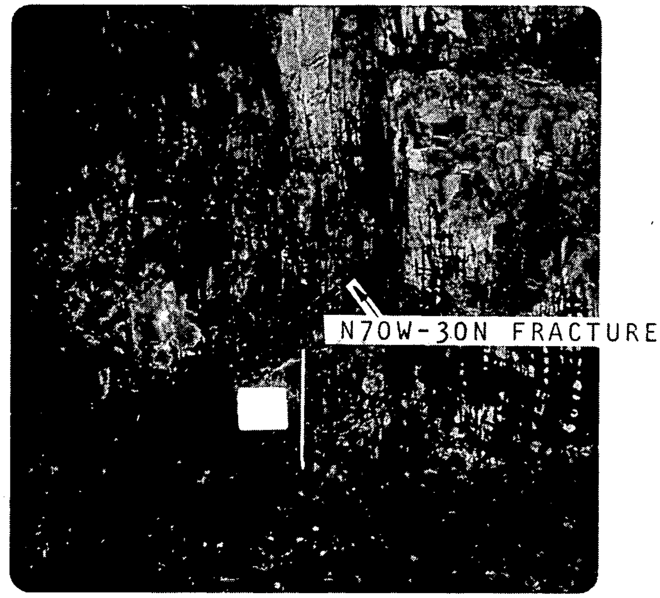


PHOTO A: OUTCROP VIEW OF SAMPLING STATION G.A.-19

LOCATION - NORTH END, EAST CORNER OF UNION HILL QUARRY, SUFFERN, N.Y.

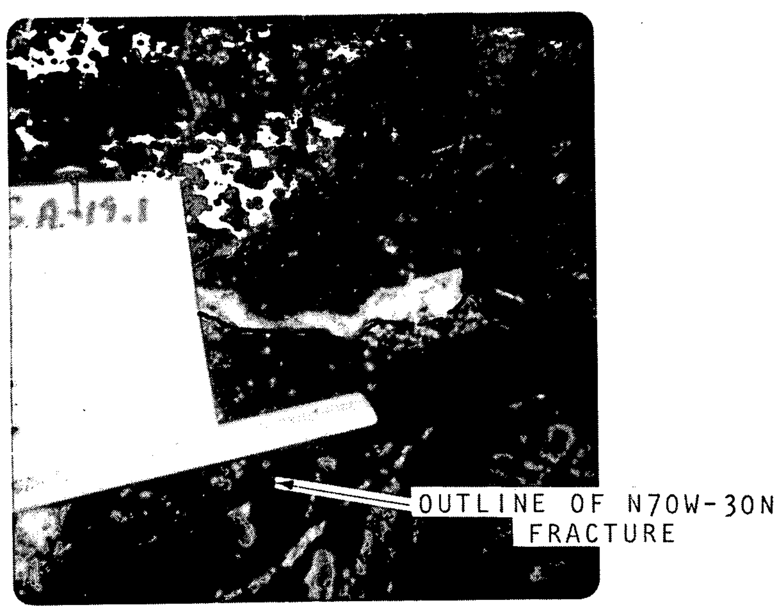
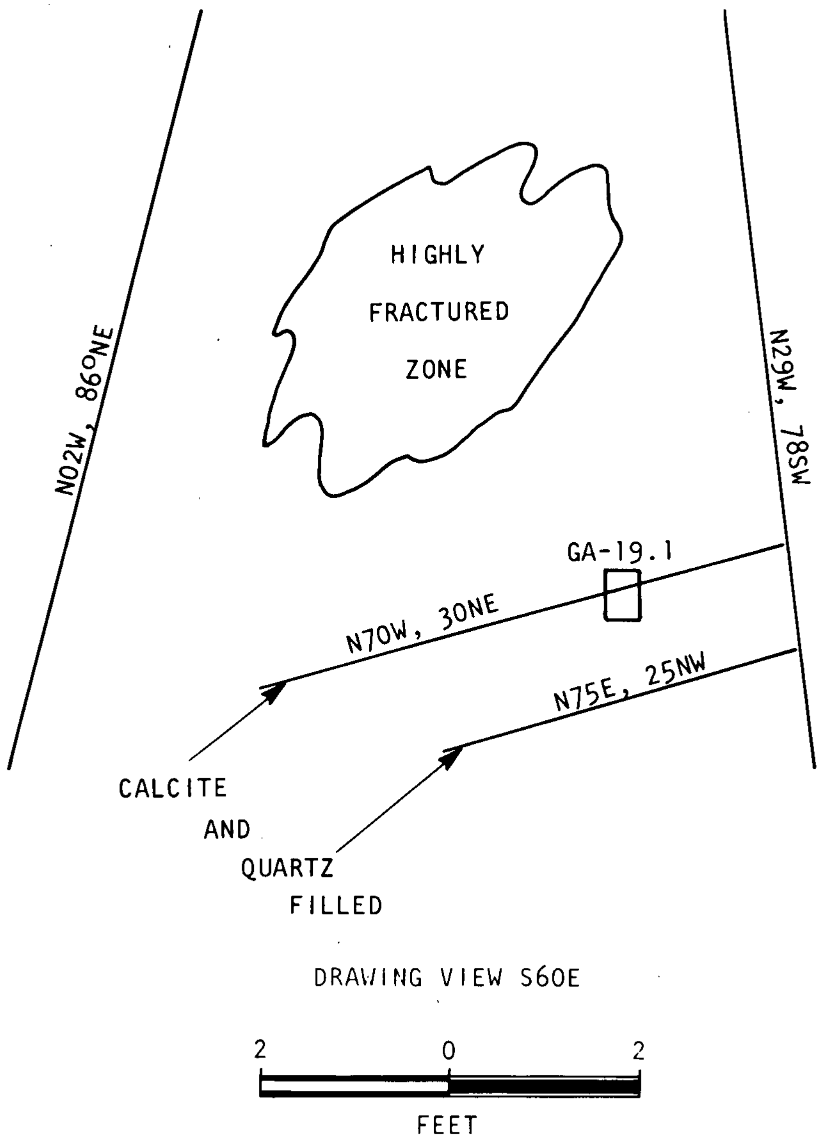


PHOTO B: CLOSEUP OF SAMPLE G.A.-19.1

DAMES & MOORE



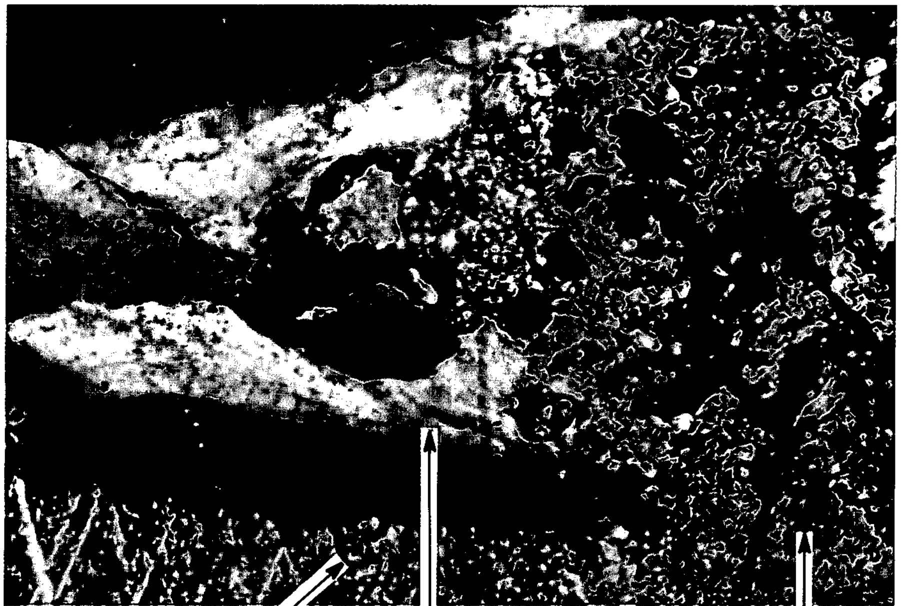
STATION G.A.-19
MINERALIZATION SAMPLING

LOCATION: UNION HILL QUARRY (EAST CORNER AT NORTH END)

NOTE: SAMPLE 19.1 EUHEDRAL CALCITE AND QUARTZ

DAMES & MOORE

PLATE E-10B



PHOTOMICROGRAPH OF SAMPLE G.A.-19.1

MAGNIFICATION: 40 X

SAMPLE TAKEN FROM FRACTURE TRENDING N70W,30N

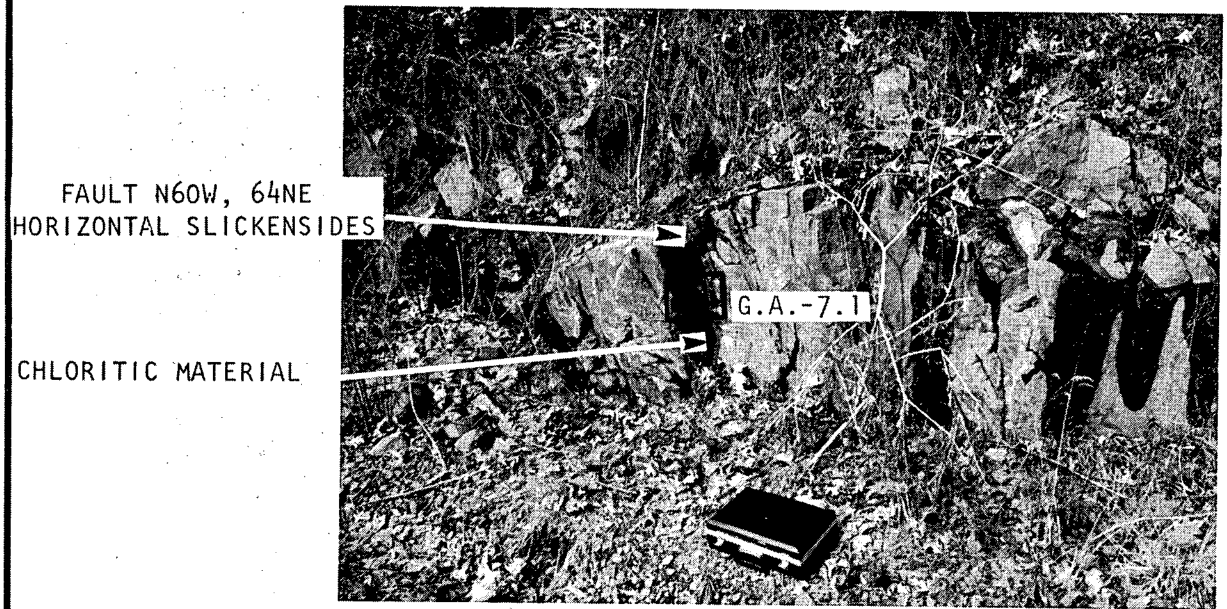


PHOTO A: OUTCROP VIEW OF SAMPLING STATION G.A.-7

LOCATION - MOUNTAIN ROAD, OPPOSITE CONVEYOR IN MARTIN MARIETTA'S LONG CLOVE QUARRY, HAVERSTRAW, N.Y.

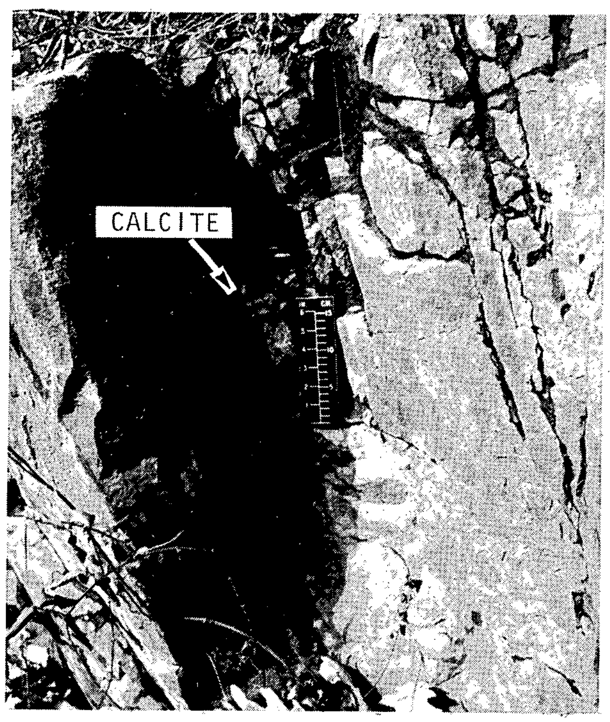
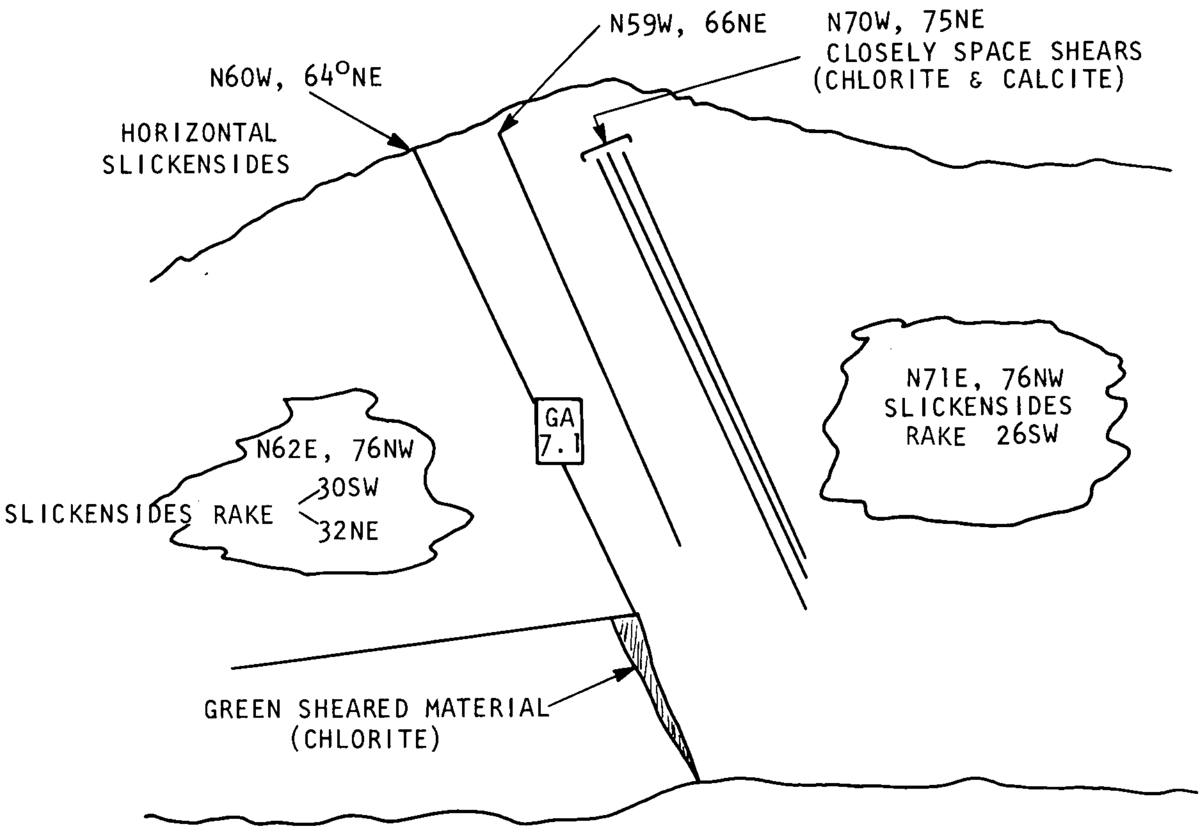
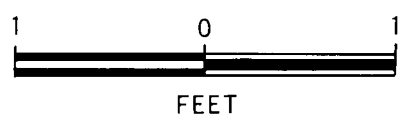


PHOTO B: CLOSEUP OF SAMPLE G.A.-7.1



CROSS SECTION (N45W VIEW)



STATION G.A.-7
MINERALIZATION SAMPLING

LOCATION: MOUNTAIN ROAD TRIASSIC DIABASE NEAR LONG CLOVE QUARRY

NOTE: APPARENTLY UNDEFORMED CALCITE FILLING SHEARED ZONE STRIKING N60W, DIPPING 64°NE; SLICKENSIDES ARE HORIZONTAL

DAMES & MOORE

PHOTO A: PHOTOMICROGRAPH OF SAMPLE G.A.-7.1
MAGNIFICATION: 4X
X - NICOLS

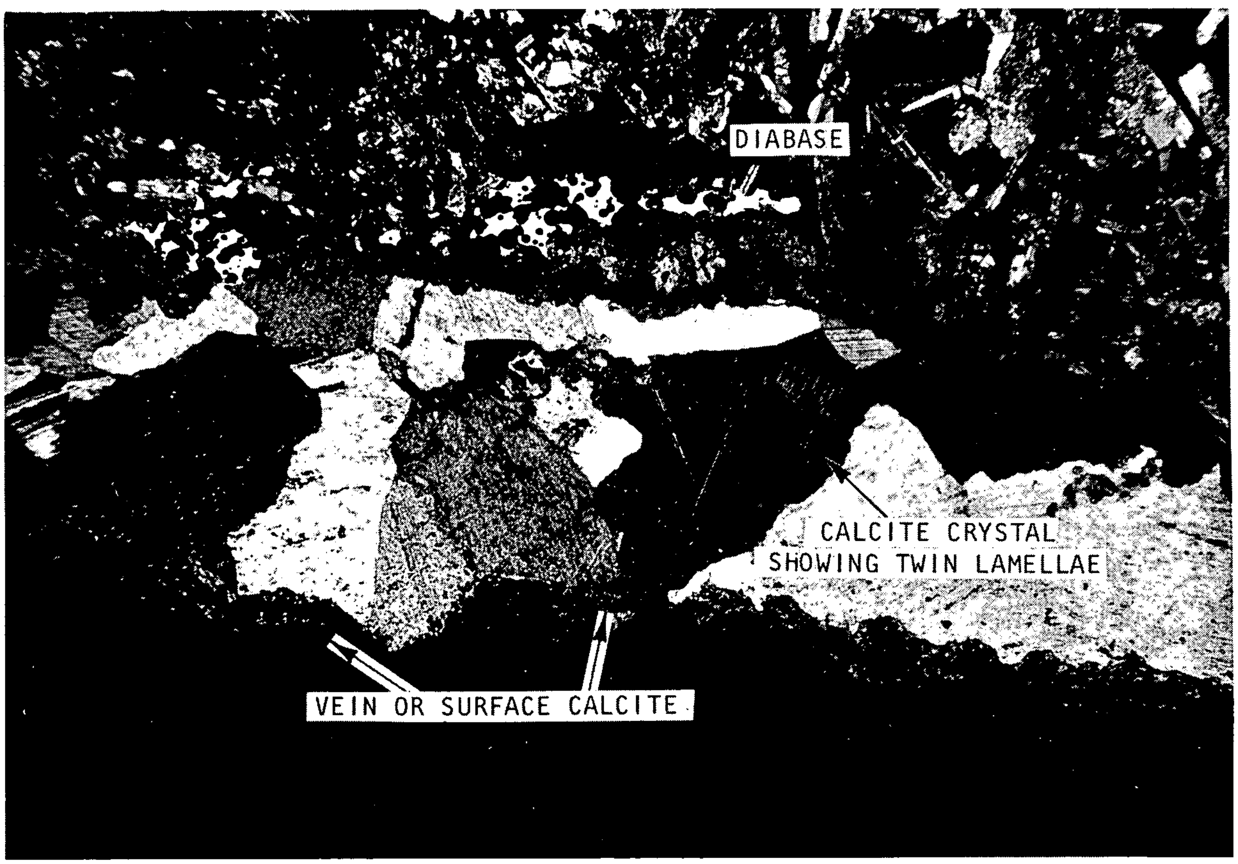


PHOTO B: PHOTOMICROGRAPH OF SAMPLE G.A.-7.1 SHOWING VEIN OR "SURFACE" CALCITE ASSOCIATED WITH DIABASE
MAGNIFICATION: 16X
X - NICOLS

DAMES & MOORE

PHOTO A: OUTCROP VIEW OF SAMPLING STATION M.W.-114
LOCATION: RT. 303, 250 FT. NORTH OF CASPER ROAD

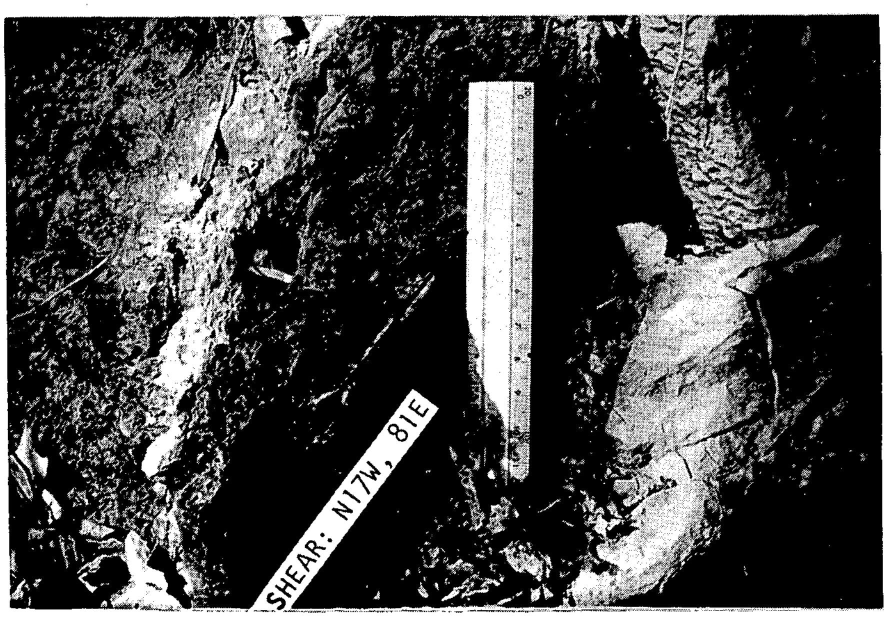
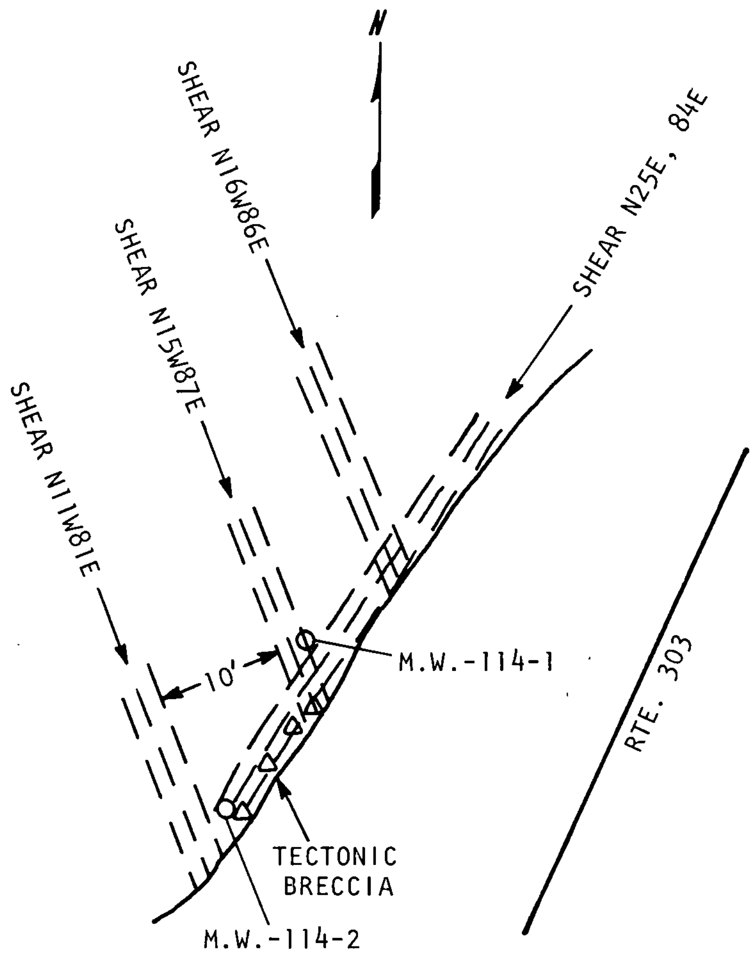


PHOTO B: CLOSEUP OF SAMPLING STATION M.W.-114-1



SKETCH MAP OF STATION M.W.-114

STATION M.W. -114
MINERALIZATION SAMPLING

LOCATION: RT. 303, 250 FEET NORTH OF CASPER ROAD

DAMES & MOORE

PLATE E-12B

PHOTOMICROGRAPH OF SAMPLE M.W.-114-1

MAGNIFICATION: 40 X

QUARTZ WITH ABUNDANT INCLUSIONS

SAMPLE TAKEN FROM WITHIN SHEAR ZONE TRENDING N17W,81E

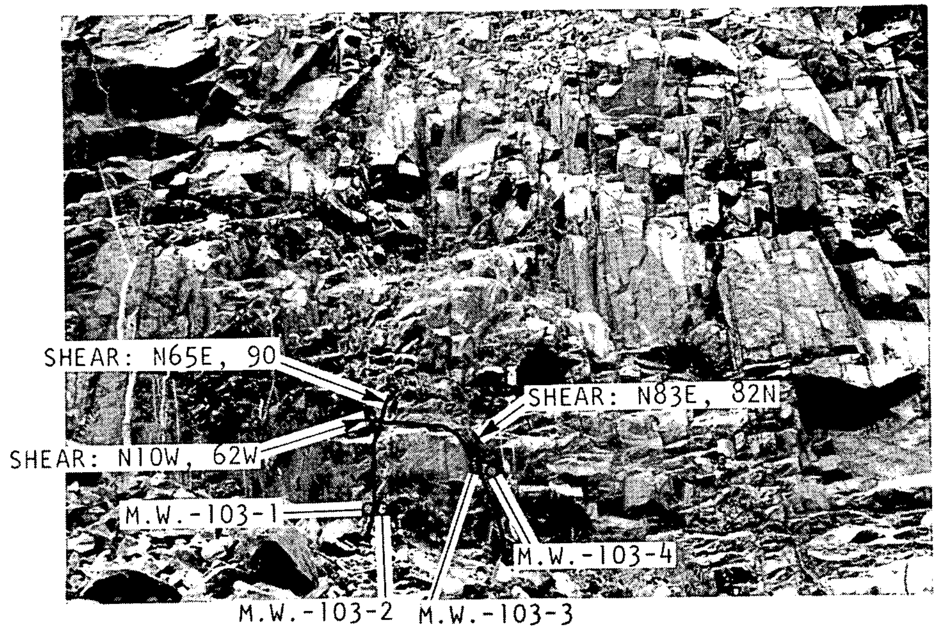


PHOTO A: OUTCROP VIEW OF SAMPLING STATION M.W.-103
LOCATION: VERDRIETEGE HOOK NORTH OF TROUGH HOLLOW

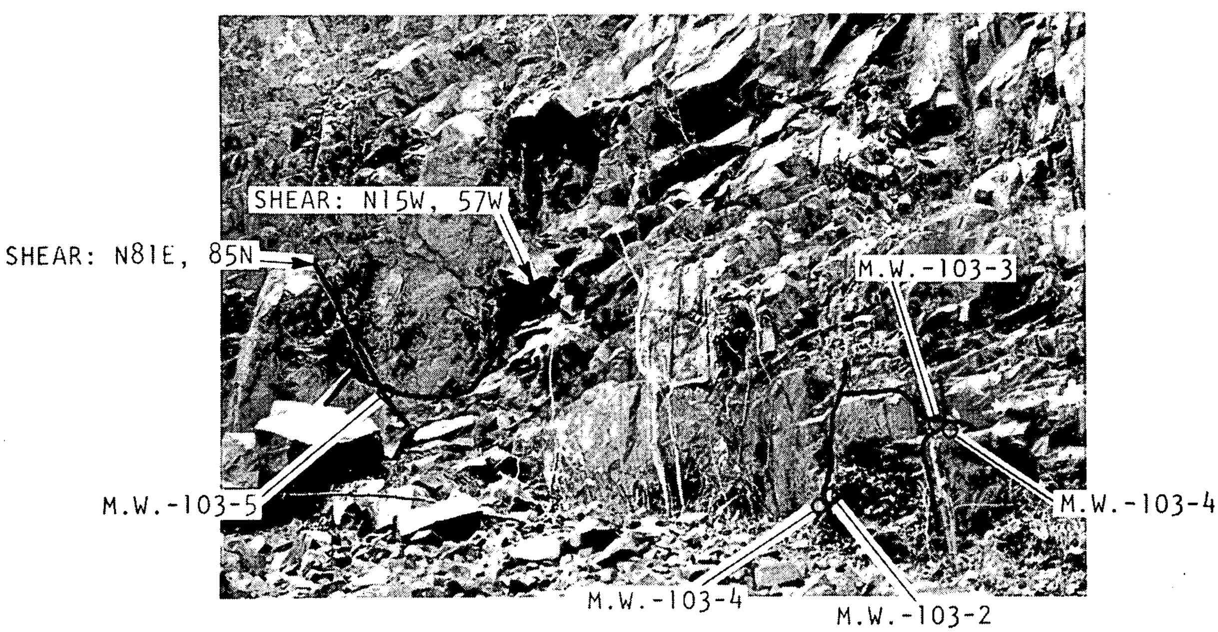
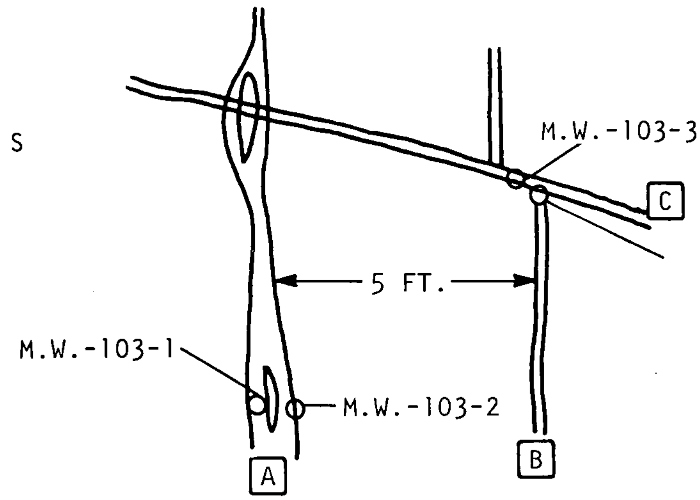


PHOTO B: OUTCROP VIEW OF SAMPLING STATION M.W.-103
LOCATION: SAME

ELEVATION SKETCH OF SAMPLE LOCATIONS



A = SHEAR N65E VERT.
B = SHEAR N83E82N
C = SHEAR N10W62W

STATION M.W.-103
MINERALIZATION SAMPLING

LOCATION: VERDRIETEGE HOOK NORTH OF TROUGH HOLLOW

DAMES & MOORE

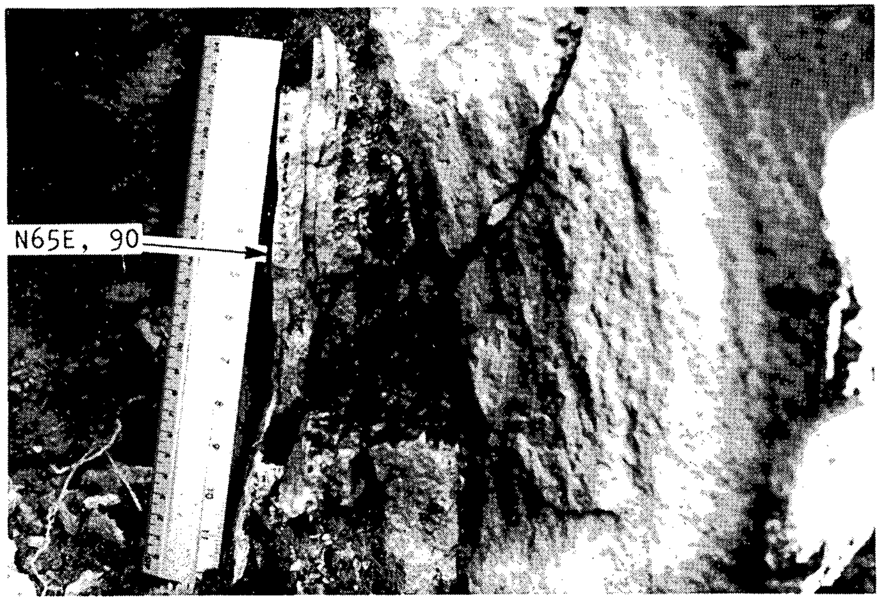


PHOTO A: CLOSEUP OF SAMPLING STATION M.W. 103-2

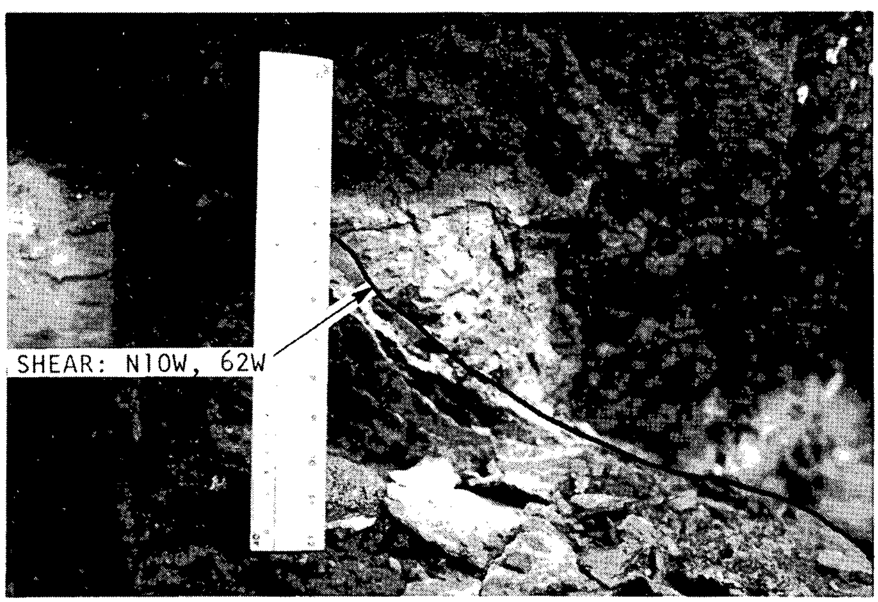


PHOTO B: CLOSEUP OF SAMPLING LOCATION M.W.-103-3

DAMES & MOORE

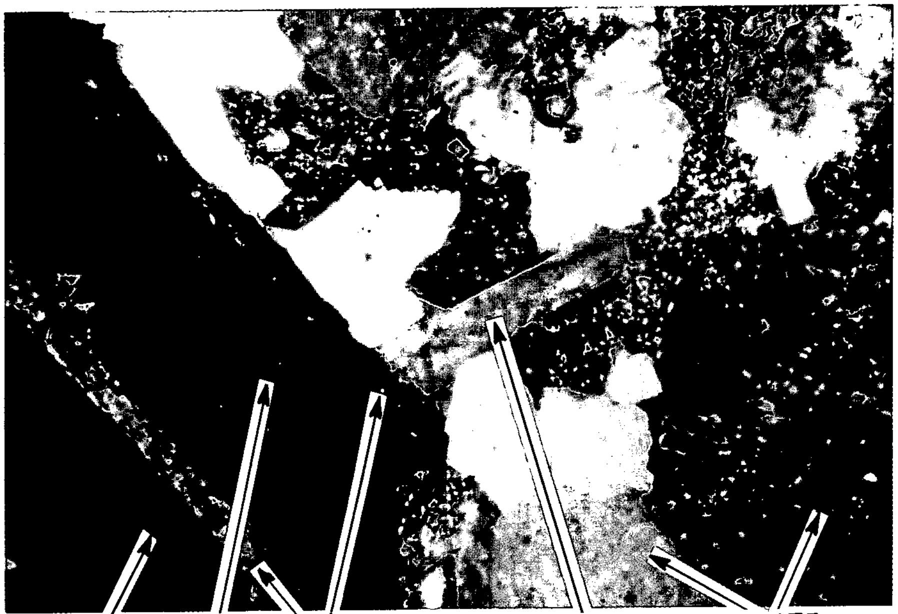


PHOTO A
PHOTOMICROGRAPH OF SAMPLE M.W.-103-2
MAGNIFICATION: 40 X
SAMPLE TAKEN FROM WITHIN SHEAR ZONE TRENDING N65E,90

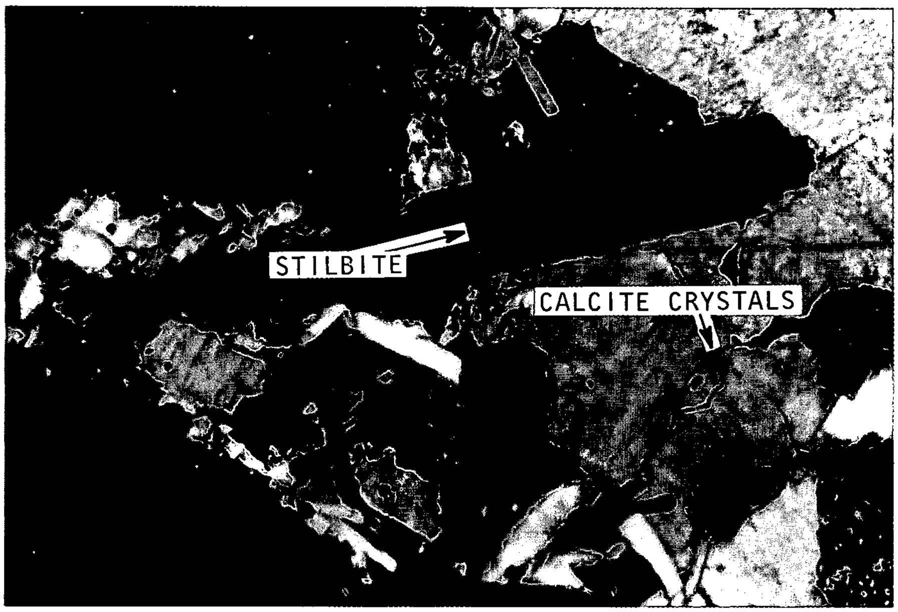
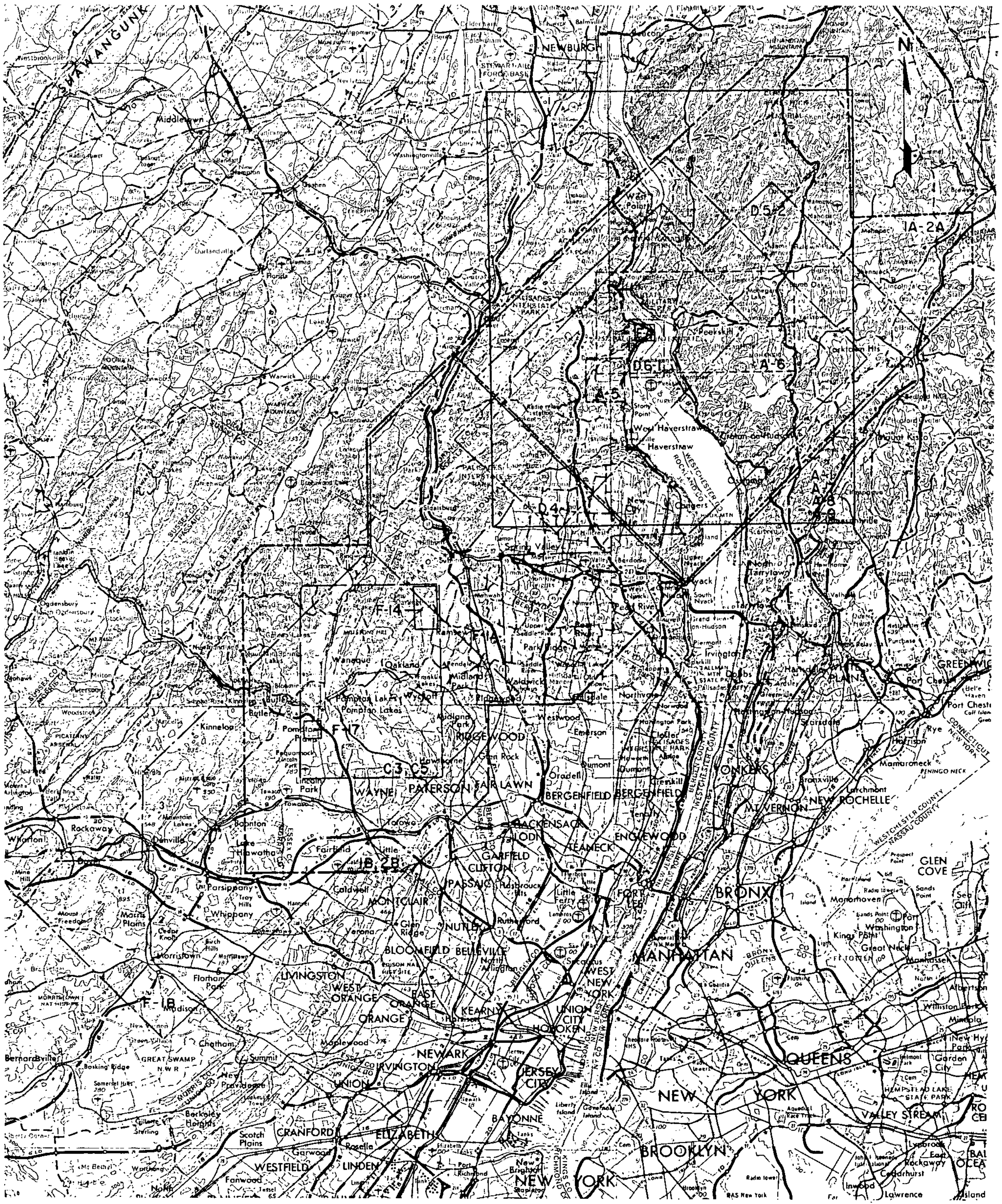


PHOTO B
PHOTOMICROGRAPH OF SAMPLE M.W.-103-3
MAGNIFICATION: 40 X
SAMPLE TAKEN FROM SHEAR ZONE TRENDING N10W,62W

DAMES & MOORE



GEOGRAPHIC LOCATION OF VARIOUS MAP PLATES

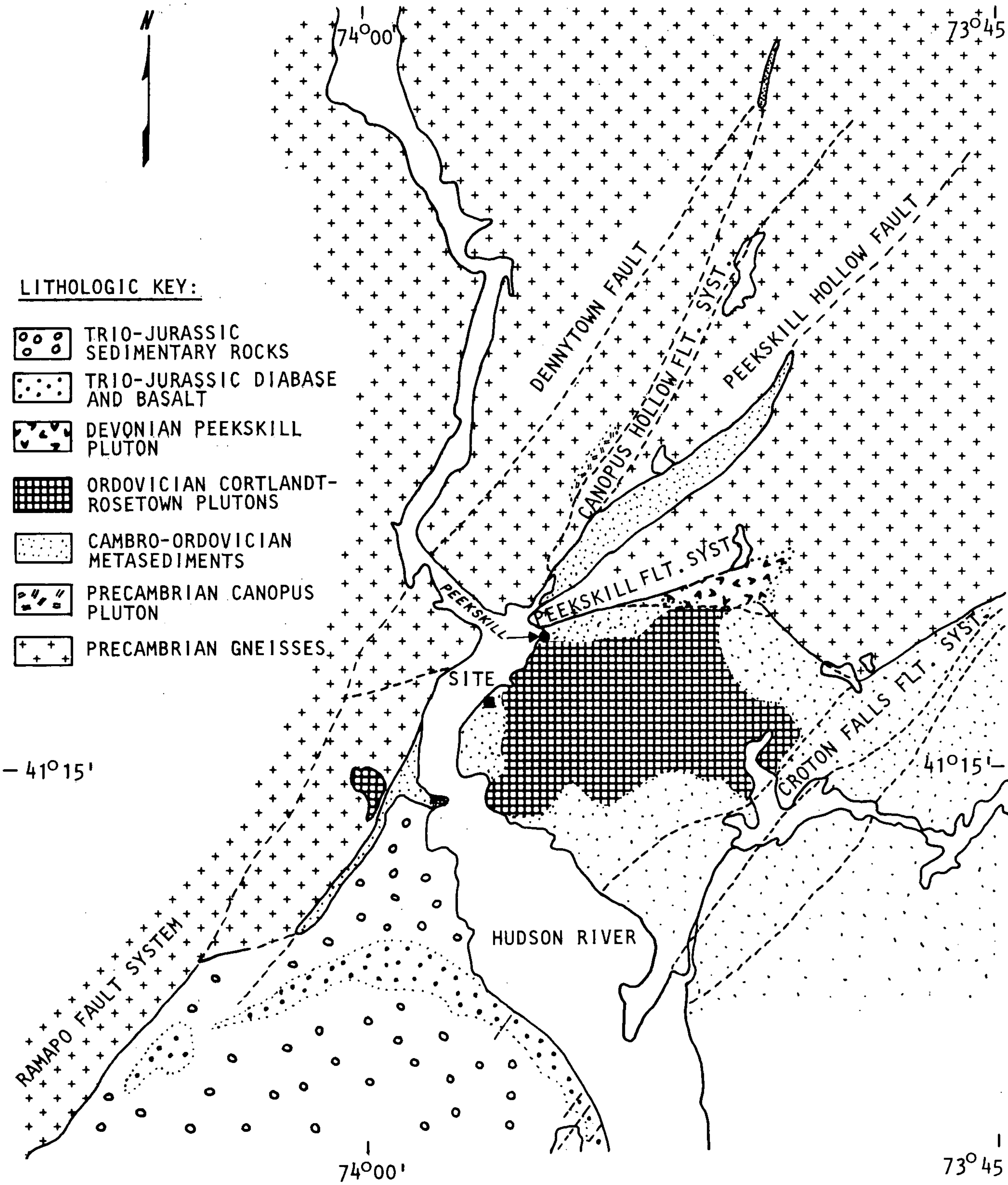
5 0 5 10

STATUTE MILES

5 0 10 15

KILOMETERS

DAMES & MOORE

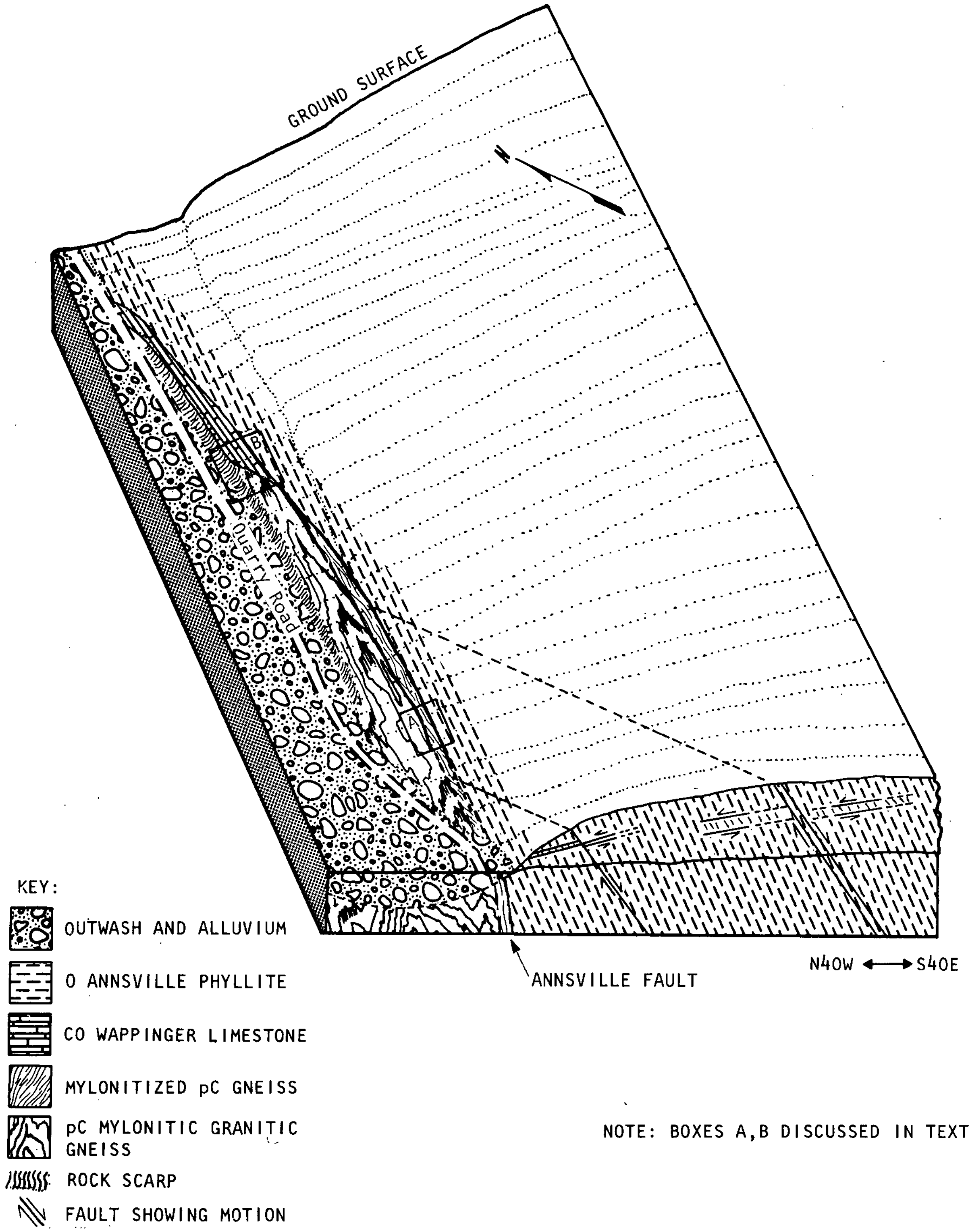


GEOLOGIC MAP OF PEEKSKILL AREA

0 1 2
MILES

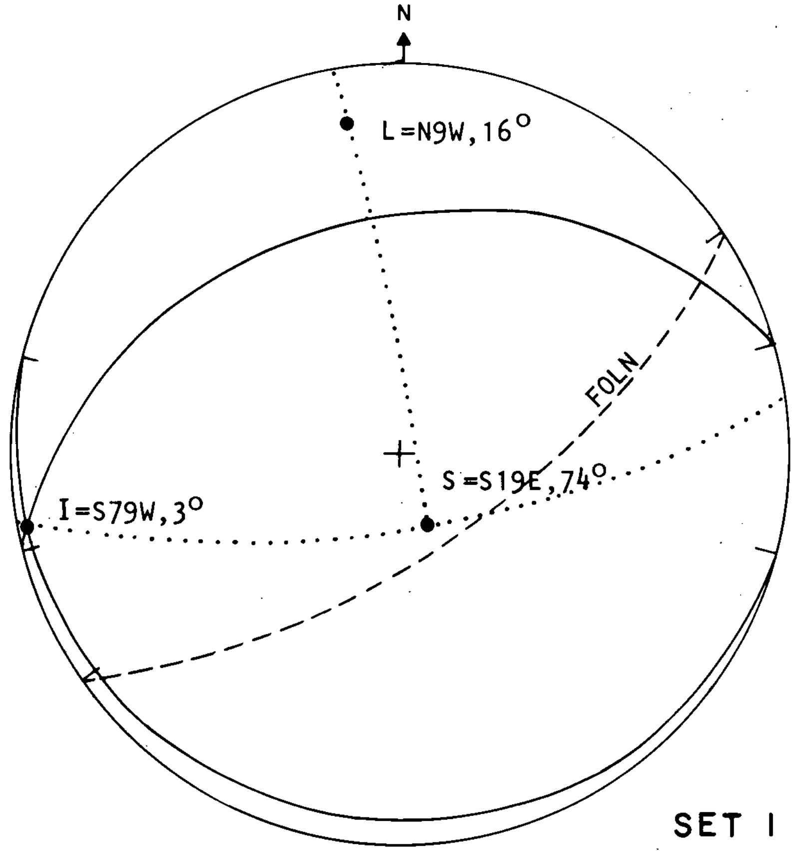
DAMES & MOORE

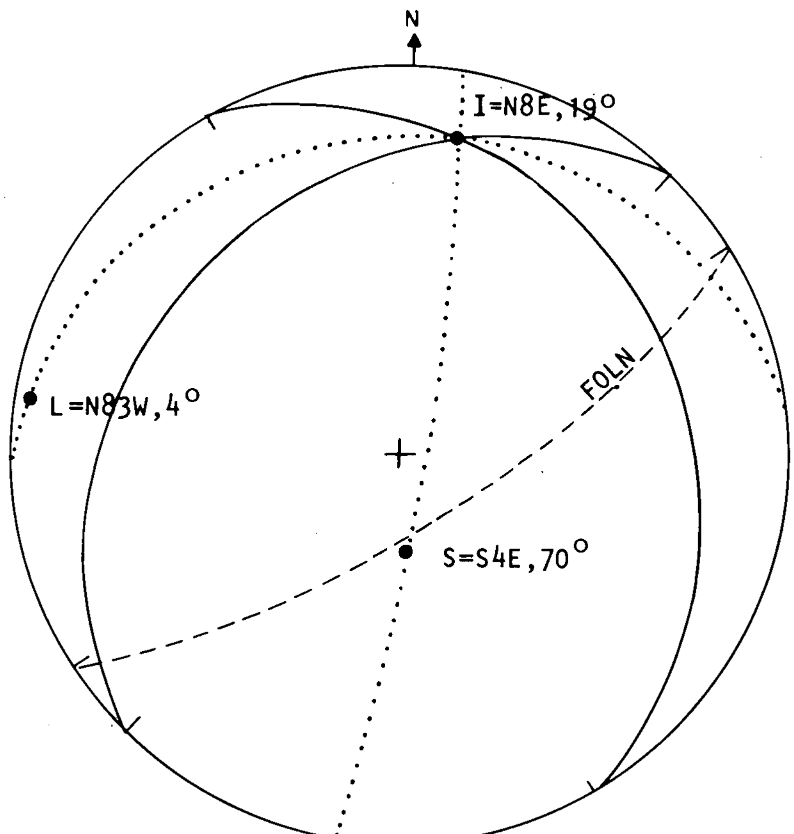
PLATE A-1



BLOCK DIAGRAM OF ANNSVILLE FAULT, ANNSVILLE, N.Y.

DAMES & MOORE

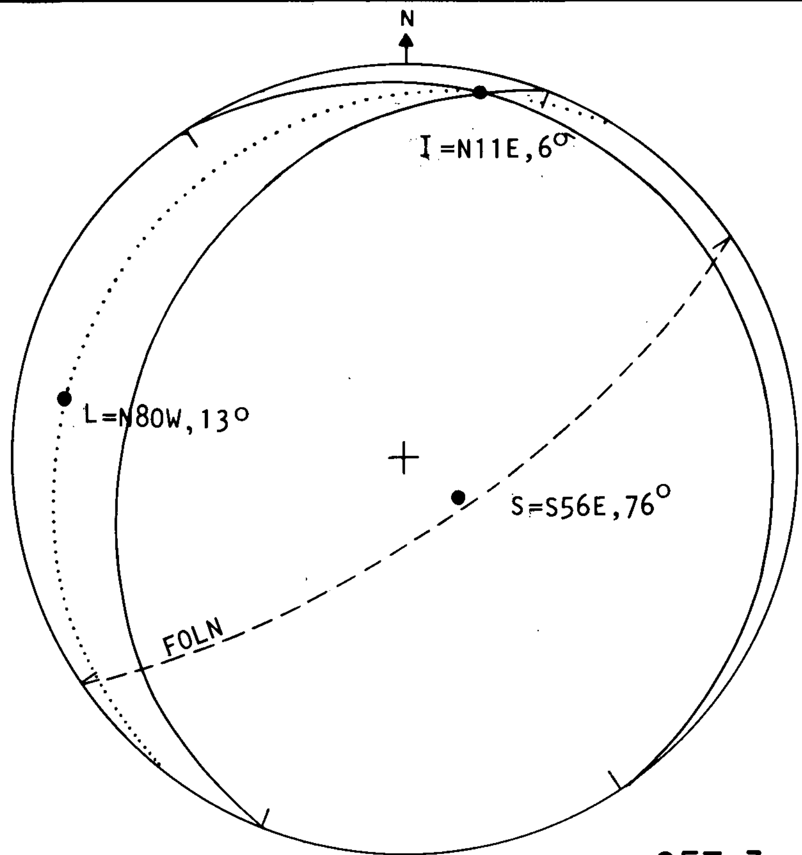




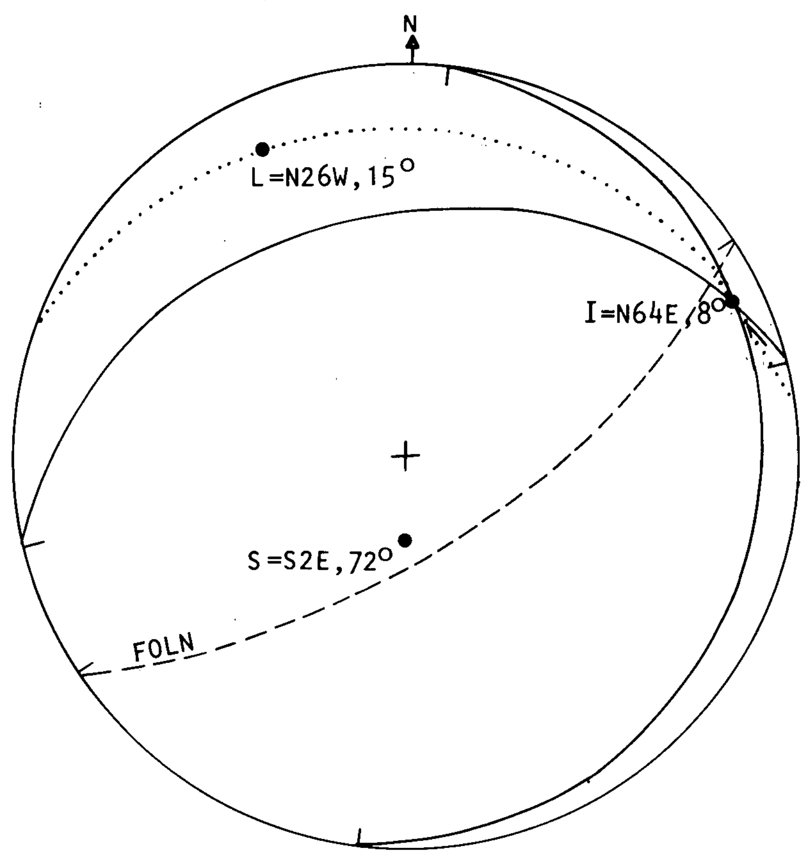
LOWER HEMISPHERE EQUAL AREA PROJECTIONS
OF CON UGATE KINK SETS IN ANNSVILLE FORMATION
ANNSVILLE, N.Y.

S, L AND I ARE SHORTENING, LENGTHENING AND INTERMEDIATE AXES, RESPECTIVELY.

DAMES & MOORE



SET 3

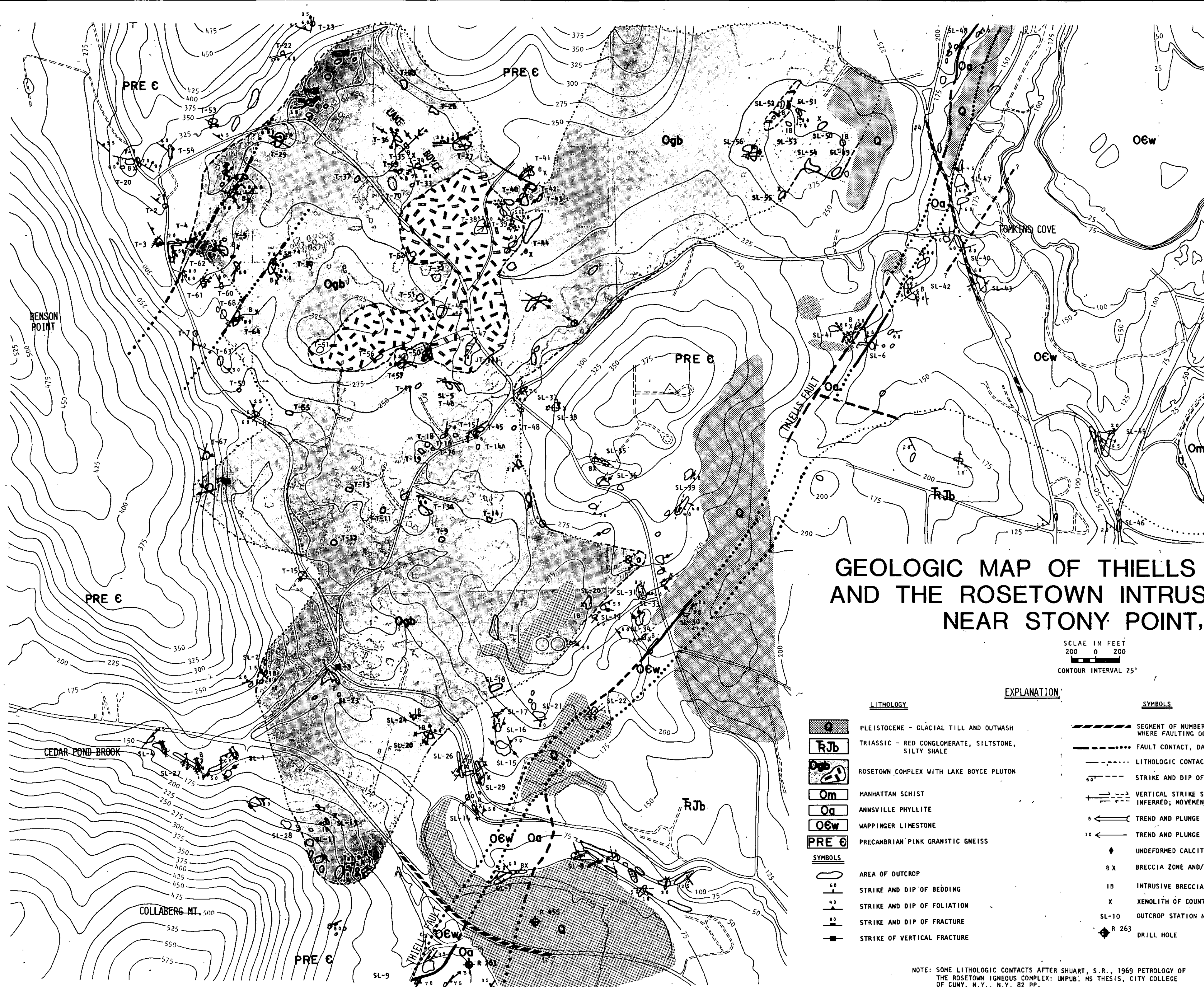


SET 4

LOWER HEMISPHERE EQUAL AREA PROJECTIONS OF CONJUGATE KINK SETS IN ANNSVILLE FORMATION ANNSVILLE, N.Y.

S, L AND I ARE SHORTENING, LENGTHENING AND INTERMEDIATE AXES, RESPECTIVELY.

DAMES & MOORE



GEOLOGIC MAP OF THIELLS FAULT ZONE AND THE ROSETOWN INTRUSIVE COMPLEX NEAR STONY POINT, N.Y.

SCLAE IN FEET
200 0 200

CONTOUR INTERVAL 25'

EXPLANATION

LITHOLOGY

- Q — PLEISTOCENE - GLACIAL TILL AND OUTWASH
- ƦJb — TRIASSIC - RED CONGLOMERATE, SILTSTONE, SILTY SHALE
- Ogb — ROSETOWN COMPLEX WITH LAKE BOYCE PLUTON
- Om — MANHATTAN SCHIST
- Oa — ANNSVILLE PHYLLITE
- OЄw — WAPPINGER LIMESTONE
- PRE Є — PRECAMBRIAN PINK GRANITIC GNEISS

SYMBOLS

- AREA OF OUTCROP
- 60 STRIKE AND DIP OF BEDDING
- 40 STRIKE AND DIP OF FOLIATION
- 80 STRIKE AND DIP OF FRACTURE
- STRIKE OF VERTICAL FRACTURE

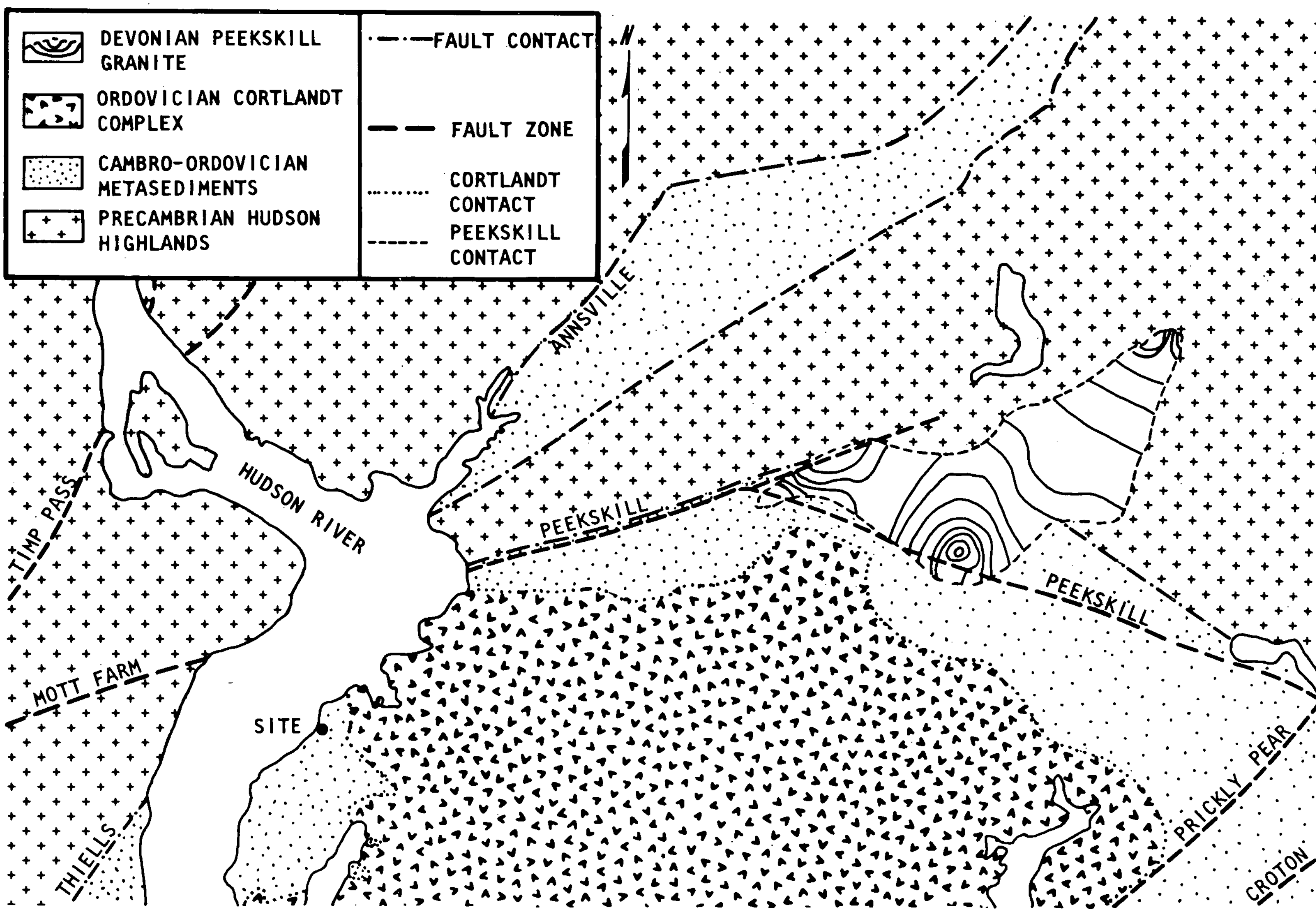
SYMBOLS

- SEGMENT OF NUMBERED SEISMIC REFLECTION LINE SHOWING WHERE FAULTING OCCURS
- FAULT CONTACT, DASHED WHERE APPROX. DOTTED WHERE INFERRED
- LITHOLOGIC CONTACT, DASHED WHERE APPROXIMATE, DOTTED WHERE INFERRED
- 60 STRIKE AND DIP OF NORMAL FAULT, DASHED WHERE APPROXIMATE
- VERTICAL STRIKE SLIP FAULT, DASHED WHERE APPROXIMATE DOTTED LINE WHERE INFERRED; MOVEMENT SENSE, DASHED WHERE INTERPRETED
- 8 TREND AND PLUNGE OF PALEOCHANNEL AXIS
- 10 TREND AND PLUNGE OF SLICKENSIDES
- UNDEFORMED CALCITE CRYSTALS
- BX BRECCIA ZONE AND/OR HEALED CATACLASTIC ROCK
- IB INTRUSIVE BRECCIA
- X XENOLITH OF COUNTRY ROCK
- SL-10 OUTCROP STATION NUMBER
- R 263 DRILL HOLE

NOTE: SOME LITHOLOGIC CONTACTS AFTER SHUART, S.R., 1969 PETROLOGY OF THE ROSETOWN IGNEOUS COMPLEX: UNPUB. MS THESIS, CITY COLLEGE OF CUNY, N.Y., N.Y. 82 PP.

REFERENCE:
THE BASE FOR THIS MAP WAS PREPARED FROM SHEETS D-23,24 AND E-23,24 OF THE PHOTOGRAMMETRIC MAP OF ROCKLAND Co., N.Y., 1958

DAMES & MOORE

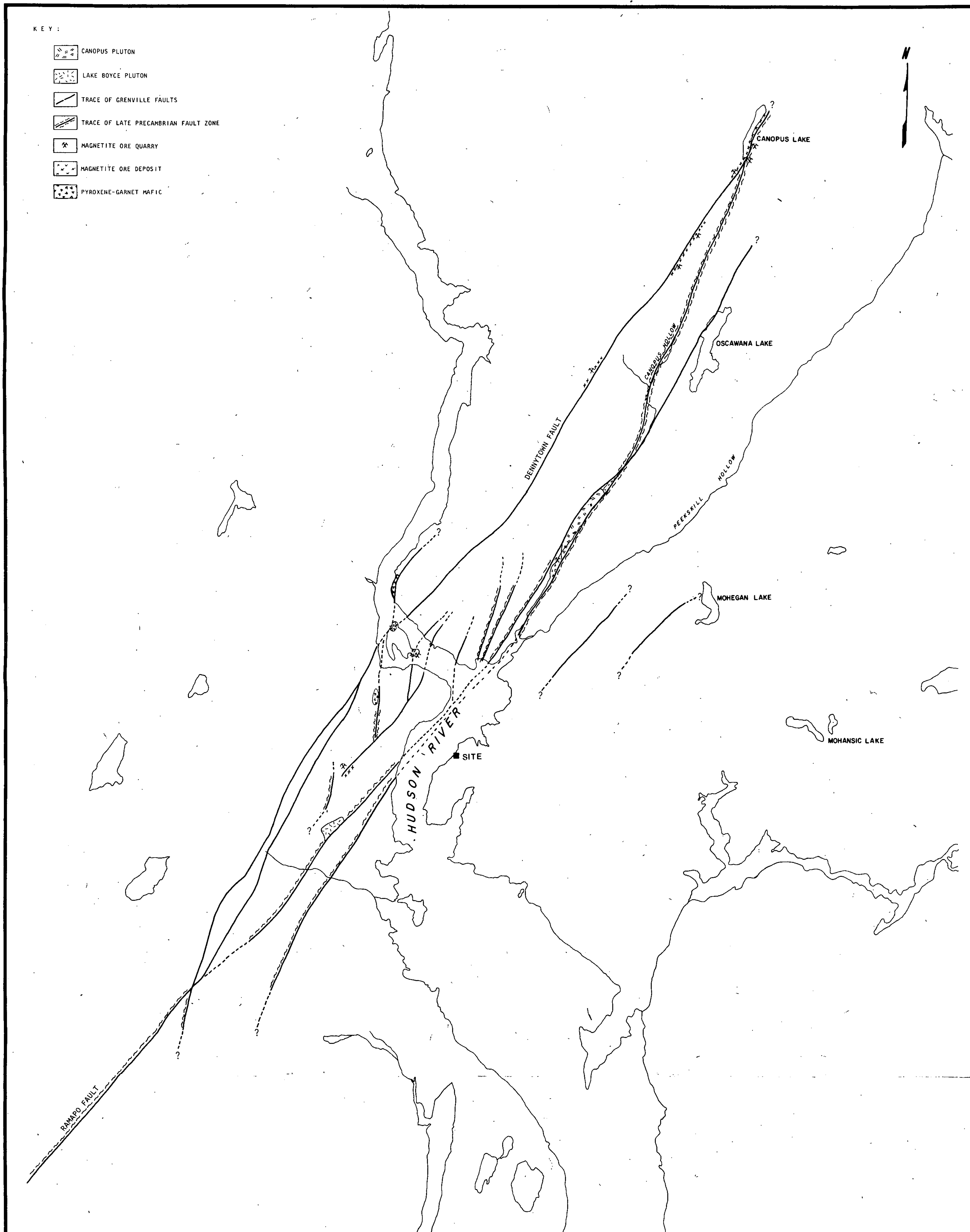


STRUCTURAL SETTING OF PEEKSKILL PLUTON

0 ½ 1 MILES

DAMES & MOORE

PLATE A-6

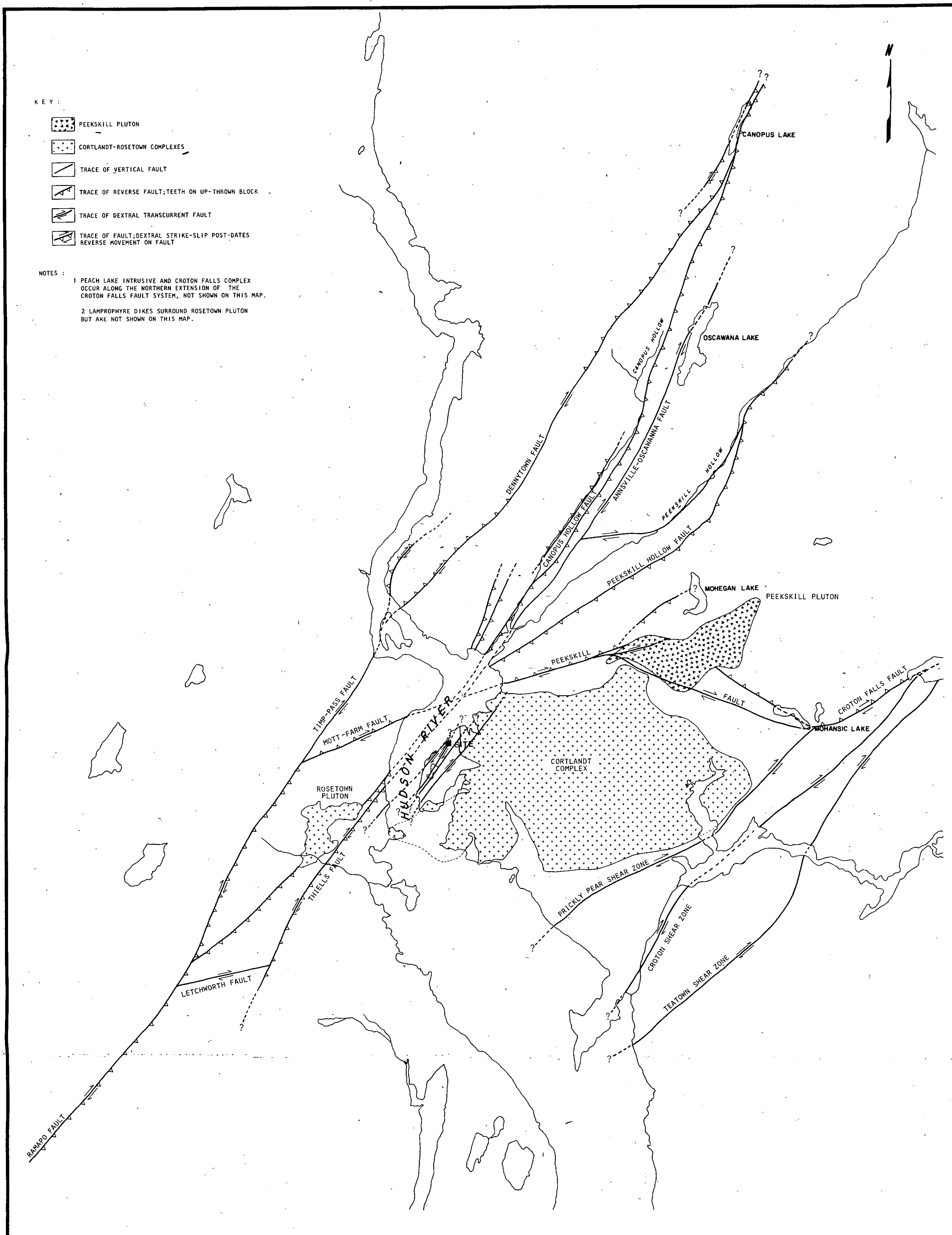


RAMAPO-CANOPUS FAULT SYSTEMS IN PRECAMBRIAN TIME

1/2 0 1 2
MILES

DAMES & MOORE

FIGURE A-7

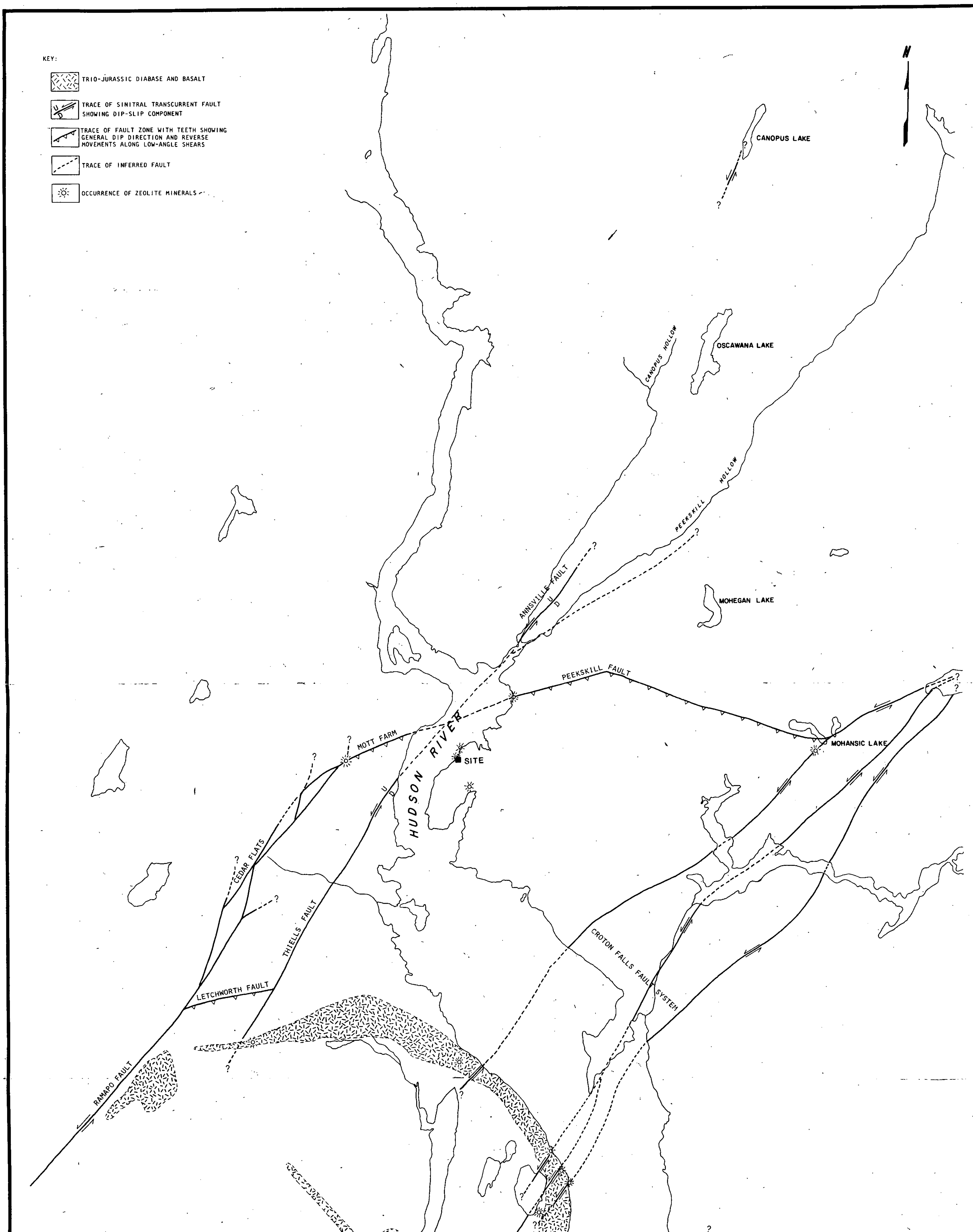


RAMAPO-CANOPUS AND CROTON FALLS SYSTEMS IN PALEOZOIC TIME

1 1/2 0 1 2
MILES

DAMES & MOORE

FIGURE A-8

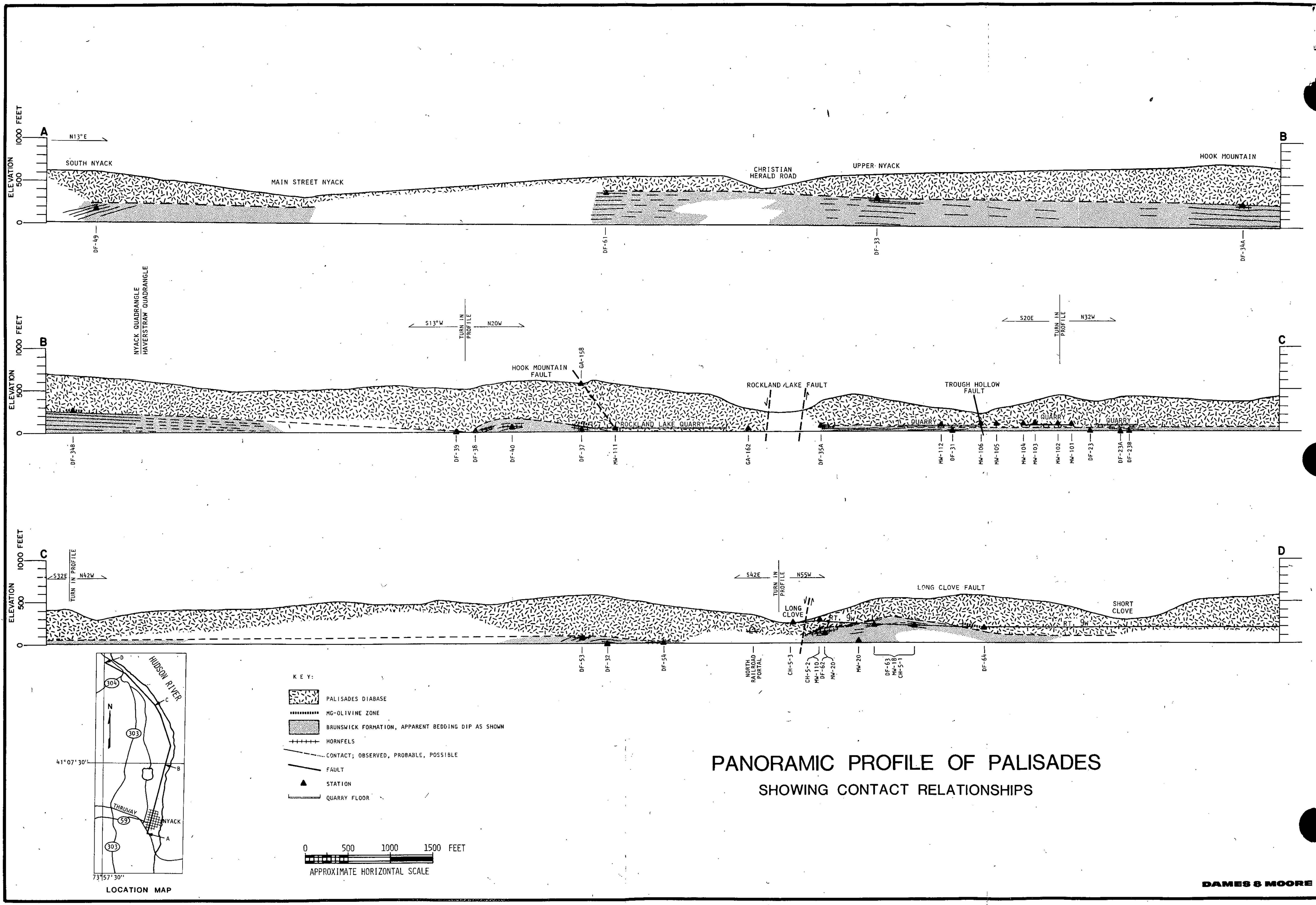


INTERPRETED
RAMAPO-CROTON FALLS FAULT SYSTEM IN MESOZOIC TIME

1/2 0 1 2
MILES

DAMES & MOORE

FIGURE A-9



PANORAMIC PROFILE OF PALISADES

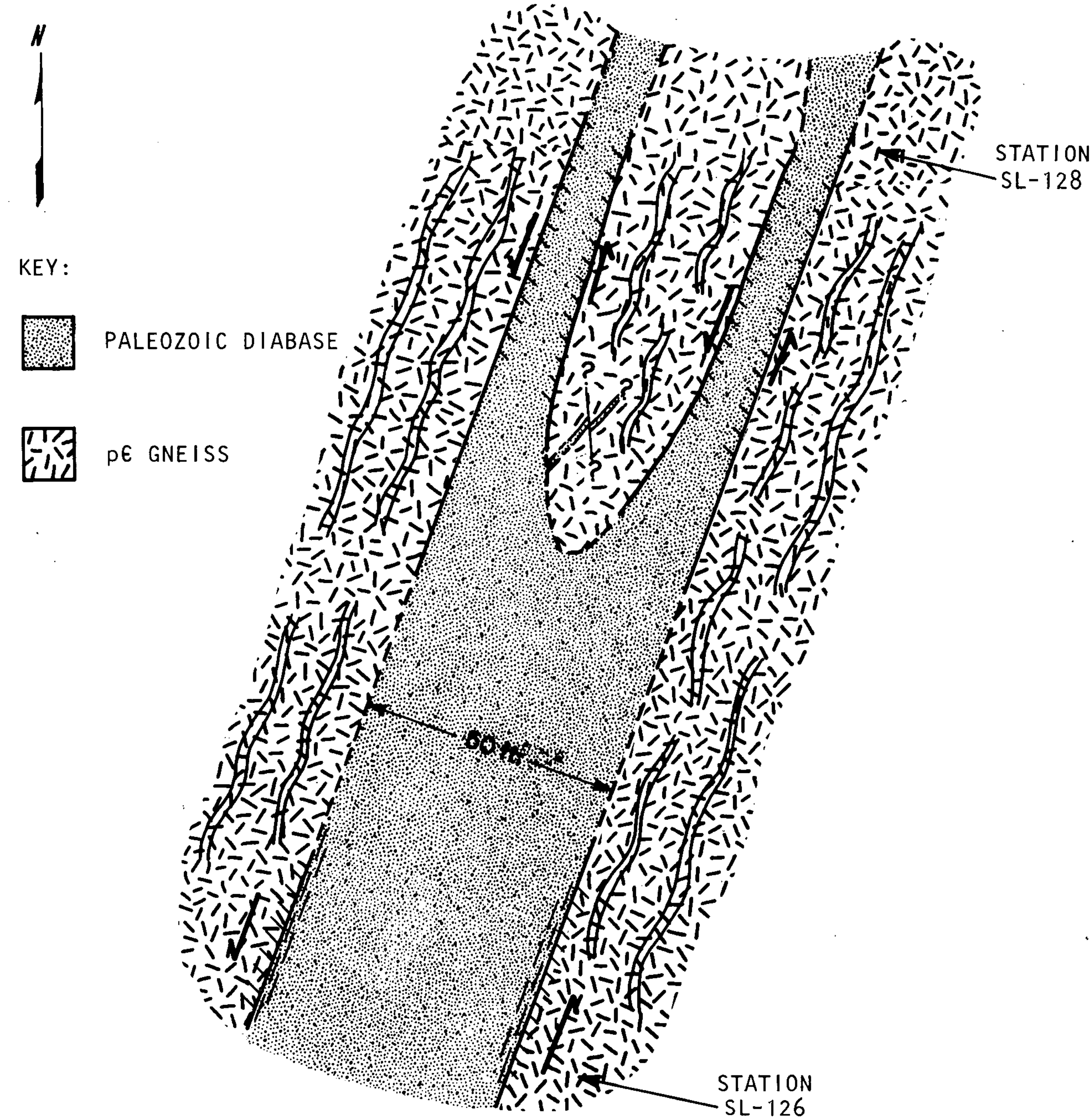
SHOWING CONTACT RELATIONSHIPS

PHOTOGRAPH

GRANITIC PEGMATITE WHICH HAS BEEN FOLDED DURING INTRUSION ALONG THE REGIONAL LAYERING AND FOLIATION OF PRECAMBRIAN PARAGNEISS. LOCATED ON GAS LINE N OF SL-136, POMPTON LAKES, NEW JERSEY

HAMMER FOR SCALE

DAMES & MOORE

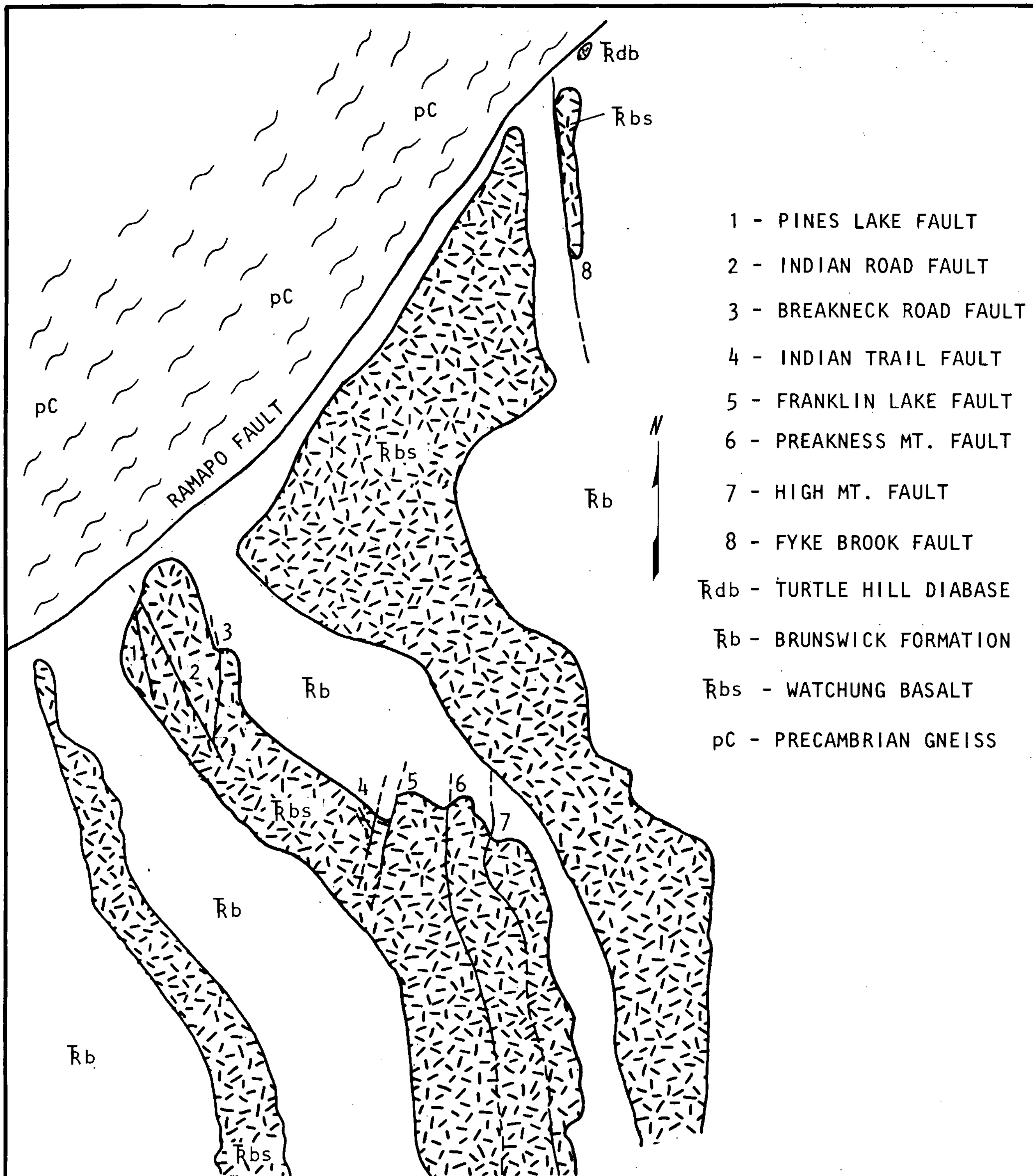


SCHEMATIC DIAGRAM

OF DIABASE DIKE NEAR LAKE INEZ FAULT, POMPTON LAKES N.J.
SINISTRAL SHEARING POST-DATES INTRUSION.

NOTE: K/Ar whole rock analysis yielded age of 439 ± 18 m.y.

DAMES & MOORE



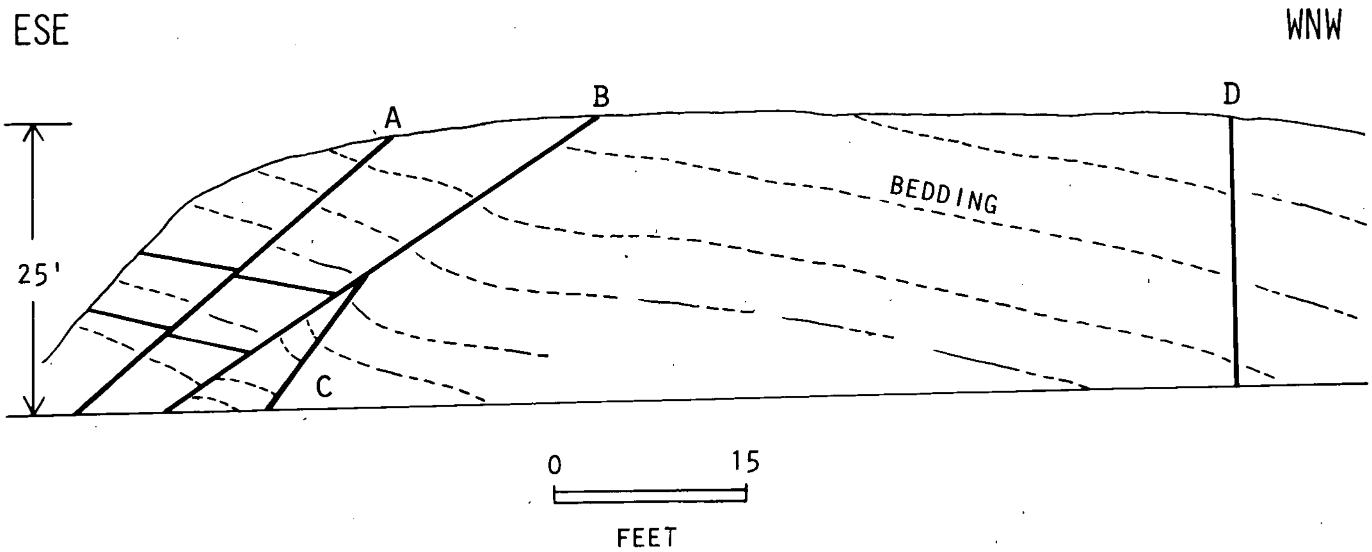
GEOLOGIC MAP
OF POMPTON LAKES AREA, N.J.

SCALE
1 0 1 2
MILES

REFERENCE: BAYLY, W.S. ET AL, 1914.

DAMES & MOORE

PLATE C-3



SCHEMATIC DIAGRAM OF STATION CH-37 (SL-109)

SHOWING CROSS-CUTTING RELATIONSHIPS OF EXPOSED FAULTS IN CONGLOMERATE BELOW SECOND WATCHUNG FLOW.

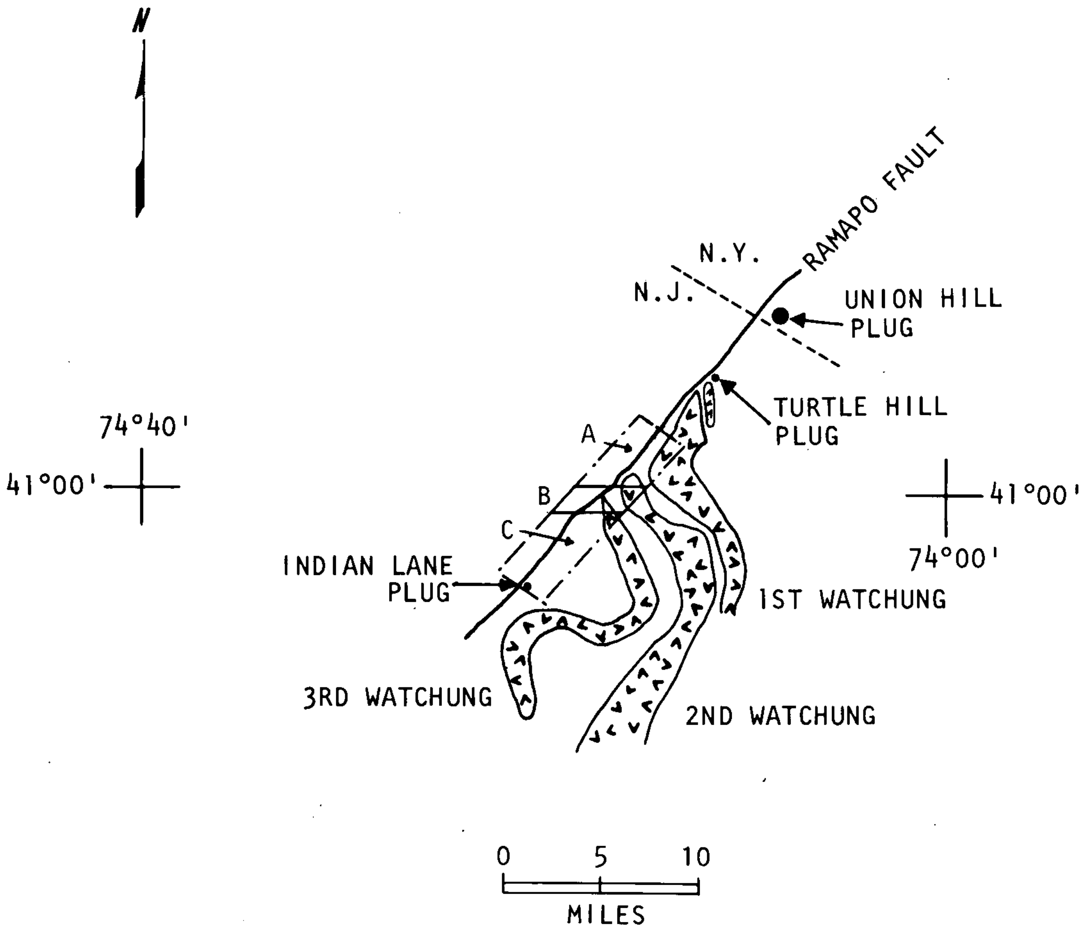
FAULT	ORIENTATION	SLICKENSIDES(RAKE)	APPARENT MOVEMENT SENSE
A	N40E 40SE	5° NE	REVERSE
B	N55E 35SE	20° NE	REVERSE
	N50E 30SE	50° NE	REVERSE
C	N55E 50SE	0°	REVERSE
D	N60E 90	—	—

ROCKS: TRIO-JURASSIC CONGLOMERATE OF BRUNSWICK FORMATION

LOCATION: OAKLAND, N.J.; BEHIND SHOP RITE IN ROUTE 202 LONG HILL MALL

BEDDING: N25°W, 25°SW (AVERAGE)

DAMES & MOORE



ZONE A - DOMAINS ALONG NORTHERN STRAIGHT SEGMENT OF RAMAPO FAULT

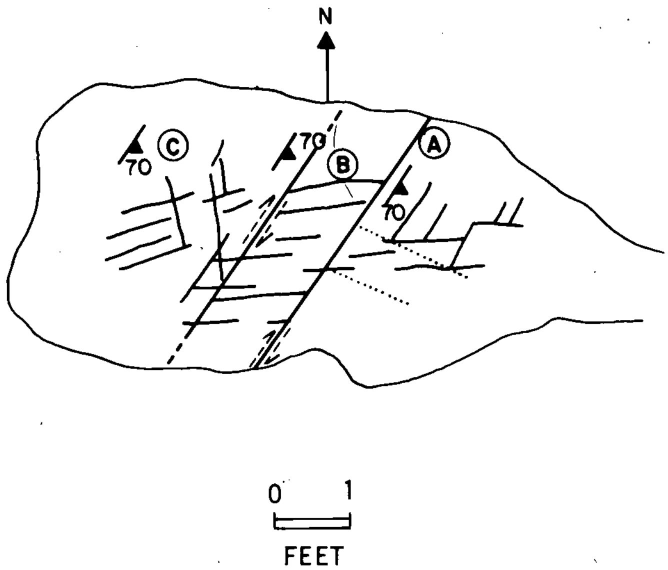
ZONE B - DOMAINS ALONG DEFLECTION OF RAMAPO FAULT TRACE

ZONE C - DOMAINS ALONG SOUTHERN STRAIGHT SEGMENT OF RAMAPO FAULT

LOCATION MAP OF STRUCTURAL SUBDIVISIONS

IN THE POMTON LAKES AREA, N.J.

DAMES & MOORE



LINE DRAWING FROM PHOTOGRAPH

GRANITIC GNEISS IN WESTERN HIGHLANDS EXHIBITING SMALL-SCALE STRIKE-SLIP SHEARS SUB-PARALLEL TO REGIONAL TREND OF RAMAPO FAULT. MOVEMENT SENSE IS INFERRED FROM FRACTURE GEOMETRY AS DEXTRAL.

STATION SL-133

FOLIATION, N35E, 70SE

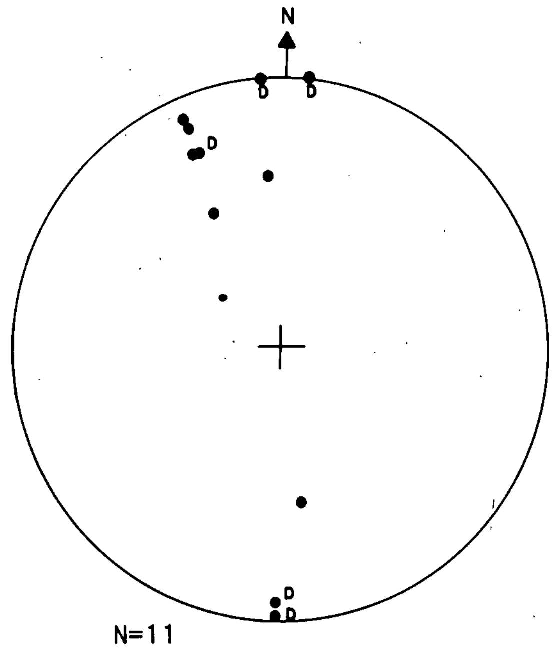
(A) SHEAR N25E, 50-70NW

(B) SHEAR N85W, 35-45N

(C) SHEAR N5W, 65W

ROCK: PRECAMBRIAN GNEISS
LOCATION: SKYLINE DRIVE,WANAQUE,N.J.

DAMES & MOORE

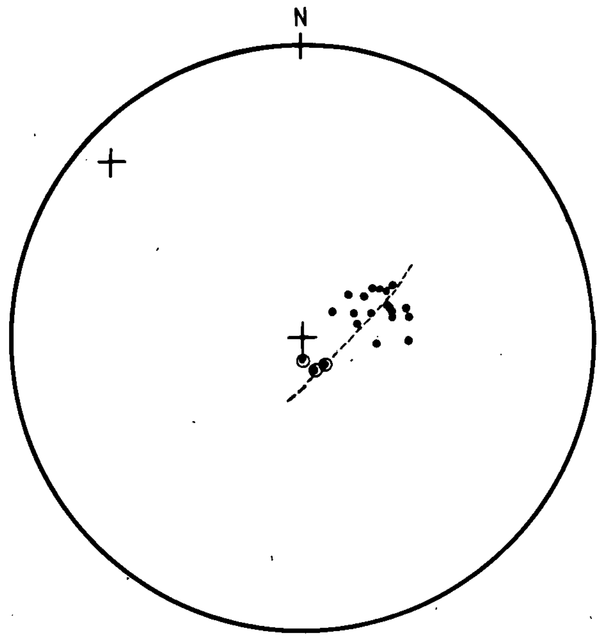


• POLE TO STRIKE-SLIP OR OBLIQUE-SLIP FAULT
D=DEXTRAL MOVEMENT SENSE INFERRED FROM GEOMETRY

LOWER HEMISPHERE EQUAL AREA PROJECTION

PLOT OF POLES TO STRIKE-SLIP AND OBLIQUE-SLIP FAULTS. FIVE FAULTS HAVE INFERRED DEXTRAL MOVEMENT SENSES. THE FAULTS STRIKE <u>ENE</u> AND DIP STEEPLY. ALL FAULTS WERE OBSERVED IN PRECAMBRIAN ROCKS WITHIN DEFLECTION ZONE (B) OF RAMAPO FAULT TRACE.

DAMES & MOORE



KEY:

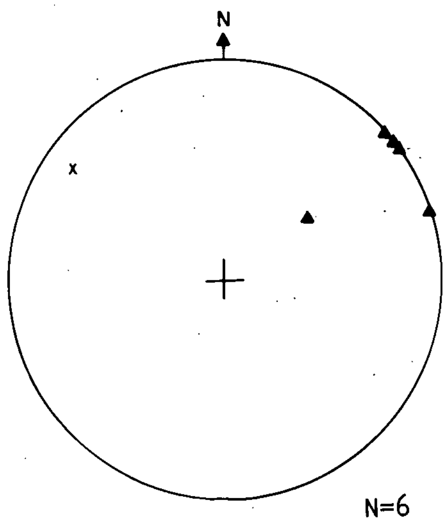
- POLE TO BEDDING AT SL-116
- POLE TO BEDDING PLANE
- POLE TO PLANE CONTAINING POLES TO BEDS (FOLD AXIS) (N 45 W, 9°)
- PLANE OF BEST FIT CONTAINING POLES TO BEDDING

LOWER HEMISPHERE EQUAL AREA PROJECTION OF POLES TO TRIASSIC BEDDING WHICH DEFINE A BROAD FOLD ABOUT AN AXIS ORIENTED (N45W, 9NW) WHICH IS APPROXIMATELY NORMAL TO THE BASIN MARGIN AND THE RAMAPO FAULT.

LOWER HEMISPHERE EQUAL AREA PROJECTION

DAMES & MOORE

A)



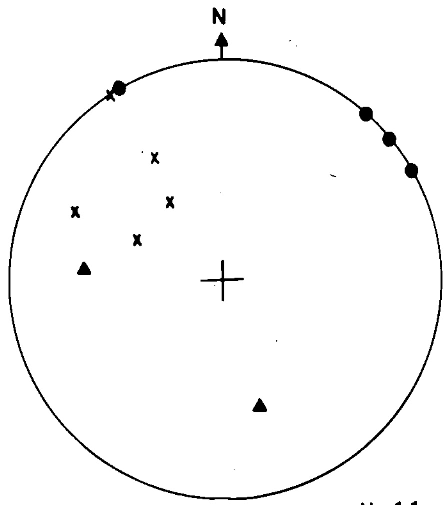
N=6

ZONE A - PLOT OF POLES TO FAULTS

▲ DIP-SLIP FAULT

x STRIKE-SLIP FAULT

B)



N=11

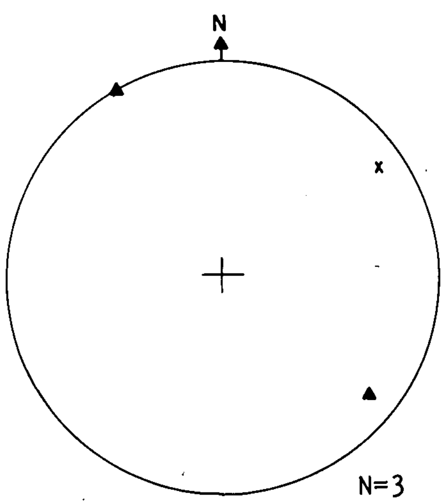
ZONE B - PLOT OF POLES TO FAULTS

▲ DIP-SLIP FAULT

x STRIKE-SLIP FAULT

● MOVEMENT SENSE UNKNOWN

C)



N=3

ZONE C - PLOT OF POLES TO FAULTS

▲ DIP-SLIP FAULT

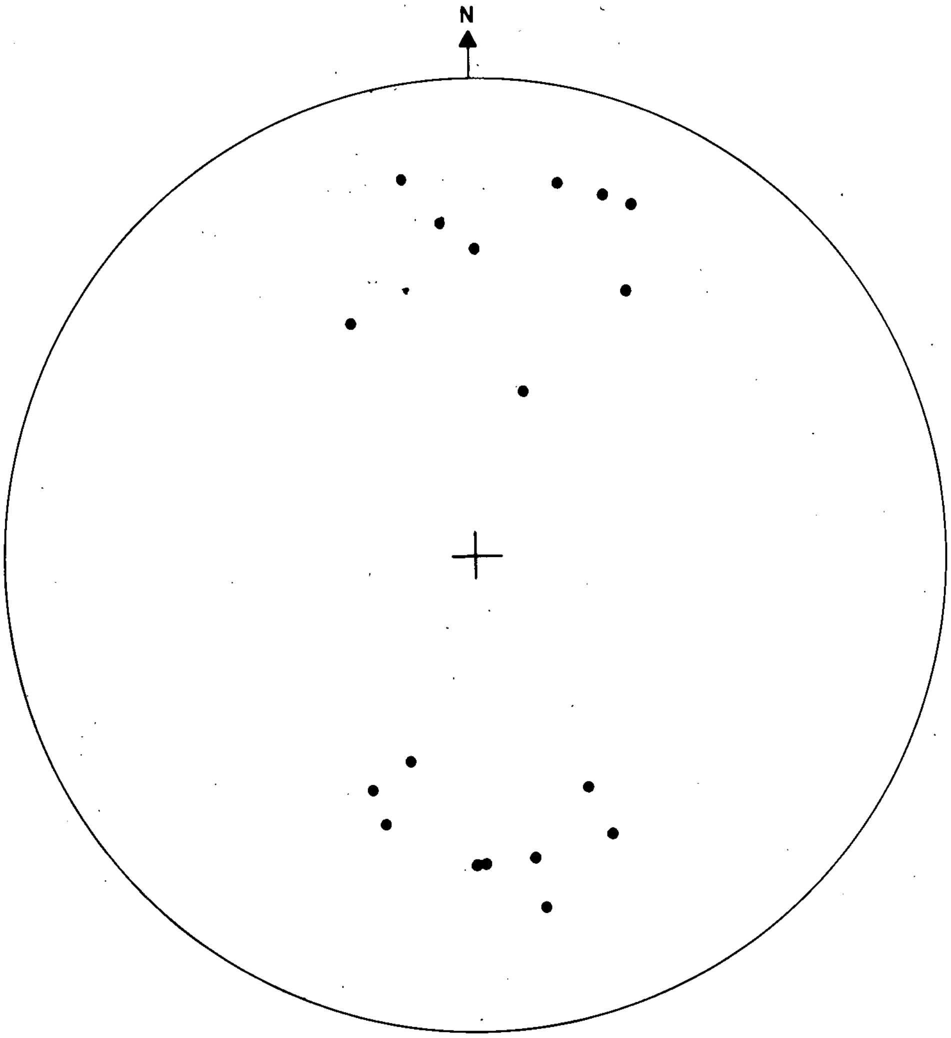
x STRIKE-SLIP FAULT

NOTE: ZONES A,B AND C SHOWN ON PLATE C-5

LOWER HEMISPHERE EQUAL AREA PROJECTIONS

FAULTS IN TRIO-JURASSIC DOMAINS OF ZONES A,B,AND C
IN POMPTON LAKES AREA,N.J.

DAMES & MOORE



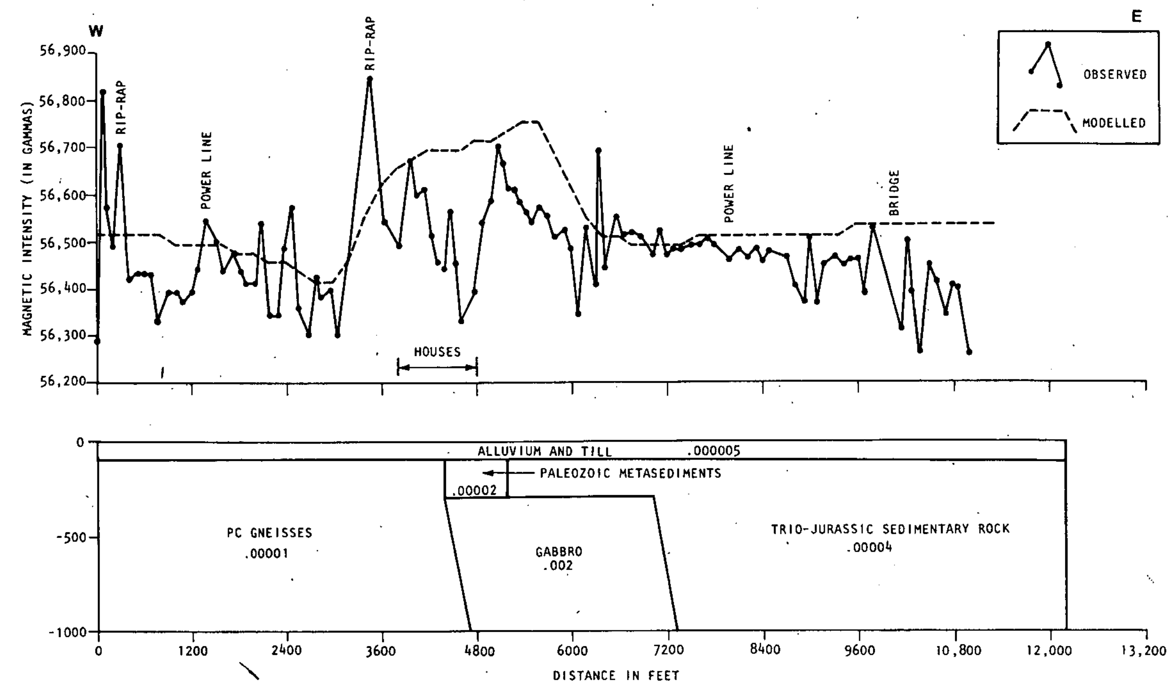
• POLE TO DIP-SLIP FAULT PLANE
N=18

LOWER HEMISPHERE EQUAL AREA PROJECTION

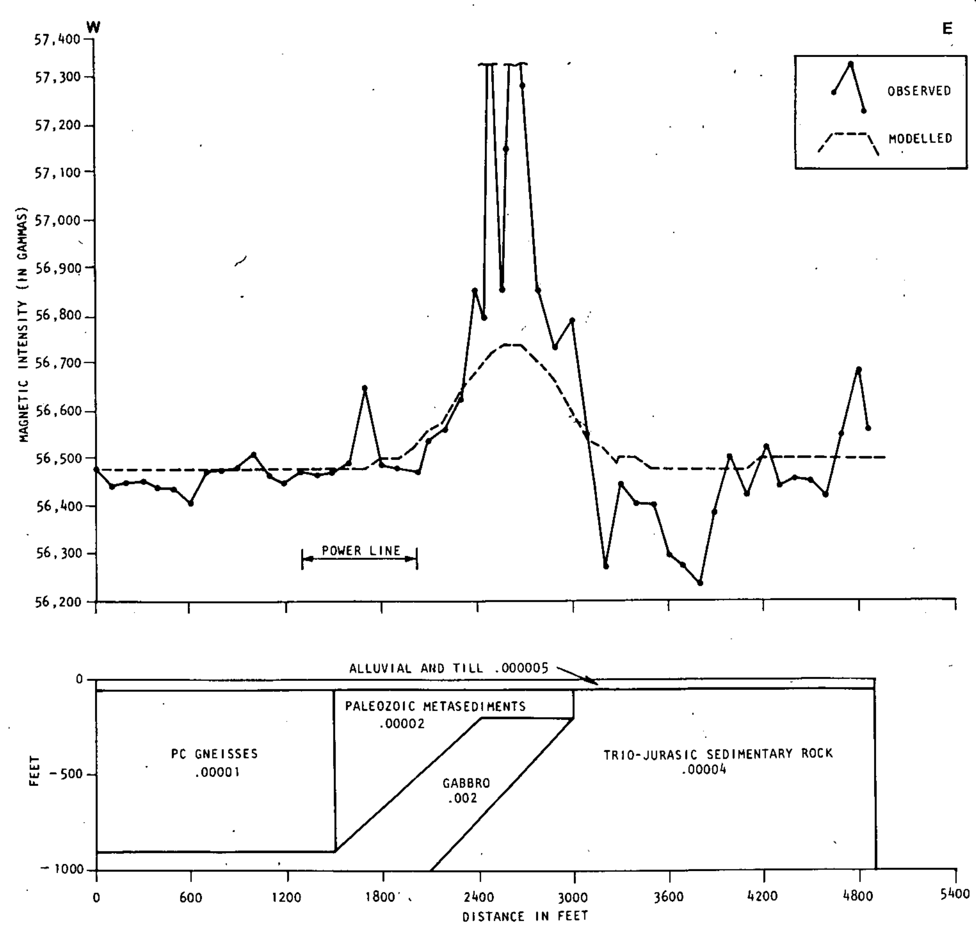
PLOT OF POLES TO DIP-SLIP FAULTS IN PRECAMBRIAN DOMAIN OF DEFLECTION ZONE (B) NEAR POMPTON LAKES, N.J. MOVEMENT SENSES OF FAULTS ARE BOTH NORMAL AND REVERSE.

DAMES & MOORE

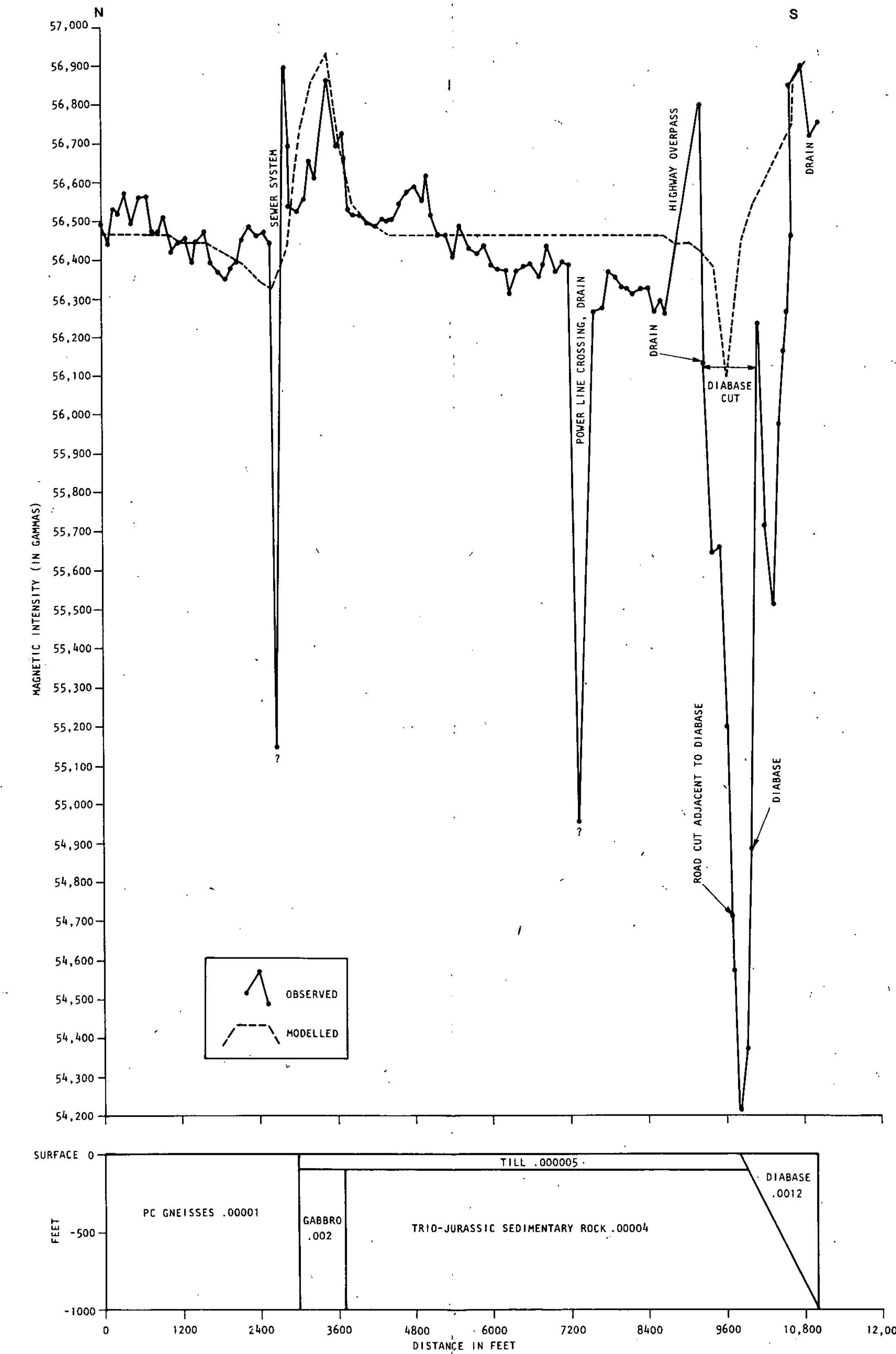
GROUND MAGNETIC PROFILES



PROFILE 1



PROFILE 2

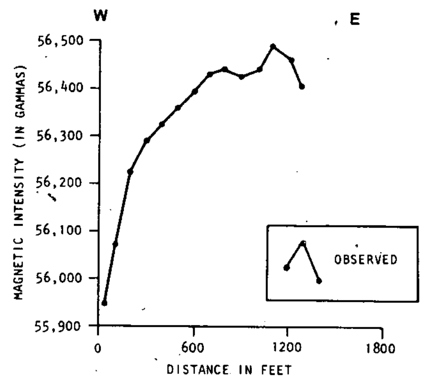


PROFILE 3

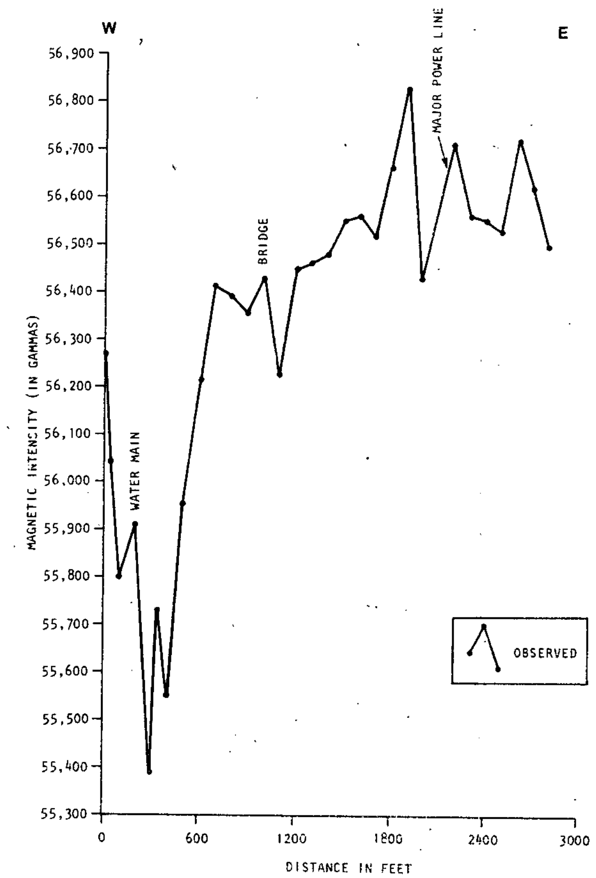
DAMES & MOORE

PLATE D.3-1

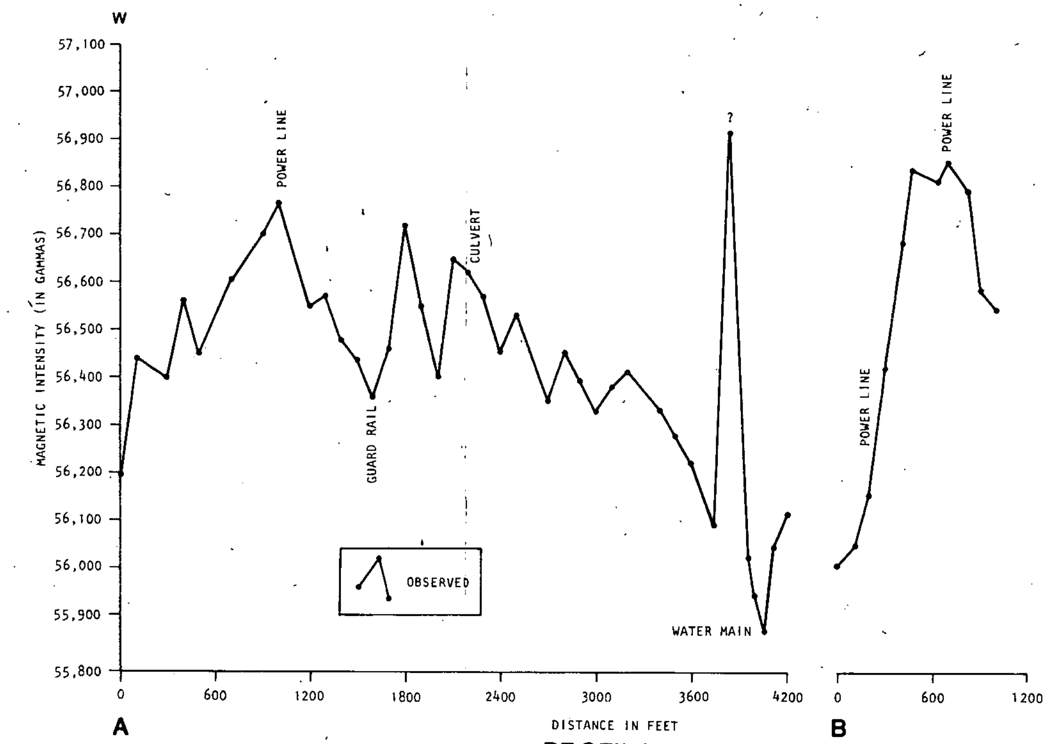
GROUND MAGNETIC PROFILES



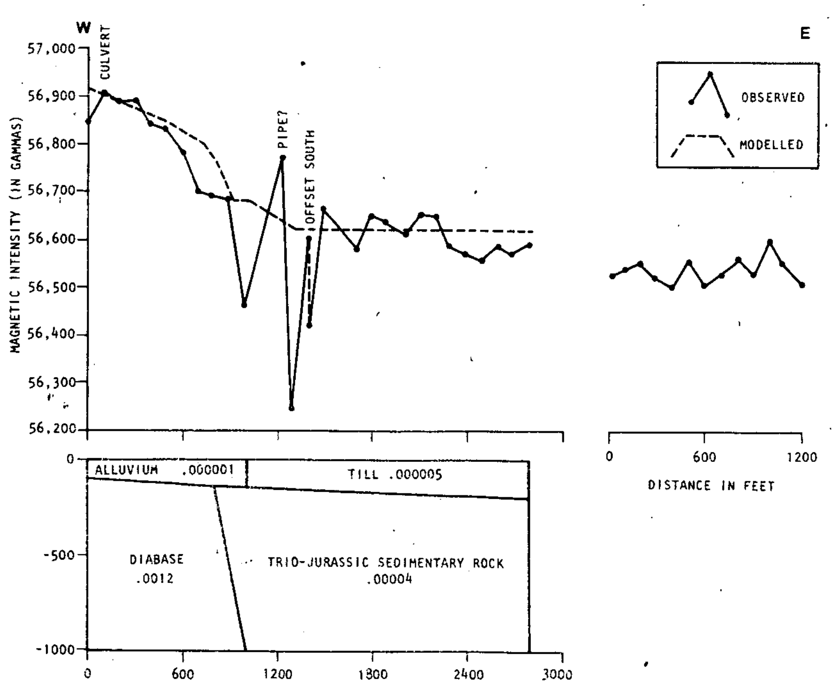
PROFILE 4



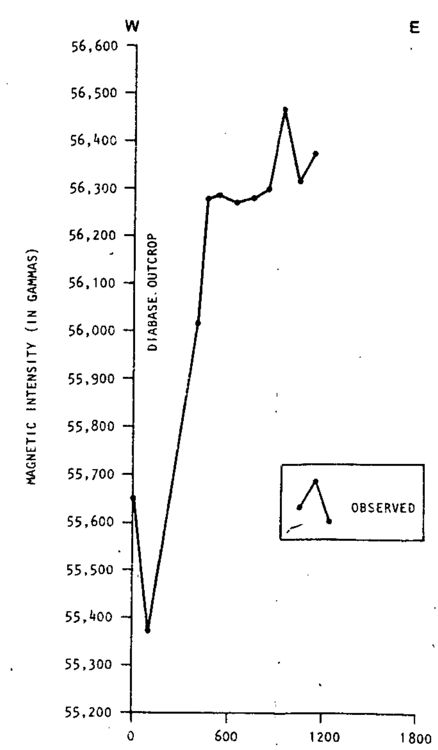
PROFILE 5



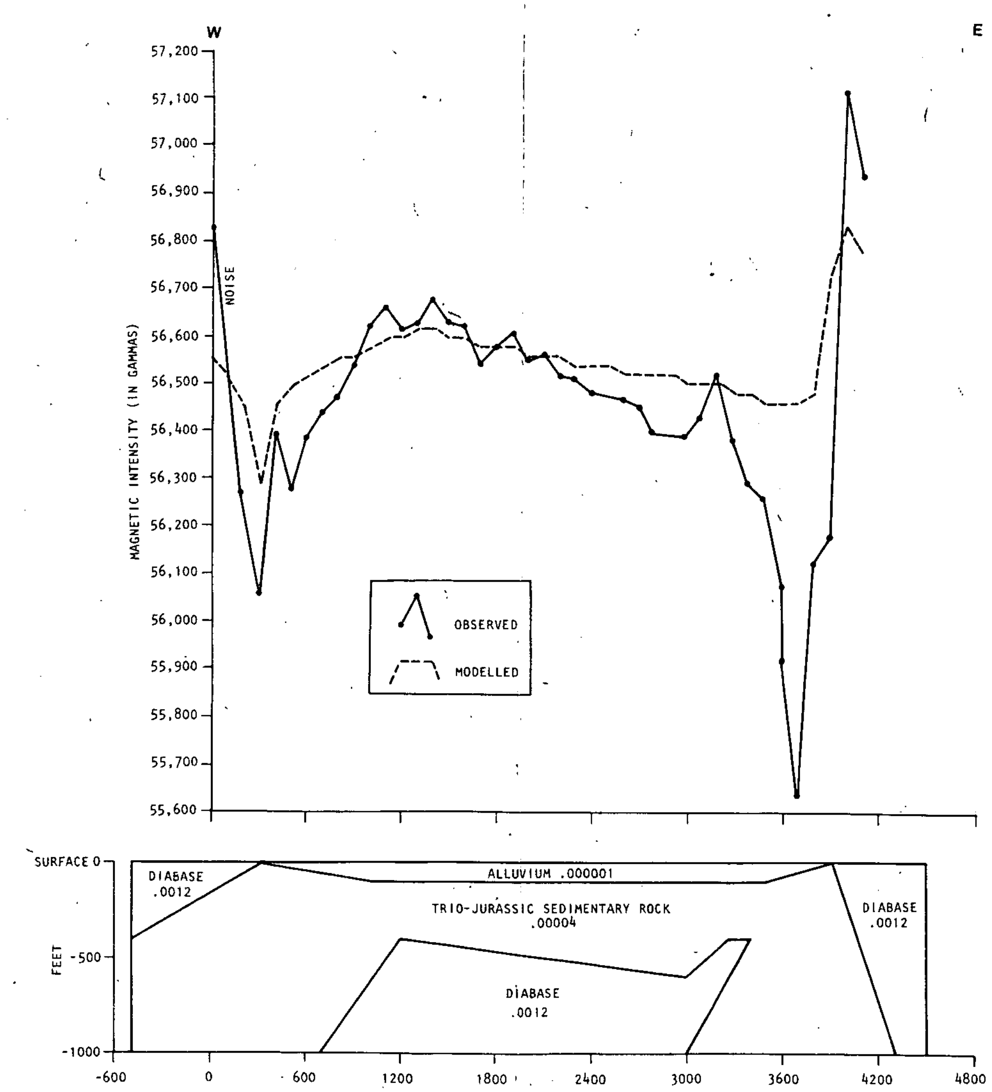
PROFILE 6



PROFILE 7



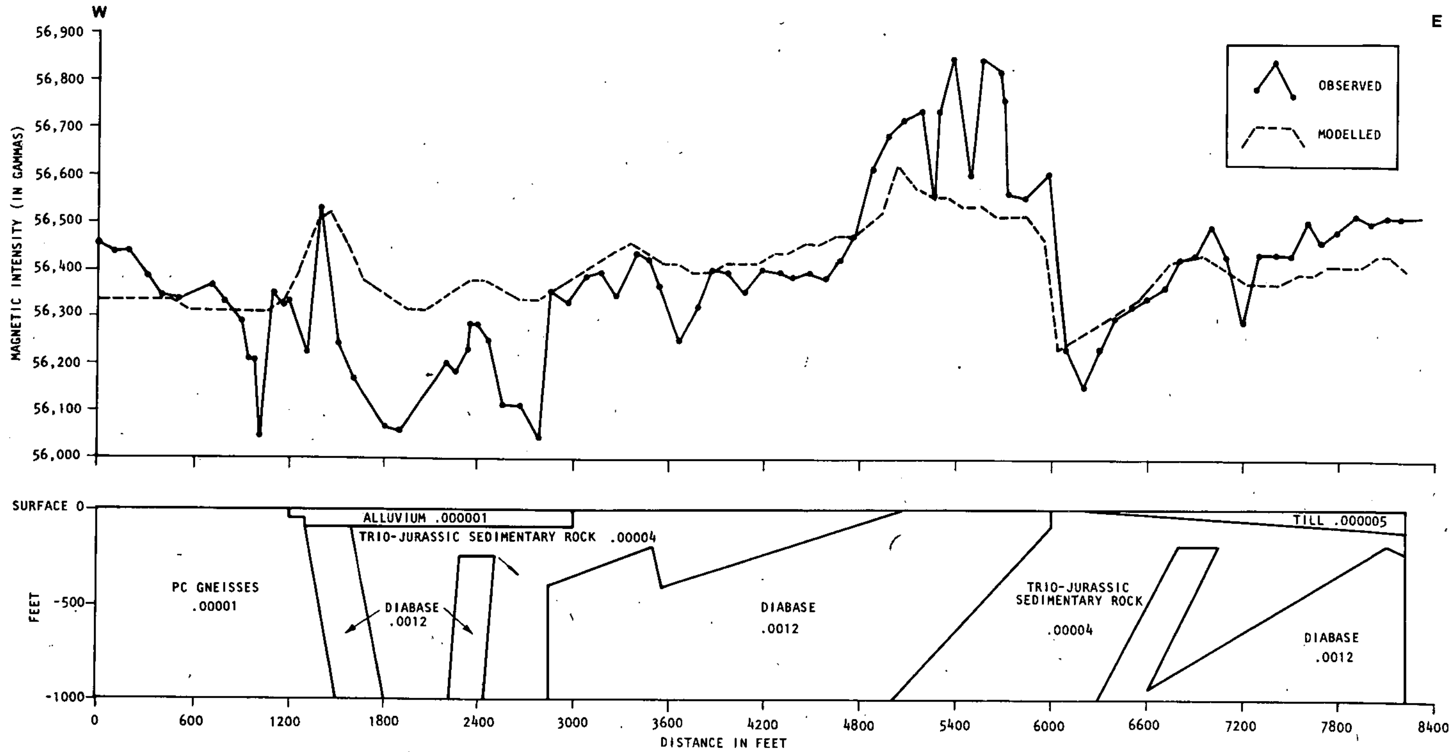
PROFILE 8



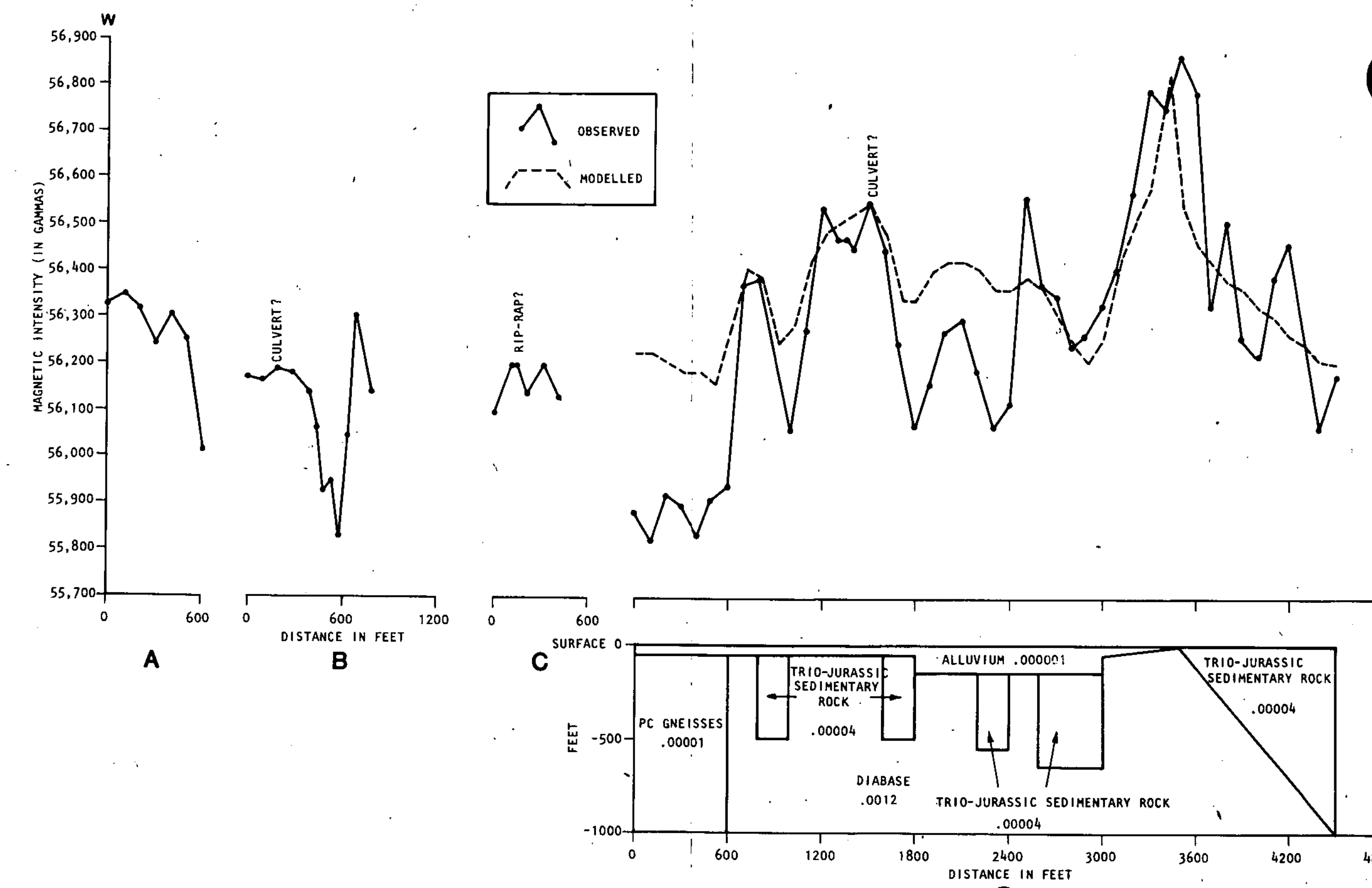
PROFILE 9

DAMES & MOORE

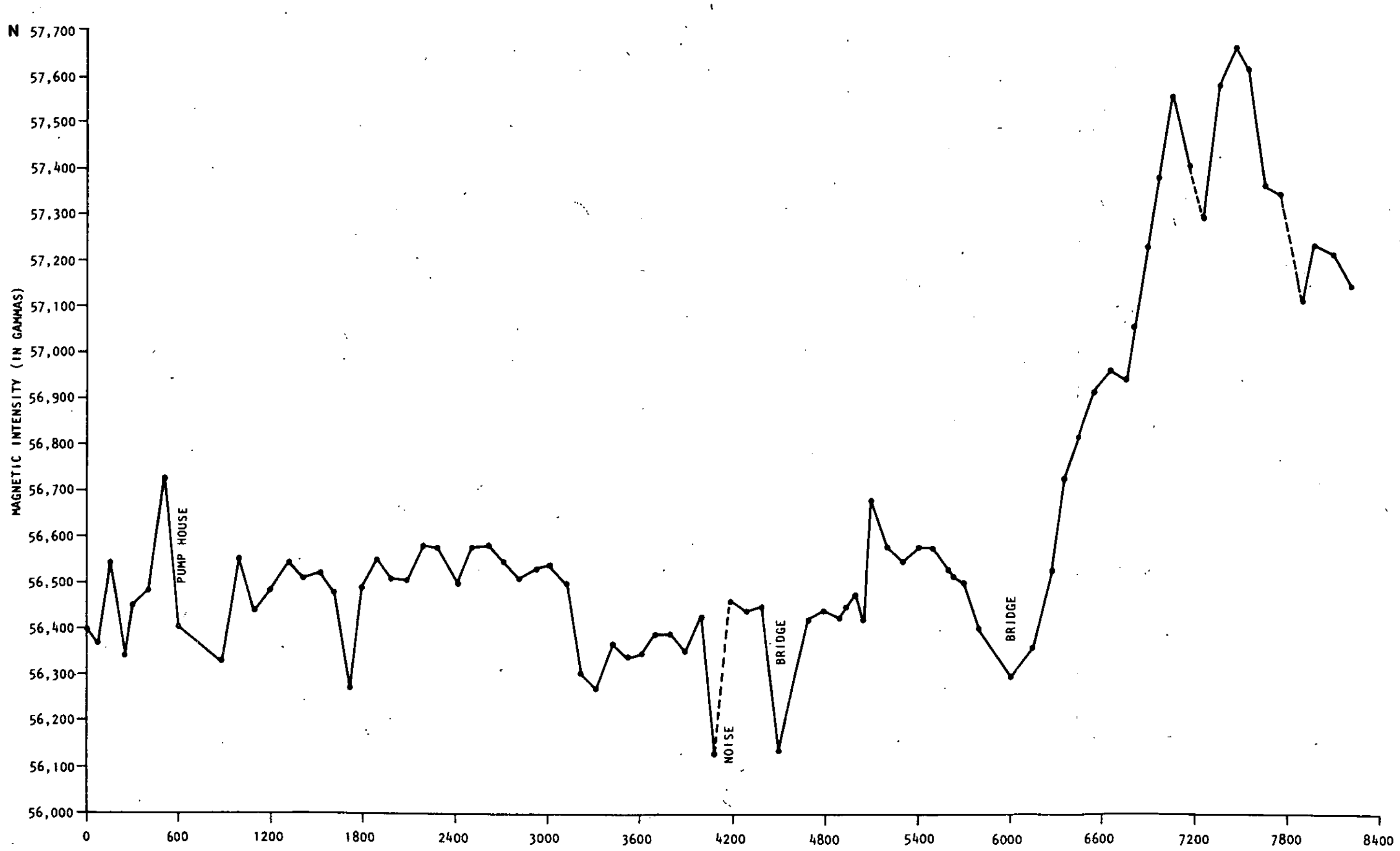
GROUND MAGNETIC PROFILES



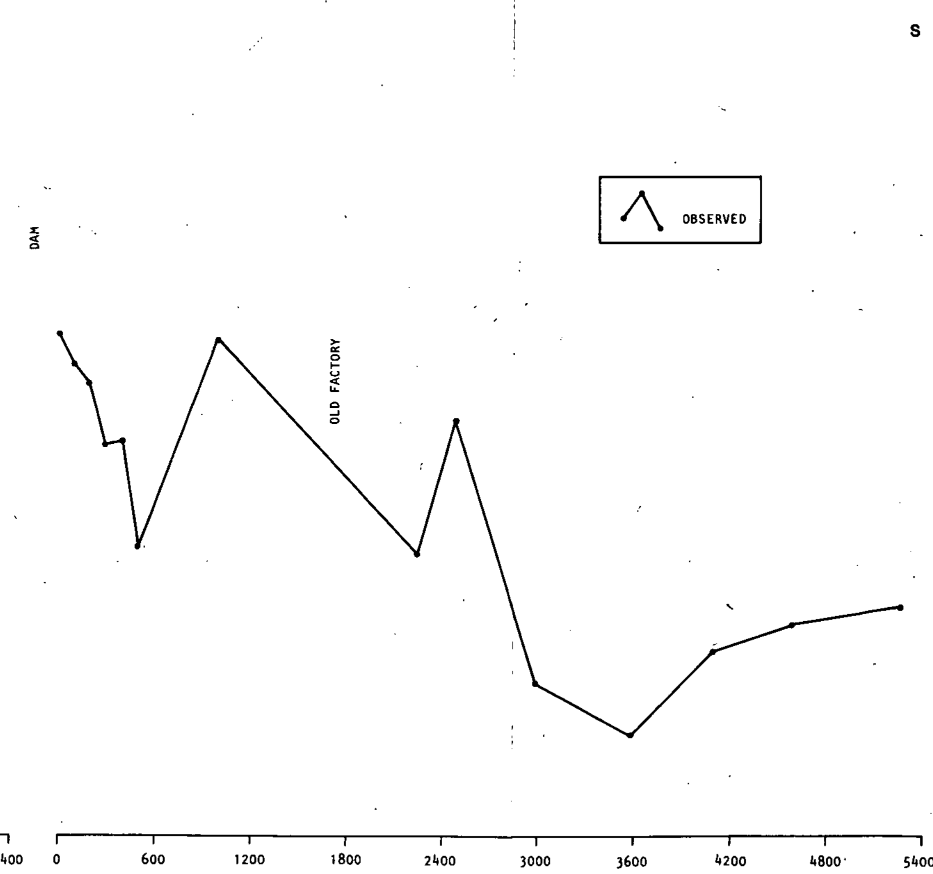
PROFILE 10



PROFILE 11

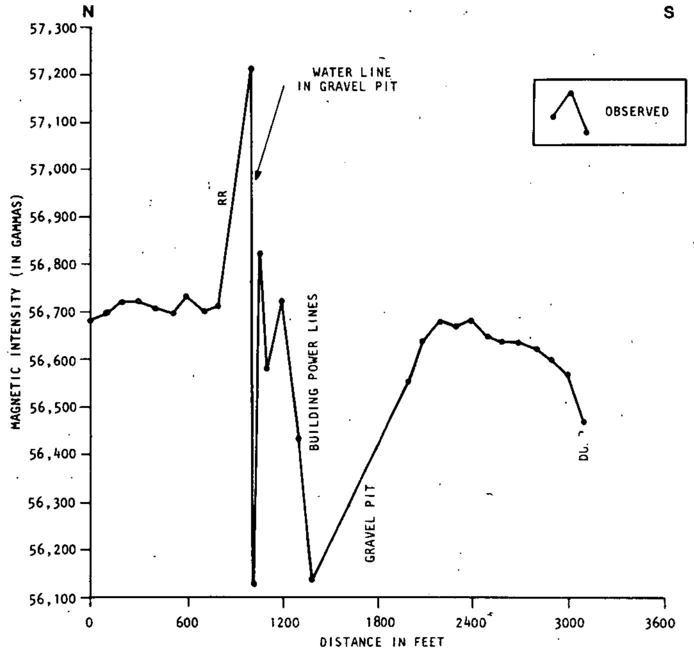


PROFILE 12

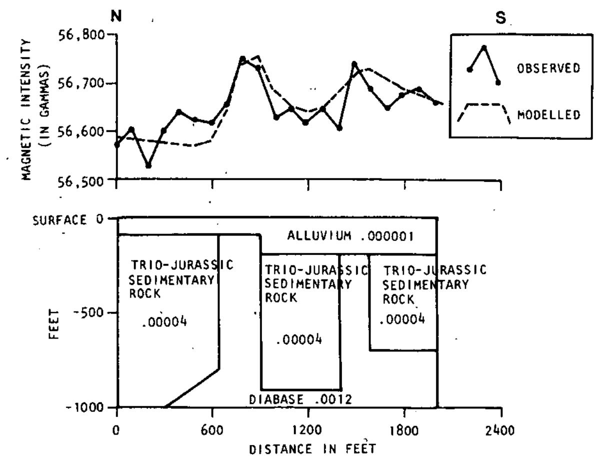


PROFILE 12A

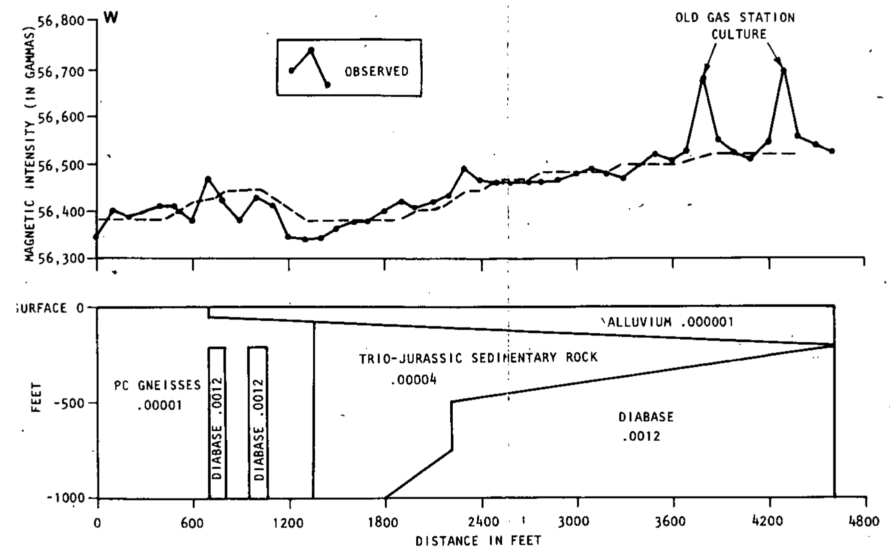
GROUND MAGNETIC PROFILES



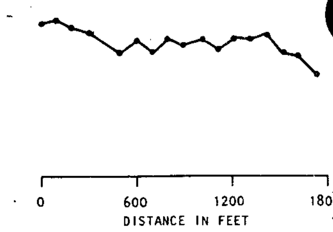
PROFILE 13



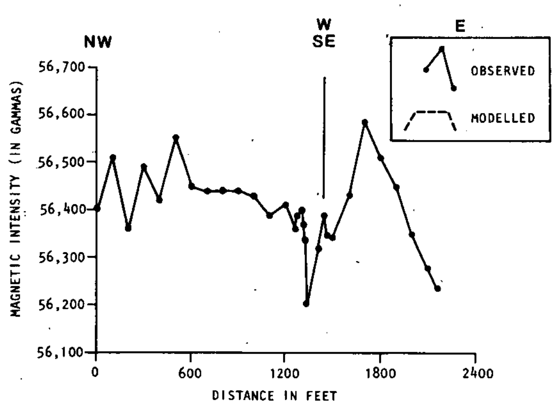
PROFILE 14



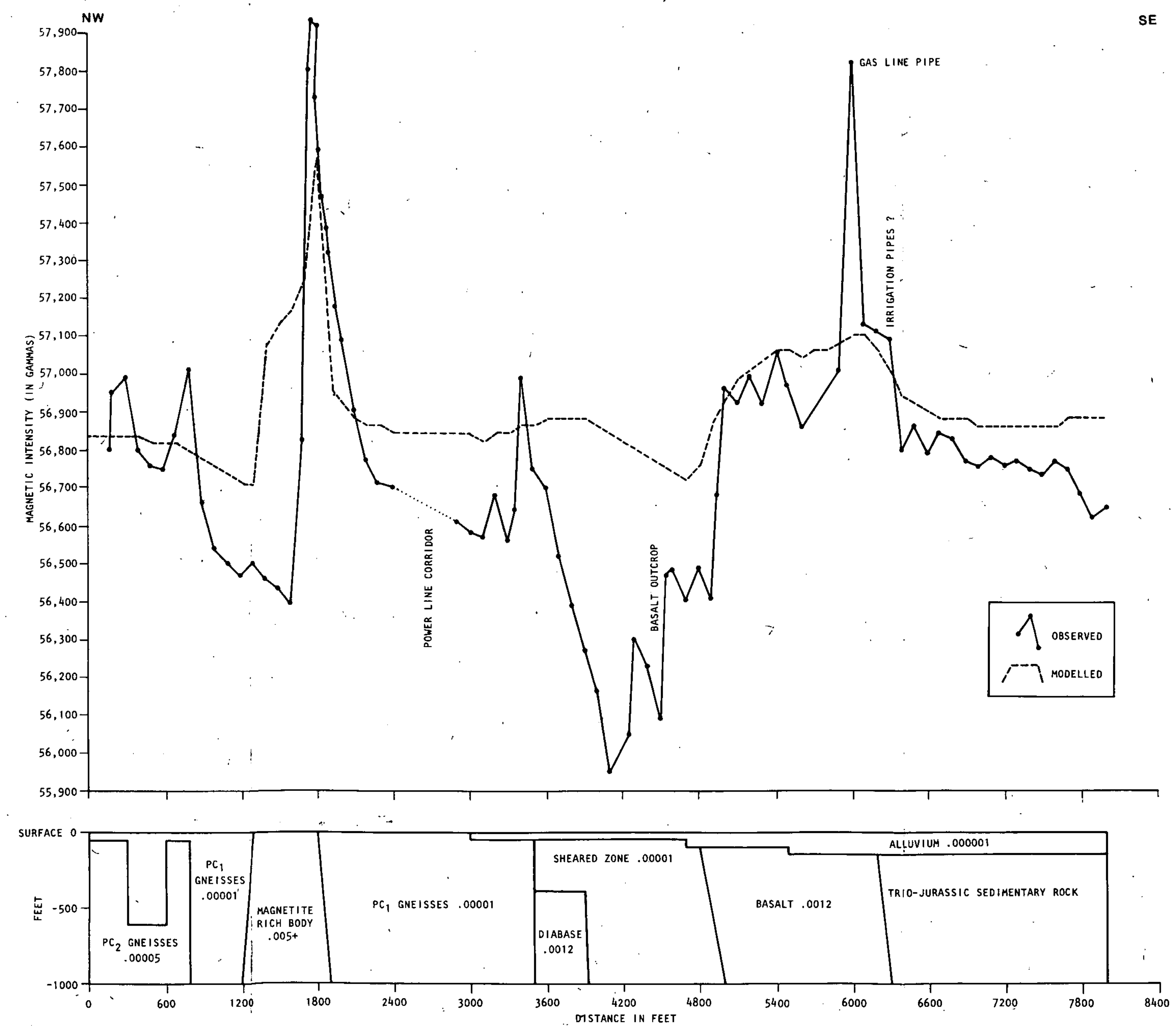
PROFILE 15



PROFILE 16



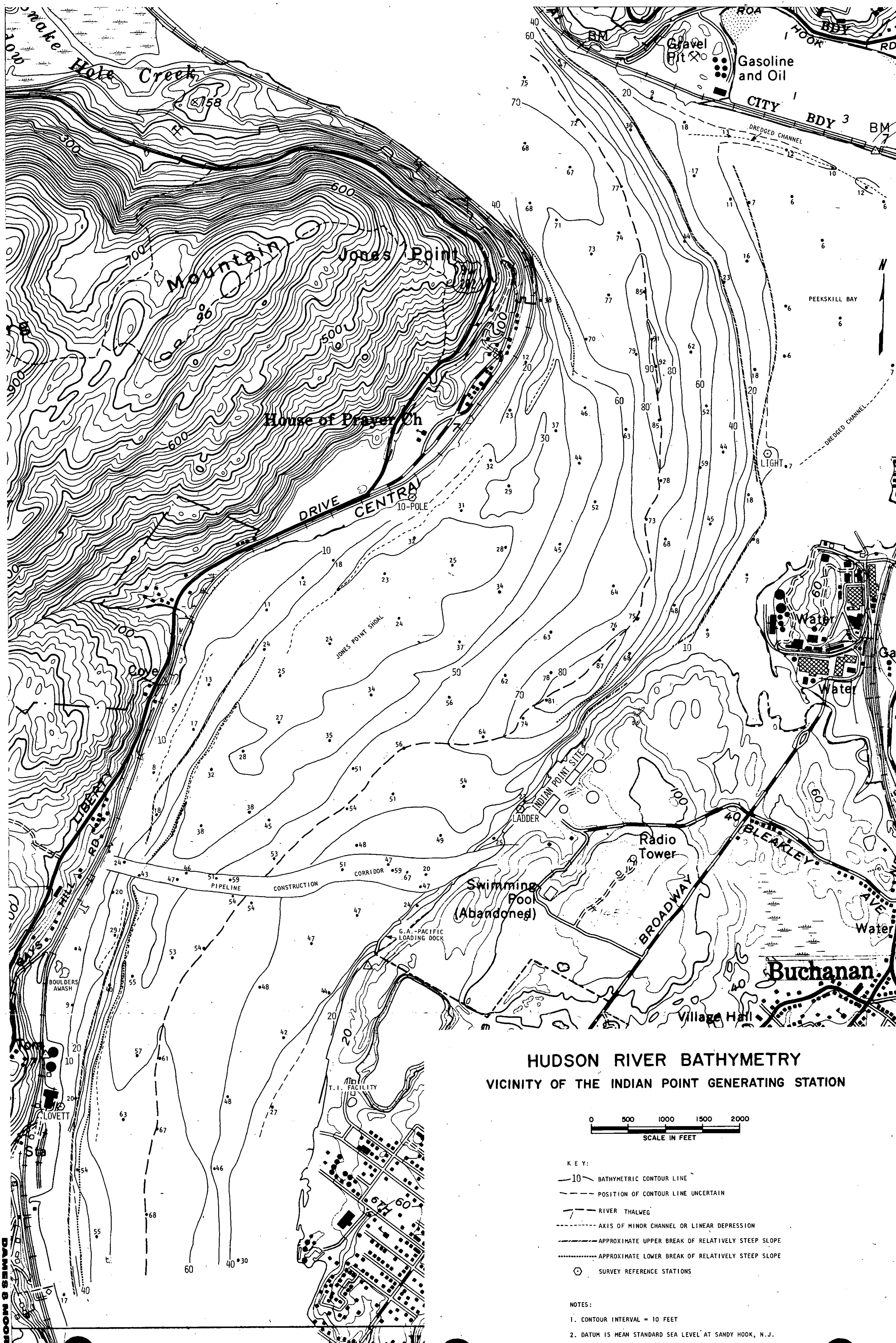
PROFILE 17



PROFILE 18

DAMES & MOORE

PLATE D.3-4



HUDSON RIVER BATHYMETRY

VICINITY OF THE INDIAN POINT GENERATING STATION

0 500 1000 1500 2000

SCALE IN FEET

KEY:

—10— BATHYMETRIC CONTOUR LINE

— — — POSITION OF CONTOUR LINE UNCERTAIN

— — RIVER THALWEG

- - - - AXIS OF MINOR CHANNEL OR LINEAR DEPRESSION

APPROXIMATE UPPER BREAK OF RELATIVELY STEEP SLOPE

APPROXIMATE LOWER BREAK OF RELATIVELY STEEP SLOPE

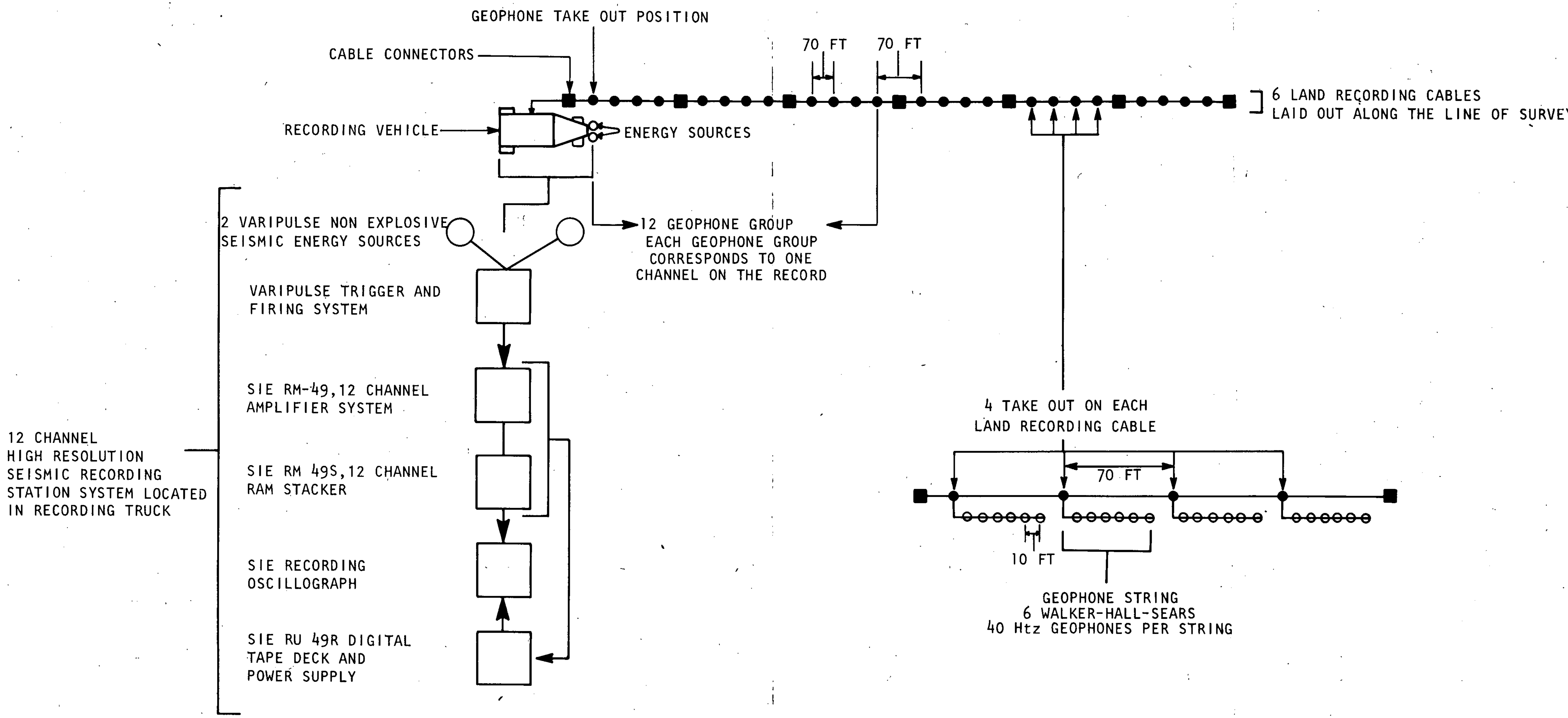
SURVEY REFERENCE STATIONS

NOTES:

1. CONTOUR INTERVAL = 10 FEET
2. DATUM IS MEAN STANDARD SEA LEVEL AT SANDY HOOK, N.J.
3. SURVEY DONE IN MARCH, 1976.

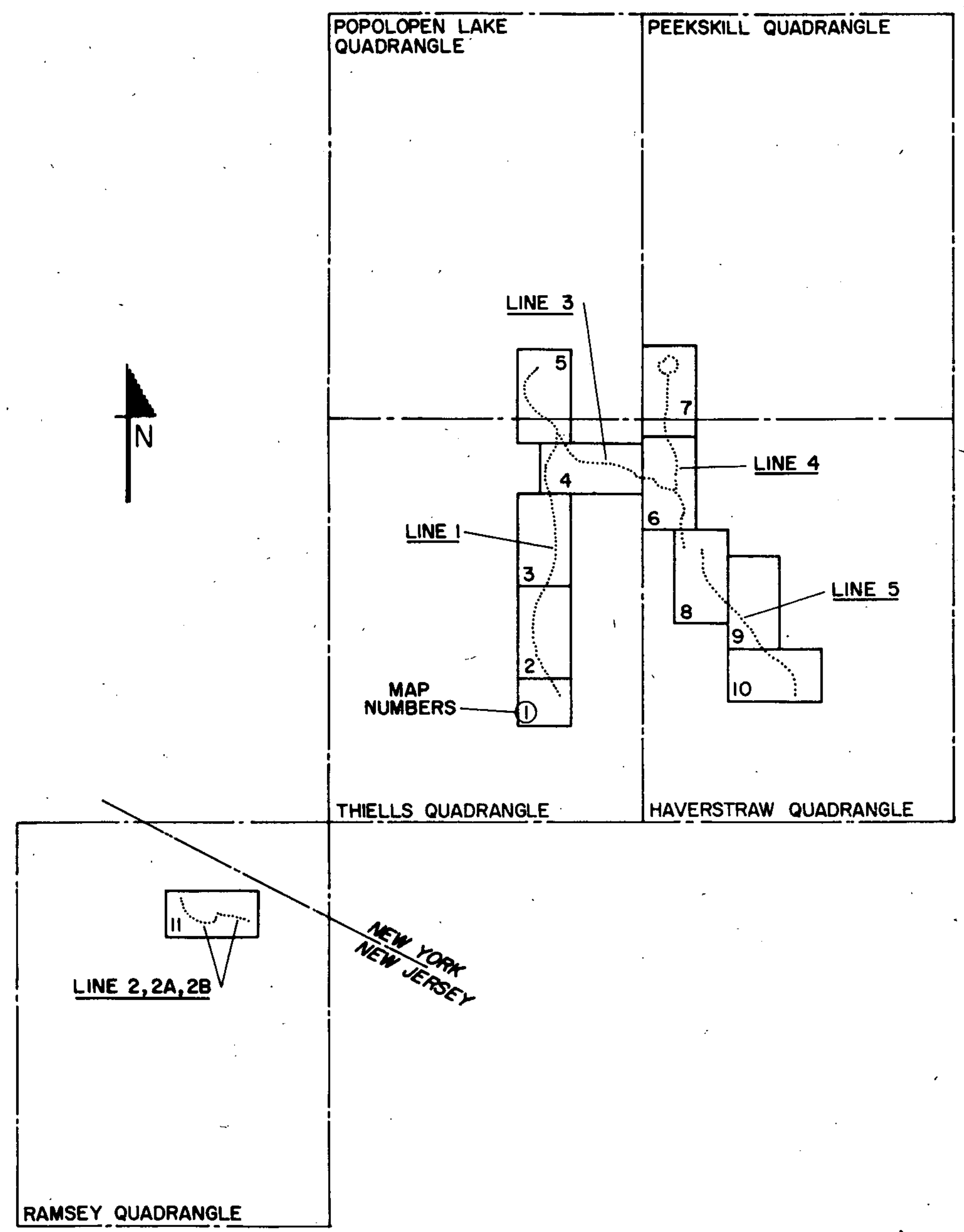
DAMES & MOORE

PLATE D.6-1

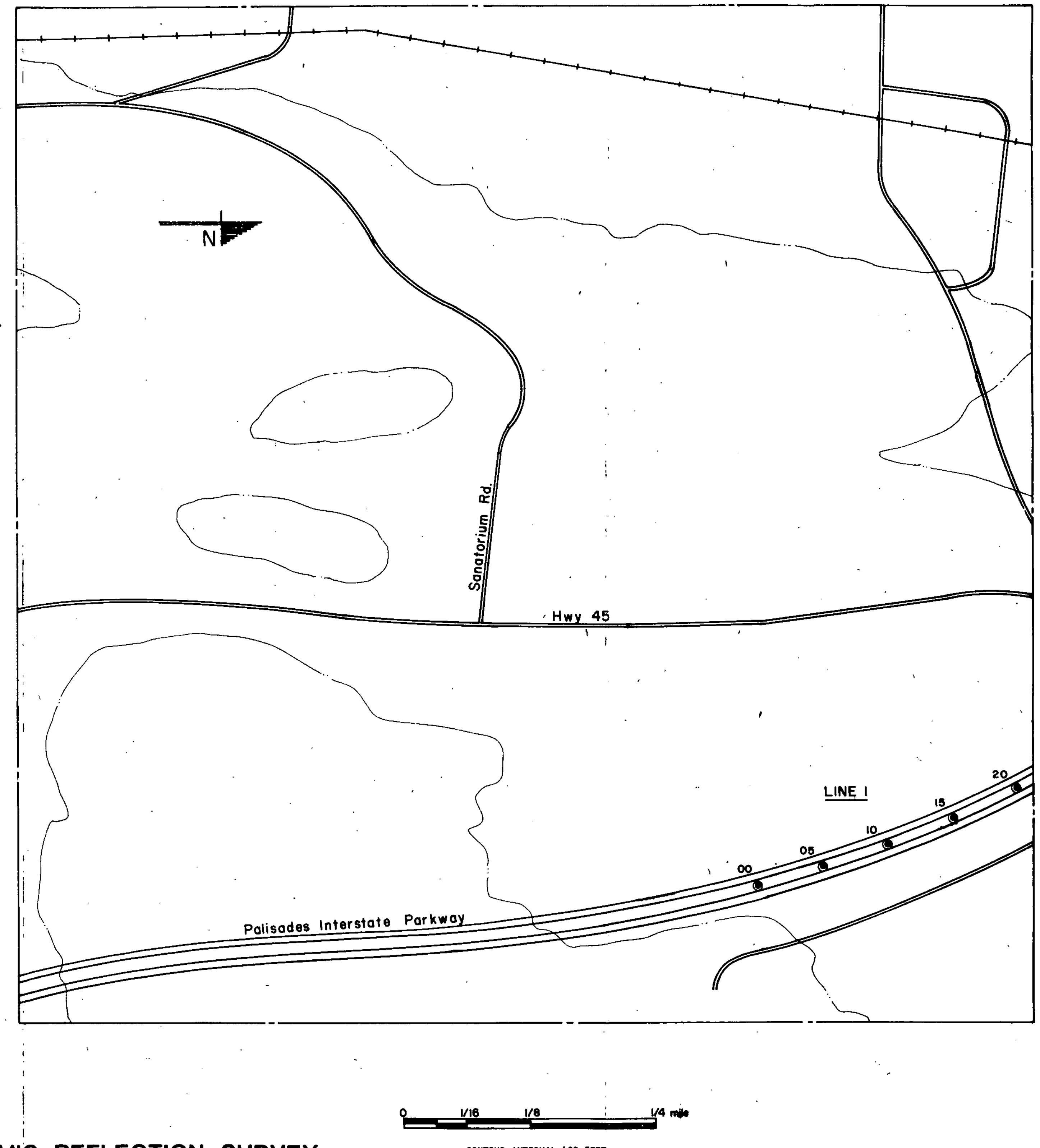


SEISMIC REFLECTION PROFILING EQUIPMENT

DAMES & MOORE



KEY PLAN



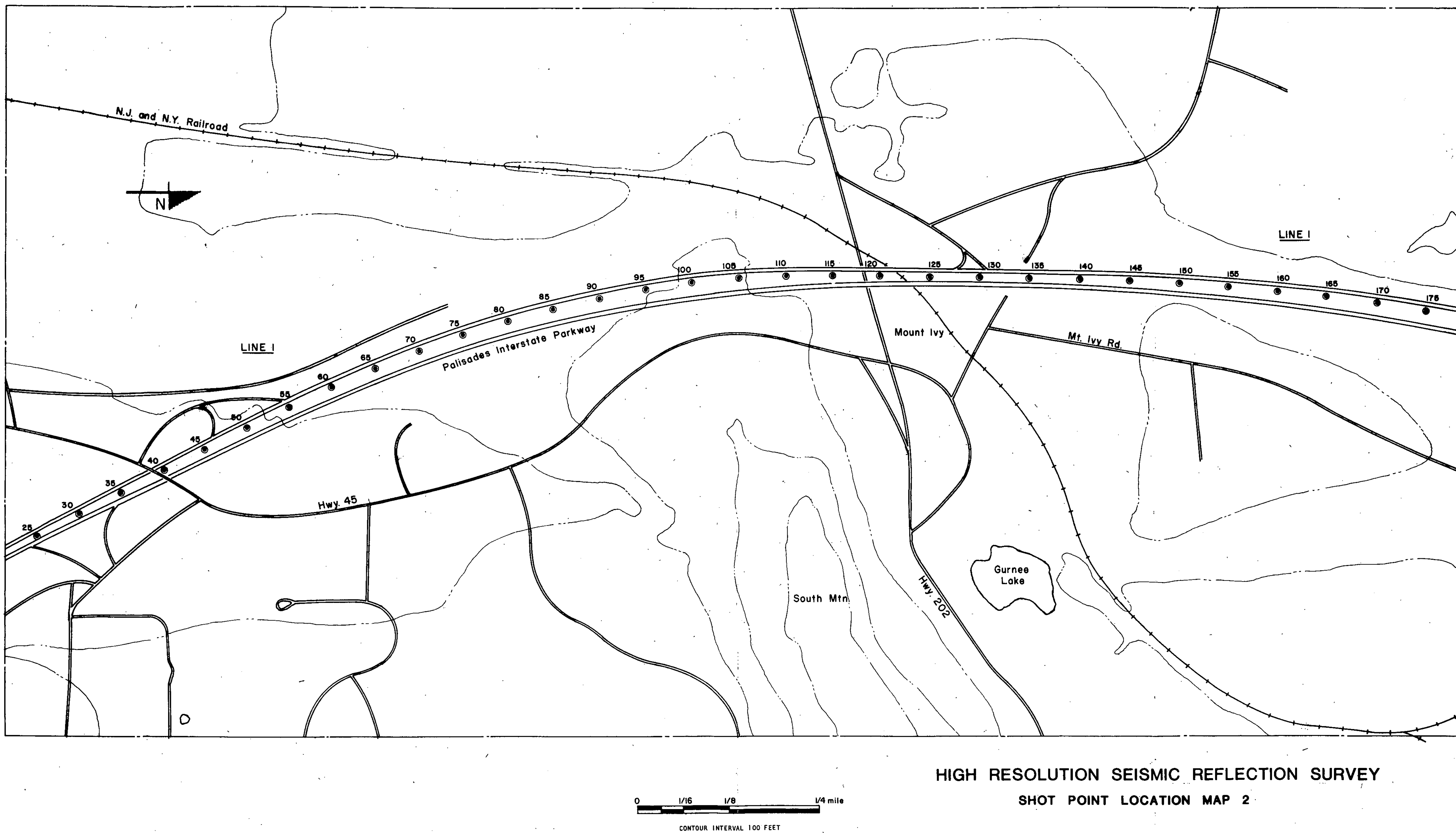
HIGH RESOLUTION SEISMIC REFLECTION SURVEY

SHOT POINT LOCATION MAP 1

REFERENCE: MAP PROVIDED BY TARGET SURVEY INC., OF HOUSTON, TEXAS.

DAMES & MOORE

PLATE D.7-2



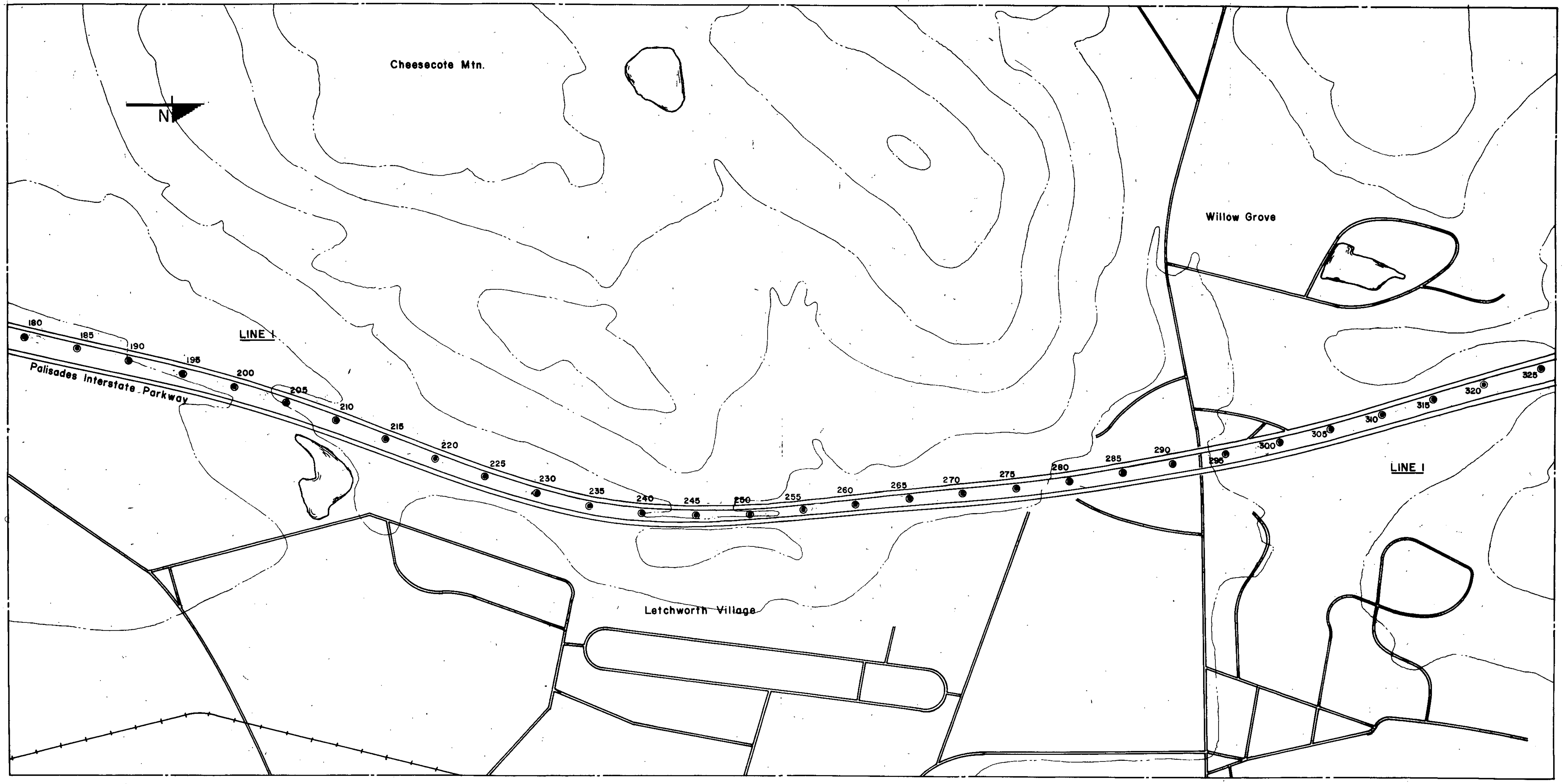
HIGH RESOLUTION SEISMIC REFLECTION SURVEY

SHOT POINT LOCATION MAP 2

REFERENCE: MAP PROVIDED BY TARGET SURVEY INC., OF HOUSTON, TEXAS.

DAMES & MOORE

PLATE D.7-3

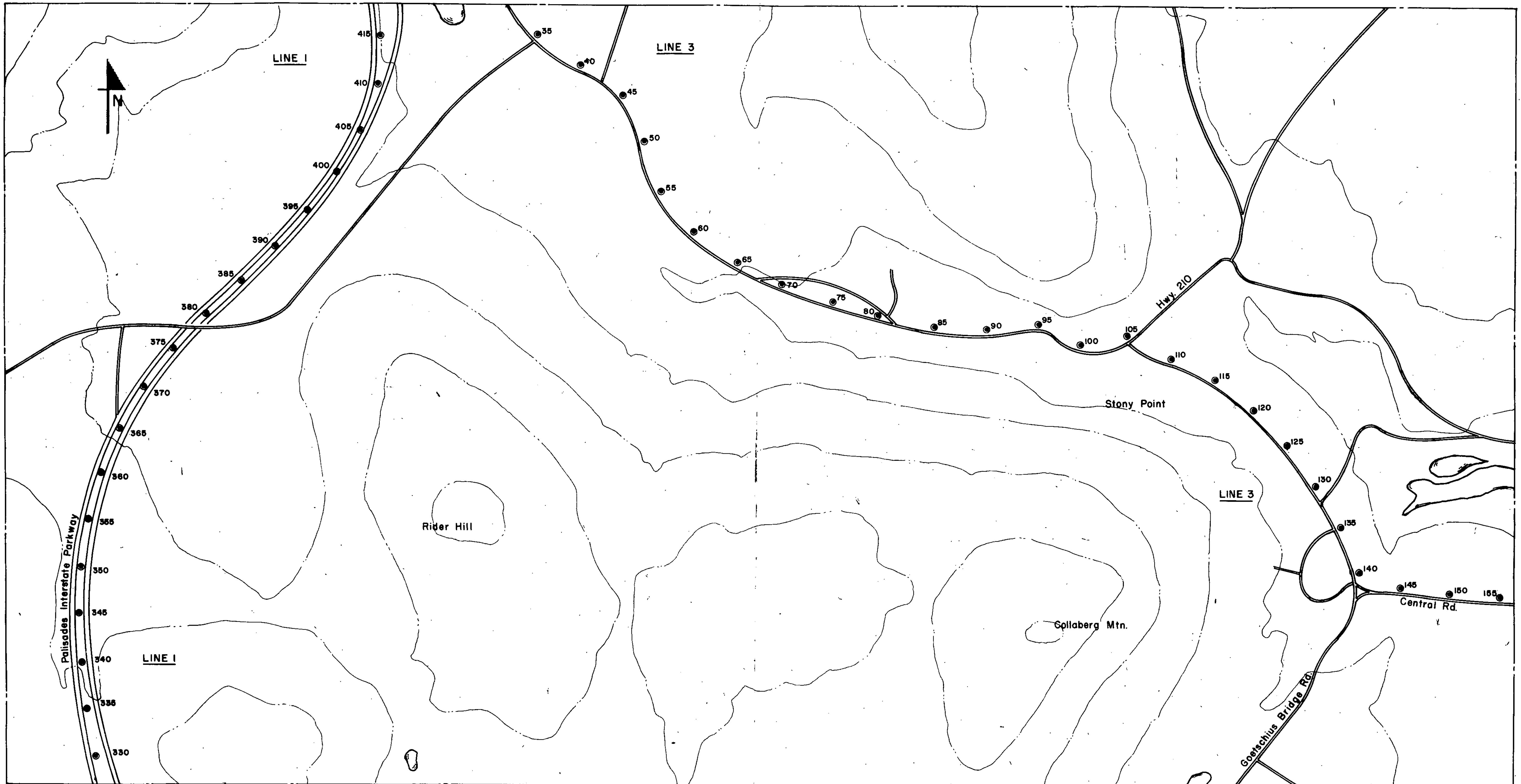


HIGH RESOLUTION SEISMIC REFLECTION SURVEY
SHOT POINT LOCATION MAP 3

REFERENCE: MAP PROVIDED BY TARGET SURVEY INC., OF HOUSTON, TEXAS.

DAMES & MOORE

PLATE D.7-4



REFERENCE: MAP PROVIDED BY TARGET SURVEY INC., OF HOUSTON, TEXAS.

HIGH RESOLUTION SEISMIC REFLECTION SURVEY

SHOT POINT LOCATION MAP 4

DAMES & MOORE

PLATE D.7-5

REFERENCE: MAP PROVIDED BY TARGET SURVEY INC., OF HOUSTON, TEXAS.

0 1/16 1/8 1/4 mile

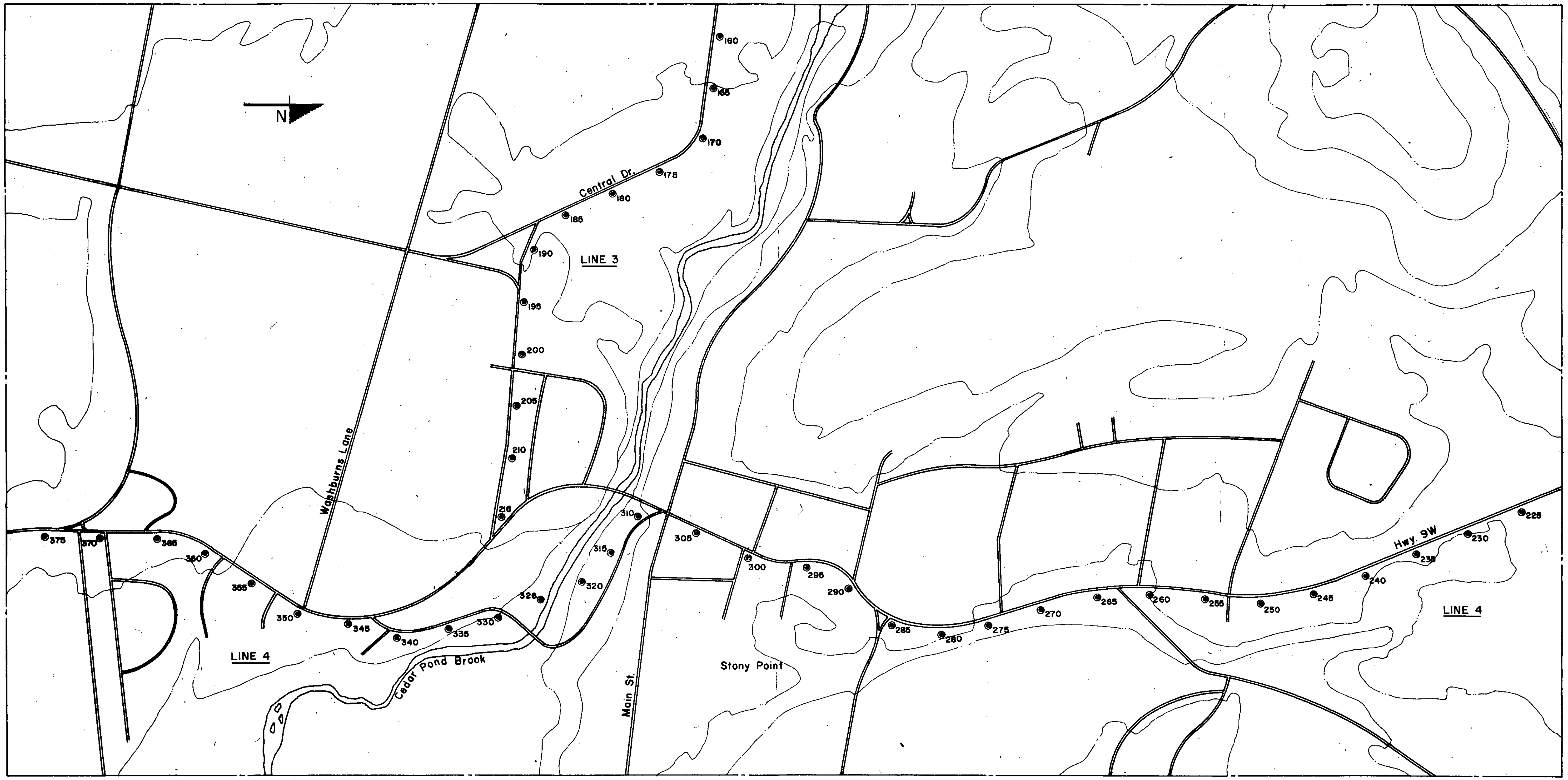
CONTOUR INTERVAL 100 FEET

HIGH RESOLUTION SEISMIC REFLECTION SURVEY

SHOT POINT LOCATION MAP 5

DAMES & MOORE

PLATE D.7-6



0 1/16 1/8 1/4 mile

CONTOUR INTERVAL 100 FEET

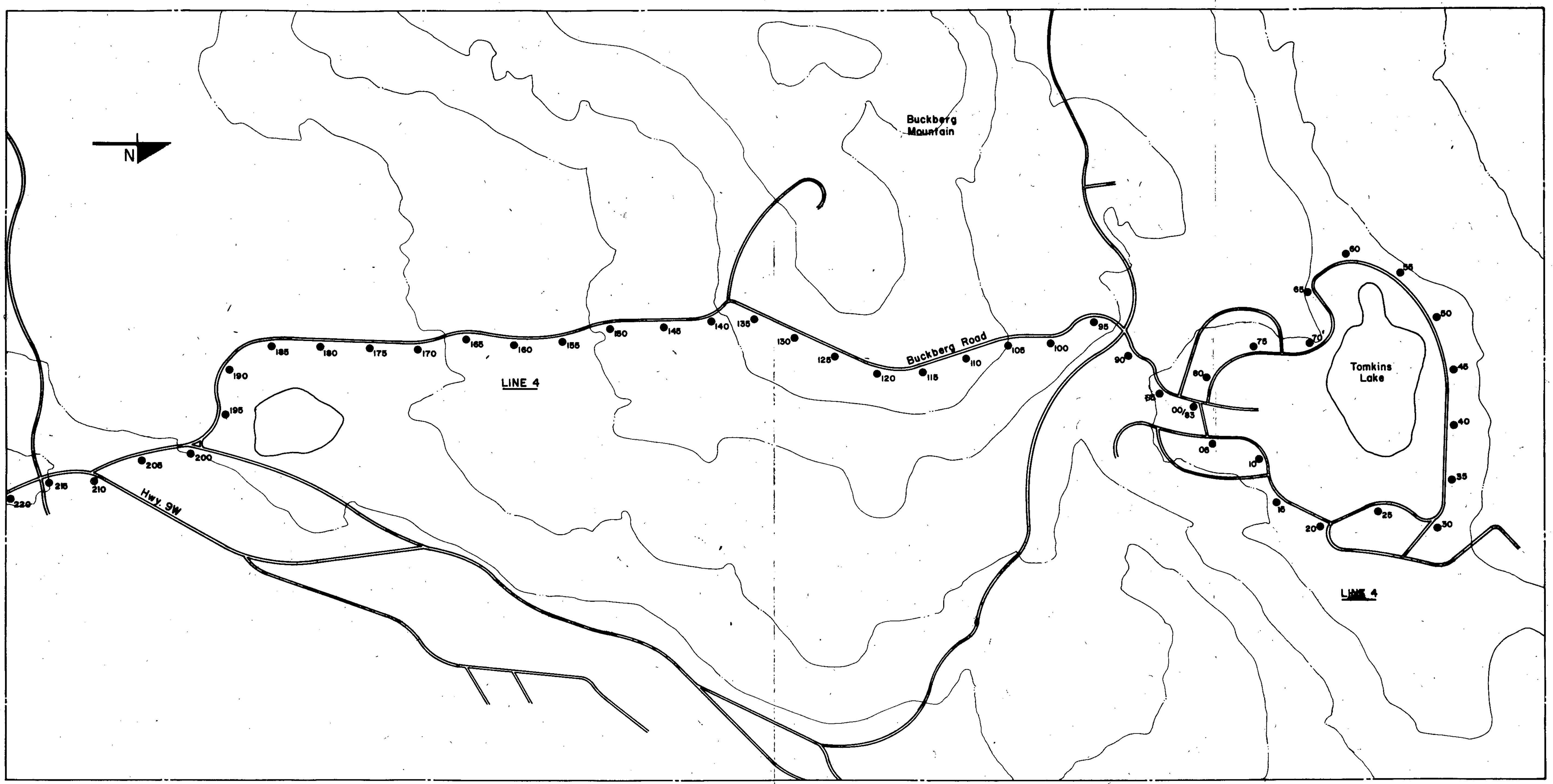
HIGH RESOLUTION SEISMIC REFLECTION SURVEY

SHOT POINT LOCATION MAP 6

REFERENCE: MAP PROVIDED BY TARGET SURVEY INC., OF HOUSTON, TEXAS.

DAMES & MOORE

PLATE D.7-7

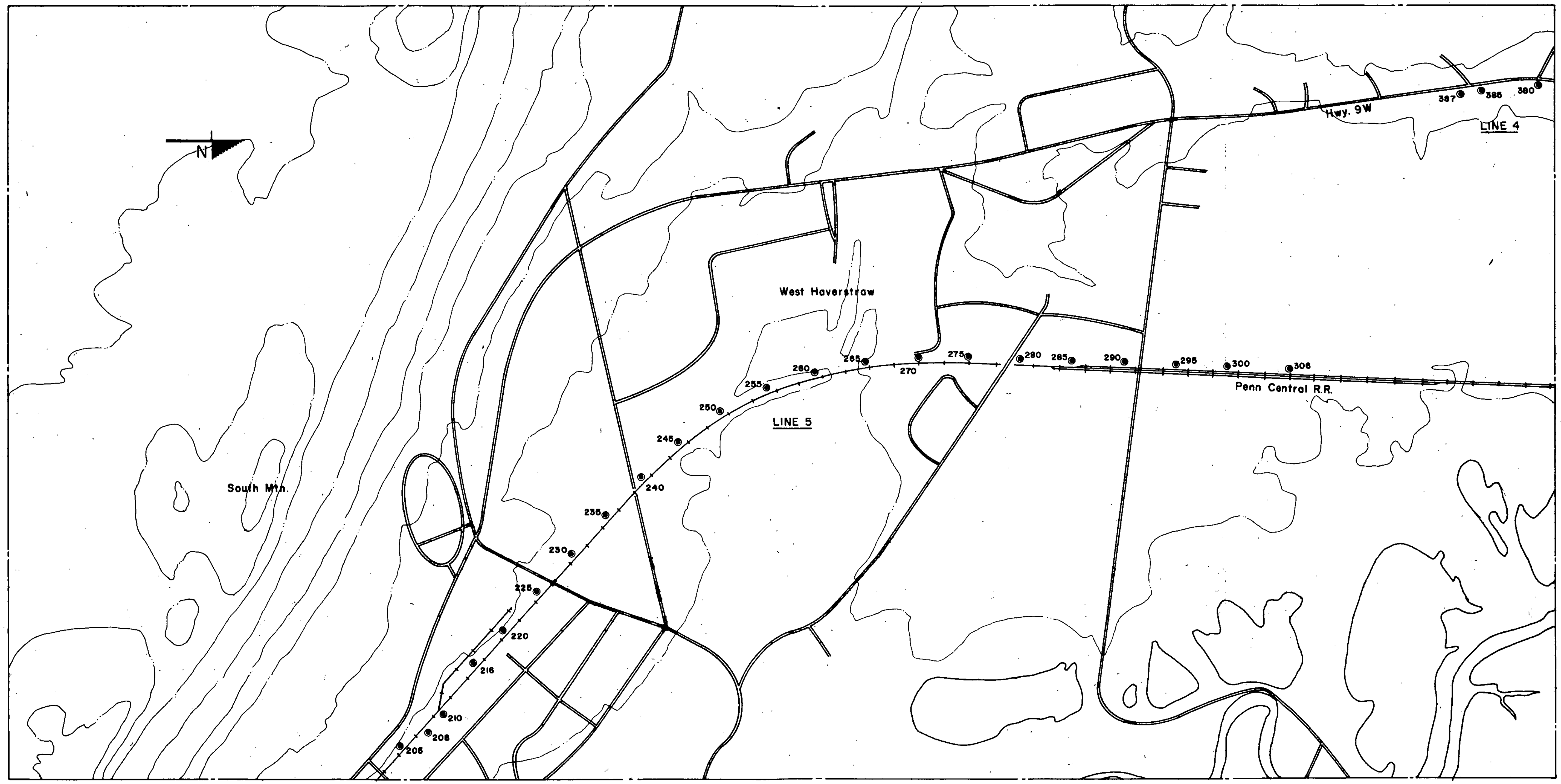


HIGH RESOLUTION SEISMIC REFLECTION SURVEY

SHOT POINT LOCATION MAP 7

REFERENCE: MAP PROVIDED BY TARGET SURVEY INC., OF HOUSTON, TEXAS.

DAMES & MOORE



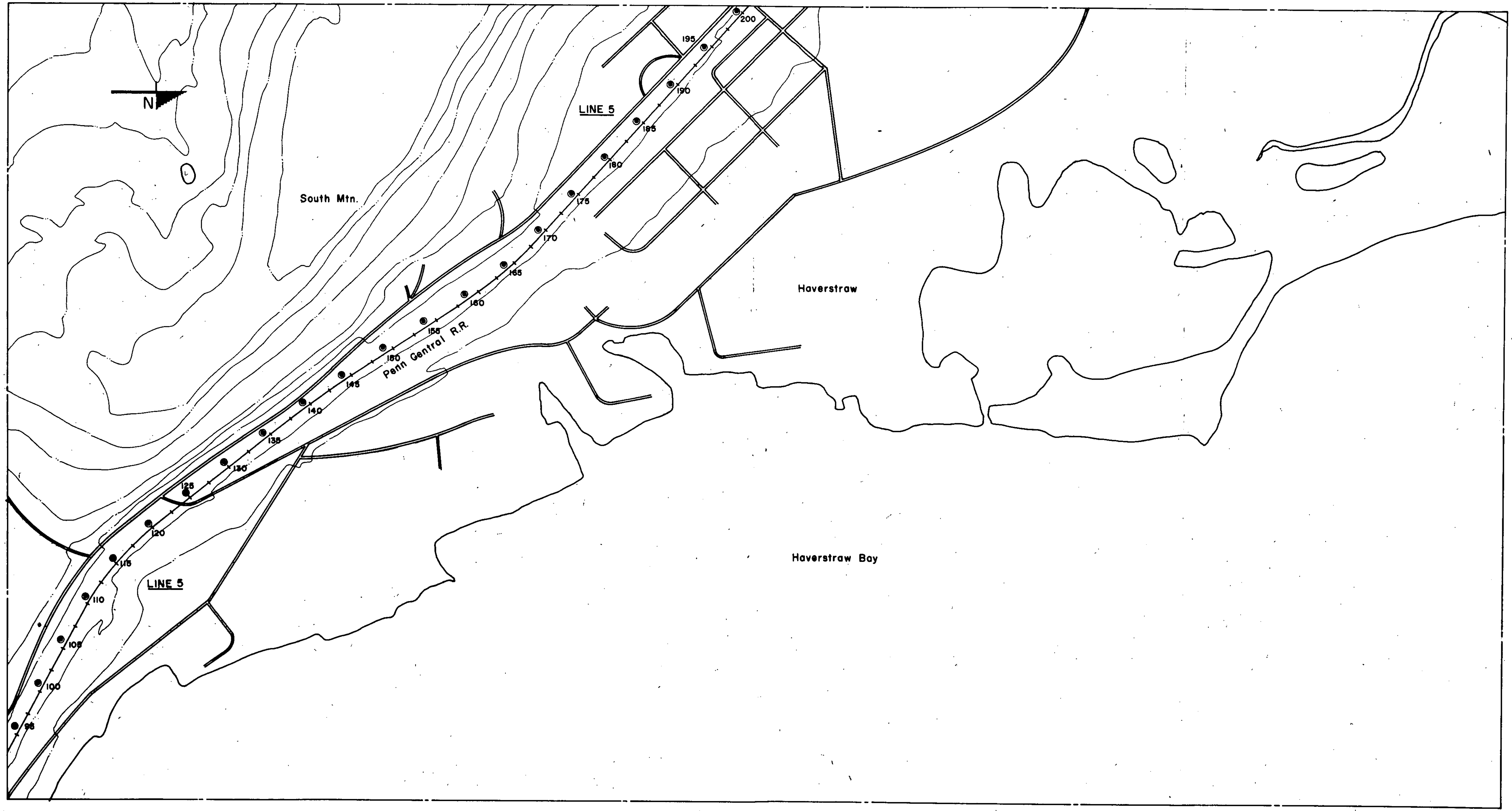
HIGH RESOLUTION SEISMIC REFLECTION SURVEY

SHOT POINT LOCATION MAP 8

REFERENCE: MAP PROVIDED BY TARGET SURVEY INC., OF HOUSTON, TEXAS.

DAMES & MOORE

PLATE D.7-8



0 1/16 1/8 1/4 mile

CONTOUR INTERVAL 100 FEET

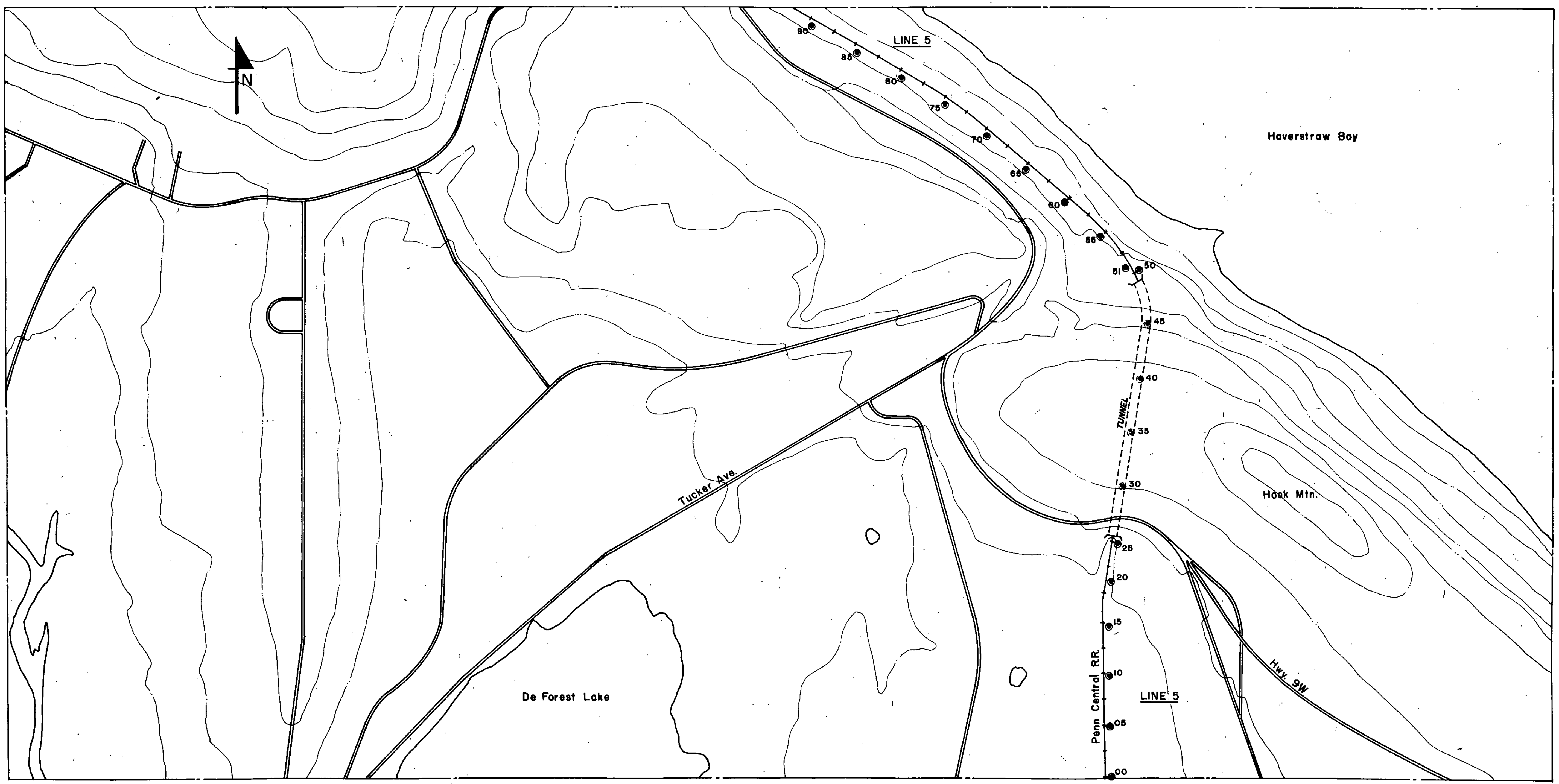
REFERENCE: MAP PROVIDED BY TARGET SURVEY INC., OF HOUSTON, TEXAS.

HIGH RESOLUTION SEISMIC REFLECTION SURVEY

SHOT POINT LOCATION MAP 9

DAMES & MOORE

PLATE D.7-10



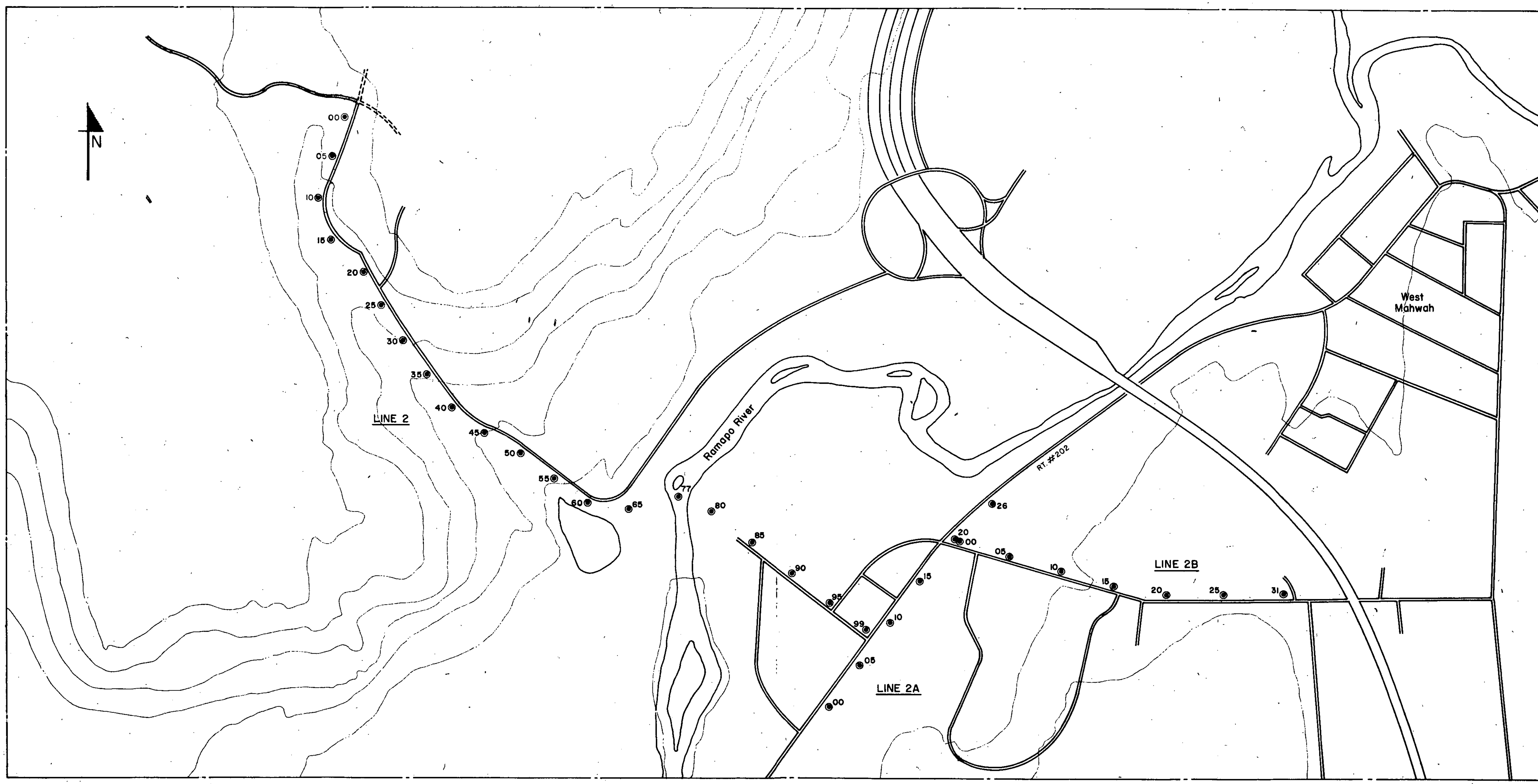
HIGH RESOLUTION SEISMIC REFLECTION SURVEY

SHOT POINT LOCATION MAP 10

REFERENCE: MAP PROVIDED BY TARGET SURVEY INC., OF HOUSTON, TEXAS.

DAMES & MOORE

PLATE D.7-11



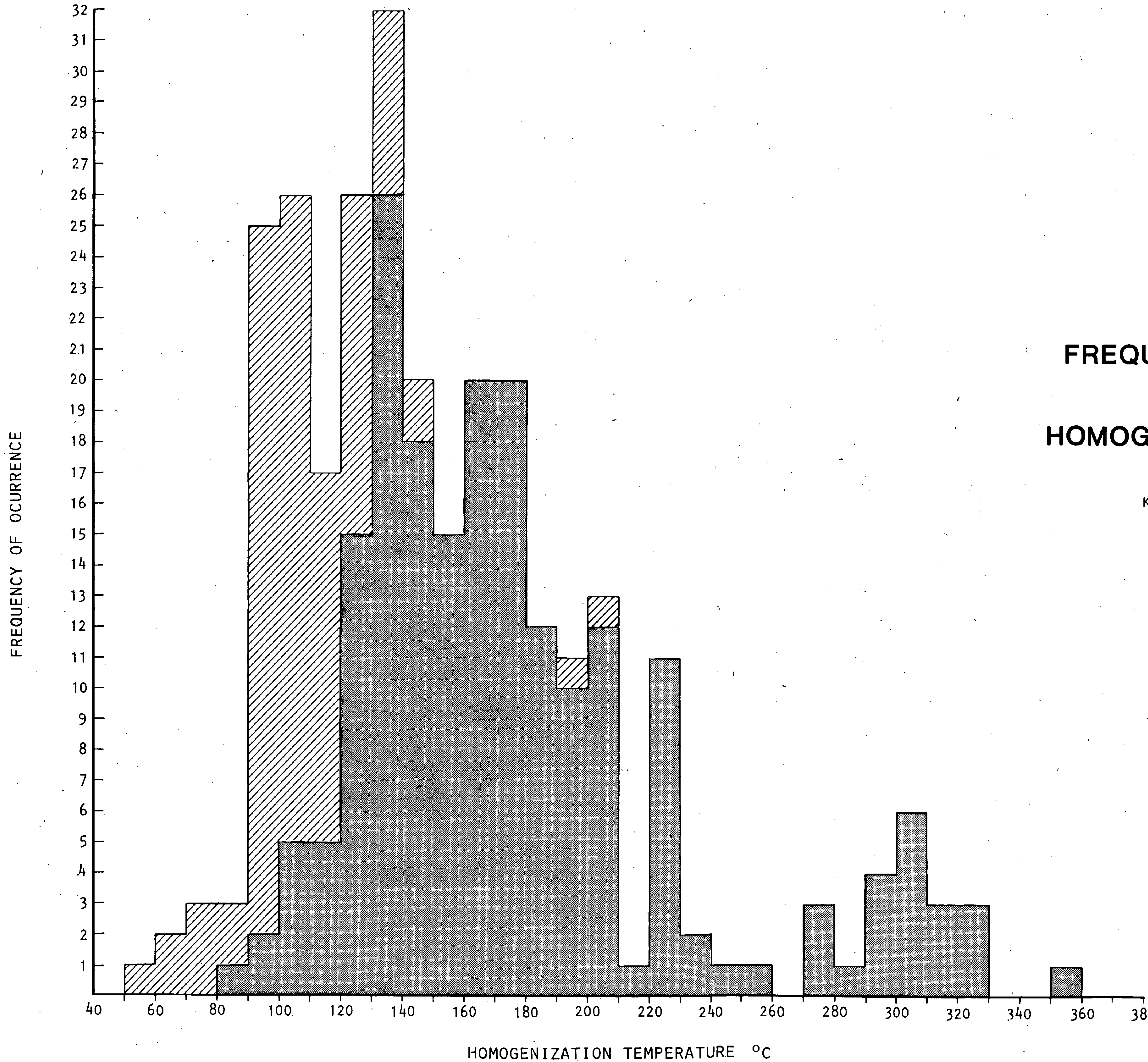
HIGH RESOLUTION SEISMIC REFLECTION SURVEY

SHOT POINT LOCATION MAP 11

REFERENCE: MAP PROVIDED BY TARGET SURVEY INC., OF HOUSTON, TEXAS.

DAMES & MOORE

PLATE D.7-12



FREQUENCY OF OCCURRENCE VS. HOMOGENIZATION TEMPERATURE

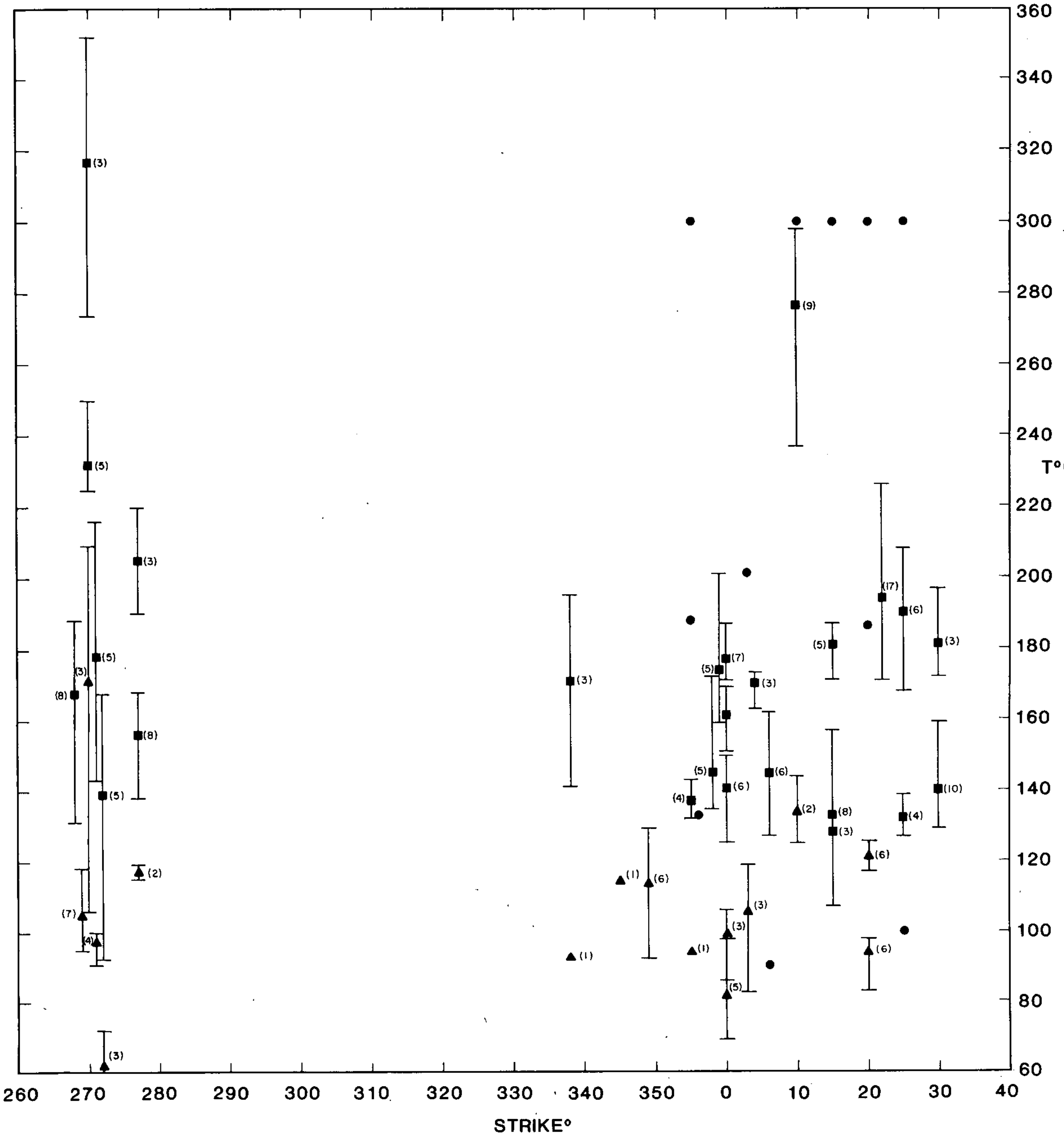
KEY:

PRIMARY OR PSEUDOSECONDARY HOMOGENIZATION TEMPERATURE

SECONDARY OR LATE STAGE HOMOGENIZATION TEMPERATURE

DAMES & MOORE

PLATE 5-1



STRIKE OF FAULT OR FRACTURE PLANE SAMPLED
VS.
HOMOGENIZATION TEMPERATURE °C
IN
PALEOZOIC HOST ROCK

LEGEND:

■ PRIMARY OR PSEUDOSECONDARY FLUID INCLUSION AVERAGE HOMOGENIZATION TEMPERATURE

▲ SECONDARY OR LATE STAGE FLUID INCLUSION AVERAGE HOMOGENIZATION TEMPERATURE

● HOMOGENIZATION TEMPERATURE INFERRED OR POOR TEMPERATURE MEASUREMENT

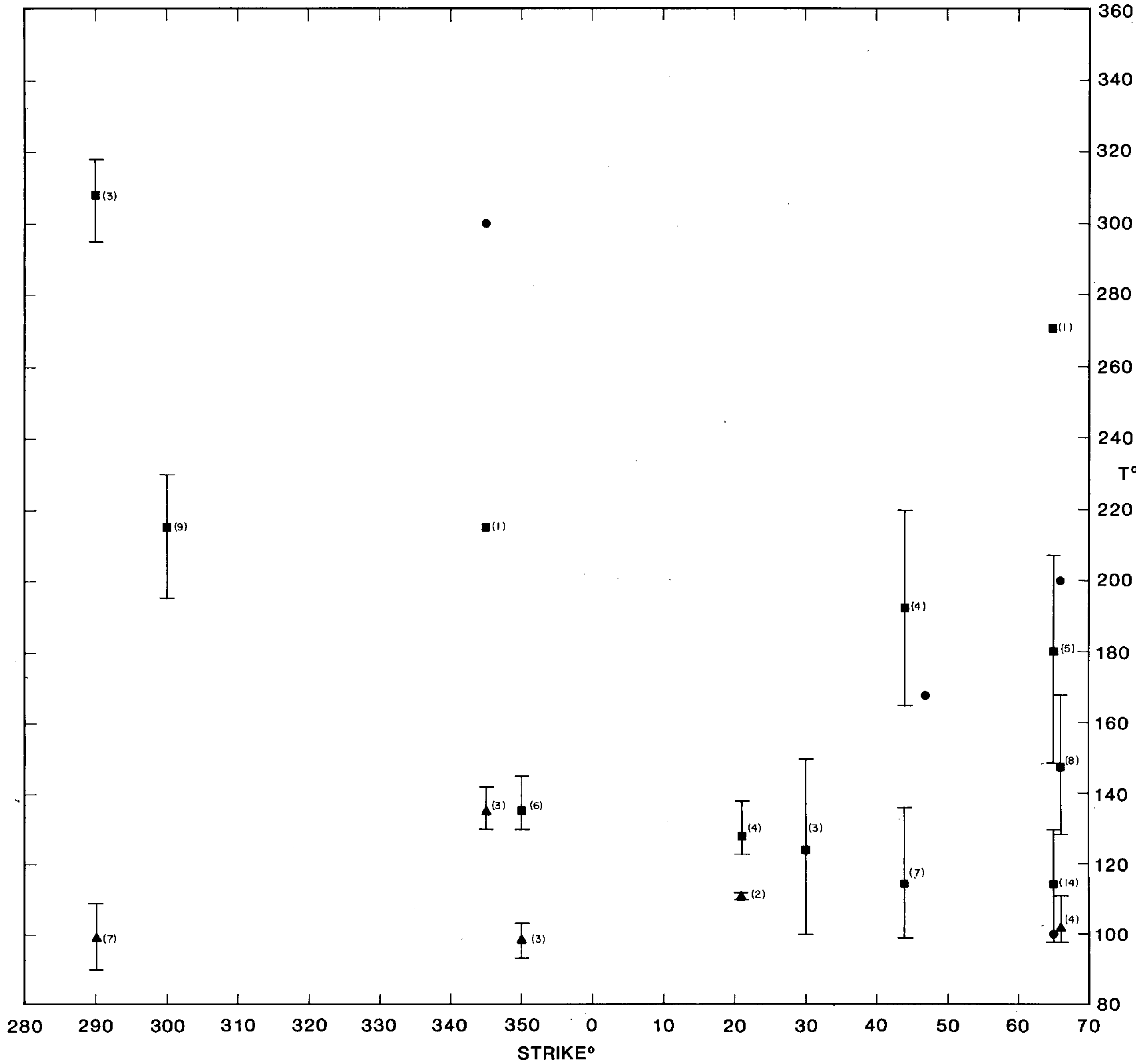
KEY:

RANGE OF TEMPERATURES MEASURED

(3)

AVERAGE HOMOGENIZATION TEMPERATURE BASED ON THREE DETERMINATIONS

DAMES & MOORE

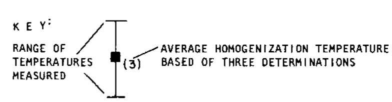


STRIKE OF FAULT OR FRACTURE PLANE SAMPLED
VS.
HOMOGENIZATION TEMPERATURE °C
IN
MESOZOIC HOST ROCK

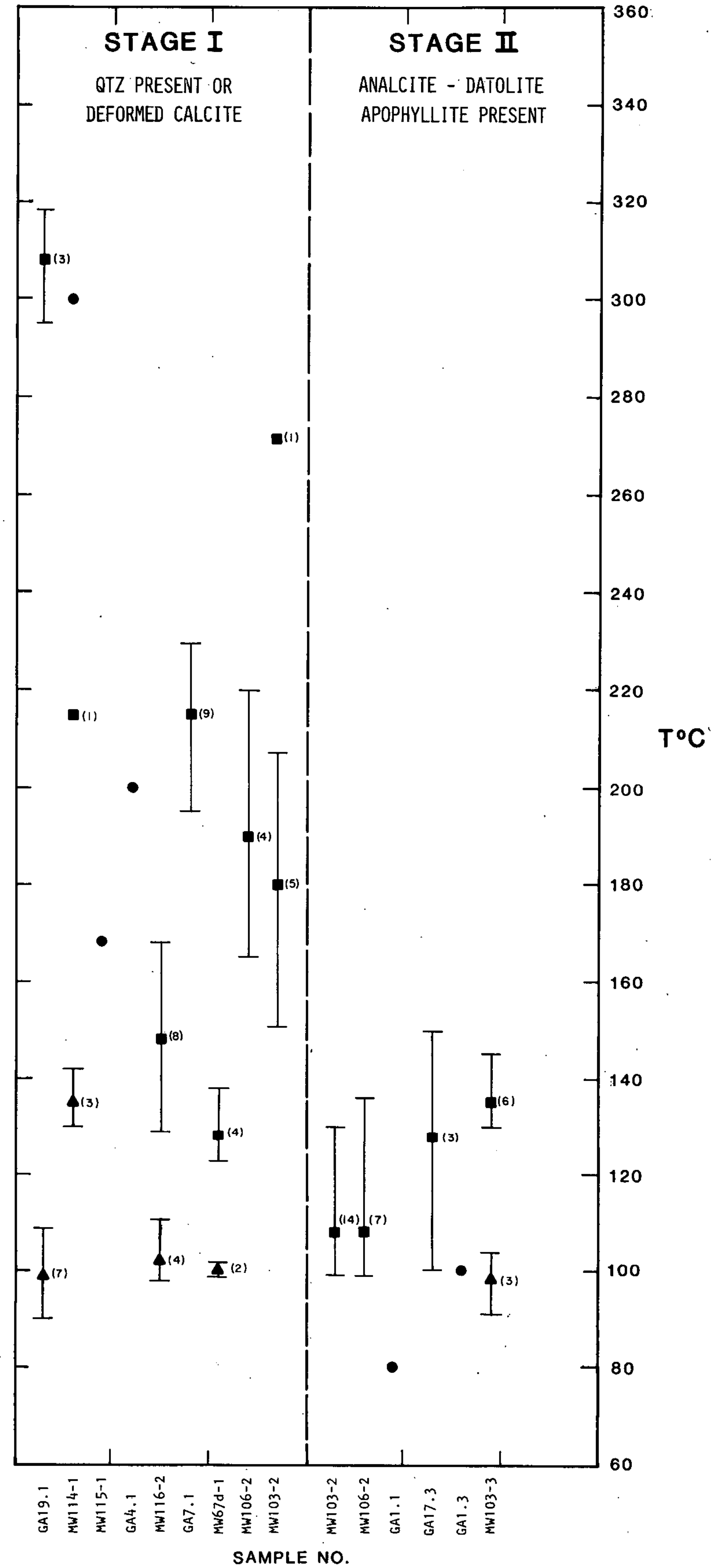
LEGEND:

- ■ PRIMARY OR PSEUDOSECONDARY FLUID INCLUSION AVERAGE HOMOGENIZATION TEMPERATURE
- ▲ SECONDARY OR LATE STAGE FLUID INCLUSION AVERAGE HOMOGENIZATION TEMPERATURE
- ● HOMOGENIZATION TEMPERATURE INFERRED OR POOR TEMPERATURE MEASUREMENT

KEY:

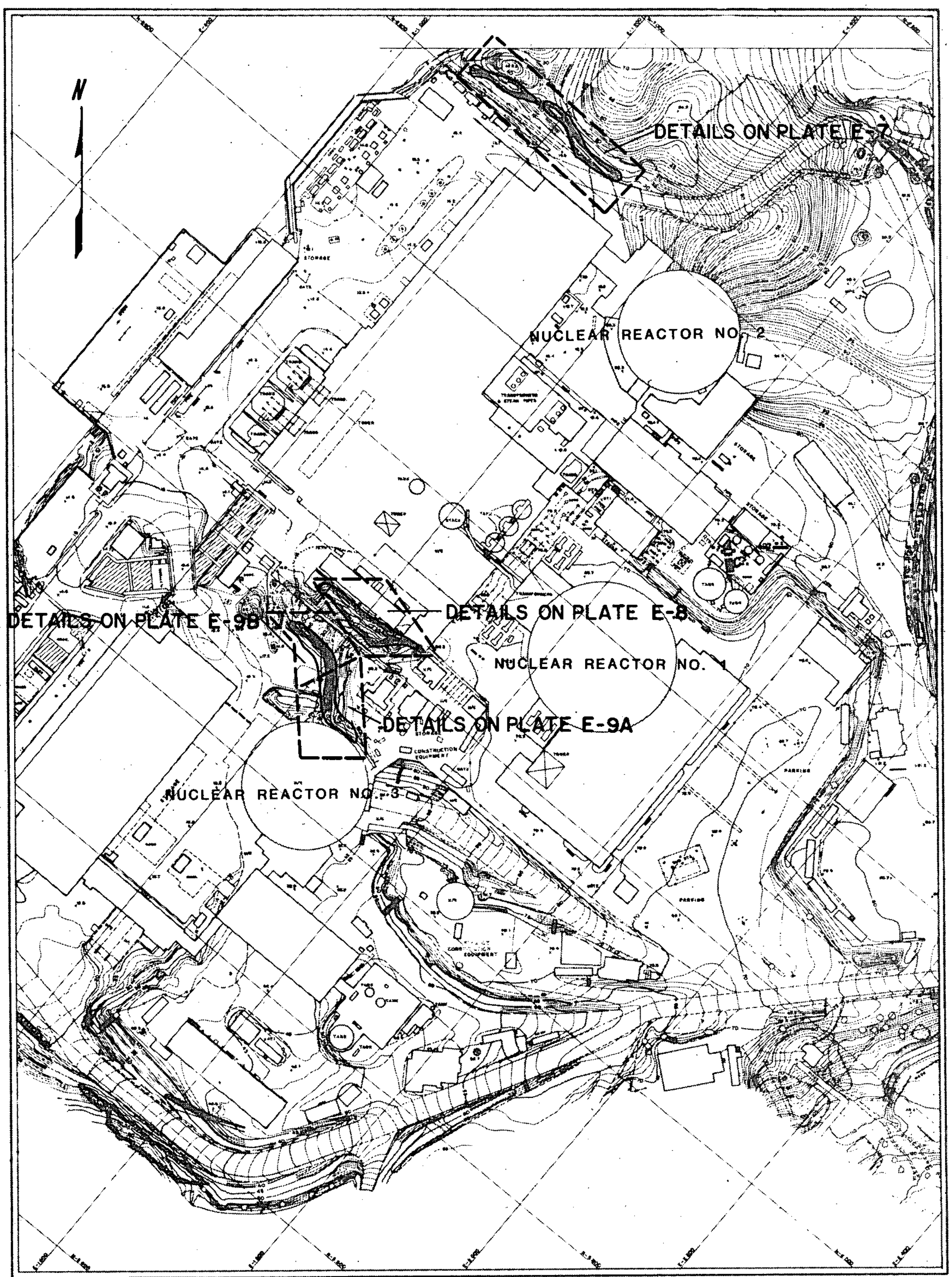


DAMES & MOORE



MINERAL PHASE VS HOMOGENIZATION TEMPERATURE

DAMES & MOORE



INDEX MAP

SHOWING ONSITE OUTCROPS AND REFERENCES TO DETAILED DIAGRAMS E-7 THRU E-9B

WHICH CONTAIN F.S. SERIES SAMPLE LOCATIONS

100 0 100 200

NOTE: PLANT NORTH IS 38½° EAST OF TRUE NORTH

REFERENCE:

THE BASE OF THIS MAP WAS PREPARED FROM; DRAWING NUMBERS 808 FROM THE OFFICE OF J.W. DELANO, 12 BOND ST., WHITE PLAINS, N.Y.

DAMES & MOORE

or B - WELL DEFINED HEALED BRECCIA

or PB- POORLY DEFINED HEALED BRECCIA

or Ub- UNHEALED BRECCIA

or M - MINERALIZATION: PYRITE, MICA, K-FELDSPAR, PINK CALCITE

§ - STRATIGRAPHIC MARKER

- LOCATION OF SAMPLE TAKEN FOR PETROGRAPHIC STUDY (SAMPLE NUMBER SHOWN ON OUTCROP PLANS)

70° 70° - STRIKE AND DIP OF PREDOMINANTLY STRIKE SLIP FAULT; DASHED WHERE INFERRED.

70° 70° - STRIKE AND DIP OF PREDOMINANTLY STRIKE SLIP FAULT; ARROWS INDICATE OBSERVED SENSE OF MOVEMENT; DASHED WHERE INTERPRETED.

60° 60° - STRIKE AND DIP OF PREDOMINANTLY DIP SLIP FAULT; DASHED WHERE INFERRED. HATCHURES INDICATE DOWNTHROWN SIDE.

65° - STRIKE AND DIP OF JOINT OR FRACTURE

65° - STRIKE AND DIP OF JOINT OR FRACTURE; ARROW INDICATES RAKE OR PLUNGE OF SLICKENSIDES

- STRIKE OF VERTICAL JOINT OR FRACTURE

60° - STRIKE AND DIP OF ORIGINAL BEDDING (S_0)

60° - STRIKE AND DIP OF FOLIATION (S_1)

60° - STRIKE AND DIP OF FOLIATION (S_2)

20 - DIRECTION AND AMOUNT OF PLUNGE OF AXIS OF F_1 FOLDING; OR LINEATION ASSOCIATED WITH F_1 FOLDING

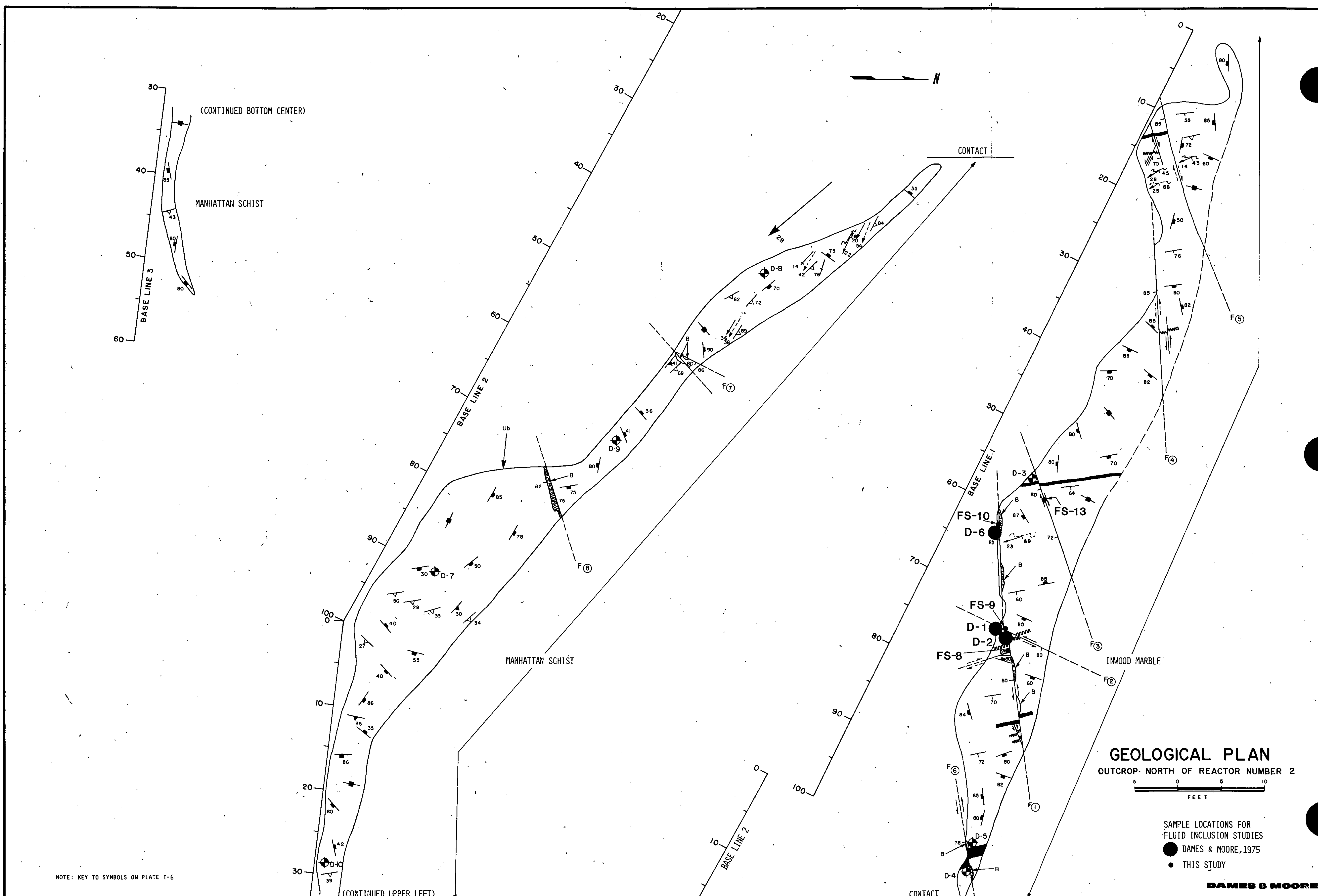
30 - DIRECTION AND AMOUNT OF PLUNGE OR AXIS OF F_2 FOLDING; OR LINEATION ASSOCIATED WITH F_2 FOLDING

20 40 - STRIKE AND DIP OF AXIAL PLANE OF MINOR FOLD; ARROW INDICATES DIRECTION AND AMOUNT OF PLUNGE

- MATCH LINE

EXPLANATION OF SYMBOLS UTILIZED ON GEOLOGIC PLANS OF SITE OUTCROPS

DAMES & MOORE



(CONTINUED BOTTOM CENTER)
MANHATTAN SCHIST
BASE LINE 3
BASE LINE 2
BASE LINE 1
CONTACT
N
MANHATTAN SCHIST
INWOOD MARBLE
FS-10
D-6
FS-13
FS-9
D-1
D-2
FS-8
D-3
D-4
D-5
D-7
D-8
D-9
D-10
(CONTINUED UPPER LEFT)
NOTE: KEY TO SYMBOLS ON PLATE E-6
GEOLOGICAL PLAN
OUTCROP NORTH OF REACTOR NUMBER 2
FEET
SAMPLE LOCATIONS FOR FLUID INCLUSION STUDIES
DAMES & MOORE, 1975
THIS STUDY
DAMES & MOORE

PLATE E-7

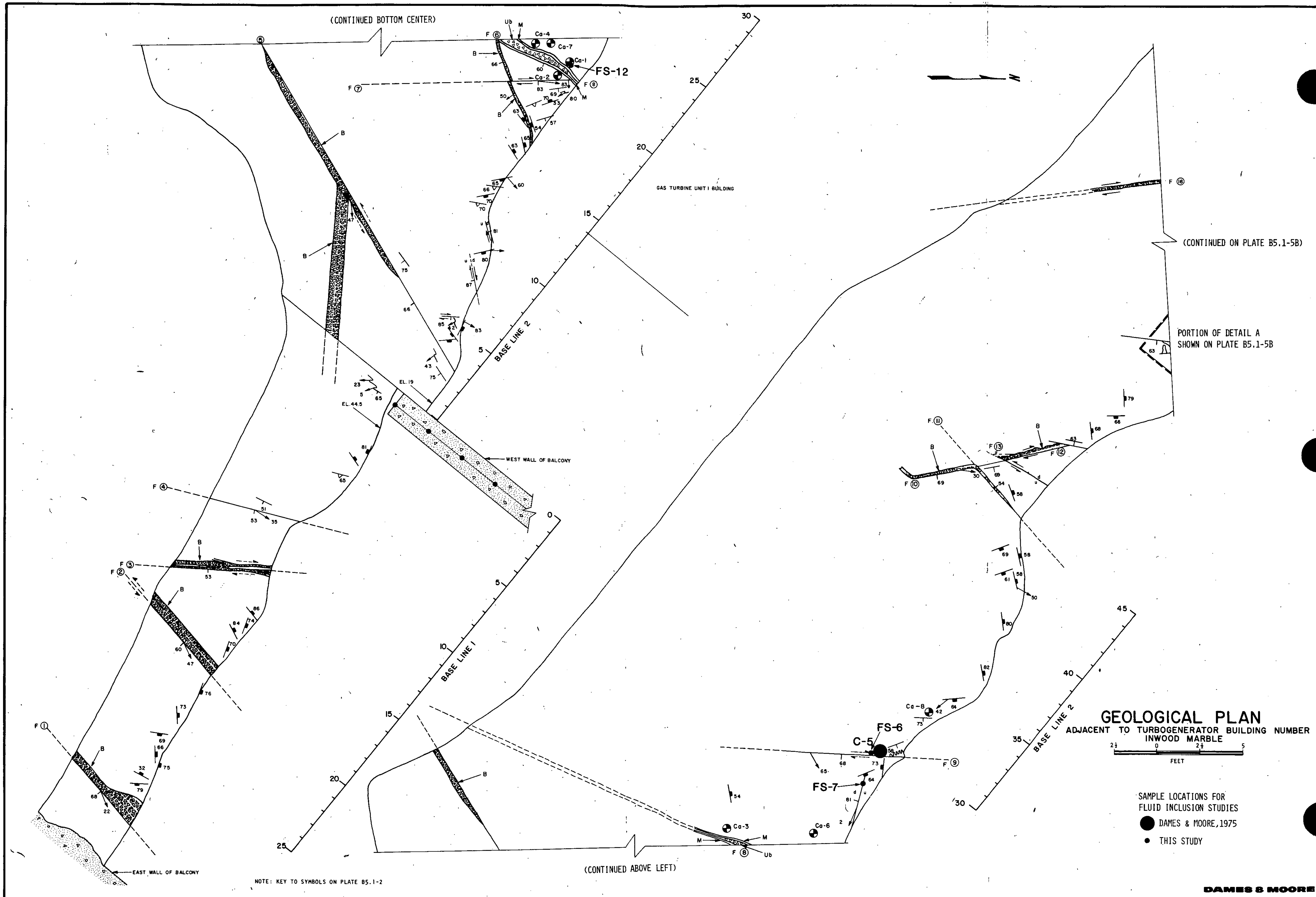
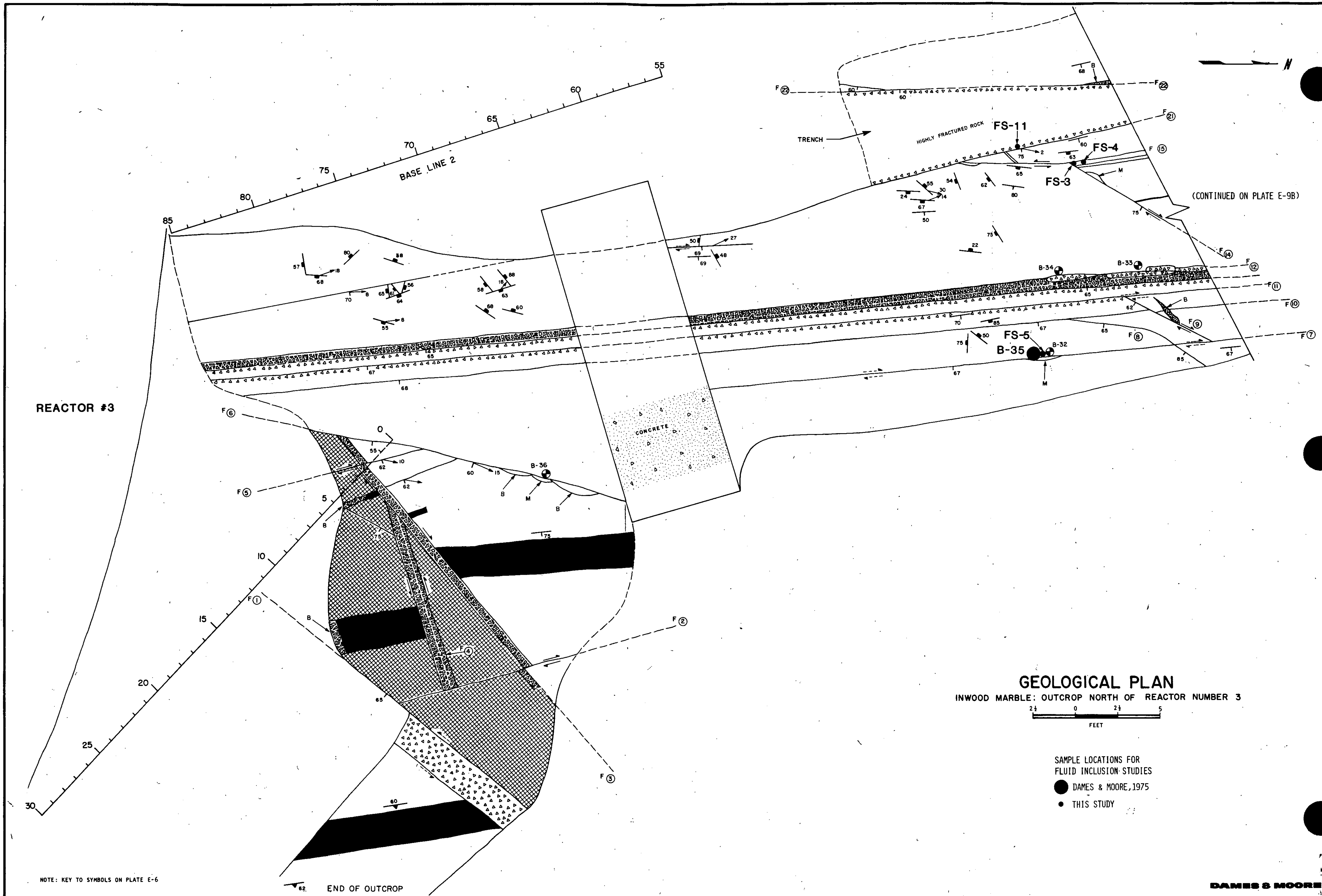
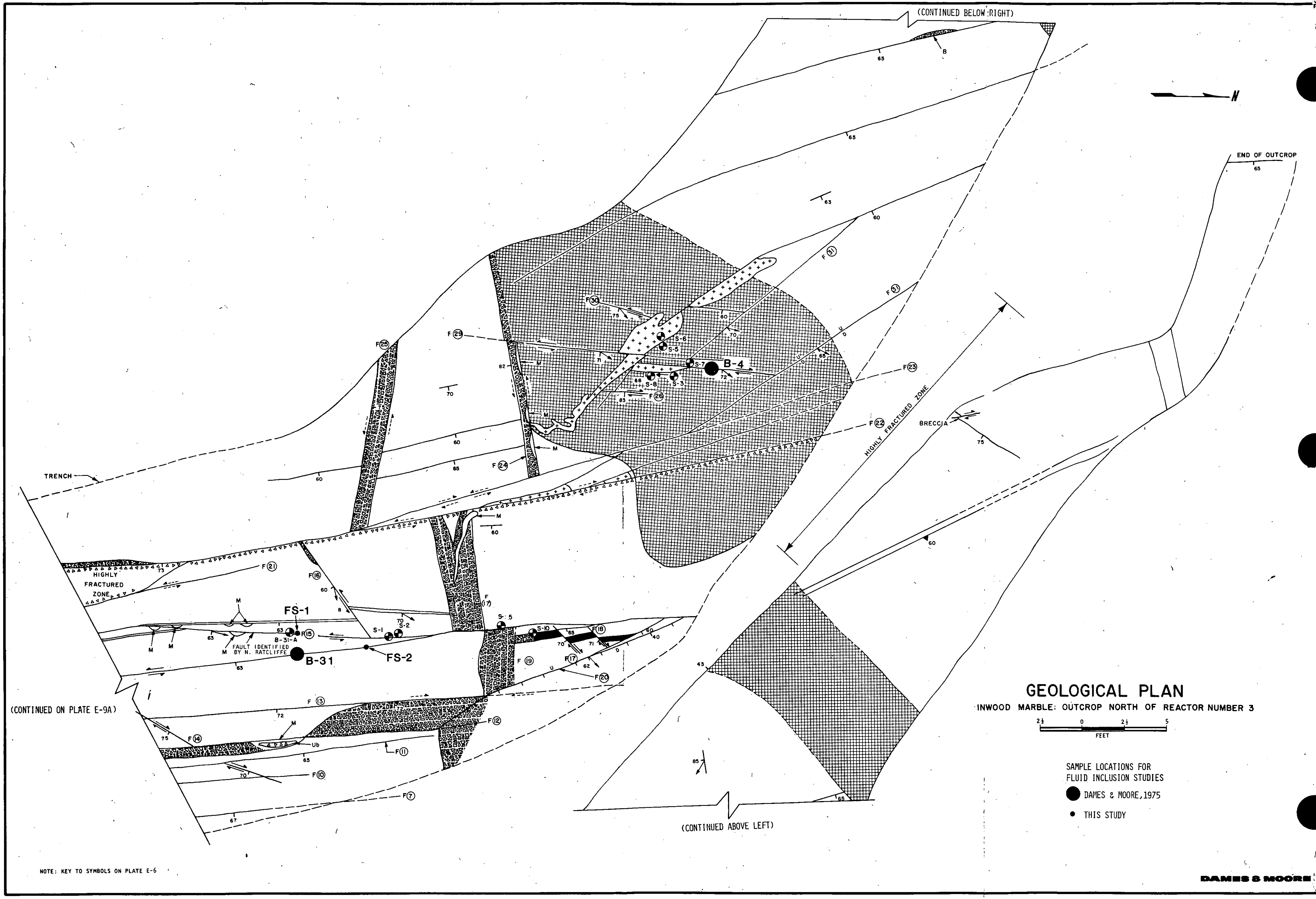

(CONTINUED BOTTOM CENTER)
FS-12
GAS TURBINE UNIT 1 BUILDING
BASE LINE 2
BASE LINE 1
(CONTINUED ON PLATE B5.1-5B)
PORTION OF DETAIL A
SHOWN ON PLATE B5.1-5B
EL. 19
EL. 44.5
WEST WALL OF BALCONY
EAST WALL OF BALCONY
NOTE: KEY TO SYMBOLS ON PLATE B5.1-2
(CONTINUED ABOVE LEFT)
FS-6
C-5
FS-7
GEOLOGICAL PLAN
ADJACENT TO TURBOGENERATOR BUILDING NUMBER 1
INWOOD MARBLE
FEET
SAMPLE LOCATIONS FOR
FLUID INCLUSION STUDIES
DAMES & MOORE, 1975
THIS STUDY
DAMES & MOORE

PLATE E-8



BASE LINE 2
TRENCH
HIGHLY FRACTURED ROCK
FS-11
FS-4
FS-3
FS-5
B-35
B-32
B-33
B-34
B-36
(CONTINUED ON PLATE E-9B)
REACTOR #3
CONCRETE
END OF OUTCROP
NOTE: KEY TO SYMBOLS ON PLATE E-6
GEOLOGICAL PLAN
INWOOD MARBLE: OUTCROP NORTH OF REACTOR NUMBER 3
FEET
SAMPLE LOCATIONS FOR
FLUID INCLUSION STUDIES
DAMES & MOORE, 1975
THIS STUDY
DAMES & MOORE

PLATE E-9A



GEOLOGICAL PLAN

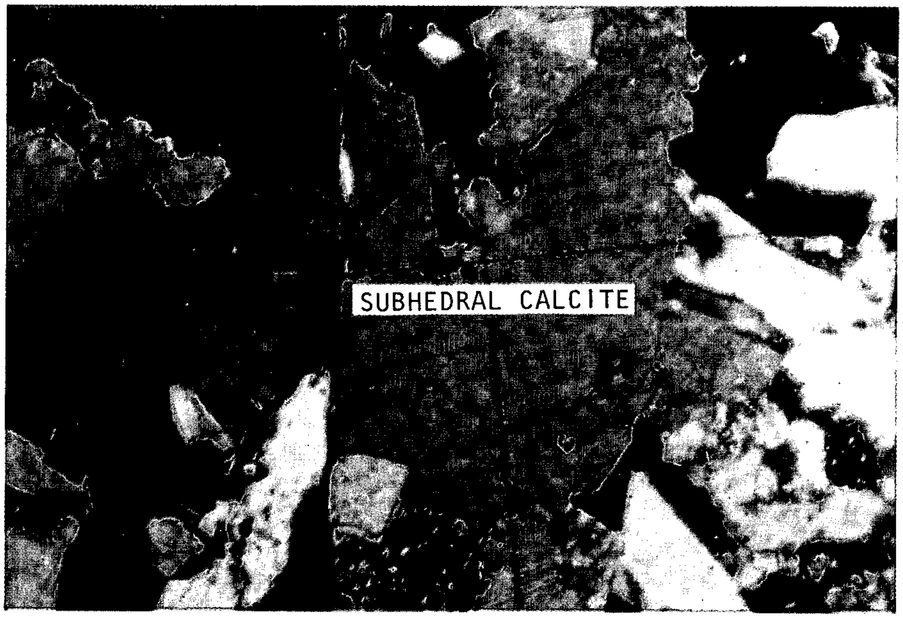
INWOOD MARBLE: OUTCROP NORTH OF REACTOR NUMBER 3

SAMPLE LOCATIONS FOR FLUID INCLUSION STUDIES

- DAMES & MOORE, 1975
- THIS STUDY

DAMES & MOORE

PLATE E-9B



PHOTOMICROGRAPH OF SAMPLE M.W.-67D-1
SAMPLE TAKEN FROM FRACTURE TRENDING N55E,74S
WITHIN A SHEAR ZONE ORIENTED N21E,80E

DAMES & MOORE

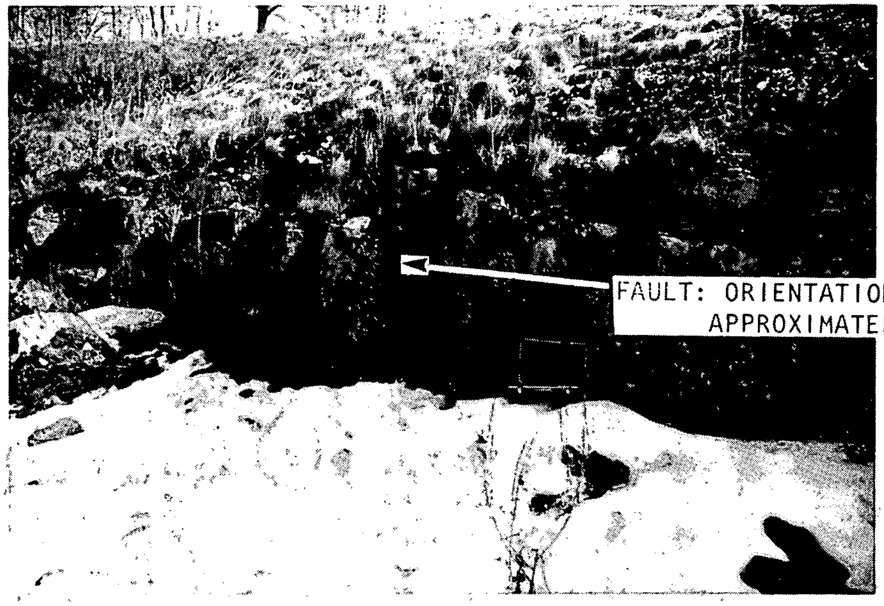


PHOTO A: OUTCROP VIEW OF SAMPLING STATION G.A.-17

LOCATION - SE CORNER OF SOCCER FIELD AT THE SOUTHERN END OF ROCKLAND LAKE

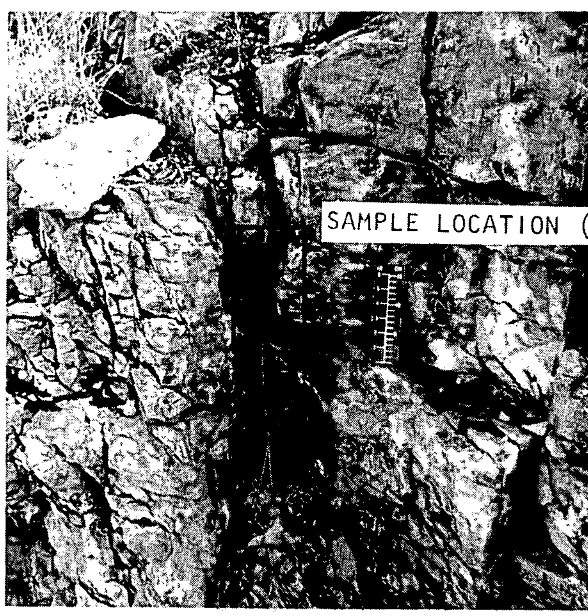
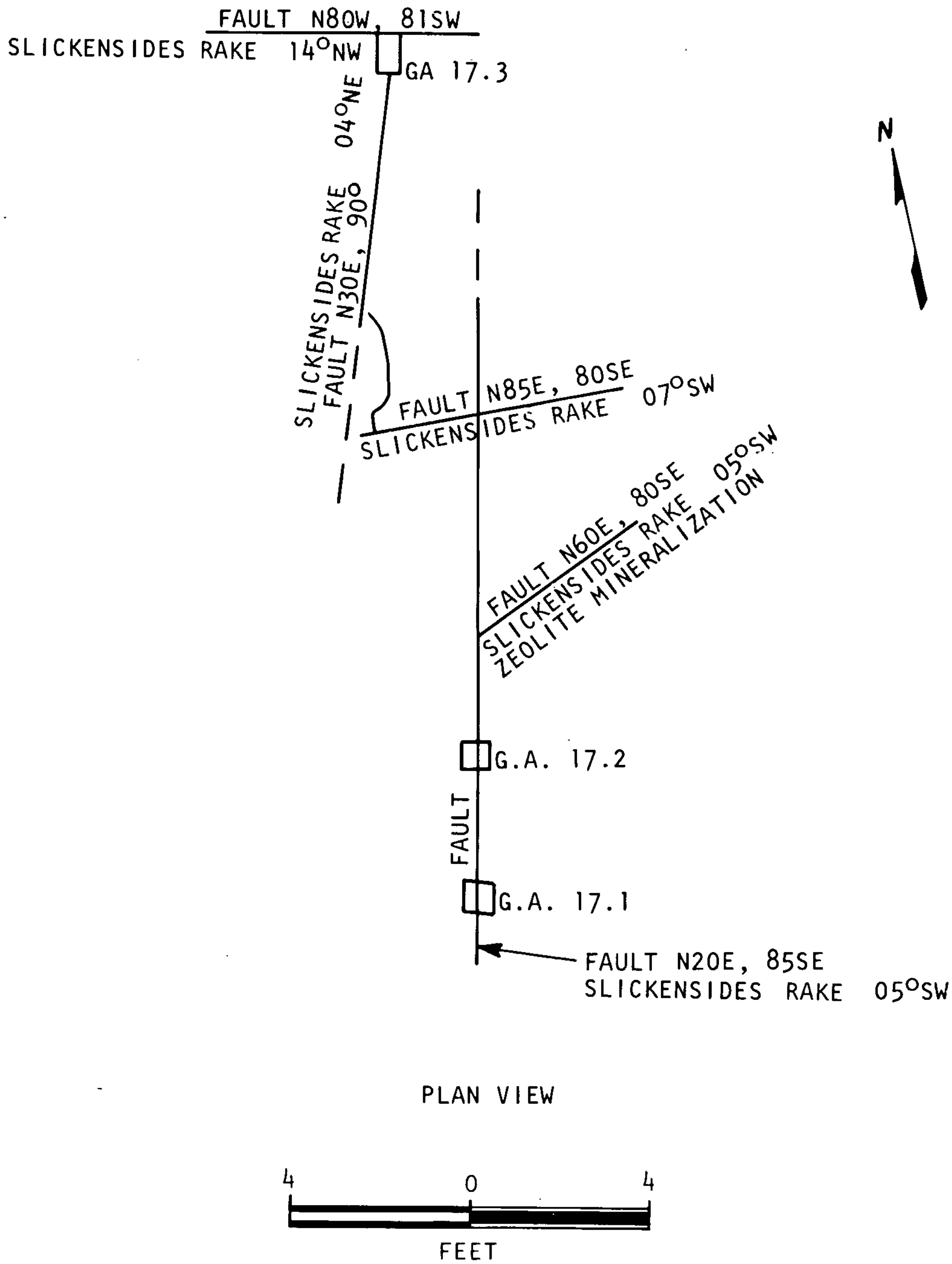


PHOTO B: CLOSEUP OF SAMPLE G.A.-17.3



STATION G.A.-17
MINERALIZATION SAMPLING

SOUTH END OF ROCKLAND LAKE - SOUTHEAST CORNER OF SOCCER FIELD

NOTE : SAMPLES APPARENTLY UNDEFORMED CALCITE WITH ZEOLITES
IN SAMPLES G.A. 17.2 AND G.A. 17.3

DAMES & MOORE

PLATE E-15B

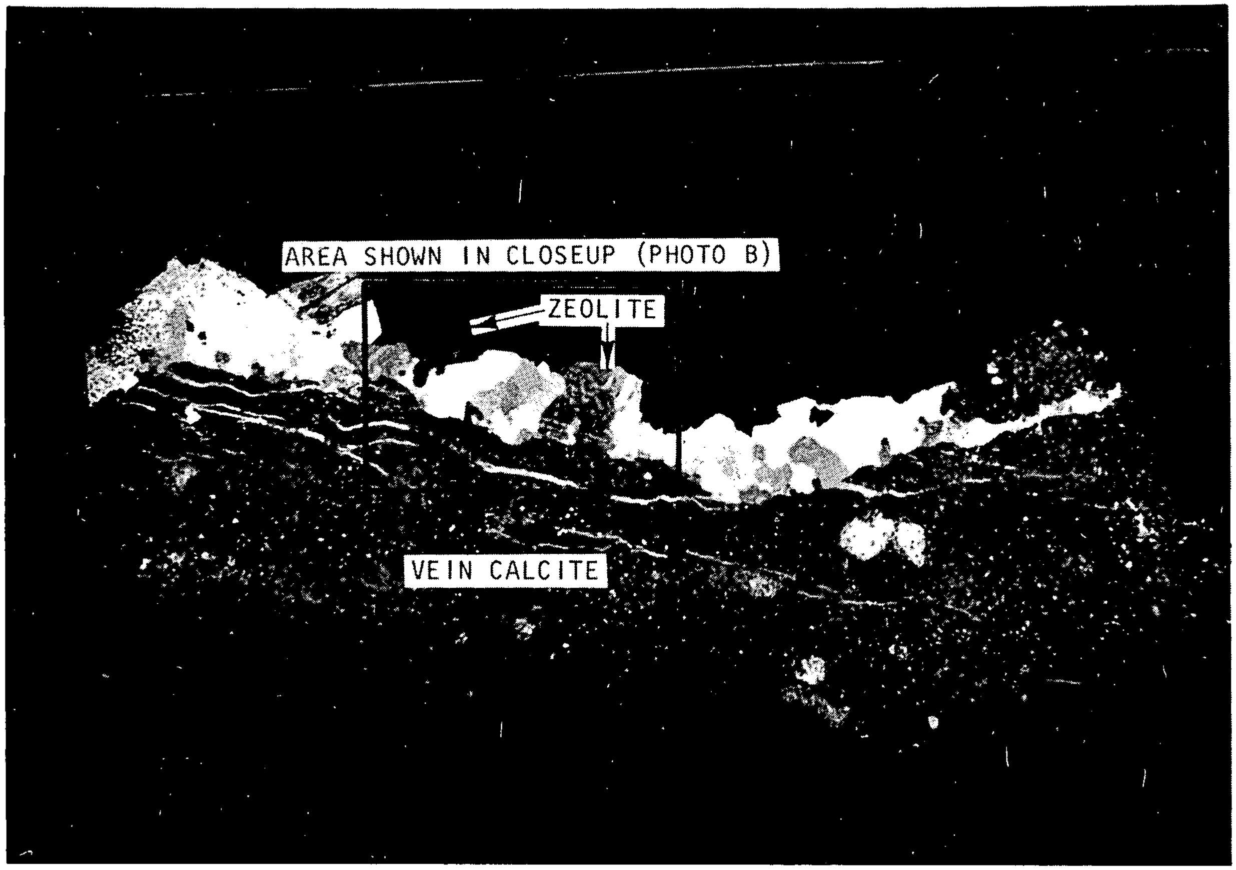


PHOTO A: PHOTOMICROGRAPH OF SAMPLE G.A.-17.3
MAGNIFICATION: 4X
X - NICOLS

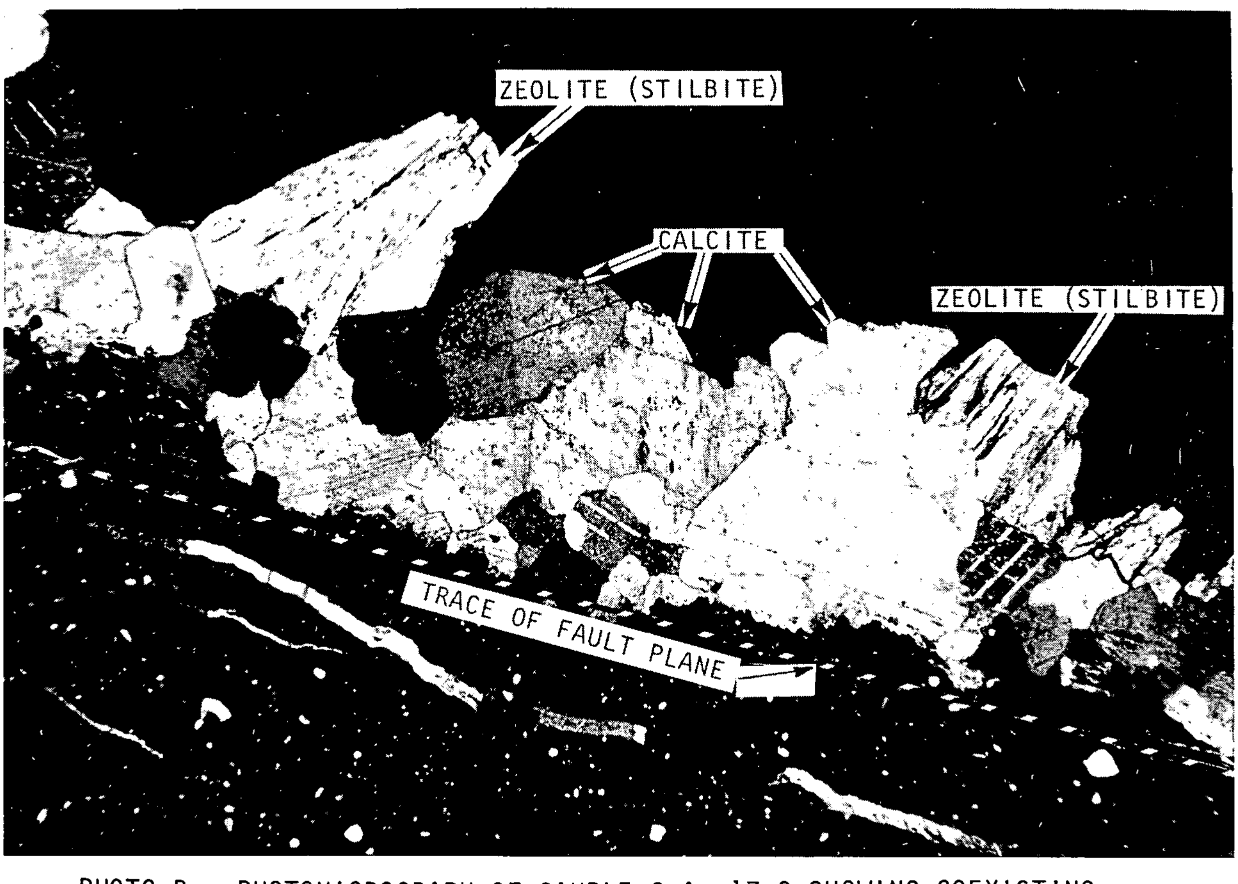


PHOTO B: PHOTOMICROGRAPH OF SAMPLE G.A.-17.3 SHOWING COEXISTING ZEOLITE AND EUHEDRAL, UNDEFORMED CALCITE.
MAGNIFICATION: 17X
X - NICOLS

DAMES & MOORE

PHOTO A: OUTCROP VIEW OF SAMPLING STATION M.W.-106
LOCATION: TROUGH HOLLOW AT VERDRIETEGE HOOK

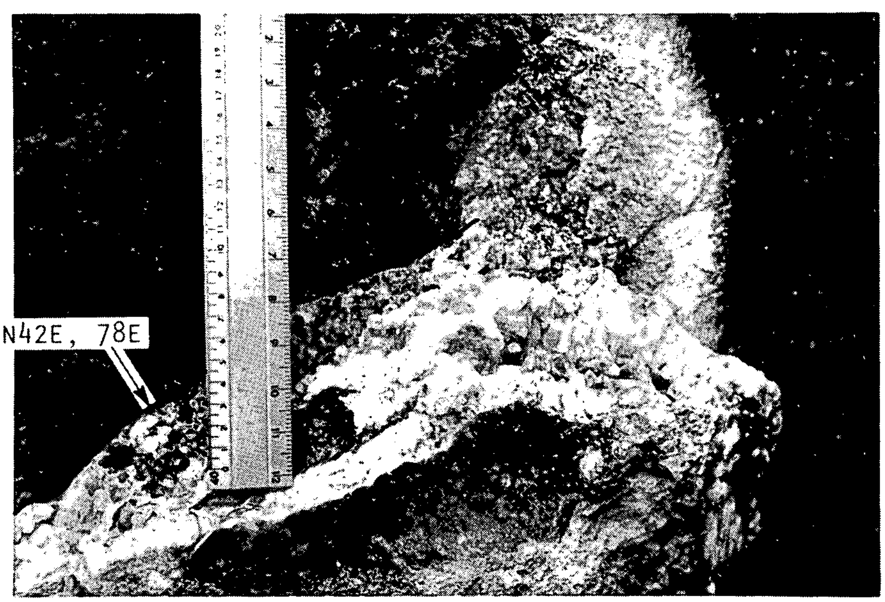
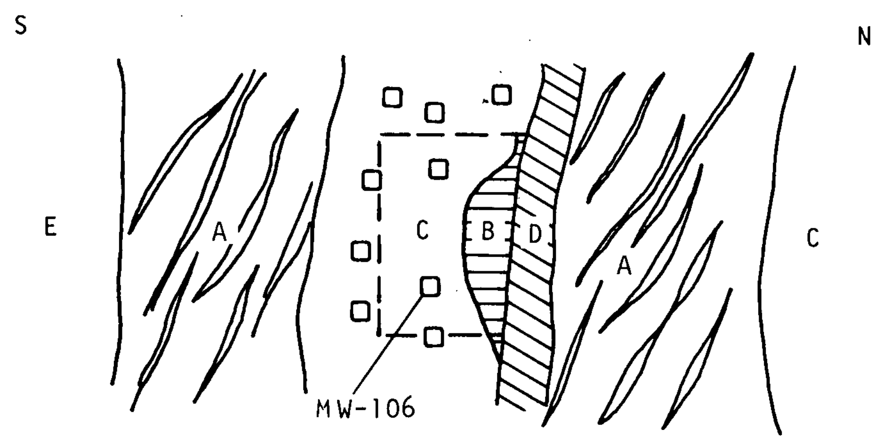


PHOTO B: CLOSEUP OF SAMPLING STATIONS M.W.-106-2

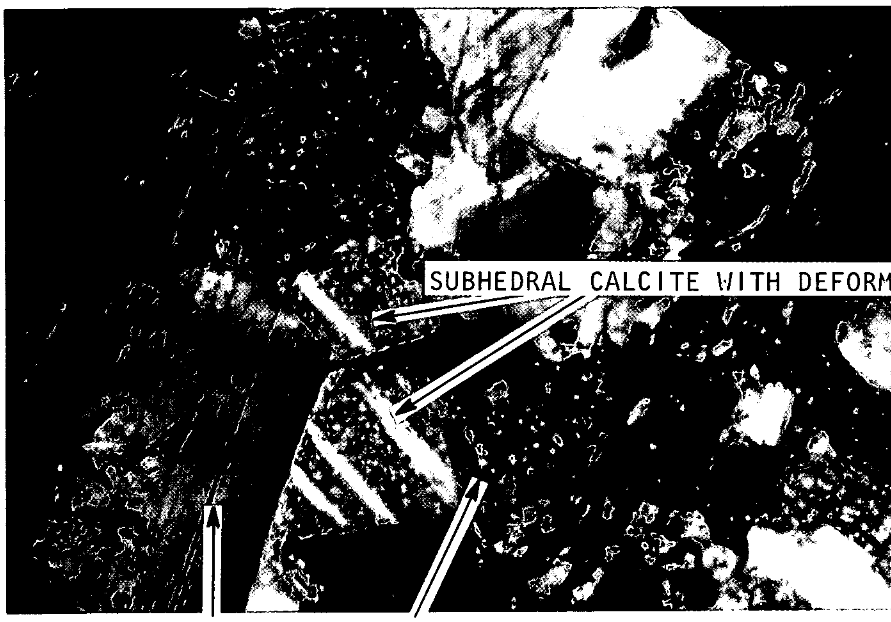


A = SHEARED DIABASE WITH STRINGERS OF CALCITE, HEALED
B = LARGE SPARRY CALCITE RILLS
C = HEALED BRECCIA COMPOSED OF FRAGMENTS OF "B"
D = WEATHERED EQUIVALENT OF "A"
E = SOLID DIABASE

STATION M.W.-106
MINERALIZATION SAMPLING

LOCATION: TROUGH HOLLOW AT VERDRIETEGE HOOK

DAMES & MOORE



PHOTOMICROGRAPH OF SAMPLE M.W.-106-2

MAGNIFICATION: 40 X

SHEAR N47E, 87SE

PHOTO A: OUTCROP VIEW OF SAMPLING STAION M.W.-115
LOCATION: TURTLE HILL, RAMAPO RESERVATION

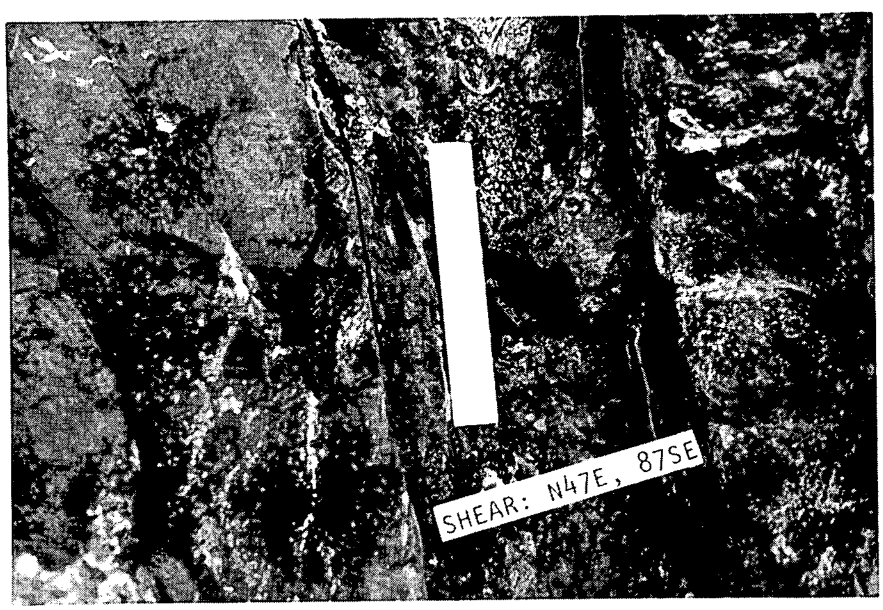


PHOTO B: CLOSEUP OF SAMPLING STATION M.W.-115-1

DAMES & MOORE

PHOTOMICROGRAPH OF SAMPLE M.W.-115-1

MAGNIFICATION: 40 X

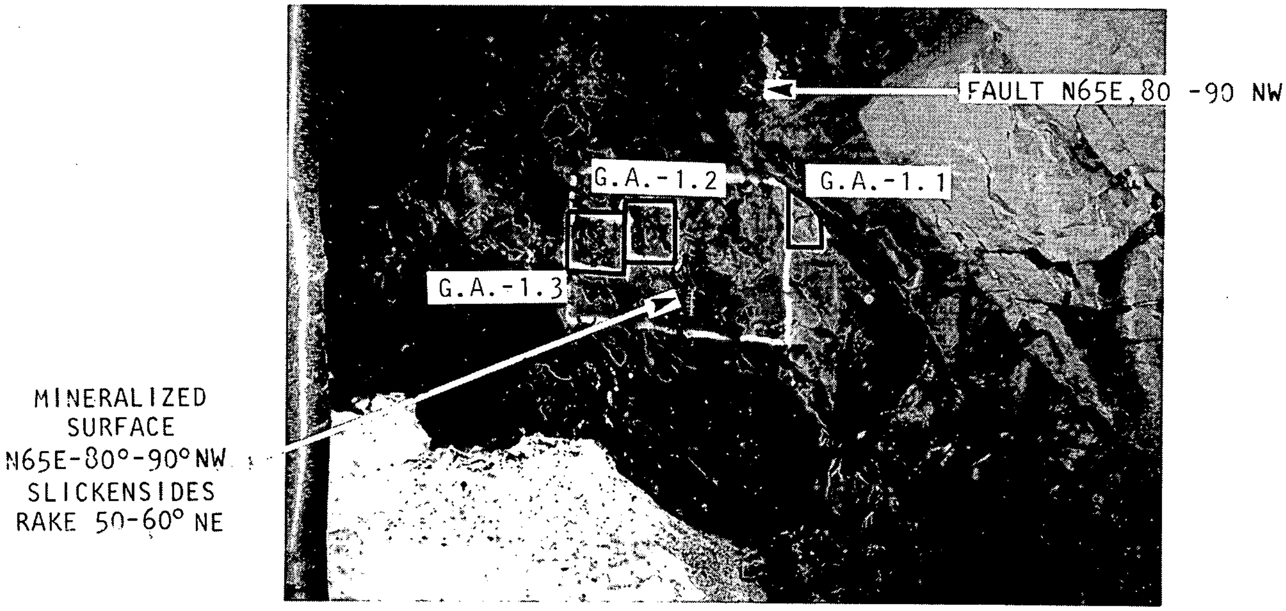


PHOTO A: OUTCROP VIEW OF SAMPLING STATION G.A.-1
LOCATION - SOUTH WALL OF QUARRY AT MT. IVY, N.Y.

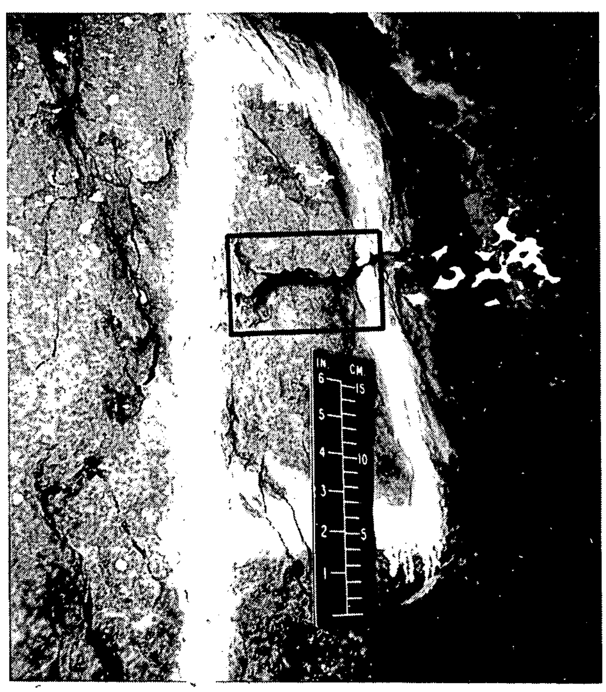
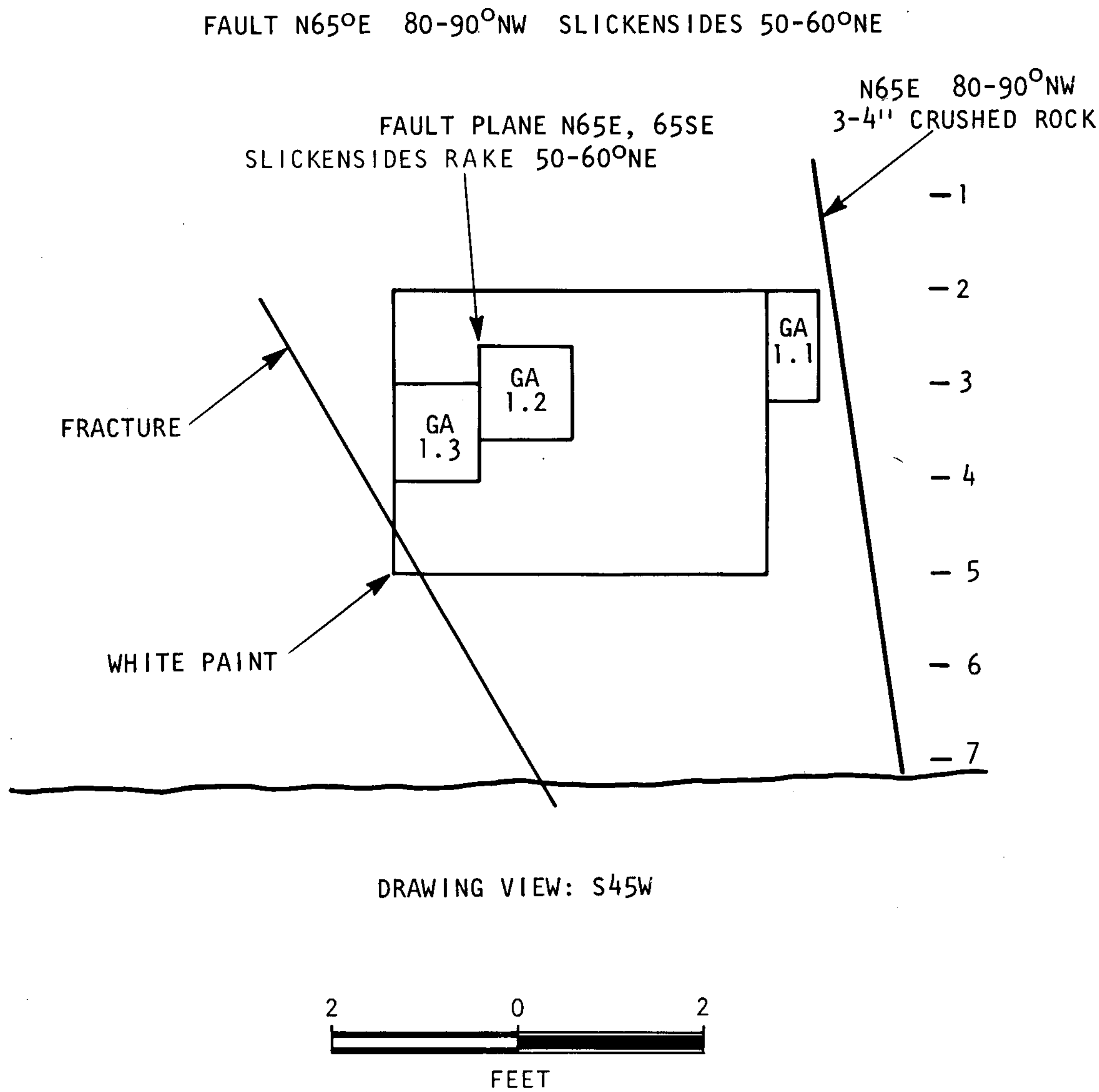


PHOTO B: CLOSEUP OF SAMPLE LOCATION G.A.-1.1



STATION G.A.-1
MINERALIZATION SAMPLING

LOCATION: MT. IVY DIABASE QUARRY

NOTE 1: SAMPLE GA-1.1, SAMPLE GA-1.2, SAMPLE GA-1.3 — ALL APPEAR TO BE UNDEFORMED CALCITE OR QUARTZ

NOTE 2: PLANE OF SAMPLING ACTUALLY BEHIND (TO LEFT) OF FAULT PROJECTION: MINERALS OF GA-1.2 GROWN BETWEEN PROJECTED SLICKENSIDED PLANES

DAMES & MOORE

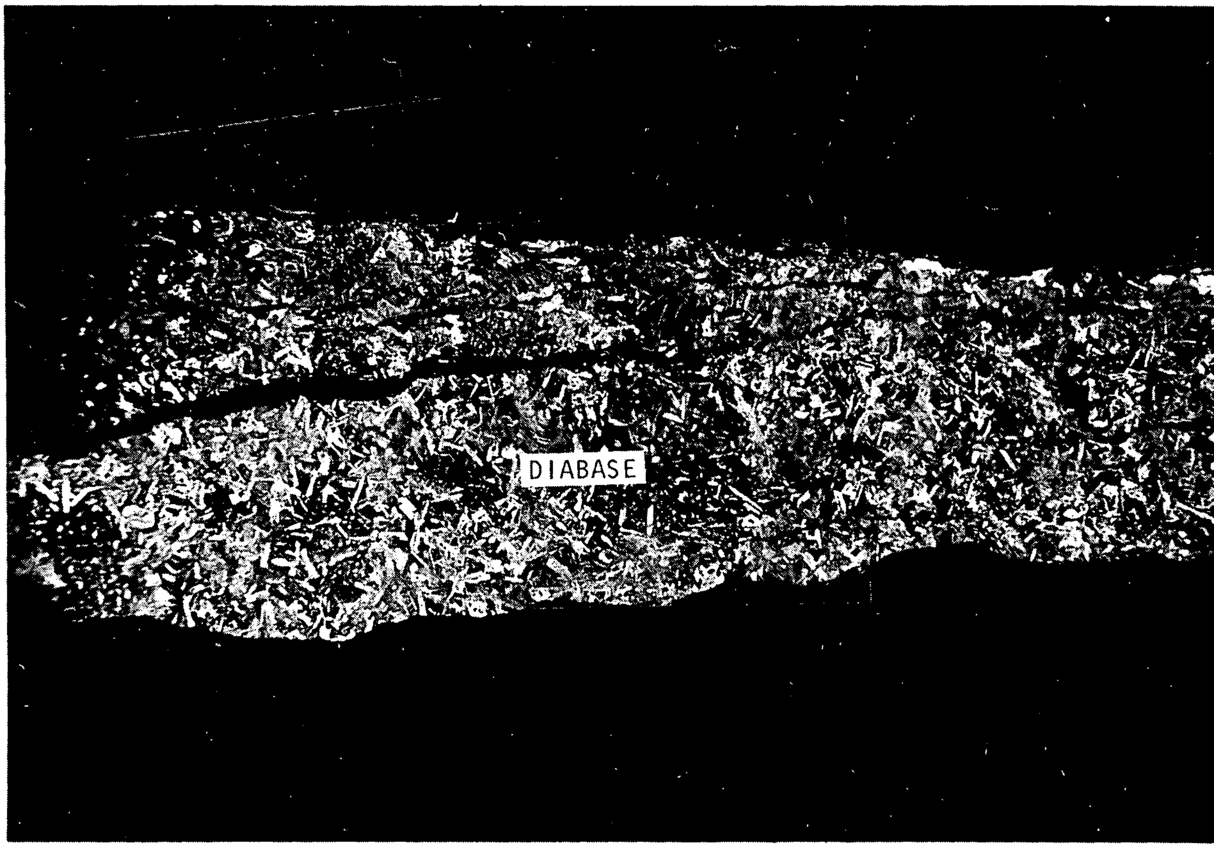


PHOTO A: PHOTOMICROGRAPH OF SAMPLE G.A.-1.1
MAGNIFICATION: 4X
X - NICOLS

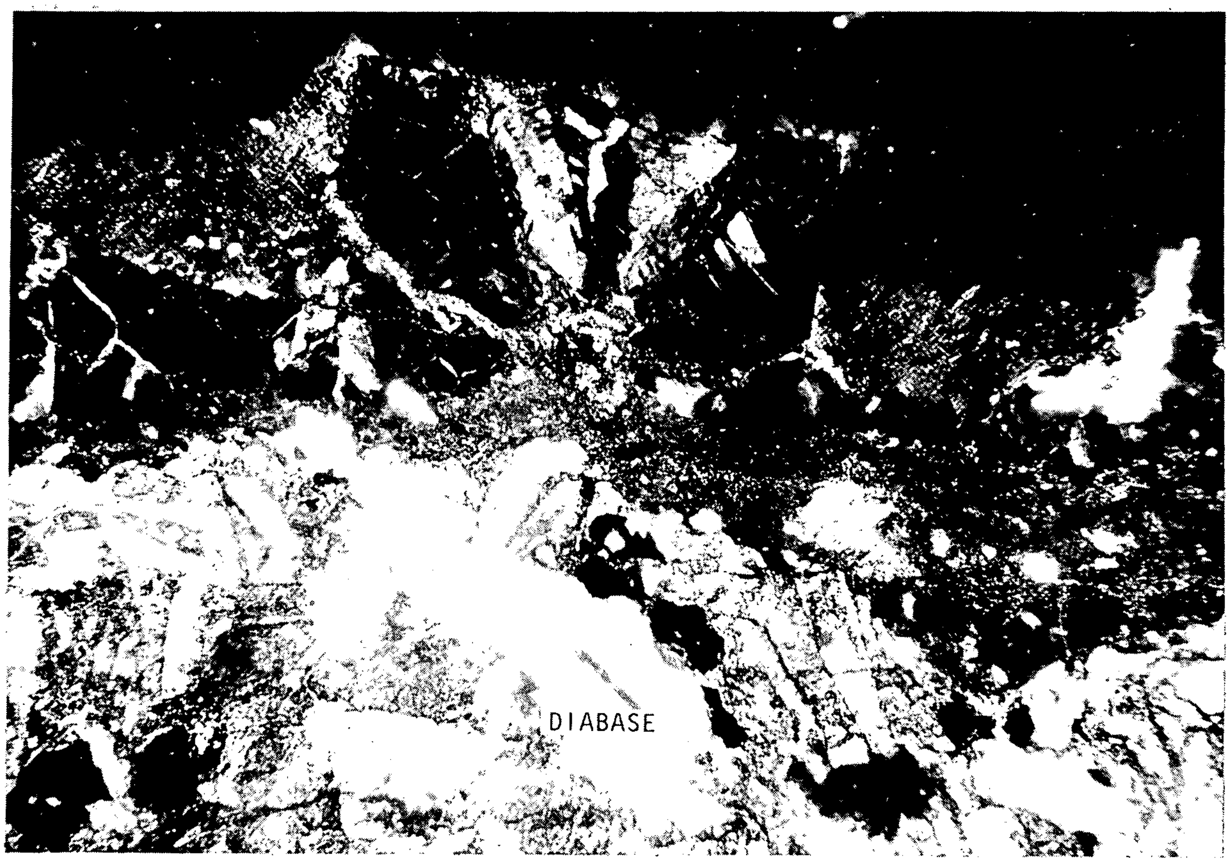


PHOTO B: PHOTOMICROGRAPH OF SAMPLE G.A.-1.1
MAGNIFICATION: 50X
X - NICOLS

DAMES & MOORE

PLATE E-18C

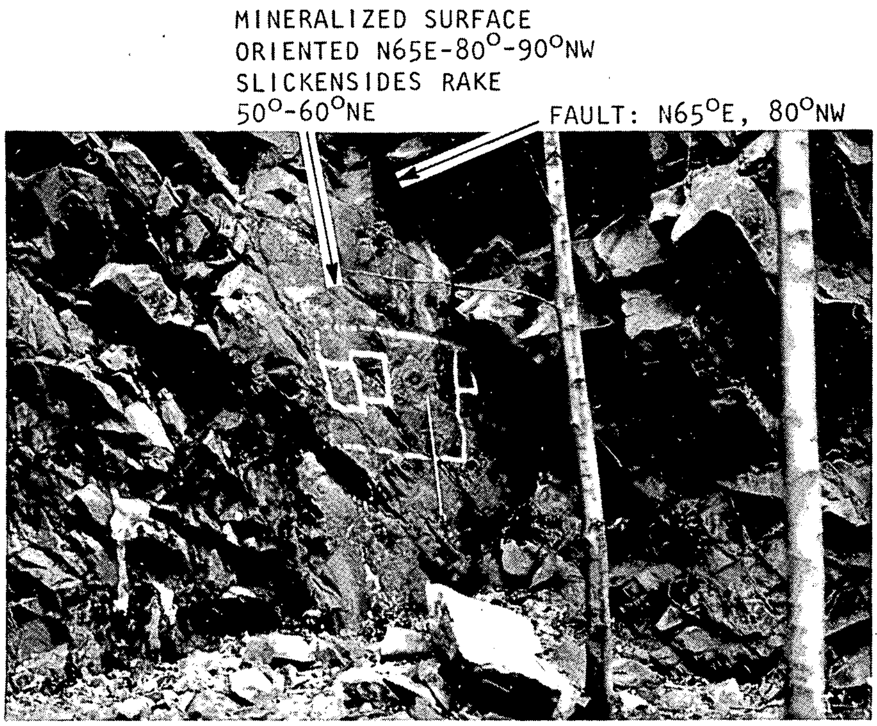
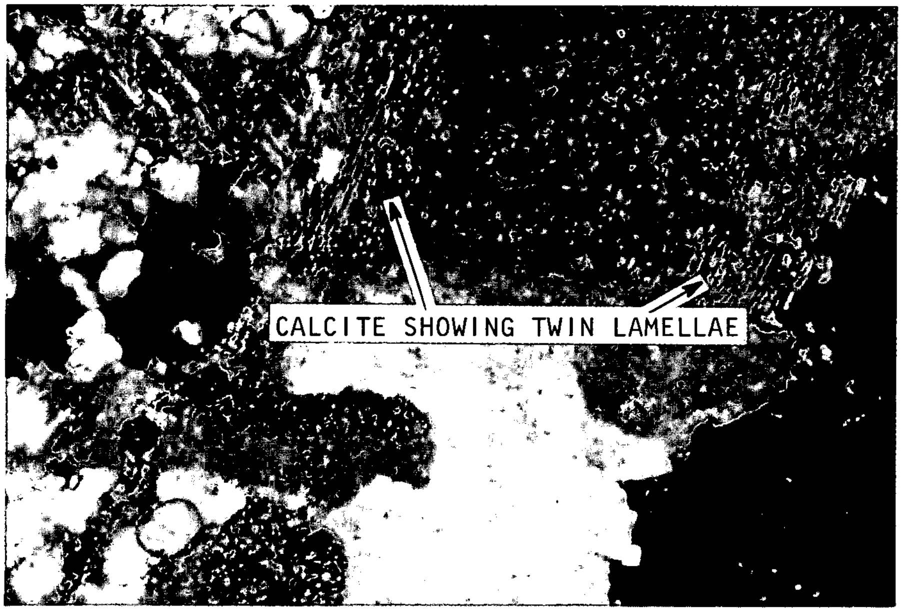


PHOTO A: OUTCROP VIEW OF SAMPLING STATION G.A.-1
LOCATION: SOUTH WALL OF QUARRY, MT. IVY, N.Y.

PHOTO B: CLOSEUP OF SAMPLE LOCATION G.A.-1.3



PHOTOMICROGRAPH OF SAMPLE G.A.-1.3

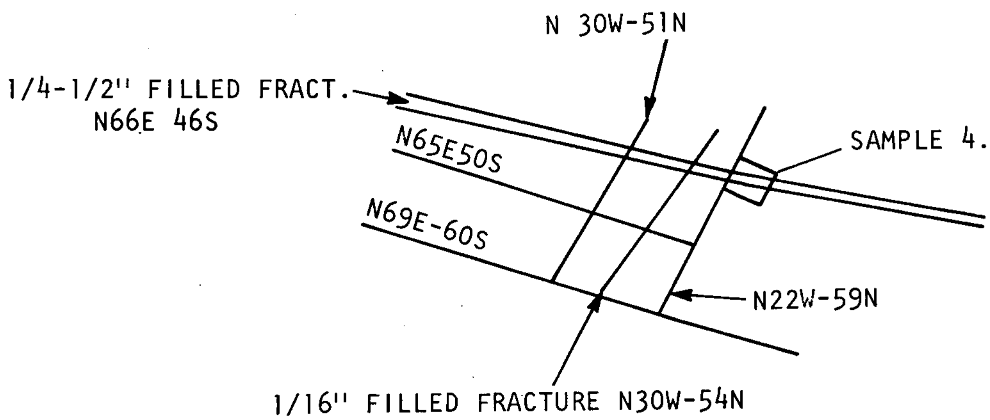
SAMPLE TAKEN FROM SLICKENSIDED SURFACE ORIENTED N65E,80NW

PHOTO A: OUTCROP VIEW OF SAMPLING STATION G.A.-4

LOCATION- EASTSIDE OF RT.# 202
200 FT. NORTH OF LIMEKILN RD.
WESLEY CHAPEL, N.Y.

CROSS SECTION VIEW (S55E)

SCALE 1" = 1'

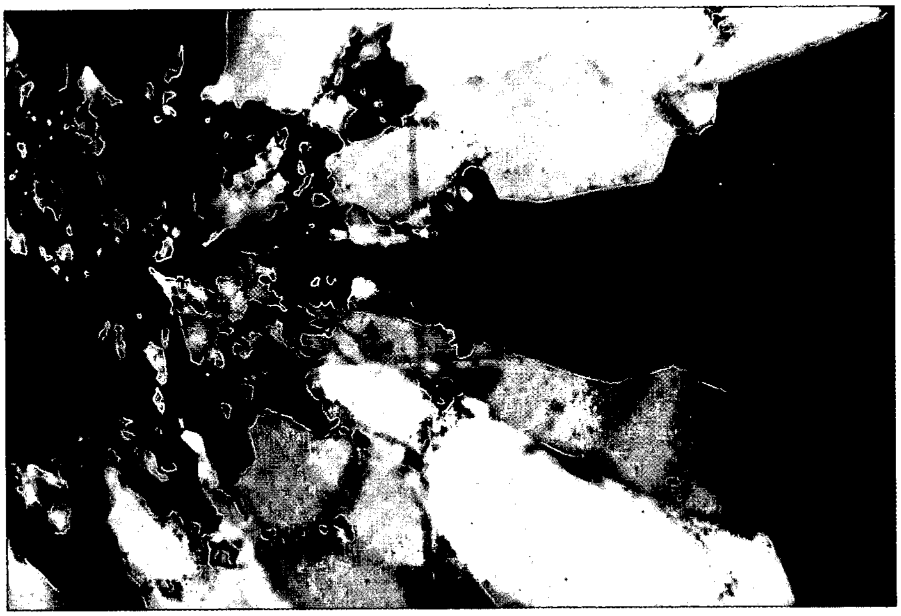


STATION G.A.-4
MINERALIZATION SAMPLING

LOCATION: EAST SIDE OF RT.202

200 FEET NORTH OF LIMEKILN RD. INTERSECTION

DAMES & MOORE



QUARTZ PHASES WITH OVERGROWTH
PHOTOMICROGRAPH OF SAMPLE G.A.-4.1
MAGNIFICATION: 40 X

SAMPLE TAKEN FROM FRACTURE TRENDING N66E,46S

DAMES & MOORE

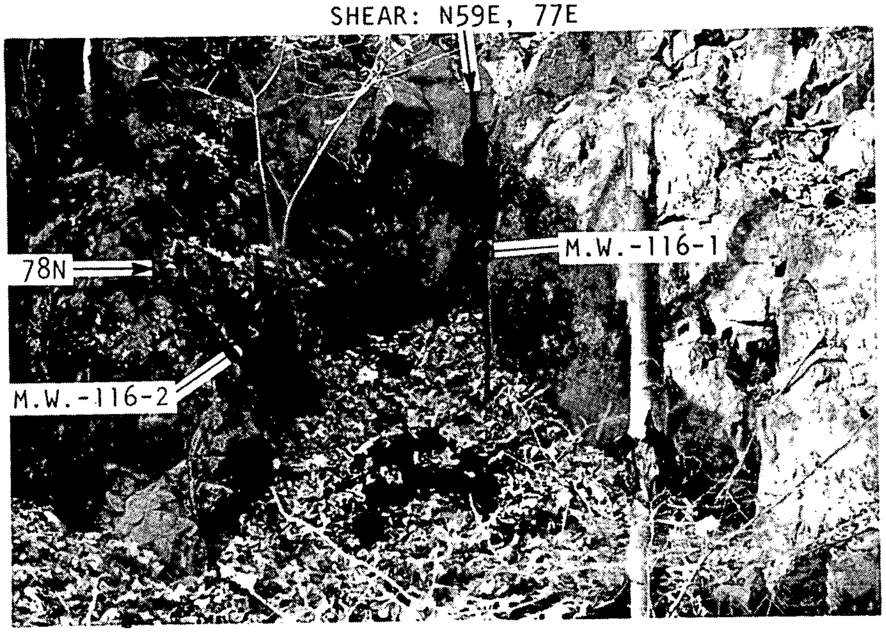
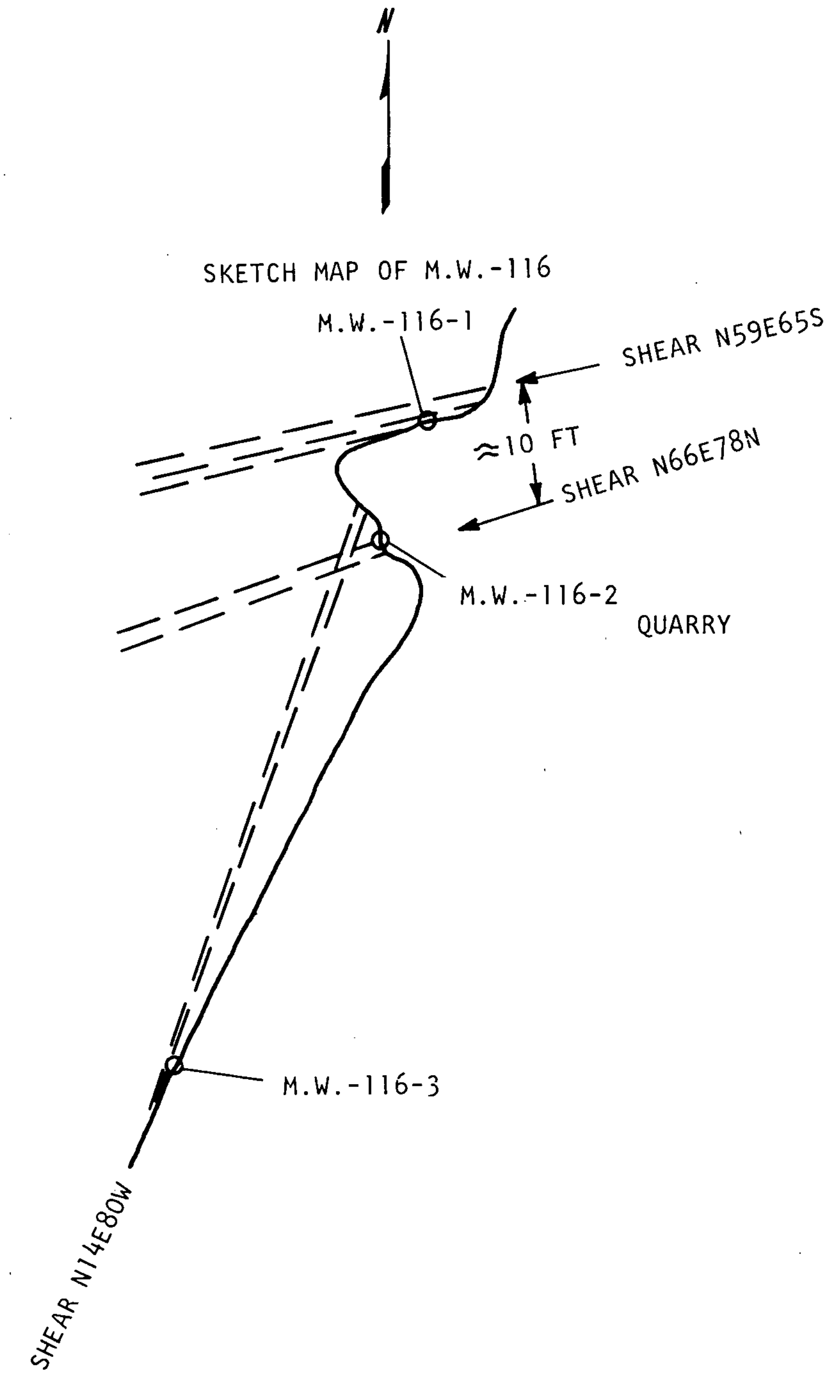


PHOTO A: OUTCROP VIEW OF SAMPLING STATION M.W.-116
LOCATION: ABANDONED QUARRY E. SIDE OF HILL TO W.S.W. OF THRUWAY EXIT 12

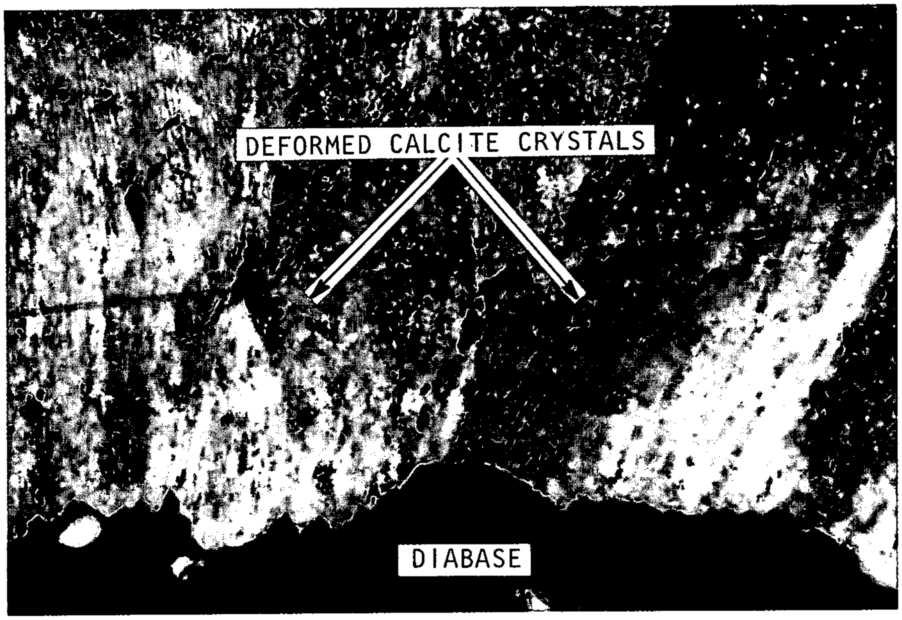
PHOTO B: CLOSEUP OF SAMPLING STATION M.W.-116-2



STATION M.W.-116
MINERALIZATION SAMPLING

LOCATION: ABANDONED QUARRY TO W.S.W.
OF THRUWAY EXIT # 12

DAMES & MOORE



PHOTOMICROGRAPH OF SAMPLE M.W.-116-2

MAGNIFICATION: 40 X

SAMPLE TAKEN FROM ALONG BORDER OF SHEAR ZONE TRENDING N66E,78N

DAMES & MOORE

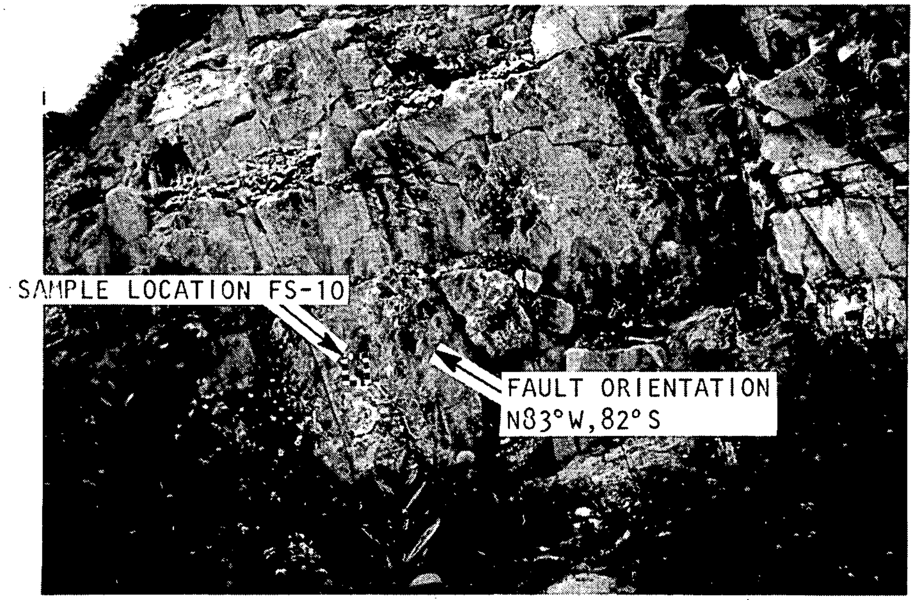


PHOTO A: OUTCROP NORTH OF REACTOR NO. 2
SAMPLE LOCATION FS-10

LOCATION- INDIAN POINT GENERATING STATION, BUCHANAN, N.Y.

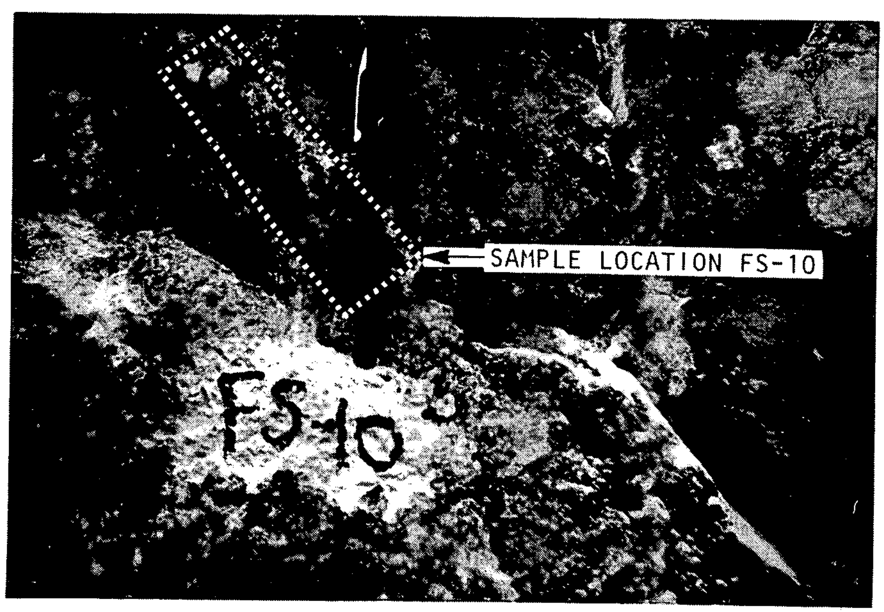
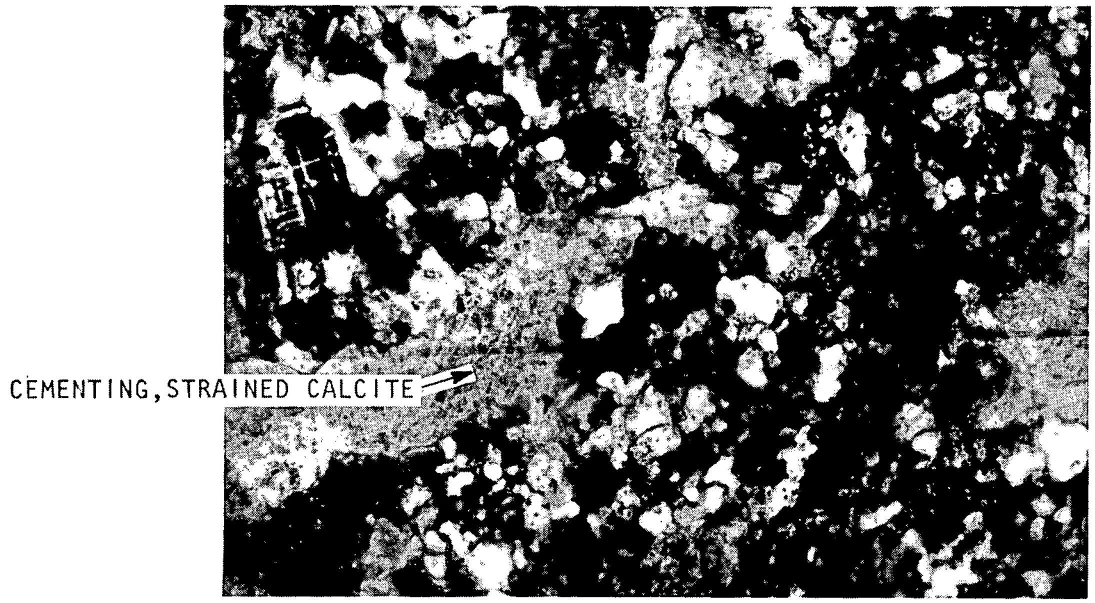
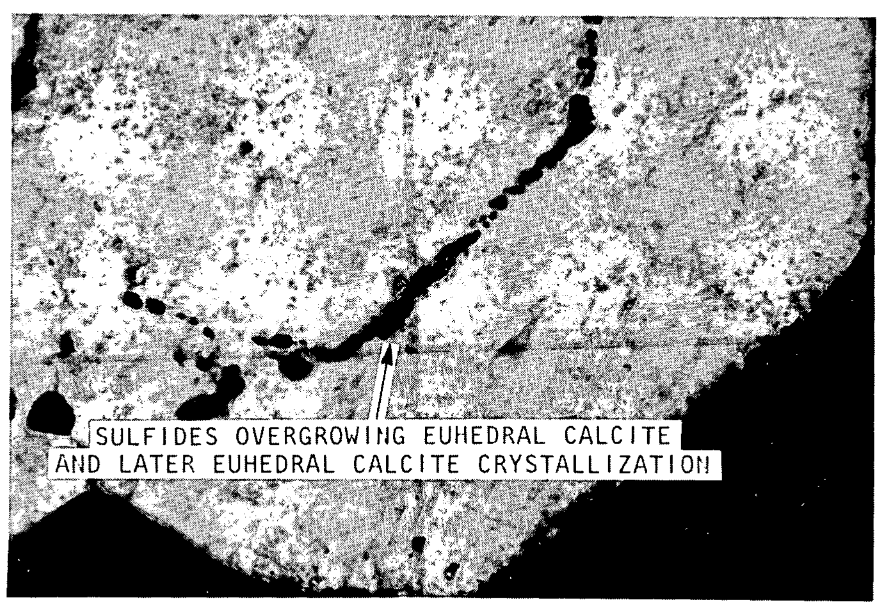


PHOTO B: CLOSE-UP OF SAMPLE LOCATION FS-10

DAMES & MOORE



A



B

PHOTOMICROGRAPHS OF SAMPLE FS-10

MAGNIFICATION: 40X

SAMPLE TAKEN FROM FAULT ORIENTED N83W, 82S

DAMES & MOORE

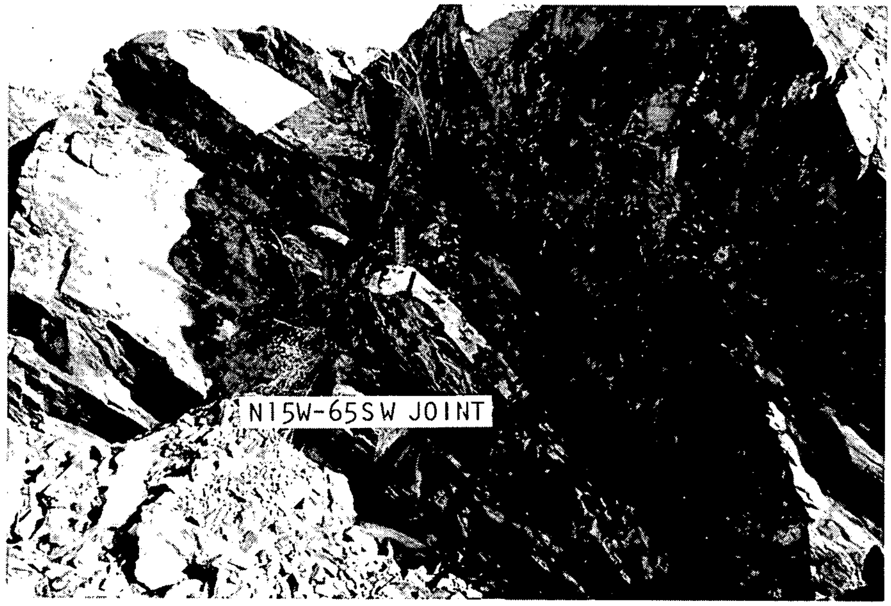


PHOTO A: OUTCROP VIEW OF SAMPLING STATION G.A.-9

LOCATION - EAST WALL OF VERPLANCK QUARRY
APPROXIMATELY 200 FEET SOUTH
OF NORTHEAST CORNER

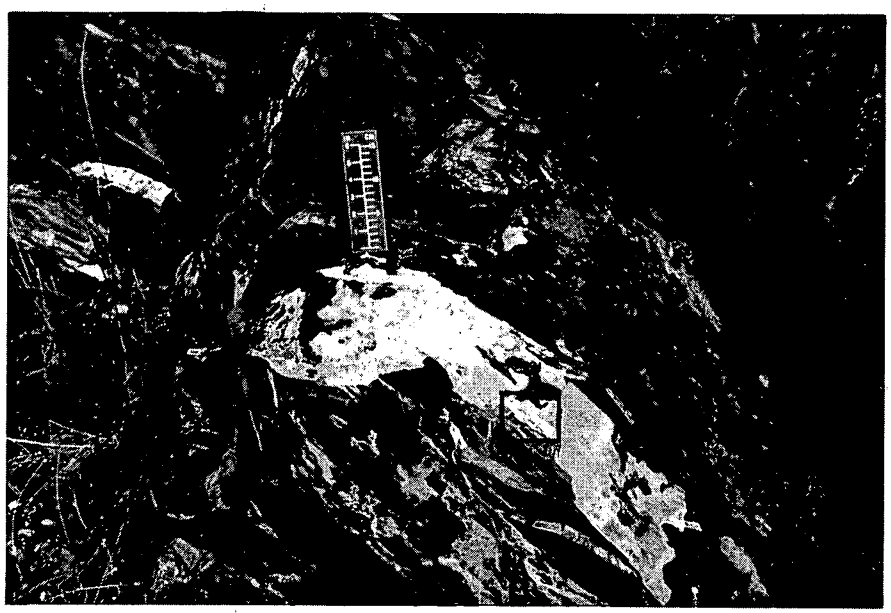
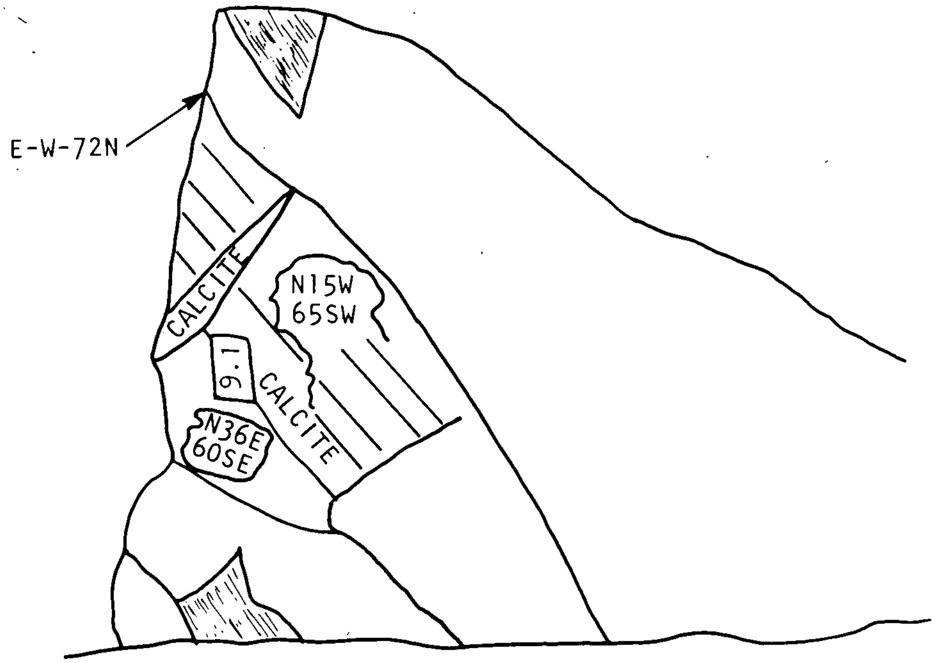
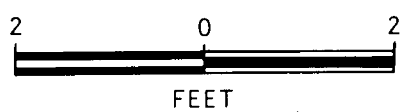


PHOTO B: CLOSEUP OF SAMPLE G.A.-9.1

DAMES & MOORE



CROSS SECTION (DUE EAST)



STATION G.A.-9
MINERALIZATION SAMPLING

LOCATION: EAST WALL OF VERPLANCK QUARRY ABOUT 200'
FROM NORTHEAST CORNER (MANHATTAN SCHIST)

NOTE: SAMPLE 9.1 (CALCITE, DEFORMED?)

DAMES & MOORE

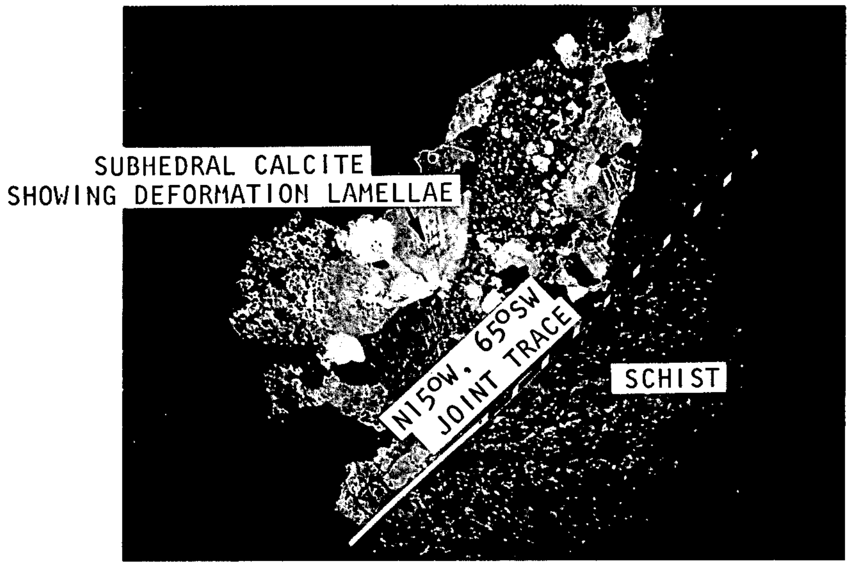


PHOTO A: PHOTOMICROGRAPH OF SAMPLE G.A.-9.1

MAGNIFICATION 8X

X - NICOLS

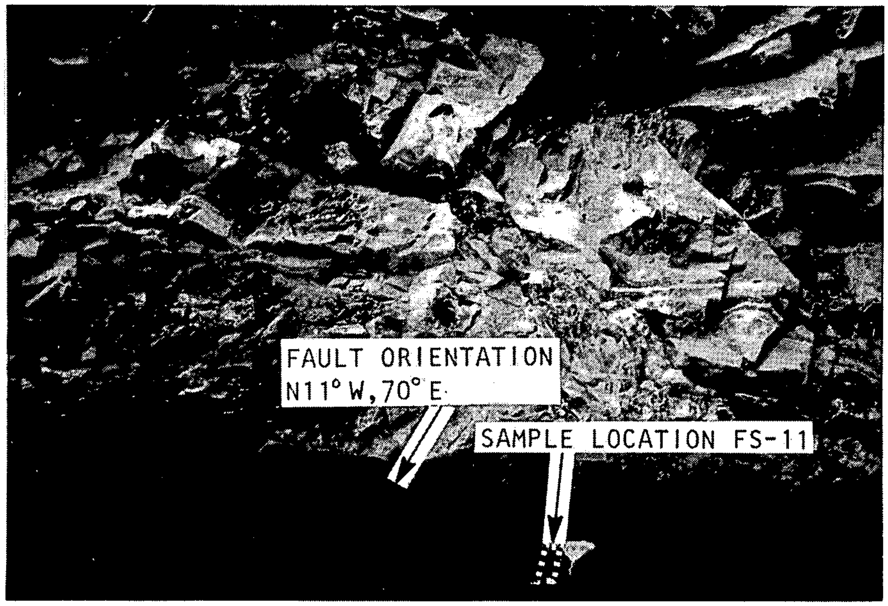


PHOTO A: OUTCROP NORTH OF REACTOR NO. 3
SAMPLE LOCATION FS-11

LOCATION- INDIAN POINT GENERATING STATION, BUCHANAN, N.Y.

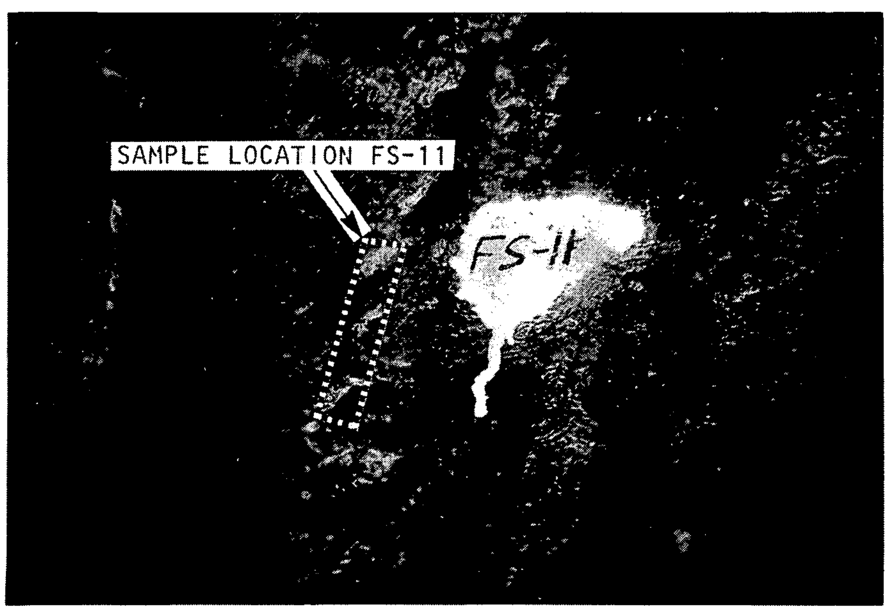
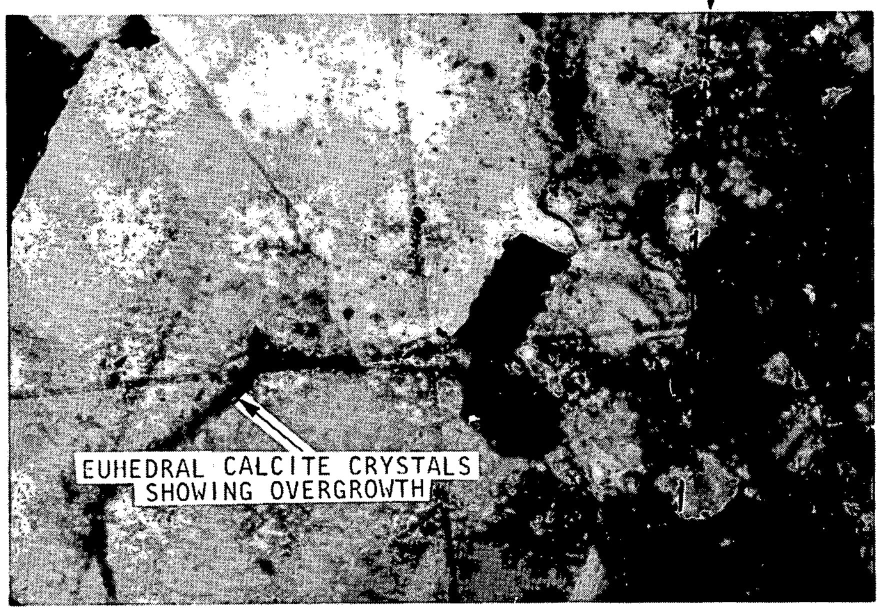


PHOTO B: CLOSE-UP OF SAMPLE LOCATION FS-11

DAMES & MOORE

FAULT N11°W,70°E



PHOTOMICROGRAPH OF SAMPLE FS-11

MAGNIFICATION:40X

DAMES & MOORE

PLATE E-24B

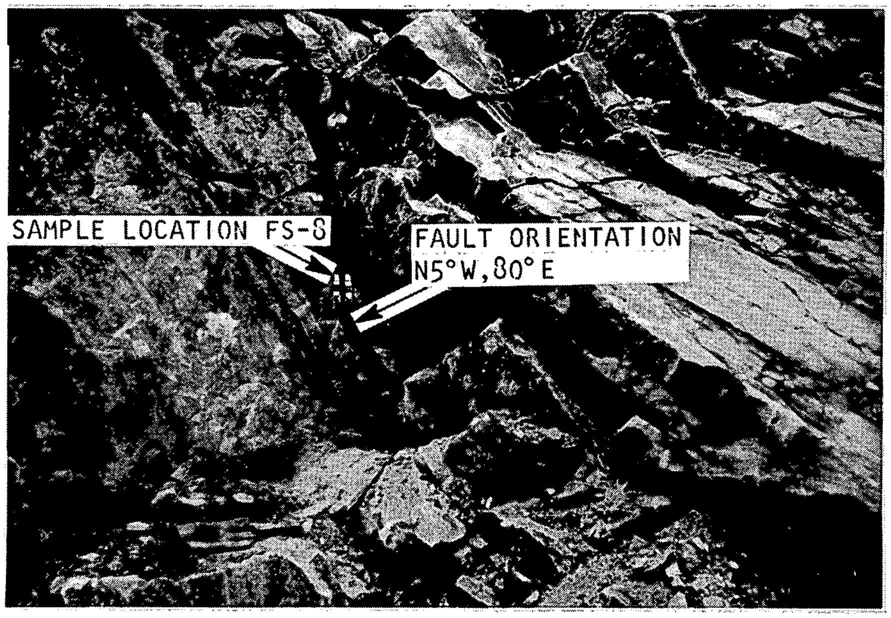


PHOTO A: OUTCROP NORTH OF REACTOR NO.2
SAMPLE LOCATION FS-8

LOCATION- INDIAN POINT GENERATING STATION, BUCHANAN, N.Y.

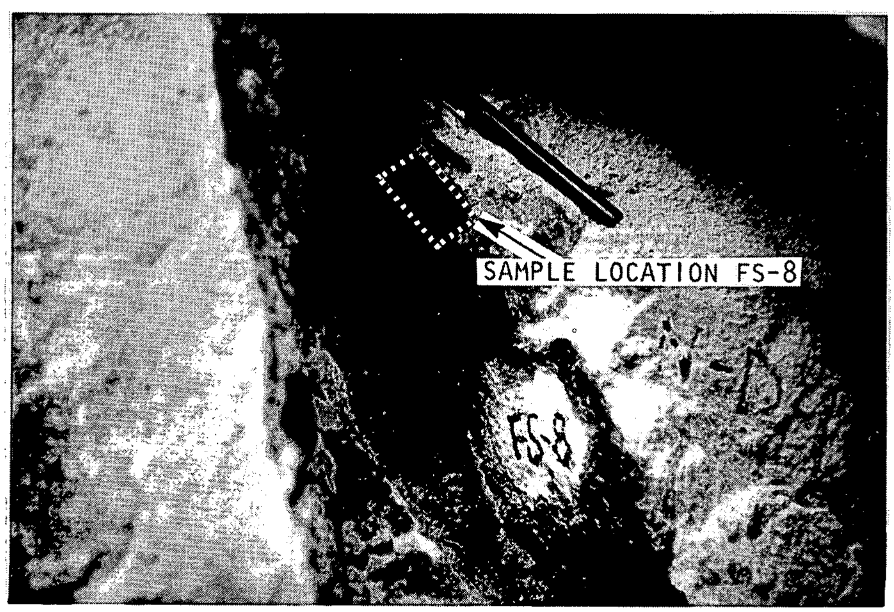
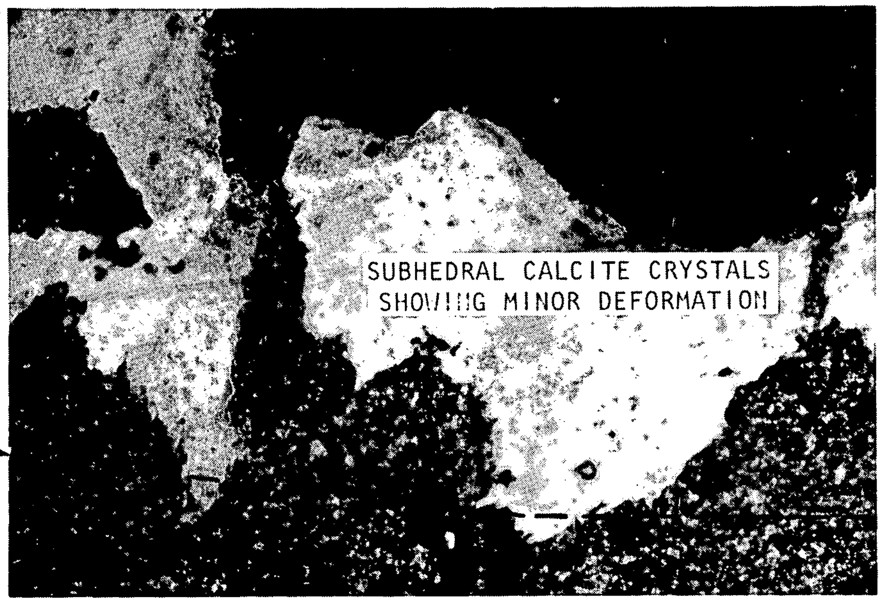


PHOTO B: CLOSE-UP OF SAMPLE LOCATION FS-8

DAMES & MOORE



PHOTOMICROGRAPH OF SAMPLE FS-8

MAGNIFICATION:40X

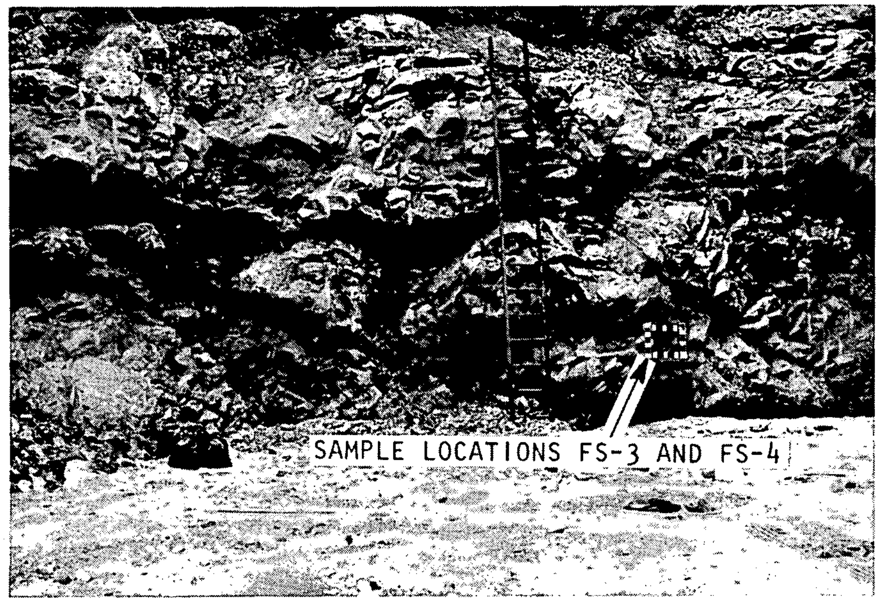


PHOTO A: OUTCROP NORTH OF REACTOR NO. 3
SAMPLE LOCATION FS-3 AND FS-4

LOCATION- INDIAN POINT GENERATING STATION, BUCHANAN, N.Y.

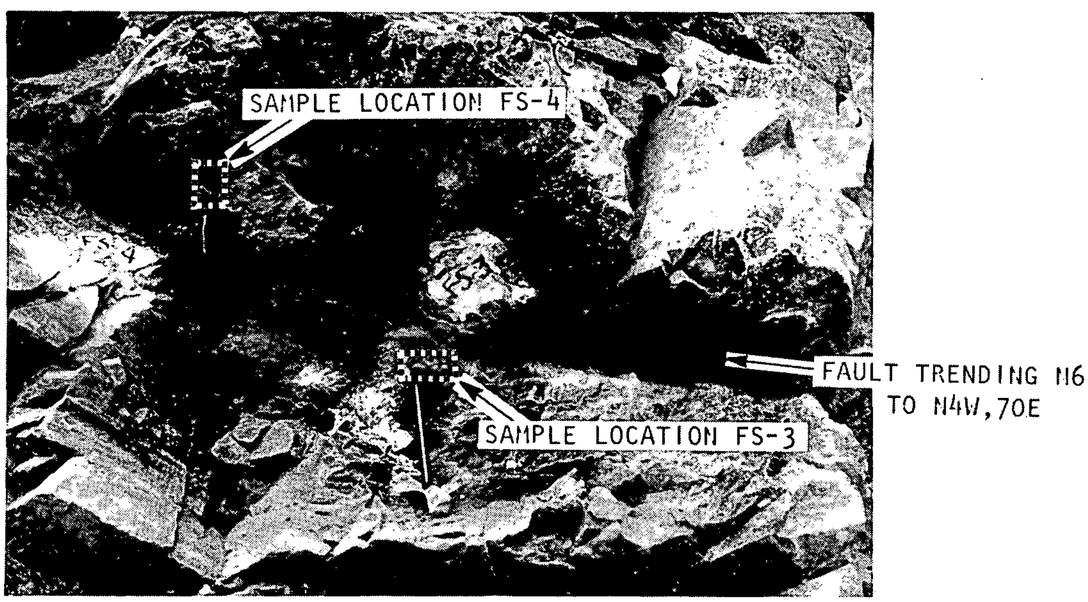


PHOTO B: SAMPLE LOCATION FS- 3 AND FS-4

DAMES & MOORE

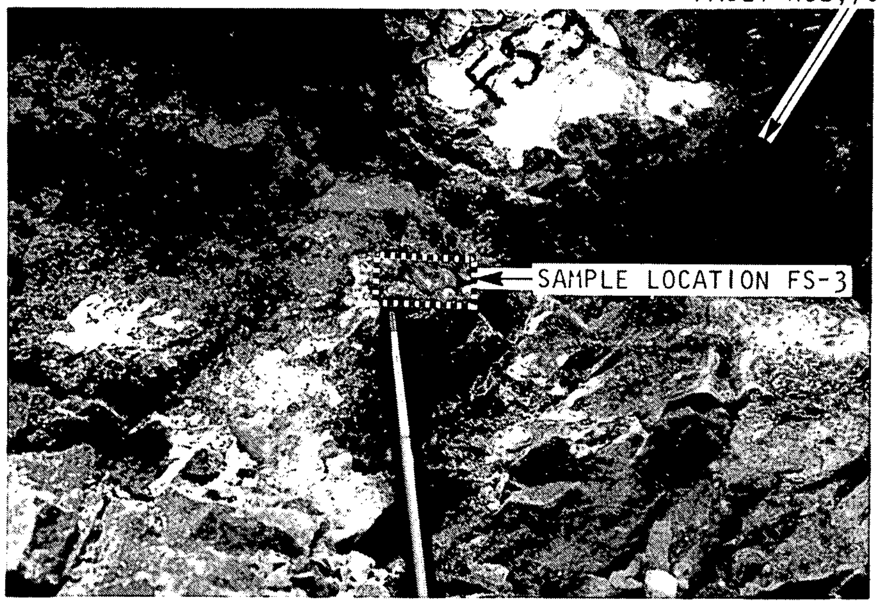


PHOTO A: CLOSE-UP OF SAMPLE LOCATION FS-3

LOCATION- INDIAN POINT GENERATING STATION, BUCHANAN, N.Y.

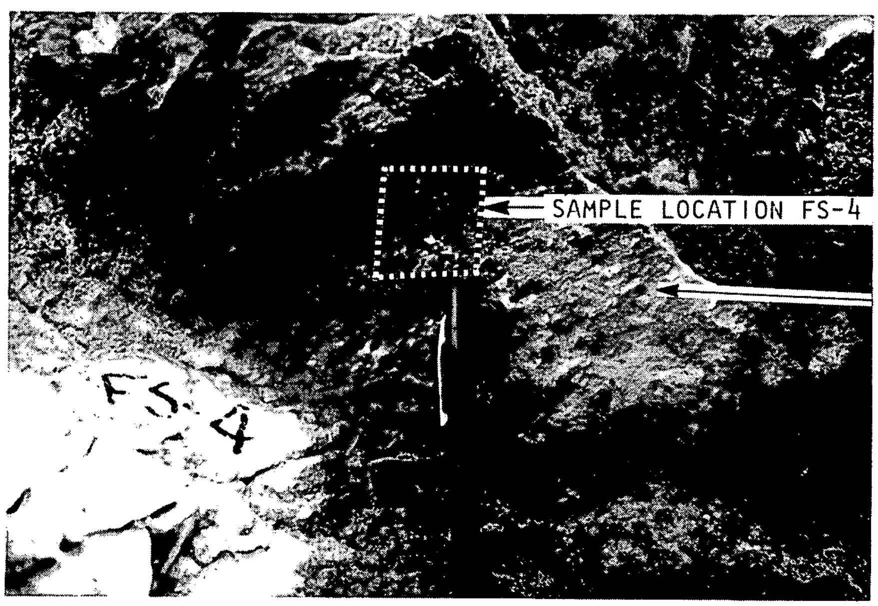
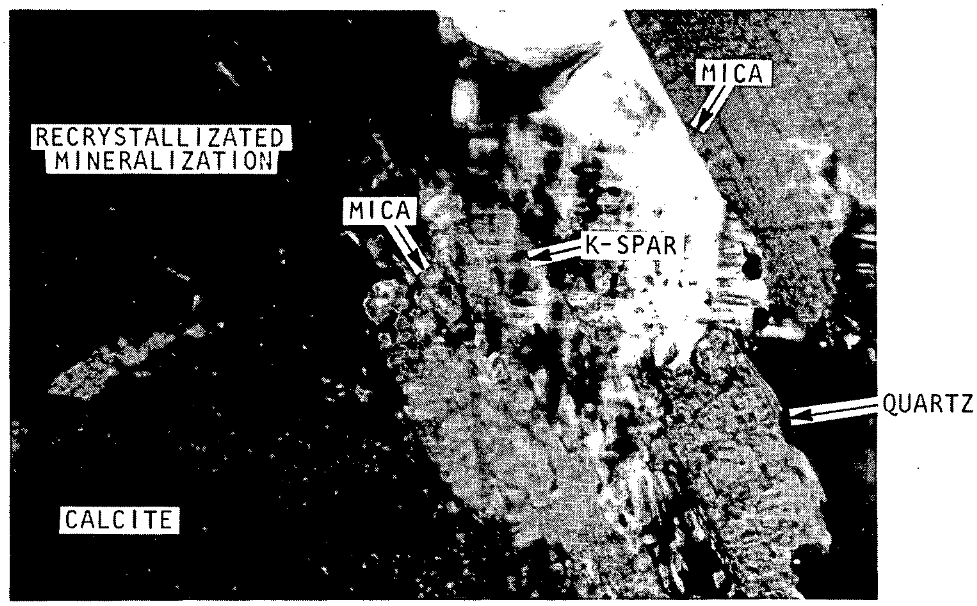


PHOTO B: CLOSE-UP OF SAMPLE LOCATION FS-4

DAMES & MOORE



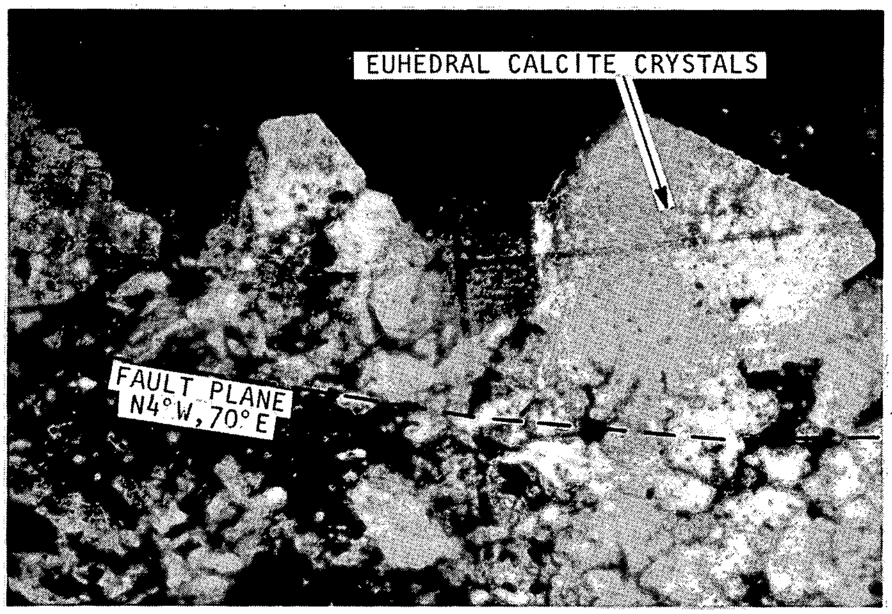
PHOTOMICROGRAPH OF SAMPLE FS-3

MAGNIFICATION:40X

SAMPLE TAKEN FROM VUG
APPROXIMATELY 2 INCHES AWAY FROM FAULT TRENDING N6E,70E

DAMES & MOORE

PLATE E-26C



PHOTOMICROGRAPH OF SAMPLE FS-4

MAGNIFICATION:40 X

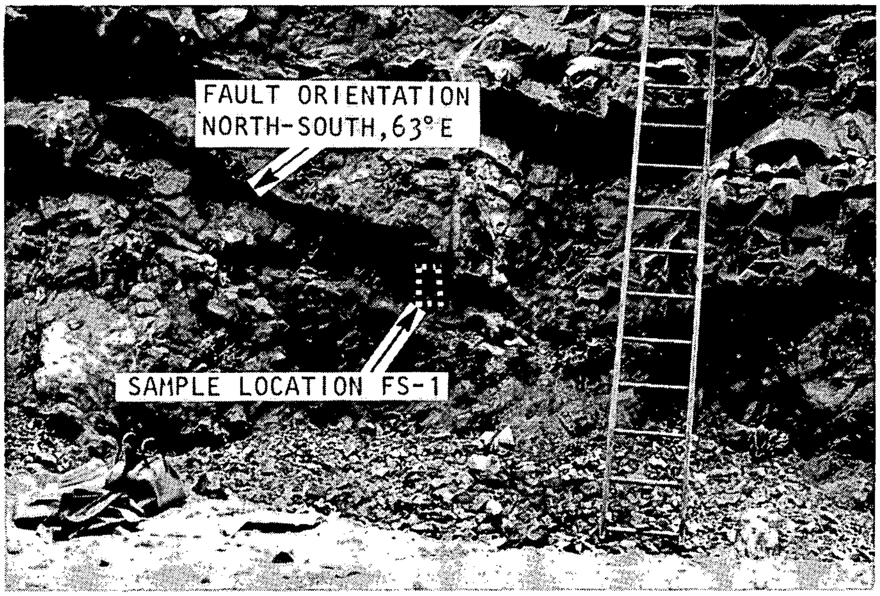


PHOTO A: OUTCROP NORTH OF REACTOR NO. 3
SAMPLE LOCATION FS-1

LOCATION- INDIAN POINT GENERATING STATION, BUCHANAN, N.Y.

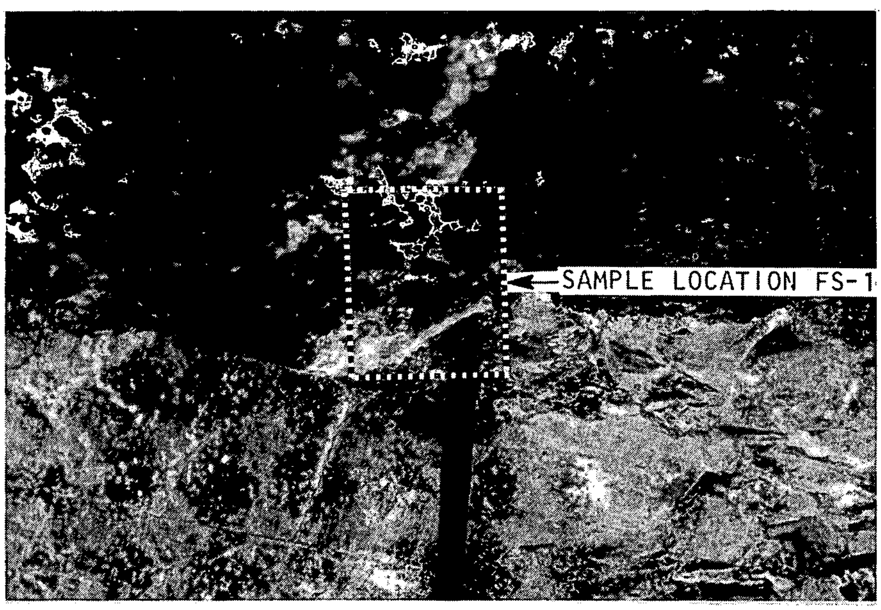
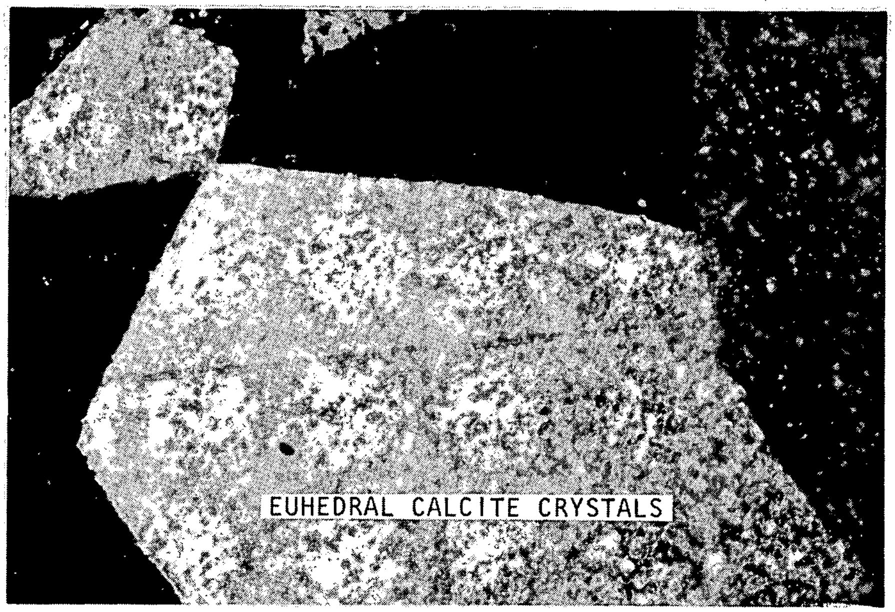


PHOTO B: CLOSE-UP OF SAMPLE LOCATION FS-1

DAMES & MOORE

PLATE E-27A



PHOTOMICROGRAPH OF SAMPLE FS-1

MAGNIFICATION:40X

SAMPLE TAKEN FROM FAULT PLANE TRENDING N-S,63E

DAMES & MOORE

PLATE E-27B

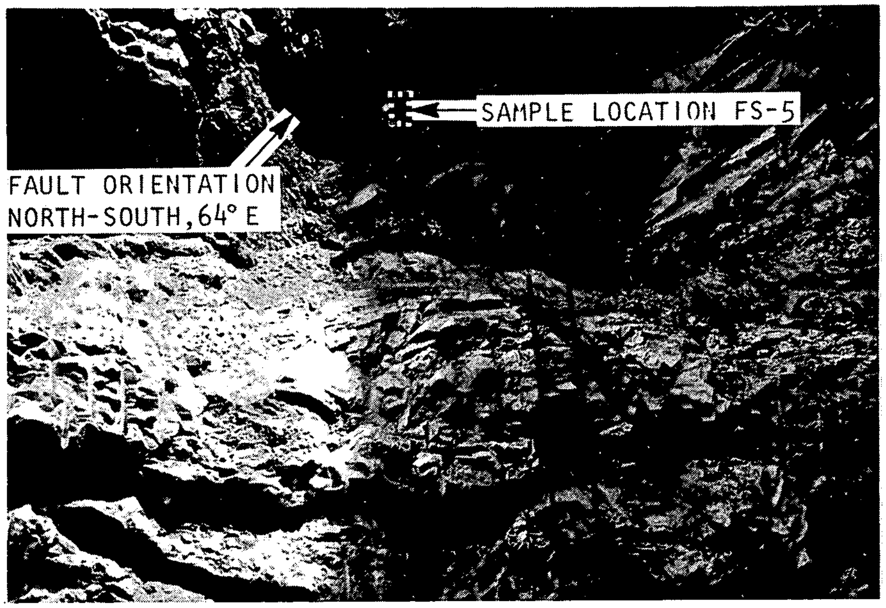


PHOTO A: OUTCROP NORTH OF REACTOR NO. 3
SAMPLE LOCATION FS-5

LOCATION- INDIAN POINT GENERATING STATION, BUCHANAN, N.Y.

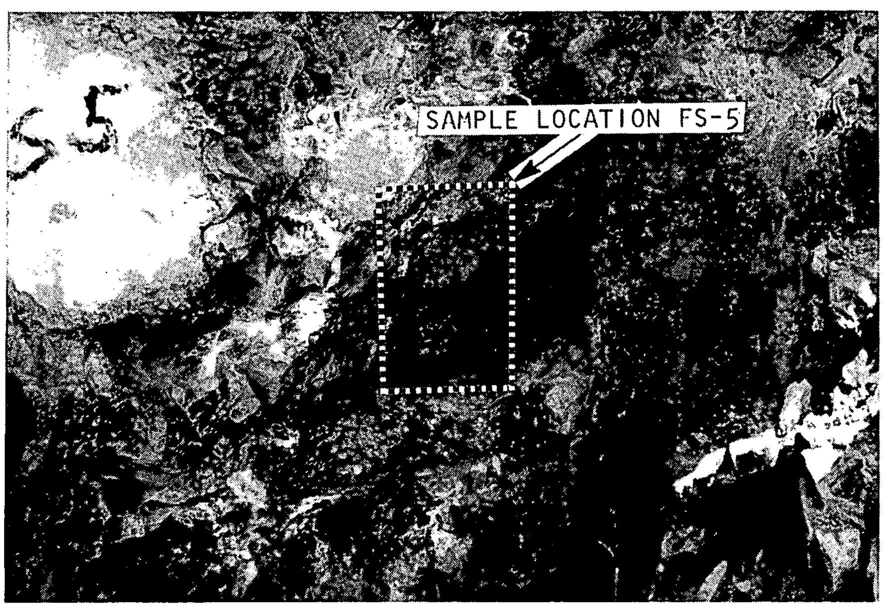
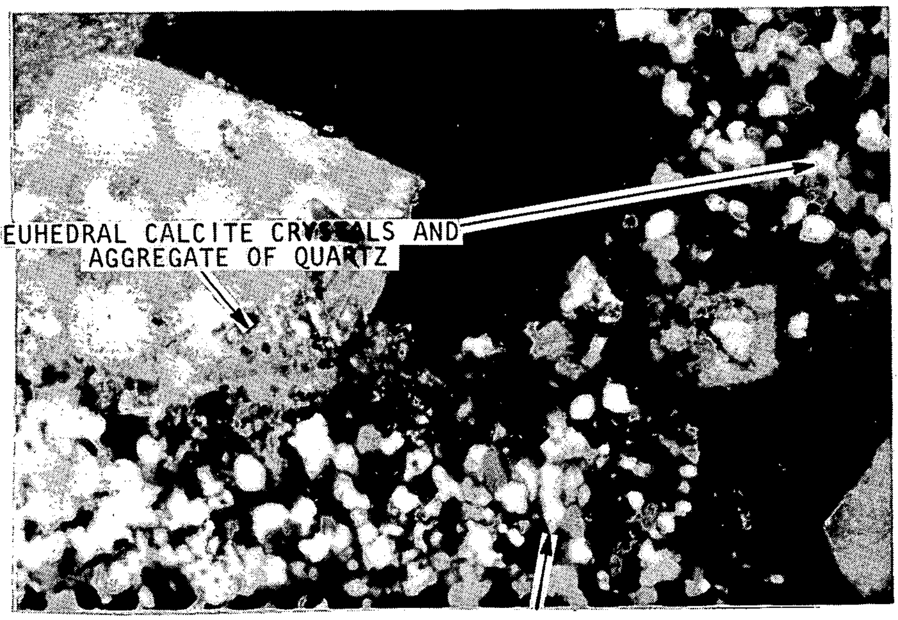


PHOTO B: CLOSE-UP OF SAMPLE LOCATION FS-5

DAMES & MOORE

PLATE E-28A



EUHEDRAL CALCITE CRYSTALS AND AGGREGATE OF QUARTZ

PHOTOMICROGRAPH OF SAMPLE FS-5

MAGNIFICATION:40 X

SAMPLE TAKEN FROM VUG NEARBY FAULT ORIENTED N-S,64E

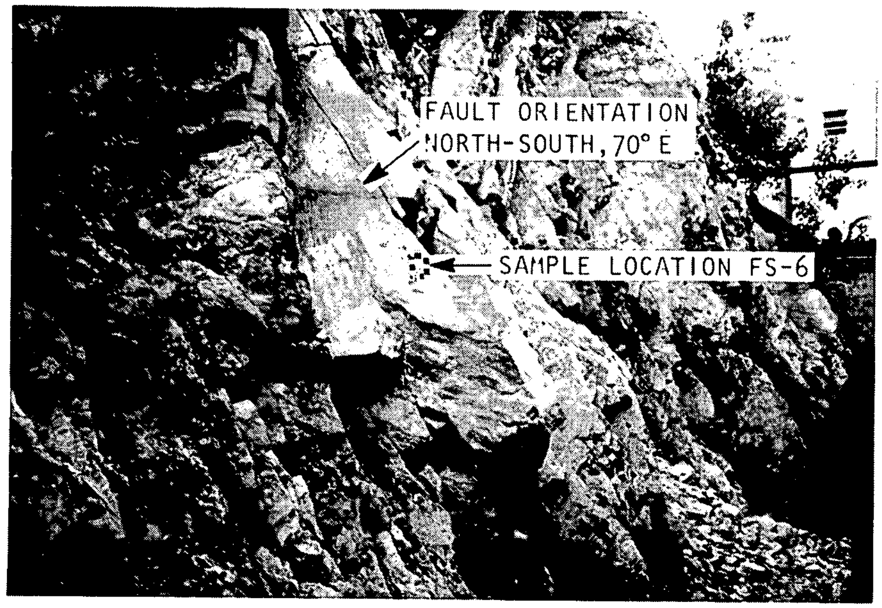


PHOTO A: OUTCROP ADJACENT TO TURBOGENERATOR BUILDING NO. 1 SAMPLE LOCATION FS-6

LOCATION- INDIAN POINT GENERATING STATION, BUCHANAN, N.Y.

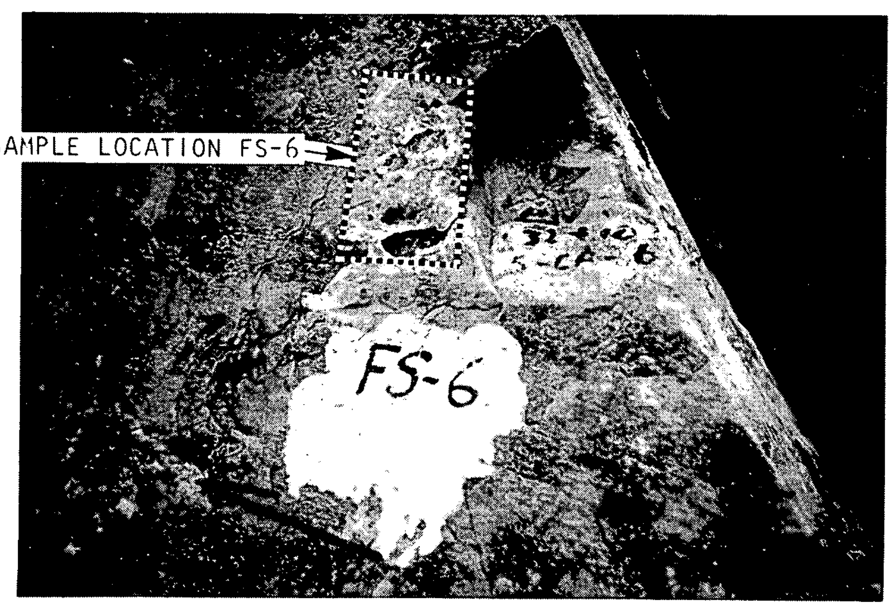
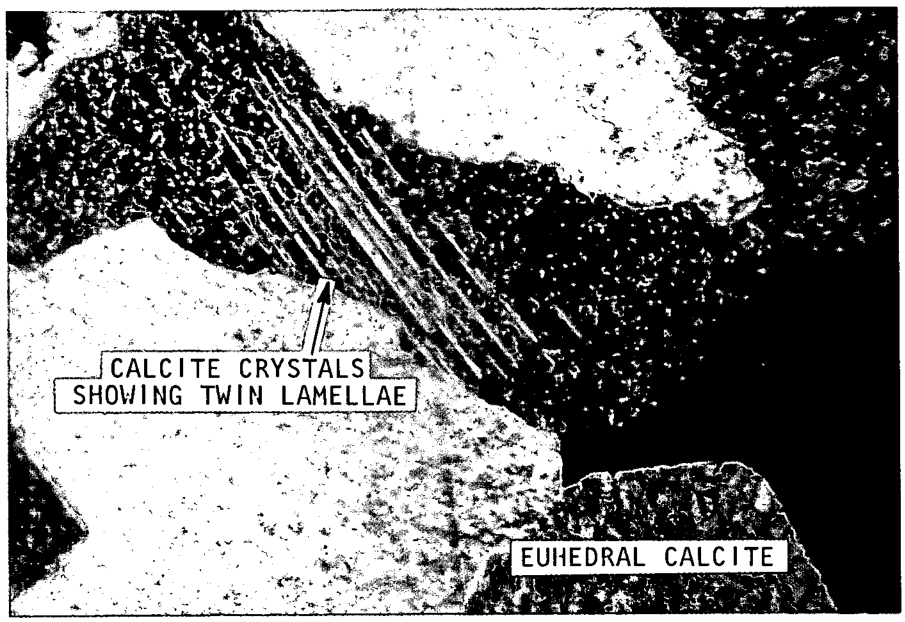


PHOTO B: CLOSE-UP OF SAMPLE LOCATION, FS-6



PHOTOMICROGRAPH OF SAMPLE FS-6

MAGNIFICATION:40X

SAMPLE TAKEN FROM VUG ON FAULT PLANE ORIENTED N-S,70E

DAMES & MOORE

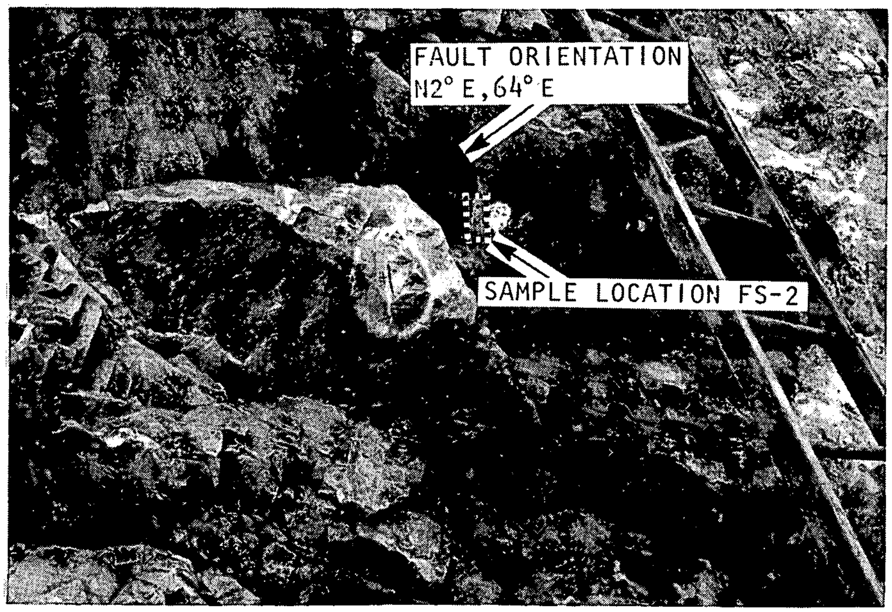


PHOTO A: OUTCROP NORTH OF REACTOR NO. 3
SAMPLE LOCATION FS-2

LOCATION- INDIAN POINT GENERATING STATION, BUCHANAN, N.Y.

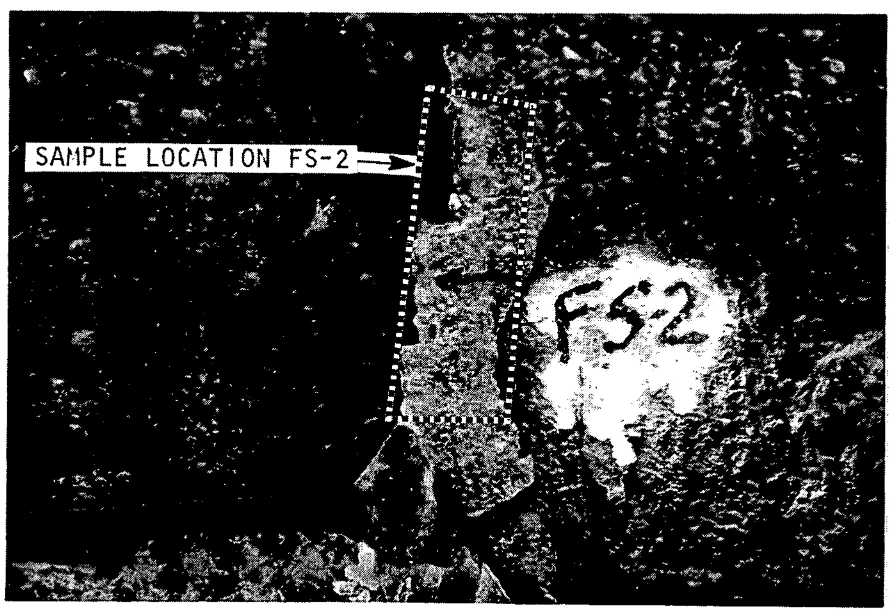
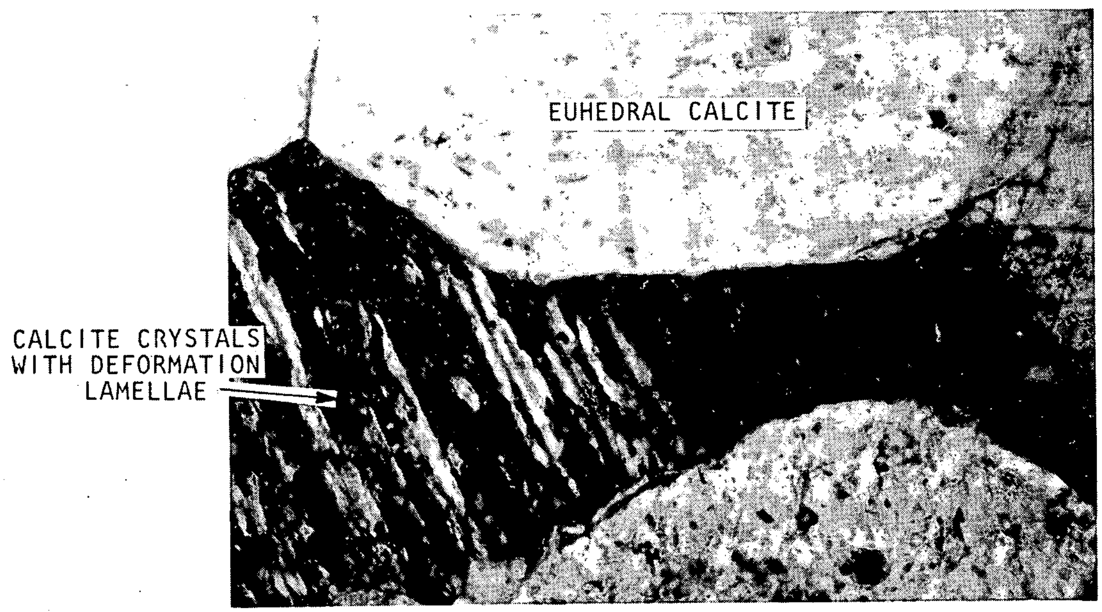


PHOTO B: CLOSE-UP OF SAMPLE LOCATION FS-2

DAMES & MOORE



PHOTOMICROGRAPH OF SAMPLE FS-2

MAGNIFICATION:40X

SAMPLE TAKEN FROM FAULT ORIENTED N2E,64E

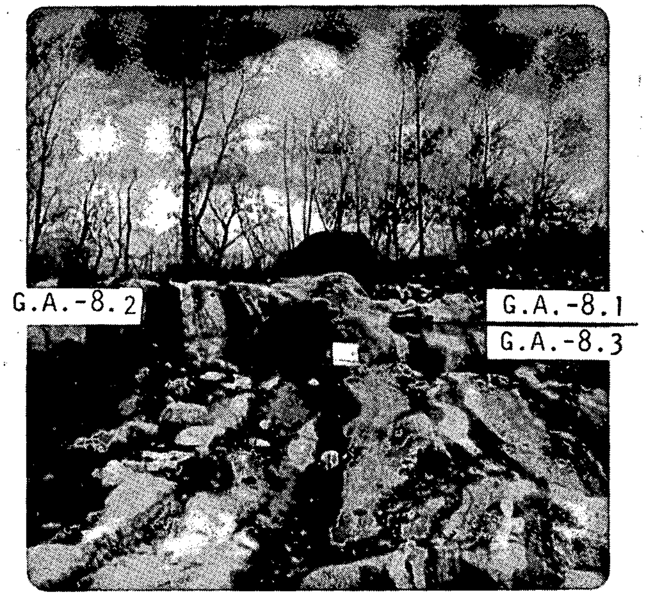


PHOTO A: OUTCROP VIEW OF SAMPLING STATION G.A.-8

LOCATION: PARKING LOT OF CHEVROLET DEALER IN CROTON-ON-HUDSON

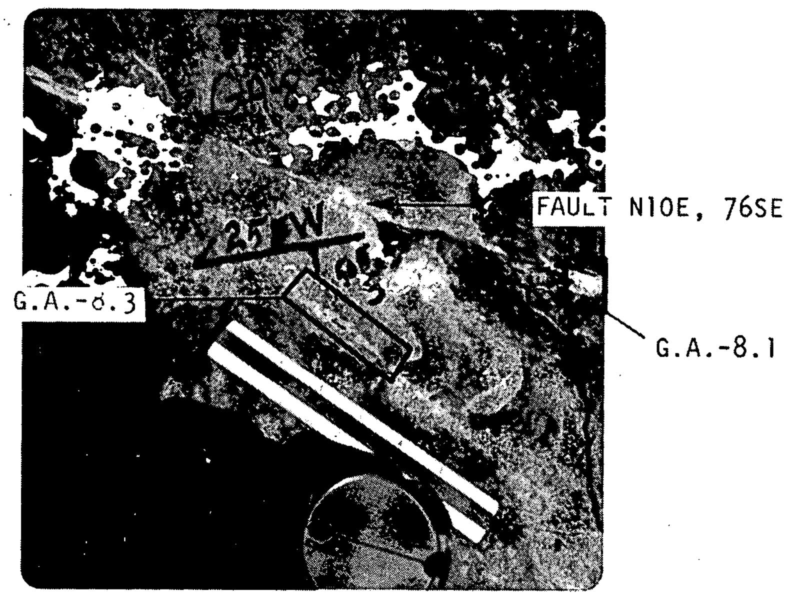
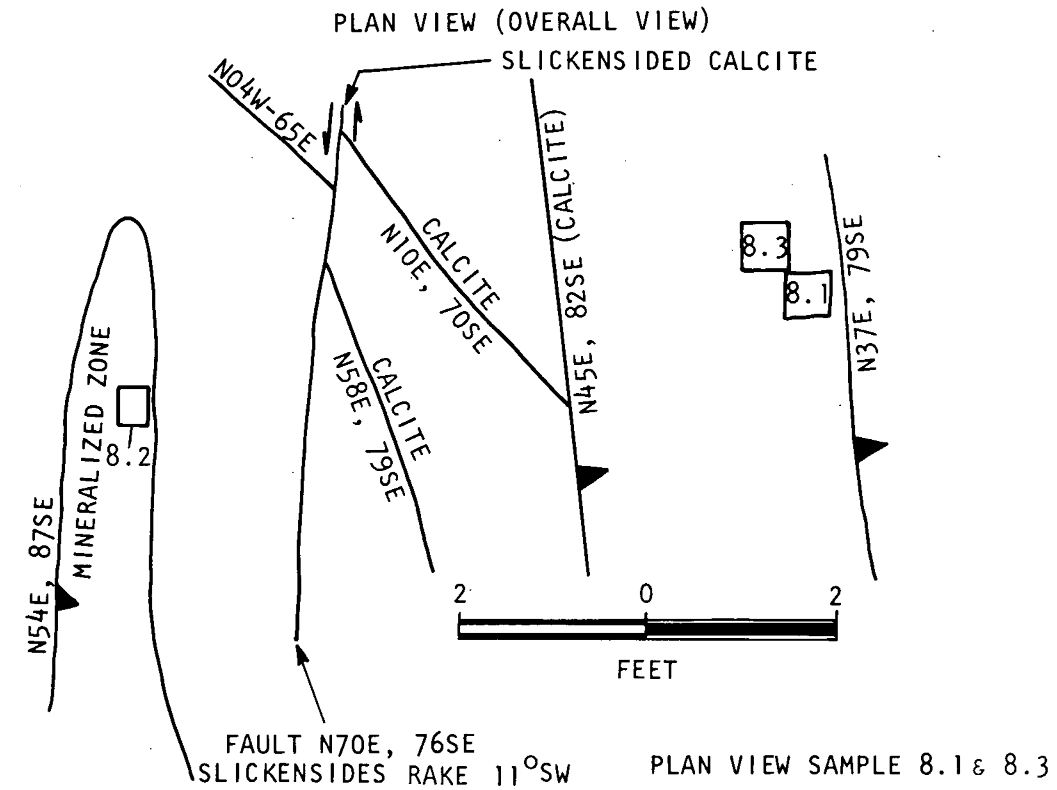
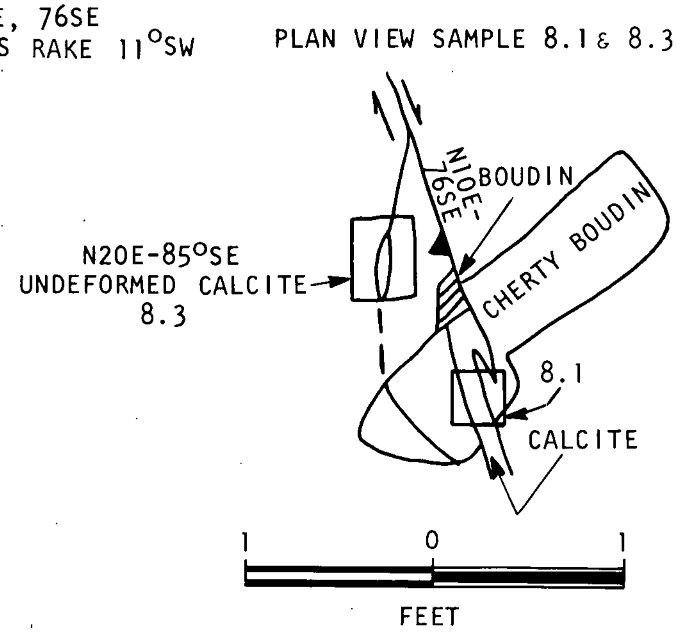


PHOTO B: CLOSE UP OF SAMPLES G.A.-8.1 AND G.A.-8.3





STATION G.A.-8
MINERALIZATION SAMPLING

LOCATION: CROTON-ON-HUDSON

NOTE: SAMPLES CALCITE, 8.2 + 8.3 PROBABLY UNDEFORMED CALCITE

DAMES & MOORE

PLATE E-31B

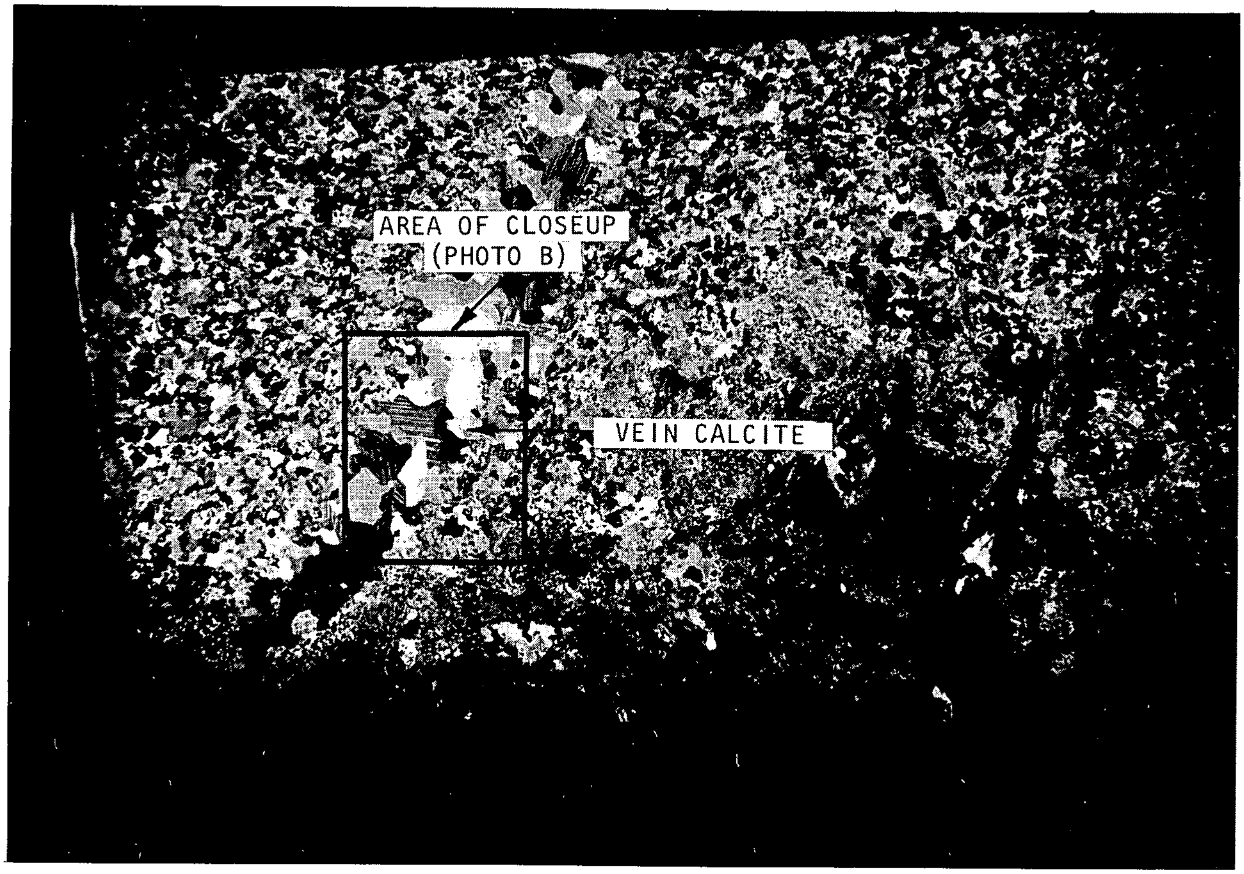


PHOTO A: PHOTOMICROGRAPH OF SAMPLE G.A.-8.1
MAGNIFICATION: 4X
X - NICOLS
SAMPLE TAKEN FROM FAULT TRENDING N10E,76S

PHOTO B: PHOTOMICROGRAPH OF SAMPLE G.A.-8.1 SHOWING EUHEDRAL, UNDEFORMED CALCITE EXHIBITING TWIN LAMELLAE.
MAGNIFICATION: 16X
X - NICOLS

DAMES & MOORE

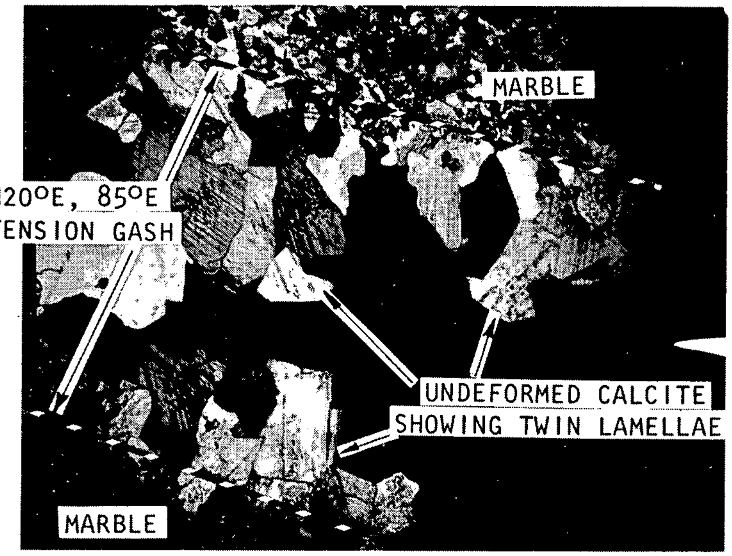


PHOTO A: PHOTOMICROGRAPH OF SAMPLE G.A.-8.3

MAGNIFICATION 8X

X - NICOLS

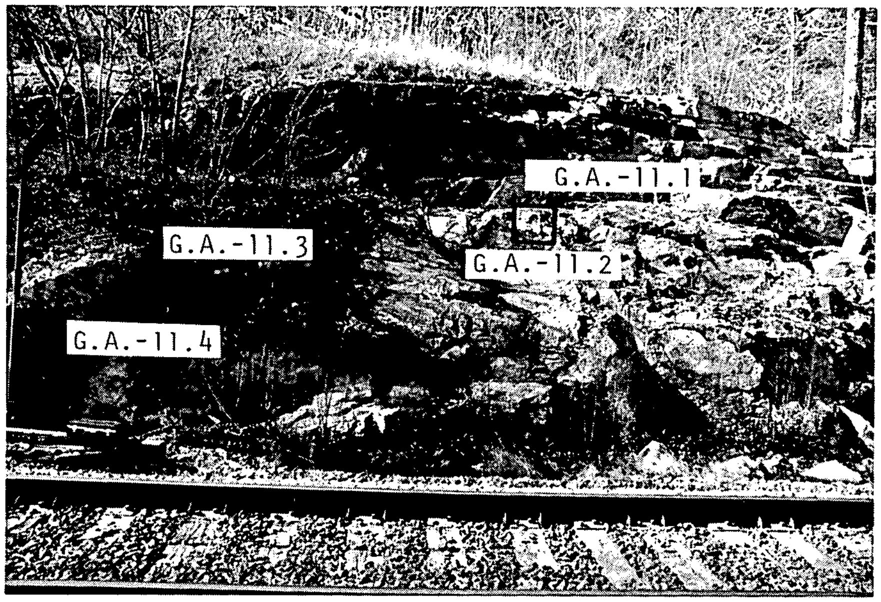


PHOTO A: OUTCROP VIEW OF SAMPLING STATION G.A.-11

LOCATION - RAILROAD CUT WEST OF LOVETT
GENERATING STATION, TOMPKINS
COVE, N.Y.

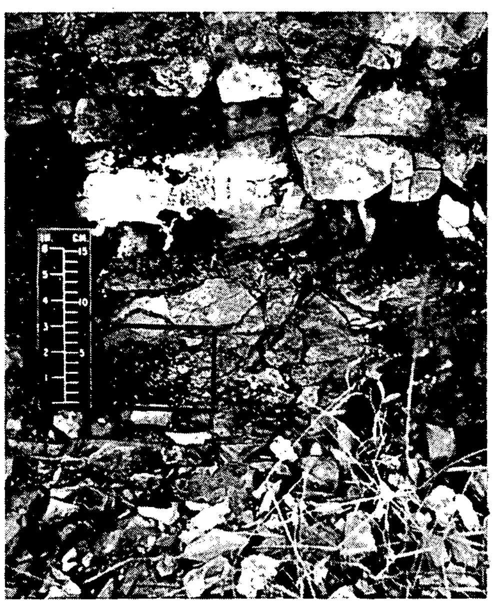


PHOTO B: CLOSEUP OF SAMPLE G.A.-11.3

PHOTO C: CLOSEUP OF SAMPLE G.A.-11.4

DAMES & MOORE

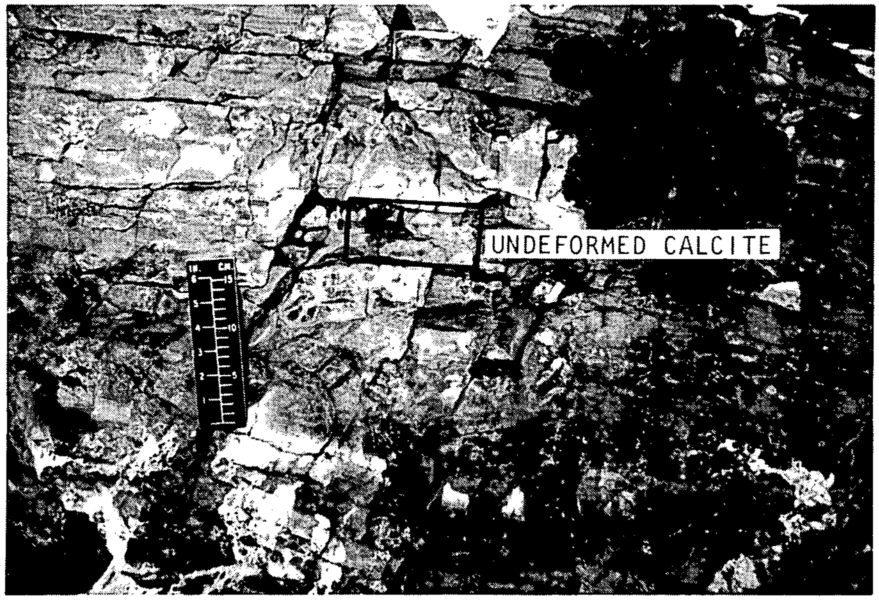


PHOTO A: CLOSEUP OF SAMPLE GA-11.1

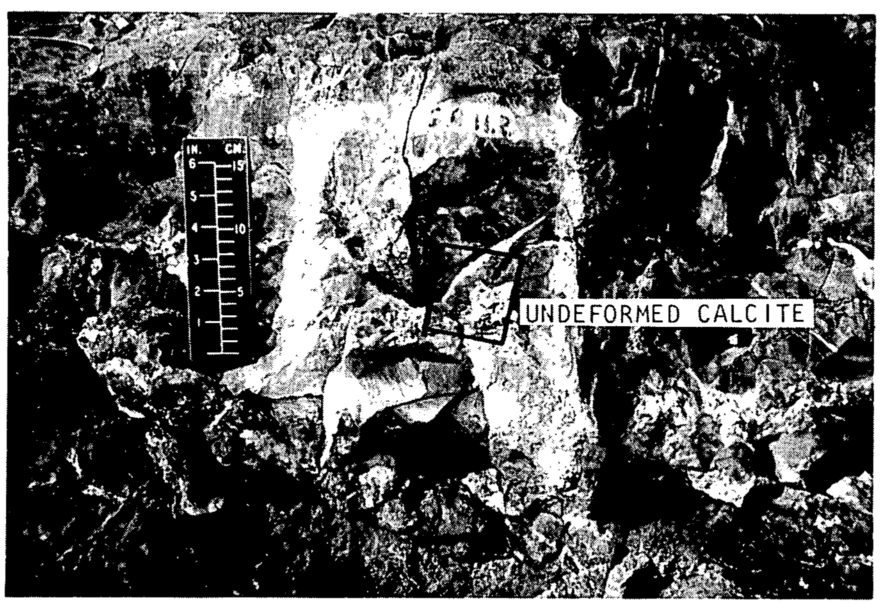
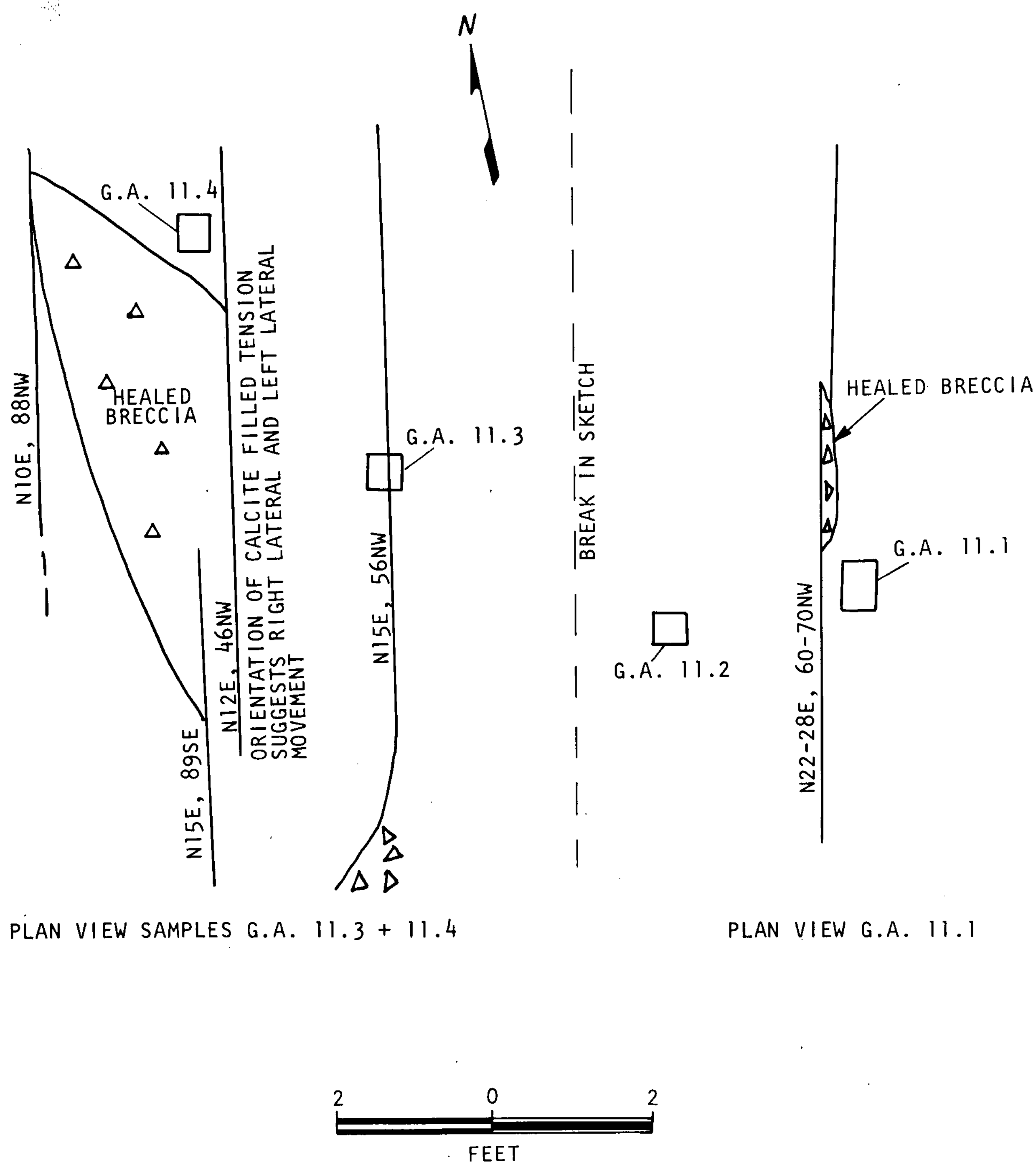


PHOTO B: CLOSEUP OF SAMPLE G.A.-11.2



STATION G.A.-11
MINERALIZATION SAMPLING

LOCATION: SOUTH END RAILROAD CUT
WEST OF LOVETT GENERATING STATION

DAMES & MOORE

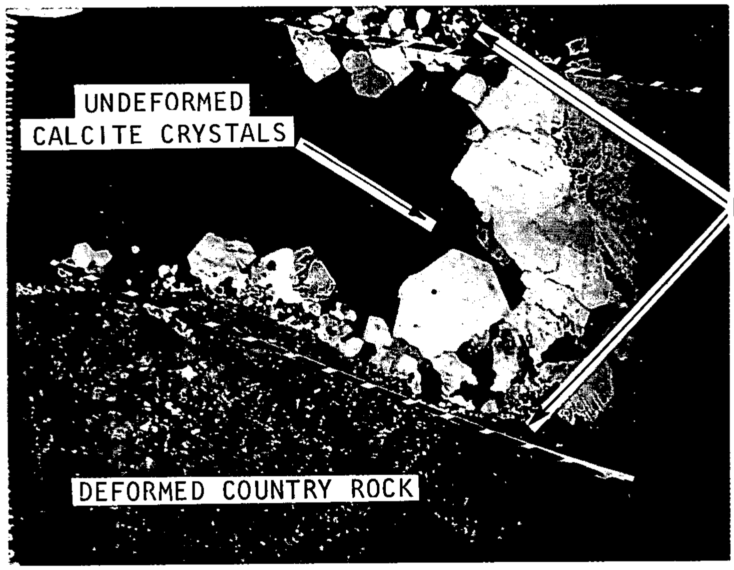


PHOTO A: PHOTOMICROGRAPH OF SAMPLE G.A.-11.1

EUHEDRAL CALCITE CRYSTALS

MAGNIFICATION 8X   X - NICOLS

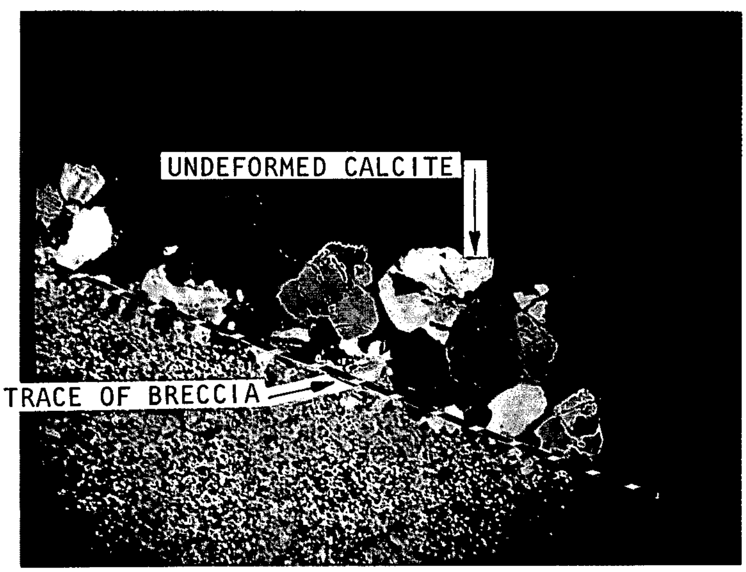


PHOTO B: PHOTOMICROGRAPH OF SAMPLE G.A.-11.2

EUHEDRAL CALCITE CRYSTALS

MAGNIFICATION 8X   X - NICOLS

BOTH SAMPLES TAKEN NEAR HEALED BRECCIA TRENDING N22E,60W

DAMES & MOORE

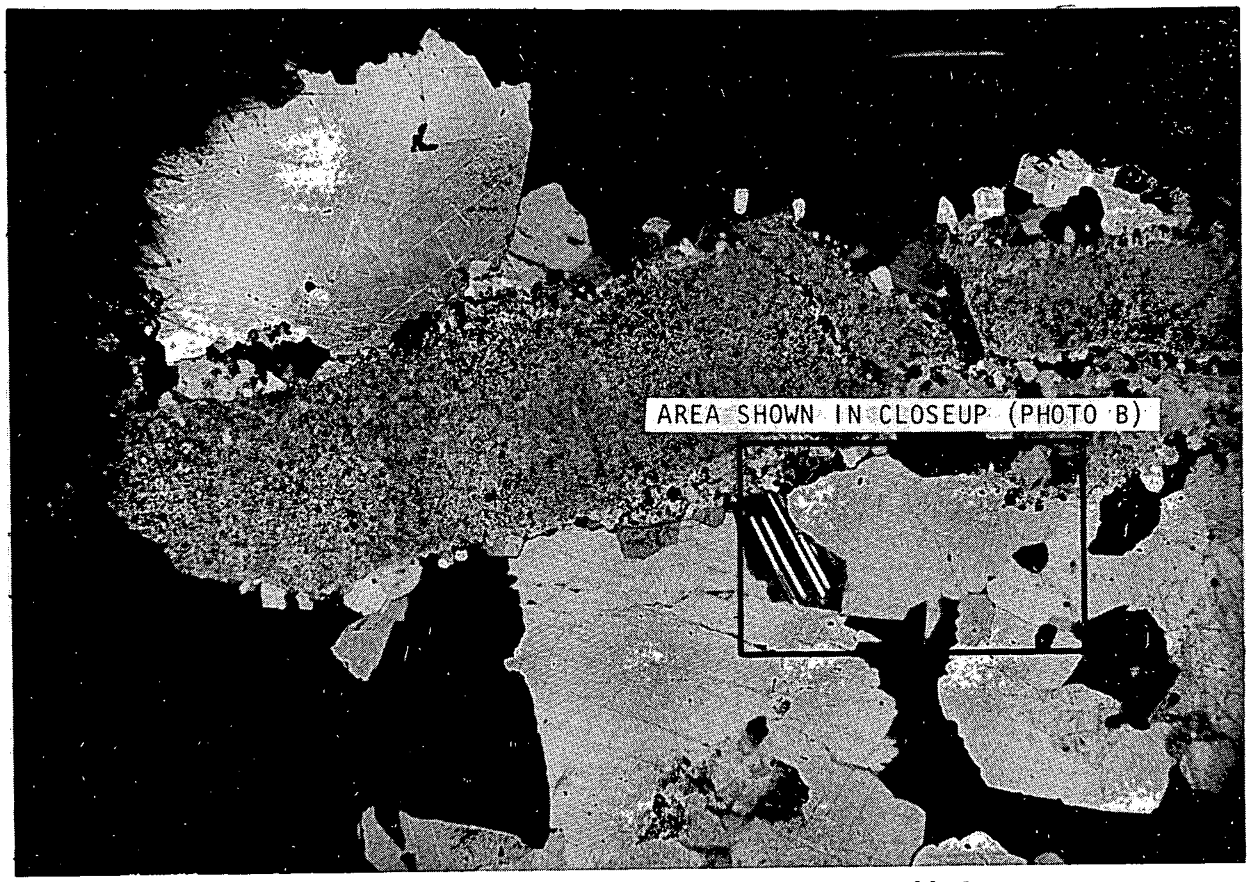


PHOTO A: PHOTOMICROGRAPH OF SAMPLE G.A.-11.3
MAGNIFICATION: 4.2X
X - NICOLS

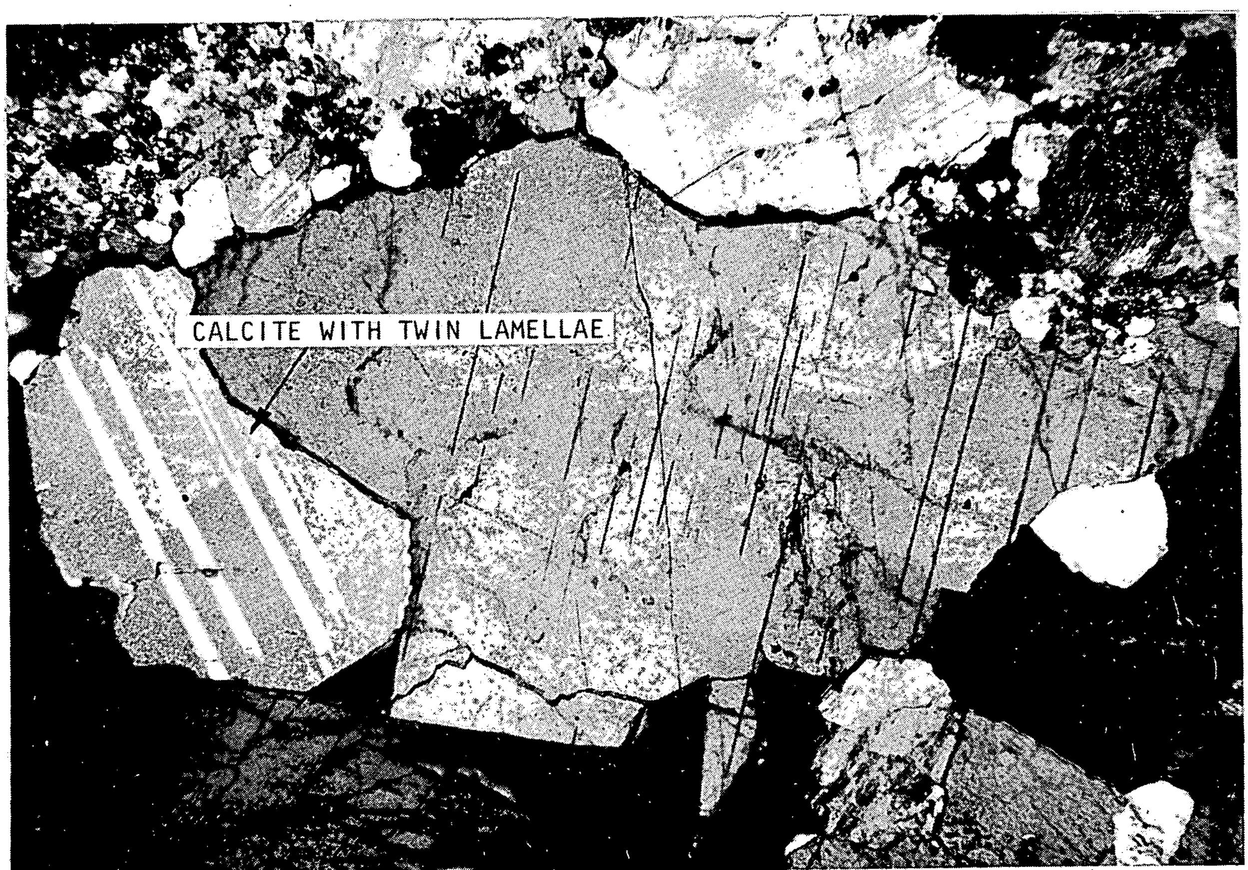


PHOTO B: PHOTOMICROGRAPH OF SAMPLE G.A.-11.3 SHOWING UNDEFORMED VEIN CALCITE
MAGNIFICATION: 16X
X - NICOLS
SAMPLE TAKEN FROM INHEALED BRECCIA ORIENTED N15E,56NW

DAMES & MOORE

PHOTO A: PHOTOMICROGRAPH OF SAMPLE G.A.-11.4A

MAGNIFICATION 8X

X - NICOLS

SAMPLE TAKEN FROM WITHIN NEARLY VERTICAL HEALED BRECCIA ZONE TRENDING N10-15E

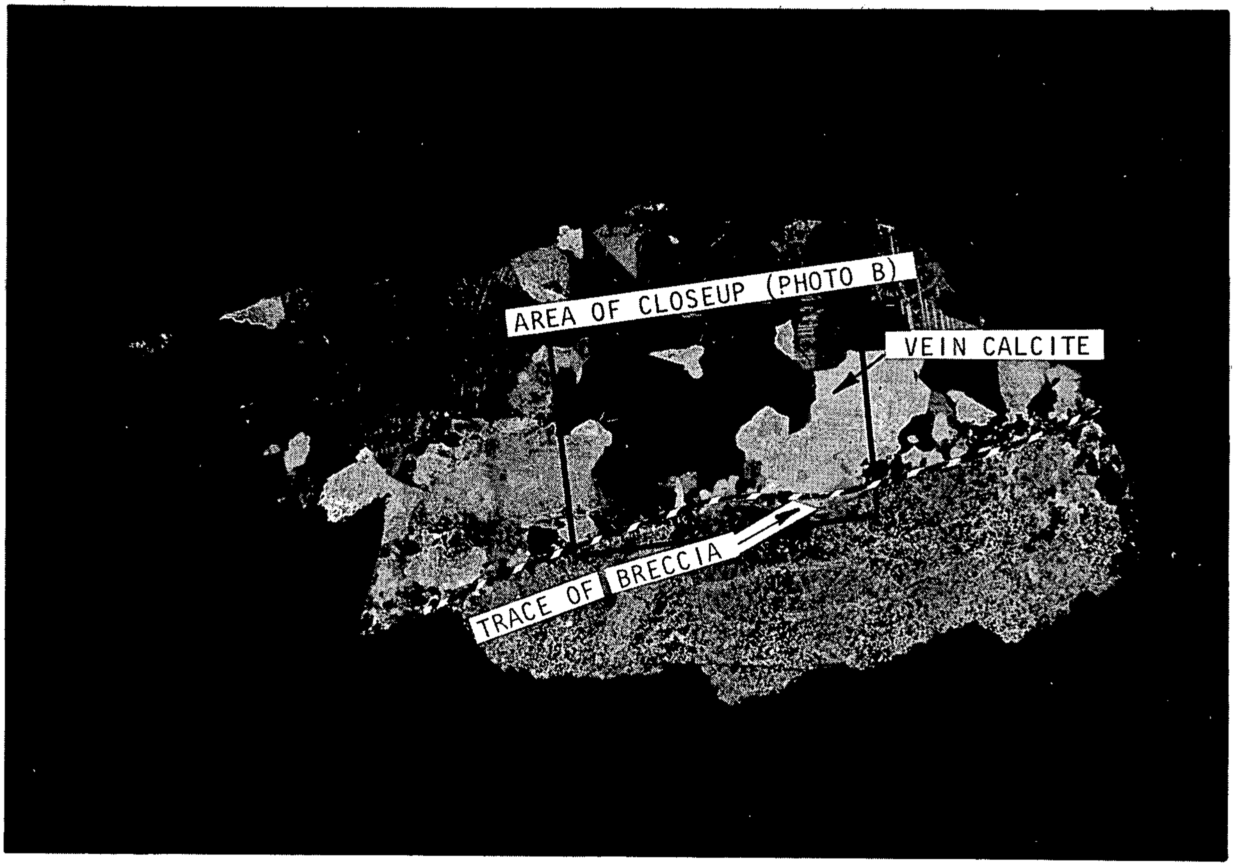


PHOTO A: PHOTOMICROGRAPHY OF SAMPLE G.A.-11.4B
MAGNIFICATION: 4.5X
X - NICOLS

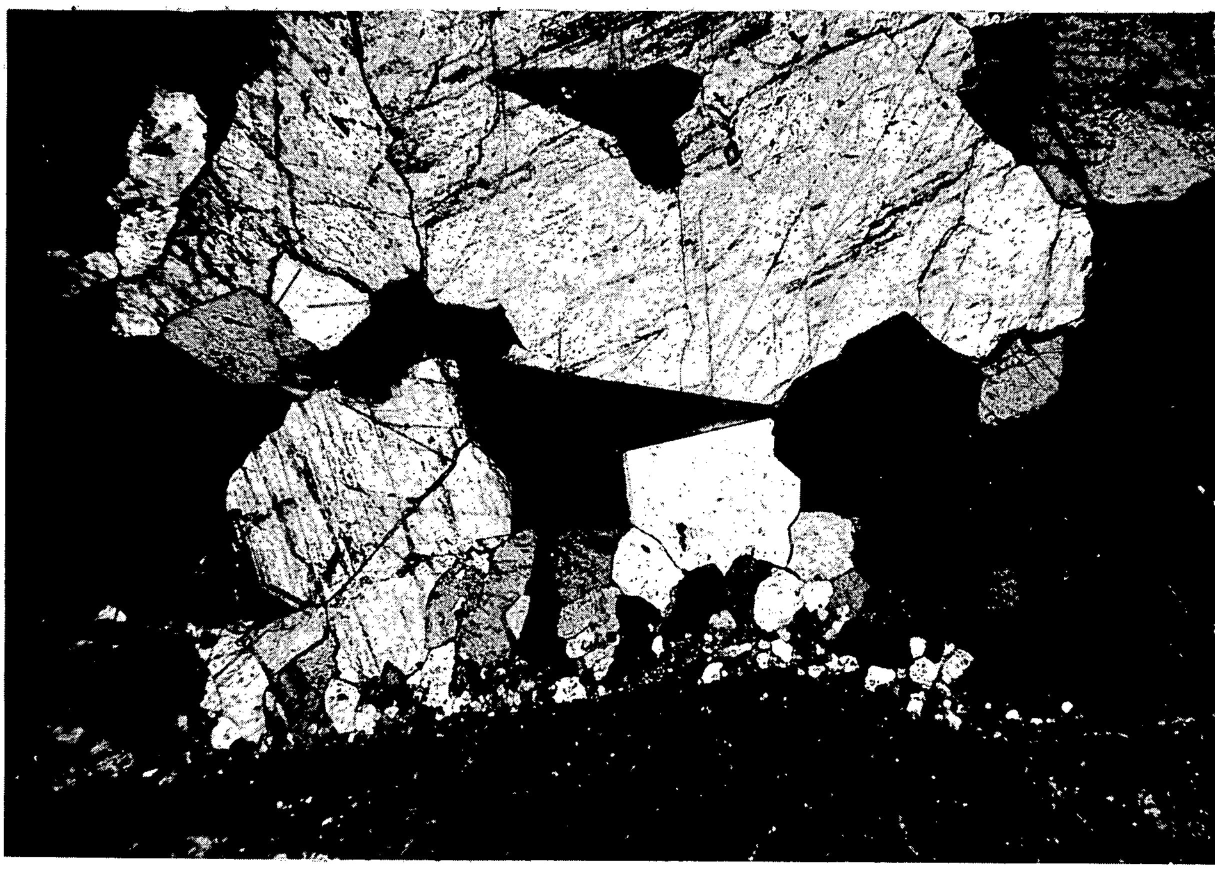


PHOTO B: CLOSEUP OF AREA OUTLINED IN PHOTO A: SHOWING UNDEFORMED VEIN CALCITE. NOTE TWIN LAMELLAE.
MAGNIFICATION: 16X
X - NICOLS

DAMES & MOORE

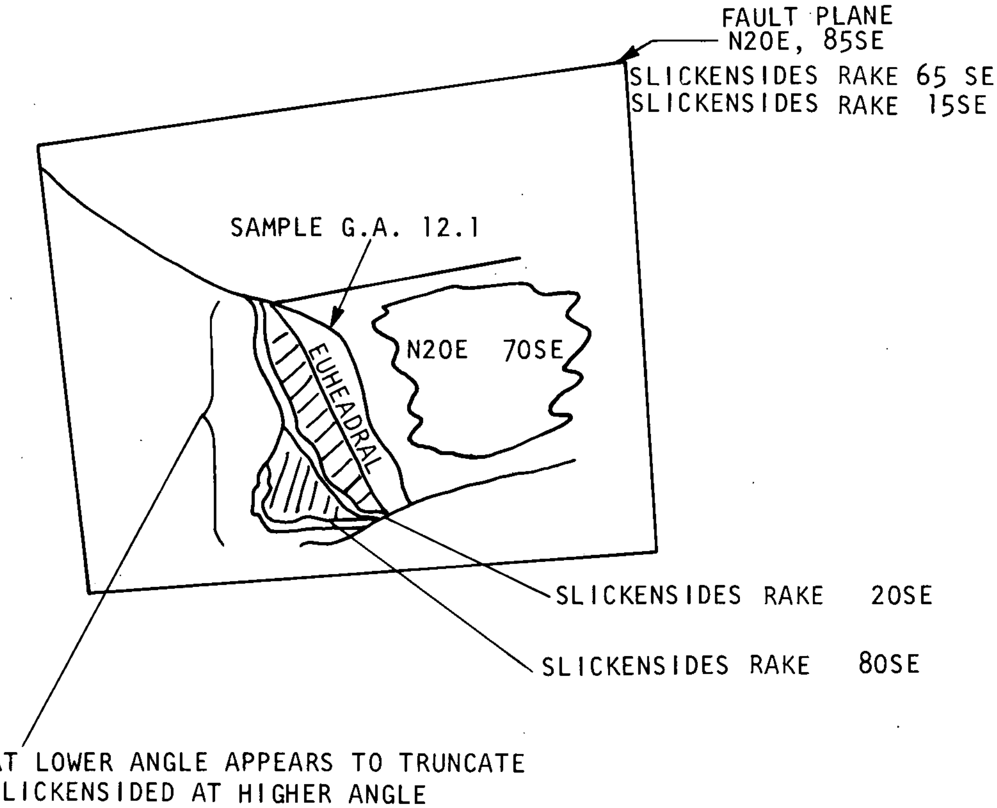
SAMPLE TAKEN FROM WITHIN NEARLY VERTICAL HEALED BRECCIA ZONE TRENDING N10-15E

PHOTO A: OUTCROP VIEW OF SAMPLING STATION G.A.-12

LOCATION - RAILROAD CUT WEST OF LOVETT GENERATING STATION, TOMKINS COVE, N.Y.

PHOTO B: CLOSEUP OF SAMPLE G.A.-12.1

DAMES & MOORE



STATION G.A.-12
MINERALIZATION SAMPLING

LOCATION: LOVETT RAILROAD CUT; 50' NORTH OF G.A. 11

NOTE: SAMPLE COMPOSED OF EUHEDRAL CALCITE CRYSTALS
ON TOP OF 2 GENERATIONS OF SLICKENSIDED CALCITE

DAMES & MOORE

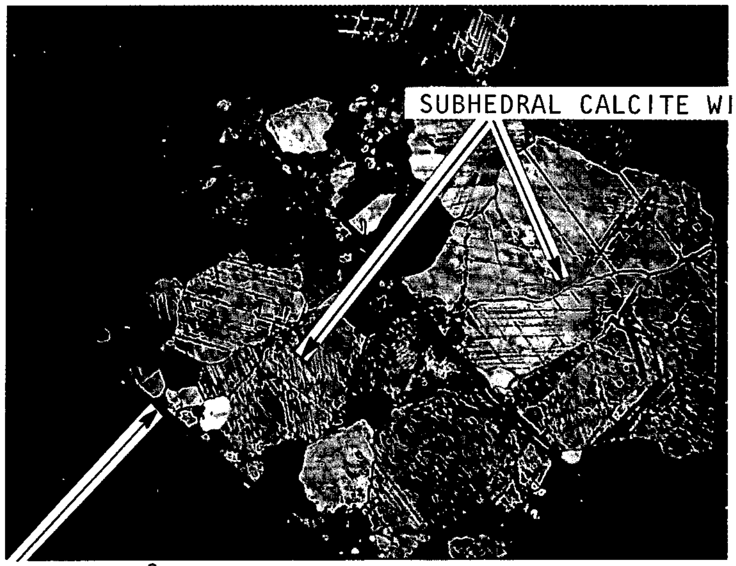


PHOTO A: PHOTOMICROGRAPH OF SAMPLE G.A.-12.1

NOTE DEFORMATION LAMELLAE IN CALCITE

MAGNIFICATION 8X

X - NICOLS

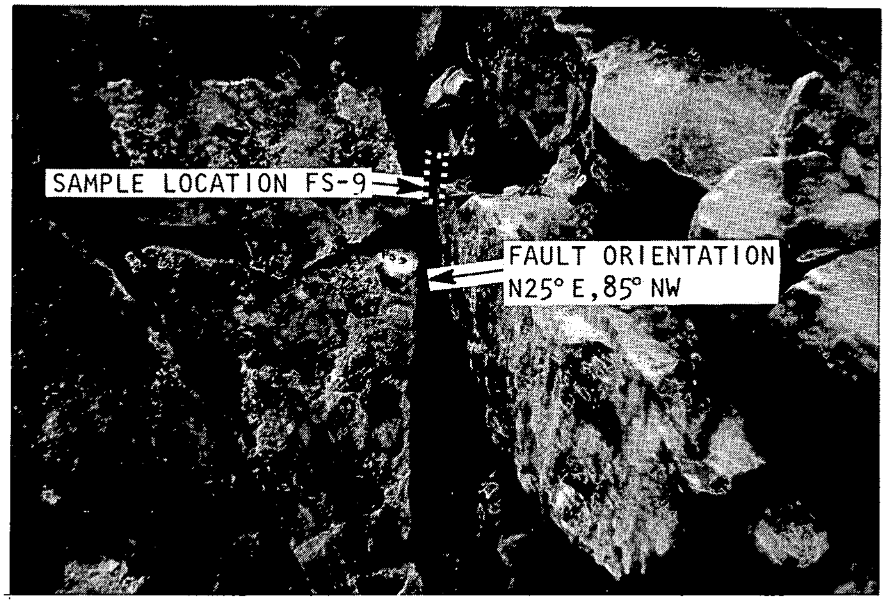


PHOTO A: OUTCROP NORTH OF REACTOR NO. 2
SAMPLE LOCATION FS-9

LOCATION- INDIAN POINT GENERATING STATION, BUCHANAN, N.Y.

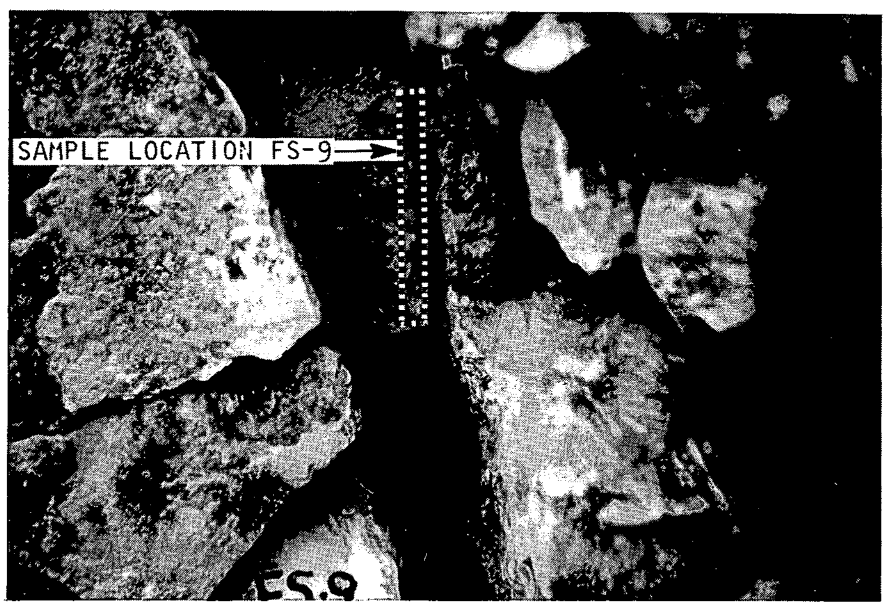


PHOTO B: CLOSE-UP OF SAMPLE LOCATION FS-9

PHOTO A: OUTCROP ADJACENT TO TURBOGENERATOR BUILDING NO. 1 SAMPLE LOCATION FS-12

LOCATION- INDIAN POINT GENERATING STATION, BUCHANAN, N.Y.

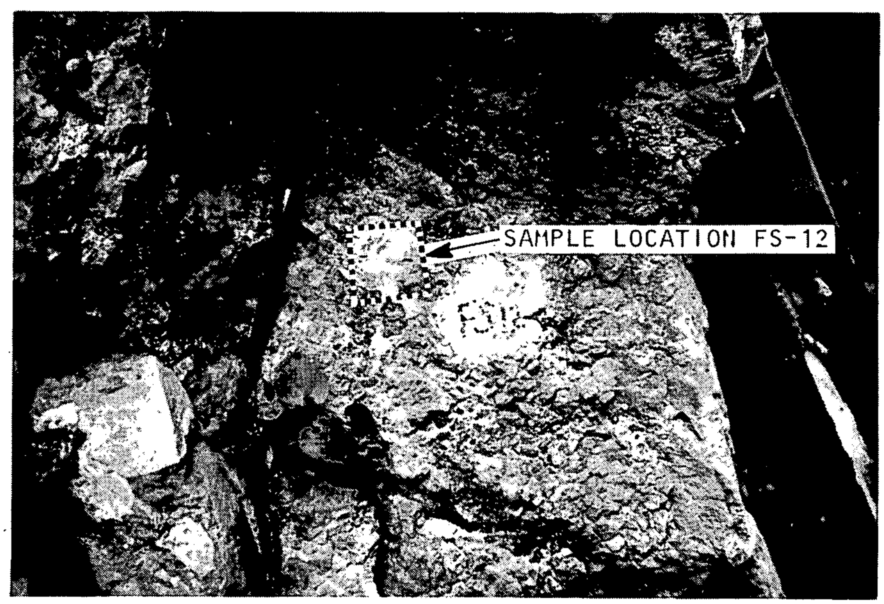


PHOTO B: CLOSE-UP OF SAMPLE LOCATION FS-12

DAMES & MOORE

PLATE E-35

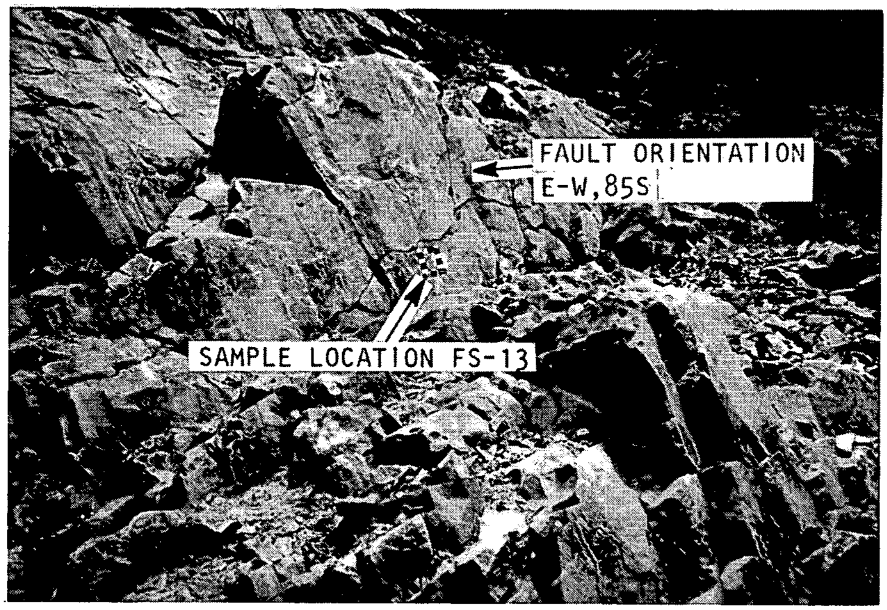


PHOTO A: OUTCROP NORTH OF REACTOR NO. 2
SAMPLE LOCATION FS-13

LOCATION- INDIAN POINT GENERATING STATION, BUCHANAN, N.Y.

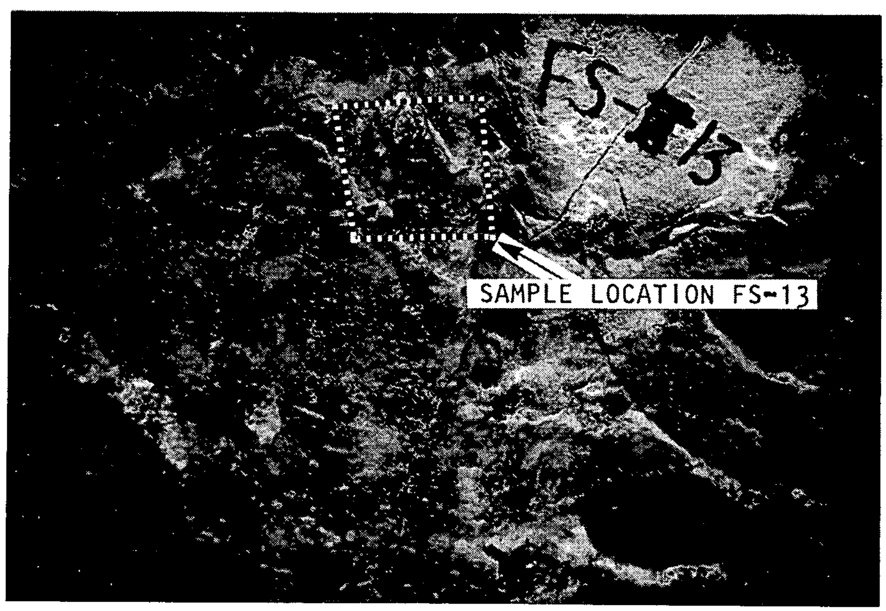
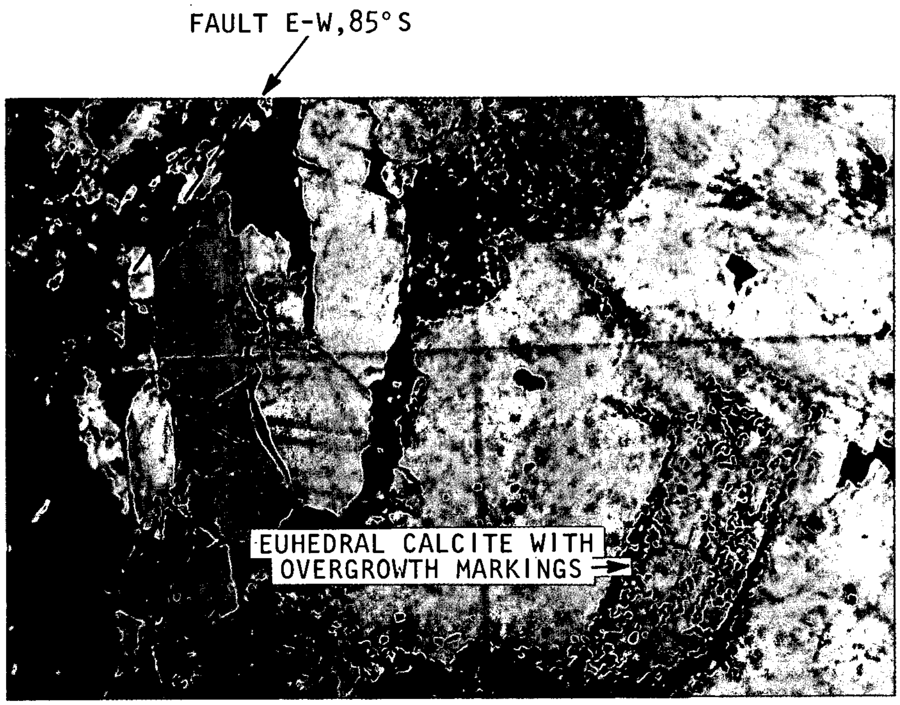


PHOTO B: CLOSE-UP OF SAMPLE LOCATION FS-13

DAMES & MOORE



PHOTOMICROGRAPH OF SAMPLE FS-13

MAGNIFICATION:40X

DAMES & MOORE

PLATE E-36B

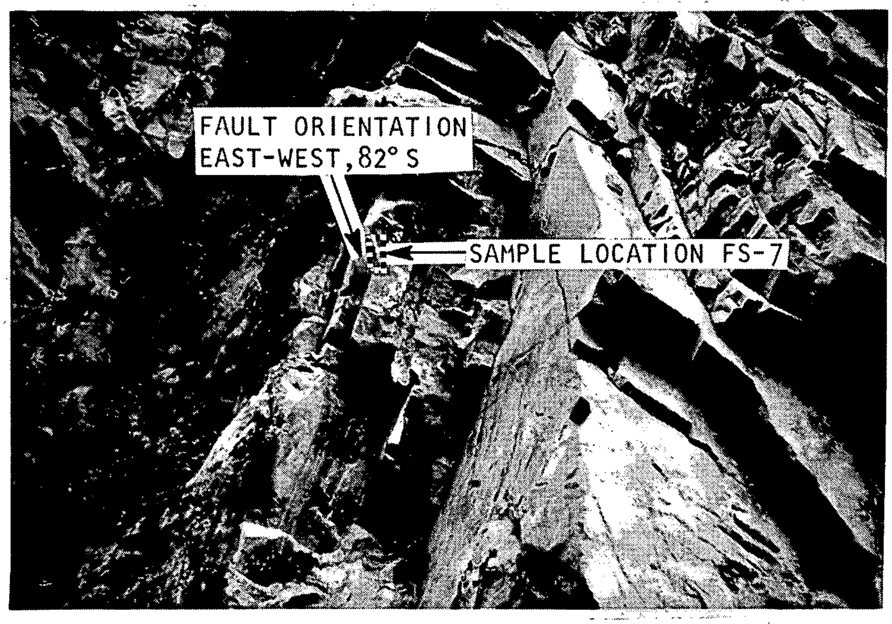


PHOTO A: OUTCROP ADJACENT TO TURBOGENERATOR BUILDING NO. 1 SAMPLE LOCATION FS-7

LOCATION- INDIAN POINT GENERATING STATION, BUCHANAN, N.Y.

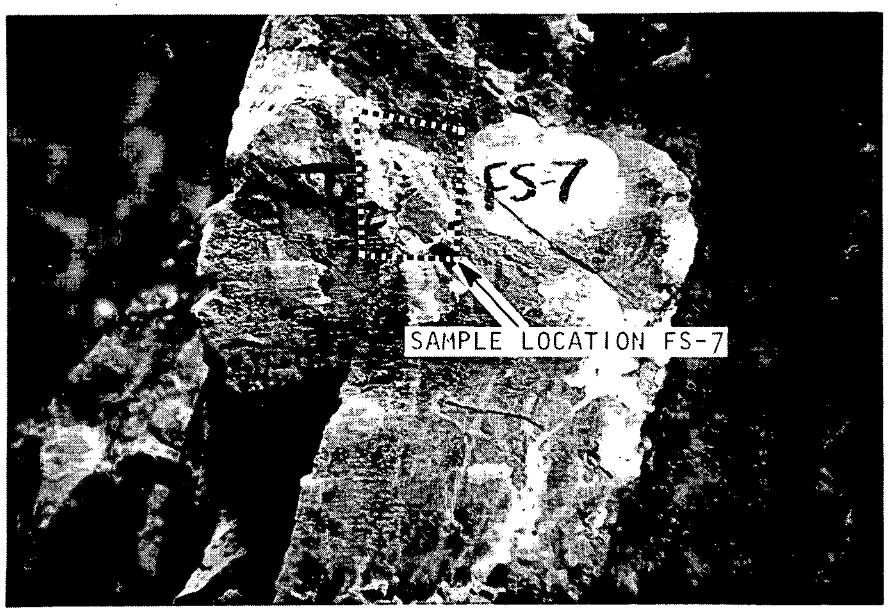
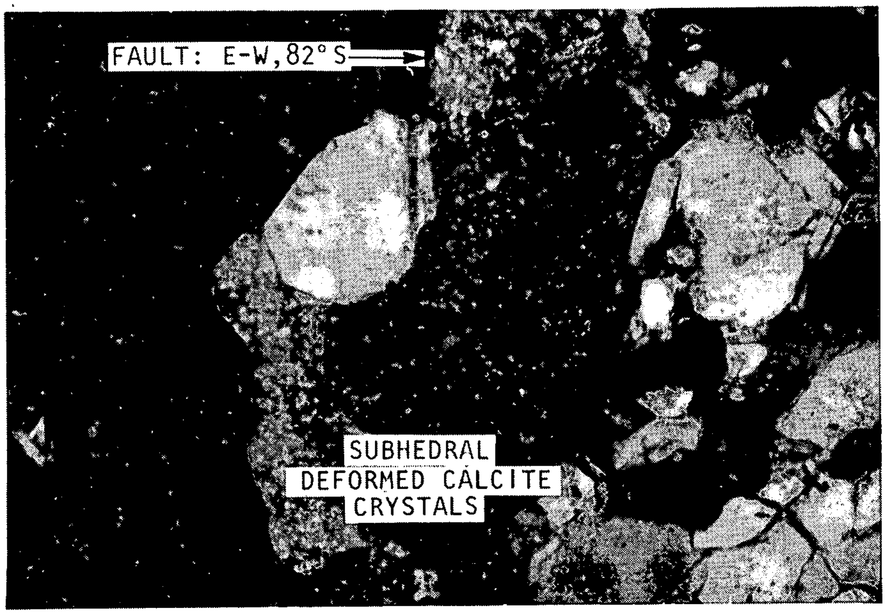


PHOTO B: CLOSE-UP OF SAMPLE LOCATION FS-7



PHOTOMICROGRAPH OF SAMPLE FS-7

MAGNIFICATION:40X

DAMES & MOORE

PLATE E-37B

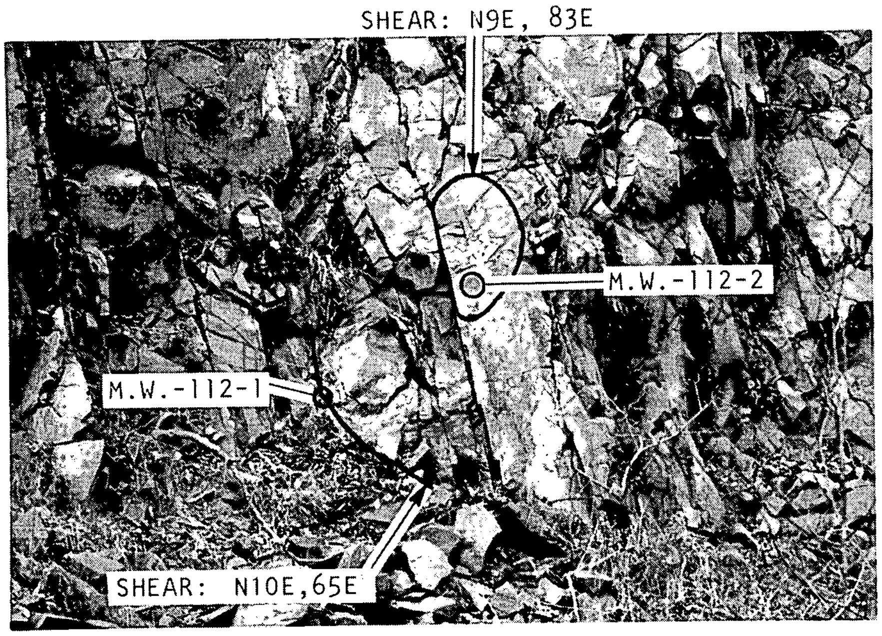


PHOTO A: OUTCROP VIEW OF SAMPLING STATION M.W.-112
LOCATION: VERDRIETEGE HOOK SOUTH OF TROUGH HOLLOW

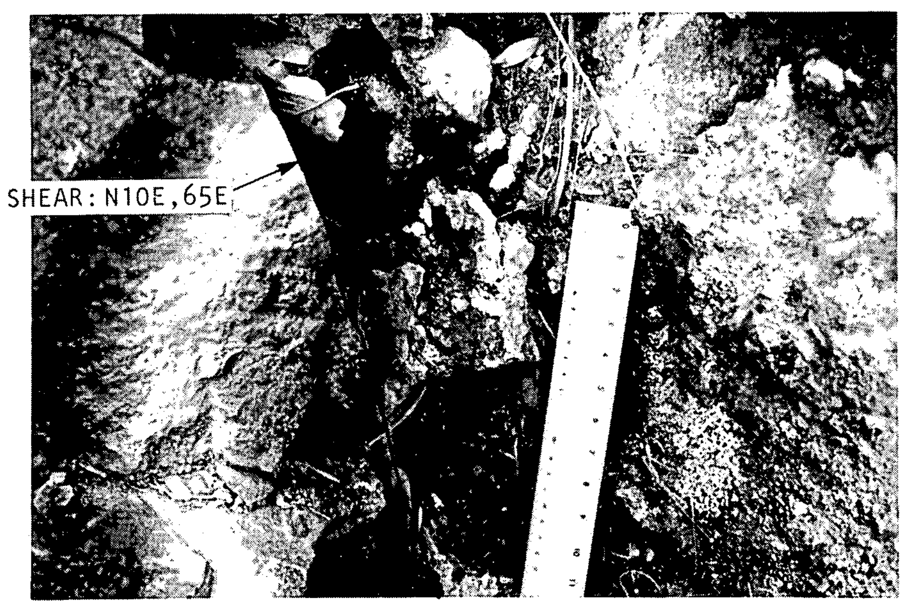
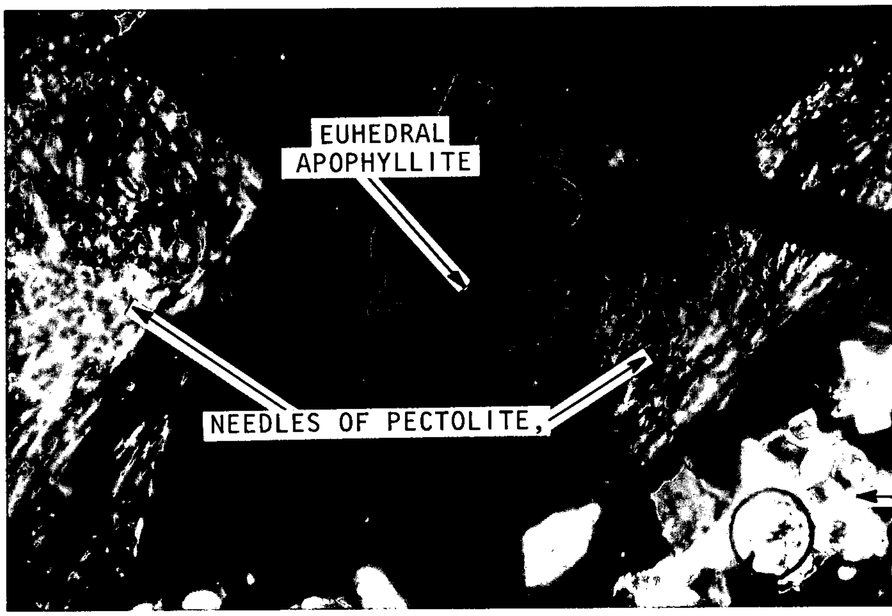


PHOTO B: CLOSE UP OF SAMPLING STATION M.W.-112-1



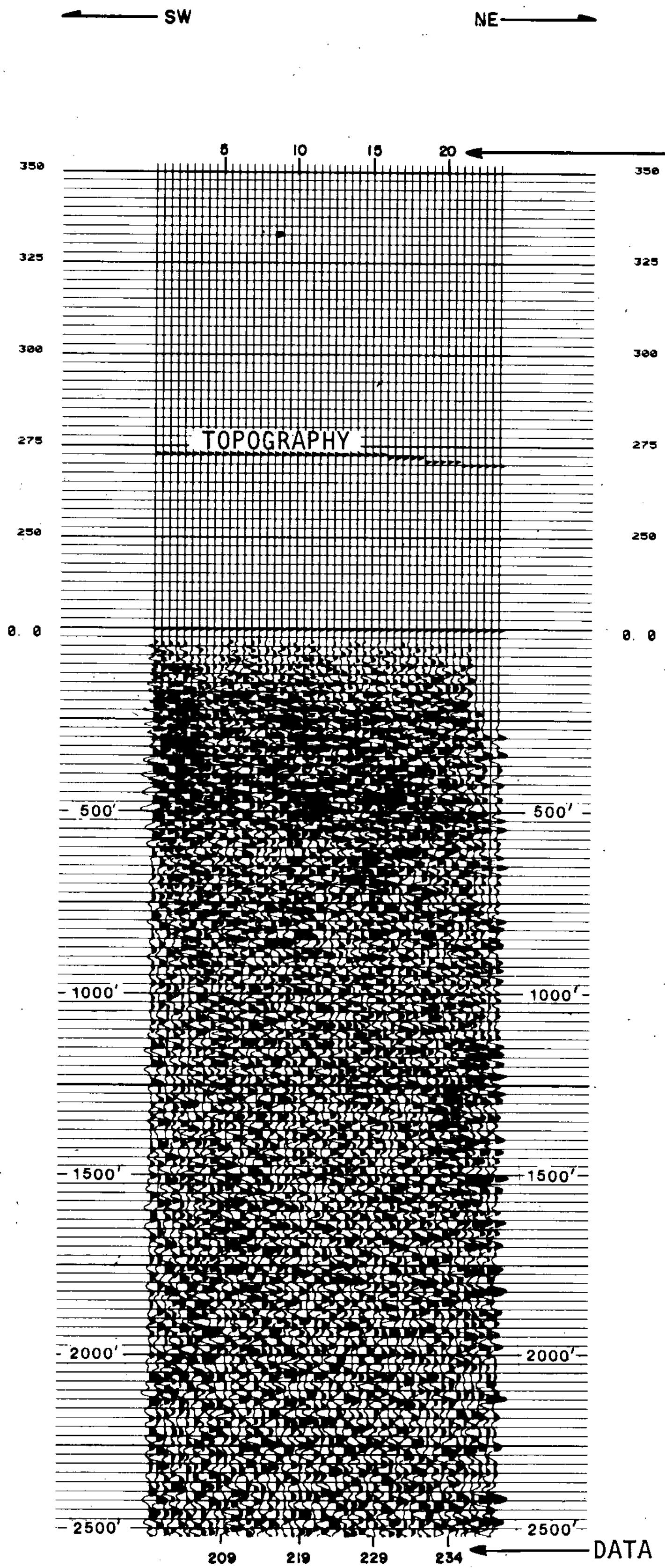
PHOTOMICROGRAPH OF SAMPLE M.W.-112-1

MAGNIFICATION: 40 X

PECTOLITE OVERGROWN BY APOPHYLLITE AND DATOLITE

SAMPLE TAKEN FROM SHEAR ZONE TRENDING N10E,65E

DAMES & MOORE



LINE 2A — DEPTH SECTION

AREA NEW YORK

FOR DAMES & MOORE

BY SEISMOGRAPH SERVICE CORPORATION

JOB NUMBER [illegible]
DATE [illegible]

PHOENIX SEISYSTEM 70

PROCESSING SEQUENCE

- 1 DEMULTIPLEX-EDIT-SUM
- VIBROSEIS CORRELATION
- 3 VELOCITY ANALYSIS
- 4 NORMAL MOVEOUT
- 2 DATUM STATICS
- 5 AUTOMATIC STATICS
- 7 STACK 6 FOLD
- DECONVOLUTION
- 8 FILTER
- TRACE EQUALIZATION

ADDITIONAL PROCESSING
- 6 AGC
- 9 DEPTH

PROCESSING PARAMETERS

CORRECTIONS

DATUM SLOPING (20' BELOW ELEV.)
VE [illegible]'/Sec. VW [illegible]'/Sec.
AUTOMATIC STATICS WINDOW 500' TO 4000' FT
ADDITIONAL

	LENGTH (MS)	WINDOW (SEC)	PREDICTION (MS)
DECONVOLUTION BEFORE STACK			
DECONVOLUTION AFTER STACK			

	BAND PASS	APPL. (FT)	OVERLAP (SEC)
BAND PASS FILTERS	60 - 240	0.0 - 1000'	

SAMPLE RATE .5 MS
ONE INCH 12 TRACES
ONE SECOND 18 INCHES
PLAYBACK GAIN -24 DB
MEAN VALUE

RECORDING PARAMETERS

RECORDED BY TARGET SURVEY

CONTRACT		PARTY 1	DATE RECORDED 072076
SP/VP INTERVAL	70'	INSTRUMENT TYPE	CASSET
GEOPHONE INTERVAL	70'	AMPLIFIERS	
NEAR OFFSET	70'	RECORDING FILTER	OUT/OUT
FAR OFFSET	840'	SAMPLE RATE	.5MS
NUMBER TRACES	12	RECORD LENGTH	800MS
CONFIGURATION		SWEEP LENGTH	
PROGRESSION	SW/NE	SWEEP FREQUENCY	
GEOPHONES/TRACE		NUMBER SWEEPS	

HORIZONTAL SCALE FEET

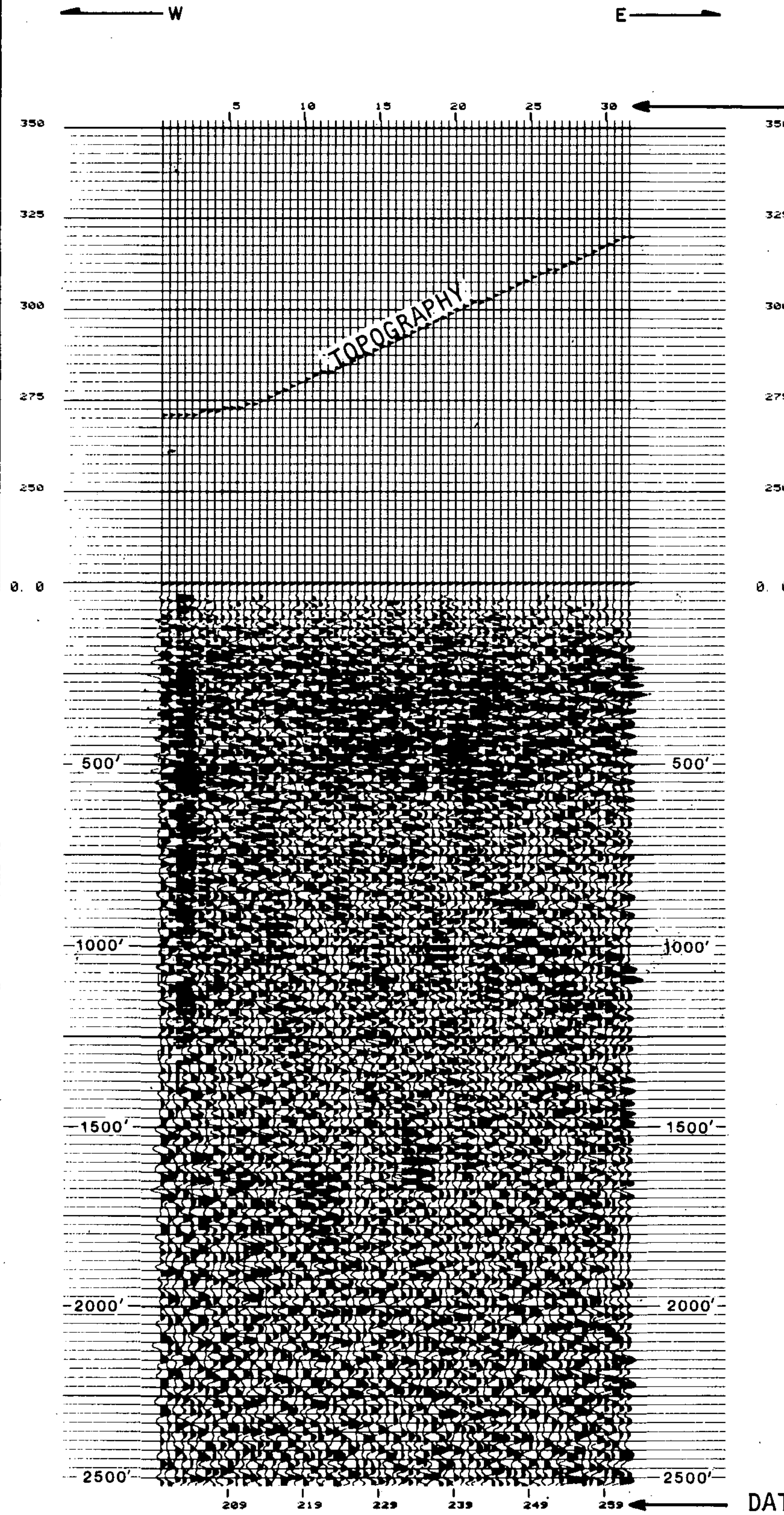
700 0 700 1400

VERTICAL EXAGGERATION : 1.7

HIGH RESOLUTION SEISMIC REFLECTION LINE

DAMES & MOORE

PLATE D7-16



LINE 2B
DEPTH SECTION
AREA NEW YORK
FOR DAMES & MOORE
BY SEISMOGRAPH SERVICE CORPORATION
JOB NUMBER [illegible]
DATE [illegible]

PHOENIX SEISYSTEM 70

PROCESSING SEQUENCE

- 1 DEMULTIPLEX-EDIT-SUM
- VIBROSEIS CORRELATION
- 3 VELOCITY ANALYSIS
- 4 NORMAL MOVEOUT
- 2 DATUM STATICS
- 5 AUTOMATIC STATICS
- 7 STACK 6 FOLD
- DECONVOLUTION
- 8 FILTER
- TRACE EQUALIZATION

ADDITIONAL PROCESSING
- 8.5P ACON
- 9 DEPTH

PROCESSING PARAMETERS

CORRECTIONS
DATUM SLOPPING (20' BELOW ELEV)
VE [illegible]'/Sec. VH [illegible]'/Sec.
AUTOMATIC STATICS WINDOW 500' TO 4000' FT
ADDITIONAL

	LENGTH (MS)	WINDOW (SEC)	PREDICTION (MS)
DECONVOLUTION BEFORE STACK			
DECONVOLUTION AFTER STACK			

	BAND PASS	APPL. (FT)	OVERLAP (SEC)
BAND PASS FILTERS	60-240	0.0-5000'	

SAMPLE RATE .5 MS
ONE INCH 12 TRACES
ONE SECOND 10 INCHES
PLAYBACK GAIN -26 DB
MEAN VALUE

RECORDING PARAMETERS

RECORDED BY [illegible]

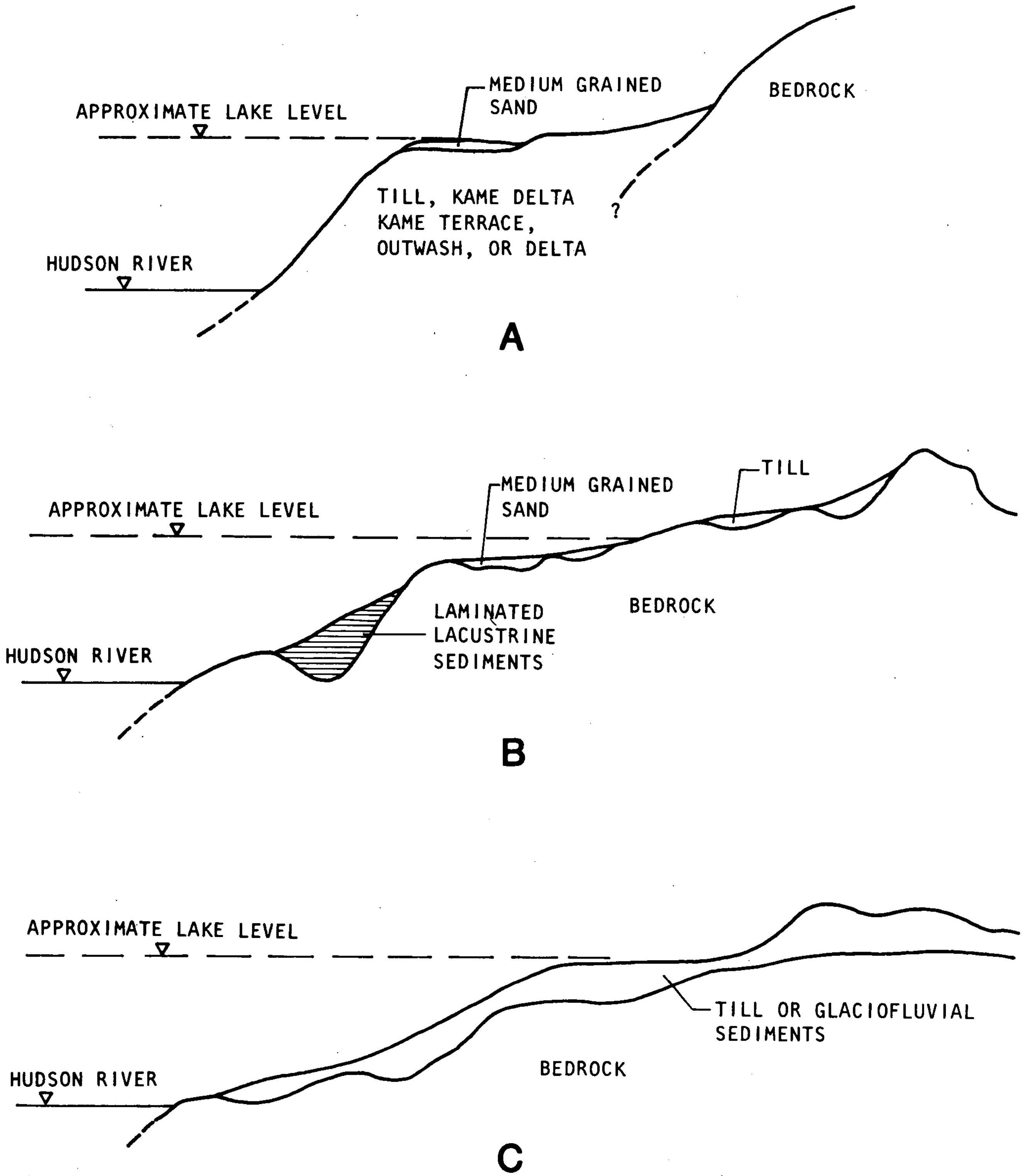
CONTRACT		PARTY 1	DATE RECORDED [illegible]
SP/VP INTERVAL	20'	INSTRUMENT TYPE	[illegible]
GEOPHONE INTERVAL	20'	AMPLIFIERS	
NEAR OFFSET	20'	RECORDING FILTER	OUT/OUT
FAR OFFSET	[illegible]'	SAMPLE RATE	[illegible]
NUMBER TRACES	12	RECORD LENGTH	[illegible]
CONFIGURATION		SWEEP LENGTH	
PROGRESSION	W/E	SWEEP FREQUENCY	
GEOPHONES/TRACE		NUMBER SWEEPS	

HORIZONTAL SCALE FEET
700 0 700 1400

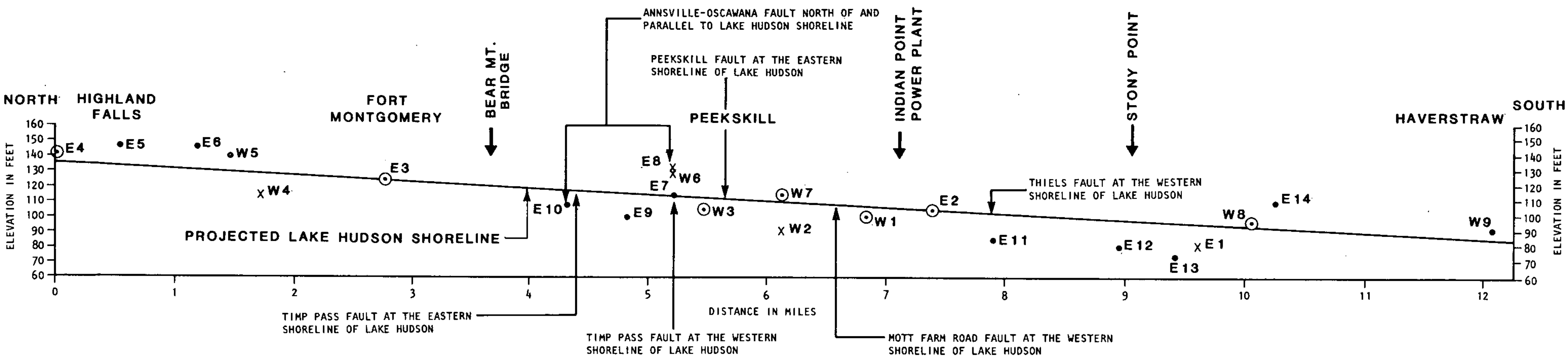
VERTICAL EXAGGERATION : 1.7

HIGH RESOLUTION SEISMIC REFLECTION LINE

DAMES & MOORE



DIAGRAMATIC SECTIONS SHOWING EVIDENCE USED TO IDENTIFY LAKE HUDSON SHORELINE



TYPE OF EVIDENCE

SURVEY POINT	ELEVATION IN FEET	TOPOGRAPHIC EVIDENCE	SEDIMENTARY EVIDENCE	TOPOGRAPHIC AND SEDIMENTARY EVIDENCE
E1	80		LACUSTRINE SAND SECTION B, PLATE F-2	
E2	104			SECTION A, PLATE F-2
E3	123			SECTION A, PLATE F-2
E4	141			SECTION A, PLATE F-2
E5	147	CHANGE IN SLOPE WITH SOME LACUSTRINE SAND, SECTION C, PLATE F-2		
E6	145	SAME AS E5		
E7	114	SAME AS E5		
E8	132		TOP OF DELTA	
E9	99	SAME AS E5		
E10	106	CHANGE IN SLOPE SECTION C, PLATE F-2		
E11	84	CHANGE IN SLOPE SECTION C, PLATE F-2		
E12	79	SAME AS E5		
E13	72	SAME AS E5		
E14	109	CHANGE IN SLOPE SECTION C, PLATE F-2		
W1	98			SECTION A, PLATE F-2
W2	90		LACUSTRINE SEDIMENTS SECTION B, PLATE F-2	
W3	104			SECTION A, PLATE F-2
W4	114		LACUSTRINE SEDIMENTS SECTION B, PLATE F-2	
W5	139	CHANGE IN SLOPE SECTION C, PLATE F-2		
W6	129		TOP OF A SMALL REMNANT OF A DELTA	
W7	113			SECTION A, PLATE F-2
W8	96			SECTION A, PLATE F-2
W9	90	SECTION C, PLATE F-2		

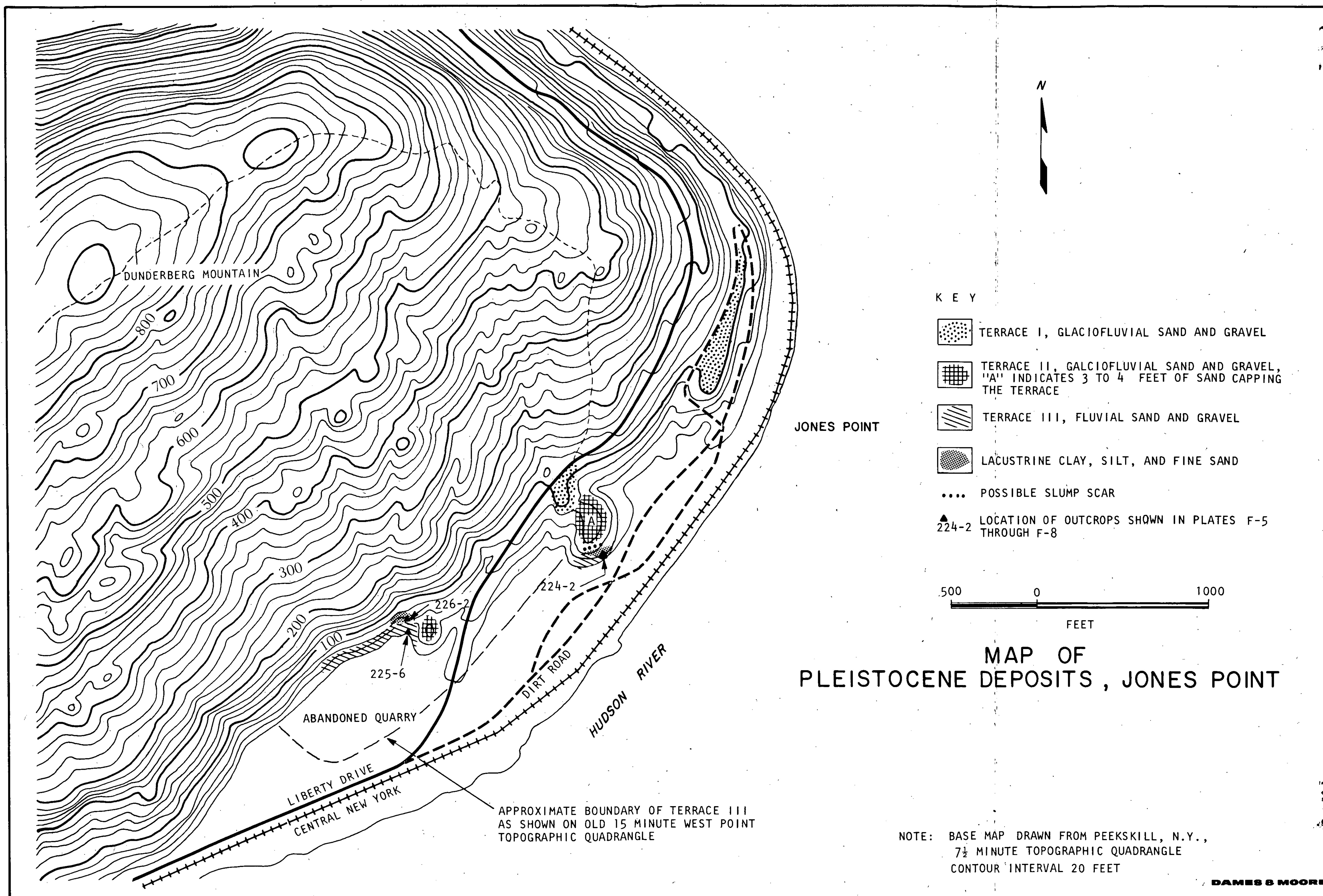
PROFILE SHOWING UPWARPED LAKE HUDSON SHORELINE

KEY:

- ⊙E2 SURVEY POINTS ON SHORELINE SEGMENTS IDENTIFIED FROM BOTH SEDIMENTARY AND TOPOGRAPHIC EVIDENCE.
- X W2 SURVEY POINTS ON SHORELINE SEGMENTS IDENTIFIED FROM SEDIMENTARY EVIDENCE.
- • E5 SURVEY POINTS ON SHORELINE SEGMENTS IDENTIFIED FROM TOPOGRAPHIC EVIDENCE.

NOTE:

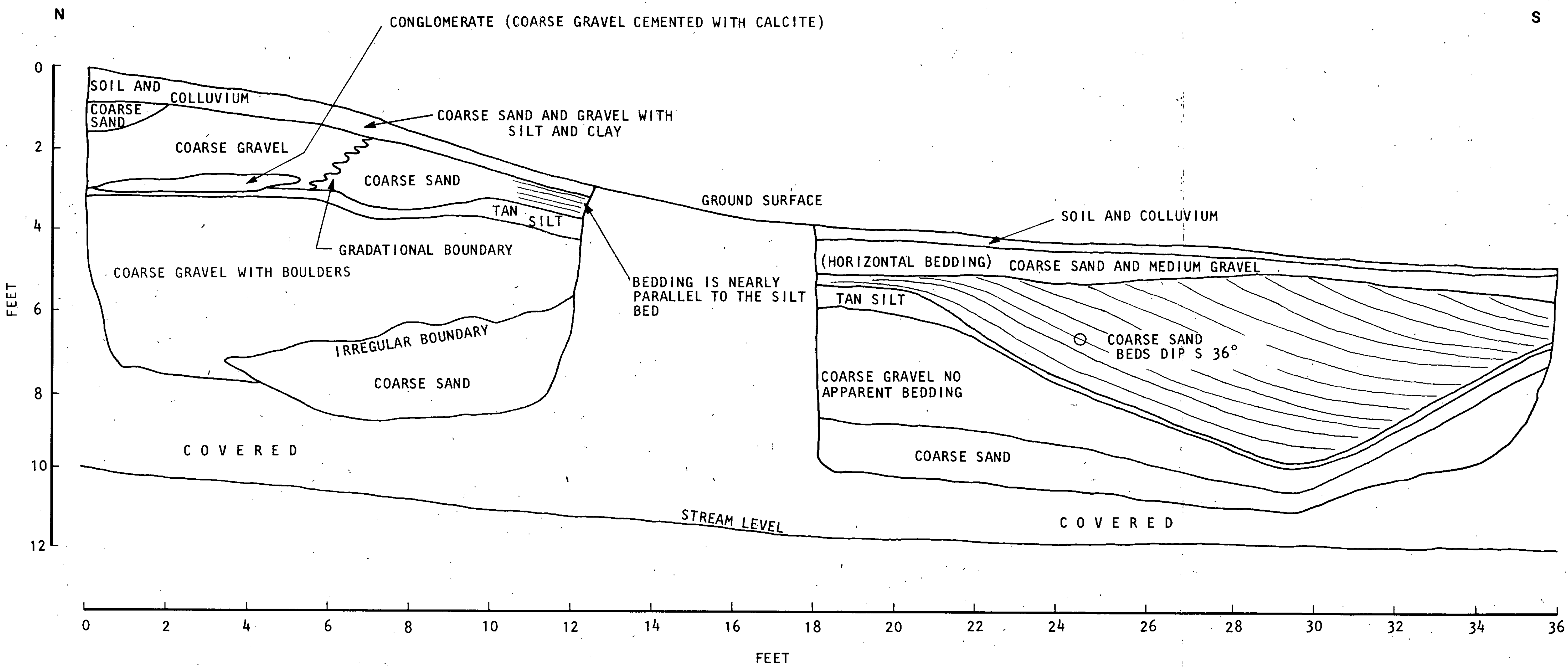
1. SURVEY DATA FOR SHORELINE SEGMENTS WERE PROVIDED BY CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
2. REFER TO PLATE F-1 FOR LOCATIONS OF SURVEY POINTS.



MAP OF PLEISTOCENE DEPOSITS, JONES POINT

NOTE: BASE MAP DRAWN FROM PEEKSKILL, N.Y.,
$7\frac{1}{2}$ MINUTE TOPOGRAPHIC QUADRANGLE
CONTOUR INTERVAL 20 FEET

DAMES & MOORE

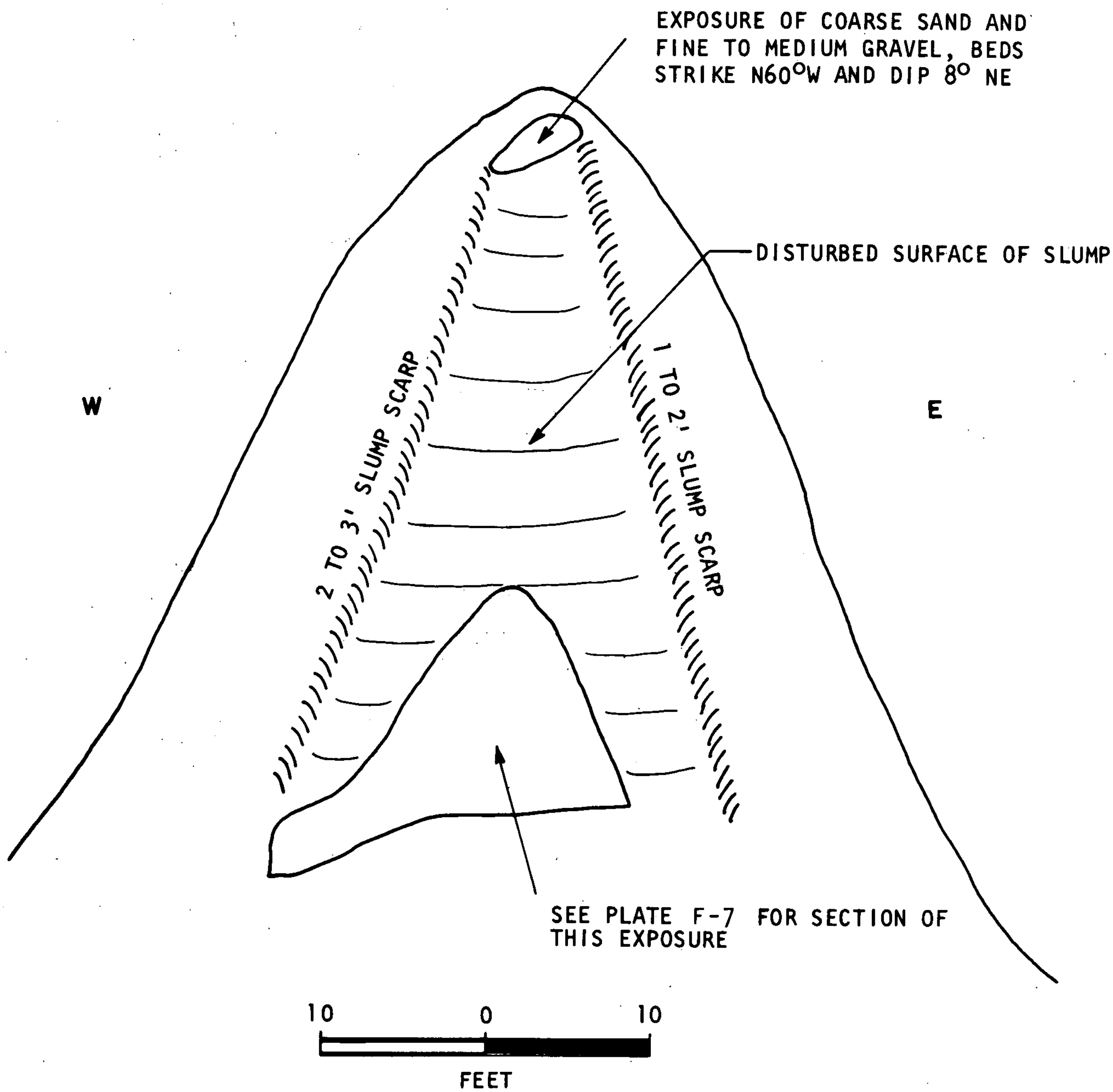


CROSS SECTION OF DELTA DEPOSITS 225-6, QUARRY AT JONES POINT

NOTE:
REFER TOP PLATE F-4 FOR LOCATION OF SECTION

DAMES & MOORE

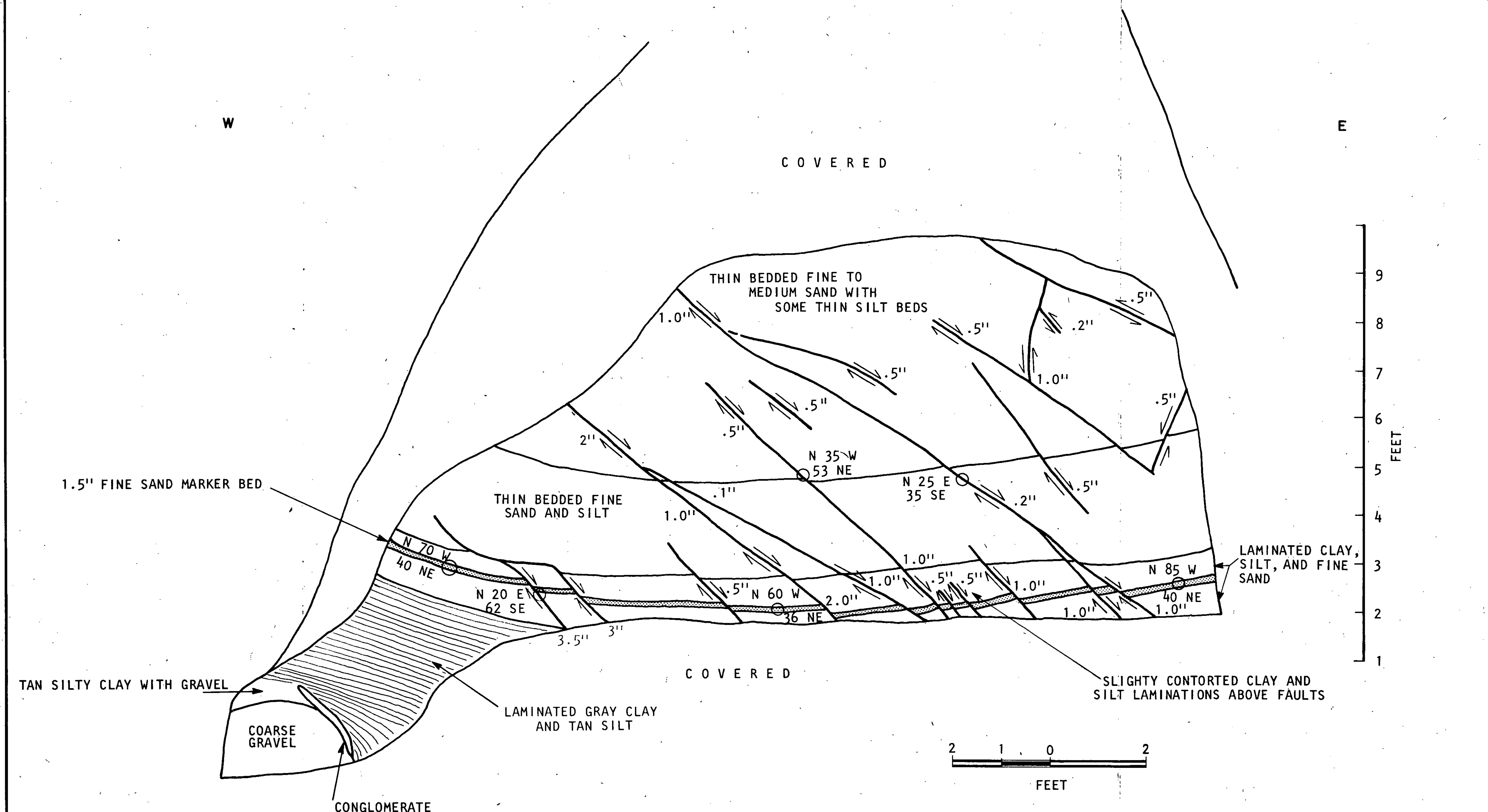
PLATE F-5



SKETCH OF
SLUMP FEATURE 224-2, JONES POINT
(ELEVATION VIEW)

NOTE:
REFER TO PLATE F-4 FOR LOCATION OF EXPOSURE

DAMES & MOORE



SLUMP FEATURE 224-2, JONES POINT

(ELEVATION VIEW)

KEY:

1.0" — INDICATES A FAULT AND THE AMOUNT OF DISPLACEMENT

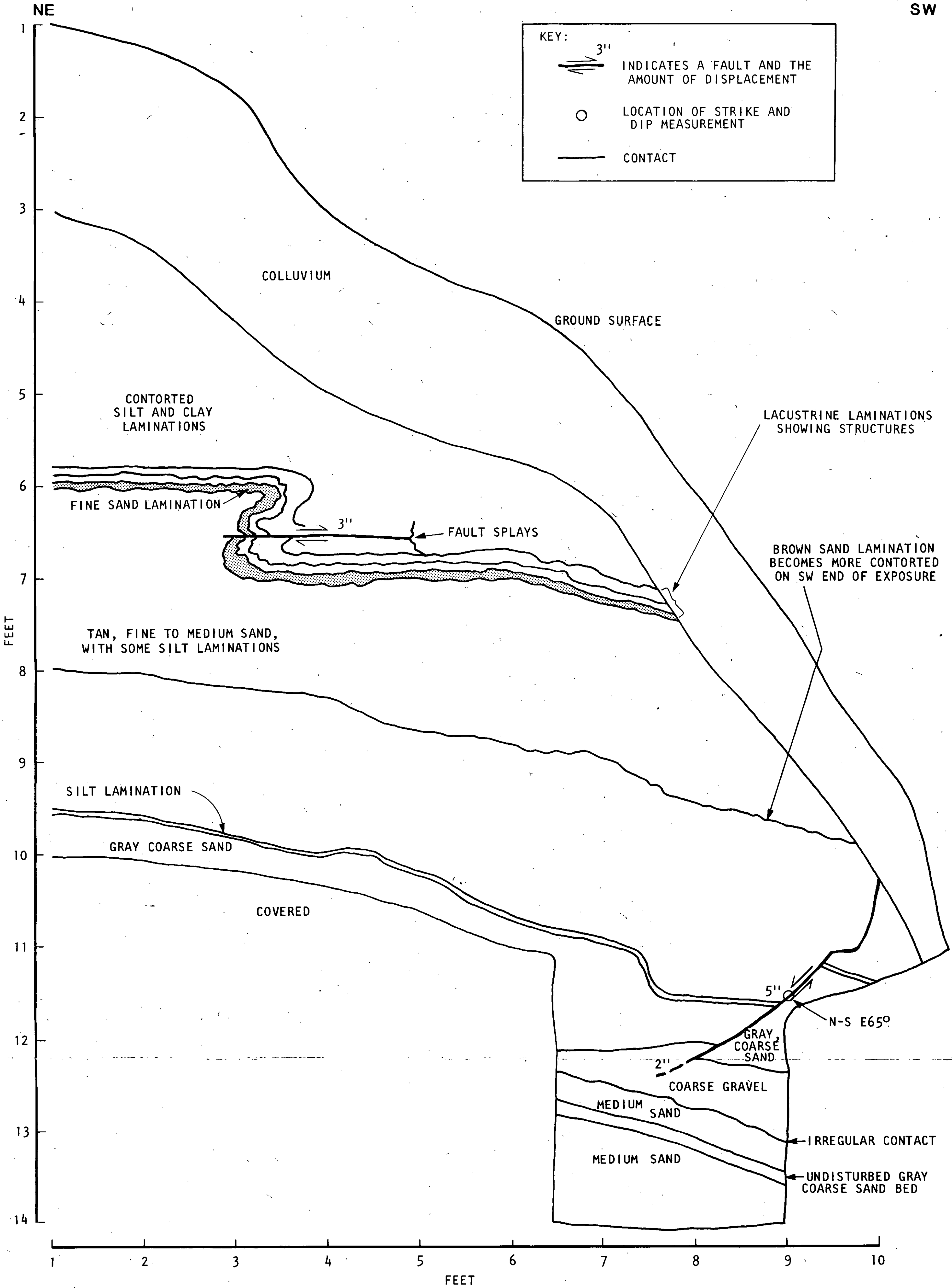
○ — LOCATION OF STRIKE AND DIP MEASUREMENTS

—— CONTACT

NOTE:

REFER TO PLATES F-4 AND F-6 FOR LOCATION OF SECTION

DAMES & MOORE



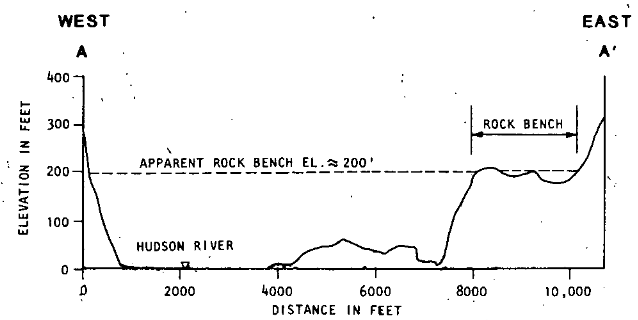
DISTURBED LACUSTRINE DEPOSITS
226-2, JONES POINT

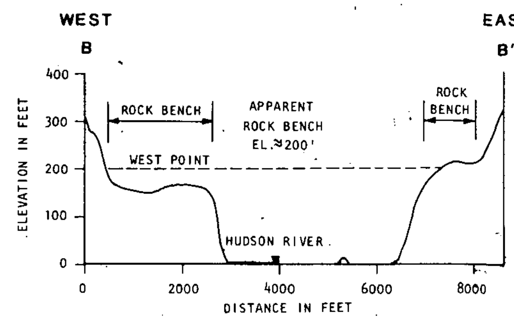
(CROSS SECTIONAL VIEW)

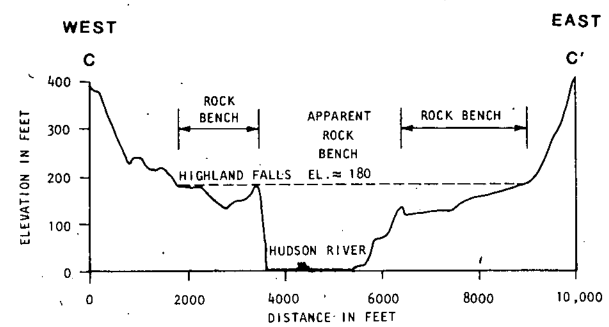
NOTE:
REFER TO PLATE F-4 FOR LOCATION OF SECTION.

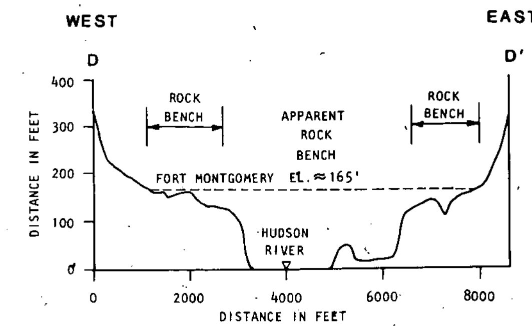
DAMES & MOORE

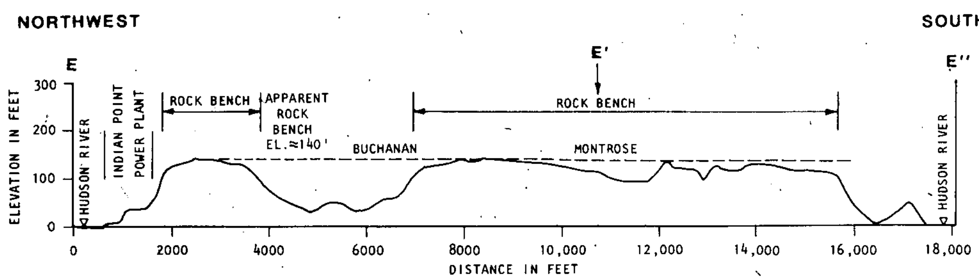
PLATE F-8

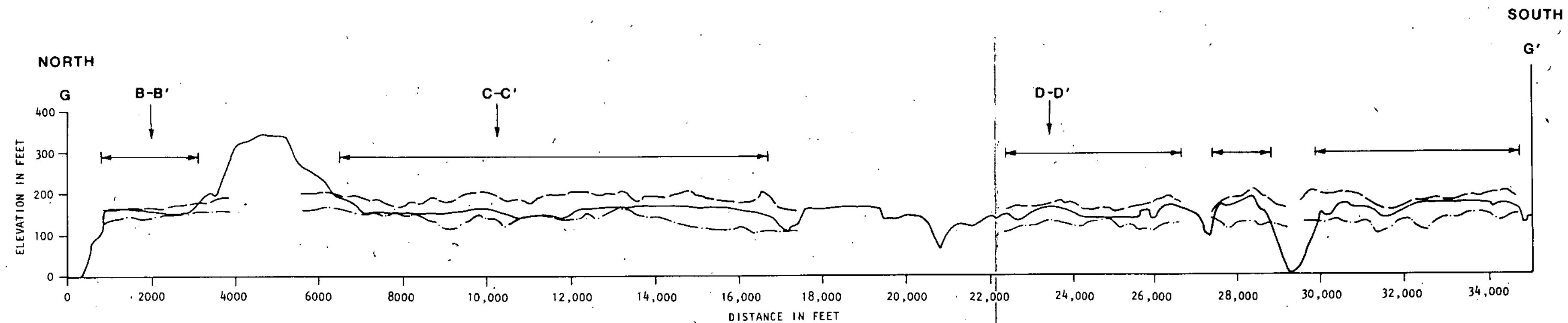


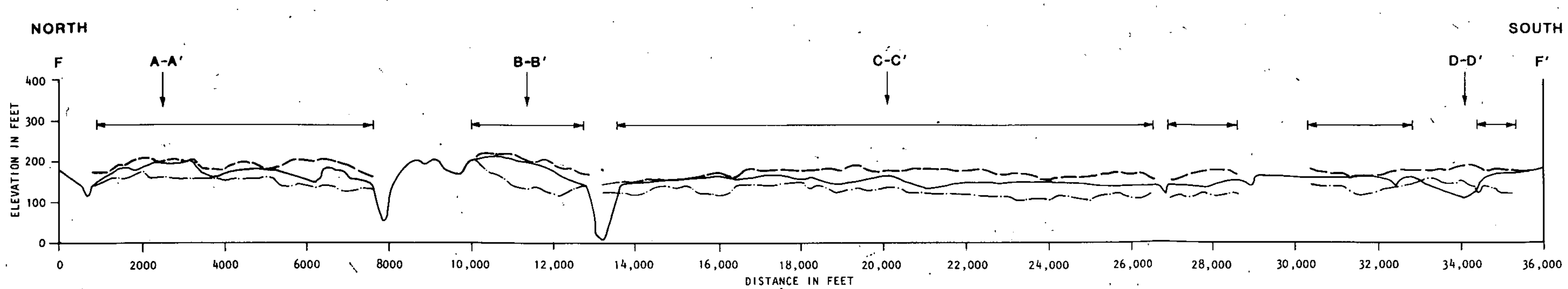












ROCK BENCH CROSS SECTIONS

KEY:

A A' TOPOGRAPHIC CROSS-SECTION (REFER TO PLATE F-1 FOR LOCATION)

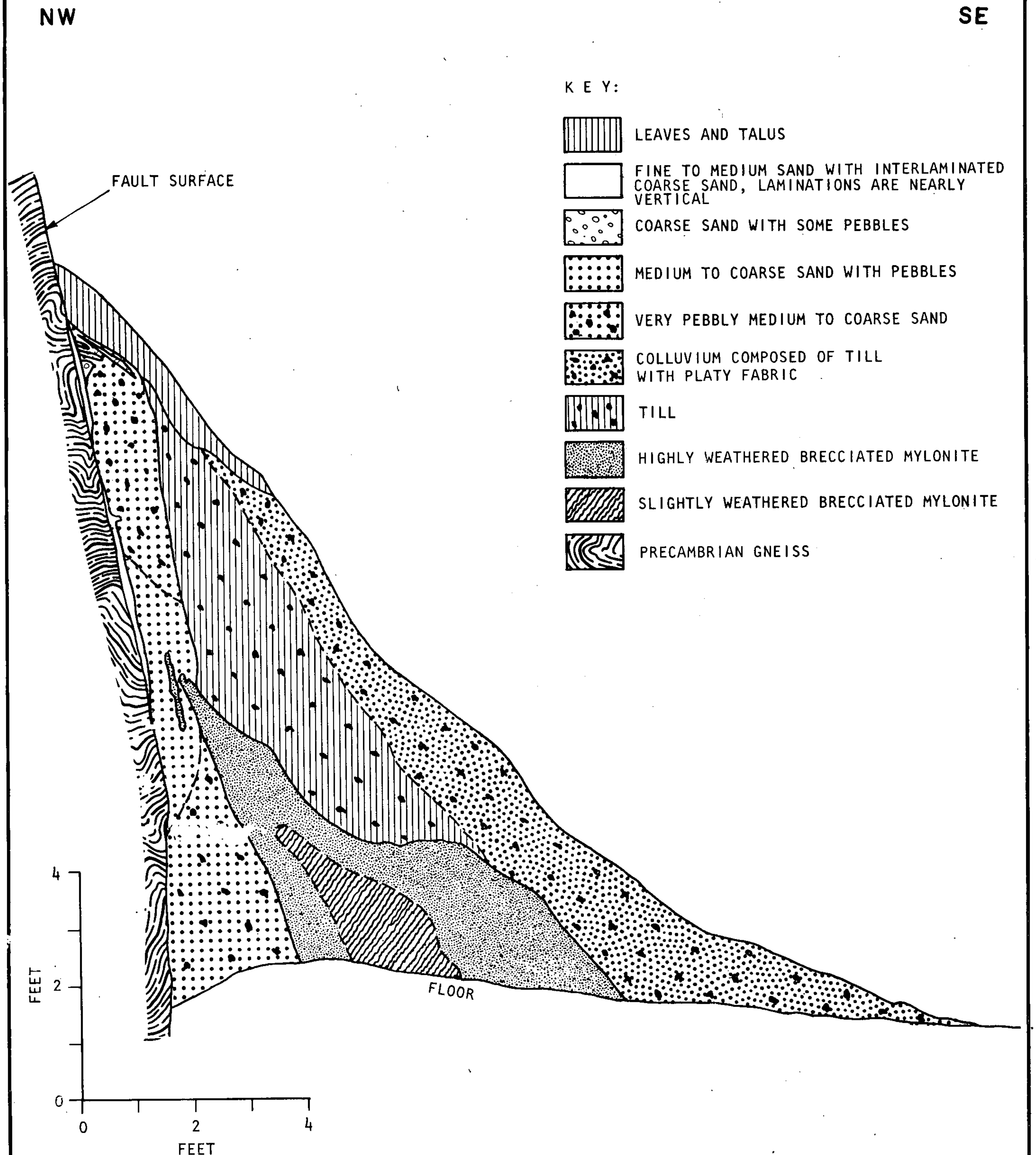
INDICATES THE PORTIONS OF THE CROSS-SECTIONS THAT CROSS THE ROCK BENCH

PROJECTED PROFILE OF THE HIGHEST ELEVATIONS ON THE ROCK BENCH REMNANTS (SKYLINE VIEW). THIS PROFILE WAS CONSTRUCTED BY PLOTTING THE HIGHEST ELEVATION OF THE ROCK BENCH ALONG PROJECTION LINES PERPENDICULAR TO LONGITUDINAL PROFILES G-G' AND F-F'. THE SPACING OF THE PROJECTION LINES WAS 200 FEET.

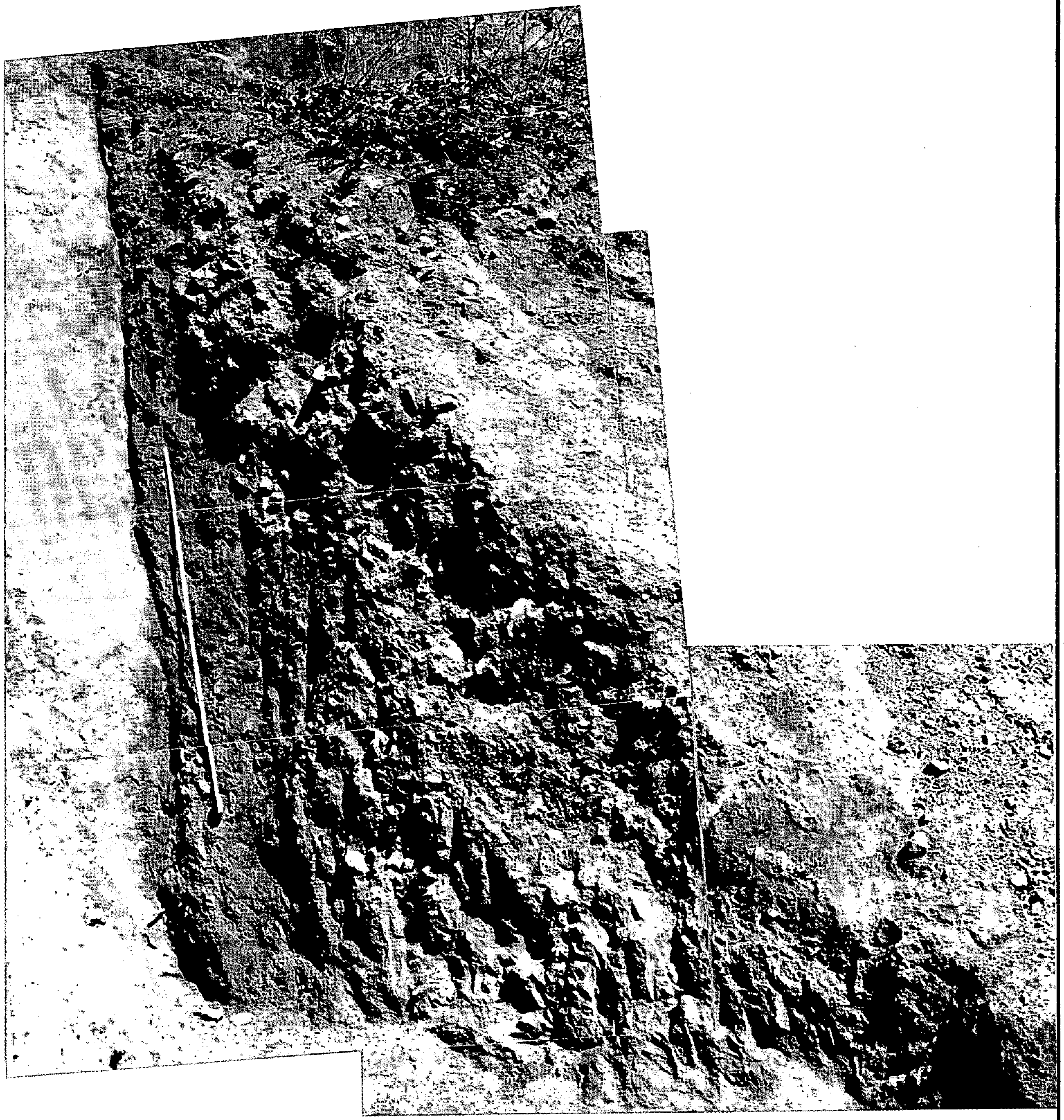
PROJECTED PROFILE OF THE LOWEST ELEVATIONS ON THE ROCK BENCH REMNANTS. THIS PROFILE WAS CONSTRUCTED BY PLOTTING THE LOWEST ELEVATION OF THE ROCK BENCH ALONG PROJECTION LINES PERPENDICULAR TO LONGITUDINAL PROFILES G-G' AND F-F'. THE SPACING OF THE PROJECTION LINES WAS 200 FEET.

DAMES & MOORE

PLATE F-9



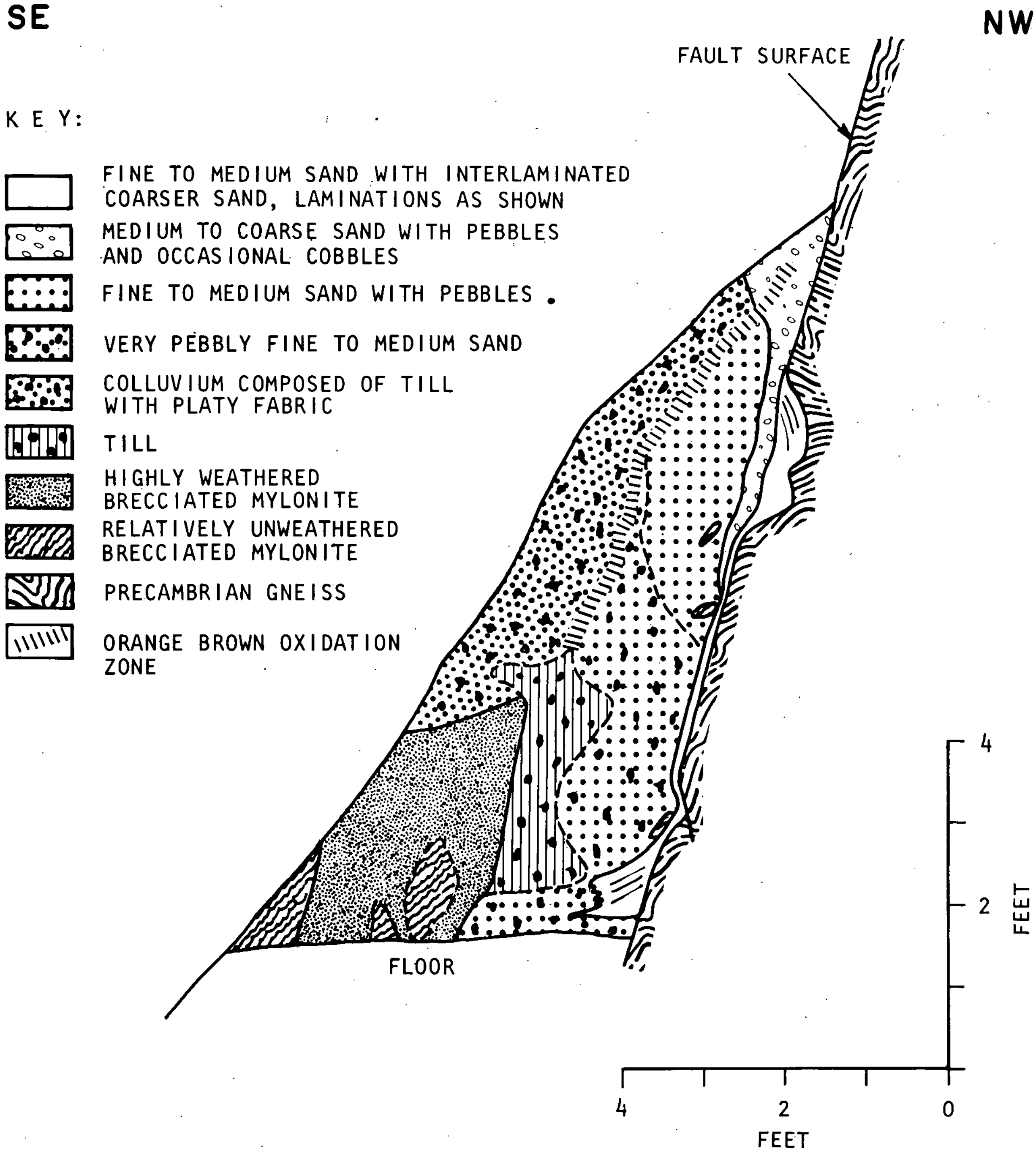
TRENCH A - MOTT FARM ROAD
VIEW IS N 45 E



PHOTOGRAPH TRENCH A
MOTT FARM ROAD
VIEW IS NORTHEAST

NOTE: TAPE LENGTH = 4 FEET

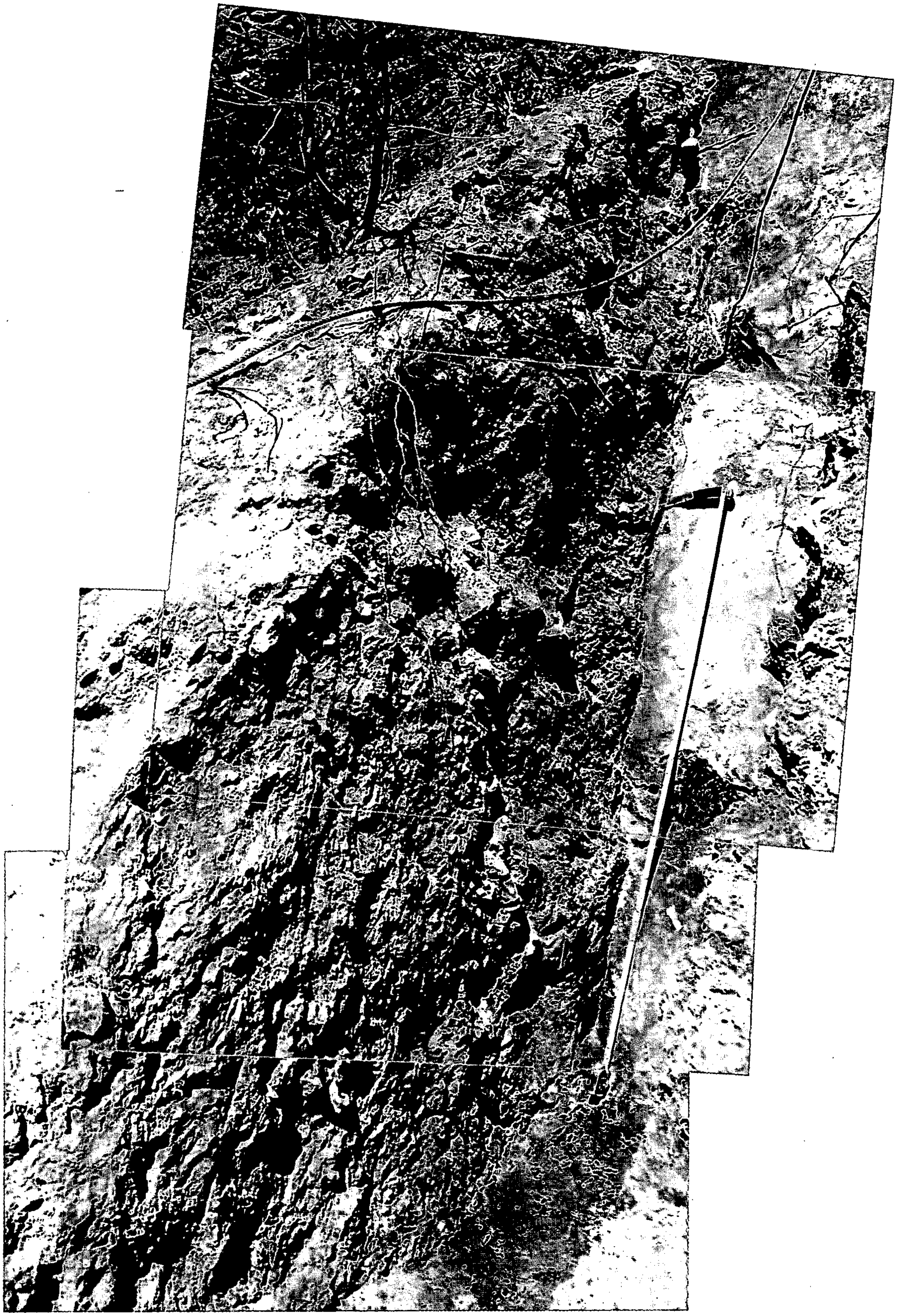
DAMES & MOORE



TRENCH B - MOTT FARM ROAD

VIEW IS S 60 W

DAMES & MOORE

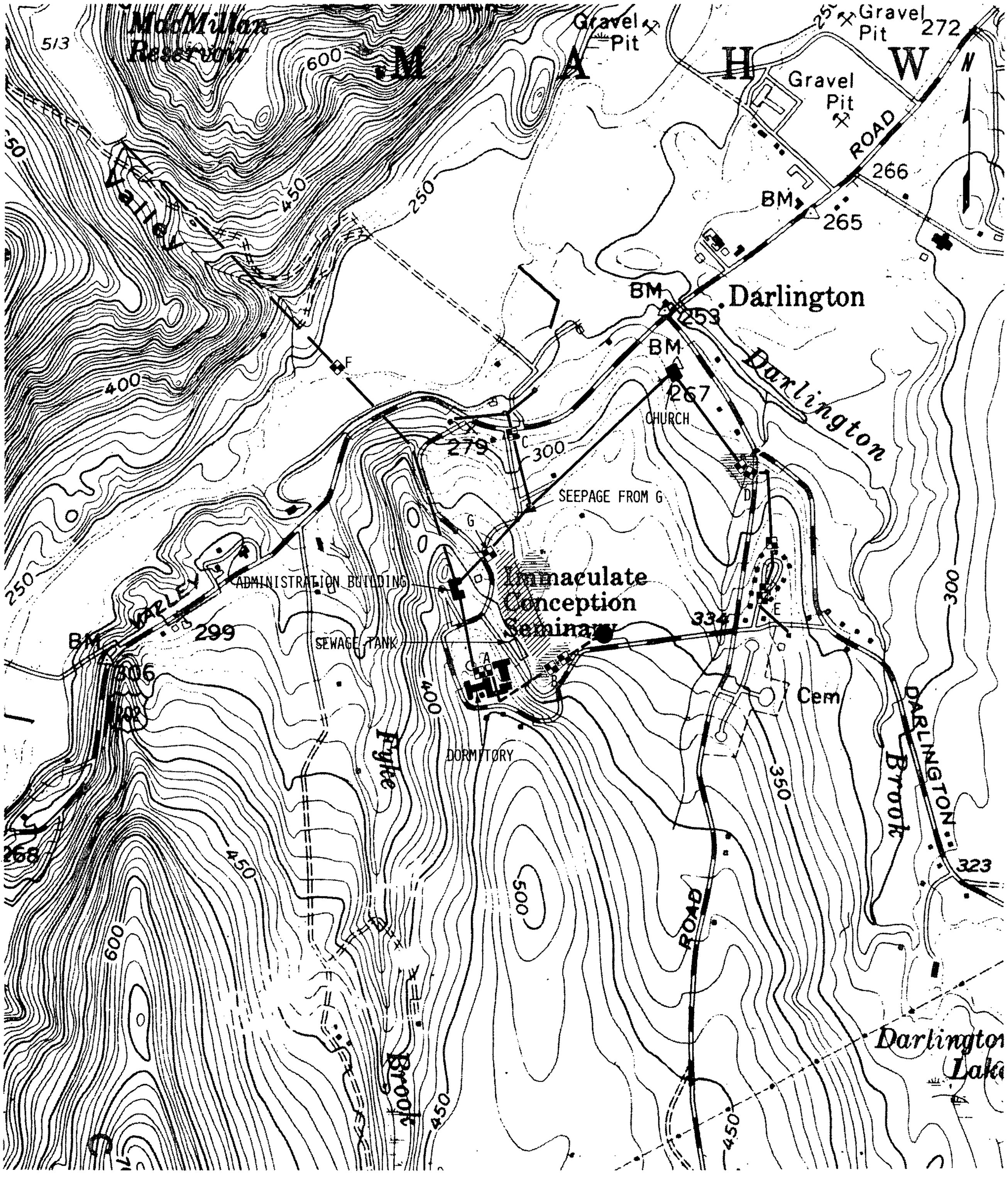


PHOTOGRAPH TRENCH B
MOTT FARM ROAD
VIEW IS SOUTHWEST

NOTE: TAPE LENGTH = 4 FEET

DAMES & MOORE

PLATE F-13



MAP: SHOWING LOCATION OF WATER LINE BREAKS AT IMMACULATE CONCEPTION SEMINARY, DARLINGTON, NEW JERSEY

0 500 1000 1500

SCALE IN FEET
CONTOUR INTERVAL - 10'

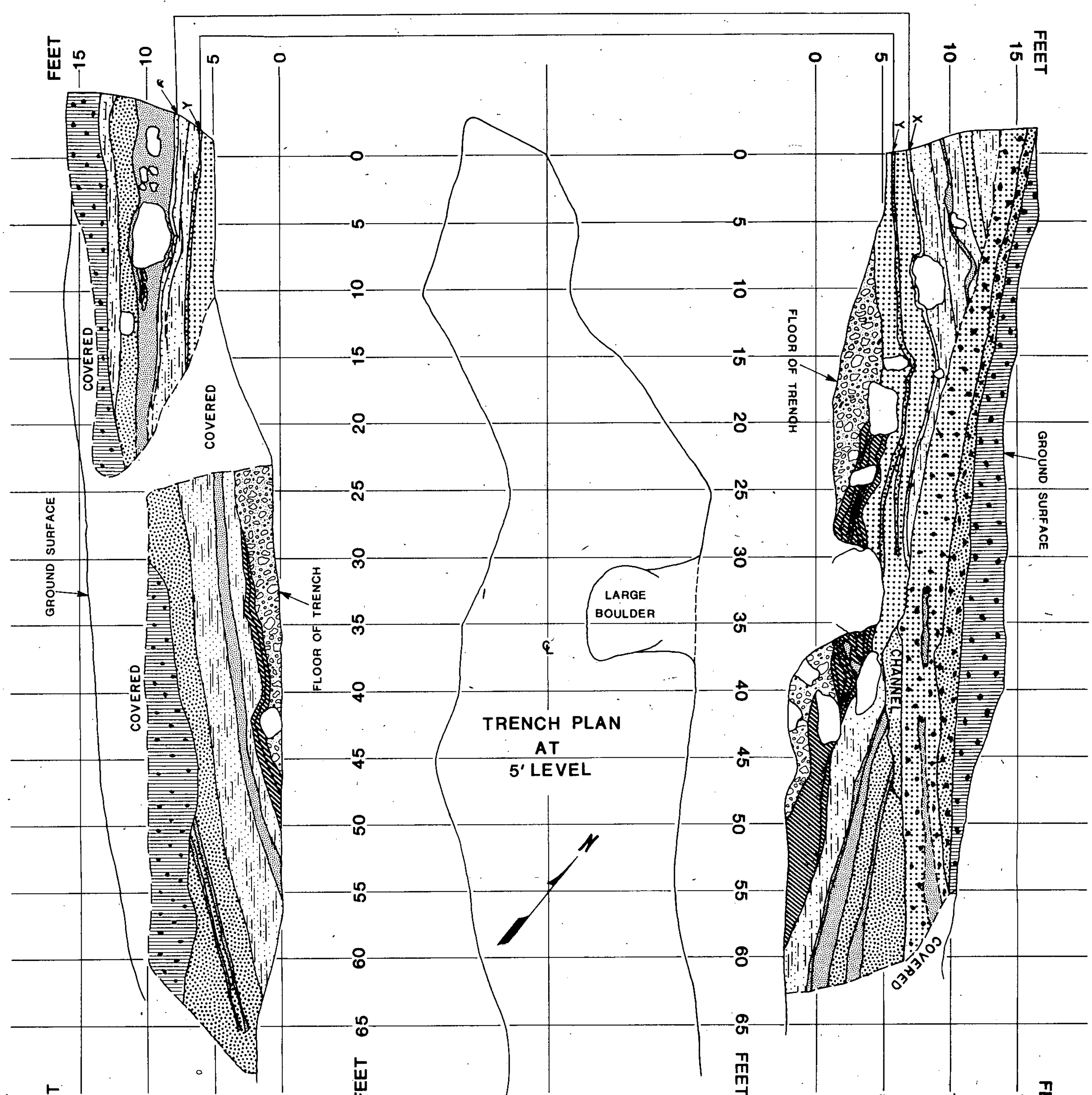
KEY:

- WELLS (400+ FEET DEEP)
- A APPROXIMATE LOCATIONS OF WATER LINE BREAKS AND NOTATION REFERRED TO IN THE TEXT
- APPROXIMATE LOCATION OF 6 INCH WROUGHT IRON WATER LINE
- APPROXIMATE LOCATION OF 6 INCH CAST IRON WATER LINE
- APPROXIMATE LOCATION OF 4 INCH CAST IRON WATER LINE
- MARSHY AREAS
- AREA OF OBSERVED MASS WASTAGE FEATURES

REFERENCE:

BASE MAP PREPARED FROM RAMSEY, N.J. (1955); U.S.G.S. 7.5 MINUTE TOPOGRAPHIC QUADRANGLE.

DAMES & MOORE

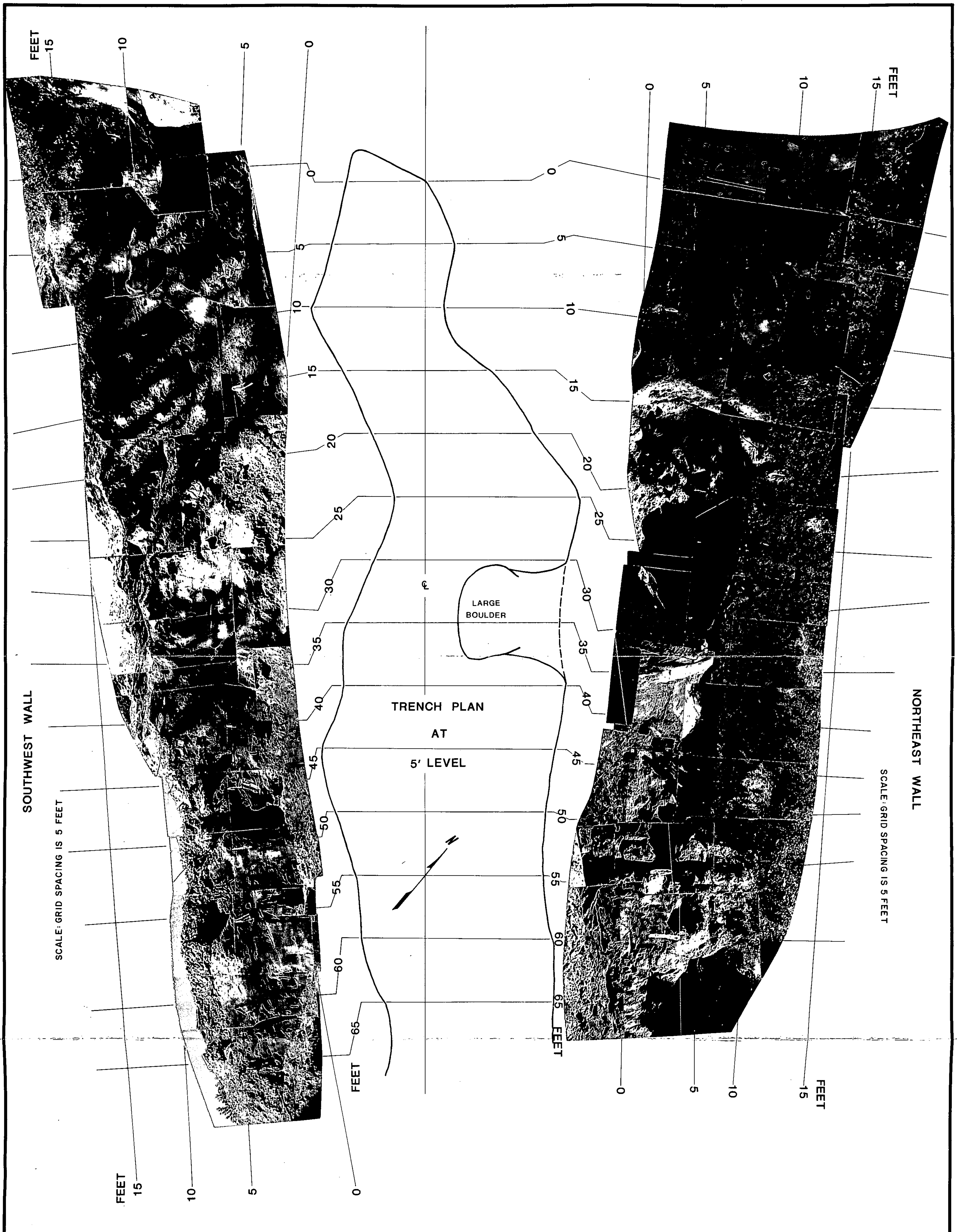


KEY:

- GRAVEL DISTURBED BY QUARRYING (FILL)
- SANDY GRAVEL WITH ORGANIC MATERIAL
- POORLY SORTED GRAVEL
- WELL SORTED VERY FINE TO FINE SAND
- WELL SORTED MEDIUM TO FINE SAND
- SILTY SAND
- SILTY PEBBLY SAND
- LAMINATED CLAY AND SILT OR SILT AND VERY FINE SAND
- TILL
- BOULDER OR LARGE COBBLE
- X UPPER MARKER BED
- Y LOWER MARKER BED

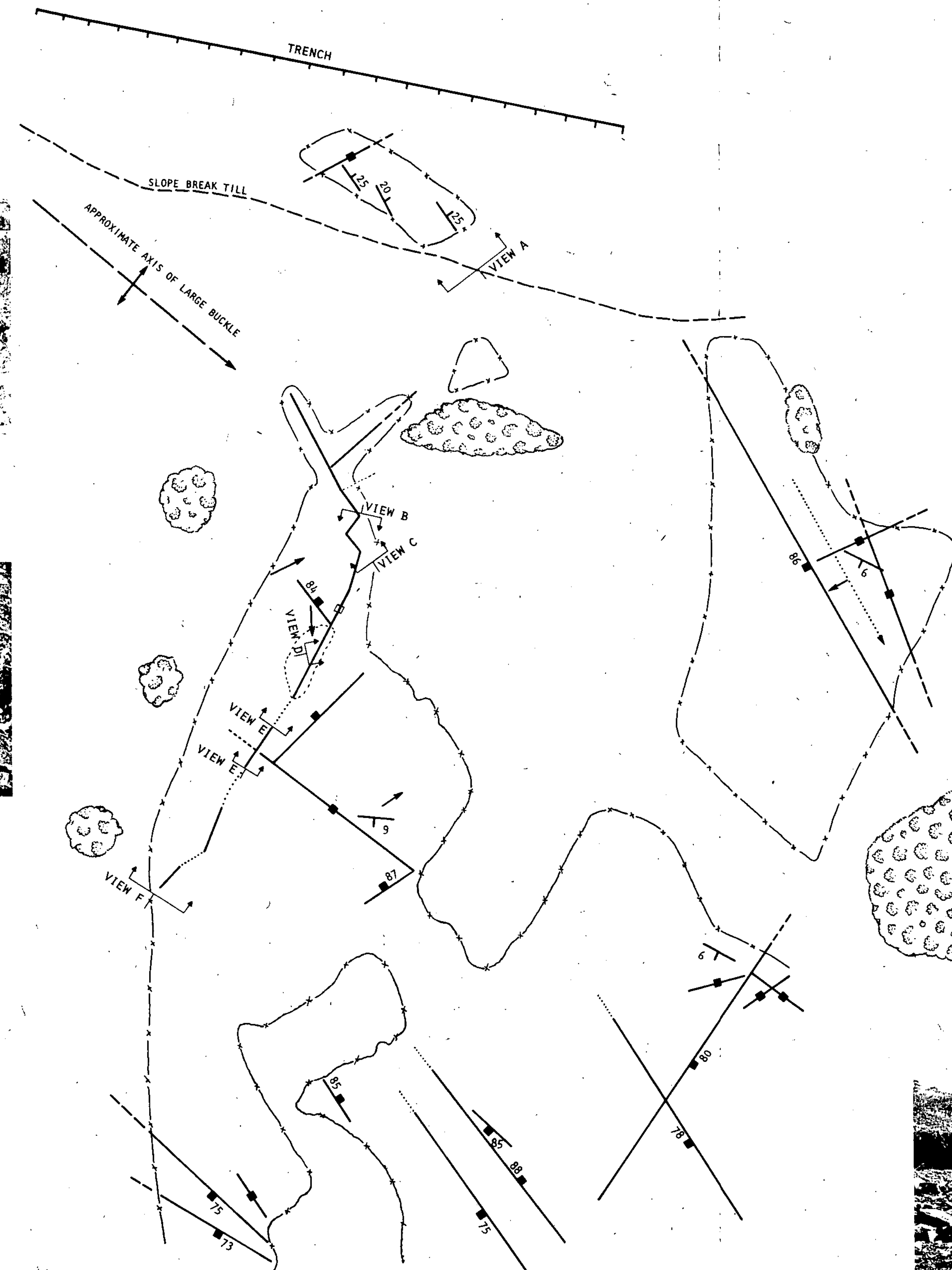
NOTE: GRID SPACING IS 5 FEET

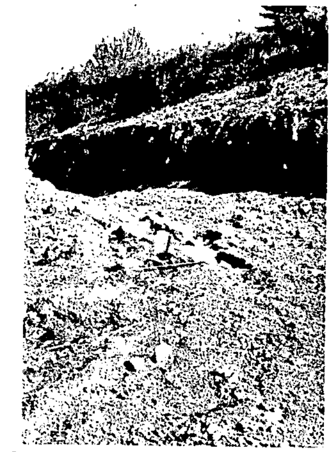
SKETCHES OF TRENCH AT STAG HILL



PHOTOGRAPH OF TRENCH AT STAG HILL

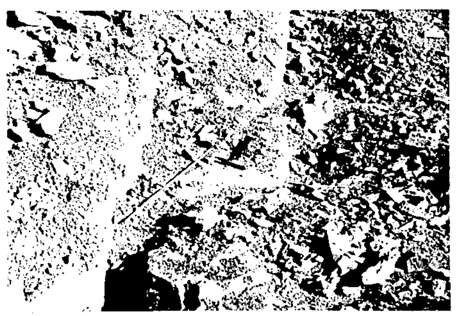
DAMES & MOORE





VIEW A
TAPE = 3 FEET

VIEW B
TAPE = 3 FEET



VIEW C
TAPE = 3 FEET

VIEW D
TAPE = 1 FOOT

VIEW E
TAPE = 3 FEET

VIEW F
HAMMER ≈ 1 FOOT

KEY :

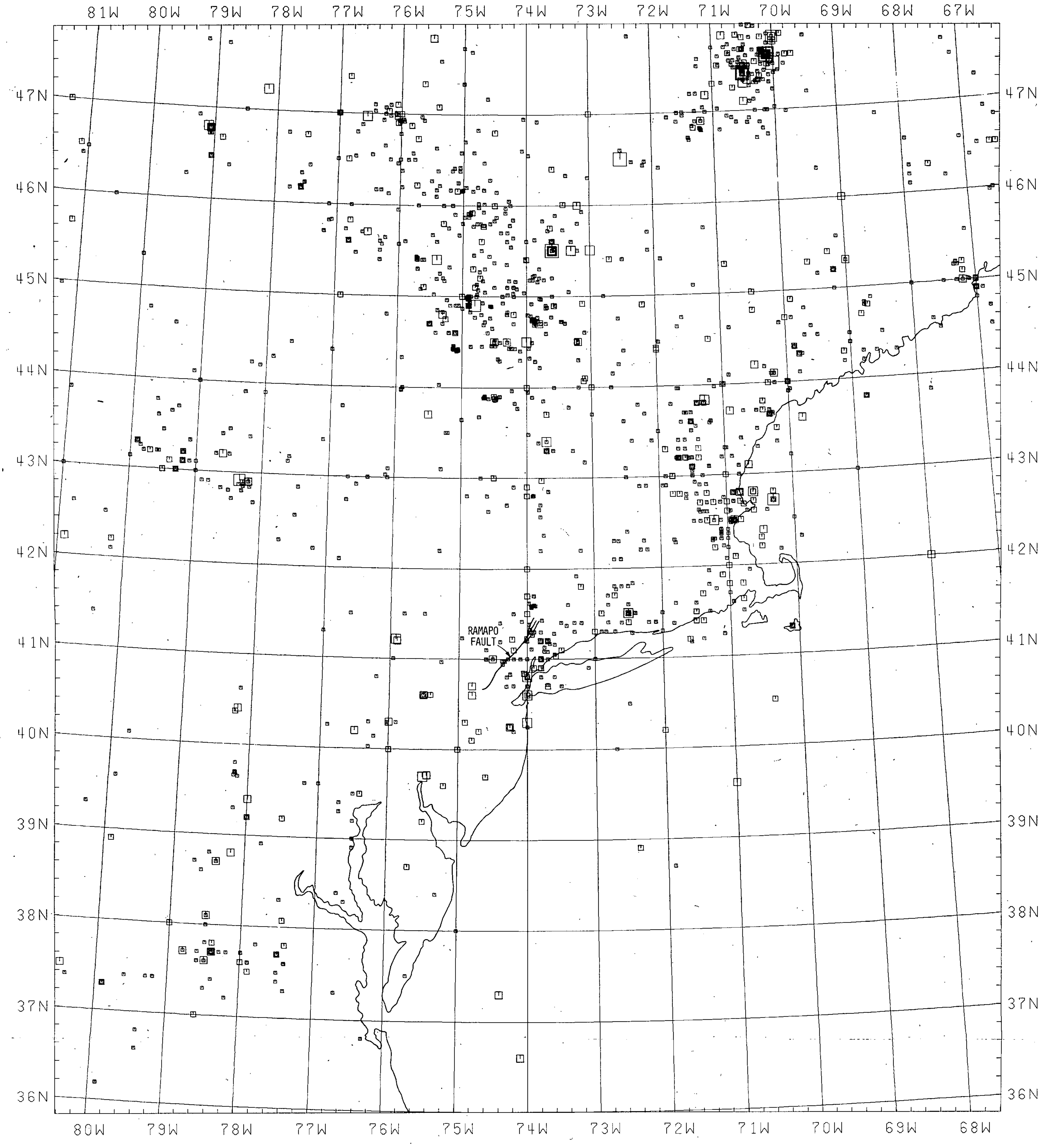
- VEGETATION
- STRIKE AND DIP OF BEDDING
- TREND OF GLACIAL STRIATIONS
- STRIKE AND DIP OF JOINT
- STRIKE OF VERTICAL JOINT
- STRIKE OR VERTICAL OPEN JOINT
- AXIAL TREND OF UPWARD
- LIMIT OF EXPOSED BEDROCK

0 20 40
SCALE IN FEET

PHOTOGRAPHS OF SOUTH END OF CENTRAL NYACK OUTCROP
WITH MAP SHOWING POSITION OF VIEWS

DAMES & MOORE

PLATE F-20



EPICENTER MAP OF NORTHEASTERN UNITED STATES

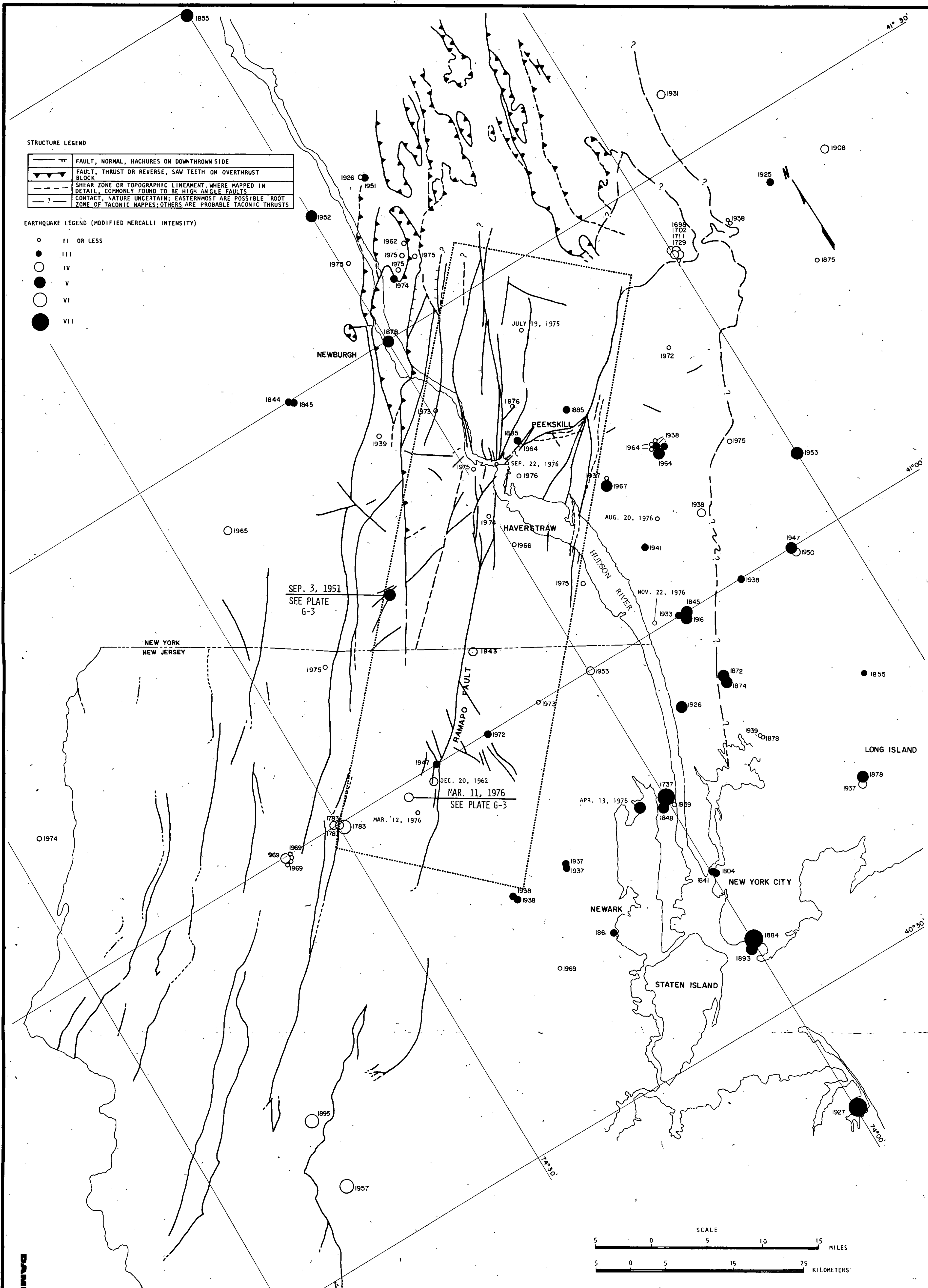
LEGEND:

(MODIFIED MERCALLI INTENSITY)

- IV OR LESS
- V
- VI
- VII
- VIII
- IX
- X

DAMES & MOORE

PLATE G-1

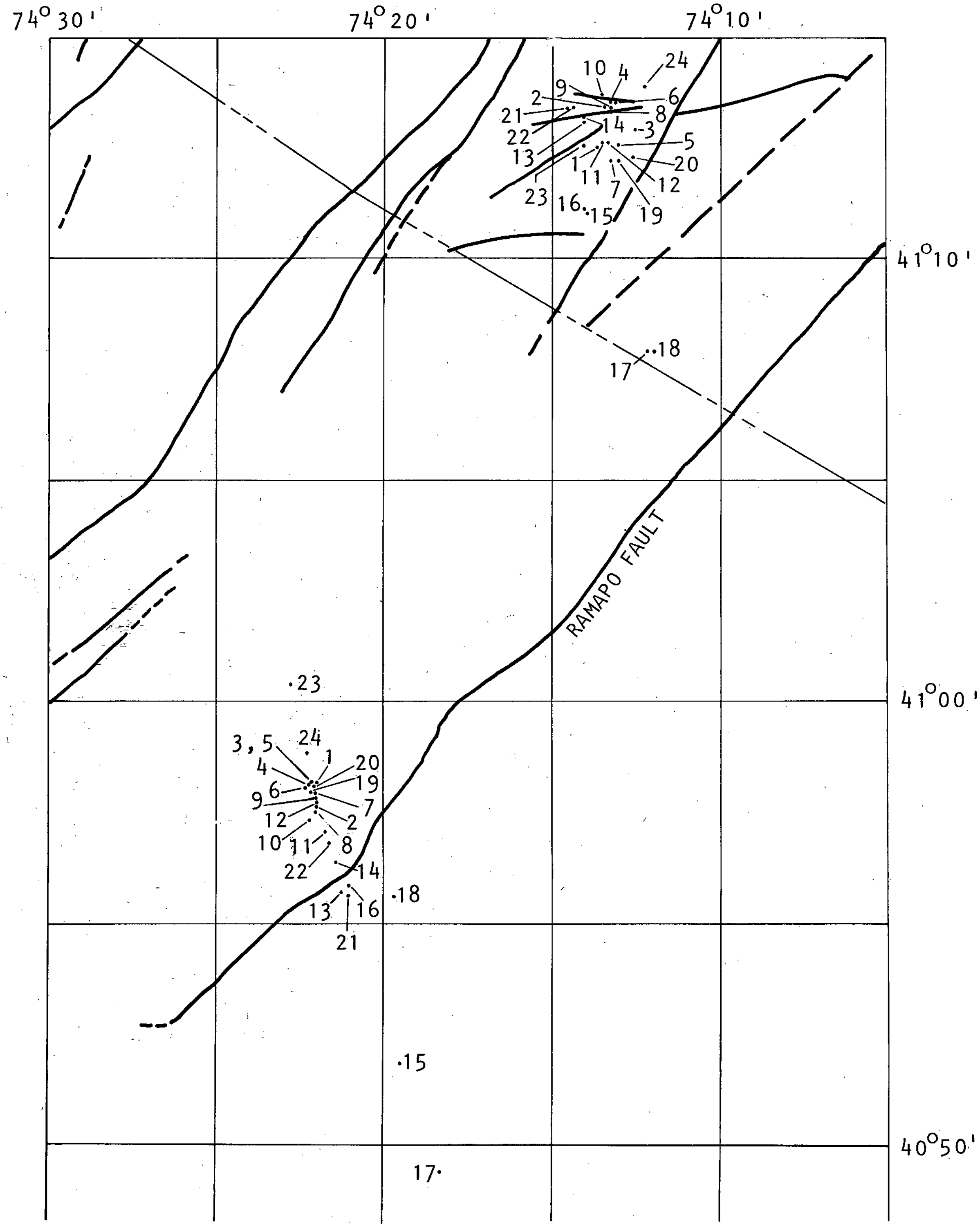


SEISMICITY OF SOUTHEASTERN NEW YORK AND NORTHERN NEW JERSEY

STRUCTURAL DATA MODIFIED FROM:
1. GEOLOGIC MAP OF NEW YORK (LOWER HUDSON SHEET) NEW STATE EDUCATION DEPT., 1970
2. GEOLOGIC MAP OF NEW JERSEY; REVISED 1950 BY M.E.

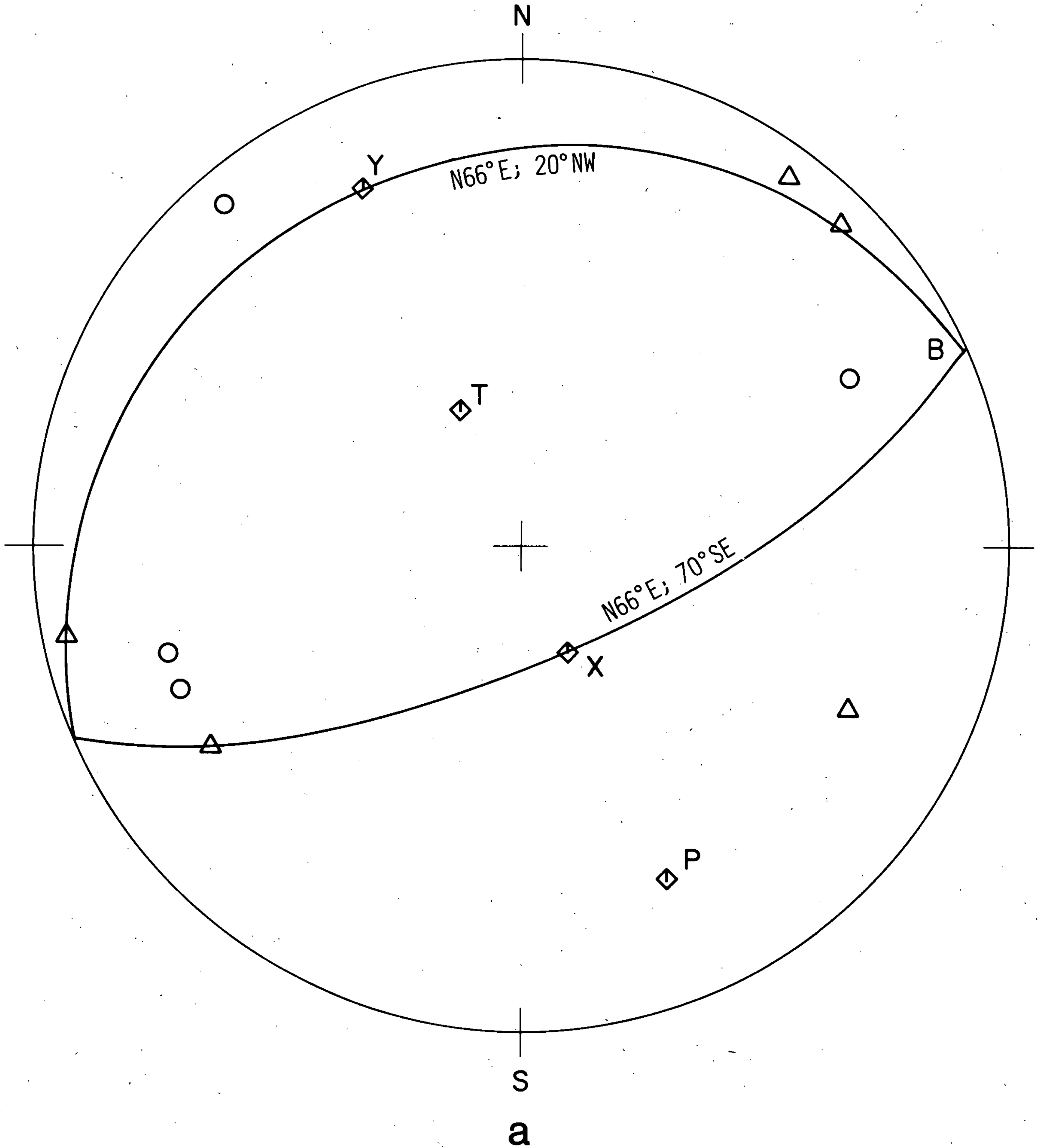
DAMES & MOORE

PLATE G-2



DIFFERENT SOLUTIONS FOR THE LOCATIONS OF SEPTEMBER 3, 1951
AND MARCH 11, 1976 EARTHQUAKES.

THE NUMBERS REFER TO TABLES G-4 AND G-6



FOCAL MECHANISM FOR JULY 19, 1975 EARTHQUAKE

LOWER HEMISPHERE PLOT

LEGEND:

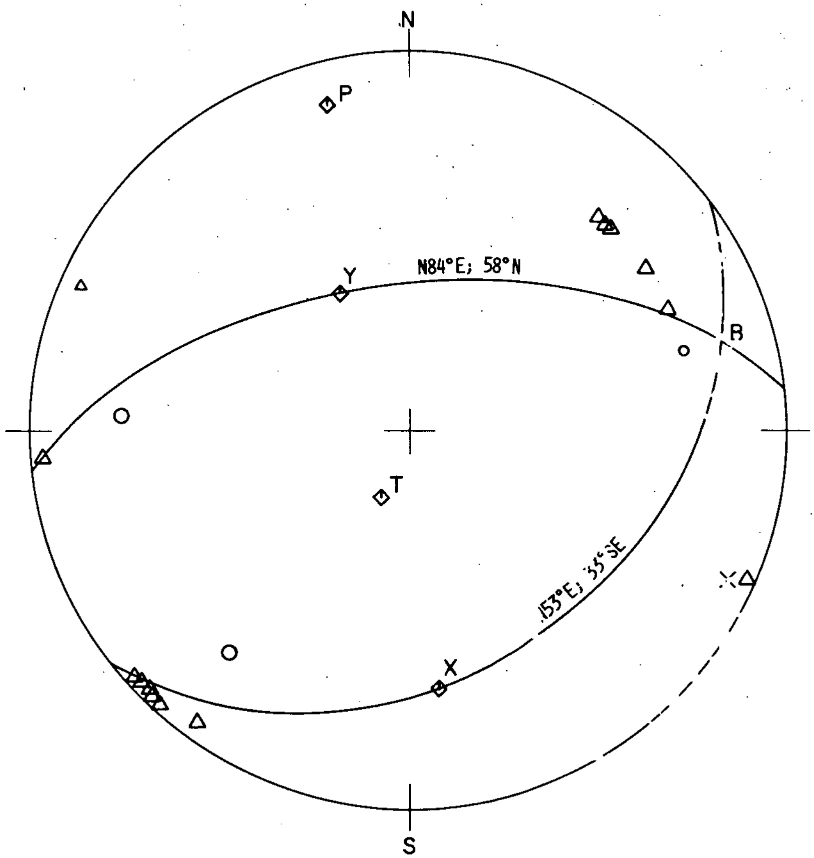
○ COMPRESSION } LESS RELIABLE DATA ARE SHOWN BY

△ DILATATION } SYMBOLS OF SMALLER SIZE

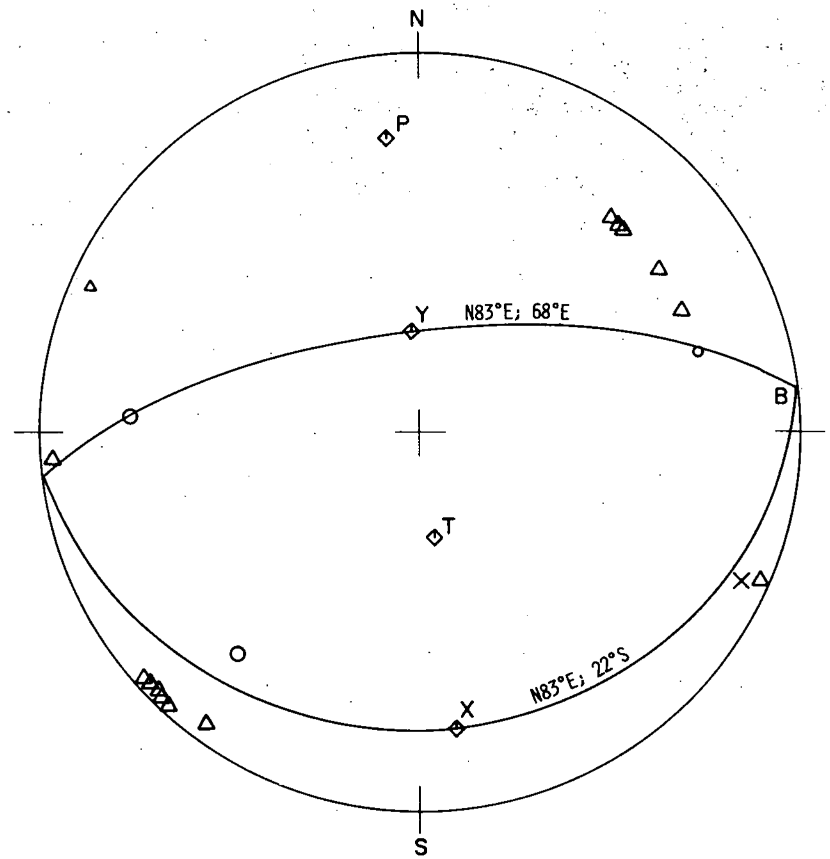
◇ MECHANISM AXES

P = PRESSURE T = TENSION X,Y = POLES

DAMES & MOORE



a



b

FOCAL MECHANISM FOR MARCH 11, 1976 EARTHQUAKE

LOWER HEMISPHERE PLOT

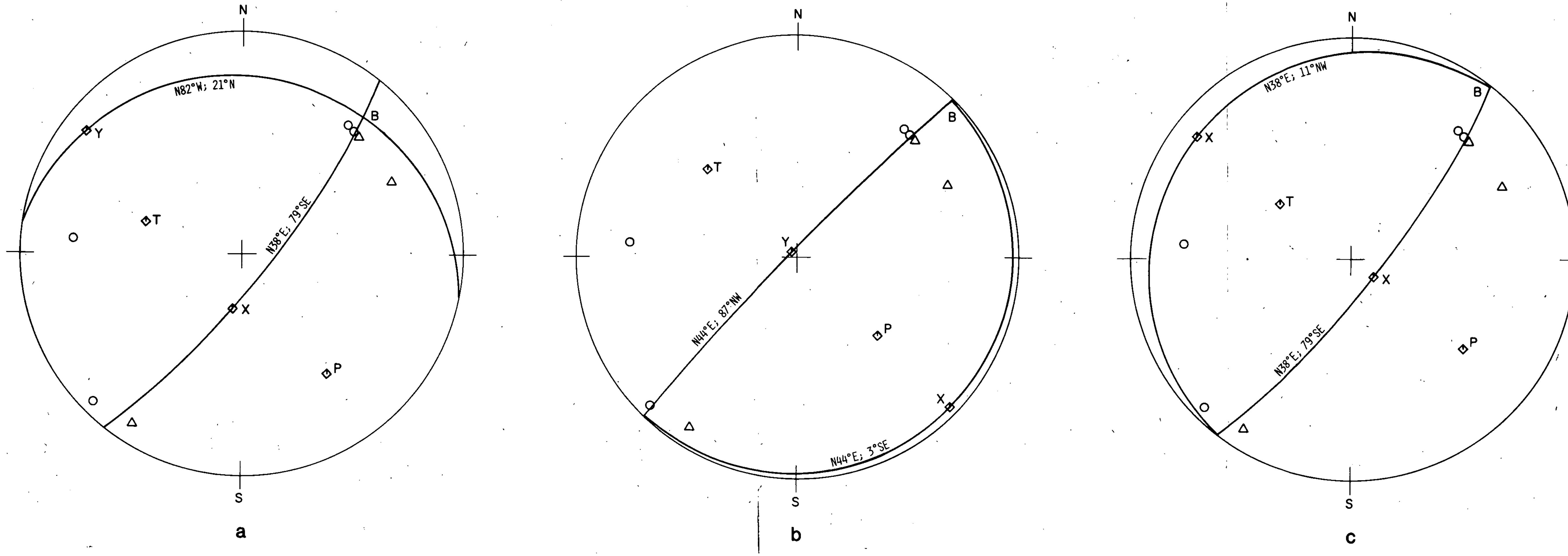
LEGEND:

- ○ COMPRESSION } LESS RELIABLE DATA ARE SHOWN BY
- △ DILATATION } SYMBOLS OF SMALLER SIZE
- × NODAL ARRIVAL OR VERY SMALL DILATATION AT OGD
- ◈ MECHANISM AXES

P = PRESSURE   T = TENSION   X,Y = POLES

DAMES & MOORE

PLATE G-5



FOCAL MECHANISM FOR MARCH 12, 1976 EARTHQUAKE

LOWER HEMISPHERE PLOT

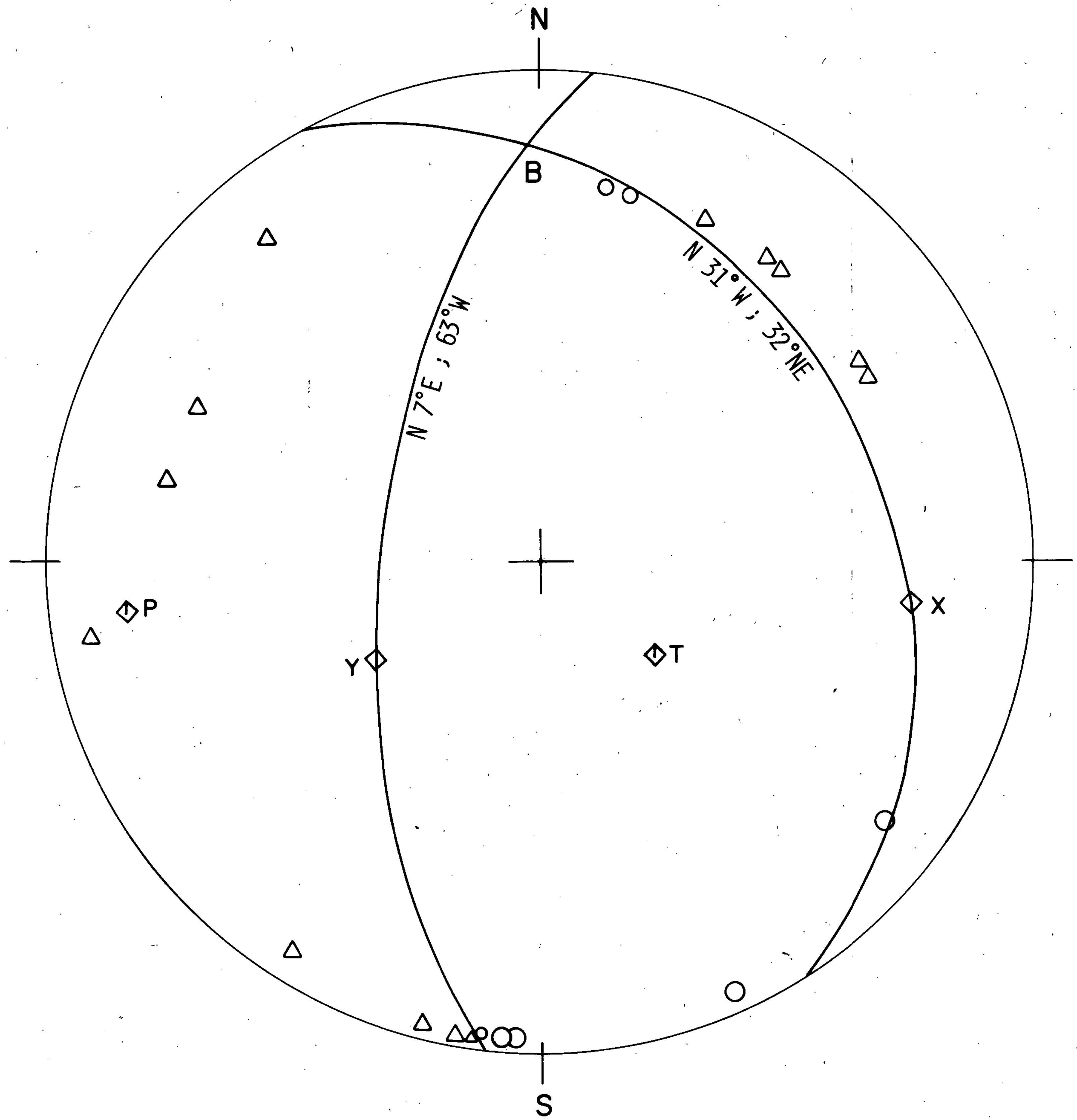
LEGEND:

- ○ COMPRESSION } LESS RELIABLE DATA ARE SHOWN BY
- △ DILATATION } SYMBOLS OF SMALLER SIZE
- ◈ MECHANISM AXES

P = PRESSURE   T = TENSION   X,Y = POLES

DAMES & MOORE

PLATE G-6



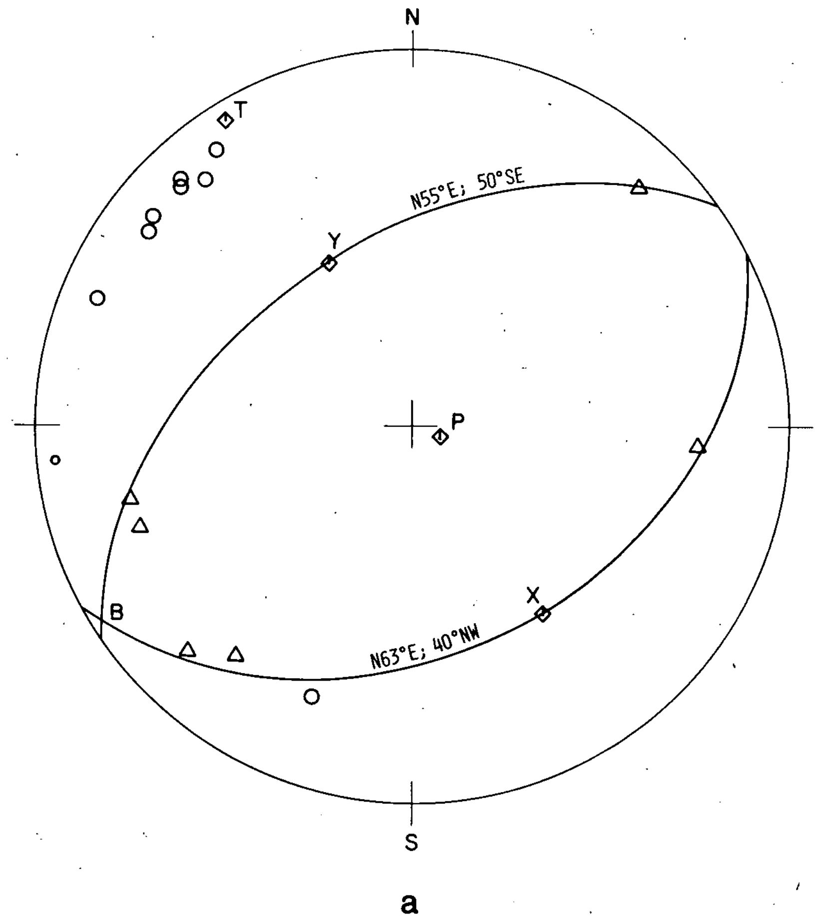
FOCAL MECHANISM FOR APRIL 13, 1976 EARTHQUAKE

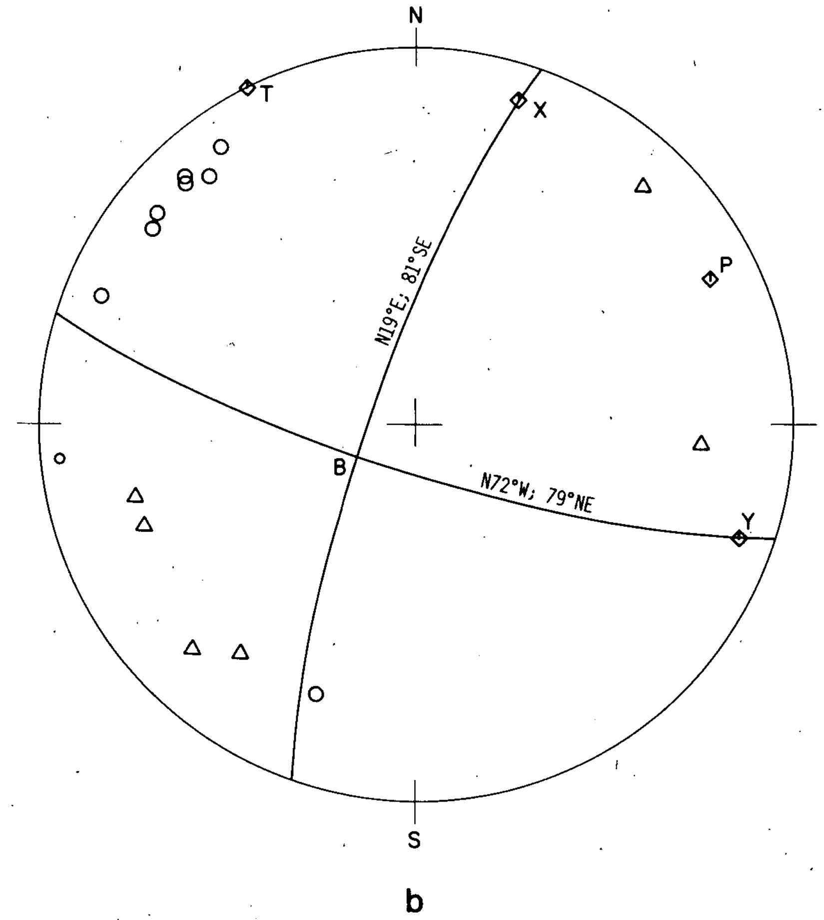
LOWER HEMISPHERE PLOT

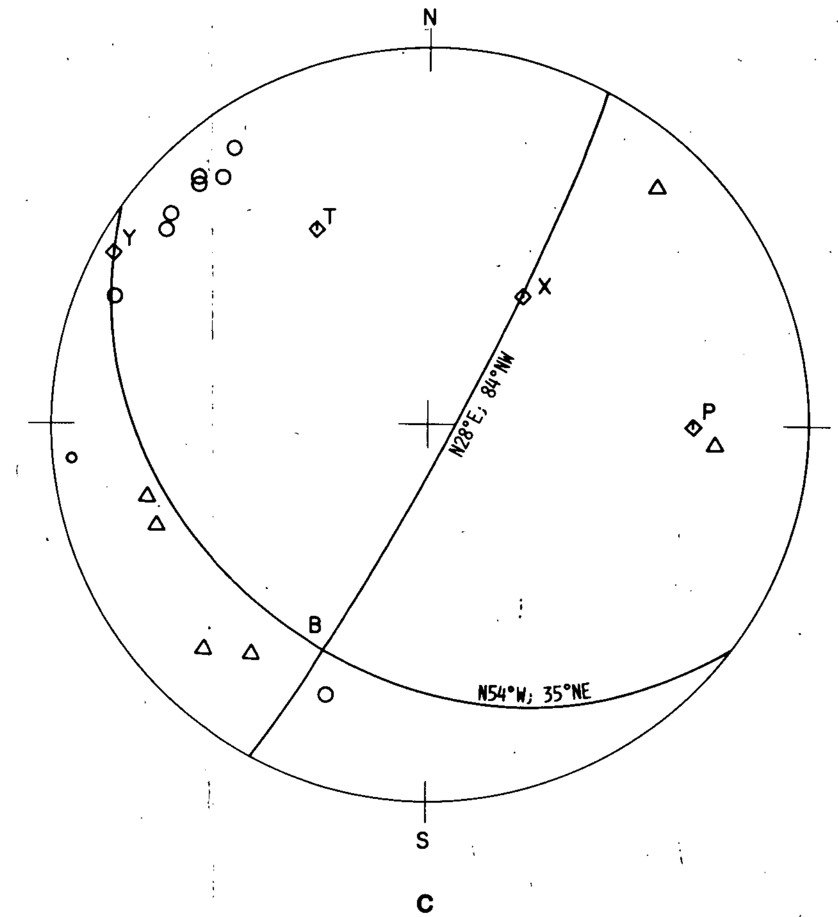
LEGEND :

○ COMPRESSION } LESS RELIABLE DATA ARE SHOWN BY
△ DILATATION } SYMBOLS OF SMALLER SIZE

◇ MECHANISM AXES
P = PRESSURE T = TENSION X,Y = POLES







FOCAL MECHANISM FOR AUGUST 20, 1976 EARTHQUAKE

UPPER HEMISPHERE PLOT

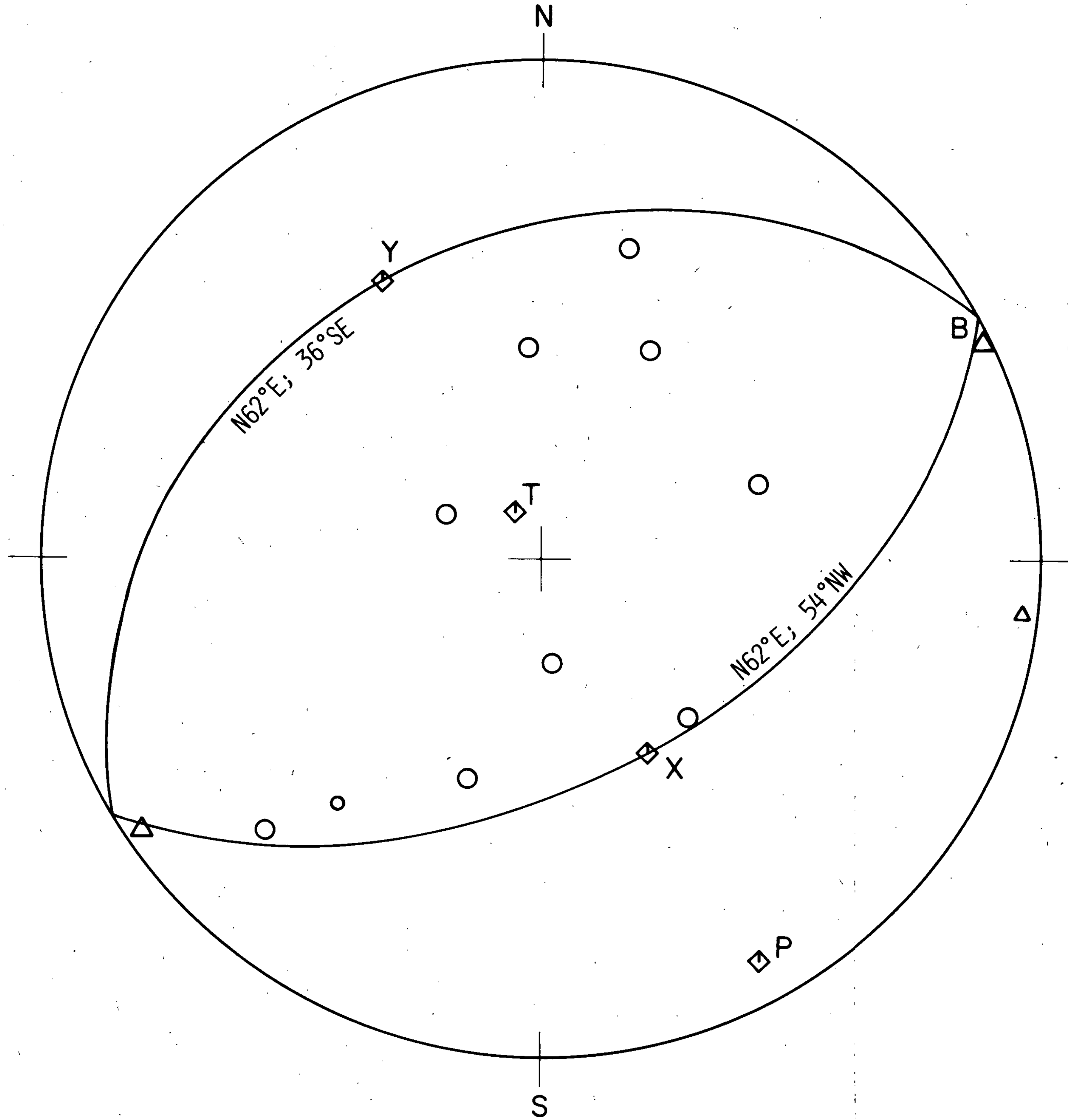
LEGEND:

○ COMPRESSION } LESS RELIABLE DATA ARE SHOWN BY
△ DILATATION } SYMBOLS OF SMALLER SIZE
◇ MECHANISM AXES
P = PRESSURE T = TENSION X,Y = POLES

DAMES & MOORE

FOCAL MECHANISM FOR SEPTEMBER 22, 1976 EARTHQUAKE

UPPER HEMISPHERE PLOT



a

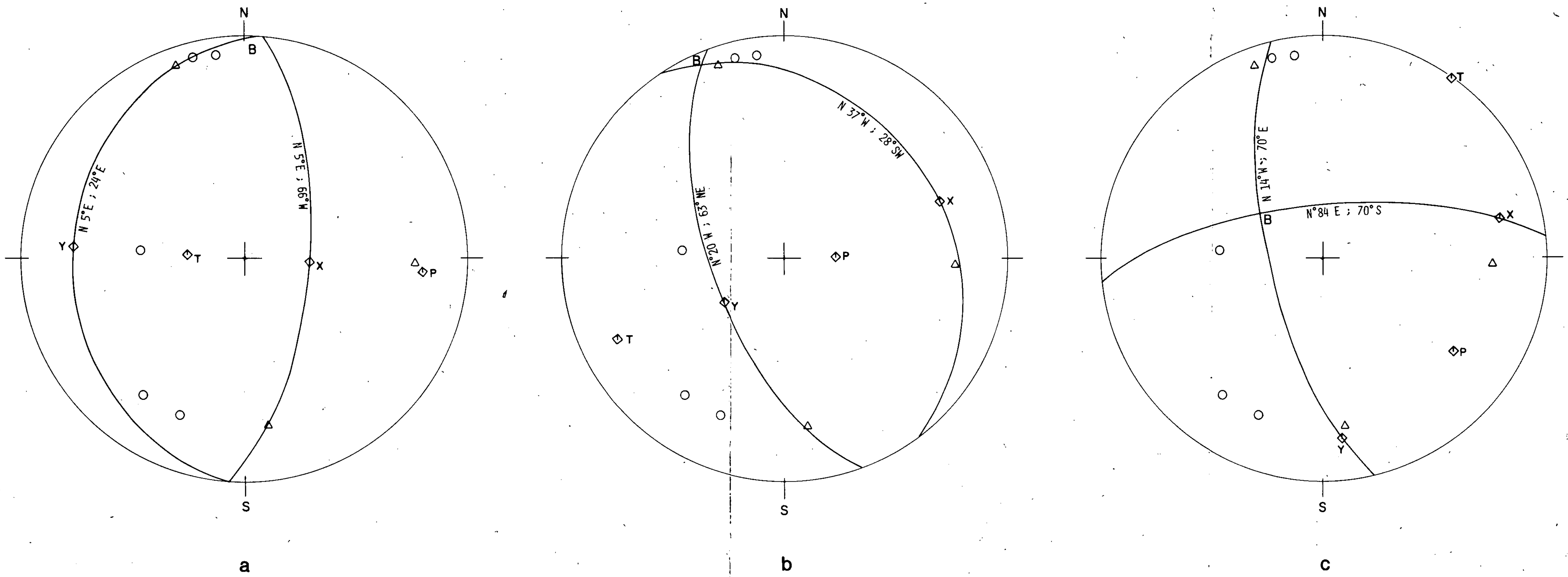
LEGEND:

○ COMPRESSION } LESS RELIABLE DATA ARE SHOWN BY

△ DILATATION } SYMBOLS OF SMALLER SIZE

◇ MECHANISM AXES

P = PRESSURE T = TENSION X,Y = POLES



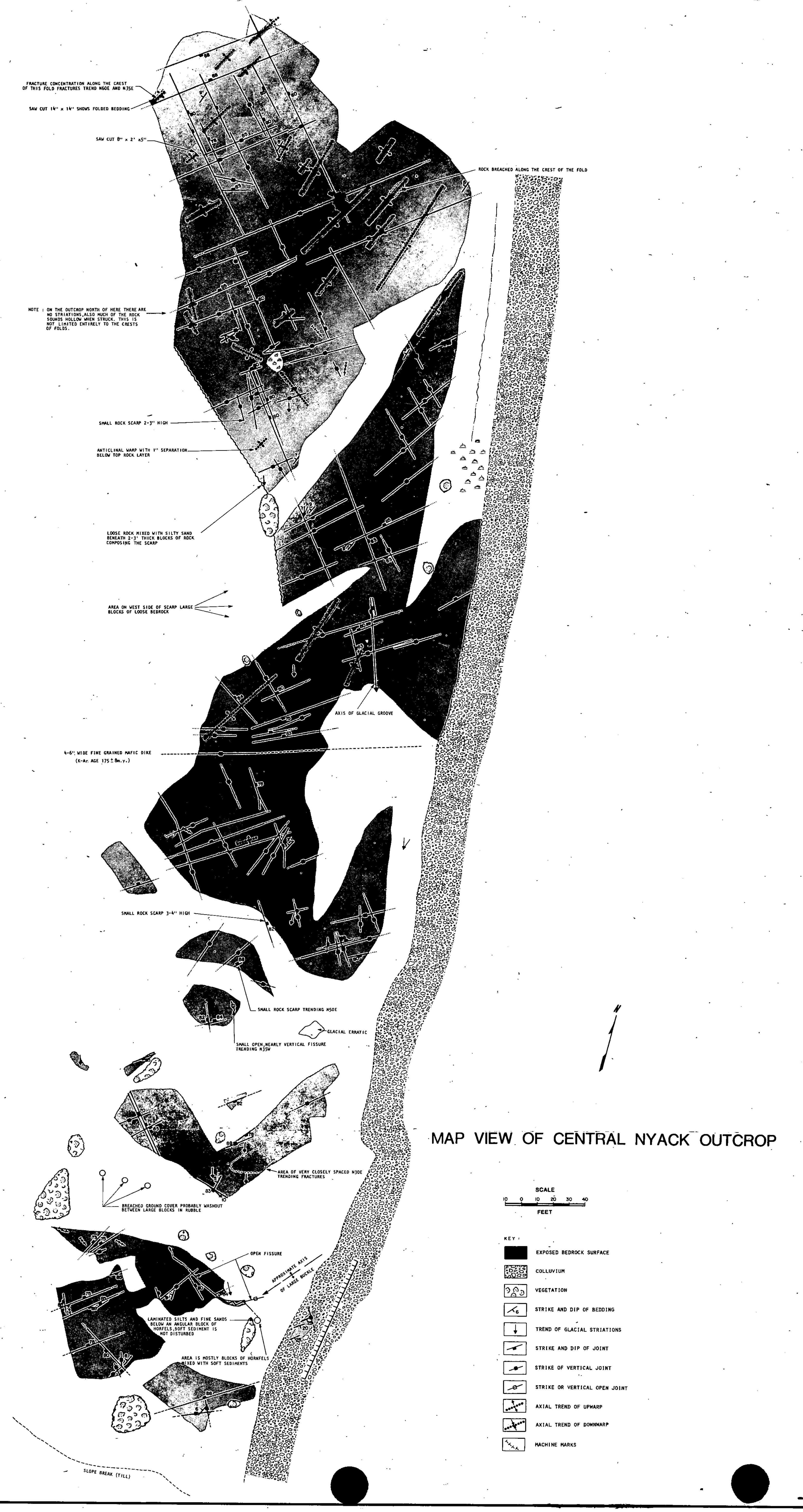
FOCAL MECHANISM FOR NOVEMBER 22, 1976 EARTHQUAKE

UPPER HEMISPHERE PLOT

LEGEND :

○ COMPRESSION } LESS RELIABLE DATA ARE SHOWN BY SYMBOLS OF SMALLER SIZE
△ DILATATION

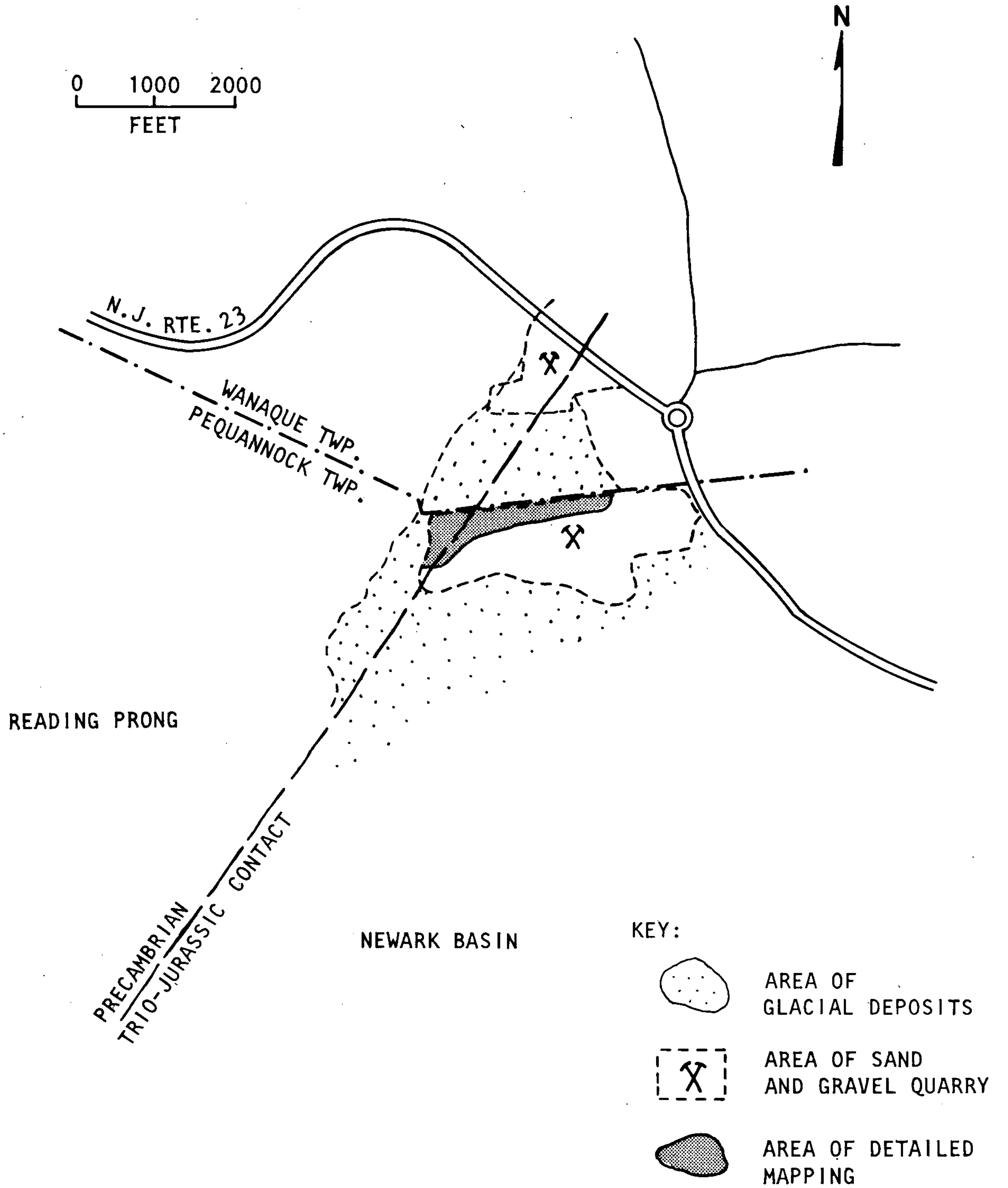
◇ MECHANISM AXES
P= PRESSURE T= TENSION X,Y= POLES



MAP VIEW OF CENTRAL NYACK OUTCROP

DAMES & MOORE

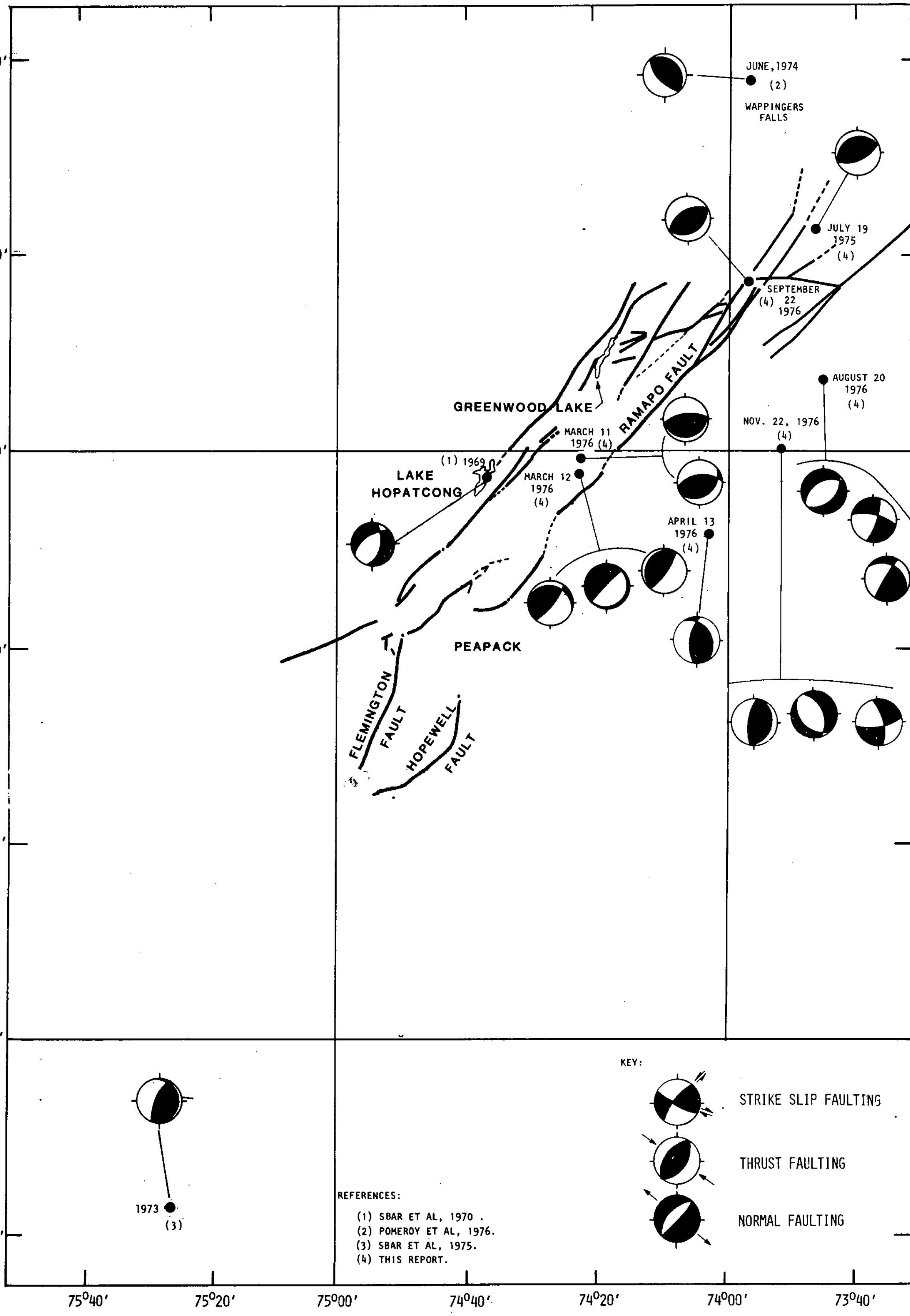
PLATE F-19



LOCATION MAP

SAND AND GRAVEL QUARRIES CONTAINING PLEISTOCENE DEPOSITS ALONG RAMAPO FAULT ZONE, PEQUANNOCK, N.J.

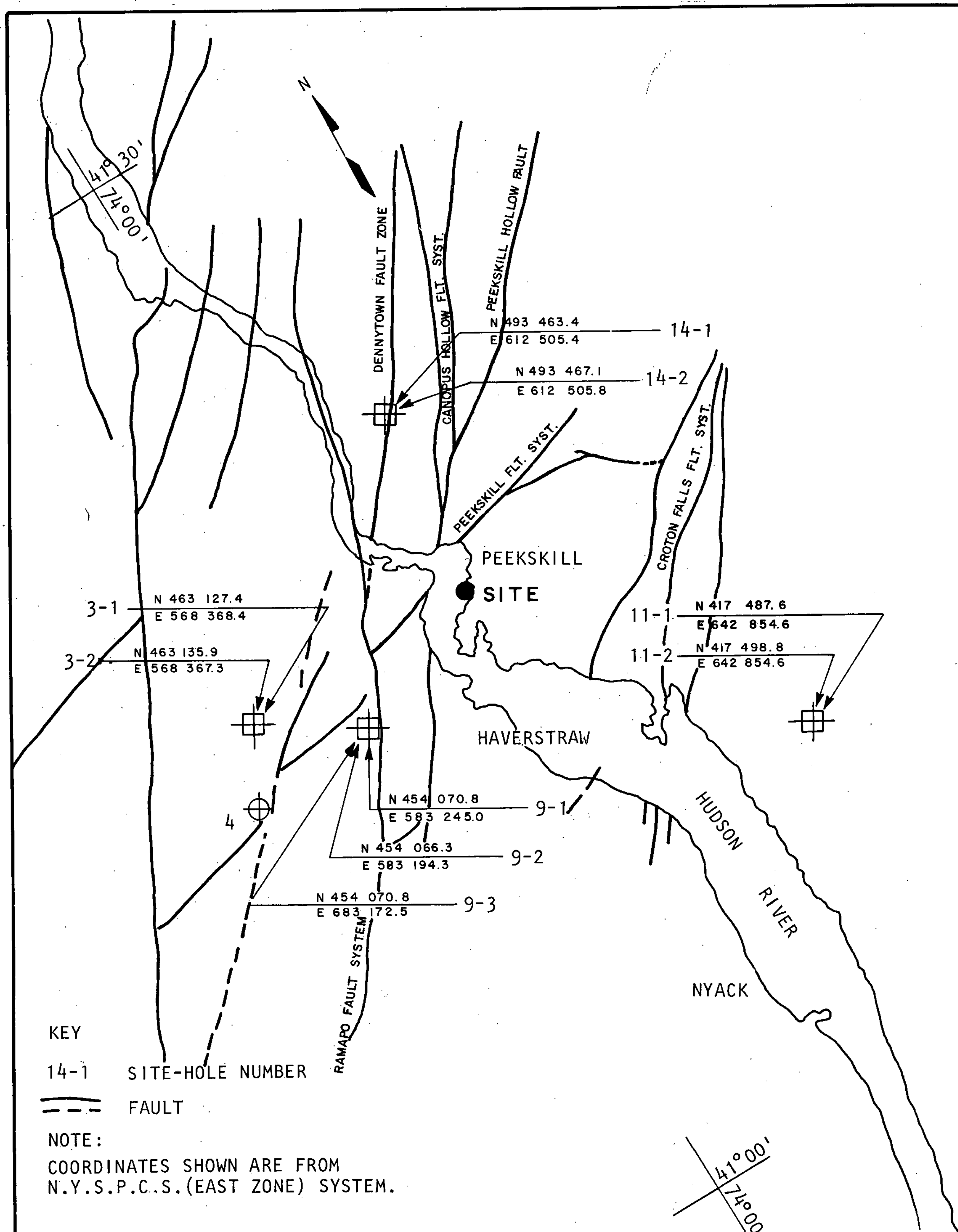
DAMES & MOORE



FAULT PLANE SOLUTIONS FOR EARTHQUAKES IN THE REGION AROUND RAMAPO FAULT

LOWER HEMISPHERE EQUAL AREA PROJECTION
P-WAVE COMPRESSION QUADRANTS ARE SHOWN IN DARK

DAMES & MOORE



LOCATION OF TEST SITES

1 0 1 2 3 4

SCALE IN MILES

SOURCE:
J.W. DELANO, PLAN OF LOCATION OF GEOLOGIC TEST
SITES, PREPARED FOR CONSOLIDATED EDISON JULY 9, 1976

DAMES & MOORE

PLATE H-1

BORING LOG

SIZE OF CORE NX DATE STARTED 2-18-76 DATE COMP. 2-19-76 GEOLOGIST E. LINDNER CHECKED S. ZALEWSKI

COLLAR ELEV. +1091.5' TOTAL DEPTH 81.5' INCLIN. FROM VERTICAL 0 AZIMUTH DIR. OF HOLE —

TESTS PERFORMED UNIAXIAL COMPRESSION WATER LEVEL DURING DRILLING AT SURFACE AFTER COMPL. 6'

Columns: ROCK TYPE | GRAPHIC LOG | DEPTH IN FEET | DESCRIPTION OF ROCK DEFECTS | RQD (75 50 25) | CORE RECOVERY (%) | NUMBER OF FRACTURES PER FOOT (1 4 16 64) | CASING DEPTH | WATER RETURN (%) (25 50 75) | OTHER TESTS

ROCK TYPE

GRAY-GREEN, MEDIUM GRAINED PYROXENE-HORNBLENDE-PLAGIOCLASE-GNEISS, FOLIATED, OCCASIONAL PEGMATITE
FOLIATION ABOUT 80°

AT 0' TO 8' PEGMATITIC INTRUSION; QUARTZ PINK FELDSPAR, GREEN HORNBLENDE
AT 8" TO 1' COARSE HORNBLENDE
AT 2' TO 4' PEGMATITE

AT 10' TO 12'4" PEGMATITE; PINK FELDSPAR AND PYRITE AND MAGNETITE ORE (AT 11')

AT 15'10" PEGMATITE 2" WIDE

FOLIATION NEARLY HORIZONTAL
AT 18'4" PEGMATITE 1" WIDE

AT 32'6" QUARTZ, HORNBLENDE, PYRITE 3" ZONE

FOLIATION ABOUT 50°

AT 35'9" COARSE PEGMATITE
AT 36'4" GREEN HORNBLENDE AND BIOTITE CONCENTRATION, 5" WIDE
FROM 36'9" TO 56' HORNBLENDE RICH ROCK
FOLIATION ABOUT 45°

AT ABOUT 43' TO 43'9" COARSE HORNBLENDE CRYSTALS
AT 44'6" TO 46' FEW PEGMATITIC VEINLETS PARALLEL TO FOLIATION

AT 47' FOLIATION SUBHORIZONTAL

AT 55'4" TO 55'9" HORNBLENDE CONCENTRATIONS
AT 55'9" TO 57'6" LIGHT GRAY QUARTZ RICH ROCK, FINE GRAINED, FAINT FOLIATION
AT 57'6" DARK GRAY BIOTITE HORNBLENDE RICH ROCK
FOLIATION ABOUT 70°

AT 59' TO 63' QUARTZ IMPREGNATED ROCK, NON FOLIATED
FROM 63' DARK GRAY BIOTITE AMFIBOLITE WITH OCCASIONAL BANDS OF FELSIC MATERIAL

FOLIATION ABOUT 70°

AT 68'8" QUARTZ PEGMATITE 2" WIDE

AT 76'2" TO 76'8" QUARTZ IMPREGNATED ZONE

FOLIATION ABOUT 45°

DESCRIPTION OF ROCK DEFECTS

AT 4' TO 6'6" FRACTURE, NEARLY VERTICAL, WEAKLY COATED WITH IRON OXIDES

AT 26' IRREGULAR FRACTURE ABOUT 30 WITH LIMONITE STAINING

AT 31' TO 32'6" HEALED FRACTURES NEARLY VERTICAL WITH LIMONITE
AT 32' FRACTURE SLICKENSIDED ABOUT 35°, STEEP SLICKS
AT 33'8" IRREGULAR FRACTURE, SUBHORIZONTAL WITH LIMONITE
AT 35' FRACTURE 6" LONG, NEARLY VERTICAL
AT 36' TO 38'4" IRREGULAR FRACTURE NEARLY VERTICAL WITH LIMONITE STAINING
AT 39' TO 41' HEALED FRACTURES NEARLY VERTICAL

AT 43'10" SET OF FRACTURES PARALLEL AND PERPENDICULAR TO FOLIATION

AT 45' TO 46' INTERVAL SEVERAL FRACTURES ABOUT 45°, PERPENDICULAR TO FOLIATION, SOME LIMONITE STAINING

AT 55'8" TO 55'9" HEALED DISCRETE FRACTURING

AT 58'4" HEALED FRACTURE, SUBHORIZONTAL

AT 60'3" FRACTURE ABOUT 30°
AT 60'5" IRREGULAR FRACTURE

AT 64'3" HEALED FRACTURE, NEARLY VERTICAL

AT 67' HEALED FRACTURE PARALLEL TO FOLIATION
AT 68'8" SLICKENSIDED FRACTURE, ABOUT 30°

AT 71'3" IRREGULAR FRACTURE ABOUT 30
AT 72'6" SLICKENSIDED FRACTURE ABOUT 45°
AT 73' FRACTURE ABOUT 45°

AT 76' FRACTURE ABOUT 45°
AT 76'8" FRACTURE ABOUT 65°

AT 79' TO 79'7" SET OF FRACTURES
AT 80' TO 81' IRREGULAR FRACTURE NEARLY VERTICAL

BORING TERMINATED AT 81.5' ON 2/2/76

RQD / CORE RECOVERY

RQD	CORE RECOVERY (%)
100	93
65	95
95	65
98	100
89	100
67	100
96	100
88	94
73	100
45	96

CASING DEPTH: NONE

OTHER TESTS: EC,D; EC,D; EC,D; EC,D; EC,D; EC,D; EC,D; EC,D; CS

SITE 3 HOLE 1
IN SITU. STRESS MEASUREMENTS
THE RAMAPO FAULT STUDY.
CONSOLIDATED EDISON COMPANY
OF NEW YORK

DAMES & MOORE

PLATE H-2

BORING LOG

SIZE OF CORE 5½" DATE STARTED 2-27-76 DATE COMP. 3-12-76 GEOLOGIST E. LINDNER CHECKED S. ZALEWSKI

COLLAR ELEV. +1090.2' TOTAL DEPTH 38.3' INCLIN. FROM VERTICAL 0 AZIMUTH DIR. OF HOLE —

TESTS PERFORMED OVERCORING WATER LEVEL DURING DRILLING AT SURFACE AFTER COMPL. 15'

Column headings: ROCK TYPE | GRAPHIC LOG | DEPTH IN FEET | DESCRIPTION OF ROCK DEFECTS | RQD (75 50 25) | CORE RECOVERY (%) | NUMBER OF FRACTURES PER FOOT (1 4 16 64) | CASING DEPTH | WATER RETURN (%) (25 50 75) | OTHER TESTS

ROCK TYPE

GRAY GREEN, MEDIUM-GRAINED, PYROXENE-HORNBLENDE-PLAGIOCLASE GNEISS, FOLIATED, OCCASIONAL PEGMATITE

AT 16'2" PEGMATITIC INTRUSION 1" WIDE

AT 17'1" TO 17'10" LIGHT GRAY LITHOLOGY FOLIATION SUBHORIZONTAL

AT 32' TO 34'8" LIGHT GRAY LITHOLOGY

AT 34'10" HORNBLENDE AND BIOTITE RICH ZONE

GRAPHIC LOG

DEPTH IN FEET: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80

DESCRIPTION OF ROCK DEFECTS

AT 29'2" IRREGULAR FRACTURES ABOUT 70° WITH LIMONITE STAINING

AT 30'11" TO 32'11" FRACTURE ABOUT 15° WITH LIMONITE STAINING

AT 33'8" NEARLY VERTICAL FRACTURE AND FEW HEALED FRACTURES

AT 34'8" IRREGULAR FRACTURE WITH LIMONITE STAINING

BORING TERMINATED AT 38.3' ON 3/12/76

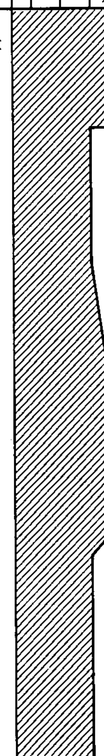
RQD: NA

CORE RECOVERY (%): 100, 100, 100, 100, 100, 100, 100, 100, 100, 100, 100, 100, 100, 100, 100, 100, 100, 83

NUMBER OF FRACTURES PER FOOT: NA

CASING DEPTH: NONE

WATER RETURN (%)



OTHER TESTS: O#1, T.S., O#2, O#3, O#4, O#5, O#6, O#7, O#8, T.S., O#9, O#10

SITE 3 HOLE 2

IN SITU. STRESS MEASUREMENTS

THE RAMAPO FAULT STUDY.

CONSOLIDATED EDISON COMPANY

OF NEW YORK

DAMES & MOORE

PLATE H-3

BORING LOG

SIZE OF CORE: NX — DATE STARTED: 2-20-76 — DATE COMP.: 2-20-76 — GEOLOGIST: E. LINDNER — CHECKED: S. ZALEWSKI

COLLAR ELEV.: NA — TOTAL DEPTH: 26.5' — INCLIN. FROM VERTICAL: 0 — AZIMUTH DIR. OF HOLE: —

TESTS PERFORMED: NONE — WATER LEVEL DURING DRILLING: AT SURFACE — AFTER COMPL.: AT SURFACE

ROCK TYPE	DEPTH IN FEET	DESCRIPTION OF ROCK DEFECTS	RQD (75 50 25)	CORE RECOVERY (%)	NUMBER OF FRACTURES PER FOOT (1 4 16 64)	OTHER TESTS
TOPSOIL SAND AND GRAVEL WITH OCCASIONAL CLAY POCKETS GLACIAL TILL	0–17.5	NA	NA	NA	NA	
LIGHT GRAY-PINKISH, FINE GRAINED BIOTITE PLAGIOCLASE-GNEISS, WELL FOLIATED, HIGHLY DEFORMED FOLIATION ABOUT 65°	17.5–26.5	AT 18' AND 18'6" SLICKENSIDED FRACTURE ABOUT 45°, OBLIQUE SENSE OF MOVEMENT AT 20' TO 21' FRACTURED ZONE WITH HIGH ANGLE FRACTURES AT 22' TO 23' HIGHLY FRACTURED ZONE AT 23'8" SLICKENSIDED FRACTURE ABOUT 25°, SLICKS PERPENDICULAR TO CORE AXIS AT 24' TO 25' HIGHLY FRACTURED ZONE AT 25'8" SLICKENSIDED FRACTURE ABOUT 30°, SLICK PERPENDICULAR TO CORE AXIS	30 20	75 100		T.S.

BORING TERMINATED AT 26.5' ON 2/20/76

SITE 4 HOLE 1
IN SITU. STRESS MEASUREMENTS
THE RAMAPO FAULT STUDY.
CONSOLIDATED EDISON COMPANY
OF NEW YORK

DAMES & MOORE

PLATE H-4

BORING LOG

SIZE OF CORE NX DATE STARTED 2-24-76 DATE COMP. 2-26-76 GEOLOGIST E. LINDNER CHECKED S. ZALEWSKI

COLLAR ELEV. +312.4' TOTAL DEPTH 79' INCLIN. FROM VERTICAL 0 AZIMUTH DIR. OF HOLE ——

TESTS PERFORMED UNIAXIAL COMPRESSION WATER LEVEL DURING DRILLING AT SURFACE AFTER COMPL. AT SURFACE

ROCK TYPE	DEPTH IN FEET	DESCRIPTION OF ROCK DEFECTS	RQD (75 50 25)	CORE RECOVERY (%)	NUMBER OF FRACTURES PER FOOT (1 4 16 64)	OTHER TESTS
FINE TO COARSE SAND AND GRAVEL WITH CLAY POCKETS GLACIAL TILL	0–5				NA	
LIGHT GRAY, COARSE HORNBLENDE GRANITE, GNEISS, MASSIVE, POORLY FOLIATED WITH OCCASIONAL PEGMATITIC INTRUSIONS AND CONCENTRATIONS OF HORNBLENDE CRYSTALS CHARACTERIZED BY ABUNDANT HEALED FRACTURES ALONG ENTIRE LENGTH OF CORE	5–10	AT 9'1" FRACTURE ABOUT 45° PARALLEL TO FOLIATION	76	100		
AT 11' COARSE PEGMATITIC BAND ABOUT 5" WIDE FOLIATION POORLY DEFINED ABOUT 45° AT 13'10" TO 14'8" PEGMATITE	10–15	AT 10'5" SLICKENSIDED FRACTURE ABOUT 45°, PARALLEL TO FOLIATION AT 12'2" SLICKENSIDED FRACTURE ABOUT 45°, OPPOSITE FOLIATION AT 14'1" SLICKENSIDED FRACTURE ABOUT 20° OBLIQUE SENSE OF MOVEMENT				
	15–20	AT 15' TO 17'6" TIGHT FRACTURING, SOME SLICKENSIDED	76	100		
AT ABOUT 21' TO 22' HORNBLENDE CONCENTRATION AT 23' TO 24'6" PEGMATITE	20–25	AT 21' FRACTURE ABOUT 45° AT 24' FRACTURE ABOUT 25°				
AT 28' COARSE PEGMATITE (QUARTZ AND HORNBLENDE) ABOUT 5" WIDE	25–30	AT 27'5" IRREGULAR FRACTURE ABOUT 45° AT 28' HEALED FRACTURES	97	100		
	30–35	AT 30' FRACTURE ABOUT 15°				EC,D EC,D
	35–40		100	100		EC,CS
FOLIATION ABOUT 50°	40–45	AT 39'6" SLICKENSIDED FRACTURE ABOUT 45° AND HEALED FRACTURES				EC,D EC,D
	45–50	AT 44'3" AND 44'6" SLICKENSIDED FRACTURES ABOUT 35°, OBLIQUE SENSE OF MOVEMENT	100	97		
AT 57' COARSE HORNBLENDE ABOUT 2" WIDE	50–55	AT 51'11" FRACTURE ABOUT 60° WITH OBLIQUE SLICKS AT 52'11" TO 54' SET OF FRACTURES AT 53'10" SLICKENSIDED ABOUT 45°, OBLIQUE SLICKS AT 54'8" TO 55'7" SET OF SLICKENSIDED FRACTURES ABOUT 45°, DIP-SLIP SENSE OF MOVEMENT	83	100		
AT 59'10" TO 60'9" PEGMATITIC BAND FOLIATION ABOUT 45°, POORLY DEFINED	55–65	AT 59'5" FRACTURE ABOUT 50° AT 60'3" AND 61'2" IRREGULAR FRACTURES ABOUT 70°	97	100		
	65–70	AT 67'3" FRACTURE ABOUT 70°, WITH SMOOTH SURFACE COATED WITH Mn OXIDES	100	100		
FOLIATION ABOUT 45°	70–79	AT 70'11" FRACTURE ABOUT 45°, OPPOSITE FOLIATION, MANGANESE COATING AT 72'1" FRACTURE ABOUT 45°, SMOOTH SURFACE WITH LIMONITE STAINING AT 72'10" FRACTURE ABOUT 65°, WITH SMOOTH SURFACE	98	100		
	80	BORING TERMINATED AT 79' ON 2/26/76				

SITE 9 HOLE 2
IN SITU. STRESS MEASUREMENTS
THE RAMAPO FAULT STUDY,
CONSOLIDATED EDISON COMPANY
OF NEW YORK

DAMES & MOORE

BORING LOG

SIZE OF CORE NX DATE STARTED 2-23-76 DATE COMP. 2-24-76 GEOLOGIST E.LINDNER/N.MYSORE CHECKED S. ZALEWSKI

COLLAR ELEV. +309.7' TOTAL DEPTH 45.0' INCLIN. FROM VERTICAL 0 AZIMUTH DIR. OF HOLE —

TESTS PERFORMED NONE WATER LEVEL DURING DRILLING AT SURFACE AFTER COMPL. AT SURFACE

ROCK TYPE	DEPTH IN FEET	DESCRIPTION OF ROCK DEFECTS	RQD	CORE RECOVERY (%)
FINE TO COARSE SAND AND GRAVEL WITH CLAY POCKETS GLACIAL TILL	0–9.5		NA	NA
LIGHT GRAY, COARSE GRAINED HORNBLENDE GRANITE GNEISS, MASSIVE, POORLY FOLIATED	10	AT 9'6" TO 10'6" FRACTURES ABOUT 30° CLOSELY SPACED, MANY HEALED AT 11'6" FRACTURE ABOUT 40° WITH LIMONITE STAINING	30	100
FOLIATION WEAKLY DEFINED BY HORNBLENDE CRYSTALS	15	AT 14' AND 14'9" FRACTURES ABOUT 45° AND PARALLEL TO CORE AXIS WITH LIMONITE AT 15'6" FRACTURE ABOUT 20° WITH LIMONITE	37	100
	20	AT 16'5" AND 18'6" FRACTURES ABOUT 25° WITH LIMONITE STAINING AT 19' TO 19'6" SET OF FRACTURES AT 21'7" FRACTURE ABOUT 35° WITH LIMONITE STAINING	43	100
	25	AT 24'3" FRACTURE ABOUT 40° AND VERTICAL, BOTH WITH LIMONITE AT 25'6" FRACTURE ABOUT 35° SMOOTH SURFACE, LIMONITE STAINING AT 25'9" TO 27' SEVERAL SIMILAR FRACTURES AT 27'6" TO ABOUT 31' FAULT ZONE; HIGHLY FRACTURED WITH LIMONITE STAINING	57	66
	30–35	AT 32' TO 32'6" SET OF FRACTURES; IRREGULAR FRACTURE NEARLY VERTICAL TERMINATED AT FRACTURES ABOUT 30° WITH OPPOSITE SENSE LIMONITE STAINING AT 33' TO 36' HIGHLY FRACTURED ZONE AT 36' TO 38' FRACTURE VERTICAL WITH LIMONITE STAINING	24	78
	40		0	100
	40–44	AT 40' FRACTURE ABOUT 30°, SMOOTH SURFACE, LIMONITE STAINING AT 40'6", 41'3", 42'2", 42'6", 43', 43'7" FRACTURES ABOUT 45°, LIMONITE STAIN	100	100
	45	AT 44'6" SET OF 5 FRACTURES ABOUT 20°	0	100
	45	BORING TERMINATED AT 45' ON 2/24/76		

Column headings: GRAPHIC LOG; NUMBER OF FRACTURES PER FOOT (1 4 16 64); CASING DEPTH; WATER RETURN (%) (25 50 75); OTHER TESTS; RQD scale 75 50 25. Depth scale 5–80.

SITE 9 HOLE 1
IN SITU. STRESS MEASUREMENTS
THE RAMAPO FAULT STUDY.
CONSOLIDATED EDISON COMPANY
OF NEW YORK

DAMES & MOORE

PLATE H-6

BORING LOG

SIZE OF CORE 5½" DATE STARTED 3-16-76 DATE COMP. 4-9-76 GEOLOGIST E.LINDNER/T.MILLS CHECKED S. ZALEWSKI

COLLAR ELEV. +313.5' TOTAL DEPTH 49.6' INCLIN. FROM VERTICAL 0 AZIMUTH DIR. OF HOLE —

TESTS PERFORMED OVERCORING WATER LEVEL DURING DRILLING AT SURFACE AFTER COMPL. 5'

ROCK TYPE	DEPTH IN FEET	DESCRIPTION OF ROCK DEFECTS	RQD (75 50 25)	CORE RECOVERY (%)	NUMBER OF FRACTURES PER FOOT (1 4 16 64)	CASING DEPTH	WATER RETURN (%) (25 50 75)	OTHER TESTS
FINE TO COATSE SAND AND GRAVEL WITH OCCASIONAL CLAY POCKETS GLACIAL TILL	0–4	NA	NA	NA	NA			
LIGHT GRAY, COARSE GRAINED HORNBLENDE GRANITE GNEISS, MASSIVE, POORLY FOLIATED WITH OCCASIONAL PEGMATITIC INTRUSIONS AND CONCENTRATIONS OF HORNBLENDE	5	AT 6'5" FRACTURE ABOUT 45° AT 7' FRACTURE~45°, SMOOTH SURFACE COATED WITH ALTERATION PRODUCTS AT 9'3" SIMILAR FRACTURE		100 100 100 100				
FOLIATION ABOUT 45°, POORLY DEFINED AT 13' COARSE HORNBLENDE CONCENTRATION AT 13'6" TO 14' PEGMATITE	10	AT 11' SET OF 2 FRACTURES-ORTHOGONAL, SMOOTH SURFACE AT 13' SET OF ORTHOGONAL FRACTURES WITH SOME DARK ALTERED COATING		100 100				
	15	AT 17'3" SLICKENSIDED FRACTURE ABOUT 35°, DIP-SLIP SENSE OF MOVEMENT AT 18'9" IRREGULAR FRACTURE ABOUT 70°		100				
	20			100 100				
	25			100				
AT 31' TO 32' COARSE PEGMATITE WITH HORN-BLENDE	30	AT 29'7" HEALED FRACTURE, VERTICAL ABOUT 8" LONG AT 32' IRREGULAR FRACTURE ABOUT 45° AND NUMEROUS HEALED ONES		100 100 100 100				O#1 O#2 T.S.
	35	AT 35' TO 38' FRACTURE ABOUT VERTI-CAL, SMOOTH SURFACE WITH ALTERED COATING AND LIMONITE STAINING		100 100 100				O#3 O#4 O#5 T.S.
	40	AT 40' IRREGULAR FRACTURE ABOUT 45° AT 41' SLICKENSIDED FRACTURE ABOUT 45°		100 100				O#6 O#7
	45	BORING TERMINATED AT 44.6' ON 4/9/76						
	50							
	55							
	60							
	65							
	70							
	75							
	80							

SITE 9 HOLE 3
IN SITU. STRESS MEASUREMENTS
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BORING LOG

SIZE OF CORE NX DATE STARTED 4-12-76 DATE COMP. 4-13-76 GEOLOGIST E.LINDNER/T.MILLS CHECKED S. ZALEWSKI

COLLAR ELEV. +244.3' TOTAL DEPTH 77.0' INCLIN. FROM VERTICAL 0 AZIMUTH DIR. OF HOLE —

TESTS PERFORMED UNIAXIAL COMPRESSION WATER LEVEL DURING DRILLING AT SURFACE AFTER COMPL. AT SURFACE

ROCK TYPE	DEPTH IN FEET	DESCRIPTION OF ROCK DEFECTS	RQD	CORE RECOVERY (%)	OTHER TESTS
TOPSOIL					
COARSE TO FINE SAND AND GRAVEL-GLACIAL TILL		NA			
	5				
LIGHT GRAY, FINE TO MEDIUM GRAINED GNEISS, WITH PEGMATITIC INTRUSIONS, OFTEN IN FORM OF PTYGMATIC FOLDS. MASSIVE, UNWEATHERED, WELL FOLIATED					
	10		100	97	
		AT 13'2" IRREGULAR FRACTURE PARALLEL TO FOLIATION			
	15				EC,D
AT 17'2" TO 19'4" PEGMATITE		AT 16'8" IRREGULAR FRACTURE PARALLEL TO FOLIATION	99	100	EC,D CS
	20	AT 20' IRREGULAR FRACTURE ABOUT 20°			
AT 21'4" ABOUT 3" CONCENTRATION OF COARSE HORNBLENDE AND BIOTITE					EC,D
AT 25' HORNBLENDE CONCENTRATION ABOUT 3" WIDE	25	AT 24'2" IRREGULAR FRACTURE WITH LIMONITE STAINING			
FOLIATION ABOUT 40°			99	97	EC,D
	30				
FOLIATION ABOUT 45°	35	AT 34'6" TO 36' FRACTURE ZONE, FRACTURES ABOUT 20°, LIMONITE STAINING; HEALED FRACTURES PARALLEL TO FOLIATION			
AT 37' TO 46' INTERVAL SCHISTOSE BIOTITE RICH LITHOLOGY IN NEAR VERTICAL CONTACT			82	100	EC,D T.S. EC,D
	40				
					EC,D
	45	AT 45'4" FRACTURE ABOUT 45°			
			98	100	
FOLIATION ABOUT 30°		AT 49' IRREGULAR FRACTURE PARALLEL TO FOLIATION			
FOLIATION NEARLY VERTICAL	50	AT 50'6" PERPENDICULAR FRACTURE, COATED WITH PYRITE			
IRREGULAR PEGMATITIC INTRUSION					
	55	AT 55' TO 56' SET OF PERPENDICULAR FRACTURES WITH PYRITE			
FOLIATION ABOUT 45°		AT 56'8" IRREGULAR FRACTURE ABOUT 75° AT 57'10" IRREGULAR FRACTURE WITH PYRITE AT 58'1" HEALED FRACTURE	97	100	
	60				
AT 64'10" PTYGMATIC FOLDS FOLIATION ABOUT 65°	65	AT 64'3" IRREGULAR FRACTURE ABOUT 75° AT 65'3" FRACTURE PARALLEL TO FOLIATION			
AT 67'6" PEGMATITE 1" WIDE			89	100	
AT 69' TO 70'6" PEGMATITE ZONE	70				
FOLIATION ABOUT 45°		AT 72'5" FRACTURE ABOUT 45°			
AT 75' ABOUT 6" PEGMATITE ZONE	75	AT 74'5" FRACTURE WITH MINOR SLICKS, ABOUT 45°, PARALLEL TO FOLIATION	100	98	
		BORING TERMINATED AT 77' ON 4/13/76			
	80				

NUMBER OF FRACTURES PER FOOT: NA (0–8')

SITE 11 HOLE 1
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BORING LOG

SIZE OF CORE 5¼" DATE STARTED 4-14-76 DATE COMP. 4-30-76 GEOLOGIST E.LINDNER/T.MILLS CHECKED S. ZALEWSKI

COLLAR ELEV. +245.5' TOTAL DEPTH 43.7' INCLIN. FROM VERTICAL 0 AZIMUTH DIR. OF HOLE —

TESTS PERFORMED OVERCORING WATER LEVEL DURING DRILLING AT SURFACE AFTER COMPL. AT SURFACE

ROCK TYPE	GRAPHIC LOG	DEPTH IN FEET	DESCRIPTION OF ROCK DEFECTS	RQD 75 50 25	CORE RECOVERY (%)	NUMBER OF FRACTURES PER FOOT 1 4 16 64	CASING DEPTH	WATER RETURN (%) 25 50 75	OTHER TESTS
LIGHT GRAY, FINE TO MEDIUM GRAINED GNEISS, WITH PEGMATITIC INTRUSIONS, OFTEN IN FORM OF PTYGMATIC FOLDS. MASSIVE, UNWEATHERED, WELL FOLIATED					100				
		5		NA		NA			
					98				
		10							
FOLIATION ABOUT 45°					97		GROUTED		
			AT 13'3" FRACTURE AT ABOUT 45°, OPPOSITE TO FOLIATION, LIMONITE STAINING						T.S. O#1
		15	AT 13'6" IRREGULAR FRACTURE ABOUT 45° IRON STAINING						O#2
AT 17'4" PEGMATITE 2" WIDE FOLIATION ABOUT 40°			AT 17'4" AND 17'6" IRREGULAR FRACTURE PARALLEL TO FOLIATION						O#3 O#4
		20	AT 20'2" IRREGULAR FRACTURE PARALLEL TO FOLIATION		100				
			AT 21'3" IRREGULAR FRACTURE ABOUT 45° OPPOSITE FOLIATION						O#5
FOLIATION ABOUT 40°			AT 23'5" FRACTURE PERPENDICULAR WITH PYRITE AND SOME IRON OXIDES						
		25	AT 25'6" FRACTURE ZONE WITH FAULT GOUGE 2" THICK.		85				
			AT 26'11" IRREGULAR FRACTURE ABOUT 70°		75				
			AT 27'2" FRACTURE PARALLEL TO FOLIATION		100				O#6
		30	AT 31'1" IRREGULAR FRACTURE ABOUT 65° OPPOSITE TO FOLIATION WITH LIMONITE						
AT 34' PEGMATITE ABOUT 6" WITH HORNBLENDE AND GARNET			AT 32'7" TO 33'9" FRACTURE ZONE; FRACTURES AT ABOUT 45° OPPOSITE TO FOLIATION, SOME WITH SMOOTH SURFACE AND LIMONITE STAINING		100				T.S. O#7 O#8
AT 35'6" TO ABOUT 37' DARK GRAY HORNBLENDE RICH UNIT GRADING LIGHT GRAY WITH PEGMATITIC INTRUSIONS		35							O#9 O#10 O#11
		40							O#12 O#13
		45	BORING TERMINATED AT 43.7' ON 4/30/76						
		50							
		55							
		60							
		65							
		70							
		75							
		80							

SITE 11 HOLE 2
IN SITU. STRESS MEASUREMENTS
THE RAMAPO FAULT STUDY.
CONSOLIDATED EDISON COMPANY
OF NEW YORK

DAMES & MOORE

PLATE H-9

BORING LOG

SIZE OF CORE NX DATE STARTED 5-3-76 DATE COMP. 5-4-76 GEOLOGIST E.LINDNER/T.MILLS CHECKED S. ZALEWSKI

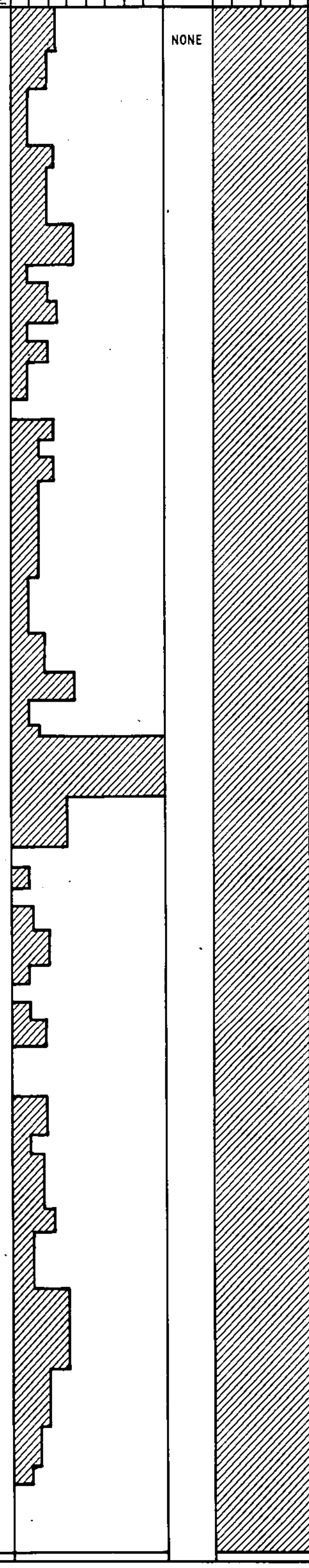
COLLAR ELEV. +457.2' TOTAL DEPTH 79.8' INCLIN. FROM VERTICAL 0 AZIMUTH DIR. OF HOLE —

TESTS PERFORMED UNIAXIAL COMPRESSION WATER LEVEL DURING DRILLING AT SURFACE AFTER COMPL. 3 FT.

ROCK TYPE	DEPTH IN FEET	DESCRIPTION OF ROCK DEFECTS	RQD	CORE RECOVERY (%)	CASING DEPTH	OTHER TESTS
GRAY-GREEN, MEDIUM-GRAINED PYROXENE HORNBLENDE-PLAGIOCLASE GNEISS WELL FOLIATED WITH OCCASIONAL BANDS OF PEGMATITIC ZONES FOLIATION ABOUT 80° AT 2'3" ABOUT 6" COARSE PEGMATITE FOLIATION ABOUT 45°		AT 1'9" IRREGULAR FRACTURE ~ 45° COATED WITH SOME ALTERED MINERALIZATION AT 4'3" AND 5' FRACTURE PARALLEL TO FOLIATION	86	100	NONE	
FOLIATION ABOUT 60°	5	AT 7' IRREGULAR HORIZONTAL FRACTURE WITH ALTERED MINERALIZED ZONE ~ 3mm THICK (PYRITE, LIMONITE...)	95	100		
	10	AT 9'4" SLICKENSIDED FRACTURE ~ 60° NOT PARALLEL TO FOLIATION, OBLIQUE SENSE OF MOVEMENT AT 11'2" SLICKENSIDED FRACTURE, HORIZONTAL SENSE OF MOVEMENT				
FOLIATION ABOUT 65° AT 15'7" FELSIC ZONE ABOUT 2" WIDE FOLIATION ABOUT 65°	15	AT 14'6" TO 15'1" SLICKENSIDED FRACTURE ~ 15° AT 16'2" SLICKENSIDED FRACTURE VERTICAL TO FOLIATION DIP-SLIP SENSE OF MOVEMENT AT 17'4" TO 18' FRACTURED ZONE AT 18'10" SLICKENSIDED FRACTURE ~ 20° OPPOSITE FOLIATION	82	100		
FOLIATION ABOUT 50°	20	AT 21'10" TO 22'2" SLICKENSIDED FRACTURES ~ 40° OPPOSITE FOLIATION				
FOLIATION ABOUT 45°	25	AT 25'10" SLICKENSIDED FRACTURE PARALLEL TO FOLIATION, OBLIQUE SLICKS AT 26'1" TO 26'7" SLICKENSIDED FRACTURE ABOUT 20° AT 28'4" SLICKENSIDED FRACTURE PARALLEL TO FOLIATION	78	100		
	30	AT 30'6" SLICKENSIDED FRACTURE, NEARLY VERTICAL, HORIZONTAL SENSE OF MOVEMENT AT 30'8" TO 32' 7 FRACTURES PARALLEL TO FOLIATION				
AT 36' TO 38' FELSIC ZONE	35	AT 33'3" SLICKENSIDED FRACTURE ~ 30° OPPOSITE FOLIATION, DIP-SLIP SENSE OF MOVEMENT AT 37' TO 38' FAULT ZONE BRECCIATED AND MINERALIZED (CALCITE, PYRITE) ZONE	56	100		
AT 41' COARSE PEGMATITE WITH ABUNDANT PYRITE ABOUT 3" ZONE	40	TO 41' ABUNDANT FRACTURES; HEALED SLICKENSIDED AT 42' FRACTURE ABOUT 15° SMOOTH SURFACE				EC,D EC,D
	45	AT 45' SEVERAL HEALED FRACTURES WITH PYRITE	97	100		
	50	AT 52'9" IRREGULAR FRACTURE ABOUT 70° WITH PYRITE				EC,D CS,D EC,D
FROM 57'6" LIGHT COLORED GNEISSIC LITHOLOGY FOLIATION ABOUT 45° LESS DEFINED	55	AT 57'11" FRACTURE ABOUT 45° OPPOSITE FOLIATION AT 58'2" SLICKENSIDED FRACTURE, PARALLEL TO FOLIATION, OBLIQUE SENSE OF MOVEMENT	82	100		EC,D EC,D EC,D
	60	AT 59'3" TO 60' FRACTURE ABOUT 15° AT 63'1" TO 63'8" FRACTURE ABOUT 25° OPPOSITE FOLIATION				
AT 68' TO 70' DARK LITHOLOGY WITH WELL DEFINED FOLIATION BY HORNBLENDE ABOUT 45°	65	AT 65'10" TO 67'1" FRACTURES ABOUT 20°	82	100		
AT 70' PEGMATITIC INTRUSIONS ABOUT 1' TO 2' WIDE FOLIATION ABOUT 50°	70	AT 69'4" IRREGULAR FRACTURE VERTICAL WITH LIMONITE STAINING AT 73'9" FRACTURE ABOUT 30° OPPOSITE FOLIATION				
AT 75'7" TO 75'11" COARSE PEGMATITE	75	AT 74'8" IRREGULAR FRACTURE ABOUT 45° OPPOSITE FOLIATION	100	100		
	80	BORING TERMINATED AT 79.8' ON 5/3/76				

GRAPHIC LOG

NUMBER OF FRACTURES PER FOOT (1 4 16 64) — WATER RETURN (%) (25 50 75)



SITE 14 HOLE 1
IN SITU. STRESS MEASUREMENTS
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DAMES & MOORE

BORING LOG

SIZE OF CORE 5¼" DATE STARTED 5-5-76 DATE COMP. 5-24-76 GEOLOGIST E.LINDNER/T.MILLS CHECKED S. ZALEWSKI

COLLAR ELEV. +457.2' TOTAL DEPTH 59.7' INCLIN. FROM VERTICAL 0 AZIMUTH DIR. OF HOLE —

TESTS PERFORMED OVERCORING WATER LEVEL DURING DRILLING AT SURFACE AFTER COMPL. AT SURFACE

Column headings: ROCK TYPE | GRAPHIC LOG | DEPTH IN FEET | DESCRIPTION OF ROCK DEFECTS | RQD 75 50 25 | CORE RECOVERY (%) | NUMBER OF FRACTURES PER FOOT 1 4 16 64 | CASING DEPTH | WATER RETURN (%) 25 50 75 | OTHER TESTS

Depth scale: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80

RQD: NA

NUMBER OF FRACTURES PER FOOT: NA

CASING DEPTH: NONE

ROCK TYPE

GRAY-GREEN, MEDIUM-GRAINED PYROXENE-HORNBLENE-PLAGIOCLASE-GNEISS, WELL FOLIATED WITH OCCASIONAL PEGMATITIC ZONES
AT 1'4" TO 2'6" COARSE PEGMATITE

FOLIATION ABOUT 60°

AT 16' HORNBLENDE CONCENTRATION AND FELSIC IMPREGNATION
FOLIATION ABOUT 50°

AT 21'6" TO 24' FELSIC ZONE

FOLIATION ABOUT 45°

AT 30' TO 30'6" FELSIC ZONE

FOLIATION ABOUT 45°

AT 35' LIGHT GRAY LITHOLOGY

AT 39'3" TO 40' COARSE UP TO 2" HORNBLENDE CRYSTALS

AT 43' ABUNDANT HORNBLENDE AND PYRITE ALONG FOLIATION
FOLIATION ABOUT 45°
DEFINED BY HORNBLENDE CRYSTALS

FOLIATION ABOUT 45°
AT 56' PEGMATITE AND MINERALIZED ZONE ABOUT 2" WIDE

DESCRIPTION OF ROCK DEFECTS

AT 3' FRACTURE ABOUT 60°
AT 3.9' TO 4', 3 FRACTURES WITH LIMONITE STAINING

AT 7'6" FRACTURE ~ 45°
AT 8' TO 9' FRACTURE ABOUT 25° WITH LIMONITE STAINING

AT 11' FRACTURE ABOUT 45° WITH LIMONITE

AT 13' AND 13'6" FRACTURES ~ 45° SMOOTH SURFACE

AT 15' FRACTURE ~ 45°

AT 17' FRACTURE ~ 55° WITH LIMONITE STAINING
AT 18'9" FRACTURE ~ 45°
AT 19' FRACTURE 45° OPPOSITE FOLIATION

AT 23' TO 24' SEVERAL FRACTURE ABOUT 30°

AT 25' TO 26' FRACTURE ZONE
AT 26' TO 27' FRACTURE NEARLY VERTICAL

AT 27'6" IRREGULAR FRACTURE ~ 40°

AT 28'9" AND 29' FRACTURES ~ 45°

AT 31' TO 32' SEVERAL SLICKENSIDED FRACTURES
AT 32'9" FRACTURE ABOUT 60°

AT 33'2" FRACTURE VERTICAL, HEALED
AT 33' TO 35' SEVERAL VERTICAL FRACTURES, CALCITE FILLED
AT 34'11" OFFSET 2" ALONG VERTICAL FRACTURE
AT 36' FRACTURE ABOUT 45° OPPOSITE FOLIATION
AT 39'8" TO 41'2" FRACTURE ABOUT 45° COATED WITH SULFIDES

AT 42'4" FRACTURE ABOUT 15° COATED WITH SULFIDES

AT 46' FRACTURE ABOUT 45° OPPOSITE FOLIATION
AT 46' TO 47'5" IRREGULAR FRACTURE ABOUT 15° TO CORE AXIS OPPOSITE FOLIATION COATED WITH GREEN ALTERATION PRODUCTS
AT 50'3" FRACTURE ABOUT 55° PYRITE AND MAGNETITE MINERALIZATION
AT 51'6" TO 54'6" HIGHLY FRACTURED ZONE
AT 55' FRACTURE ABOUT 45° AND VERTICAL PYRITE AND MAGNETITE INCRUSTATION

AT 58' FRACTURES-ORTHOGONAL SET

BORING TERMINATED AT 59.7' ON 5/24/76

CORE RECOVERY (%)

100, 90, 100, 95, 100, 100, 100, 100, 100, 100, 100, 100, 100, 60, 95, 88, 100, 100, 100, 100, 100, 100, 100, 100, 100, 100, 100

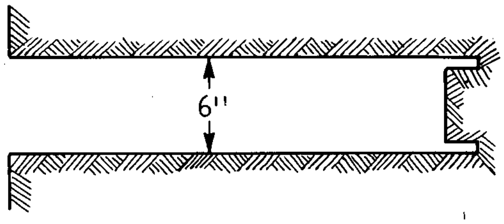
OTHER TESTS

T.S., O#1, O#2, O#3, O#4, T.S., O#5, O#6, O#7

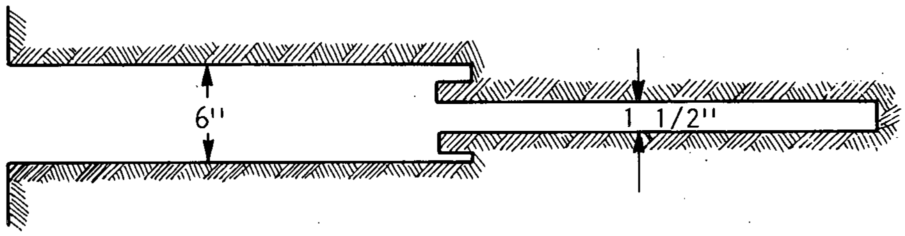
SITE 14 HOLE 2
IN SITU, STRESS MEASUREMENTS
THE RAMAPO FAULT STUDY,
CONSOLIDATED EDISON COMPANY
OF NEW YORK

DAMES & MOORE

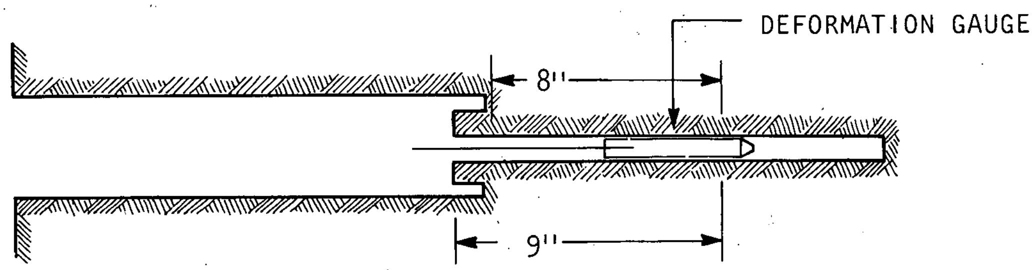
PLATE H-11



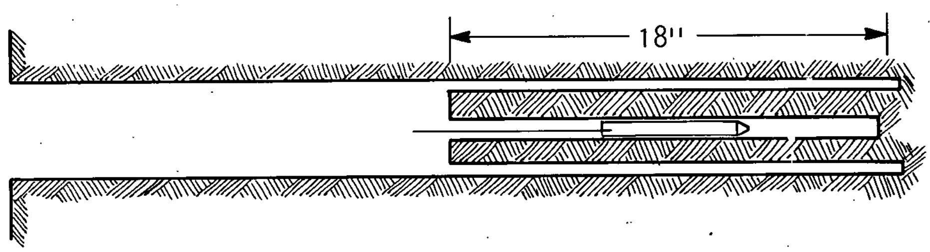
6-INCH DIAMETER HOLE IS DRILLED TO WITHIN 12INCHES OF DEPTH AT WHICH THE STRESS MEASUREMENT IS TO BE TAKEN.



EX-BOREHOLE(1 1/2 INCH DIAMETER) IS DRILLED WITHIN THE 6-INCH BOREHOLE.



DEFORMATION GAUGE IS ORIENTED AND POSITIONED AT DEPTH OF APPROX. 9 INCHES FROM COLLAR OF EX-BOREHOLE.

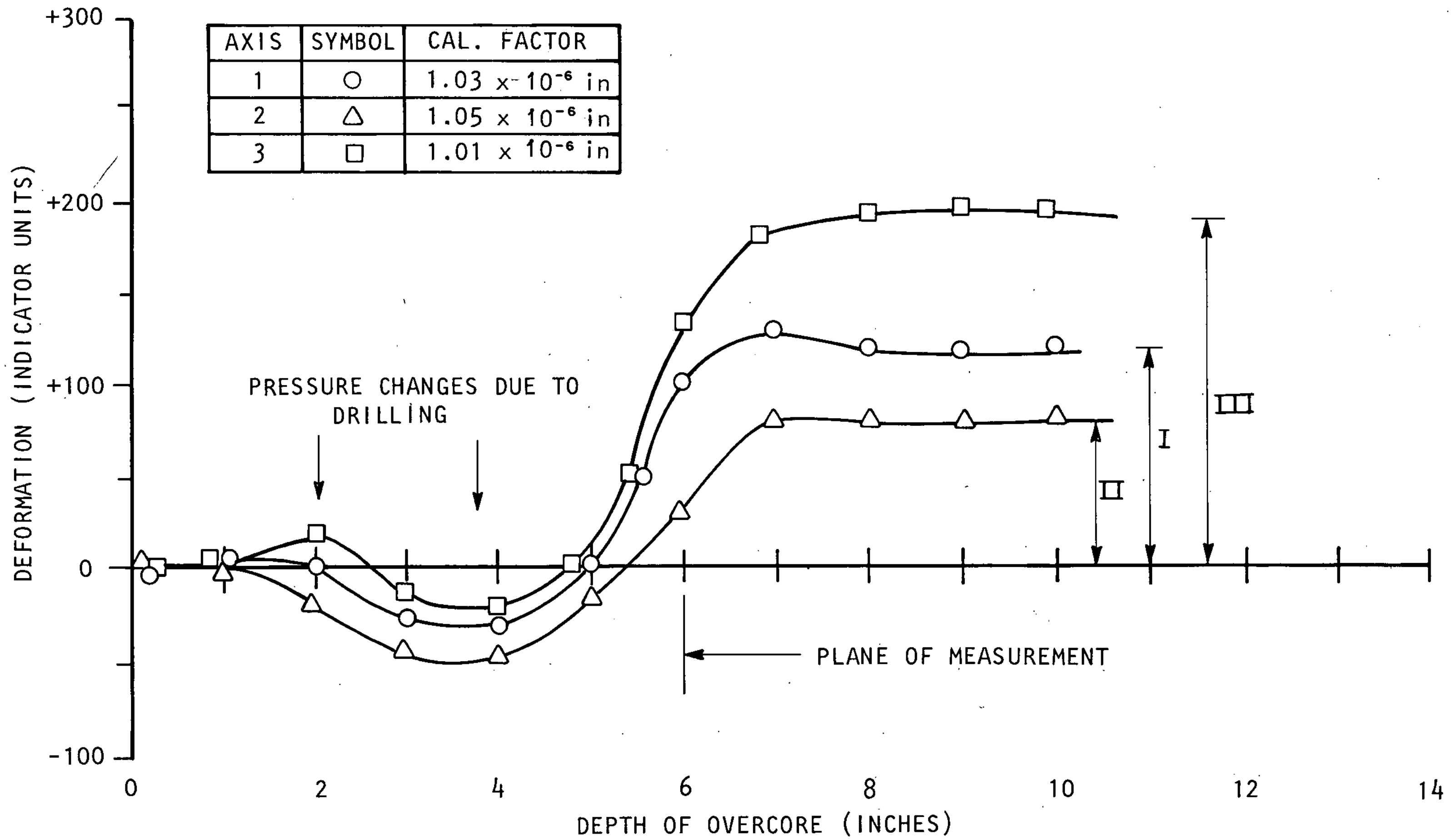


EX-BOREHOLE IS OVERCORED USING THE 6-INCH DIAMETER BIT FOR A DEPTH OF 18 INCHES. OVERCORE IS RECOVERED AND YOUNG'S MODULUSIS DETERMINED.

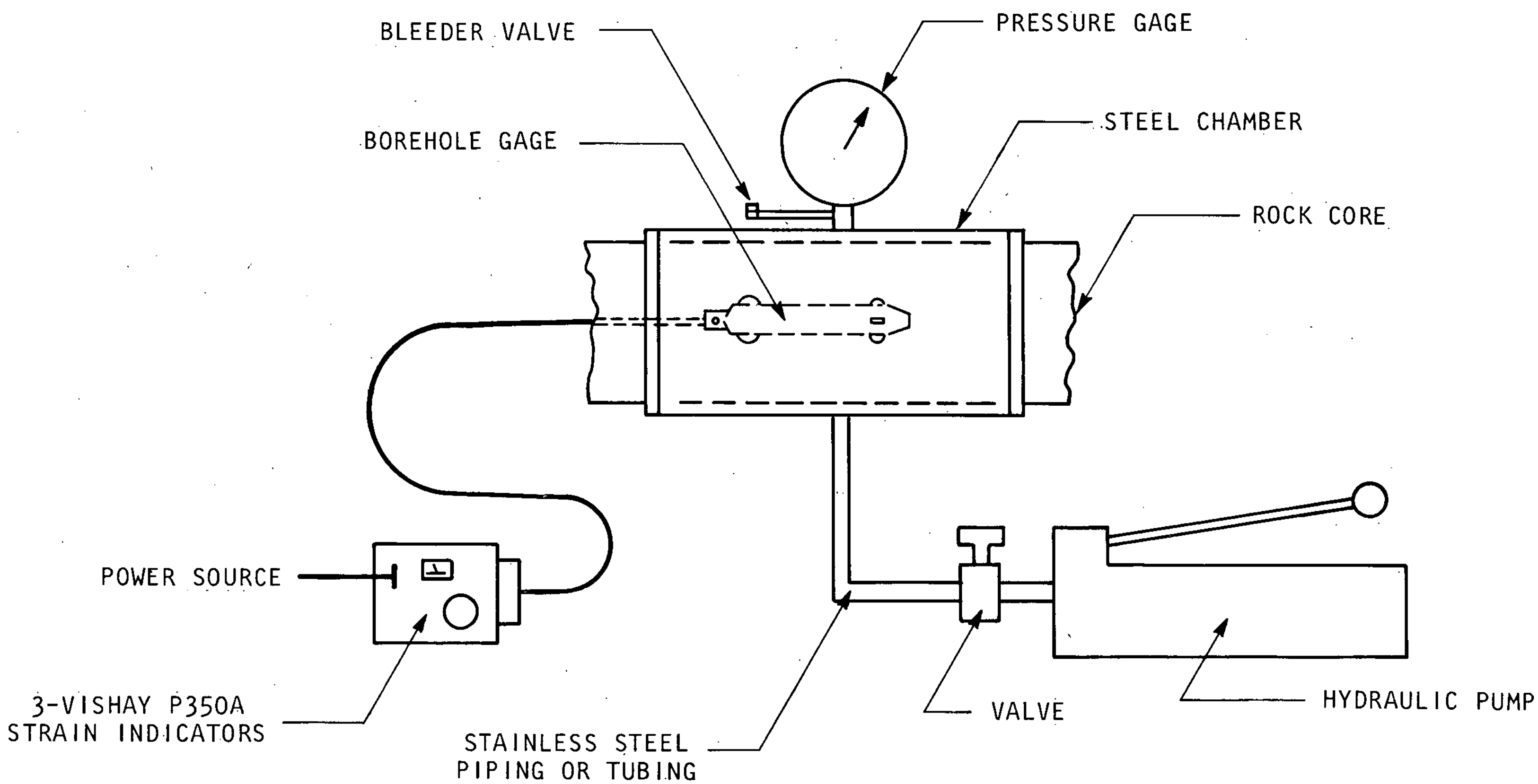
OVERCORING SCHEMATIC:

BOREHOLE DEFORMATION GAUGE

(ORIENTATION MAY BE VERTICAL OR HORIZONTAL)



TYPICAL OVERCORE RESULTS



SCHEMATIC : BI-AXIAL TEST APPARATUS

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 3 TEST 2

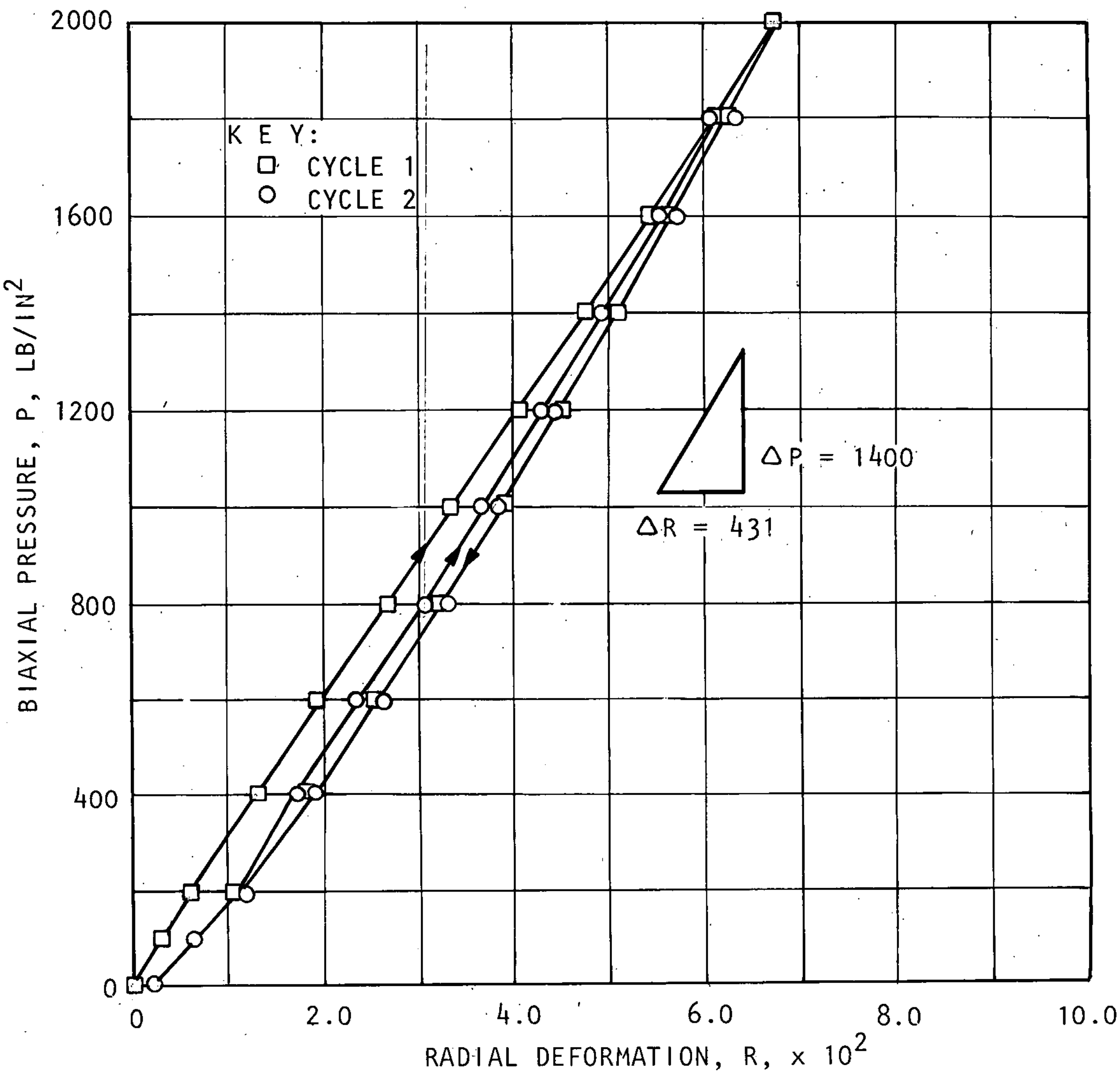
SPECIMEN LENGTH 15 IN.

SPECIMEN O.D. 5 7/32 IN.

AXIS 1

$K_i = 1.03 \times 10^{-6}$ IN

$\beta = 3.27$ IN.



$E = 8.8 \times 10^6$ LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 3 TEST 2

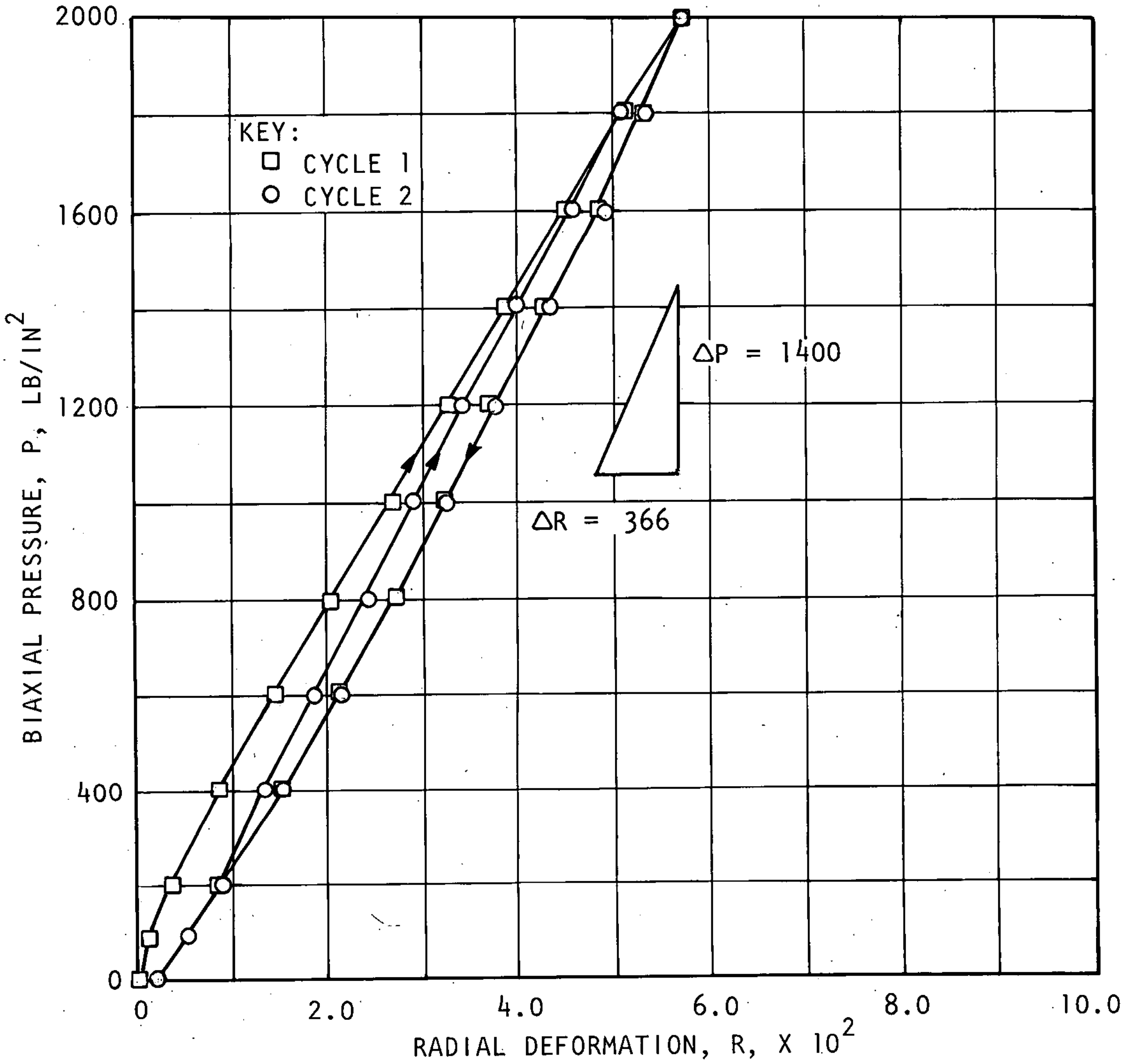
SPECIMEN LENGTH 15 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 2

K_i = 1.00 X 10^{-6} IN.

β = 3.27 IN.



E = 12.5 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 3 TEST 2

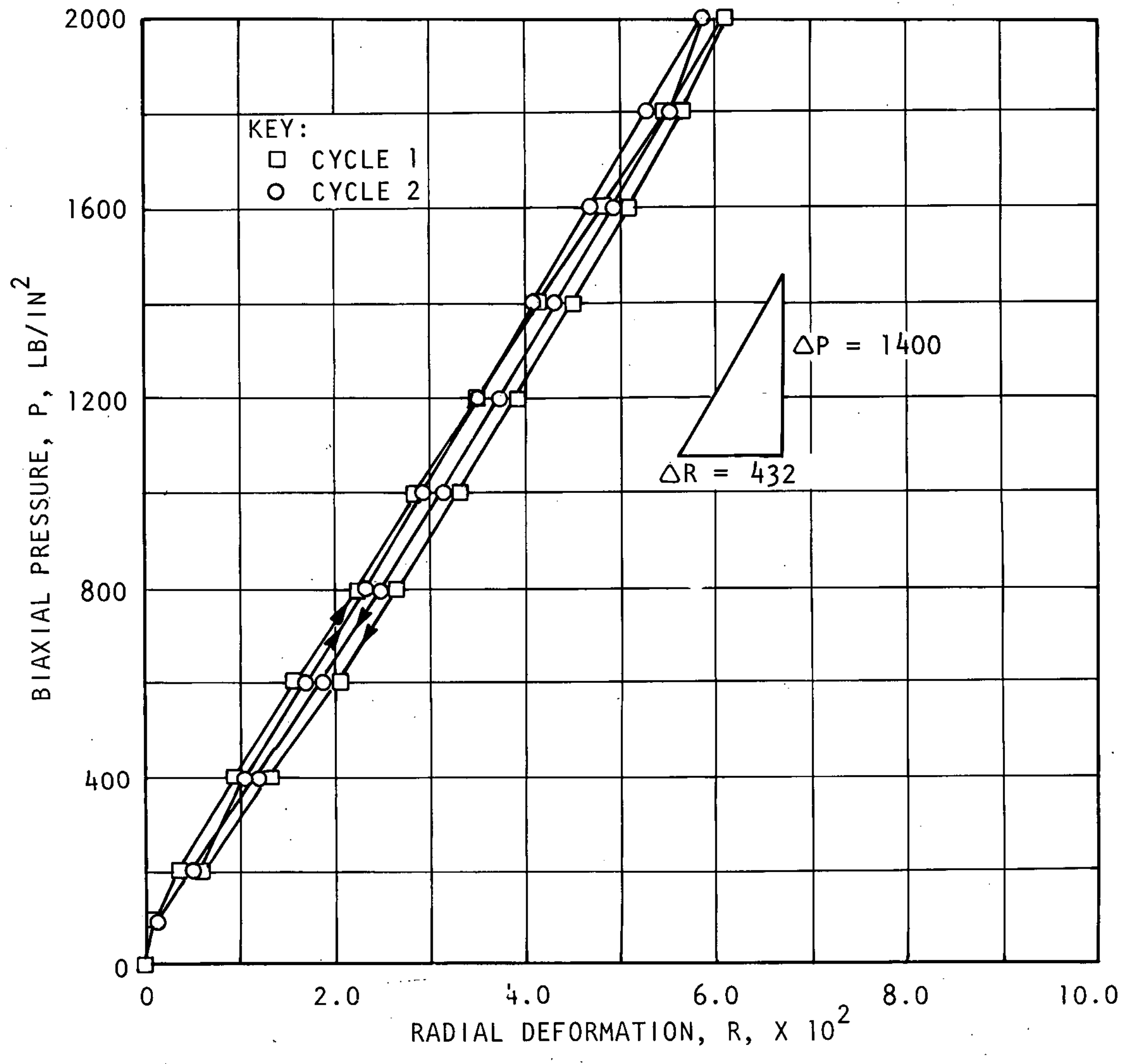
SPECIMEN LENGTH 15 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 3

K_i = 1.05 X 10^{-6} IN.

β = 3.27 IN.



E = 10.0 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 3 TEST 3

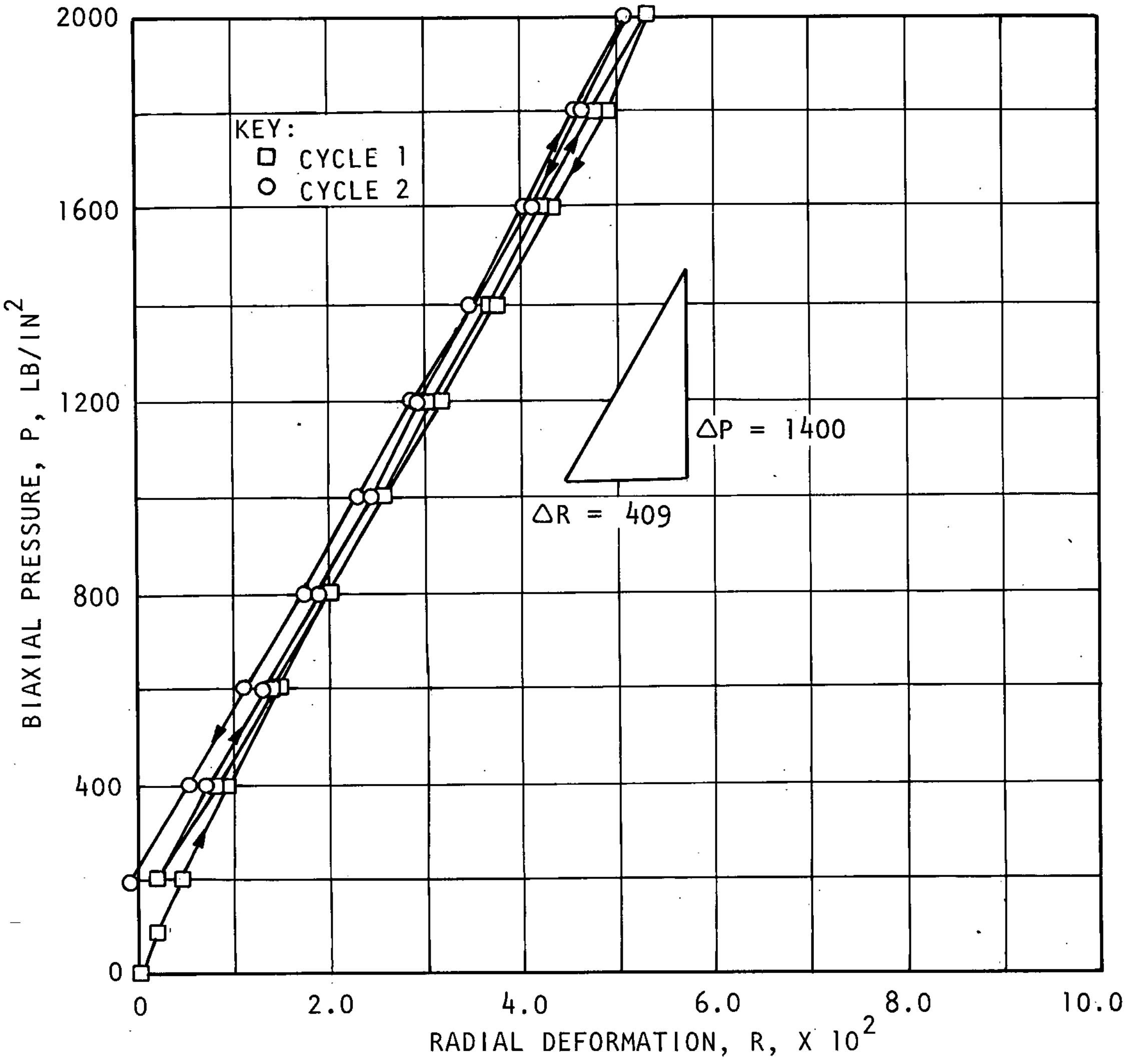
SPECIMEN LENGTH 17 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 1

K_i = 1.03 X10^{-6} IN.

β = 3.27 IN.



E = 10.9 X10^6 . LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 3 TEST 3

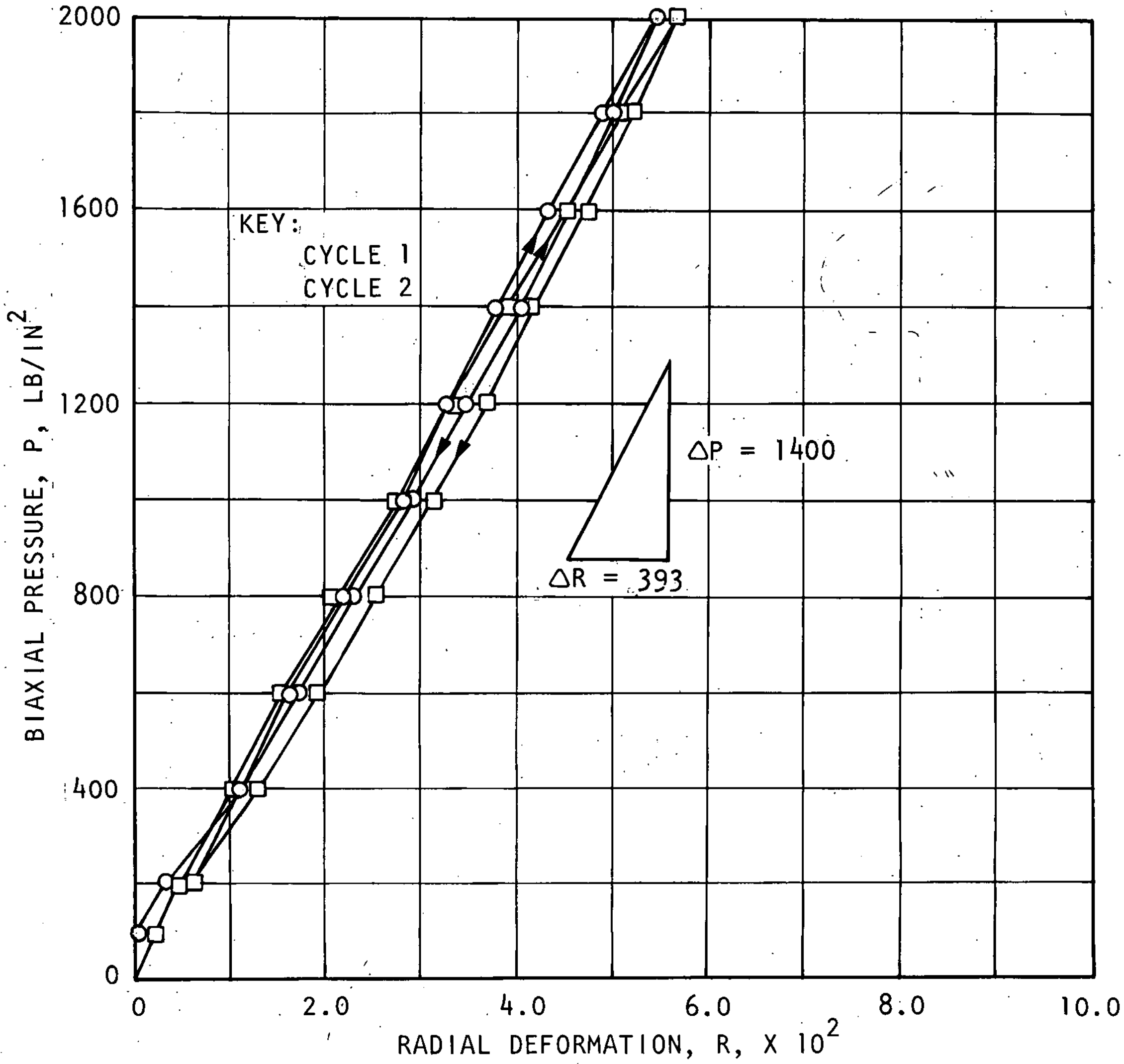
SPECIMEN LENGTH 17 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 2

K_i = 1.00 X 10^{-6} IN.

β = 3.27 IN.



E = 11.6 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 3 TEST 3

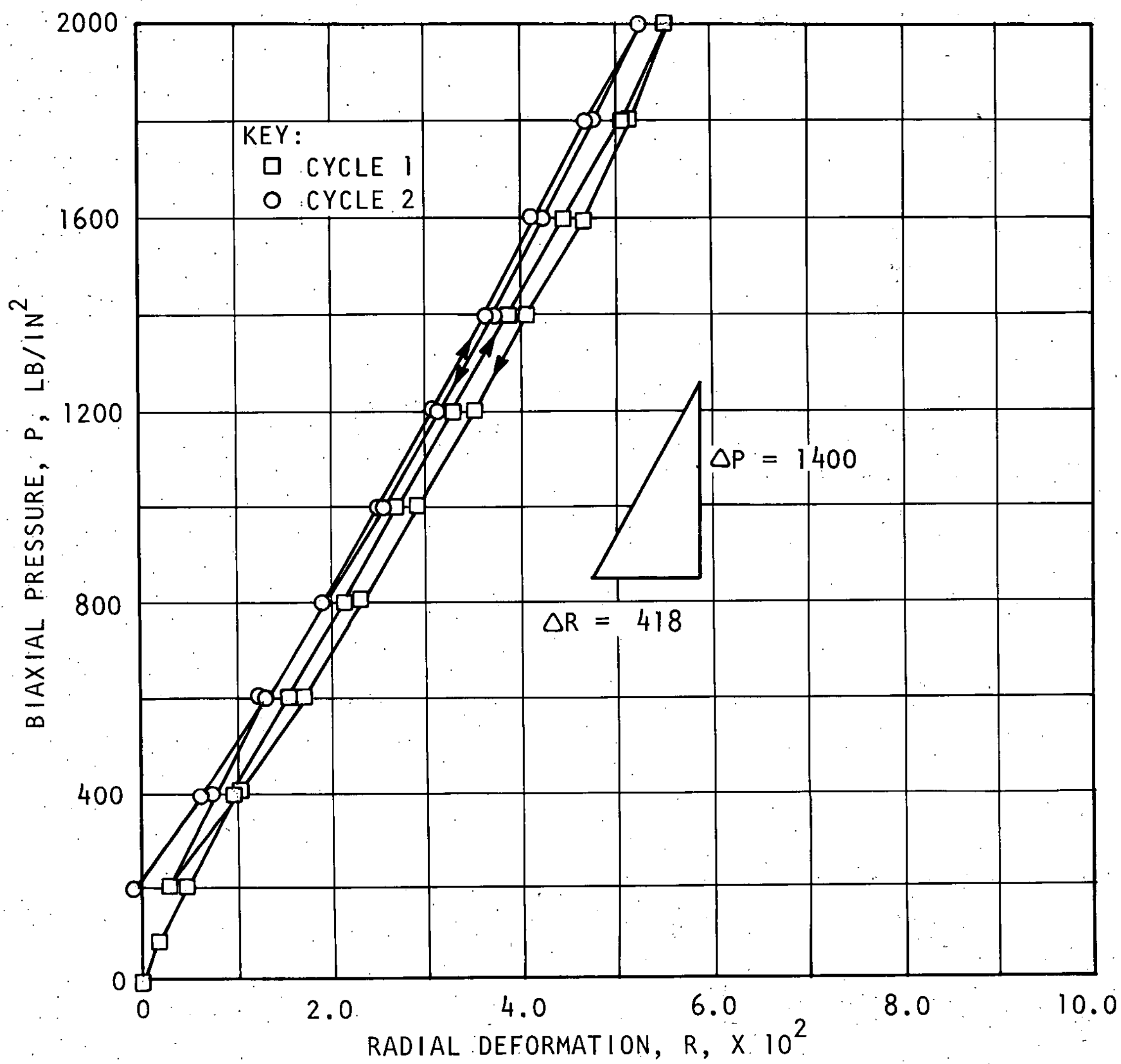
SPECIMEN LENGTH 17 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 3

K_i = 1.05 X 10^{-6} IN.

β = 3.27 IN.



E = 10.4 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 3 TEST 4

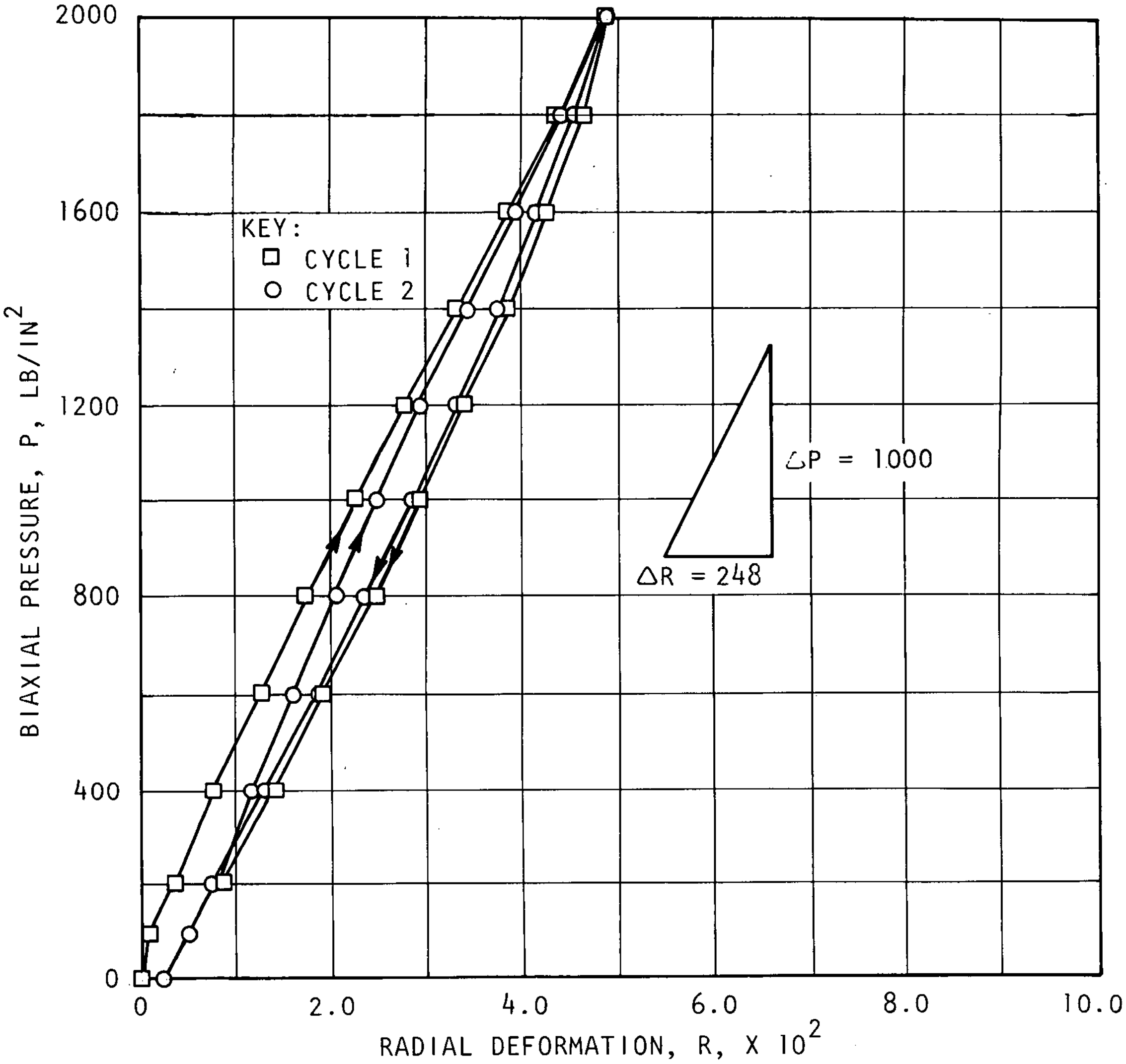
SPECIMEN LENGTH 21 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 1

K_i = 1.03 X 10^{-6} IN.

β = 3.27 IN.



E = 12.8 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 3 TEST 4

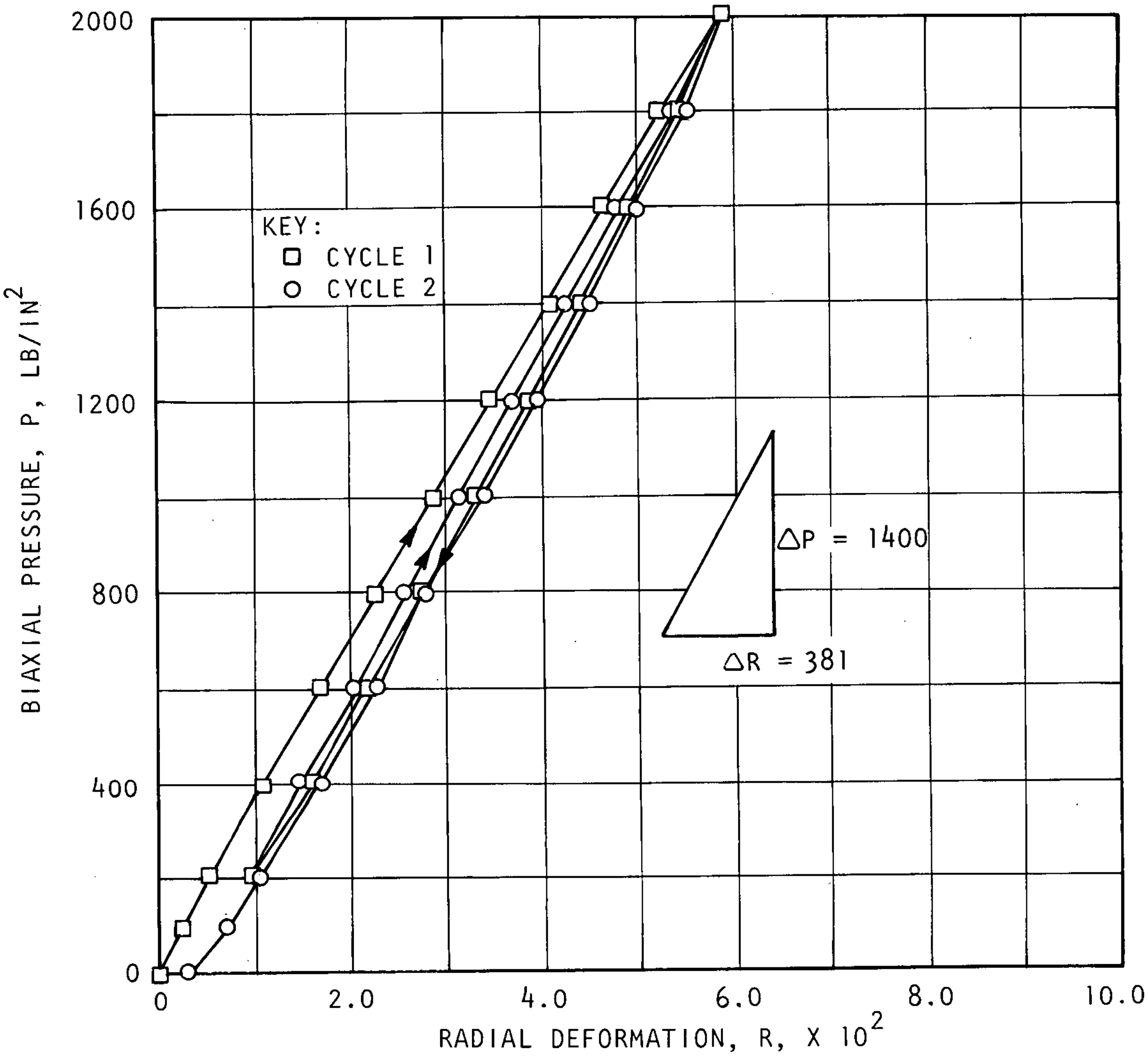
SPECIMEN LENGTH 21 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 2

$K_i = 1.05 \times 10^{-6}$ IN.

$\beta = 3.27$ IN.



$E = 12.0 \times 10^6$ LB/IN²

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 3 TEST 4

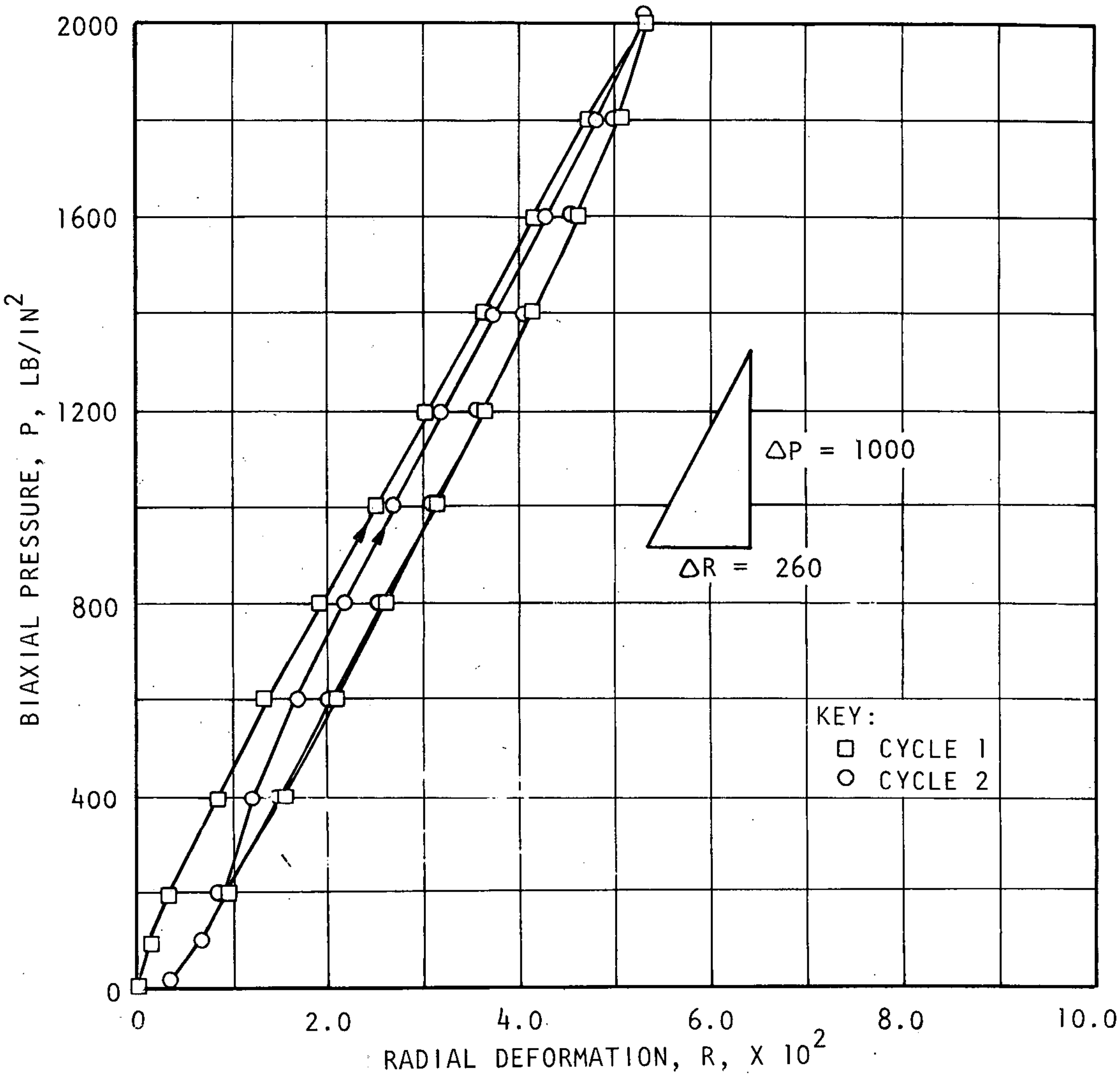
SPECIMEN LENGTH 21 IN.

SPECIMEN O.D. 5-7/32 IN.

$K_i = 1.05 \times 10^{-6}$ IN.

$\beta = 3.27$ IN.

AXIS 3



$E = 12.0 \times 10^6$ LB/IN²

MODULUS OF DEFORMATION

SITE 3 TEST 5

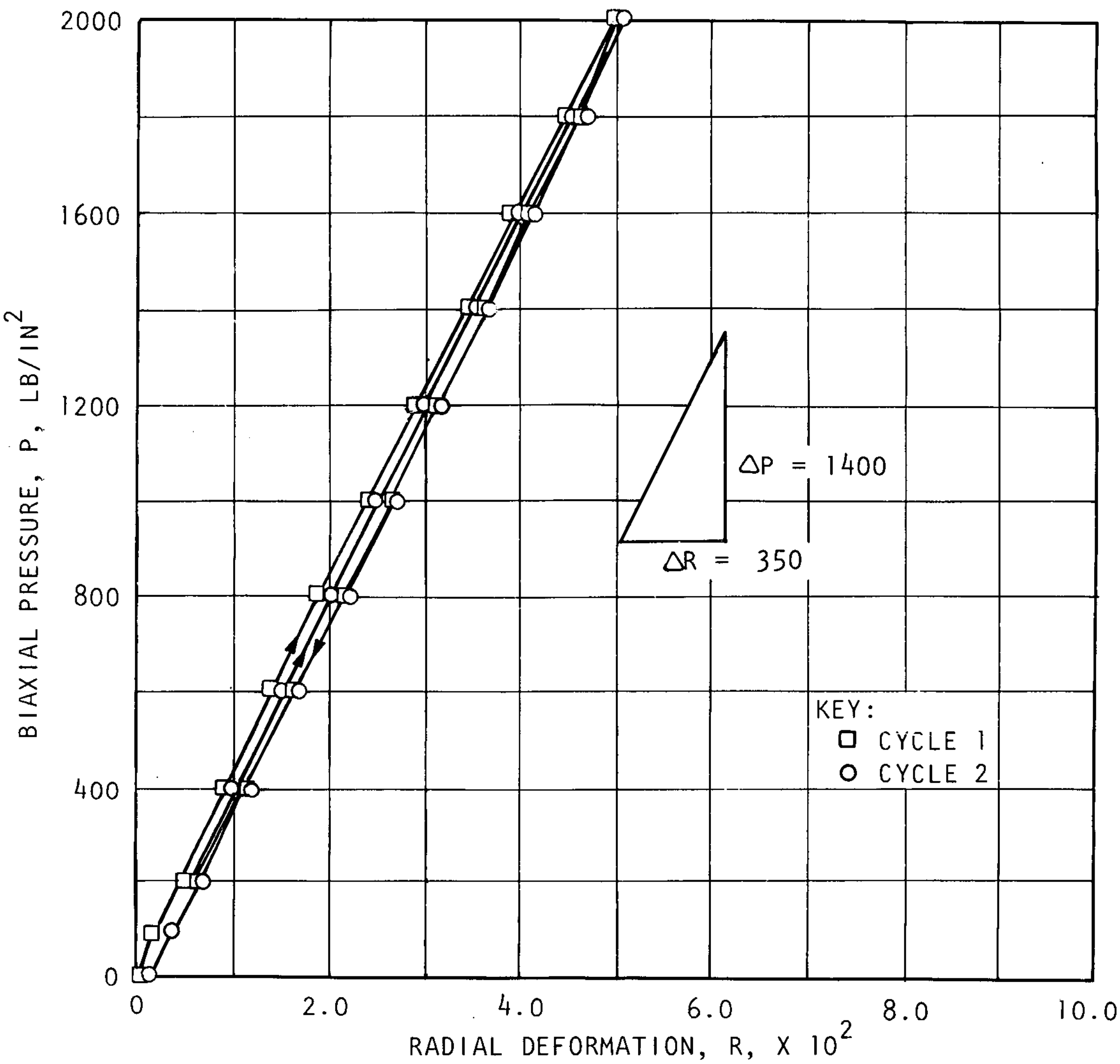
SPECIMEN LENGTH $20\frac{1}{2}$ IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 1

K_i = 1.03×10^{-6} IN.

β = 3.27 IN.



E = 12.7×10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 3 TEST 5

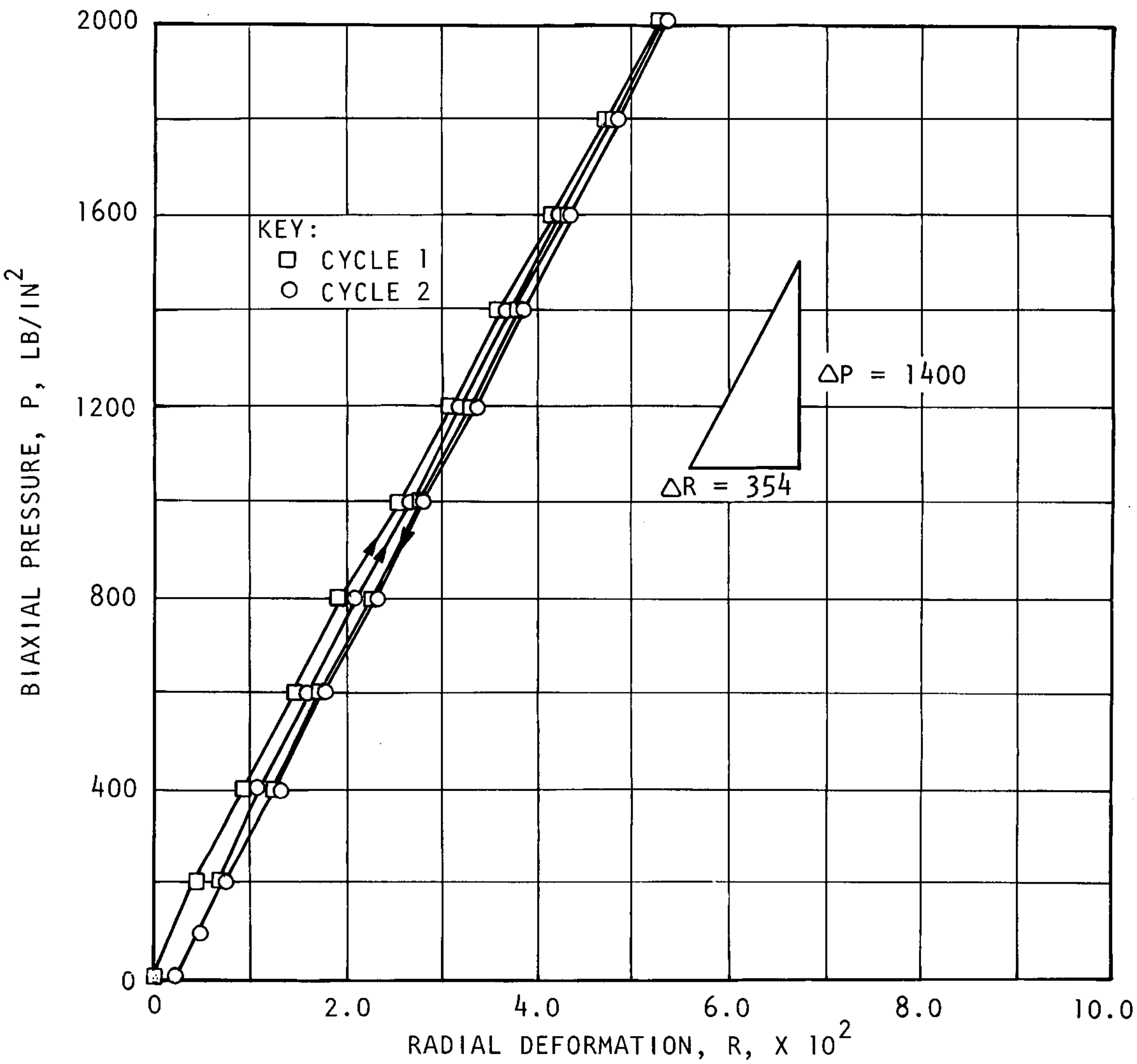
SPECIMEN LENGTH 21 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 2

K_i = 1.00 X 10^{-6} IN.

β = 3.27 IN.



E = 12.9 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 3 TEST 5

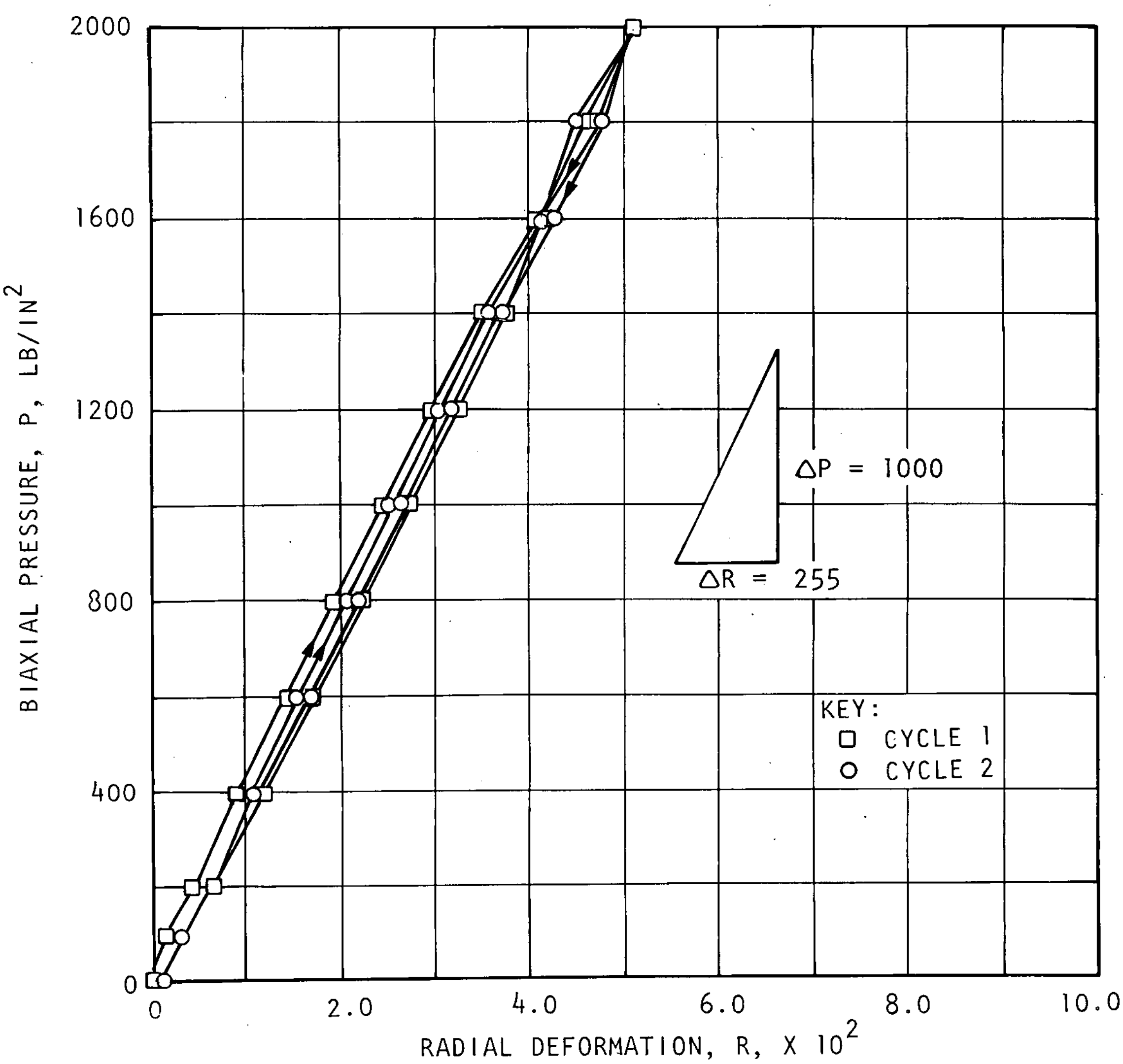
SPECIMEN LENGTH $20\frac{1}{2}$ IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 3

K_i = 1.05×10^{-6} IN.

β = 3.27 IN.



E = 12.2×10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 3 TEST 6

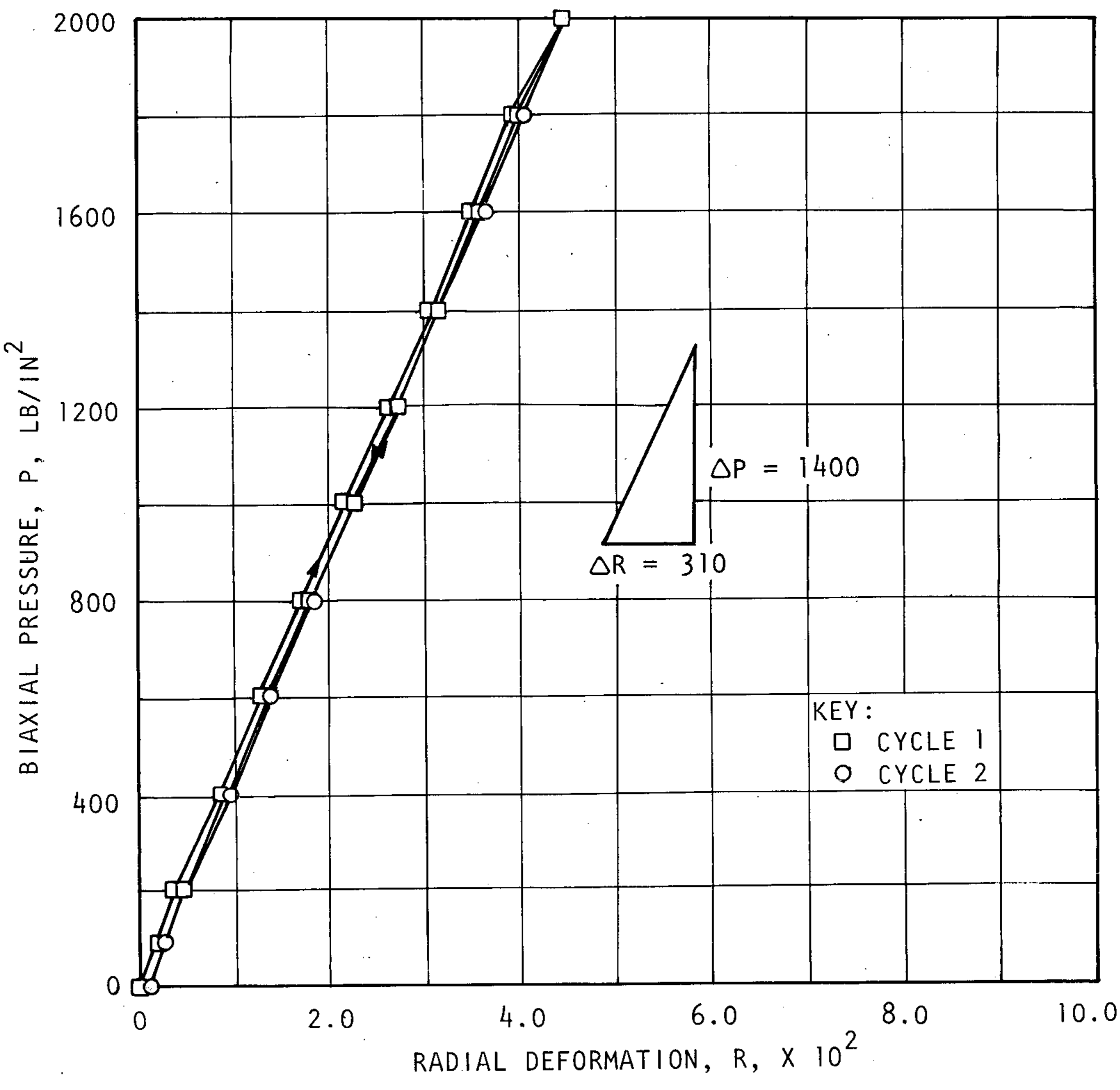
SPECIMEN LENGTH 19½ IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 1

K_i = 1.03×10^{-6} IN.

β = 3.27 IN.



E = 14.3×10^{6} LB/IN²

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 3 TEST 6

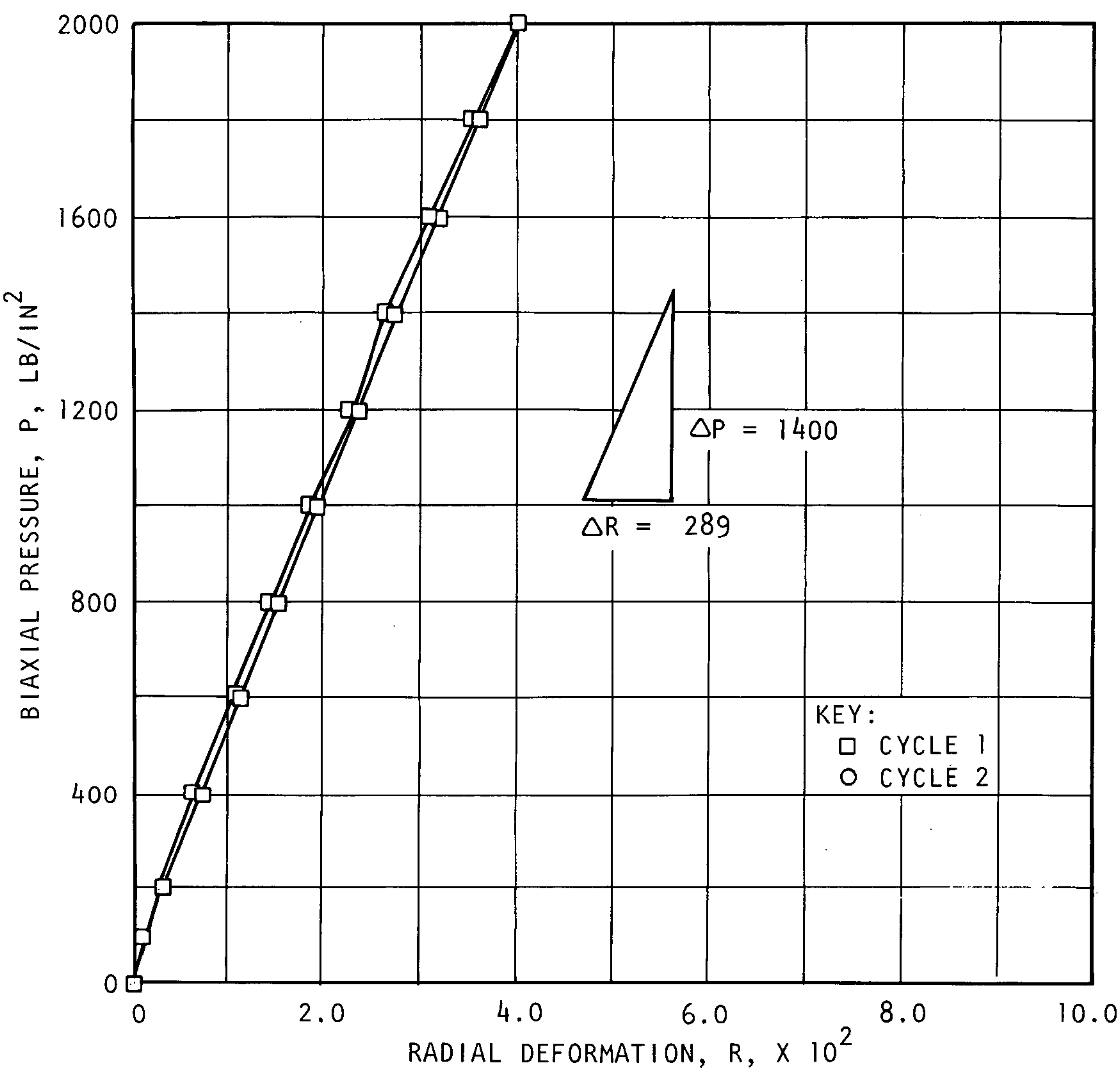
AXIS 2

SPECIMEN LENGTH 19½ IN.

SPECIMEN O.D. 5-7/32 IN.

K_i = 1.00 X 10^{-6} IN.

β = 3.27 IN.



E = 15.8 X10^6 LB/IN²

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 3 TEST 6

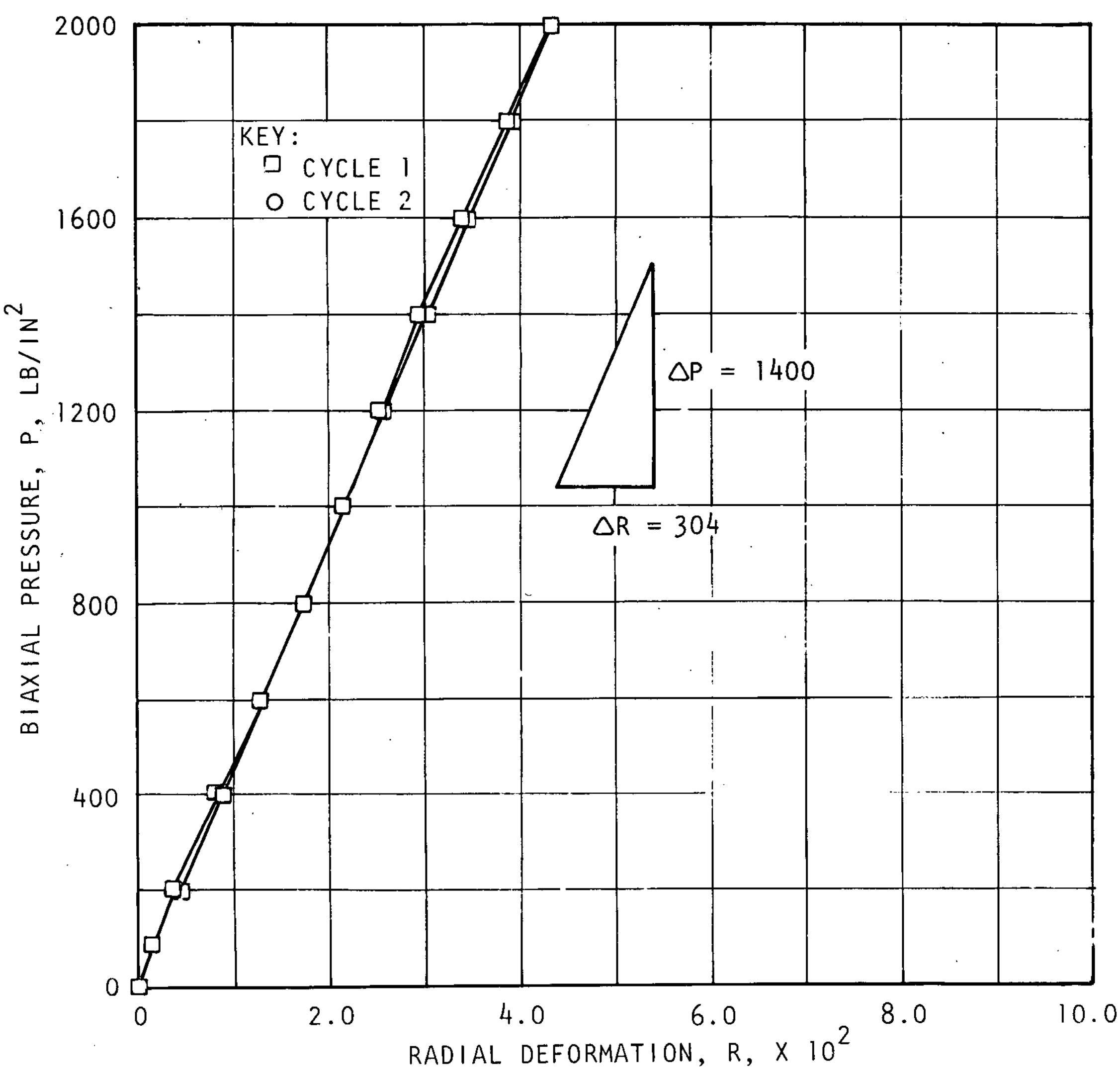
SPECIMEN LENGTH 19½ IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 3

K_i = 1.05 X 10^{-6} IN.

β = 3.27 IN.



E = 14.3 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 3 TEST 7

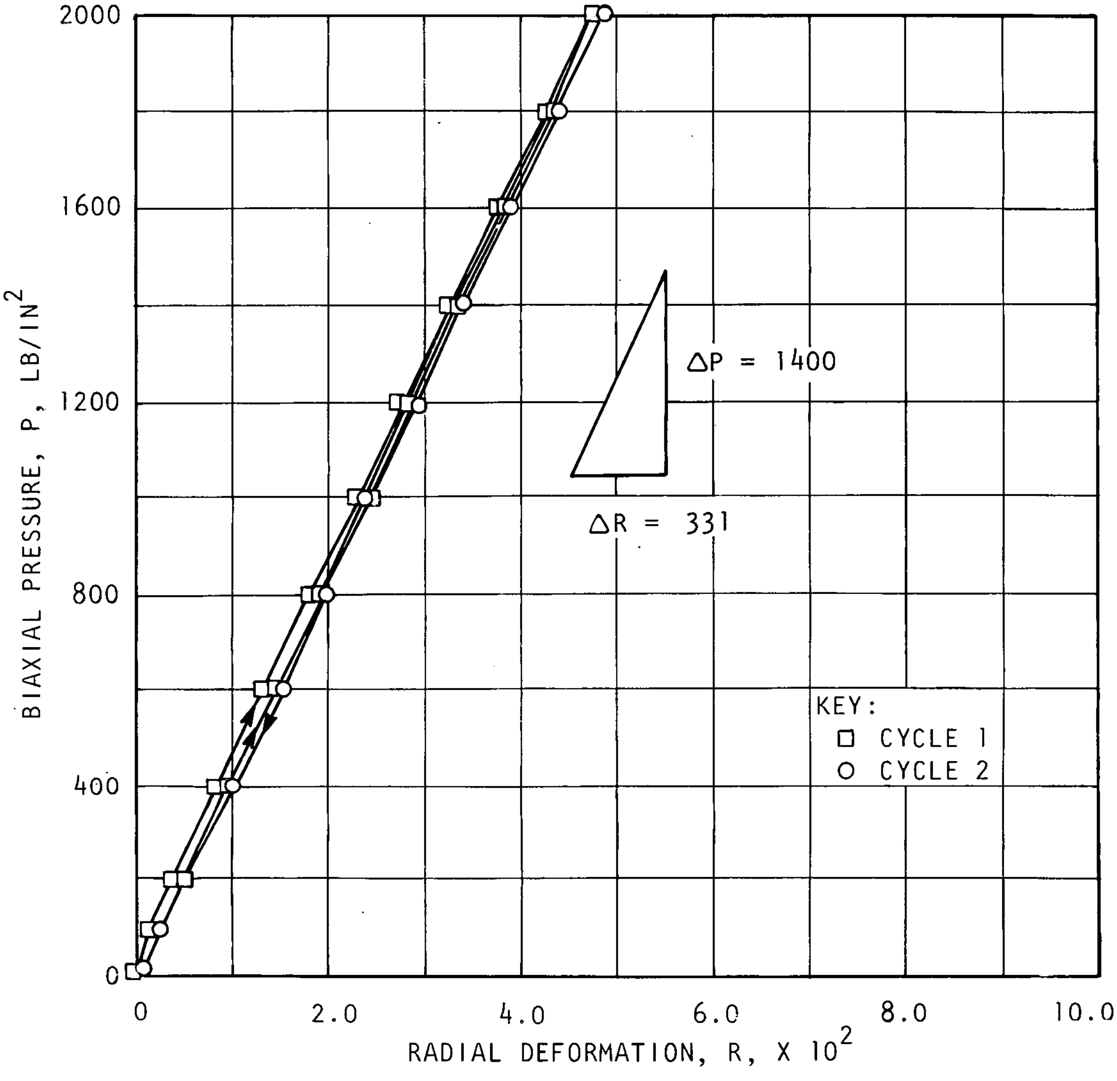
SPECIMEN LENGTH 15½ IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 1

K_i = 1.03 X10^{-6} IN.

β = 3.27 IN.



E = 13.4 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 3 TEST 7

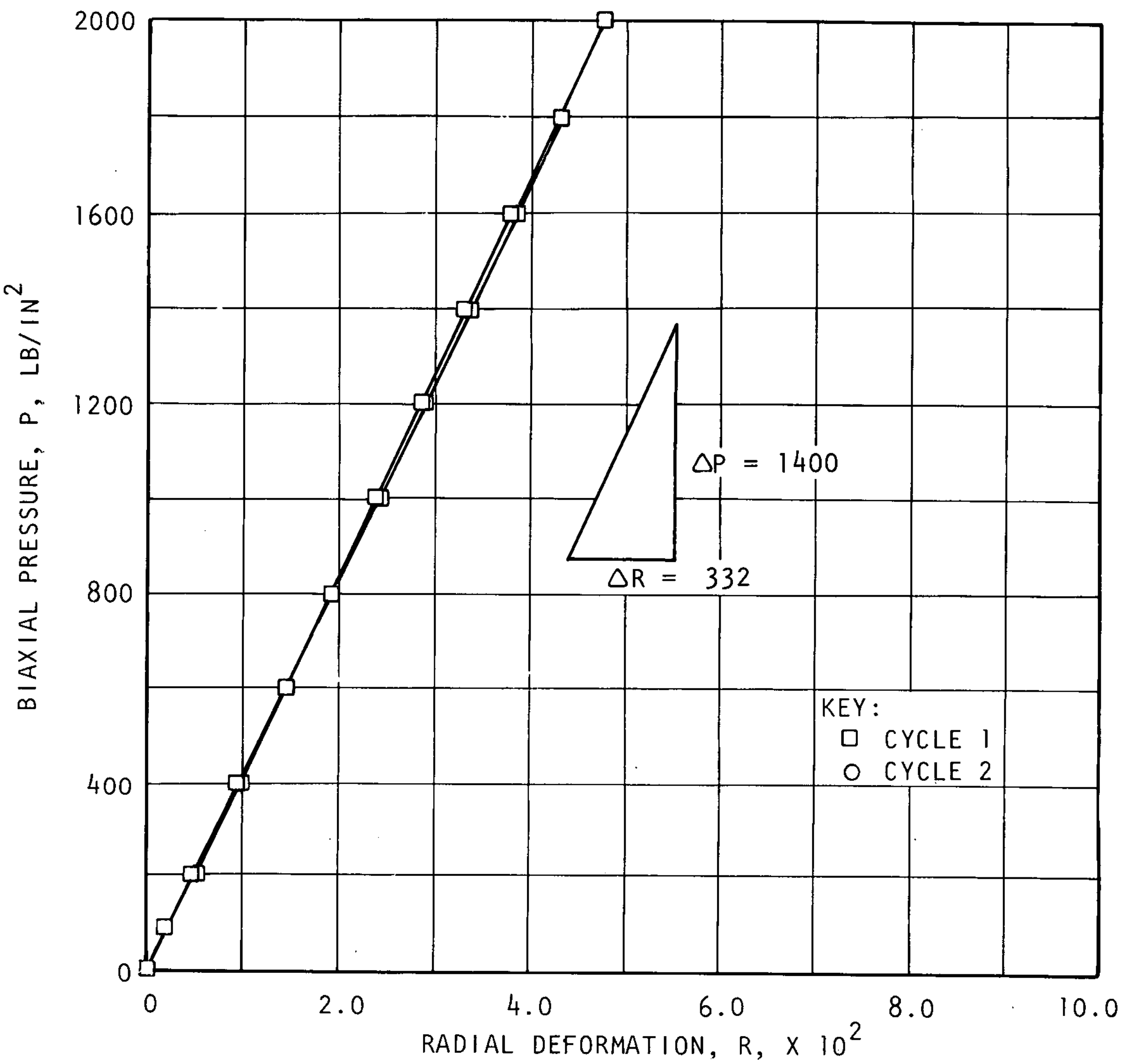
SPECIMEN LENGTH 15½ IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 2

K_i = 1.00 X 10^{-6} IN.

β = 3.27 IN.



E = 13.8 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 3 TEST 7

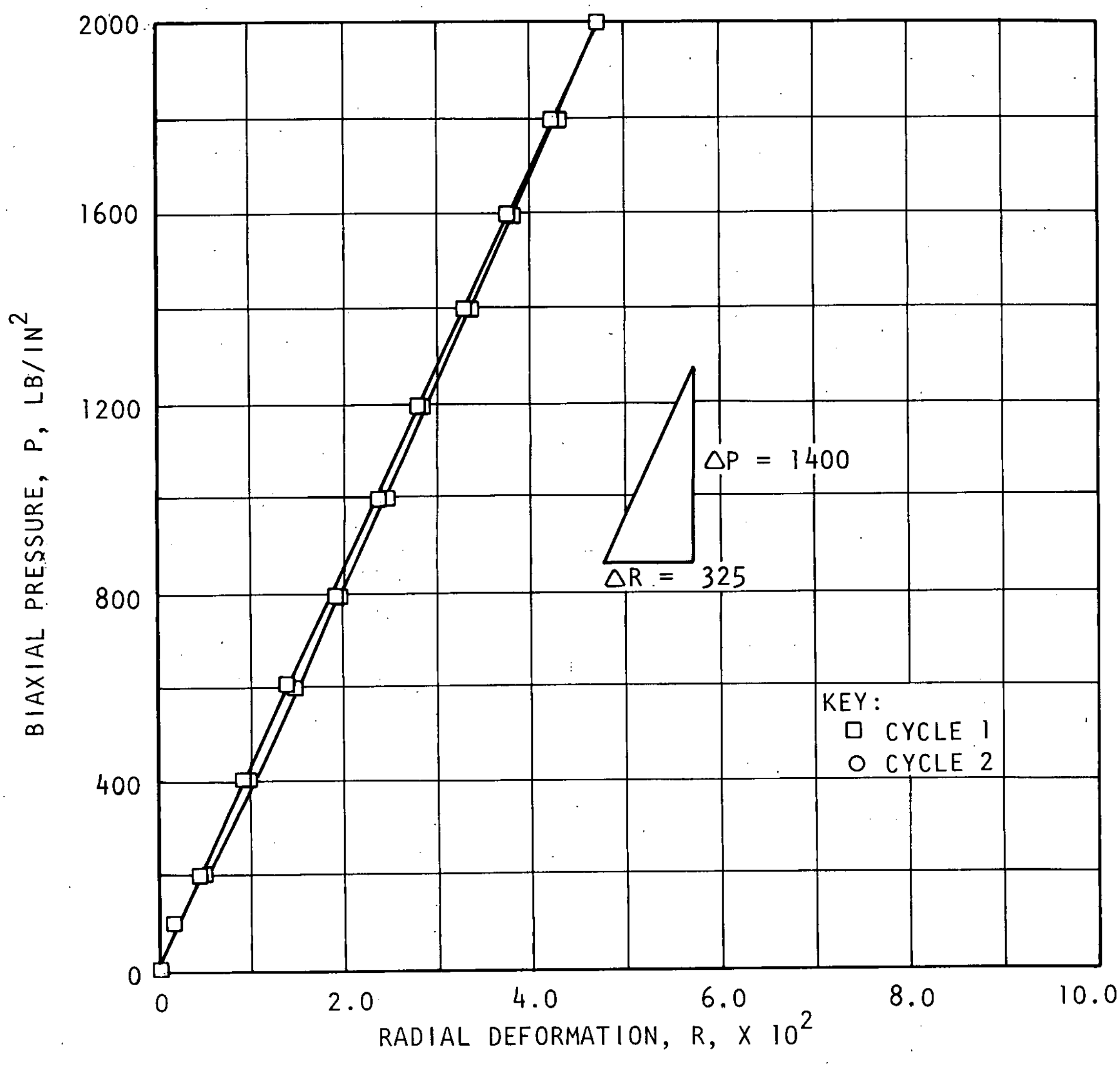
SPECIMEN LENGTH $15\frac{1}{2}$ IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 3

K_i = 1.05×10^{-6} IN.

β = 3.27 IN.



$E = 13.4 \times 10^6$ LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 3 TEST 9

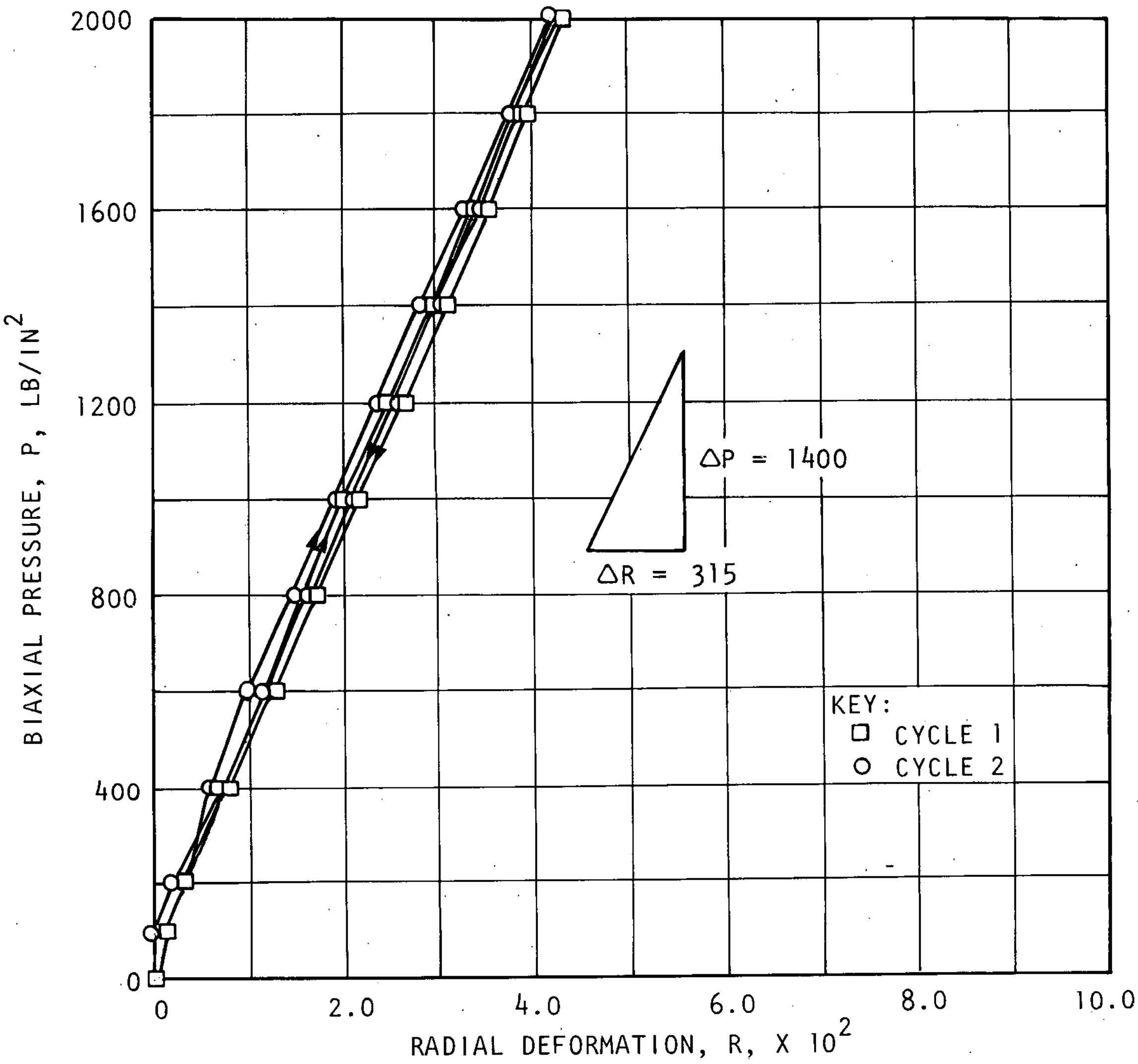
SPECIMEN LENGTH 20 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 1

K_i = 1.03×10^{-6} IN.

β = 3.27 IN.



$E = 14.1 \times 10^6$ LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 3 TEST 9

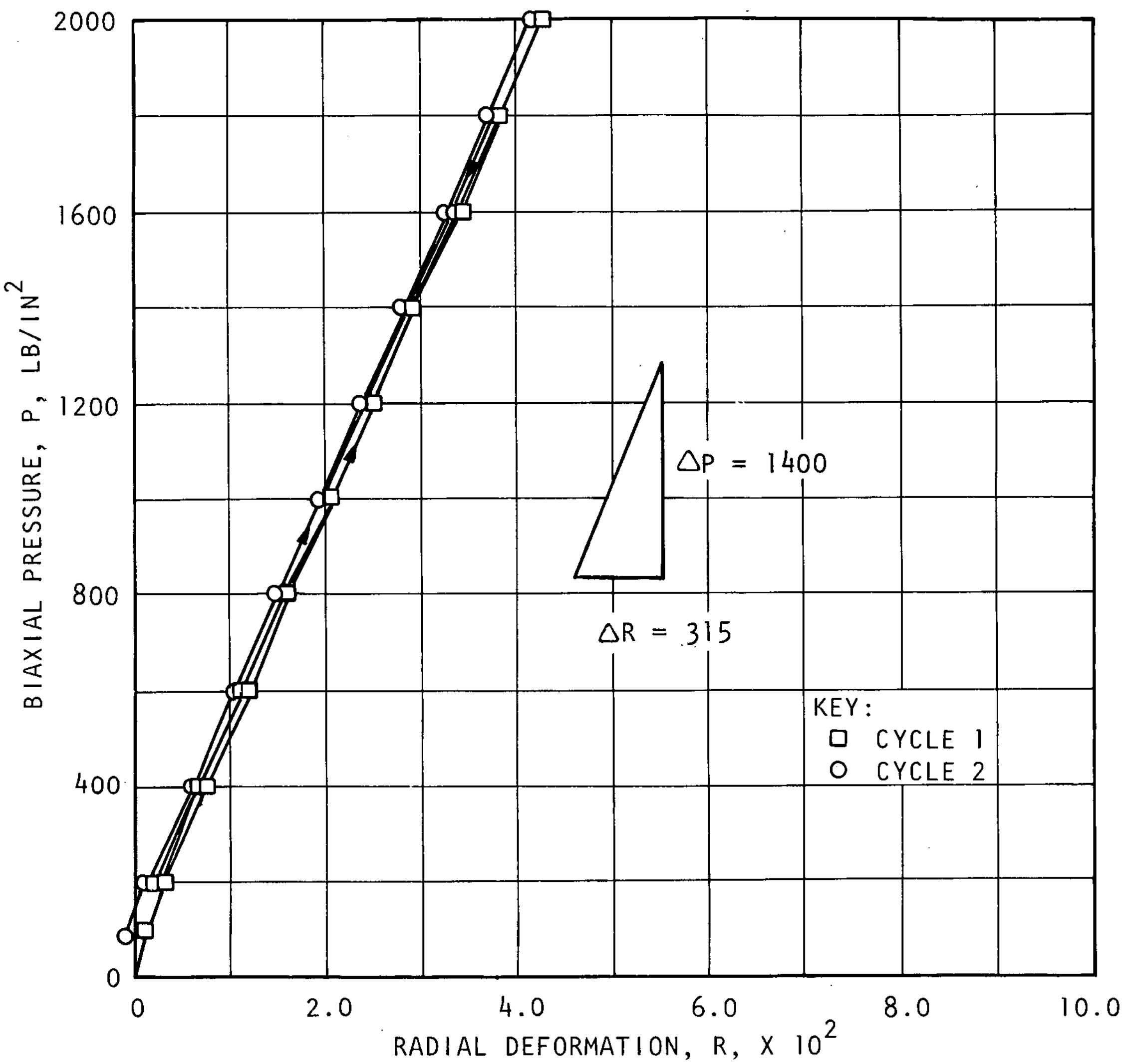
SPECIMEN LENGTH 20 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 2

K_i = 1.00 X 10^{-6} IN.

β = 3.27 IN.



E = 14.5 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 3 TEST 9

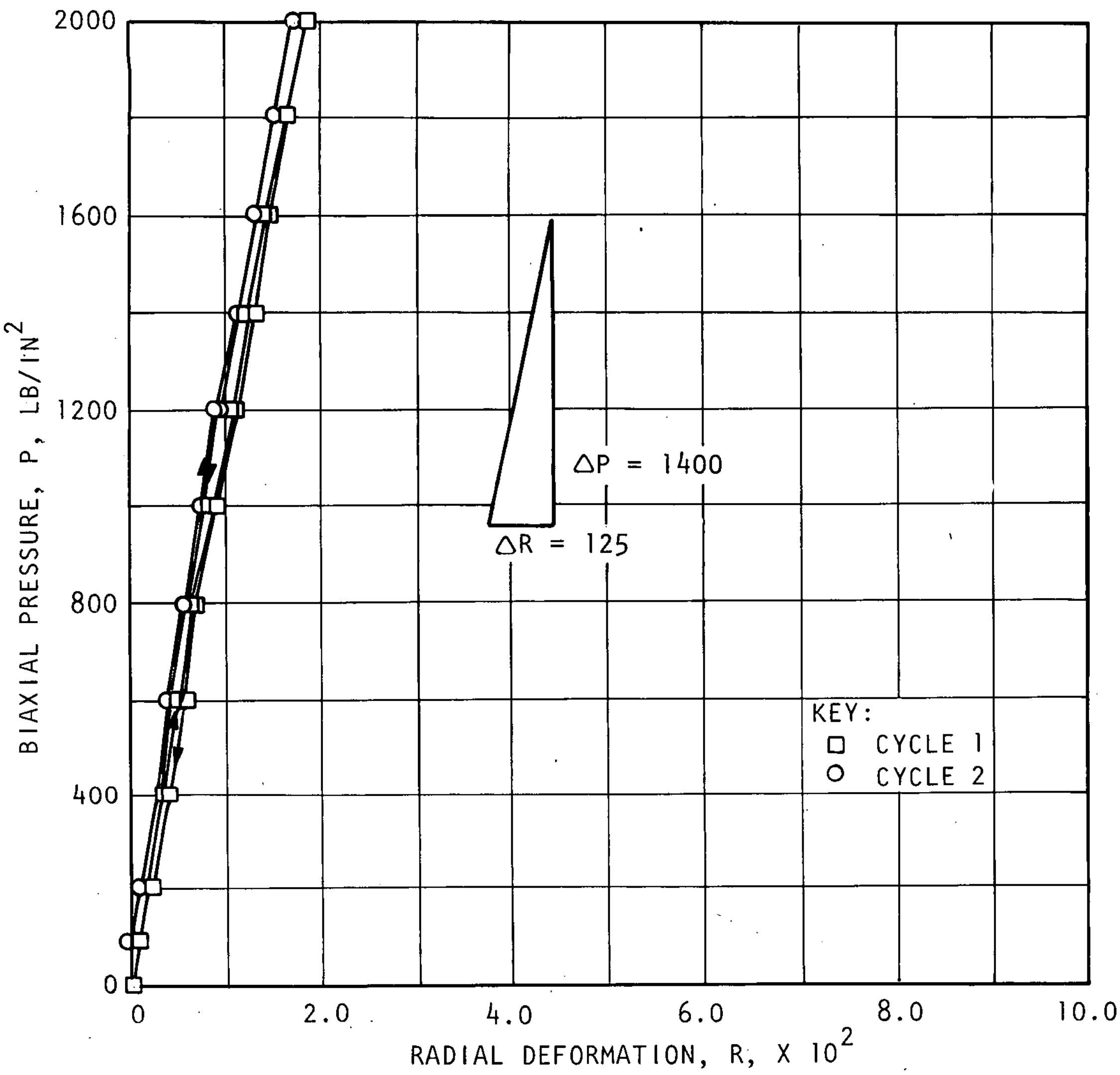
SPECIMEN LENGTH 20 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 3

K_i = 1.05 X 10^{-6} IN.

β = 3.27 IN.



E = 34.9 X10^6 LB/IN^2 (?)

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 3 TEST 10

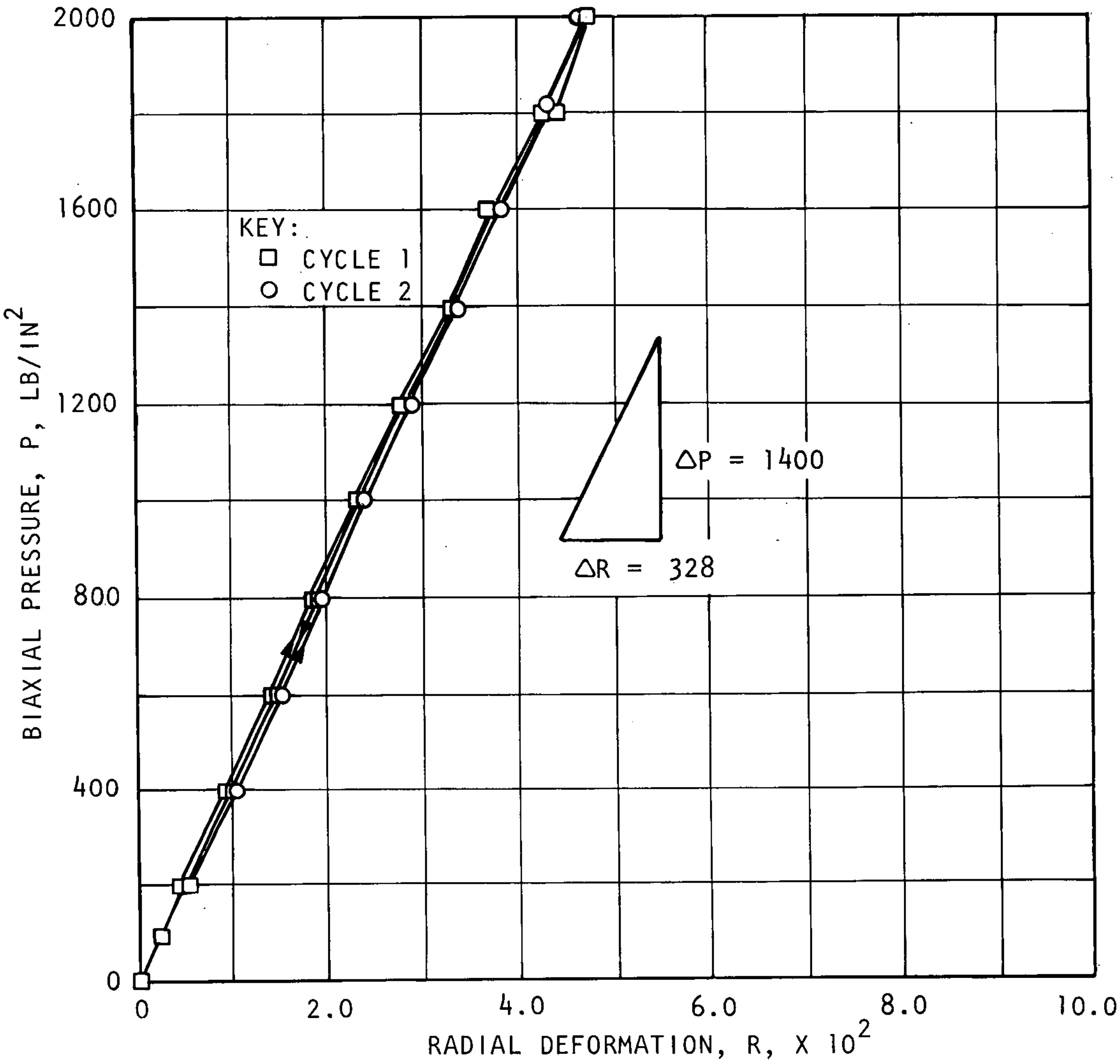
SPECIMEN LENGTH 16½ IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 1

K_i = 1.03 X 10^{-6} IN.

β = 3.27 IN.



E = 13.6 X10^6 LB/IN^2

NOTE: REBOUND FOR CYCLE #2 NOT SHOWN AS IT OVERLIES CYCLE #1 REBOUND

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 3 TEST 10

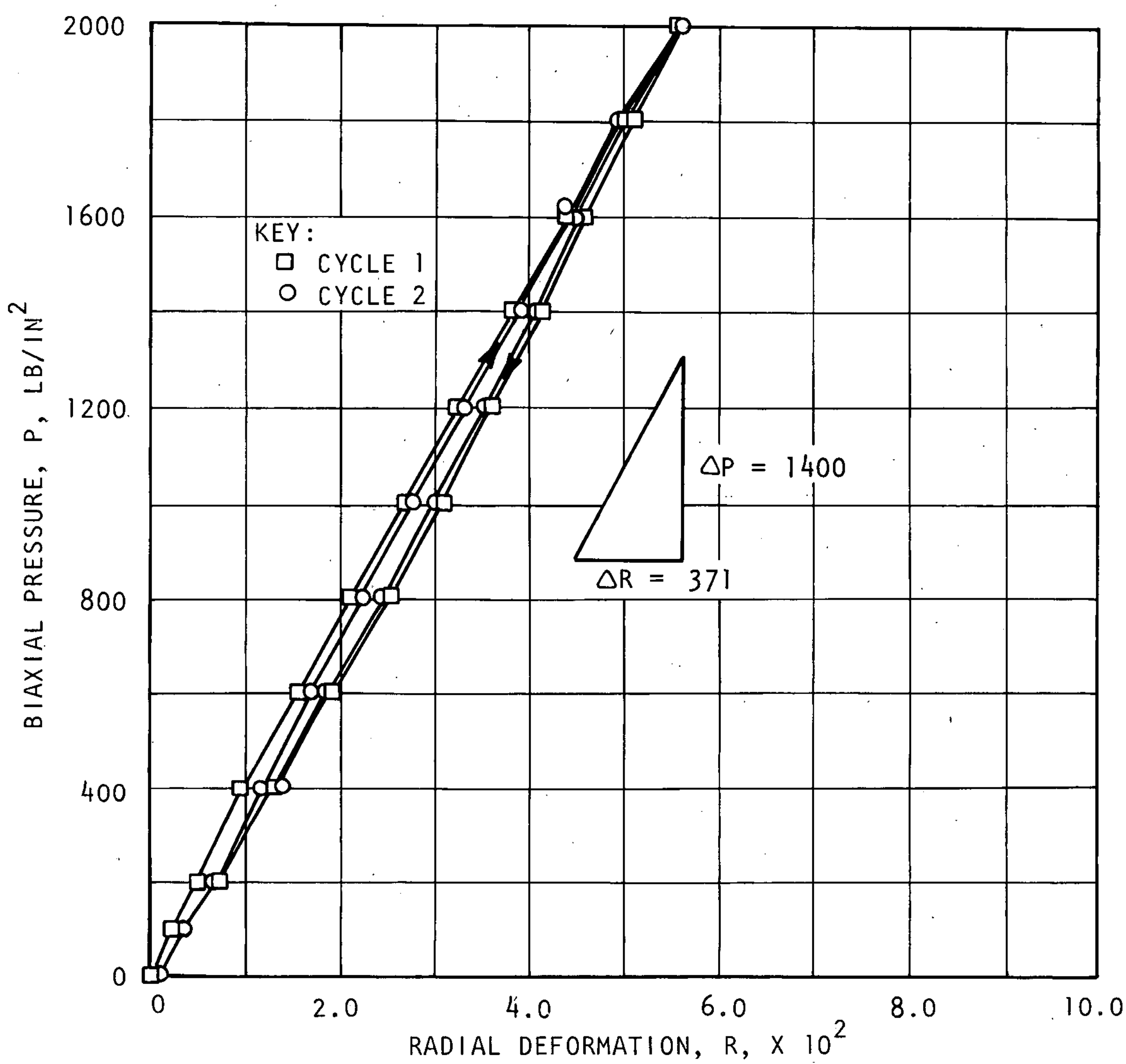
SPECIMEN LENGTH $16\frac{1}{2}$ IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 2

K_i = 1.00 X 10^{-6} IN.

β = 3.27 IN.



E = 12.3 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 3 TEST 10

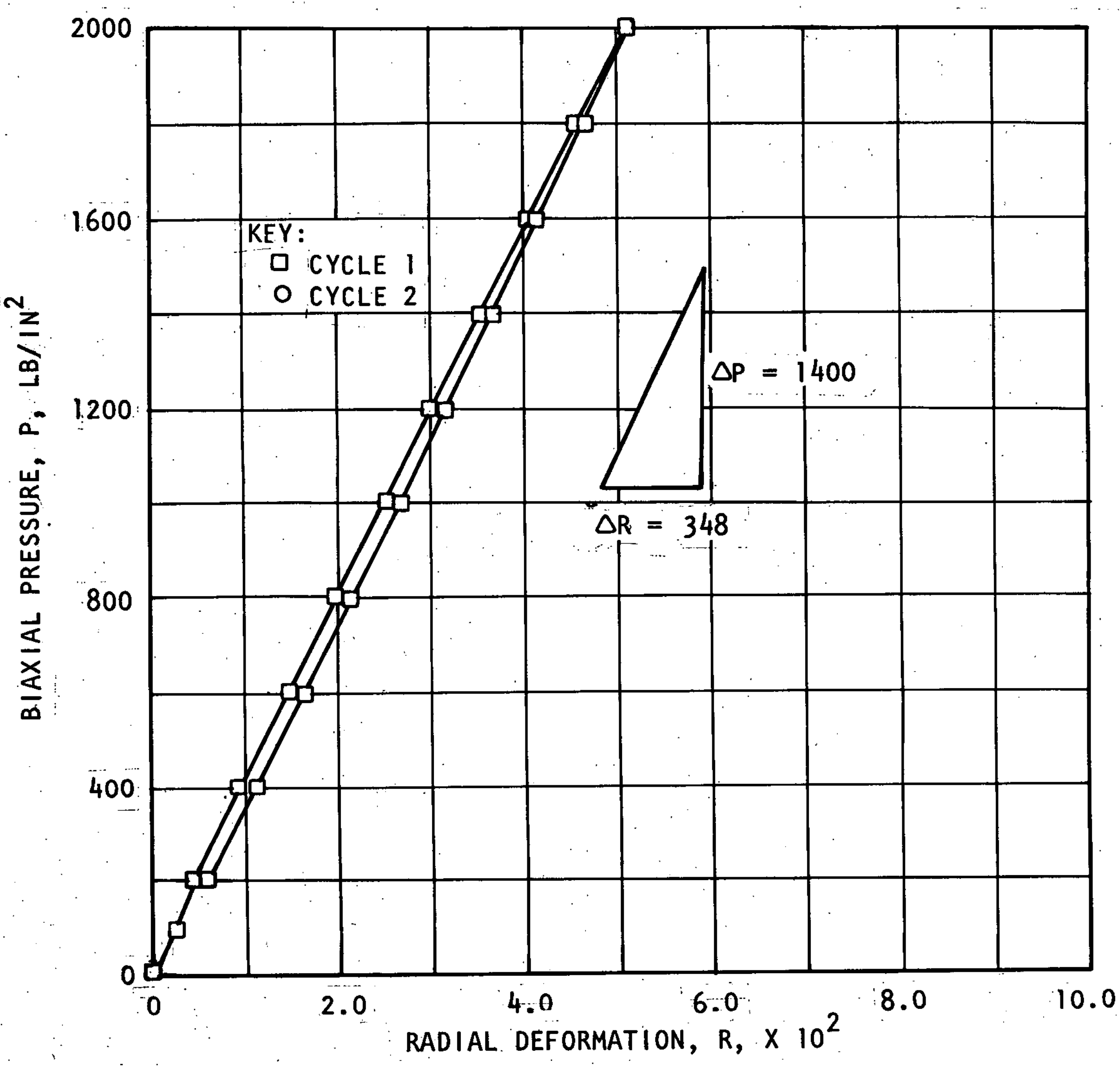
SPECIMEN LENGTH 16½ IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 3

K_i = 1.05 X 10^{-6} IN.

β = 3.27 IN.



E = 12.5 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 9 TEST 1

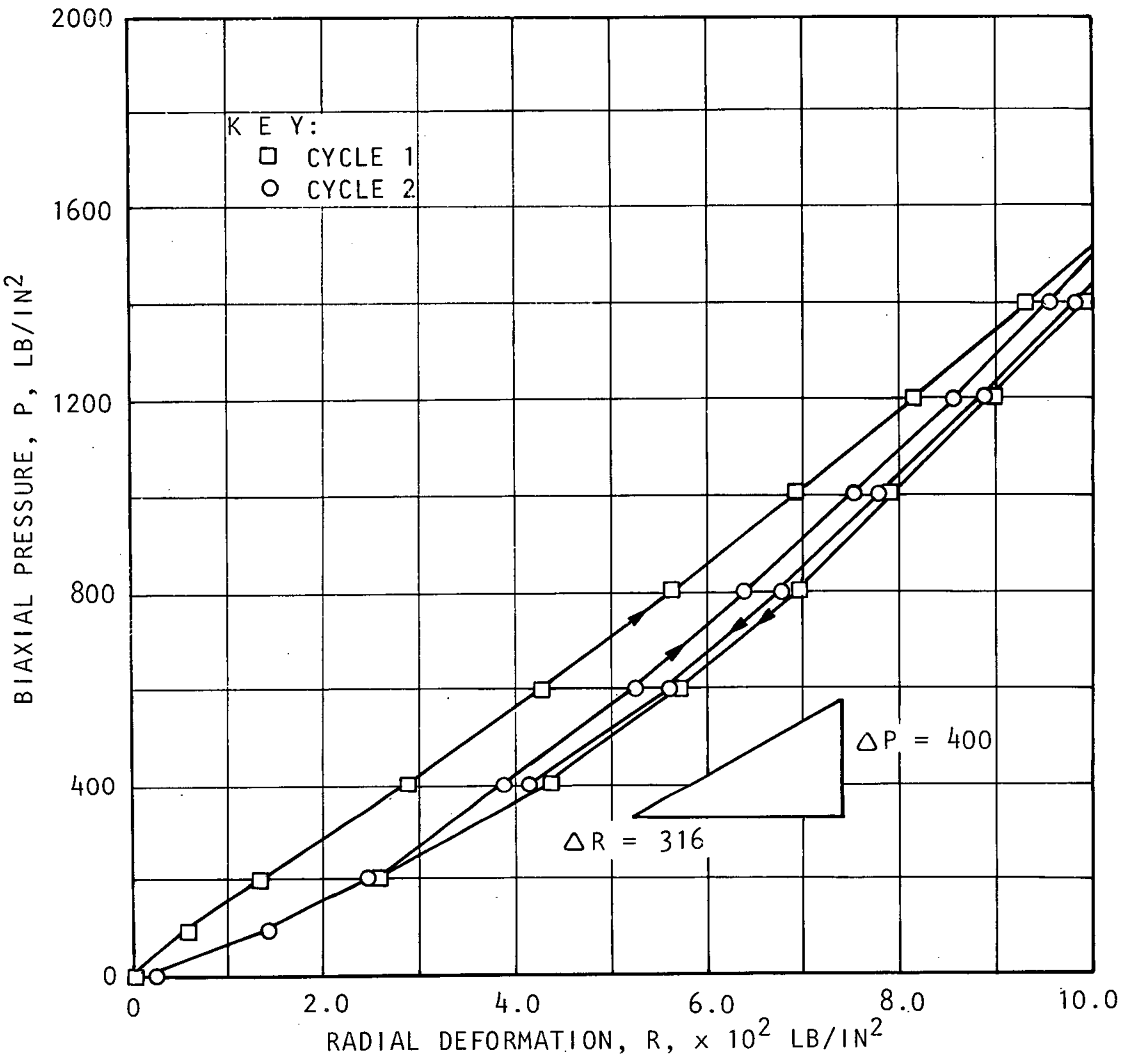
SPECIMEN LENGTH 17 1/2 IN.

SPECIMEN O.D. 5 7/32 IN.

AXIS 1

$K_i = 1.03 \times 10^{-6}$ IN

$\beta = 3.27$ IN.



$E = 4.0 \times 10^6$ LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 9 TEST 1

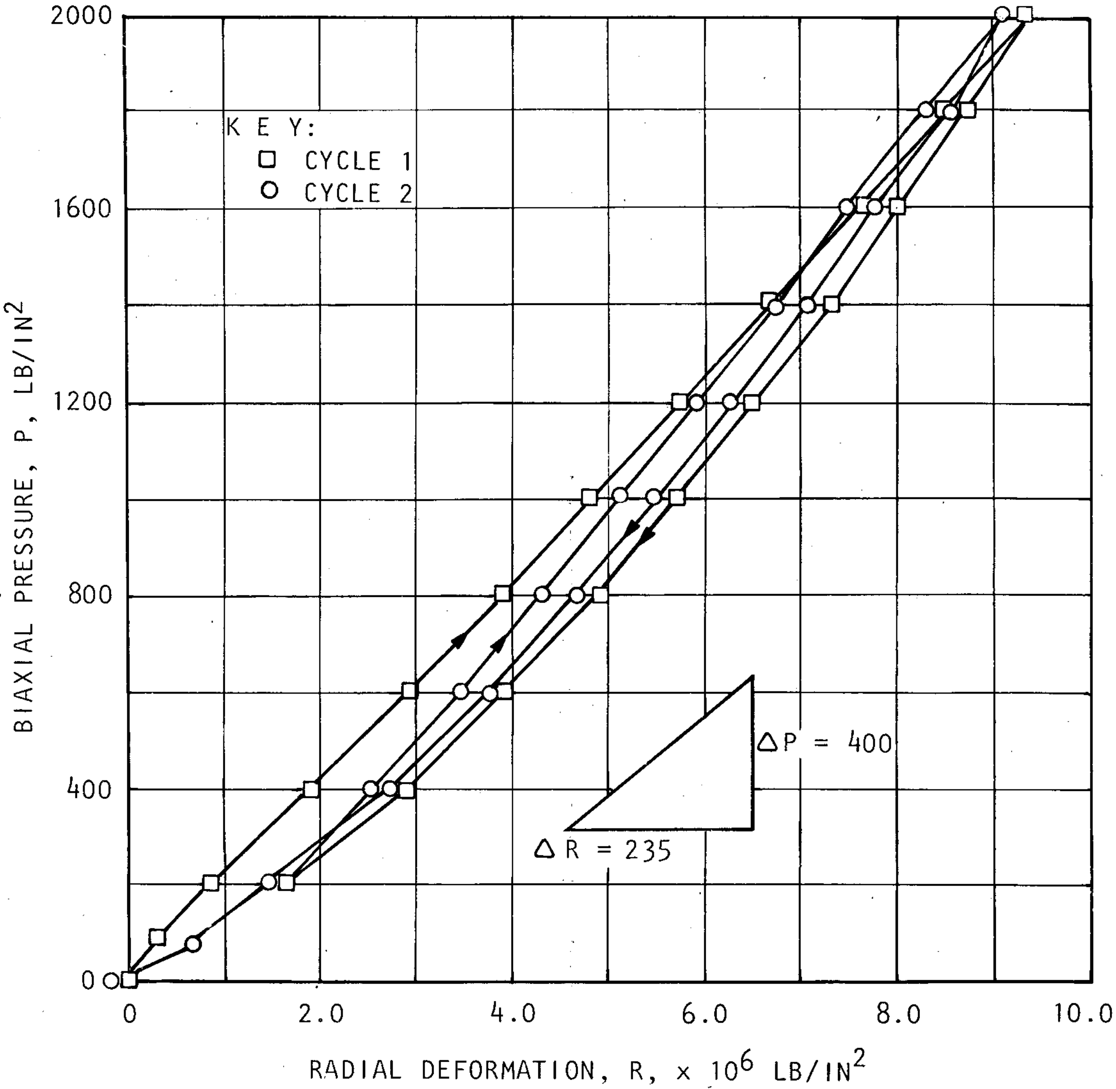
SPECIMEN LENGTH 17 1/2 IN.

SPECIMEN O.D. 5 7/32 IN.

AXIS 2

$K_i = 1.00 \times 10^{-6}$ IN

$\beta = 3.27$ IN.



$E = 5.6 \times 10^6$ LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 9 TEST 1

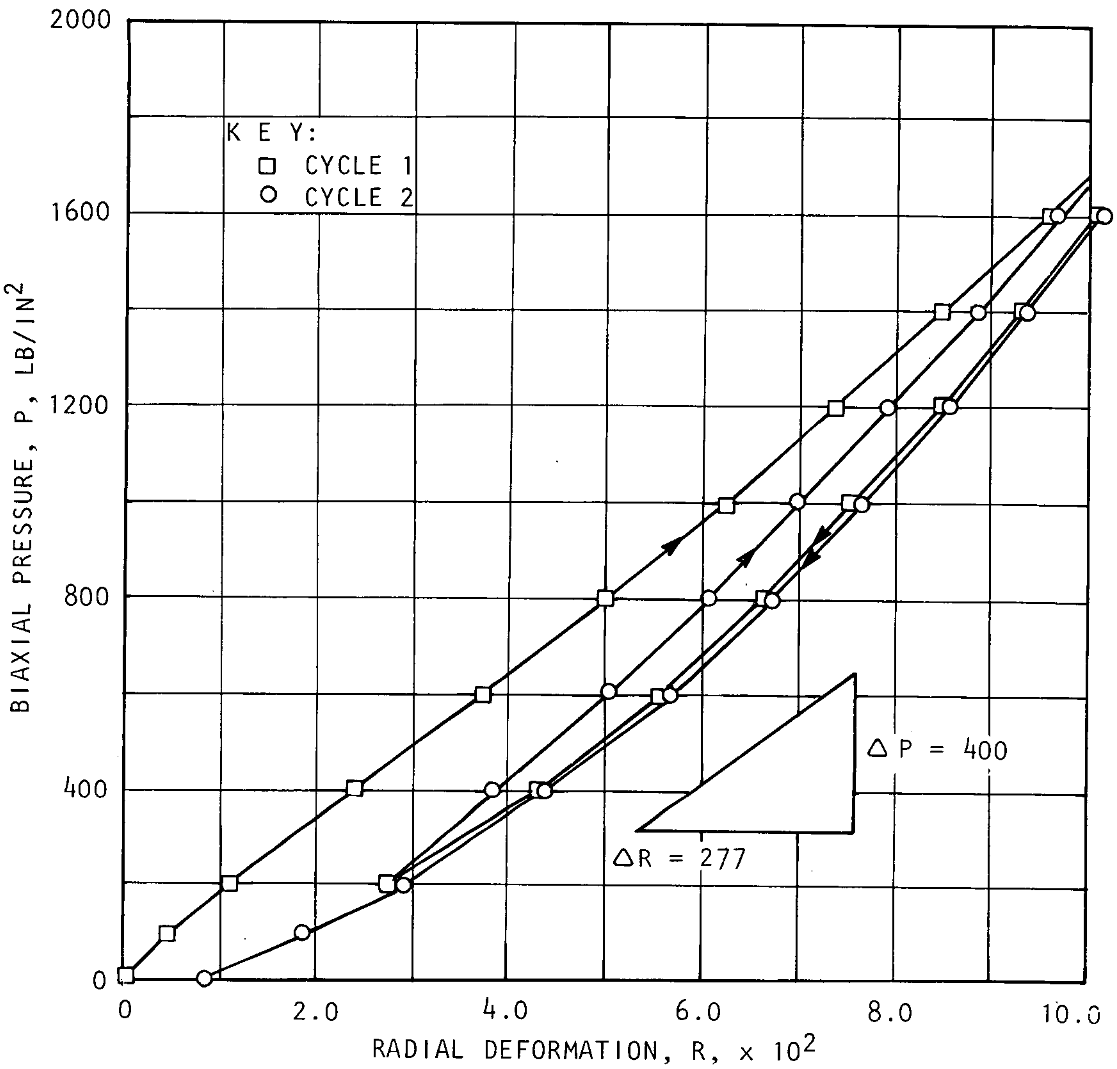
SPECIMEN LENGTH 17 1/2 IN.

SPECIMEN O.D. 5 7/32 IN.

AXIS 3

$K_i = 1.05 \times 10^{-6}$ IN

$\beta = 3.27$ IN.



E = 4.5×10^6 LB/IN²

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 9 TEST 3

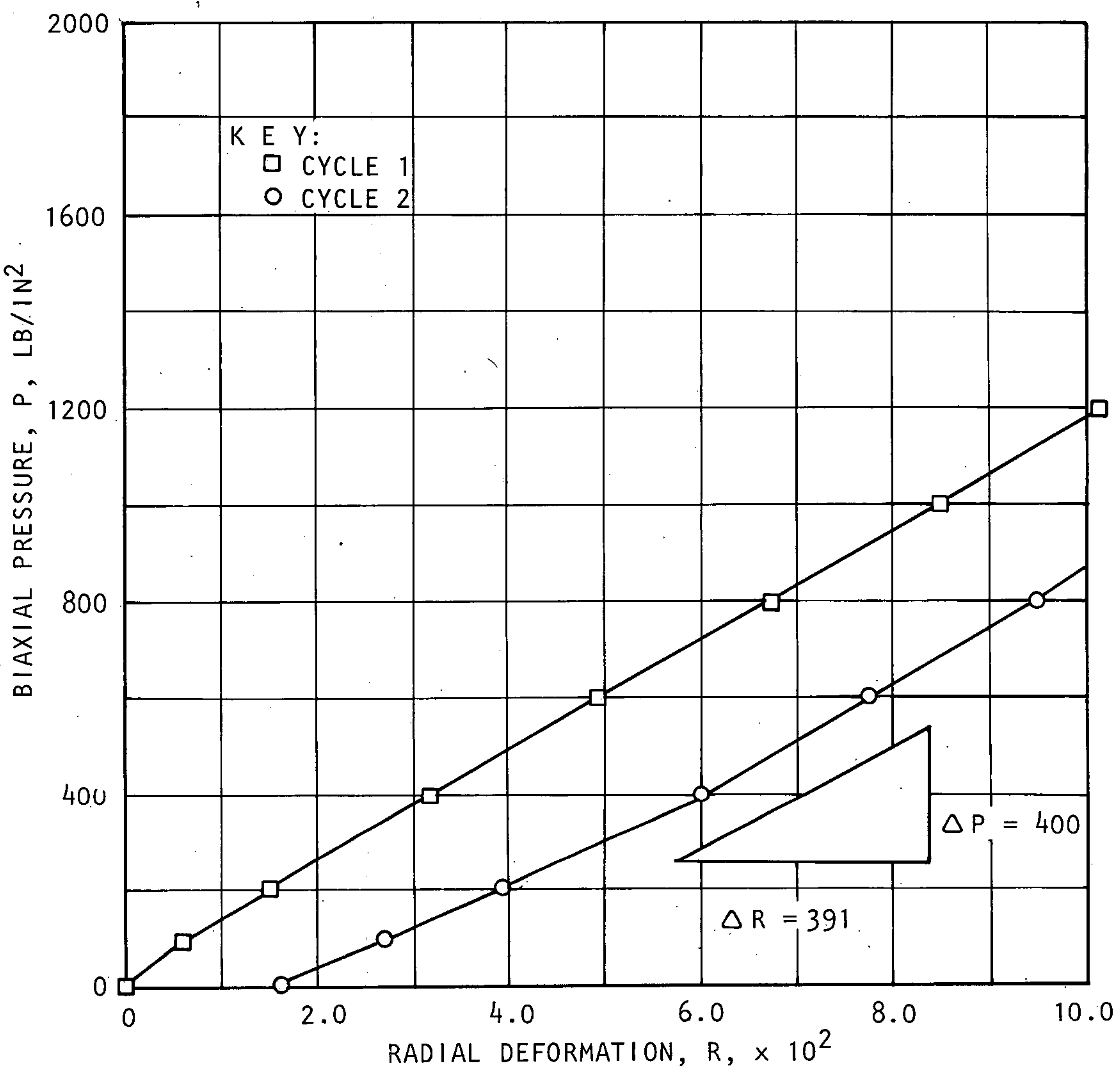
SPECIMEN LENGTH 15 IN.

SPECIMEN O.D. 5 7/32 IN.

AXIS 1

$K_i = 1.03 \times 10^{-6}$ IN

$\beta = 3.27$ IN.



$E = 3.2 \times 10^6$ LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 9 TEST 3

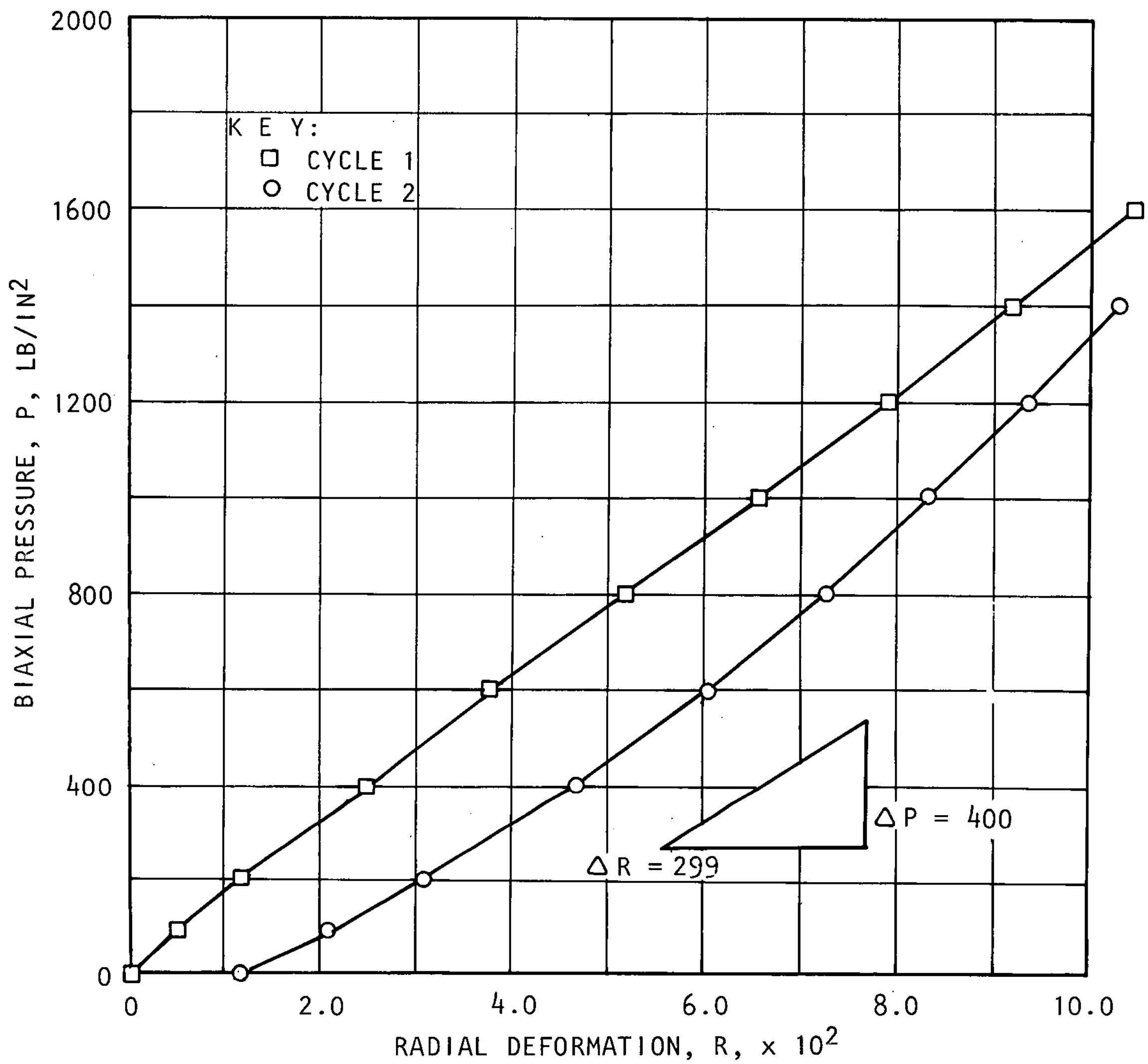
AXIS 2

SPECIMEN LENGTH 15 IN.

SPECIMEN O.D. 5 7/32 IN.

$K_i = 1.00 \times 10^{-6}$ IN

$\beta = 3.27$ IN.



$E = 4.4 \times 10^{6}$ LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 9 TEST 3

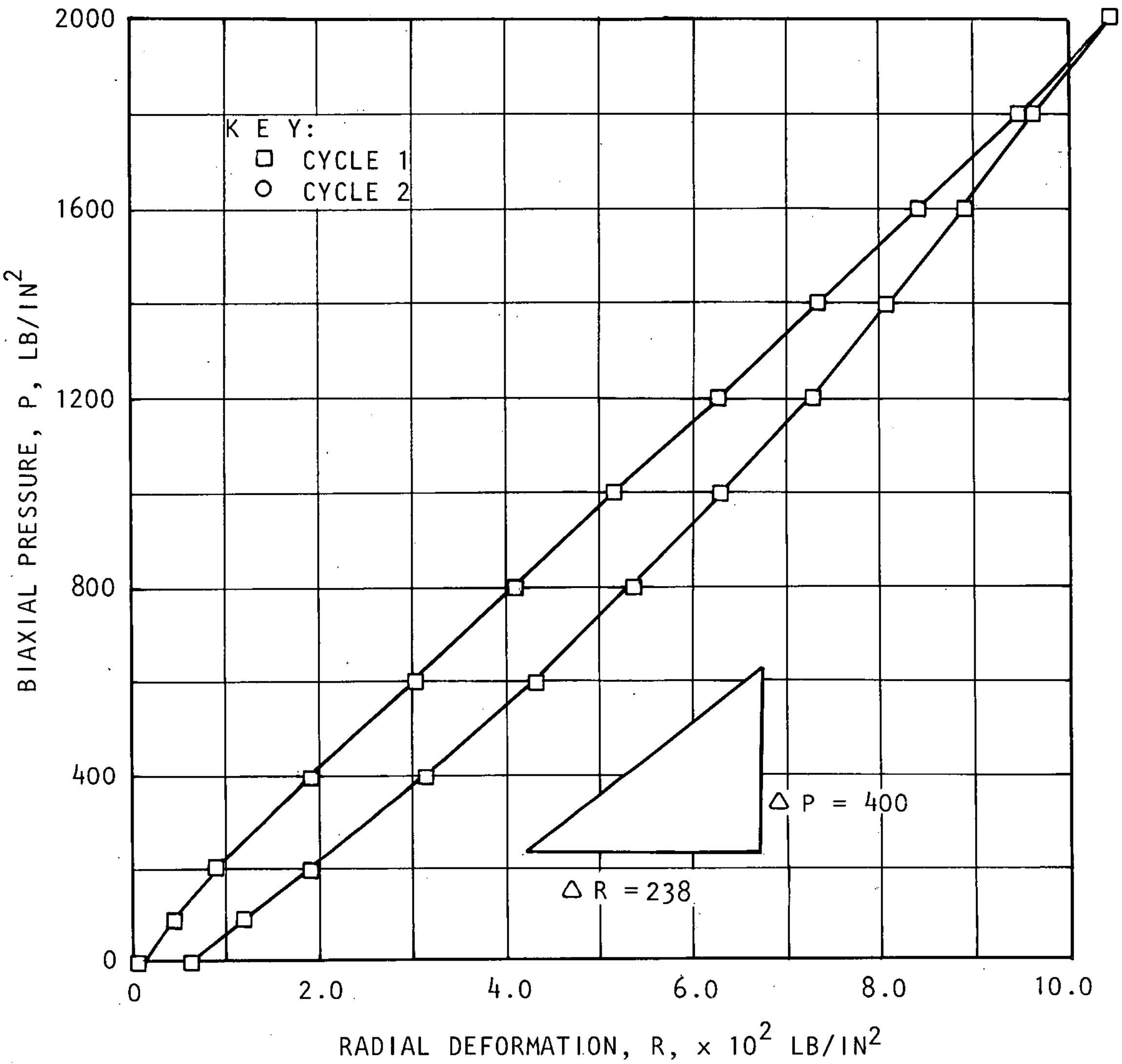
SPECIMEN LENGTH 15 IN.

SPECIMEN O.D. 5 7/32 IN.

AXIS 3

$K_i = 1.05 \times 10^{-6}$ IN

$\beta = 3.27$ IN.



$E = 5.2 \times 10^6$ LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 9 TEST 4

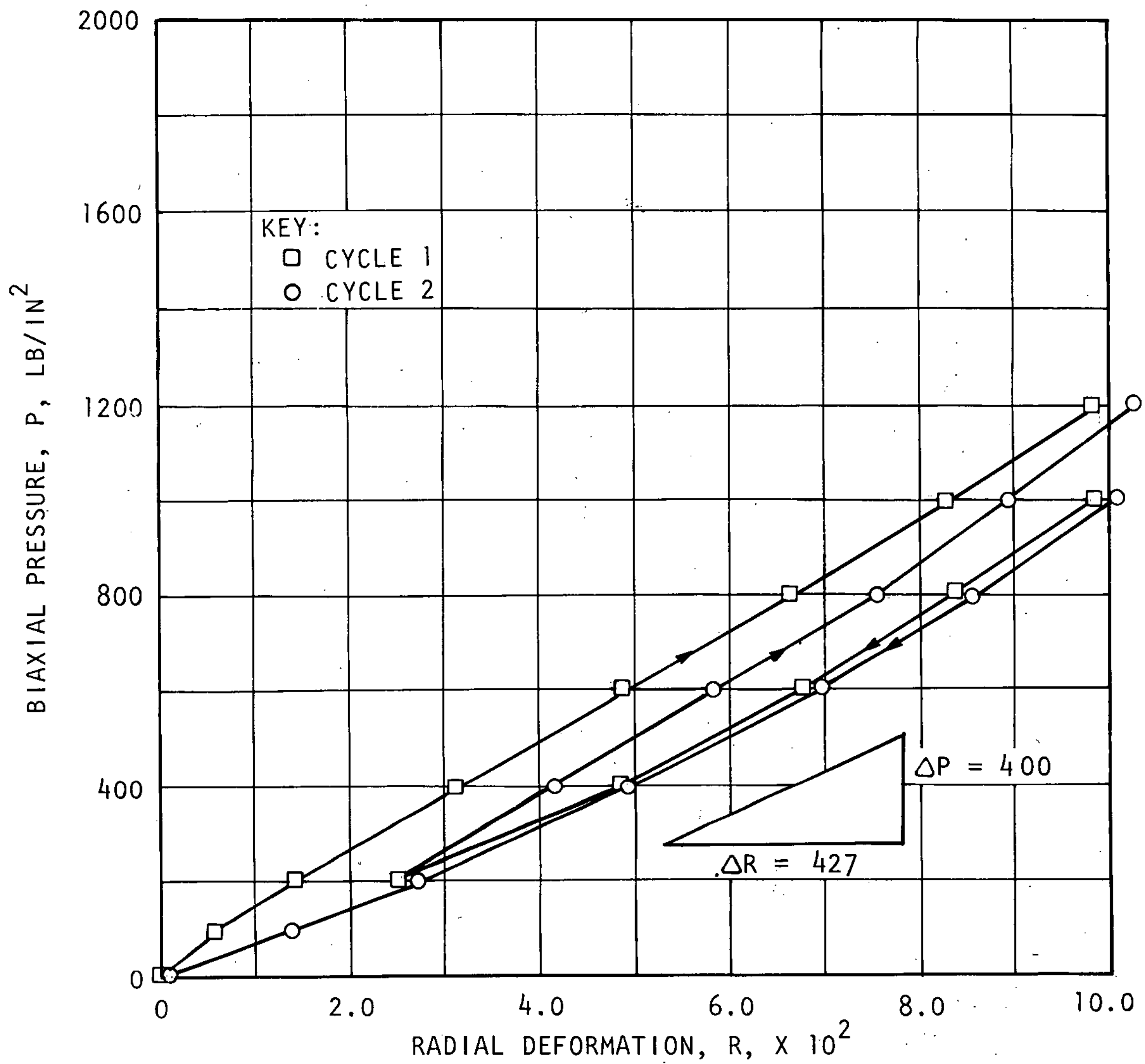
SPECIMEN LENGTH 15 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 1

K_i = 1.01 X 10^{-6} IN.

β = 3.27 IN.



E = 3.0 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 9 TEST 4

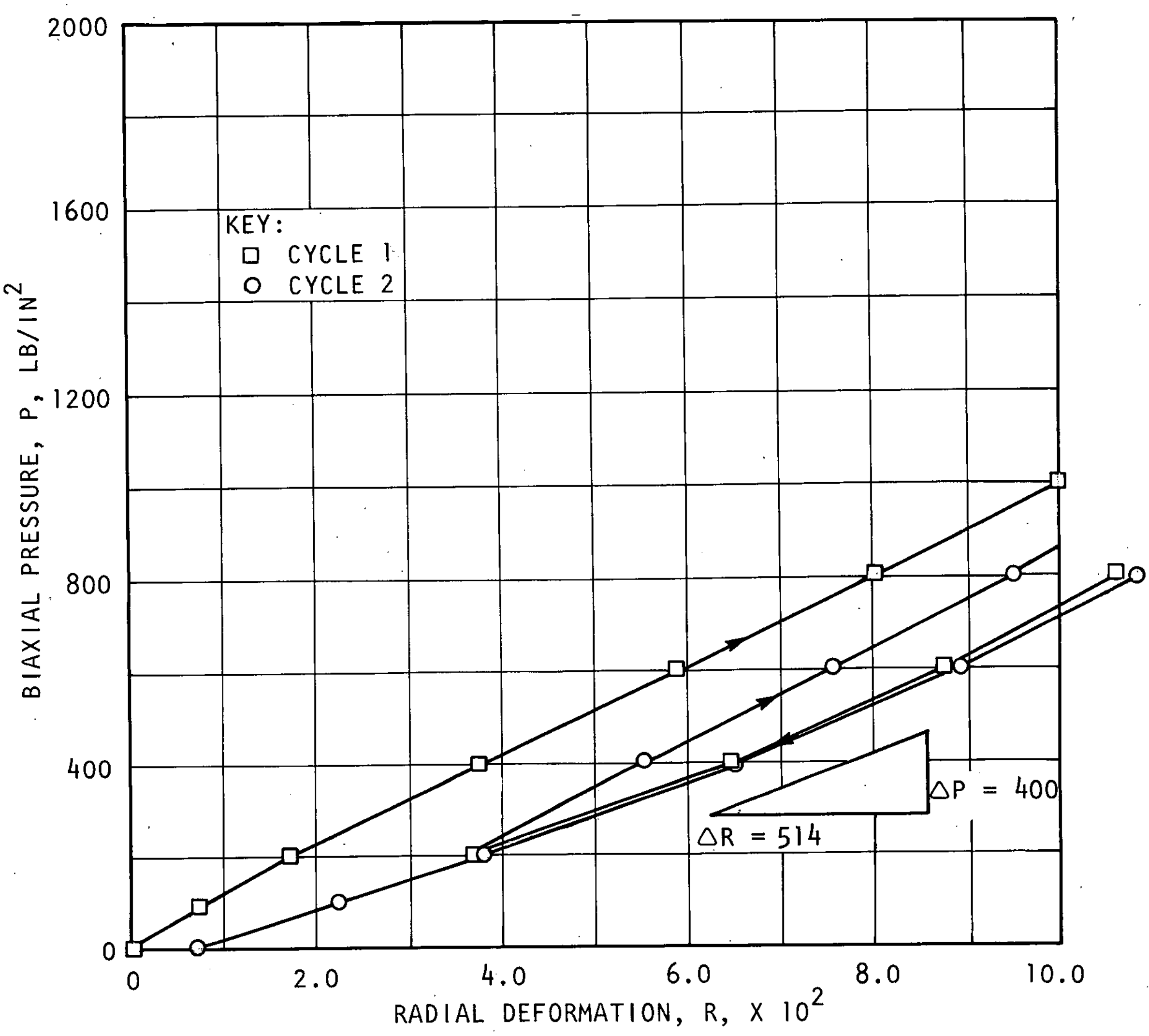
SPECIMEN LENGTH 15 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 2

K_i = 1.01 X 10^{-6} IN.

β = 3.27 IN.



E = 2.5 X10^6 LB/IN^2

MODULUS OF DEFORMATION

SITE 9 TEST 4

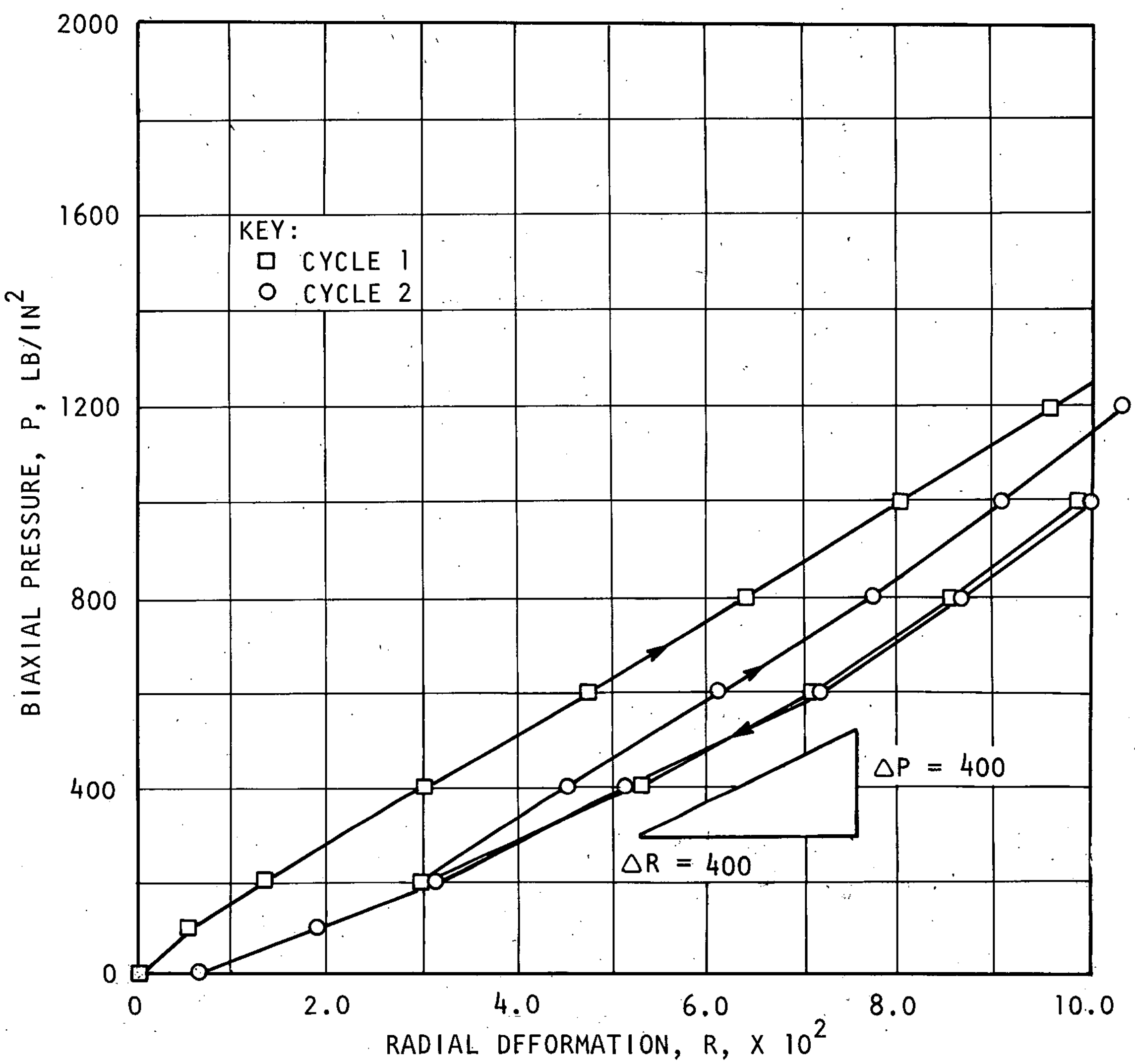
SPECIMEN LENGTH 15 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 3

K_i = 1.03 X 10^{-6} IN.

β = 3.27 IN.



E = 3.2 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 9 TEST 7

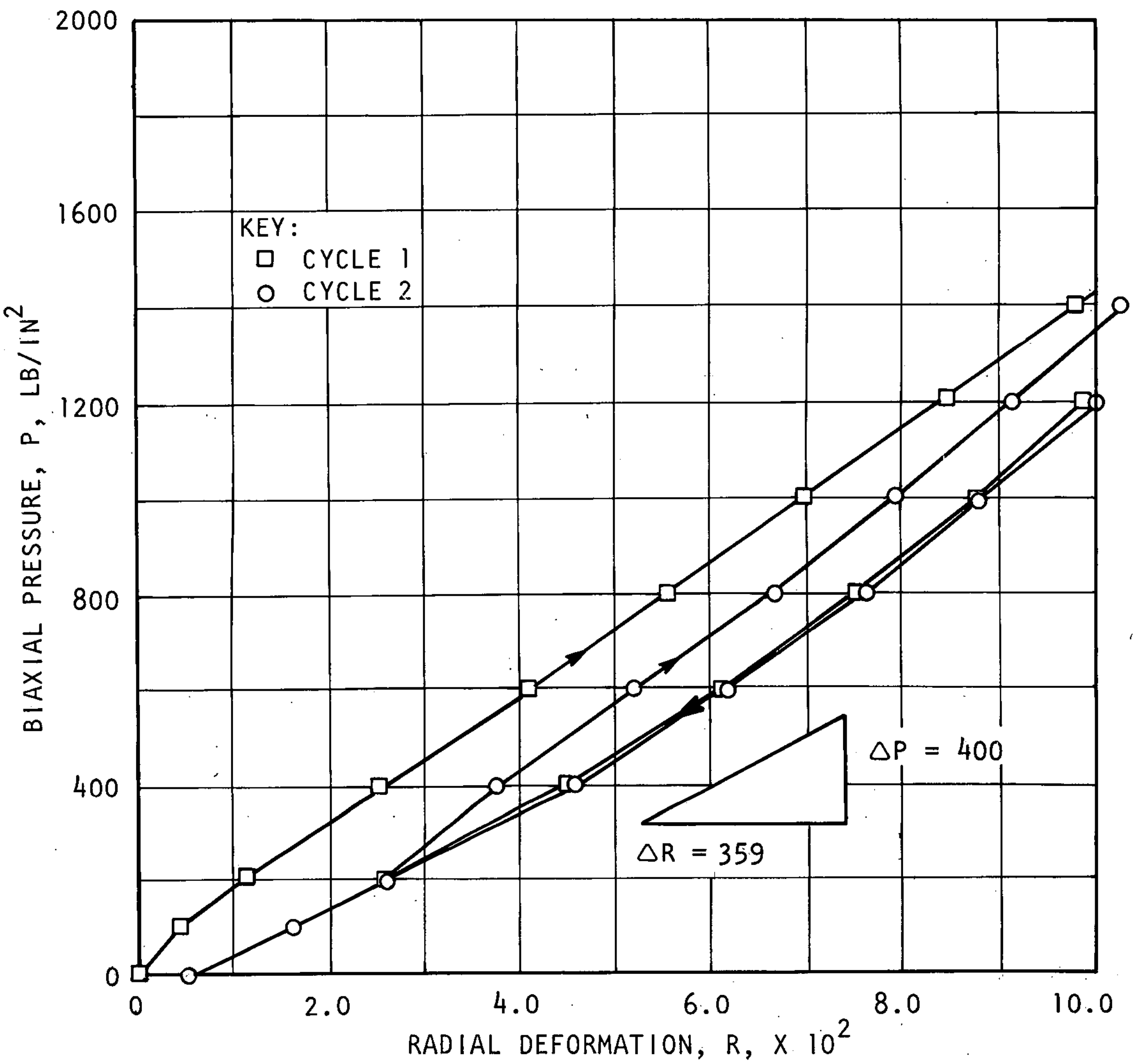
SPECIMEN LENGTH 16½ IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 1

K_i = 1.03 X 10^{-6} IN.

β = 3.27 IN.



E = 3.5 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 9 TEST 7

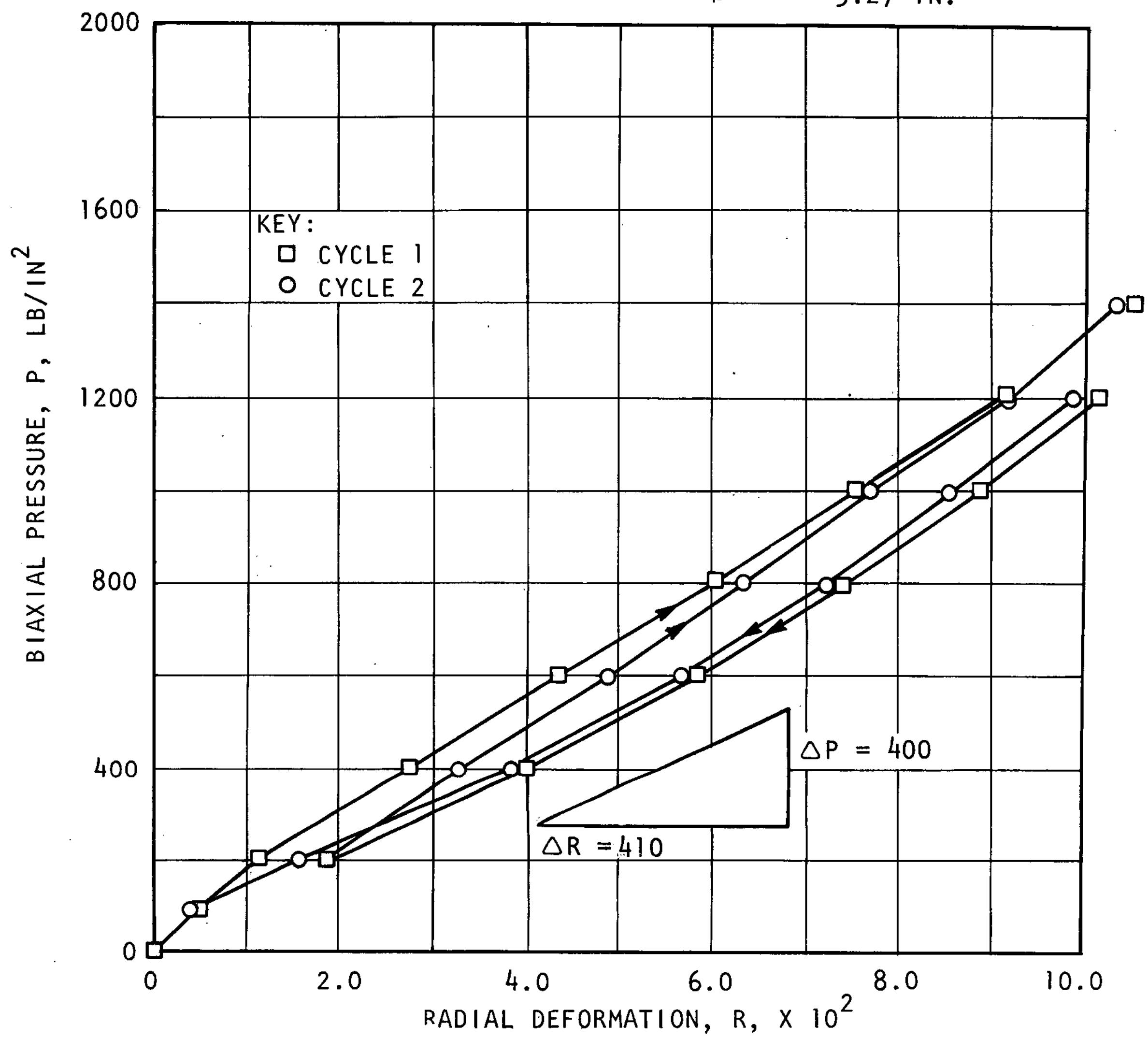
SPECIMEN LENGTH 16½ IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 2

K_i = 1.00 X 10^{-6} IN.

β = 3.27 IN.



E = 3.2 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 9 TEST 7

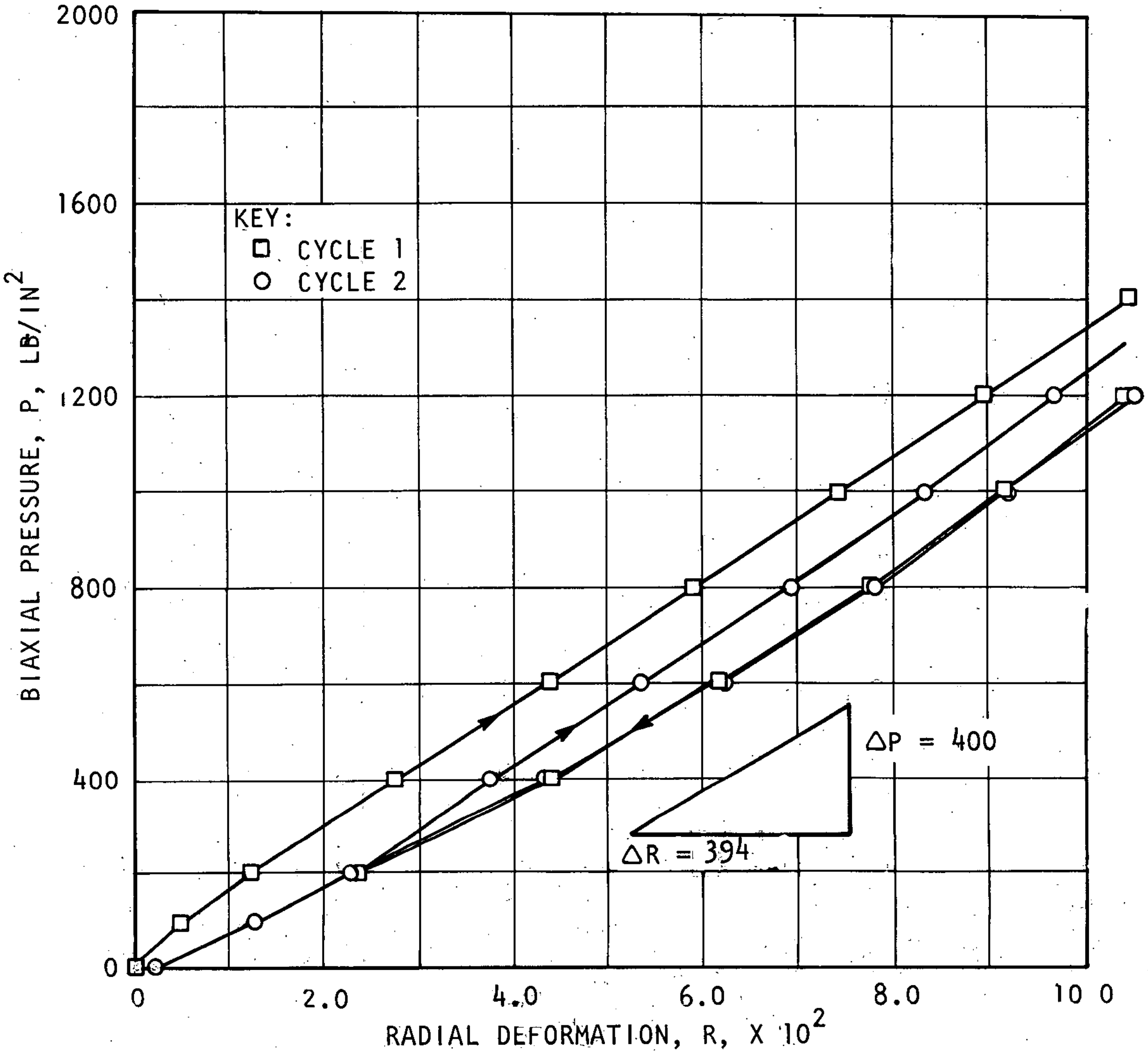
SPECIMEN LENGTH $16\frac{1}{2}$ IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 3

K_i = 1.05×10^{-6} IN.

β = 3.27 IN.



E = 3.2 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 1

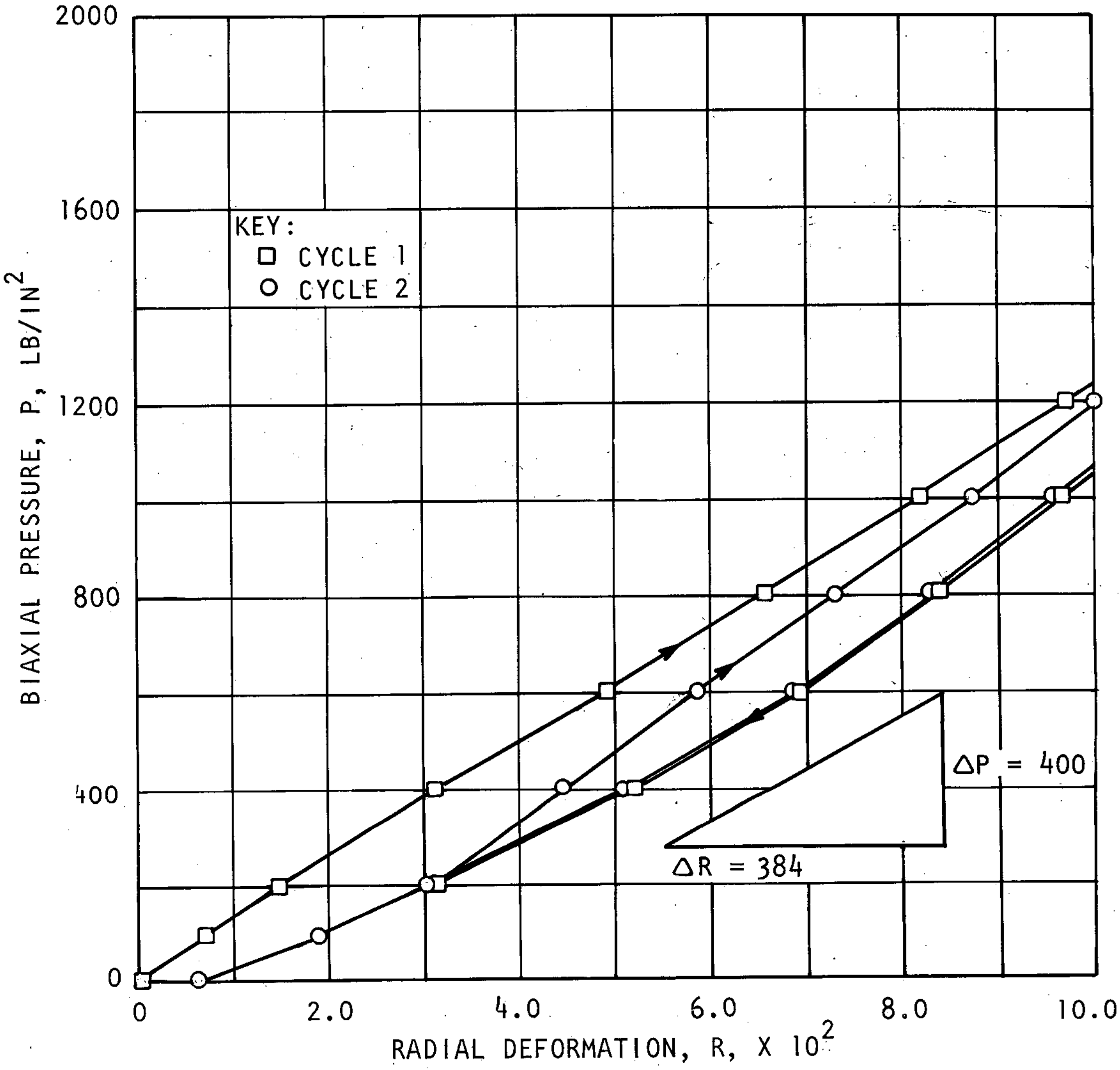
AXIS 1

SPECIMEN LENGTH 18 IN.

SPECIMEN O.D. 5-7/32 IN.

K_i = 1.03×10^{-6} IN.

β = 3.27 IN.



E = 3.3 $\times 10^6$ LB/IN^2

MODULUS OF DEFORMATION

SITE 11 TEST 1

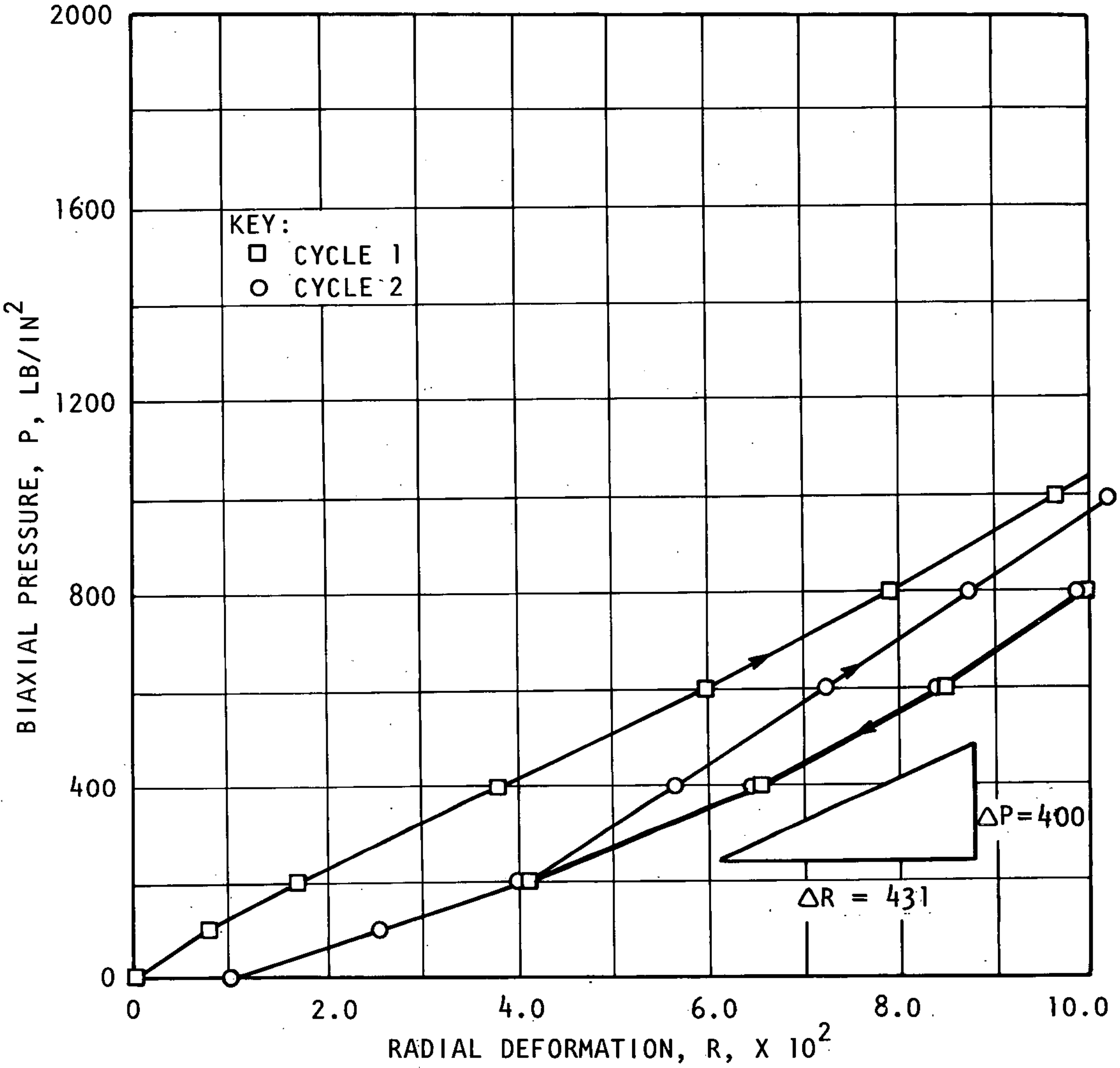
AXIS 2

SPECIMEN LENGTH 18 IN.

SPECIMEN O.D. 5-7/32 IN.

K_i = 1.00×10^{-6} IN.

β = 3.27 IN.



E = 3.0×10^6 LB/IN^2

MODULUS OF DEFORMATION

SITE 11 TEST 1

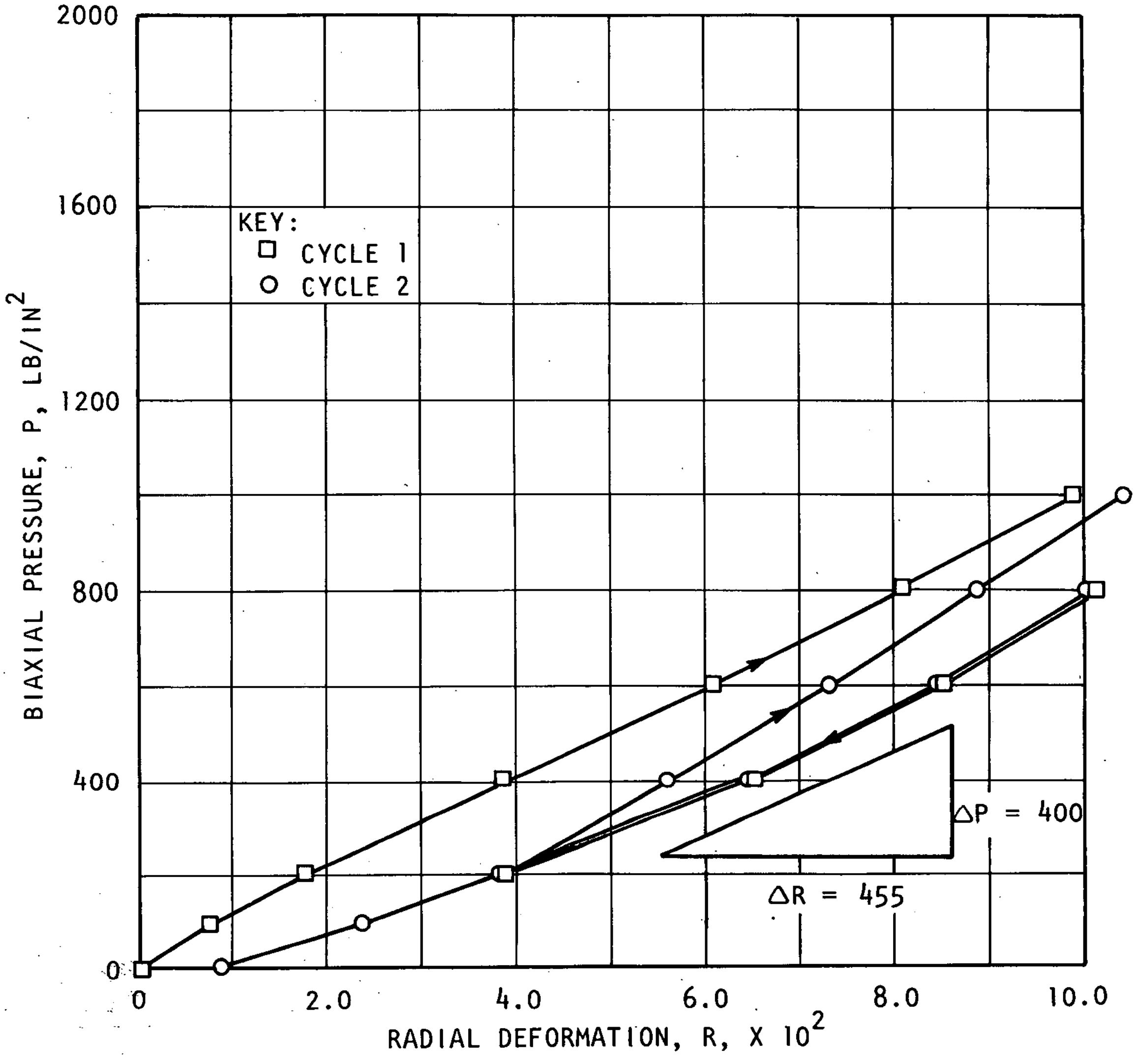
SPECIMEN LENGTH 18 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 3

K_i = 1.05 X 10^{-6} IN.

β = 3.27 IN.



E = 2.7 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 2

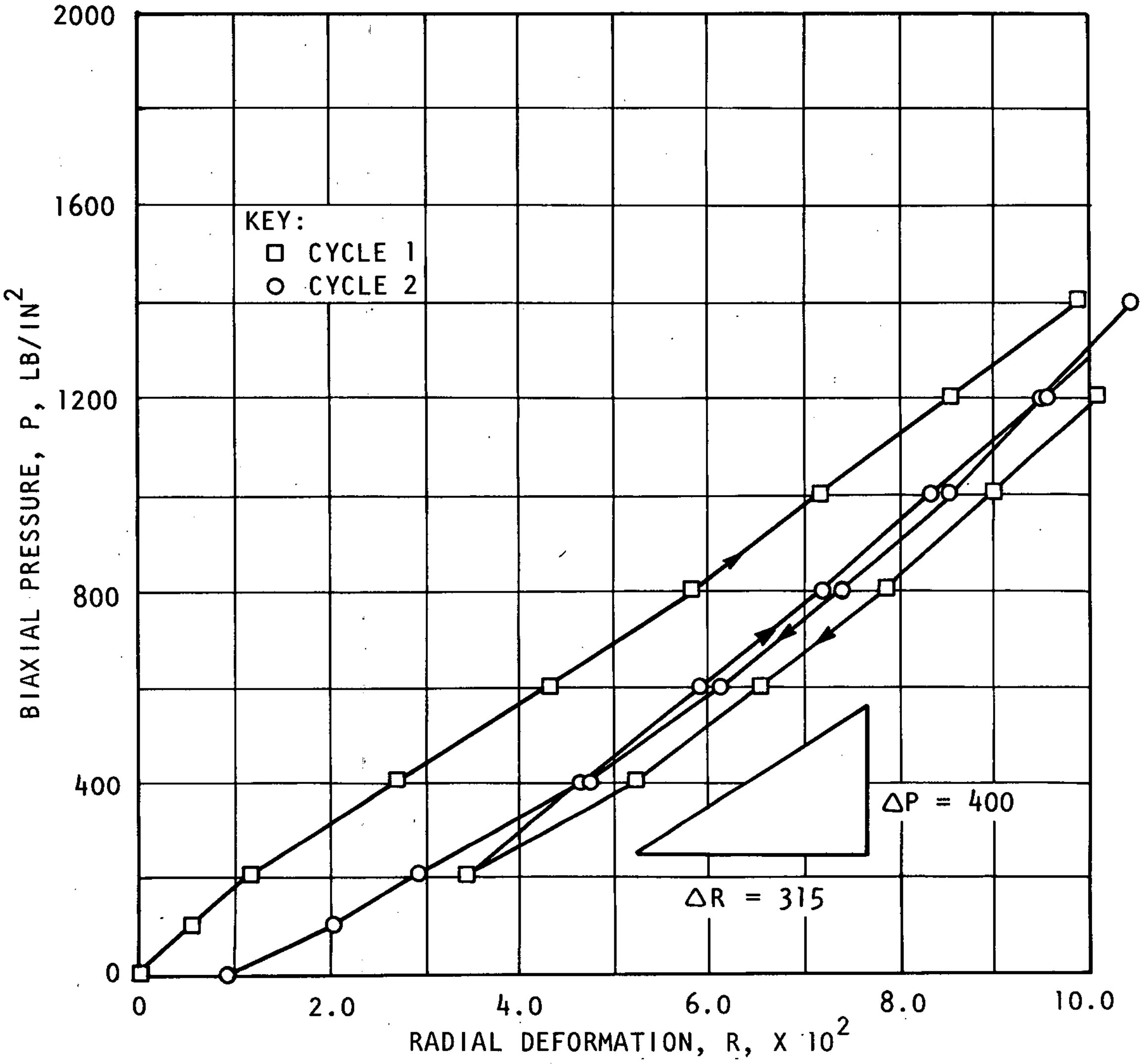
AXIS 1

SPECIMEN LENGTH 17 IN.

SPECIMEN O.D. 5-7/32 IN.

K_i = 1.03 X 10^{-6} IN.

β = 3.27 IN.



E = 4.0 X10^6 LB/IN^2

MODULUS OF DEFORMATION

SITE 11 TEST 2

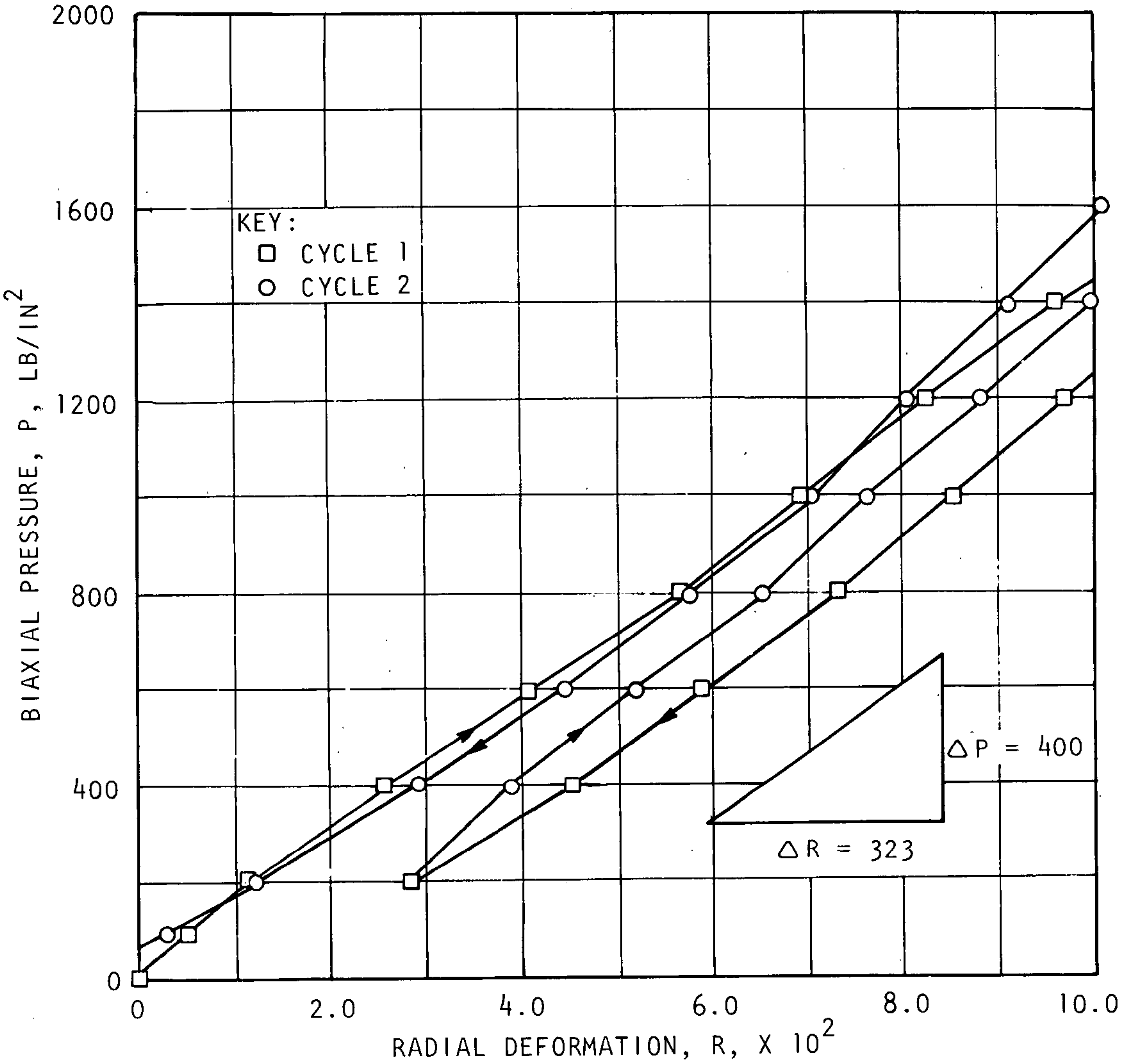
SPECIMEN LENGTH 17 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 2

K_i = 1.00×10^{-6} IN.

β = 3.27 IN.



E = 4.0 $\times 10^6$ LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 2

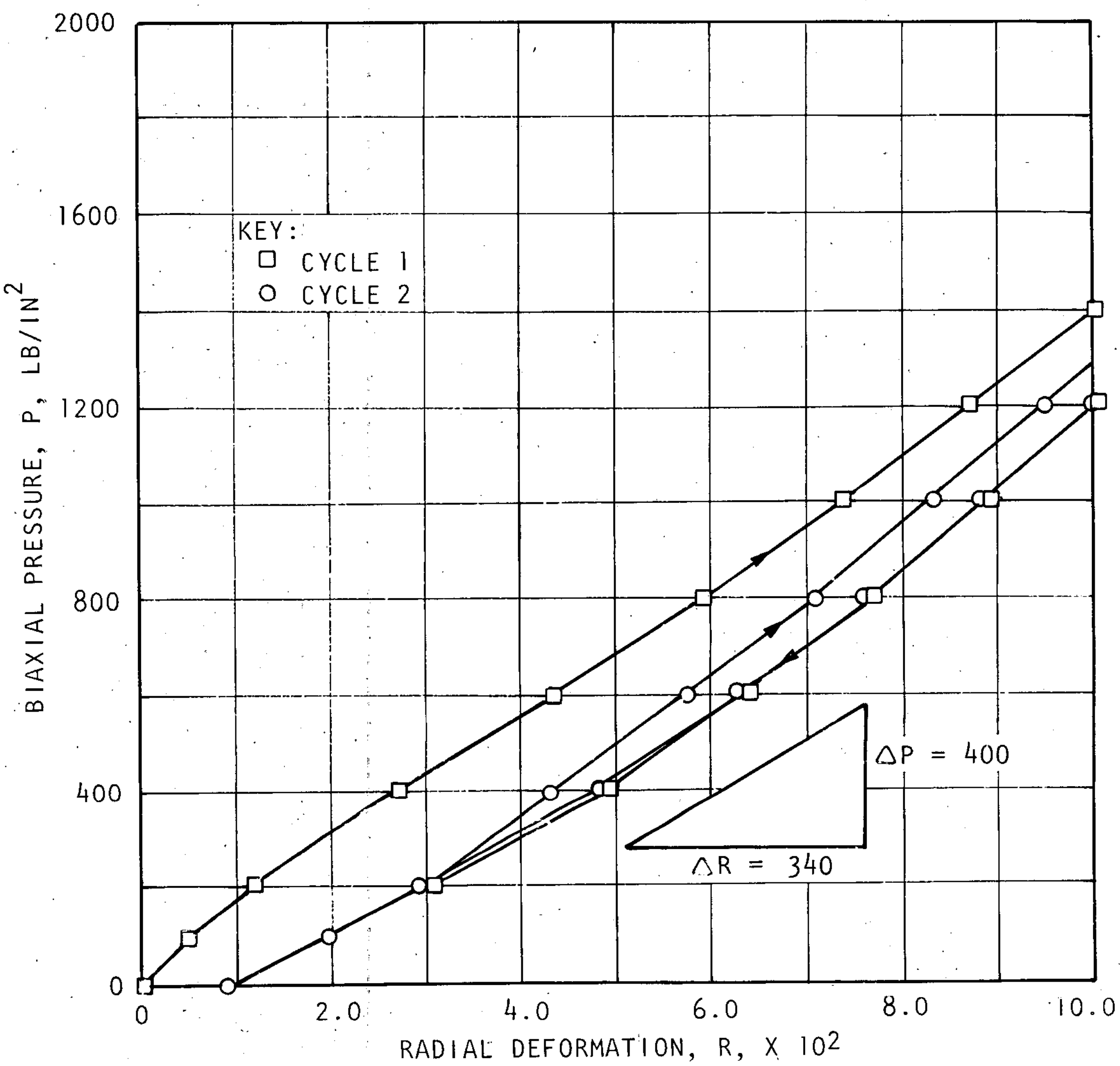
SPECIMEN LENGTH 17 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 3

K_i = 1.05 X 10^{-6} IN.

β = 3.27 IN.



E = 3.7 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 3

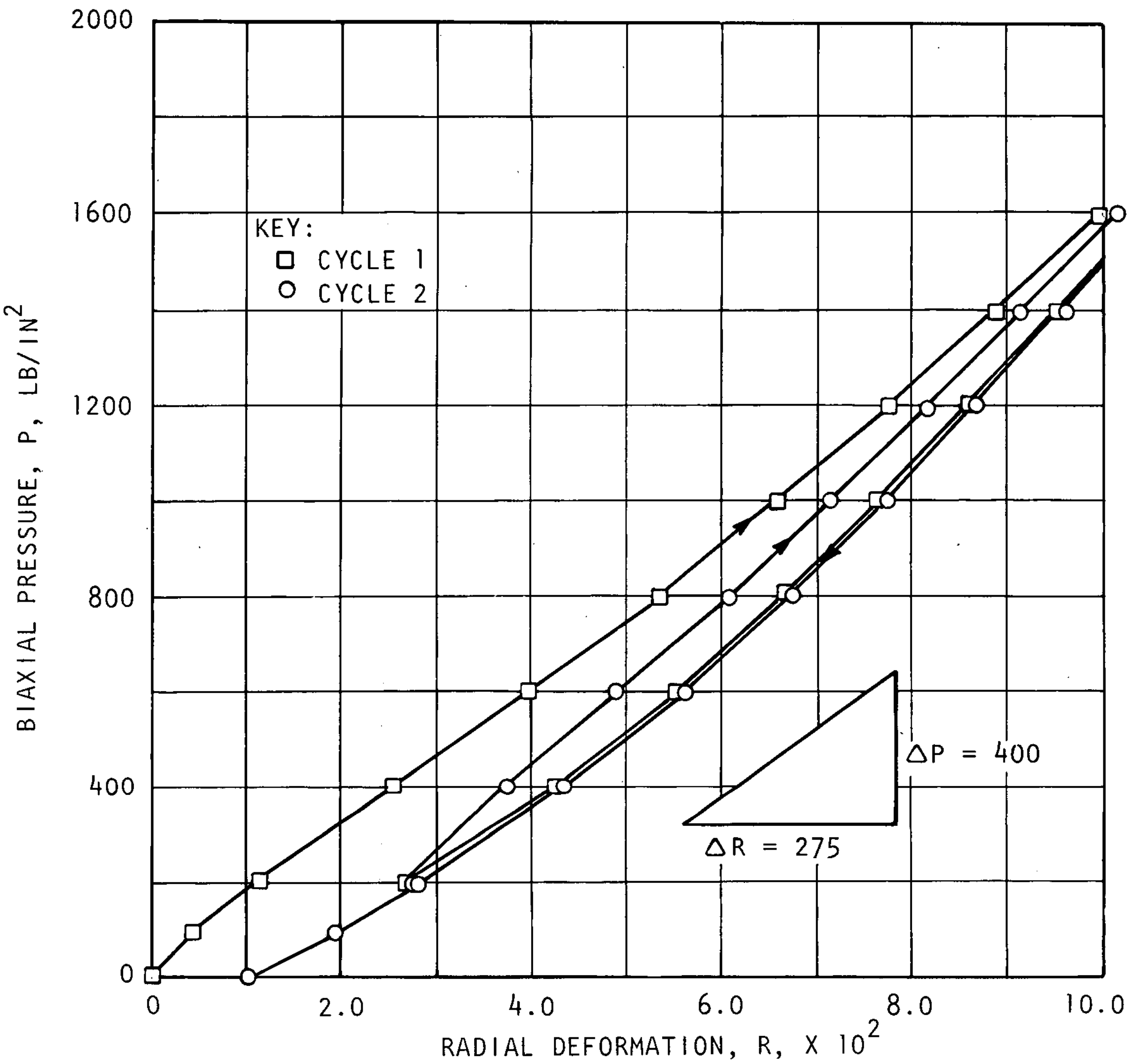
SPECIMEN LENGTH 14 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 1

K_i = 1.03 X 10^{-6} IN.

β = 3.27 IN.



E = 4.6 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 3

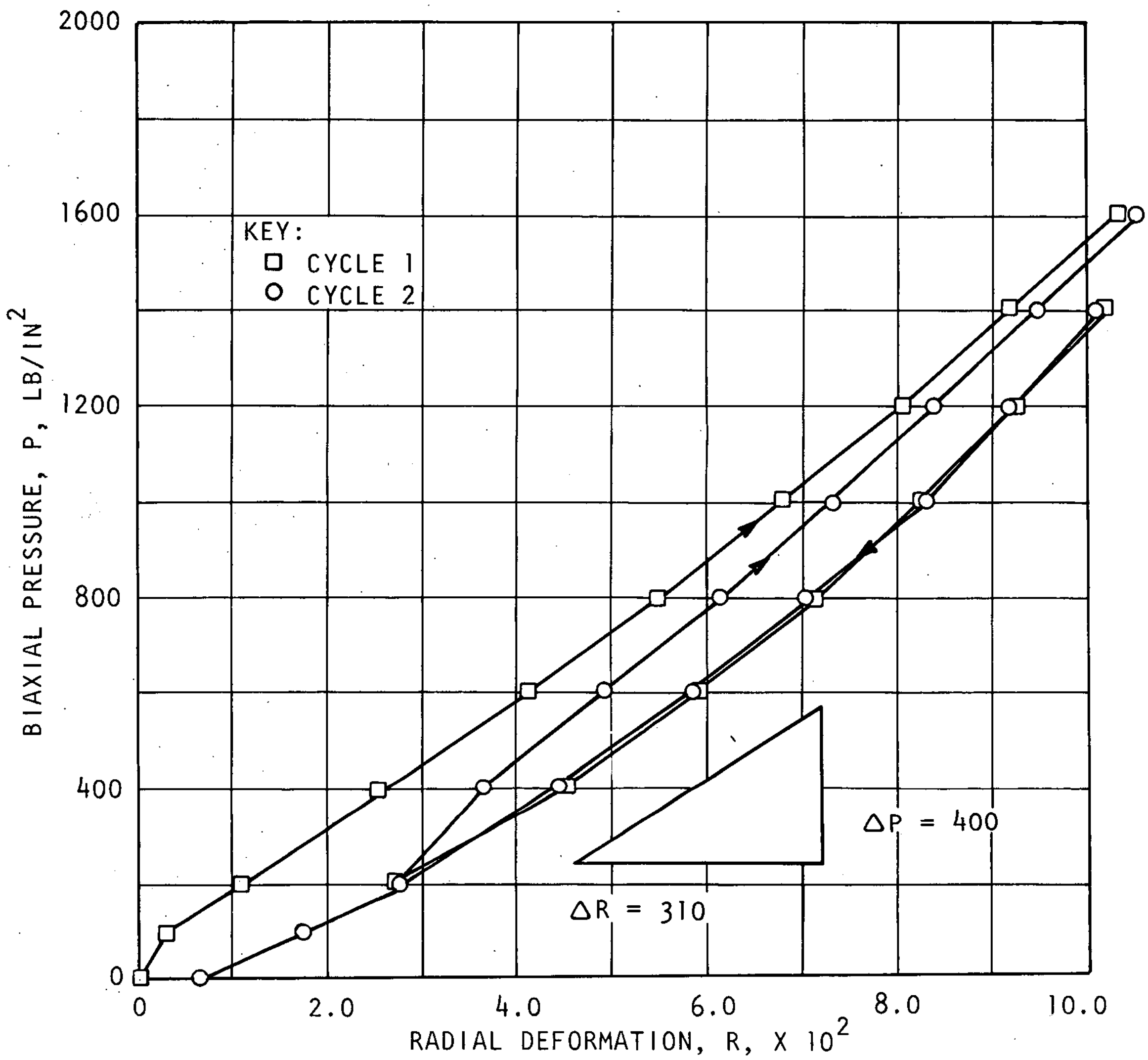
SPECIMEN LENGTH 14 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 2

K_i = 1.00 X 10^{-6} IN.

β = 3.27 IN.



E = 4.2 X10^6 LB/IN^2

MODULUS OF DEFORMATION

SITE 11 TEST 3

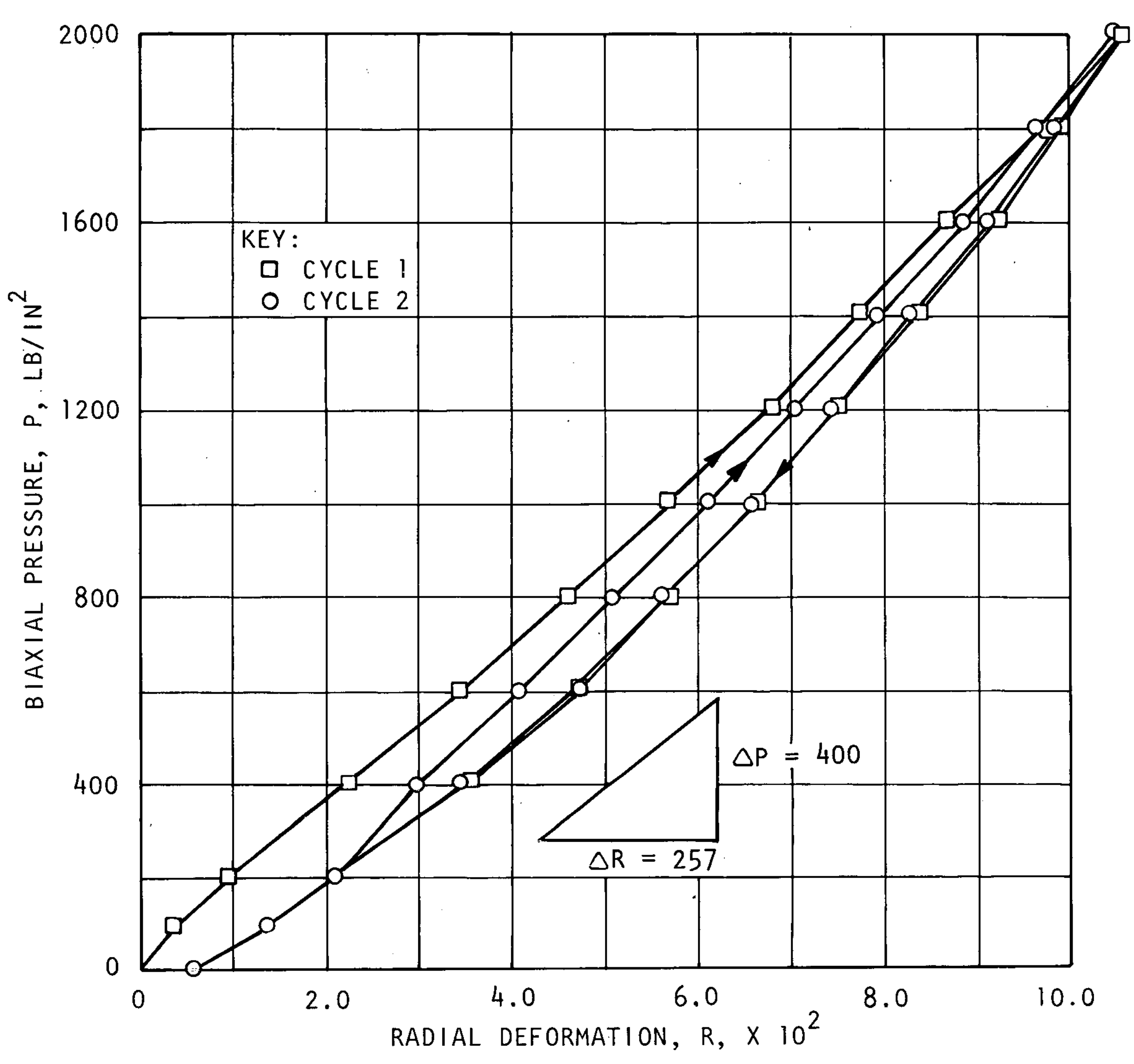
SPECIMEN LENGTH 14 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 3

K_i = 1.05 X 10^{-6} IN.

β = 3.27 IN.



E = 4.8 X10^6 LB/IN^2

MODULUS OF DEFORMATION

SITE 11 TEST 4

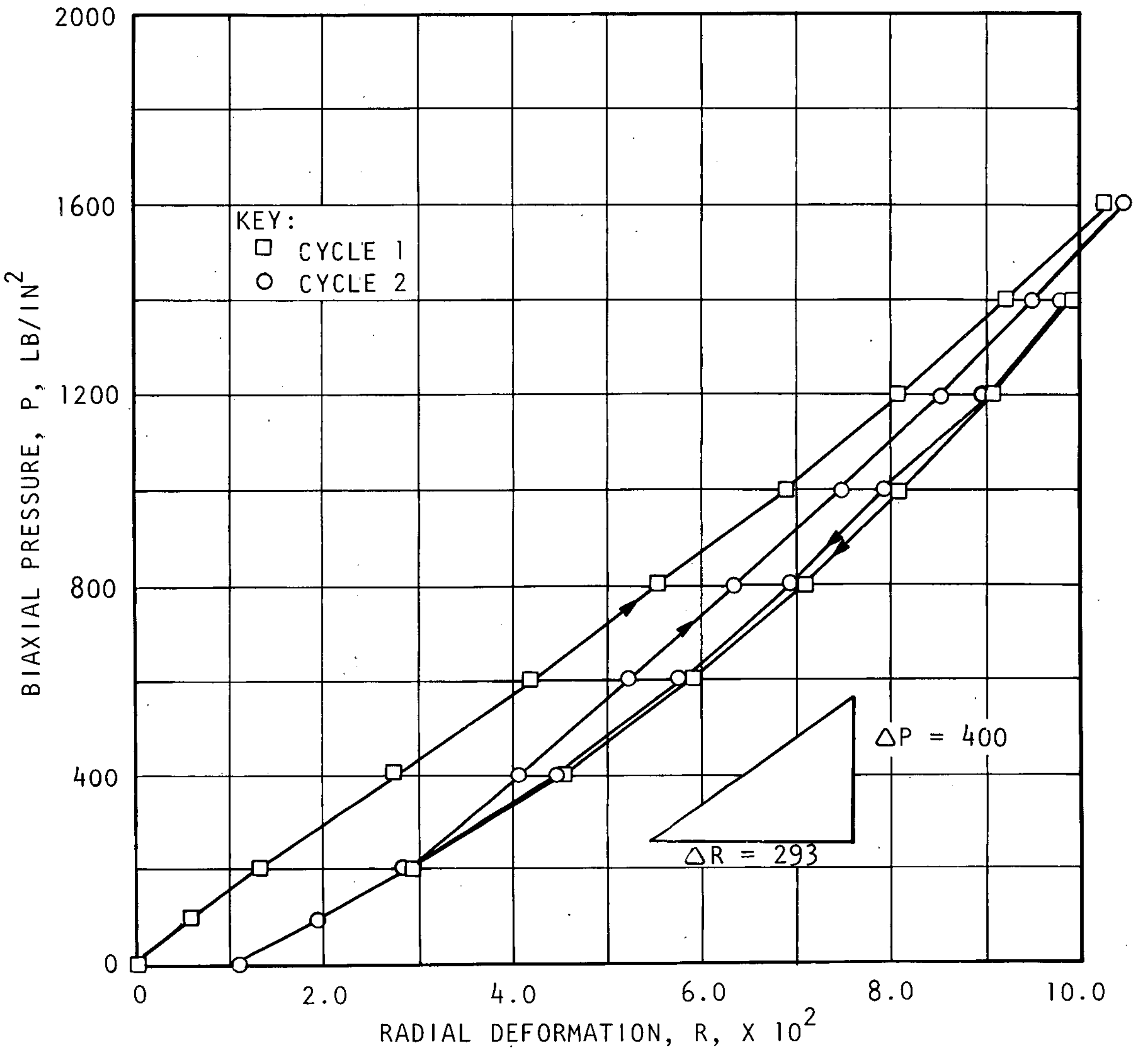
SPECIMEN LENGTH 16 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 1

K_i = 1.01 X 10^{-6} IN.

β = 3.27 IN.



E = 4.4 X10^6 LB/IN^2

MODULUS OF DEFORMATION

SITE 11 TEST 4

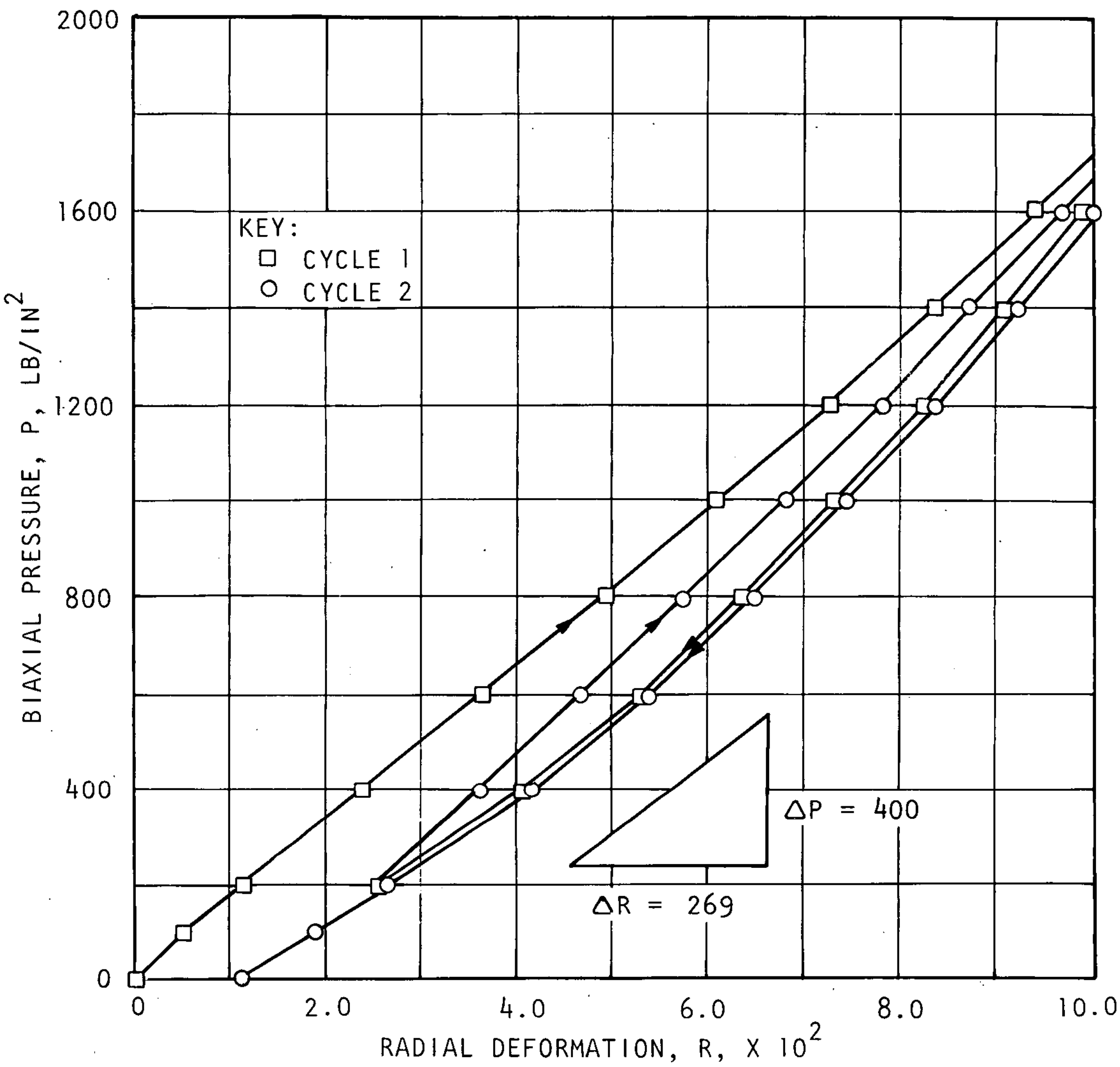
SPECIMEN LENGTH 16 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 2

K_i = 1.01 X 10^{-6} IN.

β = 3.27 IN.



E = 4.8 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 4

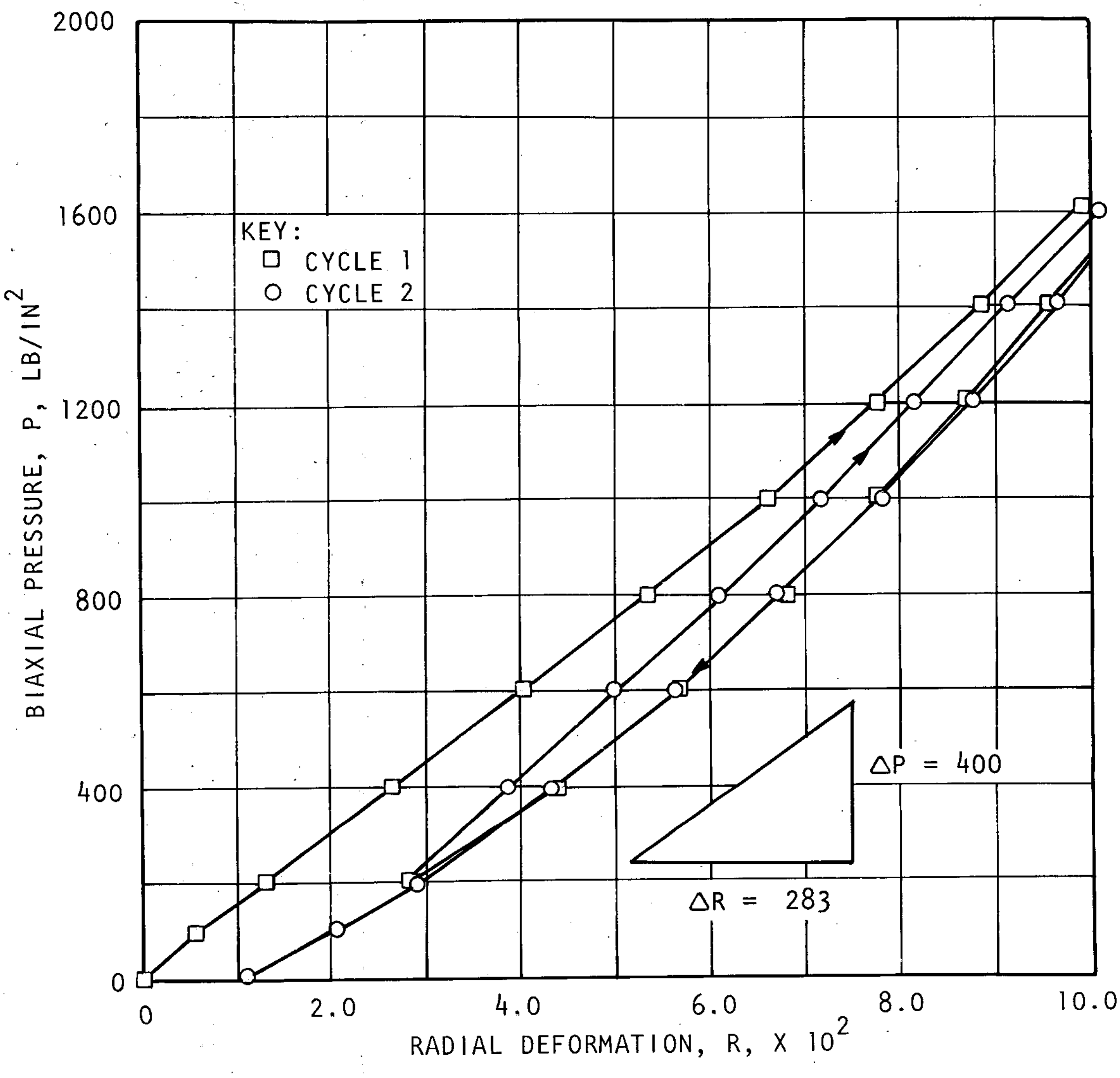
SPECIMEN LENGTH 16 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 3

K_i = 1.03 X 10^{-6} IN.

β = 3.27 IN.



E = 4.5 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 5

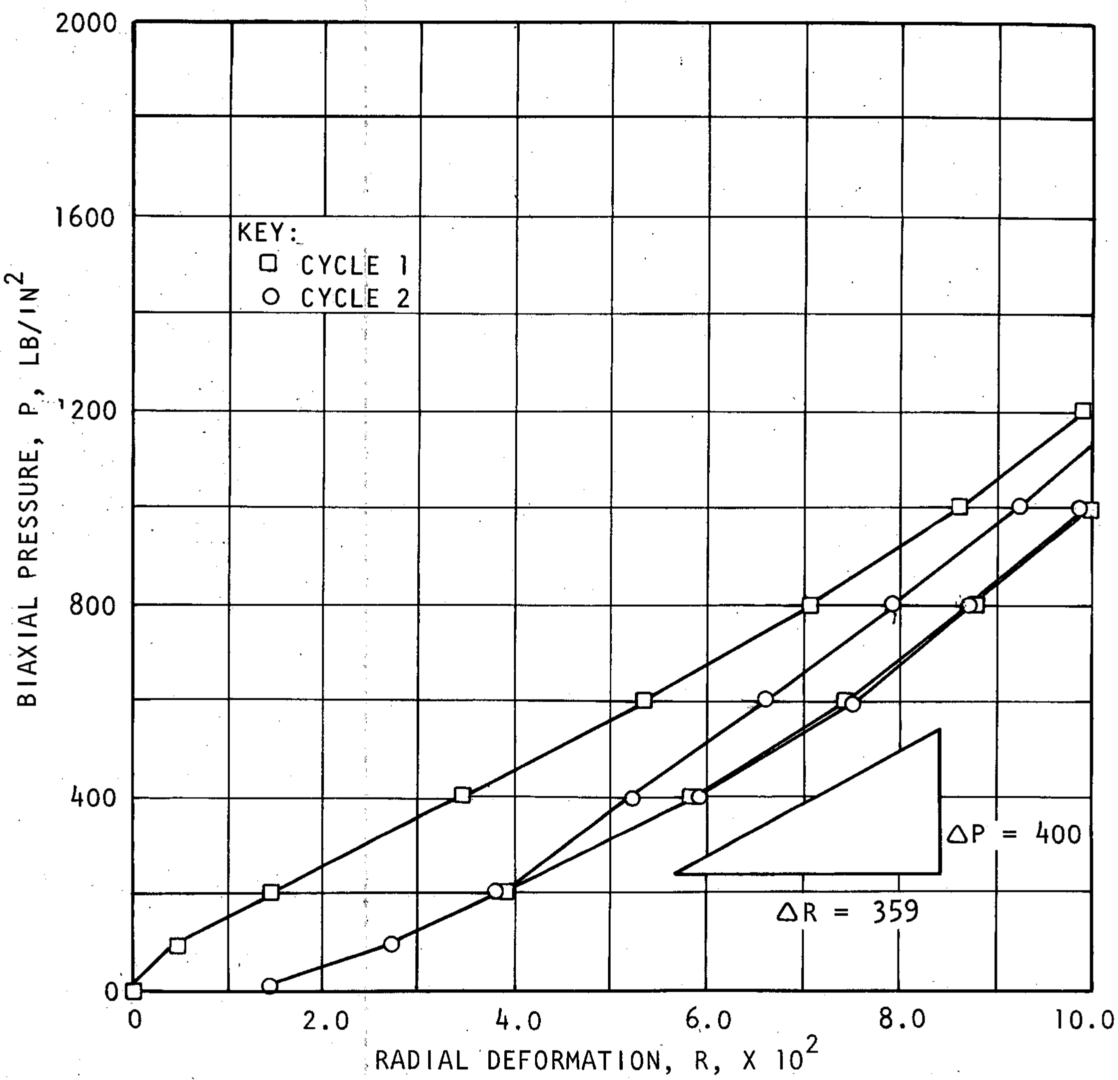
SPECIMEN LENGTH 19 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 1

K_i = 1.03 X 10^{-6} IN.

β = 3.27 IN.



E = 3.5 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 5

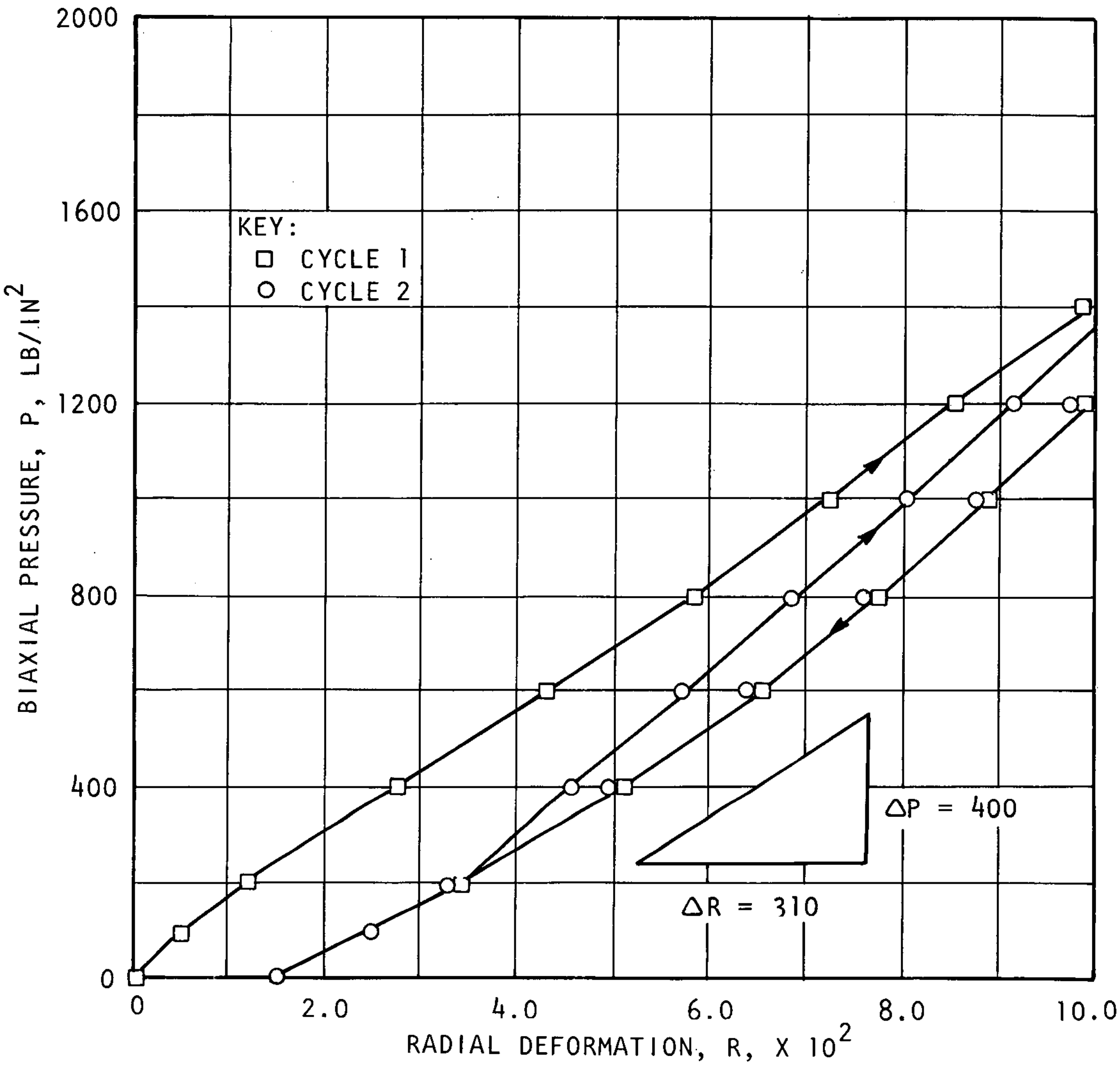
AXIS 2

SPECIMEN LENGTH 19 IN.

SPECIMEN O.D. 5-7/32 IN.

K_i = 1.00 X 10^{-6} IN.

β = 3.27 IN.



E = 4.2 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 5

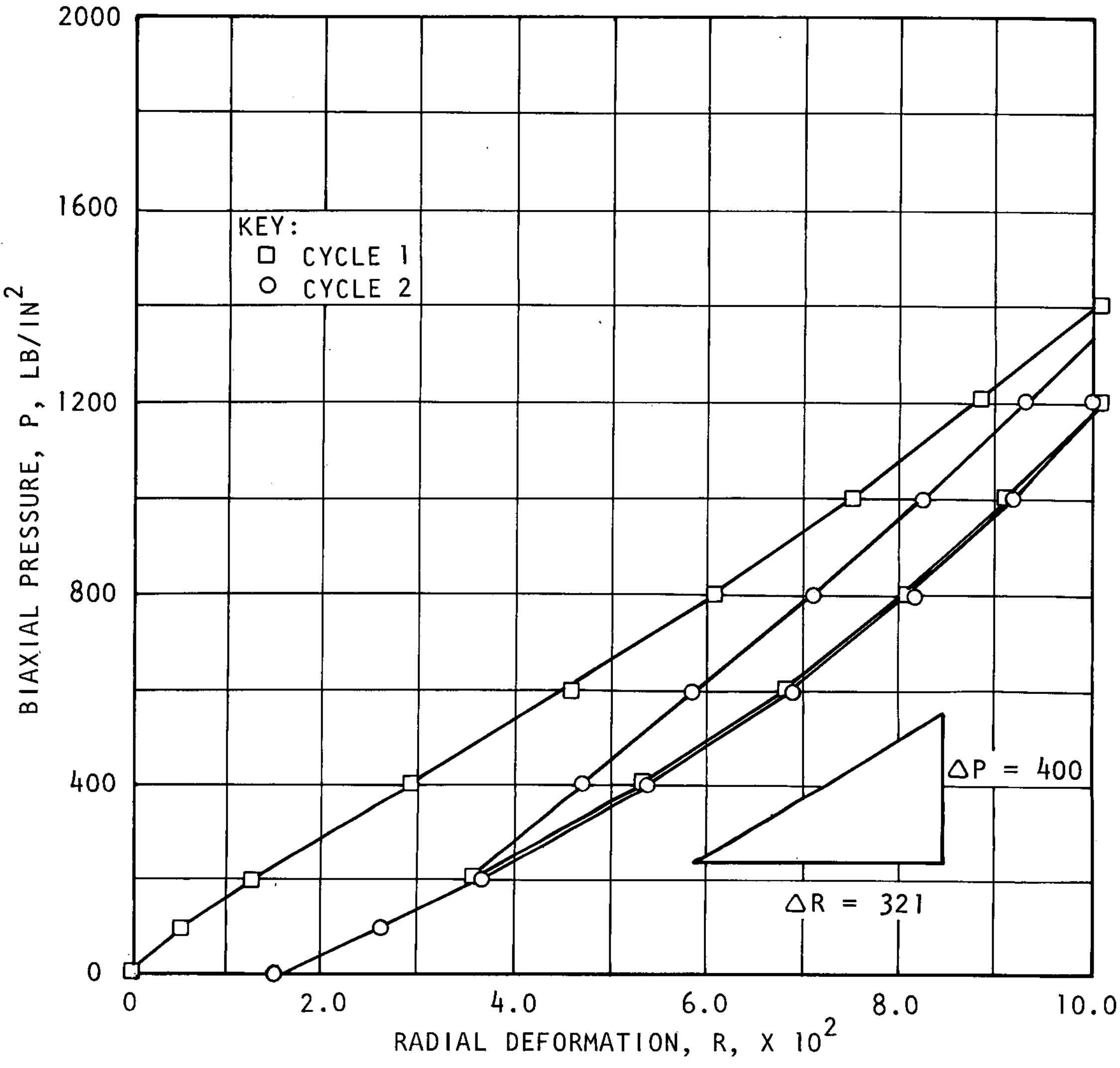
SPECIMEN LENGTH 19 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 3

K_i = 1.05 X 10^{-6} IN.

β = 3.27 IN.



E = 3.9 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 6

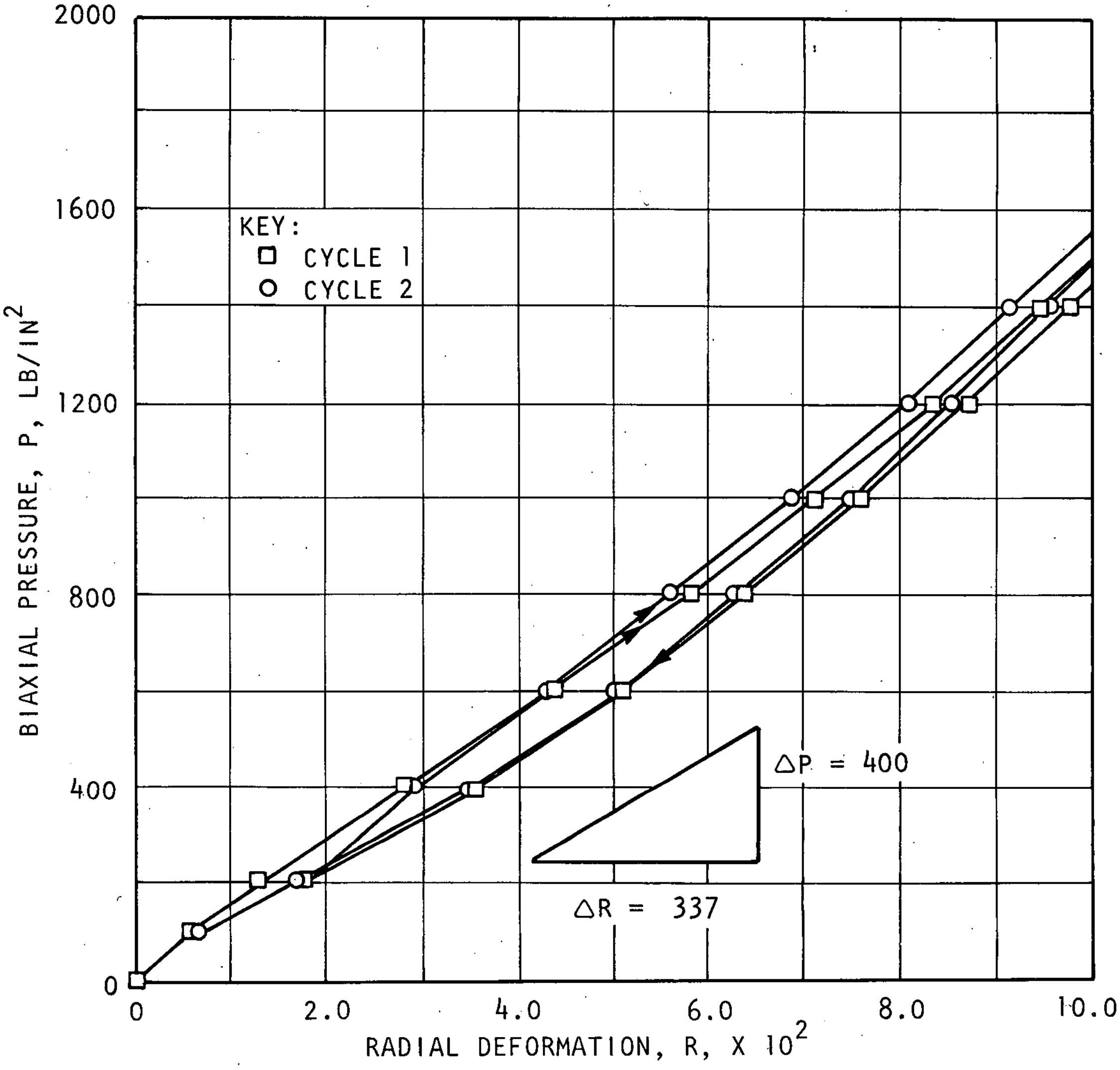
SPECIMEN LENGTH 13 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 1

K_i = 1.03 X 10^{-6} IN.

β = 3.27 IN.



E = 3.8 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 6

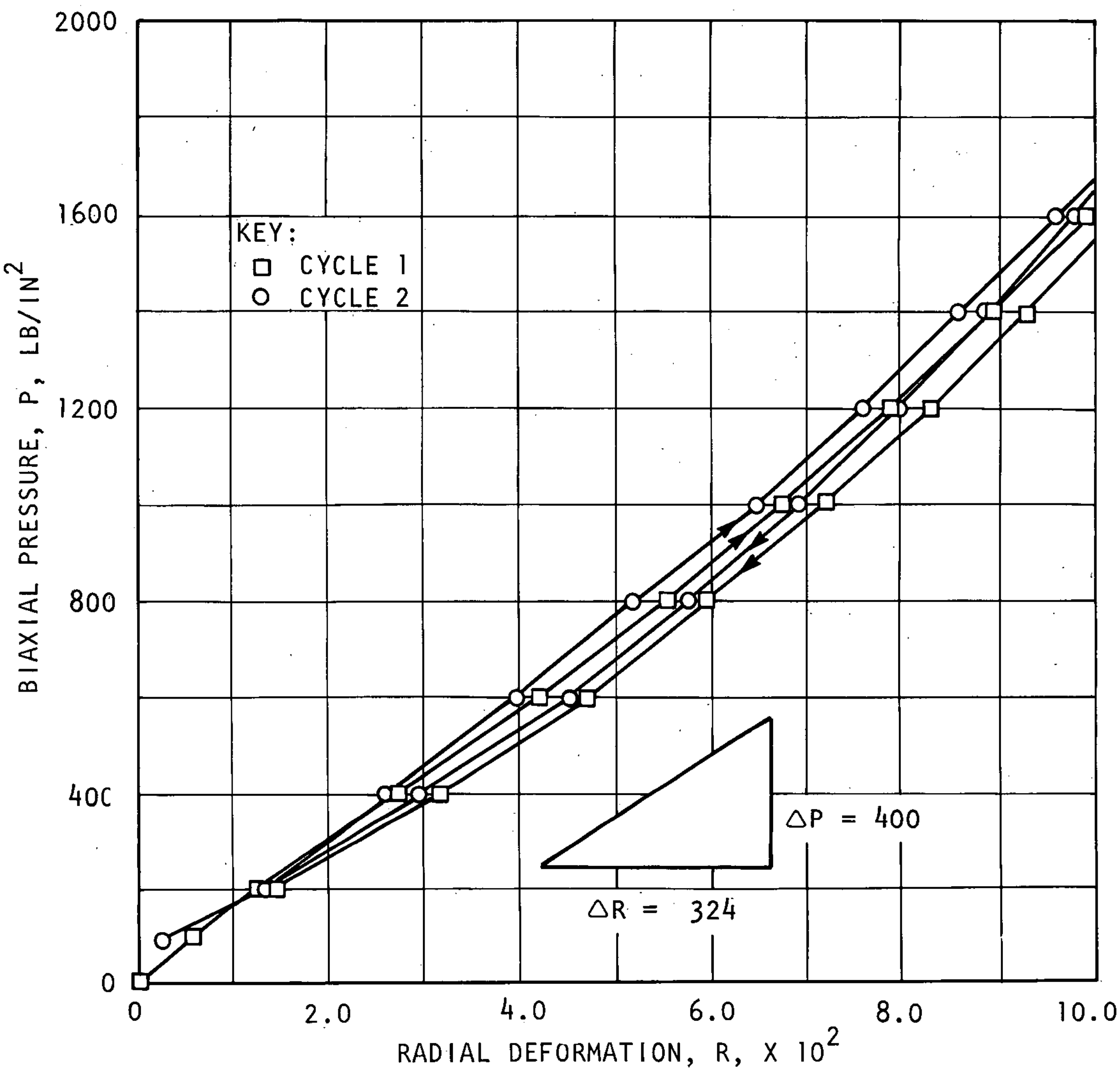
SPECIMEN LENGTH 13 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 2

K_i = 1.00 X 10^{-6} IN.

β = 3.27 IN.



E = 4.0 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 6

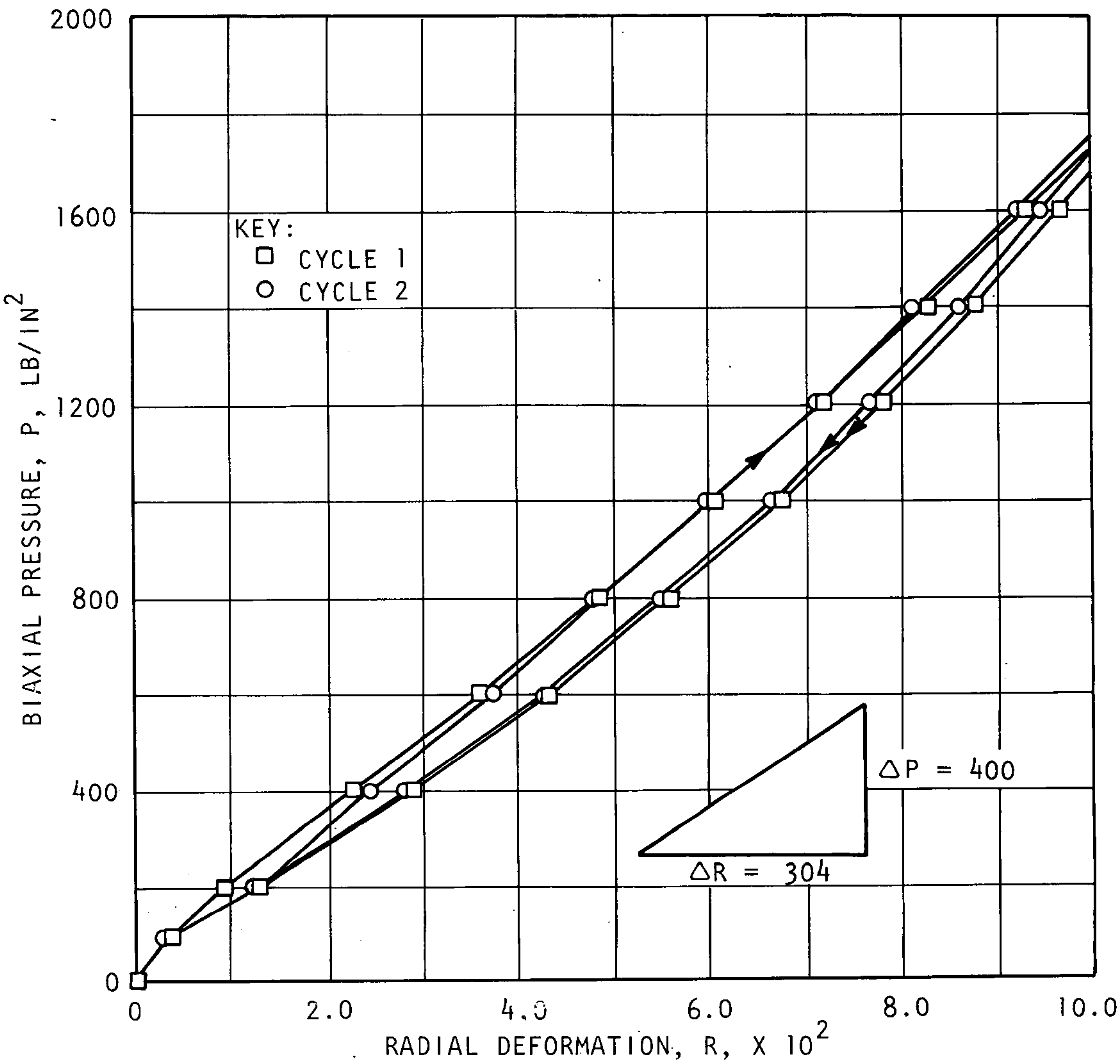
SPECIMEN LENGTH 13 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 3

K_i = 1.05×10^{-6} IN.

β = 3.27 IN.



E = 4.1 $\times 10^6$ LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 7

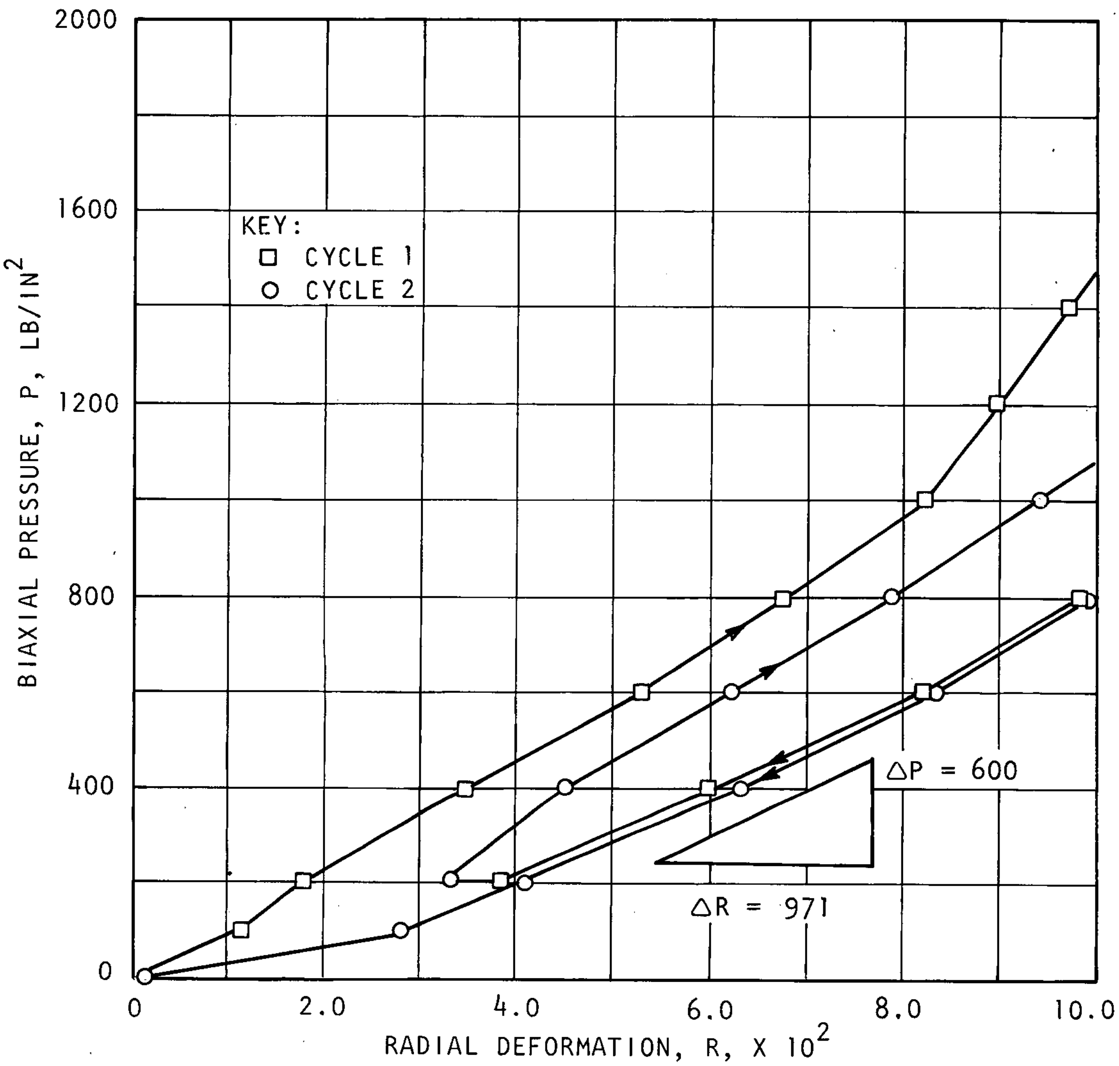
SPECIMEN LENGTH 15 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 1

K_i = 1.01 X 10^{-6} IN.

β = 3.27 IN.



E = 2.0 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 7

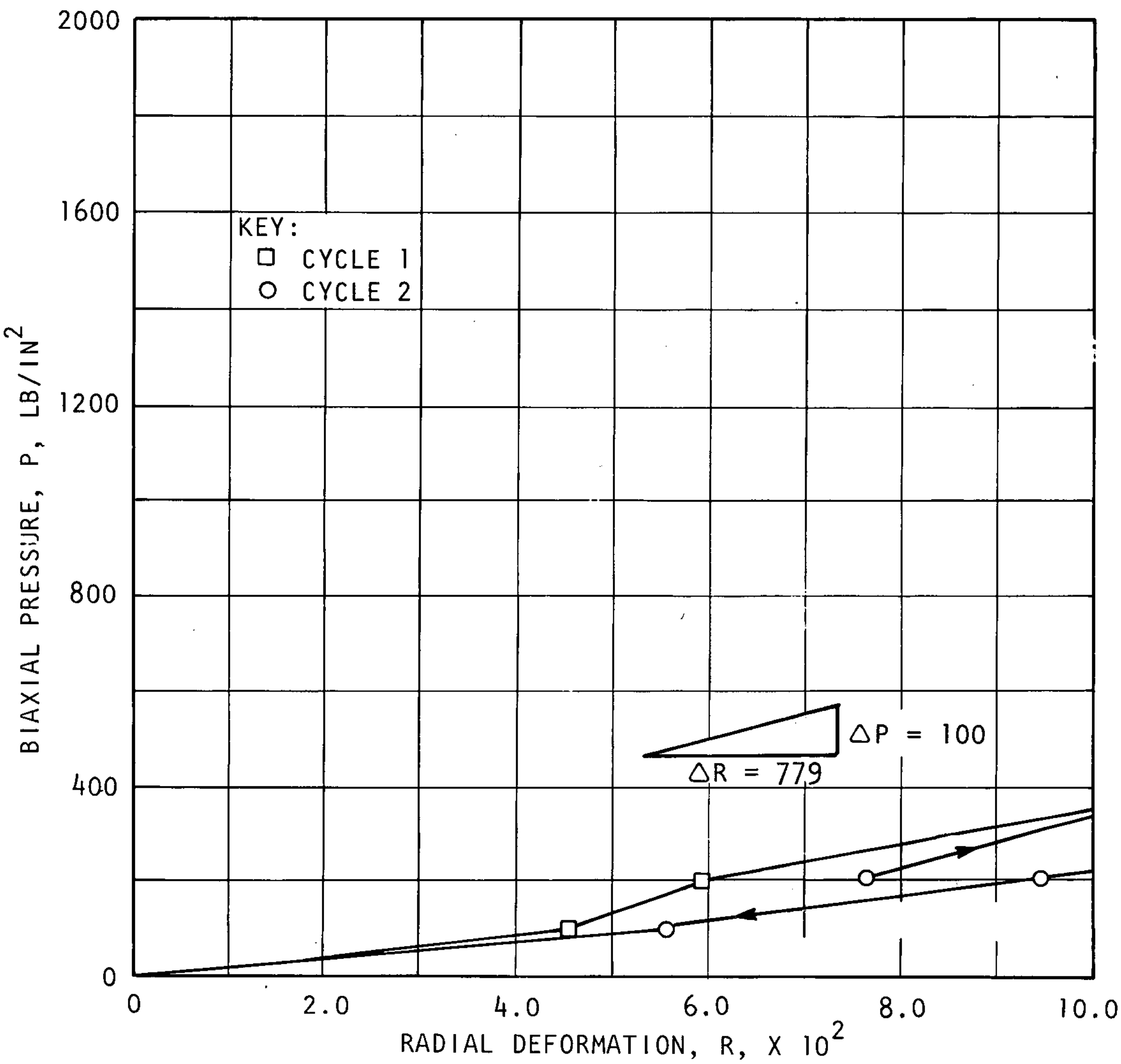
AXIS 2

SPECIMEN LENGTH 15 IN.

SPECIMEN

K_i = 1.01 X 10^{-6} IN.

β = 3.27 IN.



E = 0.4 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 7

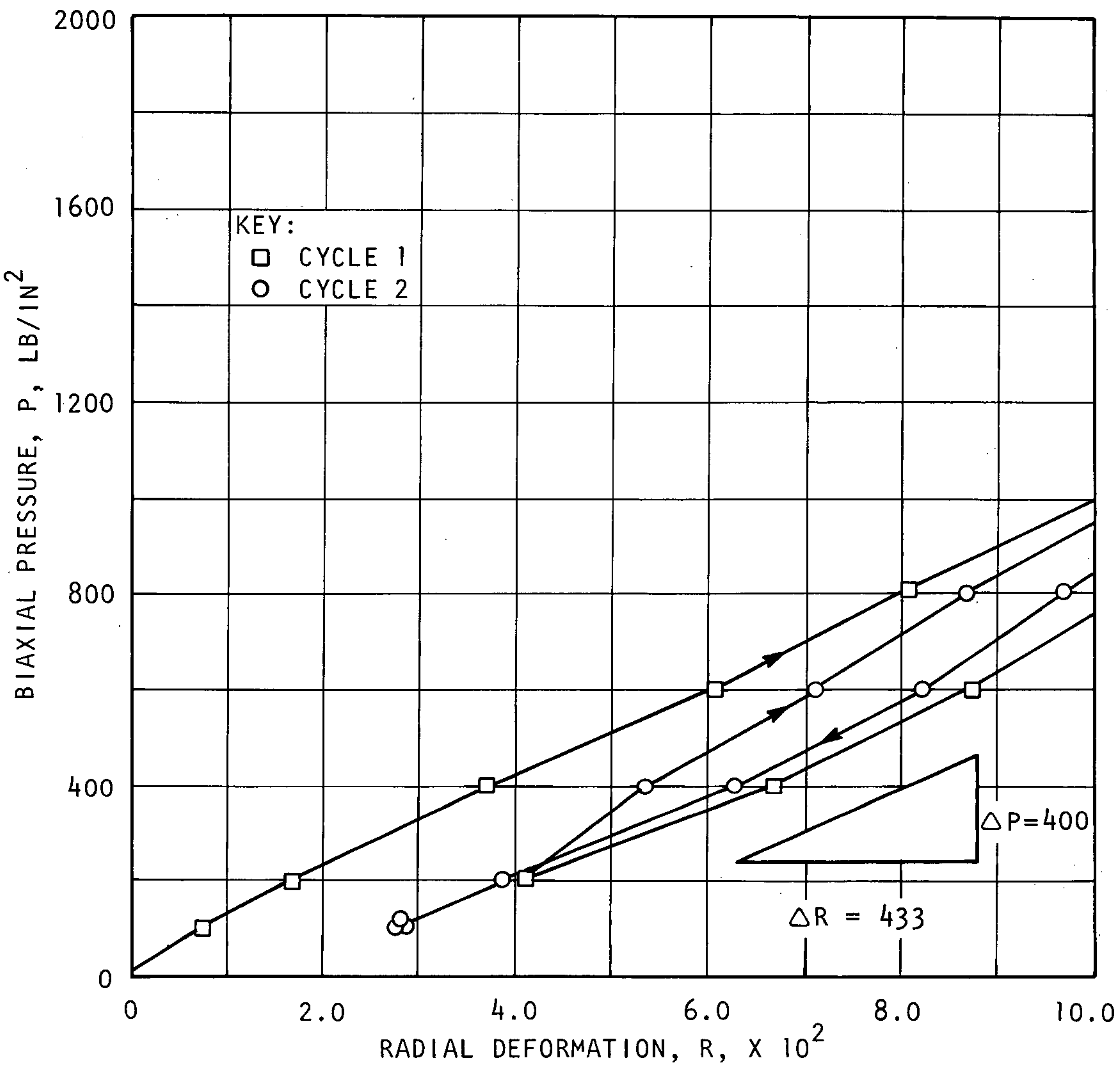
SPECIMEN LENGTH 15 IN.

SPECIMEN O.D. 5-6/32 IN.

AXIS 3

K_i = 1.03 X 10^{-6} IN.

β = 3.27 IN.



E = 2.9 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 8

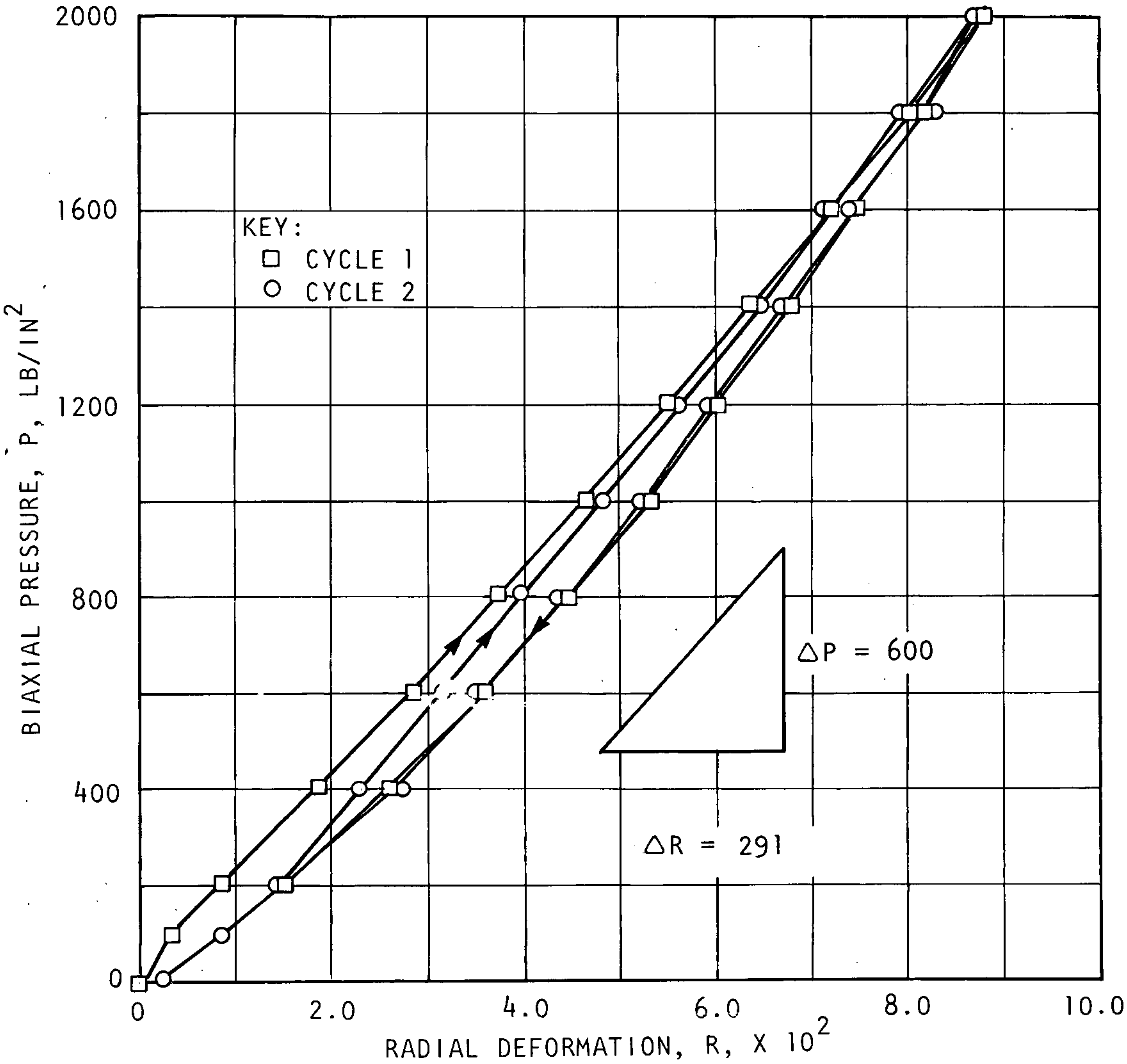
SPECIMEN LENGTH 12½ IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 1

K_i = 1.01×10^{-6} IN.

β = 3.27 IN.



E = 6.7×10^6 LB/IN²

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 8

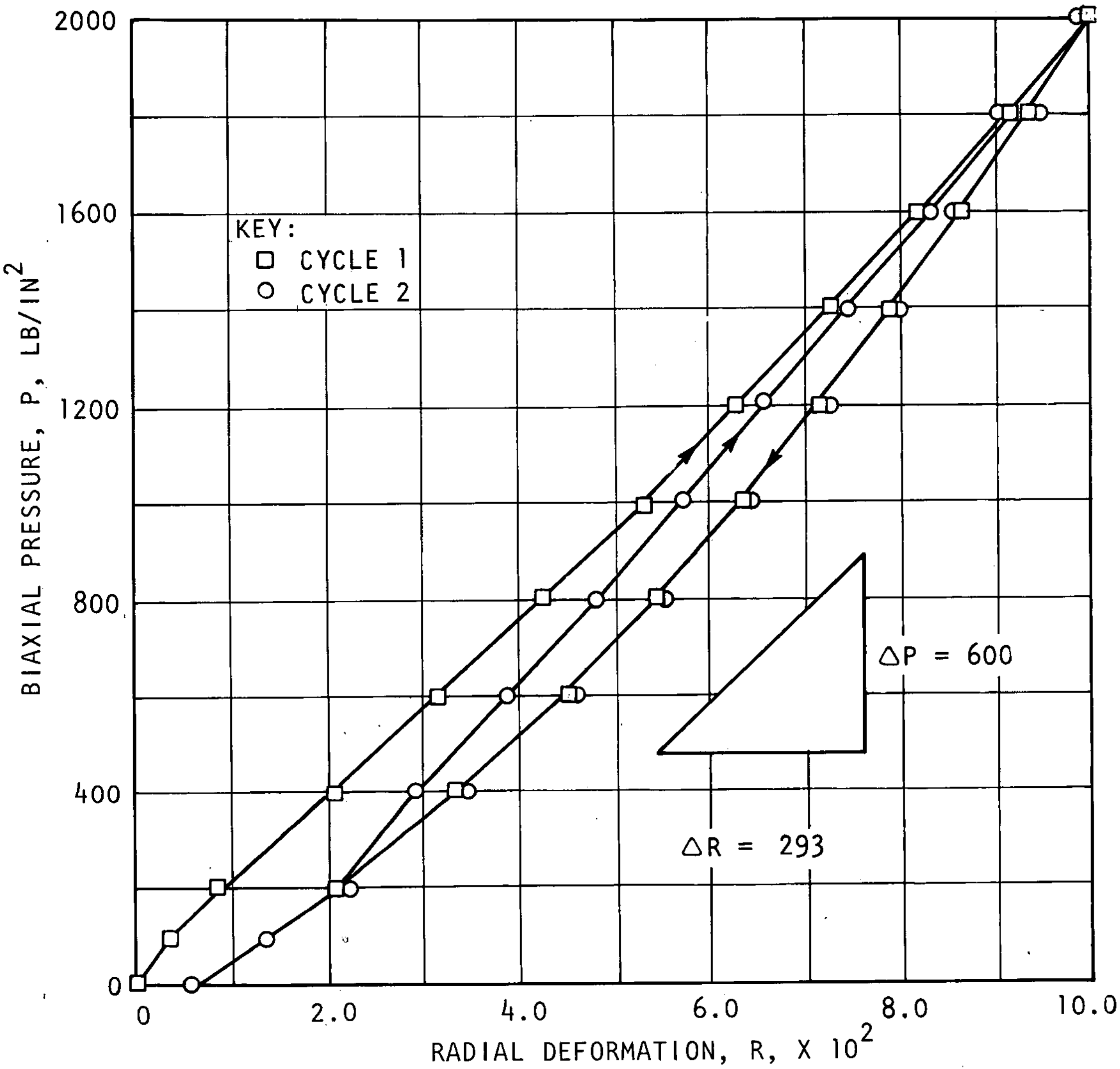
SPECIMEN LENGTH 12½ IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 2

K_i = 1.01 X 10^{-6} IN.

β = 3.27 IN.



E = 6.6 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 8

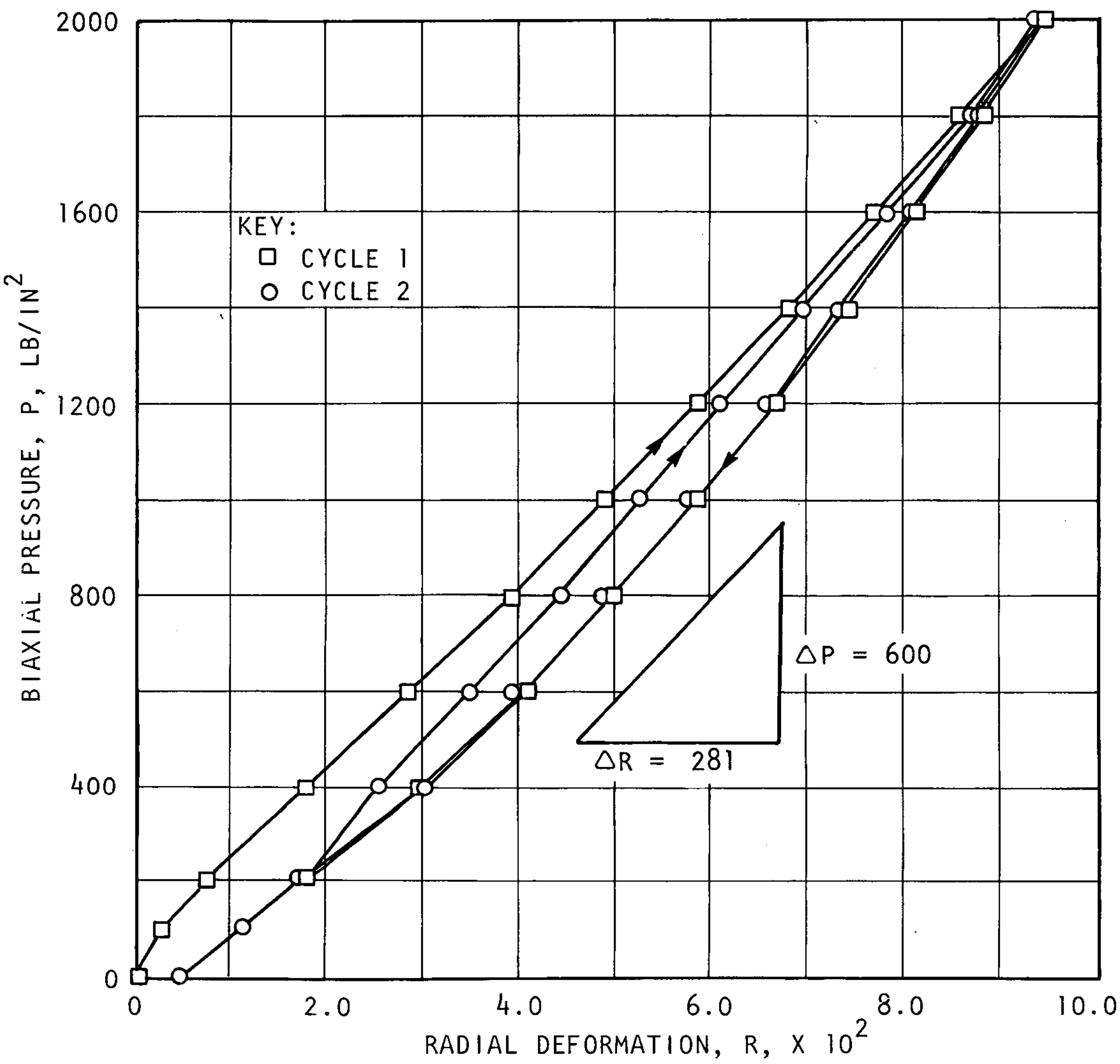
SPECIMEN LENGTH 12½ IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 3

K_i = 1.03 X 10^{-6} IN.

β = 3.27 IN.



E = 6.8 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 9

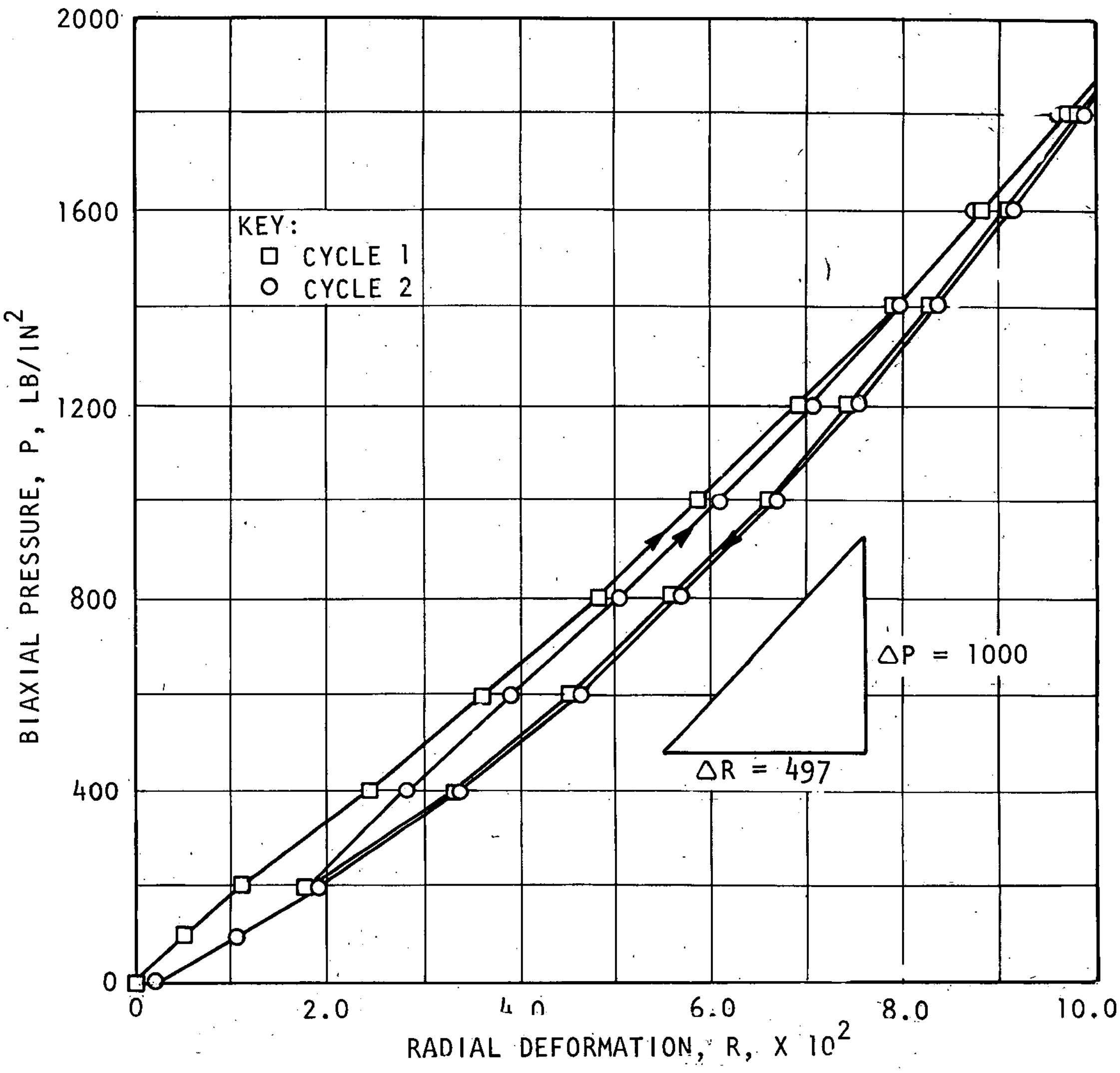
SPECIMEN LENGTH 19 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 1

K_i = 1.03 X 10^{-6} IN.

β = 3.27 IN.



E = 6.4 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 9

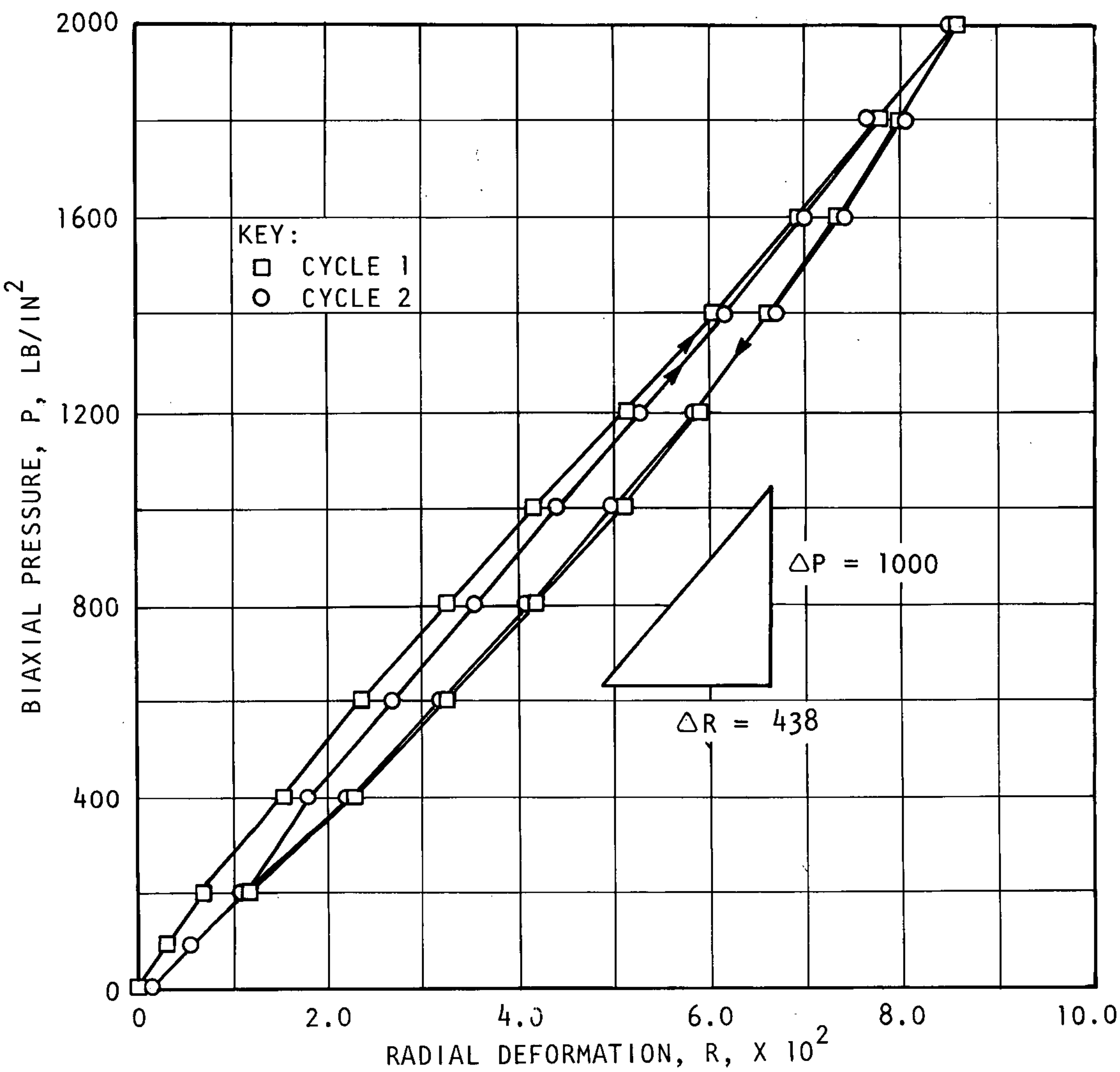
SPECIMEN LENGTH 19 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 2

K_i = 1.00 X 10^{-6} IN.

β = 3.27 IN.



E = 7.5 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 9

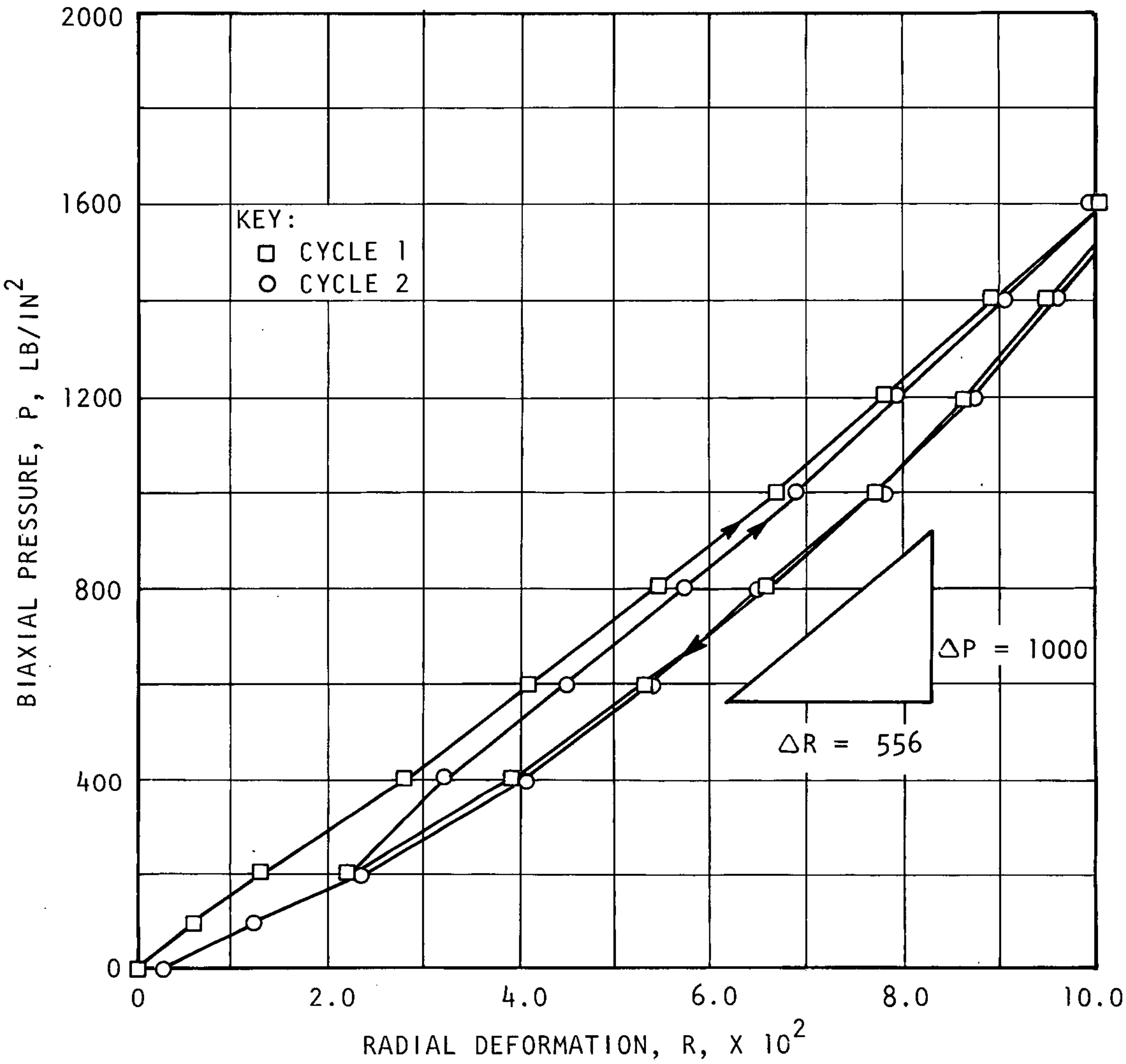
SPECIMEN LENGTH 19 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 3

K_i = 1.05 X 10^{-6} IN.

β = 3.27 IN.



E = 5.6 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 10

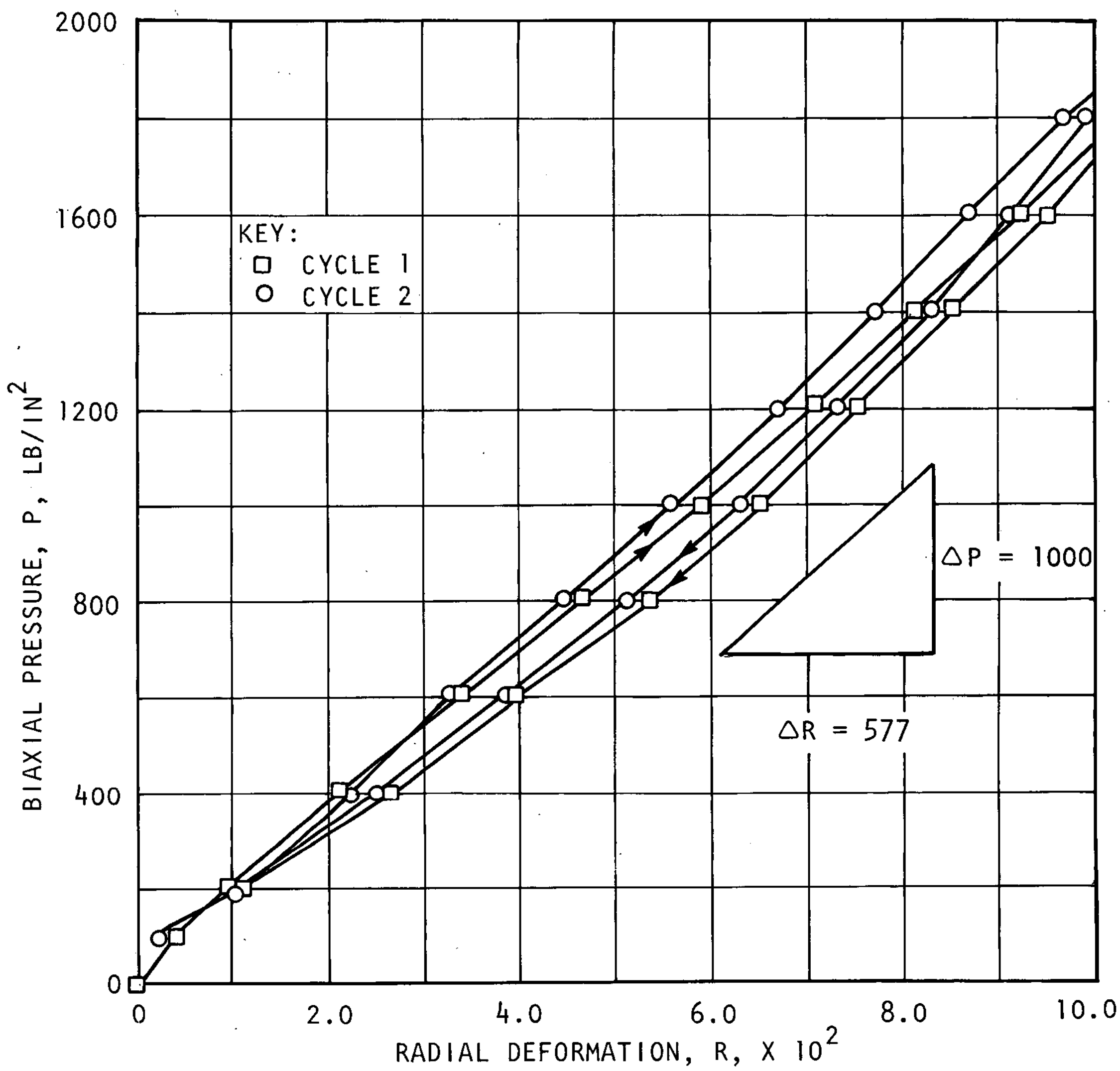
SPECIMEN LENGTH 16 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 1

K_i = 1.01 X 10^{-6} IN.

β = 3.27 IN.



E = 5.6 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 10

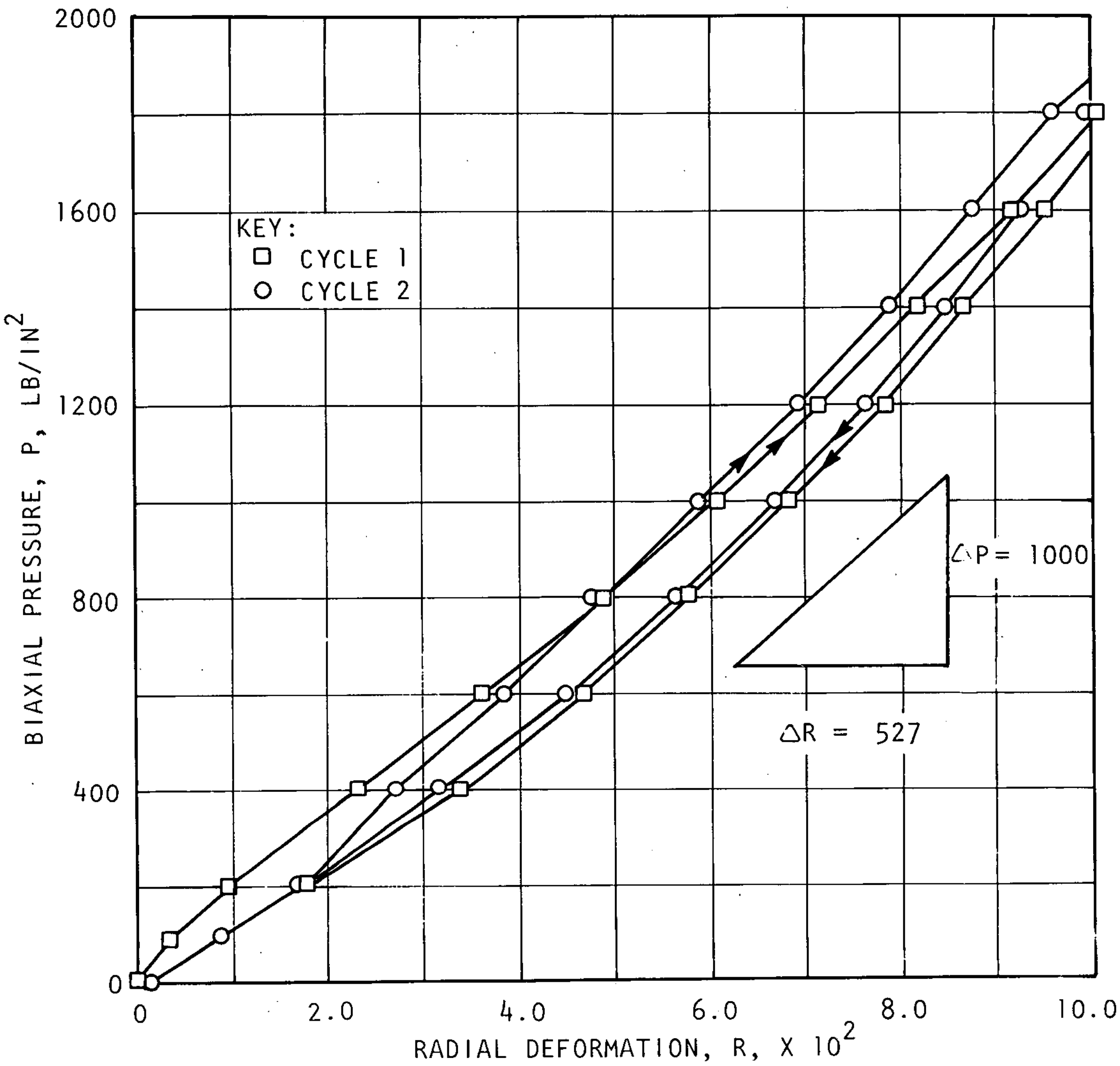
SPECIMEN LENGTH 16 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 2

K_i = 1.01 X 10^{-6} IN.

β = 3.27 IN.



E = 6.1 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 10

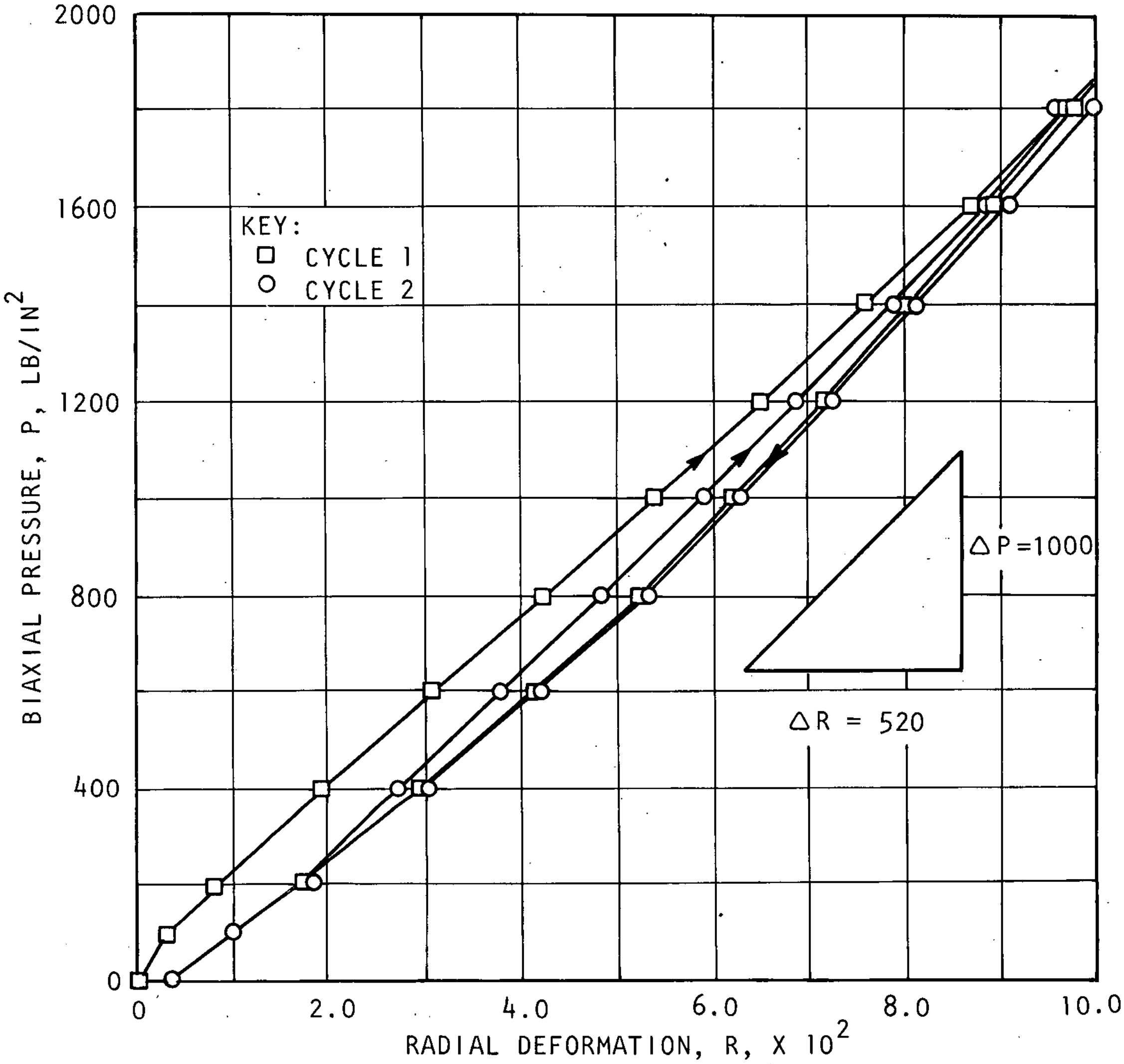
AXIS 3

SPECIMEN LENGTH 16 IN.

SPECIMEN O.D. 5-7/32 IN.

K_i = 1.03 X 10^{-6} IN.

β = 3.27 IN.



E = 6.1 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 11

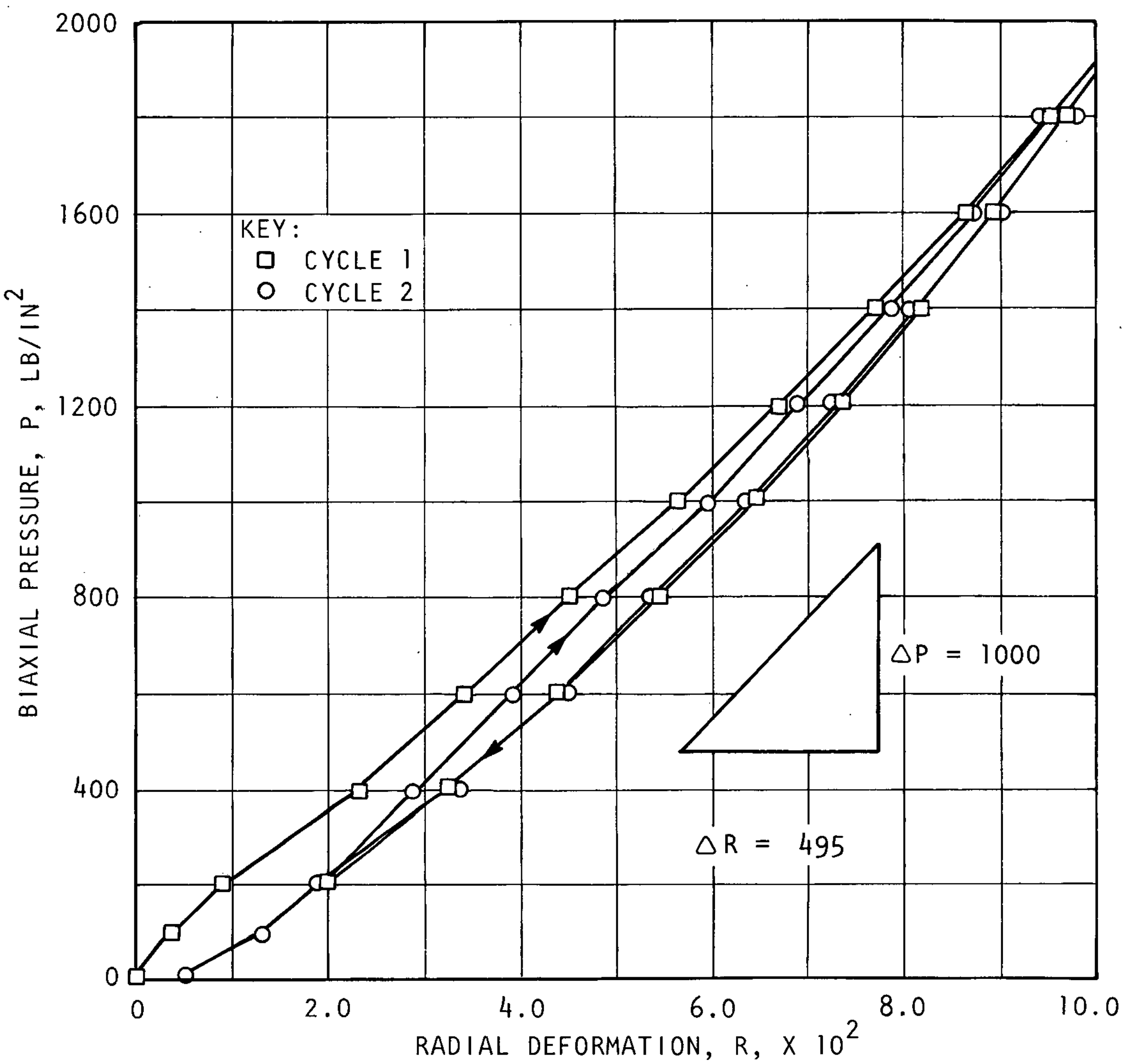
SPECIMEN LENGTH 18½ IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 1

K_i = 1.01 X 10^{-6} IN.

β = 3.27 IN.



E = 6.5 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 11

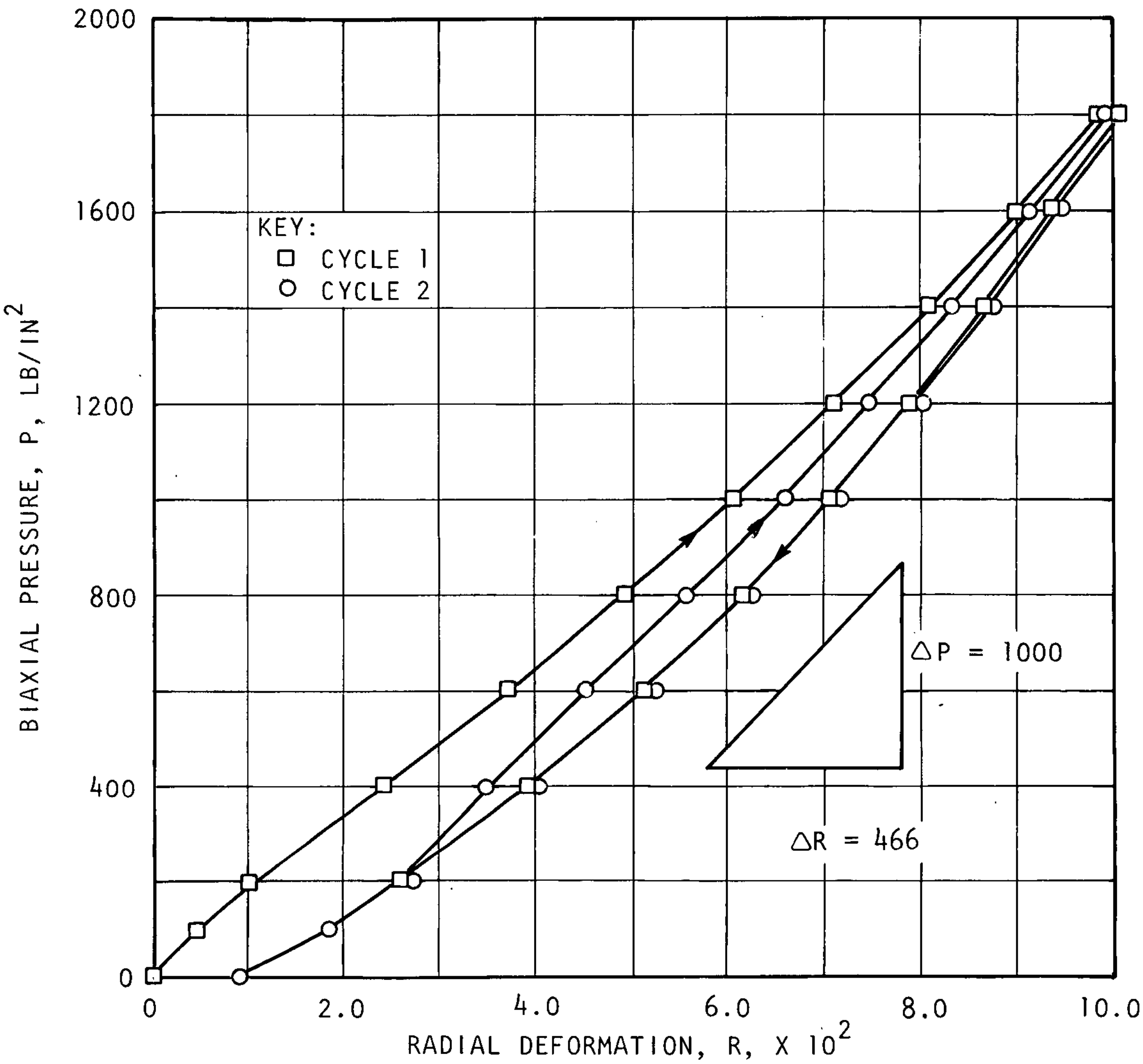
SPECIMEN LENGTH 18½ IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 2

K_i = 1.01 X 10^{-6} IN.

β = 3.27 IN.



E = 6.9 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 11

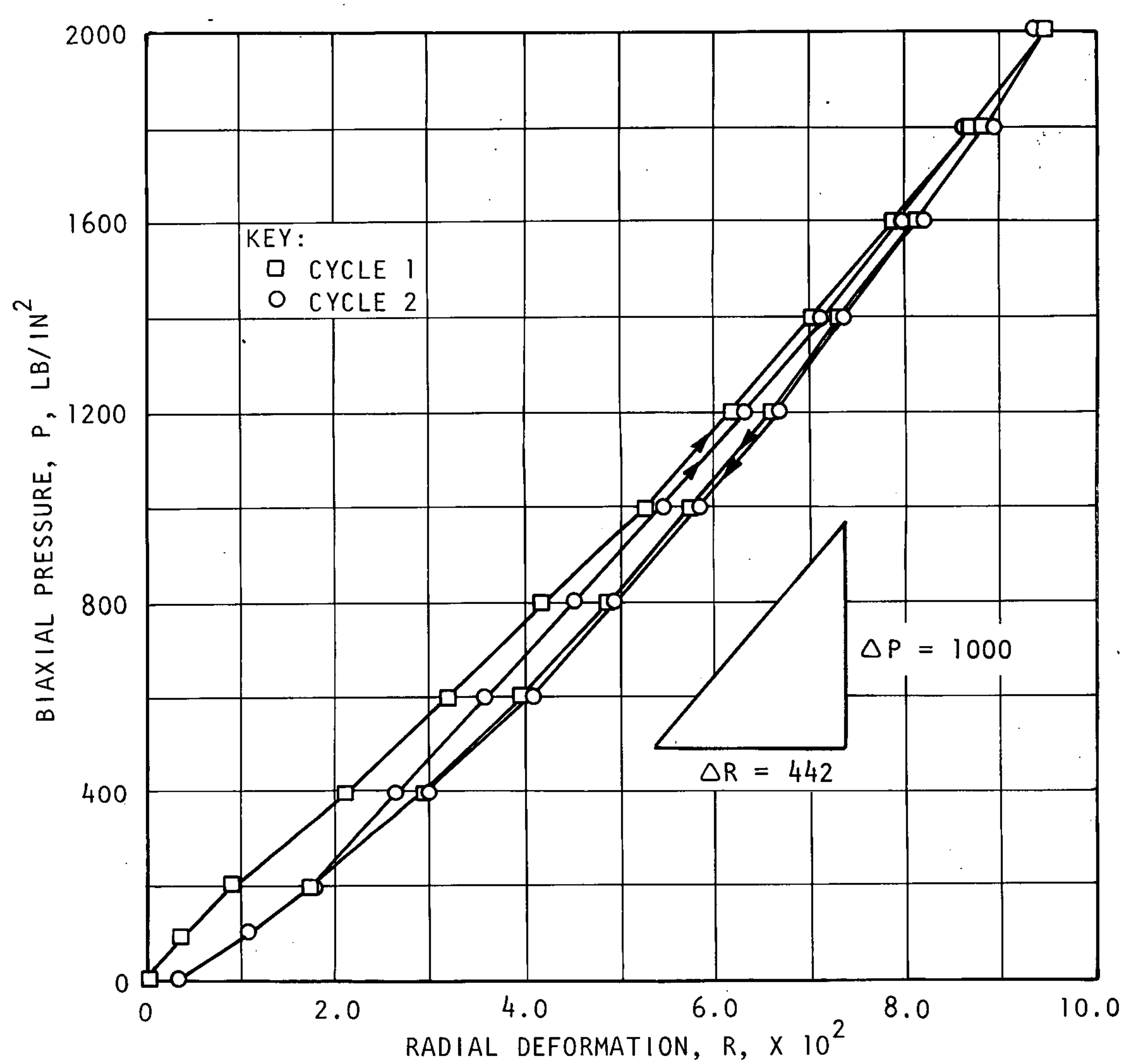
SPECIMEN LENGTH 18½ IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 3

K_i = 1.03 X 10^{-6} IN.

β = 3.27 IN.



E = 7.2 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 12

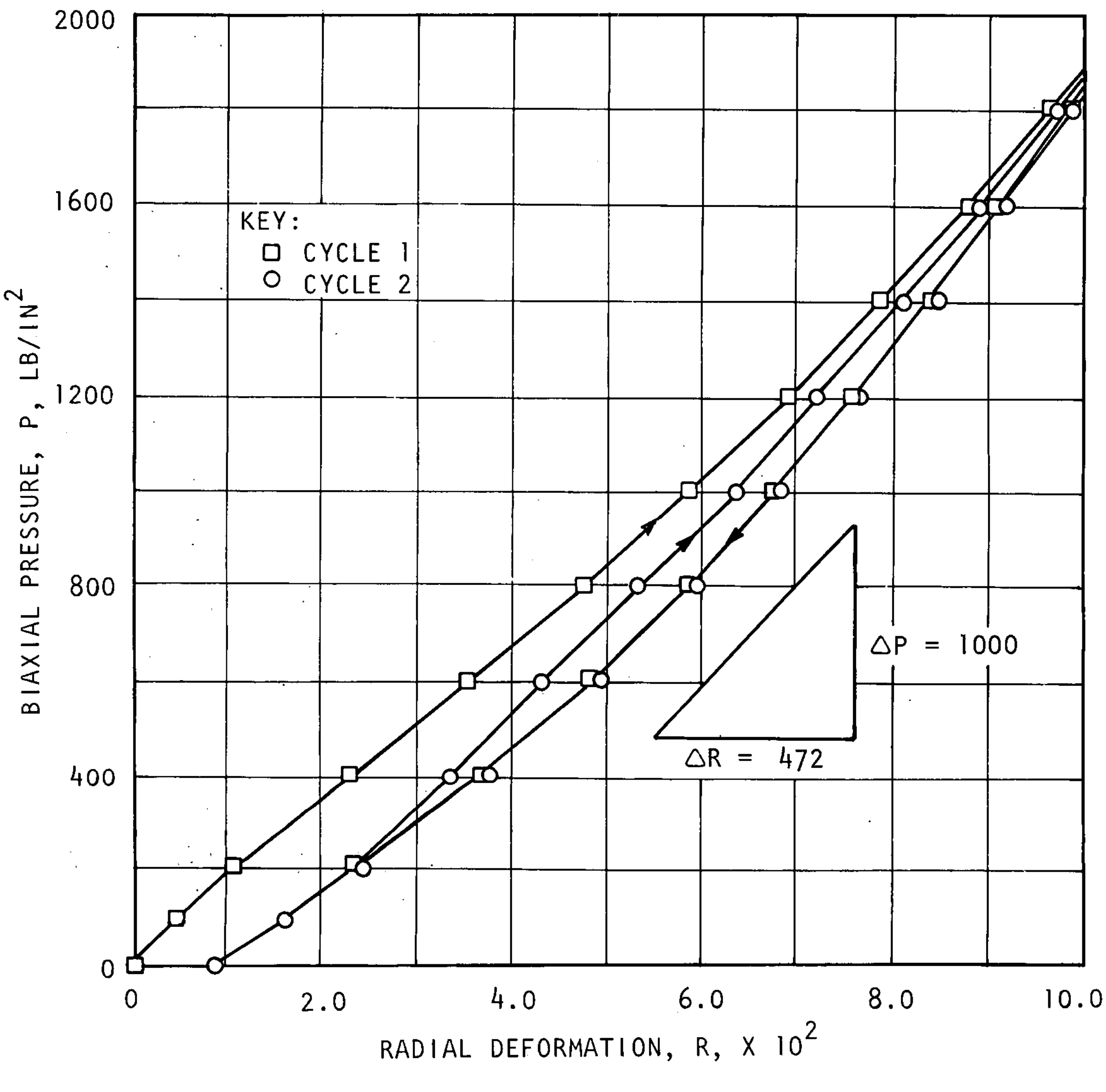
SPECIMEN LENGTH 12 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 1

K_i = 1.01×10^{-6} IN.

β = 3.27 IN.



E = 6.9×10^{6} LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 12

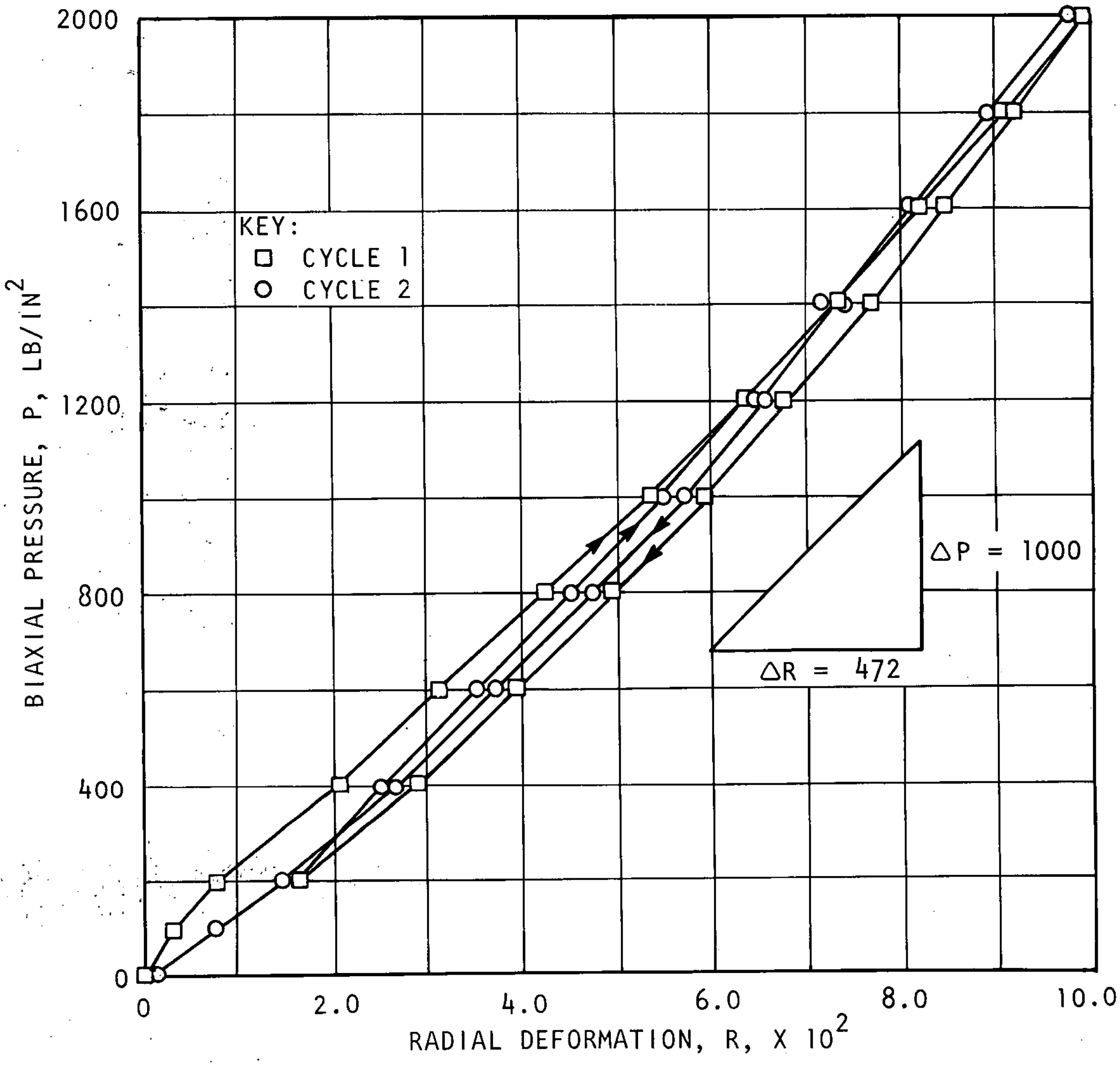
SPECIMEN LENGTH 12 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 2

$K_i = 1.01 \times 10^{-6}$ IN.

$\beta = 3.27$ IN.



$E = 6.9 \times 10^6$ LB/IN^2

MODULUS OF DEFORMATION

SITE 11 TEST 12

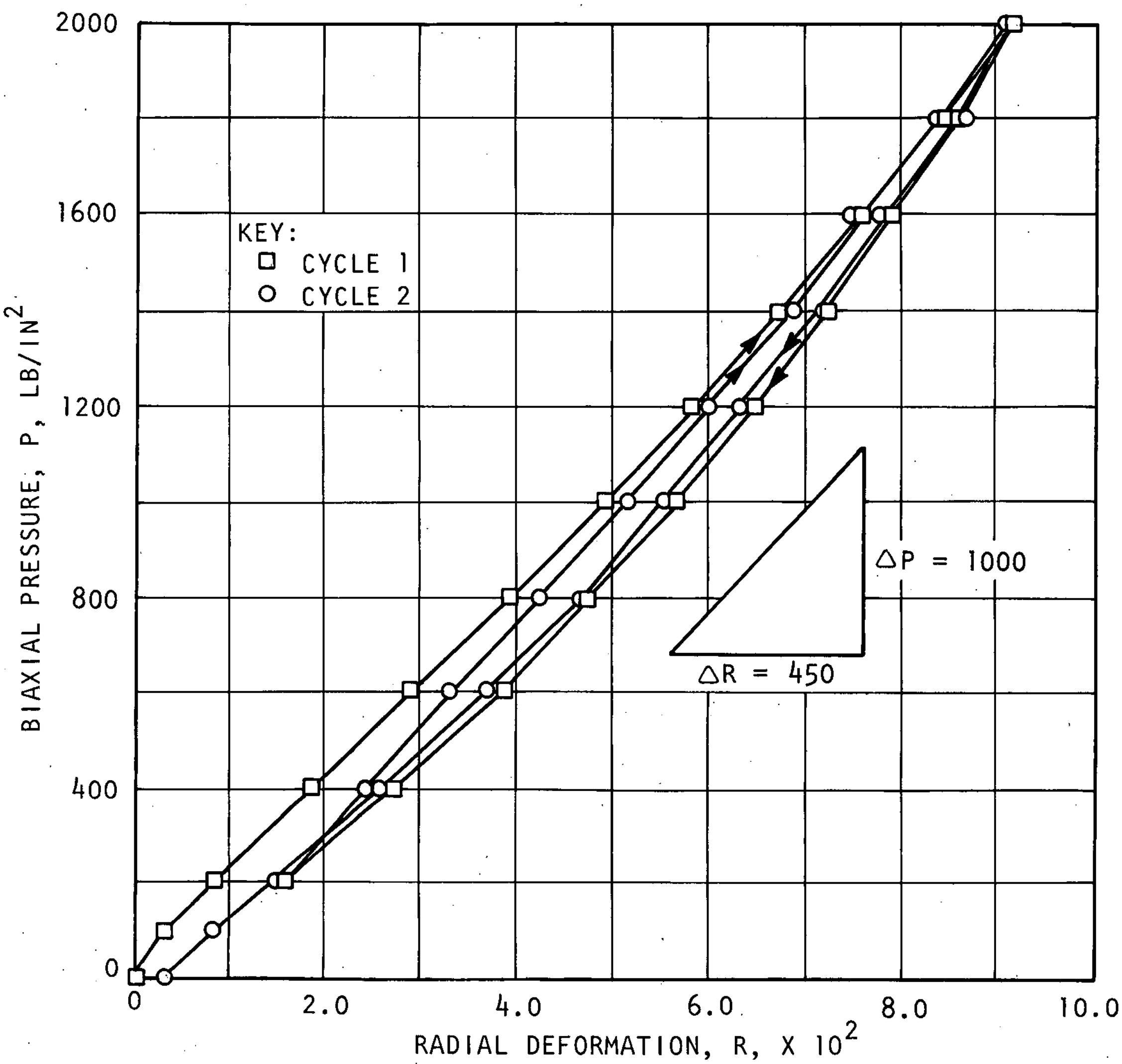
SPECIMEN LENGTH 12 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 3

K_i = 1.03×10^{-6} IN.

β = 3.27 IN.



E = 7.1 X10⁶ LB/IN²

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 13

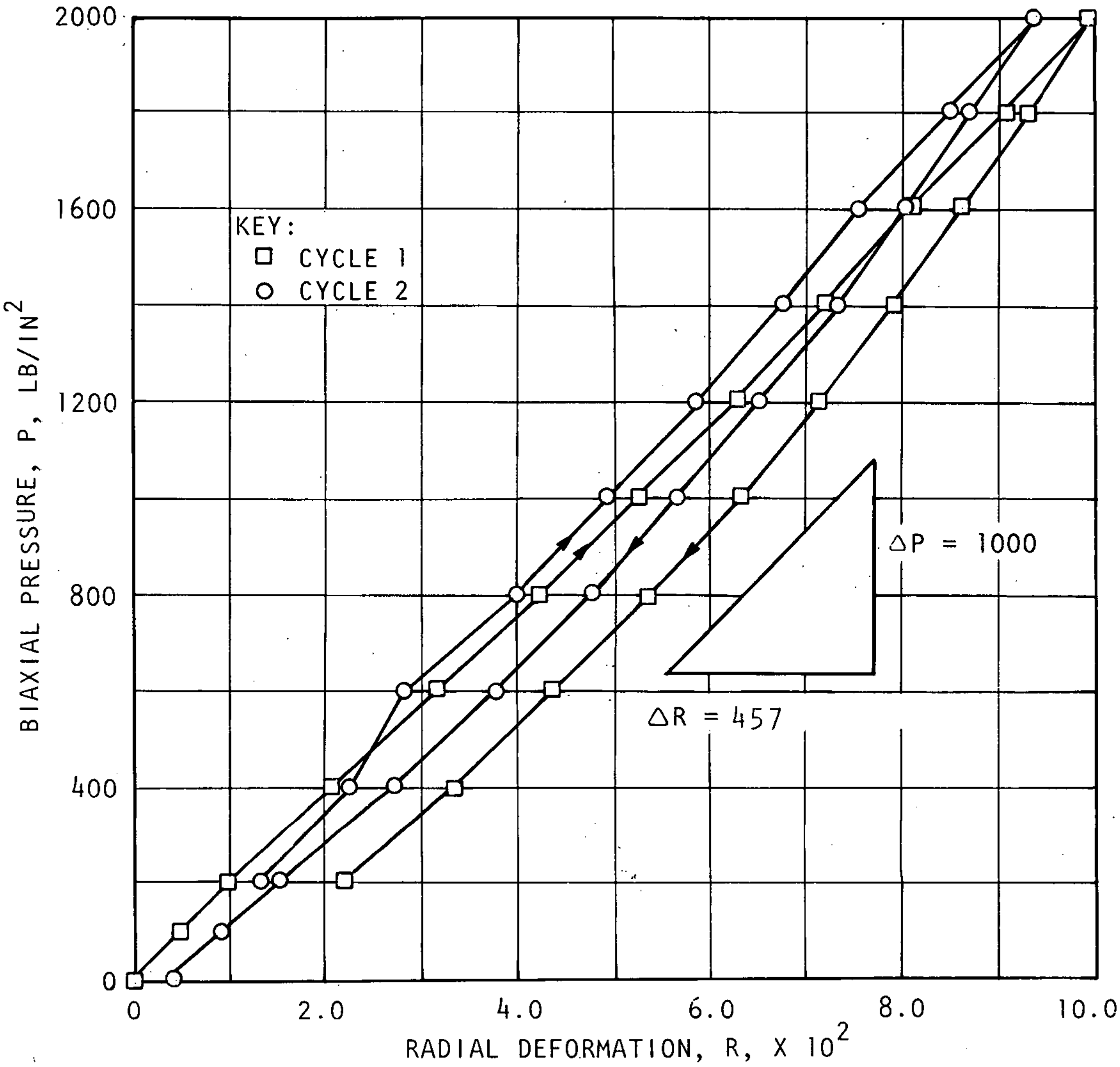
SPECIMEN LENGTH 19½ IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 1

K_i = 1.01 X 10^{-6} IN.

β = 3.27 IN.



E = 7.1 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 13

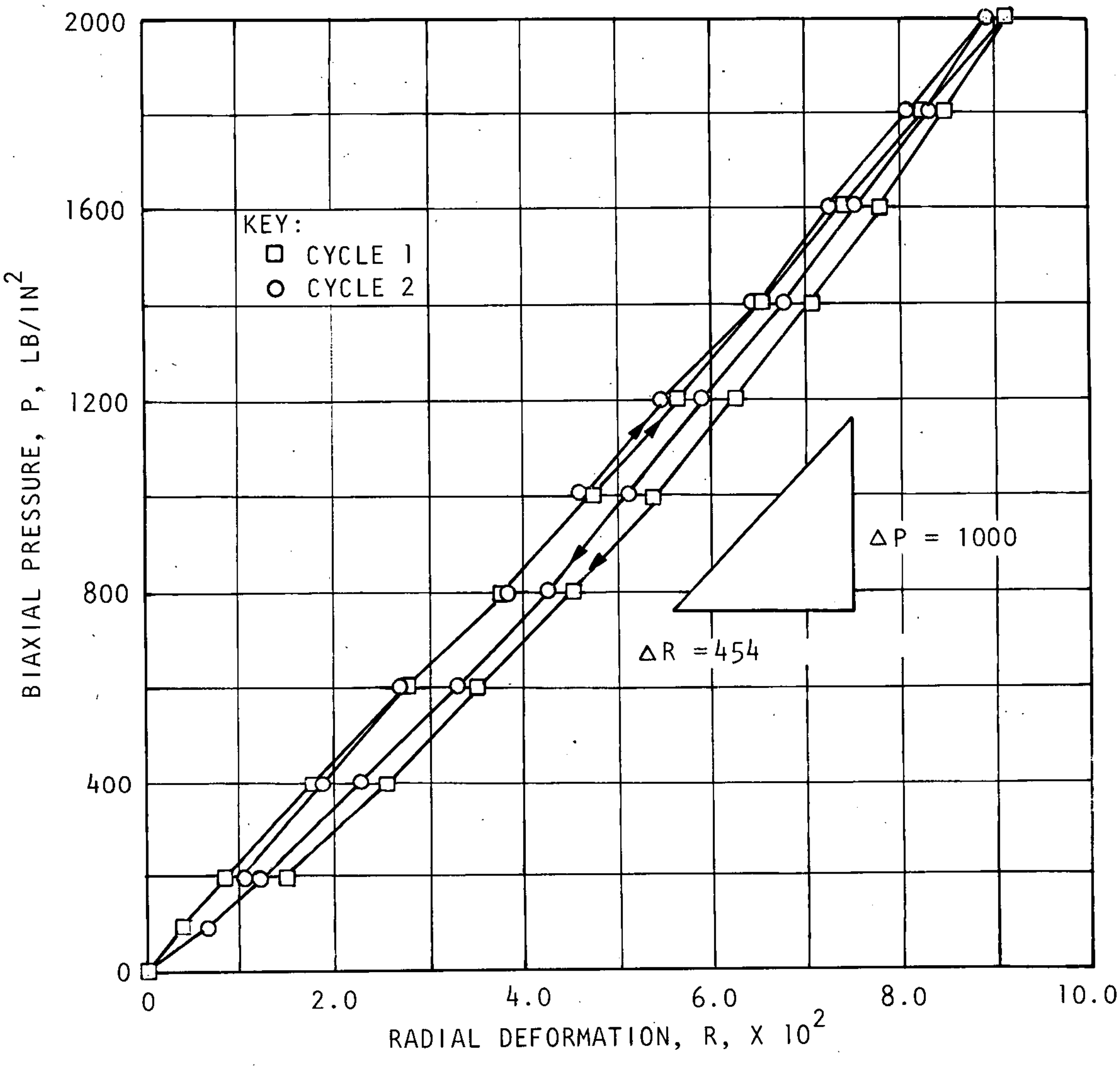
SPECIMEN LENGTH 19½ IN.

SPECIMEN O.D. 5-7/32

AXIS 2

$K_i = 1.01 \times 10^{-6}$ IN.

$\beta = 3.27$ IN.



$E = 7.1 \times 10^{6}$ LB/IN²

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 11 TEST 13

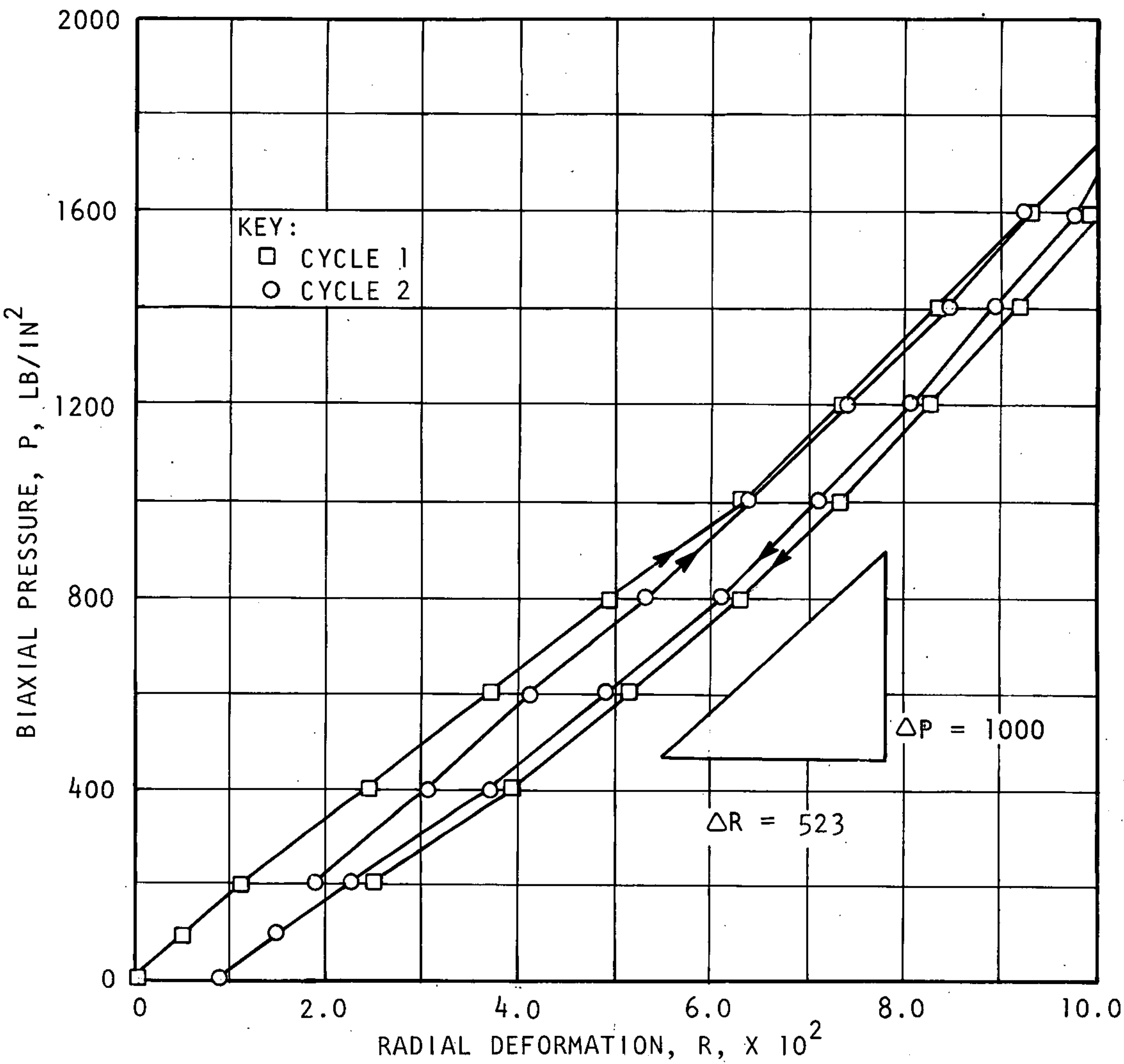
AXIS 3

SPECIMEN LENGTH 19 IN.

SPECIMEN O.D. 5-7/32 IN.

K_i = 1.03 X 10^{-6} IN.

β = 3.27 IN.



E = 6.1 X10^6 LB/IN^2

MODULUS OF DEFORMATION

SITE 14 TEST 2

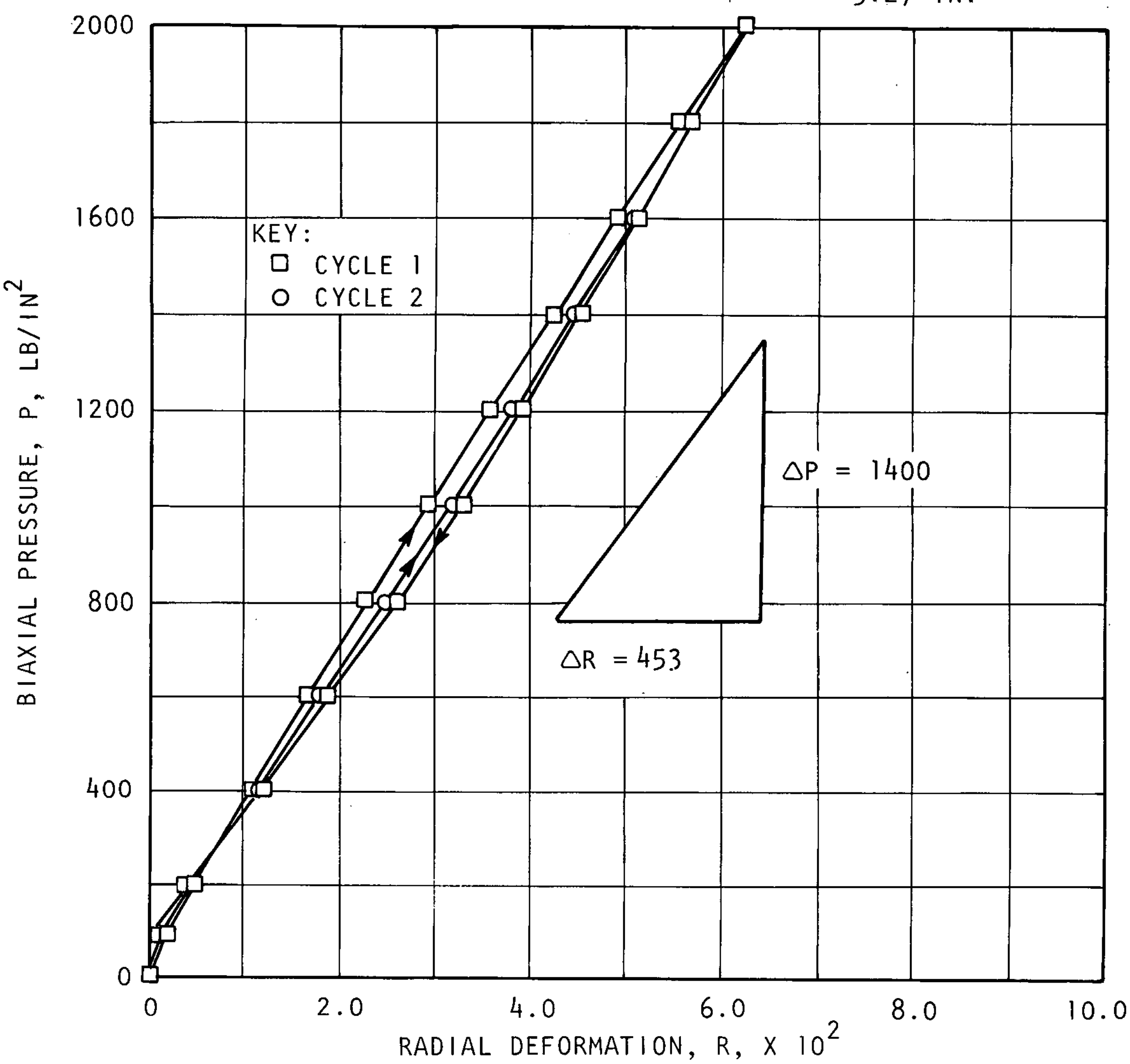
SPECIMEN LENGTH 25 IN.

SPECIMEN O.D. 5-6/32 IN.

AXIS 1

K_i = 1.03×10^{-6} IN.

β = 3.27 IN.



E = 9.8 $\times 10^{6}$ LB/IN^{2}

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 14 TEST 2

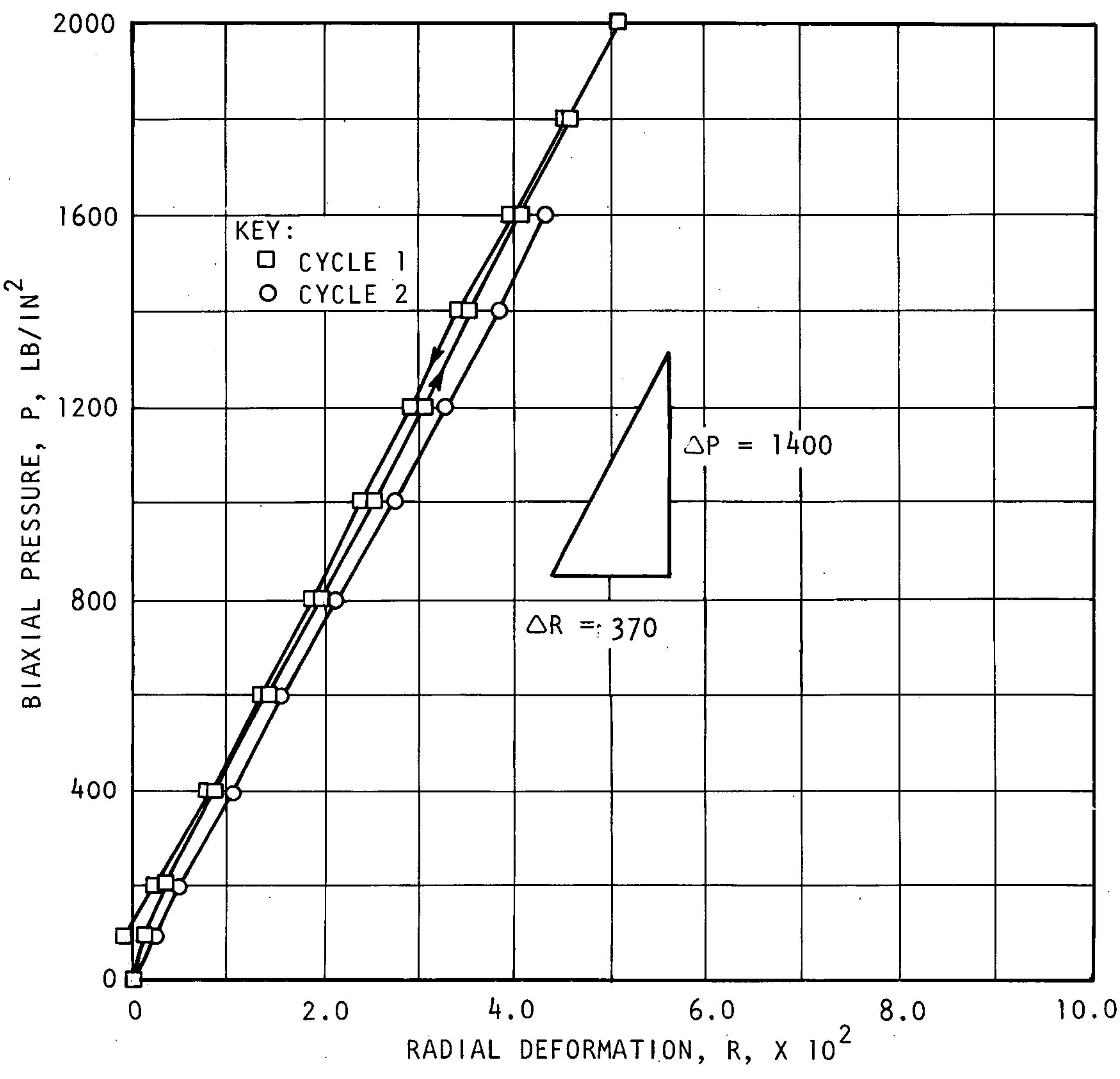
SPECIMEN LENGTH 25 IN.

SPECIMEN O.D. 5-6/32 IN.

AXIS 2

K_i = 1.00 X 10^{-6} IN.

β = 3.27 IN.



E = 12.4 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 14 TEST 2

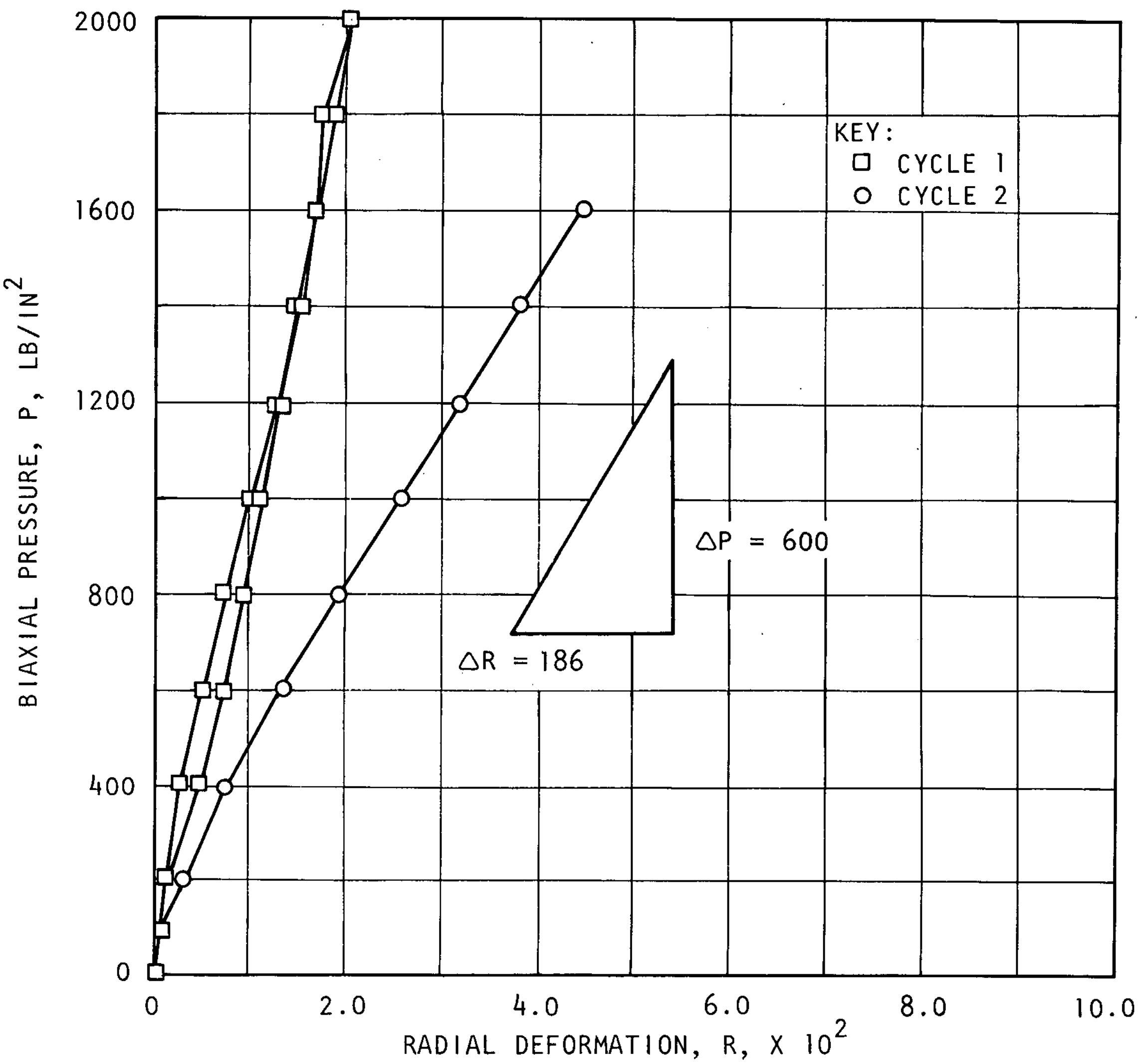
SPECIMEN LENGTH 25 IN.

SPECIMEN O.D. 5-6/32 IN.

AXIS 3

K_i = 1.05 X 10^{-6} IN.

β = 3.27 IN.



E = 10.0 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 14 TEST 3

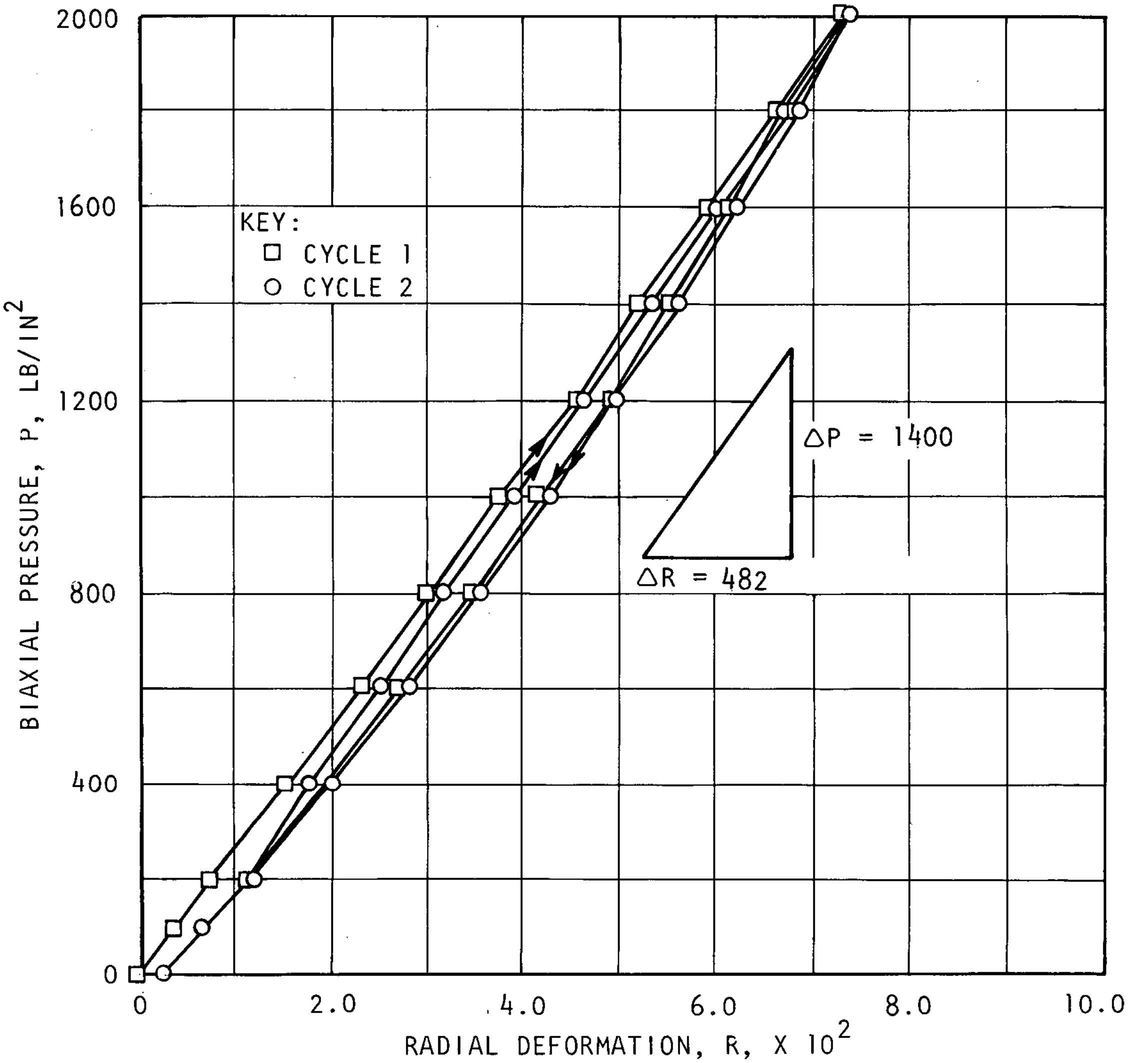
SPECIMEN LENGTH 21 IN.

SPECIMEN O.D. 5-7/32 IN.

AXIS 1

$K_i = 1.01 \times 10^{-6}$ IN.

$\beta = 3.27$ IN.



$E = 9.4 \times 10^6$ LB/IN^2

MODULUS OF DEFORMATION

SITE 14 TEST 3

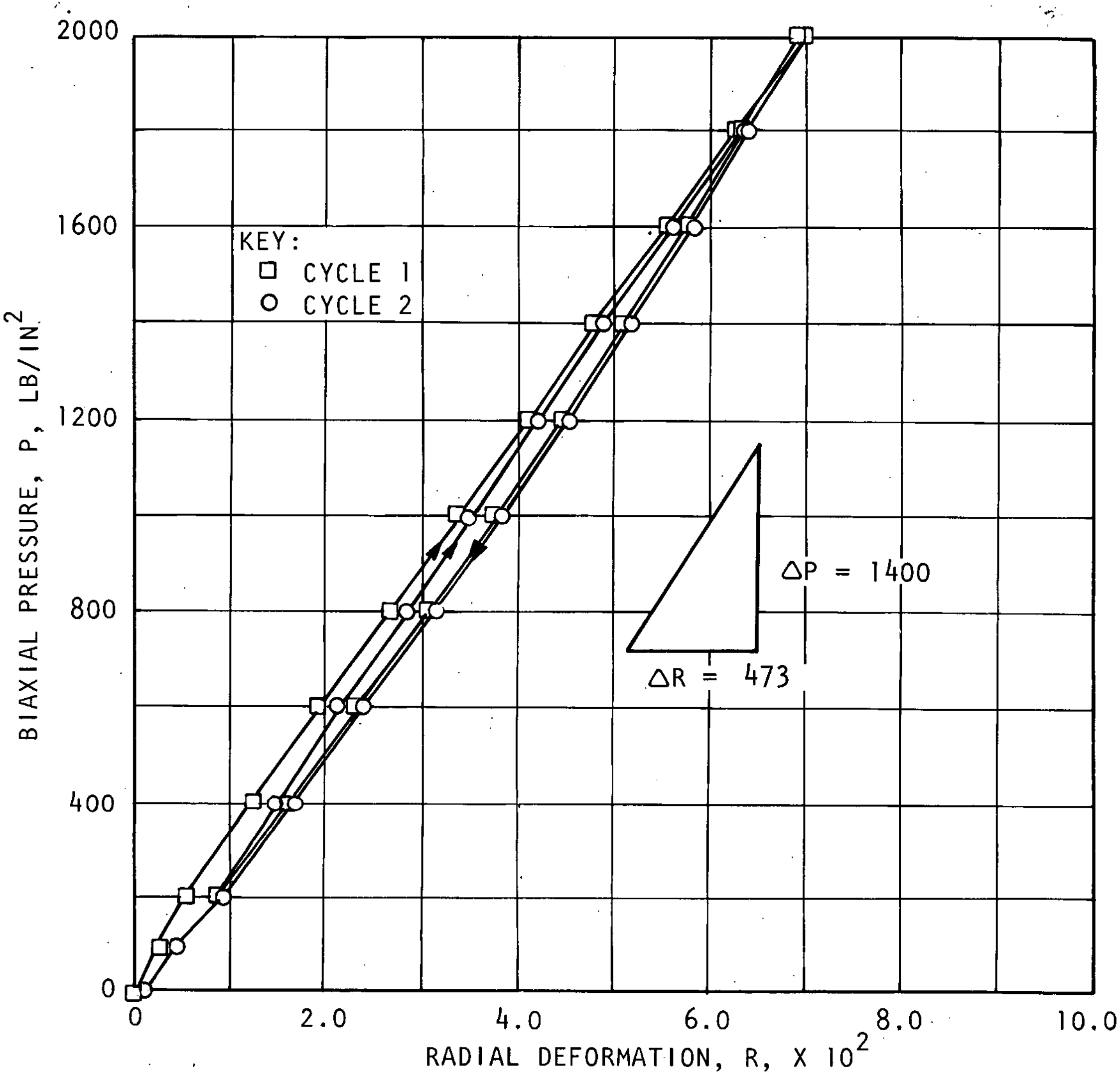
SPECIMEN LENGTH 21 IN.

SPECIMEN O.D. 5-6/32 IN.

AXIS 2

K_i = 1.01×10^{-6} IN.

β = 3.27 IN.



E = 9.6 $\times 10^6$ LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 14 TEST 3

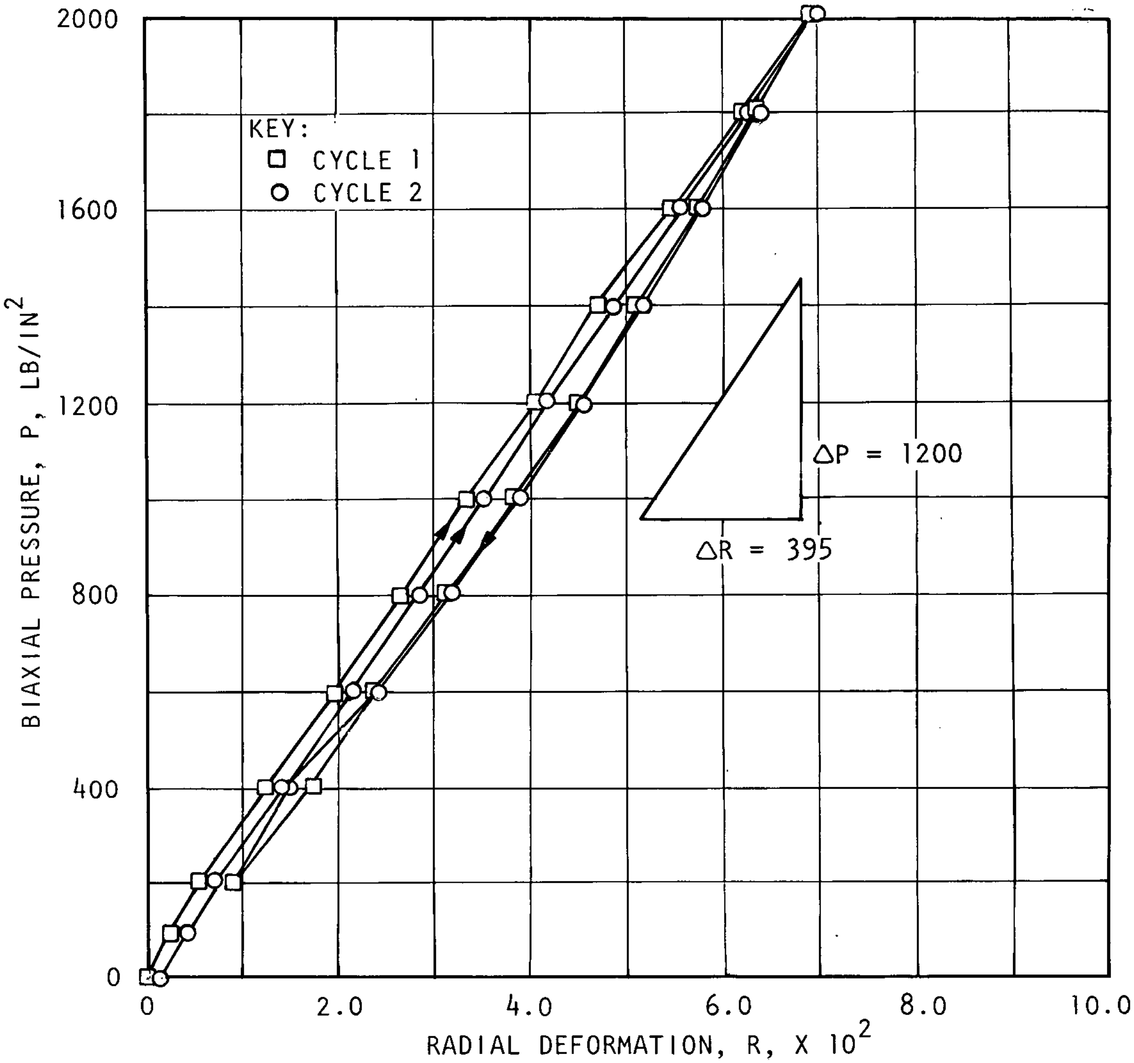
SPECIMEN LENGTH 21 IN.

SPECIMEN O.D. 5-6/32 IN.

AXIS 3

K_i = 1.03×10^{-6} IN.

β = 3.27 IN.



E = 9.6 $\times 10^6$ LB/IN²

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 14 TEST 5

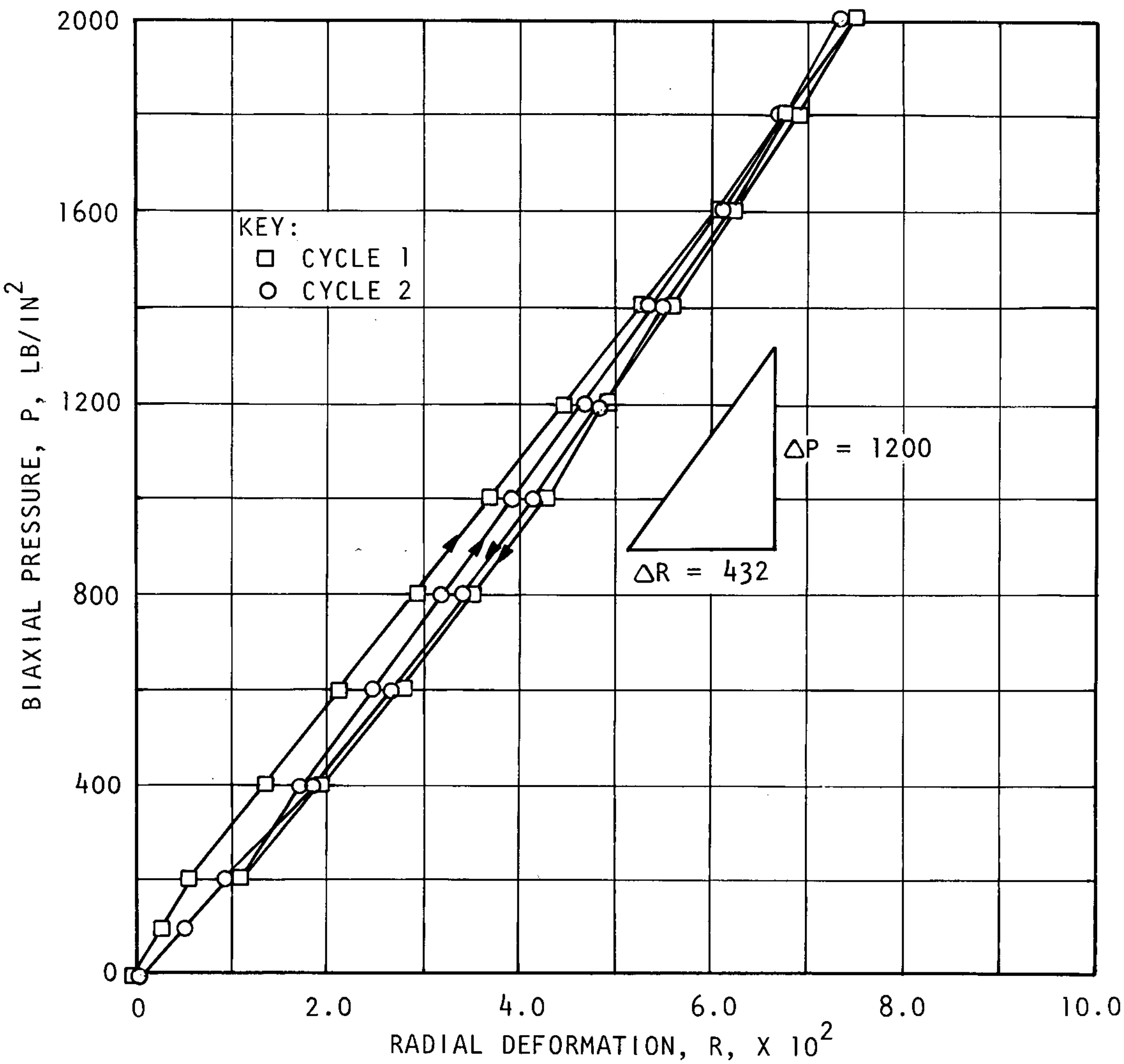
SPECIMEN LENGTH 12 IN.

SPECIMEN O.D. 5-6/32 IN.

AXIS 1

K_i = 1.03×10^{-6} IN.

β = 3.27 IN.



E = 8.8 $\times 10^6$ LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 14 TEST 5

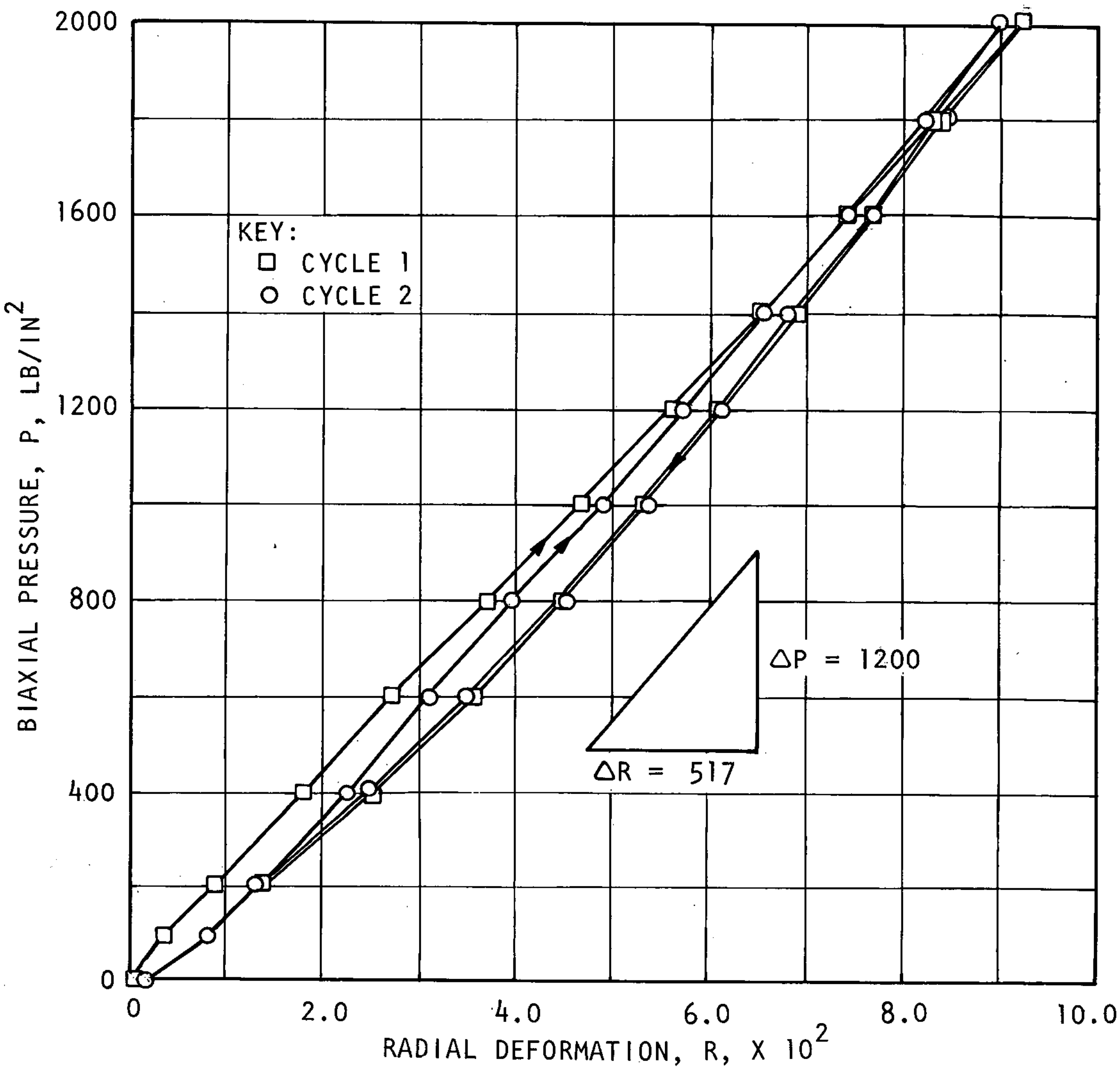
SPECIMEN LENGTH 12 IN.

SPECIMEN O.D. 5-6/32 IN.

AXIS 2

K_i = 1.00×10^{-6} IN.

β = 3.27 IN.



E = 7.6×10^{6} LB/IN^{2}

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 14 TEST 5

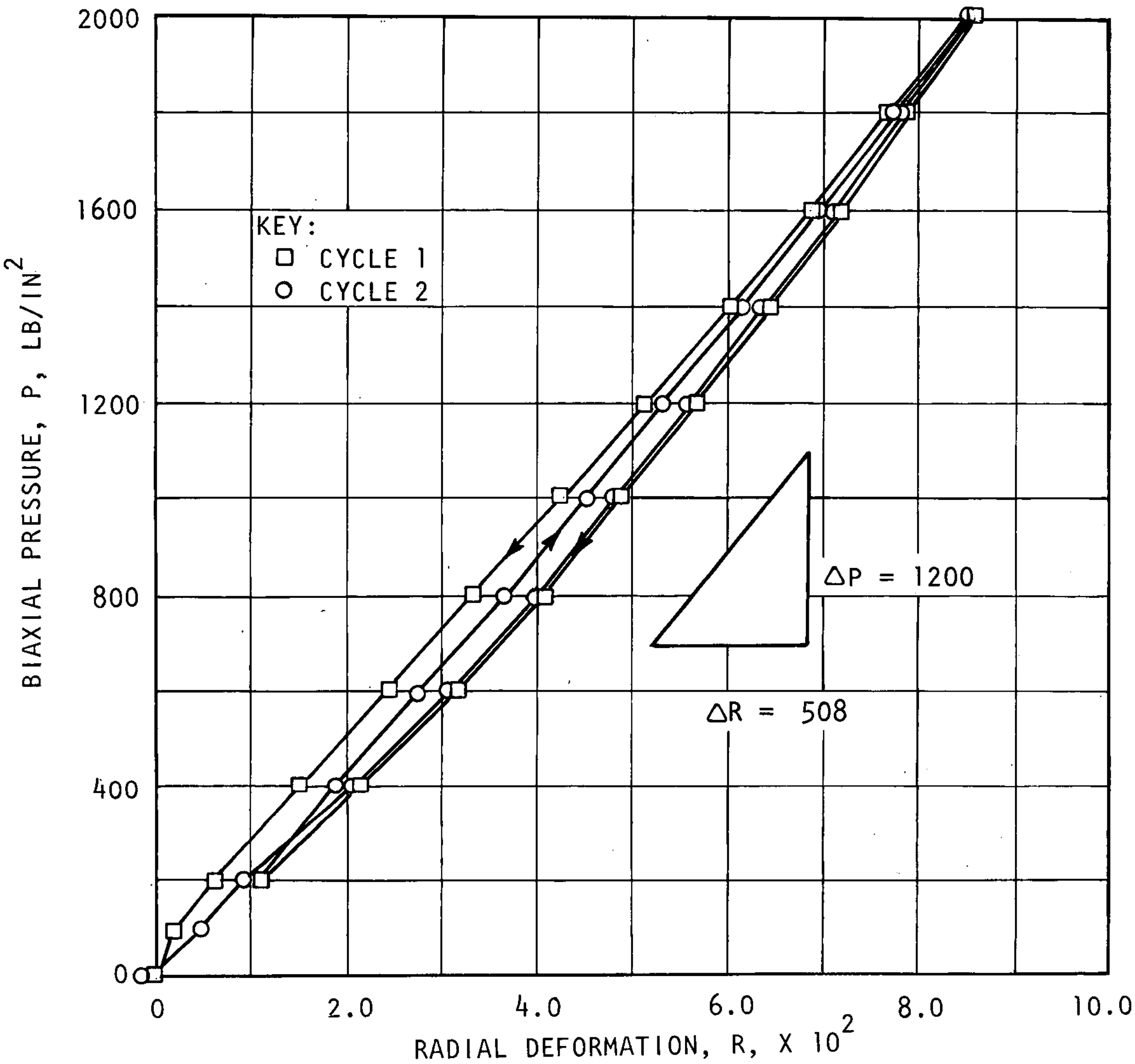
SPECIMEN LENGTH 12 IN.

SPECIMEN O.D. 5-6/32 IN.

AXIS 3

K_i = 1.05 X 10^{-6} IN.

β = 3.27 IN.



E = 7.4 X10^6 LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 14 TEST 7

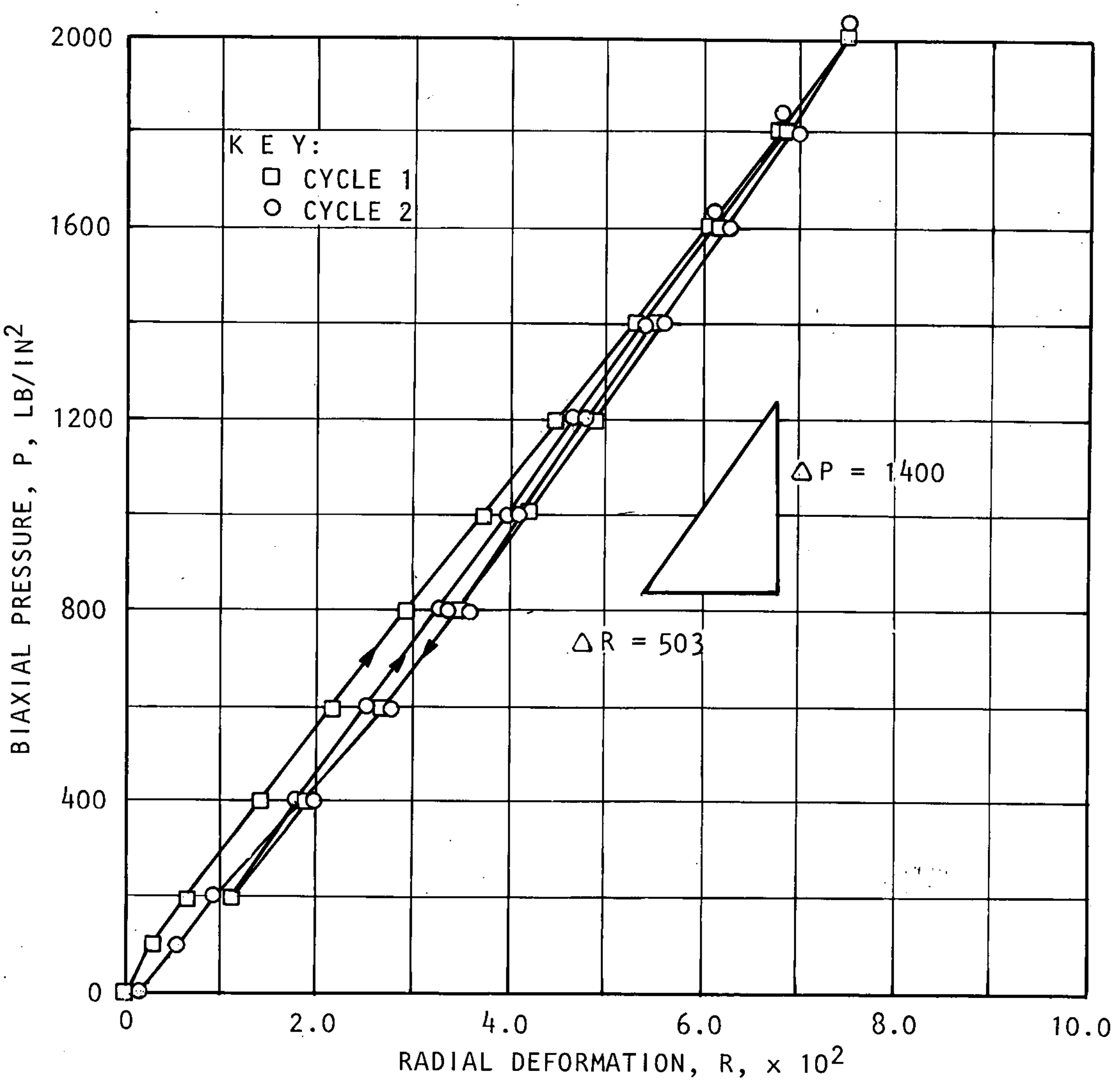
SPECIMEN LENGTH 15 1/2 IN.

SPECIMEN O.D. 5 6/32 IN.

AXIS 1

$K_i = 1.03 \times 10^{-6}$ IN

$\beta = 3.27$ IN.



$E = 8.8 \times 10^6$ LB/IN²

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 14 TEST 7

SPECIMEN LENGTH 15 1/2 IN.

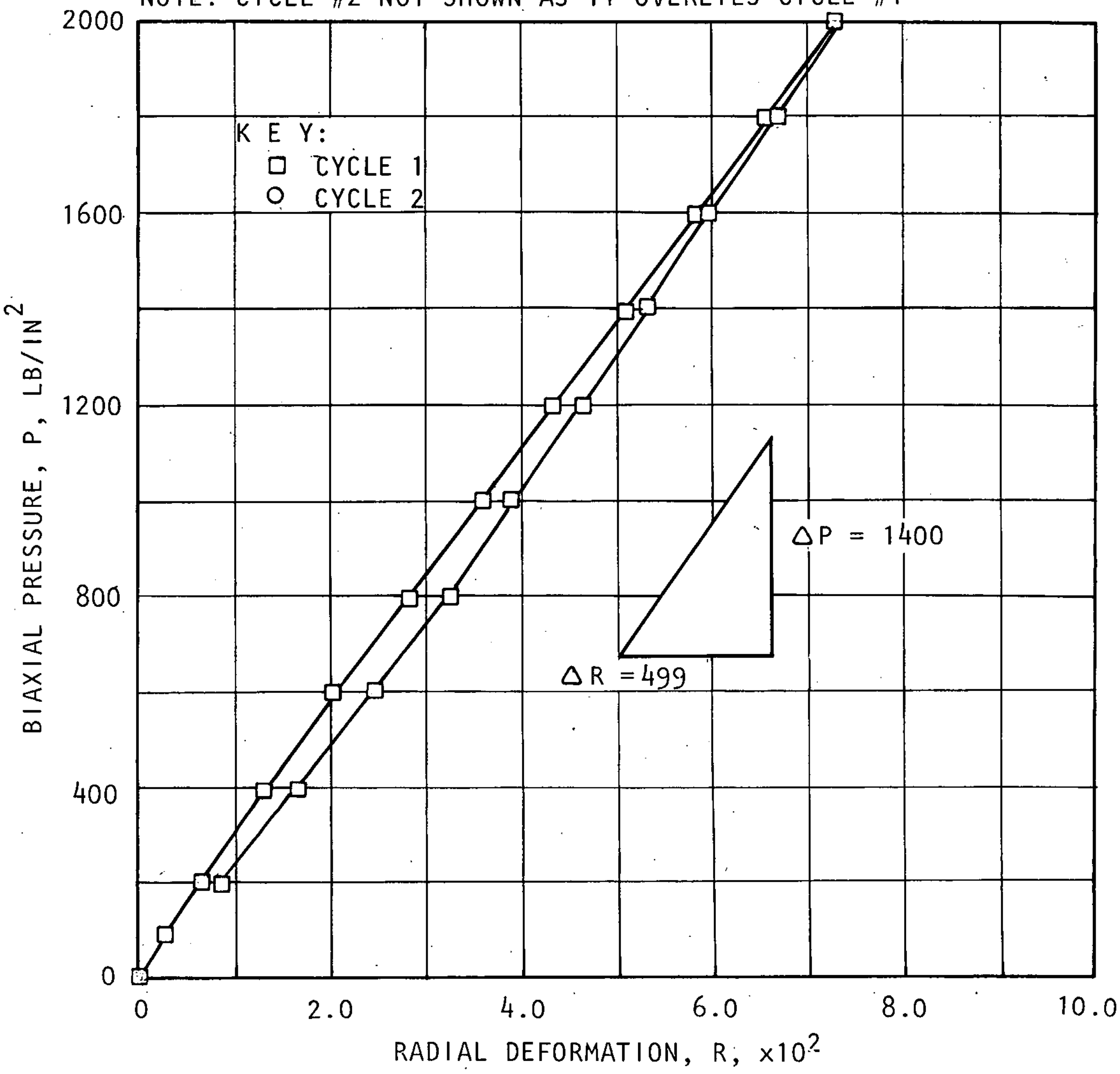
SPECIMEN O.D. 5 6/32 IN.

AXIS 2

$K_i = 1.00 \times 10^{-6}$ IN

$\beta = 3.27$ IN.

NOTE: CYCLE #2 NOT SHOWN AS IT OVERLIES CYCLE #1



$E = 9.2 \times 10^6$ LB/IN^2

DAMES & MOORE

MODULUS OF DEFORMATION

SITE 14 TEST 7

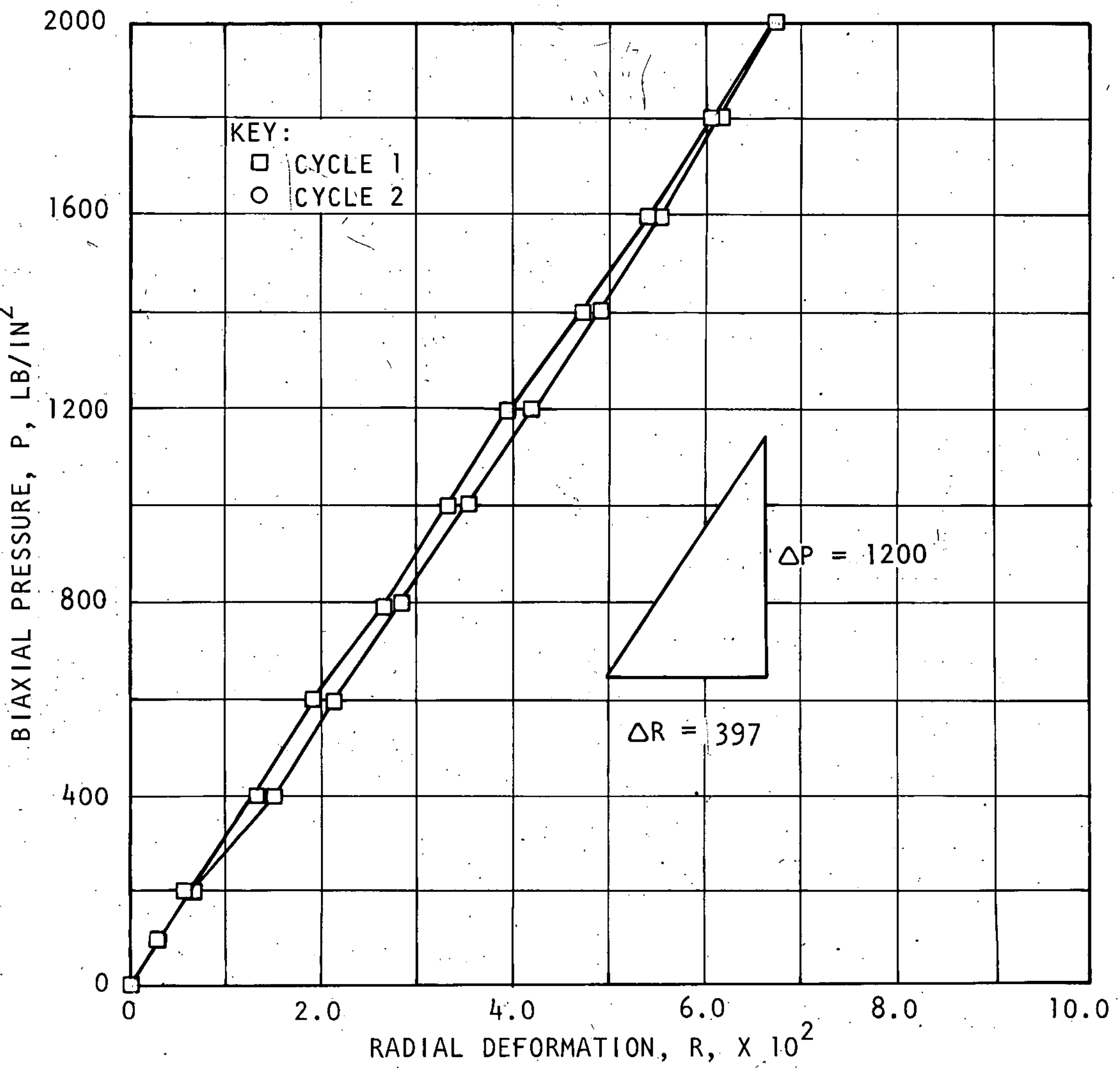
SPECIMEN LENGTH $15\frac{1}{2}$ IN.

SPECIMEN O.D. 5-6/32 IN.

AXIS 3

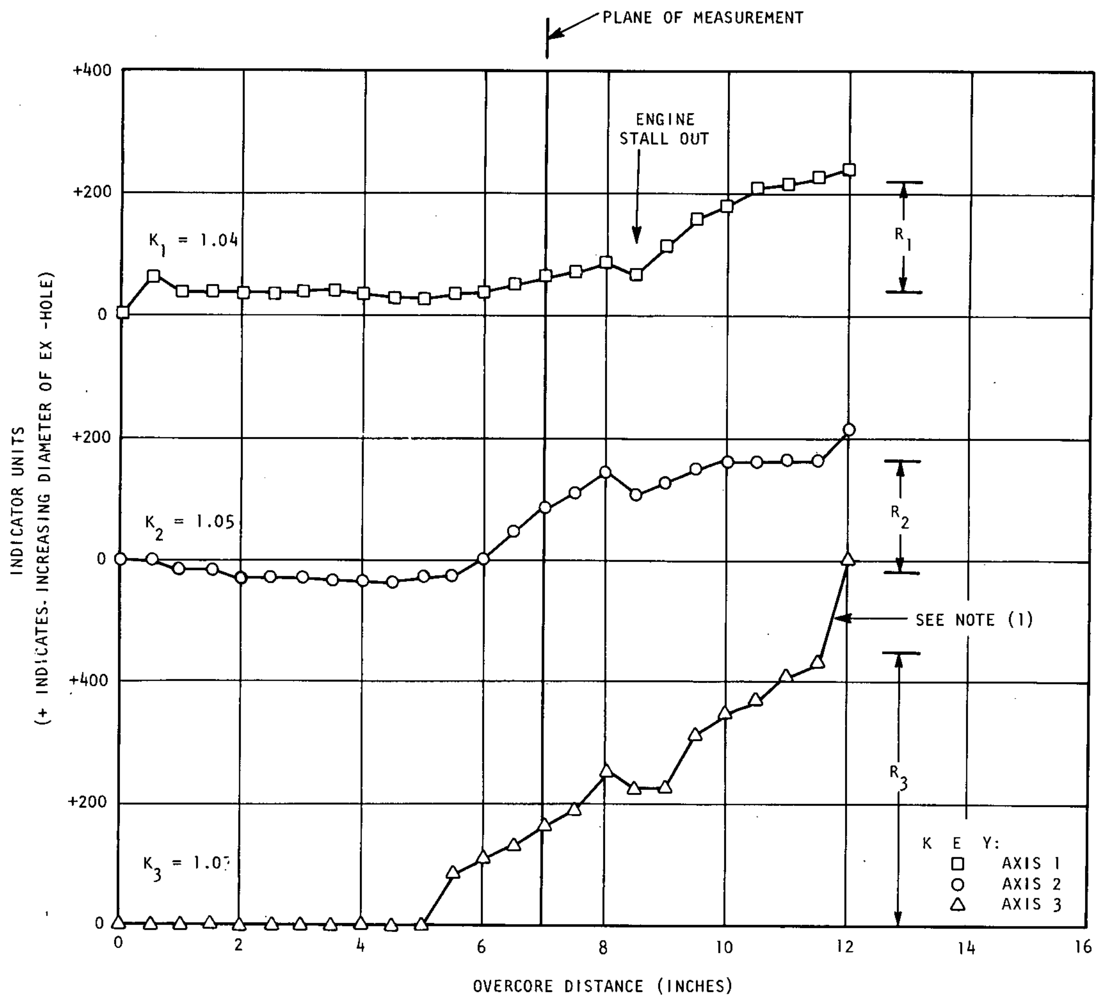
K_i = 1.05×10^{-6} IN.

β = 3.27 IN.



$E = 9.4 \times 10^6$ LB/IN^2

DAMES & MOORE



TEST NO. 1

DEPTH 17 FT. 9½ IN.

$\mu_1\theta$ N 82 W

R_1 = +40 TO +220 = +180

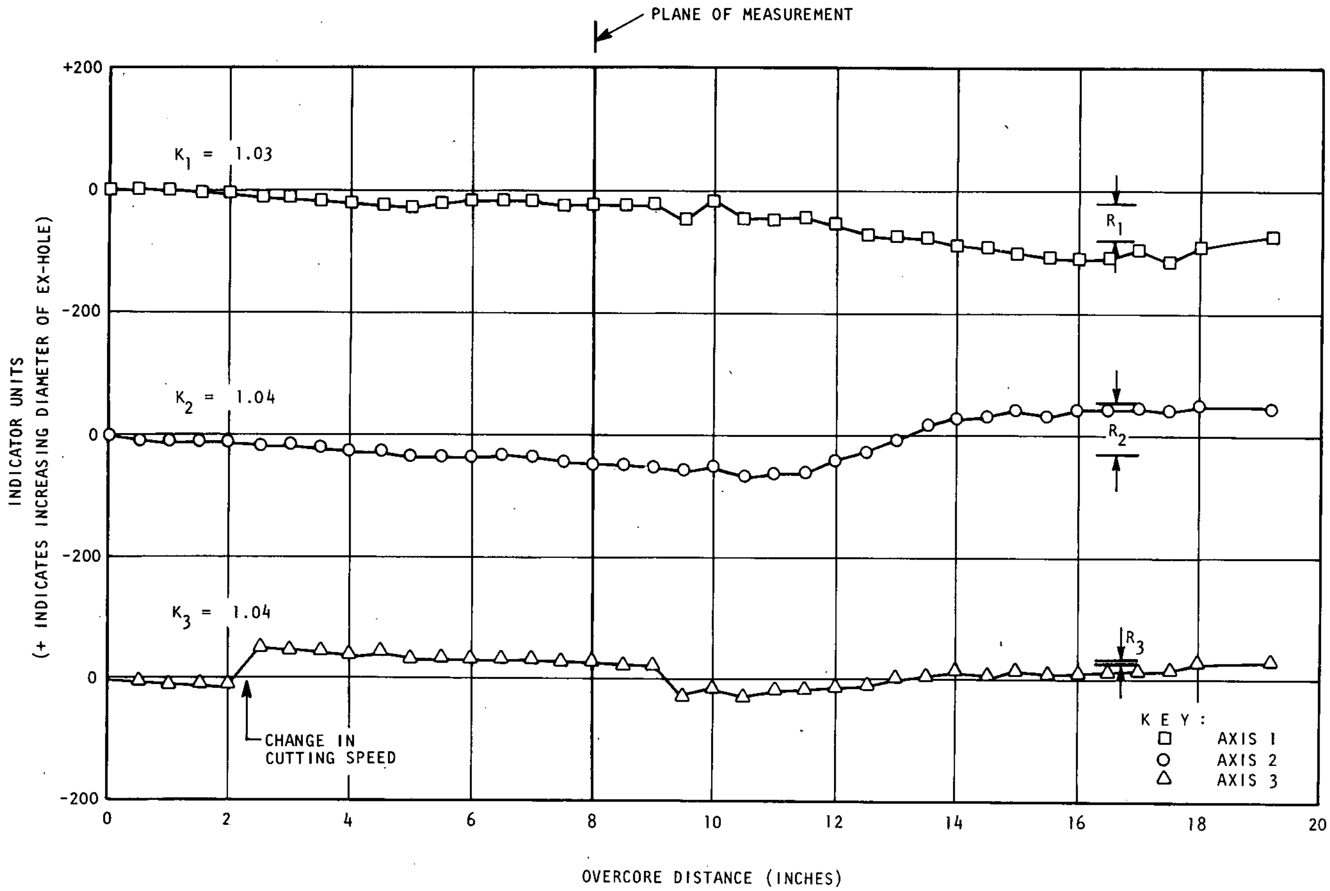
R_2 = -18 TO +162 = +180

R_3 = 0 TO +450 = +450

NOTES:
(1) TEST STOPPED AT 12 INCHES OF OVERCORE DUE TO VIBRATION OF STRAIN INDICATOR.
(2) ENGINE STALLED-OUT AT 8.5 INCHES OF OVERCORE RUN.
(3) PLANE OF MEASUREMENT = 7 INCHES

OVERCORE TEST RESULTS

SITE 3 TEST 1



TEST NO. 2

DEPTH 19 FT. 6 IN.

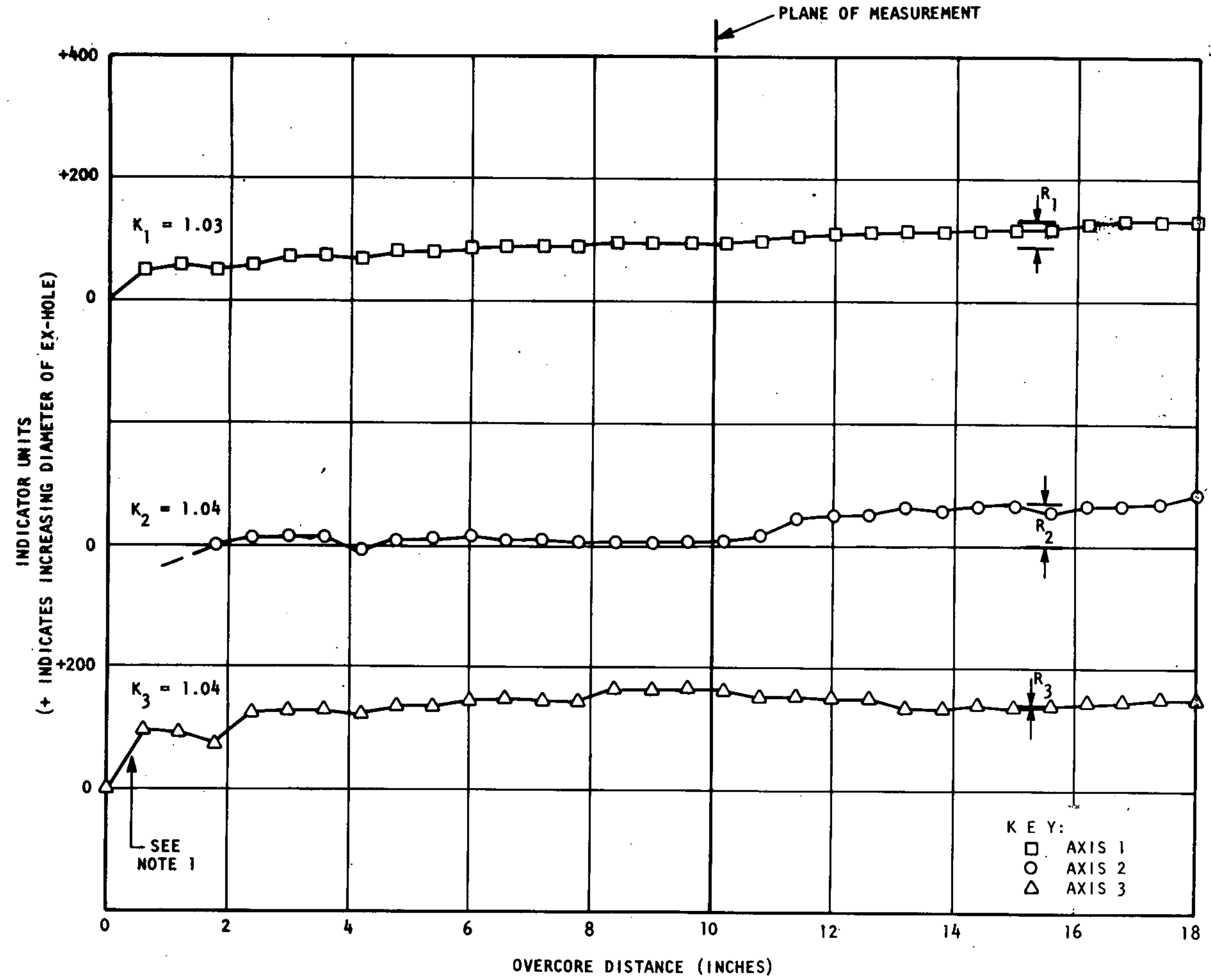
$\mu_1\theta$ N 78 W

R_1 = -20 TO -80 = -60
R_2 = -30 TO +56 = +86
R_3 = +34 TO +37 = +3

NOTES:
(1) CUTTING SPEED CHANGED SIGNIFICANTLY AT 2 INCHES, PROBABLY DUE TO DEBRIS IN GROOVE OF 6-INCH BIT
(2) PLANE OF MEASUREMENT = 8 INCHES

OVERCORE TEST RESULTS
SITE 3 TEST 2

DAMES & MOORE



TEST NO. 3

DEPTH 21 FT. 1 IN.

$\mu_1\theta$ N 85 W

R_1 = +88 TO 133 = +45

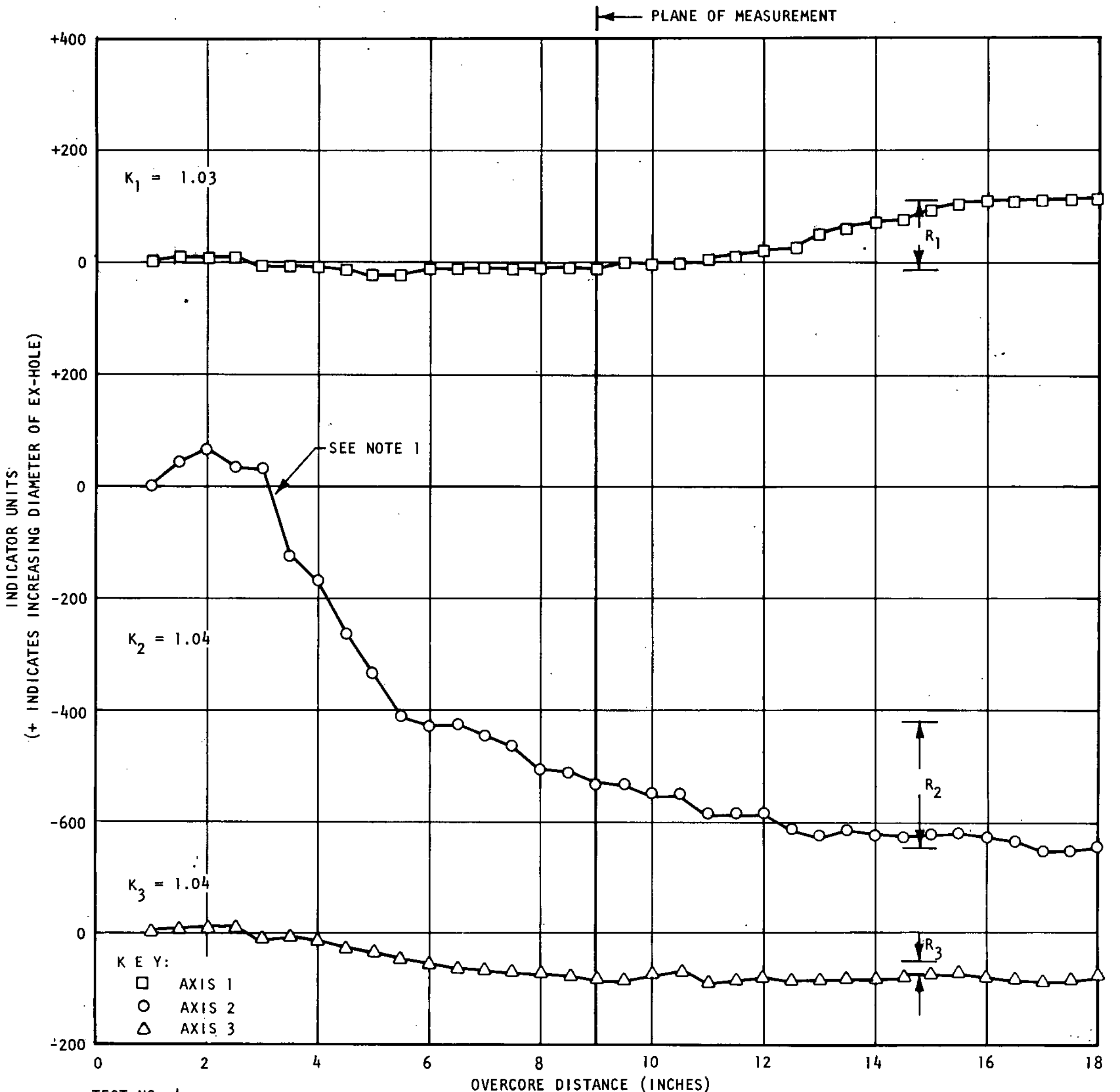
R_2 = 0 TO +66 = +66

R_3 = +140 TO +140 = 0

NOTES:
(1) ZERO READING TAKEN PRIOR TO INITIATION OF DRILLING, HENCE LARGE INCREASE IN READING DUE TO DRILL BIT PRESSURE
(2) DISTANCE WAS MEASURED IN 10 TH'S OF FEET
(3) PLANE OF MEASUREMENT = 10 INCHES

OVERCORE TEST RESULTS

SITE 3 TEST 3



TEST NO. 4

DEPTH 22 FT. 4 IN.

$\mu_1\theta$ N 86 W

NOTES:

(1) APPARENT SLIPPAGE OF GAGE DOWN-HOLE. NOTE STRESS RELIEF OF CANTILEVER NO. 1 INDICATES A MEASUREMENT PLANE OF 10 INCHES. STABILITY OF POSITION WAS REACHED AT APPROX. 6 INCHES OF OVERCORE RUN.

(2) PLANE OF MEASUREMENT = 9 INCHES

R_1 = -11 TO +113 = +124

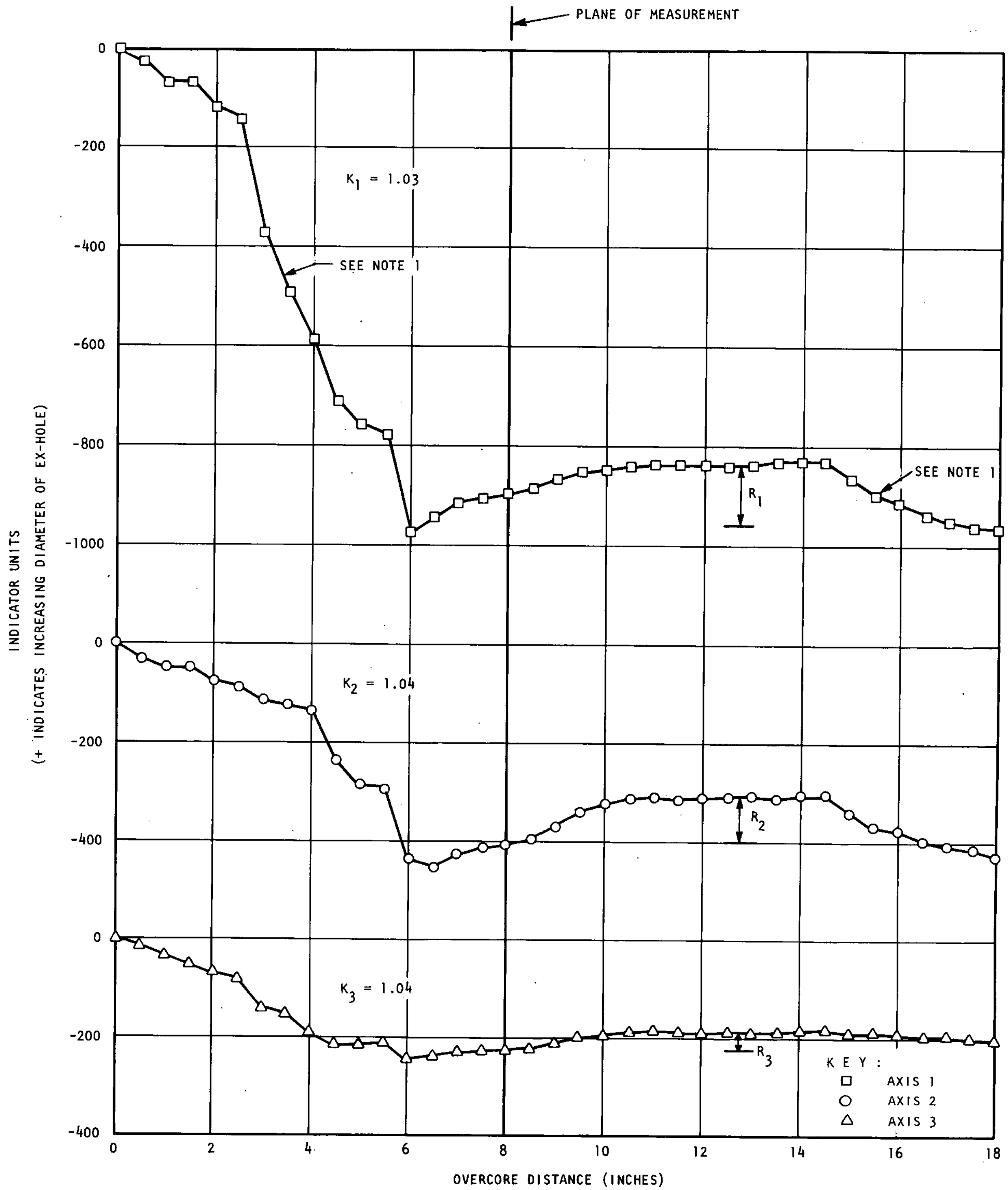
R_2 = -420 TO -647 = -227

R_3 = -55 TO -79 = -24

OVERCORE TEST RESULTS

SITE 3 TEST 4

DAMES & MOORE



TEST NO. 5

DEPTH 23 FT. 11 IN.

$\mu_1\theta$ N 85 W

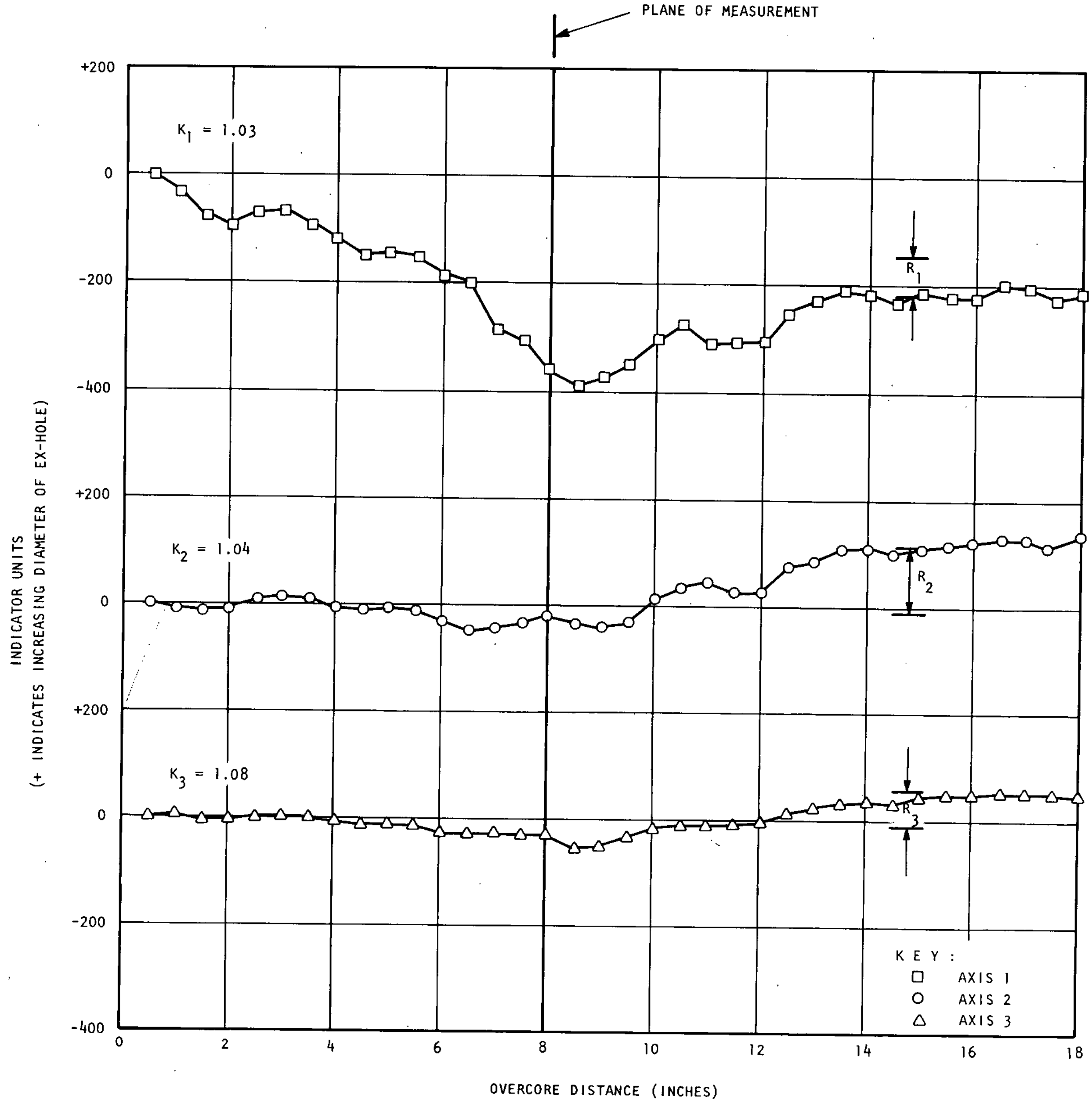
R_1 = -960 TO -840 = +120
R_2 = -400 TO -308 = +92
R_3 = -222 TO -187 = +35

NOTES:
(1) APPARENT SLIPPAGE OF GAGE. SLIPPAGE STOPPED AT APPROX. 6 INCHES OF OVERCORE RUN AND RESUMED AT 15 INCHES. NO SIGNIFICANT ROTATION OF GAGE NOTED UPON RETRIEVAL.
(2) PLANE OF MEASUREMENT = 8 INCHES

OVERCORE TEST RESULTS

SITE 3 TEST 5

DAMES & MOORE



TEST NO. 6

DEPTH 25 FT. 7½ IN.

$\mu_1\theta$ N 85 E

NOTES:
(1) APPARENT INSTABILITY OF CANTILEVER NO. 1, ARRESTED AT 4.5 INCHES OF OVERCORE RUN.
(2) PLANE OF MEASUREMENT = 8 INCHES

R_1 = -149 TO -220 = -71

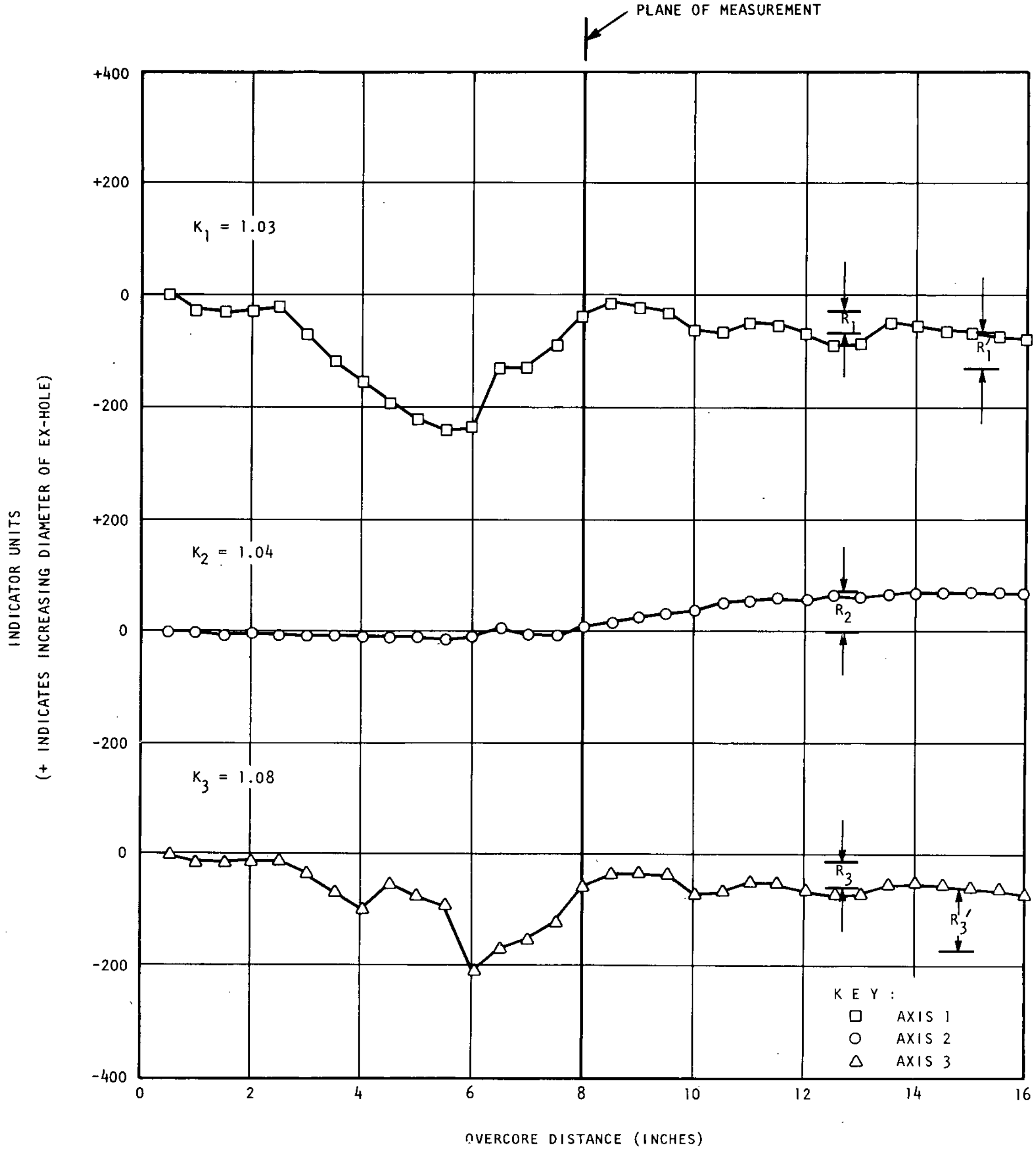
R_2 = -10 TO +107 = +117

R_3 = -12 TO +45 = +57

OVERCORE TEST RESULTS

SITE 3 TEST 6

DAMES & MOORE



TEST NO. 7

DEPTH 27 FT. 4 IN.

$\mu_1\theta$ N 80 W

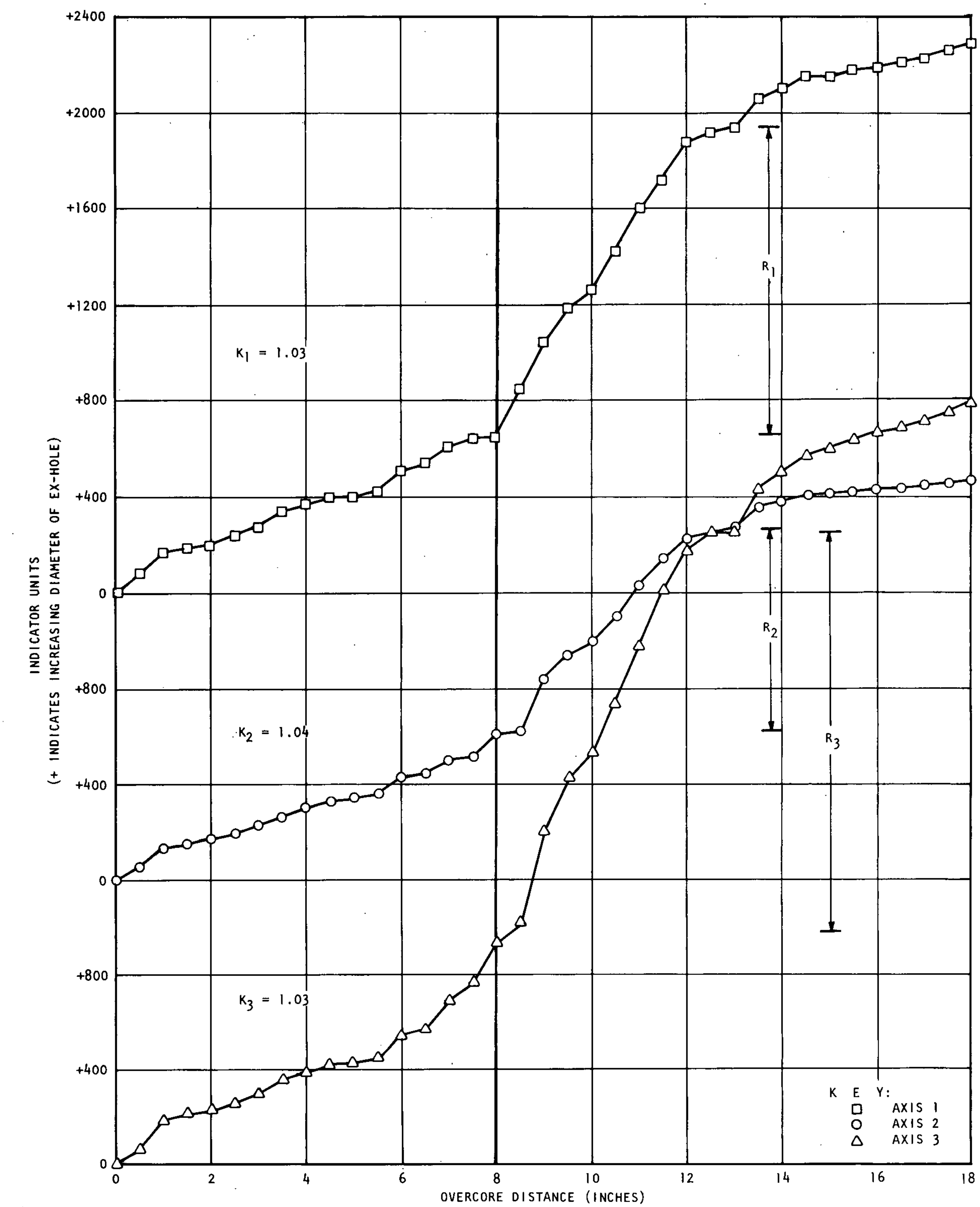
NOTES:
(1) JOINT LOCATED AT 29 FT. 0 INCHES, WITH AN INCLINATION OF
(2) PLANE OF MEASUREMENT = 8 INCHES

R_1 = -24 TO -63 = -19
R_2 = 0 TO + 67 = +67
R_3 = -12 TO -60 = -48
R_1' = -124 TO -63 = +61
R_3' = -168 TO -60 = +108

OVERCORE TEST RESULTS

SITE 3 TEST 7

DAMES & MOORE



TEST NO. 8

DEPTH 30 FT. 4 IN.

$\mu_1\theta$ N5°W

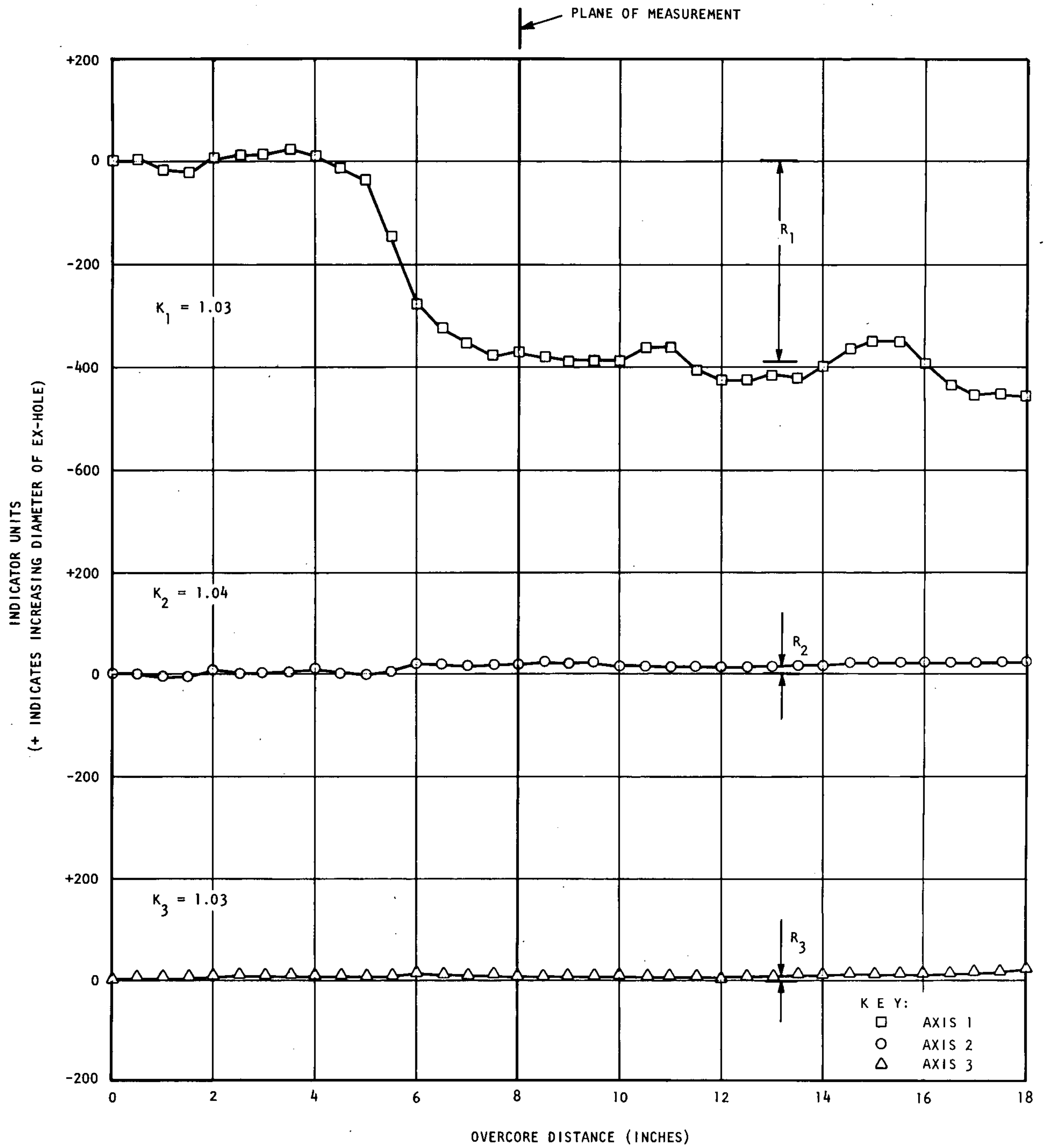
R_1 = +646 TO +1938 = +1292
R_2 = +608 TO +1460 = +852
R_3 = +980 TO +2668 = +1688

NOTES:
(1) APPARENT ROTATION OF GAGE IN-HOLE; DATA EXTREMELYFQUESTIONABLE
(2) NOTE SCALE CHANGE
(3) PLANE OF MEASUREMENT = 8 INCHES

OVERCORE TEST RESULTS

SITE 3 TEST 8

DAMES & MOORE



TEST NO. 9

DEPTH 35 FT. 7 IN.

$\mu_1\theta$ N 5 E

R_1 = 0 TO -390 = -390

R_2 = 0 TO +20 = +20

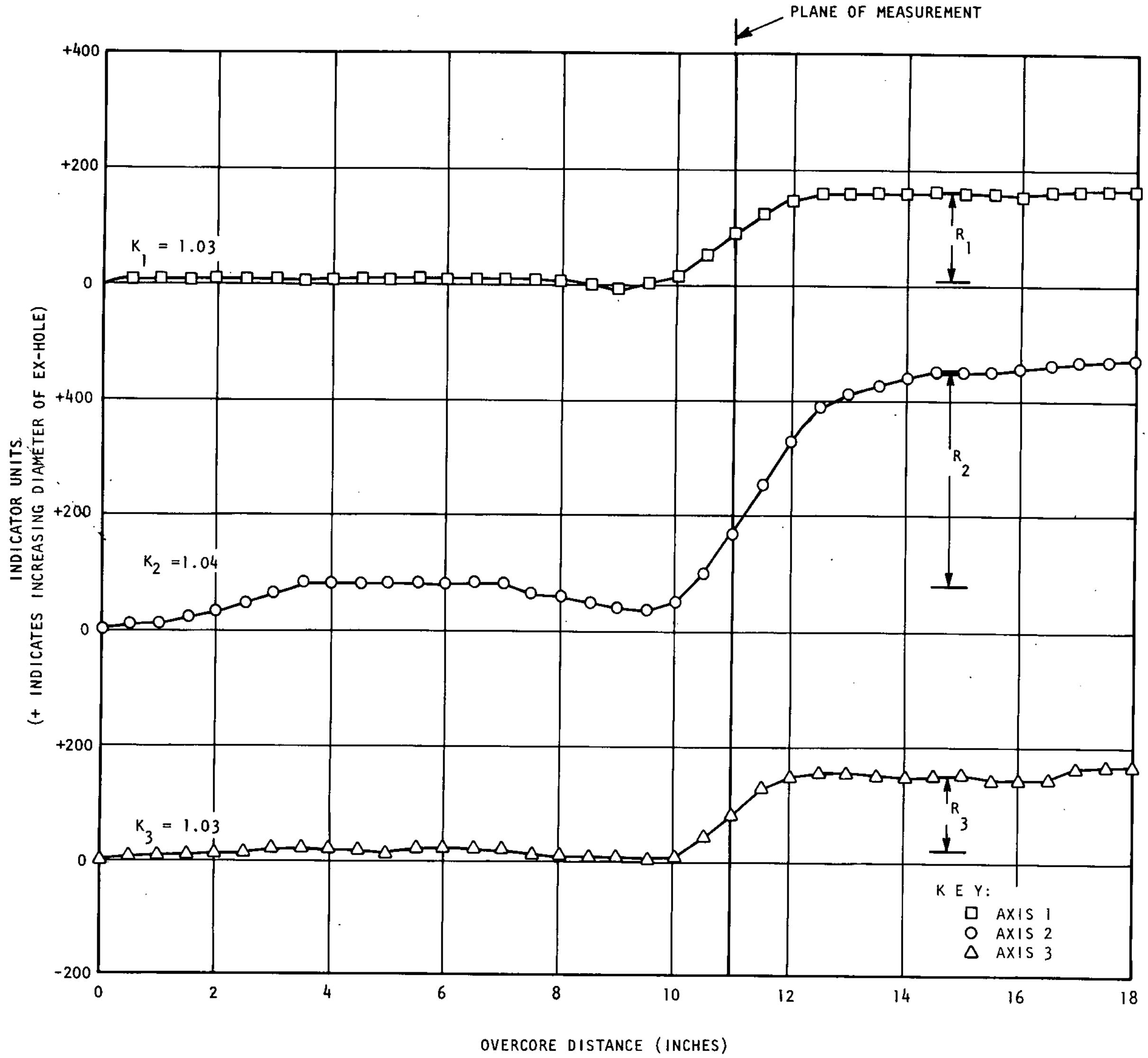
R_3 = +6 TO +16 = +10

NOTES:
(1) FRACTURE ZONE LOCATED AT 34 FT. 8 IN.
(2) PLANE OF MEASUREMENT = 8 INCHES

OVERCORE TEST RESULTS

SITE 3 TEST 9

DAMES & MOORE



TEST NO. 10

DEPTH 37 FT. 6 IN.

$\mu_1\theta$ N 5 E

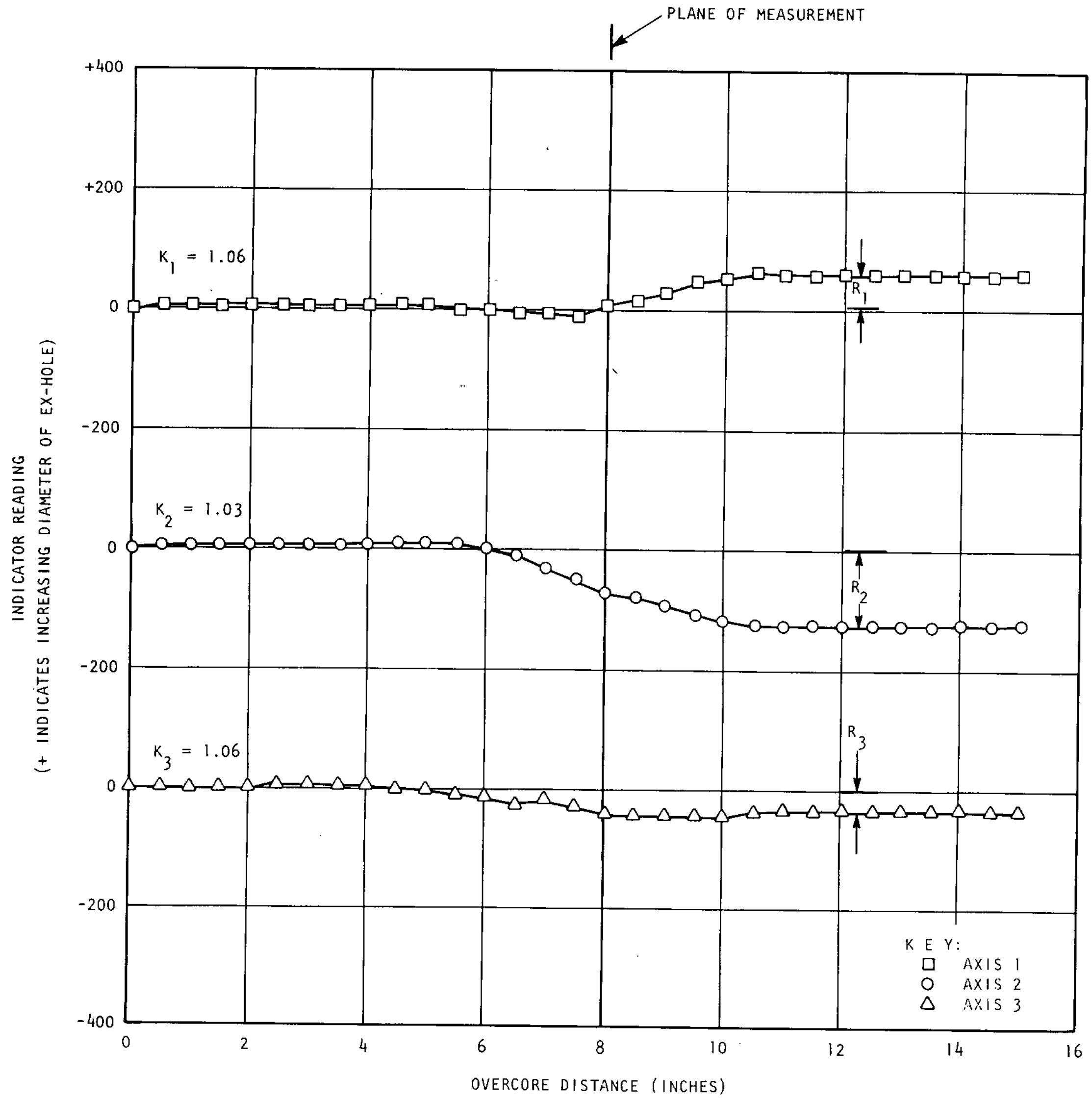
R_1 = +10 TO +160 = +150
R_2 = +81 TO +452 = +135
R_3 = +22 TO +157 = +135

NOTES:
(1) EXCEPTIONAL TEST FOR SITE. AS TEST IS BELOW MAJOR FRACTURE ZONE AT 34 FT., TEST IS PROBABLY MOST REPRESENTATIVE OF NATURAL STRESS IN AREA.
(2) PLANE OF MEASUREMENT = 11 INCHES

OVERCORE TEST RESULTS

SITE 3 TEST 10

DAMES & MOORE



TEST NO. 1

DEPTH 30 FT. 5 IN.

$\mu_1\theta$ N 70 W

R_1 = +3 TO +59 = +56

R_2 = +4 TO -126 = -130

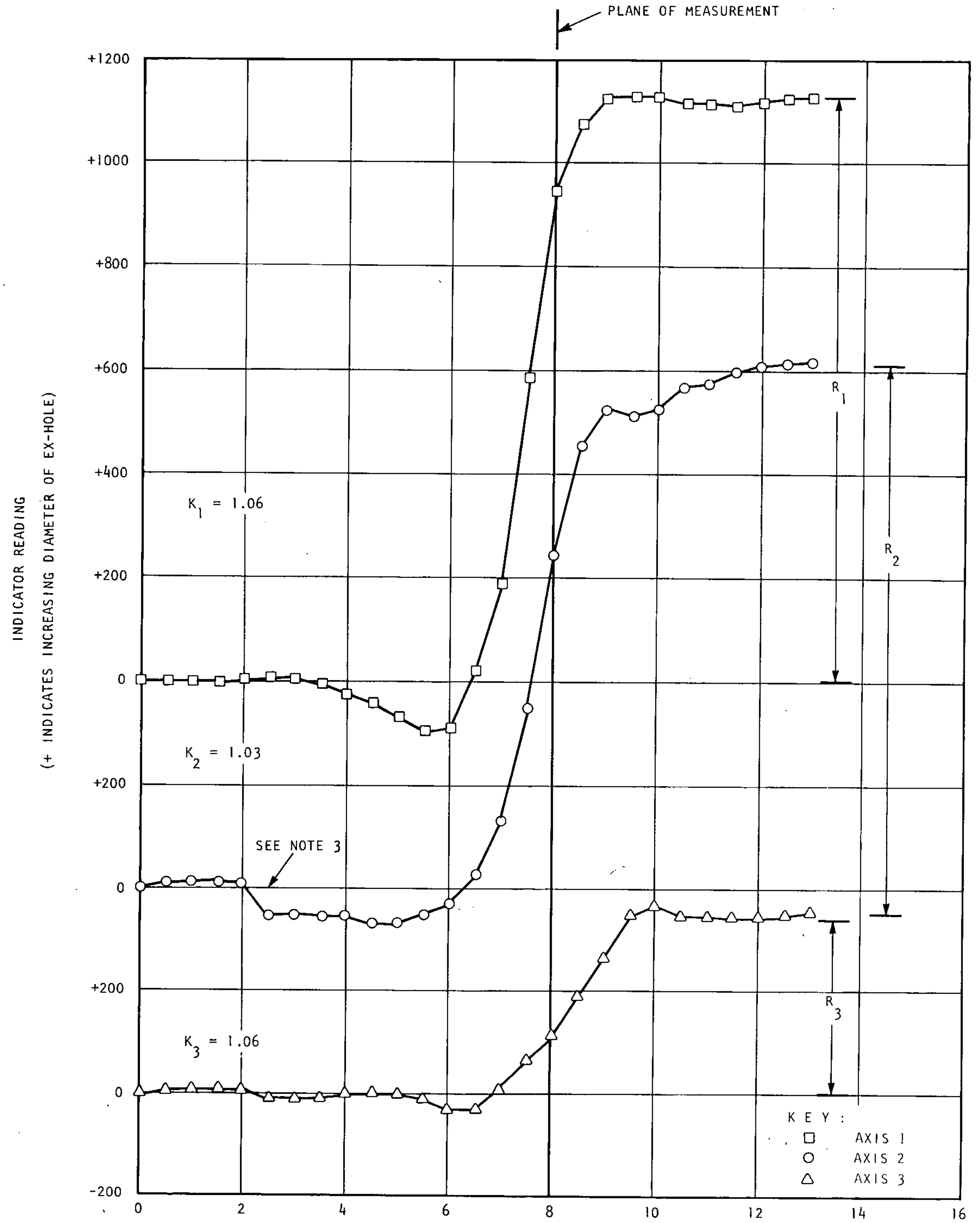
R_3 = 0 TO -38 = -38

NOTES:
(1) PLANE OF MEASUREMENT = 8 INCHES

OVERCORE TEST RESULTS

SITE 9 TEST 1

DAMES & MOORE



TEST NO. 2

DEPTH 31 FT. 8 IN.

$\mu_1\theta$ N 70 W

R_1 = 0 TO +1125 = +1125

R_2 = -50 TO +1010 = +1060

R_3 = 0 TO +341 = +341

NOTES:

(1) TEST LOCATED BETWEEN TWO FRACTURES (HAIRLINE JOINTS) AT 31 FT. 3 IN. AND 31 FT. 11 IN.

(2) TEST STOPPED AT 13 INCHES DUE TO VARIATION IN DRILL SPEED. VARIATION PROBABLY DUE TO OPENING OF HAIRLINE FRACTURE AT 31 FT. 11 IN. RETRIEVED CORE WAS INTACT TO 31 FT. 11 IN.

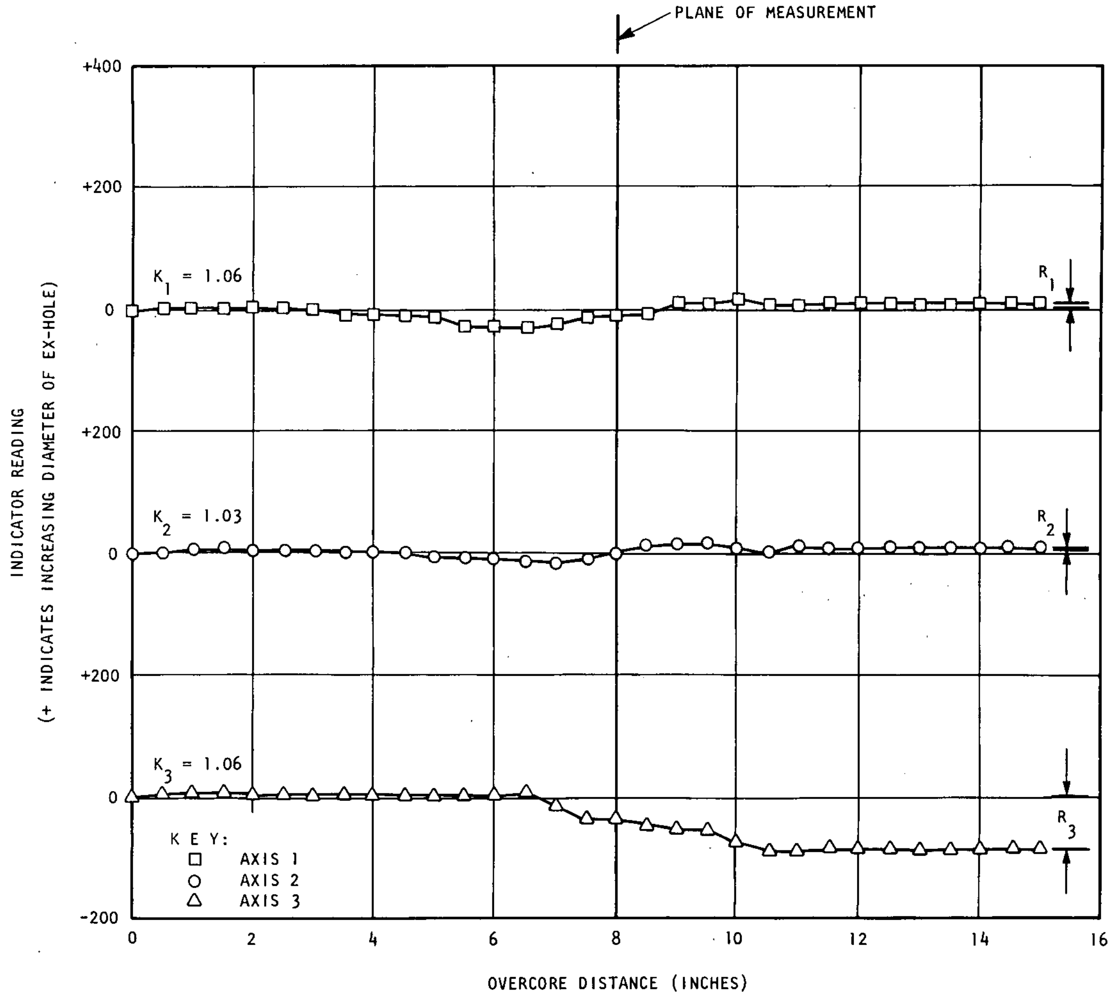
(3) PRESSURE INCREASE IN DRILLING

(4) PLANE OF MEASUREMENT = 8 INCHES

OVERCORE TEST RESULTS

SITE 9 TEST 2

DAMES & MOORE



TEST NO. 3

DEPTH 34 FT. 3 IN.

$\mu_1\theta$ N 66 W

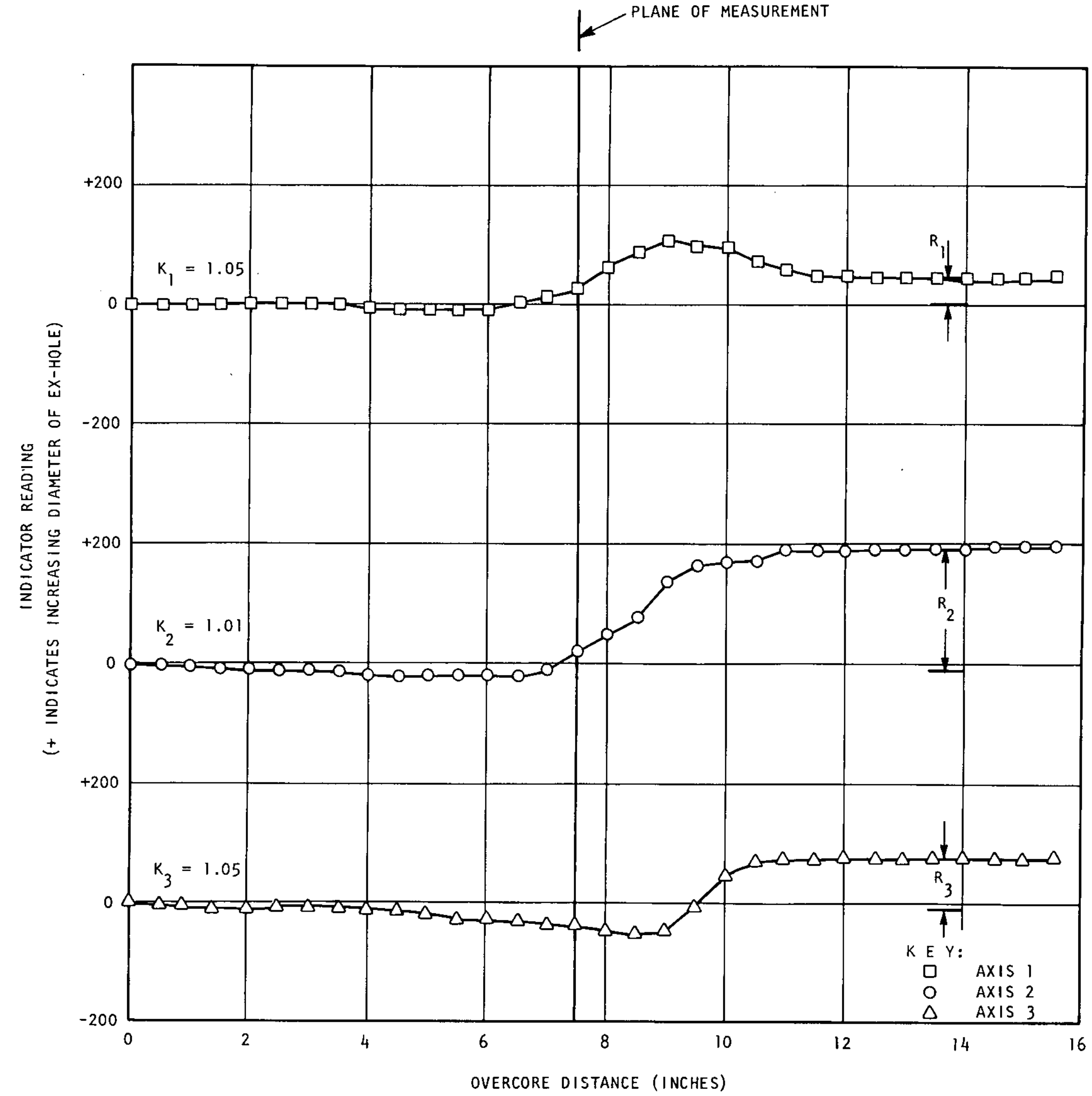
R_1 = +2 TO +14 = +12
R_2 = +3 TO +7 = +4
R_3 = +5 TO -85 = +90

NOTES:
(1) EX-HOLE OFF-CENTER TO 34 FT. 1 IN.; HOLE RE-DRILLED
(2) PLANE OF MEASUREMENT = 8 INCHES

OVERCORE TEST RESULTS

SITE 9 TEST 3

DAMES & MOORE



TEST NO. 4

DEPTH 35 FT. 5 IN.

$\mu_1 \theta$ N 67 W

R_1 = +1 TO +43 = +42

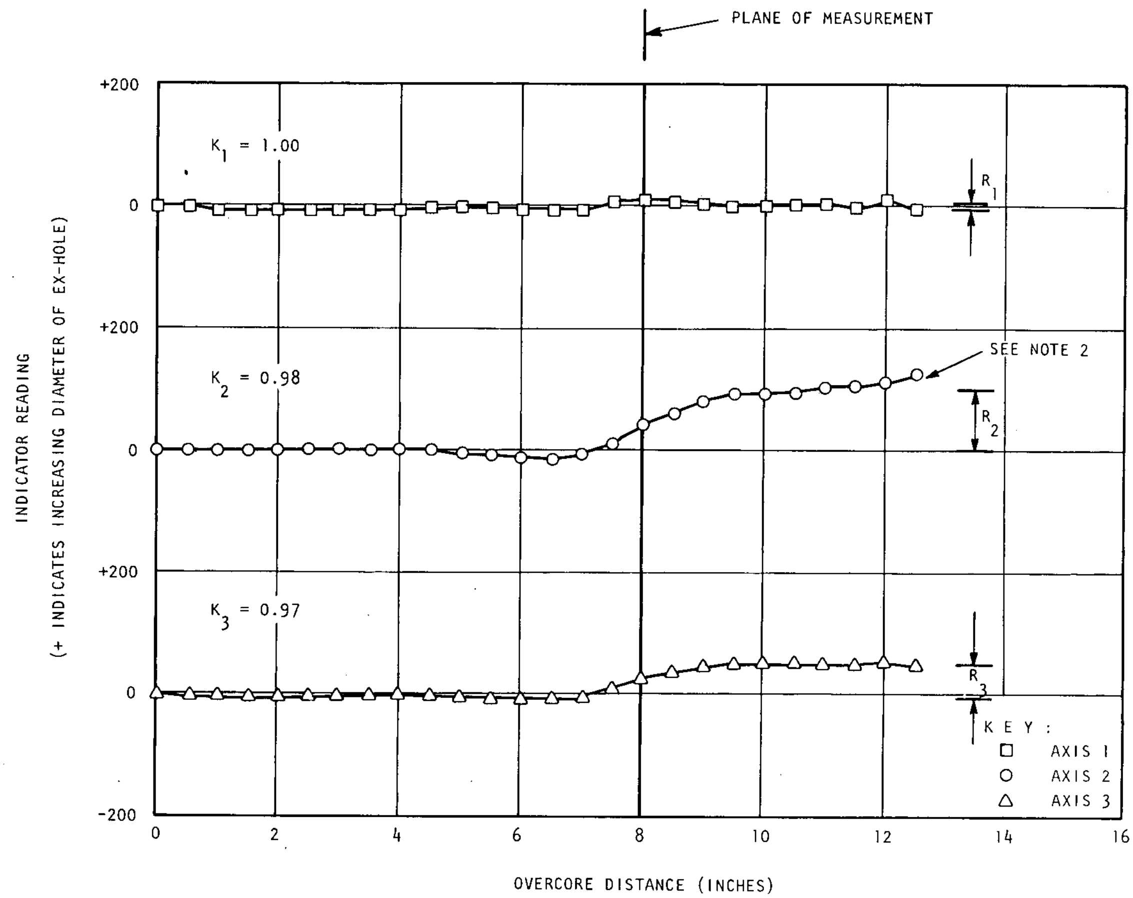
R_2 = -12 TO +197 = +209

R_3 = -4 TO +78 = +82

NOTE:
(1) PLANE OF MEASUREMENT = 7.5 INCHES

OVERCORE TEST RESULTS

SITE 9 TEST 4



TEST NO. 5

DEPTH 37 FT. 9½ IN.

$\mu_1\theta$ N 71 W

R_1 = -5 TO 0 = +5

R_2 = 0 TO +100 = +100

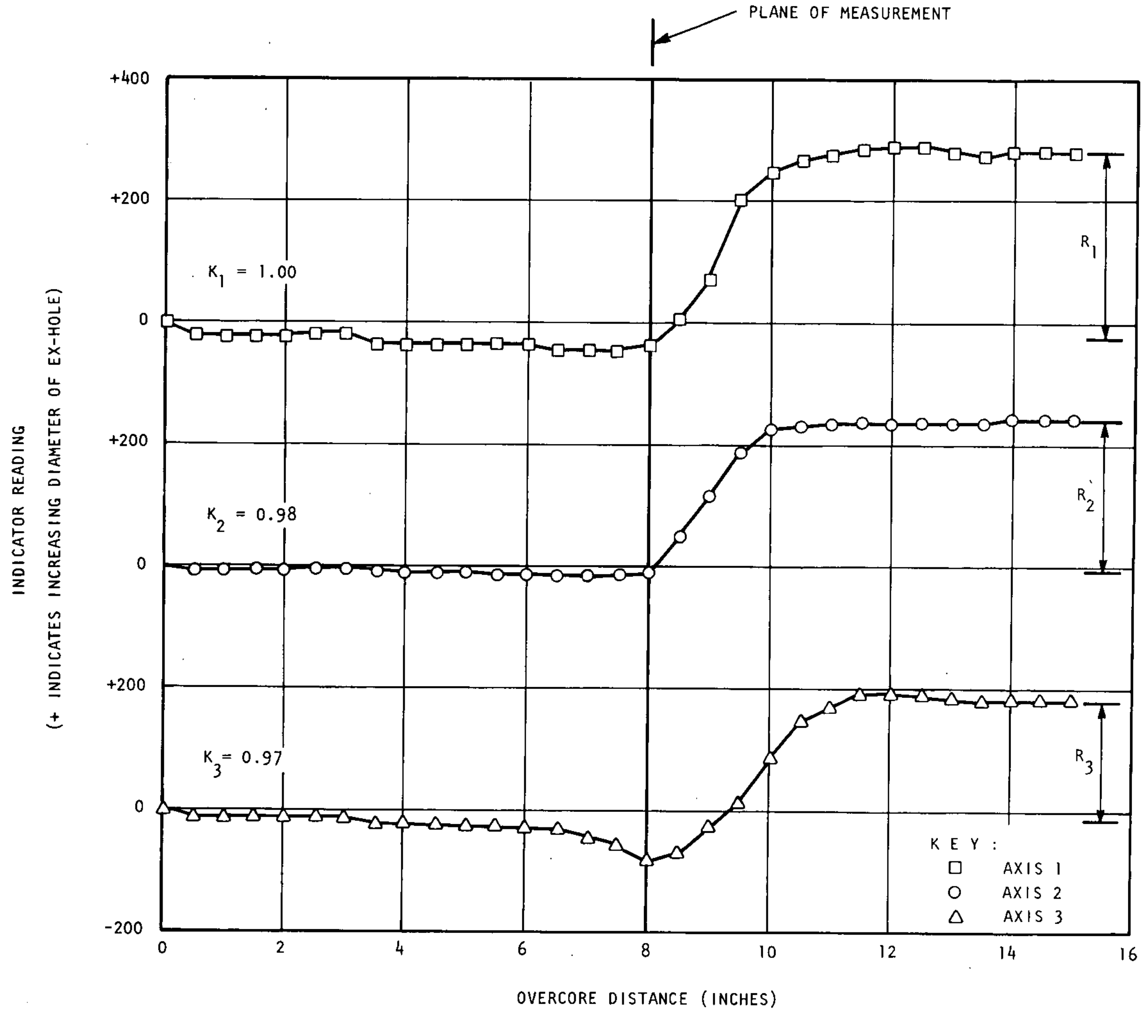
R_3 = -4 TO +50 = +54

NOTES:
(1) NEARBY, NEAR-VERTICAL FRACTURE WITH CHLORITE DISCOLORATION
(2) TEST TERMINATED AT 12.5 INCHES DUE TO EXCESSIVE NEEDLE VIBRATION
(3) PLANE OF MEASUREMENT = 8 INCHES

OVERCORE TEST RESULTS

SITE 9 TEST 5

DAMES & MOORE



TEST NO. 6

DEPTH 42 FT. 8 IN.

$\mu_1\theta$ N 70 W

R_1 = -21 TO +280 = +301

R_2 = -6 TO +241 = +246

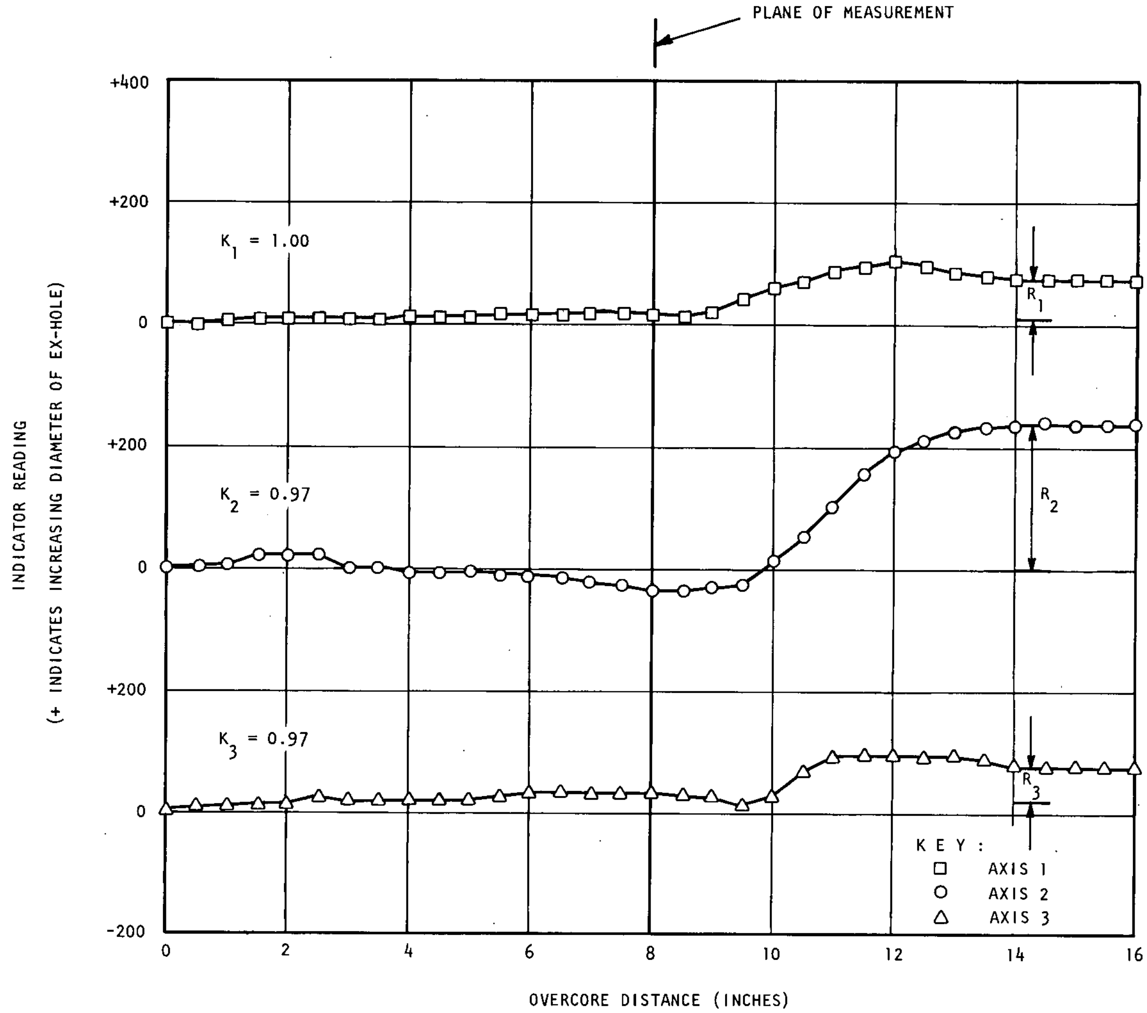
R_3 = -16 TO +180 = +196

NOTE:
(1) PLANE OF MEASUREMENT = 8 INCHES

OVERCORE TEST RESULTS

SITE 9 TEST 6

DAMES & MOORE



TEST NO. 7

DEPTH 43 FT. 10½ IN.

$\mu_1\theta$ N 74 W

NOTE:
(1) PLANE OF MEASUREMENT = 8 INCHES

R_1 = +8 TO +72 = +64

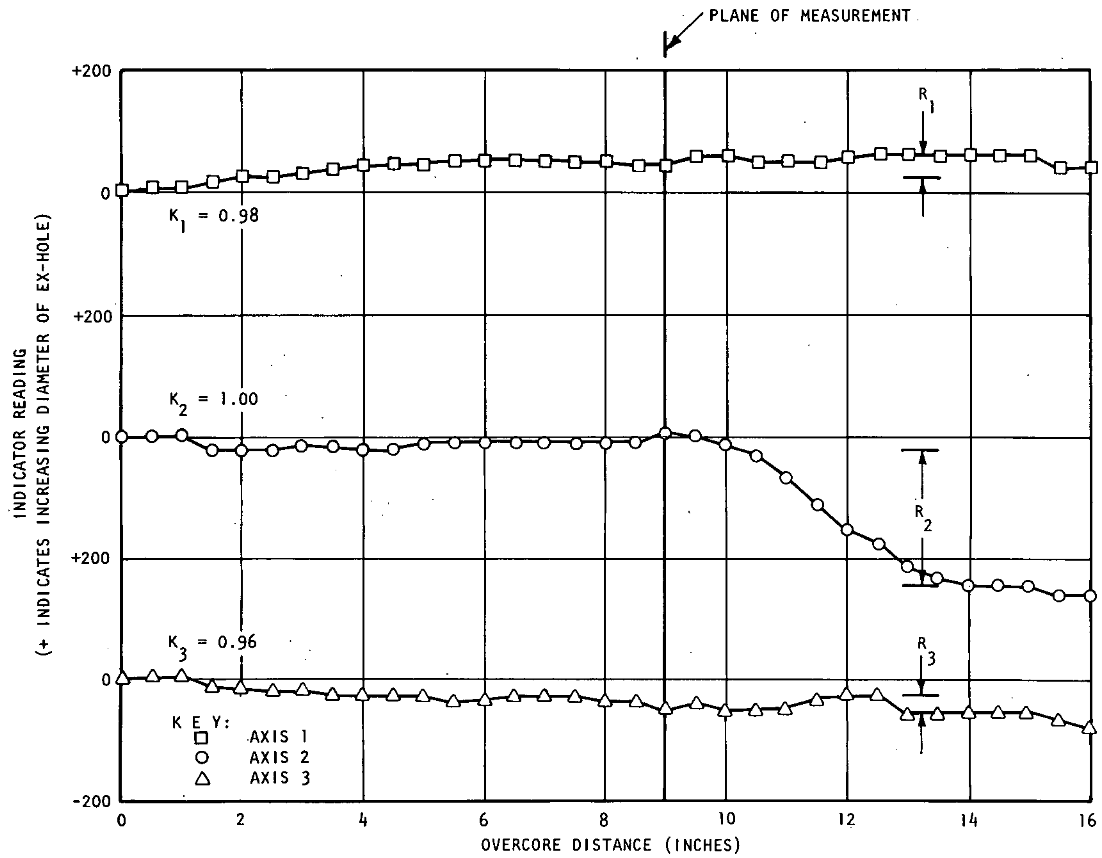
R_2 = 0 TO +238 = +238

R_3 = +20 TO +72 = +52

OVERCORE TEST RESULTS

SITE 9 TEST 7

DAMES & MOORE



TEST NO. 1

DEPTH 15 FT. 0 IN.

$\mu_1\theta$ N 42 E

R_1 = +25 TO +60 = +35

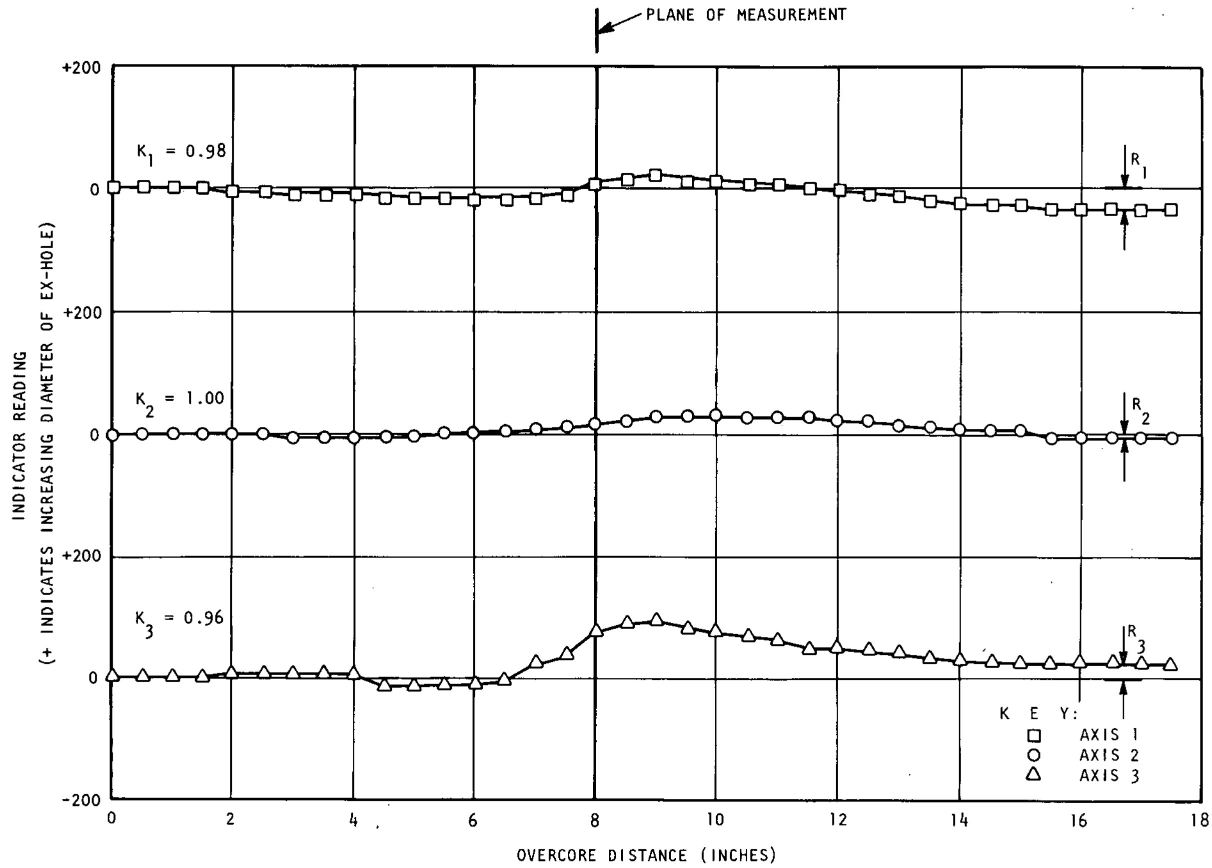
R_2 = -21 TO -243 = -222

R_3 = -25 TO -56 = -31

NOTES:
(1) CHANGE IN DRILLING CONDITIONS NOTES AT 15 INCHES OF OVERCORE RUN. APPARENTLY SMALL ROCK FRAGMENT IS IN HOLE.
(2) PLANE OF MEASUREMENT = 9 INCHES

OVERCORE TEST RESULTS

SITE 11 TEST 1



TEST NO. 2

DEPTH 16 FT. 4 IN.

$\mu_1\theta$ N 30 E

R_1 = 0 TO -37 = -37

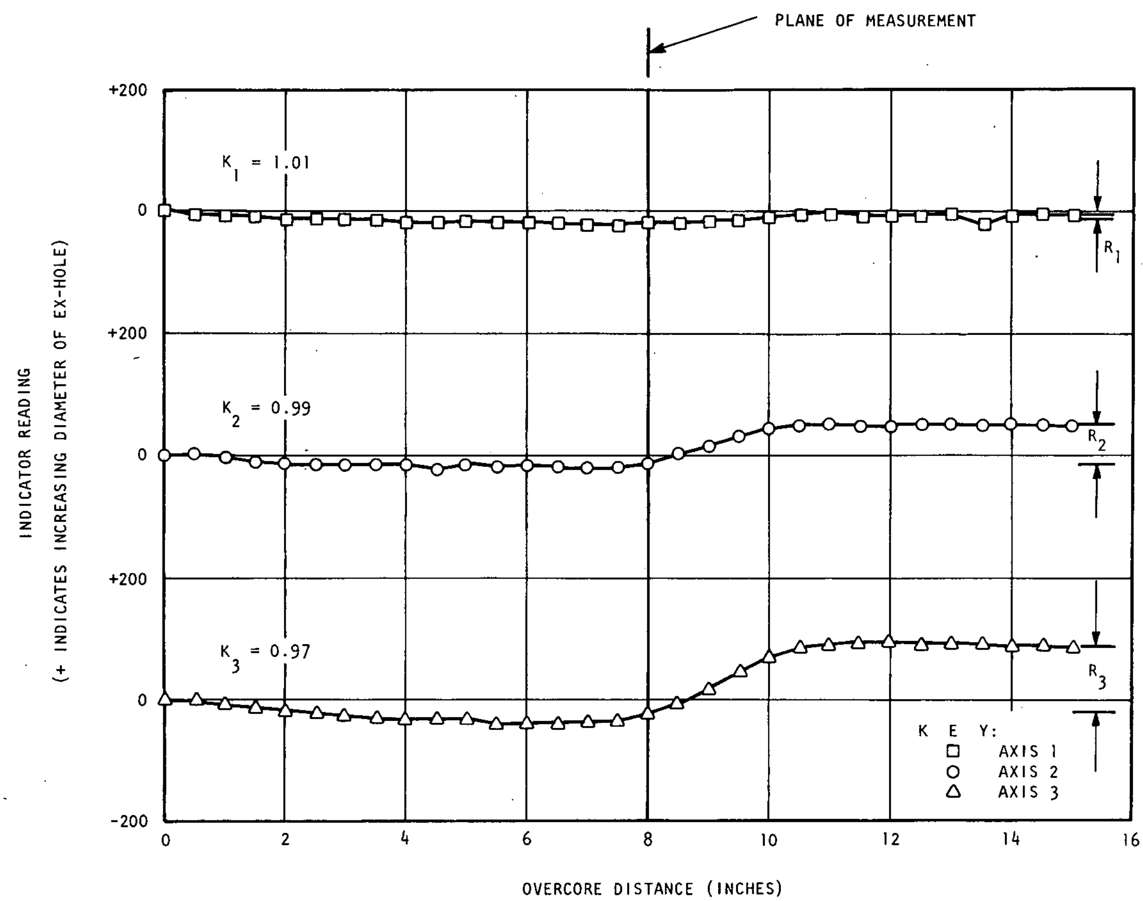
R_2 = 0 TO -6 = -6

R_3 = 0 TO +21 = +21

NOTE:
(1) PLANE OF MEASUREMENT = 8 INCHES

OVERCORE TEST RESULTS

SITE 11 TEST 2



TEST NO. 3

DEPTH 18 FT. 4 IN.

$\mu_1\theta$ N 40 E

R_1 = -14 TO -7 = +7

R_2 = -14 TO +51 = +66

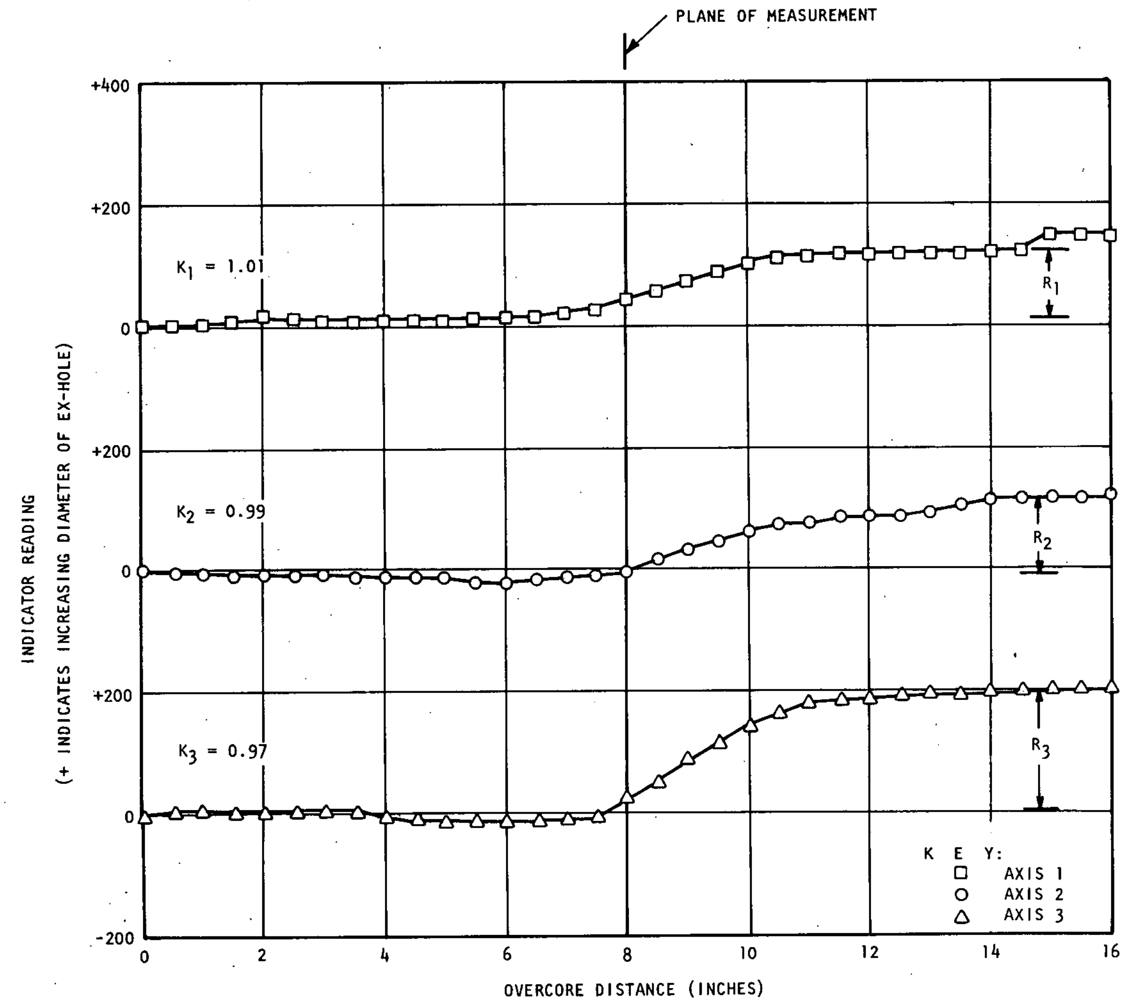
R_3 = -20 TO +86 = +106

NOTE:
(1) PLANE OF MEASUREMENT = 8 INCHES

OVERCORE TEST RESULTS

SITE 11 TEST 3

DAMES & MOORE



TEST NO. 4

DEPTH 19 FT. 7 IN.

$\mu_1\theta$ N 40 E

R_1 = +14 TO +121 = +107

R_2 = -7 TO +116 = +123

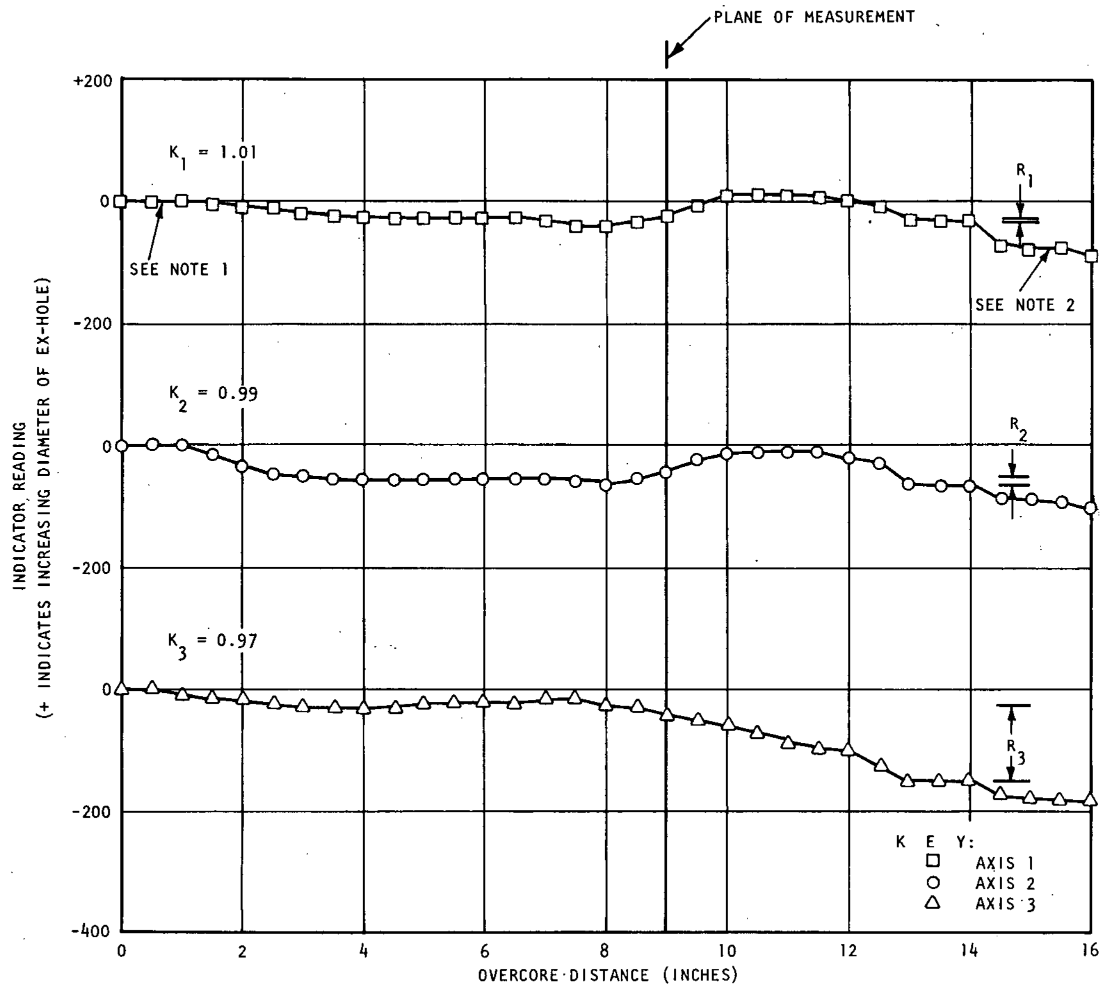
R_3 = +3 TO +200 = +197

NOTE:
(1) PLANE OF MEASUREMENT = 8 INCHES

OVERCORE TEST RESULTS

SITE 11 TEST 4

DAMES & MOORE



TEST NO. 5

DEPTH 22 FT. 5 IN.

$\mu_1\theta$ N 30 E

R_1 = -27 TO -36 = -9

R_2 = -55 TO -65 = -10

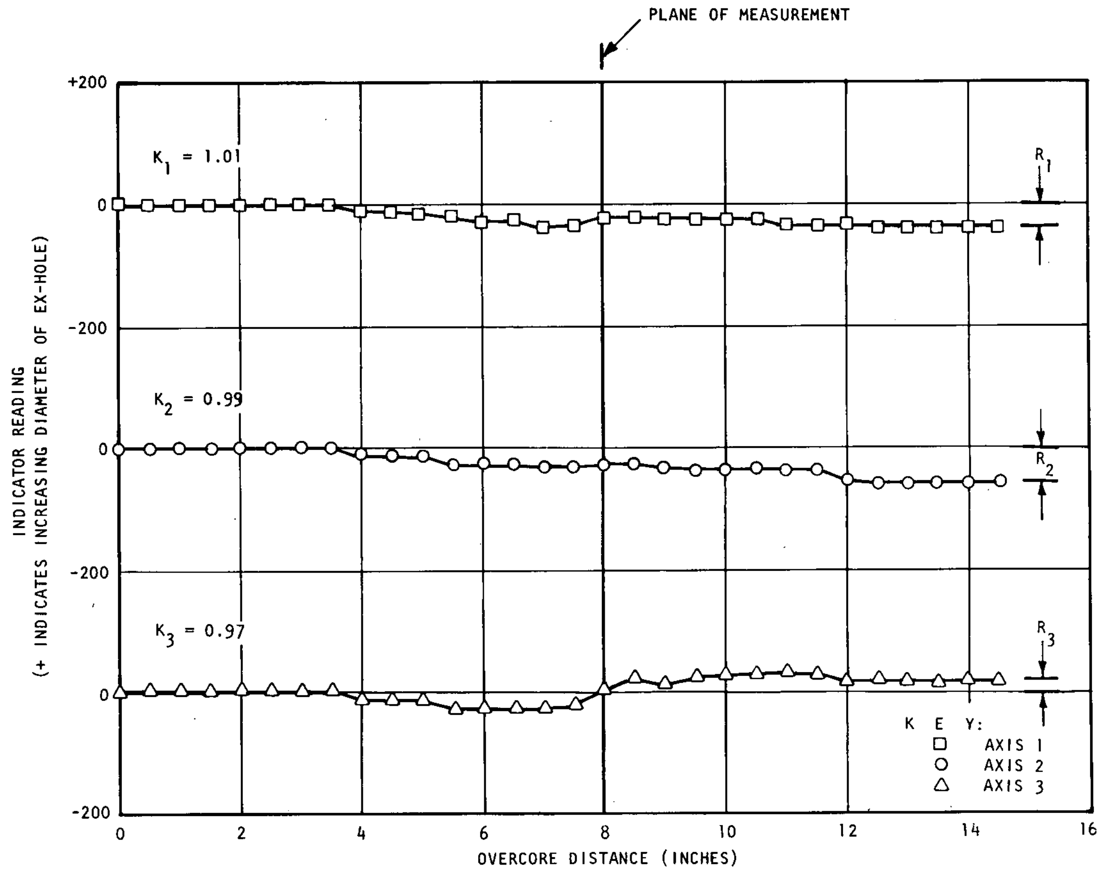
R_3 = -28 TO -153 = -125

NOTES:
(1) INITIAL INCH OF OVERCORE RUN DRILLED DEBRIS IN 6-INCH BIT GROOVE
(2) READINGS JUMPED RADICALLY AT 14.5 INCHES OF OVERCORE RUN. SMALL ROCK FRAGMENT RECOVERED ON TOP OF CORE; THIS PIECE PROBABLY STRUCK CORE AT 14.5 INCHES.
(3) PLANE OF MEASUREMENT = 9 INCHES

OVERCORE TEST RESULTS

SITE 11 TEST 5

DAMES & MOORE



TEST NO. 6

DEPTH 28 FT. 7 IN.

$\mu_1\theta$ N 37 E

R_1 = 0 TO -39 = -39

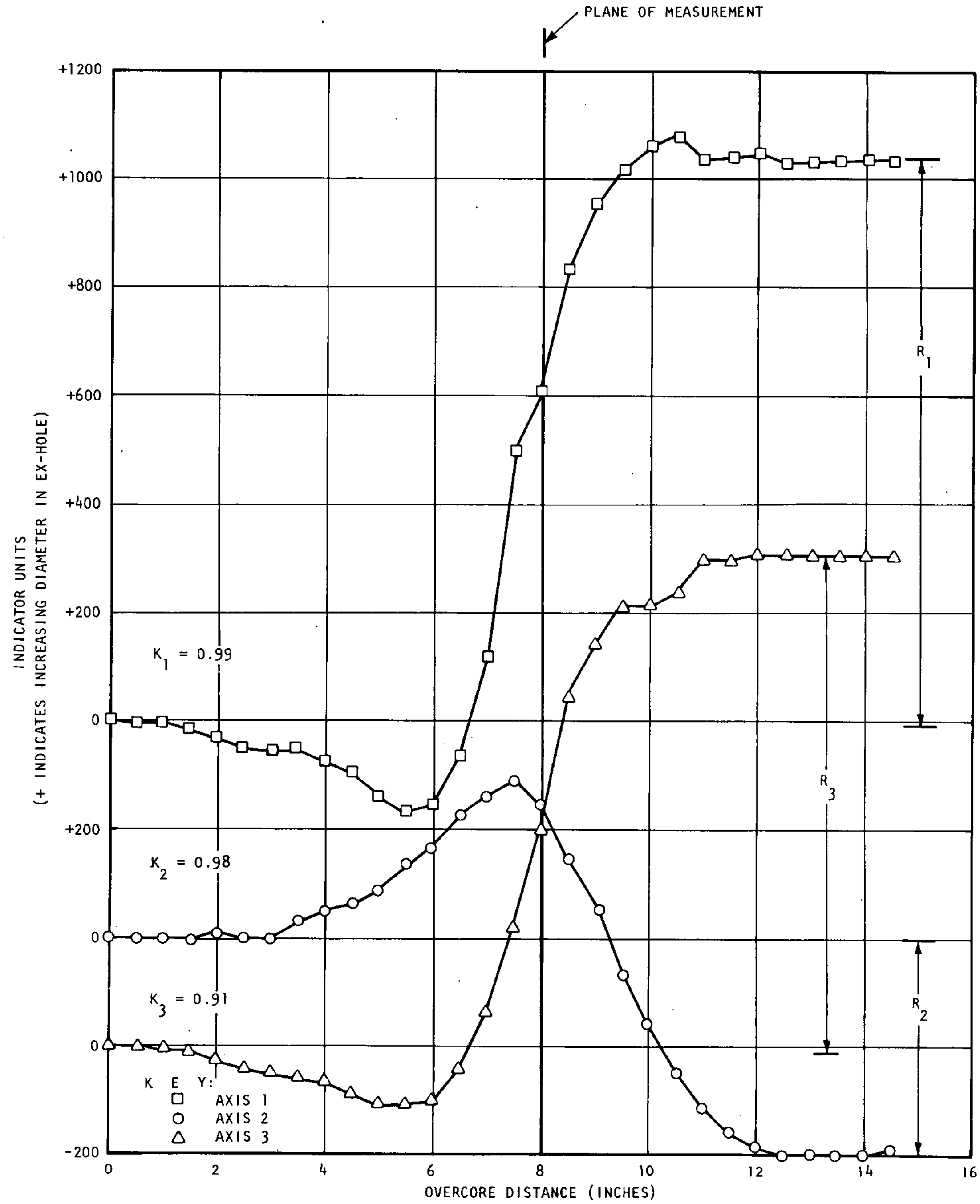
R_2 = 0 TO -59 = -59

R_3 = +3 TO +19 = +16

NOTE:
(1) PLANE OF MEASUREMENT = 8 INCHES

OVERCORE TEST RESULTS

SITE 11 TEST 6



TEST NO. 7

DEPTH 34 FT. 9 IN.

$\mu_1\theta$ N 35 E

NOTE:
(1) PLANE OF MEASUREMENT = 8 INCHES

R_1 = -7 TO +1034 = +1041

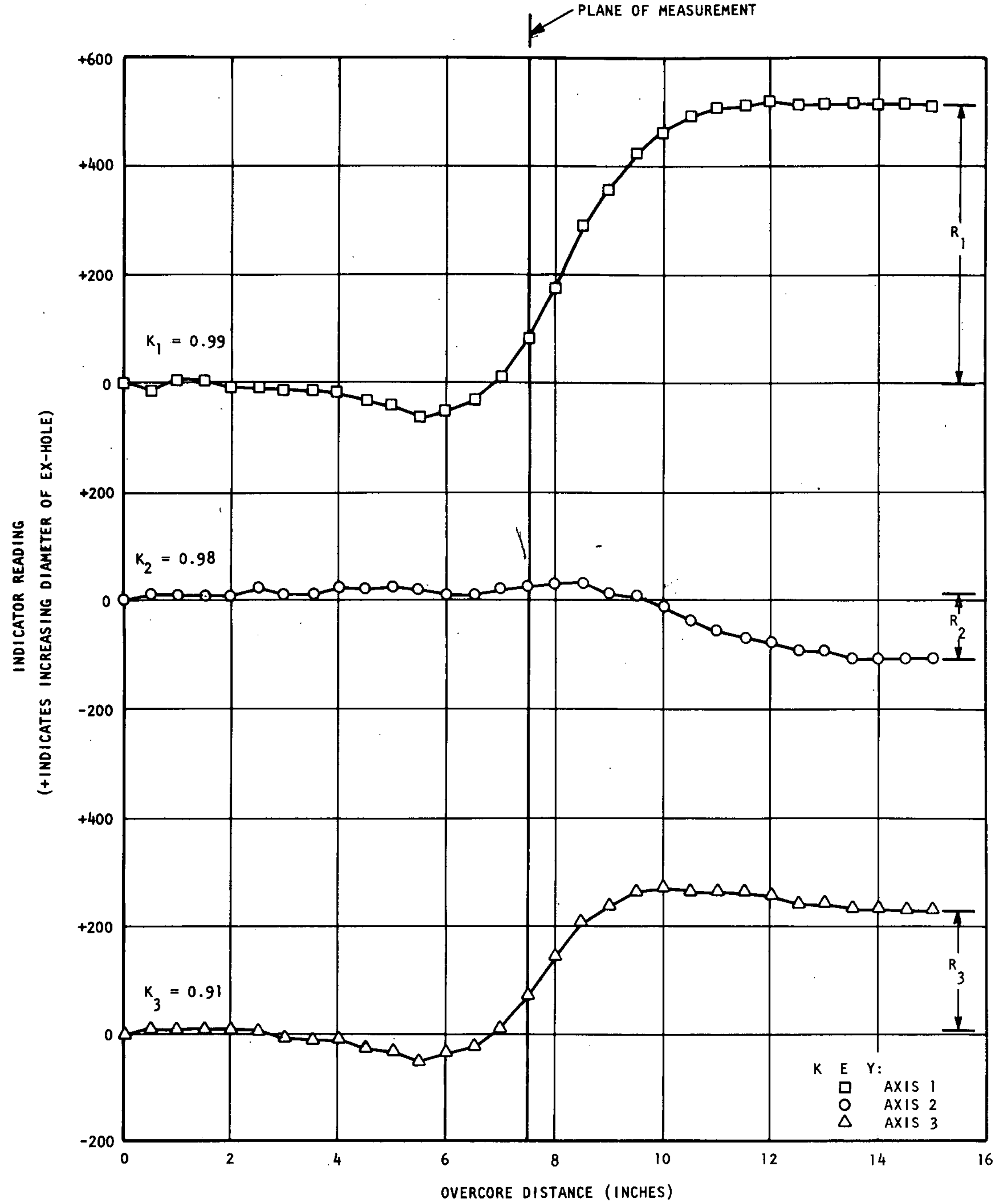
R_2 = 0 TO -403 = -403

R_3 = -10 TO +904 = +914

OVERCORE TEST RESULTS

SITE 11 TEST 7

DAMES & MOORE



TEST NO. 8

DEPTH 36 FT. 0 IN.

$\mu_1\theta$ N 38 E

R_1 = 0 TO +514 = +514

R_2 = +8 TO -103 = -111

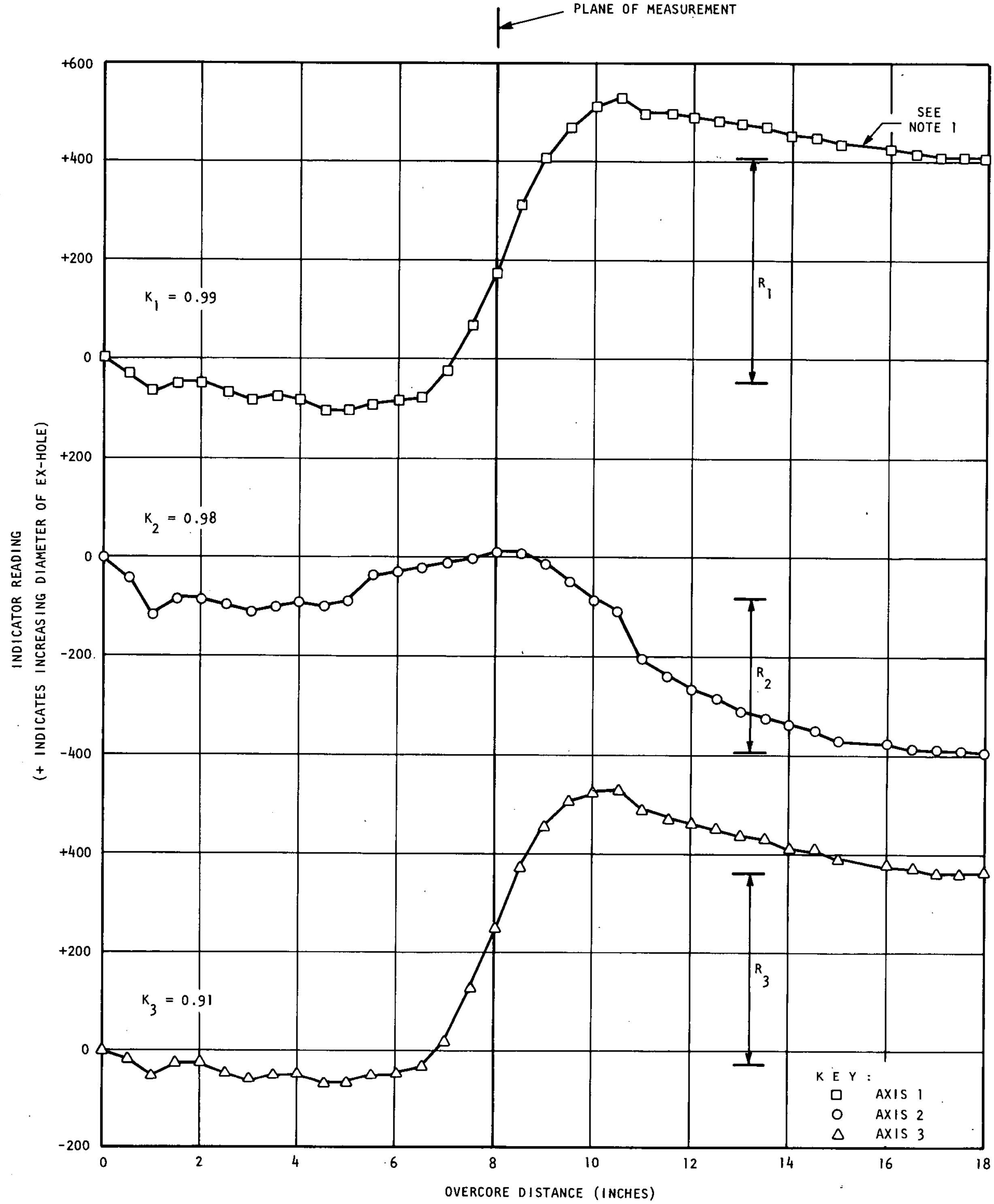
R_3 = +10 TO +230 = +220

NOTE:
(1) PLANE OF MEASUREMENT = 7.5 INCHES

OVERCORE TEST RESULTS

SITE 11 TEST 8

DAMES & MOORE



TEST NO. 9

DEPTH 37 FT. 2½ IN.

$\mu_1\theta$ N 38 E

NOTES:
(1) NO READING TAKEN AT 15.5 INCHES OF OVERCORE RUN.
(2) PLANE OF MEASUREMENT = 8 INCHES

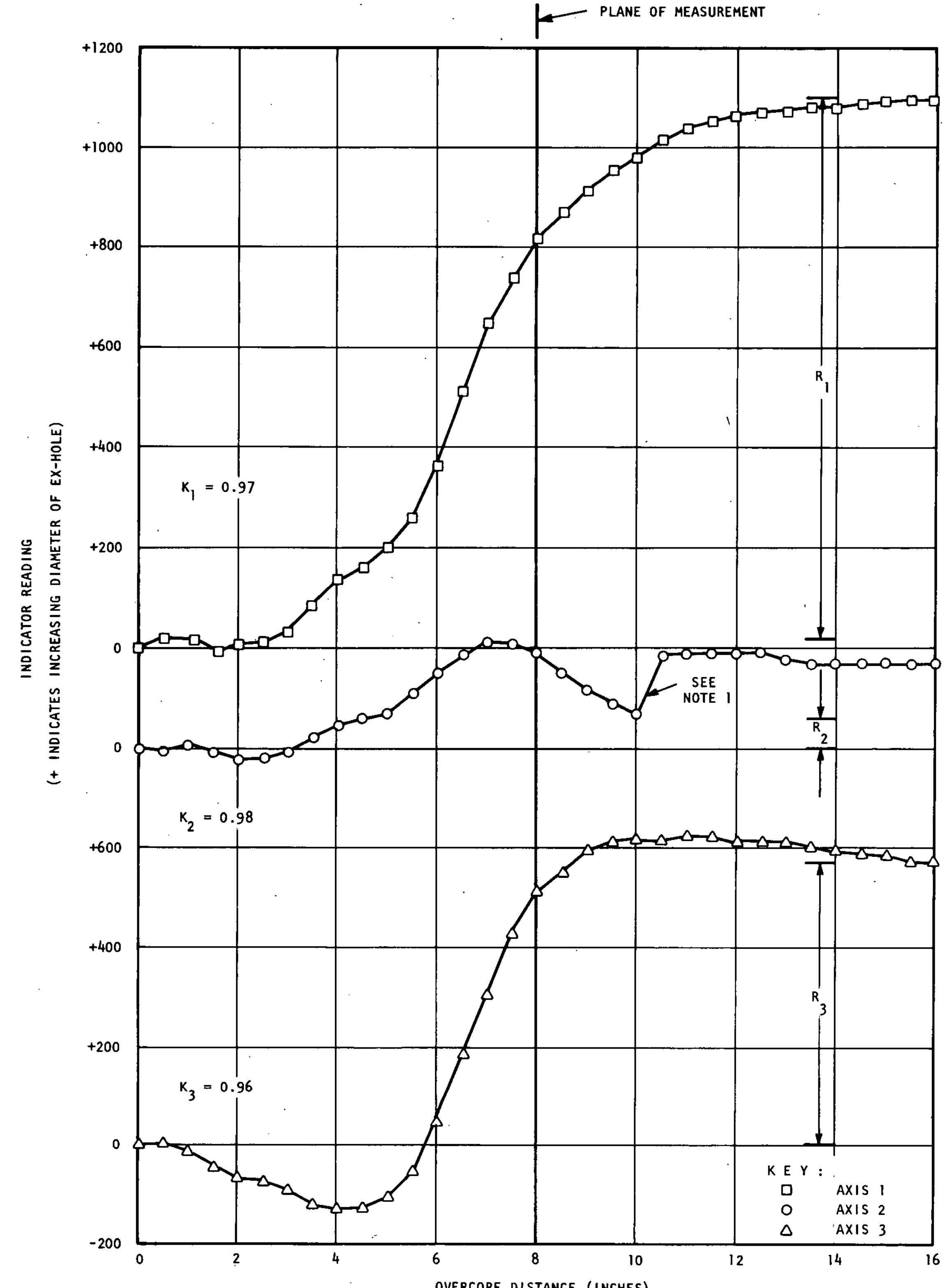
R_1 = -52 TO +503 = +455

R_2 = -84 TO -390 = -306

R_3 = -25 TO +360 = +385

OVERCORE TEST RESULTS

SITE 11 TEST 9



TEST NO. 10

DEPTH 38 FT. 8½ IN.

$\mu_1\theta$ N 40 E

NOTES:

(1) JUMP IN READING PROBABLY DUE TO WASH OUT OF ROCK FRAGMENT BETWEEN BUTTON AND CORE WALL. NOTE STABILITY AFTER 10.5 INCHES OF OVERCORE RUN.

(2) PLANE OF MEASUREMENT = 8 INCHES

R_1 = +15 TO +1097 = +1082

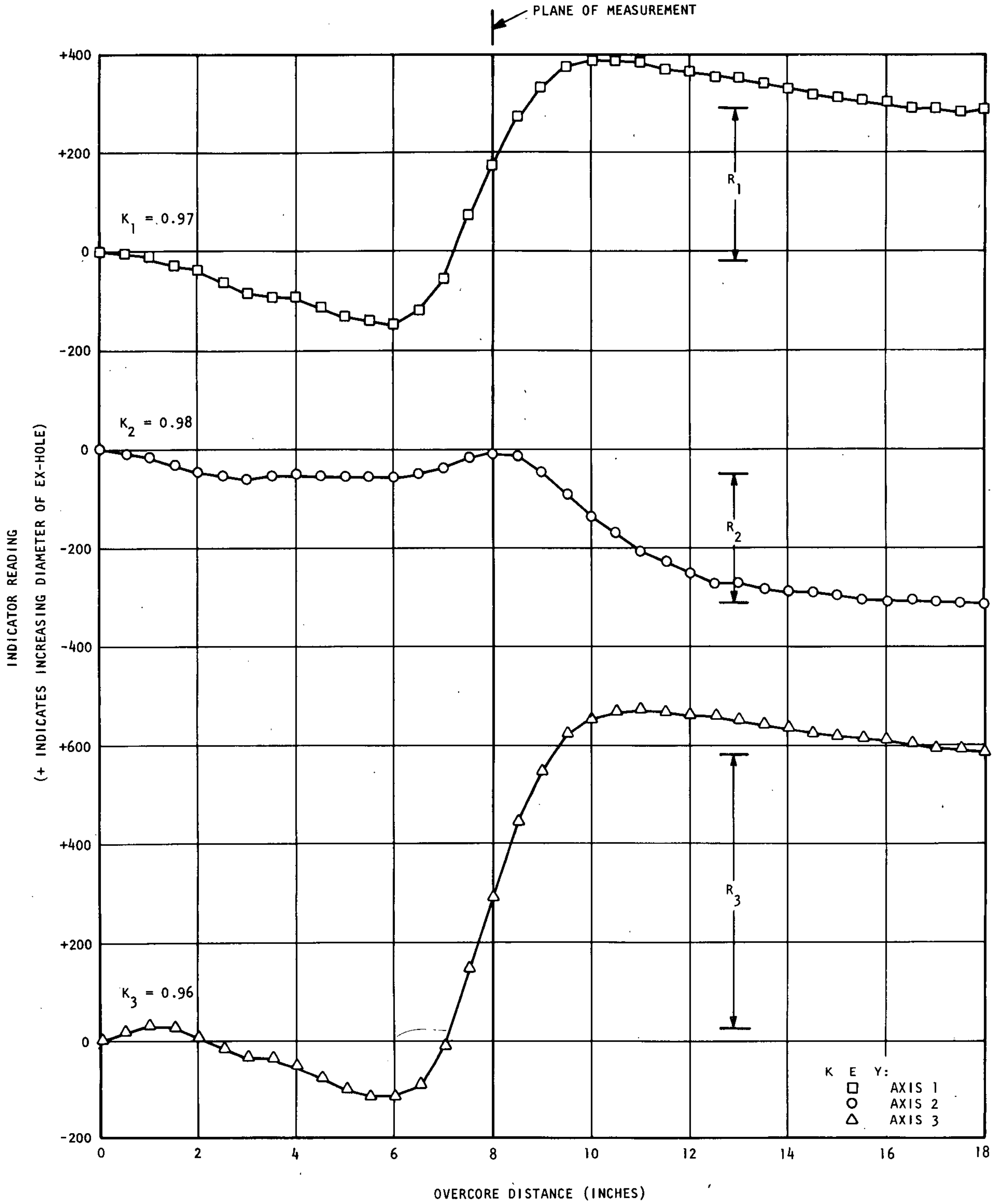
R_2 = 0 TO +62 = +62

R_3 = 0 TO +572 = +572

OVERCORE TEST RESULTS

SITE 11 TEST 10

DAMES & MOORE



TEST NO. 11

DEPTH 40 FT. 1 IN.

$\mu_1\theta$ N 40 E

R_1 = -20 TO +287 = +307

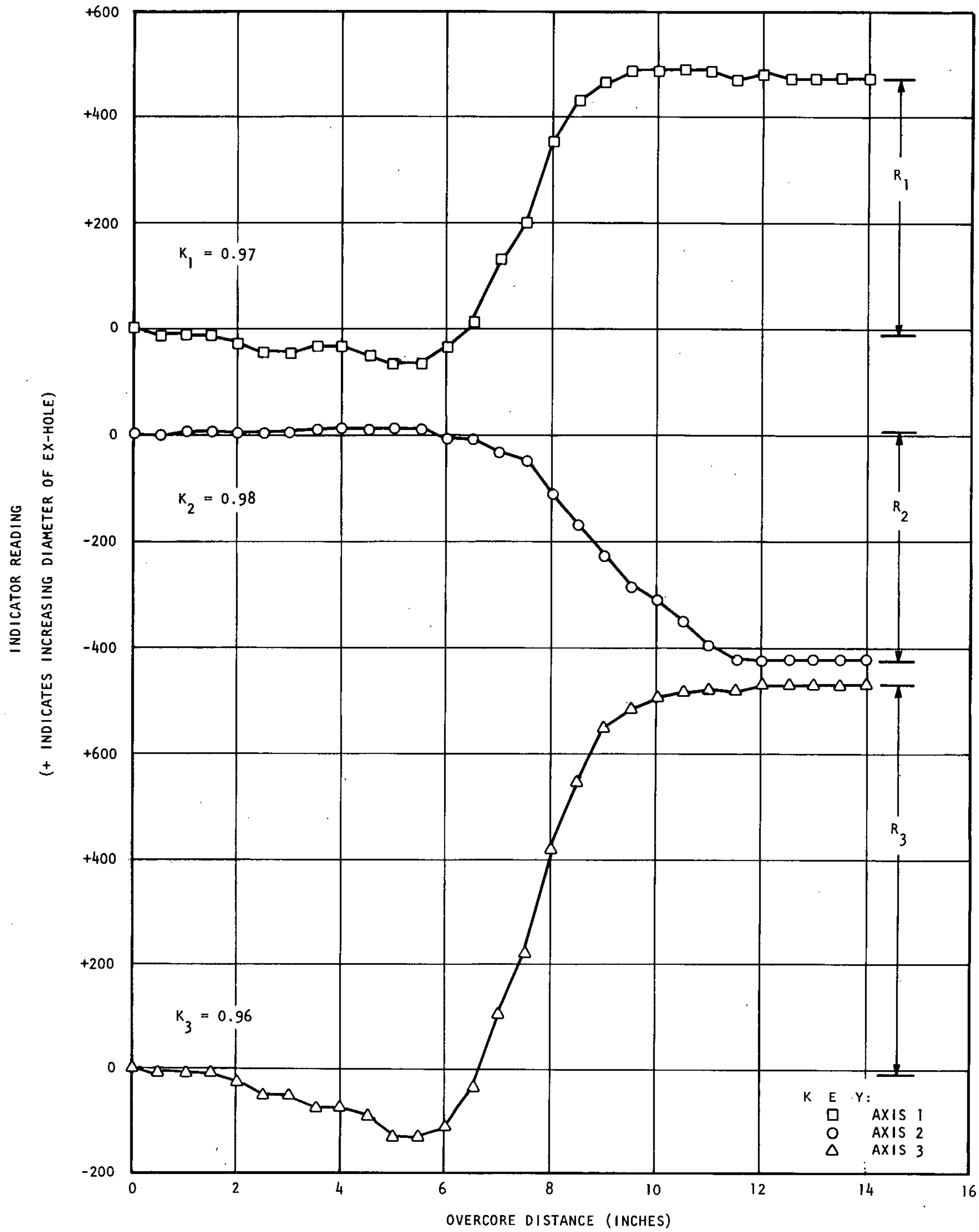
R_2 = -51 TO -310 = -259

R_3 = +25 TO +581 = +556

NOTE:
(1) PLANE OF MEASUREMENT = 8 INCHES

OVERCORE TEST RESULTS

SITE 11 TEST 11



TEST NO. 12

DEPTH 41 FT. 7 IN.

$\mu_1\theta$ N 36 E

R_1 = -12 TO +476 = +488

R_2 = +7 TO -423 = -430

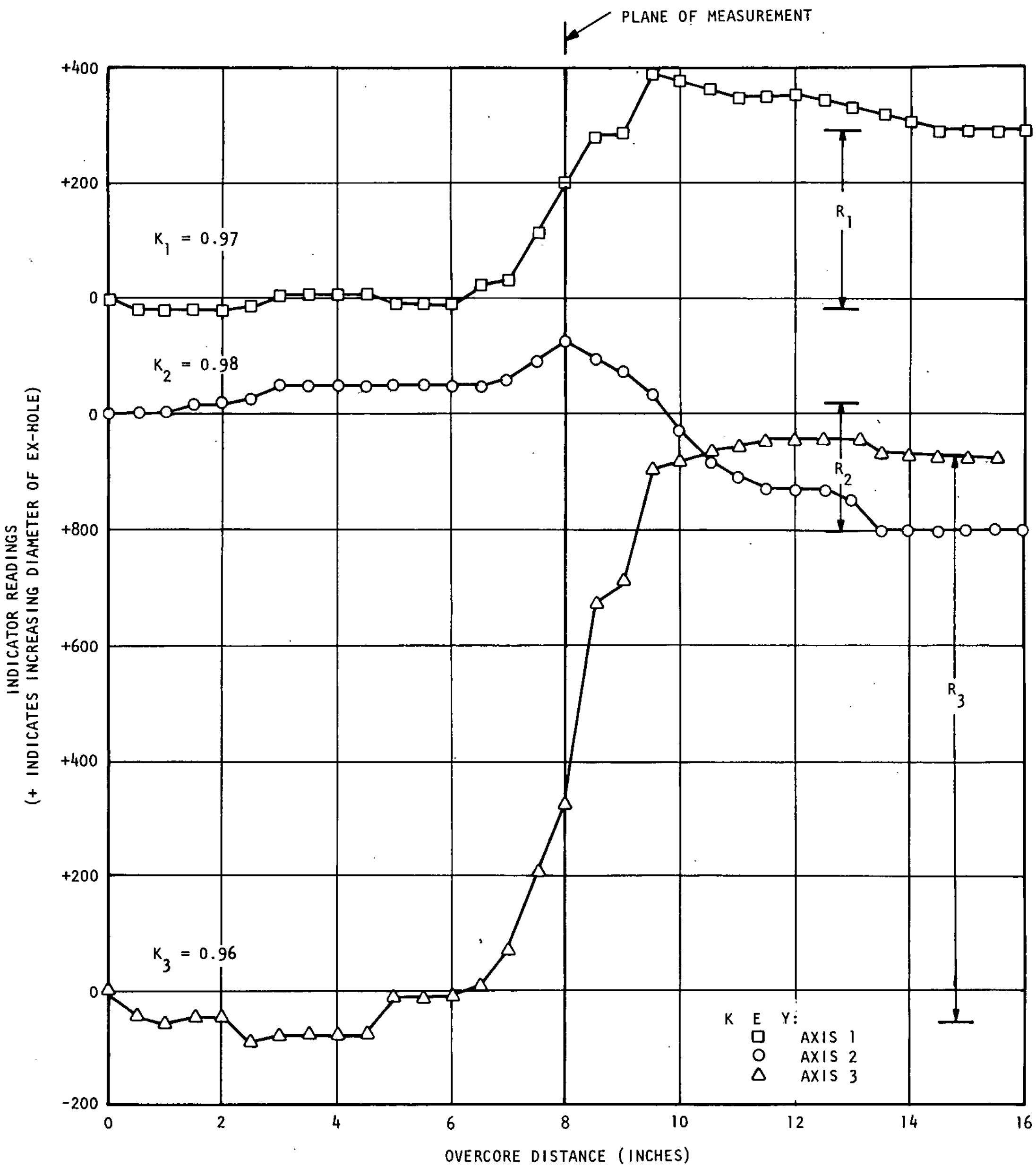
R_3 = -9 TO +731 = +740

NOTE:
(1) PLANE OF MEASUREMENT = 7 INCHES

OVERCORE TEST RESULTS

SITE 11 TEST 12

DAMES & MOORE



TEST NO. 13

DEPTH 42 FT. 11 IN.

$\mu_1\theta$ N 36 E

R_1 = -20 TO +289 = +309

R_2 = +18 TO -203 = -221

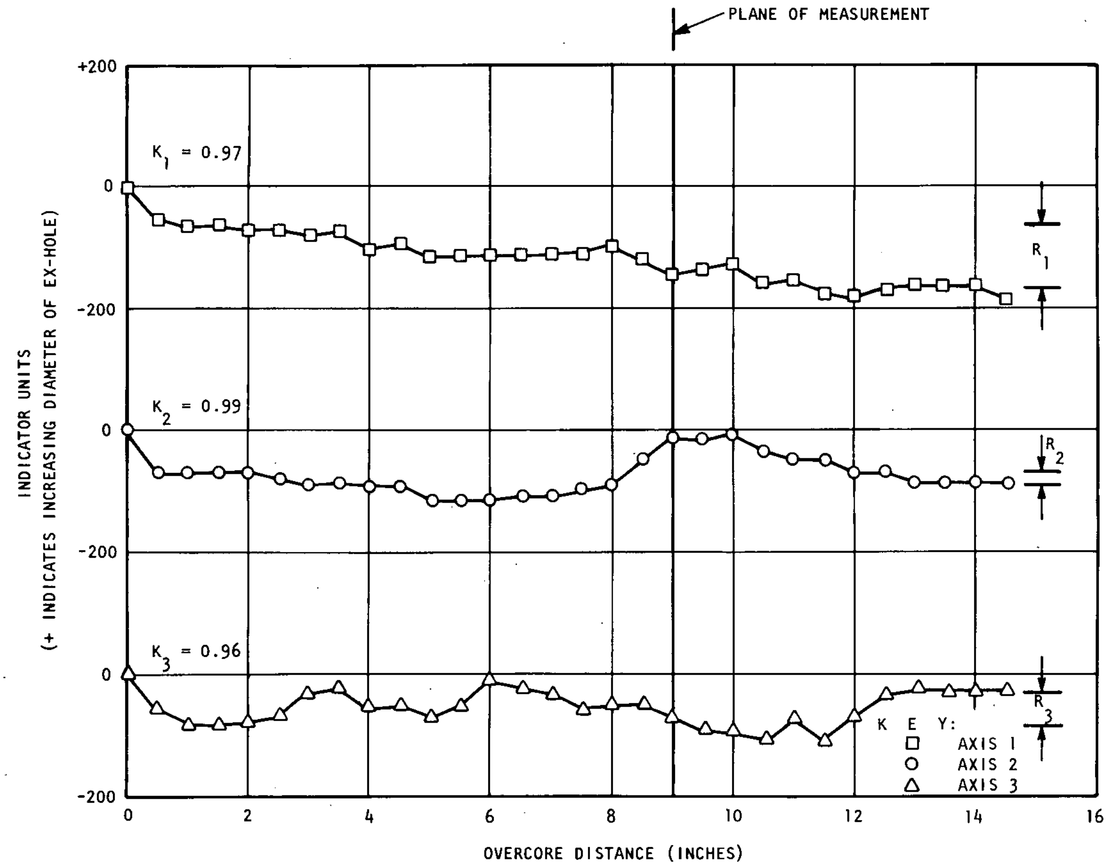
R_3 = -46 TO +922 = +968

NOTE:
(1) PLANE OF MEASUREMENT = 8 INCHES

OVERCORE TEST RESULTS

SITE 11 TEST 13

DAMES & MOORE



TEST NO. 1

DEPTH 42 FT. 4½ IN.

$\mu_1\theta$ N 45 W

R_1 = -63 TO -164 = -101

R_2 = -70 TO -85 = -15

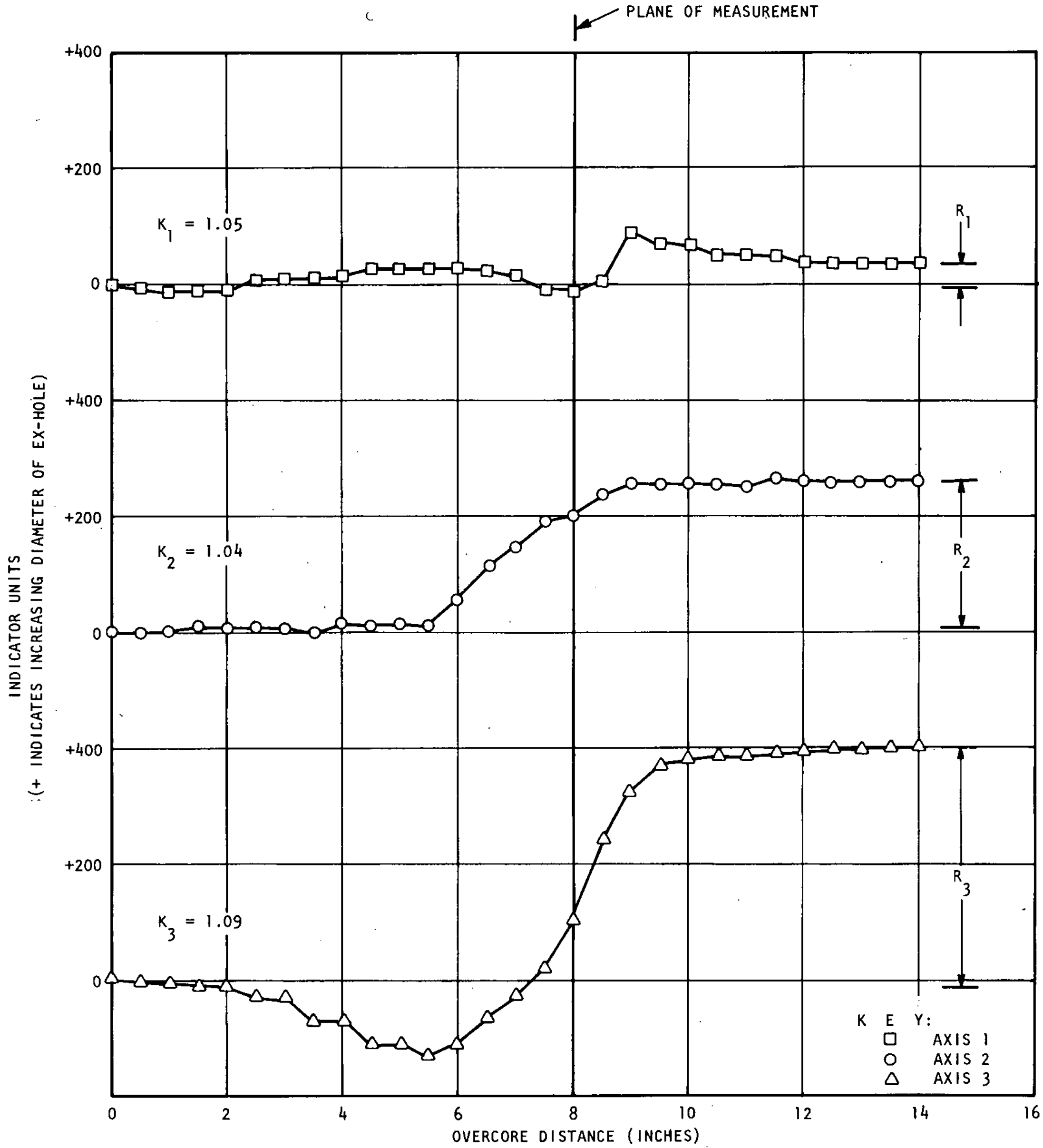
R_3 = -82 TO -28 = +54

NOTES:
(1) NEAR FRACTURE, INCLINED ______ @ 42 FT. IN; HEALED WITH MINOR CHLORITE DISCOLORATION
(2) PLANE OF MEASUREMENT = 9 INCHES

OVERCORE TEST RESULTS

SITE 14 TEST 1

DAMES & MOORE



TEST NO. 2

DEPTH 44 FT. 2 IN.

$\mu_1\theta$ N 58 W

R_1 = -9 TO +35 = +44

R_2 = +9 TO +259 = +250

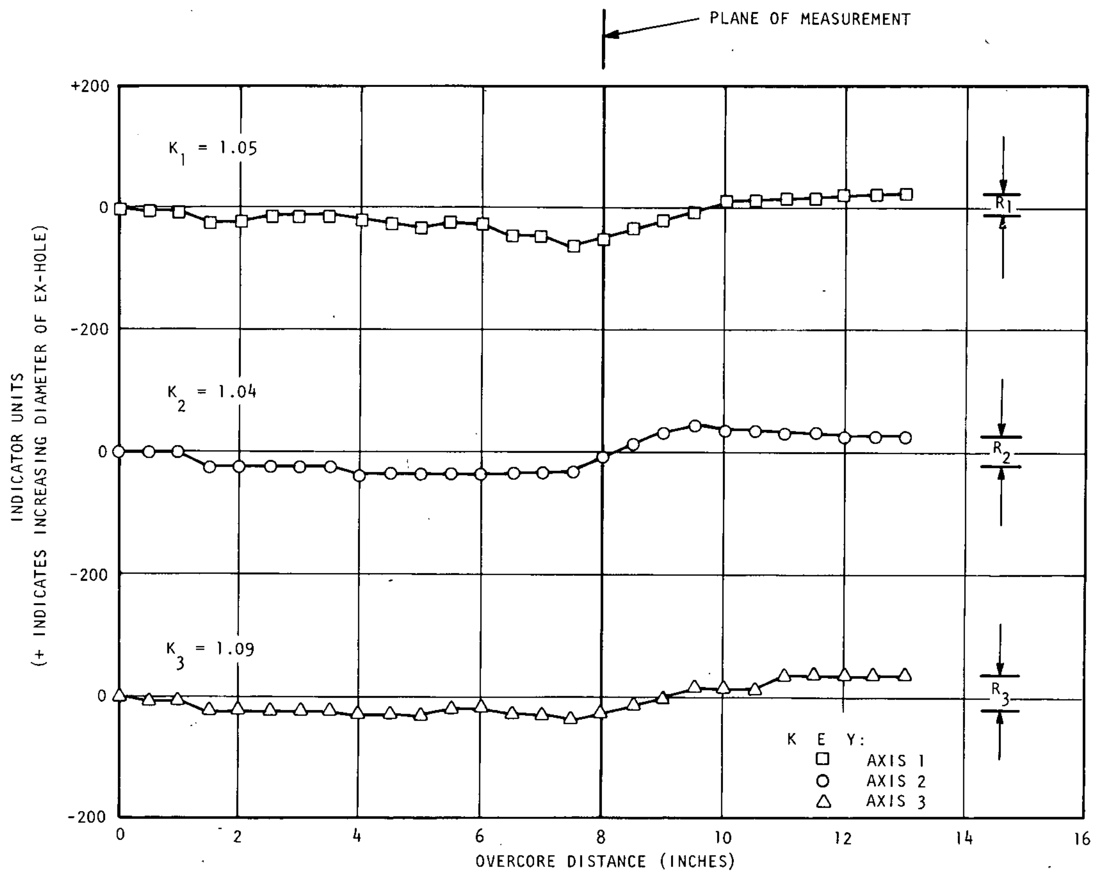
R_3 = -16 TO +400 = +416

NOTE:
(1) PLANE OF MEASUREMENT = 8 INCHES

OVERCORE TEST RESULTS

SITE 14 TEST 2

DAMES & MOORE



TEST NO. 3

DEPTH 49 FT. 2½ IN.

$\mu_1\theta$ N 58 W

R_1 = -11 TO +22 = +33

R_2 = -21 TO +26 = +47

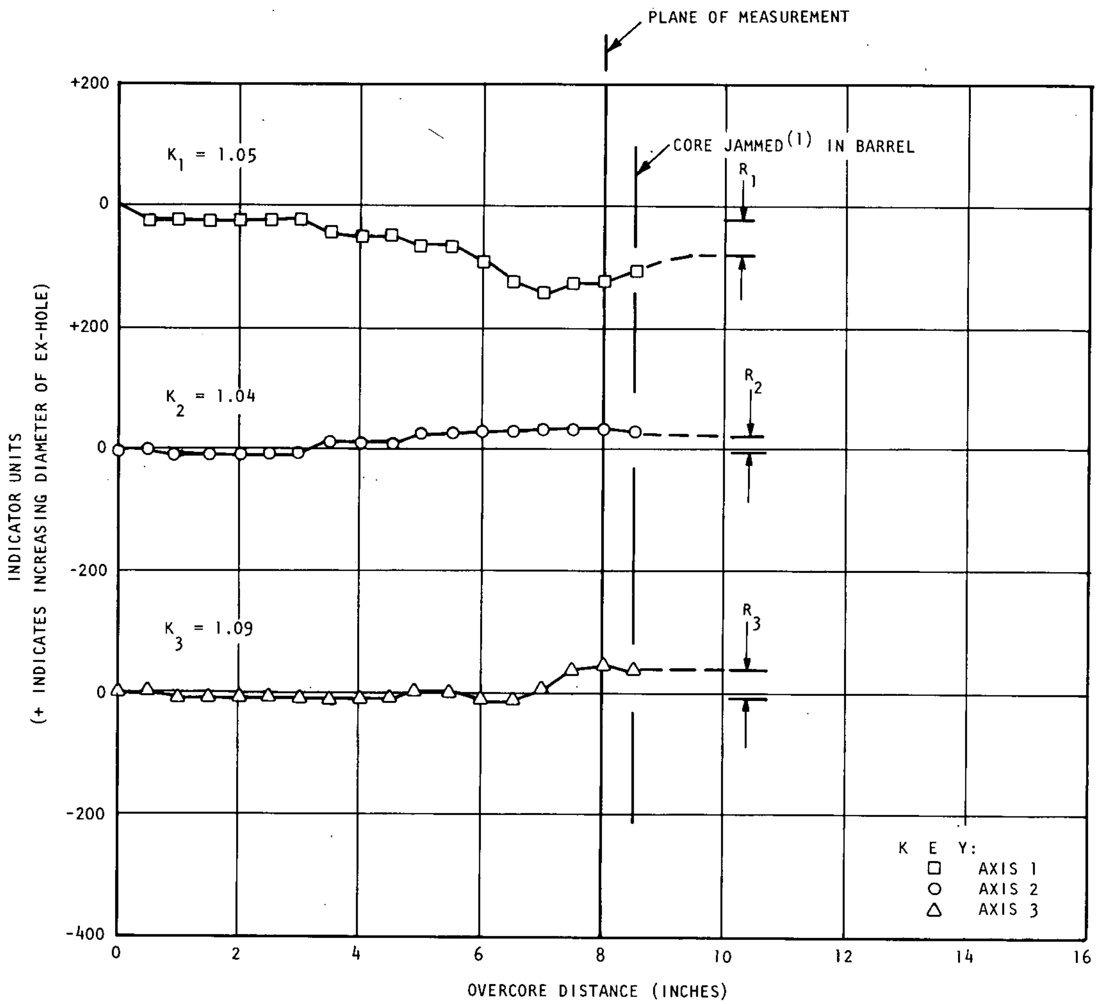
R_3 = -21 TO +38 = +59

NOTE:
(1) PLANE OF MEASUREMENT = 8 INCHES

OVERCORE TEST RESULTS

SITE 14 TEST 3

DAMES & MOORE



TEST NO. 4

DEPTH 51 FT. 6½ IN.

$\mu_1\theta$ N 58 W

R_1 = -25 TO -80 = -55

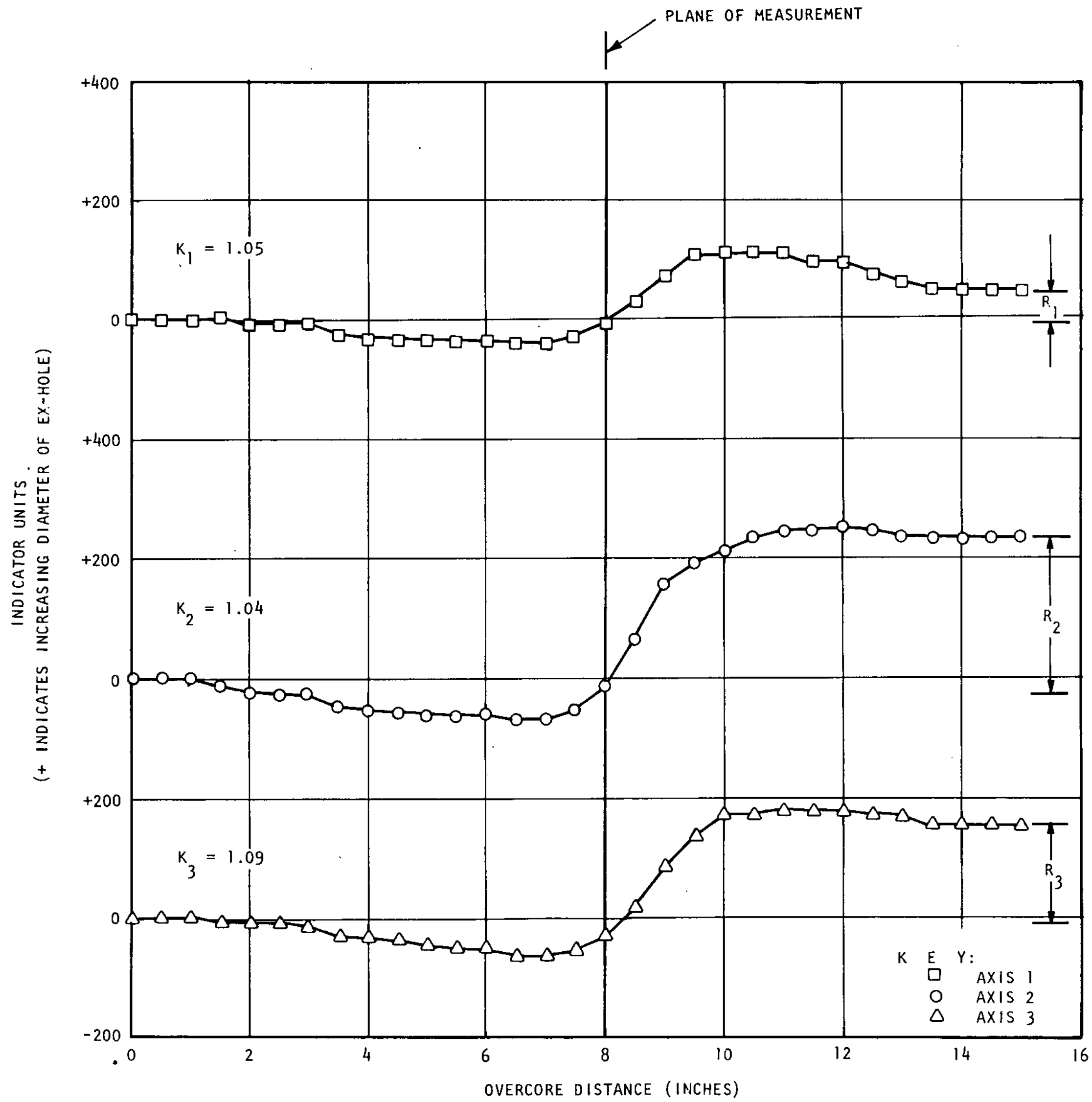
R_2 = -5 TO +20 = +25

R_3 = -4 TO +39 = +44

NOTES:
(1) TEST STOPPED AT 8½ INCHES DUE TO CORE JAMMING IN OVERCORE BARREL. AFTER STALL-OUT OF RIG.
(2) PLANE OF MEASUREMENT = 8 INCHES

OVERCORE TEST RESULTS

SITE 14 TEST 4



TEST NO. 5

DEPTH 55 FT. 8 IN.

$\mu_1 \theta$ N 58 W

R_1 = -6 TO +53 = +59

R_2 = -22 TO +235 = +257

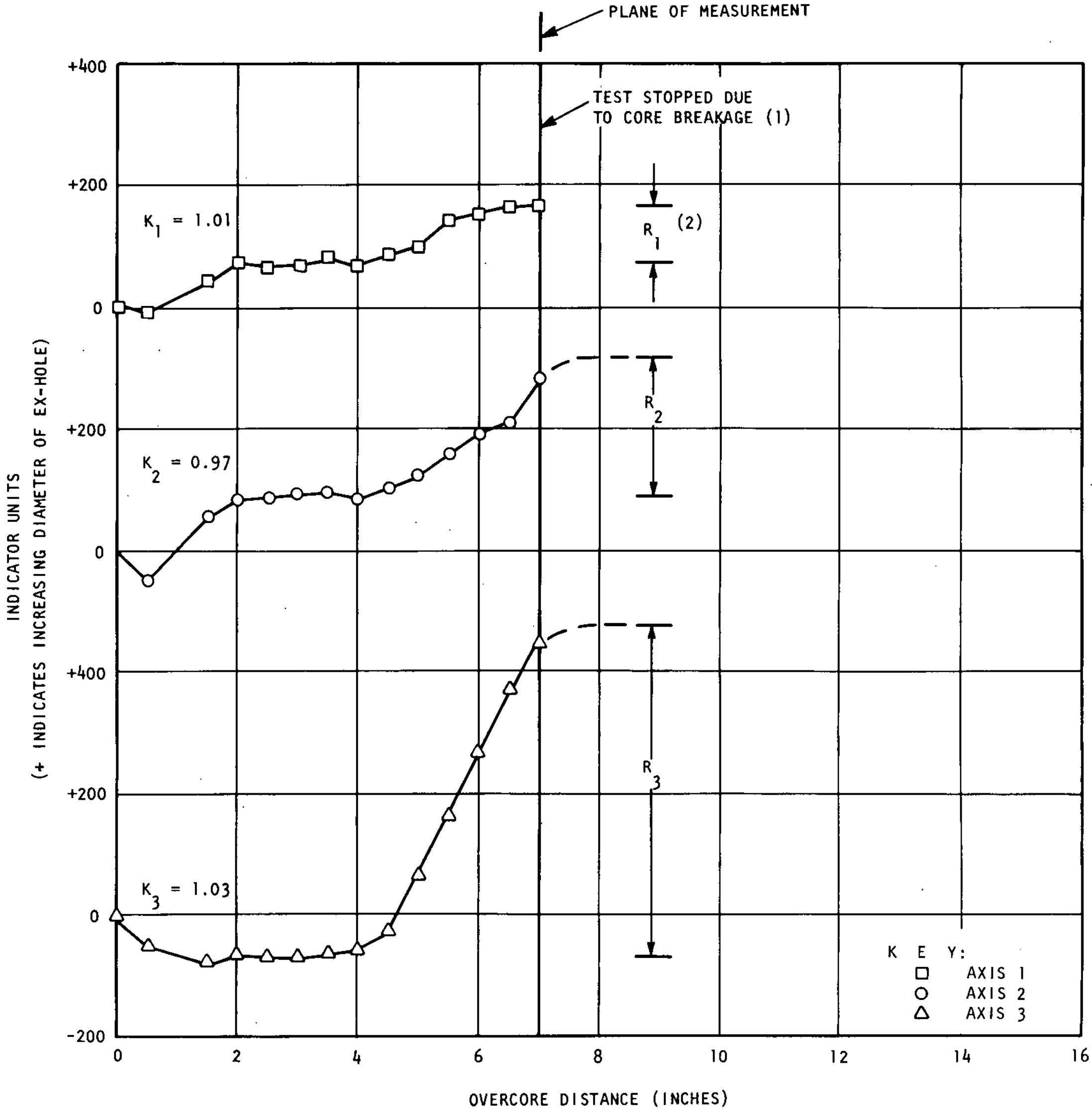
R_3 = -4 TO +159 = +163

NOTE:
(1) PLANE OF MEASUREMENT = 8 INCHES

OVERCORE TEST RESULTS

SITE 14 TEST 5

DAMES & MOORE



TEST NO. 6

DEPTH 57 FT. 6 IN.

$\mu_1\theta$ N 58 W

R_1 = +68 TO +165 = +97

R_2 = +85 TO +320 = +235

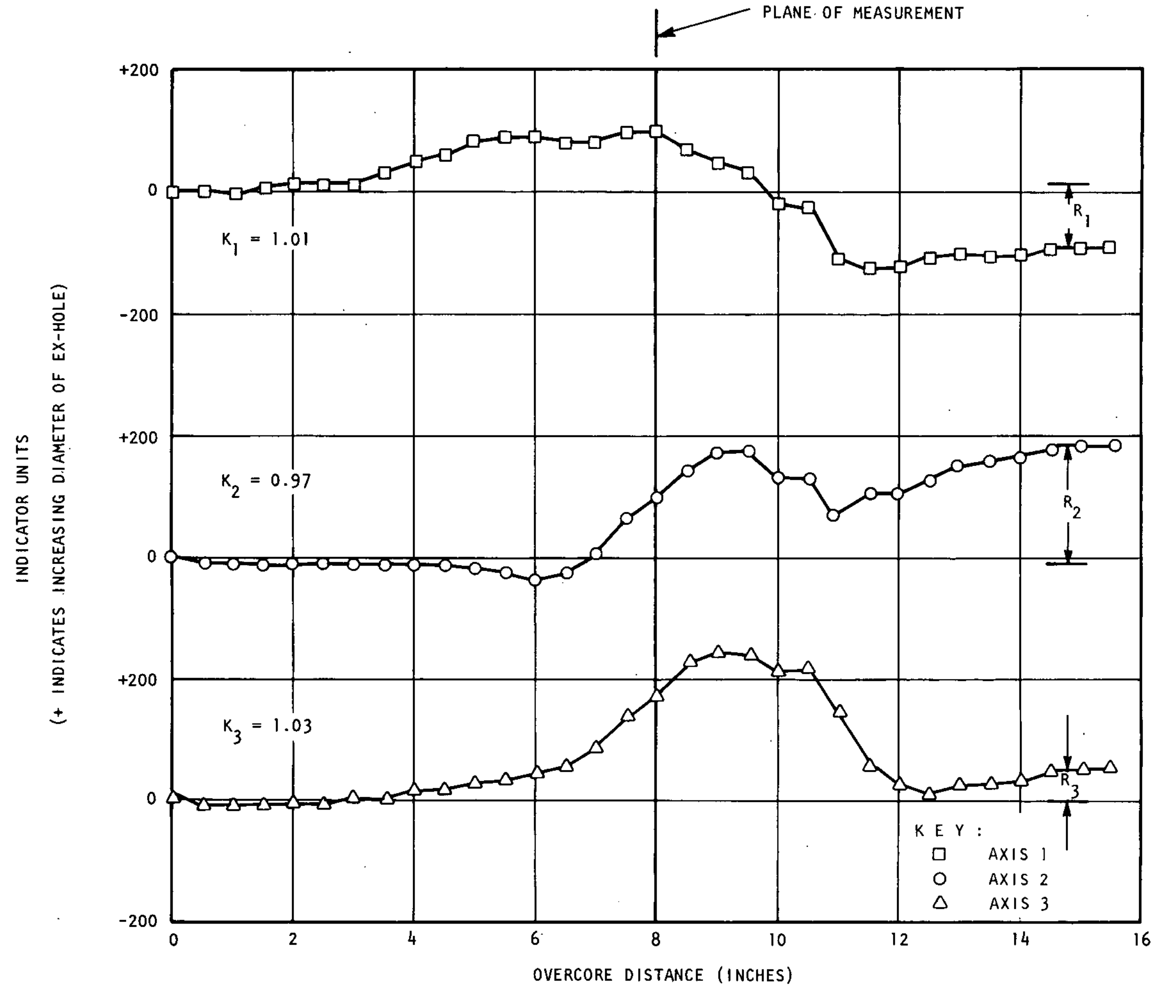
R_3 = -71 TO +480 = +551

NOTES:
(1) TEST STOPPED AT 7 INCHES OF TEST RUN DUE TO CORE BREAKAGE ALONG NATURAL FRACTURE.
(2) READINGS ARE ESTIMATES BASED ON CURVE TRENDS.
(3) PLANE OF MEASUREMENT = 7 INCHES

OVERCORE TEST RESULTS

SITE 14 TEST 6

DAMES & MOORE



TEST NO. 7

DEPTH 59 FT. 1½ INCHES

$\mu_1\theta$ N 58 W

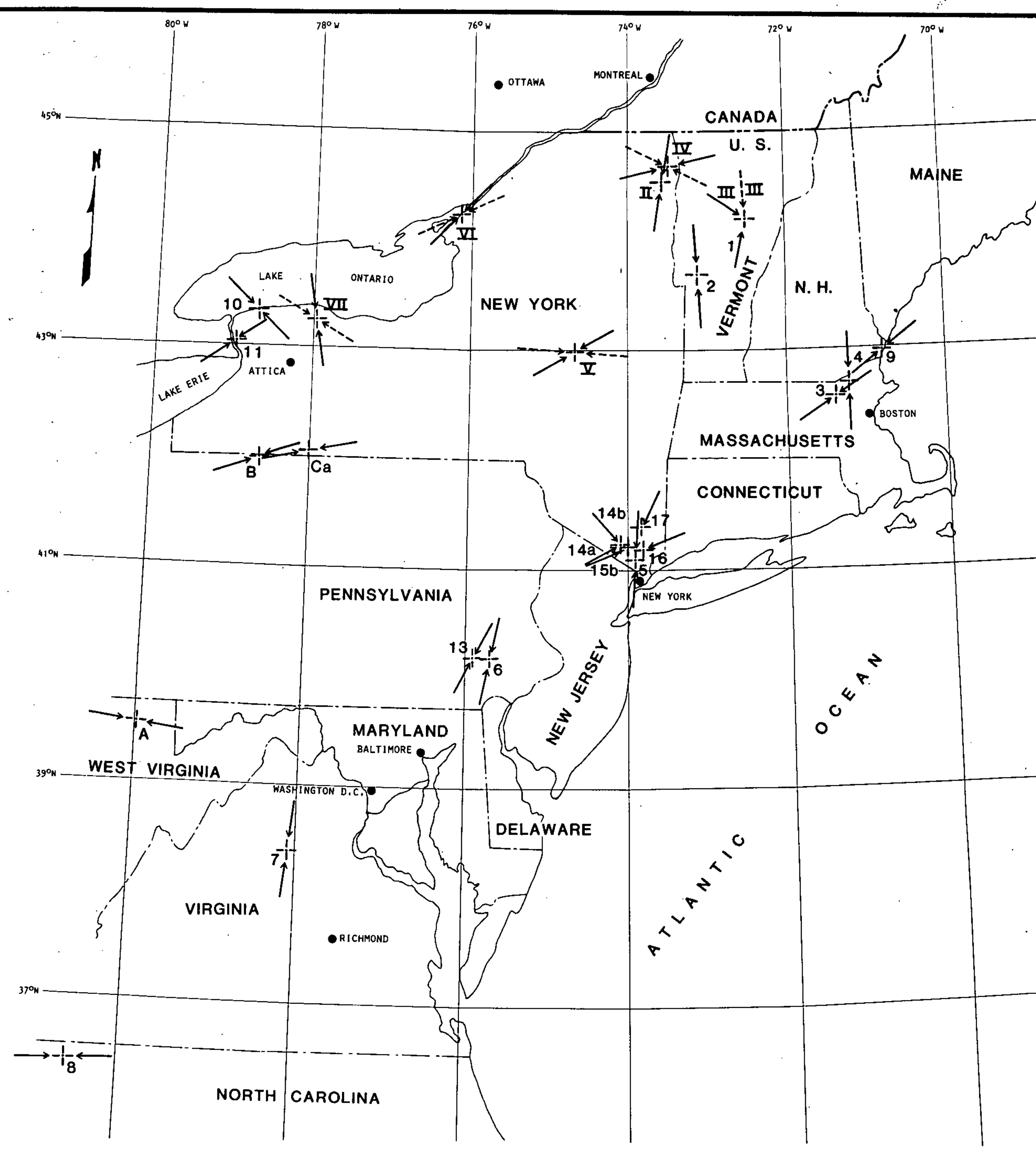
NOTES:
(1) PLANE OF MEASUREMENT = 8 INCHES

R_1 = +10 TO -92 = -102
R_2 = -11 TO +183 = +194
R_3 = -6 TO +51 = +57

OVERCORE TEST RESULTS

SITE 14 TEST 7

DAMES & MOORE



AVERAGE STRIKE OF HORIZONTAL COMPONENT OF MAXIMUM COMPRESSION

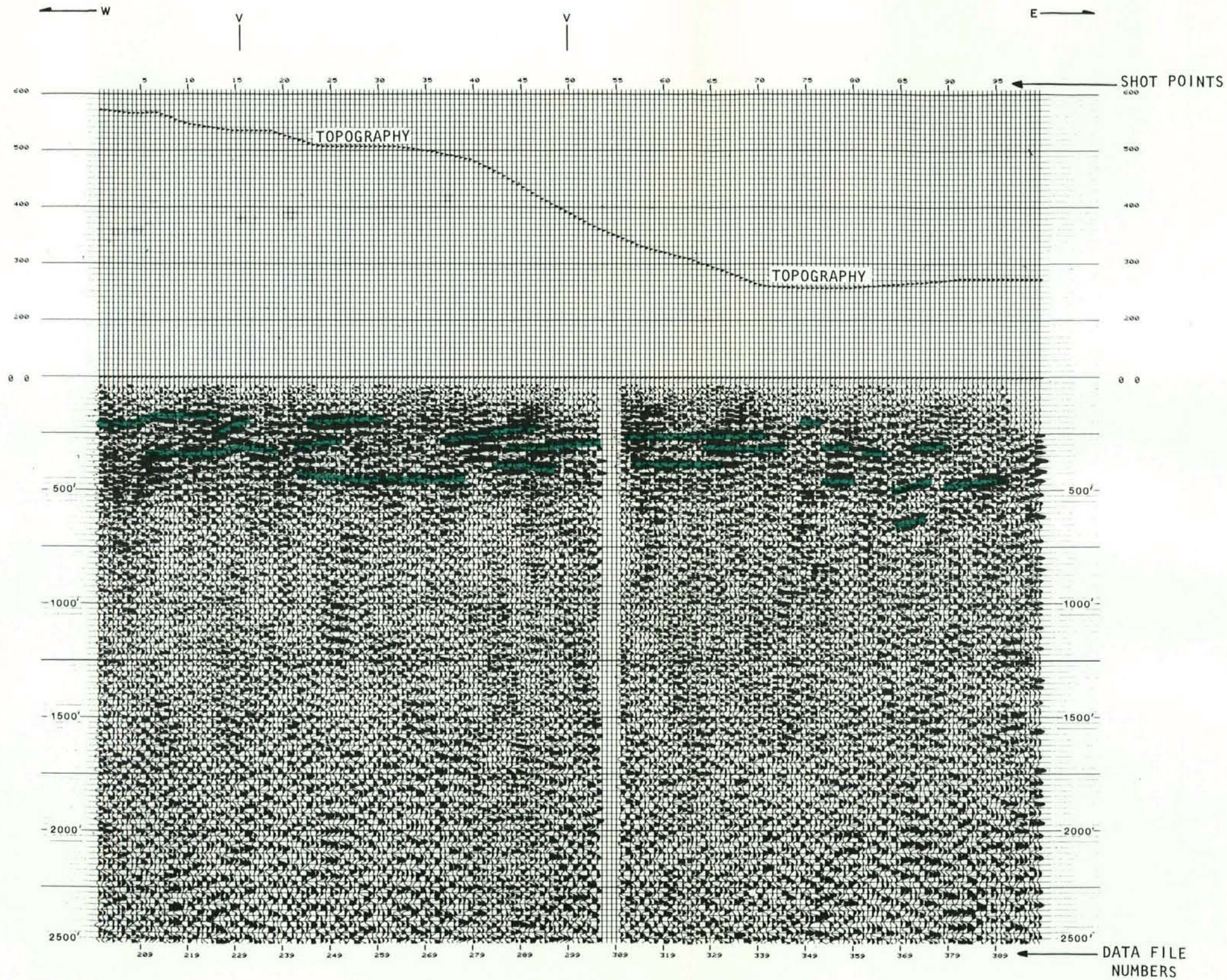
25 0 25 50 75 100 125 150 175 200
SCALE IN MILES
25 0 25 50 75 100 125 150 175 200
SCALE IN KILOMETERS

LEGEND:

- → TREND OF Pc
- - - → COMPUTED TREND OF Pc (SEE TEXT AND TABLE H-18 FOR EXPLANATION)
- 1 ORIENTATION OF PRINCIPAL STRESS, Pc (TABLE H-16)
- A TREND OF HYDRAULIC FRACTURE, EQUIVALENT TO Pc (TABLE H-17)
- I AVERAGE ORIENTATION OF MAXIMUM EXPANSION, EQUIVALENT TO Pc (TABLE H-18)

NOTE: MEASUREMENT 12 ON TABLE H-1 FALLS OUTSIDE THE NORTHERN BOUNDARY OF THIS MAP
MEASUREMENTS I & IV AT SAME SITE (TABLE H-18)

DAMES & MOORE



HIGH RESOLUTION SEISMIC REFLECTION LINE

LINE 2 — DEPTH SECTION

AREA NEW YORK

FOR DAMES & MOORE

BY SEISMOGRAPH SERVICE CORPORATION

JOB NUMBER [illegible]
DATE [illegible]

PHOENIX SEISYSTEM 70

PROCESSING SEQUENCE

- 1 DEMULTIPLEX-EDIT-SUM
- VIBROSEIS CORRELATION
- [illegible] VELOCITY ANALYSIS
- [illegible] NORMAL MOVEOUT
- 2 DATUM STATICS
- [illegible] AUTOMATIC STATICS
- [illegible] STACK [illegible] FOLD
- DECONVOLUTION
- [illegible] FILTER
- TRACE EQUALIZATION
- [illegible] ADDITIONAL PROCESSING
- [illegible]
- 9 DEPTH

PROCESSING PARAMETERS

CORRECTIONS

DATUM SLOPPING (20' BELOW ELEV.)
VE [illegible]'/Sec. VH [illegible]'/Sec.
AUTOMATIC STATICS WINDOW 500' TO 4000' FT
ADDITIONAL

	LENGTH (MS)	WINDOW (SEC)	PREDICTION (MS)
DECONVOLUTION BEFORE STACK			
DECONVOLUTION AFTER STACK			

	BAND PASS	APPL. (FT)	OVERLAP (SEC)
BAND PASS FILTERS	80-240	[illegible]-5000'	

SAMPLE RATE .5 MS
ONE INCH 12 TRACES
ONE SECOND [illegible] INCHES
PLAYBACK GAIN -[illegible] DB
MEAN VALUE

RECORDING PARAMETERS

RECORDED BY [illegible]
CONTRACT
PARTY 1
DATE RECORDED [illegible]
SP/VP INTERVAL [illegible]'
INSTRUMENT TYPE [illegible]
GEOPHONE INTERVAL [illegible]'
AMPLIFIERS
NEAR OFFSET [illegible]'
RECORDING FILTER [illegible]
FAR OFFSET [illegible]'
SAMPLE RATE [illegible]
NUMBER TRACES 12
RECORD LENGTH [illegible]
CONFIGURATION
SWEEP LENGTH
PROGRESSION W-E
SWEEP FREQUENCY
GEOPHONES/TRACE
NUMBER SWEEPS

K E Y:

PROMINENT REFLECTORS

FAULTS: WELL DEFINED

HORIZONTAL SCALE

700 0 700 1400 FEET

VERTICAL EXAGGERATION : 1.7

DAMES & MOORE

CONTOURED BOUGUER GRAVITY MAP OF A SECTION OF THE NORTHEASTERN UNITED STATES

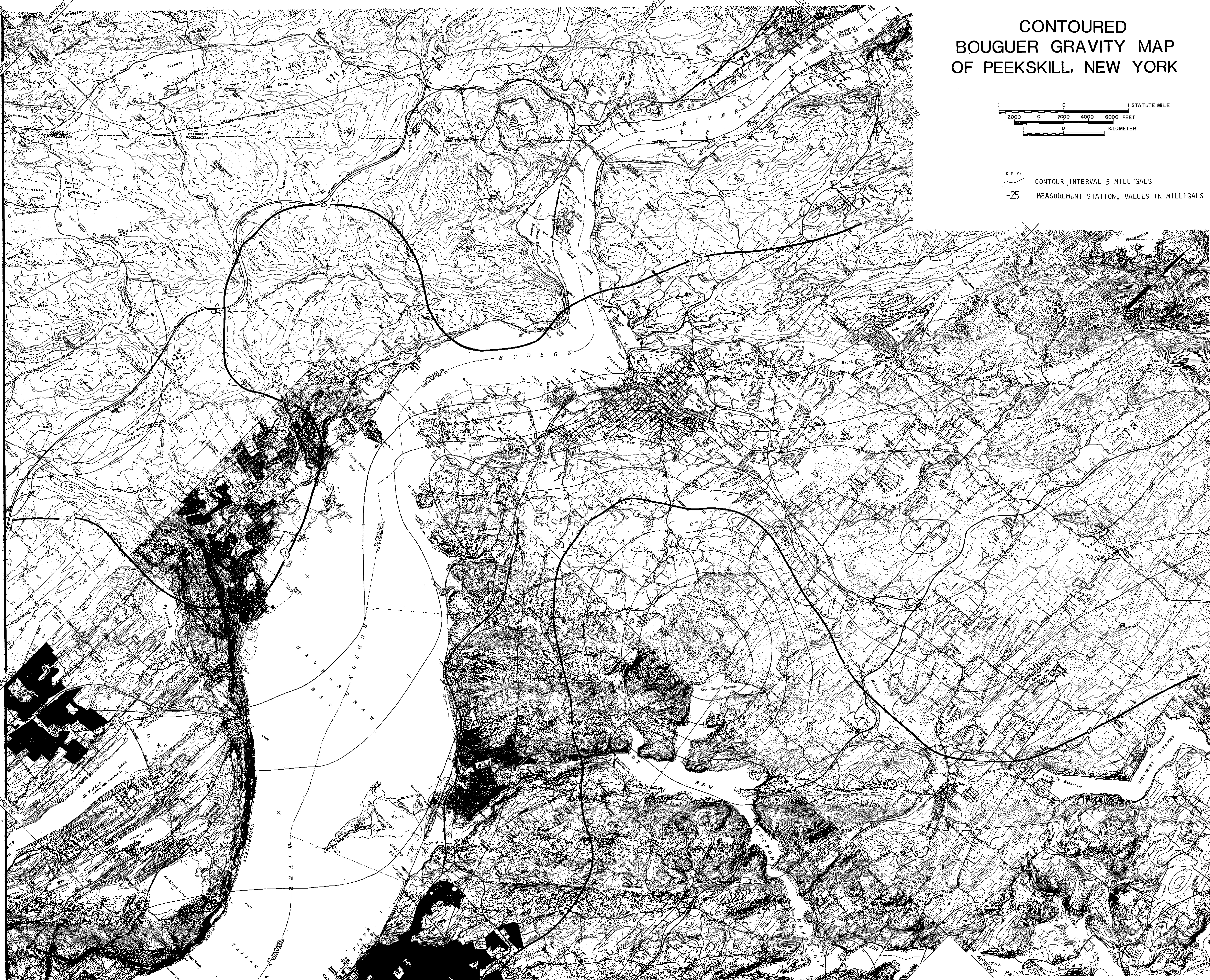
REFERENCE:

GRAVITY MEASUREMENTS OBTAINED FROM NATIONAL OCEANOGRAPHIC AND ATMOSPHERIC ADMINISTRATION (NOAA)

PLATE D.5-1

493-15-16

CONTOURED BOUGUER GRAVITY MAP OF PEEKSKILL, NEW YORK



REFERENCES:

THE BASE FOR THIS MAP WAS PREPARED FROM THE FOLLOWING 7.5 MINUTE U.S.G.S. TOPOGRAPHIC QUADRANGLES: CROTON FALLS N.Y., 1960; HAVERSTRAW N.Y., 1967; MOHEGAN LAKE N.Y., 1956; NYACK N.Y., 1967; OSCAWANA LAKE N.Y., 1956; OSSINING N.Y., 1967; PEEKSKILL N.Y., 1957; POPOLOPEN LAKE N.Y., 1957; SLOATSBURG N.Y., 1955; THIELLS N.Y., 1955; WEST POINT N.Y., 1957.

TERA APERTURE CARD

DAMES & MOORE

PLATE D.5-2

493
67-14

TERA APERTURE CARD

HIGH RESOLUTION SEISMIC REFLECTION LINE

HORIZONTAL SCALE
700 0 700 1400 FEET
VERTICAL EXAGGERATION : 1.7

LINE 5 — DEPTH SECTION
AREA NEW YORK
FOR DAMES & MOORE
BY SEISMOGRAPH SERVICE CORPORATION
JOB NUMBER [illegible]
DATE [illegible]

PHOENIX SEISYSTEM 70

PROCESSING SEQUENCE

- DEMULTIPLEX-EDIT-SUM
- VIBROSEIS CORRELATION
- VELOCITY ANALYSIS
- NORMAL MOVEOUT
- DATUM STATICS
- AUTOMATIC STATICS
- STACK — FOLD
- DECONVOLUTION
- FILTER
- TRACE EQUALIZATION
- ADDITIONAL PROCESSING

PROCESSING PARAMETERS

CORRECTIONS
DATUM SLOPPING (20' BELOW ELEV.)
VE [illegible]'/Sec. VW [illegible]'/Sec.
AUTOMATIC STATICS WINDOW 500' TO 4000' FT
ADDITIONAL

	LENGTH (MS)	WINDOW (SEC)	PREDICTION (MS)
DECONVOLUTION BEFORE STACK			
DECONVOLUTION AFTER STACK			

	BAND PASS	APPL. (FT)	OVERLAP (SEC)
BAND PASS FILTERS	[illegible]	500'-5000'	

SAMPLE RATE .5 MS
ONE INCH 12 TRACES
ONE SECOND 10 INCHES
PLAYBACK GAIN -26 DB
MEAN VALUE

RECORDING PARAMETERS

RECORDED BY TARGET SURVEY
CONTRACT — PARTY 1 — DATE RECORDED [illegible]
SP/VP INTERVAL 70' — INSTRUMENT TYPE [illegible]
GEOPHONE INTERVAL 70' — AMPLIFIERS
NEAR OFFSET 70' — RECORDING FILTER OUT/OUT
FAR OFFSET [illegible]' — SAMPLE RATE [illegible]
NUMBER TRACES 12 — RECORD LENGTH [illegible]
CONFIGURATION — SWEEP LENGTH
PROGRESSION [illegible] — SWEEP FREQUENCY
GEOPHONES/TRACE — NUMBER SWEEPS

KEY:
- PROMINENT REFLECTORS
- POSSIBLE BASEMENT REFLECTORS
- INTRUSIVE BODIES
- FAULTS: WELL DEFINED
- POSSIBLE CONTACTS

DAMES & MOORE

0 60 120
FEET

KEY:

SL-400 STATION NUMBER SEDIMENT DESCRIPTION IN TEXT

SEDIMENTARY CONTACT, APPROXIMATE

A B C SEDIMENTARY COLUMN DESCRIBED IN TABLE F-1

DENOTES LIMIT OF COVERED AREA

TERA
APERTURE
CARD

PHOTO MOSAIC OF PLEISTOCENE DEPOSITS

IN QUARRY PEQUANNOCK, N.J.

-017

DAMES & MOORE

PLATE F-18

LINE 4 — DEPTH SECTION
AREA NEW YORK
FOR DAMES & MOORE
BY SEISMOGRAPH SERVICE CORPORATION
JOB NUMBER 3886
DATE 100876

PHOENIX SEISYSTEM 70

PROCESSING SEQUENCE

1 DEMULTIPLEX-EDIT-SUM
VIBROSEIS CORRELATION
4 VELOCITY ANALYSIS
5 NORMAL MOVEOUT
2 DATUM STATICS
6 AUTOMATIC STATICS
7 STACK 6 FOLD
DECONVOLUTION
8 FILTER
TRACE EQUALIZATION

8 ADDITIONAL PROCESSING
9. SP-ACON
9. DEP. TH

PROCESSING PARAMETERS

CORRECTIONS
DATUM SLOPPING (20' BELOW ELEV.)
VE 8000'/Sec VW 8000'/Sec
AUTOMATIC STATICS WINDOW 500' TO 4000' FT
ADDITIONAL

	LENGTH (MS)	WINDOW (SEC)	PREDICTION (MS)
DECONVOLUTION BEFORE STACK			
DECONVOLUTION AFTER STACK			

	BAND PASS	APPL. (FT)	OVERLAP (SEC)
BAND PASS FILTERS	60-260	500'-5000'	

SAMPLE RATE .5 MS
ONE INCH 12 TRACES
ONE SECOND 10 INCHES
PLAYBACK GAIN -26 DB
MEAN VALUE

RECORDING PARAMETERS

RECORDED BY TARGET SURVEY
CONTRACT PARTY 1 DATE RECORDED 080276
SP/VP INTERVAL 70' INSTRUMENT TYPE CASSET
GEOPHONE INTERVAL 70' AMPLIFIERS
NEAR OFFSET 16' RECORDING FILTER OUT/OUT
FAR OFFSET 888' SAMPLE RATE .5MS
NUMBER TRACES 12 RECORD LENGTH 500MS
CONFIGURATION SWEEP LENGTH
PROGRESSION N/S SWEEP FREQUENCY
GEOPHONES/TRACE NUMBER SWEEPS

KEY:

PROMINENT REFLECTORS
POSSIBLE BASEMENT REFLECTORS
FAULTS: WELL DEFINED

HIGH RESOLUTION SEISMIC REFLECTION LINE

HORIZONTAL SCALE FEET
700 0 700 1400

VERTICAL EXAGGERATION : 1.7

TERA APERTURE CARD

DAMES & MOORE

PLATE D7-19

HIGH RESOLUTION SEISMIC REFLECTION LINE

HORIZONTAL SCALE
700 0 700 1400 FEET
VERTICAL EXAGGERATION : 1.7

TERA APERTURE CARD

LINE 1 PT 2 DEPTH SECTION
AREA NEW YORK
FOR DAMES & MOORE
BY SEISMOGRAPH SERVICE CORPORATION
JOB NUMBER 1210
DATE 082776
PHOENIX SEISYSTEM 70

PROCESSING SEQUENCE

1 DEMULTIPLEX-EDIT-SUM
VIBROSEIS CORRELATION
3 VELOCITY ANALYSIS
5 NORMAL MOVEOUT
2 DATUM STATICS
6 AUTOMATIC STATICS
7 STACK 6 FOLD
DECONVOLUTION
8 FILTER
TRACE EQUALIZATION
ADDITIONAL PROCESSING
8 SF ACOM
9 DEPTH

PROCESSING PARAMETERS

CORRECTIONS
DATUM SLOPPING (20' BELOW ELEV.)
VE 8000'/Sec VW 8000'/Sec
AUTOMATIC STATICS WINDOW 500' TO 4000' FT

RECORDING PARAMETERS

KEY:

PROMINENT REFLECTORS

FAULTS: WELL DEFINED; APPROXIMATED

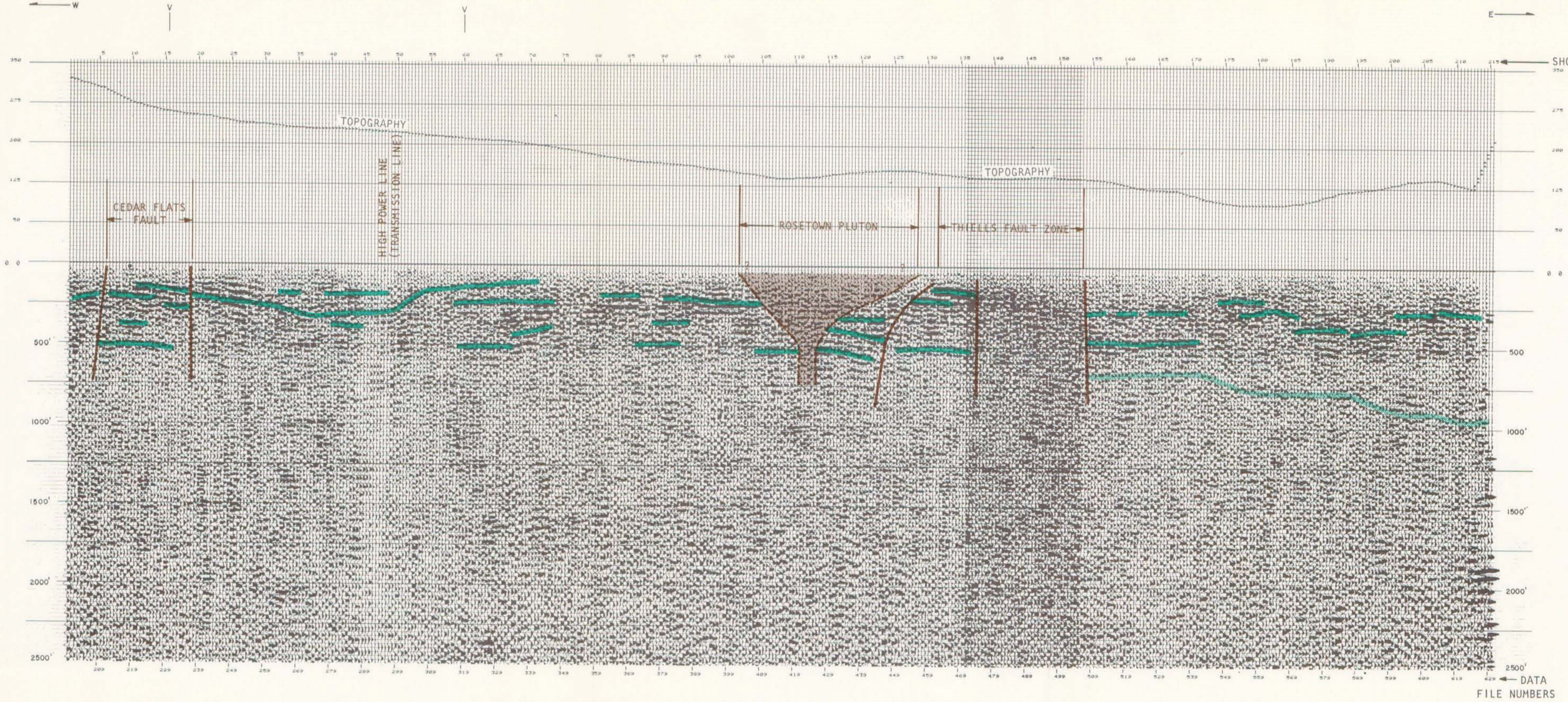
POSSIBLE CONTACTS

DAMES & MOORE

PLATE D7-14

TERA
APERTURE
CARD

PLATE F-1A



LINE 3 DEPTH SECTION
AREA NEW YORK
FOR DAMES & MOORE
BY SEISMOGRAPH SERVICE CORPORATION

PHOENIX SEISYSTEM 70

PROCESSING SEQUENCE

- DEMULTIPLEX-EDIT-SUM
- VIBROSEIS CORRELATION
- VELOCITY ANALYSIS
- NORMAL MOVEOUT
- DATUM STATICS
- AUTOMATIC STATICS
- STACK FOLD
- DECONVOLUTION
- FILTER
- TRACE EQUALIZATION
- ADDITIONAL PROCESSING
- DEPTH

PROCESSING PARAMETERS

DATUM SLOPPING

RECORDING PARAMETERS

KEY:

PROMINENT REFLECTORS

POSSIBLE BASEMENT REFLECTORS

INTRUSIVE BODIES

FAULTS: WELL DEFINED

POSSIBLE CONTACTS

HIGH RESOLUTION SEISMIC REFLECTION LINE

HORIZONTAL SCALE

700 0 700 1400 FEET

VERTICAL EXAGGERATION : 1.7

DAMES & MOORE

PLATE D7-18

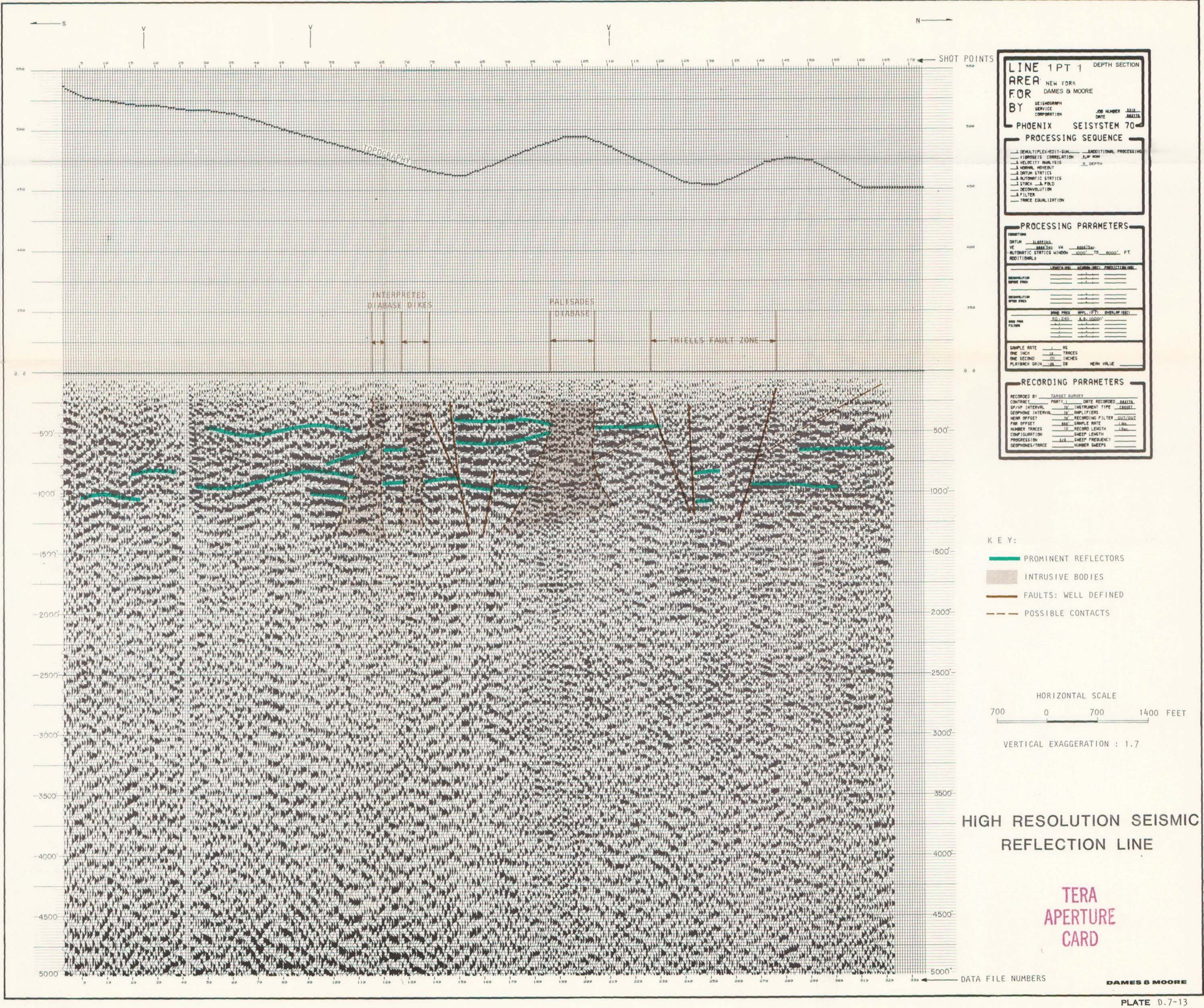

S
N
SHOT POINTS
TOPOGRAPHY
INTERPRETED DIABASE DIKES
PALISADES DIABASE
THIELLS FAULT ZONE
DATA FILE NUMBERS
LINE 1PT 1 DEPTH SECTION
AREA NEW YORK
FOR DAMES & MOORE
BY SEISMOGRAPH SERVICE CORPORATION
PHOENIX SEISYSTEM 70
PROCESSING SEQUENCE
DEMULTIPLEX-EDIT-SUM
VIBROSEIS CORRELATION
VELOCITY ANALYSIS
NORMAL MOVEOUT
DATUM STATICS
AUTOMATIC STATICS
STACK FOLD
DECONVOLUTION
FILTER
TRACE EQUALIZATION
ADDITIONAL PROCESSING
DEPTH
PROCESSING PARAMETERS
DATUM SLOPPING
AUTOMATIC STATICS WINDOW 1000' TO 8000' FT
ADDITIONAL
BAND PASS FILTERS 60-240
SAMPLE RATE 1 MS
ONE INCH 12 TRACES
ONE SECOND 20 INCHES
PLAYBACK GAIN -26 DB
MEAN VALUE
RECORDING PARAMETERS
RECORDED BY TARGET SURVEY
CONTRACT
PARTY 1
DATE RECORDED
SP/VP INTERVAL
INSTRUMENT TYPE
GEOPHONE INTERVAL
AMPLIFIERS
NEAR OFFSET
RECORDING FILTER OUT/OUT
FAR OFFSET
SAMPLE RATE 1 Ms
NUMBER TRACES 12
RECORD LENGTH 1 Sec
CONFIGURATION
SWEEP LENGTH
PROGRESSION
SWEEP FREQUENCY
GEOPHONES/TRACE
NUMBER SWEEPS
KEY:
PROMINENT REFLECTORS
INTRUSIVE BODIES
FAULTS: WELL DEFINED
POSSIBLE CONTACTS
HORIZONTAL SCALE
700 0 700 1400 FEET
VERTICAL EXAGGERATION : 1.7
HIGH RESOLUTION SEISMIC REFLECTION LINE
TERA APERTURE CARD
DAMES & MOORE

PLATE D.7-13


GEOLOGIC MAP
OF THE RAMAPO-CANOPUS
AND CROTON FALLS FAULT SYSTEMS
HUDSON HIGHLANDS
MANHATTAN PRONG
NEWARK-GETTYSBURG BASIN
INDIAN POINT GENERATING STATION
JONES POINT
CANOPUS PLUTON
ROSETOWN PLUTON
TEATOWN ANTICLINE
CROTON SHEAR ZONE
CROTON FALLS PLUTON
MATCHLINE
I STATUTE MILE
2000 0 2000 4000 6000 FEET
I KILOMETER
SEDIMENTARY AND METAMORPHIC ROCKS
IGNEOUS ROCKS
UPPER TRIASSIC
DEVONIAN
ORDOVICIAN
CAMBRIAN
PRE-CAMBRIAN
TRJb TRIO-JURASSIC BRUNSWICK SANDSTONE, SHALE AND CONGLOMERATE
TRJd TRIO-JURASSIC DIABASE, PRINCIPALLY PALISADES
Dpg DEVONIAN PEEKSKILL GRANITE
Ogb ORDOVICIAN MAFIC TO INTERMEDIATE INTRUSIVE ROCKS; CORTLANDT COMPLEX, CROTON FALLS, PEACH LAKE, TORMENT HILL, AND PARTS OF THE ROSETOWN PLUTONS
Om Oa ORDOVICIAN MANHATTAN SHIST AND ANNSVILLE PHYLLITE
OЄi OЄw CAMBRO-ORDOVICIAN INWOOD MARBLE AND WAPPINGER LIMESTONE
Єl Єpg CAMBRIAN LOWERRE AND POUGHQUAG QUARTZITE
Fgn FORDHAM GNEISS AGE UNCERTAIN
PЄ UNDIFFERENTIATED PRE-CAMBRIAN ROCKS
Cd CANOPUS DIORITIC PLUTON
mb CALCITE DIOPSIDE MARBLE WITH SILICIC IMPURITIES
LBg LAKE BOYCE GRANDIORITE
hg GNEISSIC QUARTZ, MICROCLINE, PERTHITE, PLAGIOCLASE, HORNBLENDE, ± BIOTITE GNEISS
pm PEGMATITE
am AMPHIBOLITE AND PYROXENE, HORNBLENDE, PLAGIOCLASE GNEISS
rg GARNET, DARK GREEN PYROXENE, ± HORNBLENDE, ± EPIDOTE, ± PLAGIOCLASE, ± SPHENE, ± SCAPOLITE QUARTZITE
qpg QUARTZ, PLAGIOCLASE, MICROCLINE, COLORLESS TO PALE GREEN CLINOPYROXENE, ± SPHENE, ± EPIDOTE, ± HORNBLENDE GNEISS
amg INTERLAYERED AMPHIBOLITE AND WHITE TO LIGHT GREY QUARTZ FELDSPAR, ± BIOTITE GNEISS
bg LIGHT GREY TO WHITE QUARTZ FELDSPAR BIOTITE, ± GARNET, ± HORNBLENDE GNEISS AND ASSOCIATED WHITE ANATECTITE AND INTERLAYERED AMPHIBOLE-PYROXENE ROCK
mug PEGMATITE AND GARNET DARK GREEN PYROXENE, ± HORNBLENDE, ± EPIDOTE, ± SPHENE, ± PLAGIOCLASE, ± SCAPOLITE QUARTZITE AND PARAGNEISS
CONTACT, OBSERVED; LOCATED APPROXIMATELY; LOCATED VERY APPROXIMATELY
FAULT, a) SHOWING DIPS, b) VERTICAL
FAULT, LOCATED APPROXIMATELY
FAULT, EXISTENCE UNCERTAIN
FAULT, SHOWING TREND AND RAKE OF LINEAR FEATURES (D, DOWNTHROWN SIDE; U, UPTHROWN SIDE)(NOTE: ARROW INDICATES GENERAL DIRECTION OF RAKE)
FAULT, SHOWING RELATIVE HORIZONTAL MOVEMENT
THRUST FAULT, TEETH ON UPPER PLATE
FAULT OR SHEAR ZONES, SHOWING AVERAGE DIPS a) TRANSVERSE TO FOLIATION b) SUBPARELLEL TO FOLIATION
BX BRECCIA
FAULTING INDICATED ALONG REFLECTION PROFILE
AXIAL TREND OF SMALL ANTICLINE (LEFT) AND SYNCLINE
STRIKE AND DIP OF BEDDING OR LITHOLOGIC LAYERING
HORIZONTAL BEDDING
STRIKE AND DIP OF FOLIATIONS
STRIKE OF VERTICAL FOLIATIONS
STRIKE AND DIP OF DIKES
STRIKE OF VERTICAL DIKES
TRACE OF ORE VEIN
R300 BORING LOCATION, SHOWING NUMBER
TERA APERTURE CARD
REFERENCES:
THE BASE FOR THIS MAP WAS PREPARED FROM THE FOLLOWING 7.5 MINUTE U.S.G.S. TOPOGRAPHIC QUADRANGLES: CROTON FALLS N.Y., 1960; HAVERSTRAW N.Y., 1967; MOHEGAN LAKE N.Y., 1956; NYACK N.Y., 1967; OSCAWANA LAKE N.Y., 1956; OSSINING N.Y., 1967; PEEKSKILL N.Y., 1957; POPOLOPEN LAKE N.Y., 1957; SLOATSBURG N.Y., 1955; THIELLS N.Y., 1955 WEST POINT N.Y., 1957.
INFORMATION ON THIS MAP WAS SUPPLEMENTED FROM: BERKEY C.P., 1911; BERKEY C.P. AND RICE M, 1919; ESPEGO A.C., 1969; FISHER D.W. ETAL. 1970; PRUCHA J. ETAL, 1956; RATCLIFFE N.M., 1976; SHUART S., 1969; WISSIG G.C., 1970.
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PLATE 1A

TERA
APERTURE
CARD

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PLATE F-1B

GEOLOGIC MAP
OF THE RAMAPO-CANOPUS AND CROTON FALLS FAULT SYSTEMS

REFERENCES:

THE BASE FOR THIS MAP WAS PREPARED FROM THE FOLLOWING 7.5 MINUTE U.S.G.S. TOPOGRAPHIC QUADRANGLES: HAVERSTRAW N.Y., 1967; NYACK N.Y., 1967; PARK RIDGE N.J.-N.Y., 1955; PATERSON N.J., 1955; POMPTON PLAINS N.J., 1955; RAMSEY N.J.-N.Y., 1955; SLOATSBURG N.Y., 1955; THIELLS N.Y., 1955; WANAQUE N.J., 1954.

INFORMATION ON THIS MAP WAS SUPPLEMENTED FROM: BAYLEY W.S. ETAL, 1914; FISHER D.W. ETAL, 1970; PERLMUTTER N., 1956; VECCHIOLI J. AND MILLER E.G., 1973.

DAMES & MOORE

PLATE 18


STATION LOCATION MAP
TO ACCOMPANY GEOLOGIC MAP
STATUTE MILE
2000 0 2000 4000 6000 FEET
1 0 1 KILOMETER
KEY:
JW-90-76 • STATION LOCATION
MINERALIZATION OR AGE DATING SAMPLING STATION LOCATION
GROUND MAGNETOMETER SURVEY LINE
HIGH RESOLUTION SEISMIC REFLECTION LINE
LIMIT OF AEROMAGNETIC COVERAGE
TERA APERTURE CARD
REFERENCES:
THE BASE FOR THIS MAP WAS PREPARED FROM THE FOLLOWING 7.5 MINUTE U.S.G.S. TOPOGRAPHIC QUADRANGLES: CROTON FALLS N.Y., 1960; HAVERSTRAW N.Y., 1967; MOHEGAN LAKE N.Y., 1956; NYACK N.Y., 1967; OSCAWANA LAKE N.Y., 1956; OSSINING N.Y., 1967; PEEKSKILL N.Y., 1957; POPOLOPEN LAKE N.Y., 1957; SLOATSBURG N.Y., 1955; THIELLS N.Y., 1955; WEST POINT N.Y., 1957.
DAMES & MOORE
MATCHLINE
HAVERSTRAW BAY
HUDSON
RIVER
TITICUS RESERVOIR

PLATE 2A

STATION LOCATION MAP

TO ACCOMPANY GEOLOGIC MAP

KEY:

- JW-90-76 ● STATION LOCATION
- ★ MINERALIZATION OR AGE DATING SAMPLING STATION LOCATION
- GROUND MAGNETOMETER SURVEY LINE
- HIGH RESOLUTION SEISMIC REFLECTION LINE
- LIMIT OF AEROMAGNETIC COVERAGE

REFERENCES:

THE BASE FOR THIS MAP WAS PREPAREE FROM THE FOLLOWING 7.5 MINUTE U.S.G.S. TOPOGRAPHIC QUADRANGLES: HAVERSTRAW N.Y., 1967; NYACK N.Y., 1967; PARK RIDGE N.J.-N.Y., 1955; PATERSON N.J., 1955; POMPTON PLAINS N.J., 1955; RAMSEY N.J.-N.Y., 1955; SLOATSBURG N.Y., 1955; THEILLS N.Y., 1955; WANAQUE N.J., 1954.

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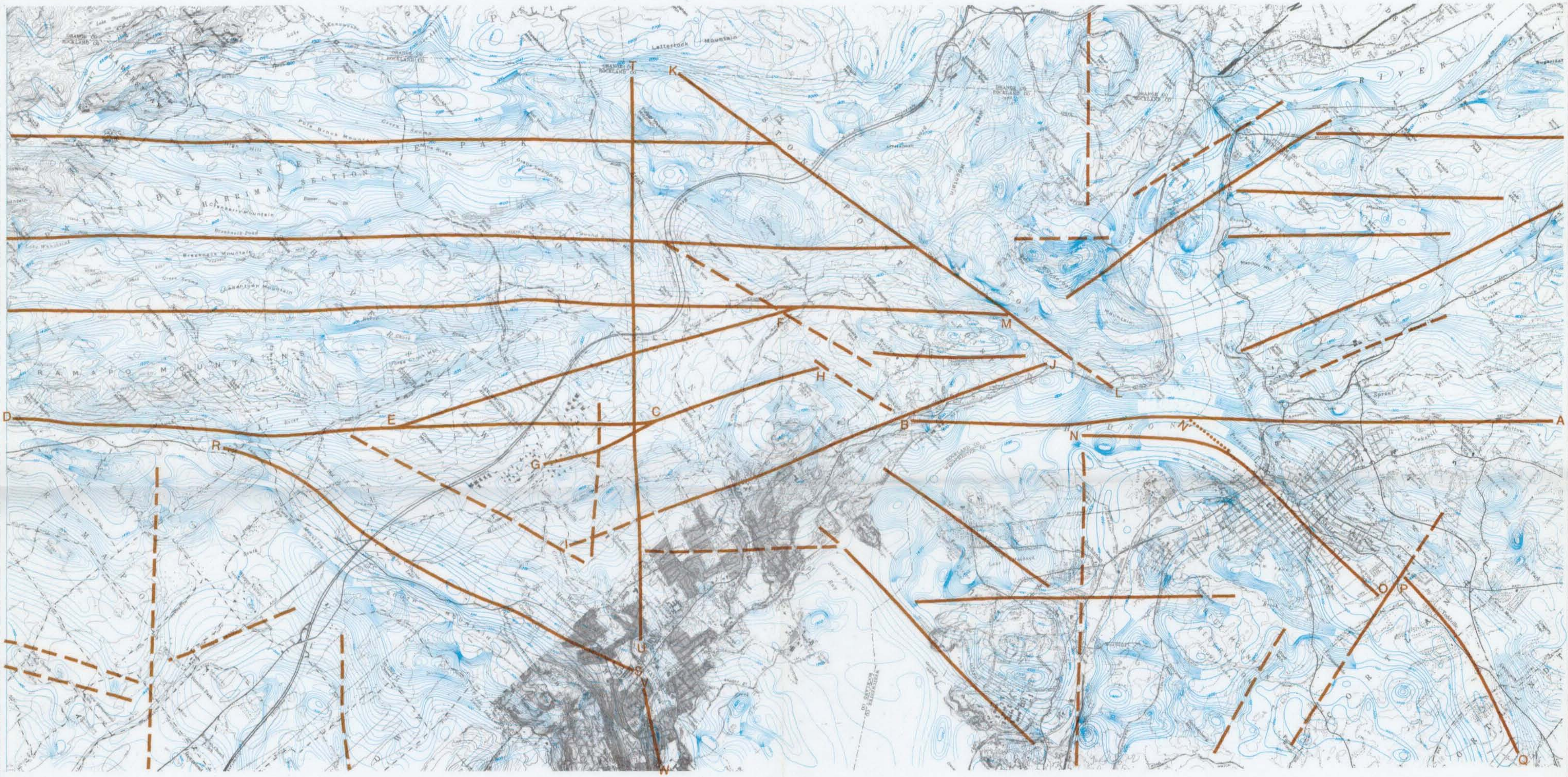
PLATE 2B



AEROMAGNETIC MAP

OF AREA SURROUNDING THE INDIAN POINT GENERATING STATION

TERA APERTURE CARD

1 0 1 MILE

1 0 1 KILOMETER

KEY:

MAGNETIC LINEARS

TOTAL FIELD CONTOURS

10 GAMMAS	
100 GAMMAS	
FLIGHT LINE DIRECTION	NW/SW
FLIGHT LINE SPACING	528 FEET
FLIGHT ALTITUDE	500 FEET TERRAIN CLEARANCE
BASE VALUE	54,985

NOTE:
THIS OVERLAY IS AT THE SAME SCALE AS THE ACCOMPANYING GEOLOGIC MAPS, PLATES 1A AND 1B.

REFERENCE :
PRODUCED FOR DAMES & MOORE BY AIRMAG INC. PHILADELPHIA, PA.
FLOWN MARCH/APRIL 1976.
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PLATE D.4-1