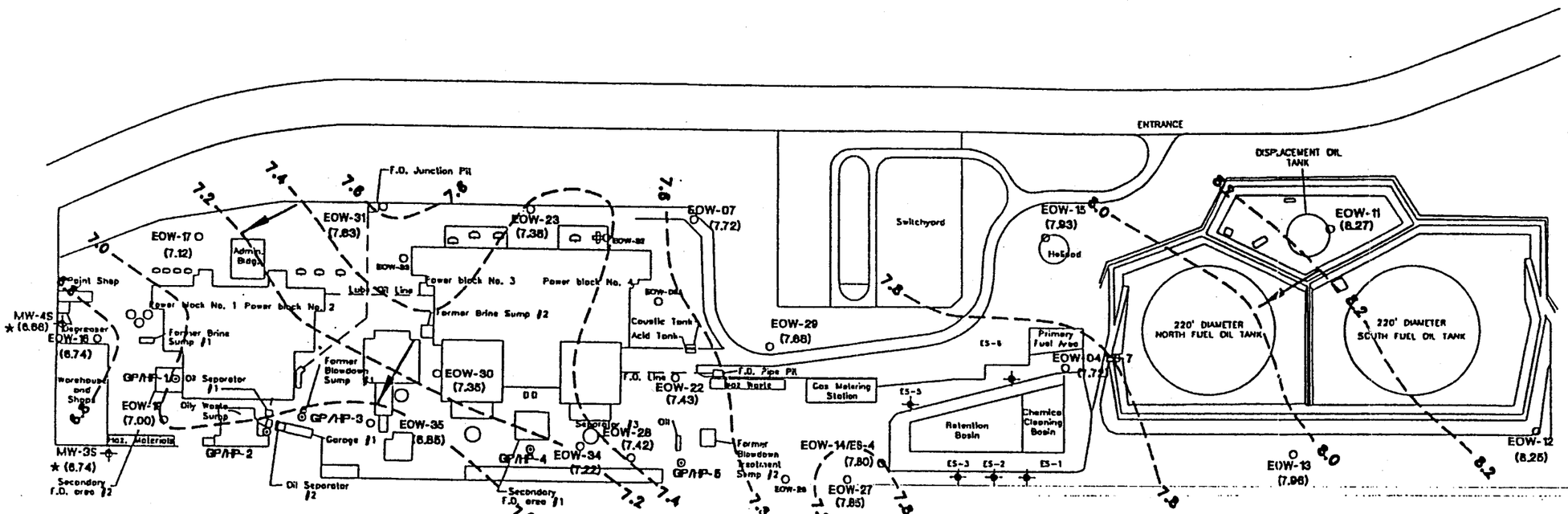


EXPLANATION

(6.75) INDICATES GROUNDWATER ELEVATION IN WELL (IN FEET MSL) MEASURED ON DECEMBER 15, 1997 BY WOODWARD-CLYDE

7.4 GROUNDWATER ELEVATION CONTOUR (IN FEET MSL)
* MEASURED ON JANUARY 5, 1998. NOT USED FOR CONTOURING PURPOSES

MW-3S
NRG/DESTEC WELL

ES-1
SCE OBSERVATION WELL

EOW-07
CHEVRON OBSERVATION WELL

GP/HP-1
GEOPROBE/HYDROPUNCH LOCATION

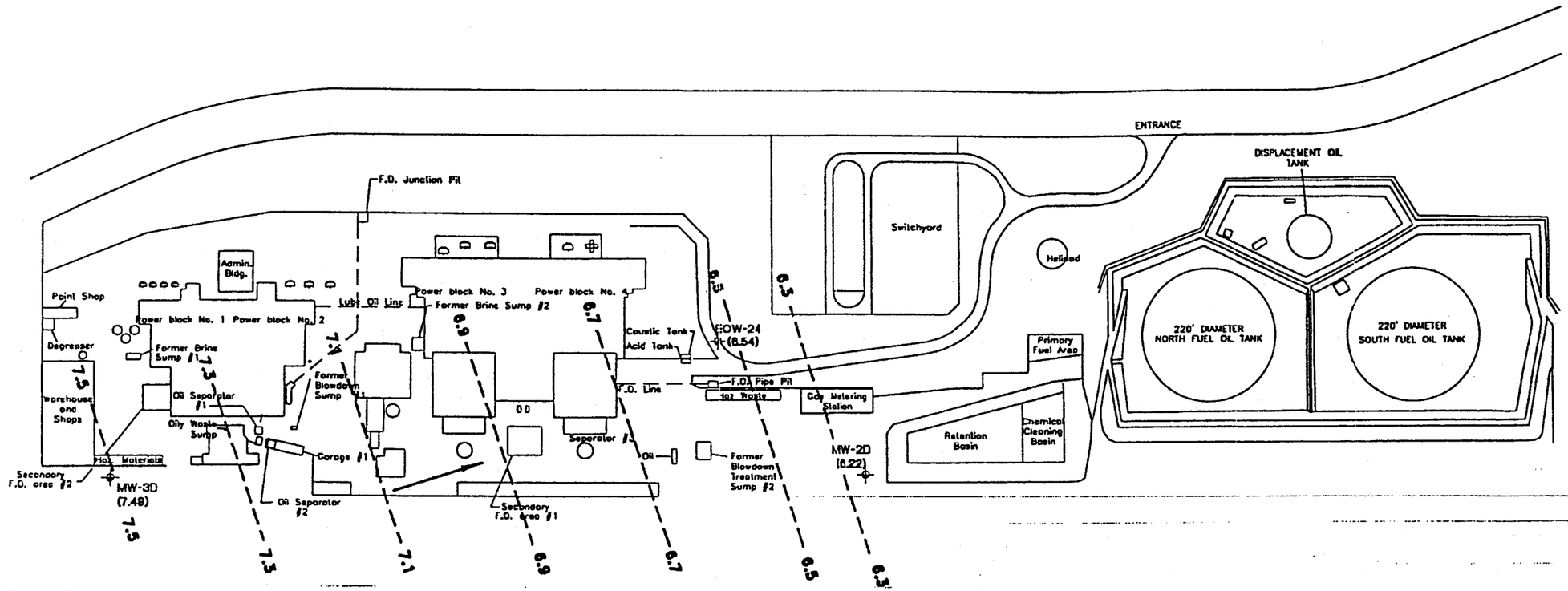
APPROXIAMTE DIRECTION OF THE GROUNDWATER GRADIENT

EOW-04/ES-7
CHEVRON OBSERVATION WELL CONVERTED TO SCE OBSERVATION WELL

BV98496

0 200 400
1" = 200'

FIGURE G-7
GROUNDWATER ELEVATIONS CONTOUR MAP
OLD DUNE SAND AQUIFER – DECEMBER 1997
(Reference 7)



EXPLANATION

(7.49) INDICATES GROUNDWATER ELEVATION IN WELL (IN FEET MSL) MEASURED ON JANUARY 19, 1998 BY WOODWARD-CLYDE

7.1 GROUNDWATER ELEVATION CONTOUR (IN FEET MSL)

MW-3D NRG/DESTEC DEEP WELL

EOW-07 CHEVRON OBSERVATION WELL

APPROXIMATE DIRECTION OF THE GROUNDWATER GRADIENT

TRANSFORMER

F.O. FUEL OIL

BV98496

0 200 400

1" = 200'

FIGURE G-8
GROUNDWATER ELEVATION CONTOUR MAP
GAGE AQUIFER – JANUARY 1998
(Reference 7)

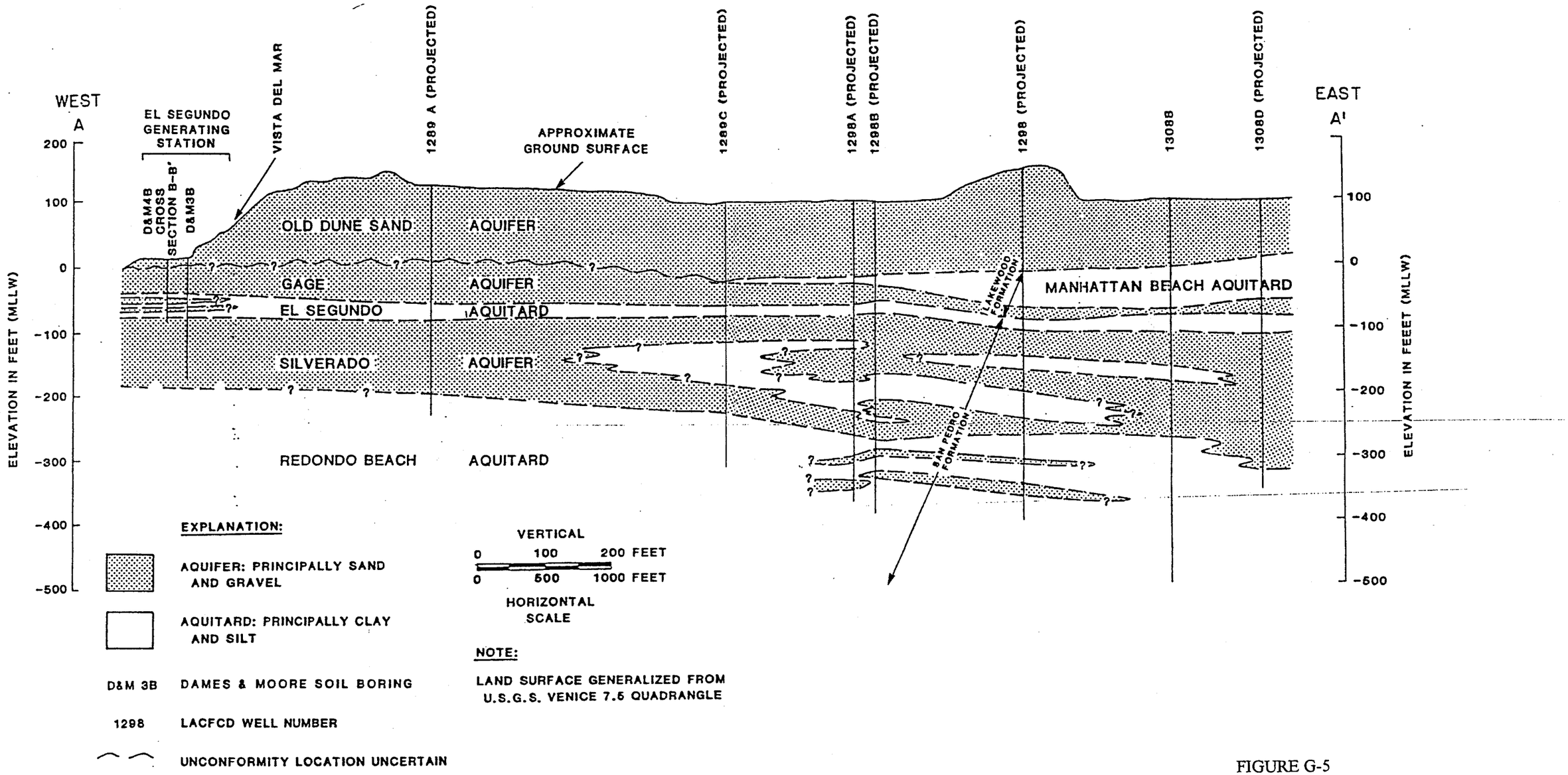
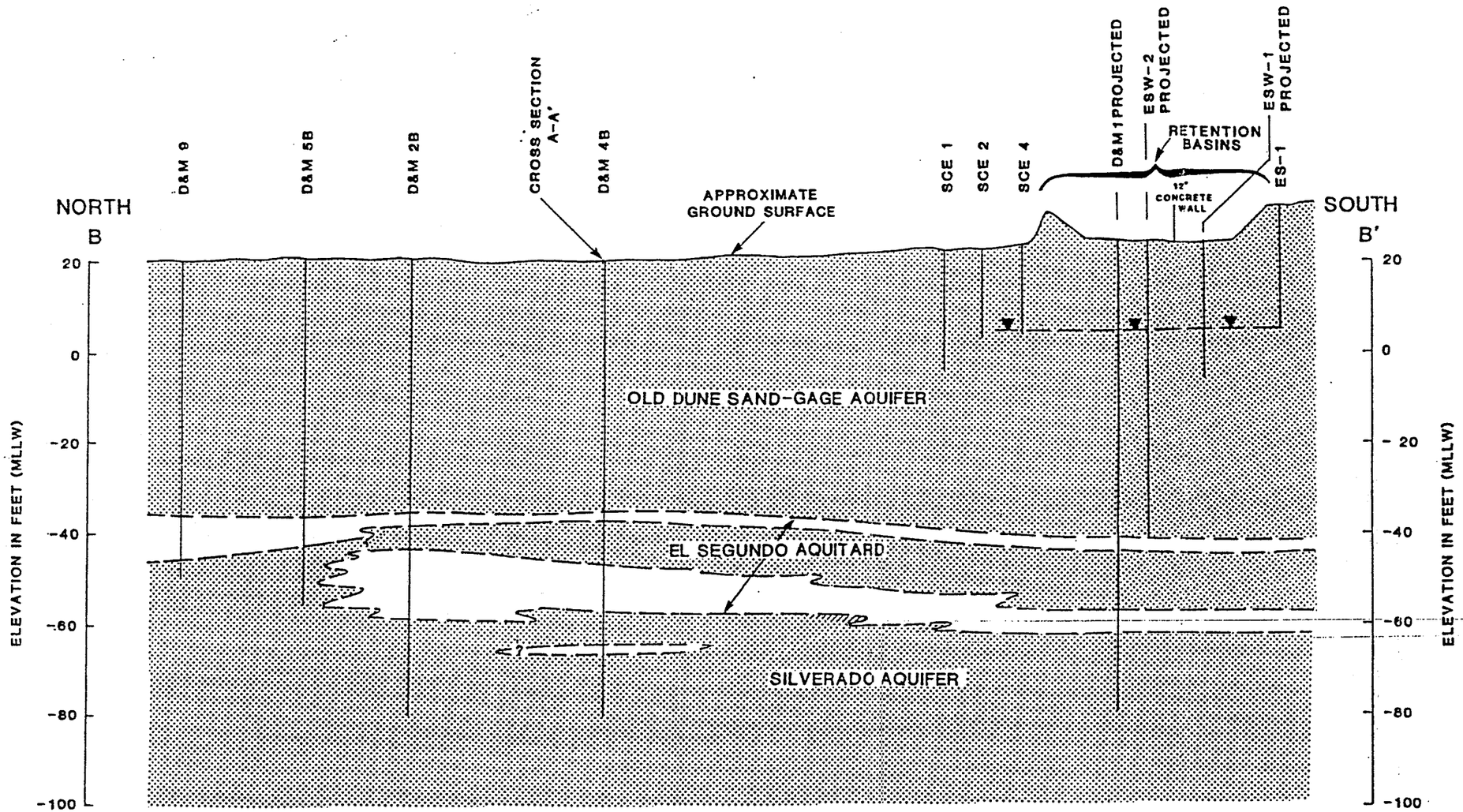


FIGURE G-5
GEOLOGIC CROSS SECTION A-A'
(Reference 7)

BV98496



EXPLANATION:

OLD DUNE SAND-GAGE AQUIFER: FINE TO COARSE SAND WITH GRAVEL LENSES

EL SEGUNDO AQUITARD: CLAY AND SILTY CLAY WITH INTERLAYERED FINE TO MEDIUM SAND. MINOR SHELLS PRESENT

SILVERADO AQUIFER: FINE TO COARSE SAND AND GRAVEL WITH MINOR SANDY CLAY LENSES

ESW-1 OBSERVATION WELL

ES-1 SOIL BORING

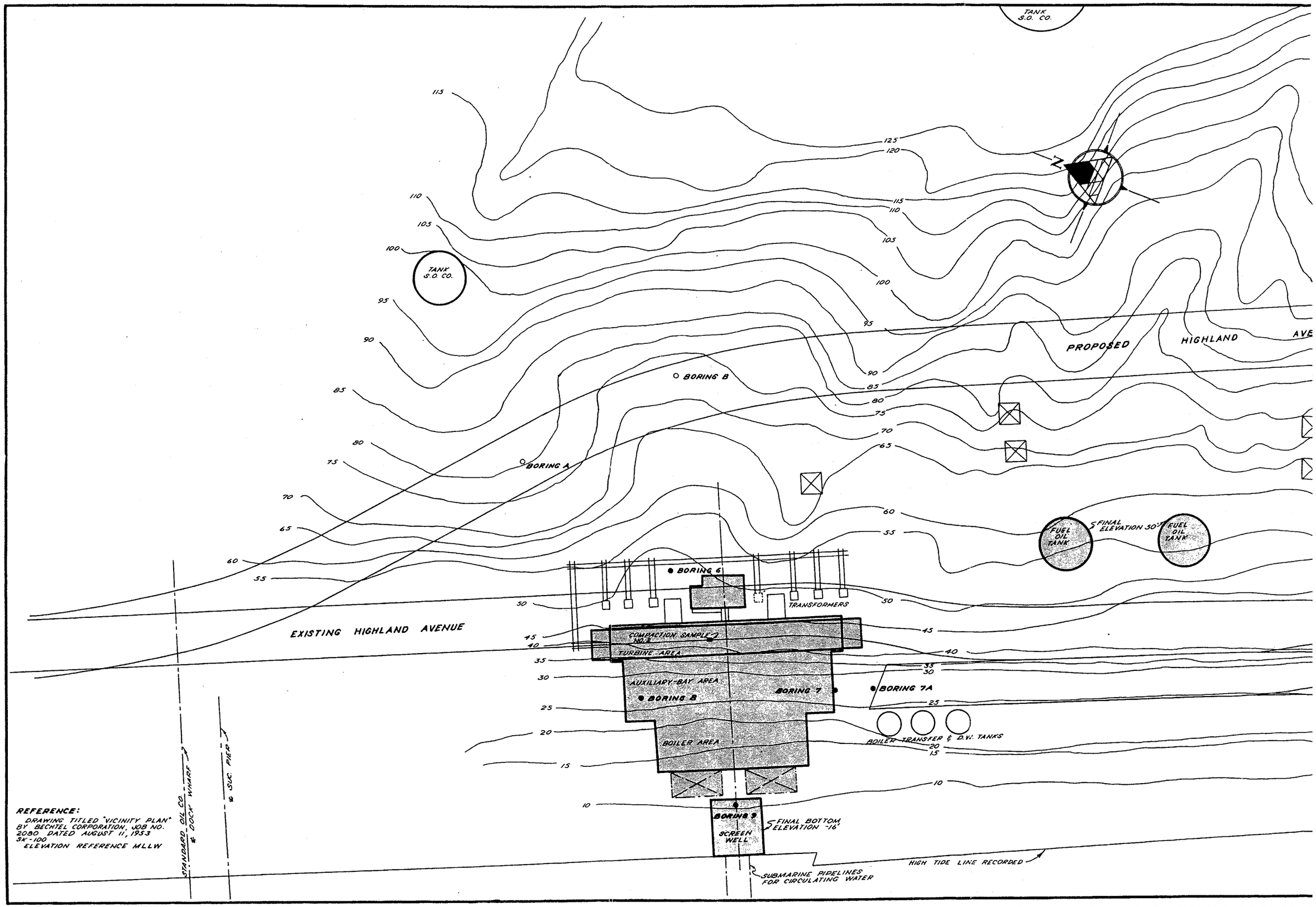
D&M3B DAMES & MOORE SOIL BORING

SCE 1 SOUTHERN CALIFORNIA EDISON CO. SOIL BORING

— ▼ — APPROXIMATE POTENTIOMETRIC SURFACE (SEPT. 1985)

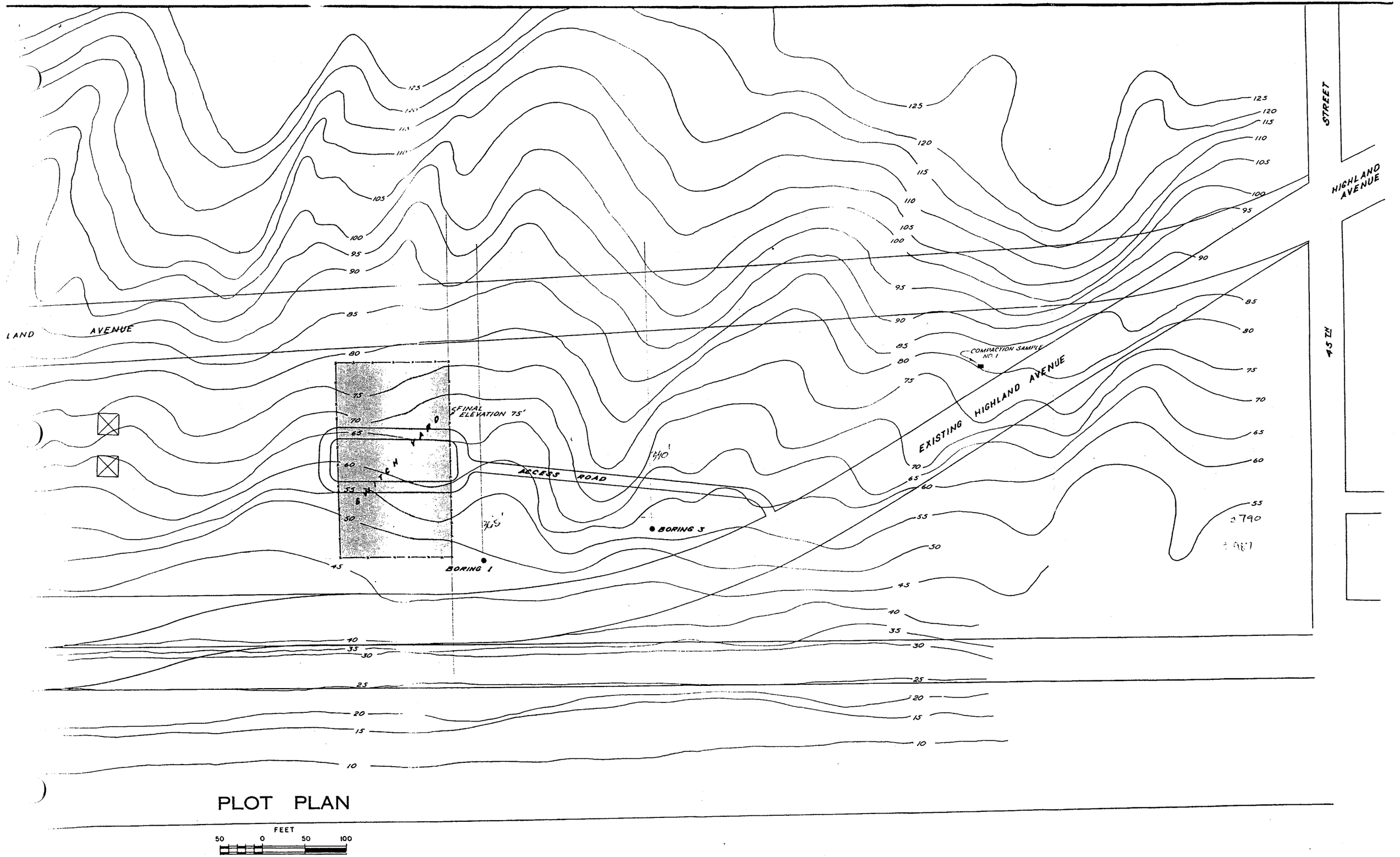
VERTICAL
0 20 40 FEET
0 100 200 FEET
HORIZONTAL SCALE

FIGURE G-6
GEOLOGIC CROSS SECTION B-B'
(Reference 7)



DAMES & MOORE
JOB NO. 377-Q
THIS DRAWING IS ONE OF A SERIES OF 12 DRAWINGS
JOB TITLE FOUNDATION INVESTIGATION
LOCATION EL SEGUNDO, CALIFORNIA
CLIENT EDISON CO.
DATE JOB STARTED 7-24-53
DATE PRINTED 10-14-53

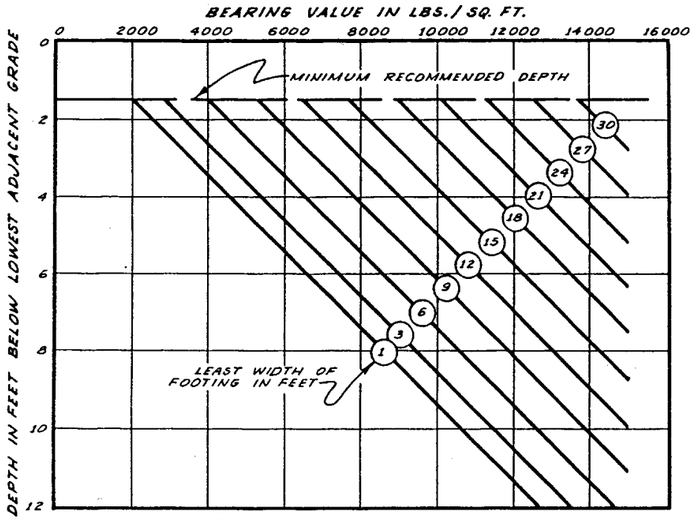
DRAWN BY KUESEL DATE 10-14-53
DATA CHECK BY KUESEL DATE 10-14-53
DRAFTING CHECK BY KUESEL DATE 10-14-53
REPORT DICTATED BY H.T. DATE —



PLOT PLAN

DAMES & MOORE, Civil Engineers
FOUNDATION INVESTIGATIONS · SOIL MECHANICS ENGINEERING

AVAILABLE BEARING VALUES



NOTES:
THE INDICATED BEARING VALUES APPLY TO THE TOTAL OF ALL LOADS, DEAD, LIVE AND SEISMIC.
THE RECOMMENDED VALUES ARE THOSE WHICH MAY BE IMPOSED IN EXCESS OF THE PRESSURE DEVELOPED BY THE ADJACENT OVERBURDEN.

RECOMMENDED FOUNDATION SPACING

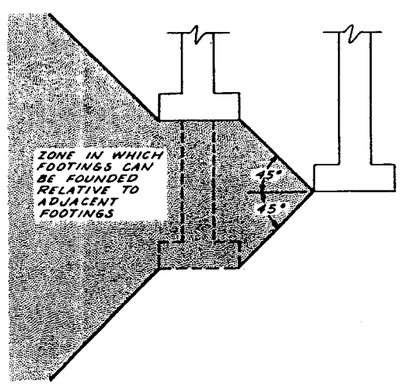


TABLE OF SETTLEMENTS

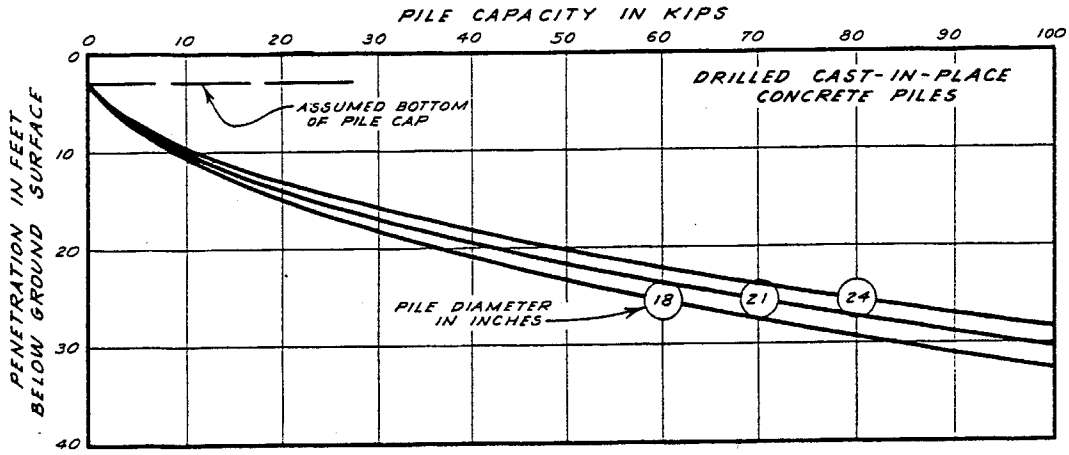
FOOTING NO.	TOTAL LOAD (KIPS)	RATIO* DEAD LOAD / TOTAL LOAD	SETTLEMENT DURING CONSTRUCTION (INCHES)	SETTLEMENT AFTER CONSTRUCTION (INCHES)
C-1	300	0.67	0.1	0.1
C-2	550	0.67	0.2	0.1
C-3	550	0.67	0.2	0.1
C-4	550	0.67	0.2	0.1
C-5	550	0.67	0.2	0.1
C-6	550	0.67	0.2	0.1
C-7	550	0.67	0.2	0.1
D-1	300	0.67	0.1	0.1
D-2	550	0.67	0.2	0.1
D-6	550	0.67	0.2	0.1
D-7	550	0.67	0.2	0.1
Elev.Col's	80	0.52	0.1	--
E-2.9,D-2.9	2834	0.67	0.4	0.3
E-4.2,D-4.2	2169	0.67	0.3	0.2
E-5.4,D-5.4	2834	0.67	0.4	0.2
E-1	100	0.77	0.1	--
E-2.4	200	0.67	0.1	0.1
F-1	116	0.86	0.1	--
F-2.4	404	0.60	0.2	0.1
F-2.9	1487	0.67	0.4	0.2
F-5.4	1487	0.67	0.4	0.2
F-6	295	0.52	0.1	0.1
G-2.4	220	0.55	0.1	0.1
G-2.9	1940	0.67	0.4	0.2
G-4.2	2570	0.67	0.4	0.3
G-5.4	1940	0.67	0.4	0.2
G-6	195	0.53	0.1	--
H-2.4	328	0.21	0.1	0.1
H-2.9	961	0.67	0.3	0.1
H-4.2	1064	0.67	0.3	0.1
H-5.4	961	0.67	0.3	0.1
H-6	328	0.21	0.1	0.1
Turbine Mat	2760 pounds per square foot net		0.4	0.3

*Assumed to be 2/3 unless definitely known otherwise.

FOUNDATION DESIGN DATA

DAMES & MOORE, Civil Engineers
FOUNDATION INVESTIGATIONS · SOIL MECHANICS ENGINEERING

DAMES & MOORE
JOB No. 377-Q
JOB TITLE FOUNDATION INVESTIGATION
LOCATION EL SEGUNDO, CALIFORNIA
CLIENT SO. CALIF. EDISON CO.
DATE JOB STARTED 7-24-53 DATE PRINTED 10-15
THIS DRAWING IS ONE OF A SERIES OF 12 DRAWINGS
DRAWN BY A. TYLER DATE OCT. 14, 53
DATA CHECK BY ALBER DATE 10-15-53
DRAFTING CHECK BY KNOBL DATE 10-15-53
REPORT DICTATED BY H.T. DATE



NOTES:

THE INDICATED CAPACITIES APPLY TO THE TOTAL OF ALL LOADS, DEAD, LIVE AND SEISMIC; THE TOTAL OF ALL PERMANENTY AND/OR FREQUENTLY APPLIED REAL LOADS SHOULD BE LIMITED TO TWO-THIRDS OF THE INDICATED CAPACITIES.

PILES SHOULD NOT BE SPACED CLOSER THAN THREE (3) DIAMETERS CENTER TO CENTER.

THE CAPACITIES SHOWN ARE LIMITED BY THE STRESSES IN THE SOILS; THE STRESSES IN THE PILE ITSELF MAY IMPOSE MORE SEVERE LIMITATIONS.

DRILLED PILES IN GROUPS SHOULD BE DRILLED AND POURED ALTERNATELY SO THAT THE CONCRETE IN A PILE HAS A MINIMUM OF TWENTY-FOUR (24) HOURS TO SET BEFORE AN ADJACENT PILE IS DRILLED.

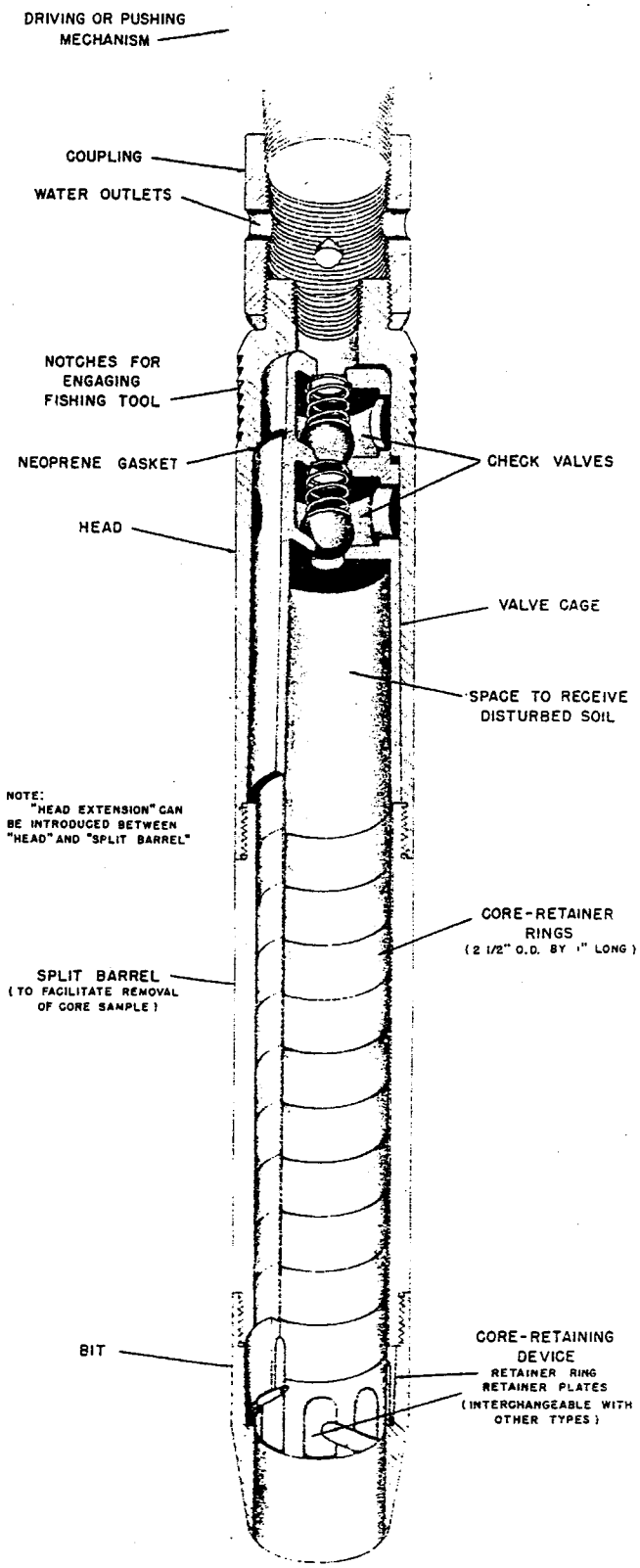
PILE CAPACITIES

DAMES & MOORE, Civil Engineers
FOUNDATION INVESTIGATIONS · SOIL MECHANICS ENGINEERING

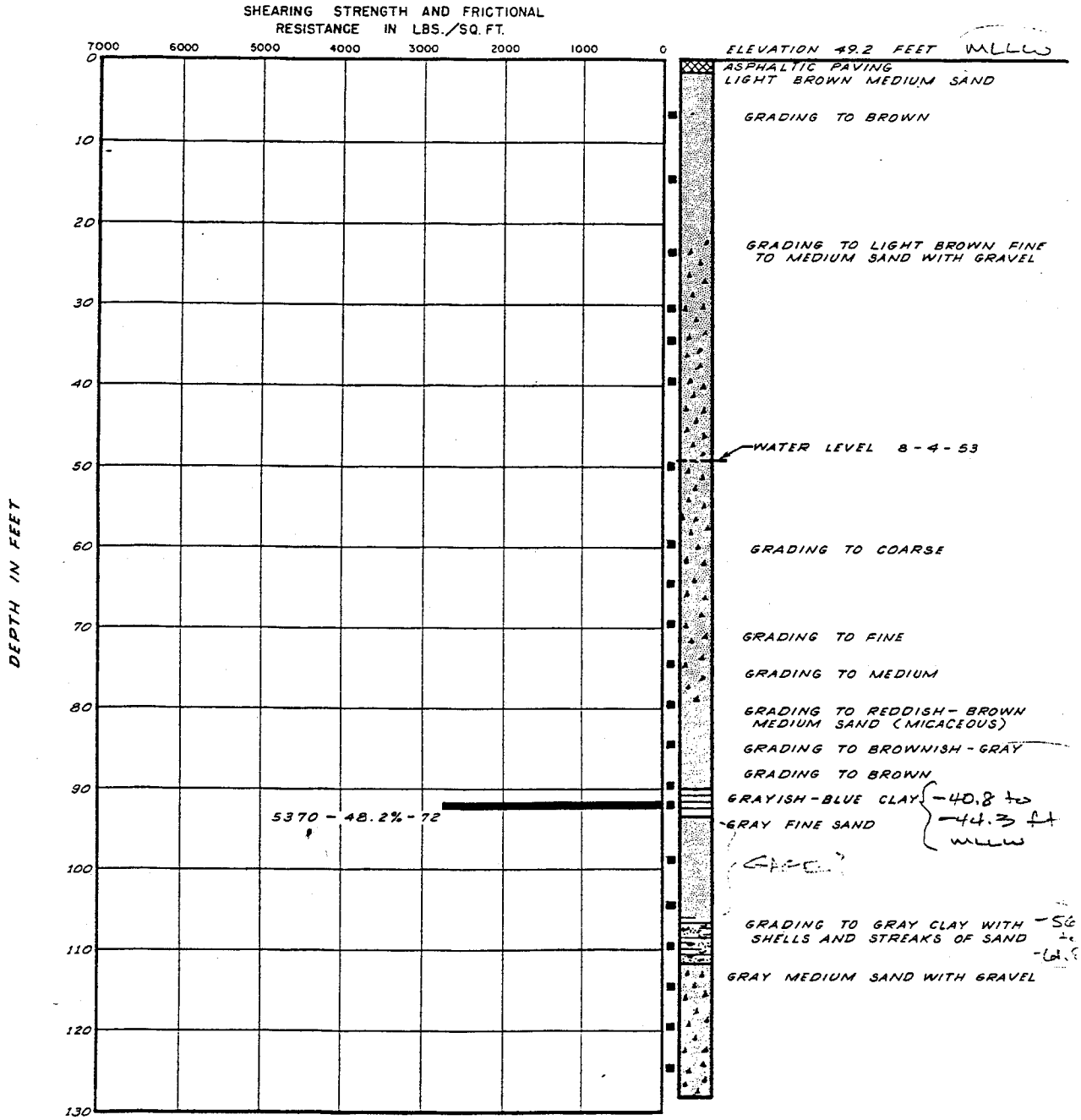
DAMES & MOORE
JOB No. 377-Q
THIS DRAWING IS ONE OF A SERIES OF ____ DRAWINGS
JOB TITLE FOUNDATION INVESTIGATION
LOCATION EL SEGUNDO, CALIF
CLIENT SO. CALIF EDISON CO
DATE JOB STARTED 7-24-53
DATE PRINTED
DRAWN BY A. MEYER
DATE OCT 4, 53
DATA CHECK BY
DATE
DRAFTING CHECK BY
DATE
REPORT DICTATED BY
DATE

SOIL SAMPLER TYPE U

FOR SOILS DIFFICULT TO RETAIN IN SAMPLER
U. S. PATENT NO. 2,318,062



BORING 1



LOG OF BORINGS

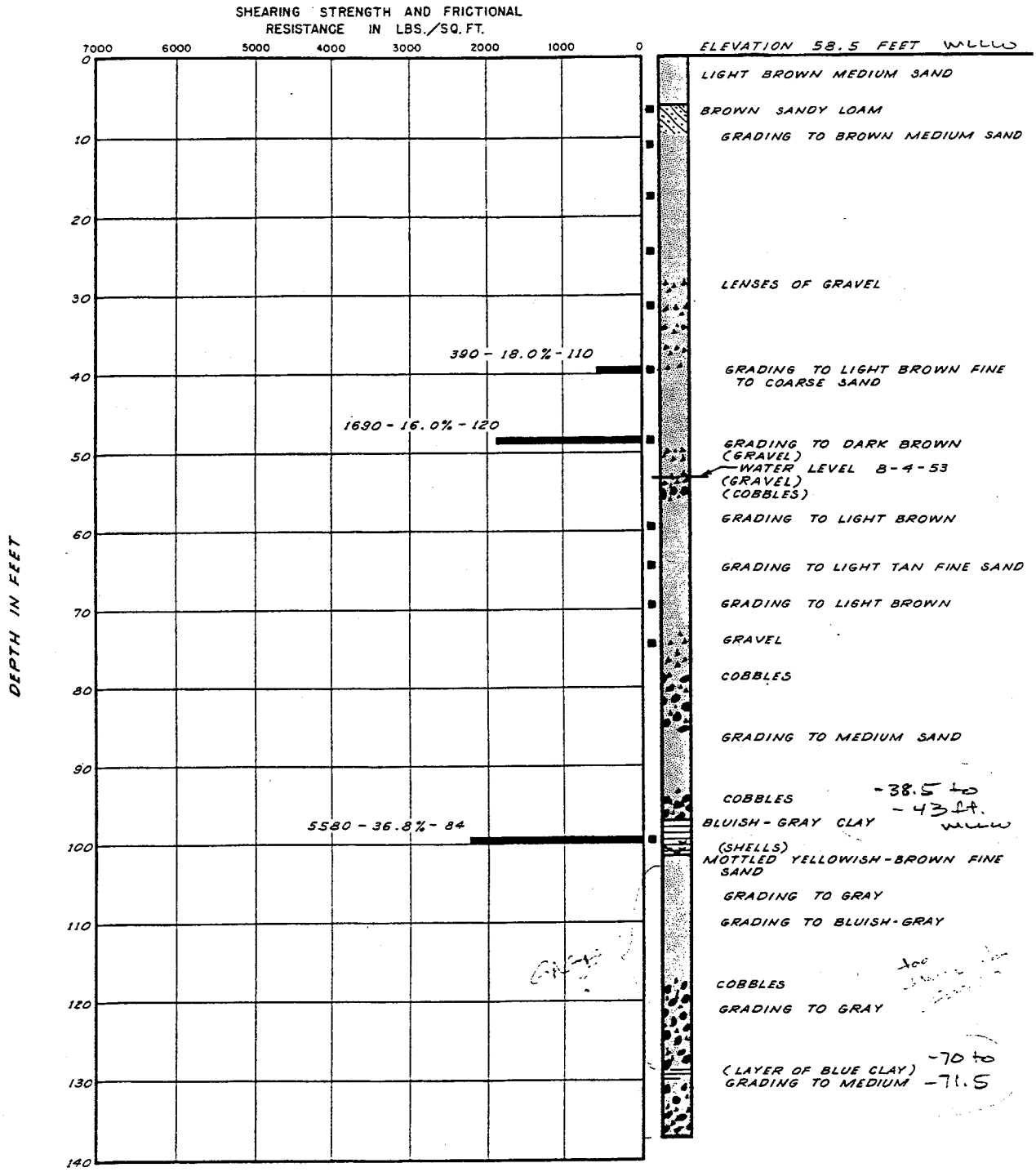
ELEVATION REFERENCE:
ELEVATIONS REFER TO CONTOURS ON PLOT PLAN

DAMES & MOORE, Civil Engineers
Foundation Investigations · Soil Mechanics Engineering

REVISIONS
BY_____ DATE_____ TO GO_____
BY_____ DATE_____ TO GO_____
PLATE 1 OF 12 PLATES

FILE 377-Q So. Cal. Edison
BY A.R. DATE SEPT. 21, 53
CHECKED BY K.V. TO GO_____
APPROVED BY OFFICE ENGINEER_____

BORING 3



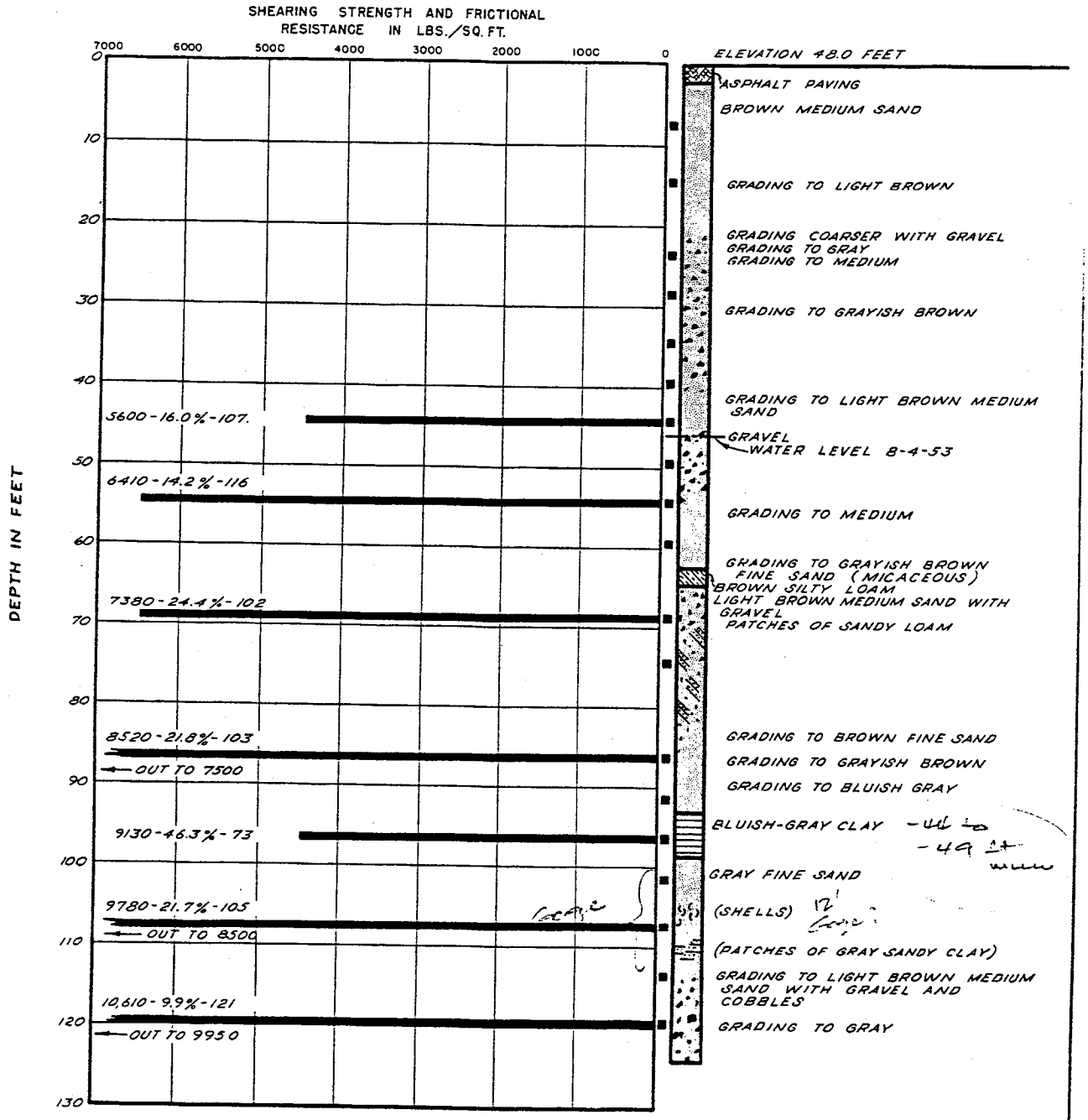
LOG OF BORINGS

DAMES & MOORE, Civil Engineers
Foundation Investigations · Soil Mechanics Engineering

REVISIONS
BY ____ DATE ____ TO GO ____
BY ____ DATE ____ TO GO ____
PLATE 1 OF 2 PLATES

FILE 377-9 So. Cal. Edison
BY A.R. DATE SEPT. 11, 59
CHECKED BY KK TO GO ____
APPROVED BY OFFICE ENGINEER ____

BORING 6

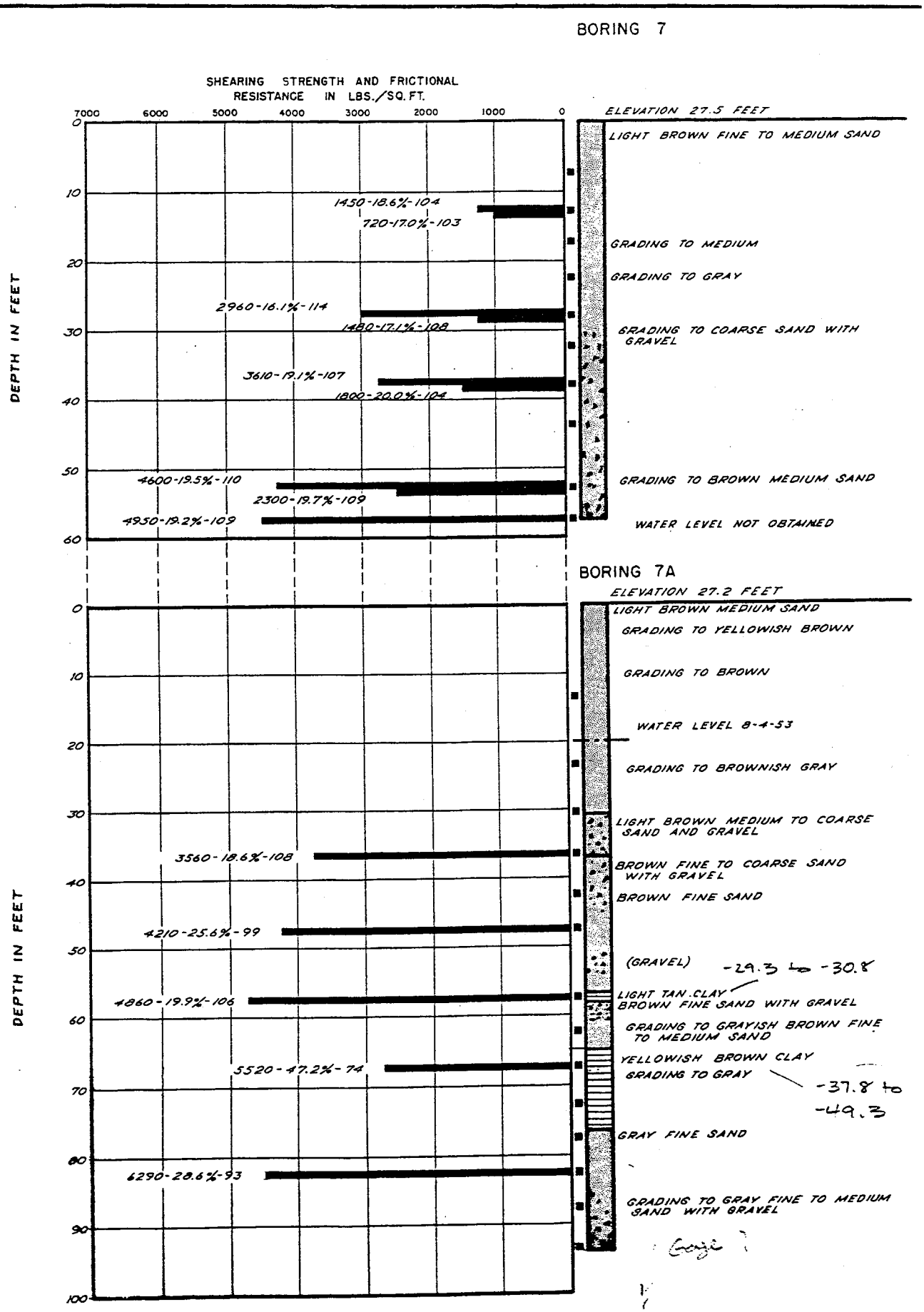


LOG OF BORINGS

DAMES & MOORE, Civil Engineers

REVISIONS
BY_____ DATE_____ TO GO_____
BY_____ DATE_____ TO GO_____
PLATE 1 OF 12 PLATES

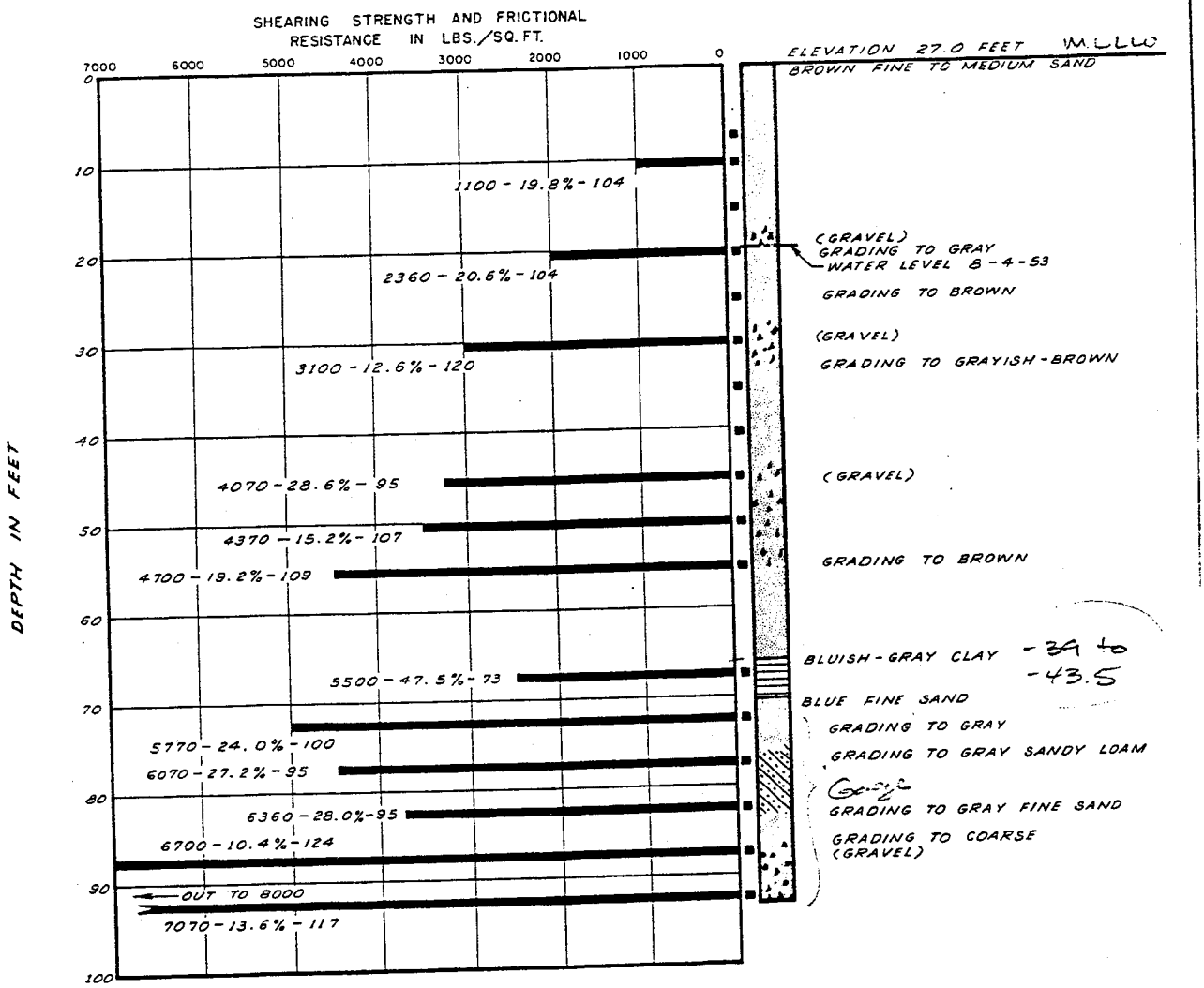
BY A.K. DATE 2-25-53
CHECKED BY A.K. TO GO_____
APPROVED BY OFFICE ENGINEER_____



DAMES & MOORE, Civil Engineers

DRAWN BY K.R.S. DATE 7-29-53
DATA CHECK BY K.K. DATE 8-25-53
DRAFTING CHECK BY K.K. DATE 8-25-53
REPORT DICTATED BY K.F. DATE
JOB TITLE
LOCATION EL SEGUNDO, CALIFORNIA
CLIENT EXXON COMPANY
DATE JOB STARTED 7-27-53 DATE PRINTED 10-15-
JOB NO. 379-8
THIS DRAWING IS ONE OF A SERIES OF 12 DRAWINGS

BORING 8

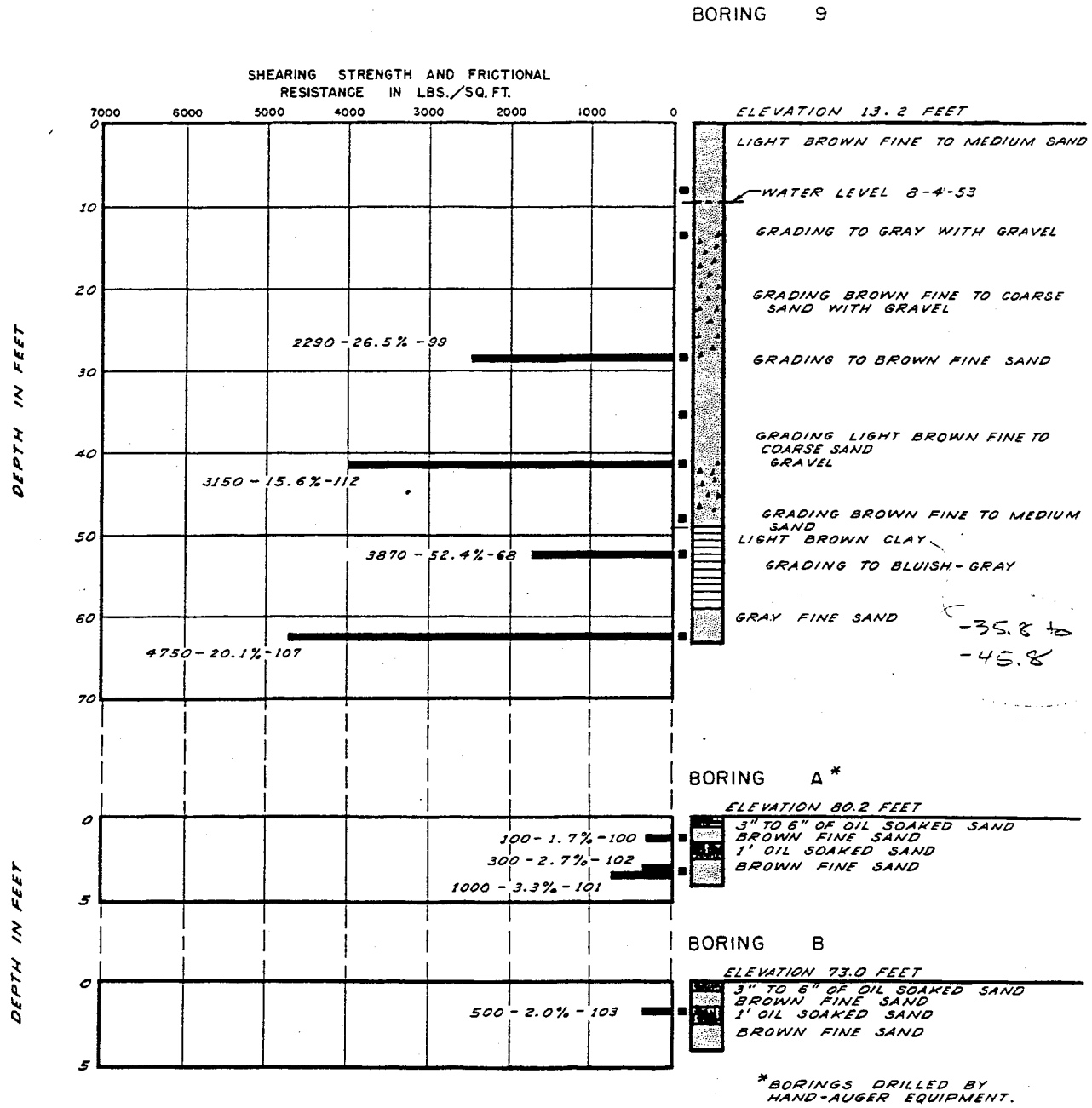


LOG OF BORINGS

DAMES & MOORE, Civil Engineers
FOUNDATION INVESTIGATIONS · SOIL MECHANICS ENGINEERING

REVISIONS
BY ____ DATE ____ TO GO ____
BY ____ DATE ____ TO GO ____
PLATE 1 OF 12 PLATES

FILE 377-9 So. Cal. Edison
BY A.K. DATE SEPT. 24, 53
CHECKED BY K.K. TO GO ____
APPROVED BY OFFICE ENGINEER ____



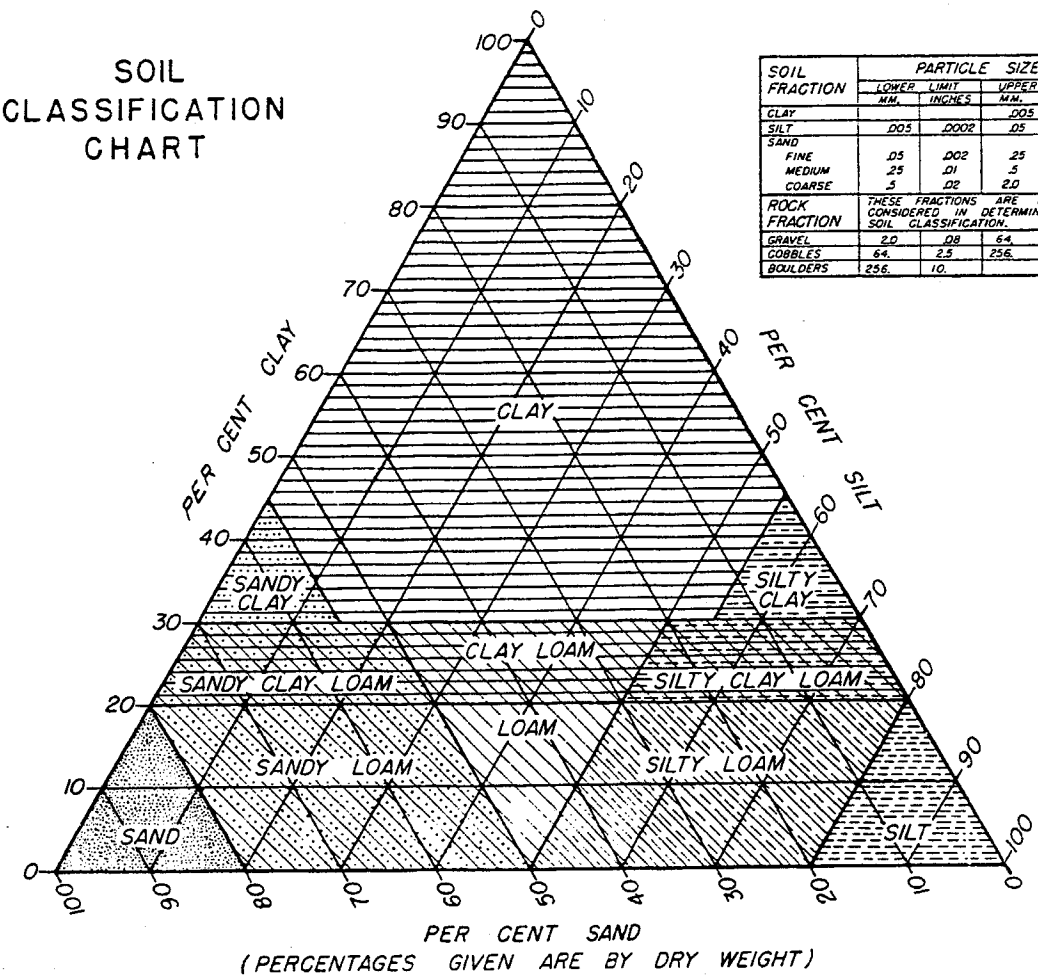
LOG OF BORINGS

DAMES & MOORE, Civil Engineers
FOUNDATION INVESTIGATIONS · SOIL MECHANICS ENGINEERING

JOB No. 377-9 LOCATION El Segundo, California DRAWN BY H.W. DATE 8-25-53
THIS DRAWING IS ONE OF A SERIES OF 12 DRAWINGS CLIENT So. Calif. Edison DATA CHECK BY H.W. DATE 8-25-53
DATE JOB STARTED 2-24-53 DATE PRINTED DRAFTING CHECK BY H.F. DATE
REPORT DICTATED BY DATE

SOIL CLASSIFICATION CHART

SOIL FRACTION	PARTICLE SIZE LOWER LIMIT MM.	LOWER LIMIT INCHES	UPPER LIMIT MM.	UPPER LIMIT INCHES
CLAY			.005	.0002
SILT	.005	.0002	.05	.002
SAND				
FINE	.05	.002	.25	.01
MEDIUM	.25	.01	.5	.02
COARSE	.5	.02	2.0	.08
ROCK FRACTION	THESE FRACTIONS ARE NOT CONSIDERED IN DETERMINING SOIL CLASSIFICATION.			
GRAVEL	2.0	.08	64.	2.5
COBBLES	64.	2.5	256.	10.
BOULDERS	256.	10.		



KEY TO TEST DATA

TESTS AT FIELD MOISTURE

TEST SURCHARGE PRESSURE IN POUNDS PER SQUARE FOOT.
PER CENT FIELD MOISTURE EXPRESSED AS A PERCENTAGE OF THE DRY WEIGHT OF SOIL
DRY DENSITY EXPRESSED IN POUNDS PER CUBIC FOOT

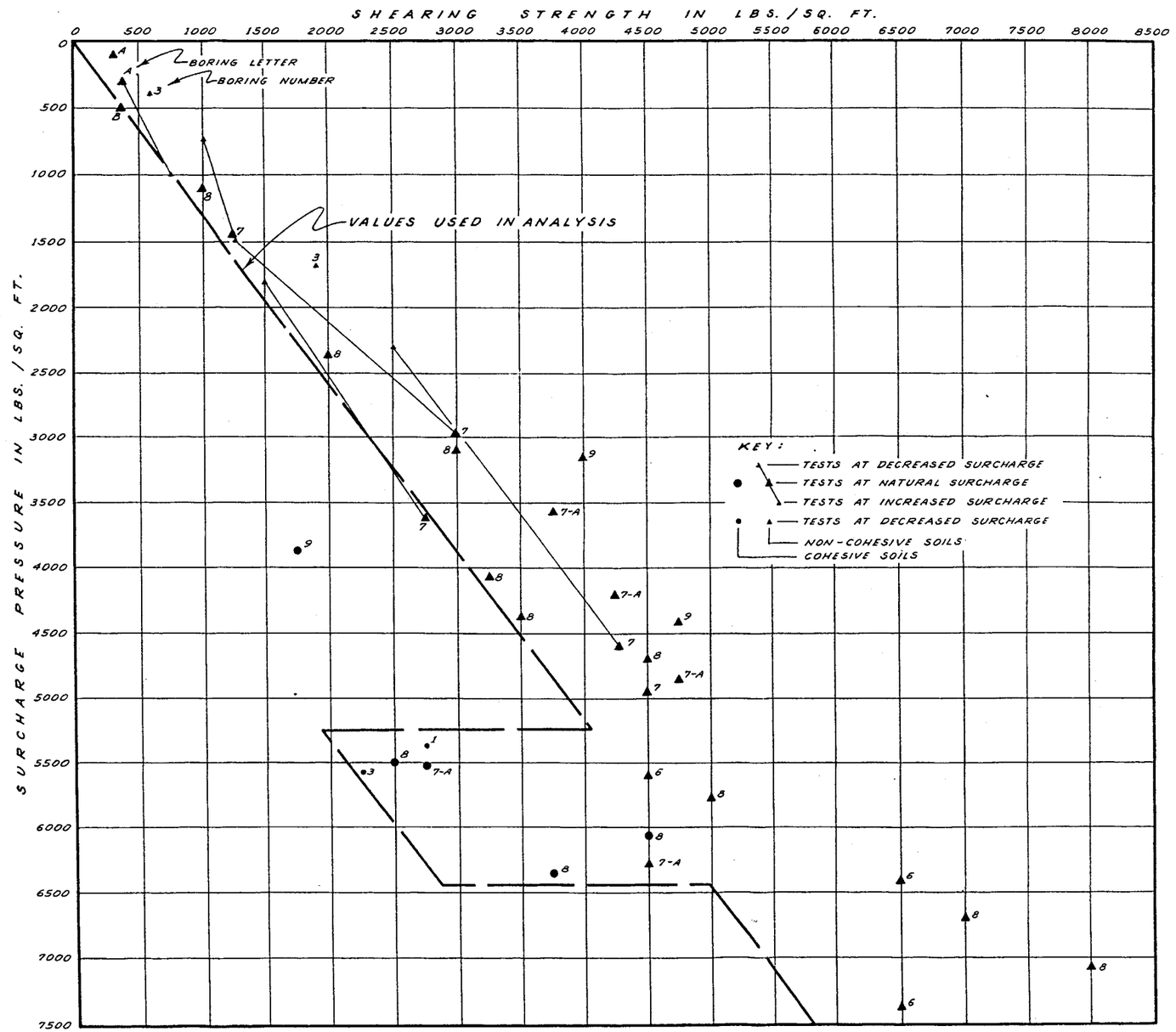
2500 — 20.4% — 104.2 — SHEARING STRENGTH IN POUNDS PER SQUARE FOOT

■ INDICATES DEPTH AT WHICH UNDISTURBED SAMPLE WAS EXTRACTED

SOIL CLASSIFICATION CHART AND KEY TO TEST DATA

DAMES & MOORE
FOUNDATION ENGINEERS

DAMES & MOORE
JOB No. 297-C
THIS DRAWING IS ONE OF A SERIES OF 6 DRAWINGS
JOB TITLE Foundation Investigation
LOCATION Hong Kong
CLIENT Hallet Sugar
DATE JOB STARTED 9-13-50
DATE PRINTED 10-11
DRAWN BY Lane DATE 10-10-50
DATA CHECK BY DATE
DRAFTING CHECK BY DATE
REPORT DICTATED BY DATE



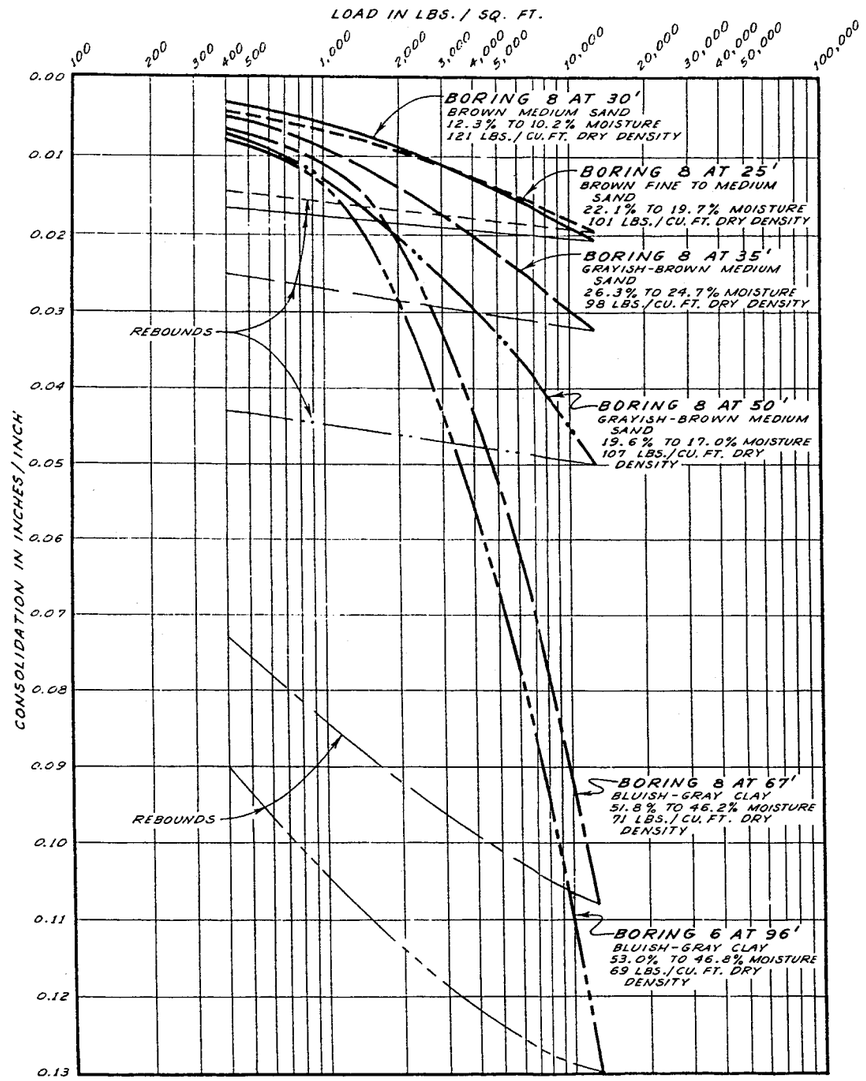
SUMMARY OF SHEAR TEST DATA

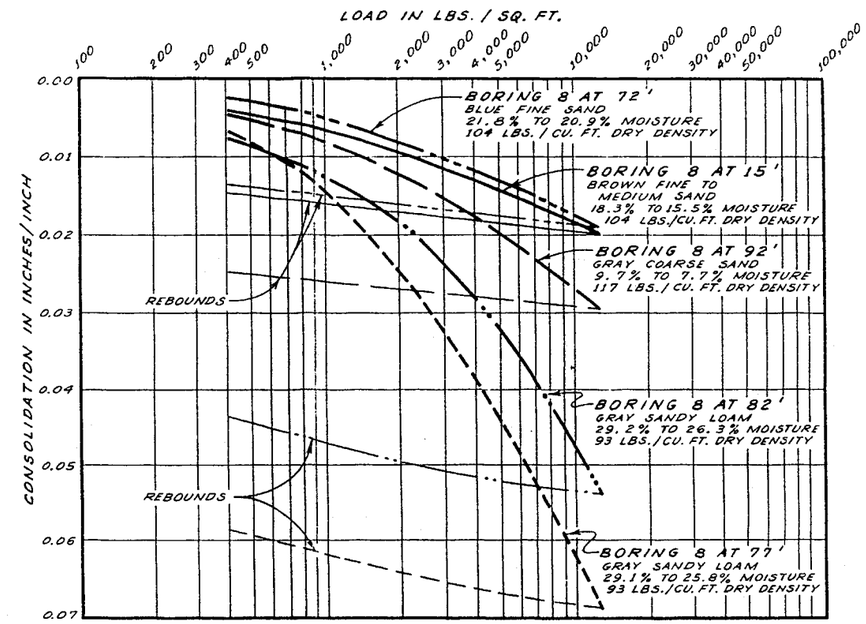
DAMES & MOORE, Civil Engineers
FOUNDATION INVESTIGATIONS · SOIL MECHANICS ENGINEERING

DAMES & MOORE
JOB No. 377-Q
THIS DRAWING IS ONE OF A SERIES OF 12 DRAWINGS

JOB TITLE FOUNDATION INVESTIGATION
LOCATION EL SEGUNDO, CALIFORNIA
CLIENT SO. CALIF. EDISON CO.
DATE JOB STARTED 7-24-53 DATE PRINTED 10-15-53

DRAWN BY A. KEYES DATE OCT. 9, 53
DATA CHECK BY KUGEL DATE 10-15-53
DRAFTING CHECK BY KUGEL DATE 10-15-53
REPORT DICTATED BY H.F. DATE





CONSOLIDATION TEST DATA

DAMES & MOORE, Civil Engineers
FOUNDATION INVESTIGATIONS · SOIL MECHANICS ENGINEERING

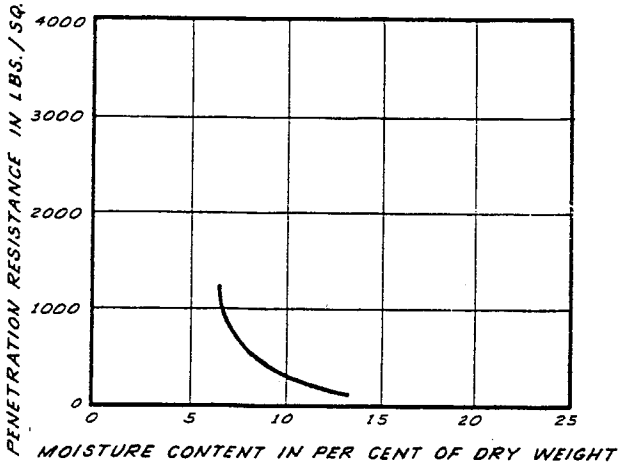
DAMES & MOORE
JOB NO. 377-Q
THIS DRAWING IS ONE OF A SERIES OF 12 DRAWINGS

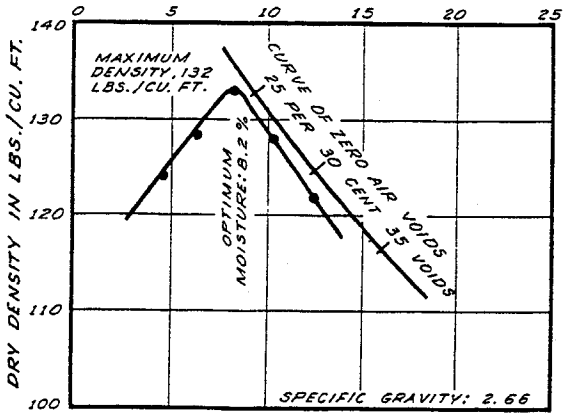
JOB TITLE FOUNDATION INVESTIGATION
LOCATION Ft. SERVICE, CALIFORNIA
CLIENT SO. CALIF. EDISON CO.
DATE JOB STARTED 7-24-53
DATE PRINTED 10-15-53

DRAWN BY A. TREYES DATE OCT. 7, 53
DATA CHECK BY KRESS DATE 10-15-53
DRAFTING CHECK BY KRESS DATE 10-15-53
REPORT DICTATED BY H.T. DATE

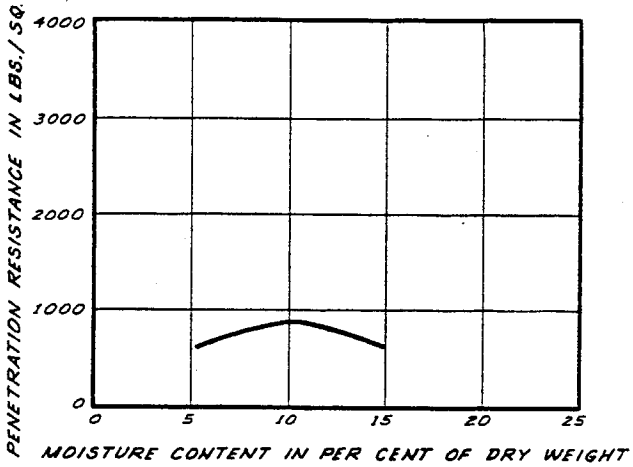
DAMES & MOORE · JOB TITLE: FOUNDATION INVESTIGATION
JOB No. 377-Q · LOCATION: EL SEGUNDO, CALIFORNIA
THIS DRAWING IS ONE OF A SERIES OF 12 DRAWINGS · CLIENT: SO. CALIF. EDISON CO.
DATE JOB STARTED 2-24-53 · DATE PRINTED 10-15
DRAWN BY A. REYES · DATE OCT. 7, 53
DATA CHECK BY KNESEL · DATE 10-15-53
DRAFTING CHECK BY KNESEL · DATE 10-15-53
REPORT DICTATED BY N.F. · DATE

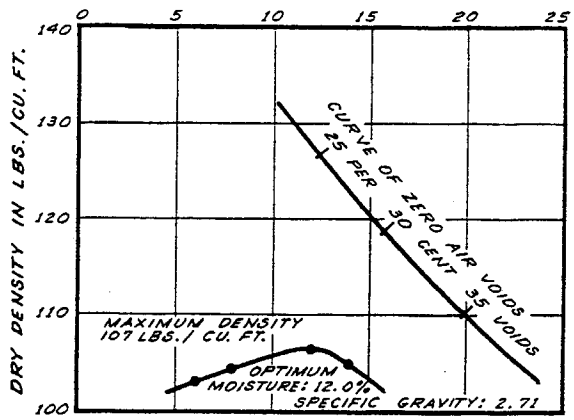
SAMPLE NUMBER 2
LOCATION SEE PLOT PLAN
DEPTH SURFACE
SOIL TYPE BROWN SANDY LOAM





SAMPLE NUMBER 1
LOCATION SEE PLOT PLAN
DEPTH SURFACE
SOIL TYPE LIGHT BROWN FINE SAND

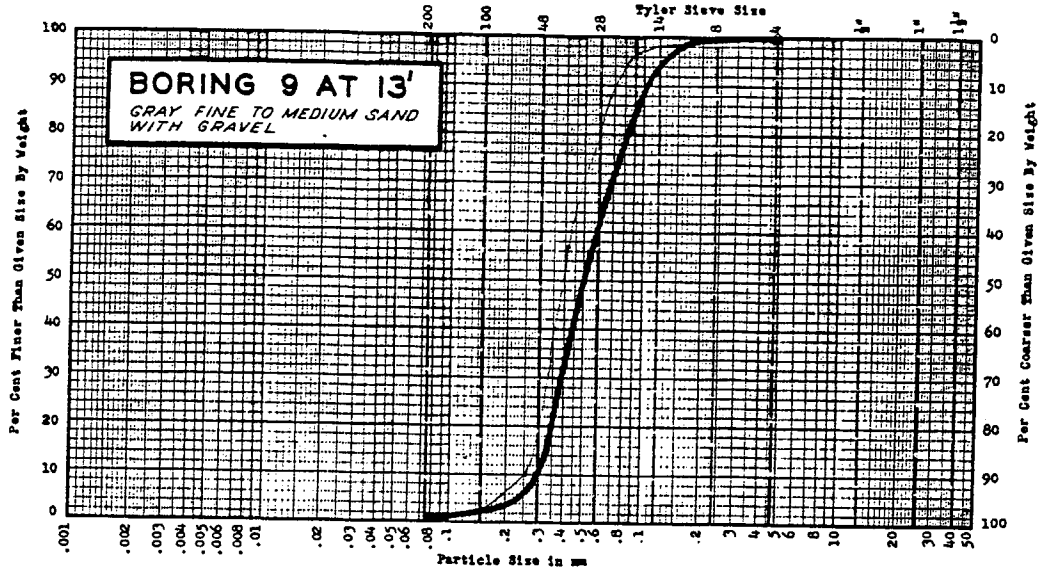


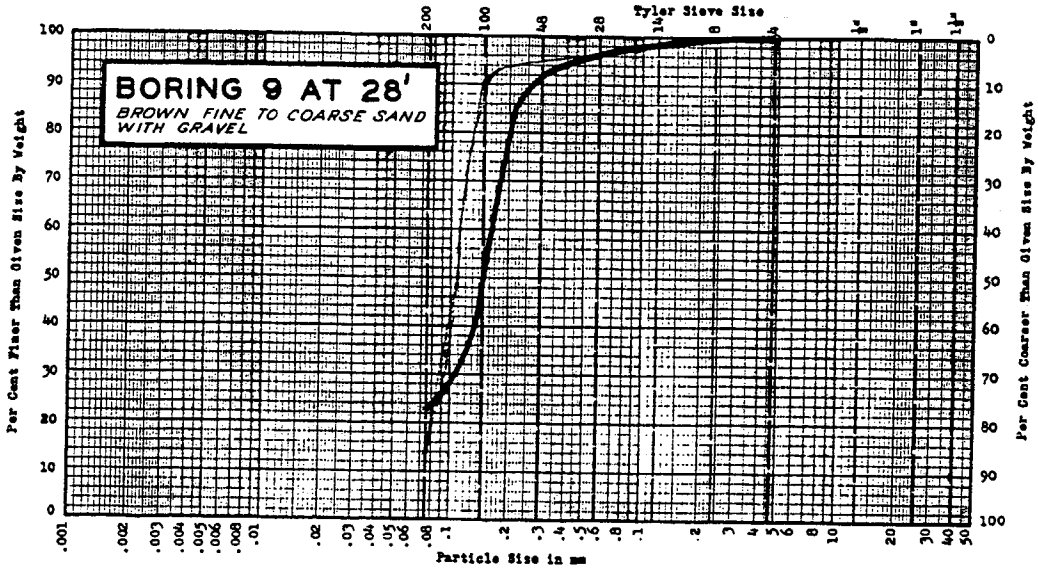


NOTE:
THE COMPACTION TESTS WERE PERFORMED IN ACCORDANCE WITH THE MODIFIED A.A.S.H.O. METHOD OF COMPACTION.

COMPACTION TEST DATA

DAMES & MOORE, Civil Engineers
FOUNDATION INVESTIGATIONS · SOIL MECHANICS ENGINEERING



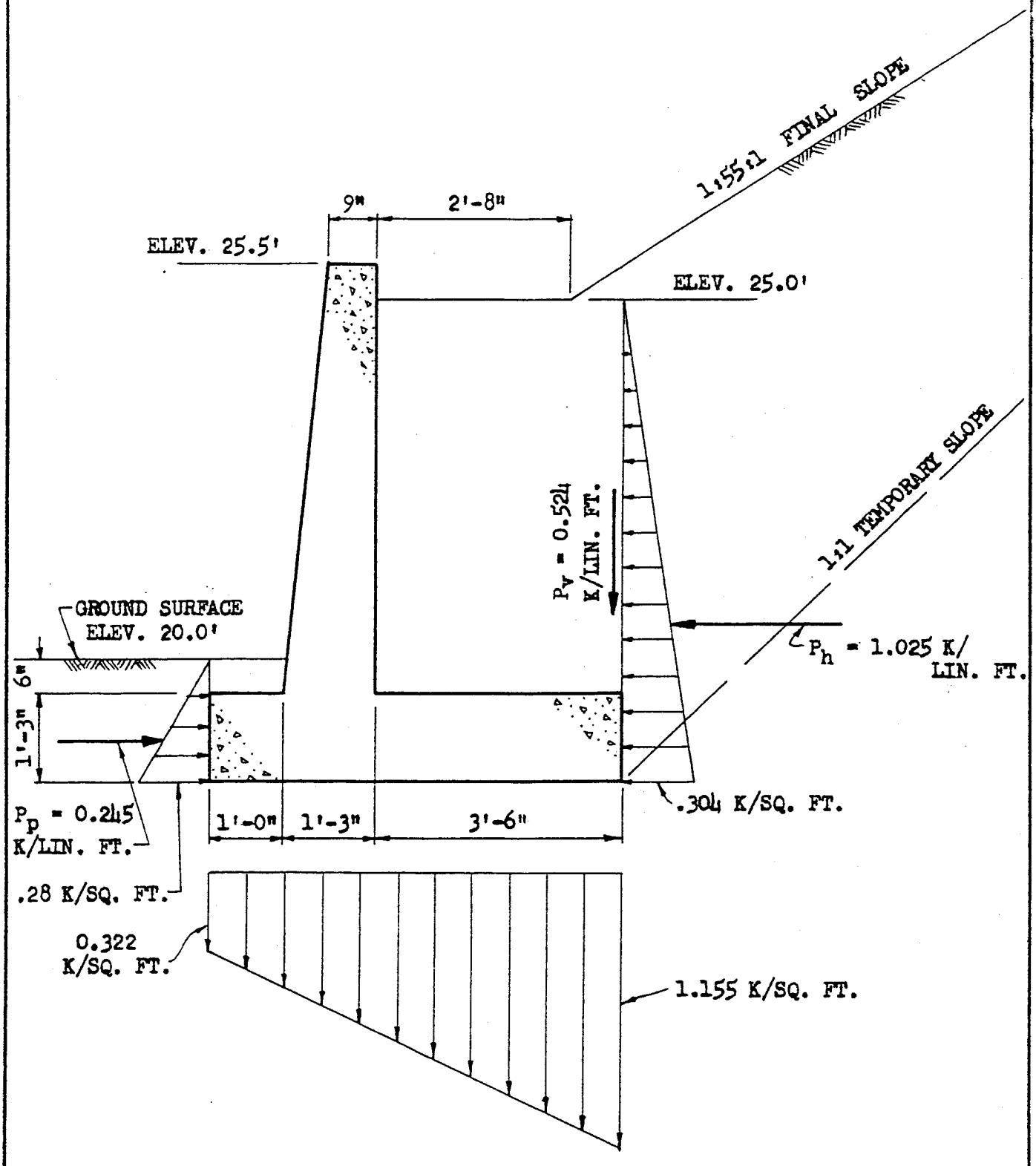


PERCOLATION RATES ON THESE SANDS VARY FROM 9×10^{-4} TO 40×10^{-4} FEET PER MINUTE FOR A HYDRAULIC GRADIENT OF ONE

MECHANICAL ANALYSES AND PERCOLATION TEST DATA

DAMES & MOORE, Civil Engineers

JOB NO. 5115
THIS DRAWING IS ONE OF A SERIES OF 13 DRAWINGS
LOCATION EL SEGUNDO, CALIFORNIA
CLIENT So. Calif. Edison Co.
DATE JOB STARTED 7-24-53
DATE PRINTED 19
DATA CHECK BY K.K. E.H. DATE 10-23-53
DRAFTING CHECK BY K.K. DATE 10-23-53
REPORT DICTATED BY H.T. DATE



PROPOSED RETAINING WALL SECTION

SCALE: $\frac{1}{2}$" = 1'-0"

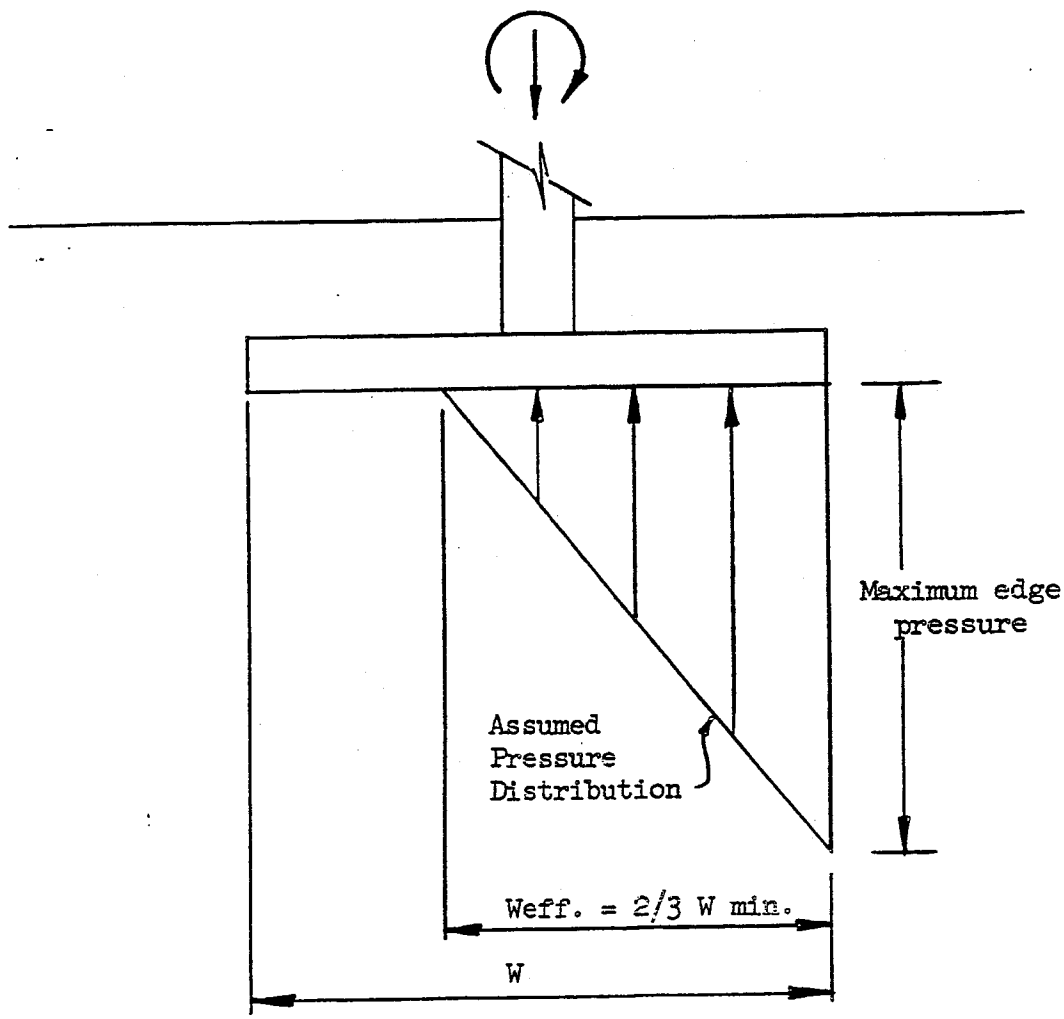
DAMES & MOORE

REVISIONS
BY ____ DATE ____ TO GO ____
BY ____ DATE ____ TO GO ____

FILE 0377-026 So. Calif. Edison Co.

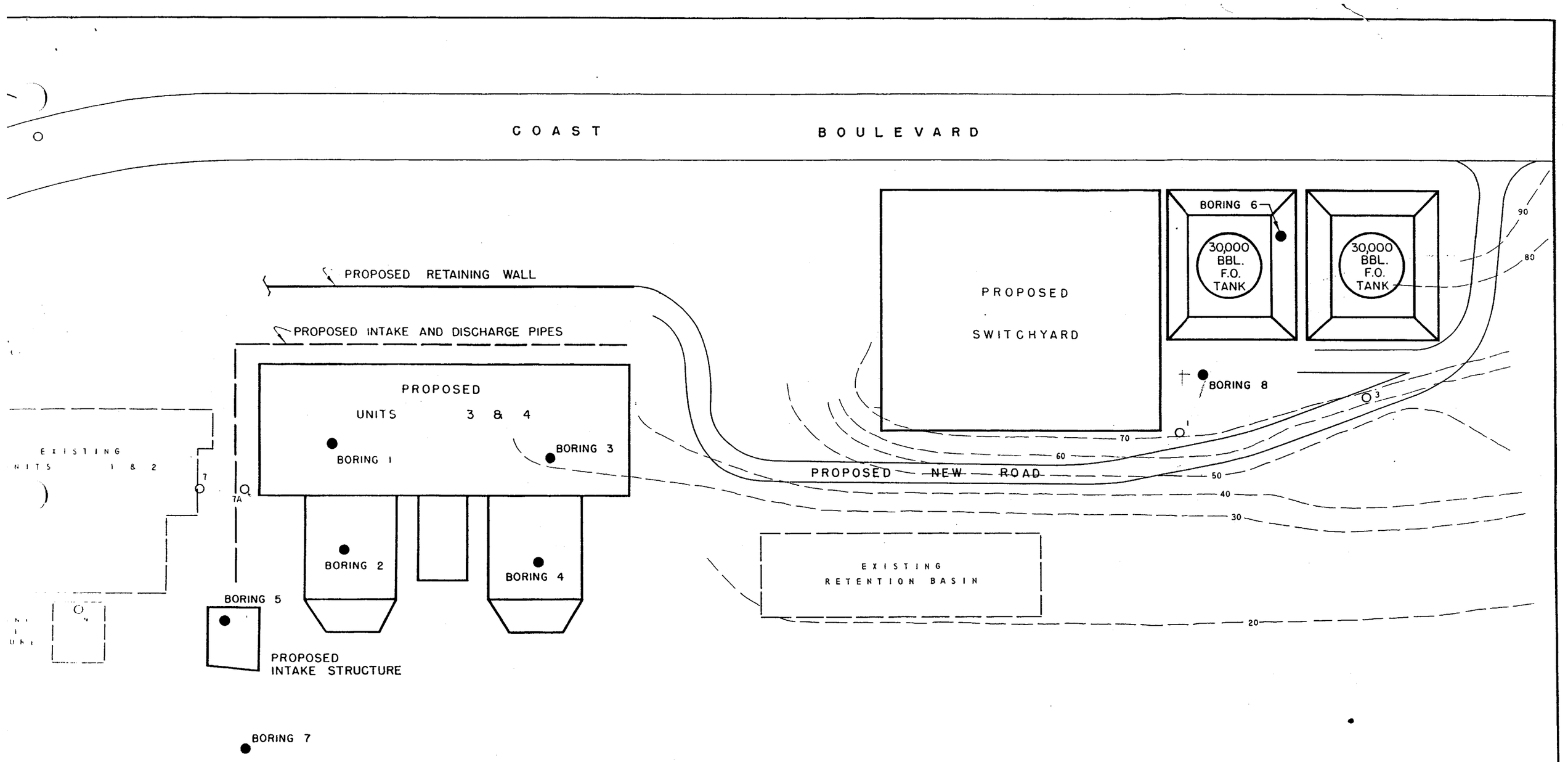
BY U.A.M. DATE 1-20-62
CHECKED BY ____
COPY TO GO ____

are net bearing values; therefore, the weight of foundations below lowest adjacent grade may be neglected when computing dead loads. The increased values apply to the maximum edge pressure (assuming linear distribution) under footings subjected to overturning moments. Some of the footings will be subjected to overturning moments of large magnitude, compared to the dead plus live loads. Figure 1, below, illustrates items to be considered in designing these footings.



Weff. must be at least two-thirds of W.

Figure 1. Design of Footings to Resist Large Overturning Forces

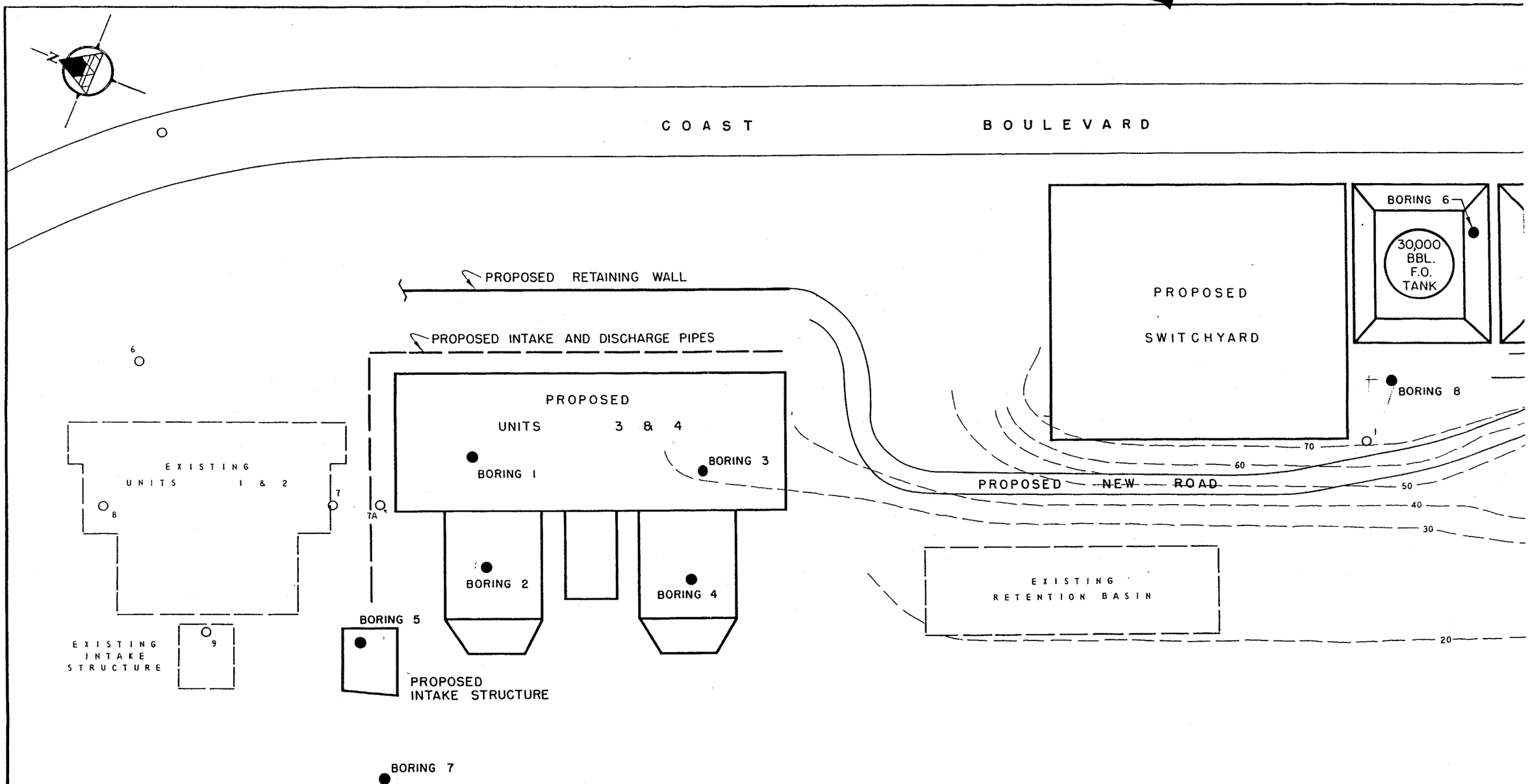


PLOT PLAN

FEET

50 0 50 100

DAMES & MOORE
SOIL MECHANICS ENGINEERS



LOCATIONS OF ALL PROPOSED FACILITIES ARE APPROXIMATE

— — — — EXISTING CONTOURS

DATUM: MEAN LOWER LOW WATER

APPROXIMATE SHORE LINE

○ BORINGS DRILLED IN CONNECTION WITH THE PREVIOUS INVESTIGATION

● BORINGS DRILLED IN CONNECTION WITH THE PRESENT INVESTIGATION

REFERENCE:

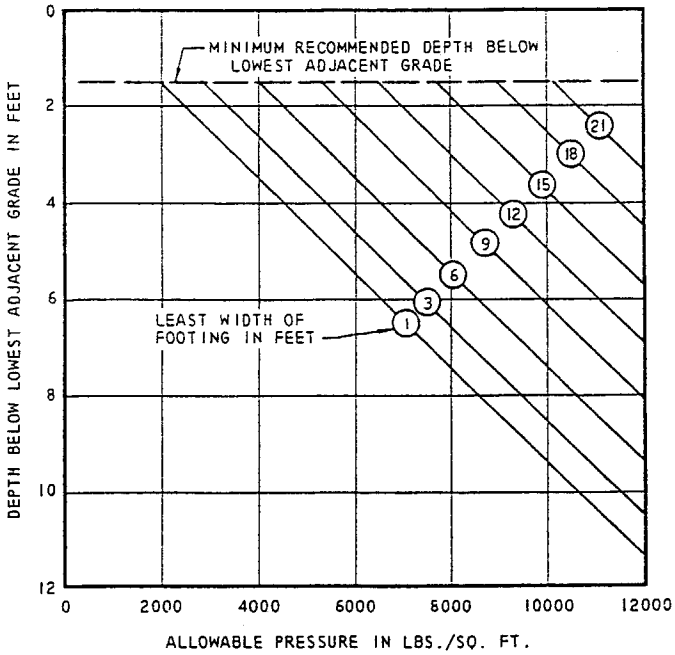
DRAWING TITLED "PLANT LAYOUT PLAN", MADE BY SOUTHERN CALIFORNIA EDISON COMPANY, LOS ANGELES, CALIFORNIA; DATED 9-13-61.

PLOT

FEE

50 0

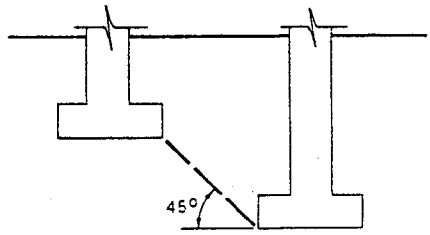
URS



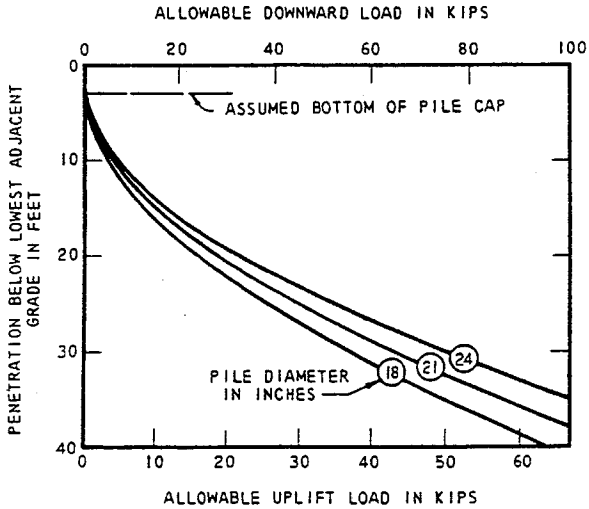
NOTES:

1. THESE VALUES APPLY FOR FOOTINGS ON NATURAL UNDISTURBED SOIL AND FOR FOOTINGS ON FILL SOIL COMPACTED TO 95% OF THE MAXIMUM A.A.S.H.O. T 180-57 COMPACTION TEST DENSITY.
2. THE VALUES SHOWN APPLY FOR THE TOTAL DEAD PLUS FREQUENTLY APPLIED LIVE LOADS. THEY MAY BE INCREASED BY ONE-THIRD FOR THE TOTAL OF ALL LOADS, INCLUDING DEAD, LIVE, AND WIND OR SEISMIC.
3. THE VALUES SHOWN ARE NET BEARING VALUES.

ALLOWABLE BEARING VALUES



FOUNDATION SPACING



NOTES:

1. THESE VALUES APPLY FOR PILES IN NATURAL UNDISTURBED SOIL AND FOR PILES DRILLED IN FILLS COMPACTED TO 90% OF THE MAXIMUM A.A.S.H.O. T 180-57 COMPACTION TEST DENSITY.
2. THE CAPACITIES SHOWN ARE LIMITED BY THE STRESSES IN THE SOILS; THE STRESSES IN THE PILES THEMSELVES MAY IMPOSE MORE SEVERE LIMITATIONS.
3. THE VALUES SHOWN APPLY FOR THE TOTAL OF DEAD PLUS FREQUENTLY APPLIED LIVE LOADS; THEY MAY BE INCREASED BY ONE-THIRD FOR THE TOTAL OF ALL LOADS INCLUDING DEAD, LIVE, AND WIND OR SEISMIC.
4. PILES IN GROUPS SHOULD BE SPACED SO THAT THE PERIMETER OF THE OUTSIDE OF THE PILE GROUP IS EQUAL TO OR GREATER THAN THE SUM OF THE PERIMETERS OF THE PILES IN THE GROUP.
5. THESE VALUES HAVE A COMPUTED SAFETY FACTOR OF ABOUT 4 FOR DEAD LOAD + LIVE LOAD.
6. THE CAPACITIES OF PILES HAVING DIAMETERS OTHER THAN THOSE SHOWN WOULD BE DIRECTLY PROPORTIONAL TO THE DIAMETERS.

DRILLED PILE CAPACITIES

FOUNDATION DESIGN DATA

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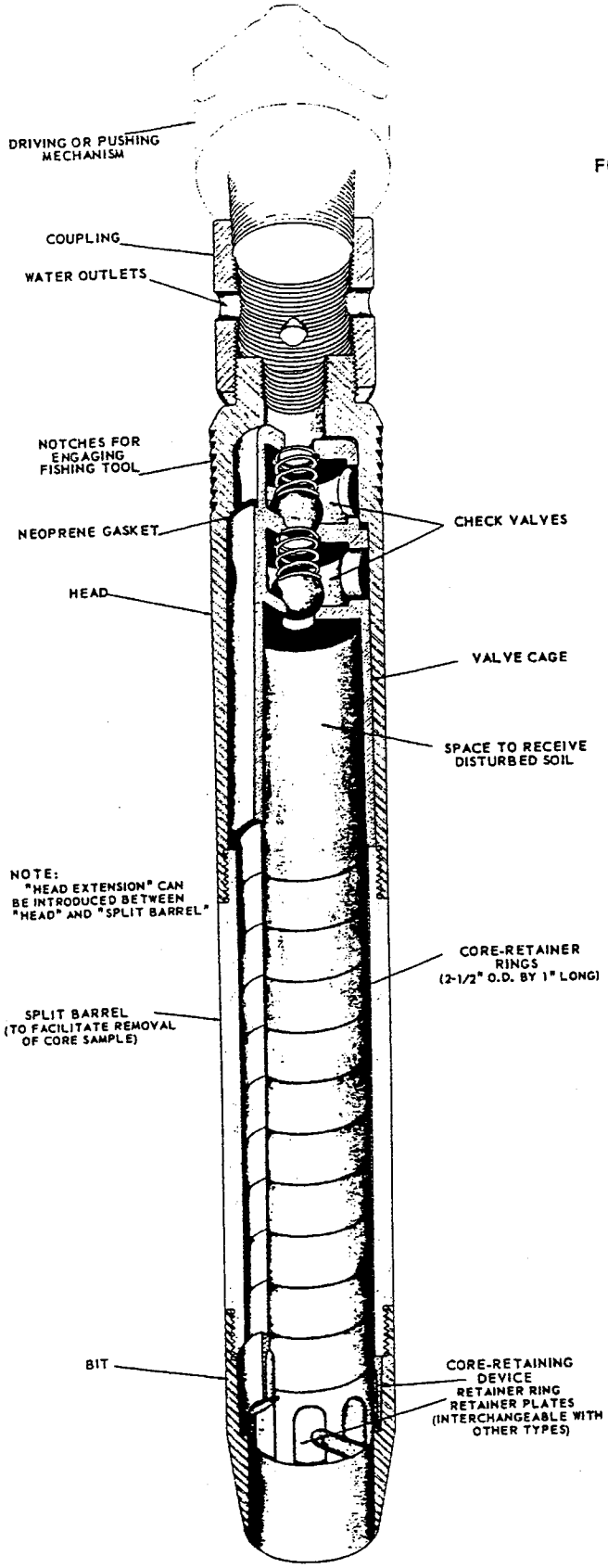
DAMES & MOORE
SOIL MECHANICS ENGINEERS

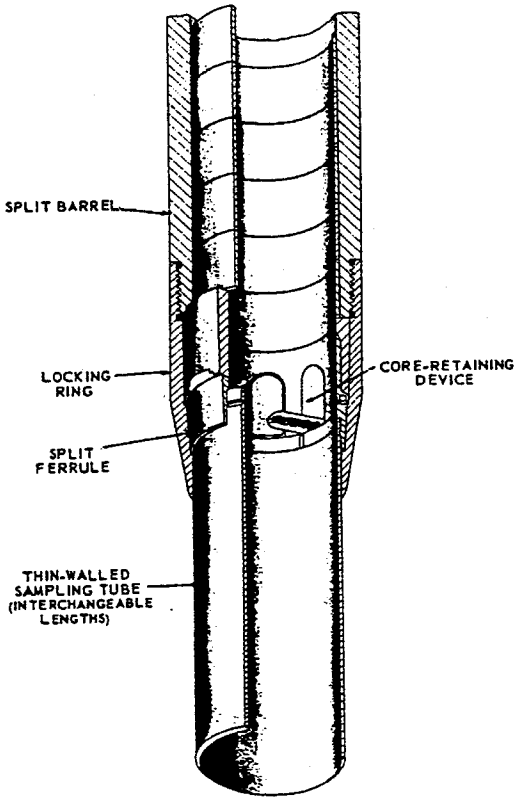
URS

SOIL SAMPLER TYPE U

FOR SOILS DIFFICULT TO RETAIN IN SAMPLER
U. S. PATENT NO. 2,318,062



ALTERNATE ATTACHMENTS



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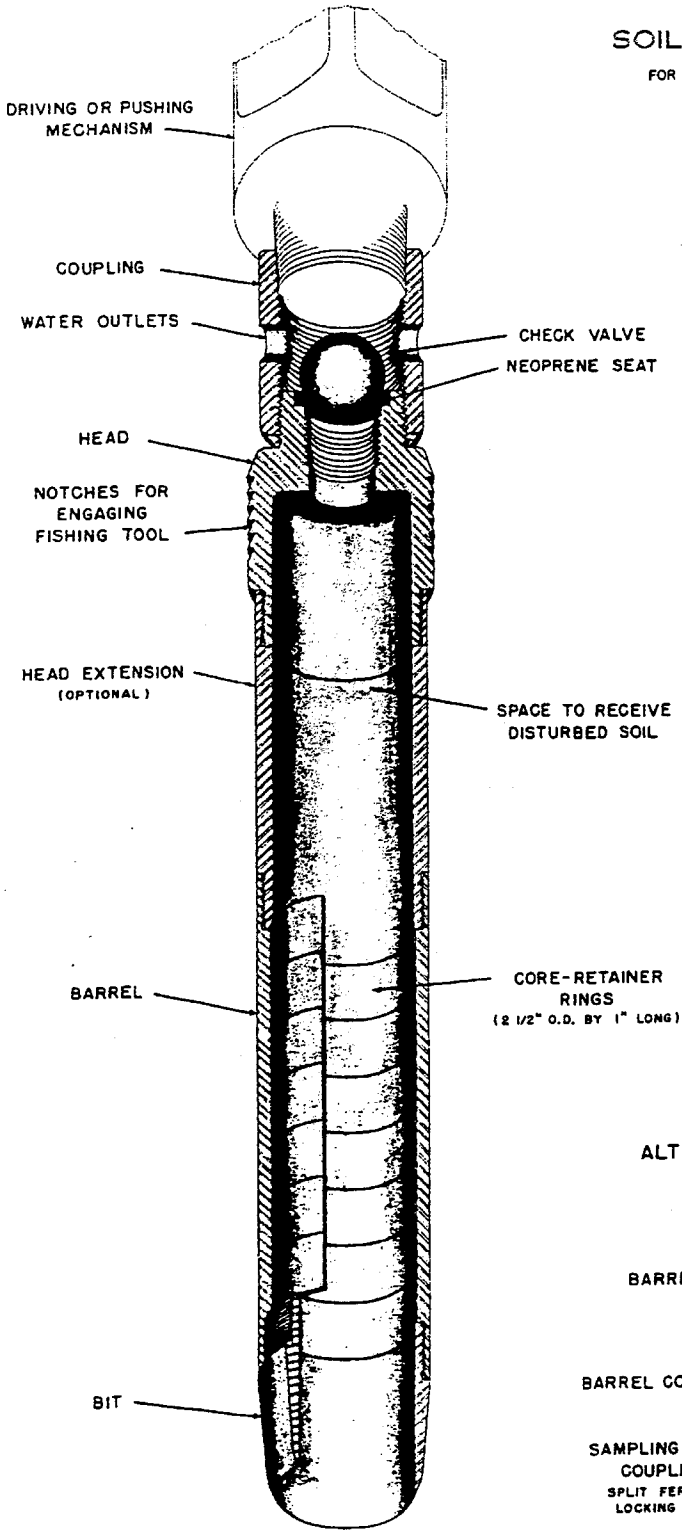
DAMES & MOORE
APPLIED EARTH SCIENCES

117.9(6-61)

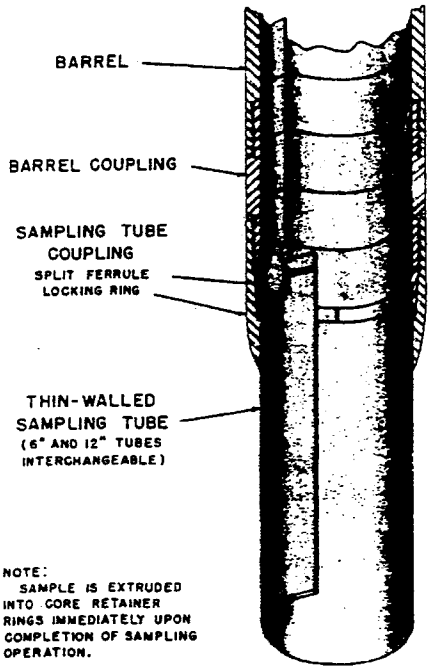
URS

SOIL SAMPLER TYPE D

FOR SOILS EASY TO RETAIN IN SAMPLER



ALTERNATE ATTACHMENTS



NOTE:
SAMPLE IS EXTRUDED INTO CORE RETAINER RINGS IMMEDIATELY UPON COMPLETION OF SAMPLING OPERATION.

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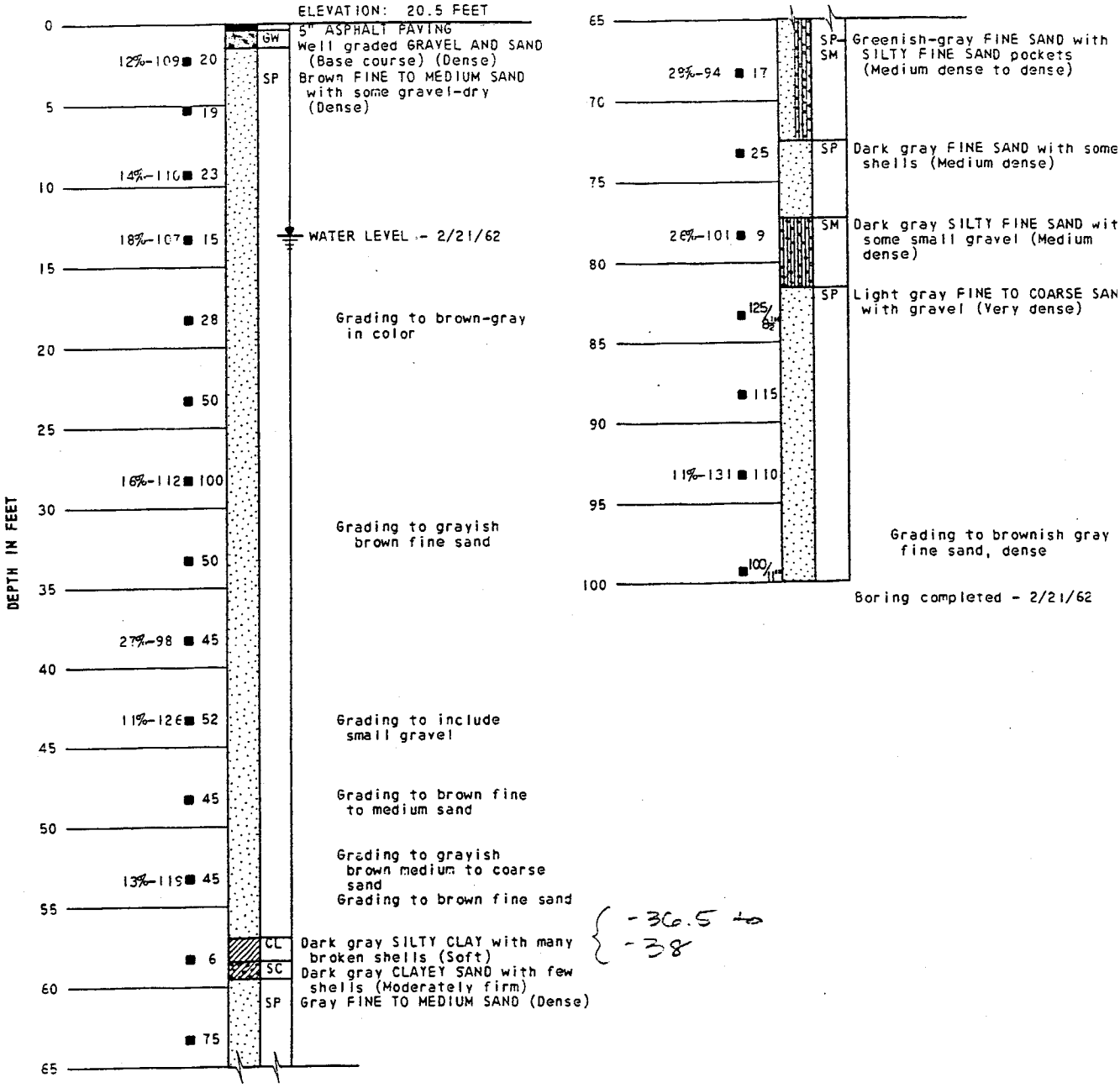
URS

BORING 1

MLLW

ELEVATION: 20.5 FEET



LOG OF BORINGS

KEY:

A - B ■ C

A FIELD MOISTURE EXPRESSED AS A PERCENTAGE OF THE DRY WEIGHT OF SOIL
B DRY DENSITY EXPRESSED IN LBS./CU. FT.
C BLOWS PER FOOT OF PENETRATION WITH A 350 LB. HAMMER DROPPING 18" FOR BORINGS 1 THROUGH 7. A 1300 LB. HAMMER DROPPING 12" WAS USED FOR BORING 8.
■ DENOTES WHERE AN UNDISTURBED SAMPLE WAS EXTRACTED
□ DEPTH OF SAMPLING ATTEMPT WITH NO RECOVERY
ELEVATIONS REFER TO MEAN LOWER LOW WATER

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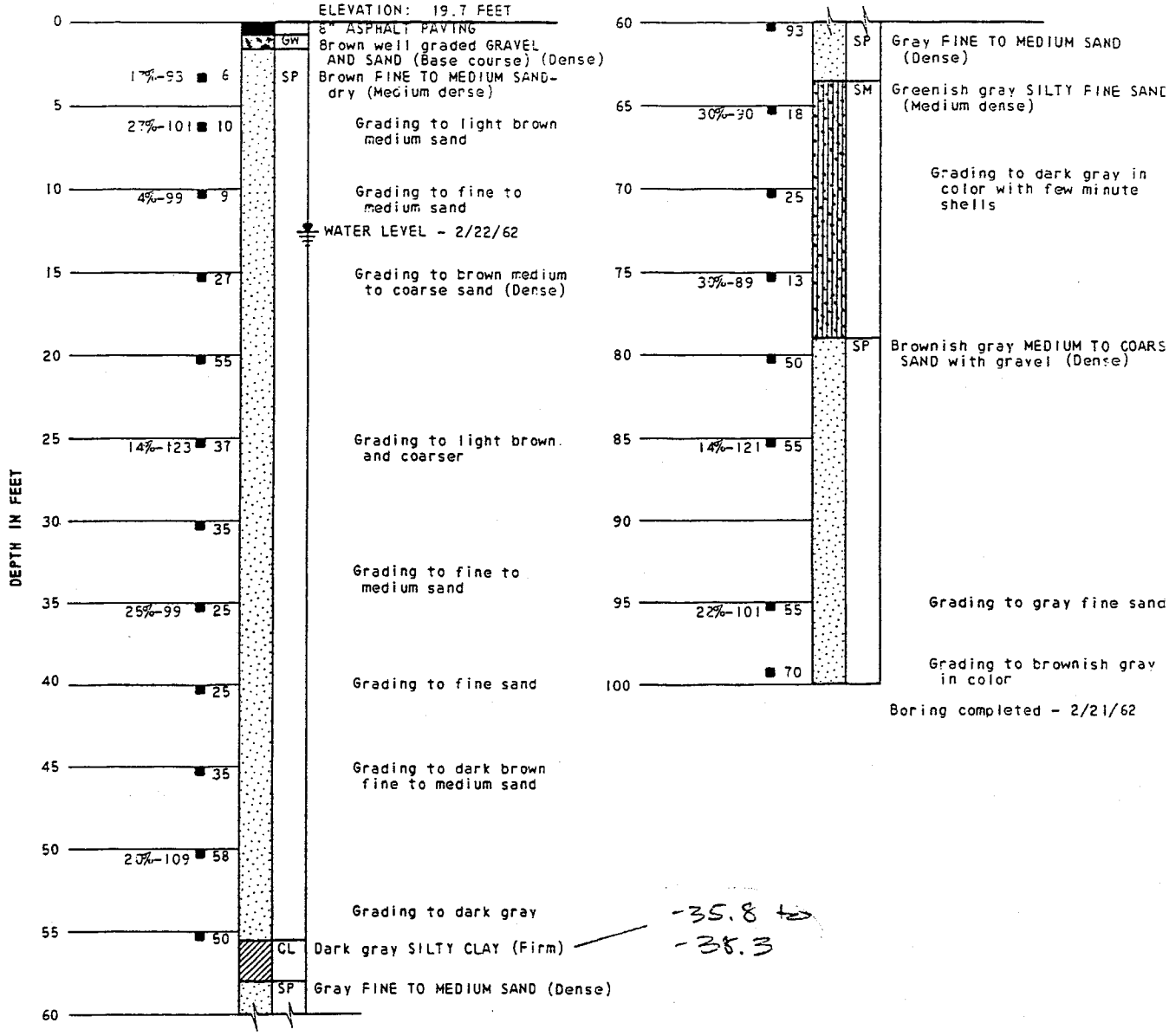
SOIL MECHANICS ENGINEERS

PLATE A-1A

URS

BORING 2



LOG OF BORINGS

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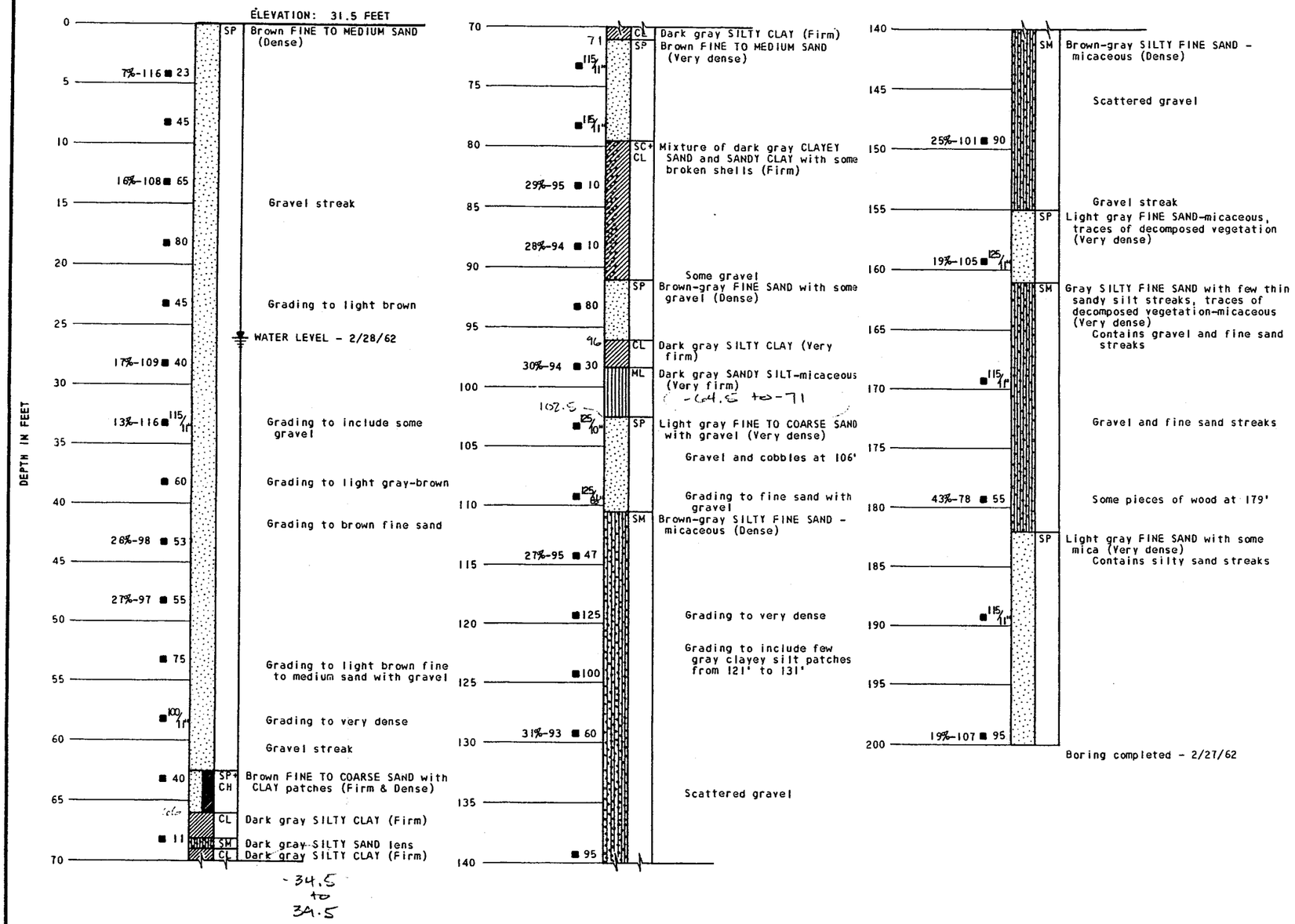
DAMES & MOORE
SOIL MECHANICS ENGINEERS

PLATE A-19

BORING 3



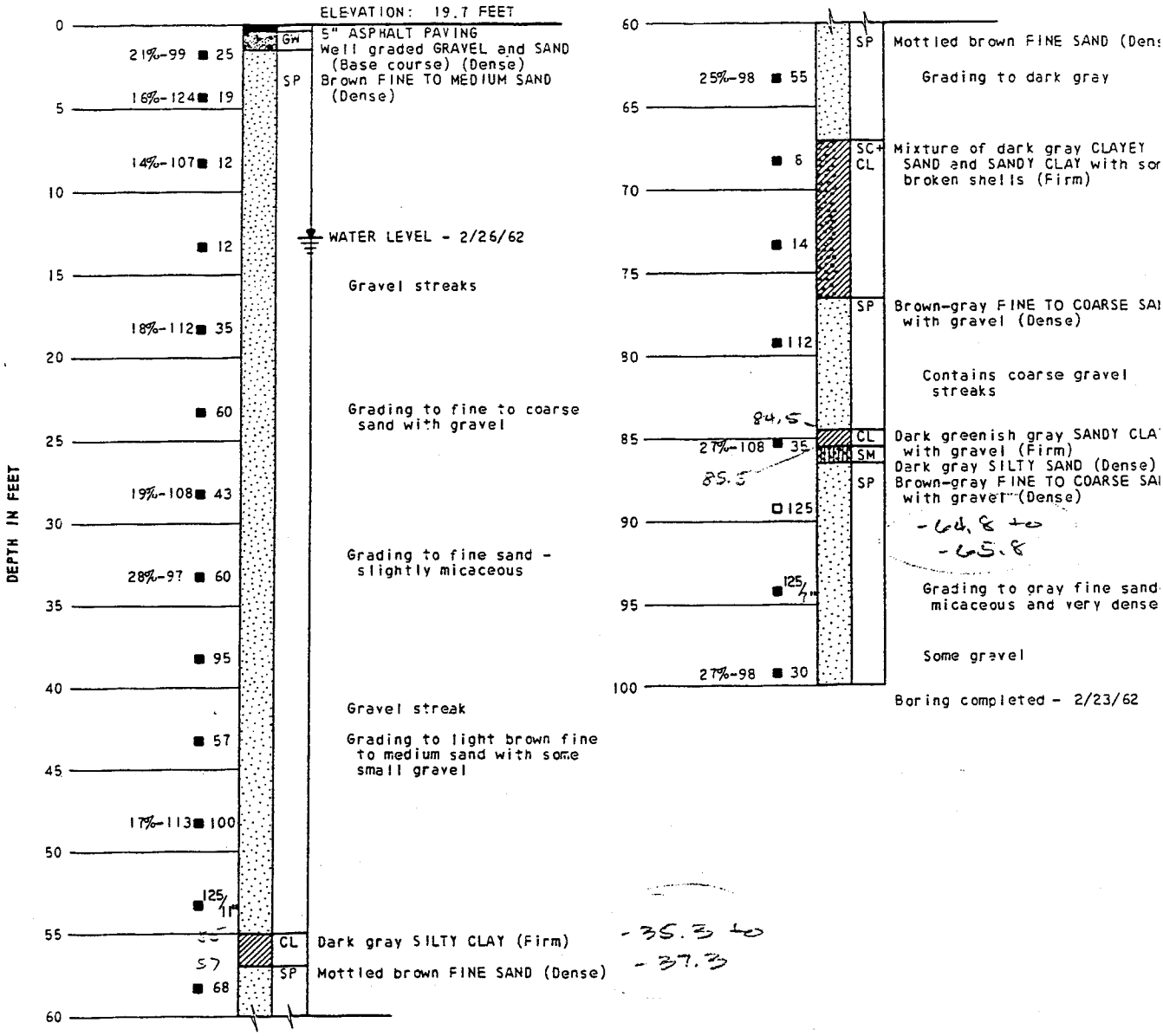
LOG OF BORING

DAMES & MOORE
SOIL MECHANICS ENGINEERS

DAMES & MOORE
SOIL MECHANICS ENGINEERS

URS

BORING 4



LOG OF BORING

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DAMES & MOORE
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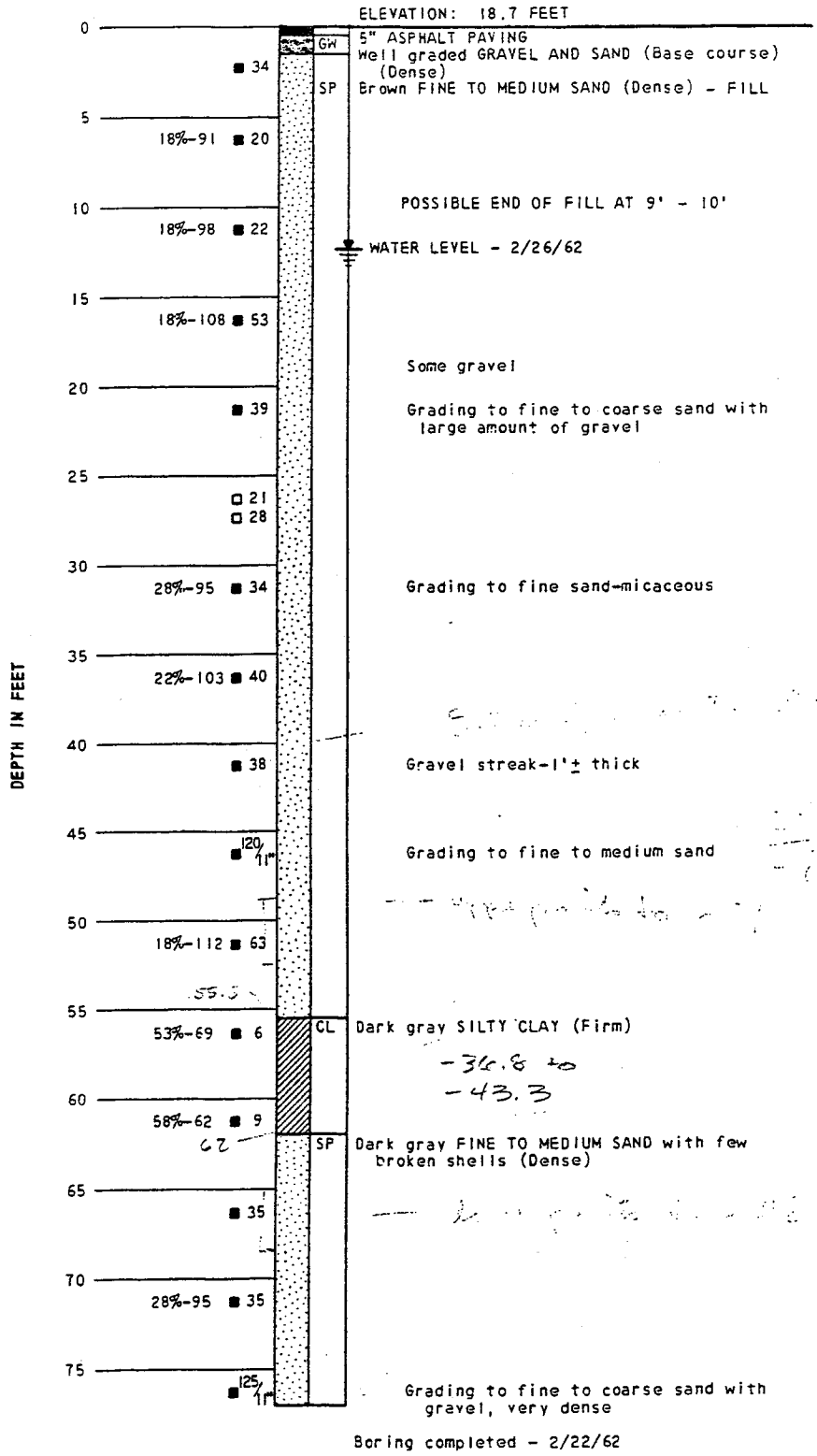
PLATE A-10

URS

BORING 5



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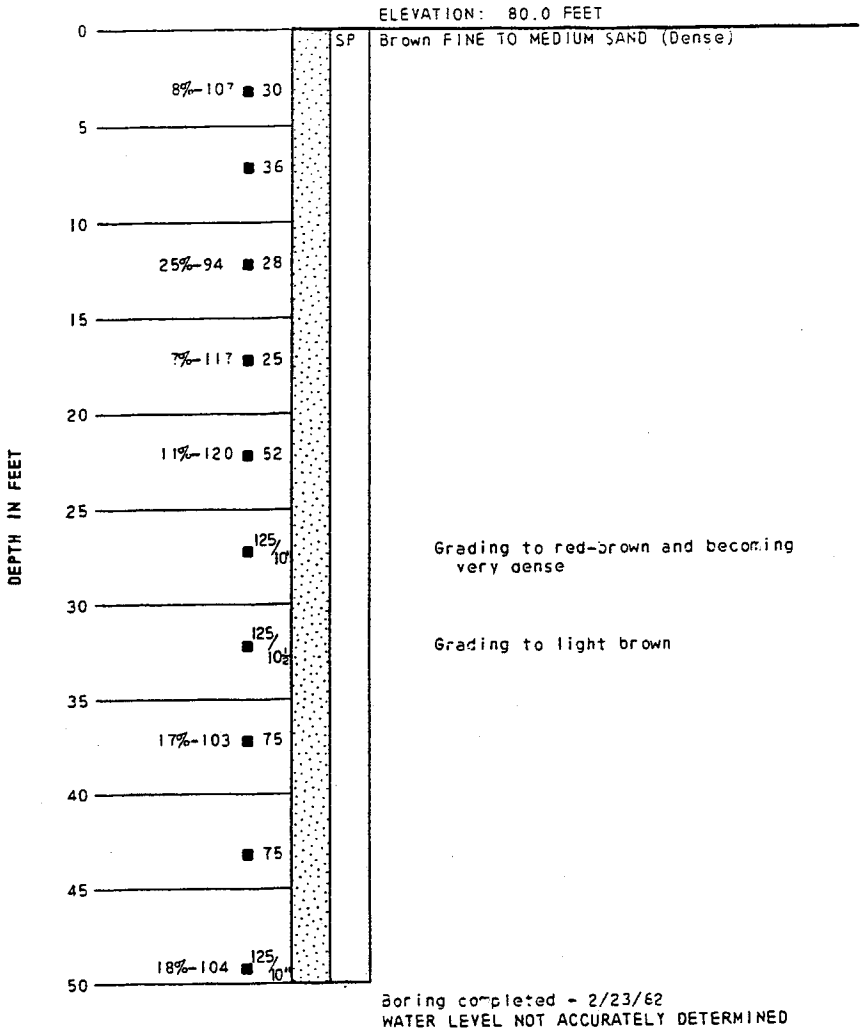
BORING 6



LOG OF BORING

BY ____ DATE ____ PLATE ____ OF ____

BY L.A.R. DATE 2-6-62 CHECKED BY [illegible] DATE 3-27-62

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BORING 7

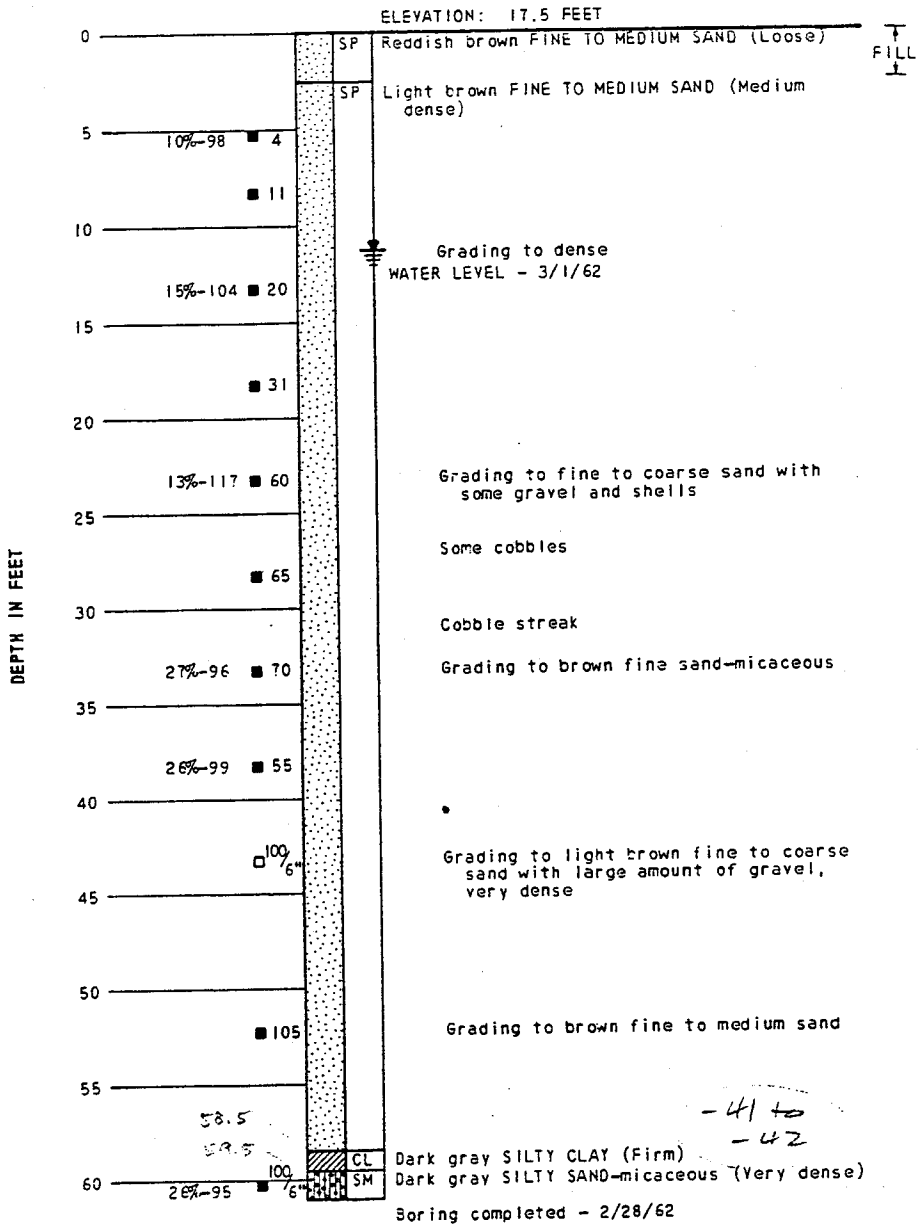

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PLATE A-16

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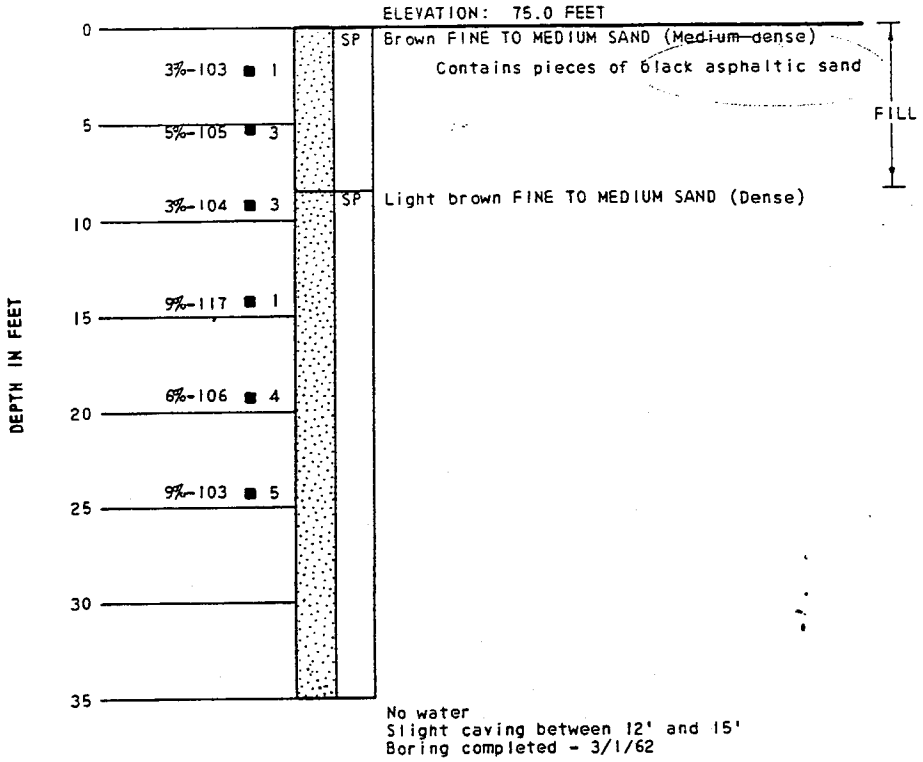
BORING 8



LOG OF BORING

BY ____ DATE ____ OF ____
PLATE ____

BY P.A.T. DATE 8-6-63
CHECKED BY RMM DATE 3-27-62

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MAJOR DIVISIONS			GRAPH SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS	CLEAN SAND (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND-SILT MIXTURES
				SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS.

SOIL CLASSIFICATION CHART

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DAMES & MOORE
SOIL MECHANICS ENGINEERS

PLATE

BY D.A.M. DATE 4-26-62
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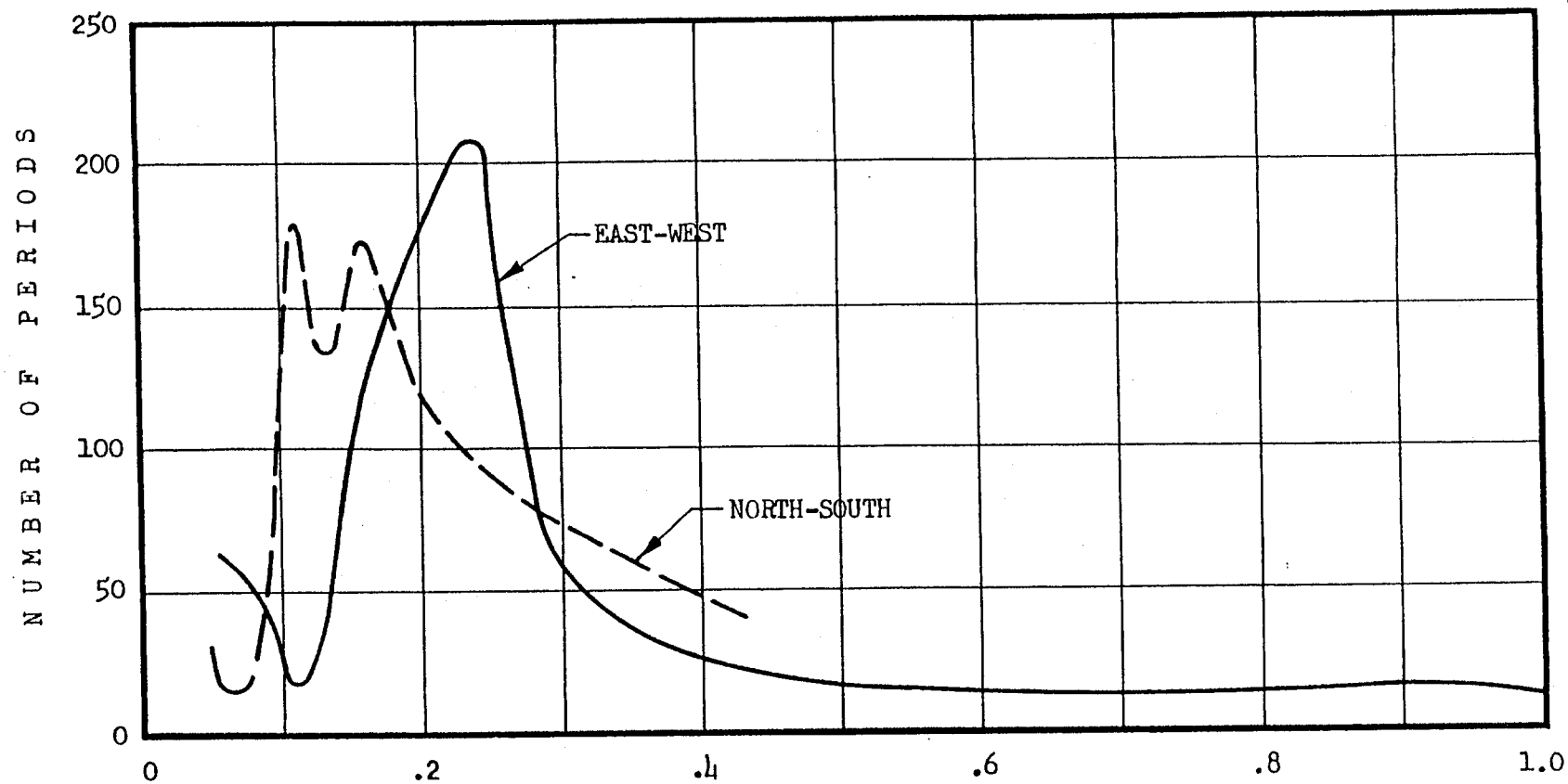
COPY TO GO
FILE 0377-026 So. Calif. Edison Co.

REVISIONS
BY DATE TO
BY DATE TO GO

URS



RECORD A (250' SOUTH OF BORING 4)

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MICROTREMOR RECORDS
DAMES & MOORE

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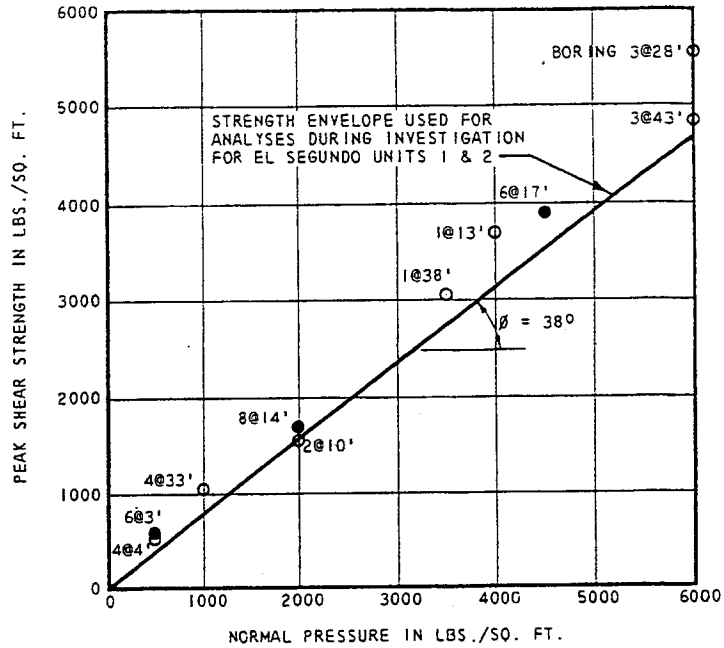
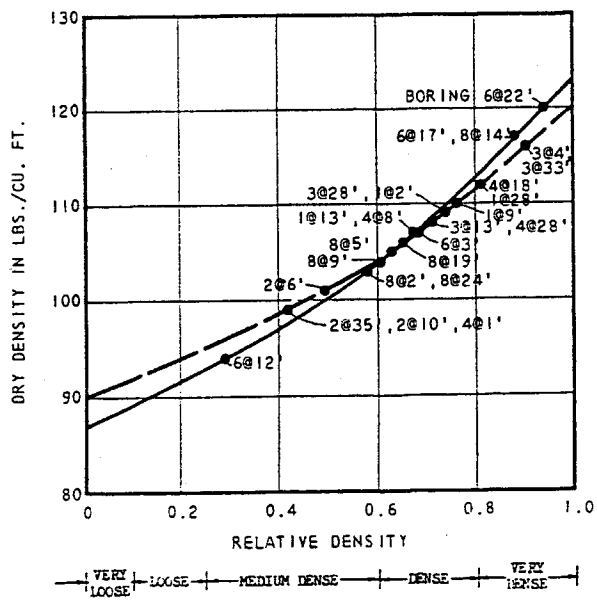


○ TESTS ON SATURATED SAMPLES

● TESTS ON SAMPLES AT FIELD MOISTURE CONTENT

NOTE:
Ø = 33° BASED ON ULTIMATE SHEAR STRENGTHS

DIRECT SHEAR



RELATIVE DENSITY

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SUMMARY OF TEST DATA

DAMES & MOORE
SOIL MECHANICS ENGINEERS

BY ____ DATE ____
PLATE ____ OF ____
BY D.A.R. DATE 2-2-92
CHECKED BY R.M.M. DATE ____

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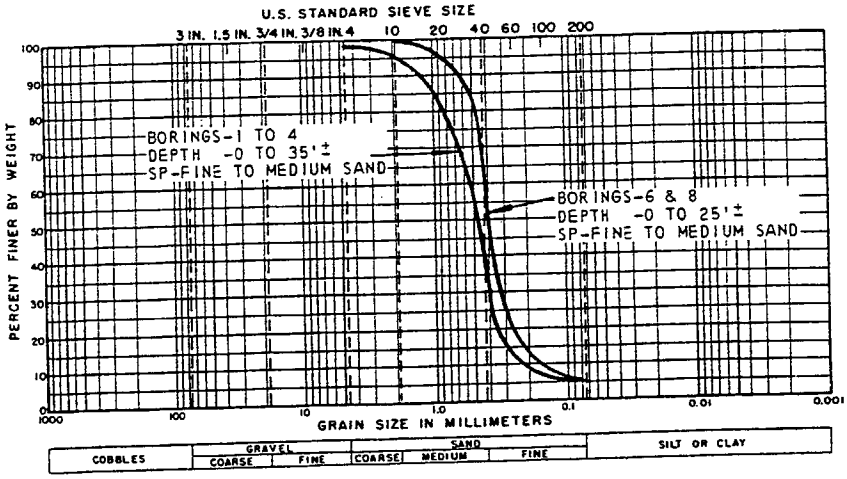

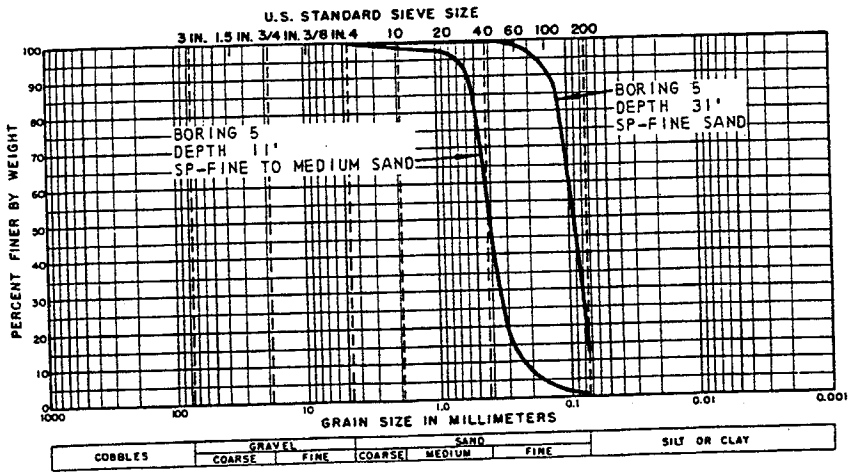

GRADATION CURVES

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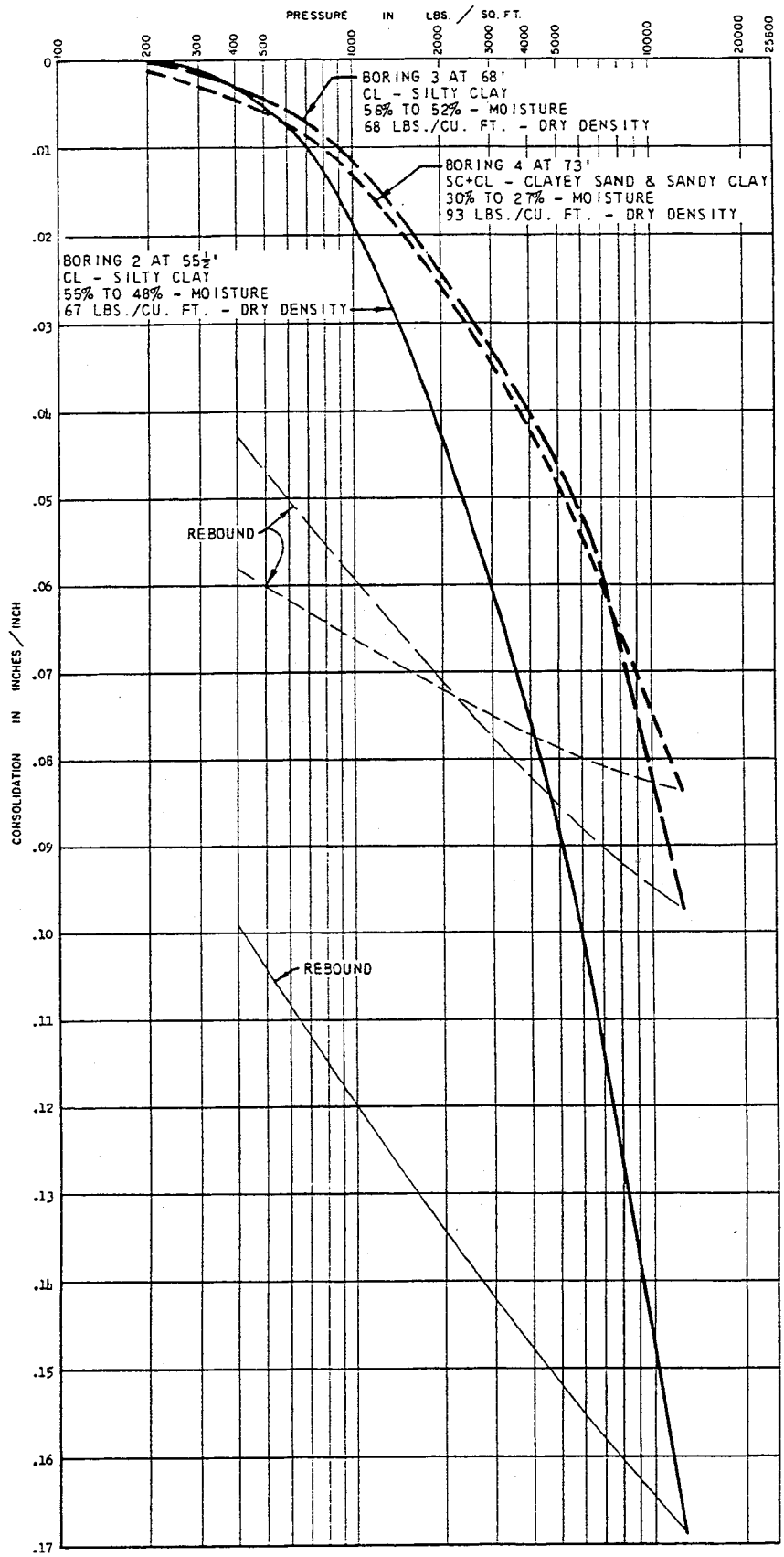
DAMES & MOOI
SOIL MECHANICS ENGINEER

URS



BY ..... DATE ..... OF .....
PLATE .....

BY R.A. DATE 3-29-66
CHECKED BY R.M. DATE .....

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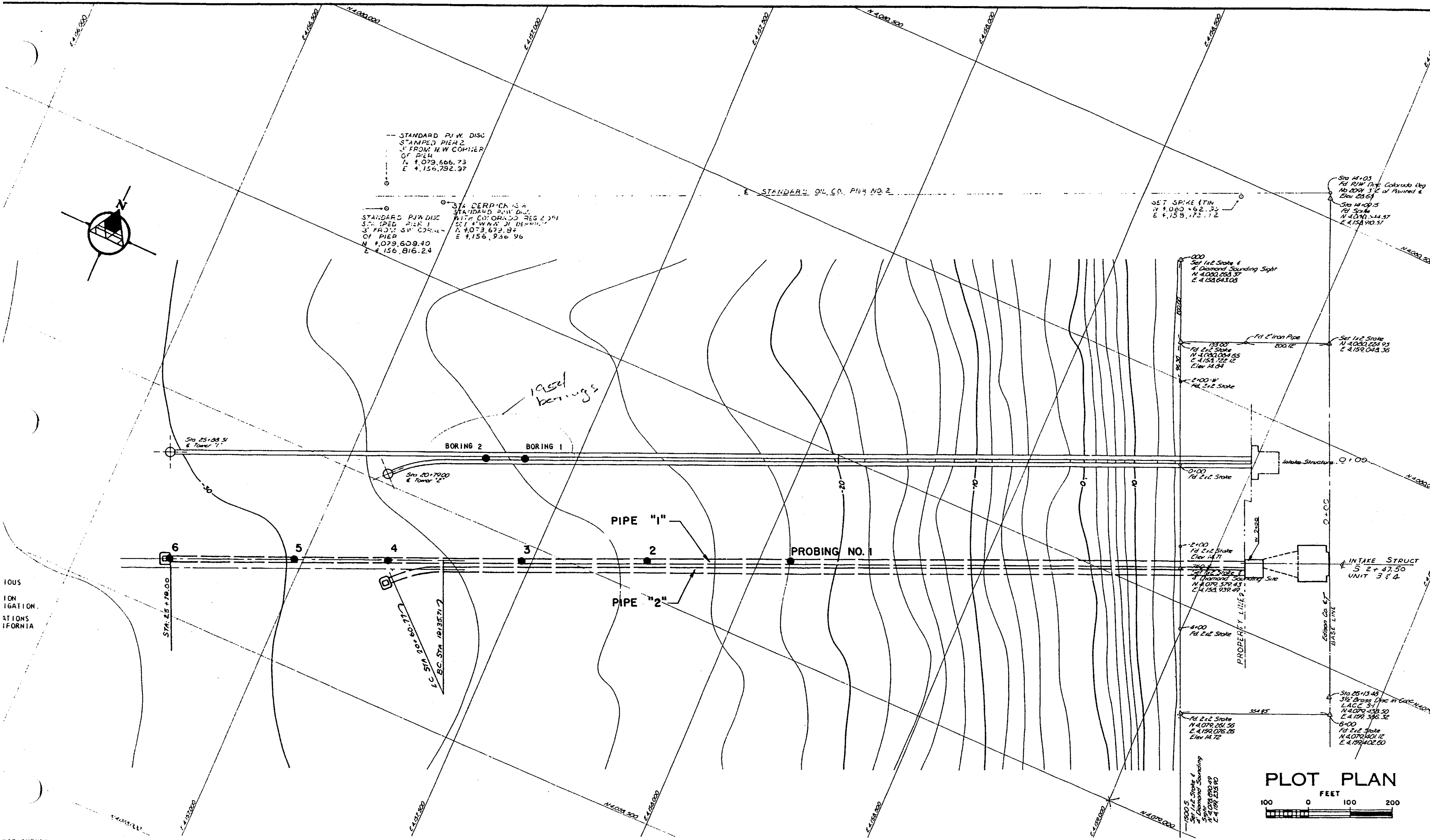
CONSOLIDATION TEST DATA

DAMES & MOOR
SOIL MECHANICS ENGINEERS



PLOT PLAN

FEET

100 0 100 200

DAMES & MOORE

SOIL MECHANICS ENGINEERS

PLATE 1

IOUS

ION
IGATION.

ATIONS
IFORNIA

TIC SURVEY,
N CALIFORNIA
ES, CALIF.;
-62.

LOG OF BORING #2

SHEET ____ OF ____ SHEET

SHEARING STRENGTH AND FRICTIONAL RESISTANCE IN POUNDS PER SQUARE FOOT

7000 6000 5000 4000 3000 2000 1000 0

ELEVATION -27'

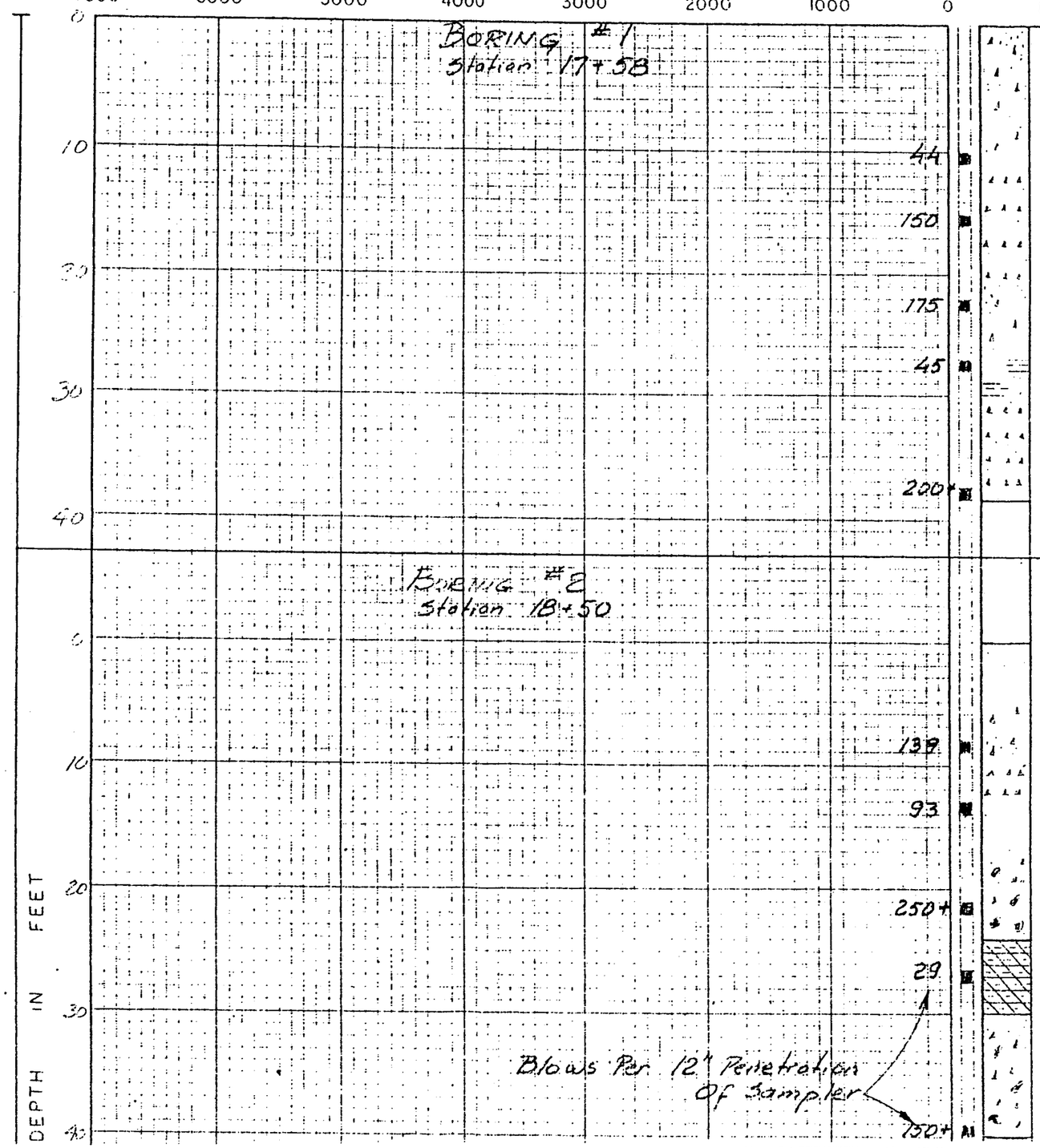
DEPTH IN FEET (DATUM)

PLOTTED BY ____ DATE ____

CHECKED BY ____ DATE ____

JOB NUMBER 572

JOB NAME [illegible]



LIGHT BROWN MEDIUM SAND WITH GRAVEL (SHELLS)

GRADING TO LIGHT BROWN MEDIUM SAND WITH LENSES OF GRAVEL

GRADING TO GREY MEDIUM TO COARSE SAND

LENSES OF BROWN GREY SILTY CLAY

GRADING TO LAMINATIONS OF BROWN MEDIUM SAND AND GRAVEL

ELEV: -24'

BROWN FINE TO MEDIUM SAND

GRADING TO BROWN MEDIUM SAND WITH GRAVEL

(LENSES OF GRAVEL)

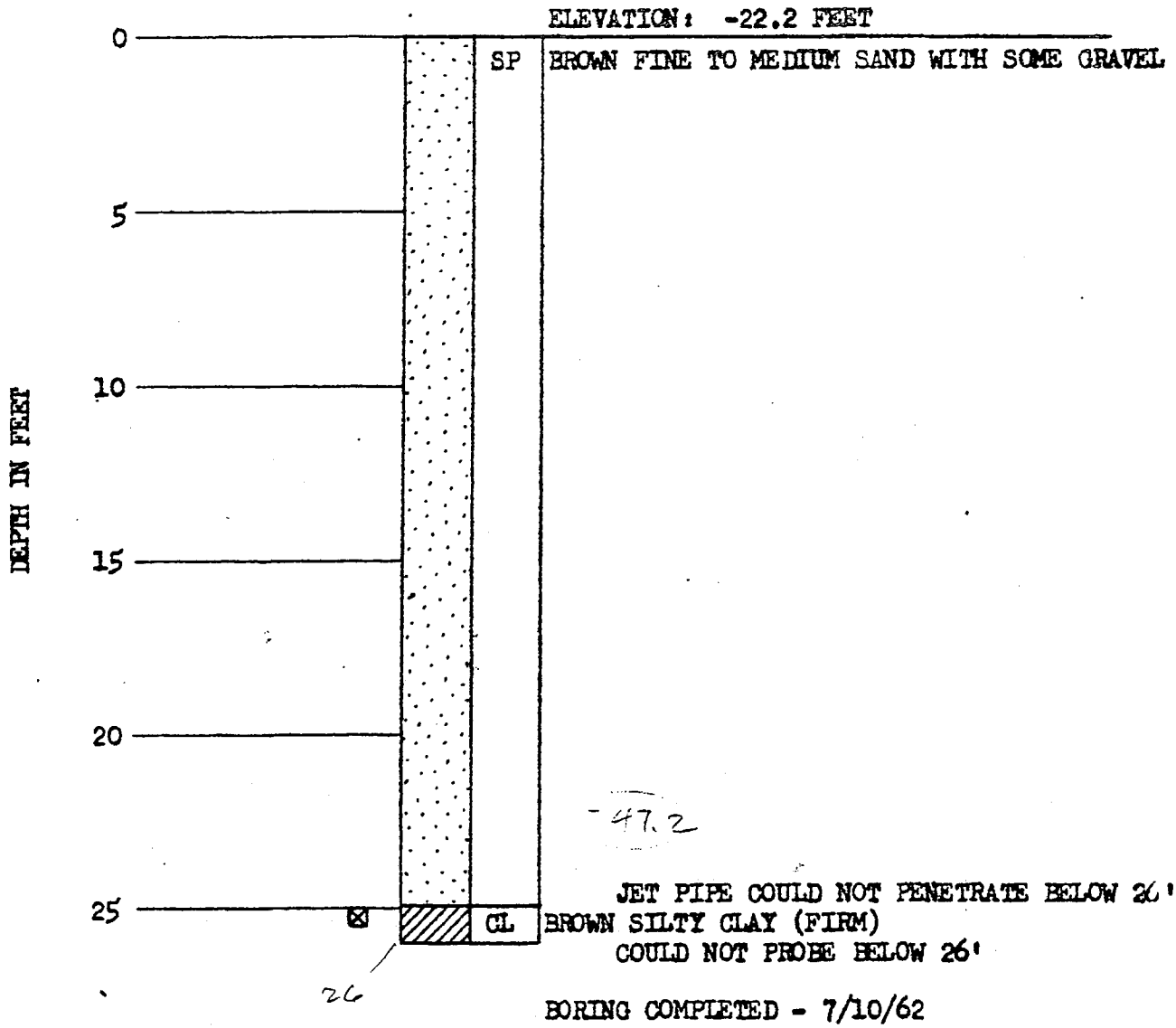
GRADING TO COARSE SAND

GRAVEL AND COBBLES

MOTTLED BROWN AND GREY SILTY CLAY LOAM

GREY COARSE SAND WITH GRAVEL AND COBBLES

PROBING NO. 1



LOG OF PROBING

KEY:

⊠ INDICATES DEPTH OF DISTURBED SAMPLE
□ INDICATES DEPTH OF SAMPLING ATTEMPT WITH NO RECOVERY
ELEVATIONS REFER TO M.L.L.W. DATUM

DAMES & MOORE
APPLIED EARTH SCIENCES

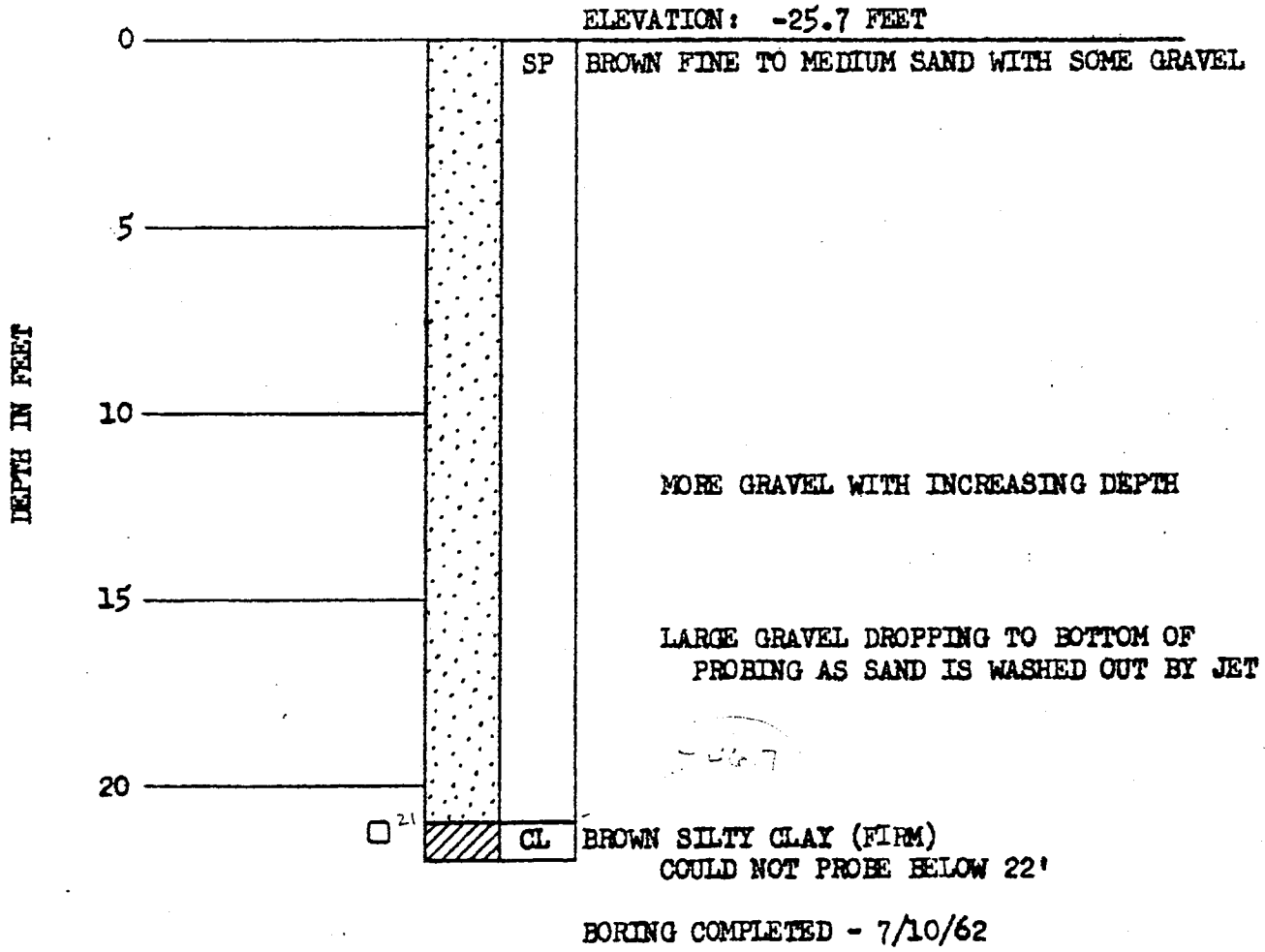
REVISIONS BY ____ DATE ____

CALIF. EDISON CO.

FILE 377-027

BY L.A.M. DATE 1-17-62
CHECKED BY ____

PROBING NO. 2



LOG OF PROBING

DAMES & MOORE
APPLIED EARTH SCIENCES

REVISIONS BY ____ DATE ____

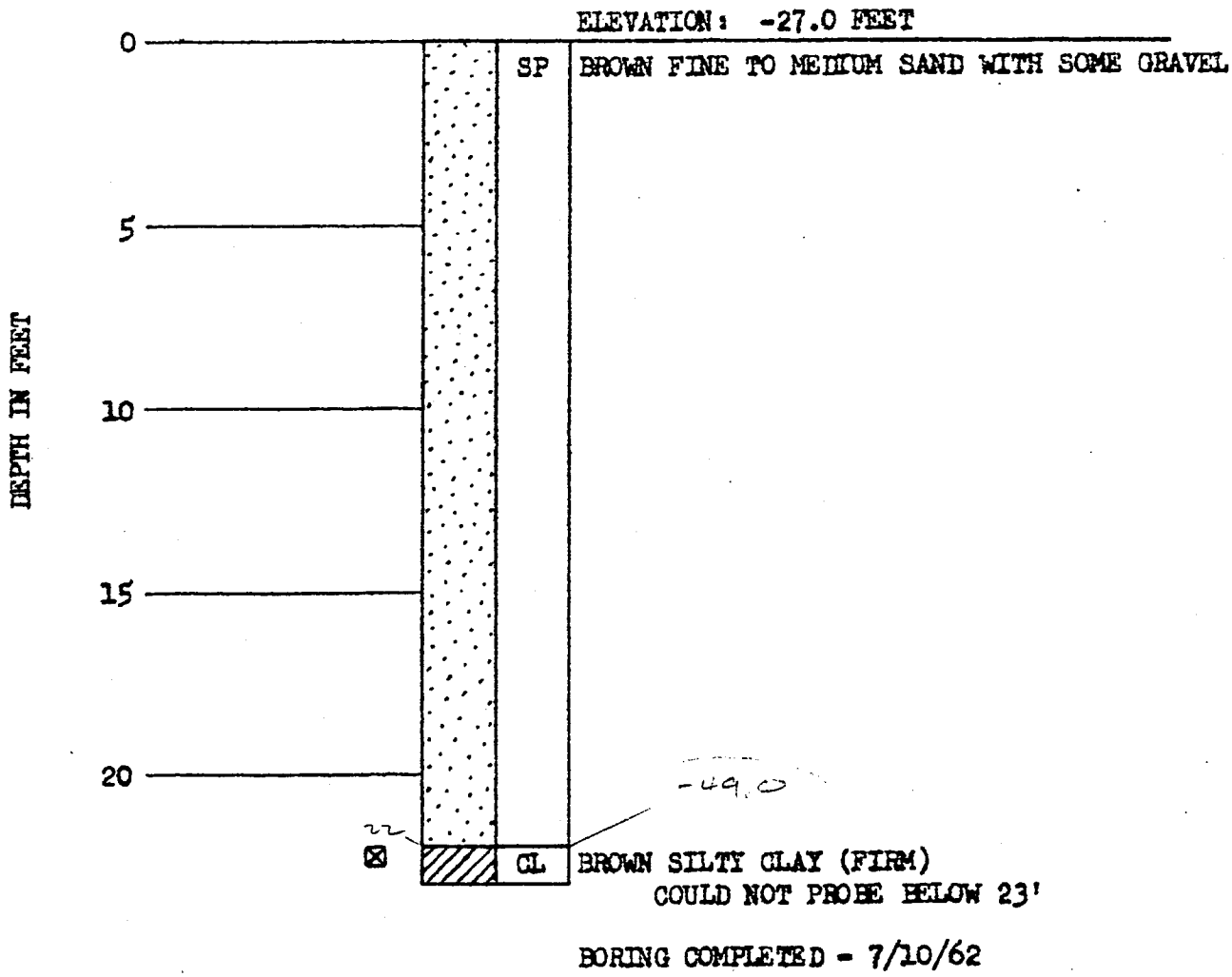
CALIF. EDISON CO.

FILE 377-027

BY R.A.M. DATE 7-17-62

CHECKED BY ____

PROBING NO. 3



LOG OF PROBING

REVISIONS BY ____ DATE ____

Calif Edison Co.

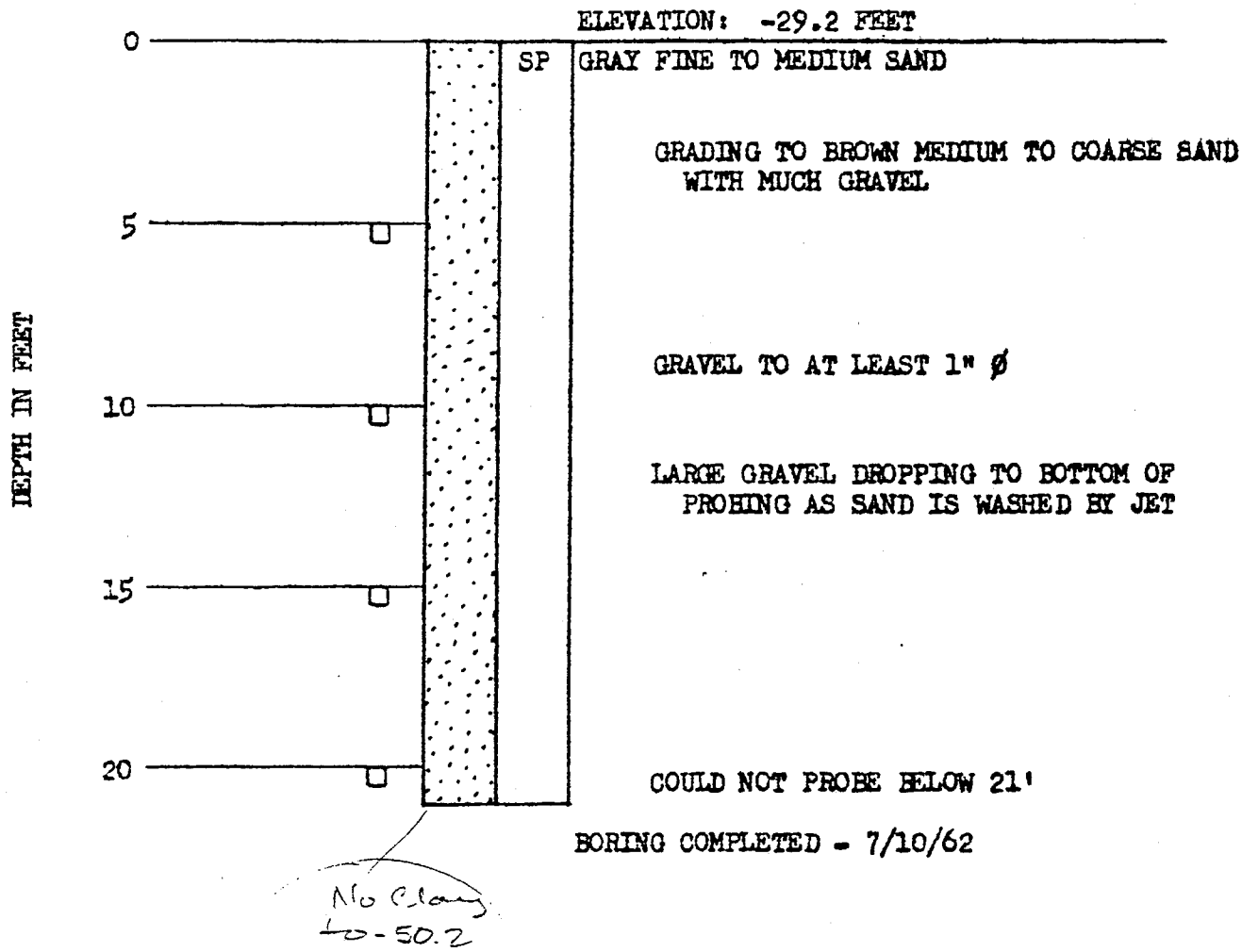
FILE 377-028

BY D.A.M. DATE 7-17-62

CHECKED BY ____

DAMES & MOORE
APPLIED EARTH SCIENCES

PROBING NO. 4



LOG OF PROBING

REVISIONS BY ____ DATE ____

Calif Edison Co.

FILE 377-027

BY R.A.M. DATE 7-17-62

CHECKED BY ____

DAMES & MOORE
APPLIED EARTH SCIENCES

PROBING NO. 5

ELEVATION: -29.7 FEET

DEPTH IN FEET: 0, 5, 10

SP — GRAY FINE TO MEDIUM SAND WITH SOME SMALL SHELLS & GRAVEL

GRADING TO BROWNISH GRAY MEDIUM TO COARSE SAND WITH GRAVEL

LARGE GRAVEL DROPPING TO BOTTOM OF PROBING AS SAND IS WASHED OUT BY JET

COULD NOT PROBE BELOW 11'

BORING COMPLETED - 7/10/62

PROBING NO. 6

ELEVATION: -32.1 FEET

DEPTH IN FEET: 0, 5, 10, 15, 20

SP — GRAY FINE TO MEDIUM SAND WITH FEW BROKEN SHELLS

GRADING TO GRAYISH BROWN MEDIUM TO COARSE SAND WITH GRAVEL

LARGE GRAVEL DROPPING TO BOTTOM OF PROBING AS SAND IS WASHED OUT BY JET

GRAVEL CONTENT PROBABLY INCREASING WITH DEPTH

COULD NOT PROBE BELOW 22'

No Clay to -54.1

BORING COMPLETED -7/10/62

LOG OF PROBINGS

DAMES & MOORE
APPLIED EARTH SCIENCES

REVISIONS BY _____ DATE _____

ALIF. EDISON CO.

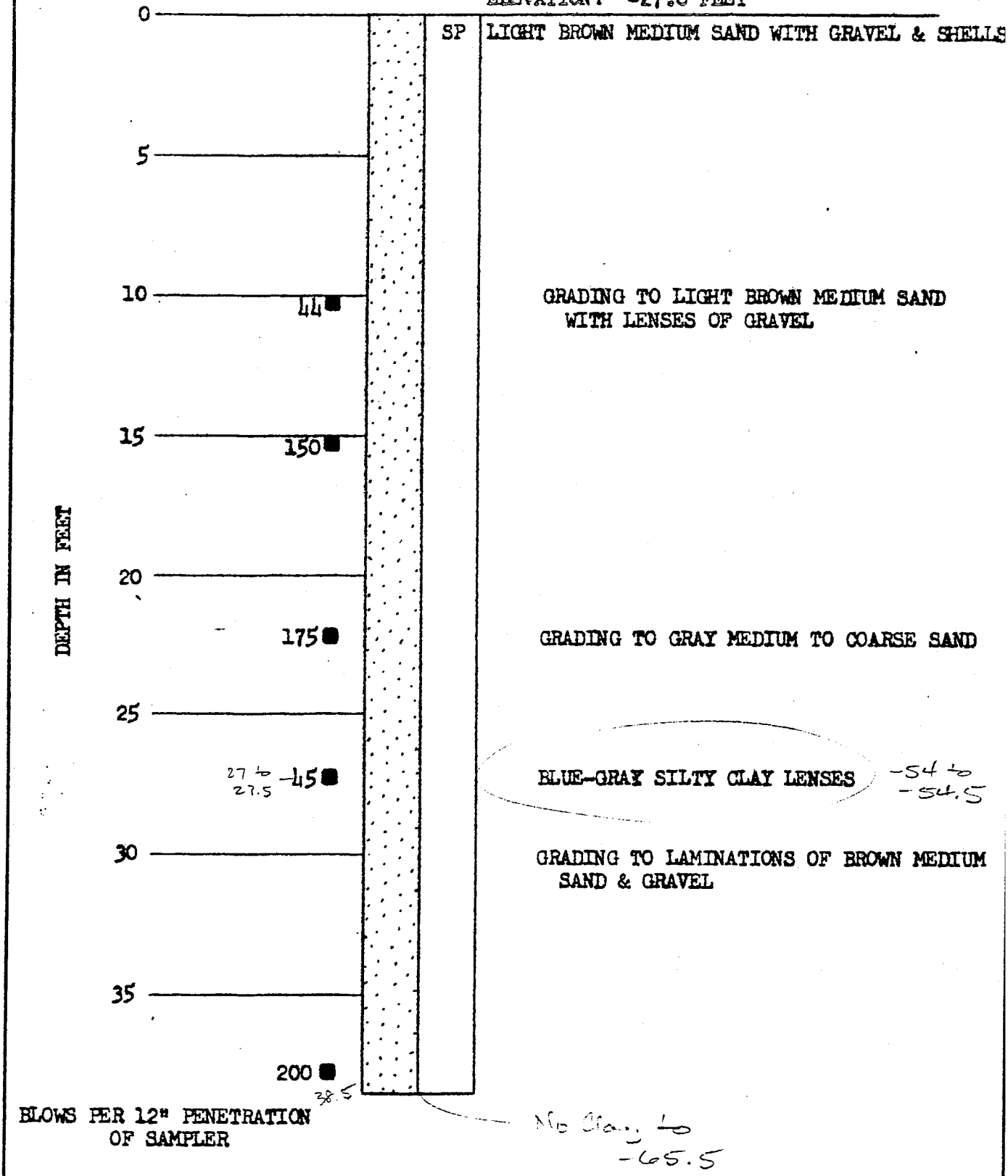
FILE 377-027

BY D.A.M. DATE 7-17-62

CHECKED BY _____

1954 BORING NO. 1

ELEVATION: -27.0 FEET



LOG OF BORING

DAMES & MOORE
APPLIED EARTH SCIENCES

PLATE 24

REVISIONS BY _____ DATE _____

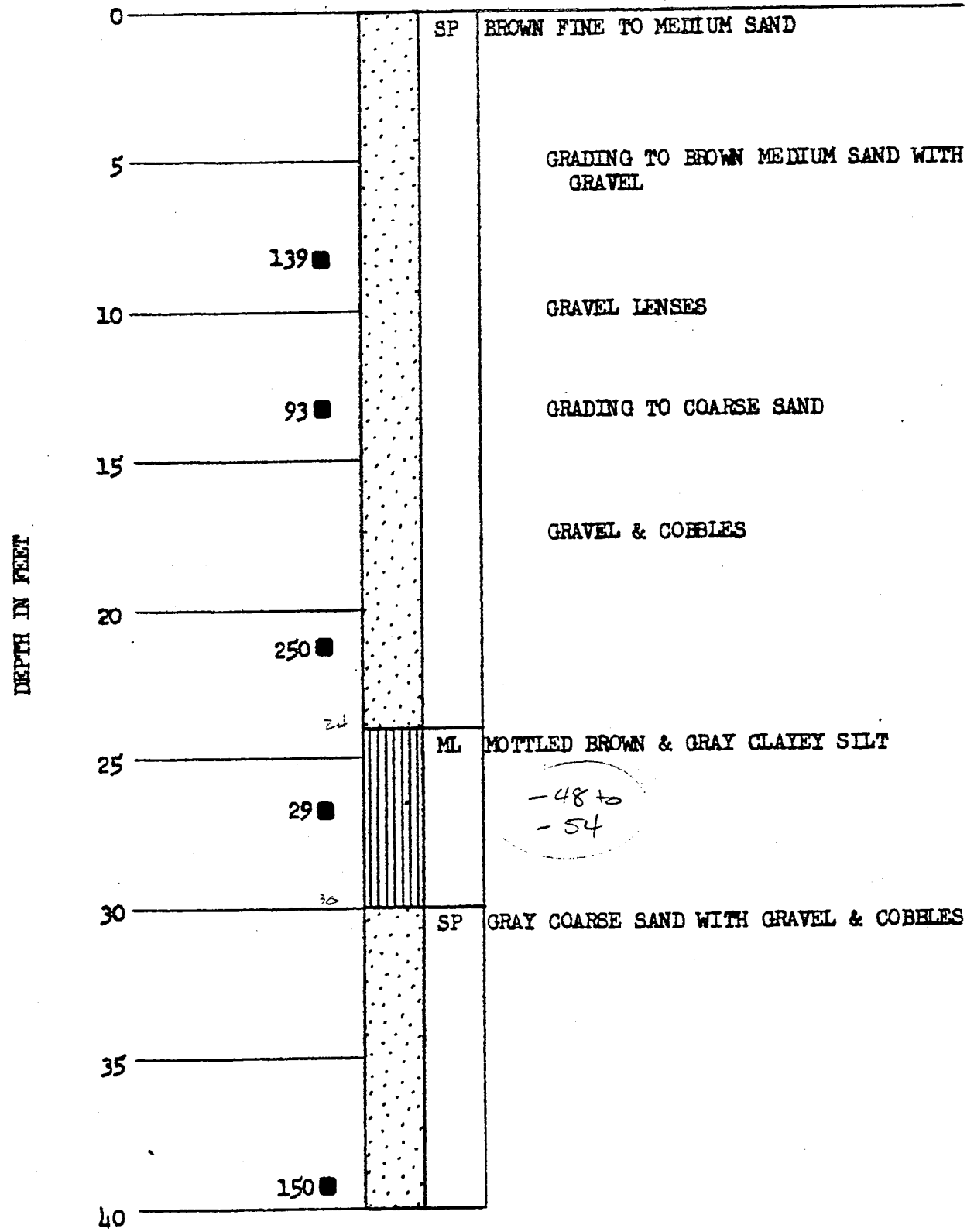
FILE 2317-027 Calif Edison Co.

BY J.A.M. DATE 1-24-62

CHECKED BY _____

1954 BORING NO. 2

ELEVATION: -24.0 FEET



LOG OF BORING

DAMES & MOORE
APPLIED EARTH SCIENCES

REVISIONS BY ____ DATE ____

ALF. EDISON CO.

FILE 03772-027

BY D.A.M. DATE 7-24-62

CHECKED BY ____

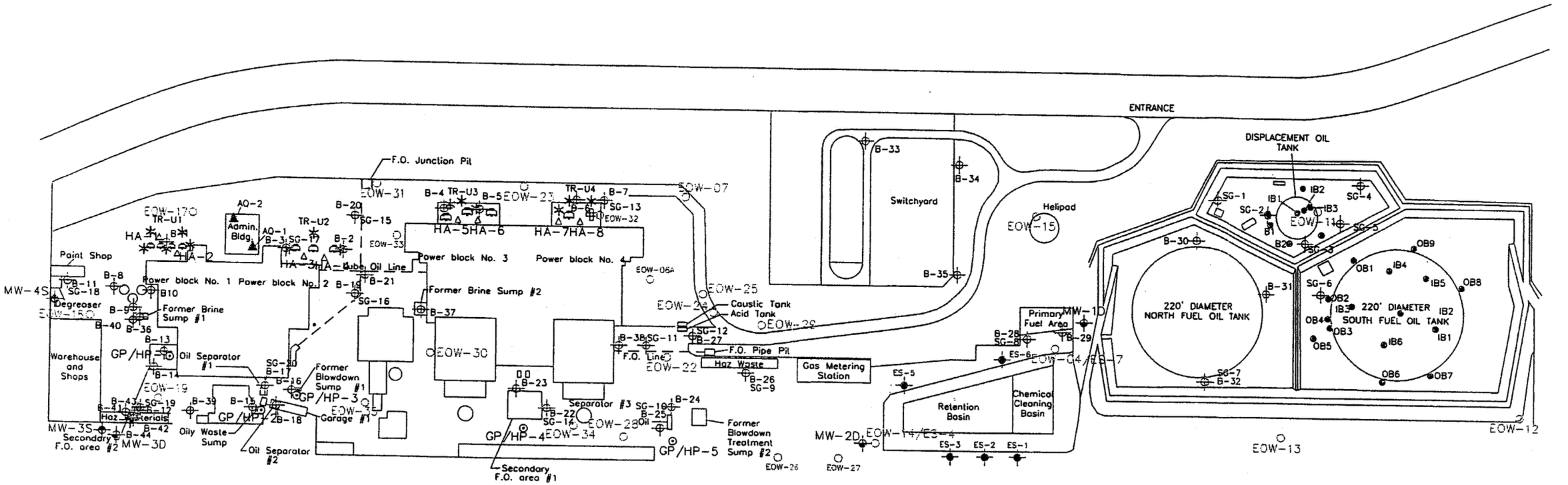
MAJOR DIVISIONS			GRAPH SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS	CLEAN SAND (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND-SILT MIXTURES
				SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS.

SOIL CLASSIFICATION CHART

DAMES & MOORE
SOIL MECHANICS ENGINEERS

PLATE



Source: HSI GEOTRANS Report, 5/30/97, Project N346-101

NOTES:

WELL IDENTIFICATIONS IN BOLD ARE INCLUDED IN THE PROPOSED WELL SAMPLING NETWORK.

WELL MW-1D WAS NOT INSTALLED

0 180 360

APPROXIMATE SCALE, feet

EXPLANATION

- SG-1 — HSI GEOTRANS SOIL VAPOR SAMPLING LOCATION
- B-23 — HSI GEOTRANS SOIL SAMPLING LOCATION
- MW-3S — NRG/DESTEC SHALLOW WELL
- MW-3D — NRG/DESTEC DEEP WELL
- ES-1 — SCE OBSERVATION WELL
- IB1 — PREVIOUS SOIL SAMPLING LOCATION
- TR-U2 — PREVIOUS COMPOSITE SOIL SAMPLE LOCATION
- EOW-07 — CHEVRON OBSERVATION WELL
- GP/HP-1 — GEOPROBE/HYDROPUNCH LOCATION
- AQ-1 — HSI GEOTRANS INDOOR AIR SAMPLING LOCATION
- TRANSFORMER
- F.O. — FUEL OIL
- HA-1 — PROPOSED HANDAUGER LOCATIONS
- EOW-04/ES-7 — CHEVRON OBSERVATION WELL CONVERTED TO SCE OBSERVATION WELL

Woodward-Clyde Consultants

ADDITIONAL INVESTIGATION SAMPLE LOCATIONS

Proj. No.:	984W245	Date:	DEC. 1997
Project:	EL SEGUNDO GENERATING STATION	Drawn by:	HSI
		Figure:	4-1

DWG 12/15/97 8:29 AM

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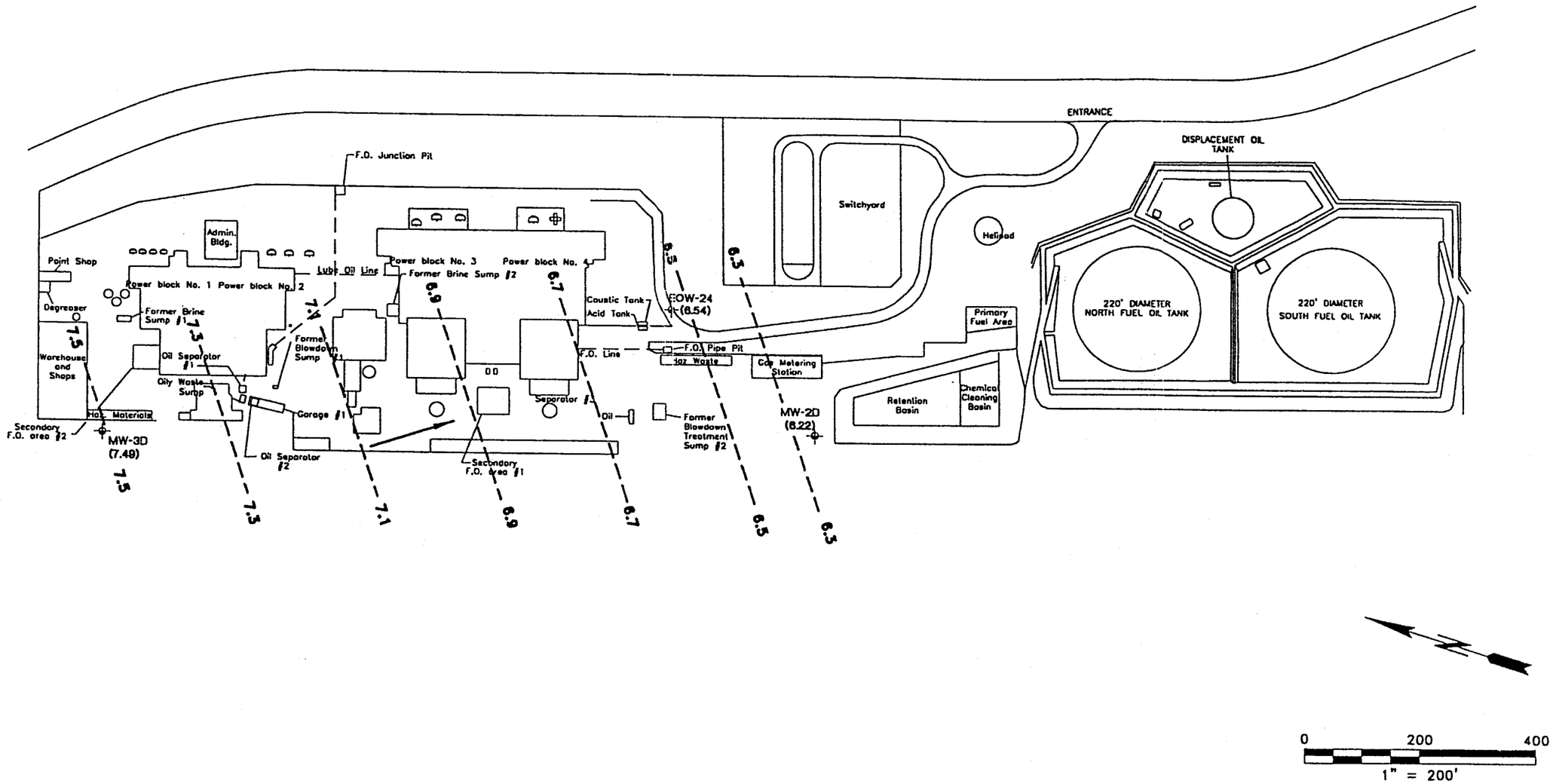


Source: HSI GEOTRANS Report, 3/30/97. Project 1046-181.

EXPLANATION

(7.49) INDICATES GROUNDWATER ELEVATION IN WELL (IN FEET MSL) MEASURED ON JANUARY 19, 1998 BY WOODWARD-CLYDE

7.1 GROUNDWATER ELEVATION CONTOUR (IN FEET MSL)

MW-3D NRG/DESTEC DEEP WELL

EOW-07 CHEVRON OBSERVATION WELL

APPROXIMATE DIRECTION OF THE GROUNDWATER GRADIENT

TRANSFORMER

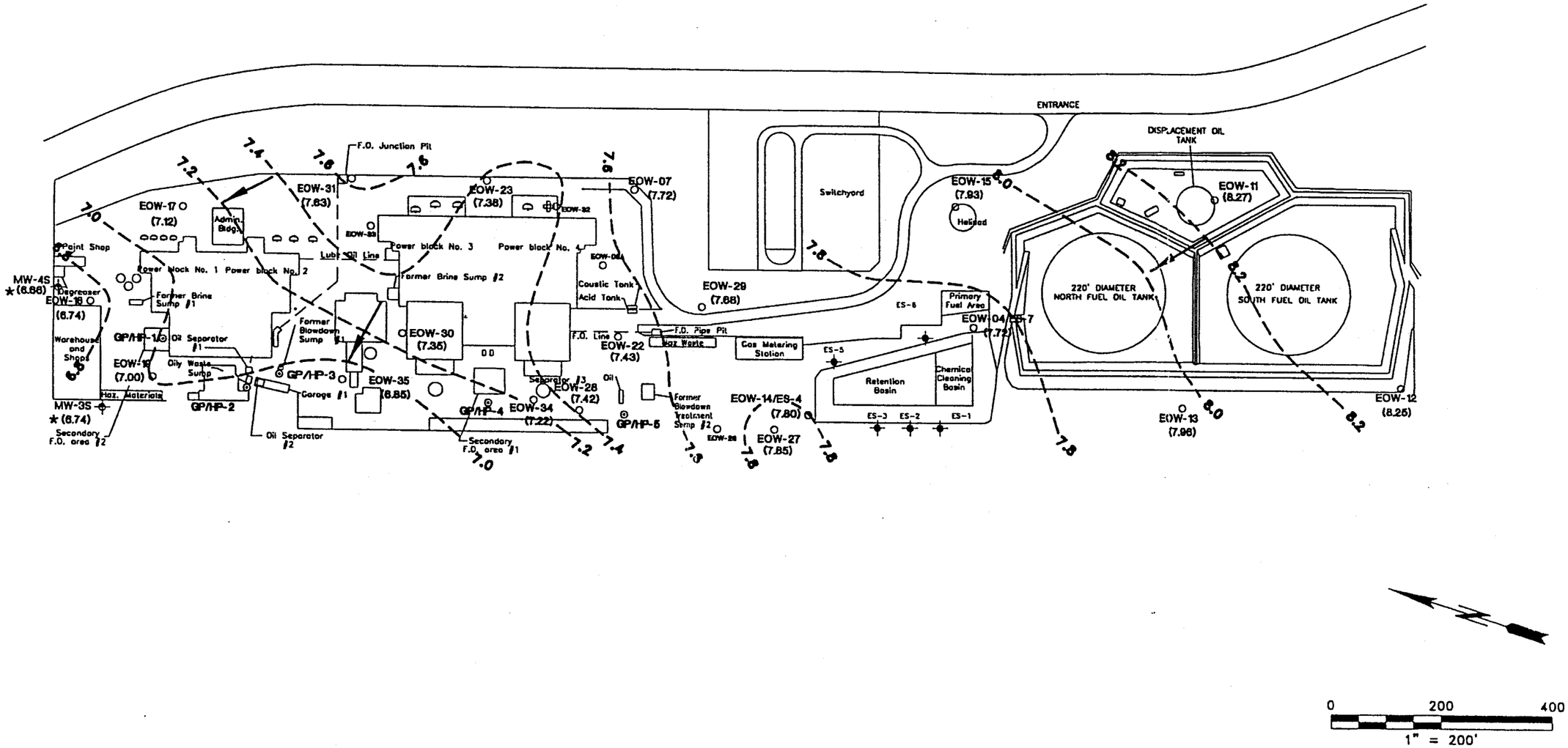
F.O. FUEL OIL

Woodward-Clyde Consultants

GROUNDWATER ELEVATION CONTOUR MAP GAGE AQUIFER JANUARY 1998

Proj. No.:	984W245	Date:	JAN. 1998
Project:	EL SEGUNDO GENERATING STATION	Drawn by:	HSI
		Figure:	5-2

MS I:\98\984W245\G-WATER2.dwg R14.0 02/17/98 09:47



0 200 400
1" = 200'

Source: HSI GEOTRANS Report, 5/30/97. Project N346-101.

EXPLANATION

(6.75) INDICATES GROUNDWATER ELEVATION IN WELL (IN FEET MSL) MEASURED ON DECEMBER 15, 1997 BY WOODWARD-CLYDE

7.4 GROUNDWATER ELEVATION CONTOUR (IN FEET MSL)
* MEASURED ON JANUARY 5, 1998. NOT USED FOR CONTOURING PURPOSES

MW-3S
NRG/DESTEC WELL

ES-1
SCE OBSERVATION WELL

EOW-07
CHEVRON OBSERVATION WELL

GP/HP-1
GEOPROBE/HYDROPUNCH LOCATION

APPROXIAMTE DIRECTION OF THE GROUNDWATER GRADIENT

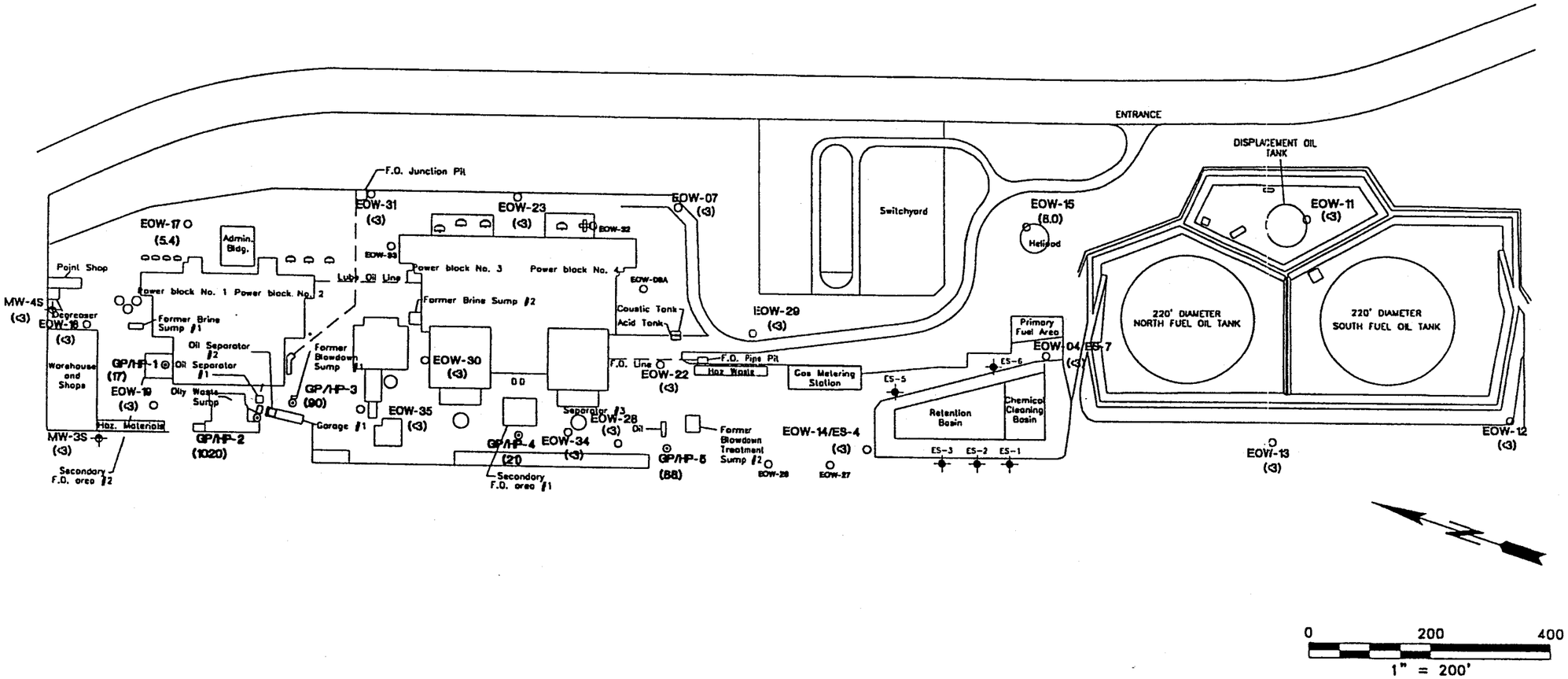
EOW-04/ES-7
CHEVRON OBSERVATION WELL CONVERTED TO SCE OBSERVATION WELL

Woodward-Clyde Consultants

GROUNDWATER ELEVATION CONTOUR MAP OLD DUNE SAND AQUIFER DECEMBER 1997

Proj. No.:	984W245	Date:	JAN,. 1998
Project:	EL SEGUNDO GENERATING STATION	Drawn by:	HSI
		Figure:	5-1

HS I:\98\984W245\G-WATER.dwg R14.0 01/27/98 11:07



Source: HSI GEOTRANS Reports, 5/30/97. Project N346-101.

EXPLANATION

(5.4) INDICATES TOTAL PETROLEUM HYDROCARBON (TPH) CONCENTRATION IN GROUNDWATER (IN MG/L), MEASURED IN DECEMBER 1997/JANUARY 1998

MW-3S
NRG/DESTEC WELL

ES-1
SCE OBSERVATION WELL

EOW-07
CHEVRON OBSERVATION WELL

GP/HP-1
GEOPROBE/HYDROPUNCH LOCATION

TRANSFORMER

F.O. FUEL OIL

EOW-04/ES-7
CHEVRON OBSERVATION WELL CONVERTED TO SCE OBSERVATION WELL

Woodward-Clyde Consultants

TPH CONCENTRATIONS IN THE OLD DUNE SAND AQUIFER DECEMBER 1997/JANUARY 1998

Proj. No.:	984W245	Date:	JAN,. 1998
Project:	EL SEGUNDO GENERATING STATION	Drawn by:	HSI
		Figure:	5-3

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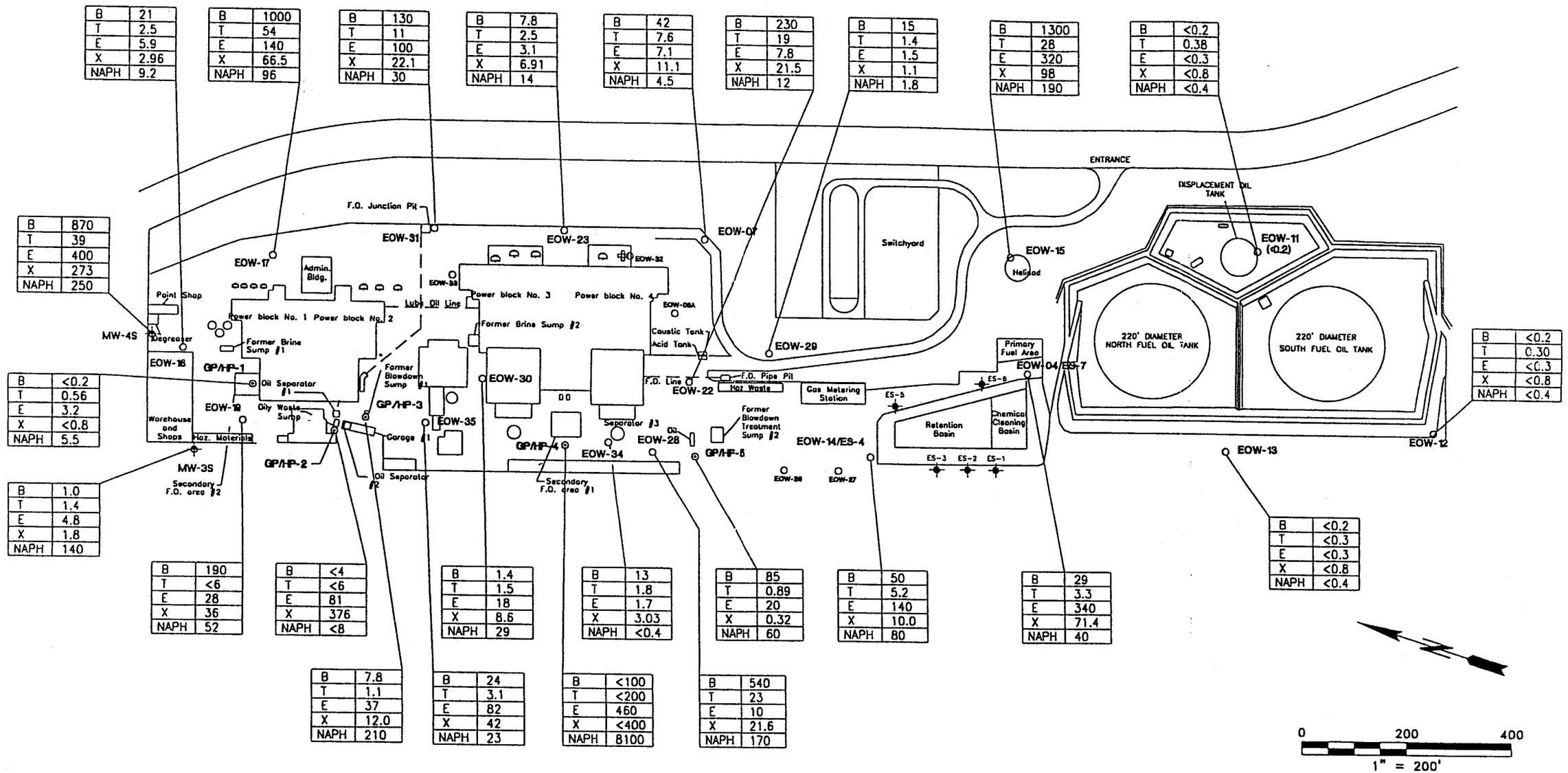

B	21
T	2.5
E	5.9
X	2.96
NAPH	9.2

B	1000
T	54
E	140
X	66.5
NAPH	96

B	130
T	11
E	100
X	22.1
NAPH	30

B	7.8
T	2.5
E	3.1
X	6.91
NAPH	14

B	42
T	7.6
E	7.1
X	11.1
NAPH	4.5

B	230
T	19
E	7.8
X	21.5
NAPH	12

B	15
T	1.4
E	1.5
X	1.1
NAPH	1.8

B	1300
T	28
E	320
X	98
NAPH	190

B	<0.2
T	0.38
E	<0.3
X	<0.8
NAPH	<0.4

B	870
T	39
E	400
X	273
NAPH	250

B	<0.2
T	0.56
E	3.2
X	<0.8
NAPH	5.5

B	1.0
T	1.4
E	4.8
X	1.8
NAPH	140

B	190
T	<6
E	28
X	36
NAPH	52

B	<4
T	<6
E	81
X	376
NAPH	<8

B	7.8
T	1.1
E	37
X	12.0
NAPH	210

B	1.4
T	1.5
E	18
X	8.6
NAPH	29

B	24
T	3.1
E	82
X	42
NAPH	23

B	13
T	1.8
E	1.7
X	3.03
NAPH	<0.4

B	<100
T	<200
E	460
X	<400
NAPH	8100

B	85
T	0.89
E	20
X	0.32
NAPH	60

B	540
T	23
E	10
X	21.6
NAPH	170

B	50
T	5.2
E	140
X	10.0
NAPH	80

B	29
T	3.3
E	340
X	71.4
NAPH	40

B	<0.2
T	0.30
E	<0.3
X	<0.8
NAPH	<0.4

B	<0.2
T	<0.3
E	<0.3
X	<0.8
NAPH	<0.4

Source: HSI GEOTRANS Report, 3/30/97. Project N346-101.

EXPLANATION

GP/HP-1
GEOPROBE/HYDROPUNCH LOCATION

MW-3S
NRG/DESTEC WELL

ES-1
SCE OBSERVATION WELL

EOW-07
CHEVRON OBSERVATION WELL

EOW-04/ES-7
CHEVRON OBSERVATION WELL CONVERTED TO SCE OBSERVATION WELL

TRANSFORMER

F.O. FUEL OIL

BENZENE	B <0.2
TOLUENE	T 0.49
ETHYLBENZENE	E <0.3
XYLENES	X <0.8
NAPHTHALENE	NAPH <0.4

INDICATES BTEX AND NAPHTHALENE CONCENTRATIONS IN GROUNDWATER (IN µg/L), MEASURED ON DECEMBER 1997/JANUARY 1998

Woodward-Clyde Consultants

BTEX AND NAPHTHALENE CONCENTRATIONS IN THE OLD DUNE SAND AQUIFER DECEMBER 1997/JANUARY 1998

Proj. No.:	984W245	Date:	JAN. 1998
Project:	EL SEGUNDO GENERATING STATION	Drawn by:	HSI
		Figure:	5-4

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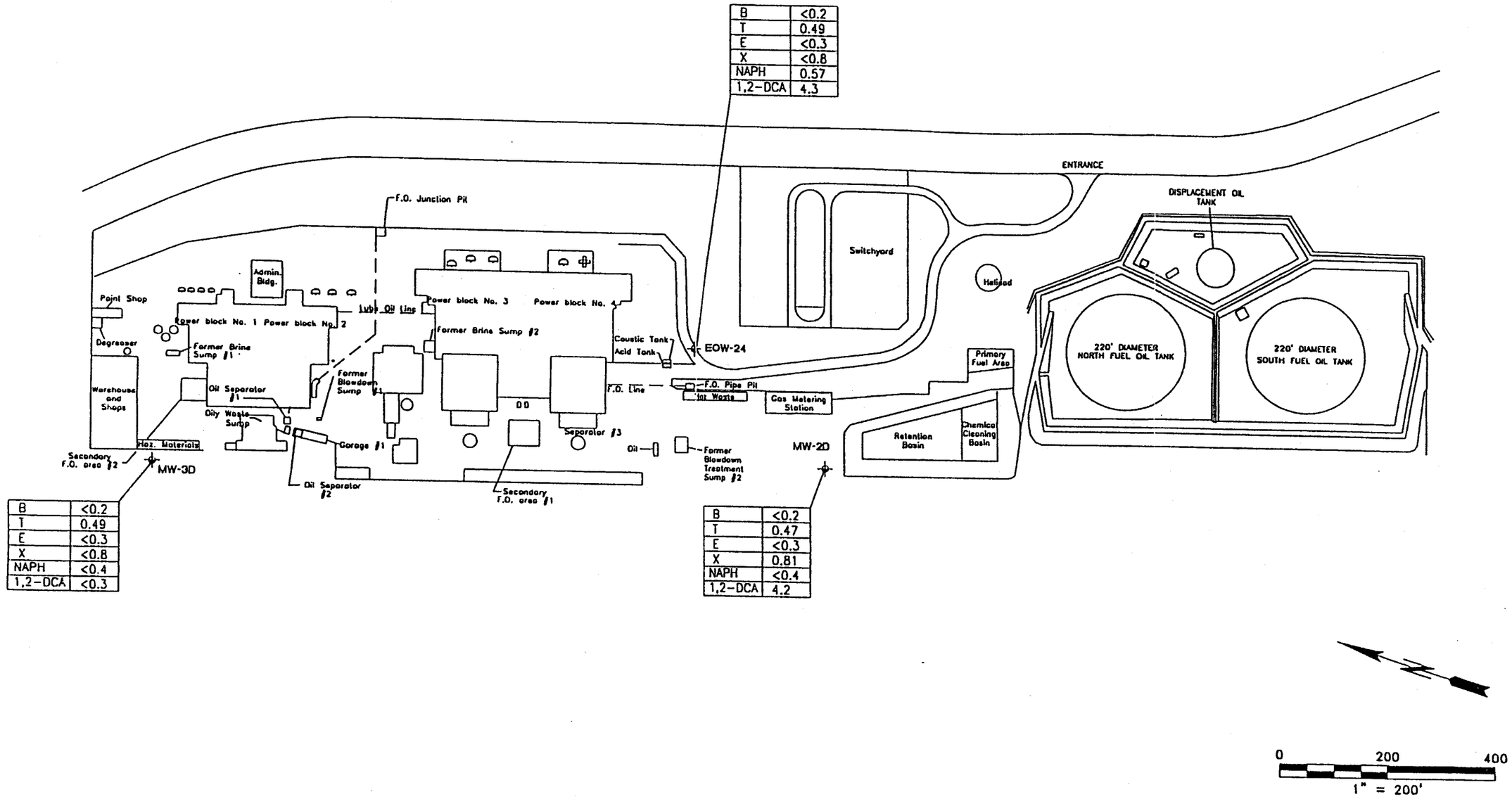

B	<0.2
T	0.49
E	<0.3
X	<0.8
NAPH	0.57
1,2-DCA	4.3

B	<0.2
T	0.49
E	<0.3
X	<0.8
NAPH	<0.4
1,2-DCA	<0.3

B	<0.2
T	0.47
E	<0.3
X	0.81
NAPH	<0.4
1,2-DCA	4.2

Source: HSI GEOTRANS Report, 3/30/97. Project 1046-181.

EXPLANATION

MW-3D — NRG/DESTEC DEEP WELL

EOW-07 — CHEVRON OBSERVATION WELL

TRANSFORMER

F.O. — FUEL OIL

BENZENE	B	<0.2
TOLUENE	T	0.49
ETHYLBENZENE	E	<0.3
XYLENES	X	<0.8
NAPHTHALENE	NAPH	<0.4
1,2-DICHLOROETHANE	1,2-DCA	<0.3

INDICATES BTEX, NAPHTHALENE AND 1,2-DCA CONCENTRATIONS IN GROUNDWATER (IN μ/L), MEASURED IN DECEMBER 1997/JANUARY 1998

NOTE:
TOTAL PETROLEUM HYDROCARBONS AND SEMI-VOLATILE ORGANIC COMPOUNDS WERE NOT DETECTED IN WELLS EOW-24, MW-2D AND MW-3D

Woodward-Clyde Consultants

BTEX, NAPHTHALENE, AND 1,2-DCA IN THE GAGE AQUIFER DECEMBER 1997/JANUARY 1998

Proj. No.:	984W245	Date:	JAN. 1998
Project:	EL SEGUNDO GENERATING STATION	Drawn by:	HSI
		Figure:	5-5

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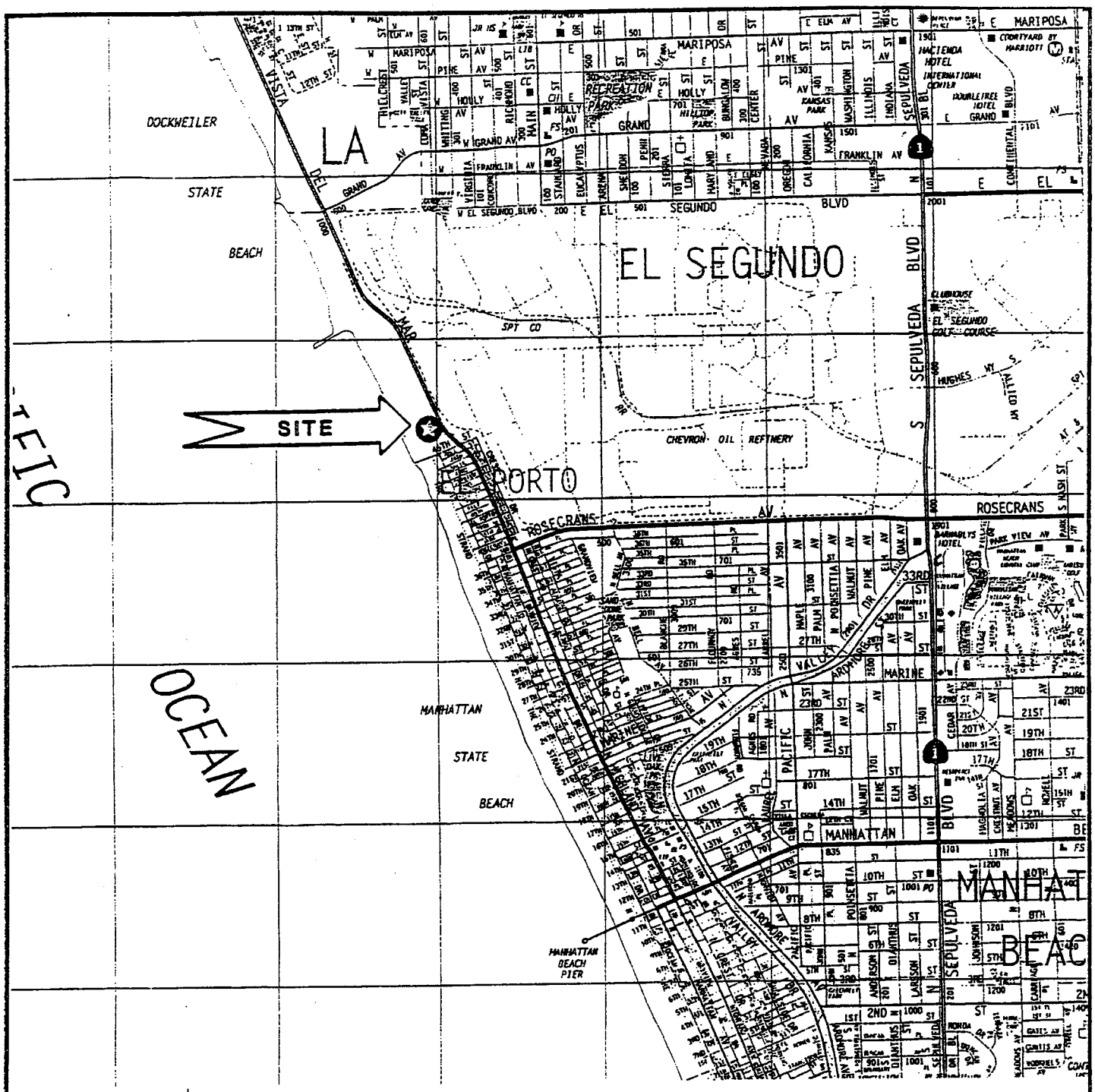

N

0 2,400 4,800

SCALE, feet

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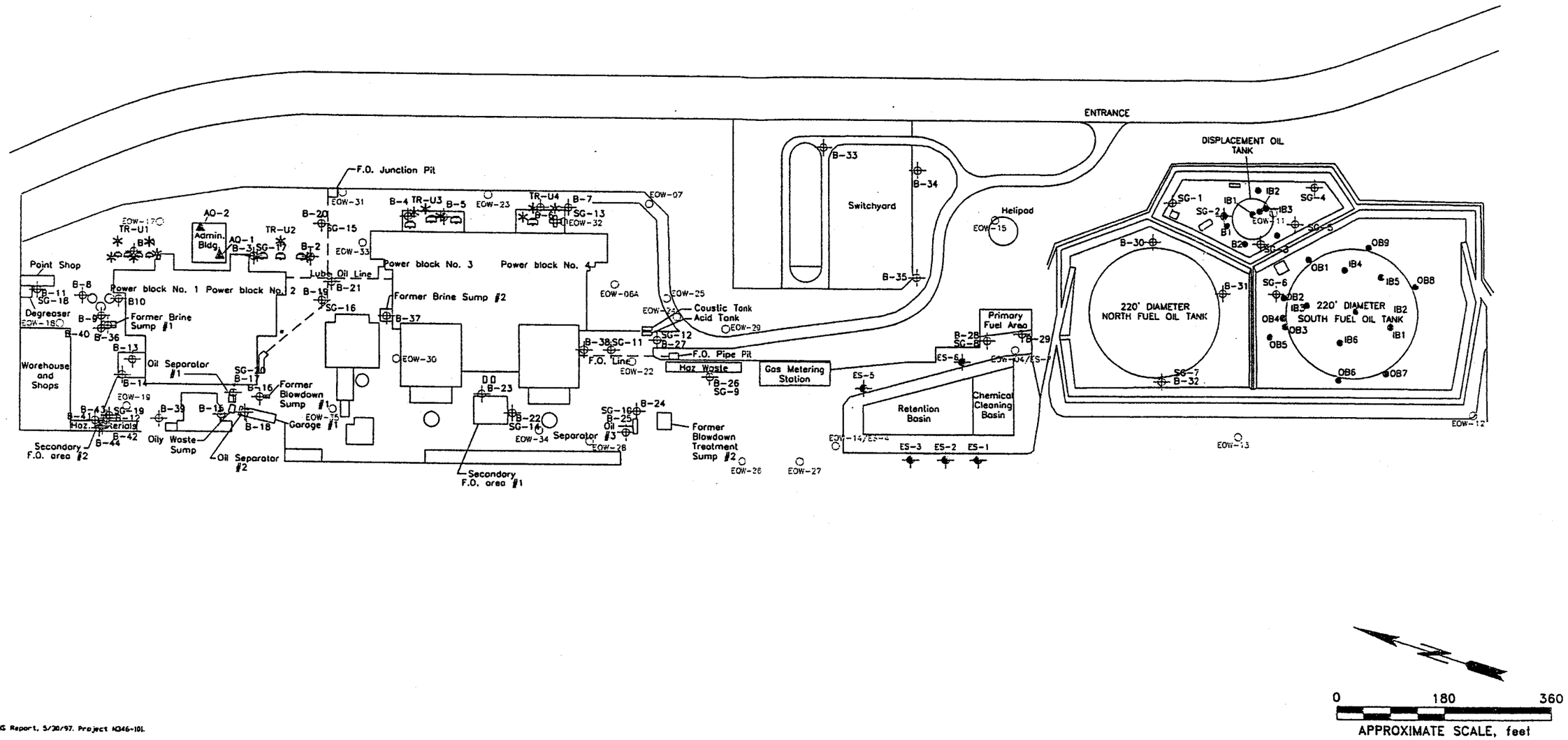
SITE LOCATION MAP

Project No.:	7E09667	Date:	DEC. 1997	Project:	EL SEGUNDO GENERATING STATION	Fig.	1-1

Woodward-Clyde



Source: HSI GEOTRANS Report, 5/30/97. Project HQ46-101.

EXPLANATION

- SG-1 HSI GEOTRANS SOIL VAPOR SAMPLING LOCATION
- B-23 HSI GEOTRANS SOIL SAMPLING LOCATION
- IB1 PREVIOUS SOIL SAMPLING LOCATION
- TR-U2 PREVIOUS COMPOSITE SOIL SAMPLE LOCATION
- EOW-07 CHEVRON OBSERVATION WELL
- AQ-1 HSI GEOTRANS INDOOR AIR SAMPLING LOCATION
- TRANSFORMER
- F.O. FUEL OIL
- EOW-04/ES-7 CHEVRON OBSERVATION WELL CONVERTED TO SCE OBSERVATION WELL

Woodward-Clyde Consultants

PREVIOUS SAMPLE LOCATIONS

Proj. No.: 984W245	Date: DEC. 1997
Project: EL SEGUNDO GENERATING STATION	Drawn by: HSI
	Figure: 1-2