LEE AND PRASZKER
A CALIFORNIA CORPORATION
CONSULTING GEOTECHNICAL ENGINEERS AND GEOLOGISTS
147 NATOMA ST. AT NEW MONTGOMERY
SAN FRANCISCO 94105
(415) 392-4866

CHARLES H. LEE (1883-1967)
F. ASCE

MICHAEL PRASZKER
F. ASCE

July 28, 1981

Ms. Mithoo Baxter
Perini Land and Development Co.
One Maritime Plaza, Suite 1320
San Francisco, CA 94111

Re: Probe Pile Driving Results and
Recommended Production Pile Tip Elevations
Ecker Square Office Building
San Francisco, CA

Dear Ms. Baxter:

The driving of probe piles at the site of the Ecker square office building has been completed and the results are presented herein. Probe piles were driven at the site for the purpose of establishing design lengths for production piles as recommended in our report titled "Foundation Investigation, Jessie Street Office Building, San Francisco, California", dated March 9, 1981.

Ten probe pile locations were selected by us and transmitted verbally to Mr. Harold Miller of Perini Corporation, general contractor for the project, on July 15, 1981. A letter of the same date specifying the probe pile locations, was issued by Mr. Miller to the pile driving subcontractor Peter Kiewit Sons' Company. Due to access problems encountered in the field two of the initially selected probe pile locations were changed once the probe pile program got underway. The actual locations of the probe piles are listed in the attached Table I.

All probe piles were 12-inch, precast, prestressed concrete and were either 60 or 65 feet in length. Probe pile locations are also production pile locations and each pile is to have a capacity of 100 tons. Pile length sufficient to extend to elevation -64 feet San Francisco City Datum were specified. The piles were driven using a KOBE KC-35 diesel hammer which has a maximum rated energy of 72,182 foot pounds per blow. The probe pile driving was continually observed by an engineer of this office, and records showing pile driving resistance to penetration were made for each pile. Prior to driving each pile location (except that for Probe Pile 2) was either "Spudded" or predrilled to penetrate the rubble fill and basement floor slab that exist at the site to a depth of about 10 feet below street grade. A total of 11 probe piles were driven but two were broken. Both

broken piles were driven in the same pile group which is located at column lines 1-D. The original pile broke below ground after being driven approximately 18 feet, the replacement pile also broke below ground after being driven a total of 35 feet. No further attempts were made at placing a pile in this group and the broken piles shall be removed before additional replacement piles are driven.

Final driving resistances and pertinent information concerning the probe piles are presented in Table I. The entire driving record for Probe Pile 7 is presented on Diagram 2 and is typical of the nine successfully driven piles. The underlying sands in which the piles terminated proved to be very dense and at all the locations of these probe piles allowed for penetration on the order of 5 to 10 feet before practical refusal was met rather than the 15 feet of penetration anticipated in our foundation investigation report.

On the basis of the probe pile program, as well as previously generated subsurface information, we recommend that production pile lengths be determined in correlation with the approximate Pile Tip Elevations presented on Diagram 1, namely that the piles be designed to terminate at approximate tip elevations ranging from -47 to -51 feet, San Francisco City Datum as shown on the diagram. However, variations from these tip elevations should be expected and resulting minor cut-offs or add-ons anticipated.

We hope the above information is sufficient for your current needs, should you have any questions please feel free to contact us.

Very truly yours,

Richard D. Rodgers

Richard D. Rodgers

RDR/eb

Attachs.

cc: Jorge de Quesada Architects - Attention: Mr. Cathal O'Doherty
Raj Desai Associates " Mr. Raj Desai
Perini Corporation Mr. Harold Miller

TABLE I

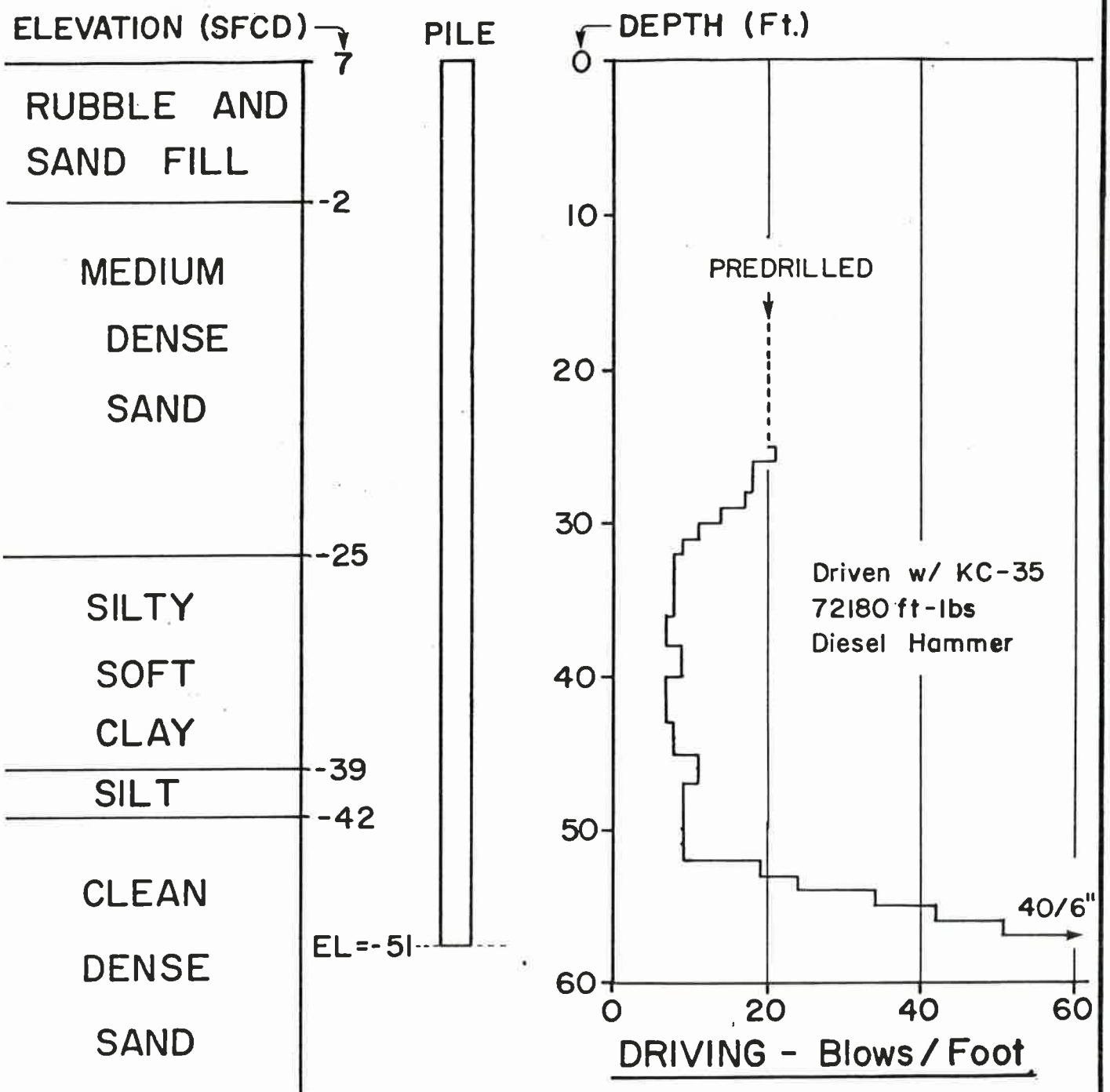
SUMMARY OF PROBE PILES

Pile No	Pile Cap Location By Column Lines	Tip Elevation (Ft.) - SFCD	Final Driving Resistance (Blows/Ft.)
1	1-A	-51	51
2	1-B	-52	50
3	1-D	Broke During Driving	
4	3-D	-47	55
5	2-C	-51	47
6	3-A	-50	65
7	8' s/o 4 -14' w/o B*	-50	51
8	5-B.5	-46	47
9	I-D	Broke During Driving	
10	4-D (Replaces 5-D)	-47	55
11	4-A (Replaces 5-A)	-50	50

* Denotes pile 7'-11" south of 4 line and 14' west of B line.

DIAGRAM-2

PROBE PILE - 7



PROFILE (TB-2)

PILE LOCATED 7'11" SOUTH OF 4-LINE and 14' WEST OF B-LINE

ENERGY DIAGRAM

Lee and Praszker
CONSULTING CIVIL ENGINEERS
147 Natoma Street at New Montgomery
San Francisco, 94105 (415) 392-4866

DRAWN BY TT	DATE 7/27/81	REVISIONS
CHECKED BY RR	JOB NO L-726A	DRAWING NO 2
APPROVED		

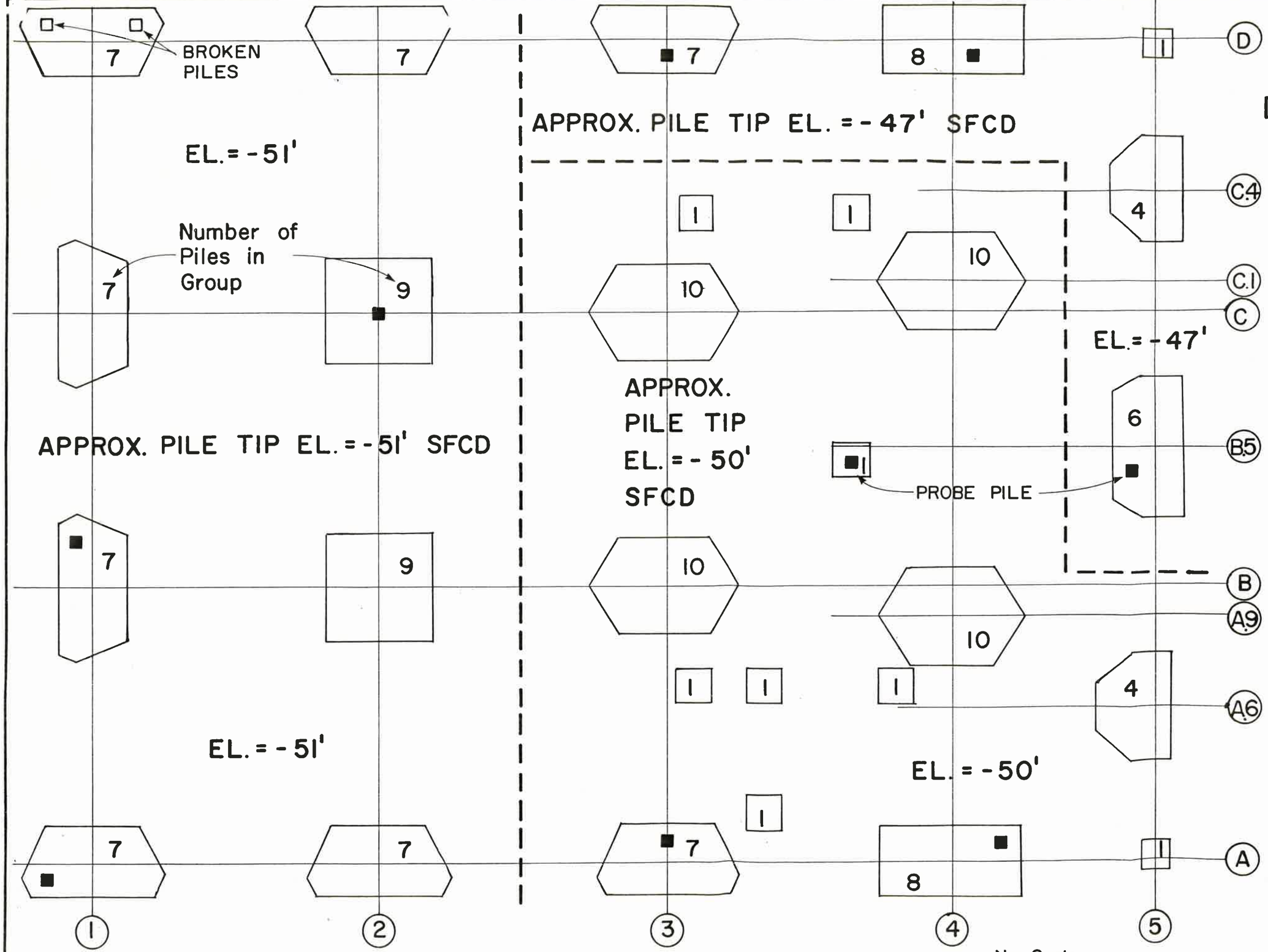


DIAGRAM-1

FOUNDATION PLAN

SHOWING:

Pile Cap Locations

Approximate Pile Tip Elevations (SFCD)

■ - Probe Pile Location

□ - Broken Pile Location

No Scale

ECKER SQUARE

Lee and Praszker
CONSULTING CIVIL ENGINEERS
147 Natoma Street at New Montgomery
San Francisco, 94105 (415) 392-4866

DRAWN BY	DATE	REVISION
TT	7-24-81	
CHECKED BY RR	JOB NO. L-726A	DIAGRAM NO. 1
APPROVED		