UPDATE REPORT

SOIL INVESTIGATION

Proposed Condominium Complex
9878-9892 11th Street
Garden Grove, California

for

Mr. David Lee
175 Sunflower Street
Brea, California 92621

J. Y. Design & Planning
Architect

Project No. HA-3199-1
January 4, 1994

The text of our report dated June 27, 1991 is appended. The reader should refer to that text for a complete description of the site surface and subsurface conditions, soils engineering testing program, and generally recommendations.

If you have any further questions concerning this update report, please do not hesitate to contact this office.

Respectfully submitted,
HU ASSOCIATES, INC.

REGISTERED PROFESSIONAL ENGINEER RICHARD E. HU No. 2240 Exp. GEOTECHNICAL STATE OF CALIFORNIA

Richard E. Hu, Ph.D.
RCE 29285, RGE 22[illegible]
Expiration Date 3-31-95
REH/hh
(3) Addressee
ADD31:add3199.1

PRELIMINARY REPORT

SOIL INVESTIGATION

Proposed Condominium Complex
9878-9892 11th Street
Garden Grove, California

for

L & C Partnership
11616 South Street, Suite 206
Artesia, California 90701

J. Y. Design & Planning
Architect

Project No. HA-3199-1
June 27, 1991

HU ASSOCIATES, INC.

GEOTECHNICAL ENGINEERING CONSULTANTS

11955 RIVERA ROAD • SANTA FE SPRINGS, CA 90670-2209 • TELEPHONE (310) 696-6062 • (310) 693-6114 • FAX (310) 698-5771

June 27, 1991
HA-3199-1

J. Y. Design & Planning
2457 Country Club Drive
Glendora, California 91740

Attention: Mr. Jin-Jie Yu

SUBJECT: PRELIMINARY SOIL INVESTIGATION
Proposed Condominium Complex
9878-9892 11th Street
Garden Grove, California

Gentlemen:

Pursuant to your request, we have conducted a preliminary soil investigation for the proposed condominium complex to be located at 9878-9892 11th Street, Garden Grove, California.

Based on the findings and observations of this investigation, it is concluded that the proposed development of the subject property for the intended use is feasible from the geotechnical engineering viewpoint, provided the specific recommendations set forth herein are followed. The proposed structures may be supported by conventional spread footings resting on properly compacted soil.

The accompanying report represents relevant conclusions and recommendations for the preliminary planning and foundation designs.

We thank you for entrusting us to undertake this investigation and look forward to future association. If any questions arise concerning the interpretation of the report, please do not hesitate to call.

Very truly yours,
HU ASSOCIATES, INC.

Richard E. Hu, Ph.D.
President
REH/ms

PRELIMINARY
REPORT OF SOIL INVESTIGATION
PROPOSED CONDOMINIUM COMPLEX
9878-9892 11TH STREET
GARDEN GROVE, CALIFORNIA
FOR
L & C PARTNERSHIP

INTRODUCTION

The following report presents the results of a preliminary soil investigation conducted on the property located at 9878-9892 11th Street, Garden Grove, California. The location of the site relative to surrounding streets and landmarks is shown on Plate 1, Vicinity Map.

The purpose of this investigation was to obtain the geotechnical engineering properties of the subsurface soils on which to base conclusions and recommendations for foundations support and other geotechnical matters pertinent to the proposed construction. The scope of this investigation does not include the work related in any way to identify asbestos and/or hazardous waste material.

This report has been prepared for use in design of the described project. It may not contain sufficient information for other purposes. Our professional services have been performed in accordance with generally accepted engineering procedures under similar circumstances. No other warranty, expressed or implied, is made as to the professional advice included in this report.

PROPOSED DEVELOPMENT

It is understood that the subject project will be utilized for the development of a 17-unit condominium complex and associated parking facility at the locations shown on Plate 2. The structures will be two stories in height with attached garage, constructed of wood frame and stucco with slab on grade. Additional open surface parking stalls will also be provided for guests.

The finish grade of the project is expected to be at or near to the street level. Only minor grading other than removal and recompaction of the existing unsuitable surface soil will be required to develop the building pads and to provide proper site drainage. No detailed grading plan and design loads are available at the time of this investigation.

FIELD EXPLORATIONS AND LABORATORY TESTING

Field explorations were performed to establish the geotechnical conditions of the site. Five test borings were excavated at the locations shown on Plate 2. The explorations were logged by our field engineer and relatively undisturbed samples were obtained for laboratory testing and inspection. A detailed description of the exploration procedures and the logs of test borings are presented in the Appendix.

Laboratory tests were performed to evaluate static soil properties. A description of the test procedures and the test results are also presented in the Appendix.

SITE CONDITIONS

The subject property is located on the south side of 11th Street, between Brookhurst and Kerry Streets, in the City of Garden Grove, California. The site is bounded by two-story apartment buildings and carports to the east, west, and south.

The site consists of a relatively level, near rectangular shape, residential lot. At the time of this investigation, the site is occupied by five one-story wood frame houses which will be demolished for new construction. The on-site vegetation consists of heavy growth of grasses and large trees.

SUBSURFACE CONDITIONS

Soil Conditions

In general, the natural soils disclosed in the five test borings consisted of moderately loose, porous, fine silty sand to depths of 2.5 to 4 feet, underlain by moderately compact slightly silty sand and clean sand with some gravel to depths of 9 to 11 feet. Below these are moderately firm clayey sandy silt to the depths penetrated.

Groundwater

Groundwater was encountered in all test borings at depths of 10 to 14 feet below the existing ground surface.

Water level readings have been made in the drill holes at times and under conditions stated on the boring logs. This data has been reviewed and interpretation made in the text of this report. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall, temperature, and other factors not evident at the time measurements were made and reported herein. Since the probability of such variations is anticipated, design drawings and specifications should accommodate such possibilities and construction planning should be based on such assumption of variations.

CONCLUSIONS AND RECOMMENDATIONS

Based on an evaluation of the site conditions and findings of this investigation, it is concluded that the subject property is suitable for the proposed development. The existing on-site surface soils to depths of 2.5 to 4 feet are relatively porous and sensitive to moisture change. Over-excavation and recompaction of the existing porous soil within the proposed building areas should be performed to provide satisfactory support of the foundation and slab. Spread footings rested on properly compacted soils will provide adequate support for the proposed structures.

Foundation

To eliminate potential excessive settlement and to provide a uniform foundation support, it is recommended the existing surface soils within the proposed building areas to a depth of 4 feet below the existing ground surface be removed and then replaced with properly compacted soil. The area of removal shall extend at least 3 feet beyond the edge of the footings. Refer to the "Grading" section of this report for detail removal and recompaction specifications.

An allowable bearing value of 2000 pounds per square foot is recommended for spread footings of at least one foot in width placed at a depth of at least 1.5 feet below the lowest adjacent final compacted ground.

The bearing value is for dead plus live load and may be increased by one-third for momentary wind or seismic loads.

Maximum ultimate settlement of footings up to 2 feet wide continuous and 4 feet square under the recommended bearing pressure is not expected to exceed 3/4 of an inch. Differential settlement between adjacent footings is not expected to exceed 1/4 of an inch. Settlement will be approximately in direct proportional to the width of the footings.

Continuous footings should be reinforced with at least two No. 4 bars, one near the top and one near the bottom of the footings. Reinforcement of isolated footings shall be utilized as deemed necessary by the Structural Engineer for the project. This reinforcement is based on soil characteristics and is not intended to be in lieu of reinforcement necessary to satisfy structural considerations.

Footings should be located below a line projected upward at a 45 degree angle from the bottom of the adjacent footings or utility trench, unless review and approved by the Soils Engineer.

Lateral Design

An allowable lateral bearing value against the sides of footings of 200 pounds per square foot per foot of depth, to a maximum of 2000 pounds per square foot, may be used provided there is positive contact between the vertical bearing surface and

the compacted soils. Friction between the base of the footings and/or floor slabs and the underlying soil may be assumed to be 0.35 times the dead load. When combining passive pressure and friction for lateral resistance, the passive component should be reduced by one-third.

Slabs on Grade

The on-site surface soils consist primarily of silty sand. Concrete slabs-on-grade should have a nominal thickness of 4 inches and be reinforced with 6" x 6", No.10/No.10 welded wire fabric or No. 3 bars, 24 inches on center both ways.

A moisture barrier beneath slabs-on-grade, consisting of a water-proof vapor barrier, such as a plastic membrane of at least 6 mils in thickness, is recommended in areas where slab moisture would be detrimental. The membrane should be overlain by a minimum of 2 inches of clean sands to provide a working surface and aid in concrete curing. It is further recommended that the slab areas be thoroughly moistened immediately prior to placing of moisture barrier.

The subgrade should be proof rolled prior to pour concrete to detect soft or disturbed areas and such areas should be excavated and replaced with compacted fill. The subgrade soils should be moisture-conditioned to obtain near optimum water content and compacted to at least 90 percent of the maximum density as determined by ASTM D-1557-78 standard.

Excavation

All excavation and shoring should be in accordance with current requirements of the State of California Safety Code, and all other public agencies have jurisdiction.

Drainage

Positive surface gradients should be provided adjacent to all structures so as to direct surface water away from foundations and slabs towards suitable discharge facilities. Ponding of surface water should not be allowed on pavements or adjacent to buildings. Where slabs or pavement are not feasible adjacent to the buildings, the ground surface should be provided with a minimum gradient of about four percent to a distance of five feet away from the structures.

Water should be transported off the site in approved drainage devices or obstructed swales. Unpaved drainage swales should have a gradient of at least one percent. Swales or drainage paths through lawn areas should be provided with a gradient of at least two percent. Where necessary drainage paths could be shortened by use of area drains and collector pipes.

Planters adjacent to buildings should be avoided insofar as possible. Planting areas at grade should be provided with good positive drainage. Wherever possible, exposed soil areas should be above adjacent paved grades. Planters should not be depressed below adjacent paved grades unless provisions for drainage, such as catch basins and pipe drains are made. Adequate drainage gradient, devices and curbing should be provided to prevent runoff from adjacent pavement or walks into planting areas. Consideration should be given to irrigation methods which will promote uniformity of moisture in planters and beneath adjacent concrete "flat-work". Over-watering and under-watering of landscape areas must be avoided.

All roof and wall surface drainage should be collected and conducted by a non-erosive device to the streets or to a designated area.

Trench Backfill

It is our opinion that utility trench and/or structural backfill consisting of the on-site material types could be best placed by mechanical compaction to a minimum of 90 percent of the laboratory maximum density.

If utility contractors indicate that it is undesirable to use compaction equipment in close proximity to a buried conduit, we would recommend the utilization of a light-weight mechanical equipment and/or bedding of conduit with clean granular material prior to initiating mechanical compaction procedures. Other methods of utility trench compaction may also be appropriate as approved by the Soils Engineer at the time of construction.

Plan Review

Subsequent to formulation of final development plans and specifications but prior to construction, grading and foundation plans should be reviewed by the geotechnical consultant to verify compatibility with site geotechnical conditions and conformance with recommendations contained herein.

Inspection

All rough grading of the property must be performed under engineering supervision of the geotechnical consultants. Rough grading includes, but is not limited to, site preparation, cleaning, over-excavation, and fill placement.

The geotechnical consultant should inspect all foundation excavations. Inspections should be made prior to installation of concrete forms and reinforcing steel to verify or modify, if necessary, conclusions and recommendations in this report.

Inspections of the finish grading, utility or other trench backfill, retaining wall backfill, or other earthwork completed for the subject project should also be performed by the geotechnical consultant.

If any of these inspections to verify site geotechnical conditions are not performed by the geotechnical consultant, liability for the safety and stability of the project is limited only to the actual portions of the project approved by the geotechnical consultant.

SITE PREPARATION

Prior to grading operations, the following items should be performed. All cleaning, site preparation, or earthwork performed on the project shall be conducted by the Contractor under the observation of the Soils Engineer.

Existing Structures

Demolition and/or removal of the existing structures is to include removal of the supporting foundation system. Existing paving and concrete slab should be removed from the site.

Utilities

Any underground utilities which are not to be reconnected should be cut off a minimum of 4 feet beyond the edge of building perimeters and entirely removed from within the area of future construction.

The ends of cut-off lines should be plugged a minimum of 5 feet with concrete exhibiting minimum shrinkage characteristics to prevent water migration to or from hollow lines. In addition, capping of lines may be required should the plug be subject to any line pressures.

Existing On-Site Sewage System

The location of the existing on-site sewage system (septic tank, seepage pits/cesspools), if any, should be determined.

Excavate and remove completely any underground tanks within areas of proposed construction. Contaminated soils resulting from leakage and tank removal will not be suitable for use as structural backfill and should be disposed of off site.

Trees and Surface Vegetation

Removal of designated trees and shrubs in areas of proposed construction should include rootballs. Resultant cavities should be cleansed of loose soils and roots and rolled to a firm unyielding surface prior to backfilling.

Grass and trees growth in areas of future construction should be stripped and disposed of off site. Stripping should penetrate three to six inches into surface soils. Any soils sufficiently contaminated with organic matter (such as root systems or stripping mixed into the soils) so as to prevent proper compaction shall be disposed of off site or set aside for future use in landscape areas.

GRADING SPECIFICATIONS

The following general specifications are recommended:

1) Area to be graded or paved shall be grubbed and stripped of all vegetation, debris, and other deleterious materials. All soil disturbed by removal of existing structures, foundations and trees should be removed.

2) Prior to receiving of new fills or where compacted soil is to provide support of structural load, the existing surface soils within the proposed building areas should be removed to a depth of at least 4 feet below the existing ground surface. The area of removal shall extend at least 3 feet beyond the edge of the footings. The exposed subgrade shall be scarified to a depth of at least 8 inches, moistened and compacted to at least 90 percent of the maximum laboratory density. All new fill shall be brought to near optimum moisture, placed in layers not exceeding 6 inches thick, and compacted to at least 90 percent of the maximum laboratory density.

3) The subgrade soil within the proposed pavement areas to a depth of 18 inches should be compacted to at least 90 percent of the maximum density prior to construction of paving to secure uniform support.

4) The depths of excavation should be reviewed by the Soils Engineer during the actual construction. Any surface or subsurface obstructions, or questionable material, encountered during grading should be brought immediately to the attention of the Soils Engineer for proper exposure, removal or processing as directed. No underground obstructions or facilities should remain in any structural areas.

5) Unless otherwise specified, all other fills and backfills should be compacted to at least 90 percent of maximum laboratory density.

6) The compaction characteristics of all fill soils shall be determined by ASTM D-1557-78 standard. The field density and degree of compaction shall be determined by ASTM D-1556, or by other ASTM standard methods which are acceptable to the governing public agency.

7) No soil shall be imported to the site without prior approval by the Soils Engineer. The on-site soils are suitable for use in compacted fills provided all the organic debris is removed.

8) All new fill shall consist of clean, non-expansive soil, free of vegetation and other debris, and shall be placed in layers not exceeding 6 inches at near optimum moisture content.

9) No rock over 6 inches in greatest dimension shall be accepted in any fill unless otherwise approved by the Soils Engineer.

10) No jetting or water tamping of fill soils shall be permitted.

11) Observation and testing of all compaction shall be under the direction of the Soils Engineer. The Soils Engineer shall advise the owner and grading contractor immediately if any unsatisfactory soils related conditions exist and shall have the authority to reject the compacted fill ground until such time as corrective measures necessary are taken to comply with the specifications.

12) Soils Engineer should be notified at least 2 days in advance of the start of grading. A joint meeting between a representative of the client, the contractor, and the Soils Engineer is recommended prior to grading to discuss specific procedures and scheduling.

REMARKS

The conclusions and recommendations contained in this report are based on the data obtained from the test borings at the dates and locations indicated in the logs and the site plan. It is assumed that the soil conditions at the other areas do not deviate significantly from those disclosed in the test borings. If any variations, or undesirable conditions are encountered during construction, or if the proposed construction will differ from the planned at the present time, this office should be notified so as to consider the need for modifications.

No responsibility for construction compliance with the design concepts, specifications, or recommendations is assumed unless an on-site review by a representative of this office is performed during the course of construction which pertains to the specific areas covered by the recommendations contained herein.

This report has been compiled for the exclusive use of the L & C Partnership. It shall not be transferred to any other party or to any other project without the consent and/or thorough review of this office.

The findings of this report are valid as of the present date. However, changes in the conditions of the property can occur with the passage of time, whether they are due to natural processes or to the works of man, on this or adjacent properties. In

addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or partially, by changes outside of our control. Therefore, this report is subject to review and should not be relied upon after a period of one year without such a review.

This report is issued with the understanding that it is the responsibility of the owner, or the proper representative thereof, to insure that the information and recommendations contained herein are called to the attention of all parties interested in the project and that the necessary steps are taken to see that the contractors and subcontractors carry out such recommendations in the field.

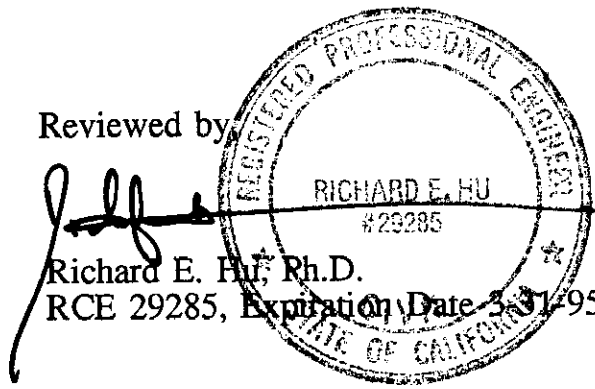
All exploratory borings used for subsurface exploration were backfilled with reasonable effort to restore the areas to their original condition. As with any backfill, some consolidation and subsidence of the backfill soils may result in time, causing some depression of the boring area and possibly a potentially hazardous condition. The client and/or owner of the property are advised to periodically examine the boring areas, and if necessary, backfill any resulting depressions. Hu Associates, Inc. shall not be liable for any resulting injury or damage.

The report is subject to review by controlling public agencies having jurisdiction.

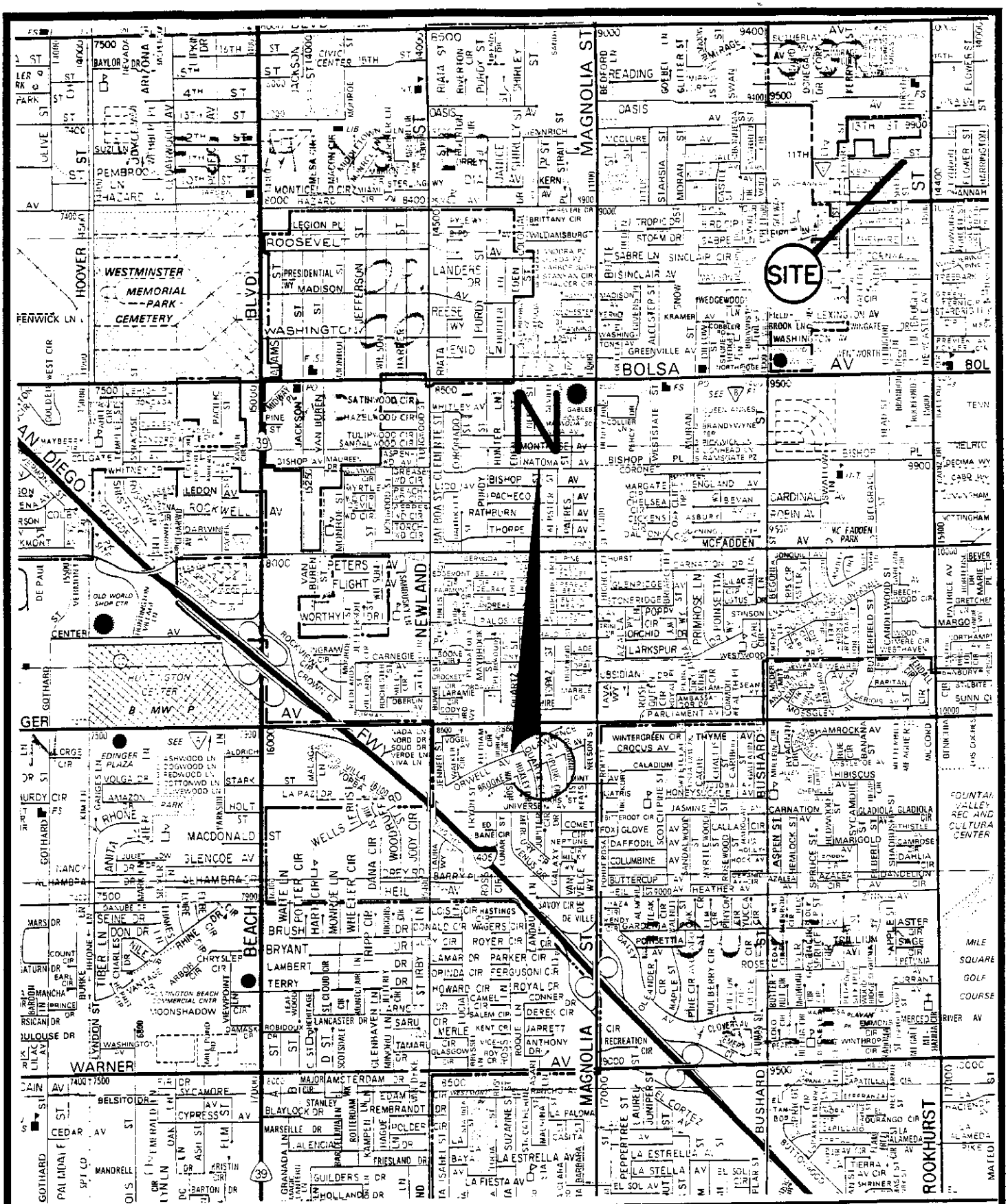
Respectfully submitted,
HU ASSOCIATES, INC.

Evan Lin
Staff Engineer
EL/REH/ms

Reviewed by:



Richard E. Hu, Ph.D.
RCE 29285, Expiration Date 3-31-95



VICINITY MAP

Proposed Condominium Complex
9878-9892 11th Street
Garden Grove, California

HU ASSOCIATES, INC *Geotechnical Engineering Consultants*

PROJECT No. HA-3199-1

PLATE 1

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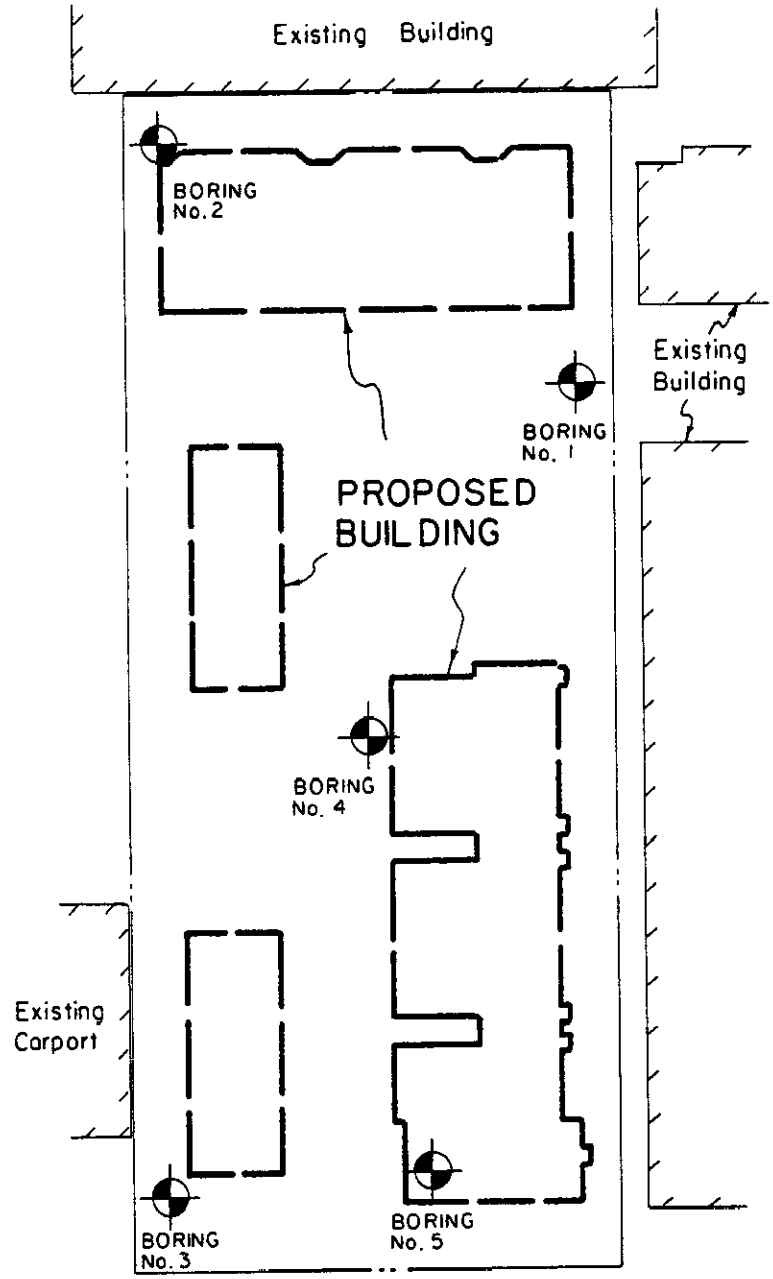


SCALE

PLOT PLAN & TEST BORING	Proposed Condominium Con 9878-9892 11th Stree Garden Grove, Californ	
HU ASSOCIATES, INC *Geotechnical Engineering Consultants*	PROJECT No. HA-3199-1	PLATE

LABORATORY TESTING

Moisture-Density Tests

The field moisture content and dry density of the materials encountered were determined by performing tests on selected undisturbed samples to aid in the classification and correlation of the soil and to obtain qualitative information relative to their strengths and compressibility. The results of the tests are shown on the Log of Test Boring, Plates A-1 through A-5.

Direct Shear Tests

Direct shear tests were performed on selected undisturbed samples of the natural soils to evaluate shear strength and supporting capacity of the foundation materials. Shear tests were made with a direct shear machine of the displacement control type at a displacement rate of approximately 0.02 inches per minute. The samples were tested at field moisture content under surcharge pressure equivalent to overburden pressures. The yield-point values determined from the tests are presented on Plates A-1 to A-5, Log of Test Boring.

Consolidation Tests

Consolidation tests were performed on representative undisturbed samples of the natural soils to evaluate the volume changes of soil subjected to increased loads. Deformations of the specimen are recorded at selected intervals. The results of pressure consolidation curves, which are used to estimate the probable magnitude and rate of settlement of the tested soil under applied loads, are presented on Plates A-6 to A-9, Consolidation Tests.

NOTE: THE DATA PRESENTED ON THIS LOG IS A SIMPLIFICATION OF ACTUAL SUBSURFACE CONDITIONS ENCOUNTERED AND APPLIES ONLY AT THE LOCATION OF THIS BORING AND THE DATE OF DRILLING. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

BORING NO. 1

DATE DRILLED: June 10, 1991

DRILLING EQUIPMENT: 8" Dia. Power Auger

DRIVING WEIGHT: 50 lbs @ 30 inch drop

WATER DEPTH: 10.0 feet below existing surface

ELEVATION: not determined

DEPTH IN FEET	SAMPLES	BLOW PER FOOT	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY LBS./CU. FT.	SHEAR RESISTANCE KIPS/SQ. FT.	CONFINING PRESSURE KIPS/SQ. FT.				
	5		6.4	88	0.17	0.21	SAND	fine, silty, porous	lt.gy. gray	sl. moist to moist	mod loose
	10		7.7	105	1.04	0.42		fine, sl. silty, porous w/occa. gravel	gray lt.br.		mod comp
5								fine to medium, sl. silty	lt.br. lt.gy.		
	9		2.6	94	0.52	0.70		fine to medium, clean	lt.gy. white		
								medium, clean	gray white	moist to moist	
10	8		12.2	96	0.52	1.05	SILT	very fine, sandy, clayey	gray brown		mod firm
			23.0								
								End of Boring @ 12.0 feet			
15											

LOG OF BORING

Proposed Condominium Complex
9878-9892 11th Street
Garden Grove, California

HU ASSOCIATES, INC *Geotechnical Engineering Consultants*

PROJECT No. HA-3199-1

PLATE A-1

NOTE: THE DATA PRESENTED ON THIS LOG IS A SIMPLIFICATION OF ACTUAL SUBSURFACE CONDITIONS ENCOUNTERED AND APPLIES ONLY AT THE LOCATION OF THIS BORING AND THE DATE OF DRILLING. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

BORING NO. 2

DATE DRILLED: June 10, 1991

DRILLING EQUIPMENT: 8" Dia. Power Auger

DRIVING WEIGHT: 50 lbs @ 30 inch drop

WATER DEPTH: 10.0 feet below existing surface

ELEVATION: not determined

DEPTH IN FEET	SAMPLES	BLOW PER FOOT	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY LBS./CU. FT.	SHEAR RESISTANCE KIPS/SQ. FT.	CONFINING PRESSURE KIPS/SQ. FT.				
							SAND	fine, silty, sl. porous	lt.gy. gray	sl. moist	mod loose
	8	7.7	90	0.53	0.21						
								fine, sl. silty, porous	gray		
	10	17.8	92	0.95	0.42				lt.br.		
5								very fine to fine, sl. silty to silty	lt.br. lt.gy.		mod comp
								fine to medium, clean	lt.gy. white		
	8	3.6	104	0.50	0.70						
								medium, clean	lt.gy.	moist to wet	
10	8	16.5					SILT	very fine, sandy, clayey	dk.gy.		mod firm
		23.9									
								End of Boring @ 13.0 feet			
15											

LOG OF BORING

Proposed Condominium Complex
9878-9892 11th Street
Garden Grove, California

HU ASSOCIATES, INC *Geotechnical Engineering Consultants* | PROJECT No. HA-3199-1 | PLATE A-2

NOTE: THE DATA PRESENTED ON THIS LOG IS A SIMPLIFICATION OF ACTUAL SUBSURFACE CONDITIONS ENCOUNTERED AND APPLIES ONLY AT THE LOCATION OF THIS BORING AND THE DATE OF DRILLING. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

BORING NO. 3

DATE DRILLED: June 10, 1991

DRILLING EQUIPMENT: 8" Dia. Power Auger

DRIVING WEIGHT: 50 lbs @ 30 inch drop

WATER DEPTH: 11.0 feet below existing surface

ELEVATION: not determined

DEPTH IN FEET	SAMPLES	BLOW PER FOOT	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY LBS./CU.FT.	SHEAR RESISTANCE KIPS/SQ.FT.	CONFINING PRESSURE KIPS/SQ.FT.				
		7	3.8	93			SAND	fine, sl. silty, porous	lt.gy. gray	dry	mod loose
		6	1.6					fine, sl. silty, sl. porous	gray lt.br.	sl. moist	
5								fine to medium, sl. silty w/medium grains & coarse grains	lt.br. lt.gy.		mod loose
		8	3.1	94	0.60	0.70		fine to medium, clean	lt.gy. white		
10			3.6	96	0.66	1.05					
			21.9				SILT	very fine, sandy, clayey	dk.gy.	moist to wet	mod firm
								End of Boring @ 13.0 feet			
15											

LOG OF BORING

Proposed Condominium Complex
9878-9892 11th Street
Garden Grove, California

HU ASSOCIATES, INC *Geotechnical Engineering Consultants* | PROJECT No. HA-3199-1 | PLATE A-3

NOTE: THE DATA PRESENTED ON THIS LOG IS A SIMPLIFICATION OF ACTUAL SUBSURFACE CONDITIONS ENCOUNTERED AND APPLIES ONLY AT THE LOCATION OF THIS BORING AND THE DATE OF DRILLING. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

BORING NO. 4

DATE DRILLED: June 12, 1991

DRILLING EQUIPMENT: 18" Dia. Bucket Auger

DRIVING WEIGHT: 1600 lbs @ 12 inch drop

WATER DEPTH: 14.0 feet below existing surface

ELEVATION: not determined

DEPTH IN FEET	SAMPLES	BLOW PER FOOT	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY LBS./CU. FT.	SHEAR RESISTANCE KIPS/SQ. FT.	CONFINING PRESSURE KIPS/SQ. FT.				
							FILL SAND	fine, sl. silty w/concrete	lt.gy.	dry	mod
							SAND	very fine to fine, sl.silty	lt.br.	sl.	loose
	2	4.0	91	0.29	0.21			sl. porous w/roots		moist	
	2	9.5	101	0.51	0.42						
5								fine, sl. silty	lt.gy. tan		mod comp
	2	6.3	97	0.64	0.70			fine to medium, clean	lt.br. lt.gy. white		
								medium, clean			
10	2	4.5	94	0.92	1.05		SILT	clayey, sl. sandy	gray brown	moist to wet	mod firm
								sandy, sl. clayey	dk.gy. gray		
15	1	26.5	97	1.18	1.54			sandy, clayey	dk.gy.		
								End of Boring @ 15.0 feet			

LOG OF BORING

Proposed Condominium Complex
9878-9892 11th Street
Garden Grove, California

HU ASSOCIATES, INC *Geotechnical Engineering Consultants* | PROJECT No. HA-3199-1 | PLATE A-4

NOTE: THE DATA PRESENTED ON THIS LOG IS A SIMPLIFICATION OF ACTUAL SUBSURFACE CONDITIONS ENCOUNTERED AND APPLIES ONLY AT THE LOCATION OF THIS BORING AND THE DATE OF DRILLING. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

BORING NO. 5

DATE DRILLED: June 12, 1991

DRILLING EQUIPMENT: 18 Dia. Bucket Auger

DRIVING WEIGHT: 1600 lbs @ 12 inch drop

WATER DEPTH: 14.0 feet below existing surface

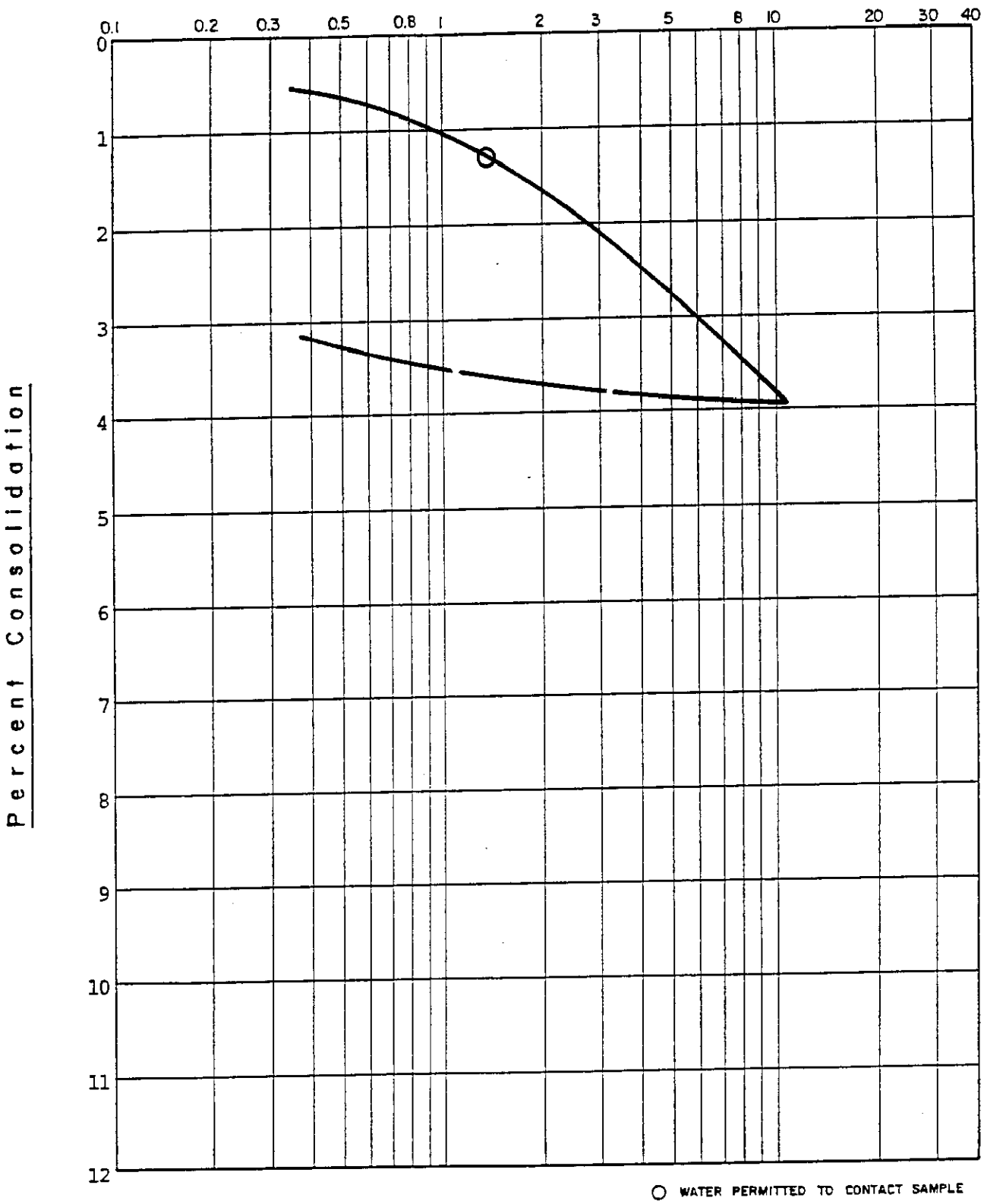
ELEVATION: not determined

DEPTH IN FEET	SAMPLES	BLOW PER FOOT	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY LBS./CU.FT.	SHEAR RESISTANCE KIPS/SQ.FT.	CONFINING PRESSURE KIPS/SQ.FT.				
	1	10.3	105	0.51	0.21	SAND	very fine to fine, silty sl. porous	gray lt.br.	moist	mod loose
	2	8.8	92	0.39	0.42		very fine to fine, sl.silty	lt.gy. lt.br.		mod comp
5							fine, sl. silty	lt.gy. tan	sl. moist	
	3	3.4	96	0.51	0.70		fine to medium, clean	lt.br. lt.gy. white		
10	1	20.7	98	0.61	1.05	SILT	sandy, sl.clayey	dk.gy. lt.br.	moist to wet	mod firm
							sandy, clayey	dk.gy. gray		
15	2	24.4	98	1.13	1.54		End of Boring @ 15.0 feet			

LOG OF BORING

Proposed Condominium Complex
9878-9892 11th Street
Garden Grove, California

HU ASSOCIATES, INC *Geotechnical Engineering Consultants* | PROJECT No. HA-3199-1 | PLATE A-5

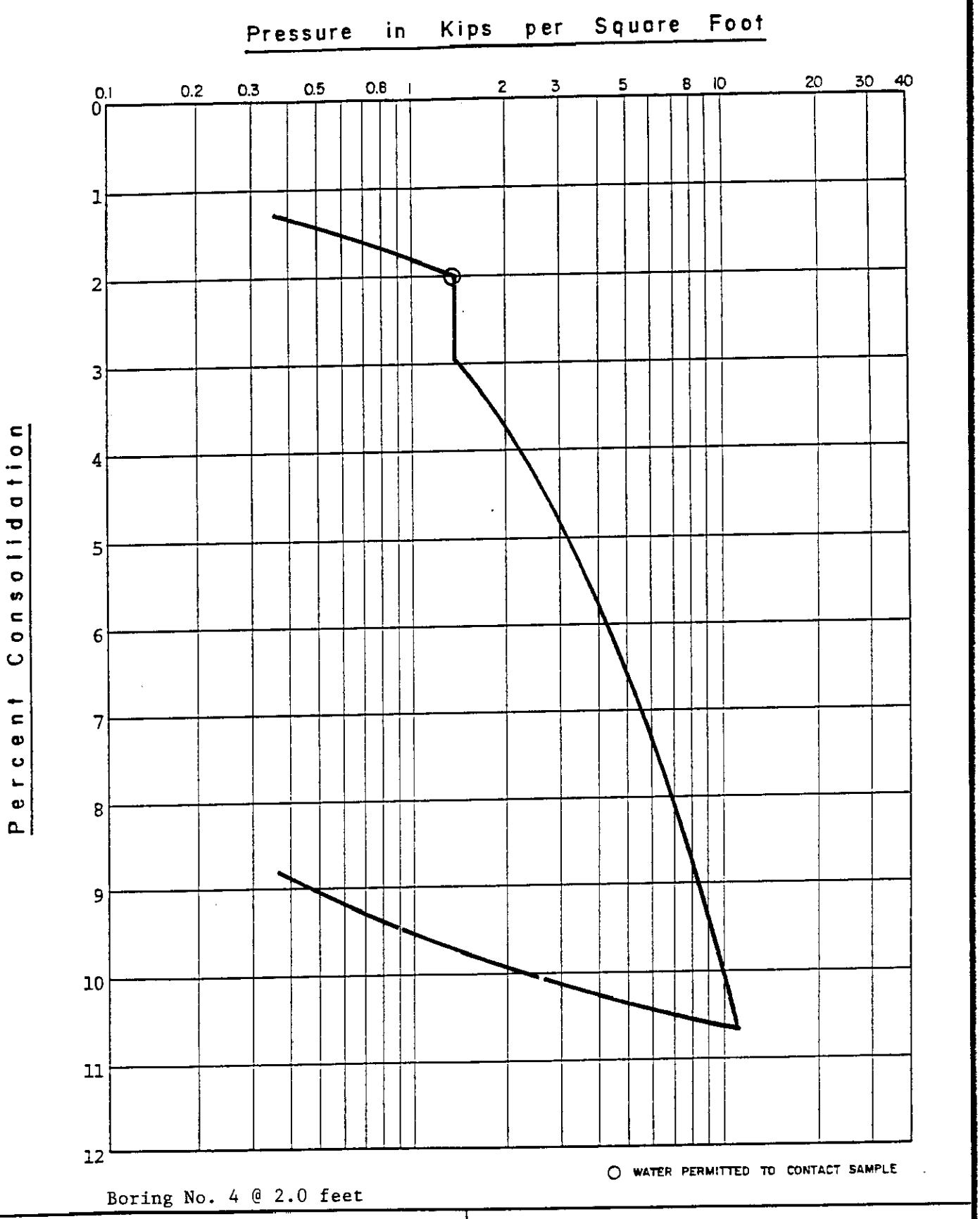


Boring No. 2 @ 7.0 feet

CONSOLIDATION TEST

Proposed Condominium Complex
9878-9892 11th Street
Garden Grove, California

HU ASSOCIATES, INC *Geotechnical Engineering Consultants* | PROJECT No. HA-3199-1 | PLATE A-6

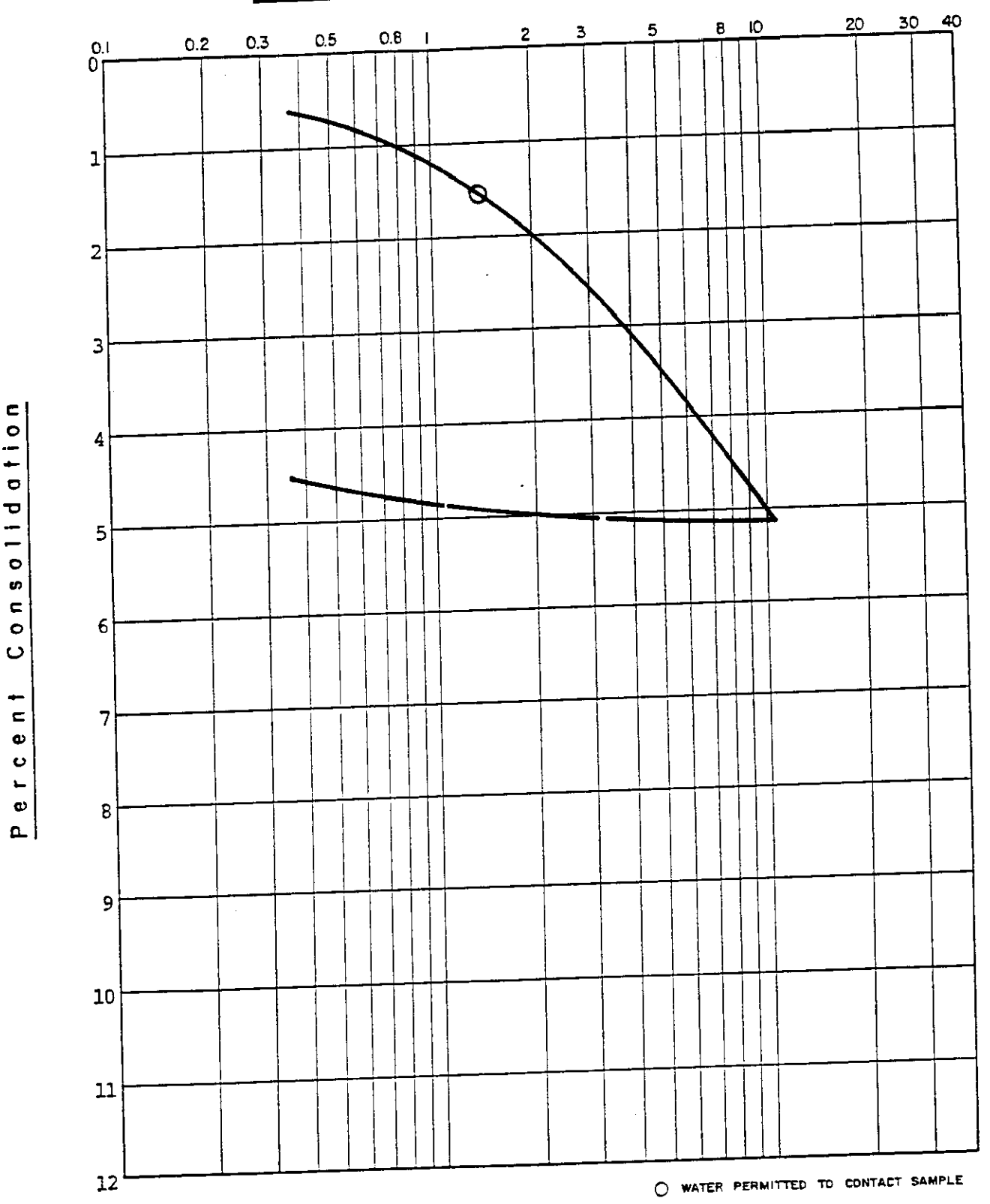


Boring No. 4 @ 2.0 feet

CONSOLIDATION TEST

Proposed Condominium Complex
9878-9892 11th Street
Garden Grove, California

HU ASSOCIATES, INC *Geotechnical Engineering Consultants* | PROJECT No. HA-3199-1 | PLATE A-7



Boring No. 4 @ 7.0 feet

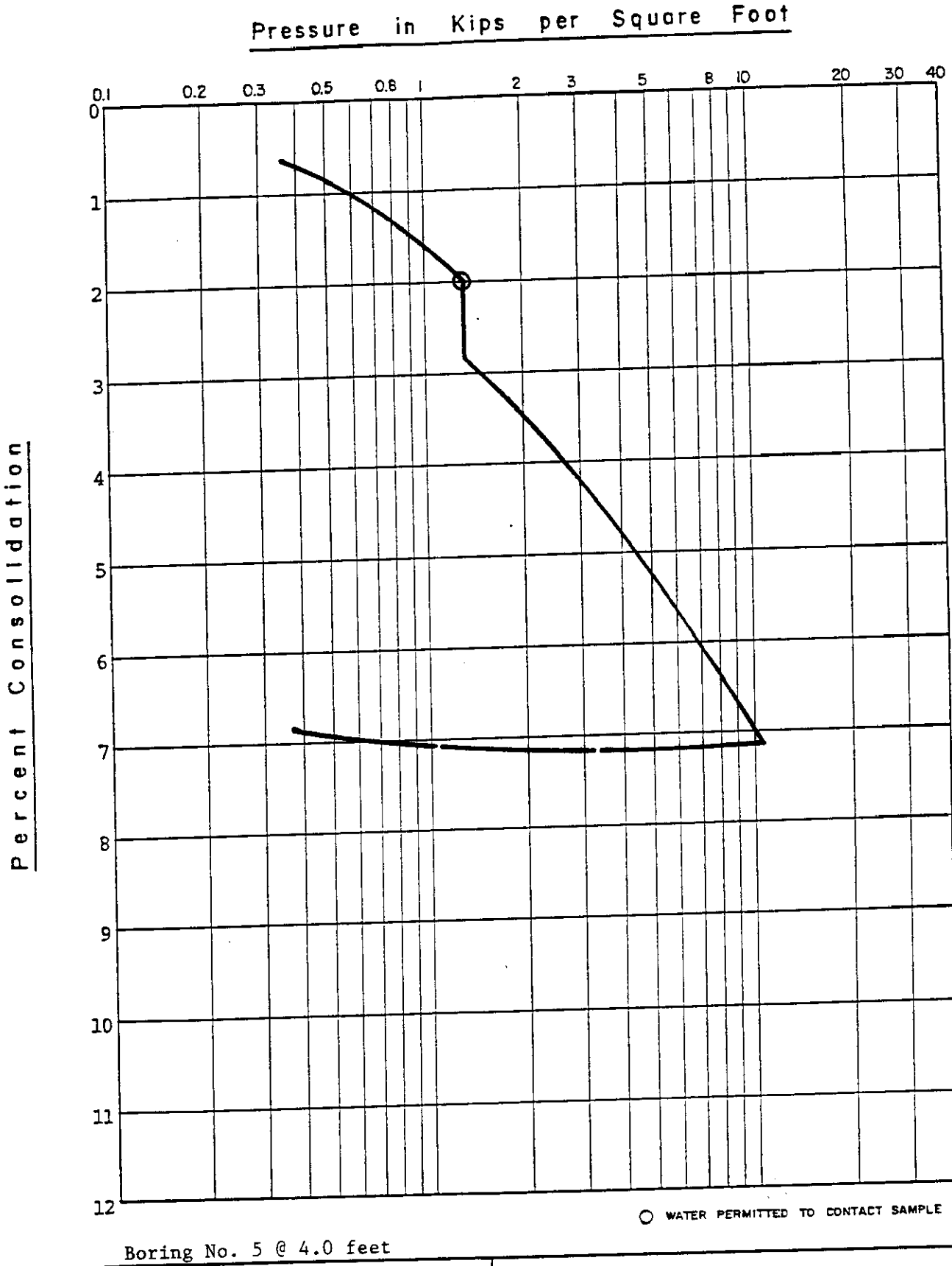
CONSOLIDATION TEST

Proposed Condominium Complex
9878-9892 11th Street
Garden Grove, California

HU ASSOCIATES, INC *Geotechnical Engineering Consultants*

PROJECT No. HA-3199-1

PLATE A-8



Boring No. 5 @ 4.0 feet

CONSOLIDATION TEST

Proposed Condominium Complex
9878-9892 11th Street
Garden Grove, California

HU ASSOCIATES, INC *Geotechnical Engineering Consultants*

PROJECT No. HA-3199-1

PLATE A-9