

APPENDIX I

GEOTECHNICAL REPORTS

December 31, 1998

Mr. Don Engler
545 Marlin Avenue
Mill Valley, California 94941

Subject: **Geotechnical Considerations
Proposed Property Purchase
Ocean Woods Terraces Apartment Complex
17331-17333 Tramonto Drive
Pacific Palisades, California
Law/Crandall Project Number 70131-8-0618**

Dear Mr. Engler:

SUMMARY

We have completed our geotechnical investigation of the site of the Ocean Woods Terrace Apartments in the Pacific Palisades area of the City of Los Angeles, California. Our subsurface explorations, geologic and engineering analyses and conclusions regarding stability of the site for continued use as an apartment complex are summarized below.

Our investigation included exploration of subsurface geologic conditions by drilling 3 borings at the site and exposing portions of the buried soldier pile protective barrier wall. One boring was drilled within the Revello Drive landslide and the remaining two borings were drilled within the existing apartment complex. Fill, terrace deposits, landslide debris and bedrock were encountered in the borings. We also inspected the foundation system of the buildings to determine if there were apparent defects in the structural system.

To supplement our field exploration activities, we reviewed stereo-paired, aerial photographs of the site area for evidence of geomorphic conditions indicative of past instability. We also reviewed reports of our previous investigations conducted at this site. The geotechnical conclusions presented in this report were developed in part using information from the previous investigations.

Based upon the results of our investigation, the protective soldier pile walls appear to have functioned satisfactorily and there are no indications that the adjacent Revello Drive landslide has encroached into the developed portion of the property. Accordingly, it is our opinion that the developed portion of the property is not subject to abnormal geologic hazards.

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INTRODUCTION

This report has been prepared at your request to present the results of our recent subsurface geotechnical investigation at the subject site. The investigation was performed in general accordance with our authorization agreement dated November 22, 1998 and was coordinated with you and a prospective buyer for the property, Mr. Ken Kahan. Ms Karoline Sauls of Sperry Van Ness provided valuable assistance in arranging access for this work. The purpose of the investigation was to evaluate geologic conditions and slope stability at the site related to continued operation of the existing apartment complex.

SITE DESCRIPTION

The site is located in the Pacific Palisades area of the City of Los Angeles near the intersection of Pacific Coast Highway and Sunset Boulevard. More specifically, the site occupies a southeast-facing slope south of Tramonto Drive as depicted on Figure 1, Vicinity Map.

Most of the property is currently used as an apartment complex consisting of one- to three-story wood-framed and stucco dwelling units, garages, driveways and a swimming pool and deck. Based upon topographic maps from our files, elevations at the site range from approximately 85 to 200 feet.

BACKGROUND

The apartment complex is bordered by the Revello landslide to the west and southwest. This landslide occupies an area of approximately 5 acres and extends generally from Revello Drive to the north and to Castellammare Drive to the south. The location of the Revello landslide is depicted on Figure 2, Geotechnical Map.

The Revello landslide initially failed in June of 1965 with associated damage and loss of the then existing residential structures and portions of Revello Drive. Several relatively small slope failures have occurred in the area as a result of heavy rains in January through March, 1978. These failures are depicted on Figure 2 and discussed in our Report of Slope Failure Investigation dated December 5, 1978.

Since the initial failure, additional movement of slope materials has reportedly continued intermittently during wet weather episodes throughout the past 33 years. The most recent of these occurred during the 1997-98 El Nino storm event where landslide movements damaged a City of Los Angeles Department of Public Works retaining wall along Castellammare Drive at the toe and extensive tension cracks developed along Revello Drive, near the head of the landslide.

As a result of the 1965 landslide, the southwestern-most of the original three apartment buildings and a portion of the central building were destroyed. We conducted an investigation of the property and recommended measures to stabilize the remaining portion of the central building in our report dated November 7, 1980. These measures included construction of a protective barrier consisting of a soldier pile wall along the westerly limits of the central building.

A relatively small slope failure, unrelated to the Revello landslide occurred on the slope below the apartment complex pool deck as a result of heavy rains in January through March, 1978. This failure was determined to be due to saturated soil and weathered rock materials moving downslope approximately 5 to 6 feet, vertically. This failure was addressed in our October 28, 1980 report. As recommended in that report, a soldier pile wall was constructed in 1981 to stabilize this portion of the apartment complex. The approximate locations of these barrier walls are illustrated on Figure 2.

Our previous investigation and inspection services are summarized in the following reports:

- Report of Slope Failure Investigation, dated December 5, 1978 (LC&A Job No.E-78290).
- Report of Geotechnical Investigation, Repair of Slope Failures Below Pool Deck, dated October 28, 1980 (LC&A Job No. AE-80258).
- Report of Geotechnical Investigation, Landslide Mitigation Measures, dated November 7, 1980 (LC&A Job No. AE-80259).
- Inspection of Foundation Excavations, Inspection and Testing of Compacted Backfill, Repair of Slope Failures Below Pool Deck, dated February 1, 1982 (LC&A Job No. B-81126).
- Geologic Conditions, dated June 29, 1981 (LC&A Job No. E-80259).
- Inspection of Current Conditions, dated November 26, 1986 (LC&A Job No. E-80259)
- Geotechnical Considerations, dated October 14, 1998 (L/C Job No. 80434)
- Supplementary Report Geotechnical Considerations Proposed Property Purchase dated October 23, 1998 (L/C Job No. 80434)

PURPOSE AND SCOPE

Our current investigation was performed to further evaluate subsurface geologic conditions and geotechnical stability of the site for its continued use as an apartment complex. Borings were located to observe and evaluate geologic conditions that could possibly affect slope stability.

This investigation was not performed for the purpose of evaluating future new construction. We recommend that if and when conceptual or design plans are developed, additional geotechnical investigation should be conducted to evaluate geotechnical conditions that could affect proposed project elements.

Our investigative scope consisted of the following:

- Review of existing geologic and geotechnical data from previous investigations and from published agency reports.
- Review of black and white, stereo-paired, aerial photographs to evaluate geomorphic features at and near the site for possible evidence of landslides or other features that would indicate unstable slope conditions.
- Geologic site reconnaissance and reconnaissance-level field mapping of surficial features at the site.
- Excavation logging and sampling of 3 exploratory borings to evaluate subsurface geologic conditions. Borings were down-hole logged by an engineering geologist.
- Excavation along the existing soldier-pile barrier wall to expose structural elements and observe these features for possible evidence of structural distress.
- Visual inspection of the building foundation construction within the under-floor area of the existing buildings.
- Preparation of this report presenting our findings, conclusions and recommendations.

FIELD EXPLORATIONS

Geologic conditions beneath the site were explored by drilling 3 borings to a maximum depth of 39 feet below the existing grade at the locations depicted on Figure 2. The borings were visually logged and sampled at selected intervals by our drilling technician. The borings were also down-hole logged by engineering geologists from our firm. The approximate locations of borings from our previous investigations at the site are also illustrated on Figure 2. Details of the explorations and the logs of the current borings are presented in the Appendix to this report.

In addition to the borings, the protective barrier wall was exposed at several locations using hand-dug pits. The exposed soldier-pile wall, between the Revello landslide and the southerly building, was inspected by our geologist to check the condition of the wall. There was no evidence of distress that would be indicative of poor performance of the barrier.

Shortly prior to the current exploratory work, we inspected the foundation system of the existing buildings. The under-floor area of each structure was examined and the condition of the earth embankments and exposed concrete foundations carefully checked. There were no indications of embankment instability or any signs of distress to the exposed foundation members.

GEOLOGIC CONDITIONS

Geologic Setting

The site is located easterly of Castellammare Mesa at the southerly terminous of the Santa Monica Mountains. The near-level mesa is composed of elevated stream channel deposits formed by regional uplifting, glacio-eustatic sea level fluctuation, stream and floodwater deposition and marine wave cutting. The subject apartment complex is located on a 70-foot high southeast-facing slope above the mouth of Santa Ynez Canyon. Predevelopment topography from aerial photographic evidence indicates that the northeasterly portion of the site is a remnant, near-level uplifted, geomorphic terrace.

Geologic Units

Geologic units underlying the property include; artificially placed fill, colluvium (slope wash), stream terrace deposits, landslide debris and bedrock. A description of these units is presented in the following sections. A more detailed lithologic description of materials encountered is presented on the boring logs in the Appendix.

Fill

Artificial fill was encountered in Borings B-1, B-2 and B-3 to depths ranging from 2 to a maximum of 6 feet. Fill was observed to consist of materials ranging from clayey silt to silty clay with wood, brick and rock fragments.

Colluvium

Colluvium is the downslope accumulation of residual soil and weathered bedrock materials on slopes under the influence of gravity and moisture. Colluvium was encountered only in Boring B-1, and was observed to consist of silty sand.

Stream Terrace Deposits

Stream terrace deposits were encountered in Borings 2 and 3 to depths of 7 feet and 8 feet respectively. These deposits are the result of stream channel deposition. when the site was closer in elevation to sea level. Terrace deposits were observed to consist of clayey to sandy silt and silty sand with gravel. The base of these deposits in Boring 3 was observed to consist of a 2-foot thick cobble and boulder gravel layer.

Landslide Debris

Boring B-1, located within the Revello landslide, encountered landslide debris to its total depth of 38 feet. The landslide was observed to consist of highly weathered, massive, sandstone and moderately well bedded and sheared, clayey siltstone. The landslide area is southerly of the currently developed apartment complex and is located beyond the protective barrier wall installed in 1981.

Bedrock

Bedrock units at the site are interbedded siltstone and sandstone sediments assigned to the Topanga Formation and intrusive volcanic rock of basalt and diabase composition. The sandstone and siltstone are thinly bedded to massive. These units are relatively soft to hard.

The sandstone and siltstone units are intruded by the basalt. The basalt occurs as sills and dikes at two locations at the site as depicted on Figure 2. As encountered in Boring B-3, the volcanic rock was observed to consist of, slightly weathered and massive basalt.

Geologic Structure

Geologic structure is characterized by moderately steep, northeasterly dipping bedding planes in the sedimentary units that are generally neutral to, or dip into the slope in this area. Minor folding and drag folding along faults result in minor departures from this preferred bedding plane orientation. Interpreted subsurface geologic conditions including geologic structure within the bedrock units and the relationship of various geologic units at the site are illustrated on Figures 3.1 to 3.3. Geologic Sections.

Groundwater

Groundwater seepage was encountered in Borings B-1 and B-2. The seepage in Boring 1, located within the landslide, was observed at depths of 13 and 29 feet to be moderate, approximately 1 to 2 gallons per minute. Minor seepage in boring B-2 was observed at a depth of 25 feet, perched behind a minor fault and was estimated to be less than a gallon a day. Both of these occurrences are considered perched groundwater trapped on relatively impermeable surfaces. Groundwater was not encountered in Boring B-3. The groundwater table in this area is estimated to be more than 100 feet below the ground surface at the subject site.

CONCLUSIONS

Our firm has had considerable experience with the geotechnical conditions at the Ocean Woods Terrace Apartments over the past 20 years. The protective soldier pile walls have functioned satisfactorily, and there is no indication that the adjacent Revello Drive landslide has encroached into the currently developed portion of the property. Our recent observations of subsurface conditions, building foundations and soldier pile retaining walls at the site did not disclose

indications of slope or foundation instability. Minor surficial displacements and soil settlement below the buildings has affected some drainage installations. These conditions are not serious but should be corrected as recommended in our report dated October 14, 1998. Based upon our experience at the property and our recent subsurface explorations, it is our opinion that geotechnical conditions at the property are favorable for continued satisfactory performance of the developed portion of the property.

Based on our inspection of the existing conditions, there was no evidence of distress in any of the foundation systems observed beneath the buildings. The concrete grade beams and other foundation construction was found to be in good condition. There was no evidence of lateral movement or distress of the exposed soil embankment beneath the structures. The buildings were built in the early 1960's and have withstood the severe earth shaking associated with the Sylmar earthquake in 1971 and the Northridge earthquake in 1994. While there was some earthquake damage to the superstructure, there is no indication that the foundations did not perform properly. Accordingly, it is our opinion that the foundation conditions of the units are satisfactory and should perform in an appropriate manner for the continued life of the structures.

The Revello landslide located beyond the apartment complex exhibits surface features indicating that this slope is unstable and capable of periodic reactivation. This condition will likely continue unless measures are implemented to mitigate the instability. These measures may include removal of the landslide debris and replacement with a properly compacted and engineered buttress fill, pile-supported retaining walls or other viable stabilization techniques. Prior to design of stabilization fills or retaining structures, a comprehensive geotechnical investigation of subsurface conditions is recommended for this landslide area to properly determine geologic conditions and evaluate possible methods of stabilizing the area.



We trust this supplementary information will provide the information you desired. Please call if you have any questions regarding this report.

Sincerely,

LAW/CRANDALL

A Division of LAW Engineering and Earth Sciences, Inc.



John Jeffrey Butelo, CEG
Senior Engineering Geologist

LeRoy Crandall
Senior Consultant



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(2 copies submitted)

Attachments: Figure 1 Vicinity Map
Figure 2 Geotechnical Map
Figures 3.1-3.3 Geologic Cross Sections
Appendix Boring Logs

Distribution: (2) Addressee
(2) California Landmark Group
Attn: Mr. Ken Kahan
(2) Sperry Van Ness
Attn: Ms. Karoline Sauls

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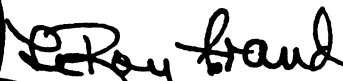
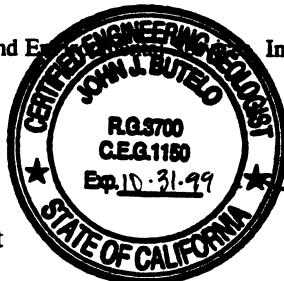
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John Jeffrey Butelo, CEG
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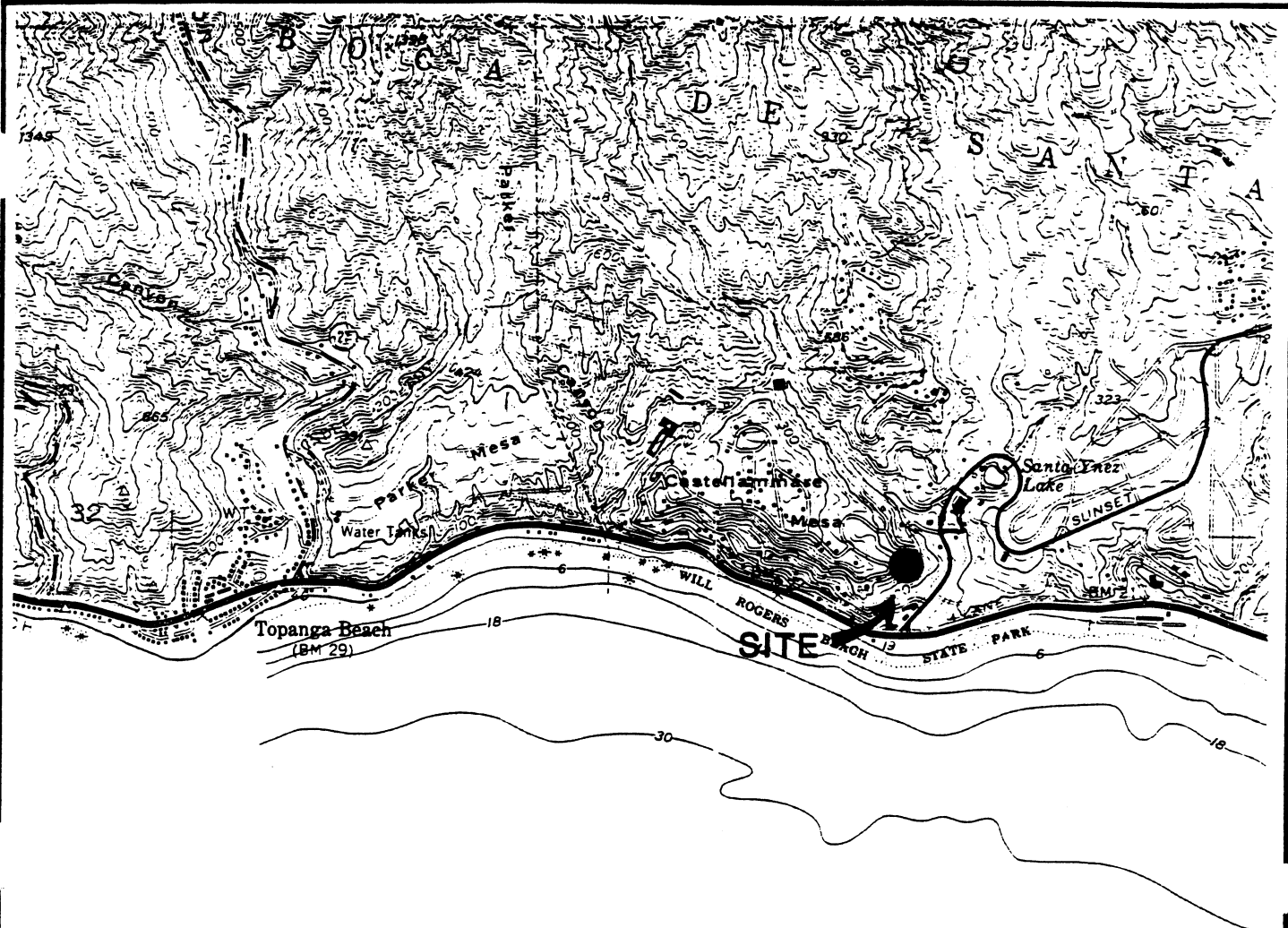
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Attn: Ms. Karoline Sauls

R. JM O.E. LC CHKD JJB

F.T. DATE 12-8-88

9 70131-8-0418



N T A M O N I C A

REFERENCE: U.S.G.S., 1952 "TOPANGA QUADRANGLE", Photorevised 1981.



VICINITY MAP

SCALE 1"=2000'

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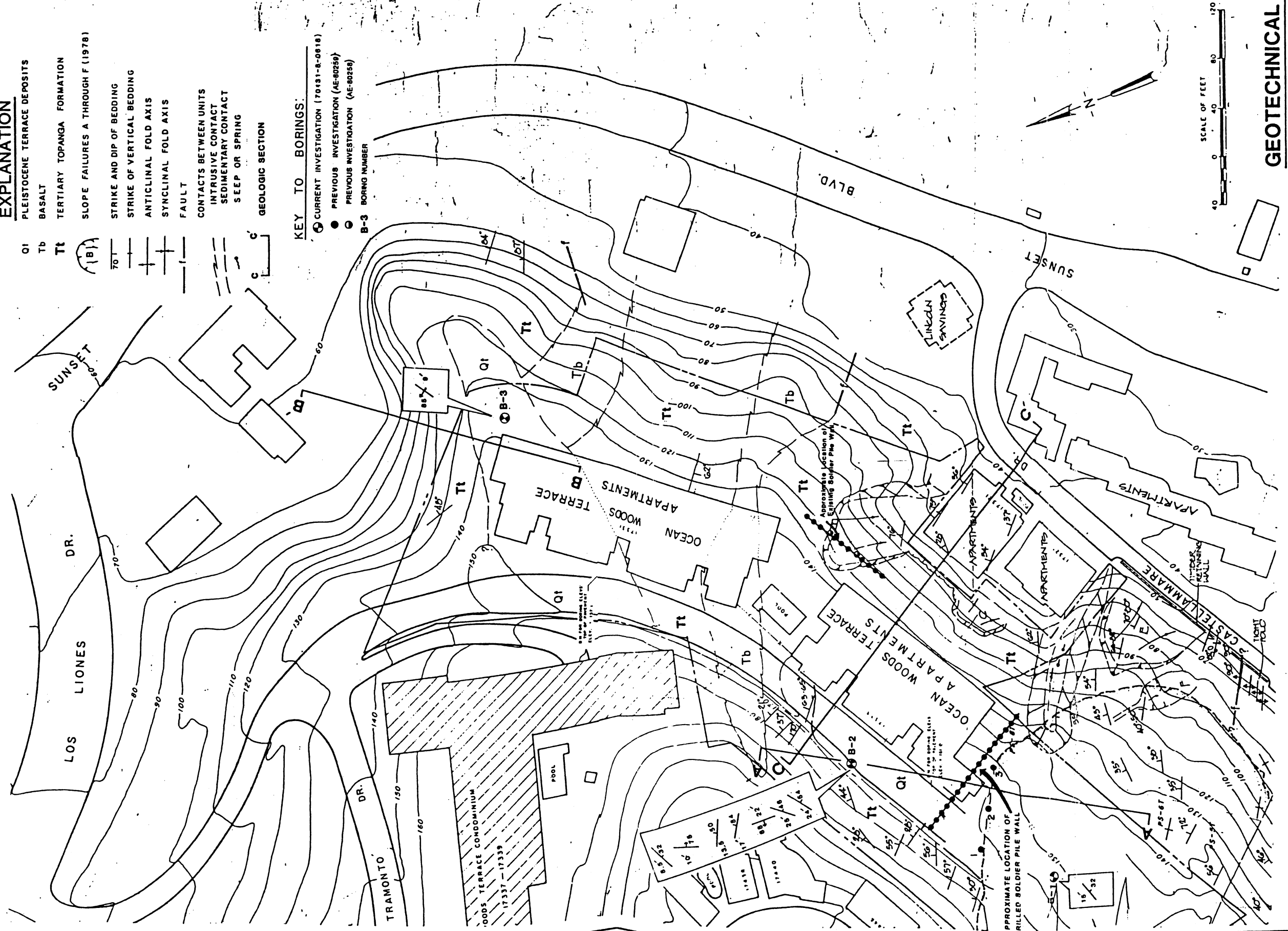
FIGURE 1

EXPLANATION

- Q1 PLEISTOCENE TERRACE DEPOSITS
- Tb BASALT
- Tt TERTIARY TOPANGA FORMATION
- (B) SLOPE FAILURES A THROUGH F (1978)
- 70° STRIKE AND DIP OF BEDDING
- 70° STRIKE OF VERTICAL BEDDING
- ANTICLINAL FOLD AXIS
- SYNCLINAL FOLD AXIS
- FAULT
- CONTACTS BETWEEN UNITS
- INTRUSIVE CONTACT
- SEDIMENTARY CONTACT
- SEEP OR SPRING
- GEOLOGIC SECTION

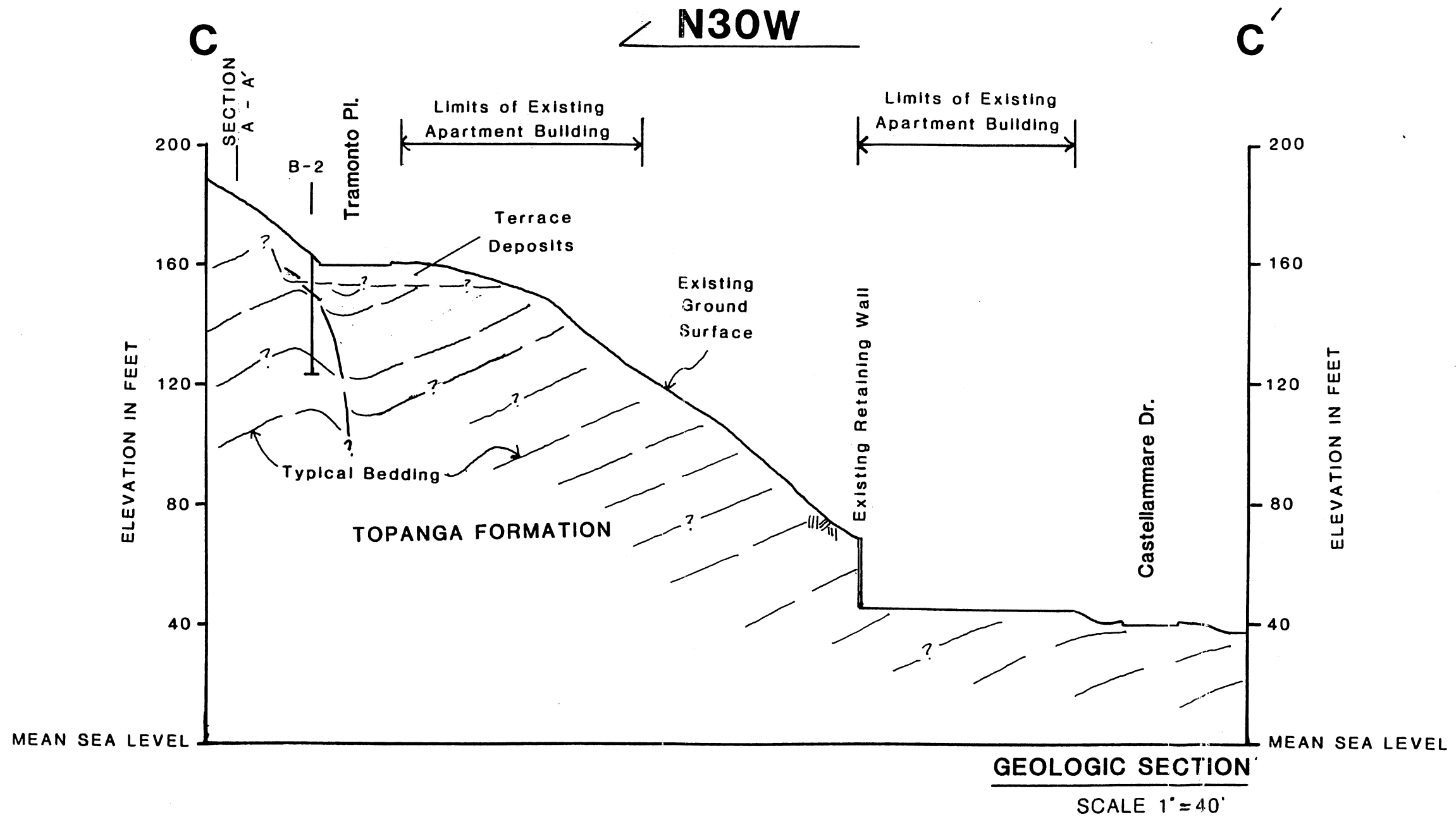
KEY TO BORINGS:

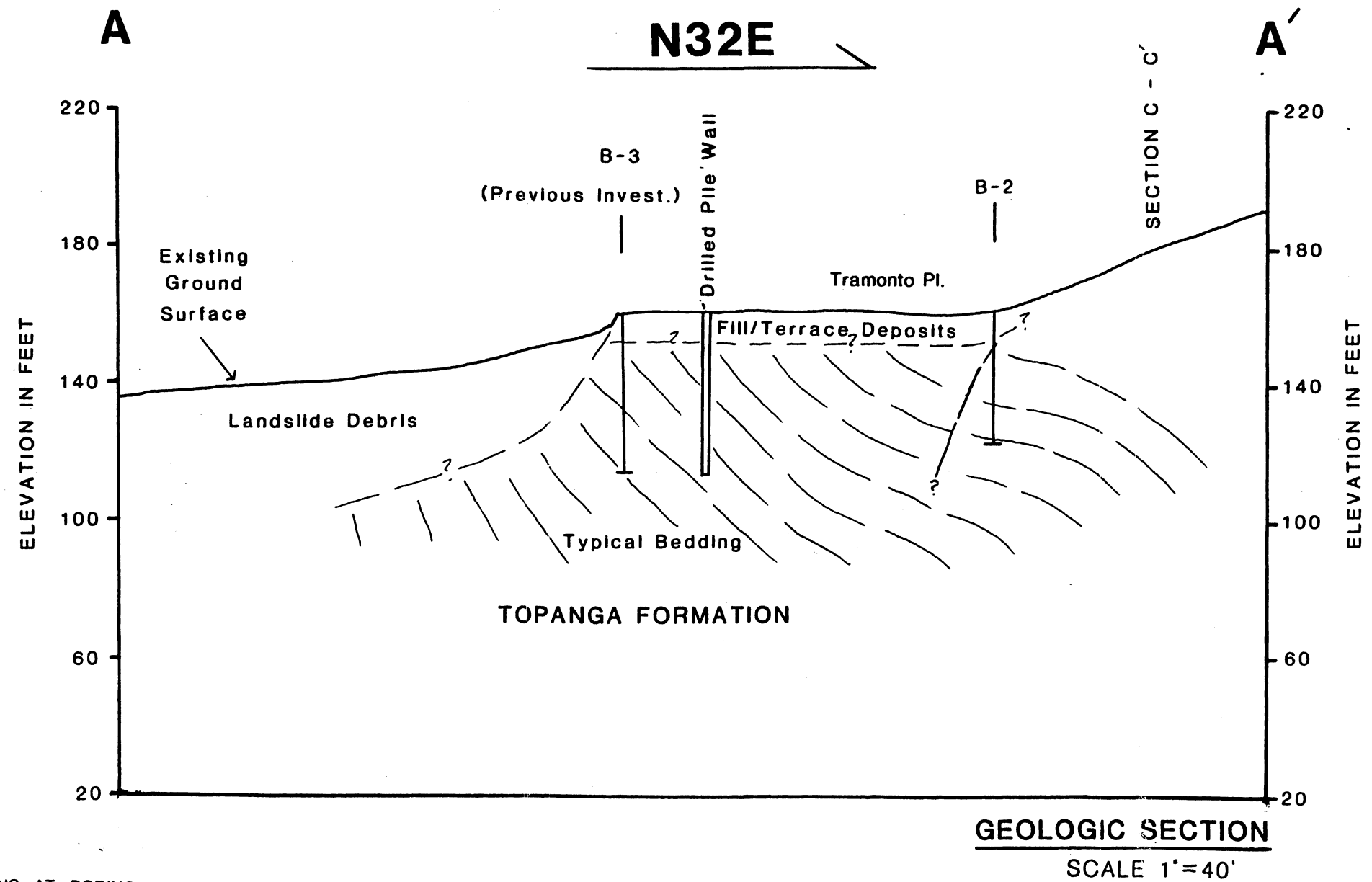
- CURRENT INVESTIGATION (70191-8-0618)
- PREVIOUS INVESTIGATION (AE-60259)
- PREVIOUS INVESTIGATION (AE-60258)
- B-3 BORING NUMBER



GEOTECHNICAL MAP

JOB 70131-8-06/8 DATE 12-21-98 DR. J. O.E. LC CHKD. JJB





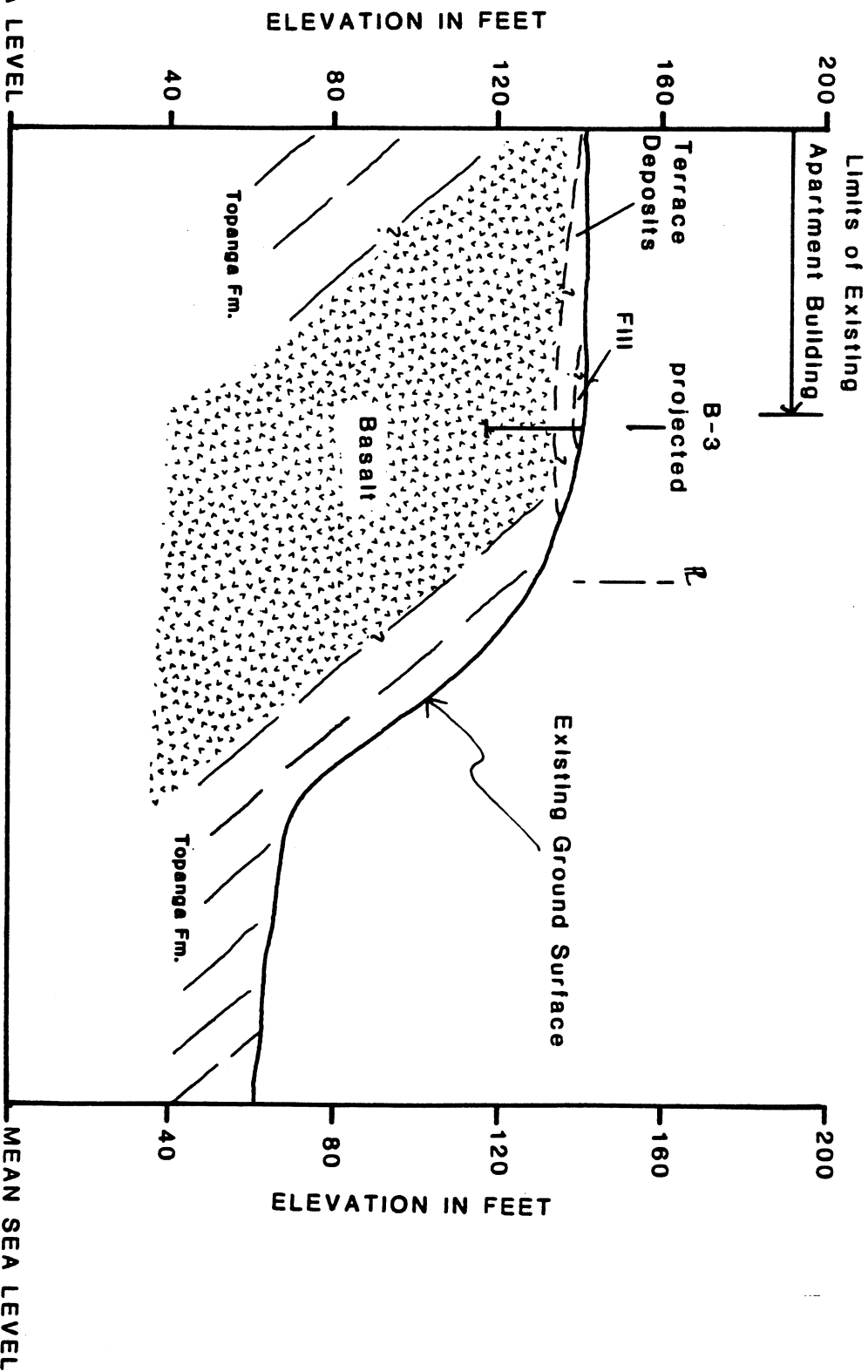
NOTES:

1. SECTIONS ARE BASED ON GEOLOGIC CONDITIONS AT BORING LOCATIONS AND AT SURFACE EXPOSURES MAPPED DURING THE INVESTIGATION. GEOLOGIC CONDITIONS BETWEEN AND BEYOND SUCH LOCATIONS HAVE BEEN INTERPOLATED OR EXTRAPOLATED. LOCALIZED VARIATIONS FROM CONDITIONS ENCOUNTERED MAY OCCUR. SECTIONS ARE INTENDED FOR DESCRIPTIVE PURPOSES ONLY.
2. SEE FIGURE 2 FOR LOCATIONS OF SECTIONS.

B

N37W

B'



GEOLOGIC SECTION

SCALE 1" = 40'

FIGURE 3.2

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