Exhibit C

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April 25, 2022

Ella Industries
608-B Missouri Street
San Francisco, CA 94107

Attention: Mr. Timothy Moore

Re: Vega Road Project Geotechnical Evaluation

Dear Mr. Moore:

This letter provides an updated geotechnical evaluation of APNS: 117471003; 117471004; 117471007; & 117471016. We performed several site visits (October 29, 2021; November 11, 2021; and January 16, 2022) to evaluate onsite conditions and reviewed a previous report by Mr. Charles A. Fisher, titled "Geologic Investigation and Report, APN 117-471-3 thru 7, 16, Monterey County, California (Prunedale area) dated July 24, 1988.

Project Overview

The proposed project is located (Figure 1, Figure 2) in Royal Oaks, California (36.887574N; 121.716173W), south of the Pajaro River. The anticipated work consists of enhancing an existing jeep trail to a paved private hillside road. This letter addresses design considerations for roadway grading and installation of subsurface utilities.

Geologic Setting

Fisher describes the geology as a geologically young Aromas sands (Qa) with surficial deposits above and adjacent to the sands consisting of a loose colluvium consisting of fine tan-inorganic-faceted sands and silts. USDA soil survey maps (Figure 3) identify the parcels as situated within Arnold loam sands and silts with a low runoff potential when thoroughly wet and water is transmitted freely through the soil. Figure 4 shows a geologic map of the Monterey Bay region. It also maps the project site as situated within the Aromas Sand (Qar) formation. No active faulting is mapped at the site, but the San Andreas Fault is situated approximately 4 miles to the East and the Vergeles Fault approximately 3000 feet northeast.

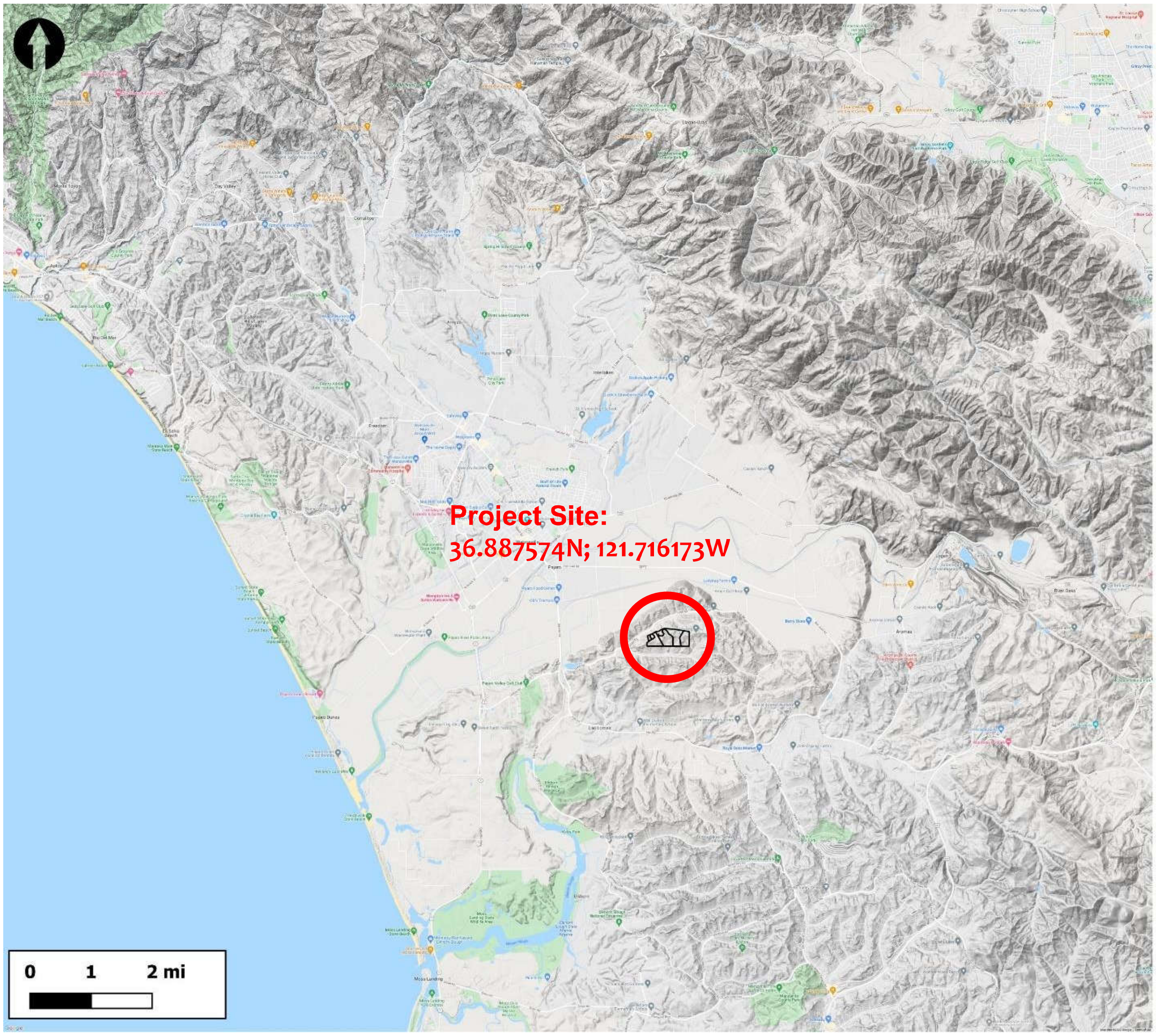

Figure 1: Vicinity map showing development location in Royal Oaks, California.

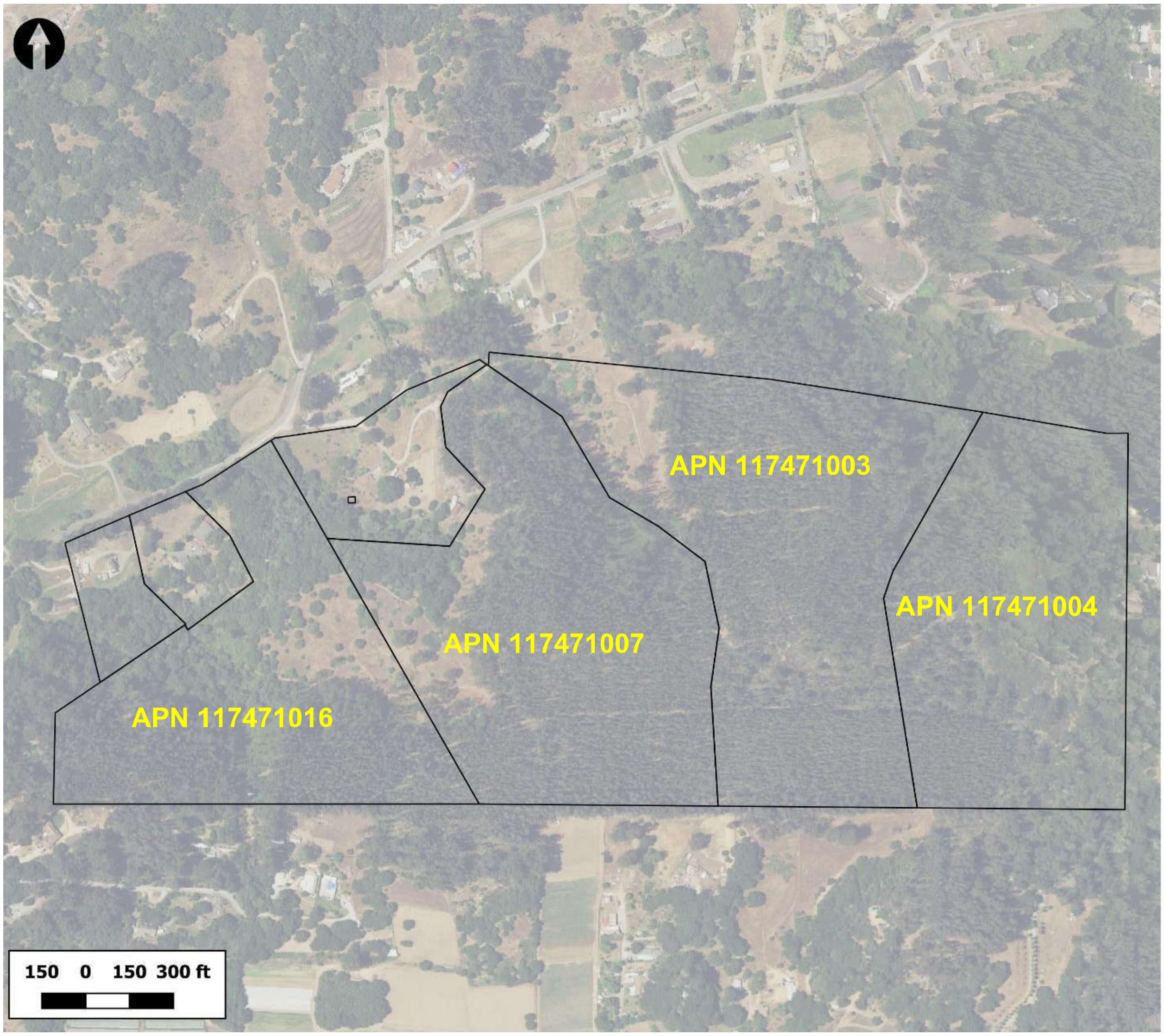

Figure 2: Site plan showing location of four project parcels.

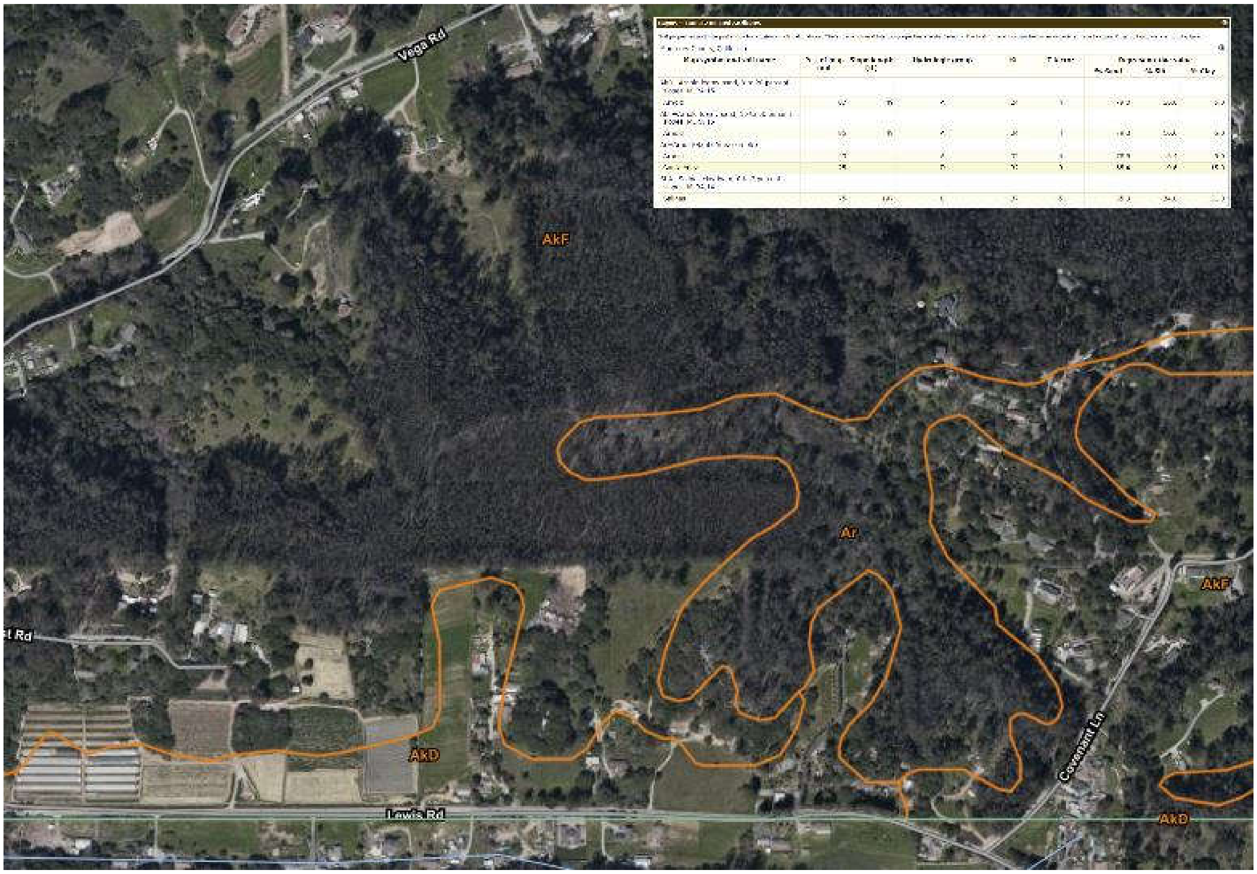

Figure 3: USDA Soil Survey Map denoting predominance of Arnold loamy sand (AkF).

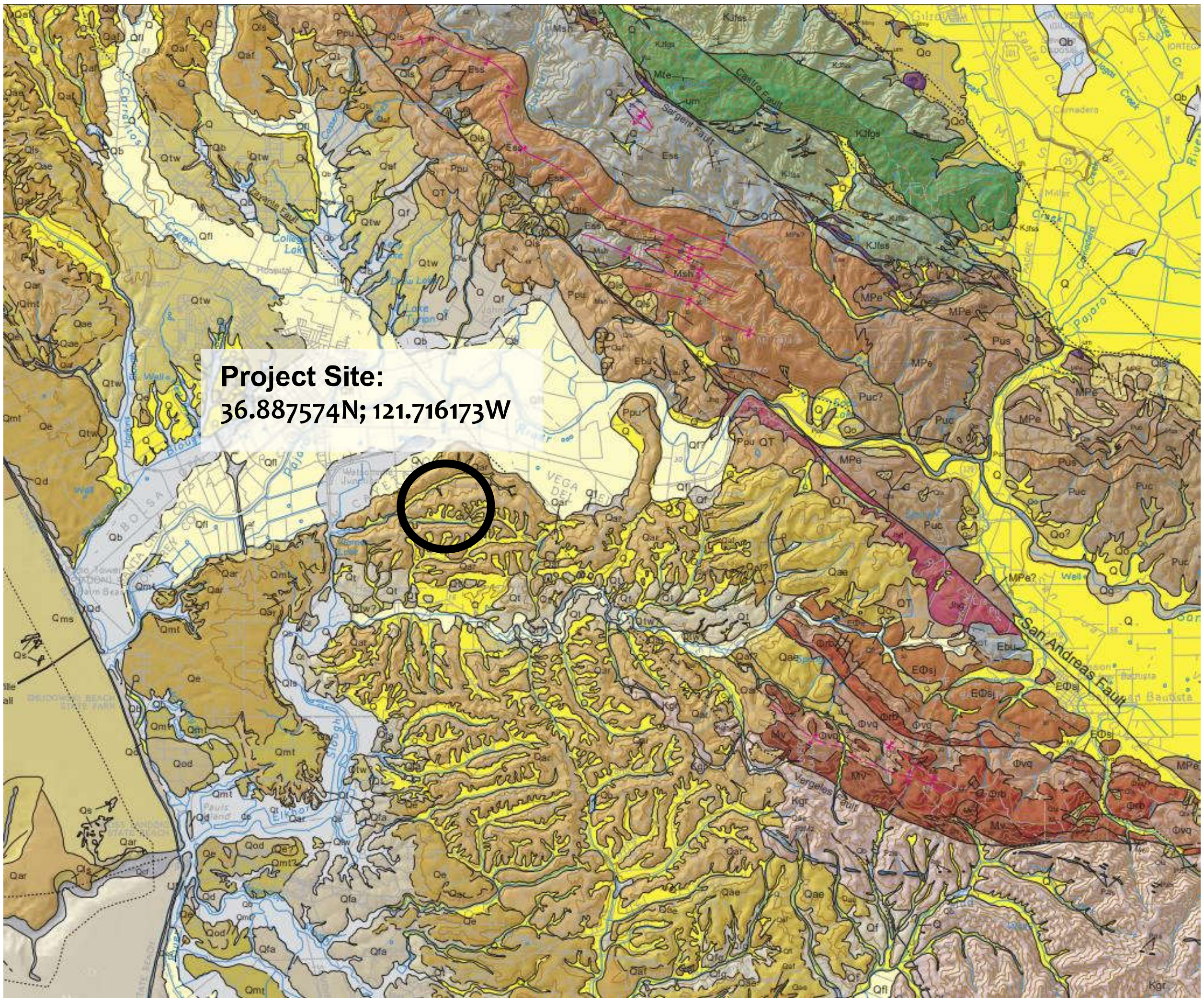

Figure 4: Geologic map of the project vicinity. San Andreas fault to the east of the site.

RECOMMENDATIONS

Site Preparation

The site should be cleared of all obstructions, including trees and associated root systems, and debris. It should be anticipated that holes resulting from the removal of root systems of larger trees could extend to depths of 3 feet, and laterally to the drip line of each tree. Holes resulting from the removal of underground obstructions extending below the proposed finish grade should be cleared and backfilled with suitable material compacted to the requirements in this report. We recommend backfilling operations for any excavations to remove deleterious material be carried out under the observation of the geotechnical engineer.

After clearing, the portions of the site containing surface vegetation or organic laden topsoil should be stripped to an appropriate depth to remove these materials. At the time of our field exploration, we estimated that a stripping depth of approximately 1.5 inches would be required. The amount of actual stripping should be determined in the field by the geotechnical engineer at the time of construction. Stripped materials should be removed from the site, or stockpiled for later use in landscaping, if approved by the owner.

Subgrade Preparation

Following excavation to the required grades, soil subgrades in areas to receive engineered fill or pavements be scarified to a depth of at least 8 inches, moisture conditioned to at least optimum moisture content and compacted to at least 90 percent relative compaction (ASTM D1557). The top 6 inches of subgrade in areas to receive pavements should be moisture conditioned and compacted to at least 95 percent relative compaction (ASTMD1557). Locally weak soils, if encountered, should be excavated and replaced, or otherwise stabilized as recommended by the geotechnical engineer at the time of construction. The compacted surface should be firm and unyielding and should be protected from damage caused by traffic or weather. Soil subgrades should be kept moist during construction. If the subgrade is allowed to become dry, it should be moisture conditioned to eliminate shrinkage cracks.

In order to achieve satisfactory compaction of the subgrade and fill materials, it may be necessary to adjust the water content at the time of construction. This may require that water be added to soils that are too dry, or that scarification and aeration be performed in any soils that are too wet.

If required, we recommend areas of unstable soils be overexcavated to competent soils or a minimum of 18 inches below finished subgrade elevation where competent soils are not encountered. The bottom of the excavation should then be completely covered with a ground stabilization geotextile fabric such as Mirafi 500X, or equivalent, and backfilled with Class 2 aggregate base. Alternative stabilization methods such as lime treatment may also be considered at the time of construction.

Engineered Fill Materials

All fill placed at the site should consist of engineered fill meeting the requirements presented in this report, except for landscaping materials which are placed on level ground. Onsite soil below the stripped layer and having an organic content of less than 3 percent by volume can be used as fill. All engineered fill placed at the site, including onsite soils, should not contain rocks or lumps larger than

4 inches in greatest dimension and contain no more than 15 percent larger than 2.5 inches. "Non-expansive" fill should be predominantly granular have an organic content of less than 3 percent by volume, should have a liquid limit less than 40 percent, have a plasticity index not exceeding 15, and should contain no environmental contaminants or debris. Imported fill should consist of "non-expansive" fill/ or have a maximum plasticity index of 15.

Fill Placement and Compaction

Engineered fill should be compacted to at least 90 percent relative compaction as determined by ASTM Designation D1557. The upper 6 inches of subgrade soils beneath pavements should be compacted to at least 95 percent relative compaction. Fill material should be spread and compacted in lifts not exceeding 8 inches in uncompacted thickness when using conventional compaction equipment. In order to achieve satisfactory compaction of the subgrade and fill materials, it may be necessary to adjust the water content at the time of construction. This may require that water be added to soils that are too dry, or that aeration be performed in any soils that are too wet.

Pipe Bedding and Trench Backfill

Utility pipes should be bedded in clean sands (conforming to the State of California Department of Transportation [Caltrans] Standard Specification Section 19-3.025B) that extend to at least 6 inches above the top of pipe. Pipeline trenches should be backfilled with materials satisfying the criteria described above for fill, placed in lifts of approximately 8 inches in uncompacted thickness. However, thicker lifts may be used provided the method of compaction is approved by the project geotechnical engineer and the required minimum degree of compaction is achieved.

Onsite soil used for trench backfill should be compacted to at least 90 percent relative compaction by mechanical means only (jetting should not be permitted). Sand can be used for trench backfill if it is compacted to at least 95 percent relative compaction and sufficient water is added during backfilling operations to prevent the soil from "bulking" during compaction. The upper 3 feet of trench backfill below slab and pavements should be compacted to at least 95 percent relative compaction.

Limitations

Our services consist of professional opinions, conclusions, and recommendations that are made in accordance with generally accepted engineering principles and practices. This warranty is in lieu of all other warranties, either expressed or implied.

This report has been prepared for the exclusive use of Ella Industries and their consultants for specific application to the project as described herein. In the event that there are any changes in the ownership, nature, design, or location of the proposed project, or if any future additions are planned, the conclusions and recommendations contained in this report should not be considered valid unless 1) the project changes are reviewed by Storesund Consulting, and 2) conclusions and recommendations presented in this report are modified or verified in writing.

Reliance on this report by others must be at their risk unless we are consulted on the use or limitations. We cannot be responsible for the impacts of any changes in standards, practices, or regulations subsequent to performance of services without our further consultation. We can neither vouch for the accuracy of information supplied by others, nor accept consequences for un-consulted use of segregated portions of this report.

Closure

We appreciate the opportunity to be of continued service. Please feel free to contact me with any questions or comments regarding the information presented in this report via phone (510) 526-5849 or email (rune@storesundconsulting.com).

Sincerely,

DocuSigned by:
Rune Storesund
DF532BD6D79F4A6...

Rune Storesund, D.Eng., P.E., G.E.
Consulting Engineer

REGISTERED PROFESSIONAL ENGINEER
RUNE STORESUND
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GEOTECHNICAL
STATE OF CALIFORNIA

Enclosures Fisher 1988 Report

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CEEG

RCE 16073
EG 262

Job No. 88002
Date July 24, 1988

[redacted]

RE: Geologic investigation and report
APN 117-471-3 thru 7, 16
Monterey County, California (Prunedale area)

[redacted]

At your request, we have performed a geologic investigation encompassing the subject property. Since it is proposed to subdivide this property, it was our purpose to ascertain geologic conditions which may need to be recognized or mitigated during development.

This report addresses geologic conditions observed during our investigation and presents conclusions and recommendations based on these observations.

Very truly yours,

Charles A. Fisher, CEEG, Inc.

REGISTERED GEOLOGIST
CHARES A. FISHER
No. 262
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

CAF/cf
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CHARLES A. FISHER, CEEG, INC.
CIVIL ENGINEER - SURVEYOR - GEOLOGIST

Job No. 88002
July 24, 1988

INDEX

TITLE	PAGE

LOCATION AND DESCRIPTION

This site (APN 117-471-3 thru 7, 16) is located in the Prunedale area of north Monterey County, approximately 1.3 miles south of the Pajaro River (north boundary) and the City of Watsonville. More specifically, this site (consisting of 103 acres) occupies an area between Vega Road and Lewis Road, approximately 1700 feet east of their intersection and fronts on Vega Road (see Figure No. 1)

It is proposed to develop 20 single-family dwellings on the property. Presently the site lies fallow and contains no building structures. Eucalyptus groves occupy most of the surface area with small clear areas supporting light grass cover near Vega Road, and manzanita brush near the southeast corner. At present, existing eucalyptus trees are being harvested.

A significant bluff area dominates the southern third of the property (see Figure No. 8); the rest consists of gentler slopes (10-30%). Dominant drainage swales appear stable and do not exhibit severe erosion cuts. No recent excessive erosional areas were located on this property which indicates most surface drainage is absorbed in the permeable underlying soils. No indications of shallow groundwater or recent ground movement was observed.

SCOPE OF INVESTIGATION

Research consisted of reviewing pertinent literature cited in the Bibliography. Aerial stereo photographs were inspected also. Dense tree cover masks many ground features which are illustrated on topographic maps of the area.

In depth investigations consisted of drilling and logging holes which were utilized for percolation tests included in the septic disposal study portion of this report (see Figure No. 18 for locations of these borings). Further, refraction seismograph profiles were performed across various portions of the site (see Figure No. 10 for locations of these profiles). Several field trips were made to locate outcrops and study the general geomorphology of the area.

REGIONAL GEOLOGY

Geologic mapping by Dupré and Tinsley (1980, Figure No. 2) show the subject area is underlain by geologically young Aromas sands (Qa). A description of these Aromas sands is shown on Figure No. 2. Surficial deposits above and adjacent to these sands consist of loose colluvium consisting of fine tan-inorganic-faceted sands and silts.

The relict Aromas Formation underlying this area was deposited by eolian processes in the form of large dunes, 200-300 feet high, during lower strands of sea level which resulted from worldwide glacial episodes. These dunal forms control topographic features present today. Geomorphologic forms illustrating this dunal topography consist of hills oriented along an east-west axis with steep northern slopes and gentler southern slopes. This orientation is illustrated by observing contour lines shown on Figure No. 1. Dupré[4] constructed a wind direction diagram (see Figure No. 3) based on this dunal orientation.

These relict dunal structures (est. 500 M years BP, Dupré)[4] have subsequently been truncated in part by fluvial processes and possibly seismicity from regional fault systems (see Figure No. 4). Presently there is no agreement as to affects of fluctuating sea level episodes affecting the base of the dunes, since no marine fossils have been located in their vicinity.

The relict dune structure has been preserved in most areas of central Monterey Bay due to formation of a resistant cap composed of hemetitic, slightly cemented red sand/sandstone. This forms a virtually impervious cap over softer dunal sands. This feature is responsible for creation of steep bluffs where the cap has been removed by natural processes and the softer underlying deposits are exposed.

Normally in other areas, i.e., north of the Pajaro River, Aromas sands were deposited on Purisima shallow lagoonal marine sandstones and shales of Pliocene Age. In this study area, deposition has been on lower Miocene granitic basement rocks (see Figure No. 9). These sands have been deposited up to 300 feet in thickness over most of the area, although in interdunal areas may be as thin as 60 feet to underlying granites. Some interdunal valleys are at or below the underlying water tables and contain small ponds as a result; i.e., Twin Lakes occupying San Miguel

Canyon. These areas may be susceptible to liquefaction during major seismic events where shallow aquifers are contained in loose sands which may consolidate (see Figure No. 6 for locations of these areas).

FAULTS AND SEISMICITY

Several major faults in the central California coastal area represent potential for seismic hazard: the San Andreas Fault, the Rinconada Fault, the San Gregorio-Sur Fault, and the nearby Vergeles (Zayante) Fault system (see Figure 4). In the northern Monterey County, the San Andreas Fault and the Vergeles Fault are considered active and may have offset rock units of Quaternary age (last 2 to 3 million years) (Alquist-Priolo Special Studies Zone Act of 1972; Hall, 1985). Surface rupture has been recorded along the San Andreas Fault in recent history and estimated recurrent intervals have been calculated as follows: (1) for a Magnitude 8 earthquake, the recurrence interval is 50-200 years; (2) for a Magnitude 7 earthquake, the recurrence interval is 7-30 years; and for a Magnitude 6 earthquake, the recurrence interval is 3-10 years.

Activity on the Vergeles Fault may be as recent as Holocene (11,000 years ago) as indicated by fault-controlled geomorphology and offset Holocene fluvial deposits (Coppersmith and Griggs, 1978). Sea floor displacement of the Monterey Bay Fault (Greene and others, 1973) also shows that area to be seismically active.

Seismic data compiled by the U.S. Army Corp of Engineers (1985) show epicenters of earthquakes of Magnitude 4.0 to 4.9 during 1979 through 1982 along the San Andreas Fault about eight miles east of the Prunedale area. Seismic events of greater magnitude (5.0-5.9 and 6.0-6.9) have been recorded offshore on the San Gregorio Fault and onshore (north of Watsonville) along the Vergeles Fault between 1900 and 1974. Seismic activity of Magnitude 7.0 or greater has not been recorded within the immediate central Monterey Bay region.

Burkland and Associates (1974) have rated the area between Las Lomas and Prunedale at a seismic hazard of IV on a scale of I (lowest) to VI (highest) (Figure 5). The subject area lies three miles west of the projected trace of the Vergeles Fault and about eight miles west of the San Andreas Fault. Seismic activity centered within 10 miles of the subject area at a

Richter Magnitude of 8.0 or greater may causes significant groundshaking and/or slope instability in both consolidated and unconsolidated materials.

Landslides, slope stability, and liquefaction are related to the occurrence of seismic activity. Landslide susceptibility surrounding and including this area is rated at V, which is moderately high (on a scale of I to VI). Landslide and erosion susceptibilities are based on mapping by Burkland and Associates, 1974, and the U.S. Geological Survey (Hall and others, 1974; Dupré and Tinsley, 1980).

SITE GEOLOGY

Our study revealed a shallow bedrock formation consisting of relict Aromas sand dune deposits previously described which exists over a large portion of the site. Where this formation is exposed, cementation has occurred to depths of six to eight feet. Areas where this has occurred are illustrated on Figure No. 8; shown as Qa. This area has been truncated to the south forming steep cliffs above colluvium Qc deposits and exposing underlying softer dunal sands. Configuration of this area indicates an ancient abrupt slope failure caused by unknown forces which may have occurred or that slower erosional processes may have undermined the looser sediments below the more resistant cap rock. It is our opinion that this area of the bluff and colluvial deposits below are presently in equilibrium and subject only to gradual weathering processes.

Areas surrounding the exposed cap rock consist of varying depths of loose, fine-grained silts and sands. Seismograph profiles on gentle slopes east of the exposed cap rock area indicate depths of 30 feet (see Figure No. 11) and 40 feet (see Figure No. 16) of looser colluvial sands above the denser underlying relict dunal sands. In areas where relict dune surface sands have not been exposed to weathering, it was difficult to differentiate between relict dunal sands and colluvium. Based on the red coloration of these sands, which occurred when they were exposed and subsequently buried by colluvium, it was possible to ascertain their depths during drilling shown on Logs of Boring Nos. 2 (Figure 20), 4 (Figure 21), 5 (Figure 22), 8 and 9 (Figure 24), 10 (Figure 25), and 11 (Figure 26.

Upper soils were tested for disposal of on-site septic or leach water by performing falling head percolation tests on each boring.

The Monterey County Soil Report[15] indicates the colluvial areas are composed of Arnold loamy sand (Akf), 15-50% slopes, and designates the cap rock areas as Arnold-Santa Ynez complex (Ar). Septic disposal restraints are listed as severe in the report due to generally steep slope conditions, but lists a permeability rate of 6-20 inches per hour.

Our percolation test results are shown on Table No. 1. These tests ran from 0 rates in cap rock (Qa) areas to 50 inches per hour in colluvial (Qc) deposits.

Percolation holes were prepared by drilling holes 12 feet deep and placing a four-inch perforated pipe surrounded by drain rock 10 feet deep. The holes were presoaked 24 hours in advance and then tested (perked) from top to various depths over a period of six hours. Due to the rapid percolation and fine silt layers surrounding some of the holes, Borings Nos. 12 and 14 became silted above the bottom although we were able to get some tests by measuring the drawdown at shorter intervals. Borings Nos. 3 and 4 continually perked rapidly and had to be measured at closer intervals. Percolation of borings in or slightly above cap rock (Borings Nos. 6, 7 and 8) became static at shallow depths illustrating the impervious nature of these slightly cemented upper sands.

CONCLUSIONS AND RECOMMENDATIONS

Relict Aromas sand dune deposits dominate topography and surrounding colluvial deposits underlying the site. Mechanics of deposition of colluvial deposits surrounding the relict dunal formations is not clear. Whether these loose deposits have been transported by eolian processes and deposited against the relict dunes or are derived from weathering of the dunes themselves is subject to conjecture. Both display faceting which is indicative of wind-borne transportation. Colluvial deposits, being generally finer grained and not containing oxidized reddish particles, indicate these materials may have been transported greater distances to the site than underlying relict dune material. Relict dune material buried under these deposits still remain reddish. Apparently the cement has been leeched out probably as a result of percolating surface water.

Seismograph profiles did not reach any high velocity layers; competent bedrock velocities=10,000-15,000 feet per second. Hence, the deeper granitic basement is probably more than 60-70 feet below the site area. Profiles did not reveal any inconsistencies in the underlying soils which might indicate existence of shear zones. Usually these zones are indicated by sudden decreases in velocities on the profiles.

Materials recovered during drilling indicate composition of colluvial deposits is consistent across the site and relict dunal deposits in some areas extend to depths of at least 25 feet below colluvium. No free groundwater or indication of perched aquifers were encountered in any of the borings.

Percolation tests indicate high rates of infiltration of groundwater occurs in both colluvial deposits and relict dune deposits where the upper cemented cap rock has been penetrated and looser underlying dunal deposits are encountered.

Recommendations for design of septic systems based on percolation tests and the nature of soils encountered are shown on Table No. 2. High rates of infiltration obtained during percolation testing are illustrative of recent loose dunal deposits. Tests performed in these types of deposits in the Marina Area obtained rates of 40-50 inches per hour. Test results obtained at the study area were tempered based on the nature of soils encountered and conditions of testing. Since water did not remain in the bottom of holes exhibiting rapid infiltration, lateral transmission on top of impervious layers was not indicated. Areas where shallow, impervious layers may restrict infiltration will be encountered in some areas. These are designated on Table No. 2 as "Special Location Investigation Required". "Anticipated Design Infiltration Rates" were adjusted to spread out or deepen leach fields to retard lateral transmission in certain areas.

Loose, silty, fine sands will be encountered in building areas surrounding denser cap rock areas. These soils can be dealt with by shallow densifying and compaction methods in the building site areas at optimum moisture conditions. Unprotected cut or fill slopes in these areas will be subject to excessive erosion. Hence, it is recommended that these slopes be graded to a maximum of 3 horizontal to 1 vertical and not extend vertically above eight feet.

Areas underlain by cap rock may, in some cases, extend to depths of 12 feet or more (see Figure Nos. 23 and 24). These areas will support steeper and higher slopes but should be inspected on an individual basis by an engineering geologist.

Building structures on top of and adjacent to the bluff area should be held back a minimum of 25 feet. This area appears to be stable and the cap rock is competent to support structures. Erosion of these bluffs appears slow but could increase if exposed to excessive saturation; hence areas at the top must not be landscaped.

Lot No. 1 is the only area of the property which may extend into the 100-Year Frequency Flood Zone along Vega Road shown on Figure No. 7. The building envelope should be located above this elevation.

Liquefaction potential for the property is rated as moderate-low, except near Vega Road (see Figure No. 6). Based on our investigation, we do not consider liquefaction a hazard at this site due to the absence of shallow groundwater. Bore Hole No. 1 at Lot No. 1 located in the Vega Road area, rated as moderate, did not encounter any free groundwater to a depth of 12 feet; hence is also rated as low.

Lack of knowledge of activity and the proximity of the Vergeles Fault zone (approximately 3000 feet northeast of the property) (see Figure No. 1), reduce the probability of its shear area affecting this site. Activity on the major San Andreas system and its documented frequency of activity is the dominating seismic threat to this site. Due to the composition of underlying granular soils, only normal seismic restraints need be imposed for development.

CAF/cf

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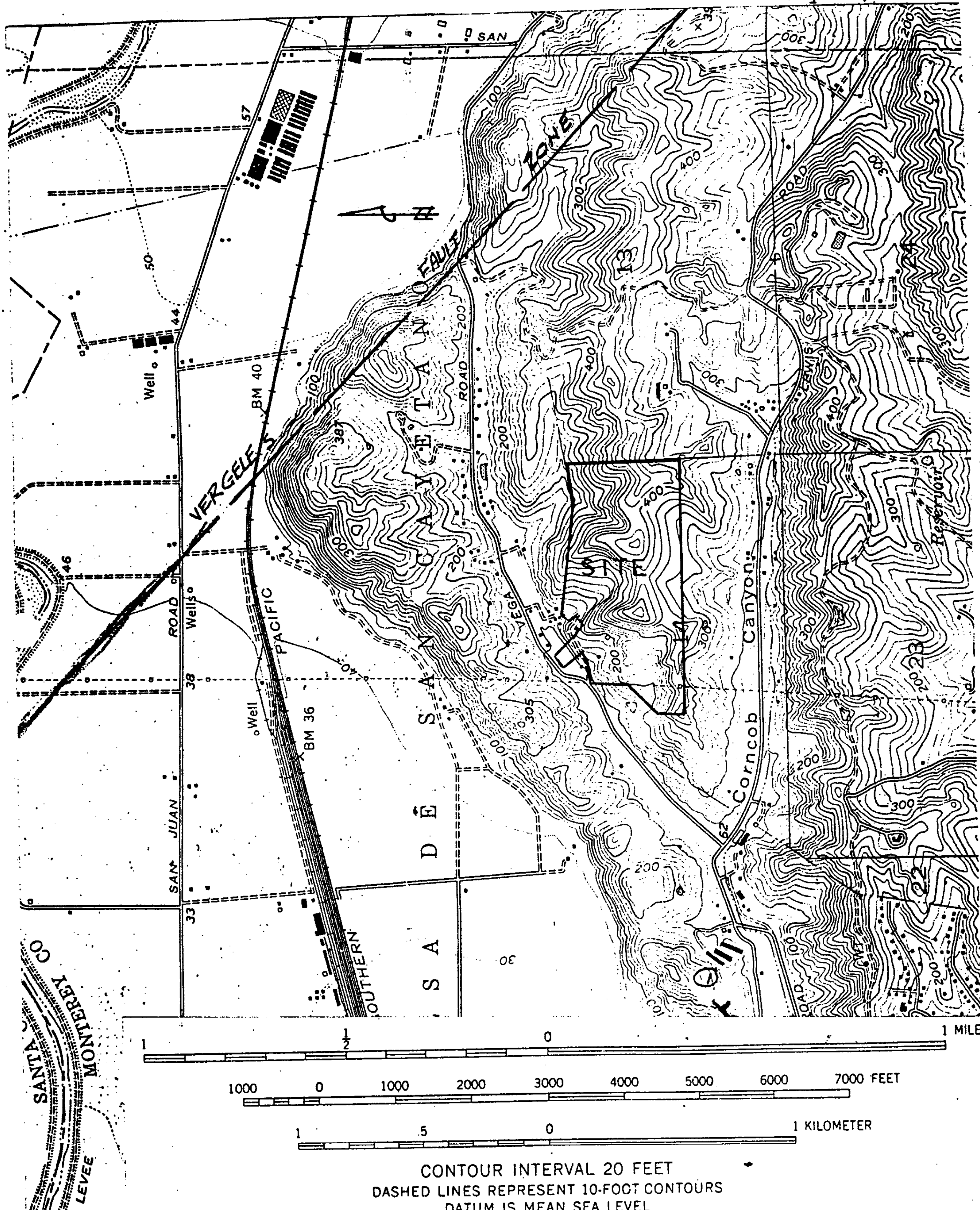
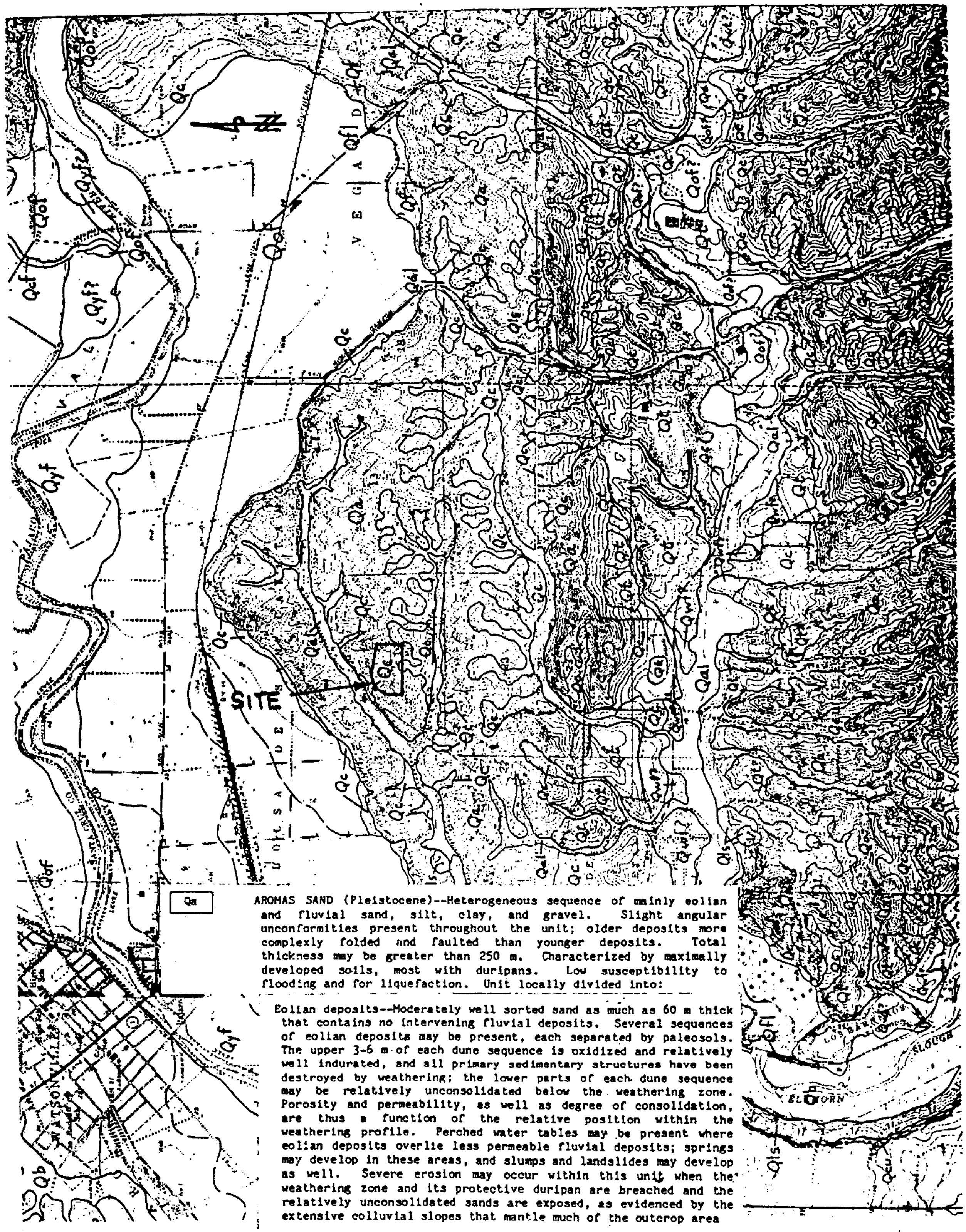
JN 88002
July 24, 1988



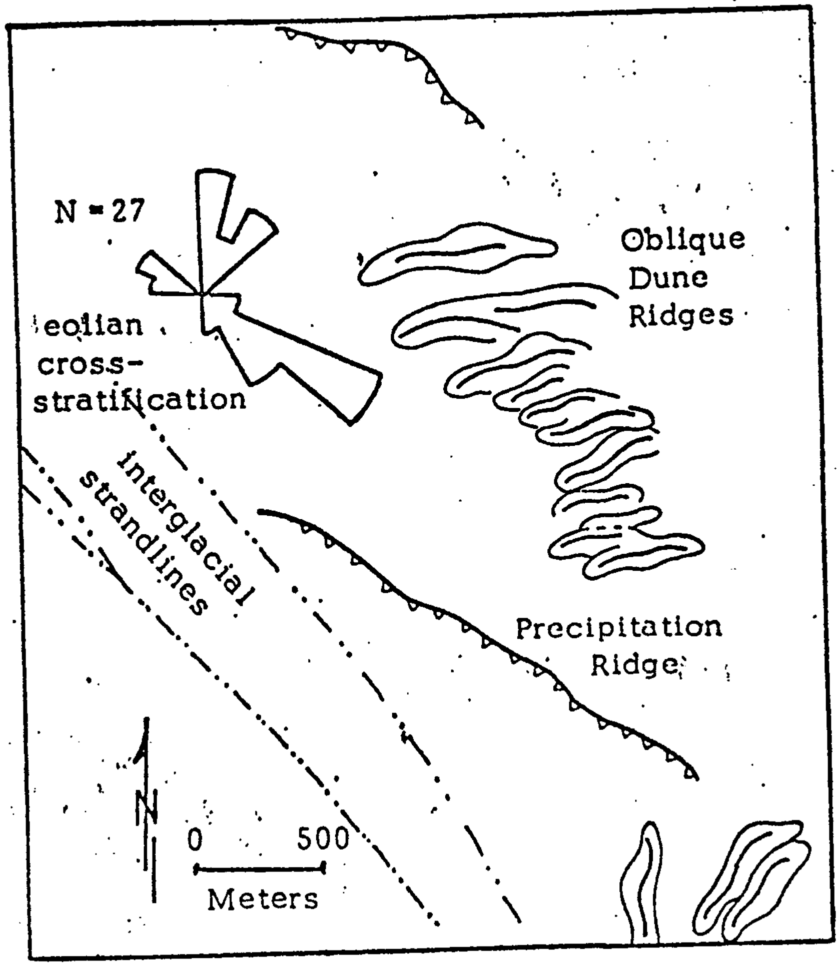
SITE LOCATION PLAN

FIGURE NO. 1



REGIONAL GEOLOGIC MAP (DUPRE AND TINSLEY)

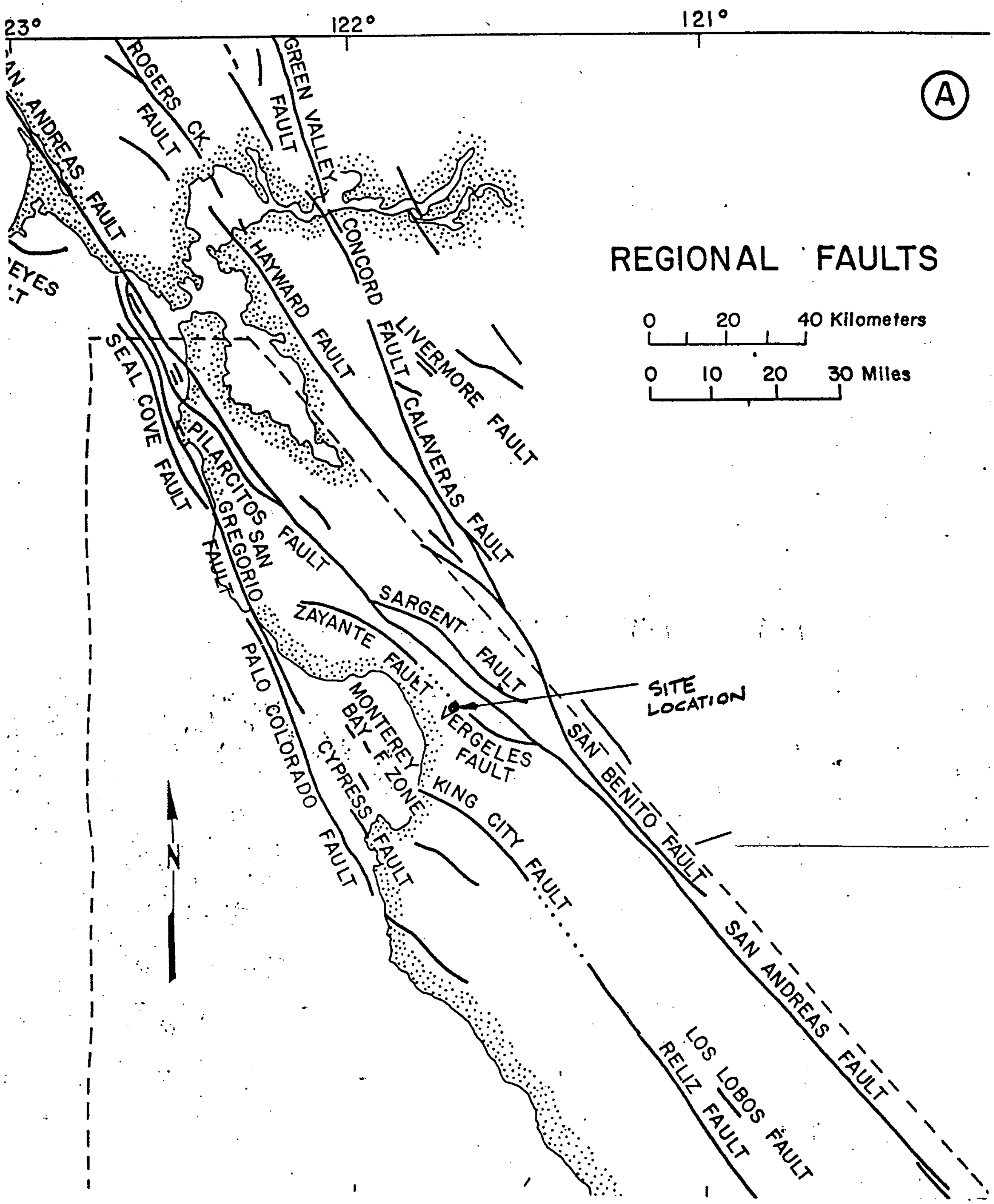
FIGURE NO. 2



B: Pleistocene Coastal Dunes, (Aromas),
Monterey Bay region, California

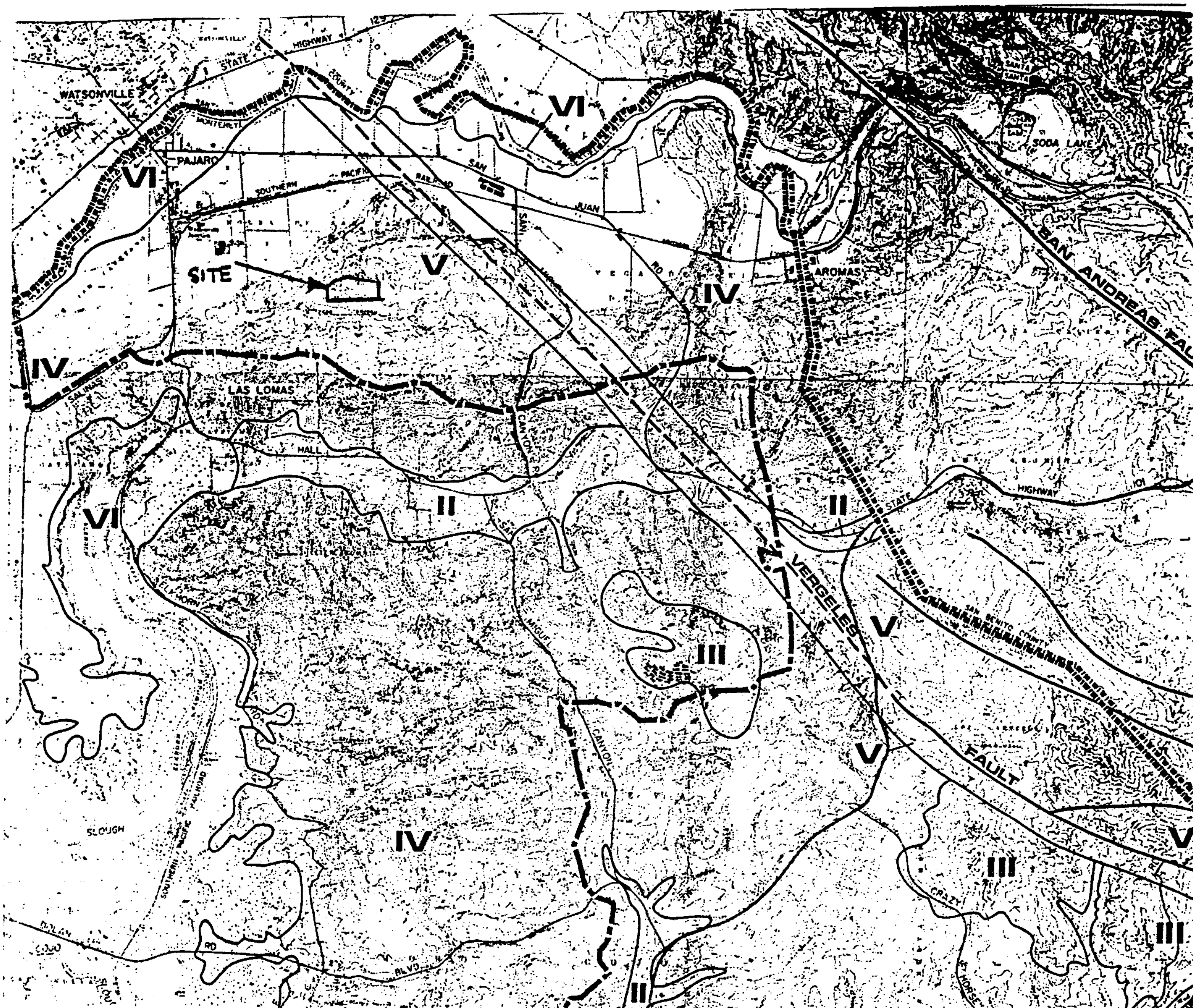
WIND ROSE DIAGRAM BASED ON
EOLIAN DUNE DEPOSITIONAL ORIENTATION (DUPRE)

FIGURE NO. 3



REGIONAL FAULT TRACE MAP

FIGURE NO. 4



SEISMIC HAZARD ZONE MAP

FIGURE NO. 5

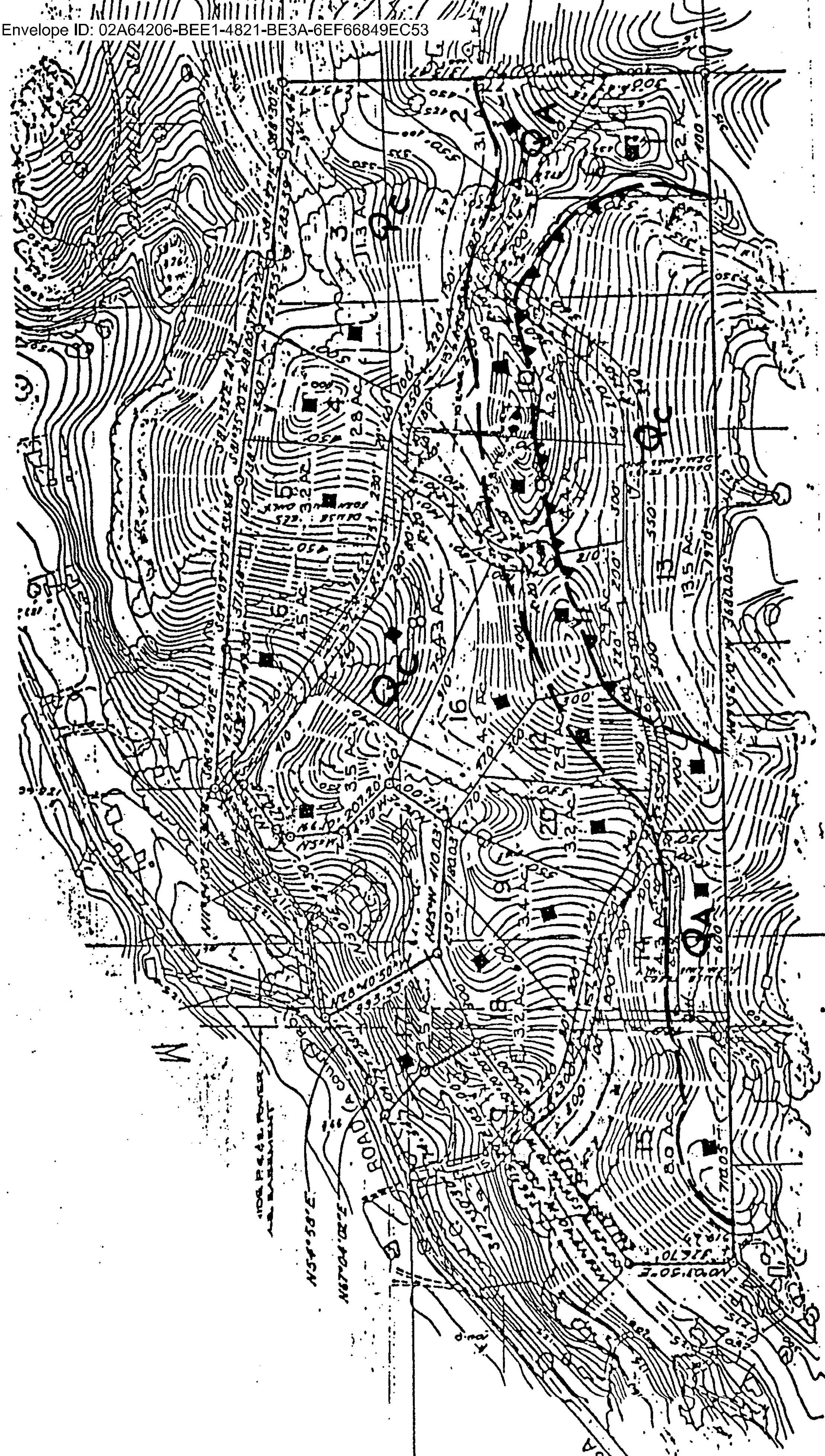
LIQUEFACTION POTENTIAL MAP

FIGURE NO. 6

FLOOD PLAIN (100-YEAR FREQUENCY)

FIGURE NO. 7

JN 88002
July 24, 1988



Q_C / Q_A Contact Line

Top of Bluff

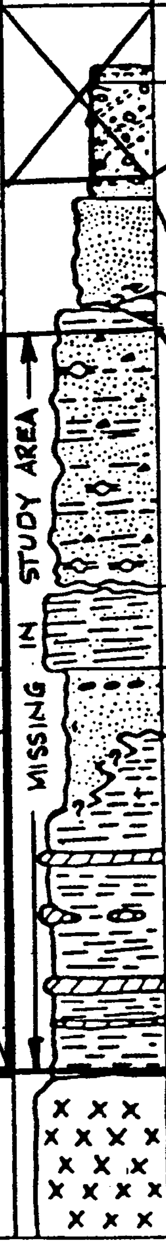
■ Building site

Q_C Quaternary Colluvium

Q_A Relict Aromas Formation outcrop red, slightly cemented sandstone

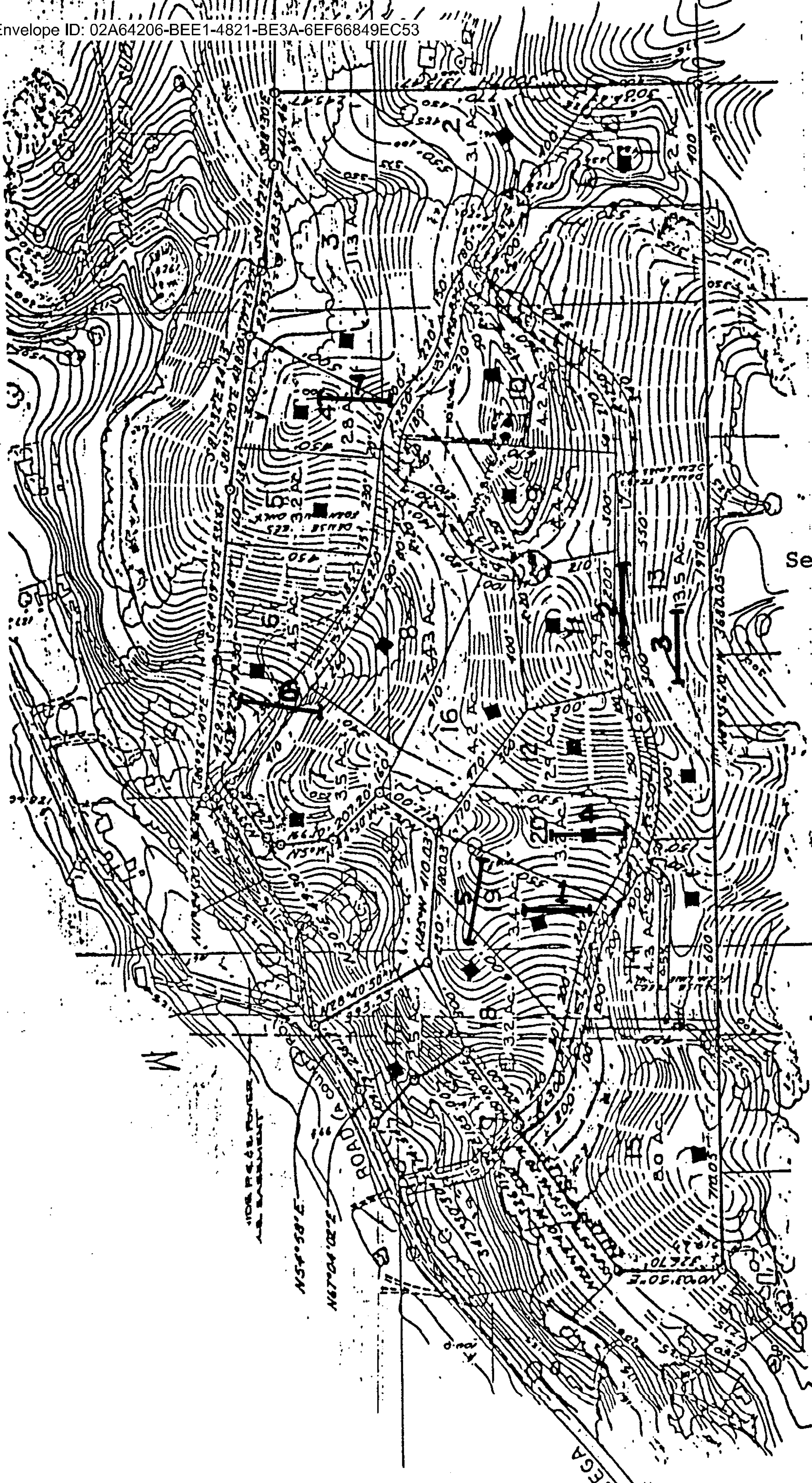
GEOLOGIC SITE MAP

FIGURE NO. 8

AGE		SEQUENCE	FORMATION	LITHOLOGY	THICKNESS (meters)	DESCRIPTION
QUATERNARY	Holocene	Upper Pliocene to Holocene	Surficial deposits		~~40~~	~~Recently deposited marine sand and mud.~~
					~~240~~	~~Submarine landslide and slump material.~~
					50	Gravel, sand, and mud; some broken consolidated material. (COLLUVIUM)
	Pleistocene		Aromas Sand		300	Well sorted, cross-bedded, quartzose sand; nonmarine, eolian. Fluvial locally at base.
			Deltaic material		±40	Sand and mud; marine, deltaic. (?)
TERTIARY	Pliocene	Upper Miocene to Pliocene	Purisima Formation		670+	Greenish-gray, semi-consolidated to consolidated sandstone, siltstone, and shale; marine, generally fossilifersous.
			Santa Cruz Mudstone of Clark (1966)		200+	Siliceous, organic mudstone; marine.
	Miocene		Santa Margarita (?) Sandstone		370?	Bedded arkosic sandstone (?)
		Middle Miocene	Monterey Formation		550	Light olive-gray, rhythmically bedded, organic mudstone, diatomaceous and siliceous shale and siltstone; marine.
MESOZOIC OR OLDER			Granitic rocks (crystalline basement)			Probably prodominantly granodiorite.

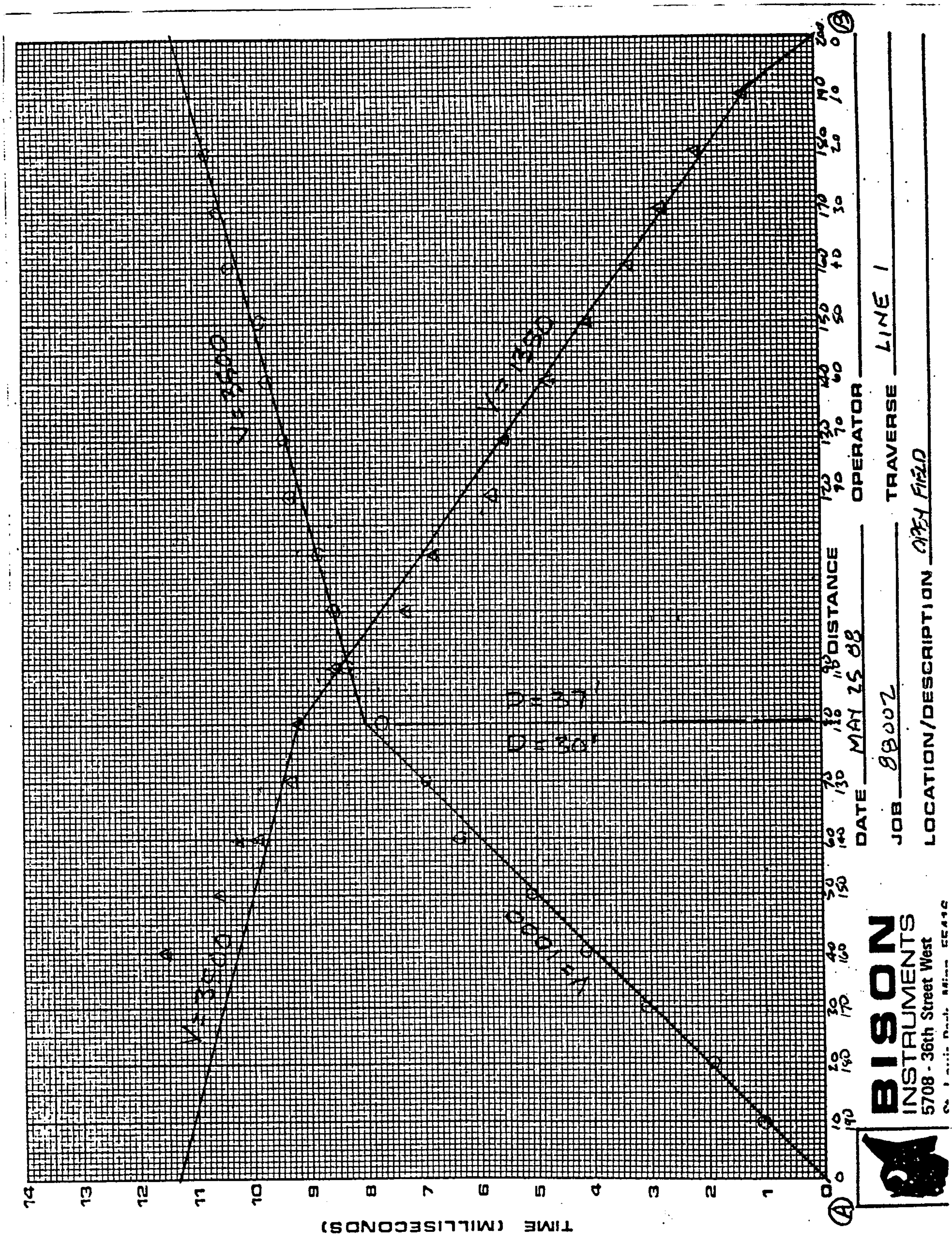
GENERALIZED GEOLOGIC CROSS-SECTION

FIGURE NO. 9



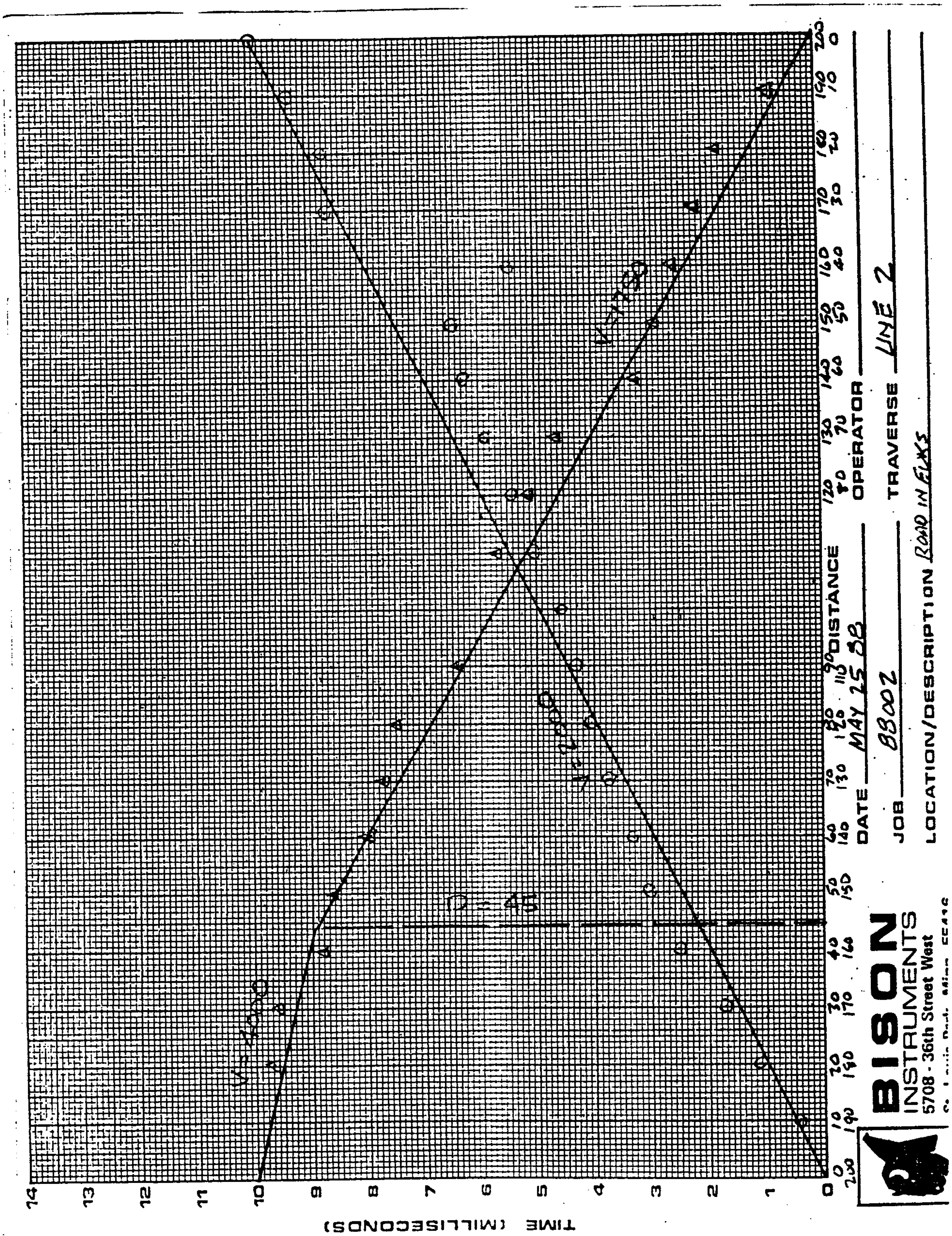
LOCATION OF SEISMOGRAPH LINES SKETCH MAP

FIGURE NO. 10



SEISMOGRAPH PROFILE LINE 1

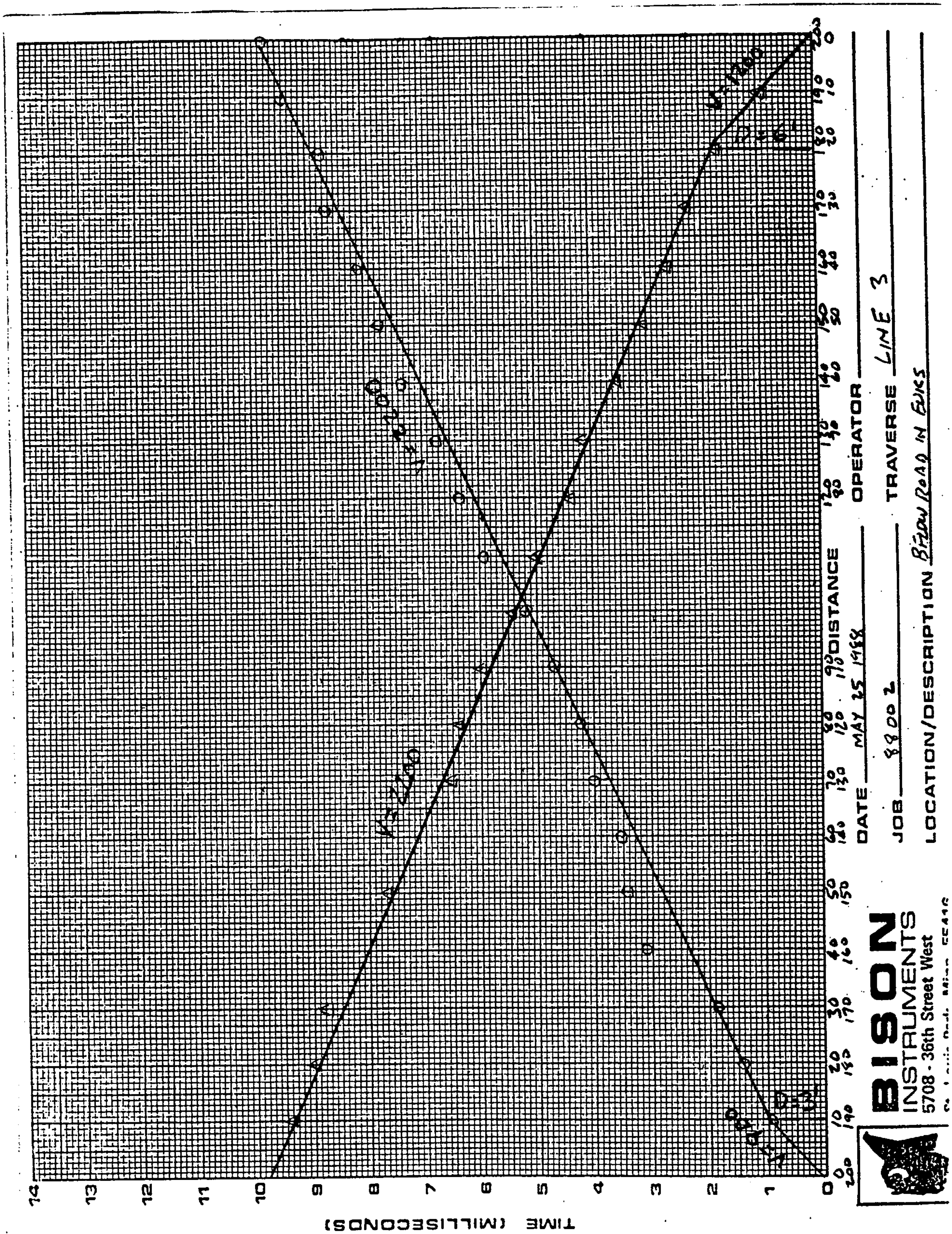
FIGURE NO. 11



SEISMOGRAPH PROFILE LINE 2

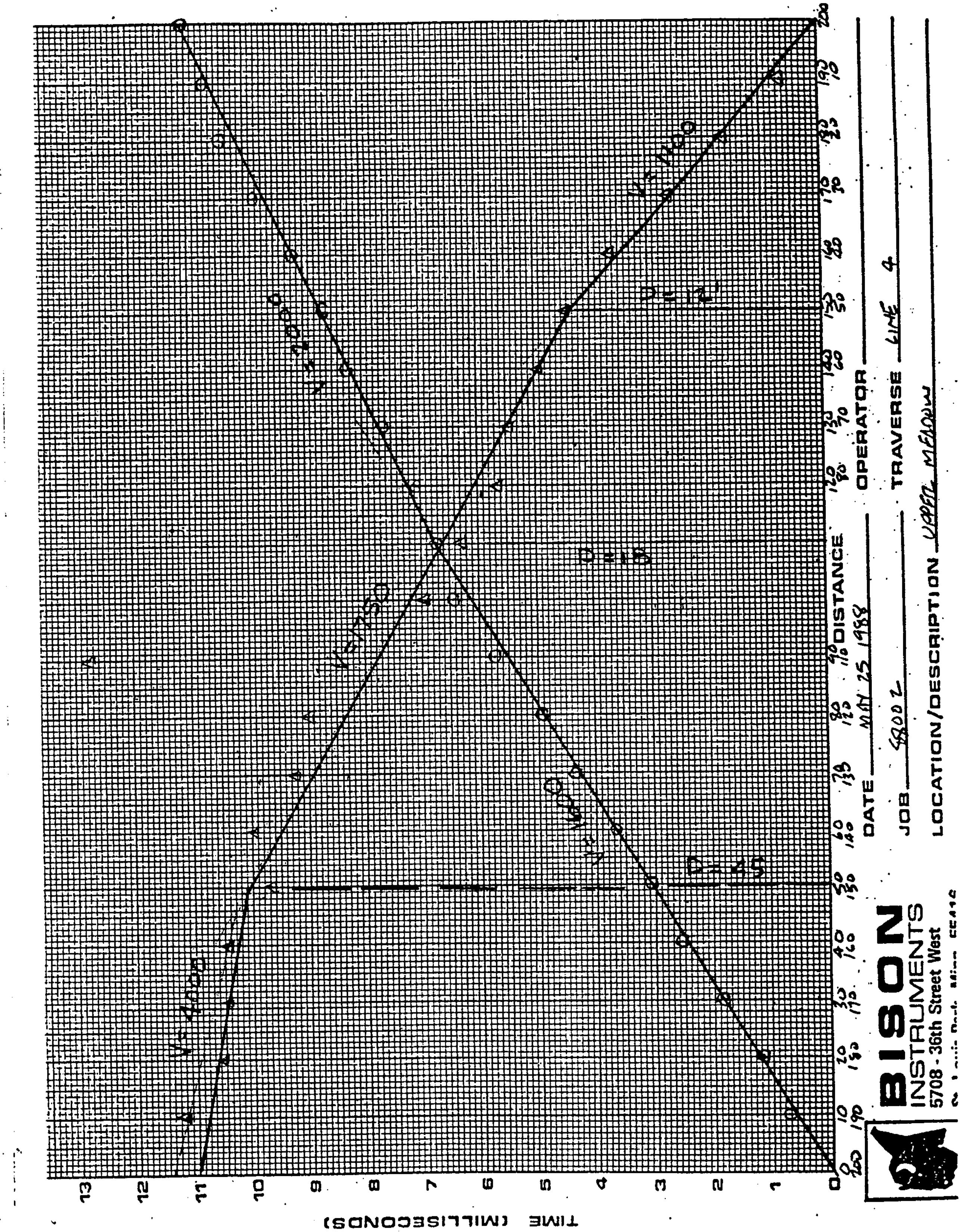
FIGURE NO. 12

JN 88002
July 24, 1988



SEISMOGRAPH PROFILE LINE 3

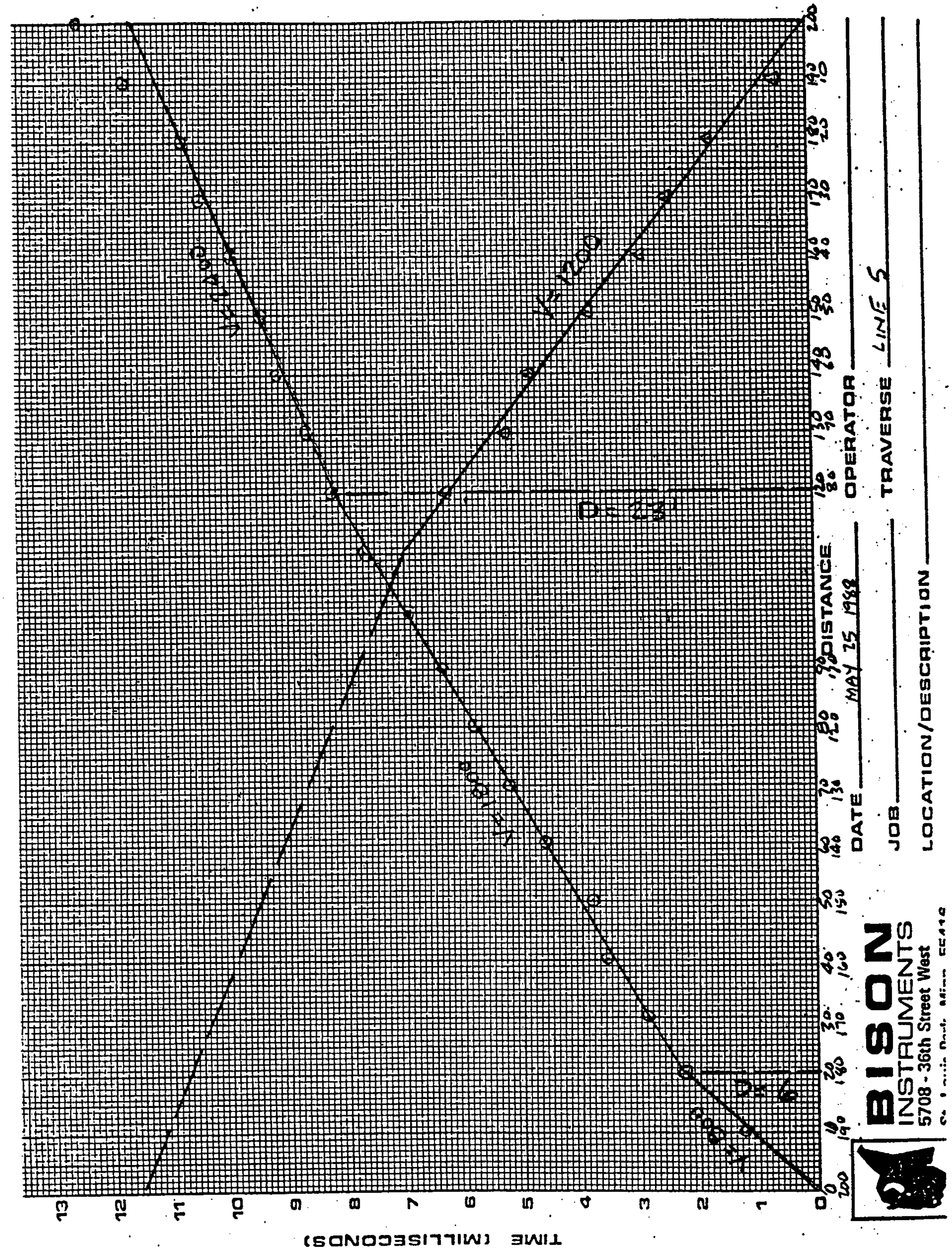
FIGURE NO. 13



SEISMOGRAPH PROFILE LINE 4

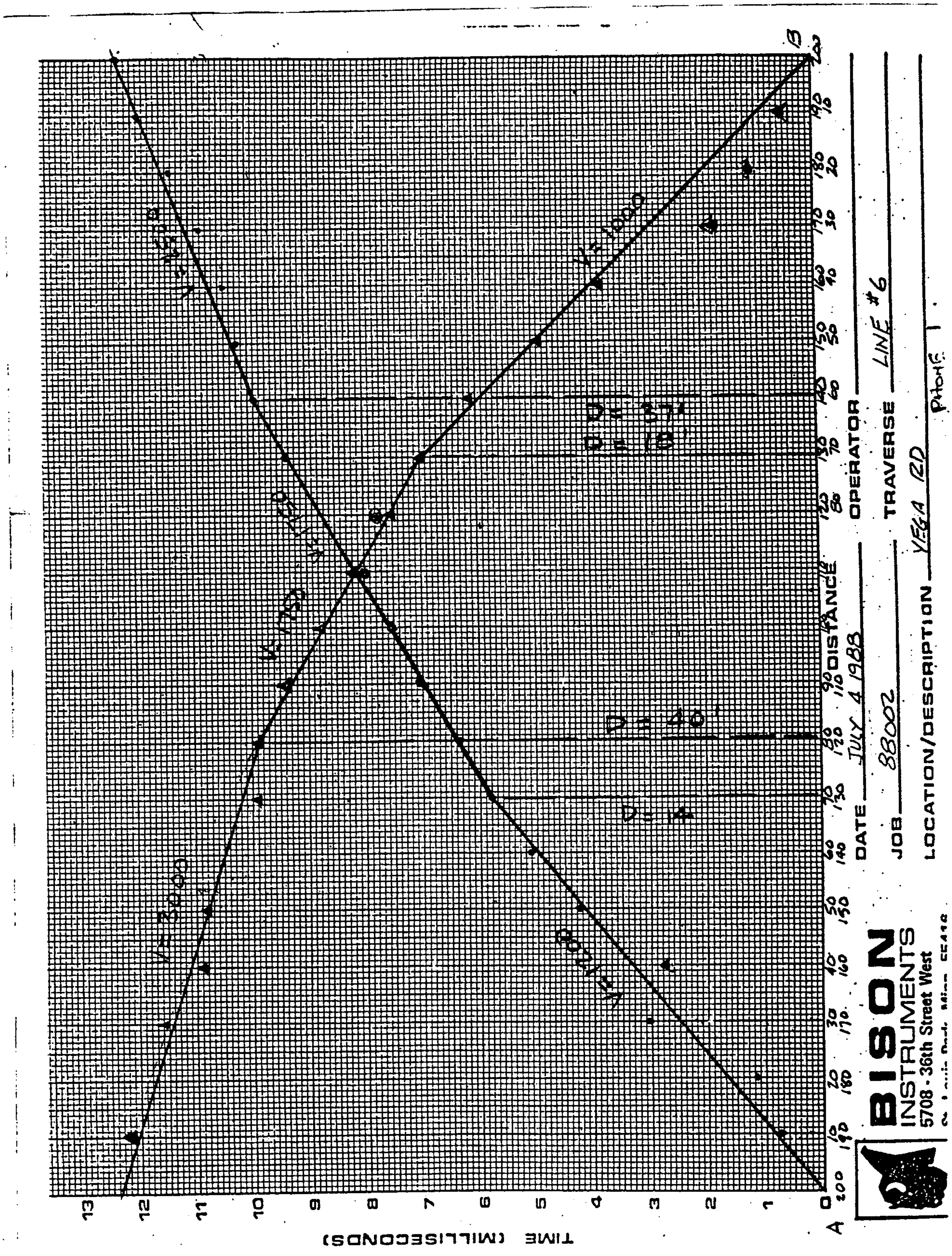
FIGURE NO. 14

JN 88002
July 24, 1988



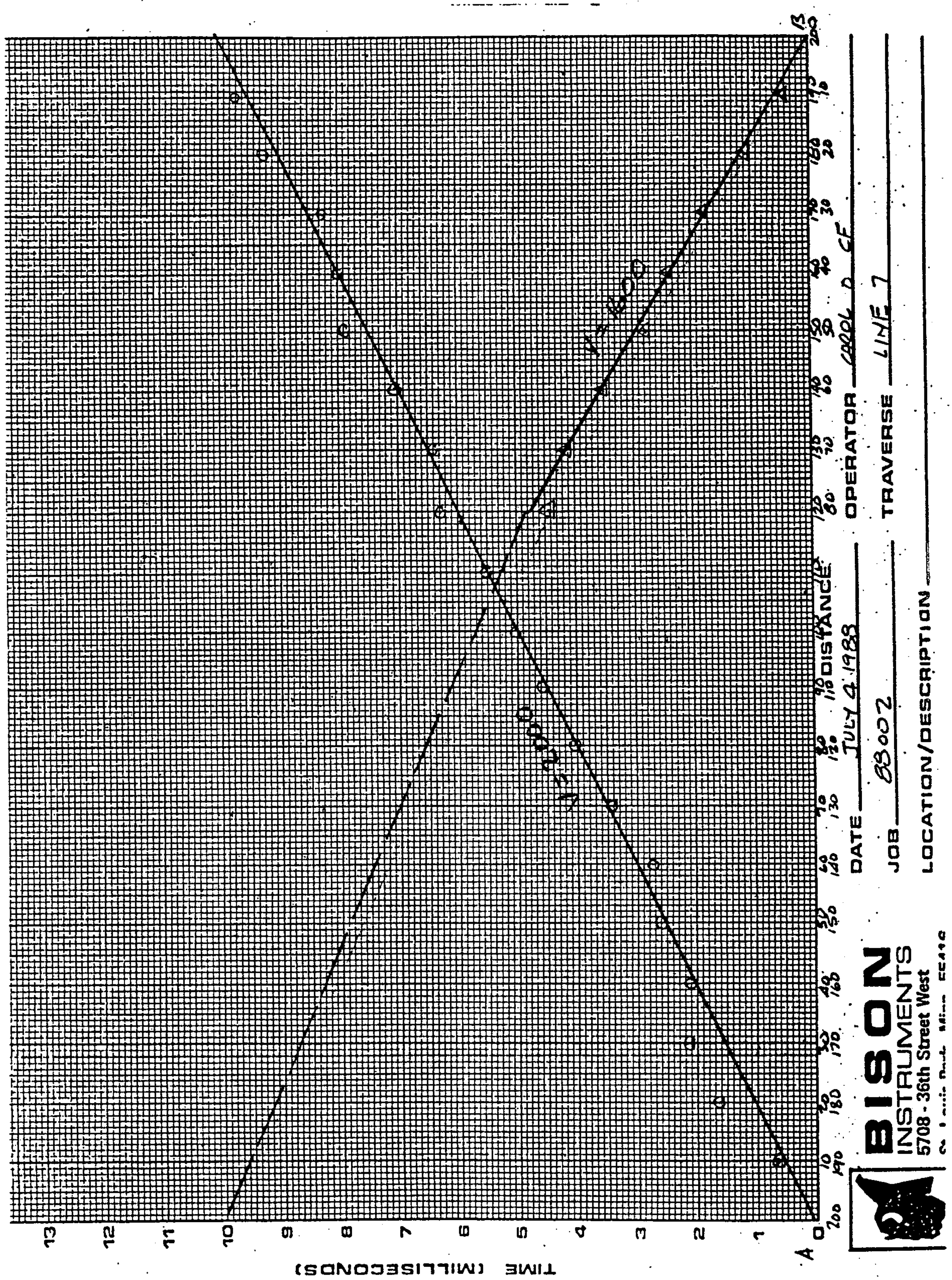
SEISMOGRAPH PROFILE LINE 5

FIGURE NO. 15



SEISMOGRAPH PROFILE LINE 6

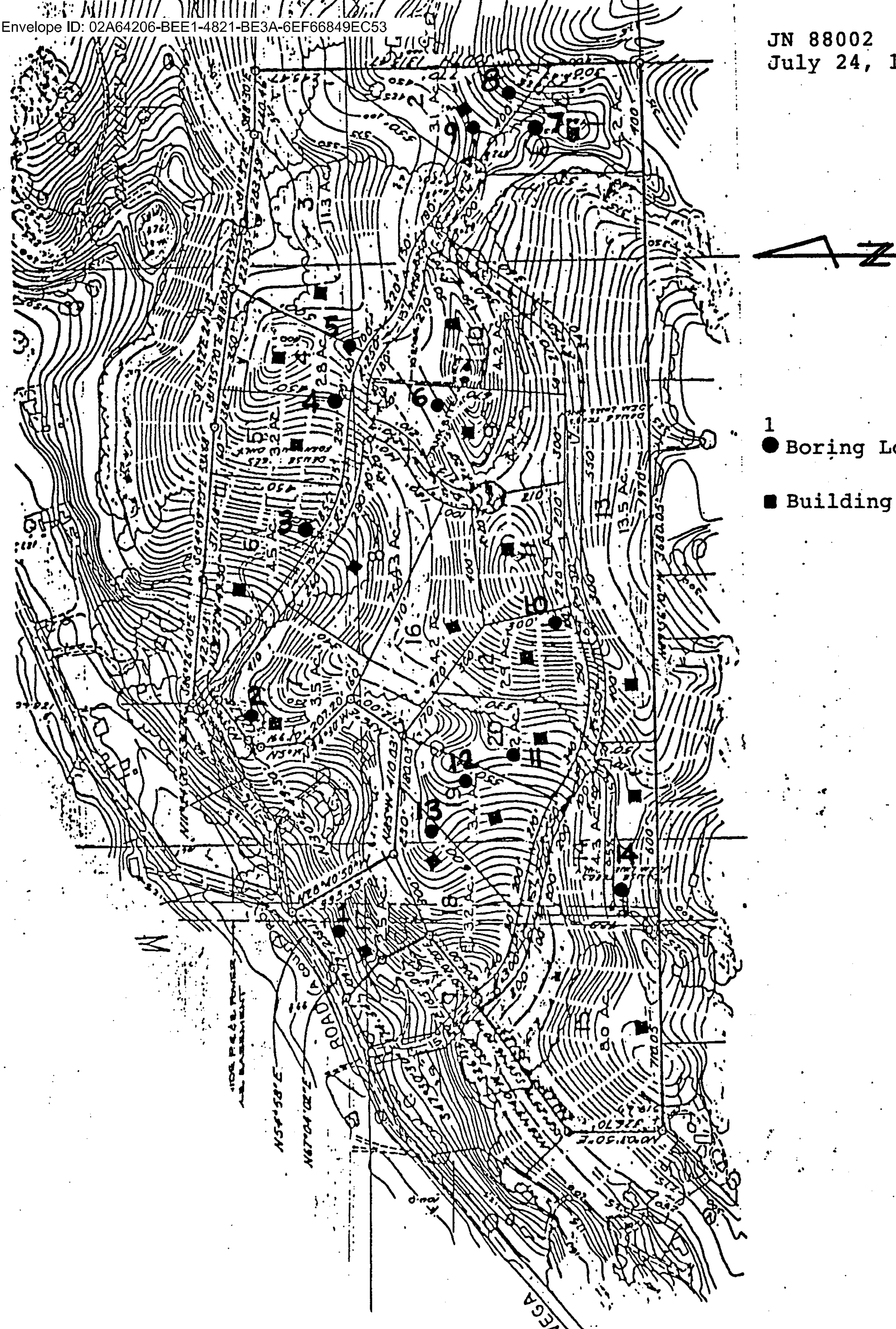
FIGURE NO. 16



SEISMOGRAPH PROFILE LINE 7

FIGURE NO. 17

JN 88002
July 24, 1988



1
● Boring Location

■ Building Site

LOCATION OF BORINGS SKETCH MAP

FIGURE NO. 18

JN 88002
July 24, 1988

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION Boring No. 1	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt.
				Ground Elev. = 123		
0				(SM) Brown slightly clayey medium sand - moist, firm		
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12				(CL) Brown sandy clay, moist, soft		
13						
14				Moist		
15				Bottom of Hole No. 1 drilled June 7, 1988 By ENEXCO, Inc. with 6" dia. continuous flight augers		

LOG OF BORING NO. 1

FIGURE NO. 19

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION Boring No. 2	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt.
				Ground Elev. = 225		
0						
1				(SM) Tan silty fine sand - dry hard		
2						
3						
4						
5						
6						
7						
8						
9						
10				Hard sandstone, Aromas Formation		
11				Bottom of Hole No. 2 Dry		
12				Boring No. 3 Ground Elev. = 265		
0						
1				(SM) Tan silty fine sand - dry soft		
2						
3						
4				Becoming moist		
5						
6						
7						
8				Increasing moisture		
9						
10						
11						
12						
13						
14				Very moist		
15				Bottom of Hole No. 3		

LOGS OF BORINGS NOS. 2 AND 3

FIGURE NO. 20

JN 88002
July 24, 1988

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION Boring No. 4	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt
				Ground Elev. = 350		
0				(SM) Tan fine-medium silty sand dry, soft		
1						
2						
3				Becoming red clayey sand and sandstone, slightly cemented Aromas Formation		
4						
5						
6						
7						
8						
9						
10						
11				Dry		
12				Bottom of Hole		

LOG OF BORING NO. 4

FIGURE NO. 21

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION Boring No. 5	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt
0				(SM) Tan silty sand - dry, dense		
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11				Becoming reddish Aromas Formation, slightly cemented sandstone		
12						
13						
14						
15						
16				Becoming softer		
17						
18						
19						
20						
21						
22						
23						
24				Dry		
25				Bottom of Hole No. 5		

LOG OF BORING NO. 5

FIGURE NO. 22

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION Boring No. 6	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt.
				Ground Elev. = 400		
0				(SM) Tan silty fine-medium sand-dry, soft		
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11				Dry		
12				Bottom of Hole No. 6		
				Boring No. 7 Ground Elev. = 450		
0				(SM) Red medium sandstone Aromas Formation - dry, hard cemented		
1						
2						
3						
4						
5						
6				Less dense		
7				Dry - Refusal		
8				Bottom of Hole No. 7		

LOGS OF BORINGS NOS. 6 AND 7

FIGURE NO. 23

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION Boring No. 8	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt
				Ground Elev. = 440		
0						
1				(SM) Tan silty fine sand - dry soft		
2						
3						
4						
5						
6				Becoming red sandstone Aromas Formation - dry-hard		
7						
8						
9						
10						
11				Bottom of Hoel No. 8 Dry		
12						
				Boring No. 9 Ground Elev. = 465		
0						
1				(SM) Tan silty sand - dry, loose		
2						
3						
4						
5						
6				(SM) Red clayey dense sand Aromas Formation		
7						
8				Becoming clayey - moist		
9						
10						
11						
12						
13						
14				Hard		
15				Bottom of Hole No. 9 Dry		

LOGS OF BORINGS NOS. 8 AND 9

FIGURE NO. 24

JN 88002
July 24, 1988

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION Boring NO. 10	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt.
				Ground Elev. = 410		
0				(SM) Tan sandy silt		
1						
2						
3						
4						
5						
6				(SM) Red slightly clayey sand Aromas Formation, dry, dense		
7						
8						
9				(SM) Tan silty sand - dry		
10						
11				Red hard sandstone		
12				Bottom of Hole No. 10		

LOG OF BORING NO. 10

FIGURE NO. 25

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION Boring No. 11	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt.
				Ground Elev. = 265		
0				(SM) Tan silty fine sand - dry soft		
1						
2						
3						
4						
5						
6				Becoming reddish		
7				Coarser slightly clayey		
8				Aromas Formation		
9						
10				Slightly cemented layer		
11						
12						
13				Moist		
14				Becoming light yellow		
15						
16						
17						
18						
19						
20						
21						
22						
23						
24				Very damp		
25				Bottom of Hole No. 11		

LOG OF BORING NO. 11

FIGURE NO. 26

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION Boring No. 12	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt
				Ground Elev. = 250		
0				(SM) Tan medium sand, dry, soft		
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11				Dry		
12				Bottom of Hole No. 12		
				Boring No. 13 Ground Elev. = 250		
0				(SM) Reddish-tan medium sand - dry, soft		
1						
2						
3				Sandstone chips		
4						
5						
6				Becoming coarser, moist		
7						
8						
9						
10						
11				Moist		
12				Bottom of Hole No. 13		

LOGS OF BORINGS NOS. 12 AND 13

FIGURE NO. 27

JN 88002
July 24, 1988

DEPTH IN FEET	SAMPLE NO.	LOG & LOCATION OF SAMPLE	Penetration Resistance Blows/ft	DESCRIPTION Boring No. 14	IN-PLACE DRY DENSITY p.c.f.	IN-PLACE MOISTURE CONTENT % dry wt.
				Ground Elev. = 325		
0				(SM) Tan silty fine sand - dry, hard		
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11				Hard Aromas Formation (?)		
12						
13						
14				Dry		
15				Bottom of Hole No. 14		

LOG OF BORING NO. 14

FIGURE NO. 28

CHARLES A. FISHER, CEEG, INC.
CIVIL ENGINEER – SURVEYOR – GEOLOGIST

JN 88002
July 24, 1988

PERCOLATION TESTS

Boring (no.)	Fall (in.)	Time (hr.)	Rate (in./hr.)	Comments (lots represented)
1	44 (22)	0.93 (0.47)	47*(46)**	Lot 17 @ Vega Road
2	44 (9)	2.67 (0.62)	16 (14)	Lot 7
3	77 (--)	2.30 (--)	33 (--)	Lots 6 & 8
4	-- (33)	-- (0.46)	-- (71)	Lots 4 & 5
5***	90 (55)	2.63 (2.43)	34 (22)	Lots 3, 4 & 10
6	35 (7)	2.72 (1.36)	13 (5)	Lots 9, 11 & 16
7	11 (0)	2.92 (1.35)	4 (0)	Lots 1 & 2
8	31 (2)	2.90 (0.35)	11 (5)	Lots 1 & 2
9	60 (47)	2.96 (1.25)	20 (37)	Lots 1 & 2
10	35 (48)	0.50 (0.95)	70 (50)	Lots 11, 12 & 13
11***	56 (--)	0.68 (--)	82 (--)	Lots 19 & 20
12	NT (38)	NT (2.68)	NT (14)	Lots 18 & 19
13	52 (49)	0.81 (1.08)	64 (48)	Lots 18 & 19
14	30 (NT)	0.60 (NT)	50 (NT)	Lots 14 & 15

LEGEND:

* Tests run June 15, 1988.
** Tests run July 14, 1988.
*** Test hole depth = 25 feet.
Average test hole depth = 12 feet.
Test holes run by falling head method from starting depths of 1 foot average.
(--) Test run to bottom of hole - no rate established.
(NT) Not tested July 14, 1988.

TABLE NO. 1 - PERCOLATION TESTS

CHARLES A. FISHER, CEEG, INC.
CIVIL ENGINEER – SURVEYOR – GEOLOGIST

JN 88002
July 24, 1988

SEPTIC STUDY RECOMMENDATIONS

Lot	Anticipated Design Infiltration Rate	Special Location Investigation Required		Comments
(no.)	(in./hr.)	Yes	No	
1	4- 5	+		Sandstone 0'-5'
2	5-10	+		Sandstone 5'-20'
3	10-12		+	Good below bldg. site
4	10-15		+	Good below bldg. site
5	15-20		+	Good depth colluvium
6	15-20		+	Good depth colluvium
7	5-10	+		Sandstone 10'
8	10-15		+	Good below bldg. site
9	4- 5	+		May be shal. sandstone
10	4- 5	+		Should be OK below site
11	4- 5	+		Should be Ok below site
12	15-20		+	Good below site
13	10-15		+	Good below site
14	5-10		+	Good below site
15	5-10		+	Good below site
16	10-15		+	Good below site
17	10-15		+	Good depth colluvium
18	15-20		+	Good depth colluvium
19	15-20		+	Good depth colluvium
20	15-20		+	Good depth colluvium

TABLE NO. 2 - SEPTIC STUDY RECOMMENDATIONS

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