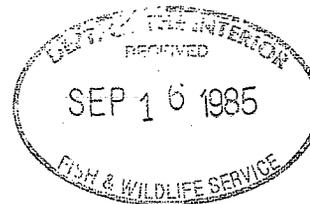


Chris K copy

Mr. Monty Knudsen
USFWS Endangered Species Office
2800 Cottage Way, Rm. E-1823
Sact., Calif. 05825



Dear Mr Knudsen:

This preliminary report on the updated distribution of the Morro Bay Kangaroo Rat (Dipodomys heermanni morroensis) is by no means a full report. It is intended to highlight the numbers and locations of MBKRs live trapped. An effort has been made to provide accurate trapline location data. Not all traplines used are presented in this report, only those that produced K-rats, or those that are in areas that were recently inhabited. The "Pecho" area, or that area north, west, and south of the Morro Bay Ecological Preserve, is not discussed here. No K-rats were discovered at Pecho. It is hoped that the information discussed in this report will be useful and timely in dealing with future litigations. I would be glad to answer any questions that might come up regarding this report.

Sincerely,

Francis Villablanca

Mr. Francis Villablanca
P.O. Box 4734
San Luis Obispo, Calif.
93403

Updated Distribution Of The Morro Bay Kangaroo Rat,
Preliminary Report.

The distribution study of Morro Bay Kangaroo Rats during 27 August to 23 September 1984, and 2 April to 22 August 1985, indicates that there are at least two areas occupied by the endangered Dipodomys heermanni morroensis. Both areas were occupied in 1979. After sampling suitable habitat within and outside the historic range, no new sites were found that harbored MBKRs. The total number of traplines used was 48. In addition one plot was established. 4,834 trap nights comprise the distribution study; this does not include trap nights at any pre existing plots.

Only one MBKR was caught at the Buckskin site (see figure 1, figure 2, and figure 3). Three lines (L, M, N) were run for two sessions of three nights each, followed by one five night session. After 240 trap nights a male in reproductive condition was trapped. As a result three additional lines (1P, 1Q, and 1R) were established. These lines plus line L, which captured the K-rat were run for three nights. The additional 138 trap nights failed to produce any more K-rats.

At least four K-rat burrows were identified at Buckskin: none were active, all were desintegrating, and all had spider webs in the openings. What ever population there is at Buckskin, it does not seem viable. No signs of activity were ever seen, except for the one live K-rat. Factors at least partly responsible for the low numbers could include: the extent to which Sudan grass (Sorghum sudanense) has become the dominant plant over about half of the area, predation by cats, poison, and possibly biological problems such as inbreeding or skewed male-female ratios.

Santa Ysabel and the Triangle (see figure 1, figure 4, figure 5, figure 6) both had MBKRs in 1979. Neither of these areas had any signs of activity, and as far as can be told, they do not contain K-rats. A Kangaroo Rat was trapped out of the area east and adjacent to the Triangle by Dr. Aryan I. Roest in the summer of 1984. The site that produced the K-rat had a concentration of burrows in an area approximately an eighth of a hectare. The site has since been destroyed. Botta pocket gophers are now abundant there. The Triangle and Santa Ysabel were trapped one five night session above and beyond the normal two sessions at three nights each.

The only sites in Los Osos that have appreciable populations of Morro Bay Kangaroo Rats are Bayview and Bayview West (see figure 1, figure 7, figure 8, and figure 9). Though there are two names, Bayview West is actually continuous with Bayview.

The amount of potentially usable habitat is roughly 25 acres, or 10 hectares. Traplines were set in areas that showed signs of activity, and in the periphery of the sites to determine the extent of occupation. Two lines, 1X and 1W were extremely fruitful. Plot KKLMM was later established over line 1W. Plots NOP and QRS are present in the attached maps only as reference points. The data for these plots is not discussed here, except to say the plot QRS did capture K-rats. Table 1 gives a summary of the trap line data.

TABLE 1

SITE	LINE	TN	# OF MBKR TRAPPED	TRAPS LINE	TN CAPTURE	AGES AND SEXES
BUCKSKIN	L	402	1	8	402	1A. M
BAYVIEW	1S	108	1	18	108	1SA. F
	1T	162	3	18	54	1SA. F 1SA. M 1A. M
	1U	162	2	18	81	1A. M 1 A. F
	1V	72	0	12	0	0
BAYVIEW	1W	162	9	18	18	3SA. M 3A. M 3A. F
WEST	1X	234	5	26	47	2SA. F 1A. M 2A. F
	KK	54	3	18	18	1SA. F 1A. M 1A. F
	LL	54	0	18	0	0
	MM	54	2	18	26	1SA. F 1A. F

TN-Trap nights
 SA-Sub adult
 A-Adult
 M-Male
 F-Female

The habitat in parts of Bayview West is not of the type normally associated with Morro Bay Kangaroo Rats. There are large bushes of Morro Bay Manzanita (Arctostaphylos morroensis), and Buck Brush (Ceanothus cuneatus), some are well over six feet. In between these large shrubs, there are open areas of various sizes. Live trapping produced MBKRs, California Pocket Mice (Perognathus californicus), and one Deer Mouse (Peromyscus maniculatus). The greatest concentration of Kangaroo Rats is in Bayview West. This is apparent by the high density of burrows and tail drag marks, as well as by the number of trap nights per capture. Bayview and Bayview West, as a whole appears to have locally favorable habitat. There are burrows scattered throughout, and there are also areas of concentrated activity, such as at plot KKLMM. Of the 26 K-rats captured 38.5% were subadults. Of the eight females trapped, 63% were prelactating in the period between June 5 and August 22. The population as a whole seems strong. No signs of inbreeding were detected.

Bayview and Bayview West appear able to support more Kangaroo Rats. There are areas of apparently suitable habitat, with no signs of K-rat activity. Some areas that lacked K-rats in the beginning of the summer, now have signs of activity. There appears to be a large amount of reproductive activity, and it is potentially what is causing the change in occupation as the summer progresses. What ever the cause, this movement should be considered when drilling test wells in this general area. Particular caution should be exercised around areas of known high densities. There is for example a new burrow (as of 7 Sept) in the bank of the road that leads south off of Broderson Ave. (it is about 300 meters due South of the survey nail). It should be suggested that this and other such K-rats be trapped out if they are in dangerous locations in regard to drilling operations.

It is not at all impossible that additional trap nights might turn up K-rats where none were captured in this distribution study. Any such animals would represent a sample from a very small population. Yet they would also represent genetic diversity and as such would be invaluable to the captive breeding program. During the course of this study two Kangaroo Rats were taken from the field to Cal. Poly. State University at San Luis Obispo for captive breeding. One was the male from Buckskin, and the other a pregnant female from line 1W. No other K-rats were taken from the Bayview area since plot QRS has been a source of captive breeding animals for the last two summers.

Though live trapping cannot prove that an area is not occupied by Morro Bay Kangaroo Rats, eleven nights of trapping at recently occupied sites does give one a reasonable degree of accuracy.

FIGURE 1
E S T E R O

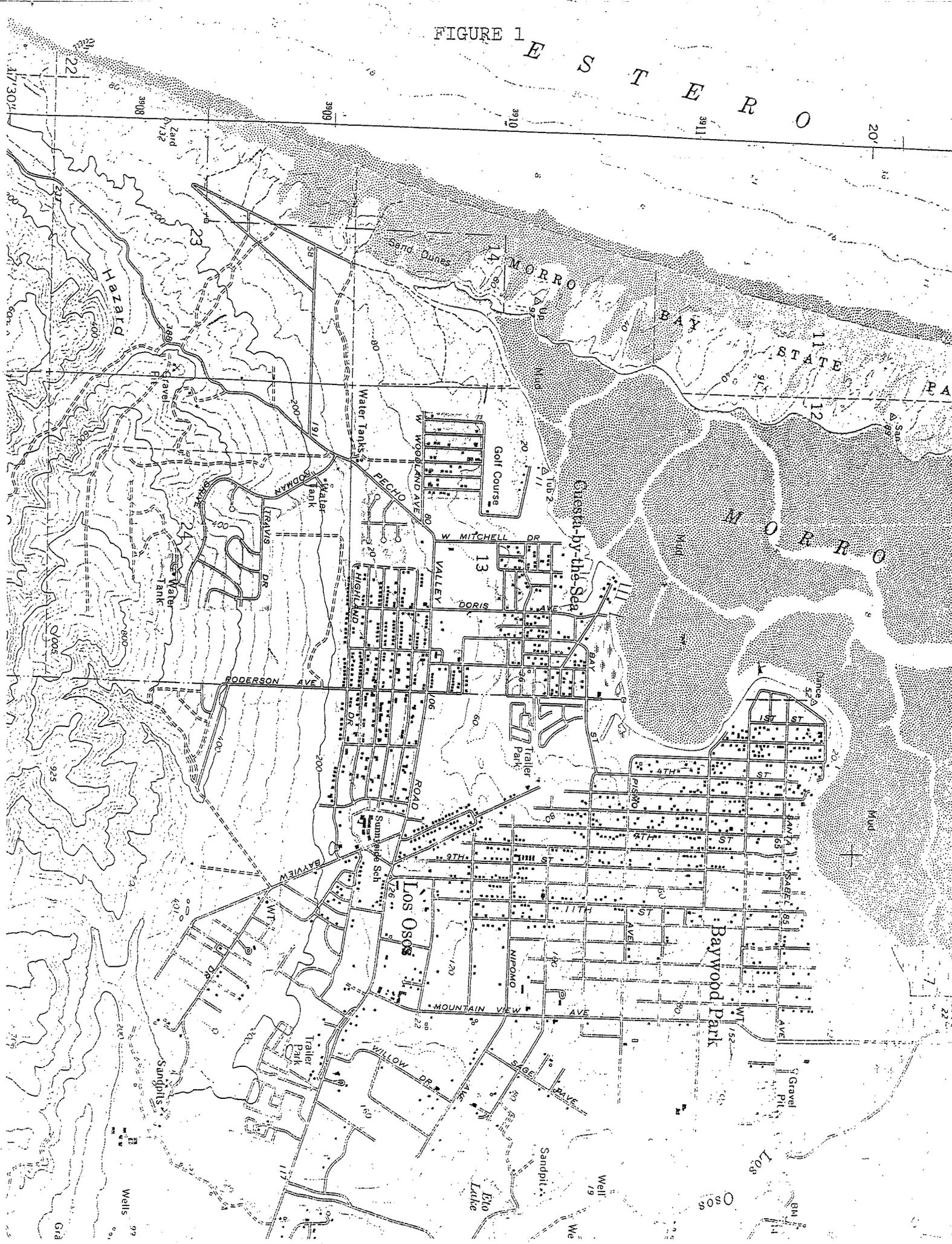
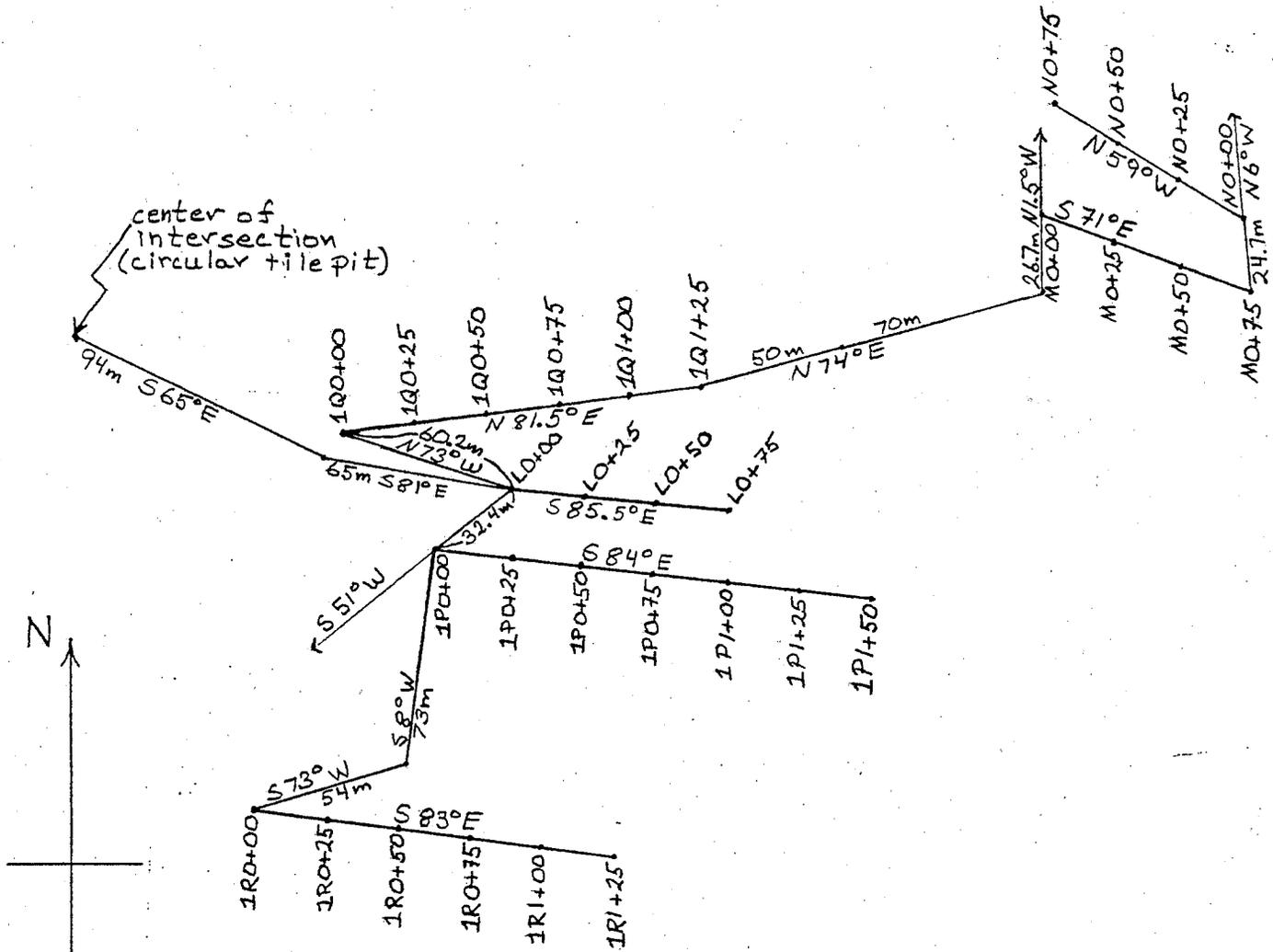


FIGURE 3

BUCKSKIN

LINES: L, M, N, 1P, 1Q, 1R.



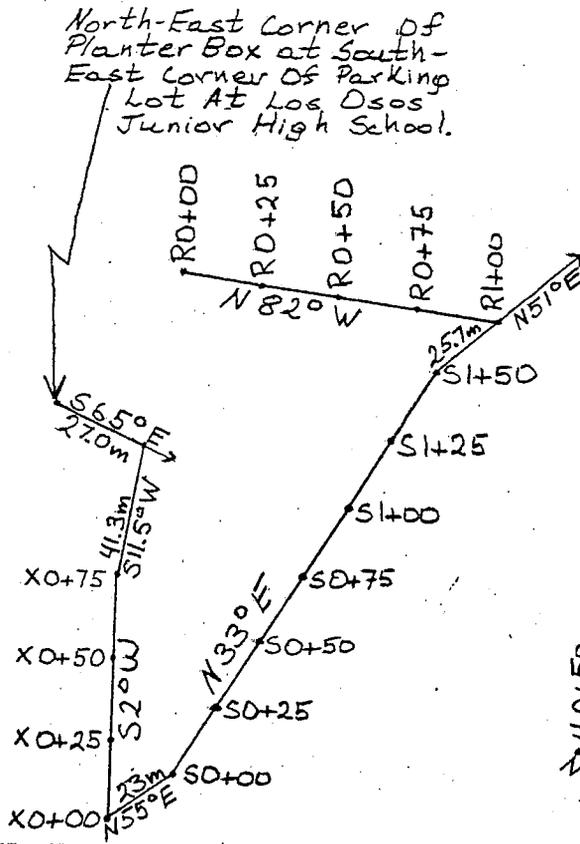
1 in = 200 ft
1 mm = 2.4 m

3	3	3	0	0
5.21	12.5	10.42	25.0	15.63
37.5	20.84	50.0	26.05	62.5
75.0	31.26	75.0	36.97	87.5
100	41.68	100	46.89	112.5
125	52.10	125	57.31	137.5
150	62.52	150	67.73	162.5
175	72.94	175		

TRIANGLE

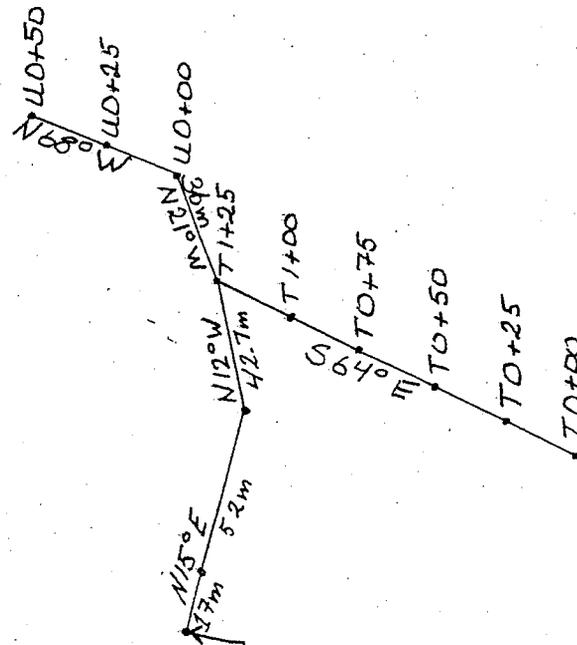
FIGURE 5

LINES: R, S, X.

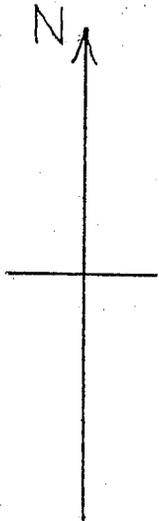


JUNIOR HIGH NORTH

LINES: T, U.



Nail at North-East Corner of intersection of South Bay Blvd. and El Morro Ave.



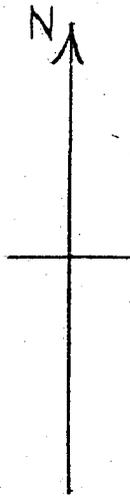
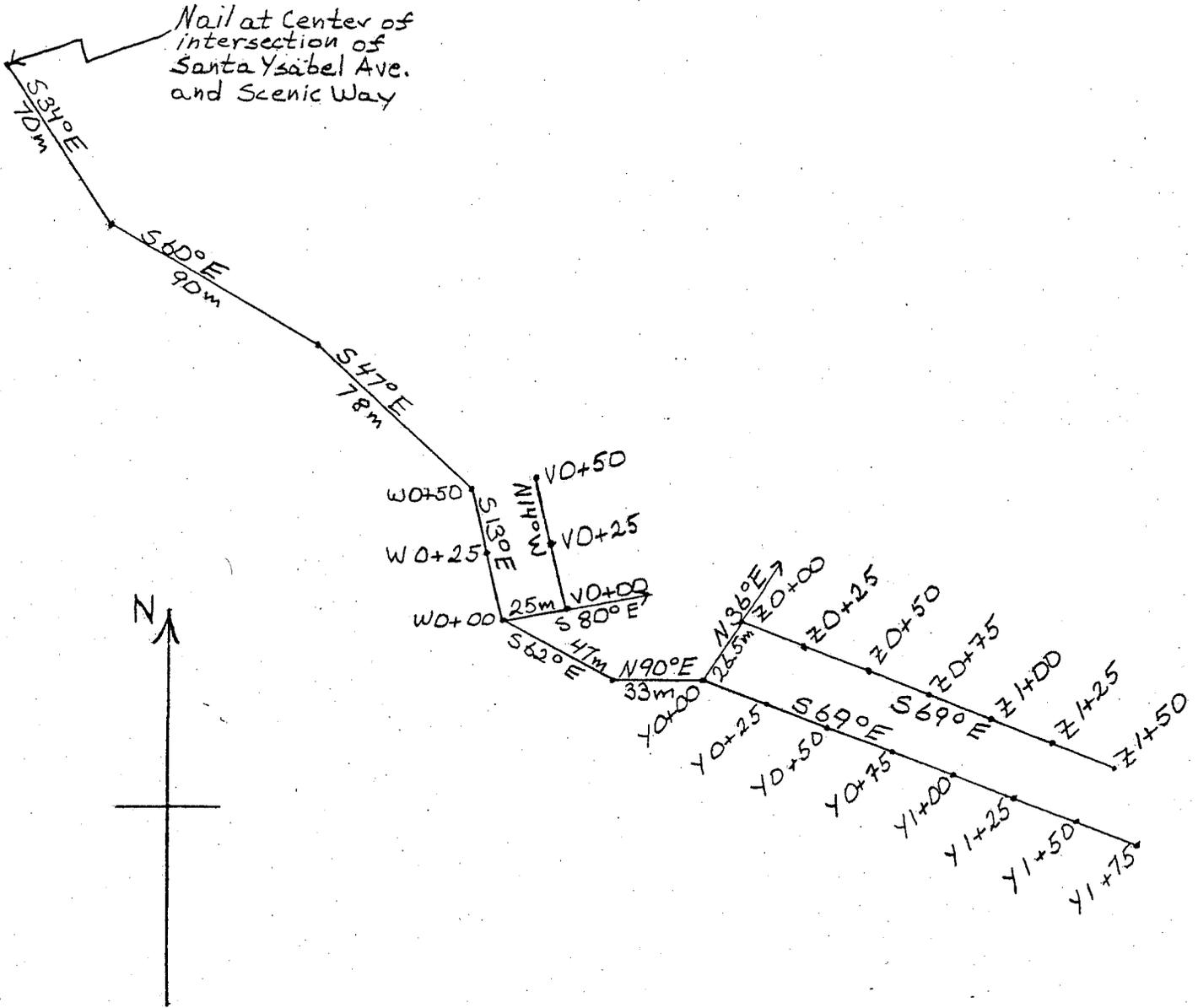
1 in = 200 ft
1 mm = 2.4 m

mm	0	5.21	12.5	10.42	25	15.63	37.5	20.84	50	26.05	62.5	31.26	75	36.47	87.5	41.68	100	46.89	112.5	52.10	125	57.31	137.5	62.52	150	67.73	162.5	72.94	175
ft	0	1"	200'	2"	400'	3"	600'	4"	800'	5"	1000'	6"	1200'	7"	1400'	8"	1600'	9"	1800'	10"	2000'	11"	2200'	12"	2400'	13"	2600'	14"	2800'

FIGURE 6

SANTA YSABEL

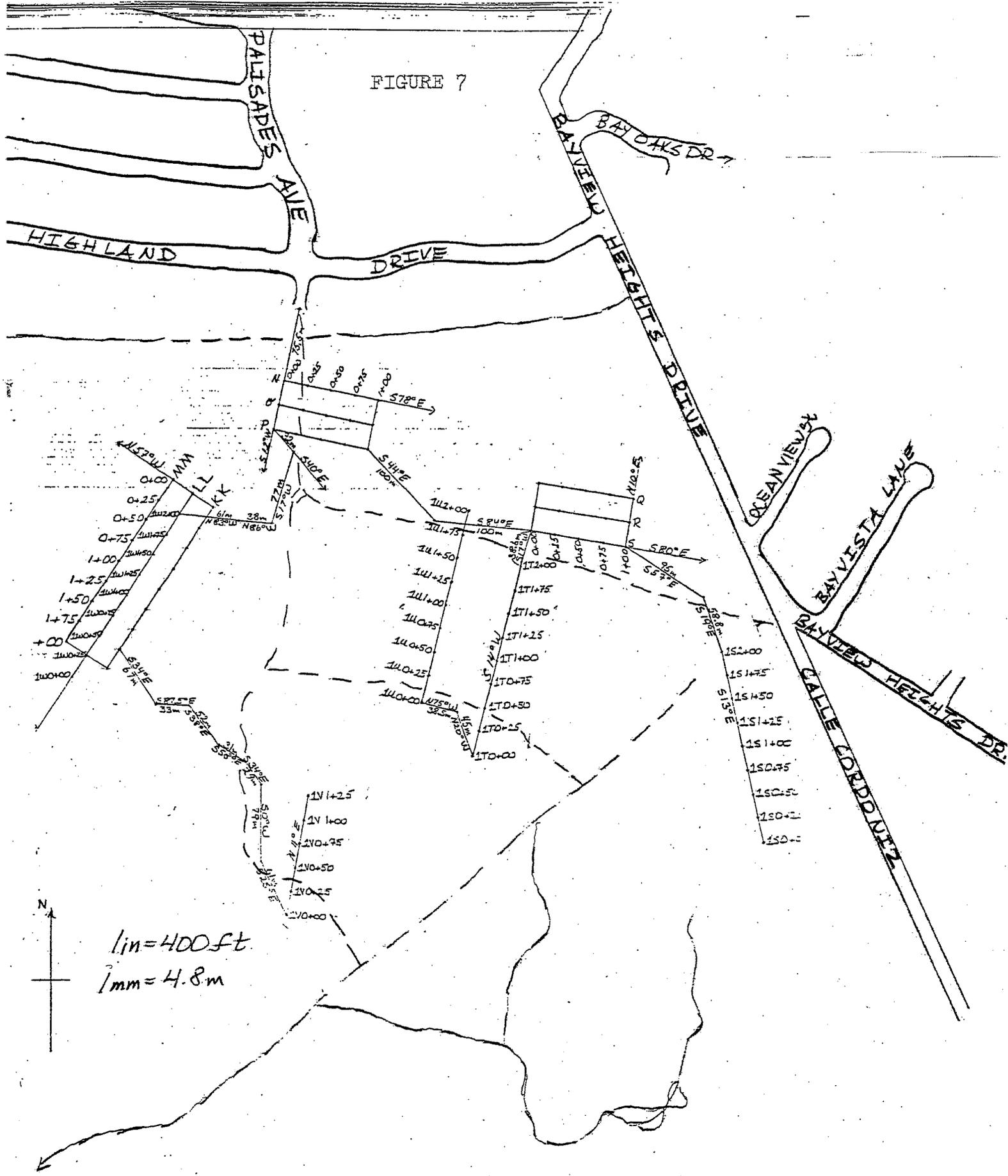
LINES: V, W, Y, Z.



1 in = 200 ft
 1 mm = 2.4 m

Station	Distance (ft)	Distance (m)
0+00	0	0
5.21	5.21	12.5
10.42	10.42	25
15.63	15.63	37.5
20.84	20.84	50
26.05	26.05	62.5
31.26	31.26	75
36.47	36.47	87.5
41.68	41.68	100
46.89	46.89	112.5
52.10	52.10	125
57.31	57.31	137.5
62.52	62.52	150
67.73	67.73	162.5
72.94	72.94	175

FIGURE 7



1 in = 400 ft
1 mm = 4.8 m

FIGURE 9

BAYVIEW WEST

LINE: 1X

