

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
T. A. TIDEMANSON - DIRECTOR

REPORT ON
LAND MOVEMENT STUDY
OF THE
ABALONE COVE AREA

BASED ON FIELD WORK AND CALCULATIONS OF THE
SURVEY DIVISION

NOTES

COORDINATES AND BEARINGS ARE BASED ON THE
CALIFORNIA COORDINATES SYSTEM - ZONE 7 N.A.D. 1927

ADDRESS COMMENTS AND SUGGESTIONS TO
THEODORE A. BICKSLER - SUPERVISING FIELD ENGINEER

SURVEY DIVISION

THIRD FLOOR

900 SOUTH FREMONT AVENUE

ALHAMBRA, CALIFORNIA 91803-1331

P R E F A C E

THIS REPORT CONTAINS A RECORD OF CURRENT SURVEY OBSERVATIONS BEING MADE BY SURVEY DIVISION. THE HORIZONTAL AND VERTICAL MOVEMENTS OF EACH STATION ARE COMPUTED WHERE AVAILABLE DATA PERMITS. THE ANGLE OF DIP WITH REFERENCE TO THE HORIZONTAL PLANE IS ALSO COMPUTED WHEN BOTH HORIZONTAL AND VERTICAL OBSERVATIONS ARE AVAILABLE FOR CONCURRENT DATES. THE TOTAL VECTORS ARE COMPUTED USING THE FIRST AVAILABLE DATA AND MOST RECENT DATA IN THE CORRESPONDING PLANES.

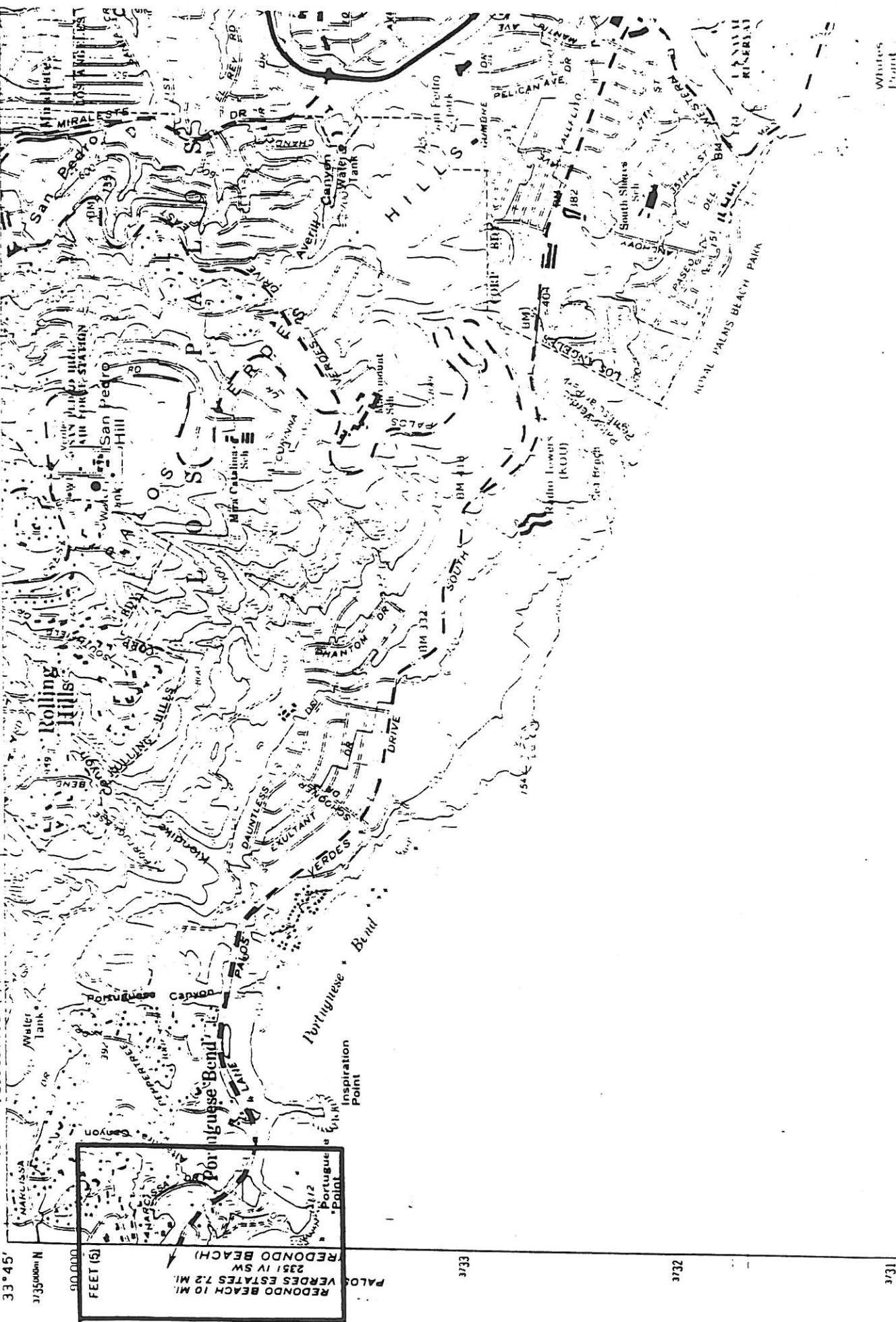
THE FOLLOWING ARE BRIEF EXPLANATIONS OF THE COLUMN HEADINGS USED IN THE REPORT:

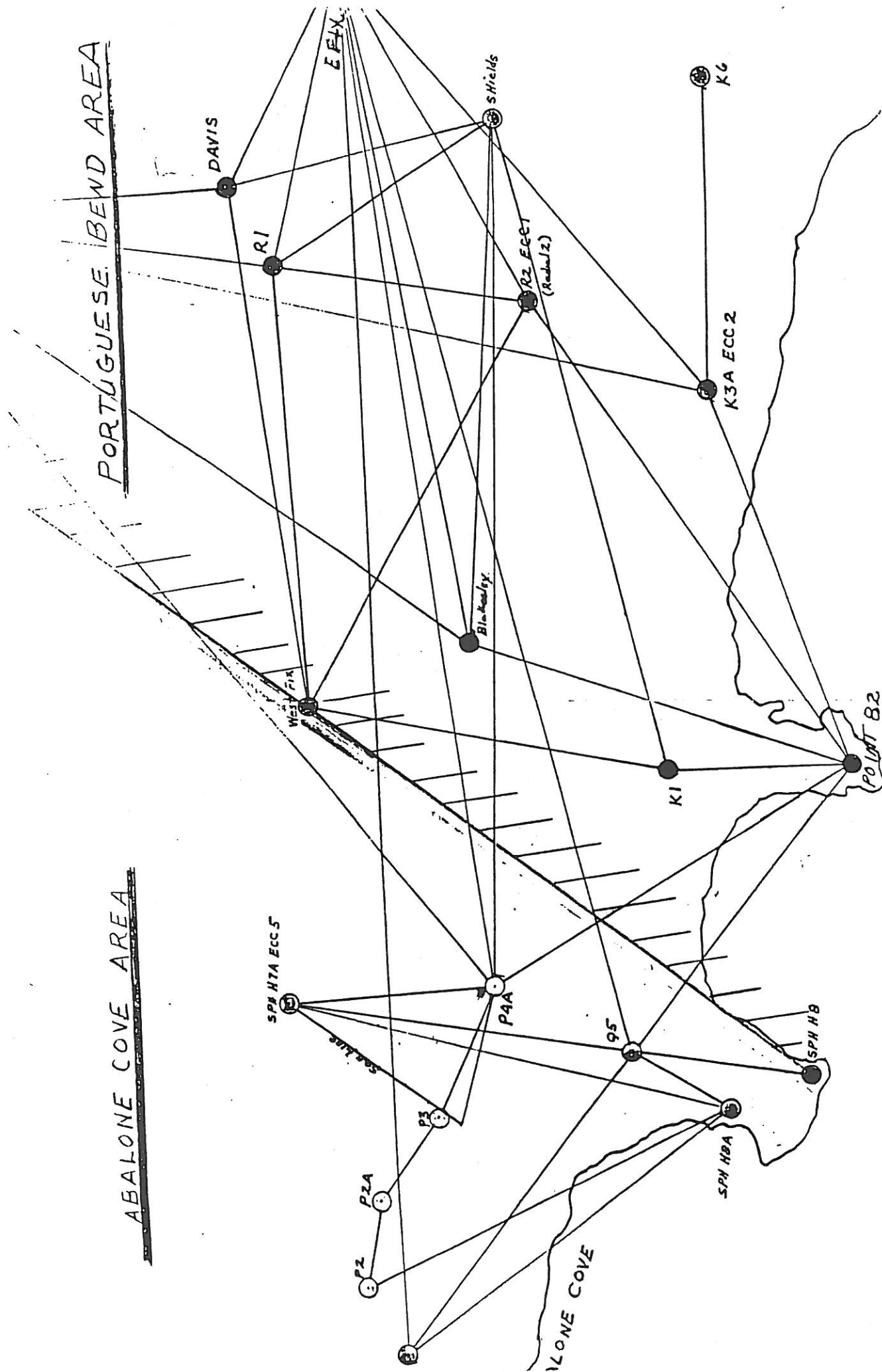
DATE	THE DAY, MONTH, AND YEAR WHEN THE OBSERVATION WAS MADE.
COORDINATES	THE NORTHING AND EASTING OF THE STATION REFERRED TO THE CALIFORNIA COORDINATES SYSTEM, ZONE 7. WHERE THERE ARE BLANKS IMMEDIATELY FOLLOWING THE DECIMAL POINT, THE COORDINATES ARE APPROXIMATE. - SEE NOTE.
ELEVATIONS	THE ELEVATION OF THE STATION REFERRED TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929. WHERE THERE ARE BLANKS IMMEDIATELY FOLLOWING THE DECIMAL POINT THE ELEVATIONS ARE APPROXIMATE. SEE NOTE.
HORIZONTAL MOVEMENT	THE COMPUTED MOVEMENT VECTOR - DISTANCE AND BEARING BETWEEN SUCCESSIVE OBSERVATIONS, THE NUMBER OF DAYS BETWEEN SUCCESSIVE OBSERVATIONS AND THE MOVEMENT RATE IN FEET PER DAY.
VERTICAL MOVEMENT	THE COMPUTED ELEVATION DIFFERENCE BETWEEN SUCCESSIVE OBSERVATIONS AND THE CORRESPONDING PERIOD IN DAYS.
DIP	THE COMPUTED VERTICAL ANGLE OF THE MOVEMENT VECTOR WITH REFERENCE TO THE HORIZONTAL PLANE WHEN BOTH HORIZONTAL AND VERTICAL DATA HAVE BEEN OBSERVED ON CONCURRENT DAYS.
TOTAL MOVEMENT VECTORS	TOTAL MOVEMENT VECTORS ARE COMPUTED USING THE FIRST APPLICABLE OBSERVATION AND THE LAST APPLICABLE OBSERVATION IN EACH OF THE TWO PLANES.

NOTE	THE APPROXIMATE HORIZONTAL POSITIONS AND ELEVATIONS ARE LISTED TO FACILITATE ELECTRONIC DATA RETRIEVAL. THESE APPROXIMATE VALUES ARE SHOWN WITH BLANKS IMMEDIATELY FOLLOWING THE DECIMAL POINT. THEY ARE NOT, NOR ARE THEY TO BE, USED FOR COMPUTATION.
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DEPARTMENT OF W

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COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

SPH H 7A ECC 1
FB 4319-013

DATE DA MON YR	COORDINATES NORTH	EAST	ELEV.	DIST FT	HORIZONTAL BEARING DG MN	MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP DG MN
2 OCT 78	4019266.85	4174840.45	287.86		N 90	2681		-2.95	2681	90
3 FEB 86	4019266.85	4174840.45	284.91		N 90	25			25	DN
28 FEB 86	4019266.85	4174840.45	284.91							
29 MAR 90			284.88					-.03	1490	

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT	FROM	2 OCT 78 TO 28 FEB 86	2706 DAYS	DIST =	.000 FT	BEARING =	N 90 00
VERTICAL MOVEMENT	FROM	2 OCT 78 TO 29 MAR 90	4196 DAYS	DIST =	-2.98 FT		
RESULTANT	FROM	2 OCT 78 TO 28 FEB 86	2706 DAYS	DIP =	90 DEG	0 MIN	DN

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PROGRAM EK11AP
12/30/91

SPH H 7A ECC 1
FB 4319-013

DATE DA MON YR	COORDINATES NORTH	EAST	ELEV.	DIST FT	HORIZONTAL BEARING DG MN	MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP DG MN
2 OCT 78	4019266.85	4174840.45	287.86		N 90	2681		-2.95	2681	90 DN
3 FEB 86	4019266.85	4174840.45	284.91		N 90	25			25	
28 FEB 86	4019266.85	4174840.45	284.91							
29 MAR 90			284.88					-0.03	1490	

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT	FROM	2 OCT 78 TO 28 FEB 86	2706 DAYS	DIST =	.000 FT	BEARING =	N 90 00
VERTICAL MOVEMENT	FROM	2 OCT 78 TO 29 MAR 90	4196 DAYS	DIST =	-2.98 FT		
RESULTANT	FROM	2 OCT 78 TO 28 FEB 86	2706 DAYS	DIP =	90 DEG	0 MIN	DN

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

SPH H 7A ECC 2
FB 4337-148

DATE	COORDINATES	ELEV.	HORIZONTAL	MOVEMENT	RATE	VERTICAL	MVNT	DIP
DA MON YR	NORTH EAST		DIST BEARING DG MN	TIME DAYS	FT/DA	ELEV DIFF	TIME DAYS	DG MN
318 14 NOV 77	4019267.70 4174845.88	288.24				-.27	322	
275 2 OCT 78		287.97				-.07	28	
303 30 OCT 78		287.90				-.03	16	
319 15 NOV 78		287.87				-.03	21	
340 6 DEC 78		287.84				-.37	146	
121 1 MAY 79		287.47				-.64	183	
304 31 OCT 79		286.83				-.19	43	
347 13 DEC 79		286.64				-.37	71	
532 22 FEB 80		286.27				-.45	63	
116 25 APR 80		285.82				-.02	21	
136 16 MAY 80		285.80				-.15	101	
239 25 AUG 80		285.65				-.19	165	
27 6 FEB 81		285.46				.12	54	
91 1 APR 81		285.58				-.09	126	
217 5 AUG 81		285.49				-.06	252	
104 14 APR 82		285.43					16	
120 30 APR 82		285.43				-.01	201	
322 17 NOV 82		285.42				-.22	295	
251 8 SEP 83		285.20				-.19	904	
59 28 FEB 86		285.01				-.13	738	23 8 DN
66 7 MAR 88	4019260.13 4174843.74	284.88	7.866 S 15 47 W	3766	.002	.08	476	20 26 UP
177 26 JUN 89	4019260.03 4174843.55	284.96	.214 S 62 14 W	476	.000	.01	276	9 44 UP
88 29 MAR 90	4019260.08 4174843.58	284.97	.058 N 30 58 E	276	.000		606	
329 25 NOV 91	4019260.05 4174843.69	284.97	.114 S 74 45 E	606	.000			

340

31
28
31
41

102

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PROGRAM EK11AP
12/30/91

SPH H 7A ECC 2
FB 4337-148

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT	FROM 14 NOV 77 TO 25 NOV 91	5124 DAYS	DIST =	7.957 FT	BEARING = S 15 58 W
VERTICAL MOVEMENT	FROM 14 NOV 77 TO 25 NOV 91	5124 DAYS	DIST =	-3.27 FT	
RESULTANT	FROM 14 NOV 77 TO 25 NOV 91	5124 DAYS	DIP =	22 DEG 20 MIN	DN

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PROGRAM EK11AP
12/30/91

SPH H 7A ECC 3
FB 4319-014

DATE DA MON YR	COORDINATES		ELEV.	HORIZONTAL		MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL		MVNT TIME DAYS	DIP
	NORTH	EAST		DIST FT	BEARING DG MN			ELEV DIFF	DG MN		
2 OCT 78	4019277.04	4174865.76	287.52								
28 FEB 86	4019277.04	4174865.76	284.78		N 90	2706		-2.74	2706	90	DN
29 MAR 90			284.75					-.03	1490		

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT	FROM 2 OCT 78 TO 28 FEB 86	2706 DAYS	DIST = .000 FT	BEARING = N 90 00
VERTICAL MOVEMENT	FROM 2 OCT 78 TO 29 MAR 90	4196 DAYS	DIST = -2.77 FT	
RESULTANT	FROM 2 OCT 78 TO 28 FEB 86	2706 DAYS	DIP = 90 DEG	0 MIN DN

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

SPH H 7A ECC 4
FB 4319-013

DATE DA MON YR	COORDINATES		ELEV.	DIST FT	HORIZONTAL BEARING		MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL MVNT		DIP
	NORTH	EAST			DG MN				ELEV DIFF	TIME DAYS	
2 OCT 78	4019256.32	4174840.53	287.94				2706		-3.03	2706	90 DN
28 FEB 86	4019256.32	4174840.53	284.91		N 90						
29 MAR 90			284.88						-.03	1490	

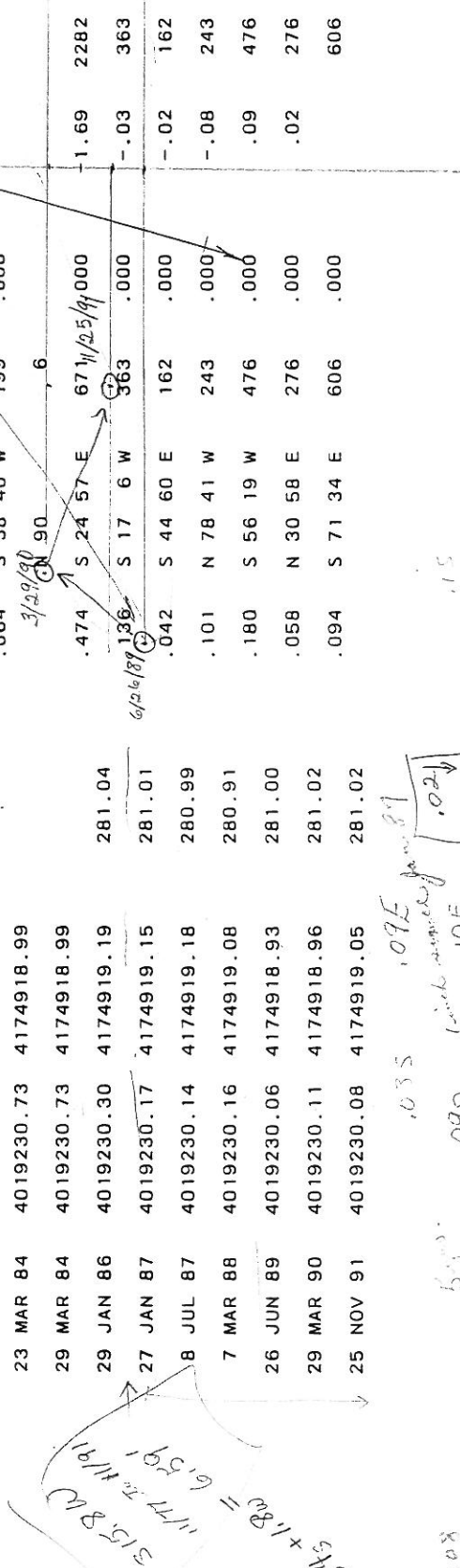
***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT	FROM	2 OCT 78 TO 28 FEB 86	2706 DAYS	DIST =	.000 FT	BEARING =	N 90 00
VERTICAL MOVEMENT	FROM	2 OCT 78 TO 29 MAR 90	4196 DAYS	DIST =	-3.06 FT		
RESULTANT	FROM	2 OCT 78 TO 28 FEB 86	2706 DAYS	DIP =	90 DEG	0 MIN	DN

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

SPH H 7A ECC S
FB 2485-071

DATE	COORDINATES	ELEV.	DIST	HORIZONTAL BEARING	MOVEMENT	RATE	VERTICAL ELEV DIFF	MTNT TIME	DIP
DA MON YR	NORTH	EAST	FT	DG MN	TIME DAYS	FT/DA		DAYS	DG MN
28 JAN 72	4019234.75	4174920.88							
14 NOV 77	4019236.42	4174920.85	1.670	N 1 2 W	2117	.000			
26 OCT 78	4019235.85	4174920.79	.573	S 6 W	346	.001	-.41	346	35 35 DN
30 OCT 78	4019235.85	4174920.79	.140	S	4	.008	-.03	4	
15 NOV 78	4019235.71	4174920.79	.786	S 41 23 W	166	.004	-.37	166	12 5 DN
30 APR 79	4019235.12	4174920.27		N 90	1			1	25 12 DN
1 MAY 79	4019235.12	4174920.27	1.362	S 18 50 W	183	.007	-.56	183	22 20 DN
31 OCT 79	4019233.83	4174919.83	1.391	S 2 53 W	176	.007			
24 APR 80	4019232.44	4174919.76	.136	S 72 54 W	21	.006			
15 MAY 80	4019232.40	4174919.63	.501	S 28 36 E	89	.005			
12 AUG 80	4019231.96	4174919.87	.394	S 59 32 W	177	.002			
5 FEB 81	4019231.76	4174919.53	.050	S 11 19 E	47	.001			
24 MAR 81	4019231.71	4174919.54	.230	S 17 39 E	134	.001			
5 AUG 81	4019231.49	4174919.61	.631	S 85 28 W	252	.002			
14 APR 82	4019231.44	4174918.98	.550	S 74 12 E	219	.002			
19 NOV 82	4019231.29	4174919.51	.700	S 43 16 W	291	.002			
6 SEP 83	4019230.78	4174919.03	.064	S 38 40 W	199	.000			
23 MAR 84	4019230.73	4174918.99							
29 MAR 84	4019230.73	4174918.99	.474	S 24 57 E	67	.000	-1.69	2282	25 13 DN
29 JAN 86	4019230.30	4174919.19	.136	S 17 6 W	363	.000	-.03	363	12 26 DN
27 JAN 87	4019230.17	4174919.15	.042	S 44 60 E	162	.000	-.02	162	25 14 DN
8 JUL 87	4019230.14	4174919.18	.101	N 78 41 W	243	.000	-.08	243	38 7 DN
7 MAR 88	4019230.16	4174919.08	.180	S 56 19 W	476	.000	.09	476	26 32 UP
26 JUN 89	4019230.06	4174918.93	.058	N 30 58 E	276	.000	.02	276	18 56 UP
29 MAR 90	4019230.11	4174918.96	.094	S 71 34 E	606	.000		606	
25 NOV 91	4019230.08	4174919.05							



Handwritten notes and calculations at the bottom of the page:

- 315.840
- $1177.5 \times 11/191$
- $6.345 + 1.80 = 8.145$
- 1035
- 1095
- $109E$
- $10E$
- 1024

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PROGRAM EK11AP
12/30/91

SPH H 7A ECC 5
FB 2485-071

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT	FROM 28 JAN 72 TO 25 NOV 91	7241 DAYS	DIST =	5.015 FT	BEARING = S 21 24 W
VERTICAL MOVEMENT	FROM 14 NOV 77 TO 25 NOV 91	5124 DAYS	DIST =	-3.08 FT	
RESULTANT	FROM 14 NOV 77 TO 25 NOV 91	5124 DAYS	DIP =	25 DEG	3 MIN DN

PROGRAM EK11AP
12/30/91

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

SPH H 7A ECC 6
FB 4205-261

DATE	COORDINATES	ELEV.	DIST	HORIZONTAL BEARING	MOVEMENT TIME	RATE	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP
DA MON YR	NORTH EAST		FT	DG MN	DAYS	FT/DA			DG MN
29 MAR 90		281.84							

***** TOTAL MOVEMENT VECTOR *****

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKSSPH H 8
FB 4445-101

DATE DA MON YR	COORDINATES NORTH EAST	ELEV.	DIST FT	HORIZONTAL BEARING DG MN	MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	VERTICAL ELEV DIFF	DIP DG MN
6 SEP 83	4016759.48 4174623.86	114.22		N 90	199			199	
23 MAR 84	4016759.48 4174623.86	114.22		N 90	172				
11 SEP 84	4016759.48 4174623.86			N 90	122				
11 JAN 85	4016759.48 4174623.86			N 90	241			535	
9 SEP 85	4016759.48 4174623.86	114.22		N 90	142			142	
29 JAN 86	4016759.48 4174623.86	114.22		N 90	363			363	
27 JAN 87	4016759.48 4174623.86	114.22		N 90	162			162	
8 JUL 87	4016759.48 4174623.86	114.22		N 90	243			243	
7 MAR 88	4016759.48 4174623.86	114.22		N 90	476			476	
26 JUN 89	4016759.48 4174623.86	114.22		N 90	276			276	
29 MAR 90	4016759.48 4174623.86	114.22		N 90	606			606	
25 NOV 91	4016759.48 4174623.86	114.22		N 90					

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT	FROM 6 SEP 83 TO 25 NOV 91	3002 DAYS	DIST = .000 FT	BEARING = N 90 00
VERTICAL MOVEMENT	FROM 6 SEP 83 TO 25 NOV 91	3002 DAYS	DIST = .00 FT	
RESULTANT	FROM 6 SEP 83 TO 25 NOV 91	3002 DAYS	DIP = 0 DEG	0 MIN

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PROGRAM EK11AP
12/30/91

SPH H 8A
FB 4445-101

DATE DA MON YR	COORDINATES		ELEV.	DIST FT	HORIZONTAL BEARING DG MN	MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MOVNT TIME DAYS	DIP DG MN
6 SEP 83	4017150.31	4174472.86	137.51	.053	N 21 48 W	371	.000			
11 SEP 84	4017150.36	4174472.84		.053	S 21 48 E	122	.000		493	
11 JAN 85	4017150.31	4174472.86	137.51		N 90	241			241	
9 SEP 85	4017150.31	4174472.86	137.51	.053	N 21 48 W	142	.000		142	
29 JAN 86	4017150.36	4174472.84	137.51		N 90	363			363	
27 JAN 87	4017150.36	4174472.84	137.51		N 90	162			162	
8 JUL 87	4017150.36	4174472.84	137.51		N 90	243			243	
7 MAR 88	4017150.36	4174472.84	137.51		N 90	476			476	
26 JUN 89	4017150.36	4174472.84	137.51		N 90	276			276	
29 MAR 90	4017150.36	4174472.84	137.51		N 90	606		-.19	606	90
25 NOV 91	4017150.36	4174472.84	137.32		N 90					DN

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT FROM 6 SEP 83 TO 25 NOV 91 3002 DAYS DIST = .053 FT BEARING = N 21 48 W
 VERTICAL MOVEMENT FROM 6 SEP 83 TO 25 NOV 91 3002 DAYS DIST = -.19 FT
 RESULTANT FROM 6 SEP 83 TO 25 NOV 91 3002 DAYS DIP = 74 DEG 11 MIN DN

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN ACL1
FB 4205-231

DATE DA MON YR	COORDINATES		ELEV.	HORIZONTAL		MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL		MVNT TIME DAYS	DIP	
	NORTH	EAST		DIST FT	BEARING DG MN			ELEV DIFF	DG MN			
26 JUN 89	4018037.72	4174052.97	65.79	.080	N 82 52 W	276	.000	.44		276	79 37	UP
29 MAR 90	4018037.73	4174052.89	66.23	.040	N 90 E	606	.000	-.24		606	80 32	DN

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT FROM 26 JUN 89 TO 25 NOV 91 882 DAYS DIST = .041 FT BEARING = N 75 58 W
 VERTICAL MOVEMENT FROM 26 JUN 89 TO 25 NOV 91 882 DAYS DIST = .20 FT
 RESULTANT FROM 26 JUN 89 TO 25 NOV 91 882 DAYS DIP = 78 DEG 21 MIN UP



COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN ACL2
FB 4205-232

DATE	COORDINATES	ELEV.	HORIZONTAL	MOVEMENT	RATE	VERTICAL	MOVNT	DIP
DA MON YR	NORTH	EAST	DIST	BEARING	FT/DA	ELEV	TIME	DG MN
			FT	DG MN		DIFF	DAYS	
26 JUN 89	4018662.78	4173771.31	.042	N 44 60 E	.000	.20	276	78 1 UP
29 MAR 90	4018662.81	4173771.34	.050	S 11 19 W	.000	-.28	606	79 41 DN
25 NOV 91	4018662.76	4173771.33						

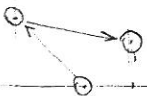
336 in / 2.4 yds

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT	FROM 26 JUN 89 TO 25 NOV 91	882 DAYS	DIST =	.028 FT	BEARING = S 44 60 E
VERTICAL MOVEMENT	FROM 26 JUN 89 TO 25 NOV 91	882 DAYS	DIST =	-.08 FT	
RESULTANT	FROM 26 JUN 89 TO 25 NOV 91	882 DAYS	DIP =	70 DEG 32 MIN	DN

*net 0.139 in up
S 45 E*

*random displacement
3 inch 1 inch = 1 inch
True Scale*



COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN ACL3
FB 4205-234

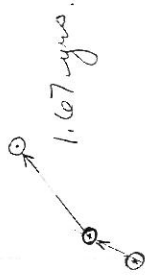
DATE DA MON YR	COORDINATES NORTH	EAST	ELEV.	DIST FT	BEARING DG MN	MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP DG MN
26 JUN 89	4018990.39	4174686.61	168.90	.022	N 26 34 E	276	.000	.16	276	82 3 UP
29 MAR 90	4018990.41	4174686.62	169.06	.050	N 53 8 E	606	.000	-.25	606	78 41 DN
25 NOV 91	4018990.44	4174686.66	168.81							

.05N .05E

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT FROM 26 JUN 89 TO 25 NOV 91 882 DAYS DIST = .070 FT BEARING = N 44 60 E
 VERTICAL MOVEMENT FROM 26 JUN 89 TO 25 NOV 91 882 DAYS DIST = -.09 FT
 RESULTANT FROM 26 JUN 89 TO 25 NOV 91 882 DAYS DIP = 51 DEG 51 MIN DN

N



COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN ACL4
FB 4205-268

DATE	COORDINATES	ELEV.	HORIZONTAL	MOVEMENT	RATE	VERTICAL	MOVNT	DIP
DA MON YR	NORTH	EAST	DIST	BEARING	TIME	ELEV	TIME	DG MN
			FT	DG MN	DAYS	DIFF	DAYS	DG MN
29 MAR 90	4017897.92	4174899.18	.076	N 66 48 E	606	-.06	606	38 14 DN
25 NOV 91	4017897.95	4174899.25						

read your

0.3N .07E

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT	FROM 29 MAR 90 TO 25 NOV 91	606 DAYS	DIST =	.076 FT	BEARING =	N 66 48 E
VERTICAL MOVEMENT	FROM 29 MAR 90 TO 25 NOV 91	606 DAYS	DIST =	-.06 FT		
RESULTANT	FROM 29 MAR 90 TO 25 NOV 91	606 DAYS	DIP =	38 DEG 14 MIN	DN	



COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN MARINE
FB 4445-101

DATE DA MON YR	COORDINATES		ELEV. FT	HORIZONTAL		MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL		DIP DG MN
	NORTH	EAST		DIST FT	BEARING DG MN			ELEV DIFF	MVNT TIME DAYS	
6 SEP 83	4017037.69	4166910.68			N 90	199				
23 MAR 84	4017037.69	4166910.68			N 90	287				
4 JAN 85	4017037.69	4166910.68			N 90	248				
9 SEP 85	4017037.69	4166910.68			N 90	142				
29 JAN 86	4017037.69	4166910.68			N 90	363				
27 JAN 87	4017037.69	4166910.68			N 90	162				
8 JUL 87	4017037.69	4166910.68			N 90					

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT FROM 6 SEP 83 TO 8 JUL 87 1401 DAYS DIST = .000 FT BEARING = N 90 00

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN MARINE A
FB 4205-192

DATE DA MON YR	COORDINATES		ELEV.	HORIZONTAL		MOVEMENT		RATE FT/DA	VERTICAL		DIP
	NORTH	EAST		DIST FT	BEARING DG MN	TIME DAYS	TIME DAYS		ELEV DIFF	TIME DAYS	
7 MAR 88	4018540.14	4164709.46			N 90	476					
26 JUN 89	4018540.14	4164709.46			N 90	276					
29 MAR 90	4018540.14	4164709.46			N 90	606					
25 NOV 91	4018540.14	4164709.46									

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT FROM 7 MAR 88 TO 25 NOV 91 1358 DAYS DIST = .000 FT BEARING = N 90 00

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN NARCISSA1
FB 4319-007

DATE DA MON YR	COORDINATES NORTH	EAST	ELEV.	DIST FT	HORIZONTAL BEARING DG MN	MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP DG MN
14 NOV 78	4019409.73	4173947.15	303.75	.610	S 34 60 W	167	.003	-.17	167	15 34 DN
30 APR 79	4019409.23	4173946.80	303.58	1.018	S 19 30 E	184	.005	-.32	184	17 27 DN
31 OCT 79	4019408.27	4173947.14	303.26	1.166	S 5 54 E	176	.006	-.64	176	28 45 DN
24 APR 80	4019407.11	4173947.26	302.62	.094	S 57 60 W	21	.004	.01	21	6 3 UP
15 MAY 80	4019407.06	4173947.18	302.63	.466	S 67 17 E	89	.005	-.09	89	10 55 DN
12 AUG 80	4019406.88	4173947.61	302.54	.428	S 52 36 W	177	.002	-.07	177	9 17 DN
5 FEB 81	4019406.62	4173947.27	302.47	.060	N 90 E	47	.001	.01	47	9 28 UP
24 MAR 81	4019406.62	4173947.33	302.48	.148	S 47 44 E	134	.001	-.07	134	25 13 DN
5 AUG 81	4019406.52	4173947.44	302.41	.510	S 49 46 E	251	.002	-.05	251	5 35 DN
13 APR 82	4019406.19	4173947.83	302.36	.515	N 71 55 W	220	.002	.01	220	1 7 UP
19 NOV 82	4019406.35	4173947.34	302.37	.571	S 32 51 W	291	.001	-.14	291	13 46 DN
6 SEP 83	4019405.87	4173947.03	302.23	.028	N 44 60 E	199	.000	-.09	199	72 33 DN
23 MAR 84	4019405.89	4173947.05	302.14	.322	S 64 14 E	677	.000	-.07	677	12 16 DN
29 JAN 86	4019405.75	4173947.34	302.07	.116	S 59 2 E	363	.000	-.01	363	4 54 DN
27 JAN 87	4019405.69	4173947.44	302.06	.036	S 33 41 W	162	.000	-.02	162	29 1 DN
8 JUL 87	4019405.66	4173947.42	302.04	.108	S 56 19 W	243	.000	-.04	243	20 18 DN
7 MAR 88	4019405.60	4173947.33	302.00	.197	S 44 60 W	476	.000	.04	476	11 25 UP
26 JUN 89	4019405.46	4173947.19	302.04	.067	N 26 34 E	276	.000	.04	276	30 48 UP
29 MAR 90	4019405.52	4173947.22	302.08	.158	S 71 34 E	606	.000		606	
25 NOV 91	4019405.47	4173947.37	302.08							

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT FROM 14 NOV 78 TO 25 NOV 91 4759 DAYS DIST = 4.265 FT BEARING = S 2 57 E
 VERTICAL MOVEMENT FROM 14 NOV 78 TO 25 NOV 91 4759 DAYS DIST = -1.67 FT
 RESULTANT FROM 14 NOV 78 TO 25 NOV 91 4759 DAYS DIP = 21 DEG 23 MIN DN

PROGRAM EK11AP
12/30/91

PORT BN P 2
FB 949-193

DATE		COORDINATES		ELEV.	HORIZONTAL		MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP
DA MON	YR	NORTH	EAST		DIST FT	BEARING DG MN					
18	JUN 57	4018877.99	4173636.87	163.51	.126	N 18 26 W	7455	.000	-.24	7455	62 12 DN
15	NOV 77	4018878.11	4173636.83	163.27	.974	S 10 2 W	345	.002			
26	OCT 78	4018877.15	4173636.66		.022	S 26 34 W	6	.003			
1	NOV 78	4018877.13	4173636.65		.250	S 53 8 W	13	.019	-.34	364	15 55 DN
14	NOV 78	4018876.98	4173636.45	162.93	2.585	S 22 59 W	167	.015	-.55	167	12 DN
30	APR 79	4018874.60	4173635.44	162.38	3.365	S 16 56 W	184	.018	-.58	184	9 47 DN
31	OCT 79	4018871.38	4173634.46	161.80	.672	S 11 8 W	43	.015	-.16	43	13 23 DN
13	DEC 79	4018870.72	4173634.33	161.64	1.836	S 21 24 W	68	.027	-.30	68	9 16 DN
19	FEB 80	4018869.01	4173633.66	161.34	2.397	S 27 19 W	65	.036	-.43	65	10 10 DN
24	APR 80	4018866.88	4173632.56	160.91	.417	S 21 2 W	21	.019	-.05	21	6 49 DN
15	MAY 80	4018866.49	4173632.41	160.86	.830	S 9 W	89	.009	-.15	89	10 14 DN
12	AUG 80	4018865.67	4173632.28	160.71	.430	S 17 35 W	65	.006	-.06	65	7 56 DN
16	OCT 80	4018865.26	4173632.15	160.65	.158	S 18 26 W	33	.004	-.03	33	10 44 DN
18	NOV 80	4018865.11	4173632.10	160.62	.308	S 35 45 W	79	.003	-.03	79	5 33 DN
5	FEB 81	4018864.86	4173631.92	160.59	.170	S 28 4 W	47	.003	-.03	47	10 DN
24	MAR 81	4018864.71	4173631.84	160.56	.353	S 8 8 W	134	.002	-.05	134	8 3 DN
5	AUG 81	4018864.36	4173631.79	160.51	.161	S 29 45 W	251	.000	-.06	251	20 25 DN
13	APR 82	4018864.22	4173631.71	160.45	.214	S 27 45 W	218	.000	-.03	218	7 57 DN
17	NOV 82	4018864.03	4173631.61	160.42	1.767	S 21 55 W	293	.006	-.26	293	8 22 DN
6	SEP 83	4018862.39	4173630.95	160.16	.531	S 19 48 W	199	.002	-.10	199	10 39 DN
23	MAR 84	4018861.89	4173630.77	160.06	.533	S 6 27 W	287	.001	-.08	287	8 32 DN
4	JAN 85	4018861.36	4173630.71	159.98	.092	N 49 24 E	248	.000	-.03	248	18 1 DN
9	SEP 85	4018861.42	4173630.78	159.95	.080	N 90 W	141	.000	-.01	141	7 8 DN
28	JAN 86	4018861.42	4173630.70	159.94	.080	S 29 45 E	364	.000	-.04	364	26 23 DN
27	JAN 87	4018861.35	4173630.74	159.90	.100	S 36 52 W	162	.000	-.04	162	21 48 DN
8	JUL 87	4018861.27	4173630.68	159.86							

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PROGRAM EK11AP
12/30/91

PORT BN P 2
FB 949-193

DATE DA MON YR	COORDINATES		ELEV.	HORIZONTAL		MOVEMENT	RATE	VERTICAL	MOVNT	DIP
	NORTH	EAST		DIST FT	BEARING DG MN	TIME DAYS	FT/DA	ELEV DIFF	TIME DAYS	DG MN
8 JUL 87	27	68	159.86	.063	S 18 26 W	243	.000	-.05	243	38 20 DN
7 MAR 88	4018861.21	4173630.66	159.81	.111	S 26 34 W	476	.000	.09	476	38 50 UP
26 JUN 89	4018861.11	4173630.61	159.90							

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT	FROM 18 JUN 57 TO 26 JUN 89	1696 DAYS	DIST =	18.003 FT	BEARING =	S 20 21 W
VERTICAL MOVEMENT	FROM 18 JUN 57 TO 26 JUN 89	1696 DAYS	DIST =	-3.61 FT		
RESULTANT	FROM 18 JUN 57 TO 26 JUN 89	1696 DAYS	DIP =	11 DEG 20 MIN	DN	

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKSPORT BN P 2A
FB 4338-011

DATE DA MON YR	COORDINATES		ELEV.	HORIZONTAL		MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP DG MN
	NORTH	EAST		DIST FT	BEARING DG MN					
10 FEB 76	4018810.58	4174018.07		.082	N 75 58 W	646	.000			
17 NOV 77	4018810.60	4174017.99		1.428	S 23 31 W	343	.004			
26 OCT 78	4018809.29	4174017.42		.064	N 51 20 W	6	.010			
1 NOV 78	4018809.33	4174017.37	161.35	.333	S 48 39 W	13	.025	-.06	13	10 13 DN
14 NOV 78	4018809.11	4174017.12	161.29	2.983	S 29 45 W	167	.017	-.82	167	15 22 DN
30 APR 79	4018806.52	4174015.64	160.47	3.963	S 25 24 W	184	.021	-1.02	184	14 26 DN
31 OCT 79	4018802.94	4174013.94	159.45	.615	S 7 28 W	43	.014	-.24	43	21 19 DN
13 DEC 79	4018802.33	4174013.86	159.21	2.263	S 27 55 W	69	.032	-.57	69	14 8 DN
20 FEB 80	4018800.33	4174012.80	158.64	2.773	S 33 14 W	64	.043	-.73	64	14 44 DN
24 APR 80	4018798.01	4174011.28	157.91	.456	S 26 W	21	.021	-.10	21	12 22 DN
15 MAY 80	4018797.60	4174011.08	157.81	.950	S 14 37 W	89	.010	-.29	89	16 58 DN
12 AUG 80	4018796.68	4174010.84	157.52	.452	S 30 32 W	65	.006	-.10	65	12 27 DN
16 OCT 80	4018796.29	4174010.61	157.42	.155	S 44 60 W	33	.004	-.04	33	14 25 DN
18 NOV 80	4018796.18	4174010.50	157.38	.272	S 28 26 W	79	.003	-.06	79	12 24 DN
5 FEB 81	4018795.94	4174010.37	157.32	.205	S 43 1 W	47	.004	-.05	47	13 41 DN
24 MAR 81	4018795.79	4174010.23	157.27	.352	S 6 31 W	134	.002	-.09	134	14 20 DN
5 AUG 81	4018795.44	4174010.19	157.18	.176	S 42 42 W	251	.000	-.08	251	24 20 DN
13 APR 82	4018795.31	4174010.07	157.10	.250	S 36 52 W	220	.001	-.05	220	11 19 DN
19 NOV 82	4018795.11	4174009.92	157.05	1.806	S 30 15 W	291	.006	-.45	291	13 59 DN
6 SEP 83	4018793.55	4174009.01	156.60	.506	S 29 36 W	199	.002	-.16	199	17 33 DN
23 MAR 84	4018793.11	4174008.76	156.44	.296	S 11 41 W	287	.001	-.14	287	25 18 DN
4 JAN 85	4018792.82	4174008.70	156.30	.290	S 1 58 E	248	.001	-.06	248	11 41 DN
9 SEP 85	4018792.53	4174008.71	156.24	.085	S 69 27 W	141	.000	-.02	141	13 10 DN
28 JAN 86	4018792.50	4174008.63	156.22	.111	S 10 18 W	364	.000	-.07	364	32 3 DN
27 JAN 87	4018792.39	4174008.61	156.15	.070	S 8 8 W	162	.000	-.05	162	35 16 DN
8 JUL 87	4018792.32	4174008.60	156.10							

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN P 2A
FB 4338-011

DATE DA MON YR	COORDINATES NORTH	EAST	ELEV.	DIST FT	HORIZONTAL BEARING DG MN	MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP DG MN
8 JUL 87	32	60	156.10	.100	S 36 52 W	243	.000	-.06	243	30 58 DN
7 MAR 88	4018792.24	4174008.54	156.04	.127	S 44 60 W	476	.000	.10	476	38 9 UP
26 JUN 89	4018792.15	4174008.45	156.14							

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT FROM 10 FEB 76 TO 26 JUN 89 4885 DAYS DIST = 20.789 FT BEARING = S 27 34 W
 VERTICAL MOVEMENT FROM 1 NOV 78 TO 26 JUN 89 3890 DAYS DIST = -5.21 FT
 RESULTANT FROM 1 NOV 78 TO 26 JUN 89 3890 DAYS DIP = 15 DEG 4 MIN DN

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PROGRAM EK11AP
12/30/91

PORT BN P 2AA
FB 4205-267

DATE	COORDINATES	ELEV.	DIST	HORIZONTAL BEARING	MOVEMENT TIME	RATE	VERTICAL ELEV DIFF	MVNT TIME	DIP
DA MON YR	NORTH	EAST	FT	DG MN	DAYS	FT/DA		DAYS	DG MN
29 MAR 90	4018793.45	4174007.30							
25 NOV 91	4018793.43	4174007.34	.044	S 63 26 E	606	.000	.02	606	24 6 UP

.025 .04E

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT	FROM 29 MAR 90 TO 25 NOV 91	606 DAYS	DIST =	.044 FT	BEARING =	S 63 26 E
VERTICAL MOVEMENT	FROM 29 MAR 90 TO 25 NOV 91	606 DAYS	DIST =	.02 FT		
RESULTANT	FROM 29 MAR 90 TO 25 NOV 91	606 DAYS	DIP =	24 DEG	6 MIN	UP

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PROGRAM EK11AP
12/30/91

PORT BN P 2B
FB 4205-267

DATE DA MON YR	COORDINATES NORTH	EAST	ELEV.	DIST FT	HORIZONTAL BEARING DG MN	MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP DG MN
29 MAR 90	4018869.30	4173624.86	162.89	.067	S 63 26 E	606	.000	.03	606	24 6 UP
25 NOV 91	4018869.27	4173624.92	162.92							

103S 106E 03A

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT	FROM 29 MAR 90 TO 25 NOV 91	606 DAYS	DIST =	.067 FT	BEARING =	S 63 26 E
VERTICAL MOVEMENT	FROM 29 MAR 90 TO 25 NOV 91	606 DAYS	DIST =	.03 FT		
RESULTANT	FROM 29 MAR 90 TO 25 NOV 91	606 DAYS	DIP =	24 DEG	6 MIN	UP

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKSPORT BN P 3
FB 949-193

DATE		COORDINATES		ELEV.	HORIZONTAL		MOVEMENT	RATE	VERTICAL	MVNT	DIP
DA	MON YR	NORTH	EAST		DIST	BEARING	TIME	FT/DA	ELEV	TIME	DG MN
					FT	DG MN	DAYS		DIFF	DAYS	
18	JUN 57	4018538.88	4174407.12		.305	S 31 36 W	7455	.000			
15	NOV 77	4018538.62	4174406.96	158.13	1.064	S 25 36 W	345	.003			
26	OCT 78	4018537.66	4174406.50		.064	N 51 20 W	6	.010			
1	NOV 78	4018537.70	4174406.45		.241	S 60 15 W	13	.018	-.17	364	7 39 DN
14	NOV 78	4018537.58	4174406.24	157.96	2.096	S 32 56 W	167	.012	-.26	167	7 4 DN
30	APR 79	4018535.82	4174405.10	157.70	2.924	S 26 23 W	184	.015	-.16	184	3 8 DN
31	OCT 79	4018533.20	4174403.80	157.54	.391	S 4 24 E	43	.009	.02	43	2 56 UP
13	DEC 79	4018532.81	4174403.83	157.56	1.645	S 27 30 W	69	.023	-.25	69	8 38 DN
20	FEB 80	4018531.35	4174403.07	157.31	1.988	S 33 56 W	64	.031	-.26	64	7 27 DN
24	APR 80	4018529.70	4174401.96	157.05	.254	S 41 49 W	21	.012	-.01	21	2 15 DN
15	MAY 80	4018529.51	4174401.79	157.04	.691	S 4 8 W	89	.007	-.08	89	6 36 DN
12	AUG 80	4018528.82	4174401.74	156.96	.326	S 49 58 W	65	.005	-.03	65	5 15 DN
16	OCT 80	4018528.61	4174401.49	156.93	.085	S 69 27 W	33	.002	-.02	33	13 10 DN
18	NOV 80	4018528.58	4174401.41	156.91	.174	S 13 14 W	79	.002		79	
5	FEB 81	4018528.41	4174401.37	156.91	.152	S 58 24 W	47	.003	.01	47	3 45 UP
24	MAR 81	4018528.33	4174401.24	156.92	.231	S 7 26 E	134	.001	-.04	134	9 47 DN
5	AUG 81	4018528.10	4174401.27	156.88	.143	S 65 13 W	251	.000	-.03	251	11 50 DN
13	APR 82	4018528.04	4174401.14	156.85	.202	S 32 54 W	220	.000	-.02	220	5 38 DN
19	NOV 82	4018527.87	4174401.03	156.83	1.090	S 33 24 W	291	.003	-.10	291	5 14 DN
6	SEP 83	4018526.96	4174400.43	156.73	.205	S 46 58 W	199	.001		199	
23	MAR 84	4018526.82	4174400.28	156.73	.245	S 11 46 W	287	.000	-.06	287	13 45 DN
4	JAN 85	4018526.58	4174400.23	156.67	.241	S 7 8 E	248	.000	-.01	248	2 22 DN
9	SEP 85	4018526.34	4174400.26	156.66	.063	N 71 34 W	141	.000	-.02	141	17 33 DN
28	JAN 86	4018526.36	4174400.20	156.64	.102	S 29 3 W	364	.000	-.04	364	21 14 DN
27	JAN 87	4018526.27	4174400.15	156.60							

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PROGRAM EK11AP
12/30/91

PORT BN P 3
FB 949-193

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT	FROM 18 JUN 57 TO 27 JAN 87	0815 DAYS	DIST =	14.408 FT	BEARING = S 28 56 W
VERTICAL MOVEMENT	FROM 15 NOV 77 TO 27 JAN 87	3360 DAYS	DIST =	-1.53 FT	
RESULTANT	FROM 15 NOV 77 TO 27 JAN 87	3360 DAYS	DIP =	6 DEG 11 MIN	DN

PROGRAM EK11AP
12/30/91

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN P 3A
FB 4205-163

DATE DA MON YR	COORDINATES NORTH	EAST	ELEV.	HORIZONTAL DIST FT	BEARING DG MN	MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP DG MN
8 JUL 87	4018526.24	4174400.12	156.43	.058	S 59 2 W	243	.000	-.06	243	45 49 DN
7 MAR 88	4018526.21	4174400.07	156.37	.130	S 57 32 W	476	.000	.09	476	34 37 UP
26 JUN 89	4018526.14	4174399.96	156.46							

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT	FROM	8 JUL 87 TO 26 JUN 89	719 DAYS	DIST =	.188 FT	BEARING =	S 57 60 W
VERTICAL MOVEMENT	FROM	8 JUL 87 TO 26 JUN 89	719 DAYS	DIST =	.03 FT		
RESULTANT	FROM	8 JUL 87 TO 26 JUN 89	719 DAYS	DIP =	9 DEG	2 MIN	UP

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN P 3B
FB 4205-268

DATE	COORDINATES	ELEV.	HORIZONTAL	MOVEMENT	RATE	VERTICAL	MOVNT	DIP
DA MON YR	NORTH	EAST	DIST	BEARING	TIME	ELEV	TIME	DG MN
			FT	DG MN	DAYS	DIFF	DAYS	DG MN
29 MAR 90	4018526.14	4174399.97	.080	S 82 52 E	606	.05	606	31 48 UP
25 NOV 91	4018526.13	4174400.05						

015 .08E

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT	FROM 29 MAR 90 TO 25 NOV 91	606 DAYS	DIST =	.080 FT	BEARING =	S 82 52 E
VERTICAL MOVEMENT	FROM 29 MAR 90 TO 25 NOV 91	606 DAYS	DIST =	.05 FT		
RESULTANT	FROM 29 MAR 90 TO 25 NOV 91	606 DAYS	DIP =	31 DEG 48 MIN	UP	

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN P 4A
FB 2485-018

DATE		COORDINATES		ELEV.	HORIZONTAL		MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP	
DA	MON	VR	NORTH		DIST FT	BEARING DG MN					DG	MN
21	AUG	75	4018277.10	4175047.06		.134 S 26 34 E	810	.000				
8	NOV	77	4018276.98	4175047.12	305.26	.723 S 11 9 W	371	.001				
14	NOV	78	4018276.27	4175046.98		.567 S 40 43 W	167	.003				
30	APR	79	4018275.84	4175046.61		.910 S 8 50 W	184	.004				
31	OCT	79	4018274.94	4175046.47		.130 S 67 23 E	43	.003				
13	DEC	79	4018274.89	4175046.59		.370 S 1 33 E	69	.005				
20	FEB	80	4018274.52	4175046.60		.396 S 49 5 W	64	.006				
24	APR	80	4018274.26	4175046.30		.050 N 53 8 W	21	.002				
15	MAY	80	4018274.29	4175046.26		.396 S 10 10 E	89	.004				
12	AUG	80	4018273.90	4175046.33		.390 N 90 W	9	.043	-.30	1017	5	12 DN
21	AUG	80	4018273.90	4175045.94	304.96	.294 S 80 13 E	56	.005				
16	OCT	80	4018273.85	4175046.23		.036 S 33 41 W	33	.001				
18	NOV	80	4018273.82	4175046.21		.092 S 49 24 W	79	.001				
5	FEB	81	4018273.76	4175046.14		.220 S 87 24 W	6	.036	-.02	174	7	32 DN
11	FEB	81	4018273.75	4175045.92	304.94	.194 S 78 7 E	41	.004				
24	MAR	81	4018273.71	4175046.11		.156 S 63 26 W	10	.015	-.04	51	18	19 DN
3	APR	81	4018273.64	4175045.97	304.90	.186 S 74 29 W	124	.001	.04	124	12	5 UP
5	AUG	81	4018273.59	4175045.79	304.94	.272 S 72 54 E	251	.001	-.07	251	14	26 DN
13	APR	82	4018273.51	4175046.05	304.87	.203 S 11 19 W	217	.000	.01	217	2	48 UP
16	NOV	82	4018273.31	4175046.01	304.88	.453 S 48 35 W	294	.001	-.02	294	2	32 DN
6	SEP	83	4018273.01	4175045.67	304.86	N 90	199			199		
23	MAR	84	4018273.01	4175045.67	304.86	.290 S 1 58 E	287	.001	-.07	287	13	34 DN
4	JAN	85	4018272.72	4175045.68	304.79	.240 S 4 46 E	248	.000				
9	SEP	85	4018272.48	4175045.70		.070 N 44 60 W	142	.000	-.06	390	17	19 DN
29	JAN	86	4018272.53	4175045.65	304.73	.180 S 19 26 W	363	.000		363		
27	JAN	87	4018272.36	4175045.59	304.73							

PORT BN P 4A
FB 2485-018

DATE		COORDINATES		ELEV.	DIST	HORIZONTAL BEARING	MOVEMENT TIME	RATE	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP
DA	MON YR	NORTH	EAST		FT	DG MN	DAYS	FT/DA		DAYS	DG MN
27 JAN 87		36	59	304.73	.022	S 63 26 E	162	.000	-.03	162	53 18 DN
8 JUL 87		4018272.35	4175045.61	304.70	.020	N 90 W	243	.000	-.09	243	77 28 DN
7 MAR 88		4018272.35	4175045.59	304.61	.130	S 67 23 W	476	.000	.14	476	47 7 UP
26 JUN 89		4018272.30	4175045.47	304.75	.022	S 63 26 E	276	.000	-.05	276	65 54 DN
29 MAR 90		4018272.29	4175045.49	304.70	.050	S 78 41 E	606	.000	.03	606	30 28 UP
25 NOV 91		4018272.28	4175045.54	304.73							

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT	FROM 21 AUG 75 TO 25 NOV 91	5940 DAYS	DIST =	5.053 FT	BEARING = S 17 30 W
VERTICAL MOVEMENT	FROM 8 NOV 77 TO 25 NOV 91	5130 DAYS	DIST =	-.53 FT	
RESULTANT	FROM 8 NOV 77 TO 25 NOV 91	5130 DAYS	DIP =	6 DEG	6 MIN DN

2.6" ~~deposit of~~ 1985

$$\begin{array}{r} 26 \\ 11 \overline{) 26} \\ \underline{26} \\ 0 \end{array}$$

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN PB 1
FB 4319-187

DATE DA MON YR	COORDINATES		ELEV.	HORIZONTAL		MOVEMENT	RATE	VERTICAL	MOVNT	DIP
	NORTH	EAST		DIST FT	BEARING DG MN	TIME DAYS	FT/DA	ELEV DIFF	TIME DAYS	DG MN
21 AUG 80	4018459.36	4175146.26	306.57	.200	S 2 52 W	174	.001	-.04	174	11 18 DN
11 FEB 81	4018459.16	4175146.25	306.53		N 90	51		.01	51	90 UP
3 APR 81	4018459.16	4175146.25	306.54	.147	S 28 18 W	124	.001		124	
5 AUG 81	4018459.03	4175146.18	306.54	.133	S 12 59 W	246	.000	-.11	246	39 30 DN
8 APR 82	4018458.90	4175146.15	306.43	.040	S	222	.000	.02	222	26 34 UP
16 NOV 82	4018458.86	4175146.15	306.45	.510	S	294	.001		294	
6 SEP 83	4018458.35	4175146.15	306.45	.360	S 1 35 E	500	.000	-.03	500	4 46 DN
18 JAN 85	4018457.99	4175146.16	306.42	.056	N 44 60 E	382	.000	-.05	382	41 29 DN
4 FEB 86	4018458.03	4175146.20	306.37	.472	S 53 37 W	519	.000	-.03	519	3 38 DN
8 JUL 87	4018457.75	4175145.82	306.34	.277	S 59 45 E	719	.000	.06	719	12 11 UP
26 JUN 89	4018457.61	4175146.06	306.40	.090	S 6 20 W	276	.000	-.11	276	50 32 DN
29 MAR 90	4018457.52	4175146.05	306.29	.111	N 63 26 E	606	.000	.14	606	51 23 UP
25 NOV 91	4018457.57	4175146.15	306.43							

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT FROM 21 AUG 80 TO 25 NOV 91 4113 DAYS DIST = 1.793 FT BEARING = S 3 31 W
 VERTICAL MOVEMENT FROM 21 AUG 80 TO 25 NOV 91 4113 DAYS DIST = -.14 FT
 RESULTANT FROM 21 AUG 80 TO 25 NOV 91 4113 DAYS DIP = 4 DEG 28 MIN DN

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN PB 2
FB 4319-187

DATE DA MON YR	COORDINATES		ELEV.	HORIZONTAL		MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP DG MN
	NORTH	EAST		DIST FT	BEARING DG MN					
21 AUG 80	4018305.82	4175209.63	300.64	.191	S 6 W	174	.001	.06	174	17 26 UP
11 FEB 81	4018305.63	4175209.61	300.70	.144	S 33 41 E	51	.002	-.09	51	31 58 DN
3 APR 81	4018305.51	4175209.69	300.61	.193	S 68 45 W	124	.001		124	
5 AUG 81	4018305.44	4175209.51	300.61	.151	S 7 36 W	246	.000	-.13	246	40 40 DN
8 APR 82	4018305.29	4175209.49	300.48	.042	S 44 60 W	222	.000	.01	222	13 16 UP
16 NOV 82	4018305.26	4175209.46	300.49	.532	S 5 23 E	294	.001	-.09	294	9 36 DN
6 SEP 83	4018304.73	4175209.51	300.40	.361	S 4 46 W	500	.000	-.11	500	16 56 DN
18 JAN 85	4018304.37	4175209.48	300.29	.056	S 44 60 W	382	.000	-.10	382	60 30 DN
4 FEB 86	4018304.33	4175209.44	300.19	.316	S 34 42 W	519	.000	-.03	519	5 25 DN
8 JUL 87	4018304.07	4175209.26	300.16							

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT FROM 21 AUG 80 TO 8 JUL 87 2512 DAYS DIST = 1.788 FT BEARING = S 11 56 W
VERTICAL MOVEMENT FROM 21 AUG 80 TO 8 JUL 87 2512 DAYS DIST = -.48 FT
RESULTANT FROM 21 AUG 80 TO 8 JUL 87 2512 DAYS DIP = 15 DEG 1 MIN DN

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN PB 3
FB 4319-187

DATE DA MON YR	COORDINATES NORTH	EAST	ELEV.	HORIZONTAL DIST FT	BEARING DG MN	MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP DG MN
21 AUG 80	4017760.96	4175035.53	191.52	.212	S 81 52 W	174	.001	.02	174	5 23 UP
11 FEB 81	4017760.93	4175035.32	191.54	.130	S	51	.002	.02	51	8 45 UP
3 APR 81	4017760.80	4175035.32	191.56	.261	S 83 25 W	124	.002	.01	124	2 11 UP
5 AUG 81	4017760.77	4175035.06	191.57	.189	S 71 34 W	246	.000	.02	246	6 1 UP
8 APR 82	4017760.71	4175034.88	191.59	.078	N 50 12 W	225	.000	-.01	225	7 18 DN
19 NOV 82	4017760.76	4175034.82	191.58	.467	S 48 28 W	291	.001	.06	291	7 19 UP
6 SEP 83	4017760.45	4175034.47	191.64	.302	S 55 47 W	500	.000	.05	500	9 23 UP
18 JAN 85	4017760.28	4175034.22	191.69	.203	S 78 41 W	382	.000	.02	382	5 36 UP
4 FEB 86	4017760.24	4175034.02	191.71	.362	S 62 1 W	519	.000	-.03	519	4 44 DN
8 JUL 87	4017760.07	4175033.70	191.68							

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT FROM 21 AUG 80 TO 8 JUL 87 2512 DAYS DIST = 2.034 FT BEARING = S 64 04 W
 VERTICAL MOVEMENT FROM 21 AUG 80 TO 8 JUL 87 2512 DAYS DIST = .16 FT
 RESULTANT FROM 21 AUG 80 TO 8 JUL 87 2512 DAYS DIP = 4 DEG 30 MIN UP

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN PB 4
FB 4319-187

DATE DA MON YR	COORDINATES		ELEV.	DIST FT	HORIZONTAL BEARING DG MN	MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP DG MN
21 AUG 80	4018074.75	4174743.38	171.60	.110	S 84 48 W	174	.000	-.02	174	10 16 DN
11 FEB 81	4018074.74	4174743.27	171.58	.053	S 21 48 E	51	.001	.02	51	20 22 UP
3 APR 81	4018074.69	4174743.29	171.60	.250	S 85 26 W	124	.002	-.01	124	2 17 DN
5 AUG 81	4018074.67	4174743.04	171.59	.072	S 15 57 W	246	.000	-.01	246	7 49 DN
8 APR 82	4018074.60	4174743.02	171.58	.121	N 9 28 W	222	.000	-.02	222	9 20 DN
16 NOV 82	4018074.72	4174743.00	171.56	.304	S 48 59 W	294	.001	-.01	294	1 53 DN
6 SEP 83	4018074.52	4174742.77	171.55	.136	S 72 54 W	500	.000		500	
18 JAN 85	4018074.48	4174742.64	171.55	.253	S 80 55 W	382	.000		382	
4 FEB 86	4018074.44	4174742.39	171.55	.286	S 60 45 W	519	.000	-.06	519	11 50 DN
8 JUL 87	4018074.30	4174742.14	171.49					.01	995	
29 MAR 90			171.50					.07	606	
25 NOV 91			171.57							

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT FROM 21 AUG 80 TO 8 JUL 87 2512 DAYS DIST = 1.319 FT BEARING = S 70 03 W
 VERTICAL MOVEMENT FROM 21 AUG 80 TO 25 NOV 91 4113 DAYS DIST = -.03 FT
 RESULTANT FROM 21 AUG 80 TO 8 JUL 87 2512 DAYS DIP = 4 DEG 46 MIN DN

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN PB 5
FB 4319-187

DATE DA MON YR	COORDINATES		ELEV.	DIST FT	HORIZONTAL BEARING DG MN	MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP DG MN
21 AUG 80	4018674.09	4175408.11	287.56	.348	S 39 10 W	174	.002	-.04	174	6 33 DN
11 FEB 81	4018673.82	4175407.89	287.52	.036	S 33 41 W	51	.000	.03	51	39 46 UP
3 APR 81	4018673.79	4175407.87	287.55	.125	S 28 36 W	124	.001	-.02	124	9 4 DN
5 AUG 81	4018673.68	4175407.81	287.53	.140	S	246	.000	-.13	246	42 53 DN
8 APR 82	4018673.54	4175407.81	287.40	.086	S 54 28 W	222	.000	.05	222	30 10 UP
16 NOV 82	4018673.49	4175407.74	287.45	.435	S 31 52 E	294	.001	-.03	294	3 56 DN
6 SEP 83	4018673.12	4175407.97	287.42	.554	S 27 57 W	500	.001	-.05	500	5 9 DN
18 JAN 85	4018672.63	4175407.71	287.37	.214	N 62 14 E	382	.000	-.06	382	15 37 DN
4 FEB 86	4018672.73	4175407.90	287.31	.667	S 60 22 W	519	.001	-.01	519	51 DN
8 JUL 87	4018672.40	4175407.32	287.30							

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT FROM 21 AUG 80 TO 8 JUL 87 2512 DAYS DIST = 1.865 FT BEARING = S 25 03 W
 VERTICAL MOVEMENT FROM 21 AUG 80 TO 8 JUL 87 2512 DAYS DIST = -.26 FT
 RESULTANT FROM 21 AUG 80 TO 8 JUL 87 2512 DAYS DIP = 7 DEG 56 MIN DN

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN PB 6
FB 4319-187

DATE DA MON YR	COORDINATES		ELEV.	HORIZONTAL		MOVEMENT	RATE	VERTICAL	MVNT	DIP
	NORTH	EAST		DIST FT	BEARING DG MN	TIME DAYS	FT/DA	ELEV DIFF	TIME DAYS	DG MN
21 AUG 80	4018860.60	4175191.60	256.33	.448	S 51 20 E	174	.002	-.04	174	5 6 DN
11 FEB 81	4018860.32	4175191.95	256.29	.076	N 66 48 W	51	.001	.01	51	7 29 UP
3 APR 81	4018860.35	4175191.88	256.30	.122	S 34 60 W	124	.000	.01	124	4 41 UP
5 AUG 81	4018860.25	4175191.81	256.31	.145	S 15 57 W	246	.000	-.15	246	45 51 DN
8 APR 82	4018860.11	4175191.77	256.16	.076	S 23 12 W	222	.000	.08	222	46 25 UP
16 NOV 82	4018860.04	4175191.74	256.24	.370	S 18 55 E	294	.001	-.01	294	1 33 DN
6 SEP 83	4018859.69	4175191.86	256.23	.581	S 28 46 W	500	.001	-.05	500	4 55 DN
18 JAN 85	4018859.18	4175191.58	256.18	.205	N 43 1 E	382	.000	-.06	382	16 18 DN
4 FEB 86	4018859.33	4175191.72	256.12	.688	S 62 19 W	519	.001	-.01	519	50 DN
8 JUL 87	4018859.01	4175191.11	256.11							

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT FROM 21 AUG 80 TO 8 JUL 87 2512 DAYS DIST = 1.663 FT BEARING = S 17 07 W
 VERTICAL MOVEMENT FROM 21 AUG 80 TO 8 JUL 87 2512 DAYS DIST = -.22 FT
 RESULTANT FROM 21 AUG 80 TO 8 JUL 87 2512 DAYS DIP = 7 DEG 32 MIN DN

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKSPORT BN PB 7
FB 4319-187

DATE DA MON YR	COORDINATES NORTH EAST	ELEV.	HORIZONTAL DIST FT	BEARING DG MN	MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP DG MN
21 AUG 80	4018451.83 4175473.53	279.28	.468	S 19 59 W	174	.002	-.14	174	16 39 DN
11 FEB 81	4018451.39 4175473.37	279.14	.044	S 26 34 W	51	.000	-.02	51	24 6 DN
3 APR 81	4018451.35 4175473.35	279.12	.191	S 6 W	124	.001	-.04	124	11 49 DN
5 AUG 81	4018451.16 4175473.33	279.08	.294	S 9 47 E	246	.001	-.23	246	38 DN
8 APR 82	4018450.87 4175473.38	278.85	.090	N 83 40 W	222	.000	.03	222	18 20 UP
16 NOV 82	4018450.88 4175473.29	278.88	.733	S 27 37 E	294	.002	-.18	294	13 47 DN
6 SEP 83	4018450.23 4175473.63	278.70	.616	S 16 58 W	500	.001	-.18	500	16 16 DN
18 JAN 85	4018449.64 4175473.45	278.52	.233	S 80 8 E	382	.000	-.12	382	27 12 DN
4 FEB 86	4018449.60 4175473.68	278.40	.667	S 49 52 W	519	.001	-.12	519	10 12 DN
8 JUL 87	4018449.17 4175473.17	278.28							

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT	FROM 21 AUG 80 TO 8 JUL 87	2512 DAYS	DIST =	2.684 FT	BEARING =	S 7 42 W
VERTICAL MOVEMENT	FROM 21 AUG 80 TO 8 JUL 87	2512 DAYS	DIST =	-1.00 FT		
RESULTANT	FROM 21 AUG 80 TO 8 JUL 87	2512 DAYS	DIP =	20 DEG 26 MIN	DN	

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN PB10
FB 2849-090

DATE DA MON YR	COORDINATES NORTH	EAST	ELEV.	DIST FT	HORIZONTAL BEARING DG MN	MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP DG MN
15 JAN 57	4019500.00	4173400.00	279.53		N 90	7608		.13	7608	90 UP
14 NOV 77	4019500.00	4173400.00	279.66		N 90	322		.06	322	90 UP
2 OCT 78	4019500.00	4173400.00	279.72		N 90	25		-.01	25	90 DN
27 OCT 78	4019500.00	4173400.00	279.71		N 90	18			18	
14 NOV 78	4019500.00	4173400.00	279.71		N 90	167		.01	167	90 UP
30 APR 79	4019500.00	4173400.00	279.72		N 90	184		.01	184	90 UP
31 OCT 79	4019500.00	4173400.00	279.73		N 90	43		-.05	43	90 DN
13 DEC 79	4019500.00	4173400.00	279.68		N 90	71		.13	71	90 UP
22 FEB 80	4019500.00	4173400.00	279.81 X		N 90	62		-.10	62	90 DN
24 APR 80	4019500.00	4173400.00	279.71		N 90	22		.01	22	90 UP
16 MAY 80	4019500.00	4173400.00	279.72		N 90	88		-.01	88	90 DN
12 AUG 80	4019500.00	4173400.00	279.71		N 90	177		-.01	177	90 DN
5 FEB 81	4019500.00	4173400.00	279.70		N 90	47		.03	47	90 UP
24 MAR 81	4019500.00	4173400.00	279.73		N 90	134		-.05	134	90 DN
5 AUG 81	4019500.00	4173400.00	279.68		N 90	251		-.04	251	90 DN
13 APR 82	4019500.00	4173400.00	279.64		N 90	218			218	
17 NOV 82	4019500.00	4173400.00	279.64		N 90	293		.02	293	90 UP
6 SEP 83	4019500.00	4173400.00	279.66		N 90			-.02	2396	
29 MAR 90			279.64					.03	606	
25 NOV 91			279.67							

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT FROM 15 JAN 57 TO 6 SEP 83 9730 DAYS DIST = .000 FT BEARING = N 90 00

VERTICAL MOVEMENT FROM 15 JAN 57 TO 25 NOV 91 2732 DAYS DIST = .14 FT

RESULTANT FROM 15 JAN 57 TO 6 SEP 83 9730 DAYS DIP = 90 DEG 0 MIN UP

Handwritten notes:
 1940
 68 ± .05
 34
 73 and .64
 .67
 64
 20
 1940
 1940

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PROGRAM EK11AP
12/30/91

PORT BN PI 1A
FB 2849-089

DATE DA MON YR	COORDINATES NORTH EAST	ELEV.	DIST FT	HORIZONTAL BEARING DG MN	MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP DG MN
18 JUL 62	4019600.00 4174300.00	333.70	4	N 90	5920		-0.17	5920	90 DN
275 2 OCT 78	4019600.00 4174300.00	333.53	1978	N 90	28		-0.07	28	90 DN
303 30 OCT 78	4019600.00 4174300.00	333.46		N 90	15		-0.02	15	90 DN
316 14 NOV 78	4019600.00 4174300.00	333.44		N 90	167		-0.36	167	90 DN
2030 APR 79	4019600.00 4174300.00	333.08		N 90	184		-0.70	184	90 DN
2431 OCT 79	4019600.00 4174300.00	332.38		N 90	43		-0.20	43	90 DN
347 13 DEC 79	4019600.00 4174300.00	332.18		N 90	71		-0.33	71	90 DN
53 22 FEB 80	4019600.00 4174300.00	331.85	153	N 90	62		-0.53	62	90 DN
45 24 APR 80	4019600.00 4174300.00	331.32		N 90	22			22	
126 16 MAY 80	4019600.00 4174300.00	331.32		N 90	101		-0.19	101	90 DN
337 25 AUG 80	4019600.00 4174300.00	331.13	33	N 90	164		-0.14	164	90 DN
36 5 FEB 81	4019600.00 4174300.00	330.99		N 90	47			47	
23 24 MAR 81	4019600.00 4174300.00	330.99		N 90	134		-0.10	134	90 DN
27 5 AUG 81	4019600.00 4174300.00	330.89		N 90	251		-0.05	251	90 DN
10313 APR 82	4019600.00 4174300.00	330.84		N 90	218		-0.03	218	90 DN
2017 NOV 82	4019600.00 4174300.00	330.81		N 90	293		-0.22	293	90 DN
249 6 SEP 83	4019600.00 4174300.00	330.59		N 90	883		-0.26	883	90 DN
36 5 FEB 86	4019600.00 4174300.00	330.33		N 90	761		-0.07	761	90 DN
12 6 7 MAR 88	4019600.00 4174300.00	330.26	330.29 ± .04	N 90	476		-0.01	476	90 DN
177 26 JUN 89	4019600.00 4174300.00	330.25	current 330.31	N 90			.08	276	
2-88 29 MAR 90		330.33					-0.02	606	
13 30 25 NOV 91		330.31							

225

During the last 5 measurements the movement has been
stable
330.29 ± .04
330.29 ± .04
Most recent measurement is 330.31

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PROGRAM EK11AP
12/30/91

PORT BN PI 1A
FB 2849-089

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT	FROM 18 JUL 62 TO 26 JUN 89	9840 DAYS	DIST =	.000 FT	BEARING = N 90 00
VERTICAL MOVEMENT	FROM 18 JUL 62 TO 25 NOV 91	0722 DAYS	DIST =	-3.39 FT	
RESULTANT	FROM 18 JUL 62 TO 26 JUN 89	9840 DAYS	DIP =	90 DEG 0 MIN	DN

3.4 Ft

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN PI 3A
FB 2849-089

DATE DA MON YR	COORDINATES NORTH EAST	ELEV.	DIST FT	HORIZONTAL BEARING DG MN	MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP DG MN
27 NOV 63	4020100.00 4174200.00	372.96		N 90	5101		.10	5101	90 UP
14 NOV 77	4020100.00 4174200.00	373.06		N 90	322		-.04	322	90 DN
2 OCT 78	4020100.00 4174200.00	373.02		N 90	28		-.02	28	90 DN
30 OCT 78	4020100.00 4174200.00	373.00		N 90	15		-.01	15	90 DN
14 NOV 78	4020100.00 4174200.00	372.99		N 90	167		.05	167	90 UP
30 APR 79	4020100.00 4174200.00	373.04		N 90	184		-.01	184	90 DN
31 OCT 79	4020100.00 4174200.00	373.03		N 90	43		-.06	43	90 DN
13 DEC 79	4020100.00 4174200.00	372.97		N 90	71		.12	71	90 UP
22 FEB 80	4020100.00 4174200.00	373.09		N 90	62		-.13	62	90 DN
24 APR 80	4020100.00 4174200.00	372.96		N 90	22		.06	22	90 UP
16 MAY 80	4020100.00 4174200.00	373.02		N 90	101		.09	101	90 UP
25 AUG 80	4020100.00 4174200.00	373.11		N 90	164		-.11	164	90 DN
5 FEB 81	4020100.00 4174200.00	373.00		N 90	47		.04	47	90 UP
24 MAR 81	4020100.00 4174200.00	373.04		N 90	134		-.05	134	90 DN
5 AUG 81	4020100.00 4174200.00	372.99		N 90	252		-.02	252	90 DN
14 APR 82	4020100.00 4174200.00	372.97		N 90	217		.01	217	90 UP
17 NOV 82	4020100.00 4174200.00	372.98		N 90	293			293	
6 SEP 83	4020100.00 4174200.00	372.98		N 90	883		-.02	883	90 DN
5 FEB 86	4020100.00 4174200.00	372.96		N 90	761		-.05	761	90 DN
7 MAR 88	4020100.00 4174200.00	372.91		N 90	476		.03	476	90 UP
26 JUN 89	4020100.00 4174200.00	372.94		N 90			.10	276	
29 MAR 90		373.04					-.01	606	
25 NOV 91		373.03							

18 values

373.00 ± .04

373.03

28 years

the initial elevation

372.96 and 11

elevation fit within this

Stable

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PROGRAM EK11AP
12/30/91

PORT BN PI 3A
FB 2849-089

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT	FROM 27 NOV 63 TO 26 JUN 89	9343 DAYS	DIST =	.000 FT	BEARING = N 90 00
VERTICAL MOVEMENT	FROM 27 NOV 63 TO 25 NOV 91	0225 DAYS	DIST =	.07 FT	
RESULTANT	FROM 27 NOV 63 TO 26 JUN 89	9343 DAYS	DIP =	90 DEG 0 MIN	DN

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKSPORT BN Q 1
FB 949-195

DATE		COORDINATES		ELEV.	HORIZONTAL		MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP	
DA	MON YR	NORTH	EAST		DIST FT	BEARING DG MN					DG	MN
18 JUN 57		4018708.43	4173035.75		.460	S	6785	.000				
15 JAN 76		4018707.97	4173035.75			N 90	4					
19 JAN 76		4018707.97	4173035.75	145.32		N 90	29		-.01	29	90	DN
17 FEB 76		4018707.97	4173035.75	145.31		N 90	29			29		
17 MAR 76		4018707.97	4173035.75	145.31		N 90	29			29	90	DN
15 APR 76		4018707.97	4173035.75	145.30		N 90	55		-.01	55	90	UP
9 JUN 76		4018707.97	4173035.75	145.31		N 90	78		.01	78		
26 AUG 76		4018707.97	4173035.75	145.31	.050	N 36 52 W	60	.000	.02	60	21 48	UP
25 OCT 76		4018708.01	4173035.72	145.33		N 90	77			77		
10 JAN 77		4018708.01	4173035.72	145.33	.089	N 63 26 W	122	.000	-.01	122	6 23	DN
12 MAY 77		4018708.05	4173035.64	145.32		N 90	75			75		
26 JUL 77		4018708.05	4173035.64	145.32	.094	S 18 26 W	112	.000	-.01	112	6 1	DN
15 NOV 77		4018707.96	4173035.61	145.31	.142	N 50 43 E	72	.001	.05	72	19 23	UP
26 JAN 78		4018708.05	4173035.72	145.36	.098	S 44 60 E	273	.000				
26 OCT 78		4018707.98	4173035.79		.053	N 68 12 W	6	.008				
1 NOV 78		4018708.00	4173035.74		.100	N 36 52 W	13	.007	-.13	292	68 58	DN
14 NOV 78		4018708.08	4173035.68	145.23	.022	N 26 34 W	22	.001				
6 DEC 78		4018708.10	4173035.67		.060	S 9 28 W	145	.000	-.01	167	12 36	DN
30 APR 79		4018708.04	4173035.66	145.22	.215	N 68 12 E	184	.001	.04	184	10 31	UP
31 OCT 79		4018708.12	4173035.86	145.26	.022	N 63 26 E	43	.000	-.04	43	60 48	DN
13 DEC 79		4018708.13	4173035.88	145.22	.108	N 56 19 E	70	.001	.14	70	52 19	UP
21 FEB 80		4018708.19	4173035.97	145.36	.319	S 69 52 W	63	.005	-.13	63	22 8	DN
24 APR 80		4018708.08	4173035.67	145.23	.041	N 75 58 E	21	.001	.01	21	13 38	UP
15 MAY 80		4018708.09	4173035.71	145.24	.276	N 49 24 E	89	.003	-.01	89	2 4	DN
12 AUG 80		4018708.27	4173035.92	145.23			65	.001		65		
16 OCT 80		4018708.19	4173035.92	145.23	.080	S						

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN Q 1
FB 949-195

DATE DA MON YR	COORDINATES NORTH	EAST	ELEV.	DIST FT	HORIZONTAL BEARING DG MN	MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MOVNT TIME DAYS	DIP DG MN
16 OCT 80	19	92	145.23	.143	S 24 46 W	33	.004	-.01	33	3 60 DN
18 NOV 80	4018708.06	4173035.86	145.22	.010	N 90 W	79	.000	.01	79	44 60 UP
5 FEB 81	4018708.06	4173035.85	145.23	.089	N 26 34 W	47	.001	.02	47	12 36 UP
24 MAR 81	4018708.14	4173035.81	145.25	.116	S 30 58 E	134	.000	-.03	134	14 25 DN
5 AUG 81	4018708.04	4173035.87	145.22	.022	N 26 34 W		.022			
5 AUG 81	4018708.06	4173035.86	145.22	.058	N 30 58 W	251	.000	-.01	251	9 44 DN
13 APR 82	4018708.11	4173035.83	145.21	.042	S 44 60 E	220	.000	.03	220	35 16 UP
19 NOV 82	4018708.08	4173035.86	145.24	.264	S 24 37 W	291	.000	-.03	291	6 29 DN
6 SEP 83	4018707.84	4173035.75	145.21	.014	S 44 60 E	199	.000	.02	199	54 44 UP
23 MAR 84	4018707.83	4173035.76	145.23	.110	N 5 12 E	287	.000		287	
4 JAN 85	4018707.94	4173035.77	145.23	.416	N 35 13 E	248	.001	-.45	248	47 14 DN
9 SEP 85	4018708.28	4173036.01	144.78	.086	N 54 28 W	142	.000	.04	142	24 56 UP
29 JAN 86	4018708.33	4173035.94	144.82	.050	N 53 8 E	363	.000	-.03	363	30 58 DN
27 JAN 87	4018708.36	4173035.98	144.79	.082	S 14 2 W	405	.000	-.06	405	36 2 DN
7 MAR 88	4018708.28	4173035.96	144.73	.111	S 10 18 W	476	.000	.10	476	41 49 UP
26 JUN 89	4018708.17	4173035.94	144.83	.089	N 26 34 W	276	.000	-.09	276	45 11 DN
29 MAR 90	4018708.25	4173035.90	144.74	.050	S 53 8 E	606	.000	.01	606	11 19 UP
25 NOV 91	4018708.22	4173035.94	144.75							

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT FROM 18 JUN 57 TO 25 NOV 91 2578 DAYS DIST = .283 FT BEARING = S 42 08 E
 VERTICAL MOVEMENT FROM 19 JAN 76 TO 25 NOV 91 5789 DAYS DIST = -.57 FT
 RESULTANT FROM 19 JAN 76 TO 25 NOV 91 5789 DAYS DIP = 61 DEG 9 MIN DN

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN Q 1A
FB 2485-028

PROGRAM EK11AP
12/30/91

DATE DA MON YR	COORDINATES		ELEV.	DIST FT	HORIZONTAL BEARING DG MN	MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	VERTICAL ELEV DIFF	DIP DG MN
	NORTH	EAST								
15 JAN 76	4018468.74	4173414.82			N 90	2				
17 JAN 76	4018468.74	4173414.82	69.94		N 90	2		-.01		90 DN
19 JAN 76	4018468.74	4173414.82	69.93	.020	N 90	58	.000			
17 MAR 76	4018468.74	4173414.84	69.93	.044	S 63 26 W	27	.001			
13 APR 76	4018468.72	4173414.80	69.93	.060	N 90	57	.001	.01		9 28 UP
9 JUN 76	4018468.72	4173414.86	69.94	.022	N 63 26 W	78	.000	-.03		53 18 DN
26 AUG 76	4018468.73	4173414.84	69.91	.010	N	67	.000	.04		75 58 UP
1 NOV 76	4018468.74	4173414.84	69.95	.044	S 26 34 E	70	.000	-.02		24 6 DN
10 JAN 77	4018468.70	4173414.86	69.93	.110	N 90	122	.000	.02		10 18 UP
12 MAY 77	4018468.70	4173414.75	69.95	.060	S 9 28 W	75	.000			
26 JUL 77	4018468.64	4173414.74	69.95	.014	S 44 60 W	112	.000	-.04		70 32 DN
15 NOV 77	4018468.63	4173414.73	69.91	.104	N 73 18 E	72	.001	.11		46 30 UP
26 JAN 78	4018468.66	4173414.83	70.02	.342	S 37 52 W	273	.001			
26 OCT 78	4018468.39	4173414.62		.076	S 23 12 W	6	.012			
1 NOV 78	4018468.32	4173414.59		.028	N 44 60 W	13	.002			
14 NOV 78	4018468.34	4173414.57		.064	S 51 20 W	22	.002			
6 DEC 78	4018468.30	4173414.52		.466	S 35 24 W	145	.003			
30 APR 79	4018467.92	4173414.25		1.944	S 30 15 W	184	.010			
31 OCT 79	4018466.24	4173413.27		.632	S 31 26 W	43	.014			
13 DEC 79	4018465.70	4173412.94		1.382	S 31 23 W	69	.020			
20 FEB 80	4018464.52	4173412.22		1.605	S 43 44 W	64	.025			
24 APR 80	4018463.36	4173411.11		.244	S 34 60 W	21	.011			
15 MAY 80	4018463.16	4173410.97		.439	S 41 18 W	89	.004			
12 AUG 80	4018462.83	4173410.68		.685	S 33 41 W	177	.003	-.97	1106	7 3 DN
5 FEB 81	4018462.26	4173410.30	69.05	.206	S 39 6 W	47	.004	-.33	47	58 DN
24 MAR 81	4018462.10	4173410.17	68.72							

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN Q 1A
FB 2485-028

DATE		COORDINATES		ELEV.	HORIZONTAL		MOVEMENT		RATE	VERTICAL	MOVNT	DIP
DA	MON YR	NORTH	EAST		DIST	BEARING	TIME	FT/DA	ELEV	TIME	DAYS	DG MN
24	MAR 81	10	17	68.72	.218	S 15 57 W	134	.001	.21	134	134	43 53 UP
5	AUG 81	4018461.89	4173410.11	68.93	.102	S 29 3 W	232	.000	-.26	232	232	68 24 DN
25	MAR 82	4018461.80	4173410.06	68.67	.148	S 70 21 W	239	.000	.21	239	239	54 42 UP
19	NOV 82	4018461.75	4173409.92	68.88	1.356	S 29 35 W	291	.004	.19	291	291	7 58 UP
6	SEP 83	4018460.57	4173409.25	69.07	.396	S 33 41 W	199	.001	.09	199	199	12 47 UP
23	MAR 84	4018460.24	4173409.03	69.16	.344	S 25 49 W	287	.001	.05	287	287	8 15 UP
4	JAN 85	4018459.93	4173408.88	69.21	.042	S 44 60 E	248	.000	.07	248	248	58 47 UP
9	SEP 85	4018459.90	4173408.91	69.28	.053	S 68 12 W	142	.000	.07	142	142	52 26 UP
29	JAN 86	4018459.88	4173408.86	69.35	.418	N 56 41 E	363	.001	.02	363	363	2 44 UP
27	JAN 87	4018460.11	4173409.21	69.37	.530	S 47 17 W	405	.001	-.26	405	405	26 6 DN
7	MAR 88	4018459.75	4173408.82	69.11	.241	S 29 45 W	476	.000	.09	476	476	20 25 UP
26	JUN 89	4018459.54	4173408.70	69.20	.050	N 11 19 E	276	.000	.29	276	276	80 2 UP
29	MAR 90	4018459.59	4173408.71	69.49	.072	N 56 19 E	606	.000	-.23	606	606	72 36 DN
25	NOV 91	4018459.63	4173408.77	69.26								

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT	FROM 15 JAN 76 TO 25 NOV 91	5793 DAYS	DIST =	10.935 FT	BEARING =	S 33 35 W
VERTICAL MOVEMENT	FROM 17 JAN 76 TO 25 NOV 91	5791 DAYS	DIST =	-.68 FT		
RESULTANT	FROM 17 JAN 76 TO 25 NOV 91	5791 DAYS	DIP =	3 DEG 33 MIN	DN	

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN Q 2
FB 949-199

DATE DA MON YR	COORDINATES NORTH	EAST	ELEV.	DIST FT	HORIZONTAL BEARING DG MN	MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP DG MN
18 JUN 57	4018228.60	4173796.47		4.076	S 31 40 W	6789	.000			
19 JAN 76	4018225.13	4173794.33	69.28	.100	S 53 8 W	58	.001	-.02	58	11 19 DN
17 MAR 76	4018225.07	4173794.25	69.26	.070	S 44 60 W	27	.002	-.01	27	8 3 DN
13 APR 76	4018225.02	4173794.20	69.25	.020	N 90 E	57	.000		57	
9 JUN 76	4018225.02	4173794.22	69.25	.070	S 44 60 W	78	.000	-.03	78	22 59 DN
26 AUG 76	4018224.97	4173794.17	69.22	.128	N 38 40 E	67	.001	.04	67	17 21 UP
1 NOV 76	4018225.07	4173794.25	69.26	.264	S 37 18 W	70	.003	-.03	70	6 29 DN
10 JAN 77	4018224.86	4173794.09	69.23	.277	S 64 22 W	122	.002	-.02	122	4 7 DN
12 MAY 77	4018224.74	4173793.84	69.21	.044	S 26 34 W	76	.000	.01	76	12 36 UP
27 JUL 77	4018224.70	4173793.82	69.22	.178	S 38 9 W	111	.001	-.13	111	36 8 DN
15 NOV 77	4018224.56	4173793.71	69.09	.350	S 36 52 W	72	.004	.09	72	14 25 UP
26 JAN 78	4018224.28	4173793.50	69.18	3.494	S 43 9 W	273	.012			
26 OCT 78	4018221.73	4173791.11		.402	S 34 52 W	6	.067			
1 NOV 78	4018221.40	4173790.88		.223	S 63 26 W	13	.017			
14 NOV 78	4018221.30	4173790.68		.297	S 42 16 W	22	.013			
6 DEC 78	4018221.08	4173790.48		4.143	S 41 46 W	145	.028			
30 APR 79	4018217.99	4173787.72		5.204	S 39 47 W	184	.028			
31 OCT 79	4018213.99	4173784.39		.992	S 40 55 W	43	.023			
13 DEC 79	4018213.24	4173783.74		2.765	S 38 59 W	69	.040			
20 FEB 80	4018211.09	4173782.00		4.075	S 41 7 W	64	.063			
24 APR 80	4018208.02	4173779.32		.500	S 36 52 W	21	.023			
15 MAY 80	4018207.62	4173779.02		1.058	S 39 15 W	89	.011			
12 AUG 80	4018206.80	4173778.35		.990	S 38 2 W	177	.005	-2.97	1106	7 1 DN
5 FEB 81	4018206.02	4173777.74	66.21	.292	S 51 57 W	47	.006	-.15	47	27 11 DN
24 MAR 81	4018205.84	4173777.51	66.06	.393	S 27 13 W	134	.002	-.09	134	12 53 DN
5 AUG 81	4018205.49	4173777.33	65.97							

515 5410 = 7427 ft = 2.9 miles
15 NOV 77 4018224.56 4173793.71 2.76 = 489
26 JAN 78 4018224.28 4173793.50 2.76 = 5.24
26 OCT 78 4018221.73 4173791.11 4.32

12 Aug 80 - 27 Jan 81 4.42
3.50 = 5.64' 538.4 W
4/16 9 077

PORT BN Q 2
FB 949-199

DATE		-COORDINATES		ELEV.	HORIZONTAL		MOVEMENT		RATE	VERTICAL	VMNT	DIP
DA	MON	VR	NORTH	EAST		DIST	BEARING	TIME	FT/DA	ELEV	TIME	DG MN
						FT	DG MN	DAYS		DIFF	DAYS	
5	AUG	81	49	33	65.97	.226	S 48 35 W	232	.000	.05	232	12 26
25	MAR	82	4018205.34	4173777.16	66.02	.200	S 53 8 W	239	.000	-.08	239	21 48
19	NOV	82	4018205.22	4173777.00	65.94	2.397	S 38 44 W	291	.008	-.13	291	3 6
6	SEP	83	4018203.35	4173775.50	65.81	.690	S 38 32 W	199	.003	-.14	199	11 28
23	MAR	84	4018202.81	4173775.07	65.67	.474	S 42 26 W	287	.001	-.05	287	6 1
4	JAN	85	4018202.46	4173774.75	65.62	.174	S 30 58 W	248	.000	-.05	248	15 57
9	SEP	85	4018202.31	4173774.66	65.57	.070	N 44 60 W	142	.000	.07	142	44 43
29	JAN	86	4018202.36	4173774.61	65.64	.240	N 85 14 E	363	.000	-.05	363	11 44
27	JAN	87	4018202.38	4173774.85	65.59	.516	S 58 28 W	405	.001	-.13	405	14 8
7	MAR	88	4018202.11	4173774.41	65.46	.122	S 34 60 W	476	.000	1910	476	
26	JUN	89	4018202.01	4173774.34	65.46	.106	N 41 11 W	276	.000	.36	276	73 33
29	MAR	90	4018202.09	4173774.27	65.82	.113	S 44 60 E	606	.000	-.18	606	57 51
25	NOV	91	4018202.01	4173774.35	65.64							DN

***** TOTAL MOVEMENT VECTOR *****

	FROM	18 JUN 57	TO 25 NOV 91	2578 DAYS	DIST =	34.587 FT	BEARING = S 39 45 W
HORIZONTAL MOVEMENT	FROM	18 JUN 57	TO 25 NOV 91	2578 DAYS	DIST =	34.587 FT	BEARING = S 39 45 W
VERTICAL MOVEMENT	FROM	19 JAN 76	TO 25 NOV 91	5789 DAYS	DIST =	-3.64 FT	
RESULTANT	FROM	19 JAN 76	TO 25 NOV 91	5789 DAYS	DIP =	6 DEG 48 MIN	DN

525

$$\begin{array}{r} 9.32 \\ 4.35 \\ \hline 8.07 \end{array} \quad \begin{array}{r} 4.97 \\ 4.97 \\ \hline 9.94 \end{array}$$

(c) q_{eff}

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PROGRAM EK11AP
12/30/91

PORT BN Q 3
FB 949-199

DATE DA MON YR	COORDINATES NORTH	EAST	ELEV.	HORIZONTAL DIST FT	BEARING DG MN	MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MTNT TIME DAYS	DIP DG MN
18 JUN 57	4017902.97	4174312.72		2.696	S 32 16 W	6787	.000			
→ 17 JAN 76	4017900.69	4174311.28	82.71		N 90	3		.01	3	90 UP
20 JAN 76	4017900.69	4174311.28	82.72	.050	N 36 52 E	57	.000	-.02	57	21 48 DN
17 MAR 76	4017900.73	4174311.31	82.70	.082	S 75 58 W	27	.003	.16	27	62 44 UP
13 APR 76	4017900.71	4174311.23	82.86	.070	N 90 E	57	.001	-.17	57	67 37 DN
9 JUN 76	4017900.71	4174311.30	82.69	.050	S 78 41 W	78	.000	-.02	78	21 25 DN
26 AUG 76	4017900.70	4174311.25	82.67	.067	N 63 26 E	67	.001	.03	67	24 6 UP
1 NOV 76	4017900.73	4174311.31	82.70	.214	S 52 36 W	70	.003	-.03	70	7 59 DN
10 JAN 77	4017900.60	4174311.14	82.67	.120	N 90 W	122	.000	-.01	122	4 46 DN
12 MAY 77	4017900.60	4174311.02	82.66	.080	S 29 45 W	75	.001		75	
26 JUL 77	4017900.53	4174310.98	82.66	.072	S 74 3 W	112	.000	-.08	112	47 42 DN
→ 15 NOV 77	4017900.51	4174310.91	82.58	.120	S 41 38 W	72	.001	.05	72	22 33 UP
26 JAN 78	4017900.42	4174310.83	82.63	1.647	S 56 53 W	273	.006			
26 OCT 78	4017899.52	4174309.45		.290	S 46 24 W	6	.048			
1 NOV 78	4017899.32	4174309.24		.121	S 80 32 W	13	.009			
14 NOV 78	4017899.30	4174309.12		.194	S 55 29 W	22	.008			
6 DEC 78	4017899.19	4174308.96		2.593	S 48 45 W	145	.017			
30 APR 79	4017897.48	4174307.01		4.285	S 44 15 W	227	.018			
13 DEC 79	4017894.41	4174304.02		1.874	S 43 29 W	69	.027			
20 FEB 80	4017893.05	4174302.73		2.658	S 44 60 W	64	.041			
24 APR 80	4017891.17	4174300.85		.794	S 68 36 W	21	.037			
15 MAY 80	4017890.88	4174300.11		.571	S 4 1 W	89	.006			
→ 12 AUG 80	4017890.31	4174300.07		.664	S 46 13 W	177	.003	-3.16	1106	11 34 DN
5 FEB 81	4017889.85	4174299.59	79.47	.178	S 63 26 W	47	.003	-.11	47	31 35 DN
24 MAR 81	4017889.77	4174299.43	79.36	.300	S 29 59 W	134	.002	-.01	134	1 54 DN
5 AUG 81	4017889.51	4174299.28	79.35							

211.40 = 0.452 ft = 5.42 inches

→

2.46
2.51
1.81 = 3.65
1.89 = 3.14

12 Aug 80 → 27 Jan 87 2.638 2.87 = 3.89' S47.5° W

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN Q 3
FB 949-199

DATE DA MON YR	COORDINATES NORTH EAST	ELEV.	DIST FT	HORIZONTAL BEARING DG MN	MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	TIME DAYS	DIP DG MN
5 AUG 81	51 28	79.35	.181	N 83 40 W	232	.000	-.05	232	15 26 DN
25 MAR 82	4017889.53 4174299.10	79.30	.234	S 19 59 W	239	.000	-.05	239	12 3 DN
19 NOV 82	4017889.31 4174299.02	79.25	1.400	S 45 35 W	291	.004	-.13	291	5 18 DN
6 SEP 83	4017888.33 4174298.02	79.12	.438	S 55 13 W	199	.002	-.09	199	11 36 DN
23 MAR 84	4017888.08 4174297.66	79.03	.368	S 40 36 W	287	.001	-.04	287	6 11 DN
4 JAN 85	4017887.80 4174297.42	78.99	.098	S 66 2 W	248	.000	-.03	248	16 56 DN
9 SEP 85	4017887.76 4174297.33	78.96	.067	N 63 26 W	142	.000	.03	142	24 6 UP
29 JAN 86	4017887.79 4174297.27	78.99	.130	S 32 28 W	363	.000	-.02	363	8 43 DN
27 JAN 87	4017887.68 4174297.20	78.97	.085	N 69 27 W	405	.000	-.17	405	63 19 DN
7 MAR 88	4017887.71 4174297.12	78.80	.134	S 26 34 W	476	.000	.04	476	16 36 UP
26 JUN 89	4017887.59 4174297.06	78.84	.100	S	276	.000	.41	276	76 18 UP
29 MAR 90	4017887.49 4174297.06	79.25	.133	N 12 59 W	606	.000	-.25	606	61 55 DN
25 NOV 91	4017887.62 4174297.03	79.00							

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT	FROM 18 JUN 57 TO 25 NOV 91	2578 DAYS	DIST =	21.949 FT	BEARING =	S 45 38 W
VERTICAL MOVEMENT	FROM 17 JAN 76 TO 25 NOV 91	5791 DAYS	DIST =	-3.71 FT		
RESULTANT	FROM 17 JAN 76 TO 25 NOV 91	5791 DAYS	DIP =	10 DEG 51 MIN	DN	

.184 39 = 0.4295 ft/yr
0.062 ft/yr = 0.747 inches/yr
365.25

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN Q 4
FB 949-199

DATE DA MON YR	COORDINATES		ELEV.	HORIZONTAL		MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL		DIP
	NORTH	EAST		DIST FT	BEARING DG MN			ELEV DIFF	MVNT TIME DAYS	
18 JUN 57	4017656.85	4174702.92								
21 JAN 63	4017657.21	4174700.74		2.209	N 80 37 W	2043	.001			

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT FROM 18 JUN 57 TO 21 JAN 63 2043 DAYS DIST = 2.209 FT BEARING = N 80 37 W

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PROGRAM EK11AP
12/30/91

PORT BN Q 4A
FB 2485-008

DATE DA MON YR	COORDINATES NORTH	EAST	ELEV.	DIST FT	HORIZONTAL BEARING DG MN	MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP DG MN
15 JAN 76	4017657.21	4174700.74			N 90	5				
20 JAN 76	4017657.21	4174700.74	215.95		N 90	28				
17 FEB 76	4017657.21	4174700.74	215.95	.290	N 86 3 W	328	.000	.04	328	7 50 UP
10 JAN 77	4017657.23	4174700.45	215.99	.171	N 83 17 W	122	.001	.03	122	9 56 UP
12 MAY 77	4017657.25	4174700.28	216.02		N 90	75		.03	75	90 UP
26 JUL 77	4017657.25	4174700.28	216.05	.158	N 71 34 W	113	.001	.01	113	3 37 UP
16 NOV 77	4017657.30	4174700.13	216.06	.041	N 75 58 W	72	.000	-.01	72	13 38 DN
27 JAN 78	4017657.31	4174700.09	216.05							

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT FROM 15 JAN 76 TO 27 JAN 78 743 DAYS DIST = .657 FT BEARING = N 81 15 W
 VERTICAL MOVEMENT FROM 20 JAN 76 TO 27 JAN 78 738 DAYS DIST = .10 FT
 RESULTANT FROM 20 JAN 76 TO 27 JAN 78 738 DAYS DIP = 8 DEG 39 MIN UP

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PROGRAM EK11AP
12/30/91

PORT BN Q 4B
FB 2485-008

DATE DA MON YR	COORDINATES NORTH	EAST	ELEV.	DIST FT	HORIZONTAL BEARING DG MN	MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP DG MN
15 JAN 76	4017677.83	4174668.10			N 90	5				
20 JAN 76	4017677.83	4174668.10	201.00		N 90	28			28	
17 FEB 76	4017677.83	4174668.10	201.00	.178	S 63 26 W	328	.000	.02	328	6 23 UP
10 JAN 77	4017677.75	4174667.94	201.02	.130	N 90 W	122	.001	.03	122	12 59 UP
12 MAY 77	4017677.75	4174667.81	201.05		N 90	75		.02	75	90 UP
26 JUL 77	4017677.75	4174667.81	201.07	.193	N 68 45 W	113	.001	.02	113	5 55 UP
16 NOV 77	4017677.82	4174667.63	201.09	.053	N 68 12 W	72	.000	-.01	72	10 31 DN
27 JAN 78	4017677.84	4174667.58	201.08							

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT FROM 15 JAN 76 TO 27 JAN 78 743 DAYS DIST = .520 FT BEARING = N 88 54 W
 VERTICAL MOVEMENT FROM 20 JAN 76 TO 27 JAN 78 738 DAYS DIST = .08 FT
 RESULTANT FROM 20 JAN 76 TO 27 JAN 78 738 DAYS DIP = 8 DEG 45 MIN UP

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN Q 5
FB 2485-025

DATE DA MON YR	COORDINATES		ELEV.	DIST FT	HORIZONTAL BEARING DG MN	MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP DG MN
15 JAN 76	4017629.70	4174744.37	231.09		N 90	5				
20 JAN 76	4017629.70	4174744.37	231.10		N 90	28		.01	28	90 UP
17 FEB 76	4017629.70	4174744.37	231.09		N 90	30		-.01	30	90 DN
18 MAR 76	4017629.70	4174744.37	231.09		N 90	28			28	
15 APR 76	4017629.70	4174744.37	231.09		N 90	55		.02	55	90 UP
9 JUN 76	4017629.70	4174744.37	231.11	.060	N 90 W	78	.000		78	
26 AUG 76	4017629.70	4174744.31	231.11	.130	S 32 28 W	60	.002	.03	60	12 57 UP
25 OCT 76	4017629.59	4174744.24	231.14		N 90	77		-.01	77	90 DN
10 JAN 77	4017629.59	4174744.24	231.13	.181	N 83 40 W	122	.001	.03	122	9 24 UP
12 MAY 77	4017629.61	4174744.06	231.16		N 90	76	.587	.02	76	90 UP
27 JUL 77	4017629.61	4174744.06	231.18	.126	N 71 34 W	112	.001	.01	112	4 31 UP
16 NOV 77	4017629.65	4174743.94	231.19	.044	S 63 26 W	72	.000	.01	72	12 36 UP
27 JAN 78	4017629.63	4174743.90	231.20	1.040	N 89 27 W	272	.003			
26 OCT 78	4017629.64	4174742.86		.020	N	6	.585	.08	278	4 23 UP
1 NOV 78	4017629.66	4174742.86	231.28	.139	S 68 58 W	13	.010		13	
14 NOV 78	4017629.61	4174742.73	231.28	.126	N 18 26 W	22	.005			
6 DEC 78	4017629.73	4174742.69		.794	N 84 13 W	145	.005	.15	167	9 58 UP
30 APR 79	4017629.81	4174741.90	231.43	.812	S 80 4 W	184	.004	.20	184	13 50 UP
31 OCT 79	4017629.67	4174741.10	231.63	.147	N 61 42 W	43	.003	.08	43	28 27 UP
13 DEC 79	4017629.74	4174740.97	231.71	.390	N 88 32 W	70	.005	.06	70	8 44 UP
21 FEB 80	4017629.75	4174740.58	231.77	.605	N 82 24 W	63	.009	.03	63	2 50 UP
24 APR 80	4017629.83	4174739.98	231.80	.080	N 82 52 W	21	.003	.03	21	20 25 UP
15 MAY 80	4017629.84	4174739.90	231.83	.210	S 84 34 W	89	.002	.05	89	13 20 UP
12 AUG 80	4017629.82	4174739.69	231.88	.210	S 87 16 W	65	.003	.04	65	10 46 UP
16 OCT 80	4017629.81	4174739.48	231.92	.072	S 56 19 W	33	.002		33	
18 NOV 80	4017629.77	4174739.42	231.92							

N 106 130

1085 1.25

1018 1.72

1038 1.55

12 Aug 80 → 8 Jul 89 .035 2.41 = 2.41' 589.36

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN Q 5
FB 2485-025

DATE DA MON YR	COORDINATES NORTH EAST	ELEV.	DIST FT	HORIZONTAL BEARING DG MN	MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	VERTICAL ELEV DIFF	VERTICAL ELEV DIFF	DIP DG MN
→ 18 NOV 80	29.77 39.42	231.92	.086	N 35 32 W	79	.001	.04	.04	.04	24 56 UP
5 FEB 81	4017629.84 4174739.37	231.96	.160	N 86 25 W	47	.003	.04	.04	.04	14 1 UP
24 MAR 81	4017629.85 4174739.21	232.00	.180	S 56 19 W	134	.001	.01	.01	.01	3 10 UP
5 AUG 81	4017629.75 4174739.06	232.01	.010	N		.010				
→ 5 AUG 81	4017629.76 4174739.06	232.01	.205	N 60 57 W	251	.000	.05	.05	.05	13 39 UP
13 APR 82	4017629.86 4174738.88	232.06	.164	S 75 58 W	220	.000				220
→ 19 NOV 82	4017629.82 4174738.72	232.06	.622	S 85 23 W	291	.002	.14	.14	.14	291
6 SEP 83	4017629.77 4174738.10	232.20	.219	N 65 46 W	199	.001	.08	.08	.08	199
→ 23 MAR 84	4017629.86 4174737.90	232.28	.231	S 82 34 W	287	.000	.23	.23	.23	287
→ 4 JAN 85	4017629.83 4174737.67	232.51	.085	S 69 27 W	248	.000	.04	.04	.04	248
9 SEP 85	4017629.80 4174737.59	232.55	.120	N 85 14 W	142	.000	-.20	-.20	-.20	142
→ 29 JAN 86	4017629.81 4174737.47	232.35	.196	S 75 15 W	363	.000	.01	.01	.01	363
→ 27 JAN 87	4017629.76 4174737.28	232.36	.030	N	162	.000				162
8 JUL 87	4017629.79 4174737.28	232.36	.044	N 63 26 W	243	.000	.02	.02	.02	243
→ 7 MAR 88	4017629.81 4174737.24	232.38	.110	N 84 48 W	476	.000	.05	.05	.05	476
→ 26 JUN 89	4017629.82 4174737.13	232.43	.031	N 71 34 W	276	.000				276
→ 29 MAR 90	4017629.83 4174737.10	232.43	.036	S 56 19 W	606	.000	.03	.03	.03	606
→ 25 NOV 91	4017629.81 4174737.07	232.46								39 46 UP

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT FROM 15 JAN 76 TO 25 NOV 91 5793 DAYS DIST = 7.300 FT BEARING = N 89 08 W

VERTICAL MOVEMENT FROM 20 JAN 76 TO 25 NOV 91 5788 DAYS DIST = 1.37 FT

RESULTANT FROM 20 JAN 76 TO 25 NOV 91 5788 DAYS DIP = 10 DEG 38 MIN UP

$0.2 + .60 = 0.60033$ $0.87 \text{ ft/mgr} = 1.044 \text{ in/mgr}$

988.1W

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKSPORT BN TBM 31
FB 2849-090

DATE DA MON YR	COORDINATES NORTH	EAST	ELEV.	DIST FT	HORIZONTAL BEARING DG MN	MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MYNT TIME DAYS	DIP DG MN
26 OCT 78	4018895.32	4173287.46	167.18	.060	N 80 32 W	6	.010			
1 NOV 78	4018895.33	4173287.40		.102	N 60 57 W	13	.007		19	
14 NOV 78	4018895.38	4173287.31	167.18	.040	N 90 W	167	.000	-.03	167	36 52 DN
30 APR 79	4018895.38	4173287.27	167.15	.300	N 60 1 E	184	.001	.04	184	7 35 UP
31 OCT 79	4018895.53	4173287.53	167.19	.100	S 36 52 E	43	.002	-.04	43	21 48 DN
13 DEC 79	4018895.45	4173287.59	167.15	.106	N 48 49 E	69	.001	.05	69	25 11 UP
20 FEB 80	4018895.52	4173287.67	167.20	.354	S 73 37 W	64	.005	-.05	64	8 2 DN
24 APR 80	4018895.42	4173287.33	167.15	.080	N 60 15 E	21	.003	.01	21	7 4 UP
15 MAY 80	4018895.46	4173287.40	167.16	.248	N 49 54 E	89	.002	.02	89	4 36 UP
12 AUG 80	4018895.62	4173287.59	167.18	.094	S 18 26 W	65	.001	-.01	65	6 1 DN
16 OCT 80	4018895.53	4173287.56	167.17	.082	S 14 2 W	33	.002	-.01	33	6 55 DN
18 NOV 80	4018895.45	4173287.54	167.16	.078	S 50 12 W	79	.000	.01	79	7 18 UP
5 FEB 81	4018895.40	4173287.48	167.17	.085	N 20 33 W	47	.001	.01	47	6 40 UP
24 MAR 81	4018895.48	4173287.45	167.18	.107	S 68 12 E	134	.000	-.01	134	5 18 DN
5 AUG 81	4018895.44	4173287.55	167.17	.092	N 49 24 W	251	.000	-.01	251	6 11 DN
13 APR 82	4018895.50	4173287.48	167.16	.053	S 21 48 W	220	.000		220	
19 NOV 82	4018895.45	4173287.46	167.16	.208	S 16 42 W	291	.000	.01	291	2 44 UP
6 SEP 83	4018895.25	4173287.40	167.17	.014	N 44 60 W	199	.000	.01	199	35 16 UP
23 MAR 84	4018895.26	4173287.39	167.18	.106	N 41 11 E	287	.000	-.02	287	10 39 DN
4 JAN 85	4018895.34	4173287.46	167.16	.202	N 57 6 E	248	.000	.02	248	5 38 UP
9 SEP 85	4018895.45	4173287.63	167.18	.086	N 54 28 W	141	.000		141	
28 JAN 86	4018895.50	4173287.56	167.18	.094	N 57 60 E	364	.000	-.02	364	11 58 DN
27 JAN 87	4018895.55	4173287.64	167.16							

23
+2.025

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN TBM 31
FB 2849-090

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT	FROM 26 OCT 78 TO 27 JAN 87	3015 DAYS	DIST =	.292 FT	BEARING = N 38 03 E
VERTICAL MOVEMENT	FROM 26 OCT 78 TO 27 JAN 87	3015 DAYS	DIST =	-.02 FT	
RESULTANT	FROM 26 OCT 78 TO 27 JAN 87	3015 DAYS	DIP =	3 DEG 55 MIN	DN

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN TBM 31A
FB 4205-191

DATE	COORDINATES	ELEV.	DIST	HORIZONTAL BEARING	MOVEMENT TIME	RATE	VERTICAL ELEV DIFF	MVNT TIME	DIP
DA MON YR	NORTH	EAST	FT	DG MN	DAYS	FT/DA		DAYS	DG MN
7 MAR 88	4018892.73	4173314.85							
			166.51						

***** TOTAL MOVEMENT VECTOR *****

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN TBM 31B
FB 4205-228

DATE		COORDINATES		ELEV.	HORIZONTAL		MOVEMENT		VERTICAL		DIP
DA	MON VR	NORTH	EAST		DIST FT	BEARING DG MN	TIME DAYS	RATE FT/DA	ELEV DIFF	TIME DAYS	
26	JUN 89	4018886.05	4173325.18	166.58							

***** TOTAL MOVEMENT VECTOR *****

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN TBM 31C
FB 4205-267

DATE	COORDINATES	ELEV.	DIST	HORIZONTAL BEARING	MOVEMENT TIME	RATE	VERTICAL ELEV DIFF	MOVNT TIME	DIP
DA MON YR	NORTH	EAST	FT	DG MN	DAYS	FT/DA		DAYS	DG MN
29 MAR 90	4018881.86	4173319.07							
25 NOV 91	4018881.89	4173319.15	.085	N 69 27 E	606	.000	.05	606	30 20 UP

08 →

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT	FROM 29 MAR 90 TO 25 NOV 91	606 DAYS	DIST =	.085 FT	BEARING = N 69 27 E
VERTICAL MOVEMENT	FROM 29 MAR 90 TO 25 NOV 91	606 DAYS	DIST =	.05 FT	
RESULTANT	FROM 29 MAR 90 TO 25 NOV 91	606 DAYS	DIP =	30 DEG 20 MIN	UP

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKSPORT BN WF
FB 2849-136

DATE DA MON YR	COORDINATES NORTH EAST	ELEV.	DIST FT	HORIZONTAL BEARING DG MN	MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP DG MN
26 OCT 78	4019015.21 X 4173519.15	213.35	.058	N 59 2 W	6	.009			
1 NOV 78	4019015.24 X 4173519.10		.085	N 69 27 W	13	.006	.01	19	3 60 UP
14 NOV 78	4019015.27 4173519.02	213.36	.022	N 26 34 W	167	.000	-.23	167	84 27 DN
30 APR 79	4019015.29 4173519.01	213.13	.271	N 83 40 E	184	.001	.24	184	41 27 UP
31 OCT 79	4019015.32 4173519.28	213.37	.060	N 80 32 E	43	.001	-.05	43	39 25 DN
13 DEC 79	4019015.33 4173519.34	213.32	.260	N 87 48 W	133	.001		133	
24 APR 80	4019015.34 4173519.08	213.32	.070	N 90 E	21	.003	.02	21	15 57 UP
15 MAY 80	4019015.34 4173519.15	213.34	.244	N 55 E	89	.002	.02	89	4 41 UP
12 AUG 80	4019015.48 X 4173519.35	213.36	.223	S 26 34 W	177	.001	-.01	177	2 34 DN
5 FEB 81	4019015.28 4173519.25	213.35	.085	N 20 33 W	47	.001	.01	47	6 40 UP
24 MAR 81	4019015.36 X 4173519.22	213.36	.090	S 6 20 E	134	.000	-.01	134	6 18 DN
5 AUG 81	4019015.27 4173519.23	213.35	.136	N 17 6 E	251	.000	-.02	251	8 22 DN
13 APR 82	4019015.40 X 4173519.27	213.33	.063	S 18 26 W	220	.000	.01	220	8 59 UP
19 NOV 82	4019015.34 4173519.25	213.34	.278	S 37 42 W	291	.000		291	
6 SEP 83	4019015.12 X 4173519.08	213.34	.050	N	199	.000		199	
23 MAR 84	4019015.17 X 4173519.08	213.34	.308	N 65 6 E	535	.000	-.01	535	1 51 DN
9 SEP 85	4019015.30 4173519.36	213.33	.072	N 56 19 W	141	.000		141	
28 JAN 86	4019015.34 4173519.30	213.33	.070	N 44 60 E	364	.000	-.01	364	8 3 DN
27 JAN 87	4019015.39 X 4173519.35	213.32	.094	S 18 26 W	405	.000	-.05	405	27 47 DN
7 MAR 88	4019015.30 4173519.32	213.27	.089	S 26 34 W	476	.000	.06	476	33 51 UP
26 JUN 89	4019015.22 X 4173519.28	213.33	.104	N 73 18 W	276	.000	-.01	276	5 28 DN
29 MAR 90	4019015.25 4173519.18	213.32	.123	N 75 58 E	606	.000		606	
25 NOV 91	4019015.28 4173519.30	213.32							

19 of 2-2
213.34 ± 0.023.2
3.3
3.4
3.5
3.613.30 ± 0.05
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2.2

3.0 ± 1.0

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PROGRAM EK11AP
12/30/91

PORT BN WF
FB 2849-136

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT	FROM 26 OCT 78 TO 25 NOV 91	4778 DAYS	DIST =	.165 FT	BEARING = N 64 59 E
VERTICAL MOVEMENT	FROM 26 OCT 78 TO 25 NOV 91	4778 DAYS	DIST =	-.03 FT	
RESULTANT	FROM 26 OCT 78 TO 25 NOV 91	4778 DAYS	DIP =	10 DEG 16 MIN	DN

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN WF 1
FB 2849-090

DATE DA MON YR	COORDINATES NORTH EAST	ELEV.	DIST FT	HORIZONTAL BEARING DG MN	MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP DG MN
26 OCT 78	4019125.70 4173528.12	210.45	.070	N 81 52 W	6	.011			
1 NOV 78	4019125.71 4173528.05		.086	N 54 28 W	13	.006	.02	19	7 29 UP
14 NOV 78	4019125.76 4173527.98	210.47	.022	N 63 26 W	167	.000	-.03	167	53 18 DN
30 APR 79	4019125.77 4173527.96	210.44	.320	N 90 E	184	.001	.04	184	7 8 UP
31 OCT 79	4019125.77 4173528.28	210.48	.028	N 44 60 W	43	.000	-.05	43	60 30 DN
13 DEC 79	4019125.79 4173528.26	210.43	.230	N 85 2 W	133	.001	.01	133	2 29 UP
24 APR 80	4019125.81 4173528.03	210.44	.092	N 77 28 E	21	.004	.02	21	12 14 UP
15 MAY 80	4019125.83 4173528.12	210.46	.272	N 53 58 E	89	.003		89	
12 AUG 80	4019125.99 4173528.34	210.46	.268	S 26 34 W	177	.001		177	
5 FEB 81	4019125.75 4173528.22	210.46	.089	N 26 34 W	47	.001	.01	47	6 23 UP
24 MAR 81	4019125.83 4173528.18	210.47	.056	S 44 60 E	134	.000	-.01	134	10 2 DN
5 AUG 81	4019125.79 4173528.22	210.46	.050	N 11 19 W	251	.000	-.03	251	30 28 DN
13 APR 82	4019125.84 4173528.21	210.43	.053	S 21 48 W	220	.000	.01	220	10 31 UP
19 NOV 82	4019125.79 4173528.19	210.44	.278	S 37 42 W	291	.000	.01	291	2 3 UP
6 SEP 83	4019125.57 4173528.02	210.45	.090	N	199	.000	-.01	199	6 20 DN
23 MAR 84	4019125.66 4173528.02	210.44	.326	N 66 34 E	535	.000	.01	535	1 45 UP
9 SEP 85	4019125.79 4173528.32	210.45	.053	N 68 12 W	141	.000		141	
28 JAN 86	4019125.81 4173528.27	210.45	.100	N 36 52 E	364	.000	-.01	364	5 43 DN
27 JAN 87	4019125.89 4173528.33	210.44	.111	S 26 34 W	405	.000	-.06	405	28 13 DN
7 MAR 88	4019125.79 4173528.28	210.38	.094	S 32 W	476	.000	.07	476	36 35 UP
26 JUN 89	4019125.71 4173528.23	210.45	.050	N 36 52 W	276	.000	-.01	276	11 19 DN
29 MAR 90	4019125.75 4173528.20	210.44	.063	N 71 34 E	606	.000		606	
25 NOV 91	4019125.77 4173528.26	210.44							

22 fit 210.45 ± .02
20 of 22

43 #
44 #
45 #
46 #
47 #

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210.45

PROGRAM EK11AP
12/30/91

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN WF 1
FB 2849-090

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT	FROM 26 OCT 78 TO 25 NOV 91	4778 DAYS	DIST =	.156 FT	BEARING = N 63 26 E
VERTICAL MOVEMENT	FROM 26 OCT 78 TO 25 NOV 91	4778 DAYS	DIST =	-.01 FT	
RESULTANT	FROM 26 OCT 78 TO 25 NOV 91	4778 DAYS	DIP =	3 DEG 39 MIN	DN

PROGRAM EK11AP
12/30/91

PORT BN WF 2
FB 2899-194

DATE		COORDINATES		ELEV.	HORIZONTAL BEARING		MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP
DA	MON YR	NORTH	EAST		DIST FT	DG MN					
19	FEB 74	4019001.22	4173469.67	207.45	.133	N 12 59 W	1364	.000	.04	1364	16 41 UP
14	NOV 77	4019001.35	4173469.64	207.49	.194	S 55 29 E	346	.000	-.04	346	11 38 DN
26	OCT 78	4019001.24	4173469.80	207.45	.050	N 53 8 W	6	.008			
1	NOV 78	4019001.27	4173469.76		.089	N 63 26 W	13	.006	.01	19	4 7 UP
14	NOV 78	4019001.31	4173469.68	207.46	.022	N 63 26 W	167	.000	-.03	167	53 18 DN
30	APR 79	4019001.32	4173469.66	207.43	.284	N 79 53 E	184	.001	.03	184	6 1 UP
31	OCT 79	4019001.37	4173469.94	207.46	.028	S 44 60 E	43	.000	-.05	43	60 30 DN
13	DEC 79	4019001.35	4173469.96	207.41	.240	N 87 37 W	133	.001	.01	133	2 23 UP
24	APR 80	4019001.36	4173469.72	207.42	.094	N 71 34 E	21	.004	.03	21	17 33 UP
15	MAY 80	4019001.39	4173469.81	207.45	.230	N 55 37 E	89	.002	.01	89	2 29 UP
12	AUG 80	4019001.52	4173470.00	207.46	.228	S 23 12 W	177	.001	-.01	177	2 30 DN
5	FEB 81	4019001.31	4173469.91	207.45	.098	N 23 58 W	47	.002	.02	47	11 29 UP
24	MAR 81	4019001.40	4173469.87	207.47	.090	S 6 20 E	134	.000	-.02	134	12 27 DN
5	AUG 81	4019001.31	4173469.88	207.45	.139	N 21 2 E	251	.000	-.02	251	8 10 DN
13	APR 82	4019001.44	4173469.93	207.43	.067	S 26 34 W	220	.000		220	
19	NOV 82	4019001.38	4173469.90	207.43	.266	S 34 17 W	291	.000	.02	291	4 18 UP
6	SEP 83	4019001.16	4173469.75	207.45	.036	N 33 41 W	199	.000	-.01	199	15 30 DN
23	MAR 84	4019001.19	4173469.73	207.44	.304	N 62 35 E	535	.000		535	
9	SEP 85	4019001.33	4173470.00	207.44	.064	N 38 40 W	141	.000		141	
28	JAN 86	4019001.38	4173469.96	207.44	.050	N 36 52 E	364	.000	-.01	364	11 19 DN
27	JAN 87	4019001.42	4173469.99	207.43	.094	S 18 26 W	405	.000	-.05	405	27 47 DN
7	MAR 88	4019001.33	4173469.96	207.38	.098	S 23 58 W	476	.000	.06	476	31 21 UP
26	JUN 89	4019001.24	4173469.92	207.44	.078	N 50 12 W	276	.000	-.01	276	7 18 DN
29	MAR 90	4019001.29	4173469.86	207.43	.072	S 74 3 E	606	.000	.01	606	7 49 UP
15	NOV 91	4019001.27	4173469.93	207.44	.072	S 74 3 E	606	.000	.01	606	7 49 UP

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COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN WF 2
FB 2899-194

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT	FROM 19 FEB 74 TO 25 NOV 91	6488 DAYS	DIST =	.264 FT	BEARING = N 79 07 E
VERTICAL MOVEMENT	FROM 19 FEB 74 TO 25 NOV 91	6488 DAYS	DIST =	-.01 FT	
RESULTANT	FROM 19 FEB 74 TO 25 NOV 91	6488 DAYS	DIP =	2 DEG 10 MIN	DN

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKSPORT BN WF 3
FB 4319-038

DATE DA MON YR	COORDINATES		ELEV.	HORIZONTAL BEARING		MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP	
	NORTH	EAST		DIST FT	DG MN					DG	MN
26 OCT 78	4018972.67	4173448.66	204.51	.050	N 53 8 W	6	.008				
1 NOV 78	4018972.70	4173448.62		.089	N 63 26 W	13	.006	.01	19	4	7 UP
14 NOV 78	4018972.74	4173448.54	204.52	.020	N 90 W	167	.000	-.03	167	56	19 DN
30 APR 79	4018972.74	4173448.52	204.49	.269	N 74 56 E	184	.001	.03	184	6	21 UP
31 OCT 79	4018972.81	4173448.78	204.52	.050	S 36 52 E	43	.001	-.06	43	50	12 DN
13 DEC 79	4018972.77	4173448.81	204.46	.230	N 90 W	133	.001	.04	133	9	52 UP
24 APR 80	4018972.77	4173448.58	204.50	.076	N 66 48 E	21	.003	.02	21	14	43 UP
15 MAY 80	4018972.80	4173448.65	204.52	.238	N 56 59 E	89	.002	.04	89	9	31 UP
12 AUG 80	4018972.93	4173448.85	204.56	.053	S 21 48 W	65	.000	-.03	65	29	7 DN
16 OCT 80	4018972.88	4173448.83	204.53	.136	S 36 1 W	33	.004	.01	33	4	12 UP
18 NOV 80	4018972.77	4173448.75	204.54	.044	S 26 34 W	79	.000	.01	79	12	36 UP
5 FEB 81	4018972.73	4173448.73	204.55	.082	N 14 2 W	47	.001	-.01	47	6	55 DN
24 MAR 81	4018972.81	4173448.71	204.54	.092	S 12 32 E	134	.000	-.03	134	18	1 DN
5 AUG 81	4018972.72	4173448.73	204.51	.130	N 22 37 E	251	.000	-.05	251	21	2 DN
13 APR 82	4018972.84	4173448.78	204.46	.076	S 23 12 W	220	.000		220		
19 NOV 82	4018972.77	4173448.75	204.46	.260	S 32 28 W	291	.000	.02	291	4	23 UP
6 SEP 83	4018972.55	4173448.61	204.48	.041	N 14 2 W	199	.000	.01	199	13	38 UP
23 MAR 84	4018972.59	4173448.60	204.49	.058	N 59 2 E	287	.000				
4 JAN 85	4018972.62	4173448.65		.219	N 65 46 E	248	.000				
9 SEP 85	4018972.71	4173448.85		.064	N 51 20 W	141	.000	-.01	676	2	14 DN
28 JAN 86	4018972.75	4173448.80	204.48	.067	N 63 26 E	364	.000	-.01	364	8	28 DN
27 JAN 87	4018972.78	4173448.86	204.47	.098	S 23 58 W	405	.000	-.03	405	16	56 DN
7 MAR 88	4018972.69	4173448.82	204.44	.107	S 21 48 W	476	.000	.07	476	33	1 UP
26 JUN 89	4018972.59	4173448.78	204.51	.078	N 50 12 W	276	.000		276		
29 MAR 90	4018972.64	4173448.72	204.51					-.02	606	18	26 DN
25 NOV 91	4018972.64	4173448.78	204.49	.060	N 90 E	606	.000				

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PROGRAM EK11AP
12/30/91

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN WF 3
FB 4319-038

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT	FROM 26 OCT 78 TO 25 NOV 91	4778 DAYS	DIST =	.123 FT	BEARING = S 75 58 E
VERTICAL MOVEMENT	FROM 26 OCT 78 TO 25 NOV 91	4778 DAYS	DIST =	-.02 FT	
RESULTANT	FROM 26 OCT 78 TO 25 NOV 91	4778 DAYS	DIP =	9 DEG 11 MIN	DN

Stop

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKSPORT BN WF 4
FB 4319-058

DATE DA MON YR	COORDINATES		ELEV.	HORIZONTAL		MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP	
	NORTH	EAST		DIST FT	BEARING DG MN					DG MN	
14 NOV 78	4019047.53	4173822.59	211.91	1.903	S 19 W	167	.011	-.89	167	25 3	DN
30 APR 79	4019045.73	4173821.97	211.02	2.871	S 7 W	184	.015	-.82	184	15 56	DN
31 OCT 79	4019042.88	4173821.62	210.20	2.148	S 9 22 W	110	.019	-1.04	110	25 50	DN
18 FEB 80	4019040.76	4173821.27	209.16	2.170	S 16 36 W	66	.032	-.97	66	24 5	DN
24 APR 80	4019038.68	4173820.65	208.19	.380	S 26 34 W	21	.018	-.14	21	20 13	DN
15 MAY 80	4019038.34	4173820.48	208.05	.827	S 14 42 E	89	.009	-.32	89	21 9	DN
12 AUG 80	4019037.54	4173820.69	207.73	.794	S 31 5 W	177	.004	-.17	177	12 5	DN
5 FEB 81	4019036.86	4173820.28	207.56	.121	S 9 28 W	47	.002	-.05	47	22 21	DN
24 MAR 81	4019036.74	4173820.26	207.51	.331	S 5 12 E	134	.002	-.12	134	19 54	DN
5 AUG 81	4019036.41	4173820.29	207.39	.302	S 55 47 W	251	.001	-.05	251	9 23	DN
13 APR 82	4019036.24	4173820.04	207.34	.120	S 24 27 E	220	.000	-.05	220	22 29	DN
19 NOV 82	4019036.13	4173820.09	207.29	1.555	S 17 58 W	291	.005	-.78	291	26 37	DN
6 SEP 83	4019034.65	4173819.61	206.51	.241	S 7 8 W	199	.001	-.18	199	36 39	DN
23 MAR 84	4019034.41	4173819.58	206.33	.640	S 2 41 W	677	.000	-.21	677	18 9	DN
29 JAN 86	4019033.77	4173819.55	206.12	.136	S 17 6 W	363	.000	-.11	363	38 58	DN
27 JAN 87	4019033.64	4173819.51	206.01	.060	S 80 32 E	162	.000	-.07	162	49 1	DN
8 JUL 87	4019033.63	4173819.57	205.94	.156	S 50 12 W	243	.000	-.02	243	7 18	DN
7 MAR 88	4019033.53	4173819.45	205.92	.233	S 46 44 W	476	.000	.05	476	12 5	UP
26 JUN 89	4019033.37	4173819.28	205.97	.072	N 74 3 E	276	.000	-.04	276	28 47	DN
29 MAR 90	4019033.39	4173819.35	205.93	.076	S 66 48 E	606	.000	-.02	606	14 43	DN
25 NOV 91	4019033.36	4173819.42	205.91								

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

PORT BN WF 4
FB 4319-058

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT	FROM 14 NOV 78 TO 25 NOV 91	4759 DAYS	DIST =	14.520 FT	BEARING = S 12 37 W
VERTICAL MOVEMENT	FROM 14 NOV 78 TO 25 NOV 91	4759 DAYS	DIST =	-6.00 FT	
RESULTANT	FROM 14 NOV 78 TO 25 NOV 91	4759 DAYS	DIP =	22 DEG 27 MIN	DN

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKSPORT BN WF 4A
FB 4319-058

DATE DA MON YR	COORDINATES		ELEV.	HORIZONTAL		MOVEMENT TIME DAYS	RATE FT/DA	VERTICAL ELEV DIFF	MVNT TIME DAYS	DIP	
	NORTH	EAST		DIST FT	BEARING DG MN					DG MN	
14 NOV 78	4019055.40	4173817.48	211.64	1.531	S 19 51 W	167	.009	-.37	167	13 35	DN
30 APR 79	4019053.96	4173816.96	211.27	2.523	S 7 45 W	184	.013	-.41	184	9 14	DN
31 OCT 79	4019051.46	4173816.62	210.86	2.011	S 8 17 W	113	.017				
21 FEB 80	4019049.47	4173816.33		2.197	S 18 51 W	63	.034	-1.17	176	15 36	DN
24 APR 80	4019047.39	4173815.62	209.69	.360	S 33 41 W	21	.017	-.19	21	27 47	DN
15 MAY 80	4019047.09	4173815.42	209.50	.774	S 17 16 E	89	.008	-.39	89	26 43	DN
12 AUG 80	4019046.35	4173815.65	209.11	.968	S 38 17 W	177	.005	-.06	177	3 33	DN
5 FEB 81	4019045.59	4173815.05	209.05	.140	N 85 55 E	47	.002	.22	47	57 28	UP
24 MAR 81	4019045.60	4173815.19	209.27	.342	S 6 42 E	134	.002	-.36	134	46 26	DN
5 AUG 81	4019045.26	4173815.23	208.91	.294	S 54 41 W	251	.001	-.07	251	13 23	DN
13 APR 82	4019045.09	4173814.99	208.84	.120	S 24 27 E	220	.000	-.05	220	22 29	DN
19 NOV 82	4019044.98	4173815.04	208.79	1.568	S 19 21 W	291	.005	-.59	291	20 37	DN
6 SEP 83	4019043.50	4173814.52	208.20	.240	S 4 46 W	199	.001	-.20	199	39 42	DN
23 MAR 84	4019043.26	4173814.50	208.00	.650	S 2 38 W	678	.000	-.22	678	18 41	DN
30 JAN 86	4019042.61	4173814.47	207.78	.170	S	362	.000	-.08	362	25 12	DN
27 JAN 87	4019042.44	4173814.47	207.70	.102	S 29 3 W	405	.000	-.07	405	34 13	DN
7 MAR 88	4019042.35	4173814.42	207.63					.01	752		
29 MAR 90			207.64					-.01	606		
25 NOV 91			207.63								

***** TOTAL MOVEMENT VECTOR *****

HORIZONTAL MOVEMENT	FROM 14 NOV 78 TO 7 MAR 88	3401 DAYS	DIST = 13.403 FT	BEARING = S 13 12 W
VERTICAL MOVEMENT	FROM 14 NOV 78 TO 25 NOV 91	4759 DAYS	DIST = -4.01 FT	
RESULTANT	FROM 14 NOV 78 TO 7 MAR 88	3401 DAYS	DIP = 16 DEG 39 MIN	DN