Notes Ck'd by GOSS & J.F.M.	Survey of Portuguese Bend Land Slide F. B. 2305 PG. 7
Map No. Sur. File Map 97-1	JN 0021.64 Tape 138 Std 84 °F
Office Work W.H. L.S.H. & G.D.B.	Surveyed by H.R. STOCK
Checked T.M.J. & T.H.B.	Notes STOCK Date 6-21-57
7-57	Indexed C. Johnson 6-27-57

PORTUGUESE BEND

HYDROGRAPHIC CONTROL

TRIANGULATION & TRAVERSE

...IANS

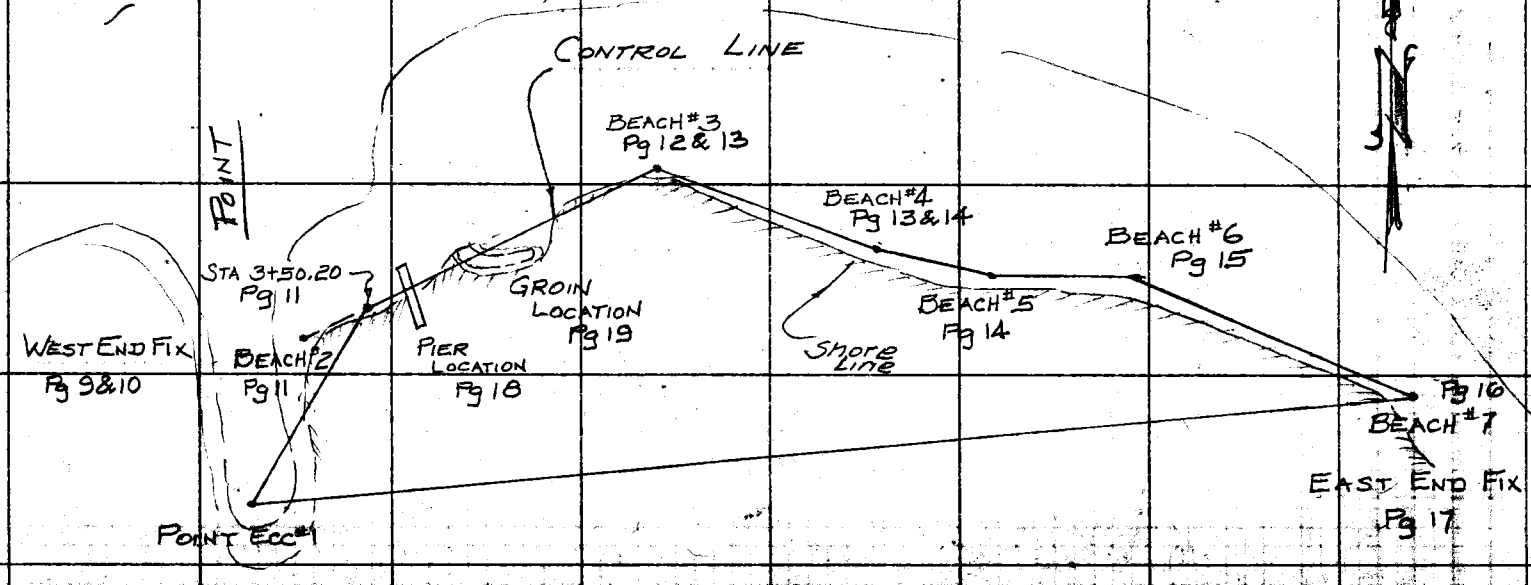
STOCK & PARTY

...on This ... in Red ... Person
LOS ANGELES COUNTY ...
700 Los ...

INDEX SKETCH

F.B. 2305 PG. 8

PORTUGUESE BEND BEACH



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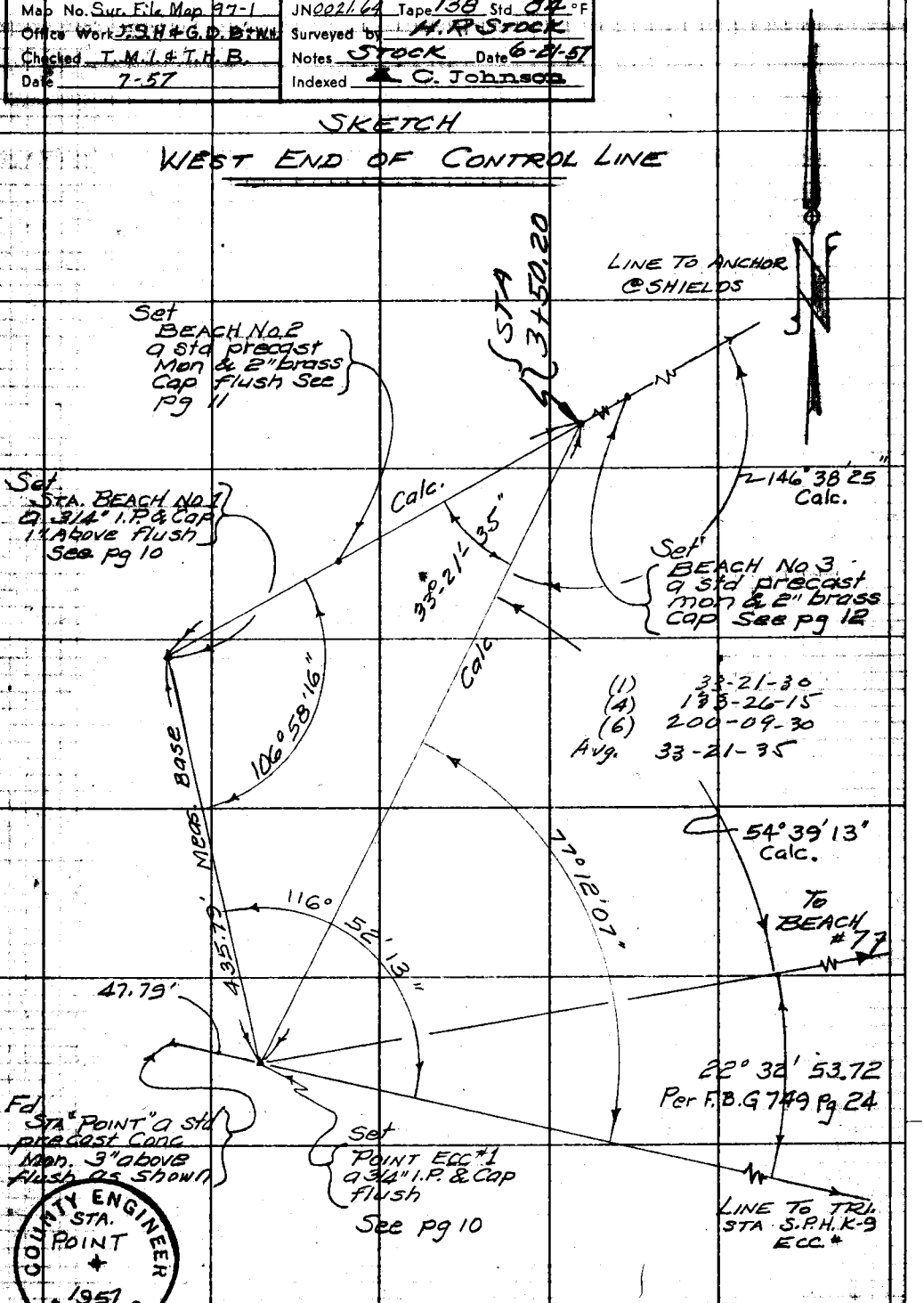
Do not extend ink into edge of this line.

Notes Ck'd by Goss + J.F.M.	Survey of Portuguese Bend Landslide F.B. 2305 Pg. 9
Map No. Sur. File Map 97-1	JN 0021.64 Tape 138 Std 84 °F
Office Work J.S.H. + G.D.B. + W.H.	Surveyed by H.R. Stock
Checked T.M.I. + T.H.B.	Notes Stock Date 6-21-57
Date 7-57	Indexed C. Johnson

SKETCH

WEST END OF CONTROL LINE



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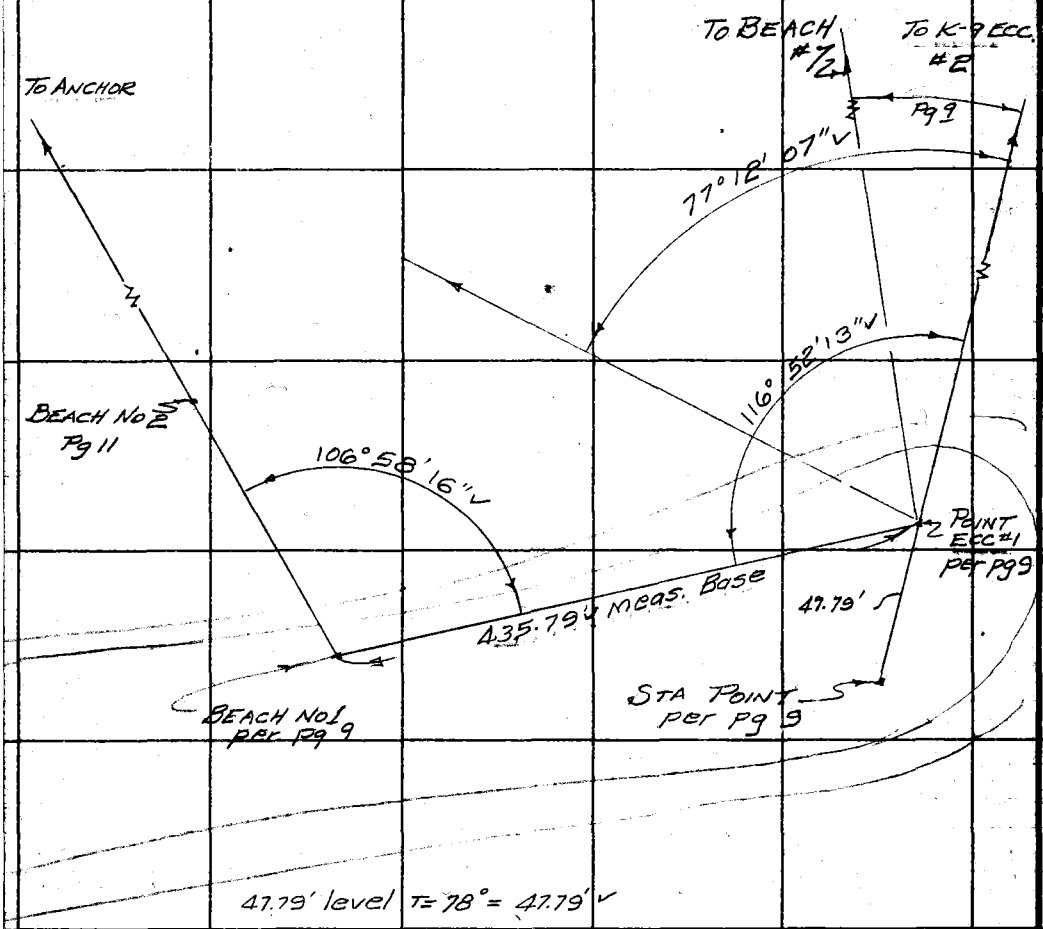
7-57 3095 SSE 1247 1-56

F. B. 2305 Pg. 10

1. 106° 58' 15"	1. 116° 52' 15"	1. 77° 12' 15"
4. 67° 53' 00"	4. 107° 29' 00"	4. 308° 48' 30"
= 106° 58' 15" V	= 116° 52' 15" V	= 77° 12' 07½" V
6. 281° 49' 30"	6. 341° 13' 15"	6. 103° 12' 45"
= 106° 58' 15" V	= 116° 52' 12½" V	= 77° 12' 07½" V
8. 135° 46' 15"	8. 214° 57' 45"	8. 257° 37' 00"
= 106° 58' 16⅞" V	= 116° 52' 13⅛" V	= 77° 12' 07½" V



47.79' level T = 78° = 47.79' V

291.57 @ 0°50' = 291.54' V		291.53
291.54 " 0°41' = 291.52' V	Av. = 291.53 V	144.28
291.57 " 0°59' = 291.53' V		435.81 V
144.62 @ 3°56' = 144.28' V	Used 144.28	-.02
144.53 @ 3°20' = 144.29' V		435.79' V

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76F309S S&E #247 1-56

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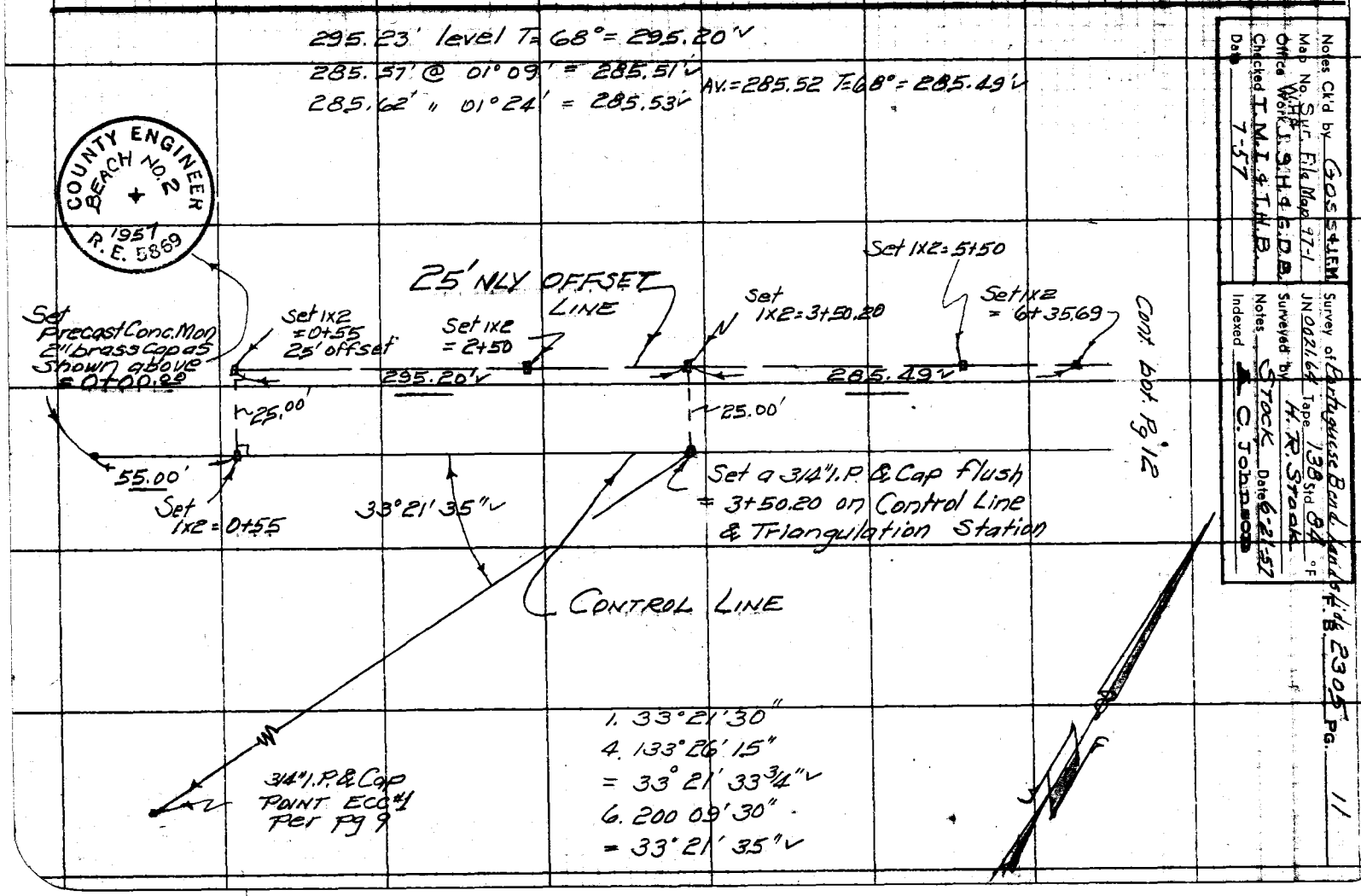

Notes Ck'd by GOSS & J.F.M.
Map No. Sur. File Map 97-1
Office W.H.& Work J.S.H. & G.D.B.
Checked T.M.I. & T.H.B.
Date 7-57

Survey of Portuguese Bend Lands Lid 2305 Pg. 11
JN 0021.64 Tape 138 Std 84 °F
Surveyed by H. R. Stock
Notes Stock Date 6-21-57
Indexed C. Johnson

99.48' level T=68° = 99.47'

57.14
220.28
139.67
88.44
112.00
16.59
634.12 level T=68° = 634.06'

F.B. 2305 Pg. 12

25' NLY OFFSET LINE

1X2 = 6+35.69

Set 1X2 = 7+35.16

Set 1X2 = 7+50

Set 1X2 = 9+50

Set 1X2 = 11+50

Set 1X2 = 13+50

285.49' — 99.47' — ~25' — 25' — 634.06'

Cont. from Top pg 11

Cont. bot pg 13

Set 3/4" I.P. & Cap flush P.O.T. = 7+35.16 on GROIN

CONTROL LINE

Set BEACH No 3 a precast Conc. Mon & 2" Brass Cap as shown below

STA = 13+69.22

COUNTY ENGINEER BEACH NO. 3 1957 R.E. 5869

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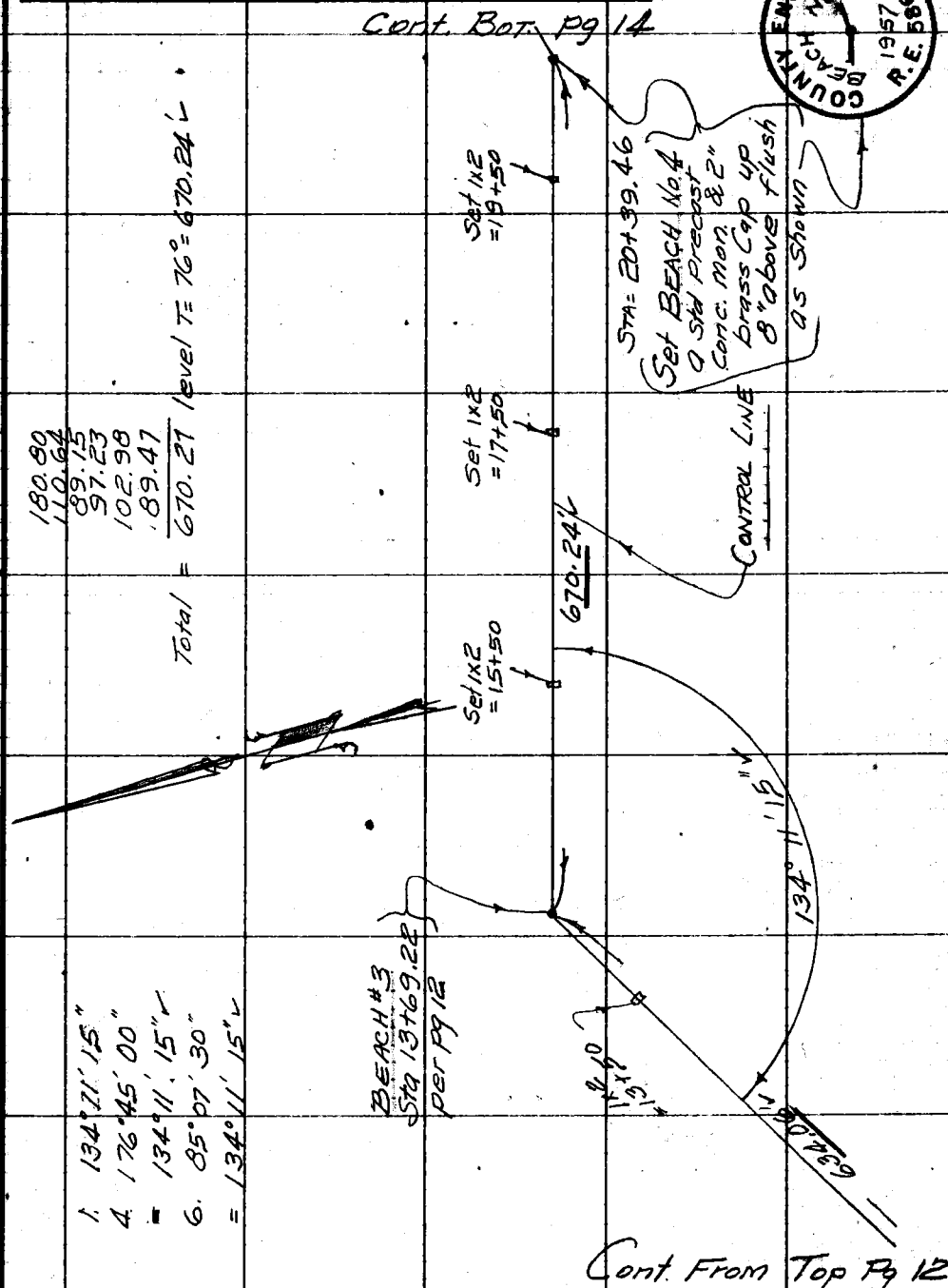
Notes Ck'd by Goss & J.F.M.	Survey of Portuguese Bend Landslide F.B. 2305 Pg. 13
Map No. Sur. F.M. 97-1	JN 0021.64 Tape #138 Std 84 °F
Office Work W.H. & J.S.H. & G.D.B.	Surveyed by H.R. STOCK
Checked T.M.I. & T.H.B.	Notes STOCK Date 6-22-57
Date 7-57	Indexed C. Johnson

COUNTY ENGINEER BEACH NO. 4 1957 R.E. 5869



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76F309S S&E #247 1-56

F. B. 2305 Pg. 14

1. 173° 22' 30"
4. 333° 30' 00"
= 173° 22' 30" ✓
6. 320° 14' 45"
= 173° 22' 27½" ✓

110.53
161.75
Total = 272.28 level T = 76° = 272.27' ✓

1. 168° 23' 45"
4. 313° 35' 30"
= 168° 23' 52½" ✓
6. 290° 23' 00"
= 168° 23' 50" ✓

173° 22' 27½" ✓

168° 23' 50" ✓

Cont From Top Pg 13

Cont Bot Pg 15

Set Chiseled in Conc Slab of Patio Porch

670.24' ✓

272.27' ✓

324.15' ✓

Conc & Stone Ref Wall Patio Porch

CONTROL LINE

BEACH No 4
20+39.46
Per Pg 13

Set BEACH No 5
= 23+11.73 a Std Precast Conc. Mon & 2" brass Cap as shown

COUNTY ENGINEER
BEACH No 5
1957
R. E. 5869

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76F309S S&E #247 1-56

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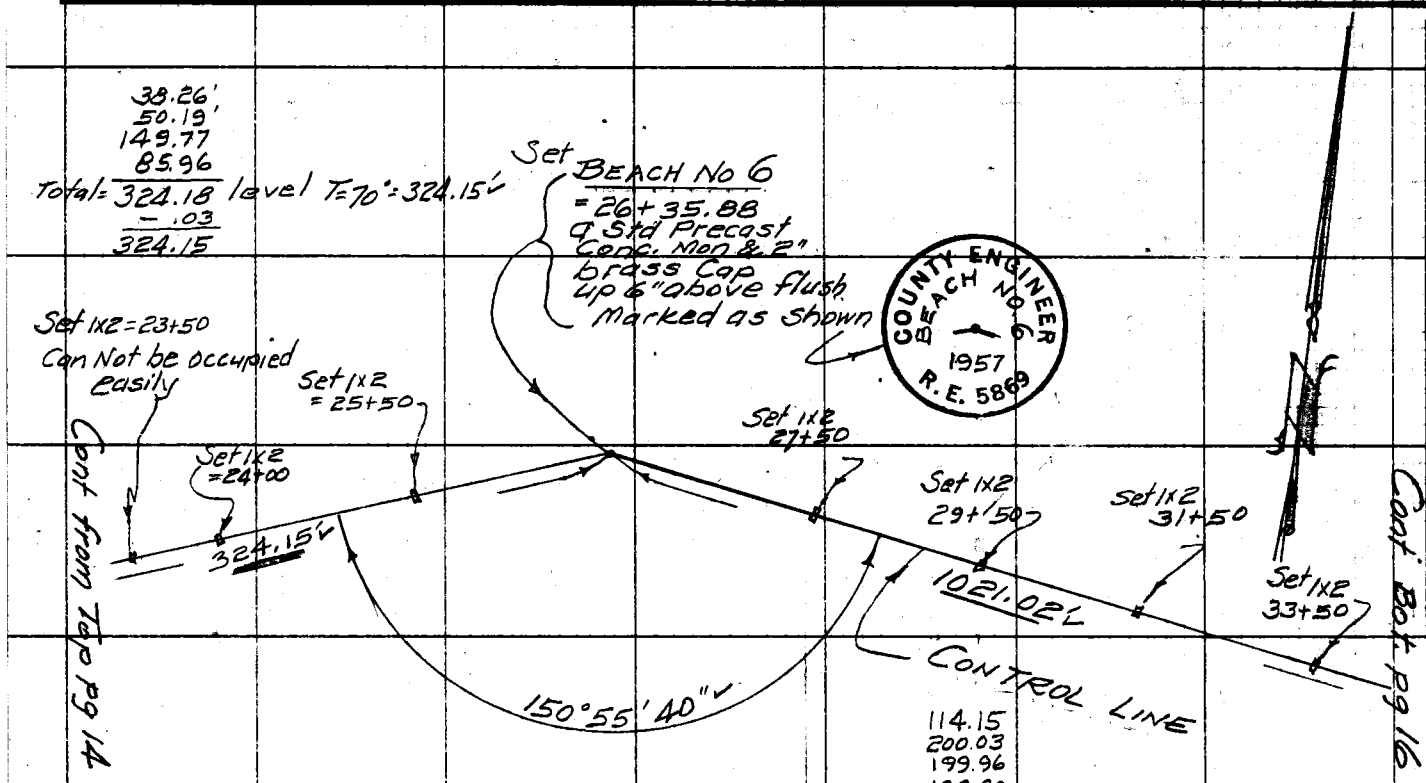

114.15
200.03
199.96
199.90
199.85
913.89 level T=76°=913.84'

1. 150°55'30"
4. 243°42'30"
= 150°55'37½"
6. 185°34'00"
= 150°55'40"

108.40 @ 08°34' = 107.19
108.12 @ 07°31' = 107.19
T=76° = 107.18'
+ 913.84'
Total 1021.02'

Notes Ck'd by GOSS & LEM
Map No. Sur. File Map 97-1
Office Work W.H.J. & S.H. & G.D.B.
Checked T.M.J. & T.H.B.
Date 7-57

Survey of Portuguese Bend Landslide F.B. 2305 PG. 15
JN 0021.64 Tape 138 Std 84 °F
Surveyed by H. R. Stock
Notes Stock Date 6-22-57
Indexed C. Johnson

F. B. 2305 Pg. 16

Cont from top Pg 15

Set 1x2 = 31+50

1021.02'

Set 1x2 = 33+50

Set 1x2 = 35+50

35° 21' 54" Per F.B. 6749 Pg 18 & 19

CONTROL LINE

TO ΔSTA POINT ECC #1 Per Pgs 9 & 10

N

Set BEACH No 7 = 36+56.90 a Std Precast Conc. Mon. & 2" Brass Cap Marked OS Shown

COUNTY ENGINEER No. 7 R.E. 5869 1957

Note: See Pg 17 for Sketch TRIANGULATION THE EAST END CONTROL LINE = BEACH No 7 FIX

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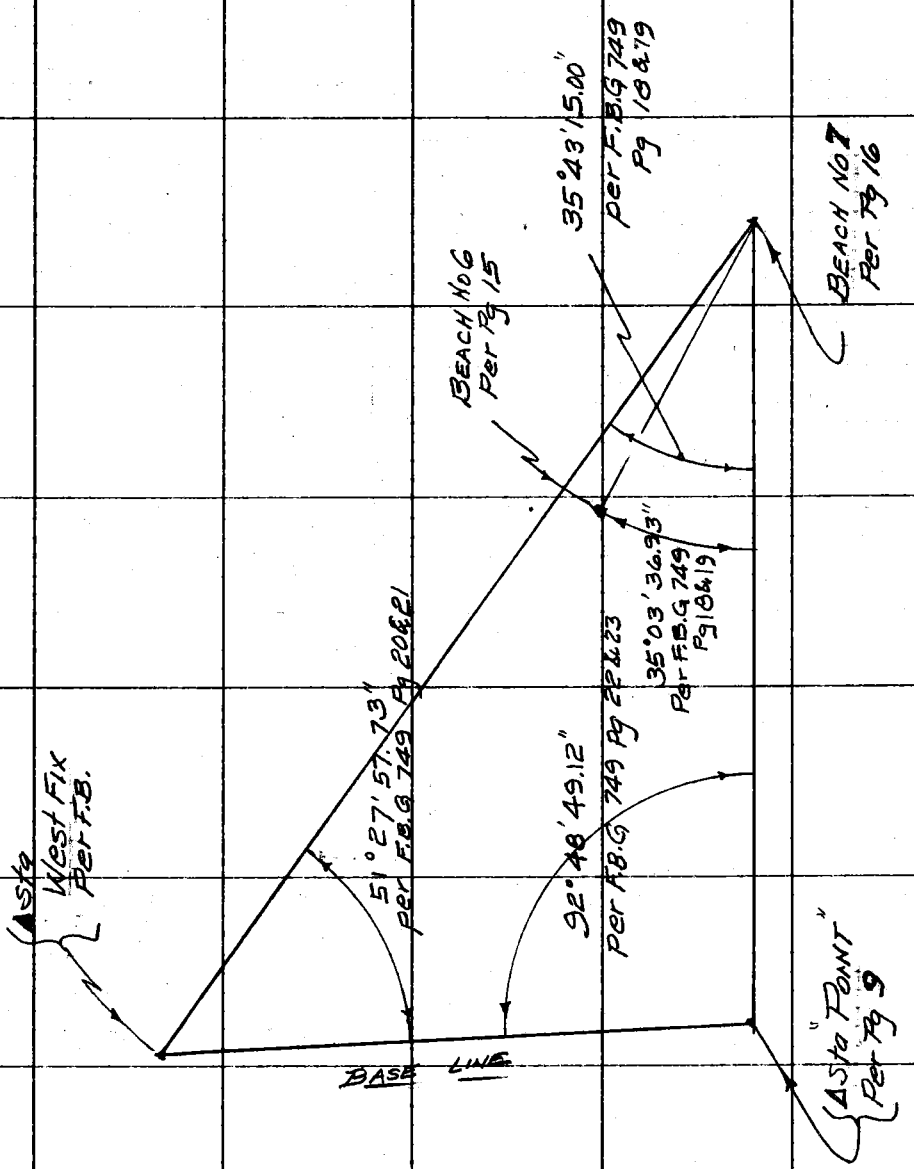
Notes Ck'd by GOSS & LEM	Survey of Portuguese Bend Landslide
Map No. Sur. File Map 97-1	JN 0021.69 Tape 138 Std 84 °F
Office Work W.H.& J. S.H. & G.D.B.	Surveyed by H.R. STOCK
Checked T.M.I. & T.H.B.	Notes STOCK Date 6-22-57
Date 7-57	Indexed A. C. Johnson

F.B. 2305 PG. 17

SKETCH

EAST END OF CONTROL LINE -(FIX) BEACH #7



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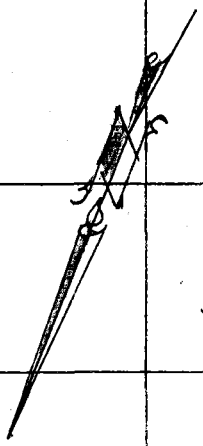
76F309S S&E #247 1-56

F. B. 2305 Pg. 18

PIER LOCATION



22.4'

65.5'

8.6'

14.0'

187'

33.0'

2.1'

87°15'

134.3'

83.5'

14.0'

10.5

3+50.20
@ 3/4" I.P. P.O.T.

BEACH #2

BEACH #3

CONTROL LINE

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76F3098 SBE #247 1-56

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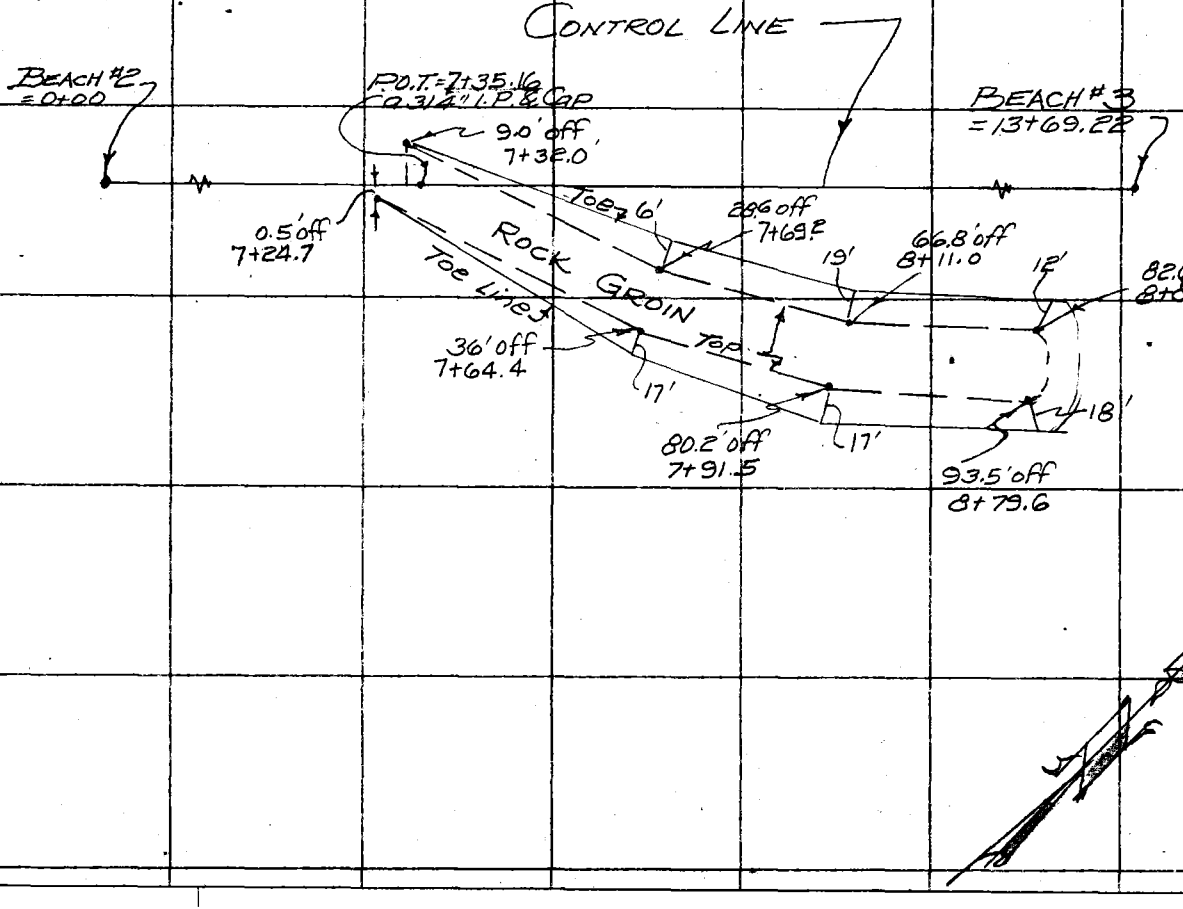

Notes Ck'd by C.C.S.S. & J.E.M.
Map No. Sur. File Map 97-1
Office Work U.S.H. 46 D.B.
Checked T.M.L. & T.H.B.
Date 7-57

Survey of PORTUGUESE BEND LANDSLIDE
J.N. 0021.64 Tape 138 Std. 82 °F
Surveyed by H.R. STOCK
Notes STOCK Date 6-24-57
Indexed C. Johnson

F. B. 2305 PG. 19

761.298 S & E #307 9-54

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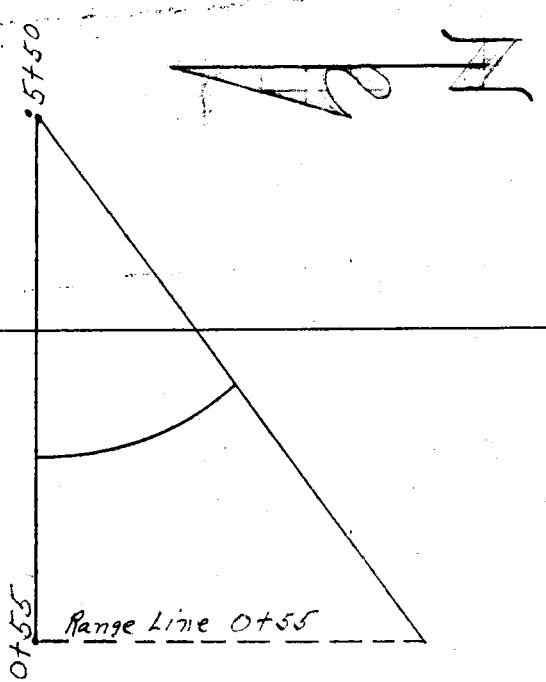
Profile Notes Red J.S.H. Plotted W.H. Job No. 0021.6 Division No. 10 F.B. 2225 Pg. 21
No. Date 7-57 Date 7-57 Survey of PORT DUTCH BEND LAND SLIDE
X-Sec. Notes Ckd W.H. Checked J.S.H. Survey by Engrish Notes Ed. Date 6-24-57
No. Qr55 Date 7-57 Date 7-57 Map No. Inked Johnson Date 6-27-57

STATION	B. S.	H. I.	F. S.	ELEV.	Inst. at 2+50	Sight on 0+55
T.B.# 1	279	13 19		0 +0	(M.L.L.W.) elev.	Inshore 0+55
0+55			425	8 14	25' Offset Line	
25 3/4 L			1 4	11 8		
18 5/4 R.			8 5	4, 7	M.H.T.	
T.P.	194	6 16	8 97	4 22		DATUM MLLW
			4 3	1 9	13° 18' 46"	
			6 5	-0 3	18 31 65'	
		(rocks)	6 6	-0 4	27 27 101'	
		"	5 5	-0 7	33 31 129'	
		"	2 5	-3 7	35 27 139'	See F.B. 2246/31 for descriptions
		"	2 0	-4 2	36 56 147'	Sketch F.B. 2254/81
		"	6 0	-0 2	42 44 180'	
		"	8 0	-1 8	48 46 222'	See F.B. 2281/68 for Elev.
		"	9 2	-3 0	50 36 237'	
		"	10 2	-4 0	53 57 268'	
2+50			278	+3 38	M.L.L.W.	

ELEVATIONS BASED ON MEAN LOWER LOW WATER DATUM

Profile No.	Notes Red. J. S. H.	Plotted W. H.	Job No. 0021.64	Division No. 10	F. B. 2305 Pg. 23
	Date 7-57	Date 7-57	Survey of Portuguese Bend Landslide		
X-Sec. No. 0+55	Notes Chkd. W. H.	Checked J. S. H.	Survey by Van Deren	Notes Turrill	Date 6-24-55
	Date 7-57	Date 7-57	Map No.	Indexed Johnson	Date

Cut in 0+55



Remarks

Cut in Line 0+55 on 25' offset line

STATION	B. S.	H. I.	F. S.	ELEV.
Inst. Sight At On	# Rec. Adj. Depth		Time Hor. Ang.	
0+55	1		7:49	58° 24'
	2			58° 05'
	3			56° 40'
	4			55° 59'
	5			54° 23'
	6			53° 14'
	7			52° 14'
	8			50° 56'
	9			49° 05'
	10			41° 57'
	11			46° 38'
	12			44° 51'
	13			43° 16'
	14			42° 04'
	15			39° 55'
	16			38° 41'
	17			37° 15'
	18			35° 53'
	19			35° 17'
	20			33° 27'

0+55

5+50

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76298 S & E #307—7-55

76298 S & E #307—7-55

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F. B. 2305 Pg. 24 | Job No. 0021 Division No. 10 Notes Red. J. S. H. Plotted W. H. Profile No.
Survey of Portuguese Landslide Date 7-57 Date 7-57 X-Sec.
Survey by Van Deren Notes Turn'11 Notes Chkd. W. H. Checked J. S. H.
Indexed K. C. Johnson Date 6-24-57 Date 7-57 Date 7-57 No. 0+55

STATION		B. S.	H. I.	F. S.	ELEV.		
Inst. At	Sight On	#	Depth Rec. Adj.	Time	Hor. Ang.	Remarks	
		21			32° 03'	Cut in Line 0+55 25' off	
		22			30° 50'		
		23			29° 13'	Cut in 0+55	
		24			27° 45'		
		25			26° 45'		
		26		7.54	24° 38'		
5+50	0+55						

76298 S & E #307—7-55

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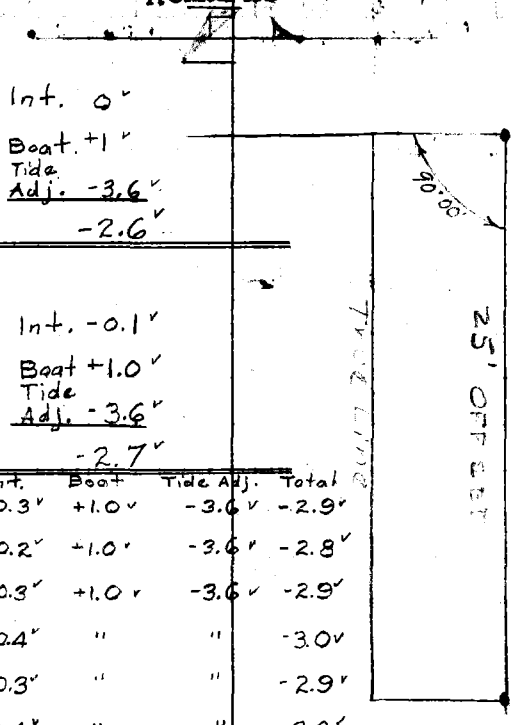
STATION Inst. At	Sight On	B. S. #	H. I. Depth Rec.	H. I. Depth Adj.	F. S. Time	ELEV. Hor. Ang.		Remarks
0+55	9+50	1	33.6	31.0	7:49	90° 00'	779	
		2	32.5	29.9	7:49	90° 00'	770	Int. 0
		3	30.1	27.5	7:49	90° 00'	727	Boat +1
		4	27.8	25.2	7:50	90° 00'	699	Tide Adj. -3.6
		5	—	—	7:50	90° 00'	666	-2.6
		6	21.9	19.2	7:50	90° 00'	637	
		7	20.0	17.3	7:50	90° 00'	614	Int. -0.1
		8	16.3	13.6	7:51	90° 00'	577	Boat +1.0
		9	13.3	10.6	7:51	90° 00'	552	Tide Adj. -3.6
		10	11.4	8.7	7:51	90° 00'	524	-2.7
		11	11.3	8.4	7:51	90° 00'	499	Int. -0.3 / Boat +1.0 / Tide Adj. -3.6 / Total -2.9
		12	10.8	8.0	7:52	90° 00'	471	-0.2 / +1.0 / -3.6 / -2.8
		13	10.6	7.7	7:52	90° 00'	441	-0.3 / +1.0 / -3.6 / -2.9
		14	9.6	6.6	7:52	90° 00'	422	-0.4 / " / " / -3.0
		15	8.6	5.7	7:52	90° 00'	389	-0.3 / " / " / -2.9
		16	8.8	5.8	7:53	90° 00'	371	-0.4 / " / " / -3.0
		17	9.0	6.1	7:53	90° 00'	351	-0.3 / " / " / -2.9
		18	7.8	4.7	7:53	90° 00'	333	-0.5 / " / " / -3.1
		19	7.6	4.6	7:53	90° 00'	325	-0.4 / " / " / -3.0
		20	5.8	2.9	7:53	90° 00'	302	-0.3 / " / " / -2.9



0+55 RANGE Range 0+55

11+50 (End offset)

Profile Notes Red J.S.H. Plotted W.H. Job No. 0021.64 Division No. 10 F.B. 2305 Pg. 25
No. Date 7-57 Date 7-57 Survey of Portuguese Landslide
X-Sec. Notes Chkd. W.H. Checked J.S.H. Survey by VANDEREN Notes Goodwin Date 6-24-57
No. 0+55 Date 7-57 Date 7-57 Map No. Indexed Johnson Date

76298 S & E #307—7-55

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Do not extend notes this side of this line.

STATION		B. S.	H. I.		F. S.	ELEV.		
Inst. At	Sight On	#	Depth Rec.	Adj.	Time	Hor. Ang.		Remarks
0+50	9+50	21	6.3	3.4	7:54	90° 00'	285	0+55 Range
		22	4.6	1.7	7:54	90° 00'	271	Tide Adj. -3.6
		23	4.3	1.4	7:54	90° 00'	247	Boat Adj. +1.0
		24	5.5	2.7	7:54	90° 00'	235	Int. Adj. -0.3
		25	3.3	0.3	7:54	90° 00'	224	-2.9
		26	3.6	0.5	7:54	90° 00'	202	

Int.	Boat	Tide Adj.	Total
-0.2	+1.0	-3.6	-2.8
-0.4	+1.0	-3.6	-3.0
-0.5	+1.0	-3.6	-3.1

F. B. 2305 Pg. 26 Job No. 0021.69 Division No. 10 Notes Red. J. S. H. Plotted W. H. Date 7-57 Date 7-57 No. Profile
Survey of Portuguese Landslide Notes Chkd. W. H. Checked J. S. H. Date 7-57 Date 7-57 No. X-Sec.
Survey by Van Deren Notes J. C. Goodwin Date 6-24-57 No. 0+55
Indexed A. C. Johnson

76L298 S & E #307 9-54

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726 LOS ANGELES COUNTY ENGINEERING BLDG.

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Do not extend notes this side of this line.

STATION	B. S.	H. I.	F. S.	ELEV.	Inst. at 0+55	Sight on 2+50
2+50	8.7	12.1		3.38	25' Offset	Inshore 2+50
8' L.				4.7	M.H.T.	
22 L			4 0	8 1	Brk.	
28 L.			1 4	10 7	Brk.	
38 L.			0 4	11 7	B.B.	DATUM
2+50	2.95	6.33	8 7	3.38		
		6.3	5 8	0.5	5° 47' 20"	MLLW
			8 2	-1 9	23 07 83'	
			12 8	-5 5	33 49 131'	
			13 0	-6 7	40 42 168'	
			14 5	-8 2	46 45 207'	
T.P.	6.57	11.93	0 97	5.36		
3+50			2 54	9 39		
5+50			4 15	7 78		

Profile Notes Red. J.S.H. Plotted W.H. Job No. 0021.64 Division No. 10 F. B. 2305 Pg. 27
No. Date 7-57 Date 7-57 Survey of PORTUGUESE BEND LAND SLIDE
X-Sec. Notes Chkd. W.H. Checked J.S.H. Survey by English Notes Ed. Date 6-24-57
No. 2+50 Date 7-57 Date 7-57 Map No. Indexed C. Johnson Date

76298 S & E #307—7-55

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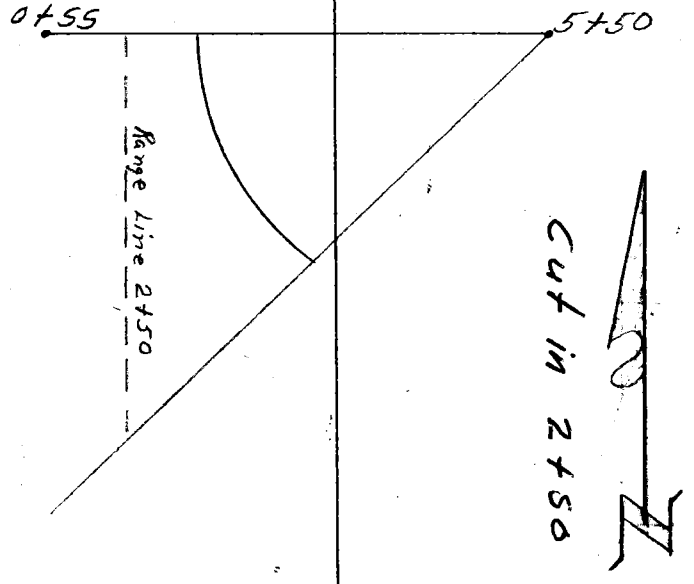
700 LOS ANGELES COUNTY ENGINEERING BLDG.

NOTE: ANY ADDITIONS OR CHANGES ON THIS SHEET MUST BE MADE OR CIRCLED IN RED INK, WITH DATE AND NAME OF PERSON MAKING CHANGE.

Do not extend notes this side of this line.

Profile Notes Red J.S.H. Plotted W.H. Job No 201164 Division No. 10 F. B. 2305 Pg. 29
No. Date 7-57 Survey of Portuguese Canyon Rd
X-Sec. Notes Chkd W.H. Checked J.S.H. Survey by Van Deren Notes Turrell Date 6-24-57
No. 2+50 Date 7-57 Map No. Notes Johnson Date

STATION	B. S.	H. I.	F. S.	ELEV.	
Inst. At / Sight On	#	Depth Rec. Adj.	Time	Hor. Ang.	Remarks
	1		8:17	66° 27'	Cut in Line 2+50 on 25' off setline
	2			65° 14'	
	3			64° 27'	
	4			63° 35'	
	5			62° 43'	
	6			61° 40'	
	7			60° 34'	
	8			57° 17'	
	9			54° 57'	
	10			53° 21'	
	11			52° 44'	
	12			53° 22'	
	13			53° 30'	
	14			51° 04'	
	15			50° 27'	
	16			50° 14'	
	17			48° 19'	
	18			47° 16'	
	19			45° 50'	
	20			44° 33'	



76298 S & E #307—7-55

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700 LOS ANGELES COUNTY ENGINEERING BLDG.

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Do not extend notes this side of this line.

STATION Inst. At	STATION Sight On	B. S. #	H. I. Depth Rec. Adj.	F. S. Time	ELEV. Hor. Ang.	Remarks
		21			43° 24'	Cut in Line 2+50 25' off
		22			42° 02'	
		23			40° 28'	Cut in 2+50
		24			38° 33'	
		25			36° 32'	
		26			34° 07'	
		27			29° 49'	
		28			28° 14'	
5+50	0+55	29			25° 17'	
		30			22° 15'	
		31		8:25	17° 27'	

F. B. 2305 Pg. 30 Job No. 0021.68 Division No. 10 Notes Red. J. S. H. Plotted W. H. Date 7-57 Date 7-57 No. Profile
Survey of Portuguese Landslide Notes Chkd. W. H. Checked J. S. H. Date 7-57 Date 7-57 No. X-Sec.
Survey by Van Deren Notes Turrell Date 6-24-57 Date 7-57 No. 2+50
Indexed A. C. Johnson

76298 S & E #307—7-55

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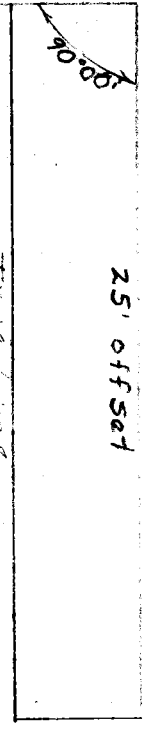
Do not extend notes this side of this line.

STATION Inst. At	STATION Sight On	S. S. #	H. I. Depth Rec.	H. I. Depth Adj.	F. S. Time	ELEV. Hor. Ang.	Remarks	Int.	Boat	Tide Adj	Total
2+50	9+50	1	26.7	23.7	8:17	90° 00'	663	-0.3	+1.0	-3.7	-3.0
		2	25.6	22.7	8:17	90° 00'	625	-0.2	+1.0	-3.7	-2.9
		3	24.2	21.3	8:17	90° 00'	602	-0.2	+1.0	-3.7	-2.9
		4	23.5	20.5	8:18	90° 00'	579	-0.3	+1.0	-3.7	-3.0
		5	21.7	18.9	8:18	90° 00'	557	-0.1	+1.0	-3.7	-2.8
		6	20.7	17.7	8:18	90° 00'	532	-0.3	+1.0	-3.7	-3.0
		7	18.7	15.8	8:18	90° 00'	507	-0.2	+1.0	-3.7	-2.9
		8	16.8	13.9	8:19	90° 00'	480	-0.2	+1.0	-3.7	-2.9
		9	15.8	12.9	8:19	90° 00'	454	-0.2	+1.0	-3.7	-2.9
		10	16.8	14.1	8:21	90° 00'	483				
		11	16.5	13.8	8:21	90° 00'	432	INT.	0.0		
		12	16.2	13.5	8:21	90° 00'	409	BOAT	+1.0		
		13	15.0	12.3	8:21	90° 00'	380	TIDE ADJ.	-3.7		
		14	14.1	11.4	8:22	90° 00'	346	TOTAL	-2.7		
		15	14.6	11.9	8:22	90° 00'	338				
		16	13.9	11.2	8:22	90° 00'	336				
		17	13.5	10.8	8:22	90° 00'	312				
		18	13.3	10.6	8:22	90° 00'	300				
		19	12.2	9.5	8:23	90° 00'	284				
		20	12.5	9.8	8:23	90° 00'	270				



2+50 Range

Range line 2+50

90°00'

25' offset

True Line

11+50 (End offset)

Profile Notes Red. J.S.H. Plotted W.H. Job No. 0021-64 Division No. 10 F.B. 2305 Pg. 31
No. Date 7-57 Date 7-57 Survey of Portuguese Landslide
X-Sec. Notes Chkd. W.H. Checked J.S.H. Survey by Van Daren Notes Goodwin Date 6-24-57
No. 2+50 Date 7-57 Date 7-57 Map No. Indexed Johnson Date

76298 S & E #307—7-55

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STATION		B. S.	H. I.		F. S.	ELEV.		
Inst. At	Sight On	#	Depth Rec.	Depth Adj.	Time	Hor. Ang.		Remarks
2+50	9+50	21	13.2	10.5	8:23	90°00'	259	
		22	12.1	9.4	8:23	90°00'	245	Range line 2+50
		23	12.0	9.3	8:24	90°00'	231	
		24	12.1	9.4	8:24	90°00'	214	Int. +0.0
		25	11.4	8.7	8:24	90°00'	197	Boat +1.0
		26	10.6	7.9	8:24	90°00'	178	Tide Adj. -3.7
		27	10.4	7.7	8:25	90°00'	147	-2.7
		28	10.2	7.5	8:25	90°00'	136	
		29	9.1	6.4	8:25	90°00'	117	
		30	8.1	5.4	8:25	90°00'	101	
		31	4.0 ?	1.3	8:25	90°00'	69	

F. B. 2305 Pg. 32 Job No. 0021.64 Division No. 10 Notes Red. J.S.H. Plotted W.H. Profile
Survey of Portuguese Landslide Date 7-57 Date 7-57 No.
Survey by Van Davan Notes J.C. Goodwin Notes Chkd W.H. Checked J.S.H. X-Sec.
Indexed C. Johnson Date 6-24-57 Date 7-57 Date 7-57 No. 2+50

Profile No.___ X-Sec. No. 3+50

Notes Red. J. S. H. Plotted W. H. Job No. 002164 Division No. 10

Date 7-57 Date 7-57 Survey of Portuguese BEND LAND SLIDE

Notes Chkd. W. H. Checked J. S. H. Survey by English Notes Ed. Date 6-24-57

Date 7-57 Date 7-57 Map No. ___ Index Johnson Date ___

F. B. 2305 Pg. 33

76L298 S & E #307 9-54

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726 Los Angeles County Engineering Bldg.

NOTE: ANY ADDITIONS OR CHANGES ON THIS SHEET MUST BE MADE OR CIRCLED IN RED INK, WITH DATE AND NAME OF PERSON MAKING CHANGE.

Do not extend notes this side of this line.

STATION	B. S.	H. I.	F. S.	ELEV.	Inst. at 0+55	Sight on 3+50
3+50	2 54	11 93		9 39	25' offset	Inshore 3+50
12' R.			4 3	7 6	rocks	
50' R.			7 2	4 7	M. H. T.	
						DATUM MLLW
T.P.	0 97	6 33	6 57	5 36		
			2.9	3 4	13° 37' 70'	
			8 5	-2 2	17 22 90'	
			12 7	-6 4	24 57 132'	
			14 0	-7 7	31 09 171'	
			15 5	-9 2	37 24 213'	

76298 S & E #307—7-55

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700 LOS ANGELES COUNTY ENGINEERING BLDG.

NOTE: ANY ADDITIONS OR CHANGES ON THIS SHEET MUST BE MADE OR CIRCLED IN RED INK, WITH DATE AND NAME OF PERSON MAKING CHANGE.

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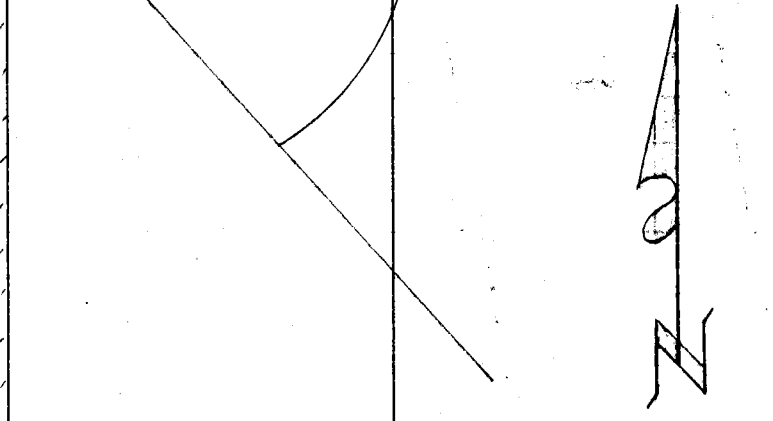
Profile Notes Red J.S.H. Plotted W.H. Job No 8021.64 Division No. 10 F. B. 2305 Pg. 35
No. Date 7-57 Date 7-57 Survey of Portuguese Bend Landslide
X-Sec. Notes Chkd W.H. Checked J.S.H. Survey by Ken Loren Notes Turrell Date 6-24-57
No. 3+50 Date 7-57 Date 7-57 Map No. Entered Johnson Date

STATION	B. S.	H. I.	F. S.	ELEV.		
Inst. At / Sight On	#	Depth Rec / Adj.	Time	Hor. Ang.	Remarks	
11+50 / 0+55	1		8:44	71° 24'	Cut in line 3+50 on 25' offset line	
	2			69° 19'	Cut in 3+50	
	3			68° 06'	0+55 to 11+50	
	4			66° 34'		
	5			65° 16'		
	6			64° 20'		
	7			63° 37'		
	8			61° 26'		
	9			59° 58'		
	10			58° 33'		
	11			57° 37'		
	12			56° 02'		
	13			54° 40'		
	14			51° 13'		
	15			49° 02'		
	16			45° 55'		
	17			42° 50'		
	18			39° 26'		
	19			37° 10'		
	20			33° 28'		



F. B. 2305 Pg. 36 Job No. 0021.64 Division No. 10 Notes Red. J. S. H. Plotted W. H. Profile

Survey of Portuguese Bend Landslide Date 7-57 Date 7-57 No.

Survey by Van Deren Notes Turrell Notes Chkd. W. H. Checked J. S. H. X-Sec.

Indexed A. C. Johnson Date 6-24-57 Date 7-57 Date 7-57 No. 3+50

76298 S & E #307—7-55

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STATION	B. S.	H. I.	F. S.	ELEV.		
Inst. Sight At On	# Rec. Adj.	Depth	Time	Hor. Ang.	Remarks	
0+55						
11+50						
	21			30° 41'	Cut in Line 3+50 25' off	
	22			27° 56'		
	23			23° 50'	Cut in 3+50	
	24		8.48	21° 00'		

76298 S & E #307—7-55

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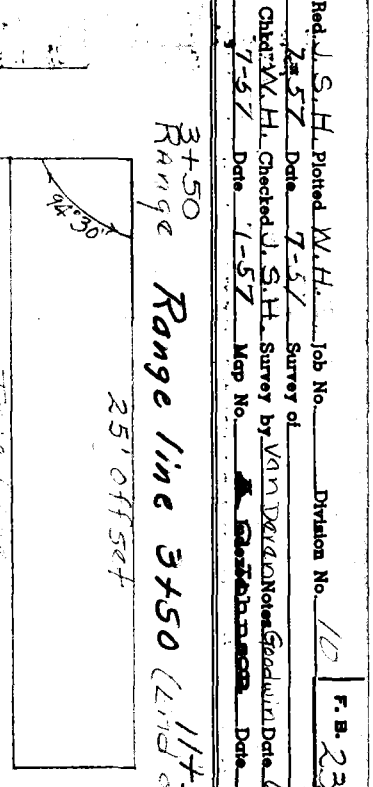
Profile Notes Red. J.S.H. Plotted W.H. Job No. Division No. 10 F.B. 2305 Pg. 37
No. Date 7-57 Date 7-57 Survey of
X-Sec. Notes Chkd. W.H. Checked J.S.H. Survey by Van Dyke Notes Goodwin Date 6-24-57
No. 3+50 Date 7-57 Date 7-57 Map No. Checked Date

STATION Inst. At	Sight On	S. S. #	H. I. Depth Rec.	H. I. Adj.	F. S. Time	ELEV. Hor. Ang.	Inth	Boat	Tide adj	Total	Remarks
3+50	9+50	1	26.6	23.8	8:44	94° 30'	688	-0.1	+1.0	-3.7	-2.8
		2	24.6	21.8	8:45	94° 30'	624	-0.1	+1.0	-3.7	-2.8
		3	23.2	20.4	8:45	94° 30'	591	-0.1	+1.0	-3.7	-2.8
		4	22.6	19.9	8:45	94° 30'	553	0.0	+1.0	-3.7	-2.7
		5	20.8	17.9	8:45	94° 30'	524	-0.2	+1.0	-3.7	-2.9
		6	19.9	17.0	8:45	94° 30'	504	-0.2	+1.0	-3.7	-2.9
		7	18.4	15.5	8:46	94° 30'	490	-0.2	+1.0	-3.7	-2.9
		8	17.3	14.4	8:46	94° 30'	450	-0.2	+1.0	-3.7	-2.9
		9	16.4	13.5	8:46	94° 30'	425	-0.2	+1.0	-3.7	-2.9
		10	16.0	13.2	8:46	94° 30'	404	-0.1	+1.0	-3.7	-2.8
		11	15.6	12.8	8:46	94° 30'	390	-0.1	+1.0	-3.7	-2.8
		12	16.0	13.1	8:47	94° 30'	368	-0.2	+1.0	-3.7	-2.9
		13	15.5	12.6	8:47	94° 30'	351	-0.2	+1.0	-3.7	-2.9
		14	14.8	12.0	8:47	94° 30'	310	-0.1	+1.0	-3.7	-2.8
		15	14.1	11.3	8:47	94° 30'	287	-0.1	+1.0	-3.7	-2.8
		16	13.3	10.5	8:48	94° 30'	258	-0.1	+1.0	-3.7	-2.8
		17	13.2	10.4	8:48	94° 30'	231	-0.1	+1.0	-3.7	-2.8
		18	12.3	9.4	8:48	94° 30'	204	-0.2	+1.0	-3.7	-2.9
		19	11.9	9.0	8:48	94° 30'	187	-0.2	+1.0	-3.7	-2.9
		20	10.6	7.7	8:48	94° 30'	161	-0.2	+1.0	-3.7	-2.9



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F. B. 2305 Pg. 38 Job No. Division No. 10 Notes Red. J.S.H. Plotted W.H. Date 7-57 No.
Survey of Notes Date Notes Chkd W.H. Checked J.S.H. Date 7-57 X-Sec.
Survey by Van Dorn Notes J.C. Goodwin Date 6-24-57 Date 7-57 No. 3+50
Indexed E. C. Johnson Profile

STATION		B. S.	H. I.		F. S.	ELEV.		
Inst. At	Sight On	# Rec.	Depth Adj.		Time	Hor. Ang.	Int. Boat Tide adj. Total	Remarks
3+50	9+50	21	10.2	7.3	8'48	74° 30'	143' -0.2' +1.0' -3.7' -2.9'	
		22	9.9	7.1	8'48	94° 30'	126' -0.1' +1.0' -3.7' -2.8'	Range line 3+50
		23	9.2	6.3	8'48	90° 30'	101' -0.2' +1.0' -3.7' -2.9'	
		24	5.6	2.6	8'48	44° 30'	85' -0.3' +1.0' -3.7' -3.0'	

76L298 S & E #307 9-54

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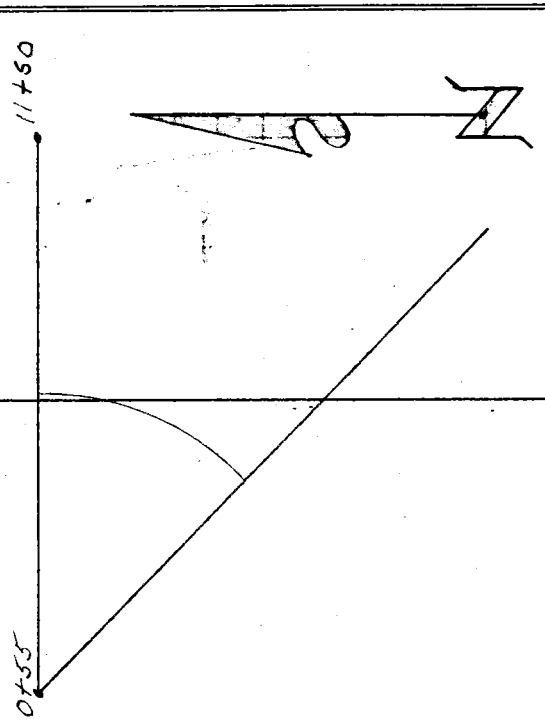
Do not extend notes this side of this line.

STATION	B. S.	H. I.	F. S.	ELEV.	Inst. at 7+20	Sight on 5+50
5+50	8 1	15.91		7.78	25' offset	Inshore 5+50
41' L.	-5 7	7 77	2 4	13.5	S.B.	
13 R.		7.8	3 1	4 7	M.H.T.	
			7 4	0 4	16°14' 49'	
			8 0	-3 2	24 16 77' Top	rocks
			10 7	-2 9	36 07 124'	
			15 0	-7 2	44 13 165'	
			16 1	-8 3	49 43 201'	DATUM MLLW

Profile Notes Red J.S.H. Plotted W.H. Job No. 0021 60 Division No. 10 F. B. 2305 Pg. 39
No. Date 7-57 Date 7-57 Survey of POINT DUME BEND LAND SURVEY
X-Sec. Notes Chkd. W.H. Checked J.S.H. Survey by English Notes Ed Date 6-24-57
No. 5+50 Date 7-57 Date 7-57 Map No. Checked Johnson Date

Profile No.	Notes Red. J. S. H.	Plotted W. H.	Job No. 0021.64	Division No. 10	F. B. 2305	Pg. 41
	Date 7-57	Date 7-57	Survey of Portuguese Bend Landslide			
X-Sec. No. 5+50	Notes Chkd. W. H.	Checked J. S. H.	Survey by Van Deren	Notes Turrill	Date 6-24-57	
	Date 7-57	Date 7-57	Map No.	Indexed C. Johnson	Date	



Remarks

Cut in Line 5+50 on 25' offset line

Cut in 5+50

STATION	B. S.	H. I.	F. S.	ELEV.
Inst. Sight At On	#	Depth Rec. Adj.	Time	Hor. Ang.
	1		9:01	60° 33'
	2			59° 37'
	3			58° 43'
	4			57° 59'
	5			56° 50'
	6			55° 13'
	7			54° 06'
	8			52° 16'
	9			50° 33'
	10			49° 16'
	11			47° 28'
	12			45° 26'
	13			43° 41'
	14			41° 16'
	15			39° 32'
	16			37° 42'
	17			35° 55'
	18			33° 31'
	19			30° 43'
	20			28° 15'

11+50

0+55

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76298 S & E #307—7-55

76298 S & E #307—7-55

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F. B. 2305 Pg. 42 | Job No 0021.64 Division No 10 Notes Red. J.S.H. Date 7-57 Plotted W.H. Date 7-57 | Profile No. | X-Sec. No. 5+50

Survey of Portuguese Bend Landslide Notes Chkd. W.H. Date 7-57 Checked J.S.H. Date 7-57

Survey by Van Doren Notes Date 7-57

Indexed E. C. Johnson Date 5+50

STATION Inst. At	Sight On	B. S. #	H. I. Depth Rec.	Adj.	F. S. Time	ELEV. Hor. Ang.	Remarks
			21			25° 43'	Cut in Line 5+50 25' off
			22			22° 30'	
			23			19° 57'	Cut in 5+50
			24			16° 44'	
			25			15° 10'	
			26		9:05	12° 40'	
0+55	11+50						

76298 S & E #307—7-55

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Profile Notes Red J.S.H. Plotted W.H. Job No. 6644 Division No. 10 F. B. 2305 - Pg. 43
No. Date 7-57 Date 7-57 Survey of Portuguese Bend Landslide
X-Sec. Notes Chkd. W.H. Checked J.S.H. Survey by Van Dam Notes Graduation Date 6-24-57
No. 5+50 Date 7-57 Date 7-57 Map No. Traced Johnson Date

STATION Inst. At	STATION Sight On	B. S. #	H. I. Depth Rec.	H. I. Adj.	F. S. Time	ELEV. Hor. Ang.	Int.	Boat	tide adj.	Total Remarks
5+50	7+50	1	29.7	27.1	9:01	90° 00'	851	0.0	+1.0	-3.6 -2.6
		2	28.1	25.5	9:01	90° 00'	819	0.0	+1.0	-3.6 -2.6
		3	27.5	24.9	9:01	90° 00'	790	0.0	+1.0	-3.6 -2.6
		4	27.0	24.6	9:02	90° 00'	767	+0.2	+1.0	-3.6 -2.4
		5	25.3	22.8	9:02	90° 00'	732	+0.1	+1.0	-3.6 -2.5
		6	26.5	24.0	9:02	90° 00'	688	+0.1	+1.0	-3.6 -2.5
		7	26.5	23.4	9:02	90° 00'	659	-0.5	+1.0	-3.6 -3.1
		8	24.0	20.9	9:02	90° 00'	615	-0.5	+1.0	-3.6 -3.1
		9	24.4	21.0	9:03	90° 00'	576	-0.8	+1.0	-3.6 -3.4
		10	24.1	20.7	9:03	90° 00'	550	-0.8	+1.0	-3.6 -3.4
		11	22.1	18.8	9:03	90° 00'	515	-0.7	+1.0	-3.6 -3.3
		12	19.8	16.6	9:03	90° 00'	477	-0.6	+1.0	-3.6 -3.2
		13	17.3	14.0	9:03	90° 00'	448	-0.7	+1.0	-3.6 -3.3
		14	15.0	11.7	9:04	90° 00'	409	-0.7	+1.0	-3.6 -3.3
		15	15.1	11.8	9:04	90° 00'	383	-0.7	+1.0	-3.6 -3.3
		16	14.6	11.2	9:04	90° 00'	358	-0.8	+1.0	-3.6 -3.4
		17	14.6	11.8	9:04	90° 00'	333	-0.2	+1.0	-3.6 -2.8
		18	13.8	10.4	9:04	90° 00'	303	-0.8	+1.0	-3.6 -3.4
		19	13.6	10.2	9:05	90° 00'	269	-0.8	+1.0	-3.6 -3.4
		20	13.4	10.0	9:05	90° 00'	241	-0.8	+1.0	-3.6 -3.4

5+50 Range

Range line 5+50

90°00'

25.0 ft

11+50 Range

76298 S & E #307—7-55

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700 LOS ANGELES COUNTY ENGINEERING BLDG.

NOTE: ANY ADDITIONS OR CHANGES ON THIS SHEET MUST BE MADE OR CIRCLED IN RED INK, WITH DATE AND NAME OF PERSON MAKING CHANGE.

Do not extend notes this side of this line.

STATION		B. S.	H. I.		F. S.	ELEV.					
Inst. At	Sight On	#	Depth Rec.	Depth Adj.	Time	Hor. Ang.		Int.	Boat	Tide adj.	Total
										Remarks	
5+50	9+50	21	12.8	9.4	9:05	90°00'	214	-0.8	+1.0	-3.6	-3.4
		22	11.8	9.3	9:05	[illegible]	180	+0.1	+1.0	-3.6	-2.5
		23	10.7	8.1	9:05	90°00'	155	0.0	+1.0	-3.6	-2.6
		24	8.5	6.0	9:05	90°00'	124	+0.1	+1.0	-3.6	-2.5
		25	6.2	3.7	9:05	90°00'	109	+0.1	+1.0	-3.6	-2.5
		26	5.0	2.6	9:05	90°00'	86	+0.2	+1.0	-3.6	-2.4

Range line 5+50

F. B. 2305 Pg. 44 Job No. 0021.64 Division No. 10 Notes Red. J. S. H. Plotted W. H. Profile
Survey of Portuguese Bend Landslide Date 7-57 Date 7-57 No.
Survey by Van Doren Notes J. C. Goodwin Notes Chkd. W. H. Checked J. S. H. X-Sec.
Indexed A. C. Johnson Date 6-24-57 Date 7-57 Date 7-57 No. 5+50

76L298 S & E #307 9-54

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Do not extend notes this side of this line.

STATION	B. S.	H. I.	F. S.	ELEV.	Inst. at 5+50	Sight on 7+50
5+50	12 23	20 01		7 78	M.L.L.W.	Inshore 7+50
7+50			9 60	10 41		
30' R			9 5	10 5	B. grom	
37' R			3 4	16 6	T. "	
48' R			3 3	16 7	T.	DATUM
61' R			10 6	9.4		
77' R			15 3	4 7	M.H.T.	MLLW
T.P.	1 61	7 30	14 32	5 69		
			9 3	-2 0	31° 07' 121'	
			5 8	1 5	35 02 140' Top	rocks
			13 2	-5 9	40 15 169'	
			14 0	-6 7	45 28 203'	
			16 1	-8 8	50 01 238'	

Profile Notes Red. J.S.H. Plotted W.H. Job No. 002164 Division No. 10 F.B. 2305 Pg. 45
No. Date 7-57 Date 7-57 Survey of PORTUGUESE BEND LAND SLIDE
X-Sec. Notes Chkd W.H. Checked J.S.H. Survey by English Notes Ed. Date 6-24-57
No. 7+50 Date 7-57 Date 7-57 Map No. Indexed Johnson Date

76298 S & E #307—7-55

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NOTE: ANY ADDITIONS OR CHANGES ON THIS SHEET MUST BE MADE OR CIRCLED IN RED INK, WITH DATE AND NAME OF PERSON MAKING CHANGE.

Do not extend notes this side of this line.

Profile Notes Red. J.S.H. Plotted W.H. Job No. 2021.64 Division No. 11 F. B. 2305 Pg. 47
No. Date 7-57 Date 7-57 Survey of Portuguese Bend Landslide
X-Sec. Notes Chkd. W.H. Checked J.S.H. Survey by Hazleton Notes R-T. Date 6-24-57
No. 7+50 Date 7-57 Date 7-57 Map No. Undetermined Date

STATION	B. S.	H. I.	F. S.	ELEV.	Remarks
Inst. At / Sight On	# Rec.	Depth Adj.	Time	Hor. Ang.	
	1		9:26	58° 31'	Cut in Line 7+50 25' Off
	2			57° 30'	Cut in 7+50
	3			56° 14'	0+55 11+50
	4			54° 59'	
	5			52° 47'	
	6			51° 36'	
	7			50° 18'	
	8			48° 42'	
	9			47° 18'	
	10			45° 45'	
	11			43° 58'	
	12			42° 38'	
	13			39° 58'	
	14			38° 42'	
	15			37° 25'	
	16			35° 19'	
	17			34° 06'	
	18			32° 52'	
	19			32° 00'	
	20			31° 01'	

11+50
0+55

76298 S & E #307—7-55

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Do not extend notes this side of this line.

F. B. 2305 Pg. 48 | Job No 0231.69 Division No. 10 Notes Red. J. S. H. Plotted W. H. Profile No.
Survey of Portuguese Bend Landslide Date 7-57 Date 7-57 X-Sec. No. 7+50
Survey by Van Deren Notes R. T. Notes Chkd W. H. Checked J. S. H.
Indexed K. C. Johnson Date 6-24-57 Date 7-57 Date 7-57

STATION Inst. At	Sight On	B. S. #	H. I. Rec.	Depth Adj.	F. S. Time	ELEV. Hor. Ang.	Remarks
		21				29° 16'	Cut in Line 7+50 25' off
		22				28° 28'	
		23				26° 38'	Cut in 7+50
		24				26° 28'	
		25				24° 25'	
		26				22° 53'	
0+55	Sta. Beach #3	27				21° 04'	
		28				19° 26'	
		29				17° 43'	
		30				16° 21'	
		31			9:32	15° 05'	

76298 S & E #307—7-55

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NOTE: ANY ADDITIONS OR CHANGES ON THIS SHEET MUST BE MADE OR CIRCLED IN RED INK, WITH DATE AND NAME OF PERSON MAKING CHANGE.

Do not extend notes this side of this line.

STATION Inst. At	Sight On	B. S. #	H. I. Depth Rec.	Adj.	F. S. Time	ELEV. Hor. Ang.	Int. Boat	Tide	Total Remarks
7+50	9+50	1	31.4	28.8	9:26	90° 00'	1110 -0.1 +1.0	-3.5	-2.6
		2	30.8	28.3	9:27	90° 00'	1066 0.0 +1.0	-3.5	-2.5
		3	30.3	27.8	9:27	90° 00'	1015 0.0 +1.0	-3.5	-2.5
		4	28.4	25.7	9:27	90° 00'	948 -0.2 +1.0	-3.5	-2.7
		5	26.9	24.2	9:28	90° 00'	890 -0.2 +1.0	-3.5	-2.7
		6	26.4	23.8	9:28	90° 00'	852 -0.1 +1.0	-3.5	-2.6
		7	27.3	24.7	9:28	90° 00'	812 -0.1 +1.0	-3.5	-2.6
		8	25.8	23.2	9:28	90° 00'	766 -0.1 +1.0	-3.5	-2.6
		9	24.8	22.2	9:28	90° 00'	728 -0.1 +1.0	-3.5	-2.6
		10	25.1	22.4	9:29	90° 00'	689 -0.2 +1.0	-3.5	-2.7
		11	23.6	20.8	9:29	90° 00'	646 -0.3 +1.0	-3.5	-2.8
		12	22.4	19.6	9:29	90° 00'	604 -0.3 +1.0	-3.5	-2.8
		13	21.8	19.0	9:29	90° 00'	557 -0.3 +1.0	-3.5	-2.8
		14	20.3	17.4	9:29	90° 00'	532 -0.4 +1.0	-3.5	-2.9
		15	19.6	16.7	9:30	90° 00'	507 -0.4 +1.0	-3.5	-2.9
		16	18.1	15.4	9:30	90° 00'	467 -0.2 +1.0	-3.5	-2.7
		17	16.6	13.8	9:30	90° 00'	446 -0.3 +1.0	-3.5	-2.8
		18	16.0	13.3	9:30	90° 00'	424 -0.2 +1.0	-3.5	-2.7
		19	15.7	12.8	9:30	90° 00'	409 -0.4 +1.0	-3.5	-2.9
		20	14.9	12.1	9:31	90° 00'	393 -0.3 +1.0	-3.5	-2.8

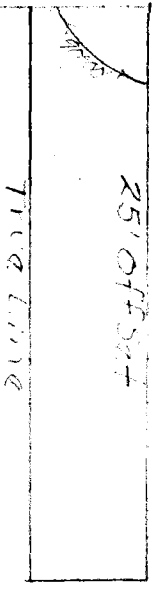
7+50 Range

Range line 7+50 (11+50 [illegible])

25' off set

True line

Profile Notes Red. J.S.H. Plotted W.H. Job No. 0021.64 Division No. 10 F. B. 2305 Pg. 49
No. Date 7-57 Date 7-57 Survey of Portuguese Bend Landslide
X-Sec. Notes Chkd. W.H. Checked J.S.H. Survey by [illegible] Notes [illegible] Date [illegible]-24-57
No. 7+50 Date 7-57 Date 7-57 Map No. Recorded Johnson Date



76298 S & E #307—7-55

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NOTE: ANY ADDITIONS OR CHANGES ON THIS SHEET MUST BE MADE OR CIRCLED IN RED INK, WITH DATE AND NAME OF PERSON MAKING CHANGE.

Do not extend notes this side of this line.

F. B. 7305 Pg. 50 | Job No. 1/6 Division No. 12 | Notes Red J.S.H. Plotted W.H. | Profile
Survey of Portuguese Bend Landslide | Date 6-24-57 | Date 7-57 Date 7-57 | No. 7+50
Survey by L. C. Johnson | Notes [illegible] | Notes Chkd W.H. Checked J.S.H. | X-Sec. No.
Indexed | Date | Date | Date

STATION	B. S.	H. I.	F. S.	ELEV.		
Inst. At / Sight On	#	Depth Rec. / Adj.	Time	Hor. Ang.	Int. Boat Tide Total	Remarks
7+50 / 7+50	21	14.1 / 11.3	7:31		364° -0.3° +1.0° -3.5° -2.8°	
	22	12.9 / 10.0	7:31		352° -0.4° +1.0° -3.5° -2.9°	
	23	14.3 / 11.5	7:31		329° -0.3° +1.0° -3.5° -2.8°	
					Range Line 7+50	
	24	13.3 / 10.3	7:31		321° -0.5° +1.0° -3.5° -3.0°	
	25	12.3 / 9.7	7:31		291° -0.1° +1.0° -3.5° -2.6°	
	26	11.2 / 8.5	7:32		268° -0.2° +1.0° -3.5° -2.7°	
	27	10.9 / 8.1	7:32		243° -0.3° +1.0° -3.5° -2.8°	
	28	10.8 / 8.0	7:32		220° -0.3° +1.0° -3.5° -2.8°	
	29	10.4 / 7.7	7:32		197° -0.2° +1.0° -3.5° -2.7°	
	30	10.2 / 7.2	7:32		179° -0.5° +1.0° -3.5° -3.0°	
	31	10.2 / 7.4	7:32		163° -0.3° +1.0° -3.5° -2.8°	

76L298 S & E #307 9-54

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Do not extend notes this side of this line.

STATION	B. S.	H. I.	F. S.	ELEV.	Inst. at 11+50	Sight on 9+50
7+50	1 55	[illegible] 96		10 41	M.L.L.W.	Inshore 9+50
9+50			[illegible]	3 25	25' Offset	
43 L'			2 5	~~10 5~~ 9 5	B.B.	
92' R			[illegible]	3 0	B. rocks	
			5 8	~~7 2~~ 6 2	T. rocks	(grain) 30° 54' 120'
			8 3	~~[illegible]~~ 3 7	M.H.T.	34 11 136'
T.T.	3 47	6 77	[illegible]	3 30		
			11 8	-5 0	DATUM	44 11 194'
			14 0	-7 2		49 02 230'
			14 0	-7 2	MLLW	53 33 271'
			14 0	-7 2		55 21 289'
			16 4	-9 6		60 41 356'

Profile Notes Red J.S.H. Plotted W.H. Job No. 002164 Division No. 10 F. B. 2305 Pg. 51
No. Date 7-57 Date 7-57 Survey of PORTUGUESE BEND LAND SLIDE
X-Sec. Notes Chkd. W.H. Checked J.S.H. Survey by English Notes Ed Date 6-24-57
No. 9+50 Date 7-57 Date 7-57 Map No. Indexed Johnson Date

76298 S & E #307—7-55

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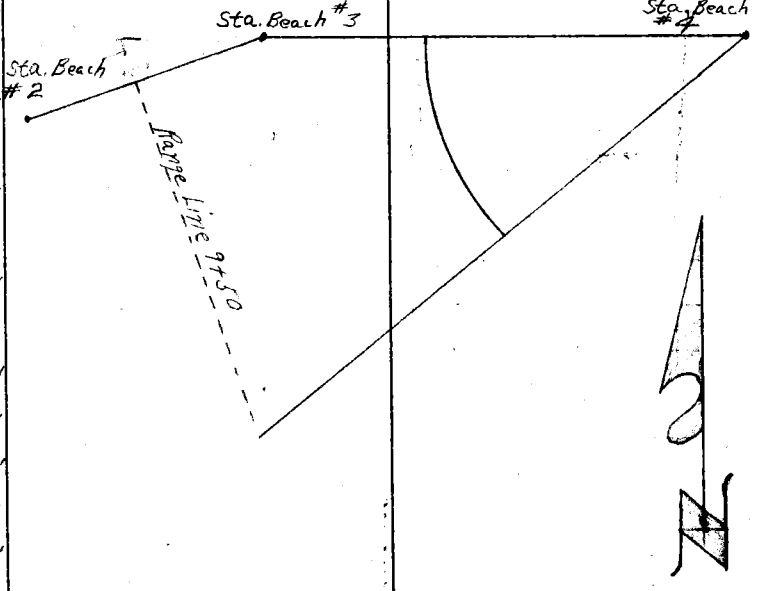
NOTE: ANY ADDITIONS OR CHANGES ON THIS SHEET MUST BE MADE OR CIRCLED IN RED INK, WITH DATE AND NAME OF PERSON MAKING CHANGE.

Do not extend notes this side of this line.

STATION		B. S.	H. I.	F. S.	ELEV.	
Inst. At	Sight On	#	Depth Rec. Adj.	Time	Hor. Ang.	Remarks
		1		9:58	83° 06	Cut in Line 9+50
		2			81° 10'	cut in line 9+50
		3			78° 55'	
		4			76° 40'	
		5			74° 30'	
		6			72° 27'	
Sta. Beach #4	Sta. Beach #3	7			71° 20'	
		8			69° 50'	
		9			68° 19'	
		10			66° 27'	
		11			64° 21'	
		12			61° 48'	
		13			59° 47'	
		14			56° 50'	
		15			54° 00'	
		16			53° 05'	
		17			51° 17'	
		18			49° 28'	
		19			48° 11'	
		20			46° 16'	



Profile Notes Red. J. S. H. Plotted W. H. Job No. 0021.64 Division No. 10 F. B. 2305 Pg. 53
No. Date 7-57 Date 7-57 Survey of Portuguese Bend Landslide
X-Sec. Notes Chkd. W. H. Checked J. S. H. Survey by Van Deren Notes R. T. Date 6-24-57
No. 9+50 Date 7-57 Date 7-57 Map No. Indexed S. Johnson Date

76298 S & E #307—7-55

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F. B. 2305 Pg. 54 | Job No. 02144 Division No. 12 Notes Red. J. S. H. Plotted W. H.
Survey of Portuguese Bend Landslide Date 7-57 Date 7-57 No.
Survey by Van Deren Notes R-7 Notes Chkd. W. H. Checked J. S. H. X-Sec.
Indexed J. C. Johnson Date 6-24-57 Date 7-57 Date 7-57 No. 9+50

Profile

STATION	B. S.	H. I.	F. S.	ELEV.		
Inst. At / Sight On	Depth # Rec.	Adj.	Time	Hor. Ang.		Remarks
	21			44° 32'	Cut in Line 9+50	
	22			42° 58'		
	23			42° 33'		
	24			40° 32'	cut in line 9+50	
	25			38° 47'		
	26			37° 17'		
Sta. Beach #4 / Sta. Beach #3	27			36° 21'		
	28			35° 16'		
	29			34° 22'		
	30			33° 32'		
	31			32° 30'		
	32			31° 54'		
	33			31° 03'		
	34			29° 59'		
	35			28° 48'		
	36			27° 46'		
	37		10:05	26° 50'		

76298 S & E #307—7-55

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Profile Notes Red. J. S. H. Plotted W. H. Job No. 0224.4 Division No. 6 F. B. 2305 Pg. 55
No. Date 7-57 Date 7-57 Survey of Portuguese Bend Landslide
X-Sec. Notes Chkd. W. H. Checked J. S. H. Survey by Van Dyke Notes Compared Date 7-24-57
No. 9+50 Date 7-57 Date 7-57 Map No. Traced Date

STATION	B. S.	H. I.	F. S.	ELEV.					
Inst. At	Sight On	#	Depth Rec.	Adj.	Time	Hor. Ang.	Int.	Bot. + Tgt.	Total Remarks
9+50		1	28.7	26.1	9:58	90° 00'	1.56'	-0.3'	+1.0' -3.3' -23'
		2	27.9	25.5	9:58	90° 00'	1.08'	-0.1'	+1.0' -3.3' -24'
		3	27.0	24.3	9:59	90° 00'	1.058'	-0.4'	+1.0' -3.3' -27'
		4	26.6	24.0	9:59	90° 00'	1.009'	-0.3'	+1.0' -3.3' -26'
		5	24.9	22.3	9:59	90° 00'	.967'	-0.3'	+1.0' -3.3' -26'
		6	24.4	22.0	9:59	90° 00'	.925'	-0.1'	+1.0' -3.3' -24'
		7	24.3	21.8	9:59	90° 00'	.904'	-0.2'	+1.0' -3.3' -25'
		8	24.0	21.5	9:59	90° 00'	.877'	-0.2'	+1.0' -3.3' -25'
		9	23.6	21.2	10:00	90° 00'	.847'	-0.1'	+1.0' -3.3' -24'
		10	23.8	21.4	10:00	90° 00'	.815'	-0.1'	+1.0' -3.3' -24'
			23.4	20.9	10:00	90° 00'	.778'	-0.2'	+1.0' -3.3' -25'
			22.9	20.3	10:00	90° 00'	.735'	-0.3'	+1.0' -3.3' -26'
			22.2	19.8	10:00	90° 00'	.702'	-0.1'	+1.0' -3.3' -24'
			21.0	18.4	10:01	90° 00'	.653'	-0.3'	+1.0' -3.3' -26'
			19.7	17.1	10:01	90° 00'	.608'	-0.3'	+1.0' -3.3' -26'
			19.8	17.2	10:01	90° 00'	.595'	-0.3'	+1.0' -3.3' -26'
		17	18.6	16.1	10:01	90° 00'	.566'	-0.2'	+1.0' -3.3' -25'
		18	18.4	15.9	10:01	90° 00'	.537'	-0.2'	+1.0' -3.3' -25'
		19	17.2	14.7	10:02	90° 00'	.517'	-0.2'	+1.0' -3.3' -25'
		20	16.4	14.0	10:02	90° 00'	.488'	-0.1'	+1.0' -3.3' -24'

9+50 Range 9+50

25' offset

T.S. 2+14.3

76298 S & E #307—7-55

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Do not extend notes this side of this line.

STATION		B. S.	H. I.		F. S.	ELEV.					
Inst. At	Sight On	#	Depth Rec.	Depth Adj.	Time	Hor. Ang.		Int.	Boat	Tide	Total Remarks
9+50	11+50	21	15.4	12.9	10:02	[illegible]	460'	-0.2'	+1.0'	-3.3'	-2.5'
		22	14.6	12.1	10:02	[illegible]	437'	-0.2'	+1.0'	-3.3'	-2.5'
		23	15.2	12.8	10:02	[illegible]	422'	-0.1'	+1.0'	-3.3'	-2.4'
		24	13.8	11.4	10:03	[illegible]	399'	-0.1'	+1.0'	-3.3'	-2.4'
		25	11.9	9.5	10:03	[illegible]	372'	-0.1'	+1.0'	-3.3'	-2.4'
		26	11.5	9.1	10:03	90° [illegible]	343'	-0.1'	+1.0'	-3.3'	-2.4'
		27	11.7	9.2	10:03	90° [illegible]	334'				
		28	11.5	9.0	10:03	[illegible]	315'				
		29	10.8	8.3	10:03	[illegible]	[illegible]				
		30	7.7	5.2	10:04	[illegible]	[illegible]				
		31	10.0	7.5	10:04	90° [illegible]	[illegible]				
		32	9.8	7.3	10:04	[illegible]	[illegible]				
		[illegible]	9.6	7.1	10:04	90° [illegible]	[illegible]				
		34	9.7	7.2	10:04	[illegible]	[illegible]				
		35	9.5	7.0	10:04	[illegible]	21[illegible]				
		36	8.7	6.2	10:05	[illegible]	192'				
		37	7.7	5.2	[illegible]	[illegible]	175'				

Int. -0.2'
Boat +1.0'
Tide -3.3'
Total -2.5'

F. B. 2305 Pg. 56 | Job No. 0021.69 | Division No. 10 | Notes Red. J. S. H. | Plotted W. H. | Profile
Survey of Portuguese Bend Landslide | Date 7-57 | Date 7-57 | No.
Survey by [illegible] | Notes [illegible] | Notes Chkd. W. H. | Checked J. S. H. | X-Sec.
Indexed A. C. Johnson | Date 6-24-57 | Date 7-57 | Date 7-57 | No. 9+50

76L298 S & E #307 9-54

PLEASE RETURN TO
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726 LOS ANGELES COUNTY ENGINEERING BLDG.

NOTE: ANY ADDITIONS OR CHANGES ON THIS SHEET MUST BE MADE OR CIRCLED IN RED INK, WITH DATE AND NAME OF PERSON MAKING CHANGE.

Do not extend notes this side of this line.

STATION	B. S.	H. I.	F. S.	ELEV.	Inst. at 9+50	Sight on 11+50
9+50	3 82	7 07		3 25	M.L.L.W.	Inshore 11+50
11+50			1 67	5 40	25' Offset	
19' L.			1 2	5 9	B.B.	
3' L.			2 4	4 7	M.H.T.	
			6 0	1 1	10° 51' 38"	
			5 8	0 3	19 05 69'	DATUM
			7 7	-0 6	27 03 102'	
			8 3	-1 2	32 59 130'	MLLW
			8 8	-1 7	36 01 145'	
			9 7	-2 6	40 20 170'	
			10 4	-3 3	43 03 187'	
			9 9	-2 8	44 51 199'	
			10 0	-2 9	47 28 218'	(M.S.L.) (M.LLW.)
P. B. #5-A			3 53	3 54	P.B. #5-A, el = 3.74 + 2.80 = 6.54	

Profile Notes Red. J.S.H. Plotted W.H. Job No. 00219 Division No. 10 F. B. 2305 PG. 57
No. Date 7-57 Date 7-57 Survey of PORTUGUESE BEND LAND SLIDE
X-Sec. Notes Chkd. W.H. Checked J.S.H. Survey by English Notes E.J. Date 6-24-57
No. 11+50 Date 7-57 Date 7-57 Map No. Traced Johnson Date

76298 S & E #307—7-55

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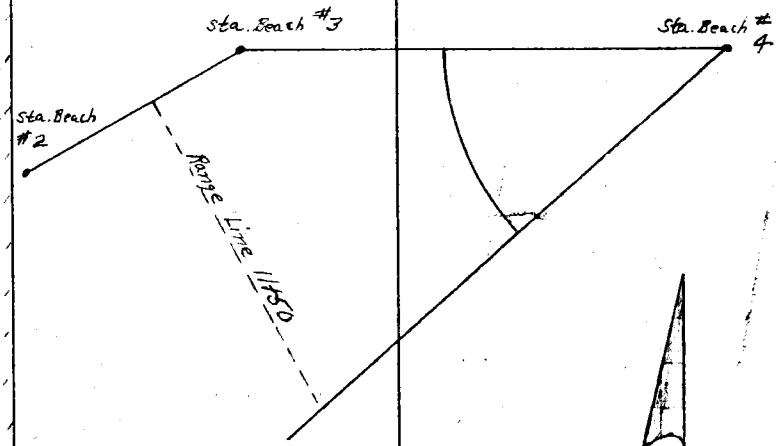
Do not extend notes this side of this line.

STATION	B. S.	H. I.	F. S.	ELEV.
Inst. Sight At On	# Rec. Depth Adj.	Time	Hor. Ang.	
	1	10:32	96° 46'	
	2		94° 51'	
	3		91° 49'	
	4		88° 55'	
	5		84° 57'	
	6		80° 03'	
Sta. Beach #4 / Sta. Beach #3	7		76° 05'	
	8		73° 46'	
	9		71° 03'	
	10		68° 01'	
	11		64° 31'	
	12		60° 12'	
	13		64° 49'	
	14		60° 28'	
	15		57° 32'	
	16		53° 28'	
	17		50° 25'	
	18		47° 09'	
	19		44° 26'	
	20		41° 35'	

Remarks

Cut in Line 11+50



Cut 11+50

Profile Notes Red. J.S.H. Plotted W.H. Job No. 0021.64 Division No. 10 F.B. 2305 Pg. 59
No. Date 7-57 Date 7-57 Survey of Portuguese Bend Landslide
X-Sec. Notes Chkd. W.H. Checked J.S.H. Survey by Van Deren Notes R-T. Date 6-24-57
No. 11+50 Date 7-57 Date 7-57 Map No. Indexed Johnson Date

76298 S & E #307—7-55

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NOTE: ANY ADDITIONS OR CHANGES ON THIS SHEET MUST BE MADE OR CIRCLED IN RED INK, WITH DATE AND NAME OF PERSON MAKING CHANGE.

Do not extend notes this side of this line.

STATION		B. S.	H. I.	F. S.	ELEV.		
Inst. At	Sight On	Depth # Rec.	Adj.	Time	Hor. Ang.	Remarks	
		21			39° 28'	Cut in Line	11 + 50
		22			37° 04'		
		23			34° 02'		
		24			30° 58'		
		25			28° 11'		
		26			25° 09'		
Sta. Beach #4	Sta. Beach #3	27			22° 57'		
		28			20° 51'		
		29		10:40	19° 38'		

F. B. 2305 Pg. 60 Job No. 0021.64 Division No. 10 Notes Red J. S. H. Plotted W. H. Profile
Survey of Portuguese Bend Landslide Date 7-57 Date 7-57 No.
Survey by Van Deren Notes R-T. Notes Chkd W. H. Checked J. S. H. X-Sec.
Indexed K. C. Johnson Date 6-24-57 Date 7-57 Date 7-57 No. 11+50

76298 S & E #307—7-55

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NOTE: ANY ADDITIONS OR CHANGES ON THIS SHEET MUST BE MADE OR CIRCLED IN RED INK, WITH DATE AND NAME OF PERSON MAKING CHANGE.

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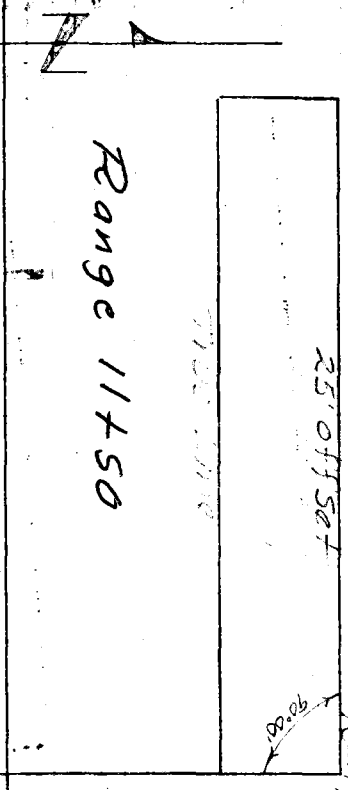
STATION Inst. At	Sight On	S. S. #	H. I. Depth Rec.	Adj.	F. S. Time	ELEV. Hor. Ang.	Int.	Boat	Tide	Total	Remarks
11+50	0+55	1	28.8	26.5	10:32	90° 00'	1326	-0.2	+1.0	-3.1	-2.3
		2	27.8	25.5	10:33	90° 00'	1269	-0.2	+1.0	-3.1	-2.3
		3	26.5	24.2	10:33		1191	-0.2	+1.0	-3.1	-2.3
		4	24.0	21.7	10:33		1123	-0.2	+1.0	-3.1	-2.3
		5	23.4	21.0	10:34	90° 00'	1038	-0.3	+1.0	-3.1	-2.4
		6	23.4	20.9	10:34	90° 00'	947	-0.4	+1.0	-3.1	-2.5
		7	23.2	20.8	10:34		881	-0.3	+1.0	-3.1	-2.4
		8	23.2	20.8	10:34		844	-0.3	+1.0	-3.1	-2.4
		9	21.5	19.1	10:34		804	-0.3	+1.0	-3.1	-2.4
		10	20.3	17.9	10:35		760	-0.3	+1.0	-3.1	-2.4
		11	18.8	16.5	10:35		713	-0.2	+1.0	-3.1	-2.3
		12	18.7	16.5	10:35		656?	-0.1	+1.0	-3.1	-2.2
		13	16.2	13.3	10:37		716?	-0.8	+1.0	-3.1	-2.9
		14	14.0	11.5	10:37	90° 00'	660?	-0.4	+1.0	-3.1	-2.5
		15	10.6	8.7	10:37	90° 00'	623	+0.2	+1.0	-3.1	-1.9
		16	11.8	9.9	10:38	90° 00'	573	+0.2	+1.0	-3.1	-1.9
		17	11.2	9.3	10:38	90° 00'	535	+0.2	+1.0	-3.1	-1.9
		18	10.3	8.4	10:38	90° 00'	496	+0.2	+1.0	-3.1	-1.9
		19	9.4	7.4	10:38		463	+0.1	+1.0	-3.1	-2.0
		20	8.3	6.5	10:38		430	+0.3	+1.0	-3.1	-1.8



Profile Notes Red J.S.H. Plotted W.H. Job No. 0021.69 Division No. 10 F.B. 2305 Pg. 61
No. Date 7-57 Date 7-57 Survey of Portuguese Bend Landslide
X-Sec. Notes Chkd. W.H. Checked J.S.H. Survey by Van Dover Notes Goodwin Date 6-24-57
No. 11+50 Date 7-57 Date 7-57 Map No. Indexed Johnson Date

76298 S & E #307—7-55

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Do not extend notes this side of this line.

STATION		B. S.	H. I.		F. S.	ELEV.					
Inst. At	Sight On	#	Depth Rec.	Adj.	Time	Hor. Ang.		Int.	Boat	Tide	Total Remarks
11+50	6+55	21	5.7	3.9	[illegible]	90° [illegible]	404	+0.3	+1.0	-3.1	-1.8
		22	6.1	4.3	[illegible]	90° [illegible]	369	+0.3	+1.0	-3.1	-1.8
		23	7.4	5.5	[illegible]	[illegible]	337	+0.2	+1.0	-3.1	-1.9
		24	7.1	4.8		[illegible]	298	-0.2	+1.0	-3.1	-2.3
		25	6.3	4.6	[illegible]	[illegible]	262	+0.4	+1.0	-3.1	-1.7
		26	4.9	3.3	[illegible]	[illegible]	222	+0.5	+1.0	-3.0	-1.6
		27	4.2	2.7	[illegible]	[illegible]	191	+0.5	+1.0	-3.0	-1.5
		28	4.3	2.5	[illegible]		161	+0.2	+1.0	-3.0	-1.8
		29	3.9	2.1	[illegible]		143	+0.2	+1.0	-3.0	-1.8

F. B. 2305 Pg. 62 Job No. 0021.64 Division No. [illegible] Notes Red. J.S.H. Plotted W.H. Profile
Survey of Portuguese Bend Landslide Date 7-57 Date 7-57 No.
Survey by [illegible] Notes [illegible] Notes Chkd W.H. Checked J.S.H. X-Sec.
Indexed [illegible] C. Johnson Date 6-24-57 Date 7-57 Date 7-57 No. 11+50

76L298 S & E #307 9-54

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726 LOS ANGELES COUNTY ENGINEERING BLDG.

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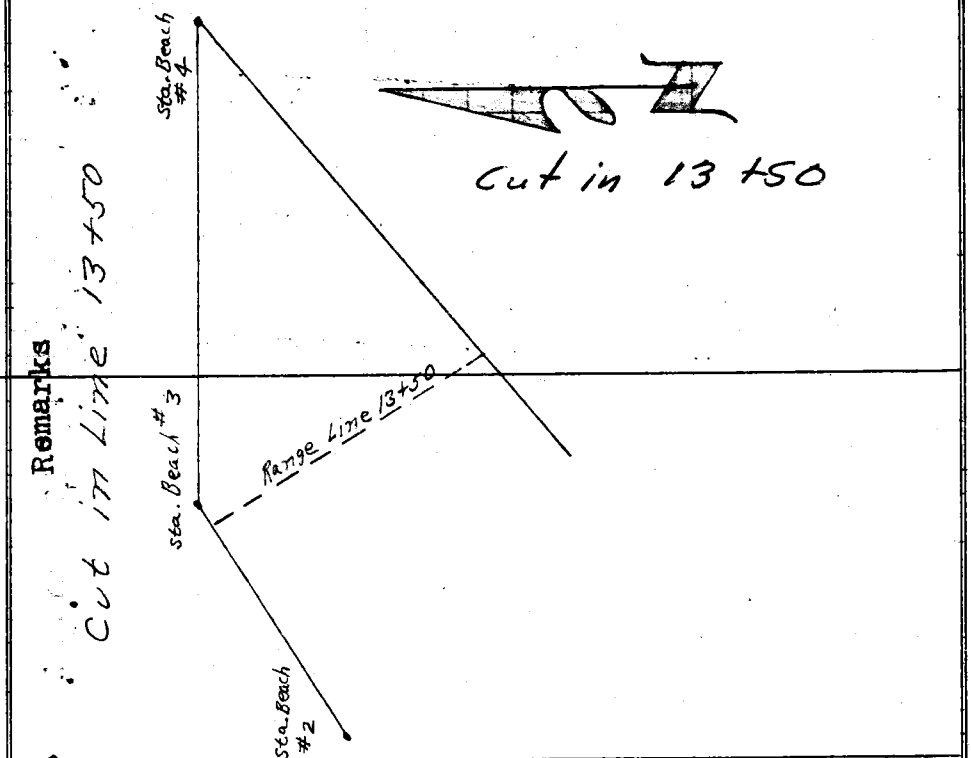
~~25' Offset Line~~

STATION	B. S.	H. I.	F. S.	ELEV.	Inst. at 11+50	Sight on 13+50
P.B. #5-A	2 96	6 53		3 57	M.L.L.W.	Inshore
13+50			+20	8 5	Control Line	13+50
6'L			+25	9 0	B.B.	
8'R.			0 8	5 7	B.B.	
38'R.			1 8	4 7	M.H.T.	DATUM
			3 4	3 1	25° 14' 94'	MLLW
			4 5	2 0	33 27 132'	
			5 5	1 0	40 54 173'	
			5 8	0 7	45 27 203'	
			4 1	2 7	49 33 235'	Top of rocks
			5 6	0 9	52 19 259'	
			1 1	-1 2	56 32 303'	
			9 9	-3 4	59 42 342'	
			9 4	-2 9	60 22 352'	

Profile Notes Red J.S.H. Plotted W.H. Job No. 0021.64 Division No. 10 F.B. 2305 Pg. 63
No. Date 7-57 Date 7-57 Survey of PORTUGUESE BEND LAND SLIDE
X-Sec. Notes Chkd W.H. Checked J.S.H. Survey by English Notes Ed. Date 6-24-57
No. 13+50 Date 7-57 Date 7-57 Map No. [illegible] Johnson Date

Profile No.	Notes Red. J. S. H.	Plotted W. H.	Job No. 5021.64	Division No. 10	F. B. 2305 Pg. 65
	Date 7-57	Date 7-57	Survey of Portuguese Bend Landslide		
X-Sec. No. 13+50	Notes Chkd. W. H.	Checked J. S. H.	Survey by Van Veren	Notes R. T.	Date 6-24-57
	Date 7-57	Date 7-57	Map No.	Indexed A. C. Johnson	Date



STATION	B. S.	H. I.	F. S.	ELEV.	Remarks
Inst. Sight At On	# Rec. Adj. Depth		Time Hor. Ang.		
	1		10:53	110° 09'	
	2			109° 17'	
	3			107° 09'	
	4			104° 08'	
	5			98° 17'	
	6			96° 37'	
	7			94° 31'	
	8			92° 15'	
	9			89° 50'	
	10			86° 48'	
	11			84° 09'	
	12			82° 29'	
	13			80° 16'	
	14			77° 54'	
	15			74° 14'	
	16			72° 26'	
	17			66° 44'	
	18			60° 50'	
	19			57° 23'	
	20			54° 28'	

Sta. Beach #3

Sta. Beach #4

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76298 S & E #307—7-55

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F. B. 2305 Pg. 66 Job No. 2021.64 Division No. 10 Notes Red. J.S.H. Plotted W.H. Date 7-57 No.
Survey of Portuguese Bend Landslide Date 7-57 X-Sec.
Survey by Van Deren Notes B.T. Notes Chkd. W.H. Checked J.S.H. Date 7-57 No. 13+50
Indexed E.C. Johnson Date 6-24-57 Profile

STATION	B. S.	H. I.	F. S.	ELEV.		
Inst. At / Sight On	Depth # Rec.	Adj.	Time	Hor. Ang.	Remarks	
	21			51° 15'	Cut in Line 13+50	
	22			46° 54'		
	23			44° 17'		
	24			41° 39'		
	25			38° 33'		
Sta. Beach #4 / Sta. Beach #3	26		10:59	35° 47		

76298 S & E #307—7-55

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STATION Inst. At	Sight On	B. S. #	H. I. Depth Rec.	H. I. Depth Adj.	F. S. Time	ELEV. Hor. Ang.	Int.	Boat	Tide	Total	Remarks
[illegible]	[illegible]	1	28.1	26.1	10:53	[illegible]	1493	-0.1	+1.0	-2.9	-2.0
		2	27.2	25.2	10:53	90 [illegible]	1454	-0.1	+1.0	-2.9	-2.0
		3	25.2	23.2	10:54	[illegible]	1370	-0.1	+1.0	-2.9	-2.0
		4	24.8	22.7	10:54	[illegible]	1269	-0.2	+1.0	-2.9	-2.1
		5	23.0	20.9	10:[illegible]	[illegible]	1114	-0.2	+1.0	-2.9	-2.1
		6	22.2	20.0	[illegible]	[illegible]	1077	-0.3	+1.0	-2.9	-2.2
		7	21.3	19.0	[illegible]		1035	-0.4	+1.0	-2.9	-2.3
		8	20.7	18.5	[illegible]		992	-0.3	+1.0	-2.9	-2.2
		9	20.2	18.0	10:55	90 [illegible]	951	-0.3	+1.0	-2.9	-2.2
		10	19.4	17.3	10:56	[illegible]	902	-0.2	+1.0	-2.9	-2.1
		11	18.7	16.5	10:56	[illegible]	865	-0.3	+1.0	-2.9	-2.2
		12	17.8	15.8	10:56	[illegible]	843	-0.1	+1.0	-2.9	-2.0
		13	17.0	15.0	10:56		814	-0.1	+1.0	-2.9	-2.0
		14	16.8	14.8	10:57		785	-0.1	+1.0	-2.9	-2.0
		15	13.9	11.9	10:57	90 [illegible]	743	-0.1	+1.0	-2.9	-2.0
		16	12.3	10.0	10:57	90 [illegible]	724	-0.4	+1.0	-2.9	-2.3
		17	12.4	10.4	10:58	[illegible]	666	-0.1	+1.0	-2.9	-2.0
		18	9.2	6.9	10:58	[illegible]	611	-0.4	+1.0	-2.9	-2.3
		19	7.4	5.4	10:58		580	-0.1	+1.0	-2.9	-2.0
		20	7.6	5.6	10:58		554	-0.1	+1.0	-2.9	-2.0

Range line 13+50

Profile Notes Red J.S.H. Plotted W.H. Job No. 0021.64 Division No. 16 F.B. Pg. 67
No. Date 7-57 Date 7-57 Survey of Portuguese Bend Landslide
X-Sec. Notes Chkd. W.H. Checked J.S.H. Survey by Van Dorf Notes Date
No. 13+50 Date 7-57 Date 7-57 Map No. Index Johnson Date

76298 S & E #307—7-55

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F. B. 2300 Pg. 68 | Job No. 0221.64 Division No. 13 | Notes Red. J. S. H. Plotted W. H. Date 7-57 | Profile No.
Survey of Portuguese Bend Landslide | Date | Chkd W. H. Checked J. S. H. Date 7-57 | X-Sec. No. 13+50
Survey by Notes | Notes | Date 7-57
Indexed A. C. Johnson Date 6-24-57

STATION	B. S.	H. I.	F. S.	ELEV.		
Inst. At / Sight On	#	Depth Rec. / Adj.	Time	Hor. Ang.	Int. Boat Tide Total	Remarks
3450 3455	21	7.6 5.6	10 55		526 -0.1' +1.0' -2.9' -2.0'	
	22	8.1 6.1	10 55		489 -0.1' +1.0' -2.9' -2.0'	
	23	7.6 5.4	10 57		467 -0.3' +1.0' -2.9' -2.2'	
	24	6.9 5.0	10 59		445 0.0' +1.0' -2.9' -1.9'	
	25	6.2 4.2	11 01		418 -0.1' +1.0' -2.9' -2.0'	
	26	— —	11 03		394 -0.4' +1.0' -2.9' -2.3'	

76L298 S & E #307 9-54

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STATION	B. S.	H. I.	F. S.	ELEV.	Inst. at 13+69 22	Sight on 15+50
P.B. #5-A	2.73	6 30		3 57	M.L.L.W.	Inshore
15+50			2 5	5 8	Control Line	15+50
2.4' L.			+5 0	11 3	B.B.	
2.5' R.			1 6	4 7	M.H.T.	DATUM
						MLLW
			4 0	2 3	20° 26' 67'	
			4 8	1 5	29 99 104'	
			5 1	0 7	36 43 135'	
			7 3	-1 6	42 52 168'	
			7	-0 8	47 41 198'	Top rocks
			9 3	-3 6	51 53 230'	
			8 3	-1 8	54 00 249'	
			10 0	-2 7	57 30 284'	
			11 5	-5 2	59 47 310'	

Profile Notes Red J.S.H. Plotted W.H. Job No 00219 Division No. 10 F. B. 2305 Pg. 69
No. Date 7-57 Date 7-57 Survey of [illegible] LAND SURVEY
X-Sec. Notes Chkd W.H. Checked J.S.H. Survey by English Notes Ed. Date 6-24-57
No. 13+50 Date 7-57 Date 7-57 Map No. [illegible] Johnson Date

76298 S & E #307—7-55

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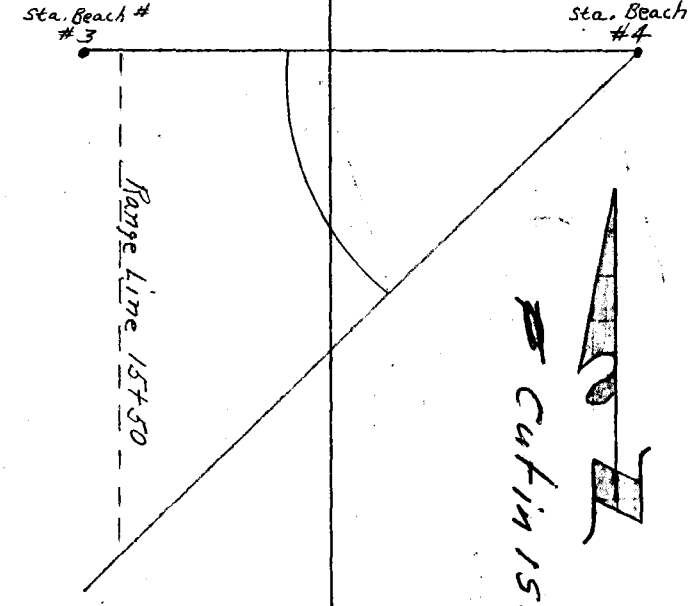
Profile Notes Red W. H. Plotted J. S. H. Job No. 0021.64 Division No. 10 F. B. 2305 Pg. 71
No. Date 7-57 Date 7-57 Survey of Portuguese Bend Landslide
X-Sec. Notes Chkd. J. S. H. Checked W. H. Survey by Van Perez Notes R. T. Date 6-24-55
No. 15+50 Date 7-57 Date 7-57 Map No. Noted Johnson Date

STATION	B. S.	H. I.	F. S.	ELEV.	
Inst. At / Sight On	#	Depth Rec. / Adj.	Time	Hor. Ang.	Remarks
Sta. Beach #4 / Sta. Beach #3	1		11:13	70° 21'	Cut in Line 15+50
	2			68° 56'	
	3			67° 50'	
	4			66° 27'	
	5			65° 26'	
	6			64° 27'	
	7			63° 16'	
	8			62° 06'	
	9			61° 22'	
	10			59° 47'	
	11			58° 20'	
	12			57° 01'	
	13			56° 32'	
	14			55° 18'	
	15			53° 42'	
	16			51° 57'	
	17			50° 40'	
	18			48° 57'	
	19			47° 03'	
	20			46° 09'	



F. B. 2305 Pg. 72 | Job No 002164 Division No. 10 | Notes Red. W. H. | Plotted J. S. H. | Profile

Survey of Portuguese Bend Landslide | Date 7-57 | Date 7-57 | No.

Survey by Van Deren Notes R. T. | Notes Chkd. J. S. H. | Checked W. H. | X-Sec.

Indexed A. C. Johnson Date 6-24-57 | Date 7-57 | Date 7-57 | No. 15+50

76298 S & E #307—7-55

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LOS ANGELES COUNTY ENGINEER

700 Los Angeles County Engineering Bldg.

NOTE: ANY ADDITIONS OR CHANGES ON THIS SHEET MUST BE MADE OR CIRCLED IN RED INK, WITH DATE AND NAME OF PERSON MAKING CHANGE.

Do not extend notes this side of this line.

STATION	B. S.	H. I.	F. S.	ELEV.	Inst. At	Sight On	# Rec.	Depth Adj.	Time	Hor. Ang.	Remarks
					Sta. Beach #4	Sta. Beach #3					
							21			44° 03	
							22			42° 41	
							23			40° 32	
							24			37° 58'	
							25			35° 37'	
							26		11:17	33° 09	
											Cut in Line 15+50

76298 S & E #307—7-55

PLEASE RETURN TO
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700 LOS ANGELES COUNTY ENGINEERING BLDG.

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Do not extend notes this side of this line.

STATION Inst. At	Sight On	B. S. #	H. I. Depth Rec.	H. I. Depth Adj.	F. S. Time	ELEV. Hor. Ang.	Int. Boat Tide Total	Remarks
15+50	[illegible]	1	—	—	11:13	[illegible]	1371 -0.2 +1.0 -2.8 -2.0	
		2	31.5	29.5	11:13	[illegible]	1271 -0.2 +1.0 -2.8 -2.0	
		3	30.0	28.1	11:13	[illegible]	1202 -0.1 +1.0 -2.8 -1.9	
		4	27.5	25.4	11:13	[illegible]	1123 -0.3 +1.0 -2.8 -2.1	
		5	26.1	24.1	11:14	[illegible]	1071 -0.2 +1.0 -2.8 -2.0	
		6	25.3	23.1	11:14	[illegible]	1024 -0.4 +1.0 -2.8 -2.2	
		7	24.6	22.7	11:14	[illegible]	972 -0.1 +1.0 -2.8 -1.9	
		8	23.9	21.9	11:14	[illegible]	925 -0.2 +1.0 -2.8 -2.0	
		[illegible]	23.3	21.2	11:15	[illegible]	897 -0.3 +1.0 -2.8 -2.1	
		[illegible]	22.7	20.7	11:15	[illegible]	840 -0.2 +1.0 -2.8 -2.0	
		[illegible]	21.4	19.3	11:15	[illegible]	793 -0.3 +1.0 -2.8 -2.1	
		[illegible]	20.8	18.7	11:15	[illegible]	754 -0.3 +1.0 -2.8 -2.1	
		[illegible]	19.6	17.6	11:15	[illegible]	741 -0.2 +1.0 -2.8 -2.0	
		[illegible]	19.7	17.8	11:15	[illegible]	707 Int. -0.2	
		[illegible]	17.5	15.6	[illegible]	[illegible]	666 Boat +1.0	
		[illegible]	14.3	12.4	[illegible]	[illegible]	626 Tide -2.7	
		[illegible]	14.1	12.2	[illegible]	[illegible]	597 Total -1.9	
		[illegible]	14.8	12.9	16	[illegible]	562	
		[illegible]	13.7	11.8	[illegible]	[illegible]	526	
		7	12.6	10.7	[illegible]	[illegible]	510	

Range 15+50

Beach #3

15+50 Range

Profile Notes Red. W.H. Plotted J.S.H. Job No. 002164 Division No. [illegible] F.B. 2305 Pg. 73
No. Date 7-57 Date 7-57 Survey of Portuguese Bend Landslide
X-Sec. Notes Chkd. J.S.H. Checked W.H. Survey by [illegible] Notes [illegible] Date [illegible]
No. 15+50 Date 7-57 Date 7-57 Map No. [illegible] Date

76298 S & E #307—7-55

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STATION		B. S.	H. I.		F. S.	ELEV.					
Inst. At	Sight On	#	Depth Rec.	Depth Adj.	Time	Hor. Ang.	Int.	Boat.	Tide.	Total	Remarks
[illegible]	[illegible]	21	11.3	9.3	[illegible]	[illegible]	473	-0.3	+1.0	-2.7	-2.0
		22	10.8	8.8	[illegible]		451	-0.3	+1.0	-2.7	-2.0
		23	10.7	8.7	[illegible]		418	-0.3	+1.0	-2.7	-2.0
		24	7.9	5.9	[illegible]		382	-0.3	+1.0	-2.7	-2.0
		25	6.3	4.3	[illegible]		350	-0.3	+1.0	-2.7	-2.0
		26	5.2	3.1	[illegible]	[illegible]	319	-0.4	+1.0	-2.7	-2.1

F. B. 2305 Pg. 74 Job No. 0021.64 Division No. 10 Notes Red W. H. Plotted J. S. H. Profile
Survey of Portuguese Bend Landslide Date 7-57 Date 7-57 No.
Survey by [illegible] Notes [illegible] Notes Chkd. J. S. H. Checked W. H. X-Sec.
Indexed C. Johnson Date 6-24-57 Date 7-57 Date 7-57 No. 15+50

76L298 S & E #307 9-54

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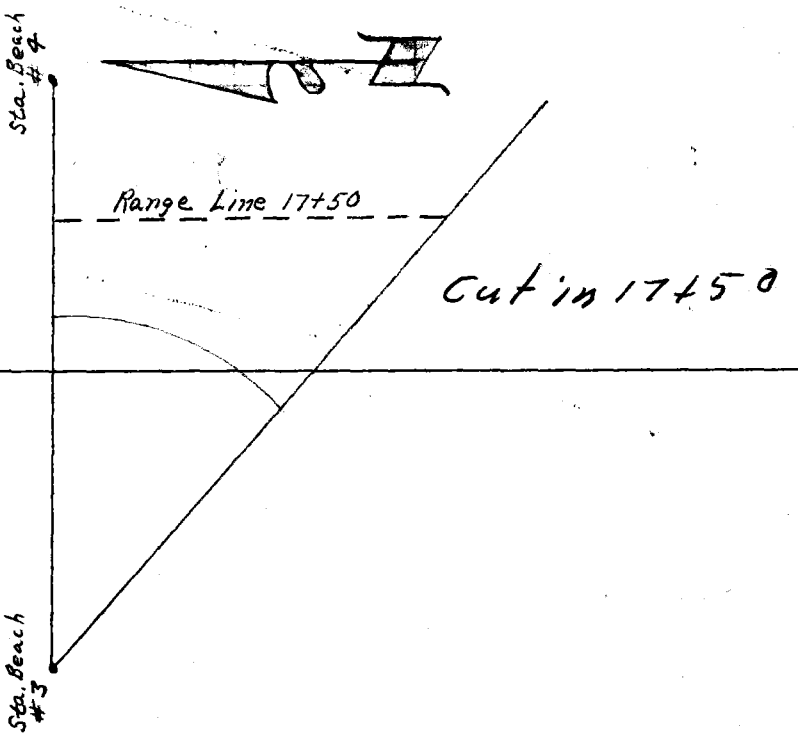
Do not extend notes this side of this line.

STATION	B. S.	H. I.	F. S.	ELEV.	Inst. at 15+50	Sight on 17+50
P.B.#5-A	3 13	6 70	5 1	3 57	M.L.L.W.	Inshore 17+50
17+50			+2 5	9 2	Control line	
8 'L			+3 1	9 8	B.B.	DATUM
37 '			2 0	4 '	M.H.T.	MLLW
			~~6 0~~	~~0 7~~		
			6 6	0 1	29 49 115'	
			7 9	-1 2	38 53 161'	
			8 5	-1 8	44 12 194'	
			9 2	-2 5	48 20 225'	
			9 3	-2 6	52 51 264'	
			10 1	-3 4	56 11 299'	

Profile Notes Red. G.D.B. Plotted J.S.H. Job No. 0021.64 Division No. 10 F. B. 23015 Pg. 75
No. Date 7-57 Date 7-57 Survey of BAND LAND SURVEY
X-Sec. Notes Clkd. J.S.H. Checked G.D.B. Survey by English Notes Ed. Date 6-24-57
No. 17+50 Date 7-57 Date 7-57 Map No. Inspected by Date

Profile No.	Notes Red. G.D.B.	Plotted J.S.H.	Job No. 0021.64	Division No. 10	F.B. 2305	Pg. 77
	Date 7-57	Date 7-57	Survey of Portuguese Bend Landslide			
X-Sec. No. 17+50	Notes Chkd. J.S.H.	Checked G.D.B.	Survey by Van Deren	Notes R.T.	Date 6-24-57	
	Date 7-57	Date 7-57	Map No.	Indexed Johnson	Date	



Remarks

Cut in Line 17+50

STATION	B.S.	H.I.	F.B.	ELEV.
Inst. Sight At On	# Rec. Adj.	Depth	Time	Hor. Ang.
	1		11:32	72° 17'
	2			71° 07'
	3			69° 57'
	4			68° 56'
	5			67° 08'
	6			66° 08'
	7			65° 02'
	8			64° 21'
	9			63° 02'
	10			61° 25'
	11			60° 04'
	12			59° 20'
	13			58° 17'
	14			57° 11'
	15			55° 54'
	16			54° 04'
	17			52° 24'
	18			50° 53'
	19			49° 32'
	20			45° 20'

Sta. Beach # 4

Sta. Beach # 3

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76298 S & E #307—7-55

F. B. 2305 Pg. 78 Job No. 0021.64 Division No. 10 Notes Red. G.D.B. Plotted J.S.H. Profile

Survey of Portuguese Bend Landslide Date 7-57 Date 7-57 No.

Survey by Van Deren Notes R.T. Notes Chkd. J.S.H. Checked G.D.B. X-Sec.

Indexed E. C. Johnson Date 6-24-57 Date 7-57 Date 7-57 No. 17+50

STATION	B.S.	H.I.	F.S.	ELEV.	
Inst. Sight At. On	Depth # Rec. Adj.	Time Hor. Ang.			Remarks
	21	11:36 43° 06			Cut in Line 17+50

Sta. Beach #3

Sta. Beach #4

76298 S & E #307—7-55

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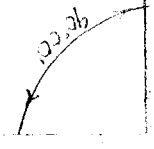
Do not extend notes this side of this line.

STATION Inst. At	Sight On	S. S. #	H. I. Depth Rec.	Adj.	F. S. Time	ELEV. Hor. Ang.		Remarks
17+50	Bar. #3	1	29.8	28.7	11:32	[illegible]	1192	
		2	27.8	26.1	11:32	[illegible]	1113	Int -0.1
		3	25.7	24.0	11:33	[illegible]	1043	Boat +1.0
		4	24.0	22.3	11:33	[illegible]	989	Tide -2.6
		5	23.3	21.6	11:33	[illegible]	923	Total -1.7
		6	22.8	21.1	11:33	[illegible]	861	
		7	23.3	21.6	11:33	[illegible]	818	
		8	23.4	21.7	11:33	[illegible]	793	
			22.1	20.3	11:34	[illegible]	748	Int. -0.2 Boat +1.0 Adj. Tide -2.6 Total -1.8
			19.8	18.1	11:34	[illegible]	699	Int -0.1
			19.4	17.7	11:34	[illegible]	661	Boat +1.0
			18.8	17.1	11:34	[illegible]	642	Tide -2.6
			17.8	16.1	11:34	[illegible]	616	Total -1.7
			16.2	14.5	11:35	[illegible]	591	
			14.2	12.4	11:35	[illegible]	562	Int. -0.2
			13.4	11.6	11:35	[illegible]	525	Boat +1.0
			11.3	9.5	11:35	[illegible]	495	Tide -2.6
			9.8	8.0	11:35	[illegible]	468	Total -1.8
			7.2	5.4	11:36	[illegible]	446	
		20	8.0	6.2	11:36	[illegible]	385	

True Line

17+50 Rail 45

Profile Notes Red. G.D.B. Plotted J.S.H. Job No. 002164 Division No. 16 F. B. 23 05 Pg. 79
No. Date 7-57 Date 7-57 Survey of Portuguese Bend Landslide
X-Sec. Notes Chkd. J.S.H. Checked G.D.B. Survey by [illegible] Notes [illegible] Date [illegible]
No. 17+50 Date 7-57 Date 7-57 Map No. X Indexed Johnson Date



F. B. PG. 80 Job No. 002164 Division No. 10 Notes Red. G. D. B. Plotted J. S. H. Profile

Survey of *Portuguese Bend Landslide* Date 7-57 Date 7-57 No.

Survey by Notes Notes Chkd. J. S. H. Checked G. D. B. X-Sec.

Indexed A. C. Johnson Date 6-24-57 Date 7-57 Date 7-57 No. 17+50

76298 S & E #307—7-55

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Do not extend notes this side of this line.

STATION		B. S.	H. I.		F. S.	ELEV.					
Inst. At	Sight On	#	Depth Rec.	Depth Adj.	Time	Hor. Ang.	Remarks: Int.	Boat Adj.	Tide Adj.	Total	
[illegible]	[illegible]	21	6.4	4.6	[illegible]	[illegible]	356	[illegible]	+1.0	-2.6	-1.8

76L298 S & E #307 9-54

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Do not extend notes this side of this line.

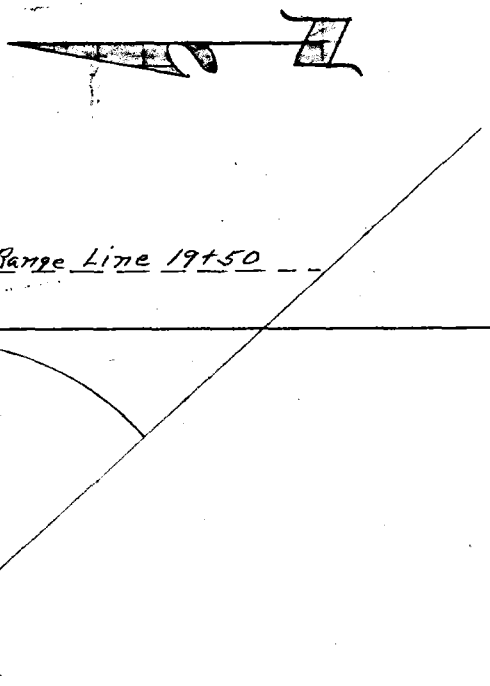
STATION	B. S.	H. I.	F. S.	ELEV.	Inst. at 15+50	Sight on 19+50
P.B.#5-A	3 13	6 70		3 57	M.L.L.W.	Inshore 19+50
19+50			+2 8	9 5	Control Line	
75 S R.			2 0	9 7	M.H.T.	DATUM MLLW
		6 7	5 7	1 0	18° 29' 134'	
			6 1	5 6	22 41 167'	
			6 3	0 4	25 16 189'	
			8 7	-2 0	28 51 220'	
			8 7	-2 0	32 32 255'	
			9 3	-2 6	36 10 292'	
TP			0 69	6 0		

Profile Notes Rod. G.D.B. Plotted J.S.H. Job No. 0021.69 Division No. 10 F. B. 2305 Pg. 81
No. Date 7-57 Date 7-57 Survey of PUNTA GUIJE BEND LAND SLIDE
X-Sec. Notes Chkd. J.S.H. Checked G.D.B. Survey by English Notes Ed. Date 6-24-57
No. 19+50 Date 7-57 Date 7-57 Map No. Inspected Johnson Date

Profile No. _____ Notes Red. G.D.B. Date 7-57 Plotted J.S.H. Date 7-57 Job No. 0021.64 Division No. 10 Survey of Portuguese Bend Landslide

F.B. 2305 Pg. 83

X-Sec. No. 19+50 Notes Chkd. J.S.H. Date 7-57 Checked G.D.B. Date 7-57 Survey by Van Deren Notes R.T. Date 6-24-57 Map No. _____ Indexed C. Johnson Date _____



Remarks

Cut in Line 19+50

STATION	B.S.	H.I.	F.S.	ELEV.
Inst. Sight At On	#	Depth Rec. Adj.	Time	Hor. Ang.
	1		11:50	64° 35'
	2			62° 50'
	3			61° 28'
	4			59° 29'
	5			58° 13'
	6			56° 57'
	7			55° 30'
	8			54° 13'
	9			52° 41'
	10			51° 06'
	11			49° 09'
	12			47° 33'
	13			46° 36'
	14			45° 09'
	15			43° 16'
	16			42° 22'
	17			41° 10'
	18			38° 58'
	19			37° 02'
	20			34° 32'

Sta. Beach #4

Sta. Beach #3

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76298 S & E #307—7-55

F. B. 2305 Pg. 84 | Job No. 8021.64 | Division No. 10 | Notes Red. G. D. B. | Plotted J. S. H. | Profile

Survey of Portuguese Bend Landslide | Date 7-57 | Date 7-57 | No.

Survey by Van Deren | Notes R. T. | Notes Chkd. J. S. H. | Checked G. D. B. | X-Sec.

Indexed A. C. Johnson | Date 6-24-57 | Date 7-57 | Date 7-57 | No. 19+50

76298 S & E #307—7-55

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STATION	B. S.	H. I.	F. S.	ELEV.	Inst. Sight At On	# Rec	Depth Adj.	Time Hor. Ang.	Remarks
Sta. Beach #3									
Sta. Beach #4									
						21		32° 36'	
						22		30° 11'	
						23		28° 23'	
						24		26° 31'	
						25		24° 51'	
					11:54				Cut in Line 19+50

76298 S & E #307—7-55

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Do not extend notes this side of this line.

STATION Inst. At	STATION Sight On	B. S. #	H. I. Depth Rec.	H. I. Depth Adj.	F. S. Time	ELEV. Hor. Ang.	Int Boat Tide Total	Remarks
19+50	Bench #3	1	31.6	29.9	11:50	[illegible]	1222 -0.2 +1.0 -2.5	-1.7
		2	29.7	28.0	11:50	[illegible]	1132 -0.2 +1.0 -2.5	-1.7
		3	26.9	25.2	11:50	[illegible]	1063 -0.2 +1.0 -2.5	-1.7
		4	25.3	23.6	11:50	[illegible]	[illegible] -0.2 +1.0 -2.5	-1.7
		5	24.4	22.6	11:50	[illegible]	[illegible]	
		6	23.4	21.6	11:50	[illegible]	893 Int -0.3	
		7	22.8	21.0	11:51	[illegible]	[illegible] Boat +1.0	
		8	22.7	20.9	11:51	[illegible]	[illegible] Tide -2.5	
		9	22.3	20.5	11:51	[illegible]	[illegible] Total -1.8	
		10	21.6	19.8	11:51	[illegible]	[illegible]	
		11	20.4	18.6	11:52	[illegible]	[illegible]	
		12	19.4	17.6	11:52	[illegible]	635	
		13	17.9	16.0	11:52	[illegible]	614 Int -0.4	
		14	16.8	14.9	11:52	[illegible]	582 Boat +1.0	
		15	15.4	13.5	11:52	[illegible]	547 Tide -2.5	
		16	13.3	11.4	11:53	[illegible]	530 Total -1.9	
		17	11.4	9.5	11:53	[illegible]	508	
		18	10.8	8.8	11:53	[illegible]	470 -0.5 +1.0 -2.5	-2.0
		19	8.9	7.1	11:53	[illegible]	438 -0.3 +1.0 -2.5	-1.8
		20	6.7	4.9	11:53	[illegible]	400 -0.3 +1.0 -2.5	-1.8

Bench #3

19+50

Profile Notes Red. W.H. Plotted J.S.H. Job No. 0021.64 Division No. 10 F. B. 73305 Pg. 85
No. Date 7-57 Date 7-57 Survey of Portuguesa Bend Landslide
X-Sec. Notes Chkd. J.S.H. Checked W.H. Survey by [illegible] Notes [illegible] Date [illegible]
No. 19+50 Date 7-57 Date 7-57 Map No. Indexed Johnson Date

76298 S & E #307—7-55

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Do not extend notes this side of this line.

STATION		B. S.	H. I.		F. S.	ELEV.					
Inst. At	Sight On	#	Depth Rec.	Depth Adj.	Time	Hor. Ang.	Int	Boat	Tide	Total	Remarks
19+50	[illegible]	21	9.2	7.3	11:54	[illegible]	372	-0.4	+1.0	-2.5	-1.9
		22	5.4	3.5	11:54	[illegible]	338	-0.4	+1.0	-2.5	-1.9
		23	5.8	4.0	11:54	[illegible]	314	-0.3	+1.0	-2.5	-1.8
		24	5.4	3.5	[illegible]	[illegible]	290	-0.4	+1.0	-2.5	-1.9
		25	4.7	2.8	[illegible]	[illegible]	269	-0.4	+1.0	-2.5	-1.9

F. B. 2305 PG. 86 Job No. 0021.64 Division No. 10 Notes Red. G.D.B. Plotted J.S.H. Profile No.
Survey of Portuguese Bend Landslide Date 7-57 Date 7-57 X-Sec.
Survey by [illegible] Notes [illegible] Notes Chkd. J.S.H. Checked G.D.B.
Indexed A. C. Johnson Date 6-24-57 Date 7-57 Date 7-57 No. 19+50

76298 S & E #307—7-55

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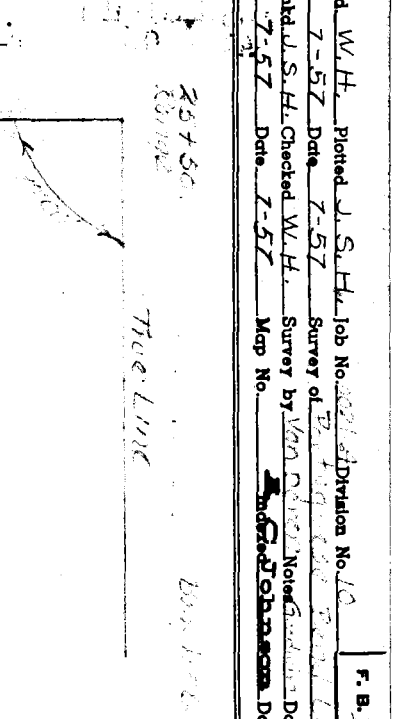
Profile Notes Red W.H. Plotted J.S.H. Job No. [illegible] Division No. 10 F. B. [illegible] Pg. 87
No. Date 7-57 Date 7-57 Survey of [illegible]
X-Sec. Notes Chkd. J.S.H. Checked W.H. Survey by Van Dyke Noted G. Johnson Date 7-25-57
No. 25+50 Date 7-57 Date 7-57 Map No. Index Johnson Date

STATION Inst. At	Sight On	B. S. #	H. I. Depth Rec.	H. I. Depth Adj.	F. S. Time	ELEV. Hor. Ang.		Remarks
		1	29.9	26.9	10:33		.303'	
		2	27.2	24.2	10:33		.232'	
		3	25.0	22.0	10:33		.152'	
		4	24.4	21.4	10:33		.133'	
		5	22.6	19.6	10:33		.081'	
		6	21.0	18.0	10:33		.036'	
		7	19.6	16.6	10:34		.004'	Int -0.5'
		8	18.1	15.1	10:34		.951'	Boat +1.0'
		9	15.8	12.8	10:34		.804'	Tide -3.5'
		10	14.4	11.4	10:34	90°	.760'	Total -3.0'
		11	15.4	12.4	10:34		.713'	
		12	14.4	11.4	10:35		.673'	
		13	11.6	8.6	10:35		.635'	
		14	11.4	8.4	10:35		.597'	
		15	10.5	7.5	10:35		.564'	
		16	9.3	6.3	10:35		.537'	
		17	9.0	6.0	10:35	70°	.509'	
		18	8.5	5.5	10:35	90°	.478'	
		19	7.7	4.7	10:36		.450'	
		20	7.6	4.6	10:36		.426'	



76298 S & E #307—7-55

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STATION		B. S.	H. I.		F. S.	ELEV.		
Inst. At	Sight On	#	Depth Rec.	Adj.	Time	Hor. Ang.		Remarks
[illegible]	[illegible]	[illegible]	7.1	4.1	[illegible]	[illegible]	392	Int -0.5
		[illegible]	6.2	3.2	[illegible]	[illegible]	372	Boat +1.0
								Tide -3.5
								Total -3.0

F. B. [illegible] Pg. 88 Job No. [illegible] Division No. [illegible] Notes Red. W. H. Plotted J. S. H. Profile
Survey of Portuguese [illegible] Date 7-57 Date 7-57 No.
Survey by Van Doren Notes J. C. [illegible] Notes Chkd. J. S. H. Checked W. H. X-Sec.
Indexed C. Johnson Date 6-25-57 Date 7-57 Date 7-57 No. 25+50

76L298 S & E #307 9-54

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STATION	B. S.	H. I.	F. S.	ELEV.	Inst. at 29+50	Sight on 27+50
P.B. #6-A	4 88	8 08		3 20	M.L.L.W.	
27+50		8 1	+2 6	10 7	Control Line	Inshore
18.51' R.			2 8	5 3	B.B.	27+50
			3 4	4 7	M.H.T.	10° 47' 58'
			5 5	2 6		23 36 87'
			6 7	1 4		35 30 143'
			7 6	0 5		44 39 198'
			8 9	-0 8		55 15 288'
			10 4	-2 3		61 33 369'
			12 3	-4 2 ~~3 8~~		65 00 429'
			12 7	-4 6		66 36 462'
T.P.			2 13	5 95		
						DATUM MLLW

Profile No. ____ Notes Red. W.H. Plotted J.S.H. Job No. 002164 Division No. 10 F. B. 2305 Pg. 89
Date 7-57 Date 7-57 Survey of Portuguese Bend landslide
X-Sec. No. 27+50 Notes Chkd. J.S.H. Checked W.H. Survey by English Notes Ed. Date 6-25-57
Date 7-57 Date 7-57 Map No. ____ Date ____

Notes Ck'd by J. S. H.	Survey of Port Bend Landslide
Map No. Surv. File Map 97-1	W. O. 2021.69 Tape No. St'd. °F
Office Work C. D. B. & W. H. & T. H. B.	Surveyed by M. R. Van Deren
Checked T. M. L.	Notes Van Date 6-25-57
Date 7-57	Indexed C. Johnson

F. B. 2305 Pg.

Tide Gauge Readings at Santa Monica

All Readings are on Daylight Saving time

Add 20 Minutes for Correct Daylight Saving time

6-25-57

Gauge time		Daylight Saving Time	Std. Time	Corr. Readg.
AM 7:00	+3.1	7:14	6:14	3.0
" 7:30	+3.7	7:44	6:44	3.6
" 8:00	+3.8	8:14	7:14	3.7
" 8:30	+3.9	8:44	7:44	3.8
" 9:00	+3.9	9:14	8:14	3.8
" 9:30	+3.7	9:44	8:44	3.6
" 10:00	+3.7	10:14	9:14	3.6
" 10:30	+3.5	10:44	9:44	3.4
" 11:00	+3.3	11:14	10:14	3.2
" 11:30	+3.0	11:44	10:44	2.9
" 12:00	+2.7	12:14	11:14	2.6
PM. 12:30	+2.5	12:44	11:44	2.4
" 1:00	+2.5	1:14	12:14	2.4
" 1:30	+2.4	1:44	12:44	2.3
" 2:00	+2.6	2:14	1:14	2.5

Note per U.S.C.&G.S.

The index line on tide gage is set at 2.9 ft. above MLLW. On the readings above 3.0 was used for the index line. Therefore subtract 0.1 ft. from above readings for correct tide height.

Notes: Any Additions or Changes on This Sheet Must be Made or Circled In Red Ink With Date and Name of Person Making Change.

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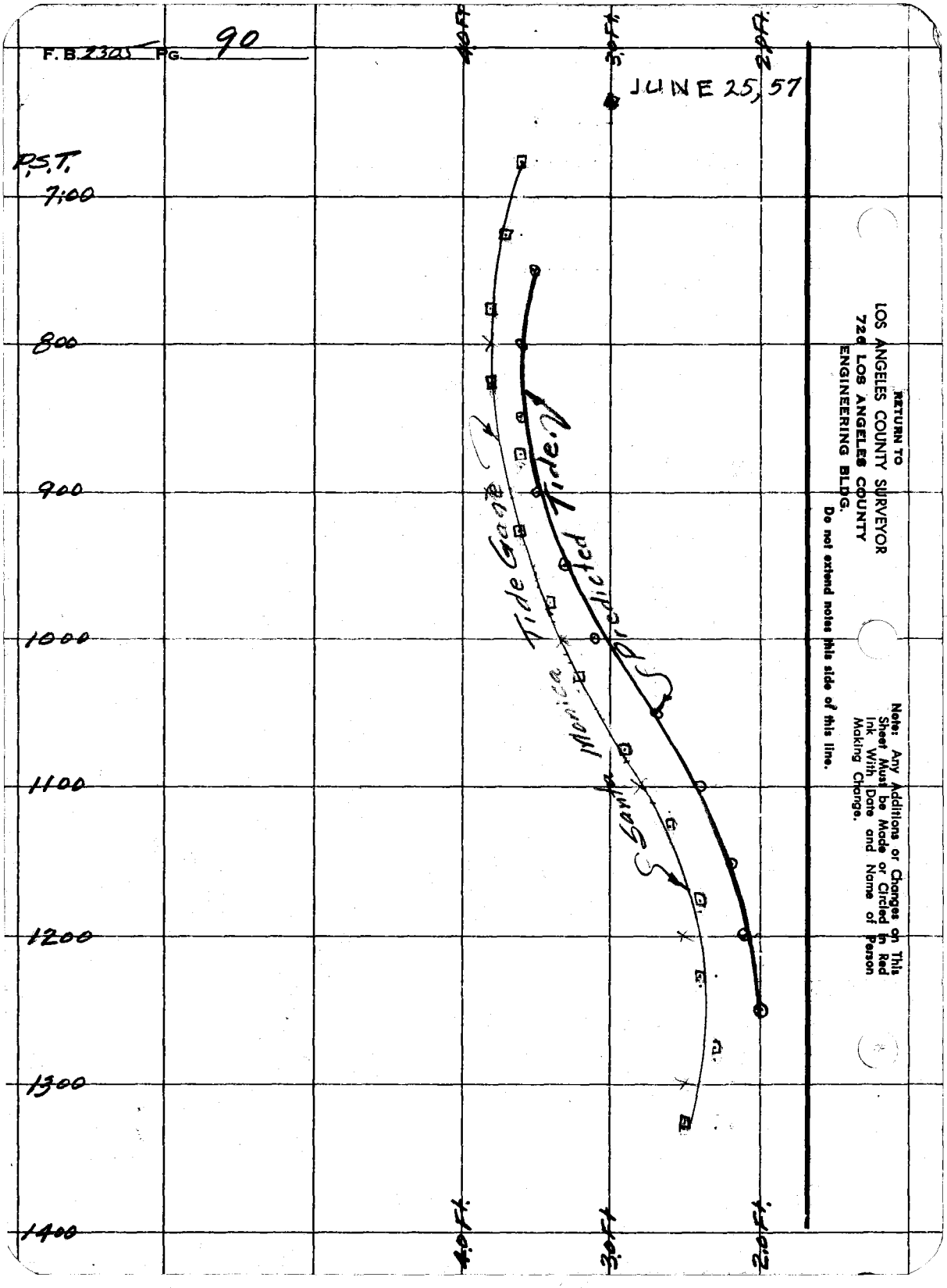
765309S S&E #247. 8-54

F. B. 2305 PG. 90



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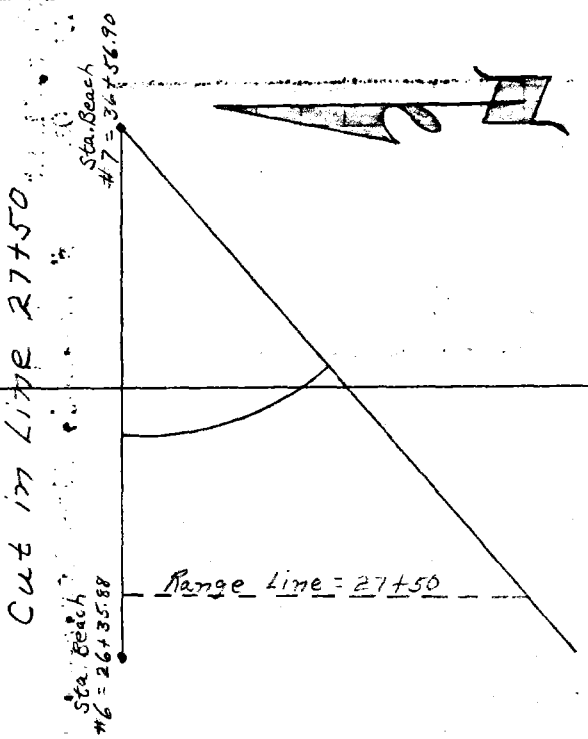
Profile	Notes Red. W. H.	Plotted J. S. H.	Job No. 0021.64	Division No. 10	F. B. 2305	Pg. 71
No.	Date 7-57	Date 7-57	Survey of Portuguese Bend Landslide			
X-Sec.	Notes Chkd. J. S. H.	Checked W. H.	Survey by Van Voren	Notes R.T.	Date 6-25-57	
No. 27+50	Date 7-57	Date 7-57	Map No.	Indexed Johnson	Date	



STATION	B. S.	H. I.	F. B.	ELEV.
Inst. Sight At On	#	Depth Rec. Adj.	Time	Hor. Ang.
	1		10:49	59° 13'
	2			57° 21'
	3			55° 49'
	4			54° 25'
	5			52° 47'
	6			50° 53'
	7			48° 53'
	8			46° 57'
	9			45° 57'
	10			42° 28'
	11			38° 51'
	12			37° 37'
	13			36° 11'
	14			34° 58'
	15			33° 25'
	16			32° 15'
	17			30° 44'
	18			29° 25'
	19			27° 54'
	20			26° 28'

Sta. Beach #6

Sta. Beach #7

Remarks

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76298 S & E #307—7-55

F. B. 2305 Pg. 92 | Job No. 202.64 Division No. 10 | Notes Red. W. H. | Plotted J. S. H. | Profile

Survey of Portuguese Bend Landslide | Date 7-57 | Date 7-57 | No.

Survey by Van Deren | Notes Ralph Turrill | Notes Chkd. J. S. H. | Checked W. H. | X-Sec.

Indexed E. C. Johnson | Date 6-25-57 | Date 7-57 | Date 7-57 | No. 27+50

76298 S & E #307—7-55

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STATION	B. S.	H. I.	F. S.	ELEV.	Inst. Sight At	# Rec'd	Depth Adj.	Time	Hor. Ang.	Remarks
					Sta. Beach #7					
					Sta. Beach #6					
						21			24° 57'	
						22		10:52	23° 45	
										Cut in Line 27+50

76L298 S & E #307 9-54

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STATION	B. S.	H. I.	F. S.	ELEV.	Inst. at 23+11 73	Sight on 21+50
T.P.	5 55	11 56		6 01		M.S.L. M.L.L.W.
P.B. #6-A	5 28	8 49	8 35	3 21	P.B. #6-A, el =	0.40 + 2.80 = 3.20
21+50			+ 5 6	14 1	Control line	Inshore
6' R			+ 5 6	14 1	Top Wall	21+50
7' R.			+ 0 3	8 8	Bot. "	
23 5 R.			0 9	7 6	Brk.	
			2 6	5 9	"	17° 47' 52'
		8 5	3 8	4 7	M.H.T.	24 57 75'
			6 9	1 6		37 17 123'
			8 1	0 4		49 02 186'
			11 8	-3 3		57 40 256'
			12 8	-4 3		61 37 299'
			12 1	-3 6		63 58 331'
			16 4	-7 9		66 57 380'

DATUM
MLLW

Profile Notes Red G.D.B. Plotted J.S.H. Job No. 0021.64 Division No. 10 F. B. 2[illegible] Pg. 91
No. Date 7-57 Date 7-57 Survey of Portuguese Bend landslide
X-Sec. Notes Chkd J.S.H. Checked G.D.B. Survey by English Notes Ed. Date 6-25-57
No. 21+50 Date 7-57 Date 7-57 Map No. ~~Index~~ Johnson Date

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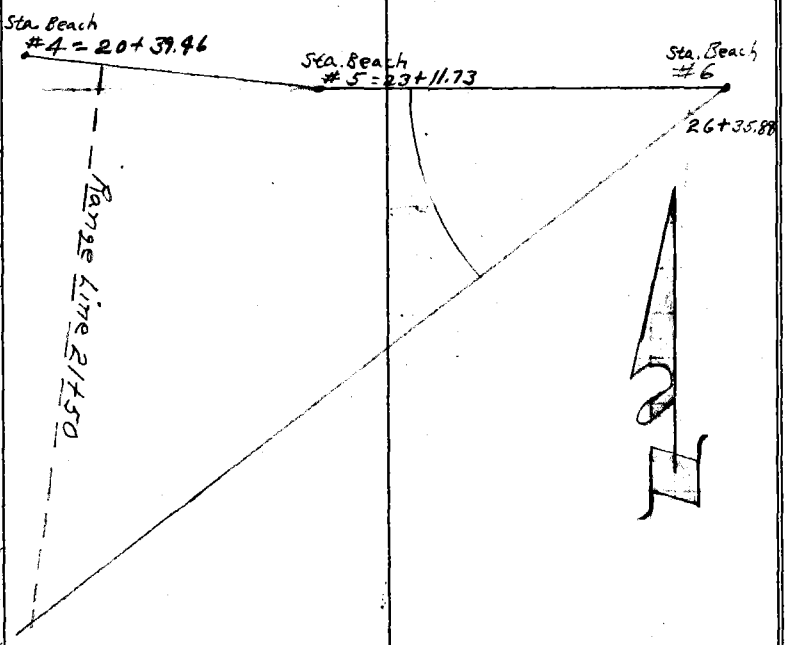
Profile Notes Red G.D.B. Plotted J.S.H. Job No. 2824.64 Division No. 10 F. B. 2305 Pg. 93
No. Date 7-57 Date 7-57 Survey of Portuguese Bend Landslide
X-Sec. Notes Chkd. J.S.H. Checked G.D.B. Survey by Van Perry Notes F.T. Date 6-25-57
No. 21+50 Date 7-57 Date 7-57 Map No. Indexed Johnson Date

STATION	B. S.	H. I.	F. S.	ELEV.	
Inst. At / Sight On	#	Depth Rec. Adj.	Time	Hor. Ang.	Remarks
Sta. Beach #6 / Sta. Beach #5	1		9:58	61° 50'	Cut in Line 21+50
	2			60° 42'	
	3			59° 44'	
	4			59° 06'	
	5			57° 50'	
	6			57° 05'	
	7			55° 45'	
	8			54° 18'	
	9			52° 48'	
	10			51° 14'	
	11			48° 36'	
	12			46° 52'	
	13			46° 00'	
	14			44° 31'	
	15			43° 43'	
	16			41° 38'	
	17			40° 17'	
	18			38° 46'	
	19			37° 17'	
	20			35° 34'	



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STATION		B. S.	H. I.	F. S.	ELEV.		
Inst. At	Sight On	#	Depth Rec. Adj.	Time	Hor. Ang.	Remarks	
		21			33° 28'	Cut in Line 21+50	
		22			32° 08'		
		23			30° 58'		
		24			29° 02'		
		25			27° 17'		
		26			25° 10'		
Sta. Beach #6	Sta. Beach #5	27			23° 13'		
		28			20° 36'		
		29		10:03	17° 47'		

F. B. 2305 Pg. 94 Job No. 002164 Division No. 10 Notes Red. G.B.D. Plotted J.S.H. Profile
Survey of Portuguese Bend Landslide Date 7-57 Date 7-57 No.
Survey by Van Deren Notes RHLPh Turrill Notes Chkd. J.S.H. Checked G.B.D. X-Sec.
Indexed [illegible] Date 6-25-57 Date 7-57 Date 7-57 No. 21+50

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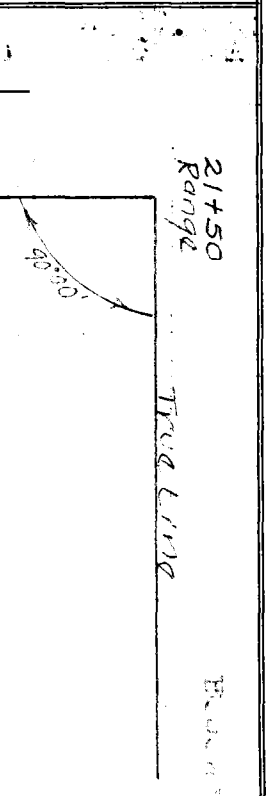
Profile Notes Red. J.S.H. Plotted J.S.H. Job No. 92464 Division No. 10 F.B. 2305 Pg. 75
No. Date 7-57 Date 7-57 Survey of Portuguese Bend Landslide
X-Sec. Notes Chkd. J.S.H. Checked J.B.D. Survey by Van Deren Notes Goodwin Date 6-25-57
No. 21+50 Date 7-57 Date 7-57 Map No. Kindel Johnson Date

STATION	B. S.	H. I.	F. S.	ELEV.		Remarks
Inst. At / Sight On	#	Depth Rec. / Adj.	Time	Hor. Ang.		
21+50 / BM 5	1	39.4 / 36.2			1549'	
		37.2 / 34.0	9:58		1438'	
		36.1 / 32.9	9:58		1385'	
		34.4 / 31.2	9:59		1302'	
		32.8 / 29.6	9:59		1212'	
		31.4 / 28.2			1162'	Int -0.5'
		29.4 / 26.2			1085'	Beat +1.0'
		27.4 / 24.2			1006'	Int -3.7'
		26.2 / 23.0			936'	Total -3.2'
		24.3 / 21.1			869'	
		22.6 / 19.4	10:01		771'	
		21.8 / 18.6	10:00		716'	
		21.5 / 18.3	10:00		692'	
		20.9 / 17.7	10:01		647'	
		19.1 / 15.9	10:01		577'	
		16.5 / 13.3	10:01		576'	
		16.0 / 12.8	10:01		547'	
	19	13.9 / 10.7	10:01		512'	
		13.4 / 10.2	10:02		494'	
		12.5 / 9.3	10:02		452'	



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STATION		B. S.	H. I.		F. S.	ELEV.		
Inst. At	Sight On	#	Depth Rec.	Adj.	Time	Hor. Ang.		Remarks
[illegible]	Beach #5	21	9.9	6.7	10:02	[illegible]	415	
		[illegible]	7.6	4.4	10:02		398	
			9.5	6.3	10:02		[illegible]	Int. -0.5
			6.9	3.7	10:02		345	Boat +[illegible]
			4.6	1.4	10:02		321	Tac -3.7
		26	6.2	3.0	10:03	[illegible]	293	Total -3.2
		[illegible]	7.4	4.2	[illegible]	[illegible]	268	
		[illegible]	6.4	3.2	[illegible]	[illegible]	236	
		29	4.8	1.6	10:03	[illegible]	204	

F. B. 2305 PG. 96 Job No. 0021.64 Division No. 10 Notes Red G. D. B. Plotted J. S. H. Profile
Survey of Portuguese Bend Landslide Date 7-57 Date 7-57 No.
Survey by Van Dyke Notes J. [illegible] Notes Chkd. J. S. H. Checked G. D. B. X-Sec.
Indexed C. Johnson Date 6-25-57 Date 7-57 Date 7-57 No. 21+50

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STATION	B. S.	H. I.	F. S.	ELEV.	Inst. at 21+50	Sight on 23+11 73
P.B. #6-A	5 28	8 48		3 20	M.L.L.W.	
23+11 73			+3 6	12 1	Control Line	Inshore 23+11 73
			3 8	4 7	M.H.T.	8° 10' 23'
			4 9	3 6		9 24 27'
			5 1	3 4		18 05 53'
			6 5	2 0		18 30 54'
			6 8	1 7		25 30 77'
		8 5	7 7	0 8	rocks	31 07 98'
			5 1	3 4	"	31 40 100'
			5 9	2 6	rocks	35 38 116'
			8 0	0 5		41 23 142'
			8 5	0 0		47 15 175'
			12 6	-4 1		51 27 203'
			13 8	-5 3		55 41 237'

DATUM MLLW

Profile Notes Red G.D.B. Plotted J.S.H. Job No. [illegible] Division No. 10 F. B. 2305 Pg. 97
No. Date 7-57 Date 7-57 Survey of Portuguese Bend Landslide
X-Sec. Notes Chkd. J.S.H. Checked G.B.D. Survey by English Notes Ed. Date 6-25-57
No. 23+11.73 Date 7-57 Date 7-57 Map No. Inspector Johnson Date

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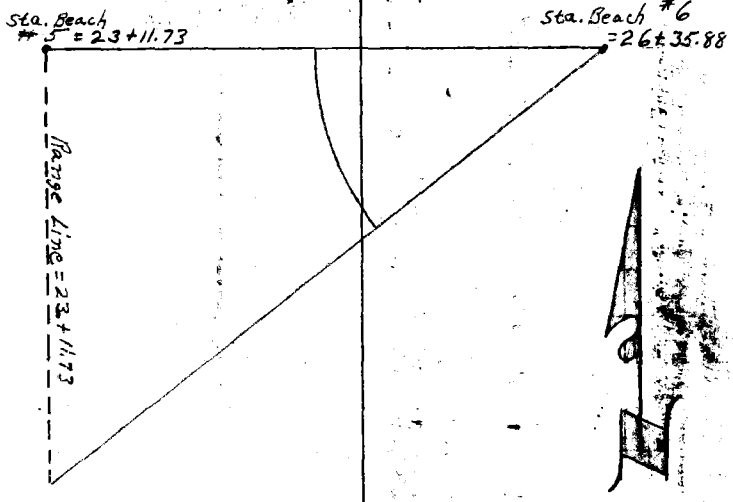
Profile Notes Red. G.D.B. Plotted J.S.H. Job No. 02464 Division No. 12 F. B. 2305 Pg. 79
No. Date 7-57 Date 7-57 Survey of Portuguese Bend Landslide
X-Sec. Notes Chkd. J.S.H. Checked G.D.B. Survey by Van Leuven Notes K.T. Date 6-25-57
No. 23+11.73 Date 7-57 Date 7-57 Map No. Engr. Johnson Date

STATION Inst. At	Sight On	B. S. #	H. I. Depth Rec. Adj.	F. S. Time	ELEV. Hor. Ang.
Sta. Beach #6	Sta. Beach #5	1		10:15	75° 22'
		2			74° 37'
		3			73° 36'
		4			72° 50'
		5			71° 58'
		6			70° 58'
		7			69° 52'
		8			68° 56'
		9			67° 48'
		10			66° 41'
		11			65° 30'
		12			64° 10'
		13			62° 43'
		14			61° 13'
		15			59° 51'
		16			58° 20'
		17			56° 18'
		18			53° 47'
		19			51° 26'
		20			48° 18'

Remarks

Cut in Line 23+11.73



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F. B. 2305 Pg. 80 | Job No. 022164 Division No. 10 Notes Red. G.D.B. Date 7-57 Plotted J.S.H. Date 7-57 No. Profile
Survey of Portuguese Bend Landslide Date 7-57 No. X-Sec.
Survey by Van Deren Notes Ralph Turrill Notes Chkd. J.S.H. Checked G.D.B. Date 7-57 No. 23+11.73
Indexed E. C. Johnson Date 6-25-57

STATION		B. S.	H. I.	F. S.	ELEV.		
Inst. At	Sight On	# Depth Rec.	Adj.	Time	Hor. Ang.	Remarks	# Depth Rec. Adj. Time
		21			45° 38'	Cut in Line 23+11.73	
Sta. Beach # 6		22		10: 18	42° 25'		
	Sta. Beach #5						

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Do not extend notes this side of this line.

STATION Inst. At	Sight On	S. S. #	H. I. Depth Rec.	H. I. Adj.	F. S. Time	ELEV. Hor. Ang.	Remarks
			31.6	28.5	[illegible]	[illegible]	241
			29.2	26.1	[illegible]	[illegible]	173
			28.5	25.4	[illegible]	[illegible]	[illegible]
			26.4	23.3	[illegible]	[illegible]	049
			23.7	20.6	[illegible]	[illegible]	[illegible]
			22.8	19.7	[illegible]	[illegible]	[illegible]
			21.3	18.2	[illegible]	[illegible]	[illegible]
			20.3	17.2	[illegible]	[illegible]	[illegible]
			19.2	16.1	[illegible]	[illegible]	[illegible]
			18.5	15.4	[illegible]	[illegible]	756
			18.7	15.6	[illegible]	[illegible]	711
			17.9	14.8	[illegible]	[illegible]	[illegible]
			16.2	13.1	[illegible]	[illegible]	[illegible]
			15.9	12.8	[illegible]	[illegible]	590
			14.8	11.7	[illegible]	[illegible]	[illegible]
			13.4	10.3	[illegible]	[illegible]	[illegible]
			12.5	9.4	[illegible]	[illegible]	[illegible]
			11.5	8.4	17	[illegible]	[illegible]
			10.3	7.2	18	[illegible]	[illegible]
			9.1	6.0	18	[illegible]	[illegible]

Int. -0.5
Boat +1.0
Tide -3.8
Total -3.1

23+11.73 Range

Profile No. ____ Notes Red G.D.B. Plotted J.S.H. Job No. CC21.64 Division No. 10 F. B. 23[illegible] Pg. 81
Date 7-57 Date 7-57 Survey of Pertinent Bond Landslide
X-Sec. No. 23+11.73 Notes Chkd. J.S.H. Checked G.D.B. Survey by Van Deken Notes Goodwin Date 25-52
Date 7-57 Date 7-57 Map No. ____ Date ____

76298 S & E #307—7-55

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STATION		S. S.	H. I.		F. S.	ELEV.		
Inst. At	Sight On	#	Depth Rec.	Adj.	Time	Hor. Ang.	Int. Boat Tide Total Remarks	
			7.2	4.1			3.1 -0.5 +1.0 -3.6 -3.1	
			7.2	4.1			3.96 -0.5 +1.0 -3.6 -3.1	

F. B. 2305 Pg. 82 Job No. 0021.64 Division No. 10 Notes Red. G.D.B. Plotted J.S.H. Date 7-57 No. Profile
Survey of Portuguese Bend Landslide Date 7-57 No. X-Sec.
Survey by [illegible] Notes [illegible] Notes Chkd. J.S.H. Checked G.D.B. Date 7-57 No. 23+11.73
Indexed A. C. Johnson Date 6-25-57

76L298 S & E #307 9-54

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STATION	B. S.	H. I.	F. S.	ELEV.	Inst. at 23+11.73	Sight on 25+50
P.S. #6-A	4 88	8 08		3 20	M. L.L. W.	
25+50		8 [illegible]	2 3	5 8	Control Line	Inshore 25+50
10' L.			+1 4	9 5		
17' R.			3 4	4 7	M. H. T.	
			6 1	2 0	19° 20' 84'	
			7 2	0 9	32 26 151'	
			8 4	-0 3	44 11 232'	
			9 3	-1 2	51 01 294'	
			9 7	-1 6	55 49 351'	
			12 5	-4 4	60 48 426'	
			12 4	-4 3	62 01 448'	

DATUM
MLLW

Profile Notes Red W.H. Plotted J.S.H. Job No. 0021.64 Division No. 10 F. B. 2305 Pg. 83
No. Date 7-57 Date 7-57 Survey of Portuguese Bend Landslide
X-Sec. Notes Chkd J.S.H. Checked W.H. Survey by English Notes Ed. Date 6-25-57
No. 25+50 Date 7-57 Date 7-57 Map No. Indexed Johnson Date

76298 S & E #307—7-55

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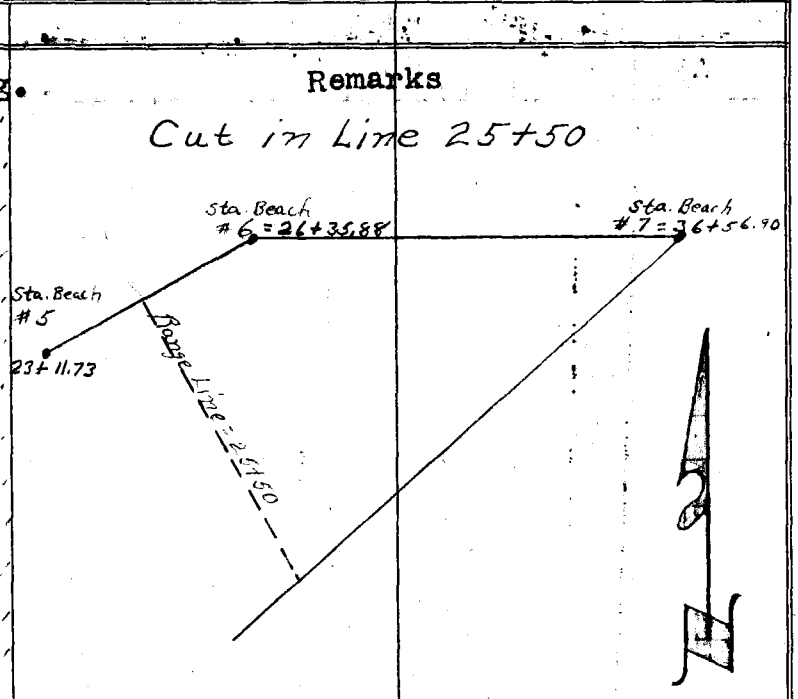
Do not extend notes this side of this line.

Profile Notes Red. W. H. Plotted G. D. B. Job No. 22166 Division No. 10 F. B. 2305 Pg. 85
No. Date 7-57 Date 7-57 Survey of Portuguese Bend Landslide
X-Sec. Notes Chkd. D. B. Checked W. H. Survey by Van Doren Notes K.T. Date 6-25-57
No. 2.5+50 Date 7-57 Date 7-57 Map No. Traced J. Johnson Date

STATION	S. S.	H. I.	F. S.	ELEV.	
Inst. At / Sight On	#	Depth Rec. / Adj.	Time	Hor. Ang.	Remarks
	1		10:33	68° 40'	Cut in Line 25+50
	2			66° 02'	
	3			63° 19'	
	4			60° 41'	
	5			58° 02'	
	6			56° 08'	
	7			52° 37'	
	8			49° 00'	
	9			46° 31'	
	10			44° 01'	
	11			41° 35'	
	12			39° 17'	
	13			37° 08'	
	14			35° 00'	
	15			33° 07'	
	16			31° 27'	
	17			29° 47'	
	18			28° 03'	
	19			26° 24'	
	20			25° 02'	



F. B. 2305 Pg. 86 | Job No. 002164 Division No. 10 | Notes Red. W. H. | Plotted G. D. B. | Profile

Survey of Portuguese Bend Landslide | Date 7-57 | Date 7-57 | No.

Survey by Van Doren | Notes Ralph Torrill | Notes Chkd. G. D. B. | Checked W. H. | X-Sec.

Indexed A. C. Johnson | Date 6-25-57 | Date 7-57 | Date 7-57 | No. 25+50

STATION	B. S.	H. I.	F. S.	ELEV.	Remarks
Sta. Beach # 7					Inst. Sight At On # Rec. Depth Adj. Time Hor. Ang.
Sta. Beach #6	21 22		10.36	22° 57 31° 53	Cut in Line 25+50

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76298 S & E #907—7-55

Notes Ck'd by G. D. B.
Map No. Sur. File Map 97-1
Office Work W.H. + G.D.B. 9-15-57
Checked T. M. I. + T. H. B.
Date 7-57

Survey of Port Bend Landslide
W. O. 5021.64 Tape No. / St'd. °F
Surveyed by M. A. Van Deren
Notes Van & C. Johnson
Indexed 5-11-58

Tide Gauge Readings at Santa Monica

All Readings are on Daylight Savingtime

Add 20 Minutes for Correct Daylight saving Time

Gauge Time		6-24-57 Daylight Savings Time.	Std time.	CORR. READING
A.M. 7:00	+3.5	7:12	6:12	+3.4
" 7:30	+3.7	7:42	6:42	+3.6
" 8:00	+3.8	8:12	7:12	+3.7
" 8:30	+3.8	8:42	7:42	+3.7
" 9:00	+3.7	9:12	8:12	+3.6
" 9:30	+3.5	9:42	8:42	+3.4
" 10.00	+3.1	10:12	9:12	+3.0
" 10:30	+3.0	10:42	9:42	+2.9
" 11:00	+2.9	11:12	10:12	+2.8
" 11:30	+2.6	11:42	10:42	+2.5
" 12:00	+2.5	12:12	11:12	+2.4
P.M. 12:30	+2.5	12:42	11:42	+2.4
" 1:00	+2.5	1:12	12:12	+2.4
" 1:30	+2.7	1:42	12:42	+2.6
" 2:00	+2.8	2:12	1:12	+2.7

Note.

Subtract 0.1 ft. from gage readings for correct height.

See note pg. 89

Note: Any Additions or Changes on this Sheet Must be Made or Circled in Red Ink With Date and Name of Person Making Change.

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76F3095 SAE #247. 8-54

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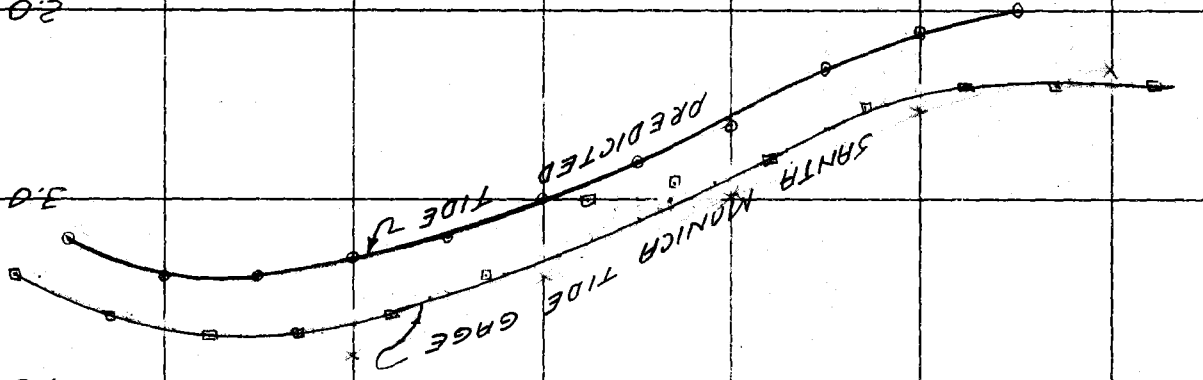
JUNE 24, 57



2.0
3.0
4.0

P.S.T.
7:00
8:00
9:00
10:00
11:00
12:00
1:00

F.B. 2303 PG. 18

76298 S & E #307—7-55

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STATION Inst. At	Sight On	B. S. #	H. I. Depth Rec.	H. I. Adj.	F. S. Time	ELEV. Hor. Ang.		Remarks
27+50	[illegible]	1	36.0	33.1	10:49	90° 00'	1523	
		2	34.0	31.1	10:49	[illegible]	1416	
		3	32.4	29.5	10:49		1335	
		4	31.4	28.5	10:49	[illegible]	1268	
		5	29.5	26.6	10:49		1194	Int. -0.5
		6	26.5	23.6	10:49		1115	Bent +1.0
		7	24.4	21.5	10:50		1039	Tide -3.4
		8	22.4	19.5	10:50		970	Total -2.9
		9	20.4	17.5	10:50		911	
		10	18.6	15.7	10:50		830	
		11	17.4	14.5	10:51		733	
		12	16.9	14.0	10:51		699	
		13	15.5	12.6	10:51		683	
		14	14.8	11.9	10:51	90° 00'	634	
		15	12.4	9.5	10:51	90° 00'	599	
		16	11.9	9.0	10:52		572	
		17	11.3	8.4	10:52	90° 00'	540	
		18	10.1	7.2	10:52	90° 00'	511	
		19	9.2	6.3	10:52	90° 00'	480	
		20	8.4	5.5	10:52	90° 00'	452	

21+50 Range

True Line

Profile Notes Red. W.H. Plotted J.S.H. Job No. [illegible] Division No. [illegible] F. B. [illegible] Pg. 93
No. Date 7-57 Date 7-57 Survey of [illegible]
X-Sec. Notes Chkd. J.S.H. Checked W.H. Survey by [illegible] Notes [illegible] Date [illegible]
No. 27+50 Date 7-57 Date 7-57 Map No. [illegible] Date [illegible]

F. B. 2305 Pg. 94 | Job No. 0021 64 | Division No. 10 | Notes Red. W. H. | Plotted J. S. H. | Profile

Survey of Portuguese Bend Landslide | Date 7-57 | Date 7-57 | No.

Survey by Van Deren | Notes J. C. Goodwin | Notes Chkd. J. S. H. | Checked W. H. | X-Sec.

Indexed X C. Johnson | Date 6-25-57 | Date 7-57 | Date 7-57 | No. 27+50

76298 S & E #307—7-55

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Do not extend notes this side of this line.

STATION	B. S.	H. I.	F. S.	ELEV.		
Inst. Sight At On	# Depth Rec. Adj.	Time	Hor. Ang.			Remarks
	7.8 4.9		422'			
	7.0 4.1		590'			

76L298 S & E #307 9-54

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Profile Notes Red. G.D.B. Plotted J.S.H. Job No. 002164 Division No. 40 F. B. 2305 Pg. 95
No. Date 7-57 Date 7-57 Survey of PORTUGUESE BEND LANDSLIDE
X-Sec. Notes Ckd. J.S.H. Checked G.D.B. Survey by ENGINEER Notes ED Date 6-25-57
No. 29+50 Date 7-57 Date 7-57 Map No. Indexed Tobascob Date

STATION	B. S.	H. I.	F. S.	ELEV.	Inst. at 31+50	Sight on 29+50
B.P.	2 62	8 57		5 95	M.L.L.W.	
29+50			+0 8	9 4	Control Line	Inshore 29+50
11° L.			+2 2	10 8	B.B.	
17', R.		8 6	3 2	5 4	Brk.	
			3 9	4 7	M.H.T.	11°01' 39'
			6 1	2 5		25 39 96'
			7 4	1 2		35 56 145'
			9 3	-0 7		46 08 208'
			9 3	-0 7		49 56 238'
			10 0	-1 4		56 43 305'
			12 0	-3 4		61 21 366'
			14 7	-6 1		63 34 402'

DATUM MLLW

76298 S & E #307—7-55

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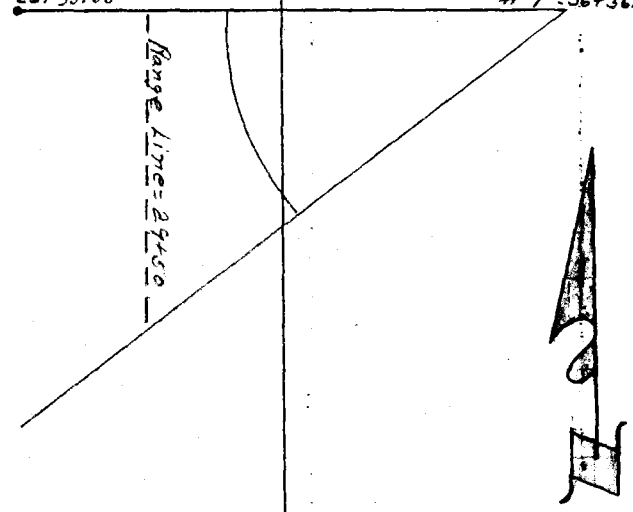
STATION		B. S.	H. I.	F. S.	ELEV.		
Inst. At	Sight On	#	Depth Rec. Adj.	Time	Hor. Ang.	Remarks	
		1		11:06	62° 30'	Cut in Line 29+50	
		2			61° 08'		
		3			59° 52'	Sta. Beach #6 = 26+35.88	Sta. Beach #7 = 36+56.90
		4			58° 32'		
		5			57° 28'		
		6			56° 01'		
Sta. Beach #7	Sta. Beach #6	7			54° 28'		
		8			53° 03'		
		9			51° 48'		
		10			50° 32'		
		11			49° 09'		
		12			47° 54'		
		13			45° 55'		
		14			43° 55'		
		15			42° 29'		
		16			41° 14'		
		17			39° 53'		
		18			38° 33'		
		19			37° 12'		
		20			35° 12'		



Profile Notes Red. G.D.B. Plotted J.S.H. Job No. 0021.64 Division No. 10 F. B. 2305 Pg. 97
No. Date 7-57 Date 7-57 Survey of Portuguese Bend Landslide
X-Sec. Notes Chkd. J.S.H. Checked G.D.B. Survey by Van Deren Notes R.T. Date 6-25-51
No. 29+50 Date 7-57 Date 7-57 Map No. Inc. Johnson Date

F. B. 2305 Pg. 78 Job No. 0021.64 Division No. 10 Notes Red. G.D.B. Plotted J.S.H. Profile

Survey of Portuguese Bend Landslide Date 7-57 Date 7-57 No.

Survey by Van Deren Notes Ralph Turrill Notes Chkd. J.S.H. Checked G.D.B. X-Sec.

Indexed A. C. Johnson Date 6-25-57 Date 7-57 Date 7-57 No. 29+50

76298 S & E #307—7-55

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STATION	B.S.	H.I.	F.S.	ELEV.		
Inst. Sight At On	# Depth Rec. Adj.		Time	Hor. Ang.	Remarks	
Sta. Beach #7						
Sta. Beach #6						
	21			33° 16'		
	22			31° 57'		
	23		11:09	30° 18'		
					Cut in Line 29+50	

76298 S & E #307—7-55

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STATION Inst. At	Sight On	B. S. #	H. I. Depth Rec.	Adj.	F. S. Time	ELEV. Hor. Ang.		Remarks
29+50	[illegible]	1	33.5	30.7	11:06		1358	
		[illegible]	31.7	28.9	11:06		1232	
		[illegible]	29.8	27.0	[illegible]		1218	
		[illegible]	27.7	24.9	[illegible]		1155	
		[illegible]	27.0	24.2	[illegible]		1108	
		[illegible]	26.1	23.3	[illegible]		1048	Int. -0.5
		[illegible]	24.4	21.6	[illegible]		990	Blast +1.0
		[illegible]	21.6	18.8	[illegible]		939	Tide -3.3
		[illegible]	19.4	16.6	[illegible]		898	Total -2.8
		[illegible]	18.6	15.8	11:07		859	
		[illegible]	17.3	14.5	[illegible]	90° [illegible]	817	
		[illegible]	16.3	13.5	[illegible]		[illegible]	
		[illegible]	14.8	12.0	[illegible]		730	
		[illegible]	13.5	10.7	11:07		681	
		[illegible]	12.1	9.3	[illegible]	90° [illegible]	615	
		[illegible]	9.8	7.0	11:08		619	
		[illegible]	11.6	8.8	11:08		[illegible]	
		[illegible]	12.7	9.9	11:08	90° 00	[illegible]	
		[illegible]	11.5	8.7	11:08	90° [illegible]	537	
		[illegible]	9.8	7.0	11:08	[illegible]	498	

29+50 Rad.

90°00

True Line

Bend [illegible]

Profile Notes Red G.D.B. Plotted J.S.H. Job No. [illegible] Division No. [illegible] F. B. [illegible] Pg. 99
No. Date 7-57 Date 7-57 Survey of [illegible]
X-Sec. Notes Chkd. J.S.H. Checked G.D.B. Survey by [illegible] Notes [illegible] Date [illegible]
No. 29+50 Date 7-57 Date 7-57 Map No. [illegible] Date

76298 S & E #307—7-55

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Do not extend notes this side of this line.

STATION		B. S.	H. I.		F. S.	ELEV.		
Inst. At	Sight On	#	Depth Rec.	Adj.	Time	Hor. Ang.		Remarks
29+50	Beach #7	21	7.3	4.5	[illegible]	[illegible]	464	
		22	5.7	2.9	[illegible]	[illegible]	441	Int. -1.5
		23	8.5	5.7	[illegible]	[illegible]	413	Rest +1.0
								Trip -3.3
								Total -2.8

F. B. 2305 Pg. 100 Job No. 0021.64 Division No. 10 Notes Red. G.D.B. Plotted J.S.H. Profile
Survey of Portuguese Bend Landslide Date 7-57 Date 7-57 No.
Survey by [illegible] Notes J.C. Goodwin Notes Chkd. J.S.H. Checked G.D.B. X-Sec.
Indexed A. C. Johnson Date 6-25-57 Date 7-57 Date 7-57 No. 29+50

76L298 S & E #307 9-54

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Do not extend notes this side of this line.

Profile Notes Red G.D.B. Plotted J.S.H. Job No 0021.64 Division No 16 F. B. 2305 PG 101
No Date 7-57 Date 7-57 Survey of PENINSULA BEND LANDSLIDE
X-Sec. Notes Chkd. J.S.H. Checked G.D.B. Survey by ENGLISH Notes ED Date 6-25-57
No. 31+52 Date 7-57 Date 7-57 Map No. Indexed Checked Date

STATION	B. S.	H. I.	F. S.	ELEV.	Inst. at 33+50	Sight on 31+50
T.P.	2 62	8 57		5 95	M.L.L.W.	Inshore 31+50
31+50		+	0 2	8 8	Control Line	
6' L		8 6+	1 0	9 6	Brk.	
9' R			2 0	6 6	"	
			3 9	4 7		14° 16' 51'
			5 7	2 9		24 00 89'
			7 3	1 3		36 32 148'
			8 4	0 2		43 33 190'
			10 9	-2 3		51 58 256'
			7 8	0 8	Rocks	52 42 263'
			9 5	-0 9		54 33 281'
			10 7	-2 1		59 14 336'
			12 8	-4 2		62 09 379'
T.P.			1 23	7 34		

DATUM MLLW

76298 S & E #307—7-55

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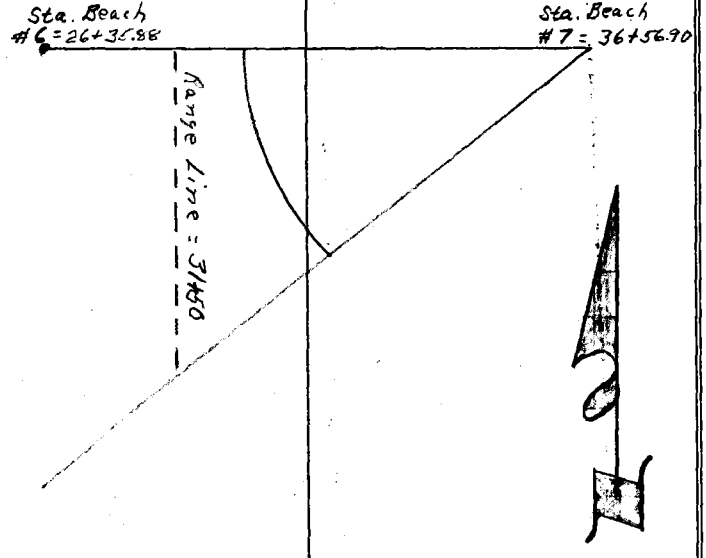
Profile Notes Red. G.D.B. Plotted J.S.H. Job No. 802164 Division No. 10 F. B. 2305 Pg. 103
No. Date 7-57 Date 7-57 Survey of Portuguese Bend Landslide
X-Sec. Notes Chkd. J.S.H. Checked G.D.B. Survey by Van Perry Notes M.C. Date 6-25-57
No. 31+50 Date 7-57 Date 7-57 Map No. Indexed Johnson Date

STATION Inst. At	Sight On	B. S. #	H. I. Depth Rec.	Adj.	F. S. Time	ELEV. Hor. Ang.
Sta. Beach #7	Sta. Beach #6	1			11:28	69° 41'
		2				68° 32'
		3				67° 16'
		4				65° 23'
		5				64° 24'
		6				62° 58'
		7				61° 10'
		8				59° 02'
		9				58° 12'
		10				56° 27'
		11				55° 21'
		12				53° 46'
		13				52° 35'
		14				51° 10'
		15				50° 08'
		16				48° 43'
		17				47° 09'
		18				45° 22'
		19				43° 47'
		20				42° 10'

Remarks

Cut in Line 31+50



76298 S & E #307—7-55

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Do not extend notes this side of this line.

F. B. 2305 Pg. 104 | Job No. 62244 Division No. 10 Notes Red. G.D.B. Plotted J.S.H.
Survey of Portuguese Bend Landslide Date 7-57 Date 7-57 No. Profile
Survey by Van Deren Notes Ralph Turrill Notes Chkd. J.S.H. Checked G.D.B. X-Sec.
Indexed E. C. Johnson Date 6-25-57 Date 7-57 Date 7-57 No. 31+50

STATION	B. S.	H. I.	F. S.	ELEV.		
Inst. At / Sight On	# Rec.	Depth Adj.	Time	Hor. Ang.		Remarks
	21			40° 10		Cut in Line 31+50
Sta. Beach #7 / Sta. Beach #6	22		11:32	38° 03		

76298 S & E #307—7-55

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Do not extend notes this side of this line.

STATION Inst. At	Sight On	B. S. #	H. I. Depth Rec.	Adj.	F. S. Time	ELEV. Hor. Ang.		Remarks
31+50	[illegible]		35.2	32.6	[illegible]	90° [illegible]	1369	
		2	33.1	30.5	[illegible]	[illegible]	1289	
		3	30.8	28.2	[illegible]	[illegible]	1210	
		4	26.8	24.2	[illegible]	[illegible]	[illegible]	
		5	23.6	21.0	11:29	[illegible]	[illegible]	Int -0.5
		6	22.7	20.1	11:29	[illegible]	[illegible]	Boat +1.0
		7	22.7	20.1	[illegible]	[illegible]	[illegible]	Toe -3.1
		8	20.9	18.3	11:30	[illegible]	[illegible]	Total -2.6
		9	19.6	17.0	11:30	[illegible]	818	
		10	18.3	15.7	11:30	[illegible]	764	
		11	16.6	14.0	11:30	[illegible]	733	
		12	14.8	12.2	11:30	[illegible]	692	
		13	14.3	11.7	11:30	[illegible]	663	
		14	13.1	10.5	11:31	[illegible]	630	
		15	12.5	9.9	11:31	[illegible]	607	
		16	11.6	9.0	11:31	[illegible]	577	
		17	11.0	8.4	11:31	[illegible]	546	
		18	10.3	7.7	11:31	[illegible]	513	
		19	9.2	6.6	11:31	90° [illegible]	486	
		20	8.0	5.4	11:31	[illegible]	459	

31+50 Ramp

True Line

Profile Notes Red G.D.B. Plotted J.S.H. Job No. [illegible] Division No. 10 F. B. [illegible] Pg. 105
No. Date 7-57 Date 7-57 Survey of [illegible]
X-Sec. Notes Chkd. J.S.H. Checked G.D.B. Survey by [illegible] Notes [illegible] Date [illegible]
No. 31+50 Date 7-57 Date 7-57 Map No. Indexed Johnson Date

F. B. 2305 PG. 106

Job No. 0021.69 Division No. 10 Notes Red. G. D. B. Plotted J. S. H. Profile

Survey of Portuguese Bend Landslide Date 7-57 Date 7-57 No.

Survey by Van Deren Notes J. C. Goodwin Notes Chkd. J. S. H. Checked G. D. B. X-Sec.

Indexed A. C. Johnson Date 6-25-57 Date 7-57 Date 7-57 No. 31+50

76298 S & E #307—7-55

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STATION	B. S.	H. I.	F. S.	ELEV.		
Inst. Sight At On	Depth # Rec. Adj.		Time	Hor. Ang.		Remarks
31+50 [illegible]	21 7.3 4.7		11:32	[illegible] 428'		
	22 6.3 3.7		11:32	[illegible] 397'		

Int -0.5'
Boat +1.0'
Tide -3.1'
Total -2.8'

76L298 S & E #307 9-54

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726 LOS ANGELES COUNTY ENGINEERING BLDG.

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Profile Notes Red. G.D.B. Plotted J.S.H. Job No. 002164 Division No. 10 F. B. 2305 Pg. 107
No. Date 7-57 Date 7-57 Survey of PORTUGUESE BEND LANDSLIDE
X-Sec. Notes Chkd. J.S.H. Checked G.D.B. Survey by ENGLISH Notes ED Date 6-25-57
No. 33+50 Date 7-57 Date 7-57 Map No. Checked Johnson Date

STATION	B. S.	H. I.	F. S.	ELEV.	Inst. at 35+50	Sight on 33+50
T.P.	13	8 47		7 34	M.L.L.W.	Inshore 33+50
33+50			0 0	8 5	Control Line	
6½' L.			+2 2	10 7	Brk.	
5' R.		8 5	1 3	7 2	"	
			3 8	4 7	M.H.T.	15° 19' 55'
			5 7	2 8		24 04 89'
			8 0	0 5		36 02 145'
			8 1	0 4		44 52 199'
			8 9	-0 4		51 32 252'
			9 4	-0 9		54 54 285'
			10 1	-1 6		57 55 319'
			11 0	-2 5		61 27 368'
			12 0	-3 5		65 03 393'
			13 6	-5 1		69 31 420'

DATUM
MLLW

76298 S & E #307—7-55

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Profile Notes Red G.D.B. Plotted J.S.H. Job No. 22166 Division No. 10 F. B. 2305 Pg. 109
No. Date 7-57 Date 7-57 Survey of Portuguese Bend Landslide
X-Sec. Notes Chkd. J.S.H. Checked G.D.B. Survey by Van Meter Notes F.T. Date 6-25-57
No. 33+50 Date 7-57 Date 7-57 Map No. Inked Johnson Date

STATION	B. S.	H. I.	F. S.	ELEV.	
Inst. At / Sight On	#	Depth Rec. Adj.	Time	Hor. Ang.	Remarks
	1		11:46	61° 18'	Cut in Line 33+50
	2			59° 25'	
	3			57° 32'	Sta. Beach #6 = 26+35.88
	4			55° 26'	
	5			53° 13'	
	6			51° 18'	
	7			48° 59'	
	8			47° 35'	
	9			46° 00'	
	10			44° 44'	
	11			43° 31'	
	12			42° 17'	
	13			40° 40'	
	14			39° 38'	
	15			38° 05'	
	16			36° 25'	
	17			35° 26'	
	18			36° 45'	✓
	19		11:49	32° 43'	
	20				

Sta. Beach #6

Sta. Beach #7

Sta. Beach #7 = 38+56.90

Range Line = 33+50

F. B. 2305 Pg. 110 | Job No. 102.64 Division No. 10 Notes Red. Plotted Profile

Survey of Portuguese Bend Landslide Date 6-25-57 Date No.

Survey by Van Deven Notes Ralph Turrill Notes Chkd. Checked X-Sec.

Indexed K. C. Johnson Date Date Date No.

STATION	B. S.	H. I.	F. S.	ELEV.	Remarks
Sta. Beach # 6					
Inst. Sight On # Rec	Depth Adj.	Time Hor. Ang.			Cut in Line 33450
Sta. Beach # 7					

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76298 S & E #307—7-55

76298 S & E #307—7-55

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Do not extend notes this side of this line.

STATION Inst. At	Sight On	B. S. #	H. I. Depth Rec.	Adj.	F. S. Time	ELEV. Hor. Ang.	Remarks
33+50	[illegible]	1	34.0	31.6	11:46	[illegible]	1305
		2	33.2	30.8	11:46	[illegible]	1208
		3	30.0	27.6	11:46	[illegible]	1123
		[illegible]	25.3	22.9	11:46	[illegible]	1036
		5	21.9	19.5	[illegible]	[illegible]	955
			20.3	17.9	[illegible]	[illegible]	891 Int -0.5
			22.1	19.7	[illegible]	[illegible]	818 Bot +1.0
			20.2	17.8	11:47	[illegible]	782 Tide -2.9
			18.1	15.7	11:47	[illegible]	740 Total -2.4
			17.3	14.9	11:47	[illegible]	706
			15.6	13.2	[illegible]	[illegible]	678
			14.3	11.9	[illegible]	[illegible]	649
			12.7	10.3	11:48	[illegible]	613
			13.7	11.3	11:48	[illegible]	591
			12.1	9.7	11:48	[illegible]	560
		[illegible]	10.7	8.3	[illegible]	[illegible]	527 ?
		17	9.5	7.1	11:48	[illegible]	508 ?
		18	8.6	6.2	11:49	[illegible]	533
		19	7.9	5.5	11:49	[illegible]	458

33+50
10 ft
True Line

Profile Notes Red G.D.B. Plotted J.S.H. Job No. [illegible] Division No. 10 F. B. 7305 Pg. 111
No. Date 7-57 Date 7-57 Survey of [illegible]
X-Sec. Notes Chkd. J.S.H. Checked G.D.B. Survey by Van Dorn Notes Goodwin Date 6-25-57
No. 33+50 Date 7-57 Date 7-57 Map No. [illegible] Date

F. B. 7305 Pg. 112 Job No. 0021.64 Division No. 10 Notes Red. Plotted Profile

Survey of [illegible] Bond Landslide Date 6-25-57 Date No.

Survey by [illegible] Notes [illegible] Goodwin Notes Chkd. Checked X-Sec.

Indexed Date Date Date No.

76298 S & E #307—7-55

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STATION	B. S.	H. I.	F. S.	ELEV.		
Inst. Sight At On	# Depth Rec. Adj.	Time	Hor. Ang.		Remarks	

BLANK

76L298 S & E #307 9-54

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726 LOS ANGELES COUNTY ENGINEERING BLDG.

NOTE: ANY ADDITIONS OR CHANGES ON THIS SHEET MUST BE MADE OR CIRCLED IN RED INK, WITH DATE AND NAME OF PERSON MAKING CHANGE.

Do not extend notes this side of this line.

STATION	B. S.	H. I.	F. S.	ELEV.	Inst. at 33+50	Sight on 35+50
T.P.	1 13	8 47		7 34	M.L.L.W.	Inshore 35+50
35+50		+	4 0	12 5	Control line	
15' R.		+	3 0	11 5	Brk.	
21' R.		8 5	0 0	8 5	"	
			3 8	4 7	M.H.T.	23° 12' 86'
			6 1	2 4		35 42 144'
			7 4	1 1		43 57 193'
			8 6	-0 1		51 15 249'
			10 8	-2 3		58 28 326'
			6 0	2 5	Top rocks	59 32 340'
			13 4	-4 9		60 56 360'
			13 2	-4 7		65 11 432'
			14 8	-6 3		67 20 479'
T.P.	5 64	12 03	2 08	6 39		
P.B. #8			1 24	10 79	P.B. #8, el. = M.S.L. 7.96 + 2.80 = M.L.L.W. 10.76	

DATUM
MLLW

Profile Notes Red. G.D.B. Plotted J.S.H. Job No. 0021.64 Division No. 10 F.B. 2385 Pg. 113
No. Date 7-57 Date 7-57 Survey of PORTUGUESE BEND LANDSLIDE
X-Sec. Notes Chkd. J.S.H. Checked G.D.B. Survey by ENGLISH Notes F.D. Date 6-25-57
No. 35+50 Date 7-57 Date 7-57 Map No. Indexed Johnson Date

76298 S & E #307—7-55

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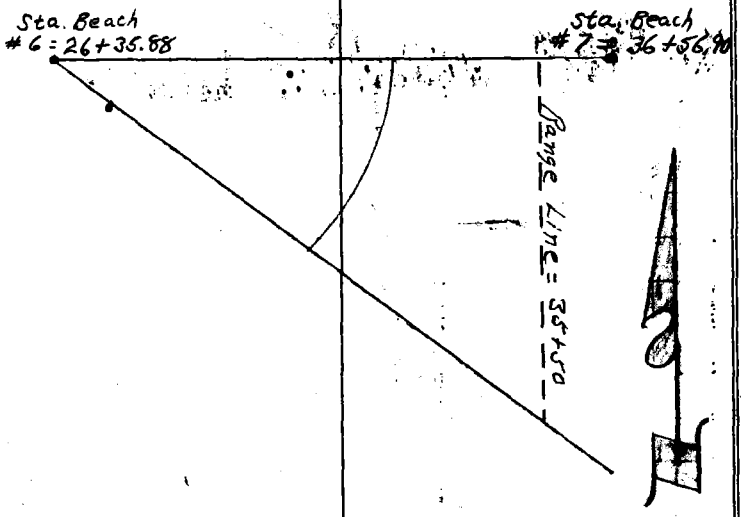
NOTE: ANY ADDITIONS OR CHANGES ON THIS SHEET MUST BE MADE OR CIRCLED IN RED INK, WITH DATE AND NAME OF PERSON MAKING CHANGE.

Do not extend notes this side of this line.

STATION		B. S.	H. I.	F. S.	ELEV.	
Inst. At	Sight On	#	Depth Rec. Adj.	Time	Hor. Ang.	Remarks
		1		12:01	54° 19'	Cut in Line 35+50
		2			51° 48'	
		3			49° 40'	
		4			47° 47'	
		5			46° 12'	
		6			43° 44'	
		7			41° 43'	
Sta. Beach #6	Sta. Beach #7	8			39° 21'	
		9			37° 36'	
		10			35° 05'	
		11			32° 44'	
		12			30° 31'	
		13			28° 40'	
		14			26° 57'	
		15		12:06	25° 22'	
		16				
		17				
		18				
		19				
		20				



Profile No. X-Sec. No. 35+50 Notes Red. G.D.B. Date 7-57 Plotted J.S.H. Date 7-57 Job No. 0021.69 Division No. 10 Survey of Portuguese Bend Landslide Notes Chkd. J.S.H. Date 7-57 Checked G.D.B. Date 7-57 Survey by Van Deren Notes P.T. Date 6-25-57 Map No. Andred Johnson Date

F. B. 2305 Pg. 115

F. B. 2305 PG. 116 | Job No. 202164 Division No. 10 | Notes Red. | Plotted | Profile No.

Survey of Portuguese Bend Landslide | Date 6-25-57 | Date |

Survey by Van Deren | Notes Ralph Turrill | Notes Chkd. | Checked | X-Sec.

Indexed [illegible] C. Johnson Date | Date | Date | No.

STATION	B. S.	H. I.	F. S.	ELEV.

Cut in Line 35450

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76298 S & E #307—7-55

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Profile Notes Rod G.D.B. Plotted J.S.H. Job No. Division No.
No. Date 7-57 Date 7-57 Survey of Date
X-Sec. Notes Chkd. J.S.H. Checked G.D.B. Survey by Notes Date
No. 35+50 Date 7-57 Date 7-57 Map No. Rod Johnson Date

F. B. 23-5 Pg. 117

STATION Inst. At	Sight On	B. S. #	H. I. Rec.	Depth Adj.	F. S. Time	ELEV. Hor. Ang.	Int.	Boat+Adj.	Tide Adj.	Total	Remarks
			34.2	29.4	12:01		1273'	-3.0'	+1.0'	-2.8'	-4.8'
			32.4	27.6	12:01		1162'	-3.0'	+1.0	-2.8'	-4.8'
			31.3	27.6	12:02		1077'	-2.4'	+1.0	-2.8'	-4.2'
			29.4	25.2			1007'	-2.4'	+1.0	-2.8'	-4.2'
			27.6	22.8	12:03		953'	-3.0'	+1.0	-2.8'	-4.8'
			25.8	21.0	12:03		875'	-3.0'	+1.0	-2.8'	-4.8'
			24.0	18.6	12:04		814'	-3.6'	+1.0	-2.8'	-5.4'
			21.6	16.9	12:02		750'	-3.0'	+1.0	-2.7'	-4.7'
			19.2	14.5	12:04		704'	-3.0'	+1.0	-2.7'	-4.7'
			16.8	12.1	12:05		642'	-3.0'	+1.0	-2.7'	-4.7'
			15.6	10.9	12:05		588'	-3.0'	+1.0	-2.7'	-4.7'
			13.8	9.1	12:05		538'	-3.0'	+1.0	-2.7'	-4.7'
			12.0	7.9	12:06		500'	-2.4'	+1.0	-2.7'	-4.1'
			10.8	6.7	12:06		454'	-2.4'	+1.0	-2.7'	-4.1'
			9.6	4.3	12:06		433'	-3.6'	+1.0	-2.7'	-5.3'

F. B. 2305 Pg. 118 Job No. [illegible] Division No. [illegible] Notes Red. _____ Plotted _____ Profile

Survey of [illegible] Date [illegible] 57 Date _____ No. _____

Survey by [illegible] Notes [illegible] Notes Chkd. _____ Checked _____ X-Sec.

Indexed _____ Date _____ Date _____ Date _____ No. _____

7929B S & E #307—7-55

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STATION	B. S.	H. I.	F. S.	ELEV.	Remarks
Inst. Sight At On	# Depth Rec. Adj.		Time Hor. Ang.		

Notes Ck'd by J. F. M.	Survey of Port Bend Landslide F. B. 2305 Pg. 119
Map No. Sur. File Map 97-1	JN 0021.64 Tape Std °F
Office Work G. D. B. & T. H. B.	Surveyed by M. A. Van Deren
Checked T. M. L.	Notes Van Date 6-29-57
Date 7-57	Indexed A. C. Johnson 7-1-57

J.N. 0021.64

Location of Exsposed mudbank

at

PORTUGUESE BEND LANDSLIDE AREA

6-29-57
Van Deren
Krammen
Landa
Turrill

Note: Any Additions or Changes on This Sheet Must be Made or Circled in Red Ink With Date and Name of Person Making Change.

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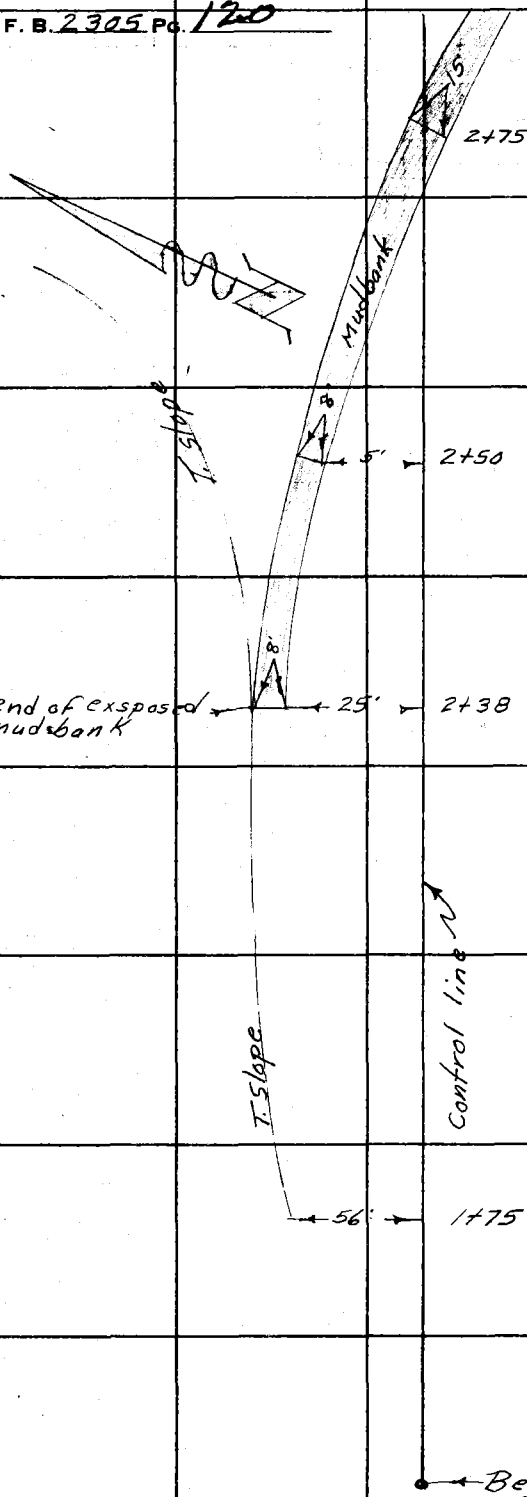
76F3095 SAE #247 1-56

F. B. 2305 Pg. 120

To bot pg 121



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700 Los Angeles County Engineering Bldg.

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Note: Any Additions or Changes on This Sheet Must be Made or Circled in Red Ink With Date and Name of Person Making Change.

Notes Ck'd by J. F. M.
Map No. Sur. File Map 97-1
Office Work G.D.B.&T.H.B.
Checked T. M. I.
Date 7-57

Survey of Port Bend Landslide
W. O. 0021.42 Tape No. St'd. °F
Surveyed by M.A.Van Deren
Notes Van Date 6-29-57
Indexed A. C. Johnson

F. B 2305 Pg 121

6+27 ← 53' → To bot pg 122

25'

Mudbank

5+50 ← 5' →

26'

Control line

Pier

3+50 ← 78' → under rocks at this point

15'

From top pg 120

Note: Any Additions or Changes on this Sheet Must be Made or Circled in Red Ink With Date and Name of Person Making Change.

Do not extend notes this side of this line.

RETURN TO
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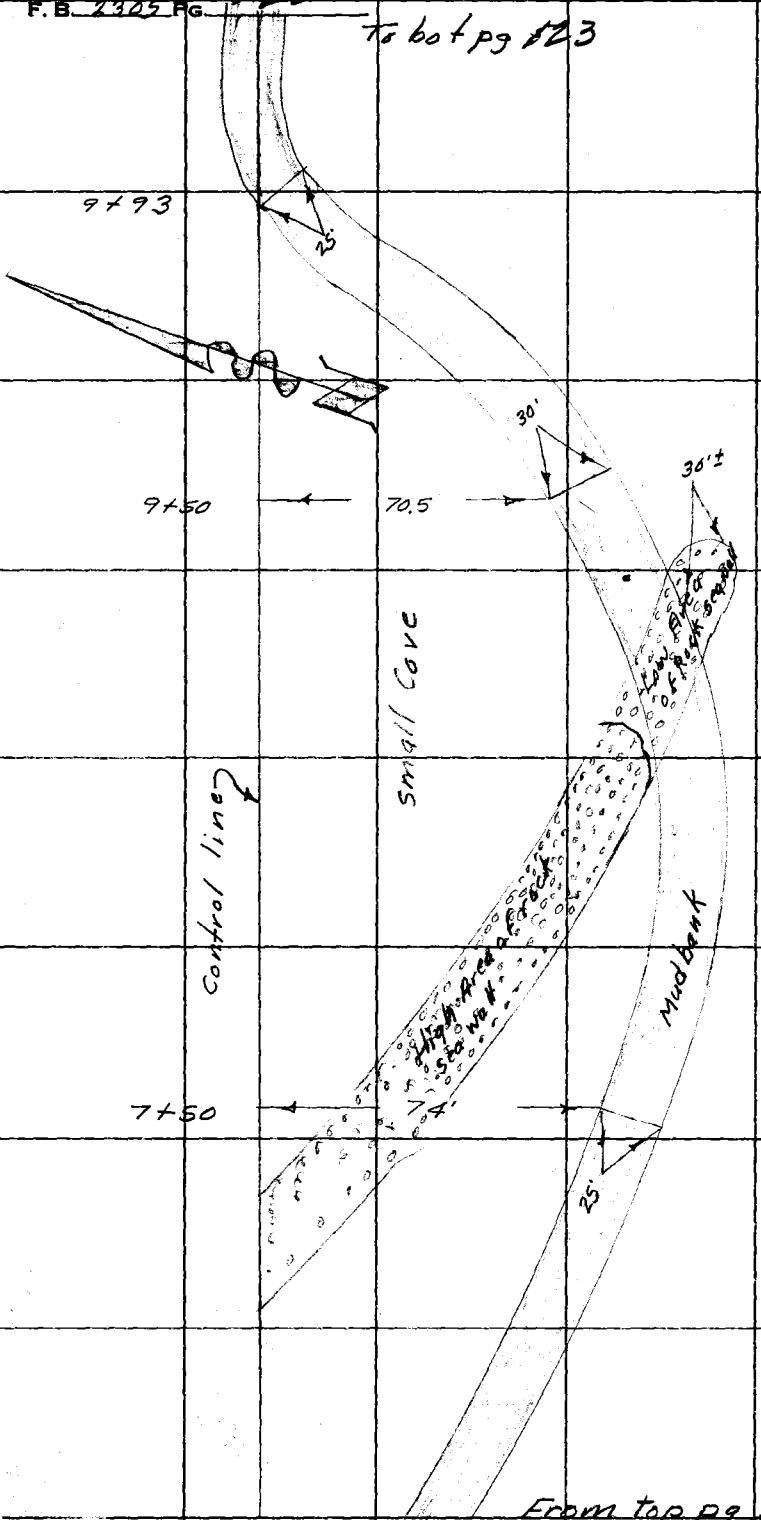
726 LOS ANGELES COUNTY
ENGINEERING BLDG.

76F3095 S&E #247. 8-54

F.B. 2305 Pg. 122

To bot pg 123



From top pg 121

RETURN TO
LOS ANGELES COUNTY SURVEYOR
726 LOS ANGELES COUNTY
ENGINEERING BLDG.

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Note: Any Additions or Changes on This Sheet Must be Made or Circled in Red Ink With Date and Name of Person Making Change.

Notes Ck'd by J. F. M.
Map No. Sur. File Map 971
Office Work T. H. B+G. D. B.
Checked T. M. L
Date 7-57

Survey of Point Bend Landslide
W. O. 0021.64 Tape No. St'd. °F
Surveyed by M. A. Van Deren
Notes Van Date 6-29-57
Indexed C. Johnson

F. B. 2305 Pg 123

To bot pg 124

Toe slope

20'

Beach No 3 = 13+69.22
Fd C.S. Mon Alush Pg. 12

Little Gibraltar ℄ 73' 12+08

10'±

Toe slope of Mud

Control Line

end of exposed Mudbank 29' 11+50

Mudbank

30'± 11+05

Toe slope

From top pg 122

Note: Any Additions or Changes on This Sheet Must be Made or Circled in Red Ink With Date and Name of Person Making Change.

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726 LOS ANGELES COUNTY
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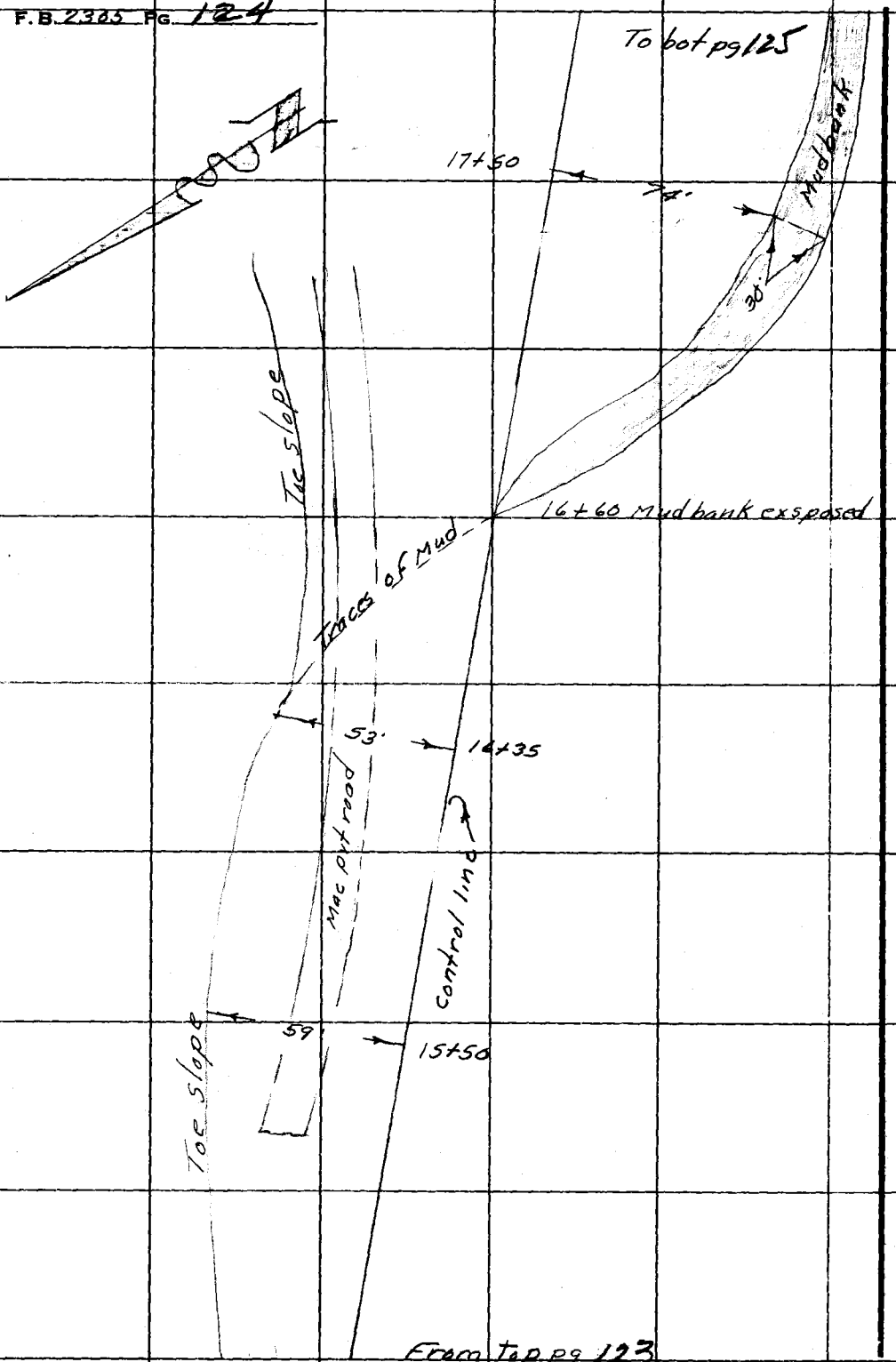
76F3093 S&E #247. 8-54

F.B. 2305 Pg. 124



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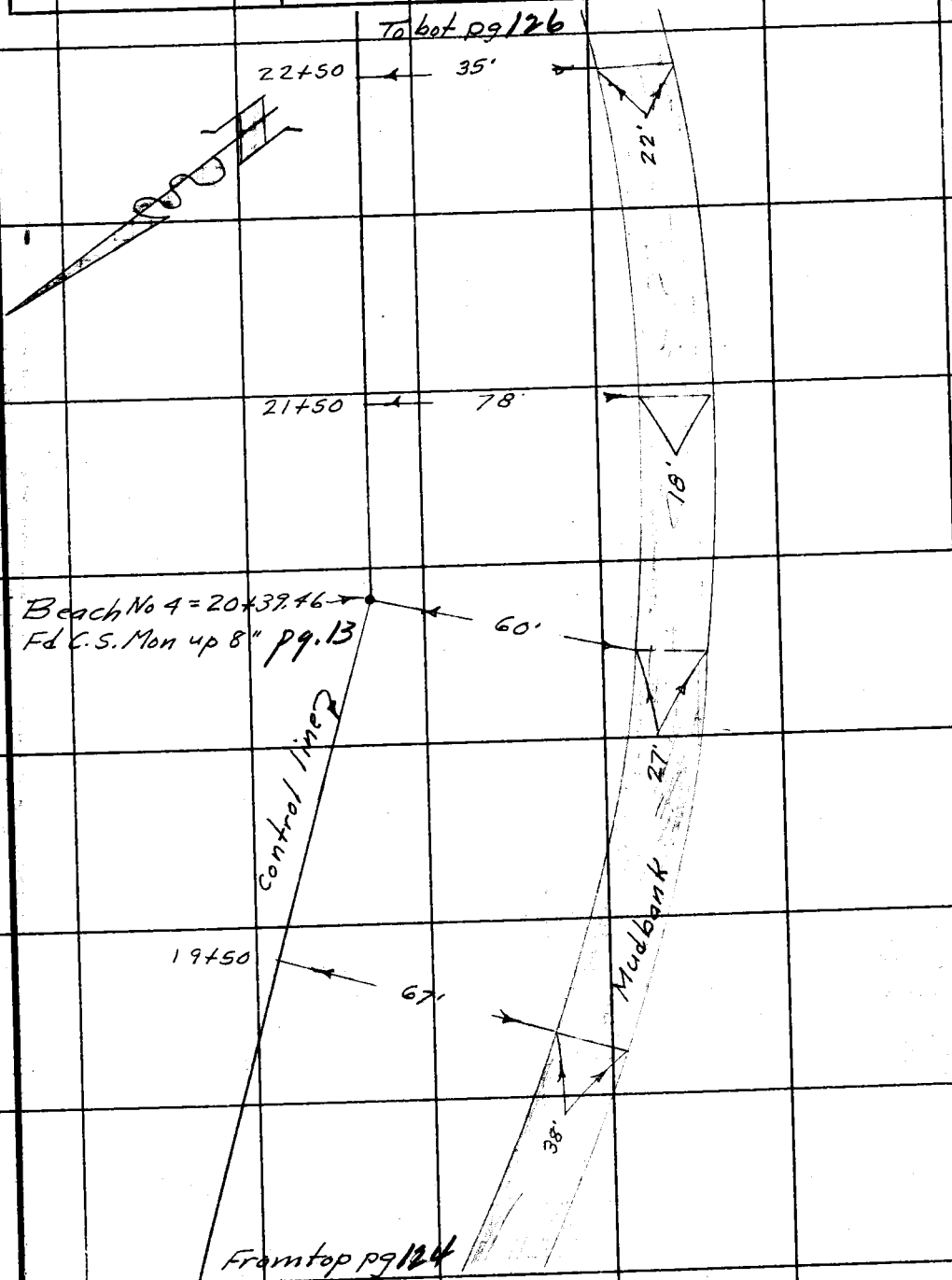
Notes Ck'd by J. F. M.
Map No. Sur. File Map 97-1
Office Work T. H. B. & G. D. B.
Checked T. M. I.
Date 7-57

Survey of Fort Bend Landslide
W. O. 5021.64 Tape No. St'd. °F
Surveyed by M. A. Van Deren
Notes Van Date 6-29-57
Indexed C. Johnson

F. B. 2309 Pg. 125

To bot pg 126



From top pg 124

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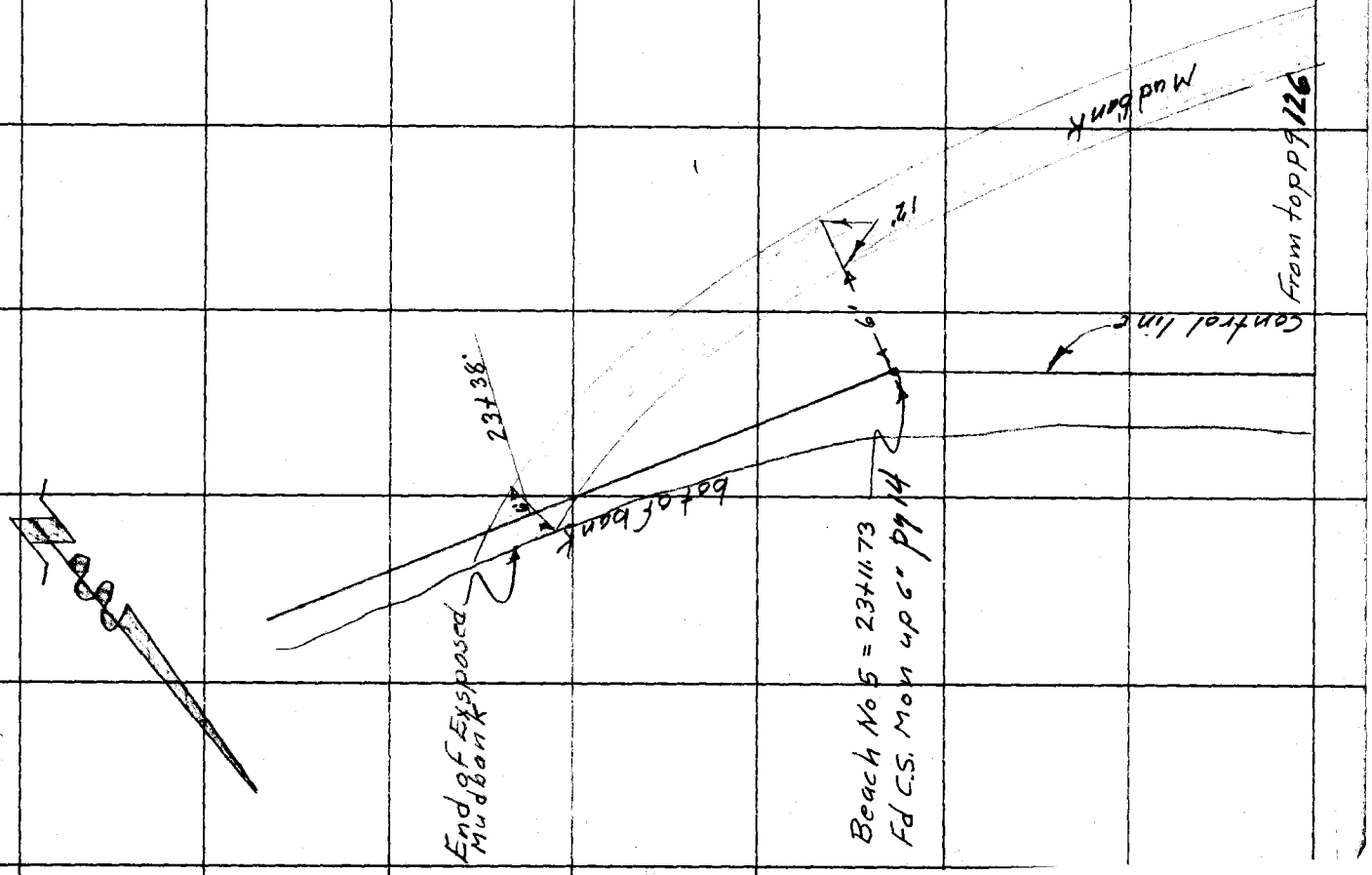

F.B. 2305 PG. 127

PORTUGUESE BEND LANDSLIDE

Report on Mud Extrusion in Tidal Area.

A geological extrusion runs along the shore and immediate offshore area at Portuguese Bend. This was located at low tide June 29th A.M. Its approximate widths and directions are shown in the accompanying field notes.

This mud coverd a large area in a number of places being a continuous solid mass, while in other places it was much less apparent especialy where it was not pushed all the way up among the rocks but lay between and below them.

Never-the-less it was fairly easy to trace the substance by strips and patches even where it did not appear in large quantities. Its width was found to vary from 6 to 30 feet. This out cropping also seemed to follow the shore line along about -1 to +1 foot reletave to MLLW. This it did from the head land northwest of the pier until it evidently went into the shore and cliffs near the first house on the beach. The exceptions are where it passed under large rock mounds at the pier and the small cove. The extrusion reappears in the tidal zone again farther down coast where the rocky beach begins again. It finaly goes into shore and is lost from view just past the end of our beach control line. at Beach 5

Its consistancy varied from fairly firm and slick to very soft and mushy. Its color also varied from white to many shades of brown and grey. It was strikingly distinguishable from the ordinary beach sand and rocks.

M. A. Van Deren 6-29-57

To be filed with field notes F.B. 2305/119-127

F.B. 5302-153