

320

INDEX

1	BIA	NETT LK	
6	GERT CASKEY	SW-NE-3-18-137-29	
7	LOE PALMATEER	7-140-29	
8	MIKE HARRINGTON	4-140-30	
9	RON CROOKER JR	32-139-30	
10	BIA	GRAND PONT.	
16	JOHN HARTZELL	10 th LK WIT. PN BEACH	
17-	BIA	GRAND PONT	
38	WIRAM TWP	ACROSS W. PN. PT	
39	KRAUSE	8-139-29	
40	ZIM MACHACEKS	NORWAY LK WHITE P. NE PT	
41	PAT MORAN	34-140-30	
42	D. ENGBER	ROUTING 7-23-139-26	
44	PAT PIPENHAGEN	3-14-140-29	
45	MACHACEK		
47	DIRK FISHER	GRAND PILE TWP LK	
49	DAVE SMITH	3-40A PINE BEACH	
50	RON MUSOLF	30-138-26	
52	CARRIER	1-133-30	
53	BILL TAYLOR	RAINY LK	
54	BIA	GRAND PONT.	
56	RAY KRESS		
57	FRANK SPARTZ	DRILL PLOT HACK	
58	HACK	SENIOR CITE. OLDC LOT	HACK

NETT LK

10 2 BS 3

0-0-25			2349.55
180-0-45	184-50-17	90-0-55	716.147
184-90-45			528.20
4-51-00	184-50-15	91-55-0	160.996
			527.903

Te 15 2

0-0-24	96-47-39		
120-0-43			
96-48-05		1290.23	
4 276-48-22	96-47-39	89-53-16	393.261
178-30-30	178-30-04		1748.18
5 358-30-48	178-30-05	88-27-04	532.848
277-50-18	277-49-52		1119.30
6 97-50-35	277-49-52	89-53-48	341.162

~~691.38~~
~~95.1303~~ ~~210.735~~

105 BS 3

0-0-14	358-08-33
180-0-10	
358-08-47	
7 178-08-49	358-08-39

7 @ 7 BS 5

0-0-22	282-10-51	85-08-24	698.54	696.027
180-0-40			212.916	
282-11-13			128.66	
8107-11-37	282-10-57	88-58-22	39.217	128.641

709 BS 11

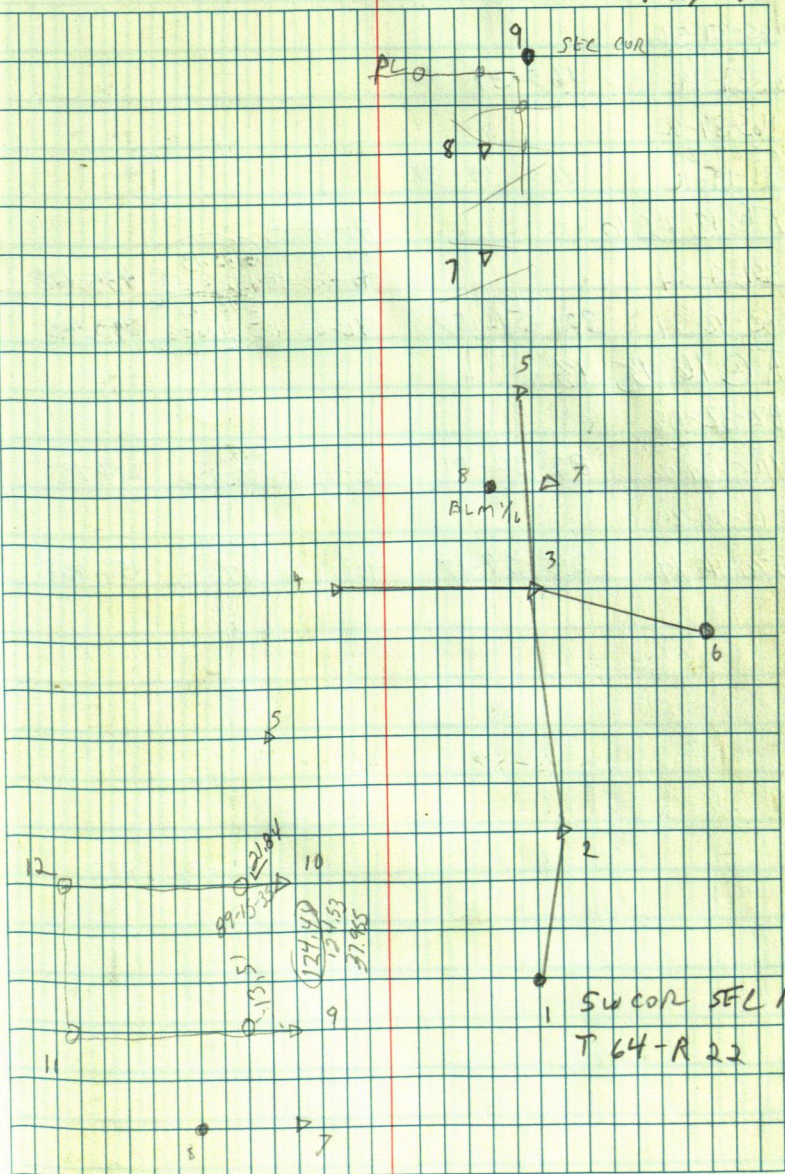
0-0-25			218.71	
180-0-36	90-14-15	89-13-16	16.579	218.392
90-14-43				
5 270-14-52	90-14-16	9		
			95.37	
7		93-46-49	29.069	95.162

11 @ 11 B 9

0-0-27	258-59-31
180-0-41	
258-59-58	
1279-0-06	258-59-25

G. cono
T. KUCHEFSKI 2

7-27-88



T@ 6 BS 3

165-39-56

165-39-40

13-331-19-20

165-39-40

165-39-50

165-39-38

331-19-16

165-39-38

T@ 13 BS 6

321-51-54

87-48-10

89-48-10

90-05-48

132.0295

132.0295

132.0295

435.128

162-83-43-54

321-51-57

90-05-48

104.682

343.445

T@ 16 BS 13

82-32-06

82-32-01

14/65-04-02

82-32-01

90-51-16

214.82

214.793

215-24-24

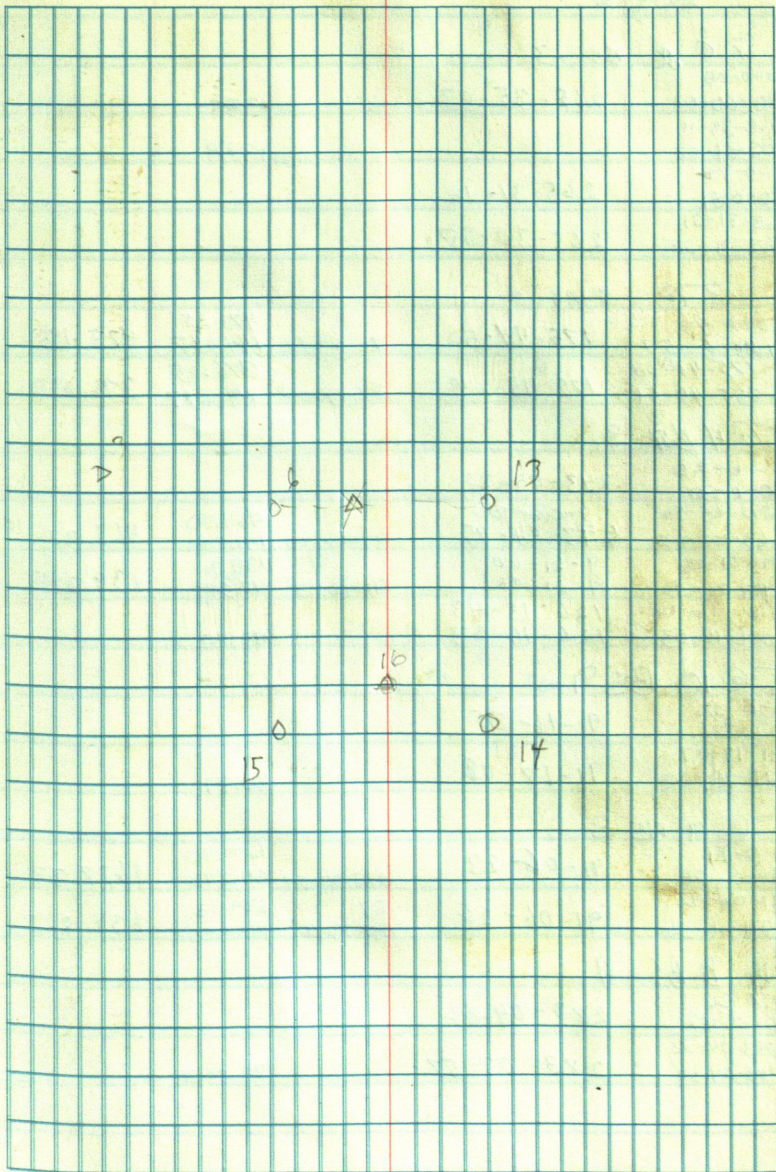
1570-48-34

215-24-17

90-19-57

156.87

156.868



S. 0020
T. KuchEFSK 4

8-9-88

T@2 BS 3			
0-0-08			
180-00-03	265-35-03	13.88	
265-35-11			
185-31-02		13.88	
0-0-17			
180-031	265-31-14		
265-31-31			
85-31-28	265-30-57		

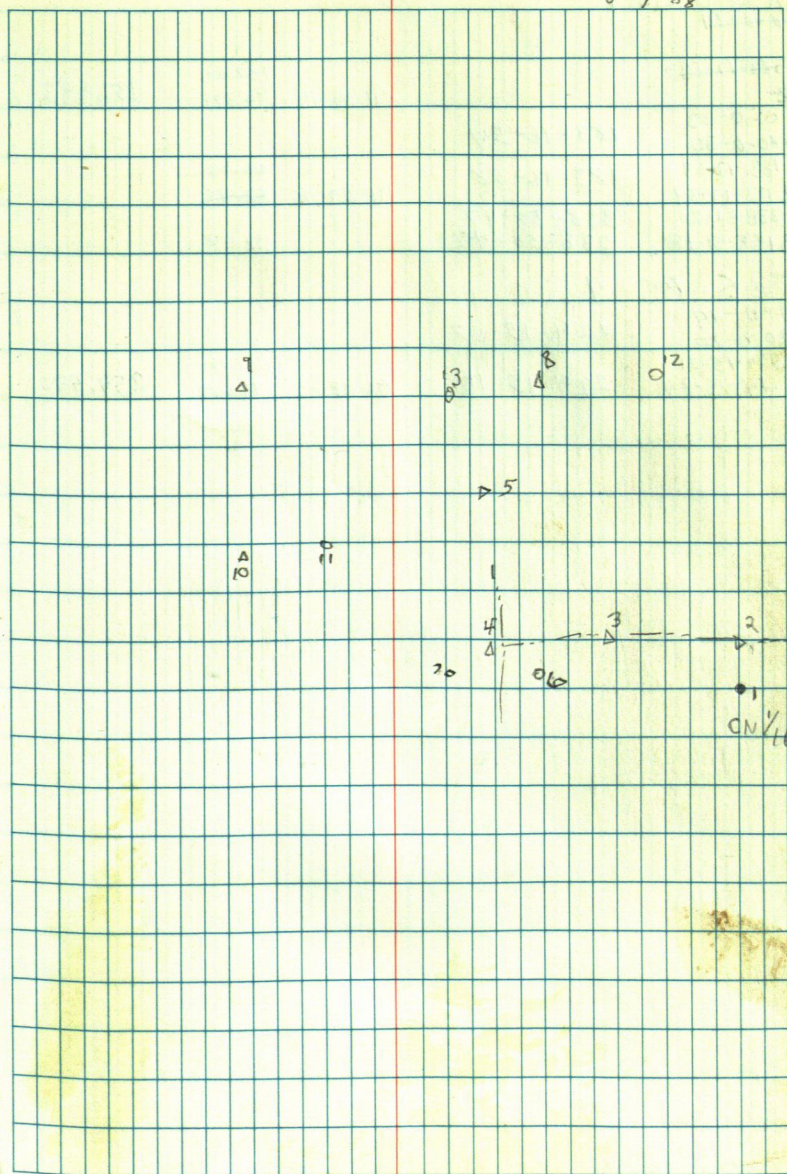
T@2 BS 2			
0-0-48		473.25	
180-0-52	175-44-50	90-50-31	473.198
175-45-38		376.05	
4 355-45-56	175-45-04	89-29-02	376.028
		114.627	

T@4 BS 3			
0-0-25			
180-0-30	243-04-25		
243-04-50	9-21-00	464.50	
5 63-05-15	8 43-04-45	94-02-20	463.379
9-21-25	9-21-00	139.71	
6 189-21-30	9-21-00	42.582	139.644
126-16-08	126-15-43		
7 306-16-53	126-16-23	49.82	

T@10 BS 9			
0-0-32			
180-0-52	91-16-35		
91-17-07			
11 271-18-00	91-17-08	80.31	

T@4 BS 8			
0-0-19		1671.40	
180-0-28	91-06-23	270-30-54	1677.331
91-06-42		87	639.93
10 271-06-56	91-06-28	87-19-20	639.227
		193.050	

T@8 BS 9			
0-0-26			
180-0-40	283-04-06		
283-04-32			
5 103-04-37	283-03-57	85-33-26	



T@8 BS 9

~~0-0-34~~

~~183-17-19~~

12

0-0-33

180-0-36

183-17-27

12 03-17-34

338-51-20

13158-51-18

183-16-54

183-16-58

338-50-47

338-50-42

91-39-45

91-39-45

91-18-02

152.01

46.331

~~46.331~~

32.48

32.48

151.943

T@5 BS 4

0-0-14

180-0-20

224-15-21

8-14-15-24

224-15-07

224-15-17

361.10

79.002

259.590

EVERETT CASHEY

Λ 0 2 BS 1

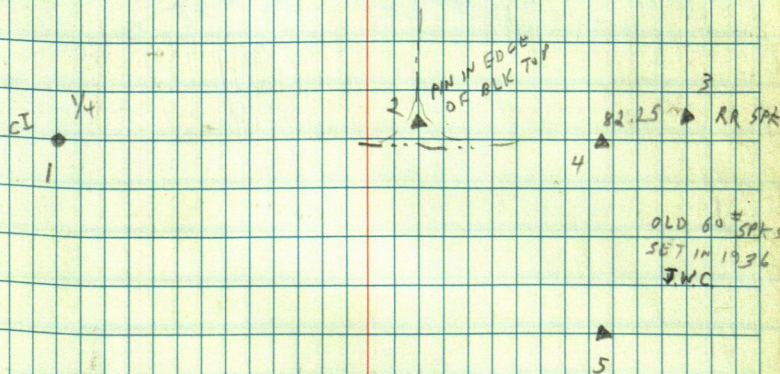
0-0-33	180-40-45	89-55-57	3395.81	3395.791
180-0-45			1035.041	
180-41-18	180-40-43	91-14-35	618.82	618.664
0-41-28			188.612	

Λ 0 3 BS 2

0-0-31	180-0-40	354-31-16
354-31-47		
174-31-52	354-31-12	

Λ 0 4 BS 3

0-1-30	180-01-02	94-41-38
94-43-08		
274-43-20	94-42-18	83-43-20 86.17 85.653

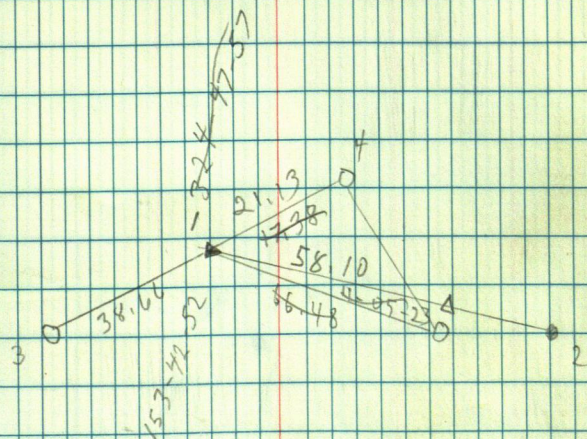


LEE PALMATEER

TP 1 BS 2

4.335-00

7



MIKE NARIVLTON

24 TC 1 BS 2

3 242-53-20

3 TC 2 BS 1

33-22-40

87-29-09

605.23

184.419

604.454

315.15

3 66-45-14

33-22-37

89-54-12

96.058

315.149



TQ1

2	90-08-02	90-09-02	2945.69 8978.50 1598.64	2945.673
3		90-26-05	487.2660	1598.588

DIX

RR 50X

3 1/2

3 1/2

2 1/4

BIA GRAND PORT.

T @ BS 1

3

T @ 3 BS 2

~~4~~ 180-00

③ 88-57 356.02
108.516 355.96

T @ 5 BS 2

303-59-14

89-01-27

547.85
166.988 547.774
175.34

6 247-58-38

303-59-19

90-05-20

53.436 175.327

T @ 6 BS 5

13-42-04

7 27-24-15

13-42-08

T @ 7 BS 6

115-42-51

89-24-45

257.69
78.544 257.676

8 231-25-58

115-42-59

36.34

301-17-34

9 242-34-56

301-17-28

133.86

A 337-07

71.30

B 348-09

81.95

C 2-04

100.45

D 12-54

90.95

E 18-08

59.90

F 27-30

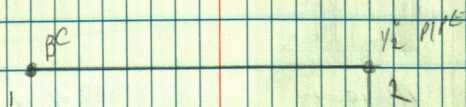
58.34

G 61-59

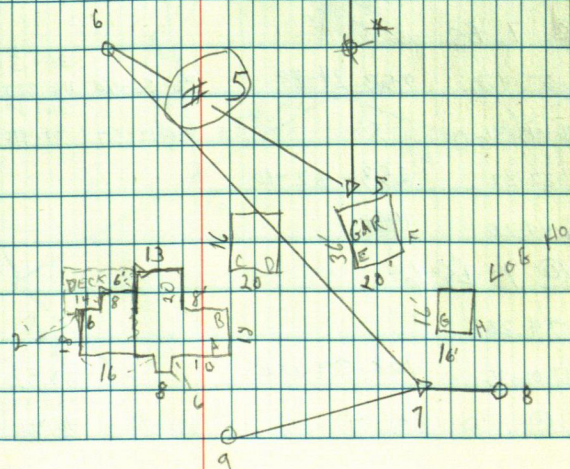
11.82

H 98-11

23.93



3 5/4" PIPE



T @ 10 BS 8

114-24-08

~~88-0-06~~

163.81

13 228-47-36

114-23-48

88-0-06

49.932

163.714

T @ 8 BS 7

67-32-48

11 135-05-30

67-32-45

103.00

40
241-20-48

12 123-20-51

241-40-26

T @ 2 BS 3

76-55-54

76-55-44

87-42-54

1488.67

1487.484

153-51-28

94-14-40

453.749

125.50

38.251

125.193

T @ 3 BS 2

249-34-54

4 139-08-54

249-34-27

249-35-24

4 139-09-54

249-34-57

249-35-12

4 139-09-42

249-34-51

T @ 3 BS 2

168-45-18

5 337-30-00

168-45-00

T @ 5 BS 3

73-44-51

90-40-00

1259.96

1259.872

6 147-29-52

73-44-56

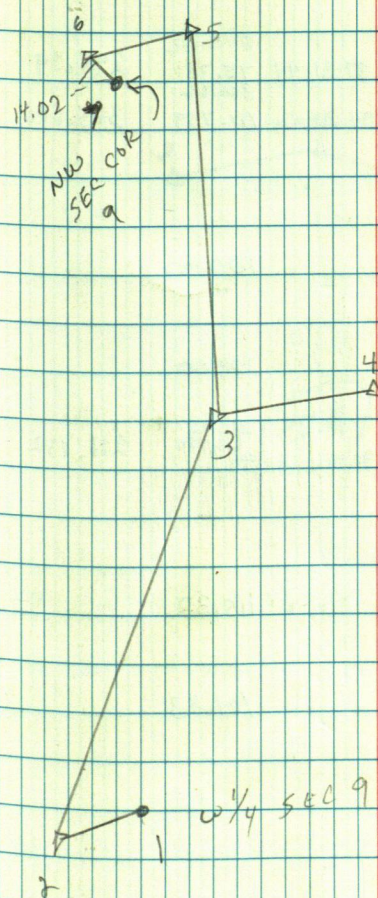
92-28-48

384.079

236.90

72.209

236.68



$\pi @ 6055$

105-49-06

7 211-78-24

105-49-12

14.02

π 4 BS BS 3

203-09-27

203-09-21

87-31-44

248.62

248.39

75.781

366.66

8 46-18-42

94-20-42

111.759

365.606

$\pi @ 8$ BS 4

60-34-27

60-34-17

9 121-08-34

100.00

252-10-30

252-10-41

10 144-21-22

100.00

154-58-09

154-58-07

9 309-56-14

90-51-38

216.16
65.884

216.132

$\pi @ 12$ BS 8

98-03-50

10 196-07-32

98-03-36

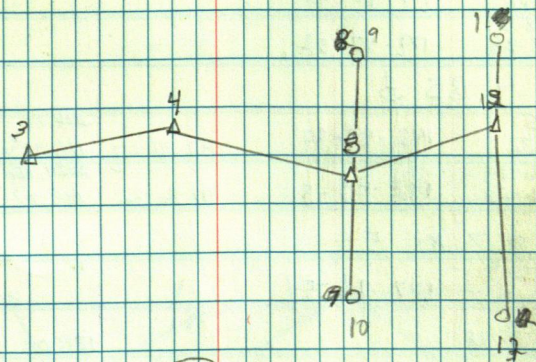
115.33

267-21-36

13 174-43-06

267-21-33

101.83



#8

π @ 2 BS 1

0-0-01	151-33-10	274-31-40	212.39	211.927
180-0-09			64.798	
151-33-11			331.18	
3 331-33-12	151-33-03	259-56-48	70.457	227.619

π @ 3 BS 2

0-0-2	171-48-05
180-0-16	
171-48-07	
4 351-48-08	171-47-52

π @ 4 BS 3

0-0-35	192-45-39	87-41-07	364.80	364.50
180-0-32			111.191	
192-46-14			2029.10	
5 12-46-23	192-45-51	91-36-32	618.47	2028.292

π @ 7 BS 5

107-26-57	107-26-54
-----------	-----------

8 214-53-48	128.07
-------------	--------

250-38-20	250-38-03
-----------	-----------

9 141-16-06	58.64
-------------	-------

π @ 5 BS 4

0-0-9	270-09-03		
180-0-8			
270-09-12	270-09-07	91-06-35	277.00
7 90-0-15			844.27
11 343-47-59	343-47-50		276.943

11 343-47-59	343-47-50		111.54
--------------	-----------	--	--------

10 206-11-21	206-11-12		75.20
--------------	-----------	--	-------

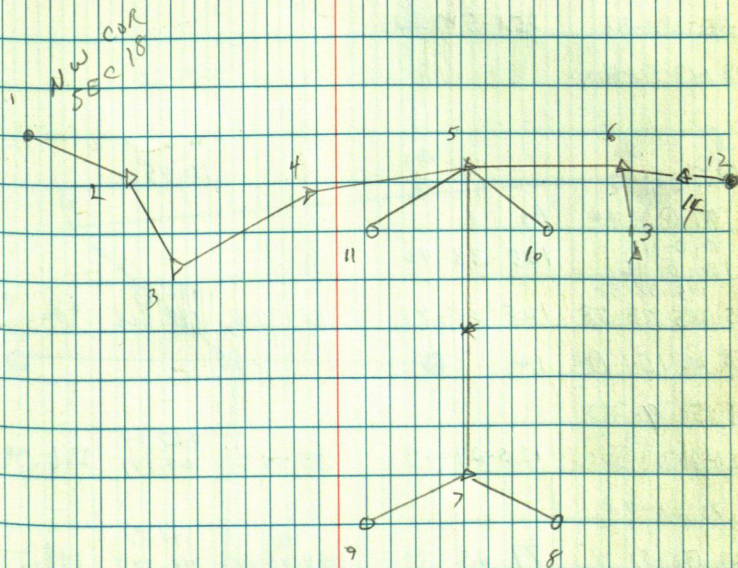
178-09-44	178-09-35	90-42-19	
6 358-9-58	178-09-42		

π @ 6 BS 5

0-0-32	0-0-6	184-07-58	89-32-14	1559.77	
180-0-20	180-0-28			475.418	1559.706
184-7-43	184-08-04	184-07-55	92-36-58	861.996	858.646
12 4-8-15	4-7-59	184-07-31		859.57	

305-00-46	305-0-14	91-19-16	254.03	253.96
13 125-0-35	305-0-15		77.428	

		92-29-08	637.42	636.86
			194.288	



π @ 13 BS 6

253-51-15 253-51-17

16 147-42-23

144.49

79-49-33

17 159-40-06 79-50-03

55.51

~~238.30~~

238.30

20 180-0-0

92-05

72.629

238.23

π @ 20 BS 17

251-58-32 251-58-20

18 143-56-40

89.55

19

110.45

π @ 14 BS 6

0-0-11 105-38-46

180-0-16

105-38-51 105-38-42

88-09-0

486.45

148.266

486.185

π @ 15 BS 14

125-29-20

24 250-58-06 125-29-03

85-44-20

227.00

69.191

226.398

79-25-48

22 158-51-18 79-25-39

89-40-18

148.78

45.347

148.775

293-15-12

21 226-29-54 293-14-57

89.00

193-01-54

25 26-3-42 193-01-51

84-10

157.05

47.867

156.233

π @ 25 BS 15

40-31-20

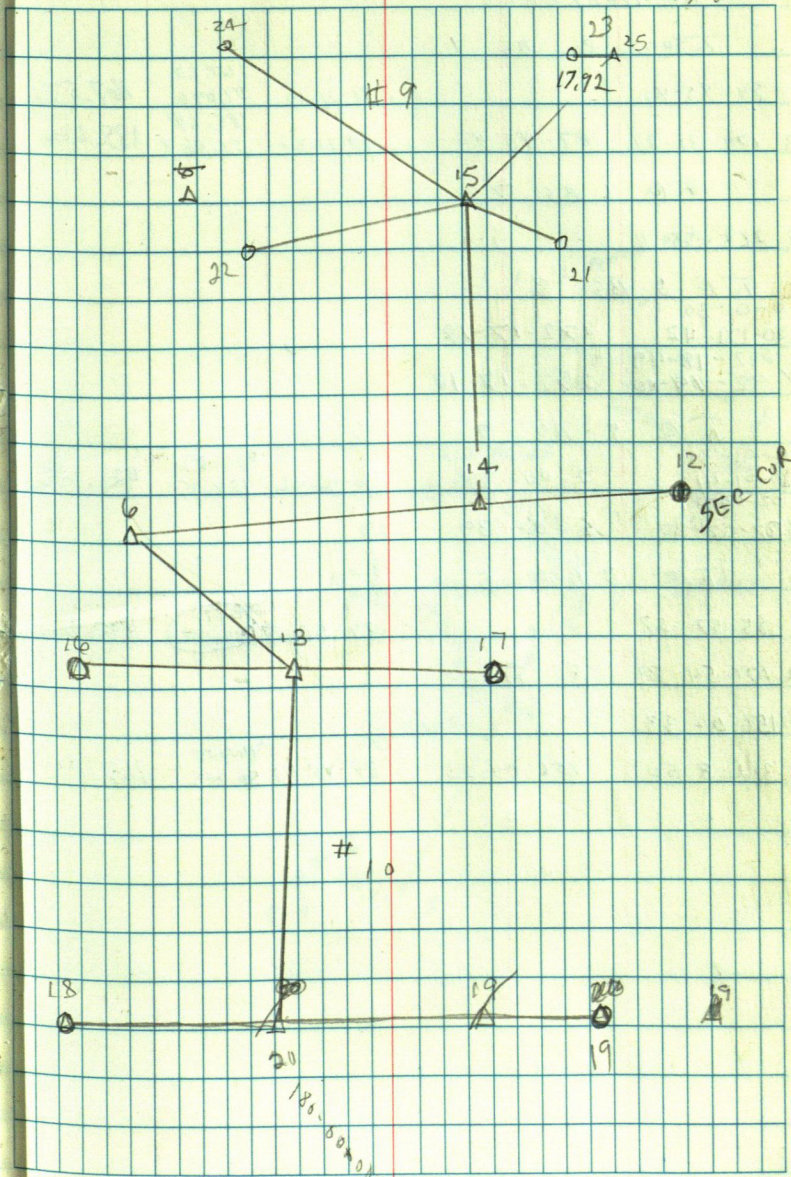
90-31-20

20 184-02-40

E CUR
T. KUCHERSKI

15

8-19-88



JOHN HARTZELL

10	2	BS	1
----	---	----	---

89-45-42

91-21-19

167,62

51,090

162.571

185.64

185. 028

56,583

701 BS 7

8 265.35-36

$\pi @ 5 \text{ BS } 3$

0-01-30

180-01-42

272-17-19

272-18-49

7 92-09-10

272-17-18

$\overline{K} @ 5.35 \text{ } 9$

0-01-31

180-01-41

02-02-07

2-00-36

90-46-56

421.29

128,357

421.055

382-02-20

2-0-39

π	0	3	B	5
---	---	---	---	---

85-57-27

89-53-2

248,571

815.52

815.516

2 171-54-39

85. 57-20

156-04-33

4 312-8-50

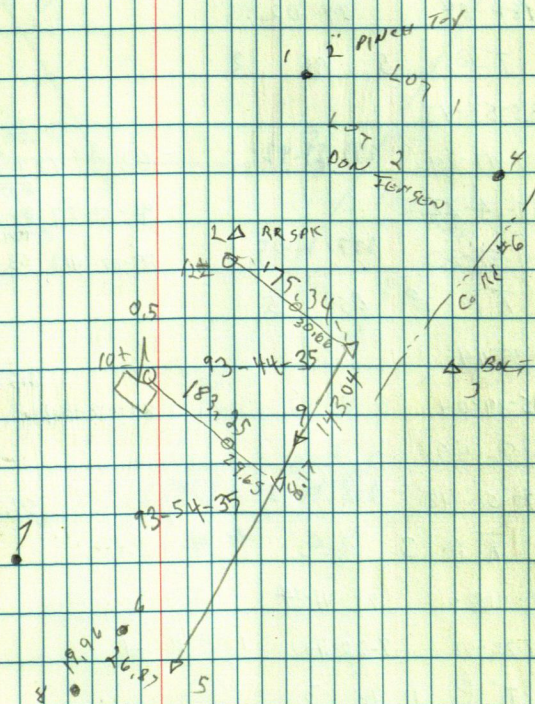
156-04-25

87-45-46

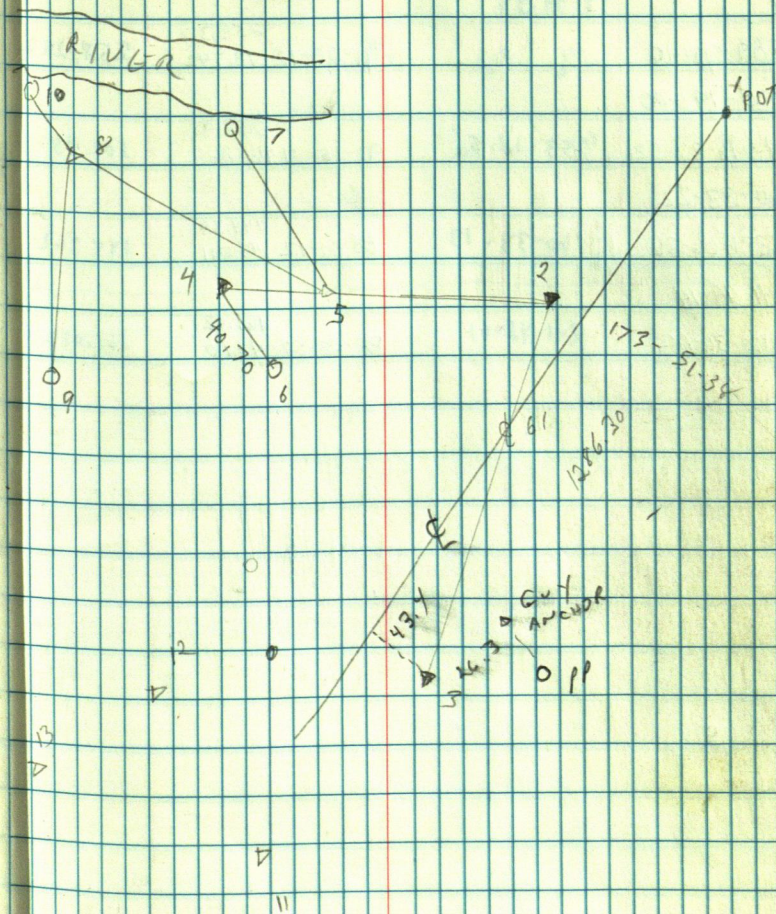
166.02

50.403

165.892



$\pi 0 \perp BS$	3	90-11-44	1286.34 392.076	1286.322
$\pi 0$	4 BS 2			
94-01-18				
6 188-04	94-02			
$\pi 0$	5 BS 2			
233-53-42				
8 107-47-24	233-53-42	88-37-19	295.62 90.104	295.532
277-14-22		90-59-27	275.69 84.031	275.649
7 194-28-30	277-14-15	89-07-41	174.70 53.247	174.676
$\pi 0$	8 BS 5			
87-39-44				
9 175-19-04	87-39-32	89-07-54	213.39 165.044	213.369
218-56-45				
10 77-52-42	218-56-21		54.67	
$\pi 0$	3 BS 2			
183-41-38	183-41-34			
11 7-22-40	7-22-40	183-41-21		
$\pi 0$	11 BS 3			
254-07-32		89-13-10	2210.11 673.643	2209.898
12 148-15-00		89-18-56	796.72 242.842	796.671
$\pi 0$	12 BS 11			



π @ 12 B5 11

44-59-62

14

44-59-53

1589-59-46

91-29-12

258.34
78.742

258.252

393-19-00

143-16-37-52

353-18-51

91-16-4

202.93
161.869

202.93

160-33-22

16321-06-26

160-33-13

88-51-12

144.39
44.011

144.362

241-48-14

17123-36-15

241-48-01

88-05-57

161.12
49.110

161.022

17
0

16
0

12

14

15
0

11

13

π @ 2 BS 3

0-0-24 185-49-32
180-0-31
185-49-56
15-50-02 185-49-31

π @ 1 BS 2

0-0-19	173-49-38	90-07-44	1139.37 347.287 779.95	1139.376
180-0-26				
173-49-57	173-49-42	91-13-28	227.731	779.772
5353-50-08	177-24-23		3673.33	
177-24-42	177-24-19	90-11-22	1119.725	3673.314
4357-24-45			.644	

π @ 5 BS 1

0-0-29
180-0-31
118-02-58
6298-03-01

π @ 6 BS 7

0-0-06			1339.97	
179-59-59		87-44-04	408.423	1338.917
			407.41	
161-34-26		93-04-26	124.779	406.823
5341-34-22				

π @ 4 BS 1

0-0-24 0-05-54
180-0-29
0-06-18
8180-06-24 0-05-55

π @ 8 BS 4

0-0-52			176.22	
180-0-52	90-34-23	89-52-35	53.712	176.219
90-35-15			178.30	
9270-35-15	90-34-23	95-36-19	54.346	177.447

π @ 9 BS 8

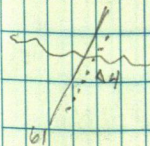
0-0-18				
180-0-29	84-29-33		408.10	
84-29-51				
10264-29-59	84-29-30	88-41-44	124.322	407.991
261-44-01	261-43-43		297.24	
1181-44-05	261-43-36	90-05-31	702.594	297.231

π @ 7 BS 6

12 180-0-0

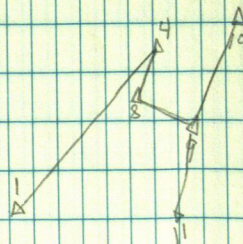
#1 ACROSS FROM
HOLLOW ROCK
RESORT AND
CAMP GROUND
SIGN

#4 4th POST
DOWN BY CULVERT
FROM THE N.



#6 WHERE DID
LOGGING ROAD VEERS
OFF RIGHT

(SEE
PIT) 2
3 (SEE
PIT)



01A

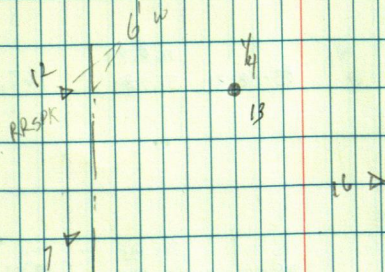
0-0-15	12 05 6		1434.63	
181-0-17	271-09-38	92-38-38	437.273	1433.093
271-09-53			223.40	
13 91-09-51	271-09-34	93-29-33	68.092	222.984

1@ 4 BS

0-0-31	68-59-30		289.78	
180-0-43			88.323	289.266
69-0-01	68-59-30	86-36-06	262.11	
15 249-0-13	129-58-31	86-21-50	79.891	261.581
129-59-02	129-58-22			
14 309-59-05				

E. 0.10
T. K. 10.05 K1 20

8-26-88



$\pi @ 15 BS 4$

124-15-38

16248-31-19

213-01-¹⁸~~30~~

1866-02-38

17

$\pi @ 17 BS 15$

258-22-07

19 156-43-56

258-22-09

19 156-43-56

170-15-33

¹⁷⁰⁻¹⁵⁻³³
20340-30-52

$\pi @ 20 BS 17$

265-21-30

21770-42-32

$\pi @ B BS A$

0-0-8

180-0-14

175-0-17

C 355-0-50

$\pi @ C BS B$

0-0-26

180-0-50

175-0-46

D 355-0-56

1

174-37-06

I 354-37-20

$\pi @ BS B$

90-03-27 563.21
171.664 563.203

85-11-36 195.76
59.668 195.071

269-39-40 370.63
112.969 370.623

83-58-39 168.27
51.289 167.336

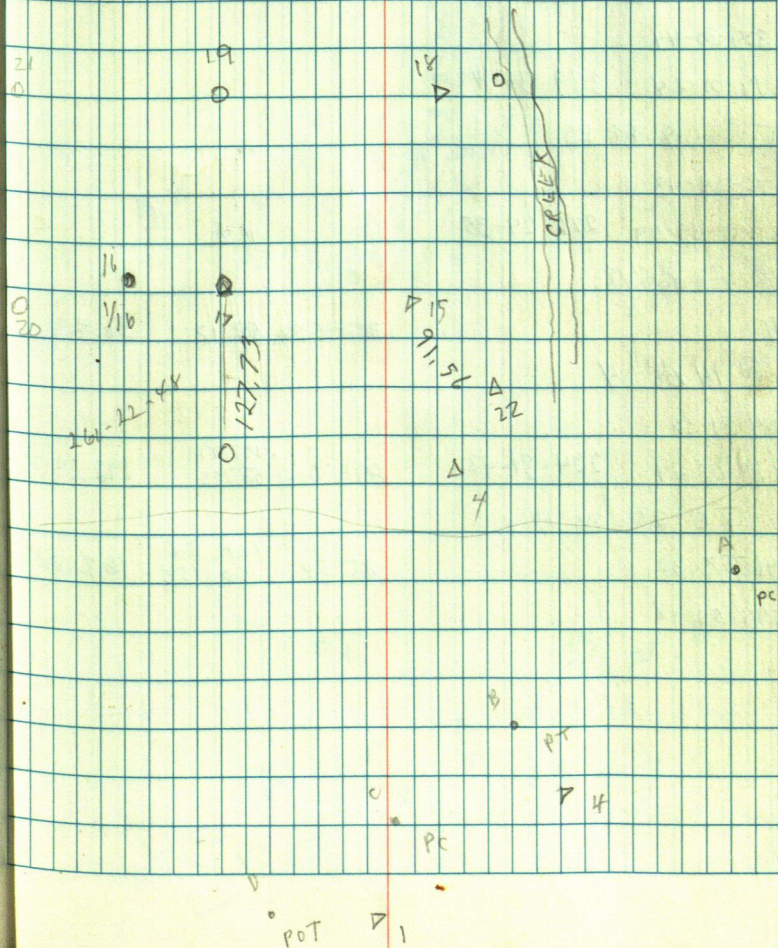
90-10-56 315.93
96.290 315.918

82-20-49 165.84
50.549 164.364

90-22-40 998.27
304.225 998.248

89-50-45 4077.19
1242.703 4077.072

89-51-15 3486.19
1062.748 3486.671



$\pi @$ 1 B5 C
 0-0-46
 180-0-52 0-27-16
 0-28-82
 4180-28-10 0-27-13

331-08-30 85±

$\pi @$ 15 B5 4

339-30-44

22319-01-24 339-30-42

$\pi @$ 18 B5 15

276-24-43

23 192-49-09 276-24-35 48.21

$\pi @$ 23 B5 18

24 252-35-58 59.12 56.414

$\pi @$ 14 B5 4

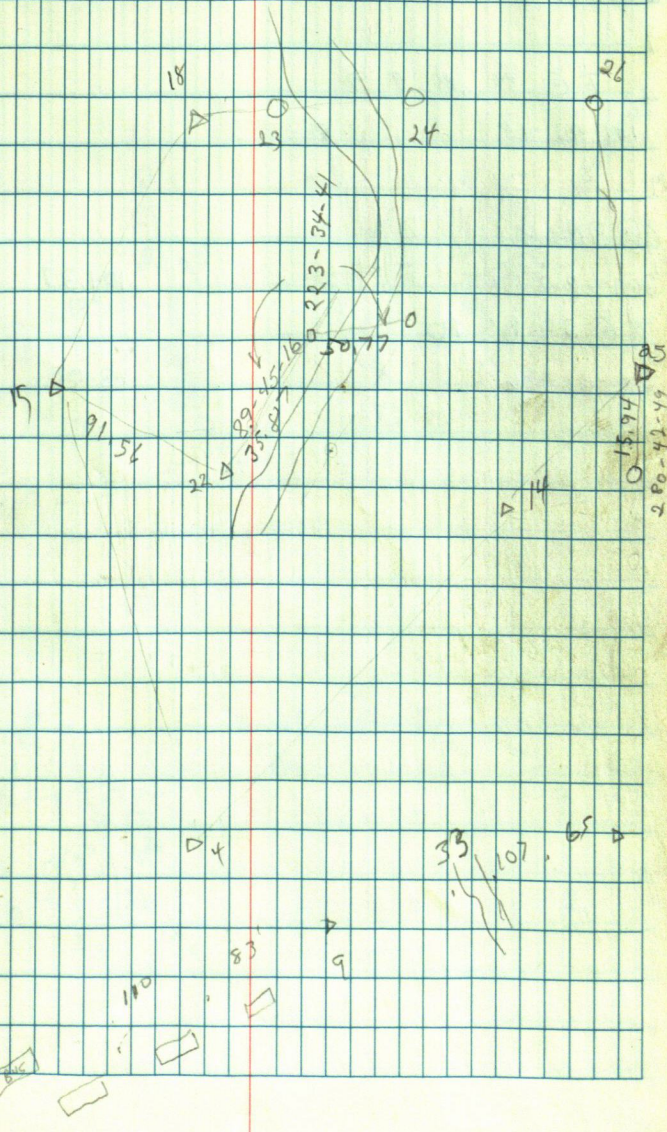
224-31-58

25 89-03-24 224-31-42 89-24-52 192.77 58.755 192.757

$\pi @$ 25 B5 14

96-57-30 85-54 164.56 50.158 164.138

26 193-54-48



51.63

1 @ 30 BS 9

181-02-18

TA@30BS 9

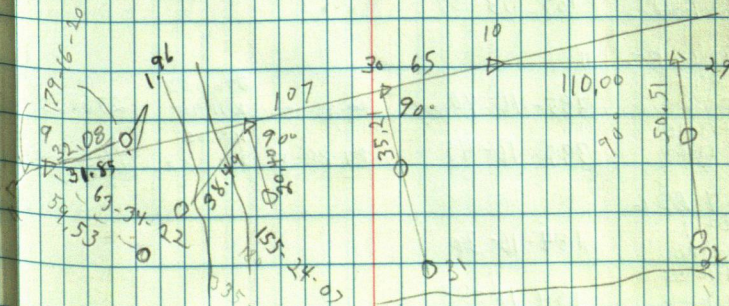
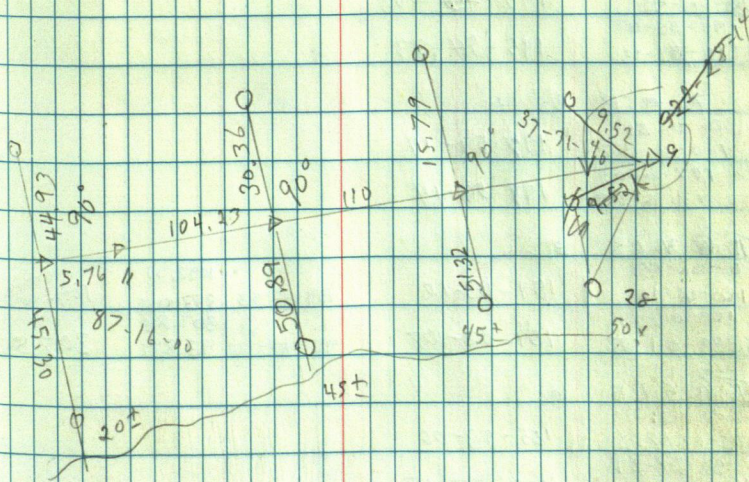
22³¹ 269-38-27

104.37

7 @ 29 BS 10

113-06

270-05-56



π	B_3		
0-0-20		1418.35	
180-0-39	195-54-43	432.316	1416.454
195-55-03		349.53	
15-55-13	195-54-34	106.536	349.202
0-0-36			
180-0-40	195- 54 -08		
195-55-08			
15-55-13	195-54-33		

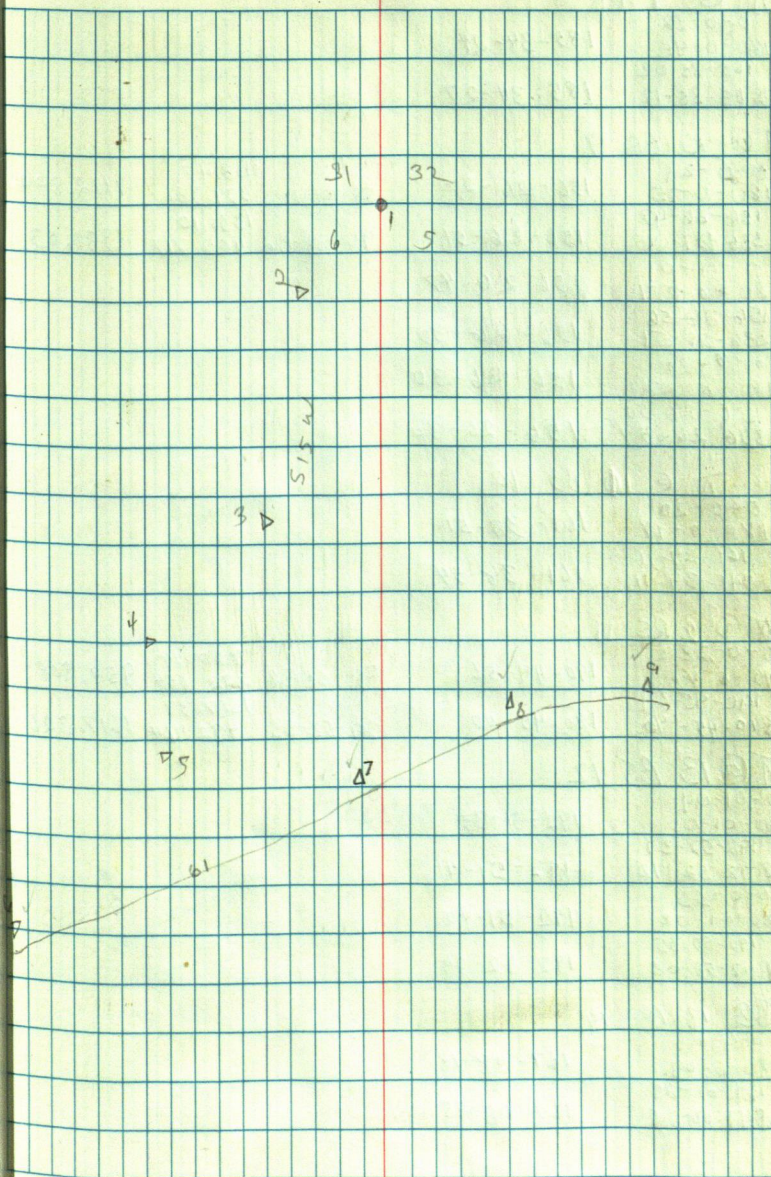
$\pi @ 3$	BS 3			
2-0-55				
180-0-55	197-59-14			
197-0-09				
# 17-0-09	197-59-14			
$\pi @ 4 BS$	3			
0-01-09			1092.71	
180-01-16	159-03-10	89-26-53	333-061	1092.659
159-04-19			307.84	
5339-04-23	159-03-07	92-40-30	93.831	307.505

$\pi @ 5 \text{ BS}$	6
0-01-21	
180-0-58	155-53-06
155-54-27	
4 335-54-43	155-53-45
0-0-53	
120-0-59	155-53-45
155-54-28	
4 335-54-36	155-53-37

1 @ 6 BS	7			
0-0-29				9761.52
180-0-36	335-16-46	89-27-10		2761.391
335-17-15				8411.717
5 155-17-21	335-16-45	87-38-12		969.65
				295.352
				968.825

7	0-0-14	184-16-39
12	0-0-20	
184	16-53	
8	04-16-58	184-16-38

$\pi @ 8 BS$	7			
0-0-34				1459.73
180-0-28	192-01-50	89-59-57	444.73	1459.741
192-02-24			1198.79	
9. 12-02-35	192-01-57	91-22-50	365.392	1198.438



$\pi @ 9$ BS 8

0-0-38	185-34-24
180-0-46	
185-35-02	
10 05-35-12	185-34-27

$\pi @ 10$ BS 9

0-0-21	156-26-27	88-10-41	1119.47	1112.894
180-0-15			339.381	
156-26-48			1331.10	
11 531-27-06	156-26-51	90-32-46	405.717	1331.03
0-0-09	156-26-47			
180-0-27				
156-26-56	156-26-30			
1336-26-57				
0-0-28	156-26-30			
180-0-22				
156-26-50	156-26-30			
336-26-57				

$\pi @ 10$ BS 10

0-0-20	161-38-51
180-0-19	
161-39-11	
12 341-39-11	161-38-54

$\pi @ 12$ BS 11

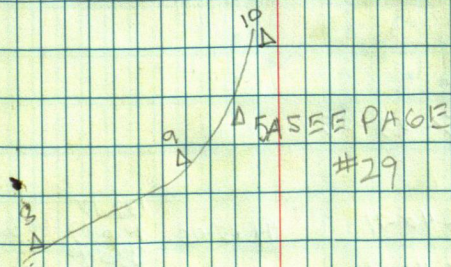
0-0-28	190-44-56	91-30-38	960.14	959.808
180-0-40			272.654	
190-45-24			1617.37	
3 18-45-46	190-45-00	52-52-53	472.964	1617.326

$\pi @ 13$ BS 12

0-01-04	192-51-33
180-01-01	
192-52-37	
14 12-52-42	192-51-41
0-0-55	
180-01-08	192-51-40
192-52-35	
14 12-53-08	192-52-00

$\pi @ 13$ BS 14

0-0-11	167-08-18
186-0-09	
167-08-29	
12 347-08-24	167-08-15



π @ 14 BS 15

0-0-29	178-42-58	90-29-32	4064.23	4064.074
180-01-45			1238.735	
178-43-27			1452.25	
13 358-43-52	178-42-07	90-23-39	442.642	1452.203

 π @ 14 BS 13

0-0-42	181-18-09			
180-00-49				
181-18-51				
15 1-48-45	181-17-58			

 π @ 15 BS 14

0-0-33	148-46-09			
180-00-37				
148-46-42				
16 328-46-47	148-46-10			

 π @ 16 BS 15

0-0-35	188-38-59	90-10-35	1882.11	1882.096
180-00-48			573.669	
188-39-34			1941.62	
18 8-39-42	188-38-54	89-12-10	591.305	1941.46
0-0-33				
180-00-36				
25-40-31	25-39-58		164.75	
17 205-40-41	25-40-05	90-44-41	50.217	164.737
188-39-30	188-38-57		794.73	
19 8-39-36	188-39-00	89-42-40	242.225	794.719

 π @ 17 BS 16

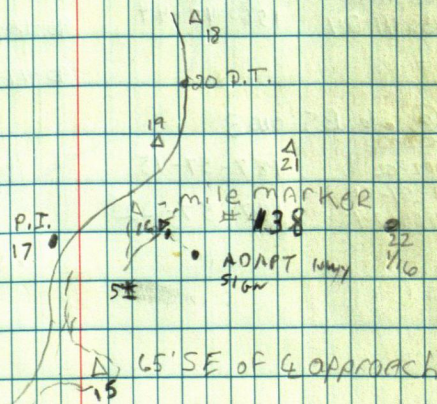
0-01-40				
347-05-05	347-03-25			
20				

 π @ 21 BS 19

0-0-26	137-40-11	94-35-05	132.17	131.743
180-00-34			40.883	
137-40-37			330.40	
19 317-40-46	137-40-12	89-36-41	100.719	330.432

 π @ 19 BS 16

0-0-30	310-48-00			
180-00-43				
310-48-30				
21 136-48-47	310-47-59			



$\pi @ 18 BS 16$

0-0-24	168-16-17
180-0-27	
168-16-41	168-16-17
23348-16-44	

$\pi @ 23 BS 18$

0-01-540	198-35-13	90-24-33	1119.44	341.207	1119.409
180-01-04					
198-36-23				1060.72	
24 18-36-28	198-35-24	91-42-24	223.309		1060.247

$\pi @ 24 BS 25$

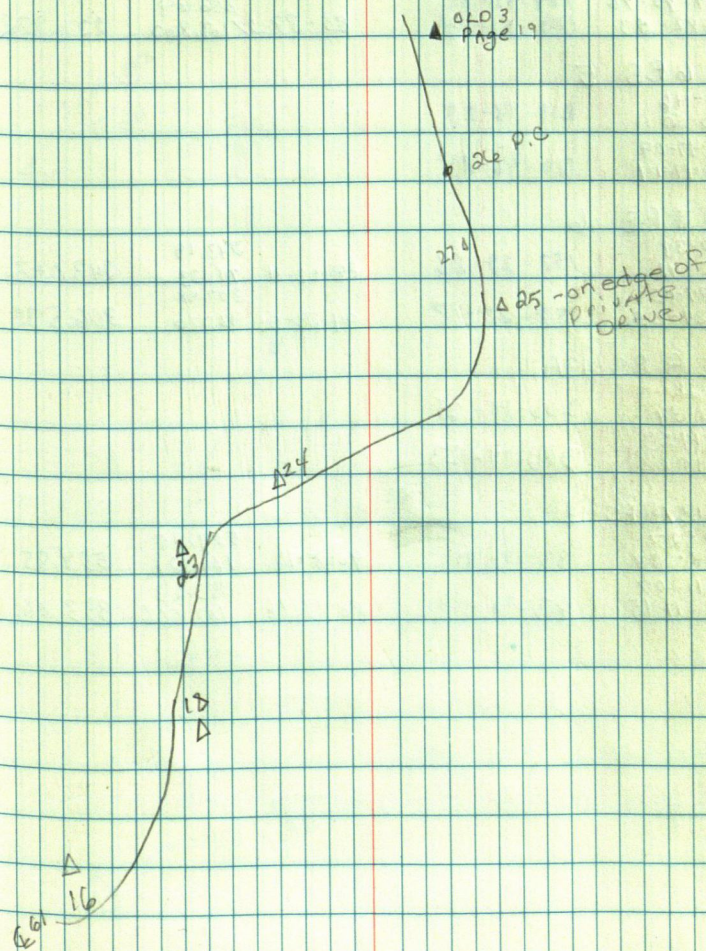
0-01-41	160-43-37
180-01-43	
160-45-18	160-43-35
23340-45-18	

$\pi @ 25 BS 24$

0-0-33	156-40-49	89-24-10	3081.82	939.357	3081.728
180-0-40					
156-41-22				1395.99	
26336-41-24	156-40-44	90-18-10	425.499		1395.966
			437.15		
27		90-47-04	133.337		437.411

$\pi @ 26 BS 0103$

0-02-06	187-57-15
180-02-02	
187-59-21	187-57-22
257-59-24	



$\pi @ 5 BS 6$

0-0-14		247.06	
181-0-29		75.304	246.46
358-37-06			
4	358-36-52	103-50-22 28.000	
97-2-55	97-02-41	281.16	
3 277-03-05	97-02-36	89-57-12	67.409
141-29-17	141-29-03	280.57	
1 321-29-25	141-28-56	85-34-53	80.128
189-42-46	189-42-32	202.64	
2 9-42-53	189-42-24	85-37-57	67.860
			221.972

$\pi @ 6 BS 5$

0-0-46			
180-0-50	219-46-23		
219-47-09			
7 39-47-14	219-46-24		

$\pi @ 7 BS 6$

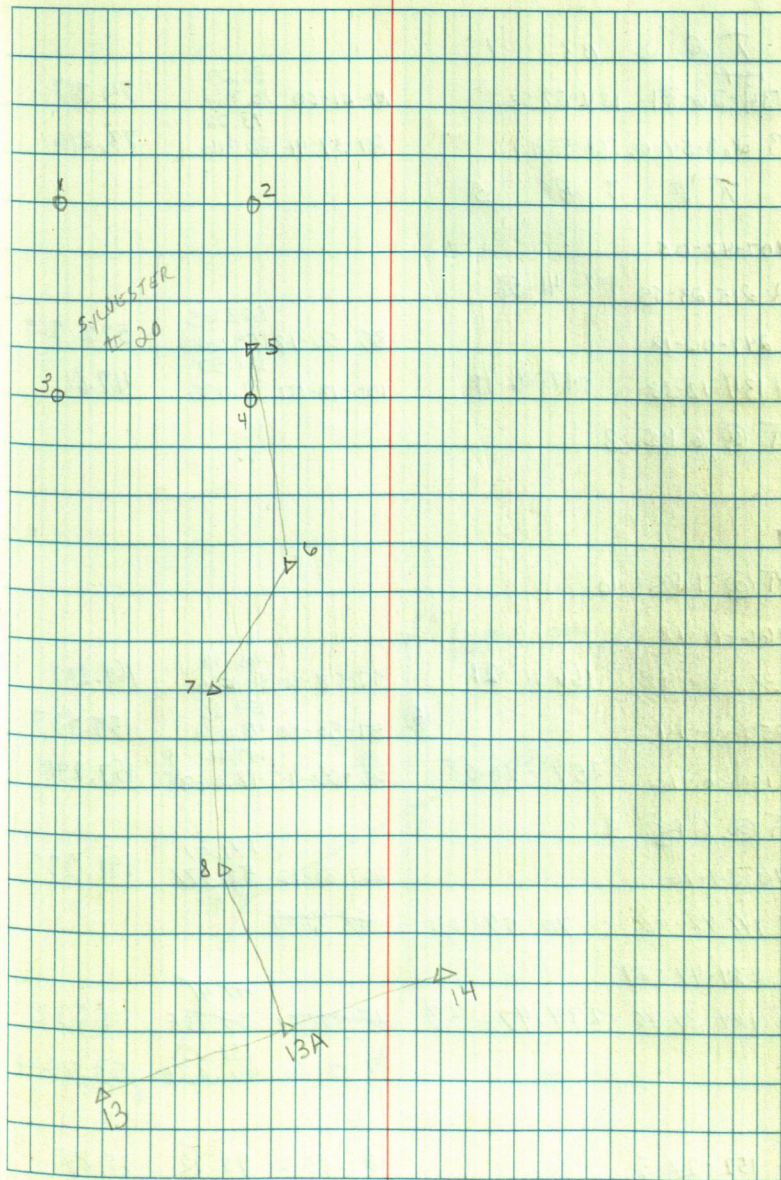
0-0-39		243.19	
180-0-48	157-23-26	88-03-31	74.123
157-24-05		307.48	
8 337-24-05	157-23-17	94-29-51	93.720
			306.532

$\pi @ 8 BS 13A$

0-0-28			
180-0-39	206-14-25		
206-14-53			
7 26-15-02	206-14-23		

$\pi @ 13A BS 13$

0-0-27		554.85	
180-0-33	83-10-41	90-8-12	169.121
83-11-07		353.23	
8 267-11-15	83-10-42	88-13-16	107.666
			353.061



$\pi @ 2$ BS 1			
134-26-37	134-27-52	11-51-00	55.29 16.852
3 26.8-54-06	26.8-55-14	89-39-41	73.22 22.316
			51.317
			73.216

$\pi @ 3$ BS 5

107-42-05			
2 215-23-55	107-41-58		
247-06-18		85-50-18	523.65 159.610
4 134-12-33	247-06-17	100-18-07	121.57 37.055
			522.269
			119.61

$\pi @ 6$ BS 3

7

$\pi @ 7$ BS 6

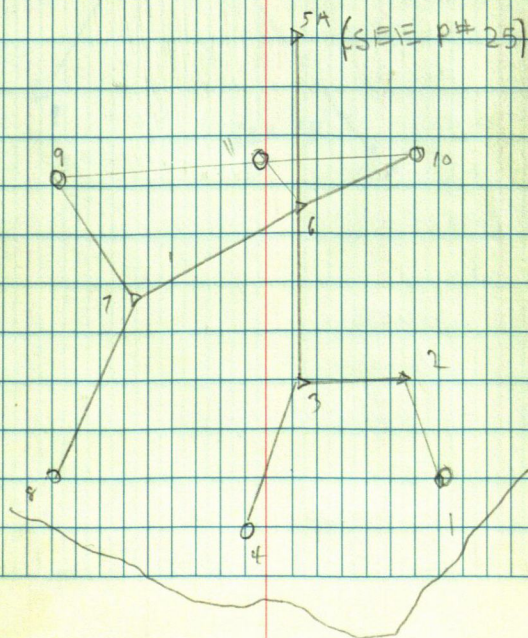
166-11-18			
8 332-22-42	166-11-21	97-53-50	165.73 50.530
257-0-14		87-50-50	159.55 48.631
9 154-0-16	257-00-08	85-50-45	157.72 48.069
			159.437
			157.298

$\pi @ 6$ BS 3

70-54-10		267-33-12	191.51 58.371
7 141-48-06	70-54-03	87-49-07	191.333

234-47-29			
10 109.34-15	234-47-23	87-49-04	111.322
		87-12-26	153.45 46.231
			153.464

11 152-28-51		84-55-22	96.22 95.84
--------------	--	----------	----------------



$\pi @ 5A$ BS 10

0-01-07

180-01-11

91-42-04

92-36-40

550.57

167.812

550.001

91-43-11
3271-43-09

91-41-50

$\pi @ 10$

BS 9

0-01-13

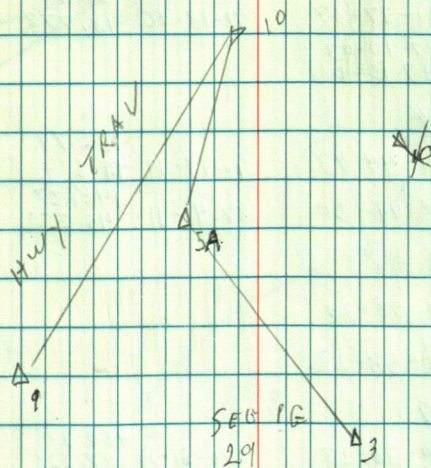
180-01-12

355-28-48

355-30-01

355-28-49

5A 175-30-01



$\pi @ 1 \text{ BS } 2$

3	0-0-25 180-0-38	5-28-27	90-41-04	483.06 147.234	483.019
3	5-28-52 185-28-58	5-28-20	91-09-33	185.19 56.448	185.154
4	64-13-04 244-13-15	64-12-39 64-12-37	89-10-42	273.50 83.365	273.474

5 $\pi @ 4 \text{ BS } 1$

5	0-0-32 180-0-56	141-27-39	91-18-26	61.60 18.772	61.578
5	141-28-11 321-28-27	141-27-37			
7	147-10-35 327-10-51	147-10-03 147-10-01			

$\pi @ 7 \text{ BS } 4$

6	0-01-27 180-1-18	141-44-43	90-19-19	162.79 49.619	162.788
6	141-46-10 321-46-08	141-44-50	88-41-11	148.37 45.272	148.348

$\pi @ 4 \text{ BS } 8$

7	0-6-42 180-0-51	311-58-30			
7	311-59-12 131-59-13	311-58-22			

$\pi @ 8 \text{ BS } 9$

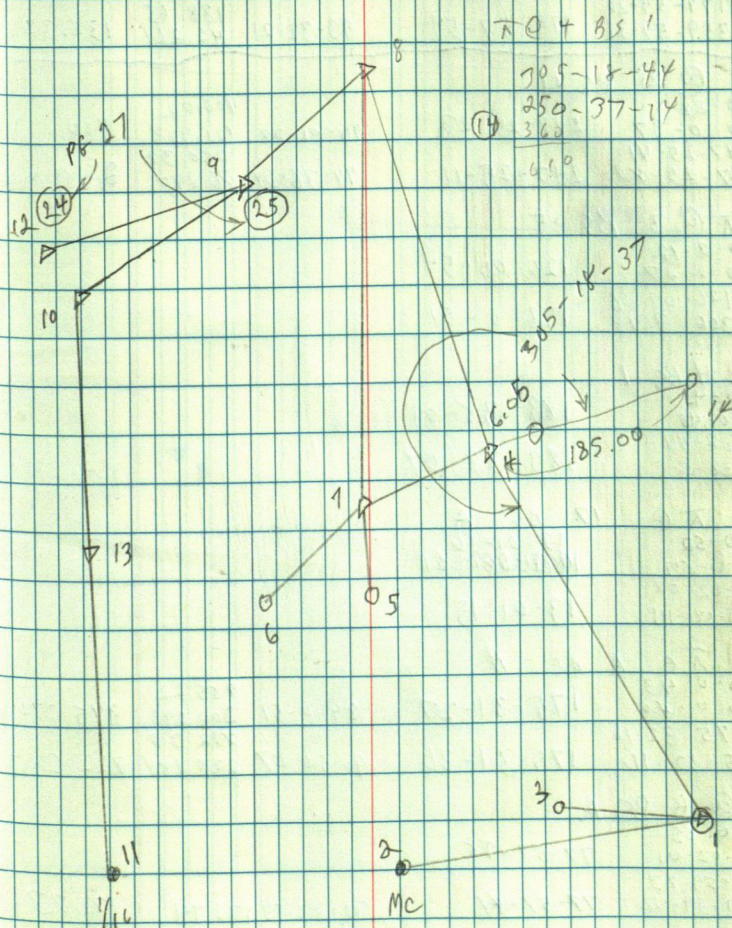
4	0-0-29 180-0-28	270-36-23	270-26-29	450.21 137.226	450.198
4	270-36-52 90-36-59	270-36-31	89-39-01	495.92 151.156	495.908

$\pi @ 9 \text{ BS } 12$

10	0-0-27 180-0-33	355-43-10			
8	355-43-37 175-47-48	355-43-15			
8	162-47-43 342-47-55	162-47-16 162-47-22			

$\pi @ 10 \text{ BS } 13$

9	0-0-33 180-01-07	252-36-56	90-19-40	376.59 114.787	376.586
9	252-37-29 72-37-45	252-36-38			



$\pi @ 13$ BS 11				
0-01-21			315.70	
180-01-32	179-57-59	85-32-50	96.226	314.747
179-59-20			138.65	
10 359-59-31	179-57-59	93-32-21	42.261	138.386

$\pi @ 5$ BS 4				
0-0-38			400.02	
180-0-37	247-25-03	90-01-28	121.928	400.021
247-25-41			250.32	
3 67-25-VJ	247-25-11	94-36-39	76.297	249.508

$\pi @ 3$ BS 5				
0-2-12				
180-2-27	126-00-54			
126-03-06				
MC 306-3-18	126-0-51			

$\pi @ 4$ BS 1				
0-0-43				
180-0-43	183-38-01			
183-38-44				
5 3-38-50	183-38-07			

$\pi @ 17$ BS A				
0-0-52	17-01-16			
180-0-59	17-01-16			
13-02-08				
15 193-02-14	13-01-15			

$\pi @ A$ BS B				
0-0-43			985.22	
180-0-40	175-31-27	84-0-51	300.298	985.074
175-32-10			722.38	
17 355-32-16	175-31-36	90-56-07	220.184	722.284

$\pi @ B$ BS A				
0-01-55				
180-02-01	77-57-28			
77-59-23				
C 257-59-42	77-57-41	91-33-33	171.74	171.73

Q=61

A₆ ——— MC
 A₃₄₁ 83²

416
 185
 C 75-06
 B

A4 (SEE P#19)

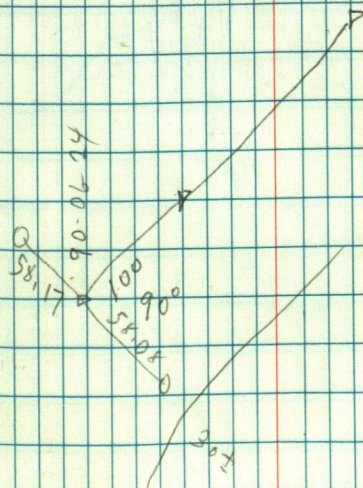
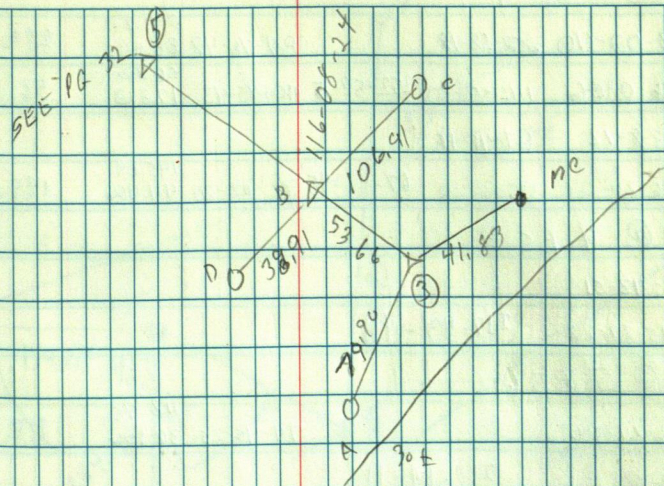
VA 1 A1 (SEE P#19)

17 15
 SEW PG 21

A @	3 85 5
267-45-30	
A 175-30-40	267-45-20

π @ B B S S

33



T @ 2 BS 3

0-01-21	169-21-01	90-45-30	2076.35	2078.162
180-01-39			133.483	
169-22-22	169-20-57	83-05-14	20	
349-22-30				

T @ 2 BS 4

0-0-34	173-01-42	90-22-17	2219.81	2219.758
180-0-50			676.601	
173-2-16	173-01-21			
357-2-11				

T @ 2 BS 5

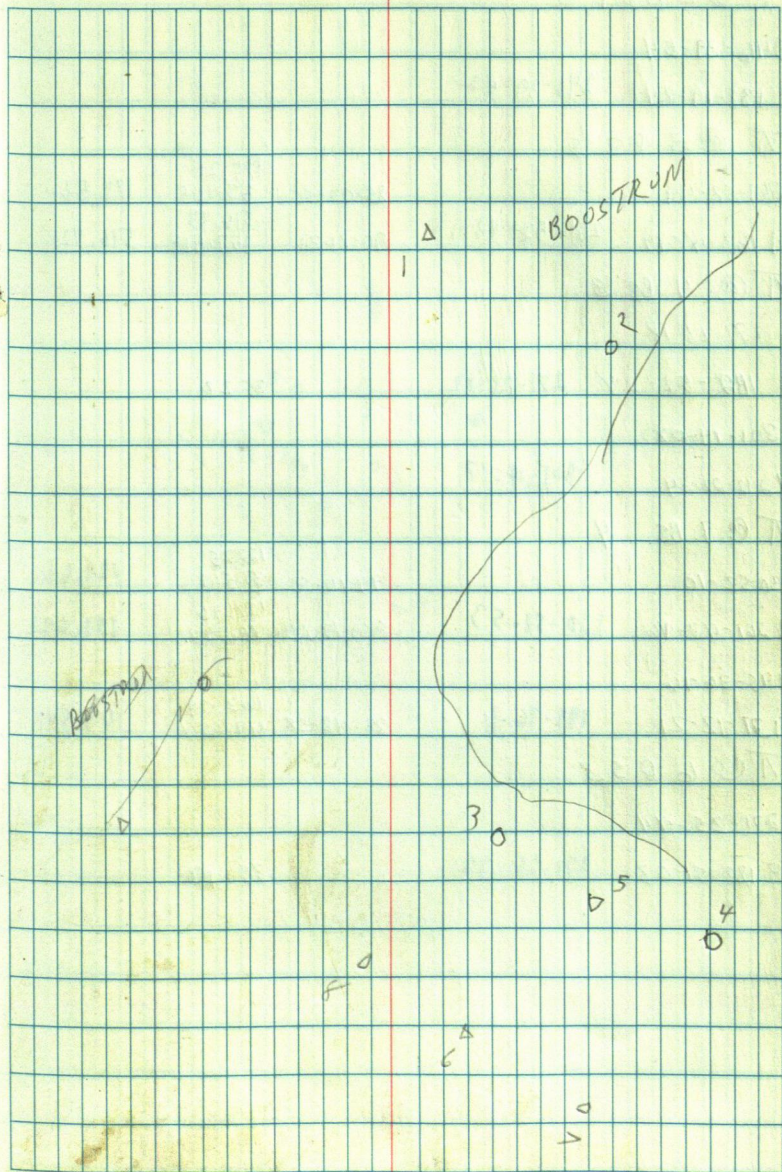
0-0-18	170-19-19	90-37-24	2204.65	2204.50
180-0-30			671.974	
170-19-37	170-19-07			
350-19-37				

T @ 5 BS 2

0-0-45	214-31-25			
180-0-49				
214-32-10	214-31-34			
34-22-23				

T @ 6 BS 5

0-0-33	95-43-34	208-57-56	173.13	173.106
180-0-32			52.773	
95-44-07	95-43-34	84-02-48	122.69	122.028
7275-44-06			32.396	
8		92-28-10	80.51	80.434
			24.539	



$\pi @ 2 BS 1$

246-39-54

3 133-19-24 246-39-42

$\pi @ 3 BS 2$

261-52-49

85-03-55

175.21
53.405

174.561

4 163-45-19 261-52-49

90-21-21

516.43
157.414

516.428

$\pi @ 4 BS 3$

271-26-18

5 182-52-24 271-26-12

35.28

301-14-08

7 242-22-34 301-14-17

$\pi @ 7 BS 4$

130-52-10

99-10-55

122.25
37.567

121.66

8 261-43-46 130-52-53

06-49-10

151.96
46.297

151.692

195-36-16

9 271-12-21 195-36-11

88-48-58

163.59
49.854

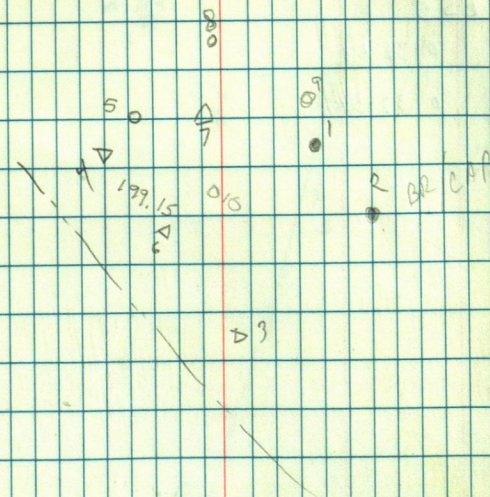
163.541

$\pi @ 6 BS 3$

271-25-44

10 182-51-03 271-25-32

35.47



Λ @ 2 BS 1

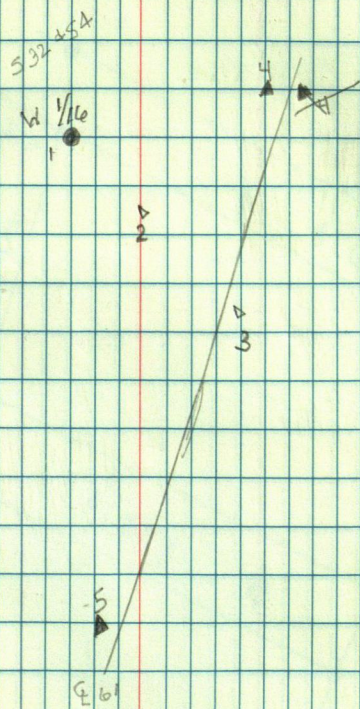
0-0-53		116.91	
180-0-54	157-33-51	91-04-53	35.627
187-34-44			229.15
3 337-34-48	157-33-54	92-35-03	69.850
			228.924

Λ @ 3 BS 4

0-0-21		616.84	
180-0-24	247-55-45	89-52-57	138.010
247-56-06			616.831
2 57-56-11	237-55-47		

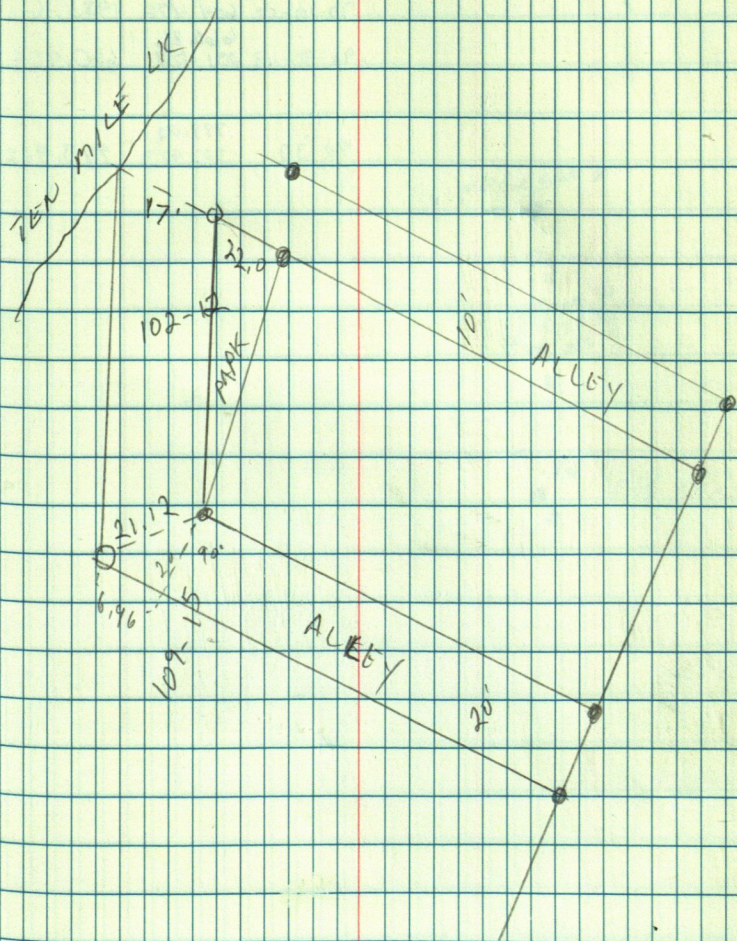
Λ @ 4 BS 5

0-01-16	
180-01-15	0-32-53
0-34-09	
3 180-34-09	0-32-54



HIRAM TWP

38



КАВУСЪ

8-139- 29

$\pi @ zBSI$

	1983.20	
90-10-52	604.476	1983.16

90-30-43 660.86
201.428 660.909

90-32	994.02	
	302.973	993.966

NE COR SEC 8

310 992.031 -
NE 1/4
SE 1/4
NE 1/4

2

 $\frac{1}{4}$

2

E 1/4 Sec 8

JIM MACHACEK

WHITE PINE POINT

X 6 BS 11

89-11-02

~~128-02-18~~

89-41-56

4 178-22-10 89-11-05

169-35-33

5 339-10-58 169-35-29

76.18

322-11-40

7 284-23-28 322-11-44

89.05

X @ 9 BS 11

89-22-22

89-21

253.75

77.343

253.733

3 178-44-48 89-22-24

208-06-14

12.88

8 56-13-04 208-06-32

36.33

208-28-31

12 176-56-57 208-28-16

91-09-30

208.08

63.423

208.037

6 269-21-59 46-476 152.47

X @ 10 BS 11

96-02-27

269-41-40

99.72

30.392

99.714

2 192-04-56 96-02-28

91-28-40

96-59-15

105.35

32.111

104.568

13 182-56-52 91-28-26

X @ 13 BS 10

359-45-16

15 359-30-30 359-45-15

1 236-55-13 236-55-12

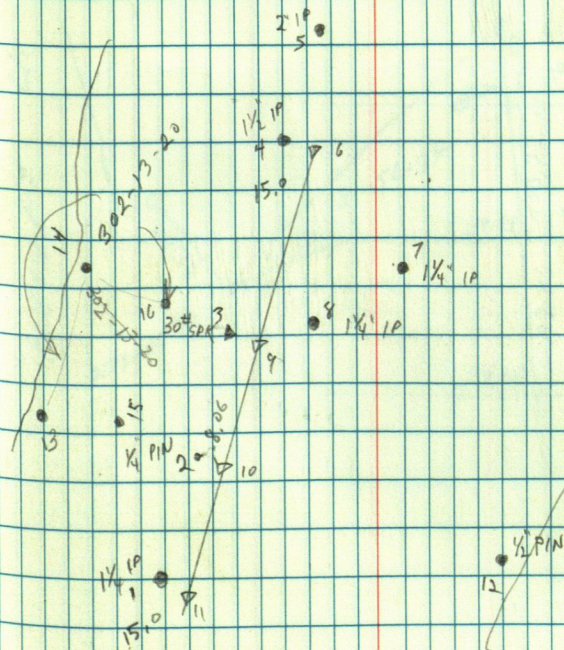
14 113-50-23

90-31-30

183.67

55.986

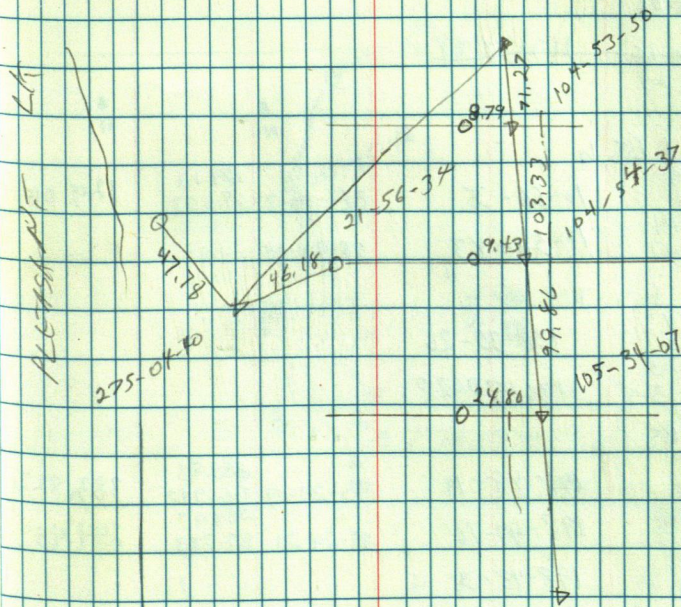
183.667



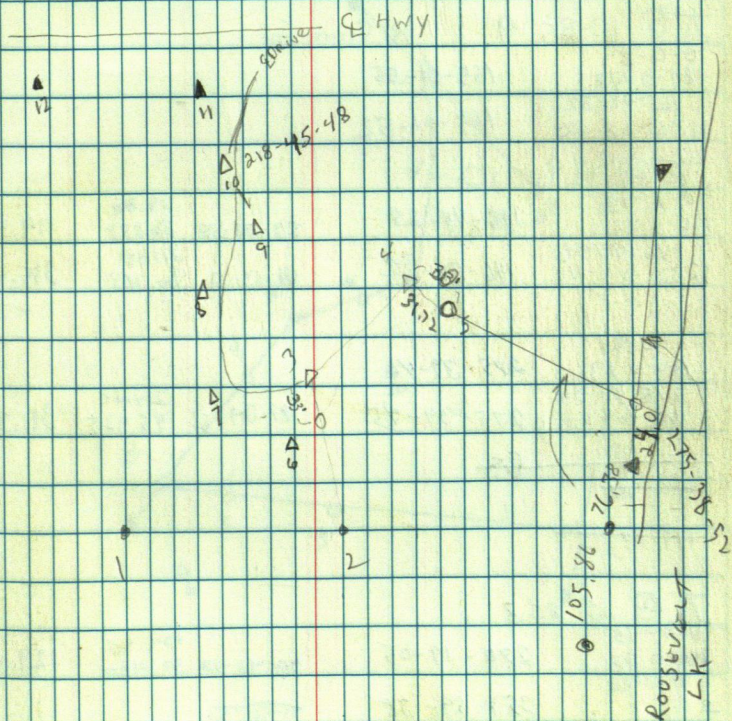
PAT MORAN

34-140-30

71.22
193.77
174.55



219-53-28



$\pi @ 9 BS$	8	30' From ζ		
0-0-59			246.92	246.734
180-0-50	95-00-52	92-12-39	75.261	
95-01-51			248.91	248.907
10275-01-57	95-01-07	89-53-58	75.867	
0-0-48				
180-0-45	95-01-14			
95-02-02				
10275-01-45	91-01-00			

$\pi @ 9 BS$	10			
0-0-56				
180-0-53	264-58-51			
264-59-47				
8 84-59-44	264-58-51			

$\pi @ 10 BS$	9	8' From ζ		
0-0-37				
180-0-42	165-01-55			
165-02-32				
11345-02-10	165-01-52			

$\pi @ 11 BS$	10			
0-0-15			119.86	
190-0-22	146-44-28	89-08-39	36.533	119.446
146-44-43			315.55	
12326-44-44	146-44-22	88-53-28	96.183	315.495

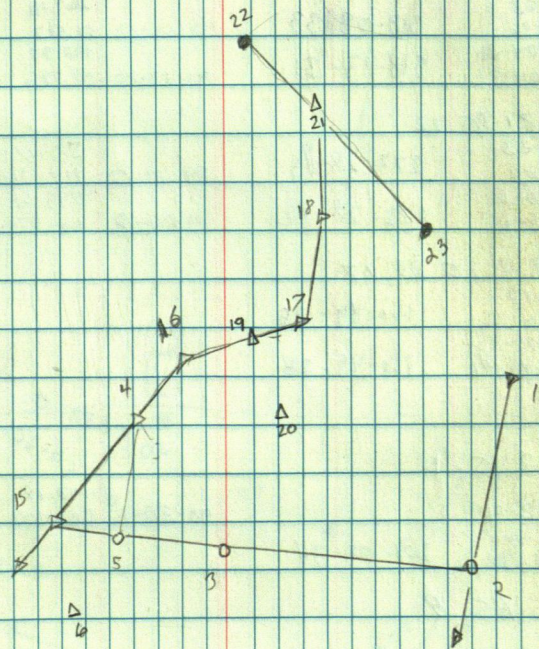
0-0-21				
180-0-13	275-39-46			
275-40-07			314.68	
95-40-01	275-39-45	87-09-56	95.925	311.372

~~$\pi @ BS$~~

~~0-0-48~~

~~174-51-15~~

$\pi @ 15 BS$	3			
0-0-45			129.35	
180-0-51	290-19-05	90-48-12	39.490	129.542
0-0-23				
5 290-19-50	359-59-38	91-50-51	152.29	
4 110-19-49	290-18-58	91-50-51	46.411	152.199
			104.22	
6		271-36-45	31.766	104.178



PAT SPAIN

$\pi @ 16$ BS 15

0-0-57	194-57-36
180-0-58	
194-58-33	
1714-58-39	194-57-41

$\pi @ 17$ BS 18

0-0-19	204-29-10	89-56-01	470.76	470.76
180-0-24			143.489	
204-29-29			404.87	
1624-29-25	204-29-04	90-46-36	423.45	404.822

$\pi @ 19$ BS 16

0-01-03	318-03-33	90-20-27	267.41	267.404
180-01-06			81.507	
318-04-36	318-03-31	91-17-20	192.97	192.819
20138-04-37			58.786	

$\pi @ 21$ BS 22

0-01-23	272-28-49	89-24-20	375.117	375.163
180-01-33			114.261	
272-30-12	272-28-42	89-24-28	199.51	199.499
1830-30-15			60.811	

$\pi @ 18$ BS 17

0-0-17	160-49-25
180-0-12	
160-49-42	
160-49-40	160-49-28

$\pi @ 2$ BS 1

201-08-40	90-30-16	198.18	198.173
201-08-34		60.406	
201-08-34	201-08-34		
201-08-34			

$\pi @ 5$ BS 8

276-41-53

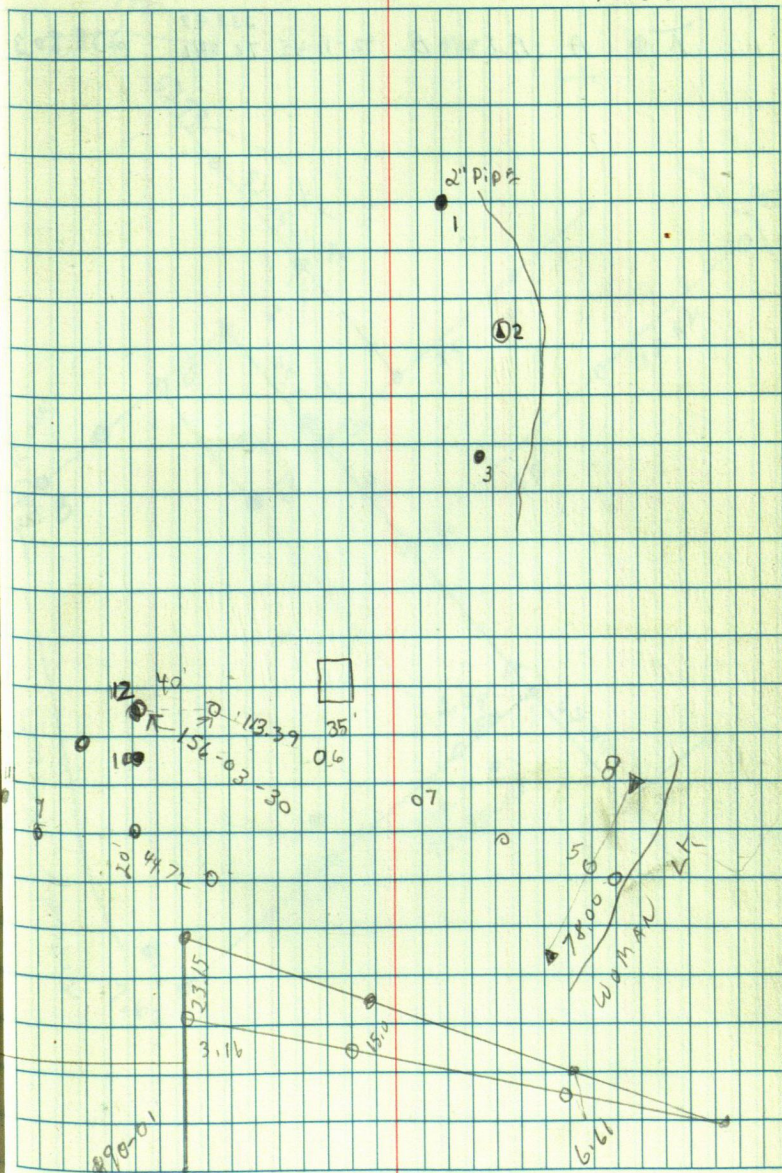
$\pi @ 7$

271-42-48	106.75	106.702
	30.537	
	135.65	
272-48-50	41.348	135.489

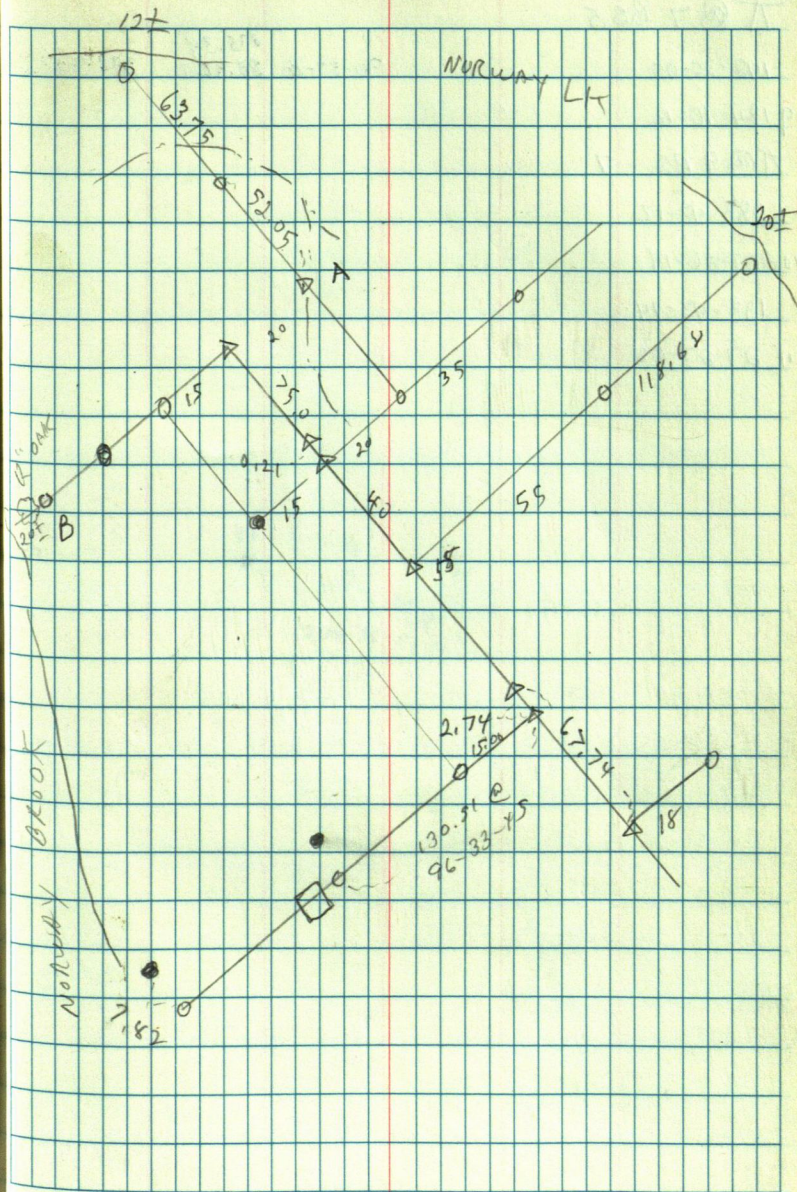
60 to Page 46

E. 1010
T. KUCHEFSKY 44

9-12-88



\overline{AC} A B S B 92-11-45 ^{238.98}
 72.846 238.803



7 @ 7 BS5

142-20-05

90-37-16

275.34

88.921

275.318

9184-40-12

7 @ 9 BS 7

283-43-12

282-43-07

10 207-26-14

193-43-14

193-43-04

11 27-27-08

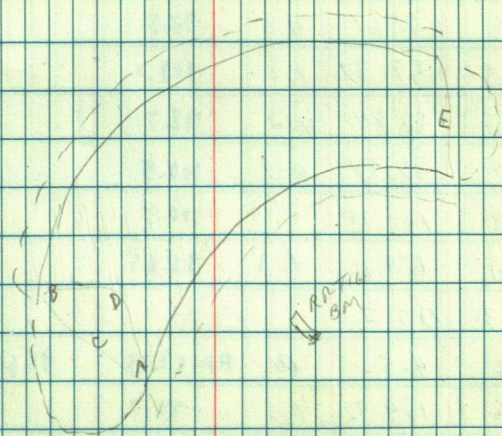
11
9
0
206-33-51
44
172
0
0

DINK FISHBON

TOWNHILL CH GRAY. PILE

A 42 BS 41 HI=105.70 BM 5.7

1	L	0152	ROD		TOP
1	88-50	96.14	5.5	100.2	TOL
2	80-15	77.12	5.4	100.3	"
3	77-50	83.55	4.0	101.7	BRK
4	67-12	70.38	5.5	100.2	TOL
5	68-36	84.0	2.7	103.0	BRK
6	54-16	68.22	5.6	100.1	
7	51-25	97.07	2.0	103.7	BRK
8	39-20	79.03	5.4	100.3	TOL
9	38-30	96.58	2.2	103.5	BRK
10	22-03	73.6	6.2	99.0	TOL
11	20-08	89.7	2.5	103.2	BRK
12	12-10	80.31	7.1	98.6	
13	354-12	81.12	8.5	97.2	
14	340.04	93.54	10.1	95.6	
15	342-05	119.84	11.0	94.7	
16	352-20	137.41	10.9	94.8	
17	C	105.89	9.8	95.9	
18	0-2-0.	187.90			
19		187.94		91.07-50	187.90
20	D 17-24	117.82			
21		119.67	4.0	79-55-30	122.3 TOL
22	28-02	122.41			
23		124.21	4.0	80-14-30	122.2
24	38-00	124.82			
25		126.65	4.0	80-14-24	122.9
26	50-25	122.48			
27		124.71		79-54-04	123.3
28	64-2-20	117.45	4.0	79-37-50	122.8



D

41

D
42

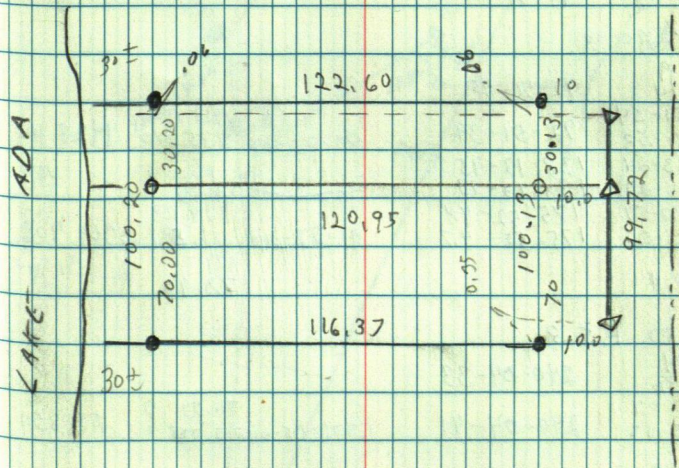
23	60-12-20	109.76 111.43	4.0	80.04-10	120.6	TOL
	TP #1			5.25	100.45	
	80-2 BS 1					
3	88-10-17			92-52-30	194.71 59.345	194.68
	TP #1 BS 2					
	TP #1	2.5		H1=102.95	100.45	
24	353-08	29.37	5.6	97.4		TOL
25	346-16	48.35	1.9	101.1		BRK
26	301-15	51.67	4.5	98.5		
27	319-25	59.37	1.0	102.0		
28	296-25	82.84	4.2	98.7		
29	307-00	89.54	0.5	102.5		
30	305.08	108.95	2.3	100.7		
31	TP #1 295-25	109.16	4.3	98.65		
	TP #3 BS 2					
	TP #2	4.5	0	H1=103.15	98.65	
32	60-05	129.32	4.5	98.7		TOL
33	52-22	124.72	1.0	102.2		BRK
34	57-03	82.37	4.5	98.7		TOL
35	43-25	85.26	0	103.2		
36	47-28	61.18	4.5	98.7		
37	26-55	53.00	4.2	99.0		
38	E 21-00	72.61	3.5	99.7		
39	4-05	64.94	3.8	99.4		
40	0-15	80.81	4.0	99.2		

DAVE SMITH LOT 3 ADA PINE BEACH

90-04-09

180-08-38

49



LOW M 65 L OF

$\overline{A} \odot 2 \quad B5 \quad 3$

~~90-12-30~~

0-0-22	
180-0-25	12-28-35
12-28-57	
192-29-01	12-28-36
180-12-24	180-12-02
0-12-30	180-12-05

90-12-30

1621,15	1621,138
494,130	
316,14	316,051
76,359	
1014,23	1014,23
309,137	

90-11-13

7 @ 3 BS 5

0-0-32	
180-0-16	26-46-16
26-46-48	
5 206-46-35	26-46-19
92-37-45	92-37-13
2 272-37-44	91-37-28

90-10-53

2616.81	2616.784
797.603	
5884.73	5884.695
1793.603	

90-4-26

$\pi @ 5 \text{ BS } 3$

0-0-9	
180-0-14	92-51-45
92-51-54	
8 272-51-53	92-51-39
138-13-24	138-13-15
8 318-13-27	138-13-13
175-52-57	175-52-48
9 355-53-01	175-52-4

09-27-117

1428.19	1428.101
435.310	

~~91-27-24~~

52.25
369.23
112.541 369.108

91-27-34

180-0-4

78.98

$\pi @ 10 \text{ B53}$

0-0-34	240-04-33
120-0-36	
240-05-07	
1160-05-17	240-04-41

272-05-00

711,33	?	713,854
217,738	!	

272-05-00

T @ 7 BS 5

0-0-20	179-52-14
180-0-24	
179-52-34	179-52-13
2359-52-37	

Λ @ 12 BS 13

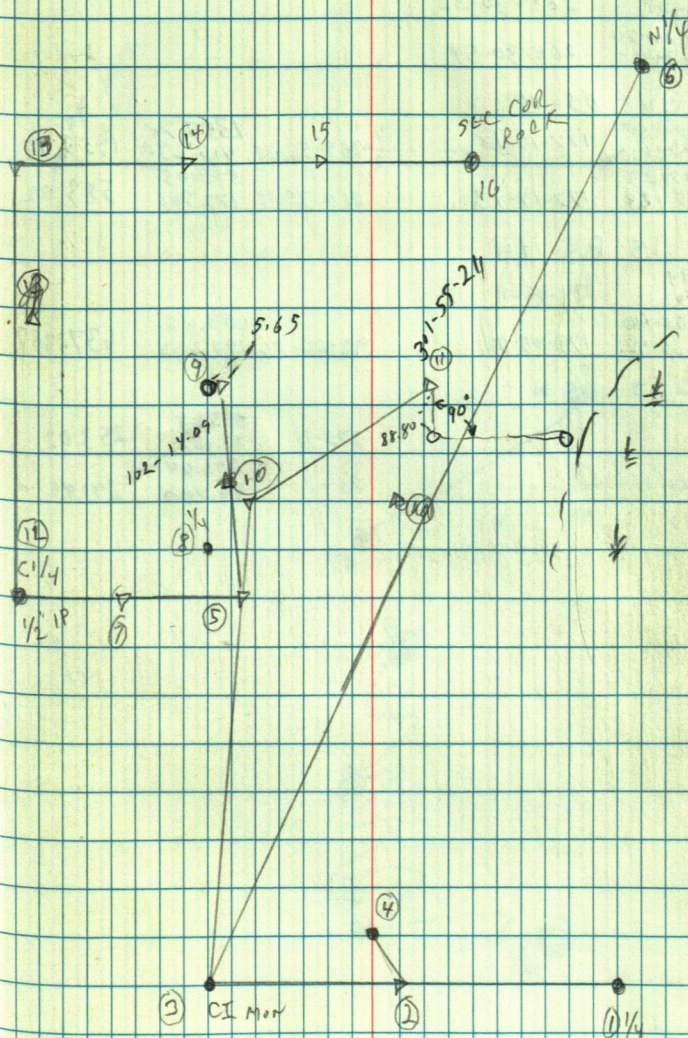
0-02-47	
180-02-52	91-57-36
92-0-23	
7272-0-22	91-57-30

90-02-02

2639.72	2639,70
804.582	

90-0 -38

1197.28	1197.276
364.932	



$\pi @ 13$ BS 12

0-0-32 268-30-52
180-0-33

268-31-24
14 88-31-27 268-30-54

$\pi @ 14$ BS 15

0-0-10 177-17-13 269-59-38 1383.78 418.630 1957.771
180-0-10

177-17-23 583.05 583.02
13 357-17-23 177-17-13 269-55-25 177.706

$\pi @ 15$ BS 14

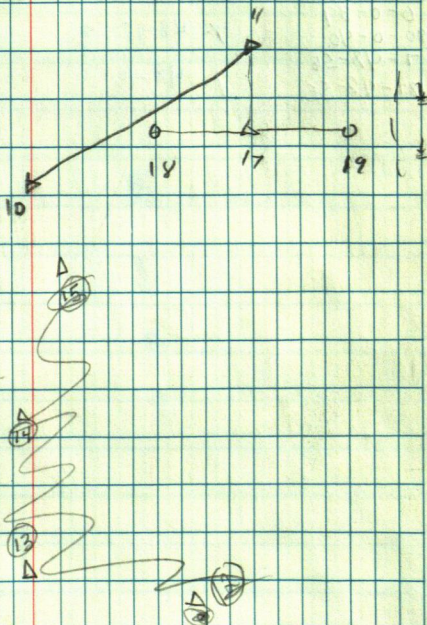
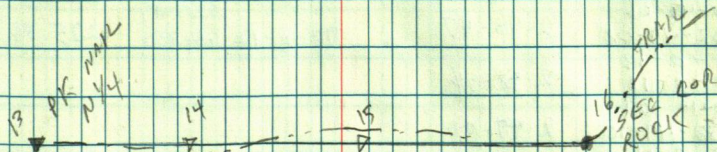
0-0-39 179-05-01
180-0-46

179-05-40 688.48 637.887
16 359-05-42 179-05-02 92-26-26 194.602

$\pi @ 17$ BS 11

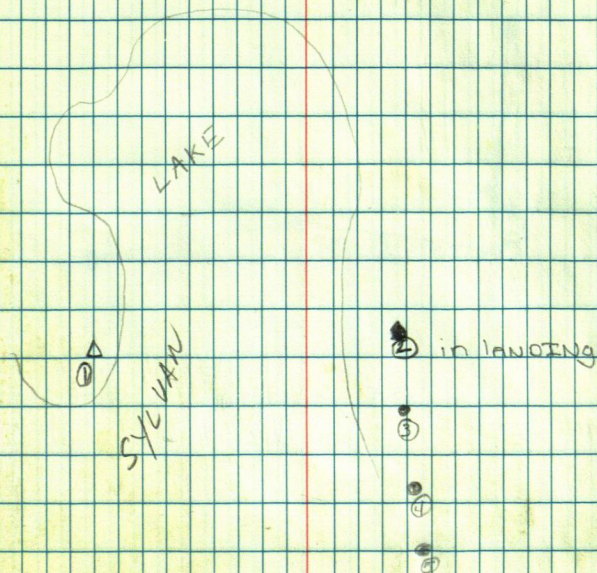
18 272-15 253.23 77.182 253.02

19 86-10 292.64 89.700 291.99



T @ 1 BS 2

0-0-40			5882.27	
180-0-19	2-48-26	90-05-50	679.179	2228.26
2-49-06			2251.47	
3182-49-08	2-48-47	90-0-12	686.250	2251.463
0-0-13				
180-0-18	2-48-54			
2-49-07				
3182-49-10	2-49-00			
0-0-11				
180-0-16	5-25-45			
5-25-56			7066.38	
4185-25-53	5-25-37	90-0-32	690.776	2266.321
0-0-04				
179-57-33	7-57-46 ?			
1-57-50			2283.72	
5187-57-39	7-58-06	89-57-52	695.931	2283.33
0-0-39				
180-0-40	7-48-17 ?			
7-48-56				
5187-48-55	7-48-15			



BILL TAYLOR

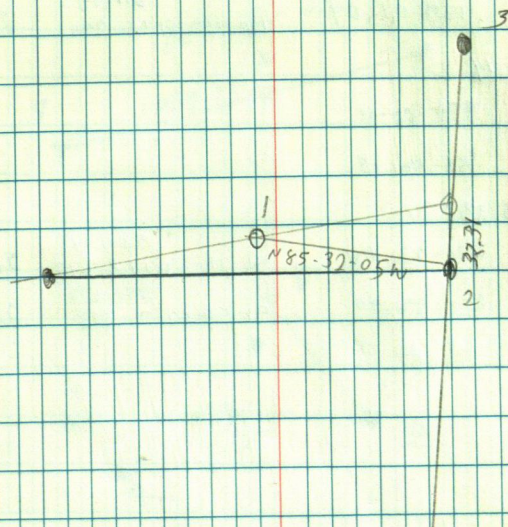
AC 2 BS 1

87-25-36

88-39-36 184.00
560.83 183.949

3 174-51 87-25-30

89-19-15 125.5
38.252 125.49



B1A

G R

T @ A BS 7

5-0-42	278-26-49	90-22-24	987.04	987.02
180-0-13			300.853	
278-27-01			348.57	
B 98-27-0	278-26-47	92-09-31	106.249	348.32

T @ B BS A

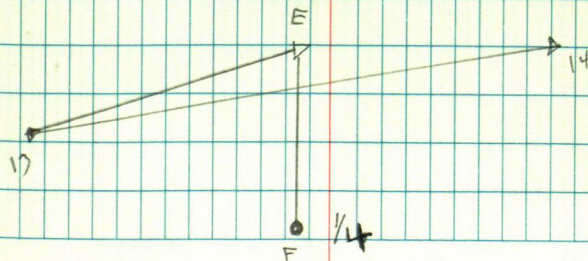
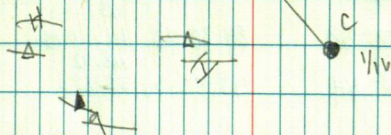
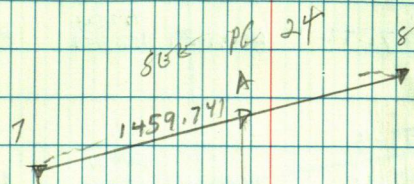
0-0-28	184-01-07			
180-0-21				
184-01-33			217.49	
C 04-01-30	184-01-09	100-42-51	66.291	213.386

T @ 13 BS 14

0-0-31				
180-0-26	358-00-11			
358-0-42				
E 178-0-41	358-00-15			

T @ E BS 13

0-0-12	290-22-06	90-28-29	584.48	584.484
180-0-16			178.148	
290-22-18			250.67	
F 110-22-16	290-22-00	91-59-07	76.373	250.417



B1A

GP

T @ 10 BS 9

0-0-20

180-0-16 357-49-48

357-50-08

G 177-50-06 397-49-50

T @ G BS 10

0-0-5

180-0-6 277-07-42

277-07-47

H 97-07-48 277-07-42

91-39-17

81-11-39

1245.24

379.549

499.54

152.252

1244.715

493.647

T @ H BS G

0-01-13

180-01-05 109-59-15

110-0-28

I 290-0-20 109-59-15

94-42-44

208.11

63.435

207.411

T @ 10 BS 9

0-0-24

180-0-19 123-37-18

123-37-42

J 303-37-37 123-37-18

T @ J BS K

0-0-37

180-0-37 232-47-58

232-48-35

1052-48-41 232-48-64

84-38-23

97-53-04

481.75

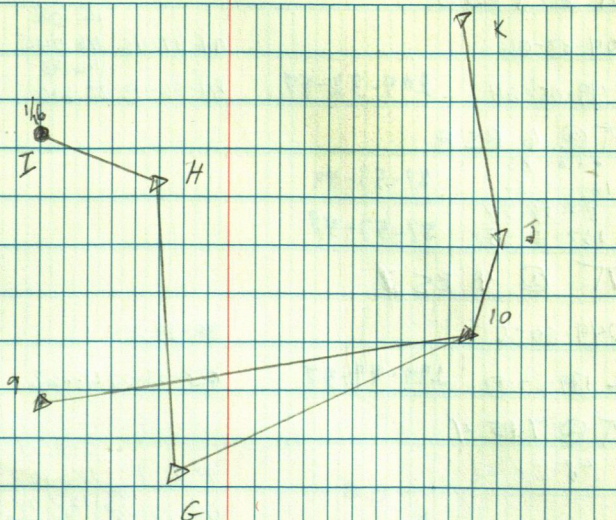
147.145

118.02

35.970

480.641

116.899



RAY KRESS

T @ 1 BS 3

204-33-06

94-37-45

151.08

46.044

150.578

249-05-34

204-32-47

84-56-43

116.83
35.610

116.376

T @ 6 BS 8

180-0-50

87-53-49

87-54-34

5 267-54-38

87-53-48

T @ 4 BS 3

249-50-0

88-18-19

1 139-39-57

249-49-57

83-03-27

43.63

43.31

T @ 7 BS 4

48-56-02

91-46-27

608.42

185.447

608.127

92-14-59

127.98

39.009

127.882

5 97-56-04

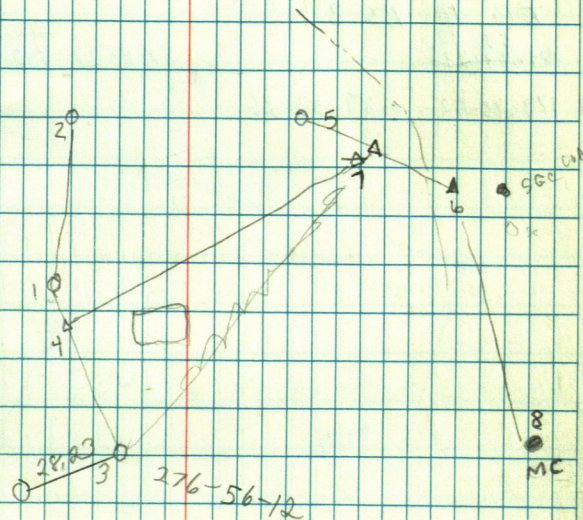
48-56-02

89-28-55

497.67

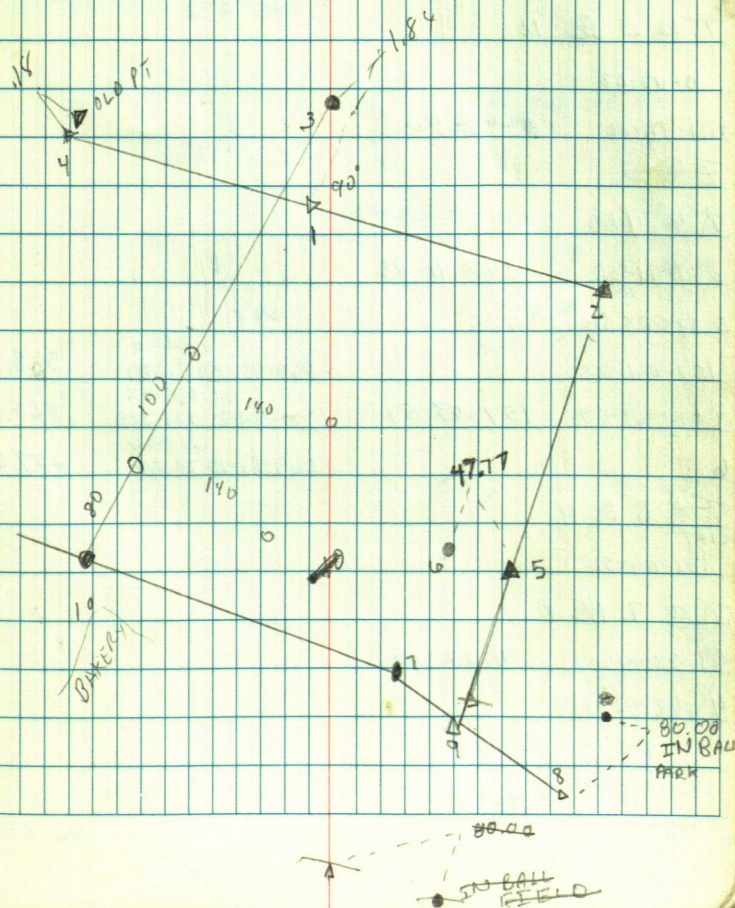
151.680

497.611



4-in ROAD
2' FROM
So Side

T@ 1 BS 2	269-12-08	345.60 105.341 320.84	345.568
T@ 7 BS 8	87-39-03	99.121	326.833
7 179-55-45	90-04-43	299.98 91.443	299.993
10 4 359-51-21	179-55-41		
T@ 9 BS 2			
8 90-0-50	90-30-15	419.99 128.006 279.00	419.977
8 181-01-52	90-0-54	89-37-33	85.036
			278.988
T@ 10 BS 3			
53-32 89-49-21	89-49-21	460.22 140.223	460.212
7 179-46-52	89-53-26		



π @ 1 BS 3

77-07-10

91-01-41

385.51

385,444

2 154-14-13

77-07-06

87-07-33

174.83

174,614

255-24-04

255-23-54

9 150-47-48

266-01-02

258.38

78.757

257.754

π @ 3 BS 1

203-23-00

203-23-01

4 46-46-01

π @ 3 BS 10

0-47-08

101-35-26

0-47-40

π @ 3

π @ 4 BS 3

247-41-42

247-41-45

5 135-23-30

157-04-02

269-43-15

368.26

112.239

368,197

7 314-01-57

157-03-59

269-44-21

565.44

172.339

565,42

6

269-31-10

257.66

78.532

257,645

π @ 6 BS 4

ERRT

101-04-56

π @ 7 BS 8

91-28-45

91-28-40

4 122-57-18

π @ 7

BS 8

92-47-53

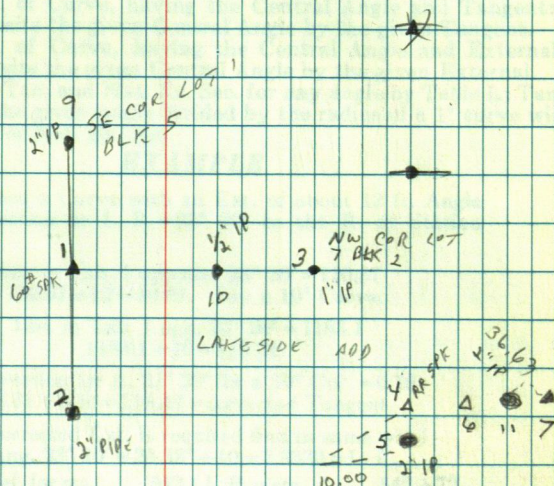
92-47-57

11 185-35-54

36.63

E RRT - 6 ARthrest Right cross hair on
the left edge of white fire dept.
gas tank by the

58



8

1/4

PINE RIVER SCHOOL

587-4425

353-50-08
180-0-26
173-42-42

173-49-38

177-24-23

0-27-14

300-27-28
75-23-44
435-33-10
297-60-27
1895-511-527

300-27-28
75-23-44
435-33-10

357-24-45
180-0-26
177-24-19

118-02-29
241-52-39
523-45-19

360-0-16
354-0-16
314-0-16
357-24-45

185-49-32
523-45-19
241-52-39

180-0-31
360-50-02
178-49-31

107-41-53
315-23-55

1538
1487
51

336-64-9
290-03-01
180-0-31
118-02-30

183-41-24
236-7-22-48
236-7-22-48

360-49-06
137-49-06
248-54-33

247-06-16
119-1-12-33

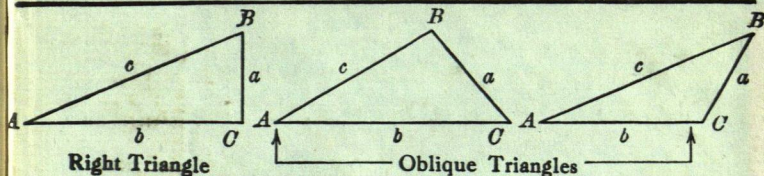
134-27-37
268-55-14
11-5-14

100-413-56
136-413-56
5114-13-56

90-45-890
268-54-06
134-27-37
236-7-22-48

179-55-21
359-51-21

TRIGONOMETRIC FORMULÆ



Solution of Right Triangles

For Angle A. $\sin = \frac{a}{c}$, $\cos = \frac{b}{c}$, $\tan = \frac{a}{b}$, $\cot = \frac{b}{a}$, $\sec = \frac{c}{a}$, $\operatorname{cosec} = \frac{c}{a}$

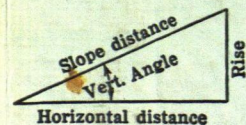
Given	Required	
a, b	A, B, c	$\tan A = \frac{a}{b} = \cot B, c = \sqrt{a^2 + b^2} = a \sqrt{1 + \frac{b^2}{a^2}}$
a, c	A, B, b	$\sin A = \frac{a}{c} = \cos B, b = \sqrt{(c+a)(c-a)} = c \sqrt{1 - \frac{a^2}{c^2}}$
A, a	B, b, c	$B = 90^\circ - A, b = a \cot A, c = \frac{a}{\sin A}$
A, b	B, a, c	$B = 90^\circ - A, a = b \tan A, c = \frac{b}{\cos A}$
A, c	B, a, b	$B = 90^\circ - A, a = c \sin A, b = c \cos A$

Solution of Oblique Triangles

Given	Required	
A, B, a	b, c, C	$b = \frac{a \sin B}{\sin A}, C = 180^\circ - (A + B), c = \frac{a \sin C}{\sin A}$
A, a, b	B, c, C	$\sin B = \frac{b \sin A}{a}, C = 180^\circ - (A + B), c = \frac{a \sin C}{\sin A}$
a, b, C	A, B, c	$A + B = 180^\circ - C, \tan \frac{1}{2}(A - B) = \frac{(a - b) \tan \frac{1}{2}(A + B)}{a + b}$ $c = \frac{a \sin C}{\sin A}$
a, b, c	A, B, C	$s = \frac{a + b + c}{2}, \sin \frac{1}{2}A = \sqrt{\frac{(s - b)(s - c)}{bc}}$ $\sin \frac{1}{2}B = \sqrt{\frac{(s - a)(s - c)}{ac}}, C = 180^\circ - (A + B)$
a, b, c	Area	$s = \frac{a + b + c}{2}, \text{area} = \sqrt{s(s - a)(s - b)(s - c)}$
A, b, c	Area	$\text{area} = \frac{b c \sin A}{2}$
A, B, C, a	Area	$\text{area} = \frac{a^2 \sin B \sin C}{2 \sin A}$

REDUCTION TO HORIZONTAL

Horizontal distance = Slope distance multiplied by the cosine of the vertical angle. Thus: slope distance = 319.4 ft. Vert. angle = $5^\circ 10'$. From Table, Page IX. $\cos 5^\circ 10' = .9959$. Horizontal distance = $319.4 \times .9959 = 318.09$ ft. Horizontal distance also = Slope distance minus slope distance times (1 - cosine of vertical angle). With the same figures as in the preceding example, the following result is obtained. $\cos 5^\circ 10' = .9959$. $1 - .9959 = .0041$. $319.4 \times .0041 = 1.31$. $319.4 - 1.31 = 318.09$ ft.



When the rise is known, the horizontal distance is approximately:—the slope distance less the square of the rise divided by twice the slope distance. Thus: rise = 14 ft., slope distance = 302.6 ft. Horizontal distance = $302.6 - \frac{14 \times 14}{2 \times 302.6} = 302.6 - 0.32 = 302.28$ ft.