

T146N R29W Traverse ~~146~~

T146N R29W

Traverse

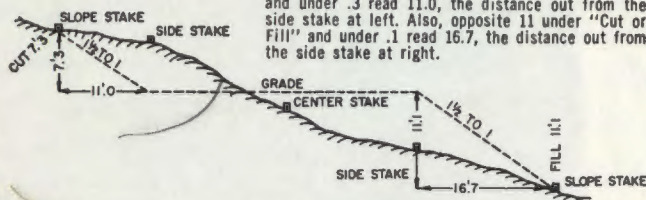
Book
#3



DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING

Roadway of any Width. Side Slopes $1\frac{1}{2}$ to 1.

In the figure below: opposite 7 under "Cut or Fill" and under .3 read 11.0, the distance out from the side stake at left. Also, opposite 11 under "Cut or Fill" and under .1 read 16.7, the distance out from the side stake at right.



Cut or Fill	Distance out from Side or Shoulder Stake										Cut or Fill
	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	0.0	0.2	0.3	0.5	0.6	0.8	0.9	1.1	1.2	1.4	0
1	1.5	1.7	1.8	2.0	2.1	2.3	2.4	2.6	2.7	2.9	1
2	3.0	3.2	3.3	3.5	3.6	3.8	3.9	4.1	4.2	4.4	2
3	4.5	4.7	4.8	5.0	5.1	5.3	5.4	5.6	5.7	5.9	3
4	6.0	6.2	6.3	6.5	6.6	6.8	6.9	7.1	7.2	7.4	4
5	7.5	7.7	7.8	8.0	8.1	8.3	8.4	8.6	8.7	8.9	5
6	9.0	9.2	9.3	9.5	9.6	9.8	9.9	10.1	10.2	10.4	6
7	10.5	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9	7
8	12.0	12.2	12.3	12.5	12.6	12.8	12.9	13.1	13.2	13.4	8
9	13.5	13.7	13.8	14.0	14.1	14.3	14.4	14.6	14.7	14.9	9
10	15.0	15.2	15.3	15.5	15.6	15.8	15.9	16.1	16.2	16.4	10
11	16.5	16.7	16.8	17.0	17.1	17.3	17.4	17.6	17.7	17.9	11
12	18.0	18.2	18.3	18.5	18.6	18.8	18.9	19.1	19.2	19.4	12
13	19.5	19.7	19.8	20.0	20.1	20.3	20.4	20.6	20.7	20.9	13
14	21.0	21.2	21.3	21.5	21.6	21.8	21.9	22.1	22.2	22.4	14
15	22.5	22.7	22.8	23.0	23.1	23.3	23.4	23.6	23.7	23.9	15
16	24.0	24.2	24.3	24.5	24.6	24.8	24.9	25.1	25.2	25.4	16
17	25.5	25.7	25.8	26.0	26.1	26.3	26.4	26.6	26.7	26.9	17
18	27.0	27.2	27.3	27.5	27.6	27.8	27.9	28.1	28.2	28.4	18
19	28.5	28.7	28.8	29.0	29.1	29.3	29.4	29.6	29.7	29.9	19
20	30.0	30.2	30.3	30.5	30.6	30.8	30.9	31.1	31.2	31.4	20
21	31.5	31.7	31.8	32.0	32.1	32.3	32.4	32.6	32.7	32.9	21
22	33.0	33.2	33.3	33.5	33.6	33.8	33.9	34.1	34.2	34.4	22
23	34.5	34.7	34.8	35.0	35.1	35.3	35.4	35.6	35.7	35.9	23
24	36.0	36.2	36.3	36.5	36.6	36.8	36.9	37.1	37.2	37.4	24
25	37.5	37.7	37.8	38.0	38.1	38.3	38.4	38.6	38.7	38.9	25
26	39.0	39.2	39.3	39.5	39.6	39.8	39.9	40.1	40.2	40.4	26
27	40.5	40.7	40.8	41.0	41.1	41.3	41.4	41.6	41.7	41.9	27
28	42.0	42.2	42.3	42.5	42.6	42.8	42.9	43.1	43.2	43.4	28
29	43.5	43.7	43.8	44.0	44.1	44.3	44.4	44.6	44.7	44.9	29
30	45.0	45.2	45.3	45.5	45.6	45.8	45.9	46.1	46.2	46.4	30
31	46.5	46.7	46.8	47.0	47.1	47.3	47.4	47.6	47.7	47.9	31
32	48.0	48.2	48.3	48.5	48.6	48.8	48.9	49.1	49.2	49.4	32
33	49.5	49.7	49.8	50.0	50.1	50.3	50.4	50.6	50.7	50.9	33
34	51.0	51.2	51.3	51.5	51.6	51.8	51.9	52.1	52.2	52.4	34
35	52.5	52.7	52.8	53.0	53.1	53.3	53.4	53.6	53.7	53.9	35
36	54.0	54.2	54.3	54.5	54.6	54.8	54.9	55.1	55.2	55.4	36
37	55.5	55.7	55.8	56.0	56.1	56.3	56.4	56.6	56.7	56.9	37
38	57.0	57.2	57.3	57.5	57.6	57.8	57.9	58.1	58.2	58.4	38
39	58.5	58.7	58.8	59.0	59.1	59.3	59.4	59.6	59.7	59.9	39
40	60.0	60.2	60.3	60.5	60.6	60.8	60.9	61.1	61.2	61.4	40

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
 CHIPPEWA NATIONAL FOREST, MINNESOTA



The paper in this book is made of 50% high grade rag stock with a WATER RESISTING surface sizing.

KEUFFEL & ESSER CO.

USFS

T146NR29W

BK 3 of 4

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I

Page

Establishment of $N\frac{1}{2}$ secs. 17 & 18 1-8
and $S\frac{1}{2}$ secs. 17 & 18 and
 $E\frac{1}{2}$ secs. 18 & 19 and $W\frac{1}{2}$
secs. 17 & 20

Survey of the $E\frac{1}{2}$ line of 9-12
sec. 34 and the reestablishment
of the SMC (McArdules)

II

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INDEX

III

STATION OCCUPIED	STATION SIGHTED	1st & VERTICAL ANGLE	3rd ANGLE SLOPE DISTANCE	MEAN ANGLE	HORIZONTAL DISTANCE
Survey traverse to establish N to bet. sections 17/18, T. 146 N. R. 29 W.					

100 a 99 * 90-38-30 1005.06 1004.98

100 a 99 00-00-00

100 a 101 180°

100 a 101 * 90-38-30 1628.90 1628.80

Moved pt. 100 south as far as I could.

100 b 99 * 90-41-50 1127.90 1127.82

100 b 99 00-00-00

100 b 101 179-59-50 359-58-40 179-59-40

100 b 101 * 90-43-00 1506.07 1505.95

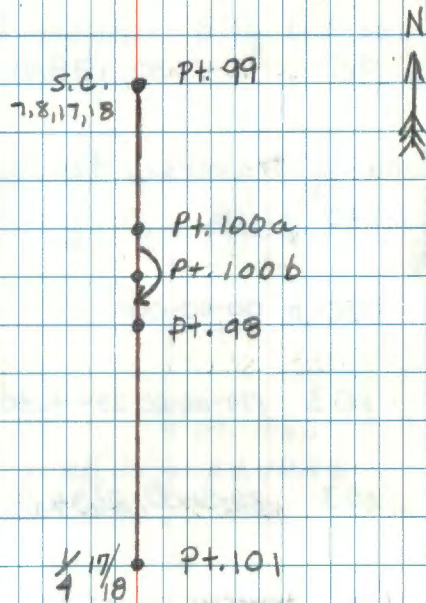
3/10/82 - BEAMA, Klaus, Hough, Funk, Gehrke

Freezing rain, temp. 20's.

E.D.M. HP3800, T60D Lietz

Pt. 99 in Sec. Cor. 7, 8, 17, 18

Pt. 101 in Quarter Cor. bet sec. 17/18



Z	STATION OCCUPIED	STATION SIGHTED	VERTICAL ANGLE	ANGLE SLOPE DISTANCE	BEAR ANGLE	HORIZONTAL DISTANCE
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		101	00-00-00			
100 b		98	00-00-00			
Set pt. 98 south of pt. 100 while sighting pt. 101						
100 b	98		91-47-30	188.41		188.32

Continuing traverse to set $5\frac{1}{16}$ bet. sec. 17/18

		101	00-00-00			
101		103	179-56-20	359.46-40	179-56-40	
101	103		89-51-00	2634.69		2634.68

3/11/82 Cont. traverse to set $5\frac{1}{16}$ bet sec. 17/18

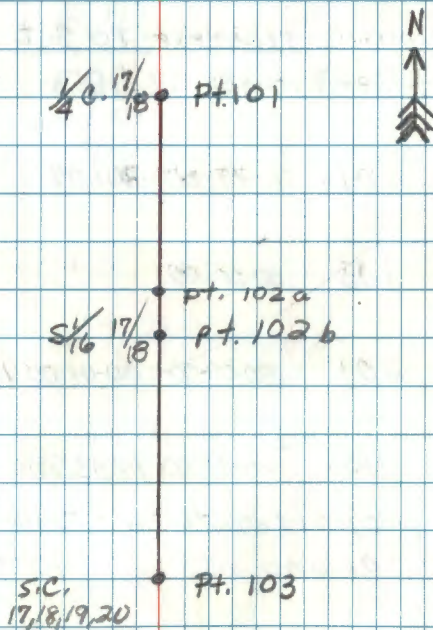
103	101		90-10-10	2634.72		2634.71
		101	00-00-00			
103		102	00-00-00			

Set pt. 102 on line while sighting pt. 101

pt. 98 is approx. $N\frac{1}{16}$ bet sec. 17/18
HP 3800, T1A

3/11/82 - BRAMA, Klaus, Hough, Gehrke
Temp. 30°F, clear sky

pt. 102 bis approx. $S\frac{1}{16}$ bet sec. 17/18



3 STATION OCCUPIED	STATION SIGHTED	1st & VERTICAL ANGLE	3rd ANGLE SLOPE DISTANCE	MEAN ANGLE	HORIZONTAL DISTANCE
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103	102 a	90-26-00	1335.62		1335.58
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The split bet. pt. 101 and 103 is 1317.36
 Moved pt 102 south 18.2'

103	102 b	90-20-20	1317.54		1317.52
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Pt. 102 needs to move south .16' and on line for $\frac{5}{16}$ bet ~~sec. 18/19~~

Continuing traverse to set $\frac{E}{16}$ bet. sections 18/19

200	201	91-27-20	801.07		800.81
-----	-----	----------	--------	--	--------

	103	00-00-00			
--	-----	----------	--	--	--

200

	201	180-00-00	00-01-00	180-00-15	
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200	103	*96-31-50	1833.85		1833.77
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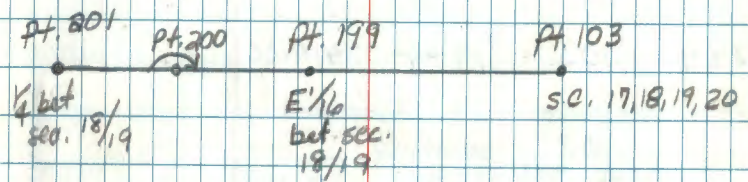
The proportionate distance bet. pt. 201 and 103 is 1317.29

200	199	91-23-00	516.52		516.37
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Pt. 199 needs to move .11' east and .03' south for $\frac{E}{16}$

Pt. 199 is on line bet. pt. 201 & pt. 103

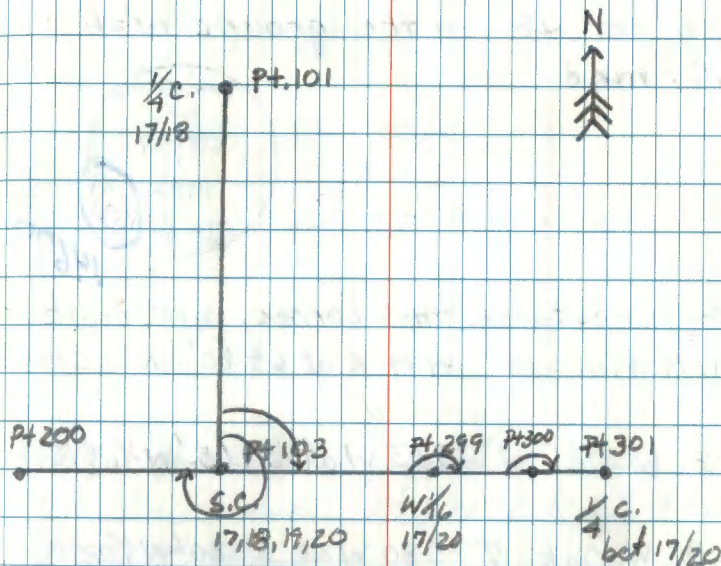
pt. 201 is $\frac{1}{4}$ corner bet. sec. 18/19
 pt. 199 is approx. $\frac{E}{16}$ bet sec. 18/19



STATION OCCUPIED	STATION SIGHTED	1st VERTICAL ANGLE	2nd ANGLE SLOPE DISTANCE	MEAN ANGLE	HORIZONTAL DISTANCE
	101	00-00-00			
103	200	267-34-00	350-15-40	267-33-55	
Cont. traverse to set W/4 bet sec. 17/20					
	101	00-00-00			
103	299	89-22-40	357-30-10	89-22-33	
299	103	*89-49-40	1410.20		1410.19
	103	00-00-00			
299	300	180-02-20	∞-08-50	180-02-13	
300	299	*91-46-20	689.02		688.69
	299	00-00-00			
300	301	179-58-45	359-55-00	179-58-45	
300	301	*90-36-40	554.99		554.96

Total distance bet. pt. 103 & 301 is 2653.84. Proportionate dist. 1326.92

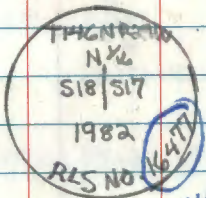
pt. 299 is approx. W/4 bet. sec. 17/20
 pt. 301 is quarter corner bet sec. 17/20



5 STATION OCCUPIED	STATION SIGHTED	1st & VERTICAL ANGLE	3rd ANGLE SLOPE DISTANCE	MEAN ANGLE	HORIZONTAL DISTANCE
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3/15/82 - BRAMA, Hough, Klaus

Set a 2" x 36" galv. concrete filled pipe set 28" in the ground with B.C. mkd.



14677

To perpetuate this corner, mkd. new BTS:

1. N. Pine, 19" N 14° E at 64.80' N 1/4 517 BT

2. W. Oak, 7" S 43 W at 22.05' N 1/4 518 BT

3. W. Oak, 7" S 80 W at 35.30' N 1/4 518 BT

Placed 8' steel sign posts south 4.3' and west 5.2' from corner with both signs attached (54-244).

Placed F.S.L.P. ON W.P. 14" S 8 W at 25.90'

Line south is mkd. to F.S. Standard.

3/15/82 Gary Brama

Set the N 1/4 south of pt. 98 .75' and east .05'

3/15/82

FS	FS	FS	FS
FS	FS	FS	S
FS	FS	S	S
FS	FS	FS	FS

4/9/82 Map Certificate prepared of survey for line between 17 1/2' 18' & 1/2 mile 18' 20'

6

STATION OCCUPIED	STATION SIGHTED	2nd & VERTICAL ANGLE	3rd ANGLE SLOPE DISTANCE	MEAN ANGLE	HORIZONTAL DISTANCE
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Set a 2" X 60" galv. pipe, concrete filled with B.C. mkd.

set 1.3' above the ice. Placed a 6" and 8" steel sign^{post} on

N.W.S. side of iron with each post 1' above grd. Posts wired to I.P.

To perpetuate this corner I set 8' steel sign posts for bearing objects, because all the trees are dead.

1. 8' Steel post, N45°W at 20.10'. 54-4 attached

2. 8' Steel post, N45°E at 20.17'. 54-4 attached

3. 8' Steel post, North at 5.1". 54-244 attached

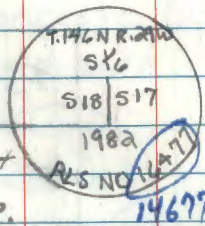
4. 8' Steel post, East at 4.9". 54-244 attached

5. 8' Steel post, South at 4.9". 54-244

6. 8' Steel post, West at 4.7". 54-244

Lines north + south are mkd to F.S. Standard

3/15/82 Gary Brant



6

Set S 1/4 .16' south of pt. 1026 and on line between 1/4 corner bet sec. 17/18 and S.P. 17, 18, 19, 20

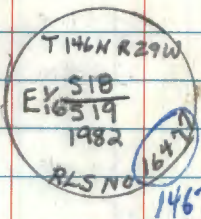
3/15/82

FS	FS	FS	FS
FS	FS	FS	S
FS	FS	S	S
FS	FS	FS	FS

1/9/82 See page 5 *[Signature]*

STATION OCCURRED	STATION SIGHTED	VERTICAL ANGLE	3rd ANGLE SLOPE DISTANCE	MEAN ANGLE	HORIZONTAL DISTANCE
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Set a 2" x 60" galv. pipe, concrete filled with B.C. mkd.
B.C. set 18" above grd.



To perpetuate this corner
I mkd. new BT's:

1. Ash 8" S 81 E 10.44' E 1/6 S 19 BT
2. W. Pine 25" S 26 E 75.40' E 1/6 S 19 BT
3. W. Pine 32" S 70 W 141.10' E 1/6 S 19 BT

Placed 8' steel sign posts south 4.15'
and west 6.2' with both signs attached.
(54-2454-4)

line west is mkd. to F.S. standard.
3/16/82 Gary Brama

3/16/82-BRAMA, Hough, Klauw

Set E 1/6 11' east of pt. 199
and south .03'. Corner falls on the
SE edge of a small open marsh.

FS	FS	S	FS
FS	FS	FS	FS
	19		
	FS	FS	FS

4/9/82 See page 5 Kell Kell

STATION OCCURRED	STATION SIGHTED	VERTICAL ANGLE	ANGLE SLOPE DISTANCE	MEAN ANGLE	HORIZONTAL DISTANCE
------------------	-----------------	----------------	----------------------	------------	---------------------

Set a 2"x60" galv. pipe, ^{cap} concrete filled with B.C. filled.

B.C. set 1.0' above grd.

T. 146 N. 229 W
 W 1/2 S 17
 S 20
 1982
 RLS NO. 147
 14677

To perpetuate this corner I mkd. New BT's:

1. W. Pine 3.5" N 27° E 155.65 W 1/2 S 17 BT

2. W. OAK 4" N 81° E 35.90 X BT

3. W. OAK 3" S 76° E 75.11 X BT

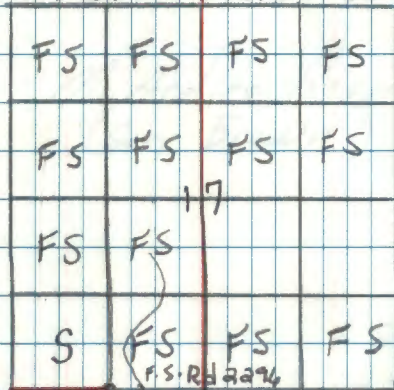
Set 8' steel sign posts west 49' and north 49' with both signs attached.

3/18/82 Mary Brann

3/18/82 - Brann, Hough, Klaus

Set W 1/2 bet. sec. 17/20 west of pt. 299 by sighting pt. 103 (S.C. 17, 18, 19, 20) and pulling 83.27'. Then pulled 0.32' south (at 90° to line).

Corner falls approx. 20' east of the wolf imp. Line west is mkd. to F.S. Standard



Placed a F.S.L.P. ON W. OAK 21' East of 300.0' from W 1/2. OAK is 30' east of F.S. Rd. 2296

4/19/82 See page 5

10

	H	D	R	D	R
FS 3	224-39-40	44-39-45	234-31-10	54-31-17	
BS 1	0-00-00	180-00-06	180-00-06	189-51-41	
T@ 2	224-39-40	224-39-39	224-39-42	224-39-36	

224-39-39

90-16-37

2-1	90-16-31	219-43-18	545.865	146.380m
2-3	89-47-46	270-12-01	380.220	115.892m

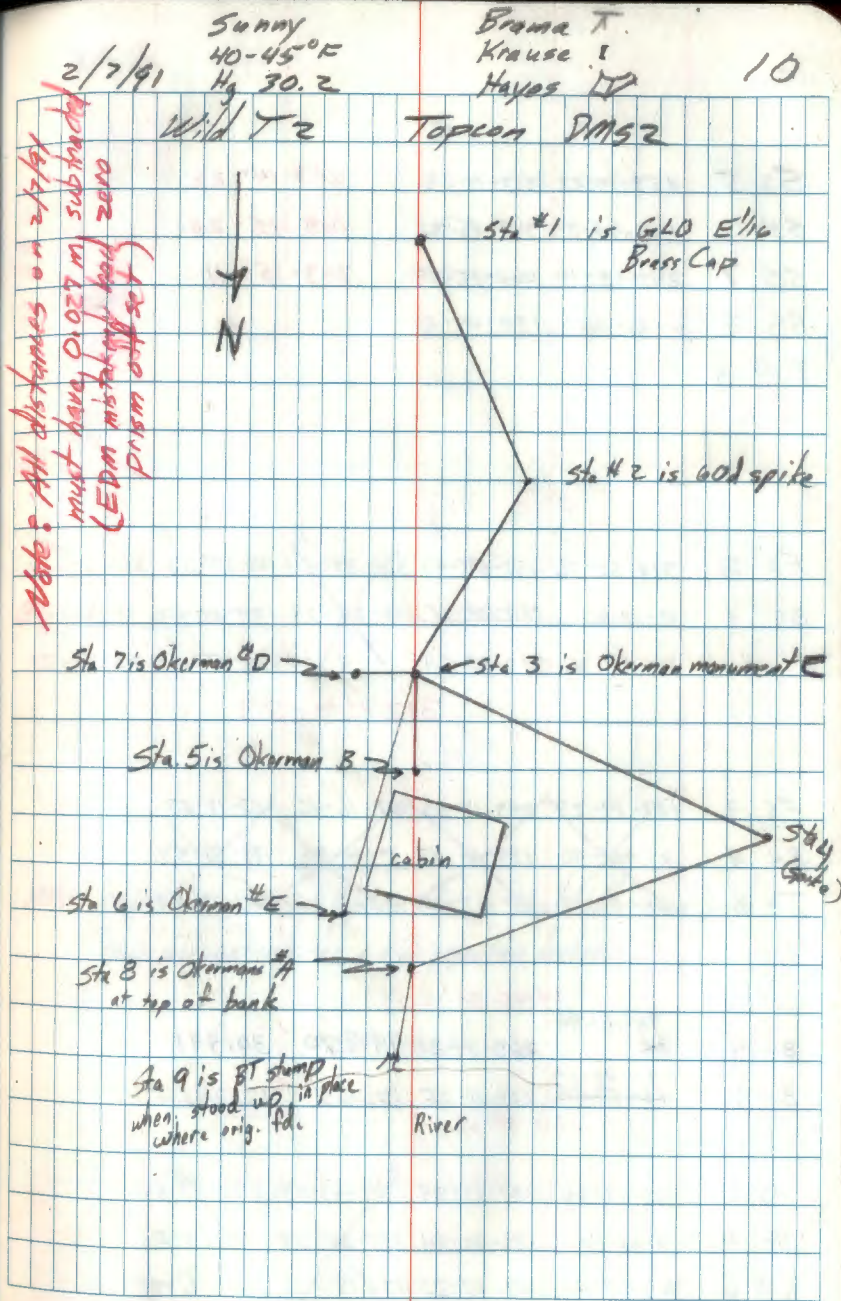
89-47-52

FS 4	103-40-40	283-40-47	116-25-42	296-25-47
BS 2	0-00-00	180-00-10	12-45-02	182-45-12
T@ 3	103-40-40	103-40-37	103-40-40	103-40-35

103-40-38

3-4	92-42-28	267-17-21	130.120	39.660
3-5	90-03-32	24-56-19	55.130	16.802m
3-6	89-28-06	270-31-43	93.545	28.512m
3-7	89-49-49	270-10-00	25.130	7.662m

X

~~BS 2~~~~T@ 3~~

	D	R	
SS 5	153-14-22	333-14-33	153-14-22
SS 6	168-45-26	348-45-32	168-45-24
SS 7	243-15-18	063-15-14	243-15-11
BS 2	0-0-00	180-00-10	
T@ 3			

	D	R	D	R	D
FS 8	312-58-36	132-58-40	321-27-59	141-27-09	321-27-18
BS 3	0-0-00	180-00-11	08-28-29	188-28-42	08-28-41
T 4	312-58-36	312-58-29	9	303	312-58-27
					312-58-30

FS 9	107-19-27	287-17-30	107-16-46	287-17-27
BS 4	0-00-00	180-00-03	00-00-00	188-59-59
T@ 8	107-19-27	107-17-25	107-16-46	107-18-20

		24-15-39	
0-4	94-15-46	265-44-28	99.870
	20		30.441
B-9	130-48-27	229-11-25	40.165
	131-50-49		12.243 m
		130-48-31	

FS 9	107-17-06	287-17-29	94-43-04	274-43-48
BS 4	0-00-00	180-00-04	347-24-58	167-17-23
T@ 8	107-17-06	107-17-25	107-18-06	6-25
		107-17-16		

Note: subtract 0.027 m from all distances

Note: pages from 4-8-9 were to a hard bed range pole thus accounting for a high rejection factor.

12

FS 10 111-41-35 291-41-54 118-35-37 298-35-48

BS 4 0-00-00 190-00-16 06-54-00 186-54-11

T@8 111-41-35 111-41-38 111-41-37 111-41-37

111-41-37

106-20-55

8-10 106-21-00 253-39-11 98.335 29.971 m 94.36

10-11 level tape 57.35

FS 11 12-00-41 192-00-51 359-03-35 179-03-49

BS 8 0-00-00 179-59-58 347-02-49 167-03-01

T@10 12-00-41 12-00-53 12-00-46 12-00-48

FS 12 10-01-21 190-01-31 20-23-50 200-23-56

BS 8 0-00-00 180-10-04 10-22-22 190-22-33

T@10 10-01-21 10-01-27 10-01-28 10-01-23

10-01-25

10-12 level tape 57.29

Light snow 30"

T₅ 29.7Bruma
Hayes
Krause

12

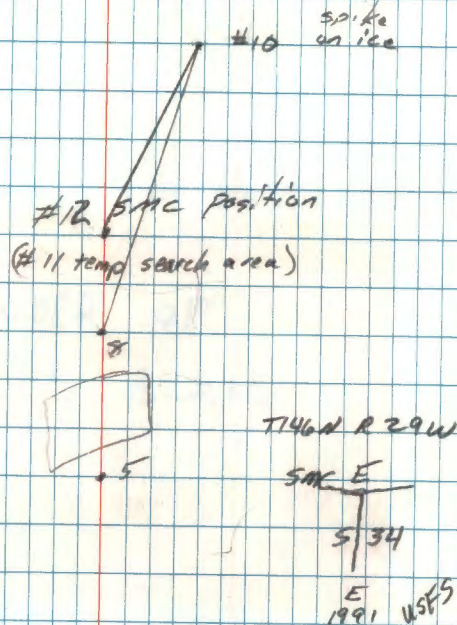
2/12/91

N Wild T2

Tupcon DMS 2

(prism offset is OK today)

4



#12 is SMC position & monument set position falls 10" ± N north of normal shoreline. Set a 3/8" x 5/8" rod w/ alum. cap secured. No reliable trees or references available. See traverse comps for ties to other monuments. Monument is 3" below river bed and 5" below surface of ice at this date.

M. Hayes
2/12/91

REMAINDER OF
BOOK IS BLANK