

T142N
R31W
RANGE LINE

T142N R31W Traverse - Rosselina

USFS, CASS COUNTY, MN

#3	PT#1 000-00-00	TIME
	D 308-15-25	10-42-1858
	D 308-26-27	10-42-5955
	D 308-36-53	10-43-3846
	R 129-29-01	10-46-5072
	R 129-47-06	10-47-5909
	R 130-00-30	10-48-4793
	PT#1 179-59-46	

Latitude - 47-07-16.15

Longitude - 94-39-48.70

GHA 0 - 179-58-40.2

Declination 0 - 09-46-05.2

GHA 24 - 180-02-15.3

Declination 24 - 10-07-27.8

T142N R31W
RANGE LINE

JA CK
JS CS
4/15/88
Clear 30°

Solar Observation

Daylight Savings time 9:45 AM

Faster @ PTD - NWSRC18 - Co. Iron Pipe

Reckoning PT1

Turning to Sun

#1	PT 1 000-00-00	Time - off - .0004
	D 302°-53'-30"	10-21-3027
	D 303°-07'-16"	10-22-2564
	D 303°-17'-06"	10-23-0496
	R 123°-37'-45"	10-24-2870
	R 123°-49'-03"	10-25-1343
	R 123°-56'-11"	10-25-4178
	PT1 180-00-179°-59-48	

Note: Believe this is recorded as daylight savings time and not Greenwich Universal Time
Change the '10' hours to '15'

#2 PT1 000-00-00

D 305-25-47	10-31-3402
D 305-34-23	10-32-0667
D 305-42-26	10-32-3793

R 125-54-24	10-33-2551
R 126-02-44	10-33-5732
R 126-11-07	10-34-3122

PT1 180-00-01

T142NR31W

AT

PT 1

PTO 1000-00-30

PT 1

4180-00-29 ^{29.5}

180-36-54

PT 2 = 180-37-23

2000-37-24 ^{27.5}

180-36-51.75 ✓

PTO 890-00-43

PT 1

5270-00-40 ^{41.5}

180-36-49.5

PT 2 = 270-37-31

6090-37-31 ³¹

vert slope dist

PTO 74-59-49

120.630

120.172

PT 1

265-00-20

36.766 ✓

PT 2 88-02-00

1260.320

1259.578

271-58-15

384.146 ✓

91

41.5

49.5

83.5

29.5

54

N
↑

PT 0 - SEC COR NW SEC 18
Iron Pipe

PT 1

PT

(white pine)
ties: 3' EAST OF DEAD SNAG in
aspens cut over

AT

PT2

pt 1 100-00-30²⁹

pt 2 180-00-28

PT. 3 187-12-44⁵ 187-12-17.5

3 007-12-49

side shot pt 100 319-26-13^{19.5} 319-25-41.5 ✓
(N¹¹⁶) 139-26-08 187-12-16.25

pt 1 90-00-34 319-25-40.5

pt 2 270-00-40³⁷ 187-12-15

pt 3 277-12-54

077-12-50⁵² 319-25-39.5side shot pt 100 049-26-15¹⁶⁵
(N¹¹⁶) 229-26-18

side shot

VERT

SLOPE
DISTpt 2 pt 100 95-01-50 135.390 134.869
264-58-01 41.267 ✓pt 2 pt 3 88-49-34 953.670 953.470
271-10-35 290.679 ✓

46.5	70.5	52	76.5
29	29	37	37
17.5	41.5	15	39.5

N
↑pt 100
N¹¹⁶ 210
Zampipe

pt 2

pt 3

Ties: 14" R. OAK - 30.82' EAST
12" ASPEN 28.89' S.E.

AT

Pt 3

pt 2 100-00-30

pt 3

180-00-32³¹

pt 4 180-22-30

180-21-58.5

3000-22-29^{29.5}

side shot

pt 101 185-32-28

185-32-02 ✓

(w/1/4 sec 18)

205-32-38³³

180-27-00 ✓

pt 2 090-00-20

185-32-01.25 ✓

pt 3

270-00-40³⁴

180-22-01.5

pt 4 270-22-32

090-22-39^{33.5}

185-32-00.5

side shot

pt 101 095-32-34

(w/1/4 sec 18)

275-32-35^{34.5}

VERT

SCOPE
DIST

pt 2

pt 3

pt 4 90-44-39

770.660

770.595

269-15-28

234.898 ✓

side shot

pt 101 96-04-55

235.530

234.204 ✓

263-55-15

71.789 ✓

89.5

 $\frac{31}{58} 5$

• Pt 2

N
↑Pt 101
w/1/4 sec 18

• Pt 3

• Pt 4

Ties: 13" STUMP 18.68 N.E.

5" W. OAK 62.88 S.E.

9" ASPEN STUMP 5.86 S.E.

AT

pt 4

pt 3 000-00-30

pt 4

180-00-36³³

175-10-20 ✓

pt 5 175-10-53

355-10-53⁵³

175-10-19.75

Side shot - pt 101 357-45-36³⁴
(W 1/4 SEC 18) 177-45-32

357-45-01

pt 3 90-20-34

pt 4

270-00-40³⁷

175-10-19.5 ✓

pt 5 265-10-47^{56.5}

085-11-06

357-45-01

Side shot - pt 101 287-45-34³⁸
(W 1/4 SEC 18) 267-45-42

357-45-01

VERT

SLOPE
DIST

PT 4

PT 5 90-42-42

269-17-10

732.675 732.619

223.320 ✓

Side shot PT 101 91-40-00

268-20-10

537.945 537.717

163.966 ✓

56.5

37

195

PT 3

PT 101
W 1/4 SEC 18

PT 4

PT 5
S 1/16 SEC 18TIES: 7" BIRCH 11.10 SO.
5" BIRCH 21.83 N.E.

pt

pt 5

5 1/16 sec 18 Iron Pipe

pt 4 000-00-30

199-50-39

4180-00-27

28.5

pt 5

5 1/16 sec 18

pt 6 2199-51-12

3019-51-03

7.5

199-50-38.75

pt 4 890-00-45

pt 5

5270-00-40

42.5

199-50-38.5

pt 6 289-51-24

6109-51-18

21

~~pt 4~~~~pt 5~~~~pt 6~~

pt 4

N
↑pt 5
5 1/16 sec 18

pt 6

ties:

6

pt

pt 6

pt 5 1000-00-30

145-14-09.5

pt 6

4180-00-20²⁵

pt 7 145-14-36

3325-14-33^{34.5}

145-14-12.25 ✓

pt 5 90-00-50

pt 6

5270-00-40⁴⁵

145-14-15

pt 7 1235-13-04

6055-14-56⁰⁰

pt 6

VERT

SLOPE
DIST

pt 5 93-15-53

266.950 266.517

pt 6

266-44-02

81.366 ✓

pt 7 90-25-37

1302.080 1302.044

269-34-55

396.873 ✓

6

PT 5

5 1/16 SEC 18

PT 7

TIES 4" ASPEN 19.40 S.W.

5" ASPEN 4.88 N.E.

PT 7

PT6 000-00-30 323-26-48

PT 7

180-00-20

25

PT8 323-27-14

SW 5.18

143-27-12

13

323-26-48.5

PT6 690-00-38

39

PT 7

270-00-40

323-26-49

PT8 053-27-26

233-27-30

28

PT6

PT8
SW 5.18

• PT 7

TIES : 6" BIRCH 5.73 S.W.

7" BIRCH 11.30 W

PT 8
SW SEC 18

PT 7 000-00-30 053-05-32.5

PT 8 180-00-27 28.5
SW SEC. 18

PT 9 053-06-02 ✓

233-06-00 053-05-31.75

PT 7 90-00-45

PT 8 270-00-40 42.5 053-05-31

PT 9 143-06-17 13.5

323-06-10

VERT

HST

PT 9 85-31-20 355.585 354.500

PT 8 274-28-48 108.383 ✓

PT 7 87-08-08 341.255 340.829

272-51-45 104.014 ✓

PT 8

PT 7

PT 9

TIES : 10" ASPEN 36.57 N E

TWIN STUMP 10.52 E

	PT 8	000-00-30	209-21-32.5
PT 9	SW 5118	180-00-28 29	
	PT 10	209-22-03	209-21-30.75
		029-22-00 1.5	
	PT 8	90-00-36	
PT 9	SW 5118	270-00-40 38	209-21-29
	PT 10	299-22-09	
		119-20-05 7	

VERT

SLOPE
DIST

	PT 10	89-09-40	859.890 859.798
PT 9		270-50-15	262.095 ✓

PT 8
SW SEC. 18

PT 9

PT 10

TIES : STUMP 3.81 N.E.
STUMP 13.35 N.W.

PT 10 -

PT 9 000-00-30 169-39-56.5

PT 10 180-00-32 31

PT 11 169-40-30 169-39-58

349-40-25 27.5

PT 9 090-00-47

PT 10 270-00-40 43.5 169-39-59.5

PT 11 259-40-46

079-40-40 43

~~PT 11~~~~PT 10~~

BARKSIGHT WAS A TOUGH SHOT!!

PT 9

PT 10

PT 11

TIES : 4" ASPEN 16.24 N.E.
 3" ASPEN 28.94 N.W.

PT 10 000-00-30 137-04-57.5

PT 11

180-00-55^{42.5}

PT 12 137-05-30 137-04-58.5

317-05-50⁴⁰

PT 10 090-00-44

PT 11

270-00-40⁴²

137-04-59.5

PT 12 227-05-45

047-05-38^{41.5}

VERT

PT 10 89-51-15 607.835 607.833

PT 11

270-08-55 185-269 ✓

PT 12 88-21-26 523.050 522.835

271-38-24 159.426 ✓

• PT 10

• PT 11

check?
this leg looks
longer on drawing
J.A.
10/88

• PT 12

TIES: 5" ASPEN 22.32 E

5" ASPEN 12.64 SW

@PT 12

PT 11 000-00-30

36

PT 12 180-00-42

153-41-01.5

PT 13 153-41-35

333-41-40 37.5

153-41-01.525 ✓

PT 11 90-00-37

38.5

PT 12 270-00-40

153-41-01.50

PT 13 243-41-42

063-41-37 39.5

POT
APPROX W 1/4
SEC 19

VERT

S

SLOPE
DIST

POT 92-25-56

962.185 961.318

PT 12 APPROX W 1/4
SEC 19 267-34-15

293.275 ✓

PT 13 90-03-44

1148.570 1148.569

269-56-09

350.085 ✓

PT 11

PT 12

POT
APPROX W 1/4
SEC 19
(PIKET)

PT 13

TIES: 4" ASPEN 14.96 SOUTH
3" ASPEN 10.02 SO. W.

PT 13

PT 12 000-00-30

PT 13 180-00-23 26.5

269-58-11.5

PT 14 269-58-41

089-58-35 38

~~STAKEHOT~~ PT 102
APPROX W 1/4
SEC 19

269-58-14.5

PT 12 90-00-45

PT 13 270-00-40 42.5

269-58-17.5

PT 14 359-59-03

179-58-57 00

~~STAKEHOT~~ PT 102
APPROX W 1/4
SEC 19

VERT

SLOPE
DIST

PT 102

PT 13

PT 14

91
160
42.5

17.5

PT 12

POT = 102

POT
APPROX W 1/4
SEC 19

PT 14

PT 13

TIES: 12" ASPEN 12.46 EAST

4" IRONWOOD 14.66 N.W.

EPT 14

PT 13 000-00-30

PT 14 180-00-28²⁹ 153-46-49.5

PT 15 153-47-22

333-47-15^{18.5}153-46-50.5 ✓

PT 13 90-00-44

PT 14 270-00-40⁴²

PT 15 243-47-32 153-46-51.5

063-47-35^{33.5}

VERT

SLOPE
DIST.

PT 13 94-32-55 206.280 205.630

PT 14 265-27-15 62.875 ✓

PT 15 90-01-12 142.870 142.870

269-58-40 43.547 ✓

TIES: 16" R. OAK 10.40 S.E.

16" R. OAK 15.34 S.W.

PT15

PT14 000-00-30

PT15

180-00-28²⁹162-35⁴-42.5

PT16 162-35-12

342-35-11^{11.5}162-35⁴-41.25 ✓

PT14 090-00-44

PT15

270-00-40⁴²162-35⁴-40.0

PT16 252-35-25

072-35-19²²

VERT

SLOPE
DIST~~PT14~~~~PT15~~~~PT16~~

PT14

PT15

PT16

TIES: 2" ASPEN 7.73 S.W.

1 1/2" ASPEN 5.13 N.W.

@PT16

	PT 15	000-00-30		
PT 16		180-00-00	15	191-17-23
	PT 17	191-17-26		
		011-17-50	38	
	PT 15			
PT 16		270-00-40		
	PT 17	281-18-27	35.5	
		101-18-44		
	PT 15	000-00-30		
PT 16		180-00-30	30	191-17-29
	PT 17	191-18-02		
		011-17-56	59	<u>191-17-29.25</u>
	PT 15	90-00-36		
PT 16		270-00-40	38	191-17-29.5
	PT 17	281-18-10	7.5	
		101-18-05		
		VERT		SLOPE DIST
	PT 15	93-42-21		307.105 306.463
PT 16		266-13-27		93.606 ✓
	PT 17	88-42-23		348.365 348.276
		271-17-30		106.182 ✓

Brush on
line

PT 15

PT 16

PT 17

TIES: 2" ASPEN 4.55 N.W.
4" ASPEN 6.83 S.W.

ePT17

PT16 000-00-30

PT17

180-00-24²⁷

169-49-58.5

PT18 169-50-27

349-50-24^{25.5}

169-49-56.5

PT16 90-00-38

PT17

270-00-40³⁹

PT18 259-50-34

169-49-54.5

079-50-33^{33.5}

PT17

PT18

PT16

PT17

PT18

YES: 10" ASPEN 8.67 NORTH
 7" ASPEN 18.86 WEST

PT 18

PT 17 000-00-30

PT 18

180-00-43 ^{33.5}_{26.6}177-36-~~52~~⁴⁹

PT 19 177-37-19

257-37-32 ^{25.5}

47.75 ✓

177-36-49.25

PT 17 090-00-46

PT 18

270-00-40 ⁴³

177-36-46.5

PT 19 267-37-36

SW-SEC 19 087-37-24 ³⁰

VERT

SLOPE
DISTANCE

PT 17 90-24-51

735.060 735.041

PT 18

269-35-19

224.047 ✓

PT 19 91-09-09

790.350 790.19

SW-SEC 19

268-50-58

240.899 ✓

PT 17

PT 18

PT 19

SW-SEC. 19

TIES: TWIN STUMP 3.63 SOUTH
STUMP 13.23 EAST

PT 19
SW-SEC 19

PT 18 000-00-30

30

PT 19 180-00-30

210-11-41

SW-SEC 19

PT 20 210-12-12

030-12-10

11

210-11-39.75

PT 18 090-00-38

39

PT 19 270-00-40

SW-SEC 19

PT 20 300-12-19

210-11-38.5

120-12-16

17.5

PT 18

PT 19

PT 20

TIES: 8" R. OAK 16.8 N78° E - (TAG)

4" BIRCH 12.66 SOUTH

e PT 20

	PT 19	000-00-30	
	SW-SEC 19		
PT 20		180-00-22 ²⁶	160-14-57

	PT 21	160-15-24	
		340-15-22 ²³	✓
			160-14-57

	PT 19	080-00-40	
	SW-SEC 19		
PT 20		270-00-40 ⁴⁰	
	PT 21	250-15-41	160-14-57
		070-15-33 ³⁷	

VERT

	PT 19	94-32-23	354.285	353.174
PT 20		265-27-43	107.987	✓
	PT 21	90-15-28	215.975	215.973
		269-44-43	65.287	M 214.101

PT 19

• PT 20

• PT 21

TIES: 2" MAPLE 20.16 W
7" BIRCH 11.22 N.E.

QPT 21

PT 20 000-00-30

PT 21

180-00-24²⁷

173-37-43

PT 22 173-38-13

353-38-07¹⁰

173-37-42.75

PT 20 090-00-40

PT 21

270-00-40⁴⁰

173-37-42.5

PT 22 763-38-25

083-38-20^{22.5}

PT 20

PT 21

PT 22

TIES: 8" ASPEN 4.03 S.E.

8" ASPEN 4.82 NORTH

@PT22

	PT21	000-00-30	
PT22		180-00-28 ²⁹	186-51-33
	PT23	186-52-02	
		006-52-02 ⁰²	
			186-51-32.75
	PT21	090-00-41	
PT22		270-00-40 ^{40.5}	186-51-32.5
	PT23	276-52-12	
		096-52-14 ¹³	

	VERT	SLOPE DISTANCE
PT 21	95-17-44	646.690 643.93
PT 22	264-42-01	197.111 ✓
PT 23	91-58-33	815.170 814.685
	268-01-20	248.464 ✓

• PT21

• PT22

• PT23

TIES : 17" R. PINE 22.05 S.E.
18" R. PINE 37.25 EASTERLY

PT 23

PT 22 006-00-30

PT 23

180-00-17

23.5

143-49-42.5

PT 24 143-50-06

323-50-06

06

143-49-43.5

PT 22 090-00-42

PT 23

270-00-40

41

143-49-44.5

PT 24 233-50-27

053-50-24

25.5

PT 22

PT 23

PT 24

TIES: 6" BIRCH 11.95 N.W.

3" BIRCH 20.30 WESTERLY

@ PT 24

PT 23 000-00-30

PT 24 180-00-27^{28.5} 195-57-03.5PT 25
APPROX W 1/4
SEC 30 195-57-32
015-57-32³²

195-57-04.75

PT 23 090-00-44

PT 24 270-00-40⁴² 195-57-06PT 25 285-57-46
APPROX W 1/4
SEC 30 105-57-50⁴⁸

VERT

SLOPE
DISTANCE

PT 23 90-53-51 601.490 601.416

PT 24 269-06-15 183.335

PT 24²⁵ 089-79-54 140.300 140.295

270-30-00 42.764 ✓

FORESIGHT 15

PT 23

PT 24

PT 25
APPROX
W 1/4
SEC 30

TIES: 4" BIRCH 9.04 S.W.

6" BIRCH 25.49 N.W.

e PT 25
APPROX W 1/4
SEC 30

PT 24 000-00-30

PT 25 180-00-20²⁵ 251-46-51.5

APPROX W 1/4
SEC 30 PT 26 251-47-18 ✓

071-47-15^{16.5} 251-46-50.5
=

PT 24 090-00-49

PT 25 270-00-40^{44.5} 251-46-49.5

APPROX. W 1/4
SEC 30 PT 26 341-47-35

161-47-33³⁴

PT 24

PT 25
APPROX W 1/4
SEC 30

PT 26

TIES: 1 1/2" MAPLE 18.00 SOUTH
2" BIRCH 19.00 N.E.
BURNED PINE STUMP 24.55 S.W.

PT 26

	PT 25	000-00-30	
PT 26	APPROX W 1/4 SEC 30	180-00-36	33
	PT 27	114-13-06	
		294-13-02	04

114-12-31

114-12-28.75 ✓

	PT 25	090-00-41	
PT 26	APPROX W 1/4 SEC. 30	270-00-40	40.5

114-12-26.5

	PT 27	204-13-06	
		024-13-08	0.7

VERT

SLOPE
DIST.

	PT 25	89-18-48	282.135	282.115
PT 26		270-41-20	85.995 ✓	
	PT 27	88-42-00	988.670	988.416
		271-18-10	301.347 ✓	

PT 25
APPROX W 1/4
SEC 30

• PT 26

• PT 27

TIES: ASPEN STUMP 7.63 N.W.
 ASPEN STUMP 8.14 NORTH
 OAK STD 9.77 SE NAIL = N Top

PT 27

PT 26 000-00-30

PT 27 180-00-20 25

~~144-43-39~~

PT 28 174-44-07

174-43-42

354-44-01 04

144-43-41.75 ✓

PT 26 090-00-45

PT 27 270-00-40 42.5

PT 28 264-44-28

~~144-43-44.5~~

284-44-26 27

PT 26

PT 27

PT 28

TIES: 18" R. OAK 18.58 S.W.

5" MAPLE 12.61 NORTHERLY

EPT 28

PT 27 000-00-30

PT 28

180-00-25^{27.5}

175-04-39

PT 29 174-05-09

354-05-04^{06.5}

174-04-38

175-04-37.75

PT 27 090-00-41

PT 28

270-00-40^{40.5}

175-04-36.5

PT 29 264-05-15

084-05-19¹⁷

PT 27 90-59-44

802.255 802.134

PT 28

269-00-25

244.528 ✓

PT 29 89-11-21

321.455 321.423

270-48-30

97.980 ✓

PT 27

PT 28

PT 29

TIES: 5" ASPEN 6.41 N W
 2" ASPEN 5.08 S. W

ePT29

PT28 000-00-30

PT29

180-00-27

28.5

219-42-32.5

PT27 219-43-03

039-42-59⁽⁶⁾

219-42-29.75

PT28 090-00-44

PT29

270-00-40

42

PT27 209-43-08

219-42-27

129-43-10⁰⁹

$$\begin{array}{r} 05 \\ 42 \\ \hline 27 \end{array}$$

PT28

PT27

PT30

TIES : 20" ASPEN 15.25 S.W.

4" ASPEN 5.30 SOUTH

e PT30

SW-SEC 30

PT 29 000-00-30

180-00-33^{31.5}

217-21-45.0

PT 30

SW-SEC 30

PT 31 217-22-15

037-22-18^{16.5}

217-21-43.25

PT 29 090-00-42

270-00-40⁴¹

217-21-41.5

PT 30

SW SEC 30

PT 31 307-22-23

127-22-22^{22.5}

VERT

SLOPE
DISTANCE

PT 29 91-51-53

405.020 404.806

268-08-20

123.451 ✓

PT 30

SW-SEC 30

PT 31 93-51-21

261.385 260.793

266-08-28

79.669 ✓

• PT 29

• PT 30
SW-SEC 30

• PT 31

TIES: 7" R. OAK 4.99 EAST
 4" BIRCH 12.38 N.W.
 4" R. OAK 3.75 SOUTH

PPT 31

PT 30 000-00-30
 SW-SEC 30
 PT 31 180-00-22²⁶ 119-40-17

PT 32 119-40-43
 299-40-43⁴³

119-40-20

PT 30 090-00-33
 SW-SEC. 30
 PT 31 270-00-40^{36.5} 119-40-23

PT 32 209-40-56
 029-41-03^{59.5}

PT 30
 SW-SEC. 30

PT 31

PT 32

TIES: 9" MAPLE 7.18 NORTH
 (STUMP)
 13" BUREN STUMP 3.30 WEST

RPT32

PT 31 000-00-30

PT 32 180-00-26²⁸ 183-14-33.5PT 33 183-15-00
003-15-03^{1.5}

183-14-36.25 ✓

PT 31 090-00-25

PT 32 270-00-30^{27.5} 183-14-39

PT 33 273-15-07

093-15-06^{6.5}

VERT

SLOPE
DIST

Horz

PT 31 90-51-49 1059.035 1058.915

PT 32 269-08-20 322.794 ✓

PT 33 89-58-22 1153.215 1153.215

270-01-45 351.501 ✓

PT 31

PT 32

PT 33

TIES: TWIN R. OAK STUMP 7.03 EAST
TWIN R. OAK STUMP 25.53 NORTH

PPT33

PT 32 000-00-30

PT 33 180-00-30³⁰ 132-30-52.5

PT 34 132-31-21

W 1/4-SEC 31 22.5

312-31-24

132-30-54.75 ✓

PT 32 090-00-40

PT 33 270-00-40⁴⁰ 132-30-57

PT 34 222-31-37

W 1/4-SEC 31 37

042-31-37

PT 32

PT 33

PT 34

TIES: TRIPLE OAK STUMP 4.56 EAST
 15" OAK STUMP (CLUMP) 6.09 WEST

PPT 34

W 1/4-SEC. 31

PT 33 000-00-30

PT 34

180-00-23^{26.5}

224-56-38

W 1/4-SEC. 31

PT 35 224-57-05

044-57-04^{4.5}

224-56-38.75 ✓

PT 33 090-00-39

PT 34

270-00-40^{39.5}

224-56-39.5

PT 35 314-57-21

134-57-17¹⁹

VERT

SLOPE
DIST

Horz.

PT 33 82-33-34

397.190 993.8456

PT 34

277-26-15

121.063 ✓

PT ~~34~~ 35

81-58-24

288.630

278-01-49

87.974 ✓

PT 33

PT 34
W 1/4-SEC 31

PT 35

TIES : 28" W. PINE S15°E 18.25

PPT 35

PT 34 000-00-30

PT 35

W 1/4 - SEC 31

180-00-36 33

180-00-29

PT 36 180-01-01

000-01-03 2

180-00-30.25

PT 34 090-00-35

PT 35

270-00-40 37.5

180-00-31.5

PT 36 270-01-09

090-01-09 09

PT 34

W 1/4

SEC 31

PT 35

PT 36

TIES: 14" MAPLE 7.77 NORTH
 18" ASPEN 11.61 S.W.

@ PT 36

PT 35 000-00-30

PT 36

180-00-26²⁸199 29
119-28-21

PT 37 199-29-50

019-29-48⁴⁹199 29 ✓
119-28-22

PT 35 090-00-40

PT 36

270-00-40⁴⁰199 29
119-28-23

PT 37 289-30-04

109-30-02⁰³

VERT

SLOPE
DIST

PT 35 94-29-39

PT 36

265-30-10

281.290
85.738 ✓

PT 37 91-58-58

268-01-17

664.915
202.666 ✓

PT 35

PT 36

PT 37

TIES : 12" R. OAK (CLUMP 3) 11.87 S.W.
10" R. OAK (TWIN) 19.82 N.W.

e PT 37

PT 36 000-00-30

PT 37

180-00-28²⁹

153-24-41

PT 38

153-25-11

333-25-09¹⁰

153-24-42

PT 36

090-00-49

PT 37

270-00-40^{44.5}

153-24-43

PT 38

243-25-29

063-25-26^{27.5}

VERT

SLOPE
DIST.

PT 37

PT 38

89-23-20

729.325

270-36-50

222.298 ✓

157-158

PT 36

PT 37

PT 38

TIES: 11" BIRCH 2.84 NORTH

141" BIRCH 4.95 S.E.

@PT 38

PT 37 000-00-30

PT 38

180-00-24²⁷

191-06-23

PT 39

191-06-50

011-06-50⁵⁰

191-06-23 ✓

PT 37

090-00-36

PT 38

270-00-40³⁸

191-06-23

PT 39

281-07-01

101-07-01⁰¹

• PT 37

• PT 38

• PT 39

TIES: 6" BIRCH 3.93 SOUTH

6" BIRCH TWIN 0.82 S.W.

@PT 39

PT 38 000-00-30

PT 39

180-00-22²⁶

147-23-56.5

PT 40 147-24-20

~~SW-SEC-31~~~~TOWNSHIP~~~~COR.~~327-24-25^{22.5}

147-23-57.5

PT 38 090-00-46

PT 39

270-00-40⁴³

147-23-58.5

PT 40 237-24-42

~~SW-SEC-31~~~~TOWNSHIP~~~~COR.~~057-24-41^{41.5}

VERT

SLOPE
DISTANCE

PT 38 84-57-23

273.615

PT 39

275-02-17

83.398 ✓

PT 40 97-08-50

312.880

~~SW-SEC-31~~~~TOWNSHIP~~~~COR.~~

262-51-20

95.366 ✓

TIES: 8" BIRCH (FWIN) 19.38 S.W.

10" R. OAK 15.03 SOUTH

PT 38.

PT 39

PT 40

~~SW-SEC-31~~~~TOWNSHIP~~~~COR.~~

EPT 40

PT 39 000-00-30

PT 40

180-00-37^{33.5}

208-51-42.5

PT 41 208-52-18

SW-SEC 31
TOWNSHIP
COR.028-52-14¹⁶

208-51-40.75

PT 39 090-00-41

PT 40

270-00-40^{40.5}

208-51-39

PT 41 298-52-18

SW-SEC 31
TWN-COR.118-52-21^{19.5}

VERT

SCOPE
DIST.

PT 40

PT 41 92-21-48

267-38-22

154.425

47.069 ✓

END OF TRAVERSE
04/20/88

PT 39

PT 40

PT 41
SW-SEC 31
TOWNSHIP
COR.

TIES : 5" ASPEN 3.86 N.W.

7" ASPEN 9.74 N.E.

41

FT. M.

BACKSIGHT
 PT 1 ⁴⁷ 355-48-40 ¹⁰⁰ 175-48-35 ⁴⁷ 355-48-45 ¹⁰⁵ 175-48-36
 FS 42 230-39-51 ⁰⁵⁰⁻³⁹⁻⁴² 175-48-36 230-39-57 050-39-35
 T @ 0 125-08-49 125-08-53 125-08-48 125-09-01

125-08-53 Angle Left

234-51-07 Angle Right

BS 0 321-33-28 ¹⁴¹⁻³³⁻⁵¹ 141-33-28 141-33-37 321-33-48

FS 43 059-42-47 ²³⁹⁻⁴³⁻¹⁵ 059-42-48 239-42-58 059-43-06

T @ 42 261-50-41 261-50-36 261-50-39 261-50-42

Angle Left 261-50-40 98-09-20 Angle Right

VA 42-0 091-09-33 268-50-48 ^{MEAN 2} 91-09-23 ^{FT Slope} 1350.950 ^{METERS} 411.772 ✓

VA 42-43 089-43-36 270-16-43 89-43-27 ^{1350.675} 803.635 244.949 ✓
 803.626

BS 42 168-40-13 348-40-15 168-40-14 348-40-11

FS 44 137-36-13 217-36-16 137-36-15 217-36-14

T @ 43 131-04-00 131-03-59 131-03-59 131-03-57

Angle Left 131-03-59

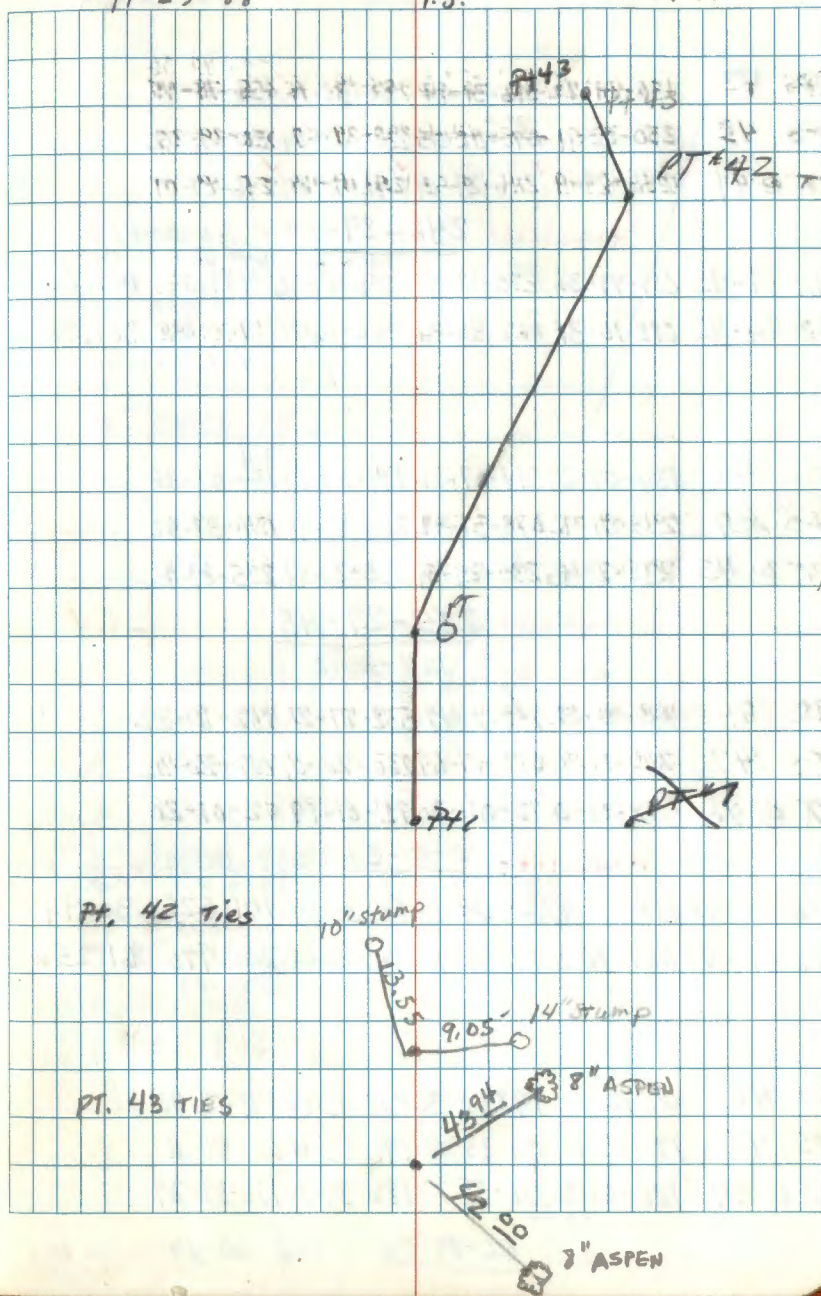
Angle Right 228-56-01

Cloudy
32°FCR
S.B.
J.S.
P.O.

M.N.

• PT 44

11-23-88



FT. M.

BS 43 136-51-22 316-31-14 136-31-11 136-31-11

FS 45 250-02-11 070-02-05 250-02-04 250-02-02

T @ 44 ✓ 246-29-11 246-29-09 246-29-07 246-29-09

Angle Left 246-29-09 ✓ 113-30-51 Angle Rt.

	MEAN \bar{x}	Slope Dist	Meters		
VA 44-43	089-47-36	270-12-44	89-47-26	489.040	149.060
				489.037	

VA 44-45	092-16-31	267-43-56	92-16-18	990.045	301.762
				989.267	

BS 44 134-07-27 314-07-36 134-07-29 314-07-38

FS 47 258-37-42 078-37-42 258-37-42 078-37-52

T @ 45 ✓ 235-29-45 235-29-54 235-29-47 235-29-46

Angle Left 235-29-48 ✓

Angle Rt. 124-30-12

BS 45 332-21-22 152-21-17 332-21-26 152-21-22

FS 47 260-19-57 090-19-57 260-20-07 090-20-02

T @ 46 ✓ 72-01-25 72-01-20 72-01-19 72-01-20

Angle Left 72-01-21 287-58-39 Angle Rt.

	MEAN \bar{x}	Slope Dist	Meters		
VA 46-45	084-35-47	274-24-38	84-35-34	101.525	30.945
				101.073	

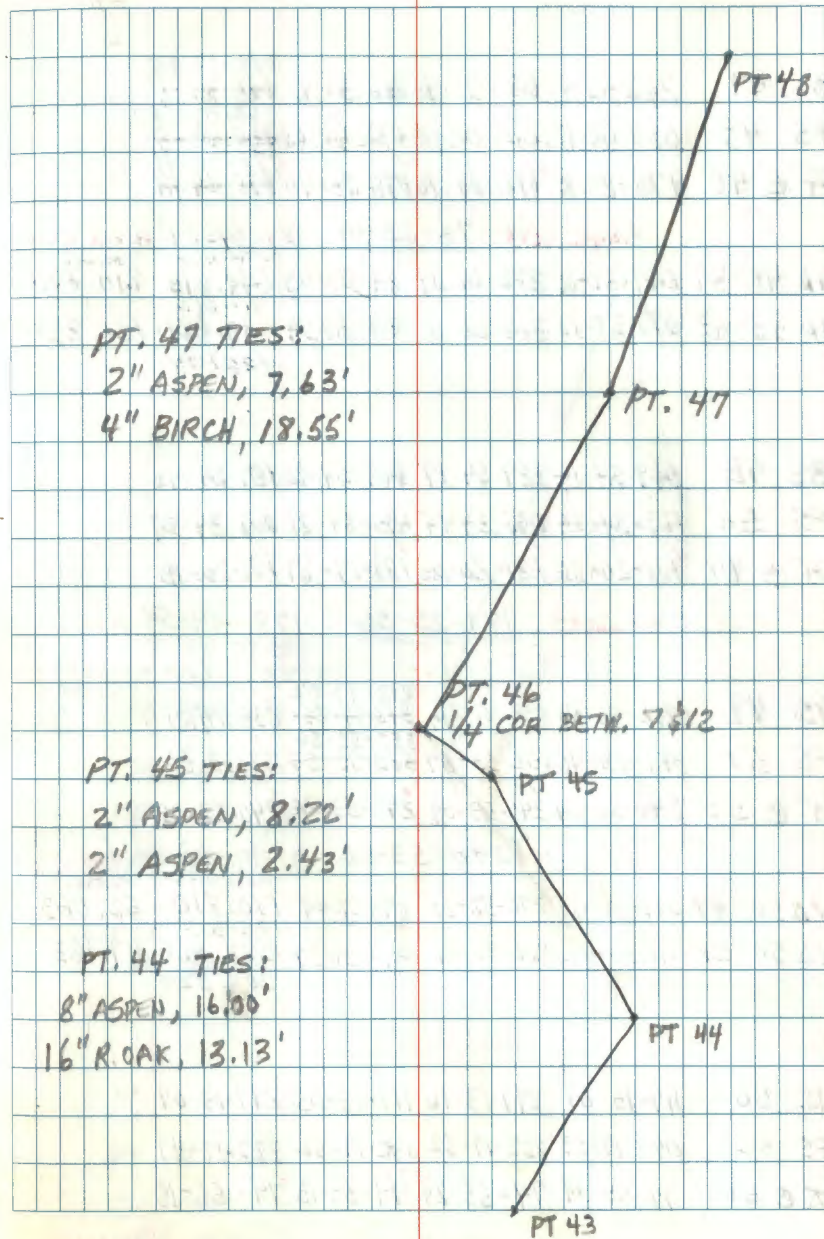
VA 46-47	084-48-12	275-12-11	84-48-01	200.970	61.256
				200.143	

BS 46 018-12-31 198-12-36 018-12-36 198-12-40

FS 48 191-33-10 011-33-08 191-33-11 011-33-11

T @ 47 ✓ 186-39-21 186-39-28 186-39-25 186-39-29

Angle Left 186-39-26 173-20-34 Angle Rt.



PT. 47 TIES:

2" ASPEN, 7.63'

4" BIRCH, 18.55'

PT. 46

1/4 COR. BETW. 7.512

PT. 45 TIES:

2" ASPEN, 8.22'

2" ASPEN, 2.43'

PT. 44 TIES:

8" ASPEN, 16.00'

16" R. OAK, 13.13'

FT. M.

BS 47	266-33-47	086-33-48	266-33-43	086-33-35 086-33-41
FS 49	088-08-12	268-08-08	088-08-03	268-07-54 268-08-09
π @ 48	178-25-35	178-25-40	178-25-40	178-25-41 178-24-42

Angle Left 178-25-39 181-34-21 Angle Rt.

VA 48-47	089-51-11	270-09-04	89-51-03	Slope Dist 691.615	Meters 210.805
VA 48-49	097-38-13	262-22-15	97-37-59	691.613 430.620	131.253
				426.804	

BS 48	009-54-14	189-54-19	009-54-20	189-54-40
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FS 50	188-34-08	008-34-14	189-34-21	008-34-27
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π @ 49	181-20-06	181-20-05	181-19-59	181-20-13
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Angle Left 181-20-06 178-39-54 Angle Rt.

BS 49	212-46-50	033-47-06	213-47-02 213-47-05	033-47-01
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FS 51	331-53-46	152-53-57	332-53-57	152-53-56
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π @ 50	240-53-04	240-53-09	240-53-06	240-53-05
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Angle Left 240-53-06 119-06-54 Angle Rt.

VA 50-49	089-27-57	270-32-30	89-27-44	Slope Dist 170.810	Meters 52.063
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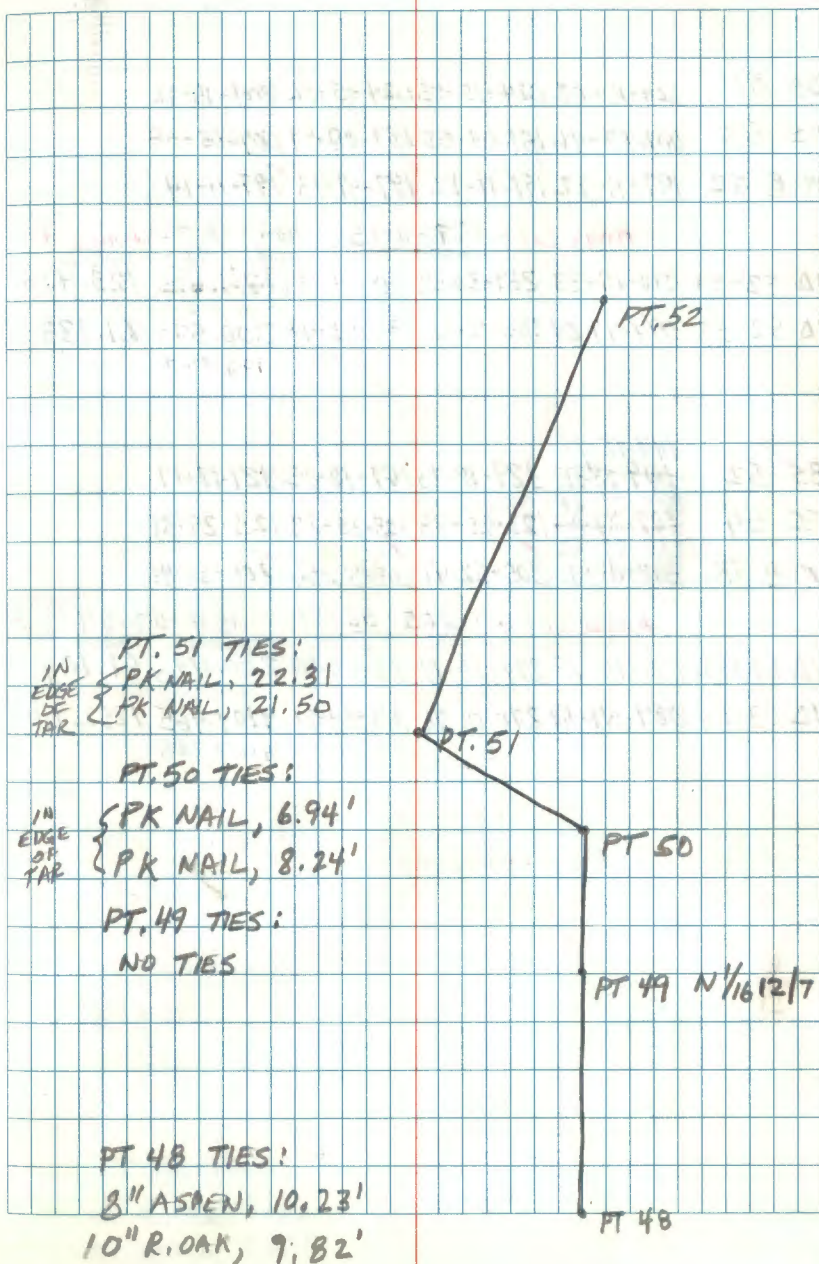
VA 50-51	091-30-12	268-30-19	91-29-57	170.803 384.460	117.183
				384.328	

BS 50	117-13-07	297-13-16	117-13-05	297-13-04
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FS 52	042-17-53	222-17-52	042-17-52	222-17-49
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π @ 51	74-55-14	74-55-24	74-55-13	74-55-15
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Angle Left 74-55-17 285-04-43 Angle Rt.



BS 51 204-15-08 024-15-05 024-15-12 204-15-12

FS 53 007-03-46 187-03-53 187-03-59 007-03-58

T @ 52 197-11-22 197-11-12 197-11-13 197-11-14

Angle Left 197-11-15 162-48-45 Angle Rt.

VA 52-51 090-29-33 269-30-52 90-29-21 ^{404.860} ^{123.400} ^{Meander}VA 52-53 094-47-04 265-13-26 94-46-49 ^{Slope Dist} 200.570 61.133
199.872BS 52 ¹⁴⁹⁻¹⁸⁻¹⁸ ~~149-18-25~~ 329-18-20 149-18-25 329-18-19FS 54 ³⁰³⁻²⁵⁻²⁶ ~~303-25-23~~ 123-25-33 303-25-29 123-25-31T @ 53 ²⁶⁵⁻⁵²⁻⁵² ~~202-11-32~~ 205-52-47 205-52-56 205-52-48

Angle Left 205-52-51 154-07-09 Angle Rt.

VA 53-52 085-10-15 274-50-17 85-09-59 ^{Slope Dist} 200.470 ^{Meander} 61.104VA 53-54 089-59-07 270-01-26 89-58-51 4107.965 1252.110
4107.965

END OF DAY

PT. 53 TIES:
6" BIRCH, 5.34'
7" ELM, 4.68'PT 52 TIES:
6" ELM, 12.43'
4" ASPEN, 9.82'PT 53
MEANDER COR.

PT 52

PT. 51

1/5/89

BS 53 ^{20 32 62} 310-33-05 ^{32 22} 130-33-03 310-33-02 130-32-59

FS 55 155-00-53 335-00-48 155-00-54 335-00-52

T.O. 54 155-32-12 155-32-15 155-32-08 155-32-07

Hazy conditions ^{Angle} 155-32-11 ^{Angle} 204-27-49 ^{RT.}

Instrun. Bump

BS 54 ~~245-53-43~~ ²⁴⁵⁻⁵⁸⁻²⁶ ~~065-53-36~~ 065-58-19 245-58-20 065-58-25

FS 56 359-29-51 000-04-42 180-04-35 000-04-43 180-04-38

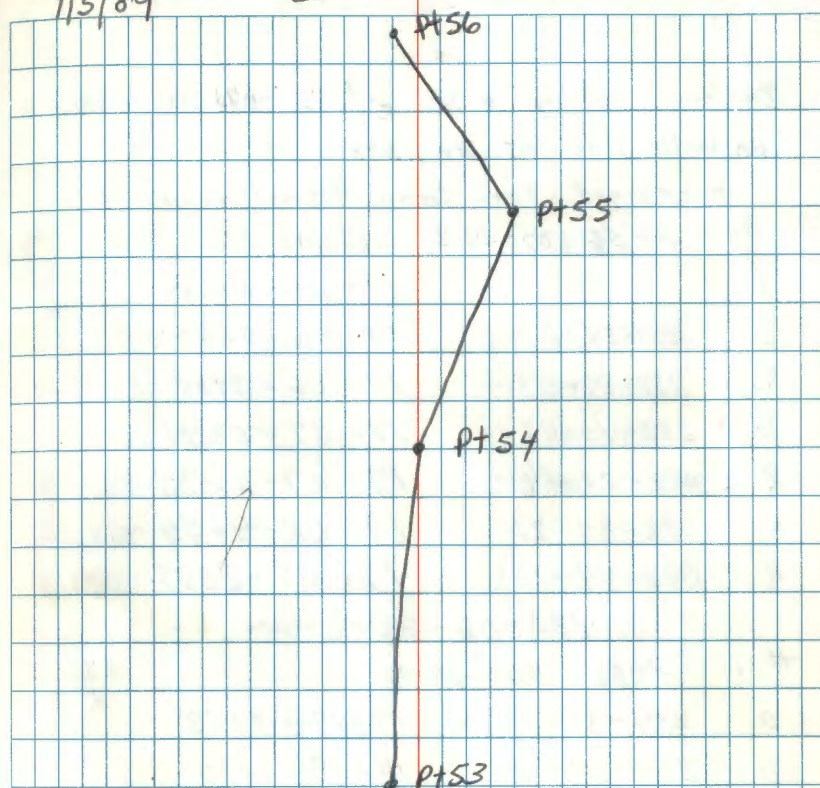
T.O. 55 245-53-52 245-53-44 245-53-44 245-53-37 245-53-47

Angle Left 245-53-43 ^{Angle RT} 114-06-17VA 55-54 090-08-12 267-52-11 90-08-00 ^{Slope Dist} 1206.645 ^{Meters} 367.787 ✓VA 55-56 ⁰⁹⁰ 089-00-00 270-00-25 89-59-48 ^{1206.642} 753.410 ^{753.410} 229.640 ✓

CK-GB-TJ-JS-CG

1/5/89

25°



Pt 54 Ties

16" W. OAK 11.13'

10" W. OAK 8.94'

Pt 55 Ties - 60d nail

EDGE OF SPR NAIL 4.92'

TAP OAK NAIL 7.38'

WHITE WIRE Pt 56 is Town Corner for 1, 6, 31, 36 for T142NR312

46

CK
GB
JS
CG
TS

Solar Observation

1/5/89
Slight haze
25°

Instrum. set up over pt. 55 - 60d nail in shadow
on north side of Hwy 200.

Backsight Town Corner for section 1, 6, 31, 36 ^{714 2N} _{R 31, 32N}

#	PTS	DATE	TIME	
# 1	PT 56	000-06-28		
D		19-04-4164		GB K
D	231-54-24	19-05-5645		
D	232-02-53	19-06-3159		
D	232-10-13	19-07-0291		
R	052-21-53	19-07-5053		
R	052-35-25	19-08-4654		
R	052-44-10	19-09-2237		

180-06-25

#	PTS	DATE	TIME	
# 1	PT 56	000-00-00		JS K

D 234-35-15 19-17-3053

D 234-59-20 19-19-1010

D 235-08-53 19-19-4851

R 55-37-00 19-21-4394

R 55-48-25 19-22-3397

R 56-06-39 19-23-4837

179-59-51

1/5/89

CK-GB-TS-JS-CG

#	PTS	DATE	TIME	TS
# 1	PT 56	000-00-00		K
D	238-11-36	19-32-3148		
D	238-44-02	19-34-4685		
D	239-03-59	19-36-1140		
R	59-59-17	19-40-0648		
R	60-25-13	19-41-5659		
R	60-39-21	19-42-5687		

179-59-⁵²72

END OF DAY

1/5/89

GHA 178-41-12.7

Declination -22-38-24.4

1/6/89 GHA 178-34-30.9

Declination -22-31-31.3

Solar Observation

5/9/89
Clear
50°S
Ck. R.M. G.B.

Instrument set up over pt. 33

Backsight w/4 of sec 31 pt. 34

R 0331 D pt. 34 ⁻³⁵⁻²³₀₀₀₋₂₀₋₀₇ Time Error in time is .003 sec.
Clock .003 sec. fast

G.B. R

D	343-47-26	15-34-452	15-34-449
D	343-55-56	15-35-173	15-35-170
D	344-02-51	15-35-433	15-35-430
R	164-33-31	15-37-384	15-37-381
R	164-41-14	15-38-069	15-38-066
R	164-49-22	15-38-370	15-38-367

180-35-30

R pt 34 ~~017-45-49~~

#2 D pt 34 017-45-49 Time

D	003-44-33	15-45-034	15-45-031
D	003-50-15	15-45-235	15-45-232
D	003-58-37	15-45-532	15-45-529

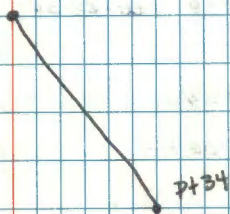
R	184-28-41	15-47-420	15-47-417
R	184-34-55	15-48-037	15-48-034
R	184-41-11	15-48-269	15-48-266

R pt 3 197-46-02

#3 D pt 34 00-00-00 TIME

D	348-22-58	15-53-276	15-53-273
D	348-28-59	15-53-524	15-53-521
D	348-33-57	15-54-092	15-54-089
R	169-00-15	15-55-410	15-55-407
R	169-07-58	15-56-042	15-56-039
R	169-13-47	15-56-271	15-56-268
R	pt 3 180-00-20		

pt 33

pt 33 - Longitude 94-39-52
Latitude 47-04-165/9/89 GHA 180-53-42.9
Declination 17-17-405/10/89 GHA 180-54-22.6
Declination 17-33-35.4

5/9/89

Instrument set up over pt 33

Backsight w/4 of sec 8, pt 34

Error in time = .003 sec

#	D	Pt 34	000-00-08	Time	R.M.	R
	D	354-09-32		16-12-548		16-12-345
	D	354-19-51		16-13-000		16-12-597
	D	354-36-08		16-13-586		16-13-583
	R	175-11-19		16-15-506		16-15-503
535	R	175-25-52		16-16-367		16-16-364
	R	175-38-39		16-17-156		16-17-153
	R	Pt 34	180-00-16			

#	D	Pt 34	00-28-54	Time		
	D	359-29-09		16-27-203		16-27-200
	D	359-44-58		16-28-066		16-28-063
	D	000-00-11		16-28-512		16-28-519
	R	180-39-04		16-30-458		16-30-455
540	R	180-51-38		16-31-221		16-31-219
	R	181-03-42		16-31-564		16-31-561
	R	Pt 34	180-29-14			

#3 D Pt 34 00-47-43 Time

	D	03-27-47		16-37-500		16-37-497
	D	03-37-59		16-38-177		16-38-174
	D	03-48-16		16-38-469		16-38-466
	R	184-19-56		16-40-158		16-40-155
	R	184-52-32		16-41-443		16-41-440
	R	185-03-21		16-42-153		16-42-150
	R	Pt 34	180-47-47			

5/9/89.

Tying in the original position for
the W $\frac{1}{4}$ of sec. 30

FT M

FS BT R.P.WE

~~BS 26~~ 62-18-40 242-19-57

52-25 52-49

FS W $\frac{1}{4}$ #57 93-53-13 273-26-34 93-52-37 273-52-41

FS BT W.P.WE 234-09-21 34-09-36

BS 26 00-11-50 180-12-00 00-11-52 180-11-52

TC 25

VA 25-BT 93-20-02 266-39-56

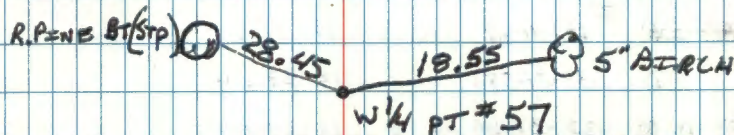
51.28 15.63

VA 25-W $\frac{1}{4}$ 89-12-27 270-47-32

33.14 10.100

VA 25-BT 85-56-01 274-04-14

26.135 7.966

C. KRAUSE
T.G. BRAMA
III R. MAINN
4

R. PINE STUMP 24" TAIL

W. PINE STUMP.

Solar Observation

5/10/89

Clear 50°

Instrument set up over pt 55 - 60d nail

in shoulder on north side of Hwy 200

Backsight Town Corner for Section ^{7142 NR 31, 32nd} 1, 6, 31, 36

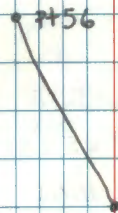
#1	R ₂₅₅	D #156	000-00-12	TIME	Error in time .010 sec.
		D *	133-11-17	13-32-391	13-32-381
		D	133-21-58	13-33-319	13-33-309
		D	133-27-48	13-34-086	13-34-076
		R	313-41-15	13-35-209	13-35-199
		R	313-52-26	13-36-208	13-36-198
		R	313-59-00	13-36-572	13-36-562
		R	#156 180-00-17		

#2

	D #156	341-51-33	TIME	
	D *	116-33-19	13-40-438	13-40-428
	D	116-37-35	13-41-063	13-41-053
	D	116-41-07	13-41-125	13-41-115
	R	296-53-30	13-42- ²⁰⁶ 206	13-42-196
	R	296-57-45	13-42- ⁵³⁷ 527	13-42-527
	R	297-01-28	13-43-134	13-43-124
	R	#156 161-51-50		

#3

D #156	318-45-12	TIME	
D *	094-27-01	13-46-014	13-46-004
D	094-30-32	13-46-202	13-46-192
D	094-33-38	13-46-367	13-46-357
R	274-40-51	13-47-715	13-47-705
R	274-45-34	13-47-405	13-47-395
R	274-49-04	13-47-587	13-47-577
R #156	138-45-23		



Longitude 94-39-41.977

Latitude 47-08-51.03

5/10/89 GHA 180-54-22.6

Declination 17-33-35.4

5/11/89 GHA 180-54-53.9

Declination 17-49-13.1

5/10/89

Survey to tie in possible M.C. on N. Side
of Kabatonna Lake on West Boundary
of 142 NR 31W bet sec's 1/6.

PT 58 252-58-40 072-59-40 072-59-52 072-59-34

FS NW BT Pine stp. 274-26-09 094-26-23

FS NE BT Pine stp. 006-23-48 186-24-34

BS 55 00-00-20 180-00-29 ~~00-00-19~~ 180-00-27

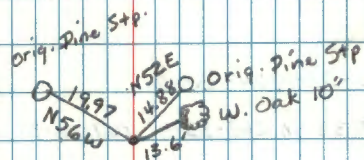
RS 54 252-58-20 252-59-11 252-59-18 252-59-07

252-58-59

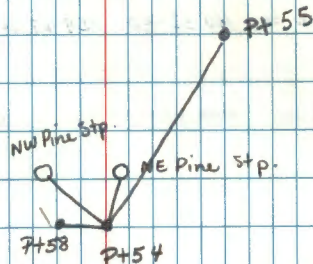
RS 54 Steel tape Pt. 58 5.72

" " NW BT 25.13

" " NE BT 11.66



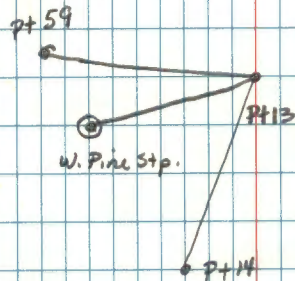
PT #58 IS TRUE NORTH MC
60° SPIKE



80° CK, 66
5/10/89Survey to tie in W $\frac{1}{4}$ of sec. 19

W. Pine Stp. Orig. BT	063-53-09	243-53-16			
FS 59	083-33-40	263-33-41	067-46-37	247-46-20	247-46-40
BS Pt 14	06-00-20	180-00-14	344-13-07	164-12-50	164-13-00
PT 13	83-33-20	83-33-27	83-33-30	83-33-30	83-33-40

				FT.	M
Pt 13	W. Pine Stp	100-32-50	259-27-24	208.425	63.527
Pt 13	59	099-20-57	260-38-57	253.875	77.381

PT 59 $\frac{1}{4}$ W $\frac{1}{4}$ Sec. 19

END OF
BOOK