

T144N R29W TRAVERSE #4

T144N R29W
T144N R29W

#4

TRAVERSE

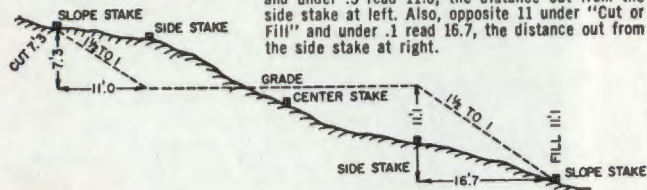
FIELD BOOK

82-0012

DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING

Roadway of any Width. Side Slopes 1½ 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



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KEUFFEL & ESSER CO.

T144 N R 29 W

Index, CASS COUNTY, MN

| Page | Project |
|------|--|
| 1-2 | Establishment of CW 1/4 Sec. 13 |
| 3-4 | Establishment of NW 1/4 cor. btwn Secs. 16 & 17 |
| 5-11 | Traverse to determine the position of the 500' on the NW 1/4 line of Sec 31 (Algers survey) (reestablish) |

| I | STATION OCCUPIED | STATION SIGHTED | 1st & VERTICAL ANGLE | 3rd ANGLE SLOPE DISTANCE | MEAN ANGLE | HORIZONTAL DISTANCE |
|---|------------------|-----------------|-----------------------|--------------------------|-------------------|---------------------|
| | | 0 | 00-00-00 | | | |
| 1 | | 2 | 179-50-00 | 359-19-40 | 179-49-55 | |
| 1 | | 0 | ³ 90-22-20 | 1316.70 | 1316.67 → 1316.67 | |
| 1 | | 2 | ³ 89-22-20 | 1318.27 | 1318.20 → 1318.19 | |

ESTABLISHMENT OF CW¹/₁₆ Sec 13 I

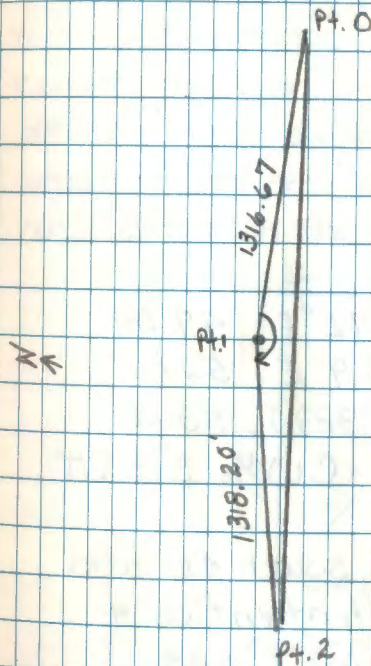
1/20/82 - G. BRAMA, H. Hough, K. Gehrke,
B. Funk

Temp. 0° F, Cloudy

pt. 0 - C¹/₄ Sec. 13

pt. 2 - ¹/₄ bet. Sec. 13/14

pt. 1 - approx. CW¹/₁₆ - sec. 13



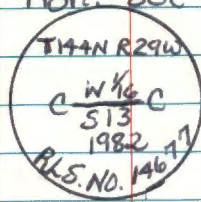
meff

| 2 | STATION OCCUPIED | STATION SIGHTED | 1st & VERTICAL ANGLE | 3rd ANGLE SLOPE DISTANCE | MEAN ANGLE | HORIZONTAL DISTANCE |
|---|------------------|-----------------|----------------------|--------------------------|------------|---------------------|
|---|------------------|-----------------|----------------------|--------------------------|------------|---------------------|

1/22/82 - GARY BRAMA, Homer Hough,
BRIAN FUNK, KEN Gehrke

Center West $\frac{1}{16}$, Sec. 13

Set a 2" x 60" conc. filled
galv. iron pipe with brass tablet
mkd. Mon. set 48" in the grd.

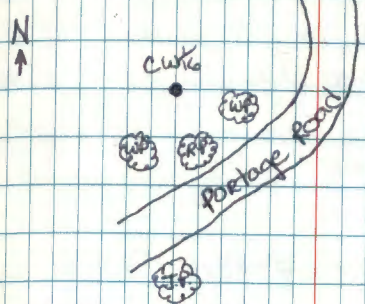


Mkd. BT'S:

White Pine 11" S72°E 49.04'
Red Pine 9" S9°E 52.01'
White Pine 10" S33°W 53.28'
Each BT (Single blaze) - CW $\frac{1}{16}$ 513 BT

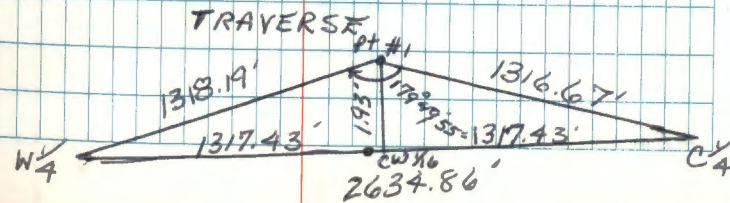
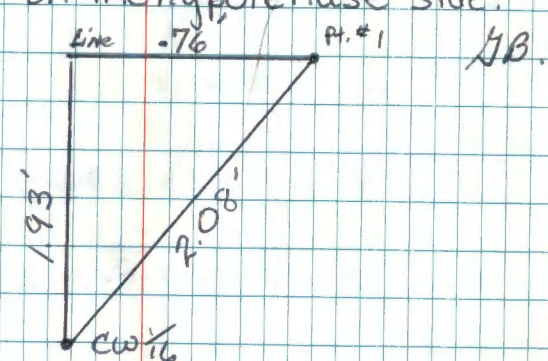
Set 8' Steel Posts south 4.0' and
east 4.0' with both attention &
property boundary signs.

Placed a F.S.L.P. on J. Pine, 13", S3°E
at 95.54' on south side of Portage Road



Lines east and
South are mkd.
to F.S. Standard.

Center-West $\frac{1}{16}$, Sec. 13³ was set
from traverse run 1/20/82. The
exact position of the CW $\frac{1}{16}$ was
determined by measuring .76'
west of traverse pt. #1 and 1.93'
south, and 2.08' on the hypotenuse side.



| STATION OCCUPIED | STATION SIGHTED | 1st & VERTICAL ANGLE | 3rd ANGLE SLOPE DISTANCE | MEAN ANGLE | HORIZONTAL DISTANCE |
|------------------|-----------------|----------------------|--------------------------|------------|---------------------|
| 1 | 0 | 89-43-00 | 1322.33 | | 1322.31 |
| | 0 | 00-00-00 | | | |
| 1 | 2 | 179-59-50 | 359-59-18 | 179-59-50 | |
| 1 | 2 | 89-58-40 | 1322.35 | | 1322.35 |
| | 1 | 00-00-00 | | | |
| 2 | 3 | 179-47-57 | 359-11-30 | 179-47-53 | |
| 2 | 3 | 89-58-10 | 2173.47 | | 2173.47 |
| | 2 | 00-00-00 | | | |
| 3 | 4 | 179-55-30 | 359-42-10 | | 179-55-3 |
| 4 | 3 | 89-05-20 | 453.02 | | 452.96 |

5/18/82 - KRAUSE, BRAMA, KLAUS

Temp. 60, cloudy + raining

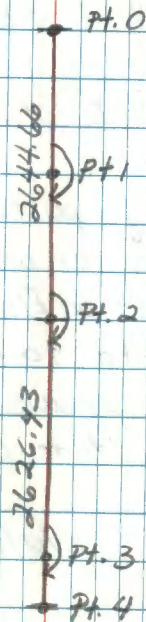
Traverse between S.C. 16, 17, 8, 9 thru
1/4 corner between Sec. 16, 17 to S.C. 16, 17, 20, 21

pt 0 - Sec. cor. 8, 9, 16, 17

pt. 1 - N 1/4 bet sec 16/17

pt. 2 - 1/4 CORNER bet sec. 16/17

pt. 4 - SEC. COR. 16, 17, 20, 21



4

| STATION OCCUPIED | STATION SIGHTED | 1st & VERTICAL ANGLE | 3rd ANGLE SLOPE DISTANCE | MEAN ANGLE | HORIZONTAL DISTANCE |
|------------------|-----------------|----------------------|--------------------------|------------|---------------------|
|------------------|-----------------|----------------------|--------------------------|------------|---------------------|

NORTH $\frac{1}{16}$ bet. sec. 16/17Set a 2" x 60" galv. concrete filled pipe
set 16" above grd. with B.C. mkd.

Placed rock ring around pipe T. 144 N. R 29 W.

S17
N $\frac{1}{16}$ S161982
R.L.S. NO. 4677

To perpetuate this corner I mkd. BT'S:

1. W. OAK 12" N86°W at 70.08 N $\frac{1}{16}$ S17 BT2. R. Pine 18" N50°W at 81.40 N $\frac{1}{16}$ S17 BT3. W. OAK 12" N50°E at 11.31 N $\frac{1}{16}$ S16 BTPlaced 8" steel sign posts south 3.3' and
west 3.1' from corner with both signs attached.

Placed a F.S.L.P. on Elm, 12", N38°W at 8.26'

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

Newly planted spruce plantation
east of corner. State cut over ^{area} into the
S.W. of corner.

5/18/82 Gary Brama

4

5/18/82 - KRAUSE, BRAMA, Klaus

Moved pt. 1 south .02' and east .03'

for N $\frac{1}{16}$ to be set proportionate distance

in a straight line between S.C. 8, 9, 16, 17 & S.C. 16, 17, 20, 21

(see computation sheet)

| | | | |
|--|----|----|----|
| | | FS | FS |
| | | FS | S |
| | 17 | FS | S |
| | | FS | S |

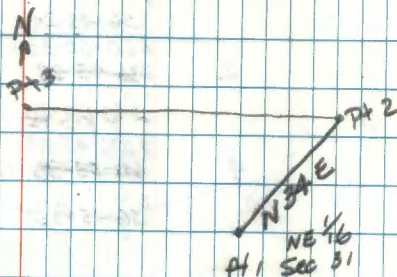
| STATION OCCUPIED | STATION SIGHTED | 1st ANGLE VERTICAL ANGLE | 3rd ANGLE SLOPE DISTANCE | MEAN ANGLE | HORIZONTAL DISTANCE |
|------------------|-----------------|--------------------------|--------------------------|------------|---------------------|
| | 1 | 00-00-00 | | | |
| 2 | | 180-00-01 | | | |
| | 3 | 51-19-46 | 51-19-44.5 | | |
| | | 231-19-44 | | | |
| | 1 | 60-39-52 | | 51-19-49 | |
| | | 240-40-00 | | | |
| 2 | 3 | 111-59-46 | 51-19-53.5 | | |
| | | 291-59-53 | | | |

| | | | | | |
|---|---|----------|--------|--|--------|
| 2 | 1 | 90-58-10 | 277.67 | | 277.63 |
| 2 | 3 | 89-42-14 | 493.65 | | 493.64 |

| | |
|------|-------------|
| | 109.5 |
| | 56 |
| 45 | <u>53.5</u> |
| 005 | |
| 44.5 | 109.5 |
| | 56 |
| | <u>53.5</u> |
| | 44.5 |

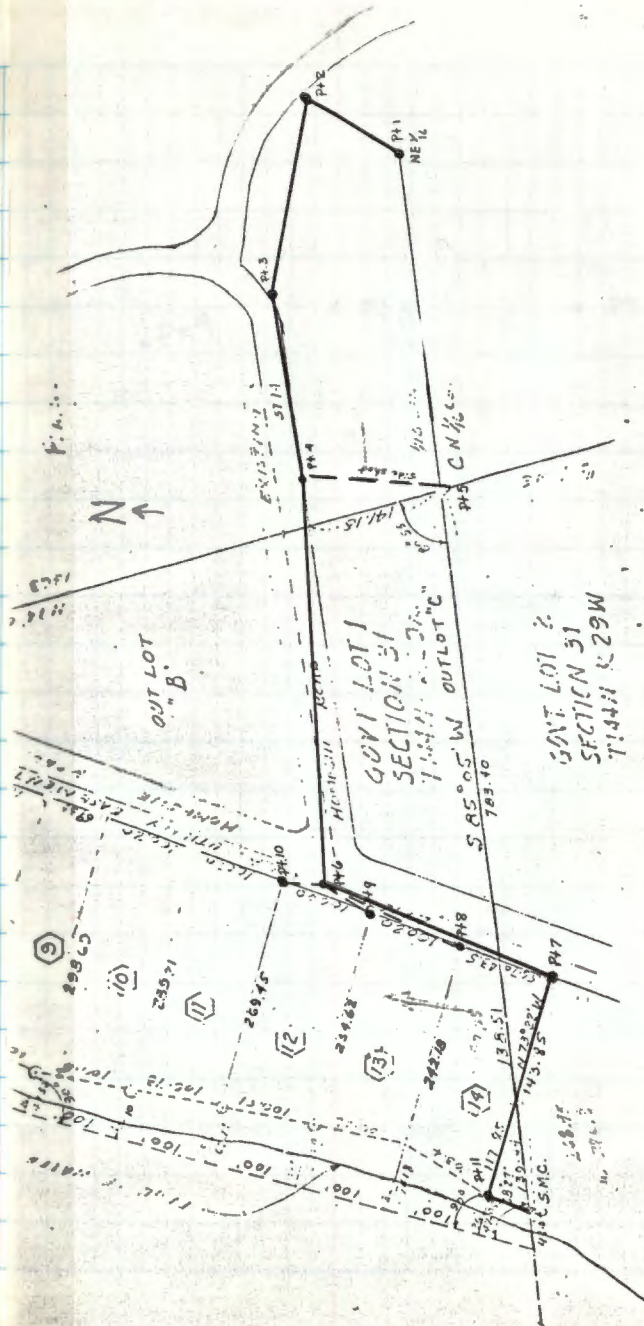
6/3/85 - Krause, Brama

Traverse to determine the position of S.M.C. on east side of Sucker Bay on Leach Lake sec. 31



| | | | |
|---|---|------------------------|-------------|
| | 2 | 00-00-30 | |
| 3 | | ⁴ 180-00-31 | |
| | 4 | ² 176-45-17 | 176-44-50 |
| | | ³ 356-45-24 | |
| | 2 | 460-00-33 | |
| | | 236-45-28 | 176-44-52.5 |
| 3 | | ¹ 240-00-40 | |
| | 4 | ³ 236-45-28 | |
| | | 60-00-33 | 176-44-55 |
| | | ² 56-45-35 | |

| | |
|------|------|
| 20.5 | 34.5 |
| 30.5 | 36.5 |
| 50.6 | 55.0 |



3

4

3

4

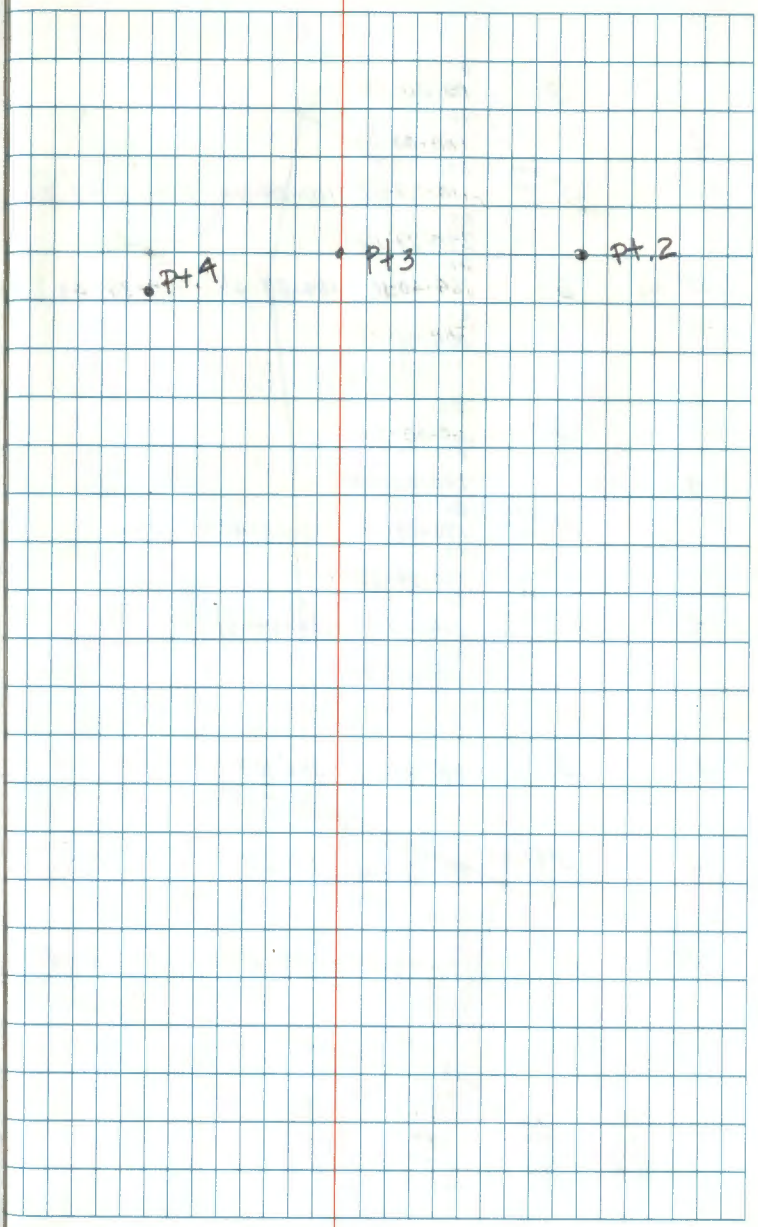
21
 30
 —
 50



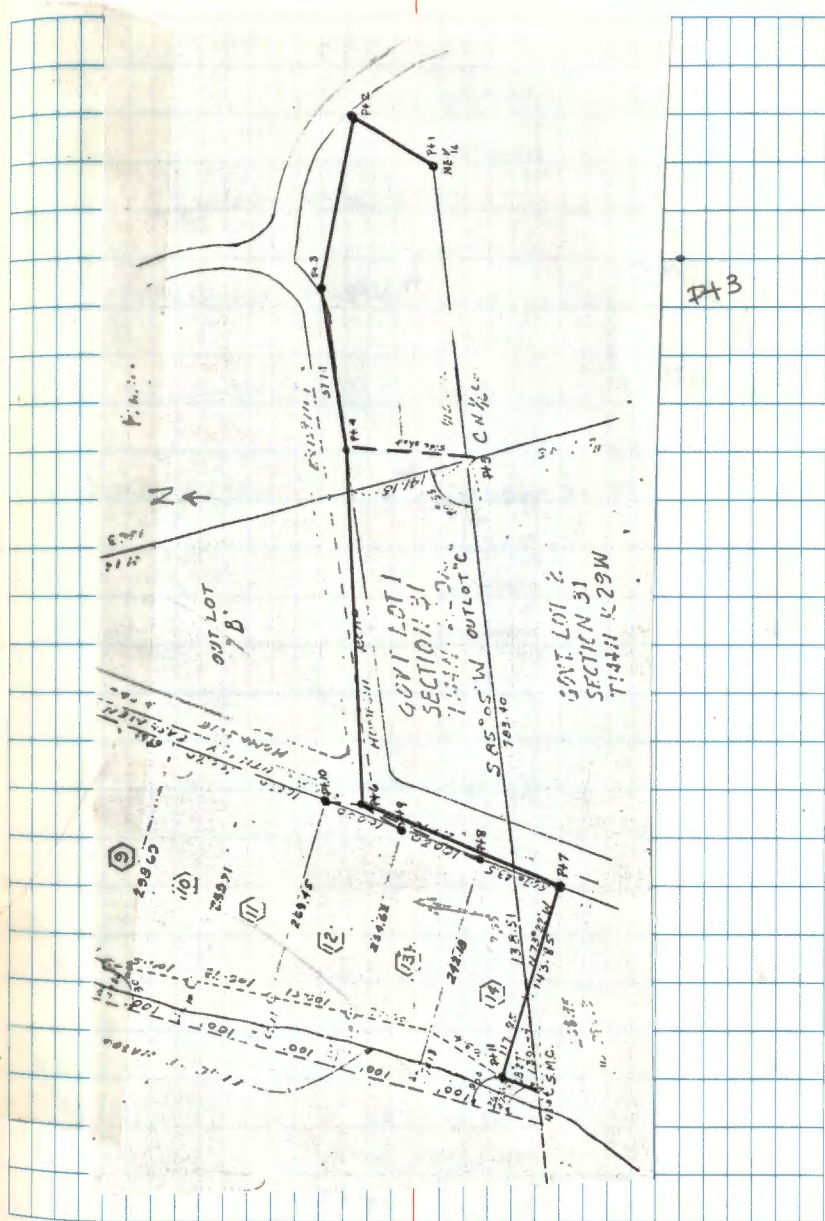
• Pt A

• Pt 3

• Pt. 2



| | | | | |
|---|----------------|--------------------|----------------|----------------|
| | 3 | D1 00-00-30 | | |
| 4 | | R6 180-00-30 | | |
| | 5 side shot | D2 110-29-12 | 110-28-44 | 110-28-43.25 |
| | | R5 290-29-16 | | |
| 4 | 6 | D3 184-40-18 | 184-39-45 | 184-39-48 |
| | | R4 009-40-28 | | |
| | 3 | D6 60-00-34 | | |
| 4 | | R1 240-00-40 | | |
| | 5 side shot | D5 176-29-17 | 110-28-42.5 | |
| | | R2 350-29-22 | | |
| 4 | 6 | D4 244-40-25 | 184-39-51 | |
| | | R3 64-40-31 | | |
| 4 | 3 | 88-49-05 | 556.73 | 556.61 |
| 4 | 5 BN 1/16 | 89-57-46 | 169.68 | 169.68 |
| 4 | 6 | 92-44-27 | 435.02 | 434.52 |
| | | 74 30 44 | 25 30 55 | 28 37 51 |
| | | 79.5 37 42.5 | | 28 37 51 |



| | | | | |
|---|---------------------|------------------|-------------|--------------|
| | 5 | D1 00-00-30 | | |
| 6 | | R10 180-00-27 | | |
| | 7 | D2 120-52-32 | 120-52-07 | 120-52-07 |
| | | R9 300-52-39 | | |
| 6 | NE14 side shot 8 | D3 124-27-21 | 124-26-56.5 | 124-26-54.25 |
| | | R8 309-27-29 | | |
| | SE13 side shot 9 | D4 140-51-38 | 140-51-06.5 | 140-51-07.5 |
| | | R7 320-51-39 | | |
| | 10 | D5 269-26-03 | 269-25-38 | 269-25-34.25 |
| | | R6 89-26-10 | | |
| | 5 | D10 60-00-29 | | |
| 6 | | R1 240-00-40 | | |
| | 7 | D9 180-52-35 | 120-52-07 | |
| | | R2 000-52-48 | | |
| | 8 | D8 184-27-23 | 124-26-52 | |
| | | R3 004-27-30 | | |
| | 9 | D7 200-51-38 | 140-51-08.5 | |
| | | R4 20-51-48 | | |
| | 10 | D6 329-25-59 | 269-25-30.5 | |
| | | R5 149-26-11 | | |
| 6 | 7 | 90-47-42 | 252.29 | 252.27 |
| | 8 | 91-01-24 | 153.15 | 153.13 |
| | 9 | 97-37-59 | 56.83 | 56.33 |
| | 10 | 96-15-12 | 54.65 | 54.32 |

NE corner of lot 12 pt 10

NE corner of lot 13 pt 9 pt 6

NE corner of lot 14 Iron pipe pt 8

SE corner of lot 14 Iron pipe pt 7

| | | | |
|-------|------|------|------|
| | 7.4 | 4 | 5 |
| 315.5 | 26 | 38.1 | 66.5 |
| 28.5 | 28.5 | 28.5 | 28.5 |
| 7.0 | 56.5 | 6.5 | 58.6 |
| 3 | 26.5 | 2 | 68 |
| 41.5 | 24.5 | 43 | 34.5 |
| 34.5 | 34.5 | 34.5 | 34.5 |
| 47.50 | 52.0 | 8.5 | 20.5 |

6
 01
 00-00-30
 R4
 7
 180-00-37
 02
 11
 260-10-01 260-09-30.5
 R3
 80-10-07

260-09-28.5

6
 04
 60-00-33
 R1
 7
 240-00-40
 03
 11
 320-10-02 260-09-26.5
 R2
 140-10-04

7
 11
 94-2226 261.38 260.62

| | | |
|------------|-----------------|-------|
| | 5 12 | 2 |
| 63 | 63 | 63.10 |
| 64 | 36.5 | 36.5 |
| 33.5 | 26.5 | 26.5 |
| <hr/> 30.5 | | |

SUN CORNER
 of lot 1A
 • 9+11

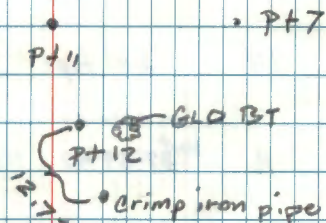
• P4

• P7

| | | | |
|----|-----------------|-----------------|-----------|
| | 7 | D1 00-00-30 | |
| | | R5 180-00-27 | |
| 11 | Bearing Tree | D2 73-53-07 | 73-52-40 |
| | | R4 253-53-10 | |
| | SMC 12 | D3 94-26-27 | 94-26-0.5 |
| | | R3 274-26-31 | |

| | | | |
|----|-----------------|-------|-----------------|
| 11 | Bearing Tree | 56.2 | } steel tape |
| | 12 | 47.25 | |

| | |
|------|-------------|
| 68.5 | 29 |
| 28.5 | <u>28.5</u> |
| 400 | |



Mr. Algons told us
he owns 60' southerly
from SW corner of
lot 14

| | | | | |
|----|----|-----------|----------|----------|
| | 7 | 00-00-00 | | |
| 11 | | 177-59-51 | 98-05-07 | 98-04-58 |
| | 14 | 98-04-49 | 98-04-49 | |
| | | 270-04-58 | | |

~~KMP~~

| | | | | |
|----|----|----------------|--------|--------|
| 11 | 14 | level tape | 48.01' | |
| | 7 | hor: 0-00-00 | | 116.11 |
| 11 | 16 | vert 87-59-40 | 116.00 | 115.93 |
| | | add level tape | | + .18 |
| | | | | 116.11 |

| | | | | |
|---|----|---------------|-------|--|
| | 8 | hor: 0-00-00 | | |
| 7 | 15 | mt level tape | 57.77 | |

| |
|-------|
| 10 |
| 183.5 |
| 55.5 |
| <hr/> |
| 58.0 |

6/5/85 Hayes, Krause, Brana
 Reestablishment of SMC and the setting
 of approx. property corners
 pt #14 is temp position for S.M.C.

REST OF BOOK
IS EMPTY

BOOK ALSO CONTAINS
SEVERAL COGO
PRINTOUTS
(NOT SCANNED)