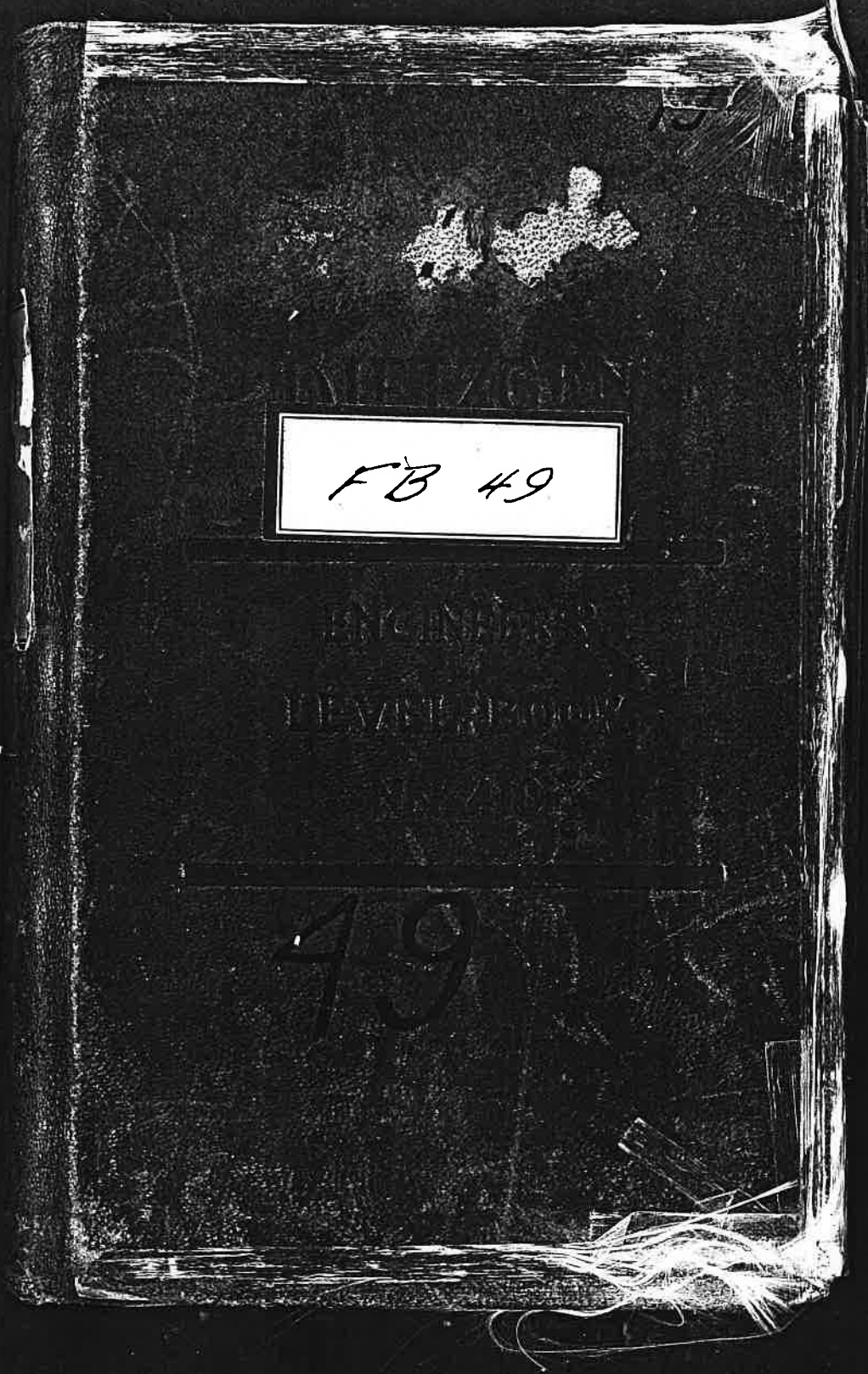
Field Book # 49


FB 49

Township..... Range.....

North

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

West

East

South

EUGENE DIETZGEN CO.

NE¼ Sec 6 T29-S
Trueman Pickerson

F W. Harvey W½

Dam Whitset owns the
W½ of the SE¼

329 8E

19

Index.

For.		Page
Oliver R.B.	T26-4	1
Roach Jack.	T22-5	3
Johnson-Conkee-Ledgerwood.	T29-6	4-10
Barker J.F.	T27-5	11-12
Hatfield & Pinkerton.	T28-5	13-15
Hurley John.	City of Roseburg.	16-17
Weatherford. Tom.	T26-4	18
Balfour-Guthrie	T25-5	19-34
Covert	T25-5	35
Moore J.S.	T30-4	36-38
Round Prarie	T28-6	39-47
Conn Estate	T25-7	47-55
Round Prarie	T28-6	55-

Rainy

Survey for R B Oliver — T. 26 S. R. 4 W. — Var 21° 15' E - Oct 18. 1920

Slope N 23 ¼ VA

Sta	Def.	MC	CC.	Dist
= 5				
		S 0° 30 W	South	943 5
= 4	R 89° 16'			
			S 89° 16 E	10 0
= 3	L 93° 0 4'			
		S 4° 30 W	S 3° 4 5 W	185 2
= 2	R 6° 52			
		S 2° 30' E	S 3° 07 E	289.7
3+09.1 = 1	L 4 2° 28'			

Tie to Sec Cors Established as follows
Trees standing do not correspond
Set a point and check bearings
and distances as follows

Q.B. Oak 24" in dia N 1°15E 62.7
" " " " " N81°00W 94.7
S84°00W 92±

Set 1¼" Iron pipe 36" long.



Cor. =10	To Sec. 15-16-21-22				
		S1°15E	S1°52E	292.1	
=9	L77°19'				
		S76°10W	S75°27W	1218.1	
=8	L34°55'				
		N70°00W	N69°38W	1559.7	
=7	R110°22'				
		S0°30W	South	431±	
=6	0°00'				
		S0°30W	South	867±	

3

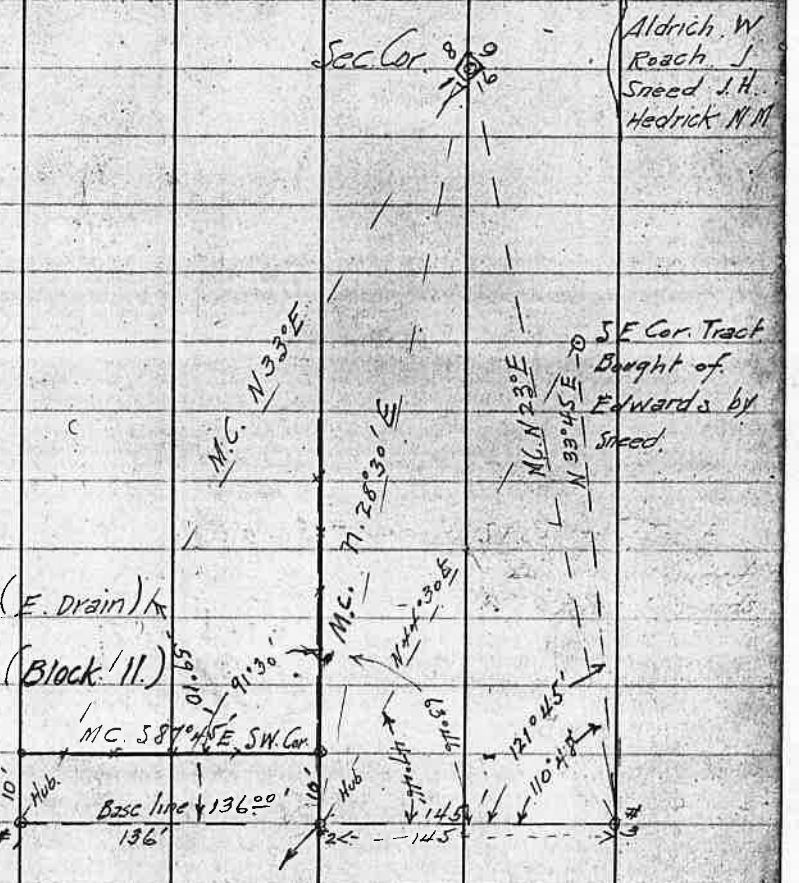
Survey for Jack Roach - Drain Ore
Made. Get tie to Govt. Cor. for purpose
of Deed Description (Sneed to Walker)
Began at Cor. to Secs. 8-9-16-17-T22-5
Set point from which Original B.T.
alive and Standing bears N65° 30E 72°
Stump of B.T. S74°30 E 130.8ft.
A small stake was setting at this point
Also. An 18" B Oak Mkd with 2. Scars
bears South. 2°E 8¾ ft.
Set flag for triangulation

Set Iron Rod 1" O dia x 48" long.
Also Set 4"x4"x48" Cedar Post Mkd S. 8. on NW
Sq. on NE. S16 on SE S17 SW.

T. 22 S. R. 5 W. W.M.
Var. 21° 15 E

cloudy No Rain
oct 21 1920.

Cole J.W.
Aldrich W.
Roach J.
Sneed J.H.
Hedrick N.M.



Solar Obs Set Hub #2. F.S. #1.
Turn. 56° 56' L. to Sun.
Altitude 28° 24'

See Page For Calc. of Solar Bearing

4 Survey for Johnson - Conlee - Solar.

Hub	Def.	MC.	C.C. and Hor. D.	Slope Dis.
⊙ Old Stake Mkd			146⅓	VA +21°15'
		S0°45E	S0°24E	157⅔
#1.	R1°07'			
		S0°15W	238⅔ / S0°43W / 41⅔	-7° / 240⅔ / +25°
#2.	R3°17'			45.8
			93⅔	+15°20'
		S3°30W.	S4°00W	97⅔
#3.	L2°58'			
			125.9	0°0'
		S0°45W	S1°02W	125.9
#4.	R0°06'			
			102.1	-17°40'
		S0°45W	S1°08W	107⅓
#5	L3°05'			
			132⅔	-22°40'
		S2°15E	S1°57E	143⅔⅔

7/28/93 VH

Sec. 25. T. 29. S R6WW M.

Var. 21°15E.

Sworn: Cole JW, Wofford, Aldrich, Pearl Johns

Began Survey at the Cor's to Sec's

23, 24, 25, 26 ~~25 26 35 36~~ T. 29 S. R 6 W. W M. Checked

distances and bearings to Orginal B.T's as follows

W oak 6" dia S21½E 27 lks. No Trace

Fir. 30" N89½E 38.7 ft. Alive Mrks. Visible

W Oak 20" N42°W 84⁻ ft. Alive Scribe Mks Vis

B " 10" S23°½W 45⅔" { Dead broken off Above Mrks

Thence Southerly.

See Page 59 for Solar Calc.

Oct 24 Solar obs. At #6.

Back Sight #5 Def R 38°55'

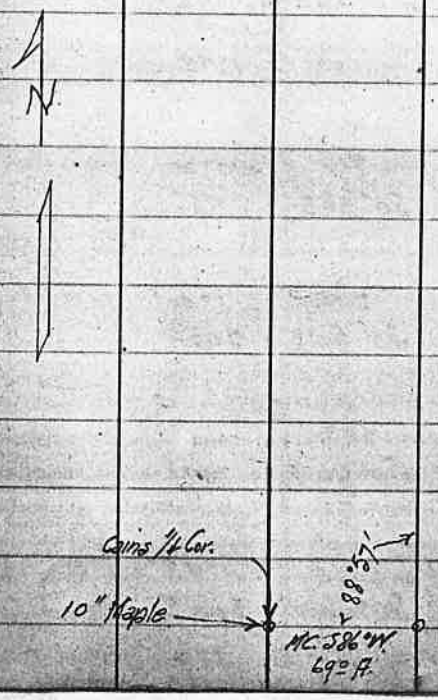
Zal 43°01 Alt 27°19'

MC. 52°05W

PM 2:20 Dec. 11°53'

Johnson - Conlee - Ledgerwood

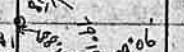
#6	R 2°20'			
		S 0°15 E	165± S 0° 23 W	-3°40' 165±
#7	0°00'			
		S 0°15 W	135.5 S 0°23 W	+4°10' 135.9
#8	0°00'			
		S 0°18 W	232± S 0°23 W	-16°30' 242
#9	R 0°56			
		S 1° 15 W	225.6 S 1° 19 W	+23°20' 245.7
#10	L 2°04'			
		S 1°10 E	116.3± S 0°45 E	+14° 119.9
#11	R 0°53'			
		S 0°15 E	198± S 0°08 W	0°00' 198±
#12	L 1°27'			
		S 1° 50 E	214.1 S 1°19 E	0°00' 214.1
#13	0°00'			
		S 1°50 W	257.7 S 1°19 E	+10°30' 262±
#14	0°00'			
		S 2°05 W	122.1 S 1°19 E	+30° 141±
S 25+46.3 N - 2.2 #15		S 2°05 W	S 1°19 E	141±



Johnson - Conlee - Ledg

#15.	L 0°45'				
		S 2°20 E	188 ± S 2°00 E	+25°40' 208.9	
#16	R 2°39'				
		South	166 ± S 0° 35 W	+17°15' 173.9	
#17.	L 0°05'				
		S 0°10 W	230 ± S 0° 30 W	+13°45' 237 ±	
#18.	L 0°29'				
		S 0°15 E	241.2 S 0° 01 W	-7°10' 243 ±	
#19	L 0°06'				
		S 0°40' E	786 S 0° 05 E	+10°30' 800	
			1918	+27°	
			1133	1270	
#20	L 0°28'				
		S 1°00 E	915 S 0° 33 E	+10°20. 930	
#21	L 0°21'				
		S 1°40 E	203 ± S 0° 54 E	-1°00' 203 ±	
#22.	R 0°29'				
		S 0°45' E	207.8 S 0° 25' E	— 207.8	
#23.	R 3°13'30"				
		S 2°15 E	293.7 S 2°48 W	-11°45' 300 ±	
			18 ± 311	18 ±	





#15
South 937
Temp 1/4 Sec. Cor.
#16 Top of Large Rock.

#18. Top of Ridge

In Small Prairie Top of Ridge

Set at #22. Def R 66°30'

Alt. 7°13' Lat 43°00'

Dec. 12°10' M.C. S 65° W

Meridiograph 1796
29.03
4699

7 Johnson-Conlee-Ledgerwood

#24	7°34' R 7°30'			+40.45	
		S 9°40 W.	S 10°22 W.	300.0	
				+5.0	602.4
				300.0	
				48	
#25'	R 3°40'				
		S 12°45' W	S 14°02' W (1492)	+9.0 (151.0)	
#26.					

Solar. Obs. at #26 = Sec Cor. Oct 26.

B.S. #25 Def 16°11.R Alt. 29°15. M.C. 28°½W

Dec 12°34'

Change Var 22°50 E to Correspond with Solar.

37

Var 21°15 E.

Set a point from Stumps of old Pine designated by Joe Edgerwood as Original BTs in Sec 26'

Check Stump of B.T. in Sec 25' Stump bears as follows With Var 21°15'E.

Stump of old Pine N 56° W 250.8 A.

N 9°45 E 487.0 A.

Cain's BTs bear as follows.

Stump of Tree = Pine	40" in dia	N 9°45 W.	487.0	
"	"	N 2°30 W	485.3	488.2
Fir	60" " "	S 60°45 E	377.8	377.8
Fir	18" " "	S 1°15 E	365.4	370.2

See Next Page

8 Johnson-Conlee-Lockwood

Set an Iron pipe 1¼" x 36"

also a Cedar post 3" x 3" x 36"

Marked S 25 T 29 S. NE

S 26 R 6 W NW

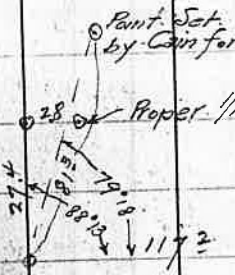
S 35 " " SW

S 36 " SE.

Erect Mound of Rock around stake

Establish ¼-¼ Sec. Cor. North of

Cor. to Secs. 25-26-35-36 Twp 29 S 6 W



Set ¾ x 1½ x 36" Cedar post

" Iron pin 1½" dia 24" long

B.T. to 1/16 Cor.

8" W. Oak N 7° W 29.5

8" W " S 6°30' E 26.7

Chaining on Chaining 18

Hub	To Hub	Dist	Slope	D.	S		Dist	Slope
0		9				18		
	+20. 157.3			+22. 246.±			5. 243.1	
1		10				19		
	739.5 - 7° 45° - 16°			+10°30 120.±			78.9 - 13° 129.± - 26°	
2		11				20		
	13°30' 97.±			198.±			92.7 - 9°.	
3		12				21		
	-5° 126.1			+2°. 214.1			203.± - 0°	
4		13				22		
	18°30' 106.9			+8°. 262.9			207.9	
5	5	14				23		
	-24° 142.3			+28° 172.3			66 251.± - 10°30	
6		15				24		
	-5°. 165°.6			124½° 208.9			300° +4°45 300 +5. 4.8	
7		16				25		
	21.4 135.9			177.5. 15°.±			151	
8		17				26		
	-17½° 241.5			237.4 - 13°				
9		18						

We the interested property owners between the N½ of the S.W¼ and the of Sec. 25 - T29 S R6W W.M. do a property line, a line des. Beginning at a point which a Cedar post 4"x4"x36" From which a. W. Oak 8" in de " " " " 8 " " Said point being N 10°9E 1284³ ft 29 S. R.6W of W.M. Thence Easterly by Frank. Cain and 538 ft South South of the intersection of the Cain with a line running Nort said line running Northerly bei fence built by J.M Ledgerwood. A Cedar post 4"x4"x48" from which We also agree to accept the line between the NE¼ of the S.W¼ Said line being marked on the J.M Ledgerwood.

Witness } J.W. Cole

in the East and West division line S½ of the South West one quarter hereby agree to accept as cribes as follows. is an iron pin 1½"x20" also marked 1/16 S. C. S — B a bears N 7° W. 295 ft Marked C.S.B.T " S 6°30 E 1267 ft " " ft from the Cor. to Secs 25-26-35-36 2640 ft parallel with the line Surveyed of said line to a point 538 ft aforesaid line Surveyed by Frank. erly Surveyed by Frank Cain ing Marked on the ground, by a Said point of intersection being a fir 48" in dia bg North 27.7 ft. Survey by Frank Cain running Northerly and the NW¼ of the SE¼ of Sec 25 ground. by a fence built by J. M. Ledgerwood

Signed } Clerk L. Johnson

10

Oct 27 1920

On or before 90 days from date I promise to pay J.W. Cole ($64.00) Sixty four and 00/100 dollars for my portion of Survey made by him during Oct 1920

J M Ledgerwood

J.E Barker Sec. T 27S R5E W

Nov 3. 1920

N.E Cor. of Barkers Place F.S. South. along Sec. line

0+00 R 11° 09

N68°51W 756 705

1 R 7° 20'

N61°31W 609.4 535.7

Retrace fence to Get it's General Direction

Nov 5-1920 { Jack Wofford - Chain
Parker — axe

Began at S.W. Cor. of Barkers Ranch = Old Stake

Hub.	Def.	M.C.	C.C.	Slope Ang +. Dist	offset to fence
0					
			117.3	- 27°10'	
		N3°00E	N3°00E	132	
				-25°52'	
				165	
				+3°35	
1	R 0° 12'			300	
			1036.4	+14.45'	
			N3°14'E	300	
				+13°50'	
				298.4	
2	L 2°06'				8' L
			87.1	- 3°50'	
		N1°45E	N1°08'E	87.3	
3	R 2°51'				4° L
			232.3	-32°10'	
		N3°40'E	N3°15E	274.3	
4	R 1°56'				40 L
			111.2	-28°	
		N4°30E	N5°55E	125.9	

Top of Hill

Hub	Def.	MC.	CC.	Slope dist	fence
5.	L 4°32'				L 9.5
			161±	- 27°30'	
		N2° W.	N10 23E	181.7	
6.	R 2°02'				L 30'
			219.8	- 14°30'	
		N2°45E	N3°25'E	227.1	
7.	L 0°34'				L 65.
			252±	- 2°00'	
		N1°15W	N2° 51E	252.5	
8.	R 2°49'				L 33
			86.6	- 20°45'	
		N5°00E	N5°40'E.	92.6	
9.	L 2°40'				L 7°
			183.7	- 25°20'	
		North.	N3°00E	203±	
10	R 1°18'				L 30'
			109.8	- 40	
		N1°30'E	N4°18E	110°	
			213±	- 14°15'	
				220°	
			179.5	- 15°	
				186°	
			144°	144°	
			966±	966±	
11.					Gate Post.

12

T. 28 S. R 5 W.

Survey for Hatfield + Pinkerton

Establish Cor. to Sec. 15-16-21-22

Set at Oak B.T. Rem. S 89¼ E 3058 ft.

Set Hub and find Alder B.T.

Intersect distances given in field Notes for B.Ts which then Bear as follows with Var 21° 15 E

Oak N 88° ¾ W 305 —

Alder S 57¼ W 265 — A - See Page for New Trees

		Def.	M.C.	C.C.	Slope + Dist	West	N. S.
O = Sec Cor.				305 —	—		
			N 89° 28 W	N 89° 28 W	305 —	305 —	2.7
1		R 0° 36'			S.		
				294.7	- 8° 20'		
			N 88° 15 W	N 88° 5 W	298 —	294 —	15.9
2		L 5° 05'					
				299.7	- 10 30		
			S 86° 45 W	S 86° 04 W	300		
				83.7	834	3876/986	25.7 = -17.1
3		R 3° 56'					
				West	4.1		
4		L 90° 00					
			S 0° 15 E	South	208 —		

See Page for Establishment of this Cor.

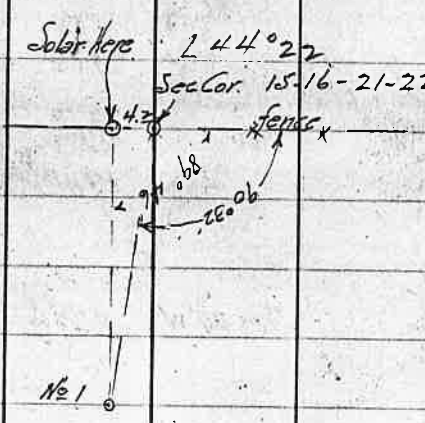
Nov 6 1920

Solar Obs. Hatfield

at Cor to Sec.

15-16-21-22 = Nov 6-20 3:00 PM

alt + 18° 03'



Dec at 3 00 PM Nov 6. 1920

- 16° 04' 24"

Lat +43° 07'

Alt. +18° 03'

Lof +41° 22'

Sun S 41 30' W

S 85° 67 W

46

86 38

Meridian { A = .3060 ; B = 4418/7478

14											
5	0°00									2+08.5	
		South	159.3	159.3							
6.										3+67.8	
				+2°20'							
			299.7	300'							
				+3°10'							
			299.4	300							
			1085.4	+8°15'							
			297.0	300							
				+11°00'							
			190.3	194.0							
7.										14+53.2	
				+5°00'							
		S0°30'W	227.6	228.5							
8										16+80.8	
				+11°10							
			251.0	255.9							
9.										19+31.8	
				+12.0							
			138.6	141.7							
10										20+70.4	
				+4°30'							
			221.1	221.8							
11.	L 0°10'									22+91.5	
			223.0	+10'							
			S0°10W	226.4							
				+18°15							
			100.0	105.3							
14				10							
										Set Cor 28 W of No 12' in fence line	
										Set 1" iron pipe 15" long. From B Oak 12" N 45°W. 1 off	

		289±	-4° 290°	
	S 88°30 E			
		101.9	+11°30' 104°	Along fence on E+W 1/4 line
			-13°45'	
		97.1	100°	
			-17°45	
		95±	100°	
			-10°20'	
		137.8	-140°	
			+9°40'	
		132.1	134°	
			-16°30	
		130.9	136±	

⊙ 1/4 Cor.

from Which an Oak 30" dia brs N81½E 72' Brg Old Scribe Mks.

" " " " " " " S39°W 17° "

Set Iron bar 1½" x ½" x 30" for Cor.

Establish Cor. to 15-16-21-22

Set an iron pipe 1½" x 18" also

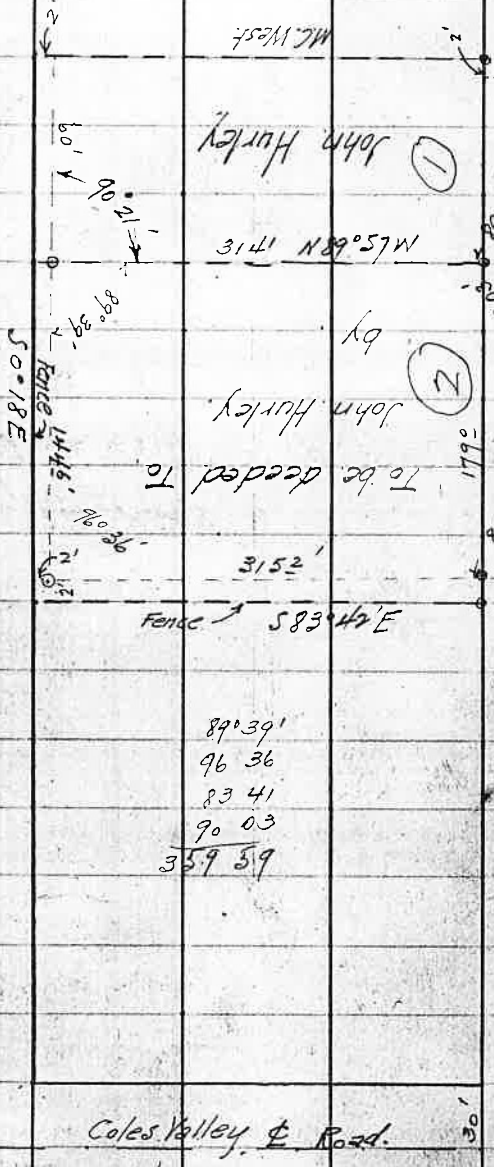
Cedar post properly marked from

which New B.T. a W Oak 10" dia

brs N 51°E 128.7 ft.

15

Survey for John Hurley in Bellows Add.



Sunshine 16

Nov. 8 1920

10 A.M. To 5 00 P.M.

Cole J. W.
Smick L.

Description for Tract No. 1 = John Hurley on the West side of Spring St (Upg A)

Beginning at a point 832.45 ft. North ~~and 20 ft West~~ of the intersection of Spring St (Now Umpqua Ave.) in West Roseburg, Douglass Co. Ore. and the ℄ Coles Valley Road

Thence West 316⅔ ft.

Thence South 60 ft.

Thence East 316⅔ ft. to the W line of Spring St.

Thence North 60 ft along the W line of Spring St. to the place of Beginning

Tract No 2.

Beginning at a point on the W line of Spring St. Now (Umpqua Ave) In West Roseburg Douglas Co Oregon. Which is an Iron pipe 1½" x 30", 291.45 ft. North ~~and 20 ft West~~ of the intersection of Spring St. (Now Umpqua Ave) with the ℄ Coles Valley Road

See Over Page 17

John - Hurley Cont'd

Course	Distance	N	S	E	W
North	181.0	181.0			
N89° 57'W	316.8	0.3			316.8
S 0° 18' E	146.6		146.6	0.8	
S83° 42' E	317.2		34.9	315.3	
		181.3	181.5	316.1	316.8

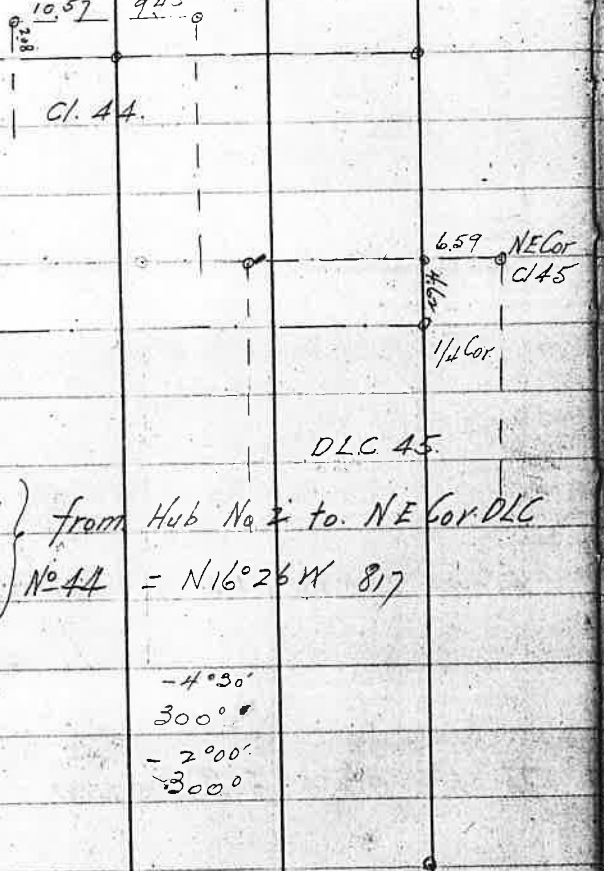
Along the W line of Spring St. (Now Upq A)

To the place of Beginning

17

Survey for Tom Weatherford

T 26 S R 4 W



7836 Ft. } from Hub No 2 to NE Cor DLC
231.3 W } No 44 = N 16° 26 W 817

-4°30'
300°
-2°00'
300°

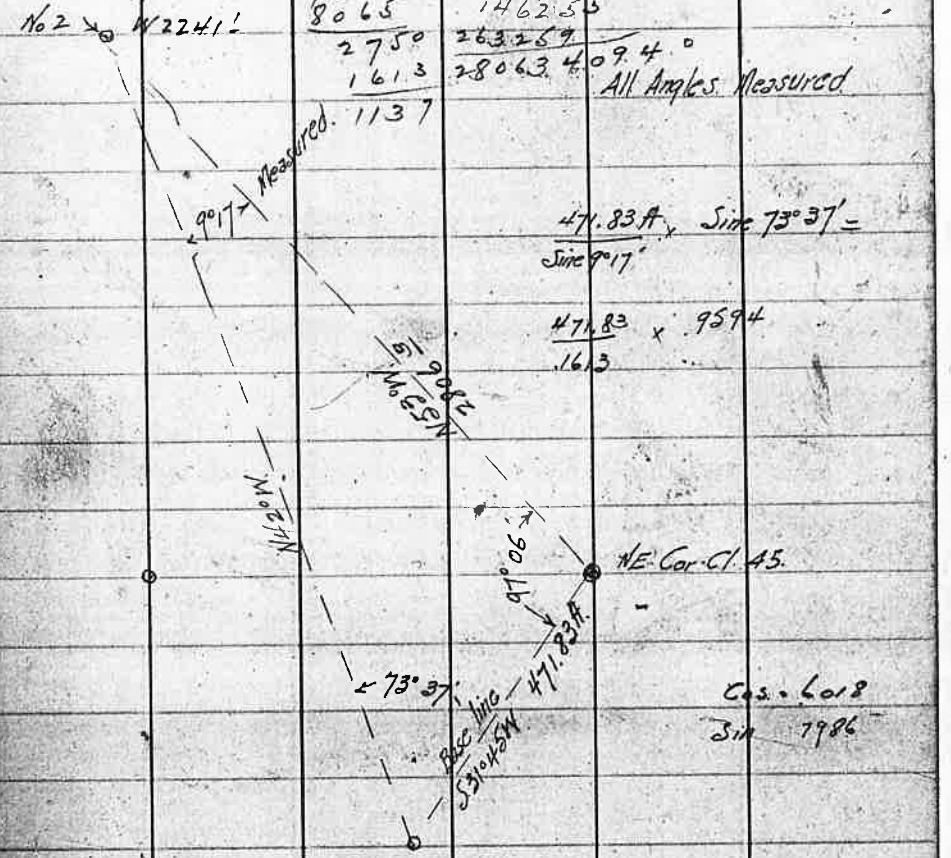
1613 | 471.83 | 2925.1

3226
14928'
14517'
4060'
3226'
8340
8065
2750
1613
1137

2925.1'
.9594 °
117004
263259
146255
2806340 94°

All Angles Measured

Nov. 14-20
{ L Smick
T. Weatherford



471.83 A. x Sine 73°37' =
Sine 9°17'

471.83 x .9594
1613

Cos. 6018
Sin 7986

18

19

Mon Nov 15 - 1920

Cole & W
Wofford P.D.
Smick L.H.
Jamieson Rain

Balfour - Guthrie Sutherlin, Ore

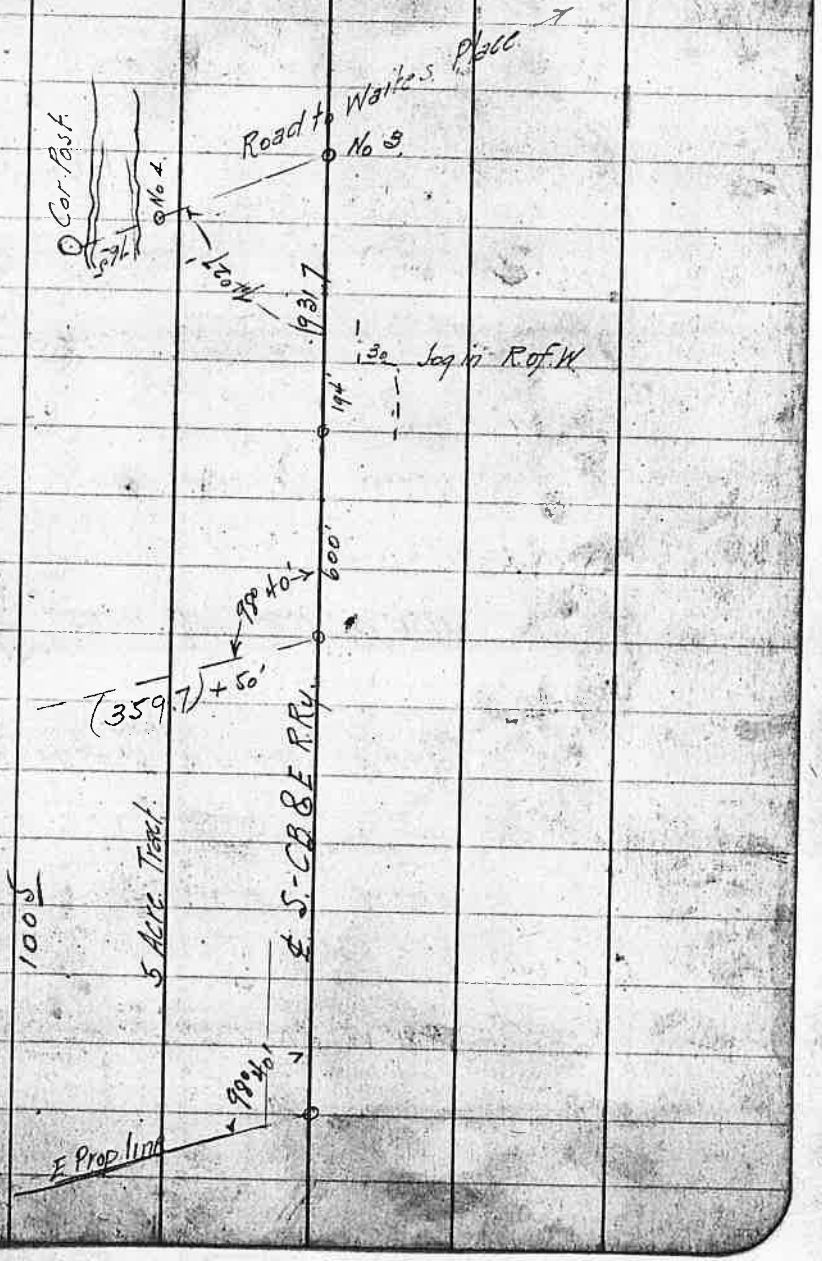
(State St.)

19

Balfour - Guthrie Co. Sutherlin

Traverse around Tract N. of S. CB & E R.R.

Hub	Def.	N.C.	C.C.	Dist	
		N19°00W	N19°49W	195±	
No. 3	L 105°33'				
		N	785°44E	931.7	
No. 2.					
No 1					
		N86°30E	785°44E	600±	
		N86°30E	N85°44E	1012.7	+8 for Clos.
No 0	L 81°20'				
			S12°56E		

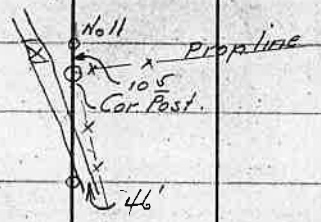


		S 13°00 E	S12°56E	150.9
#12	R. 0°19'			
		S16°30E	S13°13 E	375.3
#11	L 100°34'			
		S87°W	S87°21W	188.4
#10	R 8°41'			
		S79°W.	S78°40'W	551.4
#9	L 14°47'			
		N87°W	N86°33W	213.5
#8	L 7°11'			
		N.80°W.	N79°22W	480.0
#7	R 4°19'			
		N.84°W.	N83°41'W	505.7
#6	L 2°05'			
		N82°W	N81°36W	490.1
#5	L 0°04'			
		N 81°W.	N81°32W	202.6
No 4.	L 61°43			

Along line Parallel with E Prop line (State St.)

N.W. Cor. S.A. 0.80 No 12

To Hub 8' W of E Prop line



49.0

300'

56.0

46

70.0

59.0

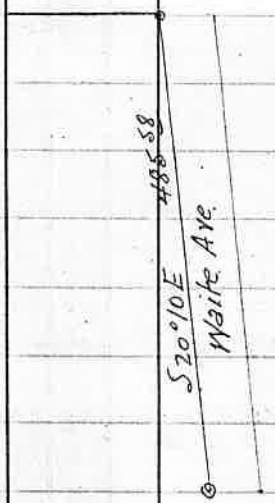
Along S. Crk. Bank.

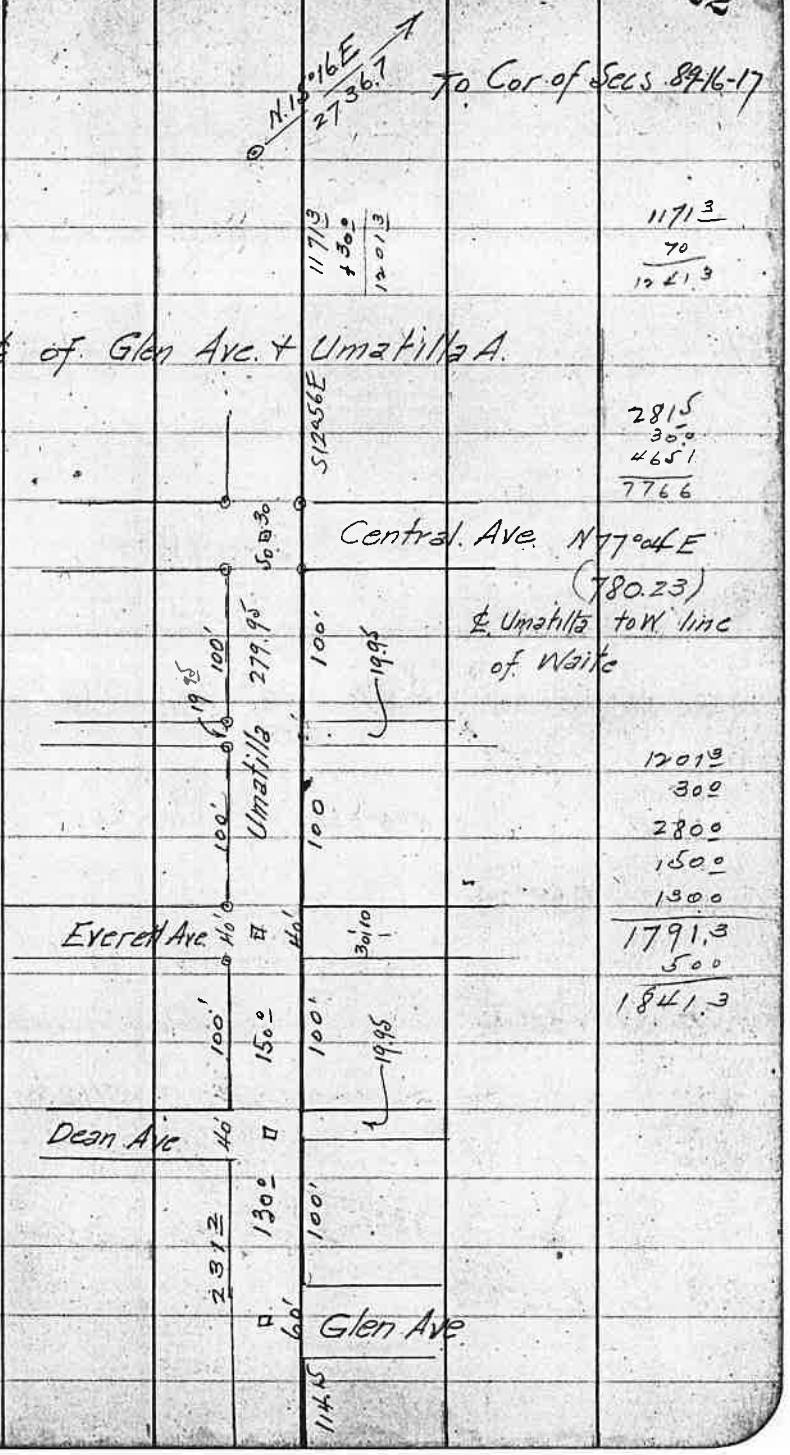


Traverse Taken from Plat of Sutherlin

From Cor. to Secs. 8-9-16-17

S15°16W	2736.7
S12°56E	2311.68



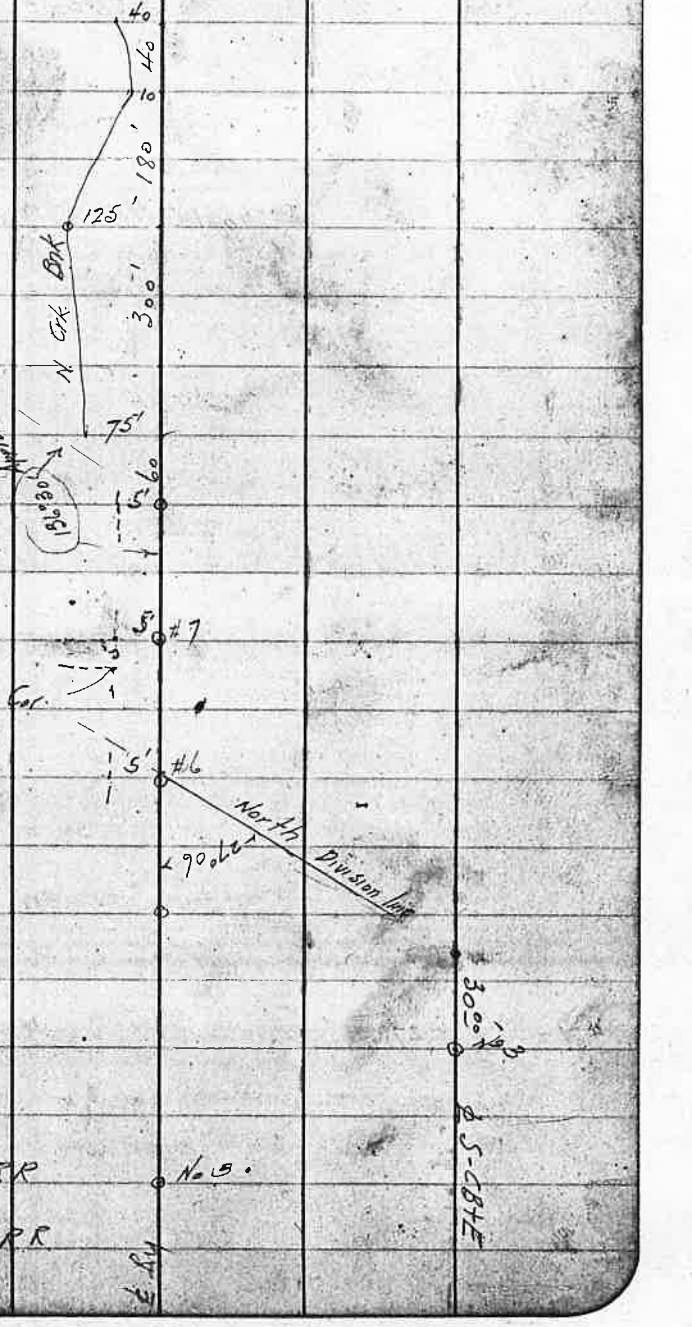


Balfour – Guthrie

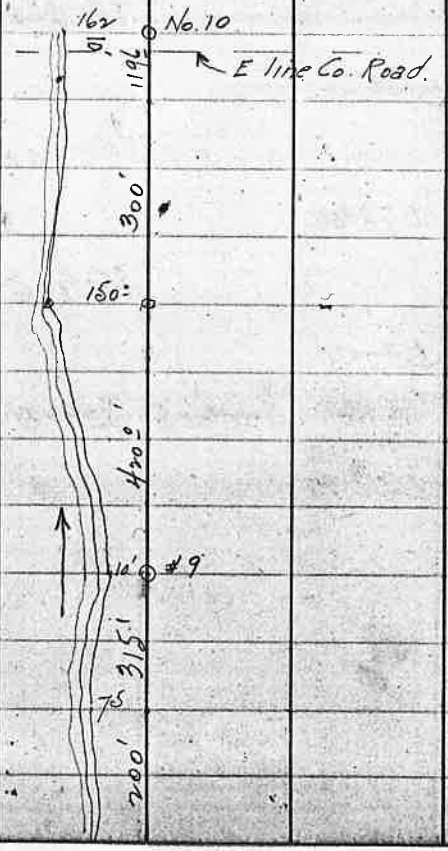
Traverse around Tract South of RR

1				
				1095.1
		N73°50W	N73°16W	
#8	R107°13'			
		South.	S0°29E	515.3
#7	L96°55'			
		N83°35W	N83°34W	355.0
#6	R69°26'			
		S26°00W	S27°00W	247.6
No 5	L23°11½'			
		S51°00W	S50°11W	712.6
No 4	R102°25'			
		S53°00E	S52°14E	800.9'
No 3	R137°58' 47°07'			
			N85°44E	

23



			N85°44E	2544.4	Along E of S-CB+E Ry.
#11	R 98°43'				
		N12°30W.	N12°59W	1320±	
#10	R 87°18'				
		S79°30W.	S79°43W.	839.6 – 10'	To E line Road
#9	L 27°01'				



Balfour.-Guthrie Cont'd

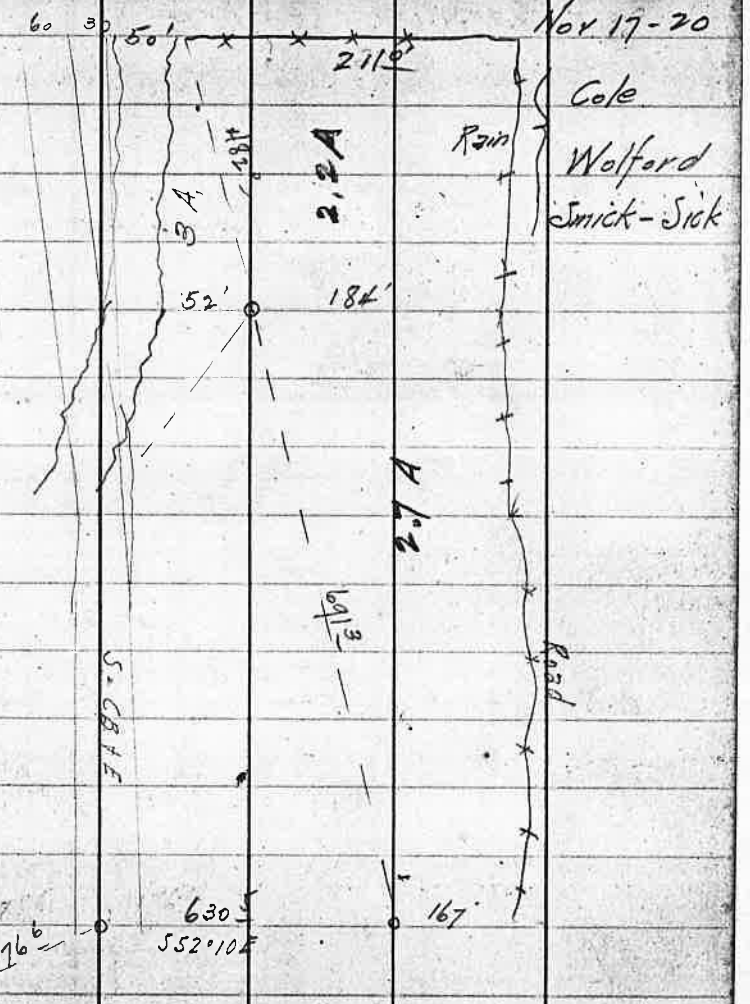
Traverse of Pump Pasture

To determine Area

			S20°00E	
S=0				
			N89°41W	456.8
4	L 9°06'			
			N80°35W	638.1
3	L 130°25'			
			N49°50E	691.3
2	L 178°00			
			S52°10E	630.5
1	L 32°10			
		S20°00E	S20°E	176.6
0	L 110°19'			

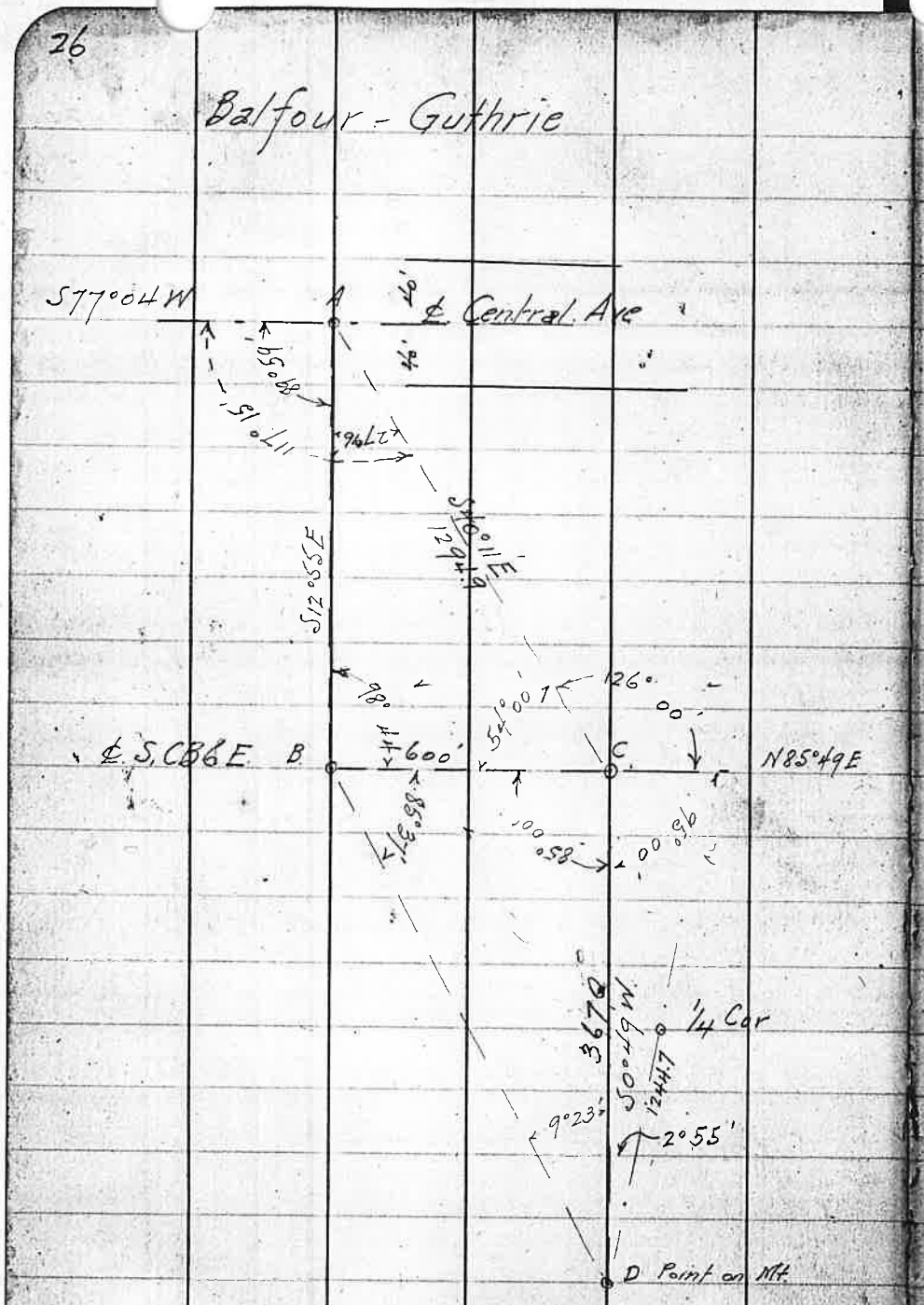
25

Nov 17-20



on E Side of Waite Ave. South of Sutherlin Cr. Near bridge

Balfour - Guthrie



$\frac{600'}{\sin 27°16} \times \sin 98°44' = \frac{600}{.4581} \times .9884 = 1294.6$

4581 / 600.000 / 1309.96

4581
14190
13743
44700
41229
34710
32067
26430

1309.8
.988
104784
104784
11788?
1294.08 = 4

$\log 600 = 2.778151$
$\log \sin 27°16 = 9.660991$
3.117160
9.995461
$3.112621 = 1296$

$\frac{600}{\sin 9°23'} \times \sin 85°37' = \frac{600}{.1630} \times .997$

.163 / 600.000 / 3680.98

489
1110
978
1320
1304
1600
1467
1330

3681
.997
25767
33129
33129
3669.957

$\log 600 = 2.778151$
$\log \sin 9°23 = 9.212291$
3.565860
$\log \sin 85°37' = 9.999728$
3.565588

3669.3

27

	Def.	MC.	CC.	Dist.	
C. 5 = Sec Cor.					
		S26°15W	S26°53'W.	44°	
4	R42°37				
		S 15°00E	S15°44E	+4° 239 6	239.1
3	L 9°52'				
		S5°00E	S5°47E	+10°30 254.1	249.8
2	L5°38'				
		S0°30W	S0°04E	+21°15 89.2	83.1
1	L2°28'				
				9 5	9.5
				+15°20' 300.0	289 3
				+2°20' 300	299 8
				+8°50' 190.0	187 8
		S1°30'W.	S2°24W.		
C=0	R1°35'				
			S0°49W.		

27

Cor. to Secs 20-21-28-29 Nov 20 1920

Made diligent Search for Cor found 3 old Oak Stakes in 3 different Stages of decay, all bearing Scribe Marks Stakes all lying together. I set at Stakes and look for evidence of Witness Trees. Could find No trees that corresponded with field notes. Set 4"x5"x48" Cedar Post and Mark new trees. C.S. BT. as follows

A.B Oak 15" dia	N. 15°30'W	57 6 ft.
A.B. " 12"	N 71°30 E	38 3 ft.
Laurel 8"	S. 52°00W.	59 0 ft.
Fir. 48"	S 47° E	66 0 "

See Next Page for 1/4 Cor. bet 20-21

Set 2" Hub D of Triangulation BS on C.

Balfour Guthrie

Search for 1/4 Cor bet Sec 20-21

Measure South from Cr bank 15.00 Ch or

Solar Obs Nov 20 1920 1:30PM

Set at Hub C FS B Def L 61° 03'

MC S 23°30W Alt +23°10'

#2 { L 59° 35' MC S 25°30W
Alt +22°43

Dec 19°45'

Lat 43°23'

No 1 A = .4037
B = .5058
.9095

S 24°29 W
61 03
S 85° 37 W

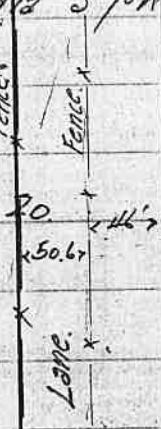
Mean S 85°30W

3951
5050
9001

S 25°43 W
59 35
85 28

188
46
96

99 ft and found 20" dble Oak Chopped open but Shows no scribe marks Set at tree and run N 49° W 42.9 and found an Iron Pipe 1½" dia from which Trec bears S 49° 45 E 42.1 ft No trace of other BT distance to Oak checks Mark old Trec C.S. BT Mark New tree C.S. BT A W Oak 8" dia S 7° W 188° ft Erect Mound of Rock over pipe

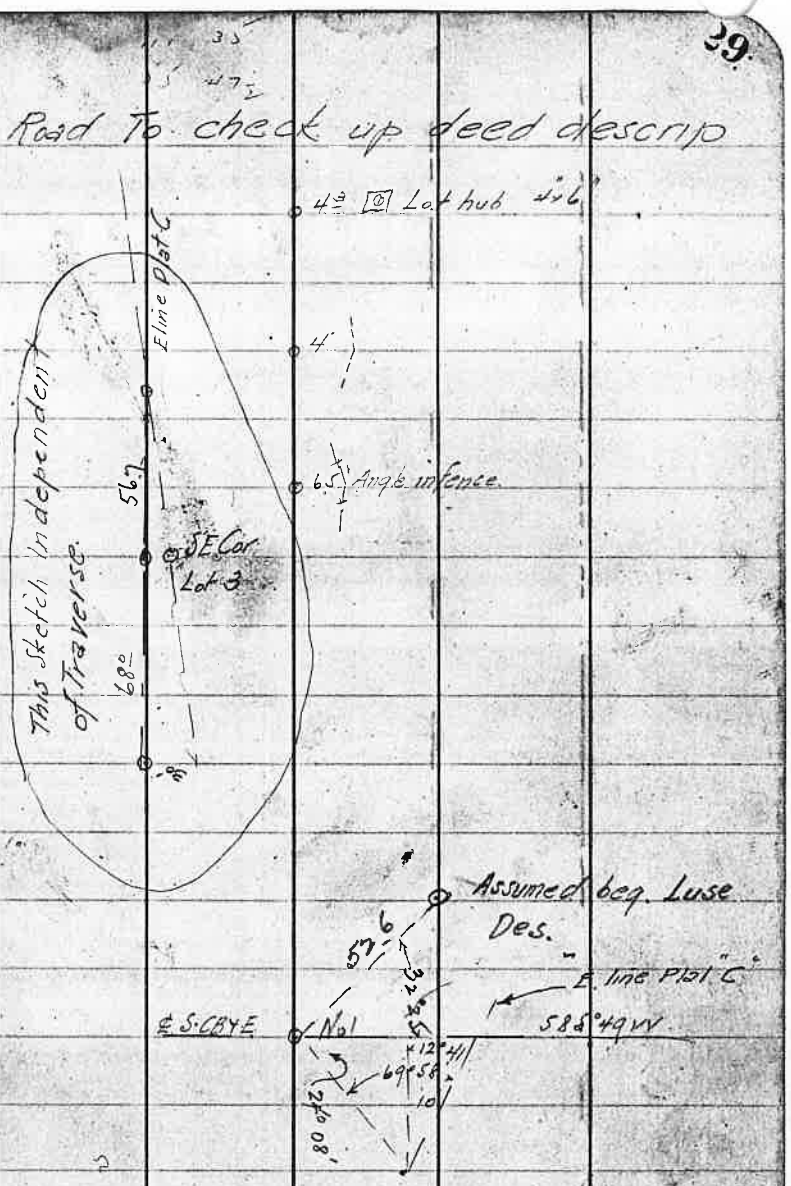


Balfour-Guthrie

Traverse South from S-CB&E Ry along Luse Road To check up deed descrip

5	R 30°33'			+6°40'	
		N86°00E	N85°33E	215±	213±
4	L 55°48'			+2°15'	
		S38°30E	S38°39E	187±	186±
3	L 39°13'				
		South	S0°34W	184±	
2 = 10 of dd Traverse	R 13°28'				
			S12°54E	1320.	
1	L 47°35' 32°25'				
			N53°14W	526.	

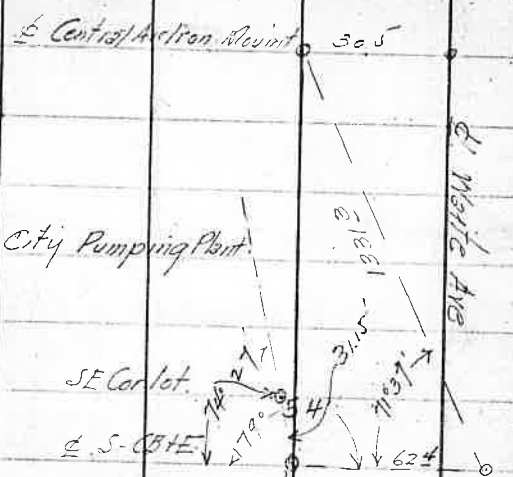
0 = Beginning Pt. (Assumed) of Luse Tract



Set at No. 1 which is Hub 10' W of E Prop line of State St. at its intersection with ℄ S-CB-Ry F.S 585°49W along ℄

30

Diagram of Tie To Pumping Plant

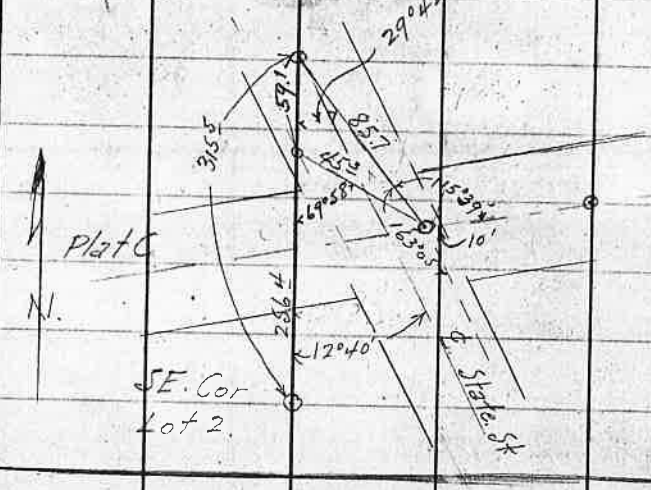


Cont'd from Previous Page

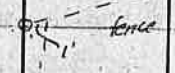
8 = ½ C₀ R 31°28'				
8			9±	
			±3°	
		S27°42'E	300°	2995
7	R 36°12'			
		S63°54'E	461.5	
6	0°00			
	S64°30E	S63°54E	219.8	2198
			+1°00	
			300.0	2999

30

Sketch of Beginning P.T. of Luse Deed Description



Beginning Pt. S 12°54 W. 831.7 ft. from Mint 10' N. of ℄s of Central Ave and State St. or 781.7 ft. from S Prop line of Central Ave



Balfour - Guthrie

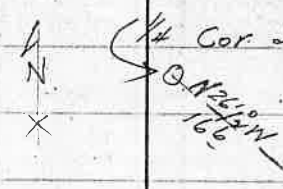
Sec line bet. Secs 22-23. South. of 1/4 Cor

Set an approx. point for Cor. S 1° W

Sta.	Def.	M.C.	C.C.	Dist.	
		S 1°00 W.	South.		
0	R 1°01'				
				-16°10	
		S 2°00 W	S 1°01' W.	162 ±	155.7
1.	L 0°47'				
				-20°15'	
		S 0°50 W	S 0°14 W	300 ±	281 ±
				-13°	
2	R 0°33'			115.7	112.7
		S 1°30 W.	S 0°47 W	575 ±	575
3.	L 1°27'				
				+22°50'	
		S 1°00 W	S 0°40 E	88 ±	81 ±
4.	R 1°25'				
				+16°10'	
		S 1°30 W	S 0°45' W.	300 ±	288 ±
5.				+20°	
				127.7	119.3
5	R 0°29'				
				-4°45	
		S 1°00 W	S 1°14 W	199 ±	198.9
6	L 3°01'				
				-13°	
		S 1°00 E	S 1°47 E	300 ±	292 ±
				-12°	
				61.9	60 ±

Nov 29 - 1920

by needle Var 21° E. Lots of timber run traverse



Established 1/4 Cor. from Old BT's Which are standing but dead and rotten scribe Marks visible on tree SE trees. check for position

Set a 5"x5"x 48" Oak Stake from which mark new trees A fir 16" in dia S 59°30 E. 20 ± ft.

" " 16" " " S 71° W. 51 ± ft.

16 ± 415.7
" 575 ±
" 88 ±
" 300 ±
" 127.7
" 199 ±
" 361.9
" 30 ±

7	L 0°14'				
		S 1°00 E	S 2°01 E	-8° 225 -8 8.0	305.9
8.	R 2°01				
		S 0° 50 W	South.	+15° 174 8	168.9
9	L 68°49				
		S 69° E	S 68°49 E	224	
10 = Sec Cor					

Found Two Original BTs broken off about 6' above ground. Old Scribe Marks visible. Other trees down and Slid downhill

Set a stake Maple 6"x6"x40" from which

Original BTs	bears	N 33½° E	12.6 ft
"	"	S 87° E	13.2 "

Mark New trees follows. Var 21° 15' E

A fir	36" dia	brs N 49¼° E	50.3
" "	50" "	" N 33° W	44.0 ft
"	24" "	" S 42½ W	16.6 "
"	24" "	" S 49° 30 E	36.6 "

Balfour – Guthie

Begin at 1/4 Cor. bet Secs 23-26
Renew. Cor. from Original B.T. S66°W
52.8 ft. Set Oak Post properly Mkd
A pit where B.T. has stood brs N57W
2 ft. Mark new trees.
A W. Oak 15" dia N79°E 129.6 A.
A W " 6" " S 13°E 49 A
Thence Easterly by Traverse

Hub	Def	MC	CC	Slope Dist	Hor D
		S89°23E			
0.	L 8°00'				
		N82°15E	N82°E	-17°15' 300	308.1 286.5 21.6
				216	
1.	R 18°39'	S79°E	S79°21E		
				-11° 288	282.8
				-8° 300	297
				+26° 115	103.4
				6°15 779.3	
				96.7	96.1
2.	L 17°35				

	Old Tree dead	Scribes marks	visible	
Sin	.9903	.9827	.9926	.9958
Cos	.1391	.1848	.1207	.0912
W				
E	305.0	76.1	97.7	176.0
S		144.2		144.1
W	42.8		11.9	174.1
D	308.1	779.3	98.4	177.3
C	N82°E	S79°21E	N83°04E	N84°48E

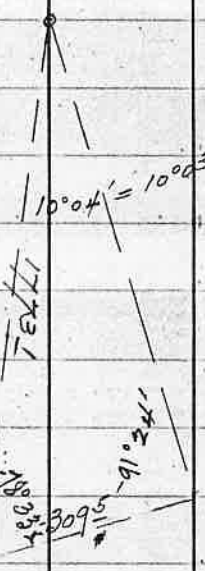
8.14
2.44
10.58

8.14
2.44
10.58

33

2	1°17'35"				
		N83° E	N83°04E	-11° 100.2	98.4
3	R 1°42'				
		N85° E	N84°46E	1773.1	
4					
			West	29.48	
5					
			South	71.9	
6	Set Temp Sec Cor. Thence North				
				-6°15' 300.1	298.7
				300.	300
				190.4	190.0
				+15° 162.6	157.1
				+14° 110.5	107.3
				+13°30' 77.1	74.9
				73.4	73.4

34



C	Dist	N	S	E	W

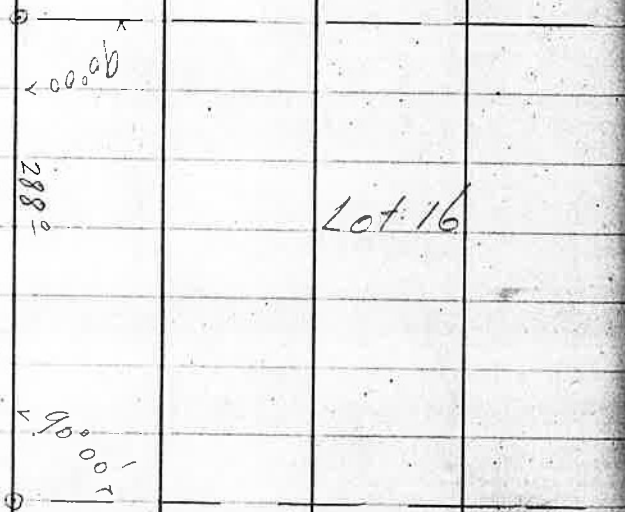
R 1°42'
1 8 2 W
10° 0 4

1°41.1'
8 22.1
10° 0 4

10°04
78 33
91 24
180 01

Survey for Covert - Lot 16 Block 2 Plat C S L & W Co. Plat Dec 3 - 1920

Ran transit lines without chaining along North and South Bdy's.



Lot 16

35

36.

Survey for J S Moore

Began at 1/4 Cor. bet Secs 22-23

T. 30 S. R 4 W. Established by Previous

Traverse North as follows.

Hub	Def.	M.C.	C.C.	Dist.	
				-17°45'	
0 = 1/4 Cor.				300	285.6
		N1°55E	N1°55E	300	900
				300	
				230	
					1185.6
#1	10°25'				
		N1°30E		14 13.3	

#x = Sec. Cor.

+ Establish 1/16 Cor. by setting 3/4" x 30" Iron bolt also take Mkd. 1/16 S C's

Erect Mound of rock from which

Cotton wood 36" ins N66°W 180 ft

B. Oak 50" " N72°E 381.8 ft

Var. 21°15

36

Dec 6-20

J.W. Cole,

L.H. Smick

P.D. Wolford

Surveyors. Thence ran Chain

No Sun

E

39.1

91°0'

69 36

160 36

179 60

19°22'

500 x Sine 69°36

Sin 19°22

Sin 19°22' = .3316

Sin 69°36 .9373

#1 L S 3

3316 | 500.00 | 150 7.8

3316

168 40

165 80

76000

23212

27880

26528

1352

150 7.8

9373

#523 L

105546

#234

136702

1413 60 9 #

500 S 87°28E

69°36'

91°02'

36.7

14 13.3

19°22'

Sunday entrance

22 23

Sec Cor.

#1 S1

True line N1°40E 2600'

Mored #1 #7A West.

Establish Cor To Secs 14-15-22-23
from 3 Oak BTs. which are standing
Tree N71°E is dead Pine down and
slid down hill. Set 4"x4"x40" Oak stake
properly Marked. Erred Mound of
Rock around stake. Mark + on Triang
ular face of Rock about 4" high
1 N11°E 45'

Set #2A N 1°40'E 11.4 ft. from Hub
Set #7 West of No.1 For 1/16 Cor
Thence Turn 90°L.

#2A 90°L N88°20W 300ft.

#3A R0°30 N87°50W 200'

#4A L1°00 N88°50W 200'

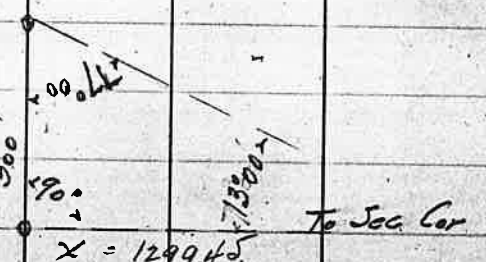
8300
90
17300
1960

$\frac{X}{300}$ = Tan 77°

X = 300 x Tan 77

X = 300 x 4.3315

X = 1299.45

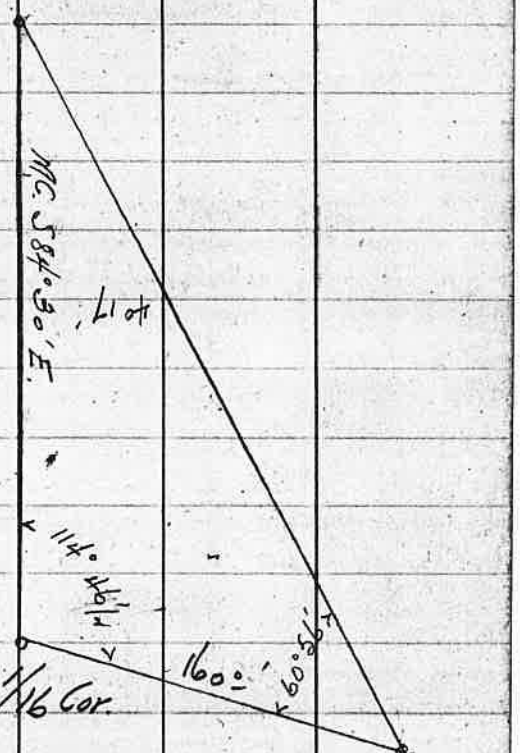


#5A.	R. 2°48'				
		S89°25W	N86°07W	1864.7	

60°56'
114 46
4° 17 +1
179° 59

160.0 × Sin 60°56'
Sin. 4°18'

160 × .8741 = 1864.7
.075



38

39

Round Prairie Ranch

Survey for Portroma Co.

T28S R.6W.

Dec 18-1920
J.W. Cole
L.H. Smick
W. Baer
Glen Taylor.
Weather: fair.

Begin Survey at the Cor to Secs 25-26-35-36 Set Cor from Original BTs all of Which are Standing and bearing Scars. Set 4"x4"x40 Oak Post from which Original BTs Check fairly close. Thence East. Var 21°15'

0=Sec Cor:					
			East.	+25°15' 185.7	167.8
1	0°00'				
			East	+18°30 111±	109.8
2	0°00'				
			East.	+21° 300±	279.9
				+22°15 123.7	114.4
3	20°16'				
		N89°45E	N89°44E	+14°45' 300±	290.1
				+16° 142.9	137.3
4	R1°19				
		S88°30E	S88°57E	+15°30' 220±	212.4
5	10°00'				
				+12°45' 300	292.5
				+12°00' 162.8	160±

6	L 0°43'				
		S89°30E	S89°40E	+27°50' 150±	1328
7.	L 2°09'				
		N88°40E	N88°11E	+10°20' 86.8	85.3
8	R 4° 43'				
		S87°E	S87°06E	-11°40' 191±	187.2
9.	L 3°08'				
		S89°40E	N89°46E	-25°10' 224.0	202.7
10	L 2°44'				
		N87°30E	N87°02E	+20°30' 158.7	148.7
11.	R 4°07'				
		S88°30E	S88°51E	-7° 119.7 119.7	118.9

12.= 1/4 Cor Bet 25-36

Cor Set from Original BTs which are alive and standing Chopped open the Oak and found Scribe Marks.

Begin Sun. Dec. 19-1920 9:00 AM

12	L 0°58'				
		S89°30E	S89°49E	80.0	80.0
13				+0°30' 198.0	198
				+14° 103.0	100.6
				+15°30' 287.0	274.1

13.	L 0°21'				
			S 89°50 E	+15°50 180.7	173.8
14	L 1°16				
			N 88°34 E	+10°30 278.0	273.3
15	R 1°31'				
			N 89°56 E	+19°30 300.0	282.9
16	L 0°14'				
			S 89°51 E	+13°45 171.0	166.2
17.	L 0°06				
			N 89°45 E	-2° 92.6	92.5
18	R 0°18'				
			N 89°57 E	-15°15 209.5	202.2
19	R 0°25'				
			S 89°32 E	-3°45 149.2	148.9
20	L 0°35'				
			S 89°53 E	+5°30' 121.2	120.6
21.	R 0°01'				
			N 89°54 E	+8°15' 203.4	201.2
22.	R 0°05'				

Top of Hill

42

				+12°45'	
			N89°54E	136.2	132.8
23	R 0°01'				
				-6.5	
			East.	171.7	170.6
24	+ 43°40 R 23°35				
	67 15		S82°45E	~~79.6~~	
25					

Establish Cor to Secs 25+36
30+31 from the orginal tree
which show scribe marks, tree
S 40 E missing no trace
Set a 4x4x40 oak post
for Corner.

Round Prarie Ranch Cotd

From Cor. to 24-25-35-36.

0 = Cor.	90°30'				
		N0°10'W	N0°22W	-18° 200±	190±
				+25° 114±	103±
				+8° 77	76±
1	0°00'				
			N0°22W	50	50±
				3° 215±	215±
2	R 0°44'				
				5°00'	
			N0°22E	101.9	101.6
3	0°00'				
				-12°15'	
			N0°22E	178±	174±
4	L 4°13				
		N3°50W	N3°51W	+8° 171±	169±
				+23° 71±	65±
5	R 8°41'				
				+4°15'	
		N4°45E	N4°50E	116±	115.1
6	L 2°02'				
				-10°45'	
		N3°00E	N2°48E	95±	93±

389.7

265'

2946

573

F.S on No.1 of Traverse.

Hub	Def.	MC	CC	VA SD	
				-11° 176±	1728
				+21° 116±	1082
				+17°30 120±	1145
				+8° 85±	845
7	L 1°56				
		N1° E	N0° 52½ E	214±	214±
8	L 0°21				
		N 0°15E	N0°31 E	1012.5	1012.5
		→	→		
9	L 0°33'				
		N0°10E	N0°02W	+15° 199.9	193.1
10	L 0°56'				
		N.0°50W	N0°58W	+13° 154.6	1506
11	R 2°00'				
		N1° E	N1°02E	20°40 219±	205±
12	R 2°53½'				
		N3°10E	N4°55E	+17°35 152.4	145±
13	L 1°20				

1012.5 Calc

4035

81?

See Page for sketch of 1½ Co

15					
				+7°30'	
		N8°30E	N3°35E	131.8	130.6
14	R 5°09'				
				+15°40'	
		N9° E	N8°44'E	251.7	247.1
15	L 11°47'				
				+16.15	
		N3°00'W	N2°58W	300.2	288.2
				+18°	
				148.2	140.7
16.	R 3°10				
				+16°20	
		N0°10E	N0°12E	147.2	141.3
17	R 4°03				
				+4°45	
		N4°15E	N4°15E	77.5	77.3
18	L 5°24'				
				-12°	
		N1° W	N1°09W	225.3	220.3
19.	L 3°14				
				-13°45	
	2°16'	N4°20W	N4°23W	128.4	124.7
20'	L 2°19'				
			6°39'	-24°45	
		N6°15'W	N6°42W	221.2	200.7
21 =					
		South.		20	
22 = Cor.					

Set Oak Stake 4"x4"x36" To.
Renew Cor. to Secs 23-24-25-26 from
Two Original BTs. Which bear as follows
An Oak 30" dia N.60°30E 168.3 ft bears old scribe
" " 30" " S48°30E 112.2" " " "
Mkd New tree An Oak 6" S19°W 16.5
An Oak 38" dia Which looks like an
Original BT. but which showed no scribe
marks when chopped open brs
N31°30W 56.4

N 0°25'E True

Creek

Homesteaders Cabin

Sec 24

Sec 25

31½

24

+15°

+10

+6

BT

BT

90°

Point ½ way bet. Sec. Cors

300

11'H to roof

11'H

26 5+19

47

Survey for Conn Est.

	Def.	M.C.	C.C.	Dist.
0+00	L° 0 10'	N0°0 SW.		
		S0°20E	S0°15E	825.9
1.	0°00'			
				10°
2.	R 89°38'			
		S89°10W.	S89°23W	772.6
3	R 90°			
				10°
4.				

Jan. 4-21
Co 27
- L H. Smick

Begin in ℄ of Co Road on. Line Bet. Conn. Est. and Henry Conn. B.S. North. along fence.

Along Offset 10' S. of fence.

SW Cor Cl. A1.

Conn. Estate - Co. Road Traverse

		M.C.	C.C.	
			S0°15E	
0.	R. 87°52'			
		S87°50W	S87°37W	356±
1.	R 15° 26'			
		N77°W	N76°57'W	429±
2.	R 76° 54'			
		North.	N00°03W	488±
3.	L 74°30'			
		N74°40'W	N74°33W	340±
4	L 27° 06			
		S78°10'W	S78°21W	261±
5.	R 11°37'			
		West.	S89°58'W	644'
6.	R 39°01'			
		N51°00W	N51°01W	532±
7	0°00'			
		N51°00'W.	N51°01W	555.1
8	R 16°45'			
		N34 W	N34°16W	1162±

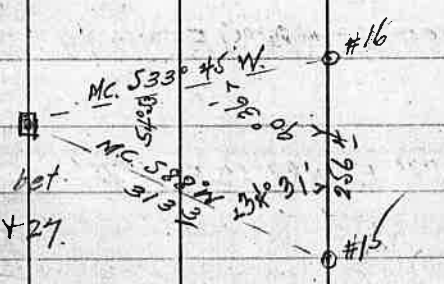
Var 21°15E

{ 0 = ℄ Co Road on Line bet. Corn. Est and H. Conn.
F.S. South to #. 1. of Previous

Note. Requested to make 3 To 5 One Course for Deed.

Angle in New Co Road Set Hub { 1037 West to ¼ Cor
360.1 West for Apprx
div. Corner.

		MC.	CC.	
9.	L 28°46'			
		N63°W.	N63°02W	222±
10.	R 8°05'			
		N55°W	N54°57W	242±
11.	R 22°28'			
			N32°29W	342±
12.	L 29°19'			
		N61°20W	N61°48W	167±
13.	R 18°35'			
		N43°W	N43°13W	234±
14.	R 28°38'			
		N14°30W	N14°35W	204±
15.	L 42°37½'			
		N57°W	N57°12W	256±
16.				



90°36'
34°31'
125°07'
179°60'
54°53'

256±
Sin 54°53' × Sin 90°36'

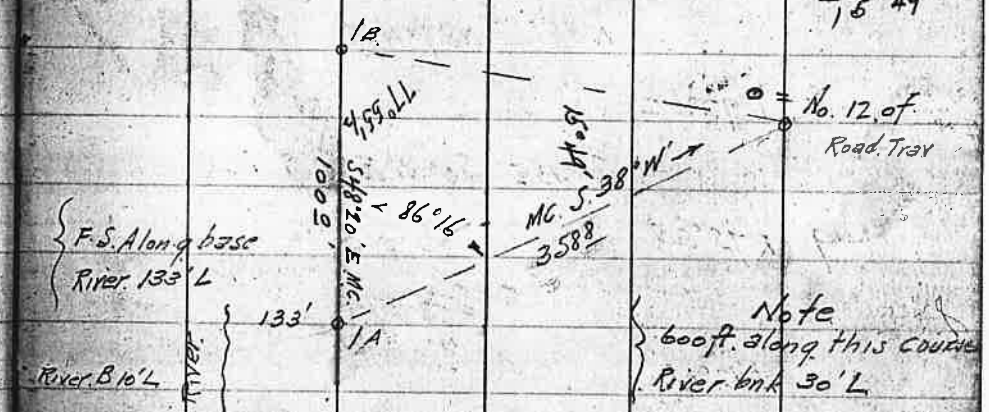
90°36'
34°31'
54°53'
180°00'

Comm Est Traverse up River.

Rd T 11

0=1	R 70°24'				
		N 38° E	N 37.5 E	358.8	
1A	R 35 35 L 88°09'				
		N 73°30 E	N 73°30 E	831.7	See Note
2	R 15°21'				
		N 89°00 E	N 88° 51 E	462.5	
3	L 4°42'				
		N 84°30 E	N 84°09 E	452.6 ~~434.6~~	
4	R 0°42'				
		N 85°00 E	N 84°51 E	729.9	
5	R 4°01'				
		N 89° E	N 88°52 E	671.6	
6	L 9°48'				
		N 79 E	N 79°04 E	556.0	
7	L 29°27'				
		N 49°15 E	N 49°37 E	252.5	
8 = Rock					

77 55
86 16
164 11
179 60
15 49



7	R8°43'				
		N88°E	N87°47E		
8	R92°02				
		S0°15E	S0° 11'E		
9	R75°38				
			S75 27W		
	R12°08'				
			S87°35W		

S 0°12 E
90 00
90 12
179 60
89 48

N 89°48
N 87°47 E
2° 01

N 87°47 E
0 12
87 59
179 00
92 01

Error 0°02'

51

32 5v

	Conn	Est.	1st Div Line	
0				
		South	S 0°03 E	37⅗
1	L 89°57'			
			East	85⅗
3	L 90°03'			
		N 0°05 W	N 0°03 W	70⅗
				1736⅗
				~~2036~~
4	0°00'			
				29.7
5	L 1°10'			
				300⅗
6	R 2°20			
				300⅗
7	L 1°10'			
				209.7
8	R 79°08'			

0 = #3 of Road Traverse

To 1/4 line

F.S. on #2.

70⅗ A. Set Hub for Approx SE Cor. Portion #2

Edge of Brush

Interset bet 6-7 of River Tr. N 79° 04 E 59⅘

Final Div N 79° 04 E 446 ft. from #6

Set Iron Pipe 1" dia 10' South of Cor.

from which A Maple 14" dia N 50° E 8' A.

Corn Estab

Established 1/4 Sec Bet Sec 26-27
from Original BC N 0° 1/4 E
Set 1/2" x 1 1/2" iron bar
Marked new tree
An oak 14" S 89° W 683 ft

SE Cor Post # 4 in E Co Road
on Course N 51° 01 W from Sub # 6
an oak 24" dia N 24° W 7.7 ft
an Iron Pipe North 25 3/4 ft

NW Cor Post # 4 in Co Road
from which an iron pipe
3/4" x 30" bears North 5 ft
a fir 30" dia N 5° E 53 ft

Reestablish Cor to Secs 22-23-26
from Original B.T. T25S R7W
N 30° W 160.4 ft Mark new tree
a B Oak 24" dia N 39 15' E 221 3/4 ft

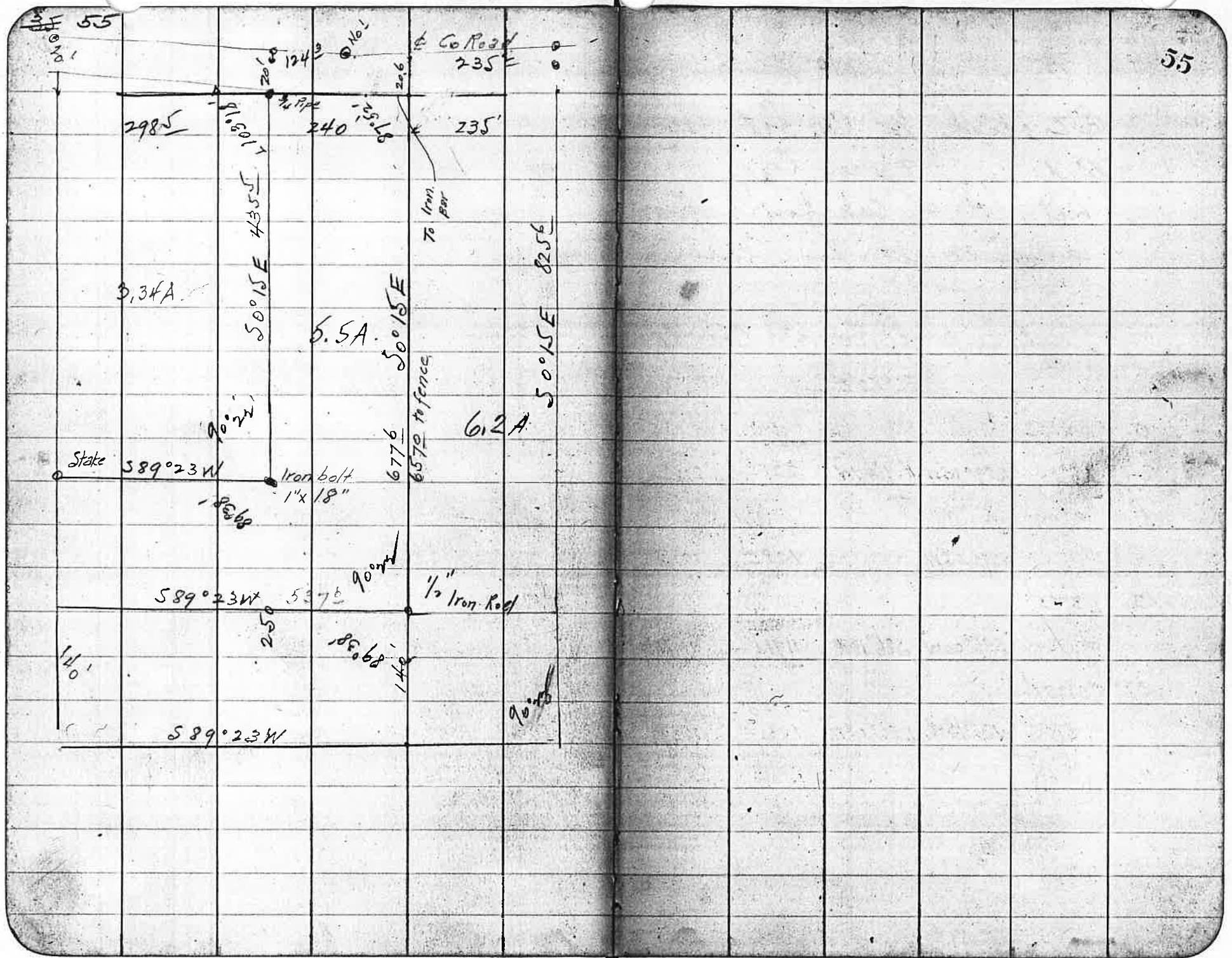
Establish Meander Cor from Sec
Cor no evidence of B Ts
Set 1/2" x 1 1/2" x 36" iron bar adj. oak post
Mark new tree A
a Maple 36" S 43° W 7 ft
a B Oak 15" S 78° E 19.7 ft

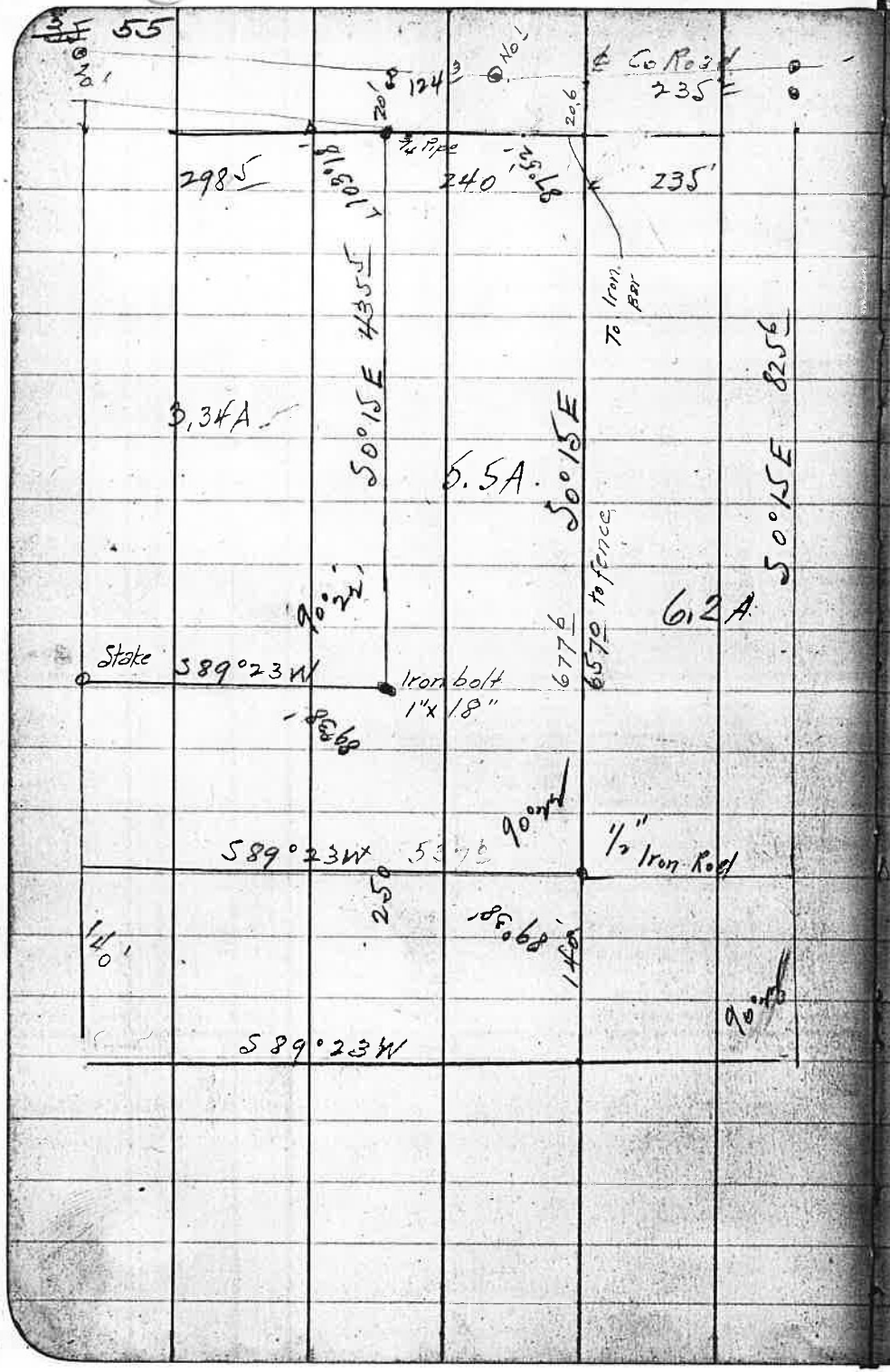
Cor on River bet # 3 + 4
Set 3/4" pipe from which a
B Oak 12" dia N 45° W 10.5 ft

~~34~~
54

Conn. Estate

Co. on River Set 2 + 3
Set ½" x 1½" x 24" iron bar.
also Set post from which
a B Oak 14" dia N. 85° W. 8ft


55
℄ Co Road
124'
235'
20.8
20.6
½" Pipe
298'
240'
235'
To Iron Pin
435'
S0°15E
825'
3.34A.
5.5A.
6.2A
90°W
Stake
S89°23W
Iron bolt
1"x 18"
6776'
6570' to fence
90°W
½" Iron Rod
S89°23W
250'
140'
90°W
S89°23W


124'
No 1
Co Road
235'
20'
20.6
¾" Pipe
298.5'
240'
235'
To Iron Bar
S 0°15 E 433.5'
S 0°15 E 825'
3.34A
5.5A
S 0°15 E
6.2A
90°
Stake
S 89°23 W
Iron bolt
1"x 18"
868'
677.6'
657.0' to fence
90°
½" Iron Rod
S 89°23 W
250'
868'
90°
S 89°23 W

55

~~36~~ 56

Jan 12 1921

56

Continuation of Round

Establish ¼ Cor. Set Sec

Midway Set Sec Cors

Set 4" x 4" Oak post from

and correct line North.

Pick up line at Cor to

			56°52'E		
0	R. 96°52'			+14°20'	
		N89°15W	N89°47W	221.5	214.6
1.	0°00'			+20°15'	
		N89°55'W		108.4	101.7
2	L 3°55'				
		S86°00W	S86°18W	117.1	117.1
3	R 57°37'			-9°40'	
		N36°15W	N36°05W	166.35	163.99
4					

Prairie Ranch Survey

25 & 26. 15.6 ft North of Point

See Page 46

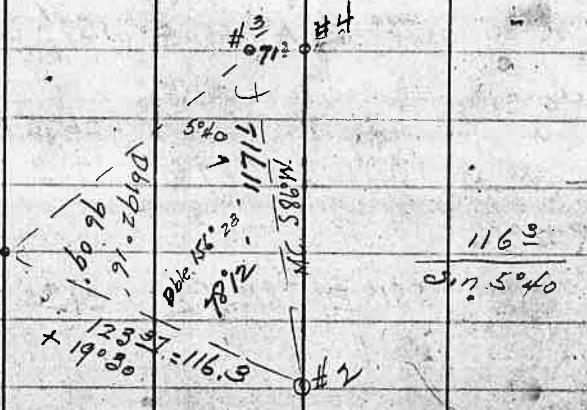
which Jan Oak 9" dia S25°E 61.8 Lks

" " 30" " S31°15W 16.4 Lks

Secs 23 - 24 - 25 - 26

{ 0 = Sec Cor. from S. 56°39 E to Hub 20
of Previous traverse Run Westerly
Random Traverse

Note Fence affected needle at Cor

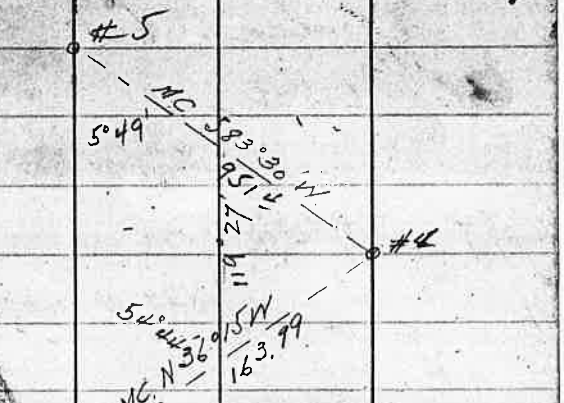


96°08'
78 12
74 20
179 60
5 40

116.3
Sin 5°40

Round Prairie

	Line	Bet Secs. 23-26			
		M.C.	C.C.		
3					
			N36°05W		
4	160°30'				
		S83°30W	S83°22W	1321.3	
5	R28°45'				
		N68° W	N67°57W	+7° 129.9	
6	R143°47			-16°20'	
		N76° E	N75°50E	157.6	151.3
7	R0°39'			-26°15'	
		N77°E	N76°29E	191.0	171.3
8	R22°16				
		S81° E	S81°15E	31.0	31.0
Cor.					



$$\frac{163.99}{\sin 5°49'} = \frac{16.18}{816.5} = 0.7$$

8091.0
97092
16182
12945.6

1321.2603 - 0

Bet Secs. 23-26

Renew 1/4 Cor from orginal BTs which are standing Oak dead

Set 4"x4"x40" Oak Post.

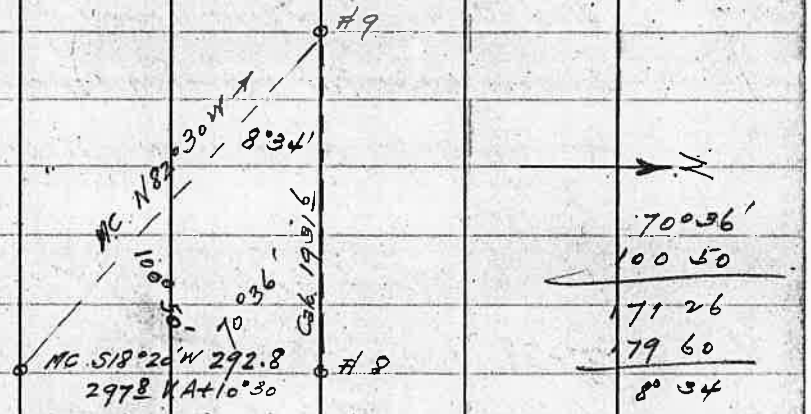
Mark new trees a fir 15 S28°E 3.7 ft
a fir N41°WE 11.9

Round Prairie

Line Lat 23+76

			N67°57W		
#6	L 15°22'			+14°40'	
		N83°15'W	N83° 19W	300	305
				13	
#7.	R 36°15'			-7°20'	
		N47° W	N47°04W	75 8	75
#8.	L 43°40'				
		S89° W.	S89°16W	1931.6	
#9=0	R 10°25'			+26°20'	
		N80°45W	N80°19W.	107.9	96.7
#1	L 8°11'				
		N88°40W	N88°30W.	75	75
#2	R 2°29'			-25°30'	
		N86° W	N86°01W.	83	74.9
#3.	R 1°52			-31°45'	
		N84°20W	N84°09W	299 6	254.7
#4	~~L 2°31'~~				
		N86°50W			
Base					

Pick up line at #6 B.B. on #5



N 33°40' W. 29² to Sec Cor. Stake

3 Brs. and old stake standing. Set new post. also 1/2" x 30" Pipe

292.8 x Cos 8°34'

To Apex of Roof. N End of Bridge

39
59

Sunshine Hooray 59

Jan 24-21

Cole
Smick
Allen Taylo

Contd Survey of Round Prarie Rnch
Went to the Cor. to Secs 21-22-27-28
and two Bearing Trees facing
fence Cor. Put Up flag on fence Post
for Purpose of Triangulation.

1 Then Went to the 1/4 Cor bet
27-28 found. Orig BT N7°E Standing
and alive Stub of tree N80°W standing
with Scribe Marks. Distance and
directions check by using dist 43 lks
25. Slope. measure Set Oak Stake
also Mound of Rock
4x4x40" Run traverse West.

25 follows

0=Cor.	51° 15 R38°45'				
		N38°45W	N38°45'W	-35°40' 2354	1912
1	L 59°58'				
		S81°15W	S81°17'W	-40 2266	2261
2					

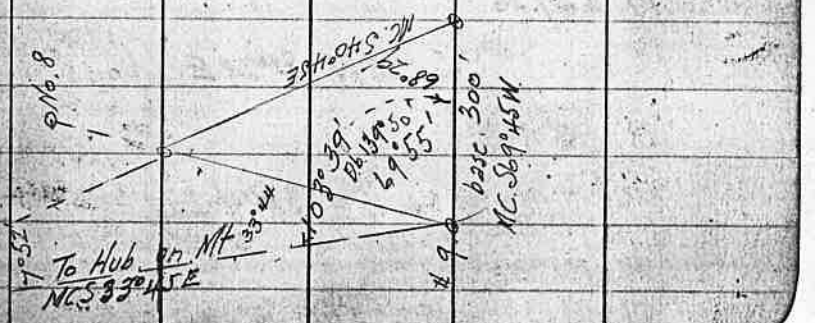
F.S. Mag West. Var. 21°15E

2	R 0°01'				
		S81°15W	S81°18W	- 6°15'	483.5
				300.0	
				185.3	
3	R 10°50'				
		N85°W	N87°52W	- 3°45'	599.4
				300.0	
				300.0	
4	L 5°46'				
				- 4°	
		S86°30W	S86°28'W	1508	150.5
5	L 27°32'				
				+ 1°30'	
		S58°45W	S58°56W	254.9	254.8
6	R 18°26'				
				- 3°	
		S77°15W	S77°22W	300.0	441.1
				141.5	
7	R 8°35'				
		S86°W	S85°57W	300.0	425.8
				125.8	
8	R 93°52'				
				- 6°	
		N0°10'E	N0°11W	300.0	598.4
				300.0	
9	R 146°16'				
			S33°55E	2038.6	2038.6
10					

#3 633' 13,00.81 N

to #2

2' East of N & S fence } 212' North to Old fence line



44
61

			S33°55E		
10	R5°57'				
		S24°W	S24°02W	-12°45' 300 62.8	355.3
11	R0°22'				
		S24°30W	S24°24W	-13' 282	274.7
12	R3°04'				
		S27°30W	S27°28W	-3°30' 300 66.8	366.2
13	R29°09'				
		S55°45W	S56°37W	-44.5' 124.8	124.4
14	R3°47'				
		S60°15W	S60°24W	-16' 300 31.2	319.5
15	R18°42'				
		S79°10W	S79°06W	-1° 212	212
16	L43°09'				
		S36°W	S35°57W	-13°50' 212.8	206.1
17	L37°26'				
		S0°20'W	S1°29E	-18°40' 300 53.6	337.7
18	L3°11'				
		S4°15E	S4°40E	-10° 300 96.8	392.2
19	R1°33'				
		S2°50E	S3°07E		

61

$$\text{Cos. } Q = \text{Tan. } L \times \text{Tan. } A - \left(\frac{\text{Sin. Dec}}{\text{Cos } L \times \text{Cos } A + t}\right)$$

Tan L = 48°06' = .9358

" A = 24°59' = .466

Dec = 18°55' at 1.50 PM

Sin = 18°55 = .3242

Cos L = 48°06' = .7302

Cos A = 24°59' = .9064

#3608 ✓ .3242 / 66185

#3608 4898 / 9259 = S22°12W / 34013 / S56 25 W 13.17

PM 1.50 Jan 25-1921

#1 L 34°13 Alt. 24°59'

Solar. Obs at No 14

#2 L 33°32 " 23°47'

MC No 1 S22°20W to Sun

Set 1/2"x30" Iron pipe from which a Laurel 40" D 89°W 37.5 an Oak 10" D 38°E 44.0

(1/4 Cor. 2' West. bet 28-33)

19					
		S2°50E	S3°07E	-18°20' 226 3	214 8
20	R40°57'				
		S0°02W	S1°50W	-22°20' 146°5	135 5
21	L 15°46'				
		S13°40'E	S13°56E	— 70° -24° 194° +9°45' 281°	524 4
22	R 50°15'				
		S36°30W	S36°19'W	-15°15' 275 8	266 1
23	L 125°47'				
		S89°00E	S89°28E	+18°15' 300° +18° 70°	351 4
24	L 2°19'				
		N88°40E	N88°43'E	+4° 216 1	215 7
25	R 99°42'				
		S8°15W	S7°55'W	-17°45' 201 4	191 8
26	L 9°58'				
		S1°45E	S2°03E	-17°45' 300° -14° 300° 22.7	599 5

Plow Share at fence Cor 3 5 West and 3 5 South.

SW 4' to tree used for fence Cor NE Cor C 1/4

			S2°03E			
27	L 86°39'					NW Cor. R.R lot set by Epp.
		S85°20E	S88°42E	+18° 300± +29°45' 180° +25°50' 39±	495±	
28.	L 1°10					
		S89°40'	S89°52E	+12°50' 153±	149±	
29	L 0°22'					
		S89°50E	N89°46E	142±	142±	
30	L 12°04'					
		N78° E	N77°42'	-9°40' 160±	158±	
31	R 9°17					
		N87°E	N86°59E	-21° 169±	158±	
32	R 0°18'					
		N88°00E	N87°17E	-25± 300° +9° 300° +20° 222±	777±	
33	R 39°18'	S				
		S53°15E	S53°25E	+6°45' 90±	90±	Set iron pipe 2"x24" and Mark near tree
34	L 12°00'					A. W. Oak 24" dia S65°30E 91±
		S65°00E	S65°07E	+12°15' 145±	144±	
1/4 Cor. 35	Lot 33+34					

1/4 Cor. 35	R 72° 24				
		S 7°00 W	S 7°17 W	+10° 192 ±	189 ±
36	L 10°17'				
		S 8°00 E	S 3°00 E	+33°10' 155 ±	129 8
37	L 8°25'				
		S 11°20 E	S 11°25 E	+19°45' 60 ± +19° 300 ± +24°15' 100 8	432.1
38	R 8°52'				
			S 2°33'E	-9°45' 300 ± 647	360 4
39	? L 13°45				
		S 6°20 E	S 6°18 E	-13°30' 85 ±	83 1
40	R 7°13'				
		S 1°00 W	S 0°55 W	-29° 207 ± -32°30' 300 ± -19° 95 ± -24°30' 300 ± 28	799 3
41					

Top of hill

Set Iron Pipe 1/2" x 30" from which W Oak
S 80° W 48' A. to fence Cor 10" brs. S 45° W 3 ft

41	L 89°45'				
		S88°45E	S88°50'E	-3° 300° +8° 300°	1027.8
				+9°30 300°	
				+10' 95° 41.6	
42	L 2°55'				
		N88°20'E	N88°15E	54°	54°
43 NW Cor Q 42					Hub 3'S 6'+2'N of Cl. Cor 47' Cor. to BT.
	R 91°48'				
			S0°03'W	-15°30 300°	661.9
				-2°30' 300°	
	L 90°00'			73'	
44 Interior L Cor					Hub 3'S 6'+1' South of fence Cor.
		S89°E	S89°57E	300° +7° 300°	644.8
				47°	
45	0°00'	East			
			S89°57E	+8° 300°	334.8
46				35.9	

46	R0°32'				
		S89°30E	S89°25E	65° 225° 59'	349'
NEC 47 CH2	R90°12				
		S1°00W	S0°37W	-5°45 300° 38'	336'
48	0°00				
		S1°00'W		-12°15 300° -2° 202½'	495'
49					
				300° -2° 220'	300 220.4
50	R2°43'				
			S3°20'W	65?	65'
51 = NEC CH2					

495'
520.4
1015.6

To. Cor. on S side Pac Highway

T 28 S R 7 W.

1/4 Cor. South Side 34. Renewed.
Cor from original B.T. S 47° E which
is alive and standing. Some one had
chopped out scar but old Blaze had
decayed. Found hole showing where
B.T. N 26° E had been. dist checked.
Stones of fire place of Robt Phipps
Cabin bears S 59° W.
Mark new trees B.T. Oak N 56° E 82 l
Set an iron bolt 5/8 x 24" also oak post

NE Cor. Cl 37 on Twp line
No evidence of B.T.s and
Relocated Cor from 1/4 Cor 30.00 ch
East. Distance to Cor West
Measures 1330.6 ft South. 13 47.8 / 1 47 8
Set oak post and 1" x 40" iron pitman
Mark new trees 9 W Oak 12" N 18° E 124 3/5
9 W Oak 10" S 81 W 64 2/5

SE Cor of Phipps Cl 37
Found a 23" Oak which JW Phipps
says his father testified was the original
B.T. direction of Cor from tree
was given as S 30° E but tree blaze
faces East, tree had been chopped
open by C.C. Boyer but no marks
visible. Re establish Cor. S 0° 25' E
13 47.8 / 13 27 8 ft from NE Cor. D.L.C. and
N. 89° 52' E 4007.7 ft from SW Cor.
tried to check measurements to
River but banks were too indefinite
Old B.T. bears N 52° W 97 3/5 ft.
New tree an Oak 10" N 7° 50 W 75 6/10
Cl Cor an Oak post and 1" x 40" iron rod
Set 1/16 Cor 27.8 ft North from
SE Cl Cor and 1320 ft from Twp
line set 5/8 pipe and oak post

Run out descrip South of Highway.

Set at Hub 50 Run North (329) 2.9 and West 2.4 Det Prop. Cor on Cl. line

0	R94°12'			
		S85°20E	S85°11E	413.9
2	L8°24'			
		N86°10E	N86°25E	413.9
3	R3°35'			
		East	East	455±
4	L25°03			
		N64°45E	N64°57E	401±
5	R21°54			
		N86°30E	N86°51'E	175±
6	L14°48'			
		N72°00E	N72°03'E	310±
7	L20°48'			
		N51° E.	N51°15E	189±

See page 71

Def. 89°00'L at #50 to
F.S. Shown below

Solar Obs at #50 Feb 1 1921

#1 F.S. No 0. on Hub S85°20E
Def. 121°17R. To Sun.
Ver. +23°36' 2:25 PM

#2 Hor. 122°14' 2:40
+23°11'

F.S. North 0 = Hub 2.4 South of Prop Cor

1/16 line on River Bank

89

D Line Cl 4x

#50	R84°14'				
			D84°51W	2772.4	
51	L95°09				
			North	264.1	
52					
		S76°10'W	S76°02'W	1138.3	
53	R57°09'				
		N47° W	N46°49'W	183.0 -40	182.6
54	R44°45'				
		N2°00W	N2°04W	115.8 -29°20'	100.9
55	R36°00'				
		N34°E	N33°56E	50.0 -38°	39.4

DW Co. Cl 37 = Robt. Phipps Cl.
Established from stumps of 2 Laurels which correspond to field notes but any scribe marks rotted. Found a fir stake marked CS badly rotted Set an oak post also

Mark Newtree 9 fir 36" P69°20W +31° 48 = 39
9 " 36" D 22°30E +27° 42 = 31

89

3316 / 10156 L 30627

99+8

20800
19876

9040
6632

24080
23212

868

64°50 — 64°51
95 46 — 95 47
160 36 — 19 22
179 60 — 180 00
19° 24

10156 × Sin 64°51
Sin 19°22

10156 × .9052
.3316

3062.7
.9052
61254
153135
275643
277.35604

Cos 84°51 = .08987
27724
22179
24951
22179
248.961 52

Sin .996
27724
166344
24951 6
24951 6
276.1304

2772.4
S84°51W

#48
N0°37E
L95°46
95 09
179 60
D84 51W

95°46'

10156
N0°37E

#50
To River 1053

70

70

68°58
103 58
172.56
79.60
7°04

150 × 68°58'
Sin 7°04'

53

150 × .9334
.1230

7°04'

1219 × 9334

= 1138 1/2'

W 11046

S 2748

S 7°01' W

103 58'

68°58'

52

150'

Round Prairie. Small tract Do. R.R.

7			N51°15E		
				1'	
8.	L 138°51				
				+ 3°30	
		N87°45W	N87°36W	97 3/4	97'
9	L 16°08'				
		S75°30W	S76°16W	490 ±	
10	R 9°35'				
		S85°10W	S85°51'W	189 5/	
11	R 4°27'				
		S89°50W	N89°42W	621 6/	
12	(R 5°33' ?)				
Maybe	4°33	N85°10W	N85°09'W	184 5/	
13	R 7°05				
		N77°45W	N78°04W	184 ±	
14	R 5°32				
		N72°00W	N72°12W	529 7/	-15 1/2
#49	L 107°11				
			S0°37'W	487.9	
	Changed to	(S0°25W)	(529.7 - 37.5)	487.9	

To Highway

Dist Co. 15' East mon pin

52					
	Survey for Kolhagen				
				43±	
0°	L 0°34'				
		N 0°30' W	N 0°34'	395±	
1	L 0°35				
		N 1°00' W		497	
2	L 0° 45'				
		N 0°15 E		148 8±	
3	R 1°03'				
		N 3°00 E		160±	
4					
				-11°	3
				100±	98±
				-18°	
				100±	95±
				-22°30'	
				100±	92 4±
				-23°10'	
				100±	91.9
				-16°	
				100	96.1
				-14°30	
				100±	96 8±
				100±	
				100±	400±
				100±	
				100±	971.0.5

T. 27 S. R. 5 W.
Sec. 16

52

Sat Jan. 29 1921

South to fence Cor.

FS = Mag North Var 21°15' E. 0 = Epps hub

No. 0 is near N.W. Cor. Harkness Pl

Evidently Mag Az

Round Prairie

Dow Burnetts &

N88°30W

Sta 2 L 1°02

S87°45W N89°32W 514.14

Dec Cor

South along E Side Burnetts

0

S33°40E 29° 29.0

9=1 L 89°32'

+5°

S10°00'W S10°09'W 193± 186.6

2 L 6°45'

-1°30'

S3°30W S3°24' 284± 283.9

3 L 5°22'

+3°40'

S2°00E S1°58E 300± 299.4

(108?) 108

4

Set at Sta 2 of Traverse See Cor.

B.S. on #1

Calc 3.06

= Cor. to Sec 22-23-25-26

Def Here Turned L. from N80°19W. to hub at hill

91°10'

S11°15'

85°44'

+1°40'

Base 278.2

= 278.1

#2 of Traverse

			S 1° 58 E		
#4	R 4° 18'				
		S 2° 30' W	S 2° 20 W.	645°	
✓ #5	L 33° 34'				
		S 31° 15 E	S 31° 14 E	- 9° 30" 109°	107 5
✓ #6	R 25° 37				
		S 6° 00 E	S 5° 37 E	- 24° 10' 109 4	998
✓ #7	2° 39' (R 3° 39')?				
		S 3° 00 E	S 2° 58 E	- 30° 45' 300°	257 8
				56 3	56 3
8.	R 4° 40'				
		S 1° 30 W	S 1° 43 W	- 12° 127 5	125°
9.					

82.07
85 00
12 53
180 00

82.07
84 53
167 06
179 60
N 54

82.07°
84° 59'
1486'
+ 12 10
1 145 ±

145 ±
#5
12° 51
645°
#4

145 ± / Sin 12° 53 × Sin 82° 07

145 ± / .223 × 9906.

Dolan Obs No 2 Page 68

Dec. 17°00'

Lat. 43°05'

AH. 23°11

Tan L = .9357

∴ A = .4283

Cos L = .7304

Cos A = .9193

Sin P = .2924

S. 33°17'

122 12

88 57

935 7 1

428 3 5

280556

74816

18704

37408

4023461 6

4355

8360

67146

7304 5

9193

21912

65736

7364

65736

6717 5672

3

4355

2924000

268584

238160

201498

36722

33573 0

31490

5

76

Solar Obs. Page 68

Meridiograph

#1 Dec 17° 17' 30"
Lat 43° 05'
Alt 23° 36'

A 4088
B. 4442
8530
S 0° 37' W
L 89° 00
D 88 23E

31°27'
S 31° 27
121.12
S 89 45E

#2 Dec 17° 17' 30
Lat 43° 05'
Alt. 23° 11'

17° 00

$\cos Q = \frac{(\tan L \times \tan A) - (\sin Dec)}{\cos L \times \cos A}$

L = 43° 05
A = 23° 11
D = 17° 17 30
Tan L = .9352
" A = .4283
Cos L = .7304
Cos A = .9193
Sin D = .2971

9352
4283
28056
74816
87704
37408
4005416
4426
8431 =
32° 32
122 14
89° 42'

7304
.919
65736
7304
65736
6712376
6712 / 2971000 (4426
26848
28620
26848
17720
13424
4296
10

Round Traverse Sec line bet 23-26 T28-6 W

	N	S	E	W
		.0088		Dome
N 89°47 W 316	13			316
	.0645			.998
S 86°18 W 1171		73		1168
	.808			.569
N 36°05 W 164°	1325			96.6
	.1155			.9933
S 83°22 W 1321		152.6		1312.1
	.3754			.929
N 67°57 E 129°	48.4			119.6
	1338	228.1		2893.8
		133.8		2640
		94.3		253.8
				373.4

Solar Obs. No 1 Page 68.

L 43°05
D = 17°00'
A. = 23°36
Hor. = 121°12

Tan L = 9352
Tan A = 4334
Cos L = 7304
Cos A = 9175
Sin D = 2924

9352
.4334
37408
28056
28056
37408
4053.1568
4363
8416
S 32° 41 W
121 12
D 88° 31 E Solar
88 2
.08

7304
.9175
36520
51128
7304
65736
.670 14200
5 8 4 3
.670 1) 2924.0000 (4363
26804
24360
20103
42570
40206
2364
6

77

Solar Obs - Balfour - Guthrie Job

See Page 28 Nov 20 - 1920 1:30 PM

Dec - 19°45' Lat 43°23' AH 23°10'

Tan A = T. 23°10 = .4279

Tan L = 43°23 = .9451

Sin Dec. 19°45' = .3379

Cos A = 23°10' = .9194

Cos L = 43°23 = .7268

.4279 × .9451 = 4279 / 21395 / 17116 / 38511 / .4044879

.9194 × .7268 = 73552 / 55164 / 18388 / 64358 / .6682199

A = .4044

B = .5057

9101

6682 | .3379 0 | .5056 = S 24°29 W

33410

38000

33410

45900

40091

5808 1

61 03

S. 85 32 W

Solar Obs

At Cor. Secs 25-26-35-36

Dec 12° 34' at 2:00 PM Oct 26 1920

AH. 29°15

Lat 43°00'

Def. R 16°11 from S 14° W of Previous Brg.

830°176

16 11

14 06

Tan A × Tan L − (Sin Dec / Cos A × Cos L) = Cos Q

Tan A = .5600

T L = .9325

Sin D = .2176

Cos A = .8725

Cos L = .7314

.8725 × .7314 = 34900 / 8725 / 26175 / 6107 5 / .6381 4650

.9325 × .56 = 55950 / 46625 / .52220000

.6381 | .21760000 | .3409

19143

26170

25524

646 00

7

98. T. 29 S. R. 6 W.

Solar Calculations for Johnson Contact - Ledgerwood Survey

About 1000 ft. South of Cor to -23-24-25-26

$\cos Q = \left(\text{Tan Lat} \times \text{tan A.}\right) - \left(\frac{-\text{Sin Dec.}}{\text{Cos L.} \times \text{Cos A}}\right)$

Dec. S 11° 53'
Lat 43° 01'
Alt 27° 19'

Sin 11° 53' = .20592
Cos. 43° 01' = .73116
" 27° 19' = .88848
Tan. 43° 01' = .93306
Tan. 27° 19' = .51651

.7059 ÷ .731 × 8885 = .3170
.4819
.7989 = Cos. of S 36° 58' W

By Meridiograph S 36° 58 W
L 38° 55
S 1° 57 W

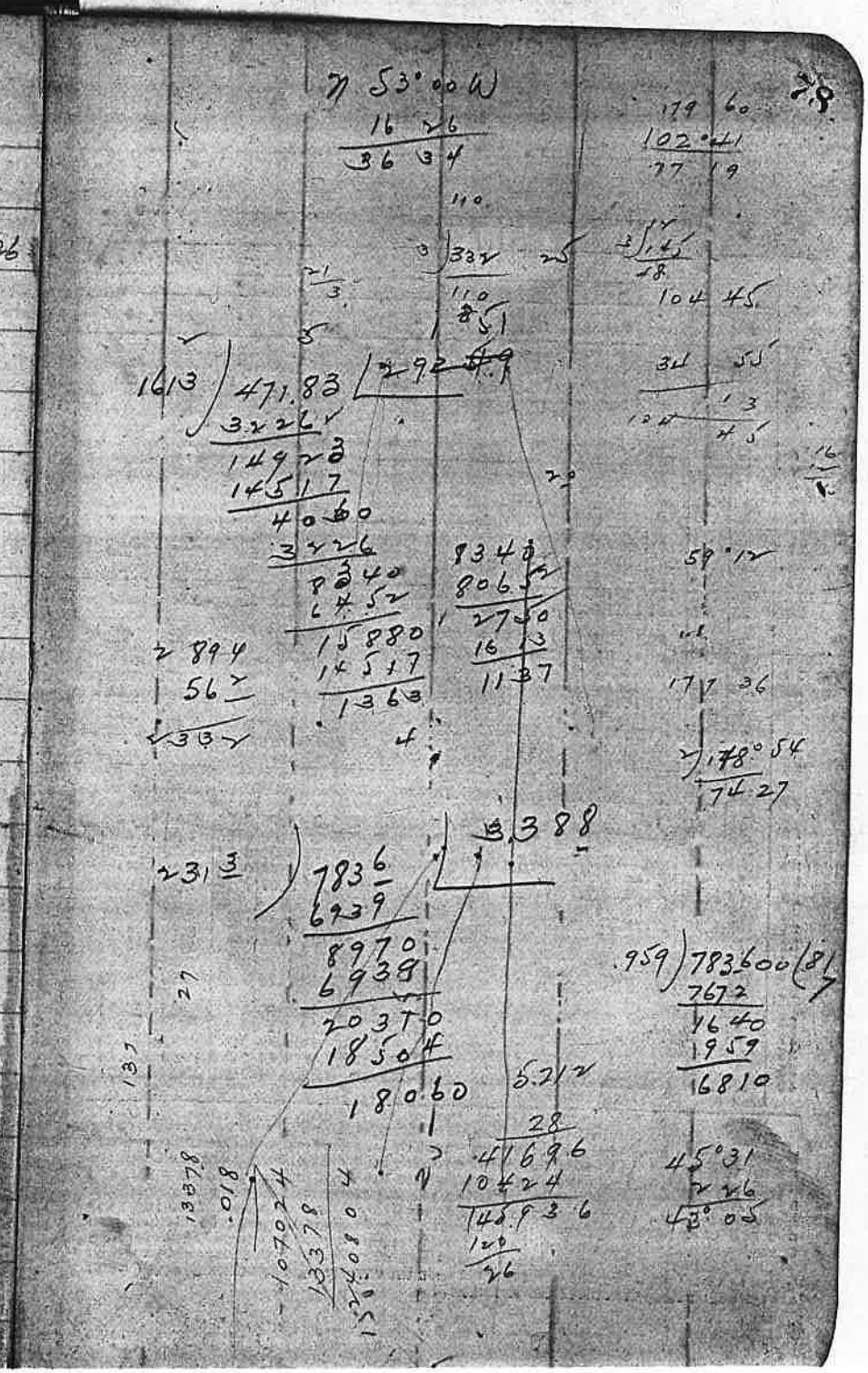


Table IX.—Calculation of Earthwork.

Width	Height 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	.02	.04	.06	.07	.09	.11	.13	.15	.17	.18	.20	.22	.24	.26	.28
2	.04	.07	.11	.15	.18	.22	.26	.30	.33	.37	.41	.44	.48	.52	.56
3	.06	.11	.17	.22	.28	.33	.39	.44	.50	.56	.61	.67	.72	.78	.83
4	.07	.15	.22	.30	.37	.44	.52	.59	.67	.74	.81	.89	.96	1.04	1.11
5	.09	.19	.28	.37	.46	.56	.65	.74	.83	.93	1.02	1.11	1.20	1.30	1.39
6	.11	.22	.33	.44	.56	.67	.78	.89	1.00	1.11	1.22	1.33	1.44	1.55	1.67
7	.13	.26	.39	.52	.65	.78	.91	1.04	1.16	1.30	1.42	1.55	1.68	1.81	1.94
8	.15	.30	.44	.59	.74	.89	1.04	1.19	1.33	1.48	1.63	1.78	1.92	2.08	2.22
9	.17	.33	.50	.67	.83	1.00	1.17	1.33	1.50	1.67	1.83	2.00	2.17	2.33	2.50
10	.18	.37	.56	.74	.93	1.11	1.30	1.48	1.67	1.85	2.04	2.22	2.41	2.59	2.78
11	.20	.41	.61	.82	1.02	1.22	1.43	1.63	1.83	2.04	2.24	2.44	2.65	2.85	3.06
12	.22	.44	.67	.89	1.11	1.33	1.56	1.78	2.00	2.22	2.44	2.67	2.89	3.11	3.33
13	.24	.48	.72	.96	1.20	1.44	1.68	1.92	2.16	2.41	2.65	2.89	3.13	3.37	3.61
14	.26	.52	.78	1.04	1.30	1.55	1.81	2.08	2.33	2.59	2.85	3.11	3.37	3.63	3.89
15	.28	.56	.83	1.11	1.39	1.67	1.94	2.22	2.50	2.78	3.06	3.33	3.61	3.89	4.17
16	.30	.59	.89	1.18	1.48	1.78	2.07	2.37	2.67	2.96	3.26	3.56	3.85	4.15	4.44
17	.31	.63	.94	1.26	1.57	1.89	2.20	2.52	2.83	3.15	3.46	3.78	4.09	4.41	4.72
18	.33	.67	1.00	1.33	1.67	2.00	2.33	2.67	3.00	3.33	3.67	4.00	4.33	4.67	5.00
19	.35	.70	1.06	1.41	1.76	2.11	2.46	2.82	3.17	3.52	3.87	4.22	4.57	4.92	5.28
20	.37	.74	1.11	1.48	1.85	2.22	2.59	2.96	3.33	3.70	4.07	4.44	4.81	5.18	5.56
21	.39	.78	1.17	1.55	1.94	2.33	2.72	3.11	3.50	3.89	4.28	4.67	5.06	5.44	5.33
22	.41	.81	1.22	1.63	2.04	2.44	2.85	3.26	3.67	4.07	4.48	4.89	5.30	5.70	6.11
23	.43	.85	1.28	1.70	2.13	2.56	2.98	3.41	3.83	4.26	4.68	5.11	5.54	5.96	6.39
24	.44	.89	1.33	1.78	2.22	2.67	3.11	3.56	4.00	4.44	4.89	5.33	5.78	6.22	6.67
25	.46	.92	1.39	1.85	2.31	2.78	3.24	3.70	4.17	4.63	5.09	5.56	6.02	6.48	6.94
26	.48	.96	1.44	1.92	2.41	2.89	3.37	3.85	4.33	4.82	5.30	5.78	6.26	6.74	7.24
27	.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50	6.00	6.50	7.00	7.50
28	.52	1.04	1.55	2.07	2.59	3.11	3.63	4.15	4.67	5.18	5.70	6.22	6.74	7.26	7.78
29	.54	1.07	1.61	2.15	2.68	3.22	3.76	4.30	4.83	5.37	5.91	6.44	6.98	7.52	8.06
30	.56	1.11	1.67	2.22	2.78	3.33	3.89	4.44	5.00	5.55	6.11	6.67	7.22	7.78	8.33
31	.57	1.15	1.72	2.30	2.87	3.44	4.02	4.59	5.17	5.74	6.32	6.89	7.46	8.04	8.61
32	.59	1.18	1.78	2.37	2.96	3.56	4.15	4.74	5.33	5.92	6.52	7.11	7.70	8.30	8.89
33	.61	1.22	1.83	2.44	3.05	3.67	4.28	4.89	5.50	6.11	6.72	7.33	7.94	8.55	9.17
34	.63	1.26	1.89	2.52	3.15	3.78	4.40	5.04	5.67	6.29	6.93	7.56	8.18	8.81	9.44
35	.65	1.30	1.94	2.59	3.24	3.89	4.53	5.18	5.83	6.48	7.13	7.78	8.42	9.08	9.72
36	.67	1.33	2.00	2.67	3.33	4.00	4.66	5.33	6.00	6.67	7.33	8.00	8.67	9.33	10.00
37	.68	1.37	2.06	2.74	3.42	4.11	4.79	5.48	6.17	6.85	7.54	8.22	8.91	9.59	10.28
38	.70	1.41	2.11	2.82	3.52	4.22	4.92	5.63	6.33	7.03	7.74	8.44	9.15	9.85	10.56
39	.72	1.44	2.17	2.89	3.61	4.33	5.05	5.78	6.50	7.22	7.95	8.67	9.39	10.11	10.83
40	.74	1.48	2.22	2.96	3.70	4.44	5.18	5.92	6.67	7.41	8.15	8.89	9.63	10.37	11.11

Table gives cu. yds. in 1 ft. of a triangle of given width and height. Corrections for tenths of width are one tenth the values found under each height considering the widths from 1 to 9 as tenths and similarly the corrections for tenths of height are one tenth the figures opposite width considering the heights from 1 to 9 as tenths. Thus if w =16.2 and h =5.3, cu. yds. =1.48+.028+.089 =1.597 cu. yds. or practically 160 cu. yds. per 100 ft. If w exceeds 40 ft., use one half and multiply result by 2, if both w and h are large use one half of each and multiply result by 4. Any cross-section may be divided into triangles by the following rule. To the triangle of the sum of the outside cuts (or fills) =h, and ½ the roadbed =w, add the triangles formed by taking the distance out to each break in turn (=w's) by the difference between the cuts (or fills) on each side of it (=h's) always subtracting the outer from the inner.

Distances from Center of Roadway for Cross-Sectioning.

Roadway 16 feet wide. Side Slopes 1 on 1½

For Single Track Embankment.

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.2	8.3	8.5	8.6	8.8	8.9	9.1	9.2	9.4	0
1	9.5	9.7	9.8	10.0	10.1	10.3	10.4	10.6	10.7	10.9	1
2	11.0	11.2	11.3	11.5	11.6	11.8	11.9	12.1	12.2	12.4	2
3	12.5	12.7	12.8	13.0	13.1	13.3	13.4	13.6	13.7	13.9	3
4	14.0	14.2	14.3	14.5	14.6	14.8	14.9	15.1	15.2	15.4	4
5	15.5	15.7	15.8	16.0	16.1	16.3	16.4	16.6	16.7	16.9	5
6	17.0	17.2	17.3	17.5	17.6	17.8	17.9	18.1	18.2	18.4	6
7	18.5	18.7	18.8	19.0	19.1	19.3	19.4	19.6	19.7	19.9	7
8	20.0	20.2	20.3	20.5	20.6	20.8	20.9	21.1	21.2	21.4	8
9	21.5	21.7	21.8	22.0	22.1	22.3	22.4	22.6	22.7	22.9	9
10	23.0	23.2	23.3	23.5	23.6	23.8	23.9	24.1	24.2	24.4	10
11	24.5	24.7	24.8	25.0	25.1	25.3	25.4	25.6	25.7	25.9	11
12	26.0	25.2	26.3	26.5	26.6	26.8	26.9	27.1	27.2	27.4	12
13	27.5	27.7	27.8	28.0	28.1	28.3	28.4	28.6	28.7	28.9	13
14	29.0	29.2	29.3	29.5	29.6	29.8	29.9	30.1	30.2	30.4	14
15	30.5	30.7	30.8	31.0	31.1	31.3	31.4	31.6	31.7	31.9	15
16	32.0	32.2	32.3	32.5	32.6	32.8	32.9	33.1	33.2	33.4	16
17	33.5	33.7	33.8	34.0	34.1	34.3	34.4	34.6	34.7	34.9	17
18	35.0	35.2	35.3	35.5	35.6	35.8	35.9	36.1	36.2	36.4	18
19	36.5	36.7	36.8	37.0	37.1	37.3	37.4	37.6	37.7	37.9	19
20	38.0	38.2	38.3	38.5	38.6	38.8	38.9	39.1	39.2	39.4	20
21	39.5	39.7	39.8	40.0	40.1	40.3	40.4	40.6	40.7	40.9	21
22	41.0	41.2	41.3	41.5	41.6	41.8	41.9	42.1	42.2	42.4	22
23	42.5	42.7	42.8	43.0	43.1	43.3	43.4	43.6	43.7	43.9	23
24	44.0	44.2	44.3	44.5	44.6	44.8	44.9	45.1	45.2	45.4	24
25	45.5	45.7	45.8	46.0	46.1	46.3	46.4	46.6	46.7	46.9	25
26	47.0	47.2	47.3	47.5	47.6	47.8	47.9	48.1	48.2	48.4	26
27	48.5	48.7	48.8	49.0	49.1	49.3	49.4	49.6	49.7	49.9	27
28	50.0	50.2	50.3	50.5	50.6	50.8	50.9	51.1	51.2	51.4	28
29	51.5	51.7	51.8	52.0	52.1	52.3	52.4	52.6	52.7	52.9	29
30	53.0	53.2	53.3	53.5	53.6	53.8	53.9	54.1	54.2	54.4	30
31	54.5	54.7	54.8	55.0	55.1	55.3	55.4	55.6	55.7	55.9	31
32	56.0	56.2	56.3	56.5	56.6	56.8	56.9	57.1	57.2	57.4	32
33	57.5	57.7	57.8	58.0	58.1	58.3	58.4	58.6	58.7	58.9	33
34	59.0	59.2	59.3	59.5	59.6	59.8	59.9	60.1	60.2	60.4	34
35	60.5	60.7	60.8	61.0	61.1	61.3	61.4	61.6	61.7	61.9	35
36	62.0	62.2	62.3	62.5	62.6	62.8	62.9	63.1	63.2	63.4	36
37	63.5	63.7	63.8	64.0	64.1	64.3	64.4	64.6	64.7	64.9	37
38	65.0	65.2	65.3	65.5	65.6	65.8	65.9	66.1	66.2	66.4	38
39	66.5	66.7	66.8	67.0	67.1	67.3	67.4	67.6	67.7	67.9	39
40	68.0	68.2	68.3	68.5	68.6	68.8	68.9	69.1	69.2	69.4	40

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 41.9. For same slopes but other width roadbed correct above figures by one-half difference in width of roadbed; thus in example above for 20 ft. roadbed distance will be 41.9+(20—16) ÷2 or 2 ft. added to 41.9 ft. For slopes of 1 on 1 see inside of front cover.

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