

HIGH WATER LINE
OTAY VALLEY

FIELD BOOK
1311

W84

MICROFILMED
JAN 7 1965

THE attention of Engineers' is called to the following important features of this improved note book.

1. The Pages are not machine ruled as is commonly the case but are printed from accurately ruled plates.

2. The right hand or sketch page is ruled in squares, enabling the note taker to easily and accurately construct a sketch to scale.

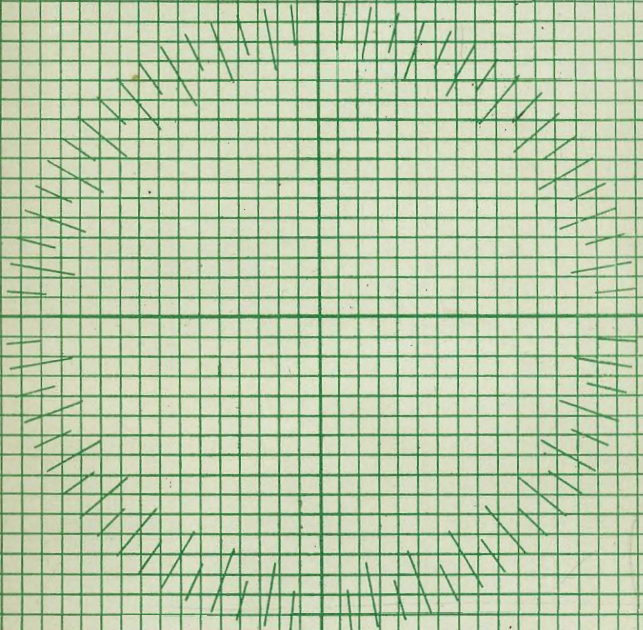
3. The faintly ruled protractor, divided to five degrees, while not so conspicuous as to interfere with the sketch, is a valuable aid in laying off angles with sufficient accuracy and with a minimum of trouble.

Place the edge of a small triangle or ruler on the desired degree mark and on the center of the circle, slide it along a ruler or by sight to the desired position. The usefulness in laying out traverses is at once apparent.

4. The newly compiled tables will be found to be superior to any in the market.

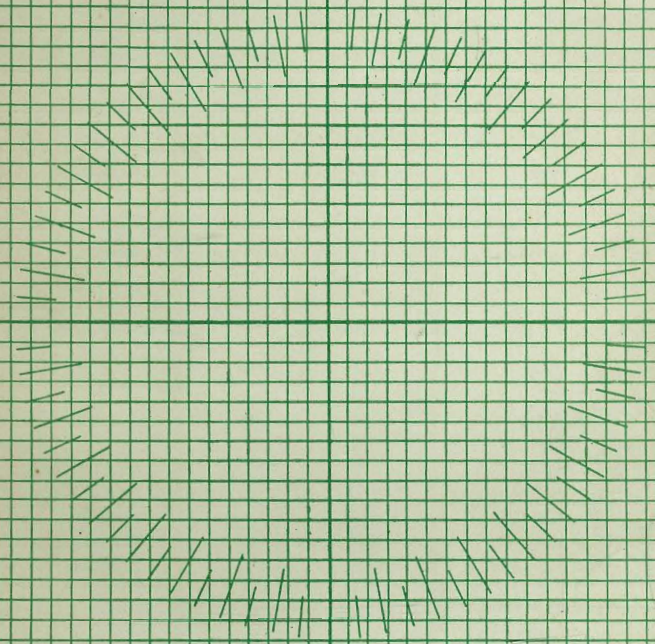
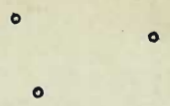
Index

Transit Notes - - - - -	1-21
Upper to Lower Otay Pipe Line Hardbands & Tied - - - -	22
Levels for 16" Pipe Line from 12" Tee on Upper Otay Line 7-5-16 - - -	23



890, 4

65
39
0.5

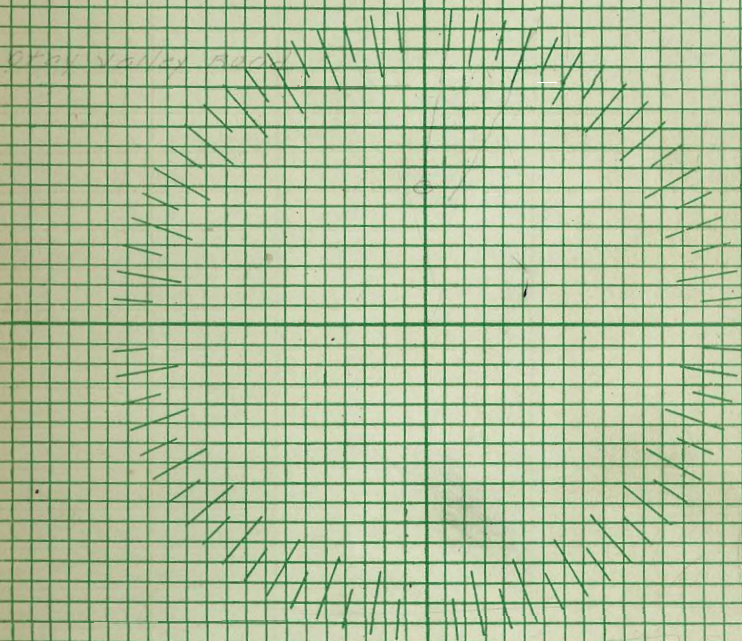


Sto	shots	Dist.	Dir.	North
348422		975'36'	667'	S81°30'W N85°39'W
	2.	971°35'	423'	N89°40'W
950	1.	311°30'	145'	N49°45'W
939472 ^Δ		279°41'	850'	S85°30'W N81°29'W
761	2.	286°25'		N74°32'W
	1.	281°20'	480'	N79°55'W
933411 ^Δ		273°31'	761'	S79°W N87°44'W N20N
776	No 1	254°25'	267'	S73°40'W
324435 ^Δ		265°54'	776'	S71°30'W S84°39'W
3270	No 2	245°56'	147'	S64°43'W
	No 1	325°30'	216'	N35°45'W
321708 ^Δ		248°27'	327'	S54°25'W S67°42'W
9360	No 3	270°23'	113'	S89°08'W
	No 2	239°40'	392'	N61°35'W
	No 1	298°15'	265'	N63°00'W
311772 ^Δ		262°39'	936'	S69°5'W S81°24'W
1120				
300460 ^Δ		281°24'	1112'	S86°55'W N79°51'W
958				
201428				S76°55'W N87°52'W

S76°45'W

3-11-16
Houston
Bellamy
Carroll
Mansfield

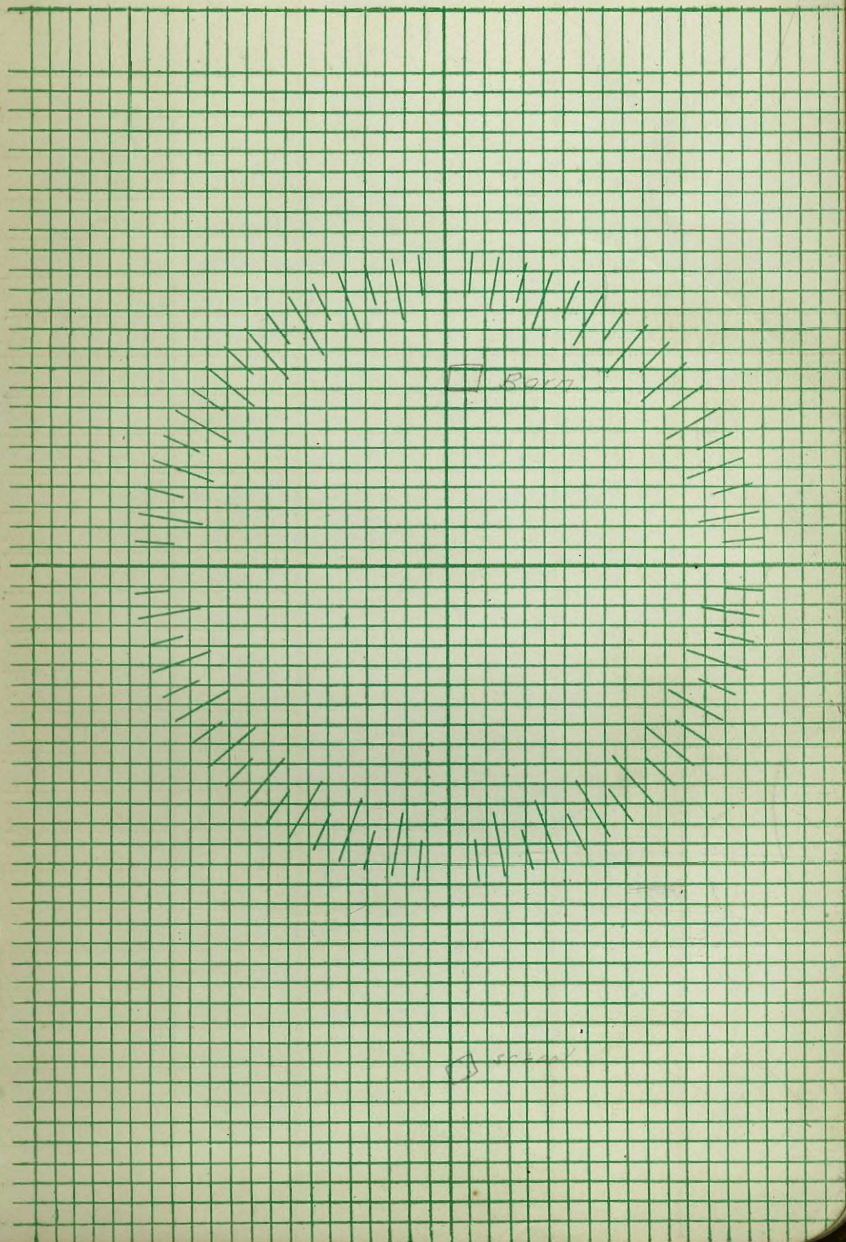
S76°45'W



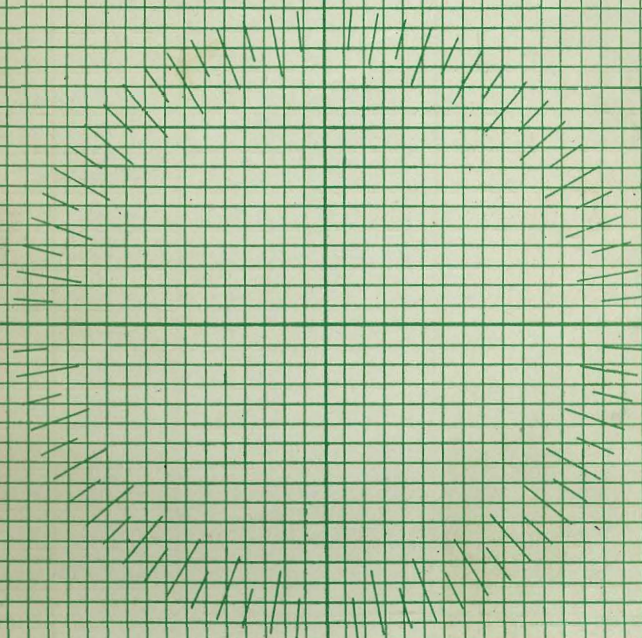
3-12-16
 Huston
 Bellamy
 Correll

2

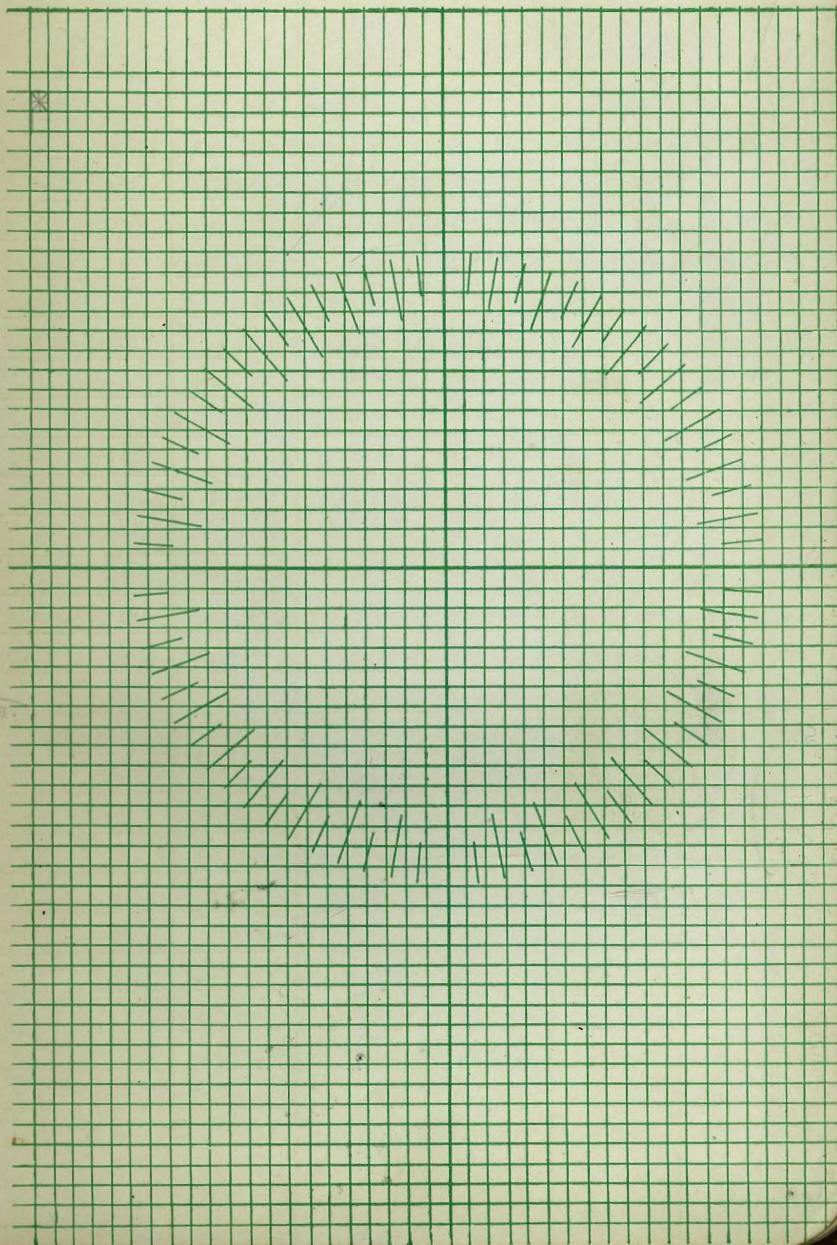
STA	shots	H.M.	DIS	M.C.
	2	273°00'	662	N 87° 50' W
	1	359°		N 2° 15' W
384+83 ^Δ		279°48'	840'	S 48° 33' W
690	2	348°5'	175'	N 19° 20' W
	1	83°45'	510'	N 82° 30' E
397+93 ^Δ		273°36'	690'	N 87° 39' W
			579° 20' W	off H.W.
795	1	267°	90'	S 85° 45' W
370+08 ^Δ		264°37'	785'	S 70° 15' W
				S 83° 22' W
781	1	265°45'	143'	S 84° 00' W
362+77 ^Δ		270°48'	731'	S 69° 33' W
	7	281°50'	778'	N 74° 25' W
	6	274°15'	660'	N 87° 00' W
788	5	284°30'	395'	N 76° 45' W
	4	305°10'	400'	N 55° 05' W
	3	317°35'	292'	N 43° 40' W
	2	297°	150'	N 64° 15' W
	N° 1	2°40'	196'	N 1° 25' E
354+89 ^Δ		275°15'	788'	S 78° 55' W
				N 88° 00' W
	4	270°10'	245'	S 88° 55' W
667	3	303°50'	323'	N 57° 25' W
	2	293°50'	377'	N 67° 25' W
	N° 1	264°30'	380'	S 93° 15' W
349+22				



STO	shots	AZM	DIS	M.C.
	1	67°50'	300'	N66°35'E
419+88 ^Δ		259°01'	357'	564°40'W 577°46'W
	2	149°10'	60'	532°05'E 501°17'
400	1-	39°30'	N3'	N38°15'E
45+88 ^Δ		275°33'	400'	531°45'W 544°18'W
	7-	326°	187'	S44°45'W
	6-	319°25'	187'	N41°50'W
566	11-	342°35'	453'	N18°40'W
	4-	352°15'	671'	N5°00'W
	3-	357°30'	368'	N3°45'W
	2-	7°45'	300'	N6°30'E
	1-	45°40'	213'	N44°25'E
410+22 ^Δ		337°53'	566'	545°30'W 556°37'W
615	2	276°05'	383'	N85°10'W
	N4	69°	406'	N69°45'E
404+07 ^Δ		246°44'	615'	552°20'W 565°29'W 207°17'W
593				
398+24 ^Δ		267°44'	573'	573°15'W 586°29'W
511				
493+23 ^Δ		245°56'	511'	551°30'W 564°41'W
840				
384+83				



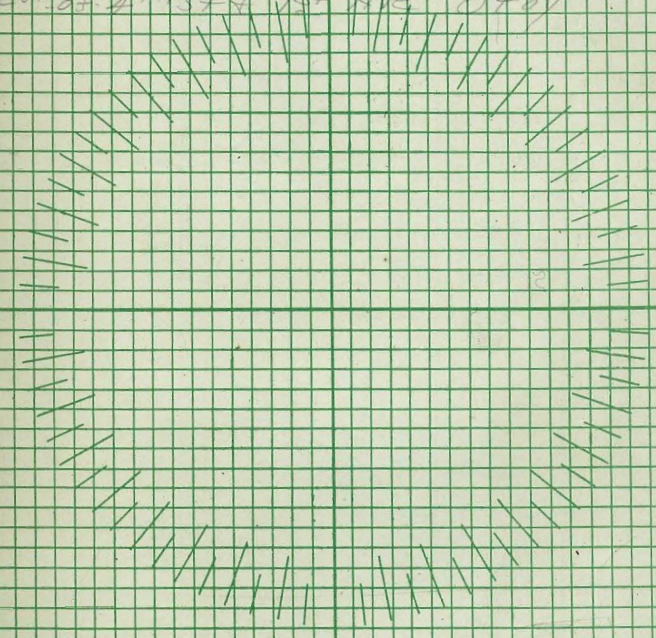
Sta	Chk	B	Dis	M.C.
	3	272°45'	455'	N88°30'W
	2	281°50'	393'	N79°25'W
	1	284°N	285'	N77°00'W
448+75'		280°00'	663'	S85°40'W N81°15'W
	4	272°	378'	S47°45'W
496	13	241°20'	335'	S60°05'W
	42	235°30'	360'	S57°16'W 340'
	1	287°45'	123'	N73°30'W
443+89 ^Δ		236°27'	486'	S47°05'W S55°12'W
530				
	1	327°25'	390'	N32°50'W
438+59 ^Δ		305°10'	530'	N69°W N55°56'W
	3	287°05'	285'	N79°10'W
463	2	308°20'	235'	N52°50'W
	1	276°10'	180'	N85°05'W
433+96 ^Δ		279°01'	463'	S84°15'W N82°14'W
639				
427+57 ^Δ		305°49'	639'	N69°30'N N55°26'W
	3	213°05'	260'	N48°10'W House
412	2	285°10'	180'	N76°05'W
	1	69°35'	90'	N68°20'E House
423+45 ^Δ		295°49'	412'	N80°30'N N67°26'W
359				
448				



3-13-16
 Huston
 Shoemaker
 Bellamy
 Cornell
 Mansfield

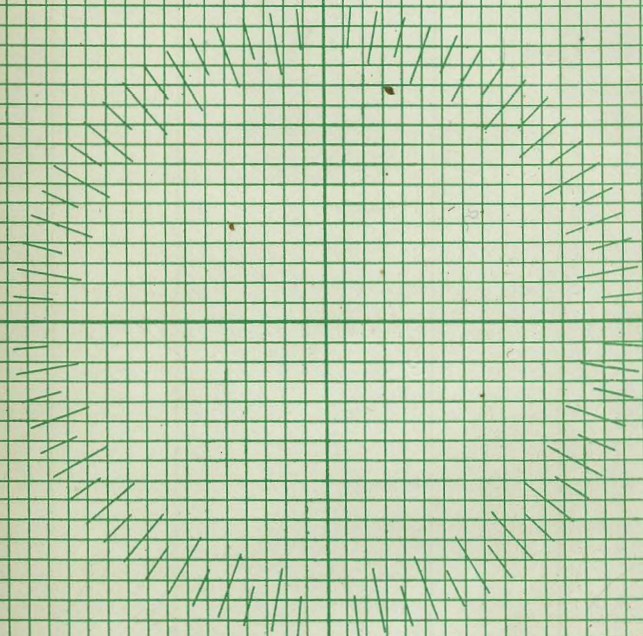
Sta	Shots	A	Dis	MC
728	4	299°40'	442'	N 61° 35' W
	3	309°40'	482'	N 52° 05' W
	2	343°47'	298'	N 17° 28' W
	1	259°53'	78'	S 78° 38' W
497+61		271°12'	728'	S 83° W
892	2	134°05'	103'	S 52° 10' E
	1	299°40'	590'	N 61° 35' W
481+74		293°11'	892'	N 68° 04' W
427	1	280°35'	187'	N 80° 51' W
477+47		295°32'	427'	N 78° 45' W
485				N 65° 43' W
472+62		292°55'	485'	N 74° 30' W
296				N 61° 20' W
469+66		300°05'	296'	N 74° 30' W
608				N 61° 10' W
463+58	1	118°05'	180'	S 58° 10' E
		271°24'	608'	S 77° W
820				N 29° 51' W
453+38		316°41'	820'	N 44° 34' W
653				N 44° 34' W

S.W. COR. OF JAMES ST + 2ND AVE
 N.W. COR. OF JAMES ST + 1ST AVE (170)



3-13-16
 N 44° 34' W
 3-13-16

Sta	Shots	Dist	Dir	Dir
70	1	26640'	243'	S 85° 25' W
538711		205° 50'	710'	S 61° 04' W S 74° 35' W
834	2	398° 20'	325'	N 32° 55' W
	1	31° 30'	70'	N 30° 15' E
529101		387° 18'	834'	N 86° 40' W N 73° 57' W OUT - 100'
523	1	342° 40'	196'	N 18° 35' W
524+52		290° 00'	593'	N 72° 10' W N 66° 15' W
499	2	179° 40'	56'	S 88° 25' E
	1	273° 00'	184'	N 88° 10' W
519+65		277° 41'	490'	N 76° 30' W N 63° 34' W
300	1	26650'	120'	S 85° 35' W
5110+65		226° 00'	591'	S 33° 50' W S 44° 49' W
521	1	216° 30'	200'	S 35° 35' W
511+38		213° 19'	527'	S 49° 15' W S 62° 04' W
602				
505+36		211° 51'	602'	N 83° 24' W N 0017
742	3	262°	507'	S 82° 45' W
	2	176° 30'	30'	S 40° 45' E
	1	90° 35'	190'	N 9° 20' E
497+94		257° 13'	742'	S 62° 55' W S 75° 58' W



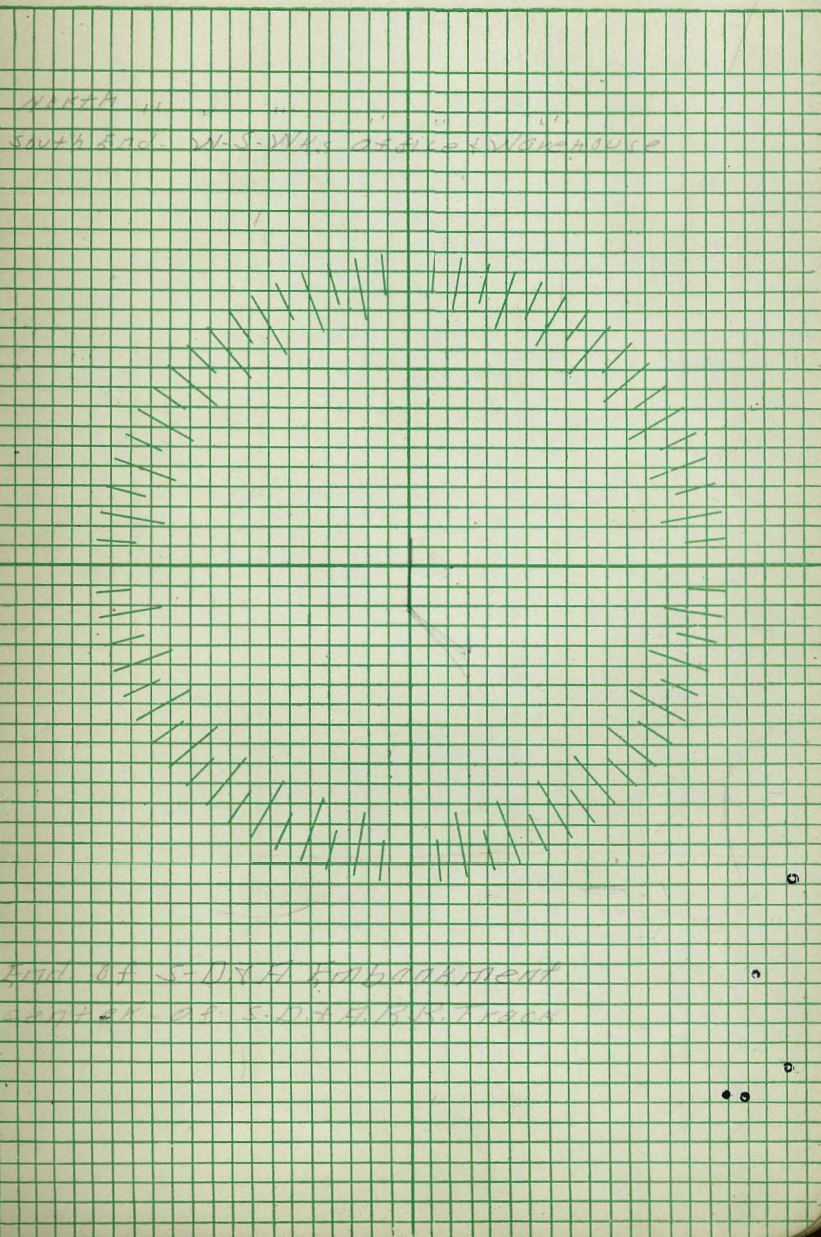
S.E. FIELD DATA

3-14-16

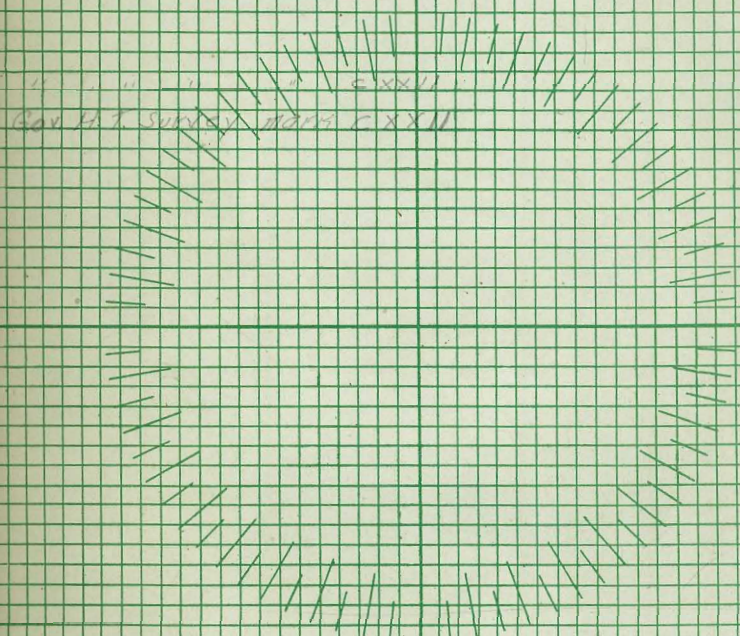
Huston
Shoemaker
Bellamy
Correll
Ranstfield

7

STA	Shots	AZM.	DIS.	ME
	2-	315°	535'	N 16° 15' W.
979	1-	337°	367'	N 24° 15' W.
	2-	315° 01'	190'	N 6° 10' W.
	1-	139° 55'	248'	S 41° 20' E.
593+37'		357° 33'	979'	N 16° 30' W. 247-500'
362				
589+75'		320° 10'	362'	N 54° 10' W. N 41° 05' W.
574	1	345° 55'	372'	N 15° 25' W.
584+09'		332° 02'	374'	N 40° 20' W. N 29° 55' W. 13-14-16
837				
	1	312° 00'	435'	N 8° 25' W.
575+64'		348° 49'	837'	N 40° 10' W. N 12° 46' W.
244				
573+20'		336° 18'	244'	N 37° 05' W. N 24° 57' W.
300				
570+20'		368° 31'	300'	S 74° 20' W. S 87° 16' W.
1620				
	1-	178° 50'	440'	S 87° 35' E.
554+00'		261° 03'	1620'	S 72° 10' W. S 79° 48' W.
835				
	1-	281° 15'	250'	N 74° 20' W.
575+64'		367° 09'	835'	S 65° W. S 86° 53' W.
750				
538+15				



Sta	Shape	H.M.	Dis	MC
			180°32'	230'
	1		158°	487'
644+51 ^Δ		APPROX. H.T. LINE		
787				
138+64 ^Δ			319°57'	787'
			N53°05'W	N41°18'W
122 ^Δ	H.T.	26833'	1202'	+ 387°40'W
	1	299°45'	347'	N61°30'W
626+49 ^Δ		345°41'	1232'	N27°30'W N15°34'W
1096		328°20'	900'	N32°55'W
	1	311°20'	480'	N49°55'W
615+46 ^Δ		320°27'	1076'	N52°20'W N40°48'W
		0°55'		N0°20'W
1230	4-	245°34'	73'	S84°19'W
	3-	241°36'	205'	N19°39'W
	2-	20°10'	85'	N1°50'W
	1-		78'	
608+16 ^Δ		349°24'	1230'	N2°11'W
979				
593437				

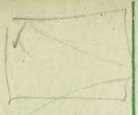


Gov. H.T. Survey 1854 CXXII

WESTERN SOUTHERN WORKS Base line for triangulation
= 5°18'W

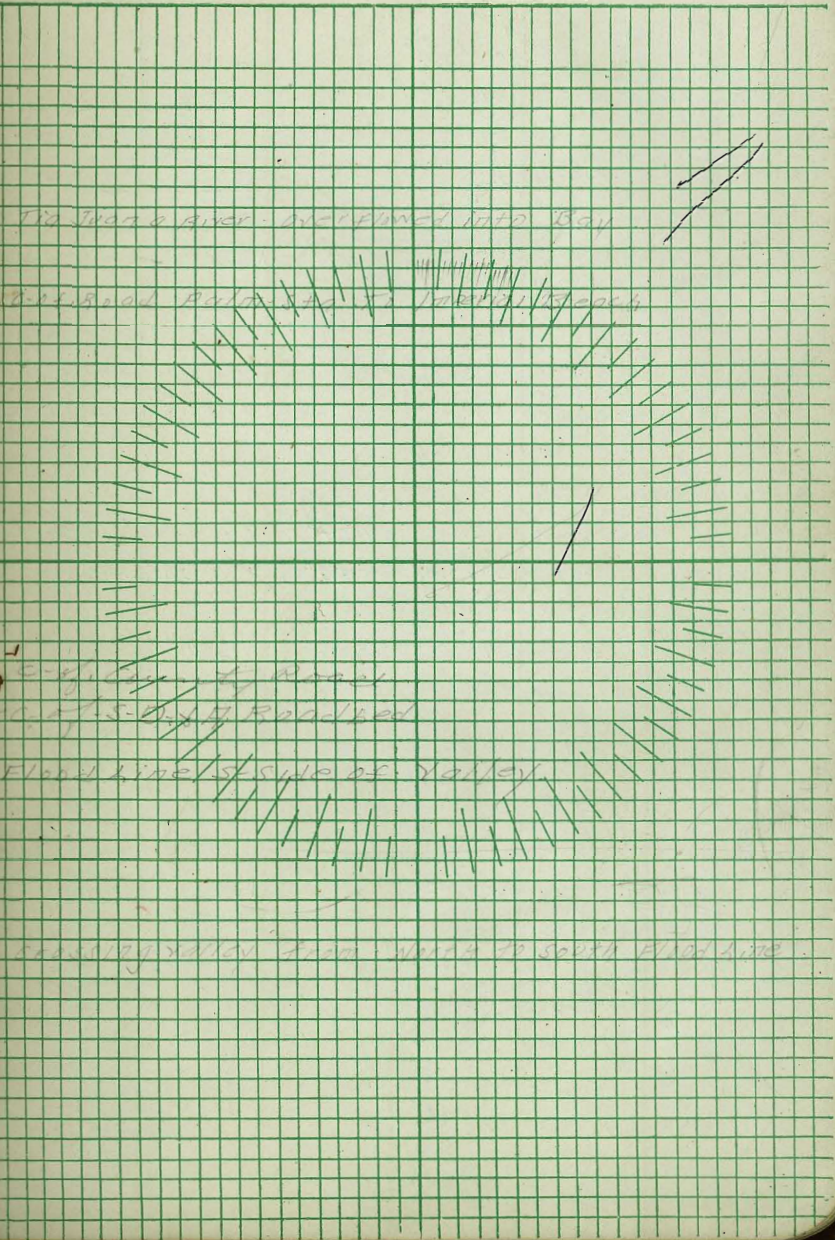
WASH. STATE SOUTHERN NAT. RANCH CO. & M.F.S.
Center line of the "Shattuck"

NEW TRACT



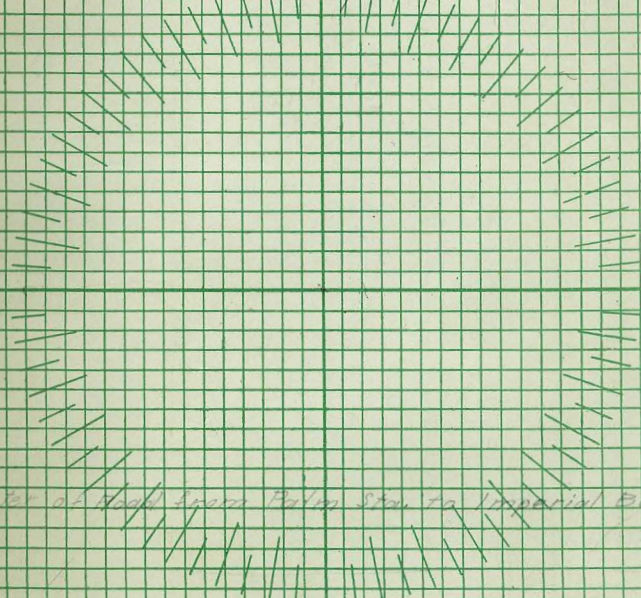
B-5! 72°34' 284' N 41° E

Sta.	chds	Azim	Dist	Acc.
	V	200°	1040'	S 18° 45' W.
	4-	179° 55'	1194'	S 88° 40' E.
	3-	160° 10'	1040'	S 21° 05' E.
	2-	135° 15'	800'	S 46° 00' E.
	1-	126°	740'	S 55° 15' E.
A-7		280° 59'	1264'	588° W N 80° 16' W S 17° 41' W
	2-	170° 30'	690'	S 10° 45' E.
	1-	90° 50'	147'	N 69° 35' E.
A-6		223° 46'	880'	530° 30' W S 42° 31' W S 17° 41' W
				3-15-16 S 68° 22' W
A-5		249° 37'	605'	556° 30' W S 68° 22' W
	4	72° 34'	284'	N 41° E = B L S W 194'
	3	191° 01'	367'	S 9° 50' W.
	2	187° 35'	360'	S 6° 10' W.
	1-	136° 56'	62'	S 44° 49' E.
A-4		258° 39'	1370'	567° W S 77° 24' W.
A-3		175° 01'	870'	518° 05' E S 6° 14' E.
A-2		178° 22'	985'	515° E S 2° 53' E.
A-1		149° 59'	922'	514° 30' E S 2° 46' E.
554+00 ^a		186° 18'	828'	514° W S 5° 05' W.
		277° 08'		



STA	SHOTS	AZIM.	DIS.	M.C.
	4-	212° 19'	1140'	S 91° 04' W
	3-	193° 50'	1660'	S 12° 35' W
	2-	176° 35'	1330'	S 4° 40' E
	1-	134° 50'	660'	S 47° 25' E
H ¹³		317° 26'	1340'	N 55° 30' W
	2-			N 43° 49' W
	1-	182° 35'	1846'	S 1° 25' W
H ¹²		281° 02'	1434'	N 80° 13' W
	2-	265°	757'	S 83° 45' W
	1-	121°	1029'	S 60° 15' E
H ¹¹		282° 15'	1552'	S 89° 30' W
				N 79° 00' W
H ¹⁰		299° 20'	1536'	N 73° 45' W
				N 61° 55' W
	3-	254° 10'	1120'	S 72° 55' W
	2-	218° 25'	1260'	S 37° 10' W
	1-	195° 05'	900'	S 12° 50' W
H ⁹		304° 42'	1678'	N 68° 30' W
				N 56° 33' W
	2-	266° 05'	887'	S 84° 50' W
	1-	288° 40'	237'	N 72° 35' W
H ⁸		264° 37'	1100'	S 71° 30' W
				S 73° 22' W
	6-	233°	910'	S 54° 45' W

Center Roundhead Crater to Fly

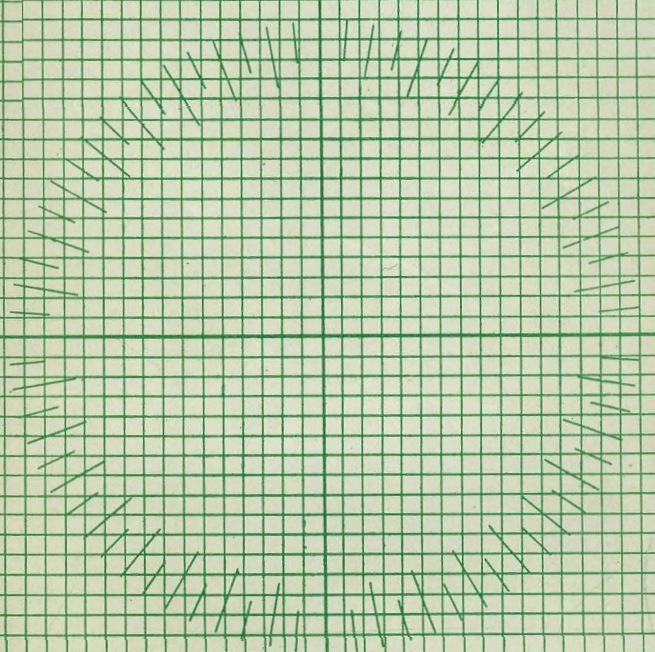


Center of Roundhead Crater to Imperial Beach

Sta. Shots Hsm. Dis. M.C.

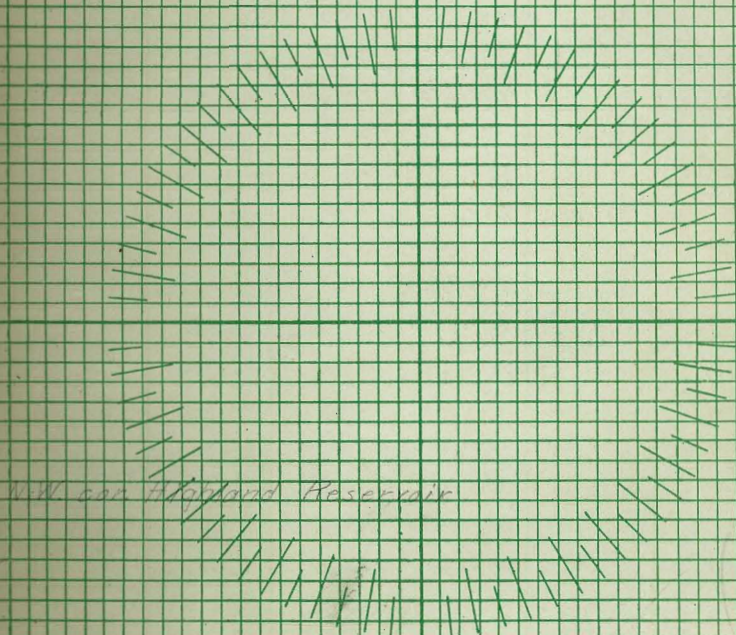
	2-	0° 09'			N1° 06' W
	1-	24° 03'	1050'		N22° 33' E
A ¹⁴		1° 18'	1018'	N11° 40' W	12° 00' N 3-15-76
	5-	284° 12'	970'		N77° 03' E

" " " " " CA-X-7
 Golf Club Tide road C-L-X
 Center Roadbed Curvada Hwy.



B-Line

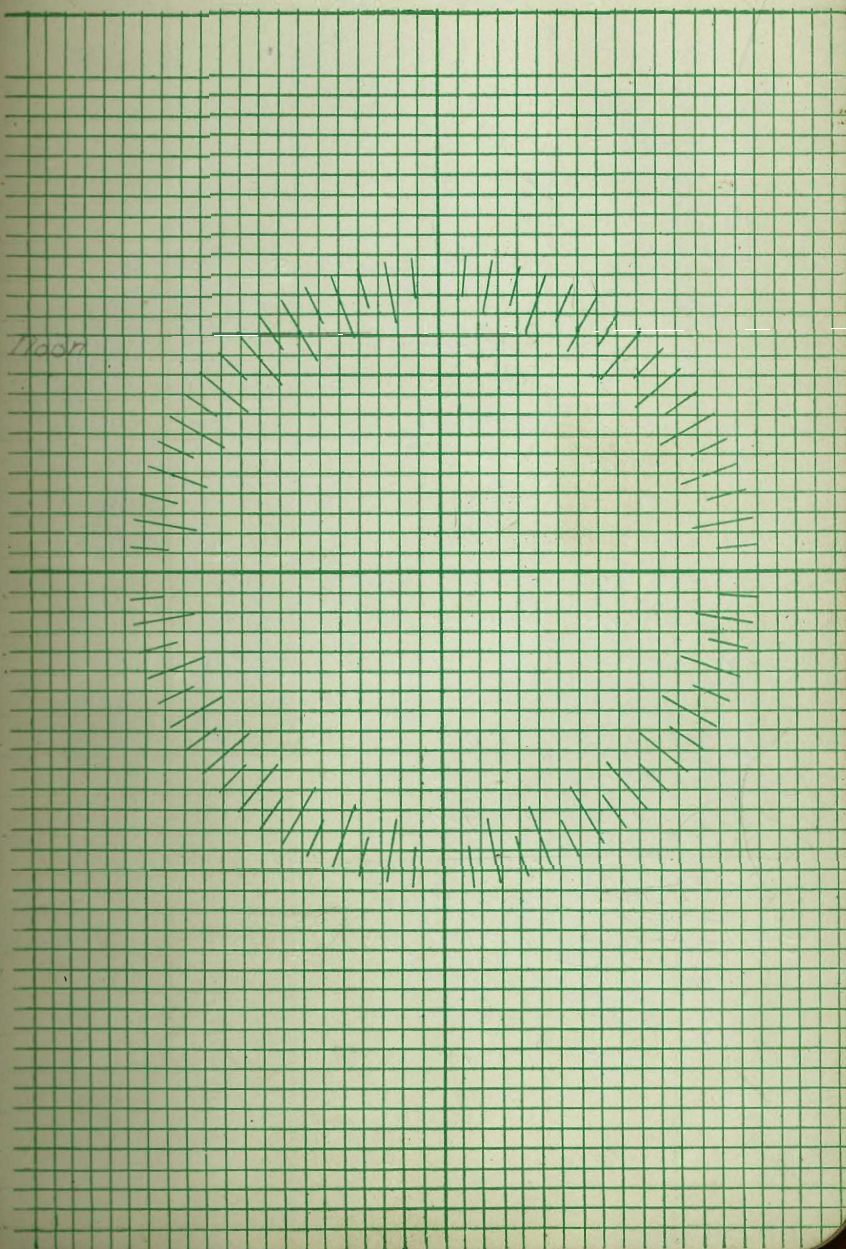
Sta	Shots	Asm.	Dis.	M.C.
	5-	100° 55'	450'	S80° 20' E Rock Crustle
	4-	225° 40'	106'	S44° 25' W
	3-	231° 55'	430'	S50° 40' E
	2-	238° 45'	538'	S57° 30' W
	1-	253° 55'	905'	S72° 40' W
B-6		90° 27'	1521'	N77° 10' E N89° 12' E Off F.L.
	3-	124° 45'	90'	S56° 30' E
	2-	235° 20'	465'	S54° 05' W
	1-	248°	888'	S66° 45' W
B-5		75° 32'	1171'	N74° 47' E N62° 05' E Off F.L.
B-4		81° 20'	1422'	N80° 05' E 3-16-16
	3-	104° 20'	655'	S76° 55' E 3-15-16
	2-	142° 47'		S98° 28' E
	1-	163° 10'	354'	S18° 05' E
B-3		77° 34'	1266'	N76° 19' E Off F.L.
	1-	97° 30'	636'	S82° 45' E
B-2		89° 27'	892'	N52° 15' E N88° 12' E
B-1		86° 52'	719'	N72° 15' E N85° 37' E
A# = B		72° 34'	284'	N71° 19' E



W.W. San Hayward Reservoir

B-Line

Sta.	Shots	Asm.	Dis.	M.C.
	2-	92° 15'	490'	S 89° 00' E
	1-	140°	181'	S 41° 15' E
B-12		65° 13'	938'	N 52° E N 63° 58' E Off Fl.
	3-	94° 20'	700'	S 86° 55' E
	2-	107° 35'	540'	S 73° 40' E
	1-	156° 50'	215'	S 24° 25' E
B-11		81° 35'	1290'	N 68° 15' E N 80° 20' E Off Fl.
	4-	101° 55'	1110'	S 79° 20' E
	3-	109° 30'	770'	S 71° 45' E
	2-	133° 40'	230'	S 47° 35' E
	1-	271° 40'	780'	N 89° 35' W
B-10		90° 36'	1460'	N 77° 20' E N 89° 21' E Off Fl.
	1-	207° 15'	65'	S 26° 00' W
B-9		95° 28'	1238'	N 82° E S 85° 47' E Off Fl.
	1-	182° 55'	176'	S 1° 40' W
B-8		103° 16'	1284'	90° E S 79° 52' E Off Fl.
	5-	97° 20'	368'	S 73° 55' E
	4-	156° 35'	112'	S 24° 40' E
	3-	193° 55'	204'	S 12° 40' W
	2-	226° 25'	173'	S 45° 10' W
	1-	264° 18'	562'	(S 82° 53' W) 4x205' marked Cor.
B-7	?	394° 20'	995'	N 80° 50' E Off Fl.



HUSTON
SHEMMECHER
BULLAMY
CORVELL
MANFIELD

15

B-Line

Sta.	Shots	Hsm.	Dis.	M.C.
	1-	126° 10'	265'	S55°05'E
B-25		90° 40'	2024'	N77°30'E N89°25'E
	1-	122° 50'	457'	S58° 25'E
B-24		110° 39'	1576'	S89° 55'E S90° 36'E
				S
B-23		96° 45'	1042'	N83°15'E S84°30'E
	1-	337° 31'	352'	N23° 46' W
B-22		92° 07'	630'	N78° 50'E S89° 08'E
B-21		99° 49'	1516'	N86°30'E S81° 26'E
	3-	118° 40'	260'	S62° 35'E
	2-	242° 10'	435'	S60° 55' W
	1-	250° 40'	430'	S69° 25' W
B-20		104° 32'	1228'	S88° 35'E S76° 43'E
	1-	83° 25'	405'	N82° 10'E
B-19		77° 25'	1196'	N64° 30'E N76° 10'E
	6-	89° 15'	1200'	S87° 00'E
	5-	93° 50'	1165'	S87° 25'E
	4-	101° 20'	514'	S79° 55'E
	3-	93° 10'	273'	S80° 05'E
	2-	54° 20'	390'	N53° 05'E
	1-	5° 50'	57'	N4° 25'E
B-18		87°	1420'	N75° 45'E N85° 45'E

283 Post 4 E & D.V.B. West

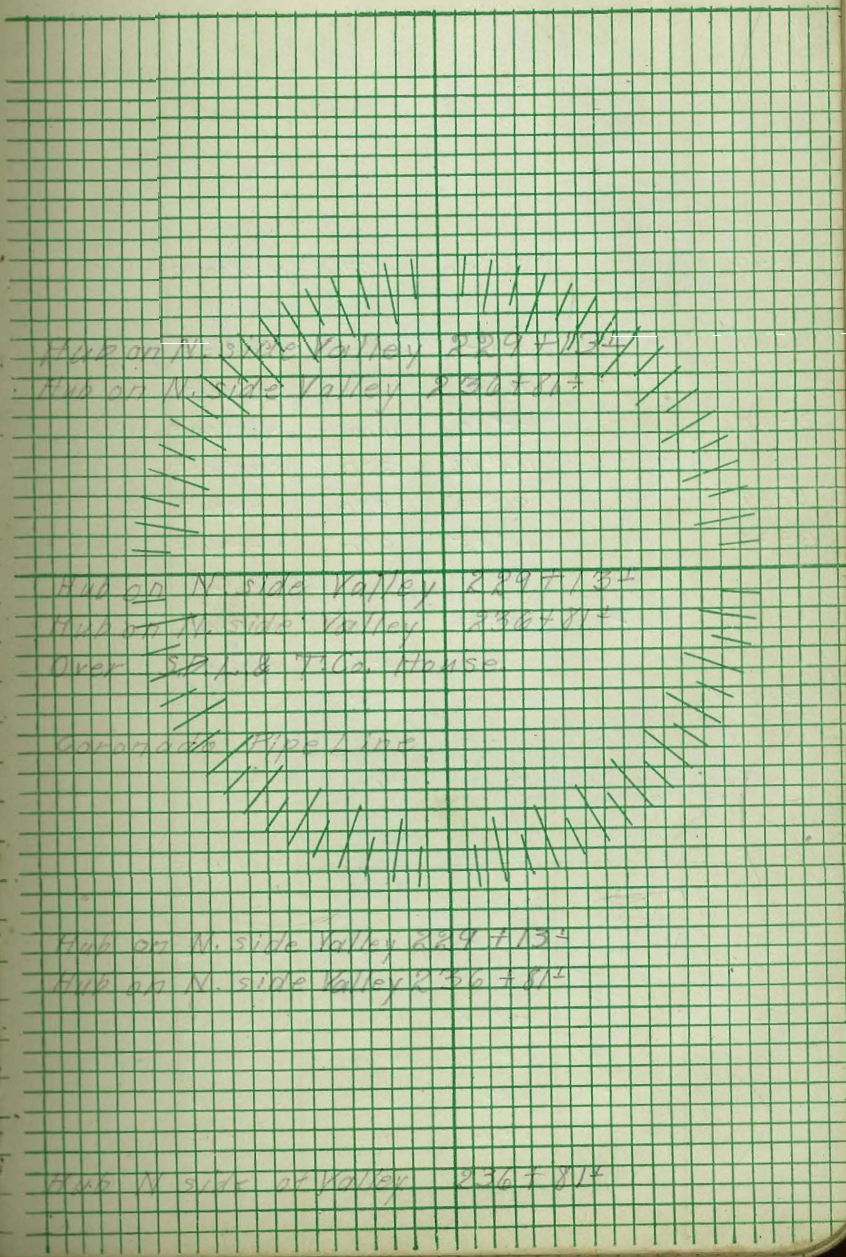
In 1874 crossing Otay Valley

Mrs. Howells House

DANAH'S Wine Cellar
WOODMAN

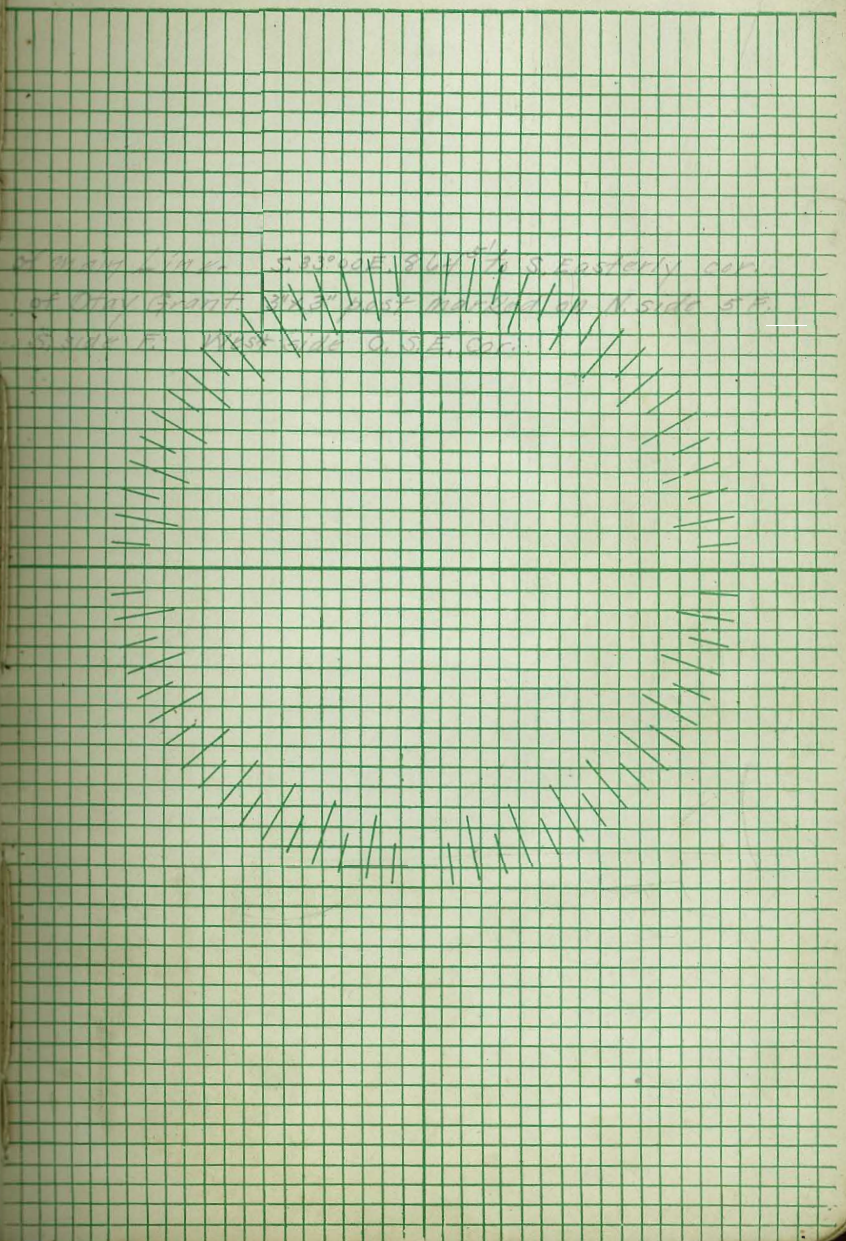
B-Line

Sta	shots	Asm	Dis.	M.C.
	1-	80°38'	400'	N 68°15'E N 79°23'E
B-30		50°27'	1926'	N 38°00'E N 49°12'E
	2-	77°	1220'	N 75°45'E
	1-	80°15'	645'	N 79°00'E
B-29		73°22'	1384'	N 59° E N 72° 07'E
	2-	284°07'		N 77°05' W
	1-	283°24'		N 77°51' W
B-28		81°47'	2436'	N 68°40'E N 80° 32'E
	4-	92°	1020'	S 89°15' E
	3-	150°40'	253'	S 31°35' E
	2-	310°03'		N 51°12' W
	1-	289°02'		N 72°13' W
B-27		83°59'	1576'	N 71°15' N 82°44'E
	7-	122°20'	15'	S 58°55' E
	6-	97°25'	725'	S 83°50' E
	5-	107°10'	380'	S 74°05' E
	4-	146°55'	146'	S 34°20' E
	3-	227°20'	300'	S 46°05' W
	2-	22°08'		N 20°53' E
	1	336°28'		N 24°45' W
B-26		89°10'	1276'	N 76°30'E N 87° 55'E
	4-	104°45'	1752'	S 76°30' E
	3-	110°45'	700'	S 70°30' E
	2-	59°56'		N 57°41' E

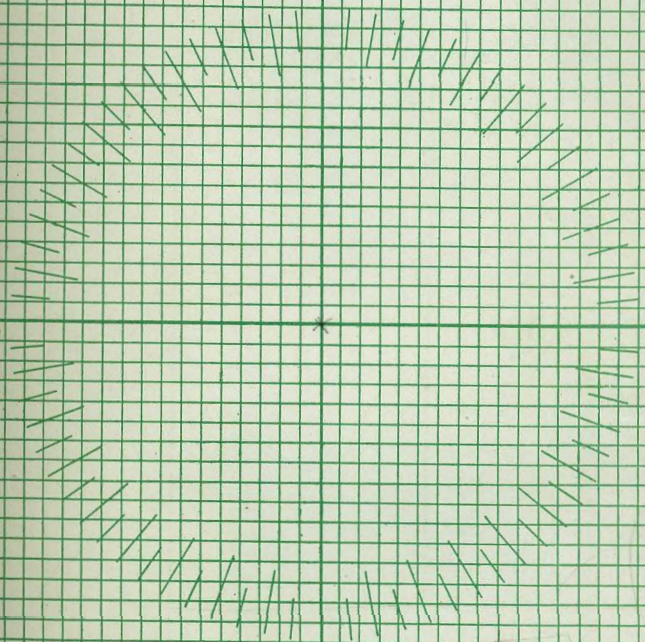


B-Line

Sta.	Shots	Asm.	Dis.	M.C.
B-47		339°29'	407	N.32°00'W = 0+00
B-41		67°51'	0+72	N.56°15'E N.66°36'E
	1	116°19'	410	S.70°30'E S.64°56'E
B-40		55°36'	1410	N.42°30'E N.54°21'E
	1	104°46'	330	S.89°45'E S.76°29'E
B-39		86°43'	980	N.73°30'E N.85°28'E
B-39		91°55'	860	N.78°30'E S.89°20'E
	2	153°19' 227°59'	170	S.40°00'E S.27°56'E
	1	227°59'	370	S.35°00'W S.46°14'W
B-37		87°18'	719'	N.73°00'E N.86°03'E
B-36		70°13'	760'	N.57°15'E N.68°58'E
B-35		37°47'	404'	N.24°45'E N.36°32'E
B-34		61°42'	1546	N.48°30'E N.60°10'E
B-33		59°33'	1610	N.47°00'E N.58°18'E
B-32		65°23'	1517	N.53°00'E N.64°08'E
	2-	83°20'	430	N.70°45'E N.82°05'E
	1-	129°42'	314	S.62°30'E S.51°33'E
B-31		73°46'	934	N.61°30'E N.72°31'E



W. 1/4 Sec. 17 T. 14 N. S. 23°00' E. 1864' to S. Easterly cor.
 of City Grant. 23°2' West Mallory on N side S.P.
 S. 37° E. West side of S.E. Cor.



9+24.7 P.T. 6°00'

9+00 4°41'

+75 3°31'

+50 2°16'

+25 1°01'

8+04.7 P.C. 10° Lt. Δ=12°00' L=120.0 T=60.22

7

6

5

4

3

+80 P.T. 14°00'

+50 12°30'

+25 11°15'

2+00 10°00'

+75 8°45'

+50 7°30'

+25 6°15'

1+00 5°00'

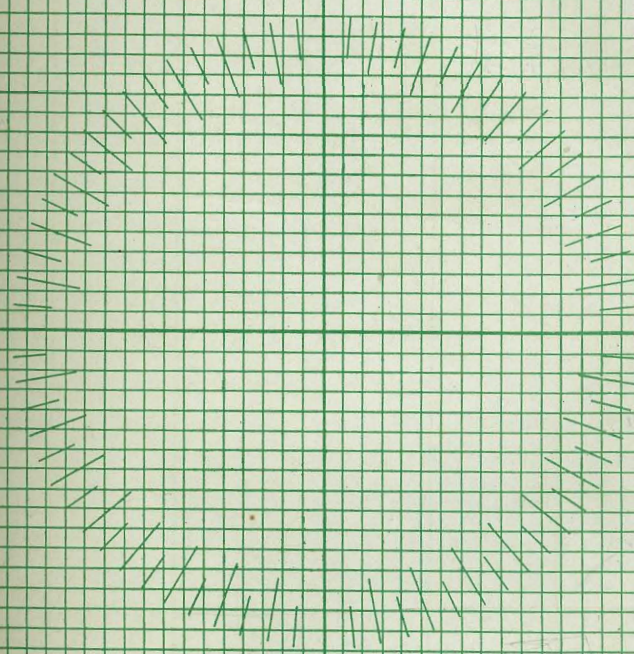
+75 3°45'

+50 2°30'

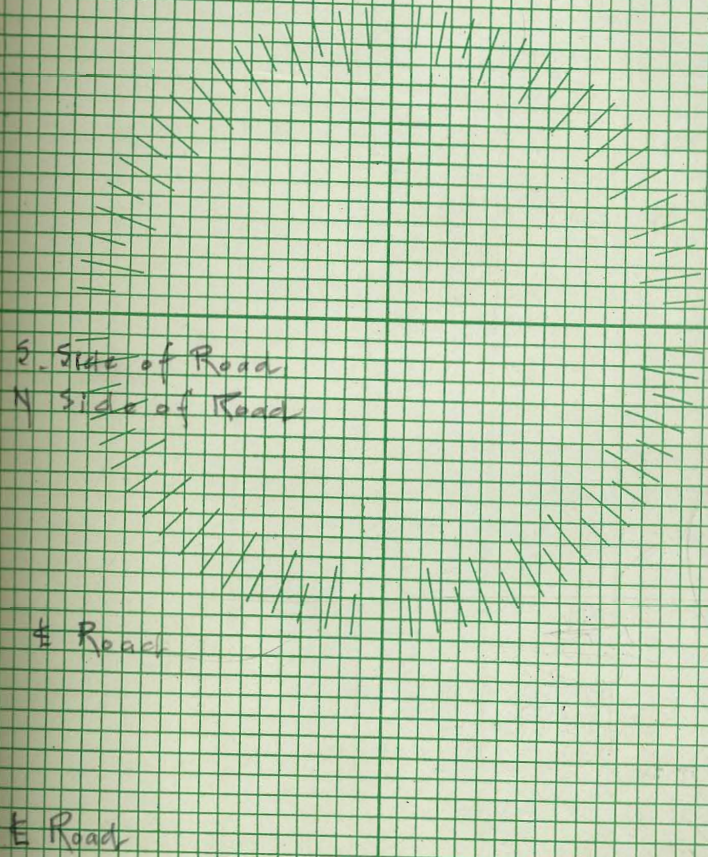
+25 1°15'

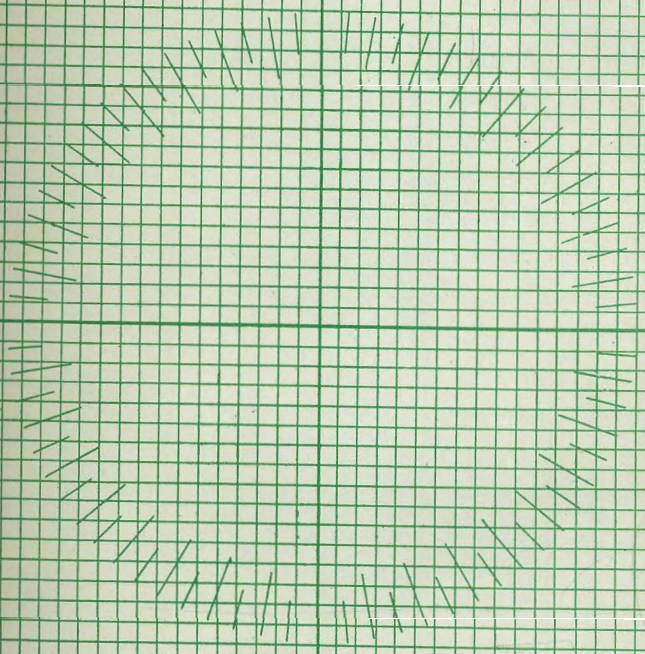
0+00 P.C. 10° Lt. Δ=28°00' L=280.00

T=142.86



17+55.87 P.T. 17°31'
 +50 16°55'
 +25 14°25'
 17+00 11°55'
 +75 9°25'
 +50 6°55'
 1+25 P.C. 4°25'
 16+00 1°55'
 15+80 B.P.C. 20°Rt Δ = 35°00' L = 175.00 T = 90.33
 +50
 14+35 P.O.T.
 14+00
 +65
 +30
 13
 +50 P.O.T.
 12+00
 +85
 +50
 11+00 P.O.T.
 +50
 10+00





+65.8 24" Gate Valve
 18+57.22 P.T.
 +50 10° 10'
 +25 6° 25'
 18+00 2° 40'
 17+82.22 PC 30° RT Δ=22° 56' L=75° T=38.0

Upper to Lower Otay
Pipe Line.

Sta	To Sta	No. Bards	Head	
91+20	91+50	58	70	
91+50	92+17	119	60	
92+17	94+10	382	70	
94+10	94+61	114	80	
94+61	95+15	137	90	
95+15	95+75	177	100	
95+75	96+17	135	110	
96+17	96+70	147	100	
96+70	97+23	133	90	
97+23	97+87	143	80	97+87 ^s Air Valve
97+87	97+96	420	70	
97+96	100+25	50	75	24" PIPE = Sta 97+96 to 100+25
100+25	101+50	281	100	
101+50	111+10	1793	75	103+09 ^s Air Valve
111+10	112+30	249	100	
112+30	114+89 ^s	478	75	114+89 ^s End of 44' Stave
114+89 ^s	134+38		75	
134+38	135+37 ⁷		100	
135+37 ⁷	137+36 ⁷		75	
137+36 ⁷	138+79		100	
138+79	139+44 ⁷		75	
139+44 ⁷	141+20		100	
141+20	142+96		75	
142+96	145+62		100	
145+62	146+64		150	

Copied into Book #92
by L.E.B.

- 578.8 to relay -

- Note -

24" C.S. Begins 99+96.0

M. Borden. Sta. 119+57^s = Air Valve

132+42 = Air Valve

135+73^s = Air Valve

138+02 = Blow Off / 139+43 = Air Valve

140+39 = Blow Off

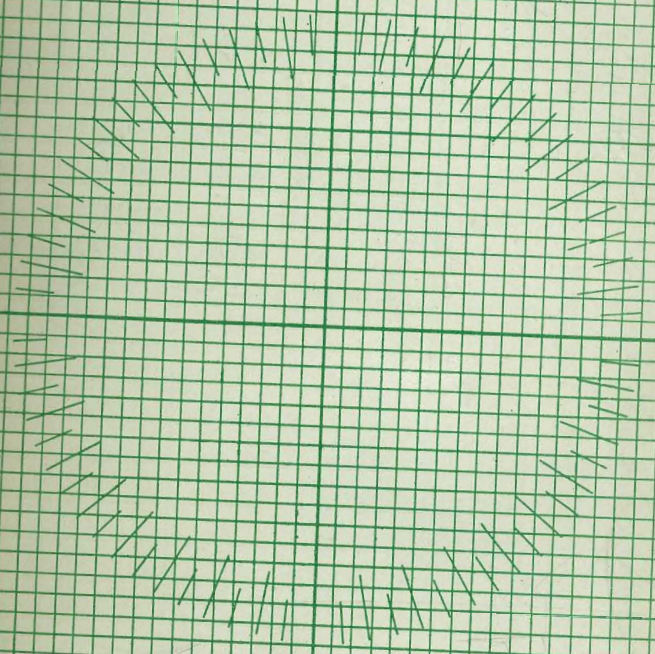
142+14⁷ = Air Valve

146+64 = O+00 of New Line

Levels for 16" Pipe-line

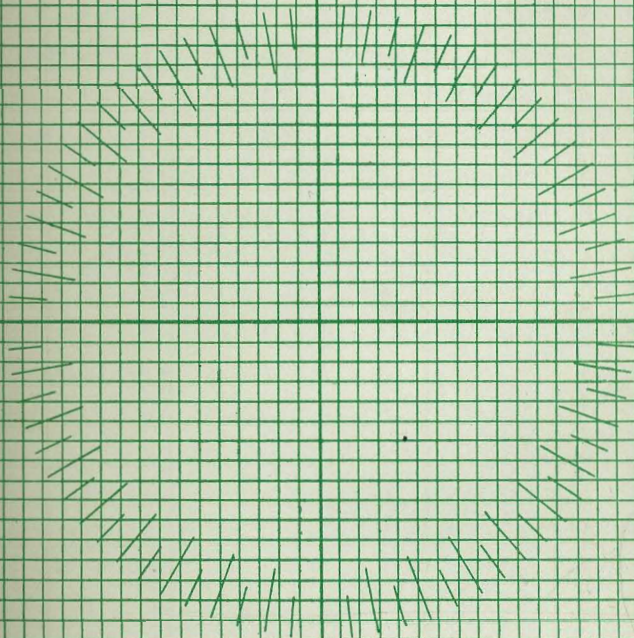
	165	101.65		180.00
0+02 ⁶⁷			1.00	100.65
0+10			2.00	99.65
0+20			2.25	99.40
0+30			2.28	99.37
0+40			3.53	98.12
0+50			4.91	96.74
0+60			4.65	97.00
0+70			5.42	96.23
0+80			5.77	95.88
0+90			6.80	94.85
1+00			8.00	93.65
1+10			8.91	92.74
+20			9.84	91.81
	0.93	92.74		
+30			1.44	91.30
+40			2.05	90.69
+50			2.13	90.61
+60			2.58	90.16
+86			7.37	85.37
2+00			9.26	83.48
+20			12.80	79.94
+60			10.60	82.14
3+00			6.21	86.53
	6.33	92.86		
+30			7.32	85.54

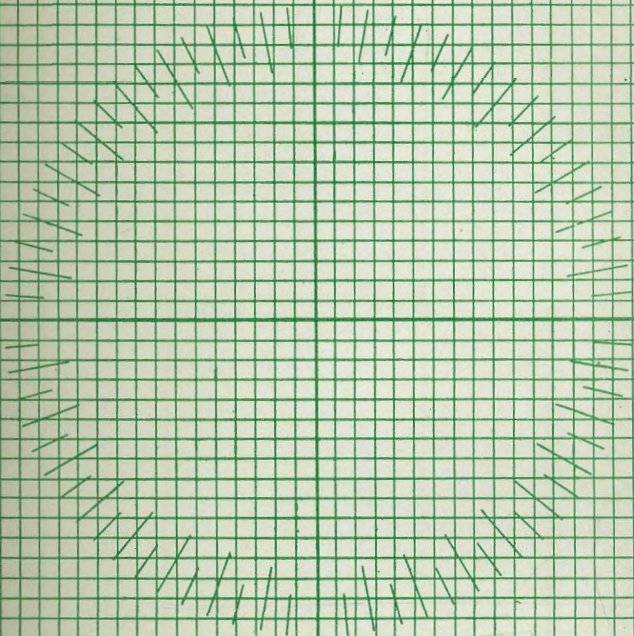
from 12" Tee on Upper Otay
Line 7-5-16
wueste
Clark
= Assumed Elev of bell of Valve
(Invert)

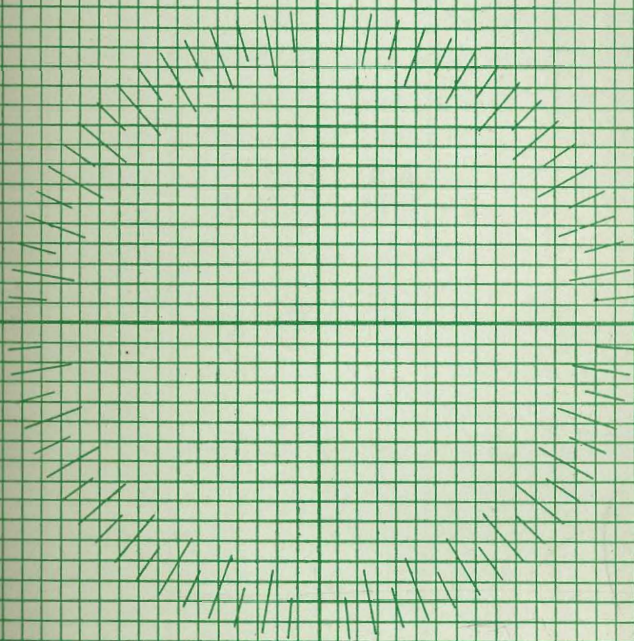


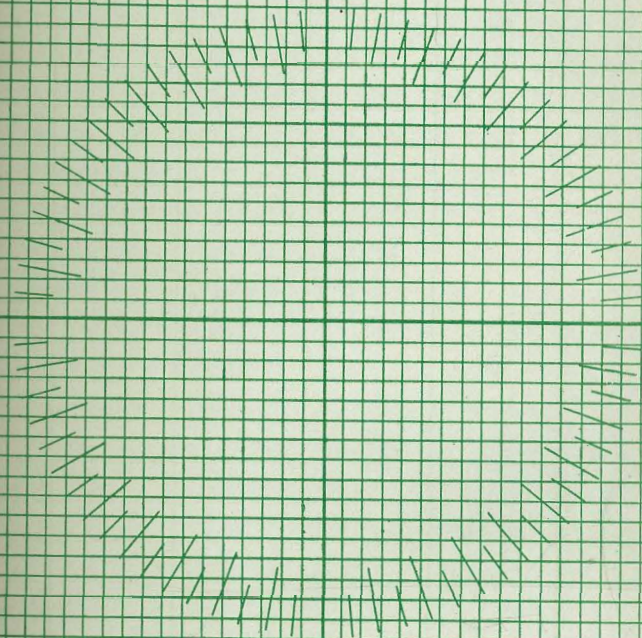
		9286		
4+00			608	86.78
+70			370	89.16
5+00			297	89.89
6+00			896	83.90
	070	8460		
6+40			972	74.88
	010	7498		
+72			514	69.84
			935	65.63
	192	67.05		
7+00			633	60.72
			654	60.51
	10.83			

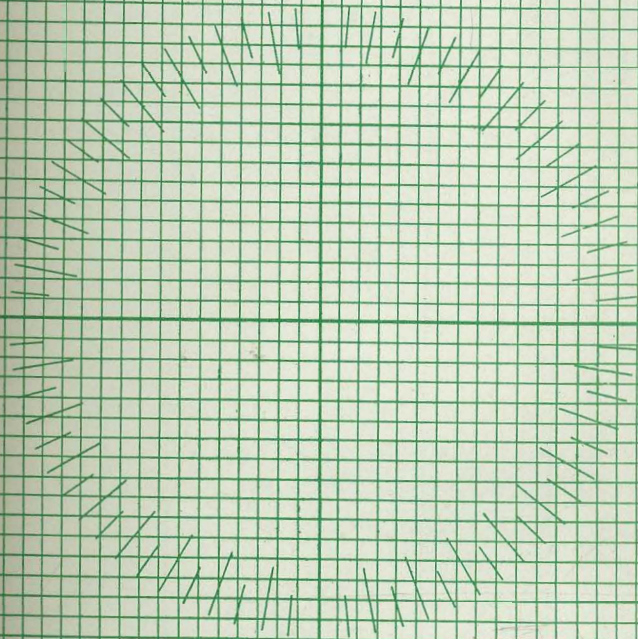


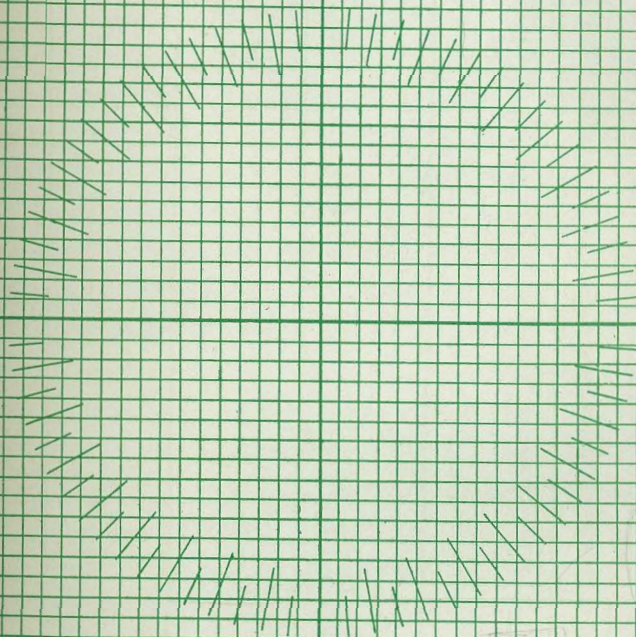


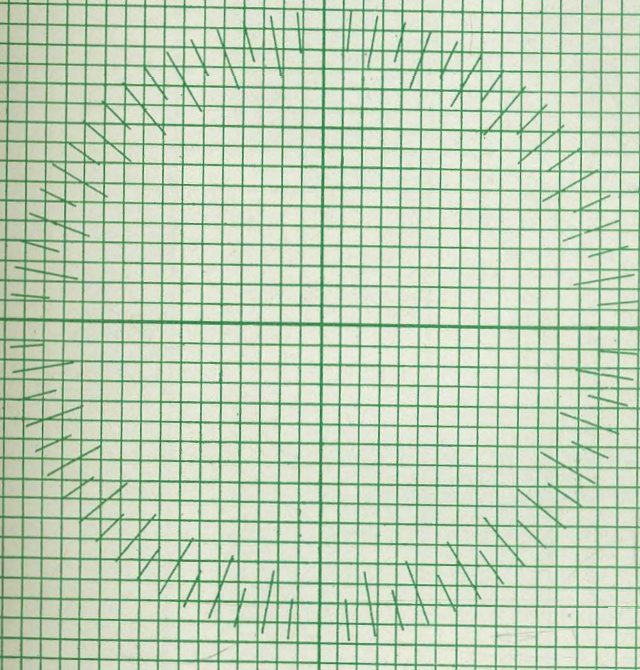


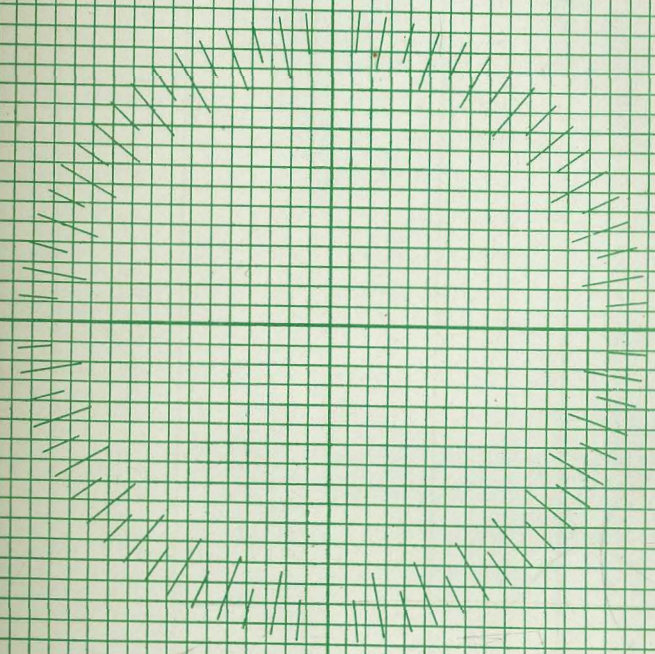


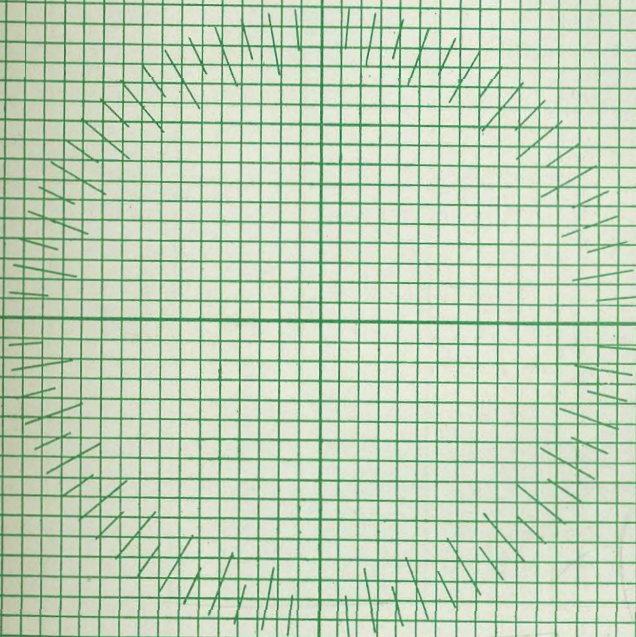


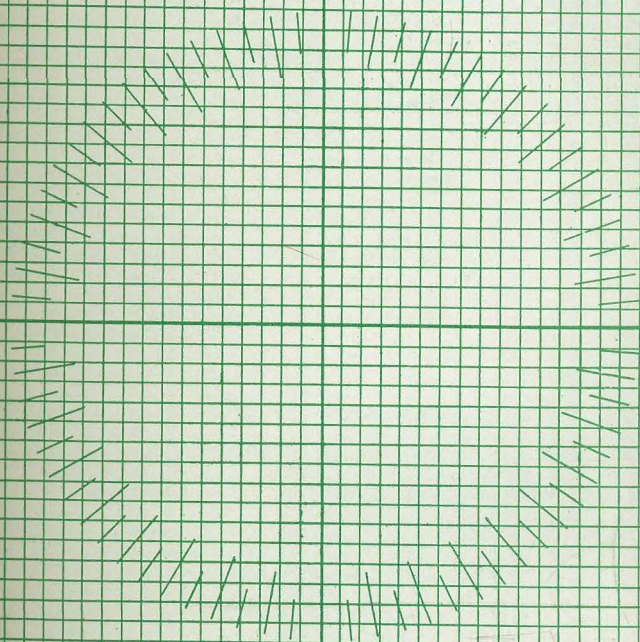


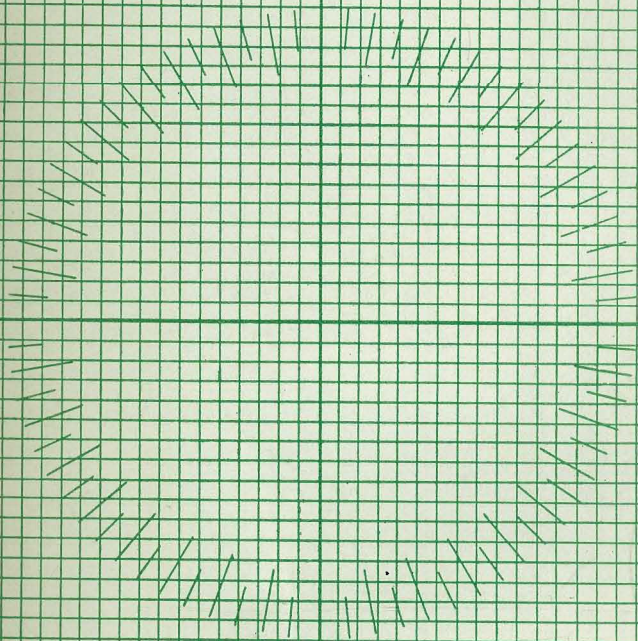


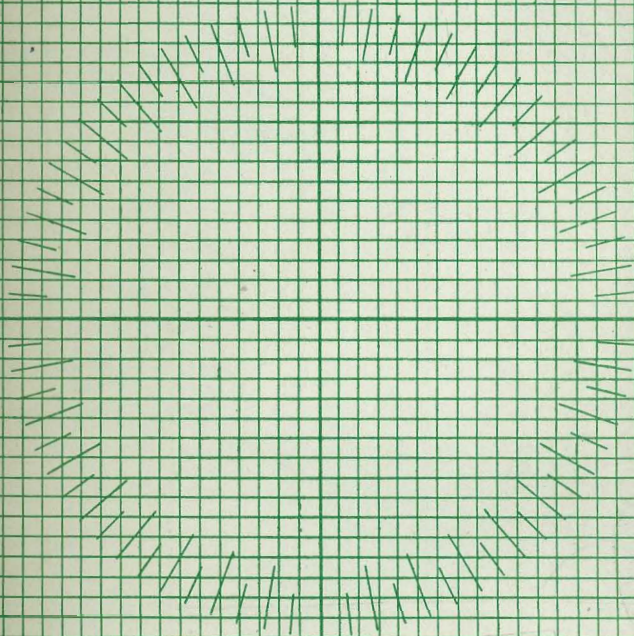


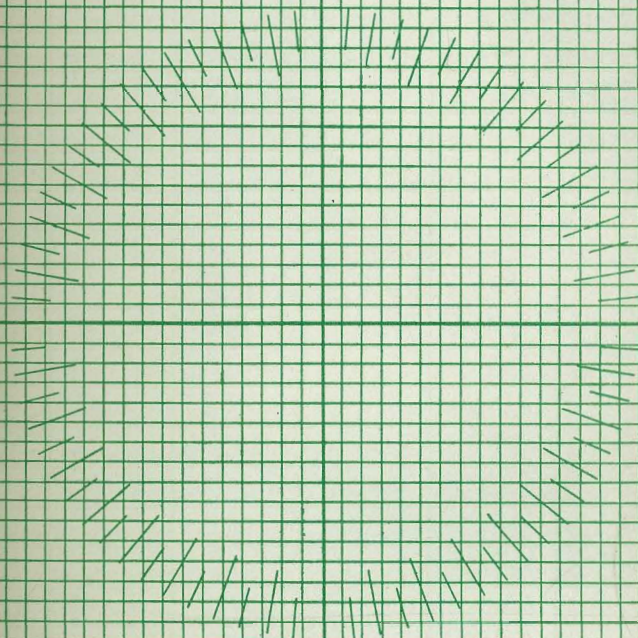


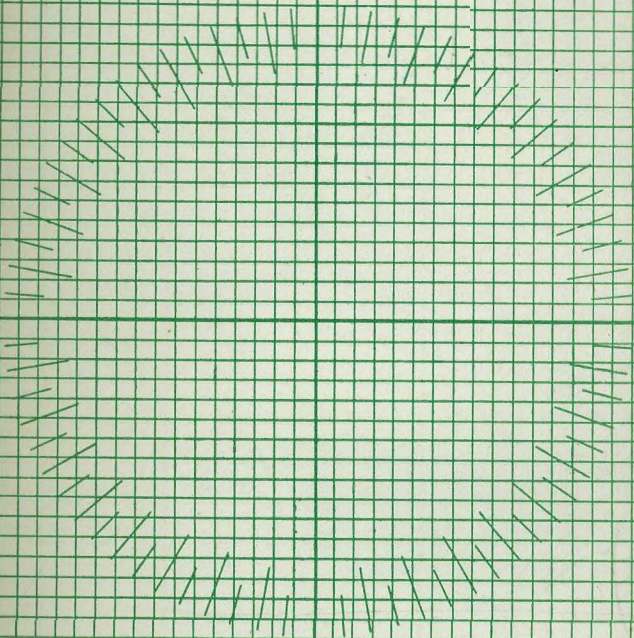


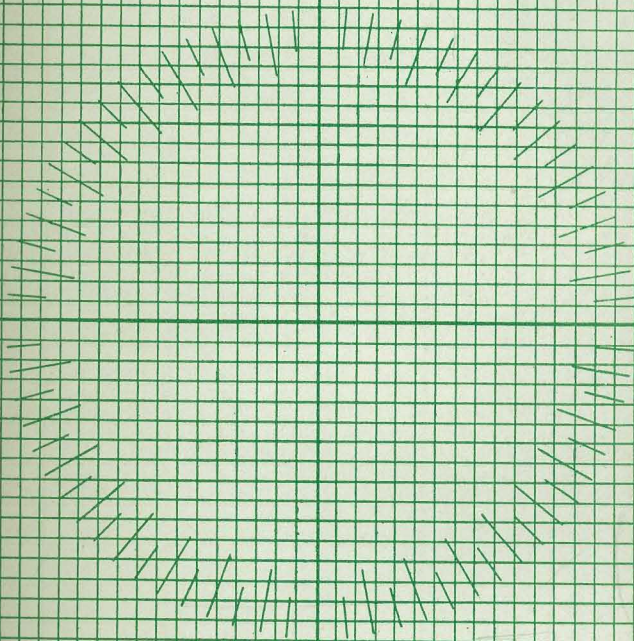


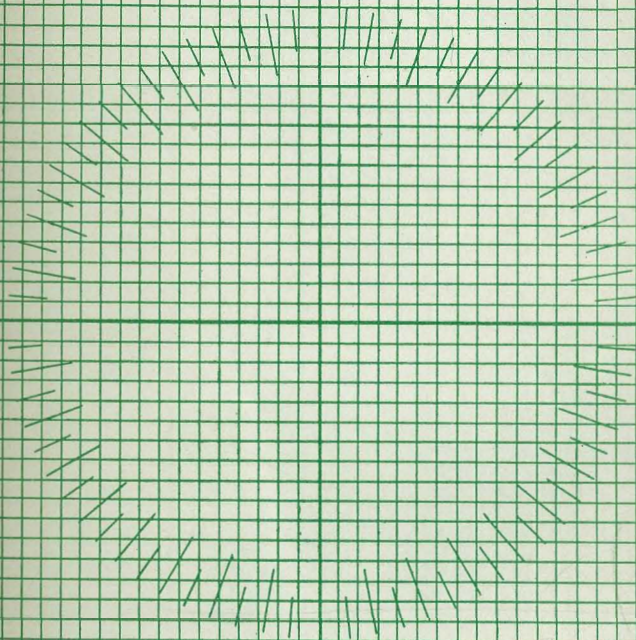


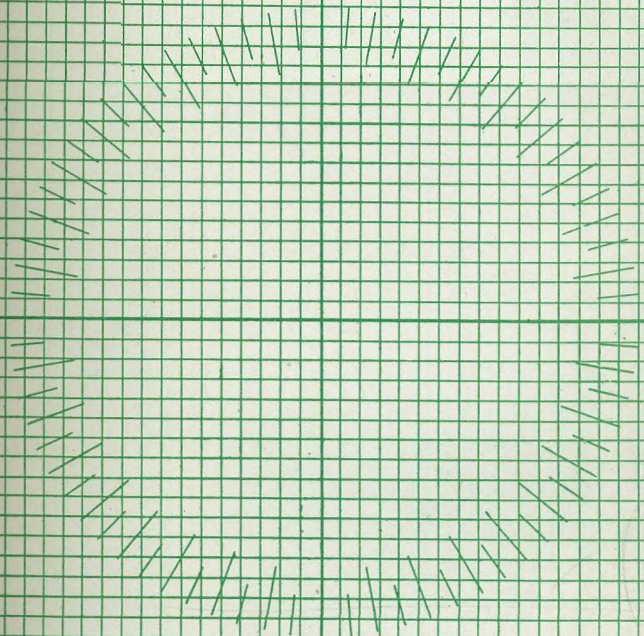


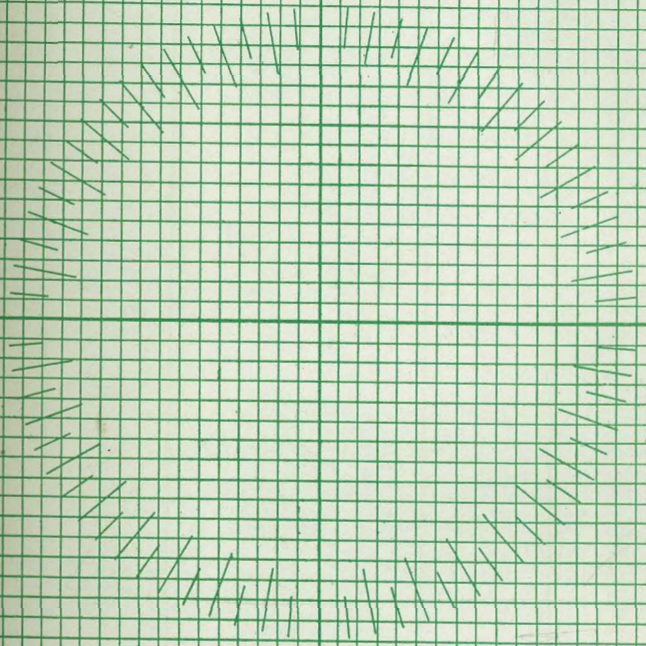


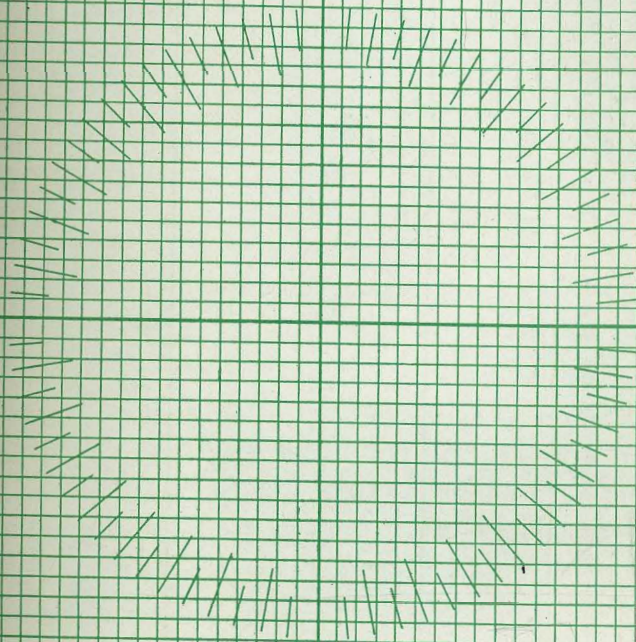


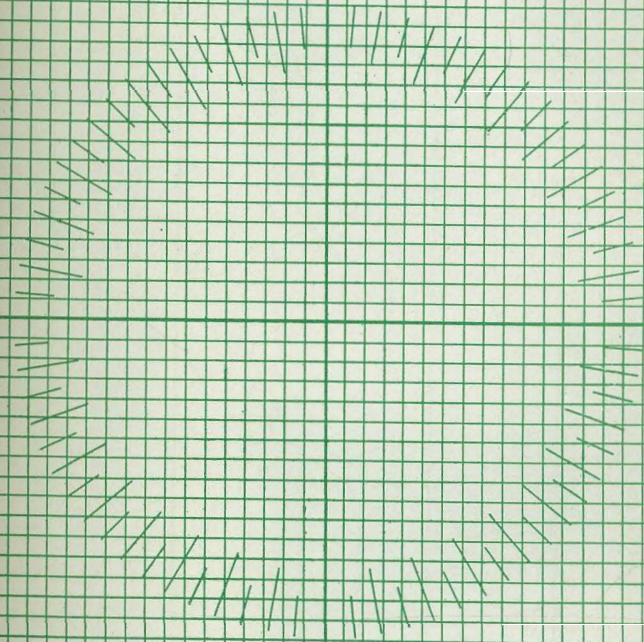


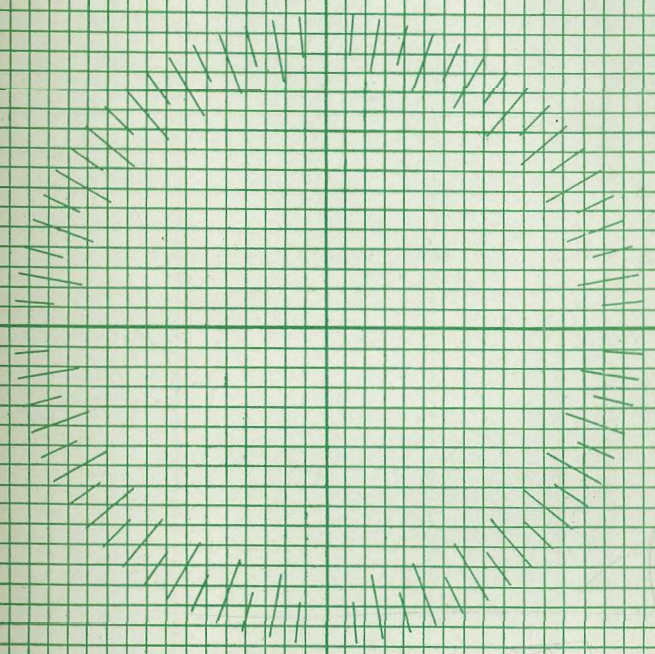


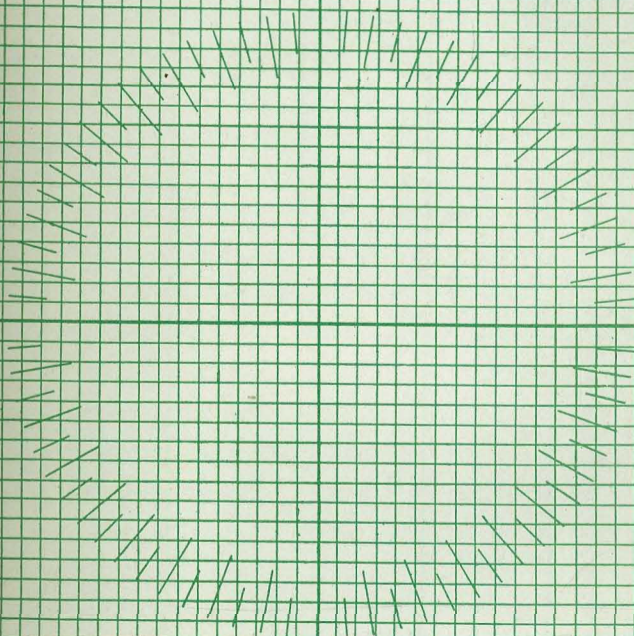


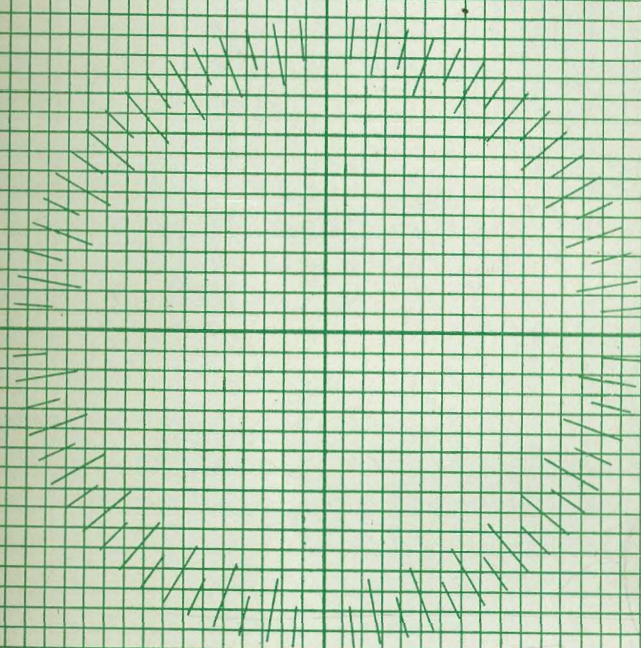


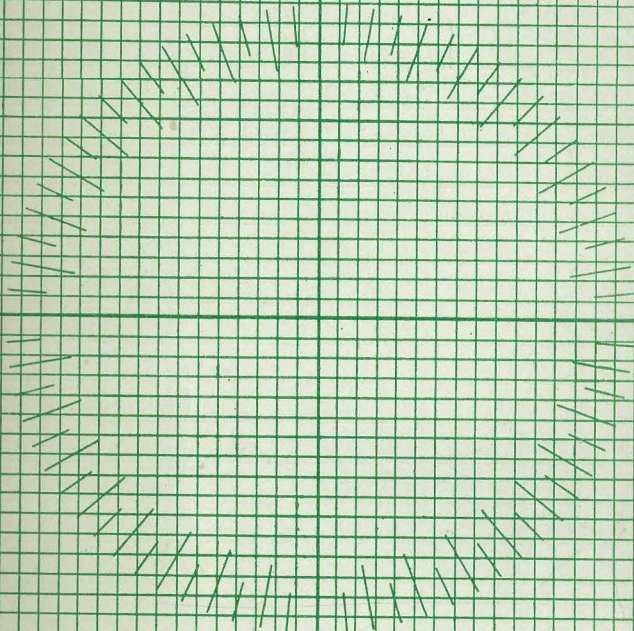


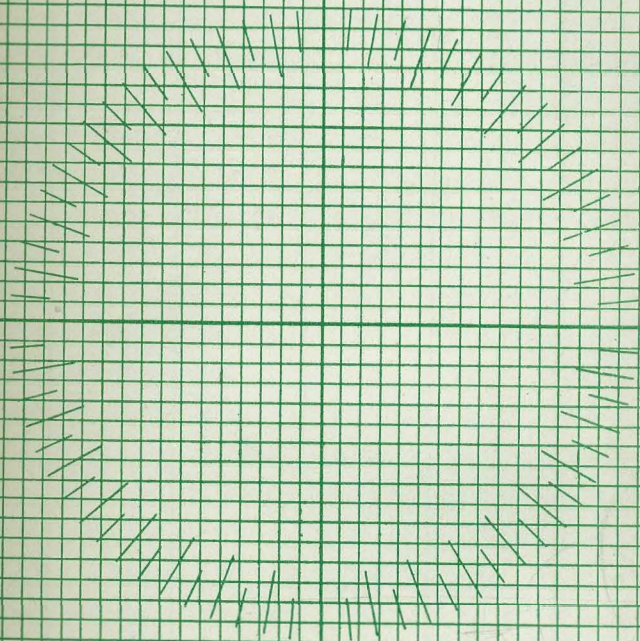


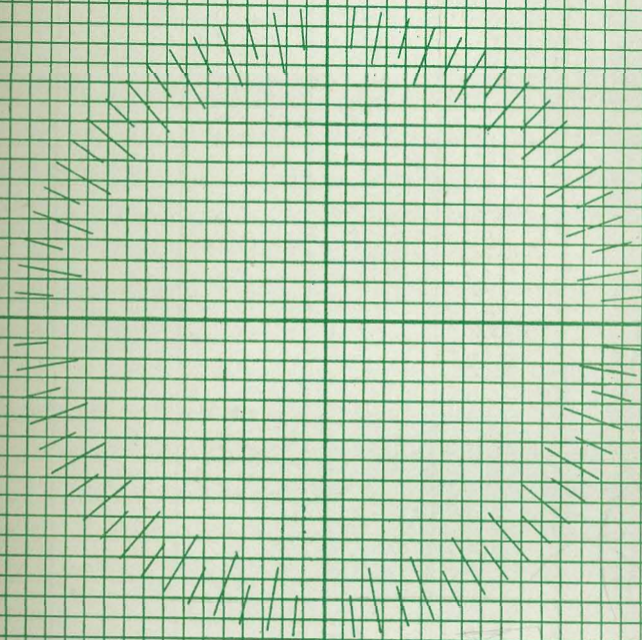


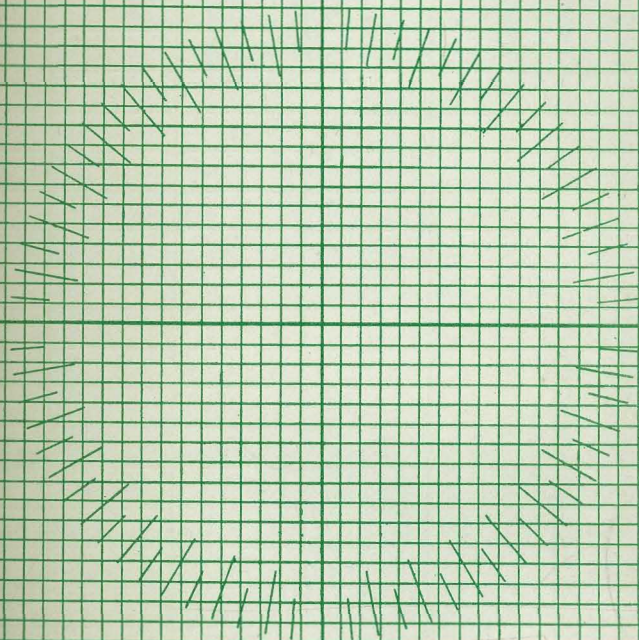


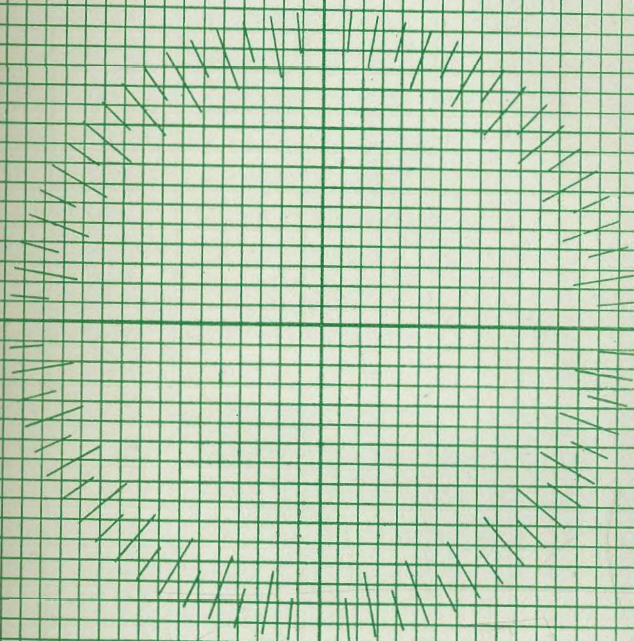


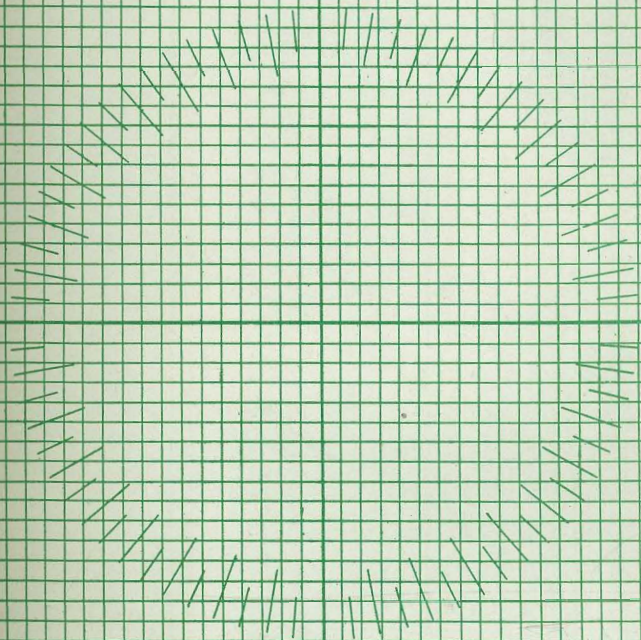


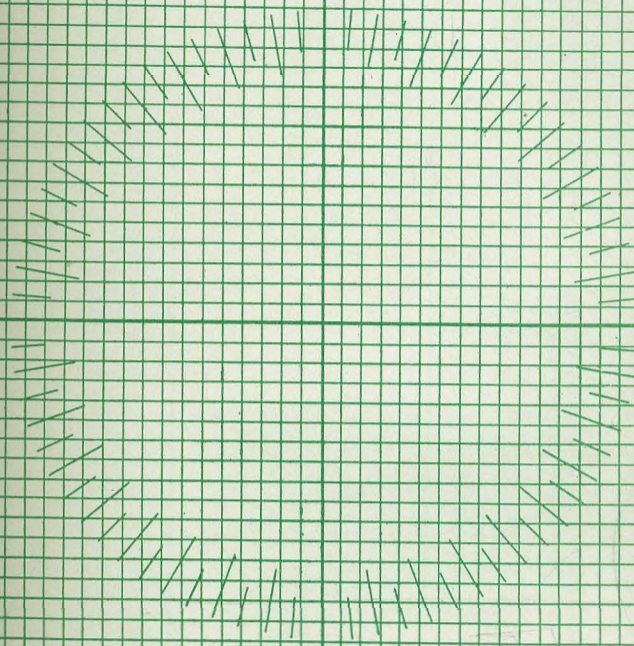


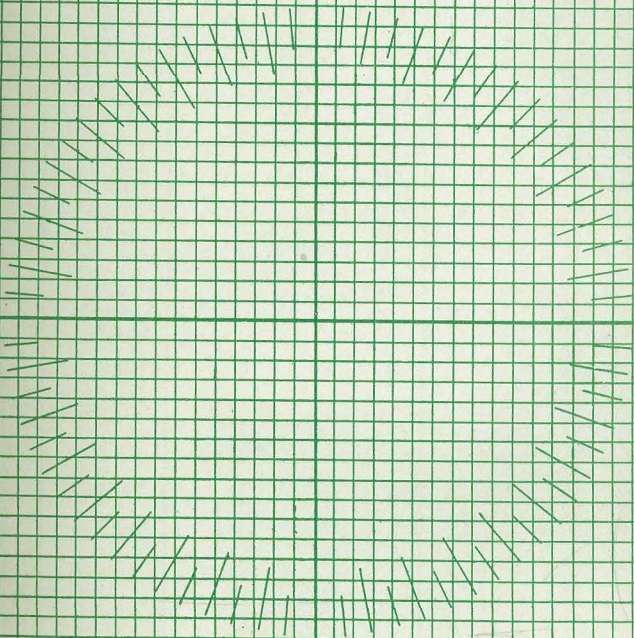


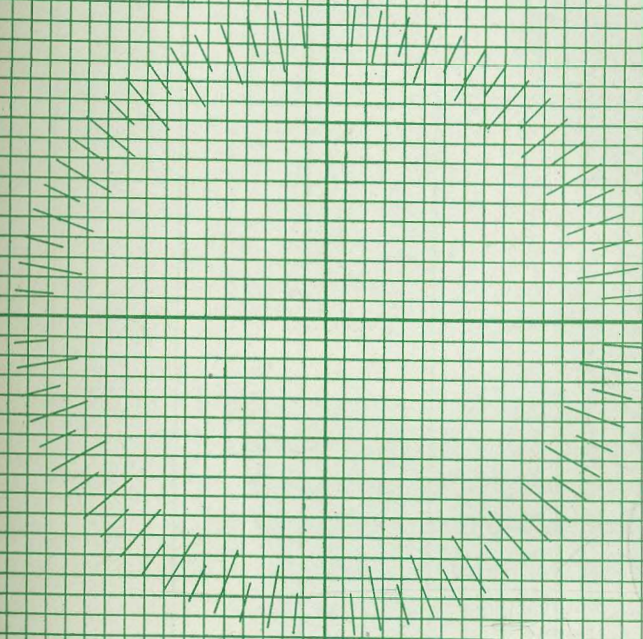


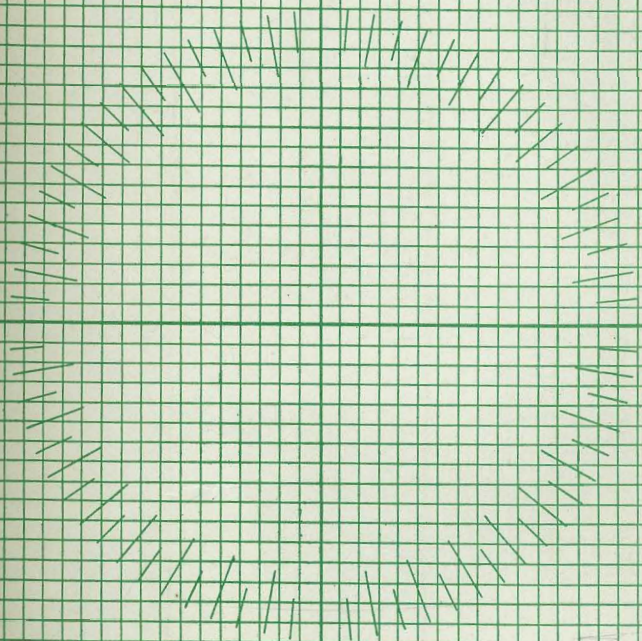


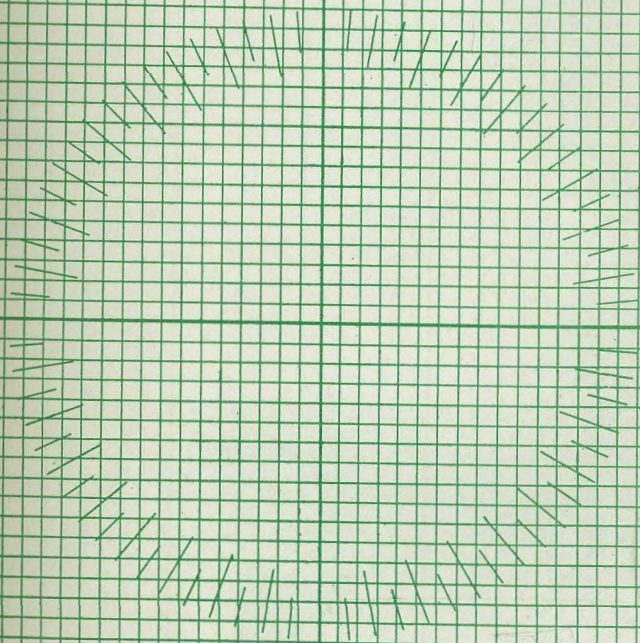


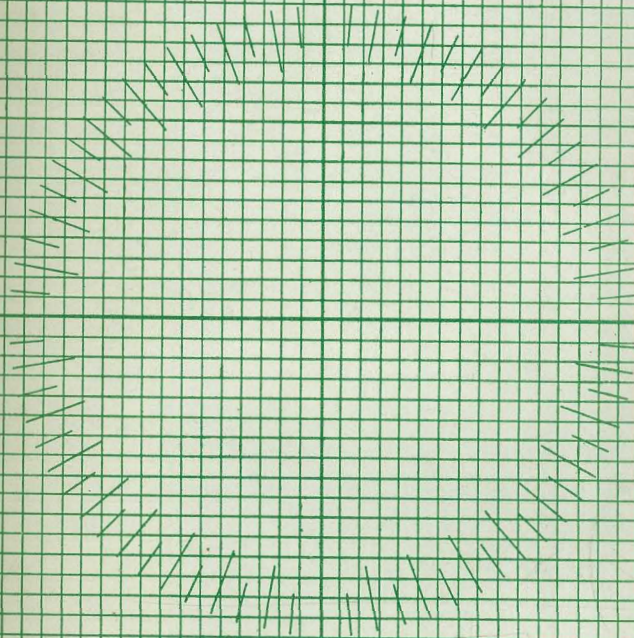


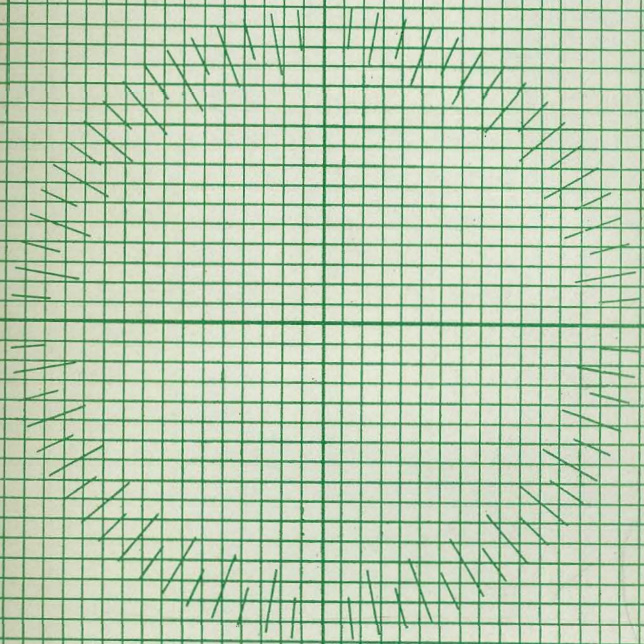


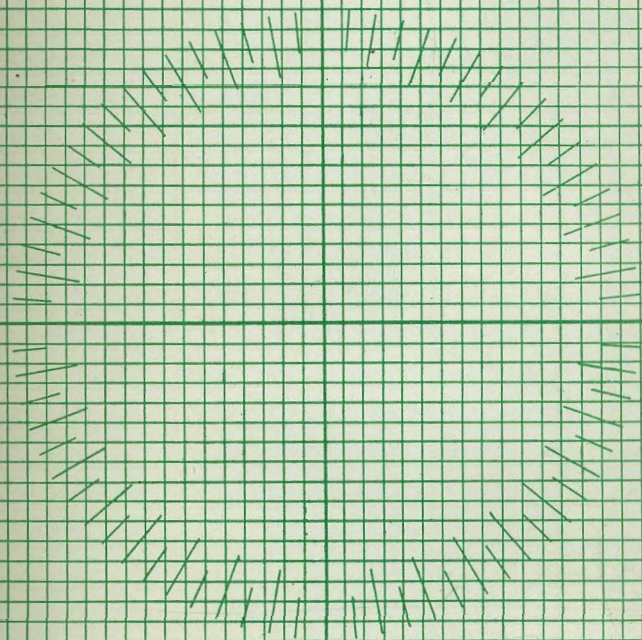


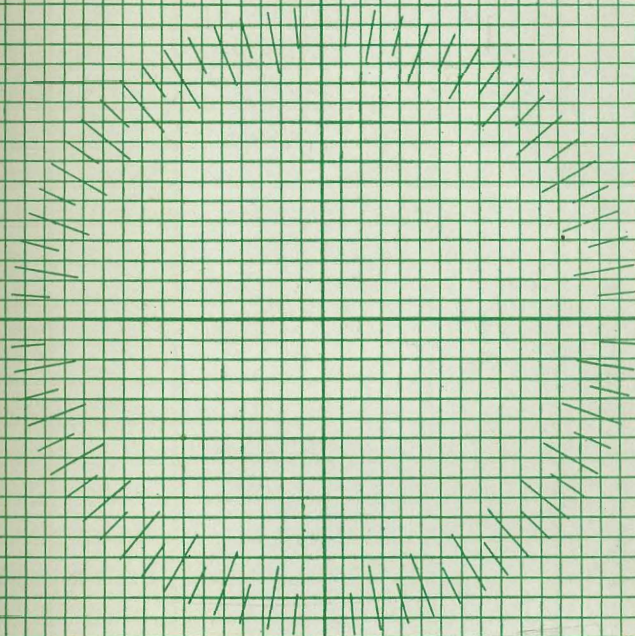


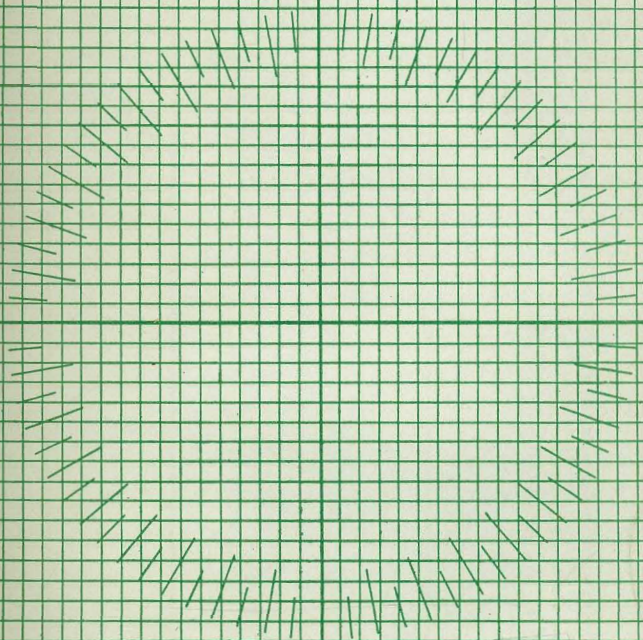


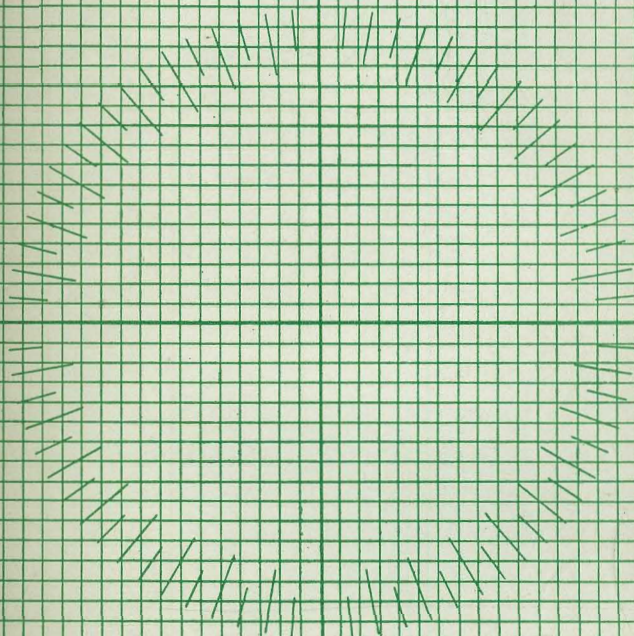


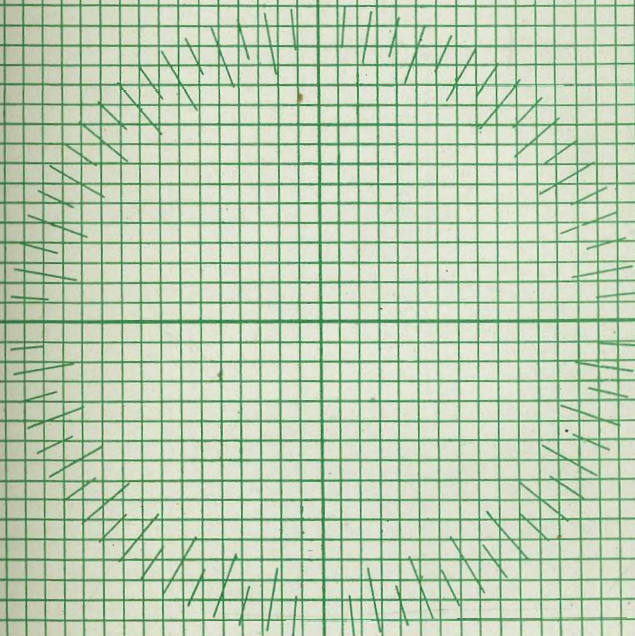


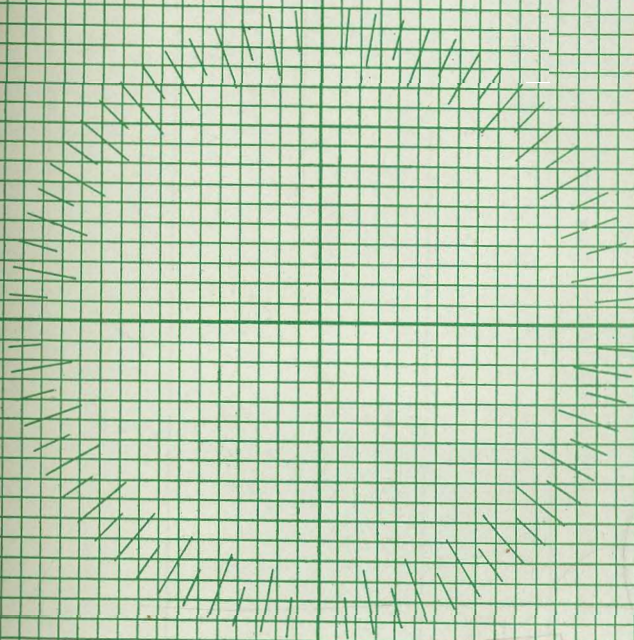


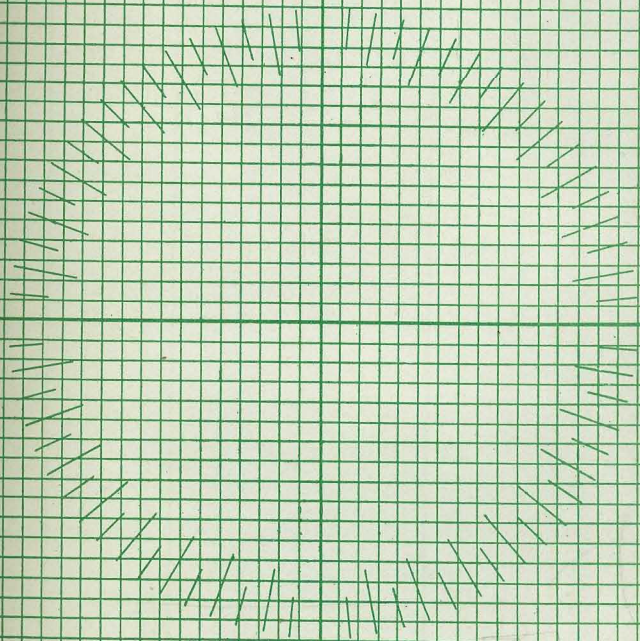


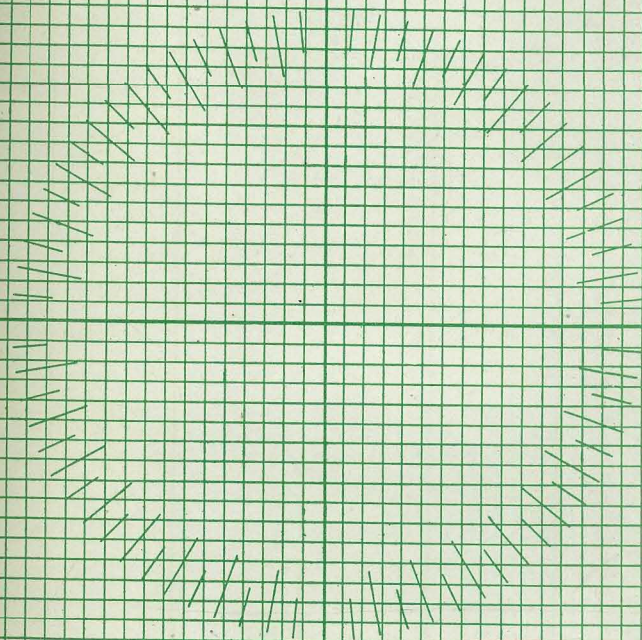


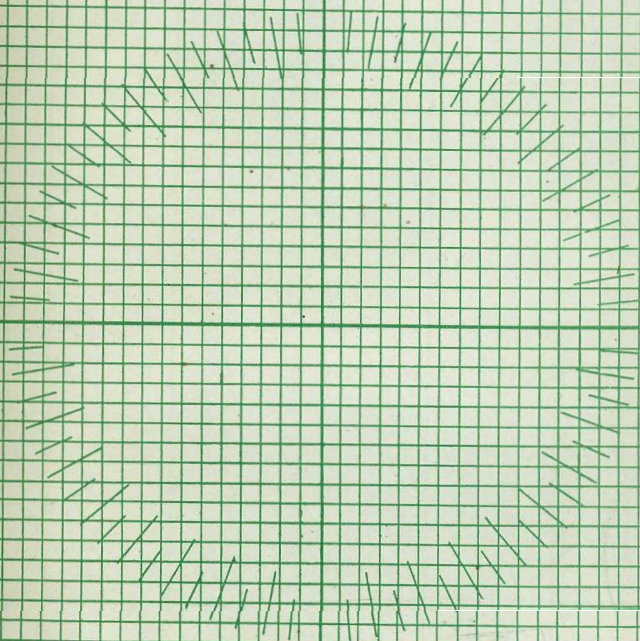












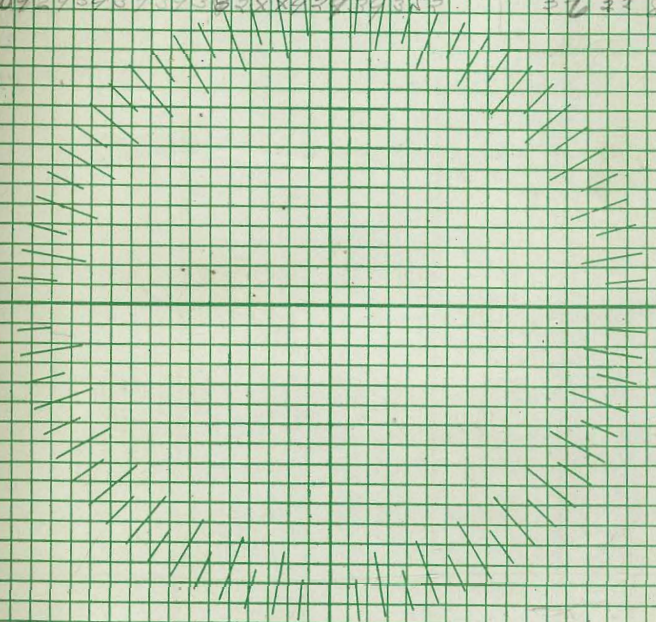
F.C. Houston
 J.F. Shoemaker
 H.H. Bellamy
 P.J. Carroll
 J.J. Mastick

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

Team
 11th 1 sack Barley
 " 1 Bale Hay 150
 17- " " " 180
 16- 1st Barley
 21- " " "
 " 1 Bale Hay

430 lbs Hay @ \$17.50 Ton = \$3.76
 359 " Barley @ \$150 Cwt. = \$5.39
 Hauling Fuel \$2.00

40 Beds \$10.00
 132 meal \$66.00
 \$87.15



A. H. Bellamy

J. E. Shremacher

P. J. Carrell

J. J. Mansfield

DIRECTIONS FOR USE OF TABLES

TABLE No. 1.

Distance of slope stake from side or shoulder stake for any width roadway, slope 1 1/2 to 1. If ground is nearly level, the cut or fill at side stake is located by the double entry method in left column and top row. The number in body

of table in same row and column gives distance level estimate the difference in elevation between the side stake and slope stake. lower target by the amount if cut, elevate if fill. Add this amount to cut or fill and find distance in table. Set up rod at cut or fill and find distance in table. Set up target. If it does not make the sight adjustment

TABLE No. 2.

To find Tangent and Elevation for curve of any other degree, divide by degree of curve and add connection found in column of correction.

Degree of curve with a given L may be found by dividing tangent, (or external), opposite L by given tangent, (or external).

The distance from a point on the tangent to the curve is very nearly the square of the tangent length divided by twice the radius.

30 22° 30'

30) 22.5 (75
210
150

1755.87
26.35
3) 1139.7
379.9
38.00

15) 1806.6 (120.44
15
30
30
66
60

1913
6
11478

5

1671.80
90.93

1580.87

17.78 7
9 7
16002 7

2° 40'

225

3° 45'

188
61
249

96
188
188
189
187
187
185
181
179
213
1793

139
190
149
478

42 = 10'
42 = 10'

10
9
10