W161

FIELD BOOK

361

CITY OF
SAN DIEGO, CALIFORNIA
ADDITIONAL WATER SUPPLY
MISSION GORGE RESERVOIR
400-FT. CONTOUR
390-FT. CONTOUR

14.

KEUFFEL & ESSER CO.

DRAWING MATERIALS

AND

SURVEYING INSTRUMENTS.

NEW YORK.

CHICAGO. ST. LOUIS. SAN FRANCISCO. MONTREAL.

Tables for Excavations and Embankments.

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

ROADWAY 18 FEET WIDE. SIDE SLOPES 1 TO 1.

FOR SINGLE TRACK EXCAVATION.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	0
1	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	1
2	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	2
3	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	3
4	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	4
5	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	5
6	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	6
7	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9	7
8	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	8
9	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	9
10	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	10
11	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9	11
12	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9	12
13	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9	13
14	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	14
15	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9	15
16	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9	16
17	26.0	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9	17
18	27.0	27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9	18
19	28.0	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9	19
20	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	20
21	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9	21
22	31.0	31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9	22
23	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	23
24	33.0	33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9	24
25	34.0	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9	25
26	35.0	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9	26
27	36.0	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9	27
28	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9	28
29	38.0	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9	29
30	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9	30
31	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9	31
32	41.0	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	32
33	42.0	42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9	33
34	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	34
35	44.0	44.1	44.2	44.3	44.4	44.5	44.6	44.7	44.8	44.9	35
36	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9	36

Calculated by Julien A. Hall, M. Am. Soc. C. E.

FOR KEITH'S RAILROAD CURVE TABLES SEE END OF BOOK.

Index

Brought over from page 55, Bk 12.

⊙	367	5.63	405.66		400.03
	368			5.66	400
⊙	369	6.68	406.69	5.65	400.01
	370			6.69	400
	371			669	400
⊙	372	656	406.55	6.70	399.99
	373			6.55	400
⊙	374	565	405.71	649	400.06
	375			5.71	400
	376			5.71	400
⊙	377	650	406.51	5.70	400.01
	378			6.51	400
	379			6.51	400
⊙	380	7.81	407.86	646	400.05
	381			7.86	400
	382			7.86	400
	383			7.86	400
⊙	384	8.55	408.61	7.80	400.06
	385			8.61	400
	386			8.61	400
⊙	387	11.53	411.52	8.62	399.99
	388			11.52	400
	389			11.52	400
	390			11.52	400
⊙	391	3.76	403.77	11.52	400.01
	392			3.77	400
		62.67 ✓		58.93 ✓	

Wuesta-Natte-Williams

3-28-22.

Inwash

Inwash

Inwash

Inwash

			403.77		
	393			3.77	400
⊙	394	6.70	406.70	3.77	400.00
	395			6.70	400
	396			6.70	400
	397			6.70	400
	398			6.70	400
	399			6.70	400
⊙	400	5.61	405.58	6.73	399.97
	401			5.58	400
	402			5.58	400
	403			5.58	400
⊙	404	2.67	402.69	5.56	400.02
⊙	405			2.69	400.00
		14.98 ✓		18.75 ✓	

Inwash

On Scripps E fence.

Sta	Az	Rod	Hor Dist	Vert ✓	Elev
Brought over from page 52, Bk 12.					
℄ @ 301A △					✓
B.S. on 299A △		2.81			✓
to 302	275°43'	2.20		✓	400
to 303	273°42'	5.83		✓	400
to 303A △	275°50'	5.82		✓	✓
℄ @ 303A △				✓	✓
B.S. on 301A △		5.82		✓	✓
to 304	283°24'	3.19		✓	400
to 305	283°38'	5.71		✓	400
to 305A △	285°19'	5.75		✓	✓
℄ @ 305A △				✓	✓
B.S. on 303A △		5.75		✓	✓
to 306	312°40'	2.88		✓	400
to 307	314°14'	4.57		✓	400
to 307A △	310°56'	4.45		✓	✓
℄ @ 307A △				✓	✓
B.S. on 305A △		4.47		✓	✓
to 308	289°50'	2.24		✓	400
to 309	271°26'	3.75		✓	400
to 309A △	278°50'	4.57		✓	✓
℄ @ 309A △					✓
B.S. on 307A △		4.57			✓
to 310	276°07'	1.03		✓	400
to 311	309°26'	3.25		✓	400
to 312	303°50'	4.50		✓	400

Woeste-Witte-Williams
3-28-22.

S54-30W
Inside edge road
Near small barn

N84-20W

N85-00W

N75-20W

N74-15W

N48°-40'W

N49-30W

N81-30W

N81-00W

Sta	Az	Rod	Hor Dist	Vert ✓	Elev ✓
⊼@309A△					
to 313A△	286°30'	5.51		✓	✓
⊼@313A△				✓	✓
B.S. on 309A△		5.52		✓	✓
to 313	354°18'	0.28		✓	400
to 314	344°07'	1.50		✓	400
to 315	294°43'	2.71		✓	400
✓	347°36'	1.91		✓	✓
to 317A△	259°11'	4.49		✓	✓
⊼@317A△				✓	✓
B.S. on 313A△		4.49		✓	✓
to 316	2°18'	2.58		✓	400
to 317	289°06'	0.62		✓	400
to 318△	224°10'	2.39		✓	400
⊼@318△				✓	400
B.S. on 317A△		2.39		✓	✓
to 319	237°00'	0.82		✓	400
to 319A△	255°28'	1.31		✓	✓
⊼@319A△				✓	✓
B.S. on 318△		1.29		✓	400
to 320	254°30'	0.97		✓	400
to 320A△	266°01'	1.05		✓	✓
⊼@320A△				✓	✓
B.S. on 319A△		1.06		✓	✓
to 321	304°21'	1.97		✓	400
to 322	301°20'	4.38		✓	400

N73-30W

N74-30W

Intersection of fences (E & W and S) NE Cor Bennett prop.

S78-15W

S79-30W

S44-10W

S45-00W

S76-30W

S76-15W

S86-50W

S86-30W

Sta	Az	Rod	HorDist	Vert ✓	Elev
⊼ @ 320A △					
to 323A △	301°32'	536		✓	✓
⊼ @ 323A △				✓	✓
BS on 320A △		535		✓	✓
to 323	291°20'	003		✓	400
to 324	354°43'	211		✓	400
to 327A △	343°01'	649		✓	✓
⊼ @ 327A △				✓	✓
BS on 323A △		649		✓	✓
to 325	142°04'	361		✓	400
to 326	168°58'	216		✓	400
to 327	251°19'	135		✓	400
✓	258°19½'	398		✓	✓
to 328A △	262°52'	540		✓	✓
⊼ @ 328A △				✓	✓
BS on 327A △		540		✓	✓
to 328	56°17'	325		✓	400
to 329	22°08'	300		✓	400
to 330A △	272°27'	475		✓	✓
⊼ @ 330A △				✓	✓
BS on 328A △		473		✓	✓
to 330	340°32'	033		✓	400
to 331	238°33'	293		✓	400
to 332	213°49'	323		✓	400
✓	178°52'	044			✓
to 333A △	202°24½'	535		✓	✓

N58-00W
Near SW cor Gibson Residence
N58-30W Waste-White-Williams
3-29-22

N17-00W

N16-30W

NW Cor Gibson property
S83-20W

S83-10W

N87°15'W
Elna Palm Ave
N86-40W

NW Cor Lucas property
S 23-15W

Sta	Az	Rod	Hor Dist	Vert ✓	Elev
T@333A△				✓	✓
B.S. on 330A△		5.33		✓	✓
to 333	134°40'	0.62		✓	400
✓	132°06'	2.33		✓	✓
to 334A△	220°15'	4.42		✓	✓
T@334A△				✓	✓
B.S. on 333A△		4.42		✓	✓
to 334	150°30'	0.56		✓	400
to 339A△	218°49'	5.70		✓	✓
T@339A△				✓	✓
B.S. on 334A△		5.72		✓	✓
to 335	22°46'	5.65		✓	400
to 336	13°58'	6.60		✓	400
to 337	17°32'	4.95		✓	400
to 338	2°35'	3.47		✓	400
to 339	24°10'	1.06	—	-9°53' ✓	400
to 340	136°55'	1.41	—	-4°42' ✓	400
✓	284°17½'	2.23	—	+14°54' ✓	✓
to 341A△	178°34½'	3.40		✓	✓
T@341A△				✓	✓
BS on 339A△		3.40		✓	✓
To 341	133°28'	0.80	—	-6°55' ✓	400
to 342	174°15'	2.10		✓	400
to 342A△	180°03½'	2.21		✓	✓
T@342A△				✓	✓
BS. on 341A△		2.22		✓	✓

S22-15W.
Ely line AW Johnson property
NEly Cor do do
S40-00W
7' from SE cor A.W. Johnson Res.
S40-00W

S38-15W

S38-40W

SW Cor AW Johnson orchard tract
S1-30E

S1-10E

On E & W fence
S0-05W

S0-15W

Sta	Az	Rod	Hor Dist	Vert ✓	Elev ✓
π @ 342A△					
to 343	201°38'	2.16		✓	400
to 343A△	209°23'	3.40		✓	✓
π @ 343A△				✓	✓
BS on 342A△		3.40		✓	✓
to 344A△	224°10'	2.46		✓	✓
π @ 344A△				✓	✓
BS on 343A△		2.46		✓	✓
to 344	90°17'	0.95		✓	400
to 345	216°09'	2.30		✓	400
to 345A△	216°11'	1.86		✓	✓
π @ 345A△				✓	✓
BS on 344A△		1.86		✓	✓
to 346	250°55'	2.72		✓	400
✓	210°39'	0.49		✓	✓
to 347A△	243°19½'	7.08		✓	✓
π @ 347A△				✓	✓
BS on 345A△		7.08		✓	✓
to 347	193°14'	0.76		✓	400
to 348 A△	240°43'	3.93		✓	400
π @ 348 A△				✓	400
BS On 347A△		3.93		✓	✓
to 348	195°06'	0.30		✓	400
to 349	251°35'	1.90		✓	400
✓	357°18'	✓		✓	✓
to 350A△	270°18'	5.08		✓	✓

S29-30W

S29-45W

S44-40W

Near Prindle house

S44-45W

On N & S fence bet. Prindle & Johnson props.

S36-45W

S36-00W

Intersection fences N & S and W

S63-00W

S64-00W

S61-30W

S61-00W

Gable on Johnson hse

N89-30W

Sta	Az	Rod	Hor Dist	Vert ∨	Elev ∨
℄@350A				✓	✓
BS on 348A		5.08		✓	✓
to 350	106°50'	1.45		✓	400
to 351	238°43'	3.38		✓	400
to 352A	254°14½'	3.71		✓	✓
℄@352A				✓	✓
BS on 350A		3.69		✓	✓
to 352	253°49'	2.00		✓	400
✓	202°11'	4.35		✓	✓
to 353	250°38'	4.45		✓	400
to 353A	254°30'	5.82		✓	✓
℄@353A				✓	✓
BS 352A		5.82		✓	✓
to 354	266°16'	2.57		✓	400
to 355	278°02'	6.40		✓	400
℄@355				✓	400
BS on 353A		6.40		✓	✓
to 356	259°41'	4.30		✓	400
✓	186°54'	3.65		✓	✓
to 357	257°11'	7.45		✓	400
℄@357				✓	400
BS on 355		7.50		✓	400
to 358	225°35'	4.00		✓	400
to 359	220°00½'	6.85		✓	400
℄@359				✓	400
BS on 357		6.80±		✓	400

N89-50W

S74-00W

S74-15W

NE Cor ☐ rinkwater property

S74°30'W

S74-30W

N82-00W

N81-50W

NW Cor ☐ rinkwater property
S77°15'W

S77-00W

Wuosto-Witte-Williams
3-30-22

S40-00W

S40-00W

Sta	Az	Rod	Hor Dist	Vert ✓	Elev:	
π@359 △						
to 360	241°37'	4.46		✓	400	
to 361A △	227°54½'	6.95		✓	✓	548-00 W
π@361A △				✓	✓	
BS. on 359 △		6.95		✓	400	547-45 W
to 361	165°49'	1.53		✓	400	
✓	136°01'	0.54		✓	✓	△ on N & S section line (one of Haylor's points)
to 362	231°04'	1.79		✓	400	∟ supposed cor of Ballantyne, Johnson & Miller
to 363	337°55'	2.69		✓	400	
to 364	322°10'	5.35		✓	400	
to 365	269°45'	5.08		✓	400	
to 366A △	266°06'	6.62		✓	✓	586-00 W
π@366A △				✓	✓	7.5' N of E & W fence
BS. on 361A △		6.62		✓	✓	587-00 W
to 366	223°15'	0.05		✓	400	
to 367	277°42'	2.96		✓	400	
to 369 △	274°31'	8.95		✓	400	N84-40 W
π@369 △				✓	400	
BS. on 366A △		8.95±		✓	✓	N84-50 W
to 368	47°05'	3.90		✓	400	
✓	113°28'	2.27		✓	✓	fence cor. (fences run E & S) probably Johnson Cor
to 370	293°57'	2.09		✓	400	
to 371	257°42'	3.45		✓	400	
to 372A △	279°06'	4.25		✓	✓	N80-15 W
π@372A △				✓	✓	
BS. on 369 △		4.25		✓	400	N79-40 W

Sta	Az	Rad	Hor Dist	Vert ∨	Elev ∨	
π@372A					✓	
to 372	208°40'	1.49		✓	400	
to 373	292°14'	2.00		✓	400	
to 374	313°45'	3.18		✓	400	
to 375	341°28'	4.62		✓	400	
to 376	332°49'	8.08		✓	400	
to 377A	315°43'	10.45		✓	✓	N43-10W
π@377A				✓	✓	
BS on 372A		10.45±		✓	✓	
to 377	293°26'	0.44		✓	400	N42-40W
to 378	278°17'	5.61		✓	400	on N&S fence
✓	353°29'	4.33		✓	✓	SE cor of fences N&S and W
✓	5°05'	4.47		✓	✓	SW cor of fences N and E
to 379A	289°22'	7.65		✓	✓	N69-00W
π@379A				✓	✓	
BS on 377A		7.65±		✓	✓	
✓	17°22'	1.73		✓	✓	N70-30W
to 379	314°58'	0.40		✓	400	Fence Cor fences ron N&E
to 380	349°04	2.22		✓	400	
to 381	353°28'	5.75		✓	400	In wash
to 382	332°34'	3.25		✓	400	
to 383	301°26'	3.86		✓	400	
to 384	283°44'	4.41		✓	400	
to 385A	240°51'	7.34		✓	✓	S60-50W
π@385A				✓	✓	
BS 379A		7.34		✓	✓	S60-45W

Sta	Az	Rod	Hor Dist	Vert ✓	Elev ✓	
π@385A				✓		
to 385	37°26'	0.66		✓	400	In wash
to 386	124°01'	2.09		✓	400	
to 387	198°17'	6.19		✓	400	
to 387A	223°37½'	5.60		✓	✓	S43-30W
π@387A				✓	✓	
BS on 385A		5.62		✓	✓	S43-20W
to 388	193°30'	5.25		✓	400	
✓	119°11'	8.90		✓	✓	NE Cor Eucalyptus grove
✓	155°21'	4.84		✓	✓	NW Cor do do
to 389	205°44'	5.82		✓	400	
to 390	239°50'	5.79		✓	400	
to 391	234°33'	7.48		✓	400	S54-15W
π@391				✓	400	
BS on 387A		7.48		✓	✓	S54-00W
to 392	316°42'	1.42		✓	400	In wash
to 393	232°20'	4.85		✓	400	
to 395A	224°04'	8.00		✓	✓	S43-30W
π@395A				✓	✓	
BS on 391		8.00		✓	400	S43-50W
to 394	123°27'	1.10		✓	400	
to 395	220°10'	1.08		✓	400	Small Wash
to 396	203°08'	2.37		✓	400	
to 397	222°58'	4.51		✓	400	
to 398	226°28'	6.35		✓	400	
to 399	210°10'	7.30		✓	400	

Sta	Az	Rod	Hor Dist	Vert v	Elev.
⊼@395A △				✓	✓
to 400 △	210°05'	8.86		✓	400
⊼@400 △				✓	400
BS on 395A △		8.86		✓	✓
to 401	211°36'	2.45		✓	400
to 402	228°51'	3.28		✓	400
to 403	212°53'	4.55		✓	400
to 404A △	215°21'	6.55		✓	✓
⊼@404A △				✓	✓
BS on 400 △		6.55		✓	400
to 404	225°02'	0.85		✓	400
to 405	247°57'	2.30		✓	400
✓	✓	✓	✓	✓	✓
✓	312°08'	3.00	—	+6°55'	✓
✓	228°51'	2.81		-2°37' ✓	✓
to 166 △	197°12½'	7.81	—	-2°52' ✓	360
⊼@166 △			—		360
BS on 404A △		7.81			✓
to 167	259°55'	9.25			360

S29°50'W

S29-45W

S35-00W

S34-50W

Scripps Eline (This bearing exact to tack)
(S67-30W)
On Scripps Eline
NW. Cor Strobeck property (Scripps Eline)
S.17-00W on 360 Cont 27'W of Scripps Eline

S17-00W
S79-30W on 360 Cont

Apr 22/22
BC Wycoste
AE Franklin
Ed Ketchum

N 18 S R 3 E Cottonwood Gr 14.
Sec 4

Survey for Land Cors Hapton Stall

Sta	Az	Dist	Rod	Vert ∠	Elev
℄ @ 0+00 = NW Cor Sec 4	F.S. on ¼ Cor E				
	91°-20'				
E Dulzura Flume		115			
	91-20				
11+36 △		1136 ⁹			
℄ @ 11+36					
to Sladia △ #1	171-24 ✓		5.62	-2°-57' ✓	
℄ @ #1					
to #2	116°-06'		7.12	-0°-33'	
℄ @ #2					
to #3	119°-16' ✓		5.03	+1°-06' ✓	
℄ @ #3					
to #4	134°-37' ✓		2.04	+1-06 ✓	
℄ @ #4					
to #5	149°-23' ✓		4.11	-0°-03'	
℄ @ #5					
to ℄ S ¼ Sec 4	146°-37' ✓		5.72	-0°-20'	

See page 16

℄ @ NW Cor Sec 4 Bearing to ¼ Cor E = S 88-40 E (Mag) Var 14-25

BS. on NW Cor Sec 4 = 0+00

BSights on next Sta △ back of ℄ △

in Road W side.

In field Az ✓

145-22 (This azimuth to point 13' 6 ft E ¼ from true point)

MM MM 1

Proposed Matchin Creek Diversion

Pt. on Dulzura Conduit 373+91

Dist from pt of diversion to 373+91 40ft
Requires diversion dam 20' long, 2' high.
Q ½ mgd ± this date
Fall = 5.8 in 40 ft.

Proposed Tunnel 2 Diversion

Dist from pt of diversion to 213+00
Diversion intake requirements uncertain
Conduction requires drift less than 100' long through boulder choked gulch
Q ½ mgd ± this date

Proposed Rattlesnake Creek Diversion

Dist from pt of diversion to 132+16
132+16 = S End Flume 11
Diversion Intake (Repair existing)
Fall: Crest of Diverting Dam to Top Flume 11 2.85 feet
Conduction requires large size pipe or flume
Q ½ mgd ± this date

= 1st flume set S of 2nd angle pt on flume
= 29ft S of N End flume.

8" thick

100' on 26° slope

85ft

Proposed Flume 9 Diversion Scheme

Sta 50+58 on Flume 9 = 47ft from S End
= 55' N of N End Tunnel 3/4
Dist Intake to 50+58 = 60' ±
Probably large pipe best
Fall slight unless some rock work is done
Q 300 to 400 thousand gallons daily

Sand Bank - Cottonwood River

Sta	Az	Rod	Hor Dist	Vert'l	Elev
⊼ @ #1	△				
BS on 11+36	171-24 (Reverse)				
to #1½	△ 134-12	2.28			
⊼ @ #1½	△				
BS on #1	△	2.28			
to A	325-47	1.90			
B	342-43	3.25			
C	356-09	5.60			
D	359-11	6.74			
E	6-14	6.70			
F	11-40	2.57			
G	58-56	1.31			
H	88-29	2.82			
I	99-51	3.47			
J	109°-26'	1.89			
to #2	△ 107°58'	5.04			

Waste - Mulkey
4-29-22.

16

See page 14

S46-00E

At edge of road = W bank Cottonwood River

S45-30E Inner edge Road

N17-15W

W side channel

N6-15E E side channel

Designates field of sand recovering operations.

N88-35E

S80-00E

At edge Road

S71-50E Inner edge Road

Levels for 390' Contour
Mission Gorge Reservoir

5-1-22
R.C. Wuester
G.B. Walker

17

	+	H.I.	−	Elev	
	0.94	400.94		400.00	
⊙ #1	6.06	396.15	10.85	390.09	
#2					6.15
#3					6.15
⊙ #4	4.02	394.21	5.96	390.19	
#5					4.21
#6					4.21
⊙ #7	6.82	396.81	4.22	389.99	
#8					6.81
#9					6.81
#10					6.81
⊙ #11	4.41	394.49	6.73	390.08	
#12					4.49
#13					4.49
#14					4.49
⊙ #15	6.13	396.10	4.52	389.97	
#16					6.10
⊙ #17	5.20	395.14	6.16	389.94	
#18					5.14
#19					5.14
⊙ #20	5.29	395.28	5.15	389.99	
#21					5.28
#22					5.28
#23					
⊙ #24	4.83	394.58	5.53	389.75	
	43.70	✓	49.12	✓	

= B.M. on bank near Hawley's Ranch Hse
In wash

5.42
394.58

		394.58			
#25					4.58
#26					4.58
#27					4.58
#28					4.58
⊙ #29	5.96	395.88	4.66	389.92	
#30					5.88
#31					5.88
⊙ #32	4.67	394.67	5.88	390.00	
#33					4.67
⊙ #34	5.55	395.45	4.77	389.90	
					5.13
#35					5.45
⊙ #36	(12.33)	402.35	5.43	390.02	
			(2.41)	399.94	
#36	6.42	396.44		390.02	
#37					6.44
#38					6.44
⊙ #39	4.98	394.94	6.48	389.96	
#40					4.94
#41					4.94
⊙ #42	6.04	396.01	4.97	389.97	
#43					6.01
#44					6.01
⊙ #45	5.98	395.90	6.09	389.92	
#46					5.90
	51.93 ✓		40.69 ✓		

51.93 40.69
+.33 +4.
396.0 388.28
388.28
1.3 -8
394.1 -8
395.90

390.32 = BM on eucalyptus tree

= #123 T.P. 400' Cont Sorrey (400.00)

Along Highway 5-2-22 Wuesta-Walker
on E & W fence

In orchard 6.09

In front of J.M. Weisbrod Res.

		395.90			
#47	4.61	394.61	5.90	390.00	
#48					4.61
#49	8.29	398.31	4.59	390.02	
#50					8.31
#51	7.50	397.52	8.29	390.02	
#52					7.52
#53	8.13	398.19	7.46	390.06	
#54	11.88	401.89	8.18	390.01	
#55	10.32	400.43	11.78	390.11	
#56	5.22	395.28	10.37	390.06	
#57					5.28
					3.89
#58					5.28
#59			5.21	390.07	
	55.95 ✓		61.78 ✓		
	5.43	395.63		390.20	
#60	5.81	395.83	5.61	390.02	
#61					5.83
	5.99	396.78	5.04	390.79	
#62					6.78
#63	6.40	396.48	6.70	390.08	
#64					6.48
#65	6.62	396.65	6.45	390.03	
#66					6.65
#67	6.92	397.00	6.57	390.08	
	37.17 ✓		30.37 ✓		

S side Street

E line Cameron property

37.17
30.37
6.80
390.20
397.00

6.78
5.21
5.83

3.91.52
3.89
3.95.41
5.21
3.90.20

W edge pavement

391.39 = BM 10½ (Highway) (391.522)

(Corrected from highway BM)

		397.00			
#68					7.00
#69	6.59	396.66	6.93	390.07	
⊙ #70	6.20	396.26	6.60	390.06	
⊙ #71	3.90	393.90	6.26	390.00	
⊙ #72	10.47	400.37	4.00	389.90	
#73					10.37
⊙ #74	11.47	401.47	10.37	390.00	
					1.46
75					11.47
⊙ 76	10.81	400.83	11.45	390.02	
77					10.83
⊙ 78	9.84	399.92	10.75	390.08	
79					9.92
⊙ 80	7.44	397.55	9.81	390.11	
⊙ 81	5.02	395.13	7.44	390.11	
⊙ 82	3.58	393.56	5.15	389.98	
	45.32 ✓		78.76 ✓		8.14

For Continuation see page 31.

787.6
75.32
3.00
397.50
393.50

400.01 = Sta 178 T.P. 400' Cont Survey

Near Dr. Learn's Hse

389.42 = BM 16½ Highway (385.403)

Woeste-Walker

5-3-22

Stadia Traverse 390' Contour Line

Mission Gorge Reservoir

Sta	Az	Rod	Hor. Dist.	Vert	V E	Elev.
T@13A						
BS on 13A	124-01½	(Telescope inverted)				
1	4-08	2.60				390
2	355-14	5.47				390
3	340-24	5.96				390
to 3A	341-09	7.5		✓		
T@3A				✓		
BS on 13A		7.5		✓		
4	67-06	0.70		✓		390
6	37-45	4.63		✓		390
7	24-10	8.6		✓		390
to 7A	26-15	8.2		✓		
T@7A				✓		
BS on 3A		8.2		✓		
5	180-48	5.6		✓		390
8	3-09	5.0		✓		390
9	14-15	6.3		✓		390
10	51-12	5.5		✓		390
to 10A	86-24	5.35		✓		
T@10A				✓		
BS on 7A		5.35		✓		
12	125-14	3.36		✓		390
13	140-41	6.0		✓		390
14	98-44	2.58		✓		390
15	10-45	3.72		✓		390

(on 400' Cont Traverse) 250/560

do do

Bottom Calcom wash

N 19-45 W

N 19-45 W

N25-20E

N25-15E

N85-30E

N89-15E

Note Sta 11 destroyed by cultivation - not moraine

Inwash

Sta	Az	Rod	Hor Dist	Vert V	Elev.	
⊼@10A						
16	359-37	7.7			390	
to 16A	15-45	7.15				N 14-30E
⊼@16A						
BS on 10A		7.15				N 14-30E
	52-41	4.67				fence intersection N-S-W
to 17A	11-02	4.64			390	N 9-50E
⊼@17A					390	
BS on 16A		4.63				N 9-30E.
17	193-00	0.91			390	
	219-47	2.33				fence intersection E-W-N
19	51°28'	4.2			390	
18	28-34	3.52			390	
to 19	51-26	4.22			390	N 50-00E
⊼@ 19					390	
BS on 17A		4.23			390	N 49-40E
20	66-46	1.53			390	
21	67-45	4.79			390	
22	86-59	5.32			390	
to 23	71-20	7.0			390	N 69-30E.
⊼@23					390	
BS on 19		7.0			390	N 70-10E
24	35-46	2.13			390	
25	74-38	5.08			390	
26	86-50	5.9			390	In wash

Sta	Az	Rod	Hor Dist	Vert Dist	Elev
π @ 23 △					390
27	50-25	6.32			390
to 27A △	35-30	7.0			
π @ 27A △					
BS on 23 △		7.0			390
28	262-56	0.72			390
to 30A △	46-52	6.35			
π @ 30A △					
BS on 27A △		6.35			
29	270-25	3.72			390
30	240-41	1.69			390
32	24-10	2.50			390
to 33 △	39-55	66			390
π @ 33 △					390
BS on 30A △		66			
	36-30	2.65			
to 34A △	38-28	3.17			
π @ 34A △					
BS on 33 △		3.17			390
34	297-19	0.86			390
to 35A △	358-58	6.7			
π @ 35A △					
BS on 34A △		6.7			
35	181-07	5.6			390
36	356-39	3.37			390

28
7
5-6

N 34-30 E

N 35-00 E

N 46-15 E

Wuoste-Walker
5-4-22.

N 46-15 E

31 lost

N 39-20 E

N 39-30 E.
Fence Cor N-W
3.5' W of W edge pavement N 38-10 E

N 37-50 E

N 1-50 W

N 0-45 W

Sta	Az	Rod	Hor Dist	Vert ∨	Elev ✓
℄@35A				✓	
to 37A	332-41	6.7		✓	
℄@37A				✓	
BS on 35A		6.7		✓	
37	351-13	0.77		✓	390
	36-31	2.32		✓	400
38	350-55	2.86		✓	390
to 39	315-42½	5.17		✓	390
℄@39				✓	390
BS on 37A		5.15		✓	
40	54-32	3.7		✓	390
41	22-22	6.2		✓	390
to 41A	4-58	6.9		✓	
℄@41A				✓	
BS on 39		6.85		✓	390
42A	323-10	1.47		✓	390
43	347-53	3.0		✓	390
to 43A	329-28	4.55		✓	
℄@43A				✓	
BS on 41A		4.55		✓	
44	339-35	2.57		✓	390
to 45A	357-48	4.7		✓	
℄@45A				✓	
BS on 43A		4.7		✓	
45	109-14	0.11		✓	390

N28-00 W

N28-15W

Sta 124, 400' Cont survey, Along side hse

N45-10W

N45-20W

N 4-00 E

N3-50E

original stake lost.

N31-30W

N31-25W

N3-00W

N3-00W

Sta	Az	Rod	Hor. Dist	Vert ✓	Elev
⊼@45A △				✓	
46	15-00	4.47		✓	390
to 47 △	356-08	6.55		✓	390
⊼@ 47 △				✓	390
BS on 45A △		6.55		✓	
to 48A △	353-51	4.04		✓	
⊼@ 48A △				✓	
BS on 47 △		4.04		✓	390
	4256	4.02		✓	400
48	351-30	4.13		✓	390
49	275-21	4.63		✓	390
to 49A △	284-35	5.3		✓	
⊼@49A △				✓	
BS on 48A △		5.33		✓	
50	251-20	2.16		✓	390
to 51A △	279-19	4.±		✓	
⊼@ 51A △				✓	
BS on 49A △		4.15		✓	
51	270-25	1.92		✓	390
to 52A △	281-33	2.00		✓	
⊼@52A △				✓	
BS on 51A △		1.98		✓	
52	326-22	3.46		✓	390
to 53A △	307-54½	4.67		✓	
⊼@ 53A △				✓	
BS on 52A △		4.67		✓	

N4-30W

N4-30W 5. Line of 5+50+

N6-50W

N7-10W

5 to 134 400' Contour Survey

N76-20W

N76-05W

E side Cameron property

N81-30W

5.0' W of Cameron W fenceline

N81-50W

N79-30W.

N79-15W Wuesta-Walker 5-5-22

N53-00W

N53-05W

Sta	Az	Rod	Hor Dist	Vert V	Elev
π@ 53A					
	217-38	283			
53	52-43	200			390
to 54A	12-35	69			
π@ 54A					
BS on 53A		69			
54	24-44	130			390
to 55A	9-26	317			
π@ 55A					
BS on 54A		317			
55	93-26	41			390
to 56A	8148	52			
π@ 56A					
BS on 55A		52			
to 57A	109-05	475			
π@ 57A					
BS on 56A		473			
56	171-02	196			390
57	145-30	417			390
58	118-01	44			390
to 59	53-17	433			390
π@ 59					390
BS on 57A		432			
to 60A	2-41	80			
π@ 60A					
BS on 59		80			390

fence corner on RR R of W S-E

N 11-30 E

N 11-15 E

N 8-00 E

N 8-30 E

N 81-00 E

N 80-30 E

S 72-10 E

S 72-00 E

W edge pavement

N 52-00 E

N 52-10 E

N 1-30 E

N 0-10 E

Sta	Az	Rod	Hor Dist	Vert ↑	El ↑	
π @ 60A						
	195-38	3.09				
	92-03	2.27		+7-00	✓ 400	
60	83-55	1.56		+5-00	✓ 390	
61	31-37	2.59			✓ 390	
to 62A	22-26	4.52			✓	
π @ 62A					✓	
BS on 60A		4.52			✓	
62	110-44	0.26			✓ 390	
63	79-11	1.36			✓ 390	
	323-42				✓	
	13-02				✓	
to 63A	74-47	4.4			✓	
π @ 63A					✓	
BS on 62A		4.4			✓	
	274-10				✓	
	303-05				✓	
to 64	74-09	4.57			✓ 390	
π @ 64					✓ 390	
BS on 63A		4.57			✓	
65	42-20	2.14			✓ 390	
66	232-3	4.85			✓ 390	
to 66A	73-23	5.6			✓	
π @ 66A					✓	
BS on 64		5.6			✓ 390	

635+47 Conduit line El Capitan to SD
Sta 143 400' Cont Survey (Plats OK)

N19-50E

N22-10E

SW Cor Standard Oil Co
SE Cor do do
N74-30E

N75-05E
SW cor Standard Oil Co
SE Cor do do
N74-40E Original 64 lost

N73-50E
Original stake lost

N73-00E

N73-00E

Sta	Az	Rod	Hor Dist	Vert ✓	Elev.
T@66A					
67	334-02	4.6		✓	390
68	12-45	4.8		✓	390
to 68A	18-03	8.4		✓	
T@68A				✓	
BS on 66A		8.3		✓	
to 69A	86-10	1.42		✓	
T@69A				✓	
BS on 68A		1.42		✓	
	148-00	0.73		+10-50 ✓	400
69	86-42	0.39		✓	390
to 70A	85-56	1.86		✓	
T@70A				✓	
BS on 69A		1.86		✓	
70	103-11	4.20		✓	390
to 71A	88-25½	6.8		✓	
T@71A				✓	
BS on 70A		?		✓	
to 71	46-59	6.12		✓	390
T 71				✓	390.
BS on 71A		6.12		✓	
to 72A	4-52	8.2		✓	
T@72A				✓	
BS on 71		8.2		✓	390
72	54-20	1.88.		✓	390

N7-30E

N16-20E

N24-30E

N25-00E

Sta 155 400' Cont Survey

N85-00E

N85-45E

N88-15E

S89-15E

N49-15E

N47-20E

N5-05E

N4-50E

Woest & Walton
5-6-22

Sta	Az	Rod	Hor Dist	Vert ✓	Elev ✓	
π @ 72A △						
73	31-47	4.53			✓ 390	
to 73A △	21-29½	6.05			✓	N 21-30 E
π @ 73A △					✓	
B.S. on 72A △		6.05			✓	
	131-25	1.45		+14-40	✓ 400	N 20-50 E
						Sta 77 400' Cont. Survey
74	110-32	1.18		+12-50	✓ 390	
75	69-49	3.25		+5-30	✓ 390	
to 76A △	58-05	8.7			✓	N 57-30 E
π @ 76A △					✓	
B.S. on 73A △		8.7			✓	N 57-40 E
76	226-24	3.73			✓ 390	
77	172-45	1.70		+5-40	✓ 390	
78	74-34	3.48			✓ 390	
to 79A △	56-50	7.7			✓	N 56-30 E
π @ 79A △					✓	In Dr Loorn's alfalfa patch
B.S. on 76A △		7.7			✓	N 56-50 E
79	141-20	2.87			✓ 390	
80	75-48	3.35			✓ 390	
to 81 △	24-23	7.28			✓ 390	N 24-20 E
π @ 81 △					✓ 390	
B.S. on 79A △		7.28			✓	N 23-30 E
to 82A △	1-16	3.68			✓	N 0-25 E
π @ 82A △					✓	
B.S. on 81 △		3.68			✓ 390	N 0-30 E

Sta	Az	Rod	Hor Dist	Vert ↓	El ⊙ V	
π@82A					✓	
82	58-52	1.32			✓	390
to 83A △	48-57½	3.8			✓	
π@83A △					✓	
BS on 82A △		3.8			✓	
83	161-55	042			✓	390
84	170-00		2.4ft			390
85	53-08	2.05			✓	390
to 86A △	62-37	3.5			✓	
π@86A △					✓	
BS on 83A △		3.50			✓	
86	145-24	0.26			✓	390
87	86-10	1.58			✓	390
to 89A △	79-06½	3.92			✓	
π@89A △					✓	
BS on 86A △		3.92			✓	
88	202-12	1.41			✓	390
89	184-23	0.95			✓	390
90	155-47	1.97			✓	390
91	126-35	1.04			✓	390
92	83-09	1.96			✓	390
93	82-58	2.84			✓	390
to 93A △	82-03	2.63			✓	
π@93A △					✓	
BS on 89A △		2.62			✓	

See page 32

N48-10E

N48-00E

N edge of pavement

N61-45E

4.0' N of N edge pavement

N62-30E

N79-00E

3.6' S of S edge pavement (on extension of old fence line.

N78-50E

N81-45E

N81-45E

Levels for 390' Contour
Mission Gorge Reservoir

82	3.16	393.14		389.98	
83					3.14
84	6.70	396.67	3.17	389.97	
85					6.67
86					6.67
87					6.67
	11.57	396.15	12.09	384.58	
88					6.15
89					6.15
90					6.15
91					6.15
92	5.86	395.86	6.15	390.00	
93					5.86
94	7.98	398.00	5.84	390.02	
95					8.00
96					8.00
97					8.00
98					8.00
99	6.06	396.09	7.97	390.03	
100					6.09
101					6.09
102	5.87	395.90	6.06	390.03	
103					5.90
104			5.90	390.00	

for continuation see page 32

Woeste-Walker
5-6-57

See page 20

Nodge pavement
OPP John Fenny sign
S Side pavement in gutter

Back of oak tree

In quarry

East Side Schoolyard

Traverse 390' Contour

See page 30

Sta	Az	Rod	Hor Dist	Vert ✓	Elev
π @ 93A △					
94	124-53	2.51			390
	230-32	1.00			
to 96A △	117-21	7.75		✓	

Check on Azimuth

π @ 200A △

BS on 93A △

to 201A △ 75 09

For continuation of Traverse see pg. 35

Levels for 390' Contour

Mission Gorge Reservoir

Sta 104	537	395.32		390.00	
105					532
106	596	395.98	530	390.02	
107					598
108					598
109					595
110					598
⊙ 111	630	396.35	593	390.05	
112					635
⊙ 113	334	393.37	632	390.03	
	2092 ✓		1755 ✓		

Sta 200A △ 400' cont Survey

E 673-00 E

2092
1755
337

400' Contour Survey

400' Contour Survey

Woosta-Walker

5-8-22

on E & W fence

on E & W fence

E side Road = W Line Shreve Ranch

		393.37			
114					337
115					337
116					337
⊙ 117	6.36	396.35	3.38	389.99	
118					635
119					635
⊙	9.28	399.39	6.24	390.11	
120					939
121					939
⊙ 122	6.81	397.07	9.13	390.26	
					294
123	5.43	395.33	7.17	389.90	
	5.56	396.46	4.23	390.90	
124					646
125					646
126					646
127					646
128					646
129					646
⊙ 130	4.55	394.61	6.40	390.06	
131					461
132					461
⊙ 133	4.95	394.97	4.59	390.02	
134					497
135					497
	42.94 ✓		41.14 ✓		

On Shroyer N Line
Cor chicken tree

on fence
edge pavement

394.13 = highway BM 20 El 394.176

In side ditch of RR S side
S edge RR embankment
In side ditch of RR N side
On RW fence

		394.97			
⊙136	5.07	395.08	4.96	390.01	
137					5.08
⊙138	7.06	396.99	5.15	389.93	
139					6.99
⊙140	4.85	395.01	6.53	390.16	
141					5.01
⊙142	4.93	394.95	4.99	390.02	
⊙143	8.41	398.43	4.93	390.02	
⊙	5.12	399.24	4.31	394.12	
⊙	8.60	403.74	4.10	395.14	
⊙	44.04		35.27		4.64

5.07 4.96 +5

Rivet Bank

4404
3527
877
3944
1037

" "

" "

W.S. San Diego River 200 yds below bridge

399.10 = Highway BM 23 El 399.235

Traverse 390-foot Contour

Sta	Az	Rod	Hor Dist	Vert ✓	Elev.
℄ @ 96A					
B.S. on 93A		7.75			
95	231-30	2.98		✓	390
96	167-54	2.00		✓	390
97	301-08	0.14		✓	390
98	13-12	1.70		✓	390
to 101A	106-34	7.50	(6.50 platted)	✓	
℄ @ 101A				✓	
B.S. on 96A		?		✓	
99	286-10	5.13		✓	390
100	264-02	4.10		✓	390
101	248-40	1.74		✓	390
102	55-20	1.97		✓	390
to 104A	61-00	8.10		✓	
℄ @ 104A				✓	
B.S. on 101A		8.10		✓	
103	162-21	2.77		✓	390
104	54-17	0.53		✓	390
	72-02	1.70		×	
	310-01	1.27		×	387.5
105	6803	5.40		✓	390
to 106A	108-40	6.13		✓	
℄ @ 106A				✓	
B.S. on 104A		6.1		✓	
	265-38	3.1		✓	

Worcester-Walker
5-10-22.

S 63-00 E

Short 6.6
390
2.5
390.0
387.49

near buildings
S 73-35 E

S 73-50 E

on N&S fence W of Highschool
N 60-30 E

N 61-00 E

N&S fence E Line Street (E of High School)
SE Cor High School

S 71-30 E

S 71-50 E
fence Cor N & E

Sta	Az	Rod	Hor Dist	Vert V	Elev.
℄@106A					
106	356-17	2.00		✓	390
107	59-29	0.76		✓	390
108	166-56	3.13		✓	390
109	144-23	4.67		✓	390
110	75-37	3.43		✓	390
111	79-58	6.15		✓	390
to 111A	92-58	8.6		✓	
℄@111A				✓	
BS on 106A		8.6		✓	
112	19-46	1.48		✓	390
113	113-35	5.33		✓	390
114	90-23	7.65		✓	390
115	66-49	8.7		✓	390
116	70-16	7.05		✓	390
117	64-07	6.05		✓	390
118	44-33	6.8		✓	390
119	19-28	7.47		✓	390
to 120A	13-40	8.75		✓	
℄@120A				✓	
BS on 111A		8.65		✓	
120	272-42	1.22		✓	390
121	283-37	1.37		✓	390
122	52-45	2.35		✓	390

11
605
435
370

on E&W fence
original stake lost
do do do
on E&W fence

S87-40E

S87-10E

on fence N&S W line Shreve Ranch

2x 3 on 4 feet

for chicken house
N13-30E

N13-00E

S edge pavement

Sta	Az	Rod	Hor Dist	Vert V	Elev.
℄ @ 120A △					✓
to 123A △	41-07	10.8			✓
℄ @ 123A △					✓
BS. on 120AA		10.9			✓
	166-48	8.3			✓
123	331-29	12.0			✓ 390
to 127A △	29-33½	6.77			✓
℄ @ 127AA					✓
BS. on 123A △		6.8			✓
	248-38½				✓
	68-35				✓
124	99-08	12.0			✓ 390
125	232-45	22.0			✓ 390
126	70-37	5.65			✓ 390
128	66-20	6.23			✓ 390
127	248-38½	5.47		not platted	390
129	19-58	0.75			✓ 390
	0-10				✓
130	35-50	4.22			✓ 390
131	37-15	6.8			✓ 390
132	29-24	8.2			✓ 390
133	4-38	4.00			✓ 390
134	6-13	5.9			✓ 390
to 135A △	3-32	7.3			✓
℄ @ 135A △					✓
BS. on 127AA					✓

N40-30 E

N40-00 E

= Sta 239A = 400' Contour Survey SA-15E

N28-30E

℄ SD & A&SF

N28-30E

℄ track towards San Diego

do do Lake side

Side ditch S side

do do N side

℄ track (original stake used as reference only)

to Rt edge concrete block silo.

Wooster-Walker

5-11-22

N2-30E

N2-10E

Sta	Az	Rod	Hor Dist	Vert ✓	Elev ✓
℄@135A △					
135	126-23	0.14		✓	390
	358-19			*	
136	240-05	5.33		✓	390
137	252-50	5.6		✓	390
138	291-13	3.40		✓	390
139	355-06	2.27		✓	390
to 140A △	50-55	6.4		✓	
℄@140A △				✓	
BS on 135A △		6.4		✓	
	320-43			x	
	162-09	1.10		x	
	137-46	1.30		x	
	120-47	0.90		x	
140	347-50	0.68		✓	390
141	48-50	3.75		✓	390
142	9-45	5.57		✓	390
to 143A △	356-18½	7.6		✓	
℄@143A △				✓	
BS on 140A △		7.6		✓	
	304-39			x	
143	44-38	0.80		✓	390
to 144A △	328-29	6.55		✓	
℄@144A △				✓	
BS on 143A △		5.50		✓	

See page 41

To concrete silo

River bank
do do
N49-40E

N49-45E
Gable of near barn
SW cor of street intersection
SE do do
NE do do
River bank
do do
In river bottom
N5-00W

N4-30W
Gable of near barn
Left shore river
N32-15W Rt side river
N32-10W

Wuest & Walker
5-12-22

Levels for 390' Contour
Mission Gorge Reservoir

	263	405.42		402.79	
⊙	200	397.31	1011	395.31	
144					731
⊙ 145	546	395.37	740	389.91	
⊙ 146	450	394.49	538	389.99	
147					449
⊙ 148	450	394.59	440	390.09	
149					459
150					
⊙ 151	445	394.43	461	389.98	
152					443
⊙ 153	404	394.03	444	389.99	
154					403
155					403
⊙ 156	370	393.69	404	389.99	
157					369
158					369
⊙ 159	612	396.04	377	389.92	
160					604
161					604
⊙	256	395.40	320	392.84	
162					540
⊙ 163	565	394.55	650	388.90	
164					455
⊙ 165	980	398.62	573	388.82	
	5541 ✓		5958 ✓		

Wuesta-Walker

5-11-22.

= BM 124 El 402.785

W.S. Rt Bank San Diego River

5958
5541
417

402.79
393.62

Rt side flood manage boundary

do do

do do

do do - Gorge altitude trail

Inaltitude trail

Wuesta-Walker

5-12-22

✓

✓

✓

✓

		398.62			
⊙ 166	12.37	402.38	8.61	390.01	
167					12.38
~~168~~	6.77	401.45	7.70	394.68	
	19.12		0.33	401.12	
		7	16.6		
	Check to 400' cont.				
	5.47	400.15		394.68	
			0.15	400.07	
		#			
	3.97	398.65		394.68	
⊙ 168	4.03	394.15	8.53	390.12	
169			~~4.08~~	~~390.07~~	4.15
170			4.08	~~390.07~~	4.15
⊙ 171	12.90	402.97	4.08	390.07	
172					12.97
⊙ 173	4.44	394.43	12.98	389.99	
174					~~4.43~~
175					4.43
⊙ 176	6.20	396.29	4.34	390.09	
⊙ 177	6.23	396.24	6.28	390.01	
178					~~6.24~~
179					6.24
⊙ 180	8.30	398.29	6.25	~~389.99~~	
181					8.29
⊙ 182	7.84	397.94	8.19	390.10	
	~~5.99~~ 6.31	Sac	5 6.57	pgc ~~43~~	

5391
5065
326
394.68
398.94

Top stake 348 - 400' Cont.

Wuoste-Walker
5-13-22

= Sta 348 400' Cont

Sta	Az	Rod	Hor Dist	Vert v	Elev
℄@144A					
	350-13	2.55		✓	400
144	185-36	1.15		✓	390
145	205-13	4.13		✓	390
to 147A	265-27	7.10		✓	
℄@147A				✓	
BS on 144A		7.1		✓	
147	18-46	0.70		✓	390
to 148A	246-58	9.0		✓	
℄@148A				✓	
BS on 147A		9.0		✓	
146	96-52	7.9		✓	390
148	59-30	0.22		✓	390
149	214-25	2.33		✓	390
150	225-56	4.65		✓	390
151	284-01	2.63		✓	390
to 152	297-08	6.9		✓	390
℄@152				✓	390
BS on 148A		6.87		✓	
153	357-15	4.77		✓	390
to 153A	319-21½	6.2		✓	
℄@153A				✓	
BS on 152		6.23		✓	390
154	0-16	4.93		✓	390
155	332-03	4.35		✓	390

=Sta 302 400' Contour survey (Rt flood monocadline

=Sta 302 400' Contour survey

S 84-45 W

S 85-00 W

S 66-15 W

Rt flood monocadline

S 67-10 W

~~do~~

do

do

do

N 62-30 W

N 62-45 W

In road

N 40-30 W

N 41-00 W

Sta	Az	Rod	Hor Dist	Vert ✓	Elev.
⊼@ 153A △				✓	
to 156A △	290-49½	6.13		✓	
⊼@ 156A △				✓	
BS on 153A △		6.1		✓	
156	217-11	0.28		✓	390
to 157A △	296-30	4.59		✓	
⊼@ 157A △				✓	
BS on 156A △		4.58		✓	
157	12-42	0.26		✓	390
	340-53	~1.66		✓	400
158	324-14	1.65		✓	390
to 159 △	307-47	4.92		✓	390
⊼@ 159 △				✓	390
BS on 157A △		4.90		✓	
to 160A △	247-23	5.63		✓	
⊼@ 160A △				✓	
BS on 159 △		5.63		✓	390
160	352-23	1.76		✓	390
161	317-21	4.20		✓	390
to 162A △	208-00½	7.7		✓	390
⊼@ 162A △				✓	390
BS on 160A △		7.7		✓	
to 163A △	233-04	5.22		✓	
⊼@ 163A △				✓	
BS on 162 △				✓	390

8's of center of road

N64-30W

N68-30W

N63-00W

On Gibson Ranch

N63-30W

= Sta 373A 400' Gord Sorrey

N52-10W

N52-15W

S67-15W

S67-10W

on N & S fenceline

S28-00W

S27-30W

S52-30W

Levels for 390' Contour Mission Gorge Reservoir

from page 40 — Woosta-Walker 43 — 5-13-22

		397.94			
183					7.94
⊙ 184	9.98	399.98	7.94	390.00	
185					9.98
⊙ 186	8.10	398.21	9.87	390.11	
187					8.21
⊙ 188	8.57	398.54	8.24	389.97	8.21
⊙ 189	8.57	398.54	8.24	389.97	
189					8.54
190					8.54
191	10.31	400.28	8.57	389.97	
192					10.28
⊙ 193	8.79	398.87	10.20	390.08	
194					8.87
195					8.87
196					8.87
197					8.87
198					8.87
⊙ 199	12.23	402.28	8.82	390.05	
⊙ 200	12.92	403.03	12.17	390.11	
201					13.03
			3.11	399.92	
	70.90 ✓		68.92 ✓		

70.90
68.92
1.98
397.94
399.92

390.00 (exact) on hub
= 4.05 on 400' Cont (El 400.00)

Traverse 390' cont

See page 42

Sta	Az	Rad	Hor Dist	Vert V	Elev
⊼@163A					✓
BS on 162		5.7			✓ 390
163	314-50	0.73			✓ 390
to 165A A	210-32½	8.55			✓
⊼@165A A					✓
BS on 163A A		8.55			✓
164	11-53	5.67			✓ 390
165	352-00	2.10			✓ 390
166	245-33	2.15		+4-15	✓ 390
to 167A A	225-24	4.08			✓
⊼@167A A					✓
BS on 165A A		4.14			✓
167	321-15	1.22		+8-30	✓ 390
to 168A A	250-17	7.8			✓
⊼@168A A					✓
BS on 167A A		7.8			✓
168	191-20	0.38			✓ 390
to 169A A	246-20½	8.8			✓
⊼@169A A					✓
BS on 168A A		8.8			✓
	43-37	3.60			✓ 400
169	277-26	2.56			✓ 390
to 170A A	258-00½	7.9			✓
⊼@170A A					✓
BS on 169A A		7.9			✓
169	31-01	1.30			✓ 390

Wuesto-Walker
5-15-72

S52-40W

S30-10W

S30-30W
3' South of E & W fence

S45-30W

S45-00W

S70-00W

S70-00W

S66-00W

S66-00W
=Sta 349 400 cont survey

S77-45W

S78-00W

Sta	Az	Rod	Hor Dist	Vert ✓	Elev ✓	
℄@170A				✓		
170	253-41	0.83		✓	390	
171	277-12	3.10		✓	390	
to 173A	268-51	6.5		✓		S88-45W
℄@173A				✓		
BS. on 170A		6.5		✓		S88-30W
172	169-01	1.86		✓	390	
173	284-18	2.08		✓	390	
	265-48	2.60		✓		Drinkwater NW Cor.
to 174A	263-35	6.0		✓		S83-05W
℄@174A				✓		
BS. on 173A		6.0		✓		S83-15W
174	161-53	1.56		✓	390	
175	247-46	3.73		✓	390	
to 176	230-12	7.45		✓	390	S49-50W
℄@176				✓	390	
BS. on 174A		7.45		✓		S49-30W
to 177A	245-46	8.2				S65-00W
℄@177A				✓		
BS. on 176		8.2		✓	390	S65-30W
177	161-37	1.98		✓	390	
178	219-42	2.14		✓	390	
to 180	263-19½	6.00		✓	390	S88-00W
℄@180				✓	390	
BS. on 177A		5.95		✓	390	S83-45W
179	55-35	3.40		✓	390	

Sta	Az	Rod	Hor Dist	Vert V	Elev
⊼@180 △				✓	390
to 182A △	274-05	8.0		✓	
⊼@182A △				✓	
BS on 180 △		7.95		✓	390
181	49-16	2.67		✓	390
182	272-54	0.68		✓	390
183	267-07	6.0		✓	390
to 183A △	232-43½	6.6		✓	
⊼@183A △				✓	
BS on 182A △		6.6		✓	
184	266-00	3.24		✓	390
to 186A △	301-21	5.0		✓	
⊼@186A △				✓	
BS on 183A △				✓	
185	200-45	3.46		✓	390
186	269-17	2.00		✓	390
187	348-27	7.0		✓	390
to 188 △	326-37	7.1		✓	390
⊼@188 △				✓	390
BS on 186A △		7.12		✓	
	143-37	1.72		✓	
to 189A △	258-57	6.0		✓	
⊼@189A △				✓	
BS on 188 △		6.0		✓	390
189	167-15	2.96		✓	390

173
2
346

N85-30W

N85-30W

S53-00W

S52-30W

N58-30W

N58-45W

N33-30W

N33-45W
On N & S fence
S78-30W

Wooster-Walker
5-16-27

Sta	Az	Rod	Hor Dist	Vert V	Elev
⊼@189A ▲				✓	
190	334-09	6.0		✓	390
191	264-38	6.15		✓	390
to 191A ▲	258-09½	11.6		✓	
⊼@191A ▲				✓	
BS on 189A ▲		11.6		✓	
	17-01	3.53		✓	400
	109-08	3.20		✓	
192	175-55	5.2		✓	390
193	215-44	4.46		✓	390
194	234-00	7.9		✓	390
to 194A ▲	220-16½	12.0		✓	
⊼@194A ▲				✓	
BS on 191A ▲		12.1		✓	
195	107-20	5.15		✓	390
198	250-09	6.1		✓	390
199	235-38	6.5		✓	390
to 199A ▲	235-09	8.0		✓	
⊼@199A ▲				✓	
BS on 194A ▲		7.9		✓	
to 200A ▲	241-04	6.8		✓	
⊼@200A ▲				✓	
BS on 199A ▲		6.8		✓	
200	168-26	4.23		✓	390
201	192-00	4.37		✓	390

25809
18.0
7809

Inwash

S78-00W

S77-30W

Sta 387A 400' Contour survey N16-25E
fence cor (NW cor eucalyptus grove)

S39-30W

S39-00W

In wash (196, 197 lost)

S54-15W

S54-30W

S60-30W

S60-30W

Sta	Az	Rod	Hor Dist	Vert ✓	Elev ✓
℄@200A △					✓
to 404A △	154-16	2.86			✓
℄@404A △					✓
BS on 200A △		2.87			✓
to 405 △	248-23	2.32			✓

180
154 16
25 44

△ on 400' Cont Survey. S24-20E

S26-30E

△ on 400' Cont Survey S67-40W (247-57)

KEITH'S RAILROAD CURVE TABLES.

Published by KEUFFEL & ESSER CO., New York.

HOW TO USE KEITH'S TABLES.

EXAMPLE.

Wanted a Curve with an Ext. of about 12 ft. Angle of Intersection or I. P. = 23° 20′ to the R. at Station 542+72.

Ext. in Tab. IV opposite 23° 20′ = 120.87
120.87 ÷ 12 = 10.07. Say a 10° Curve.

Tan. in Tab. IV opp. 23° 20′ = 1183.1
1183.1 ÷ 10 = 118.31.

Tab. V correction for A. 23° 20′ for a 10° Cur. = 0.16
118.31 + 0.16 = 118.47 = corrected Tangent.

(If corrected Ext. is required find in same way)
Ang. 23° 20′ = 23.33° ÷ 10 = 2.3333 = L. C.

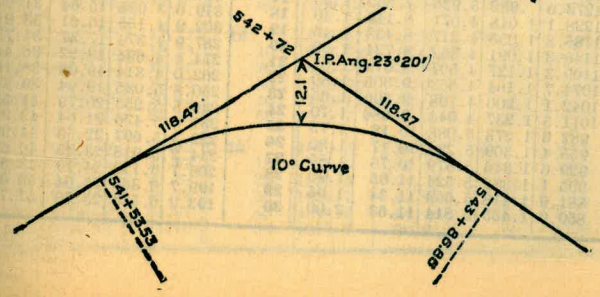
2° 19½′ = def. for sta.	542	I. P. = sta.	542+72
4° 49½′ = " " "	+50	Tan. =	1.18.47
7° 19½′ = " " "	543	B. C. = sta.	541+53.53
9° 49½′ = " " "	+50	L. C. =	2.33.33
11° 40′ = " " "	543+	E. C. = Sta.	543+86.86
	86.86		

100 − 53.53 = 46.47 × 3′ (def. for 1 ft. of 10° Cur.) = 139.41′ = 2° 19½″ = def. for sta. 542.

Def. for 50 ft. = 2° 30′ for a 10° Curve.

Def. for 36.86 ft. = 1° 50½′ for a 10° Curve.

(These tables are published in Field Books of KEUFFEL & ESSER Co., New York, N. Y.)



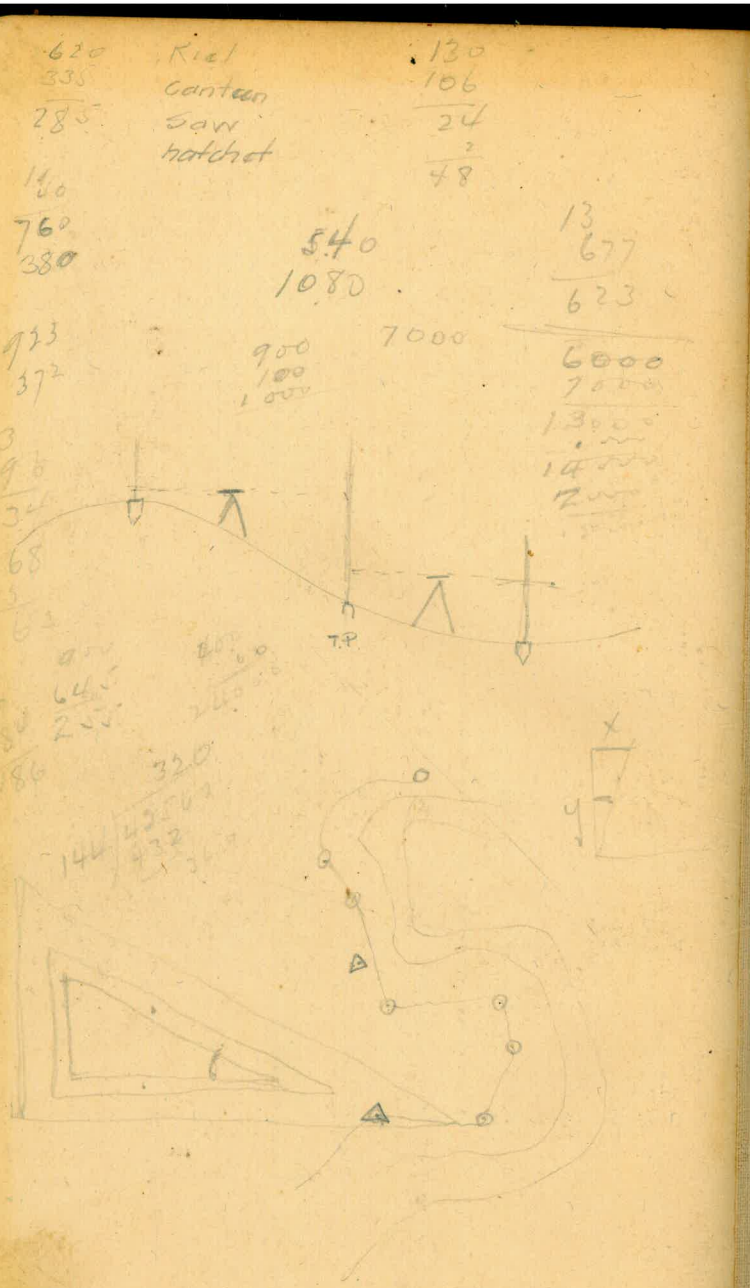
Natural Tangents.

Deg.	0′	10′	20′	30′	40′	50′	Deg.
0	0000	0029	0058	0087	0116	0145	89
1	0175	0204	0233	0262	0291	0320	88
2	0349	0378	0407	0437	0466	0495	87
3	0524	0553	0582	0612	0641	0670	86
4	0699	0729	0758	0787	0816	0846	85
5	0875	0904	0934	0963	0992	1022	84
6	1051	1080	1110	1139	1169	1198	83
7	1228	1257	1287	1317	1346	1376	82
8	1405	1435	1465	1495	1524	1554	81
9	1584	1614	1644	1673	1703	1733	80
10	1763	1793	1823	1853	1883	1914	79
11	1944	1974	2004	2035	2065	2095	78
12	2126	2156	2186	2217	2247	2278	77
13	2309	2339	2370	2401	2432	2462	76
14	2493	2524	2555	2586	2617	2648	75
15	2679	2711	2742	2773	2805	2836	74
16	2867	2899	2931	2962	2994	3026	73
17	3057	3089	3121	3153	3185	3217	72
18	3249	3281	3314	3346	3378	3411	71
19	3443	3476	3508	3541	3574	3607	70
20	3640	3673	3706	3739	3772	3805	69
21	3839	3872	3906	3939	3973	4006	68
22	4040	4074	4108	4142	4176	4210	67
23	4245	4279	4314	4348	4383	4417	66
24	4452	4487	4522	4557	4592	4628	65
25	4663	4699	4734	4770	4806	4841	64
26	4877	4913	4950	4986	5022	5059	63
27	5095	5132	5169	5206	5243	5280	62
28	5317	5354	5392	5430	5467	5505	61
29	5543	5581	5619	5658	5696	5735	60
30	5774	5812	5851	5890	5930	5969	59
31	6009	6048	6088	6128	6168	6208	58
32	6249	6289	6330	6371	6412	6453	57
33	6494	6536	6577	6619	6661	6703	56
34	6745	6787	6830	6873	6916	6959	55
35	7002	7046	7089	7133	7177	7221	54
36	7265	7310	7355	7400	7445	7490	53
37	7536	7581	7627	7673	7720	7766	52
38	7813	7860	7907	7954	8002	8050	51
39	8098	8146	8195	8243	8292	8342	50
Deg.	60′	50′	40′	30′	20′	10′	Deg.

Deg.	0′	10′	20′	30′	40′	50′	Deg.
40	8391	8441	8491	8541	8591	8642	49
41	8693	8744	8796	8847	8899	8952	48
42	9004	9057	9110	9163	9217	9271	47
43	9325	9380	9435	9490	9545	9601	46
44	9657	9713	9770	9827	9884	9942	45
45	1.0000	1.0058	1.0117	1.0176	1.0235	1.0295	44
46	1.0355	1.0416	1.0477	1.0533	1.0599	1.0661	43
47	1.0724	1.0786	1.0850	1.0913	1.0977	1.1041	42
48	1.1106	1.1171	1.1237	1.1303	1.1369	1.1436	41
49	1.1504	1.1571	1.1640	1.1708	1.1778	1.1847	40
50	1.1918	1.1988	1.2059	1.2131	1.2203	1.2276	39
51	1.2349	1.2423	1.2497	1.2572	1.2647	1.2723	38
52	1.2799	1.2876	1.2954	1.3032	1.3111	1.3190	37
53	1.3270	1.3351	1.3452	1.3514	1.3597	1.3680	36
54	1.3764	1.3848	1.3934	1.4019	1.4106	1.4193	35
55	1.4281	1.4370	1.4460	1.4550	1.4641	1.4733	34
56	1.4826	1.4919	1.5013	1.5108	1.5204	1.5301	33
57	1.5399	1.5497	1.5597	1.5697	1.5798	1.5900	32
58	1.6003	1.6107	1.6212	1.6319	1.6426	1.6534	31
59	1.6643	1.6753	1.6864	1.6977	1.7090	1.7205	30
60	1.7321	1.7437	1.7556	1.7675	1.7797	1.7917	29
61	1.8040	1.8165	1.8291	1.8418	1.8546	1.8676	28
62	1.8807	1.8940	1.9074	1.9210	1.9347	1.9486	27
63	1.9626	1.9768	1.9912	2.0057	2.0204	2.0353	26
64	2.0503	2.0655	2.0809	2.0965	2.1123	2.1283	25
65	2.1445	2.1609	2.1775	2.1943	2.2113	2.2286	24
66	2.2460	2.2637	2.2817	2.2998	2.3183	2.3369	23
67	2.3559	2.3750	2.3945	2.4142	2.4342	2.4545	22
68	2.4751	2.4960	2.5172	2.5386	2.5605	2.5826	21
69	2.6051	2.6279	2.6511	2.6746	2.6985	2.7228	20
70	2.7475	2.7725	2.7980	2.8230	2.8502	2.8770	19
71	2.9042	2.9319	2.9600	2.9887	3.0178	3.0475	18
72	3.0777	3.1084	3.1397	3.1716	3.2041	3.2371	17
73	3.2709	3.3052	3.3402	3.3759	3.4124	3.4495	16
74	3.4874	3.5261	3.5656	3.6059	3.6470	3.6891	15
75	3.7321	3.7760	3.8208	3.8657	3.9136	3.9617	14
76	4.0108	4.0611	4.1126	4.1653	4.2193	4.2747	13
77	4.3315	4.3897	4.4494	4.5107	4.5736	4.6382	12
78	4.7046	4.7729	4.8430	4.9152	4.9894	5.0658	11
79	5.1446	5.2257	5.3093	5.3955	5.4845	5.5764	10
Deg.	60′	50′	40′	30′	20′	10′	Deg.

Deg.	0′	10′	20′	30′	40′	50′	Deg.
80	5.6713	5.7694	5.8708	5.9758	6.0844	6.1970	9
81	6.3138	6.4348	6.5606	6.6912	6.8269	6.9682	8
82	7.1154	7.2687	7.4287	7.5958	7.7704	7.9530	7
83	8.1443	8.3450	8.5555	8.7769	9.0098	9.2553	6
84	9.5144	9.7882	10.078	10.385	10.711	11.059	5
85	11.430	11.826	12.250	12.706	13.197	13.727	4
86	14.300	14.924	15.605	16.350	17.169	18.075	3
87	19.081	20.206	21.470	22.903	24.542	26.432	2
88	28.636	31.242	34.368	38.189	42.964	49.104	1
89	57.290	68.750	85.940	114.588	171.885	343.77	0
Deg.	60′	50′	40′	30′	20′	10′	Deg.

Natural Cotangents.



DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

ROADWAY 14 FEET WIDE. SIDE SLOPES 1½ TO 1.

FOR SINGLE TRACK EMBANKMENT.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	7.0	7.2	7.3	7.5	7.6	7.8	7.9	8.1	8.2	8.4	0
1	8.5	8.7	8.8	9.0	9.1	9.3	9.4	9.6	9.7	9.9	1
2	10.0	10.2	10.3	10.5	10.6	10.8	10.9	11.1	11.2	11.4	2
3	11.5	11.7	11.8	12.0	12.1	12.3	12.4	12.6	12.7	12.9	3
4	13.0	13.2	13.3	13.5	13.6	13.8	13.9	14.1	14.2	14.4	4
5	14.5	14.7	14.8	15.0	15.1	15.3	15.4	15.6	15.7	15.9	5
6	16.0	16.2	16.3	16.5	16.6	16.8	16.9	17.1	17.2	17.4	6
7	17.5	17.7	17.8	18.0	18.1	18.3	18.4	18.6	18.7	18.9	7
8	19.0	19.2	19.3	19.5	19.6	19.8	19.9	20.1	20.2	20.4	8
9	20.5	20.7	20.8	21.0	21.1	21.3	21.4	21.6	21.7	21.9	9
10	22.0	22.2	22.3	22.5	22.6	22.8	22.9	23.1	23.2	23.4	10
11	23.5	23.7	23.8	24.0	24.1	24.3	24.4	24.6	24.7	24.9	11
12	25.0	25.2	25.3	25.5	25.6	25.8	25.9	26.1	26.2	26.4	12
13	26.5	26.7	26.8	27.0	27.1	27.3	27.4	27.6	27.7	27.9	13
14	28.0	28.2	28.3	28.5	28.6	28.8	28.9	29.1	29.2	29.4	14
15	29.5	29.7	29.8	30.0	30.1	30.3	30.4	30.6	30.7	30.9	15
16	31.0	31.2	31.3	31.5	31.6	31.8	31.9	32.1	32.2	32.4	16
17	32.5	32.7	32.8	33.0	33.1	33.3	33.4	33.6	33.7	33.9	17
18	34.0	34.2	34.3	34.5	34.6	34.8	34.9	35.1	35.2	35.4	18
19	35.5	35.7	35.8	36.0	36.1	36.3	36.4	36.6	36.7	36.9	19
20	37.0	37.2	37.3	37.5	37.6	37.8	37.9	38.1	38.2	38.4	20
21	38.5	38.7	38.8	39.0	39.1	39.3	39.4	39.6	39.7	39.9	21
22	40 0	40.2	40.3	40.5	40.6	40.8	40.9	41.1	41.2	41.4	22
23	41.5	41.7	41.8	42.0	42.1	42.3	42.4	42.6	42.7	42.9	23
24	43.0	43.2	43.3	43.5	43.6	43.8	43.9	44.1	44.2	44.4	24
25	44.5	44.7	44.8	45.0	45.1	45.3	45.4	45.6	45.7	45.9	25
26	46.0	46.2	46.3	46.5	46.6	46.8	46.9	47.1	47.2	47.4	26
27	47.5	47.7	47.8	48.0	48.1	48.3	48.4	48.6	48.7	48.9	27
28	49.0	49.2	49.3	49.5	49.6	49.8	49.9	50.1	50.2	50.4	28
29	50.5	50.7	50.8	51.0	51.1	51.3	51.4	51.6	51.7	51.9	29
30	52.0	52.2	52.3	52.5	52.6	52.8	52.9	53.1	53.2	53.4	30
31	53.5	53.7	53.8	54.0	54.1	54.3	54.4	54.6	54.7	54.9	31
32	55.0	55.2	55.3	55.5	55.6	55.8	55.9	56.1	56.2	56.4	32
33	56.5	56.7	56.8	57.0	57.1	57.3	57.4	57.6	57.7	57.9	33
34	58.0	58.2	58.3	58.5	58.6	58.8	58.9	59.1	59.2	59.4	34
35	59.5	59.7	59.8	60.0	60.1	60.3	60.4	60.6	60.7	60.9	35
36	61.0	61.2	61.3	61.5	61.6	61.8	61.9	62.1	62.2	62.4	36

Calculated by Julien A. Hall, M. Am. Soc. C. E.