

DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING  
SLOPE 1 TO 1. ROADWAY OF ANY WIDTH

	0	1	2	3	4	5	6	7	8	9	
0	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	0
1	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90	1
2	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	2
3	3.00	3.10	3.20	3.30	3.40	3.50	3.60	3.70	3.80	3.90	3
4	4.00	4.10	4.20	4.30	4.40	4.50	4.60	4.70	4.80	4.90	4
5	5.00	5.10	5.20	5.30	5.40	5.50	5.60	5.70	5.80	5.90	5
6	6.00	6.10	6.20	6.30	6.40	6.50	6.60	6.70	6.80	6.90	6
7	7.00	7.10	7.20	7.30	7.40	7.50	7.60	7.70	7.80	7.90	7
8	8.00	8.10	8.20	8.30	8.40	8.50	8.60	8.70	8.80	8.90	8
9	9.00	9.10	9.20	9.30	9.40	9.50	9.60	9.70	9.80	9.90	9
10	10.00	10.10	10.20	10.30	10.40	10.50	10.60	10.70	10.80	10.90	10
11	11.00	11.10	11.20	11.30	11.40	11.50	11.60	11.70	11.80	11.90	11
12	12.00	12.10	12.20	12.30	12.40	12.50	12.60	12.70	12.80	12.90	12
13	13.00	13.10	13.20	13.30	13.40	13.50	13.60	13.70	13.80	13.90	13
14	14.00	14.10	14.20	14.30	14.40	14.50	14.60	14.70	14.80	14.90	14
15	15.00	15.10	15.20	15.30	15.40	15.50	15.60	15.70	15.80	15.90	15
16	16.00	16.10	16.20	16.30	16.40	16.50	16.60	16.70	16.80	16.90	16
17	17.00	17.10	17.20	17.30	17.40	17.50	17.60	17.70	17.80	17.90	17
18	18.00	18.10	18.20	18.30	18.40	18.50	18.60	18.70	18.80	18.90	18
19	19.00	19.10	19.20	19.30	19.40	19.50	19.60	19.70	19.80	19.90	19
20	20.00	20.10	20.20	20.30	20.40	20.50	20.60	20.70	20.80	20.90	20
21	21.00	21.10	21.20	21.30	21.40	21.50	21.60	21.70	21.80	21.90	21
22	22.00	22.10	22.20	22.30	22.40	22.50	22.60	22.70	22.80	22.90	22
23	23.00	23.10	23.20	23.30	23.40	23.50	23.60	23.70	23.80	23.90	23
24	24.00	24.10	24.20	24.30	24.40	24.50	24.60	24.70	24.80	24.90	24
25	25.00	25.10	25.20	25.30	25.40	25.50	25.60	25.70	25.80	25.90	25
26	26.00	26.10	26.20	26.30	26.40	26.50	26.60	26.70	26.80	26.90	26
27	27.00	27.10	27.20	27.30	27.40	27.50	27.60	27.70	27.80	27.90	27
28	28.00	28.10	28.20	28.30	28.40	28.50	28.60	28.70	28.80	28.90	28
29	29.00	29.10	29.20	29.30	29.40	29.50	29.60	29.70	29.80	29.90	29
30	30.00	30.10	30.20	30.30	30.40	30.50	30.60	30.70	30.80	30.90	30
31	31.00	31.10	31.20	31.30	31.40	31.50	31.60	31.70	31.80	31.90	31
32	32.00	32.10	32.20	32.30	32.40	32.50	32.60	32.70	32.80	32.90	32
33	33.00	33.10	33.20	33.30	33.40	33.50	33.60	33.70	33.80	33.90	33
34	34.00	34.10	34.20	34.30	34.40	34.50	34.60	34.70	34.80	34.90	34
35	35.00	35.10	35.20	35.30	35.40	35.50	35.60	35.70	35.80	35.90	35
36	36.00	36.10	36.20	36.30	36.40	36.50	36.60	36.70	36.80	36.90	36
37	37.00	37.10	37.20	37.30	37.40	37.50	37.60	37.70	37.80	37.90	37
38	38.00	38.10	38.20	38.30	38.40	38.50	38.60	38.70	38.80	38.90	38
39	39.00	39.10	39.20	39.30	39.40	39.50	39.60	39.70	39.80	39.90	39
40	40.00	40.10	40.20	40.30	40.40	40.50	40.60	40.70	40.80	40.90	40
41	41.00	41.10	41.20	41.30	41.40	41.50	41.60	41.70	41.80	41.90	41
42	42.00	42.10	42.20	42.30	42.40	42.50	42.60	42.70	42.80	42.90	42
43	43.00	43.10	43.20	43.30	43.40	43.50	43.60	43.70	43.80	43.90	43
44	44.00	44.10	44.20	44.30	44.40	44.50	44.60	44.70	44.80	44.90	44
45	45.00	45.10	45.20	45.30	45.40	45.50	45.60	45.70	45.80	45.90	45
46	46.00	46.10	46.20	46.30	46.40	46.50	46.60	46.70	46.80	46.90	46
47	47.00	47.10	47.20	47.30	47.40	47.50	47.60	47.70	47.80	47.90	47
48	48.00	48.10	48.20	48.30	48.40	48.50	48.60	48.70	48.80	48.90	48
49	49.00	49.10	49.20	49.30	49.40	49.50	49.60	49.70	49.80	49.90	49
50	50.00	50.10	50.20	50.30	50.40	50.50	50.60	50.70	50.80	50.90	50

Distance of slope stake from side or shoulder stake for any width roadway, slope 1 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 from side stake to slope stake. If ground is not level estimate the difference in elevation between the side stake and slope stake, lower target by this amount if cut, elevate if fill. Add this amount to cut or fill and find distance in table. Set up rod at this point, and line of sight should cut target. If it does not make the slight adjustment necessary.

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33700

12.3  
27 | 337  
27  
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80

12.5  
3.5  
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4375

3.37  
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216  
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27 | 237  
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216  
16

Civic Center  
Etc.  
313

270 + 000

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478 | 3.37  
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MICROFILMED  
JAN 16 1965

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1384.74

6.06  
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907.46  
867  
1.35  
57

FRANK WELKER  
c/o 3628 QUIMBY

PHONE :

c/o E. KAESER  
3446 TENNYSON ST.

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IMPROVED TABLES  
AND  
INFORMATION

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TABLE XIII—CORRECTIONS FOR TANGENTS AND EXTERNALS

These corrections are to be added to the approximate values, found by dividing the tangent, or external, for a 1° curve (Table VIII) by the degree of curve, in order to obtain the true tangents, or externals. Intermediate values may be obtained by interpolation.

FOR TANGENTS ADD

Central Angle	DEGREE OF CURVE													
	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°
10°	.03	.06	.09	.13	.16	.19	.22	.25	.28	.31	.34	.38	.42	.46
15°	.04	.10	.14	.19	.24	.29	.34	.39	.45	.51	.53	.58	.63	.68
20°	.06	.13	.19	.26	.32	.39	.45	.51	.58	.65	.72	.79	.84	.90
25°	.08	.16	.24	.33	.40	.49	.58	.67	.75	.83	.90	.99	1.06	1.14
30°	.10	.19	.29	.39	.49	.59	.69	.79	.89	.99	1.09	1.20	1.29	1.39
35°	.11	.22	.34	.47	.58	.69	.79	.81	.92	1.04	1.29	1.42	1.51	1.66
40°	.13	.26	.40	.53	.67	.80	.93	1.06	1.20	1.34	1.49	1.64	1.79	1.94
45°	.15	.30	.44	.60	.76	.91	1.06	1.21	1.37	1.52	1.70	1.87	2.04	2.21
50°	.17	.34	.51	.68	.85	1.02	1.19	1.36	1.54	1.72	1.91	2.10	2.29	2.48
55°	.19	.38	.57	.76	.95	1.14	1.32	1.52	1.72	1.92	2.14	2.35	2.56	2.77
60°	.21	.42	.63	.84	1.05	1.27	1.49	1.71	1.94	2.17	2.38	2.60	2.83	3.07
65°	.23	.46	.69	.93	1.16	1.40	1.64	1.88	2.13	2.38	2.63	2.88	3.13	3.39
70°	.25	.51	.76	1.02	1.28	1.54	1.80	2.06	2.33	2.60	2.88	3.16	3.44	3.72
75°	.27	.56	.83	1.12	1.40	1.69	1.98	2.27	2.57	2.87	3.16	3.47	3.78	4.09
80°	.30	.61	.91	1.22	1.53	1.84	2.15	2.46	2.78	3.10	3.44	3.78	4.12	4.46
85°	.33	.66	1.00	1.33	1.68	2.02	2.36	2.70	3.05	3.40	3.77	4.14	4.55	4.89
90°	.36	.72	1.09	1.45	1.83	2.20	2.57	2.94	3.32	3.70	4.10	4.50	4.91	5.32
95°	.39	.79	1.19	1.55	2.00	2.40	2.80	3.20	3.61	4.02	4.40	4.98	5.38	5.83
100°	.43	.86	1.30	1.74	2.18	2.62	3.06	3.50	3.95	4.40	4.88	5.37	5.85	6.34
110°	.51	1.03	1.56	2.08	2.61	3.14	3.67	4.21	4.76	5.31	5.86	6.43	7.01	7.60
120°	.62	1.25	1.93	2.52	3.16	3.81	4.45	5.11	5.77	6.44	7.12	7.80	8.50	9.22

FOR EXTERNALS ADD

Central Angle	DEGREE OF CURVE													
	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°
10°	.001	.003	.004	.006	.007	.008	.009	.011	.012	.014	.015	.017	.018	.020
15°	.003	.007	.010	.014	.018	.023	.027	.029	.032	.035	.039	.043	.047	.051
20°	.006	.011	.017	.022	.028	.034	.038	.045	.051	.057	.063	.070	.076	.083
25°	.009	.018	.027	.036	.046	.056	.065	.074	.083	.093	.106	.120	.127	.135
30°	.013	.025	.038	.051	.065	.078	.090	.103	.116	.129	.149	.170	.179	.188
35°	.018	.035	.054	.072	.086	.109	.131	.153	.175	.197	.213	.230	.247	.264
40°	.023	.046	.070	.093	.117	.141	.172	.203	.234	.265	.277	.290	.315	.341
45°	.030	.060	.093	.119	.153	.184	.216	.254	.289	.325	.351	.378	.411	.445
50°	.037	.075	.116	.151	.189	.227	.266	.305	.345	.384	.425	.467	.508	.550
55°	.046	.093	.142	.188	.236	.283	.332	.381	.420	.479	.530	.582	.641	.700
60°	.056	.112	.168	.225	.283	.340	.398	.457	.516	.575	.636	.697	.774	.851
65°	.067	.135	.204	.273	.343	.412	.483	.554	.625	.697	.711	.845	.922	1.01
70°	.080	.159	.240	.321	.403	.485	.568	.652	.735	.819	.906	.994	1.08	1.17
75°	.095	.182	.286	.383	.480	.578	.678	.777	.877	.977	1.07	1.18	1.29	1.39
80°	.110	.220	.332	.445	.558	.671	.787	.903	1.02	1.13	1.25	1.38	1.50	1.62
85°	.128	.259	.391	.524	.657	.790	.926	1.06	1.20	1.34	1.47	1.62	1.76	1.91
90°	.149	.299	.450	.603	.756	.910	1.07	1.22	1.38	1.54	1.70	1.87	2.03	2.20
95°	.174	.350	.522	.706	.885	1.06	1.25	1.43	1.62	1.80	1.99	2.18	2.38	2.58
100°	.200	.401	.604	.809	1.01	1.22	1.43	1.64	1.85	2.06	2.28	2.50	2.73	2.96
110°	.268	.536	.806	1.08	1.35	1.63	1.91	2.20	2.48	2.76	3.05	3.35	3.66	3.96
120°	.360	.721	1.08	1.45	1.82	2.19	2.57	2.95	3.33	3.72	4.11	4.50	4.91	5.32

(Book #3) Sec II  
Kearny Mesa Pipe Line

Book 3  
Kearny Mesa  
Pipe Line  
Combined 1 & 2

	WELKER	Book	Page
2-15-50 Grading R/W		806	1-8 alice
3-20-50 Excavations		806	9-19 alice
3-31-50 " + R/W Grading		806	20
4-3-50 Excavations		806	21-45
4-21 to 4-30/50 Summary		806	46-47
5-1-50 EXCAVATIONS		806	48-55
to 5-10-50 Concrete		806	56-58
REINF. STEEL		806	59-60
Fitting + Connec.		806	62-63
Concrete Paving		806	64-65
EXTRAS		806	68-73 alice

Station							
159+89	4" B.O. 20" M.H.	4" Gate Valve 1-4" Blind Flg.	Kennedy -	Flange -	Buried Buried	8" Oper. Shaft 8" C.I. Cap.	7.5' long
167+14	12" S.O.	12" Gate Valve 12" Blind Flge	Rensselaer -	Flange -	Buried Buried	8" C.I. Cap. 8" Oper. Shaft	48" long
171+00	4" A.V.A. 20" M.H.	4" Gate Valve 1-4" A.V.A.	Kennedy Rensselaer	Flanged Flanged	Chamber		
186+95	4" B.O. 20" M.H.	4" Gate Valve 1-4" Blind Flge.	Kennedy	Flanged	Chamber		
191+72	4" A.V.A.	1-4" Gate Valve 1-4" A.V.A.	Kennedy Rensselaer	Flanged Flanged	Pipe Chamber		
201+53	20" M.H.	-	-	Flanged	Buried		
215+55	4" B.O. 20" M.H.	4" Gate Valve -	Kennedy -	Flanged Flanged	Chamber "		
219+95	2" A.V.A.	1-2" Corp. Cock 1-2" A.V.A.	Rensselaer	Screw Screw	Pipe Chamber "		
223+30	4" B.O. 20" M.H.	4" Gate Valve -	Kennedy -	Flanged "	Chamber "		
240+05	4" A.V.A. 20" M.H.	4" Gate Valve 1-4" A.V.A.	Kennedy Rensselaer	Flanged Flanged	Chamber "		
241+68	1-30" Valve 20" M.H.	1-30" Valve 1-12" Gate Valve 1-4" Gate Valve 1-4" A.V.A. 1-3/4" Corp. Cock 1-12" Blind Flge.	Nordstrom Rensselaer Kennedy Rensselaer	Hub end Flanged Flanged Flanged Screw	Chamber " " " "		

540.

261+15	8" S.O. 20" M.H.	1-8" Gate Valve Kennedy 1-8" Blind Flge -	Flanged "	Buried "	
275+55 275+53	20" M.H. 4" 4" outlet	1-4" Blind Flange -	"	"	
285+00	8" S.O. 1	1-8" Gate Valve Kennedy 1-8" Blind Flge -	Flanged -	" "	
287+65	20" M.H.	-	-	Buried	
293+60	20" M.H. on top 4" B.O. on Bottom	- 4" Gate Valve Rensselaer	Flanged Flange	Exposed Exposed	
301+70	4" A.V.A. 20" M.H.	1-4" Gate Valve Rensselaer -	Flanged "	Chamber "	
303+85	6" S.O.	1-6" Gate Valve Kennedy	Flanged	Buried	oper shaft + Cap
312+18	20" M.H.	-	"	"	
318+67	6" S.O.	1-6" Gate Valve Kennedy	"	"	oper shaft + 3" C.I. Cap
321+87	4" B.O. 20" M.H.	1-4" Gate Valve Renss. -	Flanged "	Chamber -	
324+95	2" A.V.A.	1-2" Corp Cocks 1-2" A.V.A. Renss	Screw Flanged	Pipe Chamber "	
327+02	Flexible Coupling	Buried			
327+80		1-30" Plug Valve Nordstrom 2-8" Gate Valves Kennedy 2-8" P.R.V. Clayton 2-2" Corp Cocks 4-1" Corp Cocks	Flanged Flanged Flanged Screw Screw	Chamber " " " "	300# Valve
28+52	Flexible Coupling	buried			

Location		Make	Type		
333+30	2" AVA	1-2" Corp Cock	Screw	Pipe Chamber	
		1-2" Air Valve Rensselaer	Screw	" "	
333+51	8" S.O.	Blind Flange	-	Buried	
339+75	4" B.O.	4" gate Valve Rensselaer	Flanged	Chamber	
	20" M.H.	-	"	"	
343+60	2" Corp Cock	1-2" Corp Cock	Screw	Buried	
351+50	20" M.H.	-	Flanged	"	
367+00	20" M.H.	-	"	"	
381+35	12" S.O.	Blind Flange	"	"	
390+85	6" S.O.	1-6" Gate Valve Kranedy	Flanged	Buried	
		1-6" Blind Flange	"	"	
396+45	4" AVA	1-4" Gate Valve Rensselaer	"	Pipe Chamber	
		1-4" Air Valve Rensselaer	"	" "	
398+42	6" B.O.	1-6" Plug Valve Nordstrom	"	Exposed	
	20" M.H.	-	"	"	
409+50	20" M.H.	-	"	Buried	
419+90	4" AVA	1-4" Gate Valve Rensselaer	Flanged	Chamber	
	20" M.H.	1-4" Air Valve Rensselaer	"	"	
422+40		4-16" gate Valve Ludlow	"	Chamber	
		2-16" PRV. Clayton	"		
		1-12" gate Valve Rensselaer	"		
		1-2" Corp Cock	Screw		
		2-3/4" Gauge			

← Flex. Coupling

Force		Equip	
No.	Hrs	No.	Type Hrs
1- Supt	7 1/2	2- Dozers	7 1/2
1- Asst Supt			
1- Foreman			
2- Dozers			

1- Supt	8	2- Dozers	8
1- Asst Supt			
1- Foreman			
2- Dozers			

Same as above	8	same as above	8
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Same as above	8	same as above	8
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1.

Kearny Mesa Pipeline Sec II

8:30-4:30 Weds Feb 15, 1950 - Fair

Start of job today.  
 Started work today - grading right  
 of way from sta. 232 to 224.

8:00-4:30 Thurs Feb 16, 1950 - Fair

Grading right of way from  
 sta. 224 to 211

8:00-4:30 Fri Feb 17, 1950 - Fair

Grading right of way from  
 sta. 211 to 200.

8:00-4:30 Mon Feb 20, 1950 - Cloudy

Grading right of way from  
 sta 200 to 187 and from 232 to 235  
 unloaded back hoe 3:00 PM



Force		Equip	
No	Hrs	No	Type
1- Supt	7 1/2	2- Dozers	7 1/2
1- Asst Supt			
1- Foreman			
2- Dozer op			

1- Supt	8	2- Dozers	8
1- Asst Supt			
1- Foreman			
2- Dozer op			

Same as above	8	same as above	8
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Same as above	8	same as above	8
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1.

Kearny Mesa Pipeline Sec II

8:30-4:30 Weds Feb 15, 1950 - Fair

Start of job today.

Started work today - grading right of way from sta. 232 to 224.

8:00-4:30 Thurs Feb 16, 1950 - Fair

Grading right of way from sta. 224 to 211.

8:00-4:30 Fri Feb 17, 1950 - Fair

Grading right of way from sta. 211 to 200.

8:00-4:30 Mon Feb 20, 1950 - Cloudy

Grading right of way from sta 200 to 187 and from 232-235 unloaded back hoe 3:00 PM

2-27-50

R.M.

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 100

Larry: These are paper locations  
 of the vertical anchors proposed for  
 Kearny mesa on the west slope  
 of Tecolote valley. Would you please  
 check them in the field and  
 move them as necessary if not OK?  
 See Jan V. would like to have them  
 spotted today I believe.

be located in field

JK 2.28.50

226+20

② 226+30

226+46.50

226+73

③ 226+80

226+99.65

227+20

④ 227+30

227+39.03

229+15

⑤ 229+25

229+37.62

229+65.07

⑥ 229+75

229+83.34

KEARNY MESA FIELD  
DETAIL OF UPRIGHT ANCHORS

Scale Engineer Director

Kearny Mesa P.L. II  
Upright Anchor

2-27-50  
R.M.

Station of Joint

225+72.56

225+82.03

226+00

226+20

226+46.50

226+73

226+99.65

227+20

227+39.03

229+15

229+37.62

229+65.07

229+83.34

Station of Upright Anchor

~~225+77~~

①

225+83

~~225+87~~

One to be located in field

②

226+30

③

226+80

④

227+30

⑤

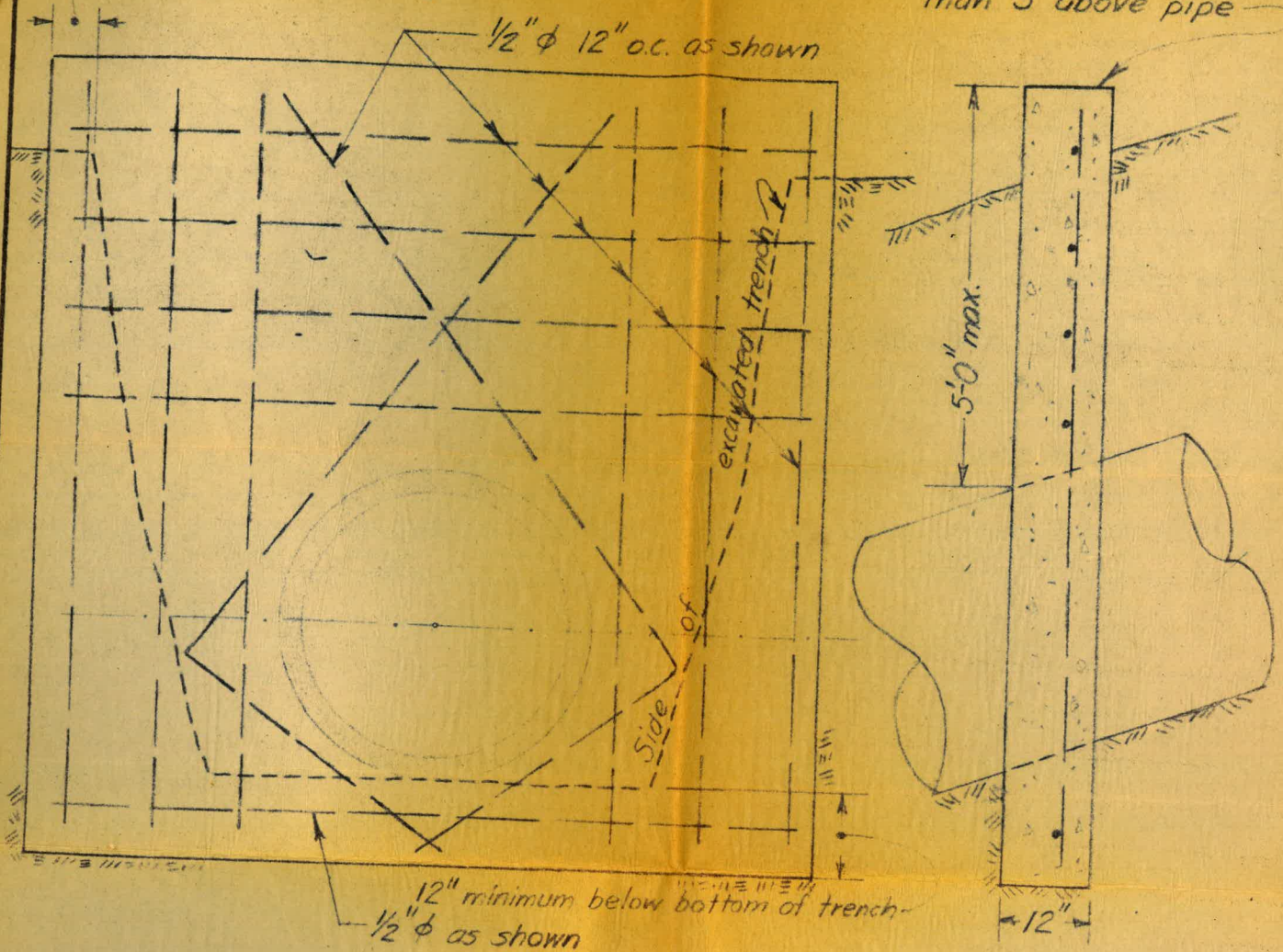
229+25

⑥

229+75

6" minimum into side of trench at ground surface.

Top of wall 12" above ground but not more than 5' above pipe



Note:  
Wall to be poured against undisturbed material.

CITY OF  
SAN DIEGO CALIFORNIA  
WATER DEPARTMENT

KEARNY MESA PIPE LINE  
DETAIL OF UPRIGHT ANCHOR

*Justin [Signature]*  
Hydraulic Engineer

*[Signature]*  
Director

Drawn: RM Checked: X

Scale: 1/2" = 1'

Date: 12-5-49

Force		Equip	
No.	Hrs	No.	Type Hrs
1 <sup>st</sup> Supt	8	2	Dozer 8
1 - asst Supt			
1 - Foreman			
2 - Dozer op			

Same as above	8	same as above	8
---------------	---	---------------	---

Same	8	same	8
------	---	------	---

Same	8	same	8
------	---	------	---

8:00-4:30 Tues Feb 21, 1950 - Fair  
Grading right of way from  
sta. 235 to 290.

Washington, D.C. <sup>But day</sup>  
8:00-4:30 Wed Feb 22, 1950. <sup>Partly</sup> ~~Cloudy~~  
Grading right of way from  
sta 290 to 295.

8:00-4:30 Thurs Feb 23, 1950 - Fair  
Grading right of way from  
sta 295 to 301.

8:00-4:30 Fri Feb 24, 1950 - Fair  
Grading right of way from  
sta 301 to 321

Force		Equipment	
No.	Qty	No.	Type
1 - Supt	1	2 - Dozers	1
1 - Asst Supt			
1 - Foreman			
2 - Dozers			

Same as above	1	Same as above	1
add 1 - tractor			

Same as above	1	2 - Dozers	1
add 1 - tractor		1 - Backhoe	
		1 - Tractor crane	

Same as above	1	2 - Dozers	1
		1 - Backhoe	
		1 - Tractor crane	

Same as above	1	Same	1
---------------	---	------	---

~~at station 301~~  
~~at station 302~~  
~~at station 303~~

3.

8:00-4:30 Mon. Feb 27, 1950 - Jan

Grading right of way 321 to - 328  
and 330 to 335  
Unloaded tractor-crane.

No grading done in vicinity of  
L.A. to S.D. telephone cables.

8:00-4:30 Tues Feb 28, 1950 - Jan

Grading right of way 339 to 360  
Installing side cutters on backhoe bucket

8:00-4:30 Weds Mar 1, 1950 - Partly  
cloudy

Grading right of way from 360  
to - 375 Excavation for ditch w/backhoe  
~~at 230+50 E. to 229+75.~~ unloaded  
tractor-crane

8:00-4:30 Thurs Mar 2, 1950 - Jan

Grading right of way from 375  
to - 383 Excavation for ditch  
w/backhoe from 229+75 E. to - 229+10

8:00-4:30 Fri Mar 3, 1950 - Jan

Grading right of way from 383 to - 386  
Excavation for ditch w/backhoe from 229+10 E. to 227+79  
unloaded ditching machine @ sta 202

Force		Equip	
No.	Lbs	No.	Type Lbs
1- Supt	8	2- Dozer	8
1- Asst Supt		1- Backhoe	1
1- Foreman		1- Tractor	1
2- Dozer op			
1- Backhoe op			
1- Oiler			

1- Supt	8	2- Dozer	8
1- Asst		1- Backhoe	1
1- Foreman		1- Tractor	1
2- Dozer op			
1- Backhoe op			
1- Oiler			
1- Trenching			

8:00-4:30 Mon Mar 6, 1950 - Fri  
 Preparing right of way from  
 sta. 386 to - 391  
 Excavating for ditch w/ backhoe E  
 from 227+09 to - 227+00

Unloaded route

8:00-4:30 Tues Mar 7, 1950 - Fri  
 Preparing right of way from  
 sta 391 to - 396  
 Excavating for ditch w/ backhoe  
 E from 227+00 to - 226+70  
 Backhoe out of commission approx 1:30 PM  
 Making up trench to  
 suit job conditions.

Force		Equip <sup>t</sup>	
No.	Qty	No.	Qty
1- Super	8	2 Dozers	8
1- Asst		no other equip <sup>t</sup>	
1- Foreman			
2- Dozer op			
1- Backhoe "			
1- Trencher "			
2- Oilers			

send equip<sup>t</sup>  
add one lat.

2 Dozers  
no other  
equip<sup>t</sup>

8:00 - 4:00 Wed Mar 8, 1950 - Fair

Dredging right of way from sta  
396 to - 401

"making up" trucks to suit  
job conditions.

Backhoe down for repairs.

8:00 - 1:30 Thurs Mar 9, 1950 - Cloudy

Dredging right of way from  
sta 401 to 408 - ?

"making up" trucks to suit  
job conditions.

Backhoe down for repairs.

Exposed 12" storm drain ~~at~~ at Servant St



Force		Equipment	
No.	Hrs	No.	Type Hrs
1 - Supt	8	2 - Dozers	8
1 - Asst Supt	}	1 - Roller	4
1 - Foreman		others	
2 - Dozers		down	
1 - Backhoe			
1 - Trencher			
2 - Oilers			

1 - Supt	2 - dozers	8
1 - Foreman	1 - roller	1
2 - Dozers	1 - backhoe	4
1 - Backhoe		
1 - Trencher		
2 - Oilers		

6.

8:00 - 4:30 Fri - Mar 10, 1950 - Fair

Adding right of way (fence) of  
 1408 to Bayview Reservoir  
 "Anchoring up" the roller to a  
 suit job condition, long on  
 "Backhoe down for repair"  
 completed

8:00 - 4:30 Mon Mar 13, 1950 - Fair

Adding right of way (banking)  
 w/ dozers + roller @ Bayview Res.  
 Waiting for parts to complete  
 trench modification.  
 Backhoe in operation again  
 @ 12:30 PM. dug from sta 226+70 E. to -  
 226.

Force		Equipment	
No	Hrs	No.	Type
1 - Supt	8	2 - Dozers	8
1 - Asst Supt		1 - Trencher	1
1 - Foreman		1 - Rooter	4
2 - Dozer op		1 - Backhoe	8
1 - Backhoe op			
1 - Trencher op			
2 - Oilers			
1 - Laborer			

8:00-4:25 Tues Mar 14, 1950 - Fair

Completed bunching, with  
dozers & rooter @ Bayview Res.  
Brought dozer to ball field to  
grade right of way.

Backhoe relocation from sta  
226. E to - 224.00

Trencher brought to sta. 155+03  
and started digging 3:30 P.M.  
End of 30" pipe (Sec. 5) exposed.

1 - Supt	8	2 - Dozer	8
1 - Asst "		1 - Tractor <sup>Instructor</sup>	
1 - Foreman		1 - Trencher	
2 - Dozer op		1 - Rooter	
1 - Backhoe op		1 - Truck	
1 - Trencher op			
2 - Oilers			
4 - Laborers			
1 - Tractor driver			

8:00-4:30 Weds Mar 15, 1950 - Partly Cloudy

3 passes w/ rooter on E of  
ditch from Bay. Res to 362+50  
(Crest Cresta Ave.) used 2 dozers + 1  
tractor-winch. Moved rooter E. of 101

Backhoe not work'g today.

Trencher excavating ditch from  
start of pt. 155+03 to - 156+60  
Cut thru 18" tile storm drain from  
sta. 154+90 to 155+63 + approx 20'

Red pencil changes  
see also Monday entries

8.

8:00-4:30 Thurs Mar 16, 1950 - Fair

3 passes w/ roter on E of ditch  
and 3 dozen in tandem  
from hwy 101 to sta 230+50  
Except approx. 200' across airport  
area - too hard for penetration w/  
roter.

Backhoe not working today

Trencher down for repairs.

Hand excavating for bell holes

Exposed ~~horizontal~~ <sup>horizontal</sup> ~~gas~~ <sup>gas</sup> ~~line~~ <sup>line</sup> ~~at~~ <sup>at</sup> ~~sta~~ <sup>sta</sup> ~~230+50~~ <sup>230+50</sup>  
drain in bull field and  $\frac{3}{4}$ " gas line @

8:00-4:30 Fri Mar 17, 1950 - Cloudy

3 passes w/ roter on E of ditch  
using 3 dozen in tandem from  
sta 224 to sta 187.

Backhoe moved to Rose Canyon -

Trencher excavation from sta. 152+60  
to sta. 158+75 Hand excav for bellhole

Unloaded 23 pcs 30" pipe

Remarks: Personnel for emergencies  
@ night or weekends may be needed  
by calling Eric Warner Humboldt 8-5934

<u>Force</u>		<u>Equipmt</u>	
<u>No.</u>	<u>lbs</u>	<u>No.</u>	<u>Type</u>
1- Supt	8	1- Trencher	X
1- asst Supt		2- Dozers	8
1- Foreman		1- Tractor-w	
3- Dozer op		1- Roter	
1- Trencher op		1- Trucks	
2- Oilers			
4- Labs			
1- Trencher			

1- Supt	8	1- Trencher	8
1- asst Supt		2- Dozers	8
1- Foreman		1- Tractor-w	1
3- Dozer op		1- Roter	4
1- Trencher op		1- Trucks	8
2- Oilers			
1- Trencher			
4- Labs			

Pce. Beach →

Job		Equipment	
No	hrs	No	Type
1-	8	1-	Trencher
1-	2	1-	Backhoe
1-		1-	Tractor w.
1-	8	1-	Truck
1-		1-	Truckcrane
1-			Backhoe
2			Others
1-			Truck
4-			Jobs

(Covall  
6/20/50)

Red pencil changes end size of excavation  
~~Sections on sheets~~  
 length of sheet @ 4 ft. 9  
 31-6 + 38-0 (arrived) 69-6  
 8:00-4:30 Mon, Mar 20, 1950 - Jan

Excavation - for later w/ trencher  
 from sta. 158+75 to -161+65  
 w/ backhoe from 296+33 to 296+00  
 started 2:00 broke down 3:30  
 Hand excavation for bell holes.  
 Unloaded 25 pcs 30" pipe  
 Exposed 24" storm drain - to  
 crossing ditch diagonally @ sta 159+00

Remarks: pipe is not being  
 delivered in sequence - to date  
 pipe sections no. 7, 27, 41 and  
 1351 to 1370 incl. have not  
 been delivered.

Note:  
 Bottom of ditch on filled ground from  
 sta. 160+30 to 161+05

Force		Equipment	
No.	Hrs	No.	Type Hrs
1- Supt	8	1- Tractor	8
1- asst		1- Backhoe	
1- Foreman		1- Tractor-w	
1- Tractor		1- Truck	
1- Backhoe		2- Comps	1-8 1-4
2- Poles		1- Truck	3 C & F
1- Compressor			
2- Power tools			
1- Truck driver			
8- Lbs			
1- Powder man			

8:10-4:20 Tues Mar 21, 1950 - Fair  
Excavation for ditch w/ trencher  
 from sta. 161+65 to - 164+10  
 With backhoe from 296+00 to - 293+75  
 Hand excavation for bell holes,  
 around 24" storm drain @ 159+00  
 Removing rock, overtopping  
 from ditch @ W slope of Tecolote  
 Canyon w/ air hammers,  
 drilling & preparing to  
 blast.  
 Unloaded 15 pc. 30" pipe

Tools		Equipment	
No.	Hrs	No.	Type
1-	Supt	1-	Trencher
1-	Asst Supt	1-	Backhoe
1-	Foreman	2-	Comp
1-	Powerman	1-	Tractor-w.
1-	Trencher op	1-	Truck
1-	Backhoe "		
2-	oilers		
1-	Comp		
4-	Painters op		
1-	Trencher		
10-	Laborer		

~~20 de report~~ red pencil change

11.

8:00-4:30 Wed. Mar 22, 50 - Jan  
 Excavation - for ditch w/ trench  
 from sta. 164+10 to - 167+25  
 Partial w/ <sup>padding</sup> backhoe from <sup>293+09</sup> to 292+80.  
 Hand excavation for bell holes,  
 around 24" storm drain @ 159+00  
 Removing rock outcroppings, grade  
 ditch bottom, W. slope of Tealate  
 Canyon w/ air hammer blast'g.  
 Exposed <sup>24" corrugated pipe</sup> storm drain @ 167+25  
 Cut'g. thru asphalt pav'g.  
 across Ulric St. + asphalt edw.  
 Excavation to expose 2" H.P.  
 gas main <sup>+1.0'</sup> in Ulric St.

Summary of work accomplished 3/11/50 to 3/20/50 since

12.

Graded right of way from sta. 408 to Bayview Res.  
incl. benching @ Res. completed

Trench excavation w/ backhoe from sta. 226+70 to 224+00

w/ trencher from 155+03 to 161+65 <sup>and from 296+33 to 296+00</sup>

w/ roto <sup>and 3 tractors</sup> from Bayview Res. to 187

except approx 200' across Airport (to be used)

Hand set excavation for bell holes, set pipe  
storm drain, water + gas lines

Unloaded 63 pcs 30" pipe

15

23

25  
3

Tools		Equipment	
No.	Hrs	No.	Type
1- Supt	8	1- Trencher	8
1- Asst		1- Backhoe	
1- Foreman		2- Compressors	
1- Powder m		1- Blower	
1- Trencher op		1- Tractor-w	
1- Dragline op		1- Trench	
2- Oilers		3- air hammer	
1- Comp op			
3- Power tool op			
1- Trenching			
9- Sals			

~~Red point~~

13.

Time: 4:30 Thurs Mar 23, 50 - Fair  
 Excavation - for ditch w/ trencher  
 from sta 167+25 to -168+54 Extremely  
 hard going. Partial w/ dragline  
 from sta 242+80 to -242+60 using  
 tractor for anchors, + to assist in coming up grade  
 Hard excavation for bell holes,  
 around 24" corrugated steel pipe  
 storm drain @ sta 167+25.

Cutting thru 6" asphalt paving  
 along Osler St. w/ air hammer  
 grade ditch bottom w/ slope  
 of Tecolote Canyon w/ air hammer

Remarks:

Waiting for pipe sec. 1351  
 to 1370 in order to start  
 laying from sta 155+0.3.



<u>Force</u>		<u>Equipment</u>	
<u>No.</u>	<u>Hrs</u>	<u>No.</u>	<u>Type</u>
1- Supt	8	1- Tractor	8
1- Asst		1- Dragline	
1- Foreman		2- Comps	
1- Power man		1- Tractor-w	
1- Trenching		1- Truck	
1- Dragline		3- Pair breakers	
2- Oiler			
1- Comp. sp			
3- Power tool sp			
1- Truckers			
8- Labor			

293+09  
10  
278-19

14.

Dir Pair  
mag

8:00-4:30 Tue Mar 24, 50 - Fair

Excavation - for ditch w/ trench  
from sta. 168+54 to -170+40 Extremely hard going  
With dragline, + blast'g. from sta.  
297+60 to - 298+20  
Hand excavation ditch bottom @  
Teeplate + Rose Canyon slopes, around  
2" gas + 10" water mains @ 167+62  
and 24" corr. storm culvert @ 167+25  
Cutting thru 6" av. asphalt paving  
along Osler St. w/ air hammer

Unloaded 27 sec. 30" pipe

Remarks. Not enough clearance between  
8" sewer + 10" water main @ 167+62  
to allow 30" line to pass between.  
Utility crew has info. noted.

<u>Item</u>	<u>Qty</u>	<u>Equip</u>	<u>Qty</u>
1- Super	8	1- Trencher	8
1- asst		2- Comp.	
1- Forem.		3- Pav'g br.	
1- Powderman		1- Truck	
1- Trencher op		1- Waterpump	
1- Crane op			
2- Oilers			
1- Comp. <sup>3</sup> <sub>1</sub>			
3- Power tools			
1- Truck			
8- Ias			

Inactive sewer @ El. 352.7

Mr. Carter of Linda Vista PHA O.K'd

closing off inactive sewer line w/ 3/4" wireline  
(no longer in use)

new

~~Red pencil~~  
~~Enter station numbers~~

15.

8:00 - 4:30 Mon. Mar 27, 50 - Cloudy  
Excavation - for ditch w/ trencher  
from sta. 170+40 to - 172+70

Blast's, hand excavation for  
ditch bottom ea. side of Rose Canyon

Completed pumping out water  
from bell holes. Worked Sat & Sun on  
paving <sup>from ditch</sup> after heavy rain Fri night.

Cutting thru 6" (A1) asphalt paving  
along Osler St. w/ paving breaker.  
Modifying dredge for use as backhoe

Remarks: Trade for bottom of ditch  
raised 10" @ sta 171+23<sup>53</sup> to  
allow new 30" line to pass over  
active 4" C.I. soil pipe sewer. Line  
was broken + repaired. Cut thru  
inactive 4" C.I. sewer pipe @ sta. 172+05 -  
<sup>dugged same</sup> active.  
Cut through 3/4" water line (copper tubing)  
@ Sta 172+06. Water line @ El. 354.0

~~also grades on this cut-off~~  
~~put journal Sec II changed + add~~  
~~Complete post report~~ 16.

Force		Equip	
No	Hrs	No	Type
1- Supt	8	1- Trencher	8
1- Asst.		2- Compressors	
1- Foreman		4- Paving breakers	
1- Powderman		4- Trucks	
1- Trencher op		1- Dozer	
1- Backhoe op		1- Tracked crane	8 (Carrick & Jost)
2- Oilers			
1- Camp op			
4- Power tool op			
7- Subs			
1- Crane op	8	Carrick	
1- Oiler	1	Jost	

8:00 - 4:30 Tues Mar 28, 50 - Fair  
 Excavation - for ditch w/ trencher  
 from sta. 172+70 to - 174+52  
 Backhoe working on W. slope  
 of Rose Canyon excavated from sta <sup>295+50</sup>  
 to - 295+00,  
 Cutting thru 6" (AV) asphalt paving  
 along Osler St w/ paving breaker  
 haulaway excavated shell from ditch in Osler St  
 Hand excavation to locate 2" gas  
 main + 8" water main in <sup>County</sup> St  
 Clean shell removing. caved - in  
 ditch from ditch from Ulric St E to 165+00  
 (leaves amt. from 165+00 E to 158+00)  
 City crew excavating @ 10" water  
 line @ sta 167+64 = preparing to  
 raise same to clear new 30" line.  
 Dozer leveled off spoil pile  
 between Ulric St. & sta. 161+75.

started using personal car today  
12 mi

<u>no</u>	<u>Force</u>	<u>hrs</u>	<u>no</u>	<u>Equipment</u>	<u>hrs</u>
1	Supt	8	1	Trencher	
1	Asst		1	Backhoe	
2	Foreman		1	Comp	
1	Trencher op		2	Paving machine	
1	Backhoe op		4	Trucks	
2	Welder		1	Truck	
1	Comp op		1	Truck crane	(C&F)
2	Powertool op				
7	Jobs				

1	Truck op	4	C&F
1	Welder	4	

17.

8:00 - 4:30 Wed Mar 29, 50 - Jan

Excavation - for ditch w/ trencher from sta 174+52 to - 176+64

Backhoe working on W slope of Rose Canyon from sta. 295+50 to 296+29 \* and from 295+00 E. to - 293+50

(Ditch @ Rose Canyon now dug from sta 291+66 to 296+29)

Cutt'g thru 6" <sup>(190)</sup> asphalt paving along Osler St w/ paving breaker.

Hauling away excavated mat'l for ditch in Osler St. Trucks load'g directly from trench conveyor belt.

Approach crane completed remaining work in path from trench. Haul'd excavation - cleaning <sup>bottom of</sup> trench.

City crew start'g @ 10" water line @ sta 167+6 ✓ preparing to raise same to clear new 30" line.

prev. 12  
today 14  
to date 26

Force

No.	hrs	No.	Type	hrs
1- Super	8	1- Trencher		8
1- Cart		2- Compactors		
2- Formers		4- P. B.		
1- Trencher op		4- Truders		
1- Bulldozer				
2- Oiler				
1- Comp. op				
4- Power tool op				
7- Truck drivers				
10- Labr				

1- Crane } 4 c & 3  
1- Oiler }

200' ahead

Reminded Mr. Roberts +  
his foreman (Andy) attention to the  
necessity of locating water, sewer, &  
gas mains well ahead of ditcher

End of mo. report - } 31st  
10 day report due - }

18.

Riv - 4.30 Thurs Mar 30, 50 - Fair

Excavation - for ditch w/ trencher  
from sta. 176+64 to - 178+50  
Modifying backhoe to crane.  
Cutting thru 6" (AV) asphalt  
paving in Osler St. w/ paving breaker  
Hauling away excavated mat  
from ditch in Osler St - trucks  
operating directly for trench  
conveyor belt

Hand excavation grade ditch bottom  
where leveled in.

Hauling in sand for pipe bed  
preparing to start pipe laying  
tomorrow A.M.

City crew assembling 10" jumper  
@ sta. 167+62 to clear new 30' line

Unloaded 26 pcs 30" pipe  
modified

157+85

prev. 26  
to day 11  
total 37

Force		Equipment	
No	lbs	No	Type/lbs
1 - Supt	8	1 - Trencher	8
1 - Asst		2 - Compressors	
2 - Foremen		3 - P.B	
1 - Trencher op		4 - Trucks	
2 - Comp op		3 - Wild'g outfits	
2 - Oilers			
3 - Point tool op			
2 - Truck drivers			
11 - Laborers			
1 (Piperitter)			
3 (Welders)			

1 - Crane op	8	1 - Trencher	8 (C & J)
1 - Oiler	1		

End of mo report  
10 da. report due } Today

19.

8:00 - 4:30 Fri Mar 31, 50 - Fri

Excavation - for ditch w/ trencher  
from sta. 178+50 to - 179+29

Cutting three 6" @ asphalt paving  
in Oiler St w/ paving breakers to 183+45

Hauling away excavated matl from  
ditch in Oiler St - trucks operating dir-  
ectly from trench conveyor belt

Hand excavation - grade ditch bottom,  
cleaning where caved in, for bell holes

Backfill  
sand bed - fine grade from sta 159+37  
to - 155+69 Sand around pipe from 159+36 to 155+69

Pipe laid from sta 159+36 to 155+69  
(access @ sta. 158+89)  
to welded " 158+83 to 155+99  
~~to grouted (return) from sta to~~

City crew not today  
working on 10" main  
@ sta. 167+62.

Summary of work accomplished  
Mar 21, 1950 to Mar 31, 1950

Excavation - for ditch w/ trenching from  
sta. 161+65 to - 179+29

W/ w/ backhoe from sta 291+66 to 296+29  
~~and from sta 224+00 to 226+70~~

Hand excavation for bell holes, around  
storm drains, sewers, water + gas lines  
crossing ditch. Dredge ditch bottom

Loosened: rock outcroppings  
+ other hard material by <sup>blast</sup> + air hammer  
at Tecolote  
and Rose Canyon slopes.

Cutting thru 8" (AV) asphalt paving  
along <sup>St and</sup> Ashbury, Oak St.

Backfill - sand bed - fine grade  
from sta. 159+37 to - 155+69

Sand around pipe from sta. 159+36  
to - 155+69

Pipe layed from sta. 159+36<sup>2</sup> to 155+69  
Its welded from sta 158+83 to 155+99

Summary of work accomplished  
to date Mar 31, 1950 155+69 20.

Excavation

Right of way graded from  
sta. 187+00 to Bayview Res.  
E of ditch routed from sta 187+00  
to Bayview Res except approx.  
2000' across Airport.

Trench excavation (w/ trencher)

from sta. 155+03 to - 179+29  
~~asphalt paving cut for~~ <sup>167+44</sup> ~~183+44~~ <sup>183+44</sup> ~~183+44~~  
(w/ backhoe) from 291+66 to 296+29  
and from sta) 224+00 to 226+70

Backfill - sand bed - fine grade from  
sta. 159+37 to - 155+69

(40') Sand around pipe from 159+36 to 155+69

Pipe layed - from sta 159+36<sup>2</sup> to 155+69

Its welded - from sta 158+83 to 155+99

only 3 days last mo 37 mi.  
 today 14  
 total 51

Tools

Equipment

- | No               | Uses  | No                | Type  | Uses |
|------------------|-------|-------------------|-------|------|
| 1- Supt          |       | 1- Trencher       |       | 8    |
| 1- Asst          |       | 2- Compressor     |       | }    |
| 2- Submers       |       | 4- Air line       |       |      |
| 10- Salvos       |       | 1- Skip loader    |       |      |
| 4- Power tooling |       | 3- Weld'g outfits |       |      |
| 1- Comp of       |       |                   |       |      |
| 3- Welders       |       |                   |       |      |
| 1- Bitter frame  |       |                   |       |      |
| 1- Skip loader   |       |                   |       |      |
| 2- Oilers        |       |                   |       |      |
| 1- Trencher op   |       |                   |       |      |
| 2- Truck driver  |       |                   |       |      |
| 1- Crane op      | 8 C#3 | 1- Truck crane    | 8 C#7 |      |
| 1- oiler         |       |                   |       |      |

City crew working on 8" water line  
 crossing ditch @ Nye St.

~~Red pencil changes set in draw, start  
 list of pipe work ditch, et. + sta. back  
 with data on cart in 3" miles, markings  
 into two lists in the books~~ 21.

NAV - 4:30 Mon April 3, 50 - Fair

Excavation - for ditch w/ trench from  
 sta. 179+29 to - 179+80.

Cutting thru 1" asphalt on "concrete"  
 sta 183+45  
 to sta 184+30. (W side of Whittom St)

Hauling away & excavated material from ditch  
 in order st. trucks getting directly  
 from trench conveyor belt.

End of excavation, grade ditch bottom  
 for bell holes, set pipe water + gas lines  
 advance of trenching machine

Backfill - Sand bed - fine grade  
 from sta 155+69 to 155+03 and  
 from 159+37 to 162+64

Sand around pipe from sta 155+69  
 to 155+03 and from 159+36 to 160+00.

Pipe layed from sta 155+69 to 155+03  
 and from 159+37 to 162+64

Jo. welded from sta 155+99 to sta  
 155+34 and from 159+37 to 159+99  
 Jo. grouted from sta 158+50 to 155+64



Daily O.T. due to date  
4 1/2 - see book # ✓

new 51  
taken 13  
total 64

Force		Equipment		lbs
No.	lbs	No.	Type	
1. Supt		1. Trencher		8
1 - Ass		2 - Compressor		
2 - Lab for		3 - Air hose		
14 - Laborers		1 - Dozer		
3 - Power tools		3 - Welding outfits		
1 - Compressor		2 - Trucks		
3 - (Welder)				
1 - Attendant				
1 - Dozer op				
2 - Oilers				
1 - Trencher op				
2 - Truck drivers				
1 - Crane op	8 C&F	1 - Truck crane	8 C&F	
1 - oiler				

Remains: Pipe grade lowered 6'  
from 166+72 to 167+54 to get  
under 24" storm drain

Continue list of pipe cross of ditch -  
Red pencil changes -

22.

8:00 - 4:30 Tues April 4, 19 - Cloudy  
Excavation - for ditch w/ trencher from  
sta. 179+80 to 180+05 extremely hard  
going  
Hauling away excavated matl (grout,  
trucks) from ditch in Oak St. - trucks  
operating directly from trencher conveyor -  
belt. Hand excavation - grade ditch  
bottom, for bell holes, around water &  
gas line cross of ditch.

Pipe laid - from sta. 162+34 to -167+02  
ft. welded - from sta. 159+99 to -166+72  
at ~~end~~ @ ~~end~~ ~~end~~ ~~end~~ & 4" bells.  
ft. grouted - from 159+37 to 162+04  
Backfill - sand bed - fine grade from  
sta. 162+64 to -168+50  
Sand around pipe from 160+00 to -  
164+43

City crew not available today.

See also L. Bots report  
for addl. men & equipt

Pres 64  
to day 12  
total 76

Force		Equipt	
No	Thrs	No	Type
1- Supt	1	1- Trencher	8
1- Trencher op		2- Comps	
1- Viler		2- Air hammers	
2- Power tool op		2- Trucks	
2- Lab forms			
8- Labs			
1- Compr op			
2- Truck drivers			

Remarks: at various sta (at various times)

They - begin work at 8:00 to be read - crew started  
gas and 1" water @ 179+82 23,

8:00-4:30 Wed, April 5 50 - Fair

Excavation - for ditch w/ trencher  
from sta. 180+05 to 182+08  
Hauling away excavated matl from  
ditch in Oak St. trucks operating  
directly from trencher conveyor belt  
Hand ed excavation - grade ditch both,  
for bell holes, around water & gas lines  
crossing ditch

Pipe laid - from sta 167+02 to 170+93  
Its welded - from sta 166+72 to 168+54  
also butt straps

Its grouted (ext) from sta 162+04 to 167+02  
(int.) from 159+72 to 165+03

Backfill - sand bed - fine grade from  
sta 168+50 to 173+92

Sand around pipe from sta 164+43  
to 167+00

City crew working on 6" main  
crossing ditch @ Nye St.

76  
12  
88

Force		Equipmt	
No.	Des.	No.	Type
1- Supt	8	1- Trencher	8
2- Sub pump		2- Comps	
1- Trench op		2- Air pump	
1- Oiler		2- Trucks	
1- Comps op			
2- Trenchmen			
2- Power tool op			
11- Labs.			

See J. But report for add men & equipmt.

Concrete - kiloblock @ sta 155+67  
 5' x 3.5 x 2.5 @ sta 165+20  
 5' x 3.5 x 2.5 ← 4 cy del.

Remarks - Add labor <sup>(4/4/50)</sup> required to lower grade 6" between sta 167+54 and 167+72 to clear under

24" corr. storm drain: 4 hrs lab, 1 hr per day

Cracks developing parallel w/ ditch in Olsen St. from sta 181+00 to 182+80  
 Slight ditch in along N. side of ditch in Olsen St

~~19th report due Mon.~~  
~~Estimate of labor required to pipe grade~~  
 8:00 - 4:30 Thursday \$50 - Fri

Excavation - for ditch w/ trench from sta 182+08 to - 184+23 Hauling away & covered with from ditch in Olsen & Wheatstone St. - trucks going directly from trench covers back. Hand excavation - grade ditch both for bell holes, around water & gas mains, crossing ditch.

Pipe laid - from sta 170+93 to - 176+34  
 Jts. welded - from sta 168+54 to - 171+53  
 Jts. gasketed - (all) from sta 167+02 to 169+74

and from <sup>limit</sup> sta 155+03 to 159+72  
 Backfill - sand bed - fine grade from sta 173+92 to - 178+00

Sand around pipe from sta 167+00 to - 172+50

City crew not on job today  
 S.O. & C lowering 2" main @ Comstock, 1" v" main @ Nye St. & Nye. part of parent.

88  
10  
98

Force		Equipmt	
no.	lbs	no.	Type lbs
1- Supt.	8	1- Trencher	8
2- Lab fore.		1- Compr.	
1- Trencher op		2 Air haws.	
1- Oiler		2- Trucks	
1- Compr. op			
2- Truck driver			
2- Power tools			
9 Laborers			

~~88~~ ~~10~~ ~~98~~ ~~today report due today~~ ~~today report due today~~ 25.

8:00-4:30 Trin April 7, 50 Cloudy  
Excavator - for ditch w/ trencher from -  
184+23 to 184+83 - haul away  
excavated mch. from ditch in Wheelstone St.  
trucks operat'g. directly from trencher  
conveyor belt. Hand excavation - grade  
ditch bott., for bell holes around water  
& gas mains cross'g. ditch.

Pipe laid - from sta. 176+34 to -180+00  
to welded - from sta. 171+53 to -177+24  
to grouted (ext) from sta. 169+74 to -175+61  
(int) from sta. 166+42 to -170+63

Backfill - sand bed - fine grade from sta.  
178+00 to -183+25

Sand around pipe from sta. 172+50  
to -177+30 (partial) Complete to 170+00

City crew - work'g. on 6" water line  
in Wheelstone St.

S.D.G. & E. - lowered 3/4" gas line @  
sta. 179+80 - wrapped 2" line (no change)  
in Price St.

O.T. to date incl  
 4 1/2 - see book #2  
 1/2 - today  
 Force 5 das. to date incl  
 Equip

18+53  
 98  
 0  
 98

No.	Qty	No.	Type	Qty
1- Supt	1	1- Trencher		8
1- Trencher				
1- Oiler				
2- Sals				

See S. Bats report for addl. man. equip

1- Supt	1- Trencher
1- Trencher	
1- Oiler	
1- Sals	

Sat April 8, 1950 - Fri

Excavation - for ditch w/ trench  
 from sta. 184+83 to - 185+50

Extremely hard going. Hauling  
 excavated material from ditch W. of  
 Wheatstone St. - trucks operating directly  
 for trench conveyor belt.

Pipe laid from sta. 180+00 to 183+50

Its welded from sta. 177+24 to 183+20

Its grouted - none today.

Backfill - sand bed - fine grade  
 from sta. 183+25 to 183+75

Sand around pipe from sta  
 177+30 to - 183+50 (partial)

Sun April 9, 1950

Excavation - for ditch w/ trench  
 from sta 185+50 to 189+58

198  
14  
172

today report done today

27.

Force		Equipment	
No.	lbs	No.	Type lbs
1 - Sledge	8	1 - Trencher	8
2 - Air Hammer		1 - Compressor	
1 - Trencher		3 - Air Hammer	
1 - Oiler		2 - Trencher	
1 - Compressor			
3 - Power tool			
3 - Tools			
2 - Trencher			

See J. Bates report for additional  
men + equipment.

8:00 - 4:30 Mon April 10, 1950 - Fair  
Excavation - for ditch w/ trencher from  
sta. 189+58 to - 190+48

Work at excavation (air hammer,  
blast c.) sta. 184+75 to 185+70  
to back for trencher - covered conglomerate  
for bell holes grade ditch bottom

Pipe laid from sta 183+50 - 183+93

ft. welded from sta 183+20 to 183+63

ft. grouted (ft) from sta 175+61 to 182+68

(int) from 170+63 to 176+34

Backfill - sand bed - fine grade from

sta. 183+75 to - 184+00

(partial)  
Sand around pipe from sta 183+50  
to - 184+00

Ported over sand from -  
to -

City crew made changeover on 6" water  
main in Wheatstone Fri PM 3/7/50

S.D.G + E lowering 1 1/2" gas line in  
Wheatstone - started 12:30

removed 5' below ground level to back of ditch

Summary of work accomplished 4/1/50 to 4/10/50 incl.

28.

Excavation - for ditch w/ trench from sta. 179+29 to 190+48  
Hand excavation for bell holes around water & gas lines cross'g  
ditch. Probe ditch bottom. Hand excavation for ditch  
w/ air hammer + blasting sta 184+75 to 185+70 (too  
hard for trench'g. machine.

Pipe layed - from sta. 155+03 to 155+69 and from 159+37 to -183+93

pts. welded - from 155+03 to 155+69 and from 159+37 to -183+63

pts. grouted - (exterior) from sta. 155+03 to -182+68

Concrete - (interior) from sta. 155+03 to 176+34  
@ sta. 155+67 and @ sta 165+20

Backfill - sand bed fine grade - sta 155+03 to 155+69 and from  
159+37 to -184+00

Sand around pipe from sta 155+03 to 155+69 and from  
159+37 to -184+00

~~Partial backfill over sand from sta. to~~

City lines - lowered 6" water line cross'g ditch @ Nye St, lowered  
6" water line in Wheatstone St.

SDG & E - lowered 7" gas main @ Constock St, lowered  
gas line @ sta. 179+80, wrapped 2" line in Bruce St (no  
change, lowered 1 1/2" gas line in Wheatstone St. lowered  
3/4"

112  
141  
126

~~10 days report~~

Force		Equipmt	
No.	lbs	No.	Type lbs
1- Supt	8	1- Trencher	8
2- Lab fanner		2- Compressor	
1- Trencher op		1- Dog	
1- Oiler		3- Air ham	
3- Power tool op			
4- Labs			

See J. Botts report for addl. men + equipmt.

note:

Dug w/ Cleveland trencher from sta. 191+60 approx 2'-6" deep to sta. 195+00. Blasted and resumed trenching w/ large trencher.

8:00 - 4:30 Tues April 11 1950 - Fair  
Excavation - for ditch w/ trencher from sta. 190+48 to -191+57 <sup>note other page</sup>  
Hand excavated (air hammer) for ditch sta 184+75 to 185+70 - too hard for trencher - approx 3' below ground level to bott of ditch. For bell holes, grade ditch bottom.

Pipe laid - from sta 183+93 - 184+83  
ft welded - from sta 183+63 - 184+23  
ft grouted - (alt) from sta 182+68 - 183+53  
(int) from sta 176+34 - 182+98

Backfill - sand bed - fine grade from sta. 184+00 to - 184+94 (corr)  
Sand around pipe from sta. 184+00 to - 184+50  
Partial over sand from <sup>corr</sup> 155+66 to <sup>50</sup> 158+50

Unloaded 26 per. of 30" pipe  
+ M.I.T. covers.



126  
13  
139

Tools		Equip	
No.	Qty	No.	Type
1	Supt	8	1-Lg trenchers
1	Lab form	1	Sm. "
1	Powderman	2	Compressors
2	Trencher op	3	Air hammers
1	Oil	1	Skid load?
3	Powertool op		
5	Labels		

Layed 90' - 18" concrete drain  
 pipe sta 154+92. <sup>begin @</sup> Backfill  
 carried to bott of drain.

Kiloblock @ sta? ~~5' x 2' x 2' wide~~  
~~3'0" high - 1'40" w~~

8.00-4.30 Weds April 17, 1950 - Fri  
 ✓ Excavation - for ditch w/ trencher from  
 sta. 191+37 to -193+76  
 w/ Cleveland trencher approx 2'-6" deep  
 ahead of large trencher. <sup>at 100 to 110 ft</sup> ~~Blasted~~ <sup>with nitroc.</sup>  
~~backfilled~~ <sup>required digg'g.</sup> w/ large trencher  
 Hand ed excavation: (air hammers) completed

hand ed excavation for ditch sta 184+75 to  
 185+70, for bell holes, grade ditch bottom  
 ✓ Pipe layed from sta. 184+83 to -186+06  
 of welded pipe from sta 184+23 to -185+91  
 of galv. (interior) <sup>none today</sup> 183+55 to  
 (int) <sup>brush coat to</sup> 184+78

✓ Backfill - sand bed. fine grade from  
 sta 184+94 to -186+10

Sand around pipe from 184+50 - 185+50  
 Partial over sand 158+50 to 167+50  
 and from 155+02 to 155+66  
 ? Water settling -

Unloaded 21 pcs. 30" pipe, 14 ft  
 cover (3 to date)

139  
15  
154

Force		Equipmt	
No	Lbs	No.	Type Lbs
1 - Supt	8	1 - Lg. trencher	8
1 - Sub foreman		1 - Sm "	
1 - Powderman		2 - Compressor	
2 - Trencher op		4 - Air line	
1 - order		2 - Straps	
4 - Power tool op			
7 - Labor			
2 - Tractor			

Concrete - killeblock @ sta 183+60

5'-8" x 2'-3" x 3'-6" 1 1/2 cu y

killeblock @ sta 184+98

5'-8" x 2'-3" x 3'-6" 1 1/2 cu y

31.

8:00 - 4:30 Thurs April 13, 50 - Jan  
Excavation - for ditch w/ trencher from  
sta 193+76 to - 198+00  
1 1/2" Cleveland trencher approx 2'-6"  
deep ahead of long trencher. Blasted,  
backfilled with ~~rock~~ <sup>large</sup> diggins / large  
trencher. Hand excavation for bell  
holes, grade ditch bottom

Pipe laid - sta 186+06 to 189+58

Its welded - from 185+91 to 188+09

Its <sup>NO. 11 BLOCK</sup> ~~grouted~~ from 183+53 to - 186+45

(int) from 182+98 to - 184+53

Backfill - sand bed - fine grade from  
186+10 to 189+58

Sand around pipe from

sta. 185+50. ~~to~~ None today

Partial over sand 167+50 to 175+00

Water settling ditch sta 155+02 to  
167+50.

Unloaded 28 per. 30" pipe

unloaded  
 35-pcs 30"  
 1-4.4. cover  
 1-4" riser pipe + Tee for  
 1-4" cover to

154  
 12  
 166

No.	Qty	No.	Type	Qty
1- Supt	8	1- Long trench		8
1- Set form		1- Sm "		
1- Powderman		2- Compressors		
2- Trenches of		4- air line		
1- Diler		2- Trenches		
4- Power tool				
7- Sets				
2- Trenches				

8.00 - 4.30 Fri April 14, 1950 - Fri  
Excavation - for ditch w/ trench  
 from sta. 198+00 to - 199+50 w/  
 Cleveland trench approx 2'-6" deep,  
 blasted, backfilled ahead of large trench  
 Hand excavation for bell holes, grade ditch  
 bottom.

Pipe laid - from sta 189+58 to 194+06  
 ft. welded - from sta 188+09 - 191+97  
 ft. grouted - (H) from sta 186+45 - 191+08  
 (int) from sta 184+53 - 187+00

Backfill - Sand bed - fine grade sta.  
 189+58 to - 194+25 Sand around  
 pipe sta 185+50 to 194+00  
 Partial over sand from 175+00 - 185+00

Unloaded - 35 pcs. 30" pipe  
 1 MH cover  
 1-4" Riser pipe + Tee for  
 sta 159+30)

<u>Tools</u>		<u>Equipment</u>	
<u>No.</u>	<u>Qty</u>	<u>No.</u>	<u>Type</u>
1- Supt	8	1- Trencher	8
1- Trencher			
1- Oil			
1- Saw			

166  
0  
166

Sat - Sun Trench  
Sat to - 202+00  
Sun to - 204+00  
8:00-4:30 Sat April 15, 1950 - Jan

198+00  
204+00  
6

33.

Excavation for ditch w/ trencher  
from sta. 199+50 to 202+00

no other work performed

---

8:00-4:30 Sun April 16, 1950 - Jan

Same as above

Same as above except  
sta. 202+00 to 204+00



184  
16  
200

35.

Force		Equipmt	
No.	lbs	No.	Type lbs
1 - Supt	8	1 - Large trencher	8
1 - Sub for		1 - Sm trencher	
1 - Powder man		2 - Compr.	
2 - Trencher op		4 - Air pump	
1 - Dozer op		2 - Trucks	
2 - Oilers		1 - Dozer	
4 - Power tool op		1 - Truck crane	C & J.
7 - Subs			
✓ - Truck driver			
1 - Crane op	8	C & J	
1 - sub			

See J. Bats report for addl mnt & equip

Unloaded - 21 pcs 30" pipe

Remarks: Enamelled inside of M.H.  
opening @ sta  $158+87 \pm$  - not done by  
So. Pipe - enamel furnished by City  
labor by contractor

8:00-4:30 Tues April 18, 50 - Jan  
Excavation - for ditch w/ trencher  
from sta. 205+75 to - 208+76  
w/ Cleveland trencher approx 2'-6" dp  
blasted, backfilled ahead of large trencher  
Hand excavation for bell holes, grade  
ditch bolt.

Pipe laid - sta. 198+59 - 205+46  
jts. welded - sta. 196+15 - 203+67  
jts. gasketed - (ext) sta 194+93 - 197+84  
(int) sta 192+87 - 195+55

Backfill - sand bed - fine grade  
from sta 199+78 to - 205+75  
Sand around pipe sta. 197+75  
to - 197+00

Partial over sand from 186+00 to 186+50  
Completed water settling ditch  
along Osler St. to sta - 184+30

Fitting & connection - M.H. cover  
@ sta  $157+00 \pm$  gasketed & bolted down.  
 $158+87 \pm$

200  
24  
224

217+25

36.

Force		Equip	
No.	Qty	No.	Type
1	Supt	1	Long trench
1	Lab for	1	Sum
1	Powerhouse	2	Coups
2	Trenching	4	Air hose
1	Backhoe	2	Trench
1	Dozer	1	Dozer
2	Wells	1	Backhoe
4	Power tools		
7	Labs		
2	Trenching		
1	Cran	1	Truck crane
1	Wells		

pipe now <sup>unloaded</sup> complete to sta 234+06  
except gas mhd <sup>1318</sup> 1322, 1328 (del.  
4/20/50)

8:00-1:30 Wed April 19, 1950 - Jan  
Excavation - for ditch w/ backhoe  
from sta 208+76 to 213+59  
Backhoe moved ahead to sta  
217+25  
220+53 excavated to sta 220+53  
w/ Cleveland trench approx 2' 1/2"  
deep ahead of large trench - blasted &  
backfilled. Hand excavation for  
bell holes, grade ditch bott.  
Pipe laid - from sta 205+46 - 210+50  
Its welded - from 203+67 - 207+49  
Its grouted - ~~from~~ from 197+84 - 200+08  
part from 195+55 - <sup>around curve</sup> 200+08  
Backfill - sand bed - in grade from  
205+75 to 211+00  
Sand around pipe from 197+00 - 203+00  
Partial over sand from 186+50 - 200+00

Unbraked 19 ps 30" pipe  
(4 + @ 201+54)





Summary of work

accomplished 4/11/50 to 4/20/50 ind

38.

- Excavation - for ditch from sta 190+48 to - 223+00  
Hand excavation for bell holes, grade ditch bottom.  
also from sta. 184+75 to 185+70 (too hard for trencher)  
Excavation w/ sm. Cleveland trencher ahead of large  
trencher approx 2' 6" deep - drilled, blasted & backfilled  
Started excavation w/ clean front grader pit for measurement under 10'
- Pipelayed - from sta. 183+93 to - 213+00<sup>2.5+52</sup>
- Jo. welded - from sta 183+63 to - 213+00<sup>2.5+52</sup>
- Jo. grouted - (exterior) from sta 182+68 to - 209+33  
(interior) from sta 176+34 to - 206+06
- Concreted - kickblocks @ stas. 183+60 (5'-8" x 2'-3" x 3'-6") - 1/2 cu yd @ sta 184+98 (5'-8" x 2'-3" x 3'-6") - 1/2 cu yd
- Backfill - sand bed - fine grade from sta 184+00 to - 216+00  
Sand around pipe from sta 184+00 to - 209+00  
Partial over sand from sta. 155+00 to - 201+00  
Water settled ditch from sta 155+00 to - 184+30
- Fittings & connection - Installed 4" B.O. riser, tee, blind flange & 4" horiz. into 2<sup>nd</sup> storm drain @ sta 158+89. M.H. cover grouted & bolted down @ sta 158+87.
- Misc - Laid 90' - 18" concrete storm drain pipe begin'n'g @ sta 154+90 (replacement for 18" tile) - sand backfill carried to bott. of drain pipe.

246  
 17  
 250

Tools		Equipment	
No.	Qty	No.	Types
1	Supr	1	Long trench
2	Sel for	1	Comps
1	Trenching op	2	Air hammers
1	Backhoe op	2	Trucks
1	Days op	1	Skip loader
2	Welder	1	Backhoe
2	Power tools		
8	Sals		
2	Trenching		

1 - Crane op + 18  
 1 - welder  
 1 - Truck crane 84 cwt

241+54  
 8  
 233+54 39.

8:00 - 4:30 Fri April 21, 1950 - Cloudy

Excavation for ditches w/ backhoes  
 from sta. 232+00 to 233+75  
 Backhoe excavating drainage trench  
 along Trestle Creek to drain water  
 from pipe trench.

Pipe laid from sta 215+52 - 220+23  
 to welded from 213+00 to - 217+11  
 to grouted (in) from 209+33 - 214+55  
 (in) from 206+06 - 210+51

Backfill - sand bed fine grade from  
 sta 216+00 to - 221+75

Sand around pipe from 209+00 - 213+00  
 Partial over sand from 201+00 <sup>now</sup> today



Unloaded - 17 pcs. 30" pipes

Backfilled trench @ 158+89, water  
 pitted feet

Chump <sup>settling</sup> rock  
 ball field, etc. @ ball field

Settling + connection - set 4" 9" oper at g depth  
 + 4" valve box cap for 4" 6" @ 159+89

250  
0  
250

### Tools

### Equipment

No.	Type	No.	Type
1	Super	1	Long trencher
1	Sub pump	1	Tractor
1	Trench dig	1	Backhoe
2	Oiler	2	Pumps
1	Tractor op		
1	Backhoe op		
1	Fitter		
1	Lab		

Set later  
only

from 233+75  
to 241+54

40.

8:00 - 4:30 Sat April 22, 1950 - Cloudy

Excavation - for ditch w/ trenches  
from sta 233+75 to 241+54

Backhoe completed drainage ditch  
@ Tecolote

Distributed pipe along ditch  
on ~~SW~~ slope of Tecolote Canyon

No other -

Pumping water from  
ditch.

In check on ditch width  
 from sta 218+00 to 221+00  
 checked consistently 52-53 meters

2600  
 16  
 276

Force		Equipment	
No.	lbs	No.	Type/lbs
1 - Supt		1 - Long trencher	
2 - Lab. forms		1 - Long "	
2 - Trencher ops		1 - Dozer	
2 - Oiler		1 - Compressor	
1 - Dozer op		2 - Air hose	
2 - Power tools		2 - Water pumps	
2 - Trencher		2 - Trucks	
7 - Laborers			

1 Crane op 1 Trencher  
 1 - Oiler

~~see trucks~~  
~~297 243~~  
~~77~~  
~~243~~  
~~243~~

24 ps  
 machine  
 width of ditch  
 Ca. 100' ~~steps~~  
 0.01 of pipe  
 stit aft  
 pe  
 5.5 km by  
 41

Mon April 24 - Cloudy  
 Excavation - for ditch w/ trencher  
 from sta. 241+54 to - 245+69  
 Backhoe moved ahead - not work'g today  
 Hand excavation for bell holes, grade  
 ditch bottom. Sub trencher work'g -  
 Pumping water from ditch  
 Pipe laid from sta 220+23 - 223+07  
 It welded from sta 217+11 - 221+54  
 It grouted (at) from - 214+55 - 216+71  
 (int) from - 210+51 - 214+93  
 Backfill - sand bed - fine grade from  
 sta - 221+75 to - 222+73  
 Sand around pipe from 213+00 - 218+00  
 Partial over sand from 201+00 - 213+50  
 Used crushed rock @ ditch bottom  
 from sta 223+00 to 224+25 in  
 order to control sub-surface water  
 in Tumble Creek and allow for  
 clearing scattered rock, rake over field  
 ditch backfill @ ball park.  
 Unlocked 24 ps 30" pipe

276  
18  
—  
294

Force		Equipment	
No.	lbs	No.	Type lbs
1 - Supt		81 - Long trench	8
1 - Tool box		1 - Saw	"
1 - Pumpman		1 - Dozer	
2 - Trencher op		2 - Compressors	
2 - Oiler		2 - Air lines	
1 - Dozer op		2 - Pumps	
4 - Power tools op		2 - Trucks	
2 - Trencher			
8 - Laborers			

1 crew of 1 - Trencher

Remarks: checked ditch from 221+00 to 223+00 width checked constantly 52" to 53". Checked from 223+00 to 224+50 - averaged 9' 10" across top and 53" @ bottom - this section dug w/ bucket, banks sloughed while digging.

Check on pipe dia.: # 225 (sta. 219+33) 33 3/4", check made @ 100' intervals

no sand sta. 225+50± - 230+50±  
23 post holes  
42

8:00 - 4:30 Tues April 25, 1950 - Cloudy  
Excavation - for ditch w/ trencher from sta 245+69 to - 247+48  
w/ sm. trencher approx 2' 6" deep blasted + back filled ahead of large trencher. Hand excavation for bell holes, grade ditch bottom. Pumping water from ditch @ Trencher Creek.

Pipelayer - from sta 223+02 - 226+46  
to welded - 221+54 - 224+84  
to grouted - (ft) from 216+71 - 224+11  
(int) from 214+93 - 220+23

Backfill - sand bed - fine grade from sta 222+73 - 225+50

Sand around pipe from 218+00 - ~~224+00~~ 219+50

Partial over sand 213+50 - 217+00  
to 225+00 pipe dia. checked constantly 33 3/4" (105 1/2" to 106" in circum.)

2232

No	Item	No	Item
1	Supt	8	1- Large trencher
1	Sub fore	1	5m "
1	Powerman	1	Dozer
2	Trencher op	2	Comp
2	Oper	4	airman
1	Dozer op	1	Truck
4	Power tool op		
1	Truck driver		
8	Laborers		

Callin @ Wharton + John  
 Mr. Hill Mr. Almy + Jeffery's  
 Mr. Bishop discussed paving  
 was agreed that test on line should be  
 made before paving is put down  
 Mr. Bishop brought out that test will be  
 made with shovels after  
 value is made @ sta 241+00

City Recreation Com, and Mr. Robey  
 + S. V. V. for the contractor. It was mutually  
 agreed to do the necessary grade of stoned  
 portion of decisional bedding in top soil to cover  
 ditch fields etc. This is to start tomorrow  
 #17 - minutes of R.C. will be present to support  
 1- Crane of 40 & 1- Truck driver  
 1- Oper

Triffett

1	Form	3	1- Grader	3
2	Labs			
1	Grader op			

1-4 1/2 ✓ Weds April 26 50 Cloudy  
 Excavation for ditch w/ trencher from  
 sta 247+48 to -248+48

W/ sun. trencher approx 2'-6" deep -  
 blasted, backfilled ahead of large trencher  
 Hand excavation for bell holes, grade  
 ditch bottom.

Pipe laid - from sta 226+46 - 230+44  
 Jo welded - from 224+84 - ~~229+44~~ 229+83  
 Jo grouted - left from sta 224+11 - 226+99  
 (not today) (beginning of sand bedding) this  
 first from 220+23 - ~~219+63~~ 220+50

Backfill - sand bed - fine grade from  
 sta 225+50 to 230+50 (no  
 sand bedding or backfill used)

Sand bed - fine grade from 230+50 <sup>none</sup> today  
 Sand around pipe from 219+50 - 222+00  
 (219+00) <sup>222+</sup> 222+50

Partial over sand from 217+00 - 219+00  
 Checked ditch from 224+50 to 225+50  
 ditch width varied from 51" to 54"  
 checked pipe dia. @ approx 100' interval  
 pipe measured from 225+00 to 245+00  
 pipe measured between 105 1/2" and 106 1/2"  
 in circumference - ~~105 3/4~~ 105 3/4  
 meeting held at ball park - present Mr. Hill, J. With  
 for the City. Mr. Bishop for S.V. and 3 members

43  
 back hole  
 dug w/ back hole  
 ditch width 50" to 55"  
 sand bedding  
 beginning of sand bedding

mule  
318  
20  
338

Force		Equipment	
No.	Des.	No.	Type
1	Supt	1	Large tank
1	Lab fore	2	Comps
1	Powder man	1	Dozer
1	Trencher op	4	Air fan
2	Oilers	2	Trucks
1	Dozer op		
4	Power tool op		
1	Comps op		
2	Truck drivers		
8	Labs		

1 - Truck crane - op & oiler - 8 cwt  
Arnold - 1 - Supt & 2 labs

~~Work in trench about tomorrow~~  
24 ps taken  
complete to p. 411  
44

8-4:30 Thurs April 27, 00 Cloudy  
Excavation - for ditch w/ trenches from  
sta 2+8+48 to - 249+07  
Blast'g. hard pockets in trench behind  
ditch. Hand excavation for bell holes  
grade ditch bottom, Arnold. <sup>(connect sub-ops)</sup> I can't get  
for chambers @ 171+00 and 186+95  
Pipe laid - from sta 230+44 - 239+74  
to welded - from 229+83 - 237+05  
to grouted left from 226+99 - 231+38  
(int) from 220+23 - 222+33  
Backfill - sand bed - fine grade from  
sta 230+50 - ~~241+54~~ Sand around  
pipe from 222+00 to 225+50  
~~and from 230+50 to 235+55~~  
Packed over sand - none taken  
Cleanup, spread top soil @ ball field

245419  
 30  
 5 das - see book # 2  
 and report 4/2/50

military  
 338  
 24  
 362

Jones		Equipmt	
No.	hrs	No.	Type
1-Supt	8	1-Say hnd	
1-S. Fore		2-Camps	
1-Prov. ma		1-Dog	
1-Trenching		4-Air hnd	
1-Oiler		2-Trucks	
1-Dog			
4-Pow. tool			
1-Camp			
2-Truck			
8. Sels.			
1-Sum			
2-Sels			
2-Camp			
1-Truck crane			

} pump

Unloaded ~~27~~ pc 30" pipe  
 1- full end 30" p.v.  
 1- flange " " "

10 da report due Mon  
 no and report " " see form  
 military report " " see form

8-4-50 Fri April 28 50 Cloudy

Excavation for ditch w/ trench  
 from 249+07 to 251+47

Blast'g. hard pockets in trench  
 behind ditch. Hand excavation for  
 bell holes, grade ditch bottom.

Pipe laid from sta 239+74 - 246+08

Jo welded from 237+05 - 244+29

Jo grouted from <sup>(left)</sup> 231+38 - 238+84

(Int) from <sup>239+44</sup> S to 233+76

Backfill - sand bed - fine grade  
 from sta 241+54 to 246+08

Sand around pipe from 235+55 - 239+25

Partial over sand from 219+00 to 225+00

Cleaning, spread top soil @ ball field

Arnold: Excavation for chamber  
 @ sta 191+72, 215+55, and 223+30

Concrete chamber base @ 171+00 - 3 y

chamber base @ 186+95 - 3 y.



Summary of work accomplished 4/21/50 to 4/30/50 46

Excavation - for ditch from sta 223+00 to - 251+47  
Hand excavation for bell holes, grade ditch bottom, pockets  
in trench too hard for machine.

Pipe laid - from sta 215+52 to - 246+08

Jts welded - from sta 213+00 to - 243+99

Jts grouted - from sta 209+33 to - 238+84 (exterior)

206+06 to - 222+33 (interior)

and from ~~233+76~~ to - 239+44

Backfill - sand bed - fine grade from sta 216+00 to - 246+08

Sand around pipe from sta 209+00 to - 239+25

Partial pipe sand from sta 201+00 to - 225+00  
Water settled ditch on ditch side of B.O. @ sta 158+89  
Cleanings spread top soil @ bell field

work

Arnold - (sub-contractor) started ~~excavation for chambers~~ 4/27/50

Excavation for chambers @ sta 171+00, 186+95, 191+77, 215+55  
and 223+30.

Concreted bases for chambers @ 171+00 and 186+95 - ~~5/2 TOT.~~

Fittings & connections -

Set 4'-9" operating shafts 8" valve box caps  
for 4" B.O. @ sta 158+89.

Summary of work accomplished to date 4/30/50 47

Excavation - for ditch complete to sta 251+47 also from 291+66 to 296+29.

Hand excavation complete for chambers @ stas 171+00, 186+95, 191+77, 215+55 and 223+30.

Pipe laid - complete to sta. 246+08.

js. welded - " to sta 243+99

js. grouted - " " " 238+84 (external)  
222+33 and from 233+76 to 239+44 (internal)

Backfill - sand bed - fine grade ~~to~~ sta 246+08

Sand around pipe to 239+25

Partial cover sand (45%) to sta 225+00  
c.g. dell.

<u>Concrete</u>	<u>Sts</u>	<u>kick blocks</u>	<u>kick blocks</u>	
	155+67	5. x 3.5 x 2.5	Kick blocks	} 4 cy.
	165+20	5. x 3.5 x 2.	"	
	183+66	5.67 x 2.25 x 3.5	"	} 3 cy
	184+98	same	"	
	171+00	base only	Chamber base	} 5 cy <sup>only reported</sup>
	186+95	" "	" "	

Fittings & connections - 4" B.O. assembly @ sta 158+89  
2-30" P.V. unloosed only

Tools		Equipment	
No.	Qty	No.	Type
1 - Supt	8	1 - Long truck	8
1 - S. Form		2 - Camps	
1 - Powder man		1 - Boy	
1 - Trucker op		4 - Air line	
1 - Oil		2 - Trucks	
1 - Boy op		1 - Sideman	
4 - Power tool op		2 - weld & out for	
1 - Camp op			
2 - Truckman			
12 - Lbs			
1 - Fitter	8		
2 - Fitter			
2 - Welder			
<u>Arnold:</u>			
1 - Supt	8		
2 - Camps		2 - Pumps	8
2 - Lbs			

turn in  
material report  
see form

8:00 - 4:30 Mon May 4, 1950 - Cloudy  
Excavation - for ditch w/ trucker from  
sta. 251+47 to - 255+1 ✓

Blust'g had pockets in trench behind  
ditch. Hand excavation for bell holes,  
grade ditch bottom.

Pipe laid - from sta 246+08 to <sup>pc # 320</sup> 248+38  
fs welded - from sta 243+99 to - 245+19  
fs grouted (ext) from - 238+84 - 244+89  
(int) from - 233+76 <sup>50</sup> <sub>pc # 229 # 83</sub>

Backfill - sand bed - grade ditch  
bottom from 246+08 - <sup>40</sup> 248+75

Sand around pipe from 239+25 - 244+00  
Partial over sand from 225+00 - 225+50

Fittings connection - installed  
30" hub and P.V. @ sta

Arnold - Excavation for <sup>pc # 219 # 95</sup> concrete pipe chamber @ sta

Forms for - Chamber base

Concrete - Base for chamber @ 223+30 - Bay  
and @ sta 215+55 - 2 cur

32  
46  
78

Force		Equipmt	
No.	Hrs	No.	Type Hrs
1 - Supt		1 - Large trench	8
1 - 2 Iron		3 - Camps	
1 - Powder man		1 - Doze	
1 - Trinch op		4 - Airham	
1 - Wils		2 - Trucks	
1 - Doze op		2 - Sideboom	
4 - Power tool op		3 - weld joints	
1 - Camps op			
2 - Truckdr			
17 - Sales			
1 - Fitter from			
2 - Fitters			
3 - Welds			
Roubidush:			
1 - Supt	8	1 - pump	
1 - Equipmt op	1		
Arnold:			
1 - Supt	8	1 - Pump	8
2 - Camps	1		

~~excavated?~~  
 det. 15.  
 grade of site?

list of fittings, concrete  
 req. steel etc see book 1  
 for set up.  
 Enter this list & extras

8:00-4:30 Tues May 7 1950 - Cloudy 49

Excavation for ditch w/ trench from  
 sta. 255+12 to 256+91. w/ small trench  
 approx 2' x 6' deep - blasted, backfilled  
 ahead of large trench. Hand excavation  
 for bell holes, grade ditch bottom <sup>remove</sup> <sub>head packs</sub>

Pipe laid from 248+38 to <sup>now</sup> today  
 ft welded - from 245+19 to 246+38  
 ft grouted - (st) from 244+89 to 246+38  
 (int) " 229+83 (S) " 227+39

Backfill - sand bed - fine grade from  
 248+75 to - some today.

Sand around pipe from 244+00 <sup>248+25</sup> to ~~246+75~~

Partial over sand from 225+50 to 245+00

except W. slope of Tecolote Canyon  
 Roubidush & Co. 3311 Olive and Long  
 Beach 7, Calif started weld'g up 42" casing for  
 pipes excavated under 101. (15' lengths) making up  
 15' lengths from 10' pcs - 100' total - <sup>v.v. welds</sup> <sub>annular joint</sub>

Arnold: ~~excavation~~ <sup>walls</sup>  
 forms for chamber @ sta  
 171+00 Pump  
 Reinf steel - for chamber walls @ 171+00  
 Concrete -  
 muck -

today  $\frac{78}{24}$   
197

50

no.	lbs	No.	Type	lbs
1- Supt	8	1- Long trench		4
1- Asst supt		1- Sm trench		
1- Sub fore		2- Comps		
1- Powderman		1- Dog		
2- Trencher op	4	4- Air hose		
1- Oiler		2- Trucks		
1- Dog op		1- Sideboom		
4- Power tool op		1- well's outfit		8
2- Truckman				
12- Laborers				
1- Fitter foreman	8			
2- Fitters				
3- Welders				
1- Sideboom op				
2- Capt				
1- Supt op				
3- Labor				

Roundbrush - well's up 4" casing pipe  
encasement under Santa Fe R.R. Making  
up 15' lengths from 7 pcs. - 70' total (V.V. welds)  
Preparing to start placed encasement under  
lany 101.

8:00-12:00 Weds May 3 1950 - Showers  
Excavation - for ditch w/ trencher from  
sta 256+91 to - 259+01  
w/ small trencher approx 2'-6" deep -  
blasted, backfilled ahead of large  
trencher. Hand excavation for bell  
holes, grade ditch bottom, remove  
hard pockets  
Pipe laged - none  
js welded - none  
js grouted - (stabilizer) - none  
227+84 ← interior from 227+34.5 to  
Backfill - sand bed - fine grade coarse  
Sand around pipe - none  
Partial over sand from 245+00 to 246+00  
Arnold: Form for chamber walls @ 171+00

Paint steel -  
Concrete - Chamber walls @ Sta 171+00  
Sittings & connection - 8" dia shaft + cap @ 167+15  
4" AVA @ 191+7V, 2" AVA @ 219+95, 12" G1 + BFC  
241+68+

today 100  
48  
150

4 pipes

list of fittings etc  
Enter S. list 2 x 2 3  
51

Force                      Equipment

No.	Qty	No.	Type	Qty
1 - Supt	8	1 - Sump tank		
1 - Asst "		2 - Comps		
1 - Job for		1 - Digger		
1 - Powder man		4 - Air lines		
1 - Trenching op		2 - Trucks		
1 - viler		1 - Sideboom		
1 - Digger op		2 - weld'g outfit		
4 - Powder tool op				
1 - Comps op				
2 - Trenching				
17 - Laborers				
1 - Fitter				
2 - Fitters				
3 - welders				
1 - Sideboom op				

1 - Supt  
7 - Corps

1 - Supt                      8 }  
1 - jacking machine      1 - jacking machine } Roundbrush  
3 - Laborers

Roundbrush - Started jacking 4" casing from W. side of line 101 @ approx 10:00 A.M.

8-4 1/2      Thurs May 4, 1950 - Cloudy

Excavation - for ditch w/ trencher from sta 259+01 to - 261+50

Drill, blast, backfill ahead of large trench'g machine. Hand excavation for bell holes, grade ditch bottom, remove hard pockets.

Pipe laid - from 248+38 - 258+71

Jts welded - from 246+38 - 251+17

Jts grouted - from 246+38 - 250+27 (ext)  
from 227+39 to - 224+54 (int)

Backfill - sand bed - fine grade from sta 248+75 to - 259+01

Sand around pipe from 248+25 - none today

Partial over sand from 246+00 - none today

Fittings & connection installed

Unloaded 45 pcs. 30" pipe also B.O. pipe for stas. 186+95, 215+55, Note: Pipe for B.O. @ 223+30 did not get here Arnold - on forms for anchors W. Trolate slopes

Roundbush - picking 4 1/2" casing  
under heavy 10' approx 10 e.f. today

Tools		Equip		
No.	Des	No.	Type	Des
1 Supt		1	Long trench	8
1. asst supt				
1. Lab fore		2	comps	
1. Powerman				
1. Trencher op		1	dozer	
2. oil				
1. Dozer op		4	anchors	
4. Power trolley				
1. Comps op		2	Trucks	
2. Truck driver				
12. Laborers		1	Subsoiler	
1. Fitter fore		2	weld'g outfit	
1. Fitter's				
2. welders				
1. subsoiler op				
1. Supt	8	Trucks	8	} Arnold
2. Comps	1			
1. Supt	8	Truck	8	} Roundbush
1. pick'g mach op	1	pick'g mach	1	
3. Lbs				

Arnold - Concrete chamber base

@ Sta 191+72 - 2 cy. @ Sta 219+95  
2 cy. anchors @ Sta: 225+82 4'x5'x4'6"  
226+90. 4'x5'6'x5'0, 226+73. 4'x5'6'x4'6"  
227+20 - 4'x5'6'x5'0 - 12 1/2 cy tot.

44 pps

52

8:00-4:30 Fri May 5, 50 - Fri

Excavation - for ditch w/ trench from  
Sta 261+50 to - 265+89

Drill, blast, backfill ahead of  
large trench. Handled excavation for  
bell holes, grade ditch bottom, remove  
hard pockets.

Pipe laid - from Sta 258+71 - 264+39

fts. welded from 251+17 - 260+80

fts. grouted (ft) from 250+27 - <sup>now</sup> today  
(int) ~~push~~ <sup>do</sup>

Backfill - sand bed - fine grade from  
Sta 259+01 to - 264+39

Sand around pipe from 248+25 - 260+00

Partial over sand from 246 - <sup>now</sup> today  
Fittings & connections - check up

prev. reported also

Unloaded 44 pps 30" pipe also

B.O. fee for Sta 223+30 and 339+75  
6" riser pipe for 241+66 - 8 <sup>completes</sup> B.O. 4" pipe.

174  
28  
202

Force		Equipmt	
No.	Hrs	No.	Type Hrs
1 - Supt	8	1 - Long truck	8
1 - Asst Supt		2 - Comps	
1 - Lab man		1 - Dog	
1 - Powder man		1 - backhoe	
1 - Trencher op		4 - Air hammer	
2 - oiler		2 - Trucks	
1 - Dog op		1 - Sideboom	
1 - Backhoe op		2 - weld'g outfits	
2 - Truck driver		} Arnold 1 - Truck	
1 - Sideboom			
1 - Fitter for		} Roadbush 1 - Truck	
1 - Fitter			
3 - Welders		} jacking machine	
1 - Sideboom	8		
1 - Supt	8		
2 - Comps			
2 - Labs			
1 - Supt	8		
1 - jacking op			
2 - Labs			

Settings now complete to chamber @ sta 241+68 except B. O. assembly @ sta 223+30 and 6" riser w/ blind long + 3/4" c.c. @ sta 241+68

Roadbush - jacking casing under heavy 10' approx 40' in place to date.

↑  
O.K.

Sat - Trencher from 265+89 - 266+49  
Backhoe from 291+66 to 289+54

8:00 - 4:30 Mon May 8, 1950 - Sat  
- Excavation - for ditch w/ trencher from sta 266+49 to 268+75 w/ Backhoe from 289+54 to 288+34  
Hand excavation for bell holes, grade ditch bottom, remove hard pockets

Pipe laid - for sta 264+39 to <sup>now</sup> Eden  
is welded - for sta 260+80 to 263+79  
is grouted - (at) from 250+27 to 262+30 (int.) from 248+38 to 245+79

Backfill - sand bed - in grade from sta 264+39 to 267+98

Sand around pipe from 260+00 to 261+00

Partial over sand from 246+00 to 25+00

Settings & connection - Installed 4" G.V. and 4" A.V. @ sta 171+00  
4" B.O. assembly complete @ sta 186+95  
" " " " " " " " 215+55  
4" G.V. and 4" A.V. @ sta 240+05 @ sta 223+  
" " " " " " " " 241+78

Arnold - forms for chamber walls @ sta 186+95, started excavation for chamber @ 241+68

Concrete anchors @ sta 229+37 (4. x 5.5 x 5.)  
229+83 (4. x 6. x 5.) 8/16 c.g. top anchor

Concrete chamber base @ sta 240+05 2 1/2 c.g.



20  
28  
230

4400  
Today 16/2  
last pm

10 de report due tomorrow  
54

Tools		Equip		
No.	Qty	No.	Type	Qty
1. Supt	8	1	Large trench	8
1. Cook		2	Comps	
1. Set for		1	Dozer	
1. Powderman		1	Backhoe	
1. Trencher op		2	Trucks	
2. Jailer		4	Air beam	
1. Dozer op		1	Sideman	
1. Backhoe op		2	weldg outfits	
2. Trencher		1	Truck	8 Arnold
11. laborer		1	Truck	8 Roubidoux
4. Power tool op		1	Jack & mach	1
1. Set for				
1. Set for				
3. Welder				
1. Sideman op				
1. Supt	8			
2. Comps				
2. Sides				
1. Supt	8			
1. Jack op				
2. Sideman				

8:00-4:30 Tues May 9, 1950 Jain  
 Excavation - for ditches w/ trencher from  
 sta. 268+75 to 270+75  
 w/ backhoe from 272+17 to 273+15  
 Drill, blast, backfill ahead of 2 trench  
 hand excavation for well hole, grade  
 ditch bottom, remove hard products  
 Pipe Layed - from 264+39 - 268+58  
 Jts welded - from 263+79 - 267+98  
 Jts grouted (H+) from 262+30 - 267+38  
 (Completes interval Jts to 30' PV @ sta 241+68 -) E to 222+33  
 Backfill - sand bed - from grade from  
 sta 267+98 to 268+58  
 Sand around pipe from 261+00 - 268+00  
 Partial over sand from 255+00 - 260+00  
 Arnold: <sup>removal steel wells</sup> Joints for chamber @ 186+95  
 Excavation for chamber @ 241+68

boulders - removed & hard tunneling started.

Roubidoux - jacking 4" casing under  
 heavy 101 approx 45 l.f. in place  
 to date. Auger heavy up in large

230  
30  
260

35 ft 51.0  
32" 51.1

Force

Equip

No.	Qty	No.	Type	Qty
1-Excavator	8	1-Long trench		8
1-Backhoe		1-Backhoe		
2-Comp.		2-Comp.		
1-Dog		1-Dog		
2-Trucks		2-Trucks		
4-Dish haul		4-Dish haul		
1-Sideboom		1-Sideboom		
2-weld girths		2-weld girths		
1-Excavator	8	1-Truck	8	} Arnold
2-Comp				
2-Sets				
1-Excavator	8	1-Truck	8	} Roundhead
1-jacking sp				
2-Sabres		1-jacking sp	1	

Some quick sand encountered

2:00 - 4:30 Weds May 10 1950 - Sat

Excavation - for ditch w/ trench from sta 270+75 to 273+15

w/ backhoe from 273+15 to 274+00

Hand excavation for bell hole, grade ditch bottom, remove hard pockets

Pipelayer - moved ahead to sta. 293+44 laid to 295+51 and to

its welded - from sta 267+98 to 268+28

moved ahead to sta 295+22 welded to

sta 293+74 and to sta

its grouted - (4") from 267+38 to 268+28

(int) from <sup>8 JTS</sup> 30" P.I. C S.A. 241+68 <sup>PAST WITH 241+68</sup> to 249+62

Backfill - sand bed - fine grade - today  
Sand around pipe - none today

Partial over sand from 260+00 to 267+50

Arnold - Form + reinf for chamber walls

@ sta 186+95. Excavation for chamber

@ 241+68 +

Roundhead: jacking for casing under highway 101  
approx 50' b. in place to ditch

Chamber dimension are inside  
 measurements both horizontal & vertical.  
CONCRETE

NOTE: CHAMBER @  
 STA. 158+88<sup>+</sup> OMITTED

CHAMBERS 56  
 rim top & bott. elev.  
 in corner

TOP OF SLAB  
 " " GROUND SUB GRADE

STA.	STRUCTURE	L x W x H	C.Y. DEL.	PORTION	MISC. IRON	EXCAVATION	TOP ELEV.	BOTT. ELEV.
155+67	Kickblock	5. x 3.5 x 2.5	4.	ALL	NONE	NO ADDL. HAND EXCAV. REQUIRED	—	—
165+20	"	5. x 3.5 x 2.	—	"	"	—	—	—
171+00	CHAMBER 6" SLAB TOP	5.34 x 5. x 2.98	4.75	2 1/2" BASE 1 1/2" WALLS 3/4" SLAB	2 L. RUNGS	→	GROUND 1" BELOW (TOP OF PIPE) AT. CL 258.6 / 358.5	351.7
183+60	Kickblock	5.67 x 2.25 x 3.5	3.	ALL	NONE	NO ADDL.	—	—
184+98	"	5.67 x 2.25 x 3.5	—	"	"	do	—	—
186+95	CHAMBER 6" SLAB TOP	5.34 x 5. x 6.26	6.75	3. 75" BASE 3. 75" WALLS 3. 75" SLAB	6 L. RUNGS	→	GROUND / 287. / 290.7	280.9
191+72	CHAMBER 42" PIPE	BASE 4.34 x 4.34 x 3.34	2.5	2. 50" BASE DECK	NONE	NO ADDL	GROUND / 296. / 297.43	289.7
215+55	CHAMBER 6" SLAB TOP	5.34 x 5. x 6.26	6.	3. 25" BASE 3. 75" WALLS 3. 75" SLAB	5 L. RUNGS	→	GROUND / 110.5 / 113.93	103.9
219+95	CHAMBER 36" PIPE	BASE 4.67 x 4.34 x 3.34	2.25	2. 25" BASE DECK	NONE	NO ADDL	GROUND / 116. / 117.32	110.1
223+30	CHAMBER 6" SLAB TOP	5.34 x 5. x 8.06	8.75	3. 75" BASE 5. 75" WALLS 3. 75" SLAB	7 L. RUNGS	→	GROUND / 103. / 105.16	93.1
225+87	Anchor	4. x 5. x 4.5	—	ALL	NONE	NO ADDL	6" OVER PIPE TOP OF	1'-0" BELOW BOTT. OF PIPE
226+70	"	4. x 5.5 x 5.	12.5	"	"	do	do	1'-6" do
226+73	"	4 x 5.5 x 4.5	—	"	"	do	do	1'-0" do
227+20	"	4 x 5.5 x 5.	—	"	"	do	do	1'-6" do
229+37	"	4 x 5.5 x 5.	8.5	"	"	do	do	1'-6" do
229+83	"	4. x 6. x 5.	—	"	"	do	do	1'-6" do
240+05	CHAMBER STEEL TOP	5.34 x 5 x 4.16	4.5	2.5" BASE 2" WALLS	4 LADDER 1 TRAP DOOR - 2 VENTS w/ screens	→	GROUND / 322.5 / 324.55	316.5
241+68 <sup>+</sup>	CHAMBER 9" REIN. SLAB	13.07 x 8.5 x 8.28	19.	4 1/2" FLOOR 10 1/2" WALLS 4" SLAB	7 LADDER.	→	319.4 / 319.4	309.7

Concrete cont

Kickblocks @ 330 + 05 - 2 cy  
 333 + 40 - 3 cy  
 6'-0 2'-0 TOP OF PIPE  
 6'-0 2'-0

57

SUB GRADE

STA	STRUCTURE*	L x W x H	C.Y. DEL.	PORTION	MISC IRON	EXCAVATION	TOP ELEV.	BOTT. ELEV.
291+66	Kickblock	5.67 x 2.25 x 3.5	1.5	ALL	NONE	NO ADDL.	-	-
292+21	Anchor	4. x 6. x 5.	-	ALL	NONE	NO ADDL.	-	-
292+77		4 x 6. x 5.	10.	"	"	" "	-	-
293+12		4 x 5.5 x 5.	-	"	"	" "	-	-
293+41		4. x 5.5 x 5.5	-	"	"	" "	-	-
293+77		4. x 6. x 4.86	13.	"	"	" "	-	-
294+46		4 x 5.5 x 5.5	-	"	"	" "	-	-
295+04	↓	4. x 5.67 x 5.25	-	"	"	" "	-	-
301+70	CHAMBER STEEL TOP CHAMBER	5.34 x 5 x 5.25	5.25	2.5 BASE 2.75 WALLS	4-L.R. 1-TRAP DOOR 2-VENTS w/SCREEN	→	GROUND 263. / 263.5	255.3
321+85	6" SLAB TOP	5.34 x 5 x 6.86	6.75	2.5 BASE 3.5 WALLS .75 SLAB	6-L.R.	→	GROUND 60. / 62.5	51.8 ✓
324+95	1" CHAMBER 4" DIA. 3" TOP PIPE	BASE: 4.34 x 4.34 x 3.	1.75	1.5 BASE .25 DECK	NONE	NO ADDL.	GROUND 66.5 / 68.	60.1
327+80	30" CHAMBER SLAB TOP	13.25 x 10.34 x 10.88	26.	5" FLOOR 15" WALLS 6" SLAB	10-L RUNGS	→	GROUND 64.5 / 65.	52.54 <sup>91</sup>
328+74	1-3 GROUT SANTA FE ENCASMENT	42" ID CASING 70'-0" lg	GROUT 9.	ALL	NONE	-	-	-
330+05	Kickblock	6. x 3. x 4.	3.	ALL	"	NO ADDL.	-	-
333+30	CHAMBER 4" DIA. 36" TOP PIPE	4.67 x 4.34 x 3.34	2.5	ALL	"	" "	-	-
333+40	Kickblock	6. x 2.5 x 3.5	2.	ALL	"	" "	-	-
339+08	Anchor	4. x 6. x 5.	4.	3. PART 1.	"	" "	-	-
339+48	Kickblock	5. x 4. x 2.	1.	ALL	"	SLIPPED IN	-	-

cont. →

## Concrete cont -

← TOP OF SLAB  
TOP OF GROUND SUBGRATE →

Sta	Structure	L x W x H	C.Y. DCL.	Position	Rein. Iron	Excavation	TOP ELEV	BOTT. ELEV.
339+75	Chamber 6" slab top	5.34 x 5 x 9.	6.25	$\frac{2}{3}$ { Base Walls $\frac{3}{4}$ cy slab	5 L. RUNGS			
342+30 -	1-3 GROUT	42" I. D. casing	GROUT					
343+30	ENCASEMENT	100'-0" long	13.5	ALL	NONE	—	—	—
396+45	Chamber dia. pipe 4'-0" long			$\frac{2}{4}$ Base Duck	NONE			
398+25	anchors	4. x 5.5 x 5.5	-	ALL	NONE	XNO ADDL REQ	6" over top of pipe	See MEAS. H
398+61		4. x 5.5 x 5.5	-	"	"	"	"	"
399+33		4. x 5.5 x 5.	-	"	"	"	"	"
399+75		4. x 6. x 5.	24.5	"	"	"	"	"
400+32		4. x 5. x 5.	-	"	"	"	"	"
400+89		4. x 5. x 5.	-	"	"	"	"	"
401+47		4. x 5.5 x 5.	-	"	"	"	"	"
402+04		4. x 5.5 x 4.	-	"	"	"	"	"
419+90	Chamber Steel top	5.34 x 5. x		$\frac{2}{4}$ Base walls				
422+39	Chamber Partial slab top	109" x 110" x						

REINF. STEEL

(AVA) 2-LADDER RUNGS ✓  
Chamber @ sta. 171+00 (Osler St) - SLAB TOP

Floor: none  
Walls: 20 - 1/2 φ 3'-0" lg. STE. (STUBS) 1-6" 12'-8" 3'-6" 5'-8" 3'-6"  
6 - 3/4 φ 5'-6" STR. 1 - 3/4 φ 1'-6" 2 - do 3'-2" 3 - do 3'-5" 4 - do 2'-0" 1 - do 1'-1"

(B.O.) 6-LADDER RUNGS ✓  
Chamber @ sta. 186+95 (Whiteline) - SLAB TOP

Floor: none  
Walls: 20 - 1/2 φ 6'-4" lg. vert. str. 20 - 1/2 φ 1'-8" led. stubs 14 - 3/4 φ 12'-8" 3'-6" 5'-8" 3'-6"  
6 - 3/4 φ 5'-0" 2 - 3/4 φ 3'-5" 4 - 3/4 φ 0'-10" 5 - do 5'-10" 4 - do 2'-0" 1 - do 1'-6" 1 - do 2'-8" 1 - do 1'-1" 3 - do 3'-2" 1 - do 4'-0"

--- INSERT CHAMBERS @ 191+92 ✓  
(B.O.) 5 LADDER RUNGS (Tuculite) 6" ✓  
Chamber @ sta 215+55 (Canyon) - SLAB TOP

Floor: none  
Walls: 20 - 1/2 φ 6'-0" lg. str. vert. stubs 20 - 1/2 φ 1'-8" 12'-8" 3'-6" 5'-8" 3'-6"  
6 - 3/4 φ 5'-6" 2 - 3/4 φ 3'-5" 4 - 3/4 φ 0'-10" 5 - do 5'-10" 4 - do 2'-0" 1 - do 1'-6" 1 - do 2'-8" 1 - do 1'-1" 3 - do 3'-2" 1 - do 4'-0"

--- INSERT CHAMBER @ 219+96 ✓  
(B.O.) 7-LADDER RUNGS (Tuculite) 6" ✓  
Chamber @ sta 223+30 (Canyon) - SLAB TOP

Floor - none  
Walls: 20 - 1/2 φ 7'-8" lg. vert. stubs 20 - 1/2 φ 1'-8" 12'-8" 3'-6" 5'-8" 3'-6"  
6 - 3/4 φ 5'-6" lg. 2 - 3/4 φ 3'-5" 4 - 3/4 φ 0'-10" 5 - do 5'-10" 4 - do 2'-0" 1 - do 1'-6" 1 - do 2'-8" 1 - do 1'-1" 3 - do 3'-2" 1 - do 4'-0"

NOTE: CHAMBER @ STA 158+88± OMITTED

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Cont

4-LADDER RUNGS ✓  
Chamber @ 240+05 (N. TOP OF TEGWATE) - TRAP DOOR TOP

Floor: none  
Walls: 20 - 1/2 φ 4'-8" lg. str. 10 - do 12'-8" lg. 5'-8" 3'-6"

Slab: none  
7-LADDER RUNGS (NEAR AIRPORT) ✓ 9" REMOVABLE  
Chamber @ 241+68 - SLAB TOP

Floor: 14 - 3/4 φ - 14'-2" lg. 2'-4" 9'-2" 12'-6" 10 - do - 18'-8" 16 - 3/4 φ - 16'-2" 13 - do - 15'-8" 4 - do - 6'-6" 4 - do - 5'-0" 30 - 1/2 φ - 8'-0" lg. str. vert. 2 - do - 4'-0" 3 - do - 2'-0"

Slab: 20 - 1/2 φ 6'-8" lg. str. 27 - 3/4 φ 8'-11" 4 - do 0'-9" 2 - do 6'-9" 2 - do 6'-9" 1 - do 2'-4" 1 - do 3'-4"

no ladder rungs (0) ✓  
Chamber @ 191+72 Pipe chamber 42"

Floor + walls - none  
Slab: 1 - 1/2 φ - 14'-0" lg. 0 also 1 - 1/2 φ - 2'-10" 1 - do - 13'-0" 1 - do - 1'-2" 1 - do - 3'-10" 1 - do - 3'-6" 1 - do - 3'-6" 1 - do - 3'-0" 1 - do - 3'-0"

no ladder rungs (0) ✓  
Chamber @ 219+95 Pipe chamber 36"

Floor and walls - none  
Slab: 1 - 1/2 φ - 13'-0" lg. 0 1 - do - 12'-0" .

15  
16  
37

## Reinf. Steel Cont

4-LADDER RODS

Chamber @ sta 301+70 - Trap door top <sup>major</sup> Rows

Floor: none

20-1/2 φ 4'-9" lg. str. vert

Walls: 10-do 12'-8" lg ← → | 5'-8" | 3'-6"

Slab: none

6-LADDER (near) RODS

Chamber @ 321+85 - (near) - 6" slab top

Floor: none

20-1/2 φ 7'-3" lg. str. vert

Walls: 14-do 12'-8" lg | 5'-8" | 3'-6"

Slab:

6-3/4 φ 5'-6" lg str.

1-3/4 φ 1'-1"

5-do 5'-10"

4-do 0'-10"

1-do 2'-8"

1-do 1'-6"

2-do 4'-0"

3-do 3'-2"

4-do 2'-0"

Chamber @ 324+95 - (near) - 8" Deck pipe chamber

Floor &amp; walls: none

Slab: 1-1/2 φ 11'-0" lg ○

1-do 12'-0" ○

Chamber @ 327+80 (near) Large Chamber

15-3/4 φ 16'-0" lg ← → | 11'-0" | 2'-6"

Floor: 12-do 18'-11" lg ← → | 13'-11" | 2'-6"

Walls:

61



FITTINGS & CONNECTIONS

NOTE: LIST MAKE ON G.V.'S

62

Cont

STA.	NO.	TYPE	MAKE	STA.	NO.	TYPE	MAKE
158+89	(4") (B.O.)	1 4" G.V. 1 4" blind flange - by V.V.	KENNEDY -	241+68	(AVA PV S.O.)	1 12" G.V. flanged 1 12" B.F.	R
167+14	(12") (S.O.)	1 12" G.V. 1 12" blind flange 1 8" operating shaft - 5'-0" lg. 1 8" valve box cap	RENS. - -			1 6" B.F. - 3/4" tapped 1 3/4" corp cock (stand) 1 4" G.V. 1 4" AV 2 6" valve box caps	K R
171+00	(4") (AV)	1 4" G.V. (ACCESS M.H. ON 30" PIPE) 1 4" AVA ASSEMBLY 1 22" M.H. FRAME 1 22" M.H. COVER	KENNEDY RENS. - -			1 22" M.H. frame 1 22" M.H. cover 1 12" C.I. x 14" sleeve 1 12" x 24" JBS adaptor 1" tapped 1 1" corp. cock (stand) 1 30" P.V. hub end	K R
186+95	(4") (B.O.)	1 4" G.V. 1 4" B.F. 1 8" VALVE BOX CAP 1 6" " " 1 22" M.H. FRAME 1 22" " COVER	K. K. - -				
191+72	(4") (AV)	1 4" G.V. ASS. 1 22" M.H. FRAME 1 22" " COVER	K. R. -	261+15	(S.O.) (S.O.)	1 8" G.V. flanged 1 8" B.F. 1 8" operating shaft ? lg. 1 8" valve box cap	K
215+55	(4") (B.O.)	1 4" G.V. 1 4" B.F. 1 8" VALVE BOX CAP 1 6" " " 1 22" M.H. FRAME 1 22" " COVER	K. K. - -	275+53	SPEC. (S.O.) (S.O.)	1 4" B.F. 1 8" G.V. flanged 1 8" B.F.	K
219+95	(2") (AV)	1 2" CORP COCK 1 2" AV. ASS. 1 22" M.H. FRAME 1 22" " COVER	R. - -	285+00	(S.O.) (S.O.)	1 8" operating shaft ? lg. 1 8" valve box cap	
223+30	(4") (B.O.)	1 4" G.V. flanged 1 4" B.F. 1 8" valve box cap 1 6" " " 1 22" M.H. frame 1 22" " cover	K. K. - -	293+60	(B.O.) (S.O.)	1 4" C.I. 90° ell 1 4" G.V. flanged 1 4" B.F.	RENS.
240+05	(4") (AV)	1 4" G.V. flanged 1 4" A.V.	K. R.	301+70	(4") (AV)	1 4" G.V. flanged 1 4" A.V.	R R
				303+85	(6") (S.O.)	1 6" G.V. flanged 1 6" B.F. 1 8" operating shaft ? lg. 1 8" valve box cap	K

(Cont)

(Cont)

Cont

STA.	NO	TYPE	MAKE
318+62	1	6" G.V. flanged	Kennedy
	1	6" B.F.	-
	1	8" valve box cap	-
	1	8" casing? lg.	-
321+85	1	4" G.V. flanged	RENS.
	1	4" B.F.	-
	1	8" valve box cap	-
	1	6" valve box cap	-
	1	22" M.H. frame	-
324+95	1	22" M.H. cover	-
	1	2" comp. cock (stand.)	-
	1	2" AN assembly	RENS.
	1	22" do cover	-
327+80	2	2" comp. cocks (stand.)	-
	2	6" valve box caps	-
	1	8" " " "	-
	1	22" M.H. frame	-
	1	22" " cover	-
	2	8" G.V. flanged	KENNEDY
	2	8" B.F.	-
	2	8" P.R.V.	CLAYTON
	2	8" C.I. sleeves	-
	2	8" F&S adaptors 24" lg	-
	2	1" comp. cocks (stand)	-
1	30" P.V. flanged	NORO.	
333+30	1	2" comp. cock (stand)	-
	1	2" air valve ass.	RENS.
333+50	1	22" M.H. frame, 1-22" M.H. cover	-
	1	8" B.F.	-
339+75	1	4" G.V. flanged	RENS.
	1	4" B.F.	-
	1	8" valve box cap	-
	1	6" valve box cap	-
	1	22" M.H. frame	-
343+60	1	22" M.H. cover	-
	1	2" comp. cock (stand)	-
	1	2" cap	-

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Cont

STA.	NO	TYPE	MAKE
381+35	1	12" B.F. (OTHERS OMITTED)	-
	1	6" G.V.	KENNEDY
390+85	1	6" B.F.	-
	1	8" opent. duct? lg.	-
	1	8" valve box cap	-
396+45	1	4" AVA	RENS.
	1	4" G.V. flanged	RENS.
	1	22" M.H. frame	-
	1	22" M.H. cover	-
398+42	1	6" 90° ell	-
	1	6" G.V.	NOROGRAM
	1	6" B.F.	-
419+90	1	4" AVA	RENS.
	1	4" G.V. flanged	RENS.
422+39+	2	16" P.R.V.	CLAYTON
	4	16" VERP. G.V.	LUDLOW
	1	12" G.V.	-
	2	16" C.I. sleeves 15" lg	-
	2	16" C.I. F&S. adaptor 24" lg	-
	2	3/4" comp. cocks on queue connection det.	-

4" add B.D. pipe fast est.  
 12" pipe @ Bayview 500' lg?  
 add sand used, see 1st of Cont.

Concrete paving  
along Osler St

64

7967 (4")  
431 (5")  
8398

Start of (4") sta 167+48

End of (4") 183+45

1597 (4")

all @: 7458 4.67 w. width

Ulrich St → 93 11179

sta 168+57 10 9582

7561 6388

minus @ number 171+00 39 7457.99

7522

on stock 21

nye 34

Price 390

1597 (4")
91 (5")
<u>1688 =</u>
TOT. L.F.
<u>7967 # =</u>
TOT 4"
<u>431 #</u>
TOT. 5"

x 7967 # 4" concrete paving

Sta. 183+45 start of 5" see sketch

22 183+60 = T.P.

69 184+29 = end

912 (5")

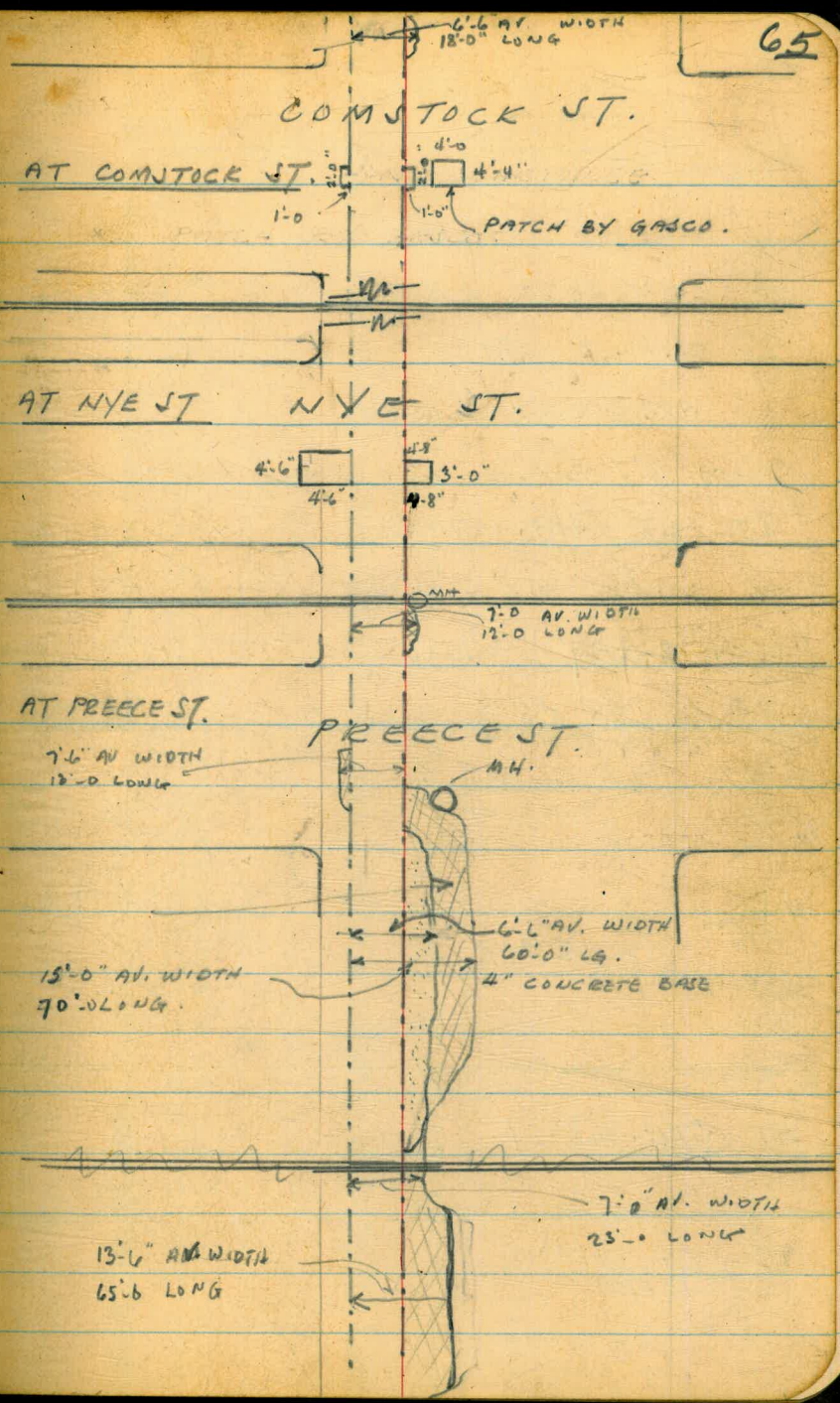
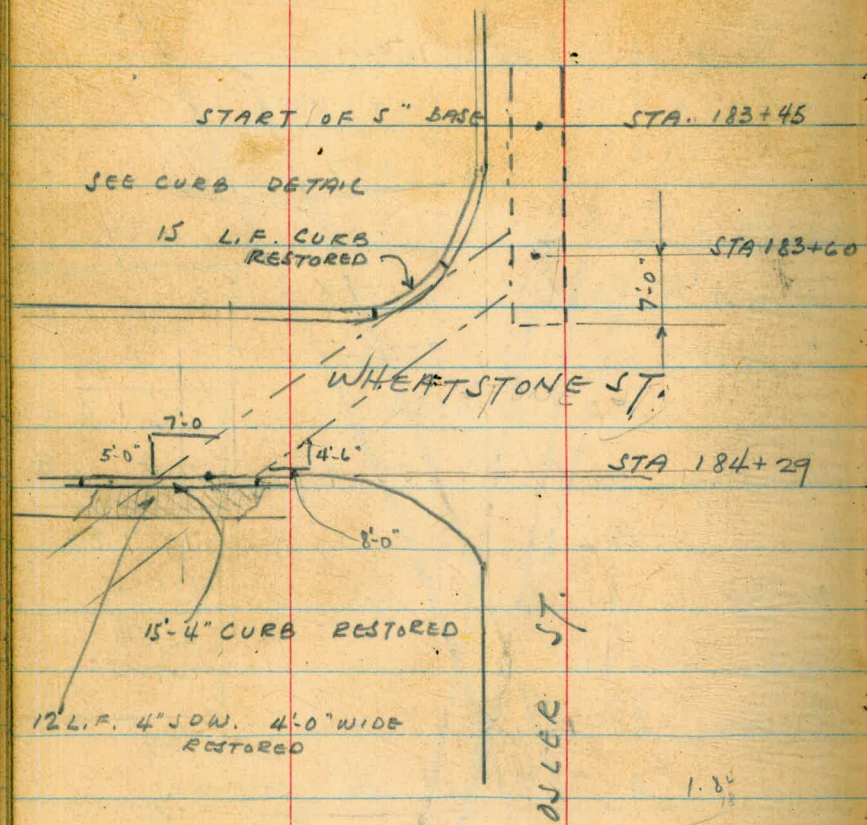
x 4.67

395 #

+ 36 #

431 # tot.

4 5" concrete paving  
Patch @ Wheatstone St



PAVEMENT SOW. AND CURBS RESTORATION

99% concrete 4" x 5" incl curbs walls

OSLER STREET

4" CONCRETE BASE - BY RILEY (SUB)

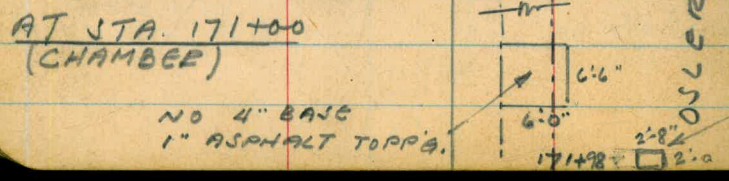
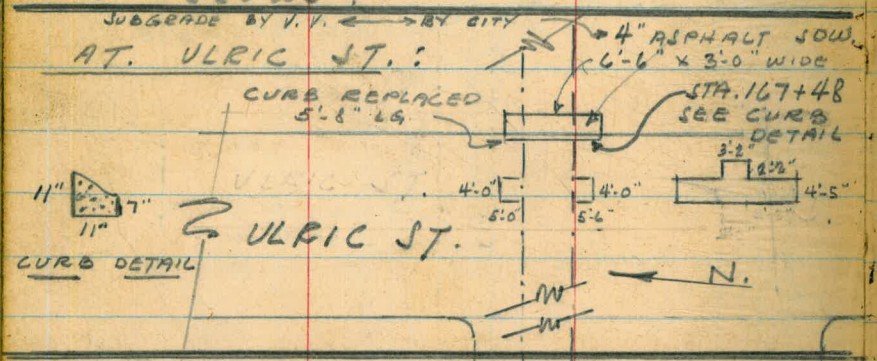
2" ASPHALT TOPPING - BY CITY

AVERAGE WIDTH - 4'-8"

FROM W. FACE OF CURB AT ULRIC STREET (STA. 167+48) TO E. SIDE OF W. CURB AT WHEATSTONE ST.

(STA. 184+29) = 1681 TOT. L.F. EXCEPTIONS

AS FOLLOWS:



183 + 60 = turn to N  
E. face  
Osl  
@ U  
←  
@ 168  
168  
@ 17

67

#366 <sup>?</sup> Buy & transport 4" blind flange  
to job site.

1 hr. S. Van Valkenburg. 1 hr truck

#



Cisterns

68

#367 ✓ Repair sewer sta 171+19 (not  
shown on drawings)

1 foreman 1 1/2 hrs 1 truck driver 1 1/2 hrs  
2 labor 1 1/2 hrs

#363 ✓ Repair storm drain (not shown  
on drawings as found) sta 154+9 to  
155+8 V

3 labor 8 hrs  
1 truck driver 1 1/2 hrs

#364 ✓ Regrade ditch due to lowering of  
30" line to clear storm drain @  
sta 167+25 ±

1 - foreman 1 1/2 hrs  
2 - laborers 1 1/2 hrs  
also 1 held up crew 1/2 hr  
1 - foreman, 1 fitter,  
1 fitter helper, 1 welder

#365 ✓ Close off copper service. not  
shown on drawings. sta 172+06

1 foreman 1 1/2 hrs, 1 truck driver 3 hrs, 2 labor  
(8 hrs total on laborers)

Cont

69

Sta. 183+56 - change in grade  
due to sewer.

See book 79v p. 23-25

Sta. 184+7v<sup>+</sup> - add sand req. to  
backfill trench made by city  
forces to put 6" line under new  
30" line. Sand placed level  
across ditch to 6" above 30" line

See book 79v p. 25

---

4/18/50 sand backfill to sta 197+00



Cont

105.50  
106.25  
+ 1.75  
108.8

made by city forces changing  
8" line to go over new 30" line  
Sand placed 18" level across ditch  
over top of new 30" line to cover  
8" line cross'g. over See  
book 79v p. 21

Sta 170+04<sup>+</sup> - change in grade  
due to 4" sewer. See book  
79v p. 1v

Comstock St - no addl req.

Sta 178+33<sup>+</sup> - no. addl. req.  
(mye st):

Sta 179+82<sup>+</sup> - change in grade  
due to sewer  
See book 79v p. 22-25

(over)

10.3 c f. <sup>105</sup> ~~106~~ l-1 of trench 52"  
+ sand req. Sec. II to (70)  
date 4/18/50 Sta 19.7+00 <sup>extent of</sup>  
sand backfill

Sta 155+02<sup>+</sup> - due to 18" tile storm  
drain cross'g. ditch diag. - sand  
brought to bott of 18" corr. pipe replacement  
See book 79v p. 20 also rear of this book

Sta 160+30 to 161+05<sup>+</sup> approx 0'-6" (AV)  
add sand placed under 30" pipe due  
to muck'g. out mud caused by rain  
3/24/50 Note: this section is filled ground.

Sta 165+19 to 166+61 - add sand  
placed due to cave-in of ditch  
caused by rain 3/24/50.  
See book 79v p. 29

Sta 167+25<sup>+</sup> - change in grade  
due to 24" corr. steel storm drain  
See book 79v p. 30

Sta 167+62<sup>+</sup> - add. sand to  
Ulric St backfill trench



Labor + equip. used due to  
to date 4/4 cave-in

11 hrs des. truck crane to date 4/4  
(Mon<sup>3/27</sup> all day Tues<sup>3/28</sup> 1/2 day)

Sat 4 men - 1 pumps - all day

Sun 1 man - 2 " " "

Mon<sup>3/27</sup> - 5 labor 1 foreman all day

Tues<sup>3/28</sup> - 3 labor 1 foreman all day

Wed<sup>3/29</sup> - 3 " " " "

Thurs<sup>3/30</sup> - 4 " " " "

Fri<sup>3/31</sup> - 4 (one cave-in and work) " "

\* note: actual no. of men in ditch 7 however  
3 were on bell holes, fire gates, throwing  
out rocks, etc.

Mon<sup>4/3</sup> none on cave-in

Tues<sup>4/4</sup> - 4 labor 1 foreman 1/2 da.

Completely add excavation see  
survey crew for amt. of excavation & backfill

Where ditch crossed filled in area between  
sta. 160+30 & 161+05 approx 6" add. sand  
req. due to removing muck.

(92)

10" C.I. WATER MAIN CROSSING  
DITCH @ STA. 167+62<sup>+</sup> 2" GAS @ 167+61-  
AND 8" SEWER @ 167+64

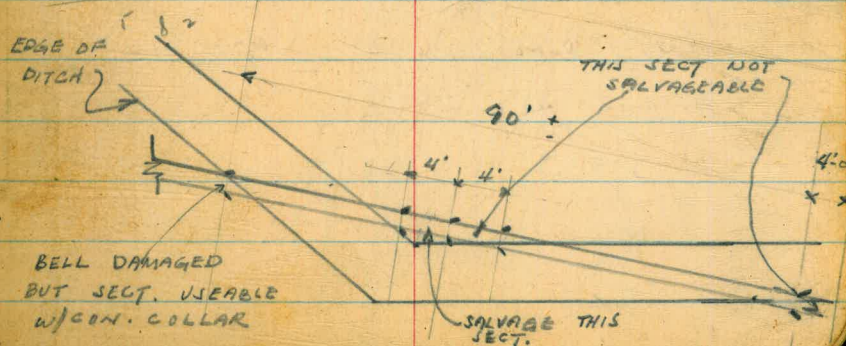
STA.		ELEV.	O.D.
167+61 <sup>-</sup>	TOP 2" GAS	347	.28
167+62 <sup>-</sup>	" 10" WATER	346.7	.94
167+64	8" SEWER	343.78	

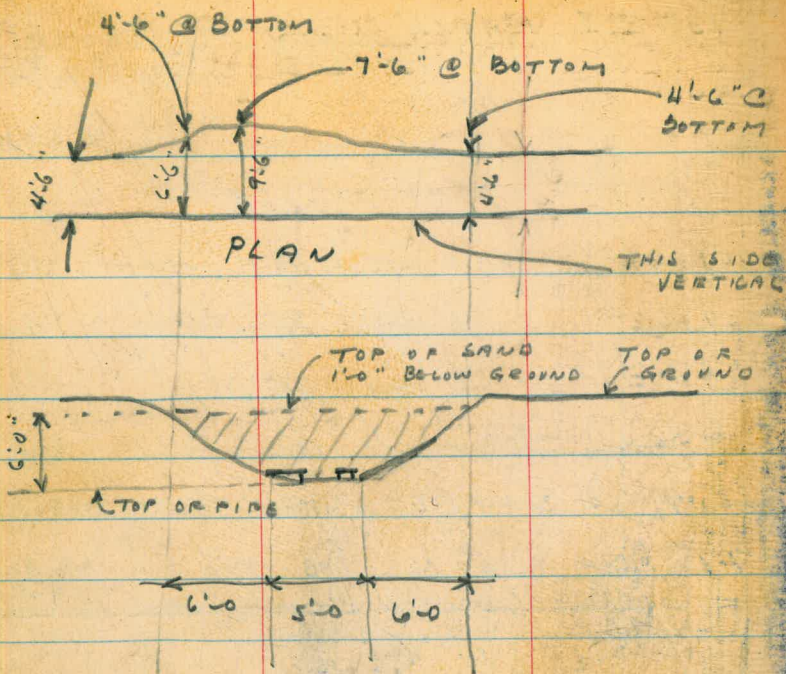
BOTT. OF 30" PIPE @ STA 167+62 - 343.7

7.7 FROM E. OF 30" PIPE TO G.V. RT SIDE

18" STORM DRAIN (VIT. TILE) CROSSING  
DITCH DIAGONALLY STARTING FROM  
STA 154+92

STA.		ELEV.	
154+92 (E. SIDE)		341.8	BOTT. OF PIPE
+90		341.2	





BACKFILL W/ SAND - ABANDON  
CHAMBER @ 158+87±

Actually

USED 2 LOADS OF SAND

1 @ 6.01 cuy

1 @ 5.74

11.75 cuy TOT.

STORM DRAIN CROSSING DITCH (73)

BETWEEN STAS. 159+07 - 158+95±

ELEV. TOP OF CHAMBER @ 159+30 - 336.8

30" PIPE LINE

ELEVS.

(TOP OF DRAIN)

E. SIDE OF DITCH - 334.03

E. OF DITCH - 334.12

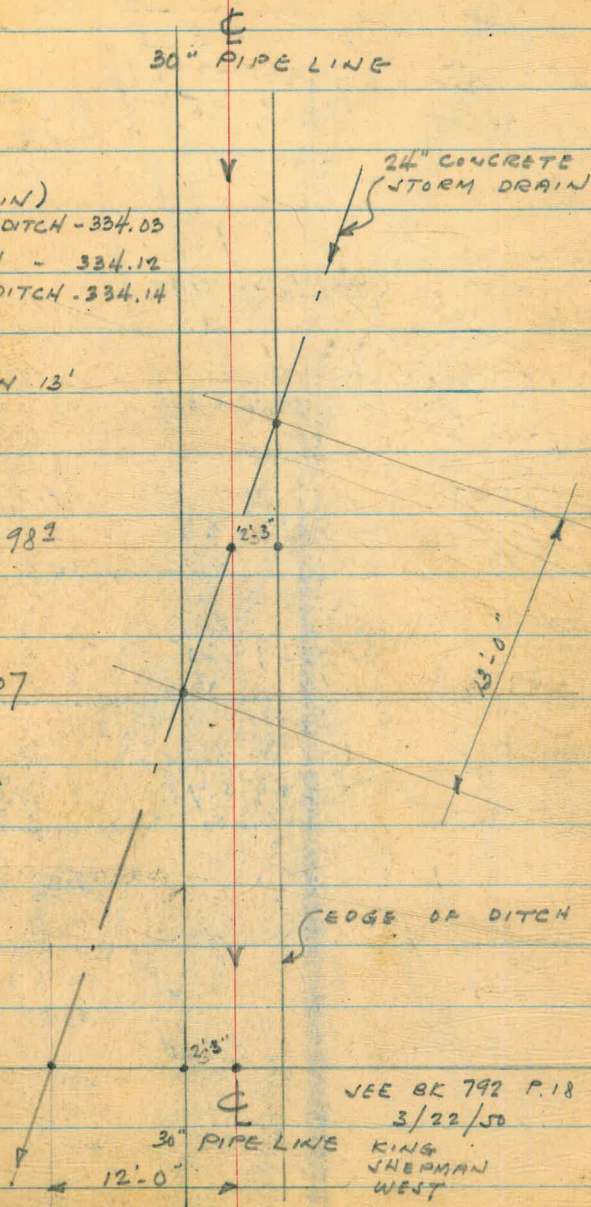
W. SIDE OF DITCH - 334.14

.11 FALL IN 13'

STA 158+98±

STA 159+07

STA 159+30



JEE BK 792 P. 18

3/22/50

KING  
SHERMAN  
WEST

Upright Anchors

Sta. of pt.

Sta. on anchors

225+72<sup>1/2</sup>

~~225+77~~

225+82<sup>0</sup>

① 225+85

~~225+87~~

one to be located in field

226+00

226+20

② 226+30

226+46<sup>5</sup>

226+73

③ 226+80

226+99<sup>65</sup>

227+20

④ 227+30

227+39<sup>03</sup>

229+15

⑤ 229+25

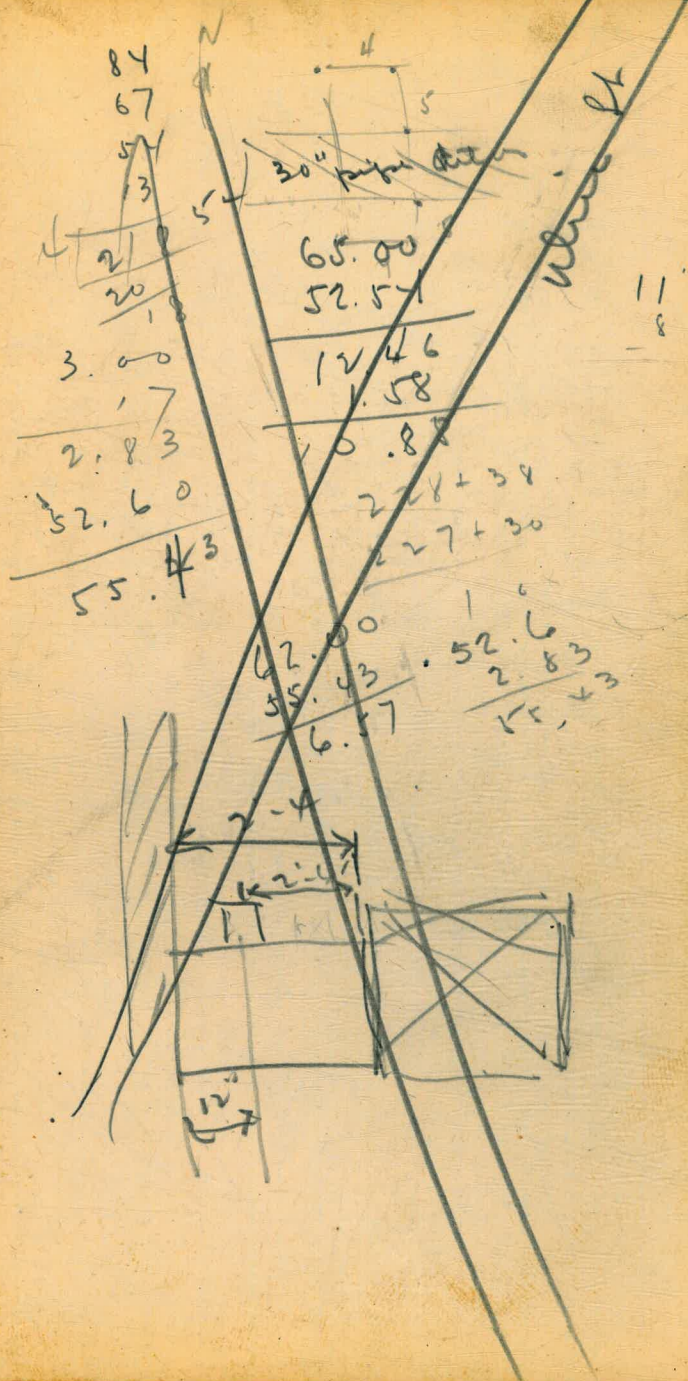
229+37<sup>6V</sup>

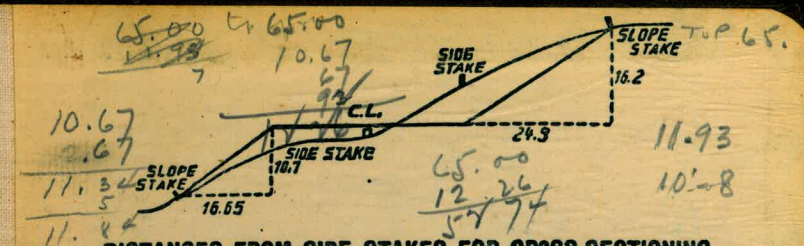
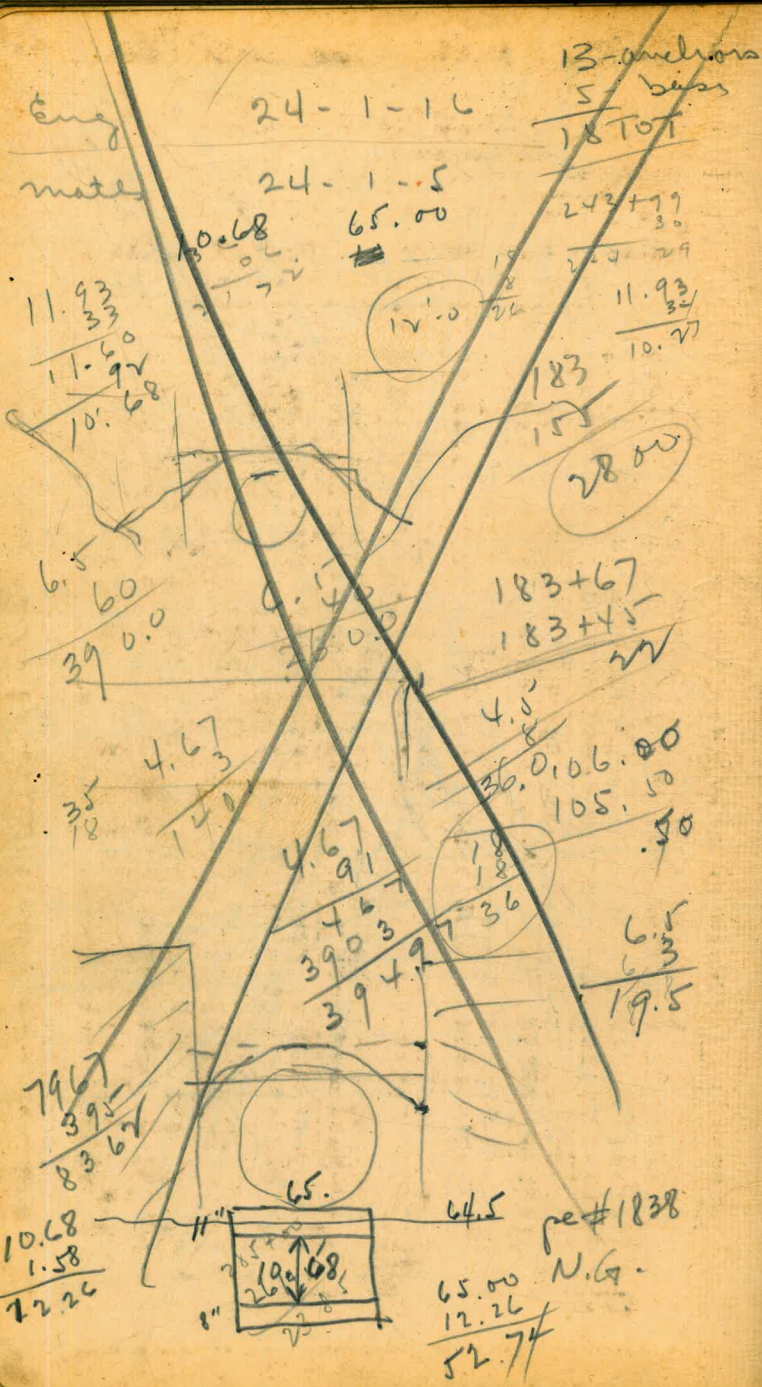
229+65<sup>07</sup>

⑥ 229+75

229+83<sup>24</sup>

P. 65.





DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING.  
SLOPE 1 1/2 TO 1. ROADWAY OF ANY WIDTH.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	0.00	0.15	0.30	0.45	0.60	0.75	0.90	1.05	1.20	1.35	0
1	1.50	1.65	1.80	1.95	2.10	2.25	2.40	2.55	2.70	2.85	1
2	3.00	3.15	3.30	3.45	3.60	3.75	3.90	4.05	4.20	4.35	2
3	4.50	4.65	4.80	4.95	5.10	5.25	5.40	5.55	5.70	5.85	3
4	6.00	6.15	6.30	6.45	6.60	6.75	6.90	7.05	7.20	7.35	4
5	7.50	7.65	7.80	7.95	8.10	8.25	8.40	8.55	8.70	8.85	5
6	9.00	9.15	9.30	9.45	9.60	9.75	9.90	10.05	10.20	10.35	6
7	10.50	10.65	10.80	10.95	11.10	11.25	11.40	11.55	11.70	11.85	7
8	12.00	12.15	12.30	12.45	12.60	12.75	12.90	13.05	13.20	13.35	8
9	13.50	13.65	13.80	13.95	14.10	14.25	14.40	14.55	14.70	14.85	9
10	15.00	15.15	15.30	15.45	15.60	15.75	15.90	16.05	16.20	16.35	10
11	16.50	16.65	16.80	16.95	17.10	17.25	17.40	17.55	17.70	17.85	11
12	18.00	18.15	18.30	18.45	18.60	18.75	18.90	19.05	19.20	19.35	12
13	19.50	19.65	19.80	19.95	20.10	20.25	20.40	20.55	20.70	20.85	13
14	21.00	21.15	21.30	21.45	21.60	21.75	21.90	22.05	22.20	22.35	14
15	22.50	22.65	22.80	22.95	23.10	23.25	23.40	23.55	23.70	23.85	15
16	24.00	24.15	24.30	24.45	24.60	24.75	24.90	25.05	25.20	25.35	16
17	25.50	25.65	25.80	25.95	26.10	26.25	26.40	26.55	26.70	26.85	17
18	27.00	27.15	27.30	27.45	27.60	27.75	27.90	28.05	28.20	28.35	18
19	28.50	28.65	28.80	28.95	29.10	29.25	29.40	29.55	29.70	29.85	19
20	30.00	30.15	30.30	30.45	30.60	30.75	30.90	31.05	31.20	31.35	20
21	31.50	31.65	31.80	31.95	32.10	32.25	32.40	32.55	32.70	32.85	21
22	33.00	33.15	33.30	33.45	33.60	33.75	33.90	34.05	34.20	34.35	22
23	34.50	34.65	34.80	34.95	35.10	35.25	35.40	35.55	35.70	35.85	23
24	36.00	36.15	36.30	36.45	36.60	36.75	36.90	37.05	37.20	37.35	24
25	37.50	37.65	37.80	37.95	38.10	38.25	38.40	38.55	38.70	38.85	25
26	39.00	39.15	39.30	39.45	39.60	39.75	39.90	40.05	40.20	40.35	26
27	40.50	40.65	40.80	40.95	41.10	41.25	41.40	41.55	41.70	41.85	27
28	42.00	42.15	42.30	42.45	42.60	42.75	42.90	43.05	43.20	43.35	28
29	43.50	43.65	43.80	43.95	44.10	44.25	44.40	44.55	44.70	44.85	29
30	45.00	45.15	45.30	45.45	45.60	45.75	45.90	46.05	46.20	46.35	30
31	46.50	46.65	46.80	46.95	47.10	47.25	47.40	47.55	47.70	47.85	31
32	48.00	48.15	48.30	48.45	48.60	48.75	48.90	49.05	49.20	49.35	32
33	49.50	49.65	49.80	49.95	50.10	50.25	50.40	50.55	50.70	50.85	33
34	51.00	51.15	51.30	51.45	51.60	51.75	51.90	52.05	52.20	52.35	34
35	52.50	52.65	52.80	52.95	53.10	53.25	53.40	53.55	53.70	53.85	35
36	54.00	54.15	54.30	54.45	54.60	54.75	54.90	55.05	55.20	55.35	36
37	55.50	55.65	55.80	55.95	56.10	56.25	56.40	56.55	56.70	56.85	37
38	57.00	57.15	57.30	57.45	57.60	57.75	57.90	58.05	58.20	58.35	38
39	58.50	58.65	58.80	58.95	59.10	59.25	59.40	59.55	59.70	59.85	39
40	60.00	60.15	60.30	60.45	60.60	60.75	60.90	61.05	61.20	61.35	40
41	61.50	61.65	61.80	61.95	62.10	62.25	62.40	62.55	62.70	62.85	41
42	63.00	63.15	63.30	63.45	63.60	63.75	63.90	64.05	64.20	64.35	42
43	64.50	64.65	64.80	64.95	65.10	65.25	65.40	65.55	65.70	65.85	43
44	66.00	66.15	66.30	66.45	66.60	66.75	66.90	67.05	67.20	67.35	44
45	67.50	67.65	67.80	67.95	68.10	68.25	68.40	68.55	68.70	68.85	45
46	69.00	69.15	69.30	69.45	69.60	69.75	69.90	70.05	70.20	70.35	46
47	70.50	70.65	70.80	70.95	71.10	71.25	71.40	71.55	71.70	71.85	47
48	72.00	72.15	72.30	72.45	72.60	72.75	72.90	73.05	73.20	73.35	48
49	73.50	73.65	73.80	73.95	74.10	74.25	74.40	74.55	74.70	74.85	49
50	75.00	75.15	75.30	75.45	75.60	75.75	75.90	76.05	76.20	76.35	50

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