EL CAPITAN
Pipe Line Levels
Cuts and Grades
Sta. 695+05 to 941+25

W207

Our Leather Bound Engineers Note Books are carried in the following rulings:

No. 380 LEVEL BOOK. Left and Right Hand Page the same as Left Hand Page of this Book.

No. 382 FIELD BOOK. Left Hand Page as in this Book, Right Hand Page 4 x 4 to the inch, Center Line Red.

No. 384 MINING TRANSIT BOOK. Left Hand Page as in this Book, Right Hand Page 8x8 to the inch, Center Line Red.

No. 385 FIELD BOOK. Left Hand Page as in this Book, Right Hand Page 8 vertical and 4 horizontal lines to the inch, Center Line Red.

We also carry the Note Books listed above, bound in extra strong Fabri-Hide (otherwise the same quality of book), which can be furnished at a somewhat lower price.

In ordering Fabri-Hide covered books, add the letter *"F"* to catalog number.

THE FREDERICK POST CO.

ENGINEERING and DRAFTING SUPPLIES

IRVING PARK STATION

CHICAGO, ILL.

Index

Grades & Cuts

Grade, - Center Cut and
Offset Cuts.
Sta. 931+06± to Sta. 939+51±.
El Capitan Pipe Line.
Page #2 - Page #5.

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	+S.	H.I.	-S.	Elev.	Grade.	Center Cut.	On Ref. Nail. Cut 10 ft. Right.
B.M. # 106. 095		319.92		318.971			
G.B. 931+00					310.00		
931+06½			5.3	314.6	309.74	4.9	6.4
+50			6.2	313.7	307.87	5.8	6.4
932			8.4	311.5	305.75	5.7	6.4
+50			10.4	309.5	303.62	5.9	6.2
933			13.3	306.6	301.50	5.1	5.8
T.P. 1.37		308.91	12.38	307.54			
+50			4.0	304.9	299.37	5.5	5.6
934			6.3	302.6	297.25	5.3	5.7
+50			7.5	301.4	295.12	6.3	6.4
G.B. 935+00			9.0	299.9	293.00	6.9	6.9
+43.5 B.C.			10.5	298.4	290.97	7.4	7.5
+68.5			12.6	296.3	289.803	6.5	6.8
2.14		299.83	11.22	297.69			

5.00%
X 310.00
25
299.37
17
290.97
46
289.803

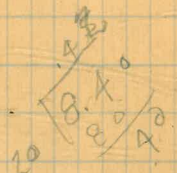
		299.83			Grade			
935+93.5			5.3	294.5	288.636	5.9	+1.9	7.8
936+18.5			6.4	293.4	287.469	5.9	+1.8	7.7
+43.5			8.0	291.8	286.302	5.5	+1.8	7.3
G.B. 936+50					286.00			
+68.5			9.5	290.3	284.446	5.9	+1.7	7.6
+96.2	E.C.		10.0	289.8	282.06	7.7	+0.4	8.1
	1.14	289.61	11.36	288.47				
937					281.80			
+30.2	B.C.		7.4	282.2	279.204	8.0	+0.8	8.8
+56.2			4.9	284.7	277.104	7.6	+1.7	9.3
+80.2			7.6	282.0	275.004	7.0	+2.7	9.7
938+05.2			10.8	278.8	272.904	5.9	+3.8	9.7
+30.2			12.8	276.8	270.804	6.0	+2.9	8.9
	0.75	277.37	12.99	276.62				
+55.2			2.6	274.8	268.704	6.1	+2.1	

-1.667 50

-8.40 90

X 286.00

288.636
1.167
287.469
1.167
286.302
-08.40
185
440
672
84
1554
286.0
1.558
284.446



	277.37			Grade - 8.40%				268.70 U 2.243 266.460
938+82½ E.C.		6.3	271.1	266.46	4.6	+1.9	6.5	
G.B. 939+00				X 265.00				
+01.9 B.C.		7.6	269.8	264.994	4.8	+1.6	6.4	
+26.9		9.5	267.9	264.880	3.0	+0.7	3.7	
+51.9		11.2	266.2	264.769	1.8	+1.8	3.6	
		12.69	264.68	-0.44490	℄ East Concrete Pier			
GB 941+25				X 264.00				

122
46
76

100° - 3°50'

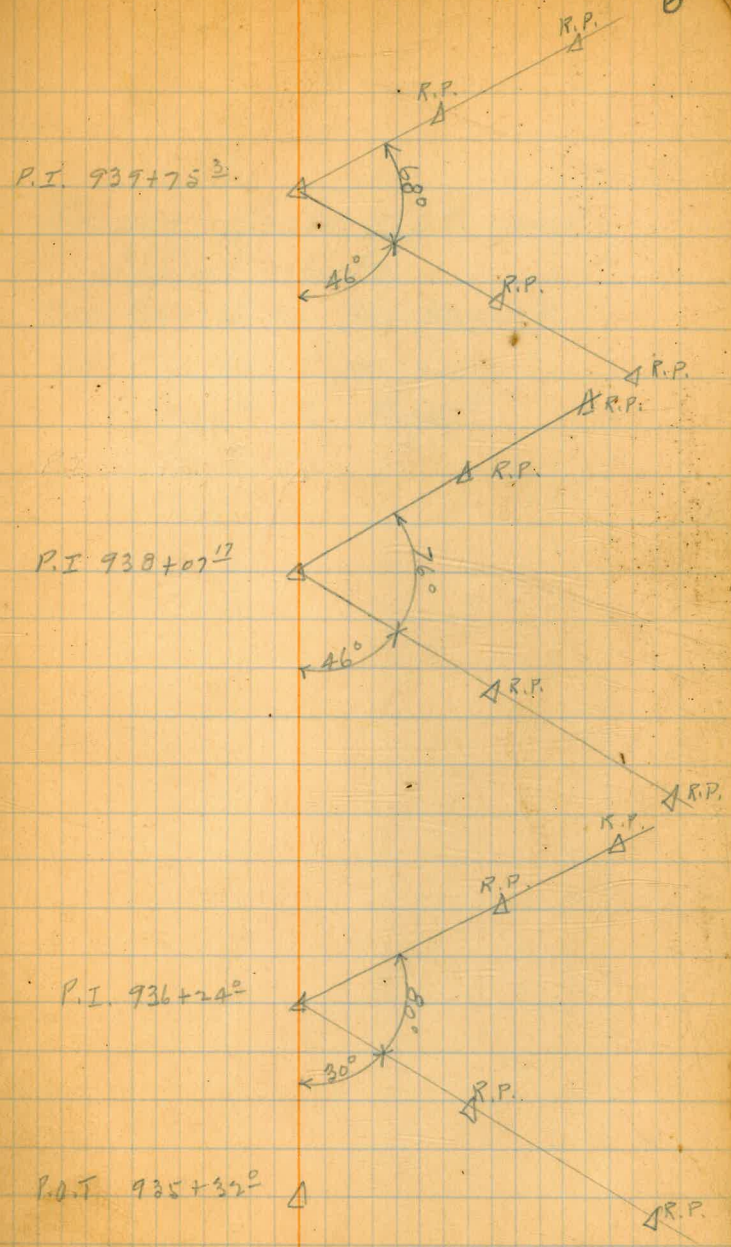
100° - 8°11'

100° - 7°04'

100° - 9°02'

100° - 2°04'

100° - 5°53'



Grades, Center Cuts and
Offset Cuts.
Sta. 911+13$\frac{4}{-}$ to Sta. 810+07$\frac{5}{-}$
El Capitan Pipe Line
Page # to Page #

		E Elev.	Grade	E Cut
911+13.4	E.C.	263.6	256.45	7.1
+02.5		263.8	256.41	7.4
910+92.5		263.8	256.37	7.4
+82.5		264.0	256.33	7.7
+72.5		264.4	256.29	8.1
+62.5		264.7	256.25	8.4
+52.5		264.7	256.21	8.5
+42.5		264.8	256.17	8.6
+32.5	✓	265.0	256.13	8.9
+22.5	✓	264.6	256.09	8.5
+12.5	✓	264.4	256.05	8.3
910+02.5		264.1	256.01	8.1
G.B. 910+00			256.00	

+0.40 B.C.

Ref. Nail 10.5 Rt. RL

7.7
8.2
8.2
8.7
9.1
9.4
9.5
9.7
9.8
9.4
9.3
9.2

10.9
.004
.0436

40.40 13.4
.004
.0536

0 2.5
.004
.0100

.004
.0448

8

Continued On Page #40.

909+92.5		263.8	255.895	7.9	8.9
+82.5		263.5	255.755	7.7	8.8
+72.5	B.C.	262.9	255.615	7.3	8.4
+50		262.1	255.3	6.8	7.8
+38.2	E.C.	261.6	255.15	6.4	7.5
+28.7		261.7	255.007	6.7	7.1
909+03.7		260.6	254.657	5.9	6.7
+78.7	B.C.	259.8	254.307	5.5	6.1
+50		259.7	253.9	5.3	5.6
+25					
908		258.7	253.7	5.0	5.3
+75					
G.B. ✓ 907+50		257.8	252.50	5.3	5.5

+1.40 ?

1.4 0.1 4
1. 1.
28.7 10.2
.01.4 .9.4
1148 1028
287 1028
4018 14228

3.5

22.5
014
900
225
3150

			℄	10' Rt.
907+25				
907		258.1	252.37 .5.7	5.8
	+75			
	+50	258.2	252.25 6.0	6.3
	+25			
906		258.3	252.17 6.2	6.6
	+75			
G.B.1 905	+50	258.7	252.00 6.7	7.0
	+25			
905		257.7	250.7 7.0	7.5
	+75			
	+50	255.2	249.4 5.8	6.0
904	+25			
	+10		248.36	

+0.25%

+2.60%

Station				℄	10' Rt.
904		254.8	248.1	6.7	5.0
+75					
+50		251.2	246.8	4.4	4.7
+25					
903+02.5	E.C.	251.3	245.565	5.7	5.5
G.B. 903+00			X 245.50		
+94.9		251.5	245.755	5.7	5.5
+84.9					
+74.9		251.8	246.755	5.0	5.0
+64.9					
+54.9	B.C.	252.7	247.755	4.9	4.6
G.B. 902+00		254.8	X 250.50	4.3	5.3
901+93.2	E.C.	255.2	250.432	4.8	5.7
+87		255.4	250.37	5.0	6.0

+2.605%

−5.00%

245.5
1.3
246.8

245.5
.065
245.565

2.5
.026
150
50
.0650

54.9
.055
2.745

6.8
.01
.068

250.500
2.745
247.755

250.5
.068
250.432

50
13
37

	E Elev.	Grade	E Cut.	Ref. Nail 10 ft. Rt.
901+67	256.0	250.17	5.8	6.8
+47	256.1	249.97	6.1	7.1
+27° B.C.	256.0	249.77	6.2	7.0
901	255.8	249.50	6.3	6.6
+89° E.C.	255.6	249.39	6.2	6.4
+68	255.3	249.18	6.1	6.3
+43	254.8	248.937	5.9	6.1
+18 B.C.	254.4	248.687	5.7	6.0
900	254.2	248.5	5.7	6.2
+75	253.5			
+59	253.0	248.1	4.9	5.6
G.B. 899+50		248.00		
+25	252.2			
899	251.6	247.2	4.4	4.9

+150 %0

898+75		251.2			
+50		250.9	246.5	4.4	4.7
+25		250.7			
898		250.6	245.7	4.9	5.3
+75					
G.B. 897 +50		251.2	X 245.0 ✓	6.2	6.2
+25					
897		251.4	245.7	5.7	6.1
+75 ~~7~~	E.C.	251.4	246.1	5.3	5.8
+55 ~~8~~		251.6	246.4	5.2	5.7
+30 ~~8~~		252.1	246.7	5.4	5.9
896		252.3	247.2	5.1	5.8
895 +75		252.8			

+1.50 5/0

1.50 5/0

+50	253.1	248.0	5.1	5.5
+25				
895	254.0	248.7	5.3	5.6
+81	254.4	249.0	5.4	5.7
+61	254.9	249.3	5.6	6.0
+36	255.2	249.8	5.4	5.8
+11	255.5	250.2	5.3	5.5
894	255.7	250.3	5.4	5.6
+73.6	255.7	250.6	5.1	5.4
+53.6	256.0	250.9	5.1	5.3
G.B. 893+50		X251.0		
+25	256.0			
893	255.5	248.6	6.9	7.1
892+75	255.0			

1.50%

+4.80%

+47.5	E.C.		253.4	245.8	7.6
892+21			251.3	244.8	6.5
		51.3			
891+96			249.6	243.6	6.0
				9.80 %	
+75					
+50			247.2	241.4	5.8
+25					
G.B. 891+00			246.0	239.0	7.0
+75			246.2	239.75	
+44		21.4	246.5	240.65	5.8
				3.00 %	
+23.5			247.3	241.3	6.0
890+03.5			248.2	241.9	6.3
+73.5			249.2	242.8	6.4
889+50			249.5	243.5	6.0

7.9
7.3
6.3
6.3
7.2
6.7
6.9
6.9
6.8
6.7

889	250.6	245.0	5.6	6.1
+58 Z	251.6	246.75	5.4	5.7
+45 Z	251.8	246.65	5.1	5.7
+25 Z	252.3	247.25	5.0	5.7
888	253.3	248.0	5.3	5.7
+82 Z	254.0	248.5	5.5	5.8
+69 Z	255.2	248.9	6.3	6.8
+49 Z	255.4	249.5	5.9	6.4
+25	256.1	250.25	5.8	6.3
G.B. 887+00	256.5	251.0	5.5	6.0
+50	256.5	250.3	6.2	6.8
G.B. 886+25		250.0		
886.	254.1	248.6	5.5	6.1

3.00 o/o

1.33 o/o

+72	252.5	247.1	5.4	6.0
+47	251.1	245.7	5.4	6.0
885+22	249.5	244.3	5.2	5.8
+97	248.3	242.9	5.4	6.1
+72	247.1	241.5	5.6	6.1
+47	245.6	240.1	5.5	5.9
884	243.1	237.4	5.7	6.0
G. B. 883+75		X236.0		
+50	242.1	235.7	6.4	6.6
883	241.1	235.0	6.1	6.5
+50	239.8	234.34	5.5	5.8
882	238.8	233.67	5.1	5.3
G. B. 881+50	238.2	X233.0	5.2	5.6
881	237.8	232.9	4.9	5.2

5.60 %
+ 1.333 %

+50		237.3	232.7	4.6	4.9
+39 8		237.0	232.6	4.4	4.8
880		236.8	232.5	4.3	4.6
+50		237.0	232.4	4.6	4.8
879		236.9	232.2	4.7	5.1
+79 3	E.C	236.7	232.1	4.6	5.5
+56 4		237.3	232.1	5.2	5.9
G.B. 878+50			X 232.0		
+46 4		237.8	232.3	5.5	6.4
+25		238.2	233.4	4.8	
878		239.4	234.7	4.7	5.1
+73 6		241.0	236.1	4.9	5.6
+48 6		242.5	237.4	5.1	5.8
+23 6		244.3	238.7	5.6	6.5
G.B. 877+00		246.1	X 240.0	6.1	6.8

+0.333%

-5.333%

+53 2	249.5	243.8	5.7	6.0
876	252.8	247.8	5.0	5.7
G. B. 875 +50	256.2	251.0	6.2	6.6
+24 8	257.5	251.05	6.4	7.0
875+04 9	258.2	251.1	7.1	8.0
+84 79	258.4	251.1	7.3	8.1
+50	258.6	251.2	7.4	8.0
874	258.4	251.3	7.1	7.6
+50	258.0	251.4	6.6	7.3
873+05 3 E.C.	257.7	251.5	6.2	6.9
+91 4	257.7	251.5	6.2	6.8
+66 4	257.6	251.6	6.0	6.7
+41 4	257.9	251.6	6.3	7.0
872+16 4 B.C.	258.3	251.7	6.6	7.4

7 333 0/0

222 0/0

872	258.7	251.7	7.0	7.6
+50	260.1	251.8	8.3	8.8
871+00	261.7	252.0	9.8	10.2
+72 8	262.1	251.55 ~~251.95~~	10.6 ~~10.1~~	11.0
+54 2	262.0	251.25 ~~251.97~~	10.8 ~~10.0~~	11.0
+34 2	260.9	~~250.92~~ ~~251.8~~	10.0 ~~9.1~~	10.1
+25	260.5	~~250.75~~ ~~251.5~~	9.8 ~~9.0~~	
870	259.0	~~250.33~~ ~~251.0~~	8.7 8.0	8.6
+50	256.3	~~249.50~~ ~~250.0~~	6.8 ~~6.3~~	7.0
869	254.3	~~248.66~~ ~~249.0~~	5.6 ~~5.3~~	5.9
+50	252.9	~~247.83~~ ~~248.0~~	5.1 ~~4.9~~	5.4
868+12 14 E.C.	252.5	249.1 ✓	5.3	5.9

	+80.6		252.7	247.2	5.5	6.2	
	+55.6		253.6	247.6	6.0	6.9	
867			255.9	248.3	7.6	7.9	
	+72.1		256.2	248.7	7.5	8.0	
	+48.8		256.2	249.0	7.2	7.6	
	+23.8		256.1	249.0	7.1	7.5	
866			255.8	249.09	6.7	7.1	
	+50		255.8	249.18	6.6	7.0	
865			255.5	249.27	6.2	6.6	
	+50		255.1	249.36	6.0	6.5	
864			255.2	249.45	5.7	6.0	
	+50		255.2	249.54	5.7	6.3	
863			254.9	249.63	5.3	5.9	Ref. Nail 8' Rt.

	+50	255.2	249.72	5.5	6.1
862		255.1	249.80	5.9	6.1
	+50	255.6	249.90	5.7	6.1
861		255.4	250.0	5.4	5.9
	+50	256.1	251.14	5.0	5.5
860		257.7	252.29	5.4	5.9
	+83 3	E.C. 258.4	252.6	5.8	6.1
	+56 3	259.4	253.3	6.1	6.2
	+31 3	259.8	253.8	6.0	6.2
859	+06 3	B.C. 260.3	254.4	5.9	6.2
	+50	261.6	255.72	5.9	6.0
858		262.4	256.86	5.5	5.9
	+50	263.3	258.0	5.3	5.7

2.286
3
6.858

857		264.4	259.15	5.25	5.6
	+50	265.8	260.3	5.5	5.8
856		267.6	261.4	6.2	6.4
	+75 G.B.		262.0		
	+55	268.7	262.3	6.4	6.8
855	+05	269.3	263.2	6.1	6.4
	+50	270.1	264.1	6.0	6.5
854	G.B.	270.6	265.0	5.6	6.0
	+78 E.C.	270.7	264.9	5.8	6.3
	+65	270.8	264.8	6.0	6.4
	+45 B.C.	270.8	264.6	6.2	6.5
	+25	270.8	264.5	6.3	
853		270.6	264.3	6.3	6.7

-1.7143

+0.667

.667
333

		853 =	264.333		
+64 4/5	E.C.	270.0	264.1	5.9	6.4
+38 5/5		269.6	263.9	5.7	6.1
+13 5/5	B.C.	269.2	263.7	5.5	6.0
852		269.0	263.666	5.3	5.9
+50		268.6	263.3	5.3	5.8
851		267.8	263.0	4.8	5.2
+50		267.4	262.7	4.7	4.8
+38 7/5	E.C.	267.0	262.6	4.4	4.7
850 +22 1/5		266.8	262.5	4.3	4.7
849+97 1/5	B.G.	266.8	267.3	4.5	5.0
+50		266.8	262.0	4.8	5.4
+37 06/5	B.G.	266.7	261.9	4.8	5.4
+12 9/5	E.C	266.7	261.8	4.9	5.5
849		266.7	261.7	5.0	5.5
+50		266.6	261.3	5.3	5.9
848	G.B.	266.7	261.0 X	5.7	6.3

+0.667

848+00	G.B.		261.0		
+50		267.1	262.0	5.1	5.8
847		268.3	263.0	5.3	6.1
+50	G.B.	269.8	264.0	5.8	6.8
846		271.6	266.0	5.6	6.5
+53	Δ	273.7	268.1	5.6	6.5
845+05	8 E.C.	276.6	269.8	6.8	7.5
845+00	G.B.		270.0		
+80	9	278.4	271.4	7.0	7.8
+55	9	280.3	273.3	7.0	7.8
+30	9	282.2	275.2	7.0	7.5
844		284.8	277.6	7.2	7.5
+50		288.6	281.4	7.2	7.8
843		292.3	285.2	7.1	7.5
+50	G.B.		289.0		
+46	6	295.1	289.1	6.0	6.1

-2.00
-4.00
-7.60
-4.667

843+19
2+50

.69
7.6
41.4
48.8
5.24
2.79
283.74

	+31 ℄	296.0	289.8	6.2	6.8
	842+06 ℄	297.4	291.0	6.4	7.1
-4.66%	+81 ℄	298.3	292.2	6.1	6.7
	+56 ℄	299.3	293.4	5.9	6.6
	+31 ℄	300.5	294.5	6.0	6.5
	841 G.B.	301.8	296.0	5.8	6.2
	+50	303.5	297.5	6.0	6.0
-3.00%	+29 3/6 E.C.	303.9	297.8	6.1	6.1
	840+16 ℄	304.1	298.5	5.6	5.9
	840+00 G.B.		299.0		
	+96 ℄	304.9	299.1	5.8	6.1
	+76 ℄	305.4	299.8	5.6	5.8
-3.50%	+50	306.5	300.75	5.8	6.1
	839	308.4	302.5	5.9	6.2

+57 57 E.C.		310.0	304.0	6.0	6.7
+49 9		310.5	304.x	6.3	
+39 9		310.9	304.6	6.3	6.9
838+19 9		311.4	305.3	6.5	7.4
838+00	G.B.		306.0 X		
837+99 9		311.7	306.0	5.7	6.7
+79 9	B.C.	312.0	306.3	5.7	6.6
+50		312.3	306.7	5.6	6.x
837		313.x	307.5	5.7	6.0
+60 05	E.C.	313.8	307.7	6.1	6.x
+41 1		314.0	308.4	5.6	6.0
+21 1	B.C.	314.0	308.7	5.5	6.0
836	G.B.	314.3	309.0 X	5.3	5.6
+62 7	E.C.	314.0	308.6	5.4	6.0
+35 6		313.7	308.4	5.3	5.8
835+10 6		313.5	308.1	5.4	5.8
835+00	G.B.		308.0		

3.60%

1.50%

1.90

835+00 G.B.		308.0			
+85.6	312.8	307.3		5.5	6.1
+50	311.1	305.6		5.5	6.1
834	308.7	303.2		5.5	5.6
+69.4 E.C.	306.9	301.7		5.2	5.6
+43.8	305.6	300.5	+ 1.80%	5.1	5.6
833+18.8	304.4	299.3		5.1	5.4
+93.8	303.2	298.1		5.1	5.3
+68.8 B.C.	302.4	296.9		5.5	5.7
+50 G.B.	301.9	296.0		5.9	5.8
832	300.7	295.2		5.5	5.6
+75.2 E.C.	300.5	294.8	+ 1.60%	5.7	6.0
+59	300.6	294.5		6.1	6.4
+34	300.7	294.1		6.6	6.8

831+09		300.4	293.7	6.7	7.1
+84		300.1	293.3	6.8	6.9
+59		299.8	292.9	6.3	6.6
+34[9]	B.C.	298.6	292.5	6.1	6.3
830	G.B	298.0	292.0	6.0	6.0
+89[7]	E.C.	297.7	292.0	5.7	
+79[7]		297.6	292.0	5.6	5.7
+59[7]		297.4	291.9	5.5	5.5
+39[7]	B.C.	297.1	291.9	5.2	5.2
829		296.7	291.8	4.9	4.9
+50		296.4	291.7	4.7	4.9
828		296.3	291.6	4.7	4.6
+50		296.3	291.5	4.8	5.2

+1.60%

+0.20%

827		297.0	291.4	5.6	5.9
+50		298.1	291.3	6.8	7.0
826		299.2	291.2	8.0	8.2
+49 6	E.C.	300.1	291.10	9.0	9.2
+29 7		300.2	291.06	9.1	9.6
825+09 7		299.8	291.02	8.8	9.2
825+00	G.B.		291.0 X		
+99 7	B.C.	299.1	291.0	8.1	8.7
+50		297.6	290.2	7.4	7.5
824+10 26	E.C.	296.4	289.6	6.8	6.6
+91 8		296.0	289.2	6.8	6.9
+71 8		295.5	288.9	6.6	6.6
+51 29	B.C.	295.1	288.5	6.6	6.5
823		293.6	287.667	5.9	5.8

+0.20%

+1.667%

	+50		292.0	286.8	5.2	5.5
						+1.667%
822		G.B.	290.9	286.0	4.9	5.3
	+50		290.1	285.5	4.6	5.1
821			289.8	285.0	4.8	5.0
						+1.00%
	+50		289.3	284.5	4.8	5.0
820		G.B.	289.2	284.0	5.2	5.4
	+50		289.6	283.75	5.8	5.7
819			289.8	283.5	6.3	6.2
	+50		289.7	283.25	6.5	6.7
						+0.5%
818			288.8	283.0	5.8	6.3
	+47½		288.4	282.70	5.7	6.2
817			287.9	282.50	5.4	5.9

	+50	287.9	282.25	5.7
8	+32.99 E.C.	287.7	282.16 5	5.5
	816 +16.3	287.4	282.08	5.3
	816+00 G.B.		282.0	
8	+91.3	287.2	282.06	5.1
	+66.3 13.C.	287.4	282.20	5.2
8	+50	287.6	282.33	5.3
	815	288.0	282.67	5.3
8	+50	288.7	283.0	5.7
	814	290.1	284.5	5.6
8	+50	291.4	286.0	5.4
	813	292.8	287.5	5.3
8	+50	294.6	289.0	5.6

0.59%

0.66 7%

3.0%

6.1
5.9
5.9
5.8
5.7
5.6
5.3
5.9
6.1
5.7
5.5
5.7

812	295.7	290.0	5.7	6.9
+70 97 E.C.	297.0	290.58	6.4	7.5
+62 9	297.2	290.74	6.5	7.8
+42 9	298.2	291.14	7.1	8.0
+22 9	298.5	291.54	7.0	8.0
811 +02 9	298.7	291.94 (292.0)	6.8	7.6
+82 9	298.8	292.34	6.5	7.1
+62 9	299.0	292.74	6.3	6.9
+42 9 B.C.	299.2	293.14	6.1	6.0
810+07 5 E.C = 811+67 8 E.C	299.5	293.84	5.7	
810		294.0 X		

2.0%

Grades, Center Cuts
and Offset Cuts.
Sta. 930+82± to Sta. 911+13±
El Capitan Pipe Line.
Page # to Page #

Continued on Page # 3

Sta.				Elev. Grade		Ref. Nail 10' Rt.	
B.M.#				318.971			
G.B. 931+00	6.05	325.02					
930+82			8.9	316.1	310.0	5.2	6.3
+57			7.7	317.3	312.1	5.2	5.9
+32			6.6	318.4	313.4	5.0	5.8
+07			5.4	319.6	314.6	5.0	5.6
G.B. 930+00			4.6	320.4	315.00	5.4	5.5
+50			2.4	322.6	317.0	5.6	5.6
929+00			0.2	324.8	319.0	5.8	6.2
T.P.			0.22	324.80			
	11.47	336.27					
928+89	EC.		11.0	325.3	319.4	5.9	6.3
+79			10.9	325.4	319.8	5.6	6.2
+54			10.1	326.2	320.8	5.4	6.1

-4.25%

-5.00%

-4.00%

		336.27				℄ Cut.	Ref. Nail 10' Right.
928+29 Z			9.2	327.1	321.8	5.3	6.1
928+04 Z			8.3	328.0	322.8	5.2	6.0
927+79 Z			7.4	328.9	323.8	5.1	6.1
+54 Z			6.6	329.7	324.8	4.9	5.8
G.B. 927+50					X325.00		
+29 Z			5.8	330.5	325.3	5.2	6.0
927+04 Z			5.1	331.2	325.6	5.6	6.4
926+79 Z			5.2	331.1	325.9	5.2	6.1
G.B. 926+75					X326.00		
+54 Z			5.7	330.6	325.3	5.3	6.3
+29 Z	B.C		6.3	330.0	324.5	5.5	6.3
926+00			7.0	329.3	323.4	5.9	6.3
+50			8.9	327.4	321.7	5.7	6.2
G.B. 925+00			11.3	325.0	X320.00	5.0	6.0
T.P.			11.03	325.24			
	1.30	326.54					

-4.00%
-1.33%
+4.29%
+6.43%

						℄ Cut.	Ref. Nail 10' Right.
		326.59					
924+50			5.2	321.3	316.8	4.5	4.9
924+00			8.8	317.7	313.6	4.1	4.8
923+50			11.8	314.7	310.4	4.3	4.8
T.P.			11.83	314.71			
	1.62	316.33					
923+00			4.5	311.8	307.1	4.7	5.1
+50			7.1	309.2	304.0	5.2	5.4
922+00			10.5	305.8	300.7	5.1	5.7
921+50			12.7	303.6	297.4	6.2	6.3
T.P.			12.55	303.78			
	0.67	304.45					
921+00			3.7	300.7	294.2	6.5	6.7
+50			6.6	297.8	290.9	6.9	7.1
920+00			9.9	294.5	287.7	6.8	7.0
T.P.			12.96	291.49			
	1.17	297.66					
919+50			2.2	295.5	284.4	6.1	6.5

+6.43970

		292.66				℄ Cut.	Ref. Nail 10' Right.	
919+00			6.1	286.6	281.2	5.9	5.6	
918+94.63 = 918+86.63	E.C.		7.2	285.5	280.4	5.1	5.5	
+66.6			8.6	284.1	279.1	5.0	5.1	
G.B. 918+50					278.00			
+41.6			10.1	282.6	277.2	5.4	5.3	
918+16.6			11.9	280.8	274.9	5.9	6.0	Ref. Nail 10' Left.
T.P.			12.12	280.54	277.44 / 286.50			
	1.43	281.97						
917+91.6			3.1	278.9	272.5	6.4	6.9	Ref. Nail 10' Left.
+66.6			5.2	276.8	270.3	6.5	7.0	Ref. Nail 10' Left.
+47.6			7.2	274.8	268.0	6.8	7.0	Nail 10' Left.
917+16.6			9.1	272.9	265.7	7.2	7.1	Ref. Nail 10' Left.
916+91.6			10.9	271.1	263.4	7.7	7.3	
+66.6			12.7	269.3	261.1	8.2	7.6	
T.P.			12.63	269.34				
	2.46	271.80						

	271.80			+2.0% Grade	℄ Cut.	Ref. Nail 10' Right.
916+41 ℄		4.1	267.7	258.8	8.9	8.1
916+16 ℄ G.B. 916+00		5.0	266.8	256.5	10.3	9.0
				X255.00		
915+91 ℄		5.6	266.2	255.2	11.0	10.0
+66 ℄		5.7	266.1	255.8	10.3	9.8
+41 ℄		5.7	266.1	256.5	9.6	9.1
915+16 ℄		5.5	266.3	257.1	9.2	8.9
914+91 ℄		5.4	266.4	257.7	8.7	8.5
+66 ℄		5.4	266.4	258.3	8.1	8.0
+41 ℄		5.6	266.2	259.0	7.0	6.9
914+16 ℄ G.B. 914+00		5.7	266.1	259.6	6.5	6.4
				X260.00		
913+91 63 ℄ B.C.		6.6	265.2	259.8	5.4	5.8
+50		7.8	264.0	259.0	5.0	5.3

-2.5%

			Elev.	Grade	℄ Cut.	Ref. Nail 10' Right.
	271.80					
913+00		9.0	262.8	258.0	4.8	5.0
G.B.						
912+50		9.1	262.7	257.00	5.7	6.0
912+00		8.6	263.2	256.8	6.4	6.5
911+50		8.2	263.6	256.6	7.0	7.3
911+13.43		8.1	263.7	256.45	7.2	
T.P.		7.49	264.31			
	4.49	268.80				
B.M.#104.		1.33	267.47	267.35		
G.B.						
910+00				256.00		

Continued on Page #8.

+2.00%

+0.10%

+1.40%

		Elev.	Grade.	
940+60		264.3	264.31	0.0
+75		265.6	264.22	1.4
941		267.6	264.11	3.5
+25		269.2	264.0	5.2
+50		271.4	266.467	4.9
+75		273.6	268.934	4.7
+95.8	B.C.	275.8	270.973	4.8
942+20.8		278.0	273.44	4.6
+45.8		280.9	275.907	5.0
+70.8		283.4	278.374	5.0
+95.8		286.1	280.841	5.3
943+20.8		288.3	283.308	5.0

86.28
83.31
2.97

86.28
280.84
5.44

86.28
278.37
7.91

86.28
75.91
10.37

G.B.

86.28
73.44
12.84

273.45
70.97
2.48

273.45
266.47
6.98

286.28
12.85
273.43
0.02
273.45
264.31
9.14

273.45
264.
9.45
9.37

943+45 8	291.0	285.775	5.2		
+70 8	294.3	288.242	6.1		
944	297.9	291.133	6.8		
+25	300.5	293.600	6.9		
+50	302.1	296.07	6.0		
+75	304.1	298.537	5.6		
945	306.2	301.0	5.2	C.0.0	G.B.
+50	309.3	302.0	6.7	C.2.4	
946	312.4	303.0	9.4	C.3.2	G.B.
+50	309.3	302.0	7.3	C.2.5	
947	306.2	301.0	5.2	C.0.7	G.B.
+50	301.8	296.6	5.2	C.0.0	
948.	297.3	292.2	5.1	0.0	

12.90	309.81 0.20 310.01 12.37 297.64 1.44 298.68 12.90 285.78 0.50 286.28	309.81 3.26 313.07 9.31 303.76 0.45 304.21 92.2 12.0
10.44		
7.55		

Change in Grade Lines.

Grades, Center Cuts
and Offset Cuts.
Sta. 855+75 to Sta. 871+00
Page 45-49.

		℄ Elev.	Grade	℄ Cut	Offset Cut.
854					
+50					
855+05					
+55					
+75	G.B.		262.0		
856		267.6	261.57	6.0	6.2
+50		265.8	260.62	5.2	5.5
857		264.4	259.77	4.6	5.0
+50		263.3	258.91	4.4	4.8
858		262.4	258.05	4.3	4.7
+50		261.6	257.19	4.4	4.5
859+06 3/5	B.C.	260.3	256.34	4.0	4.3
+31 3/5		259.8	255.91	3.9	4.1

43 = 8
1/5

			Grade	Cut	
+56 3			259.4	255.48	3.9	4.0
+83 3	E.C.		258.4	255.02	3.4	3.7
860			257.7	254.71	3.0	3.5
+50			256.1	253.86	2.2	2.7
861		G.B.	255.4	253.0	2.4	2.9
+50			255.6	252.90	2.7	3.1
862			255.7	252.80	2.9	3.1
+50			255.2	252.72	2.5	3.1
863			254.9	252.63	2.3	2.9
+50			255.2	252.54	2.7	3.3
864			255.2	252.45	2.7	3.0
+50			255.4	252.36	3.0	3.5

163 90

		Grade	℄ Cut	
865		255.5	252.27	3.2	3.6 ✓
+50		255.8	252.18	3.6	4.0 ✓
866		255.8	252.09	3.7	4.1 ✓
+23⅝	B.C.	256.1	252.04	4.1	4.5 ✓
+48⅝		256.2	252.0	4.2	4.6 ✓
+50	G.B.		252.18		
+72¼	E.C.	256.2	251.7	4.5	5.0 ✓
867		255.9	251.3	4.6	4.9 ✓
+55⅝	B.C.	253.6	250.6	3.0	3.9
+80⅝		252.7	250.0	2.7	3.4
868+00	G.B.				
868+12½	E.C.	252.5	249.8	2.7	3.3
+50		252.9	250.33	2.6	3.1
869		254.3	250.67	3.6	4.2

10.0
7.8
2.82

		Grade	℄ Cut.	
+50		256.3	251.0	5.3	6.0 ✓
870		259.0	251.33	7.7	8.3
+25		260.5	251.5	9.0	
+34.2		260.9	251.56	9.3	10.3
+54.2		262.0	251.69	10.3	11.3
+72.8		262.1	251.84	10.3	11.2 ✓
871	GB.	261.7	252.0	9.7	10.0
+50					
877					

Grads, Center Cuts
and Offset Cuts.

Sta 625+00 to Sta 810+07.5 E.C.

Page 51 - 71.

W. H. Simpson.

These Levels were Run Backwards
and The H.I.'s Read From the Bottom
of the page, Up. Two or More
Lines under the station Number
denotes Change of H.I.

Sta	+	π	−	El	℄ −	offset −	℄ El.	offset El.	Grade	℄ cut.	offset cut.
695					5.0	5.3	325.3	325.0	318.92	6.4	6.1
+50					5.1	5.4	325.2	324.9	319.00	6.2	5.9
696					4.8	5.3	325.5	325.0	319.07	6.4	5.9
+50					4.9	5.2	325.4	325.1	319.15	6.3	5.0
697					5.1	5.6	325.2	324.7	319.23	6.0	5.5
+50					5.1	5.2	325.2	325.1	319.30	5.9	5.8
698					5.1	5.3	325.2	325.0	319.38	5.8	5.6
	4.42	330.32									
+50			4.10	325.90	4.2	5.4	325.8	324.6	319.46	6.3	5.1
+65 P.I.											
699					5.1	5.3	324.9	324.7	319.54	5.4	5.2
+50					5.2	5.3	324.8	324.7	319.61	5.2	5.1
700					4.8	4.9	325.2	325.1	319.69	5.5	5.4
+50					4.6	4.7	325.4	325.3	319.77	5.6	5.5
		330.00									

Sta	+	π 331.69	−	El.	℄ −	offset −	℄ El.	offset El.	Grade	℄ cut	offset cut.
701					4.8	5.2	325.2	324.8	319.84	5.4	5.0
+50					5.1	5.2	324.9	324.8	319.92	5.0	4.9
702					4.7	5.3	325.3	324.7	320.00	5.3	4.7
+50					5.4	5.4	324.6	324.6	319.44	5.2	5.2
703					5.9	5.8	324.1	324.2	318.89	5.2	5.3
+50					6.2	6.3	323.8	323.7	318.33	5.5	5.4
704					6.3	6.5	323.7	323.5	317.78	5.9	5.7
+50					7.3	7.1	322.7	322.9	317.22	5.5	5.7
705					8.1	7.6	321.9	322.4	316.67	5.2	5.7
+50					8.6	8.0	321.4	322.0	316.11	5.3	5.9
	9.23	330.00									
			3.03	320.77							
706					3.0	2.5	320.8	321.3	315.56	5.2	5.7
+50					3.3	2.8	320.5	321.0	315.00	5.5	6.0
		323.80									

+0.154

-1111 7/8

Sta	+	℄	−	El.	℄−
706+85	P.E.				3.6
707					3.6
+50					4.0
708					4.2
+50					4.6
709					4.9
+50					5.2
710					5.5
+50					5.9
711					6.2
+50					6.9
	5.82	323.80			
			3.02	317.98	
		321.00			

Offset−	℄ El.	offset El.	Grade	℄ Cut.	offset Cut.
3.2	320.2	320.6	314.61	5.6	6.0
3.3	320.2	320.5	314.45	5.8	6.0
4.9	319.8	318.9	313.89	5.9	5.0
5.3	319.6	318.5	313.33	6.3	5.2
5.9	319.2	317.9	312.78	6.4	5.1
5.8	318.9	318.0	312.22	6.7	5.8
6.2	318.6	317.6	311.67	6.9	5.9
6.6	318.3	317.2	311.11	7.2	6.1
7.4	317.9	316.4	310.56	7.3	5.8
7.7	317.6	316.1	310.00	7.6	6.1
8.1	316.9	315.7	309.00	7.9	6.7

Sta	+	℄	−	El.	℄ −	Offset −	℄ El.	offset El.	Grade	℄ cut	offset cut.
712					4.9	6.2	316.1	314.8	308.00	8.1	6.8
+50					5.4	6.9	315.6	314.1	307.90	8.6	7.1
713					5.1	7.0	315.9	314.0	306.00	9.9	8.0
+50					5.7	7.5	315.3	313.5	305.00	10.3	8.5
714					6.7	7.9	314.3	313.1	305.63	8.7	7.5
+50					6.9	7.3	314.1	313.7	306.25	7.9	7.4
715					5.0	4.1	316.0	316.9	306.88	9.1	10.0 ~~8.0~~
+50					5.1	4.0	315.9	317.0	307.50	8.4	9.5
716					5.1	4.5	315.9	316.5	308.13	7.8	8.4
+27.7 B.C.					5.4	4.6	315.6	316.4	308.47	7.1	7.9
+52.7					5.6	4.6	315.4	316.4	308.78	6.6	7.6
+77.7					5.9	4.9	315.1	316.1	309.10	6.0	7.0
		321.00									

1 2 90

1.25 90

Sta	+	π	−	El.	℄ −
717+02 Z					4.8
+27 Z					5.1
+50 1					
+52 Z					5.1
+77 Z					5.2
718+02 Z					5.2
	7.54	321.00			
			5.97	313.46	
+21 Z E C					3.8
+50					3.9
719					4.0
+50					4.0
720					4.6
+50					4.9
721					5.5
		319.43			

Offset −	℄ El	offset El.	Grade	℄ Cut	offset Cut
5.5	316.2	315.5	309.41	6.8	6.1
5.6	315.9	315.4	309.72	6.2	5.7
			X310.00		
5.8	315.9	315.2	309.98	5.9 ~~6.9~~	5.2
6.0	315.8	315.0	309.81	6.0	5.2
6.1	315.8	314.9	309.65	6.2	5.2
			−0.67 pp		
4.9	315.6	314.5	309.52	6.1	5.0
4.9	315.5	314.5	309.33	6.2	5.2
4.4	315.4	315.0	308.99	6.4	6.0
4.3	315.4	315.1	308.66	6.7	6.4
5.0	314.8	314.4	308.32	6.5	6.1
4.5	314.5	314.9	307.99	6.5	6.9
5.6	313.9	313.8	307.65	6.3	6.2

Sta	+	X	−	El	℄−
721+50					6.4
722					5.4
+50					5.3
723					4.9
+50					4.4
724					4.4
+50					4.5
725					4.6
	2.05	319.43			
			2.82	317.38 B.M. 317.40	
+30	P.I.				5.1
+50					50
726					4.4
+50					4.2
		320.22			

offset−	℄El.	offset El.	Grade	℄cut.	offset cut.
7.0	313.0	312.4	307.32	5.7	5.1
4.9	314.0	314.5	307.00	7.0	7.5
5.2	314.1	314.2	306.92	7.2	7.3
5.4	314.5	314.0	306.85	7.7	7.5
5.2	315.0	314.2	306.77	8.2	7.4
5.1	315.0	314.3	306.69	8.3	7.6
5.0	314.9	314.4	306.62	8.3	7.6
4.9	314.8	314.5	306.54	8.3	8.0
5.4	315.1	314.8	306.49	8.6	8.3
5.4	315.2	314.8	306.46	8.7	8.3
5.4	315.8	314.8	306.39	9.4	8.4
5.2	316.0	315.0	306.31	9.7	8.7

−0.6 Z

Sta	+	X	-	El.	℄-
727					4.6
+50					4.3
728					4.4
+50					6.8
729					7.1
+50					7.6
730+00					7.2
+40 B.C.					7.5
+65					7.3
+90					7.1
731+15					7.2
	6.70	320.22			
T.P.			2.53	313.52	
+40					3.1
		316.05			

offset-	℄El.	offset El	Grade	℄cut	offset cut.
5.1	315.6	315.1	306.23	9.4	8.9
7.9	315.9	315.3	306.15	9.8	9.2
5.3	315.8	314.9	306.08	9.7	8.8
7.4	313.4	312.8	306.00	7.4	6.8
8.0	313.1	312.2	305.92	7.2	6.3
7.9	312.6	312.3	305.85	6.8	6.5
7.5	313.0	312.7	305.770	7.2	6.9
8.3	312.7	311.9	305.70	7.0	6.2
8.2	312.9	312.0	305.66	7.2	6.3
7.5	313.1	312.7	305.62	7.5	7.1
7.2	313.0	313.0	305.58	7.4	7.4
3.1	313.0	313.0	305.54	7.5	7.5

0.15-47

Sta	+	℄	−	El.	℄ −	offset −	℄ El	offset El	Grade	℄ cut	offset cut.
731+69.2	E.C.				3.6	3.2	312.5	312.9	305.51	7.0	7.4
732					4.2	3.6	311.9	312.5	305.46	6.4	7.0
+50					5.1	4.9	311.0	311.2	305.39	5.6	5.8
733					5.9	4.6	310.2	308.5	305.31	4.9	3.2
+50					5.4	5.0	310.7	311.1	305.23	5.5	5.9
734					4.1	4.8	312.0	311.3	305.15	6.9	6.2
+50					3.9	4.3	312.2	311.8	305.08	7.1	6.7
735	G.B.				4.0	4.2	312.1	311.9	305.0	7.1	6.9
+50					4.6	4.7	311.3	311.4	304.33	7.2	7.1
736					6.0	6.2	310.1	309.9	303.66	6.4	6.2
+50					7.5	7.9	308.6	308.2	303.0	5.6	5.2
737					8.0	8.0	308.1	308.1	302.33	5.8	5.8

316.05

0.154 ft/ft

1.333 ft/ft

Sta	+	π	−	El.	℄	offset	℄ El.	offset El.	Grade	℄ cut	offset cut
737+50					8.2	8.6	307.9	307.5	301.66	6.2	5.8
738					8.9	9.3	307.2	306.8	301.0	6.2	5.8
+50					10.0	10.5	306.1	305.6	300.33	5.8	5.3
	9.05	316.05									
739			6.52	307.00	8.0	8.1	305.5	305.4	299.66	5.8	5.7
+50	G.B.				8.2	8.1	305.3	305.4	299.0	6.3	6.4
740					8.1	6.7	305.4	306.8	299.8	5.6	7.0
+50					7.1	4.7	306.4	308.8	300.6	5.8	8.2
741					6.4	3.0	307.1	310.5	301.4	5.7	9.1
+50					5.3	2.2	308.2	311.3	302.2	6.0	9.1
742	G.B.				5.1	2.2	308.4	311.3	303.0	5.4	8.3
+50					5.0	2.4	308.5	311.1	302.5	6.0	8.6
743					5.2	2.9	308.3	310.6	302.0	6.3	8.6
		313.52									

1.33⅓%

1.60%

1.00%

Sta	+	x	−	El	℄ −	offset −	℄ El	offset El.	Grade	℄ cut	offset cut.
743+50					5.6	3.3	307.9 ✓	310.2	301.5	6.4	8.7
744					6.3	3.8	307.2 ✓	309.7	301.0	6.2	8.7
+50					7.1	4.5	306.4 ✓	309.0	300.5	5.9	8.5
	7.96	313.52									
745	G.B.		2.43	305.56	2.3	+0.2	305.7 ✓	308.2	300.0	5.7	8.2
+50					3.0	1.2	305.6 ✓	306.8	299.25	5.8	7.5
746					4.3	2.6	303.7 ✓	305.4	298.50	5.2	6.9
+50					5.2	4.2	302.8 ✓	303.8	297.75	5.1	6.0
747	G.B.				4.7	5.5	303.3 ✓	302.5	297.0	6.3	5.5
+50					4.8	5.8	303.2 ✓	302.2	297.17	6.0	5.0
748					4.3	5.2	303.7 ✓	302.8	297.34	6.4	5.5
+50					4.7	5.0	303.8 ✓	303.0	297.51	6.3	5.5
749					3.7	4.7	304.3 ✓	303.3	297.68	6.6	5.6
		307.99									

1.00 0/0

1.50 0/0

1.333 0/0

Sta	+	π	−	El.	℄ −	Offset −	℄ El.	Offset El.	Grade	℄ Cut	Offset Cut.
749+50					4.8	4.9	303.2	303.1	+.33% 297.84	5.4	5.3
750	G.B.				3.9	4.3	304.1	303.7	298.0	6.1	5.7
	2.50	307.99									
+50			10.73	305.49	10.9	11.5	305.3	304.7	299.2	6.1	5.5
751					10.2	10.2	306.0	306.0	300.4	5.6	5.6
+50					10.6	10.3	305.6	305.9	301.6	4.0	4.3
752					8.5	8.2	307.7	308.0	302.8	4.9	5.2
+50					7.3	6.9	308.9	309.3	+2.4% 304.0	4.9	5.3
753					5.5	5.1	310.7	311.1	305.2	5.5	5.9
+50					2.9	2.9	313.3	312.3	306.4	6.9	5.9
754					1.2	1.3	315.0	314.9	307.6	7.4	7.3
	0.46	316.22									
+50			3.15	315.26	3.4	3.6	315.5	315.3	308.8	6.7	6.5
755	G.B.				3.0	3.2	315.9	315.7	310.0	5.9	5.7
		318.91									

Sta	+	↑	-	El	℄ -	Offset -	℄ El.	Offset E.l.	Grade	℄ cut	Offset cut
755+50					3.1	2.9	315.8 ✓	316.0	309.43	6.4 ✓	6.6
756					3.5	3.5	315.4 ✓	315.4	308.86	6.5 ✓	6.5
+50					3.9	3.9	315.0 ✓	315.0	308.29	6.7 ✓	6.7
757					4.5	4.9	314.4 ✓	314.0	307.72	6.7 ✓	6.3
+50					5.2	5.5	313.7 ✓	313.4	307.15	6.6 ✓	6.2
758					5.7	5.7	313.2 ✓	313.2	307.58	5.6 ✓	5.6
+50	G.B.				7.3	5.4	311.6 ✓	313.5	✗ 306.0	5.6 ✓	7.5
759					5.7	6.1	313.2 ✓	312.8	306.67	6.5 ✓	6.1
+50					6.1	6.8	312.8 ✓	312.1	307.34	5.5 ✓	4.8
760	G.B.				6.8	7.1	312.1 ✓	311.8	✗ 308.0	4.1 ✓	3.8
+50					4.6	5.0	314.3 ✓	313.9	309.0	5.3 ✓	4.9
		1.47	318.91		B.M.						
761			7.84	317.44 – 317.42	8.8	9.0	316.5 ✓	316.3	310.0	6.5 ✓	6.3
		325.26									

-1.1430%

-1.3330%

+2.0%

Sta	+	℄	−	El.	℄	Offset −	℄ El.	offset El	Grade	℄ Cut.	offset Cut.
761+50					8.3	8.9	317.0	316.4	311.0	6.0	5.4
762					7.3	7.5	318.0	317.8	312.00	6.0	5.8
+50					7.3	7.7	318.0	317.6	312.29	5.7	5.3
763					8.0	8.5	317.3	316.8	312.57	4.7	4.2
+50					7.1	7.6	318.2	317.7	312.86	5.3	4.8
764					4.8	5.5	320.5	319.8	313.14	7.4	6.7
+50					3.7	5.3	321.6	320.0	313.43	8.2	6.6
765					6.6	7.3	318.7	318.0	313.71	5.0	4.3
+50					6.7	7.9	318.6	317.4	314.00	4.6	3.4
766					5.6	5.7	319.7	319.6	315.57	4.1	4.0
+50					2.2	2.0	323.1	323.3	317.14	6.0	6.2
	0.25	325.26									
767			12.59	325.01	10.9	10.8	326.7	326.8	318.71	8.0	8.1
		337.60									

+2.0%
-0.57%
-3.43%

Sta	+	℄	−	El.	℄ −	off −	℄ El	off El	Grade	℄ Cut	off Cut
767+50					9.8	9.9	327.8	327.7	320.29	7.5	7.4
768					9.2	9.1	328.4	328.5	321.86	6.5	6.6
750					8.2	8.3	329.4	329.3	323.43	6.0	5.9
769					8.3	8.6	329.3	329.0	325.0	4.3	4.0
+50					6.4	6.9	331.2	330.7	325.1	6.1	5.6
+80	P.I.				4.8	5.4	332.8	332.2	325.16	7.6	7.0
770					3.7	4.3	333.7	333.3	325.2	8.5	8.1
+50					1.9	2.2	335.7	335.4	325.3	10.4	10.1
Sta. 10	3.61	337.60									
771			6.41	333.99 = B.M. 331.03	3.1	3.8	337.3	336.6	325.4	11.9	11.2
+50					3.1	3.9	337.3	336.5	325.5	11.8	11.0
	4.07	340.44									
772			2.06	336.37	1.8	2.7	336.6	335.7	325.6	11.0	10.1
+50					5.0	5.7	333.4	332.7	325.7	7.7	7.0
		338.43									

.03

Sta	+	HI	−	El	℄ −	Off −	℄ El	Off El	Grade	℄ Cut	Off Cut
773					5.5	5.6	332.9	332.8	325.8	7.1	7.0
+50					7.3	7.6	331.1	330.8	325.9	5.2	4.9
774					8.2	8.4	330.2	330.0	326.0	4.2	4.0
+50					7.0	7.5	331.4	330.9	326.5	4.9	4.4
775					6.0	6.0	332.4	332.4	327.0	5.4	5.4
+50					5.5	5.7	332.9	332.7	327.5	5.4	5.2
776					5.0	5.0	333.4	333.4	328.0	5.4	5.4
+50					4.2	4.3	334.2	334.1	328.5	5.7	5.6
777					3.5	3.7	334.9	334.7	329.0	5.9	5.7
+50					2.8	3.4	335.6	335.0	329.5	6.1	5.5
778					2.3	2.7	336.1	335.7	330.0	6.1	5.7
+50					1.7	2.1	336.7	336.3	331.25	5.5	5.0
		338.43									

+0.20% (773 to 774)
+1.00% (774 to 778)
+2.5% (778 to 778+50)

Sta.	+	HI	−	El	℄ −	Off. −	℄ El	Off. El	Grade	℄ Ct	Off Cut
	0.62	338.43									
779			11.42	337.81	11.7	11.8	337.5	337.4	332.50	5.0	4.9
+50					10.4	10.4	338.8	338.8	333.75	5.8	5.0
780					9.6	9.7	339.6	339.5	335.00	4.6	4.5
+50					8.5	8.7	340.7	340.5	335.80	4.9	4.7
781					7.3	7.7	341.9	341.5	336.60	5.3	4.9
+50					5.5	5.9	343.7	343.3	337.40	6.3	5.9
782					3.9	4.6	345.3	344.6	338.20	7.1	6.4
+50					3.8	4.4	345.4	344.8	339.00	6.4	5.8
783					4.2	4.6	345.0	344.6	339.20	5.8	5.4
+50					5.0	5.5	344.2	343.7	339.40	4.8	4.3
784					5.6	6.0	343.6	343.2	339.60	4.0	3.6
+50					5.0	5.7	344.2	343.5	339.80	4.4	3.7
		349.23									

+2.5%

+1.60%

+0.40%

Sta	+	π	−	El	℄ −
	1.43	349.23			
785			7.17	347.80	9.8
+50					8.5
786					7.9
+50					7.1
787					5.9
+50					5.1
788					4.5
+50					3.4
	2.22	354.97		352.75 – B.M.	
789			3.33	352.78	2.3
+40	P.I				2.5
+50					3.6
790					4.6
+50					7.1
		356.11			

off. −	℄ El	off. El.	Grade	℄ Cut	off. Cut.
10.6	345.2	344.4	X 340.00	5.2	4.4
8.9	346.5	346.1	340.25	6.3	5.8
8.6	347.1	346.4	340.50	6.6	5.9
7.9	347.9	347.1	340.75	7.2	6.3
7.0	349.1	348.0	341.00	8.1	7.0
6.2	349.9	348.8	341.25	8.7	7.5
5.1	350.5	349.9	341.50	9.0	8.4
3.8	351.6	351.2	341.75	9.8	9.1
2.6	352.7	352.4	X 342.00	10.7	10.4
2.3	352.5	352.7			
3.7	352.3	352.4	341.67	10.6	10.8
4.8	351.3	351.3	341.33	10.0	10.0
7.9	349.0	348.2	341.00	8.0	7.2

Diff. in Grade = −0.50

Sta.	+	℄	−	El.	℄ −	Off −	℄ El	Off. El.	Grade	℄ Cut	Off. Cut.
791					7.8	8.1	348.3	348.0	340.67	7.6	7.3
+50					9.4	9.8	346.7	346.3	340.33	6.4	6.0
792					9.9	12.5	346.2	343.6	340.00	6.2	3.6
	10.57	356.11									
+50			0.14	345.54	0.0	1.0	345.7	344.7	338.00	7.7	6.7
793					2.8	3.7	242.9	342.0	336.00	6.9	6.0
+50					3.4	4.2	342.3	341.5	334.00	8.3	7.5
794					6.6	7.1	339.1	338.6	332.00	7.1	6.6
+50					7.2	7.9	338.5	337.8	331.80	6.7	6.0
795					6.9	7.4	338.8	338.3	331.60	7.2	6.7
+50					5.8	5.5	339.9	340.2	331.40	8.5	8.8
796					5.8	6.2	339.9	339.5	331.20	8.7	8.3
+50					8.5	8.8	337.2	336.9	331.00	6.2	5.9
		345.68									

0.67%
−4.00%
−0.40%
−0.20%

Sta.	+	℄	−	El.	℄ −	Off −	℄ El	Off El.	Grade	℄ Cut	Off Cut.
	8.75	345.68									
797			2.08	336.93	3.4	3.7	335.6	335.3	330.89	4.7	4.4
+50					4.5	5.1	334.5	333.9	330.78	3.7	3.1
798					5.6	6.6	333.4	332.4	330.67	2.7	1.7
+50					6.8	7.1	332.2	331.9	330.56	1.6	1.3
799					7.9	7.3	331.1	331.7	330.44	0.7	1.3
799+50					9.5	8.4	329.5	330.6	330.33	Fill 0.8	Cut 0.3
800					11.1	11.9	327.9	327.1	330.22	Fill 2.3	Fill 3.1
+50					9.2	9.1	329.8	329.9	330.11	Fill 0.3	Fill 0.2
801					4.6	5.3	334.4	333.7	330.00	4.4	3.7
+50					4.3	4.6	334.7	334.4	329.71	5.0	4.7
802					4.5	4.8	334.5	334.2	329.43	5.1	5.8
$+25\frac{8}{}$ =		$+20\frac{5}{}$			4.1	4.9	334.9	334.1			
802+50		339.01			4.2	4.4	334.8	334.6	329.14	5.7	5.5

-2.22
-0.57

Sta	+	–	π	–	EX	℄ –	Off –	℄ El.	Off El.	Grade	℄ Cut	Off Cut.
175	O.B.									329.00		
803						5.9	6.1	333.1	332.9	328.00	5.1	4.9
+50	B.29		339.01			0.0	0.4	330.9	330.50	326.00	4.9	4.5
804				0.19	330.72	1.2	2.1	329.7	328.8	323.00	6.7	5.8
+50						3.5	4.1	327.4	326.8	320.00	7.4	6.8
805+00										317.00		
+04 B						8.6	9.5	322.3	321.4	316.76	5.5	4.6
+24 B						9.6	10.5	321.3	320.4	315.76	5.5	4.6
+44 B	10.12		330.91			10.8	12.4	320.1	318.5	314.76	5.3	3.7
+64 B				0.33	320.79	1.7	2.1	319.4	319.0	313.76	5.6	6.2
+84 B						3.1	2.4	318.0	318.7	312.76	5.2	5.9
806+00										312.00		
+14 B						4.3	4.1	316.8	317.0	311.39	5.4	5.6
+35.40	E.C					5.4	3.9	315.7	317.2	310.59	5.1	6.6
+50						6.3	4.5	314.8	316.6	310.00	4.8	6.6
807+00						8.2	6.0	312.9	315.1	308.00	4.9	7.1
+50						7.7	8.0	313.4	313.1	306.50	6.9	6.6
808+00						10.4	9.8	310.7	311.3	305.00	5.7	6.3
			321.12									

-1.90%
-5.00%
-4.00%
-3.00%

Sta.	+	−	Elev.	℄ −	offset −	℄ El.	offset El.	Grade	℄ Cut	offset Cut.
808+50				12.5	11.6	308.6	309.5	303.50	5.1	6.0
	12.73	321.12								
809+00		0.17	308.39	0.5	0.4	308.1	308.2	302.00	6.1	6.2
+50				3.2	2.6	305.4	306.0	300.50	4.9	5.5
810+00 G.B.				4.5	3.9	304.1	304.7	299.00	5.1	5.7
810+27°				4.6	4.4	304.0	404.2	298.16	5.8	6.0
+52°				4.9	5.0	303.7	303.6	297.38	6.3	6.2
810+77°				5.9	6.2	302.7	302.4	296.60	6.1	6.8
811+02°				6.6	7.2	302.0	301.4	295.82	6.2	5.6
+27°				9.1	7.7	299.5	300.9	295.04	4.5	5.9
811+52°				8.2	10.5	300.4	298.1	294.25	6.7	3.8
811+60 3 G.B.								294.00		
	8.81	308.56								
811+78 E.C		0.58	299.75	9.1	8.5	299.5	300.1	293.85	5.7	6.2
810+07 5	9.87	300.33								
			290.46 B.M.							

3.00%

3.119%

2.00%

4.29

.0213
363.37
359.0213
4.35

363.4
359.1
4.3

358.014
11.83
369.844
11.91
357.934
5.44
363.37

4.9
1.144
5.76
4.29
1.45

5.69
.20
1.138.0

P.I.:
B.C. = 1209+38.0
E.C. = 1212+11.2

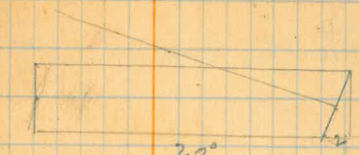
Δ = 54°39'
T = 148.0
R = 286.45
D = 20°
L = 273.2

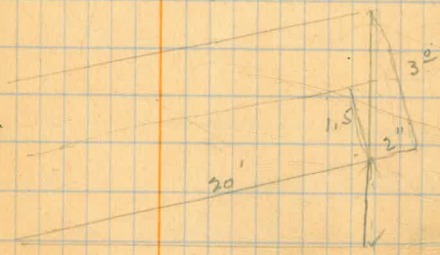
1212+11.2 E.C.

1211+86.2	2°30
1211+61.2	5° —
1211+36.2	7°30
1211+11.2	10° —
1210+86.2	12°30
1210+61.2	15° —

1366
1367
1368
1369
1370
1371

1667 5.68 +.424 5) 5.256





5.256 .22 10512 10512 1.15632

5.256 22 10512 10512 1.15632

5.68 22 1136 1136 1.2496

Manhole Box. Sta. 1295+00

365.556 B.M. S.W. Cor. Meade + 30th.
7.126
372.682 H.I.
5.41
367.27 Elev. Top Box.

So. Curb 5.63
No. Curb 5.02
2(10.65)
5.325
.085
5.410

Blow-off Box. Sta. 1296+85.8

365.556 B.M. S.W. Cor. Meade + 30th.
7.962
373.518
8.25
365.268 Top Box

So. Curb 8.06
No. Curb 7.66
2(15.62)
7.810
.246
8.056

8.31
8.37
.19

So. Curb - 7.99
& Pavement - 7.91
Top Pavement 8' from 8.31 Curb

$\frac{3}{20} \times .2 = \frac{12}{20}$

Air + Vacuum Valve. Sta. 1286+90.

383.183. N.W. Cor. Meade + Iowa
6.12
389.30 H.I.
6.79
382.51 Elev. Top Box

No. Curb. 6.36
So. Curb 7.05
2(13.41)
6.705
.085
6.790

Manhole. El Cajon + Idaho 1305+00

372.843. B.M. S.E. Cor. Idaho + Howard.
7.93
380.773
5.570
375.203 Top Box

E. Curb 5.975
W. Curb 5.165
2(11.140)
5.570

Manhole Box. Sta. 1275

378.564 B.M. Meade + 33rd.
6.172
384.736 H.I
6.760
377.976 Elev. Top Manhole.

$\left(\frac{10}{28}\right)^2 \times .667$

28
28
224
56
784

.085
784) 66.70
6272
3980
3920

6.91 - So. Curb
6.44 No. Curb
13.35
6.675
.085
6.760

Manhole Box. Sta. 1265

384.030 B.M. Meade + 34th.
9.42
393.45 H.I
8.805
384.645 Elev. Top Manhole

8.63 - So. Curb
8.81 - N. Curb
17.44
8.72
.085
8.805

381.958 B.M. 37th. & Meade.

5.139.

387.097 H.I.

6.595.

380.502 Elev. Top Manhole Sta. 1245.

$\left(\frac{10}{28}\right)^2 \times .667 = \frac{.667}{784}$

28
28
224
56
784

.085
784) 66.70
6272
3980
3920

6.91 - So. Curb
6.11
2) 13.02
6.51
.085
6.595

7.03 - So. Curb
6.37 - No. Curb
13.40
6.700
.246
6.946

376.980 B.M.
7.095
384.075 H.I.
6.946
387.129 Elev. Top Blom-off f. Bancroft

17°

$\left(\frac{17}{28}\right)^2 \times 8'' = \frac{289}{784} \times .667$

17
17
119
17
289
784

28
28
224
56
784

289
.667
2023
1734
1734
784) 192.763 (.246
1568
3596
3136
4603

Sta. 1098 Air Valve:

#200. 4" Air + Vacuum Valve Attached. See Anderson.

Sta. 1103. See if Section is about 36' Long.

1069+90.9 Stop Valve

Bet. #513 - #518 Pipe 1' Long. Short 1.61.
(#383 - 386 Pipe 1' Long. Right)

#513 - #518 Pipe 1.26 Long

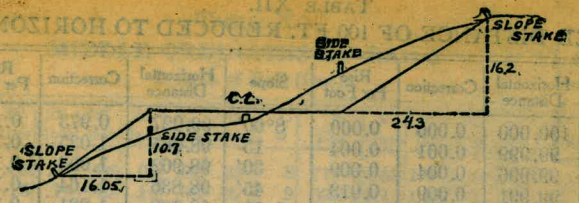
Cut Dif. off Straight End #517.

Cut. Dif. off Straight End #383

If Possible cut foot on #400.

23.62
5 | 118.1
10
18
15
3

IMPROVED TABLES AND INFORMATION



DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING.

SLOPE 1½ 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

Computed by L. Leland Locke.

912+50.
911+13.43
136.57

1212+13.2 Back
1212+13.2 Ahead

T = 148.0

Elev. 359.1 Back
353.0 Ahead

358.014

Red Tops
836+00 to 842+50.