Cross Sections & Slopes

India St.

TRANSIT BOOK

12

F.B. 602

602

able showing the difference of latitude and departure in running 80 chains at any course from 1 to 60 minutes.

MICROFILMED DEC 1964

Minutes.	Lks.	Minutes.	Lks.	Minutes.	Lks.
1	2⅓	21	49	41	95⅔
2	4⅔	22	51⅓	42	98
3	7	23	53⅔	43	100⅓
4	9⅓	24	56	44	102⅔
5	11⅔	25	58⅓	45	105
6	14	26	60⅔	46	107⅓
7	16⅓	27	63	47	109⅔
8	18⅔	28	65⅓	48	112
9	21	29	67⅔	49	114⅓
10	23⅓	30	70	50	116⅔
11	25⅔	31	72⅓	51	119
12	28	32	74⅔	52	121⅓
13	30⅓	33	77	53	123⅔
14	32⅔	34	79⅓	54	126
15	35	35	81⅔	55	128⅓
16	37⅓	36	84	56	130⅓
17	39⅔	37	86⅓	57	133
18	42	38	88⅔	58	135⅓
19	44⅓	39	91	59	137⅔
20	46⅔	40	93⅓	60	140

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SAN FRANCISCO, CAL.

Table for Running on Slopes.

In the following table the first column shows the angle, the second, the number of links to be added to a chain on the slopes, to make one chain, horizontal measurement.

Angle.	Cor. in links	Angle.	Cor. in links.	Angle.	Cor. in links.	Angle.	Cor. in links.
°		°		°		°	
4	0·24	11	1·88	18	5·14	25	10·54
5	0 38	12	2·24	19	5·76	26	11·26
6	0·55	13	2·63	20	6·42	27	12·24
7	0·76	14	3·06	21	7·11	28	13·37
8	0·98	15	3·53	22	7·85	29	14·34
9	1·24	16	4·02	23	8·64	30	15·47
10	1·55	17	4·56	24	9·47	35	22·07

1 Cu. yds

	W	E		C F	Ea	Ea	C F	
				D			D	
					(6.) 123.			
+75	53.0	54.08	3.8 / 5.7	-4.0	11.4	148.3	-13.8	14.3 / 24.5
					(25.) 189.			
+50	52.0	53.17	-7.2 / 10.8	-8.1	43.7	259.9	-17.8	-19.5 / 29.2
					(68) 280.			
+25	51.0	52.25	-11.3 / 16.8	-12.3	103.3	343.9	-18.1	-25.4 / 38.0
					(102.) 251.			
2	50.0	51.33	-12 / 18.0	-13.0	117.0	198.8	-14.2	-20.3 / 12 -22.6 / 18 -18.9 / 24 -18.6 / 28.6
					(110.) 139.			
+75	49.0	50.42	-13.2 / 19.8	-12.2	120.8	102.7	-12.3	-11.1 / 16.7
					(100.) 186.			
+50	48.0	49.50.	-11.3 / 17.0	-11.1	94.3		-11.2	
+33						131.7	-11.4	-15.4 / 23.1
						(48.) 192.7		
+25	47.0	48.58		-10.3			-15.0	-18.2 / 12.0 -17.1 / 25.7
						(176)		
1	46.0	47.67		-9.7		188.2	-18.1	-13.6 / 20.8
+90			-9.4 / 14.8	-10.4	75.9	(249)		
					(61)			
+75	45.0	46.75	-10.1 / 15.2 -10.8 / 12	-12.1	145.2	349.4	-22.4	-29.4 / 15 -20.8 / 31.2
					(140.)			
+60			-15.1 / 22.7	-31.6	358.7	(286)		
					(147)			
+50	44.0	45.83	-19.4 / 29.1 -21.0 / 14	-29.9	435.0	269.1	-27.6	-13.0 / 19.5
					(359)	(197)		
+25	43.0	44.92	-22.5 / 34.2 -30.6 / 20	-25.8	341.2	155.9	-18.9	-11.0 / 16.5
					(292.)	(52)		
0	42.0	44.0	-26.6 / 39.9 -27.7 / 36	-14.6	291.3		-1.4	
					(95)			
+66	42.00	44.0	-11.9 / 17.8	-8.3	73.9		0.0	
					(46)			
+40	42.00	44.0	-5.8 / 8.7	-4.9	21.3		+1.9	
					(7)			
+14	42.0	44.0		-0.4			+2.8	
3	42.0	44.0		-0.1			+0.5	

(3586)

(148)

Balance

	W	E	C F		Ea	Ea		
					(10)			
+75	74.25	76.16	$\frac{-3.5}{5.8}$	-2.6	6.5			
					(4)			
+50	72.50	74.33	$\frac{-1.7}{2.8}$	-1.9	2.7			
					(1)			
+25	70.75	72.5		-0.6				
2	69.00	70.66	+1.3					
+75	67.25	68.83						(15)
+50	65.50	67.00						
+25	63.75	65.16						
1	62.00	63.33						
+75	60.25	61.50						
+50	58.50	59.66						
+25	56.75	57.83						
0	55.0	56.0	+4.6			+3.4		
+66	55.0	56.0	+3.0			-0.8		
					(9)			
+40	54.50	55.50	+0.8		26.2	-5.3	$\frac{-6.5}{9.9}$	(11.5)
					(53.)			
+14	54.0	55.00	+0.3		84.3	-9.8	$\frac{-11.6}{17.2}$	
					(53.)			
3	54.0	55.0	$\frac{-1.0}{1.5}$	-1.0	0.7	118.0	-11.8	$\frac{-13.3}{20}$

Lawrel

	W	E	C	F	Ea	Ea
					85.	
+ 75	88.8	90.8	-13.4 / 20.1	-9.9	99.5	
					94.	
+ 50	87.8	89.8	-13.4 / 20.1	-10.1	101.5	
					79.	
+ 25	86.8	88.8	-11.3 / 17	-8.3	70.5	
					41.	
2	85.7	87.7	-5.8 / 9.7	-4.2	18.3	
					12.	
+ 75	84.6	86.6	-3.7 / 5.5	-2.9	8.0	
					4.	
+ 50	83.5	85.5	-1.0 / 1.5	-0.9	0.7	
+ 25	82.4	84.4	+2.1			
1	81.32	83.3				
+ 75	80.24	82.24				
+ 50	79.16	81.16				
+ 25	78.08	80.08				
0	77.0	79.0				
			+0.5			
+ 66	77.0	79.0		-0.3		
+ 40	76.5	78.5	-2.0 / 3.0	-1.4	2.1	
					5	
+ 14	76.00	78.0	-3.9 / 5.8	-2.9	8.4	
					6	
3	76.0	78.0	-5.1 / 7.6	-3.9	14.8	

3.5

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maple

4

	W	E		CF	Ea	Ea
Sk olivo						
+67.3=3	99.0	~~101.0~~	-3.6 / 5.5	-2.5	6.9	
					(6)	
+50	98.5	100.5	-4.5 / 7.0	-3.0	10.5	
					(10)	
+25	97.7	99.7	-4.5 / 7.0	-3.0	10.5	
					(8)	
3	97.0	99.0	-3.2 / 4.5	-2.4	5.8	
					(9)	
+75	96.2	98.2	-5.0 / 7.5	-3.5	13.1	
					(13)	
+50	95.5	97.5	-5.8 / 8.7	-3.7	16.1	
					(15)	
+25	94.7	96.7	-5.9 / 8.8	-3.8	16.7	
					(15)	
1	94.0	96.0	-5.8 / 8.7	-3.8	16.5	
					(17)	
+75	93.2	95.2	-6.1 / 9.0	-4.4	19.8	
					(16)	
+50	92.5	94.5	-2.3 / 7.5	-3.8	14.2	
					(13)	
+25	91.7	93.7	-4.7 / 7.1	-3.7	13.1	
					(9)	
0	91.0	93.0	-3.4 / 5.1	-2.8	7.1	
					(4)	
+66	91.0	93.0	-4.0 / 6.0	-2.9	8.7	
					(12)	
+40	90.5	91.5	-5.8 / 8.7	-3.7	16.1	
					(28)	
+14	90.0	92.0	-9.5 / 14.2	-6.0	42.6	
					(33)	
3	90.0	92.0	-13.3 / 19.0	-8.8	83.6	

131

77

Neubrueg

	W	E	C F			C F
					22	
+ 75	98.1	100.1	-4.7 / 8.0	-4.2	14.1	
					11	
+ 50	98.2	100.2	-4.1 / 6.1	-3.3	10.0	
					9	
+ 25	98.3	100.3	-4.3 / 6.5	-3.2	10.4	
					8	
2	98.4	100.4	-3.3 / 5.0	-2.4	6.0	
					7	
+ 75	98.5	100.5	-3.8 / 5.7	-2.9	8.2	152
					9	
+ 50	98.6	100.6	-4.5 / 6.8	-3.1	10.5	
					10	
+ 25	98.7	100.7	-4.8 / 7.2	-3.0	10.8	
					12	
1	98.8	100.8	-5.2 / 7.8	-3.5	13.6	
					17	
+ 75	98.9	100.9	-6.5 / 9.9	-4.6	22.8	
					25	
+ 50	99.0	101.0	-7.6 / 11.4	-5.4	30.8	
+ 32.1 N.W. Olive	99.0	101.0	-8.0 / 12.0	-5.7	34.2	22
+ 25						
+ 22 = N.E. Olive						
0	99.0	101.0				
					14	
+ 66	99.0	101.0	-5.8 / 8.7	-4.2	18.3	
					12	
+ 40	99.0	101.0	-3.3 / 5.5	-2.8	7.7	53
					5	
+ 14	99.0	101.0	-2.2 / 3.3	-1.7	2.8	
					2	
~~32 + 78.6~~	~~99.0~~	101.0				

Olive

	W	E	CF		Ea	Ea	CF		
+ 75	101.2	103.2	-6.6 / 9.9	-4.9	(23) 24.7				
					(22)				
+ 50	101.3	103.3	-6.5 / 9.6	-4.7	23.0				
					(18)				
+ 25	101.5	103.5	-5.3 / 9.4	-3.8	15.0				
					(12)				
2	101.7	103.7	-2.5 / 9.4	-3.3	12.2				
					(4)				(269)
+ 75	101.8	103.8	+0.4						
+ 50	102.0	104.0							
+ 25	101.3	103.3							
1	100.7	102.7							
+ 75	100.0	102.0	+0.7				+2.9		
					(9)				
+ 50	99.3	101.3	-3.6 / 5.4	-3.3	8.9		-0.8	-0.8 / 1.2	
					(37)	(7)			
+ 25	98.7	100.7	-10.2 / 15.3	-9.2	70.4	21.7	+5.7	-5.7 / 8.6	
					(98)	(45)			
0	98.0	100.0	-14.3 / 21.4	-13.1	140.2	76.4	-10.4	-9.8 / 14.7	
					(100)	(51)			
+ 66	98.0	100.0	-18.9 / 28.4	-17.2	244.2	122.4	-13.6	-12.0 / 18.0	
+ 60			20.4 / 30.6	-19.0	(59) 290.7	(35) 150.2			
+ 59								-13.0 / 19.5	
+ 40	98.0	100.0	-21.2 / 31.8	-16.4	(204) 261.0	(74) 61.5	-15.4 / -10.0	-8.2 / 12.3	
					(152)	(33)			
+ 14	98.0	100.0	-9.2 / 13.8	-8.1	55.8	7.3	-3.4	2.9 / 4.3	(732)
					(23)	(1)			
3	98.0	100.0	-6.7 / 10.0	-6.3	31.5		+0.8		

Calm St

	W	E	CF		
					(6)
+75	97.3	99.3	-3.9 / 5.8	-2.8	8.1
					(10)
+50	97.7	99.7	-5.1 / 7.7	-3.5	14.0
					(14)
+25	98.0	100.0	-5.8 / 8.7	-3.9	17.0
					(22)
2	98.3	100.3	-7.5 / 11.2	-5.3	29.7
					(31)
+75	98.7	100.7	-8.7 / 13.0	-5.8	37.7
					(38)
+50	99.0	101.0	-9.1 / 13.7	-6.6	45.2
					(39)
+25	99.3	101.3	-8.4 / 12.6	-6.1	38.4
					(44)
1	99.7	101.7	-10.4 / 15.6	-7.4	57.7
					(53)
+75	100.0	102.0	-9.6 / 14.4	-7.3	56.2
					(51)
+50	100.3	102.3	-10.0 / 15.0	-7.3	54.7
					(49)
+25	100.7	102.7	-10.0 / 15.0	-6.9	51.7
					(36)
0	101.0	103.0	-6.8 / 10.2	-5.0	25.5
					(14)
+66			-7.5 / 11.3	-5.3	30.0
					(27)
+40			-7.0 / 10.5	-4.9	25.7
					(24)
+14			-6.5 / 9.8	-5.0	24.5
					(13)
3	101.0	103.0	-6.6 / 9.9	-5.2	26.7

Quinco

(393)

(78)

	W	E	CF					
					(158)	(5)		-4.5
+75	85.0	87.0	-20.2 / 30.3	-14.8	224.2	17.0	-5.0	6.8
					(262)	(50)		
+50	86.0	88.0	-23.0 / 34.5	-19.9	343.2	100.3	-11.8	-11.3 / 17.0
					(357)	(155)		
+25	87.0	89.0	-24.5 / 36.8	-22.7	429.0	234.4	-18.6	-16.8 / 25.2
					(402)	(253)		
2	88.0	90.0	-25.2 / 37.8	-23.2	438.5	313.3	-21.1	-19.7 / 29.7
+85		90.6			(415)	(181) 339.7	-22.2	-20.4 / 30.6
+75	89.0	91.0	-26.3 / 39.5	-23.2	458.2	(109) 249.2	-18.6	-17.9 / 26.8
					(334)	(158)		
+50	90.0	92.0	-20.0 / 30.0	-17.5	362.5	91.8	-11.7	-10.5 / 15.7
					(192)	(49)		
+25	91.0	93.0	-15.7 / 23.5	-13.0	152.7	13.4	-4.4	-4.1 / 6.1
					(116)	(7)		
1	92.0	94.0	-12.5 / 18.7	-10.5	98.6	2.3	-1.9	-2.0 / 3.0
					(71)			
+75	93.0	95.0	-10.2 / 15.3	-7.2	55.1		+2.4	
					(49)			
+50	94.0	96.0	-9.7 / 14.1	-7.2	50.1			
					(39)			
+25	95.0	97.0	-7.4 / 11.1	-6.2	34.4			
					(33)			
0	96.0	98.0	-7.9 / 11.8	-5.8	34.2			
					(12)			
+66			-5.2 / 7.8	-3.6 ~~-10.1~~	14.0			
					(10)			
+40	96.5		-3.4 / 5.1	-2.9 ~~-10.1~~	7.4			
					(8)			
+14			-3.9 / 5.8	-2.9	8.4			
					(3)			
23	97.0	99.0	-3.2 / 4.8	-2.1	5.0			

(3395)

(33)

Redwood

	N	E	C F				
					(59)	(4)	
+ 75	83.1	85.1	-9.3 / 14.0	-7.6	53.2		+1.0
					(46)		
+ 50	83.2	85.2	-8.5 / 12.8	-7.1	45.4		
					(42)		
+ 25	83.2	85.2	-8.9 / 13.4	-6.9	46.2		
					(34)		
2	83.3	85.3	-6.5 / 9.6	-5.7	27.9		
					(26)		
+ 75	83.4	85.4	-6.5 / 9.8	-4.4	21.5		
					(20)		
+ 50	83.5	85.5	-6.4 / 9.6	-4.4	21.1		
					(19)		
+ 25	83.6	85.6	-6.0 / 9.0	-4.3	19.3		
					(19)		
1+0	83.6	85.6	-6.5 / 9.8	-4.6	22.8		
					(19)		
+ 75	83.7	85.7	-5.7 / 8.0	-4.4	17.6		
					(19)		
+ 50	83.8	85.8	-6.5 / 9.8	-4.7	23.0		
					(20)		
+ 25	83.9	85.9	-6.0 / 9.0	-4.4	19.8		
					(20)		
0	84.0	86.0	-6.6 / 9.9	-4.7	23.2		
					(13)		
+ 66			-6.9 / 10.4	-5.3	27.6		
					(33)		
+ 40			-9.0 / 13.5	-6.1	41.1		
					(59)		
+ 14			-12.5 / 18.8	-8.7	81.8		
					(51)		
3+0	84.0	86.0	-14.8 / 22.2	-10.5	116.5		+1.4

(747)

(156)

Spence 2/

	W	E	C F						
			-15.2 / 22.8	-9.0	(96) 102.6				
75	86.7	88.7							
			-16.0 / 24.0	-9.5	(100.0) 114.0				
+50	86.3	88.3							
			-14.5 / 21.9	-8.8	(92) 95.5				
+25	86.0	88.0							
			-14.6 / 21.9	-9.8	(94) 107.3				
2	85.7	87.7							
			-14.7 / 22.0	-10.1	(101) 111.1				
+75	85.3	87.3							
			-14.2 / 21.3	-9.9	(100) 105.4				
+50	85.0	87.3							
			-13.5 / 20.3	-9.6	(94) 97.4				
+25	84.7	86.7							
			-12.5 / 18.8	-9.4	(86) 88.3				
1	84.3	86.3							
			-12.8 / 19.2	-9.4	(82) 90.2				
+75	84.0	86.0							
			-12.2 / 18.3	-8.9	(79) 81.4				
+50	83.7	85.7							
			-11.4 / 17.1	-7.9	(69) 67.5				
+25	83.3	85.3							
			-10.7 / 16.1	-8.6	(63) 69.2				
0	83.0	85.0							
			-11.9 / 17.8	-9.5	(40) 84.5		+2.9		
+66									
			-15.1 / 22.6	-11.0	(100) 124.1	1.4	-1.4	1.3 / 2.0	(329)
+40									
			-14.1 / 21.1	-12.3	(122) 129.7	(6) 16.6	-5.1	-4.3 / 6.5	
+14									
			-10.2 / 15.6	-9.4	(53) 73.3	(8) 13.2	-4.4	-4.2 / 6.0	
3+0	83.0	85.0							

(1056)

Sassafras 3/

11

	W	E	C F			
					(50)	
+75	82.4	84.4	-10.4 / 15.7	-5.6	43.9	
					(37)	
+50	82.8	84.8	-9.0 / 13.5	-5.4	36.4	
					(24)	
+25	83.2	85.2	-8.5 / 11.3	-4.6	26.0	
					(25)	
2	83.7	85.7	-8.1 / 12.1	-4.5	27.2	
					(28)	
+75	84.1	86.1	-9.0 / 13.5	-4.9	33.0	
					(33)	
+50	84.5	86.5	-9.2 / 13.9	-5.5	38.2	
					(42)	
+25	84.9	86.9	-11.1 / 16.7	-6.2	51.7	
					(50)	
1	85.3	87.3	-11.4 / 17.1	6.7	57.3	
					(55)	
+75	85.7	87.7	-11.4 / 17.1	-7.1	60.7	
					(60)	
+50	86.2	88.2	-12.2 / 18.3	-7.6	69.5	
					(75)	
+25	86.6	88.6	-13.9 / 20.8	-9.0	93.6	
					(90)	
0	87.0	89.0	-14.1 / 21.2	-9.5	100.7	
					(51)	
+66			-14.2 / 21.3	-9.2	98.0	
					(88)	
+40			-13.0 / 19.5	-8.8	85.8	
					(86)	
+14			-13.2 / 19.8	-9.4	93.0	
					(49)	
3+0	87.0	89.0	-14.4 / 21.5	-9.1	97.8	

(45.5)

(47.2)

Theory

	W	E							
+75	81.1	83.1							
+50	81.2	83.2							
+25	81.2	83.2							
2	81.3	83.3							
+75	81.4	83.4	+0.7						698
+50	81.5	83.5	-1.1 / 1.5	-0.9	0.6 (6)				
+25	81.6	83.6	-5.0 / 7.5	-3.3	12.3 (31)				
1	81.6	83.6	-8.2 / 12.3	-5.4	33.2 (50)		+6.0		
+75	81.7	83.7	-11.5 / 17.2	-8.7	74.8 (109)	0.4 (14)	-0.8	-0.6 / 0.9	
+50	81.8	83.8	-16.7 / 25.0	-12.9	161.2 (177)	42.7 (50)	-8.3	-6.9 / 10.3	
+25	81.9	83.9	-18.7 / 28.0	-15.8	221.2 (208)	65.8 (63)	-10.2	-8.6 / 12.9	
0	82.0	84.0	-18.8 / 28.2	-16.2	258.4 (119)	70.3 (33)	-10.5	-8.9 / 13.4	
+66			-18.8 / 28.2	-16.3	229.8 (183)	56.7 (18)	-9.0	-8.4 / 12.6	
+40			-17.6 / 26.5	-11.4	151.0 (108)		+0.7		494
+14			-13.1 / 19.8	-7.5	74.2 (36)				
3	82.0	84.0	-12.0 / 18.0	-7.2	64.8				

Oldham St

	W	E						
					(9)			
+75	70.8	72.8	-18 / 2.7	-1.5	4.0			
					(6)			
+50	71.7	73.7	-3.9 / 5.8	-3.1	9.0			
					(16)			
+25	72.5	74.5	-6.8 / 10.2	-5.1	26.0			
					(24)			
2	73.3	75.3	-6.9 / 10.2	-5.2	26.5			
					(31)			
+75	74.2	76.2	-8.1 / 12.1	-6.7	40.5		+2.3	
					(53)			
+50	75.0	77.0	-10.6 / 15.9	-9.4	74.7	2.3	-2.4	-1.8 / 2.7
					(98)			
+25	75.8	77.8	-14.1 / 21.1	-12.9	136.1	44.5	-8.1	-7.3 / 11.0
					(172)			
1	76.7	78.7	-18.1 / 27.0	-17.4	234.9	127.8	-13.6	12.5 / 18.8
+83	77.2		-21.5 / 32.2	-20.0	32[illegible]			
					(95)			
+75	77.5	79.5	-22.7 / 34.0	-18.9	321.3	201.8	-17.4	-10.5 / 23.2
					(215)			
+50	78.3	80.3	-16.0 / 24.0	-12.7	142.8	74.4	-10.7	-9.4 / 14.1
					(100)			
+25	79.2	81.2	-12.2 / 18.3	-8.1	74.1	9.4	-3.7	-3.4 / 5.1
					(42)			
0	80.0	82.0	-5.5 / 8.2	-3.9	16.0		+3.8	
					(3)			
+66			-1.9 / 2.8	-1.8	0.2			
+40			+1.5					
+14								
3	81.0	83.0						

Circle 35

1036

(3)

	W	E				
			−2.8		(3)	
+75	66.3	68.3	4.2	−2.5	5.2	+0.8
					(10)	
			−4.8			
+50	66.7	68.7	7.2	−4.4	15.8	−1.2
					(20)	
			−7.0			
+25	67.0	69.0	9.5	−6.0	28.5	−2.4
					(33)	
			−7.6			
2	67.3	69.3	11.7	−7.2	42.1	−1.8
					(41)	
			−8.6			
+75	67.7	69.7	13.2	−7.0	46.2	−1.8
					(59)	
			−11.0			
+50	68.0	70.0	16.5	−9.9	81.6	+2.2
					(86)	
			−12.9			
+25	68.3	70.3	19.3	−10.7	103.2	−1.0
					(117)	
			−14.8			
1	68.7	70.7	22.2	−13.4	148.7	+1.0
					(147)	
			−16.4			
+75	69.0	71.0	24.6	−13.8	169.7	
					(170)	
			−18.5			
+50	69.3	71.3	27.8	−14.2	197.4	
					(182)	
			−20.0			
+25	69.7	71.7	30.0	−13.1	196.5	
					(177)	
			−19.3			
0	70.0	72.0	29.0	−12.8	185.6	
					(100)	
			−20.7			
+66			31.0	−13.0	201.5	
					(150)	
			−19.0			
+40			28.5	7.7	109.7	
					(76)	
			−11.5			
+14			17.2	−5.6	48.1	
					(17)	
			−5.8			
3	70.0	72.0	8.7	−3.6	15.7	

(1045)

(3413)

Walker 8/5

15

	W	E		
+75	76.1	78.1		
+50	75.2	77.2		
+25	74.2	76.2		
2	73.3	75.3		
+75	72.4	74.4		
+50	71.5	73.5		
+25	70.6	72.6		
1	69.7	71.7	-0.9	
+75	68.7	70.7	-0.8	
+50	67.8	69.8	-0.6	
+25	66.9	68.9	+0.2	
0	66.0	68.0	+0.7	
+66			+0.5	
+40			-0.1	
+14			-0.7	
3	66.0	68.0	$\frac{-1.6}{2.4}$ -1.2	1.4

Schulmer St

Winder 2h

0	9.66	+40	+14	720	760
0	720	790			

W

E

2 x 2' box at 3+60 Palm 135' long

Sassafras
2+0
~~++88~~ E. 2+0 W 2 x 2 box 145' long
this Cañon shows no wash + a 1 x 2 box
in RR has carried off all water

small box at 3+14 Sassafras 112'
on account of low intersection

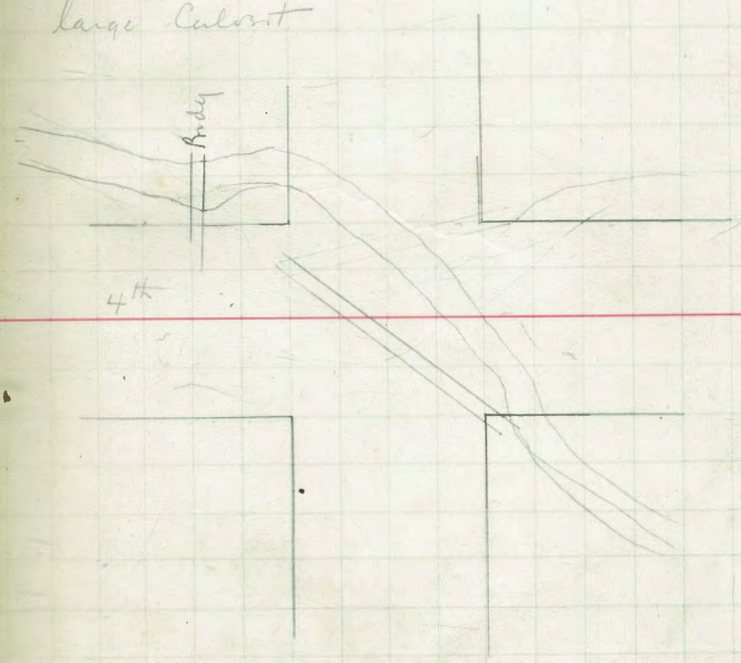
Upas
0 W
0+25 E 2 x 2' box. Cañon extends back
only a short dist + shows no
sign of wash RR has 1 x 3 box

bet Vine + Willow short small Cañon showing no wash
RR has box near top of fill which
has carried no water

At 3+0 Chalmers Can carry all water
coming down

At St beyond Winder RR has 24' Opening
with 7' Waterway

At 3+20 on E to 0 on W Harasthy St
large Culvert



Sta	+	HO	−	Elev.	N East R	N East E	curb R	curb E	center R	center E	curb R	curb E	S W R	S W E
BM	3.07	49.08		46.01						49.1				
4+0													2.5	46.6
4+25											3.2	45.9	1.9	47.2
4+50									5.8	43.3	2.6	46.5	1.7	47.4
4+75									6.3	42.8	3.1	46.0	1.8	47.3
5					9.0	40.1	7.8	41.3	6.6	42.5	4.6	44.5	2.3	46.8
5+25					9.7	39.4	8.7	40.4	7.0	42.1	31.0 curb 5.2	46.5 43.9	2.6	46.5
+50					10.3	38.8	9.2	39.9	7.2	41.9	30. curb 5.1	46.1 44.0	2.9	46.2
+75					10.6	38.5	10.2	38.9	7.2	41.9	29. curb 4.8	45.7 44.3	3.2	45.9
6					10.8	38.3	10.3	38.8	7.8	41.3	29 curb 5.9	44.4 43.2	4.2	44.9
+30	Center of Street —				11.2	37.9	10.0	39.1	8.6	40.5	29.0 curb 6.8	43.7 43.0	5.3	43.8
0					11.9	37.2	10.0	39.1	9.2	39.9	7.1	42.0	6.5	42.6

Stas to the intersection of the North line of Topeka are numbered back from Street — Not named in map calling N West side of the Sta 6

Note
At N End Blk 19 6 2+40 6x2 bx

On Hancock
Midway, 1+60 E 1+40 N 1x3 box

On Congress
1+60 E 2+0 on Tr Avista 4x4 box
Water from RR bridge Comes through this

Intersection of Topeka & Olive Aves See note on Page 18

Station	+	42	−	Elev	West Road	West Elev	Curb Road	Curb Elev	Center Road	Center Elev	Curb Road	Curb Elev	South Road	South Elev
BM. T	3.07	49.08		46.01	BM Topeka & O Ave				49.1					
2+65 =	2+71 on O ave				48.4									
					0.7	48.4								
2+81.7 =	2+92.9 on O Ave						1.7	47.4						
3+13.7 =	3+33.6 on O Ave								8.0	46.1	~~3.0~~	~~46.1~~	3.	
3+45.5 =	3+74.3 on O Ave										3.0	46.1	~~3.6~~	~~46.5~~
3+62 =	3+96.2 on O ave												2.6	46.5
2+87.8					47.9									
					2.0									
3+03.2						~~46.1~~								
						~~3.0~~	3.0	46.1						
3+49.5									~~45.3~~					
									3.8	45.3				
3+50.6											4.0	45.1		
3+63.9 =	4+12.5 on Topeka South Side												3.6	45.5
3+18.8					3.4	45.7								
3+40.7							4.4	45.3						
3+81.4									5.1	44.0				
4+22.1											5.4	43.7		
4+44. =	4+24.6 on Topeka South Side												5.6	43.5
3+50.3					4.7	44.4								
3+72.2							5.8	43.3						
4+12.9									6.7	42.4				
4+53.6											7.2	41.9		
4+75.5 =	4+65.3 on Topeka South Side												7.8	41.3
4+67					5.6	43.5								
4+88.9							6.6	42.5						
5+29.6									7.9	41.2				
5+70.3											8.1	41.0		
4+87.2 =	4+92.3 on Topeka S Side												8.9	40.2

Intersection of S side of O ave with Topeka

Curb on O Ave

Center line of O Ave

N. curb on O Ave

N curb line of O Ave

Sta.	+	HI	−	Elev	N East		out from Center	Center		out from cen	S West	
					Rod	Elev		Rod	Elev		Rod	Elev
B.M.	2.02	48.08		46.01	Sand & Topeka spk tel 200' N of cen							
					~~37.2~~	~~39.8~~			(48.0)			
0 S.E. line of — St					10.8	37.2		8.0	40.0		5.5	42.5
+25					12.2	36.8		8.9	39.1		7.0	41.0
#	1.37	39.21	10.19	37.84	(39.2)				(48.0)		(48.0)	
+50					3.9	35.3		10.5	37.5		8.4	39.6
+57	Intersection of East line 32nd St										8.8	39.2
									(39.2)			
+75					4.2	35.0		2.8	36.4		1.0	38.2
1					5.8	33.4		4.4	34.8		1.9	37.3
+25					10.1	29.1		7.2	32.0	33.0/7.0 35.1/13.0	2.2	37.0
+50					14.0	25.2		10.4	28.8	20.1/70 34.5/15 ✓	2.7	36.5
#	4.87	32.32	11.76	27.45	(32.3)				(39.2)		(39.2)	
+75 ✓					12.6	19.7		13.3	25.9	26.8/97 31.3/12 ✓	4.0	35.2
#	0.39	20.96	11.75	20.57	(21.0)				(32.3)		(32.3)	
2					9.1	11.9	14.3/19 19.0/4	9.6	22.7		1.9	30.4
					(21.0)				(32.3)		(32.3)	
+25				11.9	11.9	9.1	8.0/18 16.0/4	13.5	18.8		10.9	21.4
									(21.0)			
2+50					13.8	7.2		4.7	16.3		7.9	13.1
+75					13.1	7.9	6.1/25	6.7	14.3	6.4/20	14.2	6.8
3					10.5	10.5		8.4	12.6	6.6/22	15.5	3.5
BM			1.04	19.92	B.M. Spk left to start from to x see over Hill							
3+25					0.9	20.1		9.5	11.5		15.9	5.1
+50							12.1/15	9.2	11.8		13.0	8.0
+75							10.9/6	9.3	11.7		9.6	11.4
4								9.0	12.0		9.5	11.5
#	1.47	13.16	9.27	21.69					(13.2)			
+25							10.7/7	1.0	12.2		1.7	11.3
+50							10.7/13	2.8	10.4		1.9	11.8
+75							11.2/8	2.8	10.4		3.0	10.2

Sta	+	HI	−	Elev	N East Rod	N East Elev		Centre Rod	Centre Elev		South west Rod	South west Elev
		13.16						(13.2)				
5					(8.9)			5.3	7.9		4.8	8.4
+25				11.1	11.1	−2.2	−1.5 / 9	8.2	5.0		4.8	8.4
+50	4.55	8.86	8.85	4.31				(8.9)				
+50					12.0	−3.1	−2.8 / 10	4.7	4.2	−0.5 / 80	10.9	−2.0
+75					11.2	−2.3	−3.2 / 10	5.0	3.9	+0.7 / 15 −0.9 / 24	11.2	−2.3
6					11.2	−2.3	−0.7 / 6	5.1	3.8	+3.7 / 17	10.7	−2.8
+30	Pluto Street		End	Bridge	12.5	−3.6		12.6	−3.7		10.6	−1.7
0					14.0	−5.1		14.3	−5.4		14.0	−5.1
BM			6.08	2.78	top of bolt in NW wing of Bridge							

East side bet Sta 3+50 and 5+0

BM	11.80	31.72		19.92				(31.8)				
3+50					2.9	28.8	26.0 / 27					
#	6.97	37.98	0.71	31.01				(38.0)				
+75				1.4	1.4	36.6	34.6 / 24					
4					0.2	37.8	33.6 / 8					
+25					0.4	37.6	35.0 / 3					
+50					6.6	31.4	35.4 / 12					
#	0.63	26.76	11.85	26.13				(26.8)				
+75					6.0	20.8	24.8 / 23					
#	0.90	16.65	11.01	15.75				(16.7)				
5					7.0	9.7	15.8 / 12					
#	1.08	9.23	8.52	8.15								
B.M.			6.44	2.79	Top of bolt in Bridge							

Cross Section of Sections

Sta	+	HO	−	Elev	North E R	North E E			Center R	Center E			South W R	South W E
0m	2.33	5.11		2.78					(5.2)					
0+50					9.2	− 4.1	−4.5/15	0.3/9	1.1	+ 4.0	+3.8/9	−2.9/15	7.2	− 2.1
1	✓				7.7	− 2.5	−4.1/15	+0.3/9	4.2	+ 1.0	+0.8/9	−1.9/15	8.0	− 2.8
+50					8.1	− 2.9	−4.2/15	−0.1/9	5.1	+ 0.1	0.0/9	−2.5/15	7.8	− 2.6
2					7.0	− 1.8	−3.8/15	+1.2/9	5.2	0.0	−0.2/9	−2.9/15	7.9	− 2.7
+50					7.1	− 1.9	−1.9/15	0.7/9	4.8	+ 0.4	−0.1/9	−2.8/15	8.1	− 2.9
3m	2.31	5.09		2.78	Instrument got knocked (5.1) at last HI									
3					8.7	− 3.6	−4.0/15	+0.4/9	4.9	+ 0.2	−0.2/9	−2.9/15	9.2	− 4.1
+50					9.5	− 4.4	−4.3/15	+0.2/9	5.5	− 0.4	−0.1/9	−4.9/15	10.4	− 5.3
4					8.2	− 3.1	+0.2/15	−4.0/9	5.1	0.0	−0.5/9	−4.1/15	9.6	− 4.5
+50					8.1	− 3.0	−3.6/15	+0.1/9	5.1	0.0	−0.4/9	−3.2/15	7.7	− 2.6
5					7.8	− 2.6	−4.2/15	+0.4/9	5.1	0.0	+0.1/9	−2.4/15	7.4	− 2.2
+50					7.7	− 2.6	−3.9/15	+0.1/9	4.7	+ 0.4	+0.1/9	−2.4/15	7.5	− 2.4
6					7.4	− 2.3	−2.2/15	+0.4/9	4.7	+ 0.4	+0.1/9	−2.5/15	7.5	− 2.4
+30	Rigel Sp				7.4	− 2.3	−1.9/15	+0.6/9	4.6	+ 0.5	+0.1/9	−2.5/15	7.5	− 2.4
0					7.4	− 2.3	−2.5/15	+0.6/9	4.6	+ 0.5	+0.2/9	−2.0/15	7.2	− 2.1
+50				✓	7.3	− 2.2	−2.9/15	+0.8/9	4.6	+ 0.5	+0.2/9	−2.3/15	7.1	− 2.0

Cross Section of S Ave

Sta	+	HI	−	Elev	North East R	North East E			Center R	Center E			South West R	South West E
		5.09							(5.1)					
1+00				✓	7.5	−2.4	−3.0/15	+0.1/9	4.8	+0.3	+0.1/9	−2.2/15	7.1	−2.0
+50				✓	7.7	−2.6	−2.5/15	+0.3/9	4.7	+0.4	+0.1/9	−2.0/15	7.1	−2.0
2					7.3	−2.2	−2.8/15	+0.3/9	4.7	+0.4	+0.1/9	−2.0/15	7.1	−2.0
+50					6.6	−1.5	−2.0/15	+0.3/9	4.7	+0.4	+0.3/9	−1.8/15	7.0	−1.9
#	2.96	5.39	2.66	2.73					(5.4)					
BM			6.71	−1.32	Spk	n end of culvert								
2+60			R.R. Grade		3.4	2.0								
+70			" "	"	3.7	1.7								
+77			" "	"	7.8	−2.4								
3					7.1	−1.7			2.6	2.8			7.8	−2.4
+16			R.R. Grade										3.9	1.5
3+30													6.6	−1.2
3+50					6.8	−1.4			5.5	−0.1			7.6	−2.2
4					6.8	−1.4			5.8	−0.4			7.4	−2.0
+50					6.7	−1.3			5.6	−0.2			7.5	−2.1
5					6.8	−1.4			5.8	−0.4			7.6	−2.2
+50					7.4	−2.0			5.9	−0.5			7.0	−1.6
6					7.0	−1.6			5.7	−0.3			5.7	−0.3
+30	Center line Sion St.				6.9	−1.5			5.7	−0.3			5.6	−0.2
0					6.6	−1.2			5.4	0.0			5.4	0.0
+50					6.2	−0.8			4.9	0.5			4.9	0.5
1					6.2	−0.8			4.4	1.0			4.4	1.0
+50					5.7	−0.3			4.5	0.9			6.0	−0.6
2					5.4	0.0			4.4	1.0			4.0	1.4

Cross Sections of S. Ave

Sta	+	HI	−	Elev	N. East R	N. East E	Center R	Center E	South West R	South West E
		5.39					(5.4)			
2+50					3.7	1.7	4.6	0.8	4.4	1.0
3					4.0	1.4	4.5	0.9	4.3	1.1
+50					4.1	1.3	4.8	0.6	4.5	0.9
4					4.9	0.5	4.6	0.8	4.8	0.6
#	9.76	14.04	1.11	4.28			(14.0)			
~~+50~~					8.5	5.5	11.9	2.1	1.3	1.0
5					5.8	8.2	8.1	5.9	8.5	5.5
+50					3.3	10.7	5.3	8.7	5.1	8.9
6					2.1	11.9	3.7	10.3	4.7	9.3
+30	center of Thor St.				1.8	12.2	3.4	10.6	4.1	9.9
0					2.1	11.9	2.8	11.2	3.4	10.6
+50					2.0	12.0	1.9	12.1	1.6	12.4
BM			2.22	11.82	SPK	3' SE cor of Thor St				
#	7.88	21.04	0.88	13.16			(21.0)			
1					5.9	15.1	7.0	14.0	7.0	14.0
+50					6.4	14.6	5.5	15.5	5.2	15.8
2					5.2	15.8	5.1	15.9	5.0	16.0
+50					5.1	15.9	5.0	16.0	4.9	16.1
3					5.4	15.6	4.7	16.3	4.1	16.9
+50					5.4	15.6	4.9	16.1	4.4	16.6
4					5.8	15.2	5.8	15.2	3.3	17.7
+50					6.5	14.5	6.4	14.6	5.5	15.5
5					6.8	14.2	7.2	13.8	7.0	14.0
+50					6.3	14.7	7.4	13.6	7.5	13.5
6					6.5	14.5	7.1	13.9	8.1	12.9
+30	center line Alma St.				6.0	15.0	7.5	13.5	7.7	13.3

Cross Section of I Ave

Sta	+	HI	−	Elev	North E R	North E E		center R	center E		South West R	South West E
		21.04						(21.0)				
0	3				6.2	14.8		7.6	13.4		7.9	13.1
#	5.68	18.79	7.93	13.11				(18.8)				
+50					4.7	14.1		5.4	13.4		5.7	13.1
1					4.5	14.3		5.2	13.6		5.8	13.0
+50					4.7	14.1		5.5	13.3		5.8	13.0
2					4.3	14.5		5.2	13.6		5.4	13.4
+50					3.3	15.5		5.0	13.8		4.3	14.5
3					2.9	15.9		4.3	14.7		6.0	12.8
+50					4.3	14.5		5.1	13.7		4.9	13.9
4					3.9	14.9		5.0	13.8		4.7	14.1
+50					3.9	14.9		4.3	14.5		4.7	14.1
5					3.4	15.4		4.3	14.5		4.5	14.3
+50					3.4	15.4		3.4	15.4		3.1	15.7
6					1.7	17.1		2.1	16.7		2.0	16.8
+30	Centerline Vesta St.				1.1	17.7		1.4	17.4		1.6	17.2
0					0.2	18.6		1.0	17.8		1.1	17.7
#	4.50	22.00	1.29	17.50	Bm	SKK 2' sw cor Vesta		(22.0)				
+50												
+50					2.8	19.2		3.9	18.1		3.8	18.2
1					2.4	19.6		3.2	18.8		3.3	18.7
+50					2.1	19.9		3.1	18.9		3.3	18.7
2					3.1	18.9		4.3	17.7		4.1	17.9
+50					5.4	16.6		6.0	16.0		6.1	15.9
3					8.5	13.5		7.9	14.1		7.1	14.9
+50					7.8	14.2		8.8	13.2		7.1	14.9
4					7.6	14.4		9.0	13.0		9.6	12.4

Cross Section of I Ave

Sta	+	HI	−	Elev	N. East R	N. East E	Center R	Center E	S. West R	S. West E
		22.00					(22.0)			
+50					8.0	14.0	8.9	13.1	9.1	12.9
5					7.5	14.5	9.2	13.8	9.7	12.3
+50					8.1	13.9	9.6	12.4	10.2	11.8
6					8.0	14.0	9.4	13.6	9.7	12.3
+30	center of Woden St				7.8	14.2	9.3	12.7	9.8	12.2
0					7.6	14.4	9.2	12.8	9.7	12.3
BM	3.36	15.51	9.85	12.15	Pkg Spike on Woden		(15.5)			
+50					0.8	14.7	2.4	13.1	3.3	12.2
1					3.2	12.3	3.3	12.2	2.6	12.9
+50					8.1	7.4	7.2	8.3	6.1	9.4
2					10.4	4.7	9.5	6.0	8.0	7.5
+50					11.2	4.3	10.2	4.3	6.0	9.5
3					10.9	4.6	11.7	3.8	9.2	6.3
#	2.89	8.36	10.04	5.47			(8.4)			
+50					5.0	3.4	5.5	2.9	4.7	3.7
4					5.4	3.0	5.9	2.5	5.9	2.5
+50					5.3	3.1	5.6	2.8	5.6	2.8
5					5.0	3.4	5.2	3.2	5.2	3.2
+50					4.3	4.1	5.0	3.4	5.1	3.3
6					3.5	4.9	4.1	4.3	4.3	4.1
+30	center of Yuma St				3.3	5.1	4.0	4.4	4.5	3.9
BM			5.56	4.80	Spk 2' NE cor Yuma St					
0					3.1	5.3	3.9	4.5	4.2	4.2
+50					3.3	5.1	3.6	4.8	4.1	4.3
1					3.5	4.9	3.4	5.0	3.9	4.5
+50					3.9	4.5	4.4	4.0	4.8	3.6

Cross Section of A Ave

Sta	+	HO	−	Elev	N. Bank R	N. Bank E		Center R	Center E		S. Bank R	S. Bank E
		8.36						8.4				
2					4.0	4.4		4.6	3.8		5.1	3.3
+50					3.9	4.5		4.8	3.6		5.7	2.7
3					4.3	4.1		4.3	4.1		5.4	3.0
+50					2.0	6.4		2.9	5.5		4.3	4.1
#	8.22	13.40	3.18	5.18				13.4				
4					3.3	10.1		5.3	8.1		6.8	6.6
+21.4											4.9	8.5
+50					0.4	13.0		1.6	11.8			
+71.8					0.3	13.1						

Sta	+	H I	−	Elev	Left Curb Rod	Left Curb Elev		Center Rod	Center Elev	Right Curb Rod	Right Curb Elev	
B.M.	5.93	50.55		44.62	B.M. 31st & Main			(50.6)				
B.M.			5.05	45.50						Dist / Elev.		
0	angle in Main St				7.3	43.3		6.6	44.0		5.3	45.3
1					8.7 / 8.7	41.9	40 / 40.3	7.9	42.7	24 / 44.0	4.9	45.7
2					11.7	38.9		9.0	41.6		7.2	43.4
3					12.1	38.5		11.5	39.6		10.2	40.4 / ~~39.4~~
#	1.15	40.40	11.30	39.25				(40.4)				
4					9.5	30.9		8.5	31.9	9.0 / 32.6 — 12 / 35.1	3.6	36.8
#	0.30	28.90	11.80	28.60	(28.9)			(28.9)			(40.4)	
+60					8.9	20.0	12.0 / 24.6	4.1	24.8	10.0 / 24.8 — 15.0 / 29.0	7.4	33.0
					(18.3)			(28.9)			(28.9)	
5					8.3	10.0	7.0 / 18.9	10.0	18.9	11.0 / 18.8 — 18.0 / 18.0	9.4	19.5
#	0.50	18.30	11.10	17.80				(18.3)				
+50				H	11.1 ~~11.10~~	+ 7.2	16 / 7.5 — 6.0 / 14.1	4.2	14.1	9.0 / 14.1 — 20.0 / 7.2	11.3	7.0
6					2.8	16.3	14.0 / 11.3	6.6	11.7	16 / 11.7	10.4	7.9
7	Bank on E vertical to level of center South of Sta 7				7.0 ~~7.0 H.B.~~	26.6 / 33.6.0	2.0 / 36.0	6.1	12.1		6.1	12.1
#	2.50	9.70	11.10	7.20				(9.7)				
+80					0.0	9.7	18.0 / 9.7	3.5	6.2		4.3	5.4
8					7.8	1.9		4.9	4.8		5.1	4.6
+25					11.0	− 1.3	18 / −1.0 — 17.0 / 3.8	5.3	4.4	18.3 / 33.0 — 12.0 / + 4.0	13.32	−3.5
9	N. End of Bridge } Bulkhead of Each end				13.5	− 3.8	8.0 / −4.0 — 7.0 / 5.0	4.5	5.2	13.0 / 4.3 — 18.5 / −4.2	14.0	− 4.3
+70	S End of Bridge } Bulkhead of Each end				12.8	− 3.1	12 / −3.0 — 8.0 / +4.6	5.1	+ 4.6	16 / +4.6 — 11.6 / −3.0	12.6	−2.9
B.M.			6.98	2.72	top of Bolt on Wing of bridge							

Sta	#	HO	—	Elev	Left curb Rod	Left curb Elev			center rod	center Elev			Right curb Rod	Right curb Elev
		9.70							(9.70)					
10				~~12.0~~	12.0	−2.3	12.0 / −2.3	10 / +2.5	6.6	3.1	7.0 / +2.6	16.0 / −4.7	14.4	−4.7
11				12.1	12.1	−2.4	16.0 / −2.4	9.6 / +0.7	9.0	0.7	7.0 / +0.7	12.0 / −4.2	14.9	−5.2
12				~~14.5~~	14.5	−4.8	12.0 / −4.8	9.0 / +0.9	8.8	0.9	9.0 / +0.9	14.0 / −5.0	12.7	−3.0
#	5.36	6.26	8.80	0.90					(6.3)					
13				~~10.3~~	10.3	−4.0	17.0 / −4.0	9.0 / +0.7	5.6	+0.7	9.0 / +0.7	17.6 / −4.1	10.4	−4.1
14	ditch about 4' wide and 1' deep				10.0	−3.7	13.0 / −4.2	9.6 / +1.1	6.3	0.0	9.0 / 0.0	15 / −3.2	8.7	−2.4
15				10.0	10.0	−3.7	12.0 / −4.0	9.0 / +1.1	5.2	+1.1	9.0 / +1.1	15 / −2.8	8.2	−1.9
16				10.1	10.1	−3.8	15 / −3.2	9.0 / +1.1	5.2	+1.1	9.0 / +1.1	14.0 / −2.8	8.8	−2.5
17				9.0	9.0	−2.7	13.0 / −2.4	9.0 / +0.9	5.4	+0.9	9.0 / +0.9	15 / −2.4	8.5	−2.2
18				9.3	9.3	−3.0 / ~~−2.6~~	13.0 / −2.0	9.0 / +0.9	5.4	+0.9	9.0 / +0.9	15 / −2.0	8.6	−2.3
#90	top of rail of rail road			8.5	8.5	−2.2	15 / −2.2	9.0 / +2.8	3.5	2.8	9.0 / +2.8	15 / −2.2	8.5	−2.2
BM#	6.20	4.76	7.70	=1.32 / =1.44										
19				2.3				2.3	(14.8)				2.3	
20				5.0				5.0					5.0	
21				5.2				5.2					5.2	
22				5.4	−1.6			5.4	− 1.6				5.4	−1.6
23				4.5	−0.3			4.5	− 0.3				4.5	−0.3
24				4.2				4.2					4.2	

Left: Elev of marsh − 2.0

Right: Elev of marsh − 2.0

Bottom of culvert on each side

grade at this point

Sta	Section Left	×	Section Right	×	End Area +	Cu yd —	Cu yd +	Cu yd —
0	12 / −0.3	0.0	12 / +0.6		3.6		152.2	
1	12.0 / +2.6	+3.0	12.0 / +4.5		78.6		152.2	
2	12.0 / +4.9	+6.3	12 / +7.2		148.2		420.0	
3	12.0 / +7.8	+8.1	12.0 / +8.7		196.2		637.8	
4	12.0 / +3.7	+5.2	9.0 / +5.9	12 / +8.4	127.8		600.0	
+60	12.0 / −1.7	+0.7	12.0 / +0.7		8.4	2.8	151.3	
5	25 / −8.7	12 / −8.7	7.0 / −3.4	−3.4	12.0 / −3.5	17.2 / −3.5	161.8	122.0
+50	31 / −12.6	12 / −9.3	6.0 / −6.0	−6.0	9.0 / −6.0	12.0 / −9.0	31.5 / −13.0	333.5	508.5
6	24 / −6.7	12 / −6.7		−6.3	12 / −6.3	21.4 / −6.3	222.9	515.2
~~+70~~								
7	12 / +22.5	2 / +22.5		−1.6	12 / −1.6	14.4 / −1.6	~~270.0~~	21.1	451.9
+50	12 / −0.8			−2.7	12 / −3.5	16.2 / −3.5	65.6	144.4
8	19.1 / −6.1	12 / −6.1		−4.5	12 / −4.5	18.7 / −4.5	154.3	40.7
+25	18.3 / −4.2	12 / −4.2		−2.9	12 / −3.9	28.8 / −11.2	178.7	154.2
9	25.5 / −9.0	8.0 / −9.0	7.0 / 0.0	0.0	12.0 / −0.7	16.7 / −7.2	25.8 / −9.2	160.0	470.0
									−1961.3	2406.9
									1500	
									3461.3	

Hill to be cut off on each side of St.
average cut depth 15' over area 20 × 100 =
2000 sq ft × 15' = 30000 approx no of yards Say 1500

across flat filling on right side of road way
average fill 4.0 width 7.0 Side slope 2-1
4 x 7 = 28 + 4 x 8 ÷ 2 = 44 sq ft
Total length from Bridge to RR 820' x 44 ÷ 27' =
1336 cu yards - to be filled

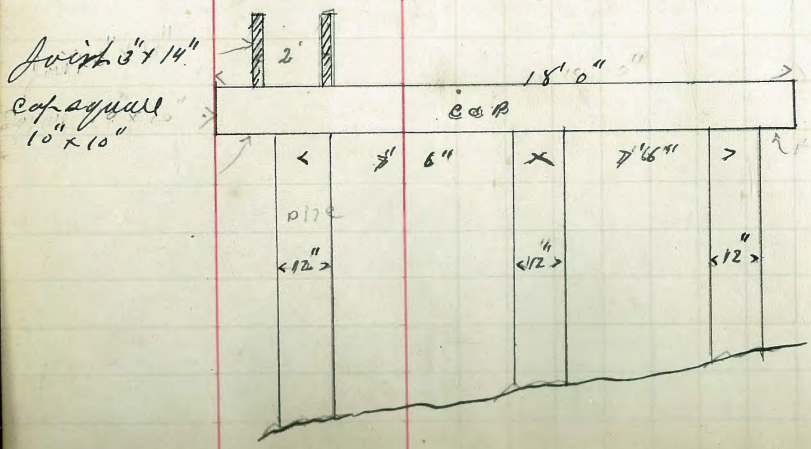
Summary

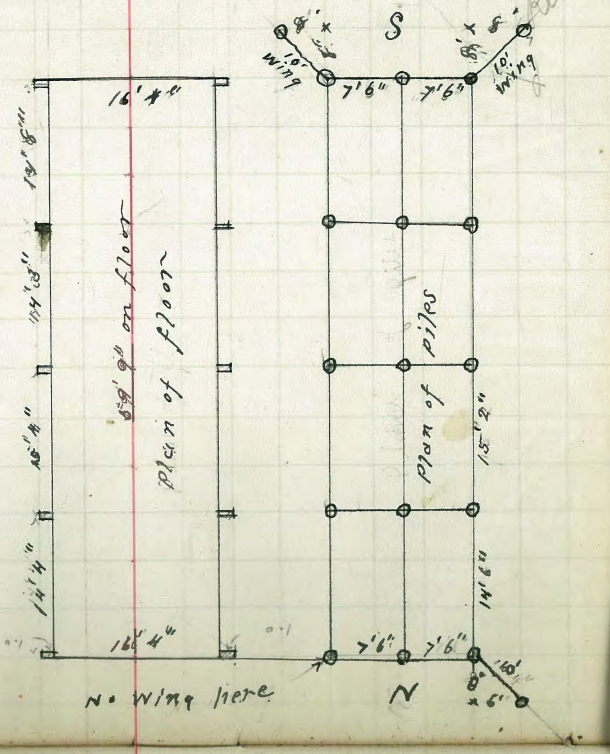
cut between Topeka ave and Bridge	1961.0	cu yds
" in hill near bridge	1500.0	"
Total cut	3461.0	"
Fill between Topeka ave and Bridge	2407.0	cu yds
" " Bridge and crossing RR	1336.0	"
Total fill	3743.0	"
Short on fill	282	cu yds

Plan of old Bridge at Pluto St

14' 4"
15' 4"
14' 3"
14' 8"
57' 19"
58' 7"

Present floor is of two thicknesses of 3" Plank. Cap 10"x10"x8'. Piles are about 12" in diameter

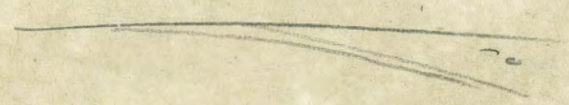




All of the wing piles and nine of the piles under bridge are fairly sound, Three have been repaired by boxing around them and filling box with concrete; and the remaining three are in bad shape.—

Hamlin.
April 17 1883

Sta	+	HI	−	Elev	N East		Dist out from center	Center		Dist out from center	S. West	
					Rod	Elev		Rod	Elev		Rod	Elev



4+65.3
2.19
4+87.3

90
5.09
49 2.5

TRAVERSE TABLE FOR TRANSIT BOOK,

From 1° to 90° for a distance of 100.

Degrees.	DEGREES.		¼ DEGREE.		½ DEGREE.		¾ DEGREE.		Degrees.
	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	
0			100.00	0.44	100.00	0.87	99.99	1.31	89
1	99.98	1.75	99.98	2.18	99.97	2.62	99.95	3.05	88
2	99.94	3.49	99.92	3.93	99.91	4.36	99.88	4.80	87
3	99.86	5.23	99.84	5.67	99.81	6.10	99.79	6.54	86
4	99.76	6.98	99.73	7.41	99.69	7.85	99.66	8.28	85
5	99.62	8.72	99.58	9.15	99.54	9.58	99.50	10.02	84
6	99.45	10.45	99.41	10.89	99.36	11.32	99.31	11.75	83
7	99.25	12.19	99.20	12.62	99.14	13.05	99.09	13.49	82
8	99.03	13.92	98.97	14.35	98.90	14.78	98.84	15.21	81
9	98.77	15.64	98.70	16.07	98.63	16.50	98.56	16.93	80
10	98.48	17.36	98.40	17.79	98.33	18.22	98.25	18.65	79
11	98.16	19.08	98.08	19.51	97.99	19.94	97.90	20.36	78
12	97.81	20.79	97.72	21.22	97.63	21.64	97.53	22.07	77
13	97.44	22.50	97.34	22.92	97.24	23.34	97.13	23.77	76
14	97.03	24.19	96.92	24.62	96.81	25.04	96.70	25.46	75
15	96.59	25.88	96.48	26.30	96.36	26.72	96.25	27.14	74
16	96.13	27.56	96.00	27.98	95.88	28.40	95.76	28.82	73
17	95.63	29.24	95.50	29.65	95.37	30.07	95.24	30.49	72
18	95.11	30.90	94.97	31.32	94.83	31.73	94.69	32.14	71
19	94.55	32.56	94.41	32.97	94.26	33.38	94.12	33.79	70
20	93.97	34.20	93.82	34.61	93.67	35.02	93.51	35.43	69
21	93.36	35.84	93.20	36.24	93.04	36.65	92.88	37.06	68
22	92.72	37.46	92.55	37.86	92.39	38.27	92.22	38.67	67
23	92.05	39.07	91.88	39.47	91.71	39.87	91.53	40.27	66
24	91.35	40.67	91.18	41.07	91.00	41.47	90.81	41.87	65
25	90.63	42.26	90.45	42.66	90.26	43.05	90.07	43.44	64
26	89.88	43.84	89.69	44.23	89.49	44.62	89.30	45.01	63
27	89.10	45.40	88.90	45.79	88.70	46.17	88.50	46.56	62
28	88.29	46.95	88.09	47.33	87.88	47.72	87.67	48.10	61
29	87.46	48.48	87.25	48.86	87.04	49.24	86.82	49.62	60
30	86.60	50.00	86.38	50.38	86.16	50.75	85.94	51.13	59
31	85.72	51.50	85.49	51.88	85.26	52.25	85.04	52.62	58
32	84.80	52.99	84.57	53.36	84.34	53.73	84.10	54.10	57
33	83.87	54.46	83.63	54.83	83.39	55.19	83.15	55.56	56
34	82.90	55.92	82.66	56.28	82.41	56.64	82.16	57.00	55
35	81.92	57.36	81.66	57.71	81.41	58.07	81.16	58.42	54
36	80.90	58.78	80.64	59.13	80.39	59.48	80.13	59.83	53
37	79.86	60.18	79.60	60.53	79.34	60.88	79.07	61.22	52
38	78.80	61.57	78.53	61.91	78.26	62.25	77.99	62.59	51
39	77.71	62.93	77.44	63.27	77.16	63.61	76.88	63.94	50
40	76.60	64.28	76.32	64.61	76.04	64.94	75.76	65.28	49
41	75.47	65.61	75.18	65.93	74.90	66.26	74.61	66.59	48
42	74.31	66.91	74.02	67.24	73.73	67.56	73.43	67.88	47
43	73.14	68.20	72.84	68.52	72.54	68.84	72.24	69.15	46
44	71.93	69.47	71.63	69.78	71.33	70.09	71.02	70.40	45
45	70.71	70.71							
Degrees.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Degrees.
	DEGREES.		¾ DEGREE.		½ DEGREE.		¼ DEGREE.		

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