1411

FIELD BOOK

774

TRAVERSE TABLE FOR TRANSIT BOOK.

From 0° to 90° for a distance of 100.

MICROFILMED
DEC 23 1964

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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SECTION

STA.	LEFT ~~ELEVA.~~	℄ GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	RIGHT ~~EXCAVATION~~ GRADES	~~EMBANKMENT~~ Defl'n. △	~~EXCAV.~~ CUBIC YDS.	EMBANK. CUBIC YDS.	REMARKS
394+00		410.25								
	Cut Slopes ½:1						2°17.77'			
+50		412.58					1°20.48'	4.65 c/o		
393+00		414.90					0°23.19'			
392+79.76 = B.C. Lt.		415.84					Lt.			

SECTION

STA.	LEFT ~~ELEVA.~~ GRADES	℄ GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS RIGHT ~~EXCAVATION~~ GRADES	AREAS ~~EMBANKMENT~~ Defln. Δ	CUBIC ~~YDS.~~ EXCAV.	CUBIC ~~YDS.~~ EMBANK.	REMARKS
+50		393.98					8°58.80'			
397+00		396.31					8°01.51'			
+50		398.63					7°04.22'			
396+00	Cut Slopes ½:1	400.96				Cut Slopes ½:1	6°06.93'	4.65 o/o		
+50		403.28					5°09.64'			
395+00		405.60					4°12.35'			
+50		407.93					3°15.06'			

SECTION

STA.	LEFT ELEVA. GRADE	℄ GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	~~AREAS~~ RIGHT EXCAVATION GRADE	EMBANKMENT Defln. Δ	CUBIC YDS. EXCAV.	CUBIC YDS. EMBANK.	REMARKS
399+00		387.01					11° 50.67'			
+84.68		387.72					11° 33.12'			
+59.68		388.88					11° 04.47'			
+50	Cut Slopes ½:1	389.33				Cut Slopes ½:1	10° 53.38'	4.65 o/o		
+34.68		390.05					10° 35.83'			
+09.68		391.21 End Full Super-Section					10° 07.18'			
398+00		391.66					9° 56.09'			

SECTION

STA.	LEFT ELEVA. GRADE	℄ GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS RIGHT EXCAVATION GRADE	AREAS EMBANKMENT Defl'n. Δ	CUBIC ~~YDS.~~ EXCAV.	CUBIC ~~YDS.~~ EMBANK.	REMARKS
401+00		377.70								
+59.68=E.V.C. on Super		379.58								
+34.68	Cut Slopes 1/2:1	380.75								
400+09.68=Center V.C.		381.91				Cut slopes 1/2:1				
+84.68		383.08						4.65 ac/o		
+59.68=P.V.C. on Super		384.24								
+09.68=E.C.=E.V.C. on Super		386.56				12° 01.68'				

SECTION

STA.	LEFT ELEVA. GRADE	℄ GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS RIGHT EXCAVATION GRADE	AREAS EMBANKMENT	CUBIC YDS. EXCAV.	CUBIC YDS. EMBANK.	REMARKS
+50		360.37								
404 +00		363.08								
+50		365.69								
403 +00	Cut slopes 1½:1	368.23				Cut slopes 1½:1				
+50		370.68						400' V.C.		
402 +00		373.65						P.V.C.		
+50		375.38						4.65%		

SECTION

STA.	LEFT ELEVA. GRADE	℄ GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS RIGHT EXCAVATION GRADE	AREAS EMBANKMENT	CUBIC ~~YDS~~ EXCAV.	CUBIC ~~YDS~~ EMBANK.	REMARKS
+25										
408+00										
+50										
407+00	Cut slopes 1/4:1									
+50						cut slopes 1/4:1		6.00 %		
406+00		351.75								
+75		353.24						=E.V.C		
+50		354.71								
+25		356.16								
405+00	Cut slope 1/2:1	357.58				Cut slopes 1/2:1		400' V.C.		

SECTION

STA.	LEFT ELEVA. GRADE	℄ GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS RIGHT EXCAVATION GRADE	AREAS EMBANKMENT Defln. Δ	CUBIC YDS. EXCAV.	CUBIC YDS. EMBANK.	REMARKS
+28.80 = P.V.C. "Super Section										
410 + 03.80										
+78.80 = Center V.C.										
+53.80	cut slopes ½:1						cut slopes ½:1	6.00 o/o		
+28.80 = P.V.C. Super Section										
409 + 00										
+75										
+50										

SECTION

STA.	LEFT ELEVA. GRADE	℄ GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	~~AREAS~~ ~~EXCAVATION~~ RIGHT GRADE	~~AREAS~~ ~~EMBANKMENT~~ Defln. Δ	CUBIC YDS. EXCAV.	CUBIC YDS. ~~EMBANK.~~	REMARKS
+50										
412+00										
+78.80 = E.V.C. and Super = Full Super Section										
+53.80	Cut Slope 1½:1									
+28.80							Cut Slopes 1½:1	6.00 %		
411+03.80										
410+78.80 = A.V.C. Super Section							Δ = 25°41'30" B.C. R.4 R = 2000'			

SECTION

STA.	LEFT ELEVA. GRADE	℄ GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS RIGHT EXCAVATION GRADE	AREAS EMBANKMENT Defln ∆	CUBIC ~~YDS.~~ EXCAV.	CUBIC ~~YDS.~~ EMBANK.	REMARKS
415+75										
415+25							cut slopes ½:1			
414+75										
+50	cut slopes ½:1							6.00%		
414+00										
+50							cut slopes ½:1			
413+00										

SECTION

STA.	ELEVA. (LEFT)	GRADE (℄)	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS EXCAVATION (RIGHT)	AREAS EMBANKMENT	CUBIC ~~YDS.~~ EXCAV.	CUBIC ~~YDS.~~ EMBANK.	REMARKS
419+00.6						GRADE	Defl'n ∠			
+75.61 =	2½ Super 2 End Full Super									
418+25										
417+75										
417+25										
416+75										
416+25										

Cut Slopes ½:1

Cut Slopes ½:1

6.00 %

Right cut slopes ½:1

SECTION

STA.	LEFT ELEVA. GRADE	℄ GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS RIGHT ~~EXCAVATION~~ GRADES	AREAS ~~EMBANKMENT~~ Defl'n. Δ	CUBIC ~~YDS.~~ ~~EXCAV.~~	CUBIC ~~YDS.~~ ~~EMBANK.~~	REMARKS
+62.81										
+37.81										
+25.										
420+12.81 = P.V.C. Super										
+87.81	P.V.C.									
+75.61 = P.V.C. = E.C.										
+50.61										
419+25.61										

Cut Slopes ½:1

Cut Slopes ½:1

Cut Slopes ½:1

6.00 %

SECTION

STA.	LEFT ELEVA. GRADE	℄ GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS RIGHT EXCAVATION GRADE	AREAS EMBANKMENT Defln. Δ	CUBIC ~~YDS.~~ EXCAV.	CUBIC ~~YDS.~~ EMBANK.	REMARKS
+25	Cut slopes 1½:1									
422+00 = P.C = P.V.C.										
+87.81 = E.V.C										
+62.81										
+37.81							Cut slopes 1½:1	6.00 %		
421+12.81										
420+87.81 = P.R.V.C on Super Section										

SECTION

STA.	LEFT ELEVA. GRADE	℄ GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS RIGHT EXCAVATION GRADE	AREAS EMBANKMENT Defln. ∆	CUBIC ~~YDS.~~ EXCAV.	CUBIC ~~YDS.~~ EMBANK.	REMARKS
425+00										
+50										
424+00										
+50										
423+00=EVC										
+75										
422+50										

Cut slopes ¼:1

Cut slopes ¼:1

6.00%

SECTION

STA.	LEFT ELEVA. GRADE	℄ GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS RIGHT EXCAVATION GRADE	AREAS EMBANKMENT Depth. Δ	CUBIC YDS. EXCAV.	CUBIC YDS. EMBANK.	REMARKS
+50										
428+00										
+50										
427+00	Cut Slopes 1/2:1								600 c/o	
+50										
426+00										
+50										

SECTION

STA.	LEFT ELEVA. GRADE	℄ GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS RIGHT EXCAVATION GRADES	AREAS EMBANKMENT Defln. Δ	CUBIC YDS. EXCAV.	CUBIC YDS. EMBANK.	REMARKS
432+00										
+50										
431+00										
+50	Cut Slope 1½:1									
430+00								6.00 %		
+50										
429+00										

SECTION

STA.	LEFT ELEVA. GRADE	℄ GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS RIGHT EXCAVATION GRADE	AREAS EMBANKMENT Defl'n. Δ	CUBIC YDS. EXCAV.	CUBIC YDS. EMBANK.	REMARKS
+77.60										
	Cut slopes 1½:1									
+52.60										
434+27.60										
+75										
+50										
433+00										
	Cut slopes 1½:1									
432+50										

1½:1

6.00%

Cut slopes 1½:1

SECTION

STA.	LEFT ELEVA. GRADE	℄ GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS RIGHT EXCAVATION GRADE	AREAS EMBANKMENT Defl'n. Δ	CUBIC ~~YDS.~~ EXCAV.	CUBIC ~~YDS.~~ EMBANK.	REMARKS
+77.6 = E.V.C										
+52.6										
+27.6										
436+02.6	Cut slopes ¼:1									
+77.60 = P.V.C										
+27.60 = E.C. = E.V.C										
435+02.60										

Cut slopes ¼:1

6.00 %

Cut slopes ¼:1

SECTION

STA.	LEFT ELEVA. GRADE	℄ GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS RIGHT EXCAVATION GRADE	AREAS EMBANKMENT Defl'n. ∆	CUBIC YDS. ~~EXCAV.~~	CUBIC YDS. EMBANK.	REMARKS
440 +00										
+50										
439+00										
+50										
438+00								6.00 %		
+50										
437+00										

SECTION

STA.	LEFT ELEVA. GRADE	℄ GRADE	CUT OR FILL LEFT	C	RIGHT	AREAS RIGHT EXCAVATION GRADE	~~EMBANKMENT~~ Depth.	CUBIC ~~YDS.~~ EXCAV.	~~EMBANK.~~	REMARKS
+95.36										
442+70.36=P.V.C.										
+50										
442+00								6.00 %		
+50										
441+00										
+50										

SECTION

STA.	LEFT ELEVA.	℄ GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS RIGHT EXCAVATION	AREAS EMBANKMENT Defln. △	CUBIC ~~YDS.~~ EXCAV.	CUBIC ~~YDS.~~ EMBANK.	REMARKS
+95.36										
+70.36										
+45.36										
444+20.36=B.C.=P.V.C								6.00%		
+70.36=E.V.C										
+45.36										
443+20.36										

SECTION

STA.	ELEVA. (LEFT GRADE)	GRADE (℄)	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS EXCAVATION (RIGHT GRADE)	AREAS EMBANKMENT (Defl'n. A)	CUBIC ~~YDS.~~ EXCAV.	CUBIC ~~YDS.~~ EMBANK.	REMARKS
+59.97										
+34.97										
+25										
+09.97=P.V.C								6.00%		
446+00										
+50										
445+20.36=F.V.C=Full Super Section										

SECTION

STA.	LEFT ELEVA.	℄ GRADE	CUT OR FILL LEFT	C	RIGHT	AREAS RIGHT EXCAVATION GRADE	EMBANKMENT Defln	CUBIC ~~YDS.~~ EXCAV.	EMBANK.	REMARKS
+34.97										
448+09.97										
+84.97										
+59.97 = P.V.C								200' V.C.		
447+09.97 = E.C. = E.V.C. on Super										
447+00 =										
+84.97										
446+75								0.00%		

SECTION

STA.	LEFT ELEVA. GRADE	℄ GRADE	CUT OR FILL LEFT	C	RIGHT	AREAS EXCAVATION RIGHT GRADE	EMBANKMENT Deflin.	CUBIC YDS. EXCAV.	EMBANK.	REMARKS
+50										
451 +00										
+50										
450 +00										
+50										
449 +00										
448+59.97=E.V.C.								200' V.C.		

SECTION

STA.	LEFT ELEVA.	℄ GRADE	CUT OR FILL									AREAS					CUBIC YDS.		REMARKS
			LEFT			C			RIGHT			RIGHT EXCAVATION GRADE			EMBANKMENT Defline		EXCAV.	EMBANK.	

SECTION

STA.	LEFT ELEVA. GRADE	℄ GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS RIGHT EXCAVATION GRADE	AREAS EMBANKMENT Defl'n. ∆	CUBIC YDS. ~~EXCAV.~~	CUBIC YDS. ~~EMBANK.~~	REMARKS

SECTION

STA.	LEFT ELEVA. GRADE	℄ GRADE	CUT OR FILL LEFT	CUT OR FILL C	CUT OR FILL RIGHT	AREAS RIGHT EXCAVATION GRADE	AREAS Defln. Δ EMBANKMENT	CUBIC YDS. EXCAV.	CUBIC YDS. EMBANK.	REMARKS

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL									AREAS					CUBIC YDS.		REMARKS
			LEFT			C			RIGHT			EXCAVATION			EMBANKMENT		EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL									AREAS				CUBIC YDS.		REMARKS
			LEFT			C			RIGHT			EXCAVATION			EMBANKMENT		EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL									AREAS				CUBIC YDS.		REMARKS
			LEFT			C		RIGHT				EXCAVATION			EMBANKMENT		EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL									AREAS						CUBIC YDS.		REMARKS
			LEFT			C			RIGHT			EXCAVATION			EMBANKMENT			EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL									AREAS					CUBIC YDS.		REMARKS
			LEFT			C			RIGHT			EXCAVATION			EMBANKMENT		EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL									AREAS				CUBIC YDS.		REMARKS
			LEFT			C			RIGHT			EXCAVATION			EMBANKMENT		EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL									AREAS						CUBIC YDS.		REMARKS
			LEFT			C			RIGHT			EXCAVATION			EMBANKMENT			EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL										AREAS				CUBIC YDS.		REMARKS
			LEFT				C				RIGHT		EXCAVATION			EMBANKMENT		EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL									AREAS				CUBIC YDS.		REMARKS
			LEFT			C			RIGHT			EXCAVATION			EMBANKMENT		EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL									AREAS					CUBIC YDS.		REMARKS
			LEFT			C			RIGHT			EXCAVATION			EMBANKMENT		EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL									AREAS					CUBIC YDS.		REMARKS
			LEFT			C			RIGHT			EXCAVATION			EMBANKMENT		EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL									AREAS				CUBIC YDS.		REMARKS
			LEFT			C		RIGHT				EXCAVATION			EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS				CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION			EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL									AREAS				CUBIC YDS.		REMARKS
			LEFT			C		RIGHT				EXCAVATION			EMBANKMENT		EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL									AREAS					CUBIC YDS.		REMARKS
			LEFT			C			RIGHT			EXCAVATION			EMBANKMENT		EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL							AREAS				CUBIC YDS.		REMARKS
			LEFT			C		RIGHT		EXCAVATION			EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL									AREAS				CUBIC YDS.		REMARKS
			LEFT			C		RIGHT				EXCAVATION			EMBANKMENT		EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL												AREAS						CUBIC YDS.		REMARKS
			LEFT				C				RIGHT				EXCAVATION				EMBANKMENT		EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL									AREAS				CUBIC YDS.		REMARKS
			LEFT			C			RIGHT			EXCAVATION			EMBANKMENT		EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL									AREAS				CUBIC YDS.		REMARKS
			LEFT			C			RIGHT			EXCAVATION			EMBANKMENT		EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL									AREAS					CUBIC YDS.		REMARKS
			LEFT			C			RIGHT			EXCAVATION			EMBANKMENT		EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL									AREAS				CUBIC YDS.		REMARKS
			LEFT			C			RIGHT			EXCAVATION			EMBANKMENT		EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL		
			LEFT	C	RIGHT

AREAS		CUBIC YDS.		REMARKS
EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL		
			LEFT	C	RIGHT

AREAS		CUBIC YDS.		REMARKS
EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL		
			LEFT	C	RIGHT

AREAS		CUBIC YDS.		REMARKS
EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL									AREAS				CUBIC YDS.		REMARKS
			LEFT			C			RIGHT			EXCAVATION			EMBANKMENT		EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL		
			LEFT	C	RIGHT

AREAS		CUBIC YDS.		REMARKS
EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS				CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION			EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL									AREAS				CUBIC YDS.		REMARKS
			LEFT			C			RIGHT			EXCAVATION			EMBANKMENT		EXCAV.	EMBANK.	

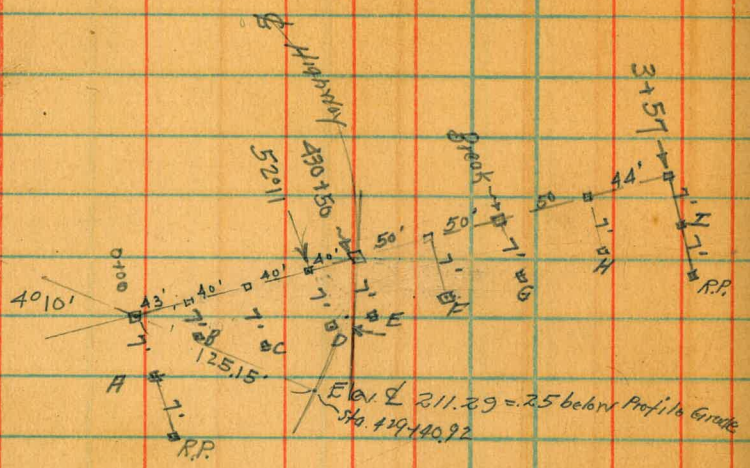
SECTION

STA.	ELEVA.	GRADE	CUT OR FILL									AREAS				CUBIC YDS.		REMARKS
			LEFT			C		RIGHT				EXCAVATION			EMBANKMENT	EXCAV.	EMBANK.	

SECTION

Walker
Bliss
Drebert

STATION 430+50
Az 52°11'
357'-R.C.P-30"



STA.	ELEVA. +	GRADE π	CUT OR FILL LEFT −	℄ Slope Elev.	RIGHT Flow Line Grades	AREAS EXCAVATION	EMBANKMENT	CUBIC YDS. EXCAV.	EMBANK.	REMARKS
A=0+00=Beginning Pipe		153.00	3.43	149.57	146.98	Cuts Flow Line +2.59	122.2 / 30.8 / 31.0			152.84=BM #5
B=+43			7.16	145.84	142.93	+2.91	125.2 / 27.8 / 260.0			0.16+
C=+83 (T.P.)			10.67	142.33	139.16	+3.17	127.7 / 24.3 / 210.0			153.00=π
D=1+23		142.12	3.38	138.74	135.39	+3.35	132.5 / 20.5 / 165			12.87−
E=+63=℄ Highway			8.18	133.94	131.62	+2.32	133.6 / 19.4 / 160			140.13=T.P.
F=2+13		130.92	2.45	128.47	126.91	+1.56	138.6 / 14.4 / 120			1.39+
G=+63=BL			5.92	125.00	122.20	+2.80	142.5 / 10.5 / 80.0	115.6 / 37.4 / 380.0		142.12=π
H=3+13			9.21	121.71	118.83	+2.88	145.5 / 7.5 / 40.0	117.2 / 35.8 / 360.0		12.95−
I=+57=End Pipe			13.17	117.15	115.87	+1.28	148.4 / 4.6 / 0.0	119.6 / 33.4 / 330.0		129.17=T.P.
							153.00			1.75+
										130.92=π

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL												AREAS				CUBIC YDS.		REMARKS
			LEFT				C				RIGHT				EXCAVATION			EMBANKMENT		EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL									AREAS				CUBIC YDS.		REMARKS
			LEFT			C		RIGHT				EXCAVATION			EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	ELEVA.	GRADE	CUT OR FILL			AREAS		CUBIC YDS.		REMARKS
			LEFT	C	RIGHT	EXCAVATION	EMBANKMENT	EXCAV.	EMBANK.	

SECTION

STA.	~~ELEVA.~~ Left	GRADE ℄	CUT OR FILL									AREAS				CUBIC YDS.		REMARKS 29
			LEFT			C		RIGHT				EXCAVATION Right.			EMBANKMENT		EXCAV.	EMBANK.	

444+20 36
1 5 0
44217 0.36

Min	8°		9°		10°		11°	
	Hor Dist.	Diff. Elev	Hor Dist	Diff. Elev	Hor Dist.	Diff Elev	Hor Dist	Diff Elev.
0′	98.06	13.78	97.55	15.45	96.98	17.10	96.36	18.73
2	98.05	13.84	97.53	15.51	96.96	17.16	96.34	18.78
4	98.03	13.89	97.52	15.56	96.94	17.21	96.32	18.84
6	98.01	13.95	97.50	15.62	96.92	17.26	96.29	18.89
8	98.00	14.01	97.48	15.67	96.90	17.32	96.27	18.95
10	97.98	14.06	97.46	15.73	96.88	17.37	96.25	19.00
12	97.97	14.12	97.44	15.78	96.86	17.43	96.23	19.05
14	97.95	14.17	97.43	15.84	96.84	17.48	96.21	19.11
16	97.93	14.23	97.41	15.89	96.82	17.54	96.18	19.16
18	97.92	14.28	97.39	15.95	96.80	17.59	96.16	19.21
20	97.90	14.34	97.37	16.00	96.78	17.65	96.14	19.27
22	97.88	14.40	97.35	16.06	96.76	17.70	96.12	19.32
24	97.87	14.45	97.33	16.11	96.74	17.76	98.09	19.38
26	97.85	14.51	97.31	16.17	96.72	17.81	96.07	19.43
28	97.83	14.56	97.29	16.22	96.70	17.86	96.05	19.48
30	97.82	14.62	97.28	16.28	96.68	17.92	96.03	19.54
32	97.80	14.67	97.26	16.33	96.66	17.97	96.00	19.59
34	97.78	14.73	97.24	16.39	96.64	18.03	95.98	19.64
36	97.76	14.79	97.22	16.44	96.62	18.08	95.96	19.70
38	97.75	14.84	97.20	16.50	96.60	18.14	95.93	19.75
40	97.73	14.90	97.19	16.55	96.57	18.19	95.91	19.80
42	97.71	14.85	97.16	16.61	96.55	18.24	95.89	19.86
44	97.69	15.01	97.14	16.66	96.53	18.30	95.86	19.91
46	97.68	15.06	97.12	16.72	96.51	18.35	95.84	19.96
48	97.66	15.12	97.10	16.77	96.49	18.41	95.82	20.02
50	97.64	15.17	97.08	16.83	96.47	18.46	95.79	20.07
52	97.62	15.23	97.06	16.88	96.45	18.51	95.77	20.12
54	97.61	15.28	97.04	16.94	96.42	18.57	95.75	20.18
56	97.59	15.34	97.02	16.99	96.40	18.62	95.72	20.23
58	97.57	15.40	97.00	17.05	96.38	18.68	95.70	20.28
60	97.55	15.45	96.98	17.10	96.36	18.73	95.68	20.34
c= .75	74	.11	74	12	74	14	.73	15
c=1.15	1.14	.17	1.13	.19	1.13	21	1.13	23
c=1.90	1.88	.28	1.87	.31	1.87	35	1.86	.38

Min.	12°		13°		14°		15°	
	Hor. Dist	Diff. Elev	Hor Dist.	Diff. Elev	Hor Dist	Diff Elev	Hor. Dist	Diff. Elev.
0′	95.68	20.34	94.94	21.92	94.15	23.47	93.30	25.00
2	95.65	20.39	94.91	21.97	94.12	23.52	93.27	25.05
4	95.63	20.44	94.89	22.02	94.09	23.58	93.24	25.10
6	95.61	20.50	94.86	22.08	94.07	23.63	93.21	25.15
8	95.58	20.55	94.84	22.13	94.04	23.68	93.18	25.20
10	95.56	20.60	94.81	22.18	94.01	23.73	93.16	25.25
12	95.53	20.66	94.79	22.23	93.98	23.78	93.13	25.30
14	95.51	20.71	94.76	22.28	93.95	23.83	93.10	25.35
16	95.49	20.76	94.73	22.34	93.93	23.88	93.07	25.40
18	95.46	20.81	94.71	22.39	93.90	23.93	93.04	25.45
20	95.44	20.87	94.68	22.44	93.87	23.99	93.01	25.50
22	95.41	20.92	94.66	22.49	93.84	24.04	92.98	25.55
24	95.39	20.97	94.63	22.54	93.81	24.09	92.95	25.60
26	95.36	21.03	94.60	22.60	93.79	24.14	92.92	25.65
28	95.34	21.08	94.58	22.65	93.76	24.19	92.89	25.70
30	95.32	21.13	94.55	22.70	93.73	24.24	92.86	25.75
32	95.29	21.18	94.52	22.75	93.70	24.29	92.83	25.80
34	95.27	21.24	94.50	22.80	93.67	24.34	92.80	25.85
36	95.24	21.29	94.47	22.85	93.65	24.39	92.77	25.90
38	95.22	21.34	94.44	22.91	93.62	24.44	92.74	25.95
40	95.19	21.39	94.42	22.96	93.59	24.49	92.71	26.00
42	95.17	21.45	94.39	23.01	93.56	24.55	92.68	26.05
44	95.14	21.50	94.36	23.06	93.53	24.60	92.65	26.10
46	95.12	21.55	94.34	23.11	93.50	24.65	92.62	26.15
48	95.09	21.60	94.31	23.16	93.47	24.70	92.59	26.20
50	95.07	21.66	94.28	23.22	93.45	24.75	92.56	26.25
52	95.04	21.71	94.26	23.27	93.42	24.80	92.53	26.30
54	95.02	21.76	94.23	23.32	93.39	24.85	92.49	26.35
56	94.99	21.81	94.20	23.37	93.36	24.90	92.46	26.40
58	94.97	21.87	94.17	23.42	93.33	24.95	92.43	26.45
60	94.94	21.92	94.15	23.47	93.30	25.00	92.40	26.50
c= .75	73	16	.73	17	.73	19	.72	20
c=1.15	1.12	.25	1.12	27	1.11	29	1.11	.31
1.90	1.85	.41	1.85	44	1.84	48	1.83	.51

Min	16°		17°		18°		19°	
	Hor. Dist.	Diff Elev	Hor. Dist.	Diff. Elev.	Hor. Dist.	Diff. Elev.	Hor. Dist.	Diff. Elev.
0′	92.40	26.50	91.45	27.96	90.45	29.39	89.40	30.78
2	92.37	26.55	91.42	28.01	90.42	29.44	89.36	30.83
4	92.34	26.59	91.39	28.06	90.38	29.48	89.33	30.87
6	92.31	26.64	91.35	28.10	90.35	29.53	89.29	30.92
8	92.28	26.69	91.32	28.15	90.31	29.58	89.26	30.97
10	92.25	26.74	91.29	28.20	90.28	29.62	89.22	31.01
12	92.22	26.79	91.26	28.25	90.24	29.67	89.18	31.06
14	92.19	26.84	91.22	28.30	90.21	29.72	89.15	31.10
16	92.15	26.89	91.19	28.34	90.18	29.76	89.11	31.15
18	92.12	26.94	91.16	28.39	90.14	29.81	89.08	31.19
20	92.09	26.99	91.12	28.44	90.11	29.86	89.04	31.24
22	92.06	27.04	91.09	28.49	90.07	29.90	89.00	31.28
24	92.03	27.09	91.06	28.54	90.04	29.95	88.96	31.33
26	92.00	27.13	91.02	28.58	90.00	30.00	88.93	31.38
28	91.97	27.18	90.99	28.63	89.97	30.04	88.89	31.42
30	91.93	27.23	90.96	28.68	89.93	30.09	88.86	31.47
32	91.90	27.28	90.92	28.73	89.90	30.14	88.82	31.51
34	91.87	27.33	90.89	28.77	89.86	30.19	88.78	31.56
36	91.84	27.38	90.86	28.82	89.83	30.23	88.75	31.60
38	91.81	27.43	90.82	28.87	89.79	30.28	88.71	31.65
40	91.77	27.48	90.79	28.92	89.76	30.32	88.67	31.69
42	91.74	27.52	90.76	28.96	89.72	30.37	88.64	31.74
44	91.71	27.57	90.72	29.01	89.69	30.41	88.60	31.78
46	91.68	27.62	90.69	29.06	89.65	30.46	88.56	31.83
48	91.65	27.67	90.66	29.11	89.61	30.51	88.53	31.87
50	91.61	27.72	90.62	29.15	89.58	30.55	88.49	31.92
52	91.58	27.77	90.59	29.20	89.54	30.60	88.45	31.96
54	91.55	27.81	90.55	29.25	89.51	30.65	88.41	32.01
56	91.52	27.86	90.52	29.30	89.47	30.69	88.38	32.05
58	91.48	27.91	90.48	29.34	89.44	30.74	88.34	32.09
60	91.45	27.96	90.45	29.39	89.40	30.78	88.30	32.14
c= .75	.72	.21	72	.23	.71	.24	.71	.25
c=1.15	1.10	33	1.10	35	1.09	.37	1.08	.38
c=1.90	1.82	.54	1.81	57	1.80	60	1.79	.63

Min.	20°		21°		22°		23°	
	Hor. Dist.	Diff. Elev.	Hor. Dist.	Diff. Elev.	Hor. Dis.	Diff. Elev.	Hor. Dist.	Diff. Elev
0′	88.30	32.14	87.16	33.46	85.97	34.73	84.73	35.97
2	88.26	32.18	87.12	33.50	85.93	34.77	84.69	36.01
4	88.23	32.23	87.08	33.54	85.89	34.82	84.65	36.05
6	88.19	32.27	87.04	33.59	85.85	34.86	84.61	36.09
8	88.15	32.32	87.00	33.63	85.80	34.90	84.57	36.13
10	88.11	32.36	86.96	33.67	85.76	34.94	84.52	36.17
12	88.08	32.41	86.92	33.72	85.72	34.98	84.48	36.21
14	88.04	32.45	86.88	33.76	85.68	35.02	84.44	36.25
16	88.00	32.49	86.84	33.80	85.64	35.07	84.40	36.29
18	87.96	32.54	86.80	33.84	85.60	35.11	84.35	36.33
20	87.93	32.58	86.77	33.89	85.56	35.15	84.31	36.37
22	87.89	32.63	86.73	33.93	85.52	35.19	84.27	36.41
24	87.85	32.67	86.69	33.97	85.48	35.23	84.23	36.45
26	87.81	32.72	86.65	34.01	85.44	35.27	84.18	36.49
28	87.77	32.76	86.61	34.06	85.40	35.31	84.14	36.53
30	87.74	32.80	86.57	34.10	85.36	35.36	84.10	36.57
32	87.70	32.85	86.53	34.14	85.31	35.40	84.06	36.61
34	87.66	32.89	86.49	34.18	85.27	35.44	84.01	36.65
36	87.62	32.93	86.45	34.23	85.23	35.48	83.97	36.69
38	87.58	32.98	86.41	34.27	85.19	35.52	83.93	36.73
40	87.54	33.02	86.37	34.31	85.15	35.56	83.89	36.77
42	87.51	33.07	86.33	34.35	85.11	35.60	83.84	36.80
44	87.47	33.11	86.29	34.40	85.07	35.64	83.80	36.84
46	87.43	33.15	86.25	34.44	85.02	35.68	83.76	36.88
48	87.39	33.20	86.21	34.48	84.98	35.72	83.72	36.92
50	87.35	33.24	86.17	34.52	84.94	35.76	83.67	36.96
52	87.31	33.28	86.13	34.57	84.90	35.80	83.63	37.00
54	87.27	33.33	86.09	34.61	84.86	35.85	63.59	37.04
56	87.24	33.37	86.05	34.65	84.82	35.89	83.54	37.08
58	87.20	33.41	86.01	34.69	84.77	35.93	83.50	37.12
60	87.16	33.46	85.97	34.73	84.73	35.97	83.46	37.16
c= .75	.70	.26	.70	.27	.69	.29	.69	.30
c=1.15	1.08	.40	1.07	.42	1.06	.44	1.05	.46
c=1.90	1.78	.66	1.77	70	1.76	.73	1.74	.76

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

MINUTES.	LKS.	MINUTES.	LKS.	MINUTES.	LKS.
1	$2\frac{1}{3}$	21	49	41	$95\frac{2}{3}$
2	$4\frac{2}{3}$	22	$51\frac{1}{3}$	42	98
3	7	23	$53\frac{2}{3}$	43	$100\frac{1}{3}$
4	$9\frac{1}{3}$	24	56	44	$102\frac{2}{3}$
5	$11\frac{2}{3}$	25	$58\frac{1}{3}$	45	105
6	14	26	$60\frac{2}{3}$	46	$107\frac{1}{3}$
7	$16\frac{1}{3}$	27	63	47	$109\frac{2}{3}$
8	$18\frac{2}{3}$	28	$65\frac{1}{3}$	48	112
9	21	29	$67\frac{2}{3}$	49	$114\frac{1}{3}$
10	$23\frac{1}{3}$	30	70	50	$116\frac{2}{3}$
11	$25\frac{2}{3}$	31	$72\frac{1}{3}$	51	119
12	28	32	$74\frac{2}{3}$	52	$121\frac{1}{3}$
13	$30\frac{1}{3}$	33	77	53	$123\frac{2}{3}$
14	$32\frac{2}{3}$	34	$79\frac{1}{3}$	54	126
15	35	35	$81\frac{2}{3}$	55	$128\frac{1}{3}$
16	$37\frac{1}{3}$	36	84	56	$130\frac{1}{3}$
17	$39\frac{2}{3}$	37	$86\frac{1}{3}$	57	133
18	42	38	$88\frac{2}{3}$	58	$135\frac{1}{3}$
19	$44\frac{1}{3}$	39	91	59	$137\frac{2}{3}$
20	$46\frac{2}{3}$	40	$93\frac{1}{3}$	60	140

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

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