Layout Data

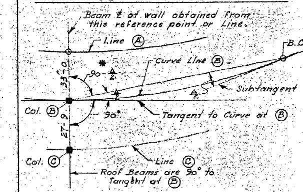
Instrument Setting	Location	Col. No.	Station (Along Line B, ℄ of Road)	Elevation* (B)	Ctr. to Ctr. of Col. (B)	Deflection Angle	Ctr. to Ctr. of Col. (Along Line C)	Elevation* (C)	Ctr. to Ctr. of Beams Opposite Col. (Along Line A)	Elevation* (A)
⊼ Run in From S.C.	On Curve	S.C.	669+49.78							
		1	671+02.00	3856.62		3° 02 40		3855.23		3858.27
		1 m	+07.00	56.92	5-0					58.57
		2	+12.00	57.22	5-0	3° 14 40	9-9 11/16	55.83	10-2 3/4	58.87
		2 m	+18.00	57.58	6-0					59.23
		3	+24.00	57.94	6-0	3° 29 04	11-9 3/16	56.55	12-3 5/16	59.59
		3 m	+30.00	58.30	6-0					59.95
		4	+36.00	58.66	6-0	3° 43 28	11-9 3/16	57.27	12-3 5/16	60.31
		C.S.	671+36.45			θ/3				
	On Spiral	4 m	+42.00	59.02	6-0					60.62
		5	+48.00	59.38	6-0	1° 30 58	11-9 1/4	58.07	12-3 1/4	60.94
		5 m	+54.00	59.74	6-0					61.25
		6	+60.00	60.10	6-0	1° 22 03	11-9 3/8	58.87	12-3 1/16	61.57
		6 m	+66.00	60.46	6-0					61.88
		7	+72.00	60.82	6-0	1° 13 35	11-9 9/16	59.66	12-2 15/16	62.20
		7 m	+78.00	61.18	6-0					62.51
		8	+84.00	61.54	6-0	1° 05 34	11-9 11/16	60.46	12-2 3/4	62.83
		8 m	+90.00	61.90	6-0					63.14
		9	+96.00	62.26	6-0	0° 58 02	11-9 13/16	61.25	12-2 5/8	63.46
		9 m	672+01.00	62.56	5-0					63.72
		10a	+06.00	62.86	5-0		9-10 1/4	61.92	10-2 1/16	63.98
		℄ of Double Cols.	+08.00	62.98		0° 50 57		62.05		64.09
		10b	+10.00	63.10	4-0		3-11 3/8	62.18	4-0 3/4	64.20
		10 m	+15.00	63.40	5-0					64.47
		11	+20.00	63.70	5-0	0° 44 20	9-10 3/8	62.84	10-1 7/8	64.73
		11 m	+26.00	64.06	6-0					65.04
		12	+32.00	64.42	6-0	0° 38 10	11-10 3/16	63.64	12-2 1/8	65.36
		12 m	+38.00	64.78	6-0					65.67
		13	+44.00	65.14	6-0	0° 32 28	11-10 5/16	64.43	12-2	65.99
		13 m	+50.00	65.50	6-0					66.30
		14	+56.00	65.86	6-0	0° 27 14	11-10 1/2	65.23	12-1 13/16	66.62
		14 m	+62.00	66.22	6-0					66.93
		15	+68.00	66.58	6-0	0° 22 27	11-10 5/8	66.02	12-1 5/8	67.25
		15 m	+74.00	66.94	6-0					67.56
		16	+80.00	67.30	6-0	0° 18 08	11-10 3/4	66.82	12-1 1/2	67.88
		16 m	+86.00	67.66	6-0					68.19
		17	+92.00	68.02	6-0	0° 14 16	11-10 7/8	67.61	12-1 5/16	68.51
		17 m	+97.00	68.32	5-0					68.77
		18a	673+02.00	68.62	5-0		9-11 3/16	68.28	10-1	69.03
		℄ of Double Cols.	+04.00	68.74		0° 10 53		68.41		69.14
		18b	+06.00	68.86	4-0		3-11 3/4	68.54	4-0 3/8	69.25
		18 m	+11.00	69.16	5-0					69.51
		19	+16.00	69.46	5-0	0° 07 57	9-11 5/16	69.20	10-0 13/16	69.77
		19 m	+22.00	69.82	6-0					70.08
Run in from S.T.		20	+28.00	70.18	6-0	0° 05 28	11-11 1/4	70.00	12-0 7/8	70.40
		20 m	+34.00	70.54	6-0					70.71
		21	+40.00	70.90	6-0	0° 03 27	11-11 7/16	70.79	12-0 11/16	71.03
		21 m	+46.00	71.26	6-0					71.34
		22	+52.00	71.62	6-0	0° 01 54	11-11 9/16	71.59	12-0 9/16	71.66
		22 m	+58.00	71.98	6-0					71.97
		23	+64.00	72.34	6-0	0° 00 48	11-11 11/16	72.38	12-0 3/8	72.29
		23 m	+70.00	72.70	6-0					72.60
		24	+76.00	73.06	6-0	0° 00 11	11-11 13/16	73.18	12-0 3/16	72.92
		24 m	+82.00	73.42	6-0					73.23
⊼		S.T.	673+86.45							
	On Tangent	25	+88.00	73.78	6-0		11-11 15/16	73.97	12-0 1/16	73.55
		25 m	+93.00	74.08	5-0					73.81
		26a	+98.00	74.38	5-0		10-0	74.64	10-0	74.07
		℄ of Double Cols.	674+00.00	74.50				74.77		74.18
		26b	+02.00	74.62	4-0		4-0	74.90	4-0	74.29
		26 m	+07.00	74.92	5-0					74.55
⊼ Run in from T.S.	On Spiral	T.S.	674+07.66			θ/3				
		27	+12.00	75.22	5-0	0° 00 03	10-0	75.56	10-0	74.81
		27 m	+18.00	75.58	6-0					75.12
		28	+24.00	75.94	6-0	0° 00 40	12-0 3/16	76.36	11-11 13/16	75.44
		28 m	+30.00	76.30	6-0					75.76
		29	+36.00	76.66	6-0	0° 02 00	12-0 3/8	77.15	11-11 9/16	76.08
		29 m	+42.00	77.02	6-0					76.39
		30	+48.00	77.38	6-0	0° 04 04	12-0 5/8	77.95	11-11 5/16	76.71
		30 m	+54.00	77.74	6-0					77.02
		31	+60.00	78.10	6-0	0° 06 51	12-0 13/16	78.74	11-11 1/16	77.34
		31 m	+66.00	78.46	6-0					77.65
		32	+72.00	78.82	6-0	0° 10 21	12-1	79.54	11-10 13/16	77.97
		32 m	+78.00	79.18	6-0					78.28
		33	+84.00	79.54	6-0	0° 14 34	12-1 1/4	80.34	11-10 9/16	78.60
		33 m	+89.00	79.84	5-0					78.86
		34a	+94.00	80.14	5-0		10-1 3/16	81.00	9-10 5/8	79.12
		℄ of Double Cols.	+96.00	80.26		0° 19 31		81.13		79.23
		34b	+98.00	80.38	4-0		4-0 1/2	81.26	3-11 3/8	79.34
		34 m	675+03.00	80.68	5-0					79.60
		35	+08.00	80.98	5-0	0° 25 10	10-1 3/8	81.93	9-10 3/8	79.86
		35 m	+14.00	81.34	6-0					80.17
		36	+20.00	81.70	6-0	0° 31 33	12-1 7/8	82.72	11-9 13/16	80.49
		36 m	+26.00	82.06	6-0					80.81
		37	+32.00	82.42	6-0	0° 38 39	12-2 1/16	83.52	11-9 9/16	81.13
		37 m	+38.00	82.78	6-0					81.44
		38	+44.00	83.14	6-0	0° 46 28	12-2 1/4	84.31	11-9 5/16	81.76

Layout Data

Instrument Setting	Location	Col. No.	Station (Along Line B, ℄ of Road)	Elevation* (B)	Ctr. to Ctr. of Col. (B)	Deflection Angle	Ctr. to Ctr. of Col. (Along Line C)	Elevation* (C)	Ctr. to Ctr. of Beams Opposite Col. (Along Line A)	Elevation* (A)
		38 m	675+50.00	3883.50	6-0	θ/3				3882.07
		39	+56.00	83.86	6-0	0° 55 01	12-2 1/2	3885.11	11-9 1/16	82.39
		39 m	+62.00	84.22	6-0					82.70
		40	+68.00	84.58	6-0	1° 04 16	12-2 11/16	85.90	11-8 13/16	83.02
		40 m	+74.00	84.94	6-0					83.33
		41	+80.00	85.30	6-0	1° 14 15	12-2 7/8	86.70	11-8 9/16	83.65
		41 m	+85.00	85.60	5-0					83.91
		42a	+90.00	85.90	5-0		10-2 9/16	87.36	9-8 15/16	84.17
		℄ of Double Cols.	+92.00	86.02		1° 24 57		87.49		84.28
		42b	+94.00	86.14	4-0		4-1 1/8	87.62	3-10 3/4	84.39
		42 m	+99.00	86.44	5-0					84.65
		43	676+04.00	86.74	5-0	1° 36 22	10-2 3/4	88.27	9-8 11/16	84.92
⊼ Run in From S.C.	On Circular Curve	S.C.	+07.66			Δ/2				
		43 m	+10.00	87.10	6-0					85.28
		44	+16.00	87.46	6-0	0° 12 31	12-3 1/2	88.99	11-7 7/8	85.64
		44 m	+22.00	87.82	6-0					86.00
		45	+28.00	88.18	6-0	0° 30 31	12-3 1/2	89.71	11-7 7/8	86.36
		45 m	+34.00	88.54	6-0					86.72
		46	+40.00	88.90	6-0	0° 48 31	12-3 1/2	90.43	11-7 7/8	87.08
		46 m	+46.00	89.26	6-0					87.44
		47	+52.00	89.62	6-0	1° 06 31	12-3 1/2	91.15	11-7 7/8	87.80
		47 m	+58.00	89.98	6-0					88.16
		48	+64.00	90.34	6-0	1° 24 31	12-3 1/2	91.87	11-7 7/8	88.52
		48 m	+70.00	90.70	6-0					88.88
		49	+76.00	91.06	6-0	1° 42 31	12-3 1/2	92.59	11-7 7/8	89.24
		49 m	+81.00	91.36	5-0					89.54
		50a	+86.00	91.66	5-0		10-2 7/8	93.19	9-8 9/16	89.84
		℄ of Double Cols.	+88.00	91.78		2° 00 31		93.31		89.96
		50b	+90.00	91.90	4-0		4-1 1/4	93.43	3-10 5/8	90.08
		50 m	+95.00	92.20	5-0					90.38
		51	677+00.00	92.50	5-0	2° 18 31	10-2 7/8	94.03	9-8 9/16	90.68
		51 m	+06.00	92.86	6-0					91.04
		52	+12.00	93.22	6-0	2° 36 31	12-3 1/2	94.75	11-7 7/8	91.40
		52 m	+18.00	93.58	6-0					91.76
		53	+24.00	93.94	6-0	2° 54 31	12-3 1/2	95.47	11-7 7/8	92.12
		53 m	+30.00	94.30	6-0					92.48
		54	+36.00	94.66	6-0	3° 12 31	12-3 1/2	96.19	11-7 7/8	92.84
		54 m	+42.00	95.02	6-0					93.20
		55	+48.00	95.38	6-0	3° 30 31	12-3 1/2	96.91	11-7 7/8	93.56
		55 m	+54.00	95.74	6-0					93.92
		56	+60.00	96.10	6-0	3° 48 31	12-3 1/2	97.63	11-7 7/8	94.28
		56 m	+66.00	96.46	6-0					94.64
		57	+72.00	96.82	6-0	4° 06 31	12-3 1/2	98.35	11-7 7/8	95.00
		57 m	+77.00	97.12	5-0					95.30
		58a	+82.00	97.42	5-0		10-2 7/8	98.95	9-8 9/16	95.60
		℄ of Double Cols.	+84.00	97.54		4° 24 31		99.07		95.72
		58b	+86.00	97.66	4-0		4-1 1/4	99.19	3-10 5/8	95.84
		58 m	+91.00	97.96	5-0					96.14
		59	+96.00	98.26	5-0	4° 42 31	10-2 7/8	99.79	9-8 9/16	96.44
		59 m	678+02.00	98.62	6-0					96.80
		60	+08.00	98.98	6-0	5° 00 31	12-3 1/2	3900.51	11-7 7/8	97.16
		60 m	+14.00	99.34	6-0					97.52
		61	+20.00	99.70	6-0	5° 18 31	12-3 1/2	01.23	11-7 7/8	97.88
		61 m	+26.00	3900.06	6-0					98.24
		62	+32.00	00.42	6-0	5° 36 31	12-3 1/2	01.95	11-7 7/8	98.60
		62 m	+38.00	00.78	6-0					98.96
		63	+44.00	01.14	6-0	5° 54 31	12-3 1/2	02.67	11-7 7/8	99.32
		63 m	+50.00	01.50	6-0					99.68
		64	+56.00	01.86	6-0	6° 12 31	12-3 1/2	03.39	11-7 7/8	3900.04
		64 m	+62.00	02.22	6-0					00.40
		65	+68.00	02.58	6-0	6° 30 31	12-3 1/2	04.11	11-7 7/8	00.76
		65 m	+73.00	02.88	5-0					01.06
		66a	+78.00	03.18	5-0		10-2 7/8	04.71	9-8 9/16	01.36
		℄ of Double Cols.	+80.00	03.30		6° 48 31		04.83		01.48
		66b	+82.00	03.42	4-0		4-1 1/4	04.95	3-10 5/8	01.60
		66 m	+87.00	03.72	5-0					01.90
		67	+92.00	04.02	5-0	7° 06 31	10-2 7/8	05.55	9-8 9/16	02.20
		67 m	+98.00	04.38	6-0					02.56
		68	679+04.00	04.74	6-0	7° 24 31	12-3 1/2	06.27	11-7 7/8	02.92
		68 m	+10.00	05.10	6-0					03.28
		69	+16.00	05.46	6-0	7° 42 31	12-3 1/2	06.99	11-7 7/8	03.64
		69 m	+22.00	05.82	6-0					04.04
	On Spiral	C.S.	679+26.33			θ/3				
		70	+28.00	06.18	6-0	1° 38 20	12-3 1/2	07.65	11-7 7/8	04.44
		70 m	+34.00	06.54	6-0					04.85
		71	+40.00	06.90	6-0	1° 26 48	12-3 3/8	08.28	11-8	05.26
		71 m	+46.00	07.26	6-0					05.67
		72	+52.00	07.62	6-0	1° 15 59	12-3 1/8	08.91	11-8 1/4	06.08
		72 m	+58.00	07.98	6-0					06.49
		73	+64.00	08.34	6-0	1° 05 53	12-2 15/16	09.55	11-8 1/2	06.90
		73 m	+69.00	08.64	5-0					07.25
		74a	+74.00	08.94	5-0		10-2 5/16	10.08	9-9 5/16	07.60
		℄ of Double Cols.	+76.00	09.06		0° 56 30		10.18		07.73
		74b	+78.00	09.18	4-0		4-0 7/8	10.28	3-11	07.86
		74 m	+83.00	09.48	5-0					08.20
		75	+88.00	3909.78	5-0	0° 47 50	10-2 1/16	10.81	9-9 1/2	08.55

* ELEVATIONS are given to the Control Points shown on Typical Cross Section.

General Curve Layout Sketches



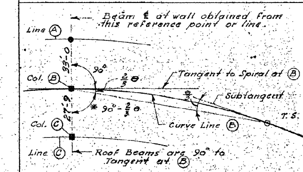
CIRCULAR CURVE

Scale 1" = 30'-0

PROCEDURE:

1. First Locate Columns on line (B)
2. Columns on line (C) located as follows - Set up at Column (B) and sight B.C. - Turn off Angle * (90° + Δ/2) and locate Column (C).
3. Locate points on Retaining Wall - Line (A)

* Angle (90° + Δ/2) becomes (90° − Δ/2) for opposite Deflection.



SPIRAL CURVE

Scale 1" = 30'-0

PROCEDURE

1. First locate columns on line (B)
2. Columns on line (C) located as follows... Set up at Column (B) and sight T.S. Turn off angle (90° − 2/3 θ) and locate Col. (C)
3. Locate points on Retaining Wall - Line (A)

* Angle (90° − 2/3 θ) becomes (90° + 2/3 θ) for opposite deflection.

ROOF BEAM SPACING

1. A roof beam is located over each column on line (B) and (C) and is located at the wall on line (A) on extension of the line joining the columns.
2. The intermediate roof beams are located equidistant between the column spacings on Line (C) and Line (A) and over Columns with suffix "m" on Line (B).
3. Columns designated "a" and "b" located at double footings.
4. Columns designated "m" are located on Line (B) Only.

No.	REVISIONS	NAME	DATE

DEPARTMENT OF PUBLIC WORKS
CANADA
DEVELOPMENT ENGINEERING BRANCH
STRUCTURES DIVISION

TUPPER #2 SNOWSHED

T.C.H. Mi. 10.99
GLACIER NATIONAL PARK

GEOMETRICAL LAYOUT

ELEVATION & CURVE DATA

JOB SUPERVISOR	S. STAMER	DESIGN		CHECK	J.T.D.
APPROVED	DATE 2/10/61	DRAWN	L.B.P.	CHECK	[illegible]
		TRACED		CHECK	

Geo. H. [illegible] — CHIEF-STRUCTURES DIVISION

PROJECT NO. SD-107

APPROVED DATE 2.10.61

[illegible signature] — CHIEF ENGINEER

SHEET 12 OF 24

AA002350