G

O.S. 355

TRAVERSE COMPUTATION — MACHINE METHOD

Name of Traverse..... *Computer*..... *Date*.....

Total Length..... *Error*.....

BEARINGS

1

2

3

4

Station	Bearing Va.	Corr.	Corrected Bearing	Distance ft	Cos. ~~A.~~ M	Sine	Cosine	E.	N.
						−			
9-10	- 19 48			78 70.84	21.57	33874	94088		20.29
						+			
10-11	+ 11 18			34.82 ~~35.00~~	10.61	19595	98061	11 601.1	10.40
						−			
10-12	- 20 04			49 75' ~~50.00~~	15.16	34311	93929		14.24
	+ 33 42					55484	83195		21.61
11 ~~12~~-11a	+ 7° 06			25' 85.33	25.98				23.53
						−			
11-12	- 26 57			41 50.66	15.37	45321	89140		13.70
						−		5	
11-13	- 19 39			41 102.50	31.21	33627	94176	.61 566.66	29.39
						−			
12-13	- 13 02			53.98 ~~54.25~~	16.45	22552	97424		16.03
						+		9 14	
13-13a	+ 6° 12			47 14.50	4.41	10800	99415	568.23	4.38

O.S. 355

TRAVERSE COMPUTATION — MACHINE METHOD

Name of Traverse.. *Computer*.. *Date*....................

Total Length.. *Error*..

BEARINGS

1

2

3

4

Station	Bearing Va	Corr.	Corrected Bearing	Distance	Cos. V.A.	Sine	Cosine	E.	N.
9									
9 A	− 4°·20'			30·5 ~~8·00~~					
B				~~8·00~~	8·00				
9 -									
9A									
B									

O.S. 355

TRAVERSE COMPUTATION — MACHINE METHOD

Name of Traverse T. T. traverse *Computer* ..... *Date* .....

Total Length ..... *Error* .....

BEARINGS

1

2

3

4

Station	~~Bearing~~ Va	Corr.	Corrected Bearing	Distance ++	~~Lat.~~ M	Sine	Cosine	E. Height	N.
G15A						—		0	
T1	−7°			76·5	23·32	12187	99255	457·0	23·15
T2	−10°			33·3	10·14	— 17365	98481	451·2	9·99
T3	+3°			6·0	1·83	+ 05234	99863	451·8	1·83
T4	−2°			5·0	1·52	— 03490	99939	451·3	1·52
G15A		-1030				+	—		
T1	178°	167 30		23·15		21644	97630	628·11	031·60
T2	235°	224 30		9·99		— 70091	— 71325	621·11	02447
T3	264°	253 30		1·83		— 95882	— 28402	619·35	023·95
T4	234°	223 30		1·52		— 68835	— 72537	618·31	022·85

O.S. 337

TRAVERSE ABSTRACT

Town G B

Traverse G (Astro)

Date 10/9/49. Angle Book ..... Sketch, Distances, etc., on Reverse Side

Station	To		1st Round ° ′ ″	2nd	3rd	4th	5th	6th	Mean Dist. ° ′ ″	R.P. Dist.	R.P. Check VA
G.12	Ro.	11	221 22 00						—	50.66′	+ 27° 36′
		10	179 06						42 16	50.00′	+ 17° 51′
		12A	309 51						271 31		- 31° 30′
		14	86 51						144 31		- 24° 39′
		13	57 36						163 46		- 11° 00′
G.11	Ro.	10	282 54 00						—	35.00′	- 13° 12′
		14	236 30						46 24		- 27° 24′
		13	219 24						64 30		- 18° 36′
		12	210 06						72 48		- 26° 18′
		11a	91 24						191 30	85.33′	
G10.	Ro.	9	284 46						—	70.84′	+ 19° 48′
		11	44 30						240 16		+ 9° 24′
		12	109 45						175 01		- 22° 18′
G9.	Ro.	8	136 14						—		
		9A	~~336~~ 54						~~258~~ 278 20	30.75′	- 4° 06′
		10	233 12						263 02		
G13	Ro.	14	158 00						—		
		12a	215 24						302 36		
G12a	Ro.	12	316 00						—	35.00′	+ 31° 42′
		13	30 48						286 12	~~36.00′~~ 52.66′	+ 8° 12′
G13	G12		173 30						00 00 00		
	11		166 18						07 12		
	14		83 42						89 48		
	13a		311 57						221 33		

(*35202) Wt.44019/239 25,000 3/48 A.& E.W.Ltd. Gp.685
(*36224) Wt.20773/261 130,000 8/48 „ „

Observer ..... Abstracted by .....

(35316) Wt.46435/242 120,000 3/48 A.& E.W.Ltd Gp.685

O.S 355.

TRAVERSE COMPUTATION — MACHINE METHOD

Name of Traverse..... *Computer*..... *Date*.....

Total Length..... *Error*.....

BEARINGS

1

2

3

4

Station	Bearing	Corr.	Corrected Bearing	Distance	Cos. V.A.	Sine	Cosine	E.	N.
E6									
H2								611.99	206.43
H3								612.34	210.97
H4								615.06	211.88
H5								616.95	211.84
H6								618.90	207.53
H7								623.63	202.79
H8								626.65	199.75
H9								634.28	194.57
H10								639.64	175.47
H11								636.15	175.32
H12								632.04	174.71
D35								639.77	163.82
G5	196 57			12.29		— 29154	— 95656	636.19 ~~639.41~~	152.06 ~~162.64~~

Station	Bearing	Corr.	Corrected Bearing	Distance	Cos. V.A.	Sine	Cosine	E.	N.
						—	—	635.78	143.62
97				8.45		-04769	99886	~~639.37~~	~~161.80~~
						—	—	634.03	133.12
218				10.65		16447	98638	~~639.20~~	~~160.75~~

SOLUTION OF UP-STATIONS, EXTRA BEARINGS, ETC.

O.S. 355

TRAVERSE COMPUTATION — MACHINE METHOD

Name of Traverse Gorge Heights Intermediate points. *Computer* ..... *Date* .....

Total Length ..... *Error* .....

BEARINGS

1

2

3

4

Station	Bearing	Corr.	Corrected Bearing	Distance	Cos. V.A.	Sine	Cosine	E.	N.
	Measured first	Scaled. mems		S Meas.		Δ Height.	Height.	Δ Height meas.	
B – C	78		22·4			−7·1	(B) 604·0	9102	
U	31		8·9			−2·8	601·2		
						−			
10 – 11	34		10·1			+6·6	(10) 589·6		
Z	13		3·9			+2·5	592·1		
			14·4 ~~13·5~~						
10 – 12	51					−17·3	(10) 589·6		
			5·6 ~~5·3~~						
Y	20					−6·8	582·8		
			12·1 ~~11·4~~						
X	43					−14·6	575·0		
12A – 14	43		13·3			−9·7	(12A) 558·0		
W	15		4·6			−3·4	554·6		
V	26		8·0			−5·9	552·1		

3048008 Ft/metres

(36232) Wt.20773/261 80,000 8/48 A.& E.W.Ltd. Gp.685

Station	Bearing Hor. dist. M.	Corr.	Corrected Bearing	Distance	Cos. V.A.	Sine	Cosine	E. Height	N. Ht M.
D34	6·4		6·4					681·3	207·7
A	22·4		28·8					648·3	197·6
G7	16·1		44·9					637·2	194·2
G8	13·6		58·5					623·2	189·9 ~~190·9~~
G9	15·7		74·2					615·8	187·7
U	3·7		77·9					601·2	183·2 ~~186·3~~
C	13·5		91·4					596·9	181·9
Z	7·0		98·4					592·1	180·5
(Y)	(5·0)		103·4					582·8	177·6
X	11·3		109·7					575·0	175·3
W	10·7		120·4					554·6	169·0
V	3·4		123·8					552·1	168·3
G14	5·3		129·1					548·3	167·1
G18	15·7		144·8					498·2	151·9
G15A	14·8		159·6					466·3	142·1

O.S. 355

TRAVERSE COMPUTATION — MACHINE METHOD

Name of Traverse Top of Gorge *Computer* *Date*

Total Length *Error*

BEARINGS

1

2

3

D34-D34a

4 +31° 54' 26.167 + 52844 697.63

Station	Bearing Va	Corr.	Corrected Bearing	Distance ft	Cos. V.A. M	Sine	Cosine	E.	N.
D34								683.8	
α	00			16.00	4.83				4.83
β				21.00	6.34				6.34
γ				20.00	6.04				6.04
δ				16.00	4.83				4.83
θ				17.00	5.13				5.13
ε				20.00	6.04				6.04
φ	+39°			28.75 46	8.67	+ 62932	77715		6.74
η	+ 3°			23.76 24.00	7.24	+ 05234	99863	785.0	7.23
φ-π		x	70°	15.00	4.53				4.53
η-λ		x	13°	10.00	3.02				3.02
34a-6	+38°	x	298°	27.33 06	8.25	+ 61566	78801	714.29 715.29	6.50
349-ω	+45°	x	335°	23.50 26	7.09	+ 70711	70711		5.01
5 ρ	+30	x	29°	24.75 25.00	7.54	+ 50000	86603	726.66 727.66	6.53
ω-ρ	+45	x	8	17.82 18.00	5.43	+ 70711	70711	ω 714.06 715.06	3.84
5-μ	+32.30	x	8°	38.61 39.00	11.77	+ 53730	84339	719.66	9.93
ρ Σ	+19		309°	22.77 23.00	6.94	+ 32557	94552	721.70	6.56
Σ K			352°	10.00	3.02				3.02

O.S. 355

TRAVERSE COMPUTATION — MACHINE METHOD

Name of Traverse Top of Gorge *Computer* *Date*

Total Length *Error*

BEARINGS

1

2

3

4

Station	Bearing	Corr.	Corrected Bearing	Distance	Cos. V.A.	Sine	Cosine	E.	N.
34									
α	234		224	4.83					
β	302		292	6.34					
γ	328		318	6.04					
δ	357		347	4.83					
θ	36		26	5.13					
ε	106		96	6.04					
φ	100		90	6.74					
η	76		66	7.23					

G

O.S. 337

TRAVERSE ABSTRACT

Town G. B.

Traverse G.

Date 24-9-49. Angle Book ..... Sketch, Distances, etc., on Reverse Side

Station	To	1st Round ° ′	2nd	3rd BB 75	4th	5th	6th V.A.	Mean Dist. ° Dist	R.P. Dist. Lt Rt	R.P. Check Fr Rf
G17	15.	~~25~~ 251°		74 73·5		+	36°	28′ 0″		
G18	14.	—		19½°		+	46°	72′ 7″		
G17	18	218·5°		38·5°		−	29°	25′ 2″		
G18	15a	174		352°		−	34·5°	58′		
G15a	Ox bow M1	198		17		+	8	43′ 7″		
G15a	19.	174		352		−	21	92′ 4″	10 3	A½ 30
G19	20	172		351·5		−	11	47′ 6″	6 6	A 20
G20	21	226·5		46		−	14·5	36′ 6″	6 8	A 10
21									3 4	6 5

Top of Gorge Detail.

From	To	Bear.	2nd	Dist.		
34	α	234°	0°	16′		α, β, θ, ε } Points on wall.
	β	302°	0°	21′		
	γ	328°	0°	20′		γ, δ, η, φ } Middle passage entrance at ground level.
	δ	357°	0°	16′		
	θ	36°	0°	17′		
	ε	106°	0°	20′		
	φ	100°	+ 39°	28′	9″	
	η	76°	+ 3°	24′		
φ	π	80°	0°	15½′	→ 1ft wide.	4′ high
η	λ	23°	0°	10′	→ 1½ ft wide.	2′ high
34a	σ	308°	+ 38°	27′	4″	
	ω	345°	+ 45°	23′	6″	
σ	ρ	39°	+ 30°	25′		
ω	ρ		+ 45°	18′		
σ	μ	18°	+ 32·5°	39′		
ρ	ξ	319°	+ 19	23′		
ξ	κ	2°	0°	10′	→ 2ft wide.	5′ high.

Station	ft	Rt	Fr	Rf.
θ	0′	10′		
34a.	~~6~~ 5′	3′		
σ	0′	14	0	6
ω	14′	5′	2	10
ρ	15′	5′		
ξ	5′	14	3	10
3	14	5′	3	10

Tape Shrinkage 6″ in 1st 50 ft 9900

(*35202) Wt.44019/239 25,000 3/48 A.& E.W.Ltd. Gp.A85
(*36224) Wt.20773/261 130,000 8/48 " "

Observer ..... Abstracted by .....

O.S. 337

TRAVERSE ABSTRACT

Town G.13.

Traverse G. Astro Compass.

Date 9th Sept. Angle Book ..... Sketch, Distances, etc., on Reverse Side

	Station	To	1st Round 1st ' "	2nd	3rd	4th	5th	6th	Mean Dist. ° ' "	R.P. Dist. V.A1.	R.P. Check V.A2.
	G.15	H.O.T.A 1'2".		2nd			3rd				
15a		14	97·6	277·3			277·4			+27·6	+26·2
15,		15a.	317·4	137·6			137·2.			-44·6	-45·8
14	Towards station	13	134	?			313·6			+40·0	+38.
13		14.	97·4.	277·4.							
13a											
	G14.	H.O.T.A. 1'2".	1st	2nd							
11, 3	ft above river	11	227·9.	47·6						+29	+27·8
12.	candle 4 ft	15	27·2.	206·9.						-26	-27·3.
	above station.	13	307·6	127·4						+29	+27·8
		12	247·0	66·8						+27·8	+26·4.
		11.	227·9.	47·6.							
	G.13.	H.O.T.A. 1'2".									
		12	173·6	353·4						+14·3	+15·8
		11	166·4	346·2.						+20	+21·4
		14	83·6	263·8						-30	-29.
		13a. (stalagmite)	312	131·9.						+5·4	+7·0
		12.	173·8.	353·4.							
	G.13.	14	86·8	267·2.							
		15	22·4	202·6.							
		14.	86·8	267·3.							
		Distances.	ft. ins.								
	14	to 13 (candle on ta)	34' 0"								
		12 (4ft above river)	67' 9"								
		11. (3'9" " ")	41' 0"								
	13	to 13a	[illegible]	14' 6"							
		15	62' 11"								
		12	54' 3"								
	14	to 15	51' 3"								
	15	to 15a.	184' 11"								

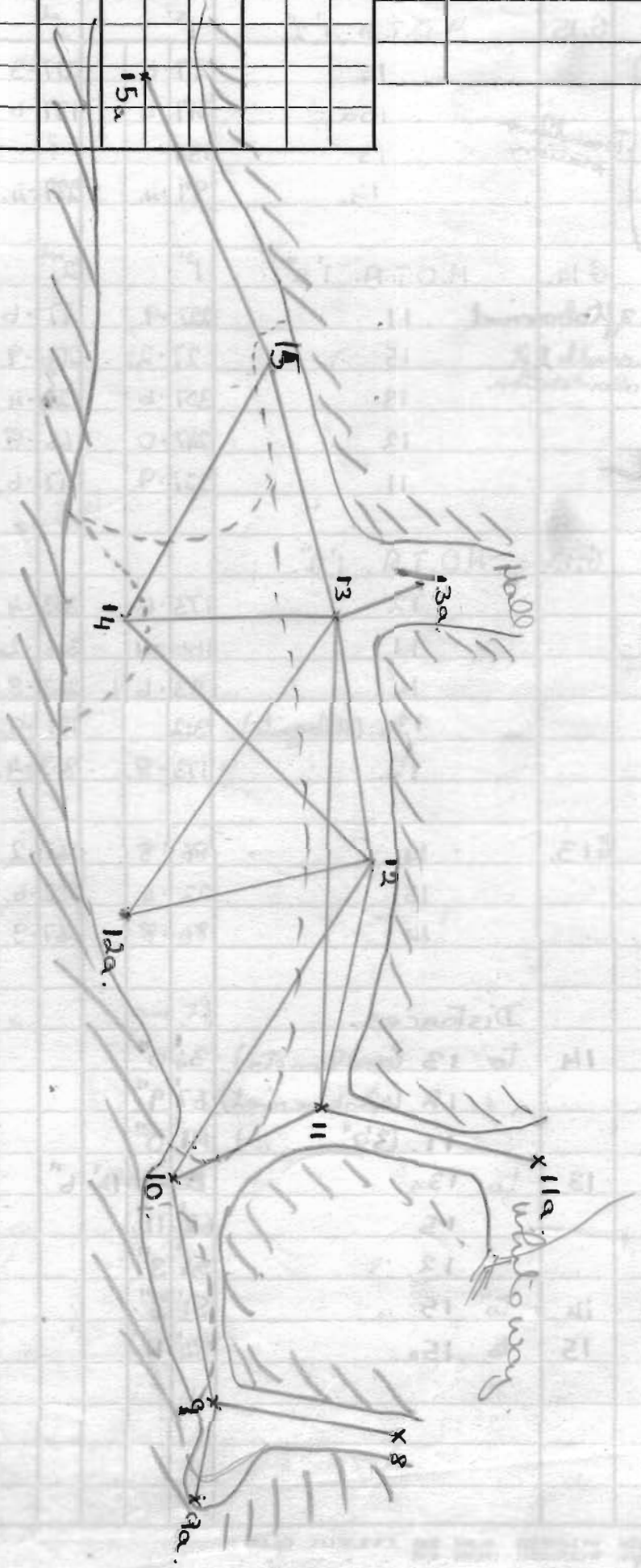
(*35202) Wt.44019/239 25,000 3/48 A.& E.W.Ltd. Gp.685
(*36224) Wt.20773/261 130,000 8/48 " "

Observer Turn Over

Abstracted by

Tape shrinkage 1st 1 inch 2nd 1 inch (99·34)

Leg	Distances			Tape No.	Temp.			V.A.			Tapes	
	Feet	Metres	Mean		Ft.	M	Mean	°	′	″	No	Value



O.S. 337

TRAVERSE ABSTRACT

Town G. B

Traverse G.

Date ..... Angle Book ..... Sketch, Distances, etc., on Reverse Side

Station	To	1st Round	2nd	3rd	4th	5th	6th	Mean Dist.	R.P. Dist.	R.P. Check
	Magnetic Bearings	° ′ ″						° ′ ″		
G9	G8.	357.75								
	G10	260								
G10	G9.	79.75								
	G11	321								
	G12.	254								
G11	G11a.	331.25	✓							
	G10.	141	✓							
	G12	212.5	✓							
	G13.	204°	✓							
	G14	190°	!							
	G15.	195°	!							
G12	G10	73.75								
	G11	31								
	G12a	125								
	13	195								
	14	167								
G13	G12	16								
	11	22								
	12a	50								
	14	107.5								
	15	170.5								
G14	G15	208.5								
	12	347								
	11	5°	?							
G12a	G13	229								
	12	303.5								
G15	G11	10.5	?							
	14	24								
	15a	168								
G15a	G15	347								
G11a	G11	152								

Sound G11 bearings don't seem to agree! Should measure from G13.

(*35202) Wt.44019/239 25,000 3/48 A.& E.W.Ltd. Gp.685
(*36224) Wt.20773/261 130,000 8/48 " "

Observer ..... Abstracted by .....

G

O.S. 337

TRAVERSE ABSTRACT

Town

Traverse G

Date Angle Book Sketch, Distances, etc., on Reverse Side

	Station	To	1st Round ° ′ ″	2nd	3rd	4th	5th	6th	TAPED Mean Dist. DIST ′ ″			R.P. Dist. — VIA —	R.P. Check
	G2.	G3	67·6	248·0							+	21·6	22·8
HOTA	1′2″	G1 D35′	319·6	139·8							+	9·0	7·0
		G5	184·0	4	4				16′	2″	+	23	21·8
		G6	155·8	335·7							−	17	18
		G3	67·6	248·0									
	G3	35.	31·2		211·4				37′	2″	−	4·5	3·2
HOTA	1′2″	G1	8·1		188·6				41′	6″	+	6·8	8·0
		G2	348·6		164·0				18′	1″	+	25·0	24·0
		G5	314·0		134·1				26′	5″	−	2·0	+0·5
		35.	31·2		211·4								
	G5	35	318·0		138·1								
HOTA	3′6″	G7	152·4		332·4								
		G6	118·8		298·9								
		G3	21·2		201·6								
		G2	347·0		167·2								
		35.	318·0		138·2								
	G6.	G2	324·4	144·8	144·4	324·2					+	13·4	14·4
HOTA	2′6″	G5	303·2	123·6	123·4	303·4					+	30·5	32.
		G7	199·2.	19·2	18·8.	198·8					−	16·4	15·0
		G8	182·0	1·8	1·8	181·8					−	17·3	16·0
		G2.		144·4	144·4	324·3							
		Distances.											
		G6 — G8	62′ 8″										
		6 — 7	16′ 6″										
		6 — 5	22′ 2″										
									Tape 1st			50′	49′9½″ ~~177ft.~~
												100′	99′8½″

(*35202) Wt.44010/239 25,000 3/48 A.& E.W.Ltd. Gp.685
(*36224) Wt.20773/261 130,000 8/48 " "

50 | 99·584

Observer Abstracted by

O.S. 337

G

TRAVERSE ABSTRACT

Traverse G. Astro Compass

Date 25 June Angle Book ..... Sketch & Details of C. of S. Pegs on Reverse Side

Station	To	1st Round ° ′ ″	2nd	Mean ° ′ ″	Measured Dist.	R.P. Check	Vertical Angle ° ′ ″
35.	34	180·8		360·3	60′ 5″	+	29° 20·6 22.
H.O.T.A. 2ft.	G1	124·4		304·2	16′ 11½″	+	~~20·6~~ 22
	G5. ~~ft 3ft above st.~~	71		251·2	40′ 6″	+	1·7 0·2.
	G2. ~~ft 3ft above st~~	56·2		236·3	29′ 5″	−	12·3 13
	G3.	31·9		211·8	73′ ½″	−	1·8 0·2 ~~0·2~~
	34.	180·8		360·4			
				Kicked Tripod.			
	34	181·2		360·1			
	G1	124·6		303·9.			
	G5.	71·2		250·4			
	G2	56·4		236·0			
	G3	31·8		211·4.			
	34.	180·8		360·1.			
		285·4		Kicked Tripod.			
34.	35	~~645·4~~		105·6.		−	30 29.
H.O.T.A. 2′6″	34a. R.P.	166·4		346·2.	26′ 11″	+	31 32·8
	G1.	302·0		122·0	52′ 10½″	−	26·2 25·8
	G3	298·0		118·2.		−	18·4 17·0
	35.	285·6		105·4			
	35	286·0					
	34a	166·8					
	G1	302·4					
	G3	298·4					
	35.	286·0					
G1.	35	225·6		45·6			
H.O.T.A. 1ft 3ins.	34	118·8		298·8		+	24 24·8
	G3	290·4		110·4	41′ 6″	−	9 8
	35.	225·9		45·8			
35	H 12	330·8		150·8			
	34	215·6		24·4			
	G1 O.K	148·4		328·2	– Instrument adjusted.		
	G3	55·8		235·6			
	H12.	330·8		150·8.			

O.S.O. 45,500 10-46

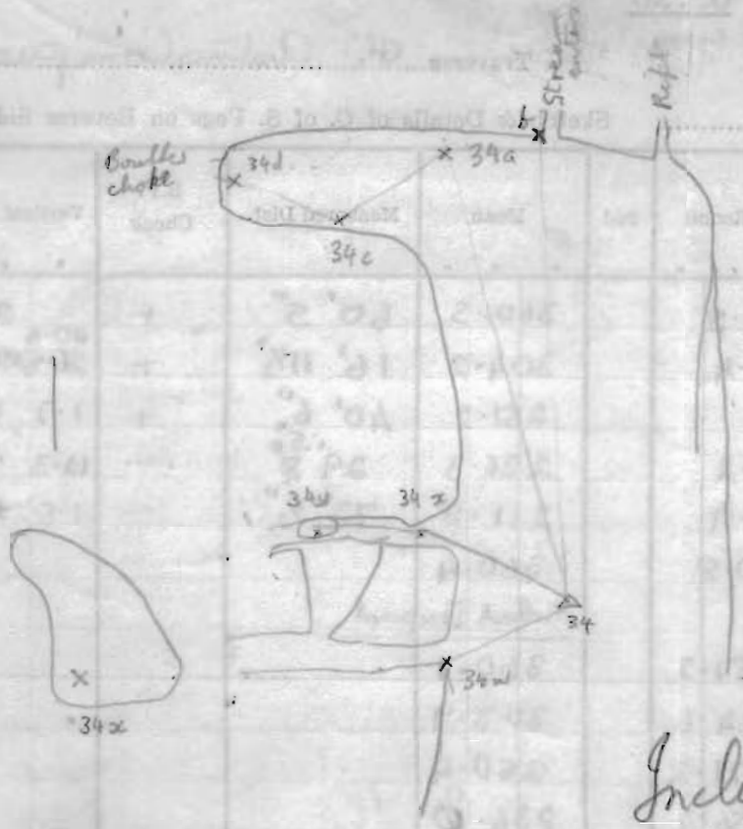
99583

Observer R.A.B. Abstracted by B.R. Length of Tapes 49′ 9½″ - ~~66′~~ 50′

~~49′ 8½″ - 66′~~ 49′ 8½″

Detail

Station 34 Magnetic



	Dist	Bear	Inc	Rt	Rt	Fl	Rod
34 → 34x	18' 10"	855°	+8	6"	2'	6"	2ft
34x → 34y	10'	B.L.O		0	1	6"	2
34 → 34w	20' 10"	324	+8				
34 → 34b	34'	74	+30	8ft above stream			

		+37°	a	8	3	0	20
34a → 34c	310.5°	30'1"					
		+38	c	4	35	0	8
34c → 34d	11°	42'9"					
			d	6	8	0	4

Inclination 34A-34C =

34C-34d =

G

O.S. 337

TRAVERSE ABSTRACT

Town

Traverse G.

Date Angle Book Sketch, Distances, etc., on Reverse Side

	Station	To	1st Round ° ′ ″	2nd	3rd	4th	5th	6th	Mean Dist. ° ′ ″			R.P. Dist.	R.P. Check
	Dorje	G 7.	179·6	39	5·3						+	~~29·0~~	
HDIA	3' 9"	G 8	73·9	25	39						−	~~18·0~~	
		& X	[illegible]								−	~~12·2~~	
	G7	G 5	323·2	143	·4		323·2		31'	11"	+	29·0	30·5
HDIA	1' 3"	G 8	162·1	340	·1				47'	2"	−	18·0	16·2
		G 9	161·3	341	·2				99'	1½"	−	12·2	10·5
		Dorje.	[illegible]	316	·2		136·4		35'	11"	+	11·7	13·0
		G 6	5·0	186	·0				15'	10½"	+	6·5	8·0
		G 5.	329·8	143	·4								
	G8	G 6	325·6	145	·6						+	15	16·5
HDIA	1' 3"	G 7	319·8	139	·8						+	16	17·9
		G 9	138·4	318	·0				52'	8½"	−	9	7·0
		Dorje	8·4	188	·7				29'	6"	+	15·8	17·0.
		G 6.	325·7	145	·6								

(*35202) Wt.44019/239 25,000 3/48 A.& E.W.Ltd. Gp.685
(*36224) Wt.20773/261 130,000 8/48 " "

Observer Abstracted by

O.S. 337

TRAVERSE ABSTRACT

Town.....

Traverse .....

Date..... Angle Book..... Sketch, Distances, etc., on Reverse Side

Station	To	1st Round ° ′ ″	2nd	3rd	4th	5th	6th	Mean Dist. ° ′ ″	R.P. Dist.	R.P. Check
D35	D34	00 00						00 00 00		
	G1	56 ·40	55·4	·15	·20			56 02	?	56/35
	G5	109 ·80	108·8	·15	·70			109 22		109/39
	G2	124 ·60	123·6	·05	·10			124 05		124/37
	G3	148 ·90	·2	·55	·70			148 35		149/07
D34	D35							00 00 00		
	34A	119 ·10	·30	·20				119 12	/	
	G1	343 ·50	·50	·60				343 32	/	
	G3	347 ·50	·30	·60				347 26	/	
G1	D35							00 00 00		
	D34							106 55	/	156/48
	G3							295 19	/	295/12
G2	G3							00 00		
	G1 D35							109 06	/	
	G5							243 36	/	
	G6							272 03	/	
G3	D35							00 00		
	G1							22 57 / 65 44	/	
	G2							47 30	/	
	G5							77 15	/	
G5	D35							00 00		
	G7							165 40	/	165/39
	G6							191 14	/	330/57
	G3							296 41	/	
	G2							330 59	/	
										131 31
										228 59
										131 45
										228 15

(*35202) Wt.44019/230 25,000 3/48 A.& E.W.Ltd. Gp.685
(*36224) Wt.20773/261 130,000 8/48 „ „

Observer..... Abstracted by.....

O.S. 337

TRAVERSE ABSTRACT

Town.....

Traverse .....

Date..... Angle Book..... Sketch, Distances, etc., on Reverse Side

Station	To	1st Round ° ′ ″	2nd	3rd	4th	5th	6th	Mean Dist. ° ′ ″	R.P. Dist.	R.P. Check
G6	G2							00 00		
	G5							21 03		
	G7							125 27		
	G8							142 36		
G7	G5							00 00		
	G8							161 06		
	G9							161 57		
	Ooze							186 54		
	G6							317 24		
	~~G5~~									
G8	G6							00 00		
	G7							5 50	5/48	
	G9							187 26	187/24	
	Ooze							317 04	317/03	
Ooze	G7							00 00		
	G8							105 33		

(*35202) Wt.44019/239 25,000 3/48 A.& E.W.Ltd. Gp.685
(*35224) Wt.20773/261 130,000 8/48 „ „

Observer..... Abstracted by.....

Leg	Distances			Tape No.	Temp.			V.A.			Tapes	
	Feet	Metres	Mean		Ft.	M	Mean	°	′	″	No	Value

C x S F x Tape (50ft)
·3034114

34-35 60' 5"
35-G1 16' 11½"
35-G5 40' 6"
35-G2 29' 5"
35-G3 37' 8' ½"
34-34a 26' 11"
34-G1 52' 10½"
G1-G3 41' 6"
G2-G5 16' 2"
G3-35 37' 2"
G3-G1 41' 6"
G3-G2 18' 1"
G3-G5 26' 5"
G6-G8 62' 8"
G6-G7 16' 6"
G5-G6 22' 2"
G5-G7 31' 11"
G7-G8 47' 2"
G7-G9 99' 1½"
G7-Onge 35' 11"
G6-G7 15' 10½"
G8-G9 52' 8½"
G8-Onge 29' 6"

G Trav G'

O.S. 355

TRAVERSE COMPUTATION — MACHINE METHOD

Name of Traverse..... *Computer*..... *Date*.....

Total Length..... *Error*.....

BEARINGS

1 130 30

2 229 30

3

4

Station	Bearing V.A.S.	Corr.	Corrected Bearing	Distance	Cos. V.A.	Sine	Cosine	E.	N. Hd.
				F+	M.	−			
34-35	29 20	−		60.417	19.470	48989	87178	29.60	16.97
34 1	25 12 (26 00)	−		52.875	16.043	42578	90483	22.52	14.52
35 1	21 18	+		16.959	5.446	+ 36325	93169	6.16	4.79
35 3	2° 42'			37.100	11.257	04711	99889	1.75	11.24
35 2	10° 20'	−		29.417	8.925	− 17937	98378	5.28	8.78
35 5	0° 57'	+		40.500	12.288	+ 01658	99986	.67	12.29
2 5	22° 24'	+		16.167	4.905	+ 38107	92455	6.16	4.53
2 3	23° 27'	+		18.083	5.487	+ 39795	91741	7.19	5.03
3 5	1° 15'	−		26.417	8.015	− 02181	99976	.58	8.01
2 6	15° 42	−							
5 6	15° 36'	−		22.167	6.726	− 26892	96316	5.96	6.48
5 7	29° 45'	−		31.917	9.684	− 49622	86820	15.87	8.41
6 7	(8° 15') 15° 42'	−		15.875 / 16.500	4.84 / 5.03 / 4.911	− 12520 / 27060	99200 / 96269	2.00 / 4.46	4.80 / 4.84
7 0	12° 21'	+		35.917	10.898	+ 21388	97686	7.68	10.65
34-34A	31° 54	+		26.167	7.939	+ 52844	84897	13.83. 697.5	6.74
1-3	7° 57'	−		41.500	12.592	− 13831	99032	5.44	12.47

Distances all checked

(36232) Wt.20773/261 80,000 8/48 A.& E.W.Ltd. Gp.685

Station	Bearing	Corr.	Corrected Bearing	Distance	Cos. V.A.	Sine	Cosine	E.	N.
				F	M				
7 8	17° 30'	−		47·167	14·311	30071	95372	14·15	13·65
7 9	11° 21'	−		99·125	30·076	19680	98044	19·51	29·49
8 9	8° 00'	−		52·709	15·993	13917	99027	7·34	15·84
6-8	17° 48'	−		62·667	19·014	30570	95213	19·16	18·10
8-0	46° 24'	+		29·500	8·951	72417	69462	21·36	6·25
34A-34C	37° 00	+		29·96 ~~30·09~~	9·13	+ 60182	79864	715·65	7·29
34C-34D	38° 00	+		42·~~75~~ 57	12·98	+ 61566	78801	741·97	10·23
34-34X	8° 00	+		18·~~83~~ 75	5·72	+ 13917	99027	686·3	5·66
34X-34Y	−			9·96 ~~10·00~~	3·04	0	1	686·3	

G

O.S. 355

TRAVERSE COMPUTATION — MACHINE METHOD

Name of Traverse..... *Computer*..... *Date*.....

Total Length..... *Error*.....

BEARINGS

1

2

3

4

Station	Bearing	Corr.	Corrected Bearing	Distance	Cos. V.A.	Sine	Cosine	E.	N.
34.035	268 39	-12	27	17.00				642.04	162.73
1	88 39					±	−		
	109 22								
-95	198 01	-24	197 37	12.30		30265	95310	638.32	151.01
	18 01					−	−		
	165 40								
-97	183 41	-37	04	8.40		05350	99857	637.87	142.62
	03 41					+	−		
	161 06								
-98	164 47	-49	163 58	13.60		26247	96494	641.44	129.50

(85816) Wt.46435/242 120,000 3/48 A.& E.W.Ltd Gp.685

O.S 355.

TRAVERSE COMPUTATION — MACHINE METHOD

Name of Traverse..... *Computer*..... *Date*.....

Total Length..... *Error*.....

BEARINGS

1

2

3

4

Station	Bearing	Corr.	Corrected Bearing	Distance	Cos. V.A.	Sine	Cosine	E.	N.
								641·85. 638·76.	162·88. 163·73.
D. 34–35	247 22. 87 22.	7	29	17·00		− 99984	− 04391	624·07	162·13
1	109 22.								
d 5.	196 44 16.	13	57	12·29		− 29154	− 95656	638·27 621·28	151·12 150·38
	165 40								
d 7	182 24 02.	20	44	2·45		− 04759	− 99886	637·86 620·88	142·68 141·94
	161 06.					+	−		
d 8.	163 38	26	56	13·72		27676	96094	641·66.	129·50.
	377 03. ÷ 33								

(85316) Wt.46435/242 120,000 8/48 A.& E.W.Ltd Gp.685

O.S 355.

TRAVERSE COMPUTATION — MACHINE METHOD

Name of Traverse..... *Computer*..... *Date*.....

Total Length..... *Error*.....

BEARINGS

1

2

COMPUTED DISTANCES

3

4

Station	Bearing	Corr.	Corrected Bearing	Distance	Cos. V.A.	Sine	Cosine	E.	N.
D37-35	17.00 ~~+6.83~~			d 7 - [illegible]		10.70			
D37-d1	14.64			d7 - d8		13.72			
D35-d1	5.04			d8 - 0		6.19			
D35-d3	11.27			d6 - d9		19.00			
D35-d5	12.29								
D35-d2	8.70								
d1-d3	12.78								
d2-d5	7.54								
d2-d3	7.98								
d3-d5	8.00								
D37-3	27.05								
d5-d6	6.24 06.								
d5-d7	8.75								
d7-6	4.80								

G

O.S. 355

TRAVERSE COMPUTATION — MACHINE METHOD

Name of Traverse ..... *Computer* D. E. Fu... *Date* .....

Total Length ..... *Error* .....

BEARINGS

1

2

3

4

Station	Bearing	Corr.	Corrected Bearing	Distance	Cos. V.A.	Sine	Cosine	E.	N.
D 35	56 02	12.	14	831.31		34-6	14.76	14.52	13.90
D 34	16 28	11	39	286.52		6-35	5.09	5.00	4.79
G 1	106 55	12	107 07	955.71		35-34	16.97	16.69	15.98
	179 25	+35							
D 35	39 43	4	17	633.16		5-3	7.98	7.96	8.01
G 5	63 49	4	23	894.02		3-35	11.26	11.24	11.31
G 3	77 45	5	20	975.66		35-5	12.29	12.27	12.34
	179 47	+13							
D 35	24 30	2	28	714.16		2-3	4.93	4.90	5.03
G 2	108 06	2	04	950.70		3-35	11.33	11.24	11.546
G 3	47 30	2	28	736.89		35-2	8.78	8.72	8.849
	180 06								
D 35	14 43	15	58	258.26		5-2	4.55	4.64	4.53
G 5	29 01	15	16	788.85		2-35	8.61	8.78	8.56
G 2	135 30	16	46	697.58		35-5	12.29	12.53	12.24
	179 14	46							
G 5	34 18	9	09	561.36		3-2	5.01	5.15	5.03
G 3	29 45	9	36	493.94		2-5	4.41	4.53	4.43
G 2	116 24	9	15	896.87		5-3	8.01	8.23	8.04
	180 27								
D 34	03 46		27	997.84		1-3	12.48		
G 1	171 36					3-37	27.05		
G 3	04 38		99	673.		37-1	17.67		
	180 00						12.48		
D 35	92 33	3	36	998.97		1-3	12.87		
G 1	64 21	3	24	901.83		3-35	11.27		
G 3	23 57	3	00	839.43		35-1	5.04		
	179 51								

(36232) Wt.20773/261 80,000 8/48 A.& E.W.Ltd. Gp.685

Station	Bearing	Corr.	Corrected Bearing	Distance	Cos. V.A.	Sine	Cosine	E.	N.
			02.						
2	28 27	25	00	46999		5-6	6·01		
5	131 45	25	20 26	75088		6-2	9·61		
6	21 03	25	38 45	52237		2-5	4·51		
	181 15								
5	33 34		23	55024		7-6	5·09	4·02	4 7
7	42 36		25	67452		6-5	6·24	5·91	5·85
6	104 24		12	96945		5-1	8·97	8·49	8·41
	180 34								
7	156 18		33			9-6	17·866		
8	05 50		06 04	99440		6-1	4·80		
6	17 09		23	95433		7-8	13·72		
	179 17								
7	25 48		46	43711		8-0	16·16	6·25	6·15
8	48 46		44	75165		0-7	10·65	10·81	10·65
8	105 33		30	96363		7-8	13·65	13·85	13·65
	180 07								
7	00 51								
9									
8									

				Sines	Cos		a	b	c	mean.
						6-7	4·82	4·79		4·80
5′	33	~~34~~	34	55291						
						5-7	8·45′	8·41	~~8·477~~	8·43
6	104°	~~24′~~	07	96980						
						5-6	5·87	5·84	~~6·48~~	5′·86
7	42	~~36~~	19	67323						
	180	34								
								Cos		
				30071						
6	17°	~~04′~~	340	~~05333~~	95372	6-7		4·80		
7	156	~~18~~	40	39608		6-8		18·16	mean 18·10	
8	05′	~~50~~	50		994482	7-8		13·65′		
	179	17								

G

O.S. 355

TRAVERSE COMPUTATION — MACHINE METHOD

Name of Traverse..... *Computer*..... *Date*.....

Total Length..... *Error*.....

BEARINGS

1

2

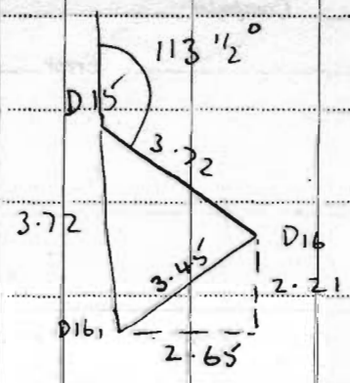
3

4

Station	Bearing	Corr.	Corrected Bearing	Distance	Cos. V.A.	Sine	Cosine	E. 658.76	N. 163.73
						−	−		
D34-D35	267 24			17.0		99897	04536	642.00	162.7
	87					−	−		
+	109 17								
D35-G5	196 41	-1	40'	12.3		28680	95799	638.47	150.92
	16					−	−		
−	193 59								
G5-G7	182 42	-1	41'	8.4		04682	99890	638.08	142.53
	2					+	−		
−	198 58			13.68					
G7-G8	163 44	-2	42'	[illegible]		28067	95981	641.90	129.47
34-35	267 24					+	+		
	119 12							78	76
34A	26 36			6.7		44776	89415	661.80	169.69
35-34	87 24					+	−		
	56 02								
G1	143 26			4.8		59576	80316	644.86	158.84
35-G5	196 40					−	−		
+	39 17							44	57
G3	235 57			11.3		82855	55992	632.64	156.37
G5-35	16 40					−	+		
	63 25							44	60
G3	313 15			8.0		72837	68518	632.64	156.40
G5-35	196 40					−	+		
−	29 16							29	51
G5-G2	347 24			4.5		21814	97592	637.49	155.31
G3-35	55 57					+	−		
	47 28								
G3-G2	103 25			5.0		97271	23203	637.50	155.22
G5-G7	182 41					−	−		
+	33 23			5.8		58873	80833	44	87
6	149 18		216 04	6.5		51054	85785	634.64	145.67
G7-G5	02 41			4.8		−	+	74	41
−	42 25								
6	320 16			[illegible]		63922	76903	634.94	146.31
									146.1

(36232) Wt.20778/261 80,000 8/48 A.& E.W.Ltd. Gp.685

Station	Bearing	Corr.	Corrected Bearing	Distance	Cos. V.A.	Sine	Cosine	E.	N.



$\frac{xc}{8} \times$

$$\text{Cos D15} = \frac{2(3.72)^2 - (3.45)^2}{2(3.72)^2}$$

$$= 1 - \frac{3.45^2}{2(3.72)^2}$$

$$= 1 - \left(\frac{3.45}{3.72} \times \frac{3.45}{7.44}\right)$$

$$= 1 - .43005$$

$$= .56995$$

D15 = 55° 15′

∠ DIF D16A = 170°

Sin = 17365

Cos = 98481

							D15	640.33	182.91
							D16	643.82	181.61
							D16a	640.98	179.25
								−2.84	−2.36
7-8	163 42					−	−		
+	25 46								
7-00	189 28			10.65		16447	98638	636.33	132.03
8-7	343 42					−	+		
−	48 44								
8-00	294 58			6.25		90655	42209	636.23	132.11
7-8	163 42					+	−		
	51								
7-9	164 33			29.49		26640	96386	645.94	114.10
8-7	343 42					+	−		
	181 36								
8-9	165 18			15.84		25376	96727	645.92	114.15

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TRAVERSE COMPUTATION — MACHINE METHOD

Name of Traverse..... *Computer*..... *Date*.....

Total Length..... *Error*.....

BEARINGS

1

2

3

4

Station	Bearing	Corr.	Corrected Bearing	Distance	Cos. V.A.	Sine	Cosine	E.	N.
35						−	+		
35e	311°			2.13		75471	65606	640.42	164.09
35						−	+		
35f	334°			2.13		43837	89879	641.08	164.59
34				8.9		+	+	658.94	163.47
34e	63°			~~10.32~~	30°	89101	45399	666.91	167.51
34e				7.29		−	+		
34c	299° 30'		~~+37°~~	~~9.13~~	+37°	87036	49242	655.45	173.28
34c				10.22					
34d	0		~~+38°~~	~~12.97~~	+38°	0	1.0	655.45	183.50
34				5.66		−	+		
34x	344°			~~5.71~~	8°	27564	96126	657.23	169.14
34x				3.04		+	+		
34y	32 ~~179~~ 9°			~~3.04~~		51504	85717	655.67	171.75
34				6.2		−	+		
34w	313			~~6.32~~	8°	73135	682000	654.27	167.93

G

O.S. 355

TRAVERSE COMPUTATION — MACHINE METHOD

Name of Traverse..... *Computer*..... *Date*.....

Total Length..... *Error*.....

BEARINGS

1 — 35 - 34 — 98° 24' — G1 - 35 — 334 26
~G1 — 56 02 — ~G3 — 295 19
154 26 — 269 45

2

3

4

Station	Bearing	Corr.	Corrected Bearing	Distance	Cos. V.A.	Sine	Cosine	E. 642.04	N. 162.73
G1			-10 22			−	−		
~G3	269° 45'		259° 23'	12.47		98288	18424	629.78	160.43
	54 18					+	−		
~G5	344 03		133 41	8.01		72317	69067	635.58	154.90
	228 59					−	−		
~G7	193 02		182 40	8.41		04653	99892	635.18	146.50
	186 54					−	−		
~0034	199 56		189 34	10.65		16620	98609	633.41	136.00
G1								642.04	162.73
~G3	269 45		259° 23'	12.47		98288	18424	629.78	160.43
	24 33					+	−		
~G2	114 18		103 56	5.03		97058	24079	634.67	159.22
	243 36					+	−		
~G5	174 54		167 32	4.53		21587	97642	635.64	154.80
	228 15					−	−		
~G6	226 09		215 47	6.48		58472	81123	631.85	149.54
	104 24					+	−		
~G7	150 33		140 11	5.03		64033	76810	635.08	145.68
	229 30					−	−		
~0	200 03		270 41	10.65		34294	93939	631.42	135.67
34-34B						+	+		
	74 00		63 38	8.94		89597	44411	666.81	167.67

(36232) Wt.20773/261 80,000 8/48 A.& E.W.Ltd. Gp.685

Station	Bearing	Corr.	Corrected Bearing	Distance	Cos. V.A.	Sine	Cosine	E.	N.
	G6		104 24	-12	104 12	96945	8 41		
	G7		42 36	-11	42 25	67452	6·48		
	G5		33 34	-11	33 23	55024	4·773 5·286 5·03		

O.S. 355

TRAVERSE COMPUTATION — MACHINE METHOD

GORGE

Name of Traverse extra Stations for Elevations *Computer* ..... *Date* .....

Total Length ..... *Error* .....

BEARINGS

1

2

3

4

Coords.

Station	Bearing	Corr.	Corrected Bearing	Distance	Cos. V.A.	Sine	Cosine	E. 645·10	N. 114·10
G9 - 8	346 20 / 78 20		-10 30			+	+		
9a	64 40		64 40	9.37		90383	42788	653.6	118.1
						−	−		
B	200 00		189 30	7.43 ~~8.00~~		16505	98629	652.3	110.8
								626.0	107.1
G10					·9171	+	+		
C	~~45°~~ 00		34 30	5.14 ~~5.6~~	+23°30'	56641	82413	628.9	111.3
								637.3	155.5
G2					9903	−	+		
A	07 00		356 30	3.17 ~~3.2~~	+8° 00	06105	99813	637.1	158.7
							−	Weight	
	Va.			Weights				615.8	
G9 9a	-4° 06'			s ft. 30.5 ~~30.4~~		− 07150		613.6	
B	-21° 30'			26.2		− 36650		604.0	
								589.6	
G10						+			
C	+23 30			18.4		39875		596.9	
								646.8	
G2						+			
A	+08° 00			10.5		1391		648.3	

Gauge Elevation. Wollaton (1)

(36232) Wt.20773/261 80,000 8/48 A.& E.W.Ltd. Gp.685

Station	Bearing	Corr.	Corrected Bearing	Distance (feet)	Cumulative Horizontal Distance (metres)	Sine (feet) Floor	Cosine (feet) Roof	E.	N.
		0							
Wall.	0	~~23~~			0	0	0		
	4					6	10		
	14					2	25		
D34	23	23.							
D34	~~23~~ 0	~~0~~	0	681·3		0	30		
	~~41~~ 11					6	35		
	~~67~~ 38					0	25/30 ~~30~~	Step in Roof.	
	~~76~~ 53					5	36/43 43	Step in Roof.	
	~~94~~ 71					3	50	10' Over	
ΔA	~~104~~ 81	~~81~~ 104	22·4 ~~55·1~~	648·2		0	36		
ΔA	0		0			0	36.		
	21					1	36		
	40					6	40		
G7	52	52	16·1 ~~40·3~~	637·2		4	35/55 ~~55~~	Step in Roof.	
G7	0		0			4	55		
	11					5	50		
	24					8	50		
	34					8	40		
G8	47.	47	13·6	623·1		10	20.		
G8	0					10	20		
	23					10	20		
	33					10	23		
G9.	53	53	15·7	615·8		0	10.		
G9.			0			0	10		
u			~~3·7~~	602·3		5	15.		

Gorge Elevation Observed (2)

M.D.

(36232) Wt.20773/261 80,000 8/48 A.& E.W.Ltd. Gp.685

Station	Bearing	Corr.	Corrected Bearing	Distance	Cos. V.A.	Sine Flood	Cosine Rang.	E.	N.
ΔB	0	0				0	20		
u.	31	0	0	~~602-3~~		5	15		
ΔC	78	47 ~~78~~	13·5	596·9		0	12.	9' high 4' span under Bridge	
G10.	0								
137	13					15	15	Edge O.	
G11.	34								
G10									
G10	0								
Y(Bay)	20					15	22.		
X	43					15	40		
G12.	51								
G12a.	0					0	65		
W	15					7	67		
V	26					15	60		
G14.	43.					10	50.		
G14.	0					10	50		
	12.					10	55		
	24					0	60	1st lipd 40'	
	35					7	55	2nd lipd 40'	
	50					10	55	Bottom 40'	
G18	72.					6	60		
G18	0					6	60		
	27					4	15.	Bridge 6' above height of G18 i.e. 5' 6"	Sheardrop in roof to 16.
G15a	58					6	15-30		

G

O.S. 337

TRAVERSE ABSTRACT

Town G. B

Traverse G. Casto Compass.

Date 10 Sept Angle Book

Sketch, Distances, etc., on Reverse Side

Station	To	1st Round ° 1st ' "	2nd	3rd	4th	5th	6th	Mean Dist. ° ' "	R.P. Dist. V.A.1.	R.P. Check V.A.2.
G.12.	H.O.T.A. 3ft.		2nd							
3ft above rivet	11	221 ·3	41 ·2					50' 8"	+28·2	+27·0
on rivet	10	179 ·2	359 ·0					50' 0"	+18·7	17·0
on rivet	12a.	130 ·0	309 ·7						-31·0	32
on rivet	14	87 ·0	266 ·7						-24	25·3
2ft above rivet	13	57 ·6	237 ·6						-10	-12.
	11.	221 ·6	41 ·4.							
G.11.	H.O.T.A 3' 9"					check				
	10	282 ·9	102 ·9						-14	-12·4
	14	236 ·4	56 ·6						-28	-26·8
2ft above rivet	13	219 ·4	38 ·9			38·8		102' 6"	-19·3	-17·9
	12	200 ·1	30 ·1						-27	-25·6
on rivet.	11a	91 ·4	271 ·4					85' 4"	+33·7	~~+26·7~~ ?
on rivet	10	282 ·9	102 ·9					35' 0"		
G.10.	H.O.T.A. 3' 9"									
on rivet	9	284 ·8	104 ·8					70' 10"	+19·2	+20·4
	11	44 ·4	224 ·6						+8·8	+10
	12.	109 ·7	289 ·8						-22·8	-21·8
	9	284 ·7.	104 ·8							
G.9.	H.O.T.A. 1' 3"									
	8	136 ·1	316 ·2							
on rivet	9a	57 ·6	238 ·2			238·2.		30' 9"	-3·2	-5·0
	10	233 ·2	53 ·2							
	8	136 ·2	316 ·4							
G.13	H.O.T.A. 1' 2"									
	14	158 ·1	337 ·9							
	12a	215 ·6	35 ·2							
	14	158 ·1	337 ·9							
G.12a	H.O.T.A 1' 3"									
3ft above rivet	12	316 ·4	135 ·9					35' 0"	+32·4	+31
2ft above rivet	13	30 ·9	210 ·7					52' 8"	+9·0	+7·4
	12.	316 ·1	135 ·6							

(*35202) Wt.44010/230 25,000 3/48 A.& E.W.Ltd. Gp.685
(*36224) Wt.20773/261 130,000 8/48 " "

Tape shrinkage.

Observer

Abstracted by N.S ins in first 1 in second.

O.S. 355

TRAVERSE COMPUTATION — MACHINE METHOD

Name of Traverse..... *Computer*..... *Date*.....

Total Length..... *Error*.....

BEARINGS

1

2

3

4

Station	Bearing	Corr.	Corrected Bearing	Distance	Cos. V.A.	Sine	Cosine	E.	N.
				Sine				a b	
G 10	65 15	09	09	90741		11-12 a	13.70	13.54	13.62 ✓
G 11	72 48	41	41	95467		10-12 b	14.24	14.41	14.32 ✓
G 12	42 16	10	10	67129		10-11 c	~~10.40~~	10.14 10.01	10.08 ✓
	180 19								
				Cosine					
G 11	8 18	+15	08 33	98889		11-12	13.70		13.62
G 12	163 46	+15	164 01			11-13	29.39		
G 13	07 12	+14	07 26	99211		12-13	16.03		
	179 16								

Va

(36232) Wt.20773/261 80,000 8/48 A.& E.W.Ltd. Gp.685

Station	Bearing	Corr.	Corrected Bearing	Distance	Cos. V.A.	Sine	Cosine	E. 601.1	N.
G11									
G12	- 27° 36'			50.583		— 46330		577.66	
G13	- 11° 00'			54.160		— 19081		567.33	
G13a	+ 6° 12'			14.476		+ 10800		568.89	
G11									
G13	- 18° 36'			102.087		— 31896		568.53	

O.S. 355

TRAVERSE COMPUTATION — MACHINE METHOD

Name of Traverse G Bottom of Gorge *Computer* JC *Date*

Total Length *Error*

BEARINGS

1

2

3

4

Station	Bearing	Corr.	Corrected Bearing	Distance	Cos. V.A.	Sine	Cosine	E.	N.
G		-10.30				—	—	629.2	007.3
21-21a	223°		212 30	6.73		53730	84339	625.6	001.6
						—	+		
21a-21b	341°		330 30	5.21		49242	87036	623.0	006.2
~~21b~~								629.2	007.3
						—	+		
21-21c	358 30		348 00	4.36		20791	97815	628.3	011.6
						—	+		
21c-21d	346		335 30	4.72		41469	90996	626.3	015.9
						—	+		
21d-21e	346		335 30	3.64		41469	90996	624.8	019.2
						—	+		
21e-21f	351		340 30	6.88		33381	94264	622.5	025.7
				~~3.55~~				631.0	029.3
						—	—		
19-19a	203 30		193 00	3.08 55		22495	97437	630.2	025.8
						—	—		
19a-19b	233		222 30	3.08		67559	73728	628.1	023.6
								635.5	016.0
						—	+		
20-20a	308 30		298 00	2.95		88295	46947	632.9	017.4
						—	+		
20a-20b	351		340 30	4.47		33381	94264	631.4	021.6

(36232) Wt.20773/261 80,000 8/48 A.& E.W.Ltd. Gp.685

Station	Bearing	Corr.	Corrected Bearing	Distance	Cos. V.A.	Sine	Cosine	E.	N.
		-10'30"				+	−	618·9	068·5
18 - 18X	107 30		97 00	5·78		99255	12187	624·6	067·8
						~~95630~~	~~24237~~		
						−	+		
18X-18Y	03 00		352 30	7·42		13053	99144	623·7	075·2
						+	+		
18Y-18Z	20 00		09 30	8·83		16505	98629	625·1	083·9
						+	+	618·9	068·5
18-18a	95 00		84 30	4·24		99540	09585	623·1	068·9
						+	+		
18a-18b	86 00		75 30	4·14		96815	25038	627·1	069·9
						+	−		
18b-18c	180 00		169 30	2·57		18224	98325	627·6	067·4

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TRAVERSE COMPUTATION — MACHINE METHOD

Name of Traverse G. Bottom Gorge. *Computer* J.H.C. *Date*

Total Length *Error*

BEARINGS

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4

Vas.

Station	Bearing	Corr.	Corrected Bearing	Distance ft	Cos. V.A. M.	Sine	Cosine	E.	N.
G						−			
21-21a	−20°			23.5	7.16	3420	9397		6.73
						−			
21a-21b	−8°			17.25	5.26	1392	9903.		5.21
						+			
21-21c	+3°			14.33	4.37	0523	9986		4.36
						−			
21c-21d	−17° 30'			16.25	4.95	3007	9537		4.72
						+			
d-e	+17°			12.5	3.81	2924	9563.		3.64
						+			
e-f	+23°			24.5	7.47	3907	9205		6.88
						−			
G19-19a	−18			12.25	3.73	3090	9511		3.55
						−			
19a-19b	−25			11.187	3.40	4226	9063.		3.08
						−			
G18-18x	−25			20.92	6.38	4226	9063.		5.78
						+			
18x-18y	+19			25.75	7.85	3256.	9455		7.42
						+			
18y-18z	+15			30.00	9.14	2588	9659		8.83
						−			
18-18a	−22			15.00	4.57	3746	9272		4.24
						+			
18a-18b	+25			15.00	4.57	4226	9063.		4.14
						−			
18b-18c	−20			9.00	2.74	3420	9397		2.57
20-20a	—			9.67	2.95	0	1.		2.95
						+			
20a-20b	+12			15.00	4.57	2079	9782		4.47

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O.S. 355

TRAVERSE COMPUTATION — MACHINE METHOD

Name of Traverse Bottom Gorge. *Computer* ..... *Date* .....

Total Length ..... *Error* .....

BEARINGS

1

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4

Station	Bearing	Corr.	Corrected Bearing	Distance	Cos. V.A.	Sine	Cosine	E.	N.
G11		-10 20				+	−	618·2	113·6
G12	211 45		201 23	13·75		36461	93116	613·29	100·80
G13						+	+	611·1	085·1
G12	15 30		05 08	16·21		08947	99599	612·65	101·24
				Mean G12		612·9		101·0	
G12						+	−		
G12a	124 15		113 53	9·07		91437	40488	621·2	097·3
G13						+	+	611·1	085·1
G12a	49 30		39 08	15·86		63113	77568	621·1	097·4
				Mean G12a		621·2		097·4	
G12						+	−	620·33	083·8
G14	167 00		156 38	18·74		39661	91799	628·6	080·2
G13						+	−	611·1	085·1
G14	107 30		97 08	9·10		99226	12418	620·1	084·0
G15						+	+	616·1	071·1
G14	26 15		15 53	13·92		27368	96182	619·9	084·5
				Mean G14		620·0	084·2		
G14						−	−		
G18	194 00		183 38	15·28		06337	99799	619·0	069·0
G15A						−	+	623·1	054·2
G18	353 00		342 38	14·42		29849	95441	618·8	068·0
				Mean G18		618·9		068·8	
G18						+	+		
G17	38 30		28 08	6·65		47153	88185	622·0	074·4
G15A						+	+	616·1	071·1
G17	73 24		63 02	6·83		89127	45347	622·2	074·2
				Mean G17		622·1		074·3	

(36232) Wt.20773/261 80,000 8/48 A.& E.W.Ltd. Gp.685

Station	Bearing	Corr.	Corrected Bearing	Distance	Cos. V.A.	Sine	Cosine	E.	N.
915A		-1030				+	−		
						30071	95372	630·9	029·3
G19	173 00		162 30	26·06		~~12197~~	~~99255~~	~~625·3~~	~~048·4~~
						+	−		
						32144	94693	635·5	016·0
G20	171·45		161 15	14·07		~~44349~~	~~98963~~	~~627·3~~	~~034·5~~
						−	−		
						~~72236~~		629·2	007·4
G21	226 15		215 45	10·67		~~72236~~	~~69157~~	~~619·6~~	~~027·1~~
						58425	81157		

TRAVERSE COMPUTATION — MACHINE METHOD

Name of Traverse..... *Computer*..... *Date*.....

Total Length..... *Error*.....

BEARINGS

1

2

3

4

Station	Bearing Va	Corr.	Corrected Bearing	Distance ft	Cos. V.A.	Sine	Cosine	E.	N.
G17 G15'	+36			27.72 28.0	8.45	+ 58779	80902	(17) 510.01	6.83
G18 G14	+46			71.95 72.58	21.99	+ 71934	69466	(18) 574.54	15.28
G17 G18	−29			24.92 25.17	7.60	− 48481	87462	17 510.28	6.65
G18 G15A	−34.5			57.42 58.00	17.50	− 56641	82413		14.42
G15A M1	+8			14 43.58	13.15	+ 13917	99027		13.02
G15A G19	−21			91.58 92.33	27.98	− 35837	93358		26.06
d19 G20	−11			47.02 47.50	14.33	− 19081	98163		14.07
d20 G21	−14.5			14 36.50	11.02	− 25038	96815		10.67
G11 G12	−26 57			58 50.66	15.42	− 45321	89140		13.75
G13 G12	+11 00			16 54.25	16.51	+ 19081	98163		16.21
G12 G12a	−31 36			34.94 35.00	10.65	− 52399	85173	558.0	9.07
G13 G12a	−8 12			57 52.66	16.02	− 14263	98978	558.10	15.86
G12 G14	−24 39			64 67.75	20.62	− 41707	90887	dud.	18.74
G13 G14	−28 24			33.94 34.00	10.34	− 47562	87965	549.45	9.10
G15 G14	+26 48			16 51.25	15.59	+ 45048	89259	549.36	13.92
G11 G14									