

National Energy Authority
Reykjavik, Iceland

SÝNIEINTAK
-má ekki fjarlægja

Surveying and mapping of Berufjörður area.

OS-ROD-7644

December 1976



National Energy Authority

Reykjavík, Iceland

Surveying and mapping of Berufjörður area in East Iceland

In the summer of 1974 ground control was marked in the Berufjörður area according to a plan by VIAK AB. The area could not be photographed that summer nor the next and the marking of ground control had to be partly repeated 1975 and 1976. The necessary surveying was carried out in 1974 and 1975 and the area was finally photographed in the autumn of 1976.

Photographs

Three strips of photographs were taken from an altitude of 6000 meters above ground:

0484-0496 E

1933-1948 E

1955-1962 E

The planned lines of flight are shown on the map on page 03.

Ground control

The ground control was marked by white canvas of net size 2.0 x 2.0 meters. A steel tube was driven into the ground under the centre of the canvas, except at triangulation points 1599, 5431, 5460, 5607, 5608 and 5609 where the ground control is eccentric. The location of ground control is shown on the map on page 03.

Map boundary

The map boundary was specified in 1974 before planning of ground control and photography. We are however interested in a somewhat larger area where the photographs permit, and we have indicated a maximum area to be mapped on page 04.

Names of map sheets

2249	Suðurdalur	2149	Skriðuvatn
2248	Sultarrani	2148	Ódáðavötn
2247	Hraun	2147	Fossárdalur
2246	Norðurhnúta	2146	Geithellnadalur
2245	Kollumúli	2048	Berufjörður
		2047	Fossárvík

List of coordinates

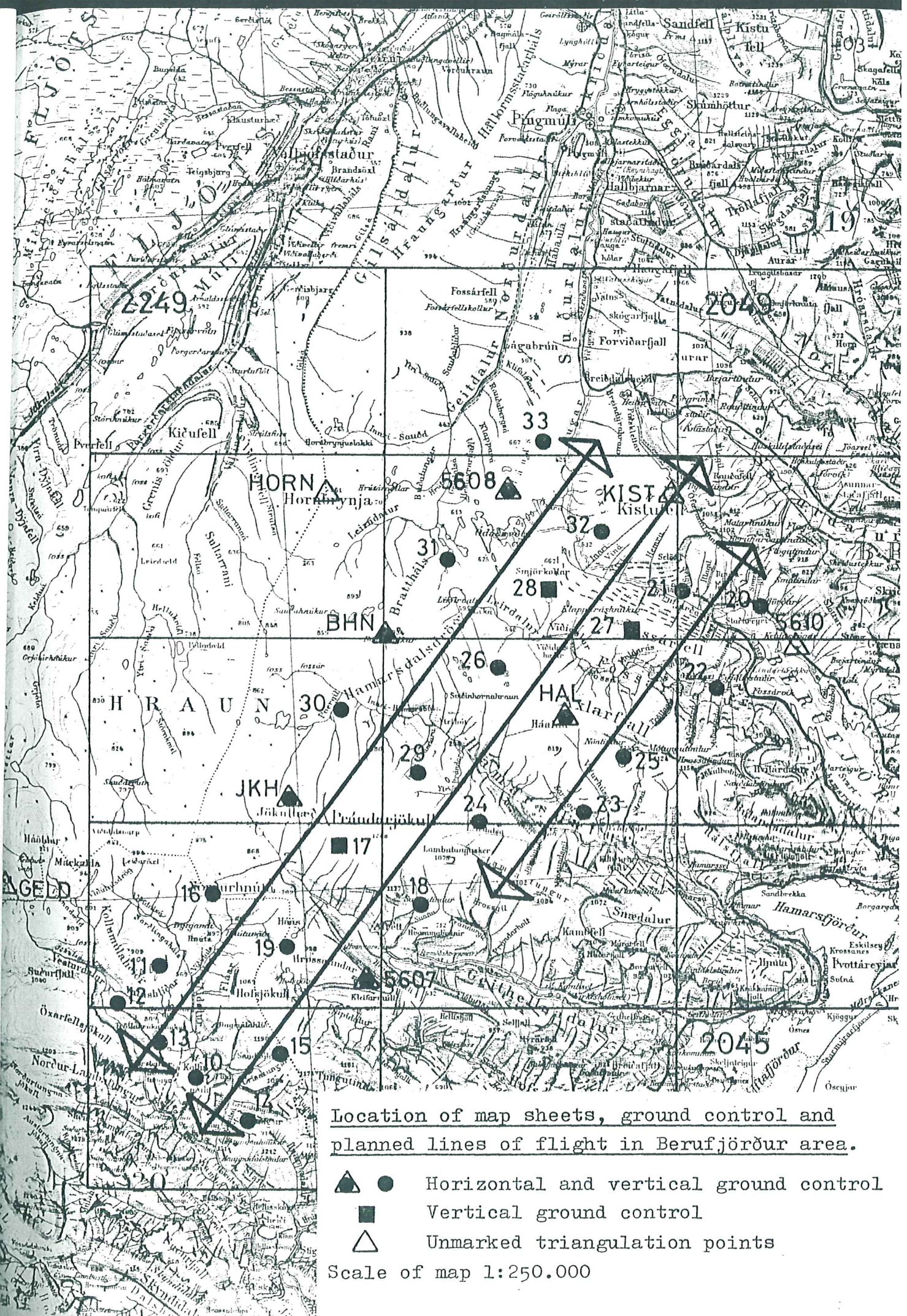
Coordinates and elevation of marked ground control are given on page 05. The first six points are eccentric marked points at triangulation points and should not be marked on the map. The rest of points on page 05 should be indicated as small circles on the map. The triangulation points given on page 06 should be indicated as triangles on the map.

Calculations

Pages 07-14 contain results of calculations, mainly computer output, and are included for convenience of surveyors.

Field books

The field books from the survey of Berufjörður are marked Austurland 1974/3 and Austurland 1974/4.



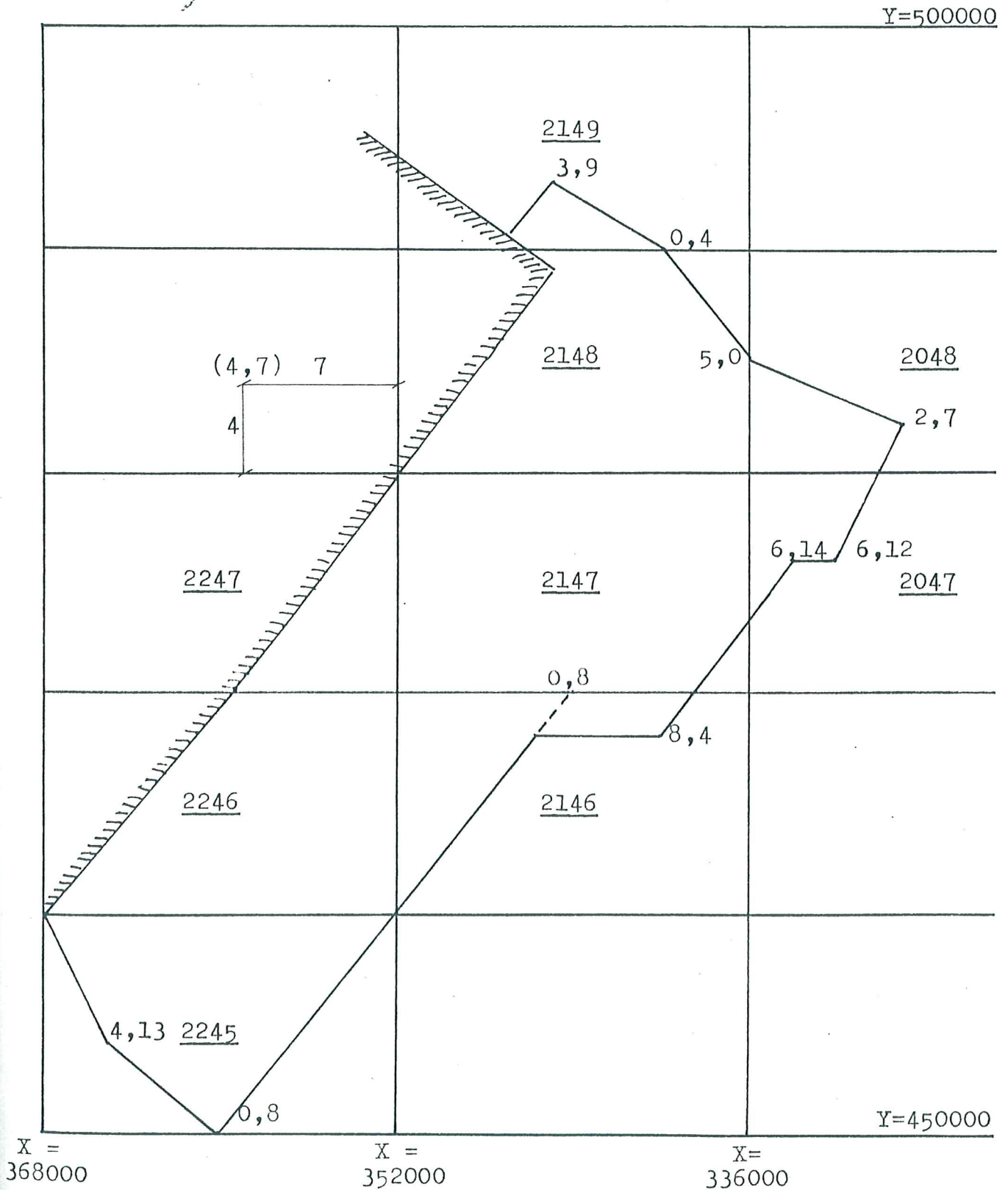
Location of map sheets, ground control and planned lines of flight in Berufjörður area.

- ▲ ● Horizontal and vertical ground control
- Vertical ground control
- △ Unmarked triangulation points

Scale of map 1:250.000

Maximum area to be mapped

The area actually mapped will be somewhat smaller, since our chartographers must decide how much can be mapped at model boundaries.



GROUND CONTROL MARKED WITH WHITE CANVAS

NUMBER	Y-NORTH	X-WEST	ELEV.	NOTE	NAME	DESCRIPTION	DONE
1599	60	480378.79	351915.51	931.70	BHN		
5431	60	487926.51	336528.31	(1109.30)	KIST		
5460	60	470989.35	356546.47	972.94	JKH		
5607	60	461819.26	353827.69	981.08	5608		
5608	60	488021.71	345466.15	663.17	HAL		
5609	60	475782.33	342228.82	688.55			
9810	0	455713.54	362192.07	904.33	9810	MULAKOLLUR	OS76
9811	0	462252.80	364150.32	846.69	9811		OS76
9812	0	459871.98	366645.35	659.68	9812		OS76
9813	0	457881.40	364391.20	739.87	9813		OS76
9814	0	453627.26	359292.24	628.46	9814		OS76
9815	0	457245.62	357764.53	938.18	9815		OS76
9816	0	465787.03	361809.82	957.41	9816		OS76
9817	0	0.00	0.00	954.62	9817		OS76
9818	0	465478.52	350249.86	652.49	9818		OS76
9819	0	463332.51	357725.92	835.24	9819		OS76
9820	0	481921.39	332125.87	45.65	9820		OS76
9821	0	482820.30	336427.16	74.26	9821		OS76
9822	60	477468.31	334025.14	98.90	9822		OS76
9823	0	470810.10	340616.14	392.40	9823		OS76
9824	0	470140.71	347015.96	647.79	9824		OS76
9825	0	473732.39	339083.84	1004.57	9825		OS76
9826	0	479159.96	345758.09	649.87	9826		OS76
9827	0	0.00	0.00	523.37	9827		OS76
9828	0	0.00	0.00	607.38	9828		OS76
9829	0	472517.20	350387.27	634.55	9829		OS76
9830	0	476411.54	354507.35	722.79	9830		OS76
9831	0	484012.56	348458.26	515.33	9831		OS76
9832	0	485811.37	340807.58	625.23	9832		OS76
9833	0	490933.86	344113.97	648.10	9833		OS76

POINTS TO BE MARKED AS TRIANGULATION POINTS ON MAP

NUMBER	Y-NORTH	X-WEST	ELEV.	NOTE	NAME	DESCRIPTION	DONE
1599	480380.84	351910.63	932.00	*38V	BHN	BO TARHNJUKUR	OS76
5431	487932.13	336535.23	1109.70	*2BV	KIST	KISTUFELL	OS76
5460	470993.01	356540.92	973.80	*2B	JKH	JOKULHAEDIR	OS76
5607	461824.78	353822.92	981.54	*4B	5607	HROSSATINDAR	OS76
5608	488030.57	345457.41	664.67	*4B	5608	ODADAVOTN NORDAN	OS76
5609	475786.62	342231.57	888.90	*3B	HAL	HAALDA	OS76
5610	479589.52	329797.18	34.02	*4B	5610	KELDUSKOGAR	OS76

INPUT TRIO

500

HORNKISTJKH BHN HAL
 54255431546015995609
 9991 22 BHN HAL

JKH	HORN	RHN	242578.0	KIST	503674.0	0.0	0.0	9994	17981	4.2
HAL	BHN	HORN	203470.0	KIST	997067.0	0.0	0.0			0.0
HORN	KIST	HAL	476744.0	BHN	736638.0	JKH	1040246.0	9993	6871	3.3
KIST	HAL	JKH	273507.0	BHN	430186.0	BHN	729702.0	9992	19011	1.9
BHN	HORN	KIST	964050.0	HAL	1536889.0	JKH	2546474.0	9994	16320	4.1

9993

9992 1 3.0 1.0 10.0 10.0

** BERUFJORDUR 1974-75

5192000000000000HORNKISTBHN HAL - BHN
 9999

INPUT TRII

3 3 51

5425	488193.26	355212.12	958.60	*2BV	HORN	HORN	HORN	HORN	OS74
5431	487932.13	336533.13		*2BV	KIST	KIST	KIST	KIST	OS71
5460	470993.01	356540.12	672.70	*2B	JKH	JKH	JOKULHAEDIR	JKH	OS74
15995609									

** BERUFJORDUR 1974-75

** ADJUSTED COORDINATES **

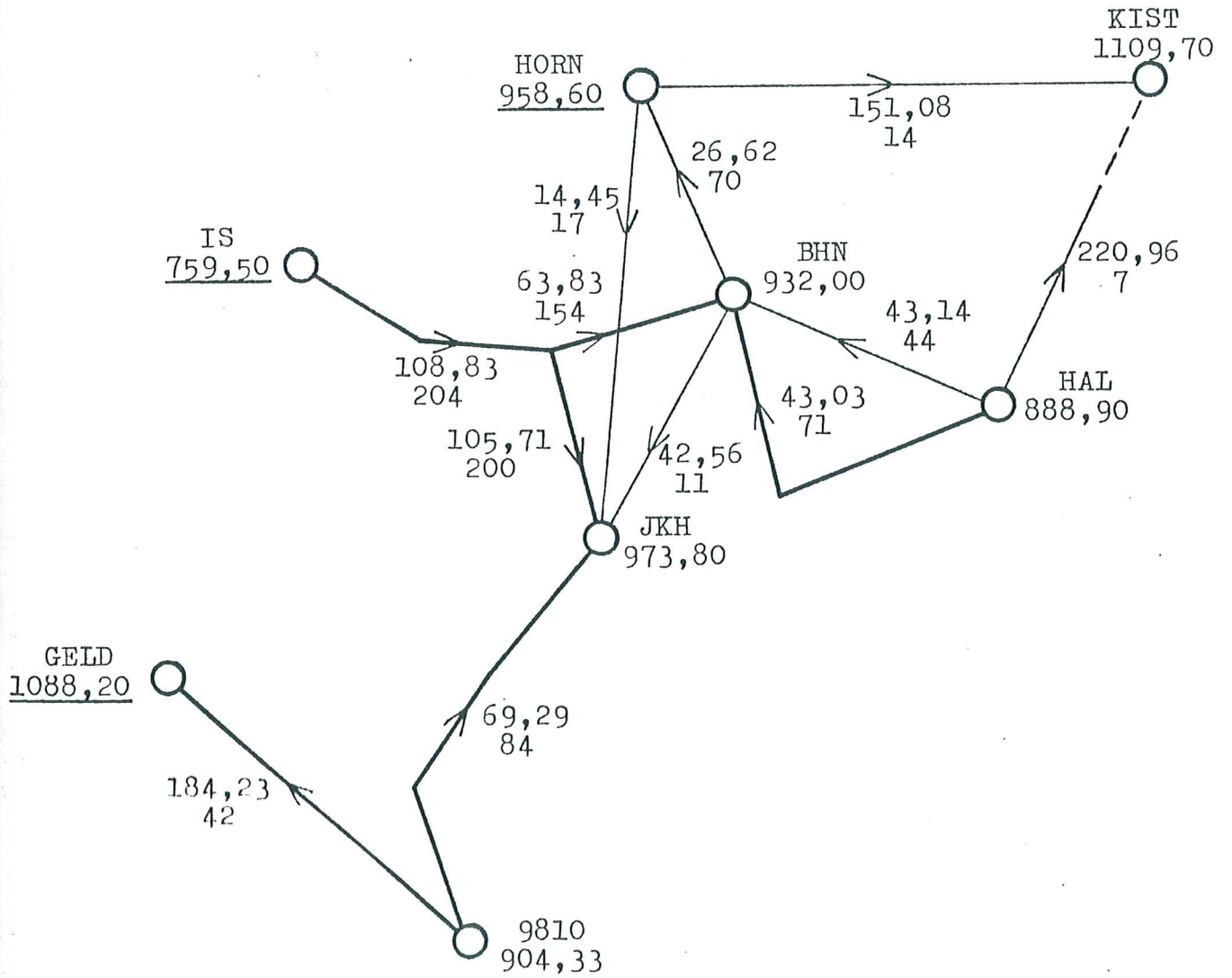
CORRECTIONS MEAN ERRORS NUMBER Y-NORTH X-WEST

CORR	1.56	ERR	.06	-1	1.00 SEC	3.09 CC
.69	.45	.04	.03	1599	480380.84	351910.63
.61	-1.56	.05	.06	5609	475786.62	342231.57

*** ADJUSTED DIRECTIONS AND DISTANCES ***

BERUFJORDUR 1974-75

STAT	NUMB	GRADS	EPROR	NAME	D	M	SEC	NUMB	DISTANCE	NAME
5460	EXC	-1.376	-1.697	JKH	94	24	36.1	5425	17252.70	HORN
	5425	104.90003	-0.23	HORN	116	14	31.4	1599	10468.09	BHN
	1599	129.15783	-0.23	BHN	139	44	26.2	5431	26213.36	KIST
	5431	155.26736	.46	KIST						
5609				HAL	25	23	29.2	1599	10714.06	BHN
	1599	28.21271	-1.40	BHN	43	42	13.2	5425	17956.40	HORN
	5425	48.55963	-0.97	HORN	115	07	37.4	5431	13414.98	KIST
	5431	127.91895	2.72	KIST						
5425	EXC	-0.711	-1.715	HORN	180	47	56.7	5431	18677.47	KIST
	5431	200.88788	4.12	KIST	223	42	22.4	5609	17954.65	HAL
	5609	248.56248	3.12	HAL	247	05	49.9	1599	8480.24	BHN
	1599	274.55244	-3.47	BHN	274	25	18.7	5460	17250.89	JKH
	5460	304.91317	-2.77	JKH						
5431	EXC	-2.360	-0.692	KIST	295	08	05.8	5609	13413.26	HAL
	5609	327.92774	-3.22	HAL	319	44	59.7	5460	26212.99	JKP
	5460	355.27769	4.27	JKH	333	51	04.9	1599	17129.50	BHN
	1599	370.94598	.37	BHN	0	48	28.7	5425	18680.24	HORN
	5425	.89776	-1.42	HORN						
1599	EXC	.413	-1.566	BHN	67	04	37.9	5425	8481.81	HORN
	5425	74.53022	3.00	HORN	153	50	31.8	5431	17128.04	KIST
	5431	170.93574	-2.23	KIST	205	23	50.6	5609	10712.80	HAL
	5609	228.21933	.66	HAL	296	15	36.9	5460	10468.68	JKH
	5460	329.17808	-1.93	JKH						



Measurements and calculation of elevations

Map scale 1:100.000

———— Simultaneous measurements

———— Reciprocal measurements

----- One-way measurements

Measured differences in elevation and weights are shown.

Input GTPOL

000	466332.53	373276.84	1088.20	*2BV	GELD	GELD IN GAFELL	OS 74
5440	481888.50	367925.06	759.50	*3B	IS	INNRI-SAUDA VESTAN	OS 74
5454	488193.26	355212.62	958.60	*2BV	HORN	HORNBRYNJA	OS 74
5425	470993.01	356540.92	973.80	*2B	JKH	JOKULHAEDIR	OS 76
5460	487932.13	336535.23	1109.70	*2BV	KIST	KISTUFELL	OS 76
5431	475786.62	342231.57	888.90	*3B	HAL	HAALDA	OS 76
5609	480380.84	351910.63	932.00	*3BV	BHN	BOTARHNJUKUR	OS 76
1599	455713.54	362192.07	934.33	*4R	9810	MULAKOLLUR	
9810	0						
9999							
9810GELD9811	328431.	275 682686.		157 150	0681005 779.	068 995024...	214
JKH HORN5607	1767600.	276 956170.		132 149	061 999951.	0461001004...	3393 72
IS	AG5	484005.		124 154	067 998193.	0341002428...	
HAL KIST98	242168345.	284 740489.		150 152	0701021112.	069 979652...	
HAL KIST5610	531862.	2971303147.		150 151	0681042358.	071 958774...	
BHN HORN5608	700756.	2821001113.		124 143	0621017453.	053 983469...	309319
5610HAL GT7	3779457.	325 369960.		152 164	075 992208.	0701008389...	165.
9999							
GELDJKH 9810	659185.	27215352 73.		129 157	0661008348.	029 993097...	364808
9810GELD9812	3991875.	275 609818.		157 146	0631025926.	065 974821...	243.
9810GELD9813	9104.	275 309255.		157 149	0671034199.	065 966452...	
9810GELD9814	1910700.	275 357336.		157 143	0651013835.	066 986776...	
9810GELD9815	1301584.	275 468544.		157 141	062 999823.	0661000842...	
9811	9816	424162.		155 151	065 983729.	0621016912...	
5607	9817	532119.		149 142	0571003562.	063 997104...	
5607JKH 9818	676371.	276 511246.		149 147	0641016383.	068 984233...	
JKH HORN9819	2048858.	278 775294.		129 150	0631014238.	049 986584...	338492
JKH HORN9816	2455008.	278 740792.		129 149	0671001777.	049 998994...	218.
JKH	GT5	707036.		129 151	0721009865.	049 990869...	218.
AG5	GT5	506910.		154 151	070 988628.	0681012001...	
5610HAL 9820	689388.	325 329554.		152 152	071 998075.	0701002568...	
5610HAL 9821	477618.	325 737540.		152 143	068 996920.	0711003856...	
GT7 561098	222456890.	325 126313.		164 213	131 991185.	0741009814...	
9824HAL 9823	486118.	290 644002.		152 146	0651025616.	069 975103...	
HAL KIST9825	1088909.	284 376088.		150 138	066 980735.	0681019876...	
HAL BHN 9826	203742.	274 488630.		150 141	0621031490.	069 969165...	
HAL	9827	611422.		150 142	0681028006.	069 972686...	
HAL	9828	717186.		150 138	0591025380.	069 975370...	
HAL BHN 9829	3475153.	271 878740.		150 147	0641004367.	069 996487...	
BHN 9829		800898.		127 147	0641008123.	036 992681...	
BHN JKH 9830	77230.	282 474856.		135 147	0631028343.	052 972263...	095898
BHN	VG15	804916.		133 123	0671005569.	045 995214...	
5608BHN 9831	3962264.	286 501547.		143 146	0671006545.	062 994031...	
5608BHN 9832	2837368.	286 515272.		143 141	0621005168.	062 995421...	
5608BHN 9833	1879788.	286 319930.		143 147	0661003561.	062 996983...	

GTPOL	000	-03	.30	6.50	3.50	3.50
98109811		-58.05	57.21		-1.8047	
JKH 5607		7.38	-8.10		-.7833	
HAL 5610		-854.58	855.15		.3360	
GELD9810		-185.37	183.08		-.9713	
98109812		-244.93	244.36		-1.5250	
98109815		3.68	-4.02		-1.5473	
JKH 9819		-168.82	168.29		-.8695	
56109821		40.05	-40.41		-.6563	
HAL 9826		-239.18	238.86		-1.3407	
56089831		-49.16	49.50		1.3239	

OUTPUT GTPOL

9811	0	462252.80	364150.32	846.69	9811
5607	0	461824.78	353822.92	981.54	5607
	0	0.00	0.00	775.28	AG5
9824	0	470140.71	347015.96	647.79	9824
5610	0	479589.52	329797.18	34.02	5610
5608	0	488030.57	345457.41	664.67	5608
GT7	0	477370.73	332757.20	80.95	GT7
9810	0	455713.54	362192.07	903.97	9810
9812	0	459871.98	366645.35	659.68	9812
9813	0	457881.40	364391.20	739.87	9813
9814	0	453627.26	359292.24	828.46	9814
9815	0	457245.62	357764.53	908.18	9815
9816	0	0.00	0.00	957.23	9816
9817	0	0.00	0.00	954.62	9817
9818	0	465478.52	350249.86	852.49	9818
9819	0	463332.51	357725.92	805.24	9819
9816	0	465787.03	361809.82	957.41	9816
GT5	0	0.00	0.00	868.09	GT5
GT5	0	0.00	0.00	868.33	GT5
9820	0	481921.39	332125.87	45.65	9820
9821	0	482820.30	336427.16	74.26	9821
9822	0	477464.66	334016.69	98.90	9822
9823	0	470810.10	340616.14	392.40	9823
9825	0	473732.39	339083.84	1004.57	9825
9826	0	479159.96	345758.09	649.87	9826
9827	0	0.00	0.00	623.37	9827
9828	0	0.00	0.00	607.38	9828
9829	0	472517.20	350387.27	834.55	9829
9829	0	0.00	0.00	834.62	9829
9830	0	476411.54	354507.35	722.79	9830
	0	0.00	0.00	866.47	VT5
9831	0	484012.56	348458.26	615.33	9831
9832	0	485811.37	340807.58	625.23	9832
9833	0	490933.86	344113.97	648.10	9833

STAT	ORIE	PKT	READING	PKT	READING	NUMBER	Y-NORTH	X-WEST	ELEVAT	STAT
BHN	HORN	-600	3123009.0	-601	668.0	159960	480378.79	351915.51	931.70	BHN
		-603	-30.0		0.0					
			0.0	9994	1253127.8					
KIST	HAL	-600	3041127.0	-601	677.0	543160	487926.51	336528.31	1109.30	KIST
		-603	-40.0		0.0					
			0.0	9992	1901171.5					
JKH	HORN	-600	2755613.0	-601	760.0	546060	470989.35	356546.47	972.94	JKH
		-603	-86.0		0.0					
			0.0	9994	1798124.2					
5607	JKH	-600	2637261.0	-601	730.0	560760	461819.26	353827.69	981.08	5607
		-603	-46.0		0.0					
			0.0							
5608	BHN	-600	49550.0	-601	1245.0	560860	488021.71	345466.15	663.17	5608
		-603	-150.0		0.0					
			0.0							
HAL	KIST	-600	1358128.0	-601	510.0	560960	475782.33	342228.82	888.55	HAL
		-603	-35.0		0.0					
			0.0							
9822	GT7	-600	2212446.0	-501	921.0	982260	477468.31	334025.14	98.90	9822
		-603	0.0		0.0					
			0.0							

UMREIKNUN PUNKTA UR KERFI * I KERFI V

FRAVIK I KERFI V

5431 0.00 0.00
 5440 0.00 0.00
 1599 -0.01 0.00
 188 0.00 0.00

FORMULUR

.66891784E+04 .99829206E-03*Y .47162675E-04**X
 -.83397905E+03-.47162675E-04*Y .99829206E-03**X

HNIT I KERFI V	V2B	JKH	JOKULHAEDIR	OS76
5460 0	7176.18	973.80	JOKULHAEDIR	OS76
5607 0	7166.90	981.54	HROSSATINDAR	OS76
5608 0	7192.66	964.67	ODADAVOTN NORDAN	OS76
5609 0	7180.29	988.90	HAALDA	OS76
5610 0	7183.50	940.2	KELDUSKOGAR	OS76
9810 0	7161.19	904.33	MULAKOLLUR	OS76
9811 0	7167.81	946.69		OS76
9812 0	7165.55	959.68		OS76
9813 0	7163.46	939.87		OS76
9814 0	7158.97	928.46		OS76
9815 0	7162.51	908.18		OS76
9816 0	7171.23	957.41		OS76
9818 0	7170.38	952.49		OS76
9819 0	7168.59	905.24		OS76
9820 0	7185.94	945.65		OS76
9821 0	7187.04	920.89		OS76
9822 0	7181.58	98.90		OS76
9823 0	7175.24	922.40		OS76
9824 0	7174.88	947.79		OS76
9825 0	7178.09	1004.57		OS76
9826 0	7183.82	949.87		OS76
9829 0	7177.41	934.55		OS76
9830 0	7181.49	922.79		OS76
9831 0	7188.79	915.33		OS76
9832 0	7190.23	925.23		OS76
9833 0	7195.50	948.10		OS76

UMREIKNUN PUNKTA UR KERFI # I KERFI V

FRAVIK I KERFI V
 5431 0.00 0.00
 5440 0.00 0.00
 1599 -0.01 0.00
 188 0.00 0.00

FORMULUR

.66891784E+04 .99829206E-03*Y .47162675E-04*X
 -.83397905E+03-.47162675E-04*Y .99829206E-03*X

HNIT I KERFI V																				
5460	0	7176.18	-500.26	973.80	V2B	JKH	JOKULHAEDIR	OS76												
5607	0	7166.90	-502.54	981.54	V4B	5607	HROSSAT INDAR	OS76												
5608	0	7192.66	-512.12	664.67	V4B	5608	ODADAVOTN NORDAN	OS76												
5609	0	7180.29	-514.77	888.90	V3B	HAL	HAALDA	OS76												
5610	0	7183.50	-527.36	34.02	V4B	5610	KELDUSKO GAR	OS76												
0	0	7225.64	-491.13		V															
0	0	7215.66	-490.66		V															
0	0	7205.68	-490.18		V															
0	0	7195.69	-489.71		V															
0	0	7185.71	-489.24		V															
0	0	7175.73	-488.77		V															
0	0	7165.74	-488.30		V															
0	0	7224.89	-507.10		V															
0	0	7214.90	-506.63		V															
0	0	7204.92	-506.16		V															
0	0	7194.94	-505.68		V															
0	0	7184.95	-505.21		V															
0	0	7174.97	-504.74		V															
0	0	7164.99	-504.27		V															
0	0	7224.13	-523.07		V															
0	0	7214.15	-522.60		V															
0	0	7204.17	-522.13		V															
0	0	7194.18	-521.66		V															
0	0	7184.20	-521.19		V															
0	0	7174.22	-520.71		V															
0	0	7164.23	-520.24		V															