












# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA MISHEGOK MTA STATE/COUNTY ALASKA BOOK NO. 3 PAGE 93 OF 27  
 LINE/LOOP NO. R7XS TYPE SURVEY \_\_\_\_\_ CLIENT Husky DATE 26 DY 3 MO 79 YR  
 SURVEYOR D.D. HELANDER INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	  	STATION	VERTICAL						ELEVATION		L/R OR DJ	HORIZONTAL		REMARKS		
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD		RIGHT TURNED HORIZONTAL ANGLE	LINE			
				SLOPE											HORIZ	
1																
2		B.M. 79319			87 56 42	+6.0	-152.8	-146.8	2378.5						2	UP ON THE SOUTHWEST
3					272 02 41	+6.0	-152.0	-146.0							3	END OF L-R7XS
4		VP 800													4	IS MARKED BY PIPE
5															5	AND TAG
6		800	0		H1	+6.1	-	+6.1	2372.4						6	
7															7	
8		798	220		92-16-46	3.0	8.75	-11.8	2366.7						8	
9		796	440												9	
10		794	660												10	
11		792	880		90-46-08	4.0	11.8	-15.8	2362.7						11	
12															12	
13		790	1100		90-53-20	5.0	17.1	-22.1	2356.3						13	2656.0
14					269-06-18	5.0	17.2	-22.2							14	
15															15	
16															16	
17															17	

10.5  
510 1/2

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 SYMBOLS  = BACKSIGHT  = INSTRUMENT SET-UP  = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

48

GSI AREA Misheguk Mtn STATE/COUNTY Alaska BOOK NO. \_\_\_\_\_ PAGE 19 OF \_\_\_\_\_  
 LINE/LOOP NO. R7XS TYPE SURVEY \_\_\_\_\_ CLIENT Husky DATE 29 DY 3 MO 78 YR  
 SURVEYOR Jensen INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184



LINE	  	STATION	VERTICAL							HORIZONTAL		REMARKS	
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION		RIGHT TURNED HORIZONTAL ANGLE		LINE
			SLOPE	HORIZ					INST	ROD			
1												1 Tie into Bas 78286	
2												2 Common with 101	
3		241+10	930°	D 88-13-20	11.0				V <sub>1</sub>	00-00-00		3 Line R7 ~ Marker	
4				R 271-46-09	✓				D	189-51-56		4 Pipe and tags.	
5		233+50		19-32	5.4					189-51-56		5	
6		210	2580°	D 91-15-20	6.0				V <sub>2</sub>	180-00-12		6	
7				R 268-40-08	✓				R	09-52-08		7	
8										189-51-56		8 189-51-56	
9												9	
10												10	
11												11	
12												12	
13												13	
14												14	
15												15	
16												16	
17												17	

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**SYMBOLS**    = BACKSIGHT    = INSTRUMENT SET-UP    = SIDESHOT    = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA MISHOOK MOUNTAIN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 3 OF 27  
 LINE/LOOP NO. R7 X5 TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE 26 DY 3 MO 79 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	<input type="checkbox"/> $\Delta$ <input type="checkbox"/> $\uparrow$ <input type="checkbox"/> SS <input type="checkbox"/> $\odot$	STATION	VERTICAL							ELEVATION		LR OR DI	HORIZONTAL RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD					
			SLOPE 	<input type="checkbox"/> FEET <input type="checkbox"/> METERS HORIZ 											
1										2328.4				1	
2		760	880	91 43 33	7.0	-26.5	-33.5			2294.9				2	
3		758	1100	-										3	
4		756	1320	90 12 49	5.2	-4.9	-10.1			2318.3				4	
5		754	1540	-										5	
6		752	1760	89 37 42	5.2	+13.5	+8.3			2336.7				6	
7		750	1980	-										7	
8		748	2200	87 21 55	5.2	+24.4	+19.2			2347.6				8	
9	$\odot$	746	2420 ✓	89 23 27	7.0	+25.7	+24.7							9	
10	$\odot$			270 35 46	7.0	+25.2	+24.2			2352.9				10	2352.4
11														11	
12														12	
13														13	
14														14	
15														15	
16														16	
17														17	

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SYMBOLS  $\Delta$  = BACKSIGHT  $\uparrow$  = INSTRUMENT SET-UP SS = SIDESHOT  $\odot$  = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA MISHKOV MOUNTAIN STATE/COUNTY ALASKA BOOK NO. 3 PAGE 4 OF 27  
 LINE/LOOP NO. R7 X3 TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE 27 DY 3 MO 79 YR  
 SURVEYOR J ANDERSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

96

LINE	  	STATION	VERTICAL						HORIZONTAL			REMARKS			
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE 	HORIZ 						INST				
1													1		
2		746	2640 ✓		92 32 40	+15.0	+117.2	+132.2	2485.3				2		
3		744	2420		267 27 00	+15.0	+117.5	+132.5					3		
4		744	2420		92 56 30	+1.0	-124.2	-128.2				2357.1	4		
5		742	2200		-								5		
6		740	1980		73 14 00	-4.0	-111.7	-115.7				2369.6	6		
7		738	1760		-								7		
8		736	1540		93 42 53	-4.0	-99.8	-103.8				2381.5	8		
9		734	1320		-								9		
10		732	1100		94 40 00	-2.0	-89.5	-93.5				2391.8	10		
11		730	880		-								11		
12		728	660		94 41 30	-4.0	-54.0	-58.0				2427.3	12		
13		726	440		-								13		
14		724	220		95 31 00	-2.0	-21.1	-23.1				2462.2	14		
15		722	0		-	-5.0	-	-5.0				2480.3	15		
16		720	220		85 12 28	-5.2	-18.4	-23.6				2461.7	16	2498.5	
17		718	440		-								17		

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SYMBOLS    = BACKSIGHT    = INSTRUMENT SET-UP    = SIDESHOT    = FORESIGHT



# HORIZONTAL AND VERTICAL SURVEY NOTES

97

GSI AREA MISHREGUK MOUNTAIN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 5 OF 27  
 LINE/LOOP NO. R7 XS TYPE SURVEY \_\_\_\_\_ CLIENT Husky DATE 27 DY 3 MO 79 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	  	STATION	VERTICAL						ELEVATION		LR OR DR	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD				
			SLOPE 	HORIZ 										
1									2985.3			1		
2		716	660			84 36 31	5.2	+62.0	+56.8		2542.1		2	
3		714	880			-							3	
4		712	1100			84 24 41	5.2	+107.1	+101.9		2587.2		4	
5		710	1320			-							5	
6		708	1540			84 38 57	7.0	+143.6	+136.6		2621.9		6	
7	o	707	1650 ✓			84 37 04	11.0	+154.8	+143.8		2629.0		7	2628.3
8	o					275 22 36	11.0	+154.6	+143.6				8	
9													9	
10													10	
11	Δ	707	2750 ✓			91 02 02	+15.0	+49.6	+64.6	2693.6			11	
12	Δ					268 57 56	+15.0	+49.6	+64.6				12	
13		706	2640			-							13	
14		704	2420			91 05 40	4.0	-46.2	-50.2		2643.4		14	
15		702	2200			-							15	
16		700	1980			91 12 36	4.0	-41.8	-45.8		2647.8		16	
17		698	1760			-							17	

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SYMBOLS

Δ = BACKSIGHT

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA MISHNEGUK MOUNTAIN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 98 OF 27  
 LINE/LOOP NO. R7 XS TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE 27 DY 3 MO 77 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1124

LINE	  	STATION	VERTICAL						HORIZONTAL			REMARKS		
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION		L/R OR D/I		RIGHT TURNED HORIZONTAL ANGLE	LINE
			SLOPE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS HORIZ					INST	ROD				
1									2693.6			1		
2		896	1540	91 26 12	-4.0	-38.6	-42.6		2651.0			2		
3		894	1320	-								3		
4		892	1100	71 26 44	-4.0	-27.7	-31.7		2661.9			4		
5		890	880	-								5		
6		888	660	91 25 00	-4.0	-16.3	-20.3		2673.3			6		
7		886	440	-								7		
8		884	220	91 59 20	-4.0	-7.6	-11.6		2682.0			8		
9	⊗	882	0	90 00 00	+5.0	-	-5.0		2688.6			9		
10		880	220	87 43 31	-5.2	+8.7	+3.5		2697.1			10		
11		878	440	-								11		
12		876	660	87 43 31	-5.2	+26.2	+21.0		2714.6			12	675 = TARGET	
13	⊙	874	880 ✓	87 48 06	-7.5	+33.8	+26.3		2719.9			13	2718.1	
14	⊙			272 11 36	-7.5	+33.7	+26.2					14		
15												15		
16	SS			89.44 36	6°				2713.8			16	TIG 0.6	
17	SS	B.M. 79321	5921.5	270 14 52	6°		+20.8		2713.2		BARR	17		

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SYMBOLS

= BACKSIGHT

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SS = SIDESHOT

⊙ = FORESIGHT









# HORIZONTAL AND VERTICAL SURVEY NOTES

99

GSI AREA MISHEGUIS MOUNTAIN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 7 OF 27

LINE/LOOP NO. 87 XS TYPE SURVEY \_\_\_\_\_ CLIENT HURKY DATE 27 DY 3 MO 79 YR

SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184


LINE	  	STATION	VERTICAL						ELEVATION		L/R OR D/I	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST					ROD
															
1													1		
2		674	2640 ✓			85 41 11	+3.0	-198.6	-195.6	2524.5			2		
3		A				274 18 20	+3.0	-198.2	-195.2				3	673 = TARGET	
4		672	2A20			85 45 58	+0	+178.7	+174.7	2699.2			4		
5		670	2200			-							5		
6		668	1980			86 01 17	-4.0	+137.4	+133.4	2657.9			6		
7		666	1760			-							7		
8		664	1540			86 07 31	+0	+104.1	+100.1	2624.6			8		
9		662	1320			-							9		
10		660	1100			86 07 37	+0	+74.3	+70.3	2594.8			10		
11		658	880			-							11		
12		656	660			86 17 40	-4.0	+42.7	+38.7	2563.2			12		
13		654	440			-							13		
14		652	220			86 48 41	-4.0	+12.2	+8.2	2532.7			14		
15		650	0			90 00 00	-5.0	-	-5.0	2519.5			15		
16		648	220			92 24 17	2.0	-9.2	-11.2	2513.3			16	TARGET	
17		646	440			93 40 25	-4.0	-28.2	-32.2	2492.3			17		

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SYMBOLS

 = BACKSIGHT

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 = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA MISHCHUK MOUNTAIN STATE/COUNTY ALASKA BOOK NO. 3 PAGE 8 OF 27  
 LINE/LOOP NO. R7 XS TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE 27 DY 3 MO 79 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184











LINE	  	STATION	VERTICAL						HORIZONTAL			REMARKS		
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION		L/R OR DI		RIGHT TURNED HORIZONTAL ANGLE	LINE
			SLOPE	HORIZ					FEET	METERS				
1									2524.5			1		
2		644	660									2		
3		642	880	93 13 04	5.2	-49.4	-54.6		2469.9			3		
4		640	1100	93 10 45	15.0	-61.0	-76.0		2448.5			4		
5		638	1320									5		
6		636	1540	93 12 13	5.2	-59.2	-64.4		2460.1			6		
7		624	1760									7		
8		632	1980	92 50 33	5.2	-98.2	-103.4		2421.1			8		
9		630	2200									9	TARGET	
10		628	2420	92 36 11	5.2	-109.9	-115.1		2409.4			10		
11	o	626	2640 ✓	92 16 50	15.0	-105.1	-120.1		2404.1			11	TARGET 2400.7	
12	o			267 42 26	15.0	-105.6	-120.6					12		
13												13		
14												14		
15	Δ	626	0	90 00 00	+4.9	-	+4.9	2409.0				15	+3.2	
16	o		T 10.65 765	77 59 54	2.5	+318.1	+315.6		2713.2	REFERENCE: B.M.S SURVEY		16	TIE SUPPORT	
17	o	B.M. 79321	C 3.00 1530	281 59 31	2.5	+317.9	+315.4		VOID			17	ALL VOID	

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA MISHNEGVIK MOUNTAIN STATE/COUNTY ALASKA BOOK NO. 3 PAGE 9 OF 27  
 LINE/LOOP NO. R7 XS TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE 27 DY 3 MO 79 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	   	STATION	VERTICAL						HORIZONTAL			REMARKS		
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION		L/R OR DI		RIGHT TURNED HORIZONTAL ANGLE	LINE
			SLOPE 	FEET METERS HORIZ 					INST	ROD				
1										2404.1			1	2400.7
2		626	T 13.4 940	89 00 32	+1.0	-32.5	-31.5	2372.7					2	
3			C 4.0 1880	270 58 48	+1.0	-32.2	-31.2						3	
4		624	1650	89 01 06	-2.0	+28.3	+24.3			2397.0			4	
5		622	1430	89 00 34	-4.0	+24.6	+20.6			2393.3			5	
6		620	1210	89 01 02	-4.0	+20.8	+16.8			2389.5			6	
7		618	990	-									7	619 = TARGET
8		616	770	89 18 57	-4.0	+9.2	+5.2			2377.9			8	
9		614	550	-									9	
10		612	330	89 50 00	-2.0	+1.0	-3.0			2369.7			10	611 = TARGET
11		610	110	-									11	
12		609	0	90 00 00	-5.0	-	-5.0			2367.7			12	TARGET
13		608	110	89 12 23	-4.0	+1.5	-2.5			2370.2			13	
14		606	330	90 37 57	-5.2	-5.6	-10.8			2361.9			14	
15		604	550	-									15	
16		602	770	91 18 57	-5.2	-17.7	-22.9			2349.8			16	
17		600	T 12.97 497	90 55 49	-8.0	-16.1	-24.1			2348.4			17	TARGET 2345.0

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 WORKED BY C. BOB CHECKED BY 994 1ST 269 03 16 2ND -16.4 -24.4

SYMBOLS  = BACKSIGHT  = INSTRUMENT SET-UP  = SIDESHOT  = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA MIDHEAVY MOUNTAIN STATE/COUNTY ALASKA BOOK NO. 3 PAGE 10 OF 27  
 LINE/LOOP NO. R7 XS TYPE SURVEY \_\_\_\_\_ CLIENT HUSEY DATE 27 DY 2 MO 79 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	   	STATION	VERTICAL						ELEVATION		L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST					ROD
				 SLOPE	 HORIZ										
1													1		
2		600	T 10.8	880	89 06 56	-2.0	-27.2	-29.2	2319.4				2		
3			C 2.0	1760	270 52 13	-2.0	-26.7	-28.7					3		
4		598	1540		-								4		
5		596	1520		89 14 52	-4.0	+17.3	+13.3	2332.7				5		
6		594	1100		-								6	TARGET	
7		592	880		89 15 01	-4.0	+11.5	+7.5	2326.9				7		
8		590	660		-								8		
9		588	440		89 23 17	-4.0	+4.7	+0.7	2320.1				9		
10		586	220		-								10		
11		584	0		90 01 00	-5.0	-	-5.0	2314.4				11		
12		582	220		-								12		
13		580	440		91 37 18	-5.2	-12.5	-17.7	2301.7				13		
14		578	660		-								14		
15		576	880		90 49 08	-5.2	-12.6	-17.8	2301.6				15		
16		574	1100		-								16	TARGET	
17		573	T 12.2	620	90 23 33	-5.0	-8.5	-13.5	2305.7				17	2304.3	

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 SYMBOLS = BACKSIGHT = INSTRUMENT SET-UP = SIDESHOT = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

103

GSI AREA MISSEQUIV MOUNTAIN STATE/COUNTY ALABAMA BOOK NO. \_\_\_\_\_ PAGE 11 OF 27  
 LINE/LOOP NO. R7 XS TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE 27 DY 3 MO 79 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	  	STATION	VERTICAL						ELEVATION		L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD					
1													1		
2		573	1650			88 54 07	+2.0	-31.6	-29.6	2276.2				2	
3						271 05 14	+2.0	-31.3	-29.3					3	
4		572	1540			88 55 59	-2.0	+28.7	+26.7	2302.9				4	
5		570	1320			89 31 46	-7.0	+22.4	+18.4	2294.6				5	
6		568	1100			89 07 37	-4.0	+16.8	+12.8	2289.0				6	
7		566	880			-								7	
8		564	660			89 06 47	-4.0	+10.2	+6.2	2282.4				8	
9		562	440			-								9	
10		560	220			88 32 30	-4.0	+5.6	+1.6	2277.8				10	
11	X	558	0			90 00 00	-5.0	-	-5.0	2271.2				11	
12		556	220			-								12	
13		554	440			92 07 04	-5.2	-16.3	-21.5	2254.7				13	
14		552	660			92 58 20	-5.2	-34.2	-39.4	2236.8				14	
15		550	880			-								15	
16		548	1100			91 37 13	-5.2	-31.1	-36.3	2239.9				16	
17		546	1320			-								17	

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SYMBOLS

= BACKSIGHT





= INSTRUMENT SET-UP

SS = SIDESHOT

= FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES


GSI AREA MISHKUK MOUNTAIN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 104 <sup>104</sup> OF 27  
 LINE/LOOP NO. R7 XS TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE 27 DY 3 MO 79 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE		STATION	VERTICAL						HORIZONTAL			REMARKS			
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			LR OR DR	RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE 	HORIZ 						INST				
1										2276.2			1		
2		544	1540			91 22 36	-5.2	-37.0	-42.2		2234.0			2	
3		542	1760			-								3	
4		540	1980			91 02 14	2.0	-35.8	-37.8		2238.4			4	
5		538	2200			-								5	
6	o	537	2380 ✓			90 58 38	-5.0	-39.4	-44.4		2231.5			6	2332.2
7	o					269 00 35	-5.0	-39.9	-44.9					7	
8														8	
9														9	
10	Δ	NO STADIA 537	2090 ✓			88 46 00	+10.0	-45.0	-35.0	2196.7				10	
11	A					271 13 20	+10.0	-44.6	-34.6					11	
12		536	1980			88 46 00	8.0	+42.6	+34.6		2231.3			12	
13		534	1760			-								13	
14		532	1540			88 43 10	-4.0	+34.4	+30.4		2227.1			14	
15		530	1320			-								15	
16		528	1100			88 41 36	-4.0	+25.1	+21.1		2217.8			16	
17		526	880			-								17	

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SYMBOLS

 = BACKSIGHT

 = INSTRUMENT SET-UP







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 = FORESIGHT



# HORIZONTAL AND VERTICAL SURVEY NOTES


GSI AREA MISHNEGUK MOUNTAIN STATE/COUNTY ALASKA BOOK NO. 3 PAGE 13 OF 27  
 LINE/LOOP NO. R7 XS TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE 28 DY 3 MO 79 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	   	STATION	VERTICAL						ELEVATION		L/R OR D/I	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST					ROD
															
1										2196.7			1		
2		524	660		88 47 44	-2.0	+13.7	+11.9		2208.6			2		
3		522	740		87 00 50	-2.0	+7.6	+5.6		2202.3			3		
4	X	520	220		88 57 13	-4.0	+4.0	+0.0		2196.7			4		
5	X	518	0		90 00 00	-5.0	-	-5.0		2191.7			5		
6		516	220		-								6		
7		514	440		90 48 00	-5.2	-6.1	-11.3		2185.4			7		
8		512	660		90 52 39	-5.2	-10.1	-15.3		2181.4			8		
9		510	880		-								9		
10		508	1100		90 36 34	-5.2	-11.7	-16.9		2179.8			10		
11		506	1320		-								11		
12		504	1540		90 44 40	-4.0	-20.0	-24.0		2172.7			12		
13		502	1760		-								13		
14		500	1980		90 32 04	-4.0	-18.5	-22.5		2174.2			14		
15	O	498	T 14.0' 1100'		90 12 16	-6.0	-7.9	-23.9		2172.6			15	2173.3	
16	O		C 3.0' 2200'		269 47 11	-6.0	-8.2	-24.2					16		
17													17		

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SYMBOLS

 = BACKSIGHT








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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA MISHNEGUK MOUNTAIN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 14 OF 27  
 LINE/LOOP NO. R7 XS TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE 28 DY 3 MO 72 YR  
 SURVEYOR J ANDERSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE		STATION	VERTICAL						ELEVATION		L/R OR DI	HORIZONTAL		REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV. DIFF	FINAL ELEVATION DIFF	INST		ROD	RIGHT TURNED HORIZONTAL ANGLE		LINE
															
1													1		
2		498	T 8.37	-	90 00 00	+5.6	-	+5.6	2178.2				2		
3			C 4.00	437	270 00 00	+5.6	-	+5.6					3		
4		496	220		90 32 58	7.0	-2.1	-6.1		2172.1			4		
5	X	494	0		90 00 00	-4.9	-	-4.9		2173.3			5		
6		492	220		94 07 49	-2.0	-15.8	-17.8		2160.4			6		
7		490	470										7		
8		488	860		94 22 58	-5.2	-50.4	-55.6		2122.6			8		
9		486	880										9		
10		484	1100		92 22 02	-5.2	-45.4	-50.6		2127.6			10		
11		482	1320										11		
12		480	1540		92 00 25	-5.2	-56.6	-61.8		2116.4			12		
13		478	T 12.15	875	91 39 57	-16.0	-50.9	-66.9		2111.3			13	2112.0	
14			C 4.00	1750	268 19 58	-16.0	-50.9	-66.9					14		
15													15		
16													16		
17													17		

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SYMBOLS

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA MISHOOK MOUNTAIN STATE/COUNTY ALASKA BOOK NO. 3 PAGE 15 OF 27  
 LINE/LOOP NO. R7 XS TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE 28 DY 3 MO 79 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	   	STATION	VERTICAL						ELEVATION		L/R OR D/I	HORIZONTAL		REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST		ROD	RIGHT TURNED HORIZONTAL ANGLE		LINE
				SLOPE 	HORIZ 										
1													1		
2		478	T 16.2   132.0		89 09 37	+4.0	-38.7	-34.7	2076.9				2		
3			C 3.0   2640		270 49 32	+4.0	-38.0	-34.0					3		
4		476	242.0		-								4		
5		474	220.0		89 07 38	-7.0	+33.5	+26.5		2103.4			5		
6		472	198.0		89 06 53	-7.0	+30.6	+23.6		2100.5			6		
7		470	176.0		-								7		
8		468	154.0		89 06 12	-7.0	+24.1	+17.1		2094.0			8		
9		466	132.0		-								9		
10		464	110.0		89 06 33	+4.0	+17.1	+13.1		2090.0			10		
11		462	88.0		-								11		
12		460	66.0		89 15 27	+7.0	+8.6	+4.6		2081.5			12		
13		458	44.0		-								13		
14		456	22.0		89 08 00	-4.0	+3.3	-0.7		2076.2			14		
15		454	0		90 00 00	+4.9	-	-4.9		2072.0			15		
16		452	22.0		-								16		
17		450	44.0		90 33 36	-5.2	-4.3	-9.5		2067.4			17		

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SYMBOLS

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= FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

108

GSI AREA MISHESUK MOUNTAIN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 16 OF 27  
 LINE/LOOP NO. 7R XS TYPE SURVEY \_\_\_\_\_ CLIENT Husky DATE 28 DY 3 MO 79 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1124

LINE	  	STATION	VERTICAL						HORIZONTAL			REMARKS			
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE	HORIZ					INST	ROD				
1									2076.9				1		
2		448	660		30 43 14	-5.2	-8.3	-13.5		2063.4			2		
3		446	880		-								3		
4		444	1100		30 29 23	-5.2	-9.4	-14.6		2062.3			4		
5		442	1320		-								5		
6	o	440	15.7 770		30 19 21	-16.0	-8.7	-24.7		2052.0			6		
7	o	438	8.0 1540 ✓		269 39 46	-16.0	-9.1	-25.1					7		
8		436											8		
9													9		
10	Δ	440	2640 ✓		89 17 21	+9.0	-32.8	-23.8	2028.5				10		
11	Δ				270 41 56	+9.0	-32.2	-23.2					11		
12		438	2420										12		
13		436	2200		89 17 18	-7.0	+26.0	+19.0		2047.5			13		
14		434	1980										14		
15		432	1760		89 20 16	-4.0	+20.3	+16.3		2044.8			15		
16		430	1540										16		
17		428	1320		89 17 23	-4.0	+15.6	+11.6		2040.1			17		

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SYMBOLS

= BACKSIGHT

= INSTRUMENT SET-UP

= SIDESHOT

= FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

109

GSI AREA MISHNEVUK MOUNTAIN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 17 OF 27  
 LINE/LOOP NO. R7 XS TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE \_\_\_\_\_ DY \_\_\_\_\_ MO \_\_\_\_\_ YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	  	STATION	VERTICAL						ELEVATION		L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD				
1										2028.5			1	
2		426	1100			-							2	
3		424	880			89 28 04	-4.0	+8.2	+4.2		2032.7		3	
4		422	660			-							4	
5		420	440			89 40 49	-4.0	+2.5	-1.5		2027.0		5	
6		418	220			-							6	
7		416	0			90 00 00	-4.9	-	-4.9		2023.6		7	
8		414	220			-							8	
9		412	440			90 47 23	-5.2	-6.1	-11.3		2017.2		9	
10		410	660			-							10	
11		408	880			90 33 34	-5.2	-8.6	-13.8		2014.7		11	
12		406	1100			-							12	
13		404	1320			90 34 35	-5.2	-13.3	-18.5		2010.0		13	
14		402	1540			-							14	
15		400	1760			90 41 09	-7.0	-21.1	-28.1		2000.4		15	
16		398	1980			-							16	
17		396	2200			90 35 42	-5.2	-22.8	-28.0		2000.5		17	

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SYMBOLS

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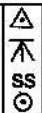







= INSTRUMENT SET-UP

= SIDESHOT

= FORESIGHT

## HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA MISHNEK MOUNTAIN STATE/COUNTY ALASKA BOOK NO. 3 PAGE 10 OF 27  
 LINE/LOOP NO. R7 XS TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE \_\_\_\_\_ DY \_\_\_\_\_ MO \_\_\_\_\_ YR \_\_\_\_\_  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE		STATION	VERTICAL						ELEVATION		L/R OR DI	HORIZONTAL RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST					ROD
				SLOPE 	HORIZ 										
1													1		
2		394											2		
3		392	T 13.2	1320	90 21 49	-16.0	-16.8	-32.8		1995.5			3	1996.8	
4			C 0.0	2640.0	269 37 33	-16.0	-17.2	-33.2					4		
5													5		
6													6		
7		392	T 10.65	765	90 00 00	+9.1	-	+9.1	2004.8				7		
8			C 3.00	1530	270 00 00	+9.5	-	+9.5					8		
9		390	1320										9		
10		388	1100		90 34 51	-4.0	-11.2	-15.2		1989.6			10		
11		386	880										11		
12		384	660		90 51 22	-7.0	-9.9	-16.9		1987.9			12		
13		382	440										13		
14		380	220		90 00 00	-4.0	-	-4.0		2000.8			14		
15		378			90 00 00	-4.9	-	-4.9		1999.9			15		
16		376	220		90 14 00	-5.2	-0.9	-6.1		1998.7			16		
17		374	440										17		

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA MICHESNAK MOUNTAIN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 12 OF 27  
 LINE/LOOP NO. R7 XS TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE \_\_\_\_\_ DY \_\_\_\_\_ MO \_\_\_\_\_ YR \_\_\_\_\_  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1124

LINE	△ ↑ SS ⊙	STATION	VERTICAL							ELEVATION		L/R OR DI	HORIZONTAL RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS
			DISTANCE	□ FEET	□ METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD				
				△ SLOPE	△ HORIZ										
1										2004.8			1		
2		372	660		90 03 00	-5.2	-0.6	-5.8		1999.0			2		
3		370	880		-								3		
4		368	1100		89 57 52	-5.2	+0.0	-5.2		1999.6			4		
5		366	1320		-								5		
6	⊙	364	11.7	770	90 00 00	-4.1	-	-4.1		2000.5			6	171' S. OF INTERSECTION	
7	⊙		4.0	1540	270 00 00	-4.4	-	-4.4					7	20 R7 XS & R6 XS	
8													8	2001.8	
9													9		
10	△	364	T 118	-	86 56 42	+3.0	-46.9	-43.9	1956.6				10		
11	△		B 30	880	273 02 79	+3.0	-46.9	-43.9					11		
12	SS	1120, LINE R6	T 240	-	86 27 58	+7.0	+51.8	+50.8		2007.3			12		
13	SS		B 110	840	273 31 19	+7.0	+51.6	+50.6					13		
14	SS	1118, LINE R6	T 9.50	-	84 19 06	+7.0	+84.2	+83.2	2039.7				14		
15	SS		B 100	850	275 40 10	+7.0	+84.2	+83.0					15		
16	SS	B.M. 79322	T 12.2	-	83 06 52	+2.0	+124.1	+122.1	2079.0		REFERENCE: B.A.S. SURVEY		16		
17	SS		B 2.0	1020	276 58 25	-2.0	+123.8	+121.8	2078.6				17		

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






**SYMBOLS**      △ = BACKSIGHT      ↑ = INSTRUMENT SET-UP      SS = SIDESHOT      ⊙ = FORESIGHT

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# HORIZONTAL AND VERTICAL SURVEY NOTES

112

GSI AREA MISHKUK MOUNTAIN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 20 OF 27  
 LINE/LOOP NO. R7 XS TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE 28 DY 3 MO 79 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	   	STATION	VERTICAL						HORIZONTAL			REMARKS		
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION		L/R OR DI		RIGHT TURNED HORIZONTAL ANGLE	LINE
			<input type="checkbox"/> FEET <input type="checkbox"/> METERS 						INST	ROD				
1									1756.6			1		
2		362	660	-								2		
3		360	440	88 20 25	-4.0	+12.7	+8.7		1965.3			3		
4		358	220	-								4		
5		356	0	90 00 00	-4.9	-	-4.9		1951.7			5		
6		354	220	-								6		
7		352	440	90 45 24	-4.0	-5.8	-9.8		1946.8			7		
8		350	660	-								8		
9		348	880	90 06 34	-5.2	-1.7	-6.9		1949.7			9		
10		346	1100	-								10		
11		344	1320	86 33 33	-7.0	+79.2	+78.2		2034.8			11		
12		343	715.2	-	86 03 13	-7.0	+97.7	+26.7	2053.1			12		
13			810	1420	273 55 43	-1.0	+97.3	+26.3				13		
14												14		
15												15		
16												16		
17												17		

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SYMBOLS  = BACKSIGHT  = INSTRUMENT SET-UP  = SIDESHOT  = FORESIGHT



# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA MISHESUK MOUNTAIN STATE/COUNTY ALASKA BOOK NO. 3 PAGE 20-A <sup>113</sup> OF 27  
 LINE/LOOP NO. R7 XS TYPE SURVEY \_\_\_\_\_ CLIENT Husky DATE 26 DY 3 MO 79 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL							ELEVATION		L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION						
			SLOPE 	HORIZ 					INST	ROD					
1	Δ	VIB. PT. 364	150		77 47 02	+0.0	-31.7	-31.7	1068.8	2000.5		REFERENCE: PAGE 19, THIS BK	1		
2	Δ		150		282 11 50	+0.0	-31.7	-31.7					2		
3		OFFSET 362	220		91 09 22	-4.0	-4.4	-8.4		1960.4			3	OFFSET 150' W.	
4													4		
5	X	OFFSET 364	0		90 00 00	-4.9	-	-4.9		1963.9			5	OFFSET 150' W.	
6													6		
7	⊙	OFFSET 366	220		88 02 30	-4.0	+7.5	+3.5		1972.3			7	OFFSET 150' W.	
8													8		
9										2053.1		REFERENCE: PAGE 20, THIS BK	9		
10	Δ	VIB. PT. 343	228.25		75 35 26	+6.0	-56.8	-50.8	2002.3				10		
11	Δ				284 23 32	+6.0	-56.7	-50.7					11		
12		OFFSET 342	220		83 23 06	-4.0	+25.3	+21.3		2023.6			12	OFFSET 200' E.	
13	X	OFFSET 344	0		90 00 00	-5.2	-	-5.2		1997.1			13	OFFSET 200' E.	
14	⊙	OFFSET 346	220		100 19 45	-4.0	-37.4	-43.4		1958.9			14	OFFSET 200' E.	
15													15		
16													16		
17													17		

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SYMBOLS

Δ = BACKSIGHT










⊕ = INSTRUMENT SET-UP

SS = SIDESHOT

⊙ = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA MISHQUEK MOUNTAIN STATE/COUNTY ALASKA BOOK NO. 3 PAGE 21 OF 27  
 LINE/LOOP NO. 7R XS TYPE SURVEY \_\_\_\_\_ CLIENT Husky DATE 29 DY 3 MO 79 YR  
 SURVEYOR J ANDERSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	   	STATION	VERTICAL						ELEVATION		L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS	
			DISTANCE		<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST					ROD
			SLOPE	HORIZ											
1										2053.1			1		
2		343	T 12.7	770		93 38 48	+16.0	+97.9	+113.9	2167.2			2		
3			C 5.0	1540		262 20 33	+16.0	+98.2	+114.2				3		
4		OFFSET 342	1226.42	CALC. DIST.									4	OFFSET 200' E	
5		OFFSET 340	1010.00	CALC. DIST.		96 12 02	-2.0	-109.1	-113.1	2054.1			5	OFFSET 200' E	
6		OFFSET 338	795.85	CALC. DIST.		97 04 25	-4.0	-98.0	-102.0	2065.2			6	OFFSET 200' E	
7		336	550.73			96 54 05	-4.0	-66.1	-70.1	2097.1			7		
8		334	830.93			99 02 12	-2.0	-51.8	-53.8	2113.4			8		
9		OFFSET 330	228.25	CALC. DIST.		102 04 51	-4.0	-47.8	-51.8	2115.4			9	OFFSET 200' W.	
10		329	0			90 00 00	-5.0	-	-5.0	2162.2			10		
11		OFFSET 328	228.25	CALC. DIST.		93 44 06	-4.0	-14.9	-18.9	2148.3			11	OFFSET 200' W.	
12		326	330			85 33 21	-2.0	+25.6	+23.6	2190.8			12		
13		324	550			82 50 59	-2.0	+71.7	+69.7	2236.9			13		
14		323	T 16.0	-		82 46 26	-10.0	+83.1	+73.1	2240.2			14		
15			S 9.4	660		277 12 49	+10.0	+82.9	+72.9				15		
16													16		
17													17		

WORKED BY \_\_\_\_\_ CHECKED BY 1ST \_\_\_\_\_ 2ND \_\_\_\_\_

SYMBOLS

 = BACKSIGHT

 = INSTRUMENT SET-UP

 = SIDESHOT

 = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

115

GSI AREA MISHNEVUK MOUNTAIN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 22 OF 27  
 LINE/LOOP NO. R7 XS TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE \_\_\_\_\_ DY \_\_\_\_\_ MO \_\_\_\_\_ YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	  	STATION	VERTICAL						HORIZONTAL			REMARKS			
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			LR OR DR	RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE	HORIZ					INST	ROD				
1													1		
2		323	T 10.5		88 18 36	+5.0	-16.2	-11.2	2229.0				2		
3			B 5.0	SSO	271 140 56	+5.0	-16.1	-11.1					3		
4		322	440										4		
5		320	220		87 34 38	-2.0	+9.3	+5.3	2234.3				5		
6		318	0		90 00 00	-5.0	-	-5.0	2224.0				6		
7		316	220		93 43 06	-2.0	-1.3	-3.3	2225.7				7		
8		314	440		93 03 40	-5.2	-23.5	-28.7	2200.3				8		
9		312	660		93 12 23	-2.0	-36.9	-40.9	2188.1				9		
10		310	880		92 47 29	-2.0	-42.9	-44.9	2184.1				10		
11		309	T 11.95	495	92 07 46	-16.0	36.8	-52.8	2176.2				11		
12		306	C 7.0	990	267 51 28	-16.0	-37.0	-63.0	2176.1				12		
13													13		
14													14		
15													15		
16													16		
17													17		

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SYMBOLS

= BACKSIGHT

= INSTRUMENT SET-UP

= SIDESHOT

= FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA MUSHRAUK MOUNTAIN STATE/COUNTY ALASKA BOOK NO. 3 PAGE 23 OF 27  
 LINE/LOOP NO. K7 XS TYPE SURVEY \_\_\_\_\_ CLIENT HUCKY DATE \_\_\_\_\_ DY \_\_\_\_\_ MO \_\_\_\_\_ YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	   	STATION	VERTICAL							ELEVATION		L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD					
				SLOPE	HORIZ											
1																
2		309	7.55	-	85 50 21	+ 1.0	- 46.0	- 45.0	2131.1					2		
3			81.0	655	274 00 59	+ 1.0	- 45.9	- 44.9						3		
4		308	550		87 21 49	- 2.0	+ 25.3	+ 23.3		2154.4				4		
5		306	330		89 34 10	- 2.0	+ 2.5	+ 0.5		2131.6				5		
6		OFFSET 304	110		97 42 35	+ 1.0	- 14.8	- 18.8		2112.3				6		OFFSET 200' E
7		203	0		90 00 00	- 5.0	-	- 5.0		2126.1				7		
8		OFFSET 302	260		100 44 35	- 16.0	- 48.5	- 64.5		2066.6				8		OFFSET 200' E
9		300	330		-									9		
10		298	550		101 41 16	- 5.2	- 111.4	- 116.6		2014.5				10		
11		296	15.68	-	98 53 56	- 16.0	- 118.8	- 134.8		1996.2				11		
12			8.00	768	261 05 07	- 16.0	- 119.0	- 135.0						12		
13														13		
14														14		
15														15		
16														16		
17														17		

WORKED BY \_\_\_\_\_ CHECKED BY 1ST \_\_\_\_\_ 2ND \_\_\_\_\_

SYMBOLS

= BACKSIGHT

= INSTRUMENT SET-UP

SS = SIDESHOT

= FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA MISHNEK MOUNTAIN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 24 OF 27  
 LINE/LOOP NO. R7 XS TYPE SURVEY \_\_\_\_\_ CLIENT HIGBY DATE \_\_\_\_\_ DY \_\_\_\_\_ MO \_\_\_\_\_ YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	   	STATION	VERTICAL						ELEVATION		L/R OR D/I	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS	
			DISTANCE		<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST					ROD
1													1		
2		296	T13.7	770		90 14 07	+16.0	+6.3	+22.3	2018.7			2		
3			66.0	1540		269 45 12	+16.0	+6.6	+22.6				3		
4		294	1320			-							4		
5		292	1100			90 53 22	-8.0	-17.1	-25.1		1993.6		5		
6		290	880			-							6		
7		288	660			90 49 41	-4.0	-9.5	-13.5		2005.2		7		
8		286	440			-							8		
9		284	220			90 33 24	2.0	-3.2	-5.2		2013.5		9		
10		282	0			90 00 00	5.0	-	5.0		2013.7		10		
11		280	220			91 18 11	-4.0	-5.0	-9.0		2009.7		11		
12		278	440			91 17 54	2.0	-10.0	-14.0		2004.7		12		
13		276	T14.58	673		90 21 06	-8.0	-4.0	-12.0		2006.6		13		
14			8 8.00	658		269 38 12	-8.0	-4.2	-12.2				14		
15													15		
16													16		
17													17		

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WORKED BY \_\_\_\_\_ CHECKED BY 1ST \_\_\_\_\_ 2ND \_\_\_\_\_

SYMBOLS = BACKSIGHT = INSTRUMENT SET-UP = SIDESHOT = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA MISHEGUK MOUNTAIN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 25 OF 27  
 LINE/LOOP NO. R7 XS TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE \_\_\_\_\_ DY \_\_\_\_\_ MO \_\_\_\_\_ YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	  	STATION	VERTICAL							ELEVATION		L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD				
1														1	
2		276	T 13.52	-	87 04 24	+ 16.0	- 20.2	- 4.2	2002.5					2	
3			B 1.0	1252	87 54 38	+ 16.0	- 19.9	- 3.9						3	
4		274	1056		-									4	
5		272	830		91 40 10	+ 7.0	- 24.2	- 18.2 <del>24.2</del>		1976.3	1976.3		5		
6		270	610		-								6		
7		268	396		95 14 58	+ 4.0	- 35.7	- 39.7		1962.8			7		
8		266	170		-								8		
9		264 + 50	0		90 00 00	+ 5.0	-	- 5.0		1997.5			9		
10		264	50		101 12 55	+ 4.0	- 9.7	- 13.7		1988.8			10		
11		262	270		102 27 26	+ 5.2	- 58.2	- 63.4		1939.1			11		
12		260	490		-								12		
13		258	710		97 34 10	+ 5.2	- 93.5	- 98.5		1904.0			13		
14		256	930		96 15 42	+ 4.0	- 101.4	- 105.4		1897.1			14		
15		254	1150		95 27 48	+ 2.0	- 109.5	- 111.5		1891.0			15		
16		252	T 14.7	-	94 11 33	+ 16.0	- 100.2	- 116.2		1886.1			16		
17			B 1.0	1370	265 47 40	+ 16.0	- 100.5	- 116.5					17		

WORKED BY \_\_\_\_\_ CHECKED BY 1ST \_\_\_\_\_ 2ND \_\_\_\_\_

SYMBOLS

= BACKSIGHT







= INSTRUMENT SET-UP

= SIDESHOT

= FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA MUSKIEGUK MOUNTAIN STATE/COUNTY ALASKA BOOK NO. 3 PAGE 26 OF 27  
 LINE/LOOP NO. R7 XS TYPE SURVEY \_\_\_\_\_ CLIENT MUSKY DATE \_\_\_\_\_ DY \_\_\_\_\_ MO \_\_\_\_\_ YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184









LINE	   	STATION	VERTICAL						ELEVATION		L/R OR D/H	HORIZONTAL		REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST		ROD	RIGHT TURNED HORIZONTAL ANGLE		LINE
															
1													1		
2	$\Delta$	252	T 120	-	90 20 10	+16.0	+6.5	+22.5	1908.6				2		
3	$\Delta$		B 10	1100	267 39 58	+16.0	+6.4	+22.4					3		
4		250	B 30		-								4		
5		248	B 60		92 06 09	+4.0	-24.2	-28.2	1880.4				5		
6		246	B 40		-								6		
7		244	B 20		95 30 23	+4.0	-21.1	-25.1	1883.5				7		
8	$\times$	242	O		90 00 00	-5.0	-	-5.0	1903.6				8		
9		OFFSET 242	B 50		105 09 33	+4.0	+13.1	+17.1	1891.5				9	OFFSET 50' E.	
10		240	B 20		90 37 00	+4.0	-2.4	-6.4	1902.2				10		
11		238	B 40		-								11		
12		236	B 60		90 40 02	-23.0	-7.7	-30.7	1877.9				12	16' + 7' BOOST	
13		234	B 80		-								13		
14	$\circ$	S.P. 101, LINE R-7	T 14.68	468	90 48 52	-16.0	-13.3	-29.3	<del>1875.7</del>	REFERENCE: B.A.S. SURVEY			14	IRON PIPE W/ TAGS	
15	$\circ$	B.M. 78285	C 10.00	936	269 10 21	-16.0	-13.5	-29.5	1879.2				15	1184 - LR7 XS	
16													16	V.P. 233 + 50	
17													17	1186 - L-R7, S.P. 101	

WORKED BY \_\_\_\_\_ CHECKED BY 1ST \_\_\_\_\_ 2ND \_\_\_\_\_  
 SYMBOLS  $\Delta$  = BACKSIGHT  $\nabla$  = INSTRUMENT SET-UP SS = SIDESHOT  $\circ$  = FORESIGHT

R7 S.P. 101 = 1886' TI-23471B  
 TIE 0-8

## HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA MISHEGUK MOUNTAIN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 27 OF 27  
 LINE/LOOP NO. R7 XS TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE \_\_\_\_\_ DY \_\_\_\_\_ MO \_\_\_\_\_ YR  
 SURVEYOR J ANDERSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1124

LINE		STATION	VERTICAL						ELEVATION		L/R OR DI	HORIZONTAL RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST					ROD
				SLOPE 	HORIZ 										
1		V.P. 233+50, LR7XS											1		
2		S.P. 101, LR7	T13.62	-	88 01 09	+1.0	-43.6	-42.6	1836.7				2		
3		B.M. 78285	B1.0	1262	271 58 22	+1.0	-43.4	-42.4					3		
4		232	1100		88 26 25	2.0	+29.9	+27.9			1864.6		4		
5		230	880		88 46 24	2.0	+18.8	+16.8			1853.5		5		
6		228	660		-								6		
7		226	440		88 53 13	-4.0	+8.5	+4.5			1841.2		7		
8		224	220		90 13 25	-2.0	-0.9	-2.9			1833.8		8		
9		222	0		90 00 00	-5.0	-	-5.0			1831.7		9		
10		220	220		-								10		
11		218	440		90 50 09	-4.0	-6.4	-10.4			1826.3		11		
12		216	660		-								12		
13		214	880		90 47 49	2.0	-12.2	-14.2			1822.5		13		
14		212	1100		90 38 35	2.0	-12.3	-14.3			1822.4		14		
15		210	T15.20	-	90 36 02	-4.0	-13.8	-17.8			1818.9		15		
16			B2.00	1320	269 23 27	-4.0	-14.0	-18.0			1818.7		16		
17													17		

TI-23471B

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**SYMBOLS**

 = BACKSIGHT

 = INSTRUMENT SET-UP

SS = SIDESHOT






















 = FORESIGHT







# HORIZONTAL AND VERTICAL SURVEY NOTES

121

GSI AREA MISHGUK MOUNTAIN STATE/COUNTY ALASKA BOOK NO. 3 PAGE 28 OF       
 LINE/LOOP NO. R7 X5 TYPE SURVEY REKUN/REKUN CLIENT HUSKY DATE      DY 3 MO 72 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO.      CREW NO. 1184















LINE	   	STATION	VERTICAL							HORIZONTAL		REMARKS	
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION		LR OR DR		RIGHT TURNED HORIZONTAL ANGLE
			<input type="checkbox"/> FEET <input type="checkbox"/> METERS 						INST	ROD <small>2524.9</small>			
1		B.M. 72319 ✓	T 12.00	1160	86 34 45	+1.0	-138.4	-137.4	2387.6			1	
2			C 2.00	2320	273 24 50	+1.0	-138.2	-137.2				2	
3												3	
4			T 12.00	980	90 01 48	-15.0	-1.0	-16.0		2371.4		4	
5		800 ✓	C 3.00	1960	269 57 45	-15.0	-1.3	-16.3				5	
6												6	
7		800 ✓	T 12.0	1100	83 14 28	+5.0	-14.6	-9.6	2361.0			7	
8			B 1.0		270 45 03	+5.0	-14.4	-9.4				8	
9		790 ✓										9	
10			T 13.15	1215	90 34 30	-15.0	-24.4	-39.4		2322.2		10	
11		760 ✓	C 11.00	2430	269 24 48	-15.0	-25.0	-40.0				11	
12												12	
13		768	T 14.75	875	90 06 43	+15.0	+3.4	+18.4	2340.8			13	
14			C 6.00	1750	269 52 27	+15.0	+3.8	+18.8				14	
15		752										15	
16			T 8.55	655	88 58 13	-2.0	+23.5	+21.5		2362.2		16	
17		746	C 2.00	1310	271 00 56	-2.0	+23.2	+21.2				17	

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SYMBOLS     = BACKSIGHT     = INSTRUMENT SET-UP     = SIDESHOT     = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA MICHIGAN MOUNTAIN STATE/COUNTY ALASKA BOOK NO. 3 PAGE 29<sup>122</sup> OF       
 LINE/LOOP NO. R7 XS TYPE SURVEY REKUN/REKUN CLIENT HUSKY DATE 19 DY 3 MO 79 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO.      CREW NO. 1184

LINE	   	STATION	VERTICAL							HORIZONTAL		REMARKS		
			DISTANCE		<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			L/R OR D/I	RIGHT TURNED HORIZONTAL ANGLE
			SLOPE	HORIZ						INST	ROD			
1		746	T 14.20   1320		52 33 14	+15.0	+117.6	+132.6	2475.2			1		
2			C 1.00   2640		267 25 56	+15.0	+118.3	+133.3				2		
3		722										3	PARTIAL	
4			T 13.50   850		84 40 22	-11.0	+157.8	+146.8		2641.9		4	REKUN	
5		707	C 5.00   1700		275 19 08	-11.0	+157.6	+146.6				5	OF	
6												6	R7 XS	
7		707	2750		91 03 23	+15.0	+50.7	+65.7	2707.8			7		
8					268 56 07	+15.0	+51.1	+66.1				8		
9		682									SEE PAGE 8 LINE 16, THIS BOOK	9		
10			5921.5		89 44 36	-6.0	+26.5	+20.5	REKUN VALUE: 2727.9		- 2713.2 = +14.7	10	B.A.S SURVEY VALUE MISCLOSURE	
11		B.M. 79321	TELLURIMETER		270 14 52	-6.0	+25.6	+19.6	REKUN VALUE: 2727.9		- 2724.5 = +3.4	11	ORIGINAL RUN VS. REKUN MISCLOSURE	
12												12		
13												13	CONCLUSION: THE ELEVATION GIVEN	
14												14	BY THE B.A.S SURVEY IS NOT	
15												15	RELIABLE & HAD	
16												16	NOT BEEN USED AS A TAKE-OFF	
17												17	ELEVATION.	

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SYMBOLS

 = BACKSIGHT

 = INSTRUMENT SET-UP

SS = SIDESHOT

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA MISHNEGUK MTN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 1 OF \_\_\_\_\_  
 LINE/LOOP NO. R 7XS TYPE SURVEY \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE 26 DY 3 MO 79 YR  
 SURVEYOR W.D. HELANDER INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	  	STATION	VERTICAL						ELEVATION		L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS	
			DISTANCE		<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST					ROD
			SLOPE	HORIZ											
1															
2		79321	6124 <sup>14</sup>		D	91-43-40		06			✓	23	1		
3		A.P. FOX	6121 <sup>26</sup>	HORIZ	R	268-16-06		61			D	158-29-17	2		
4								12					3	158-28-54	
5								21	4.14				4		
6		79319	16,842 <sup>10</sup>					16	18	16			5		
7					D	91-17-25		68	68	68			6		
8			✓ 16,837 <sup>83</sup>	HORIZ	R	—		84	85	83			7		
9								42	12	40			8		
10								2.21	9.59	2.00			9		
11													10		
12													11		
13													12		
14		79321 - 79319											13		
15													14		
16													15		
17													16		
													17		

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# HORIZONTAL AND VERTICAL SURVEY NOTES

31

GSI AREA MISHEGUK MTD STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 2 OF \_\_\_\_\_  
 LINE/LOOP NO. R 7XS TYPE SURVEY \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE 26 DY 3 MO 71 YR  
 SURVEYOR W.D. HELANDER INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	  	STATION	VERTICAL						ELEVATION		HORIZONTAL		REMARKS		
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD	LIR OR DIR		RIGHT TURNED HORIZONTAL ANGLE	
				SLOPE	HORIZ										
1															
2		79321			D	see Pg. 1					V <sub>1</sub>	20			
3					R						D	130-06-45			
4		FOX										130-06-25			
5											V <sub>2</sub>	180-00-23			
6		WP 702			D	95-33-03					R	310-06-50			
7					R	264-26-24						130-06-27			130-06-26
8															
9															
10		79319	4260 <sup>71</sup>		D	87-56-42					V <sub>1</sub>	23			
11					R	272-02-41	6.0			10	D	209-47-40			
12		800								07		209-47-17			
13					D	88-33-34				73	V <sub>2</sub>	180-00-26			
14		702	10.780		R	271-26-09	6.0			39	R	29-47-43			
15			10.739 <sup>2</sup>							174		209-47-17			209-47-17
16															
17															

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA MISHNEGUK MFD STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 3 OF \_\_\_\_\_  
 LINE/LOOP NO. R7XS TYPE SURVEY \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE 26 DY 3 MO 79 YR  
 SURVEYOR W.D. HELANDER INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	  	STATION	VERTICAL						ELEVATION		L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD					
			SLOPE	HORIZ											
1															
2		77319									Y	16			
3		VP 800									D	29-46-40			
4		TAIL SPREAD										29-46-24		29-46-24	
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															
16															
17															

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# HORIZONTAL AND VERTICAL SURVEY NOTES

33

GSI AREA Howard Pass STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 4 OF \_\_\_\_\_  
 LINE/LOOP NO. R7 XS TYPE SURVEY \_\_\_\_\_ CLIENT Husky DATE 26 DY 3 MO 79 YR  
 SURVEYOR J. Anderson INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	  	STATION	VERTICAL						HORIZONTAL			REMARKS		
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION		L/R OR DI		RIGHT TURNED HORIZONTAL ANGLE	LINE
			SLOPE	HORIZ					INST	ROD				
1												1		
2		REF PT. 'FOX'		85 44 08	+5.8					V	000 00 15	2	343 27 32	
3				271 15 18						L	343 27 47	3		
4		B.M. 79319			5.0							4		
5		V.P. 800, TAIL		91 55 33						V2	180 00 03	5		
6		END OF L-R7 SX		268 02 52	15.0					R	163 27 32	6	343 27 29	
7												7	343-27-30	
8												8		
9												9		
10												10		
11												11		
12												12		
13												13		
14												14		
15												15		
16												16		
17												17		

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# HORIZONTAL AND VERTICAL SURVEY NOTES

34

GSI AREA MISHKOK MTN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 5 OF \_\_\_\_\_  
 LINE/LOOP NO. R7XS TYPE SURVEY \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE 27 DY 3 MO 79 YR  
 SURVEYOR HELANDE INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	  	STATION	VERTICAL						ELEVATION		L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD				
			SLOPE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS HORIZ										
1														
2		800		D	91-27-44					D	164-42-21	26		
3				R	268-31-54						164-41-55			
4		702	2970								180-00-35			
5		675		D	88-33-10					R	344-42-26			
6				R	271-26-18						164-41-51			164-41-53
7														
8														
9														
10		702		D	91-27-35					L		24		
11				R	268-31-50					D	180-04-27			
12		675									180-04-03			
13		673	220	D	92-54-50					L	180-00-35			
14				R	267-04-26					R	00-04-33			
15											180-04-58			180-04-01
16											03			
17														

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# HORIZONTAL AND VERTICAL SURVEY NOTES

35

GSI AREA MISHKEGUK MTN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 6 OF \_\_\_\_\_  
 LINE/LOOP NO. R 7XS TYPE SURVEY \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE 27 DY 8 MO 79 YR  
 SURVEYOR MELANDER INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	  	STATION	VERTICAL						ELEVATION		L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS	
			DISTANCE		<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST					ROD
			SLOPE	HORIZ											
1					D	87-52-22						V.	17	1	
2		675			R	272-06-52						D	179-59-14	2	
3													179-58-57	3	
4		673	2750 <sup>⊙</sup>		D	94-19-37						V.	180-00-23	4	
5		648			R	265-39-32						R	359-59-21	5	
6													179-58-58	6	179-58-58
7														7	
8														8	
9														9	
10		673			D	85-41-07								10	
11					R	274-18-15							25	11	
12		648	1780 <sup>⊙</sup>										175-01-00	12	
13		630			D	92-39-24							175-00-35	13	
14					R	267-20-15							180-00-22	14	
15													355-01-04	15	
16													175-00-42	16	175-00-39
17														17	

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA MISHEGUK MTN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 7 OF \_\_\_\_\_  
 LINE/LOOP NO. RXS TYPE SURVEY \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE 27 DY 3 MO 79 YR  
 SURVEYOR HELANDER INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	  	STATION	VERTICAL						ELEVATION		L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD				
			SLOPE	HORIZ										
1												1		
2	A	648		D	87-25-23					V <sub>1</sub>	29	2		
3				R	272-34-00					D	190-28-07	3		
4	K	630	440								190-27-38	4		
5	O	626		D	91-37-00					V <sub>2</sub>	180-00-40	5		
6				R	268-22-08					R	10-28-12	6		
7											190-27-32	7	190-27-35	
8												8		
9												9		
10	Δ	630		D	88-48-40					V <sub>1</sub>	24	10		
11				R	271-10-46					D	194-05-11	11		
12	K	626	770								194-04-47	12		
13	O	619		D	91-08-32					V <sub>2</sub>	180-00-38	13		
14				R	268-50-38					R	14-05-19	14		
15											194-04-41	15	194-04-44	
16												16		
17												17		

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**SYMBOLS**    
 = BACKSIGHT    
 = INSTRUMENT SET-UP    
 = SIDESHOT    
 = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA MISHEGUK MTN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 8 OF \_\_\_\_\_  
 LINE/LOOP NO. R7XS TYPE SURVEY \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE 27 DY 3 MO 79 YR  
 SURVEYOR HELANDER INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	  	STATION	VERTICAL						ELEVATION		L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD				
			SLOPE	HORIZ										
1												1		
2		630								V <sub>1</sub>	26	2		
3										D	278-23-41	3		
4		626			12-07-14						278-23-15	4		
5		79321	1530°	D	77-52-46					V <sub>2</sub>	180-00-30	5		
6				R	282-06-37					R	98-23-47	6		
7											278-23-17	7	278-23-16	
8												8		
9												9		
10		626		D	89-05-56							10		
11				R	270-53-28					V <sub>1</sub>	17	11		
12		619								D	194-50-47	12		
13		611	1400°	D	91-26-46						194-50-30	13		
14			880°	R	268-32-18					V <sub>2</sub>	180-00-31	14		
15										R	14-50-59	15		
16											194-50-28	16	194-50-29	
17												17		

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**SYMBOLS**    
 = BACKSIGHT    
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 SS = SIDESHOT    
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# HORIZONTAL AND VERTICAL SURVEY NOTES

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GSI AREA MISNEGUK MTN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 9 OF \_\_\_\_\_  
 LINE/LOOP NO. R 7XS TYPE SURVEY \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE 28 DY 3 MO 79 YR  
 SURVEYOR HELANDER INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	  	STATION	VERTICAL						ELEVATION		HORIZONTAL		REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD	LR OR DR	RIGHT TURNED HORIZONTAL ANGLE		LINE
				SLOPE										
1														
2		619												
3														
4		611	230°											
5		609												
6														
7														
8														
9														
10		611												
11														
12		609	490°											
13		600 601	880°											
14														
15														
16														
17														

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# HORIZONTAL AND VERTICAL SURVEY NOTES

39

GSI AREA MISHKOUX MTN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 10 OF \_\_\_\_\_  
 LINE/LOOP NO. R7AS TYPE SURVEY \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE 28 BY 3 MO 79 YR  
 SURVEYOR HELANDER INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	  	STATION	VERTICAL						HORIZONTAL		REMARKS	
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			RIGHT TURNED HORIZONTAL ANGLE
			SLOPE	HORIZ					INST	ROD		
1												
2		609		D 89-27-06						V. 28		
3				R 270-32-22						D 179-58-06		
4		601	770°							179-57-38		
5		594		D 92-04-04						V. 180-00-36		
6				R 267-55-07						R 359-58-15		
7										179-57-39	179-57-39	
8												
9												
10												
11		601		D 88-07-41						V. 21		
12				R 271-51-40						D 171-02-03		
13		594	2200°							171-01-42		
14		574		D 90-32-06						V. 180-00-32		
15				R 269-27-14						R 351-02-09		
16										171-01-37	171-01-39	
17												

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA MISHEGOK MTN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 11 OF \_\_\_\_\_  
 LINE/LOOP NO. R7X3 TYPE SURVEY \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE 28 DY 3 MO 79 YR  
 SURVEYOR HELANDER INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> T <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						ELEVATION		HORIZONTAL		REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD	L/R OR D/I	RIGHT TURNED HORIZONTAL ANGLE		LINE
				SLOPE										
1												1		
2	Δ	594		D	89-31-37					√	32	2		
3				R	270-27-40					D	181-12-30	3		
4	T	574	4070° ⊙								181-11-58	4		
5	⊙	537		D	91-05-05					√	180-00-45	5		
6				R	268-54-13					R	01-12-43	6		
7											181-11-58	7	181-11-58	
8												8		
9												9		
10	Δ	574		D	88-55-55					√	12	10		
11				R	271-03-36					D	171-16-06	11		
12	T	537	3410° ⊙								171-15-55	12		
13	⊙	506		D	90-58-02					√	180-00-21	13		
14				R	269-01-07					R	351-16-13	14		
15											171-15-52	15	171-15-53	
16												16		
17												17		

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# HORIZONTAL AND VERTICAL SURVEY NOTES

41

GSI AREA MISHEGUK MOUNTAIN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 12 OF \_\_\_\_\_  
 LINE/LOOP NO. R7 XS TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE 27 DY 3 MO 79 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	  	STATION	VERTICAL						ELEVATION		LR OR DR	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD				
			SLOPE	HORIZ										
1												1		
2	$\Delta$	537		85 06 43	+6.0					V <sub>1</sub>	000 00 08	2	171 14 07	
3	$\Delta$			270 58 38						L	171 14 15	3		
4	X	506	880° $\odot$		-4.9							4		
6	$\odot$			269 49 29						V <sub>2</sub>	180 00 08	5		
6	$\odot$	498		90 09 47	-4.0					R	251 14 19	6	171 14 11	
7												7	171-14-09	
8												8		
9	$\Delta$	506		85 52 27	+6.0					V <sub>1</sub>	000 00 17	9	171 16 14	
10	$\Delta$			270 06 37						L	171 16 31	10		
11	X	498	330° $\odot$		-4.9							11		
12	$\odot$			90 02 10						V <sub>2</sub>	180 00 10	12		
13	$\odot$	495		267 57 00	-6.0					R	251 16 35	13	171 16 25	
14												14	171-16-20	
15												15		
16												16		
17												17		















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 SYMBOLS  $\Delta$  = BACKSIGHT  $\nabla$  = INSTRUMENT SET-UP SS = SIDESHOT  $\odot$  = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

42

GSI AREA MISHNEVUK MOUNTAIN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 13 OF \_\_\_\_\_  
 LINE/LOOP NO. R7 XS TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE 27 DY 3 MO 79 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	 SS 	STATION	VERTICAL							HORIZONTAL		LINE	REMARKS	
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION		LR OR DR			RIGHT TURNED HORIZONTAL ANGLE
			SLOPE	HORIZ					INST	ROD				
1												1		
2		428		90 07 43	+4.0					V.	000 00 18	2	169 15 19	
3				269 51 44						L	167 15 37	3		
4		495			-4.9							4		
5				91 51 35						V2	180 00 23	5		
6		478 + 05'	1865' 	268 07 40	-6.0					R	349 15 41	6	169 15 18	
7												7	169-15-18	
8												8		
9		495		88 01 01	+6.0					V.	000 00 20	9	190 40 13	
10				251 58 17						L	190 40 33	10		
11		478 + 5	1435' 		-4.9							11		
12				90 47 13						V2	180 00 17	12		
13		465		269 12 00	-6.0					R	10 40 23	13	190 40 06	
14												14	190-40-09	
15												15		
16												16		
17												17		

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SYMBOLS

 = BACKSIGHT

 = INSTRUMENT SET-UP

SS = SIDESHOT

 = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

43

GSI AREA MISHEGUK MTN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 14 OF \_\_\_\_\_  
 LINE/LOOP NO. R7XS TYPE SURVEY \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE 38 DY 3 MO 79 YR  
 SURVEYOR HELANDER INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1124

LINE	  	STATION	VERTICAL						ELEVATION		UR OR DI	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD				
			SLOPE	HORIZ										
1														
2		478+05			89-10-00 D						✓	23		
3					270-49-20 R						✓	191-13-33		
4		465	1430°									191-13-10		
5		452			90-54-00 D						✓	180-00-37		
6					29-03-18 R						R	11-13-24		
7												191-12-43		191-12-58
8														
9														
10		465			89-04-46 D				05		✓	27		
11					270-54-40 R				53		D	188-33-29		
12		452	5390°	5367.08					36			188-33-02		
13		403			90-35-03 D				67		✓	180-00-34		
14					269-24-05 R				7 08		R	08-33-37		
15									5367 08			188-33-03		188-33-03
16														
17														

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**SYMBOLS**    
 = BACKSIGHT    
 = INSTRUMENT SET-UP    
 = SIDESHOT    
 = FORESIGHT



# HORIZONTAL AND VERTICAL SURVEY NOTES

44

GSI AREA MISHAEGUK MTN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 15 OF \_\_\_\_\_  
 LINE/LOOP NO. R7XS TYPE SURVEY \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE 28 DY 3 MO 79 YR  
 SURVEYOR HELANDER INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> π <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						ELEVATION		LR OR DR	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD				
			SLOPE	HORIZ										
1														
2	Δ	452		D	89-19-05	06				✓	34	2		
3				R	270-40-08	65				D	181-45-19	3		
4	π	403				56					181-44-45	4		
5	⊙	343		D	89-36-50	66				✓	180-00-49	5		
6				R	270-22-34	6-16				R	01-45-26	6		
7			6600	6566.16		6566.16					181-44-39	7	181-44-42	
8	SS	INT L-R7XS VP	365+71°	4109°						D	181-40-00	8		
9		L-R6XW VP	1120+35°								181-39-26	9		
10										R	01-38-40	10		
11											181-37-53	11	181-38-40	
12												12		
13												13		
14												14		
15												15		
16												16		
17												17		

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# HORIZONTAL AND VERTICAL SURVEY NOTES

45

GSI AREA MISHEADLE MTN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 16 OF \_\_\_\_\_  
 LINE/LOOP NO. R7XS TYPE SURVEY \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE 28 DY 3 MO 79 YR  
 SURVEYOR HELANDER INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	  	STATION	VERTICAL						ELEVATION		L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD				
				SLOPE										
1														
2		403			90-20-43 D				02		V	13		
3					269-38-44 R				23		D			
4		343			HI 5.5				39					
5									93					
6	SS	BAS 79322	2420	2393.84	00-33-48 89-26-12 D	4.0			384		D	353-12-45		
7					270-33-05 R				2693 84			353-12-32		
8											R	173-12-50		
9												353-12-22		353-12-27
10		323	2200 <sup>2</sup> ✓		04-53-34 85-06-26 D	6.0					D	170-46-08		
11					274-52-54 R							170-45-55		
12											R	350-46-20		
13												170-45-52		170-45-53
14											V	180-00-28		
15														
16														
17														

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# HORIZONTAL AND VERTICAL SURVEY NOTES

46

GSI AREA MISHEGUK MTN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 17 OF \_\_\_\_\_  
 LINE/LOOP NO. R785 TYPE SURVEY \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE 29 DY 3 MO 79 YR  
 SURVEYOR JUNSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	  	STATION	VERTICAL						ELEVATION		L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD					
			SLOPE	HORIZ											
1															
2		343	2200 <sup>2</sup>	D	94-51-16	6.0				V <sub>1</sub>	00-00-00	2			
3				R	265-07-57	✓				D	179-36-50	3			
4		323				4.9					179-36-50	4			
5		318	550 <sup>2</sup> ✓	D	91-37-38	6.0				R	359-36-59	5			
6				R	268-21-40	✓				Y <sub>3</sub>	180-00-07	6			
7											179-36-52	7	179-36-51		
8		323	550 <sup>2</sup>	D	88-18-00	6.0				V <sub>1</sub>	00-00-00	8			
9				R	271-41-05	✓				D	179-53-56	9			
10		318				5.2					179-53-56	10			
11		309+55'	935 <sup>2</sup> ✓	D	92-19-48	5.0				V <sub>2</sub>	180-00-15	11			
12				R	267-39-24	✓				R	359-54-00	12			
13											179-53-45	13	179-53-50		
14												14			
15												15			
16												16			
17												17			

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**SYMBOLS**    
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 = SIDESHOT    
 = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

47

GSI AREA MISHEGUK MTN. STATE/COUNTY Alaska BOOK NO. \_\_\_\_\_ PAGE 18 OF \_\_\_\_\_  
 LINE/LOOP NO. R7X5 TYPE SURVEY \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE 29 DY 3 MO 99 YR  
 SURVEYOR Jensen INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> K <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						ELEVATION		LIR OR DI	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD				
				SLOPE										
1												1		
2												2		
3	Δ	318	935°	D	87-40-44	6.0		07		V <sub>1</sub>	00-00-01	3		
4				R	272-18-30	✓		73		D	176-38-55	4		
5	K	309+55	7435° ⊙			4.8		38			176-38-54	5		
6	⊙	241+100	7381°	D	92-11-21	6.0		81		V <sub>2</sub>	180-00-11	6		
7				R	267-48-05	✓		1.19		R	356-38-54	7		
8											176-38-46	8	176-38-50	
9												9		
10	Δ	309+55	7381°	D	87-48-20	6.0				V <sub>1</sub>	00-00-00	10		
11				R	272-11-21	✓				D	174-53-40	11		
12	K	241+100				5.2					174-53-40	12		
13	⊙	233+50	930°	D	91-06-12	13.0				V <sub>2</sub>	180-00-03	13		
14				R	268-53-05	✓				R	354-53-46	14		
15											174-53-43	15	174-53-42	
16												16		
17												17		

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# HORIZONTAL AND VERTICAL SURVEY NOTES

94

GSI AREA MISHEGUK MOUNTAIN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 2 OF 27  
 LINE/LOOP NO. B7 XS TYPE SURVEY \_\_\_\_\_ CLIENT Husky DATE 26 DY 3 MO 79 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	  	STATION	VERTICAL						ELEVATION		L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST					ROD
				SLOPE	HORIZ										
1										2356.3			1		
2		790	2420 ✓		89 18 42	+1.0	-29.1	-28.1	2328.4				2		
3					270 40 39	+1.0	-28.6	-27.6					3		
4		788	2200		-								4		
5		786	1980		89 39 37	+4.0	+11.7	+7.7		2336.1			5		
6		784	1760		89 51 30	+4.0	+4.4	+0.4		2328.8			6		
7		782	1540		-								7		
8		780	1320		90 05 44	+4.0	-2.2	-6.2		2322.2			8		
9		778	1100		-								9		
10		776	880		90 25 28	+4.0	-6.5	-10.5		2317.9			10		
11		774	660		-								11		
12		772	440		90 41 46	+7.0	-5.3	-12.3		2316.1			12		
13		770	220		-								13		
14		768	0		90 00 00	+5.0	-	-5.0		2323.4			14		
15		766	220		-								15		
16		764	440		91 11 42	+5.4	-9.2	-14.6		2313.8			16		
17		762	660		-								17		

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