

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI/AREA: HOWARD PASS STATE/COUNTY: ALASKA BOOK NO. 3 PAGE      OF       
 LINE/LOOP NO. ROYW TYPE SURVEY      CLIENT HUSKY DATE 15 DY 3 MO 79 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO.      CREW NO. 1184

LINE	 SS	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		LIR OR DJI		RIGHT TURNED HORIZONTAL ANGLE
				SLOPE					HORIZ	INST			
1									1838.5			1	
2		400	2640		30 31 17	+5.2	+24.0	+29.2	1809.3			2	
3					269 28 42	+5.2	+24.0	+29.2				3	
4		402	2420									4	
5		404	2200		90 31 10	-5.2	-19.9	-25.1		1784.2		5	
6		406	1980									6	
7		408	1760		90 28 50	5.2	-14.8	-20.0		1789.3		7	
8		410	1540									8	
9		412	1320		90 26 07	-5.2	-10.0	-15.2		1794.1		9	
10		414	1100									10	
11		416	880		90 25 30	-5.2	-6.5	-11.7		1797.6		11	
12		418	660									12	
13		420	440		90 28 45	-5.2	-3.7	-8.9		1800.4		13	
14		422	220									14	
15		E.O.L. PIPE - T.B.M. 424	0		90 00 00	-6.3	-	-6.3		1803.0	REFERENCE: G.I.S. SURVEY	15	LINE R-6 S.P. 111A
16		426	220									16	
17		428	440		89 36 55	-3.2	+2.0	-2.2		1807.1		17	

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

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GSI AREA MISHKOK MTN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 12 OF \_\_\_\_\_  
 LINE/LOOP NO. R6XW TYPE SURVEY \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE 20 DY 3 MO 79 YR  
 SURVEYOR B. BENEDICT 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		UR OR DI		RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE					HORIZ	INST				
1		1844			89 25 00	8				✓	00 00 22	1		
2	-				270 35 00					L	155 00 30	2		
3		2030	3119 44								155-00-08	3		
4		B.M. 79314			87 10 44	5				✓	180 00 26	4		
5	-				272 49 30					R	335 00 55	5		
6											155-00-29	6	155-00-19	
7												7		
8												8		
9		1844								✓	00 00 22	9		
10	-									L	179 57 95	10		
11		2030									179-57-23	11	179-57-23	
12		T.S.								✓		12		
13	-									R		13		
14												14		
15												15		
16												16		
17												17		

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SYMBOLS

= BACKSIGHT







= INSTRUMENT SET-UP

SS = SIDESHOT

= FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Howard Pass STATE/COUNTY Alaska BOOK NO. 3 PAGE 3 OF       
 LINE/LOOP NO. R6XW TYPE SURVEY      CLIENT Husky DATE 15 DAY 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 DJ		RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE 					HORIZ 	INST				
1												1		
2		448	1760 ✓		90 19 39	+15.0	+10.1	+25.1	1856.5			2		
3					269 40 37	+15.0	+9.9	+24.9				3		
4		450	1540		-							4		
5		452	1320		90 43 08	-4.0	-16.6	-20.6	1835.9			5		
6		454	1100		-							6		
7		456	880		90 44 38	-4.0	-11.4	-15.4	1841.1			7		
8		458	660		-							8		
9		460	446		90 42 12	-4.0	-5.4	-9.4	1847.1			9		
10		462	220		-							10		
11		464	0		90 60 00	-5.0	-	-5.0	1851.5			11		
12		466	220		-							12		
13		468	440		90 24 52	-5.2	-3.2	-8.4	1848.1			13		
14		470	660		-							14		
15		472	880		90 13 06	-5.2	-3.4	-8.6	1847.9			15		
16		474	1100		-							16		
17		476	1320		90 02 55	-3.2	-1.1	-6.3	1850.2			17		

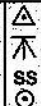



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SYMBOLS  = BACKSIGHT  = INSTRUMENT SET-UP  = SIDESHOT  = FORESIGHT





# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Howards Pass STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 4 OF \_\_\_\_\_  
 LINE/LOOP NO. R6X60 TYPE SURVEY \_\_\_\_\_ CLIENT MUSKY DATE 15 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			RIGHT TURNED HORIZONTAL ANGLE	LINE	
			SLOPE 	HORIZ 					INST	ROD				
1									1856.5			1		
2		478	1540									2		
3		480	1760			90 05 20	5.2	-2.7	-7.9		1848.6		3	
4		482	1780										4	
5		484	2200			90 01 53	5.2	-1.2	-6.4		1850.1		5	
6		486	2420										6	
7	o	488	2640 ✓			90 01 38	5.0	-1.2	-6.3		1850.3		7	1851.0
8	o					269 58 31	5.0	-1.1	-6.1				8	
9													9	
10	A	488	1100 ✓			89 52 02	+3.0	-2.5	+0.5	1850.8			10	
11	A					270 02 55	+3.0	-2.5	+0.5				11	
12		490	880										12	
13		492	660			89 45 28	-4.0	+2.8	-1.2		1849.6		13	
14		494	440										14	
15		496	220			89 07 55	+4.0	+3.3	-0.7		1850.1		15	
16	x	498	0			90.0	5.0	-	5.0		1845.8		16	
17		500	220			71 50 02	-5.2	-7.0	-2.2		1838.6		17	

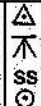



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  = FORE-SIGHT


# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Howard Pass STATE/COUNTY Alaska BOOK NO. \_\_\_\_\_ PAGE 5 OF \_\_\_\_\_  
 LINE/LOOP NO. R6 XV TYPE SURVEY \_\_\_\_\_ CLIENT Husky DATE 15 DY 3 MO 72 YR  
 SURVEYOR J. Anderson INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1104

LINE		STATION	VERTICAL						ELEVATION		HORIZONTAL		REMARKS	
			DISTANCE		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	<input type="checkbox"/> FEET <input type="checkbox"/> METERS HORIZ										
														
1								1850.8				1		
2		502	440									2		
3		504	660	91 28 36	-5.2	-17.0	-22.2		1828.6			3		
4		506	880									4		
5	o	508	1100 ✓	90 43 36	-13.0	-14.0	-29.0		1821.7			5	1822-5	
6	o			269 15 58	-15.0	-14.1	-29.1					6		
7												7		
8												8		
9	Δ	608	2640 ✓	87 24 10	+5.0	-27.5	-22.5	1799.4				9		
10	Δ			270 35 10	+5.0	-27.0	-22.0					10		
11		510	2420									11		
12		512	2200	89 27 41	-4.0	+20.7	+16.7		1816.1			12		
13		514	1980									13		
14		516	1760	89 27 05	-4.0	+16.9	+12.9		1812.3			14		
15		518	1540									15		
16		520	1320	89 33 59	-4.0	+10.0	+6.0		1805.4			16		
17		522	1100									17		

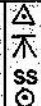


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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Howard Pass STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 6 OF \_\_\_\_\_  
 LINE/LOOP NO. R6XW TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE 15 DY 8 MO 79 YR  
 SURVEYOR S. ANDERSON 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	L/R OR D/I	RIGHT TURNED HORIZONTAL ANGLE	
				SLOPE 									
1									1799.4			1	
2		524	880		89 57 15	-4.0	+0.2	-3.8		1795.6		2	
3		526	860									3	
4		528	440		70 07 27	4.0	-1.0	-5.0		1794.4		4	
5		530	220									5	
6		532	0		90 00 00	-5.0	-	5.0		1794.4		6	
7		534	220									7	
8		536	440		90 04 35	5.2	-0.6	-5.8		1793.6		8	
9		538	860									9	
10		540	880		89 59 15	-5.2	+0.2	-5.0		1794.4		10	
11		542	1100									11	
12		544	1320		89 55 50	-5.2	+1.6	-3.6		1795.8		12	
13		546	1540									13	
14		548	1760		89 55 50	-5.2	+2.1	-3.1		1796.3		14	
15		550	1980									15	
16		552	2200		89 59 48	-5.2	+0.1	-5.1		1794.3		16	
17		554	2420									17	

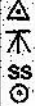







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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Howard Pass STATE/COUNTY Alaska BOOK NO. 3 PAGE 7 OF       
 LINE/LOOP NO. RG x W TYPE SURVEY      CLIENT Husky DATE 15 DY 3 MO 7 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		556	2640 ✓			92 57 50	-1.0	+1.7	+0.7		1800.0		2	1801.1
3						270 01 48	-1.0	+1.4	+0.4				3	
4													4	
5													5	
6		556	2640 ✓			90 08 47	+2.0	+6.7	+8.7	1809.0			6	
7						269 50 41	+2.0	+7.2	+9.2				7	
8		558	2420			-							8	
9		560	2200			90 07 34	-4.0	-4.8	-8.8		1800.2		9	
10		562	1980			-							10	
11		564	1760			70 10 29	-4.0	-5.4	-9.4		1799.6		11	
12		566	1540			-							12	
13		568	1320			90 15 22	-4.0	-5.9	-9.9		1799.1		13	
14		570	1100			-							14	
15		572	880			90 20 60	-4.0	-5.1	-9.1		1799.9		15	
16		574	660			-							16	
17		576	440			90 33 15	-4.0	-4.3	-8.3		1800.7		17	

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 3 PAGE 8 OF       
 LINE/LOOP NO. 26 XW TYPE SURVEY      CLIENT HUSKY DATE 15 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			RIGHT TURNED HORIZONTAL ANGLE	LINE
									SLOPE	HORIZ			
1									1809.0			1	
2		578	220									2	
3		580	0	90 .. ..	5.0	-	5.0		1804.0			3	
4		582	220									4	
5		584	440	89 32 57	5.2	+ 3.5	1.7		1807.3			5	
6		586	660									6	
7		588	880	89 23 55	5.2	+ 9.2	4.0		1813.0			7	
8		590	1100									8	
9		592	1320	89 15 27	5.2	+ 17.1	11.9		1820.9			9	
10		594	1540									10	
11		596	1760	89 18 45	5.2	+ 21.1	15.9		1824.9			11	
12		598	1980									12	
13		600	2200	89 16 22	5.2	+ 27.9	22.7		1831.7			13	
14		602	2420									14	
15		604	2640	88 48 05	5.2	+ 55.2	50.0		1859.0			15	
16		606	2860 ✓	88 37 08	1.0	+ 68.9	67.9		1876.7			16	1878.0
17				291 22 14	1.0	68.4	67.4					17	

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 3 PAGE 9 OF       
 LINE/LOOP NO. RG XW TYPE SURVEY      CLIENT HURT DATE 15 BY 3 MO 79 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO.      CREW NO. 1164

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
			SLOPE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS HORIZ					INST	ROD			
1												1	
2		606	1320 ✓		92 17 07	+15.0	+52.6	+67.6	1944.4			2	
3					267 42 38	+15.0	+52.7	+67.7				3	
4		608	1100		92 16 01	-15.0	-43.5	-58.5	1885.9			4	
5		610	880		-							5	
6		612	660		92 14 39	-15.0	-25.8	-40.8	1903.6			6	
7		614	440		-							7	
8		616	220		91 53 04	-4.0	-7.2	-11.2	1933.2			8	
9		618	0		-	-5.0	-	-5.0	1939.4			9	
10		620	220		90 02 11	-5.2	-0.1	-5.3	1939.1			10	
11		622	440 ✓		90 12 45	-75.0	-1.6	-16.6	1927.7			11	1929.2
12					267 46 59	-15.0	-1.7	-16.7				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 Holland Pass STATE/COUNTY Alaska BOOK NO. 3 PAGE 10 OF       
 LINE/LOOP NO. R6 XV TYPE SURVEY      CLIENT Hyster DATE 15 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 DJ	RIGHT TURNED HORIZONTAL ANGLE	
				SLOPE - 					HORIZ 	INST				ROD
1												1		
2	$\Delta$	622	1760 ✓		85 35 17	+1.0	-135.4	-134.4	1793.4				2	
3	$\Delta$				274 24 12	+1.0	-135.1	-134.1					3	
4		624	1340		85 54 00	-4.0	+110.1	+106.1			1899.5		4	
5		626	1320		-								5	
6		628	1100		86 18 54	-2.0	+70.7	+66.7			1860.1		6	
7		630	880										7	
8		632	660		87 00 38	-4.0	+34.4	+30.4			1823.8		8	
9		634	440										9	
10		636	220		87 54 21	-7.0	+8.0	+4.0			1797.4		10	
11	$\pi$	638	0		90 00 00	-5.0	-	-5.0			1788.4		11	
12		640	220		92 43 24	-7.0	-10.2	-14.2			1779.2		12	
13		642	440										13	
14		644	660		91 11 20	-5.2	-13.7	-18.9			1774.5		14	
15		646	880										15	
16		648	1100		88 10 12	-5.2	+35.1	+29.9			1823.3		16	
17	$\circ$	650	1320 ✓		87 52 30	-2.0	+48.9	+46.9			1840.3		17	1842.0
			0			272 07 56 -2.0 +48.8 +46.8								

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SYMBOLS  $\Delta$  = BACKSIGHT     $\pi$  = INSTRUMENT SET-UP    SS = SIDESHOT     $\circ$  = FORESIGHT




# HORIZONTAL AND VERTICAL SURVEY NOTES

ESTAB. Howard Pass STATE/COUNTY Alaska BOOK NO. 3 PAGE 11 OF       
 LINE/LOOP/NO. R6 XW TYPE SURVEY      CLIENT Huser DATE 15 DY 3 MO 72 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			RIGHT TURNED HORIZONTAL ANGLE	
				SLOPE 					HORIZ 	INST			ROD
1												1	
2		650	1100 ✓			90 02 28	+10.0	+0.8	+10.8	1851.2			2
3						269 57 08	+10.0	+0.9	+10.9				3
4		652	880			90 25 42	-4.0	-6.6	-10.6	1840.6			4
5		654	660			-							5
6		656	440			90 38 28	-4.0	-4.9	-8.9	1842.3			6
7		658	220			-							7
8		660	0			90 00 00	-5.0	-	-5.0	1846.2			8
9		662	220			-							9
10		664	440			91 56 53	-5.4	-15.0	-20.4	1830.8			10
11		666	660			-							11
12		668	880			92 14 25	-5.4	-34.4	-39.8	1811.4			12
13		670	1100			-							13
14		672	1320			91 52 03	-5.4	-43.0	-48.4	1802.8			14
15		674	1540			-							15
16		676	1760			91 25 10	-5.4	-43.6	-49.0	1802.2			16
17		678	1980			-							17

TI-23471B

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

STATE/COUNTY Howards Pass Alaska BOOK NO. 5 PAGE 12 OF       
 LINE/LOOP NO. R6 XW TYPE SURVEY      CLIENT Hinesy DATE 15 DY 3 MO 72 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO.      CREW NO. 1184

LINE	  	STATION	VERTICAL						ELEVATION		LR OR DJ	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									1851.2			1		
2		680	2200			90 37 28	5.2	-24.0	-29.2		1822.0		2	
3		682	2420			-							3	
4	SS	B.M. 79305	T 12.78 1178			89 26 58	-1.0	+22.6	+21.6		1874.7	REFERENCE - C.A.S. SURVEY	4	
5	SS		C 1.00 2356			276 32 44	-1.0	+22.4	+21.4		1872.7		5	
6	o	683	2530 ✓			90 04 00	5.0	-2.9	-7.9		-2.0	MISCLOSURE	6	
7	o					269 55 22	5.0	-3.4	-8.4		TR. 1845	ADJUSTED	7	1844.6
8											↓		8	
9													9	
10	Δ	683	2310 ✓			87 35 25	+1.0	-97.1	-96.1	1749.0			10	
11	Δ					272 24 14	+1.0	-96.9	-95.9				11	
12		684	2200			-							12	
13		686	1980			88 15 05	-4.0	+60.4	+56.4		1805.4		13	
14		688	1760			88 34 50	-4.0	+43.6	+39.6		1788.6		14	
15		690	1540			-							15	
16		692	1320			89 42 58	-0.0	+6.5	+6.5		1755.5		16	
17		694	1100			-							17	

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**SYMBOLS**

= BACKSIGHT

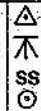

= INSTRUMENT SET-UP

= SIDESHOT

= FORESIGHT


# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Howard Pass STATE/COUNTY Alaska BOOK NO. 3 PAGE 13 OF       
 LINE/LOOP NO. R6 x W TYPE SURVEY      CLIENT Husky DATE 15 DY 3 MO 72 YR  
 SURVEYOR J. Anderson INSTRUMENT DESC/SERIAL NO.      CREW NO. 1124

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	
				SLOPE 										
1									1749.0			1		
2		696	880		90 04 07	-4.0	-1.1	-5.1		1743.9			2	
3		698	660		-								3	
4		700	440		90 16 52	-4.0	-1.4	-5.4		1743.6			4	
5		702	220		-								5	
6	X	704	0		90° 00 00	-5.0	-	-5.0		1744.0			6	
7		706	220		-								7	
8		708	440		90 45 23	-5.2	-5.8	-11.0		1738.0			8	
9		710	660		-								9	
10		712	880		90 22 22	-5.2	-5.7	-10.9		1738.1			10	
11		714	1100		-								11	
12		716	1220		88 13 41	-1.0	+40.8	+39.8		1788.8			12	
13		718	1540		-								13	
14	o	720	1760		87 52 47	+0.0	+65.1	+65.1		1814.1			14	
15		722	1980										15	
16	o	724	2200 ✓		87 50 35	-15.0	+82.8	+67.8		1816.8			16 1816.1	
17	o				272 09 24	-15.0	+82.8	+67.8					17	

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Hundred Pass STATE/COUNTY ALASKA BOOK NO. 3 PAGE 14 OF       
 LINE/LOOP NO. R6 XW TYPE SURVEY      CLIENT HONEY DATE 16 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	LINE
				SLOPE					HORIZ	INST				
1									1816.8			1		
2		724	2200 ✓		92 05 01	+15.0	+80.0	+95.0	1912.0			2		
3					267 54 16	+15.0	+80.4	+95.4				3		
4		726	1980		-							4		
5		728	1760		92 46 38	-4.0	-85.3	-89.3				5		
6		730	1540		-							6		
7		732	1320		92 58 45	-7.0	-88.6	-75.6				7		
8		734	1100		-							8		
9		736	880		92 46 30	-4.0	-42.6	-46.6				9		
10		738	660		-							10		
11		740	440		92 48 05	-4.0	-21.5	-25.5				11		
12		742	220		-							12		
13		744	0		90 06 00	-5.0	-	-5.0				13		
14		746	220		-							14		
15		748	440		89 30 58	-5.4	+3.7	-1.7				15		
16		750	660		-							16		
17		752	880		89 20 29	-5.4	+10.1	+4.7				17		

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 = SIDESHOT    
 = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Howard Pass STATE/COUNTY Alaska BOOK NO. 3 PAGE 15 OF       
 LINE/LOOP NO. 68 X 6 TYPE SURVEY      CLIENT Husky DATE 16 DY 3 MO 72 YR  
 SURVEYOR J. Anderson INSTRUMENT DESC/SERIAL NO.      CREW NO. 1184

LINE	 △ SS ⊙	STATION	VERTICAL						ELEVATION		L/R OR DJ	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				
1									1912.0			1		
2		754	1100			-						2		
3		756	1320			89 16 34	5.2	+16.7	+11.5		1923.5	3		
4		758	1540			-						4		
5		760	1760			89 09 24	5.2	+25.9	+20.7		1932.7	5		
6		762	1980			-						6		
7		764	2200			89 05 50	5.2	+34.7	+29.5		1941.5	7		
8		766	2420			-						8		
9		768	2640			89 52 50	5.2	+51.6	+46.4		1958.4	9		
10	⊙	769	2780 ✓			88 48 12	1.0	+57.4	+56.4		1968.4	10	1967.3	
11	⊙					271 11 39	1.0	+57.3	+56.3			11		
12												12		
13												13		
14												14		
15												15		
16												16		
17												17		

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 3 PAGE 16 OF       
 LINE/LOOP NO. R6 X10 TYPE SURVEY      CLIENT MUSIC DATE 16 DY 3 MO 72 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				
			SLOPE 	HORIZ 										
1												1		
2		767	2750 ✓			91 15 12	+2.0	+60.2	+62.2	2030.7			2	
3						268 44 29	+2.0	+60.4	+62.4				3	
4		770	2640			-							4	
5		772	2420			91 18 00	-4.0	-54.9	-58.9		1971.8		5	
6		774	2200			-							6	
7		776	1980			91 51 13	-4.0	-64.0	-68.0		1962.7		7	
8		778	1760										8	
9		780	1540			91 31 52	-4.0	-41.1	-45.1		1985.6		9	
10		782	1320			93 07 46	-4.0	-72.1	-76.1		1954.6		10	CREEK
11		784	1100			93 17 36	-4.0	-63.3	-67.3		1963.4		11	
12		786	880										12	
13		788	660			93 23 22	-4.0	-39.0	-43.0		1987.7		13	
14		790	440										14	
15		792	220			98 08 23	-4.0	-31.2	-35.2		1995.5		15	
16		794	0			90 00 00	-5.0	-	-5.0		2025.7		16	
17		796	220			86 19 52	-5.2	+14.1	+8.9		2039.6		17	

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








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



# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Howard Pass STATE/COUNTY ALASKA BOOK NO. 3 PAGE 17 OF       
 LINE/LOOP NO. R6 x 6 TYPE SURVEY      CLIENT Hyatt DATE      DY 3 MO 73 YR  
 SURVEYOR J. Anderson 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	L/R OR D/I	RIGHT TURNED HORIZONTAL ANGLE		
			SLOPE 	HORIZ 										
1									2030.7			1		
2		798	740									2		
3		800	660			86 21 27	-5.2	+41.9	+36.7		2067.4		3	
4		802	880										4	
5		804	1100			86 07 47	-5.2	+74.2	+69.0		2099.7		5	
6		806	1320										6	
7		808	1540			86 16 52	-5.2	+99.9	+94.7		2125.4		7	
8	o	810	1760 ✓			86 19 00	-9.0	+113.6	+104.1		2134.8		8	2133.3
9	o	811				273 41 04	-9.0	+113.6	+104.1				9	
10													10	
11													11	
12	Δ	810	440 ✓			90 00 00	+14.7	-	+14.7		2149.5		12	
13	Δ					270 00 00	+14.7	-	+14.7				13	
14	SS	B.M. 79306	T.12.0   1000			88 01 01	-1.0	+69.2	+68.2		2215.9	REFERENCE: BAS SURVEY	14	
15	SS		C.2.0   2000			271 58 32	-1.0	+68.9	+67.9		2217.6		15	
16		T.A.M. (PIPE) 812	220			90 38 34	-6.0	-	-		2134.3	MISCLOSURE	16	MARKER PIPE INSTALLED
17	X	814	0			90 00 00	-5.0	-	-5.0		2142.8		17	







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


# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 3 PAGE 18 OF       
 LINE/LOOP NO. RG XID TYPE SURVEY      CLIENT HUSKY DATE 16 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 ADJUSTED	ROD				
			SLOPE 	HORIZ 										
1									2147.8			1		
2		816	220			90 39 57	-4.0	-2.6	-6.6			2		
3		818	440			-						3		
4		820	660			90 45 50	-5.2	-8.8	-14.0			4		
5		822	880									5		
6		824	1100			90 53 21	-5.2	-19.0	-24.2			6		
7	⊙	826	1320 ✓			90 43 31	-15.0	-16.7	-31.7			7	2117.2	
8	⊙					269 16 21	-15.0	-16.8	-31.8			8		
9												9		
10												10		
11	Δ	826	2420 ✓			87 36 34	+2.0	-100.9	-98.9	2018.6		11		
12	Δ					272 22 35	+2.0	-100.3	-98.3			12		
13		828	2200			-						13		
14		830	1980			87 57 22	-4.0	+70.6	+66.6			14		
15		832	1760			-						15		
16		834	1540			88 16 30	-4.0	+46.4	+42.4			16		
17		836	1320			89 15 12	-4.0	+17.2	+13.2			17		

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Howard Pass STATE/COUNTY ALASKA BOOK NO. 3 PAGE 19 OF       
 LINE/LOOP NO. R6 X6 TYPE SURVEY      CLIENT HURST DATE      DY 3 MO 7 YR  
 SURVEYOR J. Anderson 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	
1									2018.0				1	
2		828	1100										2	
3		840	880			90 50 24	-4.0	-12.9	-16.9		2001.7		3	
4		842	660										4	
5		844	440			91 14 21	-4.0	-9.5	-13.5		2005.1		5	
6		846	220										6	
7	X	848	0			90 00 00	-5.0	-	-5.0		2013.6		7	
8		850	220										8	
9		852	440			90 16 55	-5.4	-2.2	-7.6		2011.0		9	
10		854	660										10	
11		856	880			90 21 28	-5.2	-5.5	-10.7		2007.9		11	
12		858	1100										12	
13		860	1320			90 08 26	-5.2	-3.2	-8.4		2010.2		13	
14		862	1540										14	
15		864	1760			87 50 56	-5.2	+4.6	-0.6		2018.0		15	
16		866	1980										16	
17		868	2200			89 43 10	-5.2	+10.8	+5.6		2024.2		17	










ADJUSTED FROM P.P. 118

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY Alaska BOOK NO. 2 PAGE 20 OF       
 LINE/LOOP NO. R6 X10 TYPE SURVEY      CLIENT Husky DATE 16 DY 3 MO 7 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO.      CREW NO. 1184

LINE		STATION	VERTICAL						ELEVATION		L/R OR DJ	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	o	876	2420 ✓			89 44 03	-2.0	+11.2	+9.2		2029.81		2	2029.8
3	o					270 15 55	-2.0	+11.2	+9.2				3	
4													4	
5													5	
6	Δ	870	1100 ✓			90 42 49	+15.0	+13.7	+28.7	2058.5			6	
7	Δ					269 17 26	+15.0	+13.6	+28.6				7	
8		872	880			91 03 43	-4.0	-16.31	-20.3		2038.2		8	
9		874	660			-							9	
10		876	440			90 55 07	-4.0	-7.1	-11.1		2047.4		10	
11		878	220			-							11	
12	X	880	0			90 00 00	-5.0	-	-5.0		2053.5		12	
13		882	210			-							13	
14		884	440			90 90 13	-5.2	-6.4	-11.6		2046.9		14	
15		886	660										15	
16		888	880			91 04 14	-7.0	-16.4	-23.4		2035.1		16	
17		890	1100										17	






ADJUSTED FROM V.P. 118

WORKED BY      CHECKED BY 1ST      2ND     

SYMBOLS    Δ = BACKSIGHT     = INSTRUMENT SET-UP    ss = SIDESHOT    ⊙ = FORESIGHT





# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Howard Pass STATE/COUNTY Alaska BOOK NO. 3 PAGE 21 OF       
 LINE/LOOP NO. R6 XW TYPE SURVEY      CLIENT Husky DATE 16 BY B 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		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		892	1320 ✓		89 59 08	75.0	+ 0.3	-14.7		2044.91					2044.9
3					270 00 41	75.0	+ 0.3	-14.7							
4															
5															
6		892	2420 ✓		92 30 30	+15.0	+105.9	+120.9	2165.9						
7					267 29 13	+15.0	+106.1	+121.1							
8		894	2200												
9		896	1980		92 41 32	-4.0	-93.0	-97.0	2068.9						
10		898	1760												
11		900	1540		92 46 27	-4.0	-74.5	-78.5	2087.4						
12		902	1320												
13		904	1100		92 50 39	-4.0	-54.6	-58.6	2107.3						
14		906	880												
15		908	660		92 57 10	-4.0	-34.0	-38.0	2127.9						
16		910	440												
17		912	220		92 52 32	-4.0	-11.0	-15.0	2150.9						

ADJUSTED FROM V.I.P. 1118

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY Alaska BOOK NO. 2 PAGE 22 OF       
 LINE/LOOP NO. R6 X6 TYPE SURVEY      CLIENT Apex DATE      DY 3 MO 22 YR       
 SURVEYOR S. 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									2165.9			1		
2		914	0		90 00 00	-5.0	-	-5.0		2160.9		2		
3		916	220		88 04 37	-5.2	+7.4	+2.2		2163.1		3		
4		918	440									4		
5		920	660		88 50 42	-5.2	+13.3	+8.1		2174.0		5		
6		<del>922</del>	880									6		
7		924	1100 ✓		89 13 51	-11.5	+14.8	+3.3		2169.99		7	2170.0	
8					270 45 35	-11.5	+14.7	+3.2				8		
9												9		
10												10		
11		924	2420 ✓		89 23 24	+2.0	-25.8	-23.8		2146.3		11		
12					270 36 18	+2.0	-25.6	-23.6				12		
13		926	2200									13		
14		928	1980		89 24 30	-4.0	+20.4	+16.4		2162.7		14		
15		930	1760									15		
16		932	1540		89 35 01	-4.0	+11.2	+7.2		2153.5		16		
17		934	1320									17		

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 3 PAGE 23 OF       
 LINE/LOOP NO. R6 XL TYPE SURVEY      CLIENT Husky DATE 16 DY 3 MO 7 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO.      CREW NO. 1184

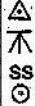
LINE	  	STATION	VERTICAL							HORIZONTAL		REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION		L/R OR DI		RIGHT TURNED HORIZONTAL ANGLE
				SLOPE					HORIZ	INST			
1									2146.3			1	
2		926	1100		89 18 52	-4.0	+ 3.6	-0.4		2145.9		2	
3		938	880		-							3	
4		940	660		90 02 36	-4.0	-0.5	-4.5		2141.8		4	
5		942	440		-							5	
6		944	220		90 65 27	-4.0	-0.3	-4.3		2142.0		6	
7		946	0		90 00 00	-5.0	-	-5.0		2141.3		7	
8		948	220		-							8	
9		950	440		91 48 01	-5.2	-13.8	-19.0		2127.3		9	
10		952	660		-							10	
11		954	880		92 16 36	-5.2	-35.0	-40.2		2106.1		11	
12		956	1100		-							12	
13		958	1320		92 14 38	-5.2	-51.7	-56.9		2089.4		13	
14		960	1540		-							14	
15		962	1760		92 16 51	-5.2	-70.0	-75.2		2071.1		15	
16		964	1980		92 22 07	-5.2	-81.8	-87.0		2059.3		16	
17		966										17	

↑  
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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Howard Pass STATE/COUNTY Alaska BOOK NO. 3 PAGE 24 OF       
 LINE/LOOP NO. R6 XLW TYPE SURVEY      CLIENT HUGER DATE 16 DY 3 MO 29 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		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	o	966	2200 ✓		92 26 39	15.0	-93.8	-108.8		2039.2				2039.3
3	o				267 32 57	15.0	-94.1	-109.1						
4														
5														
6	Δ	966	1980 ✓		89 17 58	+1.0	-24.2	-23.2	2016.0					
7	Δ				270 41 58	+1.0	-24.2	-23.2						
8		968	1760		89 25 10	-4.0	+17.8	+13.8		2029.8				
9		970	1540		-									
10		972	1320		89 46 08	-4.0	+5.3	+1.3		2017.3				
11		974	1100		-									
12		976	880		90 19 54	-4.0	5.1	-9.1		2006.9				
13		978	660											
14		980	440		91 21 12	-4.0	-10.4	-14.4		2001.6				
15		982	220											
16	⊗	984	0		90 00 00	-5.0	-	-5.0		2011.0				
17		986	220											

ADJUSTED ELEVATION V.P. 1119

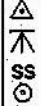
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  = INSTRUMENT SET-UP   
  = SIDESHOT   
  = FORESIGHT







# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Howard Pass STATE/COUNTY Alaska BOOK NO. 3 PAGE 29 OF       
 LINE/LOOP NO. R6 KW TYPE SURVEY      CLIENT Husky DATE 16 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		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									2018.0			1		
2		388	440		92 02 40	-5.2	-15.7	-20.9		1995.1		2		
3		990	660									3		
4		992	880		92 03 15	-3.2	-31.5	-36.7		1979.3		4		
5		994	1100									5		
6		996	1320		92 02 15	-5.2	-46.9	-52.1		1963.9		6		
7		998	1540									7		
8		1000	1760		91 55 03	-5.2	-58.9	-64.1		1951.9		8		
9	o	1002	1980 ✓		91 42 50	-75.0	-59.2	-74.2		1943.34		9	1943.4	
10	o				268 16 33	-75.0	-52.6	-74.6				10		
11												11		
12												12		
13	Δ	1002	1760 ✓		91 42 13	+15.6	+52.3	+67.3	2018.7			13		
14	Δ				268 17 31	+15.0	+52.5	+67.5				14		
15		1004	1540		92 52 17	-4.0	-77.1	-81.1		1929.6		15		
16		1006	1320									16		
17		1008	1100		93 04 34	-9.0	-59.0	-68.0		1942.7		17		

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOLWAS PASS STATE/COUNTY ALASKA BOOK NO. 3 PAGE 26 OF       
 LINE/LOOP NO. R6 x12 TYPE SURVEY      CLIENT HICKY DATE 16 DY 3 MO 72 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										2010.73			1	
2		1010	880										2	
3		1012	660			92 59 40	-4.0	-34.5	-38.5		1972.2		3	
4		1014	440										4	
5		1016	220			93 58 52	7.0	-15.3	-19.3		1991.4		5	
6	T	1018	0					5.0		5.0	2005.7		6	
7		1020	220			89 42 51	5.2	+1.1	-4.1		2006.6		7	
8		1022	440										8	
9		1024	660			89 59 51	-5.2	+0.0	-5.2		2006.5		9	
10		1026	880										10	
11		1028	1100			89 54 20	-5.2	+1.8	-3.4		2007.3		11	
12		1030	1320										12	
13		1032	1540			89 03 46	-5.2	+25.2	+20.0		2030.7		13	
14	Q	1034	1760 ✓			88 25 25	-15.0	+48.4	+33.4		2045.5		14	2045.5
15	Q					271 34 01	-15.0	+48.1	+33.1				15	
16													16	
17													17	

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 = SIDESHOT   
 = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Howard Pass STATE/COUNTY ALASKA BOOK NO. 3 PAGE 27 OF       
 LINE/LOOP NO. R6 SW TYPE SURVEY      CLIENT Husky DATE 16 DY 3 MO 72 YR  
 SURVEYOR J. Anderson INSTRUMENT DESC/SERIAL NO.      CREW NO. 1104

LINE	 SS	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	 V.A.	 RDG	 ELEV	 DIFF	 INST	 ROD					
1															
2		1034	1980 ✓		93 57 02	+15.0	+136.4	+151.4	2196.9						
3					266 03 10	+13.0	+136.3	+151.3							
4		1036	1760		-										
5		1038	1540		94 08 23	-28.5	-107.8	-133.3	2063.6						15' + 10.5' BOOST
6		1040	1320		94 11 44	-28.0	-96.6	-124.6	2072.3						15' + 13' BOOST
7		1042	1100		-										
8		1044	880		94 10 32	-21.0	-64.1	-85.1	2111.8						10.5' + 10.5' BOOST
9		1046	660		-										
10		1048	440		93 54 40	-4.0	-30.0	-34.0	2162.9						
11		1050	220		-										
12		1052	0		90 00 00	-5.0	-	-5.0	2191.9						
13		1054	220		-										
14		1056	440		90 08 14	-4.0	-1.1	-5.1	2191.8						
15		1058	660		-										
16		1060	880		90 12 21	-15.0	-3.2	-18.2	2178.7						
17		1062	1100		-										

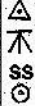





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 = INSTRUMENT SET-UP   
 = SIDESHOT   
 = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Hawes Pass STATE/COUNTY Alaska BOOK NO. 2 PAGE 28 OF       
 LINE/LOOP NO. 86 X4 TYPE SURVEY      CLIENT MUSKY DATE 16 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
				SLOPE 					HORIZ 				
1		1064	1320		30 05 45	-6.2	2.2	-7.4		2189.5		1	
2		1066	1540		-							2	
3	o	1068	1780		89 10 48	1.0	+25.2	+24.2		2222.4		3	2222.4
4	o				270 48 35	1.0	+24.9	+23.9				4	2210.8
5												5	
6												6	
7	Δ	1068	1430		87 44 13	+4.0	-56.5	-52.5	2170.0			7	
8	Δ				272 15 25	+4.0	-56.3	-52.3				8	2162.7
9		1070	1210		-							9	
10		1072	990		88 18 14	18.0	+29.3	+11.3		2181.3		10	11' + 7' BOOST
11		1074	770		-							11	
12		1076	550		88 16 11	14.5	+29.9	+15.4		2185.4		12	2.5' + 7' BOOST
13		1078	330		-							13	
14		1080	110		82 03 33	4.0	+5.6	+1.0		2171.0		14	
15	⊗	1081	0		90 00 00	5.0	-	-5.0		2165.0		15	
16		1082	110		-							16	
17		1084	330		92 53 06	5.4	-16.6	-22.0		2148.0		17	

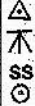








ADJUSTED FROM V.P. 1118

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SYMBOLS    Δ = BACKSIGHT    ⊗ = INSTRUMENT SET-UP    ss = SIDESHOT    ⊙ = FORESIGHT



# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Howard Pass STATE/COUNTY ALASKA BOOK NO. 3 PAGE 29 OF       
 LINE/LOOP NO. KG XW TYPE SURVEY      CLIENT Huser DATE 16 DY 3 MO 79 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO.      CREW NO. 1184

LINE		STATION	VERTICAL						ELEVATION		LR OR DJ	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	412.7	
2	o	1086	550 ✓		94 20 44	15.0	-41.7	-56.7		2113.66		2	2113.7	
3	o				265 38 50	15.0	-41.7	-56.7				3	2106.0	
4												4		
5												5		
6	Δ	1086	2420 ✓		89 42 44	+1.0	-12.2	-11.2	2002.36			6	2094.8	
7	Δ				270 17 04	+1.0	-12.0	-11.0	2002.36			7		
8		1088	2200		90 34 37	4.0	-22.2	-26.2		2076.4		8		
9		1090	1980		-							9		
10		1092	1760		91 15 52	7.0	-38.8	-45.8		2056.8		10		
11		1094	1540		-							11		
12		1096	1320		91 19 27	4.0	-30.5	-34.5		2068.1		12		
13		1098	1100		-							13		
14		1100	880		91 30 44	13.0	-23.2	-36.2		2066.4		14		
15		1102	660		-							15		
16		1104	440		91 32 50	7.0	-11.9	-18.9		2083.7		16		
17		1106	220		-							17		

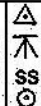











ADJUSTED ELEVATION V.P. 1118

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Montez Pass STATE/COUNTY Alaska BOOK NO. 3 PAGE 30 OF       
 LINE/LOOP NO. RG XC TYPE SURVEY      CLIENT Husky DATE 17 DY 3 MO 79 YR  
 SURVEYOR J. Anderson INSTRUMENT DESC/SERIAL NO.      CREW NO. 1184

LINE	 SS 	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									2102.6			1	2094.8	
2		1108	0		90 00 00	-5.0	-	-5.0		2097.6		2		
3		1110	220		-							3		
4		1112	440		92 42 50	-5.2	-20.8	-26.0		2076.6		4		
5		1114	660		-							5		
6		1116	880		92 32 27	-5.2	-39.0	-44.2		2058.4		6		
7	SS	B.M. 79322	T10.5 / 550		91 00 28	-5.0	-19.3	-24.3		2079.0		7		
8	SS		C5.0 / 1100 ✓		268 69 05	-5.0	-19.5	-24.5		2065.8	REFERENCE: G.A.S SURVEY MISCELLANEOUS - 13.23	8	SURVEY VALUE 2070.4	
9		1118	1100		91 43 24	-15.0	-33.1	-48.1		TRK. 2055.3	← ADJUSTED	9	TRUL VALUE 2079.0 2055.3	
10					268 16 30	-15.0	-33.1	-48.1				10	SAMPLE - 8.6	
11												11		
12												12		
13		1118	1540 ✓		88 33 25	+1.0	-38.8	-37.8	2016.5			13		
14					271 26 21	+1.0	-38.7	-37.7				14		
15		1120	1320		90 10 49	-4.0	-4.2	-8.2		2008.3		15		
16		1122	1100		-							16		
17		1124	880		93 13 30	-7.0	-49.5	-56.5		1960.0		17		

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 3 PAGE 31 OF       
 LINE/LOOP NO. 86 X61 TYPE SURVEY      CLIENT Husky DATE 17 DY 3 MO 72 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO.      CREW NO. 1184

LINE	  	STATION	VERTICAL						ELEVATION		LR 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	
1										2016.5			1	
2		1126	660										2	
3		1128	440			93 16 34	-7.0	-25.1	-32.1		1984.4		3	
4		1130	220										4	
5	X	1132	0			90 00 00	-5.0	-	-5.0		2011.5		5	
6		1134	220										6	
7		1136	440			89 58 08	-5.3	+0.2	-5.1		2011.4		7	
8		1138	660										8	
9		1140	880			88 47 03	-5.3	+18.7	+13.7		2030.2		9	
10		1142	1100										10	
11	o	1144	1320 ✓			88 38 26	-3.0	+21.3	+28.3		2044.8		11	2045.7
12	o					271 21 13	-2.0	+31.2	+28.2				12	
13													13	
14													14	
15													15	
16													16	
17													17	

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Howard Pass STATE/COUNTY Alaska BOOK NO. 3 PAGE 32 OF       
 LINE/LOOP NO. R6 XW TYPE SURVEY      CLIENT Husky DATE 17 DY 3 MO 19 YR  
 SURVEYOR J. Anderson INSTRUMENT DESC/SERIAL NO.      CREW NO. 1184

LINE	  	STATION	VERTICAL						ELEVATION		LR 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		1144	2200 ✓		91 13 56	+1.0	+47.3	+48.3	2093.3			2		
3					268 45 31	+1.0	+47.7	+48.7				3		
4		1146	1980		-							4		
5		1148	1760		91 33 20	-4.0	-47.8	-51.8	2041.5			5		
6		1150	1540		-							6		
7		1152	1320		91 23 45	-13.0	-34.5	-47.5	2045.8			7		
8		1154	1100		-							8		
9		1156	880		91 29 08	-2.0	-22.8	-26.8	2066.5			9		
10		1158	660		-							10		
11		1160	440		90 57 03	-8.0	-7.3	-20.3	2072.5			11		
12		1162	220		-							12		
13		1164	0		90 00 00	-5.0	-	-5.0	2088.3			13		
14		1166	220		-							14		
15		1168	440		89 21 01	8.2	+5.0	-0.2	2093.1			15		
16		1170	660		-							16		
17		1172	880		89 23 14	-1.0	+9.4	+8.4	2101.7			17	2102.5	








WORKED BY      CHECKED BY 1ST      2ND     

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







# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA: HOWARD PASS STATE/COUNTY: ALASKA BOOK NO. 3 PAGE 33 OF       
 LINE/LOOP NO. R6 XW TYPE SURVEY      CLIENT HUSKY DATE 17 DY 3 MO 72 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			
1												1	
2		1172	1540 ✓		90 38 24	+1.0	+17.2	+18.2	2120.1			2	
3					269 21 00	+1.0	+17.5	+18.5				3	
4		1174	1320		-							4	
5		1176	1100		91 13 59	-4.0	-23.7	-27.7	2092.4			5	
6		1178	880		-							6	
7		1180	660		91 56 47	-4.0	-22.2	-22.6	2097.5			7	
8		1182	440		-							8	
9		1184	220		91 59 01	-4.0	-7.6	-11.6	2108.5			9	
10		1186	0		90 00 00	-5.0	-	-5.0	2115.1			10	
11		1188	220		90 30 24	-5.2	-1.9	-2.1	2113.0			11	
12		1190	440		-							12	
13		1192	660		91 13 42	-5.2	-95.1	-100.3	<del>2019.8</del>		2100.8	13	
14		1194	880		-							14	
15		1196	1100		91 17 34	-5.2	-24.8	-30.00	2090.1			15	
16		1198	1320		-							16	
17		1200	1540 ✓		90 50 25	-5.0	-22.6	-27.6	2082.4			17	

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





# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 5 PAGE 34 OF       
 LINE/LOOP NO. R6 XW TYPE SURVEY      CLIENT HURBY DATE 17 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												1		
2		1200	2640 ✓		88 32 44	+10.0	-57.0	-57.0	2025.4			2		
3					271 27 08	+10.0	-66.9	-56.9				3		
4		1202	2420									4		
5		1204	2200		88 35 31	-7.0	+53.8	+46.8			2072.2	5		
6		1206	1980									6		
7		1208	1760		88 32 48	-7.0	+44.6	+37.6			2063.0	7		
8		1210	1540									8		
9		1212	1320		88 31 06	-4.0	+33.5	+23.5			2054.9	9		
10		1214	1100									10		
11		1216	880		88 25 27	-4.0	+24.2	+20.2			2045.6	11		
12		1218	660									12		
13		1220	440		88 45 31	-4.0	+9.5	+5.5			2030.9	13		
14		1222	220									14		
15		1224	0		70 00 00	-5.0	-	-5.0			2020.4	15		
16		1226	220									16		
17		1228	440		71 31 00	-5.2	-11.6	-16.8			2008.6	17		

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Howard Pass STATE/COUNTY ALASKA BOOK NO. 3 PAGE 35 OF       
 LINE/LOOP NO. R6 XW TYPE SURVEY      CLIENT HUCKY DATE 17 DY 3 MO 79 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO.      CREW NO. 1184

LINE	  	STATION	VERTICAL						ELEVATION		L/R OR DI	HORIZONTAL		REMARKS
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD		RIGHT TURNED HORIZONTAL ANGLE	LINE	
			SLOPE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS HORIZ										
1									2025.4				1	
2		1230	660										2	
3		1232	880	91 23 38	5.2	21.4	26.6		1998.8				3	
4		1234	1100										4	
5		1236	1320	90 17 44	5.2	6.8	12.0		2013.4				5	
6		1238	1540										6	
7		1240	1760	30 10 07	5.2	5.2	10.4		2015.0				7	
8		1242	1980										8	
9		1244	2200	90 10 54	5.2	7.0	12.2		2013.2				9	
10		1246	2420										10	
11	o	1248	2640 ✓	90 08 41	15.0	6.7	21.7		2003.6				11	2004.2
12	o			209 51 04	15.0	6.9	21.9						12	
13													13	
14													14	
15													15	
16													16	
17													17	












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 = SIDESHOT   
 = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI/AREA Howard Pass STATE/COUNTY Alaska BOOK NO. 3 PAGE 36 OF       
 LINE/LOOP NO. 86 XW TYPE SURVEY      CLIENT Husky DATE 17 DY 3 MO 77 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				
			SLOPE 	HORIZ 										
1													1	
2		1248	3300 ✓			90 04 35	15.0	+ 4.4	+ 19.4	2022.9			2	
3						267 55 42	15.0	+ 4.1	+ 19.1				3	
4		1250	3080			-							4	
5		1252	2860			90 21 06	7.0	- 17.6	- 24.6	1998.3			5	
6		1254	2640			-							6	
7		1256	2420			90 22 38	4.0	- 15.9	- 19.9	2003.0			7	
8		1258	2200			-							8	
9		1260	1980			90 21 06	4.0	- 12.2	- 16.2	2006.7			9	
10		1262	1760			-							10	
11		1264	1540			90 47 04	4.0	- 21.1	- 25.1	1997.9			11	
12		1266	1320			-							12	
13		1268	1100			91 07 21	4.0	- 21.5	- 25.5	1997.4			13	
14		1270	880			-							14	
15		1272	660			91 16 00	4.0	- 14.6	- 18.6	2004.3			15	
16		1274	440			-							16	
17		1276	220			91 01 09	4.0	- 3.9	- 7.9	2015.0			17	

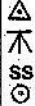




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

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Howard Pass STATE/COUNTY Alaska BOOK NO. 3 PAGE 37 OF       
 LINE/LOOP NO. R6 X62 TYPE SURVEY      CLIENT Hilary DATE 17 DY 3 MO 79 YR  
 SURVEYOR S. Anderson INSTRUMENT DESC/SERIAL NO.      CREW NO. 1184












LINE	 SS 	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 					
1												1		
2	X	1278	0									2		
3		1280	220	90 16 36	5.2	1.1	6.3		2022.9			3		
4		1282	440	-								4		
5		1284	660	90 42 24	5.2	8.1	13.3			2016.6		5		
6		1286	880	-								6		
7		1288	1100	90 58 35	5.2	18.7	23.9			2009.6		7		
8		1290	1320	-								8		
9		1292	1540	91 06 24	7.0	27.7	34.7			1999.0		9		
10		1294	1760	-								10		
11		1296	1980	91 05 04	5.2	37.5	42.7			1986.2		11		
12		1298	2200	-								12		
13		1300	2420	90 53 40	5.2	37.8	43.0			6980.2		13		
14		1302	2640	-								14		
15		1304	2860	90 33 44	8.2	28.1	33.3			1979.9		15		
16		1306	3080	-								16		
17	o	1308	3300 ✓	90 07 45	15.0	9.4	24.4			1989.6		17	1988.7	

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 3 PAGE 28 OF       
 LINE/LOOP NO. RG X62 TYPE SURVEY      CLIENT HUSKY DATE 17 3 MO 79 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO.      CREW NO. 1184

LINE	   	STATION	VERTICAL						ELEVATION		LR 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												1		
2		1308	2860 ✓		89 40 43	+2.0	-16.0	-14.0	1984.4			2		
3					270 18 45	+2.0	-15.6	-13.6				3		
4		1310	2640		-							4		
5		1312	2420		90 03 00	-4.0	-2.1	-6.1	1978.3			5		
6		1314	2200		-							6		
7		1316	1980		90 44 38	-4.0	-25.7	-29.7	1954.7			7		
8		1318	1760		-							8		
9		1320	1540		91 06 20	-4.0	-23.7	-33.7	1950.7			9		
10		1322	1320		-							10		
11		1324	1100		91 19 38	-4.0	-25.5	-29.5	1954.9			11		
12		1326	880		-							12		
13		1328	660		91 23 45	-4.0	-16.1	-20.1	1964.3			13		
14		1330	440		-							14		
15		1332	220		91 27 02	-4.0	-5.6	-9.6	1974.8			15		
16		1334	0		90 00 00	5.0	-	-5.0	1979.4			16		
17		1336	220		90 03 07	5.2	-0.2	-5.4	1979.0			17		

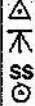







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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Howard Pass STATE/COUNTY ALASKA BOOK NO. 3 PAGE 39 OF       
 LINE/LOOP NO. R6 X60 TYPE SURVEY      CLIENT Husky DATE 17 DY 3 MO 79 YR  
 SURVEYOR J. Anderson INSTRUMENT DESC/SERIAL NO.      CREW NO. 1184

LINE	 SS 	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												1		
2		1338	440										2	
3		1340	660 ✓			91 04 10	9.0	-12.3	-21.3		1963.1		3	1983.4
4						268 56 42	9.0	-12.3	-21.3				4	
5													5	
6													6	
7		1340	2640 ✓			88 42 34	+1.0	-59.2	-58.2	1904.9			7	
8						271 46 58	+1.0	-59.1	-58.1				8	
9		1342	2420										9	
10		1344	2200			89 04 33	-4.0	+35.5	+31.5		1936.4		10	
11		1346	1980										11	
12		1348	1760			89 37 31	-4.0	+11.5	+7.5		1912.4		12	
13		1350	1520										13	
14		1352	1320			90 00 56	-4.0	-0.4	-4.4		1900.5		14	
15		1354	1100										15	
16		1356	880			90 02 13	-4.0	-0.6	-4.6		1900.3		16	
17		1358	660										17	

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Howard Pass STATE/COUNTY Alaska BOOK NO. 3 PAGE 40 OF       
 LINE/LOOP NO. RG XG TYPE SURVEY      CLIENT Husky DATE 18 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									1904.9				1	
2		1360	440		90 13 16	-4.0	1.7	-5.7		1899.2			2	
3		1362	220		-								3	
4		1364	0		90 00 00	-5.0	-	-5.0		1899.9			4	
5		1366	280		-								5	
6		1368	440		90 33 15	-5.2	4.3	-9.5		1895.4			6	
7		1370	660		-								7	
8		1372	880		90 50 24	-5.2	13.0	-18.0		1886.9			8	
9		1374	1100		-								9	
10		1376	1320		91 04 20	7.0	24.7	-31.7		1873.2			10	
11		1378	1540		-								11	
12		1380	1760		90 55 11	-5.2	23.3	-33.5		1871.4			12	
13		1382	1980		-								13	
14		1384	2200 ✓		90 28 36	-15.0	18.3	-33.3		1871.5			14	1871.6
15					269 31 17	-15.0	18.4	-33.4					15	
16													16	
17													17	










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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 3 PAGE 41 OF       
 LINE/LOOP NO. R6 XW TYPE SURVEY      CLIENT MUSKY DATE 18 DY 3 MO 79 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO.      CREW NO. 184

LINE	 SS 	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	
				SLOPE 					HORIZ 	INST				ROD
1												1		
2		1384	1320 ✓		91 03 32	+15.0	+25.2	+40.2	1711.7				2	
3					268 54 20	+15.0	+25.2	+40.2					3	
4		1386	1100		92 08 22	-4.0	-41.1	-45.1			1866.6		4	
5		1388	880		93 00 30	-4.0	-46.2	-50.2			1861.5		5	
6		1390	660										6	
7		1392	440		94 21 53	-4.0	-50.0	-54.0			1857.7		7	
8		1394	220		96 38 40	-4.0	-25.5	-29.5			1852.2		8	
9		1396	0		90 00 00	-5.0	-	-5.0			1906.7		9	
10		1398	220		-								10	
11		1400	440		87 27 04	-5.2	+13.6	+14.4			1926.1		11	
12		1402	660		-								12	
13		1404	880		87 21 58	-5.2	+40.4	+35.2			1946.9		13	
14		1406	1100		-								14	
15		1408	1320 ✓		82 07 18	2.0	+66.3	+64.3			1975.9		15	1975.9
16					292 52 05	2.0	+66.0	+64.0					16	
17													17	










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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 3 PAGE 42 OF       
 LINE/LOOP NO. RG XLV TYPE SURVEY      CLIENT HUNT DATE 18 DY 3 MO 77 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		1408	980 ✓		93 03 17	+15.0	+105.5	+120.5	2096.5			2		
3					266 56 33	+15.0	+105.6	+120.6				3		
4		1410	1760		-							4		
5		1412	1540		93 27 26	18.0	-93.8	-109.8			1986.7	5	9' + 7'	
6		1414	1320		-							6		
7		1416	1100		93 31 55	17.0	-67.8	-84.8			2011.7	7	10' + 7'	
8		1418	880		-							8		
9		1420	660		93 21 55	13.0	-38.7	-51.7			2044.8	9		
10		1422	440		-							10		
11		1424	220		92 17 50	7.0	-10.9	-14.9			2081.6	11		
12		1426	0		90 00 00	5.0	-	-5.0			2091.5	12		
13		1428	220		88 41 18	5.4	+5.0	-0.4			2096.1	13		
14		1430	440		-							14		
15		1432	660		88 32 38	5.2	+16.8	+11.6			2108.1	15		
16		1434	880		-							16		
17		1436	1100		88 16 42	2.0	+32.0	+31.0			2127.5	17	2127.3	

271 12 51 -2.0 + 32.9 + 30.9

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOLYAKO PASS STATE/COUNTY ALASKA BOOK NO. 3 PAGE 43 OF       
 LINE/LOOP NO. 26 X 60 TYPE SURVEY      CLIENT HV&K DATE 18 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			RIGHT TURNED HORIZONTAL ANGLE
				SLOPE					HORIZ	INST		
1												1
2		1436	2200 ✓		90 03 24	+3.0	+2.2	+5.2	2132.9			2
3					269 55 58	+2.0	+2.6	+5.6				3
4		1438	1980		-							4
5		1440	1760		90 08 04	-4.0	-4.1	-0.1		2132.8		5
6		1442	1540		-							6
7		1444	1320		90 18 38	-4.0	-7.2	-11.2		2121.7		7
8		1446	1100		-							8
9		1448	880		90 19 05	-4.0	-4.9	-8.9		2124.0		9
10		1450	660		-							10
11		1452	440		90 35 31	-4.0	-4.5	-8.5		2124.4		11
12		1454	220		-							12
13		1456	0		90 00 00	-5.0	-	-5.0		2127.9		13
14		1458	220		-							14
15		1460	440		92 00 25	-5.2	-15.4	-20.6		2112.3		15
16		1462	660		92 16 42	-5.2	-26.2	-31.4		2101.5		16
17		1464	880		91 21 05	-5.2	-20.8	-26.0		2106.9		17













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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Howard Pass STATE/COUNTY Alaska BOOK NO. 3 PAGE 44 OF       
 LINE/LOOP NO. GR 20 TYPE SURVEY      CLIENT Husky DATE 18 DY 3 MO 72 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO.      CREW NO. 1184

LINE	   	STATION	VERTICAL						ELEVATION		L/R OR DIA	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									2132.9				1	
2		1466	1100										2	
3		1468	1320			89 46 02	-5.2	+4.5	-0.7		2132.2		3	
4		1470	1540										4	
5		1472	1760			89 02 43	-1.0	+29.3	+28.3		2161.1		5	2160.8
6						270 56 56	-1.0	+29.1	+28.1				6	
7													7	
8													8	
9		1472	1980			90 33 13	+15.0	+19.1	+34.1	2195.3			9	
10						269 26 27	+15.0	+19.3	+34.3				10	
11		1474	1760										11	
12		1476	1540			91 13 43	-4.0	-33.0	-37.0		2158.3		12	
13		1478	1320										13	
14		1480	1100			91 53 43	-4.0	-36.4	-40.4		2154.9		14	
15		1482	880										15	
16		1484	660			91 55 18	-4.0	-22.1	-26.1		2169.2		16	
17		1486	440										17	







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  = INSTRUMENT SET-UP   
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  = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Howard Pass STATE/COUNTY ALASKA BOOK NO. 3 PAGE 45 OF       
 LINE/LOOP NO. 26 X2 TYPE SURVEY      CLIENT HUSKY DATE 18 DY 3 MO 79 YR  
 SURVEYOR J. Aronson INSTRUMENT DESC/SERIAL NO.      CREW NO. 184

LINE	   	STATION	VERTICAL							HORIZONTAL		REMARKS		
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD ROD OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION		L/R OR DJI		RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE 					HORIZ 	INST				
1										2195.3			1	
2		1288	220		91 07 55	-4.0	-4.3	-8.3		2187.0			2	
3	$\pi$	1490	0		90 00 00	-5.0	-	-5.0		2190.3			3	
4		1492	220		90 49 50	-5.2	-3.2	-8.4		2186.9			4	
5		1494	440		-								5	
6		1496	660		90 59 34	-5.2	-11.4	-16.6		2178.7			6	
7		1498	880		90 47 40	-20.0	-12.2	-32.2		2163.1			7	15' + 5' BOOST
8		1500	1100		90 38 03	-5.2	-12.2	-17.4		2177.9			8	
9		1502	1320		-								9	
10		1504	1540		89 07 02	-3.2	+23.7	+18.5		2213.8			10	
11		1506	1760		-								11	
12	$\odot$	1508	1980		88 31 05	-5.0	+51.2	+46.2		2241.4		ADJUSTED 2240.9	12	2241.1
13	$\odot$				271 28 36	-5.0	+51.0	+46.0					13	
14	$\Delta$		T 13.2 1020		92 31 11	+15.0	+89.7	+104.7	2346.2				14	
15	$\Delta$		C 3.0 2040		267 28 28	+15.0	+89.9	+104.9					15	
16	$\odot$	B.M. 79310	T 14.75 575		90 48 45	-15.0	-8.2	-23.2		2322.5		REFERENCE - B.M. 5' SURVEY	16	
17	$\odot$		B 9.0 575		269 10 57	-15.0	-8.2	-23.2		2323.0			17	

+0.5 MISCLOSEURE

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Howard Pass STATE/COUNTY Alaska BOOK NO. 3 PAGE 46 OF       
 LINE/LOOP NO. 62 XL TYPE SURVEY      CLIENT Husky DATE 12 DY 3 MO 79 YR  
 SURVEYOR J. Anderson INSTRUMENT DESC/SERIAL NO.      CREW NO. 184

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		RIGHT TURNED HORIZONTAL ANGLE	
				SLOPE	HORIZ					INST			ROD
1									2240.9		SEE PAGE 45 LINE 12.	1	
2		T 14.7 1508	660		94 05 19	+15.0	+47.1	+62.1				2	
3		B. 8.0			265 54 27	+15.0	+47.1	+62.1	2303.0			3	
4		1510	440									4	
5		1512	220		95 46 45	-4.0	-22.2	-26.2	2276.8			5	
6		1514	0		90 00 00	-5.0	-	-5.0	2298.0			6	
7		1516	220		84 55 52	-5.2	+	+14.2	2317.2			7	
8		1518	440									8	
9		1520	660		83 26 18	-9.2	+	+76.4	2373.4			9	
10		1522	880		82 47 38	-5.2	+	+105.2	2408.2			10	
11		T 14.35	935		82 55 56	-5.0	+	+115.0	2413.0			11	
12		B 5.00			277 04 01	-5.0	+	+115.0				12	
13												13	
14												14	
15												15	
16												16	
17												17	

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Howard Pass STATE/COUNTY ALASKA BOOK NO. 3 PAGE 47 OF       
 LINE/LOOP NO. EG XW TYPE SURVEY      CLIENT Husky DATE 12 DY 3 MO 72 YR  
 SURVEYOR J. Anderson 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	L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE		LINE
				SLOPE										
1												1		
2		T 13.6 860			83 30 11	+3.0	-174.6	-189.6	2223.3			2		
3		C 5.0 1720			276 29 56	+5.0	-194.7	-189.7				3		
4		1524	1540		85 06 49	-1.0	+	+130.2			2353.5	4		
5		1526	1320		86 31 51	7.0	+	+78.9			2302.2	5		
6		1528	1100		87 26 40	7.0	+	+48.1			2271.4	6		
7		1530	880		88 17 27	7.0	+	+25.3			2248.6	7		
8		1532	660		89 19 59	7.0	+	+6.7			2230.0	8		
9		1534	440		89 45 51	12.5	+	-10.7			2212.6	9		
10		1536	220		89 45 44	20.5	+	-19.6			2203.7	10	15' + 5.5' BOOBY	
11		1538	0		90 00 00	5.0	-	-5.0			2218.3	11		
12		1540	220		93 52 59	15.0	-	-29.9			2193.4	12		
13		1542	440		-							13		
14		1544	660		96 03 39	20.5	-	-90.2			2133.1	14	15' + 5.5'	
15		1546	880		-							15		
16		1548	1100		96 40 01	4.0	-	-131.7			2091.6	16		
17		1550	1320		99 54 09	2.0	-	-116.8			2106.6	17		

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 3 PAGE 48 OF       
 LINE/LOOP NO. GR XW TYPE SURVEY      CLIENT Husky DATE 19 DY 3 MO 79 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO.      CREW NO. 1184

LINE	 SS  C	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									2223.3			1		
2		1552	1540	91 55 56	-4.0	-	-55.9		2167.4			2		
3		1554	1760	91 47 15	-4.0	-	-58.5		2164.8			3		
4	o	T 11.30 990	1556	1980 ✓	91 25 58	15.0	-49.5	-64.5	2158.7			4		
5	o	C 2.00 1980			268 33 48	15.0	-49.6	-64.6				5		
6												6		
7												7		
8	Δ	T 10.95 995	1556	1980 ✓	90 00 00	+5.7	-	+5.7	2164.4			8		
9	Δ	C 1.0 1990			270 00 00	+5.7	-	+5.7				9		
10		1558	1760	-	-	-	-	-				10		
11		1560	1540	90 51 47	-4.0	-	-27'		2137.3			11		
12		1562	1320	-	-	-	-	-				12		
13		1564	1100	92 39 20	-4.0	-	-54.3		2110.1			13		
14		1566	880	-	-	-	-	-				14		
15		1568	660	92 56 35	-4.0	-	-37.9		<del>2207.3</del>	2126.5		15		
16		1570	440	-	-	-	-	-				16		
17		1572	220	92 56 48	-4.0	-	-11.3	-15.3	2149.1			17		

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Howard Pass STATE/COUNTY Alaska BOOK NO. 3 PAGE 49 OF       
 LINE/LOOP NO. R6 XW TYPE SURVEY      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		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			RIGHT TURNED HORIZONTAL ANGLE
			SLOPE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS HORIZ					INST	ROD		
1									2164.4		1	
2		1574	0		90 00 00	-5.0	-	-5.0		2159.4		2
3		1576	220		91 30 00	+1.0	-5.8	-9.8		2154.6		3
4		1578	440		-							4
5		1580	660		91 48 30	13.0	-20.8	-33.8		2130.6		5
6		1582	880		-							6
7		1584	1100		90 07 44	7.0	-2.5	-6.5		2157.9		7
8		1586	1320		-							8
9		1588	1540		89 34 41	-5.2	+11.3	+6.1		2170.5		9
10		T 9.80 880	1590		89 19 19	7.0	+20.8	+19.8		2184.3		10
11		C 1.00 1760	1760		270 40 54	7.0	+20.9	+19.9				11
12												12
13												13
14												14
15												15
16												16
17												17










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# HORIZONTAL AND VERTICAL SURVEY NOTES


GSI AREA Howard Pass STATE/COUNTY Alaska BOOK NO. 3 PAGE 50 OF       
 LINE/LOOP NO. ROXW TYPE SURVEY      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 DJ		RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE 					HORIZ 	INST				
1												1		
2		T 14.0   1210   1590	2420 v		88 49 09	+2.0	-49.9	-47.9	2136.4			2		
3		C 2.00   2420			271 10 53	+2.0	-49.9	-47.9				3		
4		1592	2200		89 08 28	+4.0	+33.0	+29.0	2165.4			4		
5		1594	1980	0	-							5		
6		1598	1760		90 20 38	+4.0	-15.7	-19.7	2116.7			6		
7		1598	1540		-							7		
8		1600	1220		91 42 26	+4.0	-39.4	-43.4	2093.0			8	RIVER BED	
9		1602	1100		-							9		
10		1604	880		92 36 14	+4.0	-55.3	-59.3	2077.1			10		
11		1606	660		-							11		
12		1608	440		73 38 44	+7.0	-28.0	-35.0	2101.4			12		
13		1610	220		-							13		
14		1612	0		90 00 00	+5.0	-	-6.0	2131.4			14		
15		1614	220		-							15		
16		1616	440		90 29 40	+4.0	-3.0	-7.0	2129.4			16		
17												17		

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GS/AREA: HOWARD PASS STATE/COUNTY: ALASKA BOOK NO. 3 PAGE 51 OF       
 LINE/LOOP NO.: R6 XW TYPE SURVEY:      CLIENT: HUSKY DATE: 19 DY 3 MO 77 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				
				SLOPE										
1												1		
2		1618	660									2		
3	○	1619 + 58'	T 13.80	830	90 00 00	-10.8	-	-10.8		2125.6		3	TARGET	
4	○		B 5.00	830	278 00 00	-10.85	-	-10.8				4		
5												5		
6												6		
7	△	1619 + 58'	T 8.18		81 22 52	+7.0	-107.6	-108.6	2019.0			7	TARGET	
8	△		B 1.00	818	278 37 01	+7.0	-107.6	-108.6				8		
9	SS	B.M. 79211	T 13.25	835	81 14 38	+7.0	+254.2	+253.2		22 72.0	REFERENCE: D.A.S. SURVEY	9		
10	SS		C 5.0	1670	278 49 54	+7.0	+254.0	+253.0		22 72.1	MISCELLANEOUS: + 0.1	10		
11		1620	660		82 44 07	±0.0	+	91'		2110'		11	2113.0	
12		1622	440									12		
13		1624	220		84 38 14	-1.0	+	166		2035.6		13		
14	⊗	1626	0		90 00 00	-5.0	-	-5.0		2014.0		14		
15		1628	220									15		
16		1630	440		95 10 24	-5.2	-	44.9		1974.1		16		
17		1632	660		94 38 00	-2.0	-	55.3		1963.7		17		

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 3 PAGE 52 OF       
 LINE/LOOP NO. RG XW TYPE SURVEY      CLIENT HURLEY DATE 19 DY 3 MO 79 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO.      CREW NO. 1184

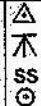


LINE	  	STATION	VERTICAL						ELEVATION		HORIZONTAL		REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD	L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE		LINE
				SLOPE										
1												1	2019.0	
2		1634	880									2		
3		1636	1100		92 26 50	-1.0		-51'		1967.8		3		
4		1638	1320									4		
5		1640	1540		91 29 05	-5.2		-45'		1973.9		5		
6		1642	1760									6		
7		1644	1980		91 04 09	-5.2		-42'		1976.9		7		
8		1646	2200									8		
9		1648	2420		91 01 42	-5.2		48 <sup>s</sup>		1970.5		9		
10	o	1650	2640 ✓		90 55 21	-15.0		-57.4	-57.6	1961.4		10	1961.4 1965.0	
11	o				269 04 03	-15.0		-57.6				11		
12												12		
13												13		
14												14		
15												15		
16												16		
17												17		

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# HORIZONTAL AND VERTICAL SURVEY NOTES

SS/BEA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 3 PAGE 53 OF       
 LINE/LOOP NO. GR XW TYPE SURVEY      CLIENT HUSKEY DATE 12 DY 3 MO 29 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO.      CREW NO. 1184

LINE	 △ SS ○	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
				SLOPE 	HORIZ 										
1												1	1961.4		
2	△	1650	2640 ✓		89 16 06	+5.0	-28.8	-28.4	1932.7			2	1932.7		
3	△				270 43 36	+5.0	-28.1	28.7				3			
4		1662	2420		-							4			
5		1654	2200		89 15 57	-7.0	+	21.3	1953.9			5			
6		1656	1980		89 15 57	-7.0	+	18.5	1951'			6			
7		1658	1760		-							7			
8		1660	1540		89 14 56	-7.0	+	16.2	1948.9			8			
9		1662	1320		-							9			
10		1664	1106		89 09 07	-7.0	+	12.3	1945.0			10			
11		1666	880		-							11			
12		1668	660		89 07 05	-7.0	+	6.2	1938.8			12			
13		1670	440		-							13			
14		1672	220		89 12 35	-7.0	+	-1.0	1931.7			14			
15	⊥	1674	0		90 00 00	-5.0	-	-5.0	1927.7			15			
16		1676	220		91 18 09	-5.2	-	10'	1922.6			16			
17		1678	440		-							17			

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 3 PAGE 54 OF       
 LINE/LOOP NO. 6R XW TYPE SURVEY      CLIENT HUSKY DATE 12 DY 3 MO 79 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO.      CREW NO. 1184

LINE	<input type="checkbox"/> $\Delta$ <input type="checkbox"/> SS <input type="checkbox"/> $\odot$	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												1	1932.7	
2		1680	660			91 11 24	5.2	-	189		1913.8		2	
3		1682	880			-							3	
4		1684	1100			91 11 24	5.2	-	-28°		1904.6		4	
5		1686	1320			-							5	
6		1688	1540			90 51 15	5.2	-	-28'		1904.5		6	
7		1690	1760			-							7	
8		1692	1980			90 41 09	5.2	-	-28.8		1903.9		8	
9		1694	2200			-							9	
10		1696	2420			90 32 21	5.2	-	-27.9		1904.8		10	
11	$\odot$	1698	T 15.00	1325		90 21 20	75.0	-31.3	-31.3		1901.4		11	1901.4 1905.6
12	$\odot$		C 1.75	2650	2650	269 38 39	75.0	-31.3					12	
13													13	
14													14	
15													15	
16													16	
17													17	

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 3 PAGE 55 OF       
 LINE LOOP NO. RG XLV TYPE SURVEY      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		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			RIGHT TURNED HORIZONTAL ANGLE	LINE
			SLOPE	HORIZ					FEET	METERS			
1											1	1901.4	
2		1698	1310	1110	90 41 48	+15.0	+28.5	+28.5	1929.7		2	1929.9	
3			8 2.00	1110	269 18 47	+15.0	+28.5				3		
4		1700	880		92 05 09	-4.0	-	-36°		1893.7	4		
5		1702	660		93 44 55	-2.0	-	-45'		1884.6	5		
6		1704	440		95 20 10	-13.0	-	-61.6		1868.2	6	RIVER BED	
7		1706	220		96 14 40	-2.0	-	-25.9		1903.8	7		
8		1708	0		90 00 00	-5.0	-	-5.0		1924.7	8		
9		1710	220		-						9		
10		1712	440		84 53 10	-5.2	+	34		1963.8	10		
11		1714	660								11		
12		1716	880		84 58 25	-5.2	+	71.4		2001.7	12		
13		1718	715.00	-	85 14 58	-3.5	+	+87.6		2017.4	13	2017.5      2022.0	
14			8 4.00	1100	274 45 01	-3.5	+	-5.0			14		
15											15		
16											16		
17											17		

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 56 OF \_\_\_\_\_  
 LINE/LOOP NO. B6 XCW TYPE SURVEY \_\_\_\_\_ CLIENT Husky DATE 19 DY 2 MO 72 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 DI	RIGHT TURNED HORIZONTAL ANGLE
				SLOPE 	HORIZ 					INST	ROD			
1												1	2017.5	
2		1718	T 14.05	1105	92 18 34	+15.0	+59.5	+59.5	2076.7			2	2077.6	
3			B 3.00	1105	267 41 22	+15.0	+59.5					3		
4		1720	880		92 41 42	-4.0	-	-45.4		2031.3		4		
5		1722	660		-							5		
6		1724	440		92 30 31	-4.0	-	-23.3		2053.4		6		
7		1726	220		-							7		
8		1728	0		90 00 00	-5.0	-	-5.0		2071.7		8		
9		1730	220		-							9		
10		1732	440		90 48 52	-5.2	-	11.5		2065.2		10		
11		1734	660		-							11		
12		1736	880		89 29 45	-5.2	+	26		2079.2		12		
13		1738	T 13.00	1100	89 01 19	2.0	+16.8	+16.8		2093.4		13	2093.8 2098.5	
14			B 2.00	1100	270 58 03	2.0	+16.7					14		
15												15		
16												16		
17												17		

TI-234715

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



# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 57 OF \_\_\_\_\_  
 LINE/LOOP NO. R6 XLO TYPE SURVEY \_\_\_\_\_ CLIENT Husky DATE 12 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			
1												1	2093.8
2		1738	1380 ✓		92 17 07	+15.0	+94.0	2187.3				2	2187.8
3					267 42 35	+15.6						3	
4		1740	1760		92 17 05	11.0	-81'		2106.2			4	
5		1742	1540									5	
6		1744	1320		92 19 51	9.0	-62.6		2124.7			6	
7		1746	1100									7	
8		1748	880		92 19 27	7.0	-39.7		2147.7			8	
9		1750	660									9	
10		1752	440		91 53 47	7.0	-18.6		2168.9			10	
11		1754	220									11	
12		1756	0		90 00 00	7.0	-5.0		2182.3			12	
13		1758	220									13	
14		1760	440		88 20 30	5.2	7.5		2194.9			14	
15		1762	660									15	
16		1764	880		87 43 51	5.2	29.7		2217.9			16	
17		1766	1100									17	



















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




# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Howard Pass STATE/COUNTY ALASKA BOOK NO. 3 PAGE 58 OF       
 LINE/LOOP NO. RG X 20 TYPE SURVEY      CLIENT Husey DATE 12 DY 3 MO 72 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO.      CREW NO.     

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	
			SLOPE 	HORIZ 										
1												1	2187.8	
2		1768	1320	87 47 56	-5.2	+4.1						2		
3		1770	1540 ✓	87 50 40	-8.5	+	+149.4		2236 <sup>8</sup>			3	2237.2 2242.3	
4				272 09 09	-8.5	+						4		
5												5		
6												6		
7		1770	2640 ✓	89 51 16	+3.0	-	+3.7		2233 <sup>1</sup>			7	2240.9	
8				270 08 27	+3.0	-						8		
9		1772	2420	89 50 51	-2.0	+	26		2235 <sup>6</sup>			9		
10		1774	2200									10		
11		1776	1980	90 07 23	-4.0	-	-8 <sup>2</sup>		2224 <sup>9</sup>			11		
12		1778	1760									12		
13		1780	1540	90 58 50	-4.0	-	-30 <sup>3</sup>		2202 <sup>8</sup>			13		
14		1782	1320									14		
15		1784	1100	92 52 22	-4.0	-	59 <sup>1</sup>		2174 <sup>0</sup>			15		
16		1786	880									16		
17		1788	660	93 15 14	-4.0	-	-41 <sup>5</sup>		2191 <sup>6</sup>			17		



TI-23471B

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Howard Pass STATE/COUNTY ALASKA BOOK NO. 3 PAGE 59 OF       
 LINE/LOOP NO. R6 XL2 TYPE SURVEY      CLIENT HUSEY DATE 12 DY 3 MO 73 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO.      CREW NO. 1184

LINE	<input type="checkbox"/> $\triangle$ <input type="checkbox"/> SS <input type="checkbox"/> $\odot$	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			
1		1790	440									1	2240.9
2		1792	220		93 56 13	-4.0		19'		2214.0		2	
3	$\tau$	1794	0		90 00 00	-5.0		-5.0		2228.1		3	
4		1796	220		87 36 19	-4.0	+	-5.2		2238.3		4	
5		1798	440		86 52 30	-5.2	+	18.8		2251.8		5	
6		1800	660		86 47 29	-5.2	+	31.8		2264.8		6	
7		1802	880									7	
8		1804	1100		86 43 32	-5.2	+	57.7		2290.7		8	
9		1806	1320									9	
10		1808	1540		86 45 44	-5.2	+	81.8		2314.9		10	
11		1810	1760									11	
12	$\odot$	1812	1980 ✓		86 54 15	-8.5	+	+98.5		2331.5		12	2339.4 2337.6
13	$\odot$				273 05 37	-8.5	+					13	
14												14	
15												15	
16												16	
17												17	

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SYMBOLS  $\triangle$  = BACKSIGHT     $\tau$  = INSTRUMENT SET-UP    SS = SIDESHOT     $\odot$  = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Howard Pass STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 60 OF \_\_\_\_\_  
 LINE/LOOP NO. R6XW TYPE SURVEY \_\_\_\_\_ CLIENT Husky DATE \_\_\_\_\_ DY \_\_\_\_\_ MO \_\_\_\_\_ YR \_\_\_\_\_  
 SURVEYOR B. BENEDICT INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						ELEVATION		LR OR DR	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	Δ	1812	880		91 57 12	5		-35'	2366 <sup>7</sup>		2374 <sup>6</sup>	1		
2	-				268 01 55			35 <sup>2</sup>				2	91 57 43	
3		1814	660									3	268 01 54	
4		1816	440		91 39 10	4		-16°		2850 <sup>6</sup>		4		
5		1818	220									5		
6	⊗	1820	0			5 <sup>4</sup>		-56		2361 <sup>1</sup>		6		
7		1822	220									7		
8		1824	440		92 13 13	13		-30°		2336 <sup>7</sup>		8		
9		1826	660									9		
10		1828	880		91 48 28	5 <sup>2</sup>		-32 <sup>9</sup>		2333 <sup>7</sup>		10		
11		1830	1100									11		
12	⊙	1832	1320		90 06 27	5		-74		2359 <sup>1</sup>	2367°	12	2365.4	
13	-				269 52 53	-		-76				13		
14												14		
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 Howard Pass STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 61 OF \_\_\_\_\_  
 LINE/LOOP NO. R6xw TYPE SURVEY \_\_\_\_\_ CLIENT Husky DATE \_\_\_\_\_ DY \_\_\_\_\_ MO \_\_\_\_\_ YR \_\_\_\_\_  
 SURVEYOR B. BENEDICT INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

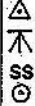


LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						ELEVATION		L/R OR D/I	HORIZONTAL RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST.	ROD				
			SLOPE 	HORIZ 										
1	Δ	1832	1320		91 27 46	10		-43 7	2402 8		2410 7	1		
2	-				268 32 08	-		-43 7				2		
3		1834	1100									3		
4		1836	880		91 28 48	4 <sup>2</sup>		-26 9		2375 9		4		
5		1838	660									5		
6		1840	440		92 20 02	4		-14 2		2388 6		6		
7		1842	220									7		
8	⊥	1844	0		-	56		-56		2397 2		8		
9		1846	220									9		
10		1848	440		91 59 00	52		-20 4		2382 4		10		
11		1850	660									11		
12	⊙	1852	880		92 28 18	13 <sup>5</sup>		-51 4	2351 4	2351 4	2359 3	12	2357.9	
13	-				267 31 52	-		-51 4				13		
14												14		
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 HOWARD PASS STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 62 OF \_\_\_\_\_  
 LINE/LOOP NO. R6XW TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE \_\_\_\_DY \_\_\_\_MO \_\_\_\_YR  
 SURVEYOR B. BENEDICT INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	 △ SS ⊙	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		RIGHT TURNED HORIZONTAL ANGLE		LINE
				SLOPE 					HORIZ 	INST			
1	△		1760		86 21 22	10		-101.9	2249.5		2257.4	1	
2	-				273 38 24	-		101.9				2	
3		1854	1540									3	
4		1856	1320		86 27 30	13.5		68.1		2317.6		4	
5		1858	1100									5	
6		1860	880		86 19 11	4.2		52.3		2301.8		6	
7		1862	660									7	
8		1864	440		88 16 20	4		9.3		2258.8		8	
9		1866	220									9	
10	⊗	1868	0			5.6		-5.6		2243.9		10	
11		1870	220									11	
12		1872	440		93 03 26	5.2		-28.7		2220.9		12	
13		1874	660									13	
14		1876	880		93 06 35	5.2		-52.9		2196.6		14	
15		1878	1100									15	
16		1880	1320		90 58 35	4		26.5		2223.1		16	
17		1882	1540									17	

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

# HORIZONTAL AND VERTICAL SURVEY NOTES






GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 3 PAGE 63 OF       
 LINE/LOOP NO. 36XW TYPE SURVEY      CLIENT HUSKY DATE      BY      MO      YR       
 SURVEYOR B. BENEDICT 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		1884	1760			89 58 09	5 <sup>2</sup>	-42		22453		2		
3		1886	1980			89 56 06	5	-27		22470	2254 <sup>8</sup>	3	2254.0	
4	-	<del>1888</del>				270 04 15	-	-26				4		
5												5		
6			2140			90 24 23	5	237	2270 <sup>9</sup>		2278 <sup>8</sup>	6		
7	-					269 34 50	-	23 <sup>9</sup>				7		
8		1888	2420			90 43 08	4	-342		22367		8		
9		1890	2200									9		
10		1892	1980			91 32 58	4 <sup>2</sup>	-61'		22098		10		
11		1894	1760									11		
12		1896	1540			91 42 30	15	-60 <sup>9</sup>		2210'		12		
13		1898	1320									13		
14		1900	1100			91 42 30	8	-40 <sup>8</sup>		2230'		14		
15		1902 <sup>7</sup>	880									15		
16		1904	1600			91 40 15	4	-23 <sup>2</sup>		22477		16		
17		1906	440									17		

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 14 OF \_\_\_\_\_  
 LINE/LOOP NO. R6XA TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE \_\_\_\_\_ DY \_\_\_\_\_ MO \_\_\_\_\_ YR  
 SURVEYOR B. BENEDICT INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	 SS	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		RIGHT TURNED HORIZONTAL ANGLE			
				SLOPE 					HORIZ 	INST			ROD	LINE
1												1		
2		1908	220		91 38 35	2		-83		2262.6			2	
3		1910	0		-	56		-56		2265.3			3	
4		1912	220		90 07 36	4		-43		2266.6			4	
5		1914	440										5	
6		1916	660		89 40 40	6 <sup>2</sup>		-15		2269.4			6	
7		1918	880										7	
8		1920	1100		89 42 30	4		16		2272.5			8	
9		1922	1320										9	
10		1924	1540		89 33 23	5 <sup>2</sup>		68		2277.7			10	
11		1926	1760										11	
12		1928	1980		89 40 40	9 <sup>u</sup>		22		2273.1			12	
13		1930	2200										13	
14		1932	2420		89 38 52	13		20		2273.1	2281.0		14	2280.8
15					270 21 38	-		22					15	
16													16	
17													17	

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



# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Howard Pass STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 65 OF \_\_\_\_\_  
 LINE/LOOP NO. R6XW TYPE SURVEY \_\_\_\_\_ CLIENT Husky DATE \_\_\_\_\_ DY \_\_\_\_\_ MO \_\_\_\_\_ YR  
 SURVEYOR B. BENEDICT INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

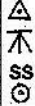






LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL							HORIZONTAL		REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION		RIGHT TURNED HORIZONTAL ANGLE		LINE
				SLOPE					HORIZ	INST			
1	Δ	1932	2420		89 49 18	10		59 9	2233 2		2241'	1	
2	-				271 10 35	-		39 8				2	
3		1934	2200									3	
4		1936	1980		88 46 31	8 8		33 6		2267 0		4	
5		1938	1760									5	
6		1940	1540		88 46 31	9 4		20 0		2262 2		6	
7		1942	1100									7	
8		1944	880		88 46 31	4		14 8		2248'		8	
9		1946	660									9	
10		1948	440		89 09 45	2		4 4		2237 7		10	
11		1950	220									11	
12	⊕	1952	0		-	5 6		-5 6		2227 6		12	
13		1954	220									13	
14		1956	440		92 15 10	5 2		-22 5		2210 7		14	
15		1958	660									15	
16		1960	880		92 26 00	4		-4 3		2191 9		16	
17		1962	1100									17	

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SYMBOLS Δ = BACKSIGHT ⊕ = INSTRUMENT SET-UP SS = SIDESHOT ⊙ = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 66 OF \_\_\_\_\_  
 LINE/LOOP NO. RGXW TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE \_\_\_\_\_ DY \_\_\_\_\_ MO \_\_\_\_\_ YR  
 SURVEYOR B. BENEDICT INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	 SS 	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		1964	1320			92 23 35	52		-60 <sup>3</sup>		2173 <sup>0</sup>			2
3		1966	1340											3
4		1968	1760			92 16 53	52		-75 <sup>2</sup>		2158 <sup>0</sup>			4
5		1970	1980											5
6	⊙	1972	2200			91 59 45	5		-81 <sup>5</sup>		2151 <sup>6</sup>	2159 <sup>5</sup>		6
7	-					28 00 00	-		-81 <sup>6</sup>					7
8														8
9	Δ		2420			90 35 48	5		30 <sup>1</sup>	2182 <sup>0</sup>		2189 <sup>8</sup>		9
10	-					269 23 28	-		30 <sup>3</sup>					10
11		1974	2200											11
12		1976	1980			91 10 03	4		-44 <sup>3</sup>		2137 <sup>7</sup>			12
13		1978	1760											13
14		1980	1540			91 28 20	42		-48 <sup>2</sup>		2189 <sup>3</sup>			14
15		1982	1320											15
16		1984	1100			91 45 15	4		-37 <sup>6</sup>		2144 <sup>3</sup>			16
17		1986	880											17

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

SYMBOLS    Δ = BACKSIGHT     = INSTRUMENT SET-UP    SS = SIDESHOT    ⊙ = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 67 OF \_\_\_\_\_  
 LINE/LOOP NO. R6 & W TYPE SURVEY \_\_\_\_\_ CLIENT HUSKP DATE \_\_\_\_\_ DY \_\_\_\_\_ MO \_\_\_\_\_ YR  
 SURVEYOR B. BENEDICT 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	INST	ROD				
			SLOPE 	HORIZ 										
1												1		
2		1988	660		92 10 18	4 <sup>2</sup>	-292		21528			2		
3		1990	440									3		
4		1992	220		92 16 03	4	-127		21693			4		
5		1994	0			56	-56		21764			5		
6		1996	220			56						6		
7		1998	440		90 15 30	2	-40		2178 <sup>0</sup>			7		
8		2000	660		89 38 38	4	0'		2192'			8		
9		2002	880									9		
10		2004	1100		89 01 50	4	14 <sup>6</sup>		2196 <sup>6</sup>			10		
11		2006	1320									11		
12		2008	1540		89 13 02	5 <sup>2</sup>	159		21979			12		
13	⊙	2010	1760		89 11 07	14	11'		2193 <sup>2</sup>		2201'	13	2201.9	
14		- 2012			270 49 21	-	11 <sup>2</sup>					14		
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 HOWARD PASS STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 68 OF \_\_\_\_\_  
 LINE/LOOP NO. RLXW TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE \_\_\_\_\_ DY \_\_\_\_\_ MO \_\_\_\_\_ YR  
 SURVEYOR B. BENEDICT INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

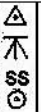
LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL							HORIZONTAL		REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION		RIGHT TURNED HORIZONTAL ANGLE		LINE
				SLOPE					HORIZ	INST			
1	Δ		2200		89 40 05	5		-7 8	2185 <sup>4</sup>		2193 <sup>3</sup>	1	
2	—				270 19 45	—		-7 8				2	
3		2012	1980									3	
4		2014	1760		89 47 50	42		21	2187 <sup>5</sup>			4	
5		2016	1540		89 51 55	4		-0 3	2185 <sup>1</sup>			5	
6		2018	1320									6	
7		2020	1100		90 02 35	42		-5 0	2180 <sup>4</sup>			7	
8		2022	880									8	
9		2024	660		90 07 50	4		-5 5	2179 <sup>9</sup>			9	
10		2026	440									10	
11		2028	220		91 08 53	2		-6 4	2179 <sup>0</sup>			11	
12	⊖	2030	0		—	56		-5 6	2179 <sup>8</sup>			12	
13												13	
14	⊙	Bm	3119 <sup>4</sup>		87 10 44	5		148 7	2334 <sup>2</sup>		2342 <sup>1</sup>	14	ELEV. NOT ADJUSTED
15	—				272 49 30	—		148 8	2343 <sup>8</sup>			15	
16									TIC (-96)			16	
17												17	

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

SYMBOLS    Δ = BACKSIGHT    ⊖ = INSTRUMENT SET-UP    SS = SIDESHOT    ⊙ = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES



















GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 3 PAGE 69 OF         
 LINE/LOOP NO. RG XW BEKON TYPE SURVEY        CLIENT Husky DATE 2 DY 4 MO 79 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO.        CREW NO. 184

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										2215.9					
2	$\Delta$	B.M. 79306 ✓	T 11.10	1010	88 00 18	+1.0	70.3	-69.3	2146.8						
3	$\Delta$		C 1.0	2020	271 58 44	+1.0		-69.8							
4	$\times$	814 ?								2142.1					NOTE
5	O		T 11.70	670	90 41 09	15.0	16.0	-31.0		2115.6					APPROXIMATE LOCATION
6	O	826 ?	C 5.00	1340	269 17 42	15.0	16.5	-31.6							2115.9
7															
8	$\Delta$	826 ?	T 13.80	1220	87 36 15	+2.0	102.8	-100.8	2014.9						
9	$\Delta$		C 1.50	2460	272 22 59	+2.0	102.3	-100.3							
10	$\times$	848 ✓								2009.9					
11	O		T 13.75	1175	89 41 12	2.0	+12.9	+10.9		2025.7					2026.8
12	O	870 ?	C 2.00	2350	270 18 35	2.0	+12.7	+10.7							
13															
14	$\Delta$	870 ?	T 15.00	1170	90 37 27	+15.0	+12.7	+27.7	2053.5						
15	$\Delta$		B 2.80		269 22 06	+15.0	+12.9	+27.9							
16	$\times$	880 ✓								2048.5					
17	O		T 8.75	675	89 53 36	15.0	+2.5	-12.5		2040.9					2042.4





WORKED BY        CHECKED BY 1ST        2ND         
 SYMBOLS:  $\Delta$  = BACKSIGHT     $\times$  = INSTRUMENT SET-UP    SS = SIDESHOT    O = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 3 PAGE 20 OF       
 LINE/LOOP NO. R6 XCV RERUN TYPE SURVEY      CLIENT HUSKY DATE 2 DY 4 MO      YR       
 SURVEYOR J ANDERSON INSTRUMENT DESC/SERIAL NO.      CREW NO. 1184

LINE	  	STATION	VERTICAL						ELEVATION		LR OR DI	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD 2040.9				
			SLOPE	HORIZ										
1		822?	T 15.0	1200	92 28 32	715.0	+103.7	+118.7	2159.8			1		
2			C 3.0	2400	267 30 55	715.0	+104.0	+119.0				2		
3		914?				5.0				2154.8		3		
4			T 14.00	600	88 49 11	715.0	+24.7	+9.7		2159.4		4	2170.9	
5		924?	C 8.00	1200	271 10 18	715.0	+24.5	+9.5				5		
6												6		
7		924?	T 14.50	1250	89 19 38	+2.0	-29.4	-27.4	2142.3			7		
8			C 2.00	2500	270 39 30	+2.0	-28.7	-26.7				8		
9		946?				5.0				2137.3		9		
10			T 13.40	1140	92 06 55	715.0	-83.5	-98.5		2043.4		10	2048.6	
11		966?	C 3.00	2280	267 53 02	715.0	84.2	-99.2				11		
12												12		
13		966?	T 13.40	1040	89 13 38	+1.0	-28.1	-27.1	2016.6			13		
14			C 3.00	2080	270 45 24	+1.0	-27.5	-26.5				14		
15		984?				5.0				2011.6		15		
16			T 14.60	960	91 43 19	715.0	57.7	-72.7		1943.6		16	1946.4	
17		1002?	C 5.00	1920	268 15 51	715.0	-58.2	-73.2				17		

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 3 PAGE 71 OF         
 LINE/LOOP NO. R6 XW RERUN TYPE SURVEY        CLIENT HUSKY DATE 2 DY 4 MO 73 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		VERTICAL ANGLE OBS.	ROD ROG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD 1943.6				
			SLOPE 	HORIZ 										
1		1002 ✓	T 9.70	870	31 37 09	+15.0	+49.2	+64.2	2007.9			1		
2			C 1.00	1740	268 22 24	+15.0	+49.4	+64.4				2		
3		1018 ✓				5.0					2002.9	3		
4			T 14.35	895	88 22 01	75.0	+51.0	+36.0				4		
5		1034 ✓	C 6.0	1790	271 37 21	75.0	+50.7	+35.7			2043.8	5	2047.0	
6						5.0						6		
7		1034 ✓	T 10.70	990	93 53 41	+15.0	+134.5	+149.5	2123.5			7		
8			C 1.00	1280	266 05 32	+15.0	+134.9	+149.9				8		
9		1052 ✓				5.0					2188.5	9		
10			T 10.00	780	89 08 30	7.0	+27.0	+26.0			2219.3	10	2222.5	
11		1068 ✓	C 1.00	1800	270 50 37	7.0	+26.5	+25.5				11		
12						5.0						12		
13		1068 ✓	T 10.10	710	87 45 15	+4.0	-55.6	-51.6	2167.8			13		
14			C 3.0	1420	272 14 05	+4.0	-55.4	-51.4				14		
15		1081 ✓				5.0					2162.8	15		
16			T 14.40	540	94 28 57	15.0	-42.2	-57.2			2110.5	16	2114.0	
17		1086 ?	B 9.00	-	265 30 27	15.0	-42.3	-57.3				17		

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SYMBOLS

= BACKSIGHT













= INSTRUMENT SET-UP

= SIDESHOT

= FORESIGHT


# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 3 PAGE 72 OF         
 LINE/LOOP NO. R6 XW RERUN TYPE SURVEY        CLIENT HUSKY DATE 2 DY 4 MO 77 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		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										2110.5			1	
2		1086	T 13.20 1220		89 43 07	+1.0	-12.0	-11.0	2099.7				2	
3			C 1.00 2440		270 16 10	+1.0	-11.5	-10.5					3	
4		1108				-5.0				2094.7			4	
5			T 11.45 545		81 01 09	-5.0	-12.4	-24.5		2079.0		REFERENCE: B.A.S. SURVEY	5	✓
6		B.M. 79322	C 6.10 1090		268 58 23	-5.0	-19.5	-24.5		2075.2			6	
7										-3.8		MISCLOSURE	7	
8													8	
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

SS = SIDESHOT

 = FORESIGHT



# HORIZONTAL AND VERTICAL SURVEY NOTES

73

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 1 OF \_\_\_\_\_  
 LINE/LOOP NO. R6 XW TYPE SURVEY \_\_\_\_\_ CLIENT CALM, CLEAR DATE 14 DY 3 MO 79 YR  
 SURVEYOR W. D. HELANDER INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	 SS	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
			SLOPE	HORIZ					INST	ROD			
1		E.O.L. OF R-6 SP1118		→ D	90-30-23					V.	31	1	VP 424 L-R62W common
2		E.O.L. = VP424 L-R62W			R	269-28-22				D	145-46-37	2	WITH SP1118 L-R6
3		424									145-46-06	3	MARKER PIPE & TAGS
4		79304 - VP 400	2640°							V.	180-00-35	4	
5										R	325-46-42	5	
6											145-46-07	6	145-06-07
7												7	
8												8	
9												9	
10		424								V.	28	10	
11		79304 - 464+60°		→ D	89-22-03					D	325-46-59	11	
12			4460 <sup>34</sup>		R	270-36-10			04		325-46-31	12	
13									44	V.	180-00-37	13	
14				← D					46	R	145-47-04	14	
15					R				60		325-46-27	15	325-46-29
16											0.34	16	
17												17	

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

74

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 2 OF \_\_\_\_\_  
 LINE/LOOP NO. R6XLW TYPE SURVEY \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE 15 DY 3 MO 79 YR  
 SURVEYOR W.D. HELANDER 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 DI	RIGHT TURNED HORIZONTAL ANGLE	LINE
			SLOPE	HORIZ						INST	ROD				
1															
2		464+60°		→ D	90-00-02						V.	27	1		
3		424 433	2580°		R	269-58-15					D	180-06-40	2		
4												180-06-13	3		
5				← D	90-34-53						V.	180-00-27	4		
6					R	269-24-20					R	00-06-42	5		
7												180-06-15	6	180-06-14	
8													7		
9													8		
10		433									V.	25	9		
11		464+60° - 620	14.520	→ D	89-38-42						D	169-05-00	10		
12			14.487°		R	270-20-08				14		169-04-35	11		
13										44	V.	180-00-28	12		
14				← D	89-58-12					48	R	349-04-58	13		
15					R	270-01-01				87		169-04-30	14	169-04-32	
16													15		
17												7.00	16		
18													17		

TI-234718

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HAWARD PASS STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 3 OF \_\_\_\_\_  
 LINE/LOOP NO. R 6XW TYPE SURVEY \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE 15 DY 3 MO 79 YR  
 SURVEYOR W.D. HELANDER INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1134

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											✓		23	1	
2		620	16.390 <sup>⊙</sup>		R	270-04-22			16		D	176-41-21		2	
3		488 - 769	16.354 <sup>30</sup> <sup>⊙</sup>						63			176-40-58		3	
4					D	90-21-43			35		✓	180-00-24		4	
5					R	269-37-55			5	4	R	350-41-29		5	
6										4.20		176-41-05		6	176-41-02
7														7	
8														8	
9														9	
10		620				90-38-50					✓		22	10	
11		488 - <sup>845</sup> 79205	5962 <sup>15</sup> <sup>⊙</sup>						05		D	196-05-58		11	
12									59		✓	180-00-29		12	
13									96		R	16-05-56		13	
14									6	2		196-05-28		14	
15										2.15				15	196-05-32
16														16	
17														17	

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA MISHAGOR MOUNTAIN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 4 OF \_\_\_\_\_  
 LINE/LOOP NO. R6XW TYPE SURVEY \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE 16 DY 3 MO 79 YR  
 SURVEYOR W.D. HELANDER INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	  	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	HORIZ											
1															
2		769	4730						04		D	184-34-08	2	VP 812 IS MARKED	
3		620 812							47			184-33-48	3	1/2 TAG AS A 10 MILE	
4									71		V <sub>2</sub>	180-00-30	4	MARKER	
5									19		R	04-34-08	5		
6									9.02			184-33-38	6	184-33-43	
7													7		
8													8		
9													9		
10		812	11880								V <sub>1</sub>	19	10		
11		769 920									D	179-56-00	11		
12									11			179-55-41	12		
13									18		V <sub>2</sub>	180-00-15	13		
14									83		R	357-55-58	14		
15									34			179-55-43	15	179-55-42	
16									4.68				16		
17													17		

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA MISHEGOK MTN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 5 OF \_\_\_\_\_  
 LINE/LOOP NO. R6XW TYPE SURVEY \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE 16 DY 3 MO 79 YR  
 SURVEYOR W.D. HELANDER INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	 SS 	STATION	VERTICAL						ELEVATION		LR 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											✓	19	1	
2		812			D	87-54-30					D	87-24-33	2	
3		769	BS 79306									87-24-14	3	
4											✓	180-00-15	4	
5											R	267-24-36	5	
6												87-24-21	6	87-24-18
7													7	
8													8	
9													9	
10		920			D	89-48-50					✓	30	10	
11		812	1068		R	270-09-40					D	187-45-12	11	
12												16	12	
13					D	90-09-00					✓	180-00-35	13	
14					R	269-49-35					R	07-45-16	14	
15												28	15	
16												82	16	187-44-41
17												2.61	17	

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA MISHEGUX MTN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 6 OF \_\_\_\_\_  
 LINE/LOOP NO. R6XS TYPE SURVEY \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE 17 DY 3 MO 79 YR  
 SURVEYOR W.D. HELANDER 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
				SLOPE					HORIZ	INST			
1													
2		1068		→ D	90-36-00			11		V.	24		
3		920 - 1172 + 16 = 11,443 <sup>LO</sup>		R	269-23-04			14		D	177-33-01		
4				← D	90-11-34			44			177-32-37		
5				R	269-47-21			43		√	180-00-24		
6								3.10		R	357-33-00		
6											177-32-34	177-32-35	
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA MISHNEGUK MTN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 7 OF \_\_\_\_\_  
 LINE/LOOP NO. R6XW TYPE SURVEY \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE 17 DY 3 MO 79 YR  
 SURVEYOR J. ANDERSON INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1784

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	
				SLOPE										
1													1	
2		1068			87 24 26	+6.0				V	000 00 15	2	188 48 02	
3					270 35 40					L	188 48 17	3		
4	SS	B.M. 79322			90 13 26	+6.0				L	01 29 36	4	01 29 21	
5	SS				267 46 20					R	181 29 51	5	01 29 26	
6		1172 + 15'				-5.0						6	01 29 24	
7					87 29 19					V	180 00 25	7		
8		1186			270 30 36	+6.0				A	08 48 32	8	188 48 07	
9												9	188-48-05	
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

80

GSI AREA MISHAGUK MTN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 8 OF \_\_\_\_\_  
 LINE/LOOP NO. R6XW TYPE SURVEY \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE 18 DY 3 MO 77 YR  
 SURVEYOR W.D. HELANDER INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	 SS 	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												33	1	
2		1186	13,420	D		90-28-44°			13		D	180-00-11	2	
3		1172+16° - 1308	13,393 <sup>21</sup>	R		269-29-52			33			179-59-38	3	
4									39		1/2	180-00-34	4	
5				D		90-27-39			93		R	00-00-05	5	
6				R		269-31-14			3,31			179-59-31	6	179-59-34
7													7	
8													8	
9													9	
10		1308	23,580	D		89-00-36					1/2	31	10	
11		1186 - 1522+40°		R		270-58-50					D	180-03-14	11	
12												180-02-43	12	
13				D		89-30-33					1/2	180-00-34	13	
14				R		270-28-52					R	00-03-22	14	
15												180-02-48	15	180-02-46
16													16	
17													17	

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# HORIZONTAL AND VERTICAL SURVEY NOTES

81

GSI AREA MISHEGUK MTN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 9 OF \_\_\_\_\_  
 LINE/LOOP NO. R6XW TYPE SURVEY \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE \_\_\_\_\_ DY \_\_\_\_\_ MO \_\_\_\_\_ YR  
 SURVEYOR W.D. HELANDER 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				
				SLOPE										
1														
2		1522+40	10.688											
3		1308 - 1619+58	10.655 <sup>45</sup>											
4														
5														
6														
7														
8														
9														
10		1619+58 <sup>2</sup>	1060 <sup>⊙</sup>											
11		1522+40 - 79311 <sup>RAE</sup>												
12														
13														
14														
15														
16														
17														

11.6 F  
1.0

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA MISHÉGOK MTN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 10 OF \_\_\_\_\_  
 LINE/LOOP NO. R6XW TYPE SURVEY \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE 20 DY 3 MO 79 YR  
 SURVEYOR W.D. HELANDER INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	  	STATION	VERTICAL						ELEVATION		LR 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		1619+58 <sup>2</sup>	22.052 <sup>⊙</sup>	D		89-22-58					✓	24	1	
3		1522+46 <sup>2</sup> - 1820	22.085 <sup>05</sup> <sup>⊙</sup>	R							D	180-34-58	2	
4				D		88-27-27					✓	180-34-34	3	
5				R		271-31-11					R	180-00-26	4	
6												00-35-04	5	
7												180-34-38	6	180-34-36
8													7	
9													8	
10		1844											9	
11		1820 - 2030	20.460 <sup>⊙</sup>	→ D		70-36-22					✓	33	10	
12				R		268-23-13					D	180-01-37	11	
13												180-01-04	12	
14				→ D		90-46-50					✓	180-60-46	13	
15				R							R	00-01-51	14	
16												180-01-05	15	
17													16	180-01-05
17													17	

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA MISHEGUK MTN STATE/COUNTY ALASKA BOOK NO. \_\_\_\_\_ PAGE 11 OF \_\_\_\_\_  
 LINE/LOOP NO. R6XW TYPE SURVEY \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE 20 DY 3 MO 79 YR  
 SURVEYOR B. BENEDICT 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		1619 + 58									✓		1		
2	-		2								L		2		
3		1820											3		
4		Bm.									✓		4		
5	-										R		5		
6													6		
7													7		
8													8		
9		1619 + 58			90 37 53	6					✓	00 00 20	9		
10	-				269 21 50	-					L	179 58 46	10		
11		1820	2640°									179-58-26	11		
12		1844			89 12 15	6					✓	180 00 52	12		
13	-				270 47 37	-					R	359 59 00	13		
14												179-58-28	14	179-58-27	
15													15		
16													16		
17													17		

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 3 PAGE 2 OF       
 LINE/LOOP NO. R6XW TYPE SURVEY      CLIENT HUSKY DATE 15 BY 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			RIGHT TURNED HORIZONTAL ANGLE	
				SLOPE					HORIZ	INST			ROD
1								1809.3			1		
2		A30	560								2		
3		A32	880			89 54 06	-5.2	+1.5	-3.7		1805.6	3	
4		A34	1100									4	
5		A36	1320			89 29 21	-5.2	+11.8	+6.6		1815.9	5	
6		A38	1540									6	
7		A40	1760			89 24 30	-5.2	+18.2	+13.0		1822.3	7	
8		A42	1980									8	
9		A44	2200			89 22 52	-5.2	+23.8	+18.6		1827.9	9	
10		A46	2420									10	
11	o	A48	2640 ✓			89 24 50	-5.0	+27.0	+22.0		1831.5	11	1831.8
12	o					270 35 24	-5.0	+27.2	+22.2			12	
13												13	
14												14	
15												15	
16												16	
17												17	

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