

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 1 PAGE ²⁰⁶ 1 OF 1
 LINE/LOOP NO. 47-XS TYPE SURVEY _____ CLIENT HUSKY DATE 14 DY 2 MO 79 YR
 SURVEYOR B. BENEDICT INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1184

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> \nearrow <input type="checkbox"/> SS <input type="checkbox"/> \odot	STATION	VERTICAL						ELEVATION		L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST					ROD
				SLOPE	HORIZ										
1															
2	Δ	INT-	2920			90 22 50	5	+20.9		1892.8				REFERENCE: THIS BOOK PAGE 1 LINE 5	
3	-	"				269 36 53	-	+21.0							
4		620	2200							1871.8				(1836 on 615)	
5		622	1980			90 31 25	7 ³	-18.1		22.4				HAPPY VALENTINE'S DAY	
6		624	1760			90 34 10	4 ³	-17.5		21.8					
7		626	1540												
8		628	1320			90 41 00	4 ³	-15.7		20.0					
9		630	1100												
10		632	880			90 50 48	4 ⁸	-13.0		17.8					
11		634	660												
12		636	440			90 59 20	4 ⁵	-7.6		11.9					
13		638	220												
14	\nearrow	640	0				5 ⁶	-		5.6					
15		642	220												
16		644	440			89 52 26	5 ³	+1.3		4.0					
17		646	660												

WORKED BY B.B.B. CHECKED BY 1ST _____ 2ND _____
 SYMBOLS Δ = BACKSIGHT \nearrow = INSTRUMENT SET-UP SS = SIDESHOT \odot = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

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GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 1 PAGE 2 OF
 LINE/LOOP NO. 47-XS TYPE SURVEY CLIENT HUSKY DATE 14 DY 2 MO 79 YR
 SURVEYOR B. BENEDICT 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									1892.8			1		
2		648	880	89 51 40	5 ³	+2.6	-2.7		1890.1			2		
3		650	1100									3		
4		652	1320	89 51 40	5 ³	+3.8	-1.5		1891.3			4		
5		654	1540									5		
6		656	1760	90 03 20	5 ³	70.0	-5.3		1887.5			6		
7		658	1980									7		
8		660	2200	89 55 43	5 ³	+0.0	-5.3		1887.5			8		
9		662	2420									9		
10	⊙	664	2640	89 42 30	5 ²	+84			1901.00		adjusted	10		
11	-	666		270 17 00		+82						11		
12		668										12		
13		670										13		
14												14		
15												15		
16												16		
17												17		

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

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 1 PAGE 3 OF 208
 LINE/LOOP NO. 47 XS TYPE SURVEY _____ CLIENT HUSKY DATE 14 DY 2 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									1901.0			1		
2			880		90 24 00	10	+16'	1917.2			1916 ³	2		
3	-				269 35 32	-	+16 ²					3		
4		666	660									4		
5		668	440		90 21 10	4 ³	-2.6	-6.9	1910.3			5		
6		670	220									6		
7		672	0		-	5 ⁶	-	-5.6	1911.6			7		
8		674	220									8		
9		676	440		90 14 05	5 ³	-3.8	-9.1	1908.1			9		
10		678	660									10		
11		680	880		90 18 12	5 ³		-9.9	1907.2A		adjusted	11		
12	-				269 41 50			-9.9				12		
13												13		
14			2640		90 05 16	6 ⁸		+10 ⁷	1918.0		1917 ²	14		
15	-				269 54 29	-		+10 ⁸				15		
16		682	2420									16		
17		684	2200		90 02 20	4 ³		0.0	1918.0			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. 1 PAGE ²⁰⁹4 OF
 LINE/LOOP NO. 47 XS TYPE SURVEY CLIENT HUSKY DATE 14 DY 2 MO 79 YR
 SURVEYOR B. BENEDICT INSTRUMENT DESC/SERIAL NO. CREW NO. 1184









LINE	 	STATION	VERTICAL						ELEVATION		L/R OR DI	HORIZONTAL		REMARKS
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD		RIGHT TURNED HORIZONTAL ANGLE	LINE	
1									1918.0				1	
2		686	1980										2	
3		688	1760	90 10 20	43	-5.1	-9.4		1908.6				3	
4		690	1540										4	
5		692	1320	90 15 40	43	-7.7	-12.0		1906.0				5	
6		694	1100										6	
7		696	880	90 24 00	40	-5.1	-9.1		1908.9				7	
8		698	660										8	
9		700	440	90 38 21	43	-5.1	-9.4		1908.6				9	
10		702	220										10	
11		704	0	—		56	—	5.6	1912.4				11	
12		706	220										12	
13		708	440	89 19 20	70	+6.4	+1.1		1919.1				13	
14		710	660										14	
15		712	880	89 19 20	74	+12.8	-6.9		1916.1				15	
16		714	1100										16	
17		716	1320	89 26 26	75	+11.5	-3.5		1914.5				17	




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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 1 PAGE 5 OF 211
 LINE/LOOP NO. 47 XS TYPE SURVEY _____ CLIENT HUSKY DATE 14 DY 2 MO 79 YR
 SURVEYOR B. BENEDICT 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
															
1									1918.0			1			
2		718	1590									2			
3		720	1760			89 29 42	5 ³	+15.4	+10.1		1926.1		3		
4		722	1980										4		
5		724	2200			89 17 55	5 ³	+25.6	+20.3		1928.3		5		
6		726	2420			89 19 43	5 ⁵		+28.0				6	SEE PAGE SA 2 THIS BOOK FOR	
7	-					770 40 05	-		+22.9		1940.91	← ORIGINALLY 1941.0 adjusted	7	TIE TO BARR	
8													8	B.M. # 79384	
9			1760			90 01 15	*10		106	1933 ¹	1993 ⁶		9		
10	-					269 58 30	-		106		1948 ³		10		
11		730	1540			90 01 15	4 ³	0.6	-4.9		1928 ²		11		
12		732	1320								1961 ⁷		12		
13		734	1100			89 19 58	4.3	+12.8	+8.5		2002 ²		13		
14		736	890								1947 ⁵		14		
15		738	660			90 33 03	4 ³	-6.4	-10.7		1923 ⁰		15		
16		740	440			91 25 50	4.3	-11.5	-15.3		1977 ⁴	*1937 ⁹	16		
17		742	220										17		

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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. PAGE 6²¹² OF
 LINE/LOOP NO. 47XS TYPE SURVEY CLIENT HUSKY DATE 14 BY 2 MO 19 YR
 SURVEYOR B. BENEDICT INSTRUMENT DESC/SERIAL NO. CREW NO. 1184

LINE	 	STATION	VERTICAL							HORIZONTAL		REMARKS	
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION		LR OR DR		RIGHT TURNED HORIZONTAL ANGLE
			SLOPE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS HORIZ					INST.	ROD			
1													
2		744	0	-	-	56	-	-5.6		1953 ⁶	1988 ⁶	1947 ⁵	2
3		746	220										3
4		748	440			89 15 15	53	+5.1	-0.2		1994 ¹	1953 ⁶	4
5		750	660			88 17 17	53	+19.2	+13.9		2009 ¹	1967 ⁶	5
6		752	880			88 05 30	4	+28.2	+24.2		2019 ⁰	1979 ³	6
7		754	1100										7
8		756	1320			87 36 54	53	+53.7	+48.4		2043 ³	2002 ⁸	8
9		758	1540										9
10		760	1760			87 58 40	53	+61.4	+56.1		2050 ⁵	2010 ⁰	10
11		762	1980										11
12		764	2200			88 08 16	55		71 ²		2064 ⁹	2024 ⁴	12
13	-					27 58 18	55		71 ²				13
14													14
15													15
16													16
17													17

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

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 1 PAGE 7 OF 213
 LINE/LOOP NO. 47 XS TYPE SURVEY _____ CLIENT HUSKY DATE 14 BY 2 MO 79 YR
 SURVEYOR B. BENEDICT INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1184

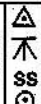





LINE	 	STATION	VERTICAL						ELEVATION		L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD				
			SLOPE 	HORIZ 										
1										2058 ⁸			1	
2			1540		90 54 22	+10		34 ³		2099 ³			2	
3	-				269 05 09	-		34.4					3	
4		765 768	1120 1100		91 22 18	-43	-25.6	-29.9		2068 ⁷		2028 ²	4	
5		770	890										5	
6		772	660		91 09 50	-43	-13.4	-17.7		2081 ⁸		2041 ¹	6	
7		774	440										7	
8		776	220		90 54 20	-4	-3.2	-7.2		2091 ⁸		2051 ³	8	
9		778	0		-	-59	-	-5.4		2093 ⁹		2053 ⁴	9	
10		780	220										10	
11		782	440		89 59 18	-53	+0.0	-5.3		2094 ¹		2053 ⁶	11	
12		784	660		90 08 20	-53	-1.9	-7.2		2092 ⁴		2051 ⁹	12	
13		786	890										13	
14		788	1100		90 24 00	-53	-6.4	-11.7		2086 ³		2045 ⁸	14	
15		790	1320										15	
16		792	1540		89 58 20	-59	+0.0	-5.3		2094 ⁸		2054 ⁵	16	
17		794	1760										17	





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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 1 PAGE 8 OF 214
 LINE/LOOP NO. 47 XS TYPE SURVEY _____ CLIENT HUSKY DATE 14 BY 2 MO 79 YR
 SURVEYOR B. BENEDICT 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														
2		776	1980			89 49 03	5 ³	+ 5.8				2100 ⁴	2059 ⁹	2
3		778	2200			89 52 08	5		0'			2099³	2058 ⁸	3
4						270 07 35			0					4
5														5
6						88 32						2016⁵		6
7			2200			88 45 52	5		42 ⁵			2141⁴		7
8						276 13 23			42 ³					8
9		800	1980			88 43 37	9 ³	+ 46.1	+ 41.8			2138⁹	2056 ³	9
10		802	1760											10
11		809	1540			89 05 42	9 ³	+ 22.4	+ 20.1			2071¹ 2119²	2036 ⁶	11
12		806	1320											12
13		808	1100			89 11 03	9 ³	+ 16.0	+ 11.7			2140⁵	2027 ⁹	13
14		810	880											14
15		812	660			89 01 10	9 ³	+ 11.5	+ 7.2			2040 2106¹	2023 ³	15
16		814	440											16
17		816	220			89 07 23	9	+ 2.2	- 0.8			2056⁴ 2098⁵	2015 ⁹	17

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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 1 PAGE 9 OF 215
 LINE/LOOP NO. 47 XS TYPE SURVEY _____ CLIENT HUSICK DATE 19 BY 2 MO 79 YR
 SURVEYOR B. BENEDICT INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1184

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> \odot	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		818	0			-54		-5.6			2051 ⁴	2010 ⁹	2	
3		820	220										3	
4		822	440	90 44 55	5 ³	-5.1	-10.4				2046 ⁰	2005 ⁵	4	
5		824	660	90 50 57	4 ⁰	-9.6	-13.6				2042	2002 ⁹	5	
6		826	880										6	
7		828	1100	90 00 06	5 ³	+0.0	-5.3				2057 ⁷	2011 ²	7	
8		830	1320										8	
9		832	1540	89 34 40	5 ³	+13.4	+8.1				2062 ¹	2022 ⁶	9	
10		834	1760										10	
11		836	1980	89 10 32	5 ³	+26.8	+23.2				2082 ³	2039 ⁸	11	
12		838	2200										12	
13	\odot	840	2420	88 58 50	5 ³	+	39 ²				2045 ²	2054 ⁷	13	
14	-			879 01 12 257 01 12			39 ²						14	
15													15	
16													16	
17													17	

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 SYMBOLS Δ = BACKSIGHT ∇ = INSTRUMENT SET-UP SS = SIDESHOT \odot = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. _____ PAGE 10 OF 216
 LINE/LOOP NO. 47XS TYPE SURVEY _____ CLIENT HUSKY DATE 14 BY Z MO 79 YR 79
 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		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			RIGHT TURNED HORIZONTAL ANGLE
			<input type="checkbox"/> FEET <input type="checkbox"/> METERS SLOPE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS HORIZ					INST	ROD		
1	Δ		1540		88 03 27	+5		47 ²	2048 ⁰			1
2	→				271 56 21	-		47 ²				2
3		842	1320		88 00 22	-4 ³	+46.1	+41.8		2089 ⁶	2049 ²	3
4		844	1100		88 08 25	-4 ³	+35.2	+30.9		2079 ⁴	2038 ⁹	4
5		846	880									5
6		848	660		88 08 25	-8 ⁰	+21.1	+13.1		2061 ⁴	2020 ⁹	6
7		850	440									7
8		852	220		87 38 48	-4 ³	+9.0	+5.0		2053 ⁰	2012 ³	8
9		854	0		-	5 ⁶	-	-5.6				9
10		856	220		93 25 20	5 ³	-13.4	-18.7		2046 ⁶	1989 ¹	10
11		858	440									11
12		860	660		91 39 38	5 ³	-23.0	-28.3		2049 ⁷	1979 ³	12
13		862	880									13
14		864	1100		91 17 28	5 ³	-25.6	-30.9		2049 ⁹	1977 ³	14
15		866	1320									15
16	⊙	868	1540		90 41 53	-5	-	-25'		2022 ⁹	1982 ⁵	16
17	-	870			269 15 08	-		25'				17

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HORIZONTAL AND VERTICAL SURVEY NOTES

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GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 1 PAGE 11 OF
 LINE/LOOP NO. 47X3 TYPE SURVEY CLIENT HUSKY DATE 15 DY 2 MO 19 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		LR OR DR		RIGHT TURNED HORIZONTAL ANGLE
				SLOPE					HORIZ	INST			
1		868	1430 ✓		90 56 11	+10	+23.4	+33.4	2015.8	51			
2					269 03 55	-	+23.3	+33.3				90 51 49 12	
3		870	1210										
4		872	990										
5		874	770		91 05 22	5	-14.6	-19.6		1996.2			
6		876	550										
7		878	330		90 58 15	5	-3.7	-8.7		2007.6			
8		880	110		91 02 48	4	-2.0	-6.0		2009.9		881 - X - 56	
9		882	110										
10		884	330		90 11 23	6	-1.0	-6.0		2009.7			
11		886	550										
12		888	770		89 53 00	6	+1.6	+4.4		2011.4			
13		890	990										
14		892	1210		90 02 50	6	-1.0	-7.0		2008.9			
15		894	1430										
16		896	1650		90 04 30	6	-2.2	-7.2		2007.7			
17		898											

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HORIZONTAL AND VERTICAL SURVEY NOTES

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GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 1 PAGE 12 OF
 LINE/LOOP NO. 47 Xs TYPE SURVEY CLIENT HUSKY DATE 16 DY 2 MO 79 YR
 SURVEYOR B BENEDICT INSTRUMENT DESC/SERIAL NO. CREW NO. 118A

LINE	 	STATION	VERTICAL							HORIZONTAL		REMARKS	
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION		L/R OR DI		RIGHT TURNED HORIZONTAL ANGLE
			SLOPE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS HORIZ					INST	ROD			
1													
2		897	1760 ✓		90 03 73	-10	-1.5	-11.5		2004 ³		1	90 02 57 10
3	-					-	-1.2	-11.6				2	268 56 50
4												3	
5		897	3410 ✓		89 59 47	+5	+4.5	+3.5		2010 ⁴		4	90 01 30 5
6	-					-	+1.9	+6.9				5	269 58 03 -
7		898	3300		90 02 30	-6	-2.4	-8 ⁴		2002 ⁴		6	
8		900	3080									7	
9		902	2860		90 14 00	-6	-11.7	-17.7		1993 ¹		8	
10		904	2660		90 15 15	-4	-11.7	-15.9		1995 ⁰		9	
11		906	2420		90 14 40	-6	-10.3	-16 ²		1999 ³		10	
12		908	2200									11	
13		910	1980		90 14 40	-6	-8.45	-14 ⁵		1996 ²		12	
14		912	1760									13	
15		914	1540		90 15 08	-6	-5.9	-11.9		1998 ⁷		14	
16		916	1320									15	
17		918	1100		90 10 18	-6	-3.3	-9 ³		2001 ³		16	

WORKED BY BRB CHECKED BY 1ST 2ND

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

HORIZONTAL AND VERTICAL SURVEY NOTES

219

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 1 PAGE 13 OF
 LINE/LOOP NO. 47 X5 TYPE SURVEY CLIENT HUSKY DATE 16 BY 2 MO 79 YR
 SURVEYOR B. BENEDICT INSTRUMENT DESC/SERIAL NO. CREW NO. 1184

LINE	 	STATION	VERTICAL						ELEVATION		LR 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														
2		920	880		90 15 32	-4	-8°	2010 ⁴	2002 ⁶					
3		922	660											
4		924	440		90 49 00	2	-8°		2002 ³					
5		926	220		90 41 56	6								
6		928	0		—	X5 ⁶	-56		2004 ⁸					
7		930	220											
8		932	440											
9		934	660		89 42 12	6	+26		2008 ⁰					
10		936	880											
11		938	1100		89 40 48	6	+02		2010 ⁷					
12		940	1320											
13		942	1540		88 48 22	6	+27°		2038 ⁵					
14		944	1760											
15		946	1980		89 40 20	6	+54		2016 ⁰					
16		948	2200											
17		950	2420		89 34 57	6	+11°		2022 ³					

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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. 1 PAGE 14 OF 210
 LINE/LOOP NO. 47 XS TYPE SURVEY _____ CLIENT HUSKY DATE 16 DY 2 MO 79 YR
 SURVEYOR B. BENEDICT INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1184

LINE	 	STATION	VERTICAL							HORIZONTAL		REMARKS	
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION		L/R OR DIR		RIGHT TURNED HORIZONTAL ANGLE
			SLOPE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS HORIZ					INST	ROD			
1													
2		952	2640	89 28 50	-6	+	173		2027 9				
3		954	2860	89 27 40	-6	+	211		2031 6				
4		956	3080 ✓	89 19 10	-10	+	36.6	+	26 8				
5	-			210 40 27	-	+	36.2	+	26 2				
6													
7		956	2420 ✓	90 03 06	+5	+	2.2	+	7 2	2044 3			
8	-			269 56 45	-	+	2.3	+	7 3				
9		958	2200	90 11 11	-6	-	7.2		13 2	2031 2			
10		960	1980	90 17 25	-6	-			16 0	2028 3			
11		962	1860										
12		964	1540	90 26 48	-6	-			18	2026 3			
13		966	1320										
14		968	1100	90 26 03	-6	-			-143 ✓	2030 0			
15		970	880	90 15 08	-6	-			-99	2034 4			
16		972	660										
17		974	440	90 05 56	-6	-			-68	2037 5			

WORKED BY BRB CHECKED BY 1ST _____ 2ND _____

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

HORIZONTAL AND VERTICAL SURVEY NOTES

221

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 1 PAGE 15 OF
 LINE/LOOP NO. 47 XS TYPE SURVEY CLIENT HUSKY DATE 16 DY 2 MO 79 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		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		978	220		90 35 15	-4	-	-63		2038 ⁰			2	
3		978	0		-	56	-	-56		2038 ⁷			3	
4		980	220										4	
5		982	440		90 38 00	-6	-	-10 ⁹		2033 ⁴			5	
6		989	660										6	
7		986	880		89 55 10	-6	+	-47		2039 ⁵			7	
8		988	1100										8	
9		990	1320		89 38 50	-6	+	2 ²		2046 ⁴			9	
10		992	1540		89 33 37	-4	+	7 ⁹		2052 ¹			10	
11		994	1760										11	
12		996	1980		89 30 34	-2	+	15		2059 ³			12	
13		998	2200										13	
14	⊙	1000	2420 ✓		89 23 38	-10	+	25.6	+15 ⁶	2059 ⁸			14	
15	-				270 36 04	-	+	25.4	+15 ⁴				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. 1 PAGE 16 OF 222
 LINE/LOOP NO. 47 X 5 TYPE SURVEY _____ CLIENT HUSKY DATE 16 DY 2 MO 79 YR
 SURVEYOR B. BENEDICT INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1184

LINE	  	STATION	VERTICAL							HORIZONTAL		REMARKS		
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION		LR OR DR		RIGHT TURNED HORIZONTAL ANGLE	LINE
			SLOPE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS HORIZ					INST	ROD				
1		1000	2640 ✓		89 48 52	+10	-8.6	+15	2061 ⁸			1		
2					270 11 10	-	-8.6	+14				2		
3		1002	2420									3		
4		1009	2200		89 55 08	-6	+	-28	2058 ⁴			4		
5		1006	1980									5		
6		1008	1760		90 06 26	-6	-	-92	2051 ⁹			6		
7		1010	1540									7		
8		1012	1320		90 12 05	-6	-	-106	2050 ⁶			8		
9		1014	1100									9		
10		1016	880		90 18 06	-6	-	-106	2050 ⁶			10		
11		1018	660									11		
12		1020	440		90 17 28	-6	-	-82	2052 ⁹			12		
13		1022	220									13		
14		1024	0			56	-	-56	2055 ⁶			14		
15		1026	220									15		
16		1028	440		89 34 50	-6	+	-28	2058 ⁴			16		
17		1030	660									17		

WORKED BY BRB 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. 1 PAGE 17 OF 223
 LINE/LOOP NO. 47 X5 TYPE SURVEY _____ CLIENT HUSKY DATE 16 BY 2 MO 77 YR
 SURVEYOR B. BENEDICT INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1184

LINE	 	STATION	VERTICAL						ELEVATION		L/R OR DI	HORIZONTAL		REMARKS
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD		RIGHT TURNED HORIZONTAL ANGLE	LINE	
				SLOPE										
1													1	
2		1032	980		89 34 50	-6	+	-08		2060 ⁹			2	
3		1038	1100										3	
4		1036	1320		89 33 48	-6	+	4'		2065 ³			4	
5		1038	1540										5	
6		1040	1760		89 23 15	-6	+	129		2074 ¹			6	
7		1042	1980										7	
8		1044	2200		89 14 28	-6	+	232		2084 ⁴			8	
9		1046	2420		89 12 00	-6	+	27 ⁹		2089 ¹			9	
10		1048	2640 ✓		89 13 00	-5	+36.1	+31 ¹		2092 ²			10	
11	-				270 46 32	-	+35.7	+30 ⁷					11	
12													12	
13		1048	2420 ✓		93 18 40	+5	+139.8	+144 ⁸	2236 ⁹				13	
14	-				266 41 00	-	140.0	+145 ¹					14	
15		1050	2200										15	
16		1052	1980		93 28 28	-13 ⁸	-	133 ⁷		2103 ³			16	
17		1054	1760										17	

WORKED BY B.R.D. 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. 1 PAGE 18 OF 228
 LINE/LOOP NO. 47X5 TYPE SURVEY _____ CLIENT HUSKY DATE 16 DY 2 MO 79 YR
 SURVEYOR B BENEDICT INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1184

LINE	 	STATION	VERTICAL						ELEVATION		L/R OR DIR	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														
2		1056	1540	HR	93 28 28	108	-	1128		2124 ²				
3		1058	1320											
4		1060	1100	HR	93 28 28	21	-	-876		2149 ⁴				
5		1062	880											
6		1067	660		93 28 28	104	-	-50 ⁴		2186 ⁶				
7		1066	440		93 37 58	6	-	-339		2203 ¹				
8		1068	220		92 21 55	6	-	-15 ¹		2221 ⁹				
9		1070	0			5 ⁶	-	-56		2231 ⁴				
10		1072	220		89 43 45	6	+	-5 ⁰		2232 ⁰				
11		1074	440		90 21 35	6	-	-8 ⁸		2228 ²				
12		1076	660		90 46 00	6	-	-17 ⁸		2219 ²				
13		1078	880		90 59 08	6	-	-19 ⁴		2217 ²				
14		1080	1100		90 47 07	10	-	-25 ¹		2212 ⁰				
15		1082	1320		90 47 07	12 ⁵	-	-30 ⁶		2206 ⁵				
16		1084	1590 ✓		90 50 42	13	-	-22.7		2201 ³				
17	-				269 09 02	-	-	-22.8		-35 ⁸				

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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. 1 PAGE 19 OF 215
 LINE/LOOP NO. 47 XS TYPE SURVEY _____ CLIENT HUSKY DATE 16 DY 2 MO 79 YR
 SURVEYOR B BENEDICT INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1184






LINE	 	STATION	VERTICAL						ELEVATION		L/R OR DI	HORIZONTAL		REMARKS
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD		RIGHT TURNED HORIZONTAL ANGLE	LINE	
				SLOPE										
1		1084	2420 ✓		87 50 48	+5	-90.9	-85.9	2115.1			1		
2					272 09 12	-	-90.7	-85.7				2		
3		1086	2200		87 51 06	-6	+82.47	+76.5			2191.15	3		
4		1088	1980									4		
5		1090	1760		87 57 07	-6	+62.9	+56.9			2172.0	5		
6		1092	1540									6		
7		1094	1320		88 10 48	-6	+41.92	+35.9			2151.	7		
8		1096	1100									8		
9		1098	880		88 04 53	-6	+29.5	+23.46			2138.56	9		
10		1100	660									10		
11		1102	440		88 02 30	-6	+15.04	+9.04			2124.14	11		
12		1104	220		89 06 95	-6	+3.41	-2.59			2112.51	12		
13		1106	0		—	-56	-	-5.6			2109.5	13		
14		1108	220									14		
15		1110	440		89 38 15	-6	+2.78	-3.22			2111.88	15		
16		1112	660		89 48 15	-4	+2.26	-1.74			2113.36	16		
17		1114	880									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. 1 PAGE 20 OF 216
 LINE/LOOP NO. 47YS TYPE SURVEY _____ CLIENT HUSKY DATE 16 DY 2 MO 79 YR
 SURVEYOR B. BENEDICT INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1184

LINE	  	STATION	VERTICAL						ELEVATION		L/R OR DI	HORIZONTAL		REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD		RIGHT TURNED HORIZONTAL ANGLE	LINE		
				SLOPE 											HORIZ 
1													1		
2		1116	1100		89 41 00	-6	+6.08	+0.1				2115.2		2	
3		1118	1320											3	
4		1120	1540		89 41 00	-6	+8.51	+2.51				2117.61		4	
5		1122	1760											5	
6		1124	1990		89 41 00	-6	+10.9	+4.9				2120.		6	
7		1126	2200											7	
8		1128	2420		89 40 25	-6	+13.8	+7.8						8	
9		1130	2640 ✓		89 40 25	-6	+15.0							9	
10	⊙	BM 79382	1980		89 32 32	-5	+15.8	+10.8		2127.9		Reference B.A.S. SURVEY		10	BAKR MARKER # 79382
11	-				270 26 56	-	+15.5	+10.5		2128.4				11	(2127.93)
12										+1.5		MISCLOSURE		12	
13	Δ	BM 79382	3200		90 14 31	+5	+13.5	+18.5	2146 ^A					13	Rough 3200
14	-				269 45 05	-	+13.9	+18.9						14	
15		1132	1980		90 22 16	-6	-	18 ⁷		2127 ⁶				15	
16		1134	1760											16	
17		1136	1540		90 25 45	6	-	-17 ⁵		2128 ⁹				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. 1 PAGE ²²⁷21 OF
 LINE/LOOP NO. 47 XS TYPE SURVEY CLIENT HUSKY DATE 16 DY 2 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		L/R OR DI		RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE					HORIZ	INST				
1												1		
2		1138	1320		90 20 25	-6	-	-138		2132 ⁶			2	
3		1140	1100										3	
4		1144	660		90 22 30	-4	-	-83		2138 ¹			4	
5		1146	440										5	
6		1148	220		90 16 11	-6	-	-70		2139 ⁴			6	
7		1150	0		-	56	-	-5.6		2140 ⁸			7	
8		1152	220		89 39 55	-4	+	-27		2143 ⁷			8	
9		1154	440										9	
10		1156	660		89 27 27	-6	+	0 ³		2146 ⁶			10	
11		1158	880										11	
12		1160	1100		89 36 05	-4	+	37		2150 ¹			12	
13		1162	1320										13	
14		1164	1540		89 34 20	-4	+	7 ⁵		2153 ⁹			14	
15		1166	1760										15	
16		1168	1980		89 35 25	-4	+	102		2156 ⁶			16	
17		1170	2200										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. 1 PAGE 22 OF 228
 LINE/LOOP NO. 47 XS TYPE SURVEY _____ CLIENT HUSKY DATE 16 DY 2 MO 79 YR
 SURVEYOR B. BENEDICT INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1184

LINE	△ ↕ SS ⊙	STATION	VERTICAL							HORIZONTAL		REMARKS	
			DISTANCE	<input type="checkbox"/> FEET	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION		RIGHT TURNED HORIZONTAL ANGLE		LINE
				<input type="checkbox"/> METERS					HORIZ	INST			
1													
2		1172	2420		89 31 32	-6	+	142		2160 ³			
3	⊙	1174	2640 ✓		89 30 50	-5	+22.4	+17.4		2163 ⁹			
4	-				270 29 00	-	+22.3	+17.3					
5													
6	△	1174	2640 ✓		90 18 48	+13	+14.4	+22.4		2191 ²			
7	-				269 11 00	-	+14.6	+29.6					
8		1176	2420										
9		1178	2200		90 18 00	-6	-	17 ³		2173 ⁸			
10		1180	1980										
11		1182	1760		90 19 50	-6	-	16 ¹		2175 ¹			
12		1184	1540										
13		1186	1320		90 24 45	-6	-	15 ⁵		2175 ⁹			
14		1188	1100										
15		1190	880		90 29 50	-6	-	13 ⁶		2177 ⁶			
16		1192	660										
17		1194	440		90 25 10	-6	-	10 ⁶		2181 ⁰			

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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. 1 PAGE 23 OF 219
 LINE/LOOP NO. 47X5 TYPE SURVEY _____ CLIENT HUSKY DATE 16 DY 2 MO 79 YR
 SURVEYOR B. BENEDICT INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1184










LINE	 	STATION	VERTICAL							HORIZONTAL		REMARKS		
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION		L/R OR DI		RIGHT TURNED HORIZONTAL ANGLE	LINE
			SLOPE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS HORIZ					INST	ROD				
1												1		
2		1196	220									2		
3		1198	0	-	56	-	-5.6		2195.6			3		
4		1200	220									4		
5		1202	440	89 08 50	6	+	06		2191.8			5		
6		1204	660									6		
7		1206	880	88 55 55	6	+	104		2201.7			7		
8		1208	1100									8		
9		1210	1320	89 00 00	6	+	176		2208.3			9		
10		1212	1540									10		
11		1214	1760	89 00 00	6	+	248		2216.0			11		
12		1216	1980									12		
13		1218	2200	88 56 18	6	+	349		2226.1			13		
14		1220	2420									14		
15		1222	2640 v	88 40 38	5	+	60.9	+55.9	2247.1		2346	2247	15	
16		1224		271 18 40	-	+	60.4	+55.4					16	
17												17		

WORKED BY B. BENEDICT 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. 1 PAGE 2A OF 260
 LINE/LOOP NO. 47 X5 TYPE SURVEY _____ CLIENT HUSKY DATE 16 DY 2 MO 79 YR
 SURVEYOR B BENEDICT 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		1222	1100		92 25 37	+5	+84.5	+89.5	2336 ⁶			1	99 24 18 5°	
2	-				265 35 79	-	+84.7	+89.7				2	265 35 05 -	
3		1227	980		99 36 26	-6	-	76.7			2259 ⁹	3		
4		1226	660		99 25 50	6	-	57°			2279 ⁶	4		
5		1228	440		99 30 20	2	-	36°			2300 ¹	5		
6		1230	220									6		
7		1232	0		-	56	-	-5.6			2331°	7		
8		1234	220									8		
9		1236	440		88 22 08	-6	+	6°			2343 ¹	9		
10		1238	660									10		
11		1240	880		88 55 38	-6	+	10°			2347 ¹	11		
12		1242	1100									12		
13			3630		88 38 52	-10	+85.7	+75.7			2412 ⁵	13	BACKSIGHT #	
14	-				271 20 58	-	+85.5	+75.5				14	REFERENCE TO BASE SURVEY	
15												15		
16												16		
17												17		

WORKED BY BRB 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. 1 PAGE 25 OF 251
 LINE/LOOP NO. 97XS TYPE SURVEY _____ CLIENT HUSKY DATE 16 DY 2 MO 79 YR
 SURVEYOR B. BENEDICT INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1184

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> ∟ <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		L/R OR D/I		RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE					HORIZ	INST				
1												1		
2	Δ	9 r.s.	1760		92 49 40	15	+86.8	+91.8	2504 ³	2555 ⁵		2		
3	Δ				26 09 59	-	+87.0	+92.0				3	S-14 190°	
4	∟											4		
5	⊙	B.M.	860		90 25 15	-13	-6.3	-19.3		2485 ⁰		5	BARR 79881	
6	-				29 59 27	-	-6.4	-19.4		2488 ²		6	S-93 1/2 430 860	
7										# -3 ²		7		
8												8	(2486 27)	
9												9		
10												10		
11												11		
12												12		
13												13		
14												14		
15												15		
16												16		
17												17		

WORKED BY BRB CHECKED BY 1ST _____ 2ND _____

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

11
 12
 13
 14
 15
 16
 17

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 1 PAGE 232 OF
 LINE/LOOP NO. 47XS TYPE SURVEY CLIENT HUSKY DATE 17 DY 2 MO 79 YR
 SURVEYOR B. BENEDICT INSTRUMENT DESC/SERIAL NO. CREW NO. 1184

LINE	 	STATION	VERTICAL						ELEVATION		LR OR DR	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD				
				SLOPE										
1														
2		INT 618	2640		90 09 27 +6	+7.5	13 ^f	1885 ³	1871 ⁸					
3					269 09 23	-	+7.8	13 ^s						269.49 52
4		616	2420		90 08 48	-4 ³	-10 ^f		1874 ⁹					100
5		614	2200											
6		612	1980		90 07 00	-4 ³	-8 ³		1877 ¹					
7		610	1760											
8		608	1540		90 06 12	-4 ³	-7 ⁰		1878 ³					
9		606	1320											
10		604	1100		90 05 35	-4 ³	-6 ¹		1879 ²					
11		602	880											
12		600	660		90 05 35	-4	-5 ¹		1880 ²					
13		598	440											
14		596	220		90 08 10	-4 ³	4 ⁸		1880 ⁵					
15		594	0		90	5 ⁶	-5 ⁶		1879 ⁷					
16		592	220		89 51 25	-5.3	+5 ⁴		1879 ⁹					
17		590	440											

WORKED BY 800 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. 1 PAGE 2 OF 233
 LINE/LOOP NO. 47XS TYPE SURVEY _____ CLIENT HUSKY DATE 17 DY 2 MO 79 YR
 SURVEYOR BRAD BENEDICT INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1184

LINE	 	STATION	VERTICAL							HORIZONTAL		REMARKS	
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION		L/R OR DI		RIGHT TURNED HORIZONTAL ANGLE
			SLOPE	HORIZ					INST	ROD			
1												1	
2		588	660	89 50 01	-5.3	+	-34		1881.9			2	
3		586	880									3	
4		584	1100	89 58 48	-5.3	+	-56		1881.7			4	
5		582	1320									5	
6		580	1540	89 58 25	-5.3	+	-45		1880.8			6	
7		578	1760									7	
8		576	1980	90 00 37	-5.3	-	-56		1879.7			8	
9		574	2200									9	
10		572	2420	90 01 08	-5.3	-	-59		1879.4			10	
11		570	2640									11	
12		568	2860	90 00 53	-5	-	-0.7		1879.6			12	
13	-			269 58 52	-	-	-0.9		-57			13	
14												14	
15		568	1760	90 50 01	+5	+	+25.6	+30.6	1910.3			15	
16	-			269 09 33	-	-	+25.8	+30.8				16	
17												17	

WORKED BY BAB 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. 1 PAGE 3 OF 3
 LINE/LOOP NO. 47X5 TYPE SURVEY _____ CLIENT HUSKY DATE 17 BY 21 MO. 79 YR
 SURVEYOR BRAD BENEDICT INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1184

LINE	△ K SS ◎	STATION	VERTICAL							HORIZONTAL		REMARKS		
			DISTANCE		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	ROD				
1									1910 ³			1		
2		566	1540									2		
3		564	1320	90 59 05	-43	-	-25°		1885.2			3		
4		562	1100									4		
5		560	880	90 57 38	-43	-	19°		1891.2			5		
6		558	660									6		
7		556	440	90 56 20	-4	-	11.2		1899°			7		
8		554	220									8		
9	K	552	0	-	-56	-	-5.6		1904.7			9		
10		550	220									10		
11		548	440	-	-53	-	-5.3		1905°			11		
12		544	660									12		
13		542	880	89 33 50	-53	+	1.4		1911.7			13		
14		540	1100									14		
15		538	1320	89 12 08	-53	+	13.5		1923.8			15		
16	◎	536	1540	88 47 50	-5	+32.3	+27.3		1937.7			16		
17	-	534		87 12.18	-	+32.4	+27.4					17		

WORKED BY BBB CHECKED BY 1ST _____ 2ND _____
 SYMBOLS △ = BACKSIGHT K = INSTRUMENT SET-UP SS = SIDESHOT ◎ = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 1 PAGE ²³⁵4 OF 29
 LINE/LOOP NO. 47KS TYPE SURVEY _____ CLIENT HUSKY DATE 17 DY 2 MO 79 YR
 SURVEYOR BRAD BENEDICT INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1184

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> \nearrow <input type="checkbox"/> SS <input type="checkbox"/> \odot	STATION	VERTICAL						ELEVATION		HORIZONTAL		REMARKS
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD	LR OR DR	RIGHT TURNED HORIZONTAL ANGLE	
			SLOPE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS HORIZ									
1	Δ	536	1540		91 23 42	+10	+37.5	+47.5	1985.2			1	
2	Δ				268 35 38	-	+37.8	+47.8				2	
3		538	1320		91 26 45	+3						3	
4		532	1100		91 25 15	-4		-31.6		1953.7		4	
5		530	880									5	
6		528	660		91 22 38	-4		-20.2		1965.1		6	
7		526	440									7	
8		524	220		91 20 40	-2		-7.2		1978.1		8	
9		522	0		-	-5.6		-5.6		1979.6		9	
10		520	220		90 26 00	-4		-5.7		1979.6		10	
11		518	440									11	
12		516	660		90 46 25	-5		-14.2		1971.0		12	
13		514	880									13	
14		512	1100		90 54 12	-4		-21.3		1963.9		14	
15		510	1320									15	
16	\odot	508	1540		90 43 11	-5	-19.3	-24.3		1960.9		16	
17	\odot	504			269 16 22	-	-19.6	-24.6				17	

WORKED BY BRB CHECKED BY 1ST _____ 2ND _____

SYMBOLS Δ = BACKSIGHT \nearrow = INSTRUMENT SET-UP SS = SIDESHOT \odot = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 1 PAGE 236 OF 5
 LINE/LOOP NO. 47KS TYPE SURVEY _____ CLIENT HUSKY DATE 17 DY 2 MO 79 YR
 SURVEYOR BRAD 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		L/R OR DI		RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE					HORIZ	INST				
1		508	1320		89 49 20	+10	-4.10	+5.9	1966 ⁸			1		
2					270 10 10	-	-3.9	+6.1				2		
3		506	1100									3		
4		504	880		90 00 00	4 ³	-	-4.3	1962 ⁵			4		
5		502	660									5		
6		500	440		90 08 02	4 ³	-	-5 ³	1961 ⁵			6		
7		498	220									7		
8		496	0		-	5 ⁶	-	-5.6	1961 ²			8		
9		494	220									9		
10		492	440		89 24 12	5 ³	+	-0.7	1966 ¹			10		
11		490	660									11		
12		488	880		88 51 25	5 ³	+	12.3	1979 ¹			12		
13		486	1100									13		
14		484	1320		88 56 26	5 ³	+	19.1	1986 ⁰			14		
15		482	1540									15		
16		481	1650		89 01 29	7 ¹⁰	+	+28.1	+18.1	1984 ⁹		16		
17					270 58 48	-	+	+27.9	+17.9			17		

WORKED BY BRB CHECKED BY 1ST _____ 2ND _____

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

HORIZONTAL VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 1 PAGE 6 OF 31
 LINE/LOOP NO. 47KS TYPE SURVEY _____ CLIENT HUSKY DATE 17 DY 2 MO 79 YR
 SURVEYOR BRAD BENEDICT INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1184

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> \nearrow <input type="checkbox"/> SS <input type="checkbox"/> \odot	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	Δ	481	1210		88 26 42	+10	-32.8	-22.8	1962 ¹		1	
2	-				271 32 50	-	-32.7	-22.7			2	
3		480	1100		88 36 30	4	+	22 ⁷	1984 ⁸		3	
4		478	880								4	
5		476	660		88 27 07	43	+	13 ⁵	1975 ⁶		5	
6		474	440								6	
7		472	220		88 25 25	4	+	2 ¹	1909 ¹		7	
8		470	0		-	-56	-	-5.6	1966 ⁵		8	
9		468	220								9	
10		466	440		89 09 35	-53	+	12	1903 ²		10	
11		464	660		89 05 42	-53	+	5 ¹	1967 ²		11	
12		462	880								12	
13	\odot	460	1100		89 21 12	-5	+12.4	+7.4	1969 ⁵		13	
14	-				270 38 45	-	+12.4	+7.4			14	
15											15	
16											16	
17											17	

WORKED BY BRB CHECKED BY 1ST _____ 2ND _____

SYMBOLS Δ = BACKSIGHT \nearrow = INSTRUMENT SET-UP SS = SIDESHOT \odot = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 1 PAGE 7 OF 32
 LINE/LOOP NO. 47XS TYPE SURVEY _____ CLIENT HUSKY DATE 17 BY 2 MO 79 YR
 SURVEYOR BRAD BENEDICT INSTRUMENT DESC/SERIAL NO. _____ CREW NO. _____

LINE	 	STATION	VERTICAL						ELEVATION		L/R OR DT	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		-460	880		90 35 00	+5	+9.0	+14.0	19834			1	60 - 860	
2	-				269 25 20	-	+8.9	+13.9				2	58 660	
3		452	660									3	56 660	
4		456	440		91 35 20	-4	-	-16.2		19672		4	54 220	
5		454	220									5	52 0	
6		452	0					-5.6		19778		6	50 120	
7		452	220									7		
8		458	440									8		
9		450	660		88 10 55	5 ³	+	15.6		19991		9		
10		448	880		88 19 50	5 ³	+	20.4		2003 ⁸		10		
11		446	1100		89 33 33	5	+21.7	+22.7		2006 ⁰		11		
12	-				271 26 10	-	+21.6	+22.6				12		
13												13		
14		446	2420		91 35 20	+5	+67.1	+72.1	20779			14		
15	-				269 25 00	-	+66.9	+71.9				15		
16												16		
17												17		

WORKED BY BRB 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. 1 PAGE 8 OF 8 239
53
 LINE/LOOP NO. 47XS TYPE SURVEY _____ CLIENT HUSKY DATE 17 DY 2 MO 79 YR
 SURVEYOR BRAD BENEDICT 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										
1													1	
2		444	2200										2	
3		442	1980		91 36 30	-43	-	-598		2018 ¹			3	
4		440	1760		91 40 42	-43	-	-558		2022 ¹			4	
5		438	1540										5	
6		436	1320		91 43 00	-43	-	-498		2034 ¹			6	
7		434	1100										7	
8		432	880		91 41 20	-43	-	-318		2046 ²			8	
9		430	660										9	
10		428	440		91 42 10	-43	-	-179		2060 ⁵			10	
11		426	220										11	
12		424	0		-	56	-	-5.6		2072 ³			12	
13		422	220										13	
14		420	440		88 21 40	53	+	73		2085 ²			14	
15		418	660										15	
16		416	880		88 26 26	53	+	187		2096 ⁶			16	
17		414	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. 1 PAGE 7 OF 9
 LINE/LOOP NO. 47X5 TYPE SURVEY _____ CLIENT HUSKY DATE 18 DY 2 MO 79 YR
 SURVEYOR B. BENEDICT INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1184

240
34

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															
2		412	1320			88 37 42	-	296		2107 ⁵				2	
3		410	1540			88 41 06	S	304		2108 ³	✓			3	
4	-					271 79 00	-	304						4	
5														5	
6			1540			96 31 10	S	-45 ⁸	2154 ²					6	
7	-					260 28 22	-	-45 ⁹						7	
8		408	1320			91 34 54	4	-40 ⁴		2113 ⁸				8	
9		406	1100											9	
10		404	880			91 34 54	4 ³	-28 ⁶		2125 ⁶				10	
11		402	660											11	
12		400	440			91 41 57	4	-17 ⁰		2137 ²				12	
13		398	220											13	
14		396	0				56	-56		2148 ⁶				14	
15		394	220											15	
16		392	440			88 30 22	4	75		2161 ⁷				16	
17		390	660											17	

WORKED BY BRB 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. 1 PAGE 201 OF 35
 LINE/LOOP NO. 47 XS TYPE SURVEY _____ CLIENT HUSKY DATE 18 DY 2 MO 79 YR
 SURVEYOR B. BENEDICT INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1189

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														
2		388	880		89 23 52	5 ³	193		2173 ⁵					2
3		384	1100											3
4		384	1320		88 27 25	10	256		2179 ⁷					4
5	-				271 32 20	-	25 ⁵							5
6														6
7		384	1320		91 20 14	5	-35 ⁸	2215 ⁶					91 07 13 10	7
8	-				268 37 15	-	-35 ⁹						268 52 20	8
9		382	1100											9
10		380	880		92 03 20	4 ³	35 ⁸		2179 ⁸					10
11		378	660											11
12		376	440		93 07 07	4 ³	-16 ³	2187 ⁴	2199⁴				CHECK RE-	12
13		374	220										RUN WITH	13
14		372	0		-	5 ⁰	-5 ⁰		2210 ⁶				ORIGINAL	14
15									2203				TRAVERSE.	15
16									2203				L-47 p1300.	16
17									2203				(MARKER PIPE	17
									2203				QUESTIONABLE)	

WORKED BY BBB 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. 1 PAGE 1 OF 36
 LINE/LOOP NO. 47XS TYPE SURVEY _____ CLIENT HUSKY DATE 17 DY 2 MO 29 YR
 SURVEYOR B. BENEDICT INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1184

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> ⚓ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						HORIZONTAL		REMARKS	
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	ELEVATION		LR OR DR		RIGHT TURNED HORIZONTAL ANGLE
			SLOPE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS HORIZ				INST	SOD			
1	Δ	INT 612	2640		90 04 47	10	13 ⁵	1885 ³			1	THIS IS A TRAVERSE I RAN TO
2					269 55 15	-	13 ⁵				2	
3											3	
4	⊙	588	2860		87 54 50	10	-5 ⁵	1879 ⁷			4	DOUBLE CHECK E.O.L MARKER PIPE 1500
5					270 05 00	-	-5 ⁶				5	
6	Δ	568	1760								6	
7	-				90 40 22	10	30 ⁶	1910 ⁴			7	47X.
8					269 19 24	-	30 ⁷				8	
9											9	
10	⊙	536	1540		88 37 52	10	26 ⁸	1937 ²			10	
11					271 22 07	-	26 ⁸				11	
12											12	
13	Δ	536	1540		91 17 17	13	47 ⁶	1984 ⁹			13	
14					268 42 23	-	47 ⁶				14	
15											15	
16	⊙	508	1540		90 32 10	10	-24 ⁴	1960 ⁴			16	
17					269 27 29	-	-24 ⁴				17	

WORKED BY PAB 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. 1 PAGE 2 OF 37
 LINE/LOOP NO. 47 Xs TYPE SURVEY _____ CLIENT HUSKEY DATE 18 DY 2 MO 79 YR
 SURVEYOR B BENEDECT 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		508	1320		89 41 40	13	59	19664				2		
3					270 18 05		+6°					3		
4												4		
5		481	1650		88 55 15	13	18'	19844				5		
6					271 04 20	—	18°					6		
7												7		
8		481	1210		88 18 18	13	-228	19617				8		
9					271 41 15	—	227					9		
10												10		
11		460	1100		89 05 38	10	74	1969°				11		
12					270 53 56	—	74					12		
13												13		
14		460	840		88 23 55	10	74					14		
15					269 46 16	—						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. 1 PAGE 3 OF 1
 LINE/LOOP NO. 47 Xs TYPE SURVEY _____ CLIENT HUSKY DATE 18 BY 2 MO 79 YR
 SURVEYOR B BENEDICT INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1184

244

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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										
1			880		90 12 30	10		113 ²	1982 ²			1		
2	-				269 47 18	-		113 ²				2		
3												3		
4			1100		88 11 43	10		24 ¹		2006 ⁹		4		
5	-				271 49 20	-		24 ¹				5		
6												6		
7			2420		91 28 10	10		-71 ⁹	2078 ⁷			7		
8	-				268 32 15	-		71 ⁸				8		
9												9		
10			1540		88 30 20	10		30 ²		2108 ⁹		10		
11	-				271 29 22	-		30 ¹				11		
12												12		
13			1540		91 20 06	10		45 ⁸	2154 ⁵			13		
14	-				268 39 18	-		46 ⁰				14		
15												15		
16			1320		88 19 56	13		25 ⁵	2180 ²			16		
17	-				271 39 54	-		25 ⁴			2180 ⁶	17		

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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. 1 PAGE ²⁴⁵4 OF 1 39
 LINE/LOOP NO. 47X5 TYPE SURVEY _____ CLIENT HUSKY DATE 18 DY 2 MO 79 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			L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE
				SLOPE					HORIZ	INST			
1			1320		910113	10		35 ⁸	2216'			1	
2	-				2685220	-		35 ⁹				2	
3												3	
4											22106	4 1 st TRAVERSE	
5			0		—	5		-5	2211'		2211'	5 2 nd TRAVERSE	
6											+ .5	6	
7												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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HORIZONTAL AND VERTICAL SURVEY NOTES

40

BBL AREA STATE/COUNTY ALASKA BOOK NO. PAGE 1 OF 15
 LINE/LOOP NO. TYPE SURVEY CLIENT DATE 13 DY 2 MO 79 YR
 SURVEYOR R.D. HELANDER INSTRUMENT DESC/SERIAL NO. - 25°, CLEAR, 7 MPH WIND - SOUTH 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							04	05	V ₁	33	1		
2		672	→ D	88-53-16	5.5	HI	45	59	D	34-47-03	2	LINK ANGLE	
3		618 - 79426	R	271-06-29		HT	58	92		34-46-30	3	34-46-25	
4								84	27	V ₂	180-00-40	4	
5			← D	90-22-25	5.5	HI		4.76	7.07	R	214-47-05	5	
6		672 → 618	R	269-37-24	6.4	HT	4584	76	5927		34-46-25	6	34-46-27
7												7	
8												8	
9												9	
10		672	→ D	89-23-08						V ₁	31	10	
11		79426 - 79384	R	270-36-26						D	123-43-41	11	
12											123-43-10	12	
13			← D							V ₂	180-00-44	13	
14			R							R	303-43-48	14	
15		672 → 79426					4584	76			123-43-04	15	123-43-07
16												16	
17												17	

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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. _____ PAGE 2 OF 15
 LINE/LOOP NO. 47 X 5 TYPE SURVEY _____ CLIENT _____ DATE 13 BY 2 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		L/R OR DI		RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE					HORIZ	INST				
1										V ₁	17	1		
2		672			D 89-08-03	5.4	HI	1	2	D	21-24-21	2		
3		79384 - 782	12.073 ^{SS}		R 278-41-23	7.6	HT		20		21-24-04	3		
4									67	V ₂	180-00-28	4		
5									73	R	201-24-19	5		
6									8.55		21-23-51	6	21-23-57	
7												7		
8												8		
9												9		
10												10		
11		672								V ₁	20	11		
12		618 - 782								D	179-53-47	12		
13											179-53-27	13		
14										V ₂	180-00-39	14		
15										R	359-52-58	15		
16											179-53-19	16	179-53-23	
17												17		

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SYMBOLS

= BACKSIGHT

= INSTRUMENT SET-UP

SS = SIDESHOT

= FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

42

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. _____ PAGE 3 OF 15
 LINE/LOOP NO. 47 XS TYPE SURVEY _____ CLIENT _____ DATE 14 DY 2 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		L/R OR DI		RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE					HORIZ	INST				
1														
2		782	1760 [⊙]		D 89-49-05	5.5	HI				V	22	1	
3		672 - 798			R 370-09-58	6.0	HT				D	180-00-30	2	
4			1760 =									180-00-08	3	
5					D	^{5.5} 5.0	HI				V ₂	180-00-21	4	
6					R	6.0	HT				R	00-00-38	5	
7												180-00-17	6	
8													7	
9													8	
10		798	4620 [⊙]		D 90-02-40	5.5	HI				V	15	9	
11		782 - 840			R 289-37-31	6.0	HT		04		D	179-59-41	10	
12			4610 ¹³						46			179-59-26	11	
13					D 90-08-08	5.5	HI		61		V ₂	180-00-03	12	
14					R 289-51-54	6.0	HT		10		R	359-59-36	13	
15									0.13			179-59-33	14	
16													15	
17													16	
													17	

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

HORIZONTAL AND VERTICAL SURVEY NOTES

43

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. _____ PAGE 4 OF 15
 LINE/LOOP NO. 47XS TYPE SURVEY _____ CLIENT _____ DATE 14 BY 2 MO 79 YR
 SURVEYOR W.D. MELANDER 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										V.	12	1		
2		840	6160 [⊙]	D	90-27-00	5.5	HI	06		D	166-02-29	2		
3		798 896	6270 [⊙]	R	269-32-53	6.0	HT	62			166-02-17	3		
4		897						26		V.	180-00-23	4		
5			6267 ¹⁶ / ₁₆	D	89-56-41	5.5	HI	67		R	346-02-34	5		
6				R	270-03-03	6.0	HT	7.16			166-02-12	6	166-02-14	
7												7		
8												8		
9												9		
10		896 897		D	89-56-23	5.5	HI			V.	18	10		
11		840 - 928	3410 [⊙]	R	270-03-08	6.0	HT			D	194-25-27	11		
12											194-25-09	12		
13				D	89-31-13	5.5	HI			V.	180-00-21	13		
14				R	270-27-56	6.0	HT			R	14-25-37	14		
15											194-25-16	15	194-25-13	
16												16		
17												17		

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SYMBOLS

= BACKSIGHT

= INSTRUMENT SET-UP

= SIDESHOT

= FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

44

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. _____ PAGE 5 OF 15
 LINE/LOOP NO. 47 XS TYPE SURVEY _____ CLIENT _____ DATE 15 DY 2 MO 79 YR
 SURVEYOR 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			L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE	HORIZ					INST	ROD				
1												18	1		
2		<u>672</u>										<u>325-14-02</u>	2		
3		<u>618 - 79624</u>										<u>325-13-44</u>	3		
4		<u>79624 - 618</u>										<u>180-00-41</u>	4		
5												<u>145-14-16</u>	5		
6												<u>325-13-35</u>	6	<u>325-13-39</u>	
7													7		
8													8		
9													9		
10		<u>897 782</u>									V	<u>21</u>	10		
11		<u>79324 - 798</u>									D	<u>157-36-14</u>	11		
12												<u>157-35-53</u>	12		
13											V	<u>180-00-26</u>	13		
14											R	<u>337-36-31</u>	14		
15												<u>157-36-05</u>	15	<u>157-35-59</u>	
16													16		
17													17		

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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. _____ PAGE 6 OF 15
 LINE/LOOP NO. 47 XS TYPE SURVEY _____ CLIENT _____ DATE 15 DY 2 MO 79 YR
 SURVEYOR HELANDER INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1184

LINE	 	STATION	VERTICAL						ELEVATION		L/R OR DI	HORIZONTAL		REMARKS
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD		RIGHT TURNED HORIZONTAL ANGLE	LINE	
				SLOPE										
1											V	22	1	
2		928		D	89-23-54	5.5	HI				D	194-22-49	2	
3		897 956		R	270-36-08	6.0	HT					194-22-27	3	
4											V	180-00-32	4	
5				D	90-01-38	5.5	HI				R	14-22-54	5	
6				R	269-58-25	6.0	HT					194-22-22	6	194-22-24
7													7	
8													8	
9													9	
10		956		D	89-43-14	5.6	HI				V	28	10	
11		928 1000		R	270-16-10	6.0	HT				D	190-05-47	11	
12												190-05-19	12	
13				D	90-34-46	5.6	HI				V	180-00-30	13	
14				R	269-24-51	6.0	HT				R	10-06-01	14	
15												190-05-31	15	190-05-25
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 7 OF 15
 LINE/LOOP NO. 47 X3 TYPE SURVEY _____ CLIENT _____ DATE 15 DY 2 MO 79 YR
 SURVEYOR HELANDER INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1184

LINE	 	STATION	VERTICAL						ELEVATION		LR 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											V.		1	
2		1000		D 90-04-35	5.4	HI					D	193-13-12	2	
3		956 - 1024		R 269-54-49	6.0	HT						193-12-56	3	
4											V.	180-00-27	4	
5				D 90-15-50	5.4	HI					R	13-13-14	5	
6				R 269-44-22	6.0	HT						193-12-47	6	193-12-51
7													7	
8													8	
9													9	
10		1024	5170 [⊙]	D 89-02-27	5.5	HI		05			V.	22	10	
11		1000 1071		R 271-56-57	6.0	HT		51			D	188-57-44	11	
12			5165 ⁸⁵					16				188-57-22	12	
13				D 89-53-55	5.5	HI		65			V.	180-00-26	13	
14				R 270-05-55	6.0	HT		5.85			R	08-57-59	14	
15												188-57-33	15	188-57-28
16													16	
17													17	

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SYMBOLS

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HORIZONTAL AND VERTICAL SURVEY NOTES

47

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. _____ PAGE 8 OF 15
 LINE/LOOP NO. 47 XS TYPE SURVEY _____ CLIENT _____ DATE 16 DY 2 MO 79 YR
 SURVEYOR 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		L/R OR D/I		RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE					HORIZ	INST				
1										V	38	1		
2		1071		D	91-02-03			06		D	188-27-11	2		
3		1024 - 79382 ^{BAS}		R				58			188-26-35	3		
4								78		V ₂	180-00-36	4		
5				D				84		R	08-27-23	5		
6				R				4.95			188-26-47	6	188-26-40	
7												7		
8												8		
9												9		
10		1071	18,810 [⊙]	D	89-39-05			18		V ₁	76	10		
11		1024 1242		R	270-19-52			88		D	183-44-29	11		
12			18,801 [⊙]					80			183-44-13	12		
13				D	91-56-40			01		V ₂	180-00-30	13		
14				R	268-02-45			1.05		R	03-44-53	14		
15											183-44-23	15	183-44-18	
16												16		
17												17		

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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. _____ PAGE 9 OF 15
 LINE/LOOP NO. 47 X3 TYPE SURVEY _____ CLIENT _____ DATE 16 DY 2 MO 79 YR
 SURVEYOR 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				
1										V ₁	18	1		
2		1242		D	88-00-05			0.4		D	176-09-18	2		
3		1071 TP RAVEN	4470 ⁴⁰	R	271-59-45			44			176-09-00	3		
4								47		V ₂	180-00-29	4		
5				D	90-21-05			70		R	356-09-25	5		
6				R	269-38-34			0.40			176-08-56	6	176-08-58	
7												7		
8												8		
9												9		
10		RAVEN		D	90-37-40					V ₁	23	10		
11		1242 793 ^{BAS} B1	886 ⁴⁰	R	269-22-05					D	190-13-48	11		
12											190-13-25	12		
13				D	91-56-34					V ₂	180-00-33	13		
14				R	268-03-25					R	10-14-03	14		
15											190-13-30	15	190-13-28	
16												16		
17												17		
















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 = SIDESHOT
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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. _____ PAGE 10 OF 15
 LINE/LOOP NO. 47-XS TYPE SURVEY _____ CLIENT HUSKY DATE 17 DY 2 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 DI		RIGHT TURNED HORIZONTAL ANGLE	
				SLOPE 					HORIZ 	INST				ROD
1											V.	000' 00 20	1	194 21 49
2		L-47-XS, 672	02		89 33 05	+8.0					L	194 22 09	2	
3			26		270 25 59								3	
4		L-47-XS, 618	64										4	COMMON POINT WITH VP 1628, L-615
5			40								L	250' 42 14	5	
6			0.12								R	70 42 21	6	
7		L-47XS, 594	26.40	12	89 41 33	-6.0					Ve	180 00 54	7	
8					270 11 39						R	14 22 28	8	194 21 39
9													9	
10													10	
11													11	
12		618	02		90 08 42	+6.0					V.	000 00 22	12	194 10 52
13			28		269 50 48						L	194 11 14	13	
14		594	85										14	
15			56		89 59 11	-6.0					Ve	180 00 38	15	
16		568	6.46		270 00 43						R	14 11 22	16	194 10 49
17			28.56	46									17	

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

HORIZONTAL AND VERTICAL SURVEY NOTES

DISTRICT AREA Howard Pass STATE/COUNTY ALASKA BOOK NO. _____ PAGE 11 OF 15
 PROJECT NO. 47-XS TYPE SURVEY _____ CLIENT HUSKY DATE 17 BY 2 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 DI		RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE 					HORIZ 	INST				
1												1		
2	Δ	594	05		89 57 58	+6.0					V	000 00 10	2	184 41 25
3	Δ		50		270 02 09						L	184 41 35	3	
4	\times	568	05										4	
5	\circ		54		88 48 10	-6.0					V	180 06 12	5	
6	\circ	522	A. 55		271 11 32						R	9 47 43	6	184 41 31
7			5054.55										7	
8													8	
9													9	
10	Δ	568	04		91 10 21	+6.0					V	000 00 15	10	180 03 54
11	Δ		45		268 49 29						L	180 04 09	11	
12	\times	522	50										12	
13	\circ		03		89 54 47	-6.0					V	180 00 31	13	
14	\circ	481	3.76		270 04 48						R	000 04 19	14	180 03 48
15			4503.76										15	
16													16	
17													17	

WORKED BY _____ CHECKED BY 1ST _____ 2ND _____

SYMBOLS Δ = BACKSIGHT \times = INSTRUMENT SET-UP SS = SIDESHOT \circ = FORESIGHT

VERTICAL AND VERTICAL SURVEY NOTES

51

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. _____ PAGE 12 OF 15
 LINE 17-X3 TYPE SURVEY _____ CLIENT HUBBY DATE 17 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		UR OR DI		RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE					HORIZ	INST				
1												1		
2		522	02		90 03 08	+6.0					V	000 00 06	2	175 15 40
3			23		269 55 47						L	175 15 46	3	
4		481	30										4	
5			07		90 20 12	-6.0					V ₂	180 00 26	5	
6		460	7.43		269 39 38						R	355 15 59	6	175 15 33
7			2307.43										7	
8													8	
9		481			89 37 16	+6.0					V ₁	000 00 03	9	165 53 22
10					270 22 06						L	165 53 25	10	
11		460											11	
12					89 29 43	-6.0					V ₂	180 00 10	12	
13		453	700	CHAINED	270 29 25						R	345 53 28	13	165 53 18
14					69								14	
15													15	
16													16	
17													17	

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. _____ PAGE 13 OF 15
 LINE/LOOP NO. 47-XS TYPE SURVEY _____ CLIENT HURRY DATE 18 DY 2 MO 1972 YR
 SURVEYOR J. ANDERSON/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		LR OR DR RIGHT TURNED HORIZONTAL ANGLE		LINE
				SLOPE 					HORIZ 	INST			
1												1	
2		460		90 24 37	6.0					V ₁	000 60 27	2	175 19 15
3				269 35 09						L	175 19 42	3	
4		453										4	
5				88 29 53	6.0					V ₂	180 00 40	5	
6		446	770'	CHAINED		271 29 23				R	355 19 55	6	355 19 15
7												7	
8												8	
9		453		91 27 34						V ₁	000 00 16	9	170 37 51
10				268 31 50						L	170 38 07	10	
11		446										11	
12				88 29 50						V ₂	180 00 25	12	
13		424	2420	CHAINED		271 36 02				R	350 38 21	13	170 37 56
14												14	
15												15	
16												16	
17												17	

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. _____ PAGE 14 OF 15
 LINE/LOOP NO. 47-XS TYPE SURVEY _____ CLIENT MUSEY DATE 18 BY 2 MO 79 YR
 SURVEYOR B. BENEDICT / 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	ELEVATION		L/R OR D/I		RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE 	HORIZ 				INST	ROD				
1												1		
2		446	01		71 34 26					V.	000' 00' 24"	2	170 34 53	
3			15		268 25 10					L'	170 35 17	3		
4		424	53									4		
5			39		88 39 54					V ₂	180 00 46	5		
6		410	98.2		271 20 10					R	350 35 27	6	350 34 41	
7			1539.82									7		
8												8		
9		424	02		71 16 50					V ₁	000 00 23	9	170 50 21	
10			26		268 42 22					L	170 50 44	10		
11		410	74									11		
12			50		88 29 45					V ₂	180 00 36	12		
13		385	078		271 30 17					R	350 50 51	13	170 50 15	
14			2750.78									14		
15												15		
16												16		
17												17		

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

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY ALASKA BOOK NO. _____ PAGE 15 OF 15
 LINE/LOOP NO. 47-X5 TYPE SURVEY _____ CLIENT MUSKY DATE 18 DY 2 MO 79 YR
 SURVEYOR B. BENDELST 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												1		
2	Δ	410	01		91 29 09	+6.0					V ₁	000 00 29	2	181 45 15
3	Δ		14		268 31 24						L	181 45 44	3	
4	X	385	42										4	
5	o		25		89 00 49	+10.0					V ₂	180 00 43	5	01 45 17
6	o	PIPE 372	5 11		270 59 25						R	01 46 00	6	PIPE: C.S.E. P.M. V.B. 300, L=47X
7			1425.11										7	
8													8	
9	Δ	385									V ₁	000 00 42	9	182 38 26
10	Δ										L	182 39 08	10	
11	X	PIPE 372											11	
12	o										V ₂	180 01 53	12	
13	o	N. END TAIL	5280	CHAINED							R	02 40 29	13	02 38 31
14													14	
15													15	
16													16	
17													17	

WORKED BY _____ CHECKED BY 1ST _____ 2ND _____
SYMBOLS Δ = BACKSIGHT ∇ = INSTRUMENT SET-UP SS = SIDESHOT o = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

DISTRICT Howard Pass STATE/COUNTY Alaska BOOK NO. _____ PAGE _____ OF _____
 LINE LOOP NO. 47-XS TYPE SURVEY _____ CLIENT MURKY DATE 14 DAY 2 MO 72 YR
 SURVEYOR W. HELANDER INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1184














LINE	 	STATION	VERTICAL						ELEVATION		L/R OR DI	HORIZONTAL		REMARKS
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD		RIGHT TURNED HORIZONTAL ANGLE	LINE	
				SLOPE										
1													1	
2		782			90 03 49	+6.0					V	000 00 15	2	
3					269 50 39						L	179 49 45	3	179 49 36
4		798											4	
5					90 02 31	-6.0					V	180 00 56	5	179 49 36
6		840			269 57 10						R	359 49 45	6	179 49 39
7													7	
8													8	
9													9	
10													10	
11		798			89 56 49	+6.0		166 02 45	000 00 15		V	000 00 10	11	166 02 56
12					210 03 04				166 03 00		L	166 03 06	12	
13		840											13	
14					90 26 12	-6.0		166 02 44	180 00 46		V	179 59 58	14	166 02 46
15		898			269 33 07				346 03 30		L	346 02 44	15	
16													16	
17													17	





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SYMBOLS = BACKSIGHT
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 = SIDESHOT
 = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARDS PASS STATE/COUNTY ALASKA BOOK NO. 1 PAGE 5A OF 21
 LINE/LOOP NO. 47 XS TYPE SURVEY _____ CLIENT HUSKY DATE 16 DY _____ MO _____ YR _____
 SURVEYOR B. BENEDICT INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1184

LINE	  	STATION	VERTICAL						HORIZONTAL		REMARKS		
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE
			SLOPE	HORIZ					INST	ROD			
1									1941.0		SEE PAGE 5 LINE 6	1	
2		726	1800	90 25 52	5	118 4	1958.6					2	
3				269 33 49	-	18 5						3	
4												4	
5		B.M. 79384	660	87 39 32	5	22 0	1981.5					5	
6				272 20 39	-	22	1983.0			D.A.S. SURVEY	(77E, -15) (1983-04)	6	
7												7	
8												8	
9		B.M. 79384	660	87 13 33	10	-22 0	1961 0					9	
10				272 46 90	-	22 0						10	
11												11	
12		726	1800	90 16 16	10	-18 5	1942.5					12	
13				269 43 29	-	18 5						13	
14												14	
15												15	
16												16	
17												17	

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