

VERTICAL AND HORIZONTAL SURVEY NOTES

GSI AREA Howland Pass STATE/COUNTY AK BOOK NO. 2 PAGE 306 OF
 LINE/LOOP NO. 636 TYPE SURVEY CLIENT DATE 8 DY 4 MO 79 YR
 SURVEYOR L. LYMAN INSTRUMENT DESC/SERIAL NO. WILD T CREW NO. 1186

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			L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE
			SLOPE	HORIZ				INST	ROD				
1	⊙	BM 77415			TAKE	off			1733.7			1	
2												2	
3												3	
4												4	
5	Δ		1155		89-00	6.9	- 13.3	1920.6		SE		5	
6	CK		✓		271-20	13.7	- 13.2					6	
7		VP. 1040	0		-	5.0		1715.6		-		7	PTY. 1184
8	⊙	VP. 1032	0:00		-	9.1	- 9.1	1911.5		N		8	PTY. 1184
9												9	
10	Δ		740		88-30	7.7	- 16.9	1894.6		S		10	
11		T.S. # 48	0		-	5.2		1889.4		-		11	PTY. 1186
12	⊙	T.S. # 36	1320		-	5.5	- 5.5	1889.1		N		12	
13	Δ		1260		87-40	7.7	- 43.6	1845.5		S		13	
14		± LH / 636	0		-	6.2		1839.3		-		14	PTY. 1184
15												15	ROW - PIPE
16		T.S. # 12	1370		92-00	9.5	- 57.3	1728.2		N		16	
17												17	

WORKED BY L. Q. L. CHECKED BY 1ST 2ND
 SYMBOLS Δ = BACKSIGHT ⊠ = INSTRUMENT SET-UP SS = SIDESHOT ⊙ = FORESIGHT

VERTICAL AND HORIZONTAL SURVEY NOTES

GSI AREA _____ STATE/COUNTY AK. BOOK NO. 2 PAGE 321 OF _____
 LINE/LOOP NO. 636 TYPE SURVEY _____ CLIENT _____ DATE 11 DY 4 MO 79 YR
 SURVEYOR L. LYMAN INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1186

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		L/R OR DI		RIGHT TURNED HORIZONTAL ANGLE
			SLOPE	HORIZ					INST	ROD			
1	⊙	862							1730.8			1	
2	Δ		1480		87-50	13.2	-42.7	1688.1				2	
3		861	600		80-00	4.4	+16.5		1704.6	S		3	LAST SP. NORTH.
4												4	
5												5	
6		T.S. # 6	0			5.2			1682.9			6	
7						3						7	
8												8	
9												9	
10		T.S. # 12	660		93-42-40	3.8	-46.4		1641.7			10	
11												11	
12		T.S. # 24	1980		93-48-30	3.8	-135.0		1553.1			12	
13												13	
14		T.S. # 36	3300		93-02-40	3.8	-182.6		1505.5			14	
15												15	
16												16	
17												17	









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HORIZONTAL AND VERTICAL SURVEY NOTES

3

GSI AREA _____ STATE/COUNTY AK BOOK NO. 2 PAGE 320 OF _____
 LINE/LOOP NO. 636 TYPE SURVEY _____ CLIENT _____ DATE 11 DY 4 MO 79 YR
 SURVEYOR L. LYMAN INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1186

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									1740.4			
2			1265	89-40	9.1	+ 1.7	1742.1					
3		870	880	89-40	2.6	+ 2.5		1744.6	S.		TP.	
4		869	0	-	5.2			1736.9	-			
5		868	880	91-00	9.8	- 25.2		1716.9	N.			
6		867	1760	91-30	12.2	- 59.3		1682.8				
7			1760	89-00	3.0	- 27.7	1655.1					
8		866	880	89-30	7.3	+ 0.4		1655.5	S.			
9		865	0	-	5.2			1649.9	-			
10		864	880	89-00	4.5	+ 10.9		1666.0	N.			
11		863	1760	88-20	7.0	+ 44.2		1699.3				
12		TBM. 1703	2000	88-10	10.5	+ 53.5		1708.6	N.W.		IRON-PIPE.	
13								1712.2			PT. 1195/77	
14							VERTICAL TIE.	- 3.6				
15												
16		862	2640	88-10	0.7	+ 75.7		1730.8	N.			
17												

WORKED BY L.G.L. CHECKED BY 1ST _____ 2ND _____

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

VERTICAL AND HORIZONTAL SURVEY NOTES

4

GSI AREA _____ STATE/COUNTY AK BOOK NO. 2 PAGE 319 OF _____
 LINE/LOOP NO. 636 TYPE SURVEY _____ CLIENT _____ DATE 11 DY 4 MO 79 YR
 SURVEYOR L. LYMAN INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1186

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						ELEVATION		L/R OR D/I	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD				
			SLOPE	HORIZ										
1	⊙	BM. 79433.								1704.8			1	
2													2	
3	Δ		500		88-20	7.1	-	7.4	1697.4		S.		3	
4		879.	0		-	5.2			1672.2		-		4	
5		878.	880		92-00	12.3	-	43.0	1654.4		N.		5	
6		877.	1760		91-30	7.3	-	53.9	1643.5				6	
7	⊙	876.	2640		91-10	7.7	-	61.4	1636.0				7	
8	Δ		2640		90-40	13.3	+	44.0	1620.0				8	
9		875.	1760		91-00	5.1	-	35.8	1644.2				9	
10		874.	880		91-20	10.9	-	31.4	1648.6		S.		10	
11		873.	0		-	5.2			1674.8		-		11	
12		872.	880		88-20	6.6	+	19.0	1699.0		N.		12	
13		871.	1760		88-10	5.7	+	50.6	1730.6				13	
14	⊙		2255		88-10	11.7	+	60.4	1740.4				14	
15													15	
16													16	
17													17	

WORKED BY L.G.L. CHECKED BY 1ST _____ 2ND _____

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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA _____ STATE/COUNTY AK BOOK NO. 2 PAGE 318 OF _____
 LINE/LOOP NO. 636 TYPE SURVEY _____ CLIENT _____ DATE 11 DY 7 MO 79 YR
 SURVEYOR L. LYMAN INSTRUMENT DESC/SERIAL NO. WILD T2 CREW NO. 1186

LINE	 	STATION	VERTICAL						ELEVATION		L/R OR D/I	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									1440.9				1	
2		005.	2640	00-50	5.9	+ 47.8			1488.7		N.		2	
3		004.	3520 3135	00-11-52	14.0	+ 84.5		+ 84.2	1525.5				3	
4			✓	271-43-52	10.0	+ 84.7							4	
5			3025	72-56-13	14.0	+ 168.8			1694.3				5	
6			✓	266-59-20	10.0	+ 169.7							6	
7		004	2640	93-10	5.7	- 151.3			1543.0				7	
8		003.	1760	93-00	6.5	- 98.5			1595.8				8	
9		002.	000	93-00	7.9	- 53.9			1640.4		S.		9	
10		001.	0	-	5.2				1689.1		-		10	
11		000	000	09-00	1.5	+ 13.9			1708.2		N.		11	
12		BM. 79433.	1260	09-00	0.5	+ 13.5			1707.9				12	
13									1704.8				13	
14								VERTICAL	+ 3.0				14	
15								TIE.					15	
16													16	
17													17	

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VERTICAL AND HORIZONTAL SURVEY NOTES

6

GSI AREA _____ STATE/COUNTY AK BOOK NO. 2 PAGE 317 OF _____
 LINE/LOOP NO. 636 TYPE SURVEY _____ CLIENT _____ DATE 11 BY 4 MO 79 YR
 SURVEYOR C. LYMAN INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1186

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		898.										1454.6			1	
2			1760		29-10	6.7	-	18.9	1435.7						2	
3		897.	880		+1/2	2.5	+4.4	+1.9				1437.6		S.		3
4		896.	0		-	5.2						1430.5		-		4
5		895.	880		-	4.0						1431.7		N.		5
6		894.	1760		+1/2	4.2	+8.8	+4.6				1440.3				6
7		893.	2640		29-30	12.0		+11.0				1446.7				7
8			2140		29-30	8.0		-14.2	1432.5							8
9		892.	1760		-	2.0						1429.7				9
10		891.	880		91-00	10.5		-25.9				1406.6		S.		10
11		890.	0		-	5.2						1427.3		-		11
12			605		29-00	12.0		-1.4				1431.1		N.		12
13			1155		-	9.0		+9.8	1440.9							13
14		889.	880		91-10	12.0		-30.7				1410.2		S.		14
15		888.	0		-	5.2						1435.7		-		15
16		887.	880		90-30	13.0		-27.7				1413.2		N.		16
17		886.	1760		+1/2	6.0	+8.8	+2.0				1442.9				17

+ CRK. 275'
+ 7' NORTH
800ft.

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VERTICAL AND HORIZONTAL SURVEY NOTES

GSI AREA Howard Pass. STATE/COUNTY AK BOOK NO. 2 PAGE 316 OF
 LINE/LOOP NO. 636 TYPE SURVEY CLIENT DATE 10 BY 4 MO 77 YR
 SURVEYOR L. LYMAN INSTRUMENT DESC/SERIAL NO. CREW NO. 1186

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	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	⊙											1		
2	Δ		1540			03-00	4.6	-	181.7	1850.7		2		
3	AK		✓			277-10	7.2	-	181.4	1791.6		3		
4		900	1160			04-20	5.0	+	109.0	1778.1		4		
5		907	275.			07-00	4.5	+	9.9	1679.0	S.	5		
6			0			-	5.2			1663.9	-	6		
7		906	605.			93-00	8.8	-	40.4	1628.7	N.	7		
8		905.	1405.			+112	3.5	+	7.4	1673.0		8		
9	⊙		1980			09-10	14.2	+	14.6	1683.7		9		
10	Δ		3025			05-10	13.8	-	240.2	1443.5		10		
11		904	2640			05-10	7.3	+	214.3	1657.0		11		
12		903.	1760			06-50	4.5	+	92.6	1536.1		12		
13		902	000			00-20	4.0	+	21.6	1465.1	S.	13		
14		901	0			-	5.2			1438.3	-	14		
15		900	000			90-30	5.8	-	13.5	1430.0	N.	15		
16		899.	1760			90-30	10.0	-	25.4	1418.1		16		
17	⊙	898	2140			09-30	11.9	+	11.1	1454.6		17		










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VERTICAL SURVEY NOTES

8

GSI AREA _____ STATE/COUNTY AK BOOK NO. 2 PAGE 315 OF _____
 LINE/LOOP NO. 636 TYPE SURVEY _____ CLIENT _____ DATE 10 BY 4 MO 79 YR
 SURVEYOR L. LYMAN INSTRUMENT DESC/SERIAL NO. WILD T2 CREW NO. 1186

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									1532.9			1			
2		913.	1760			85-10	10.7	+ 137.1		1670.0	N.	2			
3		912.	2640			83-00	2.4	+ 315.9	315.9	1848.7		3			
4						277-10	11.1	+ 315.7				4			
5			275			74-00	72.5	+ 31.6		1880.3	S.	5			
6			0			-	5.2			1875.1	-	6			
7		TP.	180			89-30	1.5	+ 0.1		1880.4	N.	7			
8			425			87-20	7.4	- 12.4		1868.0	S.	8			
9		911	0			-	5.2			1862.8	-	9			
10		910	500			95-00	9.0	- 85.4		1782.4	N.	10			
11		909.	1760			91-00	11.1	- 41.8		1826.2		11			
12			2240			90-10	10.8	- 17.3		1850.7		12			
13												13			
14												14			
15												15			
16												16			
17												17			

WORKED BY L.J.L. CHECKED BY 1ST _____ 2ND _____

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VERTICAL SURVEY NOTES

GSI AREA _____ STATE/COUNTY AK BOOK NO. 2 PAGE 314 OF _____
 LINE/LOOP NO. 636 TYPE SURVEY _____ CLIENT _____ DATE 10 BY 4 MO 79 YR
 SURVEYOR L. LITMAN INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1186

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			L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE
				SLOPE	HORIZ					INST	ROD			
1	⊙	924								1451.2			1	
2	Δ		2255		89-50	8.6	+ 2.0		1453.2				2	
3		923	1375		+ 112	8.0	+ 6.7	- 1.1		1452.1			3	
4		922	495		-	0.1				1453.1		S.	4	
5			0		-	5.2				1448.0		-	5	
6		921	385		-	14.4				1438.8		N.	6	
7		920	1265		91-20	10.2	-	39.6		1413.6			7	
8		919	2145		-	14.5				1438.7			8	
9	⊙	918	3025		-	9.7	-	9.7		1443.5			9	
10	Δ		2640		91-40	12.7	+ 89.5		+ 89.4	1532.9			10	
11	Δ		✓		268-21-50	14.0	+ 89.3						11	
12		917	1760		92-00	9.0	- 70.4			1462.5			12	
13		916	800		92-00	10.3	- 41.0			1491.9		S.	13	
14		915	0		-	5.2				1527.7		-	14	
15		914	800		86-30	4.4	+ 49.2			1582.1		N.	15	
16													16	
17													17	

WORKED BY L.L. CHECKED BY 1ST _____ 2ND _____

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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA _____ STATE/COUNTY AK. BOOK NO. 2 PAGE 313 OF _____
 LINE/LOOP NO. 636 TYPE SURVEY _____ CLIENT _____ DATE 10 BY 4 MO 79 YR
 SURVEYOR L. L. MAN. INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1186

10

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	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	⊙	935.										1569.9			1	
2															2	
3	Δ		1760		88° - 00'	5.5	-	55.9		1514.0					3	
4		934.	880		88° - 05'	1.7	+	24.0		1538.0	S.				4	
5		933	0		-	5.2				1508.8	-				5	
6		932	880		91 - 00'	10.3	-	25.7		1488.3	N.				6	
7		931.	1760		91 - 05'	7.4	-	38.1		1475.9					7	
8	⊙	930	2640		90 - 50	10.0	-	48.4		1465.6					8	
9	Δ		2640		88° - 40' - 02"	14.0	-	41.3		1424.3					9	
10		929	1760		89 - 05'	11.7	+	19.0		1443.3					10	
11		928	880		+ 1/2	3.7	+	4.4		1425.0	S.				11	
12		927	0		-	5.2				1419.1	-				12	
13		ANAK CRK	235		-	5.6				1418.7	N.				13	ANAK CRK.
14															14	
15		926	880		89 - 20'	6.7	+	3.5		1427.8					15	
16		925.	1760		89 - 20'	7.0	+	13.5		1437.0					16	
17	⊙	924.	2640		89 - 10'	11.5	+	26.9		1451.2					17	

WORKED BY L. J. L. CHECKED BY 1ST _____ 2ND _____

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VERTICAL SURVEY NOTES

GSI AREA _____ STATE/COUNTY AK BOOK NO. 2 PAGE 312 OF _____
 LINE/LOOP NO. 234 TYPE SURVEY _____ CLIENT _____ DATE 9 DY 4 MO 77 YR
 SURVEYOR L. LYMAN INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1181

11

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	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	⊙	942								1871.1			1	
2	Δ		1480		29-30	10.5	-	2.4	1868.7				2	
3		941	105		-	9.1				1859.6	S		3	
4			0		-	5.2				1863.5	-		4	
5		940	275		-	7.9				1860.9	N		5	
6	⊙		770		91-00	8.6	-	22.0		1846.7			6	
7	Δ		1280		86-00	8.8	-	80.3	1766.4				7	
8		939	880		86-00	7.7	+	53.5		1819.9	S		8	
9		938	0		-	5.2				1761.2	-		9	
10		937	880		95-00	5.5	-	81.9		1684.5	N		10	
11		936	1760		74-40	10.8	-	153.5		1612.9			11	
12	⊙	935	2640		94-00	12.9	-	176.6		1569.9			12	
13	Δ		✓		266-01-47	14.0	-	196.4	176.5				13	
14													14	
15													15	
16													16	
17													17	

WORKED BY L. J. L. CHECKED BY 1ST _____ 2ND _____

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

VERTICAL AND HORIZONTAL SURVEY NOTES

12

GSI AREA _____ STATE/COUNTY AK. BOOK NO. 2 PAGE 311 OF _____
 LINE/LOOP NO. 636. TYPE SURVEY _____ CLIENT _____ DATE 9 DY 4 MO 79 YR
 SURVEYOR L. LYMAN. INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1186.

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			LR OR DR	RIGHT TURNED HORIZONTAL ANGLE
				SLOPE	HORIZ					INST	ROD			
1	⊙	948.								1895.3			1	
2	Δ		000		00-20	11.6	-	14.0	1891.3		S.		2	
3		947.	.		-	5.2				1876.1	-		3	
4		946.	000		72-20	12.8	-	48.6		1832.7	N.		4	
5		945.	1760		92-20	7.8	-	79.4		1801.9			5	
6	⊙		2140		92-10	14.8	-	95.6		1785.7			6	
7	Δ		1150		-	3.7	+	3.7	1789.4				7	
8		944.	670		94-00	5.5	-	52.1		1737.3			8	
9		RAVINE	370		100-00	12.7	-	121.4		1668.0	S.		9	DEEP TRENCH
10			0		-	5.2				1784.2	-		10	
11		943.	190		100-00	12.0	-	44.5		1744.9	N.		11	
12		RAVINE	420		99-00	11.6	-	76.5		1712.9			12	RAVINE
13	⊙	942.	1030		85-00	7.7	+	81.7		1871.1			13	
14													14	
15													15	
16													16	
17													17	

WORKED BY L.G.L. CHECKED BY 1ST _____ 2ND _____

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

VERTICAL SURVEY NOTES

GSI AREA _____ STATE/COUNTY AK BOOK NO. 2 PAGE 310 OF 13
 LINE/LOOP NO. 636 TYPE SURVEY _____ CLIENT _____ DATE 7 DY 4 MO 79 YR
 SURVEYOR L. LYMAN INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1186

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	Δ		1360		28-05	12.0	-	35.4	1538.0			2		
3		955.	280		-	4.1			1533.4	S		3		
4		954	0		-	5.2			1532.2	-	X	4	SWAYBACK CREEK. 165' S.	
5		953.	280		28-00	5.0		+ 25.7	1563.7	N.		5		
6		952.	1760		26-40	9.0		+ 93.2	1631.2			6		
7		951.	2640		25-40	9.0		+ 189.9	1727.9			7		
8	⊙		2915		25-30	5.4		+ 222.6	1760.6			8		
9	Δ		✓		274-40	13.8		+ 222.6				9		
10	Δ		605		71-40	11.8		+ 29.9	1790.0	S		10		
11		950.	0		-	5.2			1784.8	-		11		
12		949.	280		29-20	6.4		+ 3.8	1793.8	N		12		
13	⊙	948.	1760		26-20	7.0		+ 105.3	1895.3			13		
14												14		
15												15		
16												16		
17												17		

WORKED BY L. J. L. CHECKED BY 1ST _____ 2ND _____
 SYMBOLS Δ = BACKSIGHT ⊠ = INSTRUMENT SET-UP SS = SIDESHOT ⊙ = FORESIGHT

VERTICAL SURVEY NOTES

GSI AREA _____ STATE/COUNTY AK BOOK NO. 2 PAGE 309 OF 14
 LINE/LOOP NO. 636 TYPE SURVEY _____ CLIENT _____ DATE 9 BY 4 MO 79 YR
 SURVEYOR L. LYMAN INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1186

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		LR OR DR		RIGHT TURNED HORIZONTAL ANGLE
			SLOPE	HORIZ					INST	ROD			
1	⊙	BM. 79431.							1627.6			1	
2												2	
3												3	
4	Δ		1336	80-50	7.2	- 20.0	1647.6					4	
5		961	880	80-50	6.8	+ 11.1	1658.7				S.	5	
6		960	0	-	5.2		1642.4				-	6	
7		959.	880	91-30	10.4	- 33.4	1614.2				N.	7	
8	⊙	958	1760	91-40	11.4	- 62.6	1585.0					8	
9	Δ	X	1480	-	4.1	+ 4.1	1589.1					9	
10		957	605	92-00	11.3	- 32.2	1556.7				S.	10	
11			0	-	5.2		1583.9				-	11	
12		956	275	-	7.0		1582.1				N.	12	
13	⊙		660	90-30	9.9	- 15.7	1573.4					13	
14												14	
15												15	
16												16	
17												17	

WORKED BY L.J.L. CHECKED BY 1ST _____ 2ND _____

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

VERTICAL SURVEY NOTES

GSI AREA _____ STATE/COUNTY AK BOOK NO. 2 PAGE 308 OF 15
 LINE/LOOP NO. 634 TYPE SURVEY _____ CLIENT _____ DATE 8 BY 4 MO 79 YR
 SURVEYOR L. LYMAN INSTRUMENT DESC/SERIAL NO. WILD T2 CREW NO. 1186

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									1640.9			1		
2		967	1760		29-40	7.0	+ 3.2		1644.1		N.	2		
3	⊙	966	2640		29-30	14.7	+ 8.3		1649.1			3		
4	Δ		✓		270-20	7.3	+ 8.1					4		
5	Δ		1760		90-30	10.1	+ 25.5		1674.6			5		
6		965	800		-	12.7			1661.9		S.	6		
7		964	800		-	5.2			1669.4		-	7		
8		963	800		-	6.5			1668.1		N.	8		
9		962	1760		-	8.5			1666.1			9		
10	⊙	BM. 79 431	2184		-	8.7	- 8.7		1665.8			10		
11	Δ		✓		270-00	8.9	- 8.9					11		
12									1667.6			12		
13									- 1.0			13		
14												14		
15												15		
16												16		
17												17		

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

VERTICAL AND HORIZONTAL SURVEY NOTES

GSI AREA _____ STATE/COUNTY AK BOOK NO. 2 PAGE 307 OF 16
 LINE/LOOP NO. 636 TYPE SURVEY _____ CLIENT _____ DATE 8 DY 4 MO 79 YR
 SURVEYOR L. LYMAN INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1186

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊕	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	⊕	SP. 976	2640		92-00	11.5	-	103.6	53.4	1742.1	N.	2	OLD VP. 976		
3	CK		✓		268-00	11.2	-	103.3				3	PT. 1184.		
4	Δ		1760		89-20	3.0	-	17.5	1724.6			4			
5		975	880		89-20	12.6	-	2.4		1722.2	S.	5			
6		974	0		-	5.2				1717.4	-	6			
7		973	880		90-40	12.7	-	22.9		1701.7	N.	7			
8	⊕	972	1760		91-00	13.7	-	44.4	54.5	1680.1		8			
9	CK		✓		269-00	13.9	-	44.6				9			
10	Δ		2640		89-00	6.8	-	39.3	39.2	1640.9		10			
11	CK		✓		271-00	7.0	-	39.1				11			
12		971	1760		89-20	2.8	+	17.7		1659.6		12			
13		970	880		+ 1/2	3.6	+	4.4	+0.8	1641.7	S.	13			
14		969	0		-	5.2				1635.7	-	14			
15		968	880		+ 1/2	3.5	+	4.4	+0.9	1641.8	N.	15			
16												16			
17												17			

WORKED BY L.J.L. CHECKED BY 1ST _____ 2ND _____
 SYMBOLS Δ = BACKSIGHT ⊕ = INSTRUMENT SET-UP SS = SIDESHOT ⊕ = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

17

GSI AREA Hemlock Pass STATE/COUNTY Alaska BOOK NO. _____ PAGE 1 OF _____
 LINE/LOOP NO. 636 - Control TYPE SURVEY _____ CLIENT _____ DATE 4 DY 4 MO 79 YR
 SURVEYOR Jensen 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												2		
3												3		
4		B.M. 79415	9163.21		D 91 21 00	+6.0				V ₁	000 00 00	4	191 12 22	
5					R 268 38 24	+6.0				L	191 12 22	5		
6		TRI. STA. MEDEA	3030.7						03 30			6		
7					D 85 35 06				03	V ₂	180 00 00	7		
8		1157			R 270 24 10	+6.0			30 0.7	R	11 12 13	8	191 12 13	
9									3030.7			9		
10			9163.21									10		
11		79415	3030.7		D 90-21-33	6.0				V ₁	00	11		
12					R 268-38-13	✓				D	191-02-56	12		
13		Medea	3030.7								191-02-56	13		
14		1157			D 89-35-40	6.0				V ₂	180-00-12	14		
15					R 270-24-05	✓				R	11 02-54	15		
16											191-02-42	16	191-02-47	
17												17		

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

HORIZONTAL AND VERTICAL SURVEY NOTES

18

GSI AREA Howard Pass STATE/COUNTY Alaska BOOK NO. _____ PAGE 2 OF _____
 LINE/LOOP NO. 636 TYPE SURVEY _____ CLIENT _____ DATE 4 DY 4 MO 79 YR
 SURVEYOR Jensen INSTRUMENT DESC/SERIAL NO. Whiteout CREW NO. _____

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					
				SLOPE											HORIZ
1														1	
2														2	
3														3	
4		Tri-sta. Medea	9163.21 ⊕	D	90-40-46	6.0				V ₁	0-59-58		4		
5				R	269-18-46	✓				D	166-18-59		5		
6		Bas 79415	4145.1 ⊕			5.6			04		166-18-57		6		
7		1010		D	88-38-46	6.0			41	V ₂	180-00-08		7		
8				R	271-20-43	✓			14	R	346-19-16		8		
9									5.1		166-19-02		9	166-19-00	
10									4145.1				10		
11		Bas 79415	4145.1 ⊕	D	89-19-13	6.0				V ₁	-00		11		
12				R	270-40-30	✓				D	177-58-40		12		
13		1010	1100 ⊕			5.7					177-58-40		13		
14		Int. 1000		D	92-16-41	6.0				V ₂	186-00-04		14	Int 636 ~ 611	
15				R	267-42-56	✓				R	357-59-00		15	1000 ~ 2603	
16											357-58-56		16	177-58-48	
17	SS	Upline 636	16170 ⊕							V ₁	04		17		

D 12-15-40

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

HORIZONTAL AND VERTICAL SURVEY NOTES

19

GSI AREA Howard Pass STATE/COUNTY Alaska BOOK NO. _____ PAGE 3 OF _____
 LINE/LOOP NO. 636 TYPE SURVEY _____ CLIENT _____ DATE 4 DY 4 MO 79 YR
 SURVEYOR Jensen INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1184

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ○	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													2	
3													3	
4	Δ	1010	1100.0		D 87-54-55	6.0				V ₁	00		4	
5					R 272-24-25	✓				D	179-59-31		5	
6	⊗	1000	2640			5.6					179-59-31		6	
7	○	976			D 92-08-16	4.8				V ₂	180-00-05		7	EOL ~ First VP
8					R 267-50-49	✓				R	359-59-47		8	
9											179-59-42		9	179-59-36
10	Δ	1010				4.0				V ₁	00		10	
11										D	93-14-14		11	Towards 2693 ~ 611
12	⊗	1000	4070			5.7				V	00		12	Int-636 ~ 611
13	SS					4.0				D	93-18-25		13	2640 Ln 611
14		2640											14	
15										V ₂	180-00-02		15	
16										R	273-18-25		16	
17													17	

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WORKED BY _____ CHECKED BY 1ST _____ 2ND _____

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

HORIZONTAL AND VERTICAL SURVEY NOTES

20

GSI AREA Howard Pass STATE/COUNTY Alaska BOOK NO. _____ PAGE 4 OF _____
 LINE/LOOP NO. 636 TYPE SURVEY _____ CLIENT _____ DATE 4 DY 4 MO 79 YR
 SURVEYOR Jensen 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	
				SLOPE					HORIZ	INST				ROD
1												1		
2													2	
3													3	
4													4	
5		Medea	3030.7		D 90-22-54	6.0					V ₁	00	5	Take off Medea to South
6					R 269-36-33	✓					D	172-53-36	6	
7		1157	11660.0			5.7						172-53-36	7	
8		1263	11642.53		D 90-43-46	6.0					V ₂	180-00-02	8	
9					R 269-15-40	✓					R	252-53-35	9	
10												172-53-34	10	172-53-35 OK
11		1157	11660.0		89-15-34	6.0					V ₁	35.00.00	11	AZ Stake 35-00-00
12			11642.53		270-44-35	✓					D	180-00-16	12	
13		1263	3190.0			6.0						180-00-16	13	
14		1292			90-45-00	(✓)					V ₂	215-00-05	14	
15					269-14-33						R	00-00-22	15	
16												180-00-17	16	180-00-17
17													17	

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

HORIZONTAL AND VERTICAL SURVEY NOTES

21

GSI AREA Howard Pass STATE/COUNTY Alaska BOOK NO. _____ PAGE 5 OF _____
 LINE/LOOP NO. 636 TYPE SURVEY _____ CLIENT _____ DATE 5 DY 4 MO 79 YR
 SURVEYOR Jensen INSTRUMENT DESC/SERIAL NO. _____ CREW NO. _____

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													
2													
3	△	1263	3190.0 ⊙	D	89-15-13	6.0		15		V ₁	00		
4				R	270-44-22	✓		53		D	180-00-56		
5	∩	1292						55			180-00-56		
6	○	1432	1540.0 ⊙ 15359.9 ⊙	D	89-57-04	6.0		59		V ₂	180-00-19	SS 179-28-05 14200	
7				R	270-08-22	✓		9.9		R	300-01-01		
8								15359.9			180-00-42	180-00-49	
9	△	1292	15359.9 ⊙										
10	↓	↓	↓	D	90-10-05	6.0				V ₁	00		
11				R	269-49-15	✓				D	07-01-48		
12	∩	1432	1115.0			5.8					07-01-48		
13	○	BAS 78249		D	90-21-25	6.0				V ₂	180-00-10		
14				R	269-38-00	✓				R	187-01-46		
15											07-01-36	07-01-42	
16													
17													

F 12.15 Loop

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SYMBOLS

△ = BACKSIGHT

∩ = INSTRUMENT SET-UP

SS = SIDESHOT

○ = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

22

GSI AREA Howard Pass STATE/COUNTY Alaska BOOK NO. _____ PAGE 6 OF _____
 LINE/LOOP NO. 636 TYPE SURVEY _____ CLIENT _____ DATE 5 DY 4 MO 79 YR
 SURVEYOR Jensen INSTRUMENT DESC/SERIAL NO. _____ CREW NO. 1184

LINE	 SS 	STATION	VERTICAL						ELEVATION		LR OR RI	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														
3		BAS 78249	1115.0		D		6.0				V ₁	60	3	Take off Bas 78249
4		✓			R		✓				D	352-58-05	4	
5		1432	15359.9				5.8					352-58-05	5	
6		1292			D		6.0				V ₂	179-59-51	6	1
7		✓			R		✓				R	172-58-06	7	
8												352-57-57	8	352-58-01
9		1											9	
10		1292			D		6.0				V ₁	- 02	10	
11					R		✓				D	193-53-16	11	Az 30.00.00
12		1432	17950.0				5.8					193-53-14	12	
13		1595	17923.0		D	88-20-38	6.0				V ₂	179-59-51	13	
14					R	271-39-06	✓				R	13-53-14	14	
15												193-53-23	15	193-53-18
16													16	
17													17	

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

HORIZONTAL AND VERTICAL SURVEY NOTES

23

GSI AREA Howard Pass STATE/COUNTY Alaska BOOK NO. _____ PAGE 7 OF _____
 LINE/LOOP NO. 636 TYPE SURVEY _____ CLIENT _____ DATE 5 DY 4 MO 79 YR
 SURVEYOR Jensen INSTRUMENT DESC/SERIAL NO. _____ CREW NO. _____

LINE	 	STATION	VERTICAL						ELEVATION		HORIZONTAL		REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD	LR OR DI	RIGHT TURNED HORIZONTAL ANGLE		LINE
				SLOPE										
1												1		
2												2		
3		1432	14930.00 17923.00	D	91-40-43	6.0			15		V ₁	00	3	
4				R	268-18-38	✓			54		D	329-45-25	4	
5		1595	1540.5			5.8			40			329-45-25	5	
6		TP-DJ		D	92-22-31	6.0			0.5		V ₂	179-59-57	6	
7				R	267-36-48	✓			1546.5		R	149-45-15	7	
8												329-45-12	8	329-45-19
9		1595	1540.5	D	87-35-35	6.0			0.8		V ₁	00	9	
10				R	272-23-45	✓			37		D	159-32-34	10	
11		TP-DJ				5.8			78			159-32-34	11	
12		BAS 79429	3780.7	D	93-37-28	6.0			80		0.7 V ₂	179-59-55	12	
13				R	266-22-05	✓			3780.7		R	339-32-24	13	
14												159-32-29	14	159-32-31
15													15	
16													16	
17													17	

WORKED BY _____ CHECKED BY 1ST _____ 2ND _____

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