

## HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA \_\_\_\_\_ STATE/COUNTY PA BOOK NO. \_\_\_\_\_ PAGE 6A OF 19  
 LINE/LOOP NO. 760 TYPE SURVEY \_\_\_\_\_ CLIENT Hosky DATE \_\_\_\_ DY \_\_\_\_ MO \_\_\_\_ YR  
 SURVEYOR L. LYMAN INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. \_\_\_\_\_

LINE	  	STATION	VERTICAL						ELEVATION		L/R OR DI	HORIZONTAL	LINE	REMARKS
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD				
			SLOPE	HORIZ										
1												1		
2		BH-79412										2		
3			165		19.1		19.0	1813.5				3		
4					271-00	11.9						4	→ continued on	
5												5	page 7, line 2	
6												6		
7												7		
8												8		
9												9		
10												10		
11												11		
12												12		
13												13		
14												14		
15												15		
16												16		
17												17		

TI-23471B

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

SYMBOLS

= BACKSIGHT

= INSTRUMENT SET-UP

= SIDESHOT

= FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY AK BOOK NO. \_\_\_\_\_ PAGE 1 OF 19  
 LINE/LOOP NO. 760 TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE 12 DY 2 MO 80 YR  
 SURVEYOR L. LYMAN INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1186

LINE	<input type="checkbox"/> $\Delta$ <input type="checkbox"/> SS <input type="checkbox"/> $\odot$	STATION	VERTICAL							HORIZONTAL		REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION		L/R OR D/I		RIGHT TURNED HORIZONTAL ANGLE
				SLOPE					HORIZ	INST			
1	$\odot$	SP. 757										1	IRON - PIPE
2		LINE. 49.										2	OLD - PIPE
3		PT. 1184										3	
4												4	
5		SP. 100										5	
6		LN. 760										6	
7		COMMON SP.										7	
8											(52)	8	(T.S. 1 1650 INTERPOLATED)
9												9	
10	$\Delta$	95	495		94-05	73.6	+48.0	1649.0				10	
11		TS # 5650	0		-	3.2		1643.8				11	
12		TS # 1200	770		89-05	8.2	+5.2	1654.2				12	
13	$\odot$	TS # 1600	1430		88-50	6.5	+22.6	1671.6				13	
14	$\Delta$	0	0		96-05	5.3	+5.3	1676.9				14	
15		TS # 2400	660		99-45-50	4.2	-114.5	1562.4			1561.0	15	1561.0
16		TS # 3600	1980		95-02-30	4.2	-137.5	1499.4			1499.2	16	1499.2
17	$\odot$	TS # 4200	3300		93-32-30	4.2	-207.7	1469.2				17	

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY AK BOOK NO. \_\_\_\_\_ PAGE 2 OF 19  
 LINE/LOOP NO. 760 TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE 12 DY 2 MO 80 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 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	○	SP: 100										1	IRON-PIPE	
2												2		
3												3		
4	Δ		1595		91-30	72.7	+54.4	1655.2				4		
5	CK		✓		268-20	77.6	+54.0					5		
6		101	1155		267-00	73.7	-74.1	1581.1				6		
7		102	715		265-00	73.8	-67.9	1587.3				7		
8		103	275		267-00	73.2	-27.6	1627.6				8		
9			0		-	73.3		1649.9				9		
10	○	BM 20100	90		93-00	70.1	-14.8	1640.8				10	T.O ELV.	
11	CK		✓		269-30	73.9	-14.7					11		
12								1640.5				12		
13								-0.1				13		
14												14		
15												15		
16												16		
17												17		

WORKED BY L. L. L. CHECKED BY 1ST \_\_\_\_\_ 2ND \_\_\_\_\_  
 SYMBOLS Δ = BACKSIGHT     = INSTRUMENT SET-UP    SS = SIDESHOT    ○ = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA \_\_\_\_\_ STATE/COUNTY AK BOOK NO. \_\_\_\_\_ PAGE 3 OF 19  
 LINE/LOOP NO. 710 TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE 12 DY 2 MO 8 YR  
 SURVEYOR L. LYMAN INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1186

LINE	  	STATION	VERTICAL							HORIZONTAL		REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION		RIGHT TURNED HORIZONTAL ANGLE		LINE
				SLOPE 					HORIZ.	INST			
1		BM. 80100							1640.5		1		
2											2		
3			1400		89-40	7.0	- 6.3	1634.0			3		
4			✓		270-30	5.5	- 6.7	1626.7			4		
5		104	1320		-	7.7	- 7.7	1626.3			5		
6		105	880		269-05	70.0	- 25.4	1608.6			6		
7		106	440		229-00	9.1	- 16.8	1617.2			7		
8		107	0		-	3.3	- 5.3	1628.7			8		
9		108	440		88-30	71.4	+ 0.1	1639.1			9		
10		109	880		88-30	73.0	+ 10.0	1644.0			10		
11		110	1320		88-30	71	+ 27.4	1661.4			11		
12		111	1760		88-30	77.7	+ 38.4	1672.4			12		
13		112	2200		88-20	82.2	+ 53.8	1689.8			13		
14		113	2640		88-10	88.8	+ 70.6	1715.0		0.2	14		
15			✓		271-57-45	74.0	+ 96.4				15		
16											16		
17											17		

WORKED BY L.G.L. CHECKED BY 1ST \_\_\_\_\_ 2ND \_\_\_\_\_  
 SYMBOLS = BACKSIGHT = INSTRUMENT SET-UP = SIDESHOT = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA \_\_\_\_\_ STATE/COUNTY AK. BOOK NO. \_\_\_\_\_ PAGE 4 OF 19  
 LINE/LOOP NO. 760 TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE 12 DY 2 MO 90 YR  
 SURVEYOR L. LYMAN INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1186

LINE	<input type="checkbox"/> $\Delta$ <input type="checkbox"/> SS <input type="checkbox"/> $\odot$	STATION	VERTICAL						ELEVATION		LR OR DR	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD				
				SLOPE										
1	$\odot$	113.							1710.0			1		
2	$\Delta$		575		-	12.3	+12.3	1722.3				2		
3	CK		✓		269-20	5.5	+12.2					3		
4		114.	<del>79</del> 134		-	3.8	-5.8		1716.5			4		
5			0		-	3.3	-5.3		(1717.0)			5	TP.	
6	$\odot$	115.	305		88-05	3.0	+4.8		1727.2			6		
7	CK		✓		273-10	11.9	+4.9					7		
8	$\Delta$		1320		93-30	13.6	+24.0	1821.0				8		
9	CK		✓		266-20	9.3	+93.5					9		
10		116.	880		264-40	9.5	-90.9		1730.1			10		
11		117.	440		264-05	74.4	-60.1		1760.9			11		
12		118.	0		-	3.3	-5.3		1815.7			12		
13	$\odot$	TP.	390		85-00	2.0	+27.9		1848.9		0.5	13	1848.9 ✓ $\odot$	
14	CK		✓		276-10	73.0	+27.9					14		
15												15		
16												16		
17												17		

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS. STATE/COUNTY AK. BOOK NO. \_\_\_\_\_ PAGE 5 OF 19  
 LINE/LOOP NO. 760 TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE 12 DY 2 MO 80 YR  
 SURVEYOR L. LYMAN INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1186

LINE	  	STATION	VERTICAL							HORIZONTAL		REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION		RIGHT TURNED HORIZONTAL ANGLE		LINE
				SLOPE					HORIZ.	INST			
1		TP.							1848.9	✓		1	
2			1205		88-00	7.0	- 35.1	1813.7	✓			2	
3			✓		272-10	10.0	- 35.3					3	
4		119.	1155.		272-10	8.7	+ 34.9	1778.7		1848.6		4	✓
5		120.	715		272-00	8.0	+ 19.9	1833.6	✓			5	
6		121.	275		272-00	11.5	- 1.9	1811.8	✓			6	
7			0		-	5.3	- 5.3					7	
8		122.	165		91-00	12.0	- 14.9	1798.8	✓			8	
9		123.	605		92-00	10.6	- 31.7	1782.0	✓			9	
10		124.	1045		91-20	7.3	- 33.6	1780.1	✓			10	
11		125.	1485.		90-30	8.2	- 21.1	1792.6	✓			11	
12			1660		90-20	7.9	- 17.6	1791.4	✓	-0.8		12	1796.7 (B)
13			✓		269-50	12.3	- 17.1					13	
14												14	
15												15	
16												16	
17												17	

WORKED BY L.O.L. CHECKED BY 1ST \_\_\_\_\_ 2ND \_\_\_\_\_  
 SYMBOLS = BACKSIGHT = INSTRUMENT SET-UP = SIDESHOT = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA \_\_\_\_\_ STATE/COUNTY AK BOOK NO. \_\_\_\_\_ PAGE 6 OF 19  
 LINE/LOOP NO. 760 TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE 12 DY 2 MO 80 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			
1	○											1	1796.7
2	Δ		1595		86-30	+2.8	-94.4	1701.8	1796.4			2	
3	Δ		✓		273-50	+11.6	-94.8					3	(STEEP - R.NK.)
4		126	1320		271-00	7.3	+15.7		1717.5			4	(125-126)
5		127	880		-	4.6	-4.6		1697.2			5	
6		128	440		-	7.4	-7.4		1694.4			6	
7		129	0		-	5.3	-5.3		1696.5			7	
8		130	440		89-00	10.0	-2.3		1699.5			8	
9		131	880		89-00	7.3	-9.0		1692.8			9	
10		132	1320		80-00	11.3	+34.7		1736.5			10	
11	○	133	1760		87-10	10.0	+76.9	1778.8	1778.8			11	(C)
12	Δ		✓		273-00	14.8	+77.2					12	
13	Δ		440		93-00	12.7	+35.7	1814.4				13	
14	Δ		✓		266-30	10.7	+35.5					14	
15	○	BM. 79412	165		-	9.1	-9.1		1805.6		1805.6	15	1805.6
16			✓		271-00	71.9	-9.0		1804.4		1804.4	16	
17								Tie 0.9			1804.4	17	

WORKED BY GHC CHECKED BY 1ST \_\_\_\_\_ 2ND \_\_\_\_\_  
 SYMBOLS Δ = BACKSIGHT    Δ = INSTRUMENT SET-UP    SS = SIDESHOT    ○ = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA \_\_\_\_\_ STATE/COUNTY AK. BOOK NO. \_\_\_\_\_ PAGE 7 OF 19  
 LINE/LOOP NO. 760 TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE 12 DY 2 MO 90 YR  
 SURVEYOR L. LYMAN INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1184

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ○	STATION	VERTICAL						ELEVATION		L/R OR D/I	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									1813.5			N	1		
2		134.	0			3.3		- 5.3		1808.2			-	2	
3		135.	360			83-20	7.8	+ 33.7		1807.4			S	3	STEEP. SNOW
4		136.	✓			277-00	7.9	+ 33.6						4	BNK HILL.
5		137.	1390			88-40	+ 6.0	+ 26.1		1826.3				5	
6		138.	✓			271-30	+ 9.6	+ 26.5						6	
7		139.	1320			271-00	7.5	+ 13.5		1834.6				7	STEEP. HILL.
8		140.	880			266-30	6.8	- 60.5		1760.5				8	
9		141.	440			266-00	74.2	- 44.89		1776.2			N	9	
10		142.	0				5.3	- 5.3		1815.8			-	10	
11		143.	440			85-00	8.0	+ 30.2		1821.4			S	11	
12		144.	880			84-40	72.2	+ 69.2		1890.8				12	TOP OF HILL.
13		145.	✓			275-30	74.5	+ 69.5						13	
14														14	
15														15	
16														16	
17														17	

WORKED BY GHC CHECKED BY 1ST \_\_\_\_\_ 2ND \_\_\_\_\_  
 SYMBOLS Δ = BACKSIGHT    = INSTRUMENT SET-UP    SS = SIDESHOT    ○ = FORESIGHT



# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA \_\_\_\_\_ STATE/COUNTY AK. BOOK NO. \_\_\_\_\_ PAGE 8 OF 19  
 LINE/LOOP NO. 760 TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE 12 DY 2 MO 80 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		L/R OR D/I		RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE					HORIZ	INST				
1	○	140							1890.8			1		
2	Δ		2460		86-00	5.9	-167.3					2		
3	CK		✓		274-10	+10.4	-187.9	1722.5	✓			3		
4		141	2035		271-10	-7.0	+34.4					4		
5		142	1595		269-30	13.0	-26.9					5		
6		143	1155		267-30	11.4	-61.7					6		
7		144	715		267-00	11.2	-48.6					7		
8		145	275		267-00	6.3	-20.7					8		
9			0		-	5.3	-5.3					9		
10		146	165		268-00	7.1	-0.3					10		
11	○	147	605		27-40	10.7	+13.7				1.2	11		
12	CK		✓		272-10	8.9	+14.0					12		
13	Δ		880		29-00	+2.5	-8.9	1726.5	✓			13		
14	CK		✓		271-10	+0.0	-9.1					14		
15		148	440		271-10	-5.0	+2.9					15		
16		149	0		-	5.5	-5.3					16		
17		150	440		90-30	72.0	-16.8					17		

WORKED BY BHC CHECKED BY 1ST \_\_\_\_\_ 2ND \_\_\_\_\_  
 SYMBOLS Δ = BACKSIGHT    = INSTRUMENT SET-UP    SS = SIDESHOT    ○ = FORESIGHT

## HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS. STATE/COUNTY AK. BOOK NO. \_\_\_\_\_ PAGE 7 OF 19  
 LINE/LOOP NO. 760 TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE 12 DY 2 MO 80 YR  
 SURVEYOR L. LYMAN INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1186

LINE	<input type="checkbox"/> $\Delta$ <input type="checkbox"/> SS <input type="checkbox"/> $\odot$	STATION	VERTICAL						ELEVATION		L/R OR D/I	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD				
			SLOPE 	HORIZ 										
1									1727.5			1		
2		151.	990		90-30	3.1	-	15.8	1711.8		S	2		
3	$\odot$	TP.	1280		90-30	3.6	-	16.8	1711.0		-1.9	3	(D)	
4	$\sphericalangle$		✓		269-50	72.7	-	16.4				4		
5	$\Delta$		915		89-30	+9.8	+	118.67	1723.6			5		
6	$\sphericalangle$		✓		270-40	+12.2	+	116.1				6		
7		152.	880		270-40	73.1	-	2.9	1709.8			7		
8		153.	440	N	-	3.5	-	8.5	1704.1			N	8	
9		154.	0		..	3.4	-	5.4	1707.2			-	9	
10		155.	440		80-00	2.4	+	8.9	1721.6			S	10	
11		156.	880		87-00	3.1	+	42.9	1755.6				11	
12		157.	1320		86-00	3.4	+	86.4	1799.4				12	
13	$\odot$	TP.	1732		85-52-50	74.0	+	110.1	1823.3		2.5	13	(E)	
14	$\sphericalangle$		✓		274-06	73.0	H/O	+110.5				14		
15												15		
16												16		
17												17		

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY AK BOOK NO. \_\_\_\_\_ PAGE 10 OF 19  
 LINE/LOOP NO. 760 TYPE SURVEY \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE 14 DY 2 MO 80 YR  
 SURVEYOR GHC INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1186

LINE	  	STATION	VERTICAL						ELEVATION		DR 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										1823.3			1		
2													2		
3		TP9 SP157+412	1788			88-30	+10.0	-36.8	0	1186.4			3		
4		CK				271-30	+9.8	-37.0					4		
5		158	1760			271-38	+9.5	+36.5		1822.9			5		
6		159	1320			271-10	+9.6	+17.3		1803.6			6		
7		160	880			270-40	-11.3	-1.1		1785.3			7		
8		161	440			270-10	-7.8	-6.5		1779.8			8		
9		162	0			-5.3	-5.3	-5.3		1781.1			9		
10		163	440			29-40	+4.1	-1.5		1784.8			10		
11		164	880			49-10	+7.0	+5.8		1792.2			11		
12		165	1320			89-10	-5.5	+13.7		1800.1			12		
13		166	1760			49-00	-6.2	+24.6		1810.9			13		
14		167	2200			88-50	-9.5	+35.8		1821.9			14		
15		CK				271-10	-9.2	+15.6					15		
16													16		
17													17		

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

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY AK BOOK NO. \_\_\_\_\_ PAGE 11 OF 19  
 LINE/LOOP NO. 760 TYPE SURVEY \_\_\_\_\_ CLIENT HOSKY DATE 14 DY 2 MO 80 YR  
 SURVEYOR GHC CONRAD INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ 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												1		
2												2		
3		167	2200			91-50	+8.0	+78.3	✓	1900.1		3		
4						268-10	+7.8	+78.1				4		
5		168	1760			268-00	-5.5	-66.9	✓		1833.1	5	13.8	
6		169	1320			268-60	-7.9	-53.9	✓		1846.1	6		
7		170	880			267-50	-8.2	-41.4			1858.6	7		
8		171	440			267-50	-9.5	-26.1			1873.9	8		
9		172	0				-5.3	-5.3	✓		1894.8	9		
10		173	440			87-30	+8.4	+10.8	✓		1916.9	10		
11		174	880			87-30	+9.1	+5.2	✓		1929.4	11		
12		175	1320			87-50	+12.8	+37.1	✓		1937.3	12		
13						272-10	+12.7	+31.2	✓			13		
14		175	1320			89-55-10	+15.0	+13.1	✓	1950.1		14	TOP ROD	
15						270-04-58	+15.0	+13.1				15		
16		176	880			270-20	+6.8	+1.7	✓		1948.7	16		
17		177	440			270-00	+6.3	+6.3			1944.1	17		

TI-23471B

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

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY AK BOOK NO. \_\_\_\_\_ PAGE 12 OF 19  
 LINE/LOOP NO. 700 TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE 14 DY 2 MO 80 YR  
 SURVEYOR BH CONRAD 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		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD				
			SLOPE	HORIZ										
1														
2									1950.4					
3		178	0		5.3	-5.3				1945.1				
4		179	440	89-30	9.2	-5.3.5x				1945.0				
5		180	880	89-40	4.5	+0.6 ✓				1951.0				
6		181	1320	89-50	17.0	-13.1 ✓				1937.2				+80DT 5.0'
7		182	1760	89-50	11.4	-6.2 ✓				1944.1				
8		183	2200	89-30	11.0	+8.2 ✓				1958.7 ✓				
9	○	184	2640	89-20	9.7	+21.0 ✓				1971.0 ✓		4.0 S		
10	OK			270-40	9.5	+21.2 ✓								
11	Δ	184	880	92-20	6.6	+42.4 ✓		2014.0 ✓				3.0 S N		5-13.8
12	OK			267-50	9.2	+42.4 ✓								
13		185	440	267-50	6.2	-22.8 ✓				1991.2				
14		186	0		5.3	-5.3				2008.7				
15		187	440	89-40	8.3	-5.7 ✓				2008.3				
16														
17														

TI-23471B

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

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY AK BOOK NO. \_\_\_\_\_ PAGE 13 OF 19  
 LINE/LOOP NO. 760 TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE 14 DY 2 MO 80 YR  
 SURVEYOR GH CONRAD 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		188	880			90-00	79.5	-19.5		1994.6		2	+5' BOOT	
3		189	1320			90-00	7.5	-7.5		2006.6		3		
4	○	190	1760			89-00	3.8	+26.9		2041.0	-4.5	4	5-13.8	
5	ch					271-08	3.8	+26.9				5		
6												6		
7	Δ	190	1705			95-30	76.6	+179.0		2220.8		7	5-13.5	
8	ch		1265			264-10	6.5	+178.9				8		
9		191	1265			264-02	8.3	-139.8	140.6	2080.2		9		
10		192	825			264-02	9.7	-98.5	95.9	2124.9		10		
11		193	385			262-58	9.5	-57.2	51.5	2163.3		11	262 50	
12		193+385	0				5.3	-5.3		2215.5		12		
13		194	55			96-20	7.3	-13.3		2207.4		13		
14		195	495			93-10	5.0	-32.3		2188.5		14		
15		196	935			89-50	8.2	-5.5		2215.3		15		
16		197	1375			87-54-19	6.0	-42.6	42.7	2263.5		16		
17												17		

TI-23471B

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

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY AK BOOK NO. \_\_\_\_\_ PAGE 14 OF 19  
 LINE/LOOP NO. 760 TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE 14 DY 2 MO 80 YR  
 SURVEYOR GH CONRAD INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1186

LINE		STATION	VERTICAL						ELEVATION		LR OR DI	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST					ROD
1												1			
2		197+										2267.0	2	TBM 80103	
3												2270.3	3	Out of Ground	
4		TBM 80103	1430			92-42-47	6.2	+50.8		2270.9		2267.0	4	VERT. TIE TO A	
5		ck				272-12-57	6.2	+51.1				Tie +4.9	5		
6										Tie			6		
7		ck 197+55	1430			272-16-09	6.2	+50.4		2270.5			7	TP	
8		ck				87-24-27	6.2	+50.1					8		
9		TBM 80103				89				2267.0			9		
10		TBM 80103	385			98-40	2.9	+0.7		2267.6			10		
11		ck				270-20	2.8	+0.6					11		
12													12		
13		198	0				5.3	-5.3		2262.3			13		
14		199	440			92-50	2.8	-29.5		2238.1			14		
15		200	880			92-50	3.0	-46.4		2221.2			15		
16		201	1320			92-28-30	15.0	-76.9		2195.6			16	-0.8	
17		ck				267-31-12	15.0	-72.1					17		

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

SYMBOLS

= BACKSIGHT






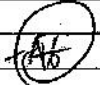

= INSTRUMENT SET-UP

SS = SIDESHOT

= FORESIGHT

## HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY AK BOOK NO. \_\_\_\_\_ PAGE 15 OF 19  
 LINE/LOOP NO. 760 TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE 14 DY 2 MO 80 YR  
 SURVEYOR BH CONRAD 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		LR OR DR		RIGHT TURNED HORIZONTAL ANGLE	LINE
			SLOPE 	HORIZ 					INST	ROD				
1												1		
2		201	1320		87-50	7.8	-42.1		2153.5			2		
3	CK				272-20	11.6	-42.1					3		
4												4		
5		202	880		271-20	6.4	-42.1	11.1	2139.4		2167.5	5		
6		203	440		269-10	4.8	-11.2		2142.3			6		
7		204	0			5.3	-5.3		2148.2			7		
8		205	440		88-00	4.8	+10.5		2164.0			8		
9		206	980		87-10	5.4	+38.0		2191.5			9		
10		<del>207</del> 206.7 215	1885		86-20	9.2	+64.5		2218.0		11.6 S	10	5-10.8 	
11	CK				273-40	9.2	+64.5					11		
12		208+275	1485		89-30	5.5	+17.5		2210.4			12	N	
13	CK				270-30	5.3	-7.7					13		
14		207	1320		270-00	4.6	-4.6		2205.8			14		
15		208	880		269-20	9.5	-18.7		2191.7			15		
16		209	440		268-40	11.7	-21.9		2188.5			16		
17		210	0			5.3			2205.1			17		

TI-23471B

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

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



# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA HOWARD PASS STATE/COUNTY AK BOOK NO. \_\_\_\_\_ PAGE 16 OF 19  
 LINE/LOOP NO. 760 TYPE SURVEY \_\_\_\_\_ CLIENT HUSKY DATE 14 DY 2 MO 80 YR  
 SURVEYOR G H CONRAD 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												1			
2		211	440		89-20	3.4	-17.1			2208.7		2212.2		2	
3		212	880		88-30	5.8	+17.2			2227.6				3	
4		213	1320		87-50	3.6	+46.3			2256.7				4	
5														5	
6	⊙	214	1760		87-50	10.8	+55.7			<del>2246.1</del>		2246.4	S	6	-2.4
7	CK				272-10	10.7	+95.8							7	
8	Δ	214	880		87-30	+7.5	-30.8		2238.2			2235.4	N	8	
9	CK	215	1110		272-30	+7.4	-30.9							9	
10		215	440		272-20	6.3	+11.6			2246.8				10	
11		216	0			5.3	-5.3			2229.9				11	
12		217	440		95-10	4.4	-41.8			2188.2		2187.4		12	
13	⊙	218	880		93-40	7.7	-63.1			2171.3		2171.5		13	3.2
14	CK				266-20	7.7	-43.9							14	
15														15	
16														16	
17														17	

TI-23471B

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

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

# HORIZONTAL AND VERTICAL SURVEY NOTES










GSI AREA Howard Pass STATE/COUNTY AK BOOK NO. \_\_\_\_\_ PAGE 17 OF 17  
 LINE/LOOP NO. 760 TYPE SURVEY \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE 15 DY 2 MO 80 YR  
 SURVEYOR M R Road INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1186

LINE	△ ↕ SS ⊙	STATION	VERTICAL						HORIZONTAL			REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION		LR OR DR		RIGHT TURNED HORIZONTAL ANGLE
				SLOPE					HORIZ	INST			
1													
2													
3	△	218	1485		91-50	+8.2	+55.7						
4	✓				268-20	+12.1	+55.3 <sup>+55.5</sup>	2226.8			2226.4		
5		219	1045		265-50	+10.8	-86.5				2140.3		
6		220	605		262-00	-5.1	-88.5				2138.3		
7		221	165		257-40	-13.3	-47.7				2179.1	2178.4	+ 3' Boost
8		221+165	0		90-00	-5.5	-5.5				2221.3		
9		222	275		85-20	-6.4	-18.9 <sup>+15.9</sup>				2210.9	2242.8	
10		223	715		84-00	-5.0	+69.3				2296.1		
11		224	1155		82-20	-7.1	+148.6				2372.9	2373.9	
12	⊙	225	1595		80-20	-5.4	+258.6						AP
13	✓				279-40	-5.0	+258.8				2485.6	2489.5	
14	△	225	870		98-30	+5.6	+132.8						
15	✓				261-40	+8.0	+132.8	2618.4				2623.7	
16													
17													

WORKED BY MRR CHECKED BY 1ST \_\_\_\_\_ 2ND \_\_\_\_\_  
 SYMBOLS    △ = BACKSIGHT    ↕ = INSTRUMENT SET-UP    SS = SIDESHOT    ⊙ = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Howard Pass STATE/COUNTY AK BOOK NO. \_\_\_\_\_ PAGE 18 OF 19  
 LINE/LOOP NO. 760 TYPE SURVEY \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE 15 DY 2 MO 80 YR  
 SURVEYOR MR Rood INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1186







LINE	 SS 	STATION	VERTICAL						ELEVATION		LR OR DR	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		226	430			258-00	73.3	-100.7	102.7	2517.7		2521.1	2	
3		227	10.10			90-00	5.5	-5.5		2612.9		2618.2	3	
4		228	450			96-10	8.0	-56.0	54.3	2562.4		2567.3	4	
5		229	890			95-00	4.7	-82.0	82.3	2536.4		2541.4	5	
6		230	1330			94-40	13.7	-121.5	121.9	2496.9		2501.8	6	
7		231	1770			94-40	10.5	-154.0					7	
8	✓					265-20	10.0	-153.5	153.8	2469.6		2469.5	8	48
9		231	2695			89-00	7.8	-39.2					9	
10	✓					271-00	7.4	-39.2	39.4	2425.2		2429.9	10	
11		232	2255			270-20	6.5	+6.6		2431.8		2436.4	11	
12		233	1815			269-40	9.2	-19.7		2408.5		2410.1	12	
13		234	1375			268-30	6.8	-42.8		2382.4		2387.1	13	
14		235	935			268-00	10.8	-43.4		2381.8		2386.5	14	
15		236	495			268-00	4.6	-21.9		2403.3		2408.0	15	
16		TS 5 (241)	0			90-00	5.5	-5.5		2419.7		2424.4	16	(241)
17													17	

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

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


# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Howard Pass STATE/COUNTY AK BOOK NO. \_\_\_\_\_ PAGE 19 OF 19  
 LINE/LOOP NO. 760 TYPE SURVEY \_\_\_\_\_ CLIENT \_\_\_\_\_ DATE 15 DY 2 MO 80 YR  
 SURVEYOR M R Reed INSTRUMENT DESC/SERIAL NO. \_\_\_\_\_ CREW NO. 1186

LINE		STATION	VERTICAL						ELEVATION		L/R OR D/I	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD				
			SLOPE 	HORIZ 										
1												1		
2												2		
3		TBM 80-104	1650			86-20	71.1	+ 94.2				3		
4	✓					273-40	70.6	+ 94.5 + 94.7 + 94.7			2519.7	2524.6	4	
5											2519.1	2519.0	5	
6										Tie	.6	+ 5.6	6	Vertical Tie
7										2424.3			7	
8		TS 12 (248)	770			273-53-15	74.0	+ 48.1			2473.3	2472.5	8	
9	⊙	TS 24 (260)	2090			273-53-15	73.0	+ 138.4	38.6		2563.6	2562.9	9	
10	△	TS 24	660			94-00	76.8	+ 52.8		2616.3	(2625.7)	2620.4	10	+4' Boost
11		TS 30 (246)	0			90-00	75.3	- 5.3			2611.0	2620.4	11	
12	⊙	TS 36 (272)	660			88-23-22	78.0	+ 0.5			2616.8	2626.3	12	+ 3' Boost
13	△	TS 36	110			88-00	72.4	- 1.4		2615.4	(2624.8)	2619.3	13	
14		TS 37 (273)	0			90:00	75.5	- 5.5			2609.9	2619.3	14	
15	⊙	TS 43 (279)	660			94-20	75.9	- 65.6			2549.8	2559.1	15	+ 3' Boost
16													16	
17													17	

TI-23471B

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

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