

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA IKpikpak UMIAT SOUND!! STATE/COUNTY AKSA BOOK NO. 4 PAGE 120 OF
 LINE/LOOP NO. 34-81 LAST LINE! TYPE SURVEY Vert. CLIENT USGS DATE 24 BY 4 MO 81 YR
 SURVEYOR M.O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 wild CREW NO. 1186

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						HORIZONTAL			REMARKS	
			DISTANCE	<input checked="" 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				
1		#106	1320		89 43 45	10		+3.7				1	
2		BAY MARX			270 16 10	10						2	Elev 230.8
3		# 81045										3	
4		105	880		89 12 2	11						4	
5		104	440		89 00 48	11						5	
6	<input checked="" type="checkbox"/>	103	-0-		90	5.5			23A.5			6	
7		102	440		89 41 07	11						7	
8		101	880		90 21 17	11						8	
9		100	1320		90 39 43	11						9	
10		99	1760		90 47 38	11						10	199.2
11		98	2200		90 44 48	11						11	195.0
12		IS 97	2640		90 11 47	11						12	214.6
13		IS 96	3080		90 02 52	11						13	221.2
14		95	3520		89 54 43	11						14	229.2
15		94	3960		89 50 15	11						15	235.1
16		93	4400		89 46 43	11						16	240.9
17												17	

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

HORIZONTAL AND VERTICAL SURVEY NOTES

2

GSI AREA Ikpiakuk STATE/COUNTY ALASKA BOOK NO. 4 PAGE 21 OF
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 29 DY 4 MO 81 YR
 SURVEYOR M. OBRADY INSTRUMENT DESC/SERIAL NO. T-2 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	LINE
			SLOPE	HORIZ					FEET	METERS			
1		TS 92	4840		89 48 00	11			240.9		1		
2		TS 91	5280		89 53 40	11			233.8		2		
3		TS 90	5720		89 55 24	15			227.9		3		
4		TS 89	6160		89 58 10	15			223.6		4		
5		TS 88	6600		90 05 32	20			209.8		5		
6											6		
7					90 09 51						7		
8											8		
9											9		
10											10		
11											11		
12											12		
13											13		
14											14		
15											15		
16											16		
17											17		

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

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Ikpiikuk STATE/COUNTY ALASKA BOOK NO. 4 PAGE 122 OF 3
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 24 DY 4 MO 81 YR
 SURVEYOR M.O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1186

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						ELEVATION		L/R OR DI	HORIZONTAL		REMARKS
			DISTANCE	<input checked="" 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	Δ	BART WALK	2200		90 09 51	10		716.2				1		
2		A			269 50 07	10						2	230.8	
3		Ab sp 106										3		
4		107	1760		90 21 37	11						4		
5		108	1320		89 56 10	11						5		
6		109	880		89 51 48	11						6		
7		110	410		89 13 08	11						7		
8	Δ	111	-0-		90	5.5			247.0			8		
9		112	440		90 36 22	11						9		
10		113	880		91 09 24	11						10		
11		114	1320		91 38 20	11						11		
12		115	1760		91 37 20	11						12		
13		116	2200		91 12 24	11						13		
14		117	2640		90 55 00	11						14		
15	⊙	118	3080		90 43 54	11		-50.1				15		
16					269 16 02	11			196.9			16		
17					59							17		

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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA IKpikpuk STATE/COUNTY ALASKA BOOK NO. 4 PAGE 123 OF 4
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 24 DY 4 MO 81 YR
 SURVEYOR M.O. GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1186

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						HORIZONTAL		REMARKS			
			DISTANCE	<input checked="" 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	Δ	SP 118	3080		90 00 48	11		411.5				1		
2					269 59 15	11						2		
3		119	2640		90 06 01	11						3		
4		120	2260		90 21 21	11						4		
5		121	1760		90 36 35	11						5		
6		122	1320		90 51 32	11						6		
7		123	880		90 54 06	11						7		
8		124	440		90 63 64	11						8		
9	∧	125	-0-		90	51.5			208.4			9		
10		126	440		90 38 34	11						10		
11		127	880		90 53 50	11						11		
12		128	1320		91 06 33	11						12		
13		129	1760		90 08 12	11						13		
14		130	2200		89 34 00	11						14		
15		131	2640		89 23 26	11						15		
16	⊙	132	3080		89 29 09	11		116.8		225.3		16		
17					270 31 01	11						17		

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SYMBOLS

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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA IKPIKPIK STATE/COUNTY ALASKA BOOK NO. 4 PAGE 124 OF
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 24 DY 4 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1126

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						HORIZONTAL			REMARKS		
			DISTANCE	<input checked="" type="checkbox"/> FEET <input type="checkbox"/> METERS		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	ELEVATION		L/R OR DI		RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE	HORIZ				INST	ROD				
1	Δ	SP 132	2640		65			-54.3				1		
2					271 24 54							2		
3		133	2200		88 38 50							3		
4		134	1760		89 26 20							4		
5		135	1320		89 57 10							5		
6		136	880		89 19 24							6		
7		137	240		88 37 30							7		
8	Δ	138	0-		90	5.5			171.0			8		
9		139	446		89 09 57							9		
10		140	880		89 06 46							10		
11		141	1320		89 05 30							11		
12		142	1760		89 17 42							12		
13	⊙	143	2200		 89 24 22							13		
14		144			89 24 22			411.9				14		
15					270 35 43				182.9			15		
16					65							16		
17												17		

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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA TKpikpuk STATE/COUNTY ALASKA BOOK NO. 4 PAGE 125 OF 125 6
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 24 BY 4 MO 81 YR
 SURVEYOR M.O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1186

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						HORIZONTAL		REMARKS			
			DISTANCE	<input checked="" 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	Δ	SP 143	3355		91 07 04	11		+76.2				1		
2					2685248	11						2		
3		144	2915		91 23 30	11						3		
4		145	2475		91 24 43	11						4		
5		146	2035		91 51 00	11						5		
6		147	1595		92 31 16	11						6		
7		148	1155		93 30 H	11						7		
8		149	715		92 11 51	11						8		
9		150	275		91 00 52	11						9		
10		TPI	0			5.5		259.2				10		
11		151	165		87 49 50	11						11		
12		152	605		89 48 04	11						12		
13		153	1045		90 16 15	11						13		
14	⊙	154	1440		90 39 00	11		-25.2				14		
15					269 26 07	11			234.0			15		
16					269 26 07	11						16		
17												17		

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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA IK piknik STATE/COUNTY Alaska BOOK NO. 4 PAGE 126 OF
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 24 DY 4 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1186

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						HORIZONTAL		REMARKS			
			DISTANCE	<input checked="" 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	Δ	SP 154	2640		89 42 22	11		-2.4				1		
2					210 17 26	11						2		
3		155	2200		90 02 20	11						3		
4		156	1760		90 30 20	11						4		
5		157	1320		90 43 22	11						5		
6		158	880		90 19 51	11						6		
7		159	440		89 47 51	11						7		
8	Δ	160	-0-		90	5.5			231.6			8		
9		161	440		90 05 20	11						9		
10		162	880		90 47 12	11						10		
11		163	1320		90 53 42	11						11		
12		164	1760		90 26 50	11						12		
13		165	2200		89 59 50	11						13		
14		166	2640		89 55 47	11						14		
15	⊙	167	3080		89 50 33	11		-2.3	229.3			15		
16					270 09 33	11						16		
17					66							17		

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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Umiat YEAR 1981 STATE/COUNTY Alaska BOOK NO. 4 PAGE 127 OF
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 29 DY 4 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1186

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						HORIZONTAL		REMARKS	
			DISTANCE	<input checked="" 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
								SLOPE	HORIZ			
1	Δ	SP 167	1760		90 16 12	11		+19.2				1
2					269 44 00	11						2
3		168	1320		90 24 55	11						3
4		169	880		90 37 12	11						4
5		170	440		90 21 30	11						5
6	⊗	171	-0-		90 05			248.4				6
7		172	440		89 39 00	11						7
8		173	880		90 25 02	11						8
9		174	1320		90 56 02	11						9
10		175	1760		90 39 20	11						10
11		176	2200		90 12 30	11						11
12		177	2640		90 01 15	11						12
13		178	3080		90 01 14	11						13
14	⊙	BAVY MARK	+ 66		90	12.4		236.0				14
15			3146									15
16		#81045										16
17												17

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SYMBOLS

Δ = BACKSIGHT

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SS = SIDESHOT

⊙ = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Umial STATE/COUNTY Alaska BOOK NO. 4 PAGE 128 OF 128
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 24 DY 4 MO 81 YR
 SURVEYOR M. O'BRADY INSTRUMENT DESC/SERIAL NO. T-2 wild CREW NO. 1186

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						HORIZONTAL		REMARKS		
			DISTANCE	<input checked="" 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	Δ	BANK MARK	2849		90 56 46	5.0		+51.9				1	239.6 Elev
2					269 03 15	5.0						2	
3			-66									3	
4		179	2475		91 08 15							4	
5		180	2035		91 29 28							5	
6		181	1595		91 53 53							6	
7		182	1155		92 26 06							7	
8		183	715		91 40 00							8	
9		184	275		91 09 46							9	
10	Δ	TP 184+275			90	5.5		291.5				10	
11		185	165		89 30 33							11	
12		186	605		89 41 09							12	
13		187	1045		89 36 42							13	
14	⊙	188	1495		89 42 32			-3.4				14	
15					270 17 29				288.1			15	
16												16	
17												17	

WORKED BY _____ CHECKED BY 1ST _____ 2ND _____

SYMBOLS

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SS = SIDESHOT

⊙ = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Umiat STATE/COUNTY ALASKA BOOK NO. 4 PAGE 129 OF 10
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 21 DAY 4 MO 81 YR
 SURVEYOR M.O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1186

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						HORIZONTAL		REMARKS		
			DISTANCE	<input checked="" 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	Δ	SP 188	1760		87 51 28	11		54.9				1	
2			✓		272 08 40	11						2	
3		189	1320		87 47 15	11						3	
4		190	880		87 39 50	11						4	
5		191	440		87 28 26	11						5	
6	Δ	192	-0-		90	5.5		233.3				6	
7		193	240		91 49 50	11						7	
8		194	980		91 46 00	11						8	
9		195	1320		91 00 28	11						9	
10		196	1760		91 01 25	15						10	
11		197	2200		90 32 30	11						11	
12		198	2640		90 15 08	11						12	
13		199	3080		89 44 05	11						13	
14	⊙	200	3520		89 30 25	11		19.5	252.8			14	
15					270 29 30	11						15	
16					85							16	
17												17	

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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Umial STATE/COUNTY Alaska BOOK NO. 4 PAGE 130 OF 11
 LINE/LOOP NO. 3A-81 TYPE SURVEY Vert CLIENT USGS DATE 24 DY 4 MO 81 YR
 SURVEYOR M. OBRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 186

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	ELEVATION		L/R OR D/I		RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE	HORIZ				INST	ROD				
1	Δ	SP 200	2640		89 51 07			6.3				1		
2					270 05 57							2		
3		201	2200		89 48 22							3		
4		202	1760		89 55 00							4		
5		203	1320		89 57 20							5		
6		204	880		90 09 32							6		
7		205	440		89 59 00							7		
8	⋈	206	-0-		90 55				259.1			8		
9		207	440		89 39 10							9		
10		208	880		89 50 13							10		
11		209	1320		89 14 58							11		
12		210	1760		89 02 20							12		
13	⊙	211	2260		89 04 01			24.9				13		
14					270 56 06				284.1			14		
15												15		
16												16		
17												17		

WORKED BY _____ CHECKED BY 1ST _____ 2ND _____

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Δ = BACKSIGHT

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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA UMIAT STATE/COUNTY Alaska BOOK NO. 4 PAGE 131 OF 12
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 21 DY 4 MO 81 YR
 SURVEYOR M. O'BRYEN INSTRUMENT DESC/SERIAL NO. T-2 with CREW NO. 1186

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						HORIZONTAL			REMARKS		
			DISTANCE	<input checked="" 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	<input checked="" type="checkbox"/> Δ	SP 211	4400		90 12 24	11		26.5				1		
2					269 47 43	11						2		
3		212	3960		90 20 35	11						3		
4		213	3520		90 31 20	11						4		
5		214	3080		90 39 33	11						5		
6		215	2640		90 49 20	11						6		
7		216	2200		91 07 21	11						7		
8		217	1760		91 06 21	15						8		
9		218	1320		90 55 05	11						9		
10		219	880		90 31 14	11						10		
11		220	440		89 46 10	11						11		
12	<input checked="" type="checkbox"/> Δ	221	-0-		90	5.3		310.5				12		
13		222	440		89 39 47	11						13		
14		223	880		90 21 00	11						14		
15		224	1320		90 47 21	11						15		
16		225	1760		90 45 11	11						16		
17												17		

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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Umiaq STATE/COUNTY Alaska BOOK NO. 4 PAGE 132 OF 13
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert. CLIENT UoGS DATE 21 DY 9 MO 81 YR
 SURVEYOR K. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 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	ELEVATION		L/R OR D/I	RIGHT TURNED HORIZONTAL ANGLE		LINE
			SLOPE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS HORIZ				INST	ROD				
1		226	2260		90 50 00	15					1		
2		227	2640		90 38 00	11					2		
3		228	3080		90 13 48	11					3		
4	⊙	229	3520		89 53 58	11	4.6	305.9			4		
5					270 06 01	11					5		
6					69						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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⊙ = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Umiat STATE/COUNTY Alaska BOOK NO. 4 PAGE 133 OF 14
 LINE/LOOP NO. 31-31 TYPE SURVEY Vert CLIENT USGS DATE 25 DY 4 MO 81 YR
 SURVEYOR M.O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1186

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						HORIZONTAL		REMARKS	
			DISTANCE	<input checked="" type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			RIGHT TURNED HORIZONTAL ANGLE
				SLOPE					HORIZ	INST		
1	Δ	SP 229	1320		90 46 11	11	28.7				START ELEV	
2					269 13 39	11					288.4	
3		230	880		90 18 06	11						
4		231	440		89 32 52	11						
5	⋈	232	0		90	5.4		334.7				
6		TRI-STATION										
7	⊙	HERTHA		2000'	89 19 36	5.	18.6		353.2		HERTHA ELEV - 351.0	
8											353.2 - 351.0	
9	Δ	HERTHA		2000'	89 19 36	5.0	-18.6				2.2 tie	
10												
11	⋈	SP 232	0					332.4				
12		SP 233	440		89 06 32	11						
13		234	880		89 37 42	11						
14		235	1320		89 43 02	11						
15	⊙	236	1760		89 49 26	11	-5.5					
16					290 10 34	11			326.9			
17												

WORKED BY _____ CHECKED BY 1ST _____ 2ND _____

SYMBOLS

Δ = BACKSIGHT

⋈ = INSTRUMENT SET-UP

SS = SIDESHOT

⊙ = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Umiaf STATE/COUNTY ALASKA BOOK NO. 4 PAGE 134 OF 15
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 25 DY 4 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1186

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						HORIZONTAL		REMARKS		
			DISTANCE	<input checked="" type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE					HORIZ	INST			
1	Δ	SP 236	3080		89 42 50	//		-4.5				1	
2					270 17 08	//						2	
3		237	2640		89 55 30	//						3	
4		238	2200		89 55 50	//						4	
5		239	1760		89 55 30	//						5	
6		240	1320		89 55 05	//						6	
7		241	880		89 52 25	//						7	
8		242	440		89 28 01	//						8	
9	Δ	243	0-		90	55			322 A			9	
10		244	430		89 20 52	//						10	
11	*	245	880		89 46 46	//						11	
12		246	1320		89 58 56	//						12	
13		247	1760		90 04 02	//						13	
14		248	2200		90 12 20	//						14	
15		249	2640		90 06 35	//						15	
16		250	3080		90 02 41	//						16	
17												17	

WORKED BY _____ CHECKED BY 1ST _____ 2ND _____

SYMBOLS

Δ = BACKSIGHT

⊕ = INSTRUMENT SET-UP

SS = SIDESHOT

⊙ = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA UmiaT STATE/COUNTY Alaska BOOK NO. 4 PAGE 135 OF 16
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 25 DY 4 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1186

LINE	<input type="checkbox"/> <input type="checkbox"/> SS <input type="checkbox"/>	STATION	VERTICAL						HORIZONTAL		REMARKS			
			DISTANCE	<input checked="" 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	<input type="checkbox"/>	SP 251	3520		89 58 35	11		9.3		313.1			1	
2					270 01 25	11							2	
3													3	
4	<input checked="" type="checkbox"/>	SP 251	3960		90 05 03	11		16.5					4	
5					269 55 10	11							5	
6		252	3520		90 02 36	11							6	
7		253	3080		90 05 50	11							7	
8		254	2640		90 02 46	11							8	
9		255	2200		89 57 08	11							9	
10		256	1760		89 53 21	11							10	
11		257	1320		89 59 56	11							11	
12		258	880		89 58 18	11							12	
13		259	440		89 24 04	11							13	
14	<input checked="" type="checkbox"/>	260	-0-		90	5.4			329.5				14	
15		261	440		89 43 36	11							15	
16		262	880		89 51 03	11							16	
17													17	

WORKED BY _____ CHECKED BY 1ST _____ 2ND _____

SYMBOLS

= BACKSIGHT.

= INSTRUMENT SET-UP

SS = SIDESHOT

= FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Umial STATE/COUNTY Alaska BOOK NO. 4 PAGE 136 OF 17
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 25 DY 4 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1186

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						HORIZONTAL			REMARKS		
			DISTANCE	<input checked="" 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		263	1370		89 57 33	11						1		
2		264	1760		90 12 31	11						2		
3		265	2200		90 19 55	11						3		
4		266	2640		90 11 22	11						4		
5		267	3080		90 01 05	11						5		
6	⊙	268	3520		90 01 59	16	-12.8		316.7			6		
7					269 58 07	11						7		
8												8		
9	Δ	SP 268	3080		89 12 14	11	-32.0					9		
10					270 47 31	11						10		
11		269	2640		89 44 21	11	89 14 42					11		
12		270	2200		89 16 07	11						12		
13		271	1760		89 10 40	11						13		
14		272	1320		89 00 50	11						14		
15		273	880		88 54 14	11						15		
16		274	440		89 15 00	11						16		
17												17		

WORKED BY _____ CHECKED BY 1ST _____ 2ND _____

SYMBOLS

Δ = BACKSIGHT

⊕ = INSTRUMENT SET-UP

SS = SIDESHOT

⊙ = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Umiat STATE/COUNTY Alaska BOOK NO. 4 PAGE 137 OF 18
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert. CLIENT USGS DATE 25 BY 4 MO 31 YR
 SURVEYOR A. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 wild 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 DI RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE					HORIZ	INST			
1	Δ	SP 275	-0-		90	5.6			284.8			1	
2		276	440		95 37 53	11						2	
3		277	880		93 51 28	11						3	
4		278	1320		92 28 47	11						4	
5		279	1760		92 03 00	11						5	
6		280	2200		91 48 10	11						6	
7		281	2640		96 25 40	11						7	
8		282	3080		91 09 24	11						8	
9		283	3520		90 55 30	11						9	
10	⊙	284	3960		90 36 47	11						10	
11					29 23 04	11	-53.0		231.7			11	
12												12	
13	Δ	SP 284	420		93 55 06	11 98	108.0					13	
14					266 05 06	11						14	
15		285	980		95 34 25	11						15	
16		286	540		97 03 00	11						16	
17												17	

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SYMBOLS

Δ = BACKSIGHT

⊕ = INSTRUMENT SET-UP

SS = SIDESHOT

⊙ = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Umjat STATE/COUNTY Alaska BOOK NO. 4 PAGE 138 OF 19
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 25 DY 4 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1186

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						HORIZONTAL			REMARKS		
			DISTANCE	<input checked="" type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION		L/R OR DJ		RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE					HORIZ	INST				
1		287	100		90	12.3						1		
2	Δ	TP 287+100'	-0-		90	5.4		339.6				2		
3		288	340		89 51 50	11						3		
4		289	780		88 37 01	11						4		
5		290	1270		88 53 00	11						5		
6		291	1660		88 55 51	11						6		
7	⊙	292	2100		89 05 50	11	22.2		361.8			7		
8					270 54 06	11						8		
9												9		
10	Δ	SP 292	3080		89 12 42	11	-31.6					10		
11					270 47 20	11						11		
12		293	2640		89 09 50	11						12		
13		294	2260		89 22 55	11						13		
14		295	1760		89 27 37	11						14		
15		296	1320		89 29 00	11						15		
16		297	880		89 33 30	11						16		
17												17		

WORKED BY _____ CHECKED BY 1ST _____ 2ND _____

SYMBOLS

Δ = BACKSIGHT

⊕ = INSTRUMENT SET-UP

SS = SIDESHOT

⊙ = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Umiaf STATE/COUNTY ALASKA BOOK NO. 4 PAGE 139 OF 20
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 25 DAY 4 MO 81 YR
 SURVEYOR M. O'BRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1186

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						HORIZONTAL		REMARKS			
			DISTANCE	<input checked="" 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		298	440		89 16 12	11						1		
2	Δ	299	-0-		90	S.S		330.2				2		
3		300	440		90 18 08	11						3		
4		301	880		90 43 10	11						4		
5		302	1320		90 42 47	11						5		
6		303	1760		90 43 12	11						6		
7		304	2200		90 44 04	11						7		
8		305	2640		90 40 06	11						8		
9	⊙	306	3080		90 35 50	11	-42.9	287.3				9		
10					269 24 15	11						10		
11												11		
12												12		
13												13		
14												14		
15												15		
16												16		
17												17		

WORKED BY _____ CHECKED BY 1ST _____ 2ND _____

SYMBOLS

Δ = BACKSIGHT

⊕ = INSTRUMENT SET-UP

SS = SIDESHOT

⊙ = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Umia STATE/COUNTY ALASKA BOOK NO. 4 PAGE 140 OF 21
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 26 BY 4 MO 8 YR 81
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 wild 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	Δ	SP 306	2640		89 47 43			+1.4				1		
2					270 12 25							2		
3		307	2200		89 47 10							3		
4		308	1760		89 40 28							4		
5		309	1320		89 44 20							5		
6		310	880		89 46 35							6		
7		311	440		89 17 01							7		
8	⋈	312	-0-		90	5.5			288.1			8		
9		313	440		91 33 56							9		
10		314	880		89 39 50							10		
11		INTERSECTION	880		89 39 50				282.9			11		
12		315	1320		89 40 07							12		
13		316	1760		89 36 27							13		
14	⊙	317	2200		89 49 49			-4.4				14		
15					270 10 10				281.3			15		
16												16		
17												17		

WORKED BY _____ CHECKED BY 1ST _____ 2ND _____

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

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Umial STATE/COUNTY Alaska BOOK NO. 4 PAGE 141 OF 22
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert. CLIENT USGS DATE 26 DY 4 MO 81 YR
 SURVEYOR M. OBRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild 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	LINE
				SLOPE					HORIZ	INST				
1	Δ	SP 317	1760		89 56 10	11		+9.0				1		
2					270 03 58	11						2		
3		318	1320		90 18 36	11						3		
4		319	880		90 31 35	11						4		
5		320	440		90 09 36	11						5		
6	Δ	321	-0-		90	5.5		293.3				6		
7		322	440		90 31 40	11						7		
8		323	880		90 32 20	11						8		
9		324	1320		90 11 20	11						9		
10		325	1760		89 59 20	11						10		
11		326	2200		90 03 21	11						11		
12		327	2640		90 06 28	11						12		
13	⊙	328	3080		90 17 01	11		-26.1	267.2			13		
14					269 42 00	11						14		
15												15		
16												16		
17												17		

WORKED BY _____ CHECKED BY 1ST _____ 2ND _____

SYMBOLS

Δ = BACKSIGHT

Δ = INSTRUMENT SET-UP

SS = SIDESHOT

⊙ = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Umiat STATE/COUNTY Alaska BOOK NO. 4 PAGE 142 OF 23
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 26 BY 4 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 wild CREW NO. 1186

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						HORIZONTAL		REMARKS			
			DISTANCE	<input checked="" 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	Δ	SP 328	3520		89 53 45			+4.3				1		
2					270 06 23							2		
3		329	3080		89 57 55							3		
4		330	2640		89 47 13							4		
5		331	2200		89 54 08							5		
6		332	1760		90 12 35							6		
7		333	1320		90 23 43							7		
8		334	880		90 30 25							8		
9		335	440		90 13 55							9		
10	Δ	336	-0-		90	5.5			271.5			10		
11		337	440		90 23 12							11		
12		338	880		89 56 52							12		
13		339	1320		89 47 20							13		
14		340	1760		89 35 10							14		
15		341	2200		89 28 54							15		
16		342	2640		89 21 01							16		
17												17		

WORKED BY _____ CHECKED BY 1ST _____ 2ND _____

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

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Umiat STATE/COUNTY Alaska BOOK NO. 4 PAGE 143 OF
 LINE/LOOP NO. 31-31 TYPE SURVEY Vert CLIENT USGS DATE 26 BY 4 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1186

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL							HORIZONTAL		REMARKS		
			DISTANCE	<input checked="" 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		343	3080		89 16 16							1		
2		344	3520		89 17 48							2		
3	⊙	345	3960		89 13 50		42.5					3		
4					29 46 18				34.1			4		
5												5		
6	Δ	SP 345	2280		90 03 20		+13.0					6		
7					20 56 48							7		
8		346	1760		90 05 28							8		
9		347	1320		90 37 25							9		
10		348	880		90 56 31							10		
11		349	440		90 05 12							11		
12	Δ	350	-0-		90	5.5			327.1			12		
13		351	440		90 58 52							13		
14		352	880		91 10 33							14		
15		353	1320		91 02 32							15		
16		354	1760		91 10 52							16		
17												17		

WORKED BY _____ CHECKED BY 1ST _____ 2ND _____

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

HORIZONTAL AND VERTICAL SURVEY NOTES

25

GSI AREA Umiait STATE/COUNTY Alaska BOOK NO. 4 PAGE 4 OF 4
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 28 BY 4 MO 8 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild 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			RIGHT TURNED HORIZONTAL ANGLE
				SLOPE					HORIZ	INST		
1		355	2200		90 59 17						1	
2		356	2640		91 04 11						2	
3		357	3080		91 09 27						3	
4		358	3520		90 57 23						4	
5	⊙	359	3960		90 46 15		-61.0				5	
6					269 13 54			263.2			6	
7											7	
8	Δ	SP 359	4400		90 19 17		+35.3				8	
9					269 40 51						9	
10		360	3960		90 20 31						10	
11		361	3520		90 28 28						11	
12		362	3080		90 31 00						12	
13		363	2640		90 35 56						13	
14		364	2200		91 25 35						14	
15		365	1760		91 40 50						15	
16		360	1320		91 17 27						16	
17											17	

WORKED BY _____ CHECKED BY 1ST _____ 2ND _____

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

HORIZONTAL AND VERTICAL SURVEY NOTES

26

GSI AREA Umia STATE/COUNTY ALASKA BOOK NO. 4 PAGE 145 OF
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 26 BY 4 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild 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		367	880		90 23 48							1	
2		368	440		90 28 49							2	
3	⊖	369	-0-		90	5.5			298.4			3	
4		370	440		89 04 52							4	
5		371	880		89 42 57							5	
6		372	1320		89 48 03							6	
7		373	1760		89 42 50							7	
8		374	2200		89 40 04							8	
9		375	2140		89 38 22							9	
10		376	3080		89 43 27							10	
11	⊙	377	3520		89 45 24							11	
12					270 14 53							12	
13					89 45 17			4.3		302.8		13	
14												14	
15	Δ	SP 377	2640		89 31 07			-11.3				15	
16					270 29 07							16	
17												17	

WORKED BY _____ CHECKED BY 1ST _____ 2ND _____

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

HORIZONTAL AND VERTICAL SURVEY NOTES

27

GSI AREA Umiat STATE/COUNTY Alaska BOOK NO. 4 PAGE 146 OF 146
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 26 DY 4 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1186

LINE	 SS 	STATION	VERTICAL						HORIZONTAL		REMARKS				
			DISTANCE		<input checked="" type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION		L/R OR DJI	RIGHT TURNED HORIZONTAL ANGLE	LINE	
			SLOPE	HORIZ						INST					ROD
1		378	2200		89 29 13								1		
2		379	1760		89 28 10								2		
3		380	1320		89 24 20								3		
4		381	880		89 11 12								4		
5		382	440		88 56 07								5		
6		383	-0-		90	5.5			291.4				6		
7		384	440		89 46 20								7		
8		385	880		89 57 20								8		
9		386	1320		90 06 20								9		
10		387	1760		90 28 00								10		
11		388	2200		90 10 31								11		
12		389	2640		90 10 10								12		
13		390	3080		90 08 00								13		
14		391	3520		90 08 25			-19.4		272.1			14		
15					269 51 42								15		
16													16		
17													17		

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

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Umiaf STATE/COUNTY Alaska BOOK NO. 4 PAGE 147 OF 28
 LINE/LOOP NO. 3A-81 TYPE SURVEY Vert CLIENT USGS DATE 26 DY 4 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 wild 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			RIGHT TURNED HORIZONTAL ANGLE
			SLOPE	HORIZ					INST	ROD		
1	Δ	SP391	3520		89 47 48			-1.7				1
2					270 12 23							2
3		392	3080		89 50 36							3
4		393	2640		90 55 21							4
5		394	2200		91 10 23							5
6		395	1760		91 57 40							6
7		396	1320		92 28 00							7
8		397	880		92 26 55							8
9		398	440		92 03 24	4.0						9
10	X	399	-0-		90	5.5			270.2			10
11		400	440		88 50 33							11
12		401	880		89 14 10							12
13		402	1320		89 30 50							13
14		403	1760		89 39 35							14
15		404	2200		89 43 21							15
16		405	2640		89 47 40							16
17												17

WORKED BY _____ CHECKED BY 1ST _____ 2ND _____

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

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Umiat STATE/COUNTY ALASKA BOOK NO. 4 PAGE 148 OF 29
 LINE/LOOP NO. 3A-81 TYPE SURVEY Vert CLIENT USGS DATE 26 DY 4 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 wild CREW NO. 1186

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						HORIZONTAL		REMARKS			
			DISTANCE	<input checked="" type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			LR OR DJ	RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE					HORIZ	INST				
1	⊙	406	3080		89 46 52	11		+1.0				1		
2					270 13 09	11			271.2			2		
3												3		
4	Δ	SP406	2200		89 33 10	11		-6.3				4		
5					270 26 46	11						5		
6		407	1760		89 31 40	11						6		
7		408	1320		89 21 50	11						7		
8		409	880		89 12 00	11						8		
9		410	440		89 17 00	11						9		
10	人	411	-0-		90	55			265.0			10		
11		412	440		89 19 34	11						11		
12		413	880		89 51 50	11						12		
13		414	1320		89 45 42	11						13		
14		415	1760		89 52 20	11						14		
15	⊙	416	2200		89 52 29	11		-6.1				15		
16					210 07 26	11			258.8			16		
17												17		

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

HORIZONTAL AND VERTICAL SURVEY NOTES

GS1 AREA Umist STATE/COUNTY Alaska BOOK NO. 4 PAGE 149 OF 30
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 26 DY 4 MO 81 YR
 SURVEYOR M. O'BRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1186

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						HORIZONTAL		REMARKS			
			DISTANCE	<input checked="" type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			L/R OR D/H	RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE					HORIZ	INST				
1	Δ	SP416	240		88 21 38			-64.7				1		
2					27 38 32							2		
3		417	2200		88 52 00							3		
4		418	1760		89 53 16							4		
5		419	1320		89 50 43							5		
6		420	880		89 49 00							6		
7		421	440		89 38 00							7		
8	Δ	422	-0-		90	5.4		194.1				8		
9												9		
10		Junction			88 54 10							10		
11		417 + 121	2079					223.0				11		
12												12		
13		423	440		89 39 56							13		
14		424	880		89 49 56							14		
15		425	1320		89 49 32							15		
16		426	1760		89 49 25							16		
17												17		

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

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Umiat STATE/COUNTY Alaska BOOK NO. 4 PAGE 150 OF 31
 LINE/LOOP NO. 3481 TYPE SURVEY Vert CLIENT USGS DATE 26 DY 4 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild 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	LINE
				SLOPE					HORIZ	INST				
1		427	2200		89 41 00							1		
2		428	2640		89 56 10							2		
3		429	3080		89 50 20							3		
4	⊙	430	3520		89 47 09		+2.4					4		
5					270 12 44				196.5			5		
6												6		
7	Δ	SP 430	880		91 33 43		+35.0					7		
8					268 26 22							8		
9		431	440		91 33 30							9		
10	⊙	432	-0-		90	5.5		231.5				10		
11		433	440		89 17 20							11		
12		434	880		89 38 40							12		
13		435	1320		89 50 12							13		
14		436	1760		89 56 14							14		
15		437	2200		89 55 30							15		
16		438	2640		88 57 53							16		
17												17		

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

HORIZONTAL AND VERTICAL SURVEY NOTES

32

GSI AREA UmiaT STATE/COUNTY Alaska BOOK NO. 4 PAGE 151 OF
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 26 DY 4 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 wild CREW NO. 1186

LINE	 	STATION	VERTICAL						HORIZONTAL		REMARKS			
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE	LINE
			SLOPE	HORIZ					INST	ROD				
1		439	3080		89 04 50	11		+38.6				1		
2					270 55 06	11						2		
3									270.0			3	270.4 DATA	
4												4		
5												5		
6												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

GSI AREA Unitat STATE/COUNTY Alaska BOOK NO. 4 PAGE 552 OF 33
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 27 DY 4 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1286

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		SP 439	2640		89 35 14			-0.2				1	
2					270 24 40							2	
3		440	2200		89 32 16							3	
4		441	1760		89 28 31							4	
5		442	1320		89 26 15							5	
6		443	880		89 20 10							6	
7		444	440		88 54 18							7	
8		445	-0-		90	5.5			261.9			8	
9		446	440		89 49 53							9	
10		447	880		90 24 55							10	
11		448	1320		89 42 50							11	
12		449	1760		89 30 23							12	
13		450	2200		89 26 38							13	
14		451	2640		89 24 40							14	
15		452	3080		89 28 10			+17.7				15	
16					270 31 50				271.6			16	
17												17	

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

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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Umiait STATE/COUNTY ALASKA BOOK NO. 4 PAGE 103 OF 34
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 27 BY 4 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1186

LINE	 <small>SS</small> 	STATION	VERTICAL						HORIZONTAL		REMARKS		
			DISTANCE	<input checked="" 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
				 <small>SLOPE</small>					 <small>HORIZ</small>	INST			
1		SP 452	2640		89 40 54	11		-3.8				1	
2					270 19 H	11						2	
3		453	2200		89 35 56	11						3	
4		454	1760		89 30 30	11						4	
5		455 455	1320		89 24 56	11						5	
6		456	880		89 12 42	11						6	
7		457	440		89 45 30	11						7	
8		458	-0-		90	5.5			275.8			8	
9		459	440		90 05 06	11						9	
10		460	880		90 19 26	11						10	
11		461	1320		91 07 46	11						11	
12		462	1760		91 57 46	20						12	
13		463	2200		90 17 50	11						13	
14		464	2640		90 04 16	11						14	
15		465	3080		90 00 41	11						15	
16		466	3520		90 00 19	11		-11.1				16	
17					269 59 44	11			264.8			17	

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SYMBOLS = BACKSIGHT
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HORIZONTAL AND VERTICAL SURVEY NOTES

35

GSI AREA Umiait STATE/COUNTY Alaska BOOK NO. 4 PAGE 154 OF
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 27 BY 4 MO 81 YR
 SURVEYOR M. O'BRADY INSTRUMENT DESC/SERIAL NO. T-Z wild CREW NO. 1186

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						ELEVATION		L/R OR DI	HORIZONTAL		REMARKS
			DISTANCE	<input checked="" 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	Δ	SP461e	2640		90 18 55	11		+25.4					1	
2					269 41 10	11							2	
3		467	2700		90 20 00	11							3	
4		468	1760		90 50 20 26'		91 25 09						4	
5		469	1370		90 35 24	11							5	
6		470	880		92 07 52	11							6	
7		471	440		91 08 41	11							7	
8	Δ	472	-0-		90 5.6				290.2				8	
9		473	440		89 04 00	11							9	
10		474	880		89 36 19	11							10	
11		475	1320		89 42 46	11							11	
12		476	1760		89 42 20	11							12	
13	⊙	477	2200		89 31 15	11		+7.5					13	
14					270 28 42	11				297.7			14	
15													15	
16													16	
17													17	

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

HORIZONTAL AND VERTICAL SURVEY NOTES

36

GSI AREA Umiat STATE/COUNTY ALASKA BOOK NO. 4 PAGE 117 OF
 LINE/LOOP NO. 3A-81 TYPE SURVEY Vert CLIENT USGS DATE 27 BY 4 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 wild CREW NO. 1186

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						HORIZONTAL		REMARKS			
			DISTANCE	<input checked="" 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	Δ	SP 477	2640		90 05 26			+15.0					1	
2					269 54 35								2	
3		478	2200		90 39 50								3	
4	⊗	479	1760		90 25 40								4	
5		480	1320		90 10 15								5	
6		481	880		90 03 40								6	
7		482	440		89 25 00								7	
8	Λ	483	- 0 -		90	5.4		312.7					8	
9		484	440		89 59 40								9	
10		485	880		91 06 00								10	
11		486	1320		90 41 25								11	
12		487	1760		90 28 05								12	
13		488	2200		89 56 52								13	
14		489	2640		89 26 15								14	
15		490	3080		89 25 15								15	
16		491	3520		89 20 37								16	
17													17	

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

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Umiaat STATE/COUNTY Alaska BOOK NO. 4 PAGE 156 OF
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 29 DY 4 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1136

LINE	 	STATION	VERTICAL							HORIZONTAL		REMARKS			
			DISTANCE	<input checked="" 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		492	3960			39 22 59	11		+32.0				1		
2						270 37 10	11				344.7			2	
3														3	
4		TRI STATION	-0-			90	5.6							4	MARIAN PESS
5		MARIAN									315.0			5	35 ENGR. Group
6		TRI STATION	-6-			90	5.6			320.6				6	Elev. 315.
7														7	
8		SP492	6943.42			89 42 32	11		+25.3					8	
9						270 17 43	11				346.1			9	SP492
10														10	
11		SP492	3080			88 55 17	15		-42.1		346.1			11	346.1-344.7
12						271 04 28	15							12	
13		493	2640			86 50 27	11							13	
14		494	2200			88 46 10	11							14	
15		495	1760			89 17 40	11							15	
16		496	1320			89 22 50	11							16	
17														17	

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SYMBOLS = BACKSIGHT
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HORIZONTAL AND VERTICAL SURVEY NOTES

38

GSI AREA Umiaat STATE/COUNTY Alaska BOOK NO. 4 PAGE 107 OF
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 27 BY 4 MO 8 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1186

LINE		STATION	VERTICAL						HORIZONTAL		REMARKS			
			DISTANCE	<input checked="" 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				
1		497	320		89 17 00	11						1		
2		498	410		88 48 13	11						2		
3		499	-0-		90	5.5			303.3			3		
4		500	440		90 00 43	11						4		
5		501	880		89 52 00	11						5		
6		502	1320		89 56 20	11						6		
7		503	1760		89 35 10	11						7		
8		504	2200		89 39 37	11						8		
9		505	2640		89 45 44	11	+1.6					9		
10					210 16 28	11			305.0			10		
11												11		
12		SP 505	3960		89 52 30	11	+2.0					12		
13					270 07 31	11						13		
14		506	3520		90 04 00	11						14		
15		507	3080		90 07 46	11						15		
16		508	2640		90 13 55	11						16		
17												17		

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

HORIZONTAL AND VERTICAL SURVEY NOTES

39

GSI AREA Umia at STATE/COUNTY Alaska BOOK NO. 4 PAGE 108 OF
 LINE/LOOP NO. 3A-81 TYPE SURVEY Vert CLIENT USGS DATE 21 BY 4 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1186

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	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		509	2200		90 30 40	11							1	
2		510	1760		90 19 41	11							2	
3		511	1320		90 19 32	11							3	
4		512	880		90 08 50	11							4	
5		513	440		89 38 10	11							5	
6	Δ	514	-0-		90	5.5		307.0					6	
7		515	440		89 34 37	11							7	
8		516	880		89 46 21	11							8	
9		517	1320		89 58 16	11							9	
10		518	1760		90 06 41	11							10	
11		519	2200		90 16 38	11							11	
12	⊙	520	2640		90 13 13	11	-21.0						12	
13					269 46 50	11			286.0				13	
14													14	
15	Δ	SP 520	2640		89 45 05	11	-1.6						15	
16					270 14 50	11							16	
17													17	

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

HORIZONTAL AND VERTICAL SURVEY NOTES

40

GSI AREA Umiat STATE/COUNTY Alaska BOOK NO. 4 PAGE 159 OF
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 27 DY 4 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1186

LINE	 SS 	STATION	VERTICAL						ELEVATION		LR OR DI	HORIZONTAL		REMARKS	
			DISTANCE		<input checked="" type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD ROD OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST		ROD	RIGHT TURNED HORIZONTAL ANGLE		LINE
			SLOPE	HORIZ											
1		521	2200		89 45 32	11							1		
2		522	1760		89 45 10	11							2		
3		523	1320		89 41 40	11							3		
4		524	880		89 31 39	11							4		
5		525	440		89 11 37	11							5		
6		526	-0-		90	5.5			285.4				6		
7		527	440		89 45 00	11							7		
8		528	880		89 31 20	11							8		
9		529	1320		89 09 20	11							9		
10		Intersect	880		89 31 20	11			281.8				10	L-39-81	
11		530	1760		89 24 48	11		+7.1					11	L-34-81	
12					276 35 02	11			292.5				12		
13													13		
14	A	SP 530	3080		89 52 55	11		-49.3					14		
15					271 07 02	11							15		
16													16		
17													17		

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

HORIZONTAL AND VERTICAL SURVEY NOTES

41

GSI AREA Umiaat STATE/COUNTY ALASKA BOOK NO. 4 PAGE 160 OF
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 27 BY A MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1186

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										
1		531	260		88 50 14							1		
2		532	220		88 48 03							2		
3		533	1760		88 49 50							3		
4		534	1320		88 36 47							4		
5		535	800		88 32 33							5		
6		536	440		88 34 39							6		
7		537	0-		90	55		243.2				7		
8		538	440		90 26 13							8		
9		539	880		90 10 20							9		
10		540	1320		89 42 15							10		
11		541	1760									11		
12		TP 540+165	1485		89 40 18		-2.4					12		
13					270 19 32			240.7				13		
14												14		
15		TP 540+165	2475		89 50 41		+4.2					15		
16					270 09 27							16		
17												17		

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

HORIZONTAL AND VERTICAL SURVEY NOTES

42

GSI AREA Umiat STATE/COUNTY Alaska BOOK NO. 4 PAGE 161 OF
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 27 BY 4 MO 8 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1186

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	FINAL ELEVATION DIFF	ELEVATION			RIGHT TURNED HORIZONTAL ANGLE
			SLOPE	HORIZ					INST	ROD		
1		541	2200		900310	20					1	
2		542	1760		894340	11					2	
3		543	1320		894612	11					3	
4		544	880		894342	11					4	
5		545	440		893323	11					5	
6	Δ	546	-0-	90°	883716	155		244.9			6	
7		547	440		883716	11					7	
8	○	548	880		892142	11					8	
9					2703820	11			243.7		9	
10											10	
11											11	
12											12	
13											13	
14											14	
15											15	
16											16	
17											17	

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

HORIZONTAL AND VERTICAL SURVEY NOTES

43

GSI AREA Umiat STATE/COUNTY Alaska BOOK NO. 4 PAGE 162 OF
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 28 DY 4 MO 81 YR
 SURVEYOR M. O'LEARY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 186

START

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						HORIZONTAL		REMARKS				
			DISTANCE	<input checked="" 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	Δ	SP 548	3520			89 05 40	11		-44.9					1	
2						270 51 15	11							2	
3		549	3080			89 41 15	4.0							3	
4		550	2640			91 37 40	11							4	
5		551	2200			91 52 07	11							5	
6		552	1760			91 59 40	11							6	
7		553	1320			91 45 47	11							7	
8		554	880			92 04 43	11							8	
9		555	440			92 24 36	11							9	
10	Λ	556	-0-			90	5.5		198.8					10	
11		557	440			87 44 00	11							11	
12		558	880			88 29 35	11							12	
13		559	1320			88 48 55	11							13	
14		560	1760			88 51 25	11							14	
15		561	2200			88 34 31	11							15	
16		562	2640			87 58 43	11							16	
17														17	

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

HORIZONTAL AND VERTICAL SURVEY NOTES

44

GSI AREA Umiat STATE/COUNTY Alaska BOOK NO. 4 PAGE 103 OF
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert. CLIENT USGS DATE 28 DY 4 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1186

LINE		STATION	VERTICAL						HORIZONTAL		REMARKS			
			DISTANCE	<input checked="" type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			LR OR DJ	RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE					HORIZ	INST				
1		563	3080		87 36 15							1		
2		569	3520		87 38 12		+13A					2		
3					272 21 50				333.3			3		
4												4		
5		SP 564	3080		90 23 24		+31.8					5		
6					269 56 31							6		
7		565	2140		90 24 06							7		
8		566	2200		90 28 46							8		
9		567	1760		90 32 00							9		
10		568	1320		90 31 30							10		
11		569	880		90 22 40							11		
12		570	440		89 52 30							12		
13		571	-0-		90	5.5			365.1			13		
14		572	440		89 03 40							14		
15		573	880		89 29 50							15		
16		574	1320		90 39 29							16		
17												17		

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

HORIZONTAL AND VERTICAL SURVEY NOTES

45

GSI AREA Umriat STATE/COUNTY Alaska BOOK NO. 4 PAGE 104 OF
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 28 DY 4 MO 8 YR
 SURVEYOR M. OGRAH INSTRUMENT DESC/SERIAL NO. T-2 wild CREW NO. 1186

LINE	 	STATION	VERTICAL						HORIZONTAL		REMARKS			
			DISTANCE	<input checked="" 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		575	1760		89 41 10							1		
2		576	2200		89 48 22							2		
3		577	2640		89 52 18							3		
4		578	3080		89 57 09		-8.3					4		
5					270 02 42				356.8			5		
6												6		
7		SP 578	3080		89 23 48		-21.6					7		
8					270 36 22							8		
9		579	2640		89 23 00							9		
10		580	2200		89 22 22							10		
11		581	1760		89 26 14							11		
12		582	1320		89 29 01							12		
13		583	880		89 34 53		89 34 53					13		
14		584	440		88 56 26							14		
15		585	-0-		90	5.5			335.1			15		
16		586	440		91 15 15							16		
17												17		

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HORIZONTAL AND VERTICAL SURVEY NOTES

46

GSI AREA Amiatt STATE/COUNTY ALASKA BOOK NO. 4 PAGE 165 OF
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 28 DY 4 MO 81 YR
 SURVEYOR W. OKADY INSTRUMENT DESC/SERIAL NO. T-2 wild CREW NO. 1126

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		587	880		92 11 02	11						1		
2		588	1320		91 58 00	11						2		
3		589	1760		91 40 15	11						3		
4		590	2200		91 22 38	11						4		
5		591	2640		90 49 40	11						5		
6		592	3080		90 18 14	11						6		
7		593	3520		89 56 43	11						7		
8		OSP 594	3960		89 41 13	11	11.0					8		
9					270 18 42	11			346.0			9		
10												10		
11		ASP 594	2640		91 13 31	11	167.3					11		
12					268 46 32	11						12		
13		595	2200		91 07 52	11						13		
14		596	1760		91 07 00	11						14		
15		597	1320		91 03 15	11						15		
16		598	880		90 57 00	11						16		
17												17		

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HORIZONTAL AND VERTICAL SURVEY NOTES

47

GS1 AREA Umiat STATE/COUNTY Alaska BOOK NO. 4 PAGE 166 OF
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 27 DY 4 MO 81 YR
 SURVEYOR M. O'LEARY INSTRUMENT DESC/SERIAL NO. T-2 wild CREW NO. 1186

LINE	 SS 	STATION	VERTICAL						HORIZONTAL		REMARKS			
			DISTANCE	<input checked="" 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		599	440		90 15 27	11						1		
2		SP 600	- 0 -		90	5.5		415.3				2		
3		601	440		88 06 24	11						3		
4		602	880		88 25 20	11						4		
5		603	1320		88 06 50	11						5		
6		604	1760		88 02 24	11						6		
7		605	2200		88 05 40	11						7		
8		606	2640		88 12 49	11	71.4					8		
9					271 47 17	11		484.8				9		
10												10		
11		606	2640		89 53 09	11	+5.6					11		
12					270 07 01	11						12		
13		607	2200		89 45 25	11						13		
14		608	1760		89 40 40	11						14		
15		609	1320		89 37 22	11						15		
16		610	880		89 31 14	11						16		
17												17		

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HORIZONTAL AND VERTICAL SURVEY NOTES

48

GSI AREA Umial STATE/COUNTY Alaska BOOK NO. 4 PAGE 167 OF 167
 LINE/LOOP NO. 34-81 TYPE SURVEY Lot CLIENT USGS DATE 28 BY 4 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 186

LINE	 	STATION	VERTICAL						HORIZONTAL		REMARKS			
			DISTANCE	<input checked="" 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		611	440		89 11 01	11						1		
2		612	0		90	5.5		490.3				2		
3		613	440		89 36 43	11						3		
4		614	880		90 06 46	11						4		
5		615	1320		90 21 48	11						5		
6		616	1760		90 41 58	11	-32.4					6		
7					26 18 02	11		457.9				7		
8												8		
9		SP 616	3080		88 22 20	11	-76.7					9		
10					27 37 45	11						10		
11		617	2610		88 32 30	11						11		
12		618	2200		88 49 50	11						12		
13		619	1760		89 15 50	11						13		
14		620	1320		89 58 45	11						14		
15		621	880		91 16 40	11						15		
16		622	440		91 29 20	11						16		
17												17		

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HORIZONTAL AND VERTICAL SURVEY NOTES

49

GSI AREA Umiaf STATE/COUNTY ALASKA BOOK NO. 4 PAGE 118 OF
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 28 DY 4 MO 81 YR
 SURVEYOR H. O'BRYEN INSTRUMENT DESC/SERIAL NO. T-2 WILD CREW NO. 1186

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						HORIZONTAL		REMARKS			
			DISTANCE	<input checked="" 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	<input checked="" type="checkbox"/> K	623	-0-		90	55			381.1			1		
2		624	440		91 18 53	11						2		
3		625	880		91 56 53	11						3		
4		626	1320		90 07 46	11						4		
5		627	1760		88 54 14	11						5		
6		628	2200		88 15 00	11						6		
7	<input checked="" type="checkbox"/> #	629	2640		88 05 20	11						7		
8	<input checked="" type="checkbox"/> ⊙	630	3080		88 08 59	11	+88.6					8		
9					27 51 10	11			469.9			9		
10												10		
11	A	630	1320		90 09 00	11						11		
12					269 51 13	11						12		
13		631	880		89 47 10	11						13		
14		632	440		89 - 03 - 50	11						14		
15	<input checked="" type="checkbox"/> K	633	-0-		90	5.4			484.2			15		
16		634	440		89 - 56 - 15	11						16		
17		635	880		90 - 26 - 10	11						17		

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

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA UMIAT STATE/COUNTY ALASKA BOOK NO. 4 PAGE 189 OF 50
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 28 DAY 4 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1186

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> SS <input type="checkbox"/> ⊙	STATION	VERTICAL						ELEVATION		LR OR DR	HORIZONTAL		REMARKS
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD		RIGHT TURNED HORIZONTAL ANGLE	LINE	
			SLOPE	HORIZ										
1	Δ	633	○		90	5.9							1	
2													2	
3	⊗	633	○		90	5.9							3	
4													4	
5	⊙	TP 1		5587.53	89 39 47	15		+18.5					5	
6					270 20 13	15			502.7				6	
7													7	
8	Δ	TP 1	○		90	7.3							8	
9													9	
10	⊗	TP 1	○		90	7.3			510.0				10	
11													11	
12	⊙	BAVY MARK		2229.79	91 08 27	15		-59.3					12	Elev. 451.7
13					268 51 36	15			450.7				13	
14													14	
15													15	
16													16	
17													17	

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

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Umia+ STATE/COUNTY ALASKA BOOK NO. 4 PAGE 110 OF 51
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert CLIENT USGS DATE 4 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild 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			RIGHT TURNED HORIZONTAL ANGLE	LINE
			SLOPE	HORIZ					INST	ROD			
1		636	1320		90-35-02	11					1		
2		637	1760		90-43-41	11					2		
3		638	2200		90-44-30	11					3		
4		639	2640		90-38-05	11					4		
5		640	3080		90-35-04	11					5		
6	⊙	641	3520		90-36-27	11		-48.1			6		
7					269-23-27	11			437.1		7		
8											8		
9	Δ	641	2200		88-01-56	15		-60.6			9		
10					271-58-00	15					10		
11		642	1760		88-00-21	11					11		
12		643	1320		87-56-26	11					12		
13		644	880		87-33-23	11					13		
14		645	440		86-54-00	11					14		
15	Δ	646	70-		90	5.5			376.5		15		
16		647	440		92-04-27	11					16		
17											17		

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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Umiat STATE/COUNTY Alaska BOOK NO. 4 PAGE 11 OF 52
 LINE/LOOP NO. 3A-31 TYPE SURVEY Vert CLIENT USGS DATE 28 BY 4 MO 8 YR 81
 SURVEYOR M. O'Grady INSTRUMENT DESC/SERIAL NO. T-2 Wild 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	LINE
				SLOPE					HORIZ	INST				
1		648	880		92 21 52	11						1		
2		649	1320		92 29 16	11						2		
3		650	1760		92 00 23	11						3		
4		651	2200		91 11 30	11						4		
5		652	2640		91 10 25	11						5		
6		653	3080		91 11 50	11						6		
7	⊙	654	3520		90 59 03	11	-71.2					7		
8					29 01 00	11			305.3			8		
9												9		
10	Δ	SP 654	-0-		90	5.6						10		
11												11		
12	⊗	SP 654	-0-		90	5.6		310.9				12		
13		655	410		90 46 07	11						13		
14		656	880		90 41 56	11						14		
15		657	1320		90 29 40	11						15		
16		658	1760		90 11 08	11						16		
17												17		

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

HORIZONTAL AND VERTICAL SURVEY NOTES

53

GSI AREA Umia+ STATE/COUNTY Alaska BOOK NO. 4 PAGE 172 OF 172
 LINE/LOOP NO. 34-81 TYPE SURVEY Vert. CLIENT USGS DATE 28 BY 4 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 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	HORIZ					INST	ROD		
1		SP 659	2200		98 12 40	11						
2		SP 660	2640		90 24 32	11						
3		SP 661	3080		90 29 26	11						
4		SP 662	3520		90 32 22	15		2163.0				EOL
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												

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