

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Teshkehpuk STATE/COUNTY ALASKA BOOK NO. 1 PAGE 102 OF 1  
 LINE/LOOP NO. 22-81 TYPE SURVEY Vert CLIENT USGS DATE 26 BY 1 MO 81 YR  
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 W.D. 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	Δ	SP 749	-0-		90	5.4					1	LINE 22-81
2											2	SP 749
3	⊗	SP 418	-0-		90	5.4		146.3	✓		3	LINE 22-81
4		SP 417	440		89 11 37	11					4	SP 418 are the
5		416	880		89 06 18	11					5	SAME POINT.
6		415	1320		89 05 58	11					6	Elev. 1109
7		414	1760		89 07 08	11					7	
8	⊙	413	2200		89 14 02	11			✓		8	
9					270 45 49	11			1104.8		9	
10											10	
11	Δ	SP 413	1320		90 24 09	11					11	
12					269 39 01	11					12	
13		412	880		90 08 29	11					13	
14		411	440		89 21 00	11			✓		14	
15	⊗	410	0		90	5.2		183.8			15	
16		409	440		89 21 00	11					16	
17											17	

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

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Teshkekwuk STATE/COUNTY Alaska BOOK NO. 31 PAGE 103 OF       
 LINE/LOOP NO. 22-31 TYPE SURVEY Vert CLIENT USGS DATE 26 DY 1 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		L/R OR D/I		RIGHT TURNED HORIZONTAL ANGLE
			SLOPE	HORIZ					INST	ROD			
1		SP 408	880		89 37 37	11						1	
2		407	1320		89 44 22	11						2	
3		406	1760		89 45 23	11						3	
4		405	1200		89 40 09	11						4	
5	◎	409	2640		89 48 06	11						5	
6					290 11 51	11			182.1			6	
7												7	
8	Δ	404	880		88 51 23	11						8	
9					271 08 40	11						9	
10		403	480		87 58 06	11						10	
11		402	-0-		90	5.4		175.5				11	
12		401	440		90 38 27	11						12	
13	◎	400	880		91 07 27	11			147.2			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

3

GSI AREA Teshkeokuk STATE/COUNTY Alaska BOOK NO. 1 PAGE 104 OF 104  
 LINE/LOOP NO. 22-81 TYPE SURVEY Vert CLIENT USGS DATE 26 DY 1 MO 81 YR  
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1186

LINE	  	STATION	VERTICAL						ELEVATION		L/R OR DI	HORIZONTAL		REMARKS
			DISTANCE		VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD		RIGHT TURNED HORIZONTAL ANGLE	LINE	
			SLOPE	HORIZ										
1		SP 749 Line 28-81												
2		SP 418	1760		90 08 31	11				140.9		From page	1	1, line 41
3					269 51 35	11	+15.3						2	
4		419	1320		90 08 20	11							3	
5		420	880		90 05 05	11							4	
6		421	440		89 39 43	11							5	
7		422	-0-		90	5.2			156.2				6	
8		423	440		89 49 19	11							7	
9		424	880		89 55 06	11							8	
10		425	1320		89 57 29	11							9	
11		426	1760		90 02 19	11							10	
12		427	2200		90 04 38	11							11	
13					269 55 16	11	-39		142.3				12	
14													13	
15		429	2365		90 33 07	11							14	
16					269 26 52	11	+33.7						15	
17													16	
													17	

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

4

GSI AREA TeshkepuK STATE/COUNTY Alaska BOOK NO. J PAGE 105 OF       
 LINE/LOOP NO. 22-81 TYPE SURVEY Vert CLIENT USGS DATE 26 DY 1 MO 81 YR  
 SURVEYOR M. O'BEADY INSTRUMENT DESC/SERIAL NO. T-2 W: B CREW NO. 1186

LINE	  	STATION	VERTICAL					ELEVATION		L/R OR DJ	HORIZONTAL		REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST		ROD	RIGHT TURNED HORIZONTAL ANGLE		LINE
			 SLOPE	 HORIZ										
1		SP428	1925		90 51 09	11							1	
2		429	1485		90 59 25	11							2	
3		430	1045		91 02 21	11							3	
4		431	605		91 02 45	11							4	
5		432	165		90 01 38	11							5	
6		TP						175.9					6	
7		433	275		90 32 55	11							7	
8		434	715		90 31 01	11							8	
9		435	1155		90 26 21	11							9	
10		436	1595		90 43 49	11							10	
11		437			269 16 06	11		-31.3		142.6			11	
12													12	
13		SP 437 436	2200	2040	89 29 26	11							13	
14					270 30 42	11		-12.7					14	
15		438 431	1760	2200	89 45 46	11							15	
16		438	1320	1760	89 44 39	11							16	
17													17	

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

5











GSI AREA Teshokuk STATE/COUNTY Alaska BOOK NO. A PAGE 106 OF       
 LINE/LOOP NO. 22-81 TYPE SURVEY Vert CLIENT USGS DATE 26 BY 1 MO 81 YR  
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild 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		SP439	1326		89 41 48	11						1	
2		440	880		89 32 50	11						2	
3		441	440		89 06 29	11						3	
4		442	-0-		90	52		131.9				4	
5		443	440		89 34 27	11						5	
6		444	880		90 01 18	11						6	
7		445	1320		90 01 32	11						7	
8		446	1760		89 58 12	11						8	
9		447	2200		90 01 37	11						9	
10		448	2640		89 59 01	11						10	
11					270 01 06	11	-10.1		121.9			11	
12												12	
13		SP448	1595		91 21 19	11						13	
14					268 38 45	11	+48.7					14	
15								170.5				15	
16		BARR MARK	3978.54		90 11 48	6.1						16	Elev 150.4
17					269 48 18	6.1	-19.2		151.3			17	151.3 - 150.4 = 0.9





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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Teshkepuuk STATE/COUNTY Alaska BOOK NO. 1 PAGE 107 OF 6  
 LINE/LOOP NO. 22-81 TYPE SURVEY vert CLIENT USGS DATE 27 BY 1 MO 8 YR  
 SURVEYOR M. O'LEARY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1186

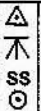




LINE	  	STATION	VERTICAL						HORIZONTAL		REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			RIGHT TURNED HORIZONTAL ANGLE
				 SLOPE HORIZ					INST	ROD		
1		Bar Mark	3928.54		90 11 48	6.1					1	Elev. 150.4
2					269 48 18	6.1	+19.2				2	
3		TP						169.6			3	
4											4	
5		SP 448	1595		91 21 19	11					5	
6					268 38 45	11	-48.7		121.0		6	
7											7	
8		SP 448	1595		91 21 20	11	+48.7				8	
9					268 38 26	11					9	
10		449	1155		91 31 20	11					10	
11		450	715		98 49 48	11					11	
12		451	275		91 55 21	11					12	
13		TP						169.7			13	
14		452	1165		91 53 15	11					14	
15		453	605		91 47 27	11					15	
16		454	1045		91 52 13	11					16	
17											17	

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA TesholekpuK STATE/COUNTY Alaska BOOK NO. 1 PAGE 108 OF 7  
 LINE/LOOP NO. 22-81 TYPE SURVEY Vert CLIENT USGS DATE 29 BY 1 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			RIGHT TURNED HORIZONTAL ANGLE	
				SLOPE 					HORIZ 	INST			ROD
1		SP 455	1485		91 26 45	11							
2		456	1425		91 06 18	11							
3		457	1365		90 34 39	11							
4		458	1205		90 17 46	11							
5					90 17 53	11	-26.5		144.1				
6					89 41 51	11							
7													
8		458	1640		89 23 19	11	-17.4						
9					270 36 54	11							
10		459	2200		89 46 54	11							
11		460	1760		89 56 31	11							
12		461	1370		89 54 38	11							
13		462	880		89 47 16	11							
14		463	440		89 35 03	11							
15		464	-0-		90	5.3			126.7				
16		465	440		89 11 22	11							
17													

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SYMBOLS

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 = INSTRUMENT SET-UP

SS = SIDESHOT

 = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

8

GSI AREA Teshkeguk STATE/COUNTY ALASKA BOOK NO. 1 PAGE 109 OF       
 LINE/LOOP NO. 22-81 TYPE SURVEY Vert. CLIENT USGS DATE 27 BY 1 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 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		SP466	880		89 37 41	11						1
2		467	1320		89 45 33	11						2
3		468	1760		89 28 43	11						3
4		469	2200		<del>89 23 23</del>	11						4
5					<del>270 35 28</del>	10						5
6					89 23 19	11						6
7					270 36 56	11	+12.7	139.4				7
8												8
9		SP 469	2640		89 30 56	11	-11.5					9
10					270 29 13	11						10
11		470	2200		89 27 40	11						11
12		471	1760		89 28 45	11						12
13		472	1320		89 21 08	11						13
14		473	880		89 23 31	11						14
15		474	410		89 01 07	11						15
16		475	-0.		90	512		122.9				16
17												17

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Teshukuk STATE/COUNTY ALASKA BOOK NO. A PAGE 110 OF 9  
 LINE/LOOP NO. 22-81 TYPE SURVEY Vert CLIENT USGS DATE 27 BY 1 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			L/R OR D/I	RIGHT TURNED HORIZONTAL ANGLE
				SLOPE					HORIZ	INST			
1		SP 476	440		89 11 05	11						1	
2		477	880		89 44 46	11						2	
3		478	1320		90 01 40	11						3	
4		479	1760		89 53 47	11						4	
5		480	2200		89 56 02	11						5	
6		481	2640		90 04 01	11						6	
7	⊙	482	3080		89 51 22	11						7	
8					270 08 46	11	-3.0	124.9				8	
9												9	
10	Δ	482	3080		90 11 47	11	+21.3					10	
11					269 48 23	11						11	
12		483	2640		90 12 53	11						12	
13		484	2200		90 07 57	11						13	
14		485	1760		89 59 41	11						14	
15		486	1320		89 48 33	11						15	
16		487	880		89 48 10	11						16	
17												17	

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

10

GSI AREA Teshakpuk STATE/COUNTY Alaska BOOK NO. 7 PAGE 11 OF 11  
 LINE/LOOP NO. 22-81 TYPE SURVEY Vert CLIENT USGS DATE 27 BY 1 MO 81 YR  
 SURVEYOR M. O'BRAY INSTRUMENT DESC/SERIAL NO. T-2 Wilb 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		L/R OR DI		RIGHT TURNED HORIZONTAL ANGLE
				SLOPE					HORIZ	INST			
1		488	440		90 08 17	11						1	
2		489	-0-		90	5.2		146.1				2	
3		490	440		89 15 59	11						3	
4		491	880		89 35 59	11						4	
5		492	1320		89 36 50	11						5	
6		493	1760		89 38 01	11						6	
7		494	2200		89 37 58	11						7	
8		495	2640		89 44 42	11						8	
9					270 15 22	11		+0.9		147.1		9	
10												10	
11		495	2640		89 57 28	11		+8.8				11	
12					270 02 55	11						12	
13		496	2200		90 00 53	11						13	
14		497	1760		90 16 31	22.5						14	
15		498	1320		89 59 36	11						15	
16		499	880		89 58 37	11						16	
17												17	

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

11

GSI AREA At Teshekpuk STATE/COUNTY Alaska BOOK NO. 1 PAGE 112 OF       
 LINE/LOOP NO. 22-81 TYPE SURVEY Vert CLIENT USGS DATE 27 DY 1 MO 81 YR  
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild 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			LR OR DR	RIGHT TURNED HORIZONTAL ANGLE
				SLOPE					HORIZ	INST			
1		SP 500	490		$\sphericalangle$	87 51 05 H						1	
2	$\Delta$	501	-6-			90	5.3		155.9			2	
3	$\odot$	502	220			<del>88 40 16</del> H						3	
4						88 40 19 H		-0.8				4	
5						27 19 47 H			155.6			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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 SYMBOLS  $\Delta$  = BACKSIGHT  $\mathcal{K}$  = INSTRUMENT SET-UP SS = SIDESHOT  $\odot$  = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

12

GSI AREA Teshkepuck STATE/COUNTY ALASKA BOOK NO. 7.1 PAGE 113 OF 113  
 LINE/LOOP NO. 22-81 TYPE SURVEY Vert CLIENT USGS DATE 28 BY 1 MO 81 YR  
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. 7-2 wild CREW NO. 2186

LINE	<input type="checkbox"/> $\Delta$ <input type="checkbox"/> $\nabla$ <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 DI	RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE					HORIZ	INST				
1	$\Delta$	SP 502	2640		89 28 58							1		
2					270 31 11		-13.0					2		
3		503	2700		89 20 27							3		
4		504	1760		89 31 20							4		
5		505	1320		89 42 42							5		
6		506	880		89 36 39							6		
7		507	490		89 28 00				1			7		
8	$\nabla$	508	0		90	5.3			142.1			8		
9		509	440		89 07 16							9		
10		510	880		89 24 42							10		
11		511	1320		88 41 17							11		
12		512	1760		88 51 23							12		
13		513	2200		88 52 47							13		
14	$\odot$	514	2640		89 05 23		+31.1					14		
15					276 54 44				173.2			15		
16												16		
17												17		

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

13

GSI AREA Teshkepuk STATE/COUNTY ALASKA BOOK NO. 21 PAGE 114 OF 114  
 LINE/LOOP NO. 22-81 TYPE SURVEY vert CLIENT USGS DATE 28 DY 1 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			RIGHT TURNED HORIZONTAL ANGLE
				SLOPE					HORIZ	INST		
1	Δ	SP 514	880		89 22 50	11						1
2					270 37 19	11	+1.5					2
3		515	440		88 49 34	10						3
4	∧	516	-0-		90	5.2		174.6				4
5		517	440		90 41 42	11						5
6		518	880		91 12 02	11						6
7		519	1328		91 14 11	10						7
8		520	1760		90 58 53	10						8
9		521	2200		90 49 10	10						9
10	⊙	522	2690		90 42 32	11						10
11					269 17 40	11	-43.4	131.2				11
12												12
13	Δ	SP 522	2200		89 54 06	11						13
14	Δ				270 06 07	11	+7.1					14
15		523	1760		89 53 45	11						15
16		524	1320		89 46 29	11						16
17												17

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

14

GSI AREA Teshkeguk STATE/COUNTY Alaska BOOK NO. 21 PAGE 115 OF 115  
 LINE/LOOP NO. 22-31 TYPE SURVEY Vert CLIENT USGS DATE 28 BY 1 MO 81 YR  
 SURVEYOR M. O'BRADY 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			RIGHT TURNED HORIZONTAL ANGLE
			<input type="checkbox"/> FEET <input type="checkbox"/> METERS 	HORIZ					INST	ROD		
1		SP 525	880		89 28 25	11						
2		526	440		89 19 55	11						
3		527	- 0 -		90	5.3		138.3				
4		528	440		89 10 01	11						
5		529	880		89 31 34	11						
6		530	1320		89 45 01	11						
7					270 15 05	11	-5.2	133.1				
8												
9		SP 530	1320		89 43 01	11						
10					270 17 08	11	+4.4					
11		off 531	↑		90	4.7						
12		off 532	↑		90	4.7						
13		off 533	440'		90	4.7		137.5				
14		off 534	↓		90	4.7						
15		535	880		89 36 29	11						
16		536	1320		89 11 58	11						
17												

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

15

GSI AREA Techekpuk STATE/COUNTY ALASKA BOOK NO. 31 PAGE 166 OF       
 LINE/LOOP NO. 22-2 TYPE SURVEY Vert. CLIENT USGS DATE 28 BY 1 MO 8 YR  
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild 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			L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE
				SLOPE					HORIZ	INST			
1		SP 537	1760		89 06 05	11						1	
2					270 54 09	11	+16.7		154.2			2	
3												3	
4		SP 537	2640		89 31 05	11						4	
5					270 29 10	11	-11.4					5	
6		538	2200		89 29 42	11						6	
7		539	1760		89 37 48	11						7	
8		540	1320		89 37 35	11						8	
9		541	880		89 34 38	11						9	
10		542	440		89 11 36	11						10	
11		543	-0-		90	5.1		142.8				11	
12		544	440		89 45 50	11						12	
13		545	880		89 51 36	11						13	
14		546	1320		89 55 51	11						14	
15		Barr Mark										15	
16		546 + 251			90	7.7			135.1			16	
17		81431										17	

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

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

16

GSI AREA Teshkepak STATE/COUNTY ALASKA BOOK NO. 1 PAGE 117 OF       
 LINE/LOOP NO. 22-81 TYPE SURVEY vert CLIENT USGS DATE 28 BY 1 MO 81 YR  
 SURVEYOR M. O'BRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1186

LINE	<input type="checkbox"/> $\Delta$ <input type="checkbox"/> $\nabla$ <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			RIGHT TURNED HORIZONTAL ANGLE
				SLOPE					HORIZ	INST		
1												
2	$\Delta$	BARR MARK		9	90	7.7						
3												
4	$\nabla$	SP 543	-0-		90	5.1		145.2				
5		547	1760		89 52 28	11						
6		548	2200		89 53 22	11						
7	$\odot$	549	2640		89 53 08	11						
8					270 01 58	11		135.8				
9												
10	$\Delta$	SP 549	2640		89 53 01	11						
11					270 07 11	11						
12		SP 550	2260		89 50 04	11						
13		551	1760		89 51 03	11						
14		552	1320		89 51 20	11						
15		553	880		89 48 01	11						
16		554	440		89 12 25	11						
17												

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



# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Teshkeguk STATE/COUNTY Alaska BOOK NO. 31 PAGE 118 OF 118  
 LINE/LOOP NO. 22-81 TYPE SURVEY Vert CLIENT USGS DATE 28 BY 1 MO 81 YR  
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1186

LINE	<input type="checkbox"/> $\Delta$ <input type="checkbox"/> $\nabla$ <input type="checkbox"/> SS <input type="checkbox"/> $\odot$	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	$\nabla$	555	-0-		90	5.3		141.2				1		
2		556	440		89 35 15	11						2		
3		557	880		90 03 53	11						3		
4	$\odot$	558	1320		<del>90 22 54</del>	4						4		
5		<del>559</del>			90 23 02	11						5		
6					269 37 02	11	-19.8		121.4			6		
7												7		
8	$\Delta$	SP 558	1320		89 24 59	11						8		
9					<del>270 35 19</del>	11						9		
10					270 35 14	11	-2.5					10		
11		559	880		90 51 12	11						11		
12		560	440		91 38 09	11						12		
13	$\nabla$	561	-0-		90	5.3		118.9				13		
14		562	440		90	4.4						14		
15		563	880		89 43 52	11						15		
16		564	1320		90 13 45	11						16		
17												17		

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

18

GSI AREA Teshkepek STATE/COUNTY Alaska BOOK NO. 31 PAGE 119 OF       
 LINE/LOOP NO. 22-81 TYPE SURVEY Vert CLIENT USGS DATE 28 BY 1 MO 81 YR  
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 with 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			L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE
				SLOPE 					HORIZ 	INST			
1		SP 565	1320	1760	90 13 43	//						1	
2		566	2200		90 11 18	//						2	
3		567	2640		90 08 06	//						3	
4					269 51 53	//	-17.1		101.8			4	
5												5	
6	A	SP 567	1760		90 20 05	//	+21.2					6	
7					269 40 28	//						7	
8		568	1320		90 19 32	//						8	
9		569	880		90 23 23	//						9	
10		570	440		90 33 22	//						10	
11	A	571	-0-		90	5.4		123.0				11	
12		572	440		88 39 00	//						12	
13		573	880		88 17 30	//						13	
14		574	1320		<del>88 40 02</del>	//						14	
15		<del>575</del>	<del>1760</del>		<del>88 40 17</del>	//						15	
16					271 19 49	//	+19.7		142.6			16	
17												17	

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Teshkepak STATE/COUNTY Alaska BOOK NO. 1 PAGE 120 OF       
 LINE/LOOP NO. 22-81 TYPE SURVEY Vert CLIENT USGS DATE 28 DY 1 MO 81 YR  
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 wild CREW NO. 1186

LINE	 SS	STATION	VERTICAL						ELEVATION		L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD				
				SLOPE										
1		574	2640		89 28 52	//							1	
2					270 31 22	//		-13.1					2	
3		575	2200		89 22 43	//							3	
4		576	1760		89 29 13	//							4	
5		577	1320		89 31 54	//							5	
6		578	880		89 22 11	//							6	
7		579	440		88 56 57	//							7	
8		580	- - -		90	5.3			129.5				8	
9		581	440		89 44 23	//							9	
10		582	880		90 03 36	//							10	
11		583	1320		90 09 50	//							11	
12		584	1760		90 13 55	//							12	
13		585	2200		90 15 19	//							13	
14		586	2640		90 4 02	//							14	
15					269 46 11	//		-21.6		107.9			15	
16													16	
17													17	

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

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Teshkepuuk STATE/COUNTY Alaska BOOK NO. 2 PAGE 126 OF 20  
 LINE/LOOP NO. 22-81 TYPE SURVEY Vert CLIENT USGS DATE 29 DY 1 MO 81 YR  
 SURVEYOR M.O'LEARY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1126

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	A	SP586	2200		89 53 15	11						1		
2					290 06 58	11	+6.5					2		
3		587	1760		89 57 29	11						3		
4		588	1320		89 58 47	11						4		
5		589	880		89 59 00	11						5		
6		590	440		89 55 08	11						6		
7	T	591	-0-		90	51		114.5				7		
8		592	440		89 59 28	11						8		
9		593	880		90 18 21	11						9		
10		594	1320		90 42 32	11						10		
11		595	1760		90 35 20	11						11		
12	O	596	2200		90 29 31	11						12		
13					289 30 28	11	-29.8	84.7				13		
14												14		
15	A	596	1320		89 41 13							15		
16					290 02 59	11	+6.0					16		
17												17		

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

21

GSI AREA Teshkepuuk STATE/COUNTY ALASKA BOOK NO. 1 PAGE 122 OF       
 LINE/LOOP NO. 22-81 TYPE SURVEY VERT CLIENT USGS DATE 29 BY 1 MO 81 YR  
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 W118 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		SP 597	880		89 37 29	11						1
2		598	440		88 37 23	11						2
3	Δ	599	0		90	5.3		90.7				3
4		600	440		89 39 00	11						4
5		601	880		90 01 07	11						5
6		602	1320		89 47 08	11						6
7		603	1760		89 43 39	11						7
8	⊙	604	2200		89 43 12	11						8
9					290 16 57	11		-0.1	90.6			9
10												10
11	Δ	604	1805		90 01 56	11		+12.3				11
12					269 58 23	11						12
13					269 58 16	11						13
14		605	2365		90 09 32	11						14
15		606	1975		90 14 22	11						15
16		607	1485		91 07 47	10						16
17												17

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Teshuk STATE/COUNTY Alaska BOOK NO. 1 PAGE 123 OF 122  
 LINE/LOOP NO. 22-81 TYPE SURVEY Vert CLIENT USGS DATE 29 BY 1 MO 81 YR  
 SURVEYOR M. OGLASZ INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 1126

LINE	<input type="checkbox"/> $\nabla$ <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		SP608	1045		90 45 51	11						1	
2		609	605		90 21 56	11						2	
3		610	165		89 39 48	10						3	
4	$\nabla$	TP	-0-		90	5-		102.9				4	
5		611	275		89 40 50	10						5	
6		612	715		90 01 14	11						6	
7		613	1155		90 09 23	11						7	
8		614	1595		90 15 06	11						8	
9		615	2035		90 18 43	11						9	
10	$\odot$	616	2475		90 25 30	11						10	
11					269 34 35	11		-29.2		73.7		11	
12												12	
13	$\nabla$	616	1320		89 50 31	11		47.3				13	
14					270 09 35	11						14	
15		617	880		89 33 12	11						15	
16		618	440		89 28 12	11						16	
17												17	

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

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

23

GSI AREA ToshokpuK STATE/COUNTY ALASKA BOOK NO. 1 PAGE 124 OF 124  
 LINE/LOOP NO. 22-81 TYPE SURVEY Vert CLIENT USGS DATE 29 DY 1 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 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
									HORIZ	INST			
1		SP 619	-0'		90°	5.2			81.0			1	
2		620	440		90 03 17	11						2	
3		621	880		90 51 49	11						3	
4		622	1320		90 23 19	11						4	
5		623	1760		90 17 38	11						5	
6		624	2200		90 10 24	11						6	
7		625	2640		90 10 01	11						7	
8					289 50 05	11		-18.5		62.5		8	
9												9	
10		625	2365		89 34 42	11		-6.6				10	
11					290 25 31	11						11	
12		626	1925		89 31 00	11						12	
13		627	1485		89 30 00	11						13	
14		628	1045		89 24 56	11						14	
15		629	665		89 54 26	11						15	
16		630	165		92 58 39	11						16	
17												17	

WORKED BY MTO CHECKED BY 1ST \_\_\_\_\_ 2ND \_\_\_\_\_  
**SYMBOLS**     = BACKSIGHT     = INSTRUMENT SET-UP     = SIDESHOT     = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

24

GSI AREA Teshkepak STATE/COUNTY Alaska BOOK NO. 7 PAGE 125 OF       
 LINE/LOOP NO. 22-81 TYPE SURVEY Vert CLIENT USGS DATE 29 DY 1 MO 81 YR  
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 will 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					INST	ROD			
1		TD						55.9			1		
2		SP631	295		89 52 53	//					2		
3		632	715		89 14 58	//					3		
4		633	1155		89 32 47	//					4		
5		634	1595		89 42 25	//					5		
6		635	2035		89 52 18	//					6		
7		636	2475		89 56 05	//					7		
8		637	2915		89 43 54	//	+2.8				8		
9					210 16 13	//	2.9	58.8			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

25

GSI AREA Teshukruk STATE/COUNTY ALASKA BOOK NO. 31 PAGE 106 OF 106  
 LINE/LOOP NO. 22-81 TYPE SURVEY Vert CLIENT USGS DATE 31 BY 1 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
				SLOPE					HORIZ	INST			
1	Δ	SP 637	2640		89 56 40	11							1
2					270 03 10	11	+8.4						2
3		638	2200		89 55 04	11							3
4		639	1760		90 05 30	11							4
5		640	1320		90 12 42	18							5
6		641	880		90 25 49	20							6
7		642	440		89 55 00	11							7
8	Δ	643	-0-		90	5.0		67.5	67.2				8
9		644	440		89 10 58	11							9
10		645	880		89 34 30	11							10
11		646	1320		89 43 49	11							11
12		647	1760		89 46 17	11							12
13		648	2200		90 00 52	11							13
14	○	649	2640		90 03 01	11							14
15					281 56 54	11	-13.2	54.3					15
16								54.0					16
17													17

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

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

26

GSI AREA Teshkevik STATE/COUNTY ALASKA BOOK NO. 1 PAGE 127 OF       
 LINE/LOOP NO. 22-31 TYPE SURVEY Vert CLIENT USGS DATE 31 BY 1 MO 31 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			RIGHT TURNED HORIZONTAL ANGLE
				SLOPE					HORIZ	INST		
1		SP 649	2200		90 09 32	11		+13.8				1
2					219 55 35	11						2
3		650	1760		90 02 32	11						3
4		" 651	1320		89 44 01	11						4
5		" 652	880		89 45 26	11						5
6		" 653	440		89 31 17	11						6
7		654	-0-		90	52		68.0	67.8			7
8		" 655	440		89 17 03	11						8
9		" 656	880		89 42 42	11						9
10		657	1320		90 20 19	18						10
11		658	1760		90 17 12	18						11
12		659	2200		90 15 29	18						12
13		660	2640		90 09 12	18						13
14		661	3080		90 09 51	11						14
15					219 50 13	11		-19.6	48.2			15
16												16
17												17

WORKED BY MTO CHECKED BY 1ST \_\_\_\_\_ 2ND \_\_\_\_\_  
**SYMBOLS**     = BACKSIGHT     = INSTRUMENT SET-UP     = SIDESHOT     = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

27

GSI AREA Teshkepuuk STATE/COUNTY ALASKA BOOK NO. 7 PAGE 128 OF 118  
 LINE/LOOP NO. 22-81 TYPE SURVEY Vert CLIENT USGS DATE 31 BY 1 MO 31 YR  
 SURVEYOR M. O'BRADY 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			LR OR DR	RIGHT TURNED HORIZONTAL ANGLE
				SLOPE					HORIZ	INST			
1		SP 661	2200		90 24 31	11							1
2					269 35 28	11	+16.6						2
3		SP 662	1760		90 25 17	11							3
4		" 663	1320		90 11 32	11							4
5		" 664	880		89 58 43	11							5
6		" 665	440		89 17 54	11							6
7		" 666	0		90	5.1		14.8					7
8		" 667	440		89 50 23	11							8
9		" 668	880		90 19 28	11							9
10		" 669	1320		90 20 38	11							10
11		" 670	1760		90 19 30	11							11
12		" 671	2200		90 14 59	11							12
13					269 45 05	11	-10.5	54.3					13
14													14
15		SP 671	2200		90 09 43	11							15
16					269 56 28	11	+18.2						16
17													17

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

28

GSI AREA Teshuk-Puk STATE/COUNTY Alaska BOOK NO. 31 PAGE 169 OF       
 LINE/LOOP NO. 22-81 TYPE SURVEY Vert CLIENT USGS DATE 31 DY 1 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			RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE 					HORIZ 	INST			
1		SP672	2200		90 15 46	11						1	
2		" 673	1760		90 40 23	11						2	
3		" 674	1320		90 27 21	11						3	
4		" 675	880		90 21 01	11						4	
5		" 676	440		89 44 50	11						5	
6		" 677	-0-		90	5.3		72.6				6	
7		" 678	440		89 53 57	11						7	
8		" 679	880		89 05 24	11						8	
9		680	1320		90 52 29	11						9	
10		681	1760		90 32 56	11						10	
11		682	2200		90 12 25	11						11	
12		683	2640		90 02 40	11						12	
13		684	3080		89 55 02	11						13	
14					270 05 09	11		46.3	66.3			14	
15												15	
16		SP684	1760		89 19 14	11		40.0				16	
17					270 46 55	11						17	

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 = FORESIGHT

# HORIZONTAL AND VERTICAL SURVEY NOTES

29

GSI AREA Teshkepuruk STATE/COUNTY Alaska BOOK NO. 1 PAGE 13 OF 13  
 LINE/LOOP NO. 22-81 TYPE SURVEY Vert CLIENT USGS DATE 31 BY 1 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		SP 685	1320		89 10 26	11						1		
2		686	880		89 50 23	11						2		
3		687	440		88 16 07	11						3		
4	Δ	688	-0-		90	5.2		56.3				4		
5		689	440		90 19 37	11						5		
6		690	880		90 42 20	11						6		
7		691	1320		90 33 53	11						7		
8		692	1760		90 40 06	11						8		
9		693	2200		90 16 57	11						9		
10		694	2640		89 56 46	11						10		
11		695	3080		89 44 18	11						11		
12	⊙	696	3520		89 38 03	11						12		
13					270 21 46	11		+11.6		67.9		13		
14												14		
15	Δ	SP 696	1320									15		
16					89 50 33	11		+7.3				16		
17					270 09 26	11						17		

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# HORIZONTAL AND VERTICAL SURVEY NOTES

30

GSI AREA Teshkeguk STATE/COUNTY ALASKA BOOK NO. 3 PAGE 131 OF       
 LINE/LOOP NO. 22-81 TYPE SURVEY Vert. CLIENT USGS DATE 31 BY 1 MO 81 YR  
 SURVEYOR M. O'LEARY 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
									SLOPE	HORIZ			
1		SP 697	880		89 49 31	11						1	
2		" 698	440		89 21 21	11						2	
3	⋈	" 699	-6-		90	5.4		73.3				3	
4		" 700	440		90 59 10	11						4	
5		" 701	880		91 04 31	11						5	
6		" 702	1320		91 06 41	11						6	
7		" 703	1760		91 11 36	11						7	
8	⊙	" 704	2200		90 59 00	11						8	
9					209 00 43	11		-48.8	26.5			9	
10												10	
11	Δ	SP 704	2760		89 58 36	11						11	
12					270 01 20	11		410.2				12	
13		705	1320		90 17 18	11						13	
14		706	880		90 26 12	18						14	
15		707	440		89 06 19	11						15	
16	⋈	708	-0-		90	5.3			36.7			16	
17												17	

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# HORIZONTAL AND VERTICAL SURVEY NOTES

31

GSI AREA Teshkepuk STATE/COUNTY ALASKA BOOK NO. 7 PAGE 132 OF       
 LINE/LOOP NO. 22-81 TYPE SURVEY Vert CLIENT USGS DATE 31 BY 1 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			L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE
									SLOPE	HORIZ			
1		709	440		89 30 49	//						1	
2		710	880		89 50 52	//						2	
3		711	1320		89 52 38	//						3	
4		712	1760		89 58 22	//						4	
5		713	2200		89 57 29	//						5	
6	⊙	714	2640		89 55 50	//						6	
7					270 04 01	//	-7.7	29.9				7	
8												8	
9	Δ	714	3080		89 56 39	//	+7.7					9	
10	Δ				270 03 32	//						10	
11		715	2640		89 57 05	//						11	
12		716	2200		90 00 45	//					89°57'18" 11:0	12	
13		717	1760		90 01 04	//						13	
14		718	1320		89 59 39	//						14	
15		719	880		89 40 29	//						15	
16		720	440									16	
17												17	

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# HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Teshkepuk STATE/COUNTY Alaska BOOK NO. # PAGE 133 OF 32  
 LINE/LOOP NO. 22-81 TYPE SURVEY vert CLIENT USOS DATE 31 BY 1 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 DJ	HORIZONTAL		REMARKS
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD		RIGHT TURNED HORIZONTAL ANGLE	LINE	
				SLOPE										
1														
2	Δ	721	-0-		90	5.3			36.7					
3														
4	⊙	well			90	0.7				36.0				81390
5		81390												Elev 36.2
6														36.2 - 36.0 =
7	Δ	well			90	0.7								0.2
8		81390												TIE
9	Δ	SP 721	-0-		90	5.3			36.7					
10		722	440		89	48 60	11							
11		723	880		89	48 25	11							
12		724	1320		89	53 06	11							
13		725	1760		89	54 35	11							
14		726	2200		89	52 40	11							
15		727	2640		90	00 12	11							
16	⊙	728	3080		90	01 09	11		-11.8		24.9			
17					269	58 51	11							

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# HORIZONTAL AND VERTICAL SURVEY NOTES

33

GSI AREA Techekpak STATE/COUNTY ALASKA BOOK NO. 1 PAGE 134 OF       
 LINE/LOOP NO. 22-8 TYPE SURVEY Vert. CLIENT USGS DATE 31 BY      MO 8 YR       
 SURVEYOR M. O'BEADY INSTRUMENT DESC/SERIAL NO. T-2 Wild 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		LR OR DR		RIGHT TURNED HORIZONTAL ANGLE
				SLOPE					HORIZ	INST			
1	$\Delta$	SP 728	0		90	5.2		+5.2	3				
2													
3	$\Delta$	SP 728	0		90	5.2			30.1	24.9			
4													
5	$\odot$	BARR MARK 81389			90	4.8				25.3		81389	
6												Elev. 23A	
7	$\Delta$	BARR MARK 81389			90	4.8						25.3 - 23A = 1.9 + IE	
8													
9	$\Delta$	SP 728	0		90	5.2							
10		TSI 729	440		89 51 16	11				22.9			
11		730	880		89 43 42	11				21.4			
12		731	1320		89 51 24	11				20.5			
13		732	1760		89 53 19	11				20.7			
14		733	2200		89 51 06	11				21.1			
15		734	2640		89 54 27	11				21.6			
16		735	3080		89 55 28	11				21.5			
17													

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

# HORIZONTAL AND VERTICAL SURVEY NOTES

34

GSI AREA Teshkepunk STATE/COUNTY ALASKA BOOK NO. 3 PAGE 135 OF       
 LINE/LOOP NO. 22-81 TYPE SURVEY Vert CLIENT USGS DATE 31 DY 1 MO 81 YR  
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. UT-2 wild CREW NO. 1186

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> T <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					ROD
1		TS 736	3520		89 55 48	11						21.8		1	
2		TS 737	3960		89 51 54	11						26.9		2	
3		TS 738	4400		89 49 03	11						31.6		3	
4		TS 739	4840		89 55 17	11						24.3		4	
5	⊙	TS 740	5280		89 55 30	11						28.7		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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**SYMBOLS**    Δ = BACKSIGHT    T = INSTRUMENT SET-UP    SS = SIDESHOT    ⊙ = FORESIGHT