

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA TESHKPUK STATE/COUNTY AK BOOK NO. 4 PAGE 1 OF
 LINE/LOOP NO. 33-81 TYPE SURVEY VERT CLIENT USGS DATE 10 BY 4 MO 8 YR 1
 SURVEYOR JOHNS INSTRUMENT DESC/SERIAL NO. WILD T-2 CREW NO. 1136

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			ROD
1		31434	4845	4565	90 51 48	15'						1	31434 = INIGOK
2					269 08 25	15'						2	WELL ELE 134.8'
3	S	107	4400		90-59-00	11						3	
4	S	106	3960		91-06-36	11						4	
5	S	105	3520		91-11-11	11						5	
6	S	104	3080		91-09-45	11						6	
7	S	103	2640		91-12-20	11						7	
8	S	102	2200		91-11-08	11						8	
9	S	101	1760		91-03-35	11						9	
10	S	100	1320		90-47-06	11						10	
11	S	TS 99	880		90-31-18	11						11	
12	S	TS 98	440		99-54-04	11						12	
13		TS 97	-0-		90	56			218.2	212.6		13	
14	S	TS 96	440		89-16-27	11				212.7		14	
15	S	TS 95	880		90-05-23	11				208.8		15	
16	S	TS 94	1320		90-30-53	11				195.4		16	
17	S	TS 93	1760		90 34 48	11				189.4		17	

TI-23471B

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

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA TESHEKPUK STATE/COUNTY AK BOOK NO. 4 PAGE 2 OF
 LINE/LOOP NO. 33-81 TYPE SURVEY VERT CLIENT USGS DATE 10 DY 4 MO 81 YR
 SURVEYOR JOHNS INSTRUMENT DESC/SERIAL NO. WILD T-2 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	S	TS 92	2200		90-40-40	11			181.3		1	
2	S	TS 91	2640		90 42 50	11			179.5		2	
3	S	TS 90	3080		90-38-25	11			173.0		3	
4	S	TS 89	3520		90-39-42	11			166.8		4	
5	S	TS 88	3960		90-40-48	11			160.5		5	
6	⊙	81434	4565		90.51.48	15					6	
7					269 08.25	15					7	
8											8	
9	Δ	81434	3355		90.22.30	15	+36.7				9	
10					269-37-31	15					10	
11	S	108	3080		90-30-03	11					11	
12	S	109	2640		90-34-46	11					12	
13	S	110	2200		90-30-26	11					13	
14	S	111	1760		90-17-54	11					14	
15	S	112	1320		90-06-56	11					15	
16	S	113	880		90-08-08	11					16	
17	S	114	440		89 59 12	11					17	

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

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA TESHEKPOK STATE/COUNTY AK BOOK NO. 4 PAGE 3 OF
 LINE/LOOP NO. 33-81 TYPE SURVEY VERT CLIENT USGS DATE 10 BY 4 MO 81 YR
 SURVEYOR JOHNS INSTRUMENT DESC/SERIAL NO. WILD T2 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
				SLOPE					HORIZ	INST			
1		115	-0-		5.5			171.5			1		
2		116	440		88-47-45	11					2		
3		117	880		89-47-10	11					3		
4		118	1320		90-01-15	11	+11.4				4		
5					269 58 40	11			1100.1		5		
6											6		
7		118	7640		89-11-36	11	-216.3				7		
8					270-48-22	11					8		
9		119	2200		89-23-35	11					9		
10		120	1760		89-39-26	11					10		
11		121	1320		89-36-50	11					11		
12		122	880		89-23-36	11					12		
13		123	440		89-03-54	11					13		
14		124	-0-			5.5			133.8		14		
15		125	440		91-25-25	11					15		
16		126	880		90-44-37	11					16		
17		127	1320		90-26-05	11					17		

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SYMBOLS

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= SIDESHOT

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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA TESHEKPOK STATE/COUNTY AK BOOK NO. 4 PAGE 4 OF
 LINE/LOOP NO. 33-81 TYPE SURVEY VERT CLIENT USGS DATE 10 DY 4 MO 81 YR
 SURVEYOR JOHNS INSTRUMENT DESC/SERIAL NO. WILD T-2 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	S	128	1760		90-08-50	11							1	
2	S	193/L 22-81	2000		90-06-35	11			119.2				2	
3	S	129	2200		90-06-20	11							3	
4	◎	130	2640		90-07-46	11		-16.8	119.2				4	
5					269-52-07	11			116.9				5	
6													6	
7	Δ	130	2200		89-48-40	11		+3.6					7	
8	#				270-11-25	11							8	
9	S	131	1760		89-48-00	11							9	
10	S	132	1320		89-48-15	11							10	
11	S	133	880		89-47-30	11							11	
12	S	134	440		89-25-48	11							12	
13	Δ	135	-0-			5.5			120.6				13	
14	S	136	440		88-57-54	11							14	
15	S	137	880		89-55-20	11							15	
16	S	138	1320		89-43-19	11							16	
17	S	139	1760		89-29-40	11							17	

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SYMBOLS

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◎ = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA TESHEKPUK STATE/COUNTY AK BOOK NO. 4 PAGE 5 OF
 LINE/LOOP NO. 33-81 TYPE SURVEY VERT CLIENT USGS DATE 10 DY 4 MO 81 YR
 SURVEYOR JOHNS INSTRUMENT DESC/SERIAL NO. WILD T-2 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 D/I	RIGHT TURNED HORIZONTAL ANGLE
			SLOPE 	HORIZ 			INST	ROD					
1		140	2200		89 47 10	11						1	
2		141	2640		89 43 33	11						2	
3		142	3080		89 43 30	11	4.0					3	
4					270 16 24	11			124.5			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 TESHEKPUK STATE/COUNTY AK BOOK NO. 174 PAGE 6 OF
 LINE/LOOP NO. 33-81 TYPE SURVEY VERT CLIENT U.S.G.S. DATE 11 BY 4 MO 81 YR
 SURVEYOR JOHNS INSTRUMENT DESC/SERIAL NO. WILD T-2 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			LR OR DR	RIGHT TURNED HORIZONTAL ANGLE
				SLOPE					HORIZ	INST			
1		142	2200		89-39-14	11	-2.4					1	
2					270-20-47	11						2	
3		143	1760		89-47-07	11						3	
4		144	1320		89-57-32	11						4	
5		145	880		89-55-43	11						5	
6		146	440		89-51-40	11						6	
7		147	-0-			5.5		122.1				7	
8		148	440		90-08-30	11						8	
9		149	880		89-56-36	11						9	
10		150	1320		89-51-47	11						10	
11		151	1760		89-44-46	11						11	
12		152	2200		89-46-00	11						12	
13		153	2640		89-50-39	11	-3.7					13	
14					270-09-21	11			118.4			14	
15												15	
16												16	
17												17	

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SYMBOLS

= BACKSIGHT

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= SIDESHOT

= FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA TESHEKPUK STATE/COUNTY AK BOOK NO. 14 PAGE 7 OF
 LINE/LOOP NO. 33-81 TYPE SURVEY VERT CLIENT USGS DATE 11 BY 4 MO 81 YR
 SURVEYOR JOHNS INSTRUMENT DESC/SERIAL NO. WILD T-2 CREW NO. 1186

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> ⚓ <input type="checkbox"/> ○	STATION	VERTICAL						ELEVATION		LR OR DR	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	Δ	153	2640		90-02-33	11		+12.8					1	
2					269-57-35	11							2	
3	○	154	2200		90-14-08	91							3	
4	○	155	1760		90-07-15	11							4	
5	○	156	1320		90-22-56	11							5	
6	○	157	880		90-07-40	11							6	
7	○	158	440		89-33-27	11							7	
8	⚓	159	-0-			5.5			131.2				8	
9	○	160	440		89-08-28	11							9	
10	○	161	880		89-56-16	11							10	
11	○	162	1320		90-11-18	11							11	
12	○	163	1760		90-04-17	11							12	
13	○	164	2200		89-44-50	11							13	
14	○	165	2640		89-46-06	11							14	
15	○	166	3080		89-51-29	11		-3.2					15	
16					270-08-39					128.1			16	
17													17	

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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA TESHEKPUK STATE/COUNTY AK BOOK NO. 4 PAGE 8 OF
 LINE/LOOP NO. 33-81 TYPE SURVEY VERT CLIENT U.S.G.S. DATE 11 BY 4 MO 81 YR
 SURVEYOR JOHNS INSTRUMENT DESC/SERIAL NO. WILD T2 CREW NO. 1186

LINE	 SS 	STATION	VERTICAL						HORIZONTAL		REMARKS		
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	ELEVATION			LR OR DR RIGHT TURNED HORIZONTAL ANGLE	
			SLOPE	HORIZ				INST	ROD				
1		166	2640		89-27-43	11		-13.9				1	
2					270-32-10	11						2	
3	S	167	2200		89-31-45	11						3	
4	S	168	1760		89-32-20	11						4	
5	S	169	1320		89-49-12	11						5	
6	S	170	880		89-52-50	11						6	
7	S	171	440		89-52-02	11						7	
8		172	-0-			5.6			114.2			8	
9	S	173	440		89-34-53	11						9	
10	S	174	880		88-44-38	11						10	
11	S	175	1320		88-36-13	11						11	
12	S	176	1760		88-44-40	11						12	
13		B.M. 777 81056	2011		88-39-10	15		32.4				13	81056 ELE =
14					271-20-38	15			146.5	-	148.2	14	143.2
15		B.M. 81056 →										15	TIE = 3.3 ✓
16			2011		88-39-10	15						16	
17					271-20-38	15		32.3				17	












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

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA TESHEKDUK STATE/COUNTY AK BOOK NO. 14 PAGE 9 OF
 LINE/LOOP NO. 33-81 TYPE SURVEY VERT CLIENT USGS DATE 11 BY 09 MO 81 YR
 SURVEYOR JOHNS INSTRUMENT DESC/SERIAL NO. WILD T-2 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 DJ	RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE 					HORIZ 	INST				
1		172			271	5.6			110.9			1		
2		177	2200			271-17.45	11					2		
3						88-42-07	11	38.9		149.8		3		
4												4		
5		177	3520			89-59-51	11	+10.6				5		
6						270-00-07	11					6		
7	S	178	3080			90-04-18	11					7		
8	S	179	2640			90-03-53	11					8		
9	S	180	2200			90-28-09	11					9		
10	S	181	1760			90-44-57	11					10		
11	S	182	1320			90-58-05	11					11		
12	S	183	880	91-10-00	89-52-00		11					12		
13	S	184	440			89-52-00	11					13		
14		185	-0-				5.6		160.4			14		
15	S	186	440			90-24-36	4					15		
16	S	187	880			89-47-07	11					16		
17	S	188	1320			89-47-37	11					17		

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

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA TESHEKPUK STATE/COUNTY AK BOOK NO. A PAGE 10 OF
 LINE/LOOP NO. 33-01 TYPE SURVEY VERT CLIENT USGS DATE 11 DY 4 MO 8 L YR
 SURVEYOR JOHNS INSTRUMENT DESC/SERIAL NO. WILD T-2 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					
1	S	189	1760		89-43-14	11							1		
2	S	190	2200		89-54-00	11								2	
3	S	191	2640		89-51-30	11								3	
4	⊙	192	3080		89-52-05	11		+3.7						4	
5					270-08-01	11			156.7					5	
6														6	
7	Δ	192	3080		89-48-18	11		+1.5						7	
8					270-11-37	11								8	
9	S	193	2640		89-51-00	11								9	
10	S	194	2200		89-52-53	11								10	
11	S	195	1760		89-55-46	11								11	
12	S	196	1320		89-52-30	11								12	
13	S	197	880		89-51-42	11								13	
14	S	198	440		89-31-31	11								14	
15	⊞	199	-0-			5.7			157.2					15	
16	S	200	440		89-19-31	11								16	
17	S	201	880		89-49-22	11								17	

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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA TESHEKPUK STATE/COUNTY AK BOOK NO. 4 PAGE 11 OF
 LINE/LOOP NO. 33-01 TYPE SURVEY VERT CLIENT USGS DATE 11 BY 4 MO 01 YR
 SURVEYOR JOHNS INSTRUMENT DESC/SERIAL NO. WILD T-2 CREW NO. 1186

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> T <input type="checkbox"/> SS <input type="checkbox"/> O	STATION	VERTICAL						ELEVATION		LR OR DR	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS	
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD					
			SLOPE 	HORIZ 											
1	S	202	1320		89-50-32	11							1		
2	S	203	1760		89-54-00	11								2	
3	S	204	2200		89-59-06	11								3	
4	S	205	2640		90-00-00	11								4	
5	O	206	3080		90-03-43	11		-14.1						5	
6					269-56-21	11			143.1					6	
7														7	
8	Δ	206	2200		89-17-02	11		-16.6						8	
9					270-42-52	11								9	
10	S	207	1760		89-13-40	11								10	
11	S	208	1320		88-55-06	11								11	
12	S	209	880		88-55-42	11								12	
13	S	210	440		88-54-35	11								13	
14	T	211	-0-			5.6			126.5					14	
15	S	212	440		89-14-57	11								15	
16	S	213	880		89-31-16	11								16	
17	S	214	1320		89-39-27	11								17	

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SYMBOLS Δ = BACKSIGHT T = INSTRUMENT SET-UP SS = SIDESHOT O = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA TESHEKPUK STATE/COUNTY AK BOOK NO. 14 PAGE 12 OF
 LINE/LOOP NO. 33-81 TYPE SURVEY VERT CLIENT USGS DATE 11 DY 4 MO 81 YR
 SURVEYOR JOHNS INSTRUMENT DESC/SERIAL NO. WILD T-2 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
				SLOPE					HORIZ	INST		
1		215	1760		89.46.55	11		-4.2				1
2					270.13.01	11			122.2			2
3												3
4		215	1320		89.39.28	11		+3.4				4
5					270.20.31	11						5
6	S	216	880		89.14.28	11						6
7	S	217	440		88.27.18	11						7
8	S	INT L-28.81	385		88.18.54	11						8
9		218	-0-			5.5			125.3			9
10	S	219	440		90.59.30	11						10
11	S	220	880		90.35.20	11						11
12	S	221	1320		90.23.07	11						12
13	S	222	1760		90.17.17	11						13
14	S	223	2200		90.05.41	11						14
15		224	2640		89.48.48	11		-2.3				15
16					270.11.00	11			123.0			16
17												17

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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA TESHEKPOK STATE/COUNTY AK BOOK NO. 4 PAGE 13 OF
 LINE/LOOP NO. 33-81 TYPE SURVEY VERT CLIENT USGS DATE 11 BY 4 MO 81 YR
 SURVEYOR JOHNS INSTRUMENT DESC/SERIAL NO. WILD T-2 CREW NO. 1181

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		
1		224	3520		269-39-25	11						1
2					90-20-36	11	31.8					2
3	S	225	3080		90-19-30	11						3
4	S	226	2640		90-16-41	11						4
5	S	227	2200		90-10-40	11						5
6	S	228	1760		90-07-20	11						6
7	S	229	1320		90-03-49	11						7
8	S	230	880		89-58-15	11						8
9	S	231	440		89-25-00	11						9
10		232	-0-			5.6		152.8				10
11	S	233	440		90-07-43	11						11
12	S	234	880		90-20-45	11						12
13	S	235	1320		90-25-25	11						13
14	S	236	1760		90-27-52	11						14
15	S	237	2200		90-28-31	11						15
16		238	2640		90-18-05	11	-24.7					16
17					269 41 52	11		130.1				17

TI-23471B

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SYMBOLS

= BACKSIGHT

= INSTRUMENT SET-UP

= SIDESHOT

= FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA TESHEKPUK STATE/COUNTY AK BOOK NO. 4 PAGE 14 OF
 LINE/LOOP NO. 33-81 TYPE SURVEY VERT CLIENT USGS DATE 11 BY 4 MO 81 YR
 SURVEYOR JOHNS INSTRUMENT DESC/SERIAL NO. WILD T-2 CREW NO. 1186

LINE	<input type="checkbox"/> Δ <input type="checkbox"/> ⚓ <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	238	3080									1		
2												2		
3	S	239	2640									3		
4	S	240	2200									4		
5	S	241	1760									5		
6	S	242	1320									6		
7	S	243	880									7		
8	S	244	440									8		
9	⚓	245	- 0 -						161.1			9		
10	S	246	440									10		
11	S	247	880									11		
12	S	248	1320									12		
13	S	249	1760									13		
14	S	250	2200									14		
15	S	251	2640									15		
16	⚓ S	252	3080									16		
17												17		

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

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA TESHEKPUK STATE/COUNTY AK BOOK NO. 4 PAGE 15 OF
 LINE/LOOP NO. 33-81 TYPE SURVEY VERT CLIENT USGS DATE 11 DY 4 MO 81 YR
 SURVEYOR JOHNS INSTRUMENT DESC/SERIAL NO. WILD T-2 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 D/I	RIGHT TURNED HORIZONTAL ANGLE
			SLOPE	HORIZ					INST	ROD			
1		293										1	
2					90-10-34							2	
3					269-49-20							3	
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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SYMBOLS = BACKSIGHT = INSTRUMENT SET-UP = SIDESHOT = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA _____ STATE/COUNTY ALASKA BOOK NO. 4 PAGE 16 OF _____
 LINE/LOOP NO. L-33-81 - TYPE SURVEY Vert CLIENT USGS DATE 12 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"/> ⚓ <input type="checkbox"/> 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 D/I	RIGHT TURNED HORIZONTAL ANGLE
									SLOPE	HORIZ			
1	Δ	SP 253	2200		89 00 35	1		-27.1				1	
2					270 59 22	11						2	
3		254	1760		89 42 43	11						3	
4		255	1520		89 44 43	11						4	
5		256	880		89 38 39	11						5	
6		257	440		89 16 18	11						6	
7	⚓	258	- 0 -		90	55			112.4			7	
8		259	440		89 05 47	11						8	
9		260	880		89 52 09	11						9	
10		261	1320		89 02 16	11						10	
11		262	1760		89 04 50	11						11	
12		263	2200		89 09 40	11						12	
13	○	26A	2640		89 18 21	11		21.1				13	
14					270 41 31	11				133.5		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 _____ STATE/COUNTY Alaska BOOK NO. 4 PAGE 17 OF _____
 LINE/LOOP NO. 33-81 TYPE SURVEY Vert CLIENT USGS DATE 12 BY 4 MO 81 YR
 SURVEYOR M. O'NEAL 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	264	1760		89 22 30		-8.3					1	
2					270 37 27							2	
3		265	1320		89 09 39							3	
4		266	880		88 57 00							4	
5		267	490		88 22 00							5	
6	Δ	268	-0-		90	5.4		125.2				6	
7		269	440		90 37 24							7	
8		270	880		90 43 04							8	
9		271	1320		90 20 28							9	
10		272	1760		90 08 26							10	
11		273	2200		89 59 49							11	
12		274	2640		89 56 28							12	
13		275	3080		89 57 22							13	
14	◎	276	3520		89 58 57		-9.7	115.5				14	
15					270 00 54							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 _____ STATE/COUNTY Alaska BOOK NO. 4 PAGE 18 OF _____
 LINE/LOOP NO. 33-81 TYPE SURVEY Vert CLIENT USGS DATE 12 BY 4 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 wild CREW NO. 1186

LINE	 	STATION	VERTICAL						ELEVATION		LR 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		276	2200		90 07 29	11	+15.6						1	
2		277			269 52 42	11							2	
3		277	1760		90 07 27	11							3	
4		278	1320		90 53 33	19.5							4	
5		279	880		90 13 25	11							5	
6		280	440		89 43 37	11							6	
7		281	- 0 -		90	6.4		131.1					7	
8		282	440		90 09 29	11							8	
9		283	880		91 21 46	11							9	
10		284	1320		90 22 20	11							10	
11		285	1760		90 25 52	11							11	
12		286	2200		90 25 00	11							12	
13		287	2640		90 19 49								13	
14		Barr Mark 81478		3000+	90	189 19.2	19.1		112.0				14	Barr Mark 81478
15													15	111.35 = Elev
16													16	111.35 - 112.0 = 0.65 TIE
17													17	

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

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA _____ STATE/COUNTY Alaska BOOK NO. 4 PAGE 19 OF _____
 LINE/LOOP NO. 33-81 TYPE SURVEY Vert CLIENT USGS DATE 12 DY 4 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 Wild CREW NO. 0206

LINE	 	STATION	VERTICAL						ELEVATION		L/R OR DI	RIGHT TURNED HORIZONTAL ANGLE	LINE	REMARKS
			DISTANCE	<input type="checkbox"/> FEET <input type="checkbox"/> METERS	VERTICAL ANGLE OBS.	ROD RDG OR HI	ELEV DIFF	FINAL ELEVATION DIFF	INST	ROD				
1		BATT MARK			90°	19.1							1	
2		81478		30007									2	
3		281	-0-		90	5.1			130.5				3	
4													4	
5		SP 287	2640		90 19 47	11		-26.0					5	
6					269 46 11	11			104.4				6	
7													7	
8		SP 287	2640		89 27 42	11		-13.9					8	
9					290 32 16	11							9	
10		288	2209		89 26 40	11							10	
11		289	1760		89 28 40	11							11	
12		290	1360		89 29 51	11							12	
13		291	880		89 16 41	11							13	
14		292	440		89 02 43	11							14	
15		293	-0-		90	55			90.5				15	
16		294	440		90 10 44	11							16	
17													17	

TI-284716

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

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA _____ STATE/COUNTY Alaska BOOK NO. 4 PAGE 20 OF _____
 LINE/LOOP NO. 33-81 TYPE SURVEY Vert CLIENT USGS DATE 12 DY 7 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 wild CREW NO. 1186

LINE	 <small>SS</small> 	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		SP 295	880		90 17 10								1	
2		296	1320		90 18 18								2	
3		297	1760		90 11 46								3	
4		298	2200		70 01 53								4	
5		299	2640		90 00 07		+10.9						5	
6					269 59 51					79.5			6	
7													7	
8		SP 299	3080		89 47 33		-0.3						8	
9					270 12 37								9	
10		300	2640		89 47 30								10	
11		301	2200		89 50 52								11	
12		302	1760		89 44 04								12	
13		303	1320		89 41 11								13	
14		304	880		89 34 44								14	
15		305	440		90 20 22								15	
16		306	-0-		90 5.4				79.1				16	
17													17	

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

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA _____ STATE/COUNTY Alaska BOOK NO. 4 PAGE 21 OF _____
 LINE/LOOP NO. 33-81 TYPE SURVEY Vert CLIENT USGS DATE 12 BY 4 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	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		307	440			89 35 25	11					1		
2		308	800			89 42 50	11					2		
3		309	1320			89 44 50	11					3		
4		310	1760			89 53 43	11					4		
5		311	2200			89 52 20	4					5		
6		312	2690			90 00 08	15					6		
7		313	3080			90 00 08	15					7		
8		313+165	3245			89 28 23	11	+19.1				8		
9						89 51 37	11		98.1			9		
10												10		
11		TP 313+165	1595	1595		89 08 59	11		-12.7			11		
12						270 51 13	11					12		
13		314	1320			89 55 15	11					13		
14		315	800			89 32 55	11					14		
15		316	440			89 53 33	11					15		
16		317	- 0 -			90	5.4		85.4			16		
17												17		

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HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA _____ STATE/COUNTY ALASKA BOOK NO. 4 PAGE 22 OF _____
 LINE/LOOP NO. 33-81 TYPE SURVEY Vert CLIENT USGS DATE 12 DY 4 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. 1-2 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
				SLOPE					HORIZ	INST		
1		BARR MARK			90	2.3			83.1			
2		81479		1660							84.96	
3												
4		BARR MARK		1660	90	2.3						
5		81479										
6												
7		SP 317	-0-		90	5.4		87.3				
8		318	440		89 30 45							
9		319	880		90 55 45							
10		320	1320		89 48 10							
11		321	1760		89 19 40							
12		322	2200		89 27 22							
13					89 27 43		+9.8					
14					270 32 08			97.0				
15												
16												
17												

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

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA _____ STATE/COUNTY Alaska BOOK NO. 4 PAGE 23 OF _____
 LINE/LOOP NO. 33-81 TYPE SURVEY Vert CLIENT USGS DATE 12 BY 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			RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE					HORIZ	INST			
1		322	3520		89 43 28	11		-6.2				1	
2					270 16 36	11						2	
3		323	3080		89 52 00	11						3	
4		324	2640		90 11 32	11						4	
5		325	2200		90 25 50	11						5	
6		326	1760		90 32 48	11						6	
7		327	1320		90 26 32	11						7	
8		328	880		91 37 50	11						8	
9		329	440		89 48 54	11						9	
10		330	-0-	-	90	5.4			90.8			10	
11		331	440		92 22 05	11						11	
12		332	880		91 12 30	11						12	
13		333	1320		90 44 42	11						13	
14		334	1760		90 35 50	11						14	
15		335	2200		90 28 14	11						15	
16		336	2640		98 20 00	11						16	
17												17	

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SYMBOLS

= BACKSIGHT

= INSTRUMENT SET-UP

= SIDESHOT

= FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA _____ STATE/COUNTY ALASKA BOOK NO. 4 PAGE 24 OF _____
 LINE/LOOP NO. 33-81 TYPE SURVEY Vert CLIENT USGS DATE 12 DY 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			RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE					HORIZ	INST			
1		SP 337	3080		90 16 11	11						1	
2		338	3520		89 47 03	11	+2.5					2	
3					270 12 45	11			93.2			3	
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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SYMBOLS = BACKSIGHT = INSTRUMENT SET-UP = SIDESHOT = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Teshelkuk STATE/COUNTY Alaska BOOK NO. 4 PAGE 25 OF
 LINE/LOOP NO. 33-81 TYPE SURVEY Vert CLIENT USGS DATE 13 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
				SLOPE					HORIZ	INST			
1	Δ	SP 338	2640		90 13 23	11		+21.1				1	
2					2694629	11						2	
3		339	2200		90 16 24	11						3	
4		340	1760		90 09 38	11						4	
5		341	1320		89 55 05	11						5	
6		342	880		89 40 15	11						6	
7		343	440		89 10 12	11						7	
8	⊗	344	- 0 -		90	5.4		114.4				8	
9		345	440		90 13 50	11						9	
10		346	880		90 23 40	11						10	
11		347	1320		90 20 41	11						11	
12		348	1760		90 33 14	11						12	
13		Intersection 16-81		398	90 12 43	11						13	
14		⊕ LINE 33-81										14	
15		349	2200		90 42 33	4						15	
16		350	2640		90 36 36	71						16	
17												17	

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SYMBOLS

Δ = BACKSIGHT

⊗ = INSTRUMENT SET-UP

SS = SIDESHOT

⊙ = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Teshkepuk STATE/COUNTY ALASKA BOOK NO. 4 PAGE 26 OF
 LINE/LOOP NO. 33-81 TYPE SURVEY Vert CLIENT USGS DATE 13 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"/> ⚓ <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	⊙	351	3080		90 10 33							1		
2	⊙	352	3520		89 59 37		-10.4					2		
3					270 00 13				103.9			3		
4												4		
5	Δ	SP 352	2200		89 52 13		+5.9					5		
6					270 07 38							6		
7		353	1760		89 45 30							7		
8		354	1320		89 40 50							8		
9		355	880		89 30 45							9		
10		356	440		89 02 52							10		
11	⚓	357	-0-		90	5.4			109.9			11		
12		358	440		90 24 27							12		
13		359	880		90 22 21							13		
14		360	1320		90 13 40							14		
15		361	1760		90 13 33							15		
16		362	2200		90 10 51							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 Tashekpuk STATE/COUNTY ALASKA BOOK NO. 4 PAGE 27 OF
 LINE/LOOP NO. 33-81 TYPE SURVEY Vert CLIENT USGS DATE 15 DY 4 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 W. H CREW NO. 186

LINE	 <small>SS</small>	STATION	VERTICAL						ELEVATION		<small>LR OR DI</small>	RIGHT TURNED HORIZONTAL ANGLE	LINE	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				
				SLOPE										
1		363	2640		90 09 21	11			-13.0				1	
2					269 50 29	11					91.8		2	
3													3	
4		SP 363	3086		90 13 01	11			+22.5				4	
5					269 46 53	11							5	
6		364	2640		90 15 00	11							6	
7		365	2200		90 18 02	11							7	
8		366	1760		90 22 00	11							8	
9		367	1320		90 28 18	11							9	
10		368	880		90 36 21	11							10	
11		369	440		90 58 14	11							11	
12		370	-0-		90	5.5				114.3			12	
13		371	440		88 22 28	11							13	
14		372	880		88 58 05	11							14	
15		373	1320		89 15 26	11							15	
16		374	1760		89 31 40	11			3.6				16	
17					276 28 13	11					117.8		17	

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SYMBOLS
 = BACKSIGHT
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SS = SIDESHOT
 = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Toshekpuk STATE/COUNTY Alaska BOOK NO. 4 PAGE 28 OF
 LINE/LOOP NO. 33-81 TYPE SURVEY Vert CLIENT USGS DATE 13 BY 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 DJ	RIGHT TURNED HORIZONTAL ANGLE
			SLOPE	<input checked="" type="checkbox"/> FEET <input type="checkbox"/> METERS					INST	ROD			
1		SP 374	2585		89 48 47	11	+2.4					1	
2					270 11 18	11						2	
3		375	2145		89 52 40	11						3	
4		376	1705		90 13 26	11						4	
5		377	1265		90 03 35	11						5	
6		378	825		90 26 41	11						6	
7		379	385		90 35 40	11						7	
8		TP			90	5.4		120.2				8	
9		380	55'		107 45 40	4.0						9	
10		381	495		93 31 20	11						10	
11		382	935		91 56 53	11						11	
12		383	1575		91 20 30	11						12	
13		384	1815		91 00 45	11						13	
14		385	2255		90 48 50	11						14	
15		386	2695		90 41 30	11						15	
16		387	3135		90 29 17	11	-37.5	82.6				16	
17					269 30 32	11						17	

TI-23471B

WORKED BY _____ CHECKED BY 1ST _____ 2ND _____

SYMBOLS

= BACKSIGHT

= INSTRUMENT SET-UP

SS = SIDESHOT

= FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Teshokpaik STATE/COUNTY Alaska BOOK NO. 4 PAGE 29 OF
 LINE/LOOP NO. 33-821 TYPE SURVEY Vert CLIENT USGS DATE 13 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"/> ⚓ <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	387	2646		89 45 47	11		-11				1		
2					270 14 31	11						2		
3		388	2200		89 39 20	11						3		
4		389	1760		89 35 50	11						4		
5		390	1326		89 30 56	11						5		
6		391	880		89 31 55	11						6		
7		392	440		89 13 25	11						7		
8	⚓	393	-0-		90	5.4			82.6			8		
9		394	440		89 13 47	11						9		
10		395	880		89 36 00	11						10		
11		396	1320		89 49 43	11						11		
12		397	1760		89 36 40	11						12		
13		398	2200		89 36 18	11						13		
14		399	2640		89 31 45	11						14		
15		400	3080		89 24 37	11						15		
16	⊙	401	3520		89 22 09	11		280				16		
17					270 37 35	11			110.3			17		

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SYMBOLS

Δ = BACKSIGHT

⚓ = INSTRUMENT SET-UP

SS = SIDESHOT

⊙ = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Teshkepunk STATE/COUNTY ALASKA BOOK NO. 4 PAGE 30 OF
 LINE/LOOP NO. 33-81 TYPE SURVEY Vert CLIENT USGS DATE 13 DY 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 DI/	RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE					HORIZ	INST				
1	Δ	401	2690		90 00 09	11	+11.0					1		
2					269 59 52	11						2		
3		402	2200		89 58 40	11						3		
4		403	1760		89 57 47	11						4		
5		40A	1320		89 56 34	11						5		
6		405	880		89 46 17	11						6		
7		406	490		88 59 55	11						7		
8	λ	407	0		90	55		121.3				8		
9		408	490		89 22 00	11						9		
10		409	880		89 26 51	11						10		
11	①	410	1320		89 47 07	11	-6.0					11		
12		1			270 12 56	11			115.3			12		
13												13		
14												14		
15												15		
16												16		
17												17		

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SYMBOLS

Δ = BACKSIGHT

λ = INSTRUMENT SET-UP

SS = SIDESHOT

⊙ = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Teshkeputk STATE/COUNTY Alaska BOOK NO. 4 PAGE 31 OF
 LINE/LOOP NO. 33-21 TYPE SURVEY Vert CLIENT WGS DATE 13 DY 9 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 DJ	RIGHT TURNED HORIZONTAL ANGLE
				SLOPE					HORIZ	INST			
1		SP 40	2200		89 29 29	11		-8.6				1	
2					270 30 23	11						2	
3		411	1760		89 31 23	11						3	
4		412	1320		89 34 22	11						4	
5		413	880		89 52 36	11						5	
6		414	440		89 55 51	11						6	
7		415	-0-		90	5.4			106.7			7	
8		416	446		93 12 22	11						8	
9		417	880		91 48 30	"						9	
10		418	1320		91 12 48	11						10	
11		419	1760		91 00 30	11						11	
12		420	2200		89 41 18	11						12	
13		421	2640		89 38 37	11						13	
14		422	3080		89 42 13	11		5.1		111.8		14	
15					270 17 40	11						15	
16												16	
17												17	

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

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Tesho KpuK STATE/COUNTY Alaska BOOK NO. 1A PAGE 32 OF
 LINE/LOOP NO. 33-81 TYPE SURVEY Vert CLIENT USGS DATE 13 DY 9 MO 81 YR
 SURVEYOR M. O'GRADY INSTRUMENT DESC/SERIAL NO. T-2 WIK 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 D/I	RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE					HORIZ	INST				
1		SP 422	2640		89 55 05			47.1				1		
2					270 05 3							2		
3		423	2200		89 54 45							3		
4		424	1760		89 57 13							4		
5		425	1320		89 53 14							5		
6		426	880		90 11 30							6		
7		427	440		91 36 53							7		
8		428	0-		90	5.4			118.9			8		
9		429	440		89 54 55							9		
10		430	880		89 26 02							10		
11		431	1320		89 36 40							11		
12		432	1760		89 33 01							12		
13		433	2200		89 33 37							13		
14		434	2640		89 30 10			12.1				14		
15					270 29 41				130.9			15		
16												16		
17												17		

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SYMBOLS

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= SIDESHOT

= FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Teshke RpuK STATE/COUNTY Alaska BOOK NO. 4 PAGE 33 OF
 LINE/LOOP NO. 33-81 TYPE SURVEY Vert CLIENT USGS DATE 4 BY 4 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 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 434	2640		89 33 03	11	-9.8					1		
2					270 26 50	11						2		
3		435	2200		89 39 20	11						3		
4		436	1760		89 47 24	11						4		
5		437	1320		89 55 00	11						5		
6		438	880		89 59 30	11						6		
7		439	440		89 33 19	11						7		
8	Δ	440	-0-		90	5.4		121.1				8		
9		441	440		89 23 42	11						9		
10		442	880		89 42 16	11						10		
11		443	1320		89 46 33	11						11		
12		444	1760		90 02 12	11						12		
13		445	2200		90 08 20	11						13		
14		446	2640		90 04 57	11						14		
15	⊙	447	3080		90 02 43	11						15		
16					269 57 05	11	-13.2	107.8				16		
17												17		

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

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Peshkepek STATE/COUNTY Alaska BOOK NO. 4 PAGE 34 OF
 LINE/LOOP NO. 33-31 TYPE SURVEY Vert CLIENT USGS DATE 14 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				ROD
1	Δ	SP 447	3520		89 47 50	11		-1.7				1		
2					270 12 00	11						2		
3		448	3080		89 52 27	11						3		
4		449	2140		89 54 51	11						4		
5		450	2200		90 00 22	11						5		
6		451	1760		89 57 55	11						6		
7		452	1320		90 20 25	11						7		
8		453	880		90 33 23	11						8		
9		454	440		90 19 30	11						9		
10	Δ	455	-0-		90	5.7		106.1				10		
11		456	440		89 26 44	11						11		
12		457	880		90 21 03	11						12		
13		458	1320		90 17 51	11						13		
14		459	1760		90 13 30	11						14		
15		460	2200		89 56 06	11						15		
16		461	2640		89 45 17	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 Teshkeguk STATE/COUNTY Alaska BOOK NO. 4 PAGE 35 OF
 LINE/LOOP NO. 33-81 TYPE SURVEY CLIENT UDGS DATE 14 DY 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 D/I	RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE 					HORIZ 	INST				
1		462	3080		89 47 01	11		.8				1		
2					270 12 53	11				106.9		2		
3												3		
4		SP 462	2200		89 39 11	11		-2.4				4		
5					270 20 54	11						5		
6		463	1760		89 38 16	11						6		
7		464	1320		89 25 40	11						7		
8		465	880		89 30 00	11						8		
9		466	440		89 12 00	11						9		
10		467	-0-		90	0.5			104.5			10		
11		INTERSECTION										11		
12		SNPR -8			89 38 48	11						12		
13		VP 305+95										13		
14		33-81										14		
15		SP 462+63'										15		
16												16		
17												17		

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SYMBOLS

 = BACKSIGHT

 = INSTRUMENT SET-UP

SS = SIDESHOT

 = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Toshrekpuuk STATE/COUNTY Alaska BOOK NO. 4 PAGE 31 OF
 LINE/LOOP NO. 33-81 TYPE SURVEY Vert CLIENT USGS DATE 14 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 D/I		RIGHT TURNED HORIZONTAL ANGLE
				SLOPE					HORIZ	INST			
1		468	440		88 56 45	11						1	
2		469	880		89 05 46	11						2	
3		470	1320		89 05 32	11						3	
4		471	1760		89 20 43	11						4	
5	◎	472	2200		89 21 53	11	+13.5					5	
6					270 37 55	11			117.9			6	
7												7	
8	Δ	SP 472	3080		89 49 33	11	+1.4					8	
9					270 10 16	11						9	
10		473	2640		89 55 36	11						10	
11		474	2200		89 59 12	11						11	
12		475	1760		89 58 47	11						12	
13		476	1320		89 56 50	11						13	
14		477	880		90 22 45	11						14	
15		478	440		89 40 50	11						15	
16	π	479	-0-		90	5.5			119.4			16	
17												17	

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SYMBOLS Δ = BACKSIGHT π = INSTRUMENT SET-UP SS = SIDESHOT ◎ = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Teshkeguk STATE/COUNTY ALASKA BOOK NO. 4 PAGE 37 OF
 LINE/LOOP NO. 33-21 TYPE SURVEY Vert CLIENT USGS DATE 14 BY 4 MO 81 YR
 SURVEYOR M. O'LEARY INSTRUMENT DESC/SERIAL NO. T-2 w/le 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		480	440		89 37 50	11						1		
2		481	880		90 29 50	11						2		
3		482	1320		90 22 05	11						3		
4		483	1760		90 16 15	11						4		
5		484	2200		90 16 13	11						5		
6		485	2640		90 13 08	11						6		
7		486	3080		90 17 27	11	-26.4					7		
8					269 42 20	11			92.9			8		
9												9		
10		SP486	2640		89 36 01	11	-7.6					10		
11					270 24 00	11						11		
12		487	2200		89 38 45	11						12		
13		488	1760		89 38 20	11						13		
14		489	1320		89 40 09	11						14		
15		490	880		89 36 26	11						15		
16		491	440		89 21 50	11						16		
17												17		

TI-23471B

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SYMBOLS

= BACKSIGHT







= INSTRUMENT SET-UP

= SIDESHOT

= FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Tashkeguk STATE/COUNTY ALASKA BOOK NO. 4 PAGE 38 OF
 LINE/LOOP NO. 33-81 TYPE SURVEY Vert CLIENT USGS DATE 14 DY 4 MO 81 YR
 SURVEYOR M. O'BRYEN INSTRUMENT DESC/SERIAL NO. T-2 WIK 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 DR	RIGHT TURNED HORIZONTAL ANGLE	LINE
				SLOPE 					HORIZ 	INST				
1		SP492	0 -		90	5.4			85.3			1		
2		493	440		89 19 00							2		
3		494	880		89 28 23							3		
4		495	1320		89 38 30							4		
5		496	1760		89 42 05							5		
6		497	2200		89 45 02							6		
7		498	2640		89 47 53							7		
8		499	3080		89 52 30							8		
9		500	3520		89 51 21		-1.9					9		
10					270 08 30				83.4			10		
11												11		
12		SP500	3520		90 04 57			+15.8				12		
13					269 55 05							13		
14		501	3080		90 06 46							14		
15		502	2640		90 09 41							15		
16		503	2200		90 14 14							16		
17												17		

WORKED BY _____ CHECKED BY 1ST _____ 2ND _____

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

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Teshkepuk STATE/COUNTY Alaska BOOK NO. 4 PAGE 39 OF
 LINE/LOOP NO. 33-81 TYPE SURVEY Vert CLIENT USGS DATE 14 DY 4 MO 81 YR
 SURVEYOR M. O'BRADY INSTRUMENT DESC/SERIAL NO. T-2 w/12 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 DJI	RIGHT TURNED HORIZONTAL ANGLE	LINE	
			SLOPE	HORIZ						INST					ROD
1		504	1760		90 21 04	11							1		
2		505	1320		90 28 15	11							2		
3		506	880		90 38 28	11							3		
4		507	440		89 58 00	11							4		
5	Δ	508	-0-		90	5.4		99.2					5		
6		509	440		89 02 30	11							6		
7		510	880		89 26 10	11							7		
8		511	1320		89 39 50	11							8		
9		512	1760		89 47 44	11							9		
10		513	2200		89 51 56	11							10		
11	⊙	514	2640		89 53 55	11		-6.2					11		
12					270 05 56	11				92.9			12		
13													13		
14	Δ	SP5K	3080		89 53 12	11		+4.7					14		
15					270 06 43	11							15		
16		515	2640		90 00 46	11							16		
17		516+121	2019		90 01 01	11				80.2			17	Intersect 12-81	

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SYMBOLS

Δ = BACKSIGHT

⊎ = INSTRUMENT SET-UP

SS = SIDESHOT

⊙ = FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Teshkepak STATE/COUNTY Alaska BOOK NO. 4 PAGE 10 OF
 LINE/LOOP NO. 33-81 TYPE SURVEY Cont CLIENT USGS DATE 17 BY 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 DI	RIGHT TURNED HORIZONTAL ANGLE	
				SLOPE 					HORIZ 	INST				ROD
1		516	2200		90 00 52	11						1		
2		517	1760		90 00 32	11							2	
3		518	1320		89 47 00	11							3	
4		519	880		89 40 14	11							4	
5		520	440		89 21 49	11							5	
6		521	-0-		90	5.5		97.7			96.3		6	
7		522	440		89 45 50	11							7	
8	SP	523	880		90 06 25	11			83.2				8	
9	TS	524	1320		90 12 50	11			81.8				9	
10	TS	525	1760		90 17 17	11			77.9				10	
11		526	2200		90 10 17	11			75.1				11	
12		527	2640		90 17 50	11			73.1				12	
13		528	3080		90 15 32	11			73.0				13	
14		529	3520		90 14 07	11			72.3				14	
15		530	3960		90 12 30	11			72.6				15	
16		531	4400		90 12 47	11			70.7				16	
17													17	

TI-23471B

WORKED BY _____ CHECKED BY 1ST _____ 2ND _____

SYMBOLS

= BACKSIGHT

= INSTRUMENT SET-UP

SS = SIDESHOT

= FORESIGHT

HORIZONTAL AND VERTICAL SURVEY NOTES

GSI AREA Teshkeguk STATE/COUNTY ALASKA BOOK NO. 4 PAGE 41 OF
 LINE/LOOP NO. 33-81 TYPE SURVEY Vert CLIENT USGS DATE 14 BY 4 MO 31 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"/> \odot	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		532	4840		90 1320	11			68.4			1	
2		533	5280		90 1149	11			69.1			2	
3		534	5720		90 11 14	11			68.7			3	
4		535	6160		90 10 30	11			68.7			4	
5												5	
6	\odot	SP 514	3080		89 53 12	11		-4.7				6	
7					210 06 43	11			93.0			7	
8												8	
9	Δ	SP 514	-0-		90	5.6						9	
10												10	
11	Δ	SP 514	-0-		90	5.6			98.6			11	
12												12	
13	\odot	Well (flange)			90	12.8						13	Elev 92.0
14												14	
15	\odot	Well (valve)	4800+		90	5.2			93.4			15	top of Valve
16												16	92.0 - 93.4 =
17												17	1.4 + 1.9 = 3.3 ✓

Valve Top to Bottom flange 7.2 top of Valve 7.6

WORKED BY _____ CHECKED BY 1ST _____ 2ND _____

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