

HOLMES & NARVER, INC.
ENGINEERS - CONSTRUCTORS
LOS ANGELES, CALIFORNIA

JOB No. C 67

SHEET 1 OF 4

TITLE LOCAL TRIANGULATION ADJUSTMENT ABLE-CHARLIE AREA BY LSH DATE 10-53

406283

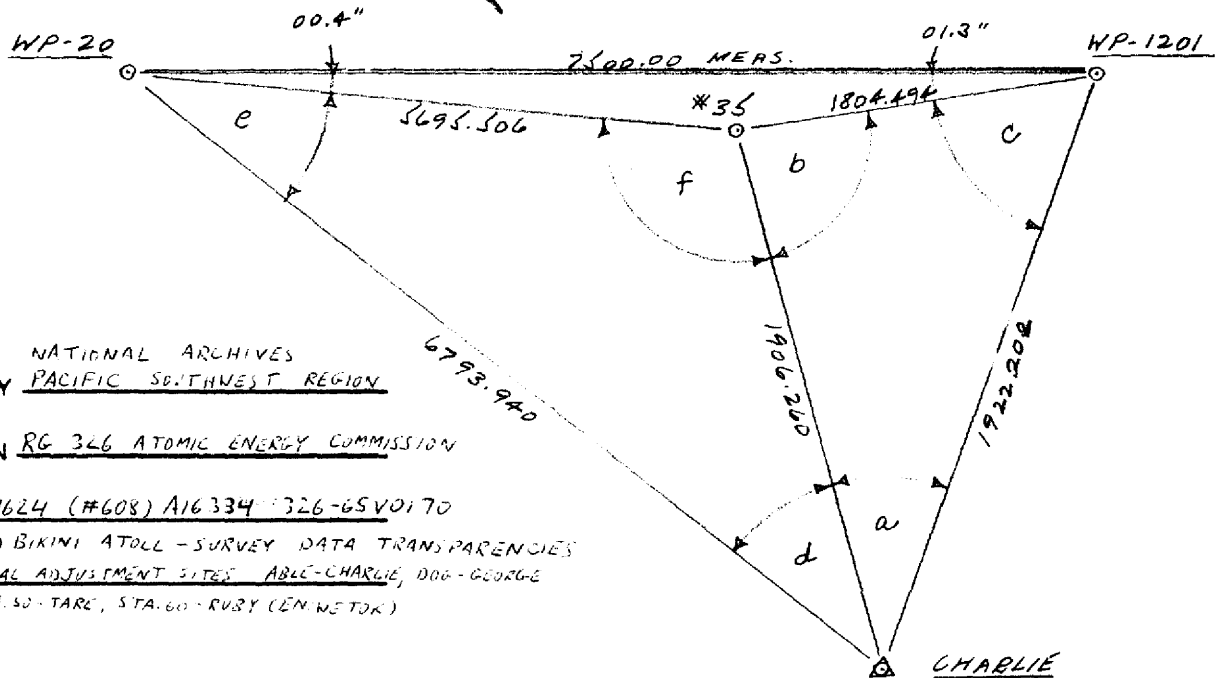
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REPOSITORY NATIONAL ARCHIVES
PACIFIC SOUTHWEST REGION

COLLECTION RG 326 ATOMIC ENERGY COMMISSION

BOX No. 199624 (#608) A16334 326-65V0170
(6) BIKINI ATOLL - SURVEY DATA TRANSPARENCIES

FOLDER LOCAL ADJUSTMENT SITES ABLE-CHARLIE, DOG-GEORGE
STA. 50 - TARE, STA. 60 - RUBY (EN. NETOK)



	MEAS. $\angle$	GEO. COND.		TRIG. COND.	
			$b+f = 01.7$		
a	56-14-26.1	25.7	25.4	25.3	
b	62-19-34.7	34.2	34.9	34.9	
c	61-26-00.6	00.1	59.7	59.8	
	01.4				
d	47-56-18.1	17.3	16.9	17.0	
e	14-23-17.4	16.6	16.3	16.2	
f	117-40-27.0	26.1	26.8	26.8	
	02.5				

TRIG EQ. $\frac{1804.494 \sin 0 \sin d}{5695.506 \sin c \sin a} = 1$

1804.494	3.256355		5695.506	3.7555324	
$\sin 61-25-59.7$	9.9946234	11.5	$\sin 14-23-16.3$	9.3952996	82.1
$\sin 47-56-16.9$	9.8706500	19.0	$\sin 56-14-25.4$	9.9197977	14.1
	3.0706289	30.5		3.0706297	96.2
				289	30.5
				8	126.7

$8/126.7 = 0.06''$

<u>5695.506</u>	$\sin 14-23-16.2$	$\sin 117-40-26.8$
$\sin 47-56-17.0$	(1906.254)	(6793.936)
<u>1804.494</u>	$\sin 61-25-59.8$	$\sin 62-19-34.9$
$\sin 56-14-25.3$	(1906.257)	(1922.202)

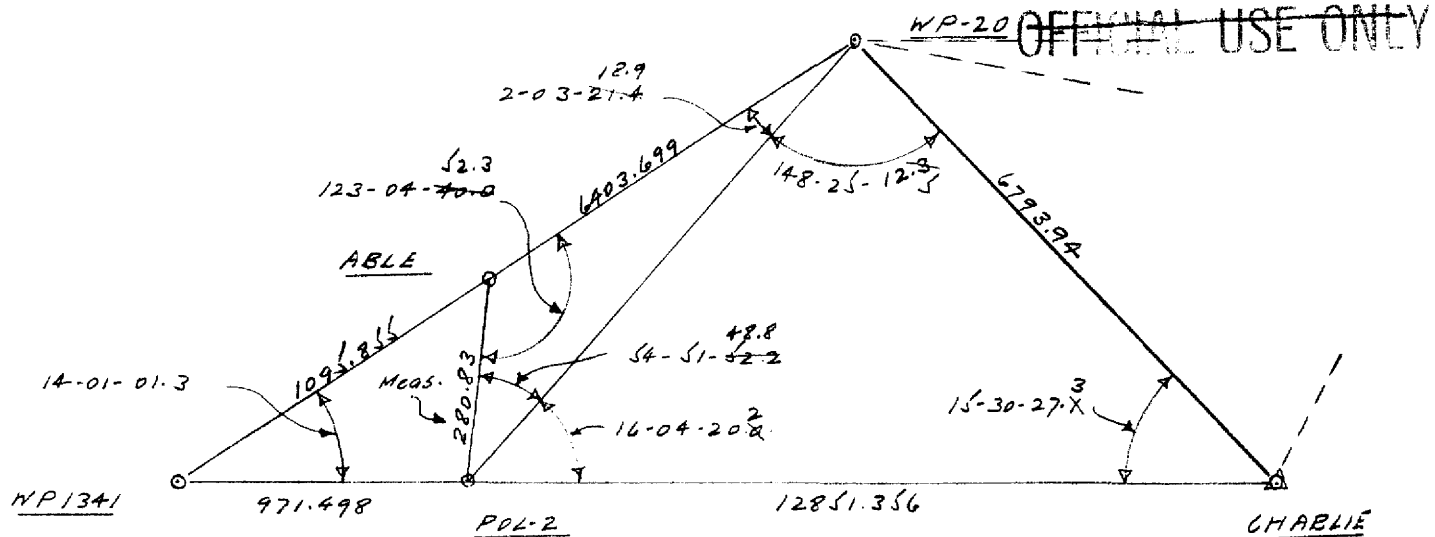
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HOLMES & NARVER, INC.
ENGINEERS - CONSTRUCTORS
LOS ANGELES, CALIFORNIA

JOB NO. 884

SHEET 2 OF 4

TITLE LOCAL TRIANGULATION ADJUSTMENT ABLE-CHARLIE AREA BY L.S.H. DATE 10-13



$$\frac{6793.94}{\sin 16-04-20.2} = \frac{\sin 15-30-27.3}{(6561.205)} = \frac{\sin 148-25-12.5}{(12851.356)}$$

$$6561.205 \sin 2-03-18.9 = 235.306$$

$$\text{Low} \quad \quad \quad = 6556.984$$

$$971.498 \sin 14-01-01.3 = 235.307$$

$$\text{Low} \quad \quad \quad = 942.570$$

$$\frac{280.83}{\sin 14-01-01.3} = \frac{\sin 56-55-07.7}{(971.498)} = \frac{\sin 109-03-51.0}{(1095.855)}$$

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Pacific Southwest Region

RECEIVED JULY 15, 1994
FROM ANTONIO MONTANO TO
DIANE S. PERRY

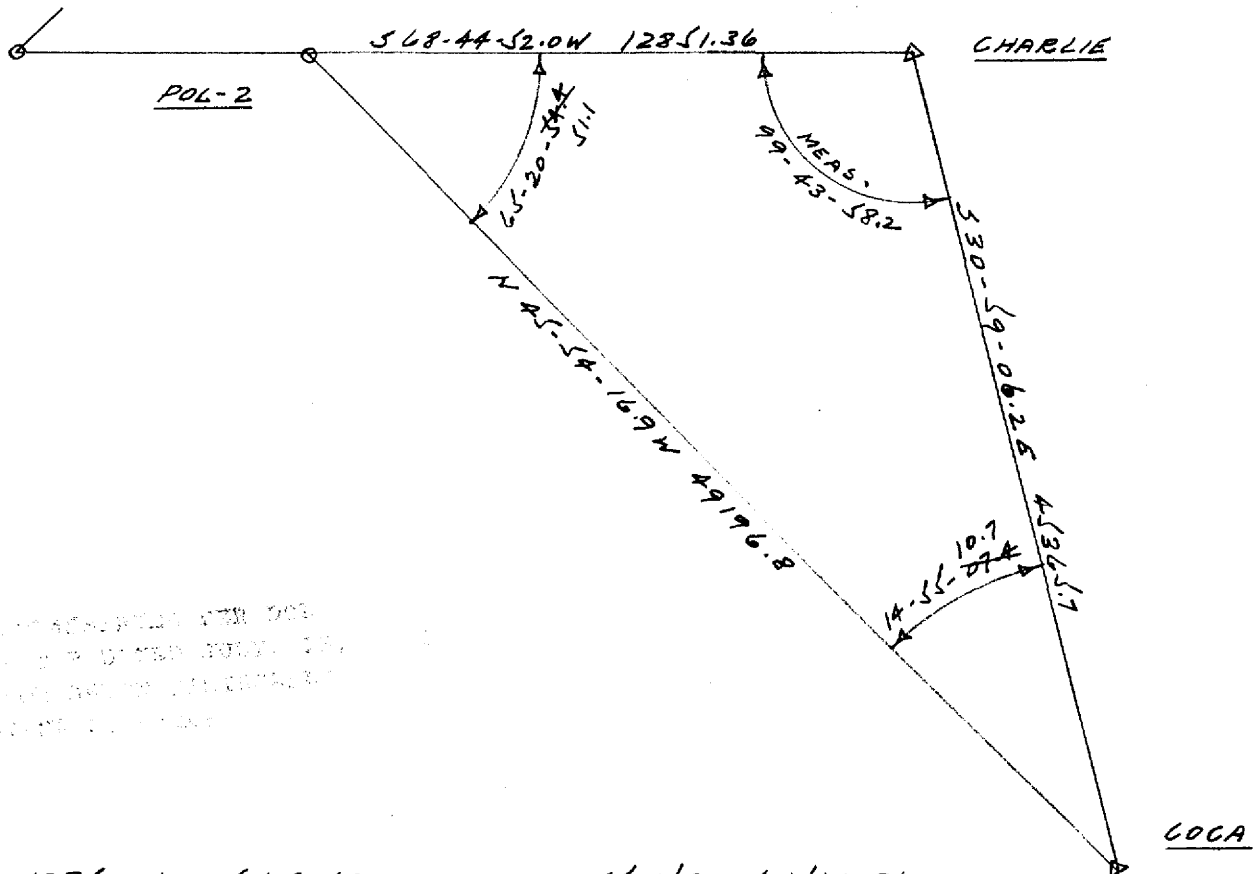
STATION	BEARING	DISTANCE	COSINE	SINE	CO-ORDINATES			
					LATITUDE	DEPARTURE	NORTH	EAST
Δ CHARLIE	584-15-19.3W	6793.94	10009496	99497788	5680.039	W6759.821	171,297.20	82,923.80
WP-20	N69-52-02.7E	7500.00	34419370	93889867	N2581.453	E7041.740	170,617.16	76,163.98
WP-1201	58-26-01.4W	1922.20	98918619	14666525	S1901.414	W281.920	173,198.61	83,205.72
Δ CHARLIE							171,297.20	82,923.80
WP-20							170,617.16	76,163.98
*35	N69-52-03.1E	5695.506	34419187	93889934	N1960.347	E5347.507	172,577.51	81,511.49
WP-1201	N69-52-01.4E	1804.494	34419961	93889650	N621.106	E1694.233	173,198.61	82,205.72
*35							172,577.51	81,511.49
Δ CHARLIE	547-48-24.0E	1906.257	67163439	74088275	S1280.308	E1412.31	171,297.20	82,923.80
Δ CHARLIE							171,297.20	82,923.80
POL-2	568-44-52.0W	12851.356	36247419	93199381	S4658.285	W11977.384	166,638.92	70,946.42
WP-1341	"	971.498	"	"	S352.143	W905.430	166,286.77	70,040.99
ABLE	N54-43-50.7E	1095.855	57741953	81644760	N632.768	E894.708	166,919.54	70,935.69
WP-20	"	6403.699	"	"	N3697.621	E5228.285	170,617.16	76,163.98
POL-2							166,638.92	70,946.42
ABLE	N2-11-17.0W	280.83	99927090	03817949	N280.625	W10.722	166,919.54	70,935.69
POL-2							166,638.92	70,946.42
WP-20	N52-40-31.8E	6561.205	60632849	79521427	N3978.246	E5217.564	170,617.16	76,163.98

CALC BY MBT
 DATE 10-53
 TRAVELER LOCATION OF STATIONS
 20,1201,1341
 884

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 TRAVELER LOCATION OF STATIONS
 20,1201,1341
 884

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ORIENTATION OF ABLE-CHARLIE AREA



Log. 12851.36	4.1089491		45365.7	4.6567276	
Log. Sin 65-20-54.4	9.9584985	9.7	14-55-07.4	9.4106905	79.0
	4.0674476	9.7		4.0674181	79.0
	<u>4181</u>	<u>79.0</u>			
	296	88.7			
					296/88.7 = 3.3"

<u>45365.7</u>	Sin 14-55-10.7	Sin 99-43-58.2
Sin 65-20-54.4	12851.38	49196.81

530-59-06.2 E	530-59-06.2 E
14-55-10.7	99-43-58.2
N 45-54-16.9 W	568-44-52.0 W

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COMPUTATION OF TRIANGLES

COMPUTED BY L.S.H.

CHECKED BY

DATE 10-53

STATION	OBSERVED ANGLE	CORR-M	SPHERICAL ANGLE	SPHERICAL EXCESS	PLANE ANGLE AND DISTANCE	LOGARITHM
2-3						4.1407434
1 HP-20	57-30-11.5	—	11.5	0.0	11.5	0.0739554
2 CHARLIE	115-14-25.5	—	25.5	0.0	25.5	9.9564213
3 COCA	7-15-23.0	—	23.0	0.0	23.0	9.1014363
1-3					14829.3	4.1711201
1-2					2070.80	3.3161351

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ENGINEERS-CONSTRUCTORS

POSITION COMPUTATION

SECOND ORDER TRIANGULATION

CONTROLLED BY LSH DATE 10-53

CHARLIE	COCA	328	59	24.5	α	3	COCA	to 2 CHARLIE	149	00	11.9
		+115	14	25.5	$3^d L$			B	-7	15	23.0
CHARLIE	WP-20	84	13	50.0	α	3	COCA	to 1 WP-20	141	44	48.9
		-	0	13.8	$\Delta\alpha$				-	1	01.2
		180	00	00.0					180	00	00.0
WP-20	CHARLIE	264	13	36.2	α'	1	WP-20	to 3 COCA	321	43	47.7

FIRST ANGLE OF TRIANGLE 57-30-11.5

11	41	33.672	CHARLIE	λ	165	17	32.784	ϕ	11	35	07.935	3	COCA	λ	165	21	27.917
-	0	06.777		$\Delta\lambda$	-	1	08.030	$\Delta\phi$	+	6	18.960			$\Delta\lambda$	-	5	03.164
11	41	26.895	WP-20	λ'	165	16	24.754	ϕ'	11	41	26.895		WP-20	λ'	165	16	24.754

Values in seconds				Logarithms				Values in seconds			
$\frac{1}{2}(\phi + \phi')$ 11-41-30.284				s 4.1711207				$\frac{1}{2}(\phi + \phi')$ 11-38-17.415			
Logarithms				Values in seconds				Logarithms			
s 3.3161382				$\cos \alpha$ 9.8950265				s 4.1711207			
$\sin \alpha$ 9.9977945				B 8.5124983				$\sin \alpha$ 9.7917862			
λ' 8.5096662				h 2.5786455				λ' 8.5096662			
$\sec \phi$ 0.0091039				$\sin \alpha'$ 9.58357				$\sec \phi$ 0.0091039			
$\Delta\lambda$ 1.8327028 -68.0304				C 0.71848				$\Delta\lambda$ 2.4816770 -303.1636			
$\sin \frac{1}{2}(\phi + \phi')$ 9.3067385				h^2 5.1573				$\sin \frac{1}{2}(\phi + \phi')$ 9.3067715			
$\Delta\alpha$ 1.1394413 -13.786				h^2 1.9861				$-\Delta\alpha$ 0.7864485 -61.157			
1.9899				7.1434				$3^d \text{ term } + .0014$			
3.6517				$-\Delta\phi$ -378.9600							

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POSITION COMPUTATION

SECOND ORDER TRIANGULATION

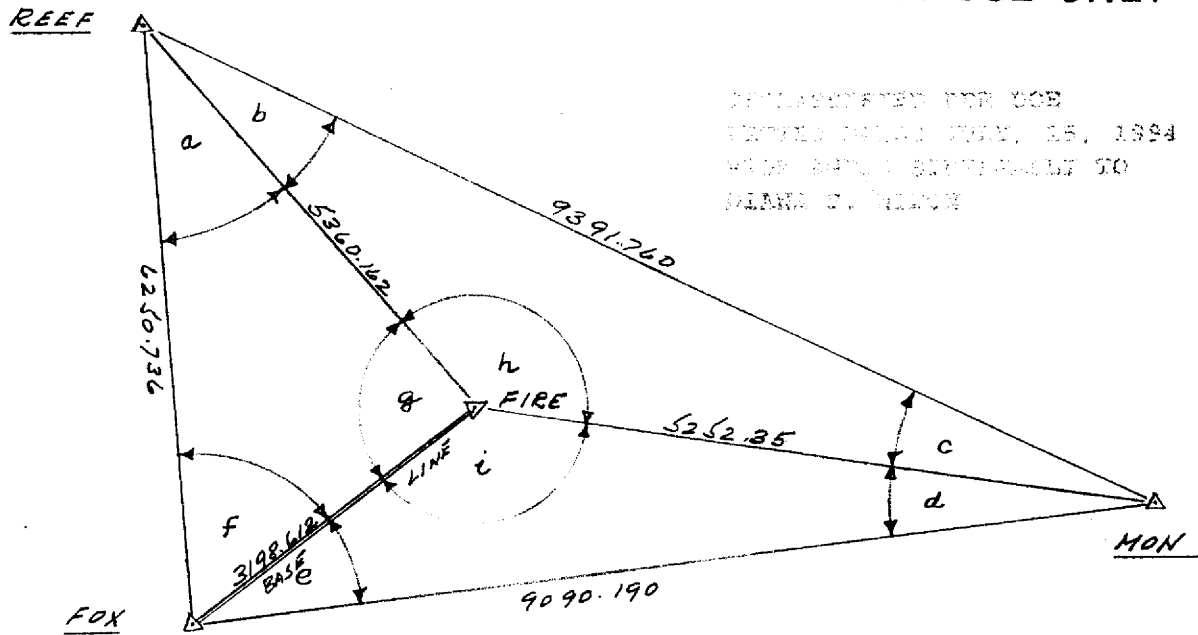
L.S.H. 11-53					
HP-20	CHARLIE	264 13 36.2	α	3	CHARLIE 102 HP-20 84 13 50.0
		150 28 31.4	3α		
HP-20	ABLE	54 42 07.6	α	3	CHARLIE 101 ABLE 69 54 52.8
		- 0 10.7	$\Delta\alpha$		
		180 00 00.0			180 00 00.0
ABLE	HP-20	234 41 57.0	α'	1	ABLE 103 CHARLIE

RIGHT ANGLE OF TRIANGLE 15-12-31.4

11 41 26.895	HP-20	λ	165 16 24.754	ϕ	11 41 33.672	3	CHARLIE	λ	165 17 32.784
- 0 36708		$\Delta\lambda$	- 0 52.599	$\Delta\phi$	- 0 43.486			$\Delta\lambda$	- 02 00.629
11 40 50.187	ABLE	λ'	165 15 32.155	ϕ'	11 40 50.186	1	ABLE	λ'	165 15 32.155

Logarithms	Values in seconds		Logarithms	Values in seconds		Logarithms	Values in seconds
3.2904465		$\frac{1}{2}(\phi + \phi')$	11-41-08.541	s	3.5899485	$\frac{1}{2}(\phi + \phi')$	11-41-11.929
9.7617982		Logarithms	Values in seconds	$\cos \alpha$	9.5358247	Logarithms	Values in seconds
8.5124951		s	3.2904465	B	8.5124950	s	3.5899485
1.5647398	+36.7062	$\sin \alpha$	9.9117747	h	1.6382682	1st term	+43.4789
6.58089		A'	8.5096663	s^2	7.17990		
9.82355		$\sec \phi'$	2.0090881	$\sin^2 \alpha$	9.94550		
0.72251		$\Delta\lambda$	1.7209756 - 52.5988	C	0.72248		
7.12695	1.0013	$\sin \frac{1}{2}(\phi + \phi')$	9.3065172		7.84788	2d term	+ .0070
3.1295		$\Delta\alpha$	1.0274928 + 10.654	h^2	3.2765		
1.9899					1.9899		
	1.0000				5.2664	3d term	+ .0000
	+36.7075					- 0.0	+43.4859

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EXEMPT FROM E.O. 12958, 1994
WAS NOT SUBMITTED TO
NARS E.O. 12958

	MEAS.	GEO. COND.		TRIG. COND.	
a	30-46-43.7	43.9		41.3	
b	27-26-47.9	48.1		50.7	
c	28-03-38.3	38.5		35.9	
d	12-59-53.7	53.9		56.5	
e	21-40-36.4	36.6		34.0	
f	59-02-18.7	19.0		21.6	
	58.7				
g	90-10-55.0	57.1		57.1	
h	124-29-33.7	33.4		33.4	
i	145-19-31.3	29.5		29.5	
	00.0				

Side Eq $\frac{FOX-FIRE \sin f \sin b \sin d}{FOX-FIRE \sin e \sin c \sin a} = 1$

$\log 3198.612 = 3.5049615$		$\log 3198.612 = 3.5049615$	
$\log \sin 59-02-19.0 = 9.9332413$	12.6	$\log \sin 21-40-36.6 = 9.5674629$	53.0
" 27-26-48.1 = 9.6636285	40.6	" 28-03-38.5 = 9.6724735	39.5
" 12-59-53.9 = 9.3520324	91.3	" 30-46-43.9 = 9.7090374	35.4
2.4538637	144.5	2.4539353	127.9
		8637	144.5
		716	272.4

$716 / 272.4 = 2.63''$

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HOLMES & NARVER, INC.
ENGINEERS - CONSTRUCTORS
LOS ANGELES, CALIFORNIA

JOB NO. 884

SHEET 2 OF 5

TITLE LOCAL TRIANGULATION ADJUSTMENT DOG - GEORGE AREA

BY LHM DATE 9-53

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3198.612
Sin 30-46-41.3

Sin 59-02-21.6
(5360.162)

Sin 90-10-57.1
(6250.736)

5360.162
Sin 28-03-35.9

Sin 27-26-50.7
(5252.352)

Sin 124-29-33.4
(9391.760)

3198.612
Sin 12-59-56.5

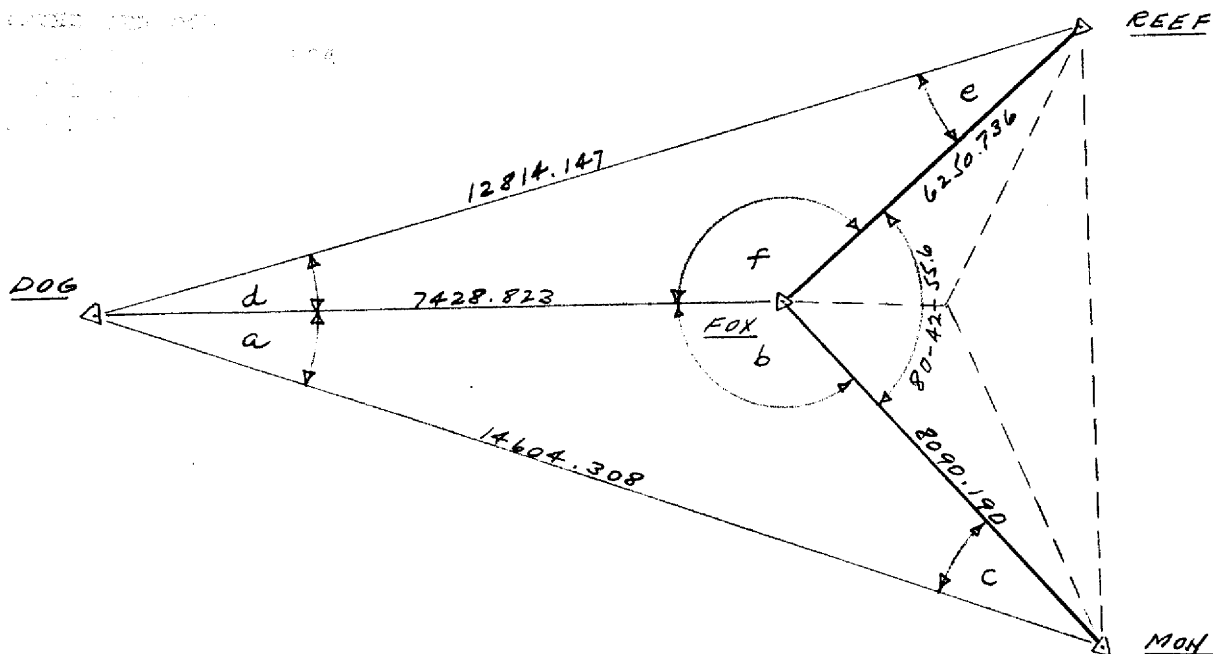
Sin 21-40-34.0
(5252.360)

Sin 145-19-29.5
(8090.190)

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TITLE LOCAL TRIANGULATION ADJUSTMENT DOG-GEORGE AREA BY LSH DATE 9-53

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		GEO. COND.		TRIG. COND	
MEAS. χ		$b + f. = 04.4$			
a	20-40-00.7	59.2	59.0	00.9	
b	140-25-24.2	22.7	23.2	23.2	
c	18-54-39.5	38.1	37.8	35.9	
	04.4				
d	18-43-07.8	07.8	07.6	05.7	
e	22-25-11.5	11.5	11.2	13.1	
f	138-51-40.7	40.7	41.2	41.2	
	0.00				

Side Eq. $\frac{\text{Fire-Ref } \sin e \sin a}{\text{Fire-Mon } \sin c \sin d} = 1$

$$\begin{array}{rcl} \log 6250.736 & = & 3.7959312 \\ \log \sin 22-25-11.2 & = & 9.5813681 \quad 51.0 \\ \quad \quad \quad 20-39-59.0 & = & \underline{9.5476837} \quad \underline{55.8} \\ & & 2.9249830 \quad 106.8 \end{array}$$

$$439 / 230.4 = 1.9''$$

$$\begin{array}{r} 209 \quad 8090.190 = 3.9079588 \\ 209.511 \quad 1854-37.8 = 9.5106667 \quad 61.5 \\ " \quad 18-43-07.6 = 9.5064014 \quad \underline{62.1} \\ 2.9250269 \quad 123.6 \\ 49830 \quad \underline{106.8} \\ 439 \quad 230.4 \end{array}$$

$$\frac{6250.736}{\sin 18-43-05.7} \sin 22-25-13.1 \sin 138-51-41.2 \quad \frac{8090.190}{\sin 20-40-00.9} \sin 18-54-35.9 \sin 140-25-23.2$$

$$(7428.823) \quad (12814.147) \quad (7428.813) \quad (14604.308)$$

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LETTER DATED JULY, 15, 1994
FROM ANTON SINISCALLI TO
DEANE J. NIXON

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STATION	BEARING	DISTANCE	COSINE	SINE	CO-ORDINATES		NORTH	EAST	CHKD BY
					LATITUDE	DEPARTURE			
Δ FOX							170.640.40	124.002.70	1
Δ REEF	N 32-07-51.3 E	6250.736	84683506	53185561	N 5293.342	E 3324.489	175.933.74	127.327.19	2
Δ MON	S 26-05-40.7 E	9391.760	89806874	43985514	S 8434.446	E 4131.014	167.499.29	131.458.20	3
Δ FOX	N 67-09-13.1 W	8090.190	38826139	92154929	N 3141.108	N 7455.509	170.640.40	124.002.69	4
Δ FOX							170.640.40	124.002.70	5
Δ FIRE	S 88-49-47.1 E	3198.612	02042330	99979142	S 65.326	E 3197.945	170.575.07	127.200.64	6
Δ REEF	N 1-21-10.0 E	5360.162	99972129	02360823	N 5358.668	E 126.544	175.933.74	127.327.19	7
Δ FIRE							170.575.07	127.200.64	8
Δ MON	S 54-09-16.6 E	5252.350	58560000	81060017	S 3075.776	E 4257.556	167.499.29	131.458.20	9
Δ MON							167.499.29	131.458.20	10
Δ DOG	N 86-03-49.0 W	14604.308	06864891	99764088	N 1002.570	W 14569.855	168.501.86	116.888.35	11
Δ REEF	N 54-33-04.4 E	12814.147	57997491	81463434	N 7431.884	E 10438.844	175.933.74	127.327.19	12
Δ FOX							170.640.40	124.002.70	13
Δ DOG	S 73-16-10.1 W	7428.823	28787028	95766925	S 2138.537	W 7114.355	168.501.86	116.888.35	14
Δ DOG							168.501.86	116.888.35	15
WP-1210	N 62-12-35.9 W	206.59	46623267	88466213	N 96.319	W 182.762	168.501.86	116.888.35	16
WP-30, 10, 90, 40	S 0-47-10.4 E	6900.00	9999585	01372174	S 6899.350	E 94.680	168.598.18	116.705.59	17
WP-10	N 69-19-16.9 E	2640.06	35312606	93557575	N 932.274	E 2469.976	161.698.83	116.800.27	18
WP-1342	N 69-15-34.9 E	13282.07	35413280	93519514	N 4703.617	E 12421.327	162.631.10	119.270.24	19
Δ MON	N 54-48-33.1 W	285.56	57630118	81723739	N 164.569	W 233.370	167.334.72	131.691.57	20
WP-30							167.499.29	131.458.20	21
WP-1342	N 69-16-11.7 E	15922.13	35396595	93525831	N 5635.89	E 14891.30	161.698.83	116.800.27	22
							167.334.72	131.691.57	23

CALC BY

DATE

TRAVERSE LOCATION OF STATIONS
1210, 1342, 30, 10

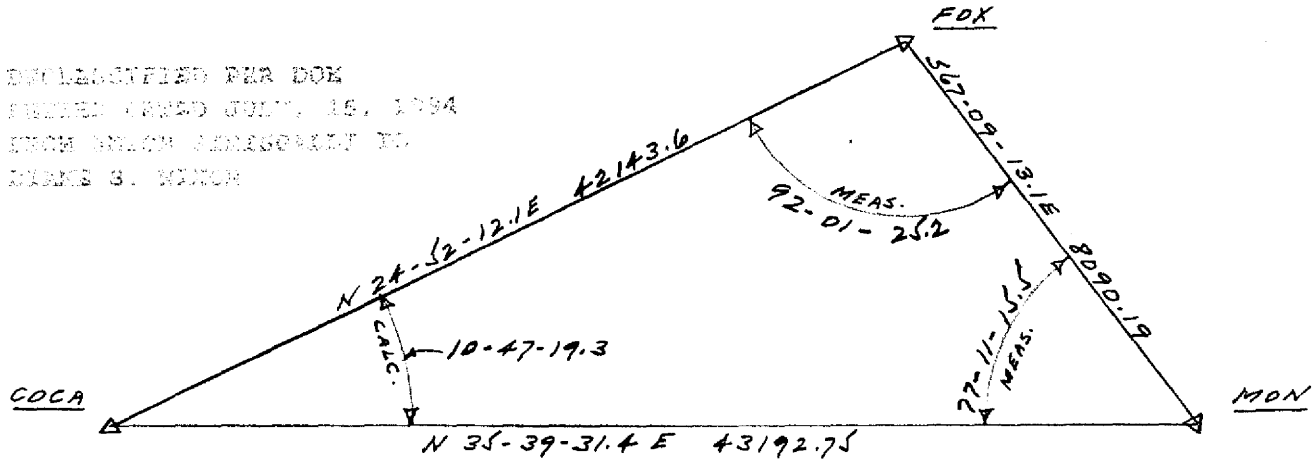
SHEET NO. 4 OF 5
JOB NO. 884

NOTES & DRAWING INC. - ENGINEERS - CONSULTANTS
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ORIENTATION OF DOG-GEORGE AREA

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EXEMPT UNDER E.O. 15, 1994
FROM WHICH DERIVED BY
JAMES S. WILSON



$$\begin{array}{r} 25.2 \\ 92-01-26.4 \\ \hline 77-11-15.5 \\ \hline 169-12-40.7 \\ \hline 10-47-19.3 \end{array}$$

Log. 42143.60	4.6247316		8090.19	3.9079588	
Log Sin 10-47-19.3	9.2722768	110.5	77-11-15.5	9.9890498	4.8
	3.8970084	110.5		3.8970086	4.8
				0084	110.5
				02	115.5

$$\begin{array}{r} 42143.6 \\ \hline \sin 77-11-15.5 \end{array} \quad \begin{array}{r} \sin 10-47-19.3 \\ (8090.19) \end{array} \quad \begin{array}{r} \sin 92-01-25.2 \\ (43192.75) \end{array}$$

$$\begin{array}{r} N 24-52-12.1 E \\ \hline 92-01-25.2 \\ \hline S 67-09-13.1 E \end{array} \quad \begin{array}{r} N 24-52-12.1 E \\ \hline 10-47-19.3 \\ \hline N 35-39-31.4 E \end{array}$$

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JOB NO. 884 LOCATION BIKINI ATOLL MI

[illegible]

COMPUTATION OF TRIANGLES

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CHECKED BY _____

DATE 12-53

STATION	OBSERVED ANGLE	CORR-M	SPHERICAL ANGLE	SPHERICAL EXCESS	PLANE ANGLE AND DISTANCE	LOGARITHM
2-3						3.3919737
1 WP-30	29-33-31.7	—	31.7	0.0	31.7	0.3068743
2 FOX	106-00-18.2	—	18.2	0.0	18.2	9.9828307
3 USN-MON	44-26-10.1	—	10.1	0.0	10.1	9.8451687
1-3					4804.85	3.6816787
1-2					3499.60	3.5440167

RECLASSIFIED BY: DCM

ON: 01-01-2013, BY: 1984

AUTHORITY: 25 USC 1651

REASON: 25 USC 1651

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ENGINEERS-CONSTRUCTORS

POSITION COMPUTATION

SECOND ORDER TRIANGULATION

CHARTED BY LSH DATE 10-53

FOX	USN-MON	292	50	40.9	α	3 USN-MON	to 2 FOX	112	50	56.1
		106	00	18.2	$3dL$		B	-44	26	10.1
FOX	WP-30	38	50	59.1	α	3 USN-MON	to 1 WP-30	68	24	46.0
		-	0	14.7	$\Delta\alpha$			-	0	29.9
		180	00	00.0				180	00	00.0
WP-30	FOX	218	50	44.4	α	1 WP-30	to 3 USN-MON	248	24	16.1

FIRST ANGLE OF TRIANGLE 29-33-31.7

11 41 27.251	FOX	λ	165	24	26.220	ϕ	11 40 56.091	3 USN-MON	λ	165	25	41.253	
- 1 28.705		$\Delta\lambda$	-	1	12.479	$\Delta\phi$	-	0	57.545	$\Delta\lambda$	-	2	27.513
11 39 58.546	WP-30	λ'	165	23	13.741	ϕ'	11 39 58.546	1 WP-30	λ'	165	23	13.741	

Logarithms				Values in seconds			
$\frac{1}{2}(\phi + \phi')$				11-40-42.919			
S				3.6816798			
Logarithms				Values in seconds			
S				3.5440184			
Sin α				9.7974617			
A'				8.5096665			
Sec ϕ'				0.0092656			
$\Delta\lambda$				1.8602122			
Sin $\frac{1}{2}(\phi + \phi')$				9.3062563			
$-\Delta\alpha$				1.1664685			
C				0.72219			
h ²				3.5199			
D				1.9896			
S				5.5095			
1st term				+57.5341			
2d term				+0.0105			
3d term				+0.0000			
$-\Delta\phi$				+57.5446			

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HOLMES & HARVEY, INC.
ENGINEERS-CONSTRUCTORS

POSITION COMPUTATION

SECOND ORDER TRIANGULATION

COMPUTED BY LSH DATE 11-53

FOX	USN-MON	292	50	40.9	α	3 USN-MON	to 2	FOX	112	50	56.1
		+142	25	23.2	3α		8		-18	54	35.9
FOX	DOG	73	16	04.1	α	3 USN-MON	to 1	DOG	86	03	39.8
		-	0	14.5	$\Delta\alpha$				93	56	20.2
		180	00	00.0					-	0	29.7
DOG	FOX	253	15	49.6	α'	DOG	to 3	USN-MON	180	00	00.0
									273	55	50.5

ANGLE OF TRIANGLE 20-40-00.9

11 41 27.251	FOX	λ	165	24	26.220	ϕ	11 40 56.091	3 USN-MON	λ	165	25	41.253
- 0 21.219		$\Delta\lambda$	-	1	11.599	$\Delta\phi$	+ 0 09.941		$\Delta\lambda$	-	2	26.633
11 41 06.032	DOG	λ'	165	23	14.628	ϕ'	11 41 06.032	DOG	λ'	165	23	14.620

Logarithms				Values in seconds			
$\frac{1}{2}(\phi + \phi')$				11-41-16.642			
3.3549359	s	3.3549359		3.6484966	S	3.6484966	
9.4592397	Logarithms	9.9812117	Values in seconds	8.8369151	Cos α	8.8369151	
8.5124951		8.5096663		8.5124953	B	8.5124953	
1.3266707	1st term	1.3266707	+21.2164	0.9979070	h	0.9979070	1st term
6.70987		0.0090950		7.29699	s ²	7.29699	-9.9519
9.96242		1.8549089	-71.5993	9.99795	Sin ² α	9.99795	
0.72252		9.3064997		0.72219	C	0.72219	
7.39481	0.0025	1.1615086	+14.505	8.01713	2d term	8.01713	+0.0104
2.6533				1.9958	h ²	1.9958	
1.9899				1.9896	D	1.9896	
4.6432	3d term			3.9854	3d term	3.9854	+0.0000
	$\Delta\phi$		+21.2189		$\Delta\phi$		-9.9415

HOLMES & NARVER, INC.
ENGINEERS - CONSTRUCTORS
LOS ANGELES, CALIFORNIA

JOB No. 884

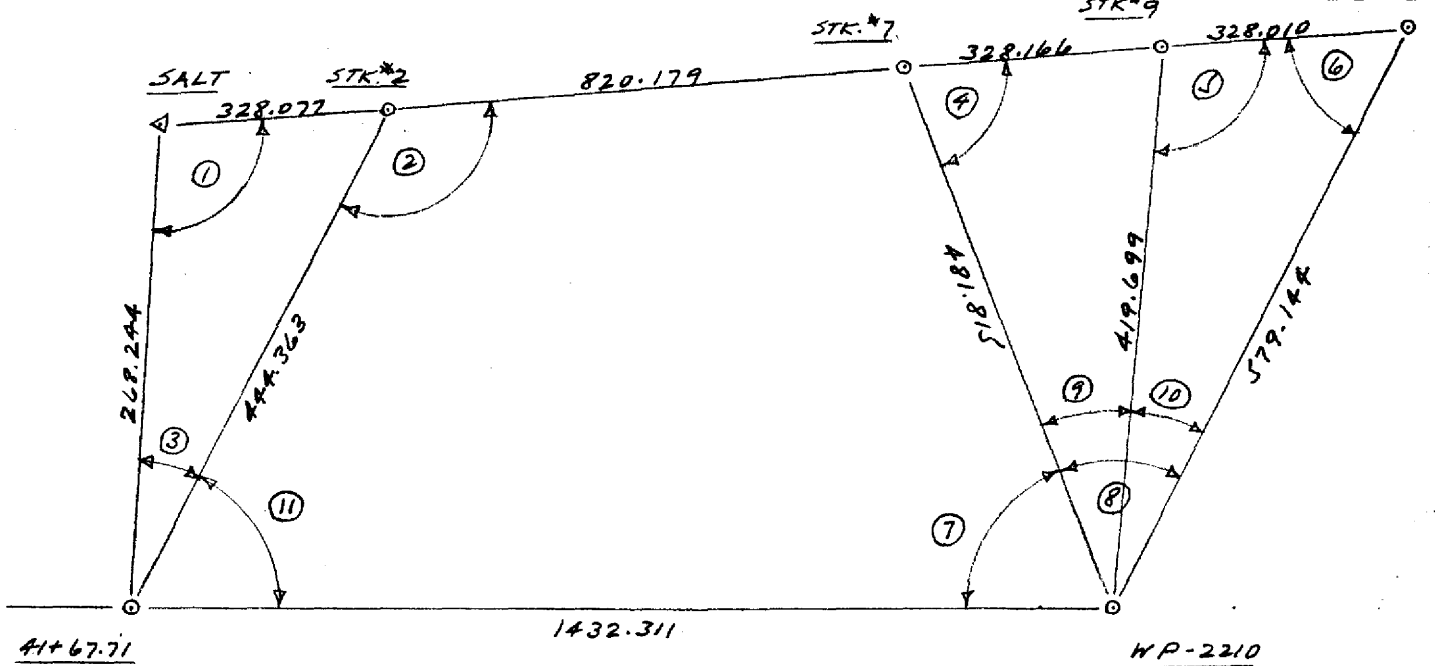
SHEET 1 OF 3

TITLE SITE SUGAR-TARE LOCATION OF STA. 50 AND 2211

BY L.S.H. DATE 10-53

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SMITH

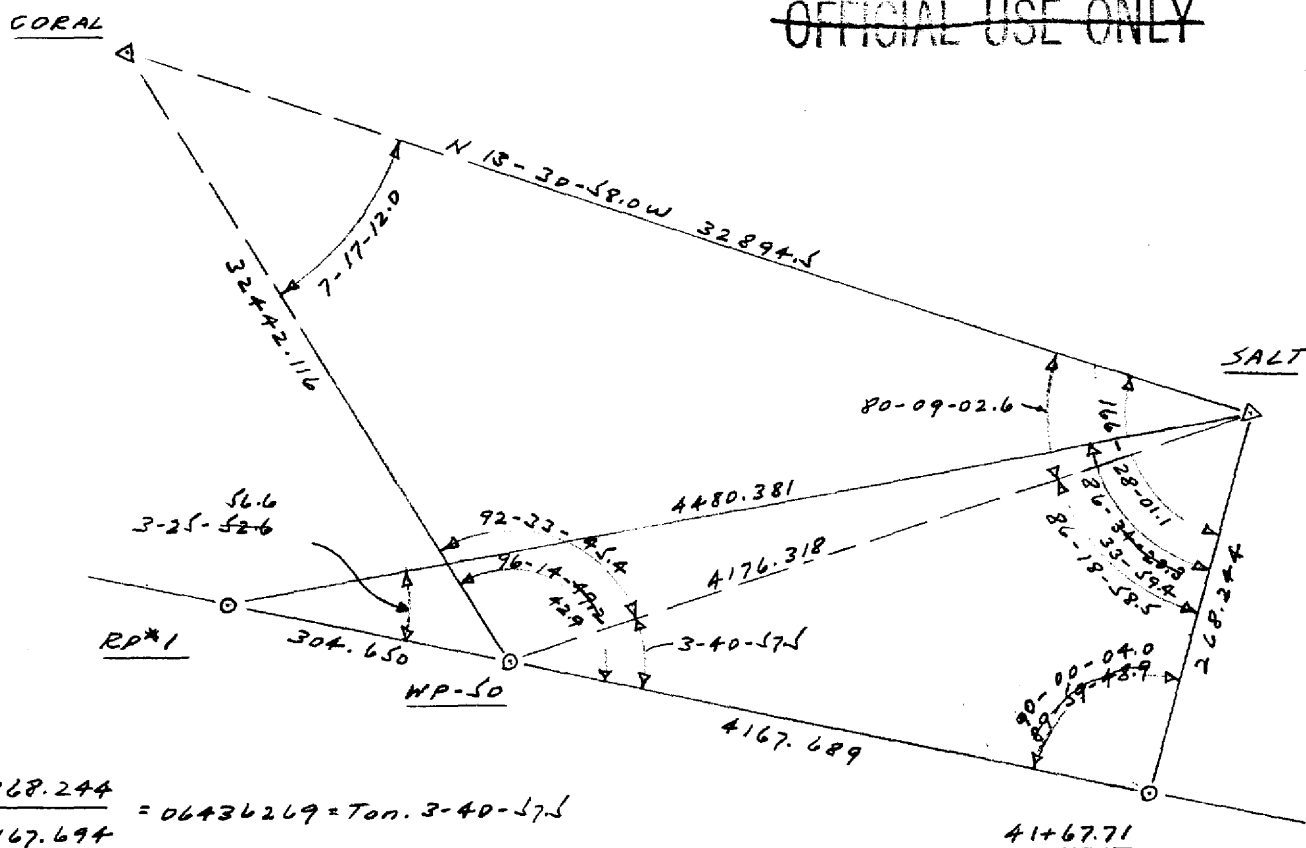


(1) 95-49-35.0	37.0	(4) 58-49-35.0	35.0	(7) 53-00-00.0	02.0	(10) 33-48 —	02.5
(2) 36-54-30.0	31.0	(5) 100-49-00.0	00.0	(8) 75-47-27.5	27.5	(11) 42-44 —	04.0
(3) 47-15-50.0	52.0	(6) 45-22-57.5	57.5	(9) 41-59 —	25.0		

328.166			
328.010	656.176	Sin 58-49-35.0	Sin 45-22-57.5
656.176	Sin 75-47-27.5	(579.144)	(481.815)
	579.144	Sin 45-22-57.5	Sin 33-48-02.5
	Sin 100-49-00.0	(419.699)	(328.009)
	481.815	Sin 58-49-35.0	Sin 41-59-25.0
	Sin 79-11-00.0	(419.699)	(328.167)
	328.077	Sin 36-54-31.0	Sin 95-49-37.0
	Sin 47-15-52.0	(268.244)	(444.363)

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$$\frac{268.244}{4167.694} = 06436269 = \text{Tan. } 3-40-57.5$$

$$\frac{4167.694}{\text{Cos. } 3-40-57.5} = 4176.318$$

$$\frac{4472.339}{\text{Sin } 86-33-59.4} \quad \text{Sin } 3-25-56.6 \quad \text{Sin } 90-00-04.0$$

$$(268.243) \quad (4480.381)$$

$$\frac{4176.318}{\text{Sin } 90-00-04.0} \quad \text{Sin } 3-40-57.5 \quad \text{Sin } 86-18-58.5$$

$$(268.245) \quad (4167.689)$$

4176.318	3.6207936		32894.5	4.5171233
Sin 92-33-51.7	9.9995648	1.0	Sin 7-17-05.7	9.1031312
	3.6203584	1.0		3.6202545
	2545	164.6		
	1039	165.6		

1039 / 165.6 = 6.3"

$$\frac{32894.5}{\text{Sin } 92-33-45.4} \quad \text{Sin } 7-17-12.0 \quad \text{Sin } 80-09-02.6$$

$$(4176.310) \quad (32442.116)$$

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RECEIVED

	DISTANCE	COSINE	SINE	LATITUDE	DEPARTURE	CO-ORDINATES NORTH EAST
SALT	N84.11-239E	328.077	10123042	99486301	N33.211 E326.392	100,421.60 113,966.80
STK. # 2	"	820.179	"	"	N83.027 E815.966	100,454.81 114,293.19
# 7	"	328.166	"	"	N33.220 E326.480	100,537.84 115,109.16
# 9	"	328.010	"	"	N33.205 E326.325	100,571.06 115,435.64
SMITH	S38.48-26.4 N	579.144	77925776	62670355	S451.302 H362.952	100,604.26 115,761.96
H.P.-2210	N89-59-03.1 W	1432.311	00027586	99999996	N0.395 H1432.311	100,152.96 115,399.01
41+67.71	"	4167.689	"	"	N1.150 H4167.689	100,153.36 113,966.70
WP-50	N86.19-59.4 E	4176.318	06395463	99795280	N267.095 E4167.768	100,154.51 109,799.01
SALT						100,421.60 113,966.80
HP-50	N6-13-46.0	32442.1W	99409533	10851024	N32250.580 H3520.300	100,154.51 109,799.01
COCA						132,405.1 106,278.7

DATE FIRST SITE SURVEY-TARE OFFICIALS USE
LOCATION OF STR. 50,2210 884

~~CONFIDENTIAL~~

DECLASSIFIED PER DOE
LETTER DATED JULY, 15, 1994
FROM ANTON SINISGALLI TO
DIANE S. NIXON

~~OFFICIAL USE ONLY~~

JOB NO. 884 LOCATION BIKINI ATOLL MI.

[illegible]

COMPUTATION OF TRIANGLES

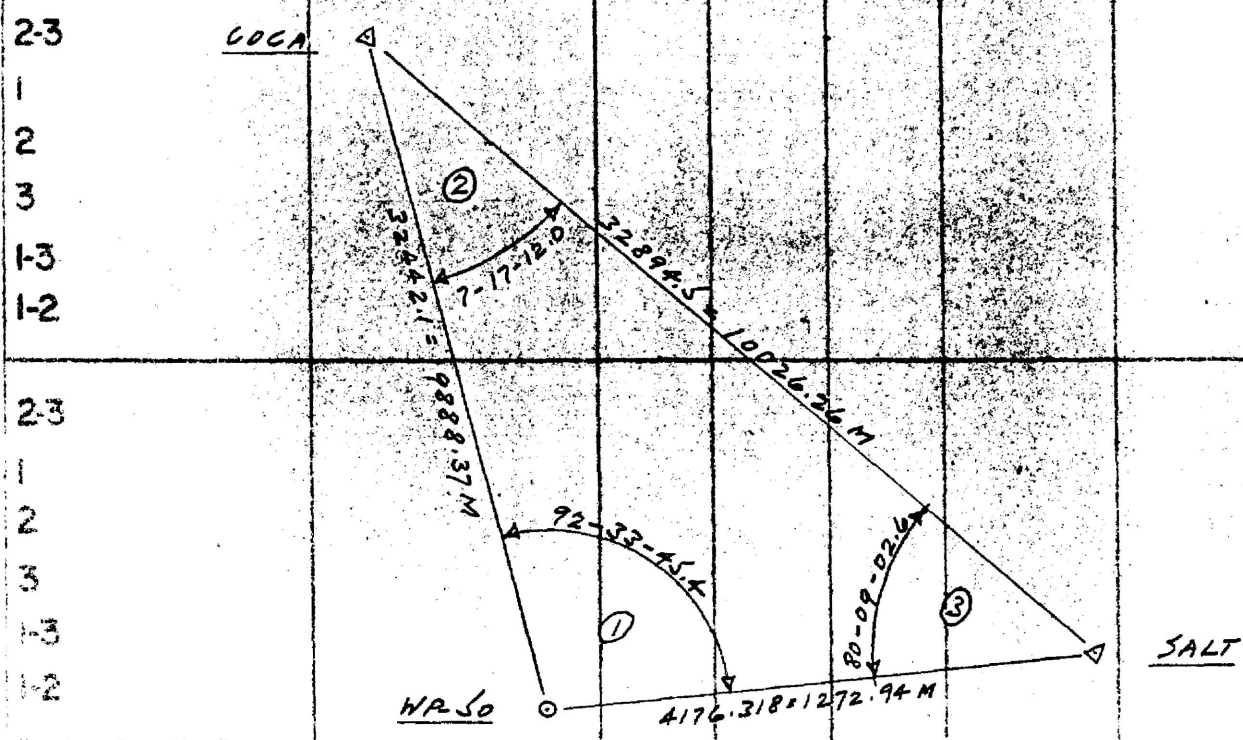
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COMPUTED BY L. SM

CHECKED BY _____

DATE 10-53

STATION	OBSERVED ANGLE	CORR-M	SPHERICAL ANGLE	SPHERICAL EXCESS	PLANE ANGLE AND DISTANCE	LOGARITHM
2-3						4.0011390
1 WP-50	92-33-45.4	-	45.4	0.0	45.4	0.0004354
2 COCA	7-17-12.0	-	12.0	0.0	12.0	9.1032349
3 SALT	80-09-02.6	-	02.6	0.0	02.6	9.9935513
1-3					1272.94	3.1048093
1-2					9888.37	3.9951257



DECLASSIFIED PER DOE
LETTER DATED JULY, 15, 1994
FROM ANTON SINISCALLI TO
DIANE S. NIXON

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HOLMES & NARVER, INC.
ENGINEERS-CONSTRUCTORS

COMPUTATION

SECOND ORDER TRIANGULATION

DATE 10-53

COCA SALT

346 28 20.1
+ 7 17 12.0

COCA WP-50

353 45 32.1
+ 0 07.1

180 00 00.0

WP-50 COCA

173 45 39.2

3 SALT to 2 COCA

166 28 35.6

3 SALT to 1 WP-50

86 19 33.0

3 SALT to 3 SALT

266 19 24.6

ANGLE OF TRIANGLE 92-33-45.4

11 35 07.935 COCA

165 21 27.917

- 5 19.922

+ 0 35.471

11 29 48.018 WP-50

165 22 03.388

Logarithms Values in seconds

3.9951247

11-32-27.917

9.9974184

Logarithms Values in seconds

8.5124983

S 3.9951247

2.5050414

1st term +319.9200

Sin α 9.9362781

7.99025

A' 8.5096681

8.07256

Sec ϕ' 0.0088022

0.71848

$\Delta \lambda$ 1.5498731 +35.4710

6.78129

2d term +1.0006

Sin $\frac{1}{2}(\phi + \phi')$ 9.3011838

5.0101

$-\Delta \alpha$ 0.8510569 -7.0967

1.9861

3d term

+0.010

6.9962

-0.1 +319.9216

11 29 50.670 3 SALT

165 22 45.305

- 0 02.656

+ 0 41.917

11 29 48.018 WP-50

165 22 03.388

Logarithms Values in seconds

3.1048079

11-29-49.341

8.8067385

B 8.5124910

b 0.4240374

1st term +2.6548

B' 16.20962

Sin α 9.99821

C 0.71508

c 6.92291

2d term +0.0008

C' 0.8481

B 1.9830

2.8311

3d term +0.0000

-0.1 +2.6556

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