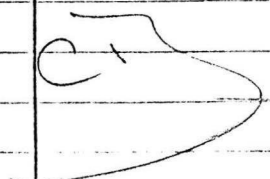




SURVEY CALCULATION SHEET

Station	Horiz. Angle	Azimuth	Slope Dist.	Vert. Angle	Horiz. Dist.	Lat.	Dep.	Calculated		Adjusted	
								Northings	Eastings	Northings	Eastings
	ADJUSTED				ADJUSTED .9995						
171								6,905,084.011	592,079.705	6,905,084.011	592,079.705
172	(-03") 72° 35' 46"	350° 59' 53" ✓	-	-	706.258 ✓	-	-	6,904,386.451	592,190.211	6,904,386.451	592,190.211
173	(-02") 63° 35' 39"	✓			494.807 ✓	(-.008) ✓ + 220.054 ✓	(+.013) ✓ + 443.182 ✓	6,904,606.505	592,633.393	6,904,606.496	592,633.406
174	(-01") 67° 10' 49"	310° 46' 28" ✓			731.190 ✓	(-.013) ✓ + 477.528 ✓	(+.019) ✓ - 553.720 ✓	6,905,084.033	592,079.673	6,905,084.011	592,079.705
175	40° 13' 25" ✓	170° 59' 53" ✓			706.258 ✓	- 697.553 ✓	+ 110.507 ✓				
						+ 0.023	- 0.031				
						CLOSURE - NORTHING = + 0.022m ✓					
						EASTING = - 0.032m ✓					
						STATION 82005 (GRUM)					
						Ele. = 1270.786 m.					
									ELLEV. CHECK O.K. ✓		

✓



Station (Sta.): 1423 AZIMUTH AL  
 Foresight (F.S.): 82005 FOR

Station (Sta.): 1422 AZIMUTH AL  
 Foresight (F.S.): 82005 FOR

ELV. STAT-82005 = 1270.764

Foresight	Meas. Dist.	
	Vert. <	<u>-0° 37' 11" ✓</u> <small>Tg 0.010816614</small>
	Horz. Dist.	<u>495.055 ✓</u>
	Vert. Dist.	<u>-5.355 ✓</u>
	H.I.	<u>1.241 ✓</u>
	H.P.	<u>1.558 ✓</u>
	Diff.	<u>-5.672 ✓</u>
Backsight	Meas. Dist.	
	Vert. <	<u>+0° 39' 41" ✓</u> <small>Tg 0.011543926</small>
	Horz. Dist.	<u>495.055 ✓</u>
	Vert. Dist.	<u>+5.715 ✓</u>
	H.I.	<u>1.335 ✓</u>
	H.P.	<u>1.356 ✓</u>
	Diff.	<u>+5.694 ✓</u>
Sta. Elev.	<u>1276.447 ✓</u>	
Diff.	<u>-5.683 ✓</u>	
F.S. Elev.	<u>1270.764 ✓</u>	

Foresight	Meas. Dist.	<u>731.556 ✓</u> <small>Tg 0.051066111</small>
	Vert. <	<u>-2° 53' 54" ✓</u>
	Horz. Dist.	<u>731.556 ✓</u>
	Vert. Dist.	<u>-37.038 ✓</u>
	H.I.	<u>1.372 ✓</u>
	H.P.	<u>1.558 ✓</u>
	Diff.	<u>-37.224 ✓</u>
Backsight	Meas. Dist.	<u>731.556 ✓</u> <small>Tg 0.051066111</small>
	Vert. <	<u>+2° 55' 24" ✓</u>
	Horz. Dist.	<u>731.556 ✓</u>
	Vert. Dist.	<u>+37.358 ✓</u>
	H.I.	<u>1.335 ✓</u>
	H.P.	<u>1.497 ✓</u>
	Diff.	<u>+37.196 ✓</u>
Sta. Elev.	<u>1308.019 ✓</u>	
Diff.	<u>-27.210 ✓</u>	
F.S. Elev.	<u>1270.809 ✓</u>	

AV = 1270.787 ✓

Station (Sta.): 1423 AZIMUTH AL  
 Foresight (F.S.): 82006 FOR

Station (Sta.): 1424 AZIMUTH AL  
 Foresight (F.S.): 82006 FOR

ELV. STA 82006 = 1283.882

Foresight	Meas. Dist.	
	Vert. <	<u>+0° 46' 08" ✓</u> <small>Tg 0.013420448</small>
	Horz. Dist.	<u>576.786 ✓</u>
	Vert. Dist.	<u>+7.741 ✓</u>
	H.I.	<u>1.241 ✓</u>
	H.P.	<u>1.524 ✓</u>
	Diff.	<u>+7.458 ✓</u>
Backsight	Meas. Dist.	
	Vert. <	<u>-0° 44' 07" ✓</u> <small>Tg 0.0128337</small>
	Horz. Dist.	<u>576.786 ✓</u>
	Vert. Dist.	<u>-7.402 ✓</u>
	H.I.	<u>1.414 ✓</u>
	H.P.	<u>1.375 ✓</u>
	Diff.	<u>-7.363 ✓</u>
Sta. Elev.	<u>1276.447 ✓</u>	
Diff.	<u>+7.411 ✓</u>	
F.S. Elev.	<u>1283.858 ✓</u>	

Foresight	Meas. Dist.	<u>622.846 ✓</u> <small>Tg 0.038498954</small>
	Vert. <	<u>-2° 12' 15" ✓</u>
	Horz. Dist.	<u>622.846 ✓</u>
	Vert. Dist.	<u>-23.973 ✓</u>
	H.I.	<u>1.372 ✓</u>
	H.P.	<u>1.524 ✓</u>
	Diff.	<u>-24.125 ✓</u>
Backsight	Meas. Dist.	<u>622.846 ✓</u> <small>Tg 0.038498954</small>
	Vert. <	<u>+2° 13' 44" ✓</u>
	Horz. Dist.	<u>622.846 ✓</u>
	Vert. Dist.	<u>+24.242 ✓</u>
	H.I.	<u>1.375 ✓</u>
	H.P.	<u>1.515 ✓</u>
	Diff.	<u>+24.102 ✓</u>
Sta. Elev.	<u>1308.017 ✓</u>	
Diff.	<u>-24.114 ✓</u>	
F.S. Elev.	<u>1283.882 ✓</u>	

AV = 1283.882 ✓

STA	B.S. F.S.	4 HORZ. <	SLOPE DIST.		VERT. DIST.		H.P.	ELEV.	REMARKS
			HORZ. DIST.	FACT	INT.				
82006	1423		576.770	90°	43'	58"		HP = 4.64	1.414m
HI = 4.51			576.772	269	15	45		HP = 4.51	1.375m
4.51			576.768	-0	44	07			
1.375m			AV = 576.770						
	1424	72° 03' 51"					HI = 4.51		1.375m
	144	07' 37"	622.850	87°	46'	12"	HP = 4.97		1.515m
	216	11' 27"	622.851	272	13	39			
	288	15' 24"	622.849						
			AV = 622.850						
Avg Hz <	72° 03' 51"	OK ✓							
									AV Vert < +2° 13' 44"

STA 82006, 1423, 1424  
 July/82  
 CARON TRANDA

STA	B.S. F.S.	4 HORZ. <	SLOPE DIST.		VERT. DIST.		H.P.	ELEV.	REMARKS
			HORZ. DIST.	FACT	INT.				
1423	1424								
HI = 4.07									
1.241m									
82006		56° 59' 06"	<del>576.809</del>	89°	13'	45"	HI = 4.07		1.241m
		113° 58' 18"	576.801	270°	46'	00"	HP = 5.00		1.524m
		170° 57' 39"	576.803	+0°	46'	08"	AV ✓		
		227° 56' 42"	576.801						
			AV = 576.802			+576.770			AV 576.786
AV	56° 59' 11"	✓							
		16.5"							

STA	B.S. F.S.	4 HORZ. <	SLOPE DIST.		VERT. DIST.		H.P.	ELEV.	REMARKS
			HORZ. DIST.	FACT	INT.				
1424	82006			92°	12'	15"		HI = 4.50	1.372m
HI = 4.50				267°	47'	45"		HP = 5.00	1.524m
1.372m									
									-2' - 2' - 15"
1423		50° 57' 07"	622.843				HI = 4.50		1.372m
		101° 53' 54"	622.842						
		152° 50' 50"	622.842						
		203° 47' 34"	AV = 622.842						
	AV	50° 56' 54"	✓						
		53.5"							
TOTAL TRAVERSE ANGLES				180° 00' 00"				✓	
" MEASURED ANGLES				179° 59' 56"				✓	
DIFF				= 00° 00' 04"				✓	



Station (Sta.): 1423 AZIMUTH F  
 Foresight (F.S.): 82005 FOR

Station (Sta.): 1424 AZIMUTH F  
 Foresight (F.S.): 82005 FOR

ELV - STAT - 82005 = 1270.736

Foresight

Meas. Dist.                       
 Vert. < -0° 37' 11" ✓ 0.010816614  
 Horz. Dist. 25.055 ✓  
 Vert. Dist. -5.555 ✓  
 H.I. 1.241 ✓  
 H.P. 1.558 ✓  
 Diff. -5.672 ✓

Foresight

Meas. Dist.                      0.05062867  
 Vert. < -2° 53' 54" ✓  
 Horz. Dist. 71.556 ✓  
 Vert. Dist. -37.088 ✓  
 H.I. 1.372 ✓  
 H.P. 1.558 ✓  
 Diff. -37.224 ✓

Backsight

Meas. Dist.                       
 Vert. < +0° 39' 41" ✓ 0.011543926  
 Horz. Dist. 495.055 ✓  
 Vert. Dist. +5.715 ✓  
 H.I. 1.335 ✓  
 H.P. 1.356 ✓  
 Diff. +5.694 ✓

Backsight

Meas. Dist.                      0.051066111  
 Vert. < +2° 55' 24" ✓  
 Horz. Dist. 731.556 ✓  
 Vert. Dist. +37.358 ✓  
 H.I. 1.335 ✓  
 H.P. 1.497 ✓  
 Diff. +37.196 ✓

Sta. Elev. 1276.447 ✓  
 Diff. -5.683 ✓  
 F.S. Elev. 1270.764 ✓

Sta. Elev. 1303.019 ✓  
 Diff. -37.210 ✓  
 F.S. Elev. 1270.809 ✓

AV = 1270.787 ✓

✓ C

Station (Sta.): 1423 AZIMUTH F  
 Foresight (F.S.): 82006 FOR

Station (Sta.): 1424 AZIMUTH F  
 Foresight (F.S.): 82006 FOR

ELV - STA 82006 = 1283.882

Foresight

Meas. Dist.                       
 Vert. < +0° 46' 08" ✓ 0.013420445  
 Horz. Dist. 576.786 ✓  
 Vert. Dist. +7.741 ✓  
 H.I. 1.241 ✓  
 H.P. 1.524 ✓  
 Diff. +7.458 ✓

Foresight

Meas. Dist.                      0.038488954  
 Vert. < -2° 12' 15" ✓  
 Horz. Dist. 622.846 ✓  
 Vert. Dist. -23.373 ✓  
 H.I. 1.372 ✓  
 H.P. 1.524 ✓  
 Diff. -24.175 ✓

Backsight

Meas. Dist.                       
 Vert. < -0° 44' 07" ✓ 0.0128337  
 Horz. Dist. 576.786 ✓  
 Vert. Dist. -7.402 ✓  
 H.I. 1.414 ✓  
 H.P. 1.375 ✓  
 Diff. -7.363 ✓

Backsight

Meas. Dist.                      0.033921055  
 Vert. < +2° 13' 44" ✓  
 Horz. Dist. 622.846 ✓  
 Vert. Dist. +24.242 ✓  
 H.I. 1.375 ✓  
 H.P. 1.515 ✓  
 Diff. +24.102 ✓

Sta. Elev. 1276.447 ✓  
 Diff. +7.411 ✓  
 F.S. Elev. 1283.858 ✓

Sta. Elev. 1303.019 ✓  
 Diff. -24.114 ✓  
 F.S. Elev. 1283.825 ✓

AV = 1283.882 ✓

✓ C

STA	B.S. F.S.	4 HORZ. <			SLOPE DIST.		VERT. DIST.		H.P.	ELEV.	REMARKS
					HORZ. DIST.	FACT	INT.	VERT. DIST.			
1424	82007	90°	42'	16"	1031.549					HI = <del>445</del> 1.356m	
		269°	17'	18"	1031.546					HP = <del>483</del> 1.472m	
					1031.548						
					AV = 1031.548						
	1423	69°	02'	21"				AV. VERT. &		- 0° 41' 29"	
		138°	04'	36"							
		207°	06'	56"							
		276°	09'	15"							
	AV	69°	02'	19"	OK ✓						
TOTAL TRAVERSE ANGLES =								180°	00'	00"	
" MEASURED ANGLES =								179°	59'	54"	
DIFF =								-	00°	00'	06"

PA \_\_\_\_\_ OF \_\_\_\_\_

STA	B.S. F.S.	4 HORZ. <			SLOPE DIST.		VERT. DIST.		H.P.	ELEV.	REMARKS
					HORZ. DIST.	FACT	INT.	VERT. DIST.			
1423	1424										
	82007	70°	41'	30"	1020.719	88°	55'	42"	HI = <del>382</del>	1.164m	
		141°	22'	33"	1020.719	271°	04'	00"	HP = <del>483</del>	1.472m	
		212°	03'	27"	1020.721	+ 1	04'	09"			
		292°	44'	46"	AV = 1020.720						
	AV =	70°	41'	12"	OK ✓						
				11.5"							
		<del>70°</del>	<del>41'</del>	<del>21"</del>							
		<del>141°</del>	<del>22'</del>	<del>24"</del>							
		<del>212°</del>	<del>03'</del>	<del>14"</del>							
		<del>292°</del>	<del>44'</del>	<del>30"</del>							
	AV =	<del>70°</del>	<del>41'</del>	<del>15"</del>	<del>70° 41' 03"</del>						

PA \_\_\_\_\_ OF \_\_\_\_\_

STA	B.S. F.S.	4 HORZ. <			SLOPE DIST.		VERT. DIST.		H.P.	ELEV.	REMARKS
					HORZ. DIST.	FACT	INT.	VERT. DIST.			
82007	1423				1020.691	91°	03'	00"			
					1020.693	268°	56'	39"		HI = <del>436</del> 1.329m	
					1020.693	-01	03'	11"		HP = <del>440</del> 1.341m	
					AV = 1020.692						
	1424	40°	16'	14"	1031.541	89°	16'	50"		HI = <del>486</del> 1.329m	
		80°	32'	32"	1031.546	270°	42'	54"		HP = <del>497</del> 1.515m	
		120°	49'	18"	1031.544	+0	43'	02"			
		161°	05'	33"	AV = 1031.544						
	AV	<del>40°</del>	<del>16'</del>	<del>14"</del>							
	AV =	40°	16'	23"	OK ✓						
TOTAL TRAVERSE <								180°	00'	00"	
" MEASURED <								179°	59'	54"	
DIFF =								-	00°	00'	06"

PA \_\_\_\_\_ OF \_\_\_\_\_

July / 82  
 STA. 82007, 1423, 1424  
 CASH IRANDA.

SURVEY CALCULATION SHEET

Station	Horiz. Angle	Azimuth	Slope Dist.	Vert. Angle	Horiz. Dist.	Lat.	Dep.	Calculated		Adjusted		
	ADJUSTED				ADJUSTED -9995			Northings	Eastings	Northings	Eastings	
424												
423	(+02") 70° 41' 14" ✓	350° 59' 53" ✓	—	—	706.258 ✓	—	—	6,905,084.011 ✓	592,079.705 ✓	6,905,084.011 ✓	592,079.705 ✓	
2007	(+02") 40° 16' 25" ✓	61° 41' 07" ✓			1020.196 ✓	+ 483.894 ✓	+ 898.135 ✓	6,904,386.451 ✓	592,190.211 ✓	6,904,386.451 ✓	592,190.211 ✓	
424	(+02") 40° 16' 25" ✓	281° 57' 32" ✓			1031.030 ✓	+ 213.640 ✓	- 1008.653 ✓	6,904,870.345 ✓	593,078.346 ✓	6,904,870.358 ✓	593,088.352 ✓	
423	(+02") 67° 02' 21" ✓	170° 59' 53" ✓			706.258 ✓	- 697.559	+ 110.507	6,905,083.985 ✓	592,079.693 ✓	6,905,084.011 ✓	592,079.705 ✓	
						- 0.025	+ 0.011					
					CLOSURE:	NORTHING -	- 0.026m					
						EASTING -	- 0.012 ✓					
					- STATION 2007 (GRUM)							
					Elev.	1295.214	ELEVATION CHECK O.K. ✓					

Station (Sta.): 1222 AZIMUTH       
 Foresight (F.S.): 1207 FOF     

Station (Sta.): 1222 AZIMUTH       
 Foresight (F.S.): 1207 FO     

STA. 1207 ELV = 1295.214

Foresight	Meas. Dist.	<u>    </u>
	Vert. <	<u>+1° 04' 09" <small>Tg=0.018662644</small></u> ✓
	Horz. Dist.	<u>1020.706</u> ✓
	Vert. Dist.	<u>+19.049</u> ✓
	H.I.	<u>1.164</u> ✓
	H.P.	<u>1.472</u> ✓
Diff.	<u>+18.741</u> ✓	
Backsight	Meas. Dist.	<u>    </u>
	Vert. <	<u>-1° 03' 11" <small>Tg=0.018381356</small></u> ✓
	Horz. Dist.	<u>1020.706</u> ✓
	Vert. Dist.	<u>-18.762</u> ✓
	H.I.	<u>1.329</u> ✓
	H.P.	<u>1.341</u> ✓
Diff.	<u>-18.774</u> ✓	
Sta. Elev.	<u>1276.447</u> ✓	
Diff.	<u>+18.758</u> ✓	
F.S. Elev.	<u>1295.205</u> ✓	

Foresight	Meas. Dist.	<u>3=0.012353529</u> ✓
	Vert. <	<u>-0° 42' 29"</u> ✓
	Horz. Dist.	<u>1031.546</u> ✓
	Vert. Dist.	<u>-12.745</u> ✓
	H.I.	<u>1.356</u> ✓
	H.P.	<u>1.472</u> ✓
Diff.	<u>-12.864</u> ✓	
Backsight	Meas. Dist.	<u>3=0.012518543</u> ✓
	Vert. <	<u>+0° 43' 02"</u> ✓
	Horz. Dist.	<u>1031.546</u> ✓
	Vert. Dist.	<u>+12.913</u> ✓
	H.I.	<u>1.329</u> ✓
	H.P.	<u>1.515</u> ✓
Diff.	<u>+12.727</u> ✓	
Sta. Elev.	<u>1308.019</u> ✓	
Diff.	<u>-12.796</u> ✓	
F.S. Elev.	<u>1295.223</u> ✓	

AV = 1295.214 ✓ *C.S.*

Station (Sta.):      AZIMUTH       
 Foresight (F.S.):      FOR     

Station (Sta.):      AZIMUTH       
 Foresight (F.S.):      FOR     

Foresight	Meas. Dist.	<u>    </u>
	Vert. <	<u>    </u>
	Horz. Dist.	<u>    </u>
	Vert. Dist.	<u>    </u>
	H.I.	<u>    </u>
	H.P.	<u>    </u>
Diff.	<u>    </u>	
Backsight	Meas. Dist.	<u>    </u>
	Vert. <	<u>    </u>
	Horz. Dist.	<u>    </u>
	Vert. Dist.	<u>    </u>
	H.I.	<u>    </u>
	H.P.	<u>    </u>
Diff.	<u>    </u>	
Sta. Elev.	<u>    </u>	
Diff.	<u>    </u>	
F.S. Elev.	<u>    </u>	

Foresight	Meas. Dist.	<u>    </u>
	Vert. <	<u>    </u>
	Horz. Dist.	<u>    </u>
	Vert. Dist.	<u>    </u>
	H.I.	<u>    </u>
	H.P.	<u>    </u>
Diff.	<u>    </u>	
Backsight	Meas. Dist.	<u>    </u>
	Vert. <	<u>    </u>
	Horz. Dist.	<u>    </u>
	Vert. Dist.	<u>    </u>
	H.I.	<u>    </u>
	H.P.	<u>    </u>
Diff.	<u>    </u>	
Sta. Elev.	<u>    </u>	
Diff.	<u>    </u>	
F.S. Elev.	<u>    </u>	

GRUM

JULY 1982

D.D.H. PICKUP

CAS / T3LO

81 AX 01, 81 AX 02, 81 AX 05

✓ 167

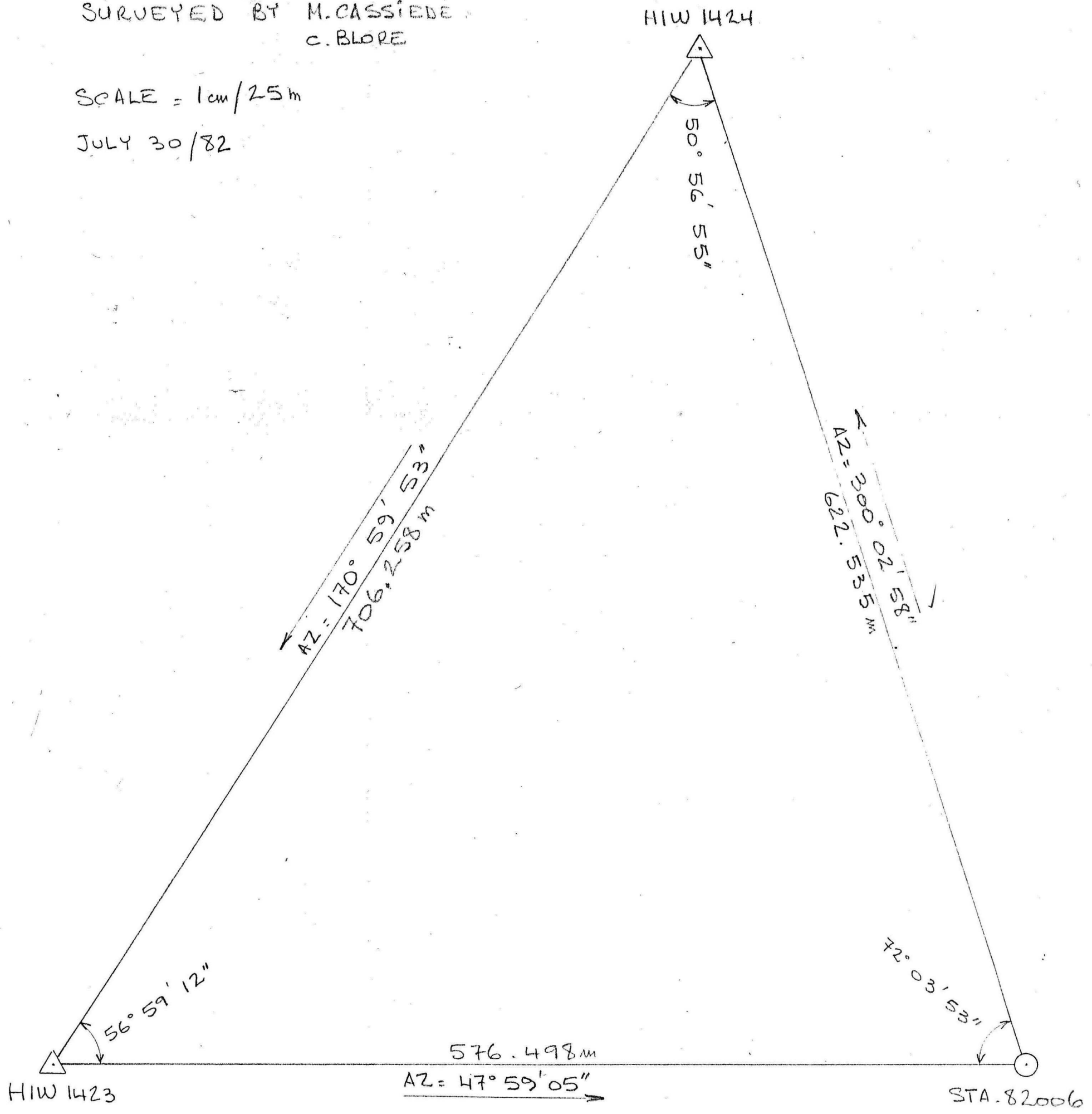
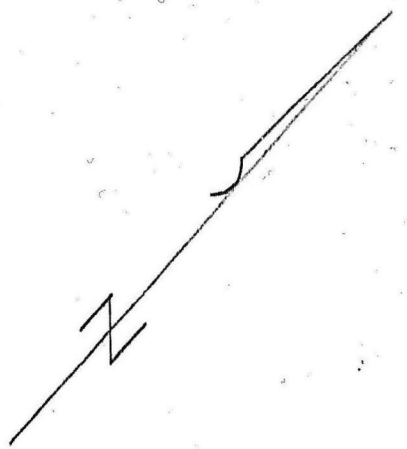
82 A 217

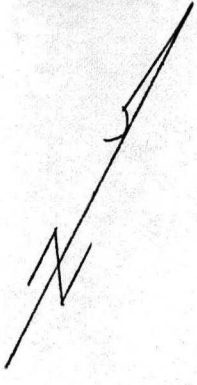
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82 A 241

GRUM TRAVERSE  
 FOR HOLES PICKED UP  
 FROM STA - 82006  
 SURVEYED BY M. CASSIEDA  
 C. BLORE

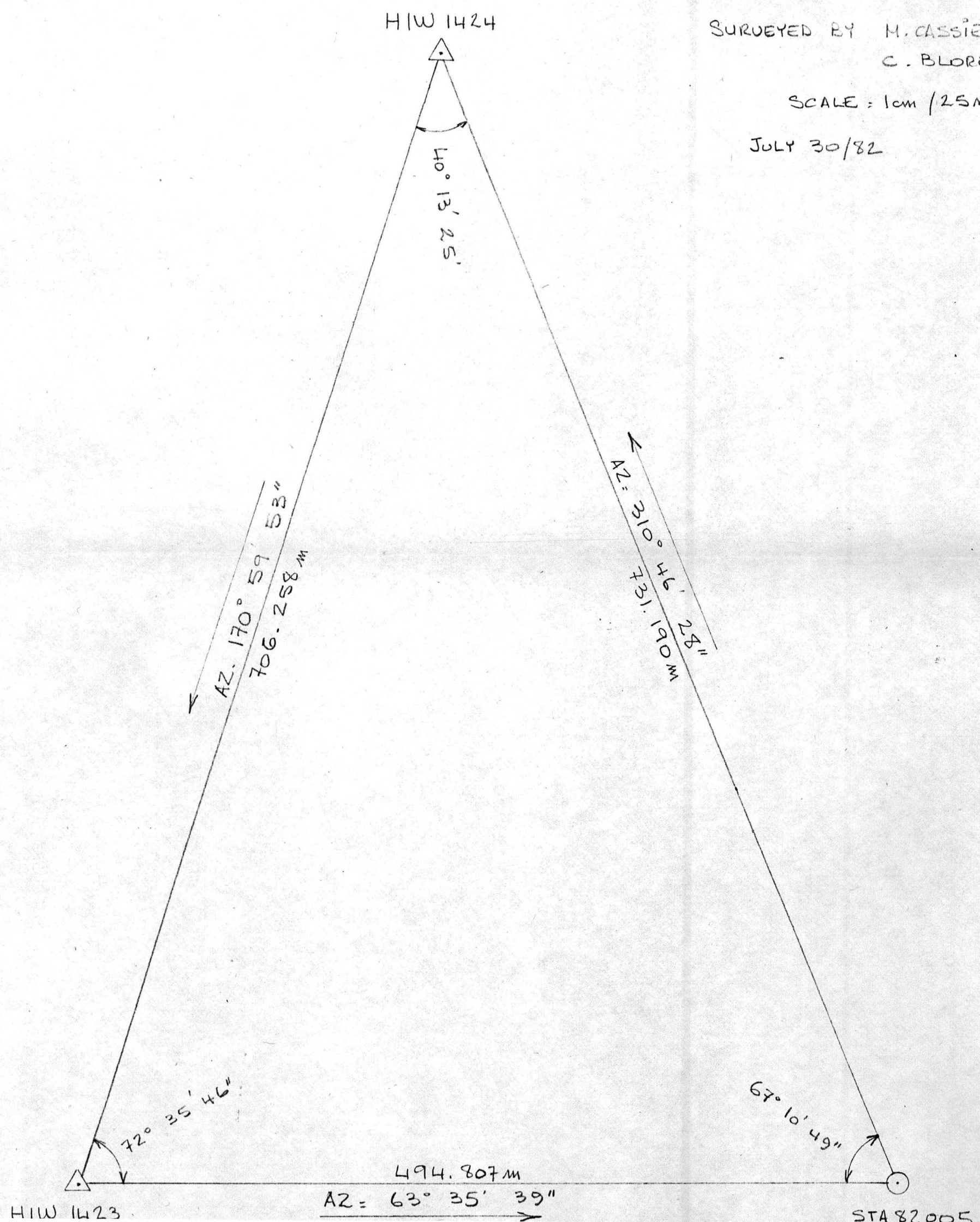
SCALE = 1cm/25m  
 JULY 30/82

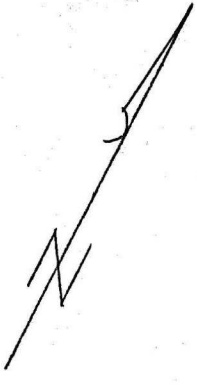




GRUM TRAVERSE  
FOR HOLES Picked UP  
FROM STAT 1423 - 82005

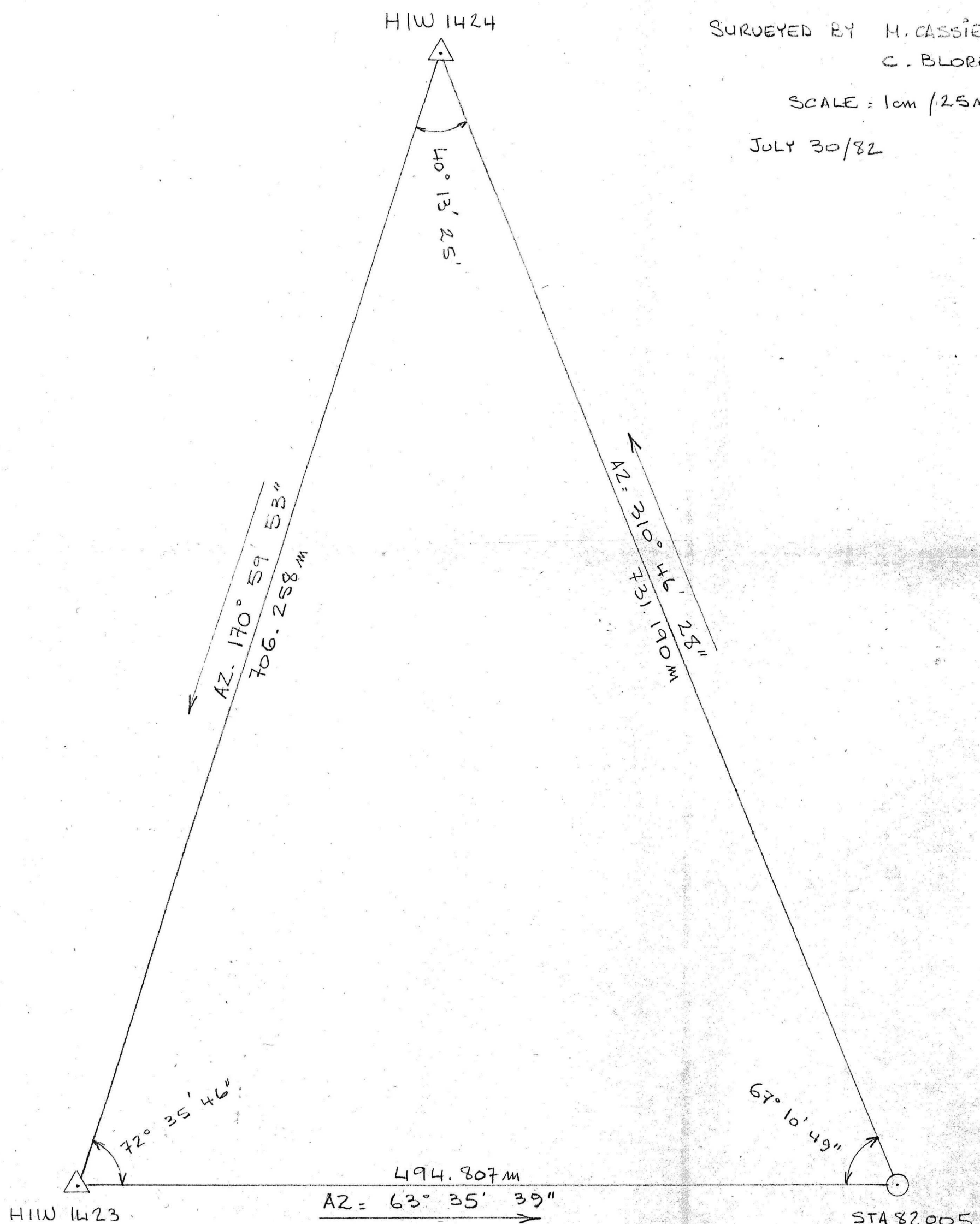
SURVEYED BY M. CASSIÈDE  
C. BLORE  
SCALE: 1cm / 25m  
JULY 30/82

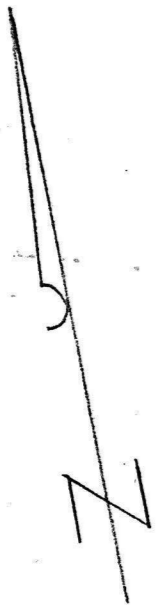




GRUM TRAVERSE  
FOR HOLES PICKED UP  
FROM STAT 1423 - 82005

SURVEYED BY M. CASSIENE  
C. BLORE  
SCALE = 1cm / 25m  
JULY 30/82





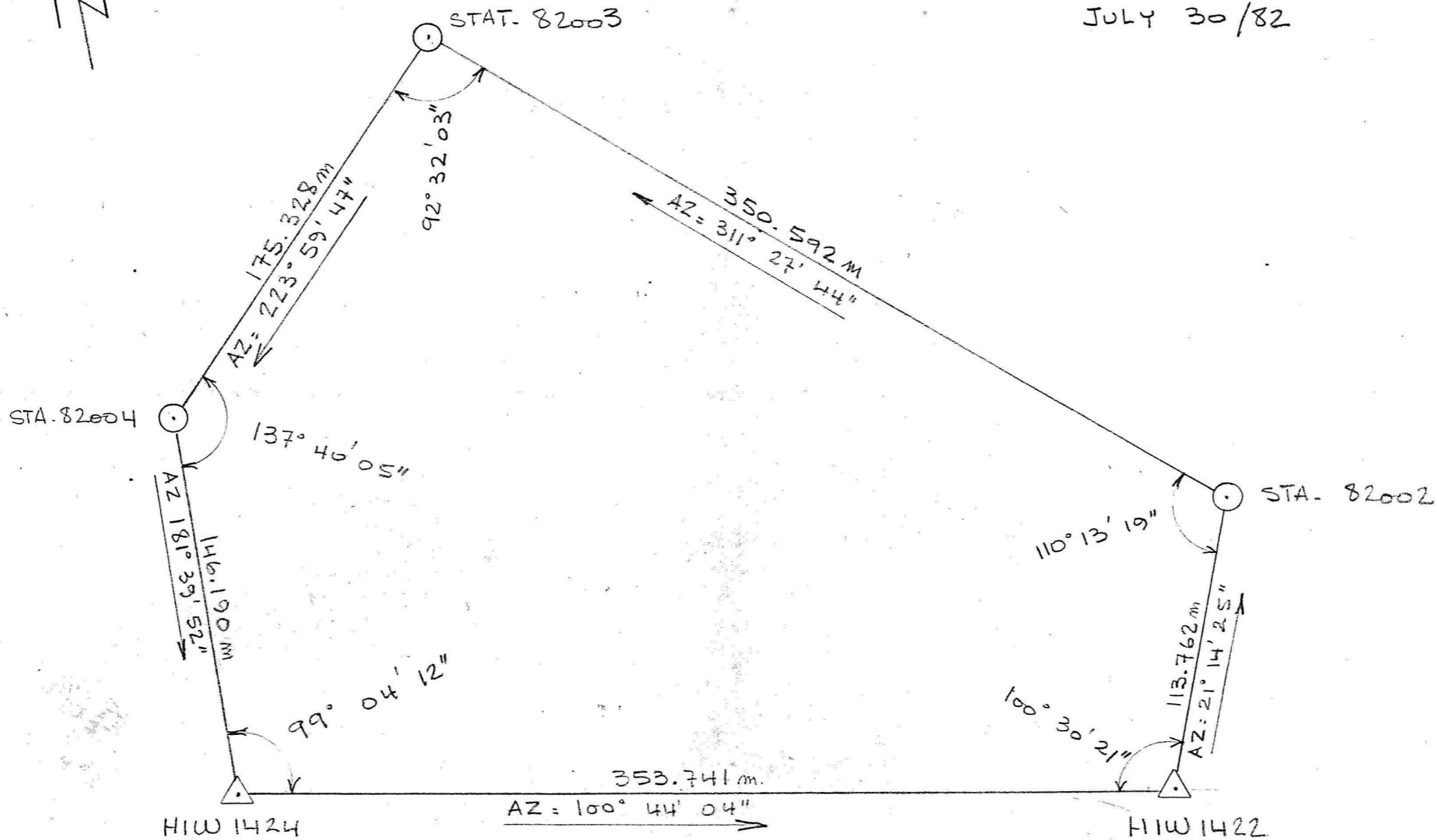
GRUM TRAVERSE FOR HOLES

PICKED UP FROM STA. 82002 - 82003 - 82004

SURVEYED BY - M. CASSIODE  
- C. BLORE

SCALE = 1cm / 20m

JULY 30 / 82



GRUM TRAVERSE  
FOR HOLES PICKED UP FROM ST. 82007

SURVEYED BY M. CASSELE  
C. BLORE

SCALE = 1cm/40m

JULY 30/82

