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WO# 16092-23

SOKKIA™

ECONOMY
FIELD BOOK

SOUTH MAIN ST.
GILA BEND
JUNE '97

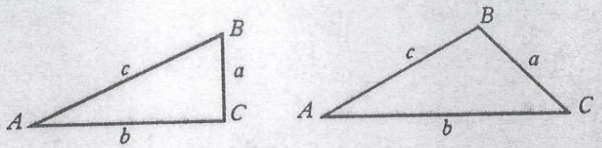
MARICOPA COUNTY D.O.T.

CREW
3307

No. 8152-05

DIN# 47480-1

FORMULAE FOR SOLVING RIGHT TRIANGLES



$\text{Sin } A = \frac{a}{c} = \text{Cos } B$ $\quad \text{Cot } A = \frac{b}{a} = \text{Tan } B$

$\text{Cos } A = \frac{b}{c} = \text{Sin } B$ $\quad \text{Sec } A = \frac{c}{b} = \text{Cosec } B$

$\text{Tan } A = \frac{a}{b} = \text{Cot } B$ $\quad \text{Cosec } A = \frac{c}{a} = \text{Sec } B$

Given	Required	Solution
A, c	B, a, b	$B = 90° - A, a = c \sin A, b = c \cos A.$
A, b	B, a, c	$B = 90° - A, a = b \tan A, c = \frac{b}{\cos A}.$
A, a	B, b, c	$B = 90° - A, b = a \cot A, c = \frac{a}{\sin A}.$
a, c	A, B, b	$\sin A = \frac{a}{c} = \cos B, b = \sqrt{(c+a)(c-a)}$
a, b	A, B, c	$\tan A = \frac{a}{b} = \cot B, c = \sqrt{a^2 + b^2}$

FORMULAE FOR SOLVING OBLIQUE TRIANGLES

Given	Required	Solution
A, a, b	B, c	$\sin B = \frac{b \sin A}{a}, c = \frac{a \sin C}{\sin A}$
A, B, a	b	$b = \frac{a \sin B}{\sin A}$
a, b, C	A, c	$A + B = 180° - C, c = \frac{a \sin C}{\sin A}$
a, b, c	Area	side $\frac{a+b+c}{2}$, area $= \sqrt{s(s-a)(s-b)(s-c)}$
A, b, c	Area	area $= \frac{bc \sin A}{2}$
A, B, C, a	Area	area $= \frac{a^2 \sin B \sin C}{2 \sin A}$

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(1)

W.O. # 16092-23

GILA BEND

SOUTH MAIN STREET

WASHINGTON AVENUE

TO

I-8 BUSINESS LOOP

MARICOPA COUNTY DEPT. OF TRANS.

JUNE, JULY

1997

CREW # 3507

HIRSCH P.C.

ALEMAN T

ENNIS

WOLFSON

DNA 47480-2

PAGE #1 TITLE PAGE

#2 INSET

#3 ALIGNMENT

#4 CONTROL POINTS

#5 CONTROL POINT ALIGNMENT

#6 ELECTRONIC FILE

TRVPT = TRAVERSE POINT
½"I.P = ½" IRON PIPE (REPRESENTING CORNER
FCBC = FLOOD CONTROL BRASS CAP.

DIN#47480-3

ALIGNMENT

N 1/4 COR SEC. 6

TRVPT #1 N 0.0000 E 304,800 — 224.04

SE COR SEC 6

TRVPT #3 N 22.5363 E 1109.7936 — 226.44

TRVPT #9 N 23.7623 E 917.707 — 229.46

INVERSE POINTS

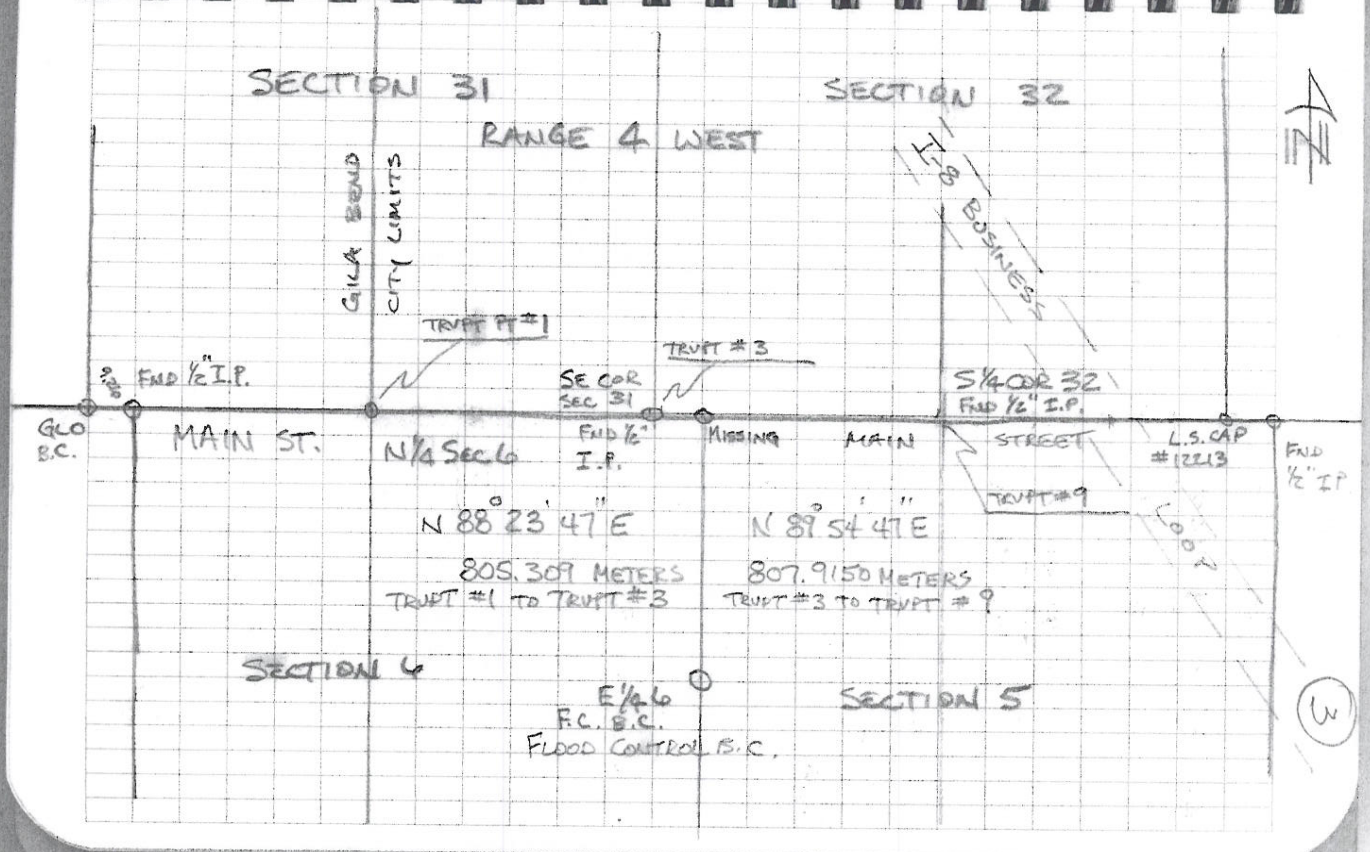
POINTS #1 TO #3

AZ = 88°23'47"
BRG = N 88°23'47" E
H.D. = 805.309 METERS

POINTS #3 TO #9

AZ = 89°54'47"
BRG = N 89°54'47" E
H.D. = 807.9150

PIN # 47480-4



42

3

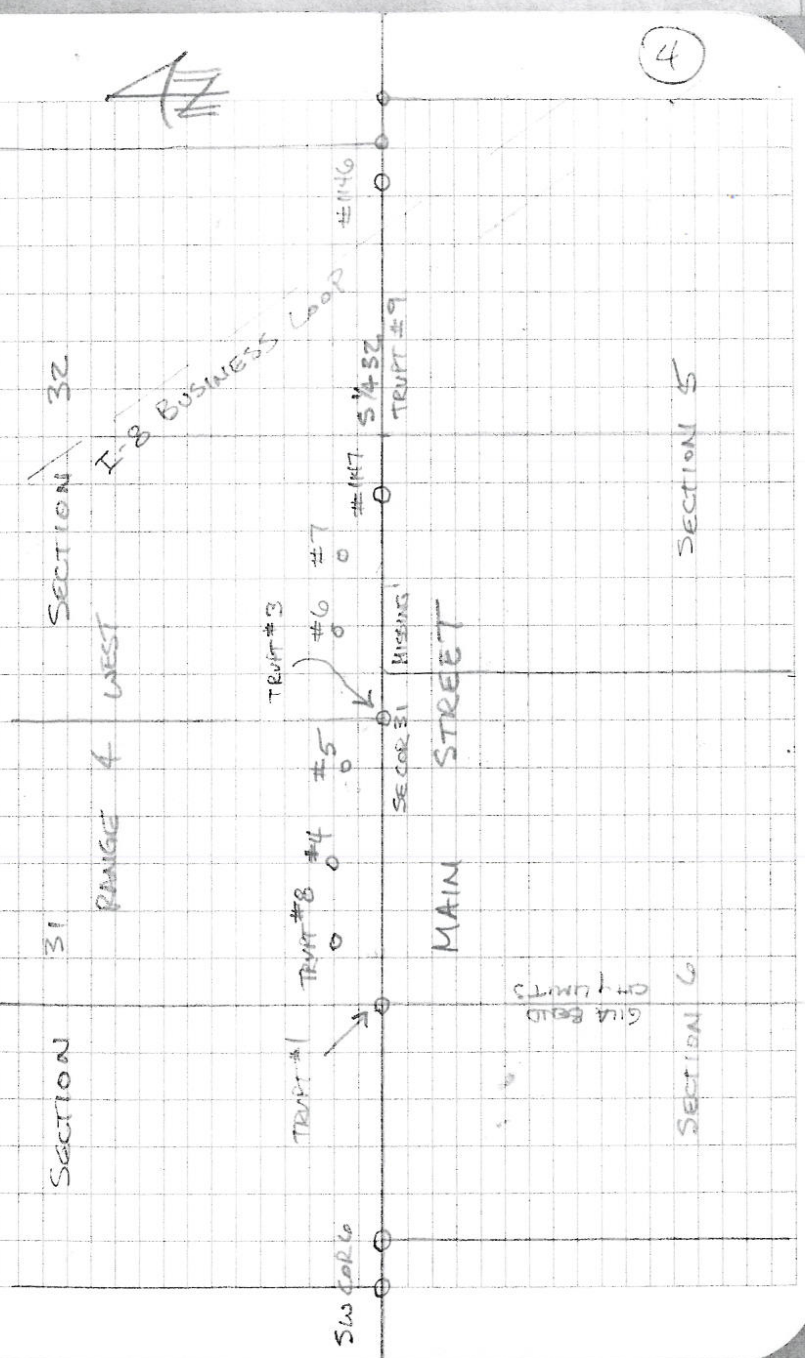
TRVPT # CONTROL POINTS

#8	N 17.7100	222.364
	E 347.8720	
#4	N 16.0750	223.980
	E 440.4230	
#5	N 27.6960	226.397
	E 850.2690	
#6	N 36.2756	227.503
	E 1319.2840	
#7	N 33.6072	228.307
	E 1691.8222	
#1147	N 23.7285	229.335
	E 1861.5634	
#1146	N 23.7005	234.415
	E 2272.1990	

CONTROL POINT ALIGNMENT

TRVPT # 1 TO TRVPT # 8

N 67°38'56"E 46.571 M.



DIN # 47480-5

(CONT.) CONTROL POINT ALIGNMENT

TRVPT # 8 TO TRVPT # 4 * NOTE →
S 88° 59' 17" E 92.565 M

TRVPT # 4 TO TRVPT # 5
S 88° 22' 33" E 410.011 M.

TRVPT # 5 TO TRVPT # 3
S 88° 51' 40" E 259.576M

TRVPT # 3 TO TRVPT # 6
S 86° 14' 51" E 209.940M

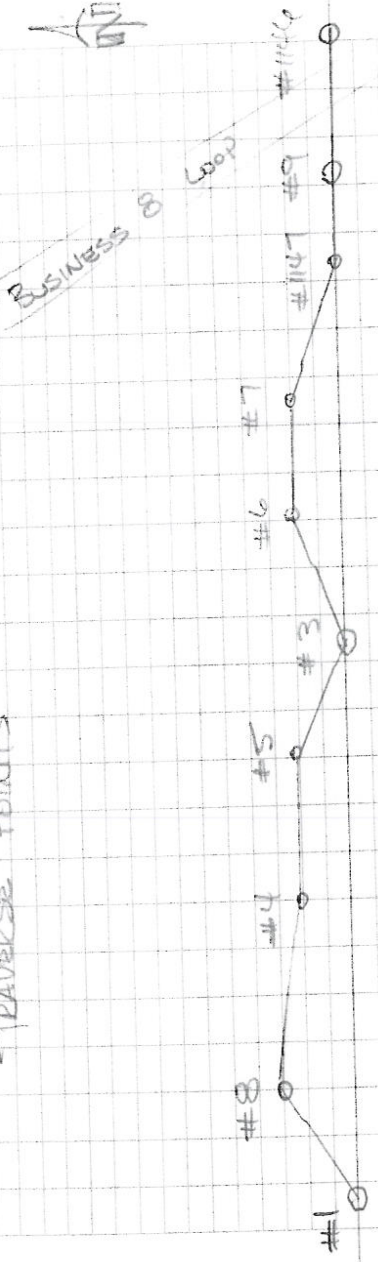
TRVPT # 6 TO TRVPT # 7
S 89° 35' 22" E 372.548M

TRVPT # 7 TO TRVPT # 1147
S 86° 40' 09" 170.029M

TRVPT # 1147 TO TRVPT # 9
S 89° 57' 56" E 56.144M

TRVPT # 9 TO TRVPT # 1146
S 89° 59' 25" E 359.492
METERS

TRAVERSE POINTS



* ALL TRAVERSE POINTS & ELEVATIONS WERE ESTABLISHED BY TWO POINT RESECT METHOD, FROM CONTROL POINTS #1, #3, #9 ORIGINAL SURVEY.

PIN # 47480-6

ELECTRONIC FILE

I:\CONSTAD\3307\MAIN ST 17.RW5

JOB NAME: MAIN ST 17. RW5

MAIN ST 17. CR5

DIN # 47480-7