2D CONFORMAL COORDINATES TRANSFORMATION

Model Equations: $ax - by + T_x = X + V_x$

$bx + ay + T_y = Y + V_y$

Number of common points or controls: 3
Number of points to be transformed: 4

MEASURED(xy) AND CONTROL DATA

Point	x	y	Sx	Sy	Easting	Northing
A	121.622	-128.066	1	1	1049422.4	51089.2
B	141.228	187.718	1	1	1049413.95	49659.3
C	175.802	135.728	1	1	1049244.95	49884.95

POINTS TO BE TRANSFORMED

Point	x	y	Sx	Sy
D	174.148	-120.262	1	1
E	513.52	-192.13	1	1
F	754.444	-67.706	1	1
G	972.788	120.994	1	1

Sx and Sy are the uncertainties in the measured points

TRANSFORMATION PARAMETERS AND THEIR T-STATISTIC

Parameter	Value	Standard Deviation(±)	t-value
a	-4.512	0.001	7,828.676
b	-0.254	0.001	440.167
Tx	1,050,003.715	0.123	8,564,969.509
Ty	50,542.131	0.123	412,276.458

Scale factor: -4.51962052
Rotation angle: 183° 13' 05.0"

TRANSFORMATION STATISTICS

Number of equations: 6
Number of unknowns: 4
Degree of freedom: 2
Variance: 0.01954977 sqr.unit
Standard deviation: ±0.13982048 unit

CALCULATED CONTROL COORDINATES USING PARAMETERS

Point	Easting	Northing	Ve	Vn	σE	σN
A	1,049,422.404	51,089.171	0.004	-0.029	0.138	0.138
B	1,049,414.051	49,659.223	0.101	-0.077	0.107	0.107
C	1,049,244.845	49,885.056	-0.105	0.106	0.092	0.092

TRANSFORMED COORDINATES

Point	Easting	Northing	σE	σN
D	1,049,187.361	51,040.629	0.135	0.135
E	1,047,637.713	51,278.829	0.271	0.271
F	1,046,582.113	50,656.241	0.368	0.368
G	1,045,644.713	49,749.336	0.484	0.484