

TO CALCULATE GEOLOGY CO-ORDS. FROM SURVEY CO-ORDS.

Let N_s E_s = SURVEY CO-ORDS.

N_o E_o = SURVEY CO-ORDS of ORIGIN of GEOLOGY CO-ORDS.

S = GEOLOGY SECT. LINE

R = GEOLOGY REF. LINE

θ = BEARING of SURVEY NORTH with respect to GEOL. REF. LINE

Then $S = (N_s - N_o) \cos. \theta + (E_s - E_o) \sin. \theta$

$R = (E_s - E_o) \cos. \theta - (N_s - N_o) \sin. \theta$

At GIANT $N_o = 11776.60$

$E_o = 7268.37$

$\theta = N 30^\circ 00' 00'' W$

Therefore:

GEOLOGY SECTION LINE = (Northing - 11776.60) 0.8660254 + (Easting - 7268.37) 0.5

GEOLOGY REF. LINE = (Easting - 7268.37) 0.8660254 + (Northing - 11776.60) 0.5

Algebraically:

+ sign in solution = NORTH or EAST

- sign in solution = SOUTH or WEST

SIMPLIFYING:

$\overset{N \text{ or } S}{\text{GEOL. SECT. LINE}} = (\overset{\text{Lat.}}{\text{Northing}} \times 0.8660254) + (\overset{\text{Dep.}}{\text{Easting}} \times 0.5) - 13,833.020 =$

$\overset{\text{For } W}{\text{GEOL. REF. LINE}} = (\overset{\text{Dep.}}{\text{Easting}} \times 0.8660254) - (\overset{\text{Lat.}}{\text{Northing}} \times 0.5) - 406.293 =$