LECTURE 21

Traversing and plotting with the compass survey:

Traversing with the compass involves taking the bearing along a series of connecting straight lines and in the same time measuring the distances with the tape. The compass is read at each point and a back bearing is equally taken to serve as a check. This continues until the traverse closes.

Choosing a suitable scale, the traverse is then plotted taking into consideration the general shape of the area.

Observing Bearing of Line

- Consider a line AB of which the magnetic bearing is to be taken.
- By fixing the ranging rod at station B we get the magnetic bearing of needle wrt north pole.
- The enlarged portion gives actual pattern of graduations marked on ring.

Designation of bearing

- The bearing are designated in the following two system:-
- 1) Whole Circle Bearing System.(W.C.B)
- 2) Quadrantal Bearing System.(Q.B)

Whole circle bearing system (W.C.B.)

- The bearing of a line measured with respect to magnetic meridian in clockwise direction is called magnetic bearing and its value varies between 0^O to 360^O.
- The quadrant start from north and progress in a clockwise direction as the first quadrant is 0^O to 90^O in clockwise direction , 2^{nd} 90^O to 180^O , 3^{rd} 180^O to 270^O, and up to 360^O is 4^{th} one.

Quadrantal bearing system(Q.B.)

- In this system, the bearing of survey lines are measured wrt to north line or south line whichever is the nearest to the given survey line and either in clockwise direction or in anti clockwise direction.

Reduced bearing (R.B)

- When the whole circle bearing is converted into Quadrantal bearing , it is termed as “REDUCED BEARING”.
- Thus , the reduced bearing is similar to the Quadrantal bearing.

- Its values lies between 0^{O} to 90^{O}, but the quadrant should be mentioned for proper designation.

The following table should be remembered for conversion of WCB to RB.

W.C.B OF ANY LINE	QUADRANT IN WHICH IT LIES	RULES FOR CONVERSION	QUADRANT
0 TO 90	I	RB=WCB	N-E
90 TO 180	II	RB=180-WCB	S-E
180 TO 270	III	RB =WCB-180^{O}	S-W
270 TO 360	IV	RB=360^{O} - WCB	N-W