

## SURVEY REPORT FOR THE MIMPEX KILGOUR SURVEY

The field surveying for the Kilgour Seismic Survey took place during July and August, 1992. The crew mobilised from Moranbah, Qld., and stayed initially at the Cape Crawford Roadhouse before moving to the H.Y.C. mine camp.

The survey area, which was located on the McArthur River Station consisted of flat valleys surrounded by large rocky ranges rising up to 80m from the valley floor. It was impossible to drive over these ranges and access had to be found through the passes that divided them. The valleys for the most parts were fairly well timbered. With no line clearing allowed, driving in a straight line in any direction was almost impossible and vehicles had to clear access as they travelled the lines. The vehicles sustained many punctures and considerable damage. Creeks crossing the valley floors further impeded access and care was needed in the sandy country to avoid becoming bogged.

Visibility for the surveyors was also very limited due to the vegetation, and all in all work conditions were difficult.

The survey was to be 37 km in total, divided into the Kilgour and Kilgour South areas, but the total was later reduced to 28.7 km. Some lines were moved from their programmed positions to allow easier access for the seismic crew and enable better coverage to be achieved.

The weather remained warm and dry for the entire survey.

### CONTROL

Two wells existed in the northern area of the prospect; the BMR and the Amoco 82-7. The BMR well site was located, and the co-ordinates provided were corroborated using a small Trimble G.P.S. unit, but no evidence of the drill hole could be found. No information was available as to the accuracy or origin of the survey data for the BMR well.

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From the assumed position of the well site, the intersection point of lines 92-04 and 92-07 was determined. Once 92-04 was pegged, the Amoco well was located on the ground. The casing was clearly visible, protruding 1 metre out of the ground, and the usual drillsite rubbish was evident. Its position on the ground, in relation to the lines and topography compared well with that of its plotted position on the program map. The assumed position of the BMR well was therefore accepted as the horizontal datum for the northern area, with the approximate elevation being deduced from the contour lines of the program map.

In the southern area of the prospect, no survey control or well locations existed. Survey control was assumed by relating the lines to the topographic features they crossed, and then scaling the co-ordinates and elevations from the program map. The co-ordinates were checked against the G.P.S. readings.

If in the future an accurate G.P.S. survey is done to co-ordinate any of the permanent markers constructed in either the Kilgour or South Kilgour areas, then the calculated error in x, y, and z of the surveyed marker should be applied to all other markers in that area. Once the block shift has been applied, then all the permanent markers will have the correct values. One marker in each area must be surveyed correctly.

### PEGGING AND SURVEYING

Due to the dense vegetation in the area, all the pegging was done on foot. Direction of the lines was determined by prismatic compasses. These had previously been calibrated against a value obtained by a sun observation. A 100m chain was pulled by the front chainman and when the distance was reached he would be put on line by the man at the rear of the chain sighting with his compass. Wooden pegs were placed every chain length and plastic pin markers used to mark the intermediate stations. Flagging tape was used to make the lines more visible. On completion of the survey, the seismic field crew gathered up the pin markers but left the wooden pegs for future reference. The peg numbers ran from 100 in the south and west, increasing to the north and east. Once the lines were pegged the crew had to return to the vehicle to either begin surveying or continue pegging.

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The survey was performed using a Sokkisha Set 4 Total Station, an SQR33 data recorder, and ICOM 2-way radios. Horizontal control was run using standard traversing techniques and vertical control, run simultaneously with the horizontal, was achieved using reciprocal vertical angles.

Horizontal control was maintained using sun observations at the beginning and ends of each line. Instrument points, bends in lines, permanent markers and control points were co-ordinated and all other points calculated by interpolation. All pegs at changes of grade were observed for vertical measurements. Where the gradient remained constant a reading was taken every 100m, and the values of points in between calculated by interpolation.

Due to the nature of the terrain and limited visibility along the lines, it was often easier to have instrument positions along the sides of the ranges when the lines paralleled the ranges. This gave a higher position looking over the tops of the trees enabling longer sights to be achieved. This, however, was not always possible and work progress was generally slow.

Permanent markers were placed on fencelines and roads and marked temporarily by wooden pegs during surveying. (They would normally be placed during pegging but the crews had to walk.) Later the actual permanent marker was constructed at the point. It consisted of a 1.8m star picket cemented into the ground. An identification tag denoting the line and shot point number was bolted to the marker.

Calculations were performed on a portable Western 286 computer using a Sokkisha software package. Any manual calculations were done using a HP 32s programmable calculator.

Provisional elevations on floppy disk were provided daily for the seismic crew, and mud maps given when required. On completion of the survey, data in UK00A format was forwarded to the client with permanent marker lists and intersection diagrams.

A base map showing approximate positions of access tracks, fences and creeks was drawn.

CLIENT: MIMPEX

AREA: KILGOUR

LINE NO:

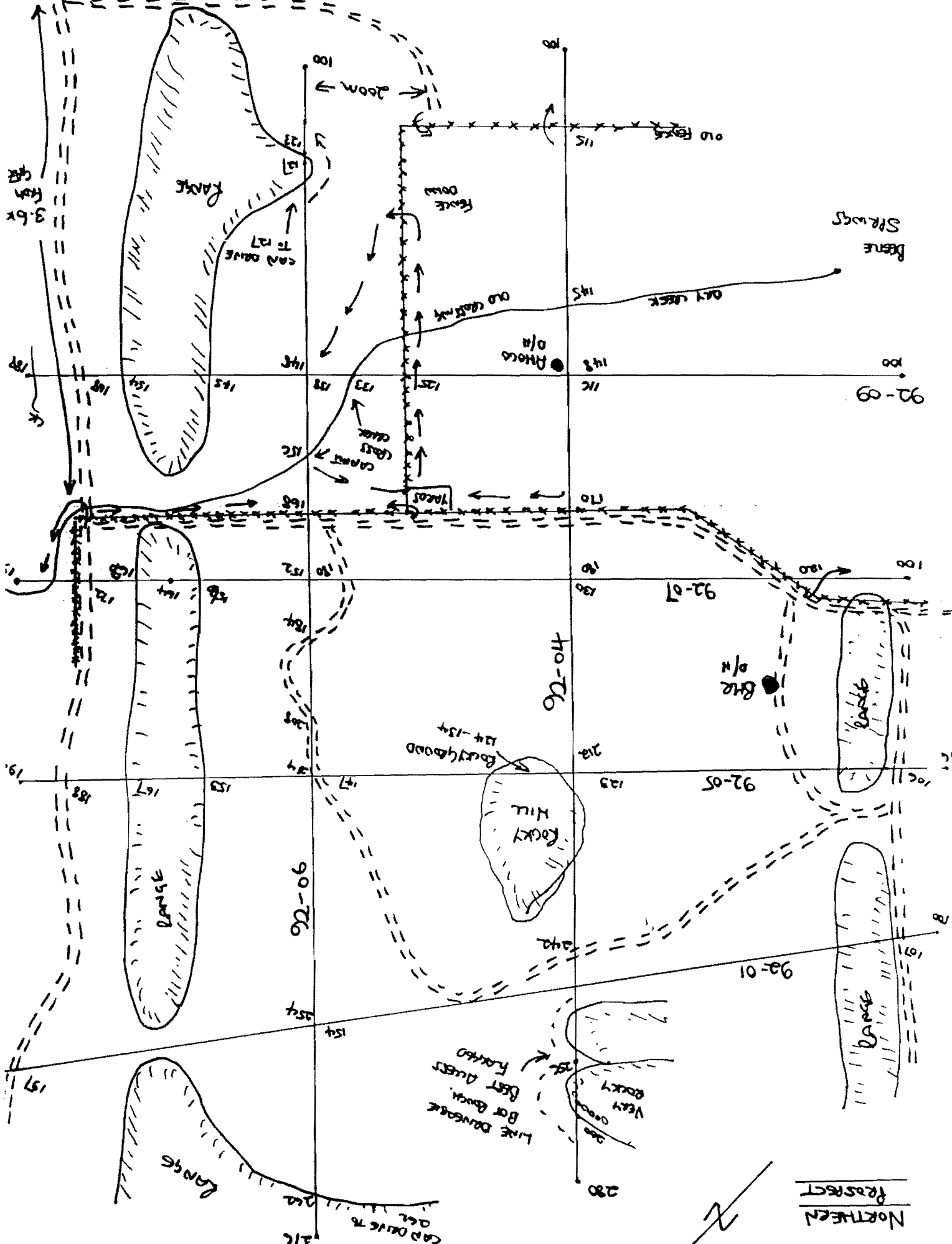
PERMANENT MARKER LIST

station	Easting	Northing	R.L.
BMR	605 391.6	8145 373.7	71.3
Amoco 82-7	606 434.4	8144 439.9	68.6
92-01 / 107+15	604 533.4	8145 811.2	77.2
92-01 / 154	605 122.7	8146 813.1	79.6
92-01 / 197	605 664.3	8147 745.1	67.6
92-04 / 100	607 203.02	8143 522.2	78.2
92-04 / 169+12	606 076.9	8144 844.0	67.3
92-04 / 243	604 836.1	8146 197.3	82.3
92-05 / 106	605 017.8	8145 340.0	72.1
92-05 / 147+11	605 798.8	8146 019.3	68.1
92-05 / 187+22	606 575.4	8146 664.5	65.4
92-06 / 100	607 613.0	8143 863.4	77.9
92-06 / 167+17	606 524.5	8145 164.7	66.9
92-06 / 212+10	605 798.8	8146 019.3	68.1
92-06 / 254	605 122.7	8146 813.1	79.6







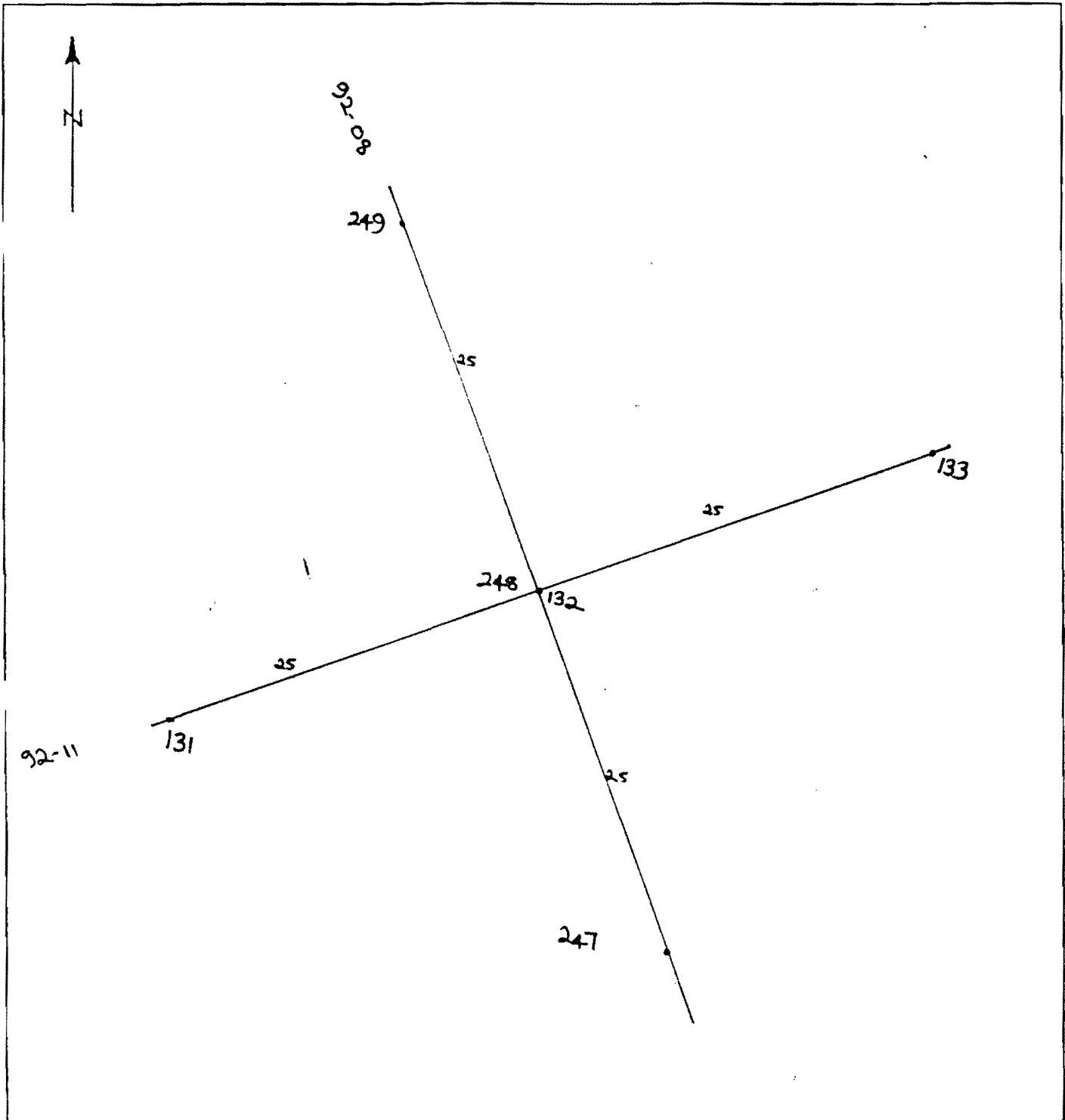




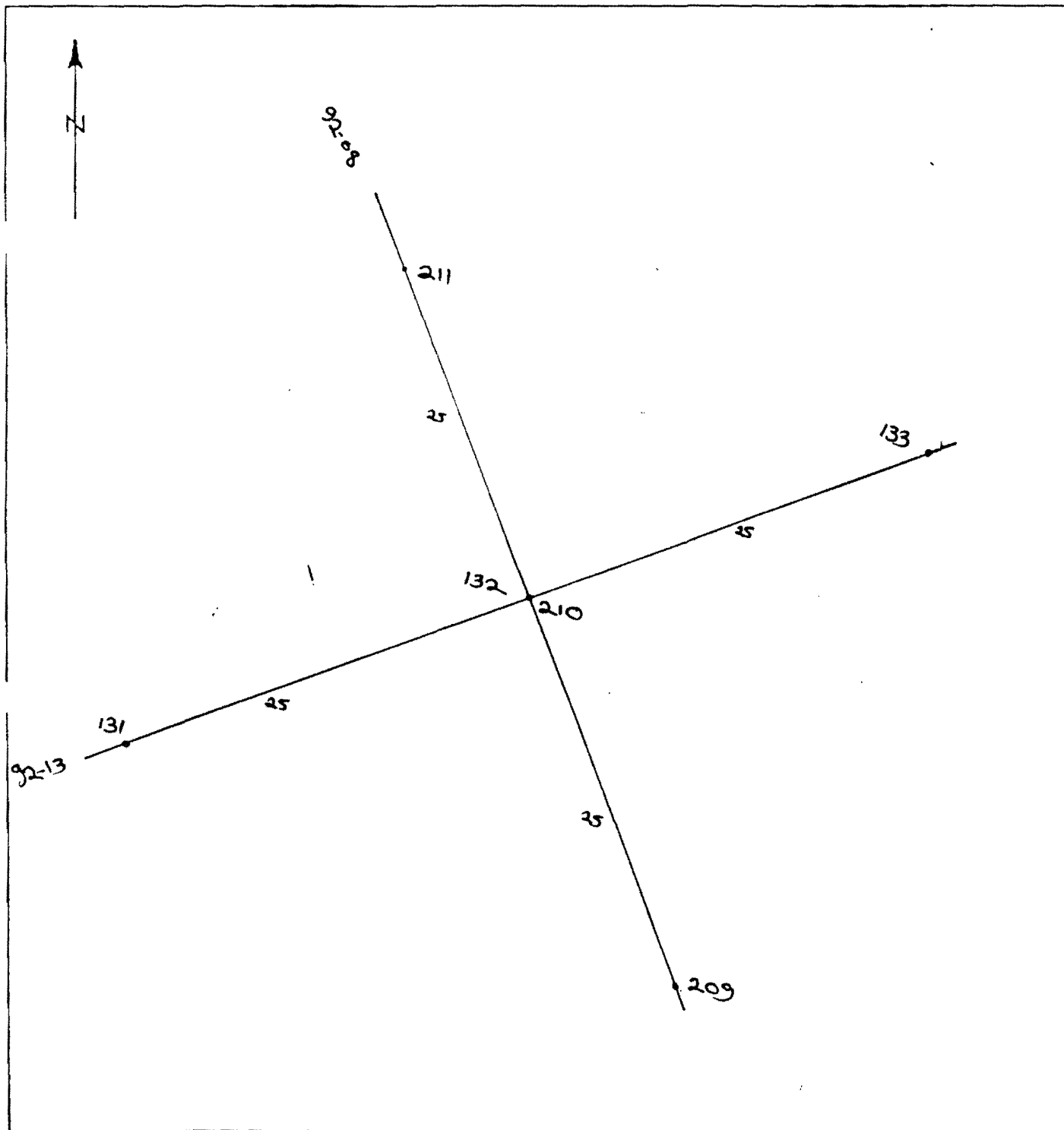




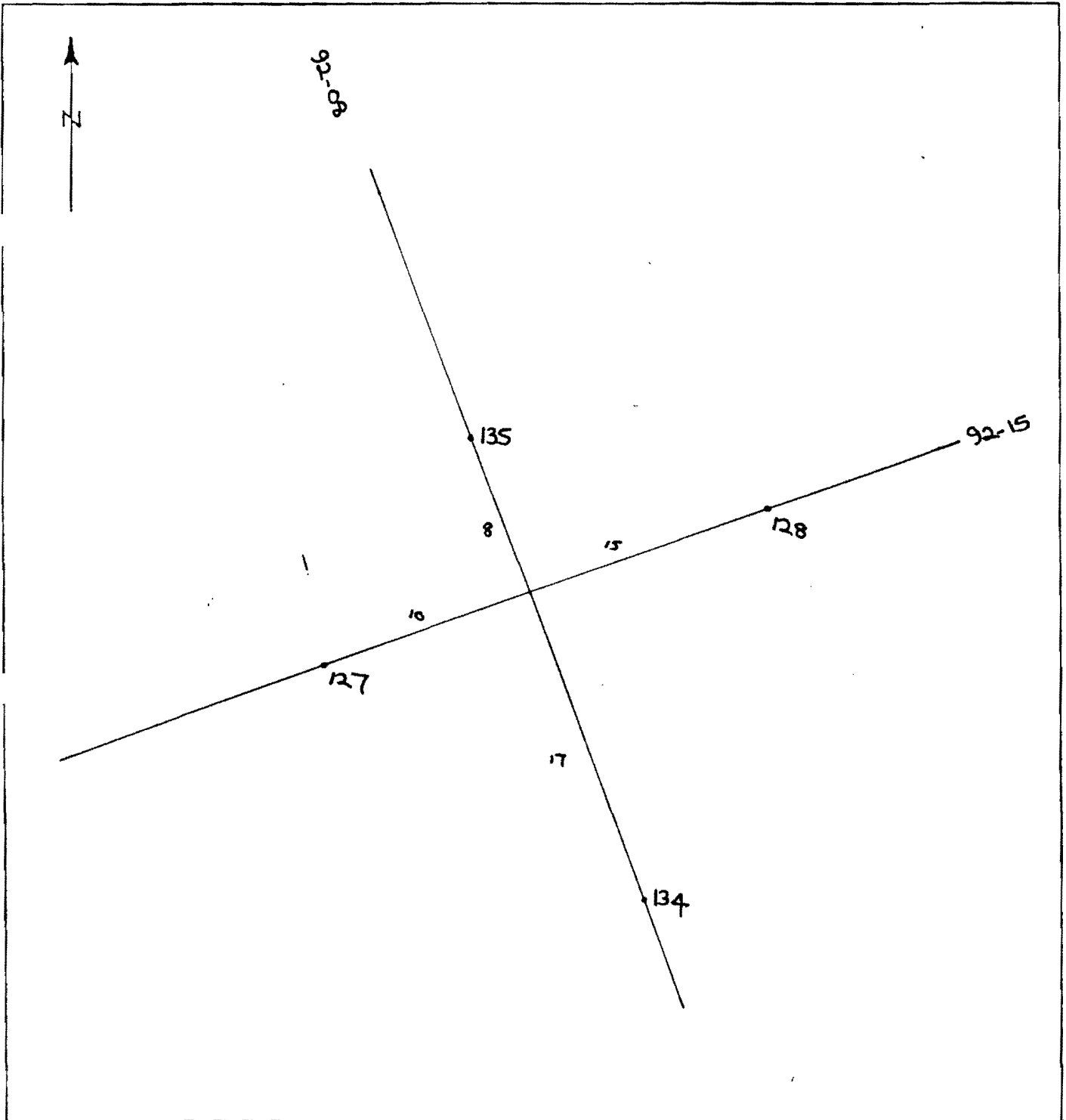
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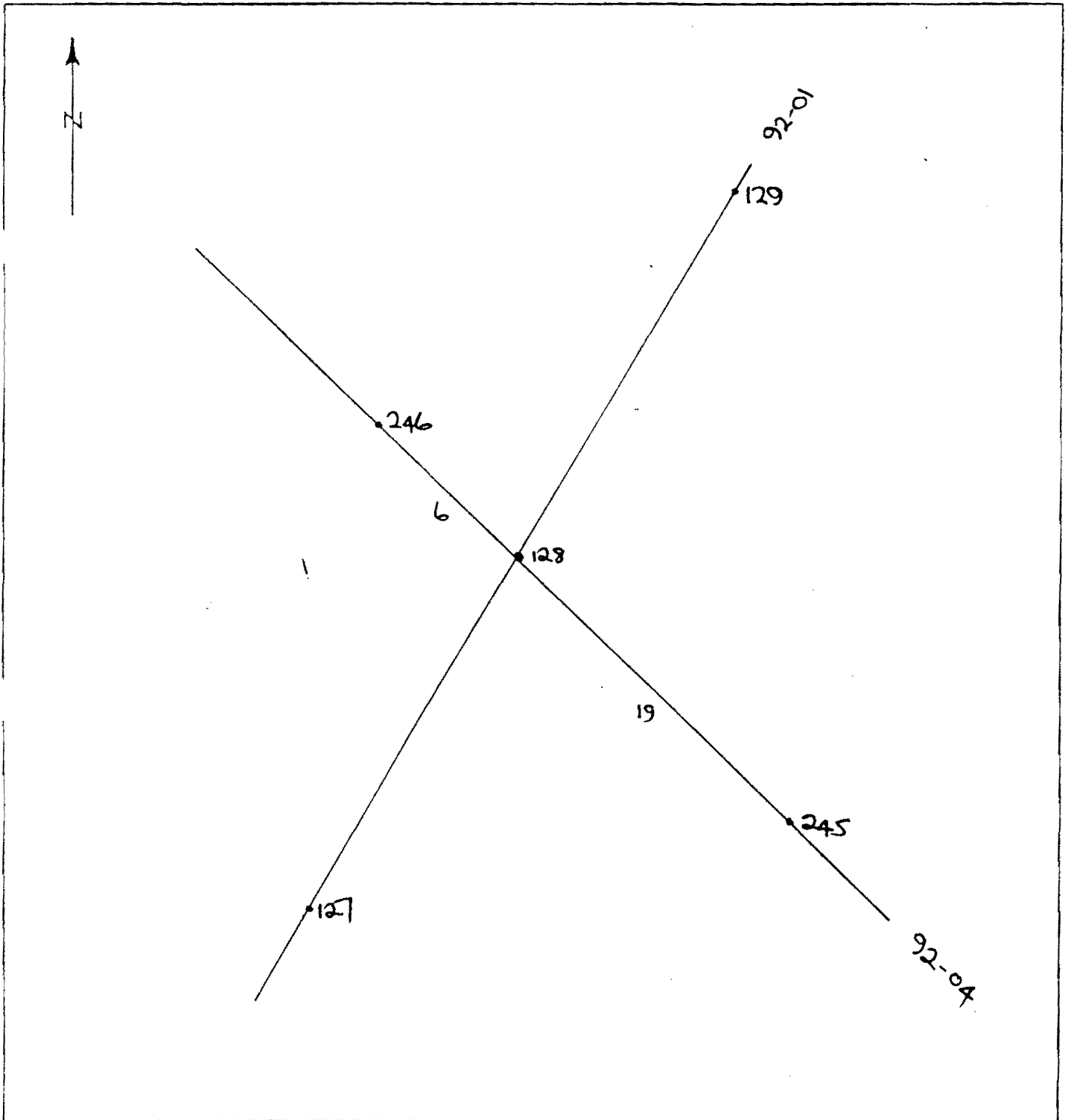
## INTERSECTION DIAGRAM



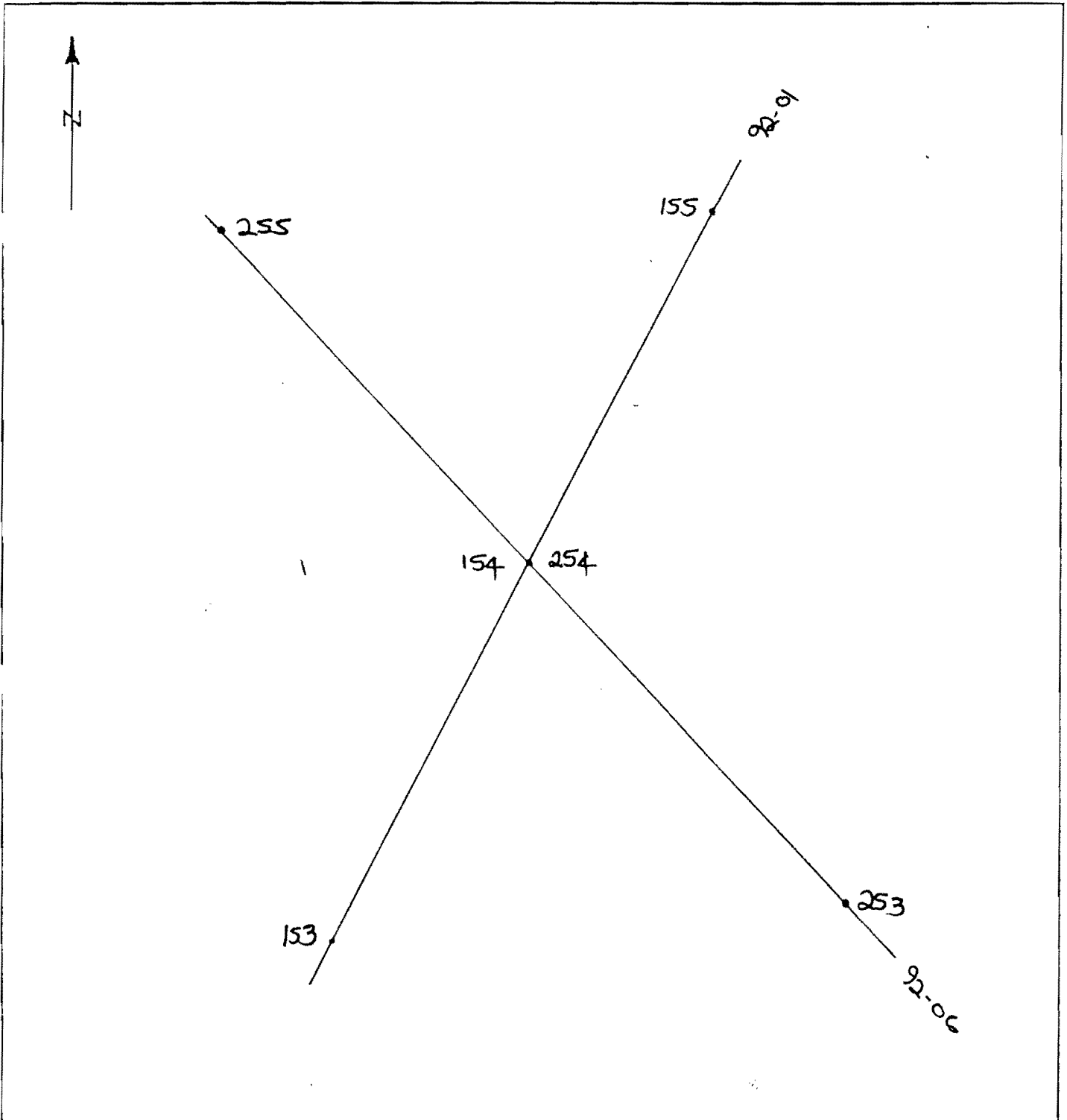
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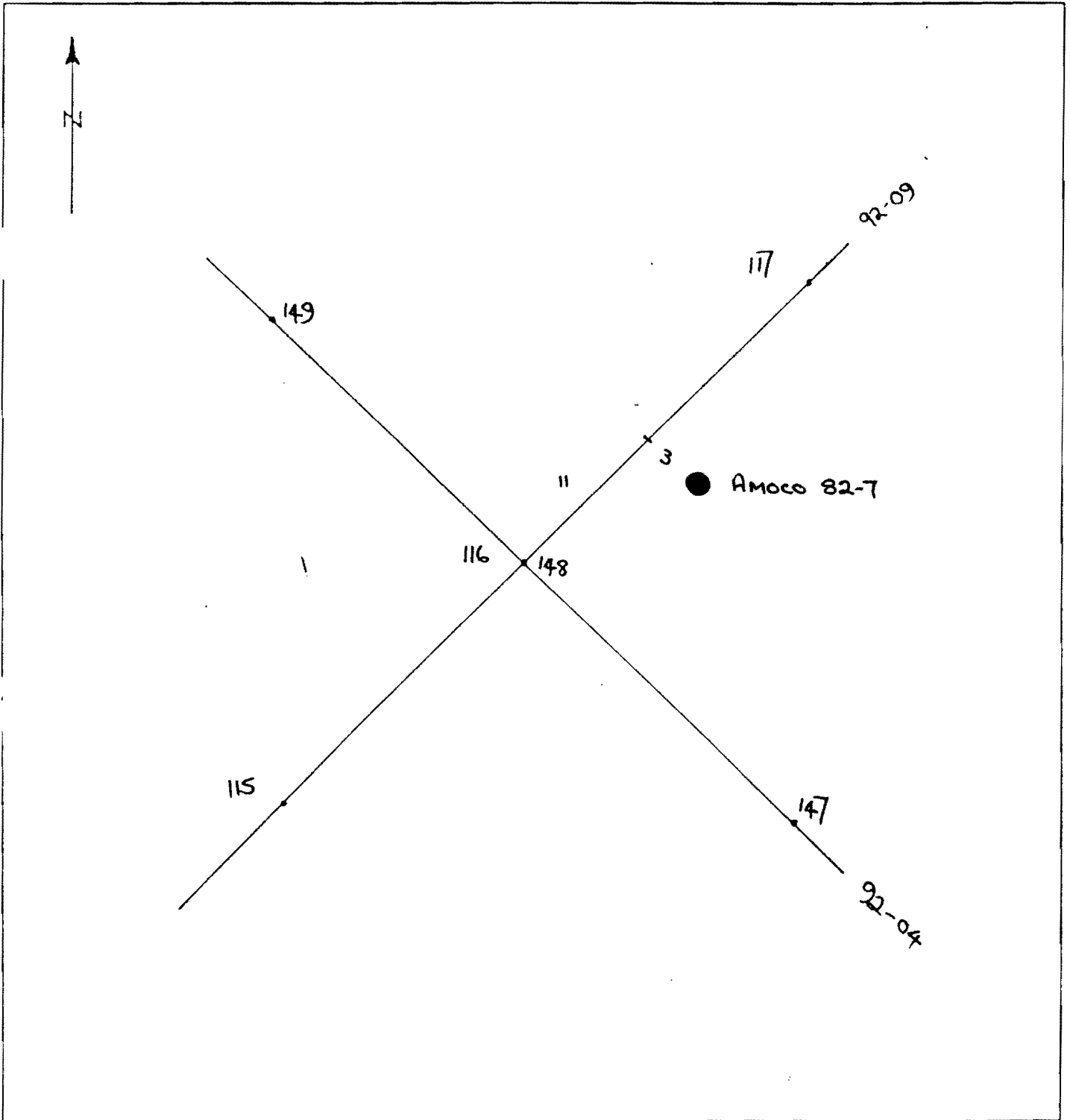
INTERSECTION DIAGRAM



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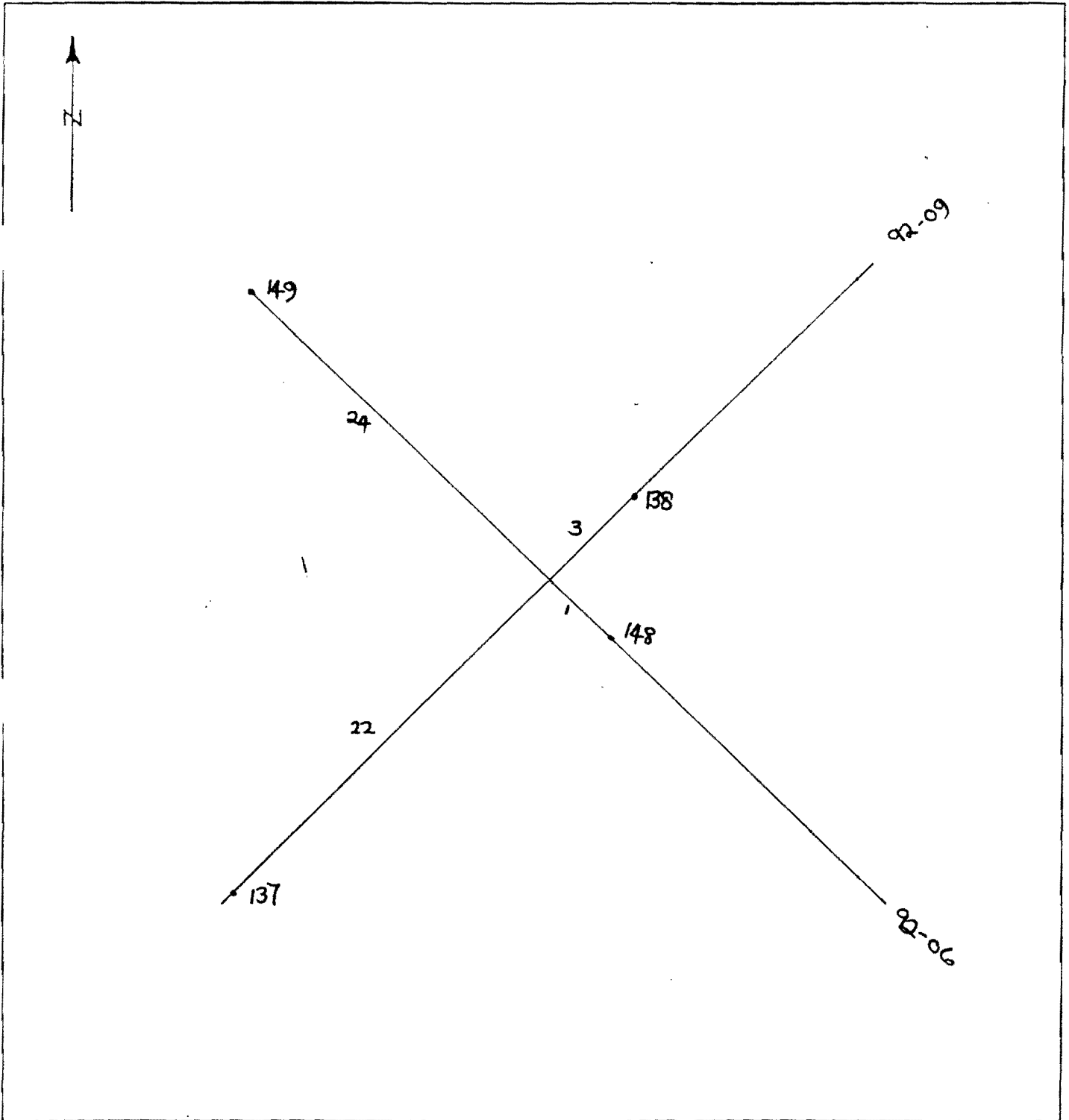


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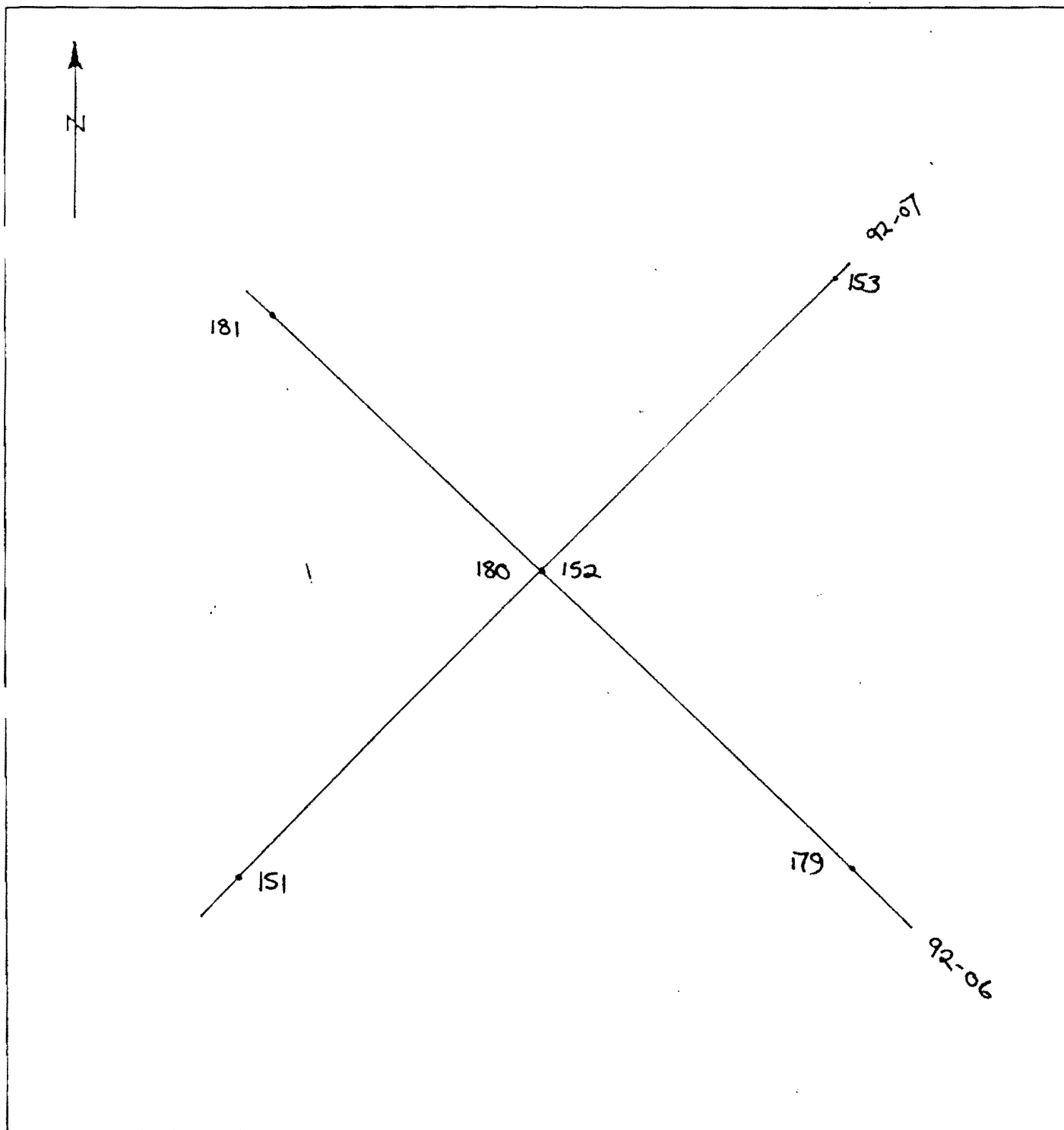




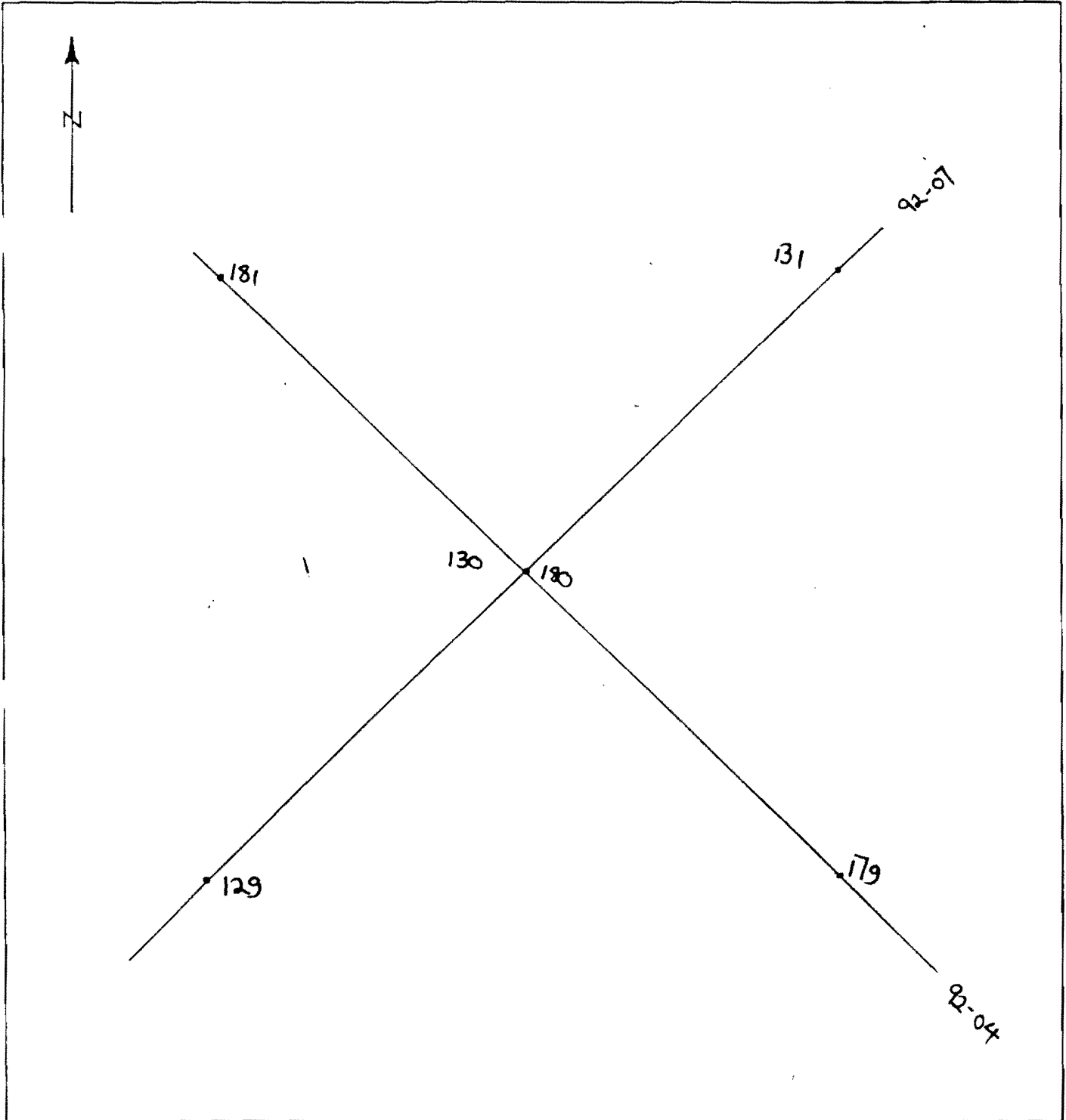
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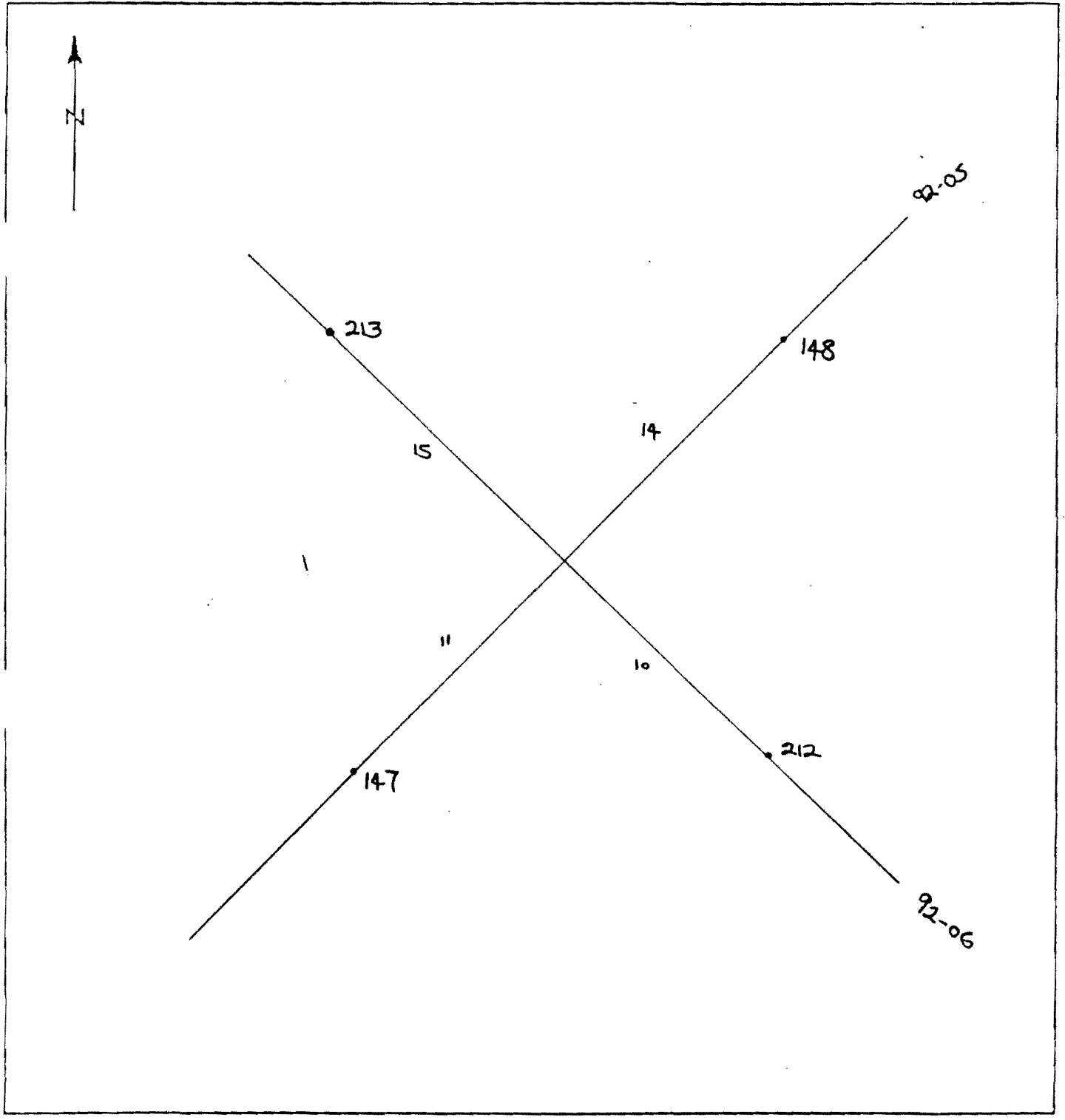
## INTERSECTION DIAGRAM



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PO Box 118 Darra Qld Australia 4076

Telephone (07) 376 5544

Fax (07) 376 6939

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