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005071

TELECOPIER COVER LETTER

TO: LEE

TELECOPIER NO. 668 6518

FROM:

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TOTAL NO. OF PAGES: 8 (Including Cover Letter) DATE: July 27 TIME: 910 OPERATOR MB

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MESSAGE:

Following will be 3 pt. problem sets and assorted plans. All figures are at 1:2000 ± photocopier & fax distortion

LKE: July 27/90

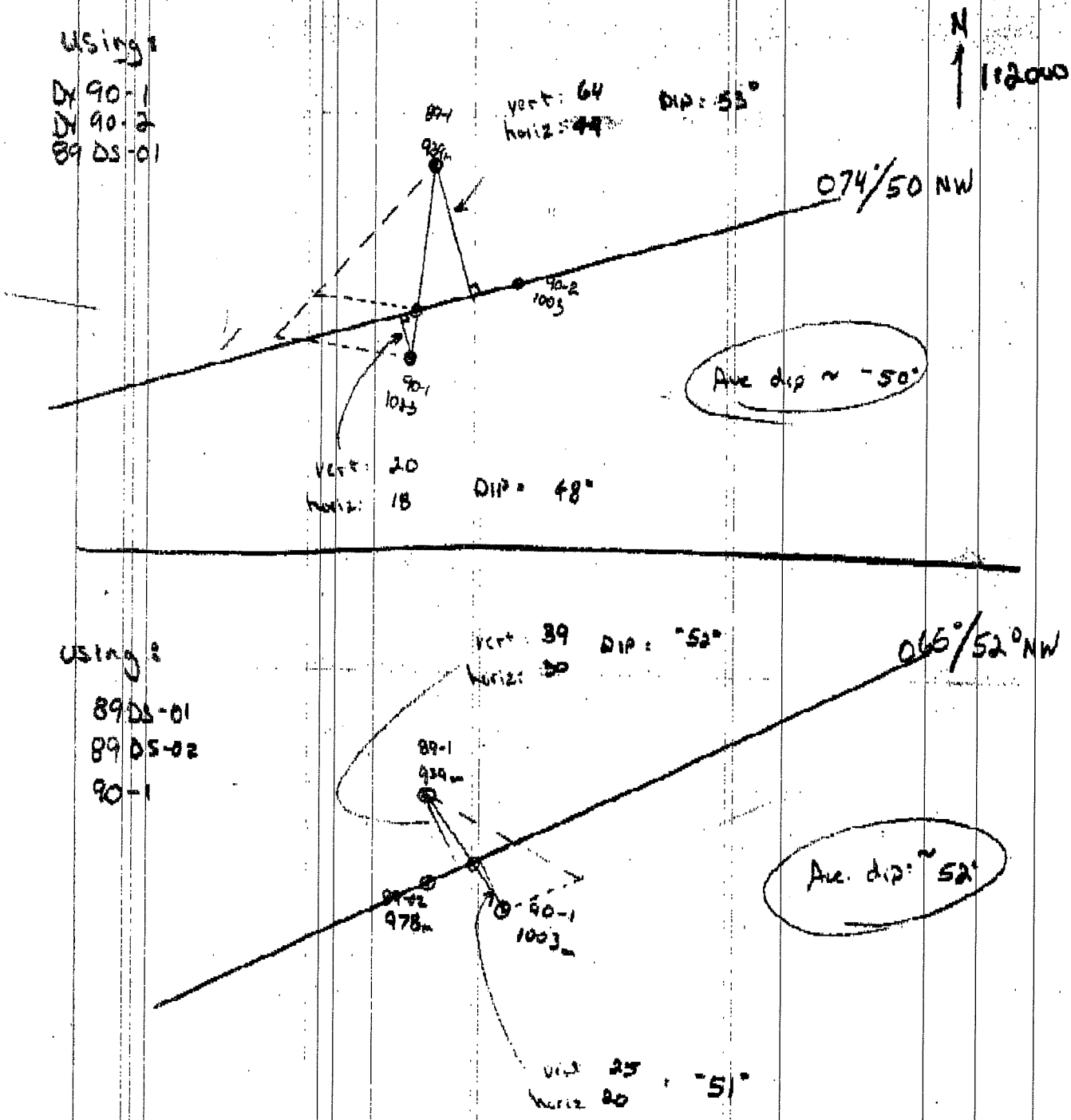
Following will be the 3-pt problems I have calculated. A total of four sets have been calculated, all giving the general trend of NE, dipping NW at approx 50-52°.

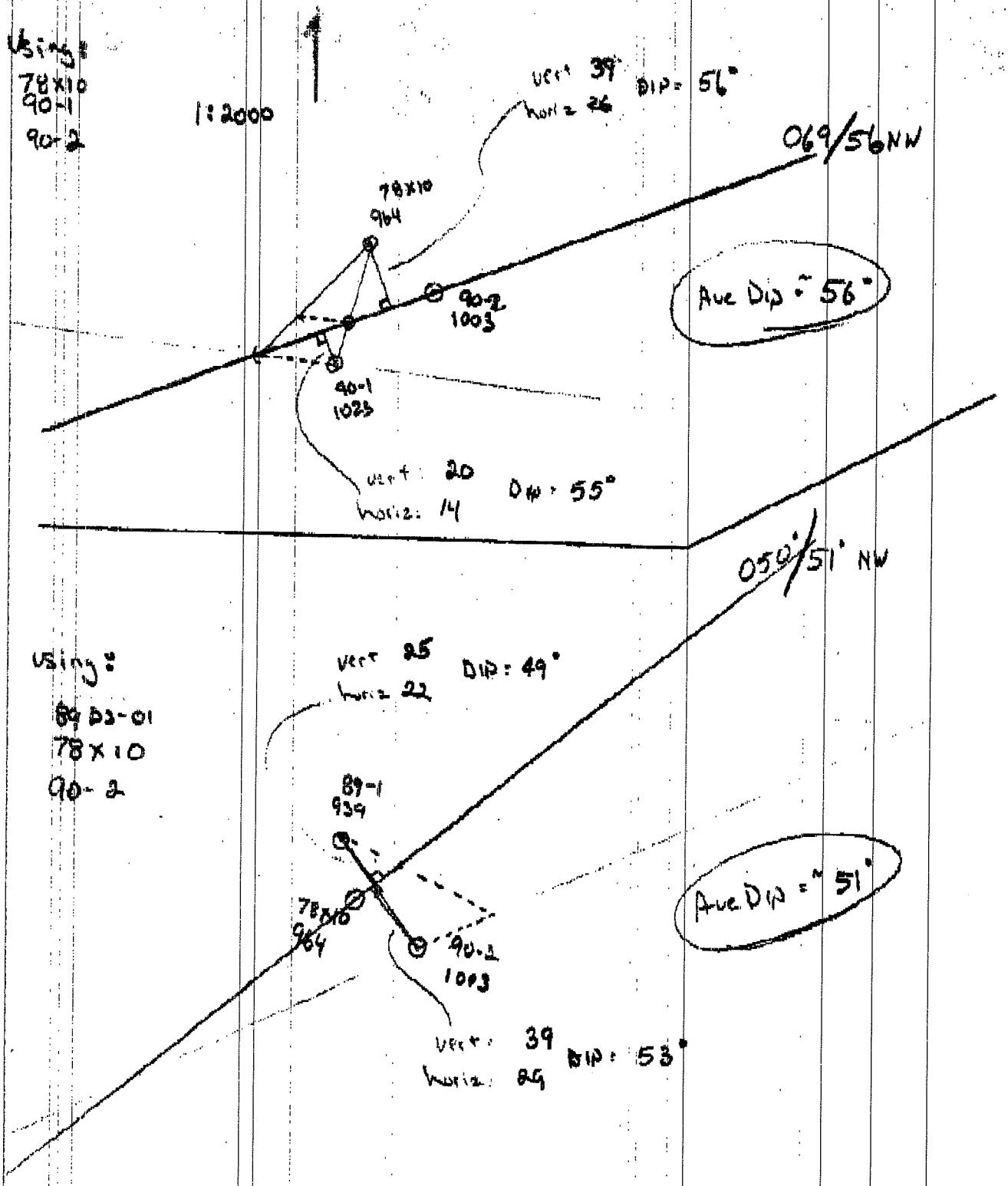
The range of possibilities these calculations indicate are:

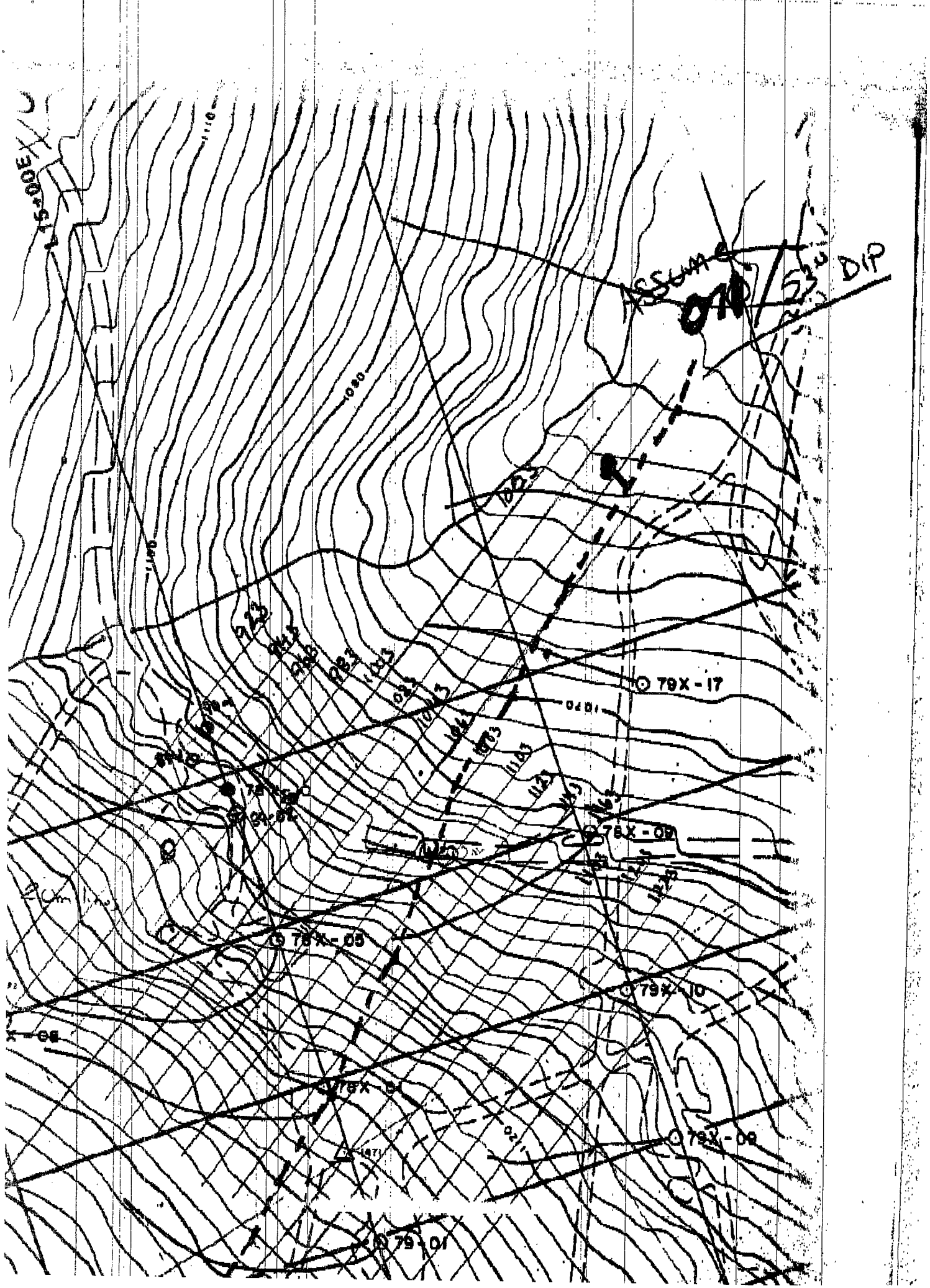
050°/51°NW to 074°/50°NW

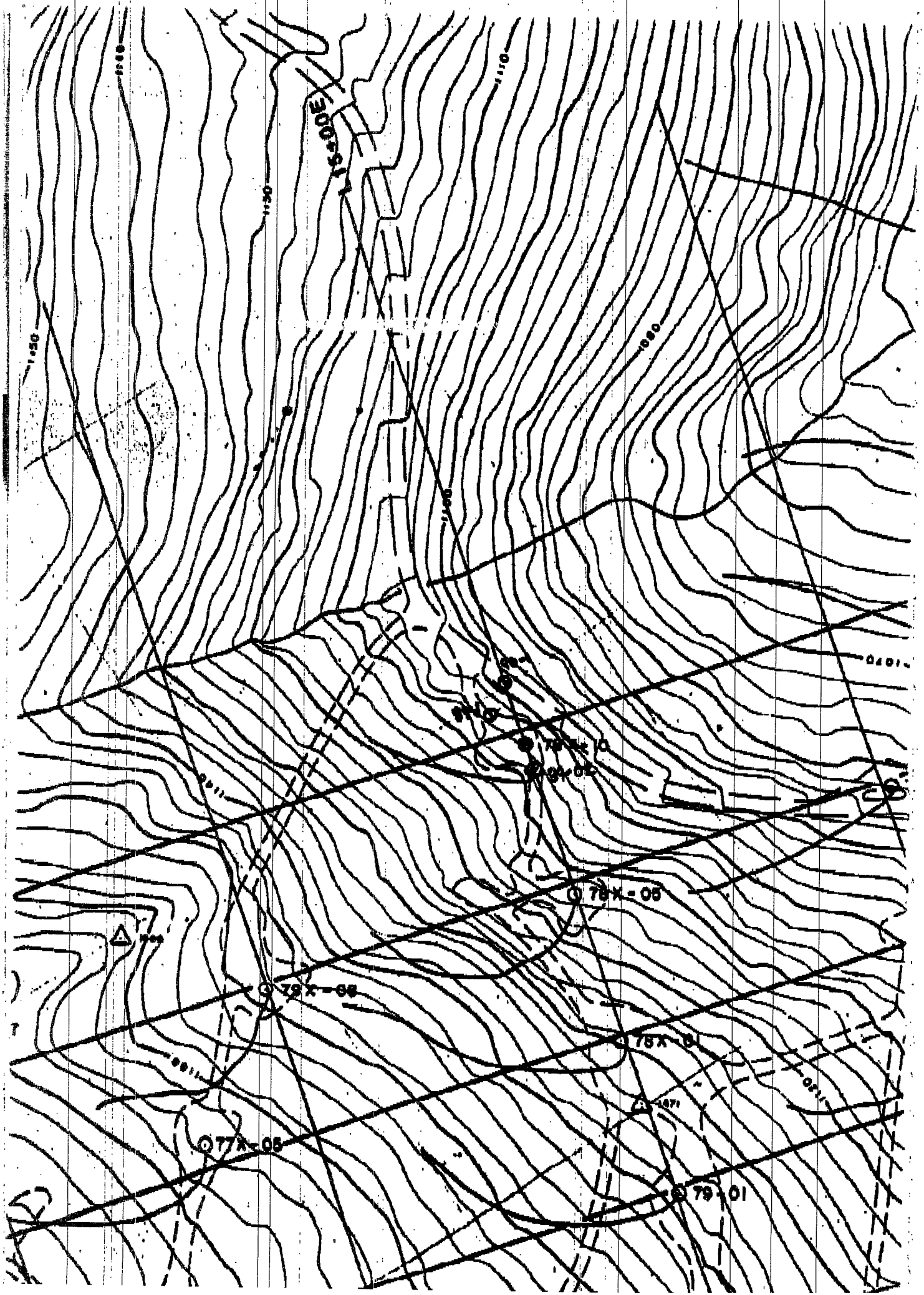
I will determine the expected range of depths of the fault in DY 90-3 and submit this to you as soon as they are calculated - hopefully this will be today.

John Z


Using:
DY 90-1
DY 90-2
89 DS-01
89-1
939m
vert: 64
horiz: 44
Dip: 53°
074/50 NW
90-2
1003
90-1
1013
Ave dip ~ -50°
vert: 20
horiz: 18
Dip = 48°
N
1:2000
Using:
89DS-01
89 DS-02
90-1
vert: 39
horiz: 30
Dip: -52°
066°/52°NW
89-1
939m
89-02
978m
90-1
1003m
Ave. dip: ~52°
vert 25
horiz 20
-51°


Using:
78x10
90-1
90-2
1:2000
vert 39
horiz 26
DIP = 56°
069/56NW
78x10
964
90-2
1003
Ave Dip = ~56°
90-1
1023
vert 20
horiz 14
DIP = 55°
059/51° NW
Using:
89-01
78x10
90-2
vert 25
horiz 22
DIP = 49°
89-1
939
78x10
964
90-2
1003
Ave Dip = ~51°
vert 39
horiz 29
DIP = 53°


ASSUME 010/53° DIP
79X-17
79X-09
79X-05
79X-10
79X-08
79-01


79X-10
79X-09
79X-08
79X-05
79X-01
77X-05
79-01

...shale. Point 6 is at the base ... 6 is sandstone. From ...nt 7 is the base of a very ...p of all the beds to be the ...al measures, on a scale of 1 ...propriate symbols and thick- ...lithologic units.

From: BILLINGS Structural Geol.

exercise

10

SOLUTION OF THREE-POINT PROBLEMS AND VERTICAL FAULT PROBLEMS BY DESCRIPTIVE GEOMETRY

Three-Point Problem

The method used in this exercise for the solution of three-point problems is based on the graphic solution of similar triangles. The following problem illustrates the procedure to be followed:

Given: Points *A*, *B*, and *C*, all on top of a sandstone bed. Point *B* lies N.45°W. of *A* at a *map distance* of 300 feet. Point *C* lies N.60°E. of *A* at a *map distance* of 400 feet. The elevations of points *A*, *B*, and *C* are 950, 1100, and 1350 feet, respectively.

To Find: The strike and dip of the top of the bed of sandstone. In all such cases the top of the bed must be a plane surface.

Construction (Fig. E10-1): Locate the three points according to the data given, using some convenient scale. Draw line *AC*, connecting the *highest* and the *lowest* of the three points. Some point along this line has the same altitude as the intermediate point *B*.

Along line *CD*, drawn in some convenient direction from point *C*, lay

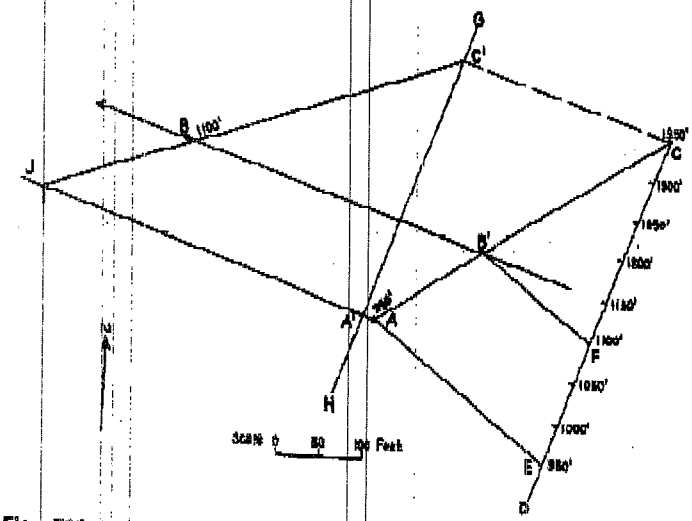


Fig. E10-1. Graphic solution of three-point problem. Location and altitude of *A*, *B*, and *C* are known.

off *CE* equal to the difference in elevation between points *A* and *C* using any convenient scale. On the same line, using the same scale, lay off *CF* equal to the difference in elevation between points *B* and *C*.

Connect points *A* and *E* by a line. Through point *F* draw a line parallel to line *AE* to intersect line *AC*. This intersection, point *B'*, is the point having the same altitude as point *B*. The line connecting points *B* and *B'* is the strike of the top of the bed.

At any convenient place draw line *GH* perpendicular to the strike of the bed. Project points *A* and *C* into this line to points *A'* and *C'*. Line *CC'* is the strike line on the top of the bed at an altitude of 1350 feet, and line *AA'* is the strike line on the top of the bed at an altitude of 950 feet. The dip is therefore from point *C'* toward point *A'*—that is, toward the southwest.

Now make a vertical section along line *GH*. Erect the perpendicular *A'J* to *GH* at point *A'*, and on this line, using the same scale as the horizontal map scale, lay off *A'I* equal to the difference in altitude between points *A* and *C*. Connect points *I* and *C'*. Angle *A'C'I* is equal to the dip of the top of the sandstone.

Vertical Fault

The following example illustrates the graphic method of determining the displacement on a fault if the attitude and location of two displaced

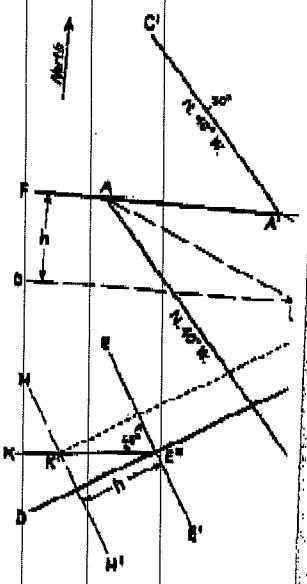


Fig. E10-2. Graphic solution of

Given (Fig. E
and dips vertically
at *A* and *A'* on th
vein, striking N.60
south and north si
Find: (a) the
horizontal project
the fault plane.
Construction:
vein, and draw *BD*
E10-2). Draw *EE'*
venient places, such
we shall now make
Draw *HH'* par
II' parallel to and a
we will call the *low*
Draw angles *G'G''*
and N.60 E. veins.
These lines