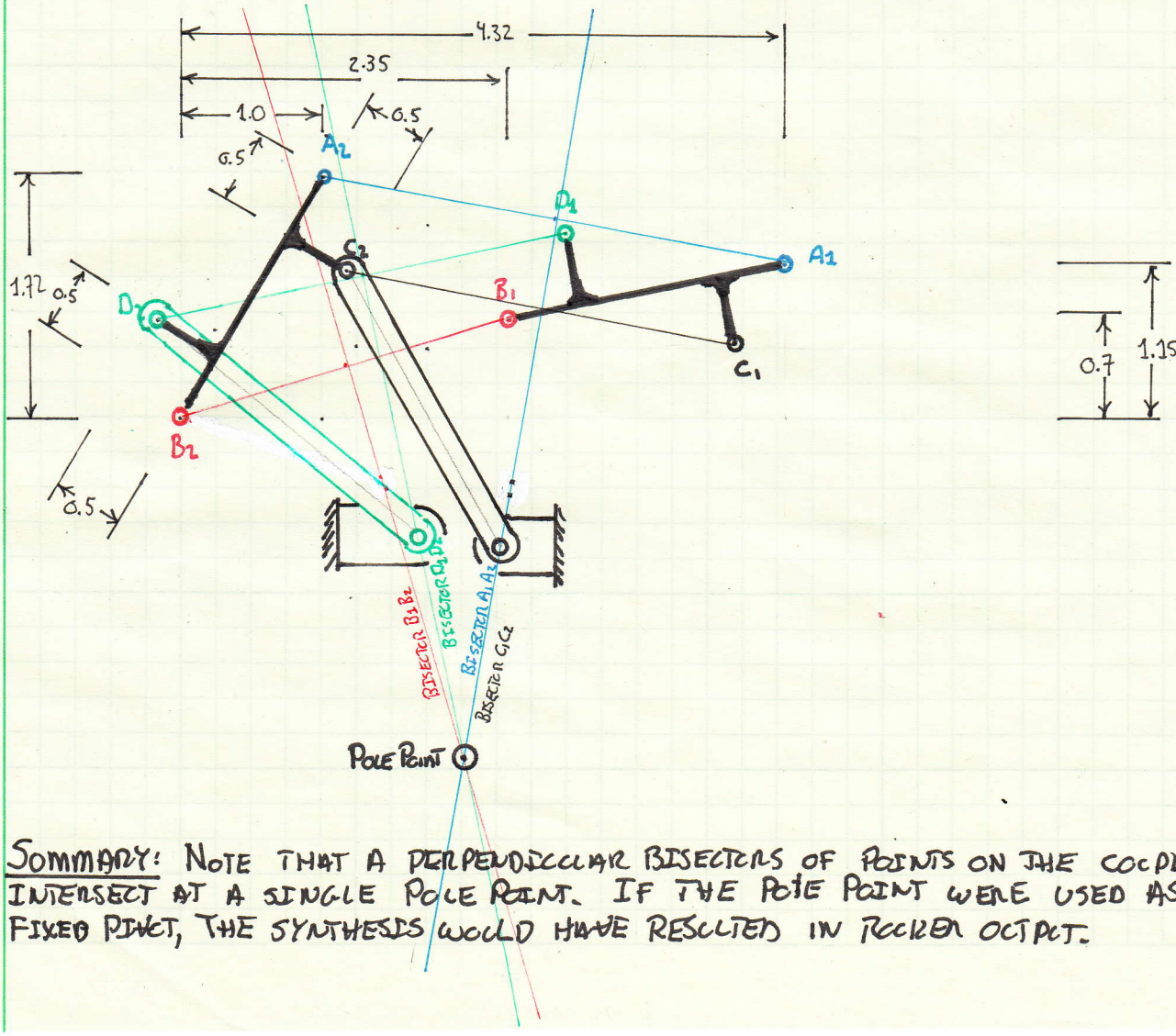
PROBLEM 7.4 | FOR THE TWO COUPLER LINK POSITION INDICATED BY LINES A_1B_1 AND A_2B_2, LOCATE THE POLE POINT. USING POINTS C AND D AS MOVING HINGE PINS, DESIGN A FOUR BAR MECHANISM THAT WILL MOVE LINE AB INTO ITS TWO DESIGNATED POSITIONS.

GIVEN:
1) TO POSITIONS OF THE COUPLER LINK AB.
2) ORIENTATION OF POINTS C AND D WITH RESPECT TO A AND B.
3) DESIRE FOR COUPLER MOTION.

ASSUMPTIONS:
1. ALL LINKS ARE RIGID
2. ALL JOINTS ARE FRICTIONLESS
3. INERTIAL AFFECTS ARE IGNORED
4. ALL LINK MOVE IN A SINGLE OR PARALLEL PLANES.
5. POINTS A, B, C, & D ARE ALL ON THE SAME LINK.

FIND:
1. LOCATE POLE POINTS FOR THE COUPLER LINK AB GIVEN POSITIONS A_1B_1 & A_2B_2.
2. USING POINTS CD AS MOVING HINGE PINS, DESIGN A 4 BAR THAT WILL MOVE AB TO THEIR DESIGNATED POSITIONS.



SUMMARY: NOTE THAT A PERPENDICULAR BISECTORS OF POINTS ON THE COUPLER INTERSECT AT A SINGLE POLE POINT. IF THE POLE POINT WERE USED AS THE FIXED PIVOT, THE SYNTHESIS WOULD HAVE RESULTED IN ROCKER OUTPUT.