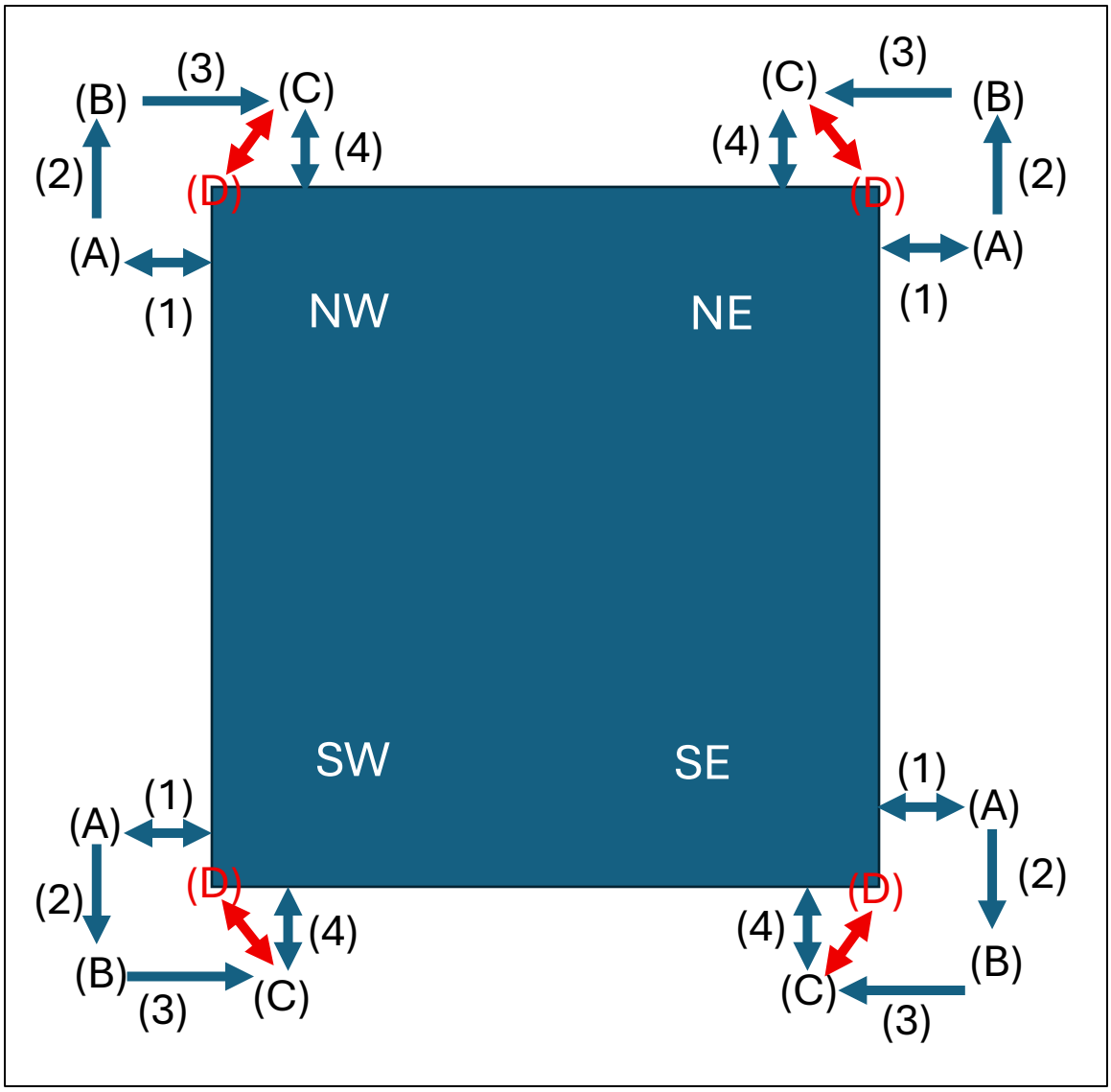

Selections in the UI:

- Setting 1: Corner to probe dropdown: SW, SE, NW, NE. This is as viewed from the users perspective standing in front of the cnc machine: SW = Southwest, SE = Southeast, NW = Northwest, NE = Northeast.
- Setting 2: Outside or inside corner dropdown.
- Setting 3: Probe start distance from first sidewall to probe textbox. This is position (A) and will default to 5mm.
- Setting 4: Probe travel distance to point (B) textbox. This will auto-calculate to twice the start distance for (A). Default 10mm. There needs to be a sanity check and warning if travel distance is less than Setting 3.
- Setting 5: Option to move probe to a save distance above the measured workpiece corner at the end of the operation. If no, then the probe operation stops at point (C). If yes, then the probe will raise Z according to Setting 6 and move to the measured corner above the workpiece.
- Setting 6: Z save distance. The last step will be to move the probe a safe distance above the workpiece measured corner.
- Setting 7: After each double probe operation, the measurement will be averaged as normal and then displayed in the UI with a button option to set that measurement as that axis WCS zero. The purpose to do this instead of auto-setting to zero is to give the user the choice to just measure or set zero. Note that the "set zero" option must use the measured coordinate displayed in the WCS and not the machine current position.

Step 1: User positions the probe tip at position (A) with Z axis set at the correct height midway down the part sidewall ready to probe. The user must understand to set the probe about 5mm to the side of the first wall to be probed and about 5mm away from the second wall. It will be 5mm by default but settable in the UI.
Step 2: User sets WCS XYZ to zero. I don't know if this is required though.
Step 3: User selects probe start corner.
Step 4: User verifies probe position (A) distance with 5mm being default.
Step 5: User verifies probe travel distance for operation (2) to point (B) which will auto-calculate to twice the entered probe position (A) distance. Default would be 10mm.
Step 6: User starts the probe operation.
Step 7: The utility moves the probe in direction (1) slowly at 100mm/min for the first probe, retracts 2mm, then travels 50mm/min for the second probe. The utility notes and displays the location for sidewall 1. The utility moves probe back to point (A).
Step 8: The utility performs movement (2) from point (A) to point (B) based on Setting 4.
Step 9: The utility performs movement (3) from point (B) to point (C) based on Setting 3 and the measured point from Step 7. If Setting 3 = 5mm, then the probe will travel 5mm past the sidewall detected in Step 7. Past the sidewall means further towards the part far side.
Step 10: The utility performs movement (4) from point (C) to the second sidewall performing the measurement as in Step 7 and then back to point (C). The utility notes and displays the location for sidewall 2.
Step 11: The utility follows Setting 5. If Setting 5 is selected to move to safe distance above the workpiece corner, then it will raise the Z axis according to Setting 6 and move carefully at 100mm/min from point (C) to the corner at point (D). If Setting 5 is selected not to move to the corner, then the probe operation ends with the probe still at point (C).
Step 12: The probe operation is complete. The measured sidewall coordinates are both displayed in the UI and an option to set WCS zero for each axis is displayed. Set X to zero. Set Y to zero. Set XY to zero.