

XXVII. ARTWORK DRAWING RULES

A. LINE PLACEMENT:

- 1) Lines must be at least two (2) horizontal or vertical grids or one and a half (1.5) diagonal grids from the center of a pad.
- 2) Lines must enter or exit a pad by at least two (2) grids without changing direction.
- 3) Lines must always be at least 1 horizontal or vertical grid apart.
NOTE: Adjoining diagonal lines are less than one grid apart.
- 4) Perpendicular angles may not be formed using diagonal lines.
- 5) No stub paths are allowed without engineering approval.
- 6) A line must always be at least two (2) grids from itself.
NOTE: This does include padding.
- 7) Foil may not be drawn on top of existing foil.
- 8) The angle formed when a line changes direction must be at least 90 degrees. This is true anywhere on the board, in or outside a pad, and does not refer to a change of direction after a change of layer.
- 9) No line may be drawn at vertical coordinates 000 or 243 in grids, 0000 or 4860 in dbus.

B. COMPONENT PLACEMENT:

- 1) When an S jumper is present and that S jumper is a part of the clock, boolean term .ZZZ, the R and U jumper locations may only be used for spare phase 2 resistors or ground jumpers.
- 2) No 'D' pin may be placed in the Q jumper location. 'D' pin here refers to Cray 2 format hole pattern representation.
- 3) All jumpers used for I - term terminations must be placed in jumper locations. No phase 2 resistors may be placed in jumper locations Q, T, W, or Z.