

Arch 464
ECS
Spring 2004

Name _____

Quiz #1

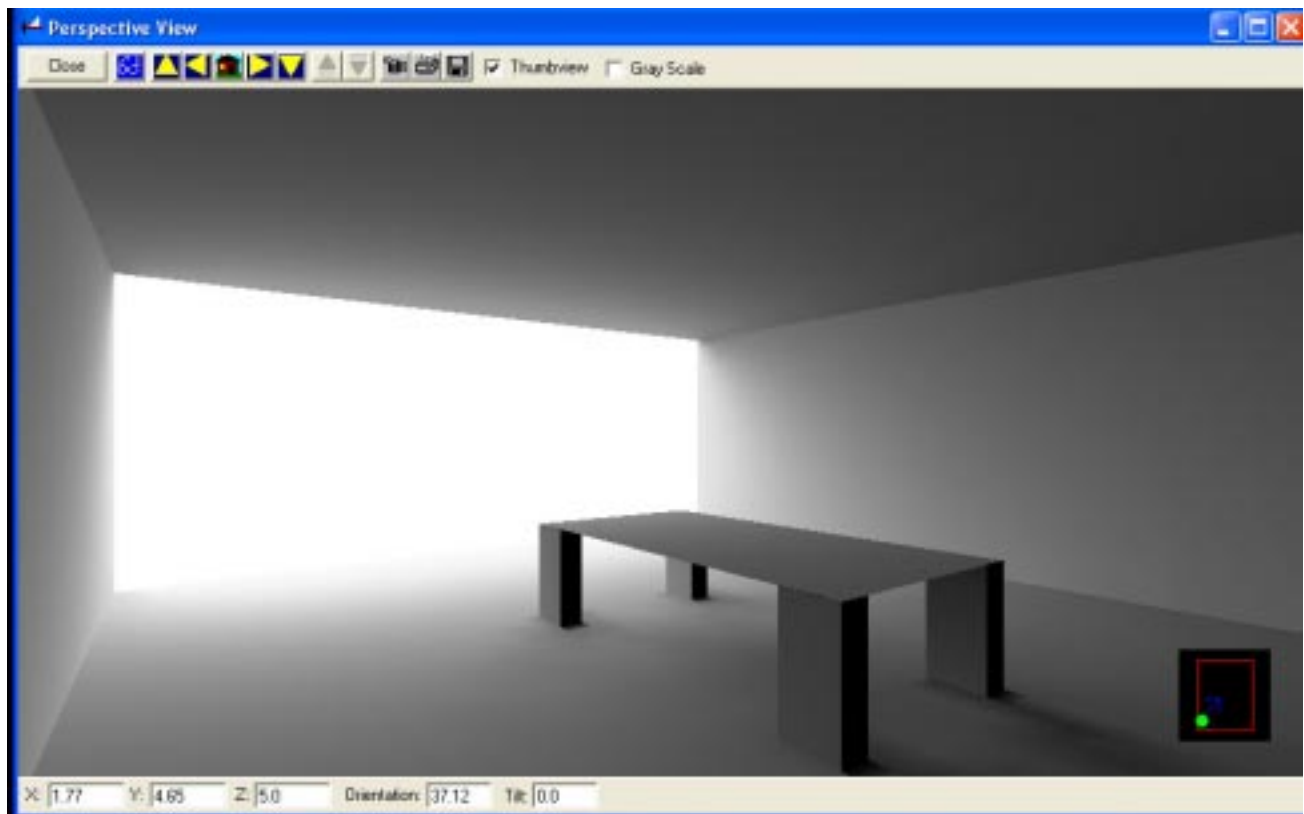
"Daylighting the Shop Crit"

For this problem you are the daylighting consultant for the Shop Crit remodel. The Shop Crit is approximately 31' x 24' x 10' high. It features a curtain wall of single pane clear glass on the north. There are no other apertures. The entry door in the southeast corner is opaque. The room's exterior surfaces which have no apertures are the ceiling and the east wall.

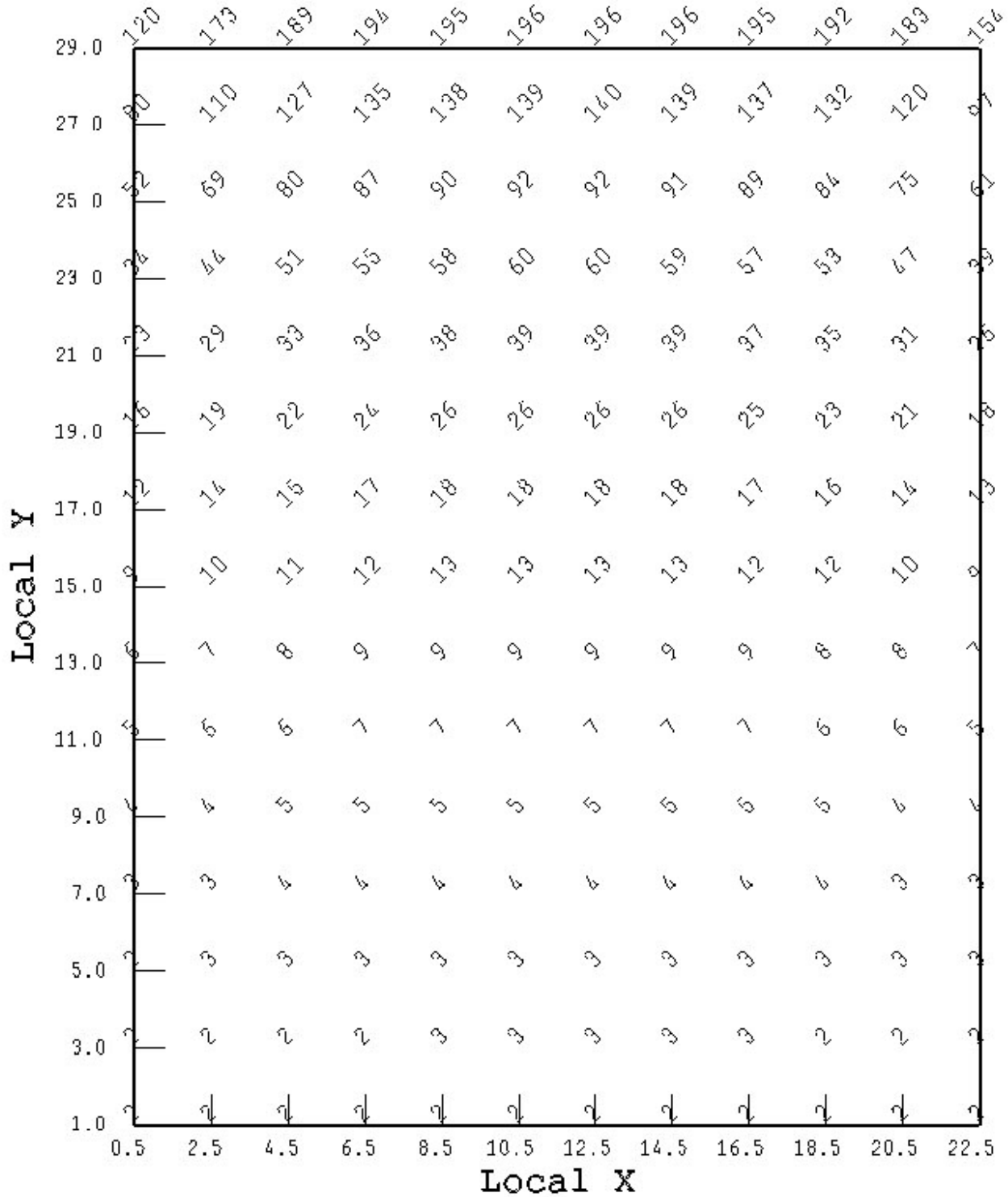
The designer has asked you to critique the existing conditions and to develop two options for improving the daylighting in the space.



The Shop Crit looking northeast, midday in February, daylighted.



Lumen-Micro model of Shop Crit looking northeast for an overcast day at noon on the winter solstice.



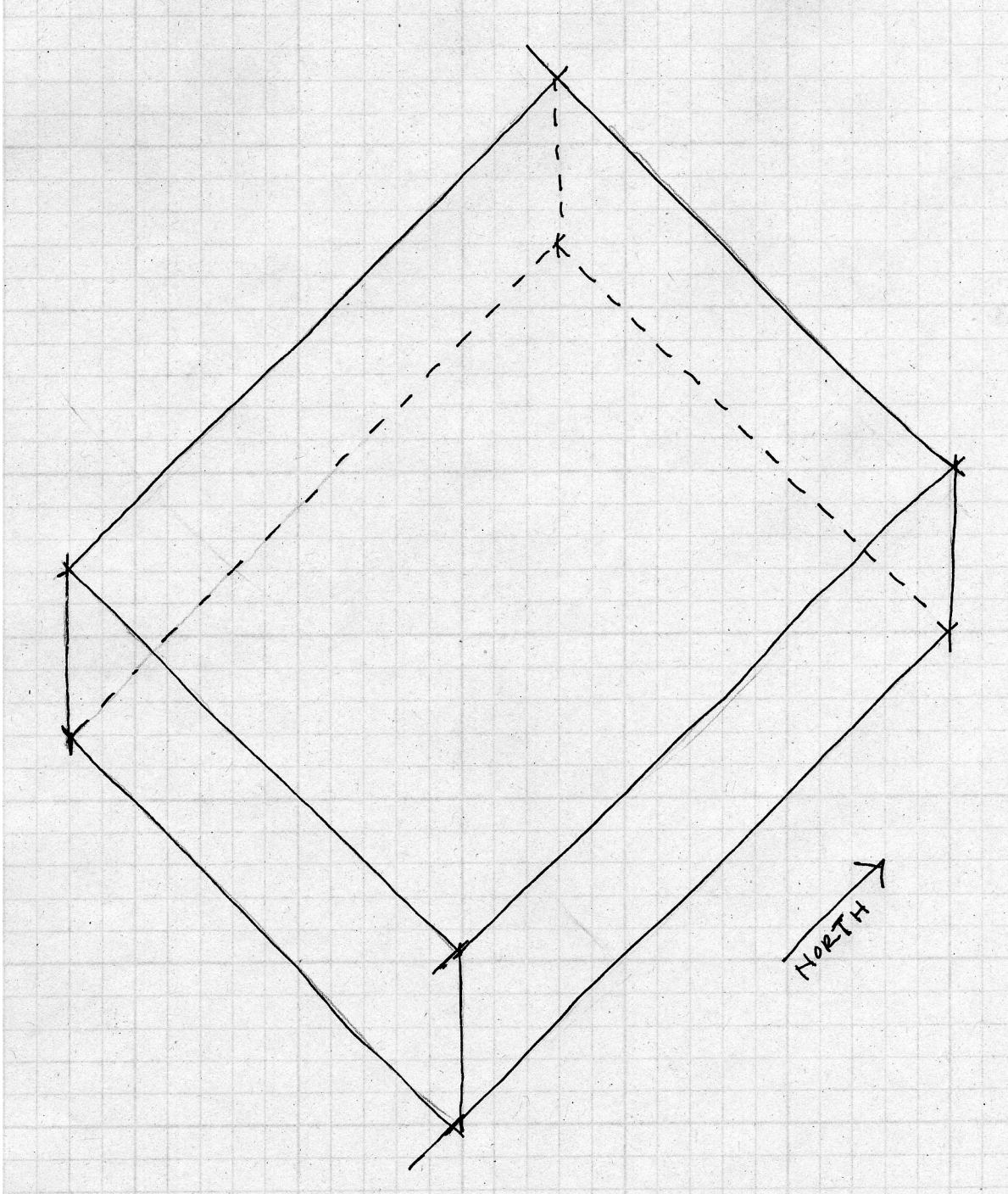
Lumen-Micro results (footcandles at the 30" horizontal work plane) for December 21 at noon with a cloudy sky.

2 pts

1. Critique the current daylighting scheme. Describe two of its weaknesses and two strengths.

2. Propose a scheme with added toplighting. Draw the new daylighting aperture on the wire-frame axonometric below. Show how it will change daylight distribution in the space. Explain why your scheme improves the daylighting in the room.

4 pts



3. Propose a scheme with improved sidelighting. Draw the new daylighting aperture on the wire-frame axonometric below. Show how it will change daylight distribution in the space. Explain why your scheme improves the daylighting in the room.

4 pts

