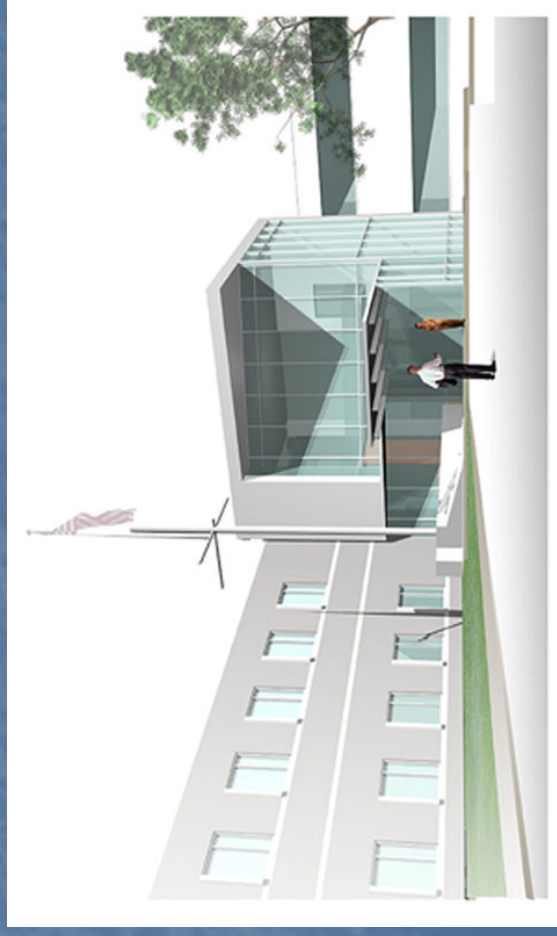


# Naval Network & Space Operations Command

## Schematic Design Presentation Fall 2006

- Christopher Ankeny
- Penn State Architectural Engineering
- Lighting/Electrical Option
- Advisor: Dr. Mistrick



Picture and drawings courtesy of Kling, D.C.

# Building Overview

Location: Naval Surface Warfare Center  
Dahlgren Division, Dahlgren, VA

Size: 75,000 s.f., 2 Stories

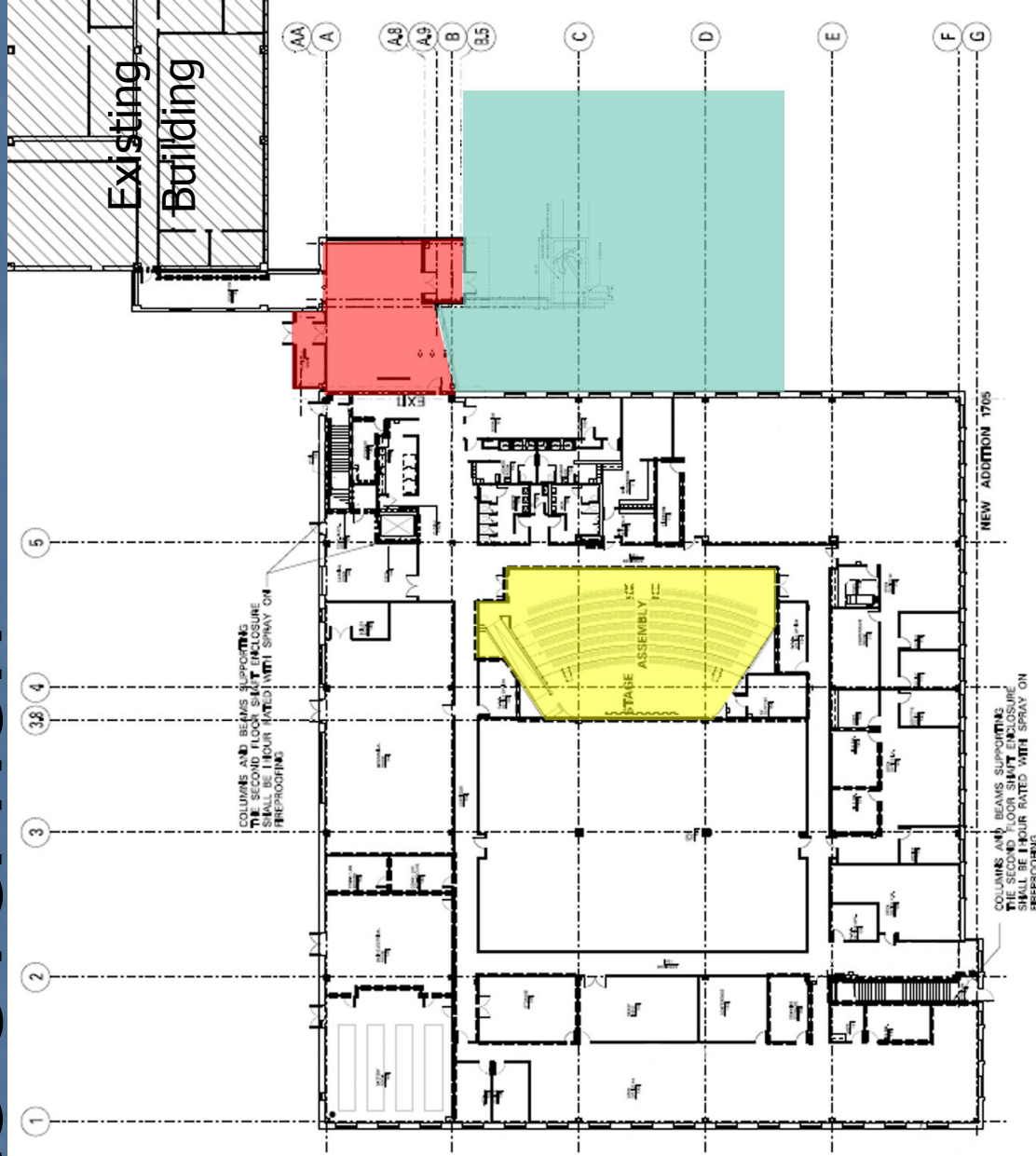
Cost: \$17,000,000

Setting: Naval Base

Function: Mixed Use, Office, with some  
assembly (training theater)

# Site Overview

1st Floor



Outdoor/Entrance

Lobby

Auditorium

Office

1 FIRST FLOOR LIFE SAFETY PLAN

FP-100 SCALE: 1" = 8'-0"

# Site Overview

2<sup>nd</sup> Floor



Outdoor/Entrance

Lobby

Auditorium

Office

# Building Sections

Auditorium



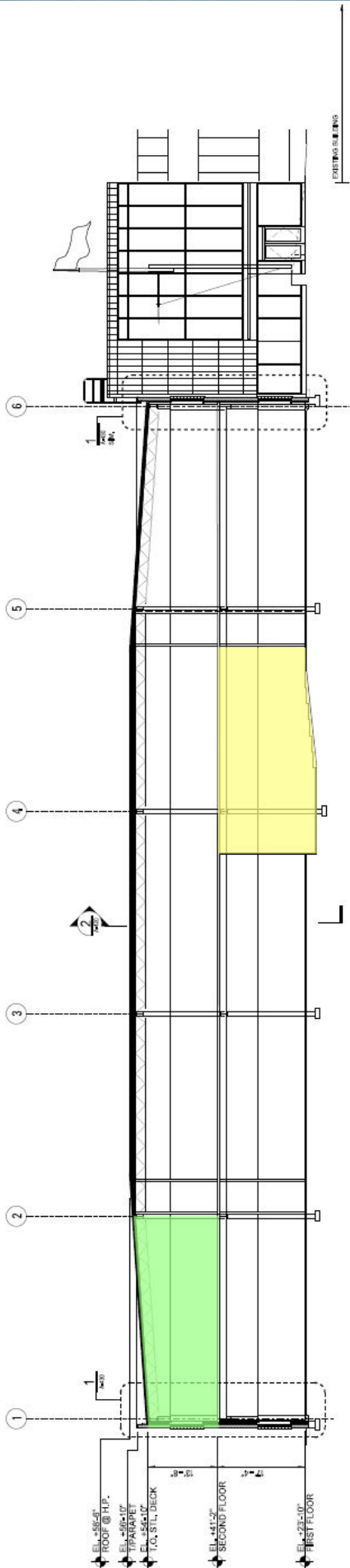
Office



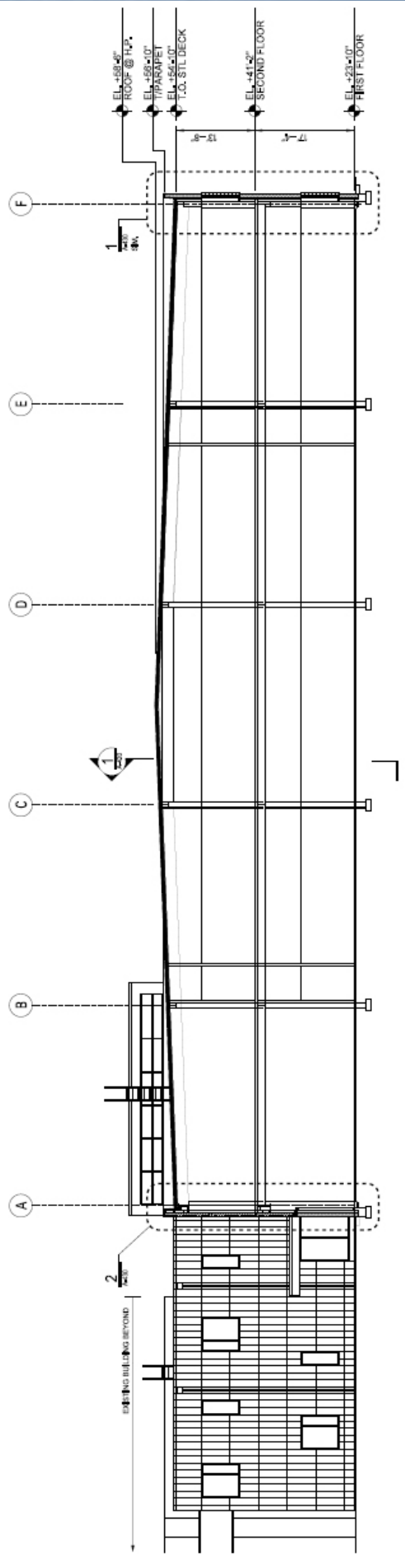
Outdoor/Entrance



Lobby



**1** BUILDING SECTION  
A-420 SCALE: 3/32" = 1'-0"



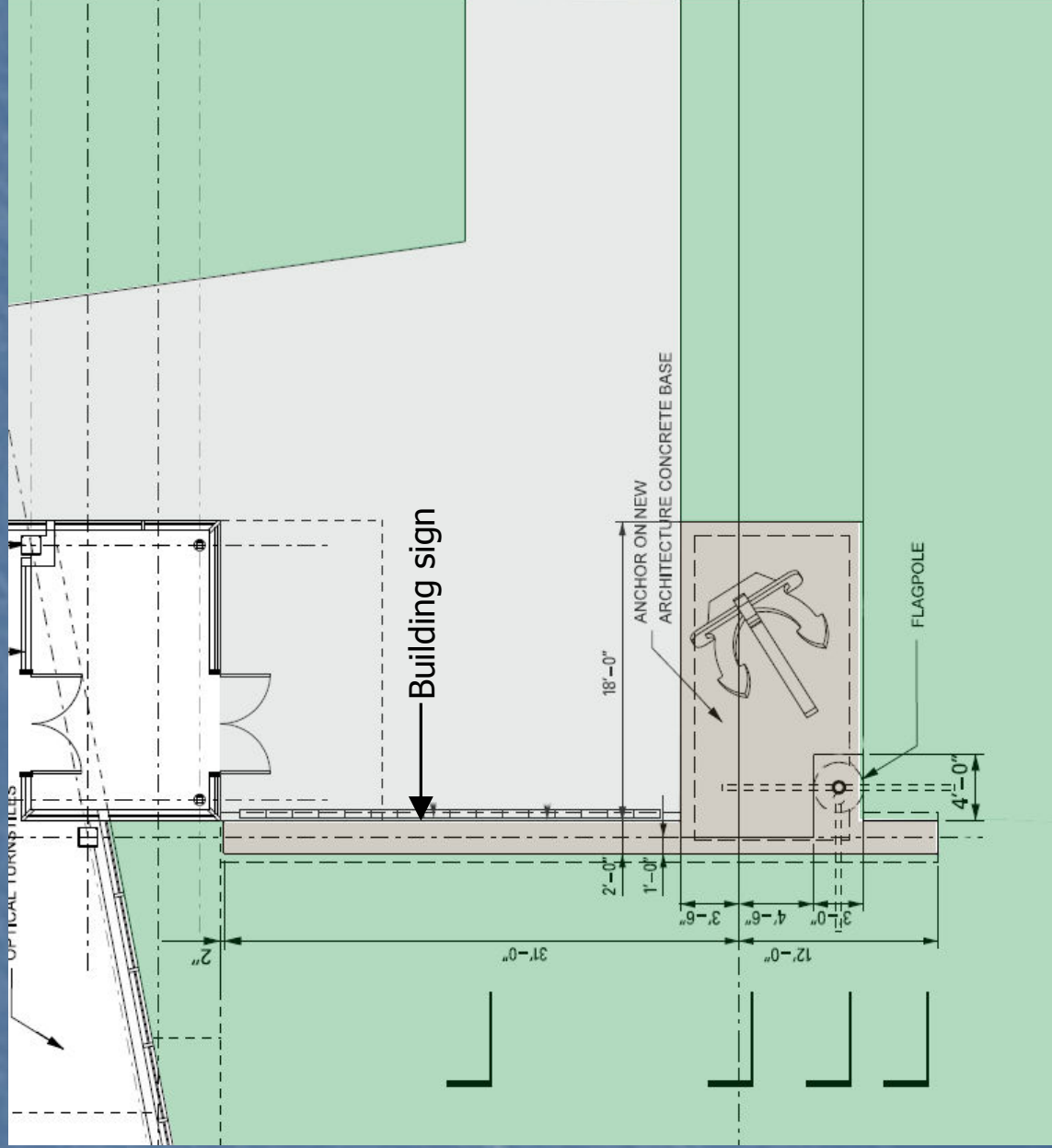
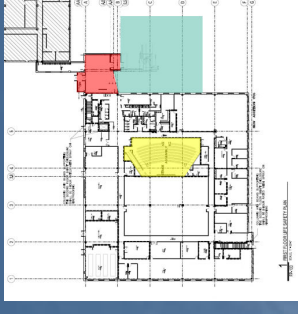
**2** BUILDING SECTION  
A-420 SCALE: 3/32" = 1'-0"

# Concept Development

- Office – Comfortable, Productive, Adjustable, Energy Efficient, Spacious
- Lobby – Attention, Egress, Nautical
- Outdoor – Highlights, Pride, Egress
- Auditorium – Flexibility, Relaxing, Nautical, Productive

# Outdoor/Entrance

## Outdoor/Entrance



### Function

- Main entrance to buildings

### Points of Interest

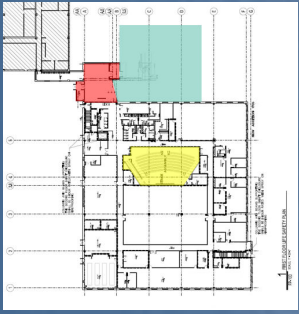
- Anchor
- Flagpole
- Building sign
- Entrance

### Materials (Reflectance)

- Concrete (15%)
- Pavement (10%)
- Grass (18%)
- Façade (40%)
- Flagpole (60%)

# Outdoor/Entrance

Outdoor/Entrance



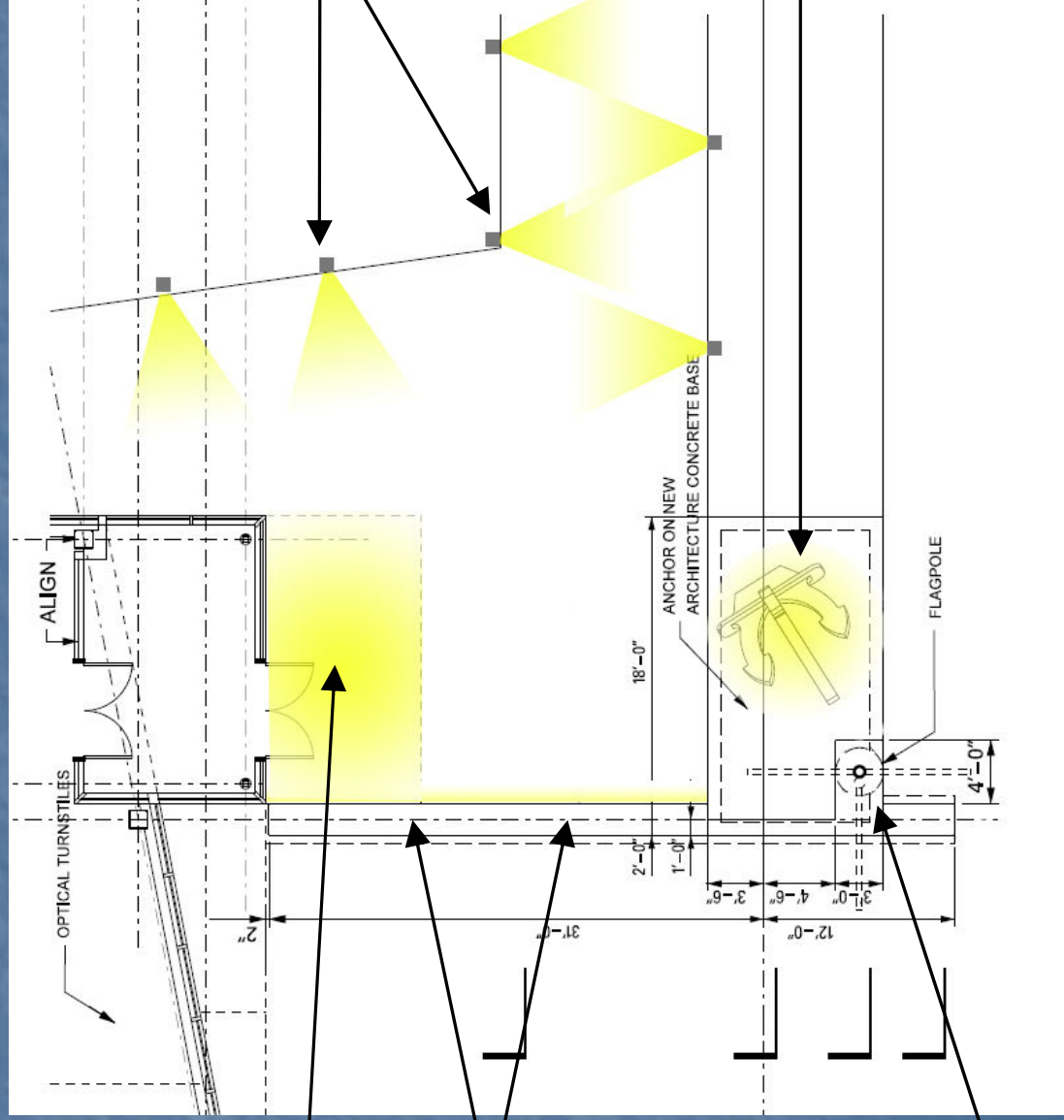
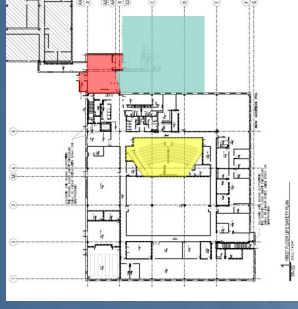
## Points of Interest

- Anchor
- Flagpole
- Building sign
- Entrance



# Outdoor/Entrance

Outdoor/Entrance



Downlights for the entrance

In ground fixtures to highlight building sign

Top of flagpole fixture to light flag

Bollards around the sidewalk

Narrow spot from top of building overhang

# Outdoor/Entrance

Outdoor/Entrance

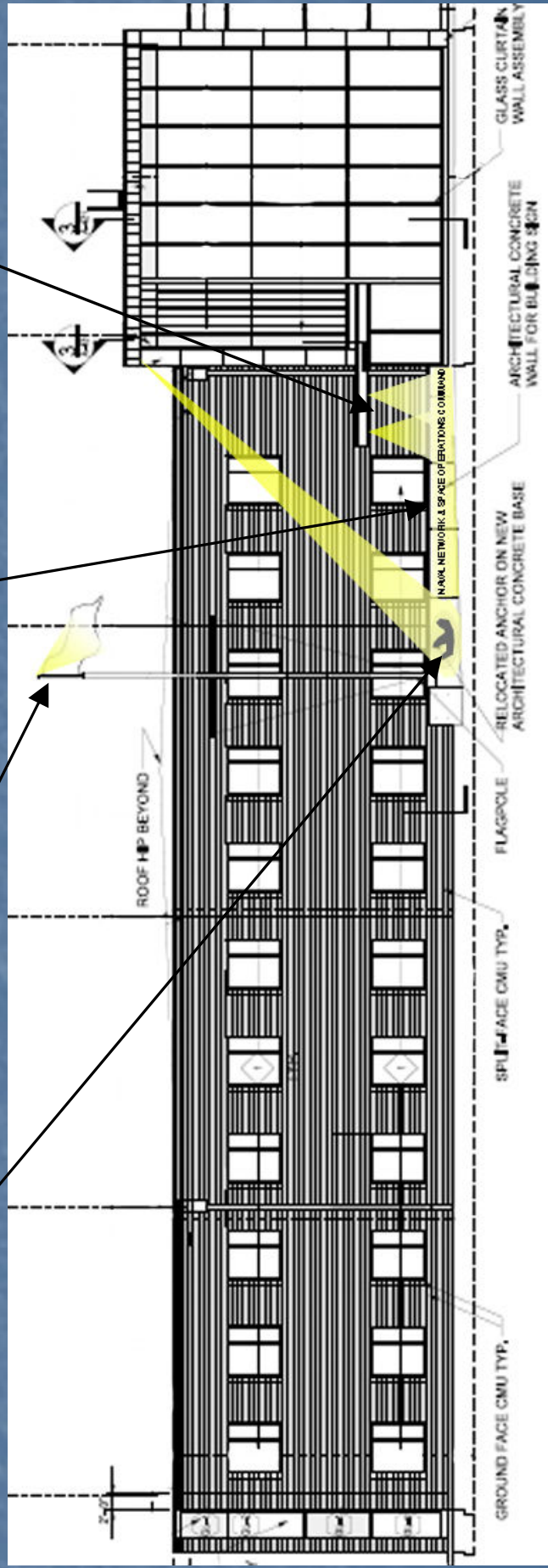


Highlight anchor from narrow spot attached to the building overhang

Top of flagpole fixture to light flag

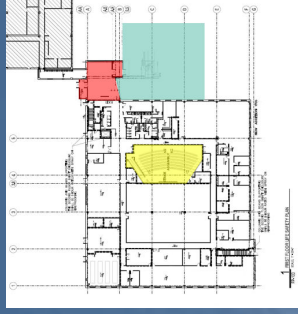
In ground fixtures to highlight building sign

Downlights for the entrance

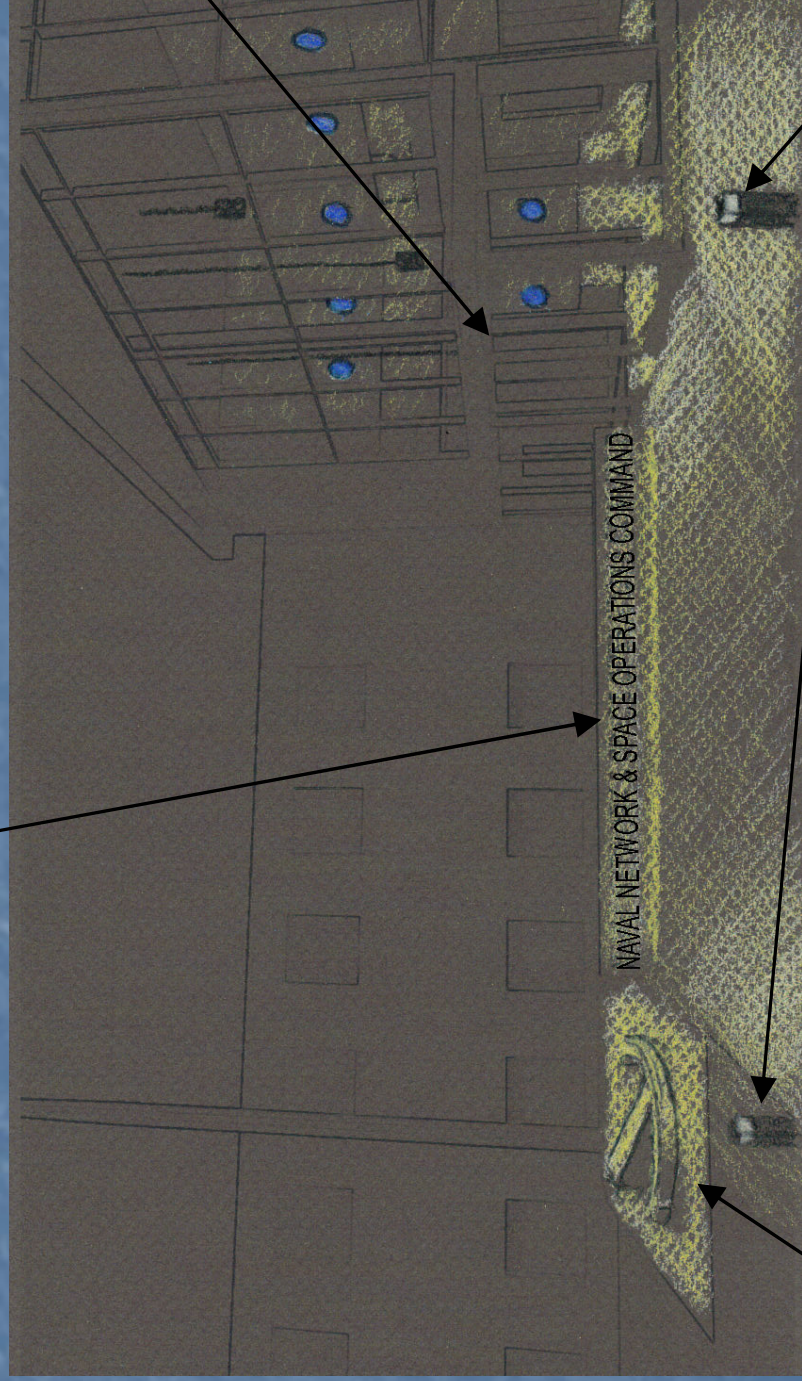


# Outdoor/Entrance

Outdoor/Entrance



In ground fixtures to highlight building sign



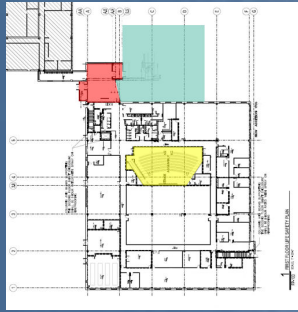
Downlights for the entrance

Highlight anchor from narrow spot attached to the building overhang

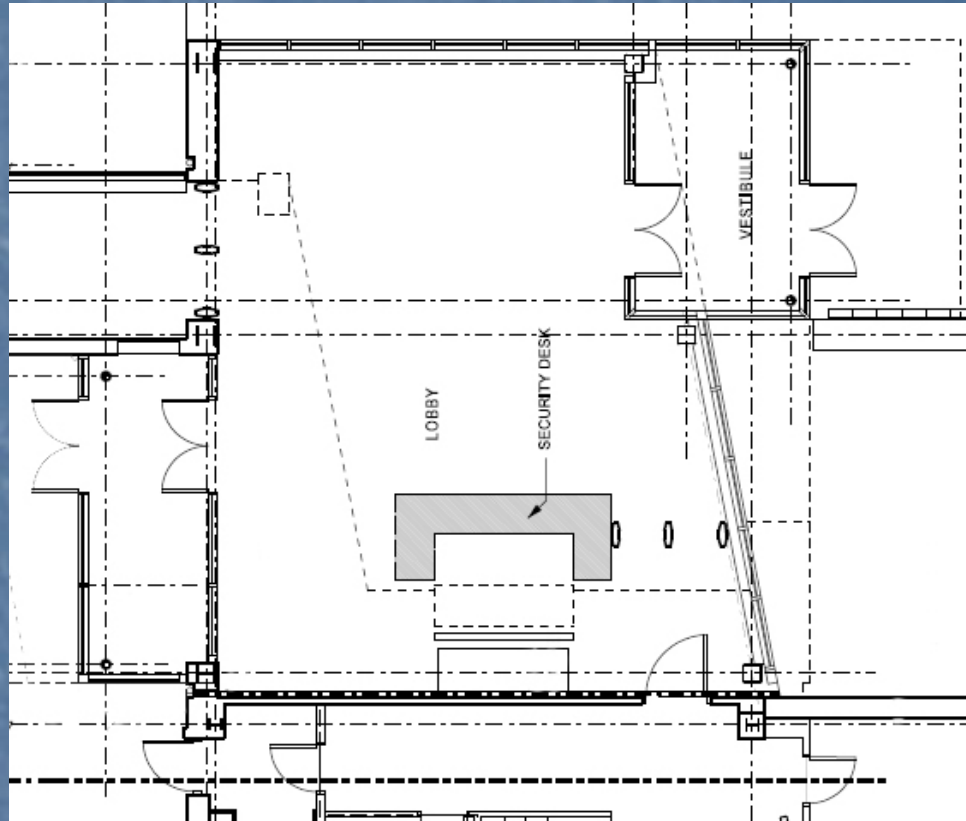
Bollards around the sidewalk

# Lobby

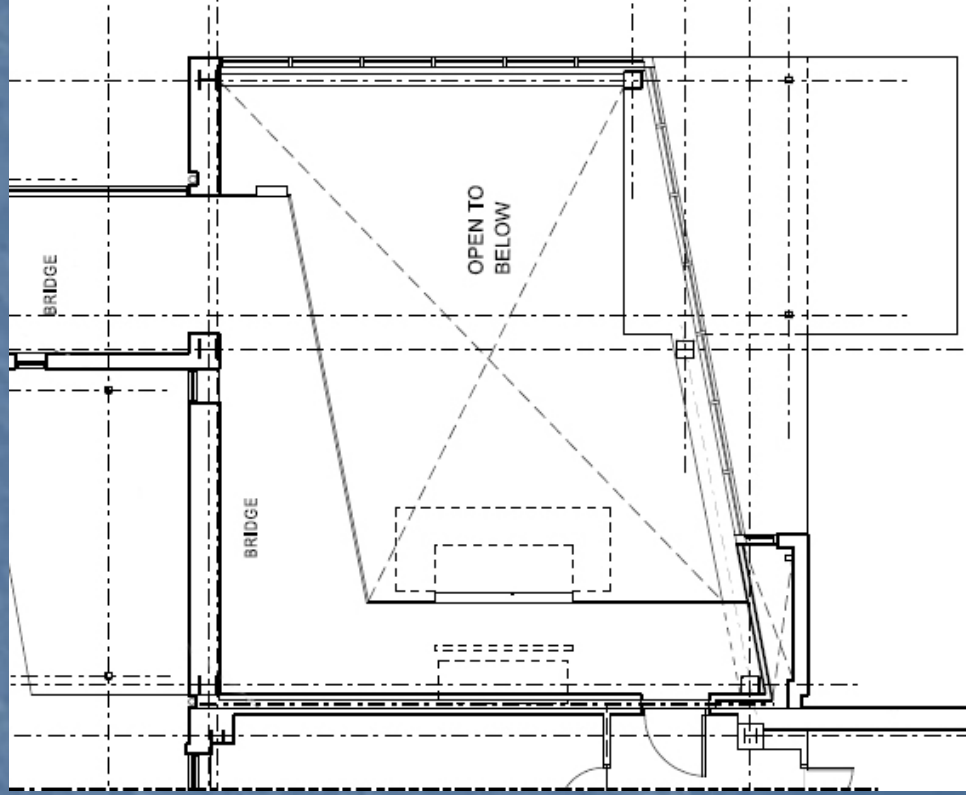
Lobby



1st Floor

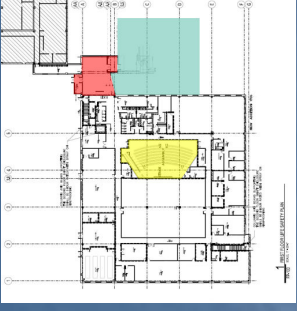


2nd Floor



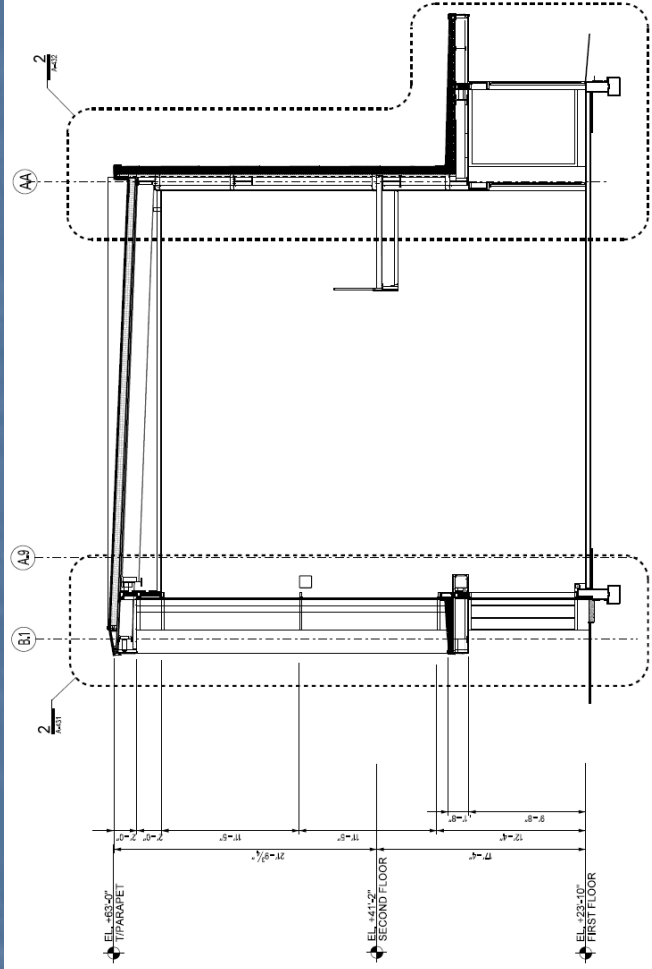
# Lobby

# Lobby

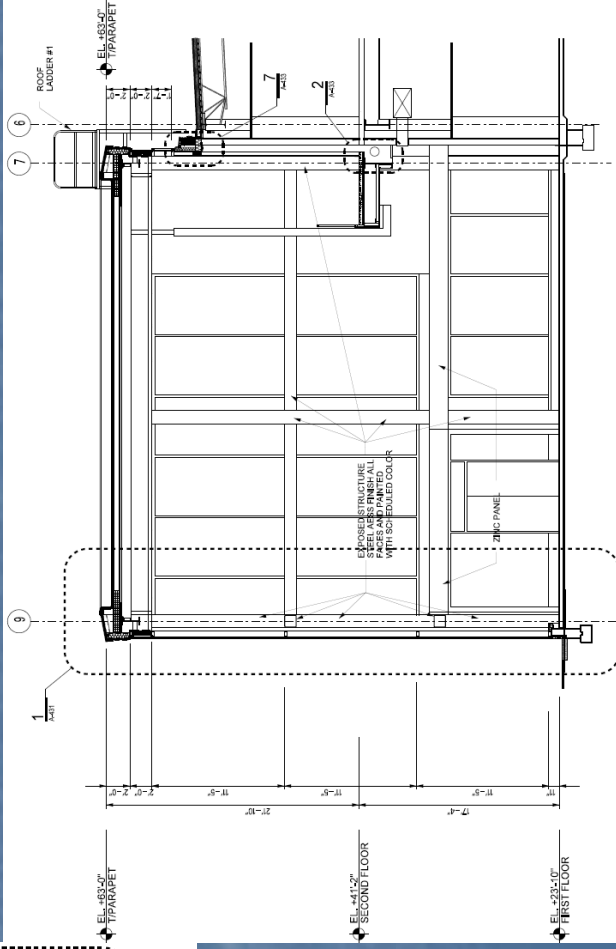


## Heights

- Floor to floor 17'-4"
- Floor to ceiling 34'-2"



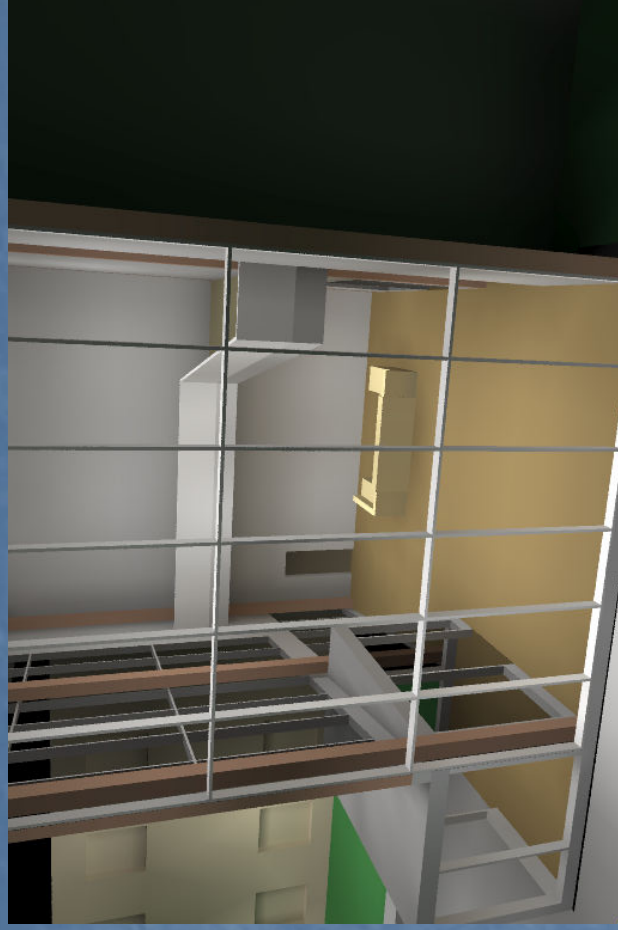
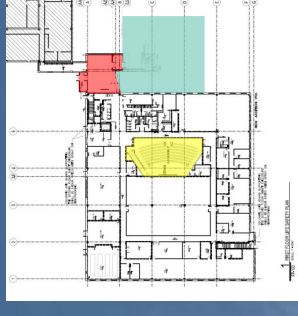
1 BUILDING SECTION  
A-21 SCALE: 3/16"=1'-0"



3 BUILDING SECTION  
A-21 SCALE: 3/16"=1'-0"

# Lobby

## Lobby



### Function

- Entrance to both buildings
- Security checkpoint

### Points of Interest

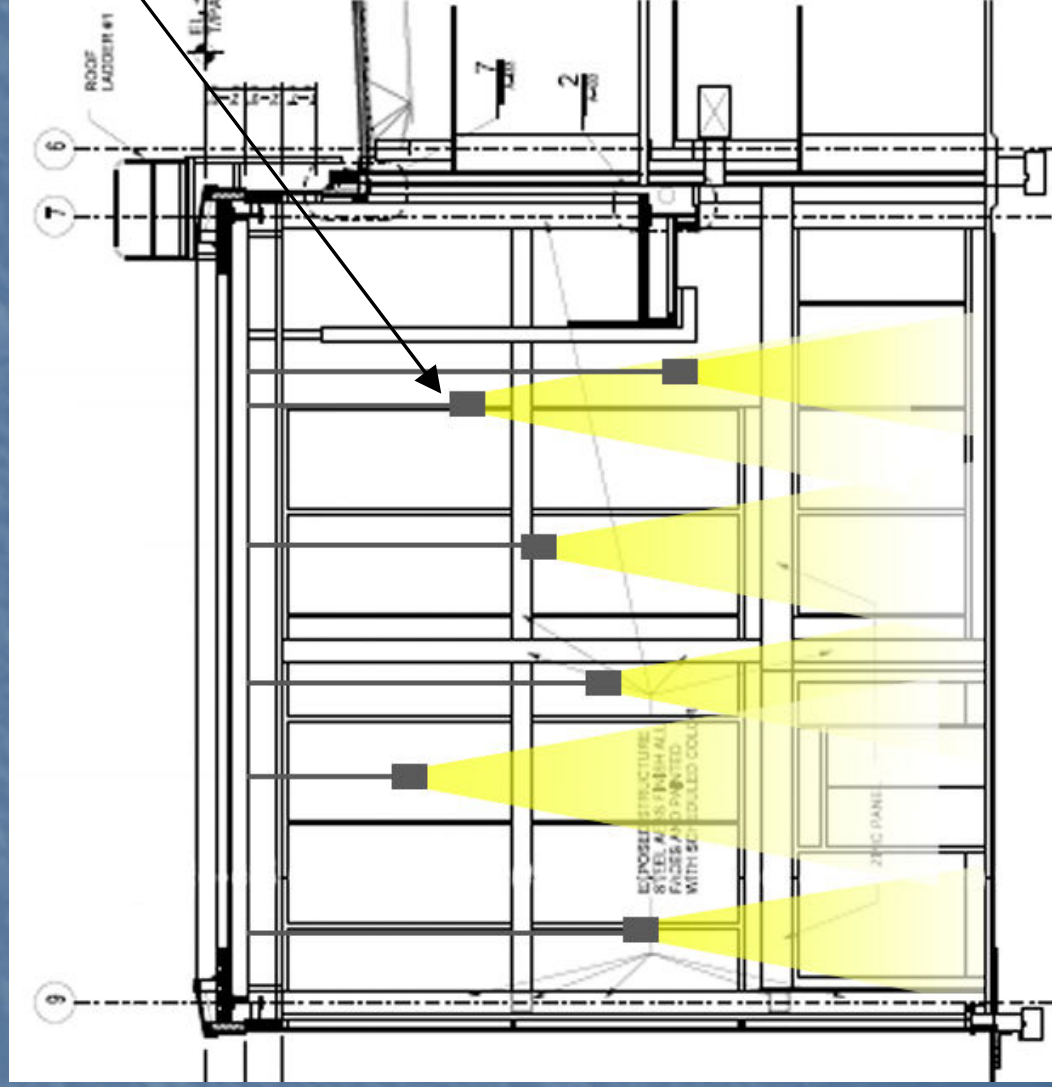
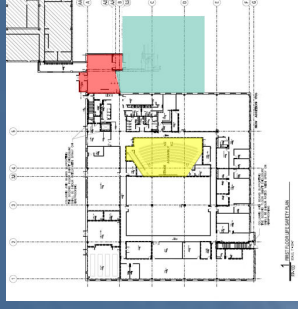
- Security Desk
- Entrance to either building
- Artwork?

### Materials (Reflectance)

- Floor – Broadloom carpet (20%)
- Walls – Painted (50%)
- Ceiling – Gypsum wallboard (70%)

# Lobby

## Lobby

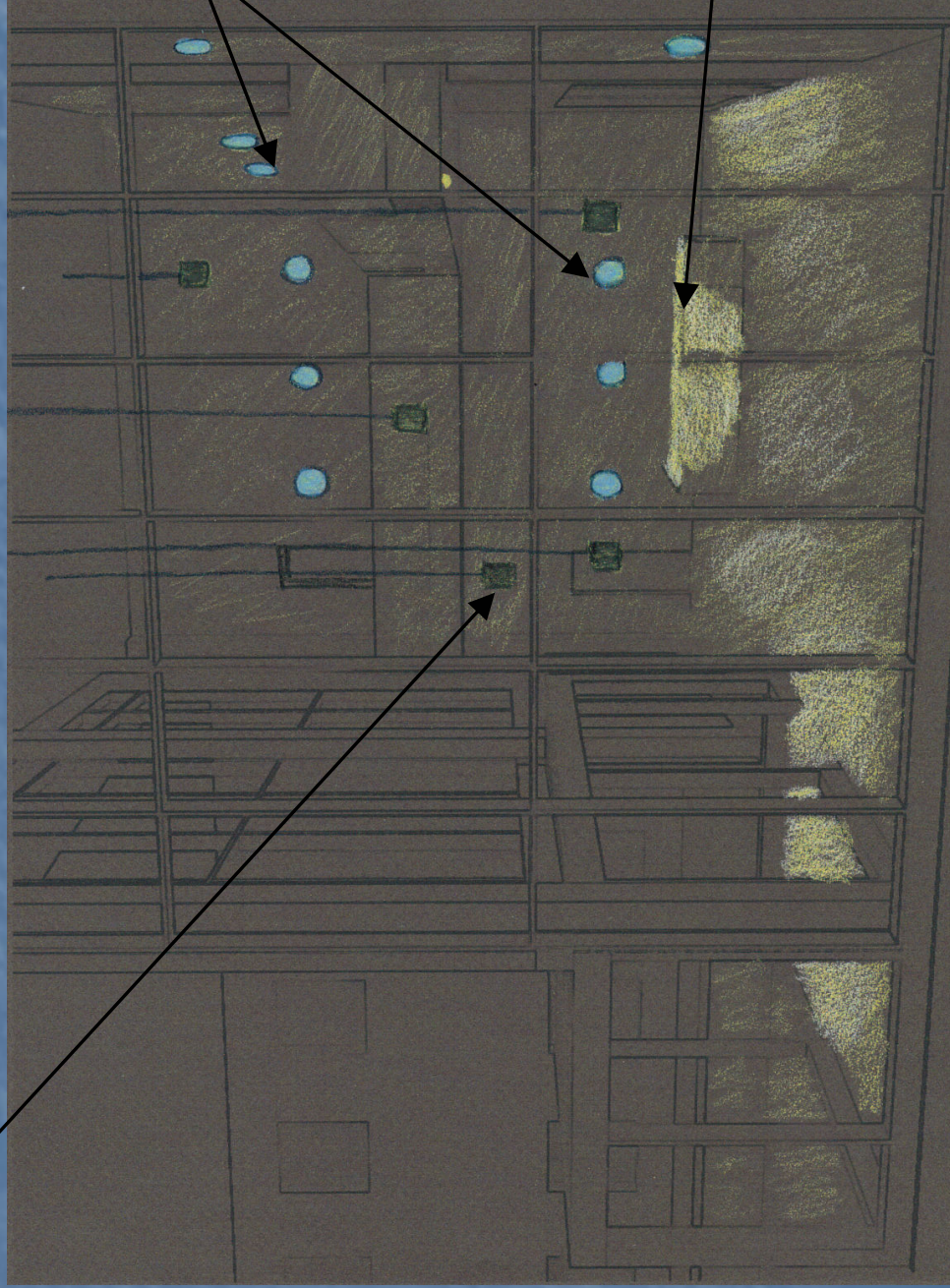
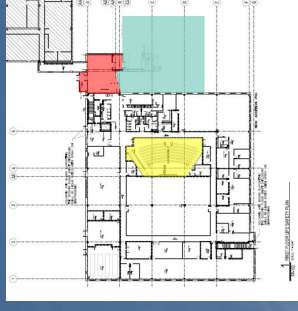


Multi-height decorative pendants for general lighting

# Lobby

Decorative pendants for general illumination

Lobby



Sconces on the walls

Spot and Task lighting on security desk



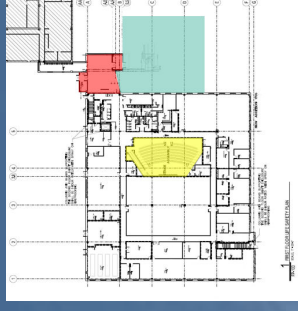
# Lobby

Decorative pendants for general illumination



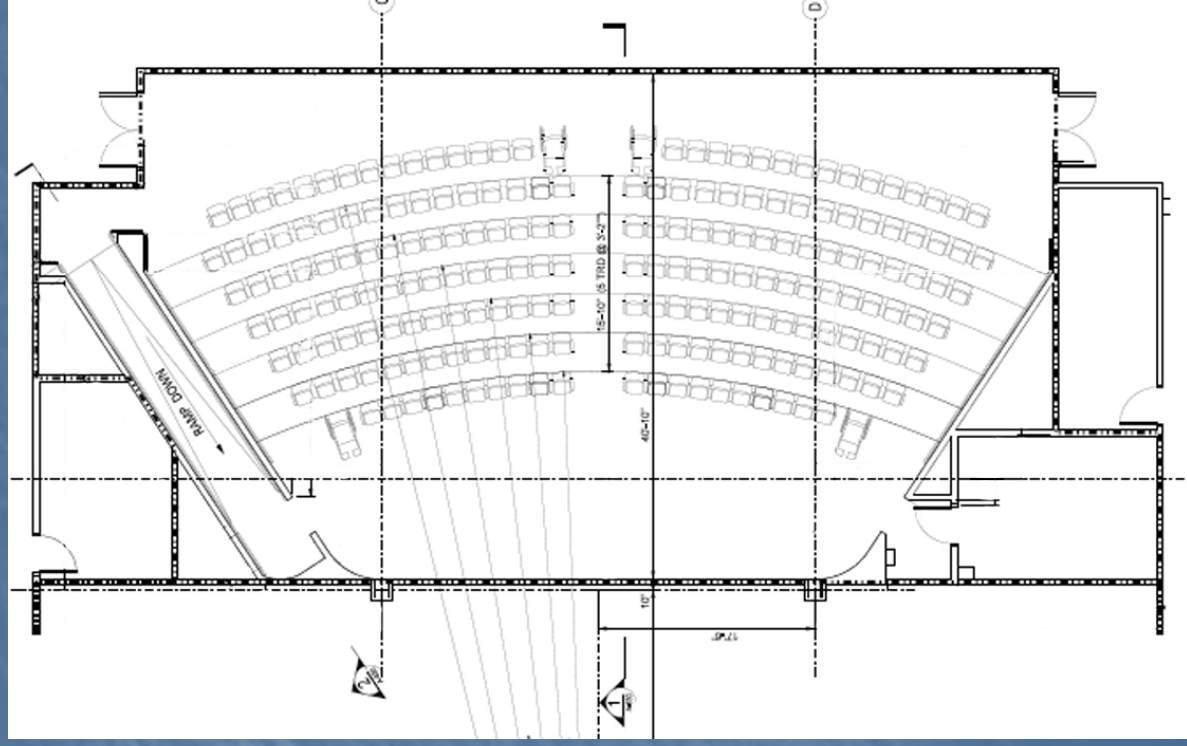
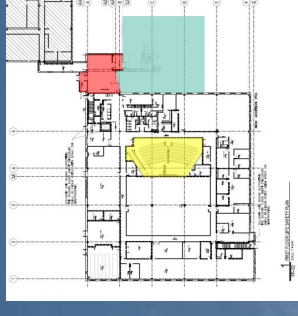
Task lighting on security desk

Lobby



# Auditorium

## Auditorium



### Function

- Training assembly (~150 seats)

### Points of Interest

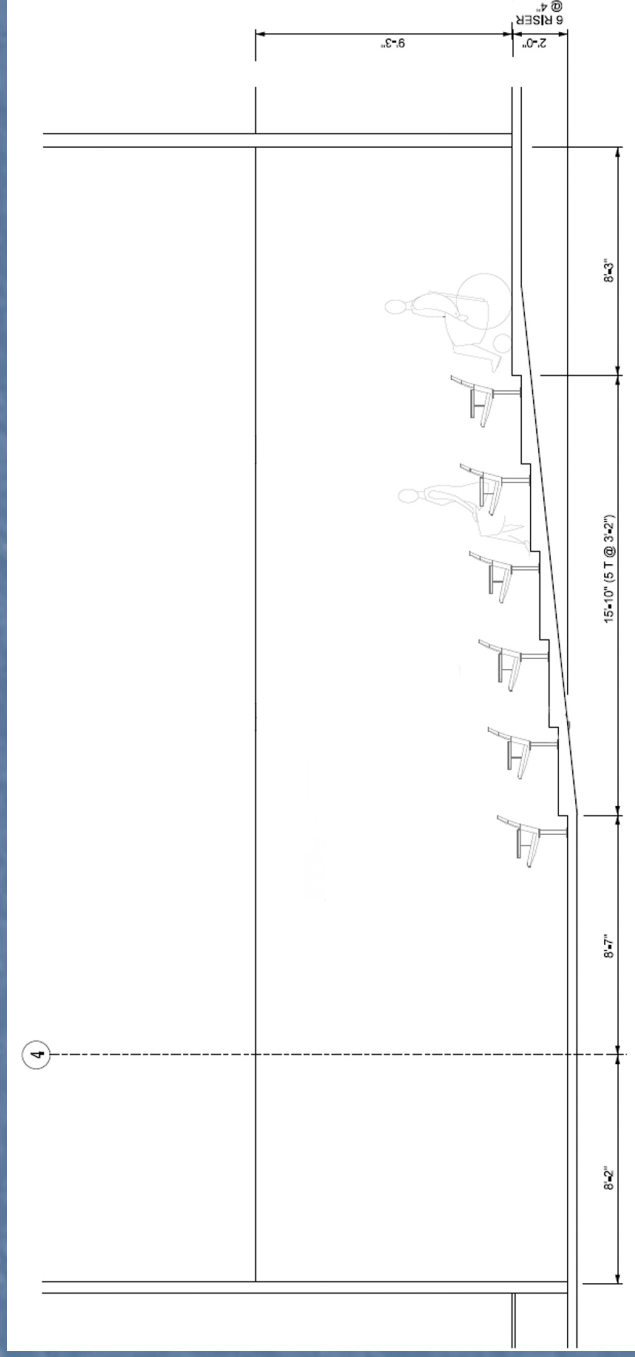
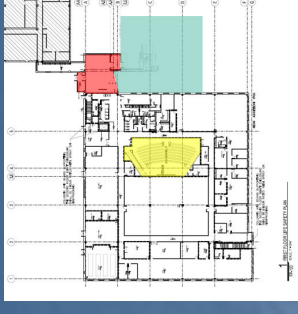
- Video screen
- Speaker area

### Materials (Reflectance)

- Floor – Broadloom carpet (20%)
- Acoustical wall covering (30%)
- Acoustical ceiling tile (85%)

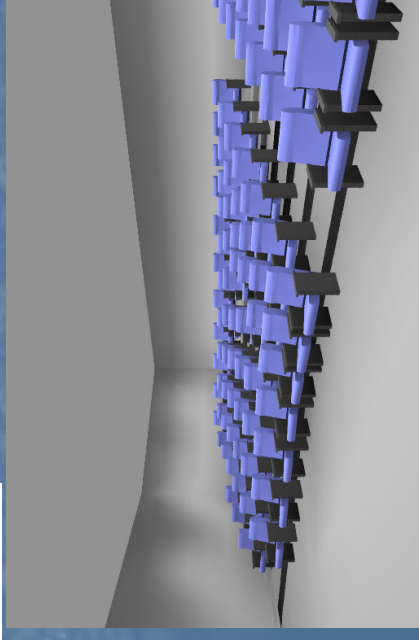
# Auditorium

## Auditorium (Current Design)



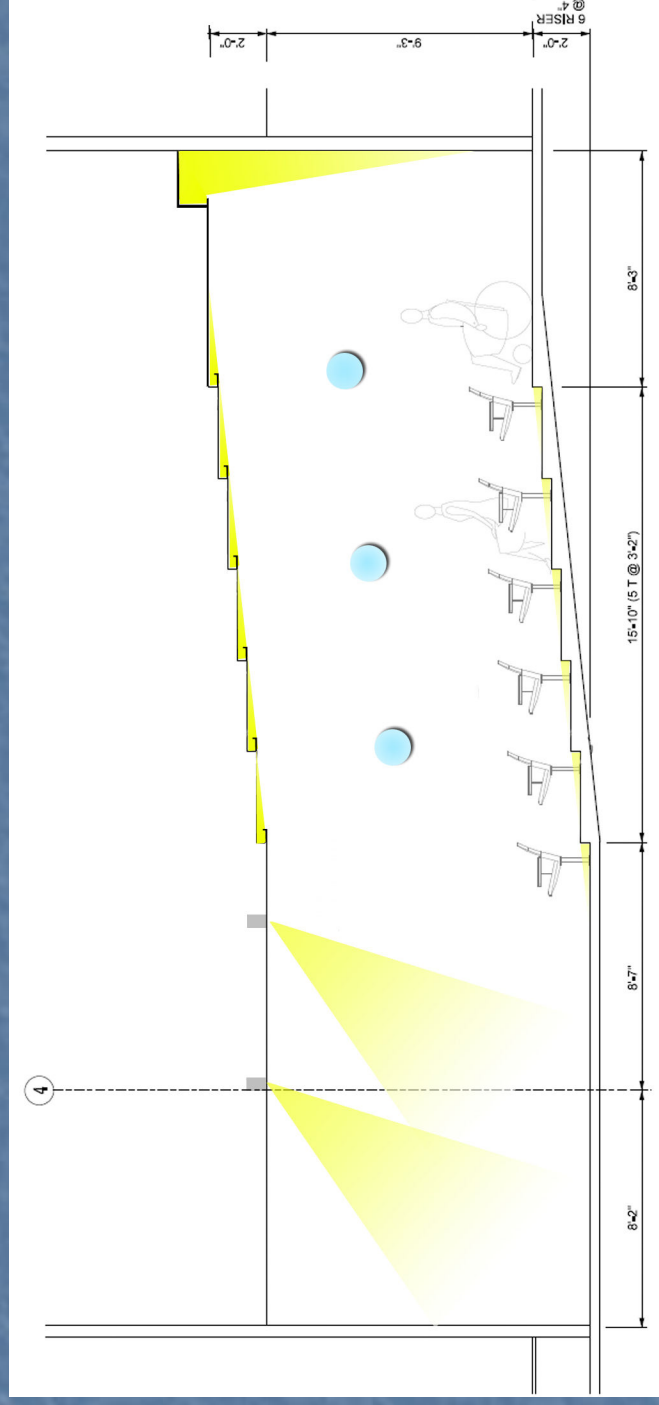
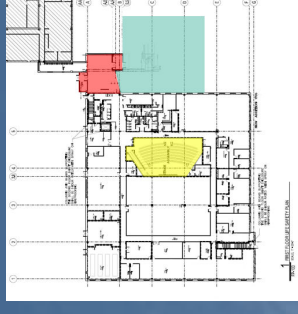
### Heights

- Floor to ceiling 9'-3" at lowest point
- Floor to ceiling 11'-3" at highest point
- Plenum 5' available below beams



# Auditorium

## Auditorium (Revised Design)

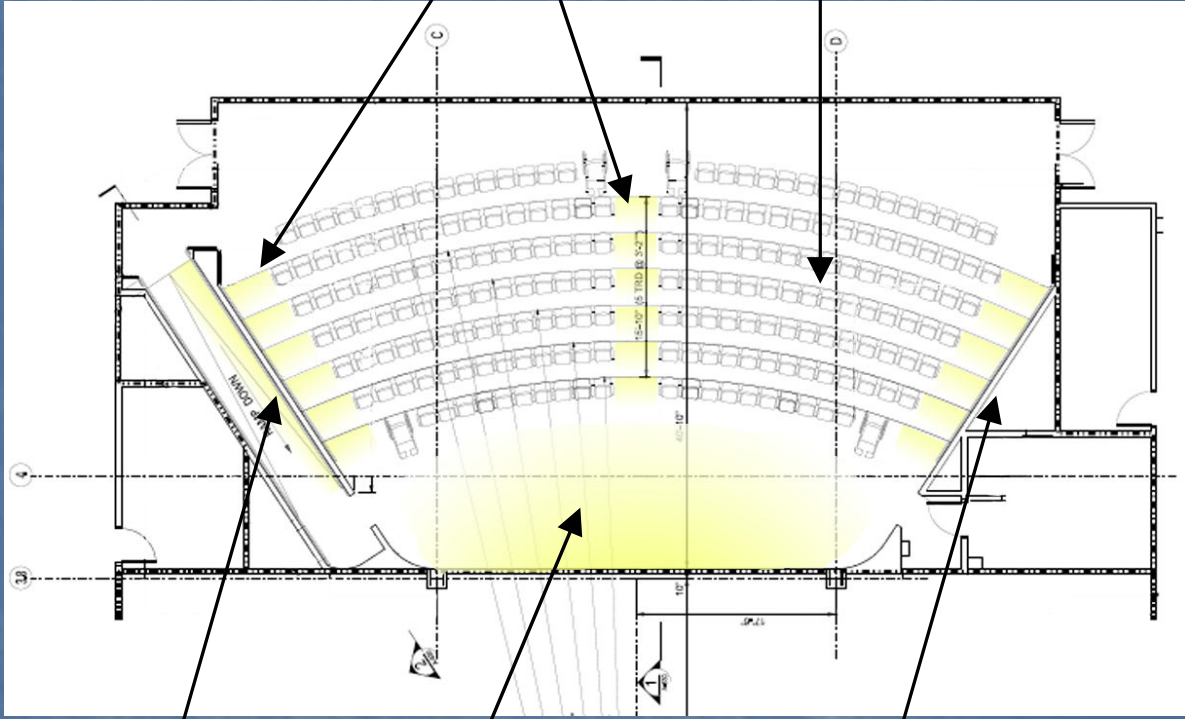
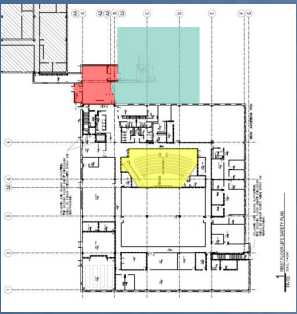


### Revisions

- Added covers that follow the curvature of the steps
- Added in a cove along back wall for wallwash or spot lights
- At highest point, still 2' of plenum space available

# Auditorium

## Auditorium



Decorative wall sconces

Spotlights on speaker area

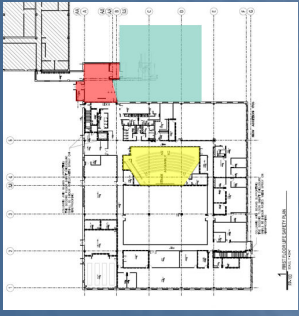
Step lighting for egress

Downlights as needed for reading and writing in seating area

Decorative wall sconces

# Auditorium

Auditorium



Spotlights on front area



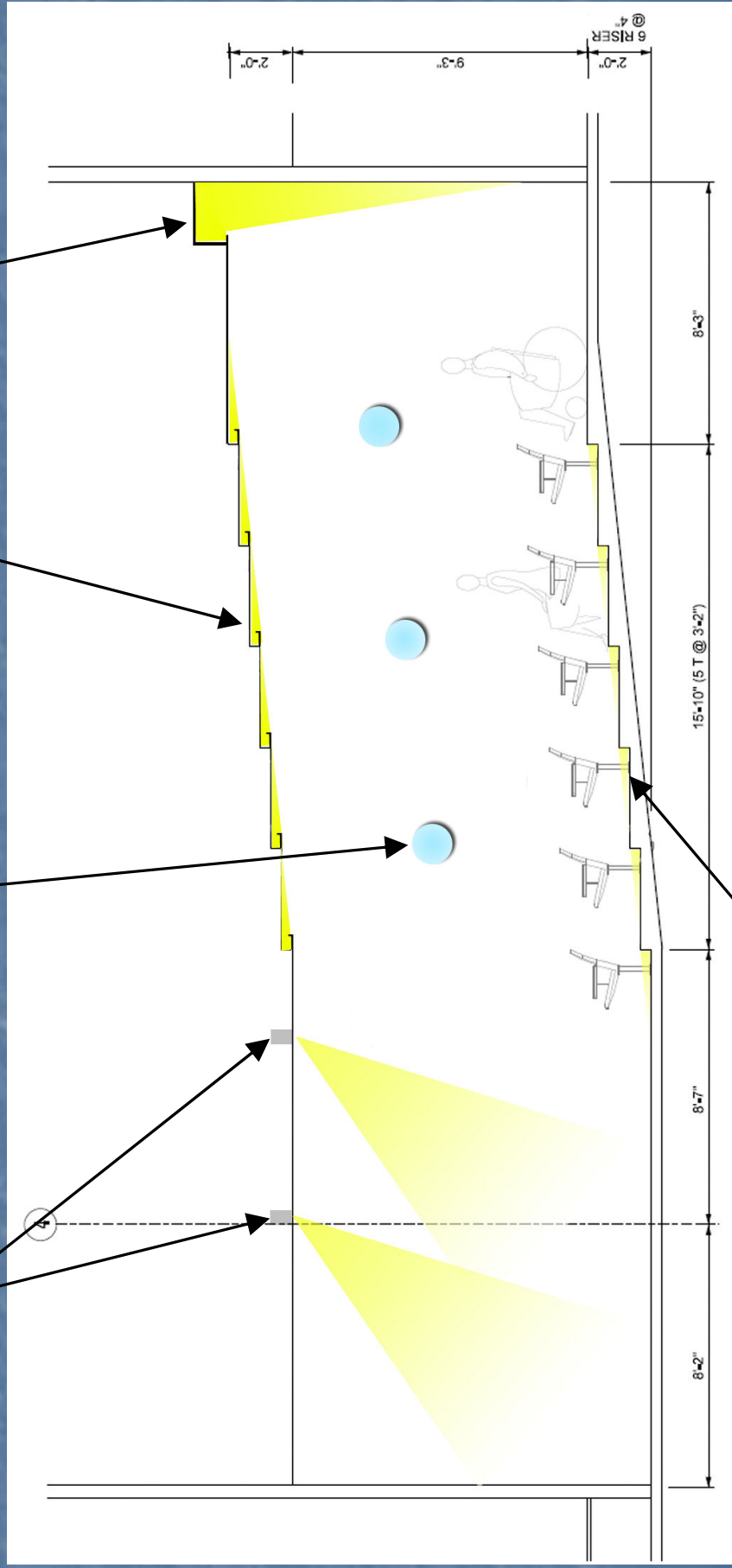
Decorative wall sconces



Cove lighting



Cove and Spotlight wallwash



Step lighting for egress

# Auditorium

## Auditorium

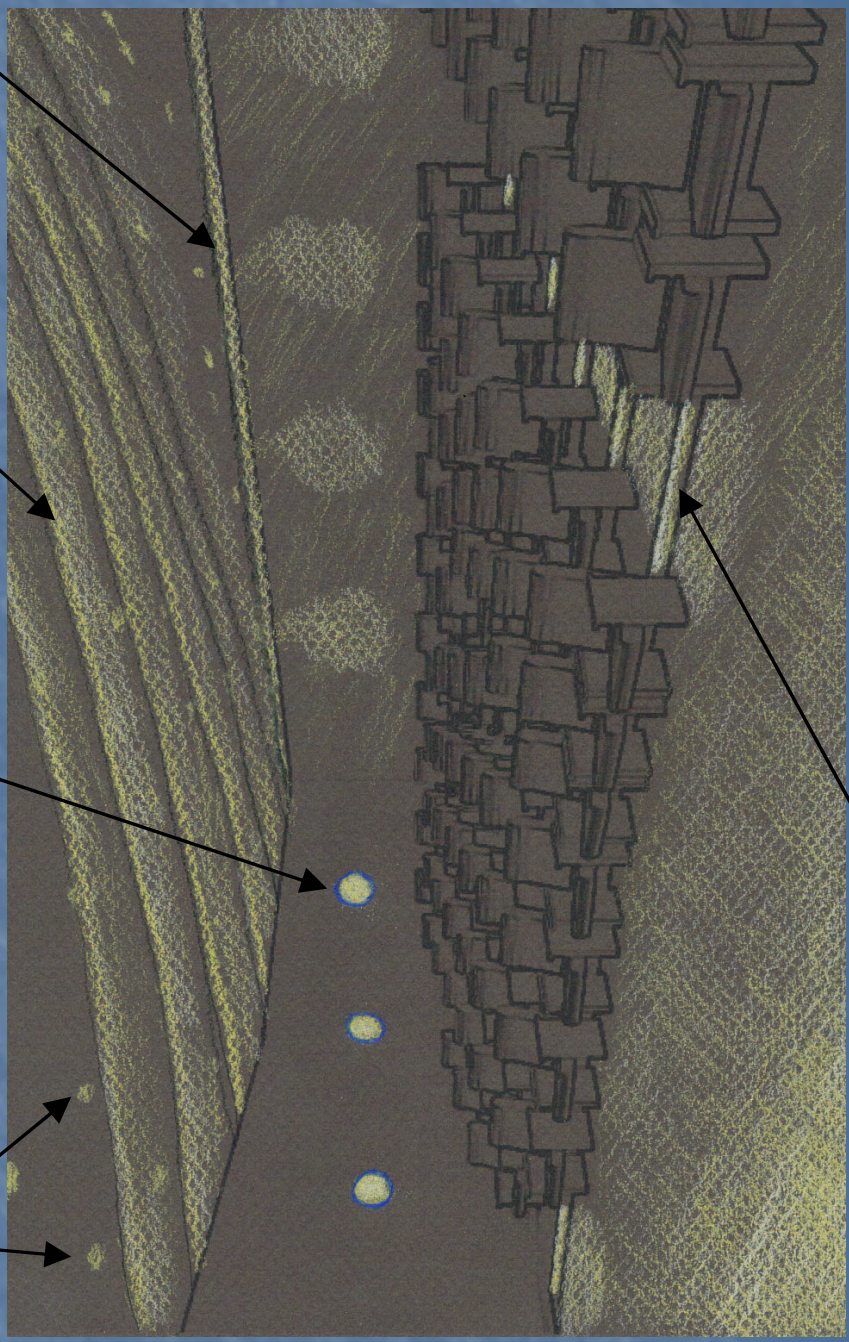


Spotlights on front area

Cove lighting

Decorative wall sconces

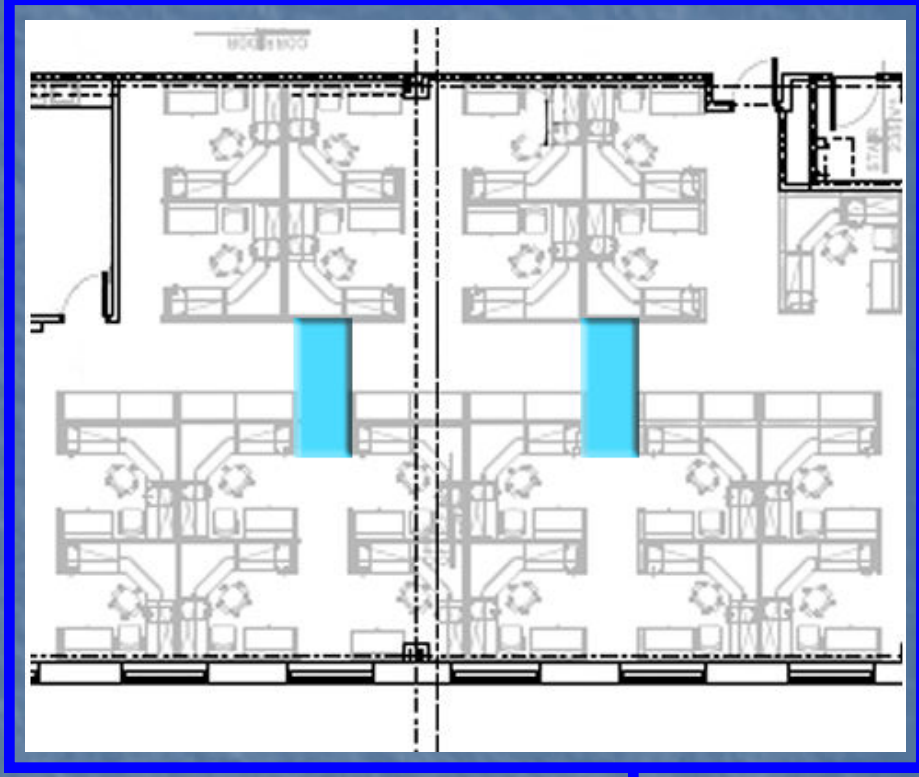
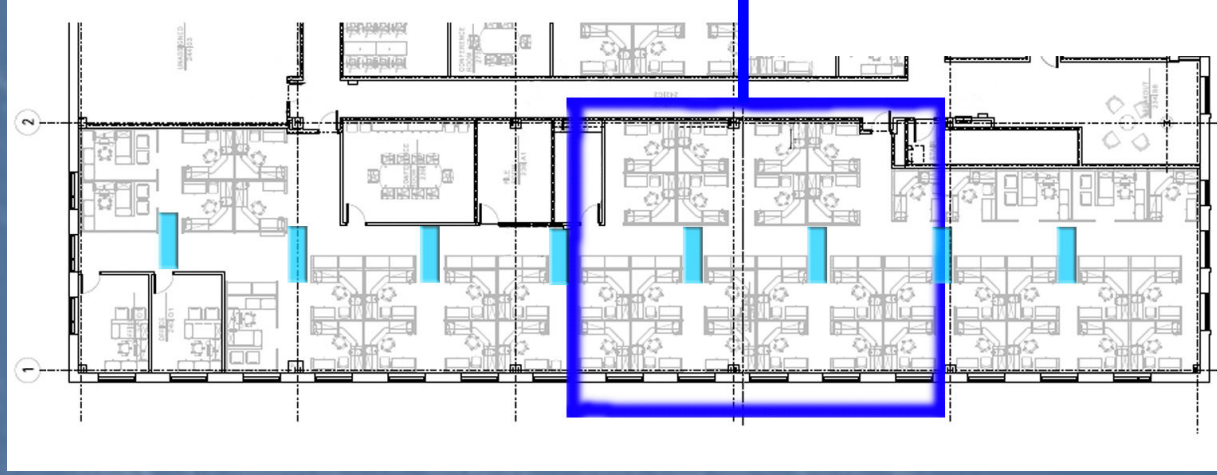
Cove and Spotlight wallwash



Step lighting for egress

# Office

## Office



### Function

- Office workstations

### Points of interest

- Cubicles
- Daylight integration
- Artwork

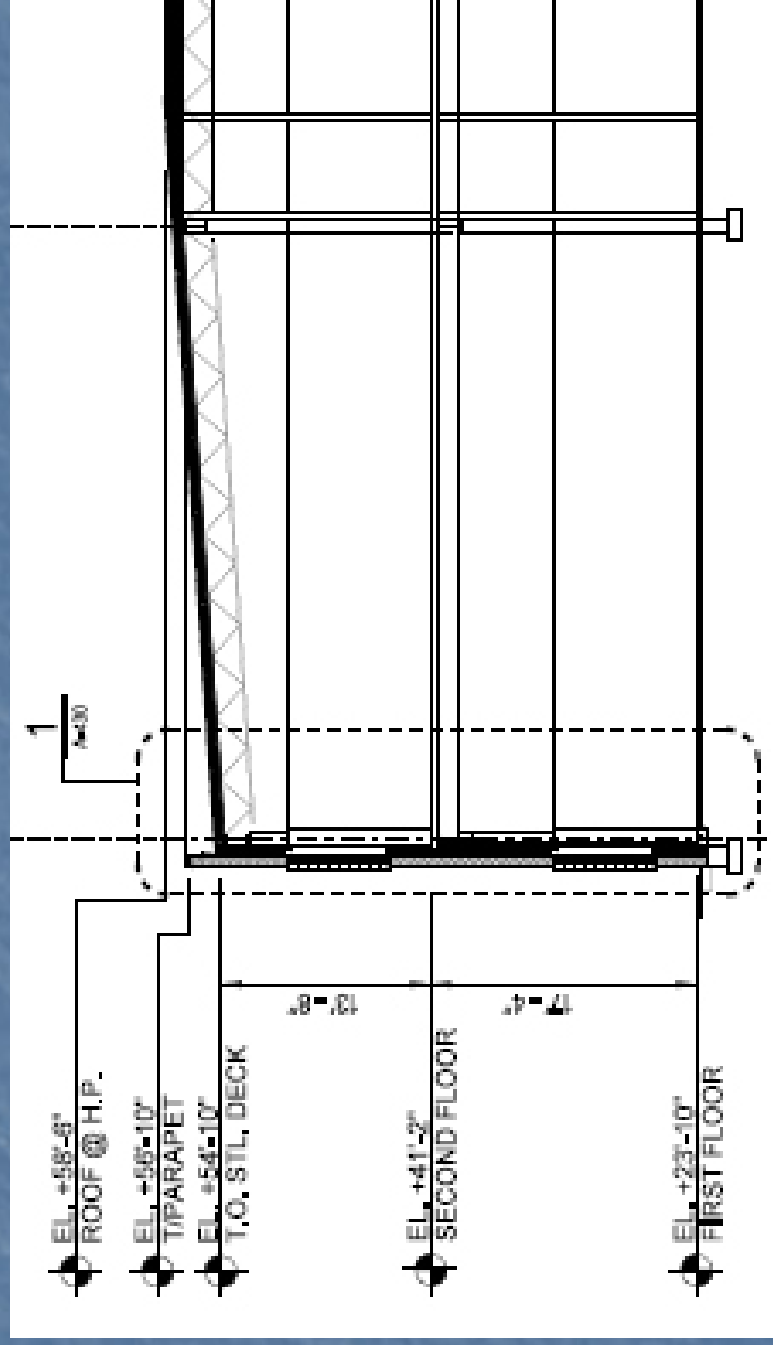
### Materials (Reflectance)

- Floor – Broadloom carpet (20%)
- Walls – Painted (50%)
- Ceiling – Acoustical Tile (85%)



# Office

## Office

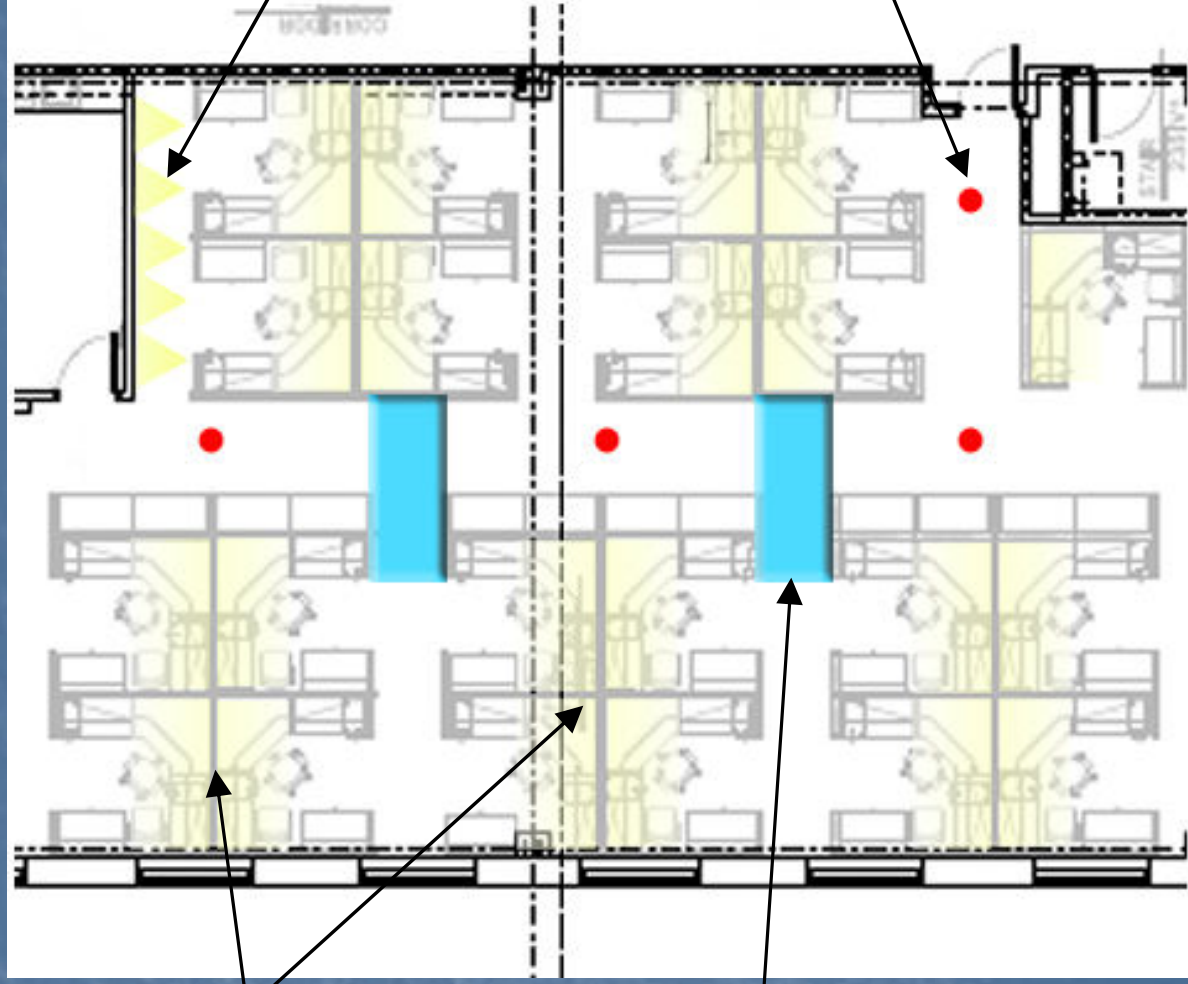


### Heights

- Floor to window 4'
- Floor to ceiling 10'
- Plenum 3.5' at lowest point
- Plenum 5.5' at highest point

# Office

# Office



Task lighting attached to cubicle with upright component

Add skylights in for a more uniform daylight distribution and energy savings

Wallwash on pictures

Emergency downlights for egress

# Office

## Office



- Two lamp direct/indirect light attached to cubicle
- Photosensor/Occupancy sensor for uplight component of fixture for general illumination and dimming of the office area
- Cubicle occupancy sensor control of downlight component in each individual cubicle
- This lighting system would also allow the possibility of removing the ceiling and using an underfloor HVAC system

# Office

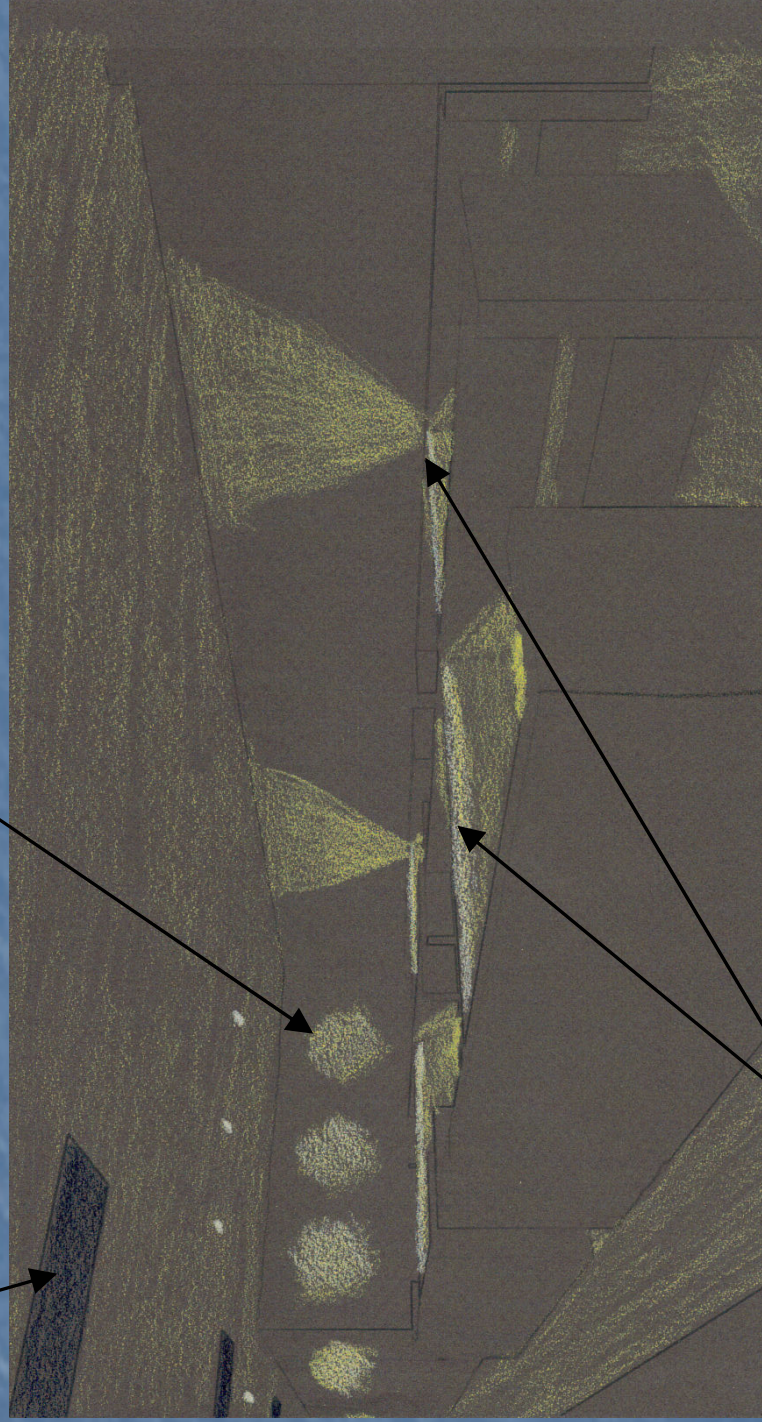
Add skylights in for a more uniform daylight distribution

Wallwash on pictures

Task lighting attached to cubicle with upright component



Office



# Questions??

