

# OAK LODGE AND GLADSTONE COMMUNITY PROJECT

## TECHNICAL ANALYSIS



**NORTH CLACKAMAS**  
PARKS & RECREATION DISTRICT

**opsis**

# **PROJECT TEAM**

**OAK LODGE AND GLADSTONE  
COMMUNITY PROJECT**

# PROJECT TEAM

## OAK LODGE AND GLADSTONE COMMUNITY PROJECT

Architect | **Opsis Architecture**

Library Architect | **Johnston Architects**

Landscape Architect | **Lango Hansen**

Civil Engineer | **KPFF**

Structural Engineer | **Catena**

Mech / Electrical Engineer | **Interface**

Public Engagement | **jla Public Involvement**

Recreation & Operations | **Ballard\*King**

Historic | **Architectural Resources Group**

Land Use | **The Bookin Group**

Cost Estimating | **ACC Cost Consultants**

Traffic | **Global Transportation Eng.**

# **BUILDING ASSESSMENT**

## **CONCORD PROPERTY**

# BUILDING ASSESSMENT

## CONCORD PROPERTY

- 46,410 sf, two stories; 5.97 acres
- Originally built 1936; north wing 1948
- URM exterior bearing walls; interior wood bearing walls and steel columns
- Windows primarily aluminum
- Asphalt shingle / built-up roofing
- Interior gypsum, lath & plaster, wood paneling, built-in storage
- Flooring – carpet / vinyl composition tile (VCT), exposed concrete



# BUILDING ASSESSMENT

## CONCORD PROPERTY

- **Mechanical** – cast iron natural gas steam boiler
  - No ventilation
  - No cooling
- **Electrical** – minimal capacity
  - Panelboards vary in age / condition
  - Limited emergency power
  - Lighting:
    - Interior – fair (not energy efficient)
    - Exterior - poor
- **Plumbing** – galvanized / cast iron
- **Fire Alarm** / suppression system
- **Data** / telecom – updated WiFi



# BUILDING ASSESSMENT

## CONCORD PROPERTY

- Limited **seismic** work in 2010; determine level of future work
- Asbestos, lead and PCBs /mercury – **abatement** will be required
- **Accessibility**
  - Elevator at south entrance added in 2010
  - Challenges:
    - Main entry
    - Site / parking
    - Interior



# **SEISMIC ASSESSMENT**

## **CONCORD BUILDING**

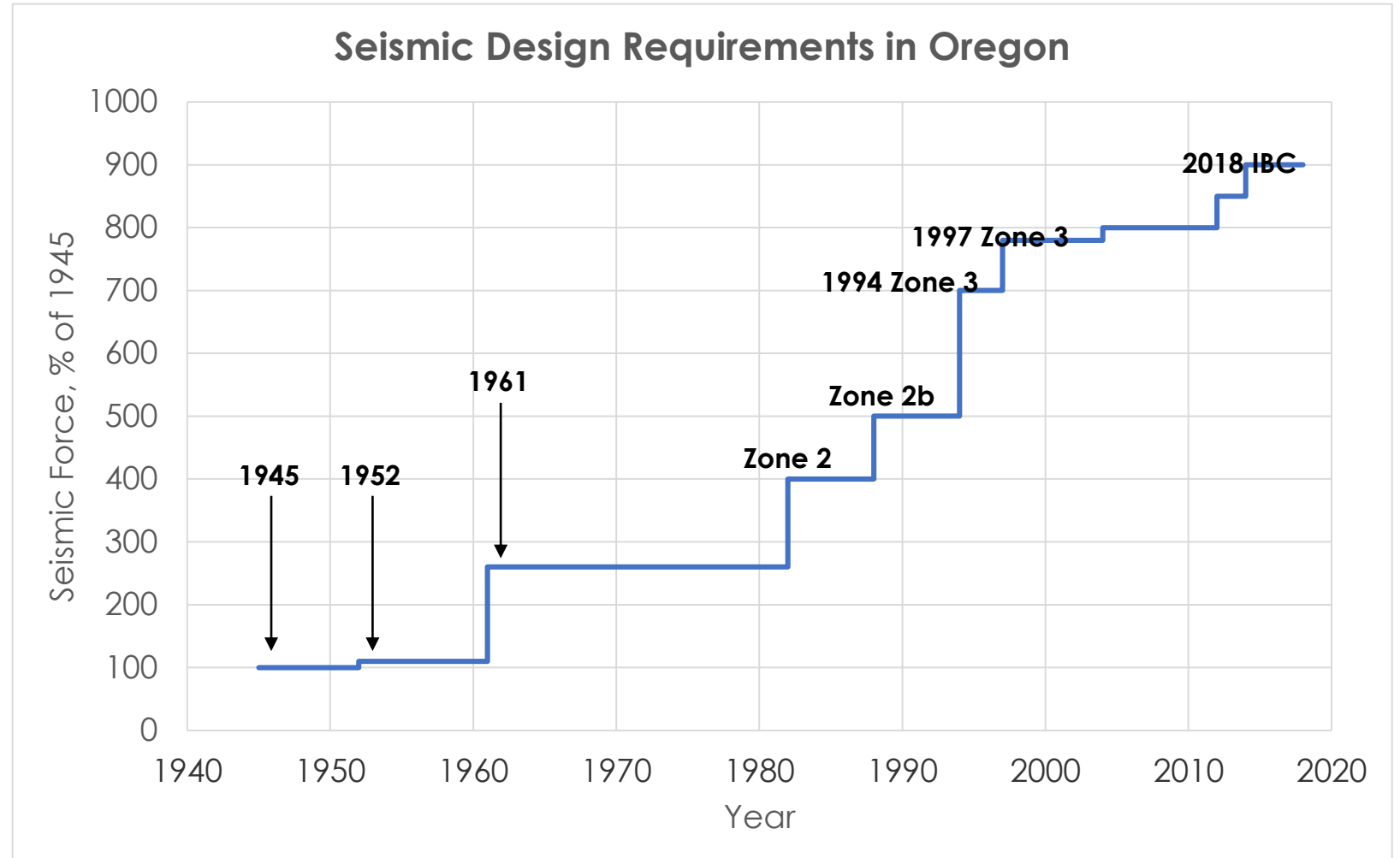


**STRUCTURAL  
ENGINEERING TERMS**  
CONCORD BUILDING

# CONCORD BUILDING

## SEISMIC ANALYSIS

**SEISMICITY:  
A REFESHER**



# CONCORD BUILDING

## SEISMIC ANALYSIS

OPERATIONAL



IMMEDIATE OCCUPANCY



LIFE-SAFETY



NEAR COLLAPSE



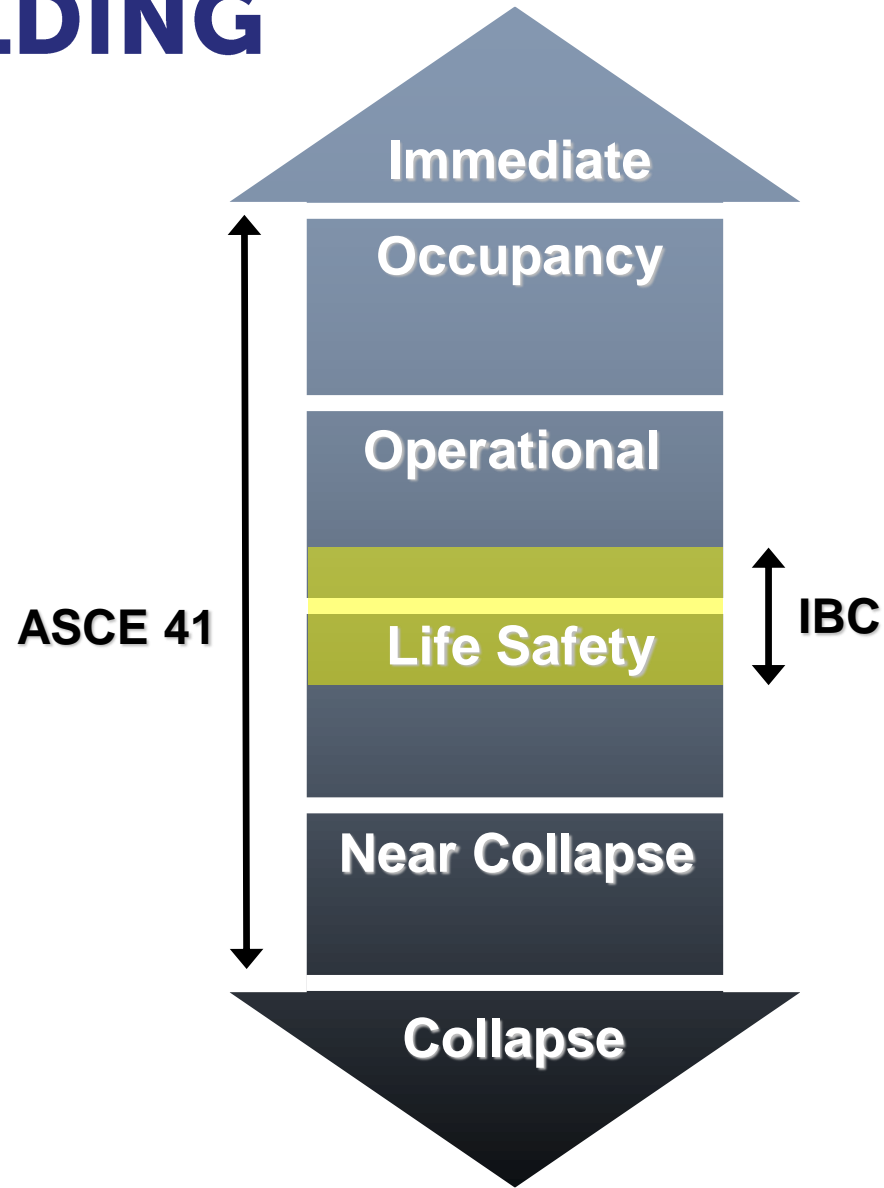
COLLAPSE



SEISMICITY:  
A REFESHER

# CONCORD BUILDING

## SEISMIC ANALYSIS



**SEISMICITY:  
A REFESHER**

# CONCORD BUILDING

## SEISMIC ANALYSIS

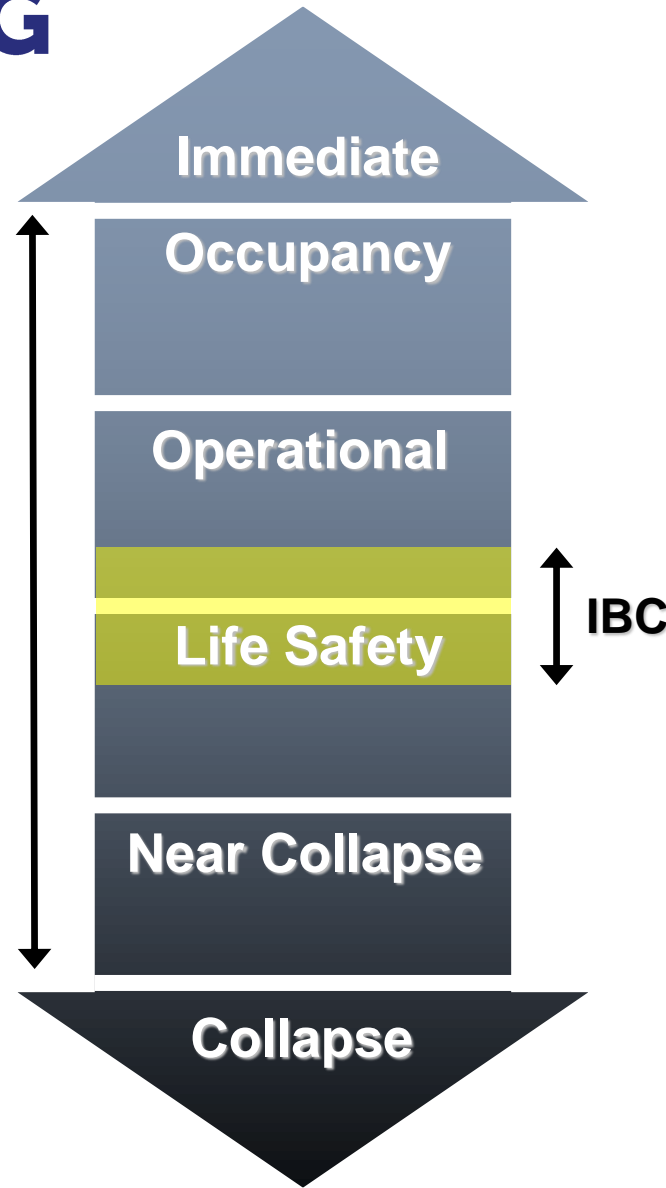
Option 3 – Enhanced Grant Option

ASCE 41

Option 2 – Enhanced Life Safety

Option 1 – Existing Building

**SEISMICITY:  
A REFESHER**



# **CONCORD BUILDING**

## **SEISMIC ANALYSIS**

### **PERFORMANCE OPTION 1**

**EXISTING BUILDING - LEAVE AS IS**

# CONCORD BUILDING

## SEISMIC ANALYSIS

**PERFORMANCE OPTION 1:**  
**LEAVE AS IS**



1 | UPPER LEVEL FLOOR PLAN  
A1.11 1/8" = 1'-0"



# **CONCORD BUILDING**

## **SEISMIC ANALYSIS**

### **PERFORMANCE OPTION 2**

**REDUCE THE RISK OF COLLAPSE**

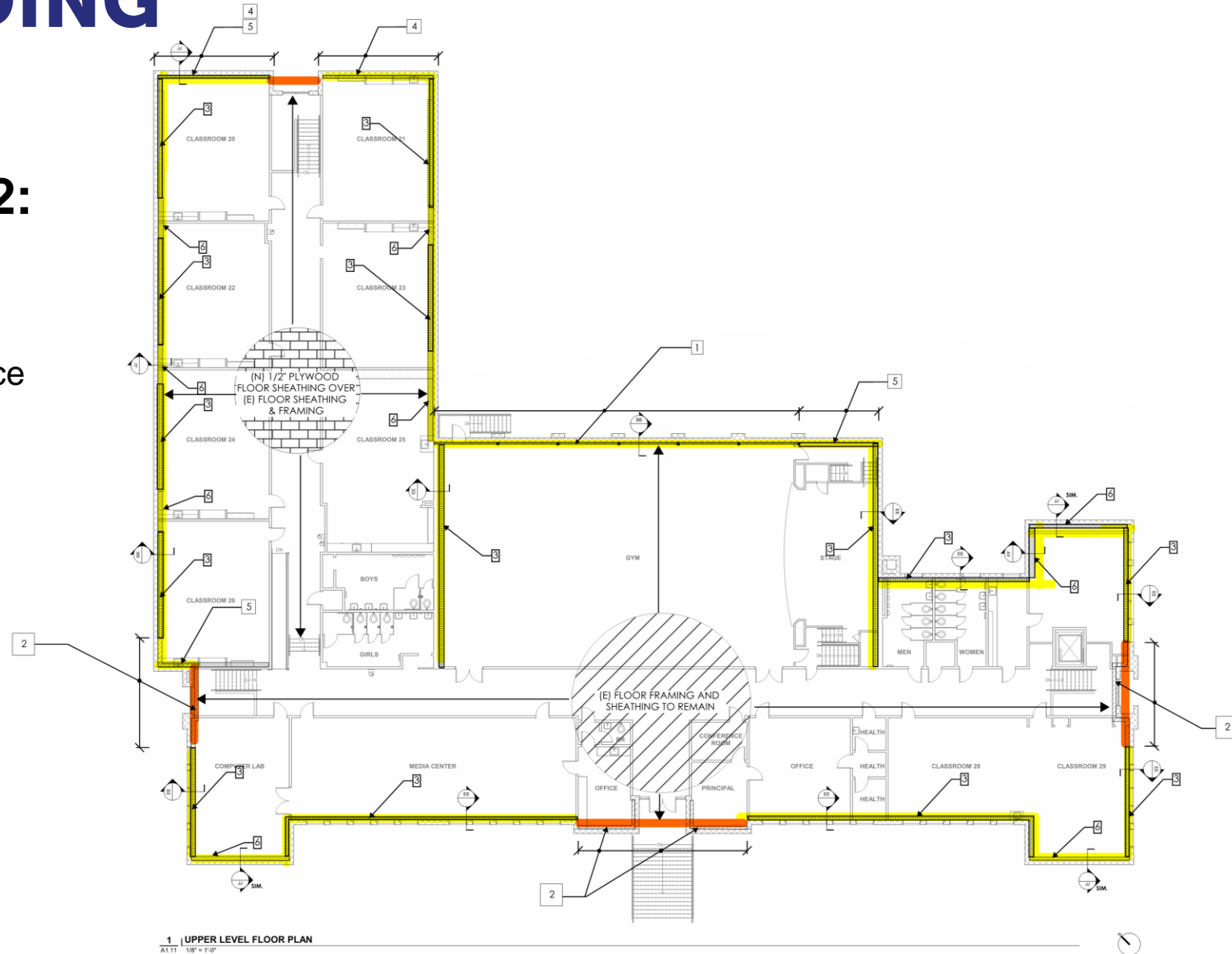


# CONCORD BUILDING

## SEISMIC ANALYSIS

### PERFORMANCE OPTION 2: REDUCE THE RISK OF COLLAPSE

- Anchor metal stud furred wall to brace URM walls against collapse.

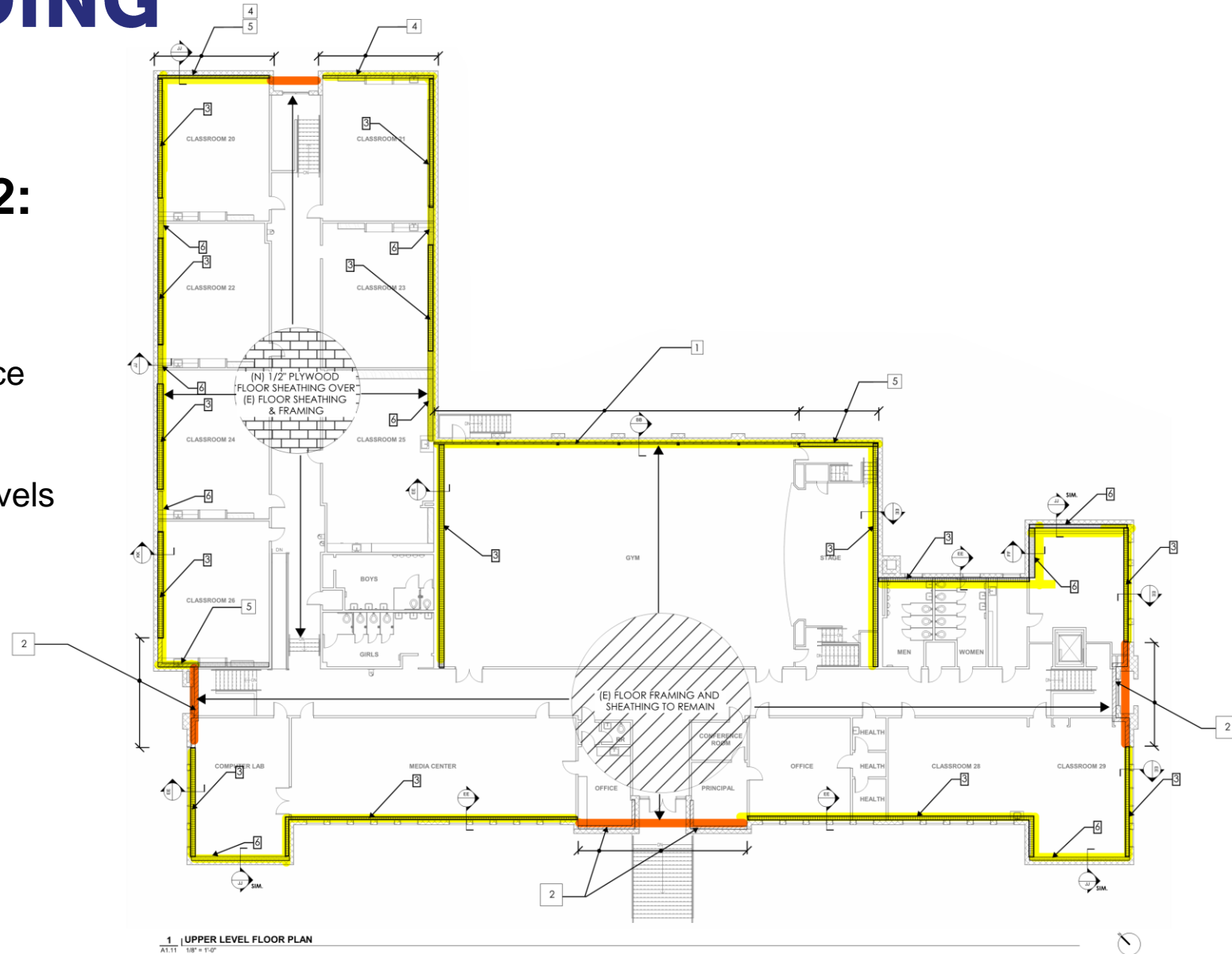


# CONCORD BUILDING

## SEISMIC ANALYSIS

### PERFORMANCE OPTION 2: REDUCE THE RISK OF COLLAPSE

- **Anchor metal stud furred wall** to brace URM walls against collapse.
- **Anchor URM walls** to floor and roof levels to prevent collapse of roof and floor structures.

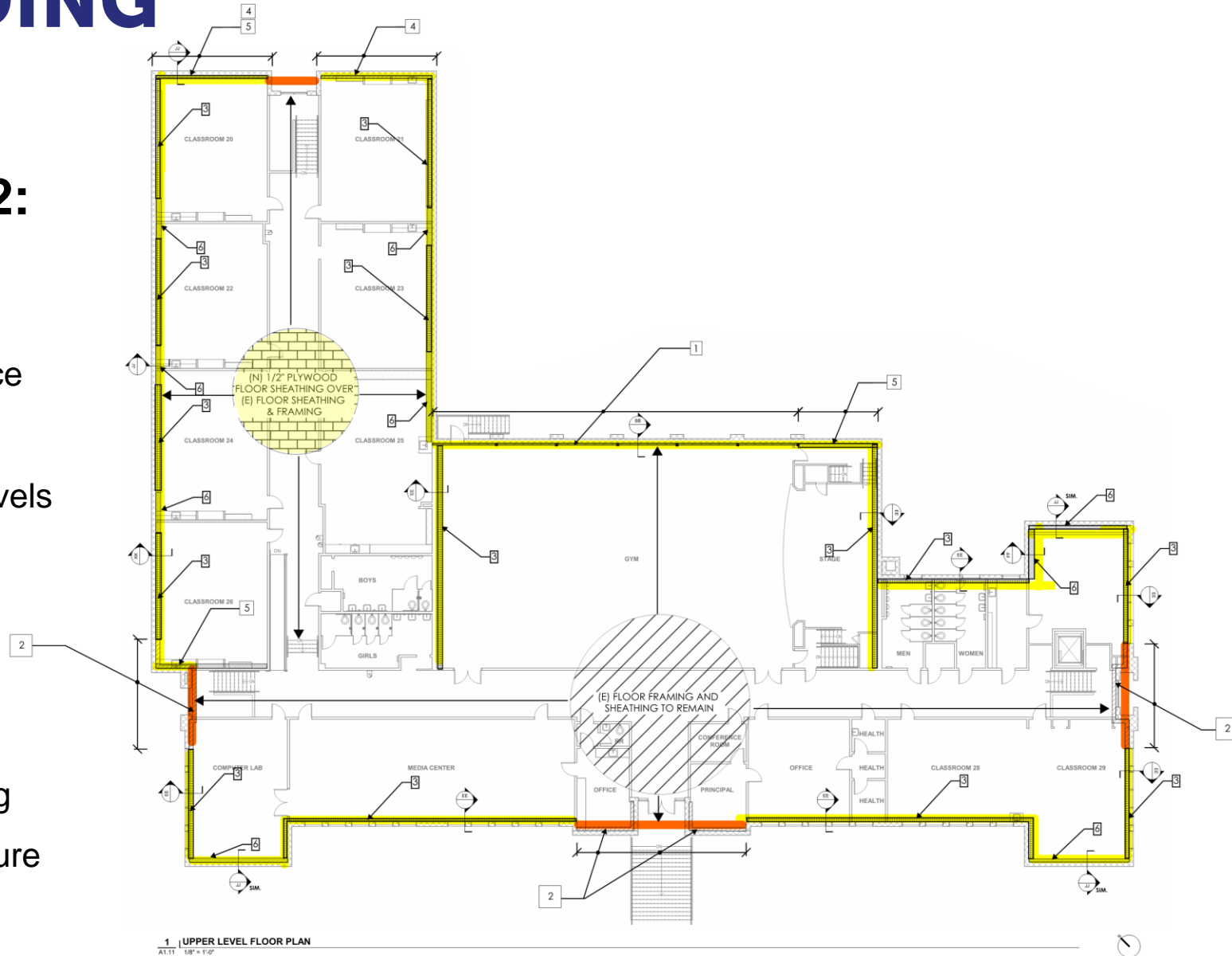


# CONCORD BUILDING

## SEISMIC ANALYSIS

### PERFORMANCE OPTION 2: REDUCE THE RISK OF COLLAPSE

- Anchor metal stud furred wall to brace URM walls against collapse.
- Anchor URM walls to floor and roof levels to prevent collapse of roof and floor structures.
- Add plywood sheathing to north wing floor
- Add plywood sheathing to gym ceiling
- Add plywood sheathing to roof structure



# **CONCORD BUILDING**

## **SEISMIC ANALYSIS**

### **PERFORMANCE OPTION 3**

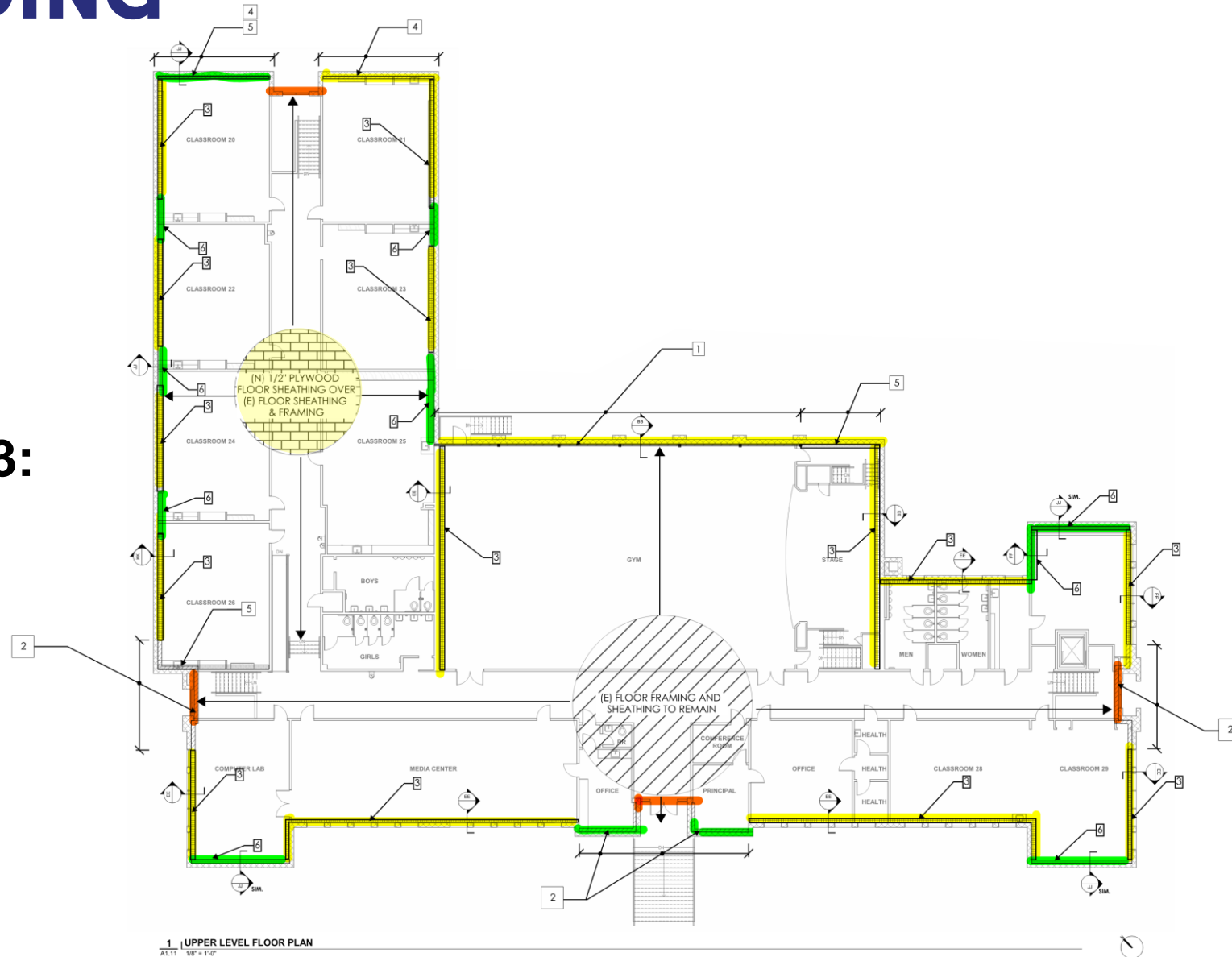
**IMPROVED PERFORMANCE**

# CONCORD BUILDING

## SEISMIC ANALYSIS

### PERFORMANCE OPTION 3: IMPROVED PERFORMANCE

- Includes all Performance Option 2 Elements
- Add shotcrete (sprayed concrete) shear walls in strategic locations throughout the building.



# CONCORD BUILDING

## SEISMIC ANALYSIS



# CONCORD BUILDING

## SEISMIC ANALYSIS

Option 3 – Enhanced Grant Option

Option 2 – Enhanced Life Safety

Option 1 – Existing Building

**SEISMICITY:  
A REFESHER**



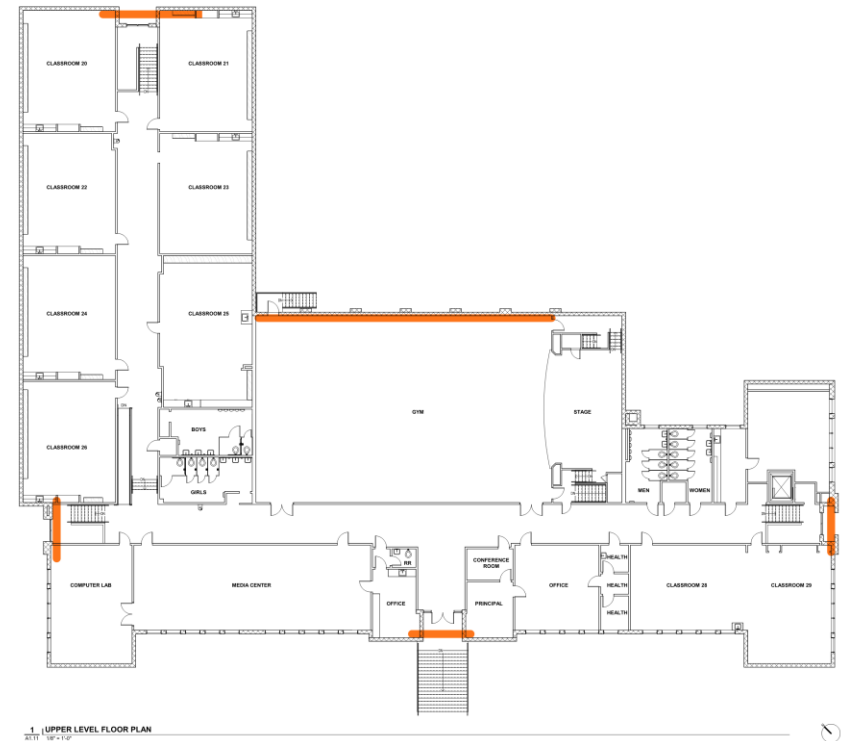
# CONCORD BUILDING

## SEISMIC ANALYSIS

**OPTION 1:**  
**EXISTING LIMITED SEISMIC STRENGTHENING**  
**(2002)**

**CURRENT CONDITION**

Meets current code requirements = **\$ 0**





# CONCORD BUILDING

## SEISMIC ANALYSIS

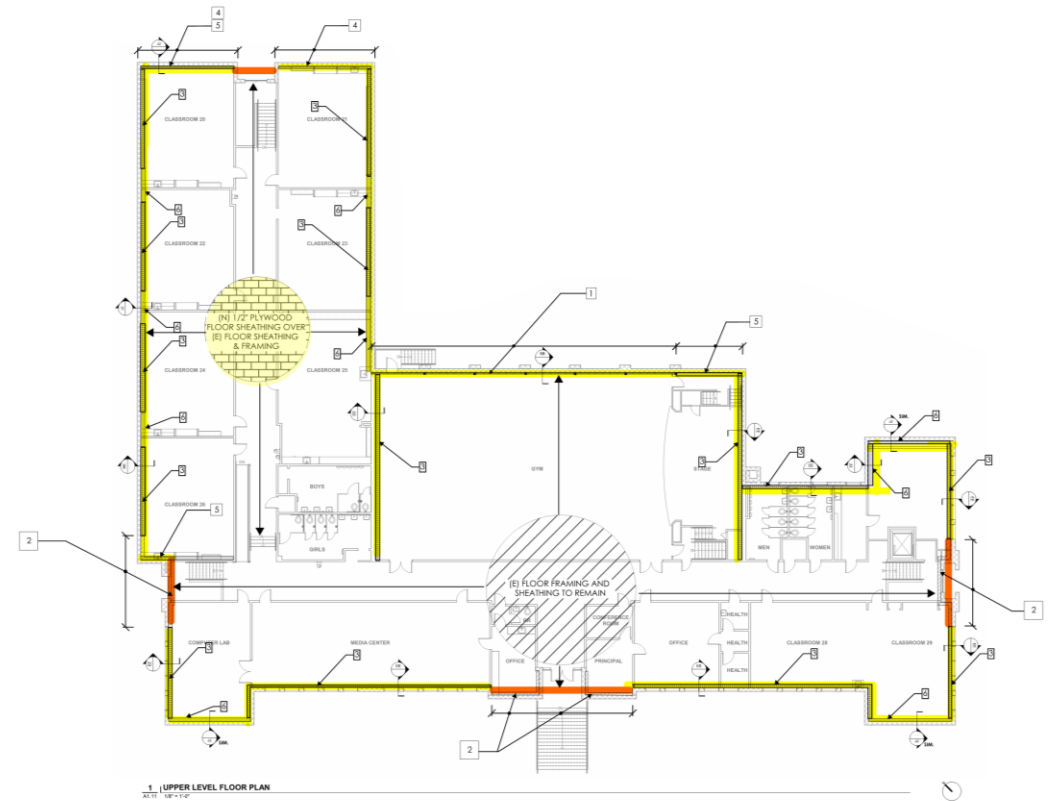
### OPTION 2: ENHANCED LIFE SAFETY SEISMIC RETROFIT DEMO AND SEISMIC STRENGTHENING ONLY

Direct (hard) cost: = \$509,000

Escalated to 2022

(Construction start): = \$244,000

**TOTAL = \$753,000**



# CONCORD BUILDING

## SEISMIC ANALYSIS

### OPTION 3: ENHANCED GRANT OPTION SEISMIC RETROFIT DEMO AND SEISMIC STRENGTHENING ONLY

Direct (hard) cost: = \$476,000

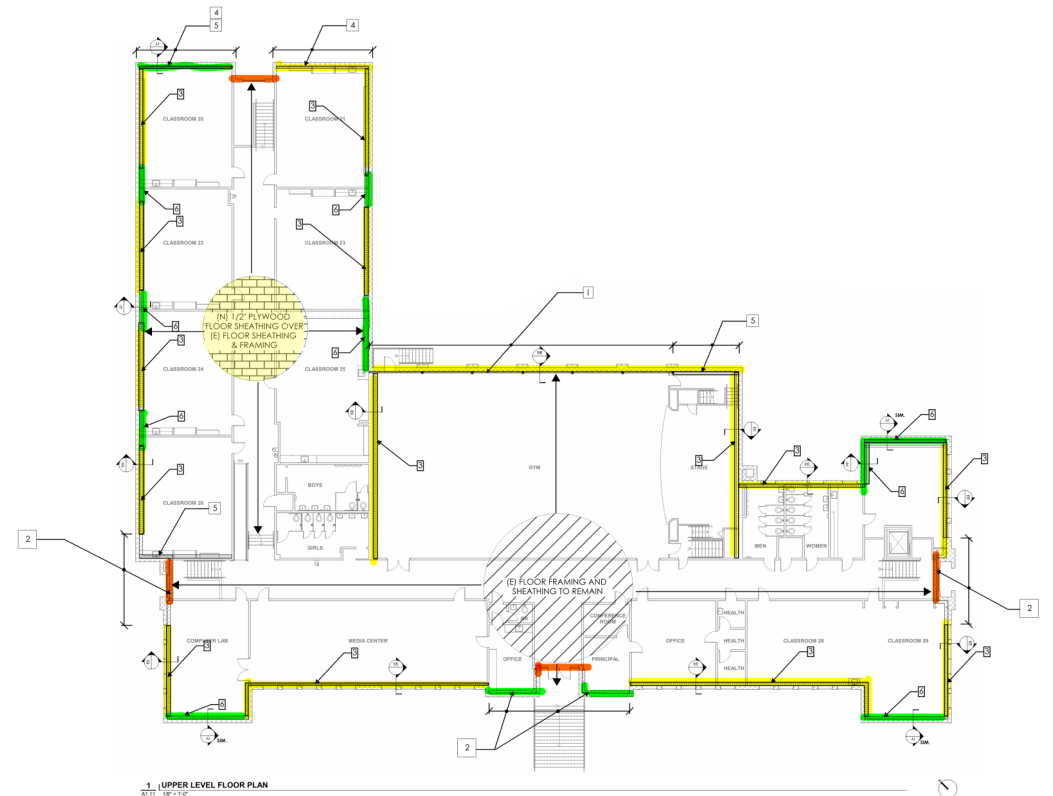
Escalated to 2022

(Construction start): + \$228,000

= \$704,000

REQUIRES OPTION 2 + \$753,000

**TOTAL = \$1,457,000**



# CONCORD BUILDING

## SEISMIC ANALYSIS

### **OPTION 1: EXISTING LIMITED SEISMIC STRENGTHENING**

**= \$0 DIRECT SEISMIC COST ONLY**

### **OPTION 2: ENHANCED LIFE SAFETY**

**= \$753,000 DIRECT SEISMIC COST ONLY**

### **OPTION 3: ENHANCED GRANT OPTION**

**= \$1,457,000 TOTAL DIRECT SEISMIC COST ONLY**

# **SEISMIC QUESTIONS?**

**CONCORD PROPERTY**

# **HISTORIC ASSESSMENT**

## **CONCORD PROPERTY**

# **HISTORIC TERMS**

## **CONCORD PROPERTY**

# CONCORD BUILDING

## HISTORIC RESOURCE ASSESSMENT

- Building Description
- Summary of Historic Significance and Status
- Character-defining Features
- Historic Resource Review Considerations



Architectural  
Resources Group

Architecture  
Planning  
Conservation



### Concord School Historic Resource Assessment

*Prepared for*

Opsis Architecture  
Portland, Oregon

*Prepared by*

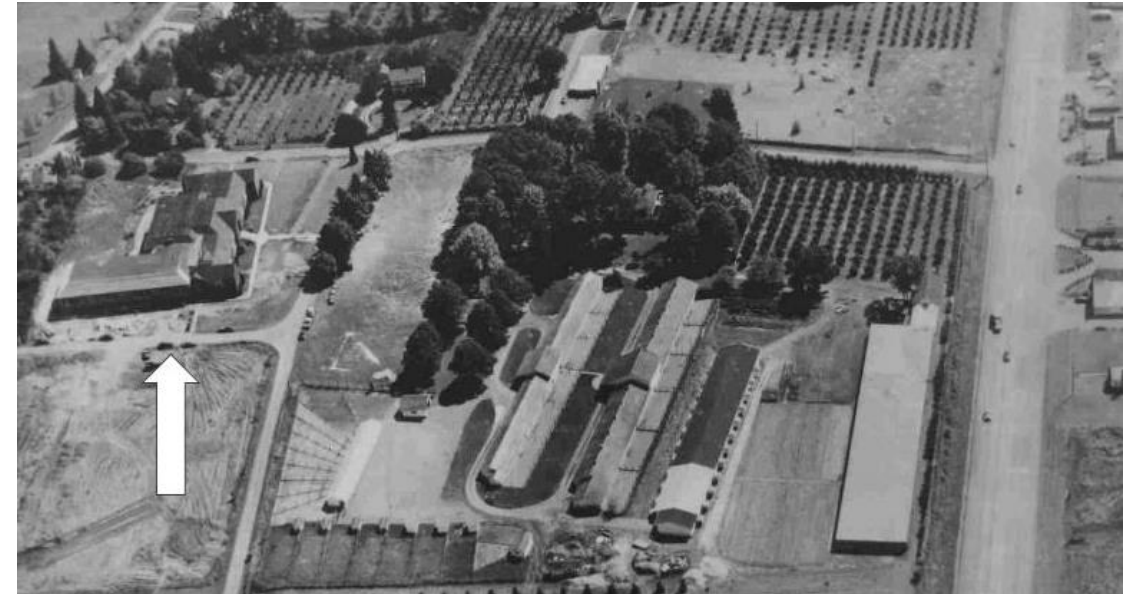
Architectural Resources Group, Inc.  
Portland, Oregon

January 2020

# CONCORD BUILDING

## HISTORIC SIGNIFICANCE AND STATUS

- Constructed 1936 (Architect: Francis Marion Stokes)
- Wing added 1948 (Architect: Stokes & Allyn)
- Closed 2014
- Found by SHPO to be National Register eligible





# CONCORD BUILDING

## CHARACTER-DEFINING FEATURES

**Definition:** any element that is representative of a building's function, type, or architectural style.

### Concord Examples:

- Rug-faced red brick veneer
- Gabled end bays with basketweave brick veneer
- Window openings (most windows have been replaced)
- Original multi-light transom
- Wood wainscot, stage and proscenium in gymnasium/auditorium



# CONCORD BUILDING

## HISTORIC RESOURCE REVIEW

Because Concord School is:

- (1) publicly owned and
- (2) has been determined NR-eligible,

proposed changes to the property will be reviewed by SHPO (ORS 358.653)



*Nature*  

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**HISTORY**  

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*Discovery*

# CONCORD BUILDING

## ANTICIPATED AREAS OF REVIEW FOCUS

- Changes at main entry
- Exterior addition
- Window replacement
- Treatment of gymnasium/auditorium
- Treatment of other interior spaces



# **HISTORIC QUESTIONS?**

**CONCORD PROPERTY**