REQUEST FOR QUALIFICATIONS
FOR ENGINEERING/ARCHITECTURAL SERVICES

EXHIBIT A

SEISMIC EVALUATION REPORT



Pleasant Hill School District

Seismic Assessment for Pleasant Hill High School Gymnasium
84455 N Enterprise Rd.
Pleasant Hill, OR 97455

Prepared for:
Jim Crist
Superintendent

January 5, 2024
23030.00

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May 9, 2006
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EXPIRES: 6/30/2025

Project Summary Information						
Building Part	*Building Part Name*	*Included in Retrofit*	*Year Built*	*Building Type**	*Nonstructural Retrofits included in Scope Y/N**	*Previous Seismic Retrofit Y/N* (year if Y)*
A	Auxiliary Gymnasium	No	1961			
B	High School Gymnasium	Yes	1961	W2 / URM	Yes	No
C	Music Center/ Cafeteria	No	1961			
D	Administration Building	No	1961			
E	Library	No	1961			
F	Classroom Building	No	1964			
G	Classroom/ Shop Building	No	1964			
H	Weight Room/Team room	No	1974			
I	Classroom Building	No	1967			
J	Forestry Building	No	1967			
*Entries required **ONLY** for building parts included in proposed seismic retrofit. If building part was previously or is currently being retrofitted, please list the building part's Risk Category and retrofit design Performance Objective, if known.						
Nonstructural deficiencies posing life safety risk **MUST** be included in the scope of work and budget.						
Seismic fragility inputs for existing buildings with **previous seismic retrofits MUST** be adjusted to reflect previous seismic retrofit measures completed for at building part.						
Total Retrofit Cost	$2,499,940					
Retrofit Square Feet	18,600 SF					
Retrofit Cost Per Square Feet	$134.41					**Yes or No?**
Is the campus within a tsunami**, FEMA flood zone, landslide/slope instability, liquefaction potential or other high hazard area? **If so, provide documentation (e.g. the Oregon Statewide Hazards Viewer by DOGAMI).** ** Projects within a Tsunami Design Zone (as defined in Application Guidance Packet section 2.D.16) require consultation with DOGAMI prior to application submittal. Applicant shall include such documentation with the application.						**No**

Engineering Report Checklist		
☒	Engineering Report Cover Page	
☒	Project Summary Page	Page i
☒	Building Parts Identification	Page 5
☒	Statement of the Performance Objective	Page 2
Summary of Deficiencies		
☒	Structural Seismic Deficiencies	Page 7
☒	Nonstructural Seismic Deficiencies	Page 10
Summary of Mitigation/Retrofit		
☒	Structural Mitigation/Retrofit	Page 7
☒	Nonstructural Mitigation/Retrofit	Page 10
Summary Construction Cost Estimate		
☒	Direct Cost	Page 11
☒	Indirect Soft Cost	Page 11
☒	Certification Statement by Engineer	Page 13
ASCE 41-17 Tier 1 Checklist		
☒	Basic Configuration Checklist	Appendix E
☒	Building System Structural Checklist	Appendix E
☒	Nonstructural Checklist	Appendix E
☒	**Retrofit Drawings & Sketches**	Appendix B
☒	**DOGAMI or Geotechnical Report**	Appendix F
☒	**Itemized Construction Cost Estimate**	Appendix C

Table of Contents

1. Project Background 1
2. Candidate Qualifications 1
3. Evaluation Criteria and Methodology 2
4. Building Description 4
5. Existing Material Test Results 6
6. Site Specific Seismicity and Geologic Hazards 6
7. Building Deficiencies & Recommended Strengthening Measures 6
7.1 Structural Deficiencies & Strengthening Measures 7
7.2 Nonstructural Deficiencies & Strengthening Measures 10
8. Construction Cost Estimate 11
9. Benefit Cost Analysis 11
10. Rapid Visual Screening 12
11. Limitations 12
12. Certification Statement 13

APPENDICES

Appendix A Building Photos
Appendix B Conceptual Seismic Strengthening Scheme
Appendix C Construction Cost Estimate
Appendix D Benefit Cost Analysis Worksheet
Appendix E ASCE 41-17 Tier 1 Checklists
Appendix F DOGAMI and RVS

1. Project Background

The goal of this evaluation of the Pleasant Hill High School Gymnasium (Gymnasium) is to determine the expected performance during a design basis earthquake. The purpose of our seismic evaluation is to identify the structural and nonstructural deficiencies that exist at the Gymnasium**.** The evaluation will then be used as the basis for developing a suitable strengthening scheme for the structural system. In addition, the evaluation will assist us in identifying the nonstructural components requiring seismic hardening (i.e. anchorage and/or bracing).

In addition to the Gymnasium described in this report, there are nine (9) other buildings on the site: the auxiliary gymnasium, music center/cafeteria, administration building, library, two classroom buildings, classroom/shop building, weight room, and a forestry building. These buildings are outside of the scope of work and are not included in this report.

Our work is based on the following:

1. A review of available construction documents for the high school gymnasium prepared by Clare K. Hamlin, B. King Martin, dated 1961.

2. A review of available construction documents for the weight room prepared by 1974, dated Hamlin, Martin, Schultz & Geyer.

3. A site visit by Brian Knight, PE, SE, of WRK Engineers on April 14, 2023, to verify the as-built conditions of the building's structural and nonstructural systems.

2. Candidate Qualifications

Upon review of OAR 123-051-0300 regarding eligible applicants for the Seismic Rehabilitation Grant, we have confirmed the Pleasant Hill High School Gymnasium is a qualified candidate as it is a public school building routinely used for student activity with a capacity of more than 250 persons, and the building is owned by the Pleasant Hill School District.

We believe the Pleasant Hill High School Gymnasium is a good candidate for seismic strengthening based on the criteria highlighted in **Table 1**.

TABLE 1 – Candidate Summary	
Criteria	**Response**
Is the building in good condition?	Yes
Is the building a functional part of the community?	Yes
Is the building part of the community's emergency response (RC IV)?	Yes
Is the cost of a rehabilitation low relative to a new building cost?	Yes
Is the building located within a site that has low flood or landslide hazards?	Yes
Is the seismic rehabilitation cost less than the allowable grant maximum?	Yes
Was the original building designed before seismic standards were codified (pre-1974)?	Yes
Is the building in an area of high seismicity?	Yes
Does the building have non-ductile structural systems?	Yes
Does the building have vertical or horizontal irregularities?	Yes

3. Evaluation Criteria and Methodology

For our evaluation of the Gymnasium, we used ASCE Standard 41-17, "Seismic Evaluation and Retrofit of Existing Buildings" published by the American Society of Civil Engineers (ASCE). ASCE 41 is the nationally recognized Standard for seismic assessment and evaluation of existing buildings. The goal of ASCE 41 is to identify the "weak links" in a building's lateral force resisting system that can lead to significant failure and/or collapse. In addition, ASCE 41 will identify typical nonstructural hazards that may pose a life-safety risk to occupants or a business interruption (i.e. operations) risk to the building.

The methodology utilizes a series of checklists that address possible seismic hazards. Checklists are included in the Standard for all the major structural systems, nonstructural elements, and geologic and site hazards. The evaluating engineer addresses each statement and determines whether it is compliant or noncompliant. Compliant statements identify conditions that are acceptable. Noncompliant statements identify conditions that need further investigation. In some cases, the Standard specifies additional calculations that may be performed to address a noncompliant statement. In other cases, a detailed analysis of the building must be performed.

ASCE 41-17 provides Performance Objectives based on a building's Risk Category which are to be used for the evaluation and retrofit of existing buildings. For our evaluation, we have used the Basic Performance Objective for Existing Buildings (BPOE) for Risk Category IV structures. For this performance objective, the building is evaluated to the Life Safety (LS) structural performance level and Hazards Reduced nonstructural performance level for the BSE-2E seismic hazard and to the Immediate Occupancy (IO) structural performance level and Position Retention (PR) nonstructural performance level for the BSE-1E seismic hazard.

The intent of the IO Structural Performance Level for BSE-1E is:

> *After a design earthquake, the basic vertical and lateral force resisting systems retain nearly all of their pre-earthquake strength, and very limited damage to both structural and nonstructural components is anticipated during the design earthquake which require some minor repairs, but the critical parts of the building are habitable.*

The intent of the LS Structural Performance Level for BSE-2E is:

> *After the earthquake, the structure has damaged components but there is some margin against either partial or total structural collapse that remains. The damaged structure is not an imminent collapse risk although some structural elements are severely damaged. The building will retain at least some of its strength against collapse and should prevent loss of human life. However, there may be injuries and the building could potentially be damaged beyond the point of economical repair.*

The intent of the PR Nonstructural Performance Level for BSE-1E is:

> *After a design earthquake, the nonstructural components might be damaged to the extent that they cannot immediately function but are secured in place so that damages caused by falling, toppling, or breaking of utility connection is avoided. Building access and Life Safety Systems, including doors, stairways, elevators, emergency lighting, fire alarms, and fire suppression systems, generally remain available and operable, provided that power and utility services are available.*

The intent of the HR Nonstructural Performance Level for BSE-2E is:

> *After a design earthquake, the nonstructural components are damaged and could potentially create falling hazards, but high hazard nonstructural components as defined in Chapter 13 of ASCE 7-16, are secured to prevent falling into areas of public assembly or those falling hazards from those components could pose a risk to life safety for many people. Preservation of Egress, protection of fire suppression systems, and similar life safety issues are not addressed.*

In other words, the IO Structural Performance Level and PR Nonstructural Performance Level are meant to ensure that a building will continue to remain in operation immediately following a major earthquake. The LS Structural Peformance Level and HR Nonstructural Peformance Level permit structural damage but ensure the structural integrity of a building after a major earthquake and that occupants are able to evacuate safely. **Figure 1** graphically shows the performance objectives for a BSE-1E seismic event in red, and a BSE-2E seismic event in blue.

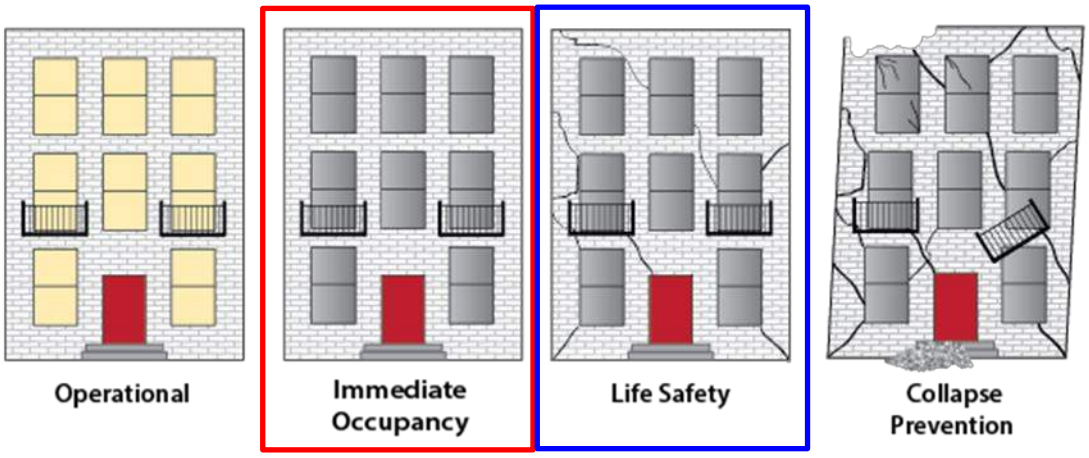


Figure 1: Structural Performance Level

4. Building Description

The Gymnasium is an 18,600-square-foot, single-story building originally constructed in 1961. The Gymnasium is composed of wood framing and unreinforced masonry. The building is rectangular in plan, approximately 200 feet by 111 feet, with a maximum roof height of approximately 35 feet. The building consists of locker rooms, offices, storage rooms, mechanical rooms, concessions, a gym, and other associated spaces. See **Figure 2** for a Building Part Map and **Appendix A** for photos of the building.

The lateral system of the Gymnasium consists of a 4x tongue and groove decking diaphragm which spans between wood framed shear walls along the perimeter. The East wood framed shear wall bears upon a URM shear wall. The lateral system of the Gymnasium lobby consists of a 4x tongue and groove decking diaphragm spanning between wood framed shear walls. The roof diaphragms are considered flexible relative to the walls that support them.

The gravity system for the Gymnasium consists of 4x tongue and groove decking which is supported by glulam arches spaced at 17-feet on center. The glulam arches span between concrete buttresses. The gravity system for the Gymnasium lobby consists of 4x tongue and groove decking supported by wood framed bearing walls. The Gymnasium ground floor level is composed of single straight sheathing supported by 2x sawn lumber joists at 12-inches on center bearing on timber beams at 5-foot on center. The timber beams bear on 6x6 timber posts. Gravity and lateral loads are transferred to the soil via spread footings.

The balcony lateral system is composed of single straight sheathing spanning between URM shear walls along the perimeter. The balcony diaphragm is considered flexible relative to the URM walls supporting it. The balcony's gravity system consists of single

straight sheathing supported by timber joists spaced at 4-foot on center bearing on URM bearing walls. Gravity and lateral loads are transferred to the soil via spread footings.

After reviewing the drawings and as-built condition, the lateral force resisting system and the ASCE 41 building type is classified as **W2: Wood Frames, Commercial and Industrial** and **URM: Unreinforced Masonry Bearing Walls with Flexible Diaphragms**.



A — Building Name: Auxiliary Gymnasium
Building Type: URM, W2
Previous Seismic Retrofit: No
NOT IN SCOPE

B — Building Name: High School Gymnasium
Building Type: URM, W2
Previous Seismic Retrofit: No
IN SCOPE

C — Building Name: Music Center/Cafeteria
Building Type: W2, URM
Previous Seismic Retrofit: No
NOT IN SCOPE

D — Building Name: Administration Building
Building Type: W2
Previous Seismic Retrofit: No
NOT IN SCOPE

E — Building Name: Library
Building Type: W2
Previous Seismic Retrofit: No
NOT IN SCOPE

F — Building Name: Classroom Building
Building Type: W2
Previous Seismic Retrofit: No
NOT IN SCOPE

G — Building Name: Classroom/Shop Building
Building Type: URM, W2
Previous Seismic Retrofit: No
NOT IN SCOPE

H — Building Name: Weight Room/Team Room
Building Type: URM/W2
Previous Seismic Retrofit: No
NOT IN SCOPE

I — Building Name: Classroom Building
Building Type: W2
Previous Seismic Retrofit: No
NOT IN SCOPE

J — Building Name: Forestry Building
Building Type: W2
Previous Seismic Retrofit: No
NOT IN SCOPE

Figure 2: Building Part Map

5. Existing Material Test Results

An onsite investigation was performed solely to verify the as-built conditions. No materials testing was performed as part of our evaluation.

6. Site Specific Seismicity and Geologic Hazards

Using the data collected by the United States Geologic Survey, **Table 2** summarizes the site specific seismicity for the location of the Gymnasium. The building is assumed to be founded on "stiff" soils of varying depths. As a result, the site soil classification is assumed to be Class "D".

TABLE 2 - Site Specific Seismicity	
Soil Density	Stiff
ASCE 7-16 Soil Classification	Class D
BSE-2N Event: Short Period Spectral Acceleration (S_S)	0.620
BSE-2N Event: Long Period Spectral Acceleration (S_1)	0.361
BSE-2N Event: Soil Condition Amplification Factors (F_V / F_A)	1.937 / 1.304
BSE-1E Event: Short Period Spectral Acceleration (S_{xs})	0.185
BSE-1E Event: Long Period Spectral Acceleration (S_{x1})	0.132
BSE-2E Event: Short Period Spectral Acceleration (S_{xs})	0.624
BSE-2E Event: Long Period Spectral Acceleration (S_{x1})	0.514
FEMA 154 RVS Seismicity Zone	Moderately High
ASCE 41-17 Level of Seismicity	High

Using the ASCE 41-17 checklists, the geologic hazards that were assessed as part of this engineering evaluation include liquefaction, landslide, flood potential, and tsunami inundation, if applicable. Using the DOGAMI Oregon HazVu website, these potential hazards were evaluated. The result from each hazard HazVu evaluation is included in **Appendix F**.

It was determined the site is in an area with NO geologic hazards as identified from the DOGAMI Oregon HazVu plots. Documentation of geological hazards are in **Appendix F.**

7. Building Deficiencies & Recommended Strengthening Measures

Using the procedures of ASCE 41, we have identified several deficiencies in the lateral force resisting system. The ASCE 41 Tier 1 checklists used to identify the structural and nonstructural deficiencies are attached as **Appendix E**. Based on the identified deficiencies and building condition, we have developed a conceptual strengthening scheme (see **Appendix B**) for the Gymnasium.

The strengthening measures are recommendations intended to provide a general discussion of the potential strengthening/hardening measures likely needed for this building. However, they are conceptual and do not constitute a final engineered solution.

7.1 Structural Deficiencies & Strengthening Measures

Numerous structural deficiencies have been identified at the Gymnasium. All structural deficiencies and the strengthening measures are summarized in **Table 3**.

TABLE 3 – STRUCTURAL
Deficiencies & Strengthening Measures
Immediate Occupancy Performance Level

Item Number	Component Type	Deficiency	Strengthening Measure
S1	Load Path	The structure does not contain a complete, well-defined load path with structural elements and connections that serve to transfer inertial forces associated with mass of elements to the building foundation.	Provide complete load path for transfer of inertial forces to building foundation.
S2	Adjacent Buildings	The clear distance between the building being evaluated and any adjacent building is not greater than 0.5% of the height of the shorter building in low seismicity, 1.0% in moderate seismicity, and 3% in high seismicity.	Provide seismic isolation joint to avoid pounding of the taller structure into the lower structure. Provide all new gravity framing and lateral resisting elements as necessary to provide building separation.
S3	Mezzanines	The interior mezzanine levels are not braced independently from the main structure or are anchored to the seismic-force-resisting elements of the main structure.	Anchor mezzanine to main structure lateral force resisting system and add shear walls as required.
S4	Shear Stress Check	The shear stress in the shear walls is more than the following values: Structural panel sheathing - 1,000 lb./ft.; Diagonal sheathing - 700 lb./ft.; Straight sheathing and all other conditions - 100 lb./ft.	Either strengthen existing shear walls or add new lateral force resisting elements.

TABLE 3 – STRUCTURAL Deficiencies & Strengthening Measures continued			
Item Number	**Component Type**	**Deficiency**	**Strengthening Measure**
S5	Walls Connected Through Floors	Shear walls don't have an interconnection between stories to transfer overturning and shear forces through the floor.	Interconnect all shear walls between stories.
S6	Hold-Down Anchors	Shear walls do not have hold-down anchors attached to end studs.	Install hold-down anchors at shear walls where they are needed to resist uplift for overturning seismic loads.
S7	Wood Posts	There is not a positive connection of wood posts to the foundation.	Add positive connection of wood posts to foundation.
S8	Wood Sills	Wood sills are not bolted to the foundation.	Add sill bolts to foundation.
S9	Roof Chord Continuity	Not all chord elements are continuous, regardless of changes in roof elevation.	Provide continuous chord elements.
S10	Straight Sheathing	Straight sheathed diaphragms have aspect ratios greater than 1-to-1 in the direction being considered.	Add plywood sheathing overlay at diaphragm with nailing, blocking, and strapping as needed.
S11	Spans	All wood diaphragms with spans greater than 12 ft. do not consist of wood structural panels or diagonal sheathing.	Install plywood sheathing overlay at roof diaphragm with diaphragm blocking, strapping and collectors.
S12	Diagonally Sheathed and Unblocked Diaphragms	All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans greater than 30 ft. and aspect ratios greater than 3-to-1.	Add blocking and supplemental nailing as required to reinforce diaphragm.
S13	Wood Sill Bolts	The existing wood sill bolt spacing is greater than 4 ft.	Add sill bolts to existing wood shear walls.
S14	Shear Stress Check	The shear stress in the unreinforced masonry shear walls is more than 30 lb/in.^{2} for clay units and 70 lb/in.^{2} for concrete units.	Strengthen wall or add new lateral force resisting elements where required.
S15	Wall Anchorage	Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are not anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm.	Add wall anchorage connections and subdiaphragms.

TABLE 3 – STRUCTURAL Deficiencies & Strengthening Measures continued			
Item Number	**Component Type**	**Deficiency**	**Strengthening Measure**
S16	Transfer to Shear Walls	Diaphragms are not connected for transfer of seismic forces to the shear walls, and the connections are not able to develop the lesser of the shear strength of walls or diaphragms.	Add in-plane connection between shear walls and diaphragm.
S17	Girder-Column Connection	There is no positive connection hardware between the girders and column supports.	Add positive connection of girders to column supports
S18	Proportions	The height-to-thickness ratio of the shear walls is greater than 13.	Strengthen/reinforce wall for expected out-of-plane demands.
S19	Opening at Shear Walls	Diaphragm openings immediately adjacent to the shear walls are greater than 15% of the wall length.	Strengthen diaphragm to wall connection or add diaphragm collectors.
S20	Plan Irregularities	There is no tensile capacity to develop the strength of the diaphragm at reentrant corners or other locations of plan irregularities.	Provide diaphragm reinforcement at reentrant corners and openings.
S21	Cross Ties	There are no continuous cross ties between diaphragm chords.	Add tension ties and supplemental framing for continuous cross ties.
S22	Straight Sheathing	Straight sheathed diaphragms have aspect ratios greater than 1-to-1.	Add plywood sheathing overlay at diaphragm with nailing, blocking, and strapping as needed.
S23	Spans	All wood diaphragms with spans greater than 12 ft. do not consist of wood structural panels or diagonal sheathing.	Install plywood sheathing overlay at roof diaphragm with diaphragm blocking, strapping and collectors.
S24	Stiffness of Wall Anchors	Anchors of concrete or masonry walls to wood structural elements are not installed taut and stiff enough to limit the relative movement between the wall and the diaphragm before engagement of the anchors.	Install anchors to improve connection stiffness to limit relative movement between the wall and the diaphragms.
S25	Beam, Girder, and Truss Supports	Beams, girders, and trusses supported by unreinforced masonry walls or pilasters do not have independent secondary columns for support of vertical loads.	Add supplemental independent support columns for Beam, Girder, and Truss support.

7.2 Nonstructural Deficiencies & Strengthening Measures

Numerous nonstructural deficiencies have been identified at the Gymnasium. All nonstructural deficiencies and the strengthening measures are summarized in **Table 4**.

TABLE 4 – NONSTRUCTURAL
Deficiencies & Strengthening Measures
Position Retention Performance Level

Item Number	Component Type	Deficiency	Strengthening Measure
N1	Shutoff Valves	Piping containing hazardous material, including natural gas, does not have shutoff valves or other devices to limit spills or leaks.	Add shutoff valves or other devices to limit spills or leaks.
N2	Flexible Couplings	Hazardous material piping, including natural gas piping, does not have flexible couplings.	Add flexible couplings to hazardous material piping and fluid and gas piping.
N3	Unreinforced Masonry	Unreinforced masonry or hollow-clay tile partitions are not braced at a spacing of at most 10 ft. in low or moderate seismicity, or at most 6 ft. in high seismicity.	Provide HSS strongback bracing at 6 ft. maximum spacing.
N4	Drift	Rigid cementitious partitions are not detailed to accommodate the following drift ratios: in steel moment frame, concrete moment frame, and wood frame buildings, 0.02; in other buildings, 0.005.	Add HSS strongbacks at URM partition walls to accommodate drift requirements.
N5	Lens Covers	Lens covers are not attached to the light fixture with safety devices.	Attach all lens covers on light fixtures with safety devices.
N6	Tall Narrow Contents	Contents more than 6 ft. high with a height-to-depth ratio greater than 3-to-1 are not anchored to the structure or to each other.	Brace and/or anchor all contents more than 6 ft. high to the structure or to each other.
N7	Fall-Prone Equipment	Mechanical and electrical equipment weighing more than 20 lb. whose center of mass is more than 4 ft. above the adjacent floor level, and which is not in-line equipment, is not braced.	Brace all mechanical and electrical equipment weighing more than 20 lb. whose center of mass is more than 4 ft. above the adjacent floor level.
N8	Tall Narrow Equipment	Equipment more than 6 ft. high with a height-to-depth or height-to-wi**dth** ratio greater than 3-to-1 is not anchored to the floor slab or adjacent structural walls.	Cabinets and Lockers more than 6 ft. high or with a height-to-depth ratio exceeding 3:1 are to be anchored to ground.

TABLE 4 – NONSTRUCTURAL Deficiencies & Strengthening Measures continued			
Item Number	Component Type	Deficiency	Strengthening Measure
N9	Flexible Couplings	Fluid and gas piping does not have flexible couplings.	Add flexible couplings to fluid and gas piping.

8. Construction Cost Estimate

An engineer's opinion of probable cost has been prepared based on the developed seismic strengthening scheme (see **Appendix B**) and is attached as **Appendix C**. The cost estimate addresses all seismic strengthening required and includes all construction costs, contingencies and necessary soft costs required to complete the scope of work. A summary of the cost estimate is provided in **Table 5**.

TABLE 5 – Cost Estimate Summary	
Construction Category	Cost Estimate
Engineering	$341,991
Construction Management	$47,999
Construction	$1,716,626
Relocation	$59,999
Contingency	$333,325
Total	**$2,499,940**
Total Area	18,600 Square Feet
$/Square Feet	$134.41

9. Benefit Cost Analysis

The benefit cost analysis (BCA) is performed using the BCA spreadsheet provided by the Oregon Business Development Department-Infrastructure Finance Authority (OBDD-IFA) as required by the SRGP (Seismic Rehabilitation Grant Program). The BCA tool considers the net present value of costs associated with damage to the building and its contents, displacements costs, loss of functionality costs, and casualties. Default building data and fragility curve information is provided in the BCA tool.

The building database in the BCA tool breaks the Pleasant Hill High School into 10 different building parts. The Pleasant Hill High School Gymnasium is labeled Building Part B. Building Parts A, C, D, E, F, G, H, I, and J are not within the scope of this seismic evaluation. Pleasant Hill School District provided only the occupancy and budget information for Building Part B. Therefore, on the Main page of the BCA tool (see **Appendix D**), the occupancy and budget percentages of Building Part B are both set to be 100% and 0% was assigned to

the other building parts. This is to avoid having the occupancy and budget provided solely for Building Part B be allocated to Building Parts A, C, D, E, F, G, H, I, and J.

Please note, Building Part B consists of building type W2 and URM. However, since W2 is the primary lateral force resisting system, the BCA calculations are based on W2 building type.

The BCA score for this project is **0.682**. Although the Gymnasium received a BCA score less than 1.0, we believe it is still a strong candidate for seismic strengthening and should be considered for grant funding. The BCA analysis performed using the OBDD-IFA BCA spreadsheet tool does not accurately capture the cost to the building if it is out-of-service after a major seismic event and its importance to the community.

The grant application outlines the additional benefits and the potential costs to the community if the building is excessively damaged and not ready for re-occupancy after a major seismic event.

10. Rapid Visual Screening

The Department of Geology and Mineral Industries (DOGAMI) completed many Rapid Visual Screening (RVS) assessments for public facilities throughout Oregon. However, for the purpose of this report, a new RVS report was created to align with this seismic evaluation. Attached in **Appendix F** is the RVS report created using the FEMA P-154 Data Collection Form for the Gymnasium.

Note, only the RVS report for Building Part B has been included since the other building parts are out of the project scope and have no impact on the BCA calculations or grant application.

11. Limitations

The opinions and recommendations presented in this report were developed with the care commonly used as the state of practice of the profession. No other warranties are included, either expressed or implied, as to the professional advice included in this report. This report has been prepared for Pleasant Hill High School Gymnasium and is used solely in its evaluation of the seismic safety of the building included herein. This report has not been prepared for use by other parties and may not contain sufficient information for purposes of other parties or uses. If you have any comments or questions regarding this evaluation, please contact us.

12. Certification Statement

WRK Engineers has reviewed the Pleasant Hill High School Gymnasium, noted the deficiencies in the Tier 1 checklists, developed seismic retrofit solutions to rectify the deficiencies, and a cost estimate for the project. The design engineer certifies the retrofit scope of work includes strengthening measures of all the structural and nonstructural deficiencies identified in the report and all items required to perform the work. The design engineer certifies the cost estimate includes all the retrofit's scope of work elements.



Brian Knight, PE, SE

Appendix A

BUILDING PHOTOS



Image 1: Southeast Elevation



Image 2: Northeast Elevation



Image 3: Northwest Elevation



Image 4: Southwest Elevation



Image 5: Balcony Framing Over Locker Room



Image 6: Gymnasium



Image 7: Hallway



Image 8: Exterior Canopy Framing

Appendix B

CONCEPTUAL SEISMIC STRENGTHENING SCHEME

PLEASANT HILL HIGH SCHOOL GYMNASIUM SEISMIC REHABILITATION GRANT STRENGTHENING CONCEPTS

SHEET INDEX	
SHEET ID	SHEET TITLE
G1	COVER SHEET
S1	FOUNDATION STRENGTHENING PLAN
S2	BALCONY AND LOW ROOF STRENGTHENING PLAN
S3	ROOF STRENGTHENING PLAN
S4	BUILDING ELEVATION

PROJECT NARRATIVE

THE INTENT OF THESE DRAWINGS IS TO ILLUSTRATE THE SCHEMATIC SEISMIC REHABILITATION TASKS TO RECTIFY THE LISTED SEISMIC AND NONSTRUCTURAL DEFICIENCIES. THESE SCHEMATIC DRAWINGS HAVE BEEN PREPARED USING THE CURRENT OREGON STRUCTURAL SPECIALTY CODE (OSSC) AND ASCE 41 (SEISMIC REHABILITATION OF EXISTING BUILDINGS) STANDARD.

THE TARGET FOR REHABILITATION IS TO IMMEDIATE OCCUPANCY (IO) STRUCTURAL PERFORMANCE LEVEL AND A POSITION RETENTION (PR) NONSTRUCTURAL PERFORMANCE LEVEL AT THE BSE-1E SEISMIC EVENT AND THE LIFE SAFETY (LS) STRUCTURAL PERFORMANCE LEVEL AND HAZARDS REDUCED (HR) NONSTRUCTURAL PERFORMANCE LEVEL AT THE BSE-2E SEISMIC EVENT.

THE (IO) STRUCTURAL PERFORMANCE LEVEL MEANS THAT AFTER A DESIGN EARTHQUAKE, THE BASIC VERTICAL AND LATERAL FORCE RESISTING SYSTEMS RETAIN NEARLY ALL OF THEIR PRE-EARTHQUAKE STRENGTH AND STIFFNESS. VERY LIMITED DAMAGE TO BOTH THE STRUCTURAL AND NONSTRUCTURAL COMPONENTS IS ANTICIPATED DURING THE DESIGN EARTHQUAKE WHICH REQUIRE SOME MINOR REPAIRS, BUT MAY NOT BE REQUIRED PRIOR TO REOCCUPANCY. THE RISK OF LIFE THREATENING INJURY AS A RESULT OF STRUCTURAL DAMAGE IS VERY LOW.

PROJECT INCLUDES SEISMIC REHABILITATION FOR THE ENTIRE GYMNASIUM BUILDING.

STRUCTURAL DEFICIENCIES

S1. THE STRUCTURE DOES NOT CONTAIN A COMPLETE, WELL-DEFINED LOAD PATH, INCLUDING STRUCTURAL ELEMENTS AND CONNECTIONS, THAT SERVES TO TRANSFER THE INERTIAL FORCES ASSOCIATED WITH THE MASS OF ALL ELEMENTS OF THE BUILDING TO THE FOUNDATION.

S2. THE CLEARANCE BETWEEN THE BUILDING BEING EVALUATED AND ANY ADJACENT BUILDING IS LESS THAN 0.5% OF THE HEIGHT OF THE SHORTER BUILDING IN LOW SEISMICITY, 1.0% IN MODERATE SEISMICITY, AND 3.0% IN HIGH SEISMICITY.

S3. INTERIOR MEZZANINE LEVELS ARE NOT BRACED INDEPENDENTLY FROM THE MAIN STRUCTURE OR ANCHORED TO THE SEISMIC-FORCE-RESISTING ELEMENTS.

S4. WOOD FRAMED SHEAR WALLS DO NOT HAVE SUFFICIENT CAPACITY FOR THE SEISMIC DEMANDS.

S5. WOOD FRAMED SHEAR WALLS ARE NOT CONNECTED BETWEEN STORIES TO TRANSFER OVERTURNING AND SHEAR FORCES.

S6. NOT ALL WOOD FRAMED SHEAR WALLS HAVE HOLD-DOWN ANCHORS ATTACHED TO THE END STUDS CONSTRUCTED IN ACCORDANCE WITH ACCEPTABLE CONSTRUCTION PRACTICES.

S7. THERE ARE NOT POSITIVE CONNECTIONS FROM WOOD POSTS TO THE FOUNDATION.

S8. NOT ALL WOOD SILLS ARE BOLTED TO THE FOUNDATION.

S9. NOT ALL ROOF CHORDS ARE CONTINUOUS.

S10. STRAIGHT-SHEATHED DIAPHRAGMS OVER WOOD FRAMED SHEAR WALLS WITH ASPECT RATIOS GREATER THAN 1-TO-1 ARE PRESENT.

S11. WOOD DIAPHRAGMS OVER WOOD FRAMED SHEAR WALLS WITH SPANS GREATER THAN 12-FEET CONSISTING OF SHEATHING OTHER THAN WOOD STRUCTURAL PANELS ARE PRESENT.

S12. NOT ALL DIAGONALLY SHEATHED OR UNBLOCKED DIAPHRAGMS OVER WOOD FRAMED SHEAR WALLS HAVE HORIZONTAL SPANS LESS THAN 30-FEET AND ASPECT RATIOS LESS THAN OR EQUAL TO 3-TO-1.

S13. SILL BOLTS ARE SPACED GREATER THAN 4-FEET ON CENTER.

S14. URM SHEAR WALLS HAVE INSUFFICIENT CAPACITY FOR THE GIVEN SHEAR WALL DEMANDS.

S15. EXTERIOR CONCRETE OR MASONRY WALLS THAT ARE DEPENDENT ON THE DIAPHRAGM FOR LATERAL SUPPORT ARE NOT ANCHORED FOR OUT-OF-PLANE FORCES AT EACH DIAPHRAGM LEVEL.

S16. DIAPHRAGMS ARE NOT CONNECTED FOR TRANSFER OF SEISMIC FORCES TO THE URM SHEAR WALLS.



STRUCTURAL DEFICIENCIES

S17. THERE IS NOT A POSITIVE CONNECTION BETWEEN THE GIRDERS AND COLUMN SUPPORTS.

S18. THE HEIGHT-TO-THICKNESS RATIO OF THE URM SHEAR WALLS AT EACH STORY IS LESS THAN 1:3.

S19. DIAPHRAGM OPENINGS IMMEDIATELY ADJACENT TO THE URM SHEAR WALLS ARE GREATER THAN 15% OF THE WALL LENGTH.

S20. THERE IS NOT TENSILE CAPACITY TO DEVELOP THE STRENGTH OF THE DIAPHRAGM AT REENTRANT CORNERS OR OTHER LOCATIONS.

S21. THERE ARE NOT CONTINUOUS CROSS TIES BETWEEN DIAPHRAGM CHORDS.

S22. STRAIGHT-SHEATHED DIAPHRAGMS OVER URM WALLS WITH ASPECT RATIOS GREATER THAN 1-TO-1 ARE PRESENT.

S23. WOOD DIAPHRAGMS OVER URM WALLS WITH SPANS GREATER THAN 12-FEET CONSISTING OF SHEATHING OTHER THAN WOOD STRUCTURAL PANELS AND DIAGONAL SHEATHING ARE PRESENT.

S24. ANCHORS OF CONCRETE OR MASONRY WALLS TO WOOD STRUCTURAL ELEMENTS ARE NOT INSTALLED TAUT AND ARE STIFF ENOUGH TO LIMIT THE RELATIVE MOVEMENT BETWEEN THE WALL AND THE DIAPHRAGM TO NO GREATER THAN 1/8-INCH BEFORE ENGAGEMENT OF THE ANCHORS.

S25. BEAMS, GIRDERS, AND TRUSSES SUPPORTED BY URM WALLS OR PILASTERS DO NOT HAVE INDEPENDENT SECONDARY COLUMNS FOR SUPPORT OF VERTICAL LOADS.

NONSTRUCTURAL DEFICIENCIES

N1. PIPING CONTAINING HAZARDOUS MATERIALS, INCLUDING NATURAL GAS, DO NOT HAVE SHUTOFF VALVES OR OTHER DEVICES TO LIMIT SPILLS AND LEAKS.

N2. HAZARDOUS MATERIAL DUCTWORK AND PIPING, INCLUDING NATURAL GAS PIPING, DO NOT HAVE FLEXIBLE COUPLINGS.

N3. URM OR HOLLOW CLAY TILE PARTITIONS ARE NOT BRACED AT A SPACING OF AT MOST 6-FEET.

N4. RIGID CEMENTITIOUS PARTITIONS ARE NOT DETAILED TO ACCOMMODATE EXPECTED DRIFT RATIOS.

N5. LENS COVERS ON LIGHTS ARE NOT ATTACHED WITH SAFETY DEVICES.

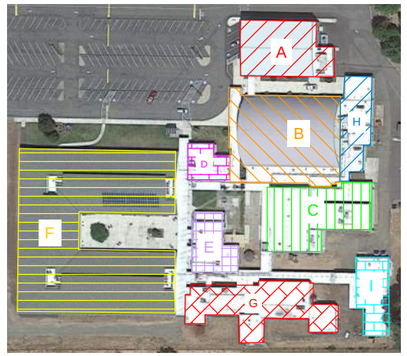
N6. CONTENTS MORE THAN 6-FEET HIGH WITH A HEIGHT-TO-DEPTH OR HEIGHT-TO-WIDTH GREATER THAN 3-TO-1 ARE NOT ANCHORED TO THE STRUCTURE OR TO EACH OTHER.

N7. EQUIPMENT WEIGHING MORE THAN 20-POUNDS WITH A CENTER OF MASS MORE THAN 4-FEET ABOVE THE ADJACENT FLOOR LEVEL ARE NOT BRACED.

N8. EQUIPMENT MORE THAN 6-FEET HIGH WITH A HEIGHT-TO-DEPTH OR HEIGHT-TO-WIDTH GREATER THAN 3-TO-1 ARE NOT ANCHORED TO THE FLOOR SLAB OR THE ADJACENT STRUCTURAL WALLS.

N9. FLUID AND GAS PIPING DOES NOT HAVE FLEXIBLE COUPLINGS.

ALL NONSTRUCTURAL DEFICIENCIES WILL BE MITIGATED AS SHOWN IN TABLE 4 IN THIS REPORT UNLESS SPECIFICALLY NOTED OTHERWISE ON THE CONCEPTUAL STRENGTHENING SCHEME DRAWINGS.

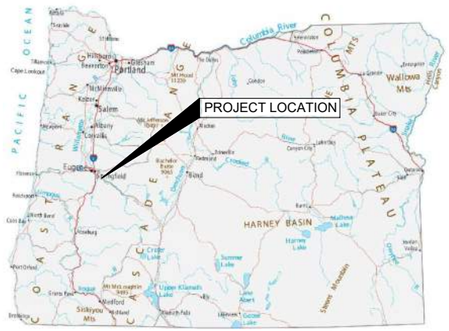


NOTE: ONLY PART B IS IN SCOPE

1 SITE MAP/BUILDING PARTS IDENTIFICATION



2 VICINITY MAP



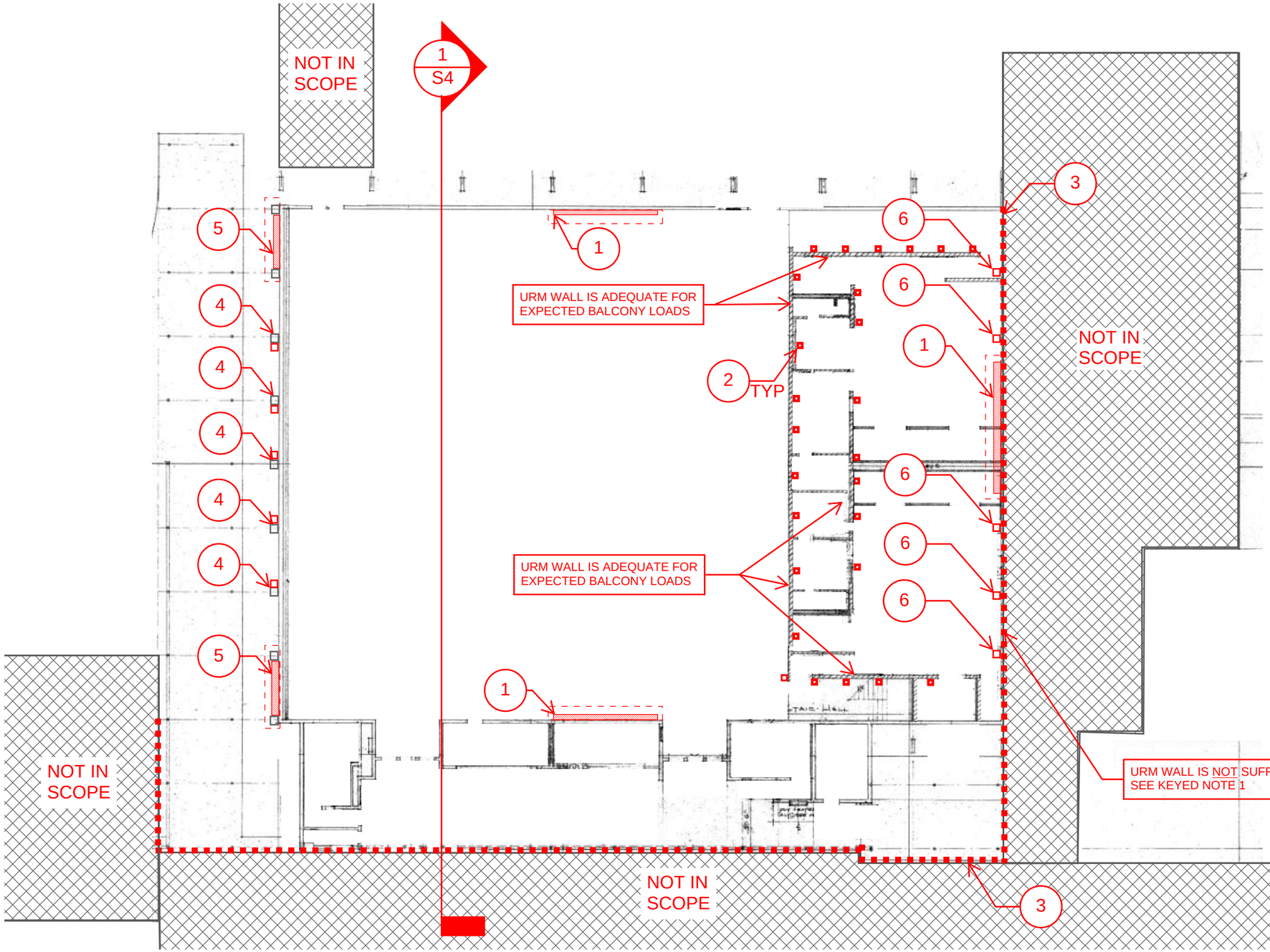
3 STATE MAP

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PLEASANT HILL HIGH SCHOOL GYMNASIUM SEISMIC REHABILITATION GRANT STRENGTHENING CONCEPTS
84455 N ENTERPRISE RD.
PLEASANT HILL, OR 97455

DATE: 06/30/2023
JOB NUMBER: 23030.00
PAGE REFERENCE:

SHEET NO.
G1



1 FOUNDATION STRENGTHENING PLAN
SCALE: NTS

NORTH

SEISMIC STRENGTHENING KEYED NOTES:

1. DEMO (E) FLOOR SLAB AND WALL FINISHES AND ADD CONCRETE SHEAR WALL AND FOUNDATION. REPAIR AND REPLACE FLOOR AND WALL FINISHES AS REQUIRED. (S1, S4, S5, S6, S8, S13, S14)
2. ADD 5x5x1/4 HSS STRONGBACKS AT 6'-0" OC, OR AS SHOWN, FOR OUT-OF-PLANE WALL BRACING OF URM SHEAR WALLS (19 TOTAL). PROVIDE 4x4x1/4 HSS AT 12'-0" OC, OR AS SHOWN, TO ACT AS INDEPENDENT SECONDARY COLUMNS FOR URM BEARING WALLS (7 TOTAL). USE HSS10x6x1/4 BEAMS SPANNING BETWEEN INDEPENDENT SECONDARY COLUMNS TO ATTACH (E) JOISTS AND BEAMS TO SECONDARY COLUMNS. (S17, S18, S25)
3. PROVIDE SEISMIC ISOLATION JOINT TO AVOID POUNDING OF TALLER STRUCTURE INTO THE LOWER STRUCTURE. PROVIDE ALL NEW GRAVITY FRAMING SUPPORT AND LATERAL RESISTING ELEMENTS AS NECESSARY TO PROVIDE BUILDING SEPARATION. ADD NEW WOOD STUD BEARING/ PLYWOOD SHEAR WALLS AND POSTS/BEAMS TO SUPPORT (E) FRAMING AND RESIST LATERAL LOADS AS REQUIRED. (S2)
4. PROVIDE POSITIVE CONNECTION BETWEEN WOOD POSTS AND FOUNDATION. ADDITIONALLY PROVIDE HSS 8x8x1/4 STRONGBACK AT EACH POST TO BRACE WOOD FRAMED WALL OUT-OF-PLANE. DEMO AND REPLACE WOOD SIDING AS REQUIRED. (S1, S7)
5. DEMO (E) SLAB-ON-GRADE AND SIDING AND ADD CONCRETE SHEAR WALL AND FOUNDATION. REPAIR AND REPLACE FLOOR AND WALL FINISHES AS REQUIRED. (S1, S4, S5, S6, S7, S8, S13)
6. DEMO FLOORING, CEILING, AND INTERIOR WALL FINISHES AS REQUIRED. PROVIDE HSS 8X8X1/4 IN ORDER TO BRACE ABOVE WOOD FRAMED WALL OUT-OF-PLANE. PROVIDE A HSS10X6X1/4 BEAM AT BALCONY LEVEL IN ORDER TO UTILIZE THE HSS STRONGBACKS AS INDEPENDENT SECONDARY SUPPORTS AT THE BALCONY LEVEL (S1, S25)

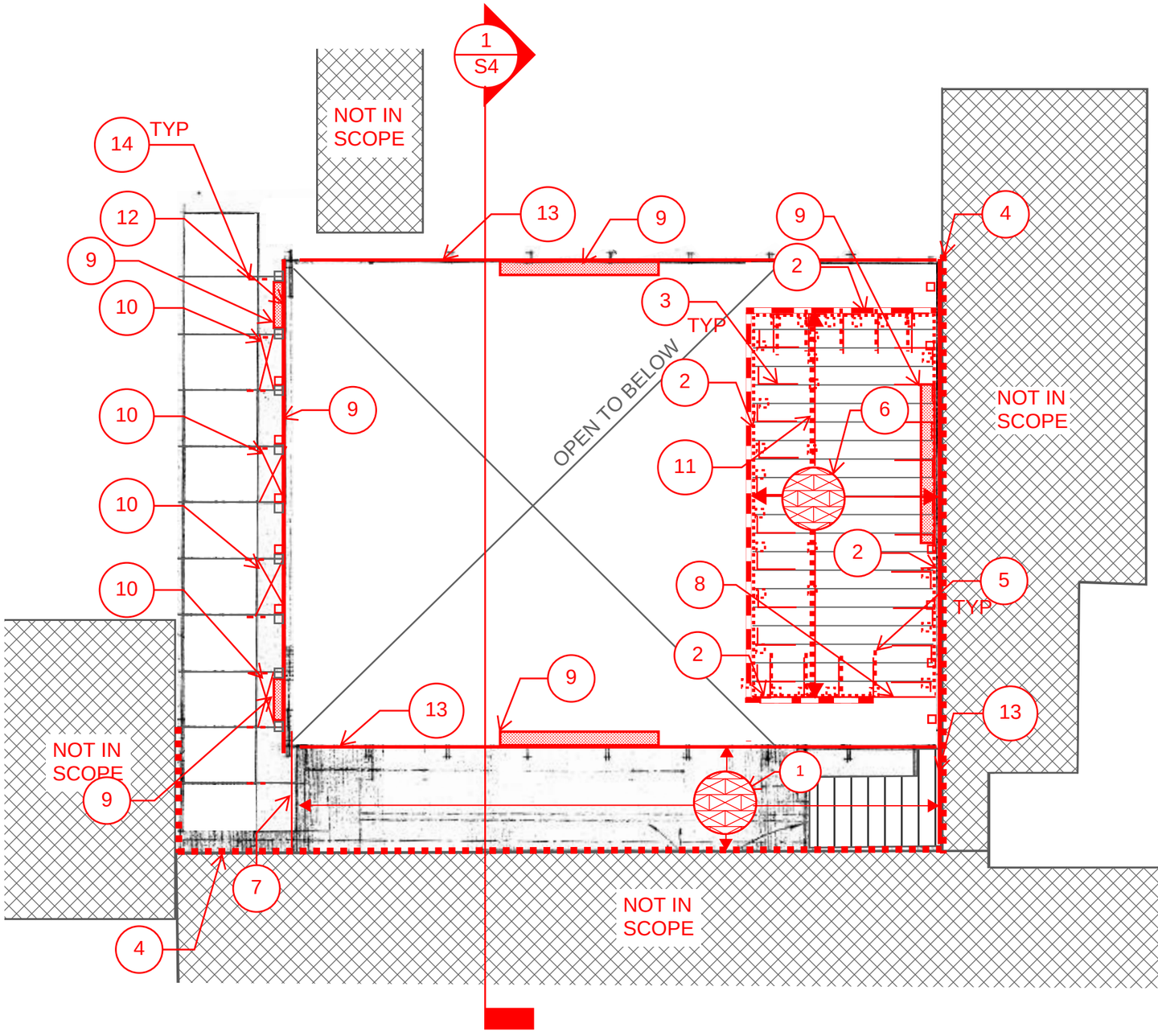
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PLEASANT HILL HIGH SCHOOL GYMNASIUM
SEISMIC REHABILITATION GRANT STRENGTHENING CONCEPTS
84455 N ENTERPRISE RD.
PLEASANT HILL, OR 97455

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JOB NUMBER: 23030.00
PAGE REFERENCE:

SHEET NO.
S1

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1 BALCONY AND LOW ROOF STRENGTHENING PLAN
SCALE: NTS

NORTH

SEISMIC STRENGTHENING KEYED NOTES:

1. DEMO (E) BUILT-UP ROOFING AND ADD 1/2" PLYWOOD SHEATHING W/ 10d NAILS AT 6" OC AT PANEL EDGES AND 12" OC IN THE FIELD. REPLACE ROOFING AFTER WORK IS COMPLETE. (S10, S11, S12, S22, S23)
2. DEMO (E) CEILING (WHERE OCCURS) TO ADD IN-PLANE CONNECTIONS BETWEEN DIAPHRAGM AND SHEAR WALL. REPAIR CEILING AFTER WORK IS COMPLETED. (S1, S3, S16).
3. DEMO (E) CEILING (WHERE OCCURS) TO ADD OUT-OF-PLANE ANCHORS BETWEEN DIAPHRAGM AND URM WALLS AT 8'-0" OC, OR AS SHOWN. REPAIR CEILING AFTER WORK IS COMPLETED. (S15, S24)
4. INDICATES SEISMIC ISOLATION JOINT. SEE S1 FOR NEW SUPPORT. PROVIDE ROOFING SEISMIC JOINT COVER AND REPAIR ROOFING AS REQUIRED. (S2)
5. ADD SUBDIAPHRAGM TIE WHERE SHOWN. (S15, S21, S24)
6. DEMO (E) CEILING (WHERE OCCURS) TO ADD NEW 1/2" PLYWOOD SHEATHING AND BLOCKING WITH 10d NAILS AT 6" OC TO THE UNDERSIDE OF BALCONY. REPLACE CEILING FINISHES AFTER WORK IS COMPLETE. (S23)
7. ADD STL STRAPPING TO PROVIDE CONTINUOUS COLLECTOR. (S1, S9, S19, S20)
8. ADD STL STRAPPING TO UNDERSIDE OF (E) BALCONY TO PROVIDE A CONTINUOUS COLLECTOR. (S1, S9, S19, S20)
9. NEW CONCRETE SHEAR WALL BELOW, SEE KEYED NOTES 1 AND 5 ON S1. (S1, S4, S5, S8, S13, S14)
10. ADD HORIZONTAL ROD BRACING TO CONNECT CANOPY TO LATERAL FORCE RESISTING ELEMENTS. (S1)
11. PROVIDE SPLICE PLATE AT SECONDARY COLUMN SUPPORTS. (S25)
12. ADD A STEEL COLLECTOR TO TRANSFER SEISMIC FORCES INTO CONCRETE MOMENT FRAME. (S1)
13. NEW BLOCKING AND STEEL STRAPPING, SEE KEYED NOTE 2 ON SHEET S4. (S1)
14. ADD BEAM SPLICES AT CANOPY TO PROVIDE CONTINUOUS ROOF CHORDS. (S1, S9, S21)

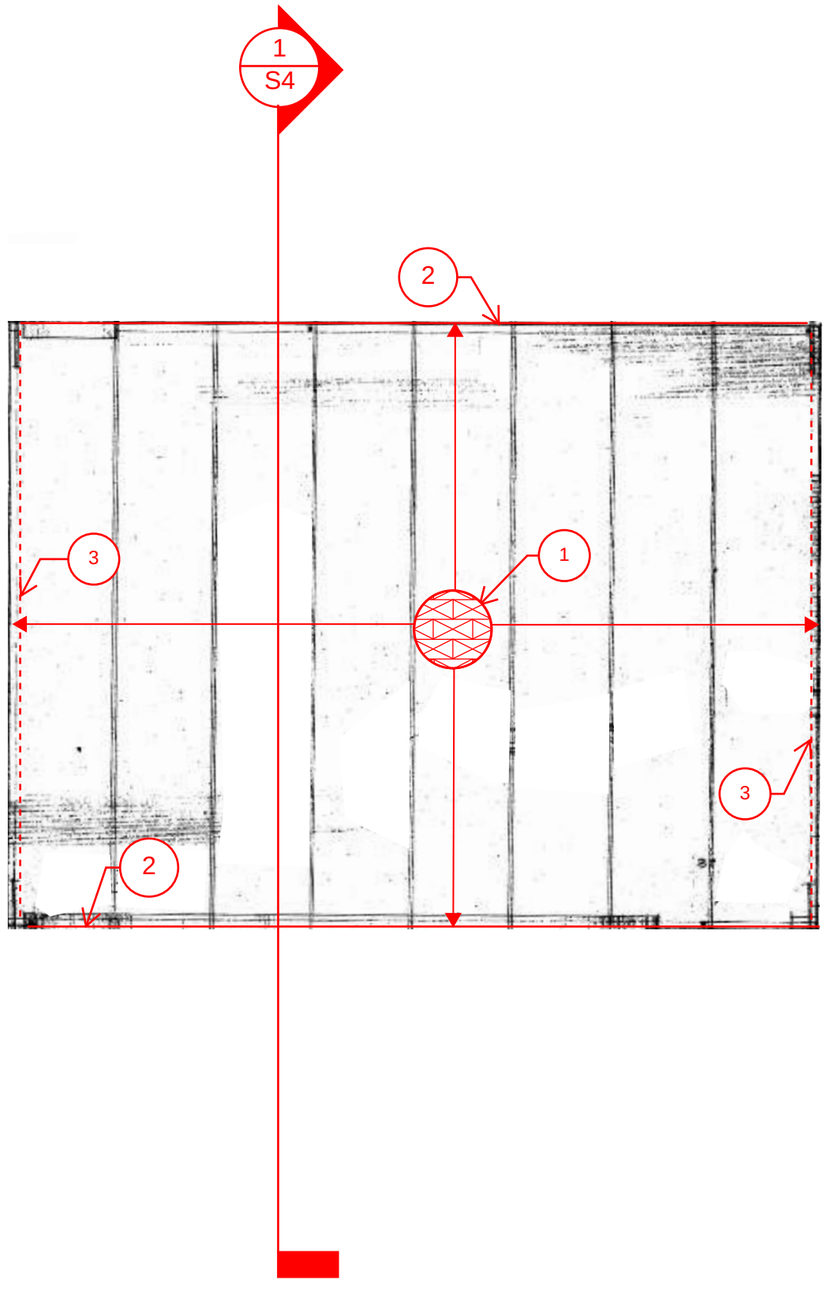
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Structural & Seismic Engineers

PLEASANT HILL HIGH SCHOOL GYMNASIUM
SEISMIC REHABILITATION GRANT STRENGTHENING CONCEPTS
84455 N ENTERPRISE RD.
PLEASANT HILL, OR 97455

DATE: 06/30/2023
JOB NUMBER: 23030.00
PAGE REFERENCE:

SHEET NO.
S2

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1 ROOF STRENGTHENING PLAN
SCALE: NTS

NORTH

SEISMIC STRENGTHENING KEYED NOTES:

1. DEMO (E) BUILT-UP ROOFING AND (E) SHEATHING. ADD 1/2" PLYWOOD SHEATHING W/ 10d NAILS AT 6" OC AT PANEL EDGES AND 12" OC IN THE FIELD (S10, S11, S12, S22, S23)
2. ADD IN-PLANE CONNECTIONS BETWEEN THE ROOF DIAPHRAGM AND LATERAL FORCE RESISTING ELEMENTS. SEE KEYED NOTE 2 ON S4. (S1)
3. DEMO (E) CEILING (WHERE OCCURS) TO ADD IN-PLANE CONNECTIONS BETWEEN DIAPHRAGM AND LATERAL FORCE RESISTING ELEMENTS. REPAIR CEILING AFTER WORK IS COMPLETED (S1, S15).

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PLEASANT HILL HIGH SCHOOL GYMNASIUM
SEISMIC REHABILITATION GRANT STRENGTHENING CONCEPTS
84455 N ENTERPRISE RD.
PLEASANT HILL, OR 97455

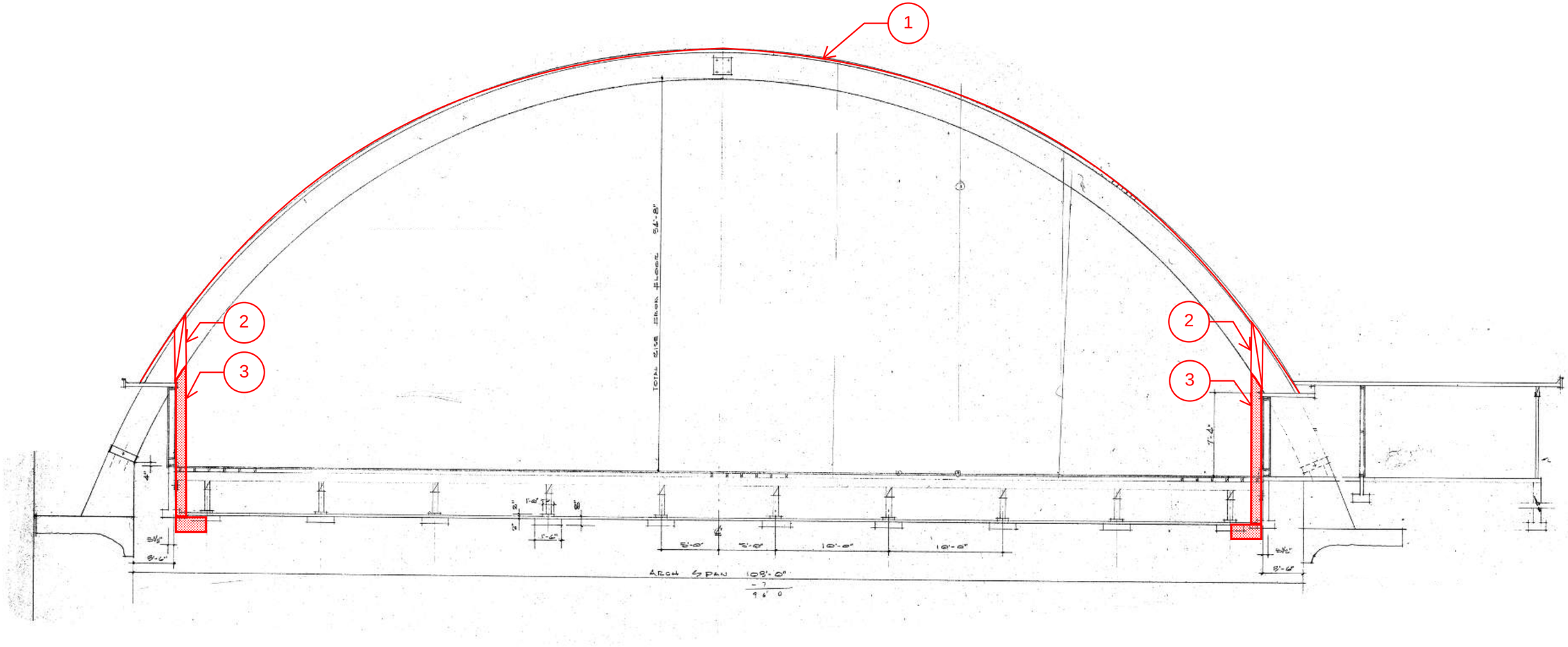
DATE: 06/30/2023
JOB NUMBER: 23030.00
PAGE REFERENCE:

SHEET NO.
S3

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SEISMIC STRENGTHENING KEYED NOTES:

1. NEW PLYWOOD SHEATHING, SEE KEYED NOTE 1 ON S3. (S10, S11, S12, S22, S23)
2. PROVIDE BLOCKING BETWEEN GLULAM ARCHES AND STEEL STRAPPING TO CREATE A CONTINUOUS COLLECTOR ELEMENT. (S1)
3. NEW CONCRETE SHEARWALL AND CONCRETE FOUNDATION, SEE KEYED NOTE 1 ON SHEET S1. (S1, S4, S5, S8, S13, S14)



1 BUILDING ELEVATION
SCALE: NTS

PLEASANT HILL HIGH SCHOOL GYMNASIUM
SEISMIC REHABILITATION GRANT STRENGTHENING CONCEPTS
84455 N ENTERPRISE RD.
PLEASANT HILL, OR 97455

DATE: 06/30/2023
JOB NUMBER: 23030.00
PAGE REFERENCE:

SHEET NO.
S4

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Appendix D

BENEFIT COST ANALYSIS WORKSHEET

Oregon Seismic Rehabilitation Grant Application: Benefit-Cost Analysis

Entity:	**Pleasant Hill School District**		
Point of Contact	**Jim Crist**		
Telephone:	**541-746-9646**		
E-Mail:	jcrist@pleasanthill.k12.or.us		
BCA File Name:	**Pleasant Hill SRGP BCA Tool 2023**	**BCA Date:**	**9/27/2023**

Building Name:	**Pleasant Hill High School**
Site ID:	**Lane-sch01A**
Facility Use:	**School**

Is the Building in the Oregon BCA Tool Database: Yes or No? **No**

How Many Structurally Different Building Parts Are There?

User-Defined	Database
10	Not Listed

Unique Building ID Number	Building Part Square Footage	Percent of Total SF	Percent of Occupancy	Percent of Operating Budget	Building Part Being Retrofitted?
Lane-sch01AA	10,269	8.03%			No
Lane-sch01AB	18,600	14.54%	100.00%	100.00%	Yes
Lane-sch01AC	12,118	9.47%			No
Lane-sch01AD	3,053	2.39%			No
Lane-sch01AE	4,973	3.89%			No
Lane-sch01AF	54,661	42.72%			No
Lane-sch01AG	12,385	9.68%			No
Lane-sch01AH	5,289	4.13%			No
Lane-sch01AI	4,517	3.53%			No
Lane-sch01AJ	2,089	1.63%			No
Totals:	**127,954**	**100.00%**	**100.00%**	**100.00%**	

Seismic Retrofit Cost Estimate per SRGP Application: **$2,499,940**

Benefit-Cost Analysis: Summary Results
Pleasant Hill High School

Building Part	Benefits
Lane-sch01AA	
Lane-sch01AB	$1,704,692
Lane-sch01AC	
Lane-sch01AD	
Lane-sch01AE	
Lane-sch01AF	
Lane-sch01AG	
Lane-sch01AH	
Lane-sch01AI	
Lane-sch01AJ	
Total Benefits	**$1,704,692**
Total Cost	**$2,499,940**
Benefit-Cost Ratio	**0.682**

Benefits by Category Avoided Damages and Losses	
Building Damage	$484,590
Contents Damage	$121,148
Displacement Costs	$50,782
Loss of Function Costs	$42,662
Casualties	$1,005,511
Total	**$1,704,692**

Occupancy Data

For benefit-cost analysis, the average occupancy on a 24/7/365 basis is used for casualty calculations.
Enter data below ONLY for the occupancy categories applicable to this building - all other green cell entries should be left blank.
There are entries below for: employees, visitors, students, meetings or special events and patients.

NOTE: for buildings with similar occupancies each month, complete the tables on the left side only.

NOTE: For buildings with different summer occupancies, complete the tables both on the left and right sides. If this does not apply, enter "0" for number of summer months

Employees: 12 Months per Year or Academic Year for Schools				
Day of Week	Time of Day	Hours per Day	Average Employees in Building	Calculated 24/7/365 Occupancy
Monday - Friday	Day	6	4	0.594
Monday - Friday	Evening	2	1	0.049
Monday - Friday	Night			
Saturday	Day			
Saturday	Evening			
Saturday	Night			
Sunday	Day			
Sunday	Evening			
Sunday	Night			
			Subtotal:	0.643

Employees: Summer Months			Number of Months:	2
Day of Week	Time of Day	Hours per Day	Average Employees in Building	Calculated 24/7/365 Occupancy
Monday - Friday	Day	2	1	0.010
Monday - Friday	Evening			
Monday - Friday	Night			
Saturday	Day			
Saturday	Evening			
Saturday	Night			
Sunday	Day			
Sunday	Evening			
Sunday	Night			
			Subtotal:	0.010

Visitors: 12 Months per Year or Academic Year for Schools			
Day of Week	Average Number of Visitors Per Day	Average Time in Building (Minutes per Visitor)	Calculated 24/7/365 Occupancy
Monday - Friday			
Saturday			
Sunday			
		Subtotal:	

Visitors: Summer Months		Number of Months:	
Day of Week	Average Number of Visitors Per Day	Average Time in Building (Minutes per Visitor)	Calculated 24/7/365 Occupancy
Monday - Friday			
Saturday			
Sunday			
		Subtotal:	

K-12 Students: Academic Year	
Average Daily Number of Students:	50
Hours per Day:	6
Days per Year:	175
Calculated 24/7/365 Occupancy:	5.993

K-12 Students: Summer School	
Average Daily Number of Students:	25
Hours per Day:	0.5
Days per Year:	60
Calculated 24/7/365 Occupancy:	0.086

College Students: Academic Year				
Number of Weeks per Year of Classes:				
Course	Class Duration (hours)	Number of Class Periods per Week	Average Number of Students per Class	Calculated 24/7/365 Occupancy
1 Hr. Courses	1	19	42	
1.5 Hr. Courses	1.5			
2 Hr. Courses	2			
3 Hr. Courses	3			
Other	N/A			
Other	N/A			
			Subtotal:	

College Students: Summer School				
Number of Weeks per Year of Classes:				
Course	Class Duration (hours)	Number of Class Periods per Week	Average Number of Students per Class	Calculated 24/7/365 Occupancy
1 Hr. Courses	1			
1.5 Hr. Courses	1.5			
2 Hr. Courses	2			
3 Hr. Courses	3			
Other	N/A			
Other	N/A			
			Subtotal:	

Occupancy Data

Meetings, Sports Events etc.				
Event	Events per Year	People per Event	Average Time spent at Event (hours per person)	Calculated 24/7/365 Occupancy
Volleyball	20	100	2	0.457
Girls Basketball	20	150	3	1.027
Boys Basketball	20	200	3	1.370
Band	3	150	3	0.154
Youth Basketball	4	200	4	0.365
Wrestling	4	300	6	0.822
Veteran's Day	1	150	1.5	0.026
Career Fair	1	600	1	0.068
Volunteers Coaches	175	24	2	0.959
			Subtotal:	5.248

Patients			
Total Number of In-Patient Beds:			
Average Daily Number of In-Patients			
Average Percentage Occupancy			
Day of Week	Average Number of Out-Patients per Day	Average Time in Building (Hours per person)	Calculated 24/7/365 Occupancy
Monday - Friday			
Saturday			
Sunday			
		Out-Patients:	
		In-Patients:	
		Total Patients:	

Occupancy Data

SUMMARY OCCUPANCY DATA:
Average 24/7/365 Occupancy

Occupancy Category	12 Months or Academic Year	Summer
Employees	0.643	0.010
Visitors		
Students: K-12	5.993	0.086
Students: College		
Meetings & Special Events	5.248	N/A
Patients		N/A
Subtotals:	11.885	0.096
Avg 24/7/365 Occupancy:	11.980	

DATA DOCUMENTATION: OCCUPANCY	
Provide brief documentation below and/or references to other documents included with your application (with page number), for the sources of the occupancy data and estimates.	
Employees: Numbers	
Employees: Hours Per Day	
Visitors: Number Per Day	
Visitors: Average Time in Building	
K-12 Students: Number	
K-12 Students: Hours Per Day	
K-12 Students: Days Per Year	
Additional Comments Re: above Occupancy Data	
College Student Occupancy Data	

Meetings, Sports Events and Other Special Events	
NOTES:	**It is <u>NOT</u> necessary to provide separate documentation for every special event listed. Rather, provide an Overview Statement of the sources of special event occupancy estimates.**
	Provide specific documentation for high occupancy events or very frequent events with high Calculated 24/7/365 Occupancy, especially for occupancies that appear "unusual" or potentially "out of bounds."
Overview Statement Re: Sources of Special Events Occupancy Estimates	Volunteer Coaches average five 2-hour shifts throughout the school year (175 days).

Hospital Patient Data	
Number of Patient Beds	
Average Daily Number of In-Patients	
Average Daily Number of Out-Patients	
Average Time in Building for Out-Patients	

Annual Operating Budget for this Facility

Employees:

	Classification	Number of FTEs[1]	Average Annual Salary per Employee	Total Benefits as Percent of Salary	Annual Salary and Benefits
1	PE Teacher / Licensed	3	$61,868	46.00%	**$270,982**
2	Educational Assistant /Classified	1	$36,000	46.00%	**$52,560**
3	Coach	12	$4,500	100.00%	**$108,000**
4					**$0**
5					**$0**
6					**$0**
7					**$0**
8					**$0**
9					**$0**
10					**$0**
	Total Number of FTEs:	**16.00**		**Subtotal:**	**$431,542**

[1] FTEs: Full time equivalents

Other Building Expenses

Category	Annual Cost
Supplies	$10,000
Building Maintenance	$15,000
Utilities	$24,000
Insurance	$8,300
Rent	$0
Average Annual Capital Goods	$0
OTHER: specify below	
Percent of District Office/Headquarters Annual Operating Budget Attributed to This Building:	**$0**
If rent is zero (building owned), a proxy rent is calculated automatically, based on the value of the building:	**$4,478,390**
Subtotal:	**$4,535,690**

Total Building Annual Operating Budget:	**$4,967,232**

Annual Operating Budget for this Facility

For entities with multiple facilities, a fraction of the operating budget for a District Office of Headquarters building may be attributed to the building being retrofitted. That is, the annual operating budget for the building above may include part of the operating budget for the District Office or Headquarters Building.
If so, complete the following tables:

District Office/Headquarters Building Employees

	Classification	Number of FTEs[1]	Average Annual Salary per Employee	Total Benefits as Percent of Salary	Annual Salary and Benefits
1					$0
2					$0
3					$0
4					$0
5					$0
6					$0
7					$0
8					$0
9					$0
10					$0
	Total Number of FTEs:	0.00		Subtotal:	$0

District Office/Headquarters Building Expenses

Category		Annual Cost
Supplies		
Building maintenance		
Utilities		
Insurance		
Rent		
Average Annual Capital Goods		
OTHER: specify below		
Enter replacement value of building:		
If rent is zero (building owned), a proxy rent is calculated		$0
	Subtotal:	$0

Total Annual Operating Budget for District Office/Headquarters Building:	$0

DOCUMENTATION: ANNUAL OPERATING BUDGET	
NOTE:	**The Annual Operating Budget is used as a "proxy" for the value of services provided from a building and is used to count the benefits of avoiding loss of service in future earthquake events.**
Operating Budget by Categories	
Percent of District Office or Headquarters Annual Operating Budget Attributed to the Facility	

Building Part A: Data for Benefit-Cost Analysis

Building Name:	**Pleasant Hill High School**
Building ID:	**Lane-sch01AA**
Building Part Name / Description:	**Original Classroom Building**

Evaluation for Building Part A

Seismic Hazard Data		
Region of Seismicity	Moderately High	
PGA Ground Motion (g)	2% in 50 year	0.421
	5% in 50 year	0.277
	10% in 50 year	0.178
	20% in 50 year	0.084
Spectral Accelerations (g)	S_{xs}, 2% in 50 year	0.864
	S_{x1}, 2% in 50 year	0.616
	S_{xs}, 10% in 50 year	0.371
	S_{x1}, 10% in 50 year	0.235

Data Entry Item	User Entered Values	Default Values	Used for BCA
Site Data			
County	Lane		Lane
Decimal Latitude	43.95756		43.95756
Decimal Longitude	122.91598		122.91598
Soil Type	D		D
Construction Data			
Primary Structure Type (FEMA 154)	W2		W2
Number of Stories	1		1
Year Built	1961		1961
Rapid Visual Screening Data			
Pre-Code	No		No
Post-Benchmark	No		No
Existing Severe Vertical Irregularity	No		No
Existing Moderate Vertical Irregularity	No		No
Existing Plan Irregularity	No		No
Are Existing Structural Irregularities (RVS) resolved by the Structural Retrofit plan?			
Severe Vertical Irregularity is Resolved		N/A	N/A
Moderate Vertical Irregularity is Resolved		N/A	N/A
Plan Irregularity is Resolved		N/A	N/A
Building Data			
Historic Importance		None	None
Historic Adjustment Modifier	N/A	N/A	1.00
Building Square Footage - SF	10,269	N/A	10,269
Building Replacement - $/SF		$500.00	$500.00
Building Replacement Value - $	N/A	N/A	$5,134,500
Historic Building Replacement - $/SF	N/A	N/A	$500.00
Historic Building Replacement Value - $	N/A	N/A	$5,134,500
Contents Value - % of Building Value		25%	25%
Displacement Costs - $/SF/month		$2.75	$2.75
Displacement Costs - One Time		$3.25	$3.25
Average Annual Occupancy	0.00	0.96	0.96
Annual Operating Budget	$0	$398,647	$398,647
Seismic Fragility Curves			
Before Mitigation			
Slight Damage State		0.12	0.12
Moderate Damage State		0.19	0.19
Extensive Damage State		0.37	0.37
Complete Damage State		0.60	0.60
Beta		0.66	0.66
After Mitigation			
Retrofit Building Type		W2	W2
Risk Category		III	III
Slight Damage State		0.12	0.12
Moderate Damage State		0.19	0.19
Extensive Damage State		0.37	0.37
Complete Damage State		0.60	0.60
Beta		0.66	0.66

Data Documentation: Building Part A	
Provide brief documentation below and/or references to other documents included with your application (with page number), but ONLY for data entries in Column C, which replace the default values in Column D.	
Soil Type	
Primary Structure Type	
Number of Stories	
Year Built	
Severe Vertical Irregularity	
Moderate Vertical Irregularity	
Plan Irregularity	
Pre-Code	
Post-Benchmark	
Historic Importance (if not none)	
Building Square Footage	
Building Replacement Value $/SF	
Contents Value % of Building Value	
Displacement Costs One Time	
Displacement Costs $/SF/month	
Fragility Curve Parameters Before Mitigation	
Fragility Curve Parameters After Mitigation	
Other Comments	

Building Part B: Data for Benefit-Cost Analysis

Building Name:	**Pleasant Hill High School**
Building ID:	**Lane-sch01AB**
Building Part Name / Description:	**Gymnasium (In Scope)**

Evaluation for Building Part B

Seismic Hazard Data		
Region of Seismicity	Moderately High	
PGA Ground Motion (g)	2% in 50 year	0.421
	5% in 50 year	0.277
	10% in 50 year	0.178
	20% in 50 year	0.084
Spectral Accelerations (g)	S_{xs}, 2% in 50 year	0.864
	S_{x1}, 2% in 50 year	0.616
	S_{xs}, 10% in 50 year	0.371
	S_{x1}, 10% in 50 year	0.235

Data Entry Item	User Entered Values	Default Values	Used for BCA
Site Data			
County	Lane		Lane
Decimal Latitude	43.957258		43.957258
Decimal Longitude	122.916007		122.916007
Soil Type	D		D
Construction Data			
Primary Structure Type (FEMA 154)	W2		W2
Number of Stories	1		1
Year Built	1961		1961
Rapid Visual Screening Data			
Pre-Code	Yes		Yes
Post-Benchmark	No		No
Existing Severe Vertical Irregularity	Yes		Yes
Existing Moderate Vertical Irregularity	No		No
Existing Plan Irregularity	Yes		Yes
Are Existing Structural Irregularities (RVS) resolved by the Structural Retrofit plan?			
Severe Vertical Irregularity is Resolved	Yes	No	Yes
Moderate Vertical Irregularity is Resolved		N/A	N/A
Plan Irregularity is Resolved	Yes	No	Yes
Building Data			
Historic Importance		None	None
Historic Adjustment Modifier	N/A	N/A	1.00
Building Square Footage - SF	18,600	N/A	18,600
Building Replacement - $/SF		$500.00	$500.00
Building Replacement Value - $	N/A	N/A	$9,300,000
Historic Building Replacement - $/SF	N/A	N/A	$500.00
Historic Building Replacement Value - $	N/A	N/A	$9,300,000
Contents Value - % of Building Value		25%	25%
Displacement Costs - $/SF/month		$2.75	$2.75
Displacement Costs - One Time		$3.25	$3.25
Average Annual Occupancy	11.98	1.74	11.98
Annual Operating Budget	$4,967,232	$722,060	$4,967,232
Seismic Fragility Curves			
Before Mitigation			
Slight Damage State		0.09	0.09
Moderate Damage State		0.14	0.14
Extensive Damage State		0.28	0.28
Complete Damage State		0.45	0.45
Beta		0.66	0.66
After Mitigation			
Retrofit Building Type		W2	W2
Risk Category	**IO**	III	IO

Slight Damage State		0.30	0.30
Moderate Damage State		0.63	0.63
Extensive Damage State		1.31	1.31
Complete Damage State		2.36	2.36
Beta		0.62	0.62

Data Documentation: Building Part B	
Provide brief documentation below and/or references to other documents included with your application (with page number), but ONLY for data entries in Column C, which replace the default values in Column D.	
Soil Type	
Primary Structure Type	
Number of Stories	
Year Built	
Severe Vertical Irregularity	
Moderate Vertical Irregularity	
Plan Irregularity	
Pre-Code	
Post-Benchmark	
Historic Importance (if not none)	
Building Square Footage	
Building Replacement Value $/SF	
Contents Value % of Building Value	
Displacement Costs One Time	
Displacement Costs $/SF/month	
Fragility Curve Parameters Before Mitigation	
Fragility Curve Parameters After Mitigation	
Other Comments	

Building Part C: Data for Benefit-Cost Analysis

Building Name:	**Pleasant Hill High School**
Building ID:	**Lane-sch01AC**
Building Part Name / Description:	**Music Center/Cafeteria**

Evaluation for Building Part C

Seismic Hazard Data		
Region of Seismicity	Moderately High	
PGA Ground Motion (g)	2% in 50 year	0.421
	5% in 50 year	0.277
	10% in 50 year	0.177
	20% in 50 year	0.084
Spectral Accelerations (g)	S_{xs}, 2% in 50 year	0.864
	S_{x1}, 2% in 50 year	0.616
	S_{xs}, 10% in 50 year	0.371
	S_{x1}, 10% in 50 year	0.235

Data Entry Item	User Entered Values	Default Values	Used for BCA
Site Data			
County	Lane		Lane
Decimal Latitude	43.956915		43.956915
Decimal Longitude	122.915843		122.915843
Soil Type	D		D
Construction Data			
Primary Structure Type (FEMA 154)	W2		W2
Number of Stories	1		1
Year Built	1961		1961
Rapid Visual Screening Data			
Pre-Code	No		No
Post-Benchmark	No		No
Existing Severe Vertical Irregularity	No		No
Existing Moderate Vertical Irregularity	No		No
Existing Plan Irregularity	No		No
Are Existing Structural Irregularities (RVS) resolved by the Structural Retrofit plan?			
Severe Vertical Irregularity is Resolved		N/A	N/A
Moderate Vertical Irregularity is Resolved		N/A	N/A
Plan Irregularity is Resolved		N/A	N/A
Building Data			
Historic Importance		None	None
Historic Adjustment Modifier	N/A	N/A	1.00
Building Square Footage - SF	12,118	N/A	12,118
Building Replacement - $/SF		$500.00	$500.00
Building Replacement Value - $	N/A	N/A	$6,059,000
Historic Building Replacement - $/SF	N/A	N/A	$500.00
Historic Building Replacement Value - $	N/A	N/A	$6,059,000
Contents Value - % of Building Value		25%	25%
Displacement Costs - $/SF/month		$2.75	$2.75
Displacement Costs - One Time		$3.25	$3.25
Average Annual Occupancy	0.00	1.13	1.13
Annual Operating Budget	$0	$470,426	$470,426
Seismic Fragility Curves			
Before Mitigation			
Slight Damage State		0.12	0.12
Moderate Damage State		0.19	0.19
Extensive Damage State		0.37	0.37
Complete Damage State		0.60	0.60
Beta		0.66	0.66
After Mitigation			
Retrofit Building Type		W2	W2
Risk Category		III	III

Slight Damage State		0.12	0.12
Moderate Damage State		0.19	0.19
Extensive Damage State		0.37	0.37
Complete Damage State		0.60	0.60
Beta		0.66	0.66

Data Documentation: Building Part C	
Provide brief documentation below and/or references to other documents included with your application (with page number), but ONLY for data entries in Column C, which replace the default values in Column D.	
Soil Type	
Primary Structure Type	
Number of Stories	
Year Built	
Severe Vertical Irregularity	
Moderate Vertical Irregularity	
Plan Irregularity	
Pre-Code	
Post-Benchmark	
Historic Importance (if not none)	
Building Square Footage	
Building Replacement Value $/SF	
Contents Value % of Building Value	
Displacement Costs One Time	
Displacement Costs $/SF/month	
Fragility Curve Parameters Before Mitigation	
Fragility Curve Parameters After Mitigation	
Other Comments	

Building Part D: Data for Benefit-Cost Analysis

Building Name:	**Pleasant Hill High School**
Building ID:	**Lane-sch01AD**
Building Part Name / Description:	**Administration Building**

Evaluation for Building Part D

Seismic Hazard Data		
Region of Seismicity	Moderately High	
PGA Ground Motion (g)	2% in 50 year	0.421
	5% in 50 year	0.277
	10% in 50 year	0.178
	20% in 50 year	0.084
Spectral Accelerations (g)	S_{xs}, 2% in 50 year	0.864
	S_{x1}, 2% in 50 year	0.616
	S_{xs}, 10% in 50 year	0.371
	S_{x1}, 10% in 50 year	0.235

Data Entry Item	User Entered Values	Default Values	Used for BCA
Site Data			
County	Lane		Lane
Decimal Latitude	43.957116		43.957116
Decimal Longitude	122.916423		122.916423
Soil Type	D		D
Construction Data			
Primary Structure Type (FEMA 154)	W2		W2
Number of Stories	1		1
Year Built	1961		1961
Rapid Visual Screening Data			
Pre-Code	No		No
Post-Benchmark	No		No
Existing Severe Vertical Irregularity	No		No
Existing Moderate Vertical Irregularity	No		No
Existing Plan Irregularity	No		No
Are Existing Structural Irregularities (RVS) resolved by the Structural Retrofit plan?			
Severe Vertical Irregularity is Resolved		N/A	N/A
Moderate Vertical Irregularity is Resolved		N/A	N/A
Plan Irregularity is Resolved		N/A	N/A
Building Data			
Historic Importance		None	None
Historic Adjustment Modifier	N/A	N/A	1.00
Building Square Footage - SF	3,053	N/A	3,053
Building Replacement - $/SF		$500.00	$500.00
Building Replacement Value - $	N/A	N/A	$1,526,500
Historic Building Replacement - $/SF	N/A	N/A	$500.00
Historic Building Replacement Value - $	N/A	N/A	$1,526,500
Contents Value - % of Building Value		25%	25%
Displacement Costs - $/SF/month		$2.75	$2.75
Displacement Costs - One Time		$3.25	$3.25
Average Annual Occupancy	0.00	0.29	0.29
Annual Operating Budget	$0	$118,519	$118,519
Seismic Fragility Curves			
Before Mitigation			
Slight Damage State		0.12	0.12
Moderate Damage State		0.19	0.19
Extensive Damage State		0.37	0.37
Complete Damage State		0.60	0.60
Beta		0.66	0.66
After Mitigation			
Retrofit Building Type		W2	W2
Risk Category		III	III

Slight Damage State		0.12	0.12
Moderate Damage State		0.19	0.19
Extensive Damage State		0.37	0.37
Complete Damage State		0.60	0.60
Beta		0.66	0.66

Data Documentation: Building Part D	
Provide brief documentation below and/or references to other documents included with your application (with page number), but ONLY for data entries in Column C, which replace the default values in Column D.	
Soil Type	
Primary Structure Type	
Number of Stories	
Year Built	
Severe Vertical Irregularity	
Moderate Vertical Irregularity	
Plan Irregularity	
Pre-Code	
Post-Benchmark	
Historic Importance (if not none)	
Building Square Footage	
Building Replacement Value $/SF	
Contents Value % of Building Value	
Displacement Costs One Time	
Displacement Costs $/SF/month	
Fragility Curve Parameters Before Mitigation	
Fragility Curve Parameters After Mitigation	
Other Comments	

Building Part E: Data for Benefit-Cost Analysis

Building Name:	**Pleasant Hill High School**
Building ID:	**Lane-sch01AE**
Building Part Name / Description:	**Library**

Evaluation for Building Part E

Seismic Hazard Data		
Region of Seismicity	Moderately High	
PGA Ground Motion (g)	2% in 50 year	0.421
	5% in 50 year	0.277
	10% in 50 year	0.178
	20% in 50 year	0.084
Spectral Accelerations (g)	S_{xs}, 2% in 50 year	0.864
	S_{x1}, 2% in 50 year	0.616
	S_{xs}, 10% in 50 year	0.371
	S_{x1}, 10% in 50 year	0.235

Data Entry Item	User Entered Values	Default Values	Used for BCA
Site Data			
County	Lane		Lane
Decimal Latitude	43.956779		43.956779
Decimal Longitude	122.916382		122.916382
Soil Type	D		D
Construction Data			
Primary Structure Type (FEMA 154)	W2		W2
Number of Stories	1		1
Year Built	1961		1961
Rapid Visual Screening Data			
Pre-Code	No		No
Post-Benchmark	No		No
Existing Severe Vertical Irregularity	No		No
Existing Moderate Vertical Irregularity	Yes		Yes
Existing Plan Irregularity	Yes		Yes
Are Existing Structural Irregularities (RVS) resolved by the Structural Retrofit plan?			
Severe Vertical Irregularity is Resolved		N/A	N/A
Moderate Vertical Irregularity is Resolved		No	No
Plan Irregularity is Resolved		No	No
Building Data			
Historic Importance		None	None
Historic Adjustment Modifier	N/A	N/A	1.00
Building Square Footage - SF	4,973	N/A	4,973
Building Replacement - $/SF		$500.00	$500.00
Building Replacement Value - $	N/A	N/A	$2,486,500
Historic Building Replacement - $/SF	N/A	N/A	$500.00
Historic Building Replacement Value - $	N/A	N/A	$2,486,500
Contents Value - % of Building Value		25%	25%
Displacement Costs - $/SF/month		$2.75	$2.75
Displacement Costs - One Time		$3.25	$3.25
Average Annual Occupancy	0.00	0.47	0.47
Annual Operating Budget	$0	$193,054	$193,054
Seismic Fragility Curves			
Before Mitigation			
Slight Damage State		0.10	0.10
Moderate Damage State		0.16	0.16
Extensive Damage State		0.31	0.31
Complete Damage State		0.50	0.50
Beta		0.66	0.66
After Mitigation			
Retrofit Building Type		W2	W2
Risk Category		III	III
Slight Damage State		0.10	0.10

Moderate Damage State		0.16	0.16
Extensive Damage State		0.31	0.31
Complete Damage State		0.50	0.50
Beta		0.66	0.66

Data Documentation: Building Part E	
Provide brief documentation below and/or references to other documents included with your application (with page number), but ONLY for data entries in Column C, which replace the default values in Column D.	
Soil Type	
Primary Structure Type	
Number of Stories	
Year Built	
Severe Vertical Irregularity	
Moderate Vertical Irregularity	
Plan Irregularity	
Pre-Code	
Post-Benchmark	
Historic Importance (if not none)	
Building Square Footage	
Building Replacement Value $/SF	
Contents Value % of Building Value	
Displacement Costs One Time	
Displacement Costs $/SF/month	
Fragility Curve Parameters Before Mitigation	
Fragility Curve Parameters After Mitigation	
Other Comments	

Building Part F: Data for Benefit-Cost Analysis

Building Name:	**Pleasant Hill High School**
Building ID:	**Lane-sch01AF**
Building Part Name / Description:	**Classroom Building**

Evaluation for Building Part F

Seismic Hazard Data		
Region of Seismicity	Moderately High	
PGA Ground Motion (g)	2% in 50 year	0.421
	5% in 50 year	0.277
	10% in 50 year	0.178
	20% in 50 year	0.084
Spectral Accelerations (g)	S_{xs}, 2% in 50 year	0.864
	S_{x1}, 2% in 50 year	0.616
	S_{xs}, 10% in 50 year	0.371
	S_{x1}, 10% in 50 year	0.235

Data Entry Item	User Entered Values	Default Values	Used for BCA
Site Data			
County	Lane		Lane
Decimal Latitude	43.956861		43.956861
Decimal Longitude	122.917281		122.917281
Soil Type	D		D
Construction Data			
Primary Structure Type (FEMA 154)	W2		W2
Number of Stories	1		1
Year Built	1964		1964
Rapid Visual Screening Data			
Pre-Code			
Post-Benchmark			
Existing Severe Vertical Irregularity			
Existing Moderate Vertical Irregularity			
Existing Plan Irregularity			
Are Existing Structural Irregularities (RVS) resolved by the Structural Retrofit plan?			
Severe Vertical Irregularity is Resolved			
Moderate Vertical Irregularity is Resolved			
Plan Irregularity is Resolved			
Building Data			
Historic Importance		None	None
Historic Adjustment Modifier	N/A	N/A	1.00
Building Square Footage - SF	54,661	N/A	54,661
Building Replacement - $/SF		$500.00	$500.00
Building Replacement Value - $	N/A	N/A	$27,330,500
Historic Building Replacement - $/SF	N/A	N/A	$500.00
Historic Building Replacement Value - $	N/A	N/A	$27,330,500
Contents Value - % of Building Value		25%	25%
Displacement Costs - $/SF/month		$2.75	$2.75
Displacement Costs - One Time		$3.25	$3.25
Average Annual Occupancy	0.00	5.12	5.12
Annual Operating Budget	$0	$2,121,965	$2,121,965
Seismic Fragility Curves			
Before Mitigation			
Slight Damage State		0.09	0.09
Moderate Damage State		0.14	0.14
Extensive Damage State		0.28	0.28
Complete Damage State		0.45	0.45
Beta		0.66	0.66
After Mitigation			
Retrofit Building Type		W2	W2
Risk Category		III	III

Slight Damage State		0.09	0.09
Moderate Damage State		0.14	0.14
Extensive Damage State		0.28	0.28
Complete Damage State		0.45	0.45
Beta		0.66	0.66

Data Documentation: Building Part F	
Provide brief documentation below and/or references to other documents included with your application (with page number), but ONLY for data entries in Column C, which replace the default values in Column D.	
Soil Type	
Primary Structure Type	
Number of Stories	
Year Built	
Severe Vertical Irregularity	
Moderate Vertical Irregularity	
Plan Irregularity	
Pre-Code	
Post-Benchmark	
Historic Importance (if not none)	
Building Square Footage	
Building Replacement Value $/SF	
Contents Value % of Building Value	
Displacement Costs One Time	
Displacement Costs $/SF/month	
Fragility Curve Parameters Before Mitigation	
Fragility Curve Parameters After Mitigation	
Other Comments	

Building Part G: Data for Benefit-Cost Analysis

Building Name:	**Pleasant Hill High School**
Building ID:	**Lane-sch01AG**
Building Part Name / Description:	**Classroom/Shop**

Evaluation for Building Part G

Seismic Hazard Data		
Region of Seismicity	Moderately High	
PGA Ground Motion (g)	2% in 50 year	0.421
	5% in 50 year	0.277
	10% in 50 year	0.178
	20% in 50 year	0.084
Spectral Accelerations (g)	S_{xs}, 2% in 50 year	0.864
	S_{x1}, 2% in 50 year	0.616
	S_{xs}, 10% in 50 year	0.371
	S_{x1}, 10% in 50 year	0.235

Data Entry Item	User Entered Values	Default Values	Used for BCA
Site Data			
County	Lane		Lane
Decimal Latitude	43.956553		43.956553
Decimal Longitude	122.916181		122.916181
Soil Type	D		D
Construction Data			
Primary Structure Type (FEMA 154)	URM		URM
Number of Stories	1		1
Year Built	1964		1964
Rapid Visual Screening Data			
Pre-Code			
Post-Benchmark			
Existing Severe Vertical Irregularity			
Existing Moderate Vertical Irregularity			
Existing Plan Irregularity			
Are Existing Structural Irregularities (RVS) resolved by the Structural Retrofit plan?			
Severe Vertical Irregularity is Resolved			
Moderate Vertical Irregularity is Resolved			
Plan Irregularity is Resolved			
Building Data			
Historic Importance		None	None
Historic Adjustment Modifier	N/A	N/A	1.00
Building Square Footage - SF	12,385	N/A	12,385
Building Replacement - $/SF		$500.00	$500.00
Building Replacement Value - $	N/A	N/A	$6,192,500
Historic Building Replacement - $/SF	N/A	N/A	$500.00
Historic Building Replacement Value - $	N/A	N/A	$6,192,500
Contents Value - % of Building Value		25%	25%
Displacement Costs - $/SF/month		$2.75	$2.75
Displacement Costs - One Time		$3.25	$3.25
Average Annual Occupancy	0.00	1.16	1.16
Annual Operating Budget	$480,791	$480,791	$480,791
Seismic Fragility Curves			
Before Mitigation			
Slight Damage State		0.10	0.10
Moderate Damage State		0.13	0.13
Extensive Damage State		0.20	0.20
Complete Damage State		0.28	0.28
Beta		0.66	0.66
After Mitigation			
Retrofit Building Type		URM	URM
Risk Category		III	III

Slight Damage State		0.10	0.10
Moderate Damage State		0.13	0.13
Extensive Damage State		0.20	0.20
Complete Damage State		0.28	0.28
Beta		0.66	0.66

Data Documentation: Building Part G	
Provide brief documentation below and/or references to other documents included with your application (with page number), but ONLY for data entries in Column C, which replace the default values in Column D.	
Soil Type	
Primary Structure Type	
Number of Stories	
Year Built	
Severe Vertical Irregularity	
Moderate Vertical Irregularity	
Plan Irregularity	
Pre-Code	
Post-Benchmark	
Historic Importance (if not none)	
Building Square Footage	
Building Replacement Value $/SF	
Contents Value % of Building Value	
Displacement Costs One Time	
Displacement Costs $/SF/month	
Fragility Curve Parameters Before Mitigation	
Fragility Curve Parameters After Mitigation	
Other Comments	

Building Part H: Data for Benefit-Cost Analysis

Building Name:	**Pleasant Hill High School**
Building ID:	**Lane-sch01AH**
Building Part Name / Description:	**Weight Room/Team Room**

Evaluation for Building Part H

Seismic Hazard Data		
Region of Seismicity	Moderately High	
PGA Ground Motion (g)	2% in 50 year	0.421
	5% in 50 year	0.277
	10% in 50 year	0.177
	20% in 50 year	0.084
Spectral Accelerations (g)	S_{xs}, 2% in 50 year	0.864
	S_{x1}, 2% in 50 year	0.616
	S_{xs}, 10% in 50 year	0.371
	S_{x1}, 10% in 50 year	0.235

Data Entry Item	User Entered Values	Default Values	Used for BCA
Site Data			
County	Lane		Lane
Decimal Latitude	43.95731		43.95731
Decimal Longitude	122.91557		122.91557
Soil Type	D		D
Construction Data			
Primary Structure Type (FEMA 154)	URM		URM
Number of Stories	1		1
Year Built	1974		1974
Rapid Visual Screening Data			
Pre-Code			
Post-Benchmark			
Existing Severe Vertical Irregularity			
Existing Moderate Vertical Irregularity			
Existing Plan Irregularity			
Are Existing Structural Irregularities (RVS) resolved by the Structural Retrofit plan?			
Severe Vertical Irregularity is Resolved			
Moderate Vertical Irregularity is Resolved			
Plan Irregularity is Resolved			
Building Data			
Historic Importance		None	None
Historic Adjustment Modifier	N/A	N/A	1.00
Building Square Footage - SF	5,289	N/A	5,289
Building Replacement - $/SF		$500.00	$500.00
Building Replacement Value - $	N/A	N/A	$2,644,500
Historic Building Replacement - $/SF	N/A	N/A	$500.00
Historic Building Replacement Value - $	N/A	N/A	$2,644,500
Contents Value - % of Building Value		25%	25%
Displacement Costs - $/SF/month		$2.75	$2.75
Displacement Costs - One Time		$3.25	$3.25
Average Annual Occupancy	0.00	0.50	0.50
Annual Operating Budget	$0	$205,321	$205,321
Seismic Fragility Curves			
Before Mitigation			
Slight Damage State		0.10	0.10
Moderate Damage State		0.13	0.13
Extensive Damage State		0.20	0.20
Complete Damage State		0.28	0.28
Beta		0.66	0.66
After Mitigation			
Retrofit Building Type		URM	URM
Risk Category		III	III

Slight Damage State		0.10	0.10
Moderate Damage State		0.13	0.13
Extensive Damage State		0.20	0.20
Complete Damage State		0.28	0.28
Beta		0.66	0.66

Data Documentation: Building Part H	
Provide brief documentation below and/or references to other documents included with your application (with page number), but ONLY for data entries in Column C, which replace the default values in Column D.	
Soil Type	
Primary Structure Type	
Number of Stories	
Year Built	
Severe Vertical Irregularity	
Moderate Vertical Irregularity	
Plan Irregularity	
Pre-Code	
Post-Benchmark	
Historic Importance (if not none)	
Building Square Footage	
Building Replacement Value $/SF	
Contents Value % of Building Value	
Displacement Costs One Time	
Displacement Costs $/SF/month	
Fragility Curve Parameters Before Mitigation	
Fragility Curve Parameters After Mitigation	
Other Comments	

Building Part I: Data for Benefit-Cost Analysis

Building Name:	**Pleasant Hill High School**
Building ID:	**Lane-sch01AI**
Building Part Name / Description:	**Classroom Building**

Evaluation for Building Part I

Seismic Hazard Data		
Region of Seismicity	Moderately High	
PGA Ground Motion (g)	2% in 50 year	0.421
	5% in 50 year	0.277
	10% in 50 year	0.177
	20% in 50 year	0.084
Spectral Accelerations (g)	S_{xs}, 2% in 50 year	0.864
	S_{x1}, 2% in 50 year	0.615
	S_{xs}, 10% in 50 year	0.371
	S_{x1}, 10% in 50 year	0.235

Data Entry Item	User Entered Values	Default Values	Used for BCA
Site Data			
County	Lane		Lane
Decimal Latitude	43.95663		43.95663
Decimal Longitude	122.91549		122.91549
Soil Type	D		D
Construction Data			
Primary Structure Type (FEMA 154)	W2		W2
Number of Stories	1		1
Year Built	1967		1967
Rapid Visual Screening Data			
Pre-Code			
Post-Benchmark			
Existing Severe Vertical Irregularity			
Existing Moderate Vertical Irregularity			
Existing Plan Irregularity			
Are Existing Structural Irregularities (RVS) resolved by the Structural Retrofit plan?			
Severe Vertical Irregularity is Resolved			
Moderate Vertical Irregularity is Resolved			
Plan Irregularity is Resolved			
Building Data			
Historic Importance		None	None
Historic Adjustment Modifier	N/A	N/A	1.00
Building Square Footage - SF	4,517	N/A	4,517
Building Replacement - $/SF		$500.00	$500.00
Building Replacement Value - $	N/A	N/A	$2,258,500
Historic Building Replacement - $/SF	N/A	N/A	$500.00
Historic Building Replacement Value - $	N/A	N/A	$2,258,500
Contents Value - % of Building Value		25%	25%
Displacement Costs - $/SF/month		$2.75	$2.75
Displacement Costs - One Time		$3.25	$3.25
Average Annual Occupancy	0.00	0.42	0.42
Annual Operating Budget	$0	$175,352	$175,352
Seismic Fragility Curves			
Before Mitigation			
Slight Damage State		0.09	0.09
Moderate Damage State		0.14	0.14
Extensive Damage State		0.28	0.28
Complete Damage State		0.45	0.45
Beta		0.66	0.66
After Mitigation			
Retrofit Building Type		W2	W2
Risk Category		III	III

Slight Damage State		0.09	0.09
Moderate Damage State		0.14	0.14
Extensive Damage State		0.28	0.28
Complete Damage State		0.45	0.45
Beta		0.66	0.66

Data Documentation: Building Part I	
Provide brief documentation below and/or references to other documents included with your application (with page number), but ONLY for data entries in Column C, which replace the default values in Column D.	
Soil Type	
Primary Structure Type	
Number of Stories	
Year Built	
Severe Vertical Irregularity	
Moderate Vertical Irregularity	
Plan Irregularity	
Pre-Code	
Post-Benchmark	
Historic Importance (if not none)	
Building Square Footage	
Building Replacement Value $/SF	
Contents Value % of Building Value	
Displacement Costs One Time	
Displacement Costs $/SF/month	
Fragility Curve Parameters Before Mitigation	
Fragility Curve Parameters After Mitigation	
Other Comments	

Building Part J: Data for Benefit-Cost Analysis

Building Name:	**Pleasant Hill High School**
Building ID:	**Lane-sch01AJ**
Building Part Name / Description:	**Forestry Building**

Evaluation for Building Part J

Seismic Hazard Data		
Region of Seismicity	Moderately High	
PGA Ground Motion (g)	2% in 50 year	0.421
	5% in 50 year	0.277
	10% in 50 year	0.177
	20% in 50 year	0.084
Spectral Accelerations (g)	S_{xs}, 2% in 50 year	0.864
	S_{x1}, 2% in 50 year	0.615
	S_{xs}, 10% in 50 year	0.371
	S_{x1}, 10% in 50 year	0.235

Data Entry Item	User Entered Values	Default Values	Used for BCA
Site Data			
County	Lane		Lane
Decimal Latitude	43.956852		43.956852
Decimal Longitude	122.915097		122.915097
Soil Type	D		D
Construction Data			
Primary Structure Type (FEMA 154)	W2		W2
Number of Stories	1		1
Year Built	1967		1967
Rapid Visual Screening Data			
Pre-Code			
Post-Benchmark			
Existing Severe Vertical Irregularity			
Existing Moderate Vertical Irregularity			
Existing Plan Irregularity			
Are Existing Structural Irregularities (RVS) resolved by the Structural Retrofit plan?			
Severe Vertical Irregularity is Resolved			
Moderate Vertical Irregularity is Resolved			
Plan Irregularity is Resolved			
Building Data			
Historic Importance		None	None
Historic Adjustment Modifier	N/A	N/A	1.00
Building Square Footage - SF	2,089	N/A	2,089
Building Replacement - $/SF		$500.00	$500.00
Building Replacement Value - $	N/A	N/A	$1,044,500
Historic Building Replacement - $/SF	N/A	N/A	$500.00
Historic Building Replacement Value - $	N/A	N/A	$1,044,500
Contents Value - % of Building Value		25%	25%
Displacement Costs - $/SF/month		$2.75	$2.75
Displacement Costs - One Time		$3.25	$3.25
Average Annual Occupancy	0.00	0.20	0.20
Annual Operating Budget	$0	$81,096	$81,096
Seismic Fragility Curves			
Before Mitigation			
Slight Damage State		0.09	0.09
Moderate Damage State		0.14	0.14
Extensive Damage State		0.28	0.28
Complete Damage State		0.45	0.45
Beta		0.66	0.66
After Mitigation			
Retrofit Building Type		W2	W2
Risk Category		III	III

Slight Damage State		0.09	0.09
Moderate Damage State		0.14	0.14
Extensive Damage State		0.28	0.28
Complete Damage State		0.45	0.45
Beta		0.66	0.66

Data Documentation: Building Part J	
Provide brief documentation below and/or references to other documents included with your application (with page number), but ONLY for data entries in Column C, which replace the default values in Column D.	
Soil Type	
Primary Structure Type	
Number of Stories	
Year Built	
Severe Vertical Irregularity	
Moderate Vertical Irregularity	
Plan Irregularity	
Pre-Code	
Post-Benchmark	
Historic Importance (if not none)	
Building Square Footage	
Building Replacement Value $/SF	
Contents Value % of Building Value	
Displacement Costs One Time	
Displacement Costs $/SF/month	
Fragility Curve Parameters Before Mitigation	
Fragility Curve Parameters After Mitigation	
Other Comments	

Appendix E

ASCE 41-17 TIER 1 CHECKLISTS

ASCE 41-17 Tier 1 Checklists

FIRM:	WRK Engineers
PROJECT NAME:	PHSD - HS Main Gym
SEISMICITY LEVEL:	High
PROJECT NUMBER:	23030.00.
COMPLETED BY:	WN
DATE COMPLETED:	7/28/2023
REVIEWED BY:	BK
REVIEW DATE:	8/31/2023

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

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17.1.2IO Basic Configuration Checklist

Table 17-3. Immediate Occupancy Basic Configuration Checklist

	Status				Evaluation Statement	Tier 2 Reference	Commentary Reference	Comments
Very Low Seismicity								
Building System—General								
S1	**C** ☐	**NC** ☒	**N/A** ☐	**U** ☐	LOAD PATH: The structure contains a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation.	5.4.1.1	A.2.1.1	Provide complete load path for transfer of inertial forces to building foundation.
S2	**C** ☐	**NC** ☒	**N/A** ☐	**U** ☐	ADJACENT BUILDINGS: The clear distance between the building being evaluated and any adjacent building is greater than 0.5% of the height of the shorter building in low seismicity, 1.0% in moderate seismicity, and 3.0% in high seismicity.	5.4.1.2	A.2.1.2	Provide all new gravity framing and lateral resisting elements as necessary to provide building separation.
S3	**C** ☐	**NC** ☒	**N/A** ☐	**U** ☐	MEZZANINES: Interior mezzanine levels are braced independently from the main structure or are anchored to the seismic-force-resisting elements of the main structure.	5.4.1.3	A.2.1.3	Anchor mezzanine to main structure lateral force resisting system and add shear walls as required.
Building System—Building Configuration								
	C ☐	**NC** ☐	**N/A** ☒	**U** ☐	WEAK STORY: The sum of the shear strengths of the seismic-force-resisting system in any story in each direction is not less than 80% of the strength in the adjacent story above.	5.4.2.1	A.2.2.2	
	C ☐	**NC** ☐	**N/A** ☒	**U** ☐	SOFT STORY: The stiffness of the seismic-force-resisting system in any story is not less than 70% of the seismic-force-resisting system stiffness in an adjacent story above or less than 80% of the average seismic-force-resisting system stiffness of the three stories above.	5.4.2.2	A.2.2.3	
	C ☐	**NC** ☐	**N/A** ☒	**U** ☐	VERTICAL IRREGULARITIES: All vertical elements in the seismic-force-resisting system are continuous to the foundation.	5.4.2.3	A.2.2.4	

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C	NC	N/A	U			
☐	☐	☒	☐	GEOMETRY: There are no changes in the net horizontal dimension of the seismic-force-resisting system of more than 30% in a story relative to adjacent stories, excluding one-story penthouses and mezzanines.	5.4.2.4	A.2.2.5
C	**NC**	**N/A**	**U**	MASS: There is no change in effective mass of more than 50% from one story to the next. Light roofs, penthouses, and mezzanines need not be considered.	5.4.2.5	A.2.2.6
☐	☐	☒	☐			
C	**NC**	**N/A**	**U**	TORSION: The estimated distance between the story center of mass and the story center of rigidity is less than 20% of the building width in either plan dimension.	5.4.2.6	A.2.2.7
☐	☐	☒	☐			

Status				Evaluation Statement	Tier 2 Reference	Commentary Reference	Comments
Low Seismicity (Complete the Following Items in Addition to the Items for Very Low Seismicity)							
Geologic Site Hazards							
C	**NC**	**N/A**	**U**	LIQUEFACTION: Liquefaction-susceptible, saturated, loose granular soils that could jeopardize the building's seismic performance do not exist in the foundation soils at depths within 50 ft (15.2 m) under the building.	5.4.3.1	A.6.1.1	
☒	☐	☐	☐				
C	**NC**	**N/A**	**U**	SLOPE FAILURE: The building site is located away from potential earthquake-induced slope failures or rockfalls so that it is unaffected by such failures or is capable of accommodating any predicted movements without failure.	5.4.3.1	A.6.1.2	
☒	☐	☐	☐				
C	**NC**	**N/A**	**U**	SURFACE FAULT RUPTURE: Surface fault rupture and surface displacement at the building site are not anticipated.	5.4.3.1	A.6.1.3	
☒	☐	☐	☐				

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Status				Evaluation Statement	Tier 2 Reference	Commentary Reference	Comments
Moderate and High Seismicity (Complete the Following Items in Addition to the Items for Low Seismicity)							
Foundation Configuration							
C	**NC**	**N/A**	**U**	OVERTURNING: The ratio of the least horizontal dimension of the seismic-force-resisting system at the foundation level to the building height (base/height) is greater than $0.6S_a$.	5.4.3.3	A.6.2.1	
☒	☐	☐	☐				
C	**NC**	**N/A**	**U**	TIES BETWEEN FOUNDATION ELEMENTS: The foundation has ties adequate to resist seismic forces where footings, piles, and piers are not restrained by beams, slabs, or soils classified as Site Class A, B, or C.	5.4.3.4	A.6.2.2	
☒	☐	☐	☐				

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ASCE 41-17 Tier 1 Checklists

FIRM:	WRK Engineers
PROJECT NAME:	PHSD - HS Main Gym
SEISMICITY LEVEL:	High
PROJECT NUMBER:	23030.00.
COMPLETED BY:	WN
DATE COMPLETED:	7/28/2023
REVIEWED BY:	BK
REVIEW DATE:	8/31/2023

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

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Project Name PHSD - HS Main Gym
Project Number 23030.00.

17.3IO Structural Checklist for Building Type W2: Wood Frames, Commercial and Industrial

Table 17-7. Immediate Occupancy Checklist for Building Type W2

Status				Evaluation Statement	Tier 2 Reference	Commentary Reference	Comments
Very Low Seismicity							
Seismic-Force-Resisting System							
C ☒	**NC** ☐	**N/A** ☐	**U** ☐	REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2.	5.5.1.1	A.3.2.1.1	
S4 **C** ☐	**NC** ☒	**N/A** ☐	**U** ☐	SHEAR STRESS CHECK: The shear stress in the shear walls, calculated using the Quick Check procedure of Section 4.4.3.3, is less than the following values: Structural panel sheathing 1,000 lb/ft (14.6 kN/m) Diagonal sheathing 700 lb/ft (10.2 kN/m) Straight sheathing 100 lb/ft (1.5 kN/m) All other conditions 100 lb/ft (1.5 kN/m)	5.5.3.1.1	A.3.2.7.1	Either strengthen existing shear walls or add new lateral force resisting elements.
C ☐	**NC** ☐	**N/A** ☒	**U** ☐	STUCCO (EXTERIOR PLASTER) SHEAR WALLS: Multi-story buildings do not rely on exterior stucco walls as the primary seismic-force-resisting system.	5.5.3.6.1	A.3.2.7.2	
C ☐	**NC** ☐	**N/A** ☒	**U** ☐	GYPSUM WALLBOARD OR PLASTER SHEAR WALLS: Interior plaster or gypsum wallboard is not used for shear walls on buildings more than one story high with the exception of the uppermost level of a multi-story building.	5.5.3.6.1	A.3.2.7.3	
C ☒	**NC** ☐	**N/A** ☐	**U** ☐	NARROW WOOD SHEAR WALLS: Narrow wood shear walls with an aspect ratio greater than 2-to-1 are not used to resist seismic forces.	5.5.3.6.1	A.3.2.7.4	
S5 **C** ☐	**NC** ☒	**N/A** ☐	**U** ☐	WALLS CONNECTED THROUGH FLOORS: Shear walls have an interconnection between stories to transfer overturning and shear forces through the floor.	5.5.3.6.2	A.3.2.7.5	Interconnect all shear walls between stories.
C ☐	**NC** ☐	**N/A** ☒	**U** ☐	HILLSIDE SITE: For structures that are taller on at least one side by more than one-half story because of a sloping site, all shear walls on the downhill slope have an aspect ratio less than 1-to-2.	5.5.3.6.3	A.3.2.7.6	
C ☐	**NC** ☐	**N/A** ☒	**U** ☐	CRIPPLE WALLS: Cripple walls below first-floor-level shear walls are braced to the foundation with wood structural panels.	5.5.3.6.4	A.3.2.7.7	

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	Status				Evaluation Statement	Tier 2 Reference	Commentary Reference	Comments
	C	NC	N/A	U	OPENINGS: Walls with openings greater than 80% of the length are braced with wood structural panel shear walls with aspect ratios of not more than 1.5-to-1 or are supported by adjacent construction through positive ties capable of transferring the seismic forces.	5.5.3.6.5	A.3.2.7.8	
S6	C	NC	N/A	U	HOLD-DOWN ANCHORS: All shear walls have hold-down anchors attached to the end studs constructed in accordance with acceptable construction practices.	5.5.3.6.6	A.3.2.7.9	Install hold-down anchors at shear walls where they are needed to resist uplift for overturning seismic loads.
	Connections							
S7	C	NC	N/A	U	WOOD POSTS: There is a positive connection of wood posts to the foundation.	5.7.3.3	A.5.3.3	Add positive connection of wood posts to foundation.
S8	C	NC	N/A	U	WOOD SILLS: All wood sills are bolted to the foundation.	5.7.3.3	A.5.3.4	Add sill bolts to foundation.
	C	NC	N/A	U	GIRDER–COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support.	5.7.4.1	A.5.4.1	
	Foundation System							
	C	NC	N/A	U	DEEP FOUNDATIONS: Piles and piers are capable of transferring the lateral forces between the structure and the soil.		A.6.2.3	
	C	NC	N/A	U	SLOPING SITES: The difference in foundation embedment depth from one side of the building to another does not exceed one story high.		A.6.2.4	
	Low, Moderate, and High Seismicity (Complete the Following Items in Addition to the Items for Very Low Seismicity)							
	Seismic-Force-Resisting System							
	C	NC	N/A	U	NARROW WOOD SHEAR WALLS: Narrow wood shear walls with an aspect ratio greater than 1.5-to-1 are not used to resist seismic forces.	5.5.3.6.1	A.3.2.7.4	
	Diaphragms							
	C	NC	N/A	U	DIAPHRAGM CONTINUITY: The diaphragms are not composed of split-level floors and do not have expansion joints.	5.6.1.1	A.4.1.1	

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	C	NC	N/A	U				
S9	☐	☒	☐	☐	ROOF CHORD CONTINUITY: All chord elements are continuous, regardless of changes in roof elevation.	5.6.1.1	A.4.1.3	Provide continuous chord elements.
	☐	☐	☒	☐	DIAPHRAGM REINFORCEMENT AT OPENINGS: There is reinforcing around all diaphragm openings larger than 50% of the building width in either major plan dimension.	5.6.1.5	A.4.1.8	
S10	☐	☒	☐	☐	STRAIGHT SHEATHING: All straight-sheathed diaphragms have aspect ratios less than 1-to-1 in the direction being considered.	5.6.2	A.4.2.1	Add plywood sheathing overlay at diaphragm with nailing, blocking, and strapping as needed.
S11	☐	☒	☐	☐	SPANS: All wood diaphragms with spans greater than 12 ft (3.6 m) consist of wood structural panels or diagonal sheathing.	5.6.2	A.4.2.2	Install plywood sheathing overlay at roof diaphragm with diaphragm blocking, strapping and collectors.
S12	☐	☒	☐	☐	DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 30 ft (9.2 m) and have aspect ratios less than or equal to 3-to-1.	5.6.2	A.4.2.3	Add blocking and supplemental nailing as required to reinforce diaphragm.
	☒	☐	☐	☐	OTHER DIAPHRAGMS: The diaphragms do not consist of a system other than wood, metal deck, concrete, or horizontal bracing.	5.6.5	A.4.7.1	
	Connections							
S13	☐	☒	☐	☐	WOOD SILL BOLTS: Sill bolts are spaced at 4 ft or less with acceptable edge and end distance provided for wood and concrete.	5.7.3.3	A.5.3.7	Add sill bolts to existing wood shear walls.

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ASCE 41-17 Tier 1 Checklists

FIRM:	WRK Engineers
PROJECT NAME:	PHSD - HS Main Gym
SEISMICITY LEVEL:	High
PROJECT NUMBER:	23030.00.
COMPLETED BY:	WN
DATE COMPLETED:	7/28/2023
REVIEWED BY:	BK
REVIEW DATE:	8/31/2023

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

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17.18IO Structural Checklist for Building Types URM: Unreinforced Masonry Bearing Walls with Flexible Diaphragms and URMa: Unreinforced Masonry Bearing Walls with Stiff Diaphragms

Table 17-37. Immediate Occupancy Structural Checklist for Building Types URM and URMa

	Status				Evaluation Statement	Tier 2 Reference	Commentary Reference	Comments
	Very Low Seismicity							
	Seismic-Force-Resisting System							
	C ☒	**NC** ☐	**N/A** ☐	**U** ☐	REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2.	5.5.1.1	A.3.2.1.1	
S14	**C** ☐	**NC** ☒	**N/A** ☐	**U** ☐	SHEAR STRESS CHECK: The shear stress in the unreinforced masonry shear walls, calculated using the Quick Check procedure of Section 4.4.3.3, is less than 30 lb/in.^{2} (0.21 MPa) for clay units and 70 lb/in.^{2} (0.48 MPa) for concrete units.	5.5.3.1.1	A.3.2.5.1	Strengthen wall or add new lateral force resisting elements.
	Connections							
S15	**C** ☐	**NC** ☒	**N/A** ☐	**U** ☐	WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections have strength to resist the connection force calculated in the Quick Check procedure of Section 4.4.3.7.	5.7.1.1	A.5.1.1	Add wall anchorage connections and subdiaphragms.
	C ☒	**NC** ☐	**N/A** ☐	**U** ☐	WOOD LEDGERS: The connection between the wall panels and the diaphragm does not induce cross-grain bending or tension in the wood ledgers.	5.7.1.3	A.5.1.2	
S16	**C** ☐	**NC** ☒	**N/A** ☐	**U** ☐	TRANSFER TO SHEAR WALLS: Diaphragms are connected for transfer of seismic forces to the shear walls, and the connections are able to develop the lesser of the shear strength of the walls or diaphragms.	5.7.2	A.5.2.1	Add in-plane connection between shear walls and diaphragm.
S17	**C** ☐	**NC** ☒	**N/A** ☐	**U** ☐	GIRDER–COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support.	5.7.4.1	A.5.4.1	Add positive connection of girders to column supports

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

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Foundation System							
C	**NC**	**N/A**	**U**	DEEP FOUNDATIONS: Piles and piers are capable of transferring the lateral forces between the structure and the soil.		A.6.2.3	
☐	☐	☒	☐				
C	**NC**	**N/A**	**U**	SLOPING SITES: The difference in foundation embedment depth from one side of the building to another does not exceed one story high.		A.6.2.4	
☐	☐	☒	☐				

	Status				Evaluation Statement	Tier 2 Reference	Commentary Reference	Comments
Low, Moderate, and High Seismicity (Complete the Following Items in Addition to the Items for Very Low Seismicity)								
Seismic-Force-Resisting System								
S18	**C**	**NC**	**N/A**	**U**	PROPORTIONS: The height-to-thickness ratio of the shear walls at each story is less than the following: Top story of multi-story building 9 First story of multi-story building 15 All other conditions 13	5.5.3.1.2	A.3.2.5.2	Strengthen/reinforce wall for expected out-of-plane demands.
	☐	☒	☐	☐				
	C	**NC**	**N/A**	**U**	MASONRY LAYUP: Filled collar joints of multi-wythe masonry walls have negligible voids.	5.5.3.4.1	A.3.2.5.3	
	☐	☐	☒	☐				
Diaphragms (Stiff or Flexible)								
S19	**C**	**NC**	**N/A**	**U**	OPENINGS AT SHEAR WALLS: Diaphragm openings immediately adjacent to the shear walls are less than 15% of the wall length.	5.6.1.3	A.4.1.4	Strengthen diaphragm to wall connection or add diaphragm collectors.
	☐	☒	☐	☐				
	C	**NC**	**N/A**	**U**	OPENINGS AT EXTERIOR MASONRY SHEAR WALLS: Diaphragm openings immediately adjacent to exterior masonry shear walls are not greater than 4 ft (1.2 m) long.	5.6.1.3	A.4.1.6	
	☒	☐	☐	☐				
S20	**C**	**NC**	**N/A**	**U**	PLAN IRREGULARITIES: There is tensile capacity to develop the strength of the diaphragm at reentrant corners or other locations of plan irregularities.	5.6.1.4	A.4.1.7	Provide diaphragm reinforcement at reentrant corners and openings.
	☐	☒	☐	☐				
	C	**NC**	**N/A**	**U**	DIAPHRAGM REINFORCEMENT AT OPENINGS: There is reinforcing around all diaphragm openings larger than 50% of the building width in either major plan dimension.	5.6.1.5	A.4.1.8	
	☐	☐	☒	☐				
Flexible Diaphragms								
S21	**C**	**NC**	**N/A**	**U**	CROSS TIES: There are continuous cross ties between diaphragm chords.	5.6.1.2	A.4.1.2	Strengthen diaphragm to wall connection or add collectors.
	☐	☒	☐	☐				

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	C	NC	N/A	U				
S22	☐	☒	☐	☐	STRAIGHT SHEATHING: All straight-sheathed diaphragms have aspect ratios less than 1-to-1 in the direction being considered.	5.6.2	A.4.2.1	Add plywood sheathing overlay at diaphragm with nailing, blocking, and strapping as needed.
S23	☐	☒	☐	☐	SPANS: All wood diaphragms with spans greater than 12 ft (3.6 m) consist of wood structural panels or diagonal sheathing.	5.6.2	A.4.2.2	Install plywood sheathing overlay at roof diaphragm with diaphragm blocking, strapping and collectors.
	☐	☐	☒	☐	DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 30 ft (9.2 m) and aspect ratios less than or equal to 3-to-1.	5.6.2	A.4.2.3	
	☐	☐	☒	☐	NONCONCRETE FILLED DIAPHRAGMS: Untopped metal deck diaphragms or metal deck diaphragms with fill other than concrete consist of horizontal spans of less than 40 ft (12.2 m) and have aspect ratios less than 4-to-1.	5.6.3	A.4.3.1	
	☐	☐	☒	☐	OTHER DIAPHRAGMS: Diaphragms do not consist of a system other than wood, metal deck, concrete, or horizontal bracing.	5.6.5	A.4.7.1	
	Connections							
S24	☐	☒	☐	☐	STIFFNESS OF WALL ANCHORS: Anchors of concrete or masonry walls to wood structural elements are installed taut and are stiff enough to limit the relative movement between the wall and the diaphragm to no greater than 1/8 in. (3 mm) before engagement of the anchors.	5.7.1.2	A.5.1.4	Install anchors to improve connection stiffness to limit relative movement between the wall and the diaphragms.
S25	☐	☒	☐	☐	BEAM, GIRDER, AND TRUSS SUPPORTS: Beams, girders, and trusses supported by unreinforced masonry walls or pilasters have independent secondary columns for support of vertical loads.	5.7.4.4	A.5.4.5	Add supplemental independent support columns for Beam, Girder, and Truss support.

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ASCE 41-17 Tier 1 Checklists

FIRM:	WRK Engineers
PROJECT NAME:	PHSD - HS Main Gym
SEISMICITY LEVEL:	High
PROJECT NUMBER:	23030.00.
COMPLETED BY:	WN
DATE COMPLETED:	7/28/2023
REVIEWED BY:	BK
REVIEW DATE:	8/31/2023

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Project Name PHSD - HS Main Gym
Project Number 23030.00.

17.19 Nonstructural Checklist

Table 17-38. Nonstructural Checklist

Status				Evaluation Statement[a,b]	Tier 2 Reference	Commentary Reference	Comments
Life Safety Systems							
C ☐	**NC** ☐	**N/A** ☒	**U** ☐	**HR—not required; LS—LMH; PR—LMH**. FIRE SUPPRESSION PIPING: Fire suppression piping is anchored and braced in accordance with NFPA-13.	13.7.4	A.7.13.1	
C ☐	**NC** ☐	**N/A** ☒	**U** ☐	**HR—not required; LS—LMH; PR—LMH**. FLEXIBLE COUPLINGS: Fire suppression piping has flexible couplings in accordance with NFPA-13.	13.7.4	A.7.13.2	
C ☐	**NC** ☐	**N/A** ☒	**U** ☐	**HR—not required; LS—LMH; PR—LMH**. EMERGENCY POWER: Equipment used to power or control Life Safety systems is anchored or braced.	13.7.7	A.7.12.1	
C ☐	**NC** ☐	**N/A** ☒	**U** ☐	**HR—not required; LS—LMH; PR—LMH**. STAIR AND SMOKE DUCTS: Stair pressurization and smoke control ducts are braced and have flexible connections at seismic joints.	13.7.6	A.7.14.1	
C ☐	**NC** ☐	**N/A** ☒	**U** ☐	**HR—not required; LS—MH; PR—MH**. SPRINKLER CEILING CLEARANCE: Penetrations through panelized ceilings for fire suppression devices provide clearances in accordance with NFPA-13.	13.7.4	A.7.13.3	
C ☒	**NC** ☐	**N/A** ☐	**U** ☐	**HR—not required; LS—not required; PR—LMH.** EMERGENCY LIGHTING: Emergency and egress lighting equipment is anchored or braced.	13.7.9	A.7.3.1	
Hazardous Materials							
C ☐	**NC** ☐	**N/A** ☒	**U** ☐	**HR—LMH; LS—LMH; PR—LMH**. HAZARDOUS MATERIAL EQUIPMENT: Equipment mounted on vibration isolators and containing hazardous material is equipped with restraints or snubbers.	13.7.1	A.7.12.2	
C ☐	**NC** ☐	**N/A** ☒	**U** ☐	**HR—LMH; LS—LMH; PR—LMH**. HAZARDOUS MATERIAL STORAGE: Breakable containers that hold hazardous material, including gas cylinders, are restrained by latched doors, shelf lips, wires, or other methods.	13.8.3	A.7.15.1	
C ☐	**NC** ☐	**N/A** ☒	**U** ☐	**HR—MH; LS—MH; PR—MH**. HAZARDOUS MATERIAL DISTRIBUTION: Piping or ductwork conveying hazardous materials is braced or otherwise protected from damage that would allow hazardous material release.	13.7.3 13.7.5	A.7.13.4	
N1 **C** ☐	**NC** ☒	**N/A** ☐	**U** ☐	**HR—MH; LS—MH; PR—MH**. SHUTOFF VALVES: Piping containing hazardous material, including natural gas, has shutoff valves or other devices to limit spills or leaks.	13.7.3 13.7.5	A.7.13.3	Add shutoff valves or other devices to limit spills or leaks.
N2 **C** ☐	**NC** ☒	**N/A** ☐	**U** ☐	**HR—LMH; LS—LMH; PR—LMH**. FLEXIBLE COUPLINGS: Hazardous material ductwork and piping, including natural gas piping, have flexible couplings.	13.7.3 13.7.5	A.7.15.4	Add flexible couplings to hazardous material piping and fluid an

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	C	NC	N/A	U				
	☐	☐	☒	☐	**HR—MH; LS—MH; PR—MH**. PIPING OR DUCTS CROSSING SEISMIC JOINTS: Piping or ductwork carrying hazardous material that either crosses seismic joints or isolation planes or is connected to independent structures has couplings or other details to accommodate the relative seismic displacements.	13.7.3 13.7.5 13.7.6	A.7.13.6	

Partitions

	C	NC	N/A	U				
N3	☐	☒	☐	☐	**HR—LMH; LS—LMH; PR—LMH**. UNREINFORCED MASONRY: Unreinforced masonry or hollow-clay tile partitions are braced at a spacing of at most 10 ft (3.0 m) in Low or Moderate Seismicity, or at most 6 ft (1.8 m) in High Seismicity.	13.6.2	A.7.1.1	Provide HSS strongback bracing at 10 ft. maximum spacing.
	☒	☐	☐	☐	**HR—LMH; LS—LMH; PR—LMH**. HEAVY PARTITIONS SUPPORTED BY CEILINGS: The tops of masonry or hollow-clay tile partitions are not laterally supported by an integrated ceiling system.	13.6.2	A.7.2.1	
N4	☐	☒	☐	☐	**HR—not required; LS—MH; PR—MH**. DRIFT: Rigid cementitious partitions are detailed to accommodate the following drift ratios: in steel moment frame, concrete moment frame, and wood frame buildings, 0.02; in other buildings, 0.005.	13.6.2	A.7.1.2	Add HSS strongbacks at URM partition walls to accommodate drift requirements.
	☒	☐	☐	☐	**HR—not required; LS—not required; PR—MH**. LIGHT PARTITIONS SUPPORTED BY CEILINGS: The tops of gypsum board partitions are not laterally supported by an integrated ceiling system.	13.6.2	A.7.2.1	
	☐	☐	☒	☐	**HR—not required; LS—not required; PR—MH**. STRUCTURAL SEPARATIONS: Partitions that cross structural separations have seismic or control joints.	13.6.2	A.7.1.3	
	☐	☐	☒	☐	**HR—not required; LS—not required; PR—MH**. TOPS: The tops of ceiling-high framed or panelized partitions have lateral bracing to the structure at a spacing equal to or less than 6 ft (1.8 m).	13.6.2	A.7.1.4	

Ceilings

	C	NC	N/A	U				
	☐	☐	☒	☐	**HR—H; LS—MH; PR—LMH**. SUSPENDED LATH AND PLASTER: Suspended lath and plaster ceilings have attachments that resist seismic forces for every 12 ft^2 (1.1 m^2) of area.	13.6.4	A.7.2.3	
	☒	☐	☐	☐	**HR—not required; LS—MH; PR—LMH**. SUSPENDED GYPSUM BOARD: Suspended gypsum board ceilings have attachments that resist seismic forces for every 12 ft^2 (1.1 m^2) of area.	13.6.4	A.7.2.3	

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C	NC	N/A	U			
☐	☐	☒	☐	**HR—not required; LS—not required; PR—MH.** INTEGRATED CEILINGS: Integrated suspended ceilings with continuous areas greater than 144 ft^2 (13.4 m^2) and ceilings of smaller areas that are not surrounded by restraining partitions are laterally restrained at a spacing no greater than 12 ft (3.6 m) with members attached to the structure above. Each restraint location has a minimum of four diagonal wires and compression struts, or diagonal members capable of resisting compression.	13.6.4	A.7.2.2
C	**NC**	**N/A**	**U**			
☐	☐	☒	☐	**HR—not required; LS—not required; PR—MH.** EDGE CLEARANCE: The free edges of integrated suspended ceilings with continuous areas greater than 144 ft^2 (13.4 m^2) have clearances from the enclosing wall or partition of at least the following: in Moderate Seismicity, 1/2 in. (13 mm); in High Seismicity, 3/4 in. (19 mm).	13.6.4	A.7.2.4
C	**NC**	**N/A**	**U**			
☐	☐	☒	☐	**HR—not required; LS—not required; PR—MH.** CONTINUITY ACROSS STRUCTURE JOINTS: The ceiling system does not cross any seismic joint and is not attached to multiple independent structures.	13.6.4	A.7.2.5
C	**NC**	**N/A**	**U**			
☐	☐	☒	☐	**HR—not required; LS—not required; PR—H.** EDGE SUPPORT: The free edges of integrated suspended ceilings with continuous areas greater than 144 ft^2 (13.4 m^2) are supported by closure angles or channels not less than 2 in. (51 mm) wide.	13.6.4	A.7.2.6
C	**NC**	**N/A**	**U**			
☐	☐	☒	☐	**HR—not required; LS—not required; PR—H.** SEISMIC JOINTS: Acoustical tile or lay-in panel ceilings have seismic separation joints such that each continuous portion of the ceiling is no more than 2,500 ft^2 (232.3 m^2) and has a ratio of long-to-short dimension no more than 4-to-1.	13.6.4	A.7.2.7
Light Fixtures						
C	**NC**	**N/A**	**U**			
☐	☐	☒	☐	**HR—not required; LS—MH; PR—MH.** INDEPENDENT SUPPORT: Light fixtures that weigh more per square foot than the ceiling they penetrate are supported independent of the grid ceiling suspension system by a minimum of two wires at diagonally opposite corners of each fixture.	13.6.4 13.7.9	A.7.3.2

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	C	NC	N/A	U				
	☒	☐	☐	☐	**HR—not required; LS—not required; PR—H**. PENDANT SUPPORTS: Light fixtures on pendant supports are attached at a spacing equal to or less than 6 ft. Unbraced suspended fixtures are free to allow a 360-degree range of motion at an angle not less than 45 degrees from horizontal without contacting adjacent components. Alternatively, if rigidly supported and/or braced, they are free to move with the structure to which they are attached without damaging adjoining components. Additionally, the connection to the structure is capable of accommodating the movement without failure.	13.7.9	A.7.3.3	
N5	☐	☒	☐	☐	**HR—not required; LS—not required; PR—H**. LENS COVERS: Lens covers on light fixtures are attached with safety devices.	13.7.9	A.7.3.4	Attach all lens covers on light fixtures with safety devices.
Cladding and Glazing								
	☐	☐	☒	☐	**HR—MH; LS—MH; PR—MH**. CLADDING ANCHORS: Cladding components weighing more than 10 lb/ft^2 (0.48 kN/m^2) are mechanically anchored to the structure at a spacing equal to or less than the following: for Life Safety in Moderate Seismicity, 6 ft (1.8 m); for Life Safety in High Seismicity and for Position Retention in any seismicity, 4 ft (1.2 m)	13.6.1	A.7.4.1	
	☐	☐	☒	☐	**HR—not required; LS—MH; PR—MH**. CLADDING ISOLATION: For steel or concrete moment-frame buildings, panel connections are detailed to accommodate a story drift ratio by the use of rods attached to framing with oversize holes or slotted holes of at least the following: for Life Safety in Moderate Seismicity, 0.01; for Life Safety in High Seismicity and for Position Retention in any seismicity, 0.02, and the rods have a length-to-diameter ratio of 4.0 or less.	13.6.1	A.7.4.3	
	☐	☐	☒	☐	**HR—MH; LS—MH; PR—MH**. MULTI-STORY PANELS: For multi-story panels attached at more than one floor level, panel connections are detailed to accommodate a story drift ratio by the use of rods attached to framing with oversize holes or slotted holes of at least the following: for Life Safety in Moderate Seismicity, 0.01; for Life Safety in High Seismicity and for Position Retention in any seismicity, 0.02, and the rods have a length-to-diameter ratio of 4.0 or less.	13.6.1	A.7.4.4	

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C	NC	N/A	U			
☐	☐	☒	☐	**HR—not required; LS—MH; PR—MH**. THREADED RODS: Threaded rods for panel connections detailed to accommodate drift by bending of the rod have a length-to-diameter ratio greater than 0.06 times the story height in inches for Life Safety in Moderate Seismicity and 0.12 times the story height in inches for Life Safety in High Seismicity and Position Retention in any seismicity.	13.6.1	A.7.4.9
C	**NC**	**N/A**	**U**			
☐	☐	☒	☐	**HR—MH; LS—MH; PR—MH**. PANEL CONNECTIONS: Cladding panels are anchored out of plane with a minimum number of connections for each wall panel, as follows: for Life Safety in Moderate Seismicity, 2 connections; for Life Safety in High Seismicity and for Position Retention in any seismicity, 4 connections.	13.6.1.4	A.7.4.5
C	**NC**	**N/A**	**U**			
☐	☐	☒	☐	**HR—MH; LS—MH; PR—MH**. BEARING CONNECTIONS: Where bearing connections are used, there is a minimum of two bearing connections for each cladding panel.	13.6.1.4	A.7.4.6
C	**NC**	**N/A**	**U**			
☐	☐	☒	☐	**HR—MH; LS—MH; PR—MH**. INSERTS: Where concrete cladding components use inserts, the inserts have positive anchorage or are anchored to reinforcing steel.	13.6.1.4	A.7.4.7
C	**NC**	**N/A**	**U**			
☐	☐	☒	☐	**HR—not required; LS—MH; PR—MH**. OVERHEAD GLAZING: Glazing panes of any size in curtain walls and individual interior or exterior panes more than 16 ft^2 (1.5 m^2) in area are laminated annealed or laminated heat-strengthened glass and are detailed to remain in the frame when cracked.	13.6.1.5	A.7.4.8
Masonry Veneer						
C	**NC**	**N/A**	**U**			
☐	☐	☒	☐	**HR—not required; LS—LMH; PR—LMH**. TIES: Masonry veneer is connected to the backup with corrosion-resistant ties. There is a minimum of one tie for every 2-2/3 ft^2 (0.25 m^2), and the ties have spacing no greater than the following: for Life Safety in Low or Moderate Seismicity, 36 in. (914 mm); for Life Safety in High Seismicity and for Position Retention in any seismicity, 24 in. (610 mm).	13.6.1.2	A.7.5.1
C	**NC**	**N/A**	**U**			
☐	☐	☒	☐	**HR—not required; LS—LMH; PR—LMH**. SHELF ANGLES: Masonry veneer is supported by shelf angles or other elements at each floor above the ground floor.	13.6.1.2	A.7.5.2
C	**NC**	**N/A**	**U**			
☐	☐	☒	☐	**HR—not required; LS—LMH; PR—LMH**. WEAKENED PLANES: Masonry veneer is anchored to the backup adjacent to weakened planes, such as at the locations of flashing.	13.6.1.2	A.7.5.3

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C	NC	N/A	U			
☐	☐	☒	☐	**HR—LMH; LS—LMH; PR—LMH**. UNREINFORCED MASONRY BACKUP: There is no unreinforced masonry backup.	13.6.1.1 13.6.1.2	A.7.7.2
C	**NC**	**N/A**	**U**	**HR—not required; LS—MH; PR—MH**. STUD TRACKS: For veneer with cold-formed steel stud backup, stud tracks are fastened to the structure at a spacing equal to or less than 24 in. (610 mm) on center.	13.6.1.1 13.6.1.2	A.7.6.1
☐	☐	☒	☐			
C	**NC**	**N/A**	**U**	**HR—not required; LS—MH; PR—MH**. ANCHORAGE: For veneer with concrete block or masonry backup, the backup is positively anchored to the structure at a horizontal spacing equal to or less than 4 ft along the floors and roof.	13.6.1.1 13.6.1.2	A.7.7.1
☐	☐	☒	☐			
C	**NC**	**N/A**	**U**	**HR—not required; LS—not required; PR—MH**. WEEP HOLES: In veneer anchored to stud walls, the veneer has functioning weep holes and base flashing.	13.6.1.2	A.7.5.6
☐	☐	☒	☐			
C	**NC**	**N/A**	**U**	**HR—not required; LS—not required; PR—MH**. OPENINGS: For veneer with cold-formed-steel stud backup, steel studs frame window and door openings.	13.6.1.1 13.6.1.2	A.7.6.2
☐	☐	☒	☐			
Parapets, Cornices, Ornamentation, and Appendages						
C	**NC**	**N/A**	**U**	**HR—LMH; LS—LMH; PR—LMH**. URM PARAPETS OR CORNICES: Laterally unsupported unreinforced masonry parapets or cornices have height-to-thickness ratios no greater than the following: for Life Safety in Low or Moderate Seismicity, 2.5; for Life Safety in High Seismicity and for Position Retention in any seismicity, 1.5.	13.6.5	A.7.8.1
☐	☐	☒	☐			
C	**NC**	**N/A**	**U**	**HR—not required; LS—LMH; PR—LMH**. CANOPIES: Canopies at building exits are anchored to the structure at a spacing no greater than the following: for Life Safety in Low or Moderate Seismicity, 10 ft (3.0 m); for Life Safety in High Seismicity and for Position Retention in any seismicity, 6 ft (1.8 m).	13.6.6	A.7.8.2
☒	☐	☐	☐			
C	**NC**	**N/A**	**U**	**HR—H; LS—MH; PR—LMH**. CONCRETE PARAPETS: Concrete parapets with height-to-thickness ratios greater than 2.5 have vertical reinforcement.	13.6.5	A.7.8.3
☐	☐	☒	☐			
C	**NC**	**N/A**	**U**	**HR—MH; LS—MH; PR—LMH**. APPENDAGES: Cornices, parapets, signs, and other ornamentation or appendages that extend above the highest point of anchorage to the structure or cantilever from components are reinforced and anchored to the structural system at a spacing equal to or less than 6 ft (1.8 m). This evaluation statement item does not apply to parapets or cornices covered by other evaluation statements.	13.6.6	A.7.8.4
☐	☐	☒	☐			

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Masonry Chimneys							
C	**NC**	**N/A**	**U**	**HR—LMH; LS—LMH; PR—LMH**. URM CHIMNEYS: Unreinforced masonry chimneys extend above the roof surface no more than the following: for Life Safety in Low or Moderate Seismicity, 3 times the least dimension of the chimney; for Life Safety in High Seismicity and for Position Retention in any seismicity, 2 times the least dimension of the chimney.	13.6.7	A.7.9.1	
☐	☐	☒	☐				
C	**NC**	**N/A**	**U**	**HR—LMH; LS—LMH; PR—LMH**. ANCHORAGE: Masonry chimneys are anchored at each floor level, at the topmost ceiling level, and at the roof.	13.6.7	A.7.9.2	
☐	☐	☒	☐				
Stairs							
C	**NC**	**N/A**	**U**	**HR—not required; LS—LMH; PR—LMH**. STAIR ENCLOSURES: Hollow-clay tile or unreinforced masonry walls around stair enclosures are restrained out of plane and have height-to-thickness ratios not greater than the following: for Life Safety in Low or Moderate Seismicity, 15-to-1; for Life Safety in High Seismicity and for Position Retention in any seismicity, 12-to-1.	13.6.2 13.6.8	A.7.10.1	
☐	☐	☒	☐				
C	**NC**	**N/A**	**U**	**HR—not required; LS—LMH; PR—LMH**. STAIR DETAILS: The connection between the stairs and the structure does not rely on post-installed anchors in concrete or masonry, and the stair details are capable of accommodating the drift calculated using the Quick Check procedure of Section 4.4.3.1 for moment-frame structures or 0.5 in. for all other structures without including any lateral stiffness contribution from the stairs.	13.6.8	A.7.10.2	
☒	☐	☐	☐				
Contents and Furnishings							
C	**NC**	**N/A**	**U**	**HR—LMH; LS—MH; PR—MH**. INDUSTRIAL STORAGE RACKS: Industrial storage racks or pallet racks more than 12 ft high meet the requirements of ANSI/RMI MH 16.1 as modified by ASCE 7, Chapter 15.	13.8.1	A.7.11.1	
☐	☐	☒	☐				
C	**NC**	**N/A**	**U**	**HR—not required; LS—H; PR—MH**. TALL NARROW CONTENTS: Contents more than 6 ft (1.8 m) high with a height-to-depth or height-to-width ratio greater than 3-to-1 are anchored to the structure or to each other.	13.8.2	A.7.11.2	Brace and/or anchor all contents more than 6 ft. high to the structure or to each other.
☐	☒	☐	☐				
C	**NC**	**N/A**	**U**	**HR—not required; LS—H; PR—H**. FALL-PRONE CONTENTS: Equipment, stored items, or other contents weighing more than 20 lb (9.1 kg) whose center of mass is more than 4 ft (1.2 m) above the adjacent floor level are braced or otherwise restrained.	13.8.2	A.7.11.3	
☐	☐	☒	☐				

N6

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C	NC	N/A	U	**HR—not required; LS—not required; PR—MH.** ACCESS FLOORS: Access floors more than 9 in. (229 mm) high are braced.	13.6.10	A.7.11.4	
☐	☐	☒	☐				
C	NC	N/A	U	**HR—not required; LS—not required; PR—MH.** EQUIPMENT ON ACCESS FLOORS: Equipment and other contents supported by access floor systems are anchored or braced to the structure independent of the access floor.	13.7.7 13.6.10	A.7.11.5	
☐	☐	☒	☐				
C	NC	N/A	U	**HR—not required; LS—not required; PR—H.** SUSPENDED CONTENTS: Items suspended without lateral bracing are free to swing from or move with the structure from which they are suspended without damaging themselves or adjoining components.	13.8.2	A.7.11.6	
☐	☐	☒	☐				
Mechanical and Electrical Equipment							
C	NC	N/A	U	**HR—not required; LS—H; PR—H.** FALL-PRONE EQUIPMENT: Equipment weighing more than 20 lb (9.1 kg) whose center of mass is more than 4 ft (1.2 m) above the adjacent floor level, and which is not in-line equipment, is braced.	13.7.1 13.7.7	A.7.12.4	Brace all mechanical and electrical equipment weighing more than 20 lb. whose center of mass is more than 4 ft. above the adjacent floor level.
N7 ☐	☒	☐	☐				
C	NC	N/A	U	**HR—not required; LS—H; PR—H.** IN-LINE EQUIPMENT: Equipment installed in line with a duct or piping system, with an operating weight more than 75 lb (34.0 kg), is supported and laterally braced independent of the duct or piping system.	13.7.1	A.7.12.5	
☐	☐	☒	☐				
C	NC	N/A	U	**HR—not required; LS—H; PR—MH.** TALL NARROW EQUIPMENT: Equipment more than 6 ft (1.8 m) high with a height-to-depth or height-to-width ratio greater than 3-to-1 is anchored to the floor slab or adjacent structural walls.	13.7.1 13.7.7	A.7.12.6	Cabinets and Lockers more than 6 feet high or with a height-to-depth ratio exceeding 3:1 are to be anchored to ground.
N8 ☐	☒	☐	☐				
C	NC	N/A	U	**HR—not required; LS—not required; PR—MH.** MECHANICAL DOORS: Mechanically operated doors are detailed to operate at a story drift ratio of 0.01.	13.6.9	A.7.12.7	
☐	☐	☒	☐				
C	NC	N/A	U	**HR—not required; LS—not required; PR—H.** SUSPENDED EQUIPMENT: Equipment suspended without lateral bracing is free to swing from or move with the structure from which it is suspended without damaging itself or adjoining components.	13.7.1 13.7.7	A.7.12.8	
☐	☐	☒	☐				
C	NC	N/A	U	**HR—not required; LS—not required; PR—H.** VIBRATION ISOLATORS: Equipment mounted on vibration isolators is equipped with horizontal restraints or snubbers and with vertical restraints to resist overturning.	13.7.1	A.7.12.9	
☐	☐	☒	☐				
C	NC	N/A	U	**HR—not required; LS—not required; PR—H.** HEAVY EQUIPMENT: Floor-supported or platform-supported equipment weighing more than 400 lb (181.4 kg) is anchored to the structure.	13.7.1 13.7.7	A.7.12.10	
☒	☐	☐	☐				

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

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C	NC	N/A	U	**HR—not required; LS—not required; PR—H.** ELECTRICAL EQUIPMENT: Electrical equipment is laterally braced to the structure.	13.7.7	A.7.12.11	
☒	☐	☐	☐				
C	NC	N/A	U	**HR—not required; LS—not required; PR—H.** CONDUIT COUPLINGS: Conduit greater than 2.5 in. (64 mm) trade size that is attached to panels, cabinets, or other equipment and is subject to relative seismic displacement has flexible couplings or connections.	13.7.8	A.7.12.12	
☐	☐	☒	☐				
Piping							
C	NC	N/A	U	**HR—not required; LS—not required; PR—H.** FLEXIBLE COUPLINGS: Fluid and gas piping has flexible couplings.	13.7.3 13.7.5	A.7.13.2	Add flexible couplings to fluid and gas piping.
☐	☒	☐	☐				
C	NC	N/A	U	**HR—not required; LS—not required; PR—H.** FLUID AND GAS PIPING: Fluid and gas piping is anchored and braced to the structure to limit spills or leaks.	13.7.3 13.7.5	A.7.13.4	
☒	☐	☐	☐				
C	NC	N/A	U	**HR—not required; LS—not required; PR—H.** C-CLAMPS: One-sided C-clamps that support piping larger than 2.5 in. (64 mm) in diameter are restrained.	13.7.3 13.7.5	A.7.13.5	
☐	☐	☒	☐				
C	NC	N/A	U	**HR—not required; LS—not required; PR—H.** PIPING CROSSING SEISMIC JOINTS: Piping that crosses seismic joints or isolation planes or is connected to independent structures has couplings or other details to accommodate the relative seismic displacements.	13.7.3 13.7.5	A.7.13.6	
☐	☐	☒	☐				
Ducts							
C	NC	N/A	U	**HR—not required; LS—not required; PR—H.** DUCT BRACING: Rectangular ductwork larger than 6 ft^2 (0.56 m^2) in cross-sectional area and round ducts larger than 28 in. (711 mm) in diameter are braced. The maximum spacing of transverse bracing does not exceed 30 ft (9.2 m). The maximum spacing of longitudinal bracing does not exceed 60 ft (18.3 m).	13.7.6	A.7.14.2	
☒	☐	☐	☐				
C	NC	N/A	U	**HR—not required; LS—not required; PR—H.** DUCT SUPPORT: Ducts are not supported by piping or electrical conduit.	13.7.6	A.7.14.3	
☒	☐	☐	☐				
C	NC	N/A	U	**HR—not required; LS—not required; PR—H.** DUCTS CROSSING SEISMIC JOINTS: Ducts that cross seismic joints or isolation planes or are connected to independent structures have couplings or other details to accommodate the relative seismic displacements.	13.7.6	A.7.14.4	
☐	☐	☒	☐				
Elevators							
C	NC	N/A	U	**HR—not required; LS—H; PR—H.** RETAINER GUARDS: Sheaves and drums have cable retainer guards.	13.7.11	A.7.16.1	
☐	☐	☒	☐				
C	NC	N/A	U	**HR—not required; LS—H; PR—H.** RETAINER PLATE: A retainer plate is present at the top and bottom of both car and counterweight.	13.7.11	A.7.16.2	
☐	☐	☒	☐				

N9

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

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C	NC	N/A	U			
☐	☐	☒	☐	**HR—not required; LS—not required; PR—H.** ELEVATOR EQUIPMENT: Equipment, piping, and other components that are part of the elevator system are anchored.	13.7.11	A.7.16.3
☐	☐	☒	☐	**HR—not required; LS—not required; PR—H.** SEISMIC SWITCH: Elevators capable of operating at speeds of 150 ft/min (0.30 m/min) or faster are equipped with seismic switches that meet the requirements of ASME A17.1 or have trigger levels set to 20% of the acceleration of gravity at the base of the structure and 50% of the acceleration of gravity in other locations.	13.7.11	A.7.16.4
☐	☐	☒	☐	**HR—not required; LS—not required; PR—H.** SHAFT WALLS: Elevator shaft walls are anchored and reinforced to prevent toppling into the shaft during strong shaking.	13.7.11	A.7.16.5
☐	☐	☒	☐	**HR—not required; LS—not required; PR—H.** COUNTERWEIGHT RAILS: All counterweight rails and divider beams are sized in accordance with ASME A17.1.	13.7.11	A.7.16.6
☐	☐	☒	☐	**HR—not required; LS—not required; PR—H.** BRACKETS: The brackets that tie the car rails and the counterweight rail to the structure are sized in accordance with ASME A17.1.	13.7.11	A.7.16.7
☐	☐	☒	☐	**HR—not required; LS—not required; PR—H.** SPREADER BRACKET: Spreader brackets are not used to resist seismic forces.	13.7.11	A.7.16.8
☐	☐	☒	☐	**HR—not required; LS—not required; PR—H.** GO-SLOW ELEVATORS: The building has a go-slow elevator system.	13.7.11	A.7.16.9

[a] Performance Level: HR = Hazards Reduced, LS = Life Safety, and PR = Position Retention.

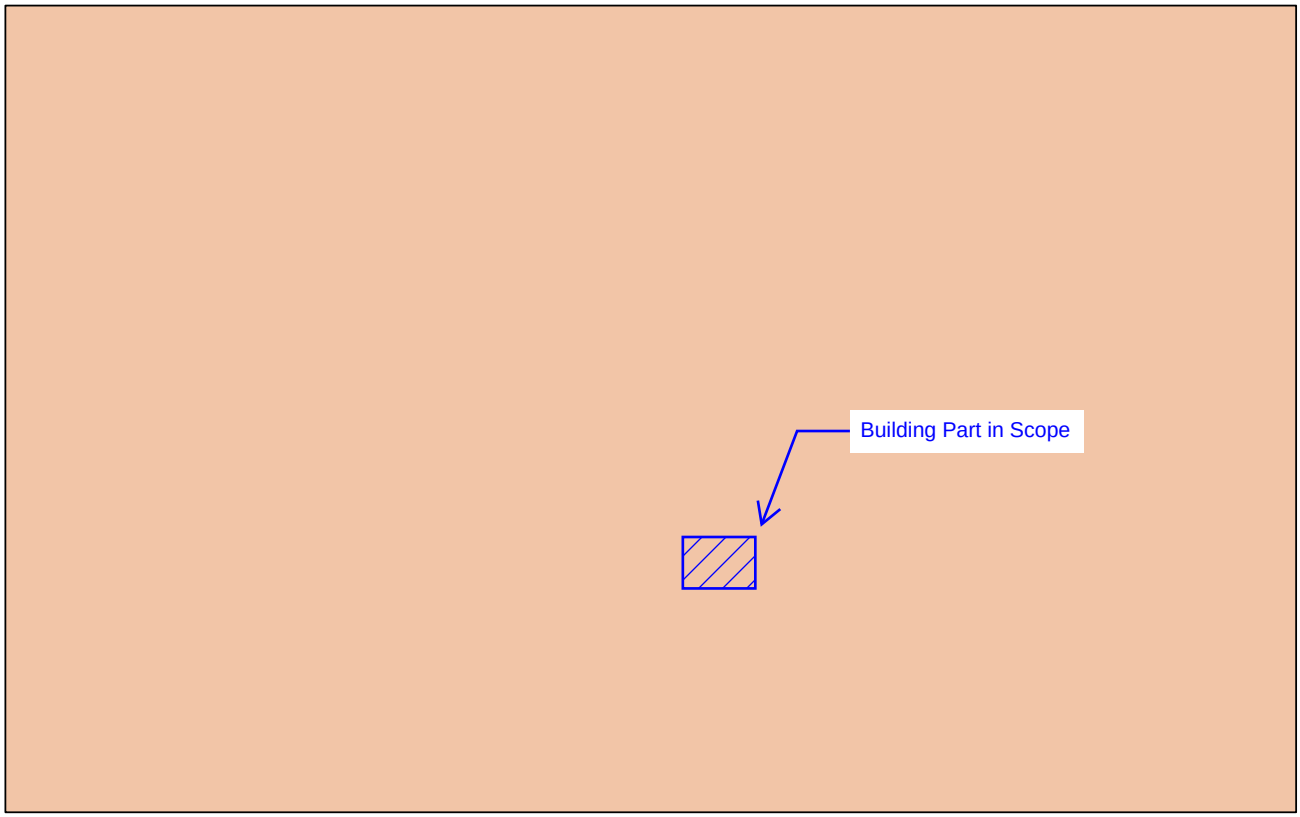
[b] Level of Seismicity: L = Low, M = Moderate, and H = High.

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Appendix F

DOGAMI & RVS

3OHDVDQW +LOO +6 /LTXHIDFWLRQ



2FWREHU ˇ

/LTXHIDFWLRQB6XV /RZ +LJK

1RQH

0RGHUDWH 9HU\ +LJK

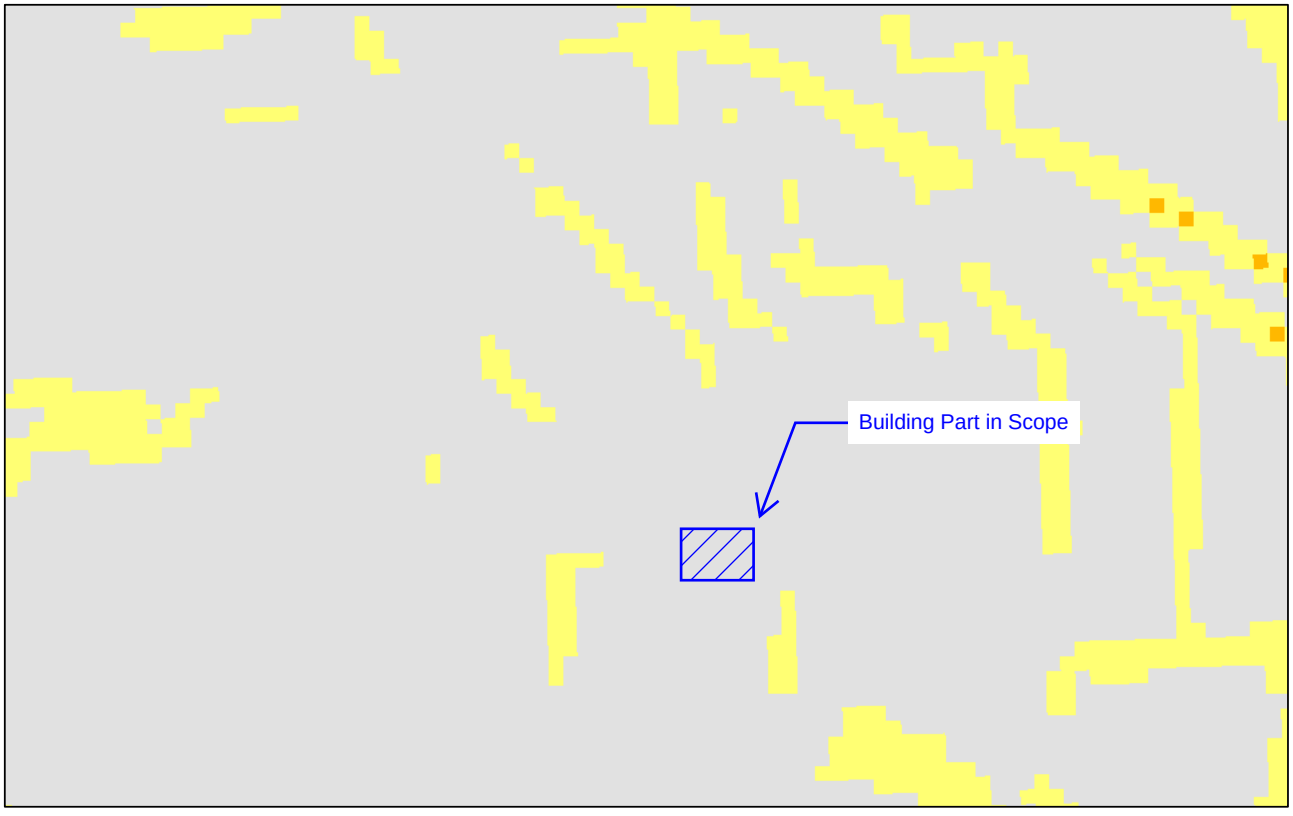
9HU\ /RZ

PL

NP

2UHJRQ 'HSDUWPHQW RI 7UDQVSRUWDWLRQ *HRJU
0D[DU

3OHDVDQW +LOO +6 /DQGVOLGH



2FWREHU ˇ

'HWDLOHG 6XVFHSWLELOLW\ 0RGHUDWH 6KDOORZ 6XVFHSWLELOLW\ WR GHHS ODQGVOLGHV

'HHS 6XVFHSWLELOLW\ +LJK VXVFHSWLELOLW\ WR GHHS ODQGVOLGHV

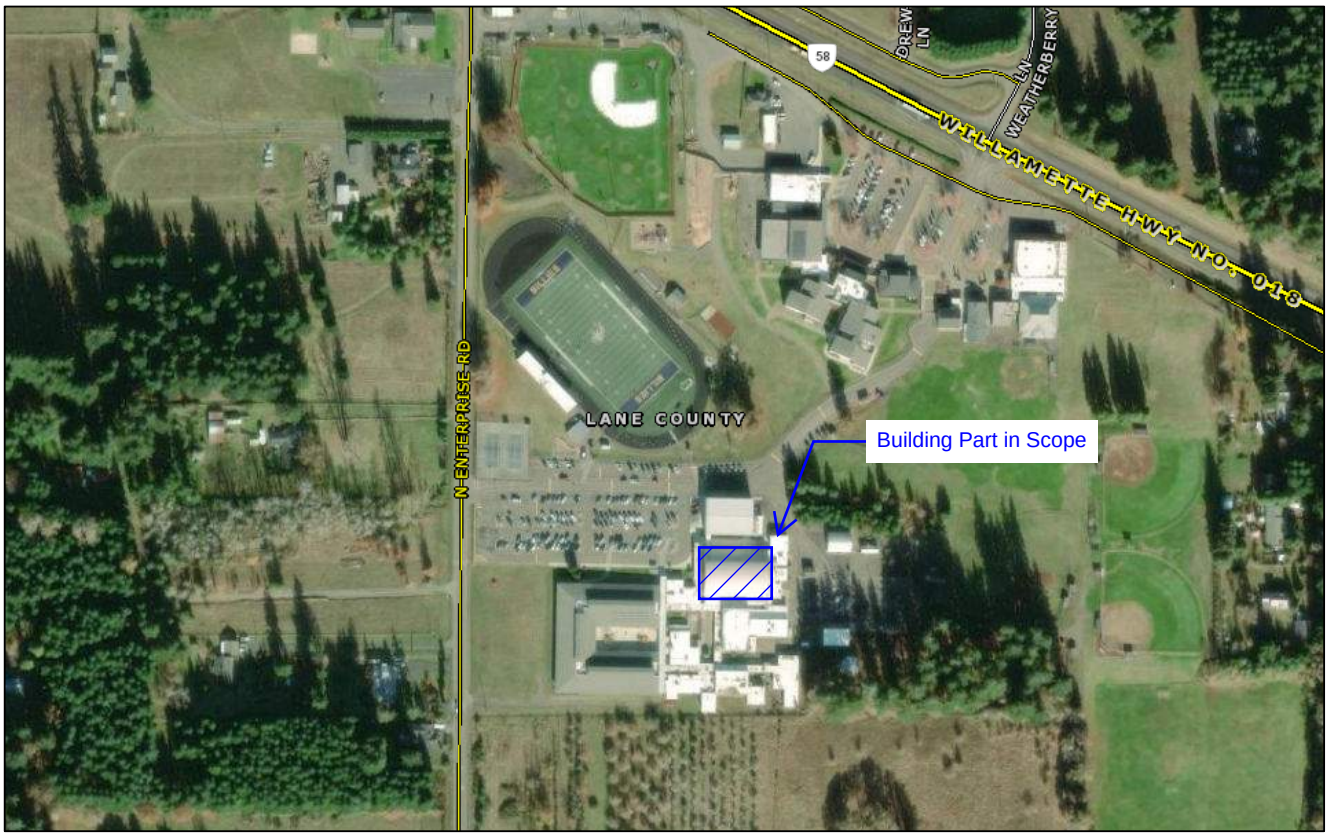
/RZ VXVFHSWLELOLW\ WR GHHS ODQGVOLGHV

PL

NP

2UHJRQ 'HSDUWPHQW RI 7UDQVSRUWDWLRQ *HRJU
0D[DU

3OHDVDQW +LOO +6)ORRG



2FWREHU ˇ

)ORRGZD\ ˇ)(0$ 4)ORRG

<HDU)ORRGSODLQWDWH 'LJLWL]HG)ORRG

ˇ <HDU)ORRGSODLQ

PL

NP

2UHJRQ 'HSDUWPHQW RI 7UDQVSRUWDWLRQ *HRJUD
0D[DU

Rapid Visual Screening of Buildings for Potential Seismic Hazards
FEMA P-154 Data Collection Form

Lane_sch01AB **Level 1**
MODERATELY HIGH Seismicity





SKETCH

Address: 84455 N Enterprise Rd
Pleasant Hill, OR Zip: 97455
Other Identifiers: Gymnasium - Part B
Building Name: Pleasant Hill High School
Use: School
Latitude: 43.9572 Longitude: -122.91578
S_S: 0.621 S_1: 0.361
Screener(s): Brian Knight Date/Time: 10/5/2023

No. Stories: Above Grade: 1 Below Grade: 0 Year Built: 1961 ☐ EST
Total Floor Area (sq. ft.): 18,600 Code Year: DNK
Additions: ☒ None ☐ Yes, Year(s) Built:

Occupancy: Assembly, Commercial, Emer. Services, ☐ Historic, ☐ Shelter, Industrial, Office, (School), ☐ Government, Utility, Warehouse, Residential, # Units:

Soil Type: ☐A Hard Rock ☐B Avg Rock ☐C Dense Soil ☒D Stiff Soil ☐E Soft Soil ☐F Poor Soil DNK *If DNK, assume Type D.*

Geologic Hazards: Liquefaction: Yes (No) DNK Landslide: Yes (No) DNK Surf. Rupt.: Yes (No) DNK

Adjacency: ☒ Pounding ☐ Falling Hazards from Taller Adjacent Building

Irregularities: ☒ Vertical (type/severity) out-of-plane offset / severe
☒ Plan (type) Re-entrant Corners

Exterior Falling Hazards: ☐ Unbraced Chimneys ☐ Heavy Cladding or Heavy Veneer ☐ Parapets ☐ Appendages ☐ Other:

COMMENTS:

Only Part B is in Scope.

☐ Additional sketches or comments on separate page

BASIC SCORE, MODIFIERS, AND FINAL LEVEL 1 SCORE, S_{L1}

FEMA BUILDING TYPE (Do Not Know)	W1	W1A	W2	S1 (MRF)	S2 (BR)	S3 (LM)	S4 (RC SW)	S5 (URM INF)	C1 (MRF)	C2 (SW)	C3 (URM INF)	PC1 (TU)	PC2	RM1 (FD)	RM2 (RD)	URM	MH
Basic Score	**4.1**	**3.7**	**3.2**	**2.3**	**2.2**	**2.9**	**2.2**	**2.0**	**1.7**	**2.1**	**1.4**	**1.8**	**1.5**	**1.8**	**1.8**	**1.2**	**2.2**
Severe Vertical Irregularity, V_{L1}	-1.3	-1.3	-1.3	-1.1	-1.0	-1.2	-1.0	-0.9	-1.0	-1.1	-0.8	-1.0	-0.9	-1.0	-1.0	-0.8	NA
Moderate Vertical Irregularity, V_{L1}	-0.8	-0.8	-0.8	-0.7	-0.6	-0.8	-0.6	-0.6	-0.6	-0.6	-0.5	-0.6	-0.6	-0.6	-0.6	-0.5	NA
Plan Irregularity, P_{L1}	-1.3	-1.2	-1.1	-0.9	-0.8	-1.0	-0.8	-0.7	-0.7	-0.9	-0.6	-0.8	-0.7	-0.7	-0.7	-0.5	NA
Pre-Code	-0.8	-0.9	-0.9	-0.5	-0.5	-0.7	-0.6	-0.2	-0.4	-0.7	-0.1	-0.4	-0.3	-0.5	-0.5	-0.1	-0.3
Post-Benchmark	1.5	1.9	2.3	1.4	1.4	1.0	1.9	NA	1.9	2.1	NA	2.1	2.4	2.1	2.1	NA	1.2
Soil Type A or B	0.3	0.6	0.9	0.6	0.9	0.3	0.9	0.9	0.6	0.8	0.7	0.9	0.7	0.8	0.8	0.6	0.9
Soil Type E (1-3 stories)	0.0	-0.1	-0.3	-0.4	-0.5	0.0	-0.4	-0.5	-0.2	-0.2	-0.4	-0.5	-0.3	-0.4	-0.4	-0.3	-0.5
Soil Type E (> 3 stories)	-0.5	-0.8	-1.2	-0.7	-0.7	NA	-0.7	-0.6	-0.6	-0.8	-0.4	NA	-0.5	-0.6	-0.7	-0.3	NA
Minimum Score, S_{MIN}	*1.6*	*1.2*	*0.8*	*0.5*	*0.5*	*0.9*	*0.5*	*0.5*	*0.3*	*0.3*	*0.3*	*0.3*	*0.2*	*0.3*	*0.3*	*0.2*	*1.4*

FINAL LEVEL 1 SCORE, $S_{L1} \geq S_{MIN}$: -0.1

FEMA 154 Collapse Potential = Very High

EXTENT OF REVIEW

Exterior: ☐ Partial ☒ All Sides ☐ Aerial
Interior: ☐ None ☒ Visible ☒ Entered
Drawings Reviewed: ☒ Yes ☐ No
Soil Type Source: DNK
Geologic Hazards Source: USGS.gov
Contact Person: Brian Knight

LEVEL 2 SCREENING PERFORMED?

☐ Yes, Final Level 2 Score, S_{L2} _____ ☒ No
Nonstructural hazards? ☐ Yes ☐ No

OTHER HAZARDS

Are There Hazards That Trigger A Detailed Structural Evaluation?

☒ Pounding potential (unless S_{L2} > cut-off, if known)
☐ Falling hazards from taller adjacent building
☐ Geologic hazards or Soil Type F
☐ Significant damage/deterioration to the structural system

ACTION REQUIRED

Detailed Structural Evaluation Required?

☐ Yes, unknown FEMA building type or other building
☐ Yes, score less than cut-off
☒ Yes, other hazards present
☐ No

Detailed Nonstructural Evaluation Recommended? *(check one)*

☒ Yes, nonstructural hazards identified that should be evaluated
☐ No, nonstructural hazards exist that may require mitigation, but a detailed evaluation is not necessary
☐ No, no nonstructural hazards identified ☐ DNK

Where information cannot be verified, screener shall note the following: EST = Estimated or unreliable data OR DNK = Do Not Know

Legend: MRF = Moment-resisting frame; BR = Braced frame; RC = Reinforced concrete; SW = Shear wall; URM INF = Unreinforced masonry infill; TU = Tilt up; MH = Manufactured Housing; LM = Light metal; FD = Flexible diaphragm; RD = Rigid diaphragm