This addendum forms a part of the Request for Proposal and modifies the original Documents dated **August 21, 2024,** as noted below. Acknowledge receipt of this addendum in the space provided on Attachment B – Certifications / Residency Form. Failure to do so may subject the Proposer to disqualification.

REVISION TO SECTION 2.7.L SELECTION PROCESS SCHEDULE

*Change **original***
FROM:

~~**L.**~~	~~Board Action to Award Contract~~	~~October 2, 2024~~
	~~Contracts Issued~~	~~October 3, 2024~~

TO:

L.	**Board Action to Award Contract**	**October 16, 2024**
	Contracts Issued	**October 17, 2024**

REVISION TO SECTION 2.7.M SELECTION PROCESS SCHEDULE

*Change **original***
FROM:

~~M.~~	~~Contracts Executed No Later Than~~	~~October 9, 2024~~

TO:

M.	**Contracts Executed No Later Than**	**October 23, 2024**

ENCLOSED – FORT VANNOY ES EVALUATION REPORT

Enclosed Fort Vanoy ES Evaluation Report, ***in its entirety***.

END OF ADDENDUM 2

Seismic Evaluation Report For:

FORT VANNOY ELEMENTARY SCHOOL

5250 Upper River Rd, Grants Pass, OR 97526
Three Rivers School District

Prepared By:
ZCS Engineering & Architecture
Matthew R. Smith, PE, SE, Principal
524 Main Street, Suite 2, Oregon City, OR 97045
T: 503.659.2205 | E: MattS@zcsea.com

STRUCTURAL
REGISTERED PROFESSIONAL
ENGINEER
70884
JULY 08, 2014
MATTHEW R. SMITH
EXPIRES: 06-30-22

ZCS
ENGINEERING
ARCHITECTURE

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 Yes)
A	Classrooms & Administration	N	Est. 1945			
B	Classrooms	N	1967			
C	Gymnasium	Y	1967	W2, RM1	Y	N
*** Entries required **ONLY** for building parts included in proposed seismic retrofit						
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 a building part.						
Total Retrofit Cost	$2,444,875					
Retrofit Square Feet	13,000 S.F.					
Retrofit Cost per Square Foot	$188.07					
Is the campus within a tsunami, FEMA flood zone, landslide/slope instability, liquefaction potential or other high hazard area? **If so, provide documentation.**						No

Engineering Report Checklist		
☒	Engineering Report Cover Page	
☒	Project Summary Page	Page 1
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☒	Statement of the Performance Objective	Page 6
	Summary of Deficiencies	
☒	Structural Seismic Deficiencies	Page 10
☒	Nonstructural Seismic Deficiencies	Page 11
	Summary of Mitigation/Retrofit	
☒	Structural Mitigation/Retrofit	Page 10
☒	Nonstructural Mitigation/Retrofit	Page 11
	Summary Construction Cost Estimate	
☒	Direct Cost	Page 13
☒	Indirect Soft Cost	Page 13
☒	Certification Statement by Engineer	Page 14
	ASCE 41-17 Tier 1 Checklist	
☒	Basic Configuration Checklist	Appendix B
☒	Building System Structural Checklist	Appendix B
☒	Nonstructural Checklist	Appendix B
☒	**Retrofit Drawings & Sketches**	Appendix C
☒	**DOGAMI or Geotechnical Report**	Appendix D
☒	**Itemized Construction Cost Estimate**	Appendix E
☒	**Rapid Visual Screening**	Appendix F

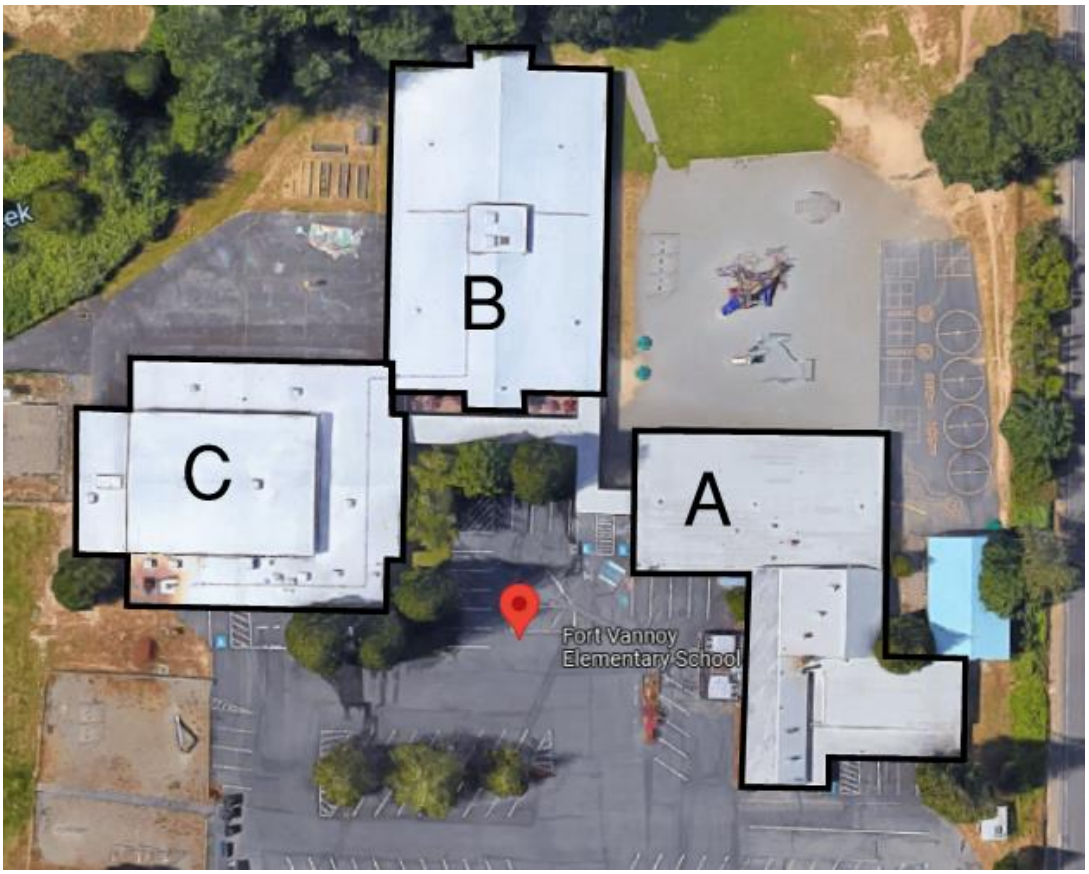
1.0 Project Introduction

Three Rivers School District is located in Grants Pass, Oregon in Josephine County. The District operates 17 schools located within the community including the property of interest, Fort Vannoy Elementary School. The District has retained ZCS Engineering and Architecture (ZCS) to perform a seismic evaluation of Fort Vannoy Elementary School that provides the District with an objective, comprehensive analysis of the condition of the building's seismic resisting systems. The purpose of the evaluation is to determine the seismic lateral resisting system deficiencies when compared to buildings designed using modern building codes. This evaluation was performed in accordance with the American Society of Civil Engineers "Seismic Rehabilitation of Existing Buildings ASCE/SEI 41-17".

SEISMIC EVALUATION SNAPSHOT	
Street Address	8550 New Hope Rd, Grants Pass, OR 97527
Evaluation Standard	ASCE 41-17 (Tier 1 Analysis)
Target Building Performance Level	Immediate Occupancy – BSE-1E; Life Safety – BSE-2E
Target Non-Structural Performance Level	Position Retention – BSE-1E; Hazard Reduced – BSE-2E
ASCE 41 Building Type	RM1
Site Soil Classification	D
Seismic Zone Hazard Level	High
Cost Estimate	$2,444,875

2.0 Building Description

The gymnasium, building C, was constructed in 1967 and is approximately 12,770 square-feet. The gymnasium is a one-story wood structure with a straight sheathed roof diaphragm over sawn lumber joists and glulam beams. The exterior walls are reinforced masonry walls. The interior walls are either reinforced masonry walls or 2x wood walls with gypsum wallboard. The foundation under the gymnasium, stage and cafeteria is a straight sheathed floor over sawn lumber girders over pad footings with strip footings and concrete stem walls under the load bearing walls. The remining building area is a slab-on-grade with spread footings under the load bearing walls. Photographs of the building parts included in this report are located in Appendix A.



A
Construction Year: Est. 1945
Building Name: Admin & Classrooms
Construction Type: W2
In scope? No

B
Construction Year: 1967
Building Name: Classrooms
Construction Type: RM1
In scope? No

C
Construction Year: 1967
Building Name: Gymnasium
Construction Type: RM1
In scope? Yes

Figure 1
Fort Vannoy Elementary School Key Plan

3.0 Definition of Building Types

After reviewing the facility and the existing drawings we have determined the lateral system is defined as Reinforced masonry Bearing Walls with Flexible Diaphragms RM1. Per ASCE 41-17 the subject structure's lateral system is defined as:

Reinforced masonry Bearing Walls with Flexible Diaphragms RM1 – These buildings have bearing walls that consist of reinforced brick or concrete block masonry. The floor and roof framing consists of steel or wood beams and girders or open web joists and are supported by steel, wood, or masonry columns. Seismic forces are resisted by the reinforced brick or concrete block masonry shear walls. Diaphragms consist of straight or diagonal wood sheathing, plywood, or unstopped metal deck and are flexible relative to the walls. The foundation system may consist of a variety of elements.

4.0 Seismic Evaluation Methodology

The subject structure was evaluated using information gathered from site observations, available historic construction documents, and interviews with District staff. This information was then utilized to perform a structural evaluation as outlined in the American Society of Civil Engineer's "Seismic Evaluation and Retrofit of Existing Buildings – ASCE 41-17" (ASCE 41-17). ASCE 41-17 is referenced as the standard for seismic evaluations of existing buildings by the International Existing Building Code (IEBC) which is referenced by the Oregon Structural Specialty Code (OSSC). Further, ASCE 41-17 is the evaluation tool required by the Seismic Rehabilitation Grant Program for grant applications.

ASCE 41-17 provides several levels of evaluation (Tiers 1-3) depending on the level of evaluation and/or retrofit being performed. The Tier 1 evaluation is a quick checklist selected based on the type of construction and the performance objective of the building and is the baseline tool for preliminary seismic evaluations. In the case of this evaluation, a Tier 1 was performed to identify the likely structural deficiencies requiring retrofit to meet the performance objective stated below.

The OSSC classifies buildings into risk categories based on the type of building and occupancy type. The building's risk category informs the required performance objective post retrofit. Risk categories I and II cover low risk structures. Risk category III includes school buildings that are not required to be used as emergency shelters and are relatively low occupancy. Risk category IV includes emergency service buildings and school buildings that are required to be designed as emergency shelters (high occupancy spaces). Figure 2, below, identifies the performance objective for each risk category.

The primary objective of the adjusting performance objectives relative to risk category is to ensure that the subject building is capable of performing in the necessary manner following a seismic event. In the case of a risk category III building, the intention is to ensure that the building is adequately stable following an earthquake to provide egress for occupants out of the building. Prior to reoccupation, the building would need evaluated and significant structural damage preventing reoccupation may be present. For risk category IV structures, the intent is that the building can be inspected then immediately reoccupied following a seismic event to function in its intended role as an emergency service building or as a high occupancy space capable of acting as an emergency structure.

In accordance with the table below, this building is categorized as a risk category IV structure and was evaluated to meet the Life Safety structural performance and Hazards Reduced nonstructural performance level for BSE-2E loading and the Immediate Occupancy structural performance and Position Retention nonstructural performance level for BSE-1E loading.

Table 2-2. Scope of Assessment Required for Tier 1 and Tier 2 with the Basic Performance Objective for Existing Buildings (BPOE)

Risk Category	Tier 1 and 2[a]	
	BSE-1E	BSE-2E
I and II	Not evaluated	Collapse Prevention Structural Performance
	Life Safety Nonstructural Performance (3-C)	Hazards Reduced Nonstructural Performance[b] (5-D)
III	Not evaluated	Limited Safety Structural Performance[c]
	Position Retention Nonstructural Performance (2-B)	Hazards Reduced Nonstructural Performance[b] (4-D)
IV	Immediate Occupancy Structural Performance	Life Safety Structural Performance[d]
	Position Retention Nonstructural Performance (1-B)	Hazards Reduced Nonstructural Performance[b] (3-D)

[a] For Tier 1 and 2 assessments of Risk Categories I–III, Structural Performance for the BSE-1E is not explicitly evaluated.
[b] Compliance with ASCE 7 provisions for new construction is deemed to comply.
[c] For Risk Category III, the Tier 1 screening checklists shall be based on the Collapse Prevention Performance Level (S-5), except that checklist statements using the Quick Check procedures of Section 4.4.3 shall be based on M_s factors taken as the average of the values for Life Safety and Collapse Prevention.
[d] For Risk Category IV, the Tier 1 screening checklists shall be based on the Collapse Prevention Performance Level (S-5), except that checklist statements using the Quick Check procedures of Section 4.4.3 shall be based on M_s factors for Life Safety.

Figure 2

Building Performance Objectives

Source: Table 2-2, ASCE 41-17: American Society of Civil Engineers – Seismic Evaluation and Retrofit of Existing Buildings

5.0 Seismicity

Seismic design is based on site specific parameters that relate to the location of the building relative to faults and the soil that supports the building. The United States Geologic Survey has developed seismic design data that is utilized to perform the calculations specified in ASCE 41-17. The table below summarizes the factors appropriate for computing the seismic lateral loads for the design earthquake specified in ASCE 41-17.

SITE SPECIFIC SEISMICITY	
Soil Density	Stiff Soil
ASCE 7-16 Soil Classification	D
BSE-1E:	
S_{xs}	0.256
S_{x1}	0.192
BSE-2E:	
S_{xs}	0.807
S_{x1}	0.661
Soil Condition Amplification Factors (F_V, F_A)	F_v = 1.963 - F_a = 1.305
ASCE 41 Site Seismicity	High

Source: SEAOC and OSHPD Seismic Design Maps, https://seismicmaps.org/

6.0 Site Specific Hazards

Site specific hazards were assessed as part of our engineering evaluation. The hazards evaluated in our analysis included liquefaction, slope failure, surface fault rupture and tsunami potential. These potential hazards were evaluated using ASCE 41-17 guidelines, as well as information provided by the online Oregon HazVu: Statewide Geohazards Viewer, maintained by the Department of Geology and Mineral Industries (DOGAMI). Tsunami risk was evaluated using the ASCE Tsunami Hazard Tool. Results from the HazVu analysis are included in Appendix D. Unless noted below, the hazards listed above are not present at the site.

7.0 Deficiencies and Repairs

The table below summarizes both the structural and nonstructural deficiencies noted in the Tier 1 evaluation and states both the proposed retrofit methodology and the plan keynote that corresponds to the scope items in the preliminary plans and the cost estimate. See Appendix B for complete Tier 1 check sheets. Drawings illustrating the proposed retrofit measures are attached in Appendix C.

Tier 1 Deficiency Description	Deficiency Statement	Repair Statement	Plan Key Note
LOAD PATH	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.	Provide a complete, well-defined load path by installing new elements and connections as needed to transfer inertial forces from all elements of the building to the foundation.	S1
SHEAR STRESS CHECK	The shear stress in the shear walls, calculated using the Quick Check procedure of Section 4.4.3.3, is higher than the following values: Structural panel sheathing 1,000 lb/ft Diagonal sheathing 700 lb/ft Straight sheathing 100 lb/ft All other conditions 100 lb/ft	Install new plywood shear walls to ensure adequate shear capacity.	S2
ROOF CHORD CONTINUITY	Chord elements are discontinuous.	Install new drag elements at discontinuous chords.	S3
STRAIGHT SHEATHING	Not all straight-sheathed diaphragms have aspect ratios less than 1-to-1 in the direction being considered.	Install new plywood diaphragm sheathing.	S4
SPANS	Not all wood diaphragms with spans greater than 12 ft consist of wood structural panels or diagonal sheathing.	Install new plywood diaphragm sheathing.	S5
SHEAR STRESS CHECK	The shear stress in the reinforced masonry shear walls, calculated using the Quick Check procedure of Section 4.4.3.3, is greater than 70 lb/in.2	Provide additional lateral resisting elements.	S6

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. Connections do not have strength to resist the connection force calculated in the Quick Check procedure of Section 4.4.3.7.	Install new out-of-plane anchorage.	S7
WOOD LEDGERS	The connection between the wall panels and the diaphragm induces cross-grain bending or tension in the wood ledgers.	Install new out-of-plane anchorage.	S8
TRANSFER TO SHEAR WALLS	Diaphragms are not connected for transfer of seismic forces to the shear walls, or the connections are not able to develop the lesser of the shear strength of the walls or diaphragms.	Install new hardware for transfer of seismic forces from diaphragm to shear walls.	S9
PLAN IRREGULARITIES	There is not tensile capacity to develop the strength of the diaphragm at reentrant corners or other locations of plan irregularities.	Provide additional lateral resisting elements.	S10
CROSS TIES	There are not continuous cross ties between diaphragm chords.	Provide new continuous cross ties between diaphragm chords.	S11
STRAIGHT SHEATHING	Not all straight-sheathed diaphragms have aspect ratios less than 1-to-1 in the direction being considered.	Install new plywood diaphragm sheathing.	S12
SPANS	Not all wood diaphragms with spans greater than 12 ft consist of wood structural panels or diagonal sheathing.	Install new plywood diaphragm sheathing.	S13
INDEPENDENT SUPPORT	Light fixtures that weigh more per square foot than the ceiling they penetrate are not supported independent of the grid ceiling suspension system by a minimum of two wires at diagonally opposite corners of each fixture.	Provide independent support for light fixtures.	N1

PENDANT SUPPORTS	Light fixtures on pendant supports are not attached at a spacing equal to or less than 6 ft. Unbraced suspended fixtures are not 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 not free to move with the structure to which they are attached without damaging adjoining components. The connection to the structure is not capable of accommodating the movement without failure.	Provide independent support for light fixtures.	N2
LENS COVERS	Lens covers on light fixtures are not attached with safety devices.	Install safety devices for light fixture lens covers.	N3
OVERHEAD GLAZING	Glazing panes of any size in curtain walls and individual interior or exterior panes more than 16ft.2 in area are not laminated annealed or laminated heat-strengthened glass or are not detailed to remain in the frame when cracked.	Remove glazing and replace with new safety glass windows system.	N4
TALL NARROW CONTENTS	Contents more than 6 ft high with a height-to-depth or height-to-width ratio greater than 3-to-1 are not anchored to the structure or to each other.	Anchor contents to the structure.	N5
FALL-PRONE CONTENTS	Equipment, stored items, or other contents weighing more than 20lb whose center of mass is more than 4 ft above the adjacent floor level are not braced or otherwise restrained.	Brace equipment to structure.	N6
SUSPENDED CONTENTS	Items suspended without lateral bracing are not free to swing from or move with the structure from which they are suspended without damaging themselves or adjoining components.	Ensure that items are free to swing from structure without damaging themselves or adjoining components.	N7
FALL-PRONE EQUIPMENT	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 and anchor 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 6ft high with a height-to-depth or height-to-width ratio greater than 3-to-1 is not anchored to the floor slab or adjacent structural walls.	Anchor equipment more than 6ft high with a height-to-depth or height-to-width ratio greater than 3-to-1 to the floor slab or adjacent structural walls.	N9

SUSPENDED EQUIPMENT	Equipment suspended without lateral bracing is not free to swing from or move with the structure from which it is suspended without damaging itself or adjoining components.	Ensure that equipment is free to swing from structure without damaging itself or adjoining components.	N10
HEAVY EQUIPMENT	Floor-supported or platform-supported equipment weighing more than 400lb is not anchored to the structure.	Anchor floor-supported equipment weighing more than 400lb to the structure.	N11

In addition to the structural and nonstructural deficiencies noted above, the gravity load resisting system was reviewed to identify obvious insufficient gravity components. Insufficient gravity elements can cause failure during seismic events. These gravity deficiencies are based on visual observations of the existing structural elements. No formal structural analysis was performed during this evaluation of the gravity resisting element.

Existing glue laminated beams built prior to 1970 were under designed based on inadequate material stress information available at the time. This results in beams that cannot be relied upon to support code prescribed gravity loading. The beams will be retrofit and strengthened to support code required gravity loading. This is deficiency/repair/plan note S14.

Based upon ZCS's previous experience and discussions with site personnel the building contains hazardous materials. These materials will need to be dealt with on a case-by-case basis as they are encountered during the project.

8.0 Preliminary Construction Cost Estimate

The attached engineer's opinion of probable cost has been developed by ZCS. ZCS has a successful record of completing seismic rehabilitation projects within the State of Oregon. The prices provided in the attached cost estimate have been developed using the extensive list of past projects as a baseline for this project. These prices are based on Oregon BOLI wage rates. The cost estimate is broken down into multiple line items associated with each major task (general conditions, foundation, structural steel, MEP, etc) associated with the rehabilitation. Additional line items are included for design associated permit costs, and owner construction management. A complete breakdown of the cost estimate can be found in Appendix E.

DIRECT COST	
Construction	$1,823,100
Engineering	$272,100
Construction Management	$60,500
Relocation	$26,300
Construction Contingency	$262,875
TOTALS AND SUMMARY	
Total Cost Estimate	**$2,444,875**
Match Funds	**$0**
Total Amount Requested from SRGP	**$2,444,875**
Total Area	**12,773 S.F.**
Cost/Square Foot	**$191.41**

9.0 Conclusion and Certification Statement

The findings described in this report have been limited to the lateral force-resisting structural system and general assessment of the gravity force-resisting elements. Based on our visual observations, we find the structure to be in relatively good condition and generally safe for occupancy. No significant damage to the existing structural system was discovered.

Given the current condition of the structure, the current code section on existing buildings does not mandate that upgrades are required unless the building is scheduled for repairs, alterations, additions, or change in occupancy. To clarify, upgrades outlined in this report are strictly at the discretion of the District.

Please contact our office if you would like to discuss our findings. Please review the attached schematic drawings that can be used to refine a scope and budget.

Certification Statement

ZCS Engineering & Architecture's professional staff has reviewed the subject building and the deficiencies noted in the Tier 1 evaluation, developed seismic retrofit solutions to rectify the deficiencies, and developed the engineering cost estimate. The project cost estimate was developed by ZCS based on unit costs from our extensive list of past seismic retrofit projects as a baseline. We certify to the best of our knowledge, based on known and readily identifiable existing conditions, that all the seismic deficiencies present in the building are included in the retrofit scope of work and that all the retrofit's scope of work elements are included in the cost estimate.

Matthew R. Smith, PE, SE

Appendix A: Figures

Figure 1: EAST ELEVATION

Figure 2: SOUTH ELEVATION

Figure 3: NORTH ELEVATION

Figure 4: GYMNASIUM INTERIOR

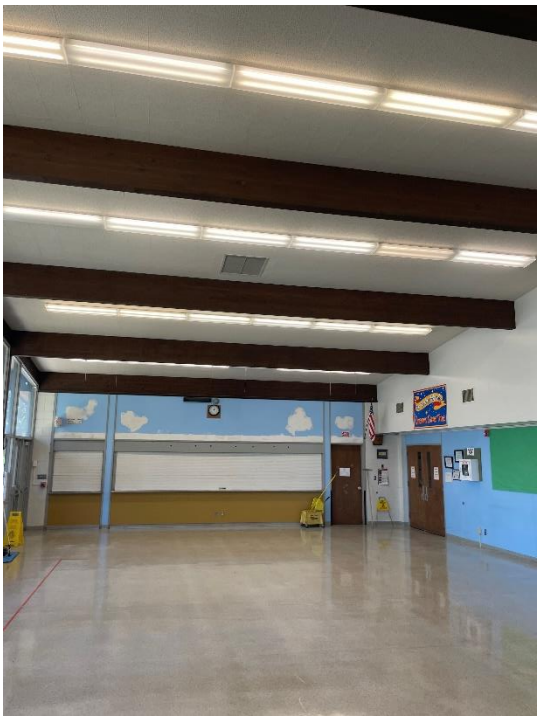


Figure 5: CAFETERIA INTERIOR

Figure 6: STAGE

Appendix B:
Tier 1 Check Sheets

ASCE 41-17 Tier 1 Checklists

FIRM:	ZCS STRUCTURAL ENGINEERING & ARCHITECTURE
PROJECT NAME:	FORT VANNOY ELEMENTARY SCHOOL
SEISMICITY LEVEL:	HIGH
PROJECT NUMBER:	G-1451-21
COMPLETED BY:	JDS
DATE COMPLETED:	1/12/22
REVIEWED BY:	MATT SMITH, PE, SE
REVIEW DATE:	FEBRUARY 2022

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

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							
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	TOP OF WALL TO ROOF CONNECTION
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	
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	
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	

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

Status				Evaluation Statement	Tier 2 Reference	Commentary Reference	Comments
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	
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	

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

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	
☐	☐	☐	☐				

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

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	
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	2X WALL OVERSTRESSED
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	
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	
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	

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

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	
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	TIER 2 CHECK SHOWS HOLDOWN NOT REQUIRED
Connections				
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	
C ☒ NC ☐ N/A ☐ U ☐	WOOD SILLS: All wood sills are bolted to the foundation.	5.7.3.3	A.5.3.4	
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	

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

C	NC	N/A	U				
☐	☐	☐	☐	ROOF CHORD CONTINUITY: All chord elements are continuous, regardless of changes in roof elevation.	5.6.1.1	A.4.1.3	BREAKS IN CHORD
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	
C	NC	N/A	U				
☐	☐	☐	☐	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	STRIAGHT SHEATHED DIAPHRAGM RATIO GREATER THAN 1-TO-1
C	NC	N/A	U				
☐	☐	☐	☐	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	STRAIGHT SHEATED DIAPHRAGM SPAN GREATER THAN 12 FEET
C	NC	N/A	U				
☐	☐	☐	☐	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	
C	NC	N/A	U				
☐	☐	☐	☐	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							
C	NC	N/A	U				
☒	☐	☐	☐	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	

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

17.17IO Structural Checklist for Building Types RM1: Reinforced Masonry Bearing Walls with Flexible Diaphragms and RM2: Reinforced Masonry Bearing Walls with Stiff Diaphragms

Table 17-35. Immediate Occupancy Structural Checklist for Building Types RM1 and RM2

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	
C ☐	**NC** ☐	**N/A** ☐	**U** ☐	SHEAR STRESS CHECK: The shear stress in the reinforced masonry shear walls, calculated using the Quick Check procedure of Section 4.4.3.3, is less than 70 lb/in.^{2} (4.83 MPa).	5.5.3.1.1	A.3.2.4.1	NON-MASONRY WALL DOES NOT HAVE CAPACITY
C ☒	**NC** ☐	**N/A** ☐	**U** ☐	REINFORCING STEEL: The total vertical and horizontal reinforcing steel ratio in reinforced masonry walls is greater than 0.002 of the wall with the minimum of 0.0007 in either of the two directions; the spacing of reinforcing steel is less than 48 in., and all vertical bars extend to the top of the walls.	5.5.3.1.3	A.3.2.4.2	
Connections							
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	NO OUT-OF-PLANE TIES
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	NO OUT-OF-PLANE TIES
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	TOP OF WALL TO ROOF CONNECTIONS

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

C	NC	N/A	U			
☒	☐	☐	☐	FOUNDATION DOWELS: Wall reinforcement is doweled into the foundation, and the dowels are able to develop the lesser of the strength of the walls or the uplift capacity of the foundation.	5.7.3.4	A.5.3.5
☒	☐	☐	☐	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
Stiff Diaphragms						
☐	☐	☐	☐	TOPPING SLAB: Precast concrete diaphragm elements are interconnected by a continuous reinforced concrete topping slab.	5.6.4	A.4.5.1
☐	☐	☐	☐	TOPPING SLAB TO WALLS OR FRAMES: Reinforced concrete topping slabs that interconnect the precast concrete diaphragm elements are doweled for transfer of forces into the shear wall or frame elements.	5.7.2	A.5.2.3
Foundation System						
☐	☐	☐	☐	DEEP FOUNDATIONS: Piles and piers are capable of transferring the lateral forces between the structure and the soil.		A.6.2.3
☐	☐	☐	☐	SLOPING SITES: The difference in foundation embedment depth from one side of the building to another does not exceed one story.		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							
☒	☐	☐	☐	REINFORCING AT WALL OPENINGS: All wall openings that interrupt rebar have trim reinforcing on all sides.	5.5.3.1.5	A.3.2.4.3	
☒	☐	☐	☐	PROPORTIONS: The height-to-thickness ratio of the shear walls at each story is less than 30.	5.5.3.1.2	A.3.2.4.4	
Diaphragms (Stiff or Flexible)							
☐	☐	☐	☐	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	

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

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	
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	MISSING DRAG CONNECTION AT REENTRANT CORNER
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							
C	**NC**	**N/A**	**U**				
☐	☐	☐	☐	CROSS TIES: There are continuous cross ties between diaphragm chords.	5.6.1.2	A.4.1.2	BREAKS IN CHORD
C	**NC**	**N/A**	**U**				
☐	☐	☐	☐	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	STRIAGHT SHEATHED DIAPHRAGM RATIO GREATER THAN 1-TO-1
C	**NC**	**N/A**	**U**				
☐	☐	☐	☐	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	STRAIGHT SHEATED DIAPHRAGM SPAN GREATER THAN 12 FEET
C	**NC**	**N/A**	**U**				
☐	☐	☐	☐	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	
C	**NC**	**N/A**	**U**				
☐	☐	☐	☐	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	
C	**NC**	**N/A**	**U**				
☒	☐	☐	☐	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							
C	**NC**	**N/A**	**U**				
☒	☐	☐	☐	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. before engagement of the anchors.	5.7.1.2	A.5.1.4	

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

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	
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	
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	

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

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**			
☐	☐	☐	☐	**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
C	**NC**	**N/A**	**U**			
☐	☐	☐	☐	**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
C	**NC**	**N/A**	**U**			
☐	☐	☐	☐	**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
C	**NC**	**N/A**	**U**			
☐	☐	☐	☐	**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
C	**NC**	**N/A**	**U**			
☐	☐	☐	☐	**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
C	**NC**	**N/A**	**U**			
☐	☐	☐	☐	**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
C	**NC**	**N/A**	**U**			
☐	☐	☐	☐	**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

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

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	IMPROPERLY SUPPORTED LIGHT

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

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	IMPROPERLY SUPPORTED LIGHT
C	**NC**	**N/A**	**U**				
☐	☐	☐	☐	**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	NO LENSE COVERS
Cladding and Glazing							
C	**NC**	**N/A**	**U**				
☐	☐	☐	☐	**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	
C	**NC**	**N/A**	**U**				
☐	☐	☐	☐	**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	
C	**NC**	**N/A**	**U**				
☐	☐	☐	☐	**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	

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

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	GLASS AT WALLS AND OVER ENTRANCE
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	

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

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
☐	☐	☐	☐			

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

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	CONTENTS IN STORAGE AREA
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	CONTENTS IN STORAGE AREA

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

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	CONTENTS IN STORAGE AREA
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	CONTENTS IN MECHANICAL EQUIPMENT AREA
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	CONTENTS IN MECHANICAL EQUIPMENT AREA
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	CONTENTS IN MECHANICAL EQUIPMENT AREA
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	CONTENTS IN MECHANICAL EQUIPMENT AREA

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

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
☒	☐	☐	☐	**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						
☒	☐	☐	☐	**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
☒	☐	☐	☐	**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
☒	☐	☐	☐	**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
☐	☐	☐	☐	**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						
☐	☐	☐	☐	**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
☐	☐	☐	☐	**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
☐	☐	☐	☐	**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						
☐	☐	☐	☐	**HR—not required; LS—H; PR—H**. RETAINER GUARDS: Sheaves and drums have cable retainer guards.	13.7.11	A.7.16.1
☐	☐	☐	☐	**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

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

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.

Appendix C:
Schematic Seismic Retrofit Drawings

FORT VANNOY ELEMENTARY SCHOOL GYM SEISMIC RETROFIT

PRELIMINARY DESIGN

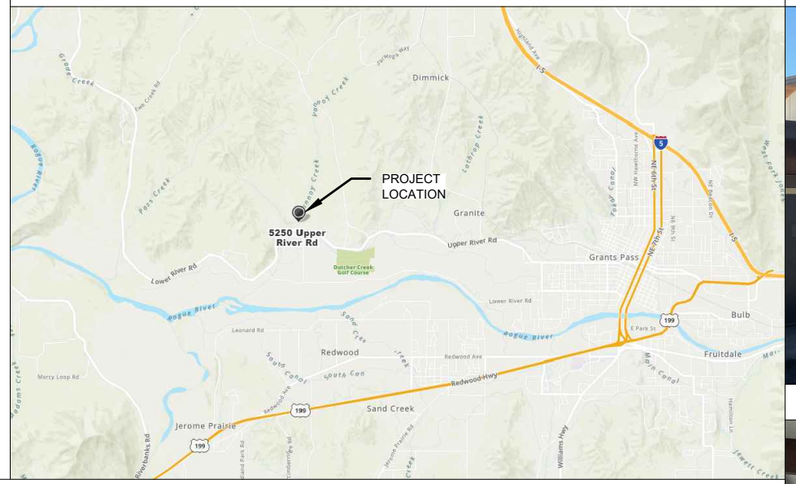
THREE RIVERS SCHOOL DISTRICT
5250 UPPER RIVER RD.
GRANTS PASS, OR 97526

ABBREVIATIONS

ABBREVIATIONS			
(E)	EXISTING	L.P.	LOW POINT
(N)	NEW	M.C.	MEDICINE CABINET
(R)	REMOVE	M.D.F.	MEDIUM DENSITY FIBERBOARD
A.C.	ASPHALT CONCRETE	M.D.O.	MEDIUM DENSITY OVERLAY
A.C.B.	ACOUSTICAL BOARD	MEMB.	MEMBRANE
A.C.P.	ACOUSTICAL PANEL	MH.	MANHOLE
A.C.T.	ACOUSTICAL CEILING TILE	MIR.	MIRROR
A.D.	AREA DRAIN	M.O.	MASONRY OPENING
ADJ.	ADJUSTABLE	M.P.	MIDPOINT
A.F.	ACCESS FLOORING	M.S.	MACHINE SCREW
AGGR.	AGGREGATE	MTD.	MOUNTED
A..F.	ABOVE FINISHED FLOOR	MUL.	MULLION
BD.	BOARD	NOM.	NOMINAL
BITUM.	BITUMINOUS	N.T.S.	NOT TO SCALE
BKP.	BACKING PLATE	OBS.	OBSCURE
BM.	BEAM	O.C.	ON CENTER
BOT./B.O.	BOTTOM/BOTTOM OF	O.C.D.	OVERHEAD COILING DOOR
C.B.	CATCH BASIN	O.C.G	OVERHEAD COILING GRILLE
CEM.	CEMENT	O.D.	OUTSIDE DIAMETER
CER.	CERAMIC	O.F.C.I.	OWNER FURNISHED CONTRACTOR INSTALLED
C.G.	CORNER GUARD	O.F.D.	OVERFLOW DRAIN
C.I.	CAST IRON	O.F.O.I.	OWNER FURNISHED OWNER INSTALLED
C.J	CONTROL JOINT	OH.	OPPOSITE HAND
CLG.	CEILING	PL.	PLATE
CLKG.	CAULKING	P.LAM.	PLASTIC LAMINATE
CLO.	CLOSET	PLAS.	PLASTER
CLR.	CLEAR	P.C.P.	PORTLAND CEMENT
C.M.U.	CONCRETE MASONRY UNIT	PLASTER	
C.O.	CASED OPENING	PR.	PAIR
CONN	CONNECTION	PTN.	PARTITION
CORR.	CORRIDOR	R.C.P.	REFLECTED CEILING PLAN
CPT.	CARPET	R.D.	ROOF DRAIN
CTSK.	COUNTERSUNK	RL.	RELOCATE
C.T.	CERAMIC TILE	R.O.	ROUGH OPENING
CTR.	CENTER	RWD.	REDWOOD
D.F.	DRINKING FOUNTAIN	R.W.L.	RAIN WALL LEADER
DET.	DETAIL	REV.	REVERSED
DISP.	DISPENSER	S.C.	SOLID CORE
DR.	DOOR	S.C.D.	SEE CIVIL DRAWINGS
DWR.	DRAWER	SHR.	SHOWER
D.S.	DOWNSPOUT	S.J.	SCORE JOINT
D.S.A.	DRY STANDPIPE	S.L.D.	SEE LANDSCAPING DRAWINGS
E.J.	EXPANSION JOINT	S.M.	SHEET METAL
EL.	ELEVATION	S.M.D	SEE MECHANICAL DRAWINGS
EXPO.	EXPOSED	S.O.G.	SLAB ON GRADE
EXP.	EXPANSION	S.S.D.	SEE STRUCTURAL DRAWINGS
F.A.	FIRE ALARM	S.S.	STAINLESS STEEL
FB.	FLAT BAR	STR.	STRUCTURAL
F.D.	FLOOR DRAIN	S.T.S.	SELF TAPPING SCREW
FDN.	FOUNDATION	SUSP.	SUSPENDED
FE	FIRE EXTINGUISHER	TRD.	TREAD
F.A.	FLAT HEAD	T.B.	TOWEL BAR
F.O.C	FACE OF CONCRETE	T.C.	TOP OF CURB
F.O.F	FACE OF FINISH	T&G.	TONGUE AND GROOVE
F.O.S.	FACE OF STUDS	THK.	THICK
F.S.	FULL SIZE	T.P.	TOP OF PAVEMENT
FTG.	FOOTING	T.W.	TOP OF WALL
FUT.	FUTURE	V.I.F.	VERIFY IN FIELD
G.A.	GAUGE	V.T.R.	VENT THROUGH ROOF
G.L.	GRID LINE	W.C.	WATER CLOSET
GLB.	GLULAM BEAM	W.O.	WINDOW OPENING
G.B.	GRAB BAR		
GND.	GROUND		
GYP.	GYPSUM		
G.W.B.	GYPSUM WALL BOARD		
H.B.	HOSE BIBB		
H.C.	HOLLOW CORE		
H.M.	HOLLOW METAL		
J.B.	JUNCTION BOX		
J.O.H.	JAMB OPENING HEIGHT		
J.O.W.	JAMB WIDTH		
JT.	JOINT		
LAM.	LAMINATE		

SHEET INDEX:

VICINITY MAP



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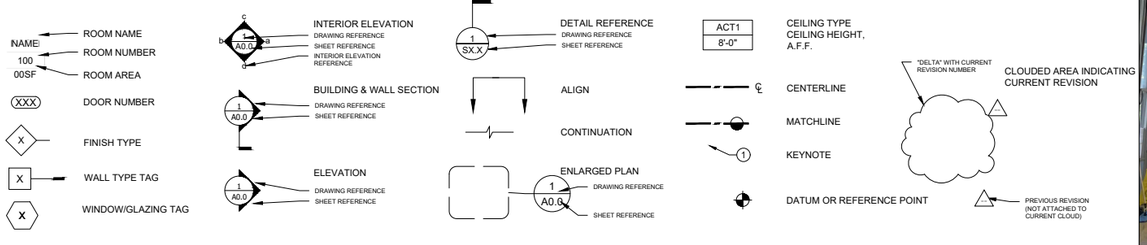


ONE INCH EQUALS FULL SCALE

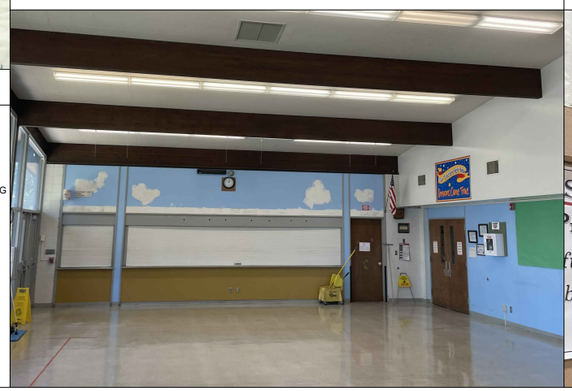
EAST ELEVATION:

SOUTH ELEVATION:

NORTH ELEVATION:

GYMNASIUM INTERIOR:

CAFETERIA INTERIOR:



STAGE:

ZCS ENGINEERING ARCHITECTURE
127 NW D Street, Grants Pass, Oregon 97526 | 541-479-3865

THREE RIVERS
SCHOOL DISTRICT
8550 NEW HOPE RD.
GRANTS PASS, OR 97527

FORT VANNOY ELEMENTARY GYM SEISMIC RETROFIT

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
OREGON
DECEMBER 08, 2014
ANDREW R. SMITH
EXPIRES: 06-30-22
PRELIMINARY - NOT FOR CONSTRUCTION

REVISION ID:	DATE:

PROJECT NO:	G-1451-21
DRAWN:	PWR
CHECKED:	MRS
DATE:	FEB. 2022

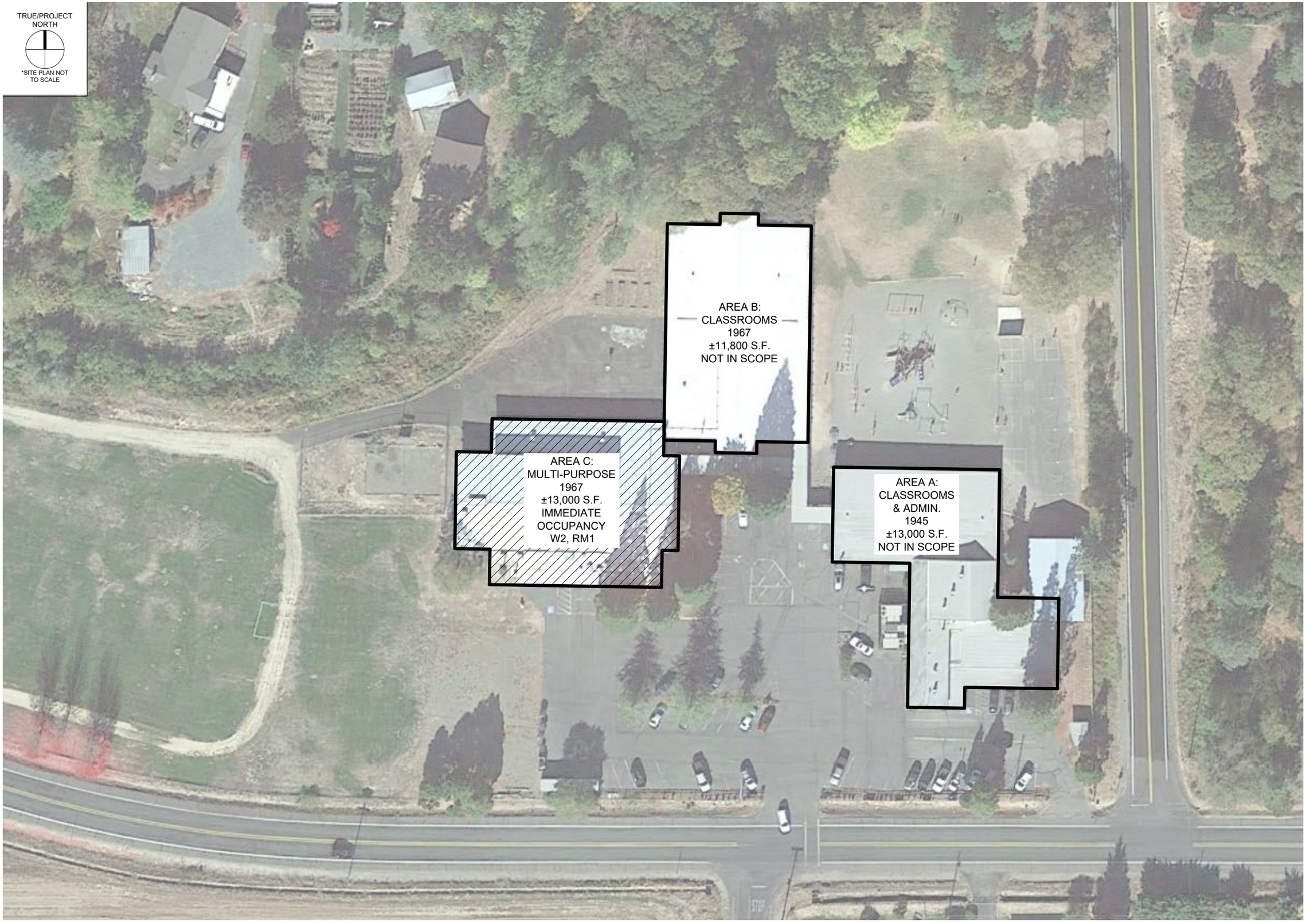
COVER SHEET

G0.0

PRELIMINARY DESIGN

TRUE/PROJECT NORTH

*SITE PLAN NOT TO SCALE



ONE INCH EQUALS FULL SCALE

ZCS
ENGINEERING
ARCHITECTURE

127 NW D Street, Grants Pass,
Oregon 97526 | 541-479-3865

THREE RIVERS
SCHOOL DISTRICT
8550 NEW HOPE RD.
GRANTS PASS, OR 97527

FORT VANNOY ELEMENTARY GYM SEISMIC RETROFIT

STRUCTURAL
REGISTERED PROFESSIONAL ENGINEER
OREGON
OCT. 08, 2014
PWR. SMITH
EXPIRES: 06-30-22

PRELIMINARY - NOT FOR CONSTRUCTION

REVISION ID:	DATE:

PROJECT NO:	G-1451-21
DRAWN:	PWR
CHECKED:	MRS
DATE:	FEB. 2022

BUILDING
KEY PLAN

A1.1

PRELIMINARY DESIGN

STRUCTURAL REPAIRS:

S1. PROVIDE A COMPLETE, WELL-DEFINED LOAD PATH BY INSTALLING NEW ELEMENTS AND CONNECTIONS AS NEEDED TO TRANSFER INERTIAL FORCES FROM ALL ELEMENTS OF THE BUILDING TO THE FOUNDATION.
   A. DIAPHRAGM ATTACHMENTS - IN-PLANE SHEAR.
   B. NEW LIGHT STEEL COLUMNS.

S2. INSTALL NEW PLYWOOD SHEAR WALLS TO ENSURE ADEQUATE SHEAR CAPACITY.

S3. INSTALL NEW DRAG ELEMENTS AT DISCONTINUOUS CHORDS.

S4. INSTALL NEW PLYWOOD DIAPHRAGM SHEATHING.

S5. INSTALL NEW PLYWOOD DIAPHRAGM SHEATHING.

S6. PROVIDE ADDITIONAL LATERAL RESISTING ELEMENTS.
   - NEW 2X FRAMED WALLS.

S7. INSTALL NEW OUT-OF-PLANE ANCHORAGE.

S8. INSTALL NEW OUT-OF-PLANE ANCHORAGE.

S9. INSTALL NEW HARDWARE FOR TRANSFER OF SEISMIC FORCES FROM DIAPHRAGM TO SHEAR WALLS.
   A. DIAPHRAGM ATTACHMENTS - IN-PLANE SHEAR.
   B. NEW LIGHT STEEL COLUMNS.

S10. PROVIDE ADDITIONAL LATERAL RESISTING ELEMENTS.
   - NEW DRAG BEAM ATTACHMENTS.

S11. PROVIDE NEW CONTINUOUS CROSS TIES BETWEEN DIAPHRAGM CHORDS.
   - NEW DRAG BEAM ATTACHMENTS.

S12. INSTALL NEW PLYWOOD DIAPHRAGM SHEATHING.

S13. INSTALL NEW PLYWOOD DIAPHRAGM SHEATHING.

S14. STRENGTHEN EXISTING GLULAM BEAMS.

NON-STRUCTURAL REPAIRS:

S1. PROVIDE INDEPENDENT SUPPORT FOR LIGHT FIXTURES.

S2. PROVIDE INDEPENDENT SUPPORT FOR LIGHT FIXTURES.

S3. INSTALL SAFETY DEVICES FOR LIGHT FIXTURE LENS COVERS.

S4. REMOVE GLAZING AND REPLACE WITH NEW SAFETY GLASS WINDOWS SYSTEM.

S5. ANCHOR CONTENTS TO THE STRUCTURE.

S6. BRACE EQUIPMENT TO STRUCTURE.

S7. ENSURE THAT EQUIPMENT IS FREE TO SWING FROM STRUCTURE WITHOUT DAMAGING ITSELF OR ADJOINING COMPONENTS.

S8. BRACE AND ANCHOR EQUIPMENT WEIGHING MORE THAN 20 LB, WHOSE CENTER OF MASS IS MORE THAN 4 FT ABOVE THE ADJACENT FLOOR LEVEL.

S9. ANCHOR EQUIPMENT MORE THAN 6FT HIGH WITH A HEIGHT-TO-DEPTH OR HEIGHT-TO-WIDTH RATIO GREATER THAN 3-TO-1 TO THE FLOOR SLAB OR ADJACENT STRUCTURAL WALLS.

S10. ENSURE THAT EQUIPMENT IS FREE TO SWING FROM STRUCTURE WITHOUT DAMAGING ITSELF OR ADJOINING COMPONENTS.

S11. ANCHOR FLOOR-SUPPORTED EQUIPMENT WEIGHING MORE THAN 400LB TO THE STRUCTURE.

ZCS
ENGINEERING
ARCHITECTURE

127 NW D Street, Grants Pass,
Oregon 97526 | 541-479-3865

THREE RIVERS
SCHOOL DISTRICT
8550 NEW HOPE RD.
GRANTS PASS, OR 97527

FORT VANNOY ELEMENTARY GYM SEISMIC RETROFIT

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
OREGON
DEC 08, 2014
PAUL W. R. SMITH
EXPIRES: 06-30-22

PRELIMINARY - NOT FOR CONSTRUCTION

REVISION ID:	DATE:

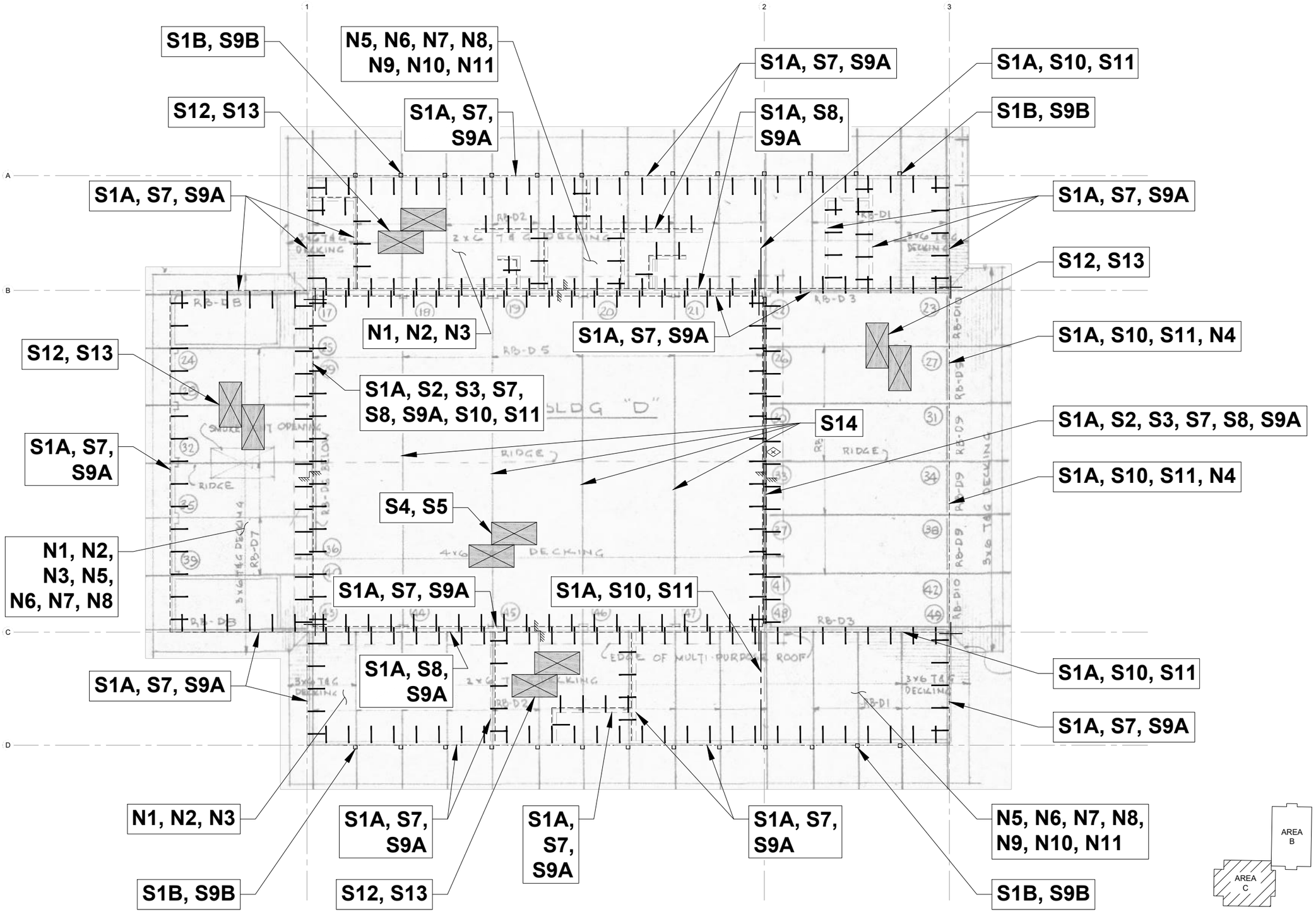
PROJECT NO:	G-1451-21
DRAWN:	PWR
CHECKED:	MRS
DATE:	FEB. 2022

AREA B ROOF
FRAMING PLAN

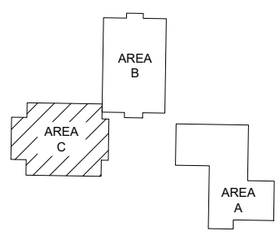
S1.1

PRELIMINARY DESIGN

ONE INCH EQUALS FULL SCALE



1 S2.1 **AREA C ROOF FRAMING PLAN** 1/8"=1'-0"



0 S2.1 **CAMPUS KEY** NTS

ONE INCH EQUALS FULL SCALE

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ARCHITECTURE
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THREE RIVERS
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FORT VANNOY ELEMENTARY GYM SEISMIC RETROFIT

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER OREGON JAN. 08, 2014 P.W.R. SMITH
PRELIMINARY NOT FOR CONSTRUCTION
EXPIRES: 06-30-22

REVISION ID:	DATE:

PROJECT NO:	G-1451-21
DRAWN:	PWR
CHECKED:	MRS
DATE:	FEB. 2022

AREA C ROOF FRAMING PLAN

S2.1

PRELIMINARY DESIGN

Appendix D:
Geotechnical Information

FT. VANOY ELEMENTARY SCHOOL

5250 Upper River Rd, Grants Pass, OR 97526, USA

Latitude, Longitude: 42.4470531, -123.4145737

Date	9/17/2021, 2:54:37 PM
Design Code Reference Document	ASCE41-17
Custom Probability	
Site Class	D - Default (See Section 11.4.3)

Type	Description	Value
Hazard Level		BSE-2N
S_S	spectral response (0.2 s)	0.936
S_1	spectral response (1.0 s)	0.51
S_{XS}	site-modified spectral response (0.2 s)	1.124
S_{X1}	site-modified spectral response (1.0 s)	0.913
F_a	site amplification factor (0.2 s)	1.2
F_v	site amplification factor (1.0 s)	1.79
ssuh	max direction uniform hazard (0.2 s)	1.082
crs	coefficient of risk (0.2 s)	0.865
ssrt	risk-targeted hazard (0.2 s)	0.936
ssd	deterministic hazard (0.2 s)	1.622
s1uh	max direction uniform hazard (1.0 s)	0.595
cr1	coefficient of risk (1.0 s)	0.858
s1rt	risk-targeted hazard (1.0 s)	0.51
s1d	deterministic hazard (1.0 s)	0.867

Type	Description	Value
Hazard Level		BSE-1N
S_{XS}	site-modified spectral response (0.2 s)	0.749
S_{X1}	site-modified spectral response (1.0 s)	0.608

Type	Description	Value
Hazard Level		BSE-2E
S_S	spectral response (0.2 s)	0.618
S_1	spectral response (1.0 s)	0.337
S_{XS}	site-modified spectral response (0.2 s)	0.807
S_{X1}	site-modified spectral response (1.0 s)	0.661
f_a	site amplification factor (0.2 s)	1.305
f_v	site amplification factor (1.0 s)	1.963

Type	Description	Value
Hazard Level		BSE-1E
S_S	spectral response (0.2 s)	0.16
S_1	spectral response (1.0 s)	0.08
S_{XS}	site-modified spectral response (0.2 s)	0.256
S_{X1}	site-modified spectral response (1.0 s)	0.192
F_a	site amplification factor (0.2 s)	1.6
F_v	site amplification factor (1.0 s)	2.4

Type	Description	Value
Hazard Level		TL Data
T-Sub-L	Long-period transition period in seconds	16

Fort Vannoy Elementary School Active Faults Hazard Map

February 7, 2022

1:840

0 0.01 0.01 0.02 mi

0 0.01 0.01 0.03 km

Maxar, Microsoft, State of Oregon, State of Oregon GEO, Esri, HERE,

Public Buildings

- State Owned/Leased Facility
- School
- Community College
- Police Station
- Fire Station
- Emergency Operations Center
- Hospital
- Active Faults

Fort Vannoy Elementary School Landslide Hazard Map

February 7, 2022

1:840

0 0.01 0.01 0.02 mi

0 0.01 0.01 0.03 km

Maxar, Microsoft, State of Oregon, State of Oregon GEO, Esri, HERE,

State Owned/Leased Facility

Public Buildings

School

Community College

Police Station

Fire Station

Emergency Operations Center

Hospital

Scarp

Head Scarp

Deposits

Talus-Colluvium

Fort Vannoy Elementary School Liquefaction Hazard Map

February 7, 2022

State Owned/Leased Facility

Public Buildings

School

Community College

Police Station

Fire Station

Emergency Operations Center

Hospital

High

Moderate

Low

1:840

0 0.01 0.01 0.02 mi

0 0.01 0.01 0.03 km

Maxar, Microsoft, State of Oregon, State of Oregon GEO, Esri, HERE,

Appendix E: Construction Cost Estimate Worksheets

ENGINEER'S OPINION OF PROBABLE COST - FORT VANNOY ELEMENTARY SCHOOL SEISMIC REHABILITATION

SUMMARY

Description	Deficiencies (Ref. Seismic Evaluation Report Sec. 4.0)	Quantity	Units	Unit Price	Total Price for Construction Item
GENERAL CONDITIONS					
General Conditions		10%	%		$ 136,067.00
Preconstruction Services		2%	%		$ 27,213.40
Escalation		7%	%		$ 106,676.53
Bonding & Insurance		3%	%		$ 45,718.51
Contractor Profit & Overhead		5%	%		$ 76,197.52
			General Conditions Subtotal		$ 391,872.96
Non-Structural Elements					
Misc MEP	N5, N6,N7, N8, N9, N10, N11	1	Lump Sum	$ 71,200.00	$ 71,200.00
Misc Non-Structural	N1, N2, N3	1	Lump Sum	$ 28,500.00	$ 28,500.00
New Restroom	S1, S3, S4, S5	2	EA	$ 25,000.00	$ 50,000.00
			Non-Structural Subtotal		$ 149,700.00
Construction Cost Per Building Part					
			Building Part 'GYMNASIUM' Subtotal		$ 1,210,970.00
			Sub-Total Construction Cost		$ 1,752,500.00
			Contingency	15%	$ 262,875.00
			Total Construction Cost		$ 2,015,375.00
Cost Estimate Summary					
Engineering					$ 272,100.00
Architectural Consulting				$ 30,200.00	
Structural / Rehabilitation Engineering				$ 221,700.00	
Geotechnical Consulting				$ 10,100.00	
Materials Testing for Design				$ 10,100.00	
Construction Management					$ 60,500.00
Construction					$ 1,823,100.00
Sub-Total Construction Cost				$ 1,752,500.00	
Special Inspection Services for Construction				$ 10,100.00	
Permitting Fees				$ 60,500.00	
Relocation of FF&E					$ 26,300.00
Contingency					$ 262,875.00
			Total Project Funding Requirement		**$ 2,444,875.00**

ENGINEER'S OPINION OF PROBABLE COST - FORT VANNOY ELEMENTARY SCHOOL SEISMIC REHABILITATION

BUILDING PART - 'GYMNASIUM'

Description	Deficiencies (Ref. Seismic Evaluation Report Sec. 4.0)	Quantity	Units	Unit Price	Total Price for Construction Item
Demolition & Asbestos Abatement					
Soft Demolition	S1, S2, S3, S6, S7, S8, S9, S10	7250	Square Foot	$ 2.00	$ 14,500.00
Hard Demolition	S1B, S9B	160	Square Foot	$ 20.00	$ 3,200.00
Built-Up Roof Demo	S4, S5, S12, S13	18720	Square Foot	$ 4.00	$ 74,880.00
Abatement	S1, S2, S3, S6, S7, S8, S9, S10	7250	Square Foot	$ 5.00	$ 36,250.00
			Demolition & Asbestos Subtotal		$ 128,830.00
Foundation / Floor Strengthening Construction					
Flooring Protection	S1, S2, S3, S6, S7, S8, S9, S10	1400	Square Foot	$ 6.00	$ 8,400.00
Spread Footings for Columns / Holdown	S1B, S9B	26	Each	$ 4,000.00	$ 104,000.00
Concrete Repair & Patching	S1B, S9B	160	Square Foot	$ 15.00	$ 2,400.00
Floor Finish Patch / Replacement	S1B, S9B	160	Square Foot	$ 7.00	$ 1,120.00
			Foundation Level Subtotal		$ 115,920.00
Wall Strengthening Construction					
Sheathing of Existing Walls	S2, S6	750	Square Foot	$ 5.00	$ 3,750.00
Light Steel Columns	S1B, S9B	26	EA	$ 1,600.00	$ 41,600.00
Interior Wall Finish Repair	S2, S6	750	Square Foot	$ 2.00	$ 1,500.00
New Windows - Storefront	N4	860	Square Foot	$ 70.00	$ 60,200.00
Painting	S2, S6, N4	750	Square Foot	$ 3.00	$ 2,250.00
			Wall Strengthening Subtotal		$ 109,300.00
Roof Strengthening Construction					
New Roof Sheathing	S4, S5, S12, S13	18720	Square Foot	$ 4.00	$ 74,880.00
New 3-ply Built Up Roof	S4, S5, S12, S13	18720	Square Foot	$ 17.00	$ 318,240.00
New 6" polyisociurinate rigid insulation	S4, S5, S12, S13	18720	Square Foot	$ 15.00	$ 280,800.00
Diaphragm Attachments - In-Plane Shear	S1, S9	1300	Linear Foot	$ 20.00	$ 26,000.00
Diaphragm Attachments - Out-of-Plane	S7, S8	1300	Linear Foot	$ 50.00	$ 65,000.00
Existing Beam Strengthening	S14	4	EA	$ 15,000.00	$ 60,000.00
New Drag Beam Attachments	S3, S10, S11	5	EA	$ 2,500.00	$ 12,500.00
Ceiling Repair	S1, S3, S7, S8, S9, S10, S11	6500	Square Foot	$ 3.00	$ 19,500.00
			Roof Strengthening Subtotal		$ 856,920.00
			Building Part 'GYMNASIUM' - Total Construction Cost		$ 1,210,970.00

Appendix F:
Rapid Visual Screening

Ft Vannoy Elementary School

Three Rivers/Josephine County SD

Jose_sch10A

Building Type	County
School	Josephine

Street: 5250 Upper River Rd.

City	State	Zip
Grants Pass	OR	97526

Latitude	Longitude
42.44718	123.41408

Tracking Code	Inspection Date
RVS in 2006	7/28/2006

Seismicity Zone: High

FEMA 154 Rapid Visual Screening Score Card

	Type	Basic Score	Vert Irreg	Plan Irreg	Pre-Code	Post-Bench	Soil C	Soil D	Soil E	RVS Score
Primary	W2	3.8	-2	-0.5	0	0	0	-0.8	0	0.5
Secondary	RM1	2.8	-1	-0.5	0	0	0	-0.6	0	0.7
Tertiary		0	0	0	0	0	0	0	0	0

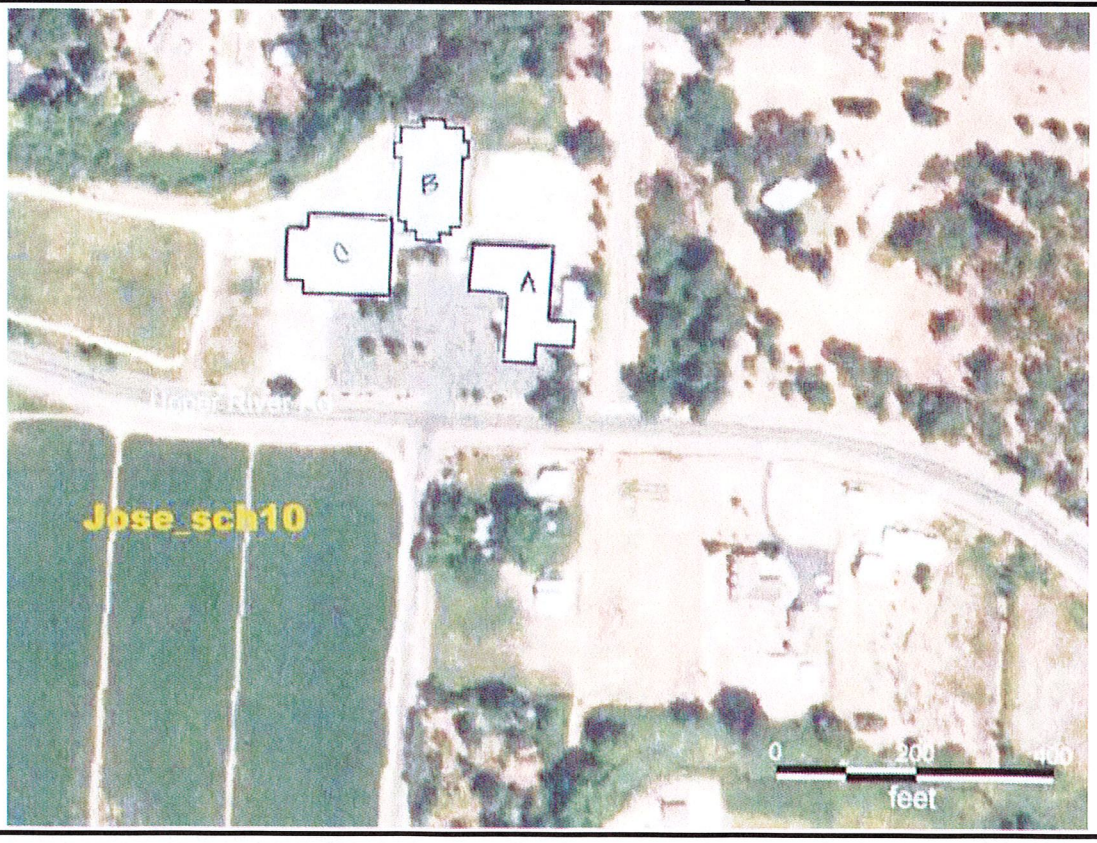
Ft Vannoy Elementary School

Final RVS Score

Final Type	Final Score
W2	0.5

FEMA-154 Collapse Potential

High (>10%)



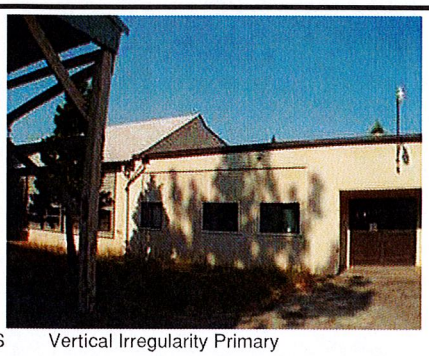
Ft Vannoy Elementary School

Jose_sch10A

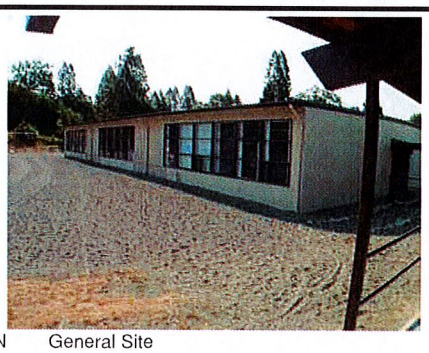
Enrollment	Year Built (Field Verified)	Year Built (Alt. Source)	Est. Decade Built
308		1967	1950
Total Area (square ft)	**Number of Stories**	**Basement**	**Pounding Potential**
40100	1	No	No

Plan Irregularities	Vertical Irregularities
Reentrant Corners: Other	Steps in Elevation View: Single Change
None	None
None	None

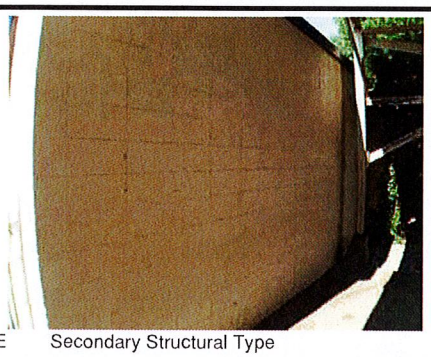
Falling Hazards	Poor Conditions
None	None
None	None
None	None



S Vertical Irregularity Primary



N General Site



E Secondary Structural Type

Ft Vannoy Elementary School

Three Rivers/Josephine County SD

Jose_sch10B

Building Type	County
School	Josephine

Street: 5250 Upper River Rd.

City	State	Zip
Grants Pass	OR	97526

Latitude	Longitude
42.44762	123.41461

Tracking Code	Inspection Date
RVS in 2006	7/28/2006

Seismicity Zone: High

FEMA 154 Rapid Visual Screening Score Card

	Type	Basic Score	Vert Irreg	Plan Irreg	Pre-Code	Post-Bench	Soil C	Soil D	Soil E	RVS Score
Primary	RM1	2.8	0	-0.5	0	0	0	-0.6	0	1.7
Secondary		0	0	0	0	0	0	0	0	0
Tertiary		0	0	0	0	0	0	0	0	0

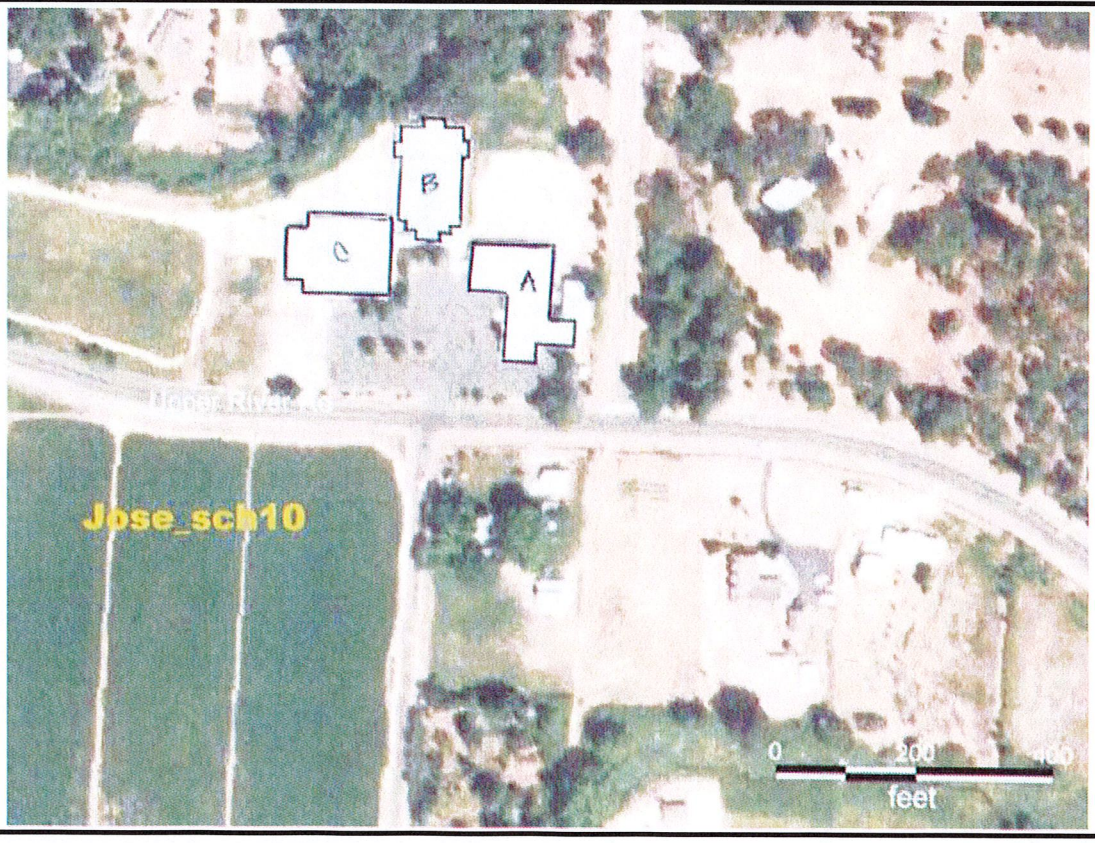
Ft Vannoy Elementary School

Final RVS Score

Final Type	Final Score
RM1	1.7

FEMA-154 Collapse Potential

Moderate (>1%)



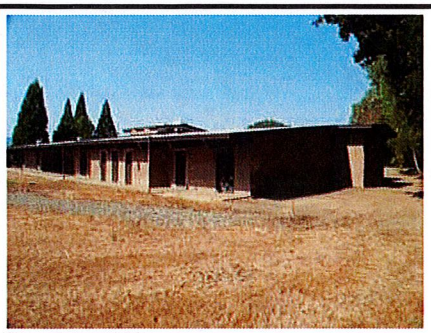
Ft Vannoy Elementary School

Jose_sch10B

Enrollment	Year Built (Field Verified)	Year Built (Alt. Source)	Est. Decade Built
308		1967	1970
Total Area (square ft)	**Number of Stories**	**Basement**	**Pounding Potential**
40100	1	No	No

Plan Irregularities	Vertical Irregularities
Out of Plane Lateral-Force-Resistance Elements	None
None	None
None	None

Falling Hazards	Poor Conditions
None	None
None	None
None	None



NE General Site

Ft Vannoy Elementary School

Three Rivers/Josephine County SD

Jose_sch10C

Building Type	County
School	Josephine

Street: 5250 Upper River Rd.

City	State	Zip
Grants Pass	OR	97526

Latitude	Longitude
42.44728	123.41508

Tracking Code	Inspection Date
RVS in 2006	7/28/2006

Seismicity Zone: High

FEMA 154 Rapid Visual Screening Score Card

	Type	Basic Score	Vert Irreg	Plan Irreg	Pre-Code	Post-Bench	Soil C	Soil D	Soil E	RVS Score
Primary	RM1	2.8	-1	-0.5	0	0	0	-0.6	0	0.7
Secondary		0	0	0	0	0	0	0	0	0
Tertiary		0	0	0	0	0	0	0	0	0

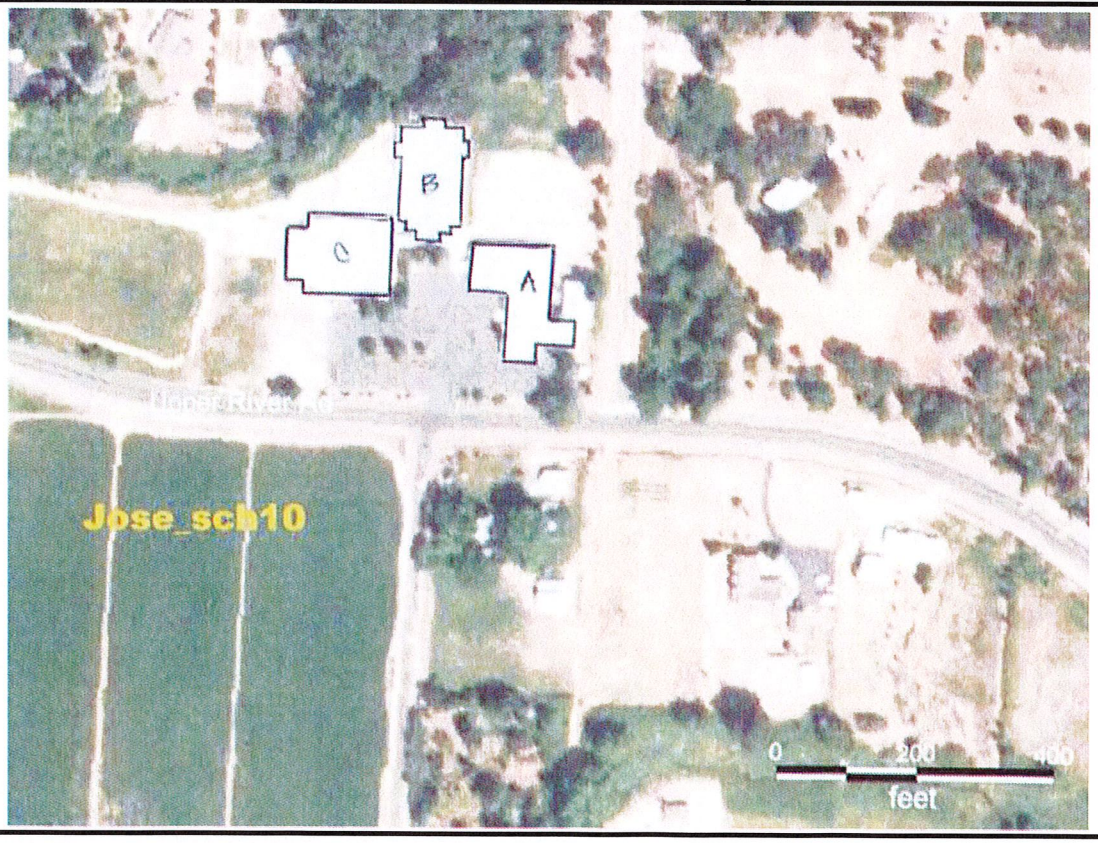
Ft Vannoy Elementary School

Final RVS Score

Final Type	Final Score
RM1	0.7

FEMA-154 Collapse Potential

High (>10%)



OregonGeology

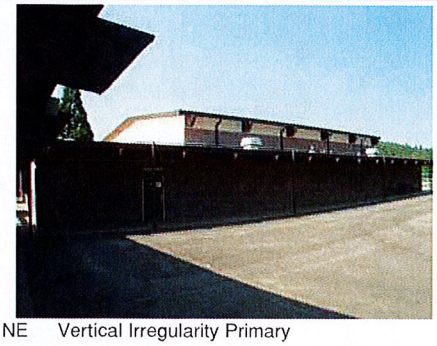
Ft Vannoy Elementary School

Jose_sch10C

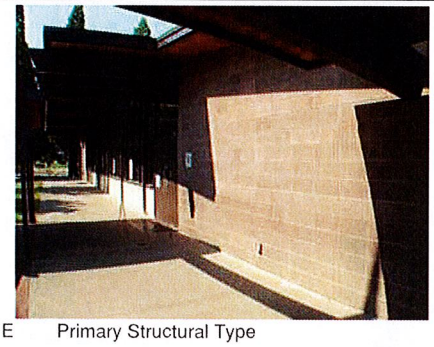
Enrollment	Year Built (Field Verified)	Year Built (Alt. Source)	Est. Decade Built
308		1967	1970
Total Area (square ft)	**Number of Stories**	**Basement**	**Pounding Potential**
40100	1	No	No

Plan Irregularities	Vertical Irregularities
Reentrant Corners: Other	Steps in Elevation View: Single Change
None	None
None	None

Falling Hazards	Poor Conditions
None	None
None	None
None	None



NE Vertical Irregularity Primary



E Primary Structural Type