Oregon Seismic Status Report - 2018

Oregon law requires school districts and education service districts to provide DOGAMI with notice of construction projects that may affect a school's seismic risk.
This report was generated by DOGAMI from submitted data.

School District/ESD:	Imbler 11
County:	UNION
Contact Name:	Angie Lakey-Campbell
Contact Email:	angie.lakey-campbell@imblersd.org
Structures Replaced?	No
Name and Address:	
Kind of Structure:	
Type of Replacement:	
Max Occupancy:	
Date Occupied:	
Structures Modified?	Yes
Name and Address:	Imbler High School , 6th & Esther Street , Imbler, OR 97841
Kind of Structure:	Gymnasium and classrooms underwent seismic rehabilitation to be completed August 2018
Type of Modification:	Structural reinforcement, roof tied properly to walls
Date Re-occupied:	8/22/2018
Optional:	
Engineering Report?	Yes *If yes, attachments are appended to this report.*
Cost of Rehab:	$1,471,000
Method of Funding:	Seismic Rehabilitation Grant Program
Notes:	

Submission Date: 08/08/18

Structural Seismic Evaluation Report

for the

Imbler High School

Prepared for:

Imbler School District

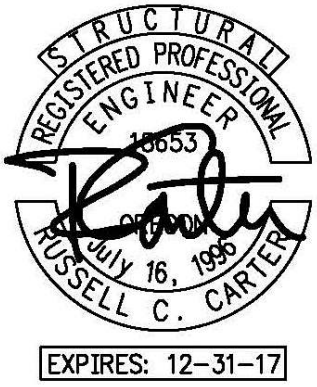
September, 2016

Prepared by:

Zachary A. Stokes, PE
Project Manager

and

Russell C. Carter, PE, SE
Principal in Charge



ZCS ENGINEERING Inc.

900 Klamath Avenue, Klamath Falls, Oregon, 97601

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Table of Contents

1.0 Executive Summary

The Imbler School District is located in Imbler, Oregon in Union, County. The District operates 2 Schools located within the community including the property of interest, Imbler High School approximately 60 miles East of Pendleton Oregon. The District has retained ZCS Engineering, Inc. (ZCS) to perform a seismic evaluation of Imbler High 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 41-13".

Imbler High School is located at 6th and Esther Ave. in Imbler Oregon. The existing school building was constructed in 1975 as a free standing addition to the original school. The elementary building was then constructed in 2012 and all the original school buildings were demolished soon after. The 1975 high school building will be the focus of this report.

The building outlined in this report has a footprint of approximately 29,300 square feet. This building contains classrooms, a gymnasium, locker rooms, administrative offices, and a balcony fitness area. The classroom portion of the building consists of a plywood roof diaphragm and is supported by TJI trussed joists that bear on exterior and interior bearing walls. The gymnasium portion of the school is composed of a plywood diaphragm and is supported by 2X rafters. The rafters are supported by glulam beams that bear on exterior reinforced CMU pilasters.

Imbler School District serves to educate students from grades K-12 in Imbler, Oregon. The entire campus is occupied throughout the school year by approximately 300-400 students and staff. The high school facility houses approximately 150 students and staff for grades 9-12.

The evaluation of the facility indicates, rehabilitation of existing lateral system components are necessary to meet the requirements for Life Safety as outlined in ASCE 41-13. The following is a brief list of seismic deficiencies encountered:

- A well-defined lateral load path is not present.
- Interior and exterior CMU walls are not properly attached to the roof diaphragm for in-plane or out-of-plane loading.
- No out-of-plane connection at the top of CMU walls to keep the walls from separating from the roof framing resulting in collapse.
- The gymnasium is taller than classroom building. This creates a vertical irregularity. This vertical irregularity could result in pounding of the classroom roof diaphragm into the gymnasium wall. The pounding effects increase the buckling loads on the walls.

- The second floor mezzanine diaphragm is not properly attached to the shear walls below, inhibiting in-plane seismic load transfer.
- The interior gypsum shear walls below the lower roofs structure do not have adequate capacity to resist the prescribed seismic forces generated in the roof diaphragms.
- Seismic isolation between the gymnasium and the classroom wing is not present.

Recommendations mitigating the known deficiencies determined by our analysis are outlined in section 4.0 of this report. In addition to the rehabilitation recommendations, we prepared schematic seismic retrofit drawings to convey the intent of the rehabilitation effort. These drawings are included in Appendix E.

To help the District understand the magnitude of the rehabilitation effort and secure funding sources for the seismic system rehabilitation of the building, a preliminary construction cost estimate was developed. With the assistance of a seismic retrofit contractor a total construction cost of $1,471,520 including all soft costs associated with architecture/engineering, permitting, and District Project Management was developed. Refer to section 5.0 of the report body.

In addition to the construction cost estimation efforts we performed a “Benefit Cost Analysis” using the tool provided by the State of Oregon Infrastructure Finance Authority. The building has a benefit cost score of 1.164. Refer to Appendix D for BCA worksheets.

It is our final recommendation that given the BCA score and the general condition of the seismic resisting systems, this building is an excellent candidate to be rehabilitated to meet the currently prescribed seismic demands for Life Safety per ASCE 41-13. Once rehabilitated, this building will meet the needs of the District and community for future generations.

2.0 Project Introduction

Imbler School District is centrally located in Imbler Oregon in Union County. Imbler High School is located at 6th and Ester Ave. in Imbler, Oregon (Figure 1 – Vicinity Map).

The District has retained ZCS Engineering, Inc. (ZCS) to perform a seismic evaluation of Imbler School District. The purpose of the evaluation is to provide the District with an objective, comprehensive analysis of the condition of the existing seismic force resisting systems of the facility when compared to a building constructed using modern building codes. In addition to evaluating the building's seismic performance, schematic seismic retrofit plans have been developed. The rehabilitation plans have been developed using our extensive knowledge of seismic rehabilitation and are intended to meet the objectives and the level of performance of Life Safety based on the ASCE 41-13 requirements. Based on the seismic evaluation and schematic rehabilitation design drawings, a preliminary construction cost estimate was developed. Based on the preliminary construction cost estimate, a benefit cost analysis was prepared to help the District determine whether or not the rehabilitation efforts outlined in this report are financially responsible.

This work was conducted at the request of Mark Lanman, *Maintenance/Transportation Director* under an engineering services contract between the *District* and ZCS.

2.1 Scope of Work

The following scope of work was developed to meet the objectives outlined above.

Seismic Evaluation & Preliminary Rehabilitation Services:

- Review original building construction drawings to determine existing structural systems and areas of concern
- Perform site visits of the structure to observe structural systems and visually review structural condition and deficiencies
- Observe lateral system (seismic) components and load path
- Observe gravity system components and load path
- Observe for damage and failing elements
- Verify original building drawings for use in developing schematic level as-builts.
- Evaluate existing construction based on visual observations and available as-constructed documentation against ASCE 41 Tier 1 requirements
- Collate findings and perform preliminary calculations to assist in the determination of each building's seismic deficiencies
- Prepare an evaluation report for the facility identifying the structural integrity and seismic deficiencies stamped by a registered Structural Engineer licensed in the State of Oregon.

Preliminary Construction Cost Consulting Services:

- Develop project base sheets based on the District provided original drawings.
- Prepare conceptual rehabilitation drawings based on ASCE 41 guidelines to convey the intent of rehabilitation recommendations
- Prepare a project cost estimate based on historic projects of similar scope and magnitude
- Review constructability and cost estimate with a licensed contractor
- Revise plans based on contractor input as required to optimize the efficiency of the rehabilitation plan and develop final construction cost recommendations
- Prepare cost benefit analysis based on SRGP methodologies
  *Financial and enrollment information has been provided by the District
- Summarize findings in final report package stamped by a registered Structural Engineer licensed in the State of Oregon

3.0 Structural Evaluation

3.1 Introduction

ZCS was tasked with evaluating the lateral force resisting systems of the facility. The structures reviewed in our analysis include high school gymnasium/classroom building.

The Imbler High School building was constructed in 1975 as a free standing addition to the original school. The elementary building was then constructed in 2012 and all the original school buildings were demolished soon after. The 1975 high school building will be the focus of this report.

The building outlined in this report has a footprint of approximately 29,300 square feet. This building contains classrooms, a gymnasium, locker rooms, administrative offices, and a balcony fitness area. The classroom portion of the building consists of a plywood roof diaphragm and is supported by TJI trussed joists that bear on exterior and interior bearing walls. The gymnasium portion of the school consists of a plywood diaphragm and by 2X rafters. The rafters are supported by glulam beams that bear on exterior reinforced CMU pilasters.

Imbler School District serves to educate students from grades K-12 in Imbler, Oregon. The entire campus is occupied throughout the school year by approximately 300-400 students and staff. The high school facility houses approximately 150 students and staff for grades 9-12.

3.2 Structural Evaluation

The following outlines the evaluation of the existing structural components of the building. The evaluation includes site observations of the existing structural elements and follows the guidelines outlined in the American Society of Civil Engineer's "Seismic Evaluation of Existing Buildings – ASCE 41-13". This manual is the required evaluation tool per the Seismic Rehabilitation Grant Program through Business Oregon Infrastructure Finance Authority. Per ASCE 41-13 a Tier 1 evaluation has been performed. The purpose of a Tier 1 evaluation is to provide "Quick Checks" to properly evaluate a building and determine deficiencies related to the lateral resisting elements.

It is the intent of the District, as part of this study, to determine the structural deficiencies of the building as compared to current prescribed loading and detailing requirements for lateral (wind/seismic) loading to a performance level of "Life Safety" per ASCE 41-13. The level of performance is defined per ASCE 41-13 as:

"Structural performance level, life safety, means post-earthquake damage state in which significant damage to the structure has occurred but some margin against either partial or total structural collapse remains. Some structural elements and components are severely damaged

but this has not resulted in large falling debris hazards, either inside or outside the building. Injuries may occur during the earthquake; however, the overall risk of life-threatening injury as a result of structural damage is expected to be low. It should be possible to repair the structure; however, for economic reasons this may not be practical. Although the damaged structure is not an imminent collapse risk, it would be prudent to implement structural repairs or install temporary bracing prior to reoccupancy."

Per ASCE 41-13 a seismic hazard level is required. In order to obtain a performance level of "Life Safety" the seismic hazard shall be BSE-1N as defined in section 2.4.1.2 and C2.4.1.2. The BSE-1N hazard level earthquake has a probability of occurring once in every 475 years, or 10% chance in 50 years. This design level earthquake has a similar rate of occurrence and magnitude as the current state adopted building codes. A 25% reduction in force is recommended by the grant committee. This follows the recommendation of the City of Portland City Code for the evaluation and rehabilitation of existing buildings per chapter 24.85. We feel this provides an appropriate level of performance for this facility.

Lateral resisting systems work in conjunction with gravity framing systems. As such, the existing gravity framing system was also reviewed for structural deficiencies during our site observations. Section 3.2.3 outlines the existing gravity system and its structural deficiencies found during the evaluation.

3.2.1 Lateral Resisting Systems

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 a RM1 lateral system is defined as buildings that 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.

3.2.2 Lateral Resisting Element Deficiencies

The following lateral resisting element deficiencies are based on visual observations of the existing structural elements and the structural analysis performed during the Tier 1 "Quick Checks" of the ASCE 41-13. The Tier 1 checklists are attached in Appendix B. The following outlines the deficiencies for each portion of the facility.

- A well-defined lateral load path is not present.
- Interior and exterior CMU walls are not properly attached to the roof diaphragm for in-plane or out-of-plane loading.

- No out-of-plane connection at the top of CMU walls to keep the walls from separating from the roof framing resulting in collapse.
- The gymnasium is taller than classroom building. This creates a geometric irregularity. This geometric irregularity could result in pounding of the classroom roof diaphragm into the gymnasium wall. The pounding effects increase the buckling loads on the walls.
- The second floor mezzanine diaphragm is not properly attached to the shear walls below, inhibiting in-plane seismic load transfer.
- The interior gypsum shear walls below the lower roofs structure do not have adequate capacity to resist the prescribed seismic forces generated in the roof diaphragms.
- Seismic isolation between the gymnasium and the classroom wing is not present.

3.2.3 Gravity Resisting Systems and General Observations

A non-formal structural review of gravity resisting elements did not reveal any deficiencies.

3.2.4 Evaluation of Incidental Items

Incidental, non-structural items can play a major role in the overall expense of rehabilitating an existing building. These costs can be significant, and can be very difficult to estimate prior to construction.

- Proper attachment and bracing of storage racks/cabinets/books shelves over 4’ tall or 3:1 (height:width) ratio
- Attachment of equipment over 20 lbs. and above 4’, and all equipment over 100 lbs.
- Attachment of all emergency lighting, power equipment and associated wiring
- Bracing of overhead fluid piping and any gas piping
- Verification/installation of emergency shutoff valves for gas utilities
- Hazardous material mitigation (floor tiles, roofing, ceiling tiles, etc.)
- Suspended ceiling seismic bracing at exits
- HVAC units should be evaluated for stability under seismic loading.

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

4.0 Seismic Rehabilitation Recommendations

The following structural improvements are required to resolve the deficiencies noted in section 3.2. These improvements are detailed below and in the attached schematic seismic rehabilitation drawings found in Appendix E. These drawings were prepared to assist in defining the rehabilitation scope of work.

- Provide pony walls, blocking, clipping and nailing connections along top of CMU walls in gymnasium area and classrooms to establish adequate connection between top of wall and diaphragm
- The roofing shall be removed to allow proper attachment of the roof sheathing to blocking between the open web rafters. The roofing will be reinstalled.
- The tops of the perimeter walls for both the gym and classroom building need to be properly attached to the roof diaphragms for out-of-plane loading.
- To limit the aspect ratio of the roof diaphragm to code prescribed limits the existing interior cross walls will be sheathed with plywood on the existing wall framing. The existing gypsum interior finish will be removed and replaced over the plywood sheathing. The walls will be adequately attached to the existing foundation utilizing post installed anchors and attached to the roof framing using structural screws.
- The existing gypsum wall board will be removed in strategic locations and new plywood sheathing wall be installed to increase the shear capacity to resist the prescribed in-plane seismic forces. Where required, additional anchor bolts shall be installed using post installed concrete anchors.
- The classroom building will be seismically isolated from the gym to minimize the pounding action and geometric irregularity.
- All piping and HVAC equipment found throughout the building shall be properly braced and attached to the structure to limit the potential damage.
- Any mechanical equipment weighing over 20 pounds shall be attached and properly braced
- Provide proper attachment and bracing for all non-structural components and equipment

5.0 Preliminary Construction Cost Estimate

The attached engineer's opinion of probable cost has been developed by ZCS for Imbler High School.. 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.

Following the generation of the preliminary construction cost estimate line item costs, they were reviewed with a local construction company representative who has participated in similar construction projects. This representative is a highly qualified commercial contractor that has worked on multiple educational facilities and performed seismic retrofits to existing structures. They reviewed the values presented in the construction cost estimate, and provided insight into current construction costs from a contractor's perspective. The comments and insight provided have been included in the proposed construction cost estimate. The preliminary opinion of probable cost is **$1,471,520**.

6.0 Benefit Cost Analysis

The provided benefit-cost analysis (BCA) included in Appendix D, has been prepared by ZCS using the BCA tool as provided by the State of Oregon Infrastructure Finance Authority. The costs associated with the building replacement value, contents replacement value, and occupancy values have been developed by District staff using recent data.

The building being addressed is part of an entire school campus surveyed during the state wide assessment of schools performed by Department of Geology, and Mineral Industries' (DOGAMI) Rapid Visual Screening (RVS) process in 2005 as part of senate bill 2. The building in question is part of part D of the RVS scoring provided by DOGAMI. The occupancy and budget data provided by the District is for the entire school. Only a percentage of these data points were used in the BCA calculation based on the square footage of building in question compared to the entire building square footage.

The BCA for this project is **1.164**. Given the BCA score of **1.164** is greater than 1.0 this project is a good candidate for the grant program.

7.0 Conclusion and Recommendations

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 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. However, it is our understanding the goal of the District is to continue utilizing the existing building as a facility for education, and the District wants the seismic structural system to be compliant with the current code. To clarify, upgrades outlined in this report are strictly at the discretion of the District.

We have attempted to identify all areas requiring upgrades to achieve a scope of work for current code compliance, associated estimated costs and project schedule.

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.

Appendix A: Figures

IMBLER HIGH SCHOOL SRG

6TH ST.

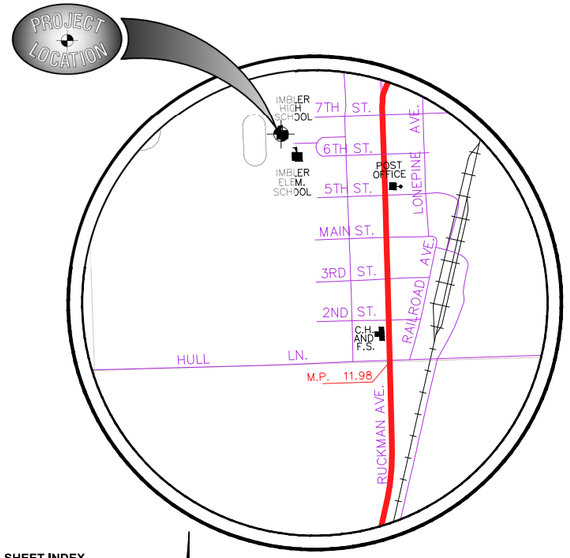
IMBLER, OR 97841

TOTAL SCHOOL AREA.....33,105 S.F.

1 C0.0 **SITE LAYOUT**
NTS

2 C0.0 **SCHOOL ELEVATION**
NTS

4 C0.0 **STREET VIEW**
NTS



3 C0.0 **VICINITY MAP**
NTS

SHEET INDEX

PROJECT NARRATIVE

INTENT OF THESE DRAWINGS IS TO ILLUSTRATE THE LEVEL OF UNDERSTANDING THE APPLICANT HAS WITH REGARDS TO THE EFFORT THAT WILL BE REQUIRED TO SEISMICALLY REHABILITATE THE BUILDING. THESE SCHEMATIC DRAWINGS HAVE BEEN PREPARED USING THE CURRENT OREGON STRUCTURAL SPECIALITY CODE (OSSC) AND THE ASCE 41 (SEISMIC REHABILITATION OF EXISTING BUILDINGS) AS THE REFERENCES FOR PRESCRIBED LOADING AND BUILDING PERFORMANCE LEVEL RATINGS.

THE DRAWING ILLUSTRATES BOTH EXISTING CONDITIONS AND GENERAL REPAIRS THAT WOULD NEED TO BE ACCOMPLISHED TO REACH AN ACCEPTABLE LEVEL OF PERFORMANCE (LIFE SAFETY) ACCORDING TO CURRENT CODE.

"STRUCTURAL PERFORMANCE LEVEL, LIFE SAFETY, MEANS POST-EARTHQUAKE DAMAGE STATE IN WHICH SIGNIFICANT DAMAGE TO THE STRUCTURE HAS OCCURRED BUT SOME MARGIN AGAINST EITHER PARTIAL OR TOTAL STRUCTURAL COLLAPSE REMAINS. SOME STRUCTURAL ELEMENTS AND COMPONENTS ARE SEVERELY DAMAGED BUT THIS HAS NOT RESULTED IN LARGE FALLING DEBRIS HAZARDS, EITHER INSIDE OR OUTSIDE THE BUILDING. INJURIES MAY OCCUR DURING THE EARTHQUAKE; HOWEVER, THE OVERALL RISK OF LIFE-THREATENING INJURY AS A RESULT OF STRUCTURAL DAMAGE IS EXPECTED TO BE LOW. IT SHOULD BE POSSIBLE TO REPAIR THE STRUCTURE; HOWEVER, FOR ECONOMIC REASONS THIS MAY NOT BE PRACTICAL. ALTHOUGH THE DAMAGED STRUCTURE IS NOT AN IMMINENT COLLAPSE RISK, IT WOULD BE PRUDENT TO IMPLEMENT STRUCTURAL REPAIRS OR INSTALL TEMPORARY BRACING PRIOR TO REOCCUPANCY"

SEISMIC DEFICIENCIES

- THE LOAD BEARING WALLS ARE NOT PROPERLY ATTACHED TO THE ROOF DIAPHRAGM FOR OUT-OF-PLANE LOADING.
- THE SHEAR STRESS IN SHEAR WALL EXCEEDS VALUES LISTED IN SECTION 4.5.3.3
- NARROW WOOD SHEAR WALLS WITH ASPECT RATIO GREATER THAN 2-TO-1 ARE RELIED ON TO RESIST SEISMIC FORCES
- WALLS WITH OPENINGS GREATER OF THAN 80% OF THE LENGTH ARE NOT BRACED WITH WOOD STRUCTURAL PANEL SHEAR WALLS.
- THE ROOF DIAPHRAGM IS NOT CONTINUOUS AND CONSISTS OF SPLIT LEVEL ROOF.
- ROOF CHORD IS NOT CONTINUOUS DUE TO SPLIT ROOF LEVEL.
- DIAGONALLY SHEATHED DIAPHRAGM SPANS MORE THAN 40 FEET.

REHABILITATION RECOMMENDATIONS

- THE TOPS OF THE CONCRETE WALLS FOR BOTH THE GYMS NEED TO BE PROPERLY ATTACHED TO THE ROOF DIAPHRAGMS FOR BOTH IN-PLANE AND OUT-OF-PLANE LOADING
- PROVIDE BLOCKING, CLIPPING AND NAILING CONNECTIONS ALONG TOP OF WALLS TO ESTABLISH ADEQUATE CONNECTION BETWEEN TOP OF WALL AND DIAPHRAGM
- ADDITIONAL CONNECTION HARDWARE WILL BE ADDED TO STRENGTHEN THE CONNECTION BETWEEN THE ROOF DIAPHRAGMS AND SHEAR WALLS
- ADDITIONAL BLOCKING AND IN-PLANE SHEAR TRANSFER CONNECTIONS SHOULD BE ADDED TO PROPERLY TRANSFER IN-PLANE LOADING INTO THE SHEAR WALLS
- PROVIDE DRAG TIES BETWEEN BEAM LINES IN THE LONGITUDINAL DIRECTION TO CONNECT THE ROOF DIAPHRAGM TO NEW SHEAR WALLS
- PROVIDE PROPER ATTACHMENT AND BRACING FOR ALL NON-STRUCTURAL COMPONENTS AND EQUIPMENT
- ALL PIPING AND HVAC EQUIPMENT FOUND THROUGHOUT THE BUILDING SHALL BE PROPERLY BRACED AND ATTACHED TO THE STRUCTURE TO LIMIT THE POTENTIAL DAMAGE,
- ALL PIPING FOUND WITHIN THE BUILDING THAT IS GREATER THAN 12" FROM STRUCTURE SHALL BE PROPERLY ATTACHED AND BRACED.
- AFTER THESE ARE IMPLEMENTED THE BUILDING WILL MEET THE "LIFE SAFETY" PERFORMANCE LEVEL PER ASCE 41-13.

IF THIS BAR DOES NOT MEASURE 1-INCH IN LENGTH, THEN THE DRAWING IS NOT TO SCALE

NO.	REVISIONS	BY	DATE

IMBLER SCHOOL DISTRICT

IMBLER HIGH SCHOOL SRG

ZGS ENGINEERING
524 Main Street • Suite 02, Oregon City, OR 97045
(503) 659-4255 phone

PROJECT NO:	P-2127-16
DRAWN:	AAL
CHECKED:	ZAS
DATE:	07-27-16

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER OREGON JULY 16, 1996 ZACHARY C. CARTER EXPIRES: 12-31-17

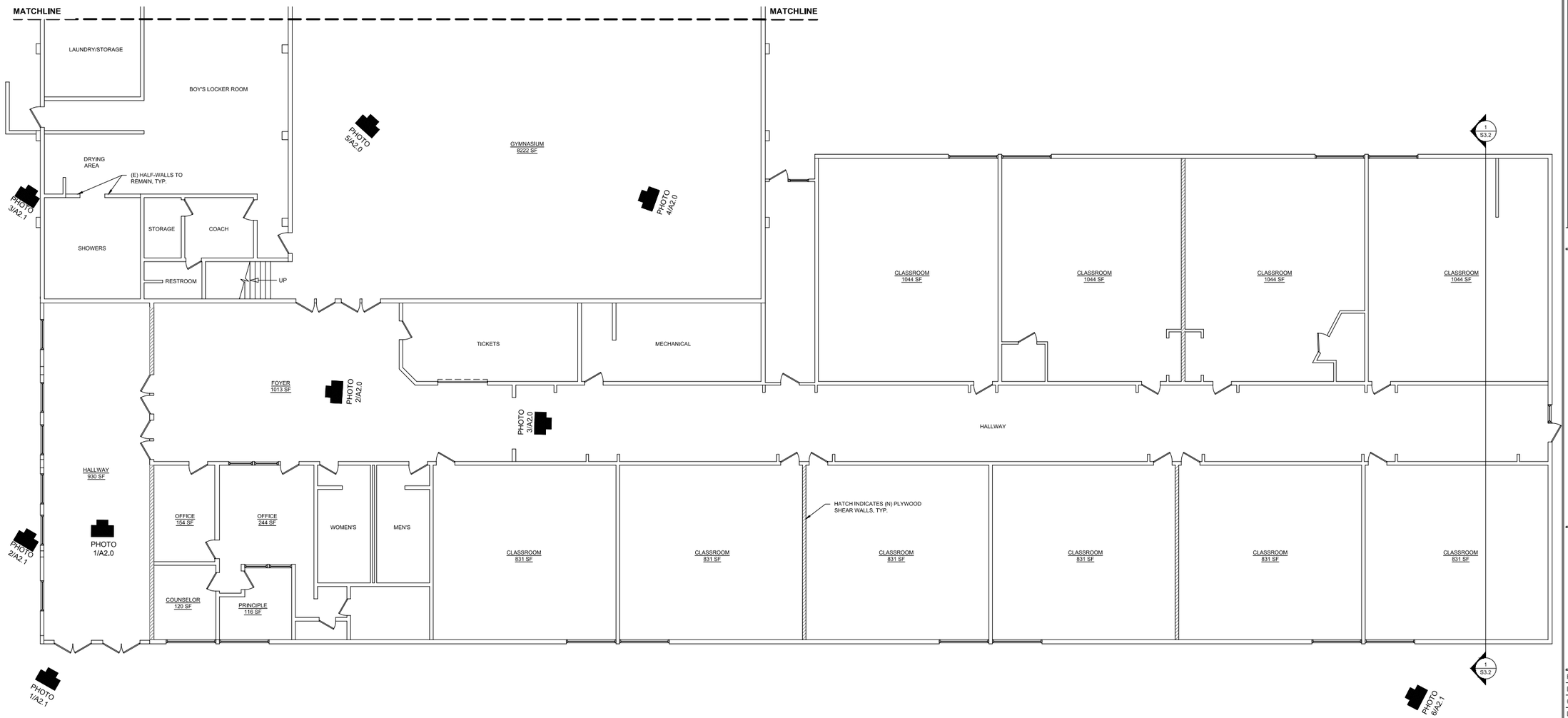
PRELIMINARY - NOT FOR CONSTRUCTION

COVER SHEET

C0.0

HATCH INDICATES (N) CMU SHEAR WALLS

HATCH INDICATES (N) SHEAR WALL ON ONE SIDE OF (E) WALL TO PROVIDE LATERAL STABILITY.



1 A1.0 **FLOOR PLAN-AREA "A"**

1/8"= 1'-0"

IF THIS BAR DOES NOT MEASURE 1-INCH IN LENGTH, THEN THE DRAWING IS NOT TO SCALE

NO.	REVISIONS	BY	DATE
1	ADD		

IMBLER SCHOOL DISTRICT

IMBLER HIGH SCHOOL SRG

ZCS ENGINEERING
524 Main Street • Suite 02 • Oregon City, OR 97045
(503) 557-0250 ph/fax
(503) 894-2283 pm/m

PROJECT NO:	P-2127-16
DRAWN:	AAL
CHECKED:	ZAS
DATE:	07-27-16

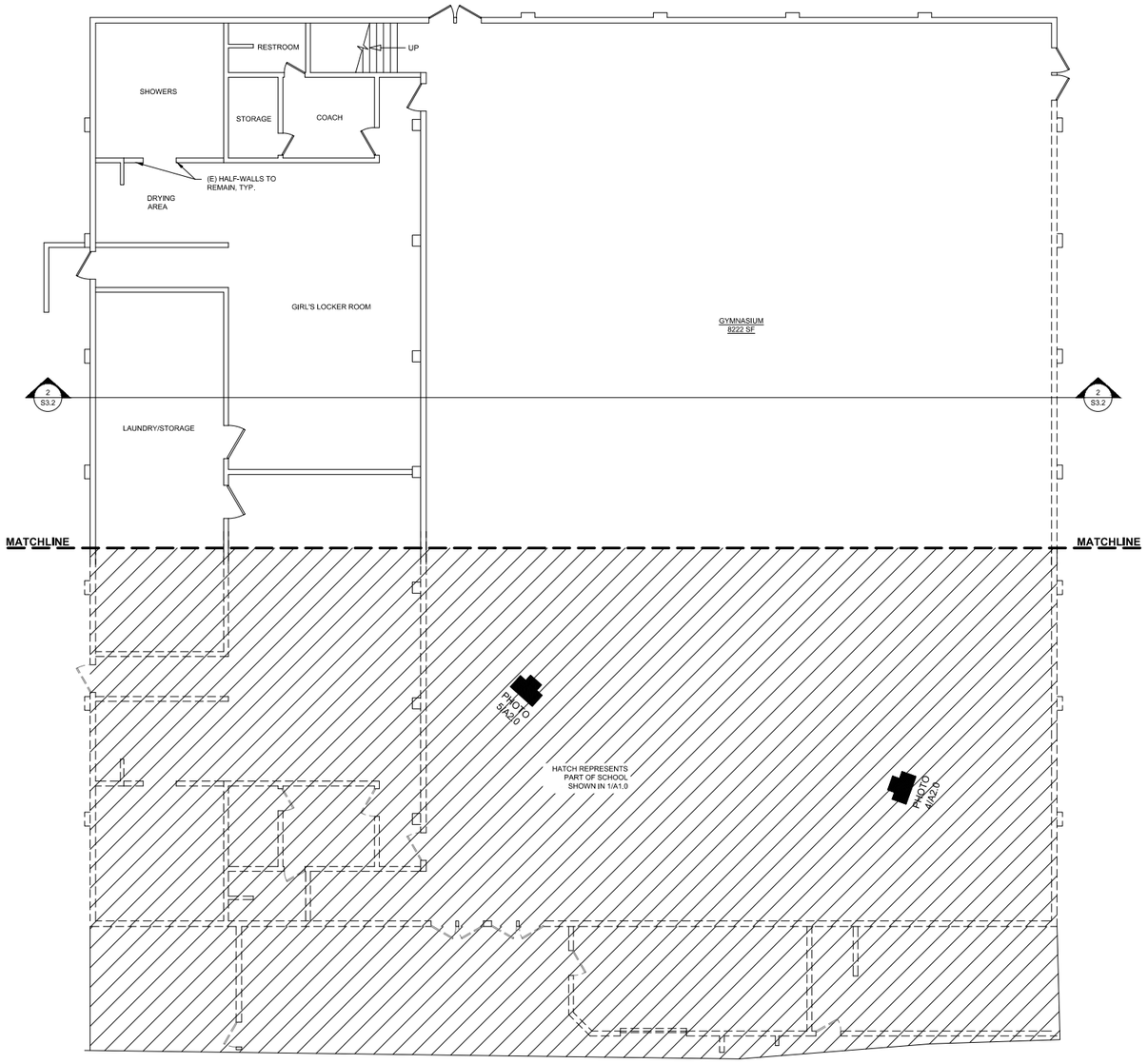
STRUCTURAL REGISTERED PROFESSIONAL ENGINEER OREGON JULY 16, 1996 ZAC C. CARTER

PRELIMINARY- NOT FOR CONSTRUCTION

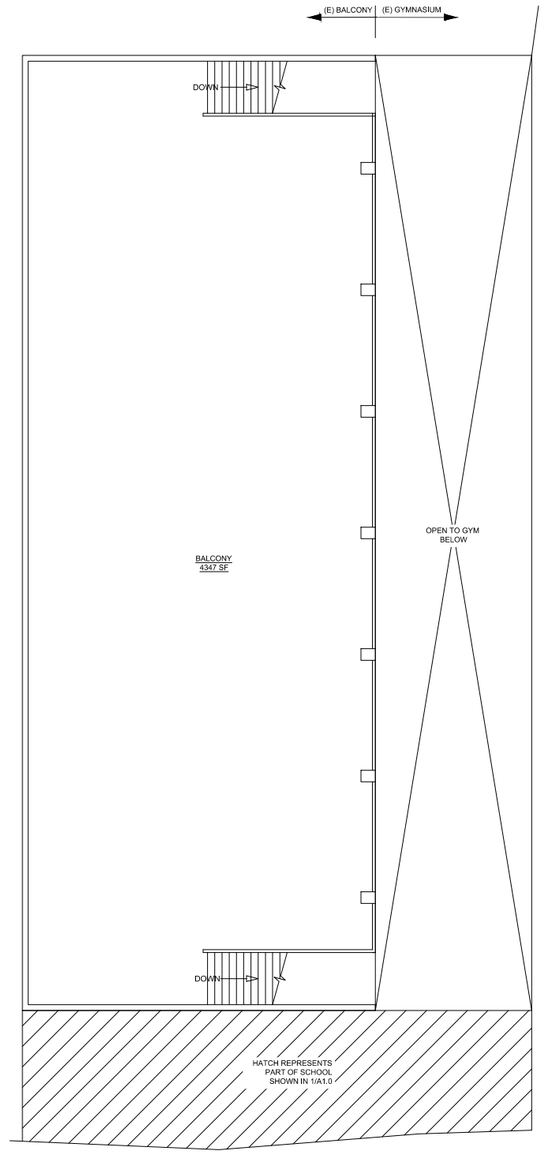
EXPIRES: 12-31-17

FLOOR PLAN-AREA "A"

A1.0



1 A1.1 **FLOOR PLAN-AREA "B"**
1/8"= 1'-0"



2 A1.1 **BALCONY FLOOR PLAN**
1/8"= 1'-0"

IF THIS BAR DOES NOT MEASURE 1-INCH IN LENGTH, THEN THE DRAWING IS NOT TO SCALE

NO.	BY	DATE	REVISIONS
1			

IMBLER SCHOOL DISTRICT

IMBLER HIGH SCHOOL SRG

ZCS Engineering
524 Main Street • Suite 02, Oregon City, OR 97045
tel: (503) 699-2333

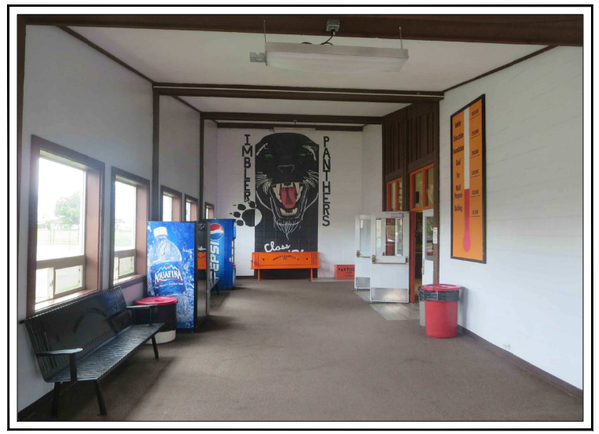
PROJECT NO:	P-2127-16
DRAWN:	AAL
CHECKED:	ZAS
DATE:	07-27-16

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER OREGON JULY 16, 1996 ZACHARY C. CARTER EXPIRES: 12-31-17

PRELIMINARY - NOT FOR CONSTRUCTION

FLOOR PLAN-AREA "B"

A1.1



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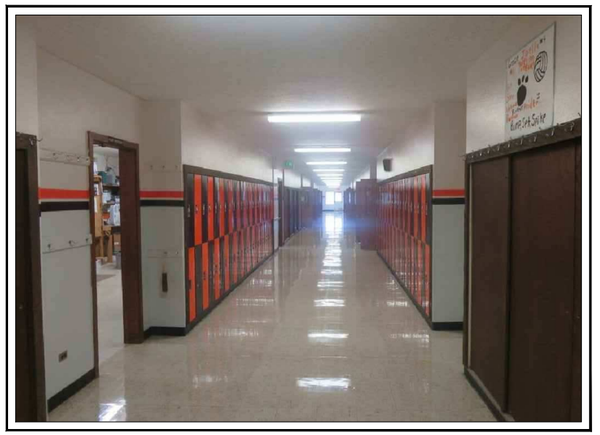
2 A2.0 **PHOTO** NTS



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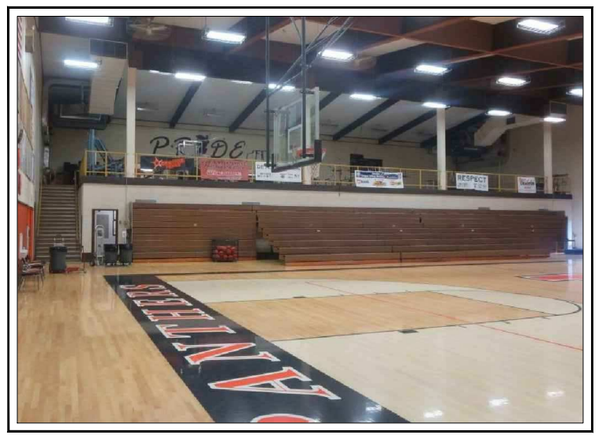

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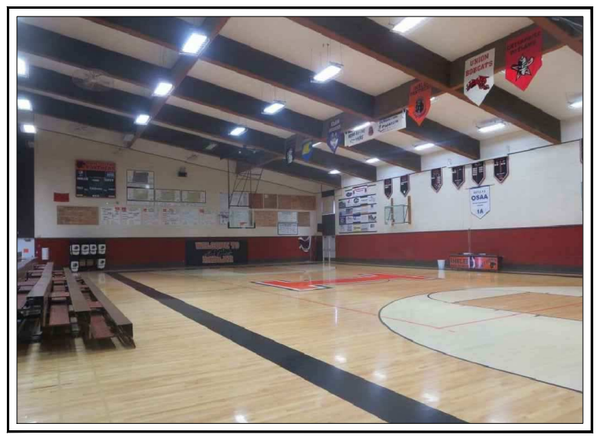

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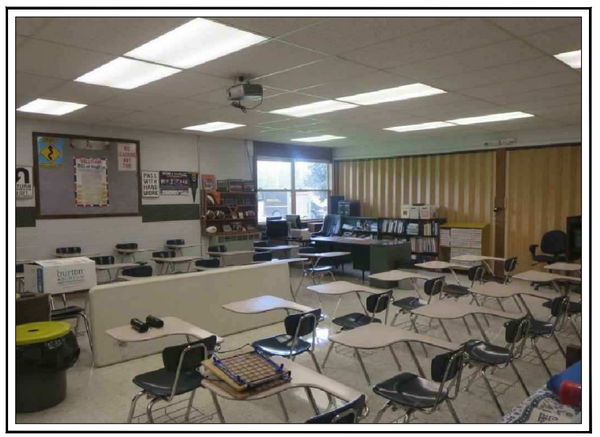

6 A2.0 **PHOTO** NTS

IF THIS BAR DOES NOT MEASURE
1-INCH IN LENGTH, THEN THE
DRAWING IS NOT TO SCALE

NO.	REVISIONS	BY	DATE
1			
2			

IMBLER SCHOOL DISTRICT

IMBLER HIGH SCHOOL SRG

ZCS ENGINEERING
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PROJECT NO:	P-2127-16
DRAWN:	AAL
CHECKED:	ZAS
DATE:	07-27-16

STRUCTURAL
REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 16, 1996
ZACHARY C. CARTER
EXPIRES: 12-31-17

PRELIMINARY - NOT FOR CONSTRUCTION

PHOTOS

A2.0

1 A2.1 **PHOTO** NTS

2 A2.1 **PHOTO** NTS

3 A2.1 **PHOTO** NTS

4 A2.1 **PHOTO** NTS

5 A2.1 **PHOTO** NTS

6 A2.1 **PHOTO** NTS

IF THIS BAR DOES NOT MEASURE 1-INCH IN LENGTH, THEN THE DRAWING IS NOT TO SCALE

NO.	REVISIONS	BY	DATE
1			
2			

IMBLER SCHOOL DISTRICT

IMBLER HIGH SCHOOL SRG

ZCS ENGINEERING
524 Main Street • Suite 02, Oregon City, OR 97045
(503) 557-0250 phone (503) 557-0253 fax

PROJECT NO:	P-2127-16
DRAWN:	AAL
CHECKED:	ZAS
DATE:	07-27-16

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER OREGON JULY 16, 1996 ZACHARY C. CARTER

PRELIMINARY - NOT FOR CONSTRUCTION

EXPIRES: 12-31-17

PHOTOS

A2.1

Appendix B: Structural Tier 1 Check Sheets

APPENDIX C
SUMMARY DATA SHEET

BUILDING DATA

Building Name: Imbler H.S. Date: 8/3/16

Building Address: 6th st Imbler, OR 97841

Latitude: 45.462445 Longitude: -117.965248 By: AAL

Year Built: _____ Year(s) Remodeled: _____ Original Design Code: _____

Area (sf): 28770 Length (ft): 244 Width (ft): 163

No. of Stories: 1 Story Height: 17' Total Height: 20'

USE ☐ Industrial ☐ Office ☐ Warehouse ☐ Hospital ☐ Residential ☐ Educational ☐ Other: _____

CONSTRUCTION DATA

Gravity Load Structural System: CMU walls, post & beam

Exterior Transverse Walls: CMU walls Openings? Y

Exterior Longitudinal Walls: CMU walls Openings? Y

Roof Materials/Framing: Trusses & Plywood

Intermediate Floors/Framing: N/A

Ground Floor: 2x12 @ 16" O.C.

Columns: N/A Foundation: _____

General Condition of Structure: _____

Levels Below Grade? N/A

Special Features and Comments: _____

LATERAL-FORCE-RESISTING SYSTEM

	Longitudinal	Transverse
System:	CMU shear walls	CMU shear walls
Vertical Elements:	walls	wall
Diaphragms:	plywood	plywood.
Connections:	nails, anchors	nails, anchors

EVALUATION DATA

BSE-1N Spectral Response Accelerations: S_{DS} = _____ S_{D1} = _____

Soil Factors: Class = _____ F_a = _____ F_v = _____

BSE-1E Spectral Response Accelerations: S_{XS} = _____ S_{X1} = _____

Level of Seismicity: _____ Performance Level: _____

Building Period: T = _____

Spectral Acceleration: S_a = _____

Modification Factor: $C_m C_1 C_2$ = _____ Building Weight: W = _____

Pseudo Lateral Force: V =

$C_m C_1 C_2 S_a W$ = _____

BUILDING CLASSIFICATION: _____

REQUIRED TIER 1 CHECKLISTS	Yes	No
Basic Configuration Checklist	☒	☐
Building Type RM1 Structural Checklist	☒	☐
Nonstructural Component Checklist	☒	☐

FURTHER EVALUATION REQUIREMENT: _____

Project: P-2127-16 Location: Imbler, OR

Completed by: AAL Date: 8/4/16

16.1.2LS LIFE SAFETY BASIC CONFIGURATION CHECKLIST

Low Seismicity

Building System

General

C (NC) N/A U LOAD PATH: The structure shall 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. (Commentary: Sec. A.2.1.1. Tier 2: Sec. 5.4.1.1)

C NC (N/A) U ADJACENT BUILDINGS: The clear distance between the building being evaluated and any adjacent building is greater than 4% of the height of the shorter building. This statement shall not apply for the following building types: W1, W1a, and W2. (Commentary: Sec. A.2.1.2. Tier 2: Sec. 5.4.1.2)

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. (Commentary: Sec. A.2.1.3. Tier 2: Sec. 5.4.1.3)

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. (Commentary: Sec. A2.2.2. Tier 2: Sec. 5.4.2.1)

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. (Commentary: Sec. A.2.2.3. Tier 2: Sec. 5.4.2.2)

(C) NC N/A U VERTICAL IRREGULARITIES: All vertical elements in the seismic-force-resisting system are continuous to the foundation. (Commentary: Sec. A.2.2.4. Tier 2: Sec. 5.4.2.3)

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. (Commentary: Sec. A.2.2.5. Tier 2: Sec. 5.4.2.4) gym is much taller

(C) NC N/A U MASS: There is no change in effective mass more than 50% from one story to the next. Light roofs, penthouses, and mezzanines need not be considered. (Commentary: Sec. A.2.2.6. Tier 2: Sec. 5.4.2.5)

(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. (Commentary: Sec. A.2.2.7. Tier 2: Sec. 5.4.2.6)

Moderate Seismicity: Complete the Following Items in Addition to the Items for 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 shall not exist in the foundation soils at depths within 50 ft under the building. (Commentary: Sec. A.6.1.1. Tier 2: 5.4.3.1)

C NC (N/A) U SLOPE FAILURE: The building site is sufficiently remote from potential earthquake-induced slope failures or rockfalls to be unaffected by such failures or is capable of accommodating any predicted movements without failure. (Commentary: Sec. A.6.1.2. Tier 2: 5.4.3.1)

(C) NC N/A U SURFACE FAULT RUPTURE: Surface fault rupture and surface displacement at the building site are not anticipated. (Commentary: Sec. A.6.1.3. Tier 2: 5.4.3.1)

High Seismicity: Complete the Following Items in Addition to the Items for Low and Moderate 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 $0.6S_a$. (Commentary: Sec. A.6.2.1. Tier 2: Sec. 5.4.3.3)

(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. (Commentary: Sec. A.6.2.2. Tier 2: Sec. 5.4.3.4)

Project: P-2127-16 Location: Tumbler, OR

Completed by: AAL Date: 8/4/16

16.15LS LIFE SAFETY STRUCTURAL CHECKLIST FOR BUILDING TYPES RM1: REINFORCED MASONRY BEARING WALLS WITH FLEXIBLE DIAPHRAGMS AND RM2: REINFORCED MASONRY BEARING WALLS WITH STIFF DIAPHRAGMS

Low and Moderate 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. (Commentary: Sec. A.3.2.1.1. Tier 2: Sec. 5.5.1.1)

(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 4.5.3.3, is less than 70 lb/in.^{2}. (Commentary: Sec. A.3.2.4.1. Tier 2: Sec. 5.5.3.1.1)

(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. (Commentary: Sec. A.3.2.4.2. Tier 2: Sec. 5.5.3.1.3) calcs attached.

Stiff Diaphragms

C NC (N/A) U TOPPING SLAB: Precast concrete diaphragm elements are interconnected by a continuous reinforced concrete topping slab. (Commentary: Sec. A.4.5.1. Tier 2: Sec. 5.6.4)

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 shall have adequate strength to resist the connection force calculated in the Quick Check procedure of Section 4.5.3.7. (Commentary: Sec. A.5.1.1. Tier 2: Sec. 5.7.1.1) not anchored for out-of-plane forces.

(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. (Commentary: Sec. A.5.1.2. Tier 2: Sec. 5.7.1.3)

C (NC) N/A U TRANSFER TO SHEAR WALLS: Diaphragms are connected for transfer of seismic forces to the shear walls. (Commentary: Sec. A.5.2.1. Tier 2: Sec. 5.7.2)

C NC (N/A) U 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. (Commentary: Sec. A.5.2.3. Tier 2: Sec. 5.7.2)

(C) NC N/A U FOUNDATION DOWELS: Wall reinforcement is doweled into the foundation. (Commentary: Sec. A.5.3.5. Tier 2: Sec. 5.7.3.4)

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. (Commentary: Sec. A.5.4.1. Tier 2: Sec. 5.7.4.1)

High Seismicity: Complete the Following Items in Addition to the Items for Low and Moderate Seismicity.

Stiff Diaphragms

C NC (N/A) U OPENINGS AT SHEAR WALLS: Diaphragm openings immediately adjacent to the shear walls are less than 25% of the wall length. (Commentary: Sec. A.4.1.4. Tier 2: Sec. 5.6.1.3)

C NC (N/A) U OPENINGS AT EXTERIOR MASONRY SHEAR WALLS: Diaphragm openings immediately adjacent to exterior masonry shear walls are not greater than 8 ft long. (Commentary: Sec. A.4.1.6. Tier 2: Sec. 5.6.1.3)

Flexible Diaphragms

C (NC) N/A U CROSS TIES: There are continuous cross ties between diaphragm chords. (Commentary: Sec. A.4.1.2. Tier 2: Sec. 5.6.1.2)

(C) NC N/A U OPENINGS AT SHEAR WALLS: Diaphragm openings immediately adjacent to the shear walls are less than 25% of the wall length. (Commentary: Sec. A.4.1.4. Tier 2: Sec. 5.6.1.3)

C (NC) N/A U OPENINGS AT EXTERIOR MASONRY SHEAR WALLS: Diaphragm openings immediately adjacent to exterior masonry shear walls are not greater than 8 ft long. (Commentary: Sec. A.4.1.6. Tier 2: Sec. 5.6.1.3)

greater than 8'

C NC (N/A) U STRAIGHT SHEATHING: All straight sheathed diaphragms have aspect ratios less than 2-to-1 in the direction being considered. (Commentary: Sec. A.4.2.1. Tier 2: Sec. 5.6.2)

(C) NC N/A U SPANS: All wood diaphragms with spans greater than 24 ft consist of wood structural panels or diagonal sheathing. (Commentary: Sec. A.4.2.2. Tier 2: Sec. 5.6.2)

C NC (N/A) U DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 40 ft and aspect ratios less than or equal to 4-to-1. (Commentary: Sec. A.4.2.3. Tier 2: Sec. 5.6.2)

(C) NC N/A U OTHER DIAPHRAGMS: The diaphragm shall not consist of a system other than wood, metal deck, concrete, or horizontal bracing. (Commentary: Sec. A.4.7.1. Tier 2: Sec. 5.6.5)

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. (Commentary: Sec. A.5.1.4. Tier 2: Sec. 5.7.1.2)

Project: P-2127-16 Location: _____

Completed by: AHL Date: 9/22/16

16.17 NONSTRUCTURAL CHECKLIST

Life Safety Systems

C NC N/A (U) LS-LMH; PR-LMH. FIRE SUPPRESSION PIPING: Fire suppression piping is anchored and braced in accordance with NFPA-13. (Commentary: Sec. A.7.13.1. Tier 2: Sec. 13.7.4)

C NC N/A (U) LS-LMH; PR-LMH. FLEXIBLE COUPLINGS: Fire suppression piping has flexible couplings in accordance with NFPA-13. (Commentary: Sec. A.7.13.2. Tier 2: Sec. 13.7.4)

C NC N/A (U) LS-LMH; PR-LMH. EMERGENCY POWER: Equipment used to power or control life safety systems is anchored or braced. (Commentary: Sec. A.7.12.1. Tier 2: Sec. 13.7.7)

C NC N/A (U) LS-LMH; PR-LMH. STAIR AND SMOKE DUCTS: Stair pressurization and smoke control ducts are braced and have flexible connections at seismic joints. (Commentary: Sec. A.7.14.1. Tier 2: Sec. 13.7.6)

C NC N/A (U) LS-MH; PR-MH. SPRINKLER CEILING CLEARANCE: Penetrations through panelized ceilings for fire suppression devices provide clearances in accordance with NFPA-13. (Commentary: Sec. A.7.13.3. Tier 2: Sec. 13.7.4)

C NC (N/A) U LS-not required; PR-LMH. EMERGENCY LIGHTING: Emergency and egress lighting equipment is anchored or braced. (Commentary: Sec. A.7.3.1. Tier 2: Sec. 13.7.9)

Hazardous Materials

C NC N/A (U) LS-LMH; PR-LMH. HAZARDOUS MATERIAL EQUIPMENT: Equipment mounted on vibration isolators and containing hazardous material is equipped with restraints or snubbers. (Commentary: Sec. A.7.12.2. Tier 2: 13.7.1)

C NC N/A (U) 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. (Commentary: Sec. A.7.15.1. Tier 2: Sec. 13.8.4)

C NC N/A (U) 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. (Commentary: Sec. A.7.13.4. Tier 2: Sec. 13.7.3 and 13.7.5)

C NC N/A (U) LS-MH; PR-MH. SHUT-OFF VALVES: Piping containing hazardous material, including natural gas, has shut-off valves or other devices to limit spills or leaks. (Commentary: Sec. A.7.13.3. Tier 2: Sec. 13.7.3 and 13.7.5)

C NC N/A (U) LS-LMH; PR-LMH. FLEXIBLE COUPLINGS: Hazardous material ductwork and piping, including natural gas piping, has flexible couplings. (Commentary: Sec. A.7.15.4, Tier 2: Sec.13.7.3 and 13.7.5)

C NC N/A (U) 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. (Commentary: Sec. A.7.13.6. Tier 2: Sec.13.7.3, 13.7.5, and 13.7.6)

Partitions

C NC N/A (U) LS-LMH; PR-LMH. UNREINFORCED MASONRY: Unreinforced masonry or hollow-clay tile partitions are braced at a spacing of at most 10 ft in Low or Moderate Seismicity, or at most 6 ft in High Seismicity. (Commentary: Sec. A.7.1.1. Tier 2: Sec. 13.6.2)

C NC N/A (U) 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. (Commentary: Sec. A.7.2.1. Tier 2: Sec. 13.6.2)

C NC N/A (U) 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. (Commentary A.7.1.2 Tier 2: Sec. 13.6.2)

C NC (N/A) U 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. (Commentary: Sec. A.7.2.1. Tier 2: Sec. 13.6.2)

C NC (N/A) U LS-not required; PR-MH. STRUCTURAL SEPARATIONS: Partitions that cross structural separations have seismic or control joints. (Commentary: Sec. A.7.1.3. Tier 2. Sec. 13.6.2)

C NC (N/A) U 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. (Commentary: Sec. A.7.1.4. Tier 2. Sec. 13.6.2)

Ceilings

C NC (N/A) U LS-MH; PR-LMH. SUSPENDED LATH AND PLASTER: Suspended lath and plaster ceilings have attachments that resist seismic forces for every 12 ft^2 of area. (Commentary: Sec. A.7.2.3. Tier 2: Sec. 13.6.4)

C NC N/A (U) LS-MH; PR-LMH. SUSPENDED GYPSUM BOARD: Suspended gypsum board ceilings have attachments that resist seismic forces for every 12 ft^2 of area. (Commentary: Sec. A.7.2.3. Tier 2: Sec. 13.6.4)

C NC N/A (U) LS-not required; PR-MH. INTEGRATED CEILINGS: Integrated suspended ceilings with continuous areas greater than 144 ft^2, and ceilings of smaller areas that are not surrounded by restraining partitions, are laterally restrained at a spacing no greater than 12 ft 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. (Commentary: Sec. A.7.2.2. Tier 2: Sec. 13.6.4)

C NC (N/A) U LS-not required; PR-MH. EDGE CLEARANCE: The free edges of integrated suspended ceilings with continuous areas greater than 144 ft^2 have clearances from the enclosing wall or partition of at least the following: in Moderate Seismicity, 1/2 in.; in High Seismicity, 3/4 in. (Commentary: Sec. A.7.2.4. Tier 2: Sec. 13.6.4)

C NC (N/A) U 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. (Commentary: Sec. A.7.2.5. Tier 2: Sec. 13.6.4)

C NC (N/A) U LS-not required; PR-H. EDGE SUPPORT: The free edges of integrated suspended ceilings with continuous areas greater than 144 ft^2 are supported by elosure angles or channels not less than 2 in. wide. (Commentary: Sec. A.7.2.6. Tier 2: Sec. 13.6.4)

C NC (N/A) U 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 2500 ft^2 and has a ratio of long-to-short dimension no more than 4-to-1. (Commentary: Sec. A.7.2.7. Tier 2: 13.6.4)

Light Fixtures

C NC N/A (U) 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. (Commentary: Sec. A.7.3.2. Tier 2: Sec. 13.6.4 and 13.7.9)

C NC (N/A) U LS-not required; PR-H. PENDANT SUPPORTS: Light fixtures on pendant supports are attached at a spacing equal to or less than 6 ft and, if rigidly supported, are free to move with the structure to which they are attached without damaging adjoining components. (Commentary: A.7.3.3. Tier 2: Sec. 13.7.9)

C NC (N/A) U LS-not required; PR-H. LENS COVERS: Lens covers on light fixtures are attached with safety devices. (Commentary: Sec. A.7.3.4. Tier 2: Sec. 13.7.9)

Cladding and Glazing

C NC (N/A) U LS-MH; PR-MH. CLADDING ANCHORS: Cladding components weighing more than 10 lb/ft^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; for Life Safety in High Seismicity and for Position Retention in any seismicity, 4 ft. (Commentary: Sec. A.7.4.1. Tier 2: Sec. 13.6.1)

C NC (N/A) U LS-MH; PR-MH. CLADDING ISOLATION: For steel or concrete moment frame buildings, panel connections are detailed to accommodate a story drift ratio 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. (Commentary: Sec. A.7.4.3. Tier 2: Section 13.6.1)

C NC (N/A) U 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 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 seismicty, 0.02. (Commentary: Sec. A.7.4.4. Tier 2: Sec. 13.6.1)

C NC (N/A) U 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. (Commentary: Sec. A.7.4.5. Tier 2: Sec. 13.6.1.4)

C NC (N/A) U LS-MH; PR-MH. BEARING CONNECTIONS: Where bearing connections are used, there is a minimum of two bearing connections for each cladding panel. (Commentary: Sec. A.7.4.6. Tier 2: Sec. 13.6.1.4)

C NC (N/A) U LS-MH; PR-MH. INSERTS: Where concrete cladding components use inserts, the inserts have positive anchorage or are anchored to reinforcing steel. (Commentary: Sec. A.7.4.7. Tier 2: Sec. 13.6.1.4)

C NC (N/A) U LS-MH; PR-MH. OVERHEAD GLAZING: Glazing panes of any size in curtain walls and individual interior or exterior panes over 16 ft^2 in area are laminated annealed or laminated heat-strengthened glass and are detailed to remain in the frame when cracked. (Commentary: Sec. A.7.4.8: Tier 2: Sec. 13.6.1.5)

Masonry Veneer

C NC (N/A) U 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, and the ties have spacing no greater than the following: for Life Safety in Low or Moderate Seismicity, 36 in.; for Life Safety in High Seismicity and for Position Retention in any seismicity, 24 in. (Commentary: Sec. A.7.5.1. Tier 2: Sec. 13.6.1.2)

C NC (N/A) U LS-LMH; PR-LMH. SHELF ANGLES: Masonry veneer is supported by shelf angles or other elements at each floor above the ground floor. (Commentary: Sec. A.7.5.2. Tier 2: Sec. 13.6.1.2)

C NC (N/A) U LS-LMH; PR-LMH. WEAKENED PLANES: Masonry veneer is anchored to the backup adjacent to weakened planes, such as at the locations of flashing. (Commentary: Sec. A.7.5.3. Tier 2: Sec. 13.6.1.2)

C NC (N/A) U LS-LMH; PR-LMH. UNREINFORCED MASONRY BACKUP: There is no unreinforced masonry backup. (Commentary: Sec. A.7.7.2. Tier 2: Section 13.6.1.1 and 13.6.1.2)

C NC (N/A) U LS-MH; PR-MH. STUD TRACKS: For veneer with metal stud backup, stud tracks are fastened to the structure at a spacing equal to or less than 24 in. on center. (Commentary: Sec. A.7.6.1. Tier 2: Section 13.6.1.1 and 13.6.1.2)

C NC (N/A) U 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. (Commentary: Sec. A.7.7.1. Tier 2: Section 13.6.1.1 and 13.6.1.2)

C NC (N/A) U LS-not required; PR-MH. WEEP HOLES: In veneer anchored to stud walls, the veneer has functioning weep holes and base flashing. (Commentary: Sec. A.7.5.6. Tier 2: Section 13.6.1.2)

C NC (N/A) U LS-not required; PR-MH. OPENINGS: For veneer with metal stud backup, steel studs frame window and door openings. (Commentary: Sec. A.7.6.2. Tier 2: Sec. 13.6.1.1 and 13.6.1.2)

Parapets, Cornices, Ornamentation, and Appendages

C NC (N/A) U 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. (Commentary: Sec. A.7.8.1. Tier 2: Sec. 13.6.5)

C NC (N/A) U 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; for Life Safety in High Seismicity and for Position Retention in any seismicity, 6 ft. (Commentary: Sec. A.7.8.2. Tier 2: Sec. 13.6.6)

C NC (N/A) U LS-MH; PR-LMH. CONCRETE PARAPETS: Concrete parapets with height-to-thickness ratios greater than 2.5 have vertical reinforcement. (Commentary: Sec. A.7.8.3. Tier 2: Sec. 13.6.5)

C NC (N/A) U 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. This checklist item does not apply to parapets or cornices covered by other checklist items. (Commentary: Sec. A.7.8.4. Tier 2: Sec. 13.6.6)

Masonry Chimneys

C NC N/A U 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. (Commentary: Sec. A.7.9.1. Tier 2: 13.6.7)

C NC N/A U LS-LMH; PR-LMH. ANCHORAGE: Masonry chimneys are anchored at each floor level, at the topmost ceiling level, and at the roof. (Commentary: Sec. A.7.9.2. Tier 2: 13.6.7)

Stairs

C NC N/A U 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. (Commentary: Sec. A.7.10.1. Tier 2: Sec. 13.6.2 and 13.6.8)

C NC N/A U LS-LMH; PR-LMH. STAIR DETAILS: In moment frame structures, the connection between the stairs and the structure does not rely on shallow anchors in concrete. Alternatively, the stair details are capable of accommodating the drift calculated using the Quick Check procedure of Section 4.5.3.1 without including any lateral stiffness contribution from the stairs. (Commentary: Sec. A.7.10.2. Tier 2: 13.6.8)

Contents and Furnishings

C NC N/A U LS-MH; PR-MH. INDUSTRIAL STORAGE RACKS: Industrial storage racks or pallet racks more than 12 ft high meet the requirements of ANSI/MH 16.1 as modified by ASCE 7 Chapter 15. (Commentary: Sec. A.7.11.1. Tier 2: Sec. 13.8.1)

C NC N/A U LS-H; PR-MH. 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 anchored to the structure or to each other. (Commentary: Sec. A.7.11.2. Tier 2: Sec. 13.8.2)

C NC N/A U LS-H; PR-H. FALL-PRONE CONTENTS: Equipment, stored items, or other contents weighing more than 20 lb whose center of mass is more than 4 ft above the adjacent floor level are braced or otherwise restrained. (Commentary: Sec. A.7.11.3. Tier 2: Sec. 13.8.2)

C NC N/A U LS-not required; PR-MH. ACCESS FLOORS: Access floors more than 9 in. high are braced. (Commentary: Sec. A.7.11.4. Tier 2: Sec. 13.8.3)

C NC N/A U 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. (Commentary: Sec. A.7.11.5. Tier 2: Sec. 13.7.7 and 13.8.3)

C NC N/A U 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. (Commentary. A.7.11.6. Tier 2: Sec. 13.8.2)

Mechanical and Electrical Equipment

C NC N/A U LS-H; PR-H. 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 braced. (Commentary: A.7.12.4. Tier 2: 13.7.1 and 13.7.7)

C NC N/A U 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, is supported and laterally braced independent of the duct or piping system. (Commentary: Sec. A.7.12.5. Tier 2: Sec. 13.7.1)

C NC N/A U LS-H; PR-MH. TALL NARROW EQUIPMENT: Equipment more than 6 ft 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. (Commentary: Sec. A.7.12.6. Tier 2: Sec. 13.7.1 and 13.7.7)

C NC N/A U LS-not required; PR-MH. MECHANICAL DOORS: Mechanically operated doors are detailed to operate at a story drift ratio of 0.01. (Commentary: Sec. A.7.12.7. Tier 2: Sec, 13.6.9)

C NC N/A U 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. (Commentary: Sec. A.7.12.8. Tier 2: Sec. 13.7.1 and 13.7.7)

C NC N/A U 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. (Commentary: Sec. A.7.12.9. Tier 2: Sec. 13.7.1)

C NC N/A U LS-not required; PR-H. HEAVY EQUIPMENT: Floor-supported or platform-supported equipment weighing more than 400 lb is anchored to the structure. (Commentary: Sec. A.7.12.10. Tier 2: 13.7.1 and 13.7.7)

C NC N/A U LS-not required; PR-H. ELECTRICAL EQUIPMENT: Electrical equipment is laterally braced to the structure. (Commentary: Sec. A.7.12.11. Tier 2: 13.7.7)

C NC N/A U LS-not required; PR-H. CONDUIT COUPLINGS: Conduit greater than 2.5 in. trade size that is attached to panels, cabinets, or other equipment and is subject to relative seismic displacement has flexible couplings or connections. (Commentary: Sec. A.7.12.12. Tier 2: 13.7.8)

Piping

C NC N/A U LS-not required; PR-H. FLEXIBLE COUPLINGS: Fluid and gas piping has flexible couplings. (Commentary: Sec. A.7.13.2. Tier 2: Sec. 13.7.3 and 13.7.5)

C NC N/A U 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. (Commentary: Sec. A.7.13.4. Tier 2: Sec. 13.7.3 and 13.7.5)

C NC N/A U LS-not required; PR-H. C-CLAMPS: One-sided C-clamps that support piping larger than 2.5 in. in diameter are restrained. (Commentary: Sec. A.7.13.5. Tier 2: Sec. 13.7.3 and 13.7.5)

C NC N/A U 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. (Commentary: Sec. A7.13.6. Tier 2: Sec.13.7.3 and Sec. 13.7.5)

Ducts

C NC N/A U LS-not required; PR-H. DUCT BRACING: Rectangular ductwork larger than 6 ft^2 in cross-sectional area and round ducts larger than 28 in. in diameter are braced. The maximum spacing of transverse bracing does not exceed 30 ft. The maximum spacing of longitudinal bracing does not exceed 60 ft. (Commentary: Sec. A.7.14.2. Tier 2: Sec. 13.7.6)

C NC N/A U LS-not required; PR-H. DUCT SUPPORT: Ducts are not supported by piping or electrical conduit. (Commentary: Sec. A.7.14.3. Tier 2: Sec. 13.7.6)

C NC N/A U 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. (Commentary: Sec. A.7.14.5. Tier 2: Sec. 13.7.6)

Elevators

C NC N/A U LS-H; PR-H. RETAINER GUARDS: Sheaves and drums have cable retainer guards. (Commentary: Sec. A.7.16.1. Tier 2: 13.8.6)

C NC N/A U LS-H; PR-H. RETAINER PLATE: A retainer plate is present at the top and bottom of both car and counterweight. (Commentary: Sec. A.7.16.2. Tier 2: 13.8.6)

C NC N/A U LS-not required; PR-H. ELEVATOR EQUIPMENT: Equipment, piping, and other components that are part of the elevator system are anchored. (Commentary: Sec. A.7.16.3. Tier 2: 13.8.6)

C NC N/A U LS-not required; PR-H. SEISMIC SWITCH: Elevators capable of operating at speeds of 150 ft/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. (Commentary: Sec. A.7.16.4. Tier 2: 13.8.6)

C NC (N/A) U LS-not required; PR-H. SHAFT WALLS: Elevator shaft walls are anchored and reinforced to prevent toppling into the shaft during strong shaking. (Commentary: Sec. A.7.16.5. Tier 2: 13.8.6)

C NC (N/A) U LS-not required; PR-H. COUNTERWEIGHT RAILS: All counterweight rails and divider beams are sized in accordance with ASME A17.1. (Commentary: Sec. A.7.16.6. Tier 2: 13.8.6)

C NC (N/A) U 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. (Commentary: Sec. A.7.16.7. Tier 2: 13.8.6)

C NC (N/A) U LS-not required; PR-H. SPREADER BRACKET: Spreader brackets are not used to resist seismic forces. (Commentary: Sec. A.7.16.8. Tier 2: 13.8.6)

C NC (N/A) U LS-not required; PR-H. GO-SLOW ELEVATORS: The building has a go-slow elevator system. (Commentary: Sec. A.7.16.9. Tier 2: 13.8.6)

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PROJECT Imbler M.S.
NO. P-2127-16
BY AAL DATE 8/3/16 SHEET 1 OF 2

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$V = c S_a W$; $c = 1.4$ (1- STORY RM-1)

$S_a = \frac{S_x}{T}$ $S_{x_1} = 0.187g$ $T = C_t h_n^{\beta}$ $C_t = 0.02$, $h_n = 17'$, $\beta = 0.75$

$\Rightarrow$ $T = 0.02(17')^{0.75} = 0.167$

$S_a = \frac{(0.75)(0.187)}{0.167} = 0.839$ Use $S_{xs} = 0.344g$

Roof: (Metal) + (plywood) + (trusses) + (ins.) + (misc.) + (GLB for gym)

Roof = 3psf + 3psf + 5psf + 2psf + 3psf = 16psf
+ 10psf = 26psf

Int. wall: 10 psf

Ext. wall: 8" CMU w/ grout $\Rightarrow$ 75 psf

School weight:

$W_s = (16120\,sf)(16psf) + (4.5')(10psf)(370') + (75psf)(484')(5') =$

$= 456\,k$

Gym:

$W_g = (12870)(26psf) + (4.5')(10psf)(245') + (75psf)(10')(557') =$

$= 763.4\,k$

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CLIENT Imbler School District
PROJECT Imbler High School SRC App.
NO. P-2127-16
BY AAL DATE 9/22/16 SHEET 2 OF 2

School Long. direction

$$V = \frac{\left(456^{k}/_{2}\right)}{\left(85' * 12''/_{1'} \times 8''\right)} \times \frac{1}{4} = 7 \text{ plf} \quad \underline{OK}$$

Transverse. dir.

$$V = \frac{456^{k}/_{2}}{\left(41.4' \times \frac{12''}{1'} \times 8''\right)} = 14.4 \text{ plf} \quad \underline{OK}$$

Gym

$$V = 1/4 \left(\frac{763.2/2}{102 \times 12'' \times 8''} \right) = 10 \text{ plf} \quad \underline{OK}$$

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CLIENT Imbler S.D
PROJECT Imbler H.S
NO. P-2127-16
BY HAL DATE 8/4/16 SHEET 1 OF 1

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Reinforced steel check

(2) #5 bars @ 4'-0" horizo.

$$\frac{(0.31\ in^2 \times 2)}{(8")(48")} = 0.0016$$

(1) #6 bars @ 4'-0" o.c vert.

$$\frac{0.44\ in^2}{(8")(48")} = 0.0012$$

$0.0016 + 0.0012 = 0.0028 > 0.002$ OK

USGS Design Maps Summary Report

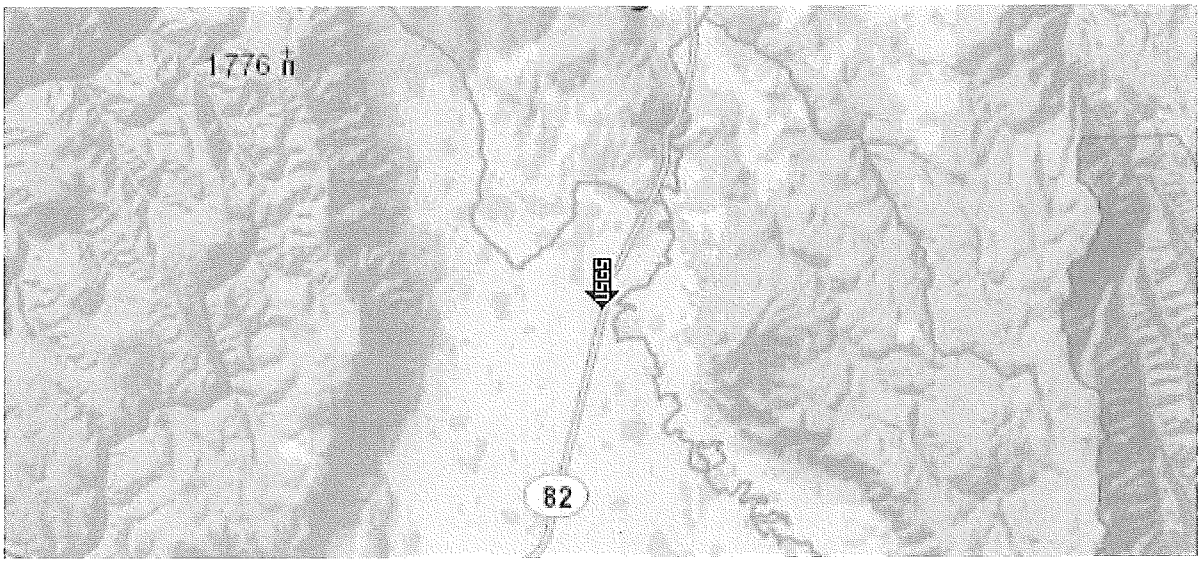
User-Specified Input

Report Title Imbler High School SRG
Thu August 4, 2016 17:19:35 UTC

Building Code Reference Document ASCE 41-13 Retrofit Standard, BSE-1N
(which utilizes USGS hazard data available in 2008)

Site Coordinates 45.46245°N, 117.96525°W

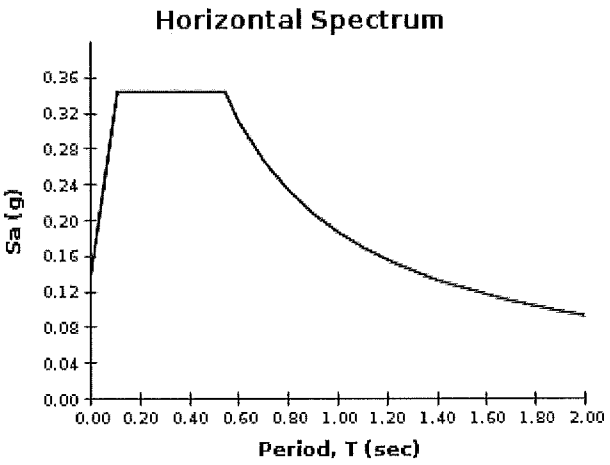
Site Soil Classification Site Class D – "Stiff Soil"

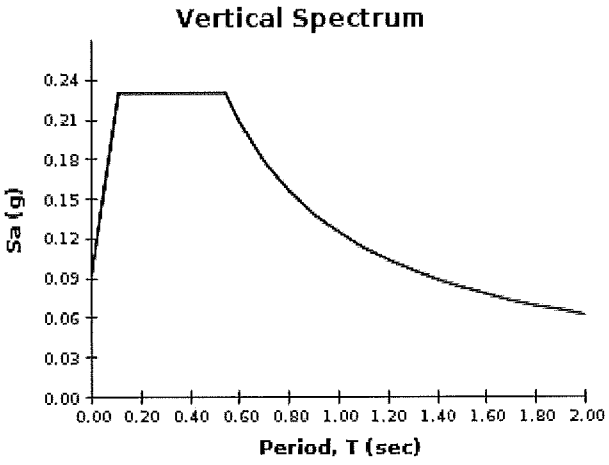


USGS-Provided Output

$S_{XS,BSE-1N}$ 0.344 g

$S_{X1,BSE-1N}$ 0.187 g





Appendix C: Construction Cost Estimate Worksheets

ENGINEER'S OPINION OF PROBABLE COST - IMBLER HIGH SCHOOL SEISMIC REHABILITATION

Description	Quanity	Units	Unit Price	Total Price for Construction Item
GENERAL CONDITIONS				
General Conditions	6%	%		$48,300.00
Preconstruction Services	1%	%		$8,500.00
Safety Measures	0.5%	%		$4,300.00
Equipment Rental	3	Month	$ 5,000.00	$15,000.00
Toilet Rental	3	Month	$ 1,800.00	$5,400.00
Cleanup Continuous	3	Month	$ 4,000.00	$12,000.00
Clean Up Dumpsters	3	Month	$ 2,400.00	$7,200.00
Temporary Conditions		Lump Sum		
Final Clean UP	33779	Square Foot	$ 0.35	$11,800.00
Wall Framing Layout	3136	Square Foot	$ 0.25	$784.00
Interior Finishes Layout	900	Square Foot	$ 0.50	$450.00
Escalation	3%	%		$26,100.00
Bonding & Insurance	3%	%		$26,100.00
Contractor Profit & Overhead	7%	%		$64,600.00
			General Conditons Subtotal	$230,500.00
Demolition & Asbestos Abatement				
Soft Demolition	33779	Square Foot	$ 2.00	$67,558.00
Gypsum Wall Demolition / Abatement	900	Square Foot	$ 6.50	$5,850.00
			Demolition & Asbestos Subtotal	$ 73,408.00
Foundation / Floor Strengthening Construction				
Flooring Protection	12870	Square Foot	$ 3.00	$38,610.00
			Foundation Level Subtotal	$ 38,610.00
Wall Strengthening Construction				
New 2x Framed Shear Walls	3136	Square Foot	$ 15.00	$47,040.00
Sheathing of Existing Walls	900	Square Foot	$ 5.00	$4,500.00
Interior Wall Finish Repair	900	Square Foot	$ 2.00	$1,800.00
Painting of Wall	8200	Square Foot	$ 3.00	$24,600.00
			Wall Strengthening Subtotal	$ 77,940.00
Roof Strengthening Construction				
Renail Existing Roof Sheathing	33779	Square Foot	$ 1.00	$33,779.00
Diaphragm Attachments - Out-of-Plane	1492	Lineral Foot	$ 50.00	$74,600.00
New metal roof	33779	Square Foot	$ 12.00	$405,348.00
Diaphragm Attachments - In-Plane Shear	2265	Square Foot	$ 5.00	$11,325.00
Seismic Isolation from Adjacent Building	137	Lineral Foot	$ 250.00	$34,250.00
			Roof Strengthening Subtotal	$ 559,302.00
Miscellaneous Elements				
Misc Electrical / HVAC / Plumbing	1	Lump Sum	$25,000.00	$25,000.00
Brace Existing Suspended Ceiling	13000	Square Foot	$4.00	$52,000.00
			Miscellaneous Subtotal	$ 77,000.00
			Sub-Total Construction Cost	**$1,056,800.00**
			Contingency 15.0%	**$158,520.00**
			Total Construction Cost	**$1,215,320.00**
Associated Design / Soft Costs				
Architectural Consulting				$18,200.00
Structural / Rehailitaiton Engineering				$127,600.00
Geotechnical Consulting				$6,100.00
Special Inspection Services for Construction				$6,100.00
Structural Observations during Construction				$6,100.00
Materials Testing for Design				$6,100.00
Construction Management / Owner Representation				$36,500.00
Permitting Fees				$36,500.00
Seismic Feasibility Study Reimbursment				$5,000.00
Relocation of FF&E				$8,000.00
			Design / Soft Cost Subtotal	**$256,200.00**
			Total Project Funding Requirement	**$1,471,520.00**

Appendix D: Benefit Cost Analysis Worksheets

Oregon Seismic Rehabilitation Grant Application: Benefit-Cost Analysis

Entity:	**Imbler School District**		
Point of Contact	**Angie Lakey-Campbell**		
Telephone:	**(541)534-5331**		
E-Mail:	angie.lakey-campbell@imblersd.org		
BCA File Name:	**BCA-ImblerHighSchool.xls**	**BCA Date:**	**7/27/2016**

Building Name:	**Imbler High Schol**
Site ID:	**Unio_sch06D**
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
	Not Listed

Unique Building ID Number	Building Part Square Footage	Percent of Total SF	Percent of Occupancy	Percent of Budget	Building Part Being Retrofitted?
Unio_sch06DA	29,300	100.00%	100.00%	100.00%	**Yes**
Totals:	**29,300**	**100.00%**	**100.00%**	**100.00%**	

Seismic Retrofit Cost Estimate per SRGP Application: **$1,471,520**

Benefit-Cost Analysis: Summary Results
Imbler High Schol

Building Part	Benefits
Unio_sch06DA	$1,712,724
Total Benefits	**$1,712,724**
Total Cost	**$1,471,520**
Benefit-Cost Ratio	**1.164**

Benefits by Category Avoided Damages and Losses	
Building Damage	$327,650
Contents Damage	$81,913
Displacement Costs	$28,148
Loss of Function Costs	$15,646
Casualties	$1,259,366
Total	**$1,712,724**

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	9	19	3.807
Monday - Friday	Evening	4	4	0.356
Monday - Friday	Night	8	1	0.178
Saturday	Day			
Saturday	Evening			
Saturday	Night			
Sunday	Day			
Sunday	Evening			
Sunday	Night			
			Subtotal:	4.341

Employees: Summer Months			Number of Months:	3
Day of Week	Time of Day	Hours per Day	Average Employees in Building	Calculated 24/7/365 Occupancy
Monday - Friday	Day	9	5	0.334
Monday - Friday	Evening			
Monday - Friday	Night			
Saturday	Day			
Saturday	Evening			
Saturday	Night			
Sunday	Day			
Sunday	Evening			
Sunday	Night			
			Subtotal:	0.334

Visitors: 12 Months per Year or Academic Year for Schools			
Day of Week	Average Number of Visitors Per Day	Average Time in Building (Minutes)	Calculated 24/7/365 Occupancy
Monday - Friday	5	10	0.019
Saturday			
Sunday			
		Subtotal:	0.019

Visitors: Summer Months		Number of Months:	3
Day of Week	Average Number of Visitors Per Day	Average Time in Building (Minutes)	Calculated 24/7/365 Occupancy
Monday - Friday	1	30	0.004
Saturday			
Sunday			
		Subtotal:	0.004

K-12 Students: Academic Year	
Average Daily Number of Students:	153
Hours per Day:	9
Days per Year:	176
Calculated 24/7/365 Occupancy:	27.666

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

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			
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 Duration per Event (hours)	Calculated 24/7/365 Occupancy
Athletics Events	14	550	7	6.153
Music Concerts	4	300	2	0.274
Regular District Mee	50	10	2	0.114
Graduation	1	800	3	0.274
8th Graduation	1	150	3	0.051
Dances	4	75	4	0.137
4-H, Little League, Y	14	20	2	0.064
Parent-Teacher Con	2	20	4	0.018
			Subtotal:	7.086

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)	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	4.341	0.334
Visitors	0.019	0.004
Students: K-12	27.666	
Students: College		
Meetings & Special Events	7.086	N/A
Patients		N/A
Subtotals:	39.111	0.338
Avg 24/7/365 Occupancy:	39.448	

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	Please see attached staff phone list
Employees: Hours Per Day	Please see attached class schedule
Visitors: Number Per Day	We have no documentation to show number of visitors per day. The number shown represents parents coming to pick up students for appointments and illness.
Visitors: Average Time in Building	We have no documentation to show number of visitors per day. The number shown represents parents coming to pick up students for appointments and illness.
K-12 Students: Number	Please see population report
K-12 Students: Hours Per Day	Please see class schedule
K-12 Students: Days Per Year	Please see calendar table screen shot
Additional Comments Re: above Occupancy Data	The occupancy data listed on the previous page does not include athletic practice which would consist of 30 students Monday-Thursday for 4 hours per day.
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	Sporting Events: The bleachers have the capacity to hold approximately 540 people. Teams and support staff would account for approximately 20 people, and people often stand on the balcony above the bleachers to view games.
	Music Concerts: The gym is usually about capacity for elementary concerts and less than capacity for high school concerts.
	Regular District Meetings: Meetings include monthly board of trustees, budget committee, booster club, foundation, and senior parent meetings.
	Graduation: Bleachers are at capacity, people standing in balcony above bleachers and floor covered with chairs for seating.
	8th Graduation: Gym at less than half capacity.

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	

College Student Occupancy Data

These tables calculate the inputs required to determine the average 24/7/365 occupancy for the classes in the building. The tables are organized by course duration (1 hr, 1.5 hr, etc) with two additional tables provided to capture different course lengths.

Do not duplicate information that has already been provided on the Occupancy worksheet.

Instructions

Enter requested course data into the green shaded cells. Tables for the Academic Year are in Row 9. Tables for Summer School are in Row 64. Use the Other / Additional Courses tables for class durations that aren't specified elsewhere or if additional space is required.

Occupancy data entered on this page are generally available for and entered for the entire school or facility and then allocated to building parts on the Main Page

However, if you enter data on the Main Page for only parts of a facility, then the occupancy data on this page must also be only for those facility parts entered on the Main Page.

See: USER GUIDE PAGES 16-17 for further guidance

Academic Year: 1 Hour Courses

Course Name	Class Duration (hours)	Number of Class Periods per Week	Average Number of Students per Class	Student Hours per Week
	1			0.0
	1			0.0
	1			0.0

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	Teachers	10.33	$50,841	70.00%	**$892,819**
2	Administration	1.5	$90,475	55.00%	**$210,354**
3	Other	6.55	$32,648	89.00%	**$404,166**
4					**$0**
5					**$0**
6					**$0**
7					**$0**
8					**$0**
9					**$0**
10					**$0**
	Total Number of FTEs:	**18.38**		**Subtotal:**	**$1,507,339**

[1] FTEs: Full time equivalents

Other Building Expenses

Category		Annual Cost
Supplies		$10,000
Building Maintenance		$37,000
Utilities		$27,215
Insurance		$13,650
Rent		$0
Average Annual Capital Goods		$5,000
OTHER: specify below		
Percent of District Office/Headquarters Annual Operating Budget Attributed to This Building:	50.00%	**$177,430**
If rent is zero (building owned), a proxy rent is calculated automatically, based on the value of the building:		**$512,750**
	Subtotal:	**$783,045**

Total Building Annual Operating Budget:	**$2,290,384**

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	Superintendent	1	$93,300	56.00%	**$145,548**
2	Clerical				**$0**
3	Business Manager	1	$60,000	65.00%	**$99,000**
4	Special Programas Supervisor				**$0**
5	Maintenance Director	1	$52,100	72.00%	**$89,612**
6					**$0**
7					**$0**
8					**$0**
9					**$0**
10					**$0**
	Total Number of FTEs:	**3.00**		**Subtotal:**	**$334,160**

District Office/Headquarters Building Expenses

Category		Annual Cost
Supplies		included with school
Building maintenance		included with school
Utilities		included with school
Insurance		included with school
Rent		included with school
Average Annual Capital Goods		included with school
OTHER: specify below		
Telephone		$16,500
Miscellaneous equipment leases		$4,200
Alarm services		$0
Enter replacement value of building:	$8,000,000	
If rent is zero (building owned), a proxy rent is calculated		**$0**
	Subtotal:	**$20,700**

Total Annual Operating Budget for District Office/Headquarters Building:	**$354,860**

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	See attached district budget.
Percent of District Office or Headquarters Annual Operating Budget Attributed to the Facility	District office housed in the building, therefore all expenses associated with the district office are included in the building budget.

Building Part A: Data for Benefit-Cost Analysis

Building Name:	**Imbler High Schol**
Building ID:	**Unio_sch06DA**
Building Part Name / Description:	

Evaluation for Building Part A

Seismic Hazard Data		
Region of Seismicity	Moderate	
PGA Ground Motion (g)	2% in 50 year	0.232
	5% in 50 year	0.149
	10% in 50 year	0.095
	20% in 50 year	0.057
Spectral Accelerations (g)	S_{xs}, 2% in 50 year	0.530
	S_{x1}, 2% in 50 year	0.252
	S_{xs}, 10% in 50 year	0.206
	S_{x1}, 10% in 50 year	0.105

Data Entry Item	User Entered Values	Default Values	Used for BCA
Site Data			
County	Union		Union
Decimal Latitude	45.46248		45.46248
Decimal Longitude	117.96557		117.96557
Soil Type	D		D
Construction Data			
Primary Structure Type (FEMA 154)	RM1		RM1
Number of Stories	1		1
Year Built	1975		1975
Rapid Visual Screening Data			
Severe Vertical Irregularity			
Moderate Vertical Irregularity	Yes		Yes
Plan Irregularity	Yes		Yes
Pre-Code			
Post-Benchmark			
Building Data			
Historic Importance	None	None	None
Historic Adjustment Modifier	N/A	N/A	1.00
Building Square Footage - SF	29,300	N/A	29,300
Building Replacement - $/SF		$250.00	$250.00
Building Replacement Value - $	N/A	N/A	$7,325,000
Historic Building Replacement - $/SF	N/A	N/A	$250.00
Historic Building Replacement Value - $	N/A	N/A	$7,325,000
Contents Value - % of Building Value		25%	25%
Displacement Costs - $/SF/month		$1.50	$1.50
Displacement Costs - One Time		$1.35	$1.35
Average Annual Occupancy	39.45	39.45	39.45
Annual Operating Budget	$2,290,384	$2,290,384	$2,290,384
Seismic Fragility Curves			
Before Mitigation			
Slight Damage State		0.10	0.10
Moderate Damage State		0.12	0.12
Extensive Damage State		0.18	0.18
Complete Damage State		0.32	0.32
Beta		0.66	0.66
After Mitigation			
Retrofit Building Type		C2	C2
Retrofit Performance Objective		LS	LS
Slight Damage State		0.23	0.23
Moderate Damage State		0.43	0.43
Extensive Damage State		0.86	0.86
Complete Damage State		1.47	1.47
Beta		0.62	0.62

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	

Appendix E: Schematic Seismic Retrofit Drawings

IMBLER HIGH SCHOOL SRG

6TH ST.

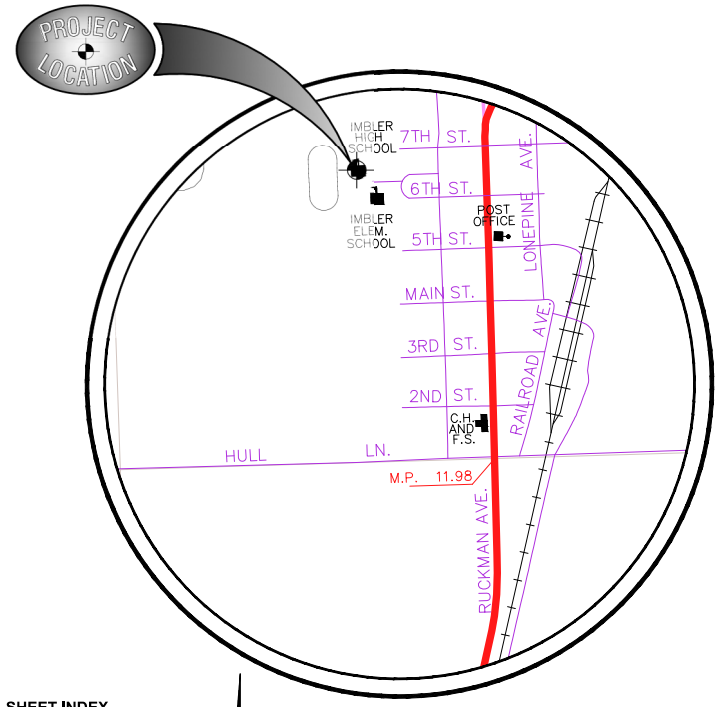
IMBLER, OR 97841

TOTAL SCHOOL AREA.....33,105 S.F.

1 C0.0 **SITE LAYOUT**
NTS

2 C0.0 **SCHOOL ELEVATION**
NTS

4 C0.0 **STREET VIEW**
NTS



3 C0.0 **VICINITY MAP**
NTS

SHEET INDEX

PROJECT NARRATIVE

INTENT OF THESE DRAWINGS IS TO ILLUSTRATE THE LEVEL OF UNDERSTANDING THE APPLICANT HAS WITH REGARDS TO THE EFFORT THAT WILL BE REQUIRED TO SEISMICALLY REHABILITATE THE BUILDING. THESE SCHEMATIC DRAWINGS HAVE BEEN PREPARED USING THE CURRENT OREGON STRUCTURAL SPECIALITY CODE (OSSC) AND THE ASCE 41 (SEISMIC REHABILITATION OF EXISTING BUILDINGS) AS THE REFERENCES FOR PRESCRIBED LOADING AND BUILDING PERFORMANCE LEVEL RATINGS.

THE DRAWING ILLUSTRATES BOTH EXISTING CONDITIONS AND GENERAL REPAIRS THAT WOULD NEED TO BE ACCOMPLISHED TO REACH AN ACCEPTABLE LEVEL OF PERFORMANCE (LIFE SAFETY) ACCORDING TO CURRENT CODE.

"STRUCTURAL PERFORMANCE LEVEL, LIFE SAFETY, MEANS POST-EARTHQUAKE DAMAGE STATE IN WHICH SIGNIFICANT DAMAGE TO THE STRUCTURE HAS OCCURRED BUT SOME MARGIN AGAINST EITHER PARTIAL OR TOTAL STRUCTURAL COLLAPSE REMAINS. SOME STRUCTURAL ELEMENTS AND COMPONENTS ARE SEVERELY DAMAGED BUT THIS HAS NOT RESULTED IN LARGE FALLING DEBRIS HAZARDS, EITHER INSIDE OR OUTSIDE THE BUILDING. INJURIES MAY OCCUR DURING THE EARTHQUAKE; HOWEVER, THE OVERALL RISK OF LIFE-THREATENING INJURY AS A RESULT OF STRUCTURAL DAMAGE IS EXPECTED TO BE LOW. IT SHOULD BE POSSIBLE TO REPAIR THE STRUCTURE; HOWEVER, FOR ECONOMIC REASONS THIS MAY NOT BE PRACTICAL. ALTHOUGH THE DAMAGED STRUCTURE IS NOT AN IMMINENT COLLAPSE RISK, IT WOULD BE PRUDENT TO IMPLEMENT STRUCTURAL REPAIRS OR INSTALL TEMPORARY BRACING PRIOR TO REOCCUPANCY"

SEISMIC DEFICIENCIES

-THE LOAD BEARING WALLS ARE NOT PROPERLY ATTACHED TO THE ROOF DIAPHRAGM FOR OUT-OF-PLANE LOADING.
-THE SHEAR STRESS IN SHEAR WALL EXCEEDS VALUES LISTED IN SECTION 4.5.3.3
-NARROW WOOD SHEAR WALLS WITH ASPECT RATIO GREATER THAN 2-TO-1 ARE RELIED ON TO RESIST SEISMIC FORCES
-WALLS WITH OPENINGS GREATER OF THAN 80% OF THE LENGTH ARE NOT BRACED WITH WOOD STRUCTURAL PANEL SHEAR WALLS.
-THE ROOF DIAPHRAGM IS NOT CONTINUOUS AND CONSISTS OF SPLIT LEVEL ROOF.
-ROOF CHORD IS NOT CONTINUOUS DUE TO SPLIT ROOF LEVEL.
-DIAGONALLY SHEATHED DIAPHRAGM SPANS MORE THAN 40 FEET.

REHABILITATION RECOMMENDATIONS

-THE TOPS OF THE CONCRETE WALLS FOR BOTH THE GYMS NEED TO BE PROPERLY ATTACHED TO THE ROOF DIAPHRAGMS FOR BOTH IN-PLANE AND OUT-OF-PLANE LOADING
-PROVIDE BLOCKING, CLIPPING AND NAILING CONNECTIONS ALONG TOP OF WALLS TO ESTABLISH ADEQUATE CONNECTION BETWEEN TOP OF WALL AND DIAPHRAGM
-ADDITIONAL CONNECTION HARDWARE WILL BE ADDED TO STRENGTHEN THE CONNECTION BETWEEN THE ROOF DIAPHRAGMS AND SHEAR WALLS
-ADDITIONAL BLOCKING AND IN-PLANE SHEAR TRANSFER CONNECTIONS SHOULD BE ADDED TO PROPERLY TRANSFER IN-PLANE LOADING INTO THE SHEAR WALLS
-PROVIDE DRAG TIES BETWEEN BEAM LINES IN THE LONGITUDINAL DIRECTION TO CONNECT THE ROOF DIAPHRAGM TO NEW SHEAR WALLS
-PROVIDE PROPER ATTACHMENT AND BRACING FOR ALL NON-STRUCTURAL COMPONENTS AND EQUIPMENT
-ALL PIPING AND HVAC EQUIPMENT FOUND THROUGHOUT THE BUILDING SHALL BE PROPERLY BRACED AND ATTACHED TO THE STRUCTURE TO LIMIT THE POTENTIAL DAMAGE,
-ALL PIPING FOUND WITHIN THE BUILDING THAT IS GREATER THAN 12" FROM STRUCTURE SHALL BE PROPERLY ATTACHED AND BRACED.
-AFTER THESE ARE IMPLEMENTED THE BUILDING WILL MEET THE "LIFE SAFETY" PERFORMANCE LEVEL PER ASCE 41-13.

IF THIS BAR DOES NOT MEASURE 1-INCH IN LENGTH, THEN THE DRAWING IS NOT TO SCALE

NO.	REVISIONS	BY	DATE
1	ADD		

IMBLER SCHOOL DISTRICT

IMBLER HIGH SCHOOL SRG

ZCS Engineering
524 Main Street • Suite 02 • Oregon City, OR 97045
(503) 657-0188 • (503) 557-5769 phone • (503) 594-2433 fax

PROJECT NO:	P-2127-16
DRAWN:	AAL
CHECKED:	ZAS
DATE:	07-27-16

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER OREGON JULY 16, 1996 ZACHARY C. CARTER EXPIRES: 12-31-17

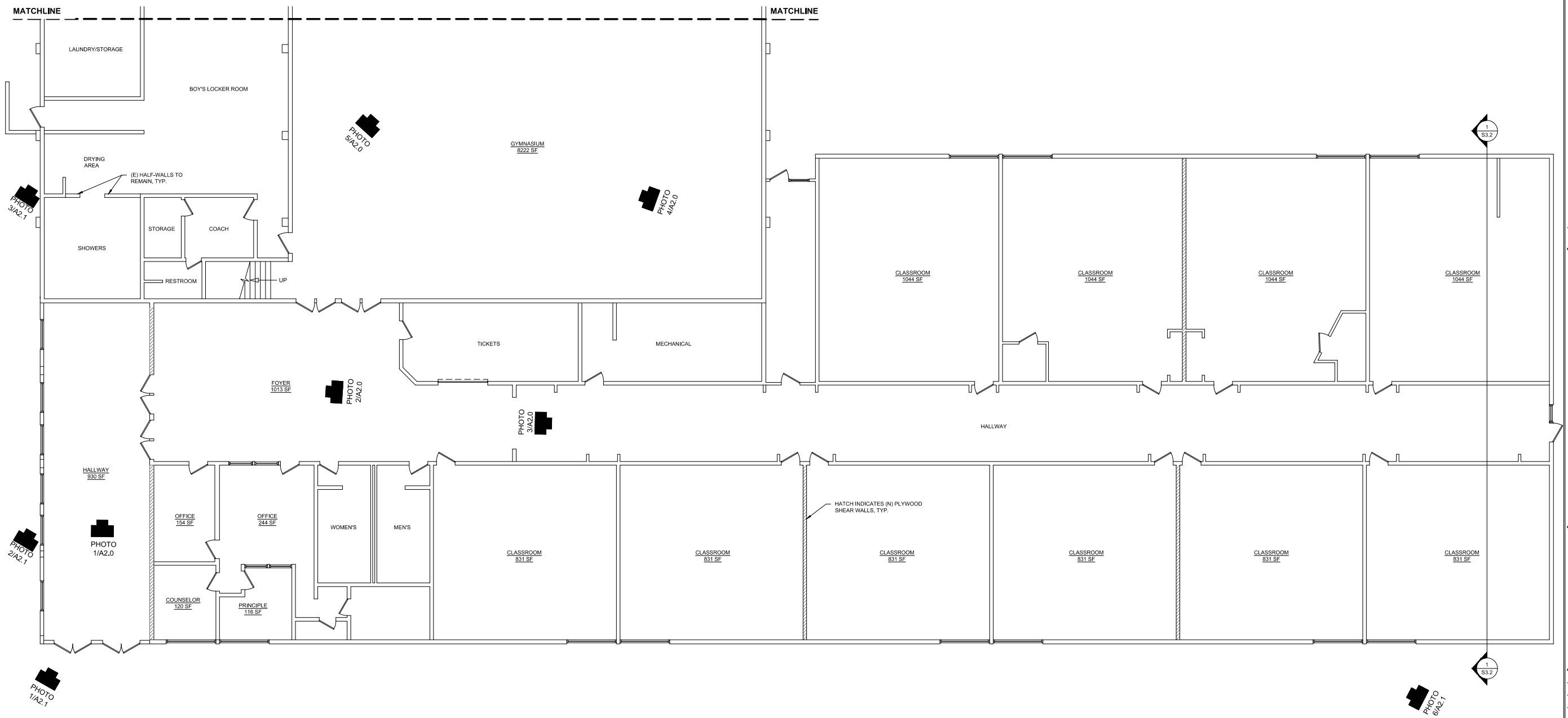
PRELIMINARY - NOT FOR CONSTRUCTION

COVER SHEET

C0.0

HATCH INDICATES (N) CMU SHEAR WALLS

HATCH INDICATES (N) SHEAR WALL ON ONE SIDE OF (E) WALL TO PROVIDE LATERAL STABILITY.



1 A1.0 **FLOOR PLAN-AREA "A"**

1/8"= 1'-0"

IF THIS BAR DOES NOT MEASURE 1-INCH IN LENGTH, THEN THE DRAWING IS NOT TO SCALE

NO.	REVISIONS	BY	DATE
1			

IMBLER SCHOOL DISTRICT

IMBLER HIGH SCHOOL SRG

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524 Main Street • Suite 02 • Oregon City, OR 97045
(503) 557-0250 phone (503) 557-0253 fax

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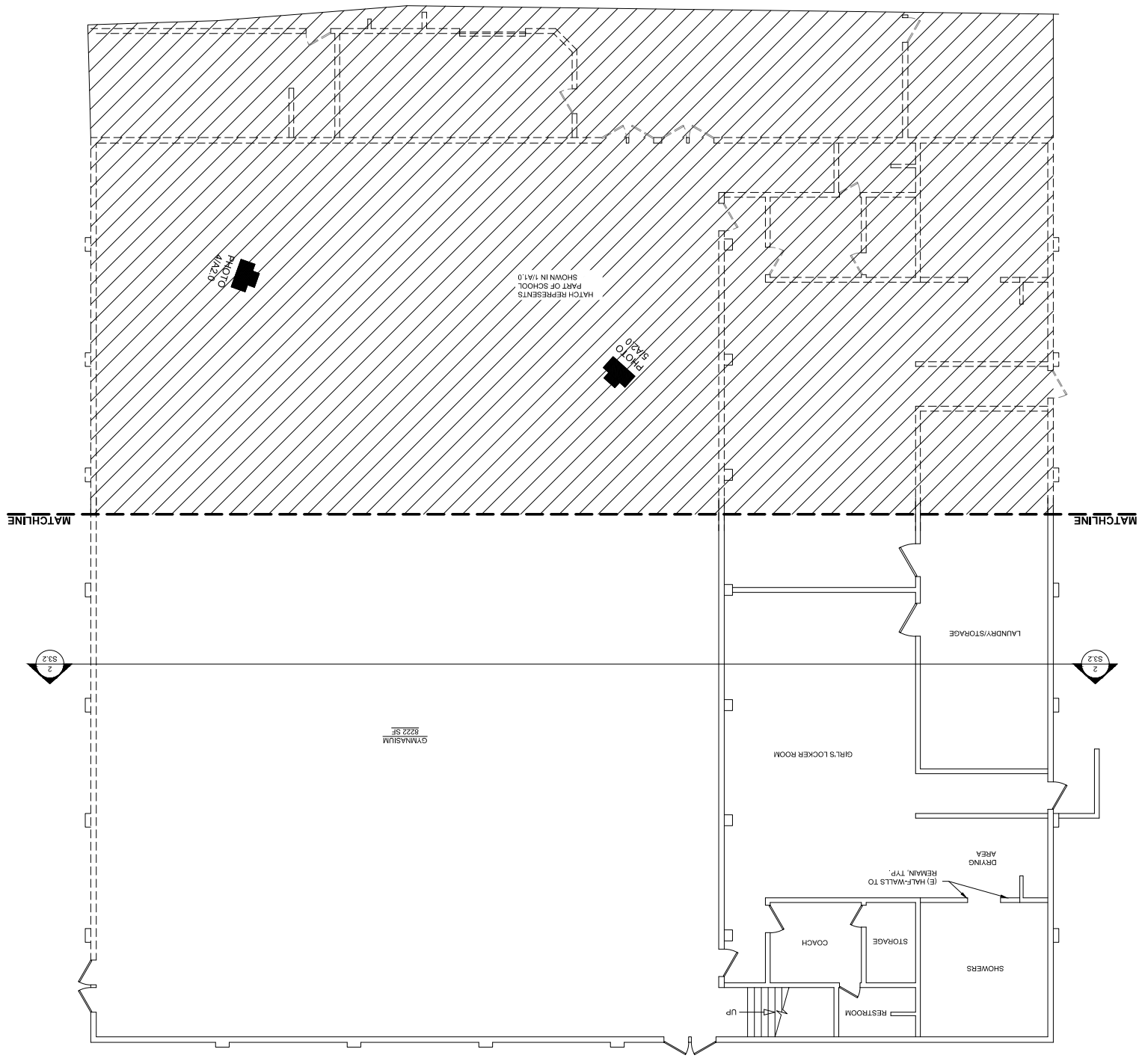
PRELIMINARY - NOT FOR CONSTRUCTION

FLOOR PLAN-AREA "A"

A1.0

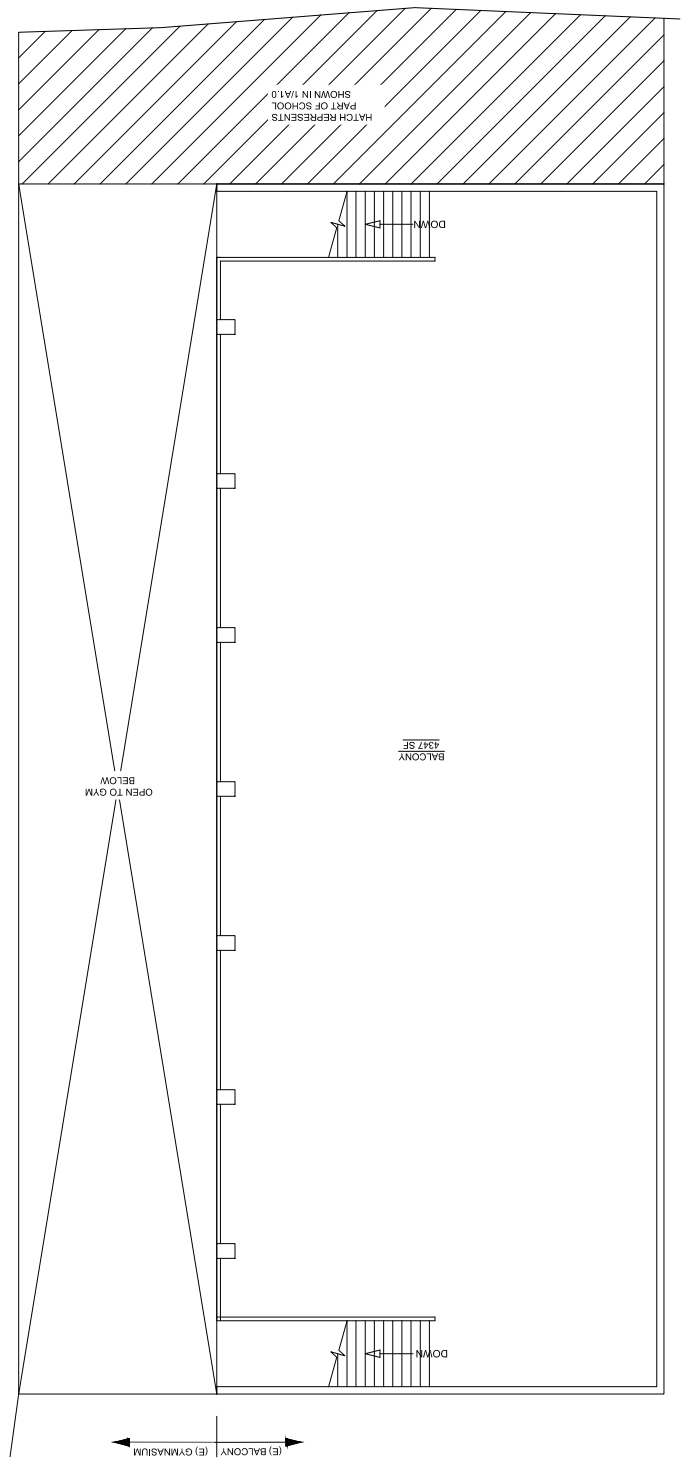
FLOOR PLAN-AREA "B"

1 A1.1 — 1/8"= 1'-0"



BALCONY FLOOR PLAN

2 A1.1 — 1/8"= 1'-0"



IMBLER SCHOOL DISTRICT

IMBLER HIGH SCHOOL SRG

ENGINEERING
524 Main Street - Suite 02, Oregon City, OR 97045
ph (503)656-2629 www fax (503)656-4338

PROJECT NO: P-2127-16
DRAWN: AAL
CHECKED: ZAS
DATE: 01-27-16

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 16, 1996
C. CARTER
EXPIRES: 12-31-17

PRELIMINARY - NOT FOR CONSTRUCTION

FLOOR PLAN-AREA "B"

A1.1

IF THIS BAR DOES NOT MEASURE 1/8INCH IN LENGTH, THEN THE DRAWING IS NOT TO SCALE

1/8" 0 1/8" 1/4" 1/2" 1"

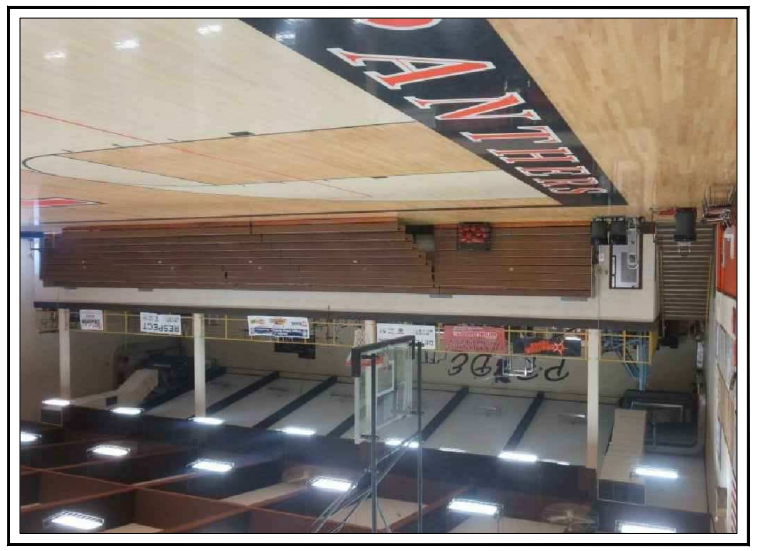


PHOTO 4 A2.0 NTS

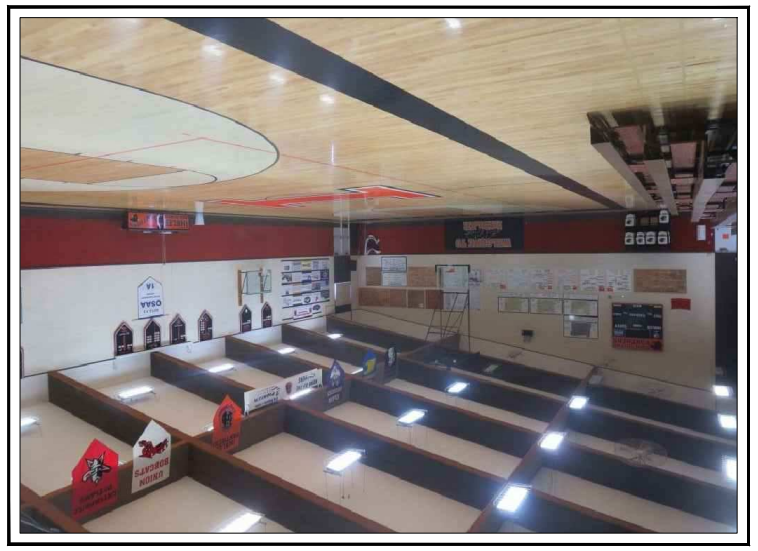


PHOTO 5 A2.0 NTS

PHOTO 6 A2.0 NTS

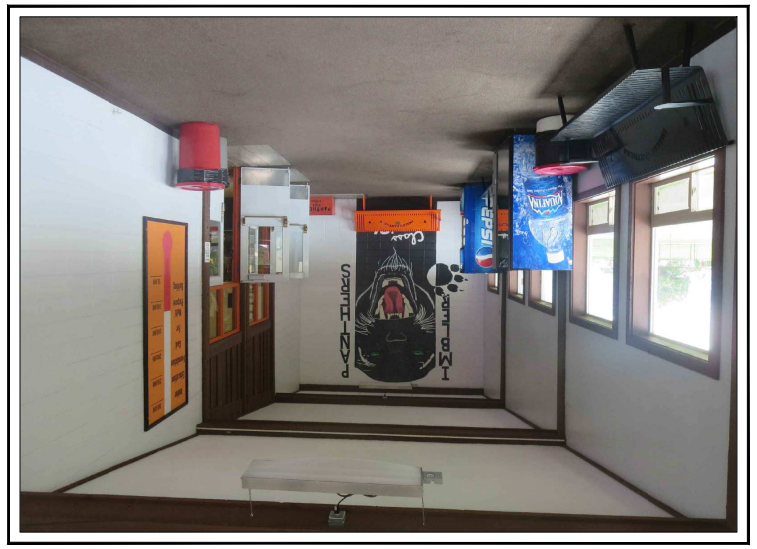


PHOTO 1 A2.0 NTS

PHOTO 2 A2.0 NTS

PHOTO 3 A2.0 NTS

IMBLER SCHOOL DISTRICT

IMBLER HIGH SCHOOL SRG

ZCS ENGINEERING
524 Main Street - Suite 02, Oregon City, OR 97045
(503) 656-2235 phone
ve (503) 656-7433

PROJECT NO: P-2127-16
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DATE: 01-27-16

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 16, 1996
C. CARTER
EXPIRES: 12-31-17

PRELIMINARY - NOT FOR CONSTRUCTION

PHOTOS

A2.0

NO.	REVISIONS	BY	DATE

IF THIS BAR DOES NOT MEASURE 1-INCH IN LENGTH, THEN THIS DRAWING IS NOT TO SCALE

PHOTO NTS 4 A2.1

PHOTO NTS 5 A2.1

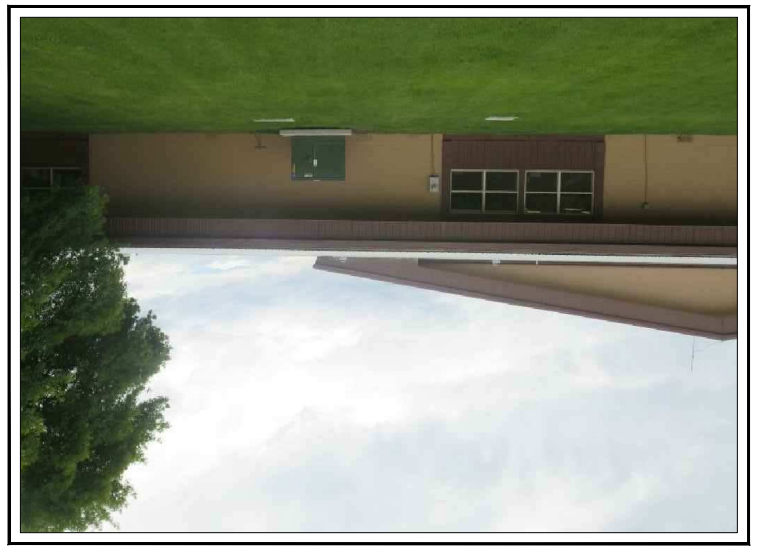

PHOTO NTS 6 A2.1

PHOTO NTS 1 A2.1

PHOTO NTS 2 A2.1

PHOTO NTS 3 A2.1

IMBLER SCHOOL DISTRICT

IMBLER HIGH SCHOOL SRG

ZCS ENGINEERING
524 Main Street - Suite 02, Oregon City, OR 97045
ph (503) 656-3290 www
fax (503) 656-7433

PROJECT NO: P-2127-16
DRAWN: AAL
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DATE: 01-27-16

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 16, 1996
C. CARTER
EXPIRES: 12-31-17

PRELIMINARY - NOT FOR CONSTRUCTION

PHOTOS

A2.1

NO.	DESCRIPTION	BY	DATE

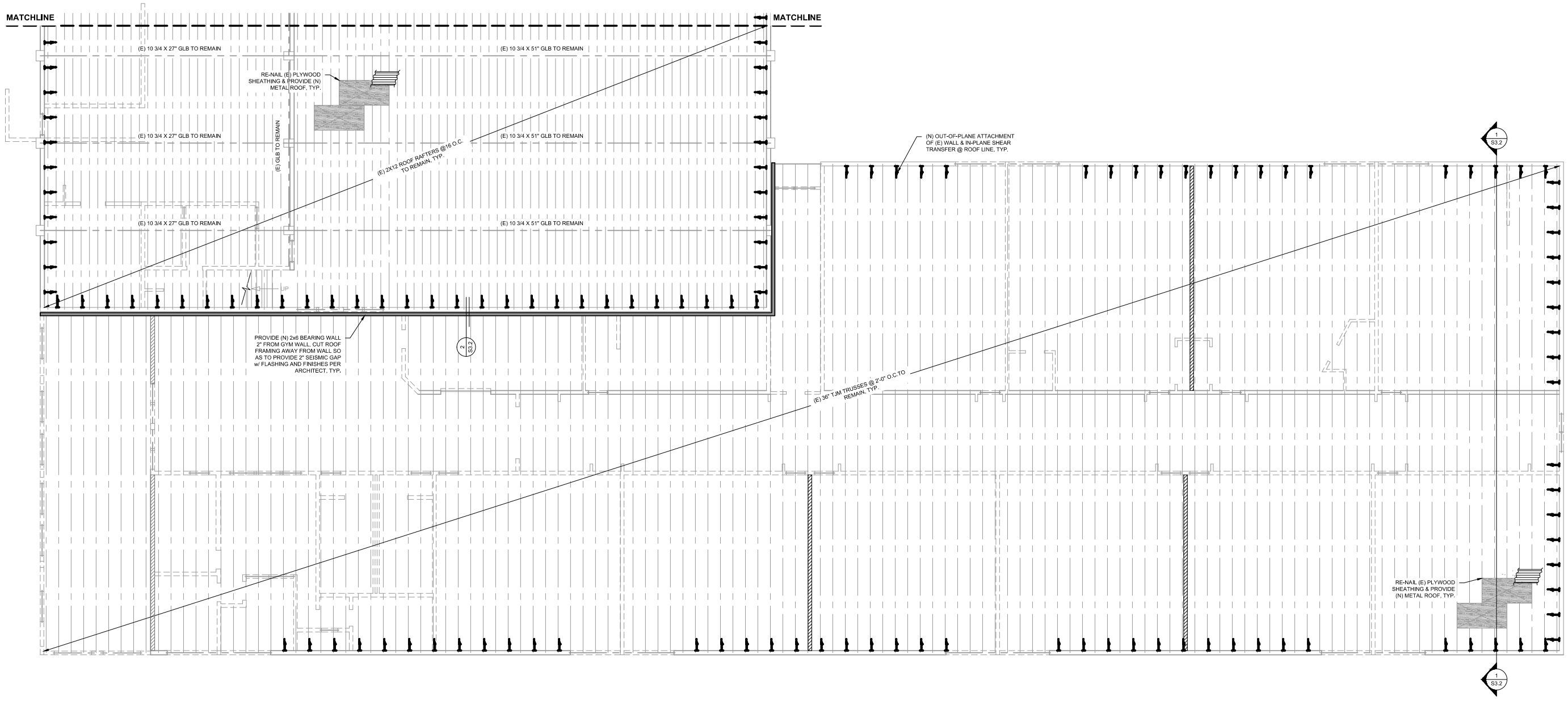
IF THIS BAR DOES NOT MEASURE 1-INCH IN LENGTH, THEN THIS DRAWING IS NOT TO SCALE

HATCH KEY:

HATCH INDICATES (N) CMU SHEAR WALLS

HATCH INDICATES (N) SHEAR WALL ON ONE SIDE OF (E) WALL TO PROVIDE LATERAL STABILITY.

HATCH INDICATES (E) FLOOR TO BE STRENGTHENED & REPAIRED



1 S3.0 **ROOF FRAMING PLAN-AREA "A"**
1/8"= 1'-0"

IF THIS BAR DOES NOT MEASURE 1-INCH IN LENGTH, THEN THE DRAWING IS NOT TO SCALE

NO.	REVISIONS	BY	DATE

IMBLER SCHOOL DISTRICT

IMBLER HIGH SCHOOL SRG

ZS ENGINEERING
524 Main Street - Suite 02, Oregon City, OR 97045
tel (503) 699-4233

PROJECT NO:	P-2127-16
DRAWN:	AAL
CHECKED:	ZAS
DATE:	07-27-16

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
OREGON JULY 16, 1996 ZACHARY C. CARTER
EXPIRES: 12-31-17

PRELIMINARY - NOT FOR CONSTRUCTION

ROOF FRAMING-AREA "A"

S3.0

S3.1

ROOF FRAMING-AREA "B"

IF THIS BAR DOES NOT MEASURE 1-INCH IN LENGTH, THEN THE DRAWING IS NOT TO SCALE

NO.	DATE	BY
1		
REVISIONS		

IMBLER HIGH SCHOOL SRG

IMBLER SCHOOL DISTRICT

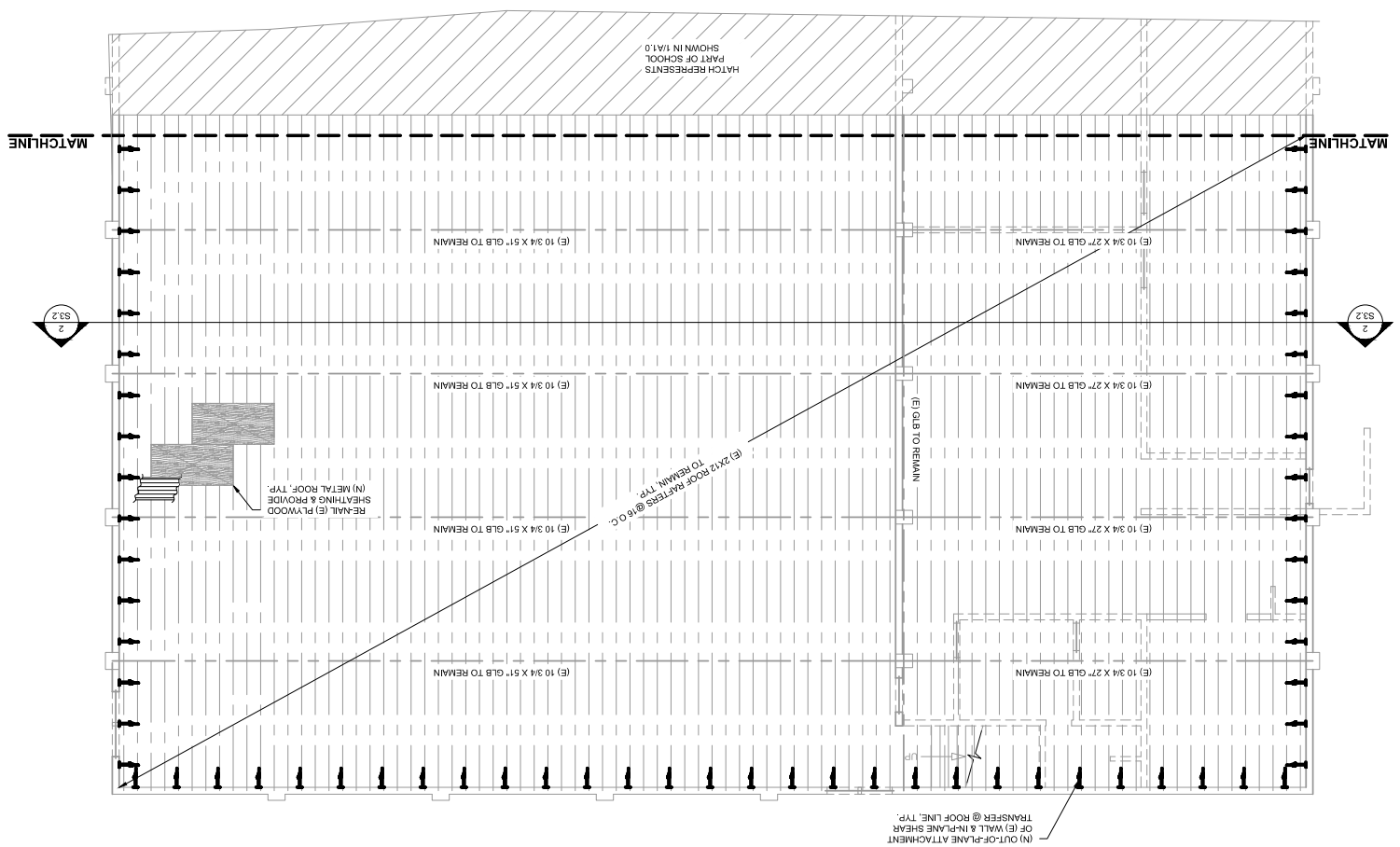
ENGINEERING
524 Main Street - Suite 02, Oregon City, OR 97045
ph (503) 656-3290 www.
fx (503) 656-4338

PROJECT NO:	P-2127-16
DRAWN:	AAL
CHECKED:	ZAS
DATE:	01-27-16

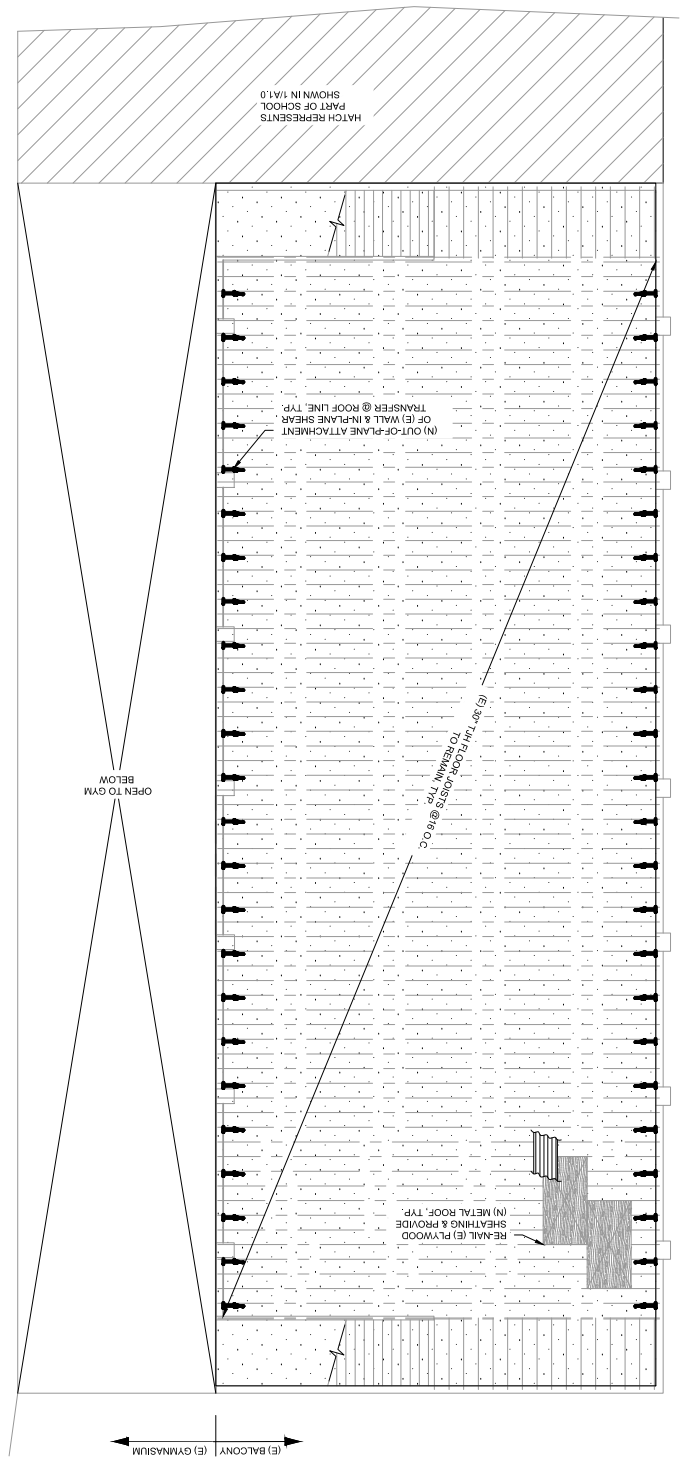
REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 16, 1996
ZACHARY A. SCHELL
EXPIRES: 12-31-17

PRELIMINARY - NOT FOR CONSTRUCTION

1 FLOOR PLAN-AREA "B" — 1/8"= 1'-0"



2 BALCONY FLOOR FRAMING PLAN — 1/8"= 1'-0"

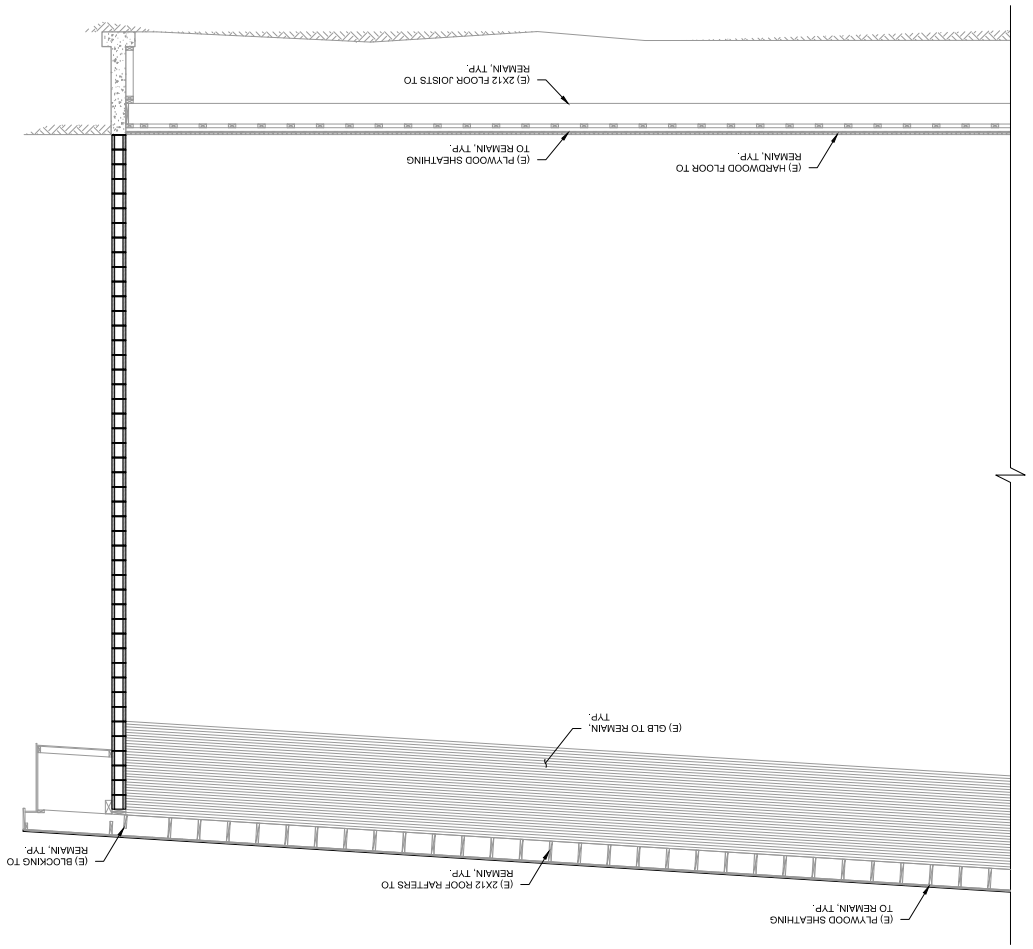


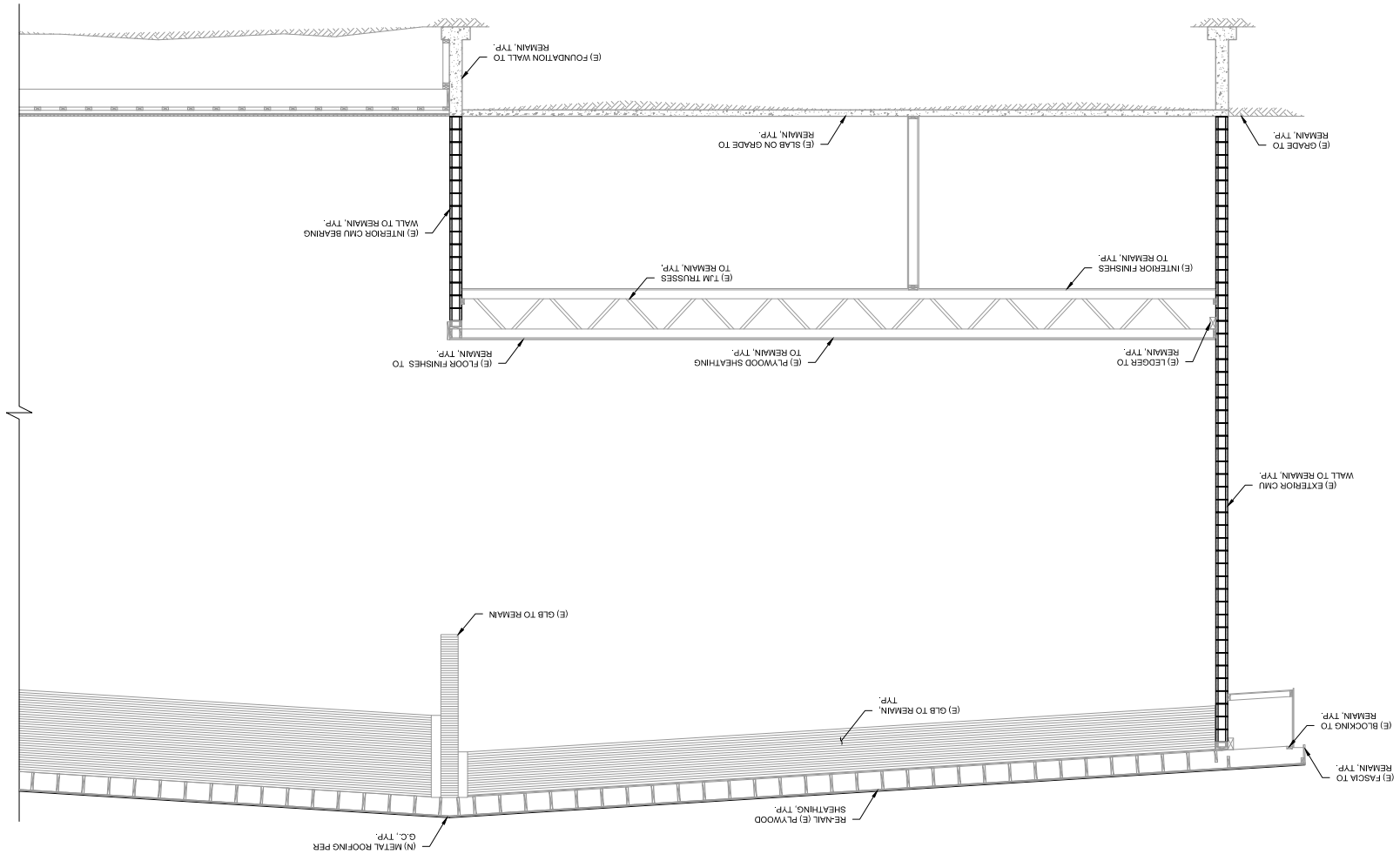
HATCH KEY:

HATCH INDICATES (N) OMU SHEAR WALLS

HATCH INDICATES (N) SHEAR WALL ON ONE SIDE OF (E) WALL TO PROVIDE LATERAL STABILITY.

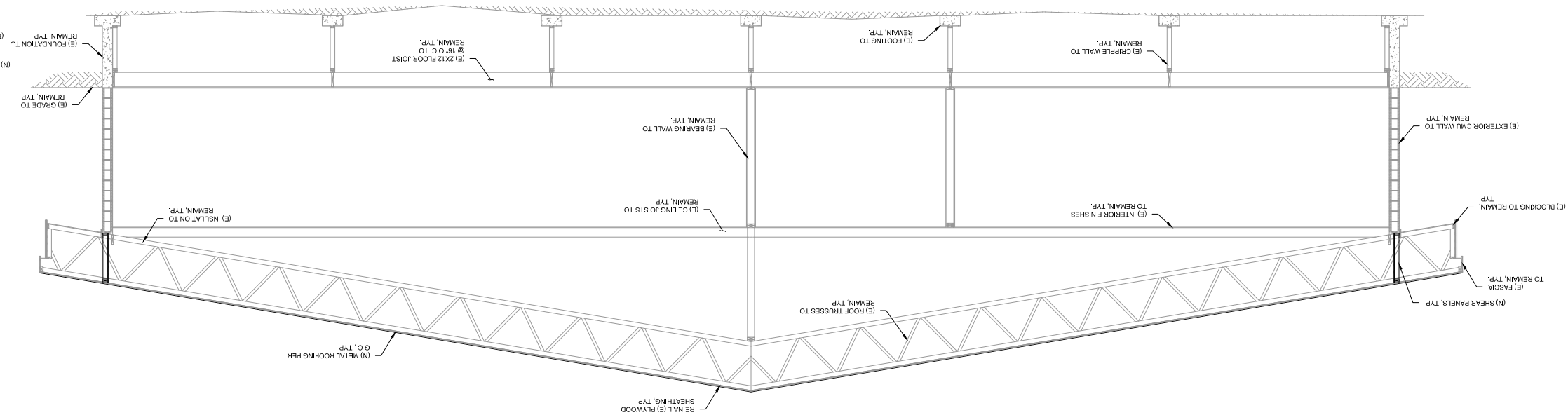
HATCH INDICATES (E) FLOOR TO BE STRENGTHENED & REPAIRED





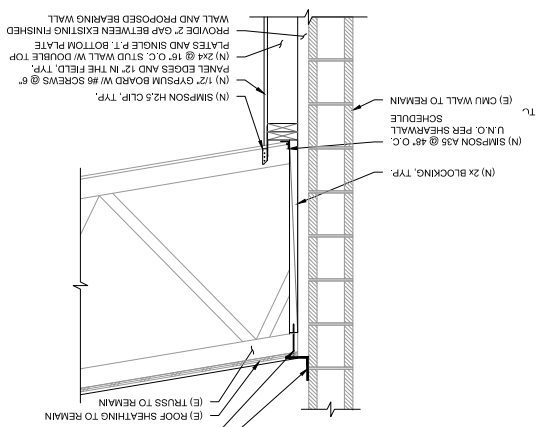
GYMNASIUM SECTION

3 S3.2 — 1/4"= 1'-0"



TYP. CLASSROOM SECTION

1 S3.2 — 1/4"= 1'-0"



SEISMIC ISOLATION JOINT

2 S3.2 — 3/4"= 1'-0"

ENGINEERING
524 Main Street - Suite 02, Oregon City, OR 97045
(503) 656-2629 phone
ax (503) 656-2433

PROJECT NO: P-2127-16
DRAWN: AAL
CHECKED: ZAS
DATE: 01-27-16

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 16, 1996
ZACHARY A. SMITH
EXPIRES: 12-31-17

PRELIMINARY - NOT FOR CONSTRUCTION

SECTION/DETAILS

S3.2

IMBLER SCHOOL DISTRICT

IMBLER HIGH SCHOOL SRG

IF THIS BAR DOES NOT MEASURE 1-INCH IN LENGTH, THEN THE DRAWING IS NOT TO SCALE

0" 1/2" 1"