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: Dallas 2
County: POLK
Contact Name: Kevin Montague
Contact Email: kevin.montague@dsd2.org

Structures Replaced? No
Name and Address:
Kind of Structure:
Type of Replacement:
Max Occupancy:
Date Occupied:

Structures Modified? Yes
Name and Address: Lyle Elementary School
Kind of Structure: New addition was constructed infilling two different wings of existing school on southwest side.
Type of Modification: See Notes.
Date Re-occupied: 2/5/2018

Optional:
Engineering Report? No *If yes, attachments are appended to this report.*
Cost of Rehab: Total project cost of approximately $3M. Seismic portion not separated out as it was a portion of the entire overall project.
Method of Funding: Local maintenance bond

Notes: New kitchen and multi-purpose room constructed between existing gymnasium and south wing. Construction methods were done to current seismic codes and tied to existing building creating better shear lines thus improving seismic risk of the rest of the building.

Submission Date: 08/09/18

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: Dallas 2
County: POLK
Contact Name: Kevin Montague
Contact Email: kevin.montague@dsd2.org

Structures Replaced? No
Name and Address:
Kind of Structure:
Type of Replacement:
Max Occupancy:
Date Occupied:

Structures Modified? Yes
Name and Address: Oakdale Heights Elementary, 1375 SW Maple St., Dallas, OR 97338
Kind of Structure: Covered play area connecting two wings.
Type of Modification: See Notes.
Date Re-occupied: 8/27/2018

Optional:
Engineering Report? No *If yes, attachments are appended to this report.*
Cost of Rehab: Total project costs of approximately $3M. Seismic portion not separated out as they were done as a part of the overall project.
Method of Funding: Local maintenance bond.

Notes: Converted space into new kitchen and multi-purpose room. Removed existing unreinforced brick from multiple areas during construction. All new construction areas and ties to existing building were done to current seismic code which will enhance existing building seismic risk category.

Submission Date: 08/09/18

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: Dallas 2
County: POLK
Contact Name: Kevin Montague
Contact Email: kevin.montague@dsd2.org

Structures Replaced? No
Name and Address:
Kind of Structure:
Type of Replacement:
Max Occupancy:
Date Occupied:

Structures Modified? Yes
Name and Address: Whitworth Elementary School, 1151 SE Miller, Dallas, OR 97338
Kind of Structure: Gymnasium

Type of Modification: Complete seismic upgrade to meet the recommendations per the attached report by ZCS Engineering to bring gymnasium to life safety standards.

Date Re-occupied: 8/27/2018

Optional:

Engineering Report? Yes *If yes, attachments are appended to this report.*

Cost of Rehab: $700,160

Method of Funding: Grant from Seismic Rehabilitation Grant Program.

Notes:

Submission Date: 08/09/18

Structural Seismic Evaluation Report

for the

Whitworth Elementary Gymnasium

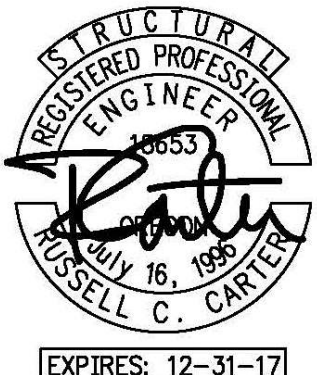
Prepared for:

Dallas School District

December, 2016

Prepared by:

Matthew R. Smith, PE, SE
Project Manager
and
Russell C. Carter, PE, SE
Principal in Charge



ZCS ENGINEERING Inc.

900 Klamath Avenue, Klamath Falls, Oregon, 97601

T: 541.884.7421 • F: 541.883.8804

Table of Contents

1.0 Executive Summary

The Dallas School District is located in Dallas Oregon in Polk County. The District operates 6 Schools located within the community including the property of interest, Whitworth Elementary approximately 2 miles West of Dallas Oregon. District has retained ZCS Engineering, Inc. (ZCS) to perform a seismic evaluation of Whitworth Elementary 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".

Whitworth Elementary is located at 1151 SE Miller Ave. in Dallas Oregon. Whitworth ES is a single story conventionally framed structure approaching 50,000 sf in floor area. Several additions have been made to this facility over the years. Area B, as designated in the DOGAMI RVS Report, is the 1994 gymnasium addition. The gymnasium will be the focus of this evaluation. This portion of the building is approximately 8,500 sf in size. The school is a K-6 facility in Dallas, Oregon that supports approximately 400-500 students and staff during the school year.

The gymnasium addition consists of a plywood diaphragm that is supported by 2X roof joists. The roof joists are subsequently supported by glulam beams that bear on precast concrete tilt-up walls supported by continuous footings.

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:

- Tilt-up concrete shear walls are not properly attached to the roof diaphragm for in-plane and out-of-plane loading.
- The glulam beams are not properly attached to the precast walls to act as a continuous tie.
- The roof structure lacks continuous cross ties in the longitudinal direction.
- The gym roof is taller than lower school roof. This creates a vertical irregularity. This vertical irregularity could result in pounding. The pounding effects increase the buckling loads on the walls.

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 local construction company representative a total construction cost of **$700,160.00** 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 **0.551**. 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

Dallas School District is centrally located in Dallas, Oregon in Polk County. Whitworth is located at 1151 SE Miller Ave.in Dallas Oregon.

The District has retained ZCS Engineering, Inc. (ZCS) to perform a seismic evaluation of Whitworth Elementary. 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 Kevin Montague 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 Whitworth Elementary.

Whitworth Elementary is located at 1151 SE Miller Ave. in Dallas Oregon. Whitworth ES is a single story conventionally framed structure approaching 50,000 sf in floor area. Several additions have been made to this facility over the years. Area B, as designated in the DOGAMI RVS Report, is the 1994 gymnasium addition. The gymnasium will be the focus of this evaluation. This portion of the building is approximately 8,500 sf in size. The school is a K-6 facility in Dallas, Oregon that supports approximately 400-500 students and staff during the school year.

The gymnasium addition consists of a plywood diaphragm that is supported by 2X roof joists. The roof joists are subsequently supported by glulam beams that bear on precast concrete tilt-up walls supported by continuous footings.

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 3.3.3 outlines the existing gravity system and its structural deficiencies found during the evaluation.

3.3.1 Lateral Resisting Systems

After reviewing the facility and the existing drawings we have determined the lateral system is defined as Precast or Tilt-up Concrete Shear Walls (PC1). Per ASCE 41 a PC1 lateral system is defined as:

Precast or Tilt-up Concrete Shear Walls (PC1): These buildings have precast concrete perimeter wall panels that are typically cast on-site and tilted into place. Floor and roof framing consists of wood joists, glulam beams, steel beams, or open web joists. Framing is supported on interior steel or wood columns and perimeter concrete bearing walls. The floors and roof consist of wood sheathing or untopped metal deck. Seismic forces are resisted by the precast concrete perimeter wall panels. Wall panels may be solid or have large window and door openings that cause the panels to behave more as frames than as shear walls. In older construction, wood framing is attached to the walls with wood ledgers. The foundation system may consist of a variety of elements.

3.3.2 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.

- Tilt-up concrete shear walls are not properly attached to the roof diaphragm for in-plane and out-of-plane loading.

- The glulam beams are not properly attached to the precast walls to act as a continuous tie.
- The roof structure lacks continuous cross ties in the longitudinal direction.
- The gym roof is taller than lower school roof. This creates a vertical irregularity. This vertical irregularity could result in pounding. The pounding effects increase the buckling loads on the walls.

3.3.3 Gravity Resisting Systems and General Observations

The following gravity resisting deficiencies are based on visual observations of the existing structural elements. No formal structural analysis was performed during this evaluation of the gravity resisting elements.

- The gravity resisting system was found to be in good general condition based on the visual observations performed

3.3.4 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.)
- 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 3.3. 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.

- The tops of the perimeter concrete tilt-up walls in the gymnasium need to be properly attached to the roof diaphragm for out-of-plane loading.
- Provide blocking, clipping and nailing connections along top of walls to establish adequate connection between top of wall and diaphragm
- Provide strapping between joists at intersecting beam lines to provide continuous cross ties.
- Provide seismic isolation joint between the gymnasium building and classroom building. As part of a previous seismic rehabilitation project a seismic isolation joint is slated to be installed to separate the main classroom wings from the gym.
- All piping and HVAC equipment found throughout the building shall be properly braced and attached to the structure to limit the potential damage.
- The brick veneer over the exit doors will be attached to the wood walls to minimize the falling hazard.

5.0 Preliminary Construction Cost Estimate

The attached engineer's opinion of probable cost has been developed by ZCS for Whitworth Elementary. 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 **$700,160**

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 BCA for this project is **0.551**. Given the BCA score of **0.551** is less than 1.0, we still recommend the proposed seismic retrofit and feel this building is a great candidate for the grant given its importance to the community it serves.

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.

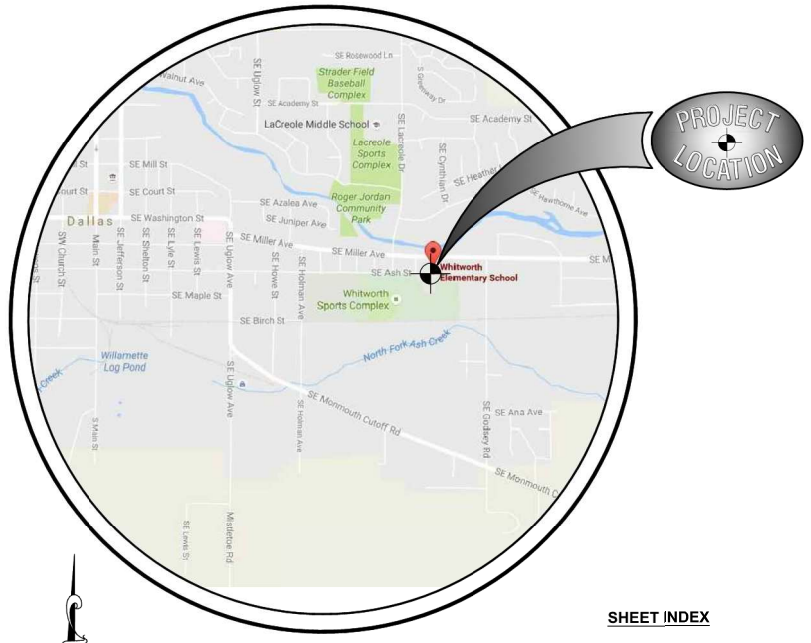
Please contact our office if you would like to discuss our findings. Please review the attached schematic drawings that can be used to refine a scope and budget.

Appendix A: Figures

WHITWORTH ELEMENTARY GYMNASIUM
SEISMIC RETROFIT

1151 SE MILLER AVE, DALLAS, OR 97338

1 C0.0 **MAIN ENTRANCE** NTS



2 C0.0 **VICINITY MAP** NTS

SHEET INDEX

3 C0.0 **STREET VIEW** NTS

4 C0.0 **AERIAL VIEW** NTS

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

-TILT-UP CONCRETE SHEAR WALLS ARE NOT PROPERLY ATTACHED TO THE ROOF DIAPHRAGM FOR IN-PLANE AND OUT-OF-PLANE LOADING.
-THE GLULAM BEAMS ARE NOT PROPERLY ATTACHED TO THE PRECAST WALLS TO ACT AS A CONTINUOUS TIE.
-THE ROOF STRUCTURE LACKS CONTINUOUS CROSS TIES IN THE LONGITUDINAL DIRECTION.
-THE GYM ROOF IS TALLER THAN LOWER SCHOOL ROOF. THIS CREATES A VERTICAL IRREGULARITY. THIS VERTICAL IRREGULARITY COULD RESULT IN POUNDING. THE POUNDING EFFECTS INCREASE THE BUCKLING LOADS ON THE WALLS.

REHABILITATION RECOMMENDATIONS

-THE TOPS OF THE PERIMETER CONCRETE TILT-UP WALLS IN THE GYMNASIUM NEED TO BE PROPERLY ATTACHED TO THE ROOF DIAPHRAGM FOR OUT-OF-PLANE LOADING.
-PROVIDE BLOCKING, CLIPPING AND NAILING CONNECTIONS ALONG TOP OF WALLS TO ESTABLISH ADEQUATE CONNECTION BETWEEN TOP OF WALL AND DIAPHRAGM
-PROVIDE STRAPPING BETWEEN JOISTS AT INTERSECTING BEAM LINES TO PROVIDE CONTINUOUS CROSS TIES.
-PROVIDE SEISMIC ISOLATION JOINT BETWEEN THE GYMNASIUM BUILDING AND CLASSROOM BUILDING. AS PART OF A PREVIOUS SEISMIC REHABILITATION PROJECT A SEISMIC ISOLATION JOINT IS SLATED TO BE INSTALLED TO SEPARATE THE MAIN CLASSROOM WINGS FROM THE GYM.
-ALL PIPING AND HVAC EQUIPMENT FOUND THROUGHOUT THE BUILDING SHALL BE PROPERLY BRACED AND ATTACHED TO THE STRUCTURE TO LIMIT THE POTENTIAL DAMAGE.
-THE BRICK VENEER OVER THE EXIT DOORS WILL BE ATTACHED TO THE WOOD WALLS TO MINIMIZE THE FALLING HAZARD.

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

NO.	REVISIONS	BY	DATE
1			

DALLAS SCHOOL DISTRICT
WHITWORTH ELEMENTARY
GYMNASIUM SRG
1151 SE MILLER AVE,
DALLAS, OREGON 97338

ZCS ENGINEERING
524 Main Street - Suite 02, Oregon City, OR 97045
ph: (503) 699-2333 fax: (503) 699-2433

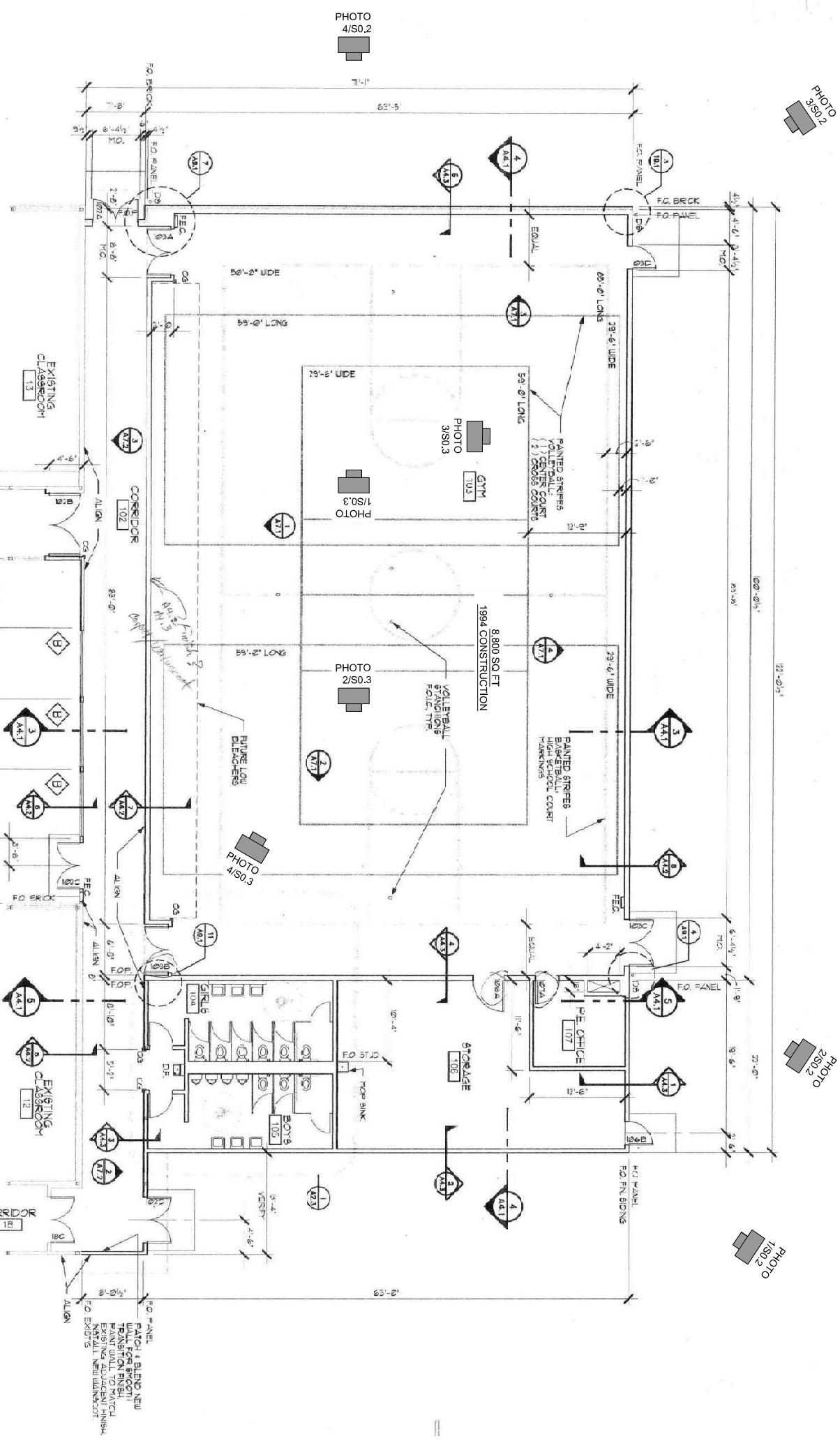
PROJECT NO: P-2159-16
DRAWN: JAG
CHECKED: MRS
DATE: 12-13-16

REGISTERED PROFESSIONAL ENGINEER
OREGON
NOVEMBER 16, 1996
M. C. CARTER
-PRELIMINARY-
NOT FOR CONSTRUCTION
EXPIRES: 12-31-17

COVER SHEET

C0.0

FOR AGENCY REVIEW / NOT FOR CONSTRUCTION



1 S0.1 **FLOOR PLAN**

1/8" = 1'-0"

S0.1

FLOOR PLAN

PRELIMINARY - NOT FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER — OREGON — JULY 16, 1996 — J. C. CARTER

EXPIRES: 12-31-17

PROJECT NO:	P-2159-16
DRAWN:	JAG
CHECKED:	MRS
DATE:	12-13-16

ZCS ENGINEERING

524 Main Street - Suite 02, Oregon City, OR 97045

(503) 659-2205 phone fax (503) 659-2433

DALLAS SCHOOL DISTRICT

WHITWORTH ELEMENTARY
GYMNASIUM SRG
1151 SE MILLER AVE,
DALLAS, OREGON 97338

NO.	REVISIONS	BY	DATE

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

FOR AGENCY REVIEW / NOT FOR CONSTRUCTION

1 S0.2 **PHOTO** NTS

2 S0.2 **PHOTO** NTS

3 S0.2 **PHOTO** NTS

4 S0.2 **PHOTO** NTS

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

NO.	REVISIONS	BY	DATE

DALLAS SCHOOL DISTRICT

WHITWORTH ELEMENTARY
GYMNASIUM SRG
1151 SE MILLER AVE,
DALLAS, OREGON 97338

ZCS ENGINEERING
524 Main Street - Suite 02, Oregon City, OR 97045
(503) 659-2205 phone (503) 659-2433 fax

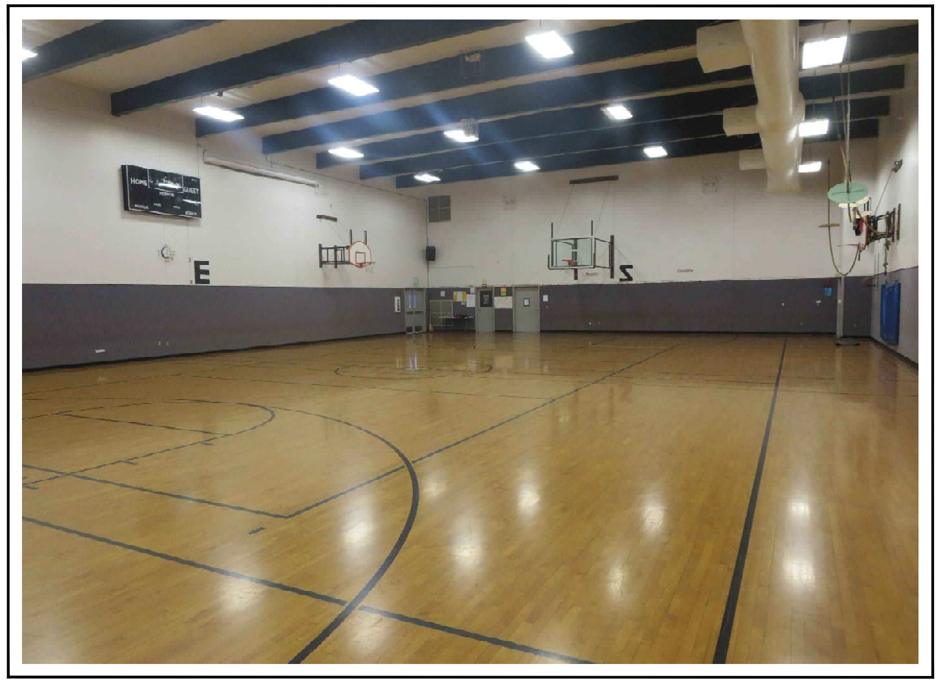
PROJECT NO:	P-2159-16
DRAWN:	JAG
CHECKED:	MRS
DATE:	12-12-16

-PRELIMINARY-
NOT FOR CONSTRUCTION
EXPIRES: 12-31-17

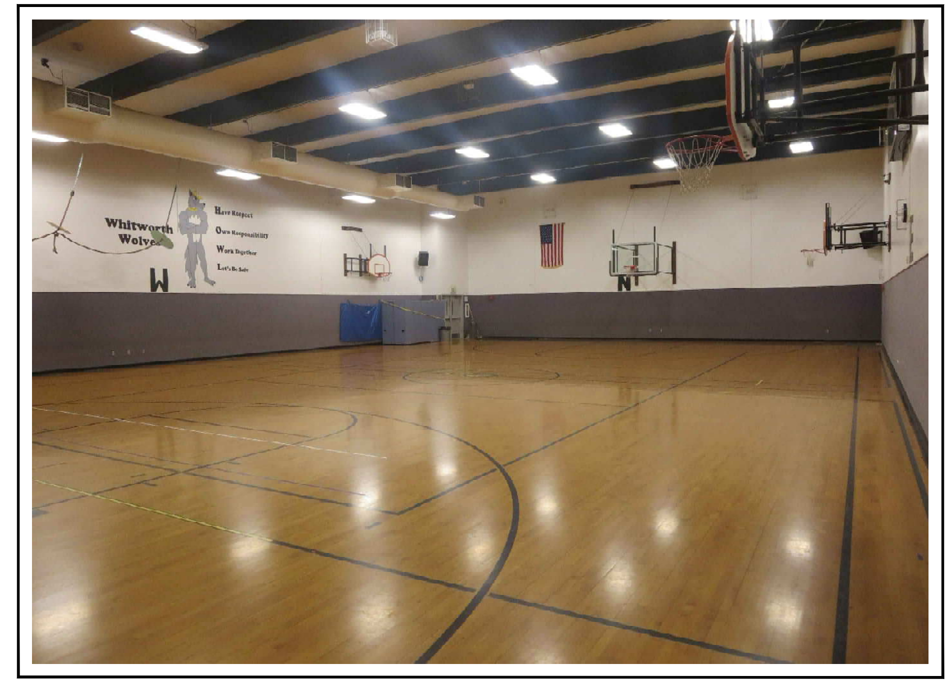
EXTERIOR PHOTOS

S0.2

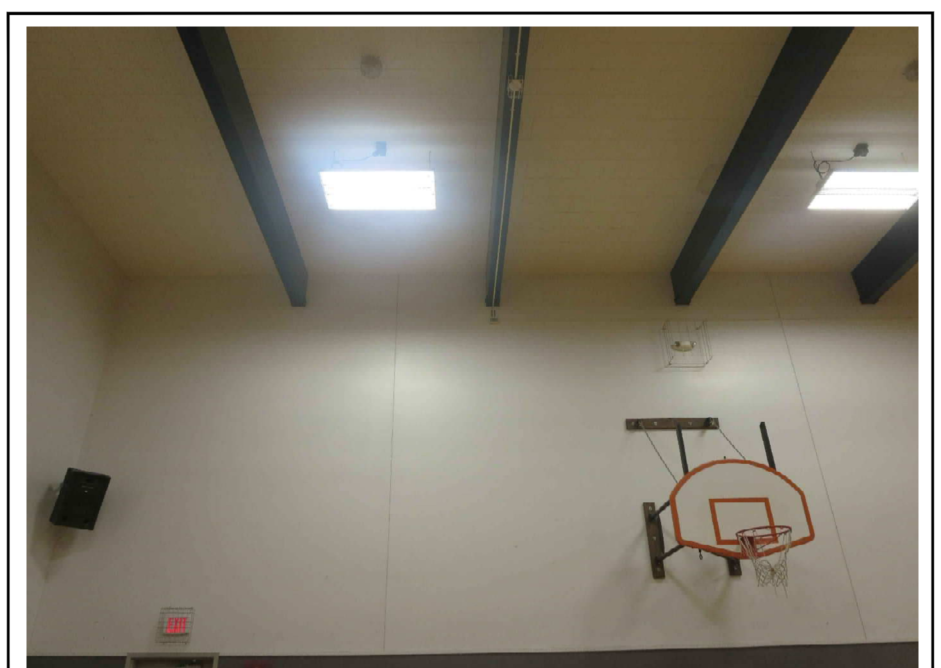
FOR AGENCY REVIEW / NOT FOR CONSTRUCTION



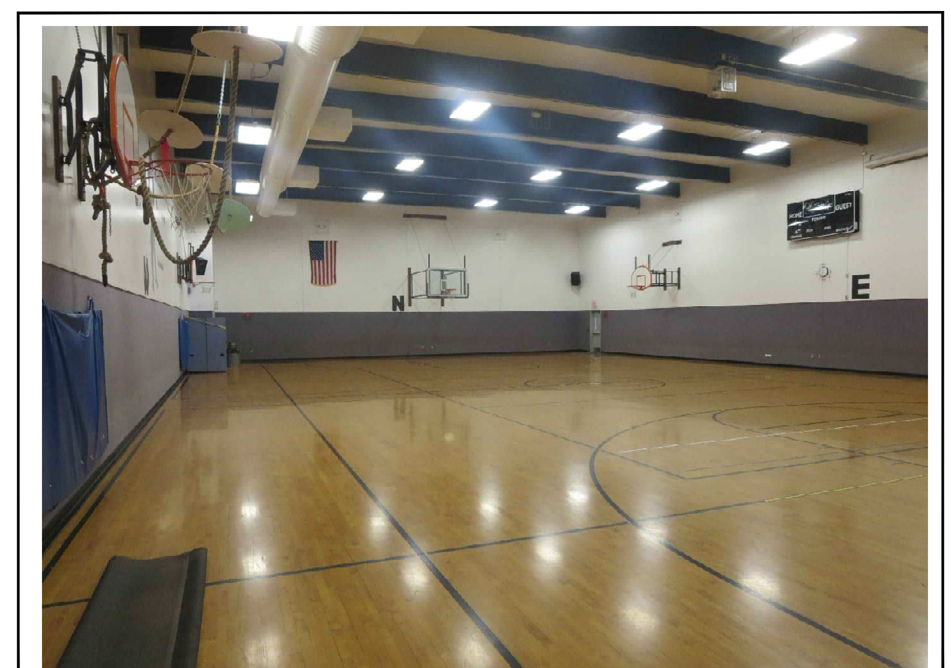
1 / S0.3 **PHOTO** NTS



2 / S0.3 **PHOTO** NTS



3 / S0.3 **PHOTO** NTS



4 / S0.3 **PHOTO** NTS

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

NO.	REVISIONS	BY	DATE

DALLAS SCHOOL DISTRICT

WHITWORTH ELEMENTARY
GYMNASIUM SRG
1151 SE MILLER AVE,
DALLAS, OREGON 97338

ZCS ENGINEERING
524 Main Street - Suite 02, Oregon City, OR 97045
(503) 659-2205 phone (503) 659-2433 fax

PROJECT NO:	P-2159-16
DRAWN:	JAG
CHECKED:	MRS
DATE:	12-13-16

-PRELIMINARY- NOT FOR CONSTRUCTION
EXPIRES: 12-31-17

INTERIOR PHOTOS

S0.3

FOR AGENCY REVIEW / NOT FOR CONSTRUCTION

Appendix B: Structural Tier 1 Check Sheets

Project: WHITWORTH GYM - P2159 Location: PDX

Completed by: MSB Date: 11/17/16

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)

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)

USGS Design Maps Summary Report

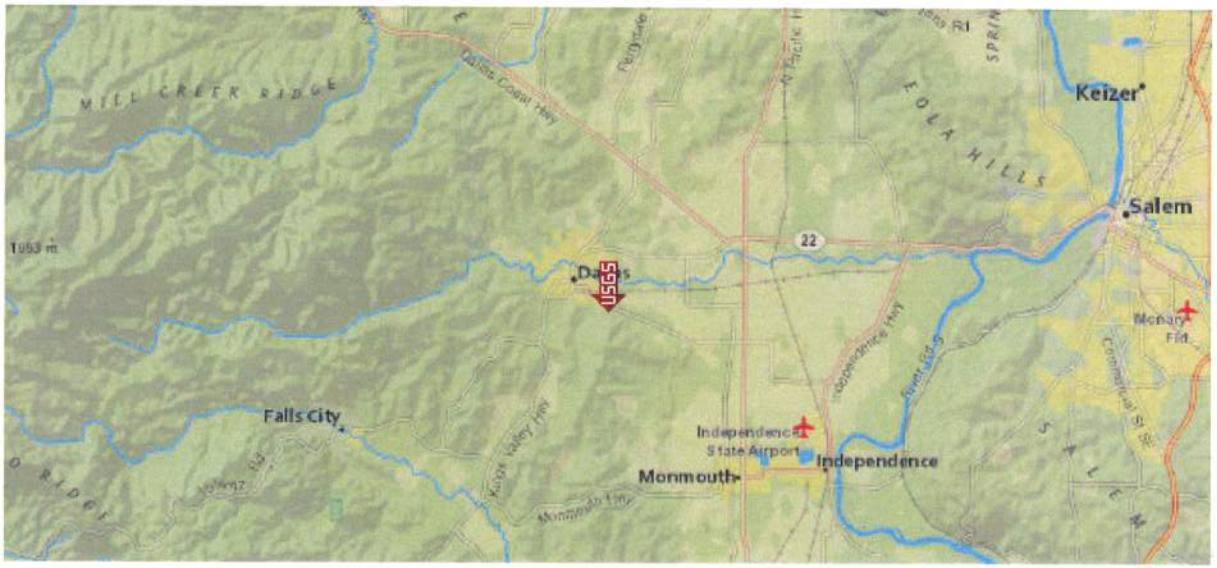
User–Specified Input

Report Title Whitworth Gym
Thu November 17, 2016 20:15:55 UTC

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

Site Coordinates 44.91788°N, 123.29854°W

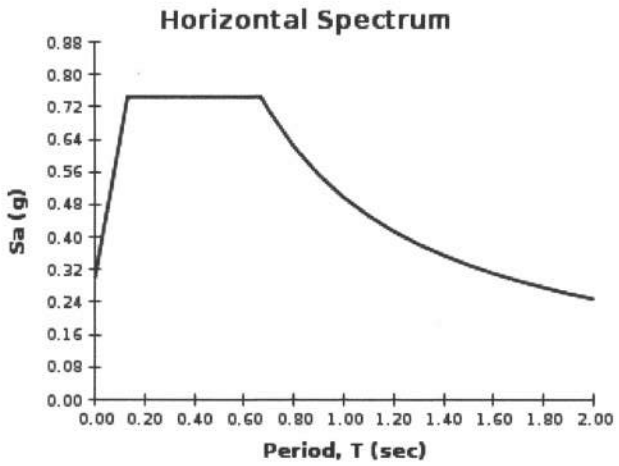
Site Soil Classification Site Class D – "Stiff Soil"

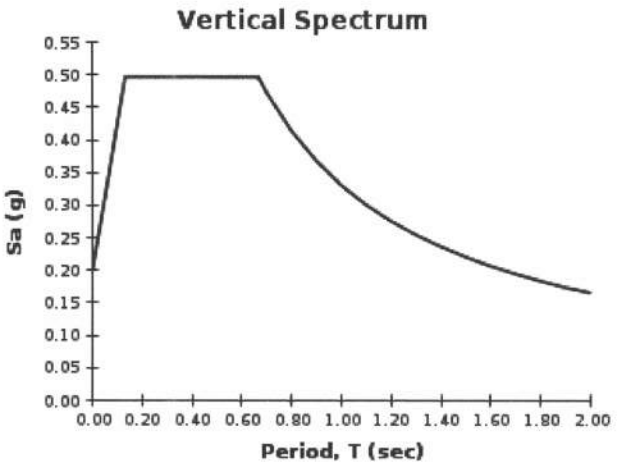


USGS–Provided Output

(haz) $S_{XS,BSE-1N}$ 0.745 g (0.75) = 0.559 g

(vert) $S_{X1,BSE-1N}$ 0.497 g (0.75) = 0.373 g





Although this information is a product of the U.S. Geological Survey, we provide no warranty, expressed or implied, as to the accuracy of the data contained therein. This tool is not a substitute for technical subject-matter knowledge.

ZCS ENGINEERING Inc.

CLIENT Dallas School District
PROJECT P2159-16
NO.
BY MSB DATE SHEET OF

Grants Pass • Klamath Falls • Medford • Oregon City
www.ZCSengineering.com

TIER 1

LIFE SAFETY (3-C) ASCE 41-13

LEVEL OF SEISMICITY $S_s = 0.559g$, $S_1 = 0.373g$

$S_{DC} = 2/3 F_a S_s$, F_a (ASCE 41-13 TABLE 2-3) = 1.353
$S_{D1} = 2/3 F_v S_1$, F_v (ASCE 41-13 TABLE 2-4) = 1.654

$S_{DS} = 2/3(1.353)(0.559) = 0.504$
$S_{D1} = 2/3(1.654)(0.373) = 0.411$

ASCE 41-13 TABLE 2-5
↳ HIGH SEISMICITY (S_{DS} & S_{D1})

PSEUDO-SEISMIC FORCE: $V = C S_a W$ $S_a = \frac{S_{X1}}{T}$, $C = 1.0$

$T = C_t (h_n)^{\beta}$ (ASCE 41-13 EQN 4-5)

$C_t = 0.20$, $h_n = 25.083'$, $\beta = 0.75$

$T = (0.02)(25.083')^{(0.75)} = 0.224s$

$S_a = 0.373g / 0.224s = 1.665$ $S_{XS} = 0.559g$

$S_a = 0.559g$

BUILDING WEIGHT:

$A_{GYM} = 6,300$ SF

ROOF DL:

JOISTS	2 x 6 @ 16 O.C. = 1.7 psf	= 10,710 lbs
GLULAMS	6 3/4 x 36 @ 9' O.C = 59.1 plf x 63' = 3723.3 lbs x 10	= 37,233 lbs
3/4" Plywood	2.3 psf	= 14,490 lbs
5/8" Gypsum	2.75 psf	= 17,325 lbs

Project: WHITWORTH GYM Location: PDX

Completed by: MSB Date: 11/17/16

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 closure 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)

Appendix C: Construction Cost Estimate Worksheets

ENGINEER'S OPINION OF PROBABLE COST - WHITWORTH ELEMENTARY SCHOOL GYM SEISMIC REHABILITATION

Description	Quanity	Units	Unit Price	Total Price for Construction Item
GENERAL CONDITIONS				
General Conditions	6%	%		$23,200.00
Preconstruction Services	1%	%		$4,100.00
Safety Measures	0.5%	%		$2,100.00
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	8700	Square Foot	$ 0.35	$3,000.00
Foundation Layou		Square Foot	$ 0.40	$0.00
Wall Framing Layout		Square Foot	$ 0.25	$0.00
Roofing Framing Layou	8700	Square Foot	$ 0.50	$4,350.00
Interior Finishes Layou	8700	Square Foot	$ 0.50	$4,350.00
Escalation	3%	%		$12,500.00
Bonding & Insurance	3%	%		$12,500.00
Contractor Profit & Overhead	6%	%		$26,600.00
		General Conditons Subtotal		$132,300.00
Demolition & Asbestos Abatement				
Soft Demolition	8700	Square Foot	$ 3.00	$26,100.00
		Demolition & Asbestos Subtotal		$ 26,100.00
Foundation / Floor Strengthening Construction				
Flooring Protectior	6350	Square Foot	$ 3.00	$19,050.00
Wood Flooring Re-Finish	6350	Square Foot	$ 5.50	$34,925.00
		Foundation Level Subtotal		$ 53,975.00
Wall Strengthening Construction				
Interior Wall Finish Repair	1850	Square Foot	$ 2.00	$3,700.00
Painting of Wall	8700	Square Foot	$ 4.00	$34,800.00
		Wall Strengthening Subtotal		$ 38,500.00
Roof Strengthening Construction				
Diaphragm Attachments - Out-of-Plane	460	Lineral Foot	$ 50.00	$23,000.00
Diaphragm Attachments - In-Plane Shea	2300	Square Foot	$ 3.00	$6,900.00
Ceiling Repair	8700	Square Foot	$ 3.00	$26,100.00
New 60 mil self-adherring TPO roof membrane	8700	Square Foot	$ 18.00	$156,600.00
Seismic Isolation from Adjacent Building	120	Lineral Foot	$ 125.00	$15,000.00
		Roof Strengthening Subtotal		$ 227,600.00
Miscellaneous Elements				
Misc Electrical / HVAC / Plumbing	1	Lump Sum	$15,000.00	$15,000.00
		Miscellaneous Subtotal		$ 15,000.00
		Sub-Total Construction Cost		$493,500.00
		Contingency	16.0%	$78,960.00
		Total Construction Cost		$572,460.00
Associated Design / Soft Costs				
Architectural Consulting				$8,600.00
Structural / Rehailitaiton Engineering				$60,100.00
Geotechnical Consulting				$2,900.00
Special Inspection Services for Construction				$2,900.00
Structural Observations during Construction				$2,900.00
Materials Testing for Desigr				$2,900.00
Construction Management / Owner Representatio				$17,200.00
Permitting Fees				$17,200.00
Seismic Feasibility Study Reimbursmen				$5,000.00
Relocation of FF&E				$8,000.00
		Design / Soft Cost Subtotal		$127,700.00
		Total Project Funding Requirement		$700,160.00

Appendix D: Benefit Cost Analysis Worksheets

Oregon Seismic Rehabilitation Grant Application: Benefit-Cost Analysis

Entity:	**Dallas School District**		
Point of Contact	**Kevin Montague**		
Telephone:	**503-623-5594**		
E-Mail:	Kevin.montague@dsd2.orgt		
BCA File Name:	**BCA-Whitworth Elementary.xls**	**BCA Date:**	**12/1/2015**

Building Name:	**Whitworth Elementary**
Site ID:	**Polk_sch12**
Facility Use:	**School**

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

How Many Structurally Different Building Parts Are There?

User-Defined	Database
3	3

Unique Building ID Number	Building Part Square Footage	Percent of Total SF	Percent of Occupancy	Percent of Budget	Building Part Being Retrofitted?
Polk_sch12A	24,800	50.81%	50.82%	50.82%	**No**
Polk_sch12B	8,700	17.82%	17.81%	17.81%	**Yes**
Polk_sch12C	15,310	31.37%	31.37%	31.37%	**No**
Totals:	**48,810**	**100.00%**	**100.00%**	**100.00%**	

Seismic Retrofit Cost Estimate per SRGP Application: **$700,160**

Benefit-Cost Analysis: Summary Results

Whitworth Elementary

Building Part	Benefits
Polk_sch12A	
Polk_sch12B	$386,016
Polk_sch12C	
Total Benefits	**$386,016**
Total Cost	**$700,160**
Benefit-Cost Ratio	**0.551**

Benefits by Category Avoided Damages and Losses	
Building Damage	$32,430
Contents Damage	$8,108
Displacement Costs	$3,949
Loss of Function Costs	$2,235
Casualties	$339,294
Total	**$386,016**

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	10	55	13.604
Monday - Friday	Evening	8	1	0.198
Monday - Friday	Night			
Saturday	Day			
Saturday	Evening			
Saturday	Night			
Sunday	Day			
Sunday	Evening			
Sunday	Night			
			Subtotal:	13.801

Employees: Summer Months			Number of Months:	2
Day of Week	Time of Day	Hours per Day	Average Employees in Building	Calculated 24/7/365 Occupancy
Monday - Friday	Day	9	3	0.134
Monday - Friday	Evening			
Monday - Friday	Night			
Saturday	Day			
Saturday	Evening			
Saturday	Night			
Sunday	Day			
Sunday	Evening			
Sunday	Night			
			Subtotal:	0.134

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	10	60	0.247
Saturday			
Sunday			
	Subtotal:		0.247

Visitors: Summer Months		Number of Months:	2
Day of Week	Average Number of Visitors Per Day	Average Time in Building (Minutes)	Calculated 24/7/365 Occupancy
Monday - Friday	10	60	0.049
Saturday			
Sunday			
	Subtotal:		0.049

K-12 Students: Academic Year	
Average Daily Number of Students:	461
Hours per Day:	7
Days per Year:	170
Calculated 24/7/365 Occupancy:	62.624

K-12 Students: Summer School	
Average Daily Number of Students:	50
Hours per Day:	7
Days per Year:	50
Calculated 24/7/365 Occupancy:	1.998

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
Dallas Basketball As	68	30	4	0.932
Rope Buster Practic	105	100	1.5	1.798
Rope Buster Summe	5	80	1.5	0.068
Church Volleyball	10	50	3	0.171
Club Volleyball	36	20	2	0.164
Wingdingers	40	10	2	0.091
Art Class	30	20	1.5	0.103
Science Fair	1	120	5	0.068
Latchkey	260	40	3	3.562
HS out of season Ba	45	25	2	0.257
HS out of season Ba	45	25	2	0.257
Various presentation	2	60	2	0.027
Boys and Girls night	2	200	2	0.091
Readin	1	180	3	0.062
			Subtotal:	7.652

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	13.801	0.134
Visitors	0.247	0.049
Students: K-12	62.624	1.998
Students: College		
Meetings & Special Events	7.652	N/A
Patients		N/A
Subtotals:	84.325	2.181
Avg 24/7/365 Occupancy:	86.506	

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
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	Totals:	0	0.00	0.0

Academic Year: 1.5 Hour Courses

Course Name	Class Duration (hours)	Number of Class Periods per Week	Average Number of Students per Class	Student Hours per Week
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	Totals:	0	0.00	0.0

Academic Year: 2 Hour Courses

Course Name	Class Duration (hours)	Number of Class Periods per Week	Average Number of Students per Class	Student Hours per Week
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	Totals:	0	0.00	0.0

Academic Year: 3 Hour Courses

Course Name	Class Duration (hours)	Number of Class Periods per Week	Average Number of Students per Class	Student Hours per Week
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	Totals:	0	0.00	0.0

Academic Year: Other / Additional Courses

Course Name	Class Duration (hours)	Number of Class Periods per Week	Average Number of Students per Class	Student Hours per Week
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
	Totals:	0	0.00	0.0

Academic Year: Other / Additional Courses

Course Name	Class Duration (hours)	Number of Class Periods per Week	Average Number of Students per Class	Student Hours per Week
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
	Totals:	0	0.00	0.0

Summer School: 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
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	1			0.0
	Totals:	0	0.00	0.0

Summer School: 1.5 Hour Courses

Course Name	Class Duration (hours)	Number of Class Periods per Week	Average Number of Students per Class	Student Hours per Week
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	1.5			0.0
	Totals:	0	0.00	0.0

Summer School: 2 Hour Courses

Course Name	Class Duration (hours)	Number of Class Periods per Week	Average Number of Students per Class	Student Hours per Week
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	2			0.0
	Totals:	0	0.00	0.0

Summer School: 3 Hour Courses

Course Name	Class Duration (hours)	Number of Class Periods per Week	Average Number of Students per Class	Student Hours per Week
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	3			0.0
	Totals:	0	0.00	0.0

Summer School: Other / Additional Courses

Course Name	Class Duration (hours)	Number of Class Periods per Week	Average Number of Students per Class	Student Hours per Week
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
	Totals:	0	0.00	0.0

Summer School: Other / Additional Courses

Course Name	Class Duration (hours)	Number of Class Periods per Week	Average Number of Students per Class	Student Hours per Week
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
				0.0
	Totals:	0	0.00	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	23	$59,816	60.00%	**$2,201,229**
2	Administration	1	$77,923	60.00%	**$124,677**
3	Other	9.32	$26,021	36.00%	**$329,821**
4					**$0**
5					**$0**
6					**$0**
7					**$0**
8					**$0**
9					**$0**
10					**$0**
	Total Number of FTEs:	**33.32**		**Subtotal:**	**$2,655,727**

[1] FTEs: Full time equivalents

Other Building Expenses

Category		Annual Cost
Supplies		$155,320
Building Maintenance		$28,600
Utilities		$55,000
Insurance		
Rent		
Average Annual Capital Goods		$33,795
OTHER: specify below		
Percent of District Office/Headquarters Annual Operating Budget Attributed to This Building:	7.50%	**$595,311**
If rent is zero (building owned), a proxy rent is calculated automatically, based on the value of the building:		**$854,175**
	Subtotal:	**$1,722,201**

Total Building Annual Operating Budget:	**$4,377,928**

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	$125,000	60.00%	**$200,000**
2	Supt clerical	1	$56,243	60.00%	**$89,989**
3	Business Dept.	5.7	$57,658	60.00%	**$525,841**
4	Special programs supervisor/staff	62.3	$46,776	54.00%	**$4,487,783**
5	Maintenenace Dept.	5	$58,156	60.00%	**$465,248**
6	Director of Instruction/Transportation	1.3	$78,111	60.00%	**$162,471**
7	Tech./Reprographics Dept.	6	$55	60.00%	**$526**
8	Director of Human Resources	1	$101,660	60.00%	**$162,656**
9					**$0**
10					**$0**
	Total Number of FTEs:	**83.30**		**Subtotal:**	**$6,094,513**

District Office/Headquarters Building Expenses

Category		Annual Cost
Supplies		$420,423
Building maintenance		$582,614
Utilities		$113,850
Insurance		$187,550
Rent		
Average Annual Capital Goods		$233,000
OTHER: specify below		
Telephones		$10,142
Enter replacement value of building:	$4,219,835	
If rent is zero (building owned), a proxy rent is calculated		**$295,388**
	Subtotal:	**$1,842,967**

Total Annual Operating Budget for District Office/Headquarters Building:	**$7,937,481**

Building Part A: Data for Benefit-Cost Analysis

Building Name:	**Whitworth Elementary**
Building ID:	**Polk_sch12A**
Building Part Name / Description:	

Evaluation for Building Part A

Seismic Hazard Data		
Region of Seismicity	Moderately High	
PGA Ground Motion (g)	2% in 50 year	0.477
	5% in 50 year	0.341
	10% in 50 year	0.246
	20% in 50 year	0.137
Spectral Accelerations (g)	S_{xs}, 2% in 50 year	1.089
	S_{x1}, 2% in 50 year	0.672
	S_{xs}, 10% in 50 year	0.550
	S_{x1}, 10% in 50 year	0.316

Data Entry Item	User Entered Values	Default Values	Used for BCA
Site Data			
County		Polk	Polk
Decimal Latitude		44.91748	44.91748
Decimal Longitude		123.2982	123.2982
Soil Type	D	C	D
Construction Data			
Primary Structure Type (FEMA 154)		W2	W2
Number of Stories		1	1
Year Built	1956	1975	1956
Rapid Visual Screening Data			
Severe Vertical Irregularity		No	No
Moderate Vertical Irregularity		Yes	Yes
Plan Irregularity		Yes	Yes
Pre-Code	Yes	No	Yes
Post-Benchmark		No	No
Building Data			
Historic Importance		None	None
Historic Adjustment Modifier	N/A	N/A	1.00
Building Square Footage - SF	24,800	N/A	24,800
Building Replacement - $/SF		$250.00	$250.00
Building Replacement Value - $	N/A	N/A	$6,200,000
Historic Building Replacement - $/SF	N/A	N/A	$250.00
Historic Building Replacement Value - $	N/A	N/A	$6,200,000
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	43.96	43.95	43.96
Annual Operating Budget	$2,224,863	$2,224,393	$2,224,863
Seismic Fragility Curves			
Before Mitigation			
Slight Damage State		0.10	0.10
Moderate Damage State		0.16	0.16
Extensive Damage State		0.31	0.31
Complete Damage State		0.50	0.50
Beta		0.66	0.66
After Mitigation			
Retrofit Building Type		W2	W2
Retrofit Performance Objective		LS	LS
Slight Damage State		0.10	0.10
Moderate Damage State		0.16	0.16
Extensive Damage State		0.31	0.31
Complete Damage State		0.50	0.50
Beta		0.66	0.66

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

Building Part B: Data for Benefit-Cost Analysis

Building Name:	**Whitworth Elementary**
Building ID:	**Polk_sch12B**
Building Part Name / Description:	

Evaluation for Building Part B

Seismic Hazard Data		
Region of Seismicity	Moderately High	
PGA Ground Motion (g)	2% in 50 year	0.477
	5% in 50 year	0.341
	10% in 50 year	0.246
	20% in 50 year	0.137
Spectral Accelerations (g)	S_{xs}, 2% in 50 year	1.089
	S_{x1}, 2% in 50 year	0.672
	S_{xs}, 10% in 50 year	0.550
	S_{x1}, 10% in 50 year	0.316

Data Entry Item	User Entered Values	Default Values	Used for BCA
Site Data			
County		Polk	Polk
Decimal Latitude		44.9175	44.9175
Decimal Longitude		123.29721	123.29721
Soil Type	D	C	D
Construction Data			
Primary Structure Type (FEMA 154)	PC1	PC1	PC1
Number of Stories		1	1
Year Built	1994	1975	1994
Rapid Visual Screening Data			
Severe Vertical Irregularity		No	No
Moderate Vertical Irregularity	Yes	No	Yes
Plan Irregularity		No	No
Pre-Code		No	No
Post-Benchmark		No	No
Building Data			
Historic Importance		None	None
Historic Adjustment Modifier	N/A	N/A	1.00
Building Square Footage - SF	8,700	N/A	8,700
Building Replacement - $/SF		$250.00	$250.00
Building Replacement Value - $	N/A	N/A	$2,175,000
Historic Building Replacement - $/SF	N/A	N/A	$250.00
Historic Building Replacement Value - $	N/A	N/A	$2,175,000
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	15.41	15.42	15.41
Annual Operating Budget	$779,709	$780,331	$779,709
Seismic Fragility Curves			
Before Mitigation			
Slight Damage State		0.17	0.17
Moderate Damage State		0.22	0.22
Extensive Damage State		0.41	0.41
Complete Damage State		0.66	0.66
Beta		0.66	0.66
After Mitigation			
Retrofit Building Type		PC1	PC1
Retrofit Performance Objective		LS	LS
Slight Damage State		0.18	0.18
Moderate Damage State		0.28	0.28
Extensive Damage State		0.55	0.55
Complete Damage State		0.93	0.93

Beta		0.62	0.62

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

Building Part C: Data for Benefit-Cost Analysis

Building Name:	**Whitworth Elementary**
Building ID:	**Polk_sch12C**
Building Part Name / Description:	

Evaluation for Building Part C

Seismic Hazard Data		
Region of Seismicity	Moderately High	
PGA Ground Motion (g)	2% in 50 year	0.477
	5% in 50 year	0.341
	10% in 50 year	0.246
	20% in 50 year	0.137
Spectral Accelerations (g)	S_{xs}, 2% in 50 year	1.089
	S_{x1}, 2% in 50 year	0.672
	S_{xs}, 10% in 50 year	0.550
	S_{x1}, 10% in 50 year	0.316

Data Entry Item	User Entered Values	Default Values	Used for BCA
Site Data			
County		Polk	Polk
Decimal Latitude		44.91725	44.91725
Decimal Longitude		123.29786	123.29786
Soil Type	D	C	D
Construction Data			
Primary Structure Type (FEMA 154)		W2	W2
Number of Stories		1	1
Year Built	1964	1975	1964
Rapid Visual Screening Data			
Severe Vertical Irregularity		No	No
Moderate Vertical Irregularity		Yes	Yes
Plan Irregularity		Yes	Yes
Pre-Code	Yes	No	Yes
Post-Benchmark		No	No
Building Data			
Historic Importance		None	None
Historic Adjustment Modifier	N/A	N/A	1.00
Building Square Footage - SF	15,310	N/A	15,310
Building Replacement - $/SF		$250.00	$250.00
Building Replacement Value - $	N/A	N/A	$3,827,500
Historic Building Replacement - $/SF	N/A	N/A	$250.00
Historic Building Replacement Value - $	N/A	N/A	$3,827,500
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	27.14	27.13	27.14
Annual Operating Budget	$1,373,356	$1,373,204	$1,373,356
Seismic Fragility Curves			
Before Mitigation			
Slight Damage State		0.10	0.10
Moderate Damage State		0.16	0.16
Extensive Damage State		0.31	0.31
Complete Damage State		0.50	0.50
Beta		0.66	0.66
After Mitigation			
Retrofit Building Type		W2	W2
Retrofit Performance Objective		LS	LS
Slight Damage State		0.10	0.10
Moderate Damage State		0.16	0.16
Extensive Damage State		0.31	0.31
Complete Damage State		0.50	0.50

Beta		0.66	0.66

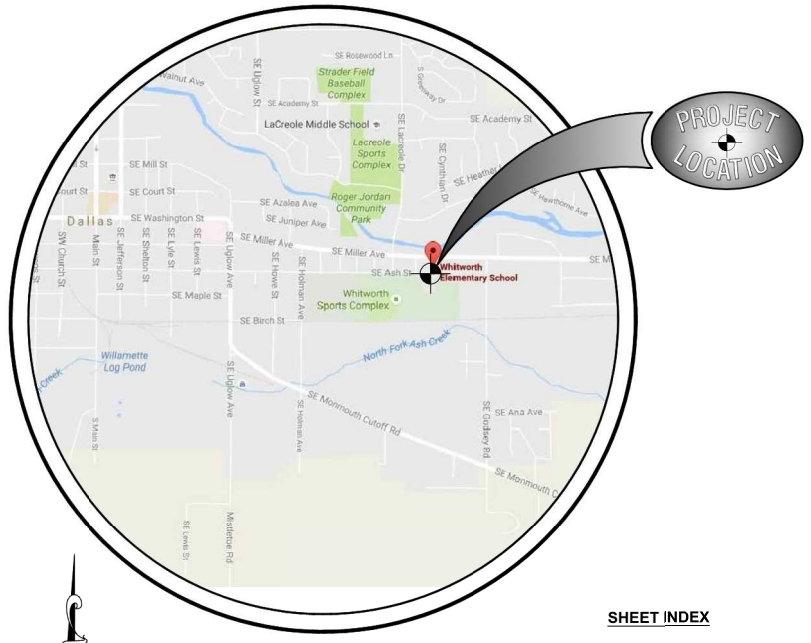
Data Documentation: Building Part C	
Provide brief documentation below and/or references to other documents included with your application (with page number), but ONLY for data entries in Column C, which replace the default values in Column D.	
Soil Type	
Primary Structure Type	
Number of Stories	
Year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

Appendix E: Schematic Seismic Retrofit Drawings

WHITWORTH ELEMENTARY GYMNASIUM
SEISMIC RETROFIT

1151 SE MILLER AVE, DALLAS, OR 97338

1 C0.0 **MAIN ENTRANCE** NTS



2 C0.0 **VICINITY MAP** NTS

SHEET INDEX

3 C0.0 **STREET VIEW** NTS

4 C0.0 **AERIAL VIEW** NTS

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

-TILT-UP CONCRETE SHEAR WALLS ARE NOT PROPERLY ATTACHED TO THE ROOF DIAPHRAGM FOR IN-PLANE AND OUT-OF-PLANE LOADING.
-THE GLULAM BEAMS ARE NOT PROPERLY ATTACHED TO THE PRECAST WALLS TO ACT AS A CONTINUOUS TIE.
-THE ROOF STRUCTURE LACKS CONTINUOUS CROSS TIES IN THE LONGITUDINAL DIRECTION.
-THE GYM ROOF IS TALLER THAN LOWER SCHOOL ROOF. THIS CREATES A VERTICAL IRREGULARITY. THIS VERTICAL IRREGULARITY COULD RESULT IN POUNDING. THE POUNDING EFFECTS INCREASE THE BUCKLING LOADS ON THE WALLS.

REHABILITATION RECOMMENDATIONS

-THE TOPS OF THE PERIMETER CONCRETE TILT-UP WALLS IN THE GYMNASIUM NEED TO BE PROPERLY ATTACHED TO THE ROOF DIAPHRAGM FOR OUT-OF-PLANE LOADING.
-PROVIDE BLOCKING, CLIPPING AND NAILING CONNECTIONS ALONG TOP OF WALLS TO ESTABLISH ADEQUATE CONNECTION BETWEEN TOP OF WALL AND DIAPHRAGM
-PROVIDE STRAPPING BETWEEN JOISTS AT INTERSECTING BEAM LINES TO PROVIDE CONTINUOUS CROSS TIES.
-PROVIDE SEISMIC ISOLATION JOINT BETWEEN THE GYMNASIUM BUILDING AND CLASSROOM BUILDING. AS PART OF A PREVIOUS SEISMIC REHABILITATION PROJECT A SEISMIC ISOLATION JOINT IS SLATED TO BE INSTALLED TO SEPARATE THE MAIN CLASSROOM WINGS FROM THE GYM.
-ALL PIPING AND HVAC EQUIPMENT FOUND THROUGHOUT THE BUILDING SHALL BE PROPERLY BRACED AND ATTACHED TO THE STRUCTURE TO LIMIT THE POTENTIAL DAMAGE.
-THE BRICK VENEER OVER THE EXIT DOORS WILL BE ATTACHED TO THE WOOD WALLS TO MINIMIZE THE FALLING HAZARD.

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

NO.	REVISIONS	BY	DATE
1			

DALLAS SCHOOL DISTRICT
WHITWORTH ELEMENTARY
GYMNASIUM SRG
1151 SE MILLER AVE,
DALLAS, OREGON 97338

ZCS ENGINEERING
524 Main Street - Suite 02, Oregon City, OR 97045
ph: (503) 699-2333 fax: (503) 699-2433

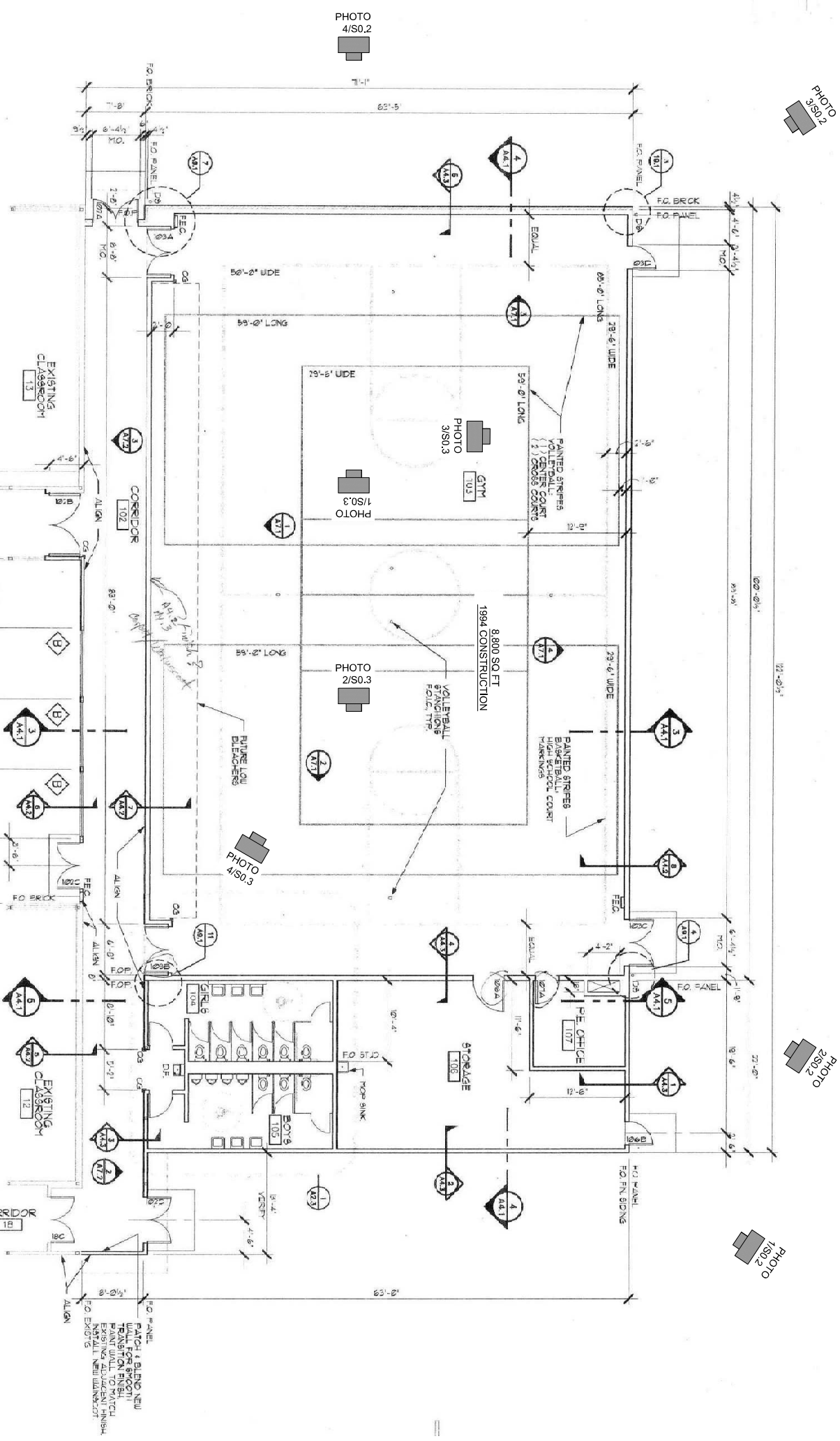
PROJECT NO: P-2159-16
DRAWN: JAG
CHECKED: MRS
DATE: 12-13-16

REGISTERED PROFESSIONAL ENGINEER
OREGON
NOVEMBER 16, 1996
M. C. CARTER
-PRELIMINARY-
NOT FOR CONSTRUCTION
EXPIRES: 12-31-17

COVER SHEET

C0.0

FOR AGENCY REVIEW / NOT FOR CONSTRUCTION



1 S0.1 **FLOOR PLAN**

1/8" = 1'-0"

S0.1

FLOOR PLAN

PRELIMINARY - NOT FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER — OREGON — JULY 16, 1996 — J. C. CARTER

EXPIRES: 12-31-17

PROJECT NO:	P-2159-16
DRAWN:	JAG
CHECKED:	MRS
DATE:	12-13-16

ZCS ENGINEERING

524 Main Street - Suite 02, Oregon City, OR 97045

(503) 659-2205 phone fax (503) 659-2433

DALLAS SCHOOL DISTRICT

WHITWORTH ELEMENTARY
GYMNASIUM SRG
1151 SE MILLER AVE,
DALLAS, OREGON 97338

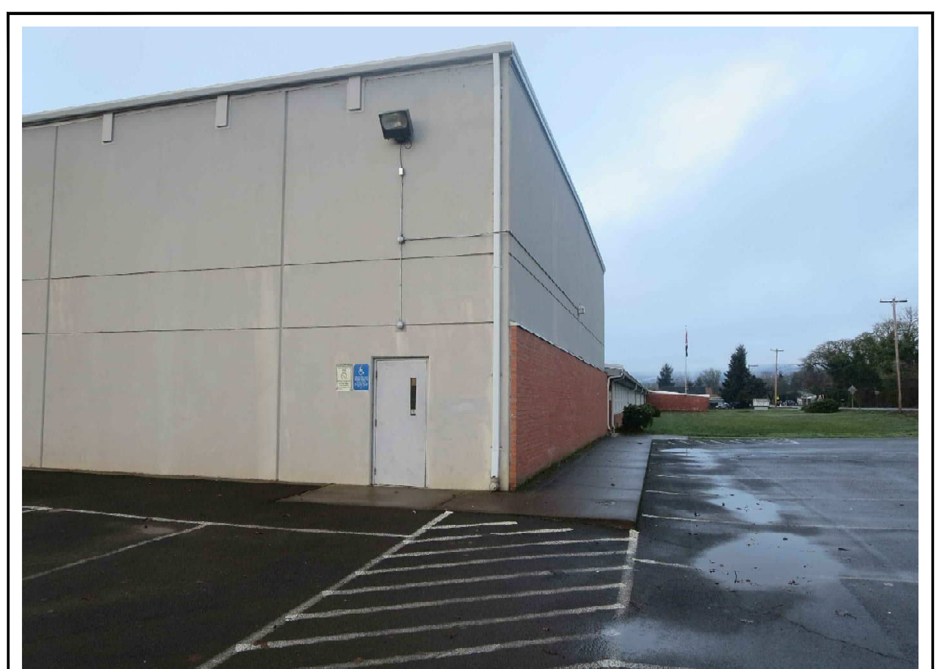
NO.	REVISIONS	BY	DATE

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

FOR AGENCY REVIEW / NOT FOR CONSTRUCTION

1 / S0.2 **PHOTO** NTS

2 / S0.2 **PHOTO** NTS



3 / S0.2 **PHOTO** NTS

4 / S0.2 **PHOTO** NTS

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

NO.	REVISIONS	BY	DATE

DALLAS SCHOOL DISTRICT

WHITWORTH ELEMENTARY
GYMNASIUM SRG
1151 SE MILLER AVE,
DALLAS, OREGON 97338

ZCS ENGINEERING
524 Main Street - Suite 02, Oregon City, OR 97045
(503) 659-2205 phone (503) 659-2433 fax

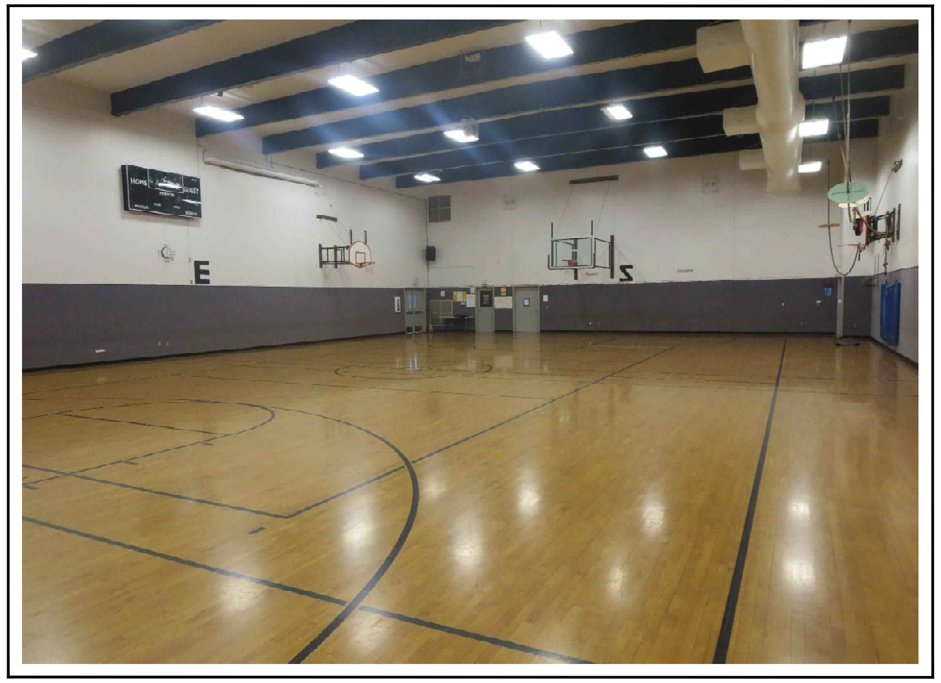
PROJECT NO:	P-2159-16
DRAWN:	JAG
CHECKED:	MRS
DATE:	12-13-16

-PRELIMINARY-
NOT FOR CONSTRUCTION
EXPIRES: 12-31-17

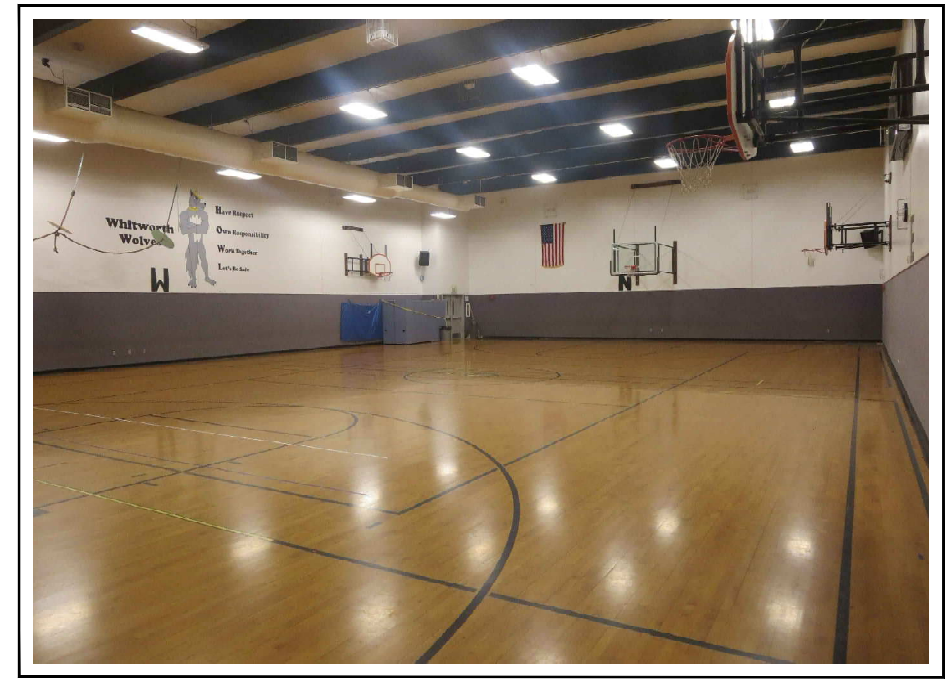
EXTERIOR PHOTOS

S0.2

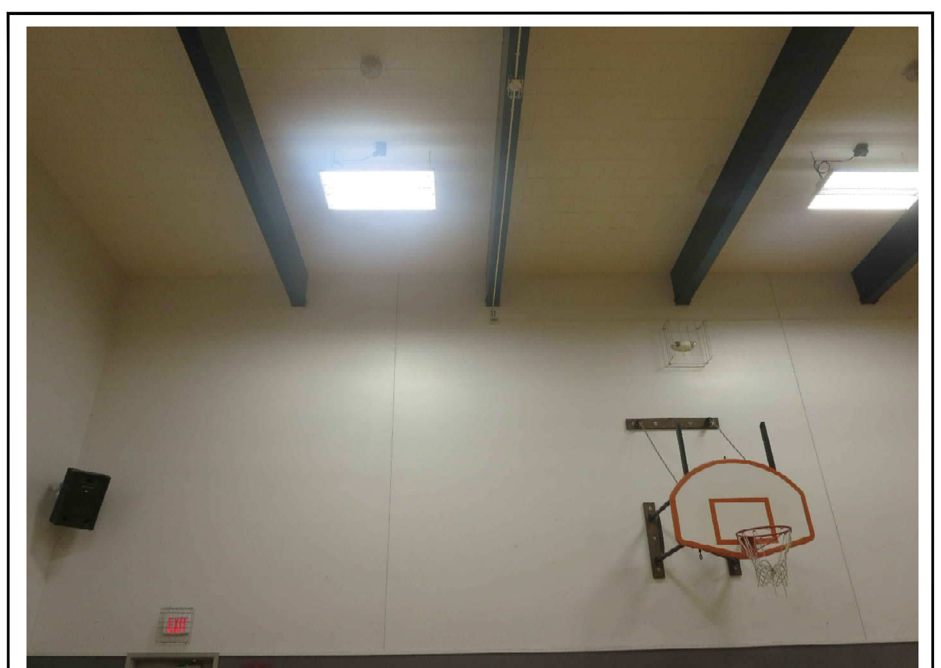
FOR AGENCY REVIEW / NOT FOR CONSTRUCTION



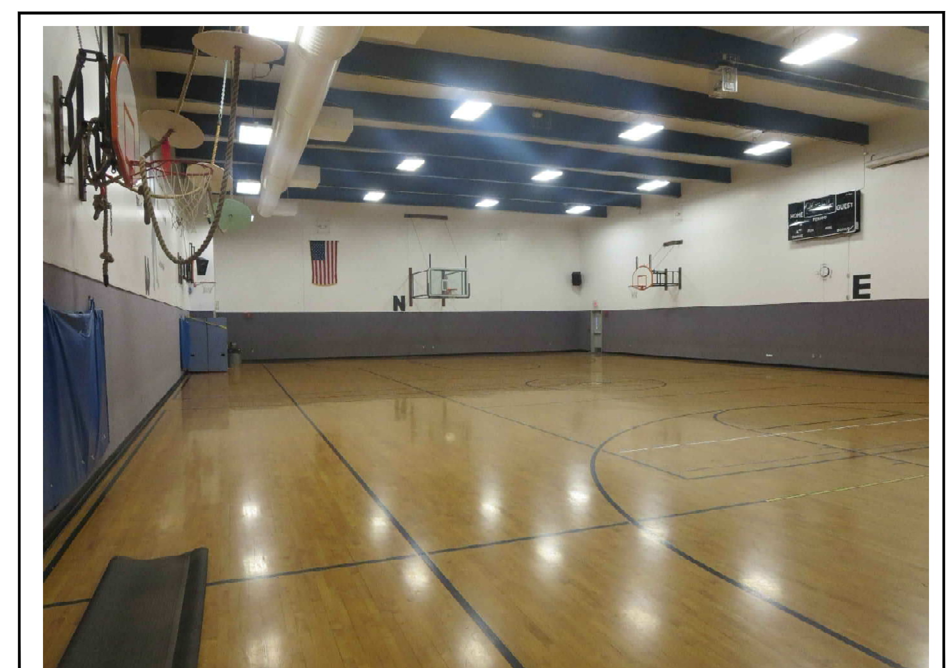
1 S0.3 **PHOTO** NTS



2 S0.3 **PHOTO** NTS



3 S0.3 **PHOTO** NTS



4 S0.3 **PHOTO** NTS

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

NO.	REVISIONS	BY	DATE

DALLAS SCHOOL DISTRICT

WHITWORTH ELEMENTARY
GYMNASIUM SRG
1151 SE MILLER AVE,
DALLAS, OREGON 97338

ZCS ENGINEERING
524 Main Street - Suite 02, Oregon City, OR 97045
(503) 659-2205 phone (503) 659-2433 fax

PROJECT NO:	P-2159-16
DRAWN:	JAG
CHECKED:	MRS
DATE:	12-13-16

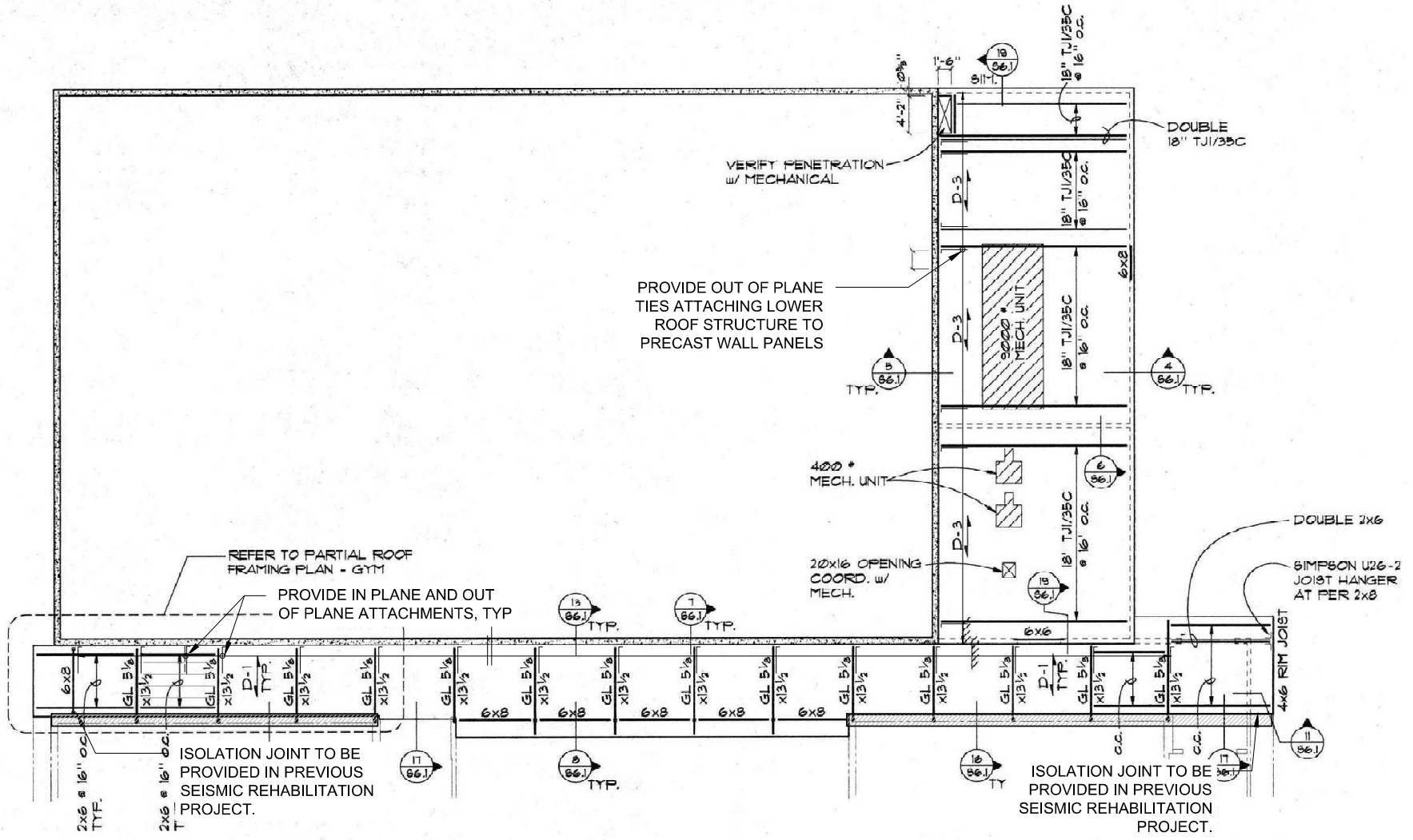
-PRELIMINARY- NOT FOR CONSTRUCTION

EXPIRES: 12-31-17

INTERIOR PHOTOS

S0.3

FOR AGENCY REVIEW / NOT FOR CONSTRUCTION



1 S0.4 **LOWER ROOF PLAN**
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			

DALLAS SCHOOL DISTRICT

WHITWORTH ELEMENTARY
GYMNASIUM SRG
1151 SE MILLER AVE,
DALLAS, OREGON 97338

ZCS ENGINEERING
524 Main Street - Suite 02, Oregon City, OR 97045
(503) 899-2325 phone

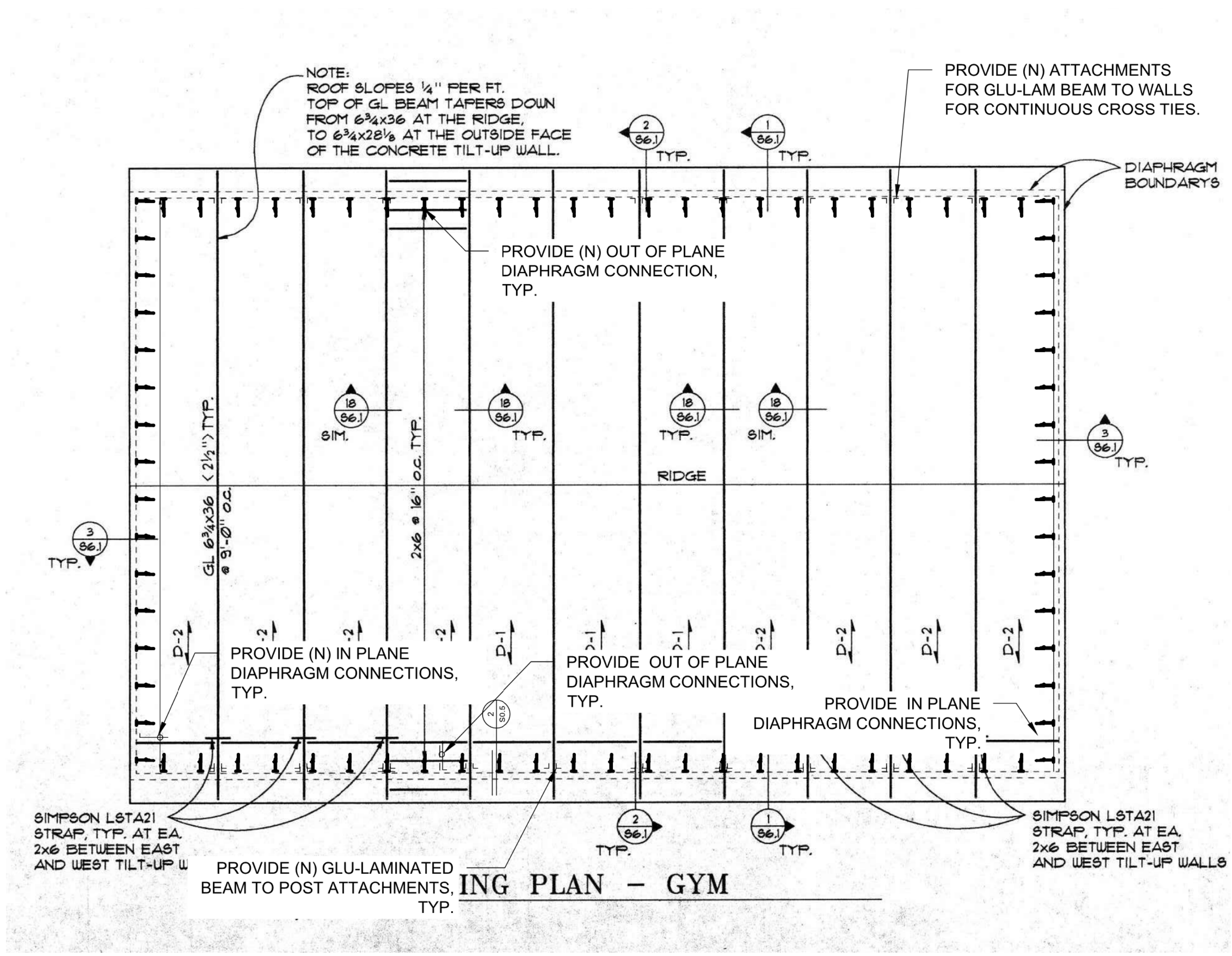
PROJECT NO:	P-2159-16
DRAWN:	JAG
CHECKED:	MRS
DATE:	12-13-16

REGISTERED PROFESSIONAL ENGINEER
OREGON
JANUARY 16, 1986
MICHAEL C. CARTER
EXPIRES: 12-31-17
PRELIMINARY - NOT FOR CONSTRUCTION

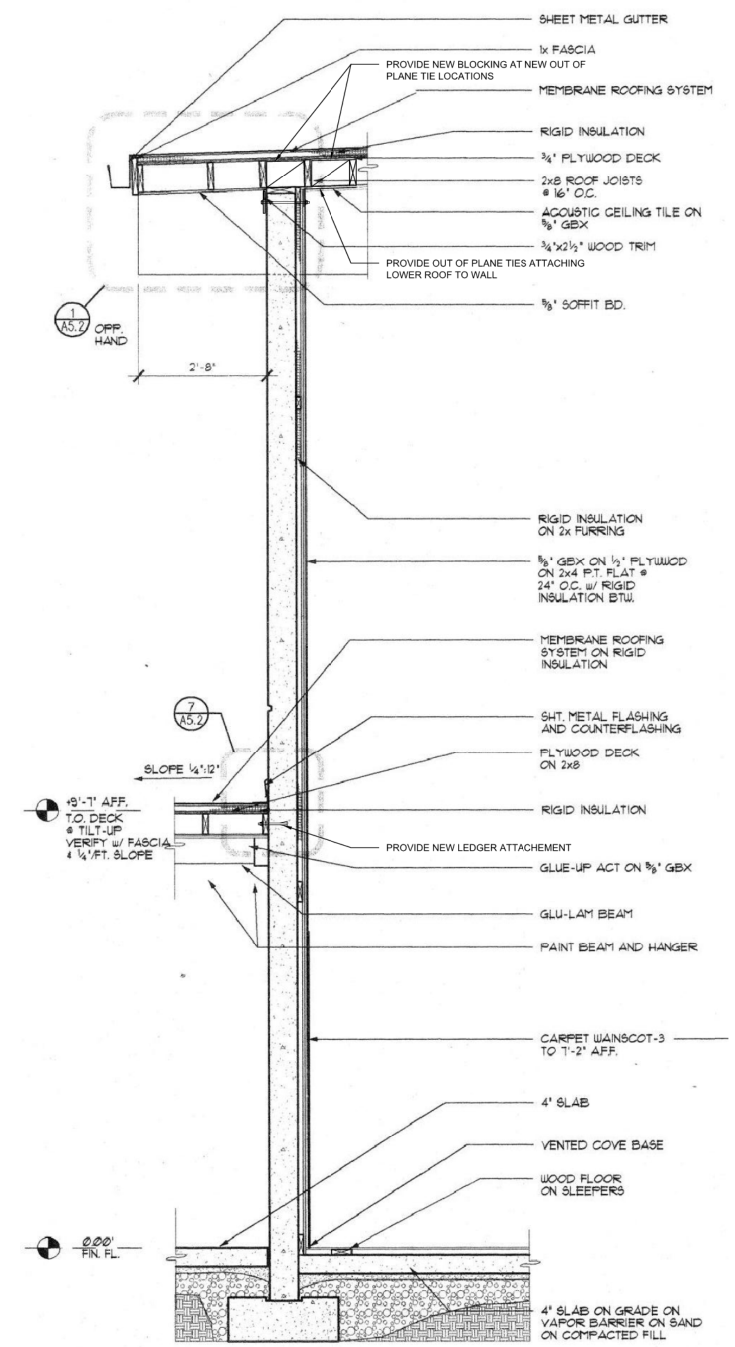
LOWER ROOF PLAN

S0.4

FOR AGENCY REVIEW / NOT FOR CONSTRUCTION



1/S0.5 **GYM ROOF PLAN**
1/8" = 1'-0"



2/S0.5 **GYM-CORRIDOR SECTION VIEW**
1/2" = 1'-0"

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

NO.	REVISIONS	BY	DATE
-	---	---	---

DALLAS SCHOOL DISTRICT
WHITWORTH ELEMENTARY
GYMNASIUM SRG
1151 SE MILLER AVE,
DALLAS, OREGON 97338

ZCS ENGINEERING
524 Main Street - Suite 02, Oregon City, OR 97045
(503) 659-2205 phone fax (503) 659-2433

PROJECT NO: P-2159-16
DRAWN: JAG
CHECKED: MRS
DATE: 12-13-16

PRELIMINARY-NOT FOR CONSTRUCTION
EXPIRES: 12-31-17

ROOF FRAMING PLAN & SECTION VIEW

S0.5

FOR AGENCY REVIEW / NOT FOR CONSTRUCTION