civil
structural
surveying
architecture
planning

i.e. Structural, LLC
6975 SW Sandburg St.
Suite 160
Tigard, OR 97223

ieengineering.com
971.371.1958

June 13, 2022

Douglas County School District #15 – Days Creek
Attn: Steve Woods
P.O. Box 10
Days Creek, OR 97429

Re: Engineering Services for Seismic Evaluation
Technical Assistance Program

In response to the Douglas County School District #15 – Days Creek Informal Request for Proposals to provide a Seismic Evaluation, the team of i.e. Structural, LLC and Wilson Architecture, hereby submits the enclosed qualification information and agrees to the terms and conditions contained in the RFP.

Rob Van Dyke will lead the team and is the authorized representative for i.e. Structural, LLC for negotiations, agreements and contracts.

We look forward to the opportunity to create a working relationship with the School District on this and future projects. Please contact Rob Van Dyke at vandyke@ieengineering.com or (971) 371-1958 with any questions or if additional information is needed at this time.

Respectfully,

Rob VanDyke, PE, SE
Principal

Experience

Rob Van Dyke is a registered Professional Engineer in Oregon and Washington and a registered Structural Engineer in Oregon. Rob has performed various seismic assessments as the managing principal of i.e. structural. Rob also has a long background in seismic assessment and upgrade work. While working for KPFF in Portland, prior to becoming a partner at i.e. Structural, LLC, he performed seismic assessment works and seismic upgrades for various clients, including the Hood River School District, Unico Properties, University of Oregon, Portland State University, and the YMCA.

Curt Wilson, AIA, started Wilson Architecture to focus on client service and success. He makes it a priority to get to know the client and their communities to understand their unique needs and values, then create spaces reflective of that. Wilson Architecture provides architectural, planning, and project management services throughout Oregon. www.wilsonarchitecture.com.
Wilson Architecture brings decades of experience working with school districts and other public agencies in evaluating facilities, developing master plans, securing funding, implementing improvements through construction, and managing the SRGP process.

i.e. Structural Project Examples and References:

Phoenix High School (Client: Phoenix Talent School District)
i.e. Structural, LLC partnered with Ogden Roemer Wilkerson Architecture on the addition and remodel of the Phoenix High School in Phoenix, Oregon. The project scope included the design of a 100,000 square foot addition, remodel of the existing gymnasiums and theaters, and an ASCE 41 seismic evaluation and schematic retrofit design to be used for an application for funding through Oregon's Seismic Rehabilitation Grant Program. The evaluation was performed using enhanced performance and risk criteria for a Risk Category IV building.

Reference:	ORW Architecture 29 S Grape St. Medford, OR 97504	David Wilkerson david@orwarch.com 541-779-5237

Rose Apartments - Roseburg, Oregon (Client: NeighborWorks Umpqua)
The scope of this project was the seismic upgrade of the 30,000 square foot existing mixed-use building using ASCE 41-13, and generation of pricing documents for use Oregon Housing and Community Service grant application. Our Scope included coordination of non-destructive testing and site evaluation.

Hillside Terrace - Coquille, Oregon (Client: NeighborWorks Umpqua)
i.e. Structural, LLC provided a seismic assessment of the Hillside Terrace Apartment complex in Coquille, Oregon to secure funding through the Oregon Housing and Community Services and the United States Department of Agricultural Rural Development.

Reference:	NeighborWorks Umpqua 605 SE Kane Roseburg, OR 97470	Albion Spahn aspahn@nwumpqua.org 541-216-7417

Timber Country Coca Cola (Client: Hanna Limited Partnership)
i.e. Structural, LLC provided a structural evaluation of the existing 20,000 square foot warehouse/office building in Roseburg, Oregon, using ASCE 41-13, as part of the due-diligence effort by a potential long term tenant. The evaluation included the generation of schematic seismic upgrade document to use for pricing.

Reference: Hanna Limited Partnership
69880 Hwy 395 S
Pendleton, OR 97801

Polly Johnson
541- 969-8528

Gazette-Times Building (Client: Anderson Construction)
i.e. Structural, LLC provided a seismic assessment of the existing Gazette Times building in Corvallis, Oregon as part of a due diligence process prior to purchase by Oregon State University.

Reference: Anderson Construction
P.O. Box 6712
Portland, OR 97228
503-283-6712

Wilson Architecture Project Examples and References:
The following projects were led by Curt Wilson as Principal/Owner at PIVOT Architecture.

Mapleton High / Mapleton Elementary Seismic Rehab (Client: Mapleton School District)
Mapleton School District passed a $4 mil local bond in 2016, which enabled them to access a $4 mil Oregon School Capital Improvement Matching (OSCME) grant. The team led by Curt Wilson helped them secure an additional $2.6 mil SRGP funds to address structural deficiencies at both the high school and elementary school.

Reference: Mapleton School District
Jodi O'Mara, Superintendent
541-268-4312, ext. 202
jomara@mapleton.k12.or.us

Oakridge High Seismic Rehab (Client: Oakridge School District)
Oakridge School District passed a $6 mil local bond in November 2017, which allowed them to access a $4 mil OSCME grant. The work of the improvements at the Junior and Senior High and Elementary School, led by Curt Wilson at his previous firm was scheduled for construction in the summers of 2019 and 2020. The design and planning work for the improvements included SRGP grant applications, but the high school grant was not issued until February 2020, a year after construction started. The project team anticipated this might occur and coordinated the sequence of the work for the two summers so the improvements impacted by potential SRGP funds would be constructed in the second summer. This work included a new roof at the 120,000+ sf high school. The work at the gym, which was the focus of the SRGP application, occurred in the second construction season. Because the seismic improvements included stiffening the roof diagram, the costs to replace the roof at the gym was covered by the SRGP funding. If the roof replacement occurred prior to the seismic improvements, the SRGP funds would not have covered it.

Reference: Oakridge School District
Reta Doland, Superintendent
541-682-5600
rdoland@ohswarriors.net

Project Plan Outline

Data Collection:
The Seismic assessment would start with data collection, which would involve gathering and reviewing drawings from the school district to ensure all plans and details associated with the original construction, as well as remodels and additions are provided.

Site Visit:
Once the design team has reviewed existing drawings, a site visit would be performed to begin the ASCE 41-17 evaluation. i.e. Structural staff would walk each building to evaluate the visible condition and verify information shown on the existing building plans. ASCE 41 checklists would be completed during the site visit. Wilson Architecture staff would attend the site visit to become familiar with the buildings, and identify any non-structural work that may be required as a result of proposed upgrades.

Staff Interviews:
In order to complete the Benefit Cost Analysis required for the grant application, Wilson Architecture staff would interview district staff to understand the use of each building, for school activities, extracurricular activities, and community use.

Engineering Report:
i.e. Structural will complete the ASCE 41-17 checklists, and prepare the report for the grant application. The engineering report will include conceptual seismic retrofit plans, to be used for the cost estimate. The conceptual seismic retrofit plans and report will have deficiencies and proposed improvements identified through a common numbering system. We find that this helps the review committee understand how proposed retrofit measures address each deficiency identified in the checklists.

Benefit Cost Analysis:
The benefit cost analysis will be prepared by Wilson Architecture, using the BCA tool provided by Business Oregon's Seismic Rehabilitation Grant Program. It is our understanding that many of the building in the District's inventory are used for storage or other uses. It is our experience that these type of buildings will have a very low BCA score, and will not be eligible for grant funds. We expect to focus on the K-12 campus for the grant application.

Cost Estimate:
The cost estimate will be prepared by Wilson Architecture, with the assistance of Jim Mender from Mender Consulting. i.e. Structural will review the cost estimate to confirm scope of the proposed retrofit drawings is addressed, and certify the cost estimate.

Grant Application:
Wilson Architecture will prepare the grant application.

Cost Factors

Our not-to-exceed base price will be $25,000. Please refer to the attached proposal for detailed information. Hourly rates are as follows:

Project Manager/Principal	$160.00	Architect	$140.00
Engineering Technician	$110.00	Cost Estimator	$135.00
Drafter/CADD Operator	$ 80.00		
Clerical	$ 80.00		

Attachments

- Detailed Proposal dated June 13, 2022
- Evidence of Insurance
- W-9 Form
- Resumes
- Example ASCE 14 Evaluation prepared for Phoenix School District
- Example Cost Estimate Summary prepared for City of Roseburg

i.e. Structural L.L.C.
6975 SW Sandburg St., Suite 160
Tigard, OR 97223

June 13, 2022

Mr. Steve Woods
Douglas County School District #15 – Days Creek
P.O. Box 10
Days Creek, OR 97429

RE: **Days Creek School District**
Oregon Seismic Rehabilitation Grant Application

Dear Steve:

We are pleased to submit the following proposal for structural engineering consulting services related to the Oregon Seismic Rehabilitation Grant Application for the Days Creek School District. It is our understanding that you intend to submit an application for the 2022 funding cycle. Based on our experience with the grant program, only the K-12 campus will have a high enough cost benefit analysis score to be eligible for grant funding. The scope of this evaluation will not include the storage buildings, greenhouse, bus barn, rental house, or water facility.

Wilson Architecture and Mender Consulting will be subcontractors under i.e. Structural, and will provide assistance with the cost estimate, benefit cost analysis, and grant application. Please note that the mechanical systems will not be included in the assessment. Our scope is as follows:

- Collect and review existing drawings.
- Perform a site visit to assess the condition of the structures, verify information shown on existing plans, and collect additional information if required.
- Complete the ASCE 41-17 checklists for each building.
- Provide an ASCE 41-17 evaluation utilizing Tier 1 and Tier 2 procedures, meeting the performance and seismic hazard requirements of the grant application.
- Provide a conceptual seismic upgrade plan, indicating proposed retrofit measures to address decencies identified in the ASCE 41 analysis.
- Provide an engineering report with narrative of deficiencies, numbered to correspond to work shown in conceptual seismic upgrade plan.
- Perform a cost benefit analysis. Wilson Architecture will interview district staff to collect information for the cost benefit analysis.
- Prepare a cost estimate. The cost estimate will be prepared by Wilson Architecture and Mender Consulting, and certified by i.e. Structural.
- Prepare and submit the grant application.

We will provide the basic structural engineering services on a Time and Materials basis, with a not to exceed fee of $25,000. Terms and conditions will be as provided in AIA Document C401. We will bill for our services monthly, based on the percentage of our effort completed. Additional or extra services will be billed at the following hourly rates:

Project Manager/Principal	$160	Drafter/CADD Operator	$80
Engineering Technician	$110	Clerical	$80
Architect (Wilson Architecture)	$140	Cost Estimator (Mender Consulting)	$135

Reimbursable expenses, as described in AIA Document C401, will be billed at our direct cost. We estimate that these will not exceed $100 on this project.

If you have any questions or need further information, please call me.

Sincerely,

Rob Van Dyke, S.E.

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 11/1/2021

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
KPD Insurance
PO Box 784
Springfield OR 97477

CONTACT NAME:
PHONE (A/C, No, Ext): 541-741-0550 **FAX (A/C, No):** 541-741-1674
E-MAIL ADDRESS:

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : The Ohio Casualty Insurance Co	24074
INSURER B : Continental Casualty Company	20443
INSURER C :	
INSURER D :	
INSURER E :	
INSURER F :	

INSURED IEENGIN01C
i.e. Engineering, Inc.
i.e. Structural LLC
i.e. Architectural LLC
PO Box 1271
Roseburg OR 97170

COVERAGES **CERTIFICATE NUMBER:** 800395386 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X **COMMERCIAL GENERAL LIABILITY**			BKO60086387	11/3/2021	11/3/2022	EACH OCCURRENCE	$ 1,000,000
	CLAIMS-MADE X OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 1,000,000
							MED EXP (Any one person)	$
	X Contractual						PERSONAL & ADV INJURY	$ 1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$ 2,000,000
	POLICY PRO-JECT LOC						PRODUCTS - COMP/OP AGG	$ 2,000,000
	OTHER:							$
A	**AUTOMOBILE LIABILITY**			BAO60086387	11/3/2021	11/3/2022	COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
	X ANY AUTO						BODILY INJURY (Per person)	$
	OWNED AUTOS ONLY / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	X HIRED AUTOS ONLY / X NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
A	X **UMBRELLA LIAB** X OCCUR			ESO60086387	11/3/2021	11/3/2022	EACH OCCURRENCE	$ 2,000,000
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$
	DED RETENTION $							$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N						PER STATUTE / OTH-ER	
	ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below	N / A					E.L. EACH ACCIDENT	$
							E.L. DISEASE - EA EMPLOYEE	$
							E.L. DISEASE - POLICY LIMIT	$
B	Professional Liability- Claims Made			AEH113801101	11/3/2021	11/3/2022	$2,000,000 Per Claim $4,000,000 Aggregate $30,000 Deductible	per Claim

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
Proof of Insurance

CERTIFICATE HOLDER

Proof of Insurance
.
. . .

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Form **W-9**
(Rev. December 2014)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

Give Form to the requester. Do not send to the IRS.

Print or type
See **Specific Instructions** on page 2.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.
i.e. Structural, LLC

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification; check only **one** of the following seven boxes:
☐ Individual/sole proprietor or single-member LLC ☐ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate
☑ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶ P
Note. For a single-member LLC that is disregarded, do not check LLC; check the appropriate box in the line above for the tax classification of the single-member owner.
☐ Other (see instructions) ▶

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):
Exempt payee code (if any) _____
Exemption from FATCA reporting code (if any) _____
(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.)
809 SE Pine St. (P.O. Box 1271)

Requester's name and address (optional)

6 City, state, and ZIP code
Roseburg, OR 97470

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Note. If the account is in more than one name, see the instructions for line 1 and the chart on page 4 for guidelines on whose number to enter.

Social security number
☐☐☐ – ☐☐ – ☐☐☐☐

or

Employer identification number
4 6 – 3 7 2 2 2 3 6

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

Sign Here **Signature of U.S. person ▶** E. Berg **Date ▶** 06/09/2022

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. Information about developments affecting Form W-9 (such as legislation enacted after we release it) is at *www.irs.gov/fw9*.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following:

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See *What is backup withholding?* on page 2.

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),

2. Certify that you are not subject to backup withholding, or

3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and

4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting?* on page 2 for further information.

Rob Van Dyke, SE, PE

Principal | Structural

Rob is a registered Structural Engineer in the State of Oregon and a registered Professional Engineer in Oregon and Washington. Joining i.e. Engineering in 2013 as head of i.e.'s Structural Department, Rob brings a breadth of experience in various markets, providing innovative solutions and cost effective designs for Architects, Owners, and Contractors.

Project experience includes mixed use, schools/higher education, government/institutional, residential, healthcare, retail, industrial, and hospitality.

Services

Commercial, Residential, and Industrial New Construction Seismic Rehabilitation

Remodels/Tenant Improvements

Specialty Engineering (Metal Studs, Curtainwall/Storefront, Stairs, Mechanical Support)

Construction Engineering

Property Purchase/Due Diligence Assistance Peer Review and Plan Review Services

Education

Oregon State University
1991-1994

Portland State University
2001-2004

Registration

Professional Engineer

Oregon 73626

Washington 52826

Professional Experience

i.e. Structural, LLC.
2013-Present KPFF

Consulting Engineers
2004-2012

Seismic Testing and Applied Research Laboratory, PSU 2002-2004

Professional Affiliation

Structural Engineers Association of Oregon

American Institute of Steel Construction

Curt Wilson, AIA

Principal | Architect

WILSON ARCHITECTURE

Curt has been instrumental in helping several school districts with planning and budgeting, TAP assessments, new facilities, and modernizing existing buildings. He has a successful history of allocating Bond funds to align with budgets and project goals. He makes it a priority to get to know clients and their communities in order to understand their unique needs and values, then connects their aspirations with operational realities.

Curt has a reputation of collaboration and communication. He considers all team members, including clients and consultants, to be invaluable to the success of a project. A collaborative process creates long-term solutions that serve the needs of the communities for years to come. For more than 20 years, he has been the Principal in Charge of leading projects, and people, to their best design solutions.

Selected Recent Project Experience

Education, K-12
Eugene School District – Howard Elementary School
Eugene School District – River Road Elementary School
Mapleton School District – High School Renovation
Mapleton School District – Elementary School Renovation
Mapleton School District – Long Range Facility Plan and Pre-Bond Study
Oakridge School District – High School Renovation
Oakridge School District – Elementary School Renovation
Siuslaw School District – Long Range Facility Plan and Pre-Bond Study
Monroe School District – High School Renovation Planning
Monroe School District – Elementary School Renovation Planning

Bond Planning Support
Mapleton School District – Long Range Facility Plan and Pre-Bond Study
Siuslaw School District – Long Range Facility Plan and Pre-Bond Study
Yachats Rural Fire Protection District - New Main Station

Facility Assessments and Planning
City of Roseburg - Parking Garage Upgrade
Lane Fire Authority – Crow Station 111 Seismic Renovation
Mapleton School District – Long Range Facility Plan and Pre-Bond Study
Siuslaw School District – Long Range Facility Plan and Pre-Bond Study
Yachats Rural Fire Protection District - New Main Station

Local Government Projects
City of Corvallis - Chintimini Community Center Expansion
City of Eugene - Numerous Fire Stations – New and Renovations
City of Eugene - 911 Communications Center
City of Roseburg - City Hall Entrance Renovation
City of Roseburg - Public Safety Center (Police and Fire Headquarters)
City of Roseburg - Fire Station #2, #3 Seismic Improvements
City of Talent - Civic Center Master Plan
City of Talent - City Hall and Civic Center
Yachats Rural Fire Protection District - New Main Station

Education

Master of Architecture
University of Oregon, 1990

B.A. in Architecture
University of Washington, 1987

Registration

Oregon# 3543
California# C 29902
Washington# 8245
Certified Assessor, ODE

Professional Experience

Wilson Architecture
Principal | Owner| Architect
2021-current

American Institute of Architects
Oregon Chapter
Executive Director | CEO (Interim)
2019-2021

PIVOT Architecture
Principal | Owner| Architect
1990-2019 (*Principal 1999-2019*)

Professional Affiliation

AIA Oregon
Legislative V.P., 2002-2019
President, 2001

Community Involvement

Lane Fire Authority
Budget Committee, 2020-current

Holiday Farm Fire Advisory Team
Committee Member, 2020-current

Kidsports
Board of Directors, 2000-2010
Board President, 2006-2008

Phoenix High School
ASCE 41 Seismic Evaluation

Prepared for the Phoenix-Talent School District

Submitted November 14, 2018
Prepared by Rob Van Dyke, P.E., S.E.
I.E. Structural Project No. S241-1

STRUCTURAL
REGISTERED PROFESSIONAL ENGINEER
23626
OREGON
Dec. 21, 2012
ROBERT W. VAN DYKE
EXPIRES: 6-30-2020

Introduction

The Phoenix Talent School District operates five schools in Jackson County, Oregon that serve the communities of Phoenix and Talent. I.E. Structural L.L.C. has been retained by the school district to perform a seismic evaluation of Phoenix High School, to assist with an application for funding to be submitted to the Oregon Seismic Rehabilitation Grant program. The purpose of this assessment was to identify deficiencies in the seismic lateral load resisting systems, as well as non-structural deficiencies. This assessment was performed in accordance with ASCE 41-17 "Seismic Evaluation and Retrofit of Existing Buildings", utilizing performance and seismic hazard criteria equivalent to that of "Essential Facility" or Risk Category IV building. It is our understanding that the communities in the Phoenix Talent School District do not have shelter resources to be used in the event of a natural disaster, and Phoenix High school would provide a valuable resource to the community if upgraded to serve as a shelter facility.

Phoenix High School is located at 745 N Rose St. in Phoenix, Oregon. The primary building on campus includes two gymnasiums, a theater, and classrooms. The building was constructed in multiple periods. The theater and a large portion of the classrooms on the north side of the building were constructed in 1949. In 1964, the auxiliary gymnasium and some classrooms on the north were added. In 1989, the large gymnasium, mechanical room/team lockers, classrooms, commons, and the central corridor connecting all phases of construction were added. At this time, the original gymnasium was converted to a theater.

This assessment is being performed concurrently with a remodel and addition project that are part of the recently passed bond measure. The scope of the bond related remodel works includes the demolition of approximately 100,000 square feet of building on the north side that includes the majority of the classrooms and the commons. The portion of the building to be demolished will not be included in this assessment.

Executive Summary

The building structure appears to be well maintained, and is in fair condition overall. Minor signs of distress and localized damage where noted during the site investigation. However, these observations are generally consistent for a building of this type, age, and use.

The building's lateral load resisting elements were evaluated using the Tier 1 (screening) criteria, and where required, Tier 2 (deficiency based) criteria of ASCE 41 to determine their capacity to resist earthquake ground motion. The evaluation indicates that the structure does not meet the ASCE 41 requirements for the Basic Performance Objective for a Risk Category IV building, and there are structural deficiencies in the building's lateral force resisting system. The structural deficiencies noted are as follows:

- CMU walls are slender and have insufficient out of plane strength at the large gymnasium and small gymnasium.
- CMU walls at the north side of the wrestling room are continuous to the corridor roof but have wood framing above. The corridor roof is insufficient to brace the walls out of plane, and the change in framing type creates a hinge, interrupting the out of plane load path.
- Wood framed roof diaphragms have large spans and are insufficient to span between shear walls at the theater roof, theater mezzanine, corridor roof, culinary roof, music room roof, and small gymnasium.
- Metal deck roof diaphragms have large spans and are insufficient to span between shear walls at the mechanical mezzanine roof and at the large gymnasium roof.

- Wood framed diaphragms are lacking continuous ties across the roof at the corridor roof, culinary roof, music room roof, small gymnasium roof, and small gymnasium mezzanine.
- Metal deck roof diaphragms are lacking continuous ties across the roof at the mechanical mezzanine roof, wrestling room roof, and the large gymnasium roof.
- CMU walls are not sufficiently anchored to the roof diaphragms at the corridor roof, culinary roof, music room roof, small gymnasium, small gymnasium mezzanine, and theater mezzanine.
- Wood framed roof connections to CMU walls have insufficient fasteners to transmit shear loads at the culinary roof, corridor roof, music room, and the small gymnasium mezzanine.
- There is a step in the roof diaphragm at the corridor between the large gymnasium and theater. This creates a discontinuity in the roof diaphragm and the diaphragm is insufficient to span between shear walls.
- The wood framed corridor roof does not have sufficient connections to the CMU walls of the large gymnasium and concrete walls of the theater. The low roof should have collectors to transfer load into the walls form the roof. This condition could lead to the roof diaphragm crushing or pulling away from the CMU or concrete walls, and possibly collapse.
- The south wall of the theater does not have wood shear wall framing above the concrete wall, and is inadequate to transmit lateral loads from the roof to the concrete wall below.
- The concrete roof beam at the small gymnasium has been damaged by exposure to the weather and must be repaired to serve as a chord for the roof diaphragm.
- The wood framed walls above the south side of the small gymnasium mezzanine and at the theater above all concrete walls are insufficient to serve as shear walls.
- The walls at the stage high roof are not continuous to the base of the building, creating a discontinuity in the lateral load path.
- There is a discontinuity in the load path from the stage high roof to the main theater roof.
- The concrete headers above doors in the theater are insufficiently detailed for deformation compatibility.

The proposed scope of the seismic retrofit for the deficiencies identified by our analysis are described in the "Recommendations" section of this report, and are shown on the conceptual seismic upgrade drawings provided in the Appendix A.

In addition to the structural deficiencies noted above, several non-structural deficiencies were noted through the Tier 1 procedures. These deficiencies are primarily related to the fire suppression piping, suspended ceilings, emergency lighting, natural gas piping, overhead glazing at the clerestory, and un-anchored tall equipment in the mechanical mezzanine. Refer to "Non-structural deficiencies" section of this report for additional information and the "Recommendations" section for proposed rehabilitation.

The General Contractor/Construction Manager for the high school remodel project, Adroit Construction, has provided a preliminary cost estimate to assist with budgeting for the proposed seismic retrofit. Based on this estimate, the total construction cost is $3,670,716. This includes soft costs such as architecture and engineering consulting fees, permitting fees, project management fees, testing, and special inspections. This also includes an appropriate contingency for the project. We have reviewed the cost estimate, and confirmed all scope of the proposed seismic upgrade is included in this estimate. As part of the remodel work associated with the bond, the school district has set aside additional funds to contribute to re-roofing projects, which would be required to install the proposed roof improvements of the conceptual seismic retrofit drawings.

In addition to the construction cost estimate, the Architect for the remodel work associated with the bond, Ogden Roemer Wilkerson Architecture, provided a cost benefit analysis using the spreadsheet tool provided by the State

of Oregon Infrastructure Finance Authority. The building has a benefit cost score of 1.534. Refer to the Benefit Cost Analysis worksheets prepared by Ogden Roemer Wilkerson Architects for additional information.

Based on the overall condition of the lateral force resisting system, the benefit cost analysis score, and the importance of this facility to the communities of Phoenix and Talent, we believe this project is an excellent candidate for funding as part of the Oregon Seismic Rehabilitation Grant program.

Building Description

The High School was built in 3 different phases of construction. The first phase of construction was built around 1949, and included the original gymnasium, which is now the theater and a classroom wing to the north. The lateral force resisting system for this structure is concrete shear walls with wood framed, flexible diaphragms (building type C2a).

The second phase of construction occurred around 1964, and included the small gymnasium and additional classrooms to the north. The lateral force resisting system for this structure is concrete masonry unit with reinforcing and wood framed flexible diaphragms. However, the amount of reinforcing in the walls is insufficient for consideration as reinforced masonry. The small gymnasium is therefor classified as and unreinforced masonry with flexible diaphragm (building type URMa).

The third phase of construction occurred around 1989, and included more classroom space to the north, the music room, culinary classrooms, central corridor, mechanical platform and locker rooms below, large gymnasium, and the wrestling room. The lateral force resisting system for this phase of construction is reinforced masonry with a combination of flexible and rigid diaphragms (building types RM1 and RM2, respectively). The wrestling room roof, mechanical mezzanine roof, and large gymnasium roof have bare metal deck diaphragm. The culinary classrooms, music room and corridor have wood framed diaphragms. The mechanical mezzanine floor has a slab on metal deck rigid diaphragm.

For the purposes of this assessment, the various areas of the building will be referred to as the Mechanical mezzanine, Wrestling room, Large gymnasium, Culinary/Health classrooms, Corridor, Small gymnasium, Theater, and Music Classroom. Refer to Figure 1 for a diagram of the different areas and phases of construction.

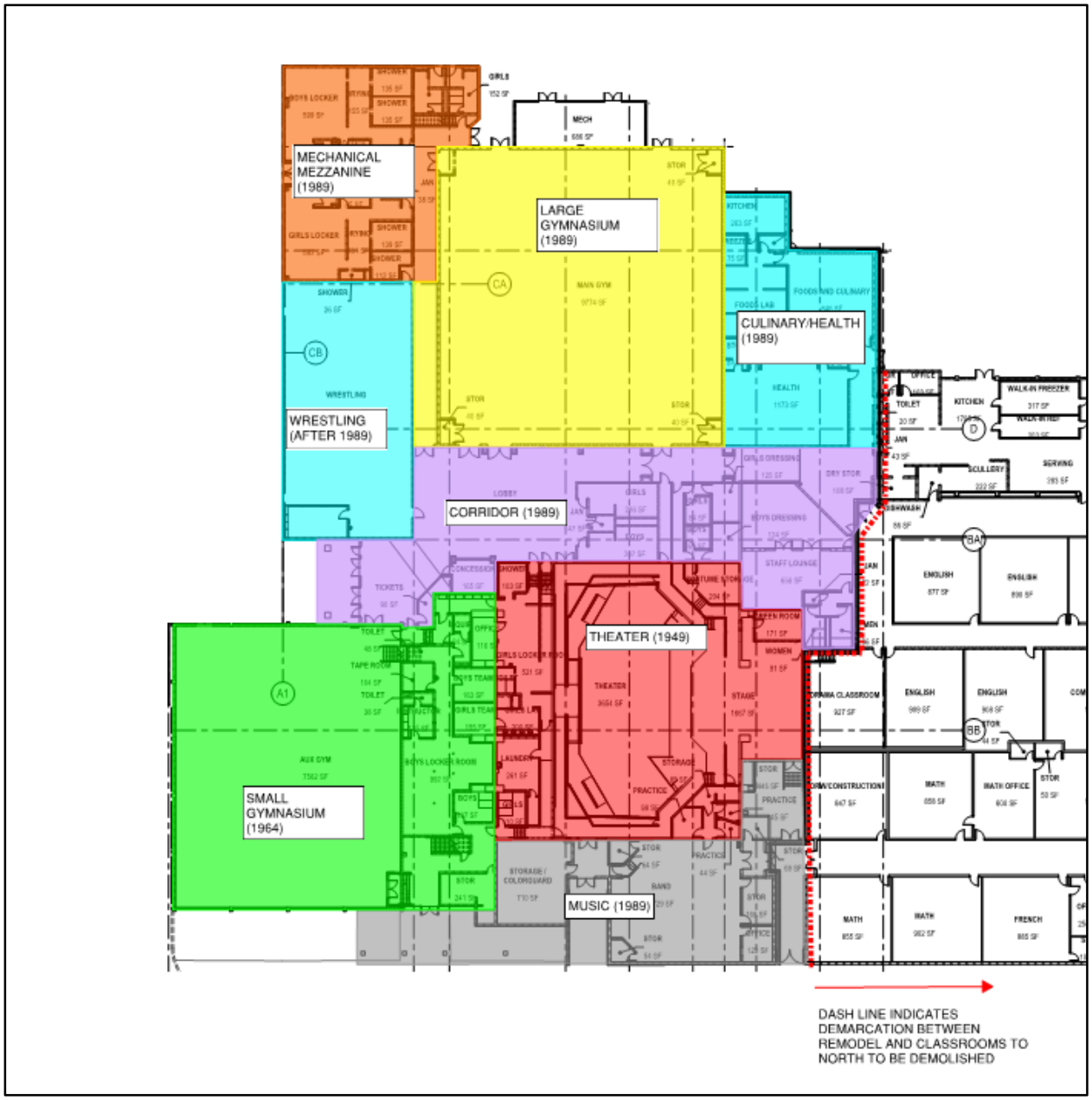

Figure 1: Area Diagram

Observations

Our conclusions about the structural system are drawn our observations of the structure made during a site visit, observations, the review of existing structural and architectural drawings, analysis provided by the GPR investigation, and our experience with structures of similar construction. The following sections present our comments regarding our review of the drawings and the site visit.

Site Visit

On August 22, 2018 a representative of i.e. Structural, L.L.C. made a site visit to review the condition of the existing structure. The primary objectives of the visit were to become familiar with the building, verify construction is generally consistent with what is shown on existing drawings, and identify distress to the existing structure. The following observations were made:

- In general, the buildings appear to be in fair condition.
- Minor cracking at was noted at the east and north walls of the large gymnasium. The cracking is not diagonal and crack width is less than one sixteenth of an inch. It is our opinion that the cracking is related to shrinkage of the CMU walls, as there are no relief joint along the length of these two sides. The cracking does not impair the ability of the walls to resist lateral loads or support gravity loads, but should be sealed to prevent water intrusion and further damage to the structure.
- Minor efflorescence was observed at the various locations of the masonry exterior walls. Efflorescence occurs when soluble salts and other water dispersible minerals come to the surface of concrete or masonry when water migrates from the exterior of the wall to the interior. We recommend the water infiltration through the masonry infill walls be addressed by sealing the exterior of the masonry to prevent further damage to the structure.
- The cast in place concrete roof beams at the northeast corner of the small gymnasium are cracked and spalling. The spalling primarily occurs at post installed anchor bolts, and where clear cover at the reinforcing bars are less than required. These beams serve as the chords for the roof diaphragm. We recommend this damage be repaired to prevent further deterioration.
- The corridor roof between the wrestling room and large gymnasium was built at the mechanical mezzanine elevation, rather than at the high sloped roof elevation, as shown on the existing drawings.

Document Review

Existing structural drawings were reviewed for all three phases of construction. It is notable that there was a revised set of drawings for the construction phase occurring around 1989 that indicated the wrestling room was removed from the scope of work. The wrestling room generally appears to be built as shown on the 1989 set of drawings, with the exception of the elevation of the low roof between the wrestling room and large gymnasium, as noted in the "Site Visit" section above. For the purposes of this assessment, it is assumed that the wrestling room was built per the 1989 plans with the roof revision being the one exception.

ASCE 41 Evaluation Methodology

The building structure's lateral load resisting components were evaluated to determine their capacity to resist earthquake ground motion. The general structural seismic evaluation was performed using the criteria of ASCE 41-17, *Seismic Evaluation and Retrofit of Existing Buildings*. ASCE 41 uses a three-tiered method to evaluate an existing building:

- Tier 1 - Screening Phase. Includes completing checklists for the structure and nonstructural items. During this tier, a review is performed of any available construction documents. A site visit is made to observe the building for any indications of deterioration of the structure, and to compare the as-built information with the construction documents. The goal of this phase is to quickly identify potential seismic deficiencies of the structure.

- Tier 2 – Deficiency Based Evaluation and Retrofit. Includes analysis of the non-compliant elements from Tier 1, utilizing a simplified static analysis approach.

- Tier 3 – Systematic Evaluation and Retrofit. This phase consists of systematic, holistic evaluation of the building structure. This method may be used to further evaluate Tier 1 or Tier 2 deficiencies. This procedure is also required for structures exceeding height limitations outlined in ASCE 41 for a given building type, buildings that do not conform to one of the common building types, or for enhanced performance objectives. Tier 3 evaluation is beyond the scope of this report.

The ASCE 41 methodology employs a performance based approach, which sets criteria for building performance when subjected to a specific seismic hazard level. Building performance can generally be described as the safety provided to occupants, the feasibility and costs of repairs following a seismic event, and impacts to the larger community.

Using this standard, a Performance Objective is selected. For this evaluation, the Basic Performance Objective for Existing Buildings (BPOE) was selected. This performance objective is the default performance objective for the assessment of existing buildings. The BPOE is intended to provide performance that is historically accepted for what is deemed "reduced code performance" in documents such as the 2012 International Existing Building Code (2012 IEBC).

The BPOE Seismic Hazard level and building performance varies by the Risk Category of the building. Under the proposed use as a shelter essential facility, this building is classified as Risk Category IV. As such, the BPOE for this building is the immediate Occupancy Structural performance level at the BSE-1E seismic hazard level, and Life Safety performance level at the BSE-2E seismic hazard level. The BSE-1E seismic hazard utilizes spectral response acceleration (ground motion) parameters corresponding to an earthquake that has a 20% probability of exceedance in a 50 year period, or a 225 year return period. The BSE-2E seismic hazard level utilizes spectral response acceleration parameters corresponding to an earthquake that has a 5% probability of exceedance in a 50 year period, or a 975 year return period. This is consistent with the performance level required in the 2012 International Existing Building Code for a building of this Risk Category.

The Life Safety performance level is defined as the post-earthquake damage stat in (a) partial or total structural collapse does not occur, and (b) damage to nonstructural components is non-life-threatening, though the level of damage after an event will be more significant than that of modern construction. The Immediate Occupancy performance level is defined as the post-earthquake damage state in which only very limited structural damage has occurred. Primary vertical and lateral force resisting systems of the building retain the majority of their original, pre-earthquake strength and stiffness.

The performance of non-structural components is an important part of a holistic seismic rehabilitation project, especially in regards to Risk Category IV buildings. The non-structural performance criteria for this assessment is Hazards Reduced at the BSE-2E seismic hazard level and Position Retention at the BSE-1E seismic hazard level. The Hazards Reduced performance level is defined as the post-earthquake state in which non-structural components are damaged and could pose falling hazards, but high hazard items are secured to reduce risk in

assembly areas or in the path of egress. The Position Retention performance level is defined as the post-earthquake state in which non-structural items may experience damage and may lose functionality, but will remain secured in place, and breaking of utility connections will not occur. Building access and life safety systems generally remain intact and operable.

Lateral Load Resisting System and Non-Structural Deficiencies

The Tier 1 checklist procedures of ASCE 41-17 identified several components of the lateral force resisting system in each phase of construction that warranted rehabilitation or further analysis by the Tier 2 procedures. Please refer to Appendix C for the checklists. In some cases, such as for lateral force resisting elements with an incomplete load path, no Tier 2 procedure exist and a rehabilitation measure must be provided. Where a Tier 2 procedure is available for further analysis, the element is checked again, and removed from the deficiency list if found to meet the Tier 2 criteria. If the element does not meet the Tier 2 check, a rehabilitation measure is required. The following list includes all structural deficiencies remaining after completion of the Tier 1 and Tier 2 procedures:

Structural Deficiencies

S1: CMU walls are slender and have insufficient out of plane strength at the large gymnasium and small gymnasium. CMU walls at the north side of the wrestling room are continuous to the corridor roof but have wood framing above. The corridor roof is insufficient to brace the walls out of plane, and the change in framing type creates a hinge, interrupting the out of plane load path.

S2: Wood framed roof diaphragms have large spans and are insufficient to span between shear walls at the theater roof, theater mezzanine, corridor roof, culinary roof, music room roof, and small gymnasium roof. Metal deck roof diaphragms have large spans and are insufficient to span between shear walls at the mechanical mezzanine roof and at the large gymnasium roof.

S3: Wood framed diaphragms are lacking continuous ties across the roof at the theater roof, corridor roof, culinary roof, music room roof, and small gymnasium. Metal deck roof diaphragms are lacking continuous ties across the roof walls at the mechanical mezzanine roof, wrestling room roof, and the large gymnasium roof.

S4: CMU walls are not sufficiently anchored to the roof diaphragms at the theater roof, theater mezzanine, corridor roof, culinary roof, music room roof, small gymnasium roof and small gymnasium mezzanine.

S5: Wood framed roof connections to CMU walls have insufficient fasteners to transmit shear loads at the culinary roof, corridor roof, music room, and the small gymnasium mezzanine.

S6: There is a step in the roof diaphragm at the corridor between the large gymnasium and theater. This creates a discontinuity (incomplete load path) in the roof diaphragm and the diaphragm is insufficient to span between shear walls.

S7: The wood framed corridor roof does not have sufficient connections to the CMU walls of the large gymnasium and concrete walls of the theater. The low roof should have collectors. This condition could lead to the roof diaphragm crushing or pulling away from the CMU or concrete walls, and possibly collapse.

S8: The south wood framed wall of the theater, above the concrete wall does not have shear wall framing and is inadequate to transmit lateral loads from the roof to the concrete wall below.

S9: The concrete roof beam at the small gymnasium has been damaged by exposure to the weather and must be repaired to serve as a chord for the roof diaphragm.

S10: The wood framed walls above the south side of the small gymnasium mezzanine and at the theater above all concrete walls are insufficient to serve as shear walls.

S11: The walls at the stage high roof are not continuous to the base of the building, creating a discontinuity in the lateral load path.
S12: There is a discontinuity in the load path from the stage high roof to the main theater roof.
S13: The concrete headers above doors in the theater are insufficiently detailed for deformation compatibility.

Non-Structural Deficiencies

Non-structural components are an important part of the function of the building, and can provide life safety hazard in a seismic event. They can pose a significant cost to a systematic seismic retrofit, especially for an essential facility. The Tier one checklist procedures of ASCE 41-17 identified the following non-structural components that did not meet the Tier 1 checklist procedures:

N1 Fire suppression piping in the corridor, culinary classroom, and stage is not adequately anchored and braced.
N2 Fire suppression piping in the corridor, culinary classroom, and stage is does not have flexible couplings.
N3 Sprinkler fixtures in the corridor, culinary classroom, and stage do not have adequate clearance at penetrations through the ceiling.
N4 Emergency and egress lighting in the corridors is not adequately anchored or braced to structure.
N5 The suspended gypsum board ceiling at theater is not adequately braced to the structure above.
N6 Integrated suspended ceilings in the corridor, culinary room, and music room are not adequately braced to the structure above.
N7 Integrated suspended ceilings in the corridor, culinary room, and music room do not have adequate clearance from enclosing wall or partitions.
N8 Light fixtures in the corridor, culinary classrooms, and music classrooms are not adequately braced to the structure above.
N9 Overhead glazing at clerestory between the large gymnasium and theater has panes larger than 16 sq. ft. that are not laminated annealed or laminated heat treated glass, and are not designed to remain in the frames once cracked.
N10 The mechanical mezzanine contains tall narrow equipment that is not anchored to the floor or walls.
N11 The natural gas distribution system in the mechanical mezzanine is not adequately braced to the structure.
N12 The natural gas distribution system in the mechanical mezzanine does not have shutoff valves.
N13 The natural gas distribution system in the mechanical mezzanine does not have flexible couplings.

Seismic Rehabilitation Recommendations

The following recommendations are required to rehabilitate the structure to meet the Basic Performance Objective criteria for a Risk Category IV building in accordance with ASCE 41-17. These rehabilitation measures are shown on the conceptual seismic upgrade drawings included in Appendix B.

Structural:

S1: Install tube steel strongbacks to the large gymnasium where wall reinforcing is not adequate for out of plane loads and the low roof diaphragms are insufficient to brace the wall. Install tube steel strongbacks at the small gymnasium. Add tube steel strongbacks at the wrestling room, where CMU walls are not full height to the upper roof. Provide tube steel struts between the large gymnasium strongbacks and wrestling room strongbacks at the corridor roof, for deformation compatibility. Strong backs will have

angle connections with epoxy anchors at the CMU walls. Strong backs will have new footings and epoxy anchors at baseplates. Miscellaneous steel will be required at the connection to roof structure. Strongbacks will be attached to wood cross ties with bolts or lags at the wood framed roofs. Strongbacks will be attached to steel angles with a combination of bolts and field welded connections at metal roof deck conditions.

S2: Install full depth blocking and enhance fastening at wood framed roof diaphragms at the theater roof, corridor roof, culinary roof, music room roof, and small gymnasium. Enhance metal deck roof diaphragms by adding top seam welds to sidelaps at the mechanical mezzanine roof and at the large gymnasium roof.

S3: Install cross ties consisting of blocking and continuous straps at wood framed diaphragms at the theater roof, corridor roof, culinary roof, music room roof, small gymnasium roof, and small gymnasium mezzanine. Install steel angle cross ties at the mechanical mezzanine roof, wrestling room roof, and the large gymnasium roof. Steel angle cross ties will require welding to the roof deck from above, and miscellaneous plates and possibly field welding at connections to the open web joists. Steel angle cross ties will require epoxy anchors to connect to CMU walls.

S4: Install holdown devises with epoxy anchors at CMU walls to anchor them to the roof diaphragms at the theater roof, theater mezzanine, corridor roof, culinary roof, music room roof, small gymnasium roof, and small gymnasium mezzanine.

S5: Install long structural screws through roof deck, into ledgers and top plates at CMU walls at the culinary roof, corridor roof, music room, and small gymnasium mezzanine.

S6: Demolish low roof above restrooms and rebuild at the same elevation as the adjacent roof to the south. The roof will be rebuilt with wood I joists and 19/32" plywood sheathing. The roof diaphragm will have full depth blocking and 10d at 4" on center at panel boundaries and diaphragm boundaries. Field fastening will be 10d at 12" on center. CMU walls in the restroom area will have to be extended approximately 2', and will require #4 epoxy dowels at 12" on center. 4x Ledgers at the large gymnasium and the theater walls will need to be attached with epoxy anchors.

S7: Add new double channel collector elements across the corridor area low roof. These collectors will require field welded plate connections with epoxy anchors at the theater and large gymnasium wall corners. Channels will require nailers for attachment to the roof diaphragm.

S8: Rebuild the south wood framed wall of the theater above the concrete wall. Remove horizontal girts. Add stud framing, anchors, holdowns, and shear wall sheathing.

S9: Remove loose concrete and corrosion from reinforcing at the northeast corner of the cast in place roof beam at the small gymnasium. Replace spalled concrete with an appropriate epoxy mortar. Install cap flashing.

S10: Rebuild interior wood framed wall at south side of small gymnasium mezzanine and all wood framed walls above the concrete walls at the theater with 15/32" sheathing, holdowns and epoxy anchor bolts to the concrete structure below. Fastening at all walls shall be 10d at 6" on center at panel boundaries and 12" on center in the field, except at the north wall of the theater. The north wall of the theater shall have 10d at 4" on center at panel boundaries, and 3x framing at sill plates, blocking, and all members at panel boundaries.

S11: Replace wood framed walls on the east and west side of the stage with new 8" CMU shear walls. Shear walls will sit on a new 2' thick by 3' wide strip footing that runs continuous between existing adjacent footings. Provide allowance for epoxy dowels to existing footings.

S12: Provide new 4x blocking and heavy strap for collectors from the east and west stage walls to the main theater roof.

S13: Provide new C12x50 channels at concrete headers at the theater to increase capacity of these secondary elements. Provide allowance for epoxy anchors along the length and groups of epoxy anchors at the ends.

Non-structural:

N1 Provide bracing to roof structure above for fire suppression piping in the corridor, culinary classroom, and stage. Bracing and attachments shall be in accordance with NFPA-13.
N2 Provide flexible coupling for fire suppression piping in the corridor, culinary classroom, and stage, in accordance with NFPA-13.
N3 Adjust ceiling framing at sprinkler fixtures in the corridor, culinary classroom, and stage to provide adequate clearance at penetrations through the ceiling. Clearances shall be in accordance with NFPA-13.
N4 Install bracing for emergency and egress lighting in the corridors.
N5 Provide 2x braces in each direction to the roof structure above for the suspended gypsum board ceiling at theater. Provide braces at 12 feet on center, each way.
N6 Provide wire bracing and struts at the integrated suspended ceilings in the corridor, culinary room, and music room. Each brace point shall have 4 wires and at least one strut. Brace points should be provided for each 144 square feet of ceiling area.
N7 Adjust integrated suspended ceiling framing in the corridor, culinary room, and music room to provide a minimum ½ inch clearance from enclosing wall or partitions.
N8 Brace pendant light fixtures in the corridor, culinary room, and music room to the roof structure above.
N9 Remove glazing at clerestory. The area of roof at the clerestory shall be replaced at the same elevation as the roof to the south.
N10 Anchor all equipment over 6' tall with a height to width ratio exceeding 3:1 at the mechanical mezzanine. Anchors shall be installed at all 4 corners and will consist of epoxy anchors.
N11 Install bracing to roof or structural walls for the natural gas distribution system in the mechanical mezzanine.
N12 Install shutoff valves at the natural gas distribution system in the mechanical mezzanine.
N13 Install flexible couplings at the natural gas distribution system in the mechanical mezzanine.

Conclusions

The findings and recommendations in this report are based on the existing drawings available for review and our visual observations, and are limited by finishes and items inaccessible to view. Based on our analysis and review, we believe the primary building on the Phoenix High School campus is deficient to resist anticipated seismic loads. We recommend the structure be retrofitted as shown on the conceptual seismic upgrade drawings included in Appendix B of this report.

It is notable that there are no alterations to the primary structure or change in risk category mandated by the remodel project. It is our understanding that the district would like to upgrade the building to Essential Facility standards, to provide the communities of Phoenix and Talent with a needed emergency shelter facility. The proposed rehabilitation would be voluntary in nature, and performed at the discretion of the school district.

We believe this seismic rehabilitation project would not only better protect the students and staff at the high school during a seismic event, but would also provide a valuable resource to the local community. Should you have any questions regarding the content of this assessment, please contact our office.

WILSON ARCHITECTURE

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Construction Cost Estimate

Owner **City of Roseburg**
Project **Navigation Center**
Phase **Scoping**
Date Printed 6/7/2022

Base Items	Qty	Unit	Unit Cost	Subtotal	Scale Factor	SubTotal with Scale Factor
Div 02 - Demo						
Sidewalk demo at new door	1.00	allow	$500.00	$500.00	1.00	$500.00
Sidewalk demo at ramp	286.00	sf	$3.86	$1,103.60	1.00	$1,103.60
Trenching for plumbing	36.00	sf	$3.86	$138.92	1.50	$208.37
Saw cut	123.00	lf	$5.48	$674.16	1.50	$1,011.24
Slab demo	559.00	allow	$3.86	$2,157.04	1.25	$2,696.30
Wall demo - CMU	120.00	sf	$28.75	$3,450.00	1.25	$4,312.50
Wall demo - Wood framing	2808.00	sf	$2.57	$7,223.58	1.25	$9,029.48
Casework demo	25.00	lf	$59.64	$1,491.00	1.00	$1,491.00
Columns - Expose	6.00	allow	$100.00	$600.00	1.00	$600.00
Ceiling tile demo	500.00	sf	$0.94	$468.00	1.25	$585.00
Ceiling grid and tile demo	2654.00	sf	$1.18	$3,139.68	1.25	$3,924.60
Door demo	13.00	ea	$192.94	$2,508.19	1.00	$2,508.19
Window demo	41.00	sf	$4.38	$179.38	1.25	$224.22
Relite demo	96.00	sf	$4.38	$420.00	1.25	$525.00
Gyp Board Demo	1.00	allow	$2,500.00	$2,500.00	1.00	$2,500.00
Flooring Demo	5035.00	sf	$0.96	$4,857.20	1.00	$4,857.20
Div 03 - Concrete						
Conc slab	559.00	sf	$14.18	$7,923.83	1.00	$7,923.83
Premium for shower	1.00	allow	$3,500.00	$3,500.00	1.00	$3,500.00
Curb at floor level transition	19.00	lf	$18.11	$344.14	2.00	$688.28
Trench repair	36.00	sf	$44.65	$1,607.45	1.00	$1,607.45
Interior ramp	1.00	allow	$10,000.00	$10,000.00	1.00	$10,000.00
Div 04 - Masonry - Not Used						
Div 05 - Metals						
Misc metals allowance	1.00	allow	$5,000.00	$5,000.00	1.00	$5,000.00
Guard rail with handrail	34.00	lf	$128.25	$4,360.50	1.00	$4,360.50
Handrail only	23.00	lf	$65.00	$1,495.00	1.00	$1,495.00
Frame at new CMU openings	2.00	allow	$3,500.00	$7,000.00	1.00	$7,000.00