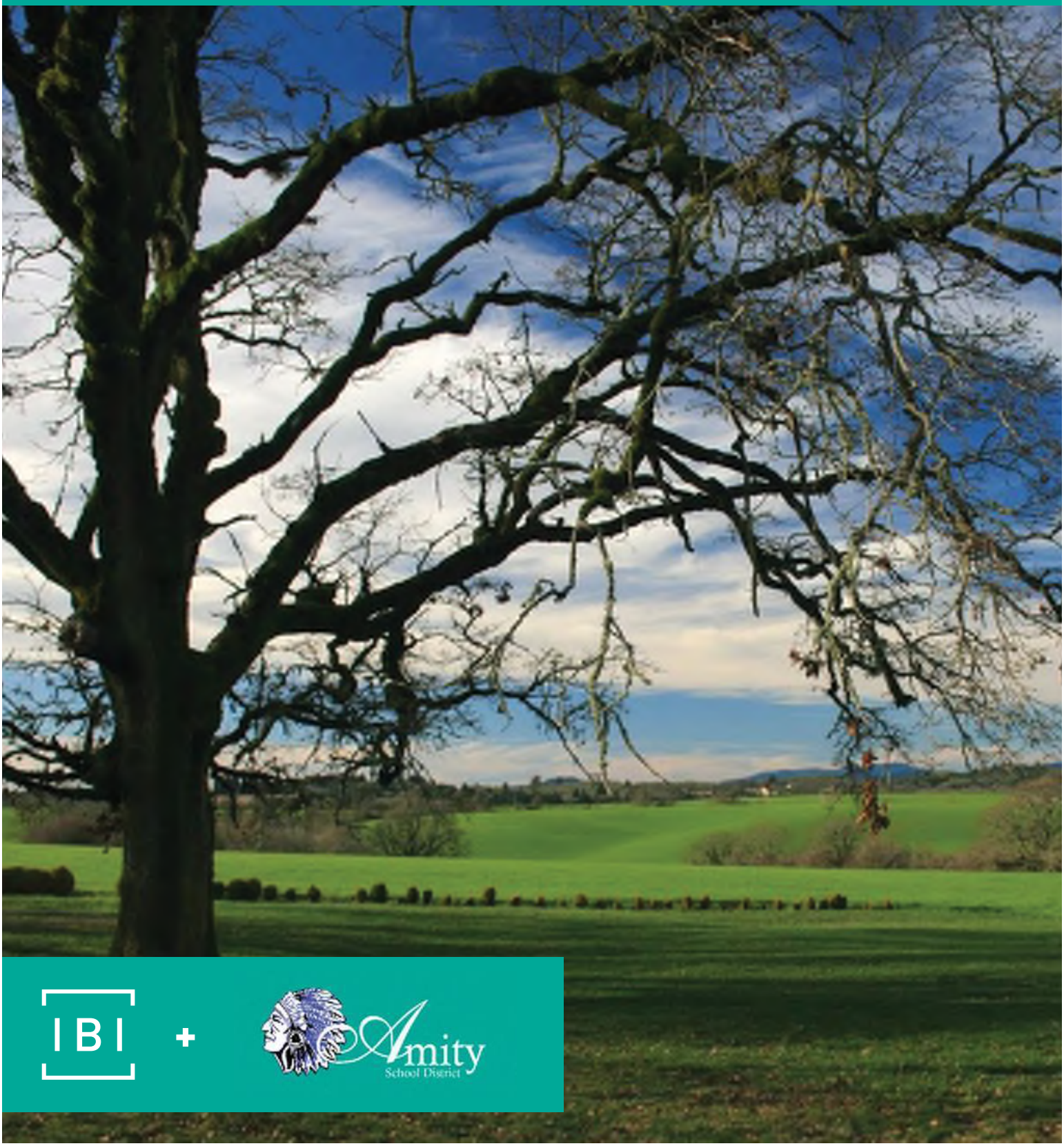
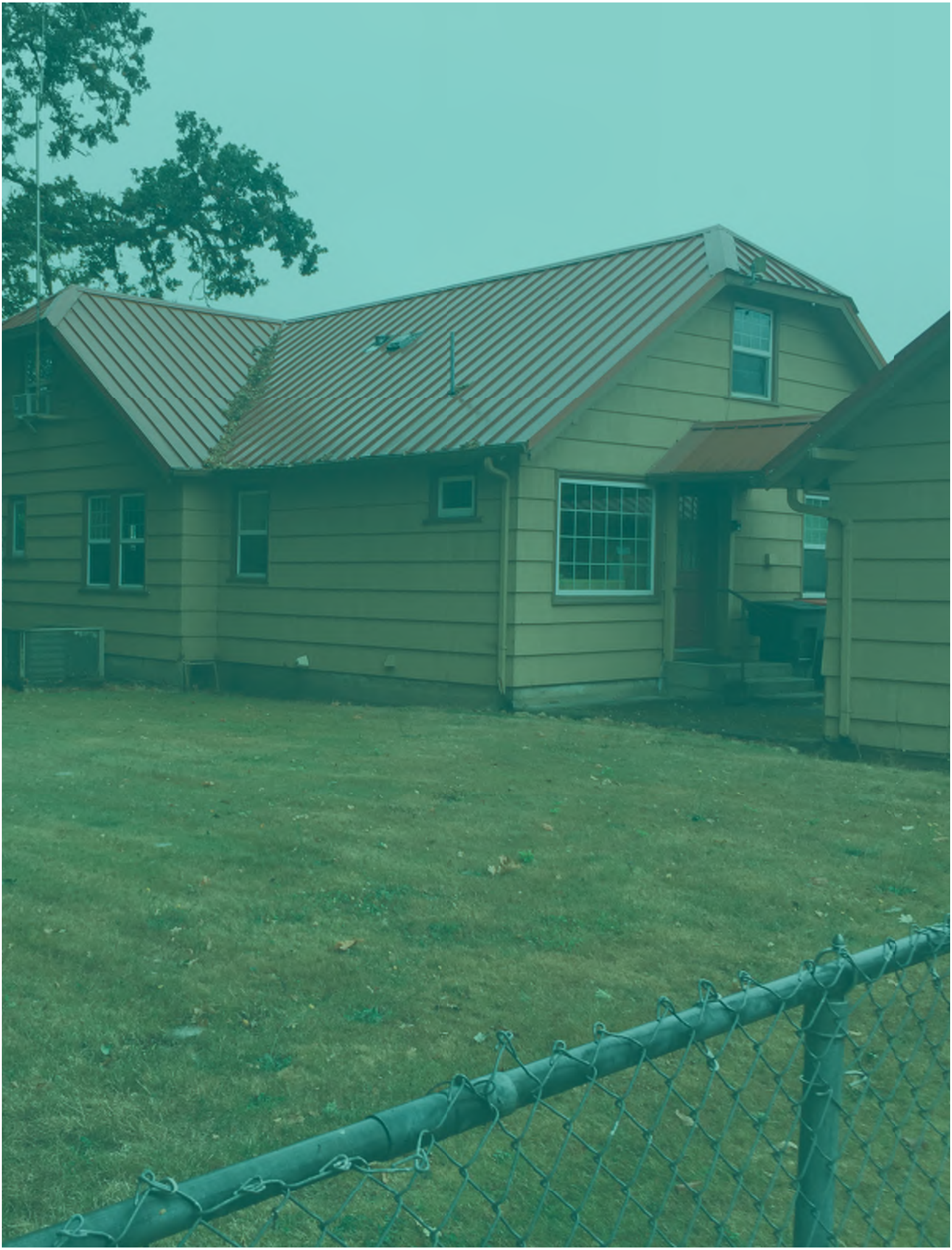
LONG-RANGE FACILITY PLAN 2020
AMITY SCHOOL DISTRICT

By IBI Group Architects, Inc.



IBI + Amity School District



ACKNOWLEDGMENTS

Effective school facility planning is characterized by extensive input, research-based analysis of facility conditions and educational trends, and documentation of building user needs. Amity School District's Long-Range Facility Plan is the culmination of a multi-faceted five-month process involving representatives from a wide variety of District programs and community stakeholders. Amity School District would like to thank the following individuals for their contribution to this process:

LONG-RANGE FACILITIES PLANNING COMMITTEE

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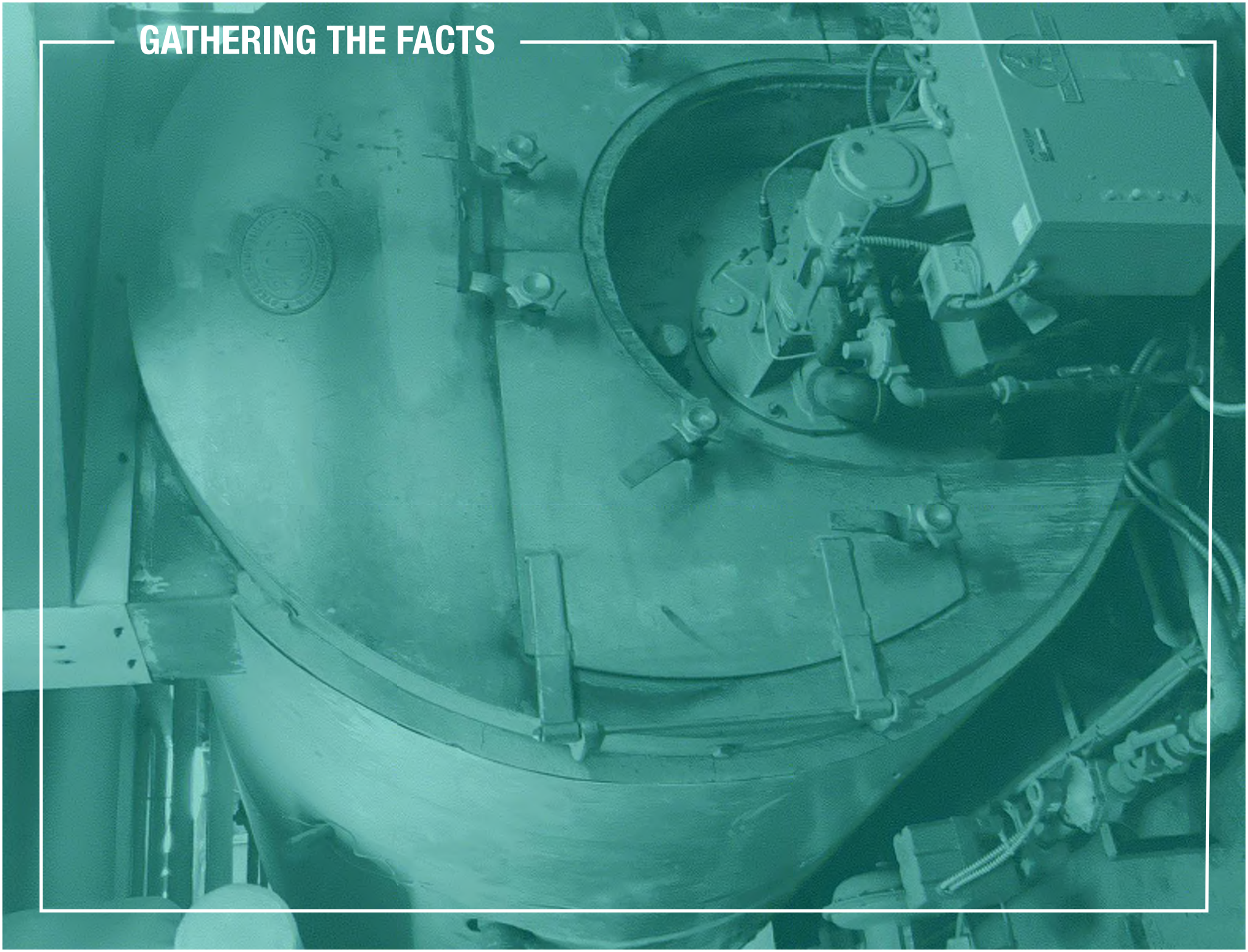
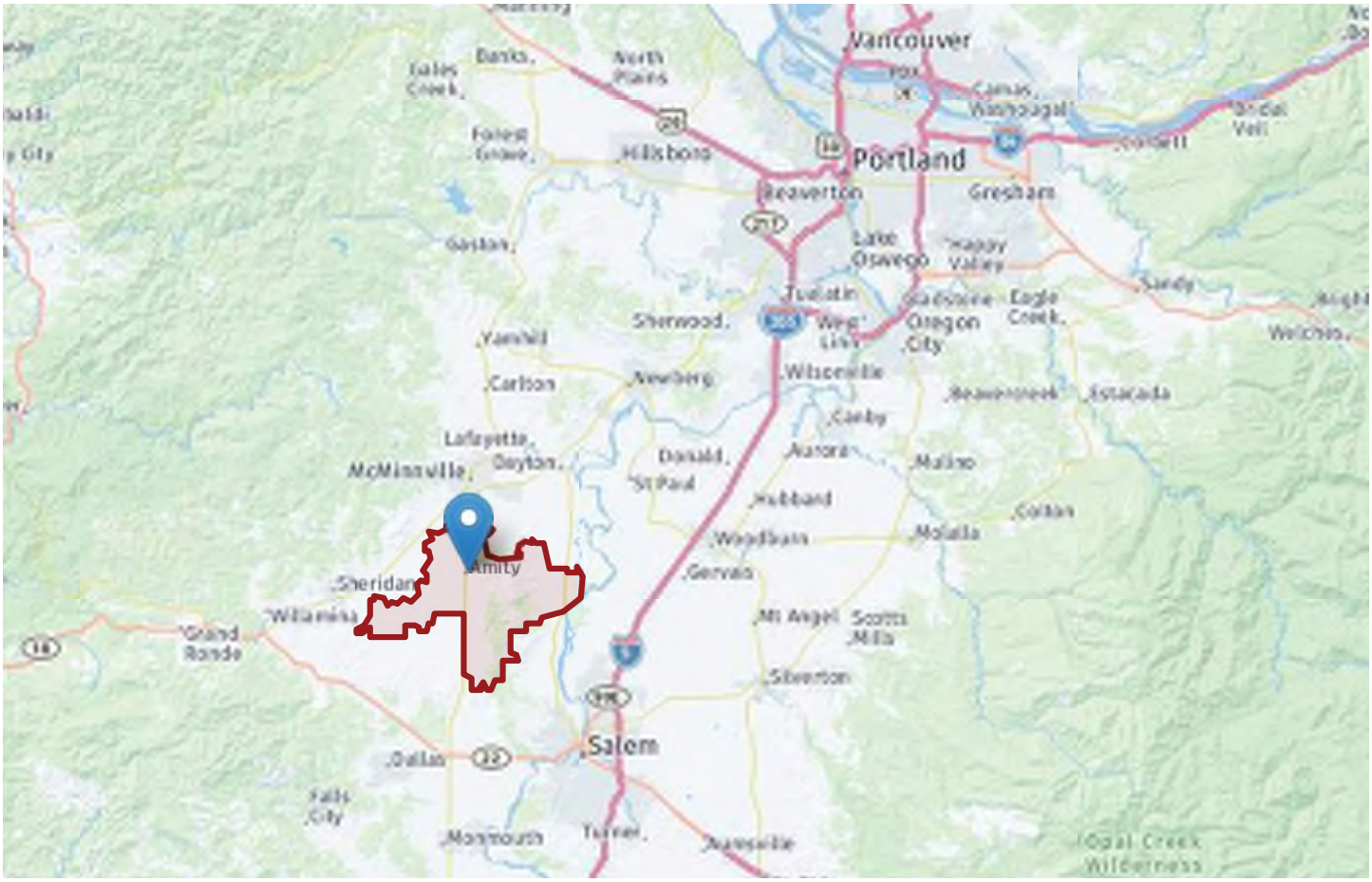
GATHERING THE FACTS





INTRODUCTION

OVERVIEW OF THE DISTRICT

Amity School District 4J is located in the town of Amity, Oregon, on US Highway 99W, 10 miles south of McMinnville and 25 miles north of the Salem.

The District serves 876 students in Yamhill County and operates one elementary, one middle, and one high school building as well as one district office building.

LONG-RANGE FACILITY PLAN

The Amity School District Long-Range Facility Plan (LRFP) presents a long-term vision for facilities to accommodate District operations and educational programs. It has been prepared in compliance with ORS 195.11 and Oregon Administrative Rule (OAR) 581-027-0035. This report reflects the work of the Amity School District LRFP Committee over a five-month process culminating in January 2020.

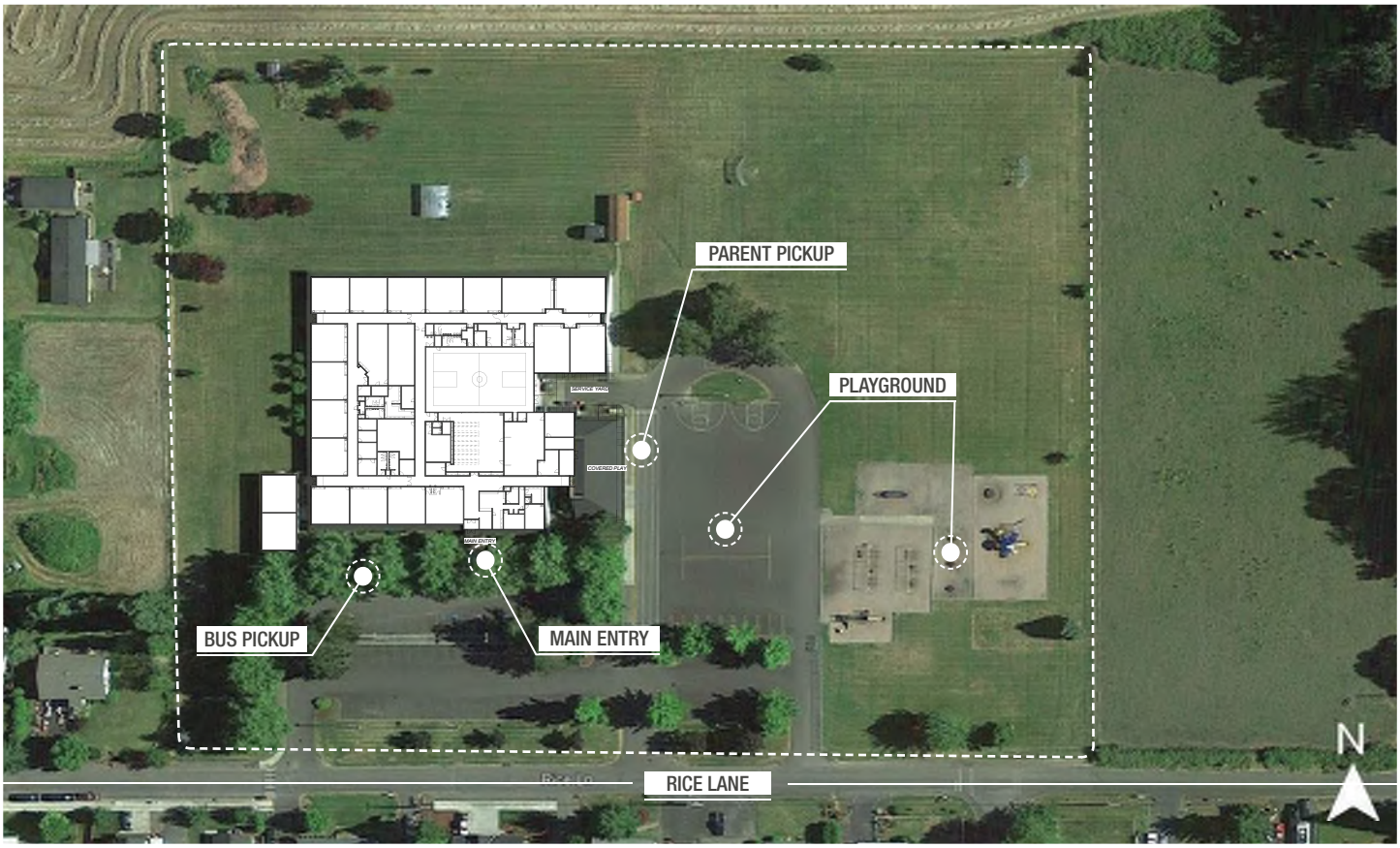
THE MISSION
AMITY SCHOOL DISTRICT

"To provide an educational system that enables each of our community's students to reach their greatest potential for the lifelong benefit of each student and the betterment of our community and country."

BUILDING & SITE UTILIZATION

AMITY ELEMENTARY SCHOOL

- BUILDING SUPPORT
- CIRCULATION
- CORE ACADEMICS- SCIENCE
- CORE ACADEMICS-GEN ED
- CTE
- DINING AND NUTRITION
- FINE AND PERFORMING ARTS
- LIBRARY
- PHYSICAL EDUCATION / ATHLETICS
- PROGRAM SUPPORT
- SPECIAL PROGRAMS
- STAFF & ADMIN SUPPORT
- STUDENT SERVICES



Property lines are approximate and not based on survey data

CURRENT USE

Amity Elementary School is a single-story building that serves kindergarten through fifth grade students. There is an additional two-classroom modular building adjacent to the school that houses the Learning Resource Center (LRC) program and a Community Preschool. Although the preschool is not operated by the District, the students share outdoor play space and equipment.

The main school building was built in 1981 to serve students in grades kindergarten through fifth grade. In its 40 years of operation, the facility has accommodated the changing needs of the elementary school community. Spaces were repurposed to support student services like Title-1, LRC, and behavior programs; a classroom was remodeled to become a computer lab; kindergarten classrooms doubled to meet the Department of Education's 2009 requirement to provide all-day kindergarten, and a makerspace was built into the library to support growing STEM curriculum needs.

The school site has access to a single road, Rice Lane, with residential property to the south, east, and west, and agricultural property to the north (aerial photograph above does not represent the most recent housing development on the neighboring property to the east).

The school site includes onsite parking and separate parent and bus dropoff lanes. Much of the site is unfenced, although there are vehicular gates at each entry drive to the playground. Service yard access (for food delivery, trash pickup, etc.) Occurs through the access gates on the north side of the playground, resulting in conflicts between vehicular and student play areas.

BUILDING & SITE UTILIZATION

AMITY MIDDLE SCHOOL

- BUILDING SUPPORT
- CIRCULATION
- CORE ACADEMICS- SCIENCE
- CORE ACADEMICS-GEN ED
- CTE
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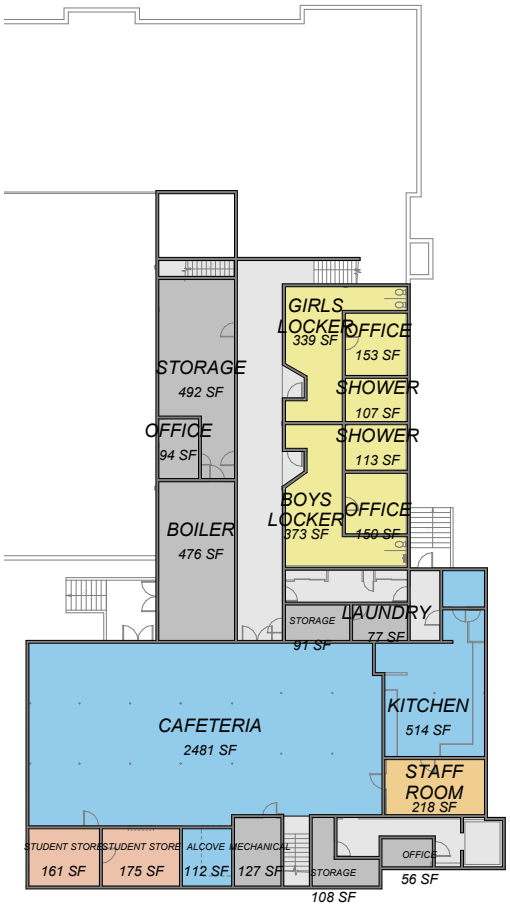


LOWER LEVEL

UPPER LEVEL

Property lines are approximate and not based on survey data

CURRENT USE

Amity Middle School is a two-story building that serves sixth through eighth grade students. There is an additional two-classroom building adjacent to the school that houses a computer and STEM lab. The District main office is also located on the middle school site and shares parking.

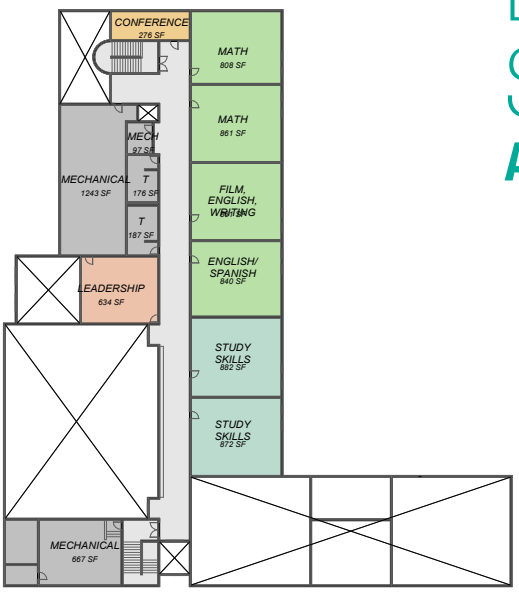
The main school building was built in 1935. In its 85 years of operation, the facility has accommodated the changing needs of the middle school community. Spaces were repurposed to support student services like leadership and LRC; classrooms were remodeled to become the library, STEM and computer labs, and the original stage was converted to counseling offices and custodial rooms. The middle school, however, does not include spaces for many programs. As a result, students walk to the high school for fine and performing arts programs, Career Technical Education (CTE) classes, and athletics.

The school faces north toward Church Avenue, with Trade Street (99W), the City's main arterial, at the west boundary of the site. There is a private parcel of property to the north of the middle school that is available for use by the District as play space, but no structure or development is permitted on this site. This field is currently used for middle school recess.

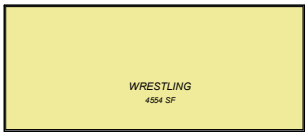
Property to the west is zoned for Light Industrial (LI) use, while all other adjacent property is zoned for Residential R2. The school site is unfenced and includes onsite parking. There are hard surface play areas on the south side of the property, but no sports fields. Team sports competitions occur at the high school.

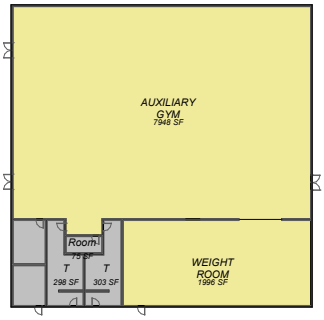
BUILDING & SITE UTILIZATION

AMITY HIGH SCHOOL



UPPER LEVEL





LOWER LEVEL

- BUILDING SUPPORT
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- PROGRAM SUPPORT
- SPECIAL PROGRAMS
- STAFF & ADMIN SUPPORT
- STUDENT SERVICES

Property lines are approximate and not based on survey data

CURRENT USE

Amity High School's main building is a two-story building that serves ninth through 12th grade students. Students in grade seven and eight from the middle school also walk to the high school facility to take part in art, music, and CTE programs not offered at the middle school.

In addition to the main building, there are two athletic buildings on site for the auxiliary gymnasium and wrestling program, as well as two two-classroom modular buildings on the southwest corner of the site that are used for stage prop storage, a takeapart lab, IT storage, and the maintenance office. The District bus yard is also housed on the high school site.

The north wing of the main building was built in 1965 and the southern wing and second story were built in 2003. The southern end of the building houses CTE programs including wood, metal, and agriculture programs that are adjacent to the greenhouse outdoor ag. facilities. The cafeteria commons is heavily used by the community and located on the south portion of the main building with easy access to the main entry and parking.

Athletic buildings are clustered to the north with athletic fields on the east portion of the school site, and include a stadium overlooking the football field and track. There is an additional 10-acre undeveloped parcel owned by the District beyond the east high school property boundary. Residential property to the north and south is zoned R1, property to the east is zoned R2. Property east of the District's 10-acre parcel is unincorporated.

Student parking is on the north lot while visitor and staff parking occur to the south near the main entry. The property has access to Oak Street to the west and Sherman Street to the south. Sherman Street does not extend the full length of the southern border, however, and ends just prior to the stadium at North Goucher Rd.

Middle School Boiler, circa 1930's

ASSESSMENTS

FACILITY & SEISMIC EVALUATIONS

FACILITY ASSESSMENTS

The facility assessments for Amity School District were conducted in the summer of 2019 in order to understand the physical conditions of the school buildings. Assessments were completed for the elementary, middle, and high school buildings as well as the district main office building.

The assessments are based on the Oregon Department of Education's (ODE) assessment guidelines (OAR 581-027-0035) and were conducted using the ODE template led by a state certified assessor and licensed architect.

The full report, which includes the assessment field instrument, summary of findings, and list of recommendations to meet the deficiencies described, is included in the appendix of this report. A prioritization of major, moderate, and minor repairs are included at the end of this report.

SEISMIC EVALUATION

The seismic evaluations for all three school buildings were also conducted in the summer of 2019. The evaluations were conducted according to the Tier 1 screen procedure per ASCE/SEI 41-17 and were conducted by a licensed structural engineer. Structural components were evaluated to the "Limited Safety" performance level and non-structural components were evaluated to the "Hazards Reduced" performance level.

The full report, which includes a summary of deficiencies and list of recommendations for further investigation and possible upgrade solutions, is included in the appendix of this report.

HISTORIC RELEVANCE

None of the school facilities operated by Amity School District are listed by the Amity Historic Landmark Committee or National Register of Historic Places. Amity Middle School and the District Office are both listed as "Eligible/ Contributing" on the Oregon Historic Sites Database but are not currently included by the State Historic Preservation Office.

ASSESSMENTS
EDUCATIONAL ADEQUACY

WHAT IS EDUCATIONAL ADEQUACY?

How do the physical aspects of the building and site support teaching, learning, and social-emotional wellbeing? How does the school facility adequately support the instructional mission and methods? Educational Adequacy is an essential component to be considered by school communities as they attempt to prepare aging facilities for a modern educational model/paradigm and includes an analysis of the current facilities' ability to meet current national educational adequacy standards.

ASSESSMENT METHODOLOGY

Our assessor teams include accredited Educational Planners and licensed architects who collaborate with school communities to determine how facilities compare to school community-defined standards according to educational adequacy categories listed in this report.

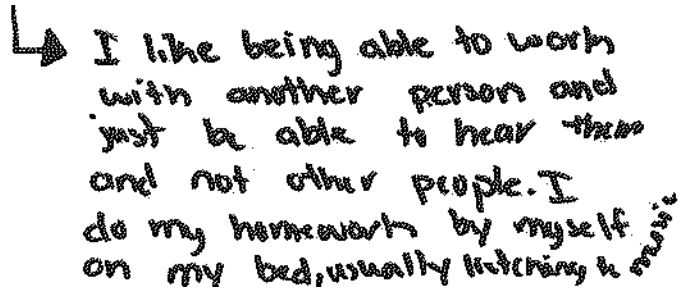
Principal Interviews

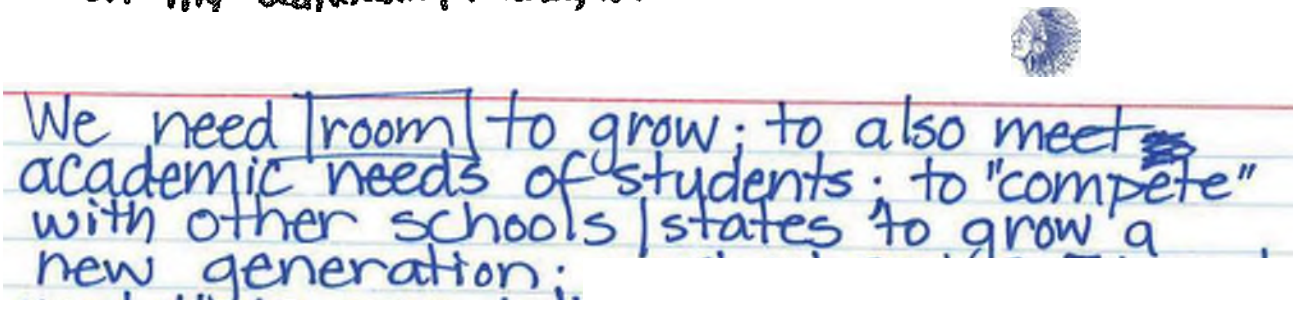
In October 2019, IBI's assessors spent a day meeting with the principals of all three schools. During that time we toured the buildings and discussed the current functions of each space (described in the building utilization plan) and the ability of the spaces to meet the needs of those functions. Assessors also conducted an interview to discuss long-term strategic goals and programs.

Stakeholder Listening Sessions

In November of that same year, the assessment teams held listening sessions with building users: students, teachers, and staff.

On the whole, one stakeholder group did not contradict the needs and priorities of the others. The summary of findings listed in this report is a compilation of the feedback gained from each event.





Listening Session Feedback

EDUCATIONAL ADEQUACY SUMMARY OF FINDINGS

AMITY ELEMENTARY SCHOOL

EDUCATIONAL PROGRAM SUPPORT

There is a need for more project-based and STEM activities, which led to the division of the library to create a makerspace lab. The makerspace, however, has no daylight or connection to the other academic spaces. Teachers expressed a desire to have more flexible and adaptable environments, using multiple walls for instruction. There is also a lack of adequate space for student services like English Language Learner (ELL), Title 1, and LRC. The LRC classroom is not part of the main building and the Title 1, speech, SPED office, and ELL rooms have no access to daylight or fresh air. There is no OT/PT room or adequate toilet for students with medical needs (there is currently one student enrolled who has a high need for a changing area and medical equipment storage). The community Pre-K program is held in the adjacent portable building, but does not have clear and safe access to the playground.

EQUIPMENT, FURNITURE, AND STORAGE

Built-in storage is old and brightly colored but functional. There is a desire to have increased storage in classrooms as well as storage for PTO events. The furniture is not very flexible. Students should be able to manipulate the space without taking time from the teacher. There is a lack of variety in the seating and grouping options for the furniture and most classrooms are set up with individual tables pushed together into small groups. The cafeteria tables are old and feel unsafe. Restroom partitions are badly damaged.

TECHNOLOGY

One classroom is used as a computer lab, but the school is moving towards, using chromebook carts. The reading program curriculum is online. There is a desire to move to monitors so that curriculum can be cast from chromebooks.

ENVIRONMENTAL CHARACTERISTICS

The cafeteria space is incredibly loud during lunch time. The high volume of the space has a physical impact on the students and teachers within. Classrooms are adequately sized for the number of students. There is no air conditioning in the building, making the beginning and end of the school year uncomfortable. The HVAC is not well balanced, some rooms are too hot, others too cold.

RELATIONSHIP OF EDUCATIONAL SPACES

There is currently no breakout space outside of classrooms. Partner activities like reading and group projects in the older grades occur in the hallways outside classroom doors. There is limited visibility from the classrooms to the hallways and there is almost no pinup space to display student work. There is also a lack of space for teacher collaboration, or rooms for part-time teaching staff to do prep. Individualized Educational Plan (IEP) meetings occur in classrooms.

SUPPORT SPACE FUNCTIONALITY

There is only one staff restroom. The admin office is open and lacking privacy, especially when there are volunteers or students in the office area. The gymnasium and playgrounds are adequately sized, but playground equipment that is suitable for younger and/or physically impaired students is desired. Storage for community athletics is inadequate.

SAFE, SECURE, AND WELCOMING

The main entry is the only point of access and there is access control technology, but there is currently no secure vestibule. Truck access to the service yard (Sysco trucks, milk deliveries, and trash pickup) runs through the playground, causing almost daily conflicts and safety concerns. Emergency egress from the gym to the playfields is through the service yard. The intercom system is outdated and there is currently no way to connect to the exterior speakers in the event of an emergency.

FUNCTIONAL SOLUTIONS FOR FURTHER STUDY

A number of programs and activities are not supported by the current school facility. Below is a list of recommendations for facility modifications that are based on space and program needs gathered through interviews with the principal and teachers. Each solution requires further feasibility analysis including master planning, cost estimating, and coordination with middle and high school programs.

- Add a secure vestibule and remodel the administrative office to increase safety and security.
- Site redesign - safe access to play. Re-route delivery trucks. Add parking.
- Add the preschool program to the main building and provide safe access to play areas.
- Add daylight to the Title 1 room.
- Add facilities for students with special needs (toilets, physical therapy room, etc).
- New restroom partitions; replace urinals with toilets.
- Create more places to display student work.
- Replace classroom furniture with more flexible options.
- Replace cafeteria tables.
- Improve the acoustics of the cafeteria.
- Upgrade PA system to include outdoor speakers.
- HVAC upgrades to balance the temperature.
- New developmentally-appropriate play equipment for preschool, kinder, and special needs students.
- Bring the LRC program into the main building.

EDUCATIONAL ADEQUACY SUMMARY OF FINDINGS

AMITY MIDDLE SCHOOL

EDUCATIONAL PROGRAM SUPPORT

There is a need for more project-based and STEM activities and increased opportunities for hands-on learning with technology such as 3D printing and Computer Numerical Control (CNC) machines. Science labs are very outdated.

There are currently no spaces for the arts. Students walk to the high school for visual arts and music. There is no theater or performance venue in the school. There are currently no seventh or eighth grade electives offered at the school. Spanish is especially desirable as an offering.

There is also a lack of adequate space for student services. There is a strong student counselor but students do not have “chill out” space in the building and currently use hallways that are very narrow. Students report a lack of ownership.

In general, the middle school facility was described by teachers, students, and administrators as being unsupportive of the educational and community goals.

> **“The building is counter-productive to the teaching we’re trying to do”**

EQUIPMENT, FURNITURE, AND STORAGE

Built-in storage is at a minimum, much of the classroom storage solutions are original to the building. Much of the furniture is aged and inflexible, but functional.

TECHNOLOGY

There are two computer labs in the school and five chromebook carts. Every classroom has a smartboard and much of the science curriculum is online. The technology is functional and reliable.

ENVIRONMENTAL CHARACTERISTICS

There have been concerns about indoor air quality from the staff. The District is currently reviewing the conditions. The boiler provides a lot of heat in the morning, which gradually reduces throughout the day.

RELATIONSHIP OF EDUCATIONAL SPACES

There is currently no breakout space outside of classrooms. Group projects occur in the hallways outside classroom doors. There is limited visibility from the classrooms to the hallways and no space to display student work. Outdoor spaces are valued and used for learning (bioswales used in science curriculum).

SUPPORT SPACE FUNCTIONALITY

The admin office is small, with room for only one office. The health room is also extremely small and down the hall next to the gym. It is not possible to supervise the health room. Locker rooms are in need of repair and upgrade and the gymnasium is undersized and has internal columns that pose a safety issue. Students report feeling crowded and unsafe in the gymnasium. The cafeteria is undersized, requiring three lunch periods to serve the student population, but students report having adequate time to eat. Corridors are narrow and students report feeling crowded and unsafe during passing times.

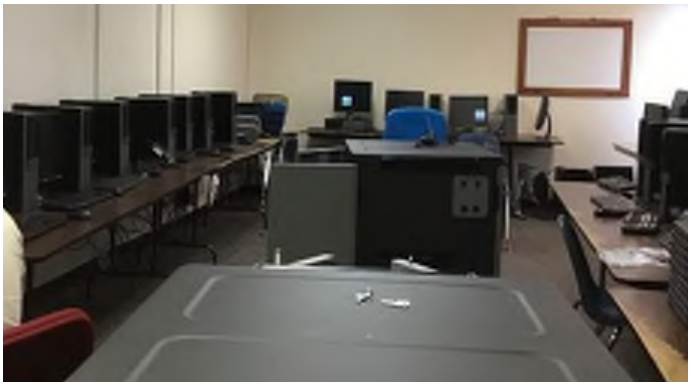
SAFE, SECURE, AND WELCOMING

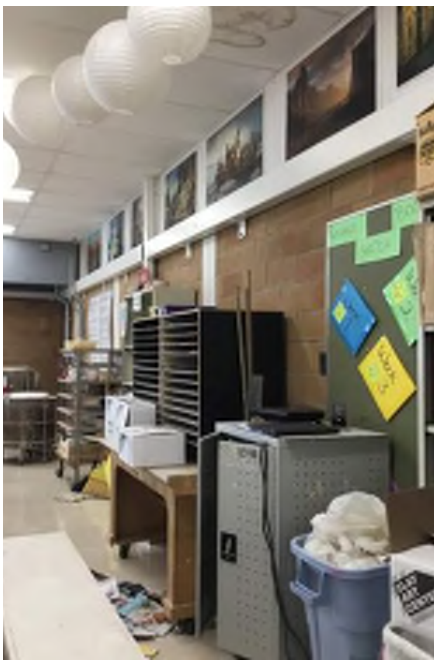
The main entry is the only point of access during school hours and there is access control technology. There is no ADA wheelchair access to the main entry door, it is provided at a secondary entry. Neither of these entry points are visible from the main office. Overall visibility in the school is good, with the principal able to supervise almost all hallway activity from a single point. Currently the PA system does not connect to outdoor speakers.

FUNCTIONAL SOLUTIONS FOR FURTHER STUDY

A number of programs and activities are not supported by the current school facility. Below is a list of recommendations for facility modifications that are based on space and program needs gathered through interviews with the principal, teachers, and students. Each solution requires further feasibility analysis including master planning, cost estimating, and coordination with elementary and high school programs.

- New security vestibule
- Office remodel to include health room
- New counseling center
- New HVAC system, boiler replacement
- Electrical system upgrades
- Plumbing upgrades – drinking fountains esp.
- New classrooms for the arts – music, drama, fine art
- New STEM labs and hands-on learning opportunities
- New gymnasium / multipurpose addition
- Upgrade outdated science labs
- Replace aging furniture
- Upgrade PA system to cover all areas of the building and outside
- Upgrade aging locker rooms





EDUCATIONAL ADEQUACY SUMMARY OF FINDINGS

AMITY HIGH SCHOOL

EDUCATIONAL PROGRAM SUPPORT

In the 17 years since the major addition/renovation to the high school building, many educational programs have grown and changed. There is an increased need to have additional CTE classes. For those that are lab or shop-based, there is a lack of facility support - forestry and animal production are reported interests by the students, as well as health-science careers and technology-based CTE classes like video production and 3D animation.

Currently, the art room is undersized and requires that painting/drawing and ceramics/sculpting be taught in the same space, requiring the teacher spend a lot of time cleaning to avoid dust and particle contamination. The art room supports both high school and middle school programs. The music room is adequately sized for band, but does not have an interior connection to the rest of the school and lacks backstage rooms. Music program also serves both middle and high school programs.

In addition to increased CTE and hands-on project-based classes, students report a desire to have more programs that prepare them for independent adulthood: personal finance, nutrition, etc.

EQUIPMENT, FURNITURE, AND STORAGE

Storage is adequate for general education programs, but lacking for the current CTE shops and drama productions. Seven out of nine students report not using their locker —typically because it is inconvenient to travel to the locker compared to carrying needed materials to each class.

TECHNOLOGY

Credit recovery and online education is offered six periods/day. There are seven chromebook carts shared by teachers and students have access to PCs. There is a strong desire to increase the technology-based classes like computer modeling and augmented reality.

ENVIRONMENTAL CHARACTERISTICS

Many classrooms in the 1965 wing, including science labs, share no exterior walls and are therefore without daylight or natural ventilation. The science lab fume hood ventilation is not operational, with exhaust fumes reported in the women's restroom. The plumbing in the 1965 portion of the building leaks, with ceiling damage occurring in some rooms.

There is no air conditioning in the building, making the beginning and end of the school year uncomfortable.

RELATIONSHIP OF EDUCATIONAL SPACES

The campus is open and outdoor spaces are used for instruction (ex: forensics lab). CTE Ag classroom does not have a direct connection to the main building. Students report a lack of space to work on projects, those in leadership program work in that space.

SUPPORT SPACE FUNCTIONALITY

There is adequate space for athletics programs and PE, but locker rooms are undersized and in need of repair. The admin area is quite small with no waiting area and lack of offices for registrar, attendance, etc. The commons is adequately sized and functional. It is an open campus, so students also leave campus to buy food downtown. Students report having enough time to eat (unless they walk off campus) and in addition to the cafeteria eat their lunch in the senior center, outside, wood shop, multipurpose room, etc.

SAFE, SECURE, AND WELCOMING

The campus is open and there are many access points. Doors remain unlocked throughout the day. The secondary entry near the student parking lot is unsupervised. There is a lack of storage space for a food pantry and clothing closet for students and families in need. Students report feeling unsafe in the student restrooms in the 1965 wing. Teachers corroborated major concerns of those restrooms which pose a supervision challenge.

FUNCTIONAL SOLUTIONS FOR FURTHER STUDY

A number of programs and activities are not supported by the current school facility. Below is a list of recommendations for facility modifications that are based on space and program needs gathered through interviews with the principal, teachers, and students. Each solution requires further feasibility analysis including master planning, cost estimating, and coordination with elementary and middle school programs.

- Add a security vestibule, remodel admin area to accommodate
- Remodel to create a new counseling center and career center
- Remodel student restrooms that are considered unsafe
- Science lab upgrades – add natural light and adequate ventilation
- Upgrade fine arts spaces to separate ceramics and kiln from 2D art and accommodate a growing program for middle and high school
- Upgrade and add CTE spaces, especially for technology-based career paths
- Upgrade spaces for students to work and collaborate
- Provide an interior connection to the Ag. lab from the rest of the school
- Upgrade the performing arts wing, provide interior connection to the rest of the school, add backstage areas, instrument storage, soundproof practice rooms
- Add an early childhood development center for a CTE class and teen moms. Consider moving the community Pre-K program to the high school?
- Locker room upgrades
- Technology upgrades and added equipment
- Added storage spaces
- Add cooling to the HVAC system
- Add a makerspace to existing library
- Add storage for food pantry and supplies for home insecure students
- Add restrooms at the ballfields

POPULATION PROJECTIONS & CAPACITY ANALYSIS

POPULATION PROJECTIONS

In November 2019, IBI Group's population and demographics research department provided the District with 5 and 10-year enrollment projections. The source of age-based population projections came from the Coordinated Population Forecast for Yamhill County 2016-17. This forecast was prepared by Portland State University's Population Research Center. The study included historic data for school years 2008 through 2016 obtained from the Oregon Department of Education and forecast data for 2025 and 2030. This 10-year analysis was broken into grade level, elementary v. middle v. high school enrollment.

The study also took into account Yamhill County and sub-area forecast growth as well has historic age-group projections from the US Census Bureau's American Community Survey. The table below summarizes the results of the study. The full population projection report can be found in the Appendix.

POPULATION FORECAST FOR AMITY SCHOOL DISTRICT

YEAR	GRADES K–5	GRADES 6–8	GRADES 9–12
2020	369	208	318
2025	381	209	331
2030	398	216	332

AREA/YEAR	2017	2020	2025	2030	2035
Yamhill County	106,555	111,101	119,339	127,404	135,096
Amity UGB	1.5%	1.5%	1.5%	1.4%	1.4%
Carlton UGB	2.1%	2.1%	2.2%	2.2%	2.2%
Dayton UGB	2.7%	2.6%	2.5%	2.4%	2.4%
Dundee UGB	3.0%	3.1%	3.2%	3.3%	3.4%
Gaston UGB (Yamhill)	0.1%	0.1%	0.1%	0.1%	0.1%
Lafayette UGB	3.8%	4.0%	4.2%	4.2%	4.2%
McMinnville UGB	32.2%	32.1%	32.2%	32.4%	32.7%
Newberg UGB	22.8%	23.3%	24.0%	24.6%	25.2%
Sheridan UGB	5.9%	5.8%	5.5%	5.3%	5.1%
Willamina UGB (Yamhill)	1.2%	1.1%	1.0%	1.0%	0.9%
Yamhill UGB	1.0%	1.0%	1.0%	1.0%	1.0%
Outside UGB Area	23.6%	23.2%	22.6%	22.0%	21.4%

Population forecasts prepared by: Population Research Center, Portland State University, June 30, 2017

CAPACITY ANALYSIS

Capacity: ability of a school building and site to meet needs of the student population.

This analysis provides a capacity number that is accurate to the programs and grade levels currently being taught in each building at the time of the assessment. However, it is also important to consider future programs, technology, and priorities at a particular campus and the impact each will have on classroom inventory and student teaching stations. As the educational strategic goals and pedagogies change, the room functions, and therefore capacity of the building, will also change.

METHODOLOGY

In October 2019, IBI Group conducted site visits and follow-up correspondence to collect information on student enrollment, class schedules, and classroom uses. Each school principal was engaged to determine the manner in which every classroom-sized space within the facility is currently utilized. School capacity is calculated based on the following District standard class size goals:

20 students per teaching station in Grades K–2

25 students per teaching station in Grades 3–5

28 students per teaching station in Grades 6–12

Utilization of general education classrooms for the elementary school is 100%. Teachers have sole ownership of their classrooms (no teachers share a room) and each student is assigned to a teacher. Therefore, any additional teaching stations in the school (gymnasium, library, music/arts, computer labs, etc.) serve only as pullout or supplemental programs to the general education teachers and their respective students.

Utilization of teaching stations for the middle and high school are 86%. Teachers have sole ownership of their classrooms and teachers conduct prep time in their classroom when it is void of students, leaving the classroom empty one out of seven periods of the day. Utilization of art and music spaces are again reduced at the high school due to their dual use as middle school teaching stations (middle school students walk to the high school to attend these classes). Other spaces may be utilized fewer than six periods out of seven due to teacher availability or subject matter, but are not reflected in the following capacity studies.

SUMMARY OF CAPACITY FINDINGS

Given the current programs, enrollment, and projected growth, there is a need to add capacity to the elementary school. Additionally, there is a desire to prepare for additional Pre-K classrooms in the elementary school in anticipation of a possible future requirement for public Pre-K from the Department of Education.

There is currently no need to add teaching stations to either the middle or high school buildings. The middle school, however, is sorely lacking in core, or non-instructional, areas. Hallway corridors, administrative areas, and gymnasium spaces are all greatly undersized for the current population. Beginning in the 2016/17 school year the Department of Education increased PE requirements at the elementary and middle school levels through House Bill 3141. This has put greater pressure on schools to meet PE requirements with limited facilities. Amity Middle School's gymnasium space is undersized in comparison to middle schools in the region and unable to hold more than one class at a time. Additionally, the middle school building and site do not include spaces for many programs. As a result, students walk to the high school for fine and performing arts, CTE classes, and athletics.

Additional needs and programs that will affect capacity are indicated in the previous Educational Adequacy Summary of Findings.

CAPACITY ANALYSIS
AMITY ELEMENTARY SCHOOL

SUMMARY AMITY ELEMENTARY SCHOOL	NUMBER OF TEACHING STATIONS	TEACHING STATION CAPACITY	2020 ENROLLMENT PROJECTIONS	2025 ENROLLMENT PROJECTIONS	2030 ENROLLMENT PROJECTIONS
	15	310	369	381	398

TEACHING STATIONS	QUANTITY	CLASS SIZE GOALS[3]	CAPACITY AT 100% USE	CURRENT UTILIZATION[4]	ADJUSTED CAPACITY	LOCATION
Classrooms Grades K-2[1]	8	20	160	1.00	160	Main building
Classrooms Grades 3-5[1]	6	25	150	1.00	150	Main building
LRC[5]	1	12	12	1.00	12	Portable building with Pre-K
TOTAL	15		310		310	

SPECIAL USE: SPACES FOR SUPPORT OR PULLOUT PROGRAMS[2]	QUANTITY	NOTES
Special programs: title 1, behavior	2	
Gymnasium, library, makerspace	3	Makerspace is an extension of the library
Multipurpose room - music/reading/math	1	
Computer lab - classroom support	1	
TOTAL	7	

1. For general instruction not requiring a specialized room.
2. The Gym, Library, Title 1, Behavior, and multipurpose room are considered teaching support spaces. They are used throughout the day as a supplemental space for students already assigned to a general classroom.
3. Class size goal of 20 for Grades K-2, and 25 for Grades 3-5.
4. No teacher preperation factor has been included in the calculation for elementary school due to the fact that there is no passing period for the elementary school and each student has an assigned general education classroom regardless of prep periods. Therefore, each teaching stations is considered fully utilized.
5. Portable building not included in capacity calculation.

CAPACITY ANALYSIS

AMITY MIDDLE SCHOOL

SUMMARY AMITY MIDDLE SCHOOL	NUMBER OF TEACHING STATIONS	TEACHING STATION CAPACITY[4]	2020 ENROLLMENT PROJECTIONS	2025 ENROLLMENT PROJECTIONS	2030 ENROLLMENT PROJECTIONS
	11	250	208	209	216

TEACHING STATIONS	QUANTITY	CLASS SIZE GOALS	CAPACITY AT 100% USE	CURRENT UTILIZATION[3]	ADJUSTED CAPACITY	LOCATION
Classrooms Grades 6-8[1]	7	28	196	0.86	168	
Science Lab, STEM Lab	2	28	56	0.86	48	STEM Outbuilding
LRC	1	12	12	0.86	10	
Gymnasium	1	28	28	0.86	24	
TOTAL	11		292		250	

SPECIAL USE: SPACES FOR SUPPORT OR PULLOUT PROGRAMS[2,5]	QUANTITY	NOTES
Library	1	
Leadership	1	
Computer lab - classroom support	2	One undersized computer lab
TOTAL	4	

1. For general instruction not requiring a specialized room.
2. The library, leadership room, and computer labs are not considered teaching spaces. They are used throughout the day as a supplemental space.
3. Teacher preperation factor has been calculated for the middle school due to the fact that teachers spend their prep period inside their classrooms. The classrooms, therefore, are utilized six out of seven periods of the day, or 86% of the time.
4. **In the case of Amity Middle School, there are adequate teaching stations to serve the student population. The core facilities, however, are greatly undersized to meet the needs of the current population. The undersized spaces include the front office, corridors, and gymnasium spaces.**
5. **The middle school building and site does not include spaces for many programs. As a result, students walk to the high school for fine and performing arts programs, Career Technical Education classes, and Athletics.**

CAPACITY ANALYSIS

AMITY HIGH SCHOOL

SUMMARY AMITY HIGH SCHOOL	NUMBER OF TEACHING STATIONS	TEACHING STATION CAPACITY	2020 ENROLLMENT PROJECTIONS	2025 ENROLLMENT PROJECTIONS	2030 ENROLLMENT PROJECTIONS
	17	413	318	331	332

TEACHING STATIONS	QUANTITY	CLASS SIZE GOALS	CAPACITY AT 100% USE	CURRENT UTILIZATION[3]	ADJUSTED CAPACITY	LOCATION
Classrooms Grades 9-12[1]	9	28	252	0.86	216	
Art & Music Classrooms	2	28	56	0.42	24	Also used for middle school instruction
Science Lab	2	28	56	0.86	48	
Gymnasium	2	45	90	0.86	77	
CTE Classrooms/shops	2	28	56	0.86	48	
TOTAL	17		510		413	

SPECIAL USE: SPACES FOR SUPPORT OR PULLOUT PROGRAMS	QUANTITY	NOTES
Study Skills	2	
Library	1	
Computer Lab, online academy	1	
TOTAL	4	

1. For general instruction not requiring a specialized room.
2. The library, leadership room, and study skills, and computer labs are not considered teaching spaces. They are used throughout the day as a supplemental space.
3. Teacher preperation factor has been calculated for the high school due to the fact that teachers spend their prep period inside their classrooms. The classrooms, therefore, are utilized six out of seven periods of the day, or 86% of the time. Music and art rooms are given a lower utilization factor due to their duel use to serve middle school programs.

DEVELOPING A COMMUNITY-DRIVEN PLAN FOR THE FUTURE


2020 Site Plan

THE COMMITTEE'S CHARGE

COMMITTEE PROCESS

In the Fall of 2019, Amity School District's Superintendent, Jeff Clark, invited the community to take part in a planning process that would be funded through a state grant that had been awarded to the District earlier that year. The end-goal being a 10-year plan that assists the District in facility decisions, including determining the needs for capital improvements.

The 17-member LRFP Committee conducted three 2.5-hour meetings: November 21, December 12, and January 30. The LRFP Committee was comprised of school teachers and administrators, community members, and representatives from the local jurisdiction and school board.

In the first meeting, the LRFP Committee was provided with the facility data summarized in the first half of this LRFP report:

1. Facility Condition Assessment Findings
2. Seismic Evaluation Findings
3. Building and Site Utilization
4. Enrollment Projections and Capacity Analysis
5. Educational Adequacy Findings

COMMITTEE'S CHARGE

After being provided with verbal descriptions and hard copies of the facility data, the LRFP Committee was then given a charge. In developing a plan for the future of the Amity school community, the Committee must:

- Represent all stakeholder groups
- Balance individual vision with what is best for the entire community
- Help to communicate the LRFP process to the community
- Contribute to the vision and goals of the LRFP

VISION & GUIDING PRINCIPLES

THE VISIONING PROCESS

The members of the LRFP Committee followed a collaborative, value-based process to build a vision for Amity Schools. At the first LRFP Committee meeting, each member was asked to voice their greatest hopes and fears for the future of Amity's schools, and to define the measure of success for a long-range plan. Members then used an Online platform to select the key value statements and propose new ideas. At the next meeting, members discussed the results, edited each statement, and placed them in order of priority. The Guiding Principles that result provide a framework and measure for all future decisions; they are the "North Star" from which all facility planning decisions will navigate.

Amity School District

Our Guiding Principles

Our schools will be **safe and secure** for all our students and teachers. Our school buildings will be **safe in a natural disaster.**

Our school buildings will provide **space for future growth** and will have the quality our students and community deserve.

All our students will have the resources they need to reach their full potential. Our students will be **prepared for their future** and will thrive.

Our schools will **draw people in**. Students come back to Amity to send their kids to our schools. Our schools grow the community.

DEFINING HOW WE ACHIEVE OUR VISION

TOPIC-FOCUSED PRESENTATIONS

What is meant by "safe and secure"? How do we prepare students for their future? Due to the stated values around safety, security, and student growth, IBI Group provided two topic-focused presentations:

- Safety and Security
- CTE and Career Readiness

These brief presentations provided information into the research and current trends in K-12 education in the region, state, and beyond.

SAFETY AND SECURITY

There are many resources and a great deal of research about safe schools. There is not, however, one standardized formula. Some recommendations focus only on external threats like active shooters, while disregarding internal threats like bullying and abuse. The strong correlation between student social and emotional health and the strength of their relationships with adults at school is often ignored all together. And how does the facility contribute to these factors? What is trauma-informed design? What are the principles of Crime Prevention Through Environmental Design (CPTED)? This short presentation discussed each of these issues and shared some examples of solutions taken by many other Oregon school districts.

CTE AND CAREER READINESS

There is a great deal of momentum at the federal, state, and district level to increase access and exposure to careers for high school students. Some CTE spaces are expensive to build and can be outfitted with equipment that quickly becomes obsolete. Many of today's students will find themselves in a career that does not yet exist. It is important districts think carefully about the best way to prepare students for their future while being fiscally responsible to their community. This short presentation focused on understanding the student's needs through surveys of neighboring districts and conversations with Amity's high schoolers. What careers do they plan to pursue after graduation? What careers do they want to have more exposure to in order to make those decisions?

The presentation also discussed the many CTE programs available in Oregon and the funding sources currently available to assist districts in providing them. Lastly, there was a discussion about career pathways centers and the places students can go in a school to gain access and exposure to careers during and beyond their years in high school.

DEFINING HOW WE ACHIEVE OUR VISION

THE JIGSAW WORKSHOP

Once the values and Guiding Principles for LRFP were established, the committee was asked the ever-present question: "How?" The committee conducted a jigsaw exercise to answer these questions as a group, build on the ideas of the groups that came before resulting in a series of solutions that have been co-created.

The following is a record of the questions posed and responses developed by the committee. A ranking and prioritization of these responses is included in the following pages.

1

How will we provide a safe and secure environment?

Provide updated facilities with the latest safety and security measures included.

Ensure all schools have limited and secure entrances that are visible to staff (eyes on).

Build in measures for environmental hazards: sprinkler systems, seismic upgrades, etc.

Work with our community, build strong relationships and plans with our local law enforcement and first responders.

2

How do we draw people in?

Offer safe and secure environments.

Offer more CTE and AP classes and increase graduation rates.

Retain and attract quality, caring staff and maintain small class sizes.

Provide quality facilities that can support forward-thinking curricula, programs, and technology.

Be known as a district that is flexible in dealing with issues and problem-solving.

3

How do we address future growth?

Be more creative in how we use current spaces and consider adjacent spaces like gyms, hallways, outdoor classrooms, etc.

Bigger buildings to maintain class size. Be smart about how to retro-fit and remodel - don't wast money on facilities that may fail in the near future.

Hire more teachers and staff.

Manage finances so we can be flexible in how we build: right buildings at the right time.

Consider technology: artificial intelligence (AI), virtual reality (VR), and augmented reality (AR).

4

How will we prepare our students for the future?

Provide them with adequate facilities to acquire practical skills.

Provide practical (soft) skills and expose them to the demands of careers and the discipline required in real life.

Understand the needs of "Generation Z."

Stay current with technology.

Teach students soft skills that will help their success no matter what career they pursue: Communication, Collaboration, Critical Thinking, and Creativity.

PROJECT PRIORITIZATION

The LRFP Committee underwent an involved process in order to determine the projects that would best serve the community, students, and staff of Amity School District. The committee considered an extensive list that had been compiled through the data-gathering stage and represented the recommendations of the facility assessments, seismic evaluations, and educational adequacy assessments.

The committee broke into groups and discussed each item before determining weather to label it a high, medium, or low priority. The projects were broken into four categories:

- Safety and security upgrades
- Program and functional needs
- Infrastructure needs
- Growth and capacity needs

No cost estimates were provided to the committee at this time. The purpose of the exercise was to understand the values of the committee without the financial variable. For instance, if the committee highly values sprinkler system upgrades but the construction cost is prohibitive, the design team can find other methods for increasing fire and life safety measures in the building, knowing it has a high value to the community.

The following pages are a record of project priorities by the committee.

A VALUE-BASED PLAN FOR THE FUTURE

PROJECT PRIORITIZATION: AMITY ELEMENTARY SCHOOL

SAFETY & SECURITY UPGRADES	HIGH PRIORITY				MODERATE PRIORITY				LOW PRIORITY			
Security vestibule and administrative office remodel	●	●	●	●								
Seismic upgrades throughout			●	●				●				●
Site redesign for safe pickup & drop-off and access to play areas from the gym				●			●	●				●
PA system upgrades: add outside coverage			●	●				●				
Add fire sprinklers (includes fire riser room and related site costs)			●	●			●	●				
General safety & security upgrades (Access controls, exterior lighting, fire alarm upgrades, security cameras)			●	●			●	●				
Fence around the whole site				●								
Re-keying whole school				●								

PROGRAM & FUNCTIONAL NEEDS	HIGH PRIORITY				MODERATE PRIORITY				LOW PRIORITY			
Provide daylight to Title 1 classroom (skylights)								●		●	●	●
Add facilities for students with special needs (toilets, physical therapy room, etc.)					●	●	●	●				
Add display areas for student work									●	●	●	●
Replace classroom furniture with more flexible options								●			●	●
Added parking				●				●			●	●
New developmentally-appropriate play equipment								●		●	●	●

PROJECT PRIORITIZATION: AMITY ELEMENTARY SCHOOL

ADDRESSING INFRASTRUCTURE NEEDS	HIGH PRIORITY				MODERATE PRIORITY				LOW PRIORITY			
Remodel restrooms - replace urinals with toilets, replace damaged partitions				●			●	●				●
Acoustic treatment at cafeteria			●	●				●				●
Replace drinking fountains with bottle filler fountains				●●							●	●
Replace damaged cafeteria tables/chairs			●	●●				●				
Redesign services yard/covered play area to provide safe playground during truck delivery				●			●	●				●
HVAC upgrades to balance rooms				●				●			●	●
Technology upgrades				●			●	●				●
Major facility repairs			●	●				●				
Moderate facility repairs				●				●				●
Minor facility repairs				●				●				●
Replace colored casework				●								

ADDRESSING GROWTH & CAPACITY NEEDS	HIGH PRIORITY				MODERATE PRIORITY				LOW PRIORITY			
Add preschool program to the main building: 2-classroom (2,500 sf addition)				●●				●				●
Connect special education LRC classroom to the rest of the school			●	●●				●				
2-Classroom addition to meet the needs of projected enrollment		●	●	●								●
Move 5th grade somewhere else	●	●	●	●								

A VALUE-BASED PLAN FOR THE FUTURE

PROJECT PRIORITIZATION: AMITY MIDDLE SCHOOL

SAFETY & SECURITY UPGRADES	HIGH PRIORITY				MODERATE PRIORITY				LOW PRIORITY			
Security vestibule and administrative office remodel	●	●	●	●								
Seismic upgrades throughout	●	●	●	●								
Site redesign for safe pickup & drop-off and access to play areas from the gym	●	●	●	●								
PA system upgrades: add outside coverage	●	●	●	●								
Add fire sprinklers (includes fire riser room and related site costs)	●	●	●	●								
General safety & security upgrades (Access controls, exterior lighting, fire alarm upgrades, security cameras)	●	●	●	●								

PROGRAM & FUNCTIONAL NEEDS	HIGH PRIORITY				MODERATE PRIORITY				LOW PRIORITY			
Provide daylight to Title 1 classroom (skylights)	●	●	●	●								
Add facilities for students with special needs (toilets, physical therapy room, etc.)	●	●	●	●								
Add display areas for student work	●	●	●	●								
Replace classroom furniture with more flexible options	●	●	●	●								
Added parking	●	●	●	●								
New developmentally-appropriate play equipment	●	●	●	●								

A VALUE-BASED PLAN FOR THE FUTURE

PROJECT PRIORITIZATION: AMITY MIDDLE SCHOOL

ADDRESSING INFRASTRUCTURE NEEDS	HIGH PRIORITY				MODERATE PRIORITY				LOW PRIORITY			
Remodel restrooms - replace urinals with toilets, replace damaged partitions	●	●	●	●								
Acoustic treatment at cafeteria	●	●	●	●								
Replace drinking fountains with bottle filler fountains	●	●	●	●								
Replace damaged cafeteria tables/chairs	●	●	●	●								
Redesign services yard/covered play area to provide safe playground during truck delivery	●	●	●	●								
HVAC upgrades to balance rooms	●	●	●	●								
Technology upgrades	●	●	●	●								
Major facility repairs	●	●	●	●								
Moderate facility repairs	●	●	●	●								
Minor facility repairs	●	●	●	●								

ADDRESSING GROWTH & CAPACITY NEEDS	HIGH PRIORITY				MODERATE PRIORITY				LOW PRIORITY			
Add preschool program to the main building: 2-classroom (2,500 sf addition)	●	●	●	●								
Connect special education LRC classroom to the rest of the school	●	●	●	●								
2-Classroom addition to meet the needs of projected enrollment	●	●	●	●								
*Move Middle school students to high school building & build a new middle school	●	●	●	●								

*All parties agreed that every list item was high priority, and therefore the best course of action is to build a new middle school.

A VALUE-BASED PLAN FOR THE FUTURE

PROJECT PRIORITIZATION: AMITY HIGH SCHOOL

SAFETY & SECURITY UPGRADES	HIGH PRIORITY				MODERATE PRIORITY				LOW PRIORITY			
Security vestibule and Admin Office Remodel	●	●	●	●								
Seismic upgrades throughout			●	●							●	●
Add fire sprinklers (includes fire riser room and related site costs)			●	●			●	●				
General safety & security upgrades (Access controls, exterior lighting, fire alarm upgrades, security cameras)		●	●	●				●				

PROGRAM & FUNCTIONAL NEEDS	HIGH PRIORITY				MODERATE PRIORITY				LOW PRIORITY			
Remodel existing spaces to new counseling center (includes new food pantry & supply storage)							●	●			●	●
Remodel existing spaces to create new art rooms with separate ceramics & paint				●		●	●	●				
Upgrade CTE existing shops	●	●	●	●								
Add new CTE spaces with technology focus		●	●	●				●				
Upgrade outdated science labs	●	●	●	●								
Remodel student gathering areas				●				●			●	●
Build hallway to connect Ag lab				●			●	●				●
Upgrades performing arts wing: interior connection, add backstage, storage, acoustics						●	●	●				●
Add early childhood center CTE class & teen moms							●	●	●			●
Locker room upgrades		●	●	●				●				
Add makerspace to existing library							●	●			●	●
New restrooms for ballfields	●	●	●	●								
Gym bathroom upgrades				●								

A VALUE-BASED PLAN FOR THE FUTURE

PROJECT PRIORITIZATION: AMITY HIGH SCHOOL

ADDRESSING INFRASTRUCTURE NEEDS	HIGH PRIORITY				MODERATE PRIORITY				LOW PRIORITY			
Student restroom upgrades	●	●	●	●								
1965 Building HVAC replacement (including science lab ventilation)		●	●	●				●				
1965 Building plumbing replacement	●	●	●	●								
Add air conditioning to whole building				●						●	●	●
Replace drinking fountains with bottle filler fountains			●	●							●	●
Replace aging and damaged furniture				●				●			●	●
Technology upgrades			●	●				●				●
Major facility repairs (plumbing & HVAC shown as separate line items)	●	●	●	●								
Moderate facility repairs				●		●	●	●				
Minor facility repairs				●				●			●	●

ADDRESSING GROWTH & CAPACITY NEEDS	HIGH PRIORITY				MODERATE PRIORITY				LOW PRIORITY			
Add 2-classrooms				●								

A VALUE-BASED PLAN FOR THE FUTURE

PLANNING FOR A NEW MIDDLE SCHOOL: PROS AND CONS

Although the members of the committee expressed a strong desire and consensus around building a new middle school, the group was asked to think about the positive and negative aspects such a project might have. The following is a record of the group conversation.

PROS

- It is more fiscally responsible than spending money to upgrade a building from the 1930's.
- The new building will be safer in a seismic event and have better safety and security systems.
- An updated facility is more cost effective to operate and will provide a better educational environment.
- We would be accommodating the projected growth. Moving fifth-grade to the middle school will free up space at the elementary, which is over capacity.
- Building a middle/high campus on one site allows for more sharing of resources - staff and facilities.
- Building a middle/high campus on one site means middle school students will no longer have to walk to the high school for athletics, art, music, and CTE.
- More advanced studies available to middle schoolers.

CONS

- Cost - it is a 20-year commitment. How will our demographics change?
- It does not solve all of the problems at the high school building, the 1965 wing still needs costly work.
- There may be unknown challenges to operating a middle and high school on the same site.

MASTER PLANNING EXERCISE

Key Takeaways

The committee spent the end of the last meeting working with aerial plans and to-scale master planning program cards. Breaking into two groups, the committee was asked to come up with at least four master plan designs for a new middle school on the high school site. The major takeaways from that discussion:

1. We want to be good neighbors. Prefer not to build close to the north property line.
2. We want to be able to operate one building as two schools, with two main entrances/ administrative offices. Possibly use the north parking lot as middle school entry.
3. Share as many core facilities as possible. If there is a single kitchen, the district can reduce the staff needed to operate the building. Shared art, music, CTE classrooms. Shared library?
4. The new building should have street frontage. The southwest corner of the site may be a good location. The bus barn and parking facility can move to the current middle school/ district office site.
5. Middle school students still have recess. Consider moving the baseball field, using the additional 10-acre lot to the east, and adding practice field and recess fields in its place. This will also satisfy the need for practice fields. Soccer is growing in popularity, consider a soccer field.
6. If the site is tight, how 'bout a 3-story classroom wing?
7. Consider grouping potential new middle school gym and athletic spaces near existing high school gym and athletic spaces. In addition, there is potential to add the new middle school parking along the south property line to increase parking for athletic events.

APPENDIX

APPENDIX

OAR 581-027-0040 COMPLIANCE GUIDE

APPENDIX

Amity School District
2020 Long-Range Facilities Plan

Description of OAR 581-027-0040 Compliance

Amity School District has completed the 1) Long-Range Facility Plan, 2) Facility Assessments, and 3) Seismic Evaluations as a result of having received the Oregon Department of Education's Technical Assistance Program (TAP) grant. In keeping with the requirements of the grant, the Long-Range Facility Plan meets all criteria set forth in OAR 581-027-0040.

Population projections by school age group for the next ten years using U.S. Census or Census partner data

Population projections are Included in the Appendix of the Long-Range Facility Plan report. Projections were prepared using data from the Population Research Center at Portland State University and historic age group population estimates from the US Census Bureau's American Community Survey.

Collaboration with local government planning agencies

There is currently no plan to build a new school on undeveloped land. The committee included one representative of the City of Amity.

Evidence of community involvement

Several members of the Long-Range Planning Committee are community representatives. See the "Acknowledgements" section of the report. The process and community vision are included on page 26.

Identification of buildings on historic preservation lists

See page 10 of the LRFP report.

Analysis of district's current facilities' ability to meet district-adopted educational adequacy standards

See pages 11 to 22 for complete educational adequacy assessment results and methodology as well as capacity analysis and potential changes needed at each facility.

A description of the plan the district will undertake to change its facility to match the projections and needs for the district for the next ten years.

See pages 28 to 37 for a full description of project prioritization at each facility as well as a potential solution for a middle school addition at the high school site.

POPULATION PROJECTION REPORT

APPENDIX

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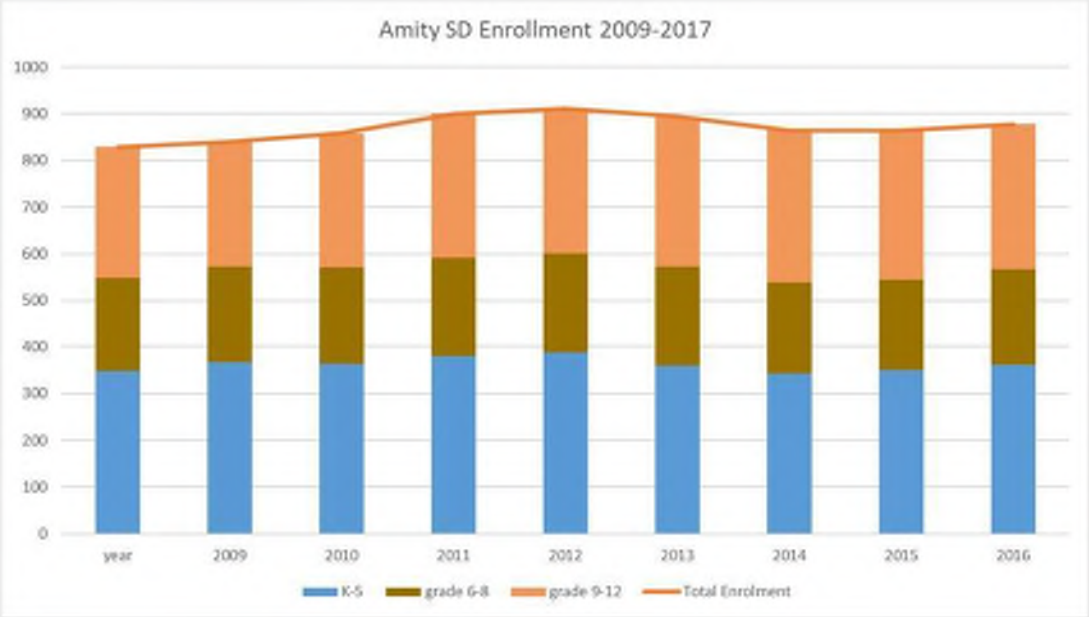
Memorandum

To/Attention	Rebecca Stuecker	**Date**	November 18, 2019
From	David Sol	**Project No**	
cc	Levi Patterson, Amanda Polini		
Subject	Amity SD enrollment projections		

This memo summarizes the process of estimating future enrollment numbers in the Amity School District (SD) based on existing data.

Enrollment numbers in Amity SD between 2009 and 2017 are illustrated in the chart below.



Future enrollment is primarily a product of future school-age populations within the district. At this time, the only source of age-based population projections is the Coordinated Population Forecast 2017-2067, Yamhill County, prepared by the Population Research Center at Portland State University in 2017. Appendix C of the report (attached) provides a county-wide population by five-year age group forecast, as well as a total population forecast for Yamhill County sub-areas.

The Amity SD boundary does not align with the county or sub-area geographies. Therefore, Amity SD enrollment and county age group populations for nine years between 2009 and 2017 were used to determine a historic capture rate for Amity SD, by age and grade group. The

enrollment numbers were obtained from the Oregon Department of Education.[1] Historic age group population estimates were obtained from the US Census Bureau's American Community Survey.[2]

Using historic share and county-wide population growth projections could overstate growth within Amity SD if the County's growth is driven by other population centres. Therefore, the sub area total population projections were analysed to determine the balance of growth across the county. The table below is adapted from Appendix C, Figure 23, and shows the percentage of total population for each sub-area for each forecast year.

Yamhill County Sub-Area Forecasts as Percentage of County Population

Area / Year	2017	2020	2025	2030	2035
Yamhill County	106,555	111,101	119,339	127,404	135,096
Amity UGB	1.5%	1.5%	1.5%	1.4%	1.4%
Carlton UGB	2.1%	2.1%	2.2%	2.2%	2.2%
Dayton UGB	2.7%	2.6%	2.5%	2.4%	2.4%
Dundee UGB	3.0%	3.1%	3.2%	3.3%	3.4%
Gaston UGB (Yamhill)	0.1%	0.1%	0.1%	0.1%	0.1%
Lafayette UGB	3.8%	4.0%	4.2%	4.2%	4.2%
McMinnville UGB	32.2%	32.1%	32.2%	32.4%	32.7%
Newberg UGB	22.8%	23.3%	24.0%	24.6%	25.2%
Sheridan UGB	5.9%	5.8%	5.5%	5.3%	5.1%
Willamina UGB (Yamhill)	1.2%	1.1%	1.0%	1.0%	0.9%
Yamhill UGB	1.0%	1.0%	1.0%	1.0%	1.0%
Outside UGB Area	23.6%	23.2%	22.6%	22.0%	21.4%

The proportion of the total population for each sub-area is surprisingly consistent, indicating relatively even growth is projected. For Amity SD, the sub-areas of interest are Amity UGB and the Outside UGB Area. The slight decrease in these areas indicates that there is less growth than other areas however, no adjustment was deemed necessary for the purpose of enrollment projections.

A second check of the population projections was made by comparing the 2017 age-group projections to the published ACS population estimates, which are the basis of the historic enrollment percentage. It was found that while generally consistent (average difference less than 5%), there was a higher number (11%) in the projections for the under 5 years old group. Because that cohort will age through the projection model, an adjustment factor was needed to reconcile the historic data with the projections.

The historic enrollment share by school grade and age group was then applied to the adjusted population projections. The age-group projections are provided for 2017, 2020, 2025, and onward in 5 year increments. The results of this enrollment projection process are summarized in the table below.

Year	K-5	6-8	9-12
2020	369	208	318
2025	381	209	331
2030	398	216	332

[1] https://www.oregon.gov/ode/reports-and-data/students/Pages/Student-Enrollment-Reports.aspx
[2] https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF

Appendix C: Detailed Population Forecast Results

Figure 22. Yamhill County—Population by Five-Year Age Group

Population Forecasts by Age Group / Year	2017	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2067
00-04	6,582	6,674	6,978	7,241	7,483	7,727	7,982	8,248	8,506	8,750	8,980	9,072
05-09	6,958	7,147	7,378	7,713	8,004	8,263	8,517	8,784	9,062	9,335	9,591	9,689
10-14	7,190	7,335	7,736	7,985	8,348	8,652	8,915	9,173	9,445	9,731	10,012	10,118
15-19	7,889	7,983	8,320	8,775	9,056	9,456	9,782	10,061	10,334	10,627	10,934	11,056
20-24	7,139	7,325	7,544	7,862	8,291	8,545	8,902	9,191	9,434	9,676	9,935	10,045
25-29	6,341	6,564	6,918	7,133	7,433	7,833	8,055	8,375	8,628	8,844	9,057	9,149
30-34	6,345	6,514	6,963	7,339	7,565	7,875	8,284	8,504	8,828	9,085	9,301	9,388
35-39	6,779	7,027	7,404	7,916	8,345	8,596	8,934	9,385	9,622	9,979	10,260	10,355
40-44	6,865	7,133	7,640	8,048	8,606	9,065	9,316	9,669	10,138	10,384	10,759	10,878
45-49	6,698	6,877	7,401	7,931	8,358	8,932	9,395	9,642	9,995	10,472	10,718	10,871
50-54	6,711	6,774	7,149	7,700	8,256	8,693	9,280	9,751	9,993	10,352	10,837	10,938
55-59	6,651	6,670	6,843	7,229	7,796	8,356	8,790	9,375	9,844	10,084	10,444	10,638
60-64	6,481	6,676	6,777	6,961	7,365	7,944	8,511	8,948	9,541	10,019	10,265	10,412
65-69	5,732	6,350	6,738	6,846	7,038	7,446	8,027	8,592	9,025	9,621	10,100	10,198
70-74	4,311	5,059	6,066	6,448	6,563	6,750	7,145	7,705	8,248	8,667	9,245	9,431
75-79	3,283	3,864	5,014	5,975	6,311	6,373	6,499	6,823	7,298	7,748	8,071	8,256
80-84	2,223	2,592	3,388	4,380	5,200	5,465	5,487	5,564	5,806	6,175	6,519	6,613
85+	2,377	2,534	3,083	3,923	5,079	6,339	7,331	8,019	8,555	9,114	9,777	10,061
Total	**106,555**	**111,101**	**119,339**	**127,404**	**135,096**	**142,311**	**149,150**	**155,808**	**162,303**	**168,662**	**174,806**	**177,170**

Population Forecasts prepared by: Population Research Center, Portland State University, June 30, 2017.

Figure 23. Yamhill County's Sub-Areas—Total Population

Area / Year	2017	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2067
Yamhill County	106,555	111,101	119,339	127,404	135,096	142,311	149,150	155,808	162,303	168,662	174,806	177,170
Amity UGB	1,642	1,691	1,769	1,840	1,910	1,975	2,038	2,096	2,154	2,206	2,257	2,276
Carlton UGB	2,229	2,340	2,586	2,813	3,013	3,204	3,384	3,551	3,704	3,841	3,959	3,998
Dayton UGB	2,837	2,914	3,004	3,108	3,200	3,290	3,376	3,461	3,545	3,628	3,723	3,761
Dundee UGB	3,243	3,408	3,772	4,158	4,570	4,936	5,296	5,645	5,979	6,296	6,590	6,697
Gaston UGB (Yamhill)	157	157	158	158	159	159	159	160	160	160	161	161
Lafayette UGB	4,083	4,436	4,958	5,375	5,717	5,970	6,187	6,367	6,540	6,709	6,872	6,937
McMinnville UGB	34,293	35,709	38,437	41,255	44,122	46,956	49,728	52,541	55,428	58,449	61,557	62,803
Newberg UGB	24,296	25,889	28,602	31,336	34,021	36,709	39,393	42,101	44,984	47,966	50,957	52,135
Sheridan UGB	6,340	6,401	6,598	6,754	6,893	7,016	7,122	7,225	7,326	7,424	7,521	7,560
Willamina UGB (Yamhill)	1,227	1,230	1,245	1,259	1,272	1,287	1,302	1,315	1,328	1,341	1,355	1,360
Yamhill UGB	1,077	1,099	1,184	1,264	1,338	1,406	1,467	1,514	1,560	1,606	1,652	1,671
Outside UGB Area	25,132	25,827	27,027	28,084	28,880	29,403	29,698	29,831	29,594	29,037	28,203	27,812

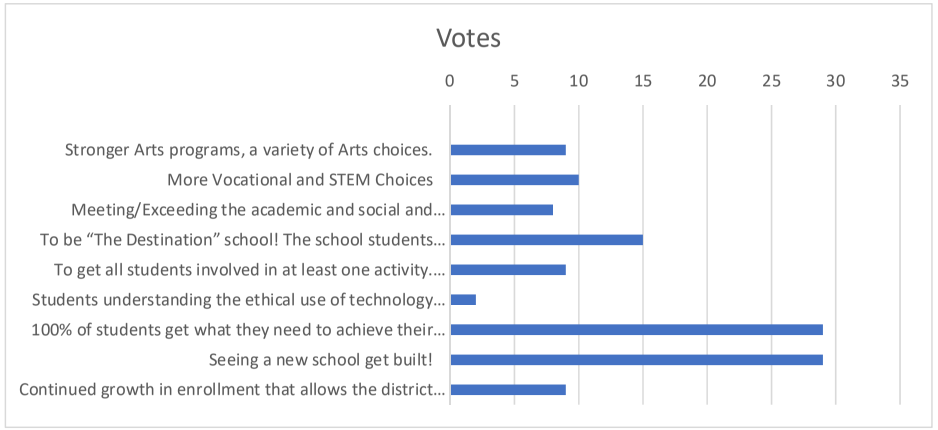
Population Forecasts prepared by: Population Research Center, Portland State University, June 30, 2017.

COMMITTEE VISION SURVEY RESULTS

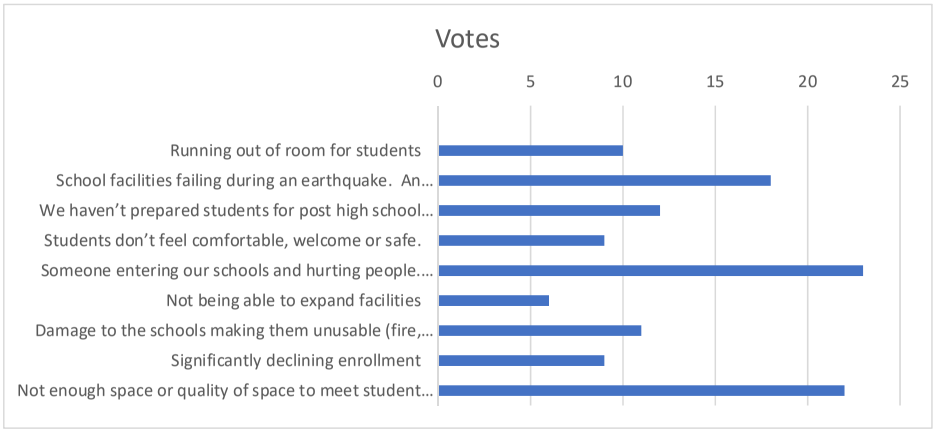
APPENDIX

Results for Amity SD LRFP Committee Vision & Guiding Principles Survey

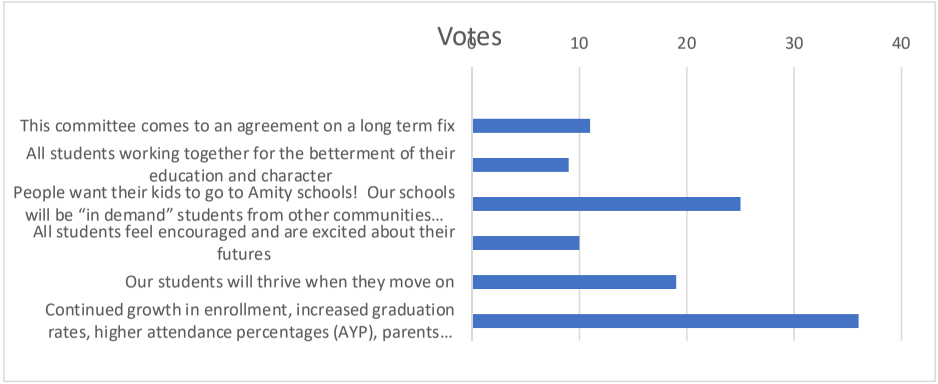
What are your greatest hopes & aspirations for Amity Schools?	Votes
Stronger Arts programs, a variety of Arts choices.	9
More Vocational and STEM Choices	10
Meeting/Exceeding the academic and social and emotional needs of our students and staff	8
To be "The Destination" school! The school students want to be able to attend.	15
To get all students involved in at least one activity. Offering different activities for them.	9
Students understanding the ethical use of technology and knowledge	2
100% of students get what they need to achieve their full potential. All students reach their highest potential. Recognized as a place where all students are well-prepared for whatever they want to pursue in life.	29
Seeing a new school get built!	29
Continued growth in enrollment that allows the district to provide more services to the students and community	9



What is your greatest fear for Amity Schools?	Votes
Running out of room for students	10
School facilities failing during an earthquake. An earthquake happens during school.	18
We haven't prepared students for post high school education and careers	12
Students don't feel comfortable, welcome or safe.	9
Someone entering our schools and hurting people. Active shooter. Student and staff safety.	23
Not being able to expand facilities	6
Damage to the schools making them unusable (fire, earthquake)	11
Significantly declining enrollment	9
Not enough space or quality of space to meet student needs	22



How will we know we've been successful?	Votes
This committee comes to an agreement on a long term fix	11
All students working together for the betterment of their education and character	9
People want their kids to go to Amity schools! Our schools will be "in demand" students from other communities will be overwhelming us!	25
All students feel encouraged and are excited about their futures	10
Our students will thrive when they move on	19
Continued growth in enrollment, increased graduation rates, higher attendance percentages (AYP), parents returning to community to allow for children to attend "their" school. Students come back! Maintain relationships, kids of kids come to school at Amity	36



FACILITY ASSESSMENT REPORT
COMPLIANT WITH OAR 581-027-0035

APPENDIX

IBI GROUP

October 15, 2019

Amity School District

807 S Trade Street

Amity, Oregon 97103

Attn: Jeff Clark

To whom it may concern,

In accordance with our contract, the project team visited the Amity School District Facilities on August 20th and performed limited visual assessments of the Amity District Office, Elementary School, Middle School, Amity High School, along with the Maintenance Shop and Grandstand. Data for the assessments were compiled into the Oregon Department of Education Assessment Template for each major building as shown in Tables 1 and 2 below.

Table 1: Main Buildings

Main Buildings		
Building	**Gross Area (SF)**	**Year Built**
District Office	2,254	1945
Amity Elementary School	42,072	1981
Amity Middle School	31,013	1935
Amity Middle School Computer Room	1,547	1942
Amity High School	68,731	1965/2003
Amity HS Gymnasium Building	11,076	2003
Amity HS Weight Room Building	5,200	2012

Table 2: Secondary Buildings

Secondary Buildings		
Building	**Gross Area (SF)**	**Year Built**
Bus Shed	3,200	1975
Athletic Grandstand	2,750	1990

Immediate Health and Safety Concerns

The only immediate health and safety concern that was noted was a sagging beam in the District Office reception area. This was noted in an April 10, 2008, Beam Investigation performed by Miller Consulting Engineers. It is unclear if remedial action was undertaken at that time.

General Findings

In general, the building structures and exterior envelopes are in good condition. There is was some deferred maintenance observed on all of the buildings. This included repairs to the exterior siding at both the Elementary School and Middle School, while at the High School a large portion of the roof is nearing the end of its life. However, no major concerns were noted for the Main Buildings. Costs for the recommended structural and exterior improvements on all of the Major Buildings are provided in Table 3, below.

Table 3: Structural and Exterior Improvement Costs

Structural and Exterior Upgrade Costs		
Building	**Structural Upgrade Cost**	**Exterior Upgrade Cost**
District Office	$6,676	$0
Elementary School	$0	$122,814
Middle School	$4,419	$56,632
Middle School Computer Room	$11,851	$44,989
High School	$0	$84,700
High School Gym Building	$0	$0
High School Weight Room Building	$0	$0

The noted electrical and mechanical repairs with the highest likely cost are; electrical upgrades to the Elementary School, an even distribution of costs for upgrades to plumbing, heating and electrical at the High School (the boiler at the High School is new). The Middle School's largest cost issue is the complete replacement of the boiler/heating system. The boiler systems for both the Middle School and Elementary School are primarily original to the buildings. The limited usefulness of the existing lighting control was an issue in the High School and Elementary School. Estimated costs to upgrade the electrical and mechanical systems for all of the Major Buildings are shown in Table 4, below.

Table 4: Electrical and Mechanical Upgrade Costs

Electrical and Mechanical Upgrade Costs		
Building	**Electrical Upgrade Cost**	**Mechanical Upgrade Cost**
District Office	$0	$19,581
Elementary School	$368,349	$241,729
Middle School	$61,942	$1,149,491
Middle School Computer Room	$0	$17,071
High School	$409,569	$926,650
High School Gym Building	$0	$0
High School Weight Room Building	$0	$0

Recommended interior improvements are primarily cosmetic in nature and age-related. Replacing doors and/or making accessibility hardware improvements and replacing deteriorated flooring are the most common suggested work items. Costs for recommended interior improvements are provided in Table 5, below.

Table 5: Interior Improvement Costs

Interior Upgrade Costs	
Building	**Interior Upgrade Cost**
District Office	$15,939
Elementary School	$304,956
Middle School	$138,646
Middle School Computer Room	$18,776
High School	$494,950
High School Gym Building	$0
High School Weight Room Building	$0

For the Secondary Buildings, recommended improvements were fairly major for the Maintenance Shop. The building is worn and needs replacement. While the Maintenance Shop does not appear to be a hazard it is probably not worth the cost of making major repairs. Costs for repairs to the Secondary Buildings are provided in Table 6, below.

Table 6: Improvement Costs for Secondary Buildings

Improvement Costs for Secondary Buildings	
Building	**Improvement Cost**
Maintenance Shop (HS)	$335,306
Athletic Grandstand (HS)	$0

The largest site expense noted is resurfacing the driveways and parking areas. The District Office has just a gravel parking area and the Elementary and Middle Schools have large areas of degradation. Recommended site improvement costs are provided in Table 7, below.

Table 7: Site Improvement Costs

Site Improvement Costs	
Improvement	**Cost**
Driveway and Parking Lot Resurfacing	$316,503
Pedestrian Pavement Repairs	$46,550

Summary and Conclusions

In general, the observed buildings are in a condition to be expected given their age and environment. The buildings are generally serviceable with no serious safety concerns. It should be noted that the assessment did not include a seismic evaluation. As Oregon is in a known area of seismic activity, an evaluation to determine seismic performance and vulnerabilities of the Main Buildings, in particular, is recommended. It was noted that there had been a seismic upgrade made to the main portion of the Middle School, which is also the oldest of the main buildings in the District. However, the Middle School's seismic performance should be reviewed with the other main buildings and updated if required.

Total recommended improvement costs are provided in Table 8, below.

Table 8: Total Recommended Improvement Costs

Total Recommended Improvement Costs	
Asset	**Cost**
District Office	$165,208
Elementary School	$1,591,315
Middle School	$2,115,846
Middle School Computer Room	$127,909
High School	$2,791,354
High School Bus Shed	$335,306
High School Grandstand	$0
High School Gym Building	$0
High School Weight Room Building	$0
Grand Total:	$6,875,904

Base Information Sheet

Item	Data	Notes / Explanation
District Name:	Amity SD 4J	Pull-down menu of the 197 Districts
Site Name:	Amity Middle School	Typically the name that is used for the facility / campus
Building Name:	Main School	If only one building on site, refer to "main"
Building ID:	22520200	Please use the same ID that is assigned to this building in the annual Building Collection.
Building Type:	Middle School	Pull-down menu - feeds FCI calculation
Physical Address of Building:	115 Church St, Amity, OR 97101	Informational only - does not link
Original Year of Building Completion	1935	When was the original building completed and ready for use
Original Construction Type	Wood Frame	What type of construction was used to complete original building
Describe Other Construction Type		If you choose other construction type please describe here
County:	Yamhill	Pull-down menu of the 36 counties - sets location factor for budgets
Gross Square Footage:	31,013	Calculated from exterior face of walls (excluding eaves, outbuilding, porches, canopies, and similar)
Site Acreage:	1.89	District records
Assessor Company:	IBI Group	Certified company
Assessor Name:	Steve Winkle	For follow up questions
Contact (Phone):	503 226 6950 ext 255	
Contact (E-Mail):	steve.winkle@ibigroup.com	
Date of Assessment:	2019-08-20	Might reference back for inflation calculation (future)

*Building ID Format: Located in ODE "Buildings Collection" database

District Name: Amity SD 4J
Site Name: Amity Middle School
Building Name: Main School
Building ID: 22520200

REMINDER: FILL OUT ALL INFORMATION ON '*BASE INFORMATION SHEET*' BEFORE ENTERING DATA ON THIS SHEET
An unused cell or system that should not receive direct user input
An automatically populated cell from user input elsewhere in the file - do not overwrite

Level 1	Level 2	Level 3	Type (as applicable)	% of Building or Number		LEVEL OF ACTION: None		Minor		Moderate		Major		Replace as part of Renovation	% of System or Finish	Automated Budget Estimate	Notes
A SUBSTRUCTURE																	
	A10 Foundations																
		A1010 Standard Foundations		100%		None	x	Minor		Moderate		Major		Replace	25%	$4,419	Main bldg constructed between 1935-1950
		A1020 Special Foundations			o	None		Minor		Moderate		Major		Replace		$0	
		A1030 Slab on Grade		28%	x	None		Minor		Moderate		Major		Replace		$0	
	A20 Basement Construction																
		A2010 Basement Excavation	NOT USED			None		Minor		Moderate		Major		Replace			
		A2020 Basement Walls		34%	x	None		Minor		Moderate		Major		Replace		$0	
B SHELL																	
	B10 Superstructure																
		B1010 Floor Construction	Wood	72%	x	None		Minor		Moderate		Major		Replace		$0	
			Steel		o	None		Minor		Moderate		Major		Replace		$0	
			Concrete		o	None		Minor		Moderate		Major		Replace		$0	
		B1020 Roof Construction	Wood	100%	x	None		Minor		Moderate		Major		Replace		$0	
			Steel		o	None		Minor		Moderate		Major		Replace		$0	
			Concrete		o	None		Minor		Moderate		Major		Replace		$0	
	B20 Exterior Enclosure																
		B2010 Exterior Walls	Concrete Formed / Tilt	15%	x	None		Minor		Moderate		Major		Replace		$0	
			Masonry		o	None		Minor		Moderate		Major		Replace		$0	
			Framed w/ Wood Siding	56%		None		Minor		Moderate	x	Major		Replace	25%	$28,807	
			Framed w/Metal Panel	3%		None		Minor		Moderate	x	Major		Replace	100%	$7,234	
			Framed w/Stucco		x	None		Minor		Moderate		Major		Replace		$0	
			Framed w/Masonry Veneer	26%	x	None		Minor		Moderate		Major		Replace		$0	
		B2020 Exterior Windows	Wood		o	None		Minor		Moderate		Major		Replace		$0	
			Aluminum/Steel	24%	x	None		Minor		Moderate		Major		Replace		$0	
			Clad	76%	x	None		Minor		Moderate		Major		Replace		$0	Vinyl windows
			Curtain Wall		o	None		Minor		Moderate		Major		Replace		$0	
		B2030 Exterior Doors	Wood		o	None		Minor		Moderate		Major		Replace		$0	
		13 total	Hollow Metal	13		None		Minor	x	Moderate		Major		Replace	10%	$1,482	
			Storefront		o	None		Minor		Moderate		Major		Replace		$0	
	B30 Roofing																
		B3010 Roof Coverings	Asphalt Shingle		o	None		Minor		Moderate		Major		Replace		$0	
			Built-Up		o	None		Minor		Moderate		Major		Replace		$0	
			Single Ply	23%		None	x	Minor		Moderate		Major		Replace	100%	$19,109	At Gym only
			Metal	77%		None	x	Minor		Moderate		Major		Replace	100%	$0	
			Concrete Tile		o	None		Minor		Moderate		Major		Replace		$0	
		B3020 Roof Openings	Skylights		o	None		Minor		Moderate		Major		Replace		$0	
			Access Hatch	1	x	None		Minor		Moderate		Major		Replace		$0	Per hatch - Bell Tower
C INTERIORS																	
	C10 Interior Construction																
		C1010 Partitions	Framed	90%		None	x	Minor		Moderate		Major		Replace	100%	$0	
			Masonry	10%	x	None		Minor		Moderate		Major		Replace		$0	
		C1020 Interior Doors	Wood	82		None	x	Minor		Moderate		Major		Replace	100%	$0	
			Hollow Metal		o	None		Minor		Moderate		Major		Replace		$0	
		C1030 Fittings	NOT USED			None		Minor		Moderate		Major		Replace			
	C20 Stairs																
		C2010 Stair Construction	Wood	4		None		Minor		Moderate	x	Major		Replace	50%	$11,400	
			Metal		o	None		Minor		Moderate		Major		Replace		$0	
			Concrete		o	None		Minor		Moderate		Major		Replace		$0	
		C2020 Stair Finishes	Concrete Fill		o	None		Minor		Moderate		Major		Replace		$0	
			Resilient	4		None		Minor	x	Moderate		Major		Replace	100%	$0	
	C30 Interior Finishes																

C3010 Wall Finishes	Paint on Masonry	2%		None	x	Minor		Moderate		Major		Replace	100%	$1,584	
	Wallboard	97%		None	x	Minor		Moderate		Major		Replace	10%	$6,927	
	Wainscot		o	None		Minor		Moderate		Major		Replace		$0	
	Ceramic Tile	1%		None	x	Minor		Moderate		Major		Replace	100%	$318	
C3020 Floor Finishes	Carpet / Soft Surface	3%	x	None		Minor		Moderate		Major		Replace		$0	
	Resilient Tile	65%		None		Minor		Moderate		Major	x	Replace	50%	$78,134	Tile is lifting off on the second floor leve
	Resilient Sheet	3%	x	None		Minor		Moderate		Major	x	Replace	15%	$1,909	
	Polished Concrete	10%	x	None		Minor		Moderate		Major		Replace		$0	
	Ceramic Tile		o	None		Minor		Moderate		Major		Replace		$0	
	Liquid Applied	6%	x	None		Minor		Moderate		Major		Replace		$0	
	Wood Sports Floor	13%	x	None		Minor		Moderate		Major		Replace		$0	
C3030 Ceiling Finishes	Wallboard	30%		None	x	Minor		Moderate		Major		Replace	30%	$9,991	
	Lay-In Ceiling Tile	24%		None	x	Minor		Moderate		Major		Replace	20%	$1,697	
	Glued-Up Ceiling Tile	46%		None	x	Minor		Moderate		Major		Replace	75%	$7,928	
	Painted Structure		o	None		Minor		Moderate		Major		Replace		$0	
D SERVICES															
D10 Conveying															
D1010 Elevators & Lifts		2	x	None		Minor		Moderate		Major		Replace		$0	Elevator added in 1992
D1020 Escalators & Moving Walks			o	None		Minor		Moderate		Major		Replace		$0	
D1090 Other Conveying Systems			o	None		Minor		Moderate		Major		Replace		$0	
D20 Plumbing															
D2010 Plumbing Fixtures		70%		None		Minor		Moderate		Major	x	Replace	100%	$222,735	All (N) fixtures must meet ADA requirements by code. Fixtures were updated in 1990 - approx. 33 fixtures
D2020 Domestic Water Distribution		70%		None		Minor		Moderate		Major	x	Replace	100%	$180,168	Very old & Rusty water at start of year
D2030 Sanitary Waste		70%		None		Minor		Moderate		Major	x	Replace	100%	$51,229	Very old
D2040 Rain Water Drainage			o	None		Minor		Moderate		Major		Replace		$0	Surface drainage only
D2090 Other Plumbing Systems	NOT USED			None		Minor		Moderate		Major		Replace			
D30 HVAC															
D3010 Energy Supply		10%		None	x	Minor		Moderate		Major		Replace	100%	$4,349	
D3020 Heat Generating Systems	Boiler	100%		None		Minor		Moderate		Major	x	Replace	100%	$336,578	Steam Boiler (GS and HS have HW Boilers) low pressure with radiators.
	Air Handler	25%		None		Minor		Moderate		Major	x	Replace	100%	$51,441	There are 2 air handlers for Gym and Cafeteria (cafeteria has 3 hp steam coil but is broken and not used)
	Furnace		o	None		Minor		Moderate		Major		Replace		$0	
	Heat Exchanger		o	None		Minor		Moderate		Major		Replace		$0	
D3030 Cooling Generating Systems	Component of air handler		o	None		Minor		Moderate		Major		Replace		$0	No AC
	Stand alone chiller		o	None		Minor		Moderate		Major		Replace		$0	
D3040 Distribution Systems	Ductwork		o	None		Minor		Moderate		Major		Replace		$0	
	Hot water return & supply	100%		None		Minor		Moderate		Major	x	Replace	100%	$302,991	Steam pipes very old.
D3050 Terminal & Package Units	Above ceiling VAV unit		o	None		Minor		Moderate		Major		Replace		$0	
	In-room ventilator unit		o	None		Minor		Moderate		Major		Replace		$0	
	In-room radiant unit		o	None		Minor		Moderate		Major		Replace		$0	Steam radiators
D3060 Controls & Instrumentation			o	None		Minor		Moderate		Major		Replace		$0	
D3070 Systems Testing & Balancing			o	None		Minor		Moderate		Major		Replace		$0	
D3090 Other HVAC Systems & Equipment	NOT USED			None		Minor		Moderate		Major		Replace			
D40 Fire Protection															
D4010 Sprinklers			o	None		Minor		Moderate		Major		Replace		$0	
D4020 Standpipes			o	None		Minor		Moderate		Major		Replace		$0	
D4030 Fire Protection Specialties		100%	x	None		Minor		Moderate		Major		Replace		$0	Fire Extinguishers only
D4090 Other Fire Protection Systems	NOT USED			None		Minor		Moderate		Major		Replace			
D50 Electrical															
D5010 Electrical Service & Distribution		100%	x	None		Minor		Moderate		Major		Replace		$0	New in 2003
D5020 Lighting and Branch Wiring		100%	x	None		Minor		Moderate		Major		Replace		$0	
D5030 Communications & Security	Voice / Data System	80%		None		Minor	x	Moderate		Major		Replace	100%	$9,899	Yes
	Clock / Intercom System	80%		None		Minor		Moderate		Major	x	Replace	100%	$28,284	Not two-way capable, existiing is like a PA system.
	Closed Circuit Surveillance	20%	x	None		Minor		Moderate		Major		Replace		$0	Only a few cameras
	Access Control System	100%	x	None		Minor		Moderate		Major		Replace		$0	Yes & Front Door Camera to Admin Office
	Intrusion Alarm System	100%	x	None		Minor		Moderate		Major		Replace		$0	Yes - OK

		Fire Alarm / Detection	100%	x	None		Minor		Moderate		Major		Replace		$0	Yes - OK Smoke Detectors
		Lighting Control System	80%		None		Minor		Moderate		Major	x	Replace	100%	$23,758	Does not perform well similar to Elem. School
	D5090 Other Electrical Systems	NOT USED			None		Minor		Moderate		Major		Replace			
E EQUIPMENT & FURNISHINGS																
	E10 Equipment															
	E1010 Commercial Equipment	Food Service	1%	x	None		Minor		Moderate		Major		Replace		$0	2003 Re-Heat Only. Oven new in 2015
		Vocational		o	None		Minor		Moderate		Major		Replace		$0	
	E1020 Institutional Equipment	Science	1500		None		Minor		Moderate		Major	x	Replace	100%	$6,772	No gas, very old chem resistent tops
		Art		o	None		Minor		Moderate		Major		Replace		$0	
		Stage Performance		o	None		Minor		Moderate		Major		Replace		$0	Cost/SF of Stage Performance Area
	830 sf total restroom area	Restroom Accessories/Stalls	3%		None		Minor		Moderate		Major	x	Replace	100%	$2,100	Old plywd stalls
	E1030 Vehicular Equipment	NOT USED			None		Minor		Moderate		Major		Replace			
	E1090 Other Equipment	NOT USED			None		Minor		Moderate		Major		Replace			
	E20 Furnishings															
	E2010 Fixed Furnishings		3%		None		Minor		Moderate		Major	x	Replace	100%	$9,885	
	E2020 Movable Furnishings			o	None		Minor		Moderate		Major		Replace		$0	
F SPECIAL CONSTRUCTION & DEMOLITION - NOT USED																
G BUILDING SITE WORK																
	G10 Site Preparation	NOT USED														
	G20 Site Improvements															
	G2010 Roadways		4097		None	x	Minor		Moderate		Major		Replace	100%	$7,333	Cost/SF of surface area
	G2020 Parking Lots		22970		None		Minor		Moderate	x	Major		Replace	40%	$68,083	Cost/SF of surface area - Gravel and shared with Dist. Office. Some AC but poor.
	G2030 Pedestrian Paving		5444		None		Minor		Moderate	x	Major		Replace	20%	$11,171	Cost/SF of surface area
	G2040 Site Development		536		None		Minor		Moderate	x	Major		Replace	50%	$2,444	Cost/LF of fencing
	G2050 Landscaping			o	None		Minor		Moderate		Major		Replace		$0	No irrigation
	G30 Site Mechanical Utilities															
	G3010 Water Supply	Domestic	200		None		Minor		Moderate		Major	x	Replace	100%	$14,820	Very old
		Fire	0		None		Minor		Moderate		Major		Replace		$0	
	G3020 Sanitary Sewer		200		None		Minor		Moderate		Major	x	Replace	100%	$10,260	Very old
	G3030 Storm Sewer		0		None		Minor		Moderate		Major		Replace		$0	
	G3040 Heating Distribution			o	None		Minor		Moderate		Major		Replace		$0	
	G3050 Cooling Distribution			o	None		Minor		Moderate		Major		Replace		$0	
	G3060 Fuel Distribution		200		None		Minor		Moderate		Major	x	Replace	100%	$7,980	Natural gas
	G3090 Other Site Mechanical Utilities	NOT USED			None		Minor		Moderate		Major		Replace			
	G40 Site Electrical Utilities															
	G4010 Electrical Distribution	Service	100%	x	None		Minor		Moderate		Major		Replace		$0	Overhead
		Generator	100%	x	None		Minor		Moderate		Major		Replace		$0	Installed in 2003
	G4020 Site Lighting		100%	x	None		Minor		Moderate		Major		Replace		$0	Very little site lighting
	G4030 Site Communications & Security			o	None		Minor		Moderate		Major		Replace		$0	
	G4090 Other Site Electrical Utilities	NOT USED			None		Minor		Moderate		Major		Replace			
	G90 Other Site Construction	NOT USED														

OTHER

Description of System	Unit of Measure	Quantity	Unit Budget	Extended	Notes
				$0	
				$0	
				$0	
				$0	
				$0	
				$0	
				$0	

Physical Condition Budget Sub-Total	**$1,533,222**
Budgeted Development Costs	**$582,624**
Physical Condition Budget TOTAL	**$2,115,846**

Cost with Escalation to June 2021	**$2,412,064**
Cost with Escalation to June 2022	**$2,508,547**
Cost with Escalation to June 2023	**$2,608,889**
Replacement Budget	**$16,588,482**

Base Information Sheet

Item	Data	Notes / Explanation
District Name:	Amity SD 4J	Pull-down menu of the 197 Districts
Site Name:	Amity Middle School	Typically the name that is used for the facility / campus
Building Name:	Computer Room	If only one building on site, refer to "main"
Building ID:	Unknown on MS Campus	Please use the same ID that is assigned to this building in the annual Building Collection.
Building Type:	Middle School	Pull-down menu - feeds FCI calculation
Physical Address of Building:	115 Church St, Amity, OR 97101	Informational only - does not link
Original Year of Building Completion	After 1942	When was the original building completed and ready for use
Original Construction Type	Wood Frame	What type of construction was used to complete original building
Describe Other Construction Type	Former Barracks	If you choose other construction type please describe here
County:	Yamhill	Pull-down menu of the 36 counties - sets location factor for budgets
Gross Square Footage:	1,547	Calculated from exterior face of walls (excluding eaves, outbuilding, porches, canopies, and similar)
Site Acreage:	1.89	District records
Assessor Company:	IBI Group	Certified company
Assessor Name:	Steve Winkle	For follow up questions
Contact (Phone):	503 226 6950 ext 255	
Contact (E-Mail):	steve.winkle@ibigroup.com	
Date of Assessment:	2019-08-20	Might reference back for inflation calculation (future)

*Building ID Format: Located in ODE "Buildings Collection" database

Physical Condition Assessment

District Name: Amity SD 4J
Site Name: Amity Middle School
Building Name: Computer Room
Building ID: Unknown on MS Campus

REMINDER: FILL OUT ALL INFORMATION ON '*BASE INFORMATION SHEET*' BEFORE ENTERING DATA ON THIS SHEET
An unused cell or system that should not receive direct user input
An automatically populated cell from user input elsewhere in the file - do not overwrite

Level 1	Level 2	Level 3	Type (as applicable)	% of Building or Number	LEVEL OF ACTION												Replace as part of Renovation	% of System or Finish	Automated Budget Estimate	Notes
						None		Minor		Moderate		Major								
A SUBSTRUCTURE																				
	A10 Foundations																			
		A1010 Standard Foundations		100%	x	None		Minor		Moderate		Major		Replace				$0	
		A1020 Special Foundations				None		Minor		Moderate		Major		Replace				$0	
		A1030 Slab on Grade				None		Minor		Moderate		Major		Replace				$0	
	A20 Basement Construction																			
		A2010 Basement Excavation	NOT USED			None		Minor		Moderate		Major		Replace					
		A2020 Basement Walls				None		Minor		Moderate		Major		Replace				$0	
B SHELL																				
	B10 Superstructure																			
		B1010 Floor Construction	Wood	100%		None		Minor	x	Moderate		Major		Replace	100%	$11,851			
			Steel			None		Minor		Moderate		Major		Replace		$0			
			Concrete			None		Minor		Moderate		Major		Replace		$0			
		B1020 Roof Construction	Wood	100%	x	None		Minor		Moderate		Major		Replace		$0			
			Steel			None		Minor		Moderate		Major		Replace		$0			
			Concrete			None		Minor		Moderate		Major		Replace		$0			
	B20 Exterior Enclosure																			
		B2010 Exterior Walls	Concrete Formed / Tilt			None		Minor		Moderate		Major		Replace				$0	
			Masonry			None		Minor		Moderate		Major		Replace				$0	
			Framed w/ Wood Siding	100%		None		Minor		Moderate		Major	x	Replace	100%	$44,989			
			Framed w/Metal Panel			None		Minor		Moderate		Major		Replace		$0			
			Framed w/Stucco			None		Minor		Moderate		Major		Replace		$0			
			Framed w/Masonry Veneer			None		Minor		Moderate		Major		Replace		$0			
		B2020 Exterior Windows	Wood			None		Minor		Moderate		Major		Replace		$0			
			Aluminum/Steel			None		Minor		Moderate		Major		Replace		$0			
			Clad	100%	x	None		Minor		Moderate		Major		Replace		$0		12 each	
			Curtain Wall			None		Minor		Moderate		Major		Replace		$0			
		B2030 Exterior Doors	Wood			None		Minor		Moderate		Major		Replace		$0			
			Hollow Metal	2	x	None		Minor		Moderate		Major		Replace		$0			
			Storefront			None		Minor		Moderate		Major		Replace		$0			
	B30 Roofing																			
		B3010 Roof Coverings	Asphalt Shingle			None		Minor		Moderate		Major		Replace		$0			
			Built-Up			None		Minor		Moderate		Major		Replace		$0			
			Single Ply			None		Minor		Moderate		Major		Replace		$0			
			Metal	100%	x	None		Minor		Moderate		Major		Replace		$0			
			Concrete Tile			None		Minor		Moderate		Major		Replace		$0			
		B3020 Roof Openings	Skylights			None		Minor		Moderate		Major		Replace		$0		By Building GSF	
			Access Hatch			None		Minor		Moderate		Major		Replace		$0		Per hatch	
C INTERIORS																				
	C10 Interior Construction																			
		C1010 Partitions	Framed	100%	x	None		Minor		Moderate		Major		Replace		$0			

		Masonry			None		Minor		Moderate		Major		Replace		$0	
	C1020 Interior Doors	Wood	7	x	None		Minor		Moderate		Major		Replace		$0	
		Hollow Metal			None		Minor		Moderate		Major		Replace		$0	
	C1030 Fittings	NOT USED			None		Minor		Moderate		Major		Replace			
C20 Stairs																
	C2010 Stair Construction	Wood			None		Minor		Moderate		Major		Replace		$0	Cost/Flight
		Metal			None		Minor		Moderate		Major		Replace		$0	Cost/Flight
		Concrete			None		Minor		Moderate		Major		Replace		$0	Cost/Flight
	C2020 Stair Finishes	Concrete Fill			None		Minor		Moderate		Major		Replace		$0	Cost/Flight
		Resilient			None		Minor		Moderate		Major		Replace		$0	Cost/Flight
C30 Interior Finishes																
	C3010 Wall Finishes	Paint on Masonry			None		Minor		Moderate		Major		Replace		$0	
		Wallboard	100%		None		Minor		Moderate		Major	x	Replace	100%	$14,214	Mostly old thin wood paneling with some wall paper, etc.
		Wainscot			None		Minor		Moderate		Major		Replace		$0	
		Ceramic Tile			None		Minor		Moderate		Major		Replace		$0	
	C3020 Floor Finishes	Carpet / Soft Surface	80%	x	None		Minor		Moderate		Major		Replace		$0	
		Resilient Tile			None		Minor		Moderate		Major		Replace		$0	
		Resilient Sheet	20%		None		Minor		Moderate		Major	x	Replace	100%	$4,233	
		Polished Concrete			None		Minor		Moderate		Major		Replace		$0	
		Ceramic Tile			None		Minor		Moderate		Major		Replace		$0	
		Liquid Applied			None		Minor		Moderate		Major		Replace		$0	
		Wood Sports Floor			None		Minor		Moderate		Major		Replace		$0	
	C3030 Ceiling Finishes	Wallboard			None		Minor		Moderate		Major		Replace		$0	
		Lay-In Ceiling Tile	100%		None	x	Minor		Moderate		Major		Replace		$0	
		Glued-Up Ceiling Tile			None		Minor		Moderate		Major		Replace		$0	
		Painted Structure			None		Minor		Moderate		Major		Replace		$0	
D SERVICES																
D10 Conveying																
	D1010 Elevators & Lifts				None		Minor		Moderate		Major		Replace		$0	
	D1020 Escalators & Moving Walks				None		Minor		Moderate		Major		Replace		$0	
	D1090 Other Conveying Systems				None		Minor		Moderate		Major		Replace		$0	
D20 Plumbing																
	D2010 Plumbing Fixtures		3%	x	None		Minor		Moderate		Major		Replace		$0	All (N) fixtures must meet ADA requirements by code.
	D2020 Domestic Water Distribution		3%	x	None		Minor		Moderate		Major		Replace		$0	
	D2030 Sanitary Waste		3%	x	None		Minor		Moderate		Major		Replace		$0	
	D2040 Rain Water Drainage				None		Minor		Moderate		Major		Replace		$0	
	D2090 Other Plumbing Systems	NOT USED			None		Minor		Moderate		Major		Replace			
D30 HVAC																
	D3010 Energy Supply		100%	x	None		Minor		Moderate		Major		Replace		$0	
	D3020 Heat Generating Systems	Boiler			None		Minor		Moderate		Major		Replace		$0	
		Air Handler	100%		None		Minor		Moderate		Major	x	Replace	100%	$10,264	Old
		Furnace			None		Minor		Moderate		Major		Replace		$0	
		Heat Exchanger			None		Minor		Moderate		Major		Replace		$0	
	D3030 Cooling Generating Systems	Component of air handler	100%		None		Minor		Moderate		Major	x	Replace	100%	$6,807	Old
		Stand alone chiller			None		Minor		Moderate		Major		Replace		$0	
	D3040 Distribution Systems	Ductwork	100%	x	None		Minor		Moderate		Major		Replace		$0	
		Hot water return & supply			None		Minor		Moderate		Major		Replace		$0	
	D3050 Terminal & Package Units	Above ceiling VAV unit			None		Minor		Moderate		Major		Replace		$0	
		In-room ventilator unit			None		Minor		Moderate		Major		Replace		$0	

		In-room radiant unit			None		Minor		Moderate		Major		Replace		$0	
	D3060 Controls & Instrumentation				None		Minor		Moderate		Major		Replace		$0	
	D3070 Systems Testing & Balancing				None		Minor		Moderate		Major		Replace		$0	
	D3090 Other HVAC Systems & Equipment	NOT USED			None		Minor		Moderate		Major		Replace			
D40 Fire Protection																	
	D4010 Sprinklers				None		Minor		Moderate		Major		Replace		$0	
	D4020 Standpipes				None		Minor		Moderate		Major		Replace		$0	
	D4030 Fire Protection Specialties				None		Minor		Moderate		Major		Replace		$0	
	D4090 Other Fire Protection Systems	NOT USED			None		Minor		Moderate		Major		Replace			
D50 Electrical																	
	D5010 Electrical Service & Distribution		100%	x	None		Minor		Moderate		Major		Replace		$0	
	D5020 Lighting and Branch Wiring		100%	x	None		Minor		Moderate		Major		Replace		$0	
	D5030 Communications & Security	Voice / Data System			None		Minor		Moderate		Major		Replace		$0	
		Clock / Intercom System			None		Minor		Moderate		Major		Replace		$0	
		Closed Circuit Surveillance			None		Minor		Moderate		Major		Replace		$0	
		Access Control System			None		Minor		Moderate		Major		Replace		$0	
		Intrusion Alarm System			None		Minor		Moderate		Major		Replace		$0	
		Fire Alarm / Detection			None		Minor		Moderate		Major		Replace		$0	
		Lighting Control System			None		Minor		Moderate		Major		Replace		$0	
	D5090 Other Electrical Systems	NOT USED			None		Minor		Moderate		Major		Replace			
E EQUIPMENT & FURNISHINGS																	
E10 Equipment																	
	E1010 Commercial Equipment	Food Service			None		Minor		Moderate		Major		Replace		$0	
		Vocational			None		Minor		Moderate		Major		Replace		$0	
	E1020 Institutional Equipment	Science			None		Minor		Moderate		Major		Replace		$0	
		Art			None		Minor		Moderate		Major		Replace		$0	
		Stage Performance			None		Minor		Moderate		Major		Replace		$0	Cost/SF of Stage Performance Area
		Restroom Accessories/Stalls	3%		None		Minor		Moderate		Major		Replace		$0	
	E1030 Vehicular Equipment	NOT USED			None		Minor		Moderate		Major		Replace			
	E1090 Other Equipment	NOT USED			None		Minor		Moderate		Major		Replace			
E20 Furnishings																	
	E2010 Fixed Furnishings		2%		None		Minor		Moderate		Major	x	Replace	100%	$329	
	E2020 Movable Furnishings				None		Minor		Moderate		Major		Replace		$0	
F SPECIAL CONSTRUCTION & DEMOLITION - NOT USED																	
G BUILDING SITE WORK																	
G10 Site Preparation		NOT USED															
G20 Site Improvements																	
	G2010 Roadways				None		Minor		Moderate		Major		Replace		$0	Cost/SF of surface area
	G2020 Parking Lots				None		Minor		Moderate		Major		Replace		$0	Cost/SF of surface area
	G2030 Pedestrian Paving				None		Minor		Moderate		Major		Replace		$0	Cost/SF of surface area
	G2040 Site Development				None		Minor		Moderate		Major		Replace		$0	Cost/LF of fencing
	G2050 Landscaping				None		Minor		Moderate		Major		Replace		$0	Cost/SF of irrigated area
G30 Site Mechanical Utilities																	
	G3010 Water Supply	Domestic			None		Minor		Moderate		Major		Replace		$0	Enter LF of pipe in cell E143
		Fire			None		Minor		Moderate		Major		Replace		$0	Enter LF of pipe in cell E144
	G3020 Sanitary Sewer				None		Minor		Moderate		Major		Replace		$0	Enter LF of pipe in cell E145
	G3030 Storm Sewer				None		Minor		Moderate		Major		Replace		$0	Enter SF of area to be drained
	G3040 Heating Distribution				None		Minor		Moderate		Major		Replace		$0	Enter LF of pipe in cell E147
	G3050 Cooling Distribution				None		Minor		Moderate		Major		Replace		$0	Enter LF of pipe in cell E148

G3060 Fuel Distribution			None		Minor		Moderate		Major		Replace		$0	Enter LF of pipe in cell E149
G3090 Other Site Mechanical Utilities	NOT USED		None		Minor		Moderate		Major		Replace			
G40 Site Electrical Utilities														
G4010 Electrical Distribution	Service		None		Minor		Moderate		Major		Replace		$0	
	Generator		None		Minor		Moderate		Major		Replace		$0	
G4020 Site Lighting			None		Minor		Moderate		Major		Replace		$0	
G4030 Site Communications & Security			None		Minor		Moderate		Major		Replace		$0	
G4090 Other Site Electrical Utilities	NOT USED		None		Minor		Moderate		Major		Replace			
G90 Other Site Construction	NOT USED													

OTHER

Description of System	Unit of Measure	Quantity	Unit Budget	Extended	Notes
				$0	
				$0	
				$0	
				$0	
				$0	
				$0	
				$0	

Physical Condition Budget Sub-Total	**$92,687**
Budgeted Development Costs	**$35,221**
Physical Condition Budget TOTAL	**$127,909**
Cost with Escalation to June 2021	**$145,816**
Cost with Escalation to June 2022	**$151,648**
Cost with Escalation to June 2023	**$157,714**
Replacement Budget	**$827,472**

HARMFUL SUBSTANCES ASSESSMENT				Amity Middle School
	YES	NO	N/A	COMMENTS
Lead				
Has your facility been assessed for lead? If so when?				
Is there lead in your facility?				
Is lead abatement included in your future bond plans?				
Asbestos				
Has your facility been assessed for asbestos? If so when?	x			2019
Is there asbestos in your facility?	x			Pipe wrap all not accessible
Is asbestos abatement included in your future bond plans?		x		
Mold				
Has your facility been assessed for mold? If so when?		x		
Is there mold in your facility?		x		
Is mold abatement included in your future bond plans?		x		
Water Quality				
Has your facility been assessed for water quality (lead, etc)? If so when?		x		
Is there a water quality concern in your facility?		x		
Is water treatment included in your future bond plans?		x		
PCBs				
Has your facility been assessed for PCBs? If so when?		x		
Are there PCBs in your facility?		x		
Is PCB abatement included in your future bond plans?		x		
Radon				
Has your facility been assessed for Radon? If so when?	x			
Is there Radon in your facility?	x			
Is Radon management included in your future bond plans?		x		

INDOOR AIR QUALITY ASSESSMENT				Amity Middle School
	YES	NO	N/A	COMMENTS
Is someone designated to develop and implement an indoor air quality management plan for your school district?		x		
Does your district have an indoor air quality management plan that includes steps for preventing and resolving indoor air quality problems?		x		
Are school buildings inspected once or twice each year for conditions that may lead to indoor air quality problems?	x			
Is a preventive maintenance schedule established and in operation for the heating, ventilation, and air conditioning (HVAC) system? Is the schedule in accordance with the manufacturer's recommendations or accepted practice for the HVAC system?	x			
Does the HVAC preventive maintenance schedule include the following?: checking and/or changing air filters and belts, lubricating equipment parts, checking the motors, and confirming that all equipment is in operating order.	x			
Is the maintenance schedule updated to show all maintenance performed on the building systems?		x		
Does the maintenance schedule include the dates that the building systems maintenance was performed and the names of the persons or companies performing the work?		x		
Are maintenance schedules retained for at least three years?	x			
Are damaged or inoperable components of the HVAC system replaced or repaired as appropriate?	x			
Are reservoirs or parts of the HVAC system with standing water checked visually for microbial growth?			x	
Are water leaks that could promote growth of biologic agents promptly repaired?	x			
Are damp or wet materials that could promote growth of biologic agents promptly dried, replaced, removed, or cleaned?	x			
Are microbial contaminants removed from ductwork, humidifiers, other HVAC and building system components, and from building surfaces such as carpeting and ceiling tiles when found during regular or emergency maintenance activities or visual			x	
inspection?Is general or local exhaust ventilation used where housekeeping and maintenance activities could reasonably be expected to result in exposure to hazardous substances above applicable exposure limits?		x		
Does the HVAC system have CO2 monitoring capability (demand control ventilation)?		x		
Are humidity levels maintained between 30% to 60% relative humidity?		x		
When a contaminant is identified in the make-up air supply, is the source of the contaminant eliminated, or are the make-up inlets or exhaust air outlets relocated to avoid entry of the contaminant into the air system?		x		
If buildings do not have mechanical ventilation, are windows, doors, vents, stacks, and other portals used for natural ventilation operating properly?	x			

SCHOOL SAFETY AUDIT ASSESSMENT				Amity Middle School
	YES	NO	N/A	COMMENTS
School grounds are fenced.		x		
There is one clearly marked and designated entrance for visitors	x			
Signs are posted for visitors to report to main office through a designated entrance.	x			
Restricted areas are clearly marked		x		
Shrubs and foliage are trimmed to allow for good line of sight. (3'-0"/8'- 0" rule)	x			
Shrubs near building have been trimmed "up" to allow view of bottom of building	x			
Bus loading and drop-off zones are clearly defined.		x		
There is a schedule for maintenance of:				
a. Outside lights	xx			
b. Locks/Hardware	x			
c. Storage Sheds	x			
d. Windows	x			
e. Other exterior buildings	x			
Parent drop-off and pick-up area is clearly defined.		x		
There is adequate lighting around the building.	x			
Lighting is provided at entrances and other points of possible intrusion.	x			
The school ground is free from trash or debris.	x			
The school is free of graffiti.	x			
Play areas are fenced.	x			
Playground equipment has tamper-proof fasteners			x	
Visual surveillance of bicycle racks from main office is possible.		x		
Visual surveillance of parking lots from main office is possible		x		
Parking lot is lighted properly and all lights are functioning				
Accessible lenses are protected by some unbreakable material		x		
Staff and visitor parking has been designated		x		
Outside hardware has been removed from all doors except at points of entry.		x		
Ground floor windows:				
a. have no broken panes;	x			
b. locking hardware is in working order.	x			
Basement windows are protected with grill or well cover.		x		
Doors are locked when classrooms are vacant.	x			
High-risk areas are protected by high security locks and an alarm system				
a. Main office		x		
b. Cafeteria		x		
c. Computer Labs		x		
d. Industrial Arts rooms		x		
e. Science labs		x		
f. Nurses Office		x		
g. Boiler Room		x		
h. Electrical Rooms		x		

i. Phone line access closet		x		
Unused areas of the school can be closed off during after school activities.		x		
There is two-way communication between the main office and:				
a. Classroom	x			
b. Duty stations	x			
c. Re-locatable classrooms			x	
d. Staff and faculty outside building		x		
e. Buses		x		
There is a central alarm system in the school. If yes, briefly describe:	x			Entry and hall sensors
The main entrance is visible from the main office.	x			Via video

Base Information Sheet

Item	Data	Notes / Explanation
District Name:	Amity SD 4J	Pull-down menu of the 197 Districts
Site Name:	Amity Middle School	Typically the name that is used for the facility / campus
Building Name:	District Office	If only one building on site, refer to "main"
Building ID:	22520000	Please use the same ID that is assigned to this building in the annual Building Collection.
Building Type:	Administrative Building	Pull-down menu - feeds FCI calculation
Physical Address of Building:	115 Church St, Amity, OR 97101	Informational only - does not link
Original Year of Building Completion	1945	When was the original building completed and ready for use
Original Construction Type	Wood Frame	What type of construction was used to complete original building
Describe Other Construction Type		If you choose other construction type please describe here
County:	Yamhill	Pull-down menu of the 36 counties - sets location factor for budgets
Gross Square Footage:	2,254	Calculated from exterior face of walls (excluding eaves, outbuilding, porches, canopies, and similar)
Site Acreage:	Shared with Middle School	District records
Assessor Company:	IBI Group	Certified company
Assessor Name:	Steve Winkle	For follow up questions
Contact (Phone):	503 226 6950 ext 255	
Contact (E-Mail):	steve.winkle@ibigroup.com	
Date of Assessment:	2019-08-20	Might reference back for inflation calculation (future)

*Building ID Format: Located in ODE "Buildings Collection" database

District Name: Amity SD 4J
Site Name: Amity Middle School
Building Name: District Office
Building ID: 22520000

REMINDER: FILL OUT ALL INFORMATION ON '*BASE INFORMATION SHEET*' BEFORE ENTERING DATA ON THIS SHEET
An unused cell or system that should not receive direct user input
An automatically populated cell from user input elsewhere in the file - do not overwrite

Level 1	Level 2	Level 3	Type (as applicable)	% of Building or Number	LEVEL OF ACTION										% of System or Finish	Automated Budget Estimate	Notes
						None		Minor		Moderate		Major		Replace as part of Renovation			
A SUBSTRUCTURE																	
	A10 Foundations																
		A1010 Standard Foundations		100%	x	None		Minor		Moderate		Major		Replace		$0	
		A1020 Special Foundations			o	None		Minor		Moderate		Major		Replace		$0	
		A1030 Slab on Grade		28%		None		Minor	x	Moderate		Major		Replace	30%	$460	
	A20 Basement Construction																
		A2010 Basement Excavation	NOT USED			None		Minor		Moderate		Major		Replace			
		A2020 Basement Walls				None		Minor		Moderate		Major		Replace		$0	
B SHELL																	
	B10 Superstructure																
		B1010 Floor Construction	Wood	72%		None		Minor	x	Moderate		Major		Replace	50%	$6,216	
			Steel		o	None		Minor		Moderate		Major		Replace		$0	
			Concrete		o	None		Minor		Moderate		Major		Replace		$0	
		B1020 Roof Construction	Wood	100%	x	None		Minor		Moderate		Major		Replace		$0	
			Steel		o	None		Minor		Moderate		Major		Replace		$0	
			Concrete		o	None		Minor		Moderate		Major		Replace		$0	
	B20 Exterior Enclosure																
		B2010 Exterior Walls	Concrete Formed / Tilt		o	None		Minor		Moderate		Major		Replace		$0	
			Masonry		o	None		Minor		Moderate		Major		Replace		$0	
			Framed w/ Wood Siding	100%	x	None		Minor		Moderate		Major		Replace		$0	
			Framed w/Metal Panel		o	None		Minor		Moderate		Major		Replace		$0	
			Framed w/Stucco		o	None		Minor		Moderate		Major		Replace		$0	
			Framed w/Masonry Veneer		o	None		Minor		Moderate		Major		Replace		$0	
		B2020 Exterior Windows	Wood		o	None		Minor		Moderate		Major		Replace		$0	
			Aluminum/Steel		o	None		Minor		Moderate		Major		Replace		$0	
			Clad	100%	x	None		Minor		Moderate		Major		Replace		$0	vinyl windows (19 each)
			Curtain Wall		o	None		Minor		Moderate		Major		Replace		$0	
		B2030 Exterior Doors	Wood	4	x	None		Minor		Moderate		Major		Replace		$0	
			Hollow Metal		o	None		Minor		Moderate		Major		Replace		$0	
			Storefront		o	None		Minor		Moderate		Major		Replace		$0	
	B30 Roofing																
		B3010 Roof Coverings	Asphalt Shingle		o	None		Minor		Moderate		Major		Replace		$0	
			Built-Up		o	None		Minor		Moderate		Major		Replace		$0	
			Single Ply		o	None		Minor		Moderate		Major		Replace		$0	
			Metal	100%	x	None		Minor		Moderate		Major		Replace		$0	
			Concrete Tile		o	None		Minor		Moderate		Major		Replace		$0	
		B3020 Roof Openings	Skylights		o	None		Minor		Moderate		Major		Replace		$0	By Building GSF
			Access Hatch		o	None		Minor		Moderate		Major		Replace		$0	Per hatch
C INTERIORS																	
	C10 Interior Construction																
		C1010 Partitions	Framed	100%	x	None		Minor		Moderate		Major	x	Replace	20%	$8,058	Major support for second floor damaged or missing
			Masonry		o	None		Minor		Moderate		Major		Replace		$0	
		C1020 Interior Doors	Wood	9	x	None		Minor		Moderate		Major		Replace		$0	
			Hollow Metal		o	None		Minor		Moderate		Major		Replace		$0	
		C1030 Fittings	NOT USED			None		Minor		Moderate		Major		Replace			
	C20 Stairs																
		C2010 Stair Construction	Wood	2		None		Minor		Moderate	x	Major		Replace	50%	$5,700	
			Metal		o	None		Minor		Moderate		Major		Replace		$0	
			Concrete		o	None		Minor		Moderate		Major		Replace		$0	
		C2020 Stair Finishes	Concrete Fill		o	None		Minor		Moderate		Major		Replace		$0	
			Resilient	2		None		Minor		Moderate		Major		Replace		$0	Carpet to 2nd floor

C30 Interior Finishes															
C3010 Wall Finishes	Paint on Masonry		o	None		Minor		Moderate		Major		Replace		$0	
	Wallboard	100%	x	None		Minor		Moderate		Major		Replace		$0	
	Wainscot		o	None		Minor		Moderate		Major		Replace		$0	
	Ceramic Tile		o	None		Minor		Moderate		Major		Replace		$0	
C3020 Floor Finishes	Carpet / Soft Surface	29%	x	None		Minor		Moderate		Major		Replace		$0	
	Resilient Tile	10%		None		Minor		Moderate	x	Major		Replace	100%	$1,223	
	Resilient Sheet		o	None		Minor		Moderate		Major		Replace		$0	
	Polished Concrete	23%	x	None		Minor		Moderate		Major		Replace		$0	
	Ceramic Tile		o	None		Minor		Moderate		Major		Replace		$0	
	Liquid Applied		o	None		Minor		Moderate		Major		Replace		$0	
	Wood Sports Floor	38%	x	None		Minor		Moderate		Major		Replace		$0	
C3030 Ceiling Finishes	Wallboard	77%	x	None		Minor		Moderate		Major		Replace		$0	
	Lay-In Ceiling Tile		o	None		Minor		Moderate		Major		Replace		$0	
	Glued-Up Ceiling Tile		o	None		Minor		Moderate		Major		Replace		$0	
	Painted Structure		o	None		Minor		Moderate		Major		Replace		$0	
D SERVICES															
D10 Conveying															
D1010 Elevators & Lifts			o	None		Minor		Moderate		Major		Replace		$0	
D1020 Escalators & Moving Walks			o	None		Minor		Moderate		Major		Replace		$0	
D1090 Other Conveying Systems			o	None		Minor		Moderate		Major		Replace		$0	
D20 Plumbing															
D2010 Plumbing Fixtures		7%		None		Minor	x	Moderate		Major		Replace	50%	$126	All (N) fixtures must meet ADA requirements by code.
D2020 Domestic Water Distribution		7%		None		Minor	x	Moderate		Major		Replace	100%	$302	
D2030 Sanitary Waste		7%	x	None		Minor		Moderate		Major		Replace		$0	
D2040 Rain Water Drainage			o	None		Minor		Moderate		Major		Replace		$0	
D2090 Other Plumbing Systems	NOT USED			None		Minor		Moderate		Major		Replace			
D30 HVAC															
D3010 Energy Supply			o	None		Minor		Moderate		Major		Replace		$0	
D3020 Heat Generating Systems	Boiler		o	None		Minor		Moderate		Major		Replace		$0	
	Air Handler	77%		None		Minor		Moderate		Major	x	Replace	100%	$11,515	Likely around 25 years old
	Furnace		o	None		Minor		Moderate		Major		Replace		$0	
	Heat Exchanger		o	None		Minor		Moderate		Major		Replace		$0	
D3030 Cooling Generating Systems	Component of air handler	77%		None		Minor		Moderate		Major	x	Replace	100%	$7,637	Likely around 25 years old
	Stand alone chiller		o	None		Minor		Moderate		Major		Replace		$0	
D3040 Distribution Systems	Ductwork	77%	x	None		Minor		Moderate		Major		Replace		$0	
	Hot water return & supply		o	None		Minor		Moderate		Major		Replace		$0	
D3050 Terminal & Package Units	Above ceiling VAV unit		o	None		Minor		Moderate		Major		Replace		$0	
	In-room ventilator unit		o	None		Minor		Moderate		Major		Replace		$0	
	In-room radiant unit		o	None		Minor		Moderate		Major		Replace		$0	
D3060 Controls & Instrumentation			o	None		Minor		Moderate		Major		Replace		$0	
D3070 Systems Testing & Balancing			o	None		Minor		Moderate		Major		Replace		$0	
D3090 Other HVAC Systems & Equipment	NOT USED			None		Minor		Moderate		Major		Replace			
D40 Fire Protection															
D4010 Sprinklers			o	None		Minor		Moderate		Major		Replace		$0	
D4020 Standpipes			o	None		Minor		Moderate		Major		Replace		$0	
D4030 Fire Protection Specialties			o	None		Minor		Moderate		Major		Replace		$0	
D4090 Other Fire Protection Systems	NOT USED			None		Minor		Moderate		Major		Replace			
D50 Electrical															
D5010 Electrical Service & Distribution		100%	x	None		Minor		Moderate		Major		Replace		$0	
D5020 Lighting and Branch Wiring		100%	x	None		Minor		Moderate		Major		Replace		$0	
D5030 Communications & Security	Voice / Data System		o	None		Minor		Moderate		Major		Replace		$0	
	Clock / Intercom System		o	None		Minor		Moderate		Major		Replace		$0	
	Closed Circuit Surveillance		o	None		Minor		Moderate		Major		Replace		$0	
	Access Control System		o	None		Minor		Moderate		Major		Replace		$0	
	Intrusion Alarm System		o	None		Minor		Moderate		Major		Replace		$0	
	Fire Alarm / Detection		o	None		Minor		Moderate		Major		Replace		$0	
	Lighting Control System		o	None		Minor		Moderate		Major		Replace		$0	
D5090 Other Electrical Systems	NOT USED			None		Minor		Moderate		Major		Replace			

E EQUIPMENT & FURNISHINGS															
E10 Equipment															
E1010 Commercial Equipment	Food Service		o	None		Minor		Moderate		Major		Replace		$0	
	Vocational		o	None		Minor		Moderate		Major		Replace		$0	
E1020 Institutional Equipment	Science		o	None		Minor		Moderate		Major		Replace		$0	
	Art		o	None		Minor		Moderate		Major		Replace		$0	
	Stage Performance		o	None		Minor		Moderate		Major		Replace		$0	
	Restroom Accessories/Stalls		o	None		Minor		Moderate		Major		Replace		$0	
E1030 Vehicular Equipment	NOT USED			None		Minor		Moderate		Major		Replace			
E1090 Other Equipment	NOT USED			None		Minor		Moderate		Major		Replace			
E20 Furnishings															
E2010 Fixed Furnishings		4%		None		Minor		Moderate		Major	x	Replace	100%	$958	
E2020 Movable Furnishings			o	None		Minor		Moderate		Major		Replace		$0	
F SPECIAL CONSTRUCTION & DEMOLITION - NOT USED															
G BUILDING SITE WORK															
G10 Site Preparation	NOT USED														
G20 Site Improvements															
G2010 Roadways			o	None		Minor		Moderate		Major		Replace		$0	
G2020 Parking Lots		8500		None		Minor		Moderate		Major	x	Replace	100%	$77,520	
G2030 Pedestrian Paving			o	None		Minor		Moderate		Major		Replace		$0	
G2040 Site Development			o	None		Minor		Moderate		Major		Replace		$0	
G2050 Landscaping			o	None		Minor		Moderate		Major		Replace		$0	
G30 Site Mechanical Utilities															
G3010 Water Supply	Domestic	125	x	None		Minor		Moderate		Major		Replace		$0	
	Fire		o	None		Minor		Moderate		Major		Replace		$0	
G3020 Sanitary Sewer			o	None		Minor		Moderate		Major		Replace		$0	
G3030 Storm Sewer			o	None		Minor		Moderate		Major		Replace		$0	
G3040 Heating Distribution			o	None		Minor		Moderate		Major		Replace		$0	
G3050 Cooling Distribution			o	None		Minor		Moderate		Major		Replace		$0	
G3060 Fuel Distribution		125	x	None		Minor		Moderate		Major		Replace		$0	
G3090 Other Site Mechanical Utilities	NOT USED			None		Minor		Moderate		Major		Replace			
G40 Site Electrical Utilities															
G4010 Electrical Distribution	Service	100	x	None		Minor		Moderate		Major		Replace		$0	
	Generator		o	None		Minor		Moderate		Major		Replace		$0	
G4020 Site Lighting			o	None		Minor		Moderate		Major		Replace		$0	
G4030 Site Communications & Security			o	None		Minor		Moderate		Major		Replace		$0	
G4090 Other Site Electrical Utilities	NOT USED			None		Minor		Moderate		Major		Replace			
G90 Other Site Construction	NOT USED														

OTHER

Description of System	Unit of Measure	Quantity	Unit Budget	Extended	Notes
				$0	
				$0	
				$0	
				$0	
				$0	
				$0	
				$0	

Physical Condition Budget Sub-Total	**$119,716**
Budgeted Development Costs	**$45,492**
Physical Condition Budget TOTAL	**$165,208**
Cost with Escalation to June 2021	**$188,337**
Cost with Escalation to June 2022	**$195,870**
Cost with Escalation to June 2023	**$203,705**
Replacement Budget	**$1,134,718**

HARMFUL SUBSTANCES ASSESSMENT				Amity District Office
	YES	NO	N/A	COMMENTS
Lead				
Has your facility been assessed for lead? If so when?				
Is there lead in your facility?				
Is lead abatement included in your future bond plans?				
Asbestos				
Has your facility been assessed for asbestos? If so when?	x			2019
Is there asbestos in your facility?		x		
Is asbestos abatement included in your future bond plans?		x		
Mold				
Has your facility been assessed for mold? If so when?		x		
Is there mold in your facility?		X		
Is mold abatement included in your future bond plans?		X		
Water Quality				
Has your facility been assessed for water quality (lead, etc)? If so when?		X		
Is there a water quality concern in your facility?		X		
Is water treatment included in your future bond plans?		X		
PCBs				
Has your facility been assessed for PCBs? If so when?		X		
Are there PCBs in your facility?		X		
Is PCB abatement included in your future bond plans?		X		
Radon				
Has your facility been assessed for Radon? If so when?	X			2019
Is there Radon in your facility?		X		
Is Radon management included in your future bond plans?		X		

INDOOR AIR QUALITY ASSESSMENT				Amity District Office
	YES	NO	N/A	COMMENTS
Is someone designated to develop and implement an indoor air quality management plan for your school district?		X		
Does your district have an indoor air quality management plan that includes steps for preventing and resolving indoor air quality problems?		X		
Are school buildings inspected once or twice each year for conditions that may lead to indoor air quality problems?		X		
Is a preventive maintenance schedule established and in operation for the heating, ventilation, and air conditioning (HVAC) system? Is the schedule in accordance with the manufacturer's recommendations or accepted practice for the HVAC system?	X			
Does the HVAC preventive maintenance schedule include the following?: checking and/or changing air filters and belts, lubricating equipment parts, checking the motors, and confirming that all equipment is in operating order.	X			
Is the maintenance schedule updated to show all maintenance performed on the building systems?		X		
Does the maintenance schedule include the dates that the building systems maintenance was performed and the names of the persons or companies performing the work?		X		
Are maintenance schedules retained for at least three years?	X			
Are damaged or inoperable components of the HVAC system replaced or repaired as appropriate?	X			
Are reservoirs or parts of the HVAC system with standing water checked visually for microbial growth?			X	
Are water leaks that could promote growth of biologic agents promptly repaired?	X			
Are damp or wet materials that could promote growth of biologic agents promptly dried, replaced, removed, or cleaned?	X			
Are microbial contaminants removed from ductwork, humidifiers, other HVAC and building system components, and from building surfaces such as carpeting and ceiling tiles when found during regular or emergency maintenance activities or visual			X	
inspection?Is general or local exhaust ventilation used where housekeeping and maintenance activities could reasonably be expected to result in exposure to hazardous substances above applicable exposure limits?			X	
Does the HVAC system have CO2 monitoring capability (demand control ventilation)?		X		
Are humidity levels maintained between 30% to 60% relative humidity?		X		
When a contaminant is identified in the make-up air supply, is the source of the contaminant eliminated, or are the make-up inlets or exhaust air outlets relocated to avoid entry of the contaminant into the air system?		X		
If buildings do not have mechanical ventilation, are windows, doors, vents, stacks, and other portals used for natural ventilation operating properly?	X			

SCHOOL SAFETY AUDIT ASSESSMENT				Amity District Office
	YES	NO	N/A	COMMENTS
School grounds are fenced.		X		
There is one clearly marked and designated entrance for visitors		X		
Signs are posted for visitors to report to main office through a designated entrance.			X	
Restricted areas are clearly marked			X	
Shrubs and foliage are trimmed to allow for good line of sight. (3'-0"/8'- 0" rule)	X			
Shrubs near building have been trimmed "up" to allow view of bottom of building		X		
Bus loading and drop-off zones are clearly defined.			X	
There is a schedule for maintenance of:				
a. Outside lights	X			
b. Locks/Hardware	X			
c. Storage Sheds	X			
d. Windows	X			
e. Other exterior buildings	X			
Parent drop-off and pick-up area is clearly defined.			X	
There is adequate lighting around the building.	X			
Lighting is provided at entrances and other points of possible intrusion.	X			
The school ground is free from trash or debris.	X			
The school is free of graffiti.	X			
Play areas are fenced.			X	
Playground equipment has tamper-proof fasteners			X	
Visual surveillance of bicycle racks from main office is possible.			X	
Visual surveillance of parking lots from main office is possible	X			
Parking lot is lighted properly and all lights are functioning	X			
Accessible lenses are protected by some unbreakable material			X	
Staff and visitor parking has been designated		X		
Outside hardware has been removed from all doors except at points of entry.		X		
Ground floor windows:				
a. have no broken panes;	X			
b. locking hardware is in working order.	X			
Basement windows are protected with grill or well cover.			X	
Doors are locked when classrooms are vacant.			X	
High-risk areas are protected by high security locks and an alarm system			X	
a. Main office			X	
b. Cafeteria			X	
c. Computer Labs			X	
d. Industrial Arts rooms			X	
e. Science labs			X	
f. Nurses Office			X	
g. Boiler Room			X	
h. Electrical Rooms			X	

i. Phone line access closet			X	
Unused areas of the school can be closed off during after school activities.			X	
There is two-way communication between the main office and:			X	
a. Classroom			X	
b. Duty stations			X	
c. Re-locatable classrooms			X	
d. Staff and faculty outside building			X	
e. Buses			X	
There is a central alarm system in the school. If yes, briefly describe:	X			Door sensors
The main entrance is visible from the main office.	X			

Base Information Sheet

Item	Data	Notes / Explanation
District Name:	Amity SD 4J	Pull-down menu of the 197 Districts
Site Name:	Amity Elementary School	Typically the name that is used for the facility / campus
Building Name:	Main	If only one building on site, refer to "main"
Building ID:	22520100	Please use the same ID that is assigned to this building in the annual Building Collection.
Building Type:	Elementary School	Pull-down menu - feeds FCI calculation
Physical Address of Building:	300 Rice Ln, Amity, OR 97101	Informational only - does not link
Original Year of Building Completion	1980	When was the original building completed and ready for use
Original Construction Type	Wood	What type of construction was used to complete original building
Describe Other Construction Type	Concrete Tilt Up at shorter exterior walls	If you choose other construction type please describe here
County:	Yamhill	Pull-down menu of the 36 counties - sets location factor for budgets
Gross Square Footage:	42,072	Calculated from exterior face of walls (excluding eaves, outbuilding, porches, canopies, and similar)
Site Acreage:	9.76	District records
Assessor Company:	IBI Group	Certified company
Assessor Name:	Steve Winkle	For follow up questions
Contact (Phone):	503 226 6950 ext 255	
Contact (E-Mail):	steve.winkle@ibigroup.com	
Date of Assessment:	2019-08-20	Might reference back for inflation calculation (future)

*Building ID Format: Located in ODE "Buildings Collection" database

Physical Condition Assessment

District Name: Amity SD 4J
Site Name: Amity Elementary School
Building Name: Main
Building ID: 22520100

REMINDER: FILL OUT ALL INFORMATION ON '*BASE INFORMATION SHEET*' BEFORE ENTERING DATA ON THIS SHEET
An unused cell or system that should not receive direct user input
An automatically populated cell from user input elsewhere in the file - do not overwrite

Level 1	Level 2	Level 3	Type (as applicable)	% of Building or Number	LEVEL OF ACTION									% of System or Finish	Automated Budget Estimate	Notes
						None		Minor		Moderate		Major		Replace as part of Renovation			
A SUBSTRUCTURE																
	A10 Foundations															
		A1010 Standard Foundations		100%	x	None		Minor		Moderate		Major		Replace		$0	
		A1020 Special Foundations			o	None		Minor		Moderate		Major		Replace		$0	
		A1030 Slab on Grade		100%	x	None		Minor		Moderate		Major		Replace		$0	
	A20 Basement Construction															
		A2010 Basement Excavation	NOT USED			None		Minor		Moderate		Major		Replace			
		A2020 Basement Walls			o	None		Minor		Moderate		Major		Replace		$0	
B SHELL																
	B10 Superstructure															
		B1010 Floor Construction	Wood		o	None		Minor		Moderate		Major		Replace		$0	
			Steel		o	None		Minor		Moderate		Major		Replace		$0	
			Concrete		o	None		Minor		Moderate		Major		Replace		$0	
		B1020 Roof Construction	Wood	100%	x	None		Minor		Moderate		Major		Replace		$0	
			Steel		o	None		Minor		Moderate		Major		Replace		$0	
			Concrete		o	None		Minor		Moderate		Major		Replace		$0	
	B20 Exterior Enclosure															
		B2010 Exterior Walls	Concrete Formed / Tilt	54%		None	x	Minor		Moderate		Major		Replace	100%	$0	
			Masonry		o	None		Minor		Moderate		Major		Replace		$0	
			Framed w/ Wood Siding	8%		None		Minor	x	Moderate		Major		Replace	100%	$11,779	
			Framed w/Metal Panel	4%	x	None		Minor		Moderate		Major		Replace		$0	Stucco Replaced by Metal in 2017
			Framed w/Stucco	34%		None		Minor	x	Moderate		Major		Replace	80%	$40,050	
			Framed w/Masonry Veneer		o	None		Minor		Moderate		Major		Replace		$0	
		B2020 Exterior Windows	Wood		o	None		Minor		Moderate		Major		Replace		$0	
		23 total windows	Aluminum/Steel	100%		None		Minor	x	Moderate		Major		Replace	50%	$64,509	Fogging
			Clad		o	None		Minor		Moderate		Major		Replace		$0	
			Curtain Wall		o	None		Minor		Moderate		Major		Replace		$0	
		B2030 Exterior Doors	Wood		o	None		Minor		Moderate		Major		Replace		$0	
			Hollow Metal	17		None	x	Minor		Moderate		Major		Replace	100%	$0	
			Storefront	1		None	x	Minor		Moderate		Major		Replace	100%	$0	
	B30 Roofing															
		B3010 Roof Coverings	Asphalt Shingle	100%		None	x	Minor		Moderate		Major		Replace	10%	$6,475	New Between 2010-2014
			Built-Up		o	None		Minor		Moderate		Major		Replace		$0	
			Single Ply		o	None		Minor		Moderate		Major		Replace		$0	
			Metal		o	None		Minor		Moderate		Major		Replace		$0	
			Concrete Tile		o	None		Minor		Moderate		Major		Replace		$0	
		B3020 Roof Openings	Skylights		o	None		Minor		Moderate		Major		Replace		$0	By Building GSF
			Access Hatch		o	None		Minor		Moderate		Major		Replace		$0	Per hatch
C INTERIORS																
	C10 Interior Construction															
		C1010 Partitions	Framed	100%		None	X	Minor		Moderate		Major		Replace	100%	$0	

	Masonry		o	None		Minor		Moderate		Major		Replace		$0	
C1020 Interior Doors	Wood	64		None		Minor	x	Moderate		Major		Replace	35%	$20,429	Provide ADA handles
	Hollow Metal	69		None		Minor	x	Moderate		Major		Replace	72%	$45,308	Provide ADA handles
C1030 Fittings	NOT USED			None		Minor		Moderate		Major		Replace			
C20 Stairs															
C2010 Stair Construction	Wood		o	None		Minor		Moderate		Major		Replace		$0	Cost/Flight
	Metal		o	None		Minor		Moderate		Major		Replace		$0	Cost/Flight
	Concrete		o	None		Minor		Moderate		Major		Replace		$0	Cost/Flight
C2020 Stair Finishes	Concrete Fill		o	None		Minor		Moderate		Major		Replace		$0	Cost/Flight
	Resilient		o	None		Minor		Moderate		Major		Replace		$0	Cost/Flight
C30 Interior Finishes															
C3010 Wall Finishes	Paint on Masonry		o	None		Minor		Moderate		Major		Replace		$0	
	Wallboard	86%	X	None		Minor		Moderate		Major		Replace		$0	
	Wainscot	12%	X	None		Minor		Moderate		Major		Replace		$0	
	Ceramic Tile	2%		None	X	Minor		Moderate		Major		Replace	40%	$345	
C3020 Floor Finishes	Carpet / Soft Surface	55%		None		Minor		Moderate		Major	X	Replace	50%	$88,106	
	Resilient Tile	29%		None		Minor		Moderate	X	Major		Replace	15%	$9,931	
	Resilient Sheet		o	None		Minor		Moderate		Major		Replace		$0	
	Polished Concrete		o	None		Minor		Moderate		Major		Replace		$0	
	Ceramic Tile	2%	X	None		Minor		Moderate		Major		Replace		$0	
	Liquid Applied	14%		None		Minor		Moderate		Major	x	Replace	100%	$94,744	Gym Floor and Kitchen
	Wood Sports Floor		o	None		Minor		Moderate		Major		Replace		$0	
C3030 Ceiling Finishes	Wallboard	8%		None	x	Minor		Moderate		Major		Replace	100%	$12,048	
	Lay-In Ceiling Tile	72%		None	x	Minor		Moderate		Major		Replace	10%	$3,453	
	Glued-Up Ceiling Tile	12%		None	x	Minor		Moderate		Major		Replace	50%	$1,871	
	Painted Structure	8%	x	None		Minor		Moderate		Major		Replace		$0	
D SERVICES															
D10 Conveying															
D1010 Elevators & Lifts			o	None		Minor		Moderate		Major		Replace		$0	
D1020 Escalators & Moving Walks			o	None		Minor		Moderate		Major		Replace		$0	
D1090 Other Conveying Systems			o	None		Minor		Moderate		Major		Replace		$0	
D20 Plumbing															
D2010 Plumbing Fixtures		100%	x	None		Minor		Moderate		Major		Replace		$0	All (N) fixtures must meet ADA requirements by code.
D2020 Domestic Water Distribution		100%	x	None		Minor		Moderate		Major		Replace		$0	Sinks and DFs throughout
D2030 Sanitary Waste		100%	x	None		Minor		Moderate		Major		Replace		$0	
D2040 Rain Water Drainage		100%	x	None		Minor		Moderate		Major		Replace		$0	
D2090 Other Plumbing Systems	NOT USED			None		Minor		Moderate		Major		Replace			
D30 HVAC															
D3010 Energy Supply		100%	x	None		Minor		Moderate		Major		Replace		$0	
D3020 Heat Generating Systems	Boiler	100%		None	x	Minor		Moderate		Major		Replace	100%	$96,883	
	Air Handler	100%	x	None		Minor		Moderate		Major		Replace		$0	
	Furnace		o	None		Minor		Moderate		Major		Replace		$0	
	Heat Exchanger		o	None		Minor		Moderate		Major		Replace		$0	
D3030 Cooling Generating Systems	Component of air handler		o	None		Minor		Moderate		Major		Replace		$0	
	Stand alone chiller		o	None		Minor		Moderate		Major		Replace		$0	
D3040 Distribution Systems	Ductwork	100%		None		Minor	x	Moderate		Major		Replace	100%	$85,852	
	Hot water return & supply	100%		None	x	Minor		Moderate		Major		Replace	100%	$58,993	
D3050 Terminal & Package Units	Above ceiling VAV unit	100%	x	None		Minor		Moderate		Major		Replace		$0	
	In-room ventilator unit		o	None		Minor		Moderate		Major		Replace		$0	
	In-room radiant unit		o	None		Minor		Moderate		Major		Replace		$0	

D3060 Controls & Instrumentation		100%	x	None		Minor		Moderate		Major		Replace		$0	Upgraded to DDC in 2003
D3070 Systems Testing & Balancing		100%	x	None		Minor		Moderate		Major		Replace		$0	2003
D3090 Other HVAC Systems & Equipment	NOT USED			None		Minor		Moderate		Major		Replace			
D40 Fire Protection															
D4010 Sprinklers			o	None		Minor		Moderate		Major		Replace		$0	
D4020 Standpipes			o	None		Minor		Moderate		Major		Replace		$0	
D4030 Fire Protection Specialties		100%		None		Minor		Moderate		Major	x	Replace		$0	Fire Extinguishers only
D4090 Other Fire Protection Systems	NOT USED			None		Minor		Moderate		Major		Replace			
D50 Electrical															
D5010 Electrical Service & Distribution		100%	x	None		Minor		Moderate		Major		Replace		$0	Original
D5020 Lighting and Branch Wiring		100%		None		Minor		Moderate	x	Major		Replace	100%	$263,312	T-8 flourescent bulbs
D5030 Communications & Security	Voice / Data System	100%		None		Minor	x	Moderate		Major		Replace	100%	$16,787	
	Clock / Intercom System	100%		None		Minor		Moderate		Major	x	Replace	100%	$47,962	
	Closed Circuit Surveillance		o	None		Minor		Moderate		Major		Replace		$0	
	Access Control System	100%	x	None		Minor		Moderate		Major		Replace		$0	Fobs
	Intrusion Alarm System	100%	x	None		Minor		Moderate		Major		Replace		$0	
	Fire Alarm / Detection	100%	x	None		Minor		Moderate		Major		Replace		$0	
	Lighting Control System	100%		None		Minor		Moderate		Major	x	Replace	100%	$40,288	
D5090 Other Electrical Systems	NOT USED			None		Minor		Moderate		Major		Replace			
E EQUIPMENT & FURNISHINGS															
E10 Equipment															
E1010 Commercial Equipment	Food Service	6%	x	None		Minor		Moderate		Major		Replace		$0	Some new equipment in 2014
	Vocational		o	None		Minor		Moderate		Major		Replace		$0	
E1020 Institutional Equipment	Science		o	None		Minor		Moderate		Major		Replace		$0	
	Art		o	None		Minor		Moderate		Major		Replace		$0	
	Stage Performance		o	None		Minor		Moderate		Major		Replace		$0	Cost/SF of Stage Performance Area
	Restroom Accessories/Stalls	3%		None	x	Minor		Moderate		Major		Replace	100%	$317	Poor
E1030 Vehicular Equipment	NOT USED			None		Minor		Moderate		Major		Replace			
E1090 Other Equipment	NOT USED			None		Minor		Moderate		Major		Replace			
E20 Furnishings															
E2010 Fixed Furnishings		3%		None		Minor		Moderate	x	Major		Replace	100%	$5,381	
E2020 Movable Furnishings		20%		None		Minor		Moderate		Major	x	Replace	10%	$23,022	Folding Cafeteria Tables
F SPECIAL CONSTRUCTION & DEMOLITION - NOT USED															
G BUILDING SITE WORK															
G10 Site Preparation	NOT USED														
G20 Site Improvements															
G2010 Roadways			o	None		Minor		Moderate		Major		Replace		$0	Cost/SF of surface area - Fair
G2020 Parking Lots		74497		None	x	Minor		Moderate		Major		Replace	80%	$106,668	Cost/SF of surface area - Fair
G2030 Pedestrian Paving		7800	x	None		Minor		Moderate		Major		Replace		$0	Cost/SF of surface area - Roots lifting concrete
G2040 Site Development		2545		None		Minor		Moderate	x	Major		Replace	10%	$2,321	Cost/LF of fencing - play grounds are uneven
G2050 Landscaping			o	None		Minor		Moderate		Major		Replace		$0	Cost/SF of irrigated area - Fair ? No Irregation
G30 Site Mechanical Utilities															
G3010 Water Supply	Domestic	231	x	None		Minor		Moderate		Major		Replace		$0	Enter LF of pipe in cell E143
	Fire		o	None		Minor		Moderate		Major		Replace		$0	Enter LF of pipe in cell E144
G3020 Sanitary Sewer		231		None		Minor		Moderate		Major	x	Replace	20%	$2,370	Enter LF of pipe in cell E145 Roots Clog Pipes
G3030 Storm Sewer		1200	x	None		Minor		Moderate		Major		Replace		$0	Enter SF of area to be drained
G3040 Heating Distribution			o	None		Minor		Moderate		Major		Replace		$0	Enter LF of pipe in cell E147
G3050 Cooling Distribution			o	None		Minor		Moderate		Major		Replace		$0	Enter LF of pipe in cell E148

Physical Condition Assessment

System	Component	Quantity	None	Minor	Moderate	Major	Replace	%	Extended	Notes
G3060 Fuel Distribution			x None	Minor	Moderate	Major	Replace		$0	Enter LF of pipe in cell E149 - Gas
G3090 Other Site Mechanical Utilities	NOT USED		None	Minor	Moderate	Major	Replace			
<u>G40 Site Electrical Utilities</u>										
G4010 Electrical Distribution	Service	231	x None	Minor	Moderate	Major	Replace		$0	
	Generator	1	x None	Minor	Moderate	Major	Replace		$0	New in 2003
G4020 Site Lighting		14%	None	Minor	x Moderate	Major	Replace	80%	$3,921	Yes - 1981 slowing going LED
G4030 Site Communications & Security		5%	x None	Minor	Moderate	Major	Replace		$0	One outdoor camera
G4090 Other Site Electrical Utilities	NOT USED		None	Minor	Moderate	Major	Replace			
<u>G90 Other Site Construction</u>	NOT USED									

OTHER

<u>Description of System</u>	Unit of Measure	Quantity	Unit Budget	Extended	Notes
				$0	
				$0	
				$0	
				$0	
				$0	
				$0	
				$0	

Physical Condition Budget Sub-Total	**$1,153,127**
Budgeted Development Costs	**$438,188**
Physical Condition Budget TOTAL	**$1,591,315**
Cost with Escalation to June 2021	**$1,814,099**
Cost with Escalation to June 2022	**$1,886,663**
Cost with Escalation to June 2023	**$1,962,130**
Replacement Budget	**$21,510,993**

HARMFUL SUBSTANCES ASSESSMENT				Amity Elementary School
	YES	NO	N/A	COMMENTS
Lead				
Has your facility been assessed for lead? If so when?	x			2016
Is there lead in your facility?	x			Water fountains in a few classes
Is lead abatement included in your future bond plans?		X?		
Asbestos				
Has your facility been assessed for asbestos? If so when?	x			2019
Is there asbestos in your facility?		x		High school floor
Is asbestos abatement included in your future bond plans?		X?		
Mold				
Has your facility been assessed for mold? If so when?		x		
Is there mold in your facility?		x		
Is mold abatement included in your future bond plans?		x		
Water Quality				
Has your facility been assessed for water quality (lead, etc)? If so when?		x		
Is there a water quality concern in your facility?		x		
Is water treatment included in your future bond plans?		x		
PCBs				
Has your facility been assessed for PCBs? If so when?		x		
Are there PCBs in your facility?		x		
Is PCB abatement included in your future bond plans?		x		
Radon				
Has your facility been assessed for Radon? If so when?	x			2019
Is there Radon in your facility?	x			
Is Radon management included in your future bond plans?		x		

INDOOR AIR QUALITY ASSESSMENT				Amity Elementary School
	YES	NO	N/A	COMMENTS
Is someone designated to develop and implement an indoor air quality management plan for your school district?		x		
Does your district have an indoor air quality management plan that includes steps for preventing and resolving indoor air quality problems?		x		
Are school buildings inspected once or twice each year for conditions that may lead to indoor air quality problems?	x			
Is a preventive maintenance schedule established and in operation for the heating, ventilation, and air conditioning (HVAC) system? Is the schedule in accordance with the manufacturer's recommendations or accepted practice for the HVAC system?	x			
Does the HVAC preventive maintenance schedule include the following?: checking and/or changing air filters and belts, lubricating equipment parts, checking the motors, and confirming that all equipment is in operating order.	x			
Is the maintenance schedule updated to show all maintenance performed on the building systems?		x		
Does the maintenance schedule include the dates that the building systems maintenance was performed and the names of the persons or companies performing the work?		x		
Are maintenance schedules retained for at least three years?	x			
Are damaged or inoperable components of the HVAC system replaced or repaired as appropriate?	x			
Are reservoirs or parts of the HVAC system with standing water checked visually for microbial growth?			x	
Are water leaks that could promote growth of biologic agents promptly repaired?			x	
Are damp or wet materials that could promote growth of biologic agents promptly dried, replaced, removed, or cleaned?	x			
Are microbial contaminants removed from ductwork, humidifiers, other HVAC and building system components, and from building surfaces such as carpeting and ceiling tiles when found during regular or emergency maintenance activities or visual			x	
inspection?Is general or local exhaust ventilation used where housekeeping and maintenance activities could reasonably be expected to result in exposure to hazardous substances above applicable exposure limits?		x		
Does the HVAC system have CO2 monitoring capability (demand control ventilation)?	x			
Are humidity levels maintained between 30% to 60% relative humidity?		x		
When a contaminant is identified in the make-up air supply, is the source of the contaminant eliminated, or are the make-up inlets or exhaust air outlets relocated to avoid entry of the contaminant into the air system?		x		
If buildings do not have mechanical ventilation, are windows, doors, vents, stacks, and other portals used for natural ventilation operating properly?	x			

SCHOOL SAFETY AUDIT ASSESSMENT				Amity Elementary School
	YES	NO	N/A	COMMENTS
School grounds are fenced.	x			
There is one clearly marked and designated entrance for visitors	x			
Signs are posted for visitors to report to main office through a designated entrance.	x			
Restricted areas are clearly marked		x		
Shrubs and foliage are trimmed to allow for good line of sight. (3'-0"/8'- 0" rule)	x			
Shrubs near building have been trimmed "up" to allow view of bottom of building	x			
Bus loading and drop-off zones are clearly defined.	x			
There is a schedule for maintenance of:				
a. Outside lights	x			As needed
b. Locks/Hardware	x			As needed
c. Storage Sheds	x			As needed
d. Windows	x			As needed
e. Other exterior buildings	x			As needed
Parent drop-off and pick-up area is clearly defined.	x			
There is adequate lighting around the building.	x			
Lighting is provided at entrances and other points of possible intrusion.	x			
The school ground is free from trash or debris.	x			
The school is free of graffiti.	x			
Play areas are fenced.	x			
Playground equipment has tamper-proof fasteners	x			
Visual surveillance of bicycle racks from main office is possible.			x	
Visual surveillance of parking lots from main office is possible		x		
Parking lot is lighted properly and all lights are functioning	x			
Accessible lenses are protected by some unbreakable material	x			
Staff and visitor parking has been designated	x			
Outside hardware has been removed from all doors except at points of entry.		x		
Ground floor windows:				
a. have no broken panes;	x			
b. locking hardware is in working order.	x			
Basement windows are protected with grill or well cover.			x	
Doors are locked when classrooms are vacant.	x			
High-risk areas are protected by high security locks and an alarm system				
a. Main office	x			
b. Cafeteria		x		
c. Computer Labs		x		
d. Industrial Arts rooms		x		
e. Science labs		x		
f. Nurses Office		x		
g. Boiler Room		x		
h. Electrical Rooms		x		

i. Phone line access closet		x		
Unused areas of the school can be closed off during after school activities.		x		
There is two-way communication between the main office and:				
a. Classroom	x			
b. Duty stations	x			
c. Re-locatable classrooms			x	
d. Staff and faculty outside building	x			
e. Buses		x		
There is a central alarm system in the school. If yes, briefly describe:	x			Main entry and hallway sensors
The main entrance is visible from the main office.	x			

Base Information Sheet

Item	Data	Notes / Explanation
District Name:	Amity SD 4J	Pull-down menu of the 197 Districts
Site Name:	Amity High School	Typically the name that is used for the facility / campus
Building Name:	School	If only one building on site, refer to "main"
Building ID:	22520300	Please use the same ID that is assigned to this building in the annual Building Collection.
Building Type:	High School	Pull-down menu - feeds FCI calculation
Physical Address of Building:	503 Oak Ave, Amity, OR 97101	Informational only - does not link
Original Year of Building Completion	1965 (addition 2003)	When was the original building completed and ready for use
Original Construction Type	1965 Wd Post & Bm w/masonry infil. 2003 Wd frame Type V-1 hr	What type of construction was used to complete original building
Describe Other Construction Type		If you choose other construction type please describe here
County:	Yamhill	Pull-down menu of the 36 counties - sets location factor for budgets
Gross Square Footage:	68,731	Calculated from exterior face of walls (excluding eaves, outbuilding, porches, canopies, and similar)
Site Acreage:	34	District records
Assessor Company:	IBI Group	Certified company
Assessor Name:	Steve Winkle	For follow up questions
Contact (Phone):	503 226 6950 ext 255	
Contact (E-Mail):	steve.winkle@ibigroup.com	
Date of Assessment:	2019-08-20	Might reference back for inflation calculation (future)

*Building ID Format: Located in ODE "Buildings Collection" database

District Name: Amity SD 4J
Site Name: Amity High School
Building Name: School
Building ID: 22520300

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Level 1	Level 2	Level 3	Type (as applicable)	% of Building or Number	LEVEL OF ACTION										% of System or Finish	Automated Budget Estimate	Notes
						None		Minor		Moderate		Major		Replace as part of Renovation			
A SUBSTRUCTURE																	
	A10 Foundations																
		A1010 Standard Foundations		83%	x	None		Minor		Moderate		Major		Replace		$0	
		A1020 Special Foundations			o	None		Minor		Moderate		Major		Replace		$0	
		A1030 Slab on Grade		83%	x	None		Minor		Moderate		Major		Replace		$0	
	A20 Basement Construction																
		A2010 Basement Excavation	NOT USED			None		Minor		Moderate		Major		Replace			
		A2020 Basement Walls			o	None		Minor		Moderate		Major		Replace		$0	
B SHELL																	
	B10 Superstructure																
		B1010 Floor Construction	Wood	17%	x	None		Minor		Moderate		Major		Replace		$0	
			Steel		o	None		Minor		Moderate		Major		Replace		$0	
			Concrete		o	None		Minor		Moderate		Major		Replace		$0	
		B1020 Roof Construction	Wood	100%	x	None		Minor		Moderate		Major		Replace		$0	
			Steel		o	None		Minor		Moderate		Major		Replace		$0	
			Concrete		o	None		Minor		Moderate		Major		Replace		$0	
	B20 Exterior Enclosure																
		B2010 Exterior Walls	Concrete Formed / Tilt	6%		None	x	Minor		Moderate		Major		Replace	100%	$0	
			Masonry	8%		None	x	Minor		Moderate		Major		Replace	100%	$0	
			Framed w/ Wood Siding		o	None		Minor		Moderate		Major		Replace		$0	
			Framed w/Metal Panel	34%		None	x	Minor		Moderate		Major		Replace	100%	$0	
			Framed w/Stucco	27%		None	x	Minor		Moderate		Major		Replace	100%	$0	
			Framed w/Masonry Veneer	8%		None	x	Minor		Moderate		Major		Replace	100%	$0	
		B2020 Exterior Windows	Wood	0%		None		Minor		Moderate		Major		Replace		$0	
			Aluminum/Steel	100%		None	x	Minor		Moderate		Major		Replace	100%	$0	Mostly replaced in 2003
			Clad		o	None		Minor		Moderate		Major		Replace		$0	
			Curtain Wall		o	None		Minor		Moderate		Major		Replace		$0	
		B2030 Exterior Doors	Wood		o	None		Minor		Moderate		Major		Replace		$0	
			Hollow Metal	56		None	x	Minor		Moderate		Major		Replace	100%	$0	Mostly replaced in 2003
			Storefront	6		None	x	Minor		Moderate		Major		Replace	100%	$0	
	B30 Roofing																
		B3010 Roof Coverings	Asphalt Shingle		o	None		Minor		Moderate		Major		Replace		$0	
			Built-Up		o	None		Minor		Moderate		Major		Replace		$0	
			Single Ply	46%		None	x	Minor		Moderate		Major		Replace	100%	$84,700	1965 building - replaced 200?
			Metal	54%		None	x	Minor		Moderate		Major		Replace	100%	$0	2003 building
			Concrete Tile		o	None		Minor		Moderate		Major		Replace		$0	
		B3020 Roof Openings	Skylights		o	None		Minor		Moderate		Major		Replace		$0	
			Access Hatch	1		None		Minor		Moderate		Major		Replace		$0	Per hatch
C INTERIORS																	
	C10 Interior Construction																
		C1010 Partitions	Framed	68%		None	x	Minor		Moderate		Major		Replace	100%	$0	
			Masonry	32%		None	x	Minor		Moderate		Major		Replace	100%	$0	
		C1020 Interior Doors	Wood	37		None		Minor	X	Moderate		Major		Replace	50%	$16,872	
			Hollow Metal	93		None	x	Minor		Moderate		Major		Replace	100%	$0	
		C1030 Fittings	NOT USED			None		Minor		Moderate		Major		Replace			
	C20 Stairs																
		C2010 Stair Construction	Wood	2		None	x	Minor		Moderate		Major		Replace	100%	$0	
			Metal		o	None		Minor		Moderate		Major		Replace		$0	
			Concrete		o	None		Minor		Moderate		Major		Replace		$0	
		C2020 Stair Finishes	Concrete Fill		o	None		Minor		Moderate		Major		Replace		$0	
			Resilient	2		None	x	Minor		Moderate		Major		Replace	100%	$0	
	C30 Interior Finishes																

	C3010 Wall Finishes	Paint on Masonry	1%		None		Minor		Moderate		Major		Replace	100%	$0	
		Wallboard	77%		None	x	Minor		Moderate		Major		Replace	44%	$53,623	
		Wainscot	20%		None	x	Minor		Moderate		Major		Replace	80%	$25,324	
		Ceramic Tile	2%	x	None		Minor		Moderate		Major		Replace		$0	
	C3020 Floor Finishes	Carpet / Soft Surface	20%		None		Minor		Moderate		Major	x	Replace	66%	$69,089	1965 building - VAT under carpet
		Resilient Tile	43%		None		Minor		Moderate		Major	x	Replace	16%	$36,657	
		Resilient Sheet	4%		None		Minor		Moderate		Major	x	Replace	100%	$37,610	
		Polished Concrete	7%	x	None		Minor		Moderate		Major		Replace		$0	
		Ceramic Tile	2%	x	None		Minor		Moderate		Major		Replace		$0	
		Liquid Applied	7%		None		Minor		Moderate		Major	x	Replace	50%	$38,695	
		Wood Sports Floor	15%		None		Minor	x	Moderate		Major		Replace	100%	$82,271	
	C3030 Ceiling Finishes	Wallboard	9%		None		Minor	x	Moderate		Major		Replace	6%	$2,962	
		Lay-In Ceiling Tile	41%		None	x	Minor		Moderate		Major	x	Replace	22%	$63,607	
		Glued-Up Ceiling Tile	31%		None	x	Minor		Moderate		Major		Replace	100%	$15,788	
		Painted Structure	20%		None		Minor		Moderate		Major	x	Replace	47%	$23,642	
D	**SERVICES**															
	D10 Conveying															
	D1010 Elevators & Lifts		2	x	None		Minor		Moderate		Major		Replace		$0	
	D1020 Escalators & Moving Walks			o	None		Minor		Moderate		Major		Replace		$0	
	D1090 Other Conveying Systems			o	None		Minor		Moderate		Major		Replace		$0	
	D20 Plumbing															
	D2010 Plumbing Fixtures		70%		None		Minor		Moderate		Major	x	Replace	56%	$276,431	All (N) fixtures must meet ADA requirements by code. 1965 building - original fixtures
	D2020 Domestic Water Distribution		70%		None		Minor		Moderate		Major	x	Replace	56%	$223,602	1965 building - original galv. @ end of life. 1965 & 2003 building W.H. 12 years old
	D2030 Sanitary Waste		70%	x	None		Minor		Moderate		Major		Replace		$0	OK
	D2040 Rain Water Drainage		100%	x	None		Minor		Moderate		Major		Replace		$0	Surface Drainage
	D2090 Other Plumbing Systems	NOT USED			None		Minor		Moderate		Major		Replace			
	D30 HVAC															
	D3010 Energy Supply		100%	x	None		Minor		Moderate		Major		Replace		$0	Natural Gas
	D3020 Heat Generating Systems	Boiler	100%	x	None		Minor		Moderate		Major		Replace		$0	These are new, 2019
		Air Handler	44%		None		Minor		Moderate		Major	x	Replace	100%	$200,647	1965 buidling - air handlers with hot water in the units (old). 2003 building - with VAV boxes
		Furnace		o	None		Minor		Moderate		Major		Replace		$0	
		Heat Exchanger		o	None		Minor		Moderate		Major		Replace		$0	
	D3030 Cooling Generating Systems	Component of air handler		o	None		Minor		Moderate		Major		Replace		$0	
		Stand alone chiller		o	None		Minor		Moderate		Major		Replace		$0	
	D3040 Distribution Systems	Ductwork	100%		None		Minor		Moderate		Major	x	Replace	56%	$225,971	2003 bldg need replacement
		Hot water return & supply	100%	x	None		Minor		Moderate		Major		Replace		$0	
	D3050 Terminal & Package Units	Above ceiling VAV unit	56%	x	None		Minor		Moderate		Major		Replace		$0	
		In-room ventilator unit		o	None		Minor		Moderate		Major		Replace		$0	
		In-room radiant unit		o	None		Minor		Moderate		Major		Replace		$0	
	D3060 Controls & Instrumentation		100%	x	None		Minor		Moderate		Major		Replace		$0	Upgraded to DDC in 2003
	D3070 Systems Testing & Balancing		100%	x	None		Minor		Moderate		Major		Replace		$0	2003
	D3090 Other HVAC Systems & Equipment	NOT USED			None		Minor		Moderate		Major		Replace			
	D40 Fire Protection															
	D4010 Sprinklers		56%	X	None		Minor		Moderate		Major		Replace		$0	2003
	D4020 Standpipes		56%	x	None		Minor		Moderate		Major		Replace		$0	2003
	D4030 Fire Protection Specialties		100%	x	None		Minor		Moderate		Major		Replace		$0	Fire Extinguishers all 3 schools
	D4090 Other Fire Protection Systems	NOT USED			None		Minor		Moderate		Major		Replace			
	D50 Electrical															
	D5010 Electrical Service & Distribution		100%	x	None		Minor		Moderate		Major		Replace		$0	
	D5020 Lighting and Branch Wiring		100%		None		Minor		Moderate	x	Major		Replace	56%	$240,890	
	D5030 Communications & Security	Voice / Data System	100%	x	None		Minor		Moderate		Major		Replace		$0	
		Clock / Intercom System	100%		None		Minor	x	Moderate		Major		Replace	100%	$9,402	2003 - OK, 1965 portion needs replacement
		Closed Circuit Surveillance	50%	x	None		Minor		Moderate		Major		Replace		$0	OK
		Access Control System	100%	x	None		Minor		Moderate		Major		Replace		$0	All 3 schools use FOBs
		Intrusion Alarm System		o	None		Minor		Moderate		Major		Replace		$0	Only ES and MS have this
		Fire Alarm / Detection	100%		None		Minor		Moderate		Major	x	Replace	56%	$93,460	Fire Panels are old

		Lighting Control System	100%		None		Minor		Moderate		Major	x	Replace	100%	$65,817	Not very good doesn't control very much like ES
	D5090 Other Electrical Systems	NOT USED			None		Minor		Moderate		Major		Replace			
E EQUIPMENT & FURNISHINGS																
	E10 Equipment															
	E1010 Commercial Equipment	Food Service	1%	x	None		Minor		Moderate		Major		Replace		$0	Original with 2003 (prep kitchen is at ES)
																Org with 2003 - wood and metals shops, 2003 Culinary Arts with some new (since 2003)
		Vocational		o	None		Minor		Moderate		Major		Replace		$0	appliances
	E1020 Institutional Equipment	Science	2012		None		Minor		Moderate		Major	x	Replace	100%	$9,083	1965 old and worn
		Art	1275		None		Minor		Moderate		Major	x	Replace	100%	$5,538	1965 old and worn
		Stage Performance	900	x	None		Minor		Moderate		Major		Replace		$0	No stage, just a platform
																1965-BadConditions, 2003-Generally good
		Restroom Accessories/Stalls	5%		None		Minor		Moderate		Major	x	Replace	56%	$4,344	condition
	E1030 Vehicular Equipment	NOT USED			None		Minor		Moderate		Major		Replace			
	E1090 Other Equipment	NOT USED			None		Minor		Moderate		Major		Replace			
	E20 Furnishings															
	E2010 Fixed Furnishings		6%		None		Minor		Moderate	x	Major		Replace	56%	$9,846	
	E2020 Movable Furnishings		5%	x	None		Minor		Moderate		Major		Replace		$0	
F SPECIAL CONSTRUCTION & DEMOLITION - NOT USED																
G BUILDING SITE WORK																
	G10 Site Preparation	NOT USED														
	G20 Site Improvements															
	G2010 Roadways		35875		None	X	Minor		Moderate		Major		Replace	10%	$6,421	
	G2020 Parking Lots		62926		None	X	Minor		Moderate		Major		Replace	10%	$11,262	Generally good condition
	G2030 Pedestrian Paving		34482		None		Minor		Moderate	X	Major		Replace	10%	$35,379	Some root damage
	G2040 Site Development		6632		None		Minor		Moderate	X	Major		Replace	20%	$12,097	Cost/LF of fencing
	G2050 Landscaping			o	None		Minor		Moderate		Major		Replace		$0	No Irregation
	G30 Site Mechanical Utilities															
	G3010 Water Supply	Domestic	50	x	None		Minor		Moderate		Major		Replace		$0	OK
		Fire	400		None		Minor		Moderate		Major		Replace		$0	
	G3020 Sanitary Sewer		400		None		Minor		Moderate		Major	x	Replace	50%	$10,260	OK
	G3030 Storm Sewer		62926		None	x	Minor		Moderate		Major		Replace	20%	$28,694	Catch Basin in Parking Lot Only
	G3040 Heating Distribution			o	None		Minor		Moderate		Major		Replace		$0	
	G3050 Cooling Distribution			o	None		Minor		Moderate		Major		Replace		$0	
	G3060 Fuel Distribution		400	x	None		Minor		Moderate		Major		Replace		$0	Natural Gas
	G3090 Other Site Mechanical Utilities	NOT USED			None		Minor		Moderate		Major		Replace			
	G40 Site Electrical Utilities															
	G4010 Electrical Distribution	Service	400	X	None		Minor		Moderate		Major		Replace		$0	
		Generator	1		None	X	Minor		Moderate		Major		Replace	100%	$2,280	Good
	G4020 Site Lighting		4%		None		Minor	X	Moderate		Major		Replace	20%	$458	
	G4030 Site Communications & Security			o	None		Minor		Moderate		Major		Replace		$0	
	G4090 Other Site Electrical Utilities	NOT USED			None		Minor		Moderate		Major		Replace			
	G90 Other Site Construction	NOT USED														

OTHER

Description of System	Unit of Measure	Quantity	Unit Budget	Extended	Notes
				$0	
				$0	
				$0	
				$0	
				$0	
				$0	
				$0	

Physical Condition Budget Sub-Total **$2,022,720**
Budgeted Development Costs **$768,634**

Physical Condition Budget TOTAL	**$2,791,354**
Cost with Escalation to June 2021	**$3,182,143**
Cost with Escalation to June 2022	**$3,309,429**
Cost with Escalation to June 2023	**$3,441,806**
Replacement Budget	**$40,547,853**

HARMFUL SUBSTANCES ASSESSMENT				Amity High School
	YES	NO	N/A	COMMENTS
Lead				
Has your facility been assessed for lead? If so when?				
Is there lead in your facility?				
Is lead abatement included in your future bond plans?				
Asbestos				
Has your facility been assessed for asbestos? If so when?	x			2019
Is there asbestos in your facility?	x			Floor in old side
Is asbestos abatement included in your future bond plans?		x		
Mold				
Has your facility been assessed for mold? If so when?		x		
Is there mold in your facility?		x		
Is mold abatement included in your future bond plans?		x		
Water Quality				
Has your facility been assessed for water quality (lead, etc)? If so when?		x		
Is there a water quality concern in your facility?		x		
Is water treatment included in your future bond plans?		x		
PCBs				
Has your facility been assessed for PCBs? If so when?		x		
Are there PCBs in your facility?		x		
Is PCB abatement included in your future bond plans?		x		
Radon				
Has your facility been assessed for Radon? If so when?	x			2019
Is there Radon in your facility?		x		
Is Radon management included in your future bond plans?		x		

INDOOR AIR QUALITY ASSESSMENT				Amity High School
	YES	NO	N/A	COMMENTS
Is someone designated to develop and implement an indoor air quality management plan for your school district?		x		
Does your district have an indoor air quality management plan that includes steps for preventing and resolving indoor air quality problems?		x		
Are school buildings inspected once or twice each year for conditions that may lead to indoor air quality problems?	x			
Is a preventive maintenance schedule established and in operation for the heating, ventilation, and air conditioning (HVAC) system? Is the schedule in accordance with the manufacturer's recommendations or accepted practice for the HVAC system?	x			
Does the HVAC preventive maintenance schedule include the following?: checking and/or changing air filters and belts, lubricating equipment parts, checking the motors, and confirming that all equipment is in operating order.	x			
Is the maintenance schedule updated to show all maintenance performed on the building systems?		x		
Does the maintenance schedule include the dates that the building systems maintenance was performed and the names of the persons or companies performing the work?		x		
Are maintenance schedules retained for at least three years?	x			
Are damaged or inoperable components of the HVAC system replaced or repaired as appropriate?	x			
Are reservoirs or parts of the HVAC system with standing water checked visually for microbial growth?			x	
Are water leaks that could promote growth of biologic agents promptly repaired?			x	
Are damp or wet materials that could promote growth of biologic agents promptly dried, replaced, removed, or cleaned?	x			
Are microbial contaminants removed from ductwork, humidifiers, other HVAC and building system components, and from building surfaces such as carpeting and ceiling tiles when found during regular or emergency maintenance activities or visual			x	
inspection?Is general or local exhaust ventilation used where housekeeping and maintenance activities could reasonably be expected to result in exposure to hazardous substances above applicable exposure limits?		x		
Does the HVAC system have CO2 monitoring capability (demand control ventilation)?		x		
Are humidity levels maintained between 30% to 60% relative humidity?		x		
When a contaminant is identified in the make-up air supply, is the source of the contaminant eliminated, or are the make-up inlets or exhaust air outlets relocated to avoid entry of the contaminant into the air system?		x		
If buildings do not have mechanical ventilation, are windows, doors, vents, stacks, and other portals used for natural ventilation operating properly?		x		

SCHOOL SAFETY AUDIT ASSESSMENT				Amity High School
	YES	NO	N/A	COMMENTS
School grounds are fenced.	x			
There is one clearly marked and designated entrance for visitors	x			
Signs are posted for visitors to report to main office through a designated entrance.	x			
Restricted areas are clearly marked		x		
Shrubs and foliage are trimmed to allow for good line of sight. (3'-0"/8'- 0" rule)	x			
Shrubs near building have been trimmed "up" to allow view of bottom of building		x		
Bus loading and drop-off zones are clearly defined.		x		
There is a schedule for maintenance of:				
a. Outside lights	x			As needed
b. Locks/Hardware	x			As needed
c. Storage Sheds	x			As needed
d. Windows	x			As needed
e. Other exterior buildings	x			As needed
Parent drop-off and pick-up area is clearly defined.		x		
There is adequate lighting around the building.	x			
Lighting is provided at entrances and other points of possible intrusion.	x			
The school ground is free from trash or debris.	x			
The school is free of graffiti.	x			
Play areas are fenced.	x			
Playground equipment has tamper-proof fasteners			x	
Visual surveillance of bicycle racks from main office is possible.		x		
Visual surveillance of parking lots from main office is possible		x		
Parking lot is lighted properly and all lights are functioning	x			
Accessible lenses are protected by some unbreakable material		x		
Staff and visitor parking has been designated		x		
Outside hardware has been removed from all doors except at points of entry.		x		
Ground floor windows:				
a. have no broken panes;	x			
b. locking hardware is in working order.	x			
Basement windows are protected with grill or well cover.			x	
Doors are locked when classrooms are vacant.	x			
High-risk areas are protected by high security locks and an alarm system				
a. Main office		X		
b. Cafeteria		X		
c. Computer Labs		X		
d. Industrial Arts rooms		X		
e. Science labs		X		
f. Nurses Office		X		
g. Boiler Room		X		
h. Electrical Rooms		x		

i. Phone line access closet		X		
Unused areas of the school can be closed off during after school activities.		X		
There is two-way communication between the main office and:				
a. Classroom	X			
b. Duty stations	X			
c. Re-locatable classrooms			X	
d. Staff and faculty outside building		X		
e. Buses		X		
There is a central alarm system in the school. If yes, briefly describe:		X		
The main entrance is visible from the main office.	X			

Base Information Sheet

Item	Data	Notes / Explanation
District Name:	Amity SD 4J	Pull-down menu of the 197 Districts
Site Name:	Amity High School	Typically the name that is used for the facility / campus
Building Name:	Grandstand	If only one building on site, refer to "main"
Building ID:	22520302	Please use the same ID that is assigned to this building in the annual Building Collection.
Building Type:	Athletic Grandstand	Pull-down menu - feeds FCI calculation
Physical Address of Building:	503 Oak Ave, Amity, OR 97101	Informational only - does not link
Original Year of Building Completion	1990	When was the original building completed and ready for use
Original Construction Type	Steel frame and metal siding with aluminum seating	What type of construction was used to complete original building
Describe Other Construction Type		If you choose other construction type please describe here
County:	Yamhill	Pull-down menu of the 36 counties - sets location factor for budgets
Gross Square Footage:	2,750	Calculated from exterior face of walls (excluding eaves, outbuilding, porches, canopies, and similar)
Site Acreage:	34	District records
Assessor Company:	IBI Group	Certified company
Assessor Name:	Steve Winkle	For follow up questions
Contact (Phone):	503 226 6950 ext 255	
Contact (E-Mail):	steve.winkle@ibigroup.com	
Date of Assessment:	2019-08-20	Might reference back for inflation calculation (future)

*Building ID Format: Located in ODE "Buildings Collection" database

District Name: Amity SD 4J
Site Name: Amity High School
Building Name: Grandstand
Building ID: 22520302

REMINDER: FILL OUT ALL INFORMATION ON '*BASE INFORMATION SHEET*' BEFORE ENTERING DATA ON THIS SHEET
An unused cell or system that should not receive direct user input
An automatically populated cell from user input elsewhere in the file - do not overwrite

Level 1	Level 2	Level 3	Type (as applicable)	% of Building or Number	LEVEL OF ACTION										% of System or Finish	Automated Budget Estimate	Notes
						None		Minor		Moderate		Major		Replace as part of Renovation			
A SUBSTRUCTURE																	
	A10 Foundations																
		A1010 Standard Foundations		100%	x	None		Minor		Moderate		Major		Replace		$0	
		A1020 Special Foundations				None		Minor		Moderate		Major		Replace		$0	
		A1030 Slab on Grade		100%	x	None		Minor		Moderate		Major		Replace		$0	
	A20 Basement Construction																
		A2010 Basement Excavation	NOT USED			None		Minor		Moderate		Major		Replace			
		A2020 Basement Walls				None		Minor		Moderate		Major		Replace		$0	
B SHELL																	
	B10 Superstructure																
		B1010 Floor Construction	Wood			None		Minor		Moderate		Major		Replace		$0	
			Steel	100%	x	None		Minor		Moderate		Major		Replace		$0	
			Concrete			None		Minor		Moderate		Major		Replace		$0	
		B1020 Roof Construction	Wood			None		Minor		Moderate		Major		Replace		$0	
			Steel	100%	x	None		Minor		Moderate		Major		Replace		$0	
			Concrete			None		Minor		Moderate		Major		Replace		$0	
	B20 Exterior Enclosure																
		B2010 Exterior Walls	Concrete Formed / Tilt			None		Minor		Moderate		Major		Replace		$0	
			Masonry			None		Minor		Moderate		Major		Replace		$0	
			Framed w/ Wood Siding			None		Minor		Moderate		Major		Replace		$0	
			Framed w/Metal Panel	25%	x	None		Minor		Moderate		Major		Replace		$0	
			Framed w/Stucco			None		Minor		Moderate		Major		Replace		$0	
			Framed w/Masonry Veneer			None		Minor		Moderate		Major		Replace		$0	
		B2020 Exterior Windows	Wood			None		Minor		Moderate		Major		Replace		$0	
			Aluminum/Steel			None		Minor		Moderate		Major		Replace		$0	
			Clad			None		Minor		Moderate		Major		Replace		$0	
			Curtain Wall			None		Minor		Moderate		Major		Replace		$0	
		B2030 Exterior Doors	Wood			None		Minor		Moderate		Major		Replace		$0	
			Hollow Metal			None		Minor		Moderate		Major		Replace		$0	
			Storefront			None		Minor		Moderate		Major		Replace		$0	
	B30 Roofing																
		B3010 Roof Coverings	Asphalt Shingle			None		Minor		Moderate		Major		Replace		$0	
			Built-Up			None		Minor		Moderate		Major		Replace		$0	
			Single Ply			None		Minor		Moderate		Major		Replace		$0	
			Metal	100%	x	None		Minor		Moderate		Major		Replace		$0	
			Concrete Tile			None		Minor		Moderate		Major		Replace		$0	
		B3020 Roof Openings	Skylights			None		Minor		Moderate		Major		Replace		$0	By Building GSF
			Access Hatch			None		Minor		Moderate		Major		Replace		$0	Per hatch
C INTERIORS																	
	C10 Interior Construction																
		C1010 Partitions	Framed			None		Minor		Moderate		Major		Replace		$0	
			Masonry			None		Minor		Moderate		Major		Replace		$0	
		C1020 Interior Doors	Wood			None		Minor		Moderate		Major		Replace		$0	
			Hollow Metal	1	x	None		Minor		Moderate		Major		Replace		$0	
		C1030 Fittings	NOT USED			None		Minor		Moderate		Major		Replace			
	C20 Stairs																
		C2010 Stair Construction	Wood			None		Minor		Moderate		Major		Replace		$0	Cost/Flight
			Metal	1	x	None		Minor		Moderate		Major		Replace		$0	Cost/Flight
			Concrete			None		Minor		Moderate		Major		Replace		$0	Cost/Flight
		C2020 Stair Finishes	Concrete Fill			None		Minor		Moderate		Major		Replace		$0	Cost/Flight
			Resilient			None		Minor		Moderate		Major		Replace		$0	Cost/Flight
	C30 Interior Finishes																

C3010 Wall Finishes	Paint on Masonry			None	Minor	Moderate	Major	Replace		$0	
	Wallboard			None	Minor	Moderate	Major	Replace		$0	
	Wainscot			None	Minor	Moderate	Major	Replace		$0	
	Ceramic Tile			None	Minor	Moderate	Major	Replace		$0	
C3020 Floor Finishes	Carpet / Soft Surface			None	Minor	Moderate	Major	Replace		$0	
	Resilient Tile			None	Minor	Moderate	Major	Replace		$0	
	Resilient Sheet			None	Minor	Moderate	Major	Replace		$0	
	Polished Concrete			None	Minor	Moderate	Major	Replace		$0	
	Ceramic Tile			None	Minor	Moderate	Major	Replace		$0	
	Liquid Applied			None	Minor	Moderate	Major	Replace		$0	
	Wood Sports Floor			None	Minor	Moderate	Major	Replace		$0	
C3030 Ceiling Finishes	Wallboard			None	Minor	Moderate	Major	Replace		$0	
	Lay-In Ceiling Tile			None	Minor	Moderate	Major	Replace		$0	
	Glued-Up Ceiling Tile			None	Minor	Moderate	Major	Replace		$0	
	Painted Structure	100%	x	None	Minor	Moderate	Major	Replace		$0	
D SERVICES											
D10 Conveying											
D1010 Elevators & Lifts				None	Minor	Moderate	Major	Replace		$0	
D1020 Escalators & Moving Walks				None	Minor	Moderate	Major	Replace		$0	
D1090 Other Conveying Systems				None	Minor	Moderate	Major	Replace		$0	
D20 Plumbing											
D2010 Plumbing Fixtures		1%	x	None	Minor	Moderate	Major	Replace		$0	All (N) fixtures must meet ADA requirements by code.
D2020 Domestic Water Distribution		5%	x	None	Minor	Moderate	Major	Replace		$0	
D2030 Sanitary Waste				None	Minor	Moderate	Major	Replace		$0	
D2040 Rain Water Drainage				None	Minor	Moderate	Major	Replace		$0	
D2090 Other Plumbing Systems	NOT USED			None	Minor	Moderate	Major	Replace			
D30 HVAC											
D3010 Energy Supply				None	Minor	Moderate	Major	Replace		$0	
D3020 Heat Generating Systems	Boiler			None	Minor	Moderate	Major	Replace		$0	
	Air Handler			None	Minor	Moderate	Major	Replace		$0	
	Furnace			None	Minor	Moderate	Major	Replace		$0	
	Heat Exchanger			None	Minor	Moderate	Major	Replace		$0	
D3030 Cooling Generating Systems	Component of air handler			None	Minor	Moderate	Major	Replace		$0	
	Stand alone chiller			None	Minor	Moderate	Major	Replace		$0	
D3040 Distribution Systems	Ductwork			None	Minor	Moderate	Major	Replace		$0	
	Hot water return & supply			None	Minor	Moderate	Major	Replace		$0	
D3050 Terminal & Package Units	Above ceiling VAV unit			None	Minor	Moderate	Major	Replace		$0	
	In-room ventilator unit			None	Minor	Moderate	Major	Replace		$0	
	In-room radiant unit			None	Minor	Moderate	Major	Replace		$0	
D3060 Controls & Instrumentation				None	Minor	Moderate	Major	Replace		$0	
D3070 Systems Testing & Balancing				None	Minor	Moderate	Major	Replace		$0	
D3090 Other HVAC Systems & Equipment	NOT USED			None	Minor	Moderate	Major	Replace			
D40 Fire Protection											
D4010 Sprinklers				None	Minor	Moderate	Major	Replace		$0	
D4020 Standpipes				None	Minor	Moderate	Major	Replace		$0	
D4030 Fire Protection Specialties				None	Minor	Moderate	Major	Replace		$0	
D4090 Other Fire Protection Systems	NOT USED			None	Minor	Moderate	Major	Replace			
D50 Electrical											
D5010 Electrical Service & Distribution		50%	x	None	Minor	Moderate	Major	Replace		$0	
D5020 Lighting and Branch Wiring		100%	x	None	Minor	Moderate	Major	Replace		$0	
D5030 Communications & Security	Voice / Data System			None	Minor	Moderate	Major	Replace		$0	
	Clock / Intercom System			None	Minor	Moderate	Major	Replace		$0	
	Closed Circuit Surveillance			None	Minor	Moderate	Major	Replace		$0	
	Access Control System			None	Minor	Moderate	Major	Replace		$0	
	Intrusion Alarm System			None	Minor	Moderate	Major	Replace		$0	
	Fire Alarm / Detection			None	Minor	Moderate	Major	Replace		$0	
	Lighting Control System			None	Minor	Moderate	Major	Replace		$0	
D5090 Other Electrical Systems	NOT USED			None	Minor	Moderate	Major	Replace			
E EQUIPMENT & FURNISHINGS											

E10 Equipment												
E1010 Commercial Equipment	Food Service		None		Minor		Moderate		Major		$0	
	Vocational		None		Minor	■	Moderate		Major		$0	
E1020 Institutional Equipment	Science		None	■	Minor		Moderate		Major		$0	
	Art		None	■	Minor		Moderate		Major		$0	
	Stage Performance		None	■	Minor		Moderate		Major		$0	Cost/SF of Stage Performance Area
	Restroom Accessories/Stalls		None		Minor		Moderate		Major		$0	
E1030 Vehicular Equipment	NOT USED	■	None	■	Minor	■	Moderate	■	Major	■		
E1090 Other Equipment	NOT USED	■	None	■	Minor	■	Moderate	■	Major	■		
E20 Furnishings												
E2010 Fixed Furnishings			None		Minor		Moderate		Major		$0	
E2020 Movable Furnishings			None	■	Minor	■	Moderate	■	Major		$0	
F SPECIAL CONSTRUCTION & DEMOLITION - NOT USED												
G BUILDING SITE WORK												
G10 Site Preparation	NOT USED											
G20 Site Improvements												
G2010 Roadways			None		Minor	■	Moderate		Major		$0	Cost/SF of surface area
G2020 Parking Lots			None		Minor	■	Moderate		Major		$0	Cost/SF of surface area
G2030 Pedestrian Paving			None	■	Minor	■	Moderate		Major		$0	Cost/SF of surface area
G2040 Site Development			None	■	Minor	■	Moderate		Major		$0	Cost/LF of fencing
G2050 Landscaping			None	■	Minor	■	Moderate	■	Major		$0	Cost/SF of irrigated area
G30 Site Mechanical Utilities												
G3010 Water Supply	Domestic		None	■	Minor	■	Moderate	■	Major		$0	Enter LF of pipe in cell E143
	Fire		None	■	Minor	■	Moderate	■	Major		$0	Enter LF of pipe in cell E144
G3020 Sanitary Sewer			None	■	Minor	■	Moderate	■	Major		$0	Enter LF of pipe in cell E145
G3030 Storm Sewer			None		Minor		Moderate		Major		$0	Enter SF of area to be drained
G3040 Heating Distribution			None	■	Minor	■	Moderate	■	Major		$0	Enter LF of pipe in cell E147
G3050 Cooling Distribution			None	■	Minor	■	Moderate	■	Major		$0	Enter LF of pipe in cell E148
G3060 Fuel Distribution			None	■	Minor	■	Moderate	■	Major		$0	Enter LF of pipe in cell E149
G3090 Other Site Mechanical Utilities	NOT USED	■	None	■	Minor	■	Moderate	■	Major	■		
G40 Site Electrical Utilities												
G4010 Electrical Distribution	Service		None	■	Minor	■	Moderate		Major		$0	
	Generator		None		Minor		Moderate		Major		$0	
G4020 Site Lighting			None	■	Minor		Moderate	■	Major		$0	
G4030 Site Communications & Security			None	■	Minor	■	Moderate	■	Major		$0	
G4090 Other Site Electrical Utilities	NOT USED	■	None	■	Minor	■	Moderate	■	Major	■		
G90 Other Site Construction	NOT USED											

OTHER

Description of System	Unit of Measure	Quantity	Unit Budget	Extended	Notes
				$0	
				$0	
				$0	
				$0	
				$0	
				$0	
				$0	

Physical Condition Budget Sub-Total	**$0**
Budgeted Development Costs	**$0**
Physical Condition Budget TOTAL	**$0**
Cost with Escalation to June 2021	**$0**
Cost with Escalation to June 2022	**$0**
Cost with Escalation to June 2023	**$0**
Replacement Budget	**$1,168,101**

Base Information Sheet

Item	Data	Notes / Explanation
District Name:	Amity SD 4J	Pull-down menu of the 197 Districts
Site Name:	Amity High School	Typically the name that is used for the facility / campus
Building Name:	Gymnasium	If only one building on site, refer to "main"
Building ID:	22520301	Please use the same ID that is assigned to this building in the annual Building Collection.
Building Type:	Gymnasium Building	Pull-down menu - feeds FCI calculation
Physical Address of Building:	503 Oak Ave, Amity, OR 97101	Informational only - does not link
Original Year of Building Completion	2003	When was the original building completed and ready for use
Original Construction Type	Pre-Engineered Steel Building	What type of construction was used to complete original building
Describe Other Construction Type		If you choose other construction type please describe here
County:	Yamhill	Pull-down menu of the 36 counties - sets location factor for budgets
Gross Square Footage:	11,076	Calculated from exterior face of walls (excluding eaves, outbuilding, porches, canopies, and similar)
Site Acreage:	34	District records
Assessor Company:	IBI Group	Certified company
Assessor Name:	Steve Winkle	For follow up questions
Contact (Phone):	503 226 6950 ext 255	
Contact (E-Mail):	steve.winkle@ibigroup.com	
Date of Assessment:	2019-08-20	Might reference back for inflation calculation (future)

*Building ID Format: Located in ODE "Buildings Collection" database

Physical Condition Assessment

District Name: Amity SD 4J
Site Name: Amity High School
Building Name: Gymnasium
Building ID: 22520301

REMINDER: FILL OUT ALL INFORMATION ON '*BASE INFORMATION SHEET*' BEFORE ENTERING DATA ON THIS SHEET

- (black cell) An unused cell or system that should not receive direct user input
- (grey cell) An automatically populated cell from user input elsewhere in the file - do not overwrite

Level 1	Level 2	Level 3	Type (as applicable)	% of Building or Number	LEVEL OF ACTION	None		Minor		Moderate		Major		Replace as part of Renovation	% of System or Finish	Automated Budget Estimate	Notes
A SUBSTRUCTURE																	
	A10 Foundations																
		A1010 Standard Foundations		100%	x	None		Minor		Moderate		Major		Replace		$0	
		A1020 Special Foundations			o	None		Minor		Moderate		Major		Replace		$0	
		A1030 Slab on Grade		100%	x	None		Minor		Moderate		Major		Replace		$0	
	A20 Basement Construction																
		A2010 Basement Excavation	NOT USED			None		Minor		Moderate		Major		Replace			
		A2020 Basement Walls				None		Minor		Moderate		Major		Replace		$0	
B SHELL																	
	B10 Superstructure																
		B1010 Floor Construction	Wood		o	None		Minor		Moderate		Major		Replace		$0	
			Steel		o	None		Minor		Moderate		Major		Replace		$0	
			Concrete		o	None		Minor		Moderate		Major		Replace		$0	
		B1020 Roof Construction	Wood		o	None		Minor		Moderate		Major		Replace		$0	
			Steel	100%	x	None		Minor		Moderate		Major		Replace		$0	
			Concrete		o	None		Minor		Moderate		Major		Replace		$0	
	B20 Exterior Enclosure																
		B2010 Exterior Walls	Concrete Formed / Tilt		o	None		Minor		Moderate		Major		Replace		$0	
			Masonry		o	None		Minor		Moderate		Major		Replace		$0	
			Framed w/ Wood Siding		o	None		Minor		Moderate		Major		Replace		$0	
			Framed w/Metal Panel	100%	x	None		Minor		Moderate		Major		Replace		$0	
			Framed w/Stucco		o	None		Minor		Moderate		Major		Replace		$0	
			Framed w/Masonry Veneer		o	None		Minor		Moderate		Major		Replace		$0	
		B2020 Exterior Windows	Wood		o	None		Minor		Moderate		Major		Replace		$0	
			Aluminum/Steel	100%	x	None		Minor		Moderate		Major		Replace		$0	
			Clad		o	None		Minor		Moderate		Major		Replace		$0	
			Curtain Wall		o	None		Minor		Moderate		Major		Replace		$0	
		B2030 Exterior Doors	Wood		o	None		Minor		Moderate		Major		Replace		$0	
			Hollow Metal	10	x	None		Minor		Moderate		Major		Replace		$0	
			Storefront		o	None		Minor		Moderate		Major		Replace		$0	
	B30 Roofing																
		B3010 Roof Coverings	Asphalt Shingle		o	None		Minor		Moderate		Major		Replace		$0	
			Built-Up		o	None		Minor		Moderate		Major		Replace		$0	
			Single Ply		o	None		Minor		Moderate		Major		Replace		$0	
			Metal	100%	x	None		Minor		Moderate		Major		Replace		$0	
			Concrete Tile		o	None		Minor		Moderate		Major		Replace		$0	
		B3020 Roof Openings	Skylights		o	None		Minor		Moderate		Major		Replace		$0	By Building GSF
			Access Hatch		o	None		Minor		Moderate		Major		Replace		$0	Per hatch
C INTERIORS																	
	C10 Interior Construction																
		C1010 Partitions	Framed		o	None		Minor		Moderate		Major		Replace		$0	

	Masonry	100%	x	None		Minor		Moderate		Major		Replace		$0	
C1020 Interior Doors	Wood	6	x	None		Minor		Moderate		Major		Replace		$0	
	Hollow Metal		o	None		Minor		Moderate		Major		Replace		$0	
C1030 Fittings	NOT USED			None		Minor		Moderate		Major		Replace			
C20 Stairs															
C2010 Stair Construction	Wood		o	None		Minor		Moderate		Major		Replace		$0	Cost/Flight
	Metal		o	None		Minor		Moderate		Major		Replace		$0	Cost/Flight
	Concrete		o	None		Minor		Moderate		Major		Replace		$0	Cost/Flight
C2020 Stair Finishes	Concrete Fill		o	None		Minor		Moderate		Major		Replace		$0	Cost/Flight
	Resilient		o	None		Minor		Moderate		Major		Replace		$0	Cost/Flight
C30 Interior Finishes															
C3010 Wall Finishes	Paint on Masonry	100%	x	None		Minor		Moderate		Major		Replace		$0	
	Wallboard		o	None		Minor		Moderate		Major		Replace		$0	
	Wainscot		o	None		Minor		Moderate		Major		Replace		$0	
	Ceramic Tile		o	None		Minor		Moderate		Major		Replace		$0	
C3020 Floor Finishes	Carpet / Soft Surface		o	None		Minor		Moderate		Major		Replace		$0	
	Resilient Tile		o	None		Minor		Moderate		Major		Replace		$0	
	Resilient Sheet		o	None		Minor		Moderate		Major		Replace		$0	
	Polished Concrete	16%	x	None		Minor		Moderate		Major		Replace		$0	
	Ceramic Tile		o	None		Minor		Moderate		Major		Replace		$0	
	Liquid Applied	84%	x	None		Minor		Moderate		Major		Replace		$0	Liquid Applied Sports Floor
	Wood Sports Floor		o	None		Minor		Moderate		Major		Replace		$0	
C3030 Ceiling Finishes	Wallboard	16%	x	None		Minor		Moderate		Major		Replace		$0	
	Lay-In Ceiling Tile		o	None		Minor		Moderate		Major		Replace		$0	
	Glued-Up Ceiling Tile		o	None		Minor		Moderate		Major		Replace		$0	
	Painted Structure	84%	x	None		Minor		Moderate		Major		Replace		$0	
D SERVICES															
D10 Conveying															
D1010 Elevators & Lifts			o	None		Minor		Moderate		Major		Replace		$0	
D1020 Escalators & Moving Walks			o	None		Minor		Moderate		Major		Replace		$0	
D1090 Other Conveying Systems			o	None		Minor		Moderate		Major		Replace		$0	
D20 Plumbing															
D2010 Plumbing Fixtures		8%	x	None		Minor		Moderate		Major		Replace		$0	All (N) fixtures must meet ADA requirements by code.
D2020 Domestic Water Distribution		8%	x	None		Minor		Moderate		Major		Replace		$0	
D2030 Sanitary Waste		8%	x	None		Minor		Moderate		Major		Replace		$0	Lift Station is in good condition
D2040 Rain Water Drainage			o	None		Minor		Moderate		Major		Replace		$0	
D2090 Other Plumbing Systems	NOT USED			None		Minor		Moderate		Major		Replace			
D30 HVAC															
D3010 Energy Supply		100%	x	None		Minor		Moderate		Major		Replace		$0	
D3020 Heat Generating Systems	Boiler		o	None		Minor		Moderate		Major		Replace		$0	
	Air Handler		o	None		Minor		Moderate		Major		Replace		$0	
	Furnace	100%	x	None		Minor		Moderate		Major		Replace		$0	4 ceiling hung gas packs
	Heat Exchanger		o	None		Minor		Moderate		Major		Replace		$0	
D3030 Cooling Generating Systems	Component of air handler		o	None		Minor		Moderate		Major		Replace		$0	
	Stand alone chiller		o	None		Minor		Moderate		Major		Replace		$0	
D3040 Distribution Systems	Ductwork		o	None		Minor		Moderate		Major		Replace		$0	
	Hot water return & supply		o	None		Minor		Moderate		Major		Replace		$0	
D3050 Terminal & Package Units	Above ceiling VAV unit		o	None		Minor		Moderate		Major		Replace		$0	
	In-room ventilator unit		o	None		Minor		Moderate		Major		Replace		$0	
	In-room radiant unit		o	None		Minor		Moderate		Major		Replace		$0	

D3060 Controls & Instrumentation			o	None		Minor		Moderate		Major		Replace		$0	
D3070 Systems Testing & Balancing			o	None		Minor		Moderate		Major		Replace		$0	
D3090 Other HVAC Systems & Equipment	NOT USED			None		Minor		Moderate		Major		Replace			
D40 Fire Protection															
D4010 Sprinklers		100%	x	None		Minor		Moderate		Major		Replace		$0	2003 & Blue Gym - Good
D4020 Standpipes		5%	x	None		Minor		Moderate		Major		Replace		$0	2003 & Blue Gym - Good
D4030 Fire Protection Specialties			o	None		Minor		Moderate		Major		Replace		$0	
D4090 Other Fire Protection Systems	NOT USED			None		Minor		Moderate		Major		Replace			
D50 Electrical															
D5010 Electrical Service & Distribution		100%	x	None		Minor		Moderate		Major		Replace		$0	
D5020 Lighting and Branch Wiring		100%	x	None		Minor		Moderate		Major		Replace		$0	
D5030 Communications & Security	Voice / Data System		o	None		Minor		Moderate		Major		Replace		$0	
	Clock / Intercom System	100%	x	None		Minor		Moderate		Major		Replace		$0	
	Closed Circuit Surveillance	100%	x	None		Minor		Moderate		Major		Replace		$0	
	Access Control System		o	None		Minor		Moderate		Major		Replace		$0	
	Intrusion Alarm System		o	None		Minor		Moderate		Major		Replace		$0	
	Fire Alarm / Detection		o	None		Minor		Moderate		Major		Replace		$0	
	Lighting Control System		o	None		Minor		Moderate		Major		Replace		$0	
D5090 Other Electrical Systems	NOT USED			None		Minor		Moderate		Major		Replace			
E EQUIPMENT & FURNISHINGS															
E10 Equipment															
E1010 Commercial Equipment	Food Service		o	None		Minor		Moderate		Major		Replace		$0	
	Vocational		o	None		Minor		Moderate		Major		Replace		$0	
E1020 Institutional Equipment	Science		o	None		Minor		Moderate		Major		Replace		$0	
	Art		o	None		Minor		Moderate		Major		Replace		$0	
	Stage Performance		o	None		Minor		Moderate		Major		Replace		$0	Cost/SF of Stage Performance Area
	Restroom Accessories/Stalls	8%	x	None		Minor		Moderate		Major		Replace		$0	
E1030 Vehicular Equipment	NOT USED			None		Minor		Moderate		Major		Replace			
E1090 Other Equipment	NOT USED			None		Minor		Moderate		Major		Replace			
E20 Furnishings															
E2010 Fixed Furnishings			o	None		Minor		Moderate		Major		Replace		$0	
E2020 Movable Furnishings			o	None		Minor		Moderate		Major		Replace		$0	
F SPECIAL CONSTRUCTION & DEMOLITION - NOT USED															
G BUILDING SITE WORK															
G10 Site Preparation	NOT USED														
G20 Site Improvements															
G2010 Roadways			o	None		Minor		Moderate		Major		Replace		$0	Cost/SF of surface area
G2020 Parking Lots			o	None		Minor		Moderate		Major		Replace		$0	Cost/SF of surface area
G2030 Pedestrian Paving			o	None		Minor		Moderate		Major		Replace		$0	Cost/SF of surface area
G2040 Site Development			o	None		Minor		Moderate		Major		Replace		$0	Cost/LF of fencing
G2050 Landscaping			o	None		Minor		Moderate		Major		Replace		$0	Cost/SF of irrigated area
G30 Site Mechanical Utilities															
G3010 Water Supply	Domestic	150	x	None		Minor		Moderate		Major		Replace		$0	Enter LF of pipe in cell E143
	Fire	530	x	None		Minor		Moderate		Major		Replace		$0	Enter LF of pipe in cell E144
G3020 Sanitary Sewer		150	x	None		Minor		Moderate		Major		Replace		$0	Enter LF of pipe in cell E145
G3030 Storm Sewer			o	None		Minor		Moderate		Major		Replace		$0	Enter SF of area to be drained
G3040 Heating Distribution			o	None		Minor		Moderate		Major		Replace		$0	Enter LF of pipe in cell E147
G3050 Cooling Distribution			o	None		Minor		Moderate		Major		Replace		$0	Enter LF of pipe in cell E148
G3060 Fuel Distribution		150	x	None		Minor		Moderate		Major		Replace		$0	Enter LF of pipe in cell E149

Physical Condition Assessment

G3090 Other Site Mechanical Utilities	NOT USED			None	Minor	Moderate	Major	Replace		
G40 Site Electrical Utilities										
G4010 Electrical Distribution	Service	100%	x	None	Minor	Moderate	Major	Replace	$0	
	Generator		o	None	Minor	Moderate	Major	Replace	$0	
G4020 Site Lighting			o	None	Minor	Moderate	Major	Replace	$0	
G4030 Site Communications & Security			o	None	Minor	Moderate	Major	Replace	$0	
G4090 Other Site Electrical Utilities	NOT USED			None	Minor	Moderate	Major	Replace		
G90 Other Site Construction	NOT USED									

OTHER

Description of System	Unit of Measure	Quantity	Unit Budget	Extended	Notes
				$0	
				$0	
				$0	
				$0	
				$0	
				$0	
				$0	

Physical Condition Budget Sub-Total	**$0**
Budgeted Development Costs	**$0**
Physical Condition Budget TOTAL	**$0**
Cost with Escalation to June 2021	**$0**
Cost with Escalation to June 2022	**$0**
Cost with Escalation to June 2023	**$0**
Replacement Budget	**$7,492,648**

Base Information Sheet

Item	Data	Notes / Explanation
District Name:	Amity SD 4J	Pull-down menu of the 197 Districts
Site Name:	Amity High School	Typically the name that is used for the facility / campus
Building Name:	Maintenance Shop	If only one building on site, refer to "main"
Building ID:	22520308	Please use the same ID that is assigned to this building in the annual Building Collection.
Building Type:	Maintenance Building	Pull-down menu - feeds FCI calculation
Physical Address of Building:	503 Oak Ave, Amity, OR 97101	Informational only - does not link
Original Year of Building Completion	1975	When was the original building completed and ready for use
Original Construction Type	Wood frame with wood siding and roof	What type of construction was used to complete original building
Describe Other Construction Type		If you choose other construction type please describe here
County:	Yamhill	Pull-down menu of the 36 counties - sets location factor for budgets
Gross Square Footage:	3,200	Calculated from exterior face of walls (excluding eaves, outbuilding, porches, canopies, and similar)
Site Acreage:	34	District records
Assessor Company:	IBI Group	Certified company
Assessor Name:	Steve Winkle	For follow up questions
Contact (Phone):	503 226 6950 ext 255	
Contact (E-Mail):	steve.winkle@ibigroup.com	
Date of Assessment:	2019-08-20	Might reference back for inflation calculation (future)

*Building ID Format: Located in ODE "Buildings Collection" database

District Name: Amity SD 4J
Site Name: Amity High School
Building Name: Maintenance Shop
Building ID: 22520308

REMINDER: FILL OUT ALL INFORMATION ON '*BASE INFORMATION SHEET*' BEFORE ENTERING DATA ON THIS SHEET
An unused cell or system that should not receive direct user input
An automatically populated cell from user input elsewhere in the file - do not overwrite

Level 1	Level 2	Level 3	Type (as applicable)	% of Building or Number	LEVEL OF ACTION: None	Minor	Moderate	Major	Replace as part of Renovation	% of System or Finish	Automated Budget Estimate	Notes
A SUBSTRUCTURE												
	A10 Foundations											
		A1010 Standard Foundations		100%		x				100%	$1,824	
		A1020 Special Foundations									$0	
		A1030 Slab on Grade		100%	x						$0	
	A20 Basement Construction											
		A2010 Basement Excavation	NOT USED									
		A2020 Basement Walls									$0	
B SHELL												
	B10 Superstructure											
		B1010 Floor Construction	Wood								$0	
			Steel								$0	
			Concrete								$0	
		B1020 Roof Construction	Wood	100%				x			$0	
			Steel								$0	
			Concrete								$0	
	B20 Exterior Enclosure											
		B2010 Exterior Walls	Concrete Formed / Tilt								$0	
			Masonry								$0	
			Framed w/ Wood Siding	100%				x		100%	$21,231	Old and weather worn
			Framed w/Metal Panel								$0	
			Framed w/Stucco								$0	
			Framed w/Masonry Veneer								$0	
		B2020 Exterior Windows	Wood								$0	
			Aluminum/Steel								$0	
			Clad								$0	
			Curtain Wall								$0	
		B2030 Exterior Doors	Wood								$0	
			Hollow Metal	4			x			25%	$1,140	Upward acting doors
			Storefront								$0	
	B30 Roofing											
		B3010 Roof Coverings	Asphalt Shingle								$0	
			Built-Up								$0	
			Single Ply								$0	
			Metal	100%					x	100%	$116,736	
			Concrete Tile								$0	
		B3020 Roof Openings	Skylights								$0	By Building GSF
			Access Hatch								$0	Per hatch
C INTERIORS												
	C10 Interior Construction											
		C1010 Partitions	Framed	100%					x	50%	$28,600	
			Masonry								$0	
		C1020 Interior Doors	Wood	1					x	100%	$2,052	
			Hollow Metal								$0	
		C1030 Fittings	NOT USED									
	C20 Stairs											
		C2010 Stair Construction	Wood								$0	
			Metal								$0	
			Concrete								$0	
		C2020 Stair Finishes	Concrete Fill								$0	
			Resilient								$0	
	C30 Interior Finishes											

	C3010 Wall Finishes	Paint on Masonry			None	Minor	Moderate	Major	Replace		$0	
		Wallboard			None	Minor	Moderate	Major	Replace		$0	
		Wainscot			None	Minor	Moderate	Major	Replace		$0	
		Ceramic Tile			None	Minor	Moderate	Major	Replace		$0	
	C3020 Floor Finishes	Carpet / Soft Surface			None	Minor	Moderate	Major	Replace		$0	
		Resilient Tile			None	Minor	Moderate	Major	Replace		$0	
		Resilient Sheet			None	Minor	Moderate	Major	Replace		$0	
		Polished Concrete			None	Minor	Moderate	Major	Replace		$0	
		Ceramic Tile			None	Minor	Moderate	Major	Replace		$0	
		Liquid Applied			None	Minor	Moderate	Major	Replace		$0	
		Wood Sports Floor			None	Minor	Moderate	Major	Replace		$0	
	C3030 Ceiling Finishes	Wallboard			None	Minor	Moderate	Major	Replace		$0	
		Lay-In Ceiling Tile			None	Minor	Moderate	Major	Replace		$0	
		Glued-Up Ceiling Tile			None	Minor	Moderate	Major	Replace		$0	
		Painted Structure			None	Minor	Moderate	Major	Replace		$0	
D	**SERVICES**												
	D10 Conveying												
	D1010 Elevators & Lifts				None	Minor	Moderate	Major	Replace		$0	
	D1020 Escalators & Moving Walks				None	Minor	Moderate	Major	Replace		$0	
	D1090 Other Conveying Systems				None	Minor	Moderate	Major	Replace		$0	
	D20 Plumbing												
	D2010 Plumbing Fixtures				None	Minor	Moderate	Major	Replace		$0	All (N) fixtures must meet ADA requirements by code.
	D2020 Domestic Water Distribution				None	Minor	Moderate	Major	Replace		$0	
	D2030 Sanitary Waste				None	Minor	Moderate	Major	Replace		$0	
	D2040 Rain Water Drainage				None	Minor	Moderate	Major	Replace		$0	
	D2090 Other Plumbing Systems	NOT USED			None	Minor	Moderate	Major	Replace			
	D30 HVAC												
	D3010 Energy Supply				None	Minor	Moderate	Major	Replace		$0	
	D3020 Heat Generating Systems	Boiler			None	Minor	Moderate	Major	Replace		$0	
		Air Handler			None	Minor	Moderate	Major	Replace		$0	
		Furnace			None	Minor	Moderate	Major	Replace		$0	
		Heat Exchanger			None	Minor	Moderate	Major	Replace		$0	
	D3030 Cooling Generating Systems	Component of air handler			None	Minor	Moderate	Major	Replace		$0	
		Stand alone chiller			None	Minor	Moderate	Major	Replace		$0	
	D3040 Distribution Systems	Ductwork			None	Minor	Moderate	Major	Replace		$0	
		Hot water return & supply			None	Minor	Moderate	Major	Replace		$0	
	D3050 Terminal & Package Units	Above ceiling VAV unit			None	Minor	Moderate	Major	Replace		$0	
		In-room ventilator unit			None	Minor	Moderate	Major	Replace		$0	
		In-room radiant unit			None	Minor	Moderate	Major	Replace		$0	
	D3060 Controls & Instrumentation				None	Minor	Moderate	Major	Replace		$0	
	D3070 Systems Testing & Balancing				None	Minor	Moderate	Major	Replace		$0	
	D3090 Other HVAC Systems & Equipment	NOT USED			None	Minor	Moderate	Major	Replace			
	D40 Fire Protection												
	D4010 Sprinklers				None	Minor	Moderate	Major	Replace		$0	
	D4020 Standpipes				None	Minor	Moderate	Major	Replace		$0	
	D4030 Fire Protection Specialties				None	Minor	Moderate	Major	Replace		$0	
	D4090 Other Fire Protection Systems	NOT USED			None	Minor	Moderate	Major	Replace			
	D50 Electrical												
	D5010 Electrical Service & Distribution		100%		None	Minor	x Moderate	Major	Replace	50%	$6,530	
	D5020 Lighting and Branch Wiring		100%		None	Minor	Moderate	x Major	Replace	100%	$20,028	
	D5030 Communications & Security	Voice / Data System			None	Minor	Moderate	Major	Replace		$0	
		Clock / Intercom System			None	Minor	Moderate	Major	Replace		$0	
		Closed Circuit Surveillance			None	Minor	Moderate	Major	Replace		$0	
		Access Control System			None	Minor	Moderate	Major	Replace		$0	
		Intrusion Alarm System			None	Minor	Moderate	Major	Replace		$0	
		Fire Alarm / Detection			None	Minor	Moderate	Major	Replace		$0	
		Lighting Control System			None	Minor	Moderate	Major	Replace		$0	
	D5090 Other Electrical Systems	NOT USED			None	Minor	Moderate	Major	Replace			
E	**EQUIPMENT & FURNISHINGS**												

E10 Equipment																		
	E1010 Commercial Equipment	Food Service			None		Minor		Moderate		Major		Replace		$0	
		Vocational			None		Minor		Moderate		Major		Replace		$0	
	E1020 Institutional Equipment	Science			None		Minor		Moderate		Major		Replace		$0	
		Art			None		Minor		Moderate		Major		Replace		$0	
		Stage Performance			None		Minor		Moderate		Major		Replace		$0	Cost/SF of Stage Performance Area
		Restroom Accessories/Stalls			None		Minor		Moderate		Major		Replace		$0	
	E1030 Vehicular Equipment	NOT USED			None		Minor		Moderate		Major		Replace			
	E1090 Other Equipment	NOT USED			None		Minor		Moderate		Major		Replace			
E20 Furnishings																		
	E2010 Fixed Furnishings				None		Minor		Moderate		Major		Replace		$0	
	E2020 Movable Furnishings				None		Minor		Moderate		Major		Replace		$0	
F SPECIAL CONSTRUCTION & DEMOLITION - NOT USED																		
G BUILDING SITE WORK																		
G10 Site Preparation		NOT USED																
G20 Site Improvements																		
	G2010 Roadways		4300		None		Minor		Moderate		Major	x	Replace	100%	$39,216	Cost/SF of surface area
	G2020 Parking Lots				None		Minor		Moderate		Major		Replace		$0	Cost/SF of surface area
	G2030 Pedestrian Paving				None		Minor		Moderate		Major		Replace		$0	Cost/SF of surface area
	G2040 Site Development				None		Minor		Moderate		Major		Replace		$0	Cost/LF of fencing
	G2050 Landscaping				None		Minor		Moderate		Major		Replace		$0	Cost/SF of irrigated area
G30 Site Mechanical Utilities																		
	G3010 Water Supply				None		Minor		Moderate		Major		Replace		$0	Enter LF of pipe in cell E143
		Fire			None		Minor		Moderate		Major		Replace		$0	Enter LF of pipe in cell E144
	G3020 Sanitary Sewer				None		Minor		Moderate		Major		Replace		$0	Enter LF of pipe in cell E145
	G3030 Storm Sewer				None		Minor		Moderate		Major		Replace		$0	Enter SF of area to be drained
	G3040 Heating Distribution				None		Minor		Moderate		Major		Replace		$0	Enter LF of pipe in cell E147
	G3050 Cooling Distribution				None		Minor		Moderate		Major		Replace		$0	Enter LF of pipe in cell E148
	G3060 Fuel Distribution				None		Minor		Moderate		Major		Replace		$0	Enter LF of pipe in cell E149
	G3090 Other Site Mechanical Utilities	NOT USED			None		Minor		Moderate		Major		Replace			
G40 Site Electrical Utilities																		
	G4010 Electrical Distribution	Service	100%		None		Minor		Moderate	x	Major		Replace	100%	$2,955	Old and worn
		Generator			None		Minor		Moderate		Major		Replace		$0	
	G4020 Site Lighting		100%		None		Minor	x	Moderate		Major		Replace	100%	$2,663	Limited coverage
	G4030 Site Communications & Security				None		Minor		Moderate		Major		Replace		$0	
	G4090 Other Site Electrical Utilities	NOT USED			None		Minor		Moderate		Major		Replace			
G90 Other Site Construction		NOT USED																

OTHER

Description of System	Unit of Measure	Quantity	Unit Budget	Extended	Notes
				$0	
				$0	
				$0	
				$0	
				$0	
				$0	
				$0	

Physical Condition Budget Sub-Total	**$242,975**
Budgeted Development Costs	**$92,331**
Physical Condition Budget TOTAL	**$335,306**
Cost with Escalation to June 2021	**$382,248**
Cost with Escalation to June 2022	**$397,538**
Cost with Escalation to June 2023	**$413,440**
Replacement Budget	**$2,038,867**

Base Information Sheet

Item	Data	Notes / Explanation
District Name:	Amity SD 4J	Pull-down menu of the 197 Districts
Site Name:	Amity High School	Typically the name that is used for the facility / campus
Building Name:	Weight Room and Batting Cages	If only one building on site, refer to "main"
Building ID:	Unknown ID Number	Please use the same ID that is assigned to this building in the annual Building Collection.
Building Type:	Gymnasium Building	Pull-down menu - feeds FCI calculation
Physical Address of Building:	503 Oak Ave, Amity, OR 97101	Informational only - does not link
Original Year of Building Completion	2012	When was the original building completed and ready for use
Original Construction Type	Wood frame with metal siding	What type of construction was used to complete original building
Describe Other Construction Type		If you choose other construction type please describe here
County:	Yamhill	Pull-down menu of the 36 counties - sets location factor for budgets
Gross Square Footage:	5,200	Calculated from exterior face of walls (excluding eaves, outbuilding, porches, canopies, and similar)
Site Acreage:	34	District records
Assessor Company:	IBI Group	Certified company
Assessor Name:	Steve Winkle	For follow up questions
Contact (Phone):	503 226 6950 ext 255	
Contact (E-Mail):	steve.winkle@ibigroup.com	
Date of Assessment:	2019-08-20	Might reference back for inflation calculation (future)

*Building ID Format: Located in ODE "Buildings Collection" database

District Name: Amity SD 4J
Site Name: Amity High School
Building Name: Weight Room and Batting Cages
Building ID: Unknown ID Number

REMINDER: FILL OUT ALL INFORMATION ON '*BASE INFORMATION SHEET*' BEFORE ENTERING DATA ON THIS SHEET
An unused cell or system that should not receive direct user input
An automatically populated cell from user input elsewhere in the file - do not overwrite

Level 1	Level 2	Level 3	Type (as applicable)	% of Building or Number		LEVEL OF ACTION: None		Minor		Moderate		Major		Replace as part of Renovation	% of System or Finish	Automated Budget Estimate	Notes
A SUBSTRUCTURE																	
	A10 Foundations																
		A1010 Standard Foundations		100%	x	None		Minor		Moderate		Major		Replace		$0	
		A1020 Special Foundations				None		Minor		Moderate		Major		Replace		$0	
		A1030 Slab on Grade		100%	x	None		Minor		Moderate		Major		Replace		$0	
	A20 Basement Construction																
		A2010 Basement Excavation	NOT USED			None		Minor		Moderate		Major		Replace			
		A2020 Basement Walls				None		Minor		Moderate		Major		Replace		$0	
B SHELL																	
	B10 Superstructure																
		B1010 Floor Construction	Wood			None		Minor		Moderate		Major		Replace		$0	
			Steel			None		Minor		Moderate		Major		Replace		$0	
			Concrete			None		Minor		Moderate		Major		Replace		$0	
		B1020 Roof Construction	Wood	100%	x	None		Minor		Moderate		Major		Replace		$0	
			Steel			None		Minor		Moderate		Major		Replace		$0	
			Concrete			None		Minor		Moderate		Major		Replace		$0	
	B20 Exterior Enclosure																
		B2010 Exterior Walls	Concrete Formed / Tilt			None		Minor		Moderate		Major		Replace		$0	
			Masonry			None		Minor		Moderate		Major		Replace		$0	
			Framed w/ Wood Siding			None		Minor		Moderate		Major		Replace		$0	
			Framed w/Metal Panel	100%	x	None		Minor		Moderate		Major		Replace		$0	
			Framed w/Stucco			None		Minor		Moderate		Major		Replace		$0	
			Framed w/Masonry Veneer			None		Minor		Moderate		Major		Replace		$0	
		B2020 Exterior Windows	Wood			None		Minor		Moderate		Major		Replace		$0	
			Aluminum/Steel	100%	x	None		Minor		Moderate		Major		Replace		$0	
			Clad			None		Minor		Moderate		Major		Replace		$0	
			Curtain Wall			None		Minor		Moderate		Major		Replace		$0	
		B2030 Exterior Doors	Wood			None		Minor		Moderate		Major		Replace		$0	
			Hollow Metal	2	x	None		Minor		Moderate		Major		Replace		$0	
			Storefront			None		Minor		Moderate		Major		Replace		$0	
	B30 Roofing																
		B3010 Roof Coverings	Asphalt Shingle			None		Minor		Moderate		Major		Replace		$0	
			Built-Up			None		Minor		Moderate		Major		Replace		$0	
			Single Ply			None		Minor		Moderate		Major		Replace		$0	
			Metal	100%	x	None		Minor		Moderate		Major		Replace		$0	
			Concrete Tile			None		Minor		Moderate		Major		Replace		$0	
		B3020 Roof Openings	Skylights			None		Minor		Moderate		Major		Replace		$0	By Building GSF
			Access Hatch			None		Minor		Moderate		Major		Replace		$0	Per hatch
C INTERIORS																	
	C10 Interior Construction																
		C1010 Partitions	Framed	100%	x	None		Minor		Moderate		Major		Replace		$0	
			Masonry			None		Minor		Moderate		Major		Replace		$0	
		C1020 Interior Doors	Wood			None		Minor		Moderate		Major		Replace		$0	
			Hollow Metal			None		Minor		Moderate		Major		Replace		$0	
		C1030 Fittings	NOT USED			None		Minor		Moderate		Major		Replace			
	C20 Stairs																
		C2010 Stair Construction	Wood			None		Minor		Moderate		Major		Replace		$0	Cost/Flight
			Metal			None		Minor		Moderate		Major		Replace		$0	Cost/Flight
			Concrete			None		Minor		Moderate		Major		Replace		$0	Cost/Flight
		C2020 Stair Finishes	Concrete Fill			None		Minor		Moderate		Major		Replace		$0	Cost/Flight
			Resilient			None		Minor		Moderate		Major		Replace		$0	Cost/Flight
	C30 Interior Finishes																

	C3010 Wall Finishes	Paint on Masonry			None		Minor	■	Moderate	■	Major		Replace		$0	
		Wallboard			None		Minor		Moderate	■	Major		Replace		$0	
		Wainscot	100%	x	None		Minor		Moderate	■	Major		Replace		$0	
		Ceramic Tile			None		Minor		Moderate	■	Major		Replace		$0	
	C3020 Floor Finishes	Carpet / Soft Surface	33%	x	None	■	Minor		Moderate	■	Major		Replace		$0	
		Resilient Tile			None		Minor		Moderate		Major		Replace		$0	
		Resilient Sheet			None	■	Minor		Moderate	■	Major		Replace		$0	
		Polished Concrete			None		Minor		Moderate	■	Major		Replace		$0	
		Ceramic Tile			None		Minor		Moderate	■	Major		Replace		$0	
		Liquid Applied	66%	x	None	■	Minor		Moderate	■	Major		Replace		$0	
		Wood Sports Floor			None	■	Minor		Moderate	■	Major		Replace		$0	
	C3030 Ceiling Finishes	Wallboard			None		Minor		Moderate	■	Major		Replace		$0	
		Lay-In Ceiling Tile			None		Minor		Moderate	■	Major		Replace		$0	
		Glued-Up Ceiling Tile			None		Minor	■	Moderate	■	Major		Replace		$0	
		Painted Structure	66%	x	None	■	Minor	■	Moderate	■	Major		Replace		$0	
D	**SERVICES**															
	D10 Conveying															
	D1010 Elevators & Lifts				None		Minor		Moderate		Major		Replace		$0	
	D1020 Escalators & Moving Walks				None	■	Minor		Moderate	■	Major		Replace		$0	
	D1090 Other Conveying Systems				None	■	Minor		Moderate	■	Major		Replace		$0	
	D20 Plumbing					■										
	D2010 Plumbing Fixtures				None	■	Minor		Moderate	■	Major		Replace		$0	All (N) fixtures must meet ADA requirements by code.
	D2020 Domestic Water Distribution				None		Minor		Moderate	■	Major		Replace		$0	
	D2030 Sanitary Waste				None		Minor	■	Moderate	■	Major		Replace		$0	
	D2040 Rain Water Drainage				None	■	Minor		Moderate	■	Major		Replace		$0	
	D2090 Other Plumbing Systems	NOT USED			None	■	Minor	■	Moderate	■	Major	■	Replace	■	■	■
	D30 HVAC															
	D3010 Energy Supply				None		Minor	■	Moderate	■	Major		Replace		$0	
	D3020 Heat Generating Systems	Boiler			None		Minor		Moderate		Major		Replace		$0	
		Air Handler	66%	x	None	■	Minor	■	Moderate		Major		Replace		$0	Heat Pump
		Furnace			None	■	Minor		Moderate		Major		Replace		$0	
		Heat Exchanger			None	■	Minor		Moderate		Major		Replace		$0	
	D3030 Cooling Generating Systems	Component of air handler	66%	x	None	■	Minor	■	Moderate		Major		Replace		$0	Heat Pump
		Stand alone chiller			None	■	Minor	■	Moderate	■	Major		Replace		$0	
	D3040 Distribution Systems	Ductwork			None	■	Minor		Moderate		Major		Replace		$0	
		Hot water return & supply			None		Minor		Moderate	■	Major		Replace		$0	
	D3050 Terminal & Package Units	Above ceiling VAV unit			None	■	Minor	■	Moderate	■	Major		Replace		$0	
		In-room ventilator unit			None	■	Minor		Moderate	■	Major		Replace		$0	
		In-room radiant unit			None		Minor	■	Moderate	■	Major		Replace		$0	
	D3060 Controls & Instrumentation				None	■	Minor	■	Moderate		Major		Replace		$0	
	D3070 Systems Testing & Balancing				None	■	Minor	■	Moderate	■	Major		Replace		$0	
	D3090 Other HVAC Systems & Equipment	NOT USED			None	■	Minor	■	Moderate	■	Major	■	Replace	■	■	■
	D40 Fire Protection															
	D4010 Sprinklers				None	■	Minor		Moderate	■	Major		Replace		$0	
	D4020 Standpipes				None	■	Minor		Moderate	■	Major		Replace		$0	
	D4030 Fire Protection Specialties				None	■	Minor		Moderate	■	Major		Replace		$0	
	D4090 Other Fire Protection Systems	NOT USED			None	■	Minor	■	Moderate	■	Major	■	Replace	■	■	■
	D50 Electrical															
	D5010 Electrical Service & Distribution		100%	x	None	■	Minor		Moderate		Major		Replace		$0	
	D5020 Lighting and Branch Wiring		100%	x	None	■	Minor	■	Moderate		Major		Replace		$0	
	D5030 Communications & Security	Voice / Data System			None	■	Minor		Moderate		Major		Replace		$0	
		Clock / Intercom System			None	■	Minor		Moderate		Major		Replace		$0	
		Closed Circuit Surveillance			None	■	Minor		Moderate		Major		Replace		$0	
		Access Control System			None	■	Minor		Moderate		Major		Replace		$0	
		Intrusion Alarm System			None	■	Minor		Moderate		Major		Replace		$0	
		Fire Alarm / Detection			None	■	Minor		Moderate		Major		Replace		$0	
		Lighting Control System			None		Minor	■	Moderate		Major		Replace		$0	
	D5090 Other Electrical Systems	NOT USED			None	■	Minor	■	Moderate	■	Major	■	Replace	■	■	■
E	**EQUIPMENT & FURNISHINGS**															

E10 Equipment																		
	E1010 Commercial Equipment	Food Service			None		Minor		Moderate		Major		Replace		$0	
		Vocational			None		Minor		Moderate		Major		Replace		$0	
	E1020 Institutional Equipment	Science			None		Minor		Moderate		Major		Replace		$0	
		Art			None		Minor		Moderate		Major		Replace		$0	
		Stage Performance			None		Minor		Moderate		Major		Replace		$0	Cost/SF of Stage Performance Area
		Restroom Accessories/Stalls			None		Minor		Moderate		Major		Replace		$0	
	E1030 Vehicular Equipment	NOT USED			None		Minor		Moderate		Major		Replace			
	E1090 Other Equipment	NOT USED			None		Minor		Moderate		Major		Replace			
E20 Furnishings																		
	E2010 Fixed Furnishings				None		Minor		Moderate		Major		Replace		$0	
	E2020 Movable Furnishings				None		Minor		Moderate		Major		Replace		$0	
F SPECIAL CONSTRUCTION & DEMOLITION - NOT USED																		
G BUILDING SITE WORK																		
G10 Site Preparation		NOT USED																
G20 Site Improvements																		
	G2010 Roadways				None		Minor		Moderate		Major		Replace		$0	Cost/SF of surface area
	G2020 Parking Lots				None		Minor		Moderate		Major		Replace		$0	Cost/SF of surface area
	G2030 Pedestrian Paving				None		Minor		Moderate		Major		Replace		$0	Cost/SF of surface area
	G2040 Site Development				None		Minor		Moderate		Major		Replace		$0	Cost/LF of fencing
	G2050 Landscaping				None		Minor		Moderate		Major		Replace		$0	Cost/SF of irrigated area
G30 Site Mechanical Utilities																		
	G3010 Water Supply	Domestic	150	x	None		Minor		Moderate		Major		Replace		$0	Enter LF of pipe in cell E143
		Fire			None		Minor		Moderate		Major		Replace		$0	Enter LF of pipe in cell E144
	G3020 Sanitary Sewer				None		Minor		Moderate		Major		Replace		$0	Enter LF of pipe in cell E145
	G3030 Storm Sewer				None		Minor		Moderate		Major		Replace		$0	Enter SF of area to be drained
	G3040 Heating Distribution				None		Minor		Moderate		Major		Replace		$0	Enter LF of pipe in cell E147
	G3050 Cooling Distribution				None		Minor		Moderate		Major		Replace		$0	Enter LF of pipe in cell E148
	G3060 Fuel Distribution				None		Minor		Moderate		Major		Replace		$0	Enter LF of pipe in cell E149
	G3090 Other Site Mechanical Utilities	NOT USED			None		Minor		Moderate		Major		Replace			
G40 Site Electrical Utilities																		
	G4010 Electrical Distribution	Service	100%	x	None		Minor		Moderate		Major		Replace		$0	
		Generator			None		Minor		Moderate		Major		Replace		$0	
	G4020 Site Lighting				None		Minor		Moderate		Major		Replace		$0	
	G4030 Site Communications & Security				None		Minor		Moderate		Major		Replace		$0	
	G4090 Other Site Electrical Utilities	NOT USED			None		Minor		Moderate		Major		Replace			
G90 Other Site Construction		NOT USED																

OTHER

Description of System	Unit of Measure	Quantity	Unit Budget	Extended	Notes
				$0	
				$0	
				$0	
				$0	
				$0	
				$0	
				$0	

Physical Condition Budget Sub-Total	**$0**
Budgeted Development Costs	**$0**
Physical Condition Budget TOTAL	**$0**
Cost with Escalation to June 2021	**$0**
Cost with Escalation to June 2022	**$0**
Cost with Escalation to June 2023	**$0**
Replacement Budget	**$3,517,675**

SEISMIC EVALUATION REPORT
COMPLIANT WITH OAR 581-027-0045

APPENDIX

AMITY ELEMENTARY SCHOOL

300 Rice Lane
Amity, OR 97101

SEISMIC EVALUATION FINAL REPORT

Prepared By:
tk1sc
616 1st Avenue, Suite 500
Seattle, WA 98104

Report Date: November 21, 2019
Project Number: 2019-0593

Prepared For:
Amity School District
807 Trade Street
Amity, OR 97101

Table of Contents

INTRODUCTION

tk1sc has performed a seismic assessment of Amity Elementary School in Amity, Oregon, based on the Tier 1 screening procedure per ASCE 41-17. The building being evaluated is located at 300 Rice Lane, Amity, Oregon 97101.

Using the ASCE 41-17 standard, structural components were evaluated to the "Limited Safety" performance level and non-structural components were evaluated to the "Hazards Reduced" performance level to identify potential deficiencies and provide recommendations for further investigation as well as possible upgrade solutions to mitigate these deficiencies.

APPLICABLE CODES AND STANDARDS

Below is a list of governing building codes (original and current), as well as the applicable seismic evaluation and retrofit standard:

CODES AND STANDARDS	
Original Governing Building Code:	Oregon State Building Code, 1976 Edition
Current Governing Building Code:	2014 Oregon Structural Specialty Code
Seismic Eval/Retrofit Referenced Standard:	American Society of Civil Engineers, "Seismic Evaluation and Retrofit of Existing Buildings" (ASCE 41-17)

SITE OBSERVATIONS

A site observation was performed by Jason Tornquist, PE, SE, August 20th, 2019, in order to assess the overall condition of the facility, as well as to verify general conformance of the existing conditions with the available structural drawings. The drawings to be used for the seismic assessment of the original facility were prepared by Moffatt, Nichol & Bonney, Inc, dated February 26, 1980, and drawings of the 1992 addition to the facility were prepared by James G. Pierson, Inc Structural Engineers, dated October 14, 1992. No demolition or invasive investigation was performed as part of this site visit, and as such, the investigation was limited to exposed structural elements visible from accessible spaces, as well as spaces above lay-in ceiling tile.

BUILDING DESCRIPTION

The building located at 300 Rice Lane, Amity, Oregon 97101 is a one-story building measuring approximately 200 feet by 240 feet. The original facility was constructed in 1980, and a small addition (roughly 1/6 of the size of the original building) was added to the northeast corner in 1992. See Figure 1 below for a map identifying each area of the facility. The addition was tied to the original building, so there is no expansion joint separating the two. Both buildings were built with similar construction consisting of a hip roof made with sloped wood trusses, supported by a combination of concrete walls and light frame wood stud walls.

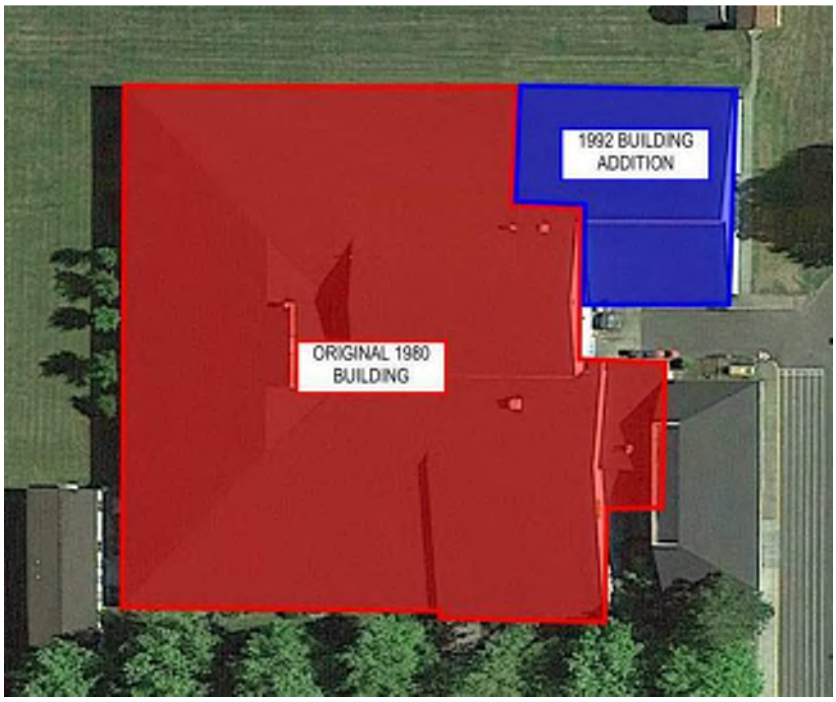

Figure 1-Facility Map

GRAVITY LOAD RESISTING SYSTEM

The gravity load resisting system consists of a one-story wood-framed roof supported by a combination of concrete walls, light frame wood stud walls, and wood posts on shallow foundations and slab on grade. More specifically, based on the existing structural drawings, the gravity load resisting system appears to consist of the following:

- Plywood sheathing (minimum of ½" thickness and nailed to supporting members with 8d nails at 6" oc), supported by prefabricated sloped wood roof trusses spaced at 24" oc.
- 2x6 and 2x8 wood stud walls sheathed with either plywood, gypsum board, or both.
- 1980 portion of the facility: 7" thick precast concrete walls panels reinforced with #4 bars at 14" oc both ways.
- 1992 portion of the facility: 7" thick tilt-up concrete wall panels reinforced with #4 bars at 12" oc both ways.

LATERAL FORCE RESISTING SYSTEM

The lateral force resisting system is comprised of two different systems; Commercial wood frames (W2) and precast/tilt-up concrete shear walls with flexible diaphragms (PC1). Per ASCE 41-17 Table 3-1, commercial wood frame systems are defined as follows:

> *"These buildings are commercial or industrial buildings with a floor area of 5,000 ft^2 or more. There are few, if any, interior walls. The floor and roof framing consists of wood or steel trusses, glulam or steel beams, and wood posts or steel columns. The foundation system is permitted to consist of a variety of elements. Seismic forces are resisted by flexible diaphragms and exterior walls sheathed with plywood, oriented strand board, stucco, plaster, or straight or diagonal sheathing, or they are permitted to be braced with various forms of bracing. Wall openings for storefonts and garages, where present, are framed by post-and-beam framing."*

And precast/tilt-up concrete shear walls with flexible diaphragms systems are defined as follows:

> *"These buildings have precast concrete perimeter wall panels and often, interior walls, that are typically cast on site and tilted into place. The panels are interconnected by weldments, cast-in-place concrete pilasters, or collector elements. 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 are permitted to 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 roof framing is permitted to have tension-capable connections between elements. The foundation system is permitted to consist of a variety or elements."*

At both the precast and the tilt-up concrete walls, the wall thickness is 7". Walls are reinforced with #4 bars in both directions spaced at 14" oc in the 1980 precast walls and spaced at 12" oc in the 1992 tilt-up walls.

At light frame wood stud walls in both the 1980 building and the 1992 addition, studs are spaced at 16" oc and are sheathed with either gypsum board or plywood sheathing on one or both sides. Nailing varies in both size and spacing at boundary members and intermediate framing members.

EXISTING FOUNDATION SYSTEM

The building is supported by a shallow foundation system. Concrete walls are typically supported by 18"x8" continuous foundations. In the 1980 portion of the building, precast walls are cast with a steel channel on the bottom that is welded to a base plate which is fastened to the footing with cast-in anchors. However, in the 1992 addition, tilt-up walls bear on continuous footings with no positive connection. Exterior wood stud walls are supported by concrete stem walls on 18"x8" continuous foundations, while interior wood stud walls are supported by 18"x8" thickened slab. Stud walls are anchored to foundations with cast-in-place anchor bolts. Typical slab on grade is 4" thick, reinforced with welded wire fabric.

SEISMIC EVALUATION PERFORMANCE OBJECTIVES

The seismic evaluation of the Amity Elementary school building was performed using *ASCE 41-17: Seismic Evaluation and Retrofit of Existing Buildings*. This standard defines various ground acceleration levels to be used in the investigation, depending on whether the evaluation/retrofit process is to be carried out to the equivalent standard of a new building (BSE-1N and BSE-2N), or to a reduced level (BSE-1E and BSE-2E). The reduced level of performance is based on the assumption that an existing building will have a shorter life span than that of a new building.

The Oregon Department of Education requires that the schools be evaluated as risk category III structures with the ability to perform to the Limited Safety Structural Performance Level (S-4) at the BSE-2E hazard level. This hazard level has a probability of exceedance of 5% over 50 years, or a 975-year return period. The basic performance objective for existing buildings for Limited Safety requires the use of the Collapse Prevention check lists, while the acceptance criteria for Tier 1 calculation-based quick

checks be the average of Life Safety and Collapse Prevention. The Oregon Department of Education Rule that outlines the requirements for the School Construction Matching Program does not explicitly provide requirements for the performance objectives to be used for non-structural performance. For this assessment, non-structural performance was reviewed against the "Hazards Reduced" (N-D) performance level, as this is consistent with the 41-17 requirements for Risk Category III buildings and the BSE-2E basic performance objective. See the glossary of terms for a full description of these performance levels.

BUILDING INFORMATION AND EVALUATION CRITERIA

The following is a summary of parameters used for the seismic evaluation of the building per ASCE 41-17:

BUILDING INFORMATION	
Site Latitude and Longitude:	45.122507, -123.203213
Year Built:	1980
Number of Stories:	1
Structural Performance Level:	Limited Safety (S-4)
Nonstructural Performance Level:	Hazards Reduced (N-D)
Design Spectral Response Acceleration Parameters:	S_{XS} = 0.886g (BSE-2E, 975-year return period) S_{X1} = 0.585g (BSE-2E, 975-year return period) S_a = 0.886g
Level of Seismicity:	High
Structure Type:	W2 and PC1
Benchmark Building:	No

SEISMIC EVALULATION METHODOLOGY

An ASCE 41-17 Tier 1 assessment was performed to identify potential deficiencies of the existing structure and non-structural systems. The Tier 1 procedure utilizes a checklist of items to be evaluated and various quick check calculation methods to verify the adequacy of the lateral force resisting system's load path and to identify potential seismic vulnerabilities within the structure. Checklists include a basic checklist for the overall building, a checklist for each of the primary lateral force resisting systems, and a checklist for nonstructural components and systems. Each item is marked as "Compliant", Noncompliant", "Not Applicable", or "Unknown" based on the information available. For all items marked as either "Noncompliant" or "Unknown", further investigation may be required to either verify compliance or identify the need for retrofit measures.

ITEMS THAT MAY REQUIRE FUTHER INVESTIGATION

The lists below are a summary of checklist items that were marked as either "non-compliant" or "unknown". See Appendix C for full checklist results. Please note that not all items marked as NC or U below will require remediation. See the "Recommendations" section of this report for further information.

Key: NC = Noncompliant, U = Unknown

Basic Checklist

DESCRIPTION	STATUS	COMMENT
LOAD PATH	NC	The mechanism of load transfer between wood diaphragms and light frame shear walls detailed in the existing drawings does not appear adequate.
WALL ANCHORAGE	NC	Out of plane wall anchorage utilizes Parabolts at 48" OC. This connection used for seismic applications in cracked concrete is not adequate.
MEZZANINES	NC	Mezzanines do not have enough adjacent shear walls to provide adequate stability.
LIQUEFACTION	U	No geotechnical investigation was performed as part of this study, therefore the existence of soils susceptible to liquefaction within 50 ft of the foundation cannot be verified.

Collapse Prevention Structural Checklist for Building Type PC1: Precast/Tilt-Up Concrete Shear Walls with Flexible Diaphragms

DESCRIPTION	STATUS	COMMENT
WALL ANCHORAGE:	NC	Out of plane wall anchorage utilizes Parabolts at 48" OC. This connection used for seismic applications in cracked concrete is not adequate.
TRANSFER TO SHEAR WALLS	NC	There is no direct connection between sheathing and wall top plate.
DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS	NC	Diaphragms are unblocked and horizontal spans exceed 40 ft.
CONNECTIONS AT PRECAST WALL PANELS	NC	In 1992 portion of building, there is no adequate connection between precast wall panels and continuous footing.

Collapse Prevention Structural Checklist for Building Type W2: Commercial Wood Frames

DESCRIPTION	STATUS	COMMENT
SHEAR STRESS CHECK	NC	Because walls are sheathed with gypsum, the limit of 100 plf for "All other conditions" was considered. The maximum demand to wood frame walls was calculated to 800 plf which exceeds the limit.
DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS	NC	Diaphragms are unblocked and horizontal spans exceed 40 ft.

Nonstructural Checklist

HAZARDOUS MATERIALS		
DESCRIPTION	**STATUS**	**COMMENT**
SHUT OFF VALVES	U	Existing mechanical drawings were not provided to verify whether or not shut off valves are present to limit spills or leaks of hazardous materials.
FLEXIBLE COUPLINGS	NC	Piping and ductwork containing hazardous materials do not have flexible couplings.

RECOMMENDATIONS

Based on the deficiencies identified above, tk1sc recommends addressing the items listed below. Items are listed in order of decreasing importance, with the most important items listed first.

- **Shear Wall Improvements:** Most of the existing wood frame shear walls are sheathed with gypsum board on one or both sides. This type of wall construction is inadequate to resist the required design seismic loads. In order provide sufficient strength, gypsum will need to be removed and replaced with APA rated structural 1 plywood in select areas. Double 2x boundary members will also need to be provided and both ends of the sheathing, and boundary members anchored to existing foundations with hold downs and post-installed anchors. See Figure 4 for plan view and approximate extents of shear wall improvement. Collector lines may be required for new shear walls.
- **Diaphragm attachments to walls:** Diaphragms to not appear to have a positive connection to transfer seismic shear forces to supporting shear walls (both wood and concrete walls). In most cases, blocking is provided for diaphragm nailing, but the blocking itself does not have a connection to the shear wall. The addition of blocking and Simpson LTP5 framing plates between will provide a mechanism to transfer shear to address this deficiency. See Figure 2 in appendix A for schematic detail.
- **Wall Anchorage:** Wall anchorage for out of plane seismic forces is currently provided with Simpson A35 clip angles from truss bottom chords to a wood ledger which is anchored to concrete wall with ½" Ø Parabolts at 48" OC, however, this connection alone is not sufficient to resist out of plane loading. To supplement the out of plane wall anchorage connections, tie-down brackets can be added, nailed to truss bottom chords and anchored to concrete walls with

post-installed anchors. This connection is required around the perimeter of the facility at all concrete (precast and tilt-up) walls. See Figure 3 in appendix A for schematic detail.

- **Shut off Valves and Flexible Couplings:** Flexible couplings and shut off valves should be installed at all components containing hazardous materials where they are identified to be lacking.
- **Liquefaction:** Per the Mid/Southern Willamette Valley Geologic Hazard map (See appendix F), the site is located in an area classified as a moderate risk to liquefaction. A geotechnical investigation should be conducted to verify whether there are soils susceptible to liquefaction within a depth of 50 ft of the building. Required remediation will depend on the results of this investigation.

APPENDIX A: SCHEMATIC UPGRADE SKETCHES

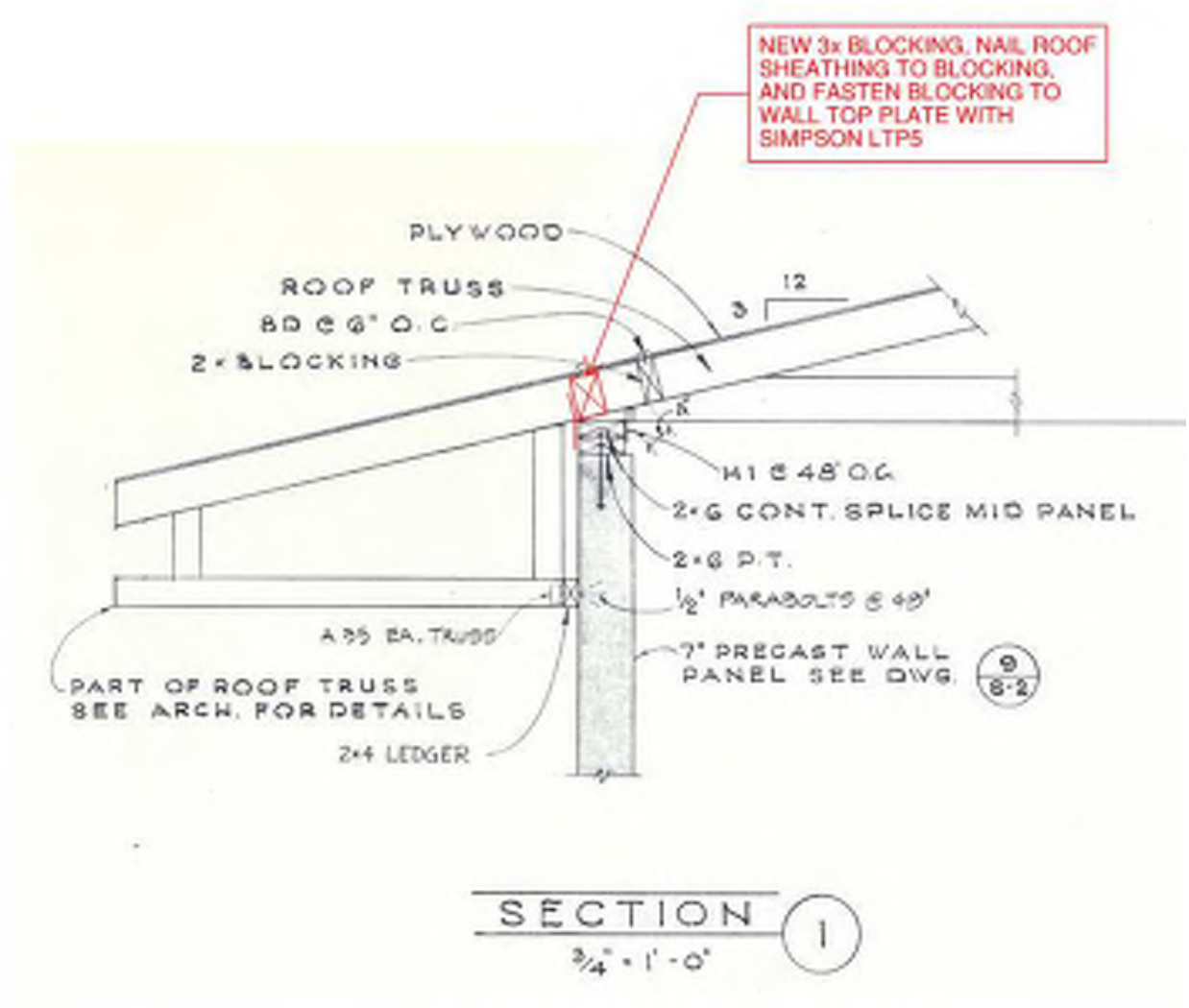

Figure 2-Diaphragm to Wall Connection

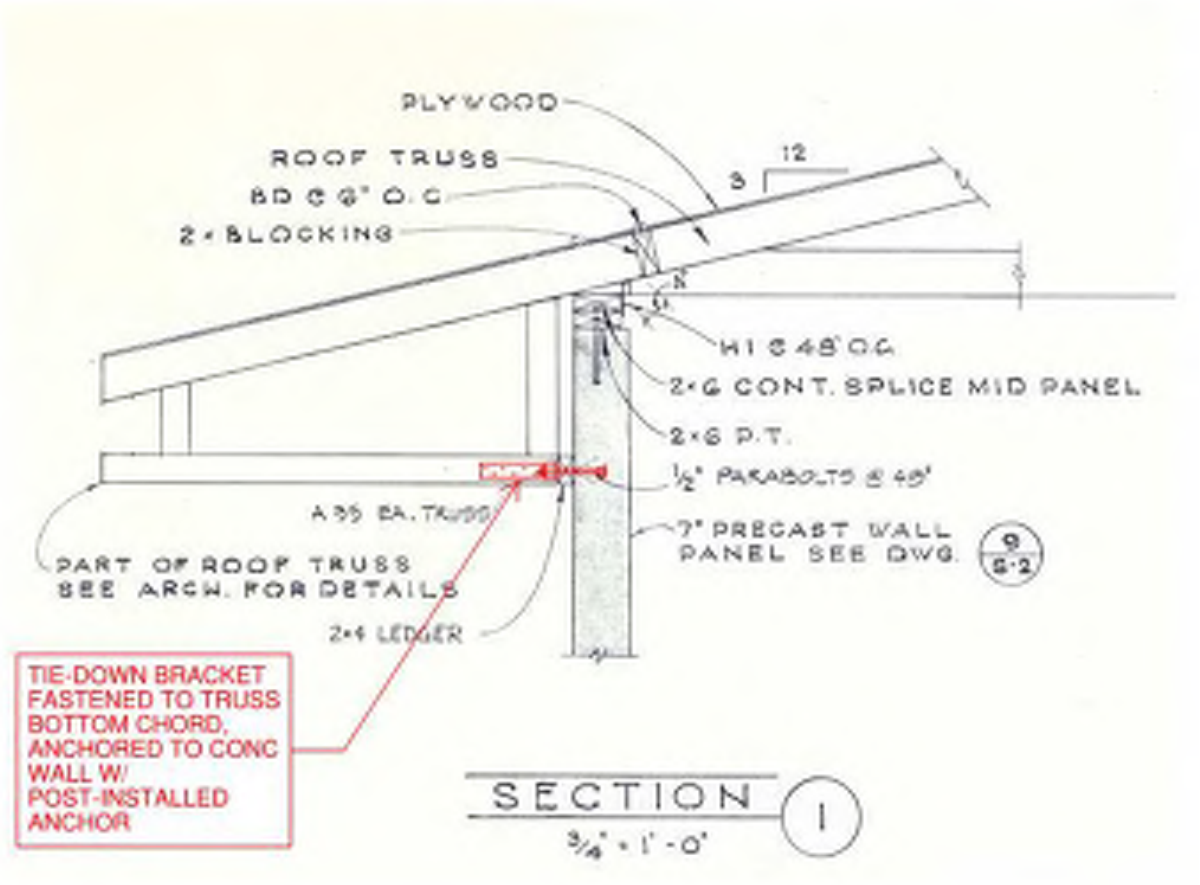

Figure 3-Out of Plane Wall Anchorage

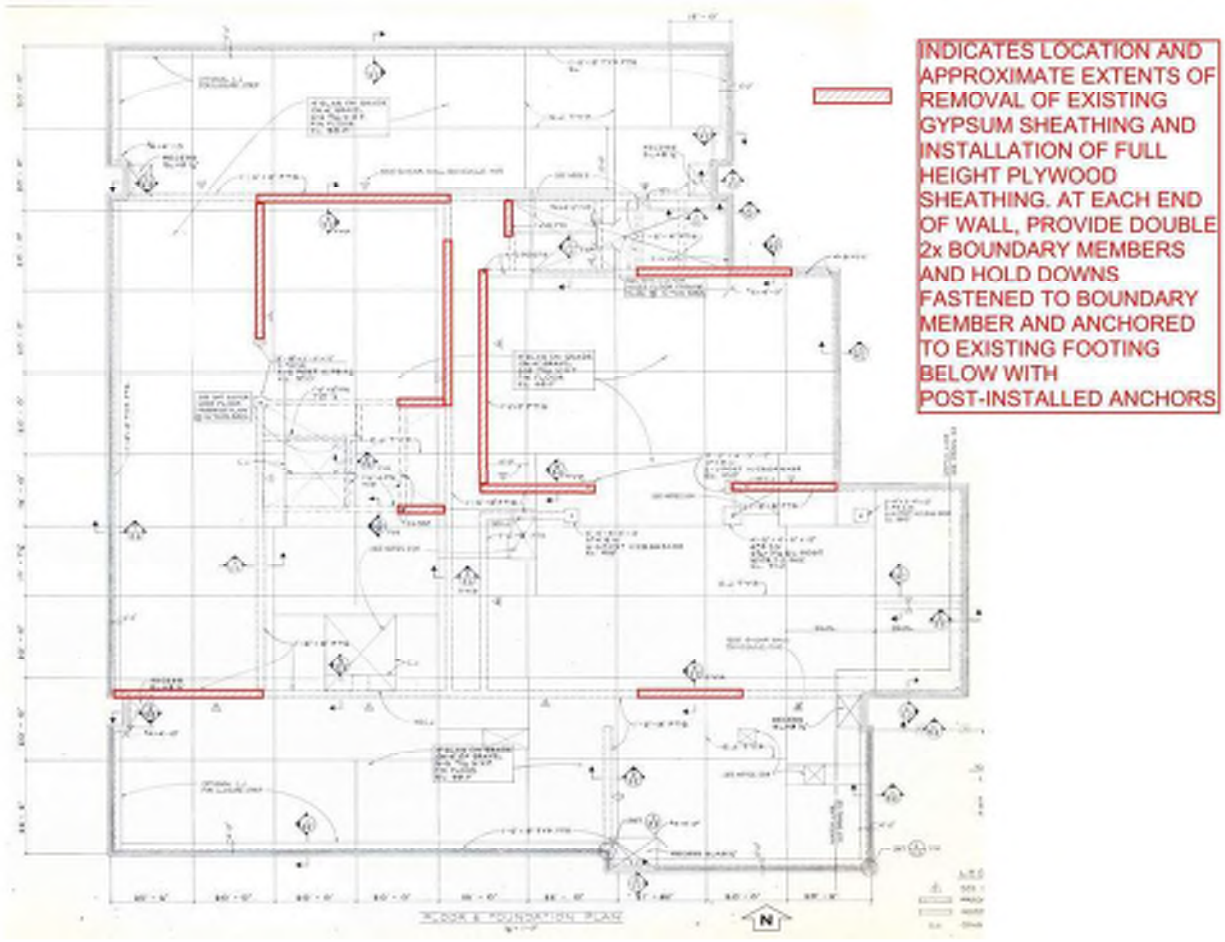

Figure 4-Shear Wall Improvement Plan

APPENDIX B: GLOSSARY OF TERMS

Tier 1 Screening - The purpose of the Tier 1 screening phase of the evaluation process is to quickly identify buildings that comply with the provisions of this standard. A Tier 1 screening also familiarizes the design professional with the building, its potential deficiencies, and its potential behavior. A Tier 1 screening is required for all buildings so that potential deficiencies may be quickly identified. Further evaluation using a Tier 2 or Tier 3 evaluation then focuses, at a minimum, on the potential deficiencies identified in Tier 1.

Tier 2 Deficiency-Based Evaluation - The Tier 2 deficiency-based evaluation requires additional analysis and evaluation of all the potential deficiencies identified in the Tier 1 screening (denoted by either "Noncompliant" or "Unknown" responses in the Tier 1 checklists). The additional analysis and evaluation of each potential deficiency shall be sufficient to either confirm the deficiency or demonstrate the adequacy of the structure as it relates to the potential deficiency. The scope of the Tier 2 deficiency-based evaluation need not expand beyond the evaluation of the potential deficiencies identified in the Tier 1 screening.

Tier 3 Systematic Procedure - The Tier 3 systematic procedure involves an analysis of the entire building, either in its current condition or with proposed retrofit measures. These procedures shall be used where systematic procedures are required in accordance with ASCE 41 and may be used as a further investigation of buildings where the deficiency-based evaluation procedures have been used.

Immediate Occupancy Structural Performance Level (S-1) - Immediate Occupancy, means the post-earthquake damage state in which only very limited structural damage has occurred. The basic vertical- and lateral-force resisting systems of the building retain almost all of their pre-earthquake strength and stiffness. The risk of life-threatening injury as a result of structural damage is very low, and although some minor structural repairs might be appropriate, these repairs would generally not be required before re-occupancy. Continued use of the building is not limited by its structural condition but might be limited by damage or disruption to nonstructural elements of the building, furnishings, or equipment and availability of external utility services.

Damage Control Structural Performance Level (S-2) - The Damage Control Structural Performance Level is set forth as a midway point between Life Safety and Immediate Occupancy. It is intended to provide a structure with a greater reliability of resisting collapse and being less damaged than a typical structure, but not to the extent required of a structure designed to meet the Immediate Occupancy Performance Level.

Life Safety Structural Performance Level (S-3) - Structural Performance Level S-3, Life Safety, means the 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 damage has not resulted in large falling debris hazards, either inside or outside the building. Injuries might 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 repair might 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 before re-occupancy.

Limited Safety Structural Performance Level (S-4) - The Limited Safety Structural Performance Level is set forth as a midway point between Life Safety and Collapse Prevention. It is intended to provide a structure with a greater reliability of resisting collapse than a structure that only meets the Collapse Prevention Performance Level, but not to the full level of safety that the Life Safety Performance Level would imply.

Collapse Prevention Structural Performance Level (S-5) - Structural Performance Level S-5, Collapse Prevention, means the post-earthquake damage state in which the building is on the verge of partial or total collapse. Substantial damage to the structure has occurred, potentially including significant degradation in the stiffness and strength of the lateral-force-resisting system, large permanent lateral deformation of the structure, and—to a more limited extent—degradation in vertical-load-carrying capacity. However, all significant components of the gravity-load-resisting system must continue to carry their gravity loads. Significant risk of injury caused by falling hazards from structural debris might exist. The structure might not be technically practical to repair and is not safe for re-occupancy because aftershock activity could induce collapse.

Structural Performance Not Considered (S-6) - Where an evaluation or retrofit does not address the structure.

Operational Nonstructural Performance Level (N-A) - Nonstructural Performance Level N-A, Operational, is the post-earthquake damage state in which the nonstructural components are able to provide the functions they provided in the building before the earthquake.

Positional Retention Nonstructural Performance level (N-B) - Nonstructural Performance Level N-B, Position Retention, is the post-earthquake damage state in which nonstructural components might be damaged to the extent that they cannot immediately function but are secured in place so that damage caused by falling, toppling, or breaking of utility connections is avoided.

Life Safety Nonstructural Performance Level (N-C) - Nonstructural Performance Level N-C, Life Safety, is the post-earthquake damage state in which nonstructural components may be damaged, but the consequential damage does not pose a life-safety threat.

Hazards Reduced Nonstructural Performance Level (N-D) – Nonstructural Performance Level N-D, Hazards Reduced, shall be defined as the postearthquake damage state in which nonstructural components are damaged and could potentially create falling hazards, but high-hazard nonstructural components identified in Chapter 13, Table 13-1, are secured to prevent falling into areas of public assembly or those falling hazards from those components could pose a risk to life safety for many people.

Nonstructural Performance Not Considered (N-E) - Where an evaluation or retrofit does not address all nonstructural components to one of the levels in the previous sections.

APPENDIX C: SITE PLAN

APPENDIX D: SUMMARY DATA SHEET AND TIER 1 SCREENING CHECKLISTS

APPENDIX C
SUMMARY DATA SHEET

BUILDING DATA

Building Name: Amity Elementary School — Date: 10/17/2019
Building Address: 300 Rice Lane, Amity, OR 97101
Latitude: 45.122507 — Longitude: -123.203213 — By: RK

Year Built: 1980 — Year(s) Remodeled: 1992 — Original Design Code: OR State Building Code, 1976
Area [ft² (m²)]: 42,000 sf — Length [ft (m)]: 200 ft — Width [ft (m)]: 240 ft
No. of Stories: 1 — Story Height: 26 ft — Total Height: 26 ft

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

CONSTRUCTION DATA

Gravity Load Structural System: Wood trusses and wood beams supported by wood framed stud walls and concrete walls
Exterior Transverse Walls: 1980: Precast concrete, 1992: Tilt-Up — Openings? Yes
Exterior Longitudinal Walls: 1980: Precast conc and Wood Stud Walls, 1992: Wood Stud Walls — Openings? Yes
Roof Materials/Framing: Plywood sheathing over prefab wood trusses, dimension lumber and glulam beams
Intermediate Floors/Framing: Plywood sheathing over dimension lumber framing
Ground Floor: 4" concrete slab on grade
Columns: Wood Posts — Foundation: Shallow spread footings and continuous wall footings
General Condition of Structure: Good
Levels Below Grade? No
Special Features and Comments:

LATERAL-FORCE-RESISTING SYSTEM

	Longitudinal	Transverse
System:	PC1 and W2	PC1 and W2
Vertical Elements:	Precast Conc walls, tilt-up Walls, Sheathed stud walls	Precast Conc walls, tilt-up Walls, Sheathed stud walls
Diaphragms:	Plywood Sheathing	Plywood Sheathing
Connections:	Diaphragm nailing to 2x top plates. Cast in anchors at conc walls	Diaphragm nailing to 2x top plates. Cast in anchors at conc walls

EVALUATION DATA

BSE-1N Spectral Response Accelerations: S_{DS} = 0.734g — S_{D1} = 0.483g
Soil Factors: Class = D — F_a = 1.099 — F_v = 1.525
BSE-2E Spectral Response Accelerations: S_{XS} = 0.886g — S_{X1} = 0.585g
Level of Seismicity: High — Performance Level: 4-D
Building Period: T = 0.17s
Spectral Acceleration: S_a = 0.686g
Modification Factor: $C_m C_1 C_2$ = 1.4 — Building Weight: W = 1,316 kips
Pseudolateral Force: $V = C_m C_1 C_2 S_a W$ = 1,632 kips

BUILDING CLASSIFICATION:

REQUIRED TIER 1 CHECKLISTS

	Yes	No
Basic Configuration Checklist	☒	☐
Building Type W1/W1A Structural Checklist	☒	☐
Nonstructural Component Checklist	☒	☐

FURTHER EVALUATION REQUIREMENT:

Table 17-1. Very Low Seismicity Checklist

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
Structural Components			
C (NC) N/A U	LOAD PATH: The structure contains a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation.	mechanism of load transfer between wood diaphragm and light frame shear walls looks questionable.	
C (NC) N/A U	WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections have adequate strength to resist the connection force calculated in the Quick Check procedure of Section 4.4.3.7.	5.7.1.1	A.5.1.1
		Parabolt at 48" oc connection for seismic forces into cracked concrete is not acceptable.	

Note: C = Compliant, NC = Noncompliant, N/A = Not Applicable, and U = Unknown.

Table 17-2. Collapse Prevention Basic Configuration Checklist

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
Low Seismicity			
Building System—General			
C (NC) N/A U	LOAD PATH: The structure contains a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation.	mechanism of load transfer between wood diaphragm and light frame shear walls looks questionable.	
(C) NC N/A U	ADJACENT BUILDINGS: The clear distance between the building being evaluated and any adjacent building is greater than 0.25% of the height of the shorter building in low seismicity, 0.5% in moderate seismicity, and 1.5% in high seismicity.	5.4.1.2	A.2.1.2
C (NC) N/A U	MEZZANINES: Interior mezzanine levels are braced independently from the main structure or are anchored to the seismic-force-resisting elements of the main structure.	Not enough shear walls surrounding the mezzanine to provide stability.	
Building System—Building Configuration			
C NC (N/A) U	WEAK STORY: The sum of the shear strengths of the seismic-force-resisting system in any story in each direction is not less than 80% of the strength in the adjacent story above.	5.4.2.1	A.2.2.2
C NC (N/A) U	SOFT STORY: The stiffness of the seismic-force-resisting system in any story is not less than 70% of the seismic-force-resisting system stiffness in an adjacent story above or less than 80% of the average seismic-force-resisting system stiffness of the three stories above.	5.4.2.2	A.2.2.3
(C) NC N/A U	VERTICAL IRREGULARITIES: All vertical elements in the seismic-force-resisting system are continuous to the foundation.	5.4.2.3	A.2.2.4
C NC (N/A) U	GEOMETRY: There are no changes in the net horizontal dimension of the seismic-force-resisting system of more than 30% in a story relative to adjacent stories, excluding one-story penthouses and mezzanines.	5.4.2.4	A.2.2.5
C NC (N/A) U	MASS: There is no change in effective mass of more than 50% from one story to the next. Light roofs, penthouses, and mezzanines need not be considered.	5.4.2.5	A.2.2.6
(C) NC N/A U	TORSION: The estimated distance between the story center of mass and the story center of rigidity is less than 20% of the building width in either plan dimension.	5.4.2.6	A.2.2.7

continues

Table 17-2 *(Continued)*. Collapse Prevention Basic Configuration Checklist

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
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 do not exist in the foundation soils at depths within 50 ft (15.2 m) under the building.	5.4.3.1	A.6.1.1
(C) NC N/A U	SLOPE FAILURE: The building site is located away from potential earthquake-induced slope failures or rockfalls so that it is unaffected by such failures or is capable of accommodating any predicted movements without failure.	5.4.3.1	A.6.1.2
(C) NC N/A U	SURFACE FAULT RUPTURE: Surface fault rupture and surface displacement at the building site are not anticipated.	5.4.3.1	A.6.1.3
High Seismicity (Complete the Following Items in Addition to the Items for 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 $0.6S_a$.	5.4.3.3	A.6.2.1
(C) NC N/A U	TIES BETWEEN FOUNDATION ELEMENTS: The foundation has ties adequate to resist seismic forces where footings, piles, and piers are not restrained by beams, slabs, or soils classified as Site Class A, B, or C.	5.4.3.4	A.6.2.2

Note: C = Compliant, NC = Noncompliant, N/A = Not Applicable, and U = Unknown.

Table 17-28. Collapse Prevention Structural Checklist for Building Types PC1 and PC1a

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
Low Seismicity			
Connections			
C NC N/A U	WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections have strength to resist the connection force calculated in the Quick Check procedure of Section 4.4.3.7.	Parabolt at 48" oc connection for seismic forces into cracked concrete is not acceptable.	

continues

Table 17-28 *(Continued)*. Collapse Prevention Structural Checklist for Building Types PC1 and PC1a

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
Moderate Seismicity (Complete the Following Items in Addition to the Items for Low Seismicity)			
Seismic-Force-Resisting System			
(C) NC N/A U	REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2.	5.5.1.1	A.3.2.1.1
(C) NC N/A U	WALL SHEAR STRESS CHECK: The shear stress in the precast panels, calculated using the Quick Check procedure of Section 4.4.3.3, is less than the greater of 100 lb/in.^{2} (0.69 MPa) or $2\sqrt{f'_c}$.	5.5.3.1.1	A.3.2.3.1
(C) NC N/A U	REINFORCING STEEL: The ratio of reinforcing steel area to gross concrete area is not less than 0.0012 in the vertical direction and 0.0020 in the horizontal direction.	5.5.3.1.3	A.3.2.3.2
(C) NC N/A U	WALL THICKNESS: Thicknesses of bearing walls are not less than 1/40 the unsupported height or length, whichever is shorter, nor less than 4 in. (101 mm).	5.5.3.1.2	A.3.2.3.5
Diaphragms			
C NC (N/A) U	TOPPING SLAB: Precast concrete diaphragm elements are interconnected by a continuous reinforced concrete topping slab with a minimum thickness of 2 in. (51 mm).	5.6.4	A.4.5.1
Connections			
(C) NC N/A U	WOOD LEDGERS: The connection between the wall panels and the diaphragm does not induce cross-grain bending or tension in the wood ledgers.	5.7.1.3	A.5.1.2
C (NC) N/A U	TRANSFER TO SHEAR WALLS: Diaphragms are connected for transfer of seismic forces to the shear walls.	No direct connection between sheathing and wall top plate.	
C NC (N/A) U	TOPPING SLAB TO WALLS OR FRAMES: Reinforced concrete topping slabs that interconnect the precast concrete diaphragm elements are doweled for transfer of forces into the shear wall or frame elements.	5.7.2	A.5.2.3
(C) NC N/A U	GIRDER–COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support.	5.7.4.1	A.5.4.1
High Seismicity (Complete the Following Items in Addition to the Items for Low and Moderate Seismicity)			
Seismic-Force-Resisting System			
C NC (N/A) U	DEFLECTION COMPATIBILITY FOR RIGID DIAPHRAGMS: Secondary components have the shear capacity to develop the flexural strength of the components.	5.5.2.5.2	A.3.1.6.2
(C) NC N/A U	WALL OPENINGS: The total width of openings along any perimeter wall line constitutes less than 75% of the length of any perimeter wall when the wall piers have aspect ratios of less than 2-to-1.	5.5.3.3.1	A.3.2.3.3
Diaphragms			
(C) NC N/A U	CROSS TIES IN FLEXIBLE DIAPHRAGMS: There are continuous cross ties between diaphragm chords.	5.6.1.2	A.4.1.2
C NC (N/A) U	STRAIGHT SHEATHING: All straight-sheathed diaphragms have aspect ratios less than 2-to-1 in the direction being considered.	5.6.2	A.4.2.1
(C) NC N/A U	SPANS: All wood diaphragms with spans greater than 24 ft (7.3 m) consist of wood structural panels or diagonal sheathing.	5.6.2	A.4.2.2
C (NC) N/A U	DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 40 ft (12.2 m) and aspect ratios less than or equal to 4-to-1.	5.6.2	A.4.2.3
(C) NC N/A U	OTHER DIAPHRAGMS: Diaphragms do not consist of a system other than wood, metal deck, concrete, or horizontal bracing.	5.6.5	A.4.7.1
Connections			
(C) NC N/A U	MINIMUM NUMBER OF WALL ANCHORS PER PANEL: There are at least two anchors connecting each precast wall panel to the diaphragm elements.	5.7.1.4	A.5.1.3
C (NC) N/A U	PRECAST WALL PANELS: Precast wall panels are connected to the foundation.	connection at tilt-up to foundation in 1992 building is not adequate.	
C NC (N/A) U	UPLIFT AT PILE CAPS: Pile caps have top reinforcement, and piles are anchored to the pile caps.	5.7.3.5	A.5.3.8

continues

Table 17-28 *(Continued)*. Collapse Prevention Structural Checklist for Building Types PC1 and PC1a

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
C NC N/A U	GIRDERS: Girders supported by walls or pilasters have at least two ties securing the anchor bolts unless provided with independent stiff wall anchors with strength to resist the connection force calculated in the Quick Check procedure of Section 4.4.3.7.	5.7.4.2	A.5.4.2

Note: C = Compliant, NC = Noncompliant, N/A = Not Applicable, and U = Unknown.

Table 17-6. Collapse Prevention Structural Checklist for Building Type W2

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
Low and Moderate Seismicity			
Seismic-Force-Resisting System			
C NC N/A U	REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2.	5.5.1.1	A.3.2.1.1
C NC N/A U	SHEAR STRESS CHECK: The shear stress in the shear walls, calculated using the Quick Check procedure of Section 4.4.3.3, is less than the following values: Structural panel sheathing 1,000 lb/ft Diagonal sheathing 700 lb/ft Straight sheathing 100 lb/ft All other conditions 100 lb/ft	5.5.3.1.1	A.3.2.7.1
C NC N/A U	STUCCO (EXTERIOR PLASTER) SHEAR WALLS: Multi-story buildings do not rely on exterior stucco walls as the primary seismic-force-resisting system.	5.5.3.6.1	A.3.2.7.2
C NC N/A U	GYPSUM WALLBOARD OR PLASTER SHEAR WALLS: Interior plaster or gypsum wallboard is not used for shear walls on buildings more than one story high with the exception of the uppermost level of a multi-story building.	5.5.3.6.1	A.3.2.7.3
C NC N/A U	NARROW WOOD SHEAR WALLS: Narrow wood shear walls with an aspect ratio greater than 2-to-1 are not used to resist seismic forces.	5.5.3.6.1	A.3.2.7.4
C NC N/A U	WALLS CONNECTED THROUGH FLOORS: Shear walls have an interconnection between stories to transfer overturning and shear forces through the floor.	5.5.3.6.2	A.3.2.7.5
C NC N/A U	HILLSIDE SITE: For structures that are taller on at least one side by more than one-half story because of a sloping site, all shear walls on the downhill slope have an aspect ratio less than 1-to-1.	5.5.3.6.3	A.3.2.7.6
C NC N/A U	CRIPPLE WALLS: Cripple walls below first-floor-level shear walls are braced to the foundation with wood structural panels.	5.5.3.6.4	A.3.2.7.7
C NC N/A U	OPENINGS: Walls with openings greater than 80% of the length are braced with wood structural panel shear walls with aspect ratios of not more than 1.5-to-1 or are supported by adjacent construction through positive ties capable of transferring the seismic forces.	5.5.3.6.5	A.3.2.7.8
Connections			
C NC N/A U	WOOD POSTS: There is a positive connection of wood posts to the foundation.	5.7.3.3	A.5.3.3
C NC N/A U	WOOD SILLS: All wood sills are bolted to the foundation.	5.7.3.3	A.5.3.4
C NC N/A U	GIRDER–COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support.	5.7.4.1	A.5.4.1
High Seismicity (Complete the Following Items in Addition to the Items for Low and Moderate Seismicity)			
Connections			
C NC N/A U	WOOD SILL BOLTS: Sill bolts are spaced at 6 ft (1.8 m) or less with acceptable edge and end distance provided for wood and concrete.	5.7.3.3	A.5.3.7
Diaphragms			
C NC N/A U	DIAPHRAGM CONTINUITY: The diaphragms are not composed of split-level floors and do not have expansion joints.	5.6.1.1	A.4.1.1
C NC N/A U	ROOF CHORD CONTINUITY: All chord elements are continuous, regardless of changes in roof elevation.	5.6.1.1	A.4.1.3
C NC N/A U	DIAPHRAGM REINFORCEMENT AT OPENINGS: There is reinforcing around all diaphragm openings larger than 50% of the building width in either major plan dimension.	5.6.1.5	A.4.1.8
C NC N/A U	STRAIGHT SHEATHING: All straight-sheathed diaphragms have aspect ratios less than 2-to-1 in the direction being considered.	5.6.2	A.4.2.1
C NC N/A U	SPANS: All wood diaphragms with spans greater than 24 ft (7.3 m) consist of wood structural panels or diagonal sheathing.	5.6.2	A.4.2.2

shear stress is 770 plf and 800 plf in 2 directions. Use "All other conditions" because walls are sheathed with gyp.

continues

Table 17-6 *(Continued)*. Collapse Prevention Structural Checklist for Building Type W2

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
C NC N/A U	DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 40 ft (12.2 m) and have aspect ratios less than or equal to 4-to-1.	5.6.2	A.4.2.3
C NC N/A U	OTHER DIAPHRAGMS: The diaphragms do not consist of a system other than wood, metal deck, concrete, or horizontal bracing.	5.6.5	A.4.7.1

Note: C = Compliant, NC = Noncompliant, N/A = Not Applicable, and U = Unknown.

ASCE 41-17 Non-Structural Checklist
For Amity Elementary School
Prepared By: tk1sc
Hazard Level: BSE-2E
Basic Performance Objective for Existing Buildings (BPOE): 4-D
Non-Structural Performance Level: Hazards Reduced
Seismicity: High

17.19 NONSTRUCTURAL CHECKLIST

The nonstructural checklist in Table 17-38 shall be completed for combinations of Performance Levels and Level of Seismicity as required by Table 4-6. Tier 1 screening shall include on-site investigation and condition assessment as required by Section 4.2.1.

Where applicable, each of the evaluation statements listed in this checklist shall be marked Compliant (C), Noncompliant (NC), Not Applicable (N/A), or Unknown (U) for a Tier 1 screening. Items that are deemed acceptable to the design professional in accordance with the evaluation statement shall be categorized as Compliant, whereas items that are determined by the design professional to require further investigation shall be categorized as Noncompliant or Unknown. For evaluation statements classified as Noncompliant or Unknown, the design professional is permitted to choose to conduct further investigation using the corresponding Tier 2 evaluation procedure listed next to each evaluation statement.

Compliant items shall be deemed by the design professional to satisfy the corresponding Performance Objective in the evaluation statement and shall meet all of the following conditions:

Table 17-38. Nonstructural Checklist

Status	Evaluation Statement[a,b]	Tier 2 Reference	Commentary Reference
Life Safety Systems			
C NC N/A U	**HR—not required; LS—LMH; PR—LMH.** FIRE SUPPRESSION PIPING: Fire suppression piping is anchored and braced in accordance with NFPA-13.	13.7.4	A.7.13.1
C NC N/A U	**HR—not required; LS—LMH; PR—LMH.** FLEXIBLE COUPLINGS: Fire suppression piping has flexible couplings in accordance with NFPA-13.	13.7.4	A.7.13.2
C NC N/A U	**HR—not required; LS—LMH; PR—LMH.** EMERGENCY POWER: Equipment used to power or control Life Safety systems is anchored or braced.	13.7.7	A.7.12.1
C NC N/A U	**HR—not required; LS—LMH; PR—LMH.** STAIR AND SMOKE DUCTS: Stair pressurization and smoke control ducts are braced and have flexible connections at seismic joints.	13.7.6	A.7.14.1
C NC N/A U	**HR—not required; LS—MH; PR—MH.** SPRINKLER CEILING CLEARANCE: Penetrations through panelized ceilings for fire suppression devices provide clearances in accordance with NFPA-13.	13.7.4	A.7.13.3
C NC N/A U	**HR—not required; LS—not required; PR—LMH.** EMERGENCY LIGHTING: Emergency and egress lighting equipment is anchored or braced.	13.7.9	A.7.3.1
Hazardous Materials			
C NC N/A U	**HR—LMH; LS—LMH; PR—LMH.** HAZARDOUS MATERIAL EQUIPMENT: Equipment mounted on vibration isolators and containing hazardous material is equipped with restraints or snubbers.	13.7.1	A.7.12.2
C NC N/A U	**HR—LMH; LS—LMH; PR—LMH.** HAZARDOUS MATERIAL STORAGE: Breakable containers that hold hazardous material, including gas cylinders, are restrained by latched doors, shelf lips, wires, or other methods.	13.8.3	A.7.15.1
C NC N/A U	**HR—MH; LS—MH; PR—MH.** HAZARDOUS MATERIAL DISTRIBUTION: Piping or ductwork conveying hazardous materials is braced or otherwise protected from damage that would allow hazardous material release.	13.7.3 13.7.5	A.7.13.4
C NC N/A U	**HR—MH; LS—MH; PR—MH.** SHUTOFF VALVES: Piping containing hazardous material, including natural gas, has shutoff valves or other devices to limit spills or leaks.	13.7.3 13.7.5	A.7.13.3
C NC N/A U	**HR—LMH; LS—LMH; PR—LMH.** FLEXIBLE COUPLINGS: Hazardous material ductwork and piping, including natural gas piping, have flexible couplings.	13.7.3 13.7.5	A.7.15.4
C NC N/A U	**HR—MH; LS—MH; PR—MH.** PIPING OR DUCTS CROSSING SEISMIC JOINTS: Piping or ductwork carrying hazardous material that either crosses seismic joints or isolation planes or is connected to independent structures has couplings or other details to accommodate the relative seismic displacements.	13.7.3 13.7.5 13.7.6	A.7.13.6
Partitions			
C NC N/A U	**HR—LMH; LS—LMH; PR—LMH.** UNREINFORCED MASONRY: Unreinforced masonry or hollow-clay tile partitions are braced at a spacing of at most 10 ft (3.0 m) in Low or Moderate Seismicity, or at most 6 ft (1.8 m) in High Seismicity.	13.6.2	A.7.1.1
C NC N/A U	**HR—LMH; LS—LMH; PR—LMH.** HEAVY PARTITIONS SUPPORTED BY CEILINGS: The tops of masonry or hollow-clay tile partitions are not laterally supported by an integrated ceiling system.	13.6.2	A.7.2.1
C NC N/A U	**HR—not required; LS—MH; PR—MH.** DRIFT: Rigid cementitious partitions are detailed to accommodate the following drift ratios: in steel moment frame, concrete moment frame, and wood frame buildings, 0.02; in other buildings, 0.005.	13.6.2	A.7.1.2
C NC N/A U	**HR—not required; LS—not required; PR—MH.** LIGHT PARTITIONS SUPPORTED BY CEILINGS: The tops of gypsum board partitions are not laterally supported by an integrated ceiling system.	13.6.2	A.7.2.1
C NC N/A U	**HR—not required; LS—not required; PR—MH.** STRUCTURAL SEPARATIONS: Partitions that cross structural separations have seismic or control joints.	13.6.2	A.7.1.3

continues

Table 17-38 *(Continued)*. Nonstructural Checklist

Status	Evaluation Statement[a,b]	Tier 2 Reference	Commentary Reference
C NC N/A U	**HR—not required; LS—not required; PR—MH.** TOPS: The tops of ceiling-high framed or panelized partitions have lateral bracing to the structure at a spacing equal to or less than 6 ft (1.8 m).	13.6.2	A.7.1.4
Ceilings			
C NC N/A U	**HR—H; LS—MH; PR—LMH.** SUSPENDED LATH AND PLASTER: Suspended lath and plaster ceilings have attachments that resist seismic forces for every 12 ft^2 (1.1 m^2) of area.	13.6.4	A.7.2.3
C NC N/A U	**HR—not required LS—MH; PR—LMH.** SUSPENDED GYPSUM BOARD: Suspended gypsum board ceilings have attachments that resist seismic forces for every 12 ft^2 (1.1 m^2) of area.	13.6.4	A.7.2.3
C NC N/A U	**HR—not required LS—not required; PR—MH.** INTEGRATED CEILINGS: Integrated suspended ceilings with continuous areas greater than 144 ft^2 (13.4 m^2) and ceilings of smaller areas that are not surrounded by restraining partitions are laterally restrained at a spacing no greater than 12 ft (3.6 m) with members attached to the structure above. Each restraint location has a minimum of four diagonal wires and compression struts, or diagonal members capable of resisting compression.	13.6.4	A.7.2.2
C NC N/A U	**HR—not required; LS—not required; PR—MH.** EDGE CLEARANCE: The free edges of integrated suspended ceilings with continuous areas greater than 144 ft^2 (13.4 m^2) have clearances from the enclosing wall or partition of at least the following: in Moderate Seismicity, 1/2 in. (13 mm); in High Seismicity, 3/4 in. (19 mm).	13.6.4	A.7.2.4
C NC N/A U	**HR—not required LS—not required; PR—MH.** CONTINUITY ACROSS STRUCTURE JOINTS: The ceiling system does not cross any seismic joint and is not attached to multiple independent structures.	13.6.4	A.7.2.5
C NC N/A U	**HR—not required LS—not required; PR—H.** EDGE SUPPORT: The free edges of integrated suspended ceilings with continuous areas greater than 144 ft^2 (13.4 m^2) are supported by closure angles or channels not less than 2 in. (51 mm) wide.	13.6.4	A.7.2.6
C NC N/A U	**HR—not required LS—not required; PR—H.** SEISMIC JOINTS: Acoustical tile or lay-in panel ceilings have seismic separation joints such that each continuous portion of the ceiling is no more than 2,500 ft^2 (232.3 m^2) and has a ratio of long-to-short dimension no more than 4-to-1.	13.6.4	A.7.2.7
Light Fixtures			
C NC N/A U	**HR—not required LS—MH; PR—MH.** INDEPENDENT SUPPORT: Light fixtures that weigh more per square foot than the ceiling they penetrate are supported independent of the grid ceiling suspension system by a minimum of two wires at diagonally opposite corners of each fixture.	13.6.4 13.7.9	A.7.3.2
C NC N/A U	**HR—not required LS—not required; PR—H.** PENDANT SUPPORTS: Light fixtures on pendant supports are attached at a spacing equal to or less than 6 ft. Unbraced suspended fixtures are free to allow a 360-degree range of motion at an angle not less than 45 degrees from horizontal without contacting adjacent components. Alternatively, if rigidly supported and/or braced, they are free to move with the structure to which they are attached without damaging adjoining components. Additionally, the connection to the structure is capable of accommodating the movement without failure.	13.7.9	A.7.3.3
C NC N/A U	**HR—not required; LS—not required; PR—H.** LENS COVERS: Lens covers on light fixtures are attached with safety devices.	13.7.9	A.7.3.4
Cladding and Glazing			
C NC N/A U	**HR—MH; LS—MH; PR—MH.** CLADDING ANCHORS: Cladding components weighing more than 10 lb/ft^2 (0.48 kN/m^2) are mechanically anchored to the structure at a spacing equal to or less than the following: for Life Safety in Moderate Seismicity, 6 ft (1.8 m); for Life Safety in High Seismicity and for Position Retention in any seismicity, 4 ft (1.2 m)	13.6.1	A.7.4.1

continues

Table 17-38 *(Continued)*. Nonstructural Checklist

Status	Evaluation Statement[a,b]	Tier 2 Reference	Commentary Reference
C NC N/A U	**HR—not required LS—MH; PR—MH.** CLADDING ISOLATION: For steel or concrete moment-frame buildings, panel connections are detailed to accommodate a story drift ratio by the use of rods attached to framing with oversize holes or slotted holes of at least the following: for Life Safety in Moderate Seismicity, 0.01; for Life Safety in High Seismicity and for Position Retention in any seismicity, 0.02, and the rods have a length-to-diameter ratio of 4.0 or less.	13.6.1	A.7.4.3
C NC N/A U	**HR—MH; LS—MH; PR—MH.** MULTI-STORY PANELS: For multi-story panels attached at more than one floor level, panel connections are detailed to accommodate a story drift ratio by the use of rods attached to framing with oversize holes or slotted holes of at least the following: for Life Safety in Moderate Seismicity, 0.01; for Life Safety in High Seismicity and for Position Retention in any seismicity, 0.02, and the rods have a length-to-diameter ratio of 4.0 or less.	13.6.1	A.7.4.4
C NC N/A U	**HR—not required LS—MH; PR—MH.** THREADED RODS: Threaded rods for panel connections detailed to accommodate drift by bending of the rod have a length-to-diameter ratio greater than 0.06 times the story height in inches for Life Safety in Moderate Seismicity and 0.12 times the story height in inches for Life Safety in High Seismicity and Position Retention in any seismicity.	13.6.1	A.7.4.9
C NC N/A U	**HR—MH; LS—MH; PR—MH.** PANEL CONNECTIONS: Cladding panels are anchored out of plane with a minimum number of connections for each wall panel, as follows: for Life Safety in Moderate Seismicity, 2 connections; for Life Safety in High Seismicity and for Position Retention in any seismicity, 4 connections.	13.6.1.4	A.7.4.5
C NC N/A U	**HR—MH; LS—MH; PR—MH.** BEARING CONNECTIONS: Where bearing connections are used, there is a minimum of two bearing connections for each cladding panel.	13.6.1.4	A.7.4.6
C NC N/A U	**HR—MH; LS—MH; PR—MH.** INSERTS: Where concrete cladding components use inserts, the inserts have positive anchorage or are anchored to reinforcing steel.	13.6.1.4	A.7.4.7
C NC N/A U	**HR—not required LS—MH; PR—MH.** OVERHEAD GLAZING: Glazing panes of any size in curtain walls and individual interior or exterior panes more than 16 ft^2 (1.5 m^2) in area are laminated annealed or laminated heat-strengthened glass and are detailed to remain in the frame when cracked.	13.6.1.5	A.7.4.8
Masonry Veneer			
C NC N/A U	**HR—not required LS—LMH; PR—LMH.** TIES: Masonry veneer is connected to the backup with corrosion-resistant ties. There is a minimum of one tie for every 2-2/3 ft^2 (0.25 m^2), and the ties have spacing no greater than the following: for Life Safety in Low or Moderate Seismicity, 36 in. (914 mm); for Life Safety in High Seismicity and for Position Retention in any seismicity, 24 in. (610 mm).	13.6.1.2	A.7.5.1
C NC N/A U	**HR—not required LS—LMH; PR—LMH.** SHELF ANGLES: Masonry veneer is supported by shelf angles or other elements at each floor above the ground floor.	13.6.1.2	A.7.5.2
C NC N/A U	**HR—not required LS—LMH; PR—LMH.** WEAKENED PLANES: Masonry veneer is anchored to the backup adjacent to weakened planes, such as at the locations of flashing.	13.6.1.2	A.7.5.3
C NC N/A U	**HR—LMH; LS—LMH; PR—LMH.** UNREINFORCED MASONRY BACKUP: There is no unreinforced masonry backup.	13.6.1.1 13.6.1.2	A.7.7.2
C NC N/A U	**HR—not required LS—MH; PR—MH.** STUD TRACKS: For veneer with cold-formed steel stud backup, stud tracks are fastened to the structure at a spacing equal to or less than 24 in. (610 mm) on center.	13.6.1.1 13.6.1.2	A.7.6.1

continues

Table 17-38 *(Continued)*. Nonstructural Checklist

Status	Evaluation Statement[a,b]	Tier 2 Reference	Commentary Reference
C NC N/A U	**HR—not required; LS—MH; PR—MH**. ANCHORAGE: For veneer with concrete block or masonry backup, the backup is positively anchored to the structure at a horizontal spacing equal to or less than 4 ft along the floors and roof.	13.6.1.1 13.6.1.2	A.7.7.1
C NC N/A U	**HR—not required; LS—not required; PR—MH**. WEEP HOLES: In veneer anchored to stud walls, the veneer has functioning weep holes and base flashing.	13.6.1.2	A.7.5.6
C NC N/A U	**HR—not required; LS—not required; PR—MH**. OPENINGS: For veneer with cold-formed-steel stud backup, steel studs frame window and door openings.	13.6.1.1 13.6.1.2	A.7.6.2
Parapets, Cornices, Ornamentation, and Appendages			
C NC N/A U	**HR—LMH; LS—LMH; PR—LMH**. URM PARAPETS OR CORNICES: Laterally unsupported unreinforced masonry parapets or cornices have height-to-thickness ratios no greater than the following: for Life Safety in Low or Moderate Seismicity, 2.5; for Life Safety in High Seismicity and for Position Retention in any seismicity, 1.5.	13.6.5	A.7.8.1
C NC N/A U	**HR—not required; LS—LMH; PR—LMH**. CANOPIES: Canopies at building exits are anchored to the structure at a spacing no greater than the following: for Life Safety in Low or Moderate Seismicity, 10 ft (3.0 m); for Life Safety in High Seismicity and for Position Retention in any seismicity, 6 ft (1.8 m).	13.6.6	A.7.8.2
C NC N/A U	**HR—H; LS—MH; PR—LMH**. CONCRETE PARAPETS: Concrete parapets with height-to-thickness ratios greater than 2.5 have vertical reinforcement.	13.6.5	A.7.8.3
C NC N/A U	**HR—MH; LS—MH; PR—LMH**. APPENDAGES: Cornices, parapets, signs, and other ornamentation or appendages that extend above the highest point of anchorage to the structure or cantilever from components are reinforced and anchored to the structural system at a spacing equal to or less than 6 ft (1.8 m). This evaluation statement item does not apply to parapets or cornices covered by other evaluation statements.	13.6.6	A.7.8.4
Masonry Chimneys			
C NC N/A U	**HR—LMH; LS—LMH; PR—LMH**. URM CHIMNEYS: Unreinforced masonry chimneys extend above the roof surface no more than the following: for Life Safety in Low or Moderate Seismicity, 3 times the least dimension of the chimney; for Life Safety in High Seismicity and for Position Retention in any seismicity, 2 times the least dimension of the chimney.	13.6.7	A.7.9.1
C NC N/A U	**HR—LMH; LS—LMH; PR—LMH**. ANCHORAGE: Masonry chimneys are anchored at each floor level, at the topmost ceiling level, and at the roof.	13.6.7	A.7.9.2
Stairs			
C NC N/A U	**HR—not required; LS—LMH; PR—LMH**. STAIR ENCLOSURES: Hollow-clay tile or unreinforced masonry walls around stair enclosures are restrained out of plane and have height-to-thickness ratios not greater than the following: for Life Safety in Low or Moderate Seismicity, 15-to-1; for Life Safety in High Seismicity and for Position Retention in any seismicity, 12-to-1.	13.6.2 13.6.8	A.7.10.1
C NC N/A U	**HR—not required; LS—LMH; PR—LMH**. STAIR DETAILS: The connection between the stairs and the structure does not rely on post-installed anchors in concrete or masonry, and the stair details are capable of accommodating the drift calculated using the Quick Check procedure of Section 4.4.3.1 for moment-frame structures or 0.5 in. for all other structures without including any lateral stiffness contribution from the stairs.	13.6.8	A.7.10.2
Contents and Furnishings			
C NC N/A U	**HR—LMH; LS—MH; PR—MH**. INDUSTRIAL STORAGE RACKS: Industrial storage racks or pallet racks more than 12 ft high meet the requirements of ANSI/RMI MH 16.1 as modified by ASCE 7, Chapter 15.	13.8.1	A.7.11.1

continues

Table 17-38 *(Continued)*. Nonstructural Checklist

Status	Evaluation Statement[a,b]	Tier 2 Reference	Commentary Reference
C NC N/A U	**HR—not required; LS—H; PR—MH.** TALL NARROW CONTENTS: Contents more than 6 ft (1.8 m) high with a height-to-depth or height-to-width ratio greater than 3-to-1 are anchored to the structure or to each other.	13.8.2	A.7.11.2
C NC N/A U	**HR—not required; LS—H; PR—H.** FALL-PRONE CONTENTS: Equipment, stored items, or other contents weighing more than 20 lb (9.1 kg) whose center of mass is more than 4 ft (1.2 m) above the adjacent floor level are braced or otherwise restrained.	13.8.2	A.7.11.3
C NC N/A U	**HR—not required; LS—not required; PR—MH.** ACCESS FLOORS: Access floors more than 9 in. (229 mm) high are braced.	13.6.10	A.7.11.4
C NC N/A U	**HR—not required; LS—not required; PR—MH.** EQUIPMENT ON ACCESS FLOORS: Equipment and other contents supported by access floor systems are anchored or braced to the structure independent of the access floor.	13.7.7 13.6.10	A.7.11.5
C NC N/A U	**HR—not required; LS—not required; PR—H.** SUSPENDED CONTENTS: Items suspended without lateral bracing are free to swing from or move with the structure from which they are suspended without damaging themselves or adjoining components.	13.8.2	A.7.11.6
Mechanical and Electrical Equipment			
C NC N/A U	**HR—not required; LS—H; PR—H.** FALL-PRONE EQUIPMENT: Equipment weighing more than 20 lb (9.1 kg) whose center of mass is more than 4 ft (1.2 m) above the adjacent floor level, and which is not in-line equipment, is braced.	13.7.1 13.7.7	A.7.12.4
C NC N/A U	**HR—not required; LS—H; PR—H.** IN-LINE EQUIPMENT: Equipment installed in line with a duct or piping system, with an operating weight more than 75 lb (34.0 kg), is supported and laterally braced independent of the duct or piping system.	13.7.1	A.7.12.5
C NC N/A U	**HR—not required; LS—H; PR—MH.** TALL NARROW EQUIPMENT: Equipment more than 6 ft (1.8 m) high with a height-to-depth or height-to-width ratio greater than 3-to-1 is anchored to the floor slab or adjacent structural walls.	13.7.1 13.7.7	A.7.12.6
C NC N/A U	**HR—not required; LS—not required; PR—MH.** MECHANICAL DOORS: Mechanically operated doors are detailed to operate at a story drift ratio of 0.01.	13.6.9	A.7.12.7
C NC N/A U	**HR—not required; LS—not required; PR—H.** SUSPENDED EQUIPMENT: Equipment suspended without lateral bracing is free to swing from or move with the structure from which it is suspended without damaging itself or adjoining components.	13.7.1 13.7.7	A.7.12.8
C NC N/A U	**HR—not required; LS—not required; PR—H.** VIBRATION ISOLATORS: Equipment mounted on vibration isolators is equipped with horizontal restraints or snubbers and with vertical restraints to resist overturning.	13.7.1	A.7.12.9
C NC N/A U	**HR—not required; LS—not required; PR—H.** HEAVY EQUIPMENT: Floor-supported or platform-supported equipment weighing more than 400 lb (181.4 kg) is anchored to the structure.	13.7.1 13.7.7	A.7.12.10
C NC N/A U	**HR—not required; LS—not required; PR—H.** ELECTRICAL EQUIPMENT: Electrical equipment is laterally braced to the structure.	13.7.7	A.7.12.11
C NC N/A U	**HR—not required; LS—not required; PR—H.** CONDUIT COUPLINGS: Conduit greater than 2.5 in. (64 mm) trade size that is attached to panels, cabinets, or other equipment and is subject to relative seismic displacement has flexible couplings or connections.	13.7.8	A.7.12.12
Piping			
C NC N/A U	**HR—not required; LS—not required; PR—H.** FLEXIBLE COUPLINGS: Fluid and gas piping has flexible couplings.	13.7.3 13.7.5	A.7.13.2

continues

Table 17-38 *(Continued)*. Nonstructural Checklist

Status	Evaluation Statement[a,b]	Tier 2 Reference	Commentary Reference
C NC N/A U	**HR—not required; LS—not required; PR—H.** FLUID AND GAS PIPING: Fluid and gas piping is anchored and braced to the structure to limit spills or leaks.	13.7.3 13.7.5	A.7.13.4
C NC N/A U	**HR—not required; LS—not required; PR—H.** C-CLAMPS: One-sided C-clamps that support piping larger than 2.5 in. (64 mm) in diameter are restrained.	13.7.3 13.7.5	A.7.13.5
C NC N/A U	**HR—not required; LS—not required; PR—H.** PIPING CROSSING SEISMIC JOINTS: Piping that crosses seismic joints or isolation planes or is connected to independent structures has couplings or other details to accommodate the relative seismic displacements.	13.7.3 13.7.5	A.7.13.6
Ducts			
C NC N/A U	**HR—not required; LS—not required; PR—H.** DUCT BRACING: Rectangular ductwork larger than 6 ft^2 (0.56 m^2) in cross-sectional area and round ducts larger than 28 in. (711 mm) in diameter are braced. The maximum spacing of transverse bracing does not exceed 30 ft (9.2 m). The maximum spacing of longitudinal bracing does not exceed 60 ft (18.3 m).	13.7.6	A.7.14.2
C NC N/A U	**HR—not required; LS—not required; PR—H.** DUCT SUPPORT: Ducts are not supported by piping or electrical conduit.	13.7.6	A.7.14.3
C NC N/A U	**HR—not required; LS—not required; PR—H.** DUCTS CROSSING SEISMIC JOINTS: Ducts that cross seismic joints or isolation planes or are connected to independent structures have couplings or other details to accommodate the relative seismic displacements.	13.7.6	A.7.14.4
Elevators			
C NC N/A U	**HR—not required; LS—H; PR—H.** RETAINER GUARDS: Sheaves and drums have cable retainer guards.	13.7.11	A.7.16.1
C NC N/A U	**HR—not required; LS—H; PR—H.** RETAINER PLATE: A retainer plate is present at the top and bottom of both car and counterweight.	13.7.11	A.7.16.2
C NC N/A U	**HR—not required; LS—not required; PR—H.** ELEVATOR EQUIPMENT: Equipment, piping, and other components that are part of the elevator system are anchored.	13.7.11	A.7.16.3
C NC N/A U	**HR—not required; LS—not required; PR—H.** SEISMIC SWITCH: Elevators capable of operating at speeds of 150 ft/min (0.30 m/min) or faster are equipped with seismic switches that meet the requirements of ASME A17.1 or have trigger levels set to 20% of the acceleration of gravity at the base of the structure and 50% of the acceleration of gravity in other locations.	13.7.11	A.7.16.4
C NC N/A U	**HR—not required; LS—not required; PR—H.** SHAFT WALLS: Elevator shaft walls are anchored and reinforced to prevent toppling into the shaft during strong shaking.	13.7.11	A.7.16.5
C NC N/A U	**HR—not required; LS—not required; PR—H.** COUNTERWEIGHT RAILS: All counterweight rails and divider beams are sized in accordance with ASME A17.1.	13.7.11	A.7.16.6
C NC N/A U	**HR—not required; LS—not required; PR—H.** BRACKETS: The brackets that tie the car rails and the counterweight rail to the structure are sized in accordance with ASME A17.1.	13.7.11	A.7.16.7
C NC N/A U	**HR—not required; LS—not required; PR—H.** SPREADER BRACKET: Spreader brackets are not used to resist seismic forces.	13.7.11	A.7.16.8
C NC N/A U	**HR—not required; LS—not required; PR—H.** GO-SLOW ELEVATORS: The building has a go-slow elevator system.	13.7.11	A.7.16.9

Note: C = Compliant, NC = Noncompliant, N/A = Not Applicable, and U = Unknown.
[a] Performance Level: HR = Hazards Reduced, LS = Life Safety, and PR = Position Retention.
[b] Level of Seismicity: L = Low, M = Moderate, and H = High.

APPENDIX E: QUICK CHECK HAND CALCULATIONS

Project Calcs

tk1sc

Project Name: AMITY ELEMENTARY SCHOOL	Project No.:
Computed by: RK	Date:
	Page:
Checked by:	

BUILDING WEIGHT

→ 1983 Building:

Walls: 7" Precast Walls 87.5psf
Wood Stud Walls 10 psf

Trib Wall Heigh = 5 ft
Length of Precast = 600 ft
Length of Wood = 1286 ft

⇒ Total Wall Weight = 327 K

Roof: DL = 20 psf
Area = 39,300 ft²
⇒ Total Weight = 786 K

→ 1992 Building:

Walls: 7" Tilt-Up Walls 87.5psf
Wood Stud Walls 10psf

Trib Wall Height = 5 ft
Length of Tilt-Up = 141 ft
Length of Wood = 219 ft
⇒ Total Wall Weight = 73K

Project Calcs

tk1sc

Project Name:	Project No.:
Computed by:	Date:
	Page:
Checked by:	

Roof: DL = 20 psf

Area = 6,500 ft²

⇒ Total Weight = 130 K

→ Total Building Weight

W = 327K + 786K + 73K + 130K

W = 1,316 K

Project Calcs

tk1sc

Project Name:	Project No.:
Computed by:	Date:
	Page:
Checked by:	

TIER 1 CALCULATIONS

$V = C S_a W$ (4-1)

$S_a = S_{x1}/T \leq S_{xs}$

$T = C_t h_n^{\beta}$

$C_t = 0.02$

$h_n = 18'$

$\beta = 0.75$

$\Rightarrow T = 0.02 \times 18^{0.75} = 0.175$

$S_{x1} = 0.585g$

$\Rightarrow S_a = 0.585/0.17 = 3.44g$

$S_{xs} = 0.886g$

$\Rightarrow$ Use $S_a = 0.886g$

$C = 1.3$ (Wood) $C = 1.0$ (Pre-Cast/Tilt-up)

$\Rightarrow V_{wood} = 1.3 \times 0.886 \times 1.216k = 1.515k$

$V_{conc} = 1.0 \times 0.886 \times 1.216k = 1.166k$

Project Calcs

tk1sc

Project Name:	Project No.:
Computed by:	Date:
	Page:
Checked by:	

→ Shear Stress (W2)

$V_j = 1,515\,k$

$M_s = \frac{4.5+3}{2} = 3.75$

Transverse Direction,

$A_w = 525\ ft$

$\Rightarrow v_j^{Avg} = \frac{1}{3.75} \times \frac{1,515k}{525\,ft} = 770\ plf$

Longitudinal Direction,

$A_w = 500\ ft$

$\Rightarrow v_j^{Avg} = \frac{1}{3.75} \times \frac{1,515k}{500\,ft} = 808\ plf$

→ Wall Shear Stress Check (PCI)

$V_j = 1,166\,k$

$M_s = 3.75$

Transverse Direction,

$A_w = 7in \times 481\,ft = 40404\,in^2$

$\Rightarrow v_j^{Avg} = \frac{1}{3.75} \times \frac{1,166k}{40404\,in^2} = 8.2\,ksi$

Project Calcs

tk1sc

Project Name:	Project No.:
Computed by:	Date:
	Page:
Checked by:	

Longitudinal Direction,

$A_w = 7in \times 243ft$

$\Rightarrow v_s^{Avg} = \frac{1}{375} \times \frac{1,166k}{2042\ in^2} = 15psi$

→ Reinforcing Steel (PCI)

Vertical Reinforcing: #4 @ 14" (1980 Building)

Wall thickness = 7"

$\rho_v = \frac{0.2in^2}{7" \times 14"} = 0.002 > 0.0012$ OK

Horizontal Reinforcing: #4 @ 14"

$\rho_h = 0.002 \geq 0.002$ OK

(1992 building has #4 @ 12", greater than 1980 building, OK)

Project Calcs

tk1sc

Project Name:	Project No.:
Computed by:	Date:
	Page:
Checked by:	

→ Overturning (Basic Checklist)

$0.6 S_a = 0.6 \times 0.886 = 0.53$

Building Height (Max) = 26 ft

Least Horizontal Dimension = 200 ft

$\text{Ratio} = \frac{200 \text{ ft}}{26 \text{ ft}} = 7.7 > 0.53$ OK

APPENDIX F: MID/SOUTHERN WILLAMETTE VALLEY LIQUEFACTION SUSCEPTIBILITY MAP

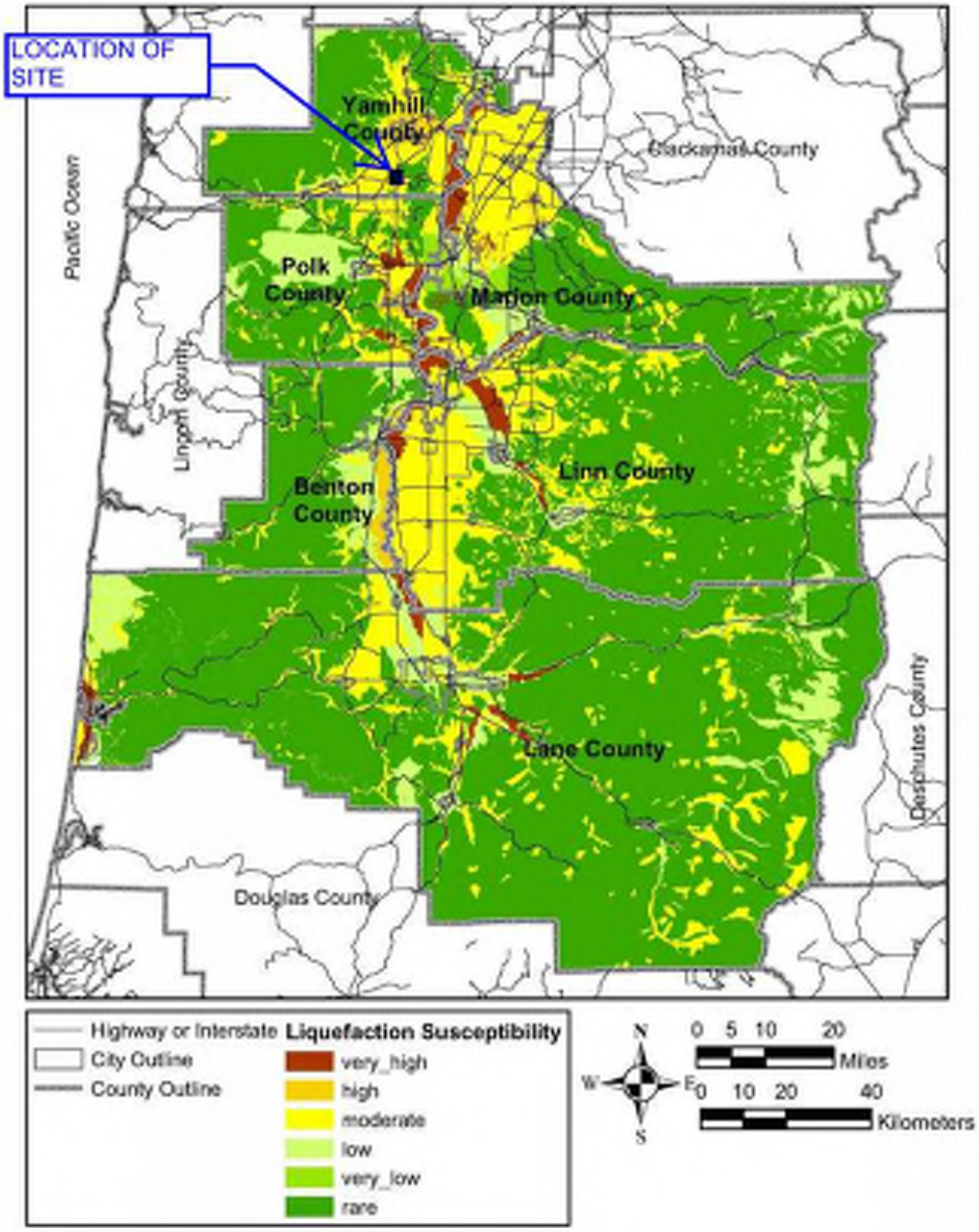

Figure 17. Liquefaction hazard map for the study area displays the six liquefaction potential classes used in this study. Benton County data were modified from Wang and others (2001).

APPENDIX G: RETROFIT COST ESTIMATES

COST SUMMARY ESTIMATE

Description	Unit Cost	Number of Units	Total Cost
Shear wall improvements	$ 450.00	375 LF	$ 168,750.00
Shear wall foundations	$ 100,000.00	1 ea	$ 100,000.00
Shear wall collectors and chords	$ 75.00	1000 LF	$ 75,000.00
Blocking and plate connections at roof diaphragm	$ 125.00	2000 LF	$ 250,000.00
Out of plane anchorage at exterior walls	$ 150.00	175 ea	$ 26,250.00
Shut off valves and flexible couplings	$ 5,000.00	1 ea	$ 5,000.00
Geotechnical Study	$ 10,000.00	1 ea	$ 10,000.00

Sub Total	=	$ 635,000.00
Soft Costs	=	$ 254,000.00
Total Cost	=	**$ 889,000.00**

Note:
This estimate includes allowances for selective demolition and modest replacement of architectural materials, including wall finishes, trim, and roofing.

AMITY MIDDLE SCHOOL

115 Church Ave
Amity, OR 97101

SEISMIC EVALUATION FINAL REPORT

Prepared By:
tk1sc
616 1st Avenue, Suite 500
Seattle, WA 98104

Report Date: November 21, 2019
Project Number: 2019-0593

Prepared For:
Amity School District
807 Trade Street
Amity, OR 97101

Table of Contents

INTRODUCTION

tk1sc has performed a seismic assessment of Amity Middle School in Amity, Oregon, based on the Tier 1 screening procedure per ASCE 41-17. The facility is located at 115 Church Ave, Amity, Oregon 97101.

Using the ASCE 41-17 standard, structural components were evaluated to the "Limited Safety" performance level and non-structural components were evaluated to the "Hazards Reduced" performance level to identify potential deficiencies and provide recommendations for further investigation as well as possible upgrade solutions to mitigate these deficiencies.

APPLICABLE CODES AND STANDARDS

Below is a list of governing building codes (original and current), as well as the applicable seismic evaluation and retrofit standard:

CODES AND STANDARDS	
Original Governing Building Code:	Unknown
Current Governing Building Code:	2014 Oregon Structural Specialty Code
Seismic Eval/Retrofit Referenced Standard:	American Society of Civil Engineers, "Seismic Evaluation and Retrofit of Existing Buildings" (ASCE 41-17)

BUILDING DESCRIPTION

The building located at 115 Church Ave, Amity, Oregon 97101 is a one-story building with a partial basement measuring approximately 210 feet by 130 feet. The original facility was constructed in 1935 and has been modified several times since its original construction:

- The gymnasium was extended on the west side of the original building. It is unknown when this was added, but is estimated to have occurred in the 1950's.
- An old army barracks building was relocated to the southern side of the site and integrated into the facility. This addition most likely occurred in the 1950's as well.
- An elevator and stair tower and vestibule was added between the original facility and the relocated army barracks. This was estimated to have occurred in the 1990's.
- In 2002, a partial seismic retrofit was performed on the facility. This retrofit addressed issues relating to diaphragm deficiencies, continuity in lateral force resisting elements, and connections between the diaphragm, shear walls, and foundations. Retrofit drawings were prepared by WDY and dated April 23, 2002.

See Figure 1 below for a map of the facility.

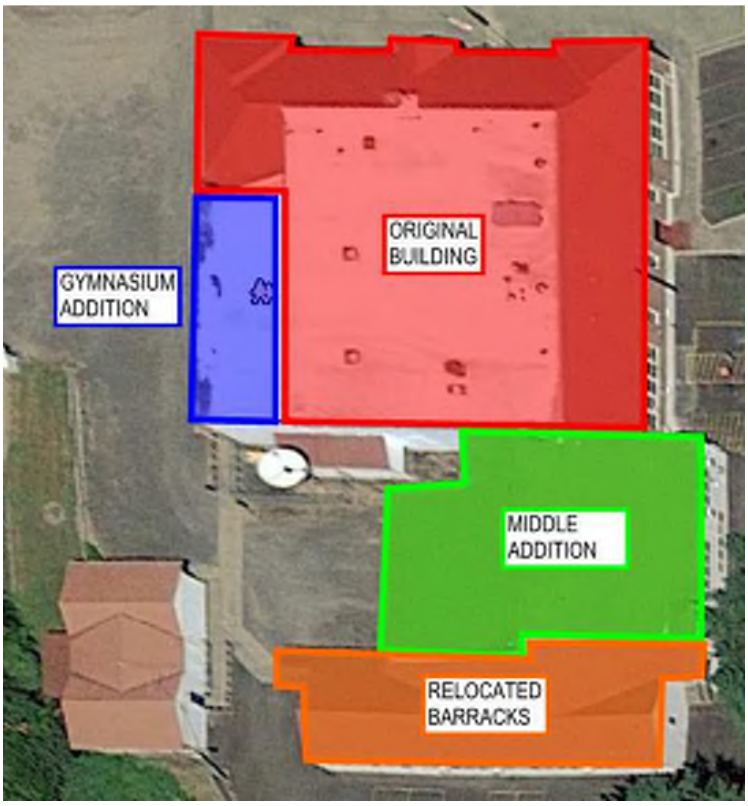

Figure 1 - Facility Map

SITE OBSERVATIONS

A site observation was performed by Jason Tornquist, PE, SE, on August 20th, 2019 in order to assess the overall condition of the facility, as well as to verify general conformance of the existing conditions with the available structural drawings.

Existing drawings of the original building, as well as retrofit drawings for the entire facility are available. These drawings were prepared by C.N. Freeman (dated 10/5/1935) and WDY (dated 4/23/2002), respectively, and were used for the seismic assessment.

The portions of the facility that were built sometime in the 1950's do not have available as-built drawings. These areas were evaluated solely based on the site investigation as well as the information included in the retrofit drawings. No demolition or invasive investigation was performed as a part of this site visit. Accordingly, the site visit and resulting information was limited to exposed structural elements visible from occupiable spaces, as well as accessible attics and crawlspaces.

GRAVITY LOAD RESISTING SYSTEM

The 1935 building and the gymnasium addition is constructed of wood framing (light frame wood) with brick veneer. The roof consists of straight wood sheathing over stick-framed trusses. Exterior bearing walls consist primarily of 2x6 framing at 16" on center and are covered with straight wood sheathing and brick veneer on the exterior face, with lath and plaster finish on the interior face. Interior bearing and partition walls consist of similar framing (2x6 framing at 16" on center) with lath and plaster finish.

The first floor sits above a crawlspace with wood posts and wood beams on shallow foundations, and concrete walls which support stud walls above form a basement under a portion of the gymnasium addition.

The middle addition of the building has a wood framed sloped roof, over-framed at the barracks building. Roof sheathing and framing is unknown. Roof framing is supported by straight sheathed wood stud walls and wood columns.

The relocated army barracks has a straight sheathed roof supported with gable trusses. Walls are straight sheathed wood stud walls. This portion of the facility has a crawlspace below and is supported by concrete blocks.

LATERAL FORCE RESISTING SYSTEM

The lateral force resisting system aligns most closely with the Wood Light Frames (W1) building type. Per ASCE 41-17 Table 3-1, wood light frame systems are defined as follows:

> *"Building loads are light, and the framing spans are short. Floor and roof framing consists of wood joists or rafters on wood studs spaced no more than 24 in. apart. The first-floor framing is supported directly on the foundation system or is raised up on cripple studs and post-and-beam supports. The foundation is permitted to consist of a variety of elements. Chimneys, where present, consist of solid brick masonry, masonry veneer, or wood walls. Floor and roof diaphragms consist of straight or diagonal lumber sheathing, tongue-and-groove planks, oriented strand board, plywood, or other materials. Shear walls are permitted to consist of straight or lumber sheathing, plank siding, oriented strand board, plywood, stucco, gypsum board, particleboard, fiberboard, or similarly performing materials. Interior partitions are sheathed from floor to floor with plaster or gypsum board."*

Wood diaphragms are constructed of straight sheathing in the original facility, and plywood sheathing in the 1950's addition. Shear walls appear to be straight or diagonally sheathed light frame wood walls.

EXISTING FOUNDATION SYSTEM

The building is supported by shallow foundations. Wood shear walls are supported by concrete stem walls that sit on continuous wall footings. Wood posts are supported by spread footings, however, there appears to be no connection tying posts to the footing. At the relocated army barracks, the building appears to be supported on concrete stem walls and continuous footings.

PREVIOUS RETROFIT WORK

A partial seismic retrofit was performed on this facility in 2002. Retrofit measures include:

- The roof diaphragm in the original building was overlaid with ½" plywood sheathing.
- Connections between the diaphragm and vertical lateral force resisting elements were added with diaphragm nailing into blocking and clips to attaching blocking to walls.
- Many shear walls with discontinuous sheathing were improved by adding new sheathing and blocking/nailing to provide a continuous load path.

- Wood shear walls were tied to concrete stem walls with Simpson clips and post installed anchors.
- Brick veneer was tied back to structure with helical ties at 16” on center in both horizontal and vertical directions in areas adjacent to key egress paths.
- The unreinforced brick chimney has been braced at the roof with Simpson straps and epoxy anchors.

Shear walls are not explicitly identified in the available as-built drawings, and it is difficult to determine through on-site investigation which walls are part of the lateral force resisting system. As such, the walls identified in the retrofit drawings that have had sheathing and/or connections added in order to provide a reliable shear transfer mechanism from the roof diaphragm to the foundation are the only walls that have been assumed to be a part of the lateral force resisting system used in the seismic analysis.

SEISMIC EVALUATION PERFORMANCE OBJECTIVES

The seismic evaluation of the Amity Middle School building was performed using *ASCE 41-17: Seismic Evaluation and Retrofit of Existing Buildings*. This standard defines various ground acceleration levels to be used in the investigation, depending on whether the evaluation/retrofit process is to be carried out to the equivalent standard of a new building (BSE-1N and BSE-2N), or to a reduced level (BSE-1E and BSE-2E). The reduced level of performance is based on the assumption that an existing building will have a shorter life span than that of a new building.

The Oregon Department of Education requires that the schools be evaluated as Risk Category III structures with the ability to perform to the Limited Safety Structural Performance Level (S-4) at the BSE-2E hazard level. This hazard level has a probability of exceedance of 5% over 50 years, or a 975-year return period. The basic performance objective for existing buildings for Limited Safety requires the use of the Collapse Prevention check lists, while the acceptance criteria for Tier 1 calculation-based quick checks be the average of Life Safety and Collapse Prevention.

The Oregon Department of Education Rule that outlines the requirements for the School Construction Matching Program does not explicitly provide requirements for the performance objectives to be used for non-structural performance. For this assessment, non-structural performance was reviewed against the “Hazards Reduced” (N-D) performance level, as this is consistent with the 41-17 requirements for Risk Category III buildings and the BSE-2E basic performance objective. See the glossary of terms for a full description of these performance levels.

BUILDING INFORMATION AND EVALUATION CRITERIA

The following is a summary of parameters used for the seismic evaluation of the building per ASCE 41-17:

BUILDING INFORMATION	
Site Latitude and Longitude:	45.122507, -123.203213
Year Built:	1935
Number of Stories:	1
Structural Performance Level:	Limited Safety (S-4)
Nonstructural Performance Level:	Hazards Reduced (N-D)
Design Spectral Response Acceleration Parameters:	S_{XS} = 0.824g (BSE-2E, 975-year return period) S_{X1} = 0.619g (BSE-2E, 975-year return period) S_a = 0.824g
Level of Seismicity:	High
Structure Type:	W1
Benchmark Building:	No

SEISMIC EVALULATION METHODOLOGY

An ASCE 41-17 Tier 1 assessment was performed to identify potential deficiencies of the existing structure and non-structural systems. The Tier 1 procedure utilizes a checklist of items to be evaluated and various quick check calculation methods to verify the adequacy of the lateral force resisting system's load path and to identify potential seismic vulnerabilities within the structure. Checklists include a basic checklist for the overall building, a checklist for each of the primary lateral force resisting systems, and a checklist for nonstructural components and systems. Each item is marked as "Compliant", Noncompliant", "Not Applicable", or "Unknown" based on the information available. For all items marked as either "Noncompliant" or "Unknown", further investigation may be required to either verify compliance or identify the need for retrofit measures.

ITEMS THAT MAY REQUIRE FUTHER INVESTIGATION

The lists below are a summary of checklist items that were marked as either "non-compliant" or "unknown". See Appendix C for full checklist results. Please note that not all items marked as NC or U below will require remediation. See the "Recommendations" section of this report for further information.

Key: NC = Noncompliant, U = Unknown

Basic Checklist

DESCRIPTION	STATUS	COMMENT
LIQUEFACTION	U	No geotechnical investigation was performed as part of this study, therefore the existence of soils susceptible to liquefaction within 50 ft of the foundation cannot be verified.
TIES BETWEEN FOUNDATION ELEMENTS	U	Not all existing drawings are available. Cannot verify all foundations are tied or restrained.

Collapse Prevention Structural Checklist for Building Type W1: Wood Light Frames

DESCRIPTION	STATUS	COMMENT
SHEAR STRESS CHECK	NC	Using the walls identified in the retrofit drawings as shear walls, the resulting stresses exceed the allowable limits.
NARROW WOOD SHEAR WALLS	NC	There are narrow wall piers identified in the retrofit drawings that received upgrades to transfer shear forces. These walls were presumably used for lateral force resistance.
CRIPPLE WALLS	U	Access in crawlspace is limited to verify bracing of cripple walls. Drawings not available to make a determination.
WOOD POSTS	NC	Posts do not have a connection to foundations.
GIRDER-COLUMN CONNECTION	NC	In crawlspace, girders are not positively connected to supporting posts.
ROOF CHORD CONTINUITY	U	Unable to verify roof chord continuity.
STRAIGHT SHEATHING	U	1935 building has plywood overlay from previously performed retrofit and is compliant. Additional buildings do not have overlay and type of sheathing is unknown.
SPANS	U	Original building has plywood overlay from previously performed retrofit and is compliant. Building additions have spans greater than 24 ft, however, type of sheathing is unknown.
DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS	NC	Retrofit drawings do not indicate blocking at plywood overlay and spans greater than 40 ft exist.

Nonstructural Checklist

HAZARDOUS MATERIALS		
DESCRIPTION	**STATUS**	**COMMENT**
SUSPENDED LATH AND PLASTER	NC	Suspended lath and plaster to do have attachments for seismic resistance

RECOMMENDATIONS

Based on the deficiencies identified above, tk1sc recommends addressing the items listed below. Items are listed in order of decreasing importance, with the most important items listed first.

- **Shear Wall Improvements:** The total length of shear walls in the facility is deficient, resulting in applied shear wall stresses exceeding allowable values. The previously performed seismic retrofit improved diaphragm to wall and wall to foundation connections in the 1935 and army barracks portions of the facility. However, no work was done to improve the shear capacity of the shear walls. To address this, existing shear walls throughout the facility should be improved by the addition of new plywood sheathing installed directly to existing wall studs. Additionally, in locations where the top and bottom wall connections were not already improved during the previously performed retrofit, connections should be made as shown in Figure 4 and Figure 5 in Appendix A. See Figure 2 in Appendix A for extents of shear wall improvement.
- **Diaphragm Improvements:** Portions of the building that did not receive plywood sheathing overlay as part of the previous retrofit and have a roof diaphragm of straight or diagonal sheathing, should have a new plywood diaphragm overlay installed. See Figure 3 in Appendix A for extents of diaphragm improvement.
- **Wood Post to Foundation Connections:** Wood posts do not have a positive attachment to supporting foundations. The addition of retrofit post bases fastened to wood posts and anchored to foundations with post-installed anchors will address this deficiency. See Figure 7 for connection detail.
- **Wood Post to Beam Connections:** Wood posts do not have positive connections to beams in the crawlspace. It is unknown whether that is also true at roof framing. To address this deficiency, post cap plates can be fastened to both sides of the beam and column. See Figure 6 for connection detail.
- **Liquefaction:** Per the Mid/Southern Willamette Valley Geologic Hazard map (See appendix F), the site is located in an area classified as a moderate risk to liquefaction. A geotechnical investigation should be conducted to verify whether there are soils susceptible to liquefaction within a depth of 50 ft of the building. Required remediation will depend on the results of this investigation.

APPENDIX A: SCHEMATIC UPGRADE SKETCHES

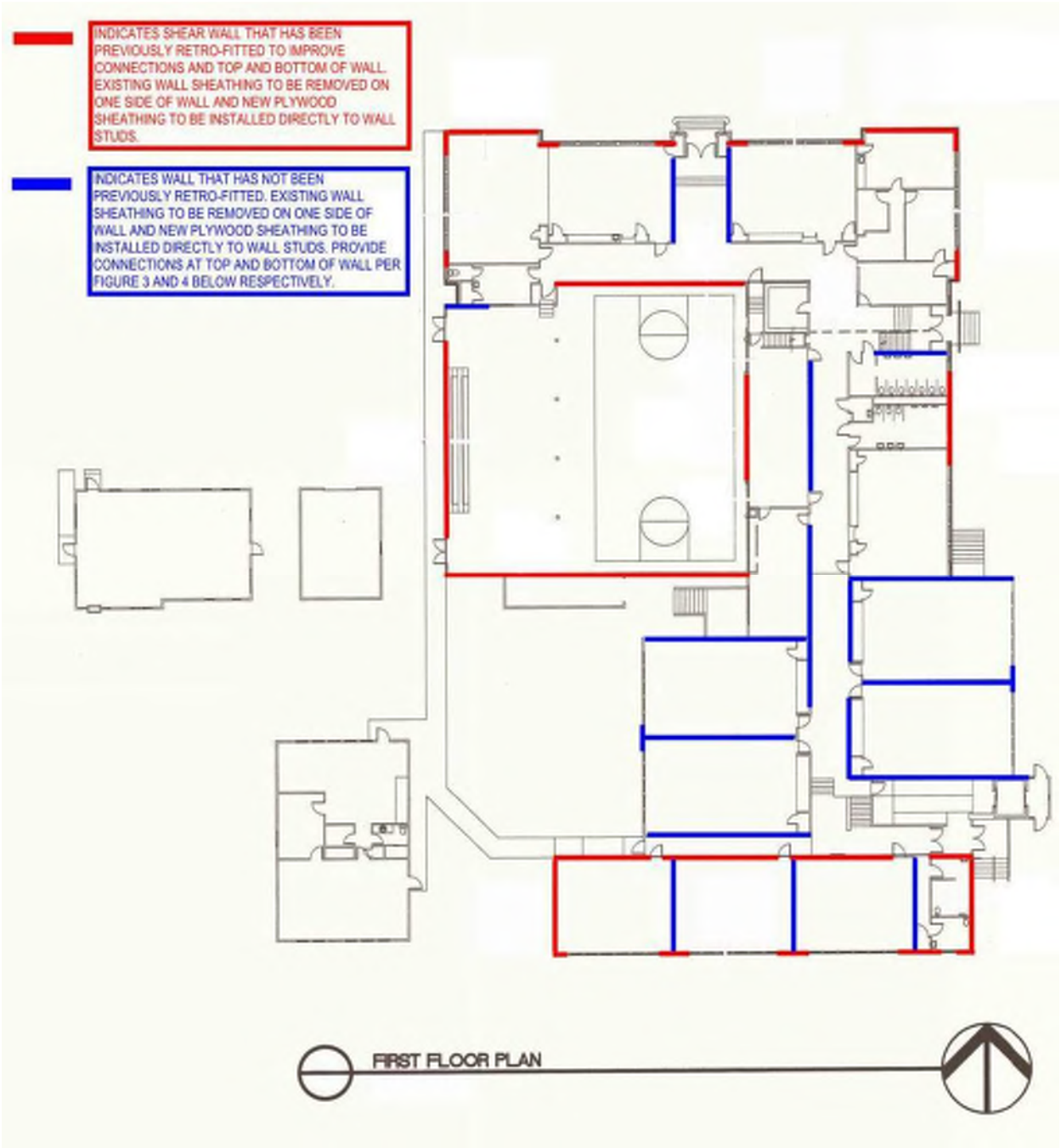

Figure 2 - Shear Wall Improvement Plan

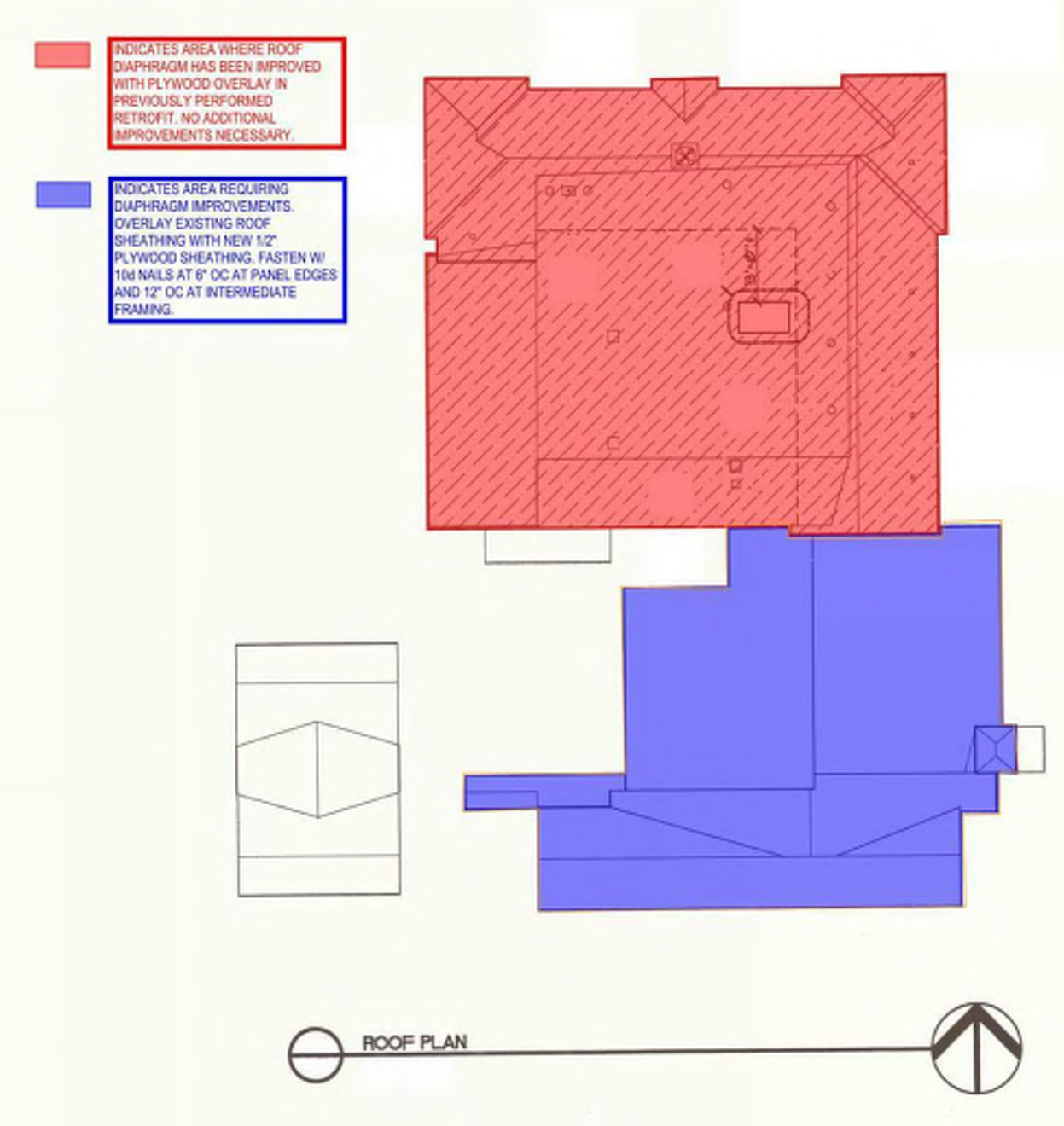

Figure 3 - Diaphragm Improvement Plan

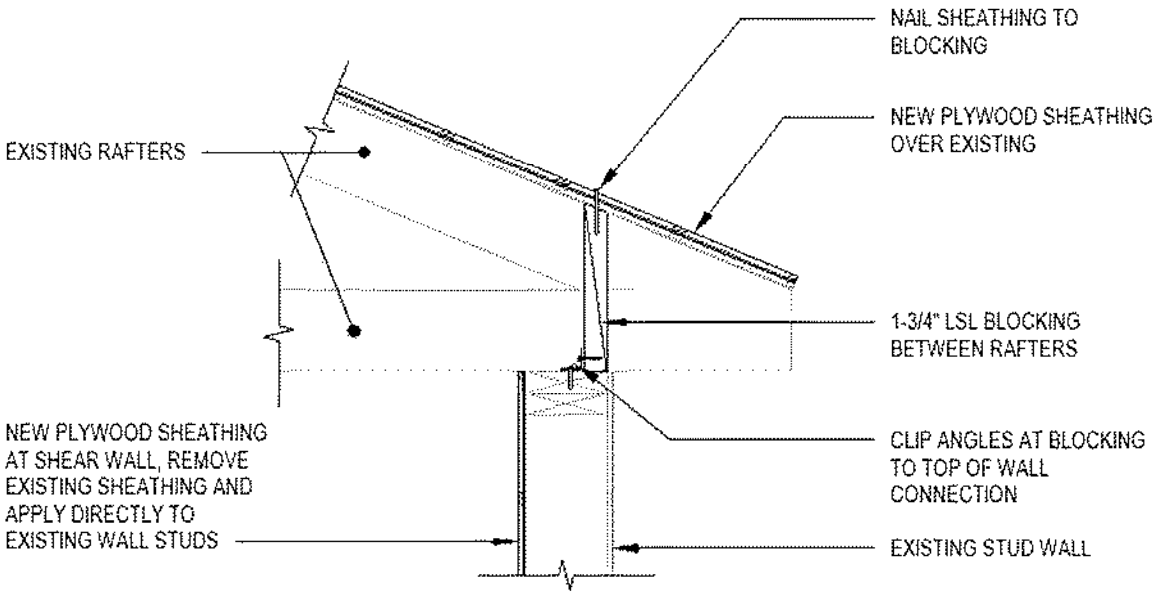

Figure 4 - Connection at Diaphragm to Top of Shear Wall

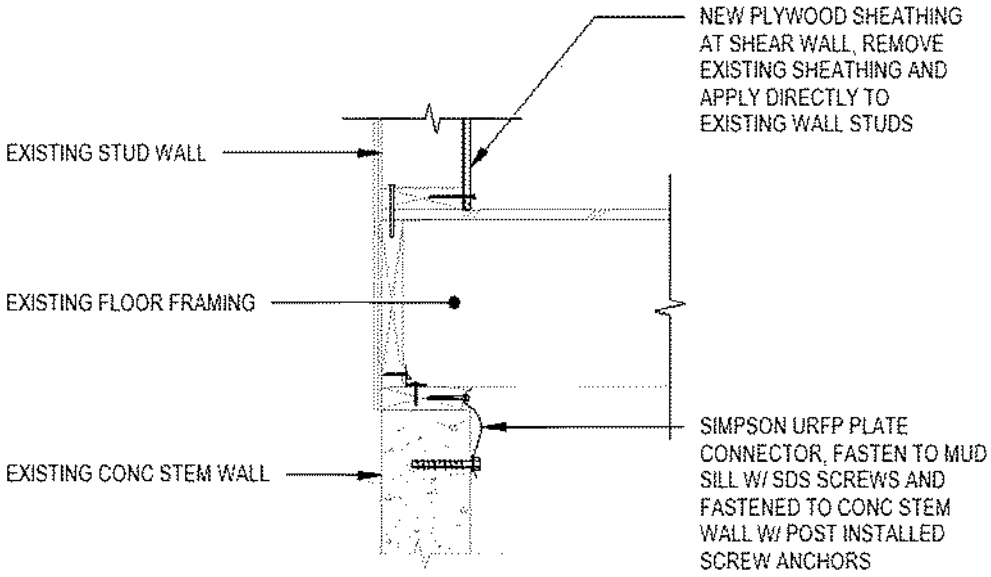

Figure 5 - Connection at Shear Wall to Conc Stem Wall

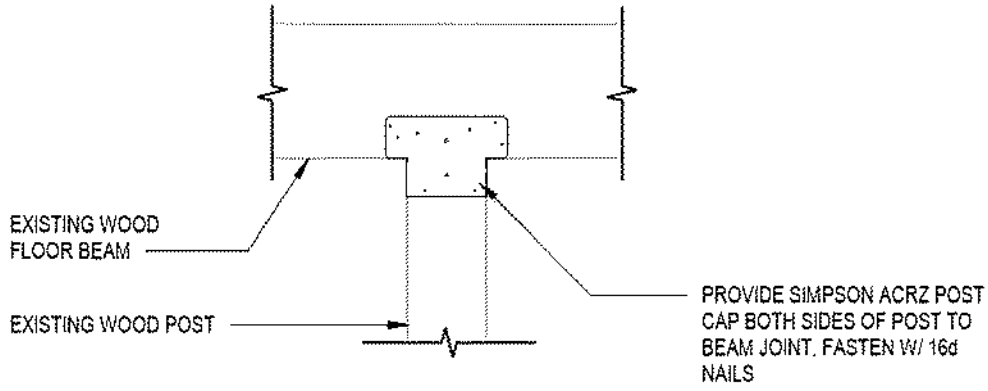

Figure 6 - Post to Beam Connection

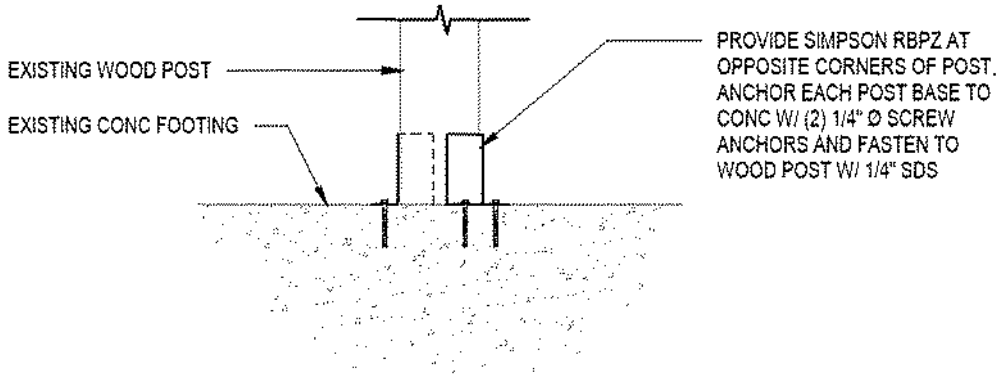

Figure 7 - Post to Foundation Connection

APPENDIX B: GLOSSARY OF TERMS

Tier 1 Screening - The purpose of the Tier 1 screening phase of the evaluation process is to quickly identify buildings that comply with the provisions of this standard. A Tier 1 screening also familiarizes the design professional with the building, its potential deficiencies, and its potential behavior. A Tier 1 screening is required for all buildings so that potential deficiencies may be quickly identified. Further evaluation using a Tier 2 or Tier 3 evaluation then focuses, at a minimum, on the potential deficiencies identified in Tier 1.

Tier 2 Deficiency-Based Evaluation - The Tier 2 deficiency-based evaluation requires additional analysis and evaluation of all the potential deficiencies identified in the Tier 1 screening (denoted by either "Noncompliant" or "Unknown" responses in the Tier 1 checklists). The additional analysis and evaluation of each potential deficiency shall be sufficient to either confirm the deficiency or demonstrate the adequacy of the structure as it relates to the potential deficiency. The scope of the Tier 2 deficiency-based evaluation need not expand beyond the evaluation of the potential deficiencies identified in the Tier 1 screening.

Tier 3 Systematic Procedure - The Tier 3 systematic procedure involves an analysis of the entire building, either in its current condition or with proposed retrofit measures. These procedures shall be used where systematic procedures are required in accordance with ASCE 41 and may be used as a further investigation of buildings where the deficiency-based evaluation procedures have been used.

Immediate Occupancy Structural Performance Level (S-1) - Immediate Occupancy, means the post-earthquake damage state in which only very limited structural damage has occurred. The basic vertical- and lateral-force resisting systems of the building retain almost all of their pre-earthquake strength and stiffness. The risk of life-threatening injury as a result of structural damage is very low, and although some minor structural repairs might be appropriate, these repairs would generally not be required before re-occupancy. Continued use of the building is not limited by its structural condition but might be limited by damage or disruption to nonstructural elements of the building, furnishings, or equipment and availability of external utility services.

Damage Control Structural Performance Level (S-2) - The Damage Control Structural Performance Level is set forth as a midway point between Life Safety and Immediate Occupancy. It is intended to provide a structure with a greater reliability of resisting collapse and being less damaged than a typical structure, but not to the extent required of a structure designed to meet the Immediate Occupancy Performance Level.

Life Safety Structural Performance Level (S-3) - Structural Performance Level S-3, Life Safety, means the 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 damage has not resulted in large falling debris hazards, either inside or outside the building. Injuries might 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 repair might 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 before re-occupancy.

Limited Safety Structural Performance Level (S-4) - The Limited Safety Structural Performance Level is set forth as a midway point between Life Safety and Collapse Prevention. It is intended to provide a structure with a greater reliability of resisting collapse than a structure that only meets the Collapse

Prevention Performance Level, but not to the full level of safety that the Life Safety Performance Level would imply.

Collapse Prevention Structural Performance Level (S-5) - Structural Performance Level S-5, Collapse Prevention, means the post-earthquake damage state in which the building is on the verge of partial or total collapse. Substantial damage to the structure has occurred, potentially including significant degradation in the stiffness and strength of the lateral-force-resisting system, large permanent lateral deformation of the structure, and—to a more limited extent—degradation in vertical-load-carrying capacity. However, all significant components of the gravity-load-resisting system must continue to carry their gravity loads. Significant risk of injury caused by falling hazards from structural debris might exist. The structure might not be technically practical to repair and is not safe for re-occupancy because aftershock activity could induce collapse.

Structural Performance Not Considered (S-6) - Where an evaluation or retrofit does not address the structure.

Operational Nonstructural Performance Level (N-A) - Nonstructural Performance Level N-A, Operational, is the post-earthquake damage state in which the nonstructural components are able to provide the functions they provided in the building before the earthquake.

Positional Retention Nonstructural Performance level (N-B) - Nonstructural Performance Level N-B, Position Retention, is the post-earthquake damage state in which nonstructural components might be damaged to the extent that they cannot immediately function but are secured in place so that damage caused by falling, toppling, or breaking of utility connections is avoided.

Life Safety Nonstructural Performance Level (N-C) - Nonstructural Performance Level N-C, Life Safety, is the post-earthquake damage state in which nonstructural components may be damaged, but the consequential damage does not pose a life-safety threat.

Hazards Reduced Nonstructural Performance Level (N-D) – Nonstructural Performance Level N-D, Hazards Reduced, shall be defined as the postearthquake damage state in which nonstructural components are damaged and could potentially create falling hazards, but high-hazard nonstructural components identified in Chapter 13, Table 13-1, are secured to prevent falling into areas of public assembly or those falling hazards from those components could pose a risk to life safety for many people.

Nonstructural Performance Not Considered (N-E) - Where an evaluation or retrofit does not address all nonstructural components to one of the levels in the previous sections.

APPENDIX C: SITE PLAN

APPENDIX D: SUMMARY DATA SHEET AND TIER 1 SCREENING CHECKLISTS

APPENDIX C
SUMMARY DATA SHEET

BUILDING DATA

Building Name: Amity Middle School — Date: 10/17/2019

Building Address: 115 Church Ave, Amity, OR 97101

Latitude: 45.1134222 — Longitude: -123.2052275 — By: RK

Year Built: Estimated 1935 — Year(s) Remodeled: 2002 — Original Design Code: Unknown

Area (ft² (m²)): 25,000 sf — Length (ft (m)): 210 ft — Width (ft (m)): 130 ft

No. of Stories: 1 — Story Height: 13 ft — Total Height: 13 ft

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

CONSTRUCTION DATA

Gravity Load Structural System: Wood rafters over wood frame stud walls

Exterior Transverse Walls: Walls are the same in transverse and longitudinal direction. — Openings? Yes

Exterior Longitudinal Walls: 1935: Brick veneer on straight sheathed wood stud walls, 1950's diagonal sheathed wood stud walls — Openings? Yes

Roof Materials/Framing: 1935: Straight sheathing over stick built trusses @ 24", 1950's: Plywood sheathing over gable trusses

Intermediate Floors/Framing:

Ground Floor: Diagonally sheathed floor over dimension lumber framing and wood posts

Columns: Wood Posts — Foundation: Shallow spread footings and continuous wall footings

General Condition of Structure: Fair

Levels Below Grade? Crawl space under 1935 building, basement under 1950's building

Special Features and Comments:

LATERAL-FORCE-RESISTING SYSTEM

	Longitudinal	Transverse
System:	W1	W1
Vertical Elements:	Straight and diagonally sheathed wood frame stud walls	Straight and diagonally sheathed wood frame stud walls
Diaphragms:	1935: Straight sheathing, 1950s: Plywood sheathing	1935: Straight sheathing, 1950s: Plywood sheathing
Connections:	Unknown	Unknown

EVALUATION DATA

BSE-1N Spectral Response Accelerations: S_{DS} = 0.729g — S_{D1} = 0.561g

Soil Factors: Class = D — F_a = 1.2 — F_v = 1.843

BSE-2E Spectral Response Accelerations: S_{XS} = 0.824g — S_{X1} = 0.619g

Level of Seismicity: High — Performance Level: 4-D

Building Period: T = 0.17s

Spectral Acceleration: S_a = 0.824g

Modification Factor: $C_m C_1 C_2$ = 1.4 — Building Weight: W = 700 kips

Pseudolateral Force: $V = C_m C_1 C_2 S_a W$ = 808 kips

BUILDING CLASSIFICATION:

REQUIRED TIER 1 CHECKLISTS

	Yes	No
Basic Configuration Checklist	☒	☐
Building Type W1 Structural Checklist	☒	☐
Nonstructural Component Checklist	☒	☐

FURTHER EVALUATION REQUIREMENT:

Table 17-1. Very Low Seismicity Checklist

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
Structural Components			
C NC N/A U	LOAD PATH: The structure contains a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation.	5.4.1.1	A.2.1.1
C NC N/A U	WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections have adequate strength to resist the connection force calculated in the Quick Check procedure of Section 4.4.3.7.	5.7.1.1	A.5.1.1

Note: C = Compliant, NC = Noncompliant, N/A = Not Applicable, and U = Unknown.

Table 17-2. Collapse Prevention Basic Configuration Checklist

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
Low Seismicity			
Building System—General			
C NC N/A U	LOAD PATH: The structure contains a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation.	5.4.1.1	A.2.1.1
C NC N/A U	ADJACENT BUILDINGS: The clear distance between the building being evaluated and any adjacent building is greater than 0.25% of the height of the shorter building in low seismicity, 0.5% in moderate seismicity, and 1.5% in high seismicity.	5.4.1.2	A.2.1.2
C NC N/A U	MEZZANINES: Interior mezzanine levels are braced independently from the main structure or are anchored to the seismic-force-resisting elements of the main structure.	5.4.1.3	A.2.1.3
Building System—Building Configuration			
C NC N/A U	WEAK STORY: The sum of the shear strengths of the seismic-force-resisting system in any story in each direction is not less than 80% of the strength in the adjacent story above.	5.4.2.1	A.2.2.2
C NC N/A U	SOFT STORY: The stiffness of the seismic-force-resisting system in any story is not less than 70% of the seismic-force-resisting system stiffness in an adjacent story above or less than 80% of the average seismic-force-resisting system stiffness of the three stories above.	5.4.2.2	A.2.2.3
C NC N/A U	VERTICAL IRREGULARITIES: All vertical elements in the seismic-force-resisting system are continuous to the foundation.	5.4.2.3	A.2.2.4
C NC N/A U	GEOMETRY: There are no changes in the net horizontal dimension of the seismic-force-resisting system of more than 30% in a story relative to adjacent stories, excluding one-story penthouses and mezzanines.	5.4.2.4	A.2.2.5
C NC N/A U	MASS: There is no change in effective mass of more than 50% from one story to the next. Light roofs, penthouses, and mezzanines need not be considered.	5.4.2.5	A.2.2.6
C NC N/A U	TORSION: The estimated distance between the story center of mass and the story center of rigidity is less than 20% of the building width in either plan dimension.	5.4.2.6	A.2.2.7

continues

Table 17-2 *(Continued)*. Collapse Prevention Basic Configuration Checklist

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
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 do not exist in the foundation soils at depths within 50 ft (15.2 m) under the building.	5.4.3.1	A.6.1.1
C NC **N/A** U	SLOPE FAILURE: The building site is located away from potential earthquake-induced slope failures or rockfalls so that it is unaffected by such failures or is capable of accommodating any predicted movements without failure.	5.4.3.1	A.6.1.2
C NC **N/A** U	SURFACE FAULT RUPTURE: Surface fault rupture and surface displacement at the building site are not anticipated.	5.4.3.1	A.6.1.3
High Seismicity (Complete the Following Items in Addition to the Items for 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 $0.6S_a$.	5.4.3.3	A.6.2.1
C NC N/A **U**	TIES BETWEEN FOUNDATION ELEMENTS: The foundation has ties adequate to resist seismic forces where footings, piles, and piers are not restrained by beams, slabs, or soils classified as Site Class A, B, or C.	Not all existing drawings are available to verify how foundations are tied or restrained.	

Note: C = Compliant, NC = Noncompliant, N/A = Not Applicable, and U = Unknown.

ASCE 41-17 W1 Checklist
For Amity Middle School
Prepared By: tk1sc
Hazard Level: BSE-2E
Basic Performance Objective for Existing Buildings (BPOE): 4-D
Non-Structural Performance Level: Hazards Reduced
Seismicity: High

Table 17-4. Collapse Prevention Structural Checklist for Building Types W1 and W1a

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

continues

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Table 17-4 *(Continued)*. Collapse Prevention Structural Checklist for Building Types W1 and W1a

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
C NC N/A U	CRIPPLE WALLS: Cripple walls below first-floor-level shear walls are braced to the foundation with wood structural panels.	5.5.3.6.4	A.3.2.7.7
C NC N/A U	OPENINGS: Walls with openings greater than 80% of the length are braced with wood structural panel shear walls with aspect ratios of not more than 1.5-to-1 or are supported by adjacent construction through positive ties capable of transferring the seismic forces.	5.5.3.6.5	A.3.2.7.8
Connections			
C NC N/A U	WOOD POSTS: There is a positive connection of wood posts to the foundation.	5.7.3.3	A.5.3.3
C NC N/A U	WOOD SILLS: All wood sills are bolted to the foundation.	5.7.3.3	A.5.3.4
C NC N/A U	GIRDER–COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support.	5.7.4.1	A.5.4.1
High Seismicity (Complete the Following Items in Addition to the Items for Low and Moderate Seismicity)			
Connections			
C NC N/A U	WOOD SILL BOLTS: Sill bolts are spaced at 6 ft or less with acceptable edge and end distance provided for wood and concrete.	5.7.3.3	A.5.3.7
Diaphragms			
C NC N/A U	DIAPHRAGM CONTINUITY: The diaphragms are not composed of split-level floors and do not have expansion joints.	5.6.1.1	A.4.1.1
C NC N/A U	ROOF CHORD CONTINUITY: All chord elements are continuous, regardless of changes in roof elevation.	5.6.1.1	A.4.1.3
C NC N/A U	STRAIGHT SHEATHING: All straight-sheathed diaphragms have aspect ratios less than 2-to-1 in the direction being considered.	5.6.2	A.4.2.1
C NC N/A U	SPANS: All wood diaphragms with spans greater than 24 ft (7.3 m) consist of wood structural panels or diagonal sheathing.	5.6.2	A.4.2.2
C NC N/A U	DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 40 ft (12 m) and have aspect ratios less than or equal to 4-to-1.	5.6.2	A.4.2.3
C NC N/A U	OTHER DIAPHRAGMS: The diaphragms do not consist of a system other than wood, metal deck, concrete, or horizontal bracing.	5.6.5	A.4.7.1

Note: C = Compliant, NC = Noncompliant, N/A = Not Applicable, and U = Unknown.

ASCE 41-17 Non-Structural Checklist
For Amity Middle School
Prepared By: tk1sc
Hazard Level: BSE-2E
Basic Performance Objective for Existing Buildings (BPOE): 4-D
Non-Structural Performance Level: Hazards Reduced
Seismicity: High

17.19 NONSTRUCTURAL CHECKLIST

The nonstructural checklist in Table 17-38 shall be completed for combinations of Performance Levels and Level of Seismicity as required by Table 4-6. Tier 1 screening shall include on-site investigation and condition assessment as required by Section 4.2.1.

Where applicable, each of the evaluation statements listed in this checklist shall be marked Compliant (C), Noncompliant (NC), Not Applicable (N/A), or Unknown (U) for a Tier 1 screening. Items that are deemed acceptable to the design professional in accordance with the evaluation statement shall be categorized as Compliant, whereas items that are determined by the design professional to require further investigation shall be categorized as Noncompliant or Unknown. For evaluation statements classified as Noncompliant or Unknown, the design professional is permitted to choose to conduct further investigation using the corresponding Tier 2 evaluation procedure listed next to each evaluation statement.

Compliant items shall be deemed by the design professional to satisfy the corresponding Performance Objective in the evaluation statement and shall meet all of the following conditions:

Table 17-38. Nonstructural Checklist

Status	Evaluation Statement[a,b]	Tier 2 Reference	Commentary Reference
Life Safety Systems			
C NC N/A U	**HR—not required; LS—LMH; PR—LMH.** FIRE SUPPRESSION PIPING: Fire suppression piping is anchored and braced in accordance with NFPA-13.	13.7.4	A.7.13.1
C NC N/A U	**HR—not required; LS—LMH; PR—LMH.** FLEXIBLE COUPLINGS: Fire suppression piping has flexible couplings in accordance with NFPA-13.	13.7.4	A.7.13.2
C NC N/A U	**HR—not required; LS—LMH; PR—LMH.** EMERGENCY POWER: Equipment used to power or control Life Safety systems is anchored or braced.	13.7.7	A.7.12.1
C NC N/A U	**HR—not required; LS—LMH; PR—LMH.** STAIR AND SMOKE DUCTS: Stair pressurization and smoke control ducts are braced and have flexible connections at seismic joints.	13.7.6	A.7.14.1
C NC N/A U	**HR—not required; LS—MH; PR—MH.** SPRINKLER CEILING CLEARANCE: Penetrations through panelized ceilings for fire suppression devices provide clearances in accordance with NFPA-13.	13.7.4	A.7.13.3
C NC N/A U	**HR—not required; LS—not required; PR—LMH.** EMERGENCY LIGHTING: Emergency and egress lighting equipment is anchored or braced.	13.7.9	A.7.3.1
Hazardous Materials			
C NC N/A U	**HR—LMH; LS—LMH; PR—LMH.** HAZARDOUS MATERIAL EQUIPMENT: Equipment mounted on vibration isolators and containing hazardous material is equipped with restraints or snubbers.	13.7.1	A.7.12.2
C NC N/A U	**HR—LMH; LS—LMH; PR—LMH.** HAZARDOUS MATERIAL STORAGE: Breakable containers that hold hazardous material, including gas cylinders, are restrained by latched doors, shelf lips, wires, or other methods.	13.8.3	A.7.15.1
C NC N/A U	**HR—MH; LS—MH; PR—MH.** HAZARDOUS MATERIAL DISTRIBUTION: Piping or ductwork conveying hazardous materials is braced or otherwise protected from damage that would allow hazardous material release.	13.7.3 13.7.5	A.7.13.4
C NC N/A U	**HR—MH; LS—MH; PR—MH.** SHUTOFF VALVES: Piping containing hazardous material, including natural gas, has shutoff valves or other devices to limit spills or leaks.	13.7.3 13.7.5	A.7.13.3
C NC N/A U	**HR—LMH; LS—LMH; PR—LMH.** FLEXIBLE COUPLINGS: Hazardous material ductwork and piping, including natural gas piping, have flexible couplings.	13.7.3 13.7.5	A.7.15.4
C NC N/A U	**HR—MH; LS—MH; PR—MH.** PIPING OR DUCTS CROSSING SEISMIC JOINTS: Piping or ductwork carrying hazardous material that either crosses seismic joints or isolation planes or is connected to independent structures has couplings or other details to accommodate the relative seismic displacements.	13.7.3 13.7.5 13.7.6	A.7.13.6
Partitions			
C NC N/A U	**HR—LMH; LS—LMH; PR—LMH.** UNREINFORCED MASONRY: Unreinforced masonry or hollow-clay tile partitions are braced at a spacing of at most 10 ft (3.0 m) in Low or Moderate Seismicity, or at most 6 ft (1.8 m) in High Seismicity.	13.6.2	A.7.1.1
C NC N/A U	**HR—LMH; LS—LMH; PR—LMH.** HEAVY PARTITIONS SUPPORTED BY CEILINGS: The tops of masonry or hollow-clay tile partitions are not laterally supported by an integrated ceiling system.	13.6.2	A.7.2.1
C NC N/A U	**HR—not required; LS—MH; PR—MH.** DRIFT: Rigid cementitious partitions are detailed to accommodate the following drift ratios: in steel moment frame, concrete moment frame, and wood frame buildings, 0.02; in other buildings, 0.005.	13.6.2	A.7.1.2
C NC N/A U	**HR—not required; LS—not required; PR—MH.** LIGHT PARTITIONS SUPPORTED BY CEILINGS: The tops of gypsum board partitions are not laterally supported by an integrated ceiling system.	13.6.2	A.7.2.1
C NC N/A U	**HR—not required; LS—not required; PR—MH.** STRUCTURAL SEPARATIONS: Partitions that cross structural separations have seismic or control joints.	13.6.2	A.7.1.3

continues

Table 17-38 *(Continued)*. Nonstructural Checklist

Status	Evaluation Statement[a,b]	Tier 2 Reference	Commentary Reference
C NC N/A U	**HR—not required; LS—not required; PR—MH**. TOPS: The tops of ceiling-high framed or panelized partitions have lateral bracing to the structure at a spacing equal to or less than 6 ft (1.8 m).	13.6.2	A.7.1.4
Ceilings			
C NC N/A U	**HR—H; LS—MH; PR—LMH**. SUSPENDED LATH AND PLASTER: Suspended lath and plaster ceilings have attachments that resist seismic forces for every 12 ft^2 (1.1 m^2) of area.	13.6.4	A.7.2.3
C NC N/A U	**HR—not required LS—MH; PR—LMH**. SUSPENDED GYPSUM BOARD: Suspended gypsum board ceilings have attachments that resist seismic forces for every 12 ft^2 (1.1 m^2) of area.	13.6.4	A.7.2.3
C NC N/A U	**HR—not required LS—not required; PR—MH**. INTEGRATED CEILINGS: Integrated suspended ceilings with continuous areas greater than 144 ft^2 (13.4 m^2) and ceilings of smaller areas that are not surrounded by restraining partitions are laterally restrained at a spacing no greater than 12 ft (3.6 m) with members attached to the structure above. Each restraint location has a minimum of four diagonal wires and compression struts, or diagonal members capable of resisting compression.	13.6.4	A.7.2.2
C NC N/A U	**HR—not required; LS—not required; PR—MH**. EDGE CLEARANCE: The free edges of integrated suspended ceilings with continuous areas greater than 144 ft^2 (13.4 m^2) have clearances from the enclosing wall or partition of at least the following: in Moderate Seismicity, 1/2 in. (13 mm); in High Seismicity, 3/4 in. (19 mm).	13.6.4	A.7.2.4
C NC N/A U	**HR—not required LS—not required; PR—MH**. CONTINUITY ACROSS STRUCTURE JOINTS: The ceiling system does not cross any seismic joint and is not attached to multiple independent structures.	13.6.4	A.7.2.5
C NC N/A U	**HR—not required LS—not required; PR—H**. EDGE SUPPORT: The free edges of integrated suspended ceilings with continuous areas greater than 144 ft^2 (13.4 m^2) are supported by closure angles or channels not less than 2 in. (51 mm) wide.	13.6.4	A.7.2.6
C NC N/A U	**HR—not required LS—not required; PR—H**. SEISMIC JOINTS: Acoustical tile or lay-in panel ceilings have seismic separation joints such that each continuous portion of the ceiling is no more than 2,500 ft^2 (232.3 m^2) and has a ratio of long-to-short dimension no more than 4-to-1.	13.6.4	A.7.2.7
Light Fixtures			
C NC N/A U	**HR—not required LS—MH; PR—MH**. INDEPENDENT SUPPORT: Light fixtures that weigh more per square foot than the ceiling they penetrate are supported independent of the grid ceiling suspension system by a minimum of two wires at diagonally opposite corners of each fixture.	13.6.4 13.7.9	A.7.3.2
C NC N/A U	**HR—not required LS—not required; PR—H**. PENDANT SUPPORTS: Light fixtures on pendant supports are attached at a spacing equal to or less than 6 ft. Unbraced suspended fixtures are free to allow a 360-degree range of motion at an angle not less than 45 degrees from horizontal without contacting adjacent components. Alternatively, if rigidly supported and/or braced, they are free to move with the structure to which they are attached without damaging adjoining components. Additionally, the connection to the structure is capable of accommodating the movement without failure.	13.7.9	A.7.3.3
C NC N/A U	**HR—not required; LS—not required; PR—H**. LENS COVERS: Lens covers on light fixtures are attached with safety devices.	13.7.9	A.7.3.4
Cladding and Glazing			
C NC N/A U	**HR—MH; LS—MH; PR—MH**. CLADDING ANCHORS: Cladding components weighing more than 10 lb/ft^2 (0.48 kN/m^2) are mechanically anchored to the structure at a spacing equal to or less than the following: for Life Safety in Moderate Seismicity, 6 ft (1.8 m); for Life Safety in High Seismicity and for Position Retention in any seismicity, 4 ft (1.2 m)	13.6.1	A.7.4.1

continues

Table 17-38 *(Continued)*. Nonstructural Checklist

Status	Evaluation Statement[a,b]	Tier 2 Reference	Commentary Reference
C NC N/A U	**HR—not required LS—MH; PR—MH.** CLADDING ISOLATION: For steel or concrete moment-frame buildings, panel connections are detailed to accommodate a story drift ratio by the use of rods attached to framing with oversize holes or slotted holes of at least the following: for Life Safety in Moderate Seismicity, 0.01; for Life Safety in High Seismicity and for Position Retention in any seismicity, 0.02, and the rods have a length-to-diameter ratio of 4.0 or less.	13.6.1	A.7.4.3
C NC N/A U	**HR—MH; LS—MH; PR—MH.** MULTI-STORY PANELS: For multi-story panels attached at more than one floor level, panel connections are detailed to accommodate a story drift ratio by the use of rods attached to framing with oversize holes or slotted holes of at least the following: for Life Safety in Moderate Seismicity, 0.01; for Life Safety in High Seismicity and for Position Retention in any seismicity, 0.02, and the rods have a length-to-diameter ratio of 4.0 or less.	13.6.1	A.7.4.4
C NC N/A U	**HR—not required LS—MH; PR—MH.** THREADED RODS: Threaded rods for panel connections detailed to accommodate drift by bending of the rod have a length-to-diameter ratio greater than 0.06 times the story height in inches for Life Safety in Moderate Seismicity and 0.12 times the story height in inches for Life Safety in High Seismicity and Position Retention in any seismicity.	13.6.1	A.7.4.9
C NC N/A U	**HR—MH; LS—MH; PR—MH.** PANEL CONNECTIONS: Cladding panels are anchored out of plane with a minimum number of connections for each wall panel, as follows: for Life Safety in Moderate Seismicity, 2 connections; for Life Safety in High Seismicity and for Position Retention in any seismicity, 4 connections.	13.6.1.4	A.7.4.5
C NC N/A U	**HR—MH; LS—MH; PR—MH.** BEARING CONNECTIONS: Where bearing connections are used, there is a minimum of two bearing connections for each cladding panel.	13.6.1.4	A.7.4.6
C NC N/A U	**HR—MH; LS—MH; PR—MH.** INSERTS: Where concrete cladding components use inserts, the inserts have positive anchorage or are anchored to reinforcing steel.	13.6.1.4	A.7.4.7
C NC N/A U	**HR—not required LS—MH; PR—MH.** OVERHEAD GLAZING: Glazing panes of any size in curtain walls and individual interior or exterior panes more than 16 ft^2 (1.5 m^2) in area are laminated annealed or laminated heat-strengthened glass and are detailed to remain in the frame when cracked.	13.6.1.5	A.7.4.8
Masonry Veneer			
C NC N/A U	**HR—not required LS—LMH; PR—LMH.** TIES: Masonry veneer is connected to the backup with corrosion-resistant ties. There is a minimum of one tie for every 2-2/3 ft^2 (0.25 m^2), and the ties have spacing no greater than the following: for Life Safety in Low or Moderate Seismicity, 36 in. (914 mm); for Life Safety in High Seismicity and for Position Retention in any seismicity, 24 in. (610 mm).	13.6.1.2	A.7.5.1
C NC N/A U	**HR—not required LS—LMH; PR—LMH.** SHELF ANGLES: Masonry veneer is supported by shelf angles or other elements at each floor above the ground floor.	13.6.1.2	A.7.5.2
C NC N/A U	**HR—not required LS—LMH; PR—LMH.** WEAKENED PLANES: Masonry veneer is anchored to the backup adjacent to weakened planes, such as at the locations of flashing.	13.6.1.2	A.7.5.3
C NC N/A U	**HR—LMH; LS—LMH; PR—LMH.** UNREINFORCED MASONRY BACKUP: There is no unreinforced masonry backup.	13.6.1.1 13.6.1.2	A.7.7.2
C NC N/A U	**HR—not required LS—MH; PR—MH.** STUD TRACKS: For veneer with cold-formed steel stud backup, stud tracks are fastened to the structure at a spacing equal to or less than 24 in. (610 mm) on center.	13.6.1.1 13.6.1.2	A.7.6.1

continues

Table 17-38 *(Continued)*. Nonstructural Checklist

Status	Evaluation Statement[a,b]	Tier 2 Reference	Commentary Reference
C NC N/A U	**HR—not required; LS—MH; PR—MH**. ANCHORAGE: For veneer with concrete block or masonry backup, the backup is positively anchored to the structure at a horizontal spacing equal to or less than 4 ft along the floors and roof.	13.6.1.1 13.6.1.2	A.7.7.1
C NC N/A U	**HR—not required; LS—not required; PR—MH**. WEEP HOLES: In veneer anchored to stud walls, the veneer has functioning weep holes and base flashing.	13.6.1.2	A.7.5.6
C NC N/A U	**HR—not required; LS—not required; PR—MH**. OPENINGS: For veneer with cold-formed-steel stud backup, steel studs frame window and door openings.	13.6.1.1 13.6.1.2	A.7.6.2
Parapets, Cornices, Ornamentation, and Appendages			
C NC N/A U	**HR—LMH; LS—LMH; PR—LMH**. URM PARAPETS OR CORNICES: Laterally unsupported unreinforced masonry parapets or cornices have height-to-thickness ratios no greater than the following: for Life Safety in Low or Moderate Seismicity, 2.5; for Life Safety in High Seismicity and for Position Retention in any seismicity, 1.5.	13.6.5	A.7.8.1
C NC N/A U	**HR—not required; LS—LMH; PR—LMH**. CANOPIES: Canopies at building exits are anchored to the structure at a spacing no greater than the following: for Life Safety in Low or Moderate Seismicity, 10 ft (3.0 m); for Life Safety in High Seismicity and for Position Retention in any seismicity, 6 ft (1.8 m).	13.6.6	A.7.8.2
C NC N/A U	**HR—H; LS—MH; PR—LMH**. CONCRETE PARAPETS: Concrete parapets with height-to-thickness ratios greater than 2.5 have vertical reinforcement.	13.6.5	A.7.8.3
C NC N/A U	**HR—MH; LS—MH; PR—LMH**. APPENDAGES: Cornices, parapets, signs, and other ornamentation or appendages that extend above the highest point of anchorage to the structure or cantilever from components are reinforced and anchored to the structural system at a spacing equal to or less than 6 ft (1.8 m). This evaluation statement item does not apply to parapets or cornices covered by other evaluation statements.	13.6.6	A.7.8.4
Masonry Chimneys			
C NC N/A U	**HR—LMH; LS—LMH; PR—LMH**. URM CHIMNEYS: Unreinforced masonry chimneys extend above the roof surface no more than the following: for Life Safety in Low or Moderate Seismicity, 3 times the least dimension of the chimney; for Life Safety in High Seismicity and for Position Retention in any seismicity, 2 times the least dimension of the chimney.	13.6.7	A.7.9.1
C NC N/A U	**HR—LMH; LS—LMH; PR—LMH**. ANCHORAGE: Masonry chimneys are anchored at each floor level, at the topmost ceiling level, and at the roof.	13.6.7	A.7.9.2
Stairs			
C NC N/A U	**HR—not required; LS—LMH; PR—LMH**. STAIR ENCLOSURES: Hollow-clay tile or unreinforced masonry walls around stair enclosures are restrained out of plane and have height-to-thickness ratios not greater than the following: for Life Safety in Low or Moderate Seismicity, 15-to-1; for Life Safety in High Seismicity and for Position Retention in any seismicity, 12-to-1.	13.6.2 13.6.8	A.7.10.1
C NC N/A U	**HR—not required; LS—LMH; PR—LMH**. STAIR DETAILS: The connection between the stairs and the structure does not rely on post-installed anchors in concrete or masonry, and the stair details are capable of accommodating the drift calculated using the Quick Check procedure of Section 4.4.3.1 for moment-frame structures or 0.5 in. for all other structures without including any lateral stiffness contribution from the stairs.	13.6.8	A.7.10.2
Contents and Furnishings			
C NC N/A U	**HR—LMH; LS—MH; PR—MH**. INDUSTRIAL STORAGE RACKS: Industrial storage racks or pallet racks more than 12 ft high meet the requirements of ANSI/RMI MH 16.1 as modified by ASCE 7, Chapter 15.	13.8.1	A.7.11.1

continues

Table 17-38 *(Continued)*. Nonstructural Checklist

Status	Evaluation Statement[a,b]	Tier 2 Reference	Commentary Reference
C NC N/A U	**HR—not required; LS—H; PR—MH.** TALL NARROW CONTENTS: Contents more than 6 ft (1.8 m) high with a height-to-depth or height-to-width ratio greater than 3-to-1 are anchored to the structure or to each other.	13.8.2	A.7.11.2
C NC N/A U	**HR—not required; LS—H; PR—H.** FALL-PRONE CONTENTS: Equipment, stored items, or other contents weighing more than 20 lb (9.1 kg) whose center of mass is more than 4 ft (1.2 m) above the adjacent floor level are braced or otherwise restrained.	13.8.2	A.7.11.3
C NC N/A U	**HR—not required; LS—not required; PR—MH.** ACCESS FLOORS: Access floors more than 9 in. (229 mm) high are braced.	13.6.10	A.7.11.4
C NC N/A U	**HR—not required; LS—not required; PR—MH.** EQUIPMENT ON ACCESS FLOORS: Equipment and other contents supported by access floor systems are anchored or braced to the structure independent of the access floor.	13.7.7 13.6.10	A.7.11.5
C NC N/A U	**HR—not required; LS—not required; PR—H.** SUSPENDED CONTENTS: Items suspended without lateral bracing are free to swing from or move with the structure from which they are suspended without damaging themselves or adjoining components.	13.8.2	A.7.11.6
Mechanical and Electrical Equipment			
C NC N/A U	**HR—not required; LS—H; PR—H.** FALL-PRONE EQUIPMENT: Equipment weighing more than 20 lb (9.1 kg) whose center of mass is more than 4 ft (1.2 m) above the adjacent floor level, and which is not in-line equipment, is braced.	13.7.1 13.7.7	A.7.12.4
C NC N/A U	**HR—not required; LS—H; PR—H.** IN-LINE EQUIPMENT: Equipment installed in line with a duct or piping system, with an operating weight more than 75 lb (34.0 kg), is supported and laterally braced independent of the duct or piping system.	13.7.1	A.7.12.5
C NC N/A U	**HR—not required; LS—H; PR—MH.** TALL NARROW EQUIPMENT: Equipment more than 6 ft (1.8 m) high with a height-to-depth or height-to-width ratio greater than 3-to-1 is anchored to the floor slab or adjacent structural walls.	13.7.1 13.7.7	A.7.12.6
C NC N/A U	**HR—not required; LS—not required; PR—MH.** MECHANICAL DOORS: Mechanically operated doors are detailed to operate at a story drift ratio of 0.01.	13.6.9	A.7.12.7
C NC N/A U	**HR—not required; LS—not required; PR—H.** SUSPENDED EQUIPMENT: Equipment suspended without lateral bracing is free to swing from or move with the structure from which it is suspended without damaging itself or adjoining components.	13.7.1 13.7.7	A.7.12.8
C NC N/A U	**HR—not required; LS—not required; PR—H.** VIBRATION ISOLATORS: Equipment mounted on vibration isolators is equipped with horizontal restraints or snubbers and with vertical restraints to resist overturning.	13.7.1	A.7.12.9
C NC N/A U	**HR—not required; LS—not required; PR—H.** HEAVY EQUIPMENT: Floor-supported or platform-supported equipment weighing more than 400 lb (181.4 kg) is anchored to the structure.	13.7.1 13.7.7	A.7.12.10
C NC N/A U	**HR—not required; LS—not required; PR—H.** ELECTRICAL EQUIPMENT: Electrical equipment is laterally braced to the structure.	13.7.7	A.7.12.11
C NC N/A U	**HR—not required; LS—not required; PR—H.** CONDUIT COUPLINGS: Conduit greater than 2.5 in. (64 mm) trade size that is attached to panels, cabinets, or other equipment and is subject to relative seismic displacement has flexible couplings or connections.	13.7.8	A.7.12.12
Piping			
C NC N/A U	**HR—not required; LS—not required; PR—H.** FLEXIBLE COUPLINGS: Fluid and gas piping has flexible couplings.	13.7.3 13.7.5	A.7.13.2

continues

Table 17-38 *(Continued)*. Nonstructural Checklist

Status	Evaluation Statement[a,b]	Tier 2 Reference	Commentary Reference
C NC N/A U	**HR—not required; LS—not required; PR—H.** FLUID AND GAS PIPING: Fluid and gas piping is anchored and braced to the structure to limit spills or leaks.	13.7.3 13.7.5	A.7.13.4
C NC N/A U	**HR—not required; LS—not required; PR—H.** C-CLAMPS: One-sided C-clamps that support piping larger than 2.5 in. (64 mm) in diameter are restrained.	13.7.3 13.7.5	A.7.13.5
C NC N/A U	**HR—not required; LS—not required; PR—H.** PIPING CROSSING SEISMIC JOINTS: Piping that crosses seismic joints or isolation planes or is connected to independent structures has couplings or other details to accommodate the relative seismic displacements.	13.7.3 13.7.5	A.7.13.6
Ducts			
C NC N/A U	**HR—not required; LS—not required; PR—H.** DUCT BRACING: Rectangular ductwork larger than 6 ft^2 (0.56 m^2) in cross-sectional area and round ducts larger than 28 in. (711 mm) in diameter are braced. The maximum spacing of transverse bracing does not exceed 30 ft (9.2 m). The maximum spacing of longitudinal bracing does not exceed 60 ft (18.3 m).	13.7.6	A.7.14.2
C NC N/A U	**HR—not required; LS—not required; PR—H.** DUCT SUPPORT: Ducts are not supported by piping or electrical conduit.	13.7.6	A.7.14.3
C NC N/A U	**HR—not required; LS—not required; PR—H.** DUCTS CROSSING SEISMIC JOINTS: Ducts that cross seismic joints or isolation planes or are connected to independent structures have couplings or other details to accommodate the relative seismic displacements.	13.7.6	A.7.14.4
Elevators			
C NC N/A U	**HR—not required; LS—H; PR—H.** RETAINER GUARDS: Sheaves and drums have cable retainer guards.	13.7.11	A.7.16.1
C NC N/A U	**HR—not required; LS—H; PR—H.** RETAINER PLATE: A retainer plate is present at the top and bottom of both car and counterweight.	13.7.11	A.7.16.2
C NC N/A U	**HR—not required; LS—not required; PR—H.** ELEVATOR EQUIPMENT: Equipment, piping, and other components that are part of the elevator system are anchored.	13.7.11	A.7.16.3
C NC N/A U	**HR—not required; LS—not required; PR—H.** SEISMIC SWITCH: Elevators capable of operating at speeds of 150 ft/min (0.30 m/min) or faster are equipped with seismic switches that meet the requirements of ASME A17.1 or have trigger levels set to 20% of the acceleration of gravity at the base of the structure and 50% of the acceleration of gravity in other locations.	13.7.11	A.7.16.4
C NC N/A U	**HR—not required; LS—not required; PR—H.** SHAFT WALLS: Elevator shaft walls are anchored and reinforced to prevent toppling into the shaft during strong shaking.	13.7.11	A.7.16.5
C NC N/A U	**HR—not required; LS—not required; PR—H.** COUNTERWEIGHT RAILS: All counterweight rails and divider beams are sized in accordance with ASME A17.1.	13.7.11	A.7.16.6
C NC N/A U	**HR—not required; LS—not required; PR—H.** BRACKETS: The brackets that tie the car rails and the counterweight rail to the structure are sized in accordance with ASME A17.1.	13.7.11	A.7.16.7
C NC N/A U	**HR—not required; LS—not required; PR—H.** SPREADER BRACKET: Spreader brackets are not used to resist seismic forces.	13.7.11	A.7.16.8
C NC N/A U	**HR—not required; LS—not required; PR—H.** GO-SLOW ELEVATORS: The building has a go-slow elevator system.	13.7.11	A.7.16.9

Note: C = Compliant, NC = Noncompliant, N/A = Not Applicable, and U = Unknown.
[a] Performance Level: HR = Hazards Reduced, LS = Life Safety, and PR = Position Retention.
[b] Level of Seismicity: L = Low, M = Moderate, and H = High.

APPENDIX E: QUICK CHECK HAND CALCULATIONS

Project Calcs

tk1sc

Project Name: AMITY MIDDLE SCHOOL	Project No.:
Computed by: RK	Date:
	Page:
Checked by:	

QUICK CHECKS

Assume 30 psf weight over full building area

→ Area = 24,000 ft²

→ Building Weight: 30 psf × 25,000 ft² = 700 k

→ Building Period

$T = C_t h_n^{\beta}$

$= 0.02 \times 13^{0.75} = 0.14 s$

$C_t = 0.02$

$h_n = 13$ ft

$\beta = 0.75$

→ Response Spectral Acceleration

$S_a = S_{x1}/T \leq S_{xs}$

$= 0.614g / 0.14 \leq 0.824g$

$S_a = 0.824g$

$S_{x1} = 0.614g$

$S_{xs} = 0.824g$

→ CH 7 Pseudolateral Force

$C_m = 1.0$

$C_1 C_2 = 1.4$ $(2 \leq m_{max} \leq 6)$

$\Rightarrow C_m C_1 C_2 = 1.4$

$\Rightarrow V = C_m C_1 C_2 S_a W = 808 k$

Project Calcs

tk1sc

Project Name:	Project No:
Computed by:	Date:
	Page:
Checked by:	

→ Later Force for quick checks

$V = C S_a W$

$C = 1.3$ (1-Story W1)

$S_a = 0.824g$

$W = 700\,k$

$\Rightarrow V = 750\,k$

Project Calcs

tk1sc

Project Name:	Project No.:
Computed by:	Date:
	Page:
Checked by:	

→ Overturning (Basic Checklist)

$0.6\,S_a = 0.6 \times 0.824 = 0.5$

Assuming shear walls exist at extents of building,

$130ft / 13ft = 10 >> 0.5$ OK

Project Calcs

tk1sc

Project Name:	Project No.:
Computed by:	Date:
	Page:
Checked by:	

AMITY MIDDLE SCHOOL SEISMIC WEIGHT

1935 ORIGINAL BUILDING:

Roof Area = 14,600 ft²
Roof DL = 20 psf
Wall DL to Roof = 10 psf

⇒ Seismic Weight = 438 k

SOUTHERN BUILDING ADDITION:

Roof Area = 6,000 ft²
Roof DL = 20 psf
Wall DL to Roof = 10 psf

⇒ Seismic Weight = 180 k

RELOCATED BARRACKS BUILDING:

Roof Area = 3,500 ft²
Roof DL = 20 psf
Wall DL to Roof = 5 psf

⇒ Seismic Weight = 88 k

Project Calcs

tk1sc

Project Name:	Project No.:
Computed by:	Date:
	Page:
Checked by:	

LATERAL FORCE FOR QUICK CHECKS

$V = C S_a W$

$C = 1.3$
$S_a = 0.824g$ } $V = 1.07W$

→ 1935 ORIGINAL BUILDING:

$V = 1.07 \times 438\,K = 469\,K$

→ SOUTHERN BUILDING ADDITION:

$V = 1.07 \times 180\,K = 193\,K$

→ RELOCATED BARRACKS BUILDING:

$V = 1.07 \times 88\,K = 94\,K$

Project Calcs

tk1sc

Project Name:	Project No.:
Computed by:	Date:
	Page:
Checked by:	

STRESS CHECK

→ Walls have straight sheathing plus gyp

Limit = 100 plf + 100 plf = 200 plf

→ Original Building

$L_{Trans} = 170$ ft

$L_{Long} = 97$ ft

$v_{Trans}^{avg} = \frac{1}{3.75} \times \frac{4169\#}{170\,ft} = 735$ plf NG

$v_{Long}^{avg} = \frac{1}{3.75} \times \frac{4169\#}{97\,ft} = 1290$ plf NG

→ Southern Building Addition

No information on shear walls

→ Relocated Barracks Building

$L_{Trans} = 108$ ft

$L_{Long} = 48$ ft

$v_{Trans}^{avg} = \frac{1}{3.75} \times \frac{944\#}{108\,ft} = 233$ plf NG

$v_{Trans}^{avg} = \frac{1}{3.75} \times \frac{944\#}{48\,ft} = 522$ plf NG

APPENDIX F: MID/SOUTHERN WILLAMETTE VALLEY LIQUEFACTION SUSCEPTIBILITY MAP

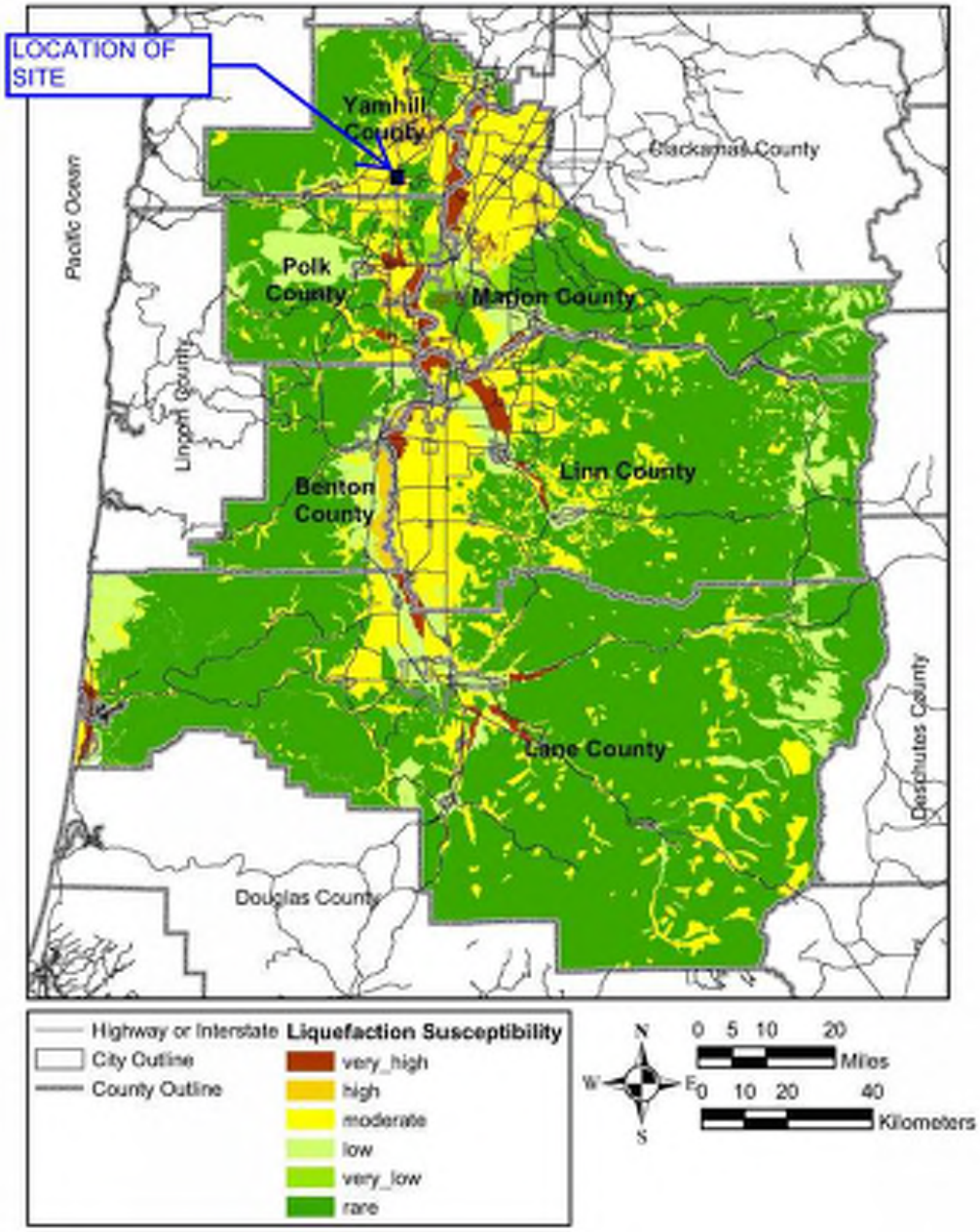

Figure 17. Liquefaction hazard map for the study area displays the six liquefaction potential classes used in this study. Benton County data were modified from Wang and others (2001).

APPENDIX G: RETROFIT COST ESTIMATES

COST SUMMARY ESTIMATE

Description		Unit Cost	Number of Units		Total Cost
Geotechnical Study	$	10,000.00	1	$	10,000.00
Shear Wall Improvements - New Sheathing	$	500.00	750 LF	$	375,000.00
Shear Wall Improvements - Diaphragm Connection	$	125.00	600 LF	$	75,000.00
Shear Wall Improvements - Foundation Connection	$	50.00	600 LF	$	30,000.00
Diaphragm Improvements - Plywood Overlay	$	15.00	9400 ft^2	$	141,000.00
Wood post connection improvements	$	1.00	15000 ft^2	$	15,000.00

Sub Total	=	$	646,000.00
Soft Costs	=	$	258,400.00
Total Cost	=	**$**	**904,400.00**

Note:
This estimate includes allowances for selective demolition and modest replacement of architectural materials, including wall finishes, trim, and roofing.

AMITY HIGH SCHOOL

503 Oak Avenue
Amity, OR 97101

SEISMIC EVALUATION FINAL REPORT

Prepared By:
tk1sc
616 1st Avenue, Suite 500
Seattle, WA 98104

Report Date: November 21, 2019
Project Number: 2019-0593

Prepared For:
Amity School District
807 Trade Street
Amity, OR 97101

Table of Contents

INTRODUCTION

tk1sc has performed a seismic assessment of Amity High School in Amity, Oregon, based on the Tier 1 screening procedure per ASCE 41-17. The building being evaluated is located at 503 Oak Avenue, Amity, Oregon 97101.

Using the ASCE 41-17 standard, structural components were evaluated to the "Limited Safety" performance level and non-structural components were evaluated to the "Hazards Reduced" performance level to identify potential deficiencies and provide recommendations for further investigation as well as possible upgrade solutions to mitigate these deficiencies.

APPLICABLE CODES AND STANDARDS

Below is a list of governing building codes (original and current), as well as the applicable seismic evaluation and retrofit standard:

CODES AND STANDARDS	
Original Governing Building Code:	Original structure – unknown 1965 structure – unknown 2002 structure – 1997 UBC 2002 retrofit - unknown
Current Governing Building Code:	2014 Oregon Structural Specialty Code
Seismic Eval/Retrofit Referenced Standard:	American Society of Civil Engineers, "Seismic Evaluation and Retrofit of Existing Buildings" (ASCE 41-17)

SITE OBSERVATIONS

A site observation was performed by Jason Tornquist, PE, SE, August 20th, 2019, in order to assess the overall condition of the facility, as well as to verify general conformance of the existing conditions with the available structural drawings. The drawings to be used for the seismic assessment of the facility consist of:

- Original structure: Union High School locker and shower room addition, prepared by Tom Burns, Architect and dated 1/2/1948
- Original structure: Union High School alterations, prepared by Burns, Bear & McNeil Architects and dated 5/5/1950
- 1965 structure: Amity High School, prepared by Frank L Shell – Architect and dated 2/9/1965
- 2002 structure: Amity High School Addition & Remodel, prepared by WDY Consulting Engineers and dated 8/7/2002
- Partial seismic retrofit of original and 1965 structure: Amity High School Addition & Remodel, prepared by WDY Consulting Engineers and dated 8/7/2002

No demolition or invasive investigation was performed as part of this site visit, and as such, the investigation was limited to exposed structural elements visible from accessible spaces, as well as spaces above lay-in ceiling tile.

BUILDING DESCRIPTION

The building located at 503 Oak Avenue, Amity, Oregon 97101 is a two-story building measuring approximately 320 feet by 350 feet. The original one-story facility was constructed prior to 1948. In 1965, a one-story addition of approximately 35,000 square feet was added to the north of the existing facility. In 2002, a two-story addition was added to the south of the 1965 building and approximately in the location of the original school construction. A seismic joint provides separation between the 2002 building and both other portions of the facility. Additionally, the site houses a maintenance building of unknown age, an auxiliary gym built sometime between 2003 and 2004, a weight room built after 2012, athletic fields, and small miscellaneous outbuildings. See Figure 1 below for a site orientation plan.

This assessment focused on the primary educational facilities and did not include the maintenance building.

Figure 1 - Site Orientation Plan

Per ASCE 41-17, section 3.3, the 2002 addition, the auxiliary gym, and the weight room are all considered “benchmark buildings”. Due to the age and original design codes for those facilities, they are all deemed to comply with the provisions of the ASCE 41-17 standard for the purposes of this

assessment. Any descriptions of the systems in those structures are provided for reference only; a complete seismic assessment of those areas was not performed.

GRAVITY LOAD RESISTING SYSTEMS

The gravity load resisting system of each portion of the primary structure consists of the following elements:

- Remaining portion of the original structure: masonry bearing walls and a wood-framed roof consisting of dimensional lumber joists and 1" flat roof sheathing. The roof has been over-framed with rafters or trusses at some point in its history to provide the appearance of a gable roof.
- 1965 structure: wood-framed post and beam construction supporting wood trusses and (primarily) plywood roof sheathing. Masonry infill occurs below the wood beams and between wood posts.
- 2002 structure: wood-framed bearing walls, engineered wood truss floors supporting plywood sheathing and gypcrete topping, and engineered wood truss or I-joist roof framing supporting plywood roof sheathing. The shop (wood and metalworking) areas utilize CMU bearing walls in lieu of wood framing for additional durability.

LATERAL FORCE RESISTING SYSTEM

The lateral force resisting system of each portion of the primary structure consists of the following elements:

- Remaining portion of the original structure: wood roof diaphragms transferring load to the original concrete/masonry bearing and shear walls as well as plywood and CMU retaining walls added during the 2002 retrofit.

  Per the ASCE 41-17 designations, this structure may be categorized as a "URM" structure with flexible diaphragms, defined as follows:

  "These buildings have perimeter bearing walls that consist of unreinforced clay brick, stone, or concrete masonry. Interior bearing walls, where present, also consist of unreinforced clay brick, stone, or concrete masonry. In older construction, floor and roof framing consists of straight or diagonal lumber sheathing supported by wood joists, which, in turn, are supported on posts and timbers. In more recent construction, floors consist of structural panel or plywood sheathing rather than lumber sheathing. The diaphragms are flexible relative to the walls. Where they exist, ties between the walls and diaphragms consist of anchors or bent steel plates embedded in the mortar joints and attached to framing. The foundation system is permitted to consist of a variety of elements."

- 1965 structure: wood roof diaphragms transferring load to wood-framed/plywood-sheathed shear walls over masonry infill shear walls. In the gymnasium, full-height wood-framed/plywood shear walls were added during the 2002 retrofit. The wood roof diaphragms vary in construction and include tongue and groove plank, plywood panels with unblocked edges, and plywood panels with blocked edges.

  This is a somewhat unusual lateral force resisting system; most typically, one system is used in a given floor level rather than a vertically "stacked" combination. Per the ASCE 41-17

designations, this would be most closely approximated as a type W1a structure over a URM wall system. ASCE 41 defines a W1a structure as follows:

"These buildings are single- or multiple-family dwellings one or more stories high with plan areas less than or equal to 3,000 ft2 (280 m2). Building loads are light, and the framing spans are short. Floorandrooffframingconsistsofwoodjoistsorraftersonwoodstudsspacednomorethan24in. (61cm) apart. The first-floor framing is supported directly on the foundation system or is raised up on cripple studs and post-and-beam supports. The foundation is permitted to consist of a variety of elements. Chimneys, where present, consist of solid brick masonry, masonry veneer, or wood frame with internal metal flues. Seismic forces are resisted by wood frame diaphragms and shear walls. Floor and roof diaphragms consist of straight or diagonal lumber sheathing, tongue-and-groove planks, oriented strand board, plywood, or other materials. Shear walls are permitted to consist of straight or lumber sheathing, plank siding, oriented strand board, plywood, stucco, gypsum board, particleboard, fiberboard, or similarly performing materials. Interior partitions are sheathed from floor to floor with plaster or gypsum board. Older construction often has open-front garages at the lowest story and is permitted to be split-level. W1a (Multistory, Multiunit, Residential) These buildings are multistory, similar in construction to W1 buildings, but have plan areas on each floor of more than 3,000 ft2 (280m2). Older construction often has open-front garages at the lowest story."

- 2002 structure: wood roof and floor diaphragms transferring load to wood-framed/plywood-sheathed shear walls. In the shop areas, CMU shear walls are utilized in lieu of wood-framed shear walls.

  Per the ASCE 41-17 designations, this structure is most closely approximated as a "W1a" structure, defined as noted above. As previously indicated, this is a benchmark building and was not subject to a full assessment. Instead, a review of the provided structural drawings was performed to verify that systems, detailing, and design is in general conformance with code requirements at the time. No major exceptions or deficiencies were noted during this review.

EXISTING FOUNDATION SYSTEM

All portions of the building are supported by a shallow foundation system. Foundation sizes and configurations vary by structure but bearing and shear walls are typically supported by continuous concrete footings while columns bear on either thickened slab regions, continuous footings, or discrete spread footings. Typical slab on grade is 4" thick, reinforced with welded wire fabric or deformed bar reinforcing.

PREVIOUS RETROFIT WORK

As part of the 2002 remodel and addition project, portions of the original school and the 1965 school underwent retrofit work. The scope of these retrofit measures is as follows:

- Original structure: new wood shear walls added in both primary directions of the structure, new CMU shear walls added in the longitudinal direction of the structure, plywood diaphragm panels were added adjacent to the new wood shear walls, out-of-plane wall anchorage was added, in-plane shear transfer connections between the diaphragm and existing shear walls were added, and ties were added from primary girders to the gravity pier elements (secondary elements per ASCE 41-17).

- 1965 structure: At exterior walls and all gym walls, FRP strips were installed vertically on the masonry filler walls at approximately 8’ on center (located between wood columns), extending from grade to the beam line approximately 7 feet above grade, wood shear walls were added in both primary directions of the structure at the gymnasium.

The code indicated for new construction in the 2002 remodel and addition was the Uniform Building Code. Given the date of the retrofit work, it is likely that these retrofits were designed under either FEMA 310 (1998) OR FEMA 356 (2000); if so, these upgrades would be deemed to comply with the provisions of the ASCE 41-17 standard for the purposes of this assessment. Without additional information on the design of these retrofits, we cannot conclusively confirm this, but given that this is a voluntary assessment it is a reasonable assumption.

SEISMIC EVALUATION PERFORMANCE OBJECTIVES

The seismic evaluation of the Amity High School building was performed using *ASCE 41-17: Seismic Evaluation and Retrofit of Existing Buildings*. This standard defines various ground acceleration levels to be used in the investigation, depending on whether the evaluation/retrofit process is to be carried out to the equivalent standard of a new building (BSE-1N and BSE-2N), or to a reduced level (BSE-1E and BSE-2E). The reduced level of performance is based on the assumption that an existing building will have a shorter life span than that of a new building.

The Oregon Department of Education requires that the schools be evaluated as Risk Category III structures with the ability to perform to the Limited Safety Structural Performance Level (S-4) at the BSE-2E hazard level. This hazard level has a probability of exceedance of 5% over 50 years, or a 975-year return period. The basic performance objective for existing buildings for Limited Safety requires the use of the Collapse Prevention check lists, while the acceptance criteria for Tier 1 calculation-based quick checks be the average of Life Safety and Collapse Prevention.

The Oregon Department of Education Rule that outlines the requirements for the School Construction Matching Program does not explicitly provide requirements for the performance objectives to be used for non-structural performance. For this assessment, non-structural performance was reviewed against the “Hazards Reduced” (N-D) performance level, as this is consistent with the 41-17 requirements for Risk Category III buildings and the BSE-2E basic performance objective. See the glossary of terms for a full description of these performance levels.

BUILDING INFORMATION AND EVALUATION CRITERIA

The following is a summary of parameters used for the seismic evaluation of the building per ASCE 41-17:

BUILDING INFORMATION	
Site Latitude and Longitude:	45.122507, -123.203213
Year Built:	1980
Number of Stories:	1
Structural Performance Level:	Limited Safety (S-4)
Nonstructural Performance Level:	Hazards Reduced (N-D)
Design Spectral Response Acceleration Parameters:	S_{XS} = 0.886g (BSE-2E, 975-year return period) S_{X1} = 0.585g (BSE-2E, 975-year return period) S_a = 0.886g
Level of Seismicity:	High
Structure Type:	URM and W1a
Benchmark Building:	Yes (2002 building only)

SEISMIC EVALULATION METHODOLOGY

An ASCE 41-17 Tier 1 assessment was performed to identify potential deficiencies of the existing structure and non-structural systems. The Tier 1 procedure utilizes a checklist of items to be evaluated and various quick check calculation methods to verify the adequacy of the lateral force resisting system's load path and to identify potential seismic vulnerabilities within the structure. Checklists include a basic checklist for the overall building, a checklist for each of the primary lateral force resisting systems, and a checklist for nonstructural components and systems. Each item is marked as "Compliant", Noncompliant", "Not Applicable", or "Unknown" based on the information available. For all items marked as either "Noncompliant" or "Unknown", further investigation may be required to either verify compliance or identify the need for retrofit measures.

ITEMS THAT MAY REQUIRE FUTHER INVESTIGATION

The lists below are a summary of checklist items that were marked as either "non-compliant" or "unknown". See Appendix C for full checklist results. Please note that not all items marked as NC or U below will require remediation. See the "Recommendations" section of this report for further information.

Key: NC = Noncompliant, U = Unknown

Basic Checklist

DESCRIPTION	STATUS	COMMENT
WALL ANCHORAGE	NC	Out of plane support of walls is provided by FRP retrofit strips. FRP strip capacity was not evaluated as part of this assessment but is likely adequate based on date and governing retrofit standards at the time.
LIQUEFACTION	U	No geotechnical investigation was performed as part of this study, therefore the existence of soils susceptible to liquefaction within 50 ft of the foundation cannot be verified.

Collapse Prevention Structural Checklist for Building Type URM: Unreinforced Masonry with Flexible Diaphragms

DESCRIPTION	STATUS	COMMENT
SHEAR STRESS CHECK:	NC	Masonry infill shear walls below walls designated and/or assumed to be used as shear walls do not have adequate capacity to resist seismic forces.
WALL ANCHORAGE:	U	Out of plane support of walls is provided by FRP retrofit strips. FRP strip capacity was not evaluated as part of this assessment but is likely adequate based on date and governing retrofit standards at the time.
PROPORTIONS	NC	The height to thickness ratio of masonry infill shear walls exceeds the allowable values.
STRAIGHT SHEATHING	NC	Portions of the roof utilize straight tongue and groove sheathing and exceed the allowable aspect ratios and/or spans.
SPANS	NC	Portions of the roof diaphragm are unblocked and exceed the allowable aspect ratios and/or spans.
DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS	NC	Portions of the roof diaphragm are unblocked and exceed the allowable aspect ratios and/or spans.
STIFFNESS OF WALL ANCHORS	U	In 1992 portion of building, there is no adequate connection between precast wall panels and continuous footing.

Collapse Prevention Structural Checklist for Building Type W1a: Wood Frames

DESCRIPTION	STATUS	COMMENT
SHEAR STRESS CHECK	NC	Shear stresses on walls designated and/or assumed to be used as shear walls exceed the allowable values.
STRAIGHT SHEATHING	NC	Portions of the roof utilize straight tongue and groove sheathing and exceed the allowable aspect ratios and/or spans.
SPANS	NC	Portions of the roof diaphragm are unblocked and exceed the allowable aspect ratios and/or spans.
DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS	NC	Portions of the roof diaphragm are unblocked and exceed the allowable aspect ratios and/or spans.

Nonstructural Checklist

HAZARDOUS MATERIALS		
DESCRIPTION	**STATUS**	**COMMENT**
SHUT OFF VALVES	U	Shut off valves are not present to limit spills or leaks of hazardous materials at all gas appliances.
FLEXIBLE COUPLINGS	NC	Piping and ductwork containing hazardous materials do not have flexible couplings at many locations throughout the facility.
UNREINFORCED MASONRY PARTITIONS	NC	Unbraced unreinforced masonry partitions occur throughout the 1965 portion of the facility.

RECOMMENDATIONS

Based on the deficiencies identified above, tk1sc recommends addressing the items listed below. Items are listed in order of decreasing importance, with the most important items listed first.

- **Shear Stress in Shear Walls:** The lateral system of the 1965 structure is an unusual combination of wood shear walls over what appear to be unreinforced masonry filler shear walls. Load transfer is provided by corrugated metal straps of an unknown capacity. Not only is the configuration of this system unusual, but the shear walls that occur appear to be overstressed. It is strongly recommended that these shear walls be upgraded to provide an improved load path, increased capacity, and increased resiliency for the 1965 structure. Wall upgrades would be similar to the wood shear wall retrofits performed in the gym as part of the 2002 retrofit project. See Figure 2 below for extents of work.
- **Bracing of Unbraced Masonry Partitions:** Partial height masonry partitions are present throughout the 1965 building. In a seismic event, these walls may present collapse hazards that could injure occupants and impede egress. It is recommended that these partitions be braced to resist out of plane forces using a "strong back" style solution. See Figure 2 below for extents of work and Figure 3 for connection of strongback to masonry partition.
- **Diaphragm Improvements:** Portions of original structure and the 1965 structure contain either straight-sheathed or unblocked plywood diaphragms that exceed allowable spans and aspect ratios. Straight diaphragms can be sheathed with plywood overlayment to improve capacity. Unblocked plywood diaphragms at the 1965 building may be found to be adequate with further analysis.
- **Liquefaction:** Per the Mid/Southern Willamette Valley Geologic Hazard map (See appendix F), the site is located in an area classified as a moderate risk to liquefaction. A geotechnical investigation should be conducted to verify whether there are soils susceptible to liquefaction within a depth of 50 ft of the building. Required remediation will depend on the results of this investigation.
- **Shut off Valves and Flexible Couplings:** Flexible couplings and shut off valves should be installed at all components containing hazardous materials where they are identified to be lacking throughout the structure.

APPENDIX A: SCHEMATIC UPGRADE SKETCHES

Figure 2 - Shear Wall Improvement Plan

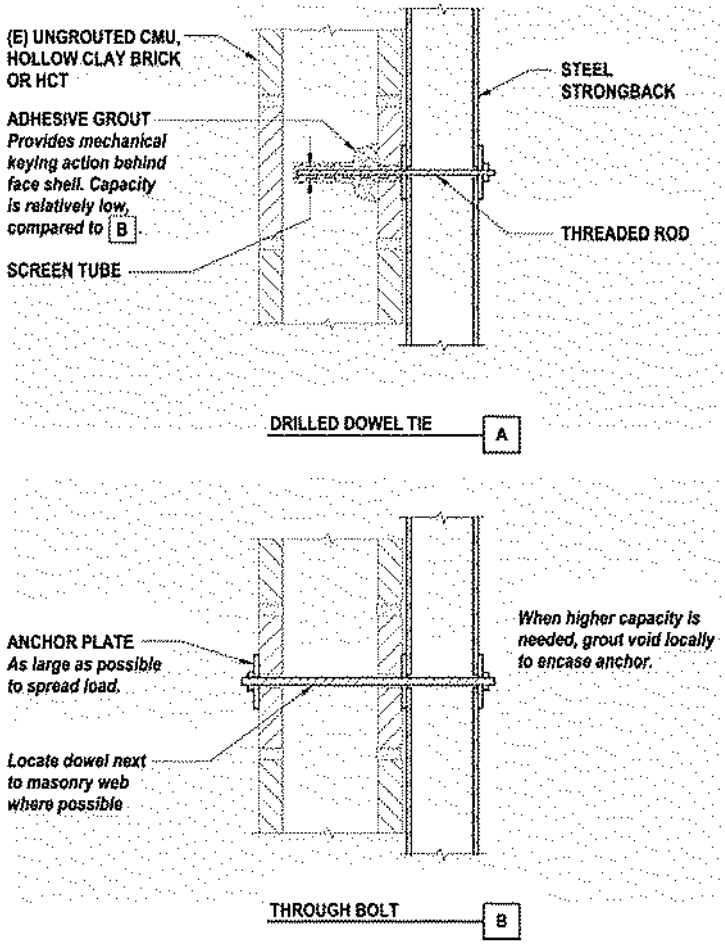

Figure 3 - Strongback Connection

APPENDIX B: GLOSSARY OF TERMS

Tier 1 Screening - The purpose of the Tier 1 screening phase of the evaluation process is to quickly identify buildings that comply with the provisions of this standard. A Tier 1 screening also familiarizes the design professional with the building, its potential deficiencies, and its potential behavior. A Tier 1 screening is required for all buildings so that potential deficiencies may be quickly identified. Further evaluation using a Tier 2 or Tier 3 evaluation then focuses, at a minimum, on the potential deficiencies identified in Tier 1.

Tier 2 Deficiency-Based Evaluation - The Tier 2 deficiency-based evaluation requires additional analysis and evaluation of all the potential deficiencies identified in the Tier 1 screening (denoted by either "Noncompliant" or "Unknown" responses in the Tier 1 checklists). The additional analysis and evaluation of each potential deficiency shall be sufficient to either confirm the deficiency or demonstrate the adequacy of the structure as it relates to the potential deficiency. The scope of the Tier 2 deficiency-based evaluation need not expand beyond the evaluation of the potential deficiencies identified in the Tier 1 screening.

Tier 3 Systematic Procedure - The Tier 3 systematic procedure involves an analysis of the entire building, either in its current condition or with proposed retrofit measures. These procedures shall be used where systematic procedures are required in accordance with ASCE 41 and may be used as a further investigation of buildings where the deficiency-based evaluation procedures have been used.

Immediate Occupancy Structural Performance Level (S-1) - Immediate Occupancy, means the post-earthquake damage state in which only very limited structural damage has occurred. The basic vertical- and lateral-force resisting systems of the building retain almost all of their pre-earthquake strength and stiffness. The risk of life-threatening injury as a result of structural damage is very low, and although some minor structural repairs might be appropriate, these repairs would generally not be required before re-occupancy. Continued use of the building is not limited by its structural condition but might be limited by damage or disruption to nonstructural elements of the building, furnishings, or equipment and availability of external utility services.

Damage Control Structural Performance Level (S-2) - The Damage Control Structural Performance Level is set forth as a midway point between Life Safety and Immediate Occupancy. It is intended to provide a structure with a greater reliability of resisting collapse and being less damaged than a typical structure, but not to the extent required of a structure designed to meet the Immediate Occupancy Performance Level.

Life Safety Structural Performance Level (S-3) - Structural Performance Level S-3, Life Safety, means the 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 damage has not resulted in large falling debris hazards, either inside or outside the building. Injuries might 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 repair might 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 before re-occupancy.

Limited Safety Structural Performance Level (S-4) - The Limited Safety Structural Performance Level is set forth as a midway point between Life Safety and Collapse Prevention. It is intended to provide a structure with a greater reliability of resisting collapse than a structure that only meets the Collapse Prevention Performance Level, but not to the full level of safety that the Life Safety Performance Level would imply.

Collapse Prevention Structural Performance Level (S-5) - Structural Performance Level S-5, Collapse Prevention, means the post-earthquake damage state in which the building is on the verge of partial or total collapse. Substantial damage to the structure has occurred, potentially including significant degradation in the stiffness and strength of the lateral-force-resisting system, large permanent lateral deformation of the structure, and—to a more limited extent—degradation in vertical-load-carrying capacity. However, all significant components of the gravity-load-resisting system must continue to carry their gravity loads. Significant risk of injury caused by falling hazards from structural debris might exist. The structure might not be technically practical to repair and is not safe for re-occupancy because aftershock activity could induce collapse.

Structural Performance Not Considered (S-6) - Where an evaluation or retrofit does not address the structure.

Operational Nonstructural Performance Level (N-A) - Nonstructural Performance Level N-A, Operational, is the post-earthquake damage state in which the nonstructural components are able to provide the functions they provided in the building before the earthquake.

Positional Retention Nonstructural Performance level (N-B) - Nonstructural Performance Level N-B, Position Retention, is the post-earthquake damage state in which nonstructural components might be damaged to the extent that they cannot immediately function but are secured in place so that damage caused by falling, toppling, or breaking of utility connections is avoided.

Life Safety Nonstructural Performance Level (N-C) - Nonstructural Performance Level N-C, Life Safety, is the post-earthquake damage state in which nonstructural components may be damaged, but the consequential damage does not pose a life-safety threat.

Hazards Reduced Nonstructural Performance Level (N-D) – Nonstructural Performance Level N-D, Hazards Reduced, shall be defined as the postearthquake damage state in which nonstructural components are damaged and could potentially create falling hazards, but high-hazard nonstructural components identified in Chapter 13, Table 13-1, are secured to prevent falling into areas of public assembly or those falling hazards from those components could pose a risk to life safety for many people.

Nonstructural Performance Not Considered (N-E) - Where an evaluation or retrofit does not address all nonstructural components to one of the levels in the previous sections.

APPENDIX C: SITE PLAN

APPENDIX D: SUMMARY DATA SHEET AND TIER 1 SCREENING CHECKLISTS

Appendix C: Summary Data Sheet

BUILDING DATA

Building Name:	Amity High School			Date:	10/15/2019
Building Address:	503 Oak Ave, Amity, OR 97101				
Latitude:	45.1156973	Longitude:	-123.2036604	By:	RK
Year Built:	1947	Year(s) Remodeled:	1965, 2002	Original Design Code:	Unknown
Area (sf):		Length (ft):	325	Width (ft):	350
No. of Stories:	2	Story Height:		Total Height:	

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

CONSTRUCTION DATA

Gravity Load Structural System:	1947: Wood framed 1965: Wood framed with masonry infill 2002: Wood framed with CMU at shop areas		
Exterior Transverse Walls:	1947: Wood/conc 1965: Wood + masonry 2002: Wood or CMU	Openings?	Yes, various.
Exterior Longitudinal Walls:	1947: Wood/conc 1965: Wood + masonry 2002: Wood or CMU	Openings?	Yes, various.
Roof Materials/Framing:	1947: Dim lumber + trusses 1965: Wood trusses 2002: Engineered wood		All areas wood sheathed.
Intermediate Floors/Framing:	2002 only: Engineered wood trusses, plywood sheathing, gyprete topping slab		
Ground Floor:	Slab on grade		
Columns:	Dimensional and engineered lumber	Foundation:	Conventional / shallow concrete.
General Condition of Structure:	Generally good condition with little sign of damage or significant deterioration.		
Levels Below Grade?	None known.		
Special Features and Comments:	Partial retrofit of 1947 and 1965 regions performed in/around 2002 including FRP wall reinforcing.		

LATERAL-FORCE-RESISTING SYSTEM

	Longitudinal	Transverse
System:	Wood shear wall (plus masonry infill)	Wood shear wall (plus masonry infill)
Vertical Elements:	Wood shear wall (plus masonry infill)	Wood shear wall (plus masonry infill)
Diaphragms:	Plywood sheathing	Plywood sheathing
Connections:	Light framed / nailed and bolted	Light framed / nailed and bolted

EVALUATION DATA

BSE-1N Spectral Response Accelerations:	S_{DS}=	0.728g	S_{D1}=	0.561g	
Soil Factors:	Class=	D (assumed)	F_a=	1.2	F_v= 1.844
BSE-1E Spectral Response Accelerations:	S_{XS}=	0.337	S_{X1}=	0.188	
Level of Seismicity:		High	Performance Level:	4-S	
Building Period:	T=	1947: 0.15s 1965: 0.24s 2002: 0.25s			
Spectral Acceleration:	S_a=	0.824			
Modification Factor:	$C_m C_1 C_2$=	1.4	Building Weight: W=	1942: 250k 1965: 1100k	
Pseudo Lateral Force:	V= $C_m C_1 C_2 S_a W$=	1947: 288k 1965: 1180k			

BUILDING CLASSIFICATION: 1947: C2a 1965: W1a and/or URM with flexible diaph. 2002: W1a and RM1 (benchmark building)

REQUIRED TIER 1 CHECKLISTS

	Yes	No
Basic Configuration Checklist	☑	☐
Building Type ___ Structural Checklist	☑	☐
Nonstructural Component Checklist	☑	☐

FURTHER EVALUATION REQUIREMENT: Evaluate for BSE-2E performance objective per OAR requirements.

Table 17-1. Very Low Seismicity Checklist

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
Structural Components			
(C) NC N/A U	LOAD PATH: The structure contains a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation.	5.4.1.1	A.2.1.1
(C) NC N/A U	WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections have adequate strength to resist the connection force calculated in the Quick Check procedure of Section 4.4.3.7.	No calculation performed. 2002 retrofit added anchorage.	

Note: C = Compliant, NC = Noncompliant, N/A = Not Applicable, and U = Unknown.

Table 17-2. Collapse Prevention Basic Configuration Checklist

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
Low Seismicity			
Building System—General			
(C) NC N/A U	LOAD PATH: The structure contains a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation.	5.4.1.1	A.2.1.1
(C) NC N/A U	ADJACENT BUILDINGS: The clear distance between the building being evaluated and any adjacent building is greater than 0.25% of the height of the shorter building in low seismicity, 0.5% in moderate seismicity, and 1.5% in high seismicity.	5.4.1.2	A.2.1.2
C NC (N/A) U	MEZZANINES: Interior mezzanine levels are braced independently from the main structure or are anchored to the seismic-force-resisting elements of the main structure.	5.4.1.3	A.2.1.3
Building System—Building Configuration			
C NC (N/A) U	WEAK STORY: The sum of the shear strengths of the seismic-force-resisting system in any story in each direction is not less than 80% of the strength in the adjacent story above.	5.4.2.1	A.2.2.2
C NC (N/A) U	SOFT STORY: The stiffness of the seismic-force-resisting system in any story is not less than 70% of the seismic-force-resisting system stiffness in an adjacent story above or less than 80% of the average seismic-force-resisting system stiffness of the three stories above.	5.4.2.2	A.2.2.3
(C) NC N/A U	VERTICAL IRREGULARITIES: All vertical elements in the seismic-force-resisting system are continuous to the foundation.	5.4.2.3	A.2.2.4
C NC (N/A) U	GEOMETRY: There are no changes in the net horizontal dimension of the seismic-force-resisting system of more than 30% in a story relative to adjacent stories, excluding one-story penthouses and mezzanines.	5.4.2.4	A.2.2.5
C NC (N/A) U	MASS: There is no change in effective mass of more than 50% from one story to the next. Light roofs, penthouses, and mezzanines need not be considered.	5.4.2.5	A.2.2.6
C NC (N/A) U	TORSION: The estimated distance between the story center of mass and the story center of rigidity is less than 20% of the building width in either plan dimension.	5.4.2.6	A.2.2.7

continues

Table 17-2 *(Continued)*. Collapse Prevention Basic Configuration Checklist

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
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 do not exist in the foundation soils at depths within 50 ft (15.2 m) under the building.	Moderate risk of liquefaction per Willamette Valley map	
(C) NC N/A U	SLOPE FAILURE: The building site is located away from potential earthquake-induced slope failures or rockfalls so that it is unaffected by such failures or is capable of accommodating any predicted movements without failure.	5.4.3.1	A.6.1.2
(C) NC N/A U	SURFACE FAULT RUPTURE: Surface fault rupture and surface displacement at the building site are not anticipated.	5.4.3.1	A.6.1.3
High Seismicity (Complete the Following Items in Addition to the Items for 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 $0.6S_a$.	5.4.3.3	A.6.2.1
(C) NC N/A U	TIES BETWEEN FOUNDATION ELEMENTS: The foundation has ties adequate to resist seismic forces where footings, piles, and piers are not restrained by beams, slabs, or soils classified as Site Class A, B, or C.	5.4.3.4	A.6.2.2

Note: C = Compliant, NC = Noncompliant, N/A = Not Applicable, and U = Unknown.

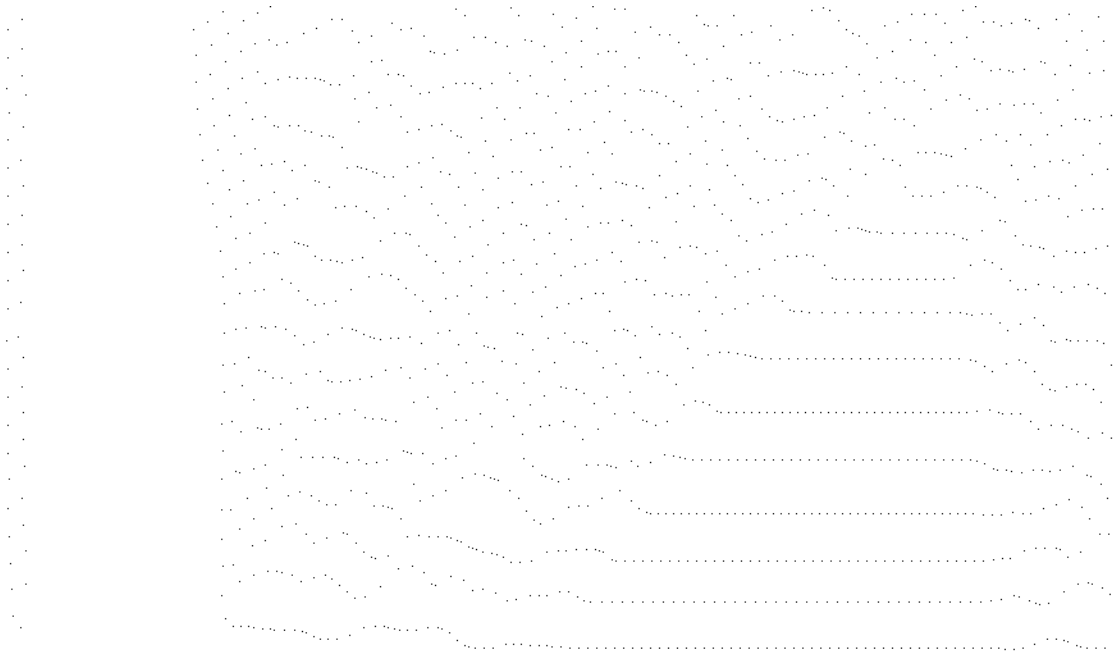

Table 17-1. Very Low Seismicity Checklist

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
Structural Components			
(C) NC N/A U	LOAD PATH: The structure contains a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation.	5.4.1.1	A.2.1.1
C NC N/A (U)	WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections have adequate strength to resist the connection force calculated in the Quick Check procedure of Section 4.4.3.7.	Walls do not extend to diaphragm - extend to mid-height beam and have been retrofitted. Capacity of FRP unknown.	

Note: C = Compliant, NC = Noncompliant, N/A = Not Applicable, and U = Unknown.

Table 17-2. Collapse Prevention Basic Configuration Checklist

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
Low Seismicity			
Building System—General			
(C) NC N/A U	LOAD PATH: The structure contains a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation.	5.4.1.1	A.2.1.1
(C) NC N/A U	ADJACENT BUILDINGS: The clear distance between the building being evaluated and any adjacent building is greater than 0.25% of the height of the shorter building in low seismicity, 0.5% in moderate seismicity, and 1.5% in high seismicity.	5.4.1.2	A.2.1.2
(C) NC N/A U	MEZZANINES: Interior mezzanine levels are braced independently from the main structure or are anchored to the seismic-force-resisting elements of the main structure.	5.4.1.3	A.2.1.3
Building System—Building Configuration			
C NC (N/A) U	WEAK STORY: The sum of the shear strengths of the seismic-force-resisting system in any story in each direction is not less than 80% of the strength in the adjacent story above.	5.4.2.1	A.2.2.2
C NC (N/A) U	SOFT STORY: The stiffness of the seismic-force-resisting system in any story is not less than 70% of the seismic-force-resisting system stiffness in an adjacent story above or less than 80% of the average seismic-force-resisting system stiffness of the three stories above.	5.4.2.2	A.2.2.3
(C) NC N/A U	VERTICAL IRREGULARITIES: All vertical elements in the seismic-force-resisting system are continuous to the foundation.	5.4.2.3	A.2.2.4
C NC (N/A) U	GEOMETRY: There are no changes in the net horizontal dimension of the seismic-force-resisting system of more than 30% in a story relative to adjacent stories, excluding one-story penthouses and mezzanines.	5.4.2.4	A.2.2.5
C NC (N/A) U	MASS: There is no change in effective mass of more than 50% from one story to the next. Light roofs, penthouses, and mezzanines need not be considered.	5.4.2.5	A.2.2.6
C NC (N/A) U	TORSION: The estimated distance between the story center of mass and the story center of rigidity is less than 20% of the building width in either plan dimension.	5.4.2.6	A.2.2.7

continues

Table 17-2 *(Continued)*. Collapse Prevention Basic Configuration Checklist

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
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 do not exist in the foundation soils at depths within 50 ft (15.2 m) under the building.	Moderate risk of liquefaction per Willamette Valley map	
(C) NC N/A U	SLOPE FAILURE: The building site is located away from potential earthquake-induced slope failures or rockfalls so that it is unaffected by such failures or is capable of accommodating any predicted movements without failure.	5.4.3.1	A.6.1.2
(C) NC N/A U	SURFACE FAULT RUPTURE: Surface fault rupture and surface displacement at the building site are not anticipated.	5.4.3.1	A.6.1.3
High Seismicity (Complete the Following Items in Addition to the Items for 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 $0.6S_a$.	5.4.3.3	A.6.2.1
(C) NC N/A U	TIES BETWEEN FOUNDATION ELEMENTS: The foundation has ties adequate to resist seismic forces where footings, piles, and piers are not restrained by beams, slabs, or soils classified as Site Class A, B, or C.	5.4.3.4	A.6.2.2

Note: C = Compliant, NC = Noncompliant, N/A = Not Applicable, and U = Unknown.

Table 17-36. Collapse Prevention Structural Checklist for Building Types URM and URMa

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
Low and Moderate Seismicity			
Seismic-Force-Resisting System			
(C) NC N/A U	REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2.	5.5.1.1	A.3.2.1.1
C (NC) N/A U	SHEAR STRESS CHECK: The shear stress in the unreinforced masonry shear walls, calculated using the Quick Check procedure of Section 4.4.3.3, is less than 30 lb/in.^{2} (0.21 MPa) for clay units and 70 lb/in.^{2} (0.48 MPa) for concrete units.	5.5.3.1.1	A.3.2.5.1
Connections			
C NC N/A (U)	WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections have strength to resist the connection force calculated in the Quick Check procedure of Section 4.4.3.7.	Out of plane support provided by beam above and retrofit. Capacity of FRP is unknown	
C NC (N/A) U	WOOD LEDGERS: The connection between the wall panels and the diaphragm does not induce cross-grain bending or tension in the wood ledgers.	5.7.1.3	A.5.1.2
(C) NC N/A U	TRANSFER TO SHEAR WALLS: Diaphragms are connected for transfer of seismic forces to the shear walls.	Load path provided from diaphragm to wood shear wall to masonry shear wall via ties.	
C NC (N/A) U	GIRDER–COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support.	5.7.4.1	A.5.4.1
High Seismicity (Complete the Following Items in Addition to the Items for Low and Moderate Seismicity)			
Seismic-Force-Resisting System			
C (NC) N/A U	PROPORTIONS: The height-to-thickness ratio of the shear walls at each story is less than the following: Top story of multi-story building 9 First story of multi-story building 15 All other conditions 13	5.5.3.1.2	A.3.2.5.2
C NC (N/A) U	MASONRY LAYUP: Filled collar joints of multi-wythe masonry walls have negligible voids.	5.5.3.4.1	A.3.2.5.3
Diaphragms (Stiff or Flexible)			
C NC (N/A) U	OPENINGS AT SHEAR WALLS: Diaphragm openings immediately adjacent to the shear walls are less than 25% of the wall length.	5.6.1.3	A.4.1.4
C NC (N/A) U	OPENINGS AT EXTERIOR MASONRY SHEAR WALLS: Diaphragm openings immediately adjacent to exterior masonry shear walls are not greater than 8 ft (2.4 m) long.	5.6.1.3	A.4.1.6
Flexible Diaphragms			
C NC (N/A) U	CROSS TIES: There are continuous cross ties between diaphragm chords.	Masonry does not extend to diaphragm	

continues

Table 17-36 *(Continued)*. **Collapse Prevention Structural Checklist for Building Types URM and URMa**

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
C (NC) N/A U	STRAIGHT SHEATHING: All straight-sheathed diaphragms have aspect ratios less than 2-to-1 in the direction being considered.	5.6.2	A.4.2.1
C (NC) N/A U	SPANS: All wood diaphragms with spans greater than 24 ft (7.3 m) consist of wood structural panels or diagonal sheathing.	5.6.2	A.4.2.2
C (NC) N/A U	DIAGONALLY SHEATHED AND UNBLOCKED DIAPHIRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 40 ft (12.2 m) and aspect ratios less than or equal to 4-to-1.	5.6.2	A.4.2.3
(C) NC N/A U	OTHER DIAPHRAGMS: The diaphragms do not consist of a system other than wood, metal deck, concrete, or horizontal bracing.	5.6.5	A.4.7.1
Connections			
C NC N/A (U)	STIFFNESS OF WALL ANCHORS: Anchors of concrete or masonry walls to wood structural elements are installed taut and are stiff enough to limit the relative movement between the wall and the diaphragm to no greater than 1/8 in. before engagement of the anchors.	Stiffness and tautness of masonry wall anchors is unknown, but walls do not exhibit damage that would suggest failure	
C NC (N/A) U	BEAM, GIRDER, AND TRUSS SUPPORTS: Beams, girders, and trusses supported by unreinforced masonry walls or pilasters have independent secondary columns for support of vertical loads.	Masonry is infill shear wall only and does not provide gravity support.	

Note: C = Compliant, NC = Noncompliant, N/A = Not Applicable, and U = Unknown.

Table 17-4. Collapse Prevention Structural Checklist for Building Types W1 and W1a

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

continues

Table 17-4 *(Continued)*. **Collapse Prevention Structural Checklist for Building Types W1 and W1a**

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
C NC (N/A) U	CRIPPLE WALLS: Cripple walls below first-floor-level shear walls are braced to the foundation with wood structural panels.	5.5.3.6.4	A.3.2.7.7
(C) NC N/A U	OPENINGS: Walls with openings greater than 80% of the length are braced with wood structural panel shear walls with aspect ratios of not more than 1.5-to-1 or are supported by adjacent construction through positive ties capable of transferring the seismic forces.	5.5.3.6.5	A.3.2.7.8
Connections			
(C) NC N/A U	WOOD POSTS: There is a positive connection of wood posts to the foundation.	Wood shear walls terminate at the top of masonry filler walls - see note below.	
C NC (N/A) U	WOOD SILLS: All wood sills are bolted to the foundation.		
(C) NC N/A U	GIRDER–COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support.		
High Seismicity (Complete the Following Items in Addition to the Items for Low and Moderate Seismicity)			
Connections			
C NC (N/A) U	WOOD SILL BOLTS: Sill bolts are spaced at 6 ft or less with acceptable edge and end distance provided for wood and concrete.	Wood shear walls terminate at the top of masonry filler walls - see note below.	
Diaphragms			
(C) NC N/A U	DIAPHRAGM CONTINUITY: The diaphragms are not composed of split-level floors and do not have expansion joints.	5.6.1.1	A.4.1.1
(C) NC N/A U	ROOF CHORD CONTINUITY: All chord elements are continuous, regardless of changes in roof elevation.	5.6.1.1	A.4.1.3
C (NC) N/A U	STRAIGHT SHEATHING: All straight-sheathed diaphragms have aspect ratios less than 2-to-1 in the direction being considered.	5.6.2	A.4.2.1
C (NC) N/A U	SPANS: All wood diaphragms with spans greater than 24 ft (7.3 m) consist of wood structural panels or diagonal sheathing.	Areas with T&G sheathing	
C (NC) N/A U	DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 40 ft (12 m) and have aspect ratios less than or equal to 4-to-1.	Unblocked diaphragm over mechanical room.	
(C) NC N/A U	OTHER DIAPHRAGMS: The diaphragms do not consist of a system other than wood, metal deck, concrete, or horizontal bracing.	5.6.5	A.4.7.1

Note: C = Compliant, NC = Noncompliant, N/A = Not Applicable, and U = Unknown.

Notes:
1. Existing drawings do not indicate specific exterior walls as shear walls. All full-height plywood sheathed walls are considered in quick checks.
2. Shear walls do not continue to floor: wood shear walls extend from top of masonry "filler" walls to roof diaphragm above. Beams (collector elements) at base of walls transfer shear into masonry walls via metal ties. See masonry checklist for continuation of load path evaluation.

ASCE 41-17 Non-Structural Checklist
For Amity High School
Prepared By: tk1sc
Hazard Level: BSE-2E
Basic Performance Objective for Existing Buildings (BPOE): 4-D
Non-Structural Performance Level: Hazards Reduced
Seismicity: High

17.19 NONSTRUCTURAL CHECKLIST

The nonstructural checklist in Table 17-38 shall be completed for combinations of Performance Levels and Level of Seismicity as required by Table 4-6. Tier 1 screening shall include on-site investigation and condition assessment as required by Section 4.2.1.

Where applicable, each of the evaluation statements listed in this checklist shall be marked Compliant (C), Noncompliant (NC), Not Applicable (N/A), or Unknown (U) for a Tier 1 screening. Items that are deemed acceptable to the design professional in accordance with the evaluation statement shall be categorized as Compliant, whereas items that are determined by the design professional to require further investigation shall be categorized as Noncompliant or Unknown. For evaluation statements classified as Noncompliant or Unknown, the design professional is permitted to choose to conduct further investigation using the corresponding Tier 2 evaluation procedure listed next to each evaluation statement.

Compliant items shall be deemed by the design professional to satisfy the corresponding Performance Objective in the evaluation statement and shall meet all of the following conditions:

Table 17-38. Nonstructural Checklist

Status	Evaluation Statement[a,b]	Tier 2 Reference	Commentary Reference
Life Safety Systems			
C NC N/A U	**HR—not required; LS—LMH; PR—LMH.** FIRE SUPPRESSION PIPING: Fire suppression piping is anchored and braced in accordance with NFPA-13.	13.7.4	A.7.13.1
C NC N/A U	**HR—not required; LS—LMH; PR—LMH.** FLEXIBLE COUPLINGS: Fire suppression piping has flexible couplings in accordance with NFPA-13.	13.7.4	A.7.13.2
C NC N/A U	**HR—not required; LS—LMH; PR—LMH.** EMERGENCY POWER: Equipment used to power or control Life Safety systems is anchored or braced.	13.7.7	A.7.12.1
C NC N/A U	**HR—not required; LS—LMH; PR—LMH.** STAIR AND SMOKE DUCTS: Stair pressurization and smoke control ducts are braced and have flexible connections at seismic joints.	13.7.6	A.7.14.1
C NC N/A U	**HR—not required; LS—MH; PR—MH.** SPRINKLER CEILING CLEARANCE: Penetrations through panelized ceilings for fire suppression devices provide clearances in accordance with NFPA-13.	13.7.4	A.7.13.3
C NC N/A U	**HR—not required; LS—not required; PR—LMH.** EMERGENCY LIGHTING: Emergency and egress lighting equipment is anchored or braced.	13.7.9	A.7.3.1
Hazardous Materials			
C NC N/A U	**HR—LMH; LS—LMH; PR—LMH.** HAZARDOUS MATERIAL EQUIPMENT: Equipment mounted on vibration isolators and containing hazardous material is equipped with restraints or snubbers.	13.7.1	A.7.12.2
C NC N/A U	**HR—LMH; LS—LMH; PR—LMH.** HAZARDOUS MATERIAL STORAGE: Breakable containers that hold hazardous material, including gas cylinders, are restrained by latched doors, shelf lips, wires, or other methods.	13.8.3	A.7.15.1
C NC N/A U	**HR—MH; LS—MH; PR—MH.** HAZARDOUS MATERIAL DISTRIBUTION: Piping or ductwork conveying hazardous materials is braced or otherwise protected from damage that would allow hazardous material release.	13.7.3 13.7.5	A.7.13.4
C NC N/A U	**HR—MH; LS—MH; PR—MH.** SHUTOFF VALVES: Piping containing hazardous material, including natural gas, has shutoff valves or other devices to limit spills or leaks.	13.7.3 13.7.5	A.7.13.3
C NC N/A U	**HR—LMH; LS—LMH; PR—LMH.** FLEXIBLE COUPLINGS: Hazardous material ductwork and piping, including natural gas piping, have flexible couplings.	13.7.3 13.7.5	A.7.15.4
C NC N/A U	**HR—MH; LS—MH; PR—MH.** PIPING OR DUCTS CROSSING SEISMIC JOINTS: Piping or ductwork carrying hazardous material that either crosses seismic joints or isolation planes or is connected to independent structures has couplings or other details to accommodate the relative seismic displacements.	13.7.3 13.7.5 13.7.6	A.7.13.6
Partitions			
C NC N/A U	**HR—LMH; LS—LMH; PR—LMH.** UNREINFORCED MASONRY: Unreinforced masonry or hollow-clay tile partitions are braced at a spacing of at most 10 ft (3.0 m) in Low or Moderate Seismicity, or at most 6 ft (1.8 m) in High Seismicity.	13.6.2	A.7.1.1
C NC N/A U	**HR—LMH; LS—LMH; PR—LMH.** HEAVY PARTITIONS SUPPORTED BY CEILINGS: The tops of masonry or hollow-clay tile partitions are not laterally supported by an integrated ceiling system.	13.6.2	A.7.2.1
C NC N/A U	**HR—not required; LS—MH; PR—MH.** DRIFT: Rigid cementitious partitions are detailed to accommodate the following drift ratios: in steel moment frame, concrete moment frame, and wood frame buildings, 0.02; in other buildings, 0.005.	13.6.2	A.7.1.2
C NC N/A U	**HR—not required; LS—not required; PR—MH.** LIGHT PARTITIONS SUPPORTED BY CEILINGS: The tops of gypsum board partitions are not laterally supported by an integrated ceiling system.	13.6.2	A.7.2.1
C NC N/A U	**HR—not required; LS—not required; PR—MH.** STRUCTURAL SEPARATIONS: Partitions that cross structural separations have seismic or control joints.	13.6.2	A.7.1.3

continues

Table 17-38 *(Continued)*. Nonstructural Checklist

Status	Evaluation Statement[a,b]	Tier 2 Reference	Commentary Reference
C NC N/A U	**HR—not required; LS—not required; PR—MH.** TOPS: The tops of ceiling-high framed or panelized partitions have lateral bracing to the structure at a spacing equal to or less than 6 ft (1.8 m).	13.6.2	A.7.1.4
Ceilings			
C NC N/A U	**HR—H; LS—MH; PR—LMH.** SUSPENDED LATH AND PLASTER: Suspended lath and plaster ceilings have attachments that resist seismic forces for every 12 ft^2 (1.1 m^2) of area.	13.6.4	A.7.2.3
C NC N/A U	**HR—not required LS—MH; PR—LMH.** SUSPENDED GYPSUM BOARD: Suspended gypsum board ceilings have attachments that resist seismic forces for every 12 ft^2 (1.1 m^2) of area.	13.6.4	A.7.2.3
C NC N/A U	**HR—not required LS—not required; PR—MH.** INTEGRATED CEILINGS: Integrated suspended ceilings with continuous areas greater than 144 ft^2 (13.4 m^2) and ceilings of smaller areas that are not surrounded by restraining partitions are laterally restrained at a spacing no greater than 12 ft (3.6 m) with members attached to the structure above. Each restraint location has a minimum of four diagonal wires and compression struts, or diagonal members capable of resisting compression.	13.6.4	A.7.2.2
C NC N/A U	**HR—not required; LS—not required; PR—MH.** EDGE CLEARANCE: The free edges of integrated suspended ceilings with continuous areas greater than 144 ft^2 (13.4 m^2) have clearances from the enclosing wall or partition of at least the following: in Moderate Seismicity, 1/2 in. (13 mm); in High Seismicity, 3/4 in. (19 mm).	13.6.4	A.7.2.4
C NC N/A U	**HR—not required LS—not required; PR—MH.** CONTINUITY ACROSS STRUCTURE JOINTS: The ceiling system does not cross any seismic joint and is not attached to multiple independent structures.	13.6.4	A.7.2.5
C NC N/A U	**HR—not required LS—not required; PR—H.** EDGE SUPPORT: The free edges of integrated suspended ceilings with continuous areas greater than 144 ft^2 (13.4 m^2) are supported by closure angles or channels not less than 2 in. (51 mm) wide.	13.6.4	A.7.2.6
C NC N/A U	**HR—not required LS—not required; PR—H.** SEISMIC JOINTS: Acoustical tile or lay-in panel ceilings have seismic separation joints such that each continuous portion of the ceiling is no more than 2,500 ft^2 (232.3 m^2) and has a ratio of long-to-short dimension no more than 4-to-1.	13.6.4	A.7.2.7
Light Fixtures			
C NC N/A U	**HR—not required LS—MH; PR—MH.** INDEPENDENT SUPPORT: Light fixtures that weigh more per square foot than the ceiling they penetrate are supported independent of the grid ceiling suspension system by a minimum of two wires at diagonally opposite corners of each fixture.	13.6.4 13.7.9	A.7.3.2
C NC N/A U	**HR—not required LS—not required; PR—H.** PENDANT SUPPORTS: Light fixtures on pendant supports are attached at a spacing equal to or less than 6 ft. Unbraced suspended fixtures are free to allow a 360-degree range of motion at an angle not less than 45 degrees from horizontal without contacting adjacent components. Alternatively, if rigidly supported and/or braced, they are free to move with the structure to which they are attached without damaging adjoining components. Additionally, the connection to the structure is capable of accommodating the movement without failure.	13.7.9	A.7.3.3
C NC N/A U	**HR—not required; LS—not required; PR—H.** LENS COVERS: Lens covers on light fixtures are attached with safety devices.	13.7.9	A.7.3.4
Cladding and Glazing			
C NC N/A U	**HR—MH; LS—MH; PR—MH.** CLADDING ANCHORS: Cladding components weighing more than 10 lb/ft^2 (0.48 kN/m^2) are mechanically anchored to the structure at a spacing equal to or less than the following: for Life Safety in Moderate Seismicity, 6 ft (1.8 m); for Life Safety in High Seismicity and for Position Retention in any seismicity, 4 ft (1.2 m)	13.6.1	A.7.4.1

continues

Table 17-38 *(Continued)*. Nonstructural Checklist

Status	Evaluation Statement[a,b]	Tier 2 Reference	Commentary Reference
C NC N/A U	**HR—not required; LS—MH; PR—MH.** CLADDING ISOLATION: For steel or concrete moment-frame buildings, panel connections are detailed to accommodate a story drift ratio by the use of rods attached to framing with oversize holes or slotted holes of at least the following: for Life Safety in Moderate Seismicity, 0.01; for Life Safety in High Seismicity and for Position Retention in any seismicity, 0.02, and the rods have a length-to-diameter ratio of 4.0 or less.	13.6.1	A.7.4.3
C NC N/A U	**HR—MH; LS—MH; PR—MH.** MULTI-STORY PANELS: For multi-story panels attached at more than one floor level, panel connections are detailed to accommodate a story drift ratio by the use of rods attached to framing with oversize holes or slotted holes of at least the following: for Life Safety in Moderate Seismicity, 0.01; for Life Safety in High Seismicity and for Position Retention in any seismicity, 0.02, and the rods have a length-to-diameter ratio of 4.0 or less.	13.6.1	A.7.4.4
C NC N/A U	**HR—not required; LS—MH; PR—MH.** THREADED RODS: Threaded rods for panel connections detailed to accommodate drift by bending of the rod have a length-to-diameter ratio greater than 0.06 times the story height in inches for Life Safety in Moderate Seismicity and 0.12 times the story height in inches for Life Safety in High Seismicity and Position Retention in any seismicity.	13.6.1	A.7.4.9
C NC N/A U	**HR—MH; LS—MH; PR—MH.** PANEL CONNECTIONS: Cladding panels are anchored out of plane with a minimum number of connections for each wall panel, as follows: for Life Safety in Moderate Seismicity, 2 connections; for Life Safety in High Seismicity and for Position Retention in any seismicity, 4 connections.	13.6.1.4	A.7.4.5
C NC N/A U	**HR—MH; LS—MH; PR—MH.** BEARING CONNECTIONS: Where bearing connections are used, there is a minimum of two bearing connections for each cladding panel.	13.6.1.4	A.7.4.6
C NC N/A U	**HR—MH; LS—MH; PR—MH.** INSERTS: Where concrete cladding components use inserts, the inserts have positive anchorage or are anchored to reinforcing steel.	13.6.1.4	A.7.4.7
C NC N/A U	**HR—not required; LS—MH; PR—MH.** OVERHEAD GLAZING: Glazing panes of any size in curtain walls and individual interior or exterior panes more than 16 ft^2 (1.5 m^2) in area are laminated annealed or laminated heat-strengthened glass and are detailed to remain in the frame when cracked.	13.6.1.5	A.7.4.8
Masonry Veneer			
C NC N/A U	**HR—not required; LS—LMH; PR—LMH.** TIES: Masonry veneer is connected to the backup with corrosion-resistant ties. There is a minimum of one tie for every 2-2/3 ft^2 (0.25 m^2), and the ties have spacing no greater than the following: for Life Safety in Low or Moderate Seismicity, 36 in. (914 mm); for Life Safety in High Seismicity and for Position Retention in any seismicity, 24 in. (610 mm).	13.6.1.2	A.7.5.1
C NC N/A U	**HR—not required; LS—LMH; PR—LMH.** SHELF ANGLES: Masonry veneer is supported by shelf angles or other elements at each floor above the ground floor.	13.6.1.2	A.7.5.2
C NC N/A U	**HR—not required; LS—LMH; PR—LMH.** WEAKENED PLANES: Masonry veneer is anchored to the backup adjacent to weakened planes, such as at the locations of flashing.	13.6.1.2	A.7.5.3
C NC N/A U	**HR—LMH; LS—LMH; PR—LMH.** UNREINFORCED MASONRY BACKUP: There is no unreinforced masonry backup.	13.6.1.1 13.6.1.2	A.7.7.2
C NC N/A U	**HR—not required; LS—MH; PR—MH.** STUD TRACKS: For veneer with cold-formed steel stud backup, stud tracks are fastened to the structure at a spacing equal to or less than 24 in. (610 mm) on center.	13.6.1.1 13.6.1.2	A.7.6.1

continues

Table 17-38 *(Continued)*. Nonstructural Checklist

Status	Evaluation Statement[a,b]	Tier 2 Reference	Commentary Reference
C NC N/A U	**HR—not required; LS—MH; PR—MH**. ANCHORAGE: For veneer with concrete block or masonry backup, the backup is positively anchored to the structure at a horizontal spacing equal to or less than 4 ft along the floors and roof.	13.6.1.1 13.6.1.2	A.7.7.1
C NC N/A U	**HR—not required; LS—not required; PR—MH**. WEEP HOLES: In veneer anchored to stud walls, the veneer has functioning weep holes and base flashing.	13.6.1.2	A.7.5.6
C NC N/A U	**HR—not required; LS—not required; PR—MH**. OPENINGS: For veneer with cold-formed-steel stud backup, steel studs frame window and door openings.	13.6.1.1 13.6.1.2	A.7.6.2
Parapets, Cornices, Ornamentation, and Appendages			
C NC N/A U	**HR—LMH; LS—LMH; PR—LMH**. URM PARAPETS OR CORNICES: Laterally unsupported unreinforced masonry parapets or cornices have height-to-thickness ratios no greater than the following: for Life Safety in Low or Moderate Seismicity, 2.5; for Life Safety in High Seismicity and for Position Retention in any seismicity, 1.5.	13.6.5	A.7.8.1
C NC N/A U	**HR—not required; LS—LMH; PR—LMH**. CANOPIES: Canopies at building exits are anchored to the structure at a spacing no greater than the following: for Life Safety in Low or Moderate Seismicity, 10 ft (3.0 m); for Life Safety in High Seismicity and for Position Retention in any seismicity, 6 ft (1.8 m).	13.6.6	A.7.8.2
C NC N/A U	**HR—H; LS—MH; PR—LMH**. CONCRETE PARAPETS: Concrete parapets with height-to-thickness ratios greater than 2.5 have vertical reinforcement.	13.6.5	A.7.8.3
C NC N/A U	**HR—MH; LS—MH; PR—LMH**. APPENDAGES: Cornices, parapets, signs, and other ornamentation or appendages that extend above the highest point of anchorage to the structure or cantilever from components are reinforced and anchored to the structural system at a spacing equal to or less than 6 ft (1.8 m). This evaluation statement item does not apply to parapets or cornices covered by other evaluation statements.	13.6.6	A.7.8.4
Masonry Chimneys			
C NC N/A U	**HR—LMH; LS—LMH; PR—LMH**. URM CHIMNEYS: Unreinforced masonry chimneys extend above the roof surface no more than the following: for Life Safety in Low or Moderate Seismicity, 3 times the least dimension of the chimney; for Life Safety in High Seismicity and for Position Retention in any seismicity, 2 times the least dimension of the chimney.	13.6.7	A.7.9.1
C NC N/A U	**HR—LMH; LS—LMH; PR—LMH**. ANCHORAGE: Masonry chimneys are anchored at each floor level, at the topmost ceiling level, and at the roof.	13.6.7	A.7.9.2
Stairs			
C NC N/A U	**HR—not required; LS—LMH; PR—LMH**. STAIR ENCLOSURES: Hollow-clay tile or unreinforced masonry walls around stair enclosures are restrained out of plane and have height-to-thickness ratios not greater than the following: for Life Safety in Low or Moderate Seismicity, 15-to-1; for Life Safety in High Seismicity and for Position Retention in any seismicity, 12-to-1.	13.6.2 13.6.8	A.7.10.1
C NC N/A U	**HR—not required; LS—LMH; PR—LMH**. STAIR DETAILS: The connection between the stairs and the structure does not rely on post-installed anchors in concrete or masonry, and the stair details are capable of accommodating the drift calculated using the Quick Check procedure of Section 4.4.3.1 for moment-frame structures or 0.5 in. for all other structures without including any lateral stiffness contribution from the stairs.	13.6.8	A.7.10.2
Contents and Furnishings			
C NC N/A U	**HR—LMH; LS—MH; PR—MH**. INDUSTRIAL STORAGE RACKS: Industrial storage racks or pallet racks more than 12 ft high meet the requirements of ANSI/RMI MH 16.1 as modified by ASCE 7, Chapter 15.	13.8.1	A.7.11.1

continues

Table 17-38 *(Continued)*. Nonstructural Checklist

Status	Evaluation Statement[a,b]	Tier 2 Reference	Commentary Reference
C NC N/A U	**HR—not required; LS—H; PR—MH.** TALL NARROW CONTENTS: Contents more than 6 ft (1.8 m) high with a height-to-depth or height-to-width ratio greater than 3-to-1 are anchored to the structure or to each other.	13.8.2	A.7.11.2
C NC N/A U	**HR—not required; LS—H; PR—H.** FALL-PRONE CONTENTS: Equipment, stored items, or other contents weighing more than 20 lb (9.1 kg) whose center of mass is more than 4 ft (1.2 m) above the adjacent floor level are braced or otherwise restrained.	13.8.2	A.7.11.3
C NC N/A U	**HR—not required; LS—not required; PR—MH.** ACCESS FLOORS: Access floors more than 9 in. (229 mm) high are braced.	13.6.10	A.7.11.4
C NC N/A U	**HR—not required; LS—not required; PR—MH.** EQUIPMENT ON ACCESS FLOORS: Equipment and other contents supported by access floor systems are anchored or braced to the structure independent of the access floor.	13.7.7 13.6.10	A.7.11.5
C NC N/A U	**HR—not required; LS—not required; PR—H.** SUSPENDED CONTENTS: Items suspended without lateral bracing are free to swing from or move with the structure from which they are suspended without damaging themselves or adjoining components.	13.8.2	A.7.11.6
Mechanical and Electrical Equipment			
C NC N/A U	**HR—not required; LS—H; PR—H.** FALL-PRONE EQUIPMENT: Equipment weighing more than 20 lb (9.1 kg) whose center of mass is more than 4 ft (1.2 m) above the adjacent floor level, and which is not in-line equipment, is braced.	13.7.1 13.7.7	A.7.12.4
C NC N/A U	**HR—not required; LS—H; PR—H.** IN-LINE EQUIPMENT: Equipment installed in line with a duct or piping system, with an operating weight more than 75 lb (34.0 kg), is supported and laterally braced independent of the duct or piping system.	13.7.1	A.7.12.5
C NC N/A U	**HR—not required; LS—H; PR—MH.** TALL NARROW EQUIPMENT: Equipment more than 6 ft (1.8 m) high with a height-to-depth or height-to-width ratio greater than 3-to-1 is anchored to the floor slab or adjacent structural walls.	13.7.1 13.7.7	A.7.12.6
C NC N/A U	**HR—not required; LS—not required; PR—MH.** MECHANICAL DOORS: Mechanically operated doors are detailed to operate at a story drift ratio of 0.01.	13.6.9	A.7.12.7
C NC N/A U	**HR—not required; LS—not required; PR—H.** SUSPENDED EQUIPMENT: Equipment suspended without lateral bracing is free to swing from or move with the structure from which it is suspended without damaging itself or adjoining components.	13.7.1 13.7.7	A.7.12.8
C NC N/A U	**HR—not required; LS—not required; PR—H.** VIBRATION ISOLATORS: Equipment mounted on vibration isolators is equipped with horizontal restraints or snubbers and with vertical restraints to resist overturning.	13.7.1	A.7.12.9
C NC N/A U	**HR—not required; LS—not required; PR—H.** HEAVY EQUIPMENT: Floor-supported or platform-supported equipment weighing more than 400 lb (181.4 kg) is anchored to the structure.	13.7.1 13.7.7	A.7.12.10
C NC N/A U	**HR—not required; LS—not required; PR—H.** ELECTRICAL EQUIPMENT: Electrical equipment is laterally braced to the structure.	13.7.7	A.7.12.11
C NC N/A U	**HR—not required; LS—not required; PR—H.** CONDUIT COUPLINGS: Conduit greater than 2.5 in. (64 mm) trade size that is attached to panels, cabinets, or other equipment and is subject to relative seismic displacement has flexible couplings or connections.	13.7.8	A.7.12.12
Piping			
C NC N/A U	**HR—not required; LS—not required; PR—H.** FLEXIBLE COUPLINGS: Fluid and gas piping has flexible couplings.	13.7.3 13.7.5	A.7.13.2

continues

Table 17-38 *(Continued)*. Nonstructural Checklist

Status	Evaluation Statement[a,b]	Tier 2 Reference	Commentary Reference
C NC N/A U	**HR—not required; LS—not required; PR—H.** FLUID AND GAS PIPING: Fluid and gas piping is anchored and braced to the structure to limit spills or leaks.	13.7.3 13.7.5	A.7.13.4
C NC N/A U	**HR—not required; LS—not required; PR—H.** C-CLAMPS: One-sided C-clamps that support piping larger than 2.5 in. (64 mm) in diameter are restrained.	13.7.3 13.7.5	A.7.13.5
C NC N/A U	**HR—not required; LS—not required; PR—H.** PIPING CROSSING SEISMIC JOINTS: Piping that crosses seismic joints or isolation planes or is connected to independent structures has couplings or other details to accommodate the relative seismic displacements.	13.7.3 13.7.5	A.7.13.6
Ducts			
C NC N/A U	**HR—not required; LS—not required; PR—H.** DUCT BRACING: Rectangular ductwork larger than 6 ft^2 (0.56 m^2) in cross-sectional area and round ducts larger than 28 in. (711 mm) in diameter are braced. The maximum spacing of transverse bracing does not exceed 30 ft (9.2 m). The maximum spacing of longitudinal bracing does not exceed 60 ft (18.3 m).	13.7.6	A.7.14.2
C NC N/A U	**HR—not required; LS—not required; PR—H.** DUCT SUPPORT: Ducts are not supported by piping or electrical conduit.	13.7.6	A.7.14.3
C NC N/A U	**HR—not required; LS—not required; PR—H.** DUCTS CROSSING SEISMIC JOINTS: Ducts that cross seismic joints or isolation planes or are connected to independent structures have couplings or other details to accommodate the relative seismic displacements.	13.7.6	A.7.14.4
Elevators			
C NC N/A U	**HR—not required; LS—H; PR—H.** RETAINER GUARDS: Sheaves and drums have cable retainer guards.	13.7.11	A.7.16.1
C NC N/A U	**HR—not required; LS—H; PR—H.** RETAINER PLATE: A retainer plate is present at the top and bottom of both car and counterweight.	13.7.11	A.7.16.2
C NC N/A U	**HR—not required; LS—not required; PR—H.** ELEVATOR EQUIPMENT: Equipment, piping, and other components that are part of the elevator system are anchored.	13.7.11	A.7.16.3
C NC N/A U	**HR—not required; LS—not required; PR—H.** SEISMIC SWITCH: Elevators capable of operating at speeds of 150 ft/min (0.30 m/min) or faster are equipped with seismic switches that meet the requirements of ASME A17.1 or have trigger levels set to 20% of the acceleration of gravity at the base of the structure and 50% of the acceleration of gravity in other locations.	13.7.11	A.7.16.4
C NC N/A U	**HR—not required; LS—not required; PR—H.** SHAFT WALLS: Elevator shaft walls are anchored and reinforced to prevent toppling into the shaft during strong shaking.	13.7.11	A.7.16.5
C NC N/A U	**HR—not required; LS—not required; PR—H.** COUNTERWEIGHT RAILS: All counterweight rails and divider beams are sized in accordance with ASME A17.1.	13.7.11	A.7.16.6
C NC N/A U	**HR—not required; LS—not required; PR—H.** BRACKETS: The brackets that tie the car rails and the counterweight rail to the structure are sized in accordance with ASME A17.1.	13.7.11	A.7.16.7
C NC N/A U	**HR—not required; LS—not required; PR—H.** SPREADER BRACKET: Spreader brackets are not used to resist seismic forces.	13.7.11	A.7.16.8
C NC N/A U	**HR—not required; LS—not required; PR—H.** GO-SLOW ELEVATORS: The building has a go-slow elevator system.	13.7.11	A.7.16.9

Note: C = Compliant, NC = Noncompliant, N/A = Not Applicable, and U = Unknown.
[a] Performance Level: HR = Hazards Reduced, LS = Life Safety, and PR = Position Retention.
[b] Level of Seismicity: L = Low, M = Moderate, and H = High.

APPENDIX E: QUICK CHECK HAND CALCULATIONS

Project Calcs

tk1sc

Project Name:	Project No.:
Computed by:	Date:
	Page:
Checked by:	

AMITY HS EVALUATION CALCS – SEISMIC WEIGHT & T

1947 BUILDING:

ROOF AREA = 5110 SF
APPROX ROOF DL = 20 PSF
PARTITION DL TO ROOF = 5 PSF
} ROOF W = 128 K

EXT WALL LENGTH = 325'
WALL HT TRIB TO ROOF = 7'
WALL WT = 50 PSF (AVG)
} WALL W = 113 K

TOTAL SEISMIC WEIGHT = 241 K – USE 250 K

1965 BUILDING:

ROOF AREA = 34900 SF
APPROX ROOF DL = 20 PSF
WALL DL TO ROOF = 10 PSF
(INCLUDING PART & EXT WALLS)
} ROOF & WALL W = 1047 K

USE 1100 K

PERIOD CALCULATION:

→ 1947: $T = C_t h_n^{\beta} = 0.02 \cdot 15^{0.75}$
$= 0.15$ s

→ 1965: $T = 0.02 \cdot 27^{0.75}$
$= 0.24$

Project Calcs

tk1sc

Project Name:	Project No.:
Computed by:	Date:
	Page:
Checked by:	

AMITY HS EVALUATION CALCS – PSEUDO SEISMIC FORCE

CALCULATE PSEUDO SEISMIC FORCES FOR CHECKS:

TIER 1:

→ PER SECT. 4.4.2.1 & EQ 4-1:

$$V = CS_a W$$

FOR MAIN BUILDING:

$C = 1.4$

$S_a = 0.824$

$W = 250$ K

$\Rightarrow V = 288$ K

FOR 1965 BUILDING:

$C = 1.5$

$S_a = 0.824$

$W = 1100$ K

$\Rightarrow V = 1180$ K

Project Calcs

tk1sc

Project Name:	Project No.:
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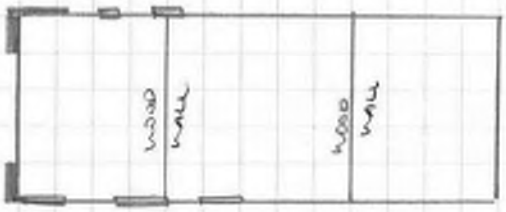
	Page:
Checked by:	

AMITY HS : 1947 SW QUICK CHECKS

→ CHECK CONC STRESS PER QUICK CHECK PROCEDURE OF SECT 4.4.3.3 :

$$V_{J\,AVG} = \frac{1}{M_S}\left(\frac{V_J}{A_W}\right) \qquad M_S = 3.95$$

APPROX PLAN :



→ IN N/S DIR. FORCE TO CONC = 12% OF 300 K
= 36 K

$A_W \approx 1536$ SQ IN (2 8"x8" PIERS)

$$V_{J\,AVG} = \frac{1}{3.95}\left(\frac{36\ K}{1536\ in^2}\right) = 6\ PSI \rightarrow OK$$

→ IN E/W DIR, CONS IGNORE ALL WOOD & CMU APPED WALLS. F = 300 K

$A_W \approx 4500\ in^2$ $\quad V_{J\,AVG} = \frac{1}{3.95}\left(\frac{300}{4500}\right) = 18\ PSI$

→ OK

Project Calcs

tk1sc

Project Name:	Project No.:
Computed by:	Date:
	Page:
Checked by:	

AMITY HS : MWS QUICK CHECKS (WOOD S.W.)

* DUE TO GEOMETRY OF MWS WALLS, BREAK INTO (3) AREAS:
  1. AREA A
  2. LIBRARY
  3. AREA B

AREA A: A = 15000 SF (INCL ROOF O.H.)

$$V = \frac{15000}{34{,}900} \times 1100 = 473 \text{ K}$$

PER 4.4.3.3.: $V_{j\,AVG} = \frac{1}{M_s}\left(\frac{V_j}{L_w}\right)$ $M_s = 3.75$

TRANSVERSE DIRECTION: $L_w = 108'$

$$V_{j\,AVG} = \frac{1}{3.75}\left(\frac{473\text{ K}}{108'}\right) = 1.2 \text{ KLF}$$

→ NG (MAX = 1.0 KLF)

LONGITUDINAL DIRECTION: $L_w = 152'$

$V_{j\,AVG} = 0.83$ KLF

→ OK

Project Calcs

tk1sc

Project Name:	Project No.:
Computed by:	Date:
	Page:
Checked by:	

AMITY HS: 1966 QUICK CHECKS, CONT.

LIBRARY: $A = 3650$ (INC. ROOF OH)

$V = \frac{3650}{24900} \times 1100 = 115$ K

TRANSVERSE DIR: $L_w \simeq 80'$ $V_{AVG} = .335$ KLF → OK

LONG DIR: $L_w \simeq 64'$ $V_{AVG} = 0.480$ KLF → OK

AREA B: $A = 16500$ (INC CORR. BTWN A & B)

$V = \frac{16500}{34900} \times 1100 = 520$ K

* TRY W/ ONLY RETROFIT SW @ GYM:

TRANSVERSE: $L_w \simeq 32'$ $V_{AVG} = 4.8$ KLF → NG

LONG: $L_w = 64'$ $V_{AVG} = 2.2$ KLF → NG

APPENDIX F: MID/SOUTHERN WILLAMETTE VALLEY LIQUEFACTION SUSCEPTIBILITY MAP

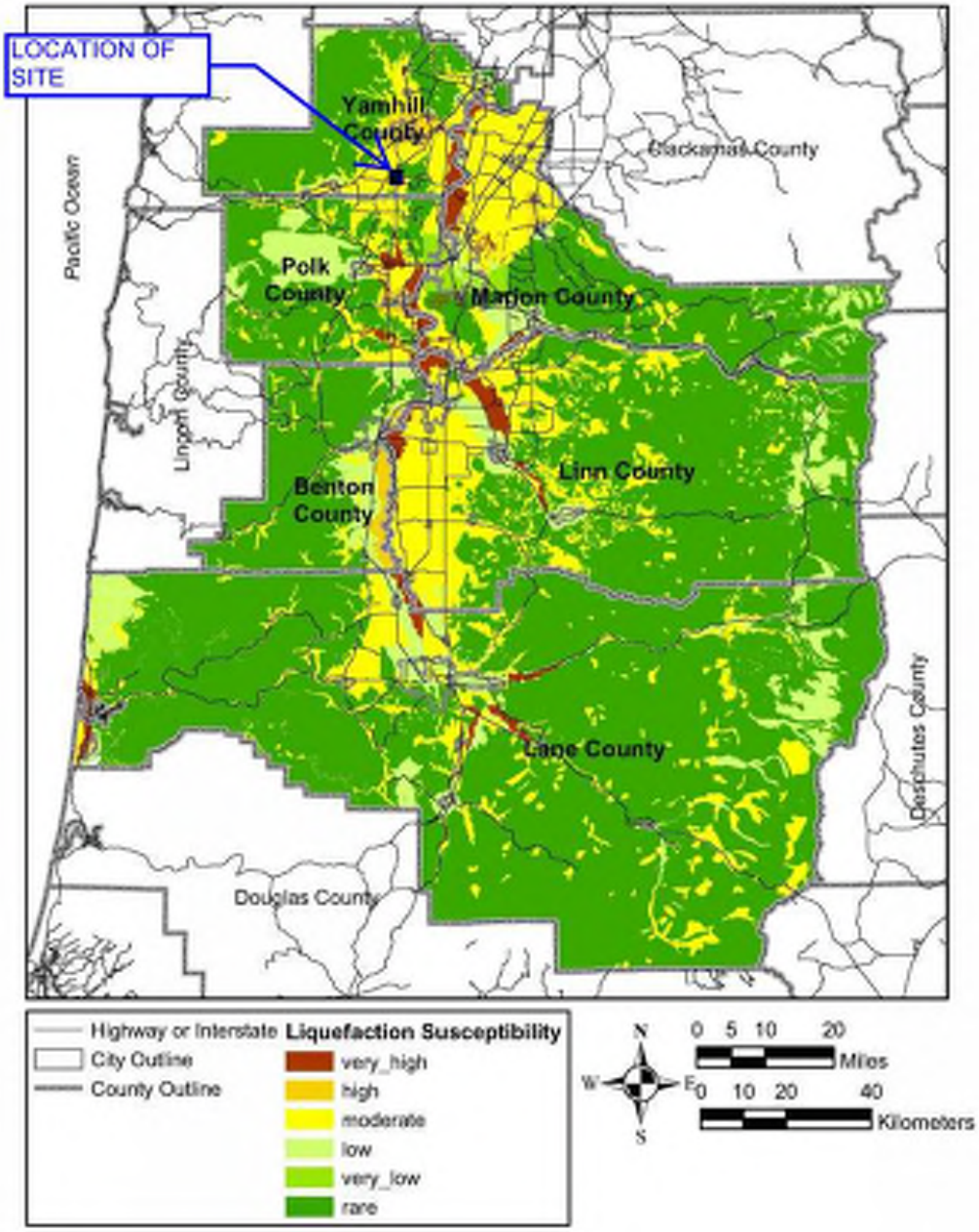


Figure 17. Liquefaction hazard map for the study area displays the six liquefaction potential classes used in this study. Benton County data were modified from Wang and others (2001).

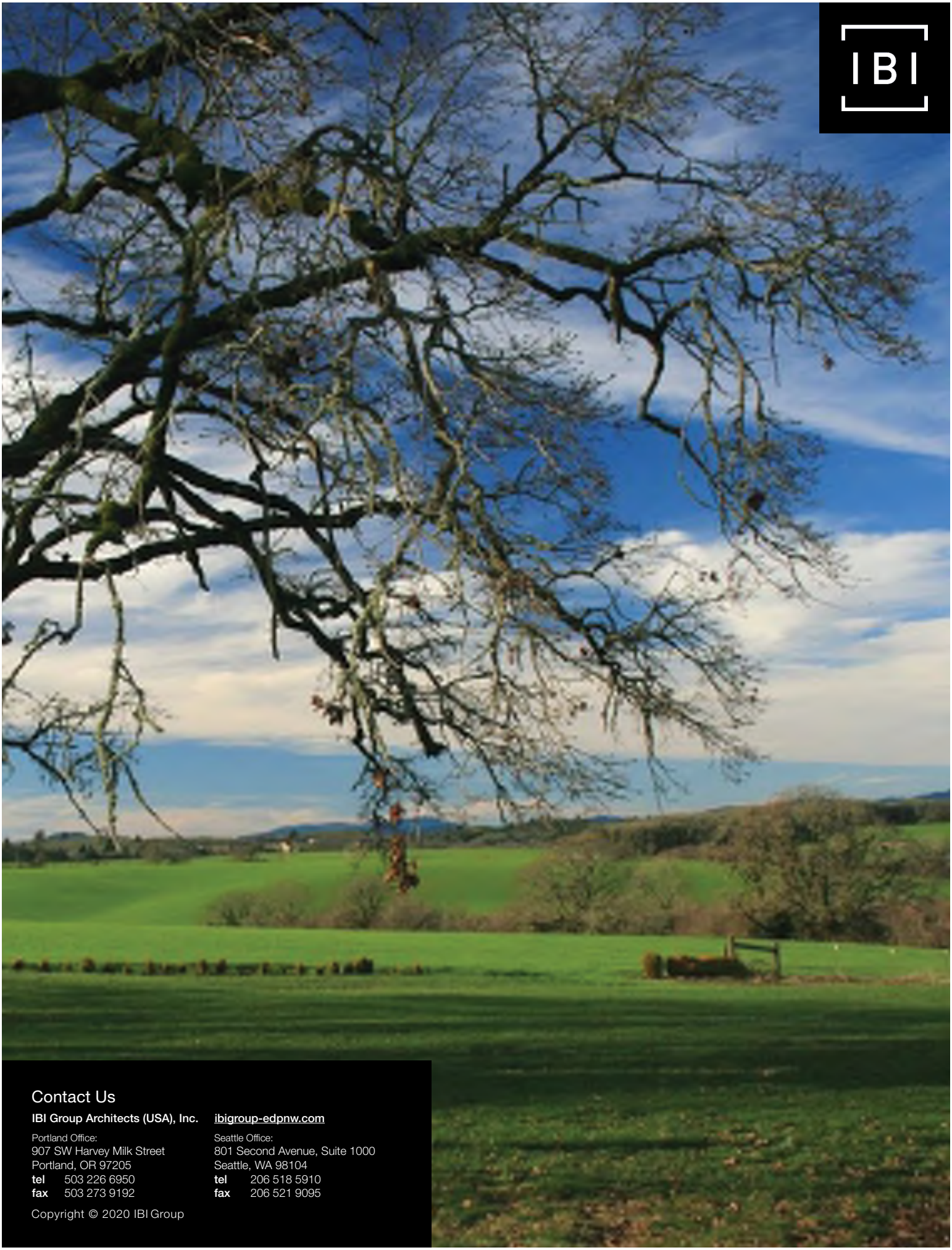
APPENDIX G: RETROFIT COST ESTIMATES

COST SUMMARY ESTIMATE

Description	Unit Cost	Number of Units	Total Cost
Shear wall improvements	$ 500.00	450 LF	$ 225,000.00
Shear wall foundations	$ 100,000.00	1 ea	$ 100,000.00
Shear wall collectors/chords	$ 75.00	1500 LF	$ 112,500.00
Strong backing unreinforced masonry partitions	$ 15.00	18000 ft^2	$ 270,000.00
Plywood overlay at straight sheathed diaphragms	$ 45.00	1500 ft^2	$ 67,500.00
Geotechnical study	$ 10,000.00	1 ea	$ 10,000.00
Shut off valves and flexible couplings	$ 10,000.00	1 ea	$ 10,000.00

Sub Total	=	$ 795,000.00
Soft Costs	=	$ 318,000.00
Total Cost	=	**$ 1,113,000.00**

Note:
This estimate includes allowances for selective demolition and modest replacement of architectural materials, including wall finishes, trim, and roofing.



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