CO-OP GAS & SUPPLY COMPLEX
GRANARY BUILDING FEASIBILITY STUDY

Prepared for the Bonner County Historical Society by
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PROJECT SUMMARY

This study represents the culmination of numerous building investigations, site meetings, discussions, and preliminary sketches intended to implement the appropriate adaptive reuse project in the last remaining historic granary building in Sandpoint, Idaho.

All of these efforts have aimed at crafting a project which makes good use of the building, enhances the city's vitality, provides broad access to the public and maintains the historic qualities of the structure.

For all of these reasons, the building is well suited to be the new home of the Bonner County Historical Society's history museum, archives, educational resources, and public events space.

Adapting the structure to a museum would place very specific requirements on the building, many of which are covered in this document. These requirements can include specific layouts for exhibit display and circulation areas, extensive environmental controls (i.e. lighting, temperature, humidity and fresh air) for the protection of historic materials, and specific building-code driven safety measures for high occupant loads. Additionally, funding for a public project like the history museum has different requirements than that of a private development, thus a detailed financial strategy is important to compile before any construction or design work begins.

This study was commissioned by the Bonner County Historical Society to catalog and depict the general scope of construction work entailed in addressing these considerations, the viable directions to initiate design work for the project, and the different financial assistance programs available in preparing the granary building for use as their museum. It includes two primary parts: (1) the architectural and structural summary and corresponding graphics, data, building drawings, that are presented in this document and Addenda 1-4, and (2) the historic assessment in Addendum 5 that serves as a roadmap for renovation/restoration/conservation work and the corresponding grants and funding resources available.

PROGRAM

A preliminary breakdown of the floor areas available for the museum uses at the granary building are given in Figure 1 on the following page. These are preliminary and stem from some basic initial assumptions. All figures are intended to be further developed and better detailed during the project design.

The available floor area of the existing granary is approximately 8,600sf, slightly larger than the museum's current 611 Ella Avenue location, which totals approximately 7,800sf (calculated using the City of Sandpoint online GIS maps).

The chart here includes only the existing granary floor areas. Depending on the final design, there is an option to add at least one additional 400sf mezzanine level in the granary building for a total of 9,000sf.

The primary floor areas and uses depicted by this chart were compiled from input given by the museum's Executive Director, Olivia Luther Morlen. These areas include uses for archives, research, two administrative offices, a registrar's office, a conference room, a gifts shop, and a kitchen.

Additional space was added here for equipment & janitorial uses, restrooms, and an elevator & stairs. These were based on approximate floor areas required for projects of similar scale. An area designated for storage was added based on the existing building storage under the shed roof addition at the north end of the building.

Any floor area remaining from the total was included as exhibits & circulation space.

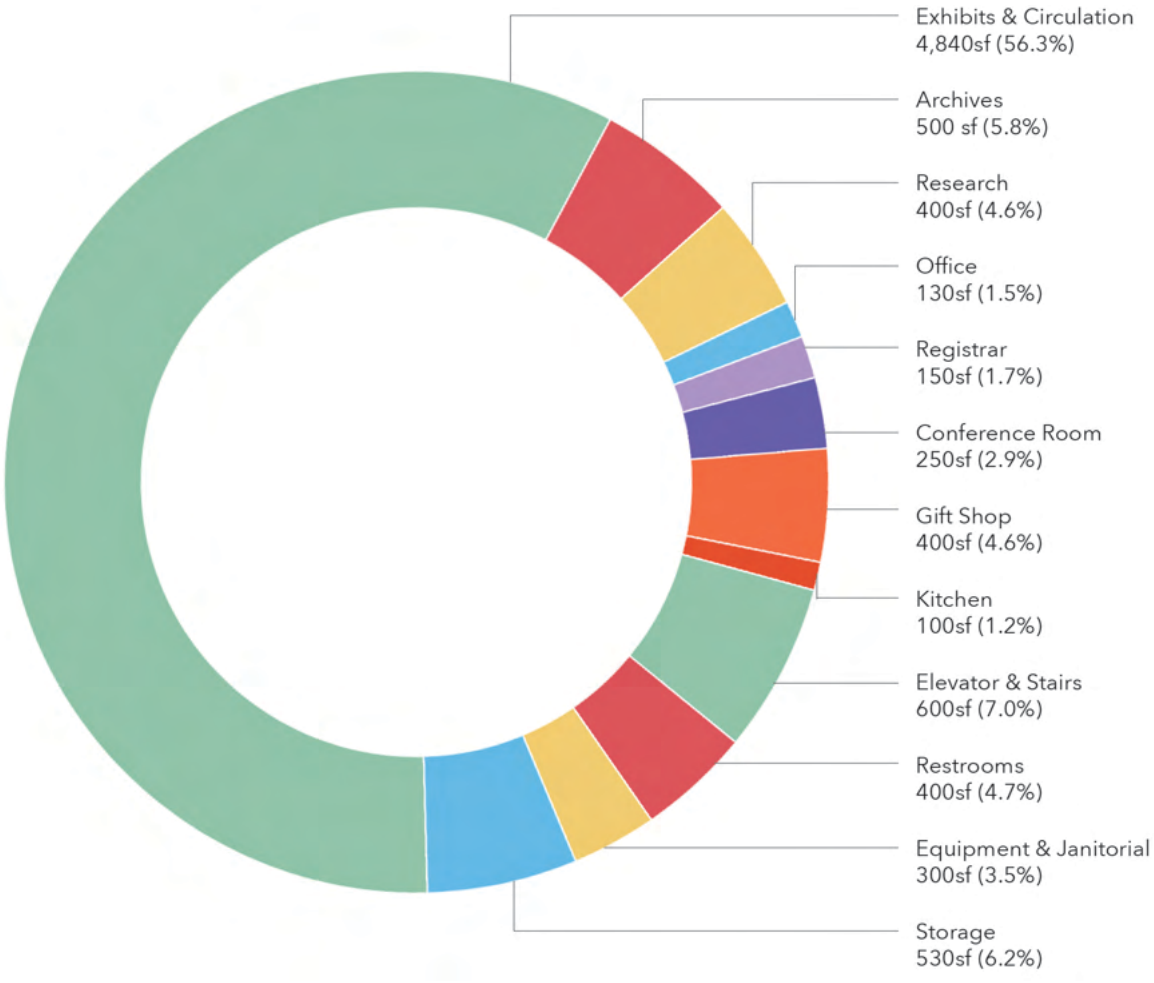


Figure 1. Required floor areas and uses for the BCHS Museum

BUILDING CODE CONSIDERATIONS

For a project such as this, one that entails a change of building use and possible structural revisions, a comprehensive building code compliance strategy is required for permitting and inspections, and is important for the ongoing safety of the occupants and owners. The following graphics should be seen as guides to what is possible for addressing some of the most complex building code issues on the project in order to provide public access to the grain processing portion of the building. All of these strategies would require significant demolition of the building's grain bins.

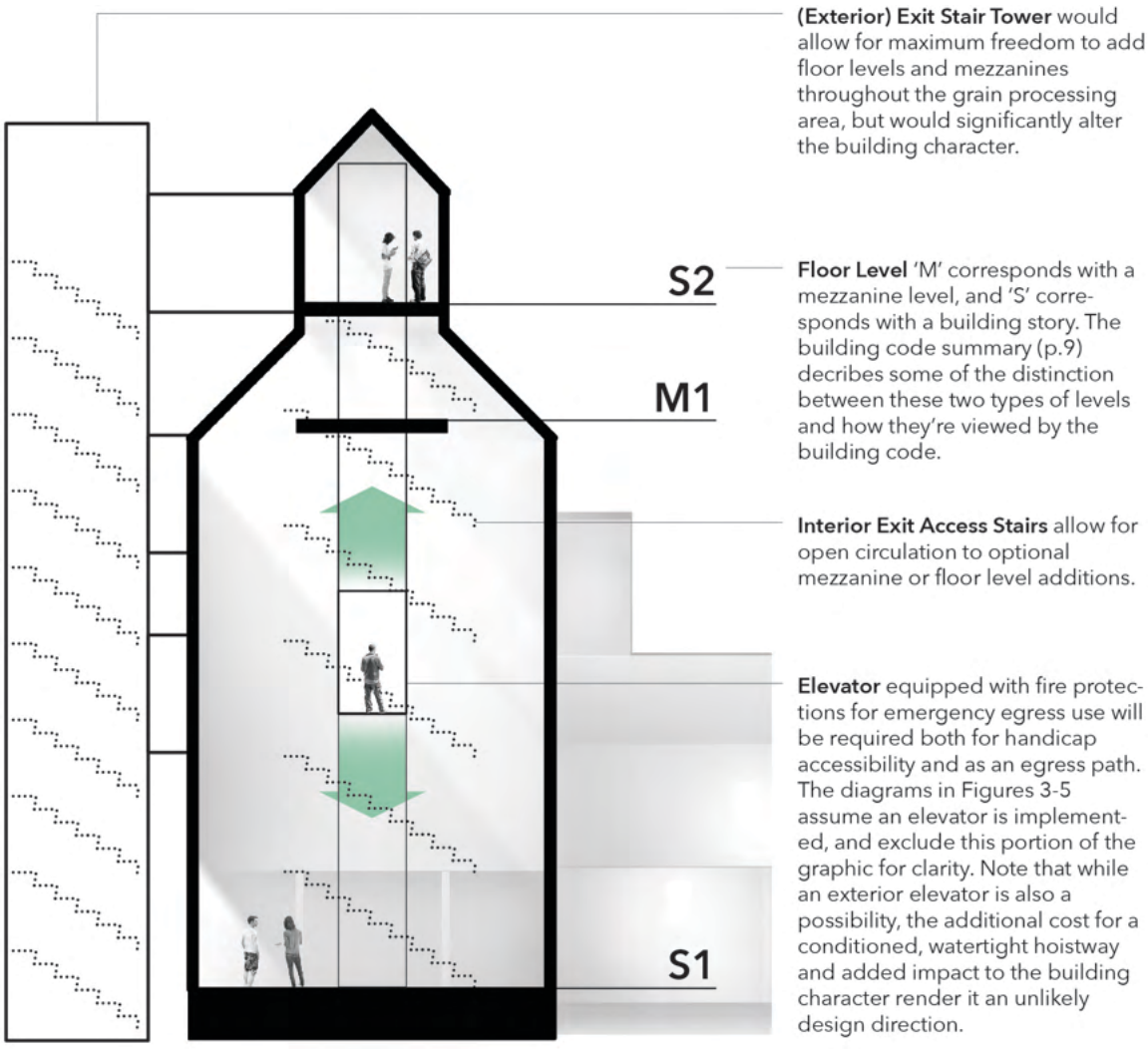


Figure 2. Graphic legend for the grain processing design options shown in Figures 3, 4 and 5.

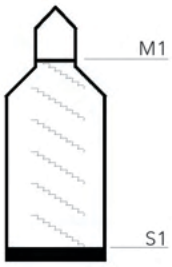


Figure 3. One story and mezzanine option.

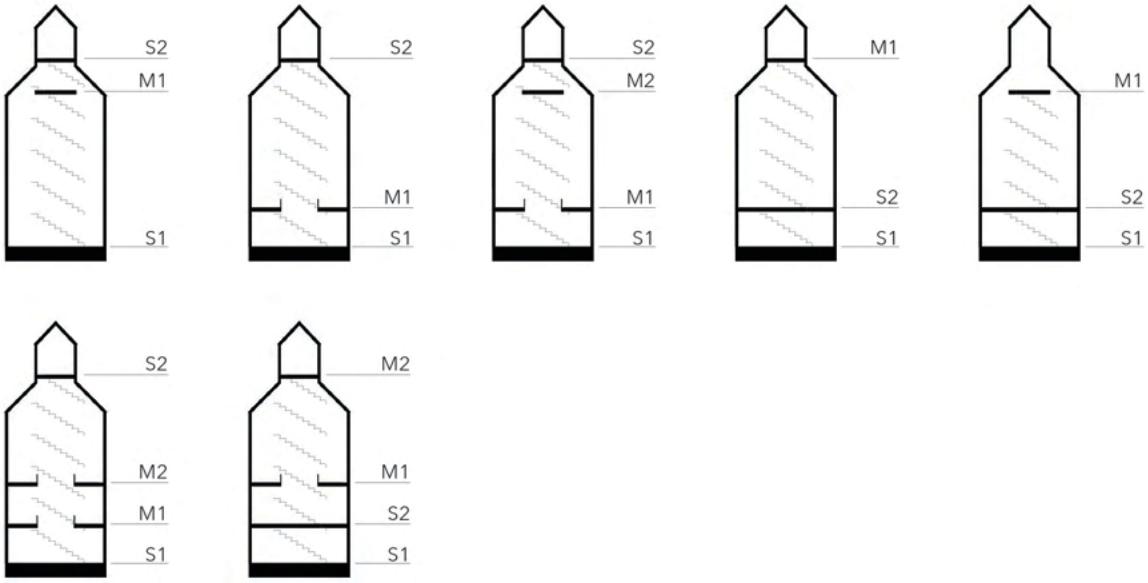


Figure 4. Two story and mezzanine configuration options.

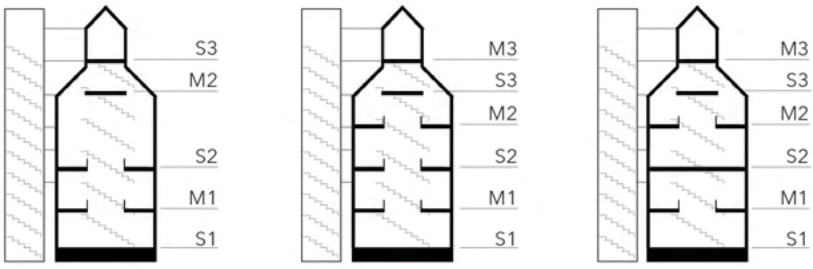


Figure 5. Three story and mezzanine options. Note the required, additional stair tower.

BUILDING CODE SUMMARY

ITEM	NOTES	REFERENCE
Jurisdiction	City of Sandpoint	
Applicable Codes	2012 ICC International Building Code	
Types of Construction	Type VB, Combustible exterior/interior walls and structural elements	IBC 602.5
Use and Occupancy Classifications	**Established Uses** F1 - Moderate Hazard Factory Group (grain processing) S1 - Moderate Hazard Storage Group (grain storage) M - Mercantile (feed and supply store) B - Business Use, Indoor Athletic Gymnasium (rock gym) **Additional Proposed Uses** A3 - Assembly Group (museum gallery)	IBC 303.1.2 IBC 303.4 IBC 304.1 IBC 306.2 IBC 309.1 IBC 310.4 IBC 311.2
Allowable Building Areas and Heights	**Existing Structure** Area: max. 5,180sf on a story, 8,623sf total (includes unconditioned north storage) Stories: 3 + mezzanine (may be deemed 2 + multiple mezzanine levels) Height: approx. 75' **Allowable Structure** Area: 6,000sf for each story (additional possible with fire sprinkler & frontage increases) Stories: 1 allowed + 1 for fire sprinkler increase Height: 50' + 20' for fire sprinkler increase The existing top floor of the structure exceeds the building code requirements for maximum height allowance. Additionally, all levels above the first floor are only allowable with the increases granted with a new fire sprinkler system. Chapter 34 Existing Buildings and Structures provides some options for getting the entire building compliant. Also, there are compliance strategies depicted in the unadopted ICC Existing Building Code that handles these types of renovations more comprehensively, and this would require pre-approval from the City of Sandpoint.	IBC Table 503 IBC 504.2 IBC 505.2 IBC 506 IBC Table 602 IBC Chapter 34 IEBC Table 1012.5 IEBC 1012.5.1.1 IEBC 1012.5.2

BUILDING CODE SUMMARY

ITEM	NOTES	REFERENCE
Egress and Building Exiting	**Enclosed Interior Exit Stair (or Exterior Stair Tower)** Any configuration that includes more than 2 stories will require an enclosed interior exit stair or exterior stair tower, which will dramatically change the project scope, cost, and building character. The number of usable floors can be more than 2 depending on floor construction and maximum use of mezzanines (in other words, 2 "stories" + multiple "mezzanines"). However, mezzanines are very limited in floor area, and almost always have to be open to the floor below. **Exterior Doors** Historic sliding doors, while important for historic building character, are not allowed for emergency egress. Additional swing doors with panic hardware will be required at points of exit discharge. **Exit Access Travel Distance** This will be limited to 250' total travel distance for a sprinklered building with a museum/gallery use. An open interior stairway from the ground level to the highest level of the grain processing portion will come close to this threshold and will need to be designed accordingly. **Common Path of Egress Travel** This is limited to 75' and will be a very important factor in determining egress from the top floor level of the grain processing portion. Generally, it restricts the distance you can travel before multiple exit options are available. This will likely need to be addressed by an occupant evacuation elevator with a fire-rated hoistway enclosure, in addition to an open interior exit access stair to the top floor. Enclosed interior exit stairs and exterior stair towers could also supplement a solution to this issue.	IBC 1008.1.9 IBC 1009.2 IBC 1009.3 IBC Table 1014.3 IBC Table 1016.2 IBC 1021.1
Accessibility, Wheelchair and Handicap Access	**Accessible Means of Egress** Additional, accessible means of egress are recommended, but not required outright for alterations to existing buildings. (continued)	IBC 1007.1

BUILDING CODE SUMMARY

ITEM	NOTES	REFERENCE
Accessibility, Wheelchair and Handicap Access	**Elevator** An elevator is required for this project. An initial review shows that the building receives some accessibility exemptions in the IBC as an existing, historic structure, and may be able to narrowly skirt an elevator requirement if interior and exterior exit stairs are provided to upper levels. However, this could theoretically be interpreted as non-conforming with the Americans with Disabilities Act, leaving the museum exposed to possible litigation from visitors. Additionally, the IBC requires the accessible upgrade cost for the area of primary function (i.e. public, exhibit space) to meet a which is 20% of the construction costs.	IBC 3411.7
Fire Suppression	**Fire Sprinklers** A comprehensive sprinkler system is required for a museum/ gallery use that is 1 story or more above the level of exit discharge (ground level, in this case). **Fire Alarm** A fire alarm and detection system is required for any exhibit gallery and museum space with over 300 occupants (there are some exceptions to this). The 300 occupant count is very close to the anticipated occupant load for the building, and so it isn't yet clear if a fire alarm system will be required outright. However, a fire alarm is strongly recommended for a public space like this, and is actually required to operate in conjunction with some sprinkler systems.	IBC 903.2.1.3 IBC 907.2.1
Fire Separation	**Exterior** None of the site buildings, nor centerlines of the adjacent public right-of-ways, are closer than 10' to the building. Given the use and construction type of the building, no exterior fire rated assemblies are required. **Interior** A rated, enclosed hoistway is required for the elevator, with a continuous separation direct to a building exit at Level 1. Smoke management detailing is likely required at the grain processing portion of the building as well, depending on final design. Any additional interior fire separation requirements will be driven by the design.	IBC Table 602 IBC 3002.1 IBC 3008.6

BUILDING CODE SUMMARY

ITEM	NOTES	REFERENCE
Structural Requirements	**Existing Structure** See the structural engineer's building summary (Addendum 4). This includes a catalog of the existing structural elements compiled from numerous on-site assessments. **Seismic Upgrades** The existing structure is required to undergo seismic upgrades that correspond with a change in use for an A3 - Assembly Group (museum gallery). This often entails new shear walls or moment frame structures, foundation revisions to accommodate these lateral forces, and additional fasteners and connectors to reinforce the load transfer between building elements. **Grain Bin Alteration** The grain bins provide much of the building's lateral stability, and Main Wind Force Resistance System (MWFRS). They are also a primary character defining feature for historic preservation purposes. However, if the upper levels of the building are going to be available for public access, the grain bins, or major portions of them, will need to be removed. One alternative could be to provide an exterior stair and elevator tower. However, this would come at significantly higher costs than interior versions of the same. Also refer to the structural engineer's building summary for more discussion on this point (Addendum 4). **Wind Loads, Roofing and Wall Cladding Attachment** The existing corrugated tin roof and wall cladding shows significant deterioration (rust) in numerous places. While these materials contribute to the building character, they also pose a life-safety issue in the form of panels that can lift off in wind storms and fall over seventy feet to the ground (which the owner indicates has happened in the past). In order to address this issue and meet current wind load requirements, the roofing and wall cladding either need significant restoration, reinforcement and proper reattachment, or full replacement.	IBC Table 1604.5 IBC 1609.5 IBC Table 1609.6.2 IBC 1609.6.4.4.1 IBC 3408.4

LAND USE CODE SUMMARY

ITEM	NOTES	REFERENCE
Bonner County Parcel No.	RPS013300N001CA	
Zoning	CA, Commercial-A	Official City of Sandpoint Zoning Map, 2015
Permitted Uses	Museums, Community Centers, Offices, Retail	SCC 9-2-1-3-A
Setbacks	**Existing Setbacks** 0'-20' (varies w/ angle) Front Setback to Church Street 77'-148' (varies w/ angle) West Side Setback to 6th Ave 0' East Side Setback to ITD Right Of Way (ROW) 164' Rear Setback to Oak Street (measured using City of Sandpoint GIS Maps) **City of Sandpoint Requirements** 0' setback from all property lines permitted and encouraged **Idaho Transportation Department** Much of the building currently has a 0' setback on the ITD ROW to the east of the site, with a portion of the SE corner previously extending into the ROW (the building owner has recently secured ownership of this corner from ITD as part of the granary site). Close coordination will be required to determine options for any ramps and stairs up to the building main level at the east side, as well as any revisions to the building exterior that would project into the ROW.	SCC 9-2-1-4 SCC 9-2-1-6-B
Parking	No off street parking is required for the first 2,000sf of gross floor area for any project in a Commercial-A zone. Assuming a project area of 8,600sf, a total of 17 off street parking spaces are required for a museum use. The project can either A) provide these spaces on the somewhere on the complex site in conjunction with other existing and forthcoming projects, or B) submit to the city for a full or partial variance from this standard.	SCC 9-5-17 SCC 9-2-2-11
Building Design Standards	Building size, bulk, scale, mass, storefront configuration and material use are regulated for all new construction projects and would not apply for an existing building project.	SCC 9-2-1-6

ENERGY CODE SUMMARY

ITEM	NOTES	REFERENCE
Applicable Codes	2012 ICC International Energy Conservation Code	
Climate Zone	6B - It's advisable to research climate trends and future outlooks to design for a more conservative climate and precipitation zone.	IECC Table C301.1 IECC Table C301.3(1) IECC Table C301.3(2)
Insulation Requirements	**Roofs** R-30 continuous insulation (i.e. insulation board installed exterior to the sheating), or U-0.032 total assembly **Walls** R-13 batts + R-7.5 continuous insulation, or U-0.051 total assembly performance **Floors** R-30 batts + air barrier U-0.033 total assembly performance	IECC C402.1.2 IECC C402.2
Air Barrier	In addition to insulating the building roof, wall, and floor assemblies around the perimeter of the building's thermal envelope, an air barrier is required at these areas to control exchanges with outside air. Final installations are required to be tested by inducing air pressure differences between the interior and exterior environments in accordance with ASTM E779	IECC C402.4.1
Fenestration Performance	**Windows** Fixed: U-0.36, Operable: U-0.43 Max. 0.40 SHGC **Doors** Max: U-0.77, 0.40 SHGC **Skylights** Max. U-0.50, 0.40 SHGC	IECC Table C402.3

ENERGY & SUSTAINABILITY

There are several categories that make up a building sustainability strategy. The list given below is limited to categories that would be most applicable or relevant to this project. These stem from general recommendations in line with good building science and sensible lifetime building cost analyses, as well as scoring categories for sustainability programs such as the Living Building Challenge, Zero Energy (or Net Zero), and LEED.

Further analysis would be required to pursue one of these programs, including assessment of building site development, manufacturing and sourcing of all the project materials, quality of lighting, air, and overall interior environment, and efficiency in the total building water use.

BUILDING ENVELOPE PERFORMANCE

Perhaps the single biggest energy performance measure that can be implemented on this project is to better insulate and air-seal the entirety of the building. The heating, cooling and ventilation requirements of the building account for approximately half of the anticipated energy use (Figures 7-10), with lighting and equipment loads (or wall outlets) making up the rest.

High levels of insulation (R-values greater than the code minimums on p. 12), combined with high performance triple-glazed windows, and meticulous air-sealing details often pay off in less than 10 years, and continue to pay off for the functional life of the building.

As any thermal and air sealing strategy works by controlling and slowing air exchanges to the outdoors, this work will require good moisture control design as well. This is especially important to ensure that historic wood and timber elements that have been able to dry freely over the years can continue to dry as needed from any of the moisture issues typical to the region's climate.

MECHANICAL HVAC, ELECTRICAL, AND LIGHTING SYSTEMS

The existing building has very limited, ad-hoc electrical and light fixtures, and no permanent mechanical heating, ventilation or air conditioning (HVAC) systems. New systems are required, and this can be an excellent opportunity to further reduce the anticipated energy consumption shown in Figures 7-10.

A standard variable air volume (VAV) mechanical system was assumed for the energy analysis in this study, but there are numerous emerging technologies that require simpler systems, often requiring less total energy.

Dedicated outdoor air systems, for example can be paired with affordable ductless split systems, which utilize low-energy heat pumps for temperature control. These two, simpler systems can constitute a comprehensive HVAC strategy.

Lighting cost and performance will also be a major consideration. Good daylighting strategies are a hallmark of museum design, and are recommended to offset both the up front and continued operating costs of electrical lighting (refer to Figures 11-14 on p. 19 for examples). High performance LED lights should also be considered for longevity, low electrical demand, and for full control of light color, temperature, and intensity on museum exhibits.

Electrical systems in high-performance buildings will also implement extensive metering at each panel, circuit, and sometimes each individual wall outlet to track equipment loads. This can allow for ongoing commissioning and improved use of the electrical systems.

ON-SITE RENEWABLE ENERGY

Among geothermal, wind, and solar energy collection options available on-site, solar energy represents the most appropriate strategy for this project. Geothermal systems typically entail major soil work and are susceptible to failure in seismic zones. Wind systems are most effective in rural and open areas where winds move more consistently and at higher average speeds.

Active solar capturing systems, such as photovoltaic systems (standard PV panel arrays, paving replacement panels, or siding/roofing replacement panels) are more cost effective and better suited to this project than passive capturing systems, such as solar hot-water panels. However, the building itself has limited opportunity to support the ideal south-facing solar collectors. This will have to be weighed against impacts to the building character as well.

INCENTIVE PROGRAMS

Energy performance incentives are generally issued through either the local energy utility or through a government body via grants and tax incentives. The primary government incentive for energy-efficient commercial buildings, the Energy Policy Act of 2005, expired in December of 2016 and was not extended. See the following link for further reading:
http://programs.dsireusa.org/system/program/detail/1271

Avista Utilities offers a variety of incentives for implementing different types of efficient equipment as well as improving the building's thermal envelope. These should be studied closely in conjunction with the final design work to ensure the best balance of up-front costs with lifetime costs. See the following link for further reading:
https://www.avistautilities.com/business/rebates/Pages/IDCommercialRebates.aspx

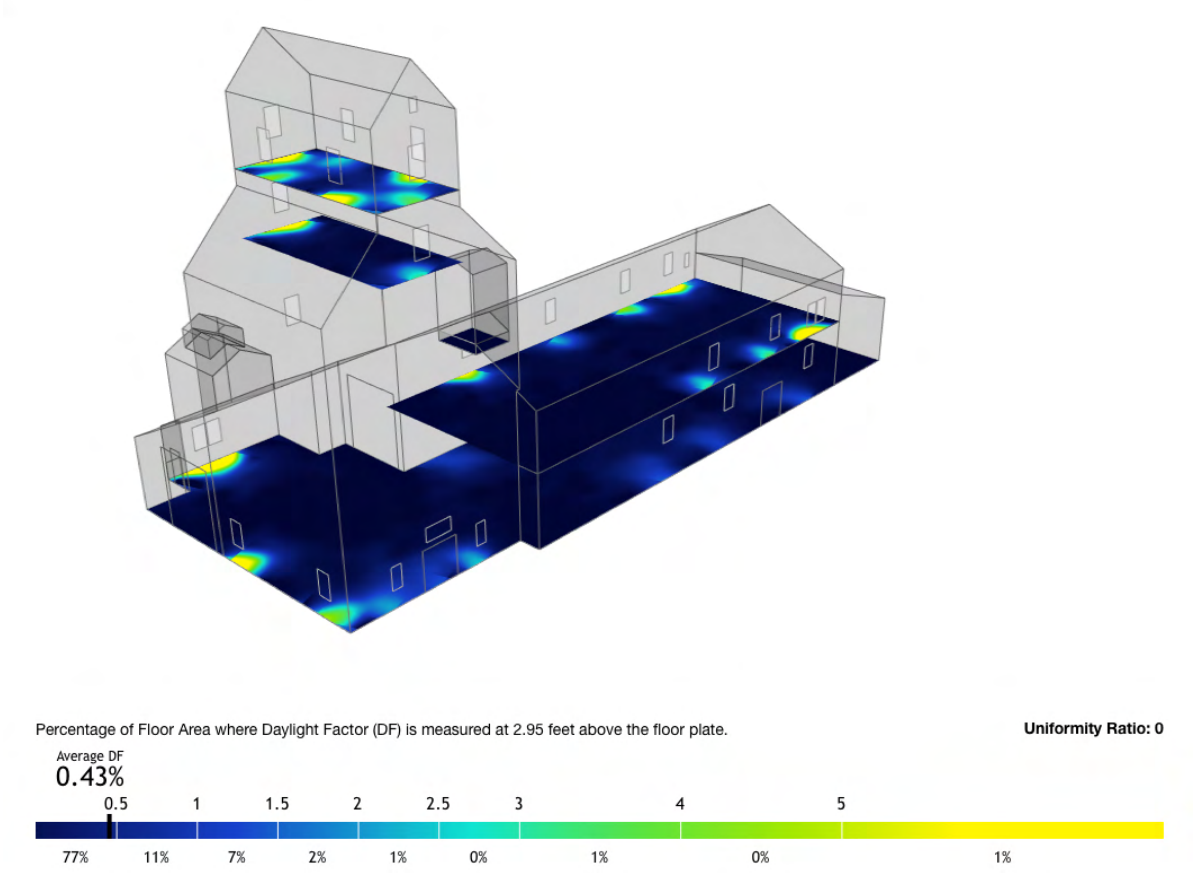
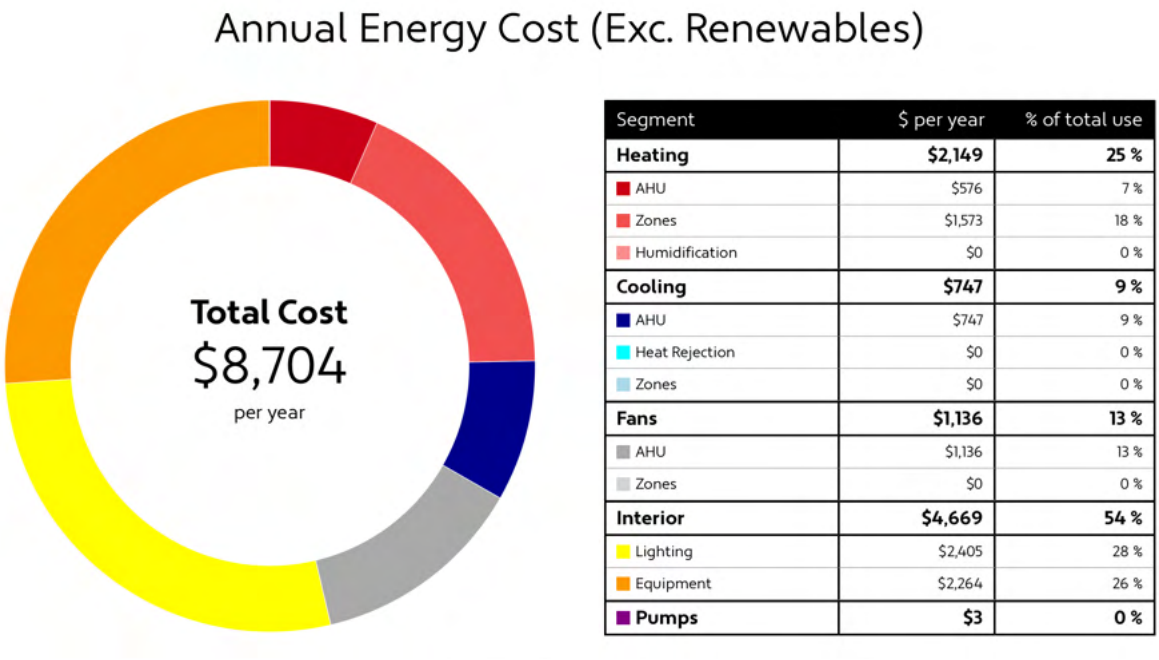


Figure 6. Daylighting assessment of the existing building. Note significant amounts of the building have very low access to natural daylighting, indicated by the dark blue tones. The "Daylight Factor" is a figure used to assess the daylight inside a structure as compared to available daylight outside. For reference, a LEED certified project will typically attain a daylight factor of at least 2% across a minimum of 50% of the building floor area.



Segment	$ per year	% of total use
Heating	**$2,149**	**25 %**
AHU	$576	7 %
Zones	$1,573	18 %
Humidification	$0	0 %
Cooling	**$747**	**9 %**
AHU	$747	9 %
Heat Rejection	$0	0 %
Zones	$0	0 %
Fans	**$1,136**	**13 %**
AHU	$1,136	13 %
Zones	$0	0 %
Interior	**$4,669**	**54 %**
Lighting	$2,405	28 %
Equipment	$2,264	26 %
Pumps	**$3**	**0 %**

Figure 7. Projected annual energy cost for the building. Assumes only minimum IECC and ASHRAE 90.1 compliance, no onsite renewable energy, and a standard, commercial use variable air volume (VAV) mechanical system. Projection created using Sefaira and US DOE EnergyPlus simulation tools.

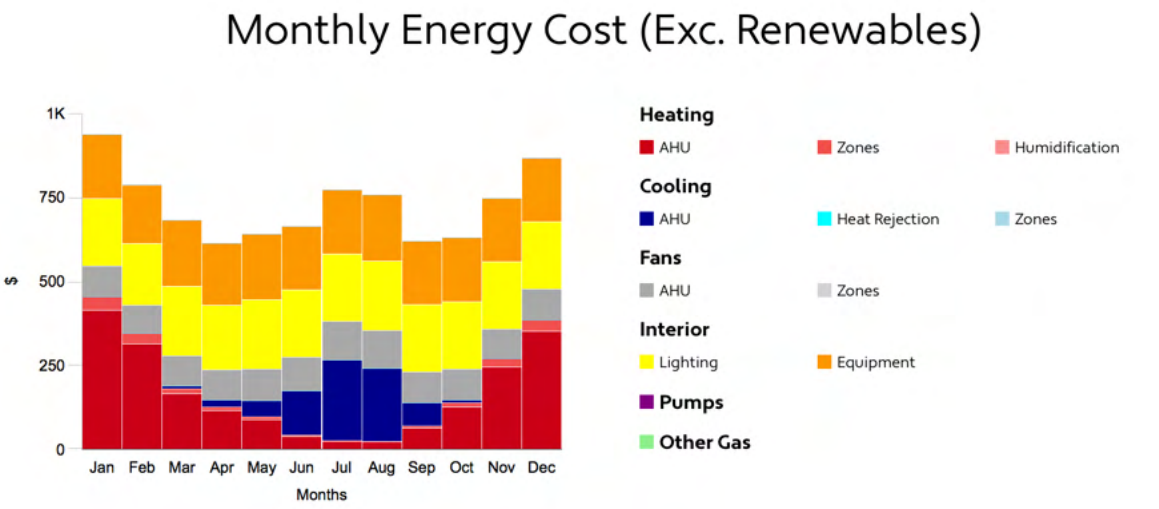
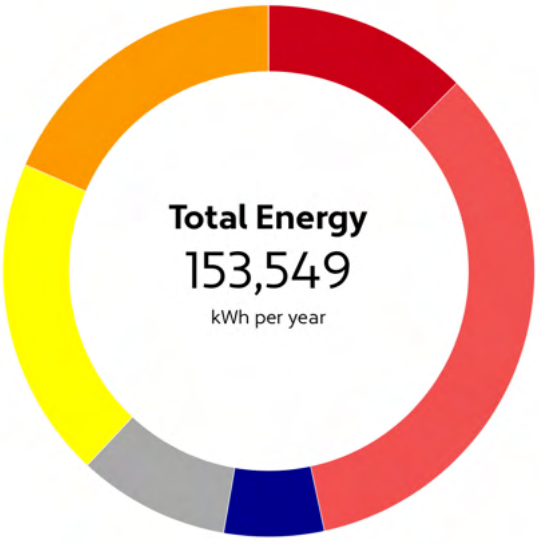


Figure 8. Projected monthly energy cost for the building. Assumes only minimum IECC and ASHRAE 90.1 compliance, no onsite renewable energy, and a standard, commercial use variable air volume (VAV) mechanical system. Projection created using Sefaira and US DOE EnergyPlus simulation tools.

Annual Energy Use



Segment	kWh per year	% of total use
Heating	**71,618**	**47 %**
AHU	19,196	13 %
Zones	52,422	34 %
Humidification	0	0 %
Cooling	**9,339**	**6 %**
AHU	9,339	6 %
Heat Rejection	0	0 %
Zones	0	0 %
Fans	**14,194**	**9 %**
AHU	14,194	9 %
Zones	0	0 %
Interior	**58,359**	**38 %**
Lighting	30,064	20 %
Equipment	28,295	18 %
Pumps	**39**	**0 %**

Figure 9. Projected annual energy use for the building. Assumes only minimum IECC and ASHRAE 90.1 compliance, no onsite renewable energy, and a standard, commercial use variable air volume (VAV) mechanical system. Projection created using Sefaira and US DOE EnergyPlus simulation tools.

Monthly Energy Use

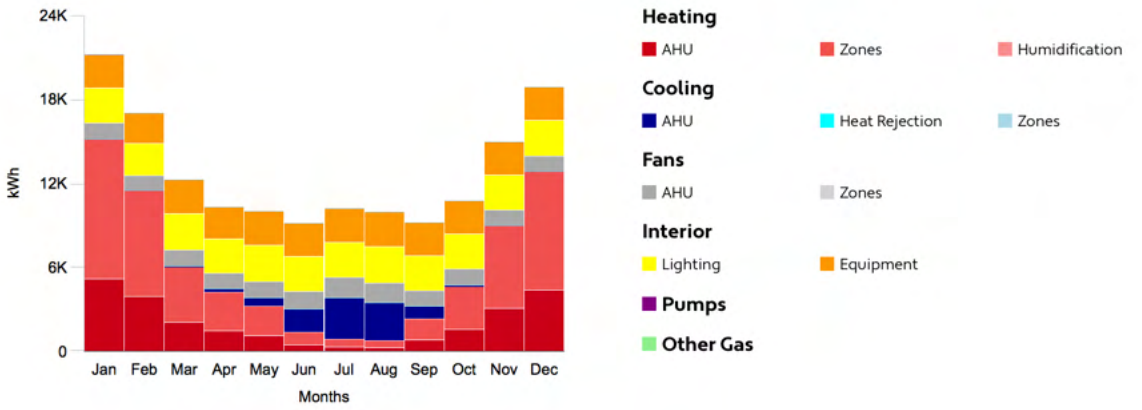


Figure 10. Projected monthly energy use for the building. Assumes only minimum IECC and ASHRAE 90.1 compliance, no onsite renewable energy, and a standard, commercial use variable air volume (VAV) mechanical system. Projection created using Sefaira and US DOE EnergyPlus simulation tools.

PRELIMINARY DESIGN CONSIDERATIONS

The following list of design elements represent some of the discussions and ambitions that have come up during this feasibility stage. These stem from varied sources, be it ideas discussed with the building owners, general museum use and display considerations, and common issues in adaptive reuse projects. They represent a catalog of relevant possibilities and considerations that will be important to evaluate during the design phase.

Retain Important Historic Elements: all parties have expressed interest in maintaining character defining historic elements to the extent practical for the usability of the building.

Grain Bin Revisions: the grain bins represent a primary character defining feature as well as a primary structural element for resisting lateral loads. Keeping them completely intact, however, will rule-out an interior stair and elevator to the upper levels of the building.

Siding and Roofing: the deteriorated siding and roofing panels pose a life-safety issue in the form of panels that can lift off in wind storms and fall over seventy feet to the ground (which the owner indicates has happened in the past). These will very likely require replacement.

Elevator: Public access to the upper levels of the grain processing portion of the building will require a new elevator, both for handicap accessibility requirements and for egress purposes (refer to the code summary portion of this report, p.9-10). Most discussions have leaned toward the idea of a glass, panoramic elevator with the smallest possible footprint to maximize the limited floor area of the building's top level.

Stairs: Public access to the upper levels of the grain processing portion of the building will also require egress stairs as part of the design. These have been loosely discussed as an open-air, architectural feature that would require partial or full removal of the existing grain bins. The total travel distance required in the building code (p. 9) will be a primary driver of this design.

Catwalk/Mezzanine: The owner has expressed interest in open-air walkways for gallery displays to be included at various heights throughout the grain processing portion of the building. These could make for added usable space, as well as an elegant means to take in the height and drama of the historic structure. See Figure 3-5 on p. 7 for viable configurations.

Skylights: Another ambition that has been loosely discussed is fenestration (skylights are one possibility) to carry light down through the entirety of the grain elevator. This could assist in the building's poor access to natural light, but would need to be detailed to prevent direct light on museum displays. Some precedents are depicted in Figures 11-14.

Figure 11. Natural lighting softened by wood screens in the Hiroshige Museum, Japan.

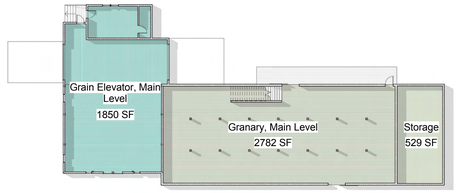
Figure 12. Translucent roofing panels provide for even, natural lighting in the Asian Art Museum in Seattle, Washington.

Figure 13. Perforated aluminum roofing panels allow lighting to pass through to the interior without compromising the historic character of this restored barn.

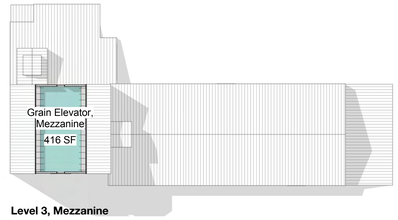
Figure 14. The interior of the same barn from Fig. 13. Note that harsh, direct sunlight is made soft and indirect with the small perforations of the panels.

Gross Building Areas

Name	Area
Grain Elevator, Main Level	1850 SF
Grain Elevator, Mezzanine	416 SF
Grain Elevator, Top Floor	416 SF
Granary, Level 2	2610 SF
Granary, Main Level	2782 SF
Storage	529 SF
	8603 SF



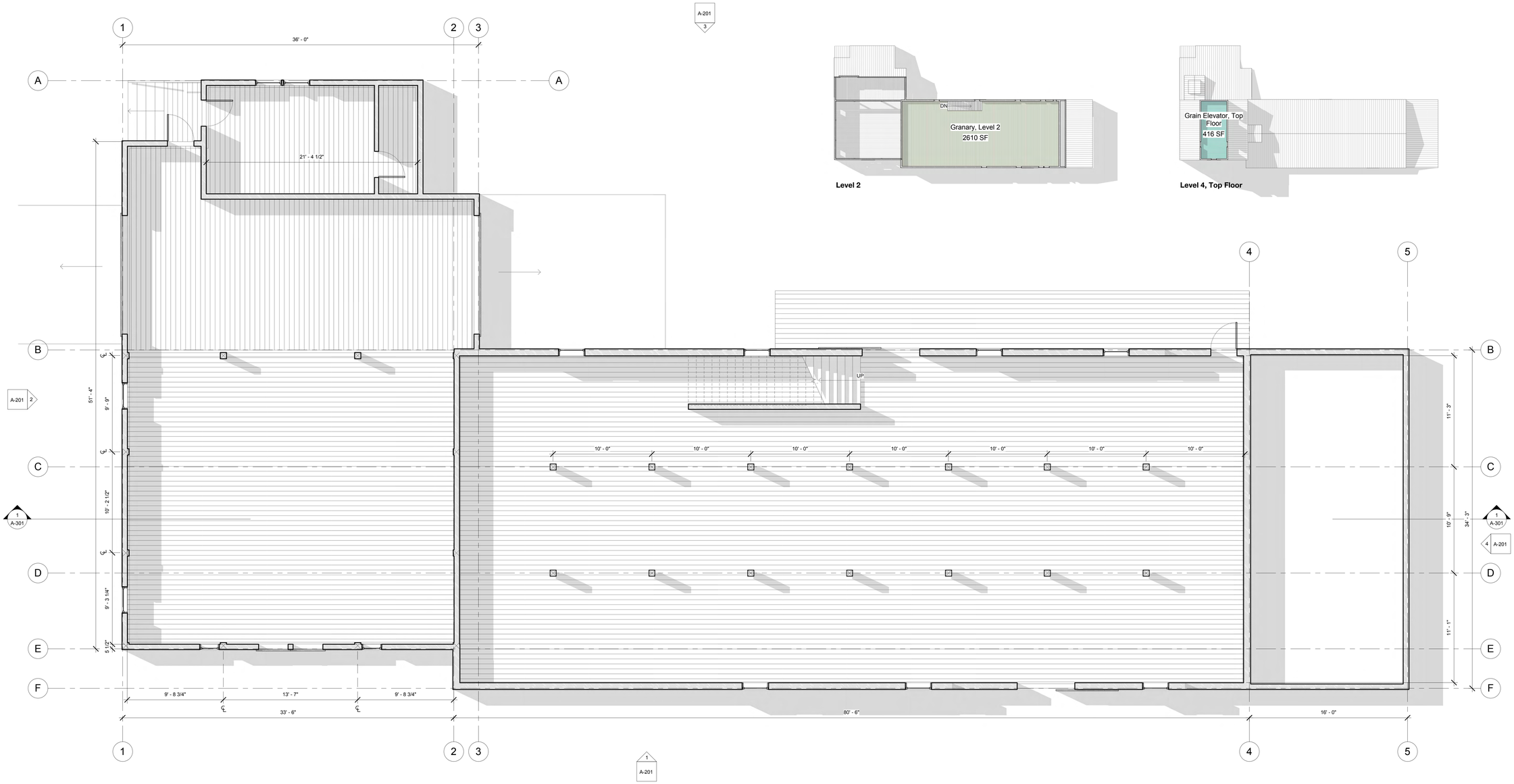
Level 1



Level 3, Mezzanine

Level 2

Level 4, Top Floor



1 **Level 1, Approximate Existing Plan**
1/4" = 1'-0"

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LICENSED ARCHITECT
AR-980028
DUSTIN CHAPIN
STATE OF IDAHO

BCHS Museum

Not for Construction

Revisions

NO.	DESCRIPTION	DATE

Project

ADDRESS	524 Church Street, Sandpoint, ID
CLIENT	BCHS
ARCHITECT	
PROJECT NO.	

Sheet and Set

DRAWINGS BY	DC
DRAWINGS SET	Structural Coordination 1
ISSUE DATE	2017.03.24
SHEET TITLE	Level 1, Approximate Existing Plan
SHEET NUMBER	

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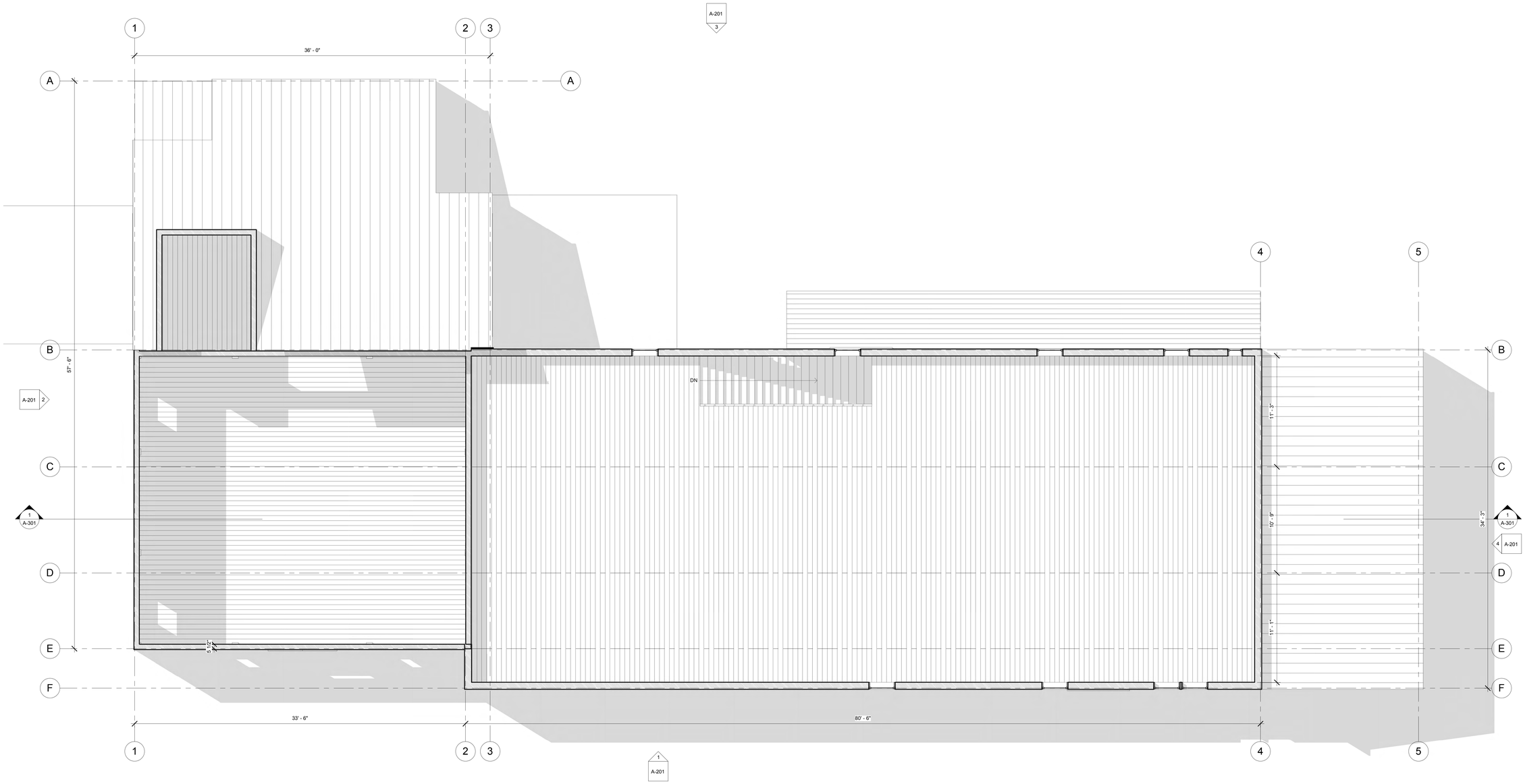

1 **Level 2, Approximate Existing Plan**
1/4" = 1'-0"

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STATE OF IDAHO

BCHS Museum

Not for Construction

Revisions

NO.	DESCRIPTION	DATE

Project

ADDRESS	524 Church Street, Sandpoint, ID
CLIENT	BCHS
ARCHITECT	
PROJECT NO.	

Sheet and Set

DRAWINGS BY	DC
DRAWINGS SET	Structural Coordination 1
ISSUE DATE	2017.03.24
SHEET TITLE	Level 2, Approximate Existing Plan
SHEET NUMBER	

A-102

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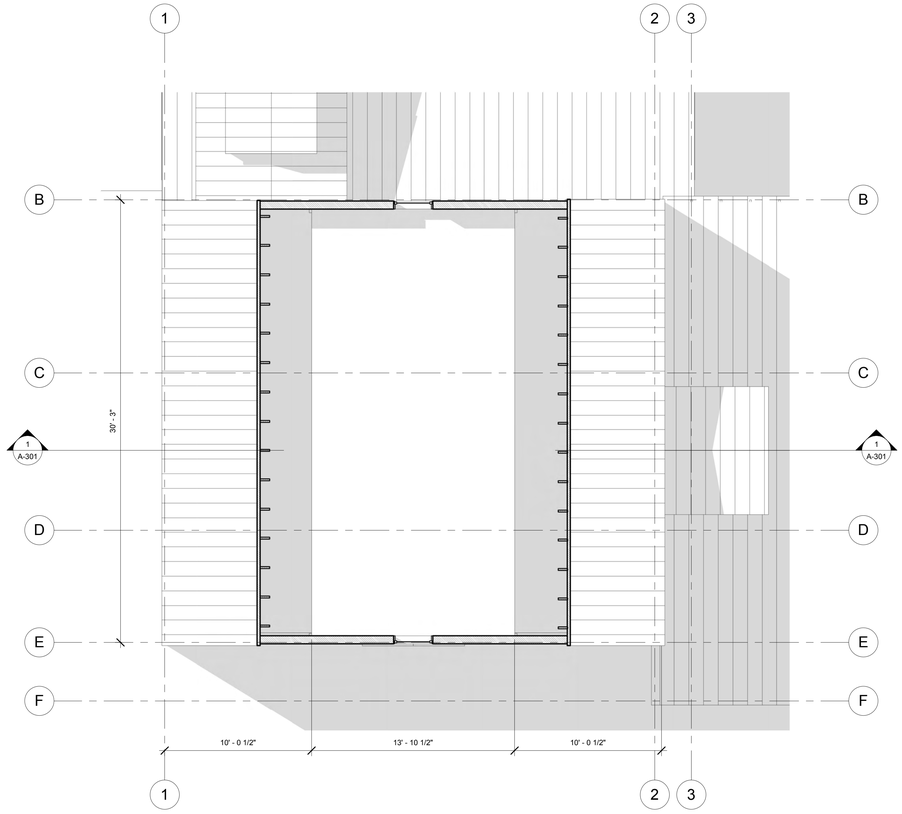
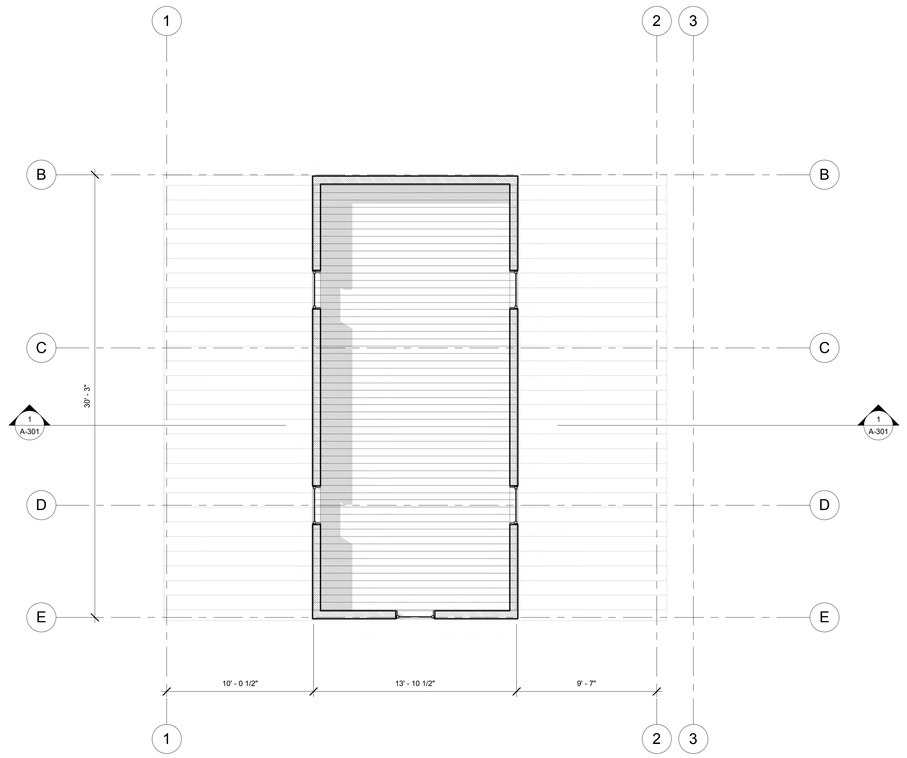


1 **Level 3 (Mezzanine), Approximate Existing Plan**
1/4" = 1'-0"



2 **Level 4, Approximate Existing Plan**
1/4" = 1'-0"

BCHS Museum

Not for Construction

Revisions

NO.	DESCRIPTION	DATE

Project

ADDRESS	524 Church Street, Sandpoint, ID
CLIENT	BCHS
ARCHITECT	Designer
PROJECT NO.	

Sheet and Set

DRAWINGS BY	Author
DRAWINGS SET	Structural Coordination 1
ISSUE DATE	2017.03.24
SHEET TITLE	Levels 3 & 4, Approx. Existing Plans
SHEET NUMBER	

A-103

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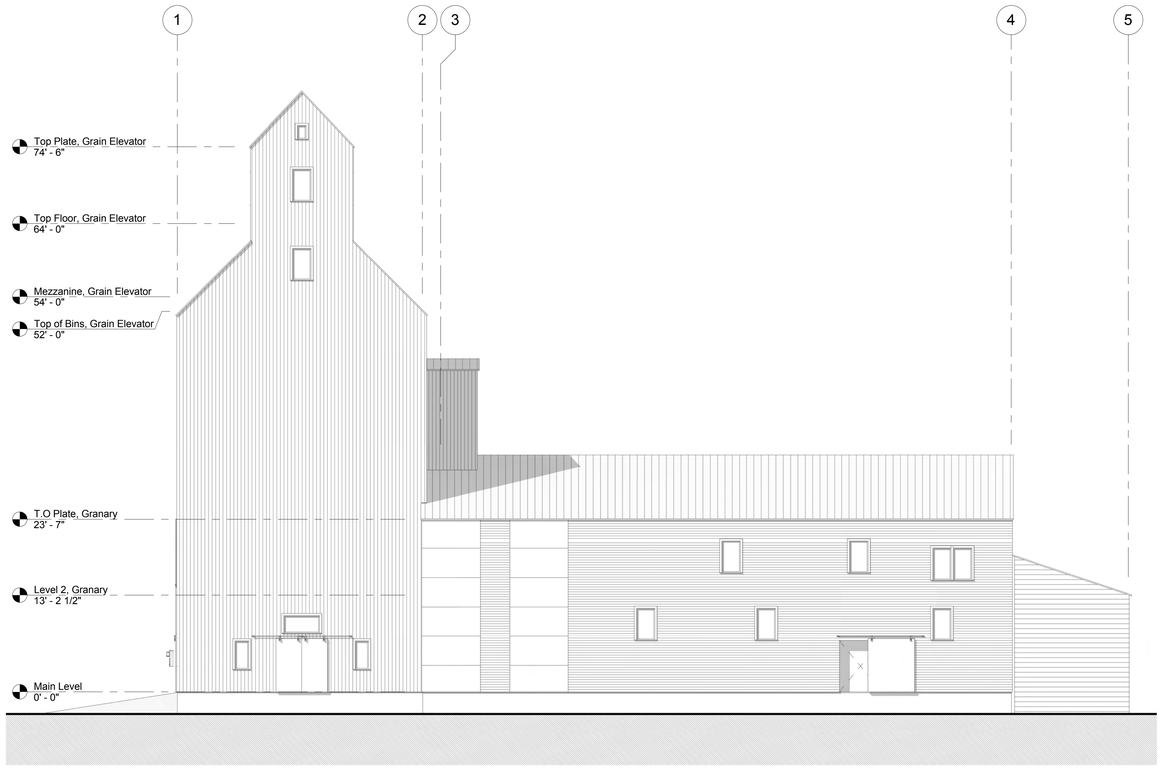
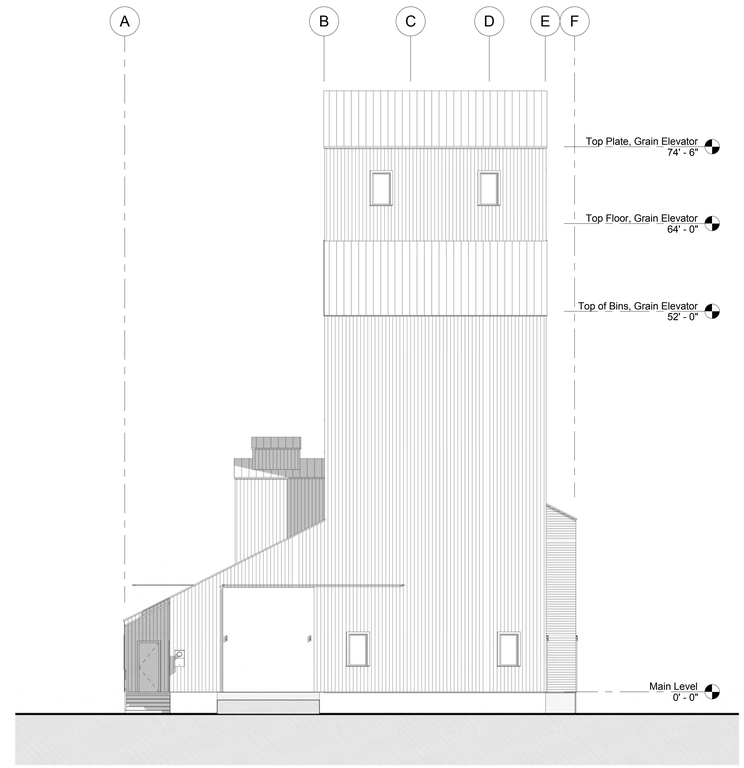
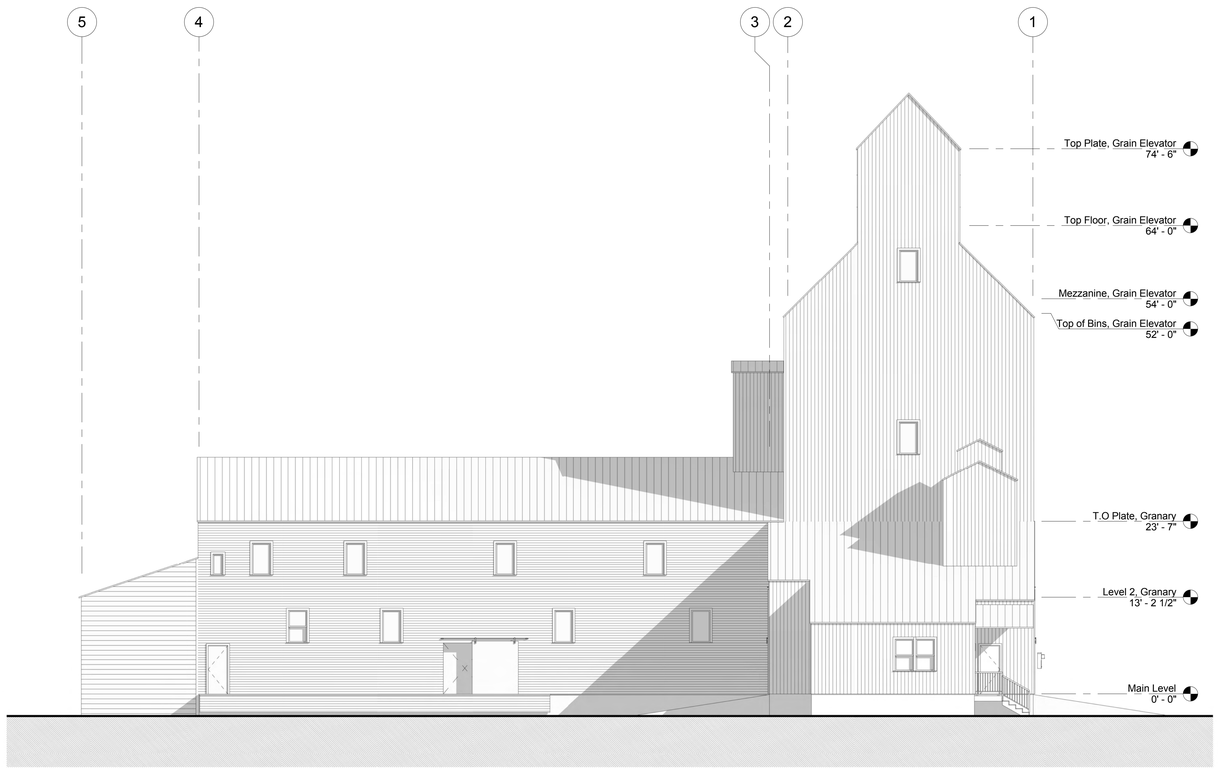


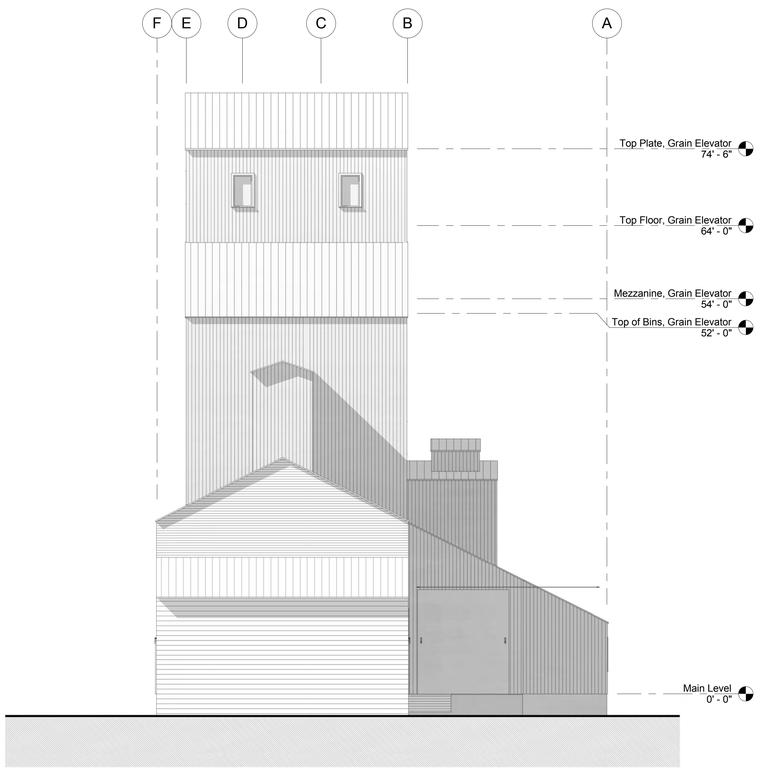
1 **East Elevation**
1/8" = 1'-0"



2 **South Elevation**
1/8" = 1'-0"



3 **West Elevation**
1/8" = 1'-0"



4 **North Elevation**
1/8" = 1'-0"

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Revisions

NO.	DESCRIPTION	DATE

Project

ADDRESS	524 Church Street, Sandpoint, ID
CLIENT	BCHS
ARCHITECT	Designer
PROJECT NO.	

Sheet and Set

DRAWINGS BY	MC
DRAWINGS SET	Structural Coordination 1
ISSUE DATE	2017.03.24
SHEET TITLE	Exterior Elevations
SHEET NUMBER	

A-201

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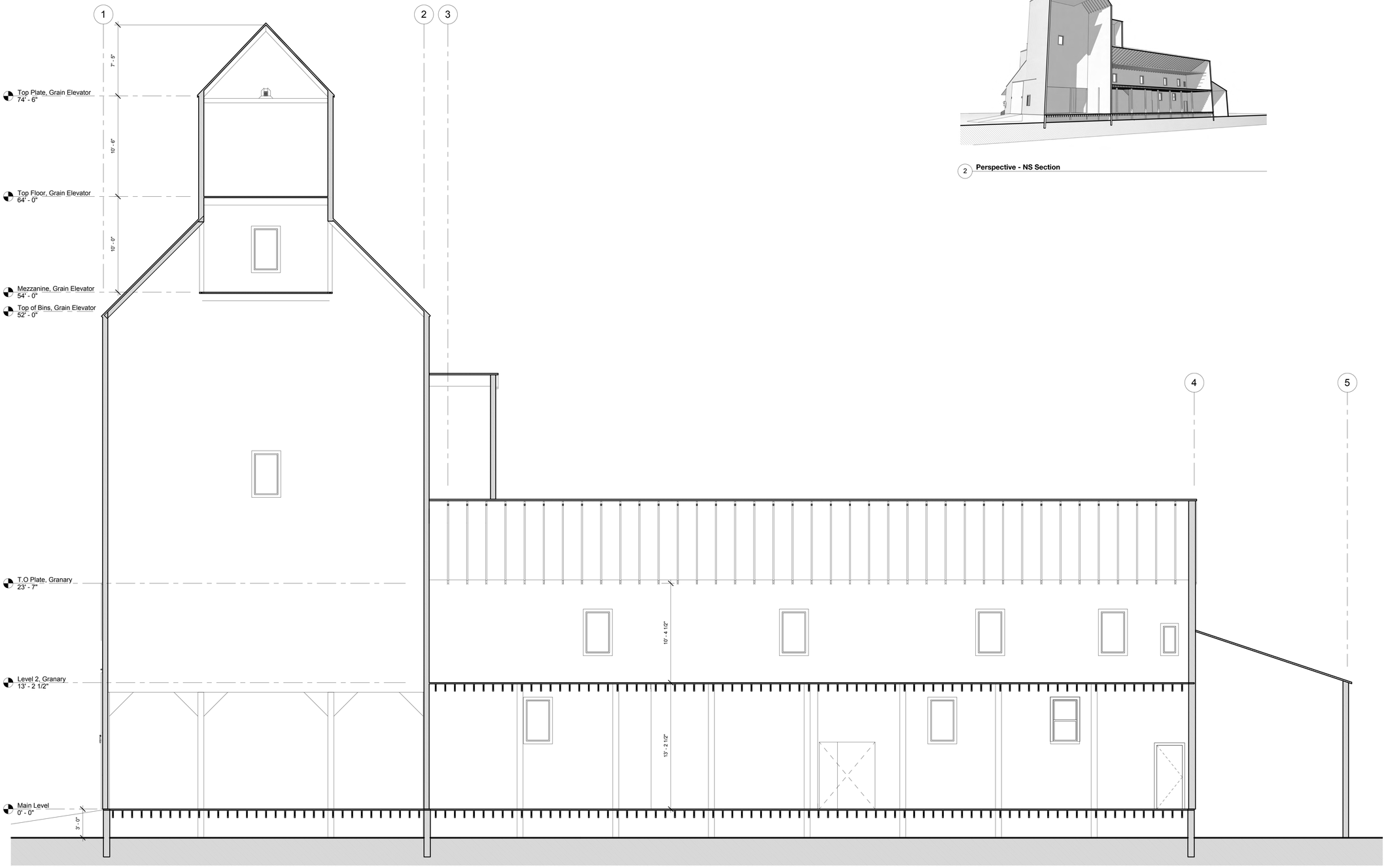
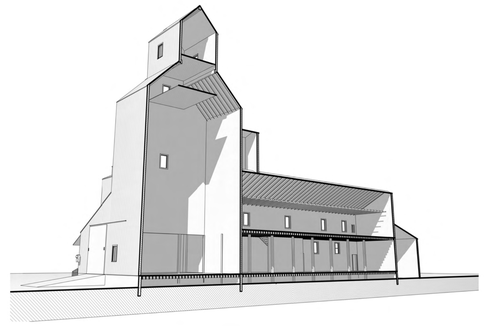


1 **NS Section, Approximate Existing Building Heights**
1/4" = 1'-0"



2 **Perspective - NS Section**

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Revisions

NO.	DESCRIPTION	DATE

Project

ADDRESS	524 Church Street, Sandpoint, ID
CLIENT	BCHS
ARCHITECT	
PROJECT NO.	

Sheet and Set

DRAWINGS BY	DHDC
DRAWINGS SET	Structural Coordination 1
ISSUE DATE	2017.03.24
SHEET TITLE	Building Section
SHEET NUMBER	

A-301

3/24/2017 7:59:36 AM

PROJECT COST ANALYSIS

Date *May 2nd, 2017*

Project *BCHS Granary Renovation*

Address *524 Church St, Sandpoint, ID 83864*

Project Information

Assumed construction time	**16 months**
Building area (assumed area of final design)	**8,600 s.f.**

Soft Costs **$785,904.29**

Hard Costs / Construction Costs			**$4,032,320.00**
A10 Foundations	$7 /s.f.	2%	$57,720.00
B10 Superstructure	$23 /s.f.	7%	$200,350.00
B20 Exterior Enclosure	$61 /s.f.	17%	$521,703.13
B30 Roofing	$24 /s.f.	7%	$209,383.50
C10 Interior Construction	$22 /s.f.	6%	$189,200.00
C30 Interior Finishes	$12 /s.f.	3%	$105,920.00
D10 Conveying	$23 /s.f.	6%	$198,000.00
D20 Plumbing	$7 /s.f.	2%	$62,675.00
D30 HVAC	$22 /s.f.	6%	$191,250.00
D40 Fire Protection	$28 /s.f.	8%	$240,000.00
D50 Electrical	$38 /s.f.	11%	$327,230.00
E20 Furnishings	$30 /s.f.	8%	$254,800.00
F20 Selective Building Demolition	$12 /s.f.	3%	$106,156.25
Z10 General Conditions	$45 /s.f.	13%	$390,400.00
Subtotal	$355 /s.f.	100%	$3,054,787.88
Construction Contingencies		+20%	$610,957.58
Contractor Profit		+12%	$366,574.55

Total Project Costs **$4,818,224.28**

SOFT COST DETAIL

Category	Item Description	Units	Unit Cost	Subtotal
Site Evaluation	*Hazardous materials testing (soils contamination, asbestos containing materials, lead paint)*	allowance	$ 2,600.00	$ 2,600.00
Site Evaluation	*Property survey*	allowance	$ 2,200.00	$ 2,200.00
Site Evaluation	*Geotechnical survey and report*	allowance	$ 4,200.00	$ 4,200.00
Design Professional Services	*Architectural services*	estimate based on total construction costs	13%	$ 524,201.60
Design Professional Services	*Structural engineering services*			
Design Professional Services	*Historical building consultant*			
Design Professional Services	*Electrical engineering services*			
Design Professional Services	*Mechanical engineering services*			
Design Professional Services	*Civil engineering services*			
Design Professional Services	*Plumbing systems engineering services*			
Design Professional Services	*Hazardous materials abatement plans and specifications*			
Additional Design Services	*Landscape Design*	estimate based on total construction costs	2%	$ 80,646.40
Additional Design Services	*Lighting design, custom museum displays, signage design*			
Additional Design Services	*Energy consultation, LEED certification, sustainable certification program*			
Other Professional Services	*Legal services (contracts and agreements for ownership and project structure)*	allowance	$ 10,000.00	$ 10,000.00
Other Professional Services	*Accounting and tax consultation*	allowance	$ 2,000.00	$ 2,000.00
Other Professional Services	*Fundraising consultant*	allowance	$ 50,000.00	$ 50,000.00
Utilities	*Water utility new service & meter (new lateral main to building included in plumbing costs)*	allowance	$ 7,523.29	$ 7,523.29
Utilities	*Electrical utility hook-up and service connection*	allowance	$ 2,000.00	$ 2,000.00
Utilities	*Gas utility hook-up and service connection*	allowance	$ 2,000.00	$ 2,000.00
Utilities	*Sewer utility hook-up and service connection*	allowance	$ 10,000.00	$ 10,000.00
Utilities	*Data utility hook-up and service connection*	allowance	$ 250.00	$ 250.00
Other Costs	*City of Sandpoint Development Impact Fees (assumed "Office," use outside URA)*	8,600 s.f.	$ 1.34	$ 11,524.00
Permits	*Construction permit (based on $4m construction budget)*	LS	$ 16,559.00	$ 16,559.00
Permits	*Street use and ROW use permits*	allowance	$ 500.00	$ 500.00
Permits	*Plumbing permit*	allowance	$ 400.00	$ 400.00
Permits	*Electrical permit*	allowance	$ 400.00	$ 400.00
Permits	*Mechanical permit*	allowance	$ 400.00	$ 400.00
Permits	*Sewer card*	allowance	$ 400.00	$ 400.00
Permits	*Stormwater permit*	LS	$ 100.00	$ 100.00
Administration/Supplies	*Additional time/work for museum staff or construction management consultant*	allowance	$ 40,000.00	$ 40,000.00
Administration/Supplies	*Promotional Materials, digital and printed*	allowance	$ 20,000.00	$ 20,000.00
Administration/Supplies	*Reprographics*	allowance	$ 3,000.00	$ 3,000.00

CONSTRUCTION COST DETAIL

	Item Description	Breakdown					Remarks
Uniformat division		Quantity	Units	Unit Cost	Markup	Subtotal	
A10 Foundations	*Hand excavation @ crawl space*	1	Allowance	$ 4,200.00		$ 4,200.00	
A10 Foundations	*Elevator pit excavation, backfill*	1	Allowance	$ 1,200.00		$ 1,200.00	
A10 Foundations	*Dowel/tie fndtn slab to existing*	14	EA	$ 180.00		$ 2,520.00	
A10 Foundations	*Conc plinth, cap, driven piles*	4	EA	$ 7,500.00		$ 30,000.00	
A10 Foundations	*Conc cont ftgs-complete*	11	CY	$ 350.00		$ 3,850.00	
A10 Foundations	*Elevator pit conc and footing*	1	Allowance	$ 11,000.00	+20%	$ 13,200.00	work around historic materials
A10 Foundations	*Tie-in to existing foundation*	50	LF	$ 55.00		$ 2,750.00	
B10 Superstructure	*Dowels/anchors @ structural steel moment frame members*	4	EA	$ 3,600.00		$ 14,400.00	
B10 Superstructure	*Repaired roof trusses and roof framing @ Granary*	1	Allowance	$ 18,000.00		$ 18,000.00	
B10 Superstructure	*Revised roof framing at grain elevator (skylight curbs & supports)*	1	Allowance	$ 16,000.00		$ 16,000.00	
B10 Superstructure	*Replaced floor, wall & roof framing and sheathing at north shed roof area*	1	Allowance	$ 12,000.00		$ 12,000.00	
B10 Superstructure	*Exterior sheathing panels*	6,900	SF	$ 1.50		$ 10,350.00	
B10 Superstructure	*Misc welding/moment frames/connections*	1	Allowance	$ 8,000.00		$ 8,000.00	
B10 Superstructure	*Steel floor/catwalk support and deck systems*	1	Allowance	$ 26,000.00		$ 26,000.00	
B10 Superstructure	*Steel moment frame*	1	Allowance	$ 75,000.00		$ 75,000.00	
B10 Superstructure	*Entry Canopy*	240	SF	$ 45.00		$ 10,800.00	
B10 Superstructure	*Fall arrest anchors*	14	EA	$ 700.00		$ 9,800.00	
B20 Exterior Enclosure	*Replaced areas rotted 2x framed of walls (assumed allowance)*	450	SF	$ 12.00		$ 5,400.00	
B20 Exterior Enclosure	*Replaced areas of grain elevator exterior wall*	720	SF	$ 12.00	+50%	$ 12,960.00	historic materials, work at heights
B20 Exterior Enclosure	*Exterior wall water resistive membrane*	14,150	SF	$ 1.25	+25%	$ 22,109.38	work at heights
B20 Exterior Enclosure	*Exterior insulation board, walls*	14,150	SF	$ 2.50	+25%	$ 44,218.75	work at heights
B20 Exterior Enclosure	*Floor insulation*	5,100	SF	$ 1.65		$ 8,415.00	
B20 Exterior Enclosure	*Exterior swing doors, sliding doors, surface and hardware restoration*	6	EA	$ 2,200.00		$ 13,200.00	
B20 Exterior Enclosure	*Windows, replacement of existing*	32	EA	$ 750.00	+25%	$ 30,000.00	work at heights
B20 Exterior Enclosure	*Windows, undefined allowance for possible new window/glass areas*	1	Allowance	$ 20,000.00		$ 20,000.00	
B20 Exterior Enclosure	*Misc exterior flashing, trim, caulk*	1	Allowance	$ 10,000.00		$ 10,000.00	
B20 Exterior Enclosure	*Storefront/Entry*	1	Allowance	$ 22,000.00		$ 22,000.00	undefined

CONSTRUCTION COST DETAIL

	Item Description	Breakdown					Remarks
Uniformat division		Quantity	Units	Unit Cost	Markup	Subtotal	
B20 Exterior Enclosure	*Siding: wood lap siding @ granary, preprimed*	5,400	SF	$ 8.00		$ 43,200.00	
B20 Exterior Enclosure	*Siding: metal z-furring supports*	14,150	SF	$ 2.75		$ 38,912.50	
B20 Exterior Enclosure	*Siding: historic metal panel restoration or replacement @ grain elevator*	8,750	SF	$ 21.00	+25%	$ 229,687.50	work at heights; likely more cost for restroration
B20 Exterior Enclosure	*Paint: exterior wood lap siding @ granary*	5,400	SF	$ 4.00		$ 21,600.00	
B30 Roofing	*Roofing ice & water shield membrane*	4,400	SF	$ 1.50	+25%	$ 8,250.00	work at heights
B30 Roofing	*Exterior insulation board, roofs*	3,800	SF	$ 7.50	+25%	$ 35,625.00	work at heights
B30 Roofing	*Misc exterior flashing, trim, caulk*	1	Allowance	$ 8,000.00		$ 8,000.00	
B30 Roofing	*Gutters, downspouts, cleanouts, water management*	1	Allowance	$ 10,000.00		$ 10,000.00	
B30 Roofing	*Skylights*	600	SF	$ 52.00	+33%	$ 41,496.00	work at heights
B30 Roofing	*Steel access ladders*	3	EA	$ 700.00		$ 2,100.00	
B30 Roofing	*Snow fences*	280	LF	$ 70.00		$ 19,600.00	
B30 Roofing	*Roofing: historic metal panel restoration or replacement*	3,800	SF	$ 15.00	+25%	$ 71,250.00	work at heights; likely more cost for restoration
B30 Roofing	*Roofing: metal z-furring or roof system clips*	3,800	SF	$ 2.75	+25%	$ 13,062.50	work at heights
C10 Interior Construction	*Ornamental guardrail*	120	LF	$ 165.00		$ 19,800.00	rails at new catwalk/mezzanines
C10 Interior Construction	*Misc. Blocking/backing*	9,000	SFA	$ 0.25		$ 2,250.00	
C10 Interior Construction	*Acoustic Insulation*	1	Allowance	$ 2,500.00		$ 2,500.00	
C10 Interior Construction	*Int. Relites/sidelites*	1	Allowance	$ 4,000.00		$ 4,000.00	
C10 Interior Construction	*Misc. Rated finishes allow.*	1	LS	$ 5,000.00		$ 5,000.00	
C10 Interior Construction	*Int. Wd door/frm/hw*	12	EA	$ 1,850.00		$ 22,200.00	
C10 Interior Construction	*Coiling counter doors*	1	EA	$ 1,800.00		$ 1,800.00	
C10 Interior Construction	*Restroom Mirrors*	2	EA	$ 200.00		$ 400.00	
C10 Interior Construction	*Int. stud wall framing-2x*	1	Allowance	$ 10,000.00		$ 10,000.00	
C10 Interior Construction	*Int. movable partitions*	1	Allowance	$ 80,000.00		$ 80,000.00	
C10 Interior Construction	*Int. 5/8" gwb-additional underlayer*	1	Allowance	$ 1,200.00		$ 1,200.00	
C10 Interior Construction	*Premium-abuse resistant gwb*	1	Allowance	$ 4,200.00		$ 4,200.00	
C10 Interior Construction	*Misc. Specialties-allow*	9,000	SFA	$ 0.50		$ 4,500.00	
C10 Interior Construction	*Toilet partitions*	3	EA	$ 1,000.00		$ 3,000.00	
C10 Interior Construction	*Toilet partitions-hcp*	2	EA	$ 1,100.00		$ 2,200.00	
C10 Interior Construction	*Urinal screen*	1	EA	$ 350.00		$ 350.00	
C10 Interior Construction	*Wall & corner guards*	1	Allowance	$ 1,800.00		$ 1,800.00	

CONSTRUCTION COST DETAIL

	Item Description	Breakdown					Remarks
Uniformat division		Quantity	Units	Unit Cost	Markup	Subtotal	
C10 Interior Construction	*Signage*	1	Allowance	$ 22,000.00		$ 22,000.00	
C10 Interior Construction	*Grab bars-stall*	2	EA	$ 185.00		$ 370.00	
C10 Interior Construction	*Janitor's mop/broom holder*	1	EA	$ 85.00		$ 85.00	
C10 Interior Construction	*Sanitary napkin dispenser*	1	EA	$ 400.00		$ 400.00	
C10 Interior Construction	*Sanitary napkin disposal*	3	EA	$ 60.00		$ 180.00	
C10 Interior Construction	*Toilet paper dispenser*	5	EA	$ 65.00		$ 325.00	
C10 Interior Construction	*Toilet seat cover dispenser*	5	EA	$ 80.00		$ 400.00	
C10 Interior Construction	*Waste receptacle*	2	EA	$ 120.00		$ 240.00	
C20 Stairs	*Interior architectural steel stair, steel rail to top level*	1	Allowance	$ 35,000.00		$ 35,000.00	
C20 Stairs	*Exterior stairs to main level entry points*	1	Allowance	$ 5,000.00		$ 5,000.00	
C30 Interior Finishes	*Misc. Finish carpentry-minor w/fsc wd*	1	Allowance	$ 2,500.00		$ 2,500.00	
C30 Interior Finishes	*Gwb ceiling*	2	EA	$ 200.00		$ 400.00	
C30 Interior Finishes	*Ceramic tile flooring-restrooms, janitor's closet*	1	Allowance	$ 6,000.00		$ 6,000.00	
C30 Interior Finishes	*Ceramic tile walls-restrooms, janitor's closet*	3	EA	$ 1,000.00		$ 3,000.00	
C30 Interior Finishes	*Wood floor patching & repair*	1	Allowance	$ 10,000.00		$ 10,000.00	
C30 Interior Finishes	*Wood floor sanding & clear finish*	9,000	SF	$ 3.00	+25%	$ 33,750.00	equipment access to upper levels
C30 Interior Finishes	*Replace salvaged base/replace base*	1	Allowance	$ 6,000.00		$ 6,000.00	
C30 Interior Finishes	*Misc.floor prep (furring, leveling)*	9,000	SF	$ 0.75		$ 6,750.00	
C30 Interior Finishes	*Paint gwb ceiling*	1	Allowance	$ 1,500.00		$ 1,500.00	
C30 Interior Finishes	*Paint int partitions*	1	Allowance	$ 2,500.00		$ 2,500.00	very few painted surfaces anticipated
C30 Interior Finishes	*Paint/seal new doors,frames-per leaf*	12	EA	$ 85.00		$ 1,020.00	
C30 Interior Finishes	*Paint/touch up new stairs*	1	Allowance	$ 1,500.00		$ 1,500.00	
C30 Interior Finishes	*Misc.touch up/patch/paint-minor*	1	Allowance	$ 1,000.00		$ 1,000.00	
C30 Interior Finishes	*Historic wood surfaces sanding/beadblasting; clear finish*	1	Allowance	$ 30,000.00		$ 30,000.00	
D10 Conveying	*Elevator: rated glass hoistway and compartment, non-hydraulic, machine roomles*	1	Allowance	$ 180,000.00	+10%	$ 198,000.00	non local elevator installers
D20 Plumbing	*Trenching and new supply & sewer lines to building*	1	Allowance	$ 8,000.00	+25%	$ 10,000.00	routing through existing/historic structure
D20 Plumbing	*Waste and vent line rough-in (restrooms, kitchenette, janitor closet)*	1	Allowance	$ 3,000.00	+25%	$ 3,750.00	routing through existing/historic structure
D20 Plumbing	*Domestic supply line rough-in (restrooms, kitchenette, janitor closet)*	1	Allowance	$ 18,000.00	+25%	$ 22,500.00	routing through existing/historic structure
D20 Plumbing	*Plumbing insulation*	1	Allowance	$ 2,500.00	+25%	$ 3,125.00	routing through existing/historic structure
D20 Plumbing	*Commercial plumbing fixtures and installation*	12	EA	$ 400.00		$ 4,800.00	

CONSTRUCTION COST DETAIL

	Item Description	Breakdown					Remarks
Uniformat division		Quantity	Units	Unit Cost	Markup	Subtotal	
D20 Plumbing	*Boiler/domestic hot water*	1	Allowance	$ 6,000.00		$ 6,000.00	
D20 Plumbing	*Misc. disconnect and demolition of existing*	1	Allowance	$ 10,000.00	+25%	$ 12,500.00	protect historic materials
D30 HVAC	*Equipment (air handler w/ heat recovery for fresh air)*	1	Allowance	$ 60,000.00		$ 60,000.00	
D30 HVAC	*Equipment (heat pump)*	1	Allowance	$ 25,000.00		$ 25,000.00	
D30 HVAC	*Equipment (humidity control systems)*	1	Allowance	$ 25,000.00		$ 25,000.00	
D30 HVAC	*Ducts (insulated & non), diffusers, registers, dampers, addn'l fans*	1	Allowance	$ 30,000.00	+25%	$ 37,500.00	routing through existing/historic structure
D30 HVAC	*System controls*	1	Allowance	$ 35,000.00	+25%	$ 43,750.00	routing through existing/historic structure
D40 Fire Protection	*Sprinkler system*	1	Allowance	$ 110,000.00	+50%	$ 165,000.00	non-water suppression system to protect museum contents
D40 Fire Protection	*Fire alarm system (control panel, sensors, annunciators, wiring, installation)*	1	Allowance	$ 75,000.00		$ 75,000.00	
D50 Electrical	*Site Utility Distribution (trenching, service feeder, commercial transformer)*	1	Allowance	$ 30,000.00		$ 30,000.00	
D50 Electrical	*Commercial service panel*	1	Allowance	$ 12,000.00		$ 12,000.00	
D50 Electrical	*Mechanical equipment breakers, service disconnects*	1	Allowance	$ 10,000.00		$ 10,000.00	
D50 Electrical	*Elevator service, disconnects*	1	Allowance	$ 10,000.00		$ 10,000.00	
D50 Electrical	*Rigid conduit, feeder wire*	9,000	SF	$ 9.00	+33%	$ 107,730.00	exposed, routing through existing/historic structure
D50 Electrical	*Light fixtures (LEDs to meet energy code, museum-quality light color rendering)*	9,000	SF	$ 10.00		$ 90,000.00	
D50 Electrical	*Electrical fixtures (receptacles, switches, hand dryers, kitchenette range)*	1	Allowance	$ 30,000.00		$ 30,000.00	
D50 Electrical	*Data equipment, IDF room*	1	Allowance	$ 25,000.00		$ 25,000.00	
D50 Electrical	*Misc. disconnect and demolition of existing*	1	Allowance	$ 10,000.00	+25%	$ 12,500.00	protect historic materials, work at heights
E20 Furnishings	*Misc. casework allowance (incl. archive storage/shelving systems)*	1	Allowance	$ 30,000.00		$ 30,000.00	
E20 Furnishings	*Counter tops (restrooms, reception/entry/tickets, kitchenette)*	1	Allowance	$ 12,000.00		$ 12,000.00	
E20 Furnishings	*Window treatments*	32	Allowance	$ 400.00		$ 12,800.00	
E20 Furnishings	*Misc. museum displays allowance*	1	Allowance	$ 200,000.00		$ 200,000.00	
F20 Selective Building Demolition	*Demolition of grain bins*	5,900	SF	$ 4.00	+25%	$ 29,500.00	historic materials, solid lumber walls, work at heights
F20 Selective Building Demolition	*Demolition allowance for rotted areas*	1,000	SF	$ 12.00	+25%	$ 15,000.00	historic materials, solid lumber walls, work at heights
F20 Selective Building Demolition	*Building cladding allowance: roofing, metal siding, wood lap siding*	19,550	SF	$ 1.50	+25%	$ 36,656.25	protect historic materials, work at heights
F20 Selective Building Demolition	*Hazardous materials abatement*	1	Allowance	$ 20,000.00	+25%	$ 25,000.00	protect historic materials, work at heights
G20 Site Improvements	*Exterior flatwork*	1	Allowance	$ 10,000.00		$ 10,000.00	
G20 Site Improvements	*Landscaping*	1	Allowance	$ 10,000.00		$ 10,000.00	
G20 Site Improvements	*Handicap ramp(s) & metal rails*	1	Allowance	$ 16,000.00		$ 16,000.00	
G20 Site Improvements	*Waste/Recycle pad, fence, gate*	1	Allowance	$ 5,000.00		$ 5,000.00	

CONSTRUCTION COST DETAIL

	Item Description	Breakdown					Remarks
Uniformat division		Quantity	Units	Unit Cost	Markup	Subtotal	
G20 Site Improvements	*Repair/replace curb*	1	Allowance	$ 500.00		$ 500.00	
G20 Site Improvements	*Outdoor patio roof structure*	1	Allowance	$ 80,000.00		$ 80,000.00	
Z10 General Conditions	*Temporary barriers, locks or enclosures*	1	total	$ 250.00		$ 250.00	
Z10 General Conditions	*Temporary supports and shoring*	1	Allowance	$ 7,500.00		$ 7,500.00	
Z10 General Conditions	*Waste management, dumping costs*	3	total loads	$ 700.00		$ 2,100.00	
Z10 General Conditions	*Cleaning*	1	total	$ 250.00		$ 250.00	
Z10 General Conditions	*Preservation/Protection of Historic Components*	1	Allowance	$ 5,000.00		$ 5,000.00	
Z10 General Conditions	*General protection of materials during construction*	1	Allowance	$ 5,000.00		$ 5,000.00	
Z10 General Conditions	*Temp. Power Poles*	1	Allowance	$ 2,500.00		$ 2,500.00	
Z10 General Conditions	*Temp. Power Hook-Up*	1	Allowance	$ 2,500.00		$ 2,500.00	
Z10 General Conditions	*Power Use*	16	MO	$ 200.00		$ 3,200.00	
Z10 General Conditions	*Temp. Water Hook-Up*	1	Allowance	$ 1,500.00		$ 1,500.00	
Z10 General Conditions	*Water Use*	16	MO	$ 100.00		$ 1,600.00	
Z10 General Conditions	*Temp Fence*	1	Allowance	$ 2,000.00		$ 2,000.00	
Z10 General Conditions	*Temp Scaffolding and Platforms*	1	Allowance	$ 100,000.00		$ 100,000.00	
Z10 General Conditions	*Site Office*	16	MO	$ 600.00		$ 9,600.00	
Z10 General Conditions	*Tools and Equipment (including lift and crane rentals)*	1	Allowance	$ 25,000.00		$ 25,000.00	
Z10 General Conditions	*Contractor general overhead, payroll, project documentation support*	16	MO	$ 1,800.00		$ 28,800.00	
Z10 General Conditions	*Construction Project Manager*	16	MO	$ 3,600.00		$ 57,600.00	
Z10 General Conditions	*Construction Site Superintendant*	16	MO	$ 8,500.00		$ 136,000.00	

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May 8, 2017

Dustin Chapin, Architect
Clark & Chapin Architects
Seattle, WA

RE: Structural Input for Project Feasibility Study
Granary Building, Sandpoint, ID

Hi Dustin,

This is to provide you with structural engineering input for the Bonner County Historical Society Feasibility Study. Please offer comments and/or changes that you would like for me to consider and make. I'll break down the primary components of the existing structure(s) for consideration of what would be the minimum requirements for a building upgrade for the new use.

Foundations – The existing concrete foundations in both the Granary and Grain Elevator buildings appear to be in good (serviceable) condition. I did not see many cracks in the concrete and the ones I did see were small and insignificant. Of the foundations that I was able to see, I did not see any that had rotated or otherwise failed. Keep in mind that I was not able to actually see all of the concrete foundations due to: access, high accumulation of old grain/chaff under the floor and/or standing water. I was also not able to measure the actual size of the footings as that will require strategic excavation. While the foundations appear to be in overall good condition, they will require footing/pedestal modifications to supplement any revisions to the building's structural systems, specifically beneath the grain bins. I recommend a complete soil evaluation to provide allowable soil bearing pressure and other soil parameters that will be necessary to perform final engineering for the building modifications.

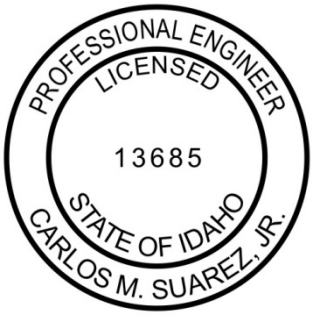
Framing System, Grain Processing Portion – The existing framing system appears to be in good (serviceable) condition with the exception of the upper SE corner that has experienced some rot, as well as an area that continues across the south wall of the grain processing portion of the structure. Limited sections of this area have been repaired for the time being, but will need attention when the project is executed.

- Timber building columns – There are (16) 10"x10" columns that support the timber grain bins. All of the columns that are visible are in good (serviceable) condition and bear directly on the existing concrete foundations.
- Timber grain bins – There are approximately 10 grain bins that comprise the majority of the buildings integrity. The bins are supported by the timber columns and are approximately 38 feet tall. The bins appear to be in good (serviceable) condition with the exception of the SE corner of the SE bin (as mentioned above.) It is my opinion that the bins currently provide the lateral stability of the structure under wind and seismic loading. The modification of the building will have to provide careful consideration to lateral loading and transfer of forces to the foundations.

Granary Building – This (2) story building that is attached on its south end to the grain processing portion of the building is in fair condition. Several pieces of grain processing equipment were removed from the building at some time in the past and in doing so have left areas that require work/repair. The foundations appear to be in good (serviceable) condition and appear to be quite robust (hefty.) Since the wall framing was not visible during our observations I cannot report on their integrity. I can offer that the walls could require new/additional stud framing, exterior sheathing and exterior siding. I also observed water damage and wood deterioration in several locations especially in the SW corner where the framing abuts the grain processing building. The existing roof framing system will also require improvement/replacement to bring it up to today's building code requirements for snow and wind loads. Based on my experience with local buildings built at around the same time, it is likely that the roof will require replacement.

Respectfully submitted,

Carlos Suarez, P.E.
President



May 8, 2017

Co-Op Gas & Supply Complex
Sandpoint, Idaho

GRANARY ASSESSMENT

Administrative Data

Historic Name

Co-Op Gas & Supply Complex

Current Name

Sandpoint Granary

Year Built

- Grain elevator (1943)
- Warehouse no. 1 (1943, post 1948 east addition)
- Warehouse no. 2 (1978)
- Garage (1966)
- Grain hopper (year built unknown).

Address

524 W Church Street Sandpoint ID

Bonner county parcel

RPS013300N001CA

Township, Section, Range

Township 57N, Range 02W, Section 22

Sandpoint Quadrangle

Acreage

Less than 1 acre

Landmark status

Not listed.

Historic Property Inventory form previously recorded 6/22/2015 ID 678795. The survey recommended the building as potentially eligible for National Register of Historic Places (NRHP) listing retaining integrity of design, materials, and location.

- Potentially NRHP eligible under Criterion A for its association with the agricultural development of Sandpoint
- Potentially NRHP eligible under Criterion C as the last remaining grain elevator in Sandpoint.

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Executive Summary

This study provides information on the character-defining features and spaces of the granary building and information on potentially applicable financial incentives.

The granary is a rare historic resource in the state.

The granary, along with warehouse no. 1 are potentially eligible for inclusion in the National Register of Historic Places. These properties held a significant role in the growth of Sandpoint and the desire is to solidify their future role in the cultural heritage and economic development of Sandpoint.

The buildings remain in relatively good condition.

Interest in converting the granary to a museum prompted the development of this report to provide planning data to inform the feasibility of this change of use for the building, what impacts this could have to its historic character, and what financial incentives could support this adaptive reuse of the building.

Character-Defining Catalog

The purpose of the following catalog of character-defining features, systems, and spaces is to facilitate compliance with the two core goals of the *Secretary of the Interior's Standards for the Treatment of Historic Properties*:

- Preserve the building's historic spaces; and,
- Preserve the building's distinguishing visual and physical character.

The approach employed in developing this catalog follows guidelines established in the National Park Service Preservation Brief 17 *Architectural Character: Identifying the Visual Aspects of Historic Buildings as an Aid to Preserving Their Character.*

This catalog can serve as a quick reference during space programing for rehabilitation projects to identify which features and spaces remain intact and are important to maintaining the character of the building, and which have been altered and as such are more adaptable to new uses.

The building's facades, floor plans, spatial types, and individual spaces serve as the organizational framework for this catalog. The data on each feature and space provides information on general description, changes when known, level of significance, and images for identification.

The vast collection of character-defining spaces fall into two main groupings:

- Those key spaces, individually attributed to the building's character and historical significance.
- Those contributing collectively to the building's character and historic function(s).

An example of the first category include the grain bins, and truck scale. Examples of the second category include the processing volumes, and corrugated metal cladding.

Terminology employed in the descriptions:

- Granary: for the purpose of this report we used this term in reference to the corrugated metal clad portion of the building containing the office, grain bins, grain elevator (mechanism for physically moving the grain up to and into the bins), and the pass through, loading space with the scales. Collectively these spaces all functioned to receive, move, store, process, and distribute grains (as well as other granular items such as peas and pellets).
- Processing: for the purpose of this report we used this term to reference the wood clad portion of the building that was formerly used for processing and as a warehouse for storage of bagged grains and other materials.

Spaces and Features

Site

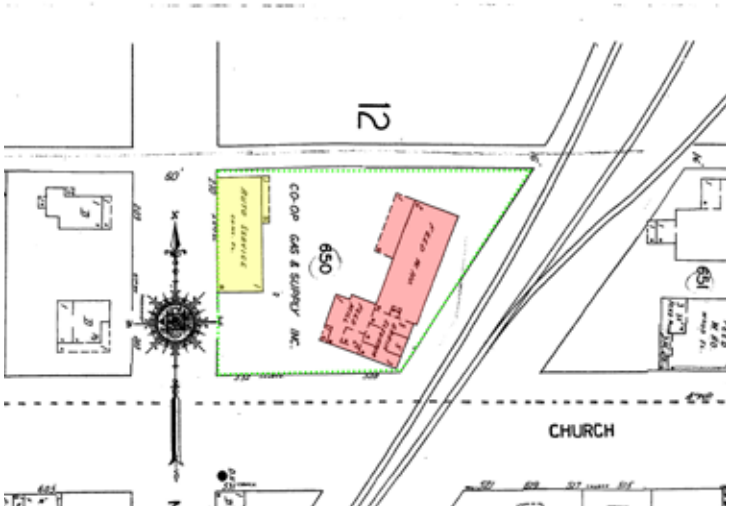
The site functions as part of the shared complex of buildings formerly operated as part of the co-op.

Character defining features

- Loading dock along the west side of the processing building.
- Concrete ramp to and down from the pass through.
- Open drive through space for vehicles to pull through and into the pass through.

Alterations

- Conversion for use as parking.



1948 Sanborn Fire Insurance map detail showing the granary in red and warehouse no. 1 in yellow.

Cladding

Cladding protects the interior structure and provides an important visual characteristic distinguishing the industrial role of this building.

Character defining features

- Corrugated metal panels cladding the granary portion, pass through, and office volumes.
- Painted Co-Op sign at the uppermost wall on the north facade.
- Horizontal wood siding (WP105 profile) 5 inch exposure with ½ inch lap at both stories of the two story processing portion, without corner boards.

Alterations

- The outline of a former gable roof addition off the north side of the main granary volume remains evident.
- Vents added along the lower level of the processing portion.
- Horizontal wood and vertical metal cladding at shed roof north addition.
- Plywood replacement sections on the south end of the east facade of the processing building.
- Loss of cladding during wind storms (preservation of the cladding will include recommendations from the architectural/structural report to address the current state of cladding attachment).

Roof

Character defining features

- Roof framing at the top of the granary, consisting of 2x4 inch boards, on 24 inch centers ending on double top plate of walls, no ridge beam, 8 inch shiplap sheathing.
- Corrugated metal cladding.
- Roof framing at the shed roof over the pass through, consisting of 2x4 inch boards, on 24 inch centers ending on double top plate of walls, 8 inch shiplap sheathing.
- Roof framing over the processing portion consisting of approximately 2x6 to 2x8 inch rafters on approximately 24-inch centers with diagonal bracing below (note per structural engineer this bracing is not configured correctly to function as a truss system, in part due to vertical and diagonal members being offset from one another and not originating from the same point along the bottom chord); cross bracing running north/south.
- Corrugated metal roofing at all roof slopes with flush eaves and sheet metal enclosing the soffit.

Alterations

- Southeast portion of the gable roof over the two story processing portion, sheathing replaced with plywood and rafter replaced.
- Roof bracing received added members nailed to face of bottom chord.
- Ridge vent in processing portion removed and the opening closed off.
- Added shed roof with exposed rafter ends off the north end of the building.
- Loss of metal roofing during wind storms (preservation of the roofing will include recommendations from the architectural/structural report to address the current state of attachment).

Structure

The building features several structural components.

Character defining features

- Processing portion consists of wood frame perimeter walls, the thickness of the framing is not known, heavy timber posts running north/south support the second floor framing.
- At the granary portion, heavy timber posts with knee braces at level 1 support the grain bin framing (structure for the upper level), which supports the dimensional lumber framing at levels 3 and 4 built up on top of the grain bins to accommodate the grain elevators. Shiplap wood clads and reinforces the beams and braces at level 1.
- The grain bins operate as part of the structure and consist of 2x4 and 2x6 lumber cribbing (flat stacked 2x6 exterior and 2x4 interior) for the height of the grain bins.
- The pass through and office consist of wood stud framing along the outer walls, with timber posts along the grain bin side supporting the roof framing.

Alterations

- Maple tree growing adjacent the foundation.
- Added wood frame addition off the north end of the building.

Windows

Windows provided day lighting and natural ventilation for the interior spaces.

Character defining features

- Sheet metal wrapped casings and sills at the granary and processing portions.
- Paired 6 over 6 windows, with wood casings, sill, and apron on the west wall of the office.
- 6 over 6 windows at the granary portion, at level 4, level 3, sash remains on only one on the north facade.
- Offset spacing of windows on the east, north, and west facades of the processing portion, instead of maintaining a vertical alignment the upper facade windows are offset to the north.
- 4 lite fixed gable end window on the east facade of the granary at level 4.
- Former windows on the south and east facade, level 1 of the granary.

Alterations

- Boarded over windows in the granary portion at all levels.
- Missing glass and added plywood at the office windows.
- Replacement and missing sash at all of the processing windows.

Entrances

Character defining features

- Truck pass through doorways at the pass through volume, accessible via concrete ramps, these top hung sliding doors could be opened to allow truck entry, the extended tracks supported the open doors.
- Top hung loading doors on the east and west sides of the processing portion. The intact east facade door features a wood door clad in tin.
- Top hung loading door on the east side of the granary with a set of three transom windows above the doorway.

Alterations

- Plywood added at former doors.
- South doorway at the pass through replaced with new wood framing and oriented strand board cladding.
- North doorway at the pass through replaced with new wood framing and plywood cladding.

Electrical

Due to the explosive potential of the fine grain dust, design of the electrical system was of exceptional importance to the safety of the operation.

Character defining features

- Electric room at level 1, serving as the hub for power entry to and distribution within the building. No access was possible for this study.
- Armored conduit used throughout the building, with substantial power feeds to the processing areas and to the power the motors for the grain elevator (located at level 4).
- Non sparking switches used throughout the building, including a main switch at the pass through space that appears to be oil filled.
- Original light fixtures, the bases remain; however, the bulbs and associated enclosures have been removed.

Alterations

- Contemporary wiring added within the processing building relating to contemporary use of the building.
- New lighting fixtures throughout the processing space.

Level 1 | Pass Through, Loading

These two spaces directly supported the movement of grains into and out of the bins direction above on level 2 and were identified as the feed mill space on the 1948 Sanborn map. The pass through provided access for grain trucks to pull into and through the building for loading and unloading. The loading space consisted of two parts: 1) a horizontal auger and vertical bucket lift to move grain into the bins, and 2) the space below the bins for accessing the chutes for moving grain out of the bins (in addition to the pipe from level 3 for rail car loading).

Character defining features

- Truck scale along the middle portion of the pass through, with readings in office.
- Metal floor grates, 4 feet wide, running the length of the space, grain poured through these from the truck to feed the horizontal auger.
- Center space containing the horizontal metal pipe and auger feeding the former bucket lift (lift chase remains intact at levels 2 and above).
- Hammer mill screens stored in the space, two different screen sizes.
- Chaff separator located in the space, bolted to floor in what appears to be original location immediately south of the bucket lift.
- Overall open volume along the pass through and along the bottom of the bins.
- Truck pass through over metal grates.
- Chalk boards with bin numbers and identifying bin status/contents (cleaned, dairy pellets oats, barley, pulp, peas).
- Plank flooring, 9-inch face.
- Horizontal board siding along walls.
- Belt lift stored in space.
- Metal base plate with gears for opening and closing located over pass through.
- Electrical system (see Electric).

Alterations

- Removed tongue and groove ceiling at the south end above the chaff separator.
- East end added partition wall and insulation to close off a work space for the tenant in the processing portion of Level 1, and added oriented strand board cladding and a partition in the northeast corner of the space.
- Added posts at the south end of the pass through providing additional support at the south pass through entrance.
- Bucket lift chase cut off at this level and lower portions of metal distribution pipes for grain also removed.
- Variety of contemporary and historic materials stored in this space.

Level 1 | Office

The office served as the operating center for the granary. A window on the east wall allowed observation of the grain transfer. A personnel doorway provided access between the two spaces. Another smaller doorway from the pass through side provided access to the attic storage space above the office. A toilet and shower at the north end of the space provided onsite restroom facilities.

Character-defining features

- Sliding wood sash 2 lite window opening to the pass through space.
- Narrow table with the "Howe" brand scale apparatus for the truck scale located in front of and below the window looking into the pass through space. The Howe Scale Company was an important manufacturer of high-accuracy scales into the twentieth century. They were the first to utilize ball bearings in their scale that did not dull and reduce the accuracy of the measurements as in the case of scales with a sharp pivot point.
- Pair of 6 over 6 lite wood sash on the west wall, with 3-1/2 inch casings, stool and apron, 4-5/8 mullion.
- Window, 1 over 1 in the bathroom same trim as the office windows.
- Bathroom concrete floor, toilet, sink, walk in shower, and a 5 panel wood door opening to the space from the office.
- Horizontal ship lap sheathing at walls.
- Wood vertical paneling ½ inch with 7-1/8 face ship lap at walls, Douglas fir.
- Ceiling 12 inch wide boards.
- Floor 9-1/2 inch wide boards.
- 5 panel door to granary and at exit.
- Loft space with attic door to pass through space.

Alterations

- Oriented strand board and stud framing added at the north end and along part of the north floor.
- Paneling missing at the north end of the space and along part of the southwest end.
- Exterior stairs and landing rebuilt.
- Added plywood table.

Level 1 | Processing

This utilitarian open volume exists within the two story north portion of the building and provided space for grain milling, bagging, and the storage of bagged materials prior to shipment. The floors structural system supported this industrial use. Historically this volume was open to the pass through and loading space beneath the grain bins at the south end of the building.

Character-defining features

- Concrete foundation wall below the columns and around the perimeter with wood beams spanning between and a wood beam sill plate.
- 8 by 8 inch columns supporting second floor.
- 9-1/2 inch wide diagonal flooring.
- 7 inch lap siding at inner wall face.
- Concrete pad at the northeast corner along the transition from the two story building to the space below the grain bins.
- Wood frame direct flight up to the second floor along the west side of the space.

Alterations

- New wall framing at the south end of the space, the addition of a new beam and post, new ceiling and wall paneling, and plywood over the original floor boards.
- Removal of equipment from the concrete pad.
- New wall framing enclosing an office along the west side of the volume.
- Exterior doorways and windows along the east side closed off.
- Window closed off along the west side of the volume.
- New hand railings at the stairs.
- All new lighting fixtures.

Level 2 | Grain Bins

There are two sets of grain bins, and were referred to as the grain elevator area on the 1948 Sanborn map. The main bins occupying the central core of the granary's vertical mass. A small bin off the west side of the main bins that is located directly over the south end of the level 1 pass through. The outer walls of the bins form the outer walls of the building at this level.

Character defining features

- 12 main grain bins, approximately 39 feet tall, consisting of four large bins at the outer corners, a center set of two small bins, and two sets on the north, east, and south sides between the outer bins.
- 1 small bin off the west side of the main bins, with a geared steel bottom plate that could be opened to discharge materials into a truck directly below in the pass through. This bin appeared to be fed from the main bins; however, this and/or a separate filling mechanism was not identified.
- Bin construction consisting of full dimension 2x6 inch boards stacked face to face for the outer bin walls, with full dimension 2x4 inch boards stacked for inner partition walls between bins. All corners finger jointed with alternating board ends. All partition walls joined into outer walls in a similar manner with alternating through board ends.
- Diagonal 2x6 inch knee bracing within the bins, each brace consisting of at least 3 stacked boards.
- Corbeling at the upper edges and some partition walls through offsetting of stacked boards.
- Wear patterns in the wood from erosion during filling of the bins with material (unknown if erosion tied to proximity of fill point or hardness of different materials, such as peas versus wheat, or a combination of both).

Alterations

- Framing repairs due to failed conditions in the upper southeast corner of the outer bin.
- Refer to the architectural/structural engineering report for details on conditions, including the remaining deteriorated portions of bin walls, primarily on the south facade.

Level 2 | Vertical Chase

This rectangular chase rises the full height of the granary and contains two grain elevators, a platform lift, a wood ladder, electrical conduit, and a steel pipe. This served as the only vertical circulation path within the granary.

Character defining features

- Two grain elevators, each consisting of two vertical wood framed chases. Each chase framed with 5 inch tongue and groove boards. Each powered by a worm gear motor located at level 4 on a wood supporting structure.
- Buckets mounted on a continuous belt, bucket shape with rounded sides designed to flowable bulk solids, operable at high speeds, rose on west and discharged at top out east side within large wood framed distributor hoods (see level 4 for distribution).
- Pulley lift wood platform elevator located in the northwest corner of the chase with a steel pulley mounted at level 3.
- Wood ladder mounted along the southeast side of the chase for personnel vertical access.
- Round, welded steel pipe (approx. 2 foot diameter) located in the northeast corner of the chase, original use unknown, bolted to sides of grain bins, lower end tapers to a smaller diameter.
- Window opening on the west facade.

Alterations

- Lower portions of the grain elevators at level 1 cut off and the bottom boots removed.
- Lower ladder portion removed; current access relies on an aluminum ladder resting against the base of the wood ladder for access to level 2.
- West facade window boarded over.

Level 2 | Processing

This utilitarian, open volume exists within the two-story north portion of the building and provided space for grain milling, bagging, and the storage of bagged materials prior to shipment. This area was identified as the feed warehouse on the 1948 Sanborn map. The floors structural system supported this industrial use. A rooftop enclosure covered former mechanical equipment and a feed system of unknown function.

Character defining features

- Fir flooring with 3-1/2 inch face, running north/south.
- Direct flight of stairs down to level 1.
- Wood floor joists, 2x9-3/4 on 12 inch centers.
- 9-1/2 inch wide diagonal sub flooring.
- 7 inch lap siding at inner wall face, with wider boards utilized along the upper portion of the walls above the window headers to top of the wall.
- 3-1/2 inch window casings, stool and apron.
- Exposed grain bin structure at the south end of the volume.

Alterations

- New beam framing added in the south end to stabilize the rooftop enclosure structure.
- New lighting system installed throughout the space.
- Stored items throughout the space.
- Added wood railing around the stairwell opening.

Level 3

Distribution of materials to the various bins occurred at this level via arms that came down through floor above to this level.

Character defining features

- Window openings at east and west ends.
- Four grain elevator chases extending through this volume at the west side.
- Metal pipe along west side for directing materials down, the exact end destination is not known.
- Tongue and groove floor with doors for access to the bins below the floor (thumb holes for lifting of doors).
- Floor and ceiling openings for the platform lift access through to level 4.
- Wood ladder along south side for access to level 4.
- Round, heavy walled, steel pipe in the center of the floor, set at an angle, used for loading rail cars, the other end exits the building on the east facade.
- Vertical stud framing, 2x6 inch, with let in diagonal bracing, and a 2x4 inch board along the inner face to serve as a railing.
- Plank walkways (2) extending from this floor out over the grain bins to monitor and direct fill levels.
- 2x6 wall framing with a double base plate, diagonal bracing let in between studs, exterior cladding 1x8 lap siding horizontal, double top plate, studs on 24 inch centers.
- Small pulleys mounted to the underside of the ceiling and used in combination with ropes to direct the distribution arms over the various bins.
- Electrical conduit and switches (see electrical).

Alterations

- Missing window sash at east and west end.

Level 4

Upper most level. Machinery for grain bin filling, four chutes, bucket lift rises in one and returns in another. Chute connected with openings at bottom. Unknown what east end functioned as

Character defining features

- 2x6 wall framing with a double base plate, diagonal bracing let in between studs, exterior cladding 1x8 lap siding horizontal, double top plate, studs on 24 inch centers.
- Sheet metal distribution arms (spouts) and associated pulley wheels on floor in space.
- Windows on north, east, south, 6 lite per sash, stopped in, 2 inch face on sash rails and stiles, ½ inch wide muntins, galvanized tin flashing at sill.
- Window at east gable end at east end; 4 lite fixed original.
- Floor boards running east/west.
- Wood structure supporting upper ends of grain elevator bolted to framing within this volume, including a wood frame walkway around the distributor hoods.
- Metal pulley wheel supporting cable and wood lift framed in at this level.
- Central built up beam extending out through the middle of this volume.
- Electrical conduit and switches (see electrical).

Alterations

- Added boards and plexiglass at windows, oriented strand board infill at southwest window.
- Pigeon guano throughout space.
- Flooring in east portion added to cover over former openings to floor below.

Findings

The general conclusions drawn in this report are organized in sections below and address the specific historic preservation findings, conditions, and recommendations that will help shape plans and policies for stewardship and maintenance of the structure.

The overall recommended treatment for the building is rehabilitation. The overall rehabilitation approach outlined in this report is intended to provide flexibility in previously altered spaces.

Degree of Extant Character-Defining Spaces and Features

The building exhibits a form that clearly conveys its historic role, a high level of integrity relative to the grain storage functions, and large utilitarian former processing volumes. Alterations to the windows and partitioning off the space below the grain bins have had the most impact on the character defining features and spaces of the building.

Granary

Exterior retains a high level of integrity, with the varied roof levels, vertical massing and form, window casings, corrugated cladding. Loss cladding during wind storms and loss of window sash have been the main alterations.

Interior from level 2 up remains intact. The main change has been the enclosure of the level 1 volume though it did not appear that this process had removed any items, simply covered over materials. The lower portions of the ladder, grain buckets and former piping have all been cut off at level 1.

Pass through and office

Exterior retains a moderate level of integrity, with the roof level, small bin over the pass through, and the largely intact office windows. Replacement of the pass through doors and rebuilding of the rear office stairs and stoop are the main alterations.

Interior remains largely intact with the scales, pass through volume, window to the office and one remaining machine. Alterations have been the addition of plywood and steel plate coverings over the metal grates and the storage of materials in the volume, floor and wall replacement work in the office, as well as the enclosure of a storage space in the northeast corner.

Processing

Exterior retains moderate level of integrity, with the side gable roof form, small enclosure at the south end above the roof, loading dock and top hung door, window casings. The north addition, some siding replacement, and loss of siding during wind storms, and loss of window sash and doors have been the main alterations.

Interior remains largely intact owing to the utilitarian open character of this volume. The main alterations have been the enclosure of an office space on level 1 and some flooring replacement on levels 1 and 2.

Spatial Sequences

The following spatial sequences represent the most important interconnections of spaces and functions. These are important interpretive and educational features.

- Rail line connectivity: this defined site selection and provided a key shipping method for grain and for the receipt of shipments of fertilizer, feed, gasoline, and salt for the Co-op via the Spokane International Railway. The building parallels the rail line. Loading doors at level 1 open on this facade for the movement of bagged goods. A heavy walled steel pipe projects through the upper facade of the granary for the direct loading of rail cars. Historically this included the open volume below the grain bins and connectivity through to the processing spaces.
- Pass through sequence: this provided the delivery method for grain to the building and the mechanical sequence for loading the grain in to the bins. This includes the visual connection with the adjacent office for the scale.
- Vertical chase and bins: this provided the method for material and personnel movement vertically within the granary and method for filling the bins.

Analysis

Historical and architectural significance are the principal means to convey the level of historic integrity, historical and architectural significance. The building can be divided into areas of relative character-defining importance. The historic significance of these areas stems from the history of construction, past occupants and events, and quality and integrity of architectural details.

Significance Levels

Building features and spaces are designated as Primary, Secondary, Minimal, or None, based on the level of contribution each makes to define the building's architectural character and historical significance. The basis for categorization stems from:

- The importance of the feature or space for grain storage;
- Whether the feature or space is original, or is a historically significant or contemporary addition;
- The extent of modifications and additions to the feature or space; and,
- The compatibility of finishes and building materials employed in the historic and contemporary changes to the feature or space.

The intent is not to fragment the building into divisible parts that can individually be preserved, modified, or discarded in future planning; rather, it is to view the building as a collective resource of character-defining features and spaces and provide some direction for necessary treatments or alterations. The goal is to steer toward solutions that will permit continued improvements to areas with minimal or no significance, and to prevent eroding or adversely impacting those character-defining features and spaces with primary significance levels.

Significance levels assigned through this analysis are plotted on maps within this section.

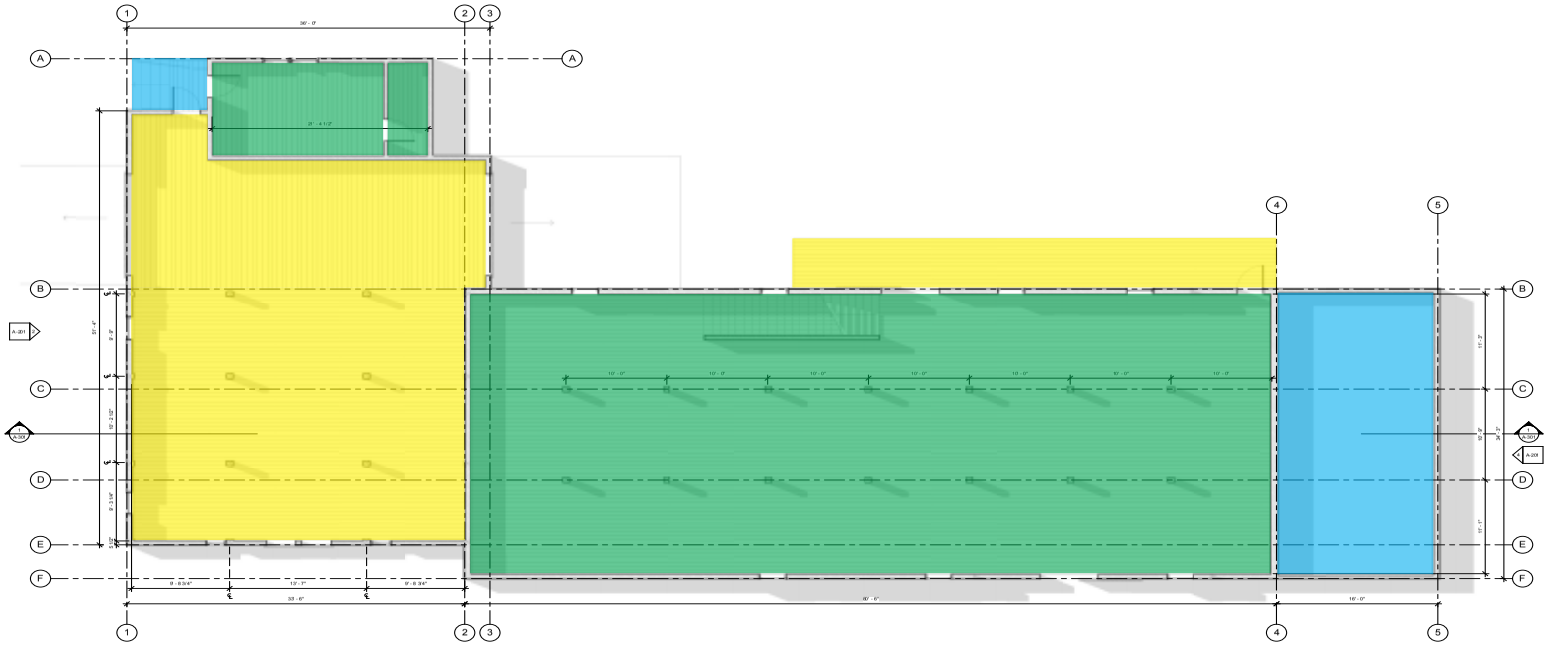
- Primary: Features and spaces original to the building that display a high level of physical integrity, although possibly with minor changes or historically significant alterations created to fit into the design or character of the original feature or space. At an architectural significance level, the finishes, design, and materials are of a high quality and assemblies well made. They convey a consciousness of setting, and typically exhibit design qualities defining the building's functional role. They reflect prevailing design influences during the building's period of construction. These elements would contribute to the building's listing status under Criterion C (architectural character). At a historical significance level, they may also be noted for important historic events supporting the building's status under Criterion A (association with historic events). Their removal or extensive alteration would detract from the overall architectural and historical significance of the building. Primary spaces and features may exhibit either or both architectural and historical significance associations.
- Secondary: Features and spaces are original to building, though likely to have experienced changes and/or historically significant additions. They retain some historic character and significant features. They exhibit utilitarian, well-crafted but not lavish, building materials or architectural features. At a historical significance level, they often served supporting roles to historic functions in primary spaces. Secondary spaces and features may exhibit either or both architectural and historical significance associations.
- Minimal: Features and spaces have few distinguishing architectural characteristics. Alternatively, an extensive, non-compatible contemporary remodel might obliterate nearly all significant architectural features and spatial configurations through introduced contemporary features and spaces.
- None: Features and spaces have no remaining architectural features or spatial configurations dating to either original construction or significant historical modifications, or are contemporary features and spaces that are not compatible with the original design. Due to the absence of original materials, configurations or architectural design elements, these spaces do not have historical associations.

Primary

Secondary

Minimal

None



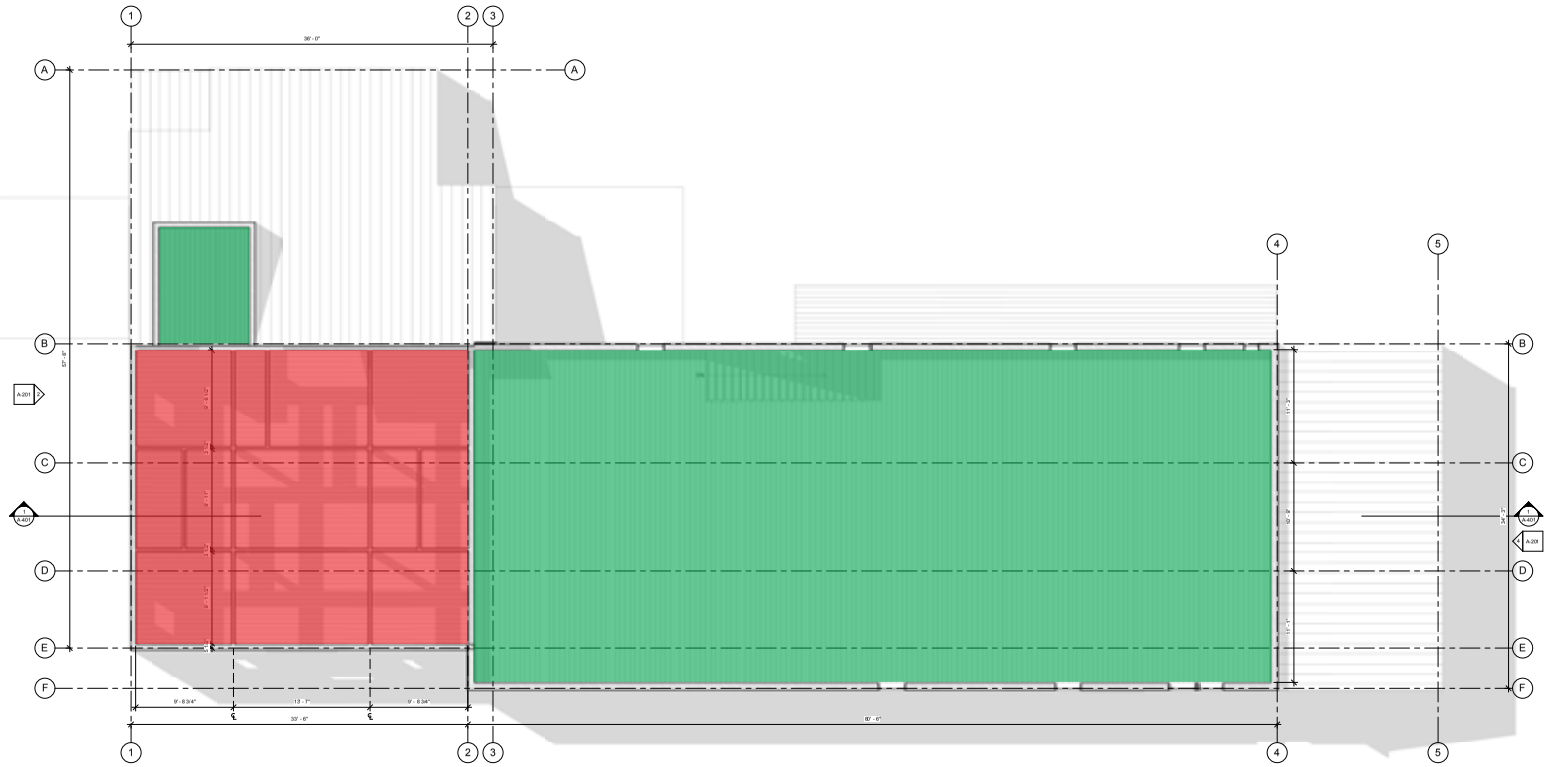
Level 1 Significance Map

Primary

Secondary

Minimal

None



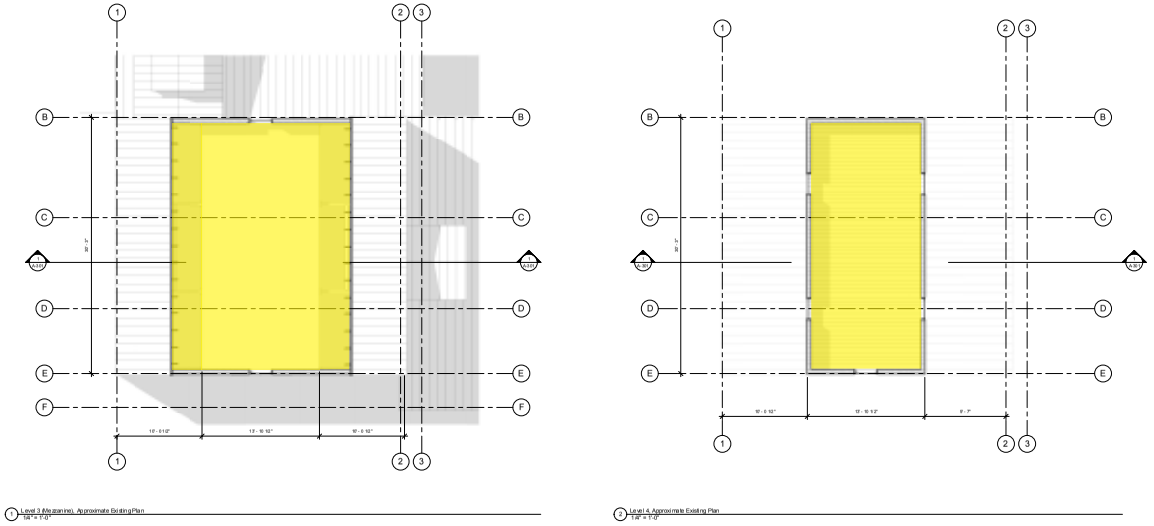
Level 2 Significance Map

Primary

Secondary

Minimal

None



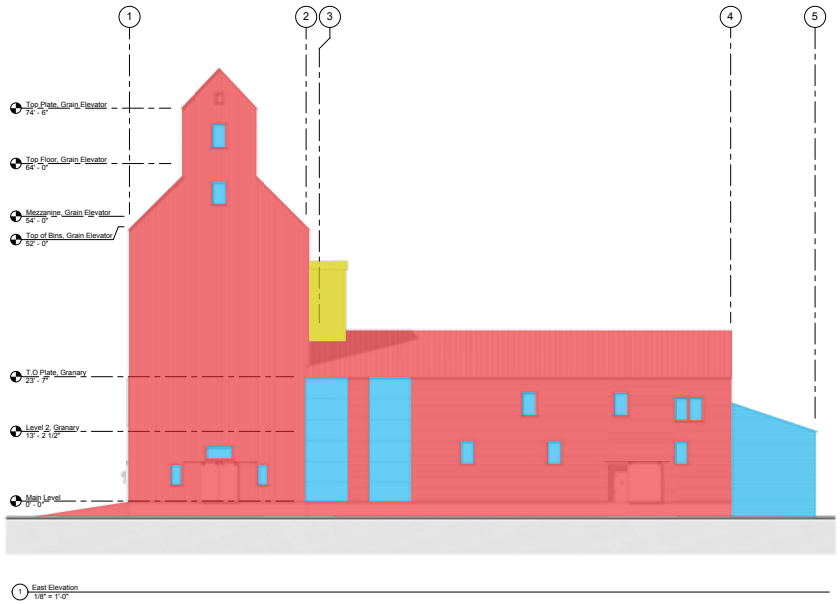
Levels 3 & 4 Significance Map

Primary

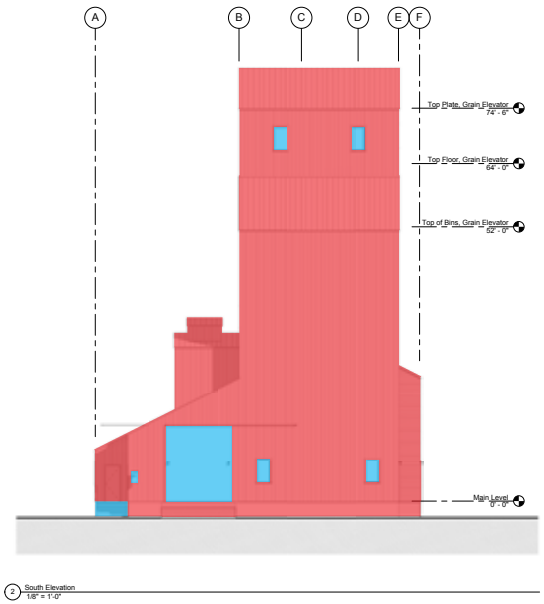
Secondary

Minimal

None

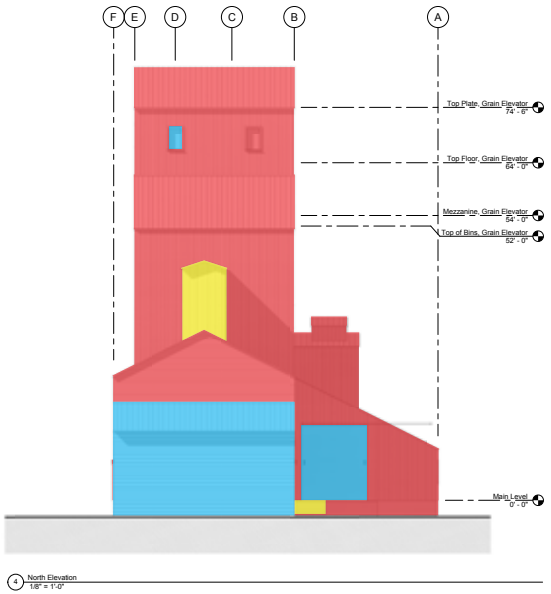


1 East Elevation
1/8" = 1'-0"



2 South Elevation
1/8" = 1'-0"

3 West Elevation
1/8" = 1'-0"



4 North Elevation
1/8" = 1'-0"

Elevations Significance Map

Financial Incentives

Economic incentives for historic preservation include tax credits, special tax assessments, grants, easements, and alternative paths for building code compliance. Incentives are generally available to owners of register-listed properties. Listing status establishes the community value of a property through archival research, building documentation, and a formal public meeting process. It is this community value that the economic incentives are intended to help property owners retain.

Incentives help to encourage private investment in historic properties by extending the investment capacity of private property owners. These incentives acknowledge both the public benefit of historic properties and the capacity for public benefit through coordinated public/private efforts.

- The building is currently not listed to the National Register of Historic Places. A 2013 survey recommended the building as retaining integrity of design, materials, and location.
- Industrial site consisting of the grain elevator (1943), warehouse no. 1 (1943), warehouse no. 2 (1978), garage (1966), and grain hopper (year built unknown).
- Potentially eligible under Criterion A for its association with the agricultural development of Sandpoint
- Potentially eligible under Criterion C as the last remaining grain elevator in Sandpoint.

20 Percent Rehabilitation Credit

Through the federal tax credit program, there is an opportunity to receive a federal income tax credit on the qualified amount of private investment spent on a certified rehabilitation of a NRHP-listed building. Idaho has seen approximately 39 rehabilitation projects utilize tax credits since 1997.

Requirements:

- NRHP-listed, individually or contributing to a district
- Income producing, which can be commercial, agricultural, industrial, and hotel-related, but must remain income-producing for at least five years following rehabilitation.
- Substantial rehabilitation, in which qualified rehabilitation expenditures equal or exceed the adjusted basis value of the building, exclusive of the land.
- Adjusted Basis = A – B – C + D
  - A = purchase price of the property (building and land)
  - B = cost of land at time of purchase
  - C = depreciation taken for an income-producing property
  - D = cost of any capital improvements made since purchase
- Rehabilitation work must be done per the Secretary of the Interior's (SOI) Standards for Rehabilitation, reviewed by both the Idaho SHPO and NPS for compliance. Submit for review prior to starting work. Take existing-condition photographs to document work prior to starting. https://www.nps.gov/tps/standards/rehabilitation.htm

The following are key considerations relative to the use of federal historic tax credits as part of a rehabilitation project for the granary.

- Industrial complex: The national register listing approach for the building is important. Listing of the industrial complex with the grain elevator and warehouse no. 1 as contributing, and warehouse no. 2, the garage, and grain hopper as non-contributing would allow warehouse no. 1 to also use tax credits (it likely would not be individually eligible). However, if a group of functionally related buildings are listed to the National Register of Historic Places, the National Park Service will want to review any work that happens to the other buildings as part of the rehabilitation project to ensure that the overall character of the complex is retained, this includes the non-contributing buildings and the site.
  - https://www.nps.gov/tps/tax-incentives/taxdocs/functionally-related-additional-guidance-rev-3-2017.pdf
- Window treatment: the project is not obligated to replace in-kind missing windows; however, the compatibility of new windows with the overall character and materials of the building will be an important consideration.
  - https://www.nps.gov/tps/standards/applying-rehabilitation/its-bulletins/ITS23-ReplaceWindows.pdf

- Adding new windows and entrances: new openings to support new building programming benefit from placement on secondary facades, set back from outer corners, and considering their overall compatibility with the building.
  - » https://www.nps.gov/tps/standards/applying-rehabilitation/its-bulletins/ITS14-Adding-NewOpenings.pdf
  - » https://www.nps.gov/tps/standards/applying-rehabilitation/its-bulletins/ITS21-NewOpenings-SecondaryElevations.pdf
  - » https://www.nps.gov/tps/standards/applying-rehabilitation/its-bulletins/ITS22-NewEntrances.pdf
- Egress, same issues as adding new windows and entrances.
  - » https://www.nps.gov/tps/standards/applying-rehabilitation/its-bulletins/ITS30-NewEntries-MillBuildings.pdf
- Grain bins: these are distinctive features that characterize the property. The goal of rehabilitation is that it requires minimal change to the building's character-defining features. In order to adaptively use the granary some level of modification will be required. The extent of these modifications will be a driving factor in whether the use of historic tax credits are suitable for the project.
  - » https://www.nps.gov/tps/standards/applying-rehabilitation/its-bulletins/ITS50-SpecialUse.pdf
- Atrium guidance with regards to the capacity to create one within the grain bin volume.
  - » https://www.nps.gov/tps/tax-incentives/incentives/avoiding_21.htm
- Exterior stair additions to support egress.
  - » https://www.nps.gov/tps/standards/applying-rehabilitation/its-bulletins/ITS10-StairTowers.pdf

Granary Rehabilitation Examples

Nationwide, there are few direct case study examples of historic grain elevators that have been adaptively reused and utilized historic tax credits. The following two projects were identified through a search of the National Park Service historic investment tax credit database using the word "granary." The link below provides additional case studies for other building types.

- » https://www.nps.gov/tps/tax-incentives/case-studies.htm
- NPS Project #28734: The Granary Building (Reading Company Grain Elevator), 411 N 20th Street, Philadelphia PA. A 2013 rehabilitation project that applied for federal historic investment tax credits and received a conditional approval on the part 2 application. A part 3 has not been filed. (https://tpsdev.cr.nps.gov/status/)
- NPS Project #22381: Persons Barn and Granary, 2103 Zeandale Road, Manhattan KS. A 2008-2011 project that utilized federal historic tax credits.

Reading Company Grain Elevator. Courtesy Google Earth Streetview.

Comparative Examples

The following is a brief list of other examples converting a granary to a new commercial or residential use. None of these are known to have utilized federal historic tax credits.

Mill City Museum

www.millcitymuseum.org

Located in Minneapolis, the museum is built into the ruins of what was once the world's largest flour mill. Museum displays focus on the history of the flour industry, the Mississippi River and the city of Minneapolis. It is owned and operated by the Minnesota Historical Society. An award-winning recent project was major exterior repairs on the Washburn Crosby Elevator No. 1 structure located adjacent to the museum. The Elevator is a component of the historic Washburn "A" Mill Complex, which is a designated National Landmark and contributing property within Minneapolis' St. Anthony Falls Historic District. The Elevator consists of fifteen (15), 128-foot tall, cylindrical grain bins with a 5-story Headhouse structure

constructed on top of the bins. The "Gold Medal Flour" sign is attached to the topmost roof of the Headhouse. The work will stabilize deteriorated elements of the Elevator. The project submitted a part 1, which was approved (project #6304), the part 2 was submitted and then withdrawn. Ultimately this project did not use federal historic tax credits.

Thorp Grist Mill

http://www.thorp.org

The Thorp Grist Mill is the only remaining mill in Washington state that made the transition from stone buhr to modern rollers. Built between 1880 and 1883 in this small town near Ellensburg, the mill has been lovingly restored and maintained so visitors can catch a glimpse of history back to the early days of settlement in the state. Restoration of the mill site continues to this day, with volunteers working on the nationally designated historic landmark throughout the year. An interpretive center in the gristmill provides information about the mill, pioneering families, local history, and photographs. In 1989, the Thorp Mill Town Historical Preservation Society restored the mill's turbine, making it once again operational. The Historical Society now devotes itself to developing the mill site both as an interpretive site and as a gathering place for community activities, helping to maintain both a close sense of community and the enterprising spirit that is Thorp's heritage.

Northside Granary Building

http://bceweb.com/portfolio-view/northside-granary-building-bozeman-mt/

The Northside Granary Building involved the adaptive re-use of and addition onto an iconic grain structure into a new commercial complex on the north skyline of Bozeman. The new 3 story office space saddles up right next to the grain structure and connects with it on the main floor as a restaurant space. The grain structure itself still houses the original bins and steel structure inside the space, and was structurally upgraded. This retrofit helped develop the community's north side into an active commercial sector while preserving an iconic piece of its past. This project did not use federal historic tax credits.

La Quinta Inn – Old Towne Irvine, CA

http://www.laquintairvinespectrum.com

101 rooms of the La Quinta Inn were once the grain silos of Irvine's former bean and grain warehouse, making it the most creative re-adaptive use of a building in the historic district. When Old Town Irvine preservation efforts began in the mid-1980's, the old 1949 silos were listed on the National Register of Historic Places. La Quinta Inn, based in San Antonio, Texas, spent millions converting the building into a hotel. All changes had to conform with strict preservation guidelines. Major design decisions included keeping an agricultural/industrial look to the granary. This involved using metal windows, keeping the original concrete surfaces visible wherever possible, and keeping the original tin at the top floor "Head House." The silos were converted into hotel rooms and the center bays of the hexagonal silos became an interior corridor serving the rooms. More than 180 panels of concrete were saw cut out of the silo walls to provide openings for doors, window, and passageways. The original tin shed at the west end was kept intact as a lobby. This project did not use federal historic tax credits.

The Lofts At Globe Mills – Sacramento, CA

http://www.loftsatglobemills.com

The Lofts at Globe Mills is an adaptive reuse of a former feed and flour mill built nearly a century ago in downtown Sacramento. This one-of-a-kind community features studio and one-bedroom lofts.

The Globe Mills is a City of Sacramento Landmark and is eligible for listing in the National Register of Historical Places. The current mill was built in 1914, as an independent mill, but was eventually purchased by Pillsbury in 1940. Pillsbury invested $250,000 in 1942 to triple the storage capacity of the flour mills here and constructed forty-two circular poured concrete silos, as well as thirty square silos. These improvements made the plant one of the largest feed and flour mills in California. The Mills continued production of feed and flour until 1968 when Pillsbury closed their entire operation. The complex laid dormant for nearly forty years before being purchased by local developers. This project applied for the federal historic tax credits; however, the part 1 (project #15463) to certify National Register of Historic Places eligibility was denied.

Grants

Grant funds for heritage activities are available from both public and private sources. The following is a list of some grant sources in addition to the Preservation Services Fund—Eldridge Campbell Stockton Memorial

Preserves Fund and Pacific Northwest Fund which is funding this study. It is not exhaustive.

Community Facilities Direct Loan and Grant Programs/US Dept. of Agriculture

This program provides affordable funding in the form of grants and low interest direct loans to develop essential community facilities in rural areas. An essential community facility is defined as a facility that provides an essential service to the local community for the orderly development of the community in a primarily rural area (under 20,000 population), and does not include private, commercial or business undertakings. Public entities, community-based non-profits and Federally-recognized tribes may apply. Funds can be used to purchase, construct, and / or improve essential community facilities, purchase equipment and pay related project expenses. Eligible projects include public facilities such as town halls, courthouses, airport hangars or street improvements, Educational services such as museums, libraries or private schools; and local food systems such as community gardens, food pantries, community kitchens, food banks, food hubs or greenhouses

Cynthia Woods Mitchell Fund for Historic Interiors

Assists in the preservation, restoration, and interpretation of historic interiors. Grants typically range from $2,500 to $10,000. The selection process is very competitive.

Hart Family Fund for Small Towns

Grants are intended to encourage preservation at the local level by providing seed money for preservation projects in small towns under 10,000 population. These grants help stimulate public discussion, enable local groups to gain the technical expertise needed for projects, introduce the public to preservation concepts and techniques, and encourage financial participation by the private sector. Grants typically range from $2,500 to $15,000.

Joanna Favrot Fund for Historic Preservation

The fund aims to save historic environments to foster an appreciation of our nation's diverse cultural heritage and to preserve and revitalize the livability of the nation's communities. Grants typically range from $2,500 to $10,000.

(Footnotes)

1 Company papers for the Howe Scale Company reside at the University of Vermont. http://cdi.uvm.edu/findingaids/viewEAD.xql?pid=howescale.ead.xml