STAR VALLEY RANCH

Star Valley Ranch, WY

ARCHITECTURAL BUILDING ASSESSMENT and CODE ANALYSIS:

GAMBREL BARN & SILO

Myers ■ Anderson

- Architecture
- Interior Design
- Landscape Architecture

101 North Main Street
Pocatello, Idaho 83204

Tel. (208) 232 - 3741
Fax (208) 232 - 3782

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Overview:

Myers-Anderson Architects, contracted with and through the Wyoming Business Council and administered by Wyoming Main Street, visited Star Valley ranch on August 25, 2010 to conduct an assessment of the Barn and Silo buildings. While on site, our investigation included the following items:

- Measurements and photographs of both buildings so that an accurate set of as-built plans could be drafted and used for conceptual planning and code review
- Observations pertaining to possible ADA accessibility deficiencies
- Observations pertaining to IBC code compliance (IBC 2006)
- Observation of additional issues that may need to be addressed, specifically those relating to the condition and thermal qualities of the buildings' exterior envelope
- General review of architectural space needs and recommendations

Using this data, we conducted an extensive assessment of both the Barn and the Silo identifying deficiencies and offering alternatives to remedy each. Accompanying these remedies are existing plans, elevations, a general cost estimate for each building, a rough phasing plan, and a schematic plan and elevation for remodel work. The majority of the items discussed in this assessment relate to violations of minimum requirements set forth by the IBC and ADA standards. While these items vary in degree of severity, it is required that minimums for each are achieved before the building can be used in its entirety. The recommendations in this assessment, if applied, will bring these deficiencies up to compliance. The remaining items, while not required by code, are provided with a strong recommendation that they are included in any renovation undertaken.
It should be noted that, relative to the code analysis, the Barn and Silo are treated as a single building given the location of the Men and Women restrooms on the ground level and the existing ramp connection between the two.
The proposed layout and elevation included in this assessment is intended to be viewed as an initial concept only. At this time, there has not been a formal discussion in any depth about design specifications or priorities. The spatial arrangement and circulation shown in this schematic design merely reflect what we feel is vital to a golf course and community center and should not be interpreted as anything beyond that at this point. The costs included in this assessment are budget estimate figures. They have not been verified as actual bid costs.

The information in this assessment is intended to be complementary to the structural assessment conducted by Sargent Engineers in October 2009. Any conflicts or redundant information between the two assessments is noted.

Barn Building

The Barn Building is an approximately 5,700 square foot wood framed building built in the 1970's. The main level serves as a community center with an assembly room, bar area, stage, and men's restroom. The bottom level of the building serves as golf cart storage. While the bottom level can be entered from

the exterior, there is no interior access. In addition to the structural repair requirements stated in Sargent Engineering's structural assessment, the following items need to be addressed:

- Insulation in the roof
    - With the installation of the new roof sheathing as proposed in the 2009 structural assessment, place 4" rigid insulation on the exterior side of the roof. Re-set existing metal roof over new insulation board.
- Insulation in walls
    - Place batt insulation between the exterior wall framing members. Finish full height of interior walls with interior wood paneling that speaks to the existing context of the space. This work should be done in conjunction with required wall framing upgrades per the 2009 structural assessment.
- Replace aluminum thermal barrier windows with more efficient vinyl or wood clad, double pane, Low-e glazed, windows
- ADA compliant Ramp addition to east exit
    - Replace exterior stair with exterior ADA compliant ramp. This upgrade will require approximately 3 parking spaces to be vacated.
- Ramp upgrade at Barn/Silo connection
    - Remodeling work in the silo will provide necessary space for an ADA compliant ramp at this connection. This remodeling will also better integrate the silo-barn connection with a main entrance and central lobby.
- Renovation of Men's restroom
    - Remodeling work in the silo will provide conveniently located and upgraded restrooms that meet all code requirements. Upgraded restrooms will include space for lockers and benches. The renovation includes the demolition of the existing mens rest room in the barn building.
- Install mechanical system (heating and cooling)
- Electrical upgrades
    - Electrical upgrades include provisions for emergency lighting and a fire alarm system required by code as well as improved lighting.
- Repair and repaint existing exterior siding
    - Repair and patch any breaks, cracks, or other issues that results in thermal bridging. Prep and repaint.

Silo Building

The silo building is an approximately 8,050 square foot, 4 story wood framed building with a steel central pipe column, also built in the 1970's. The ground level houses the pro shop, lobby, and women's restroom. The remaining floors have office spaces on the 2nd level, a restaurant on the 3rd level, and a bar on the 4th level. In addition to the structural repair requirements stated in Sargent Engineering's structural assessment, it is recommended the following items be addressed:

- Insulation in walls

    - Place blown in insulation in the existing walls. This work should be done in conjunction with required wall framing upgrades per the 2009 structural assessment.
- Replace aluminum thermal barrier windows with more efficient vinyl or wood clad, double pane, low-e glazed, windows
- Add ADA hardware to doors as required by code.
- Provide accessible access to women's restroom on ground level
    - Remodeling work in the silo will provide conveniently located and upgraded restrooms that meet all code requirements. Upgraded restrooms will include space for lockers and benches.
- Upgrade restrooms on restaurant level to be ADA accessible
- 4 stop elevator and lobby addition
- Install mechanical system (heating and cooling)
- Electrical upgrades
    - Electrical upgrades include provisions for emergency lighting and a fire alarm system required by code as well as improved lighting. Additional electrical capacity for the silo building may be required.
- Repair and repaint exterior siding
    - Repair and patch any breaks, cracks, or other issues that results in thermal bridging. Prep and repaint. Repaint exterior exit stair.

Barn Building and Silo Building: Code Analysis

General Notes	
Construction Type	V-B
Occupancy	A-3
Total Occupants	1123
Fire Suppression System	Yes
Emergency Exit Lighted	No*
Fire Alarm System	No*
Occupancy Separation	None
Fire Walls	None

	Existing	Allowed
Number of Stories	4	No**
Building Height	45'-0"	Yes
Building Area	13,741 GSF	Yes

*The code requirements for emergency exit lighting and a complete fire alarm system is addressed under electrical upgrades for each building.

**Section 101.4 in the International Existing Building Code States:

- The legal occupancy of an existing building shall be permitted to continue without change.
- Related to this provision in the code, the interior stairway in the Silo building may be permitted to remain as well. Despite being in violation of code, the building's original use is not being changed, so the stairway may not need to be brought up to standard. Because stairways are among the most common areas of injury in building, this issue should be discussed at length with the local jurisdiction for building safety.
    - If the committee elects to repair the interior stair, it is recommended that a new, centrally located stair integrated with an elevator be constructed and the existing stair be demolished. The proposed pro shop office in the attached schematic plan is one possible location.
- The Star Valley Ranch Barn and Silo originally served as an A-3 occupancy which is only allowed to be 2 floors when the construction type is classified at a V-B. The International Existing Building Code, however, allows for this rating to remain despite exceeding the allowable number of floors.

Plumbing Fixtures

The table below shows water closet and lavatory requirements for both men and women in the barn and silo as required by the IBC. 3 drinking fountains are also required. It is recommended that the majority of the water closets be located in close proximity to the Assembly Hall which accounts for the largest occupant load within the two buildings.

Plumbing fixture Schedule

	# of occupants	Water Closets Required	Lavatories Required
Male	562	5	3
Female	562	9	3
Total	**1124**	**14**	**6**

Secretary of the Interior's Standards for Rehabilitation:

This building is not yet 50 years old and, while still historically significant, is not considered a technically historical building. Although neither the Barn nor Silo buildings were constructed with features such as ornate doors and windows, trim work, and other fenestration that are typical of buildings which the

Interior's Standards for Rehabilitation are applied to it is still recommended that these standards are taken into consideration.

Executive Summary

The Star Valley Barn and Silo buildings provide both the golf course and the community a great deal of potential to have a unique and enjoyable facility. This assessment provides a comprehensive checklist of all work necessary to maximize the value of these two buildings. While the work listed, as a whole, is extensive, it can easily be broken down into manageable phases that the committee can act on immediately.

Phase I

All code and ADA related issues in the Barn building should be addressed first. It is recommended that the renovation/addition of the Silo building ground floor be constructed concurrently with the code compliance work in the barn.

Addressing these issues will result in a code compliant building that can be used in warmer months comfortably and without unnecessary liability. The remodeling/addition on the ground floor of the silo will provide code compliant access to the Barn, Men and Women restrooms as well as a much more preferable pro shop location and overall improvements to circulation. The following table provides a potential phasing plan and the associated costs with each.

Phase I Cost Estimate	
Barn: Ramp addition on east end	$8,000
Ramp upgrade: Barn-Silo connection	$15,000
Silo: Pro shop addition	$138,000
Silo: Lobby/Lounge upgrade and addition	$101,250
Silo: Men's rest room and locker upgrades	$105,000
Silo: Women's rest room and locker upgrades	$60,000
Phase I Architectural Cost estimate subtotal	**$427,250**
Structural Upgrades: Barn foundation repair	$35,000
Structural Upgrades: Barn roof framing	$150,000
Structural Upgrades: Silo Foundation Repair	$95,000
Phase I Architectural and Structural Subtotal	**$707,250**
Non-construction project costs (~40%)	$284,204
Phase I Cost Estimate Total	**$991,454**

Phase II

The focus of phase II is to upgrade the envelope of the barn and silo buildings so that they can be used year-round. This primarily includes adding insulation to the walls and roofs where required. The existing aluminum thermal barrier windows will be replaced more efficient wood-clad or vinyl windows and the

exterior siding will be repaired and repainted. While Phase II upgrades alone cannot make the building usable in throughout the winter, improved insulation in the envelope will make the building more comfortable and energy efficient in the summer and available for use in the spring and fall.

Phase II Cost Estimate	
Barn: Roof insulation upgrades	$62,840
Barn: Framing upgrades	$60,000
Barn: Wall insulation	$15,165
Barn: Replace windows	$12,500
Barn: Repair and repaint siding	$28,000
Silo: Insulation upgrades in walls and roof	$20,000
Silo: Replace windows	$20,000
Silo: ADA hardware for doors	$1,500
Silo: Repair and repaint siding	$18,000
Phase II Architectural Cost estimate subtotal	**$238,005**
Structural Upgrades: Barn floor framing	$60,000
Structural Upgrades: Barn wall framing	$70,000
Structural Upgrades: Silo floor framing	$70,000
Structural Upgrades: Silo wall framing	$55,000
Structural Upgrades: Silo roof framing	$60,000
Phase II Architectural and Structural Subtotal	**$553,005**
Non-construction project costs (~40%)	$222,222
Phase II Cost Estimate Total	**$775,227**

Phase III

Phase III will provide accessibility to all portions of the building and significantly improve temperature control. In addition to adding a 4 stop elevator to the silo building, this phase will provide both buildings with full heating and air conditioning systems and compliant accessibility throughout. As a result, the barn and silo buildings will be available for year-round usage for all intended uses.

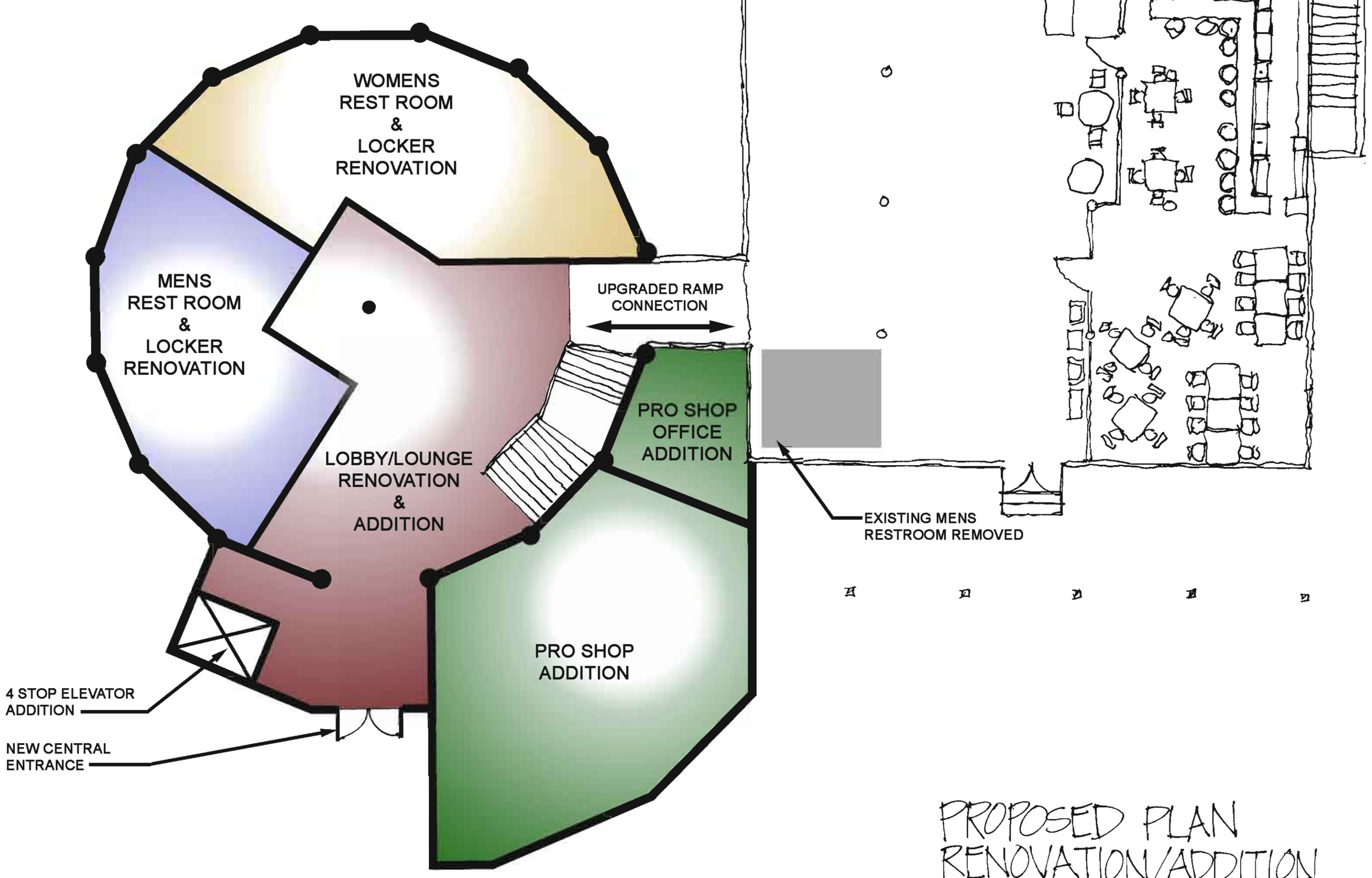
Phase III Estimate	
Barn: Mechanical system	$79,702
Barn: Electrical upgrades	$34,158
Silo: Mechanical system	$126,868
Silo: Electrical upgrades	$54,372
Silo: Elevator addition	$175,000
Silo: Restaurant restroom upgrades	$22,500
Phase III Architectural Cost estimate subtotal	**$492,600**
Non-construction project costs (~40%)	$197,948
Phase III Cost Estimate Total	**$690,548**

Star Valley Barn						
Cost Estimate: Architectural & Structural Upgrades						
Description	Qty.	Unit	Cost/Qty.	Estimate	$/Sf of building	% of Total
Roof: Tear-Off/Replacement, Insulation, & Finished Ceiling	6,284	SF	$10	$62,840	$11.04	9.97%
Improved Roof Framing Per 2009 Sargent Assessment	1	Total	$60,000	$60,000	$10.54	9.52%
Walls: Insulation Upgrade & Interior Finish	3,033	SF	$5	$15,165	$2.66	2.41%
Replace Windows	25	ea.	$500	$12,500	$2.20	1.98%
Ramp Addition: East Exit	1	Total	$8,000	$8,000	$1.41	1.27%
Ramp Upgrade: Barn-Silo Connection	1	Total	$15,000	$15,000	$2.63	2.38%
Mechanical System	5,693	SF	$14	$79,702	$14.00	12.64%
Electrical Upgrades	5,693	SF	$6	$34,158	$6.00	5.42%
Re-Side Exterior of Building	1	Total	$28,000	$28,000	$4.92	4.44%
Architectural Work Sub Total				**$315,365**	**$55.40**	
Structural Repairs Per 2009 Sargent Assessment	1	Total	$315,000	$315,000	$55.33	49.97%
Cost Estimate Subtotal For Barn				**$630,365**	**$110.73**	**100.00%**

Star Valley Silo						
Cost Estimate: Architectural & Structural Upgrades						
Description	Qty.	Unit	Cost/Qty.	Estimate	$/Sf of building	% of Total
Insulation Upgrades In Walls & Roof*	1	Total	$20,000	$20,000	$2.49	1.78%
Replace Windows Per 2009 Sargent Assessment	1	Total	$20,000	$20,000	$2.49	1.78%
ADA Hardware	1	Total	$1,500	$1,500	$0.19	0.13%
Addition of 4 Stop Elevator	1	Total	$175,000	$175,000	$21.74	15.59%
ADA Upgrades to Restaurant Restrooms	1	Total	$22,500	$22,500	$2.80	2.00%
Pro Shop Addition	920	SF	$150	$138,000	$17.15	12.29%
Lobby Lounge Upgrade/Addition	675	SF	$150	$101,250	$12.58	9.02%
Men's Restroom and Locker Upgrades	600	SF	$175	$105,000	$13.05	9.35%
Women's Restroom and Locker Upgrades	600	SF	$100	$60,000	$7.46	5.35%
Mechanical System	9,062	SF	$14	$126,868	$15.76	11.30%
Electrical Upgrades	9,062	SF	$6	$54,372	$6.76	4.84%
Re-side Exterior of Building	1	Total	$18,000	$18,000	$2.24	1.60%
Structural Repairs Per 2009 Sargent Assessment	1	Total	$280,000	$280,000	$34.79	24.94%
Cost Estimate Subtotal For Silo				**$1,122,490**	**$197.17**	**100.00%**

Star Valley Barn and Silo Renovation
Project Cost Estimate

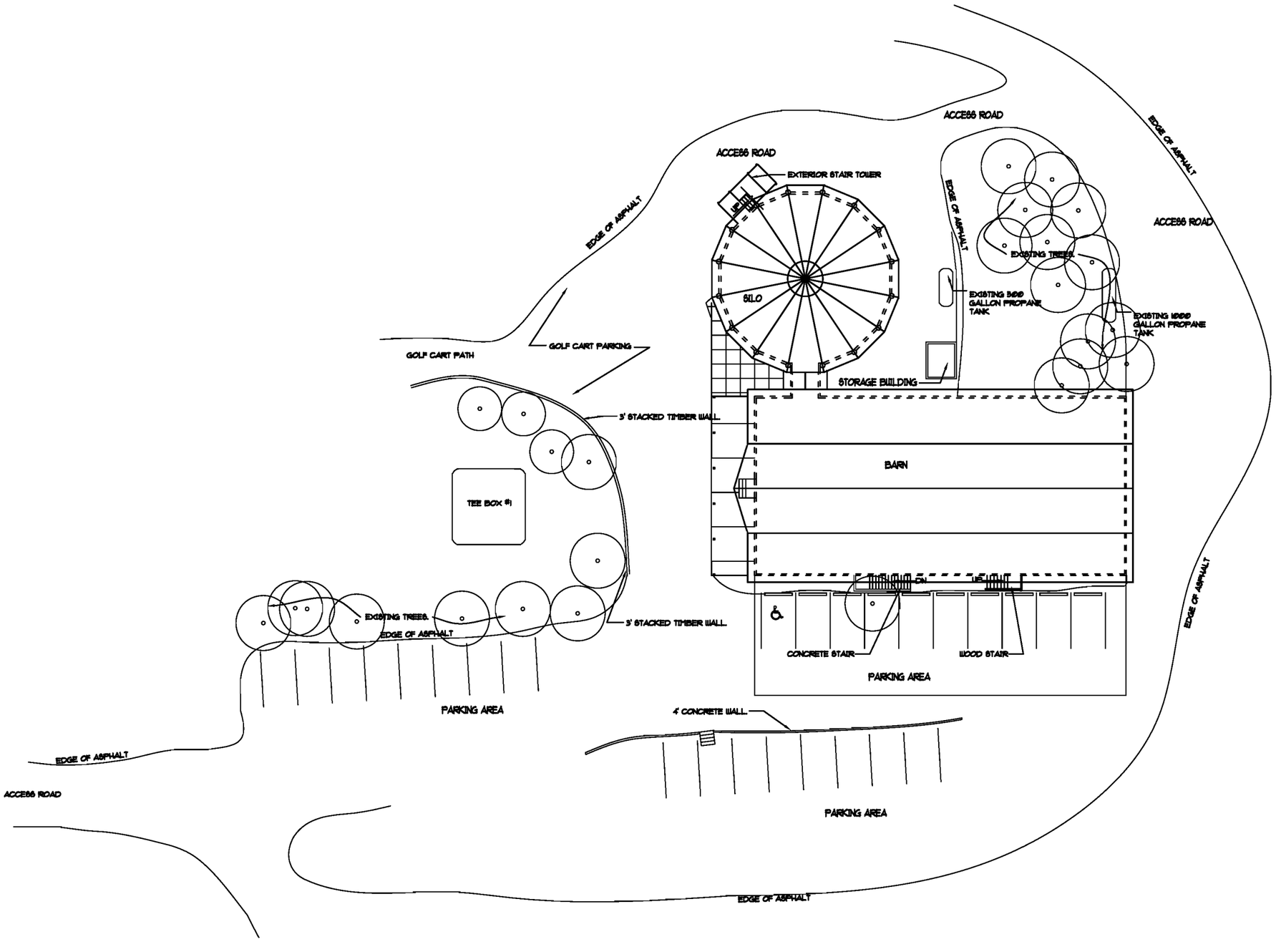
Description	Estimate
Cost Subtotal: Barn	$630,365
Cost Subtotal: Silo	$1,122,490
Project Subtotal	$1,752,855
Bonds & Insurance (3%)	$52,586
Project Cost Subtotal	$1,805,441
Contractor Profit & Overhead (6%)	$108,326
Project Cost Subtotal	$1,913,767
Soft Costs: A/E, Testing, Etc. (15%)	$287,065
Project Cost Subtotal	$2,200,832
Escalation Through Middle of Construction (1.5%)	$33,012
Project Cost Subtotal	$2,233,845
Design Contingency (10%)	$223,384
Total Project Construction Estimate	**$2,457,229**



PROPOSED PLAN
RENOVATION/ADDITION
SCALE: 1/8" = 1'-0"

PROPOSED ELEVATION

SCALE: 1/8"=1'-0"



SITE PLAN

SCALE: 1/16" = 1'-0"

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849 Front Street, Suite 202 ■ Evanston, Wyoming 82930 ■ Tel. (307) 789 - 0934

REVIEW SET

AIA NCARB ASLA

PROJECT:
STAR VALLEY RANCH
GAMBREL BARN & SILO
EVANSTON, WYOMING

SHEET TITLE:

SITE DEVELOPMENT

CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS SHOWN OR IMPLIED

DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

REVISION	DATE

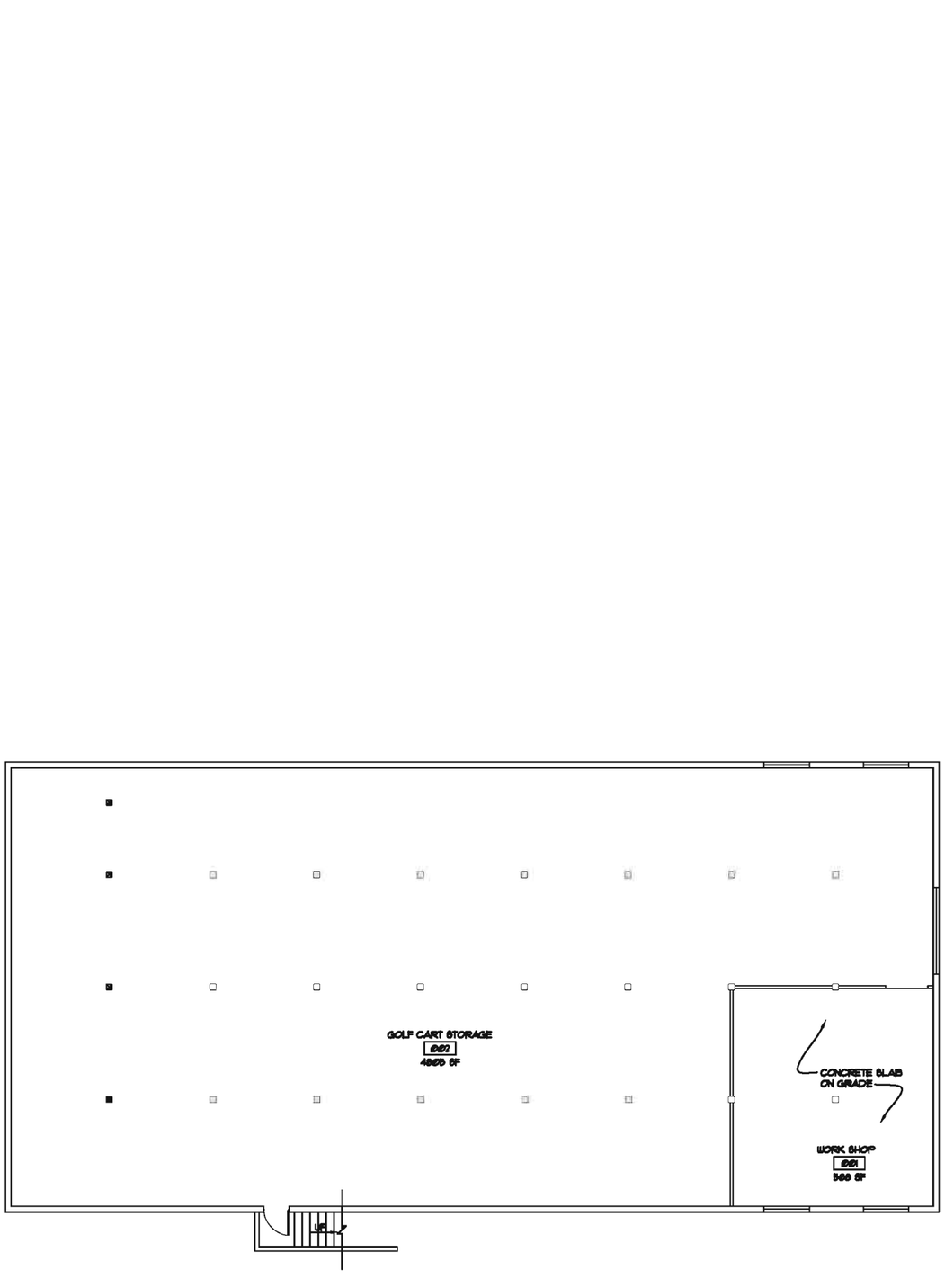
DRAWN BY: B.H. NIELSON

CHECKED BY: JT MYERS

JOB NUMBER: 0938-15K

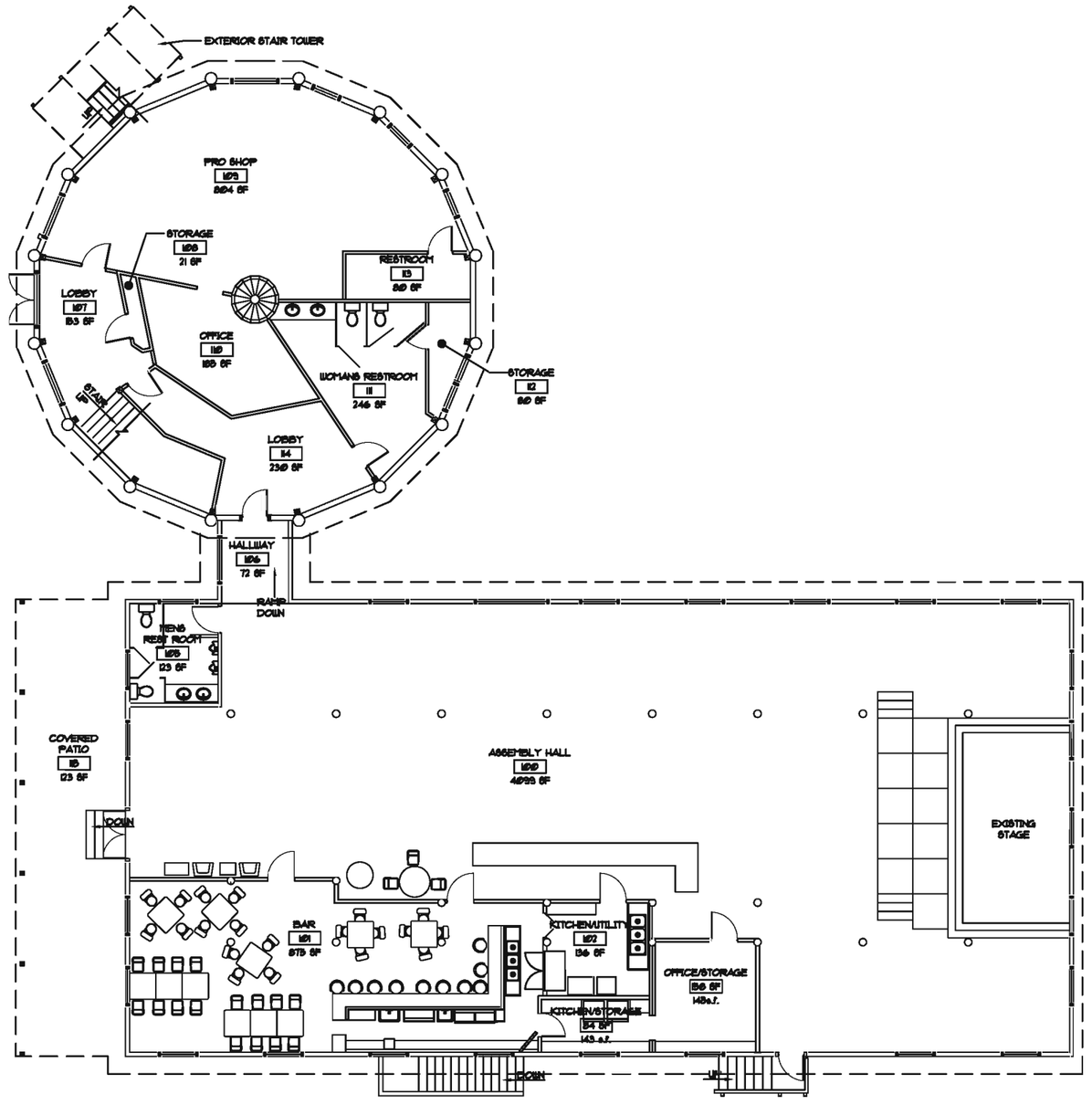
PROJECT DATE: SEPT 2010

SHEET SD100 OF xxxx



BASEMENT FLOOR PLAN

SCALE: 1/8" = 1'-0"



FLOOR PLAN

SCALE: 1/8" = 1'-0"

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PROJECT:

STAR VALLEY RANCH
GAMBREL BARN & SILO
EVANSTON, WYOMING

SHEET TITLE:

GAMBREL BARN AND SILO GOUND FLOOR PLAN

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DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

REVISION	DATE

DRAWN BY: B.H. NIELSON

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JOB NUMBER: 0919-19K

PROJECT DATE: SEPT 2019

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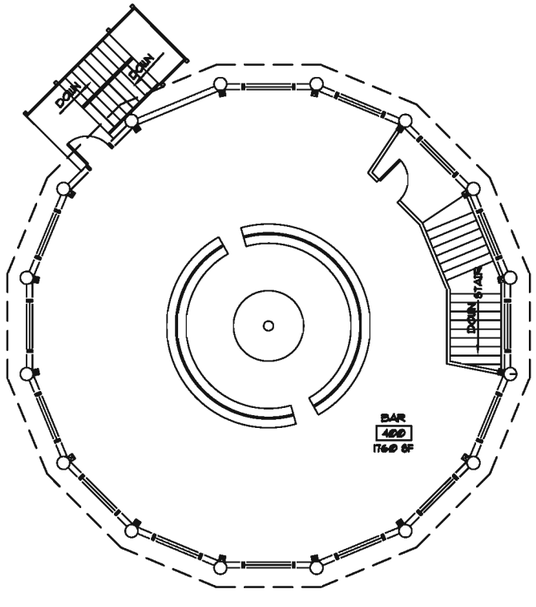

LEVEL FOUR PLAN

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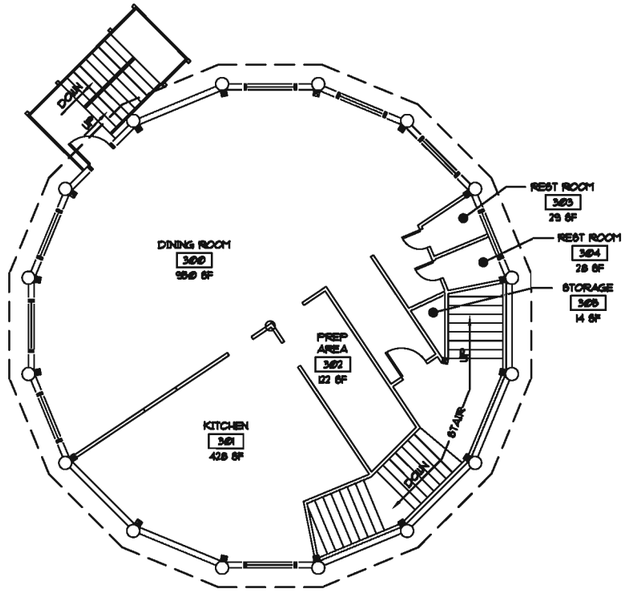

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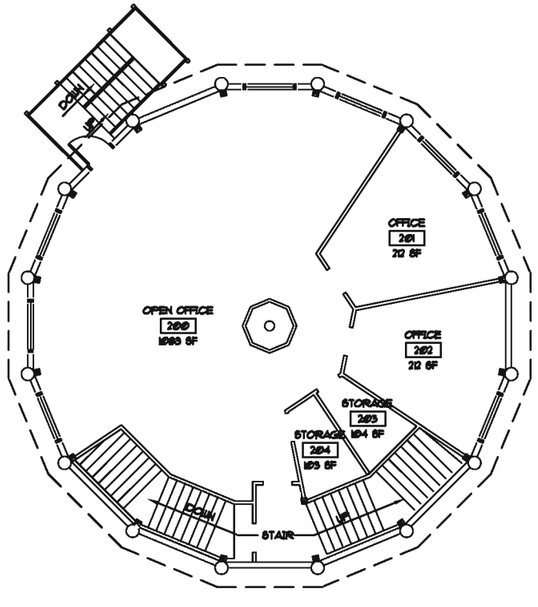

LEVEL TWO PLAN

SCALE: 1/8" = 1'-0"

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PROJECT:
STAR VALLEY RANCH
GAMBREL BARN & SILO
EVANSTON, WYOMING

SHEET TITLE:

SILO
2-3-4 LEVEL
FLOOR
PLANS

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DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

REVISION	DATE

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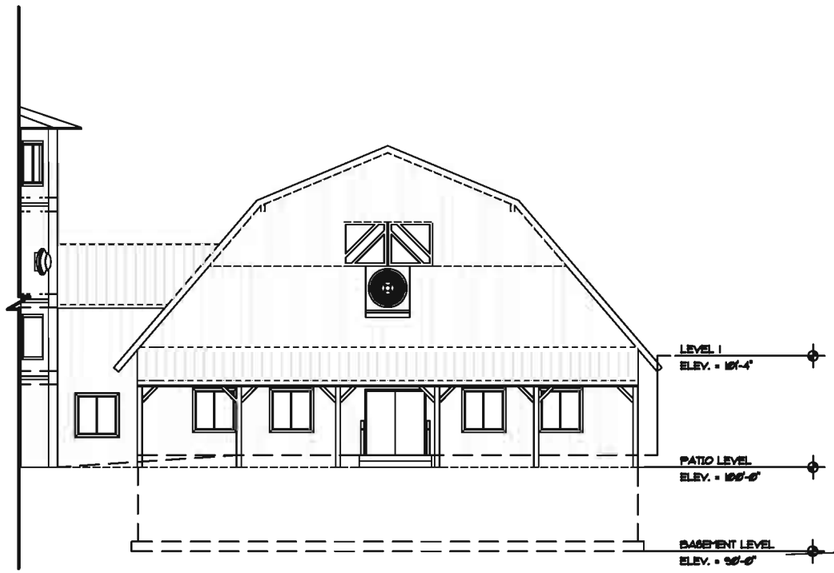
JOB NUMBER: 0939-15K

PROJECT DATE: SEPT 2016

SHEET 101 OF xxxx



SOUTH ELEVATION
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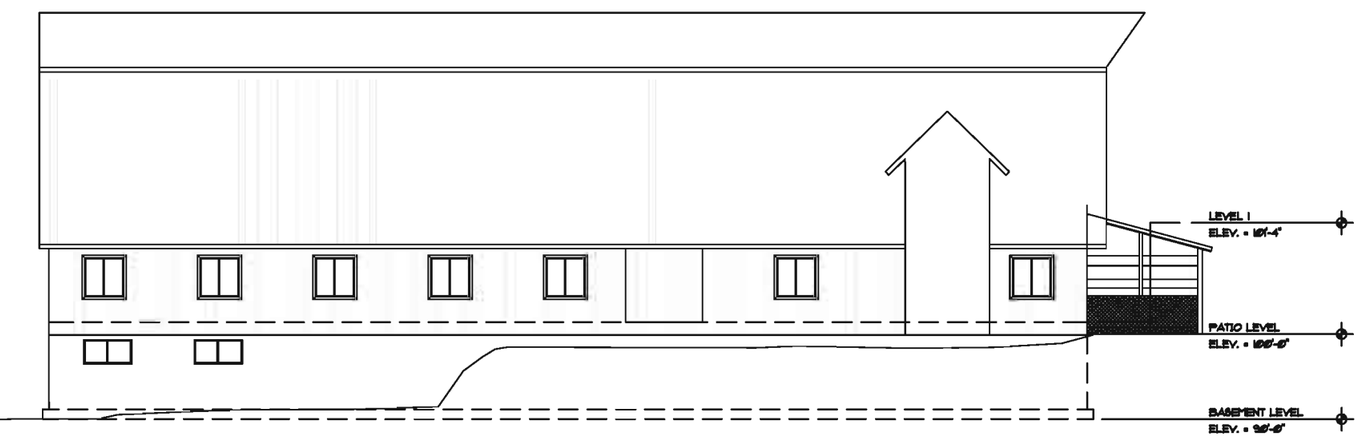

WEST ELEVATION
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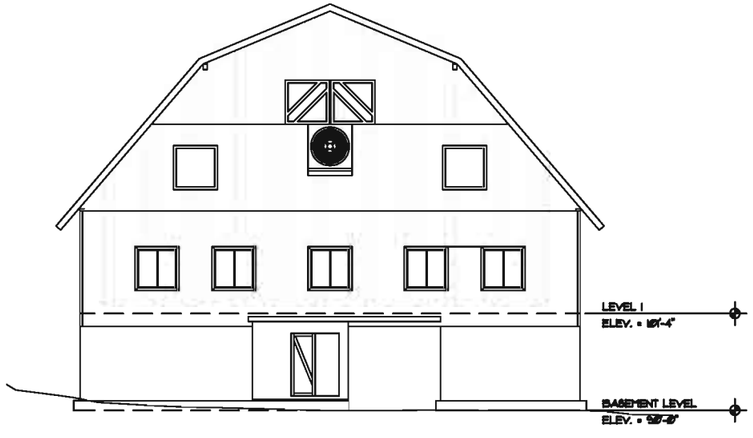

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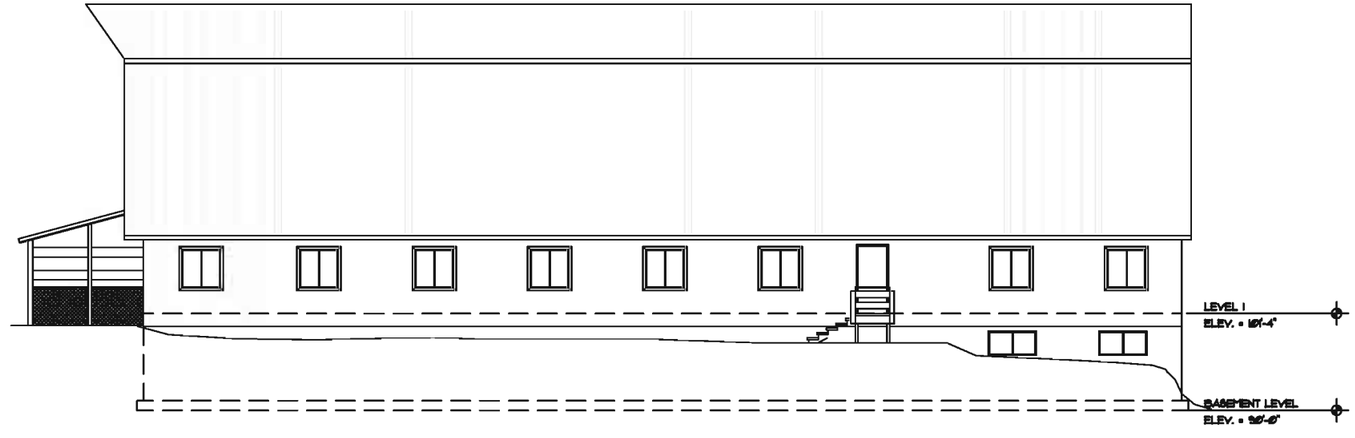

EAST ELEVATION
SCALE: 1/8" = 1'-0"

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REVIEW SET

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STAR VALLEY RANCH
GAMBREL BARN & SILO
EVANSTON, WYOMING

SHEET TITLE:

BARN EXTERIOR ELEVATIONS

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PROJECT DATE: SEPT 2019

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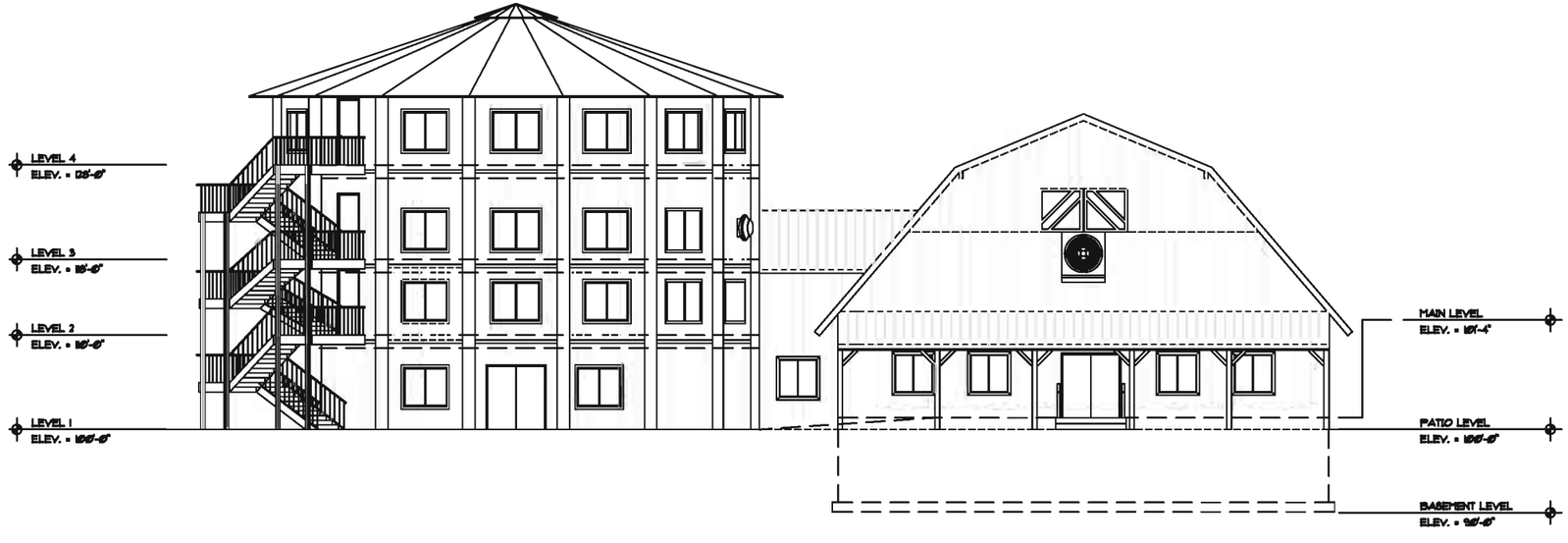

SOUTH ELEVATION

SCALE: 1/8" = 1'-0"

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REVIEW SET

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PROJECT:
STAR VALLEY RANCH
GAMBREL BARN & SILO
EVANSTON, WYOMING

SHEET TITLE:

SILO AND BARN ELEVATION

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DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

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