Work Session Meeting Agenda
2 Park Drive South, Great Falls, MT
Gibson Room, Civic Center
November 18, 2025
5:30 PM

The agenda packet material is available on the City's website: **https://greatfallsmt.net/meetings.** The Public may view and listen to the meeting on government access channel City-190, cable channel 190; or online at **https://greatfallsmt.net/livestream.**

Public participation is welcome in the following ways:

- Attend in person.
- Provide public comments in writing by 12:00 PM the day of the meeting: Mail to City Clerk, PO Box 5021, Great Falls, MT 59403, or via email to: **commission@greatfallsmt.net**. Include the agenda item or agenda item number in the subject line, and include the name of the commenter and either an address or whether the commenter is a city resident. Written communication received by that time will be shared with the City Commission and appropriate City staff for consideration during the agenda item, and, will be so noted in the official record of the meeting.

CALL TO ORDER

PUBLIC COMMENT

(Public comment on agenda items or any matter that is within the jurisdiction of the City Commission. Please keep your remarks to a maximum of five (5) minutes. Speak into the microphone, and state your name and either your address or whether you are a city resident for the record.)

WORK SESSION ITEMS

1. Update from Historic Preservation Advisory Commission on the Boston and Montana Barn - Presented by Richard Ecke. (estimated 20 minutes)

2. Fire Training Center Update - Presented by Jeremy Virts (estimated 20 minutes)

DISCUSSION POTENTIAL UPCOMING WORK SESSION TOPICS

ADJOURNMENT

City Commission Work Sessions are televised on cable channel 190 and streamed live at https://greatfallsmt.net. Work Session meetings are re-aired on cable channel 190 the following Thursday morning at 10 a.m. and the following Tuesday evening at 5:30 p.m.

Wi-Fi is available during the meetings for viewing of the online meeting documents.

UPCOMING MEETING SCHEDULE

Special City Commission Meeting, Monday December 1, 2025 4:00 p.m.

Great Falls City Commission
2 Park Drive South
Great Falls, MT 59401

From: The City-County Historic Preservation Advisory Commission
And the Committee to Save the Boston & Montana Barn
301 Third Avenue North
Great Falls, MT 59401

Dear Commissioners:

Enclosed please find a report outlining revised plans by the Historic Preservation Advisory Commission to stabilize the historic Boston & Montana Barn, the last remaining vestige of the original Black Eagle smelter. As you know, the smelter and metals refinery was the largest employer in the Great Falls area for nearly half a century, and was best known under the ownership of the Anaconda Copper Mining Co. To summarize, this report sets a new estimated cost to stabilize the historic barn at $175,000. Please refer to the Schedule of Values section of our report for a breakdown of stabilization costs.

Once the Barn is stabilized, we recommend that the Barn eventually be renovated and used as an interpretive center, telling the compelling story of two Great Falls area industrial giants – the Anaconda Co. smelter and refinery, and the Montana Power Co. hydroelectric dams on the Missouri River that continue to help power the state under current NorthWestern Energy ownership. In addition, the Barn would serve as an events center. But, for now, the goal is to save and stabilize the building. Our committee has begun fundraising and has so far raised $28,645 in cash and pledges as of Oct. 31.

City staff has expressed to us its concerns about the city's liability from people entering the Barn area through inadequate fencing. The HPAC and its committee are willing to expend some of the funds we have raised so far to install a solid chain-link fence, where needed, around the barn to reduce the ability of golfers and vandals to enter the barn property. Strong, new fencing along two sides of the barn may be needed. We await detailed information from city staff on what type of fencing the city desires. Existing golf course fencing should continue to function along the southern edge of the barn property, and an existing smelter fence on the eastern edge. We can provide the funds in a prompt fashion to the city finance office for the fencing.

Our goal is to begin construction work to stabilize the historic barn next spring, and to continue fundraising in the meantime. It's our understanding city staff will solicit bids for the work; we recommend breaking the solicitation into two parts, for wall stabilization and then roof rebuilding.

We believe demolishing the barn now would be a costly move for the city to make. If the city indeed has some $50,000 to tear the Barn down, we would suggest giving that money to the committee toward stabilization work. Our report also offers several Plan B alternatives in case you opt for demolition. Thank you for your consideration, and please feel to contact me and the committee with any questions.

Sincerely,

Channing J. Hartelius
Chairman, Historic Preservation Advisory Commission

Report to the Great Falls City Commission

On the Boston & Montana Barn Stabilization Plan

Date: November 12, 2025

From: The City-County Historic Preservation Advisory Commission (HPAC)

Introduction:

The Boston & Montana Barn was built in 1901 on Black Eagle smelter property to house horses and mules and to store equipment. Over the years, it later served as home to the Anaconda Co.'s fire department, was used to stored windows and screens for the Smelter Hill houses, and most recently was used for a short time to store golf carts.

This is the last onsite building still standing from the original Boston & Montana/Anaconda Copper Mining Company smelter. A nearby brick building, now known as the Black Eagle Community Center, was built by the Anaconda Co. in the 1950s as an employee clubhouse. Saving the historic Barn and transforming it into an interpretive center in the coming years would serve to honor Great Falls' nationally important industrial past.

The city became owner of the Barn when Arco donated the Anaconda Hills golf course to the city of Great Falls, and included the Barn in that donation.

The Barn's condition is deteriorating, although its walls on three sides are fairly straight. One wall is bowing out. Our plan is to first stabilize the walls, and reinforce supports on the first-floor level, before rebuilding the second-story portion and the roof.

City staff asked a number of questions in a letter to HPAC dated Aug. 14, 2025, signed by Kevin Vining, city park supervisor. We will address those questions here. Please see our responses beginning on the next page.

Questions and Answers:

1. Confirmed funding sources

The Barn Committee has so far raised nearly $30,000 in cash and pledges, using Preservation Cascade Inc. as its fiscal agent. The committee is continuing to aggressively seek donations through face-to-face contact and through the group's Facebook page. The committee would also be willing to accept a donation from the city of Great Falls to take money that would be used for demolition and put it into stabilization of the historic structure. We also plan to apply by early next year for a $15,000 grant from the Helena-based Montana Foundation for Montana History, and for a state of Montana historic preservation grant.

2. Future ownership

The city of Great Falls is the current owner of the property. Should the city support HPAC's efforts to continue to raise money to stabilize the Barn, its Barn committee will work to obtain 501 (c) (3) status so the Barn and its surrounding property can be owned by a nonprofit group, and the city could then turn over ownership to the nonprofit. We have an informal opinion from the state Historic Preservation Office that the barn would be eligible for listing on the National Register of Historic Places. We do intend to pursue this designation.

3. Site access arrangements

Mr. Phil Faccenda, lessee of the Stray Moose property owned by Cascade County south of the barn, has given HPAC permission for officials and construction workers and equipment to access the Barn property through gates on the south perimeter fence of the golf course. Cascade County Commissioners have approved access to HPAC's Barn Committee and construction workers after a review by the county's legal department. The letter from the County Commission is attached to this report.

4. Independent structural assessment

Please see the architect's report, paid for with private donations raised by HPAC. The architect planned to make an addendum to the report that should be ready this autumn, discussing the building's current condition.

See on the following pages:

Comprehensive plan for stabilization and repair of the historic old barn
Detailed construction timeline
Alternate preservation options

Comprehensive Plan for Barn Stabilization and Repair

The historic Boston & Montana Barn, built in 1901, has serious structural issues that must be addressed. HPAC recommends a two-part approach when soliciting bids for the project.

PART ONE: Wall Stabilization – Stabilize the Barn's walls, one side of which is bowing out. The other three walls are relatively plumb and straight. Contractor will take a step-by-step approach to stabilizing the walls and enhancing first-floor supports, as needed.

PART TWO: Rebuild the Roof – Move or remove material that has fallen as a result of the two partial roof collapses. Store cupolas for future reinstallation. Re-use wooden materials where appropriate and rebuild the barn roof, with permanent sheathing and roof covering.

Schedule of values

Historic Boston & Montana Barn

Area	Cost	Number	Details
Safety	**$5,000**		
Temporary Facilities	**$5,000**		**Porta potty rental, security, power**
Demolition, limited	**$10,000**		
Rough Carpentry*	**$20,000**		
Siding	**$10,000**		
Roofing*	**$57,000**		
Doors*	**$10,000**	**15**	
Windows*	**$30,000**	**27**	
Cupolas	**$9,000**	**3**	
Final Cleanup	**$5,000**		
Waste Management	**$5,000**		
Contingency	**$9,000**		
Total project cost	**$175,000**		

***Includes labor and materials**

Detailed Construction Timeline

The Historic Preservation Advisory Commission anticipates completion of the barn stabilization contract work by the end of the 2026 calendar year. All the months shown on the included table are in the 2026 calendar year.

Schedule (Timeline) 2026
B-M Barn Stabilization

Category	March	April	May	June	July	August	September	October	November	**2026**
Initial fixes	xxxxxxxxxxxxxxxx									
Demolition	xxxxxxxxxxxxxxxx									
Foundation		xxxxxxxx								
Framing		xxxxxxxxxxxxxxxxxxxxxx								
Siding			xxxxxxxxxxxxx							
Roofing				xxxxxxxxxxxxxxxxx						
Doors, windows				xxxxxxxxxxxxxxxxxxxxxxxx						
Cupolas				xxxxxxxxxxxxxxxxxxxxxxxx						
Waste management	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx									
Safety issues	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx									
Final cleanup								xxxxxxxxxxxxxxx		

2026

Alternate Preservation Plans (Plan 'B' concepts)

Listed are several possible alternatives in case the Barn cannot be saved. HPAC recommends Item No. 1, interpretive panel, as the primary alternative and Item No. 4, documentation, as the secondary alternative. HPAC's overwhelming recommendation, however, is that the historic barn should be saved, not demolished.

1. **Interpretive Panel**
    - Cost: $750 -- $1,000 based on St. Peter's sign fabrication costs and assuming Park and Rec or RED HORSE Squadron will install.
    - Pro: Effective way to communicate history of site. Relatively inexpensive.
    - Con: On-site location has limited access. Does not address material culture.
2. **Material Salvage**
    - Cost: May be up to double cost of traditional demolition, but materials may be sold to offset cost.
    - Pro: Reduces carbon footprint of demolition. Makes materials available for other preservation efforts.
    - Con: City has limited use for materials and less storage capacity. Lead paint is a factor.
    - The beams in the building are in good condition and could be quite valuable. Proceeds from sale could support interpretive installations.
3. **Material Interpretive Reconstruction**
    - Cost: Variable. Use of salvaged materials to construct some homage or memorial to the site or the smelter as a whole.
    - Pro: Highly visible and tangible remainder of site. May be used to house interpretive panel.
    - Con: Barn site is difficult to access, but may be placed elsewhere. Design, funding, and maintenance are unknowns. Materials must be assessed for hazards such as lead.

4. Documentation

- Drone
  - Cost: $400 – $1,000+
- 3D Modeling
  - $5,000 -- $20,000
- Historic American Building Survey
  - Variable
- Some drawings by Ken Sievert and photography exist.
- Pro: Mitigates loss of data with loss of building.
- Con: Limited ability to communicate with public. Current state of the building is not representative of its service life.

Conclusion

The Historic Preservation Advisory Commission has answered city staff's questions from its Aug. 14, 2025, letter, and its Barn committee has courageously embarked on a fund-raising campaign to save the last remaining building from the original Great Falls smelter, which proved to be a major economic and cultural player in Great Falls and Black Eagle history, and of important national significance.

The Great Falls City Commission can assist this admirable effort by allowing dedicated Barn Committee members to pay for upgrading fence security on the site; allowing the committee to continue to fund-raise in the community and gain additional support; and allowing the city to solicit bids for stabilization work that can take place in 2026, if bids from private contractors over the wintertime prove satisfactory.

Should the barn fully collapse before stabilization work can begin, then HPAC expects the effort to save the building to be moot. Donors to the Save the Barn fund have been given the option to ask that their donations be returned to them if the barn cannot be saved.

Please note that a master plan for the former Anaconda Co. property was endorsed by the Cascade County Commission and lists the Barn as a potential location for an interpretive center. Whether future Superfund dollars or other grant money will become available to renovate the barn into an interpretive center remains uncertain. But efforts by HPAC and its Barn Committee show a resolve by community members to save this important and unique slice of history for future generations to experience, learn from, and enjoy.

The Big Stack is demolished and gone, to the regret of many in our community. We believe demolition of the historic Barn would be a similarly tragic day for the Great Falls area, and we hope you will opt for preserving an important piece of our past.

Follow-up:

We welcome any questions you may have. Please contact:

Channing Hartelius, HPAC chairman: (406) 799-1707

Rich Ecke, Barn Committee chairman: (406) 788-1893

Samantha Long, Historic Preservation Officer: (406) 455-8550

Dan Johnstone, construction experience: (406) 788-0153

(Please see attachments, below.) A. Letter on access from Cascade County Commission;

B. Original architect's report, plus addendum

Attachments

Board of County Commissioners
325 2nd Avenue North
Great Falls, MT 59401
Tel. 406.454.6810
Fax 406.454.6945
commission@cascadecountymt.gov
www.cascadecountymt.gov

CASCADE COUNTY

November 12, 2025

Philip M. Faccenda
CEO, Stray Moose Productions, Inc.
2926 4th Ave., N.
Great Falls, MT 59401

Hello Mr. Faccenda,

As you are aware, Stray Moose Productions, Inc. and Cascade County executed a thirty (30) year *Commercial Lease*, signed by the then sitting Commissioners on August 31, 1999, for the leasehold property described as: a tract of land located in U.S. Government Lots 1 and 2 of Section 6, Township 20 North, Range 4 East, P.M.M., Cascade County, Montana, wholly contained within Tract 1 of Certificate of Survey No. 3064, as on file in the official property records of the Cascade County Clerk and Recorder. This lease created a Lessor/Tenant relationship between the County and Stray Moose Productions, Inc.

As the tenant, rights-of-way and access control to the property are granted by the written express authorization of the Lessor, not to be unreasonably withheld. Under Section 22 *Rights of Way and Access Control*, pages 33-34, the following is stated:

> Lessor and Tenant hereby acknowledge that all presently existing roads, alleys, trails, and sidewalks on the leasehold property are not public highways, public rights-of-way, or county roads, but rather are "private" roads, alleys, trails, and sidewalks owned by Lessor. Lessor and Tenant further acknowledge that a number of the presently existing roads, alleys, trails, and sidewalks, in addition to other locations, on the leasehold the property are or may be subject to private easements appurtenant to adjacent properties or held in gross by third-parties.
>
> Subject to any adverse property rights in third parties or appurtenant to other properties, and subject to the discretion and direction of Lessor, Tenant shall control and limit access to the leasehold property to protect Tenant's property and business interests and to preserve the current controlled status of the existing and future access to and across the leasehold property, to the exclusion of the public and adverse third parties. Further, except upon the express written authorization of Lessor (which Lessor shall not unreasonably withhold), Tenant shall have no authority to and shall not grant, convey, transfer, any right of access or other easement to or across the leasehold property to any third-party.
>
> During the term of this lease, Lessor shall not grant, transfer, or convey an easement or other right of access upon, across, beneath, or over the leasehold property without the express written consent of Tenant.

During the term of this lease, Tenant shall be solely responsible for the improvement, construction, and maintenance of all roads, alleys, streets, sidewalks, or ways upon, across, or abutting the leasehold property.

Although the Save the Boston & Montana Barn Committee of HPAC, the City-County Historic Preservation Advisory Commission, will be utilizing an already existing road to access the historic barn, the road is still considered a "private road" owned by the Lessor. With this in mind, and with the provision that we, the County (Lessor), shall not unreasonably withhold authorization, we authorize the Save the Boston & Montana Barn Committee of HPAC and any of its assigns, to temporarily use and access the current and existing road on the property that leads to access to the historic barn, which is NOT located on the property. Additionally, no construction work, building, or improvements of any nature is authorized at this time. We want to take this opportunity to also remind you that you, as the Tenant, are solely responsible for the maintenance, improvement, and construction of all roads, streets, sidewalks, alleys, or ways upon, across, or abutting the leasehold property.

This temporary access shall be granted until December 1, 2026, when the Commission will re-evaluate the access, and any potential developments with the property. This temporary access can also be revoked at any time by action of the Commission.

Please keep the County apprised of any developments regarding the access and the barn.

James L. Larson
Chair
Board of Cascade County Commissioners

Joe Briggs
Commissioner

Eric Hinebauch
Commissioner

Contract 25-162

BOARD OF COUNTY COMMISSIONERS
CASCADE COUNTY, MONTANA

James L. Larson, Chairman

Joe Briggs, Commissioner

Eric Hinebauch, Commissioner

Passed and adopted at Commission Meeting held on this 12th day of November 2025.

Attest

On this 12th day of November 2025, I hereby attest the above-written signatures of James L. Larson, Joe Briggs, and Eric Hinebauch Cascade County Commissioners.

SANDRA MERCHANT, CASCADE COUNTY CLERK AND RECORDER

*** APPROVED AS TO FORM:**
Josh Racki, County Attorney

DEPUTY COUNTY ATTORNEY

*** THE COUNTY ATTORNEY HAS PROVIDED ADVICE AND APPROVAL OF THE FOREGOING DOCUMENT LANGUAGE ON BEHALF OF THE BOARD OF CASCADE COUNTY COMMISSIONERS, AND NOT ON BEHALF OF OTHER PARTIES OR ENTITIES. REVIEW AND APPROVAL OF THIS DOCUMENT BY THE COUNTY ATTORNEY WAS CONDUCTED SOLELY FROM A LEGAL PERSPECTIVE AND FOR THE EXCLUSIVE BENEFIT OF CASCADE COUNTY. OTHER PARTIES SHOULD NOT RELY ON THIS APPROVAL AND SHOULD SEEK REVIEW AND APPROVAL BY THEIR OWN RESPECTIVE COUNSEL.**

Boston and Montana Barn

Black Eagle, Montana

Existing Conditions Assessment

Recommendations for Stabilization and Protection

Jointly prepared by :

Cushing Terrell

TD&H Engineering

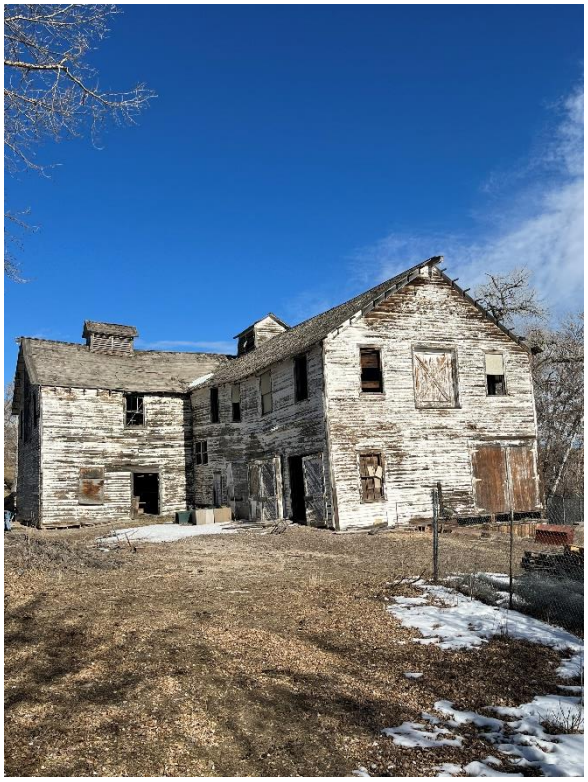
Contents

1.0 Intent

The intent of this report is to review and assess the existing condition of the Boston and Montana Barn located in the current Anaconda Hills Golf Course; specifically to review imminent safety and/or degradation concerns and potential remediation solutions related to the structural infrastructure and the architectural envelope.

2.0 Background

The Boston and Montana Barn was built circa 1900 to house wagons, horses, and construction equipment for the Boston and Montana Company, which pre-dated the Anaconda Copper Mining Company smelting and refining operations. Construction of the "Big" stack began in 1908 and, in 1910, the properties of the Boston & Montana Company were acquired by the Anaconda Copper Mining Company.



The barn is a two-story, wood framed, gable-roofed structure built in a T-plan oriented north-south on the south end of the Anaconda Hills golf course. The barn has a sandstone foundation and is situated on a small rise that slopes down to the east and south. It is the only remaining industrial building on the former 450 acre ACM site.

3.0 Existing Documentation

No existing documentation of construction detail has been obtained, either in hard copy or digital format. As a result, all observations and estimated methods of replacement are dependent on the observable exterior condition of the building and on-site field verification and measurement. Design teams collaborated to ascertain the existing building dimensions and visually measure, quantify, and observe the existing conditions of the structure related to the intent of this document.

4.0 Existing Conditions

The existing building is a two-story T-shaped structure in plan with gable roof. Truss bearing elevation is approximately 20’ above main floor level. Trusses in the north section appear to be stick-built common-style trusses. Construction of the roof in the southern section consists of larger heavy timber trusses with purlins spanning between them. Cupolas rest on the top of both the north and south sections. Top of roof is approximately 31’-9” above main floor, and the top of the cupolas sit approximately 37’ above main floor.

Both floor levels are fully wood-framed with wood flooring. The main floor is framed over crawl space, accessible in the south half, but the north section is inaccessible and was unobserved at the time of this report. Foundation walls are sandstone construction, and carry the heavy timber frame for the floor structure. The second level is framed over heavy timber primary structure and is approximately 12’6” above main floor level.

All walls are 2x framed and faced with painted narrow wood lap siding. The roof itself is sheathed and finished with wood shakes. All doors and windows are constructed completely of wood. The exterior grounds are primarily gravel and grade is typically at main floor level.

4.1 Character Defining Materials and Features

Our position is that the following features, architectural marks, and features are considerably contributing to the history and architectural character of the building and care should be undertaken to preserve and/or restore as appropriate within the guidelines of the Secretary of the Interior :

4.11 Roof Cupolas. The three cupolas on the roof should be preserved in form, dimension, and materiality. Due to their condition, they will need to be rebuilt. We don't think that their use as air relief vents will need to be continued, but the louvers should be retained.

4.12 Wood Doors. All the wood doors should be preserved in their materiality and aesthetic materiality/method of construction. Due to their condition, they will need to be replumbed and likely re-hinged.

4.13 Heavy Timber Trusses on the South Section. These trusses and their supporting steel rods are in reasonably good shape and should be retained.

4.14 Narrow-plank wood siding. In heavily-weathered condition, the barn structure itself should attempt to preserve the narrow-plank wood siding, both in dimension and materiality.

4.15 Sandstone Foundation. If at all possible, we would recommend preserving the externally visible sandstone foundation. Where possible, reinforce the foundation internally as necessary to stabilize the structure.

4.16 Opening Locations and Dimensions. No windows are currently intact, but all existing openings and window/vent patterns should remain as part of the historical nature and use of the building.

4.17 Heavy Timber Framing, Main Floor. The heavy timber columns, beams, and kickers on main floor showcase the methods of construction and also the affect of time on the structure. Our recommendation would be to preserve all the heavy timber framing and attempt to augment that structure rather than replace it.

4.18 Wood Shake Roof. Doesn't really exist in its current condition; however, the wood shakes have been the roofing material since the building was erected.

4.2 Overall maintainability and safety of the building

Current condition of the building is in overall disrepair and is unsafe for occupation. Categorical review of each of the primary building systems are as follows :

4.21 Roof

The existing shake roofing is well past its useful life and is neither complete nor capable of weather-protecting the interior of the building. Roof sheathing is heavily weathered and weakened throughout. Stick-built trusses on the north section are broken and the bottom chords are completely sheared from the primary structure, allowing the walls to shift laterally. Hip-jacks are broken, allowing the roof to sag, especially under the weight of snow. These failures have resulted in substantial sag in the ridge of the north section.

Roof structure on the south section is relatively intact and in more serviceable condition. Lateral purlins are undersized, but in generally good working condition. No ridge exists currently. Rods that extend from the girder trusses to the floor system below are intact.

4.22 Exterior Walls, windows, doors

Exterior windows consist only of heavily weathered frames. Many of the headers have been dislodged or are broken, and their nailed connection points severed. As a result, the windows are collapsing. They don't currently keep the weather out of the building, and are open for potential rodent or avian access to the building.

Doors are wood and mounted on hinges. Most are no longer plumb and don't easily close. Wood is heavily weathered, dry, cracking, and no level of weatherstripping exists.

Exterior walls are failing. At the roof level, both the failure of the trusses on the north section as well as attempts to stabilize the structure have caused the walls to shift out of plumb heavily to the north. Much of the siding is intact, but checked in multiple areas and separating from the building.

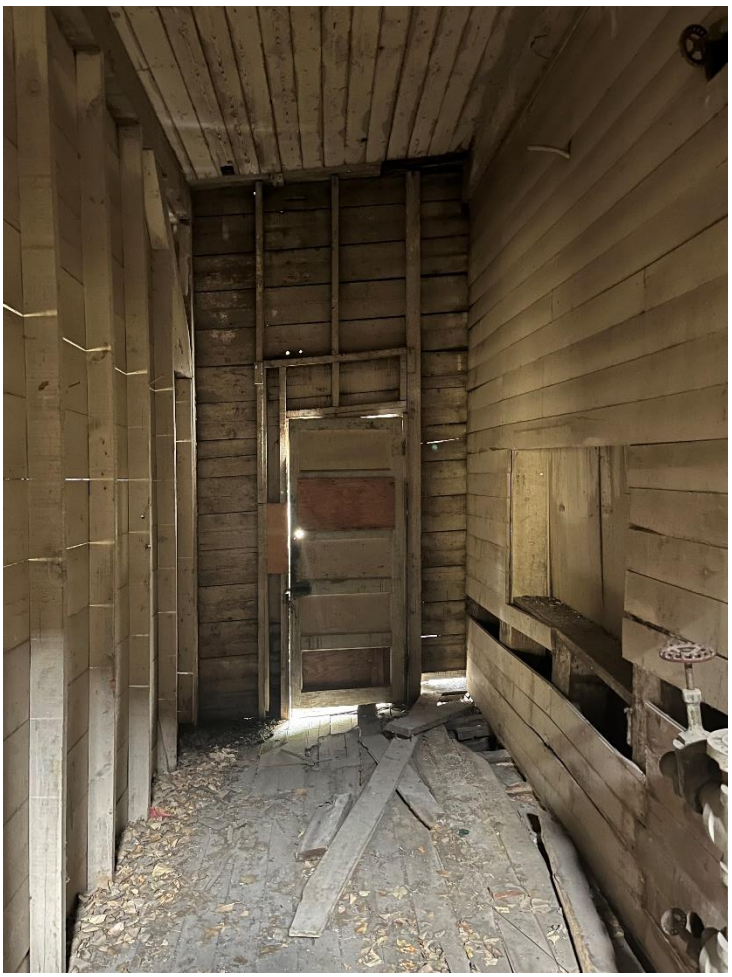
Virtually all the corner trimboards as well as fascia boards are missing. As anticipated with a structure of this vintage, no weather barrier currently exists. Consequently, any weather events are absorbed by the sheathing boards at minimum and likely the framing as well.

4.23 Primary Structure

Primary structure is a series of heavy timber columns and beams serving as intermediate bearing for the building. Sizing of these beams and columns are in general accordance with the loading anticipated; however, many of the columns are suffering from dry-rot, and some of them have separations at their connecting points. The original design for the second floor required two parallel rows of columns to support the roof structure. These are all currently absent, resulting in a dangerous structural situation on the northern section. The structure is in danger of collapse.

Building lateral systems at both the roof and the walls are impaired, rendering the building unable to resist wind or seismic forces acting on the building.

Internal stairwell is stable. Main floor level is not level, but apart from some holes and gaps in the flooring, is in relatively serviceable condition. The second level south section is covered with debris but is primarily stable. Floor in the north section is noticeably out of level, primarily at the north end of the building where the exterior walls have shifted out of plumb.



Foundations in the north section are mostly unobserved due to lack of access to below-floor areas. Foundations in the south section are accessible from openings in the wall along the southeastern corner of the building. Sandstone is weathered and the joints require maintenance, but the stone is in adequate condition.

5.0 Recommendations

Due to the various degradation of different systems in the building, and considering the amount of effort required to repair and/or stabilize the existing structure, the design team recommends the following strategy for mothballing the building to protect it against further damage. Attached are full schematic drawings for the below scope of work summary. The intent of these recommendations is to fully protect the existing architecture and materials from further degradation and is not intended to replace them.

5.1 Internal Shear Wall construction

First, the interior column grid in the north section must be rebuilt, infill framed with stud wall construction, and sheathed in order to create a central stabilizing core. This core is proposed to extend up to the truss bearing point so that it can successfully tie to the exterior walls and also anchor the roof itself. Secondarily, this structural core will serve as a safe area from which to stage construction operations. Attached drawings indicate extent and preliminary design of this central stabilizing building core.

5.2 Stabilize the exterior walls

Following construction of the central stabilizing core, the exterior walls can be positioned more closely to plumb by anchoring them to the central core. This will ensure that subsequent envelope stabilizing strategies will succeed.

5.3 Set the north roof ridge elevation level

Once the exterior walls are plumb and the top plates are repaired as necessary, the roof can be stabilized by rebuilding the trusses and restoring a continuous, level ridge line at the roof. This will allow for resurfacing and weatherization of the roof assembly. It is our position that trying to weather-protect the structure without first setting the ridge level will compromise the weather-resistant properties and long term durability of any roofing system, and also make any future work such as permanent roofing much more difficult and costly.

5.4 Weatherprotect the Roof System

Strip the existing roofing, resheathe, and provide a weather resistant roofing material capable of enduring Montana weather conditions for the length of time needed until a more permanent roof solution can be installed. Options for a protective membrane include :

5.4.1 Synthetic Roofing Underlayment. Not Advised. These underlayments are typically stapled down, and while the material itself can sometimes prove

durable, the installation of synthetic underlayments is not intended to provide waterproof protection long term. Wind, hail, and snow can cause the system to fail if used independently.

5.4.2 Ice and Water Shield. Not Advised. Similar to the option in 5.4.1, these products are not intended to work independently as a primary defense against moisture intrusion. However, Ice and Water Shield, if installed appropriately, is more resilient than option 5.4.1.

5.4.3 Torch-down roll roofing. Installed properly, this system can wear extremely well, and also provide a base for over-shingling at a later date. Does require full manufacturer installation techniques to be followed throughout and not just reliant on nail-down fasteners. Could be a solid solution, but we recommend better benefit-to-cost solutions below.

5.4.4 Self-Adhered Waterproof Membrane. PolyStick TU P by PolyGlass or similar. Depending on timeframe requirements, this could be a lower budget option. Polystick TU P carries an extended exposure time of up to 36 months and is a flexible solution that can handle some shifting in the building structure. *This pricing is included in the cost estimate.*

5.4.5 30-mil sheet membrane roof, mechanically attached. Not advised due to cost of material and the (non) wind-resistance of the building. If mechanically attached, the membrane can handle flex in the building and still maintain weather-tightness. The material will need to be firmly adhered along all edges and joints, and drip flashing installed around the entire perimeter to keep the wind from trying to separate the membrane from the structure. Critical to ensure that the new sheathing is tight – since the building itself isn't necessarily air-tight, wind and air pressure from inside the building could potentially cause fastener tear in the membrane.

5.4.6 30-year composite shingles. The preferred solution is to treat the edges and valleys of the roof with ice/water shield and cover the rest with synthetic underlayment. Install Style-D drip edge at the perimeter of the roof and fully install new shingled roof. While the preservation of the building fully may require wood shake installation, the pricepoint, flexibility and durability of composite shingle systems for the near future would be our preferred solution for preserving the building interior. *This pricing is <u>not</u> included in the cost estimate and would be an upgraded approach to protecting the roof and building from moisture penetration for a longer period of time.*

5.5 *<u>Seal the windows and doors</u>*

Windows can then be framed over, **protecting** the existing original window frames, trim, and other defining elements, while still allowing for protection from the elements, rodent and avian penetration. Doors shall all be closed and screwed shut to prevent leaking and/or intrusion. One door to remain operational for maintenance purposes only. We recommend this approach over trying to board up the window openings from the interior due to the lack of plumb/level conditions in the building and also because keeping water and snow out of the building will be difficult to accomplish unless handled from the exterior.

5.6 *Seal the foundation wall openings*

The building now stabilized, openings in the foundation wall should be enclosed with materials capable of handling contact with the ground, but fully sealed to limit rodent intrusion into the building. An access door shall be installed for maintenance purposes only.

5.7 *Protect the exterior*

Lap siding boards to be removed from the building, stored and marked in a safe place for future re-use/re-installation and the structure wrapped with weather barrier, secured per manufacturer's instructions for long term exposure, with all seams lapped for positive drainage and seam tape applied.

6.0 Potential Construction Costs

See attached cost exhibit for opinion of probable costs relative to the scope of work outlined in item 5 above. The Cost exhibits represent all the work indicated above – where funds are limited, measures to stabilize the core, strengthen the roof, and weather-protect the roof are of primary priority.

7.0 Conclusion

The Barn structure currently located at the Anaconda Hills Golf Course, in its current state, can be salvaged and preserved, both for use and for its inherent historic value. For it to be preserved, the structure must be stabilized to prevent further movement and weatherized to prevent further degradation of the critical structural systems.

Structural Stabilization Opinion of Probable Cost

NOTE: Data from 2021 RSMeans has been adjusted for a total 12.9% inflation. Bare values are RSMeans 2021 listed values, inflation is accounted for in the respective O&P columns. Material and equipment O&P costs include 10% profit, labor O&P includes cost of labor burden and 10% profit. Labor burden is an estimate from back calculations.**This estimate is for the temporary shoring and stabilization of the structure only. This estimate does not include any costs for permanent structural rehabilitation and retrofitting.**

Section #	Section Description	Task #	Task Description	Unit Type	Unit Total	Bare Material	Material O&P	Bare Labor	Labor O&P	Unit O&P	Total O&P	Source	Notes
01 52	Field Offices and Sheds: Offices and Storage Space	13.20 0550	50x12 storage trailer (rent)	month	4					$540.00	$2,160.00	RSMeans Online	Estimated duration of repairs
01 54	Construction Aids: Equipment Rental	33.40 2200	10kW gas generator	month	4					$895.00	$3,580.00	RSMeans Online	Estimated duration of repairs
		33.60 3150	40 ton telehandler	month	4					$10,527.00	$42,108.00	RSMeans Online	Estimated duration of repairs
01 56	Temporary Barricades: Temporary Fencing	26.50 0200	Rented 6' high > 1000' up to 12 months	LF	650					$5.68	$3,692.00	RSMeans Online	
02 43	Building Relocation	13.13 0040	Wood Frame Bldg.	SF	4000					$17.06	$68,240.00	RSMeans Online	Temporary building shoring
06 05	Selective Demo Wood Framing	05.10 3160	Beams 10"x12"	LF	300	$0.00		$9.85	$16.57	$16.57	$4,970.93	2021 RSMeans	
		05.10 4280	Joists, 2"x12"	LF	250			$0.81	$1.36	$1.36	$340.65	2021 RSMeans	
		05.10 5480	Posts, 8"x8"	LF	84			$2.37	$3.99	$3.99	$334.89	2021 RSMeans	Initial estimate: 7 posts @12'
		05.10 5688	Rafters, 2x6 @ 24" OC	SF	200			$0.64	$1.08	$1.08	$215.32	2021 RSMeans	
		05.10 6056	2x6 Rafter tie	LF	680			$0.73	$1.23	$1.23	$835.05	2021 RSMeans	
		05.10 6096	Board sheathing from roof	SF	5200			$0.51	$0.86	$0.86	$4,461.22	2021 RSMeans	
		05.10 6159	Subfloor/roof deck, w/ togue and groove boards	SF	450			$0.36	$0.61	$0.61	$272.52	2021 RSMeans	
		05.10 6740	Wall Framing Inc. Studs, Plates, Blocking,2x6	SF	360			$0.74	$1.24	$1.24	$448.14	2021 RSMeans	
06 11	Wood Framing	10.02 2625	Wood Blocking, 2x4, Pneumatic Nailing	MBF	1.82	$1,050.00	$1,304.00	$2,075.00	$3,490.59	$4,794.58	$8,726.14	2021 RSMeans	
		10.18 2765	Joist Framing, 2x14, Pneumatic Nailing	MBF	2	$1,525.00	$1,893.90	$425.00	$714.94	$2,608.84	$5,217.67	2021 RSMeans	
		10.26 1205	Partitions, 2x6x12, 16" OC	LF	500	$12.90	$16.02	$10.40	$17.49	$33.52	$16,757.75	2021 RSMeans	
		10.30 7000	Roof Framing, Rafters, 2x6, <4:12 Pitch	MBF	0.4	$1,075.00	$1,335.04	$875.00	$1,913.51	$3,248.56	$1,299.42	2021 RSMeans	Steep slope addition included in labor O&P
		10.30 7300	Hip and Valley Rafters, 2x6	MBF	0.07	$1,075.00	$1,335.04	$1,150.00	$2,514.90	$3,849.95	$269.50	2021 RSMeans	Steep slope addition included in labor O&P
		10.30 7540	Jack Rafters, 2x6	MBF	0.3	$1,075.00	$1,335.04	$1,450.00	$3,170.97	$4,506.01	$1,351.80	2021 RSMeans	Steep slope addition included in labor O&P
		10.30 7780	Steep Slope Addition	30%					$0.00		$0.00	2021 RSMeans	
06 13	Heavy Timber Construction	23.10 0100	Beams, 8x16	MBF	2.1					$2,927.55	$6,147.86	RSMeans Online	
		23.10 0400	Columns, Structural Grade, 8x8	MBF	1.65					$7,143.00	$11,785.95	RSMeans Online	
		23.10 0900	Floor Planks, 2"x10"	MBF	0.9					$5,647.95	$5,083.16	RSMeans Online	
06 16	Sheathing	36.10 4605	5/8 Roof OSB, Pneumatic Nailing	SF	5000	$1.05	$1.30	$0.67	$1.47	$2.77	$13,846.00	2021 RSMeans	Steep slope addition included in labor O&P
		36.10 4615	7/16 Wall OSB, Pneumatic Nailing	SF	6000	$0.41	$0.51	$0.59	$0.99	$1.50	$9,010.10	2021 RSMeans	
											O&P total $211,154.06		

Permit				
Base permit	Additional fee	Total Permit	Commercial plan review	
$1,091.02	$710.27	$1,801.29	$1,170.84	
Project Estimate				
10% Contingency	$21,115.41		Total Estimate:	$235,241.60

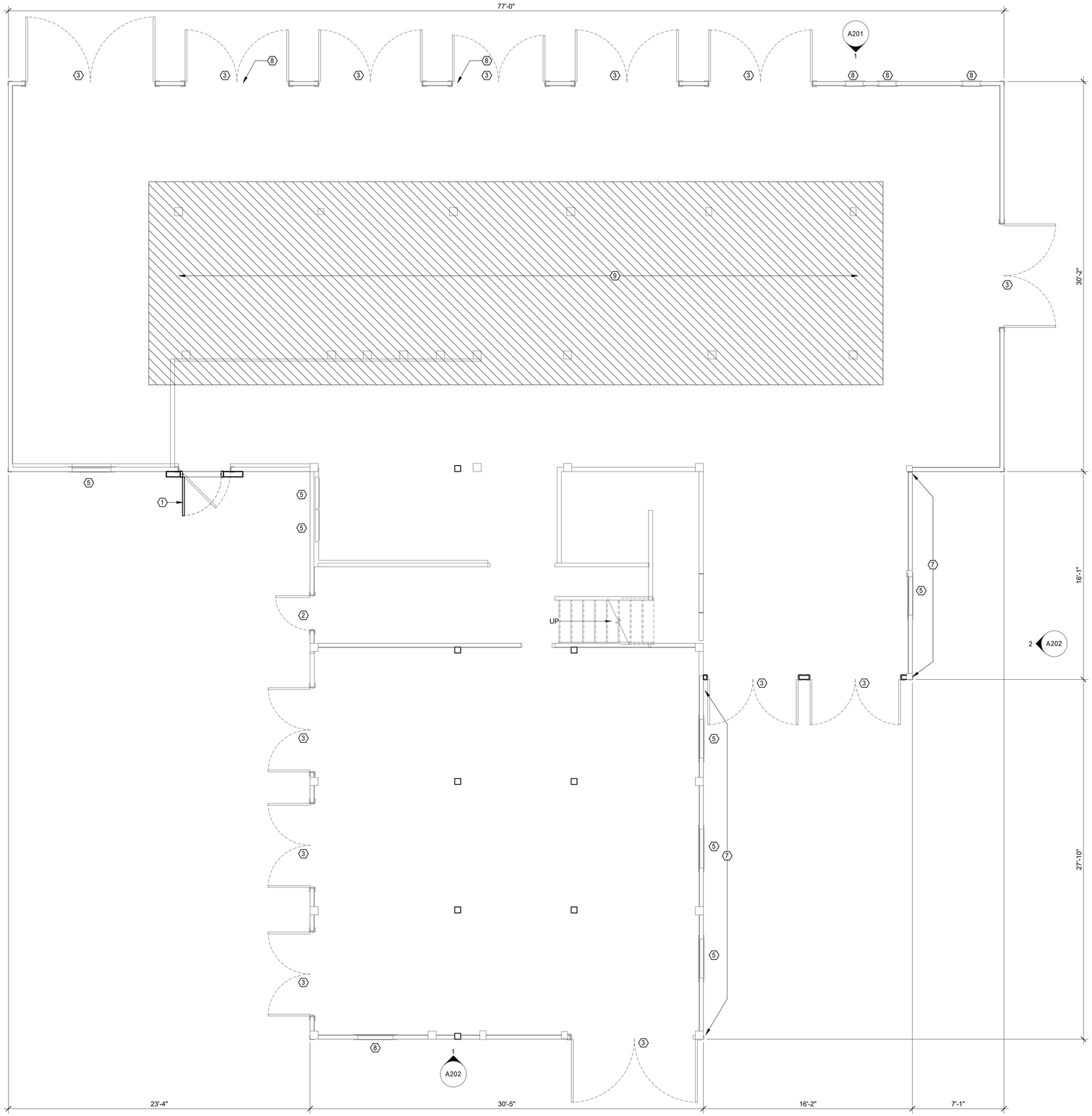
Architectural and Weatherization Opinion of Probable Cost

Cushing Terrell - Cost Estimating System

Project Name	Boston Barn	Project Number	CITYGFCC
Project Description:		Billing Group	BARN
		Building Area	1
		Perimeter	0
		Construction Months	5
		Bid ENR Index	8642
Estimate based on bid date of: 12/1/2023		Estimate Date	4/12/2023

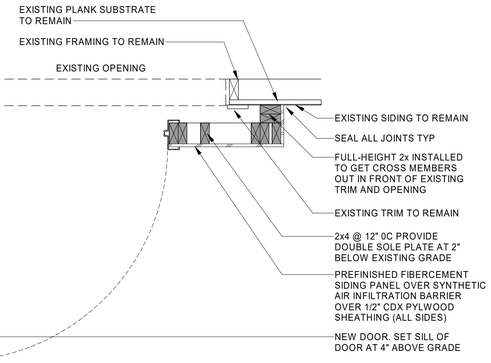
Division	Description	Material Total	Labor Total	Extended Total	Cost/SF	% Total
06	Wood, Plastics, and Composites	23,274	15,159	38,433	$38,433	36%
07	Thermal and Moisture Protection	27,976	26,774	54,749	$54,749	52%
08	Openings	10,828	1,636	12,465	$12,465	12%
	Subtotal	62,078	43,569	105,647		
	General Contractor's Markup @ 12%	7,449	5,228	12,678		12%
	Construction Total	69,527	48,797	118,325	$118,325	
	General Conditions	11%	0	11,621		
	scope inclusion	10%	0	10,565		
	Prevailing Wages, 1% GRT, Bonding	5%	0	5,282		
	Project Cost Subtotal	69,527	48,797	145,793		
	Contingency @ 10%			11,832		
	Total Project Cost	69,527	48,797	157,625	$157,625	

Item Number	Description	Qty	Unit	Material	Material Total	Labor	Labor Total	Unit	Total
Division 06	**Wood, Plastics, and Composites**								
061110240010	MISCELLANEOUS FRAMING								
5005	Wood framing, miscellaneous, nailers, treated, wood construction, 2" x 4", pneumatic nailed	5,400	L.F.	1.78	9,608	1.39	7,533	3	17,141
400010	WALL FRAMING								
0370	Wall framing, window buck, king studs, jack studs, rough sill, cripples, header and accessories, 2" x 6" wall, 6' wide, 8' high	5	Ea.	217.96	1,090	24.71	124	243	1,213
	Total Spec 1110				10,698		7,656		18,354
1636100010	SHEATHING								
0705	Sheathing, plywood on walls, CDX, 5/8" thick, pneumatic nailed	3,000	S.F.	1.83	5,493	0.96	2,889	3	8,381
	Total Spec 1636				5,493		2,889		8,381
	Division 06 Subotal				16,191		10,545		26,736
	Remote factor @ 15%				2,429		1,582		4,010
	Subtotal				18,619		12,127		30,746
	Size factor @ 25%				4,655		3,032		7,687
	Subtotal				23,274		15,159		38,433
Division 07	**Thermal and Moisture Protection**								
072510100010	WEATHER BARRIERS								
3000	Weather barriers, building paper, spun bonded polyethylene	3,000	S.F.	0.21	618	0.27	813	0	1,430
	Total Spec 2510				618		813		1,430
3113100010	ASPHALT ROOF SHINGLES								
0850	36 month exposure rubberized asphalt underlayment	62	Sq.	270.35	16,762	251.83	15,613	522	32,375
	Total Spec 3113				16,762		15,613		32,375
4213300010	STEEL SIDING								
1001	Steel siding, colored, corrugated or ribbed, on steel frame, 10 year finish, 24 gauge, incl. fasteners	140	S.F.	3.38	473	2.09	293	5	766
	Total Spec 4213				473		293		766
4646100010	FIBER CEMENT SIDING								
0210	Fiber cement siding, accessories, fascia, 5/4" x 5-1/2"	280	L.F.	3.35	938	3.69	1,034	7	1,972
	Total Spec 4646				938		1,034		1,972
7143100010	DRIP EDGE, RAKE EDGE, ICE BELTS								
0100	Aluminum drip edge, white finish, .016" thick, 5" wide	520	L.F.	1.29	671	1.68	872	3	1,544
	Total Spec 7143				671		872		1,544
	Division 07 Subotal				19,461		18,625		38,087
	Remote factor @ 15%				2,919		2,794		5,713
	Subtotal				22,381		21,419		43,800
	Size factor @ 25%				5,595		5,355		10,950
	Subtotal				27,976		26,774		54,749
Division 08	**Openings**								
081213130010	STANDARD HOLLOW METAL FRAMES								
0100	Frames, steel, knock down, hollow metal, single, 16 ga., up to 5-3/4" deep, 3'-0" x 7'-0"	1	Ea.	246.01	246	75.75	76	322	322
	Total Spec 1213				246		76		322
1313130010	STANDARD HOLLOW METAL DOORS								
1760	Doors, commercial, steel, insulated, full panel, 18 ga., 3'-0" x 7'-0" x 1-3/4" thick	1	Ea.	779.17	779	76.69	77	856	856
	Total Spec 1313				779		77		856
3113100010	TYPES OF FRAMED ACCESS DOORS								
1400	Doors, specialty, access, fire rated, with lock, metal, 48" x 48"	2	Ea.	702.95	1,406	77.08	154	780	1,560
	Total Spec 3113				1,406		154		1,560
7120050015	Hardware Group 3-Exterior,Hinges,HD cyl.lock,closer,thrshd,wthstrp	1	Ea.	1,134.90	1,135	486.90	487	1,622	1,622
	Total Spec 7120				1,135		487		1,622
9119200010	STEEL LOUVERS								
3310	Wall louvers, galvanized steel, fixed blades, commercial grade, 24" x 24"	2	Ea.	431.34	863	34.51	69	466	932
3370	Wall louvers, galvanized steel, fixed blades, commercial grade, 48" x 48"	4	Ea.	776.04	3,104	68.98	276	845	3,380
	Division 08 Subtotal				7,533		1,138		8,671
	Remote factor @ 15.0%				1,130		171		1,301
	Subtotal				8,663		1,309		9,972
	Size factor @ 25.0%				2,166		327		2,493
	Subtotal				10,828		1,636		12,465
	Grand Total				**62,078**		**43,569**		**105,647**

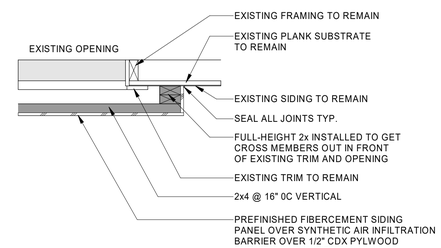


KEYNOTES FLOOR PLAN:

1. REMOVE EXISTING DOOR LEAF AND STORE INSIDE IN WEATHERSAFE LOCATION. ATTACH TO AN INTERIOR WALL AND ELEVATE OFF THE FLOOR. KEEP FRAME AND HINGES IN EXISTING CONDITION. PREP EXTERIOR OF DOOR WAY TO ACCOMMODATE MOTHBALL COVERING AND NEW ACCESS DOOR PER PLAN DETAIL 2/A101.
2. SINGLE DOOR. PRESERVE ALL EXISTING DOOR CONSTRUCTION. PROVIDE (2) THUMBTURN-STYLE HASP AT INTERIOR FACE OF DOOR. SET HASPS TO HOLD DOOR TIGHTLY SHUT. INSTALL BACKER ROD AT JAMBS AND HEAD OF DOOR TO FULLY SEAL ALL GAPS. PROVIDE ADJUSTABLE NEOPRENE SWEEP AT BOTTOM EDGE OF DOOR SET TIGHT TO FLOOR. INSTALL SIGN "NOT AN EXIT" ON INTERIOR FACE OF DOOR. PREP EXTERIOR OF DOOR TO ACCOMMODATE MOTHBALL COVERING PER DETAIL 3/A101.
3. DOOR PAIR. PRESERVE ALL EXISTING DOOR CONSTRUCTION. PROVIDE (2) THUMBTURN-STYLE HASP AT INTERIOR FACE OF DOOR. SET HASPS TO HOLD DOOR TIGHTLY SHUT. INSTALL BACKER ROD AT JAMBS AND HEAD OF DOOR TO FULLY SEAL ALL GAPS. PROVIDE ADJUSTABLE NEOPRENE SWEEP AT BOTTOM EDGE OF DOOR SET TIGHT TO FLOOR. INSTALL SIGN "NOT AN EXIT" ON INTERIOR FACE OF DOOR. PREP EXTERIOR OF DOOR TO ACCOMMODATE MOTHBALL COVERING PER DETAIL 3/A101.
4. SLIDING DOOR. PRESERVE ALL EXISTING DOOR CONSTRUCTION. PROVIDE (2) THUMBTURN-STYLE HASP AT INTERIOR FACE OF DOOR. SET HASPS TO HOLD DOOR TIGHTLY SHUT. INSTALL BACKER ROD AT JAMBS AND HEAD OF DOOR TO FULLY SEAL ALL GAPS. PROVIDE ADJUSTABLE NEOPRENE SWEEP AT BOTTOM EDGE OF DOOR SET TIGHT TO FLOOR. INSTALL SIGN "NOT AN EXIT" ON INTERIOR FACE OF DOOR. PREP EXTERIOR OF DOOR TO ACCOMMODATE MOTHBALL COVERING PER DETAIL 3/A101.
5. WINDOW. PRESERVE ALL EXISTING WINDOW CONSTRUCTION. SEE DETAIL 3/A101 FOR HEAD/JAMB/SILL CONDITION TO ENCLOSE WINDOW OPENING AND PROTECT FROM WEATHER.
6. FOLLOWING STRUCTURAL REINFORCEMENT OF FLOOR STRUCTURE. PIECE IN FLOORING WITH WOOD TO MATCH FINISH, DIMENSION AND SPECIES OF EXISTING . SCOPE ONLY IN THE DAMAGED AREA.
7. INFILL FRAME FROM 6" BELOW GRADE TO BOTTOM OF FLOOR FRAMING W/ P.T. 2x6 STUDS @ 12" O.C. FACE WITH WEATHERBARRIER AND 24 GA 7/8" PREFINISHED CORRUGATED METAL SIDING PANELS SPANNING HORIZONTALLY. PROVIDE CONTINUOUS DRIP EDGE AT TOP OF PANELS TYP.
8. INSTALL NEW METAL LOUVERS IN EXISTING OPENINGS. SIZE TO MATCH OPENING. PROVIDE METAL INSERT SCREENS, SEE ENTIRE PERIMETER OF LOUVER TO EXISTING BUILDING.
9. SEE STRUCTURAL DRAWING FOR AREAS OF FLOOR TO BE REMOVED AND REPLACED FOLLOWING STRUCTURAL IMPROVEMENTS. CARE TO BE TAKEN TO PRESERVE ALL FLOORING AND REINSTALL TO MATCH EXISTING CONDITIONS.



2 A101 — OPERABLE DOOR OPENING DTL
1" = 1'-0"



3 A101 — OPENING COVER DTL
1" = 1'-0"

1 A101 — FIRST FLOOR PLAN
1/4" = 1'-0"

1000 500 0 4 8
SCALE IN MM | SCALE IN FEET
SCALE: 1/4" = 1'-0"

NORTH REF

Cushing Terrell.
cushingterrell.com
800.757.9522

NOT FOR CONSTRUCTION - PRELIMINARY DESIGN

WHITE BARN ON ANACONDA SMELTER HILL
CITY OF GREAT FALLS
BOSTON BARN

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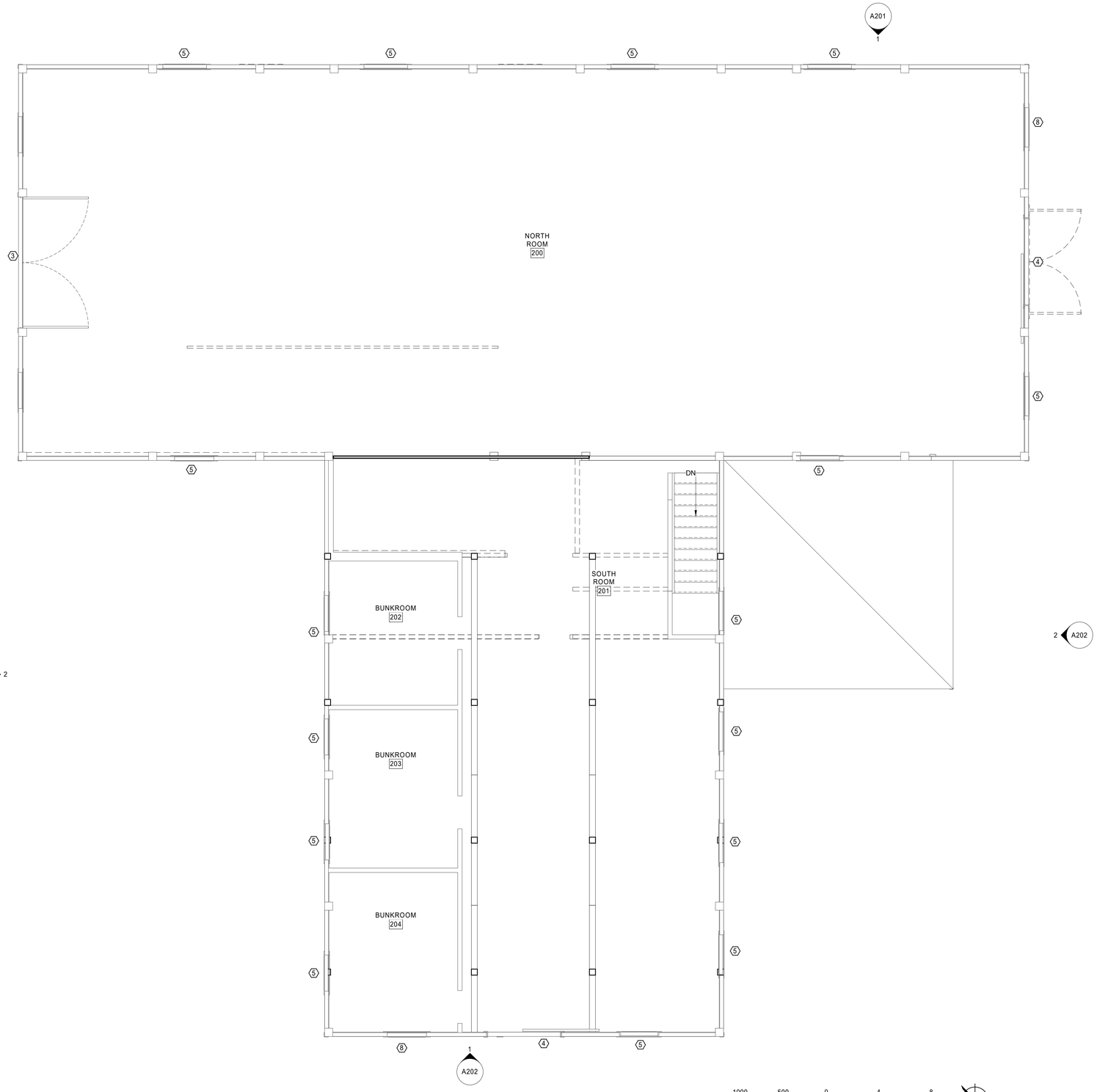
04.27.2023
PROJ# | CITYGF_BARN
DESIGNED BY | HOUTZ
DRAWN BY | SUMMERS

REVISIONS

FIRST FLOOR PLAN

A101



1 A102 SECOND FLOOR
1/4" = 1'-0"

1000 500 0 4 8
SCALE IN MM | SCALE IN FEET
SCALE: 1/4" = 1'-0"

NORTH REF

KEYNOTES FLOOR PLAN:

1. REMOVE EXISTING DOOR LEAF AND STORE INSIDE IN WEATHERSAFE LOCATION. ATTACH TO AN INTERIOR WALL AND ELEVATE OFF THE FLOOR. KEEP FRAME AND HINGES IN EXISTING CONDITION. PREP EXTERIOR OF DOOR WAY TO ACCOMMODATE MOTHBALL COVERING AND NEW ACCESS DOOR PER PLAN DETAIL 2/A101.
2. SINGLE DOOR. PRESERVE ALL EXISTING DOOR CONSTRUCTION. PROVIDE (2) THUMBTURN-STYLE HASP AT INTERIOR FACE OF DOOR. SET HASPS TO HOLD DOOR TIGHTLY SHUT. INSTALL BACKER ROD AT JAMBS AND HEAD OF DOOR TO FULLY SEAL ALL GAPS. PROVIDE ADJUSTABLE NEOPRENE SWEEP AT BOTTOM EDGE OF DOOR SET TIGHT TO FLOOR. INSTALL SIGN "NOT AN EXIT" ON INTERIOR FACE OF DOOR. PREP EXTERIOR OF DOOR TO ACCOMMODATE MOTHBALL COVERING PER DETAIL 3/A101.
3. DOOR PAIR. PRESERVE ALL EXISTING DOOR CONSTRUCTION. PROVIDE (2) THUMBTURN-STYLE HASP AT INTERIOR FACE OF DOOR. SET HASPS TO HOLD DOOR TIGHTLY SHUT. INSTALL BACKER ROD AT JAMBS AND HEAD OF DOOR TO FULLY SEAL ALL GAPS. PROVIDE ADJUSTABLE NEOPRENE SWEEP AT BOTTOM EDGE OF DOOR SET TIGHT TO FLOOR. INSTALL SIGN "NOT AN EXIT" ON INTERIOR FACE OF DOOR. PREP EXTERIOR OF DOOR TO ACCOMMODATE MOTHBALL COVERING PER DETAIL 3/A101.
4. SLIDING DOOR. PRESERVE ALL EXISTING DOOR CONSTRUCTION. PROVIDE (2) THUMBTURN-STYLE HASP AT INTERIOR FACE OF DOOR. SET HASPS TO HOLD DOOR TIGHTLY SHUT. INSTALL BACKER ROD AT JAMBS AND HEAD OF DOOR TO FULLY SEAL ALL GAPS. PROVIDE ADJUSTABLE NEOPRENE SWEEP AT BOTTOM EDGE OF DOOR SET TIGHT TO FLOOR. INSTALL SIGN "NOT AN EXIT" ON INTERIOR FACE OF DOOR. PREP EXTERIOR OF DOOR TO ACCOMMODATE MOTHBALL COVERING PER DETAIL 3/A101.
5. WINDOW. PRESERVE ALL EXISTING WINDOW CONSTRUCTION. SEE DETAIL 3/A101 FOR HEAD/JAMB/SILL CONDITION TO ENCLOSE WINDOW OPENING AND PROTECT FROM WEATHER.
6. FOLLOWING STRUCTURAL REINFORCEMENT OF FLOOR STRUCTURE, PIECE IN FLOORING WITH WOOD TO MATCH FINISH, DIMENSION AND SPECIES OF EXISTING . SCOPE ONLY IN THE DAMAGED AREA.
7. INFILL FRAME FROM 6" BELOW GRADE TO BOTTOM OF FLOOR FRAMING W/ P.T. 2x6 STUDS @ 12" O.C. FACE WITH WEATHERBARRIER AND 24 GA 7/8" PREFINISHED CORRUGATED METAL SIDING PANELS SPANNING HORIZONTALLY. PROVIDE CONTINUOUS DRIP EDGE AT TOP OF PANELS TYP.
8. INSTALL NEW METAL LOUVERS IN EXISTING OPENINGS. SIZE TO MATCH OPENING. PROVIDE METAL INSERT SCREENS, SEE ENTIRE PERIMETER OF LOUVER TO EXISTING BUILDING.
9. SEE STRUCTURAL DRAWING FOR AREAS OF FLOOR TO BE REMOVED AND REPLACED FOLLOWING STRUCTURAL IMPROVEMENTS. CARE TO BE TAKEN TO PRESERVE ALL FLOORING AND REINSTALL TO MATCH EXISTING CONDITIONS.

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WHITE BARN ON ANACONDA SMELTER HILL
CITY OF GREAT FALLS
BOSTON BARN

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04.27.2023
PROJ# | CITYGF_BARN
DESIGNED BY | HOUTZ
DRAWN BY | SUMMERS

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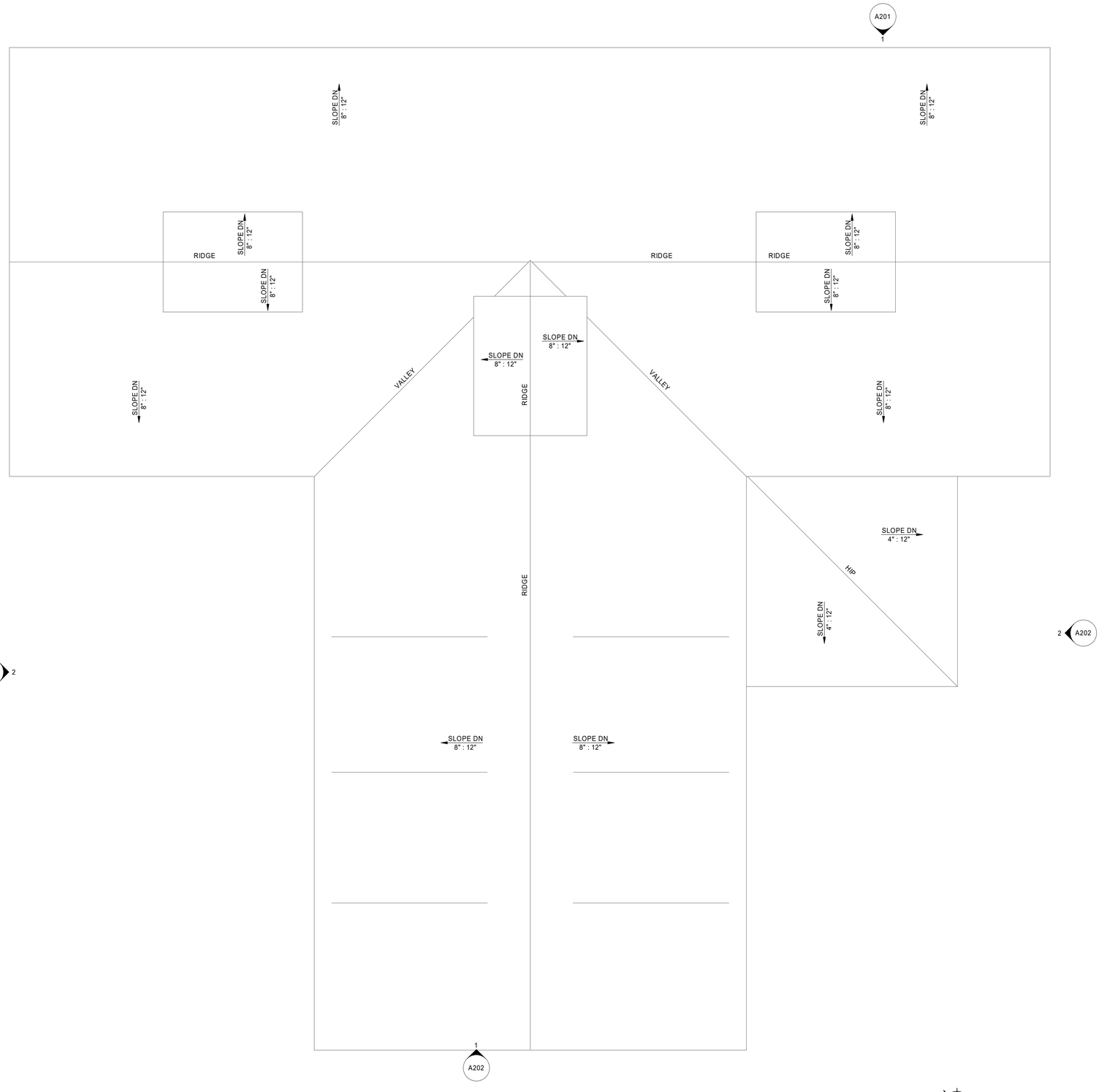
SECOND FLOOR PLAN

A102

KEYNOTES ROOF PLAN:

1. SEE STRUCTURAL DRAWINGS FOR ROOF STABILIZATION AND SETTING RIDGE AND ROOF SLOPE AT FINAL POSITION.
2. REMOVE EXISTING SHAKE SHINGLES. EXISTING SUBSTRATE PLANKS TO REMAIN.
3. PROVIDE NEW STYLE D DRIP EDGE AROUND ENTIRE PERIMETER OF ALL ROOFS.
4. PROVIDE 36"W METAL VALLEY FLASHING AT ALL VALLEYS TYPICAL.
5. INSTALL POLYSTICK TU P OR APPROVED EQUAL ELASTOMERIC BITUMEN UNDERLAYMENT (MINIMUM 36 MONTH EXPOSURE). LAY FOR POSITIVE DRAIN,



1 A110 ROOF
1/4" = 1'-0"

1000 500 0 4 8
SCALE IN MM | SCALE IN FEET
SCALE: 1/4" = 1'-0"

NORTH REF

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WHITE BARN ON ANACONDA SMELTER HILL
CITY OF GREAT FALLS
BOSTON BARN

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DRAWN BY | SUMMERS

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ROOF PLANS

A110

1 A201 NORTH

1/4" = 1'-0"

1000 500 0 4 8

SCALE IN MM | SCALE IN FEET

SCALE: 1/4" = 1'-0"

2 A201 WEST

1/4" = 1'-0"

1000 500 0 4 8

SCALE IN MM | SCALE IN FEET

SCALE: 1/4" = 1'-0"

KEYNOTES ELEVATIONS:

1. CUPOLA LOUVERS. PRESERVE ALL EXISTING DOOR CONSTRUCTION. PROVIDE (2) THUMBTURN-STYLE HASP AT I NTERIOR FACE OF DOOR. SET HASPS TO HOLD DOOR TIGHTLY SHUT. INSTALL BACKER ROD AT JAMBS AND HEAD OF DOOR TO FULLY SEAL ALL GAPS. PROVIDE ADJUSTABLE NEOPRENE SWEEP AT BOTTOM EDGE OF DOOR SET TIGHT TO FLOOR. INSTALL SIGN "NOT AN EXIT" ON INTERIOR FACE OF DOOR. PREP EXTERIOR OF DOOR TO ACCOMMODATE MOTHBALL COVERING PER DETAIL 3/A101
2. CORNER TRIM BOARDS. REMOVE EXISTING CORNER TRIMBOARDS IF STILL IN PLACE. REPLACE WITH NEW HARDWOOD TRIM, PREPPED AND PAINTED. MATCH DIMENSION TO EXISTING SIDING EDGES. FULLY SEAL JOINT ALONG OUTSIDE CORNER, TYP ALL.
3. FOUNDATION VENT LOUVER WITH INSECT SCREEN.
4. LOUVER INSTALL. INSTALL NEW METAL LOUVERS IN EXISTING OPENINGS. SIZE TO MATCH OPENING. PROVIDE METAL INSERT SCREENS, SEE ENTIRE PERIMETER OF LOUVER TO EXISTING BUILDING.
5. FULLY SEAL GAP BETWEEN BUILDINGS WITH FLEXIBLE SEALANT.
6. CRAWL SPACE ACCESS DOOR. PROVIDE 24"H x 42"W PREFINISHED LOCKING HM ACCESS DOOR.
7. INFILL FRAME FROM 6" BELOW GRADE TO BOTTOM OF FLOOR FRAMING W/ P.T. 2x6 STUDS @ 12" O.C. FACE WEATHERBARRIER AND 24 GA 7/8" PREFINISHED CORRUGATED METAL SIDING PANELS SPANNING HORIZONTALLY. PROVIDE CONTINUOUS DRIP EDGE AT TOP OF PANELS TYP

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WHITE BARN ON ANACONDA SMELTER HILL
CITY OF GREAT FALLS

BOSTON BARN

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NOT FOR CONSTRUCTION

04.27.2023
PROJ# | CITYGF_BARN
DESIGNED BY | HOUTZ
DRAWN BY | SUMMERS

REVISIONS

NOT FOR CONSTRUCTION - PRELIMINARY DESIGN

EXTERIOR ELEVATIONS

A201

1 A202 SOUTH

1/4" = 1'-0"

1000 500 0 4 8

SCALE IN MM | SCALE IN FEET

SCALE: 1/4" = 1'-0"

2 A202 EAST

1/4" = 1'-0"

1000 500 0 4 8

SCALE IN MM | SCALE IN FEET

SCALE: 1/4" = 1'-0"

KEYNOTES ELEVATIONS:

1. CUPOLA LOUVERS. PRESERVE ALL EXISTING DOOR CONSTRUCTION. PROVIDE (2) THUMBTURN-STYLE HASP AT I NTERIOR FACE OF DOOR. SET HASPS TO HOLD DOOR TIGHTLY SHUT. INSTALL BACKER ROD AT JAMBS AND HEAD OF DOOR TO FULLY SEAL ALL GAPS. PROVIDE ADJUSTABLE NEOPRENE SWEEP AT BOTTOM EDGE OF DOOR SET TIGHT TO FLOOR. INSTALL SIGN "NOT AN EXIT" ON INTERIOR FACE OF DOOR. PREP EXTERIOR OF DOOR TO ACCOMMODATE MOTHBALL COVERING PER DETAIL 3/A101
2. CORNER TRIM BOARDS. REMOVE EXISTING CORNER TRIMBOARDS IF STILL IN PLACE. REPLACE WITH NEW HARDWOOD TRIM, PREPPED AND PAINTED. MATCH DIMENSION TO EXISTING SIDING EDGES. FULLY SEAL JOINT ALONG OUTSIDE CORNER, TYP ALL.
3. FOUNDATION VENT LOUVER WITH INSECT SCREEN.
4. LOUVER INSTALL. INSTALL NEW METAL LOUVERS IN EXISTING OPENINGS. SIZE TO MATCH OPENING. PROVIDE METAL INSERT SCREENS, SEE ENTIRE PERIMETER OF LOUVER TO EXISTING BUILDING.
5. FULLY SEAL GAP BETWEEN BUILDINGS WITH FLEXIBLE SEALANT.
6. CRAWL SPACE ACCESS DOOR. PROVIDE 24"H x 42"W PREFINISHED LOCKING HM ACCESS DOOR.
7. INFILL FRAME FROM 6" BELOW GRADE TO BOTTOM OF FLOOR FRAMING W/ P.T. 2x6 STUDS @ 12" O.C. FACE WEATHERBARRIER AND 24 GA 7/8" PREFINISHED CORRUGATED METAL SIDING PANELS SPANNING HORIZONTALLY. PROVIDE CONTINUOUS DRIP EDGE AT TOP OF PANELS TYP

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REVISIONS

EXTERIOR ELEVATIONS

A202

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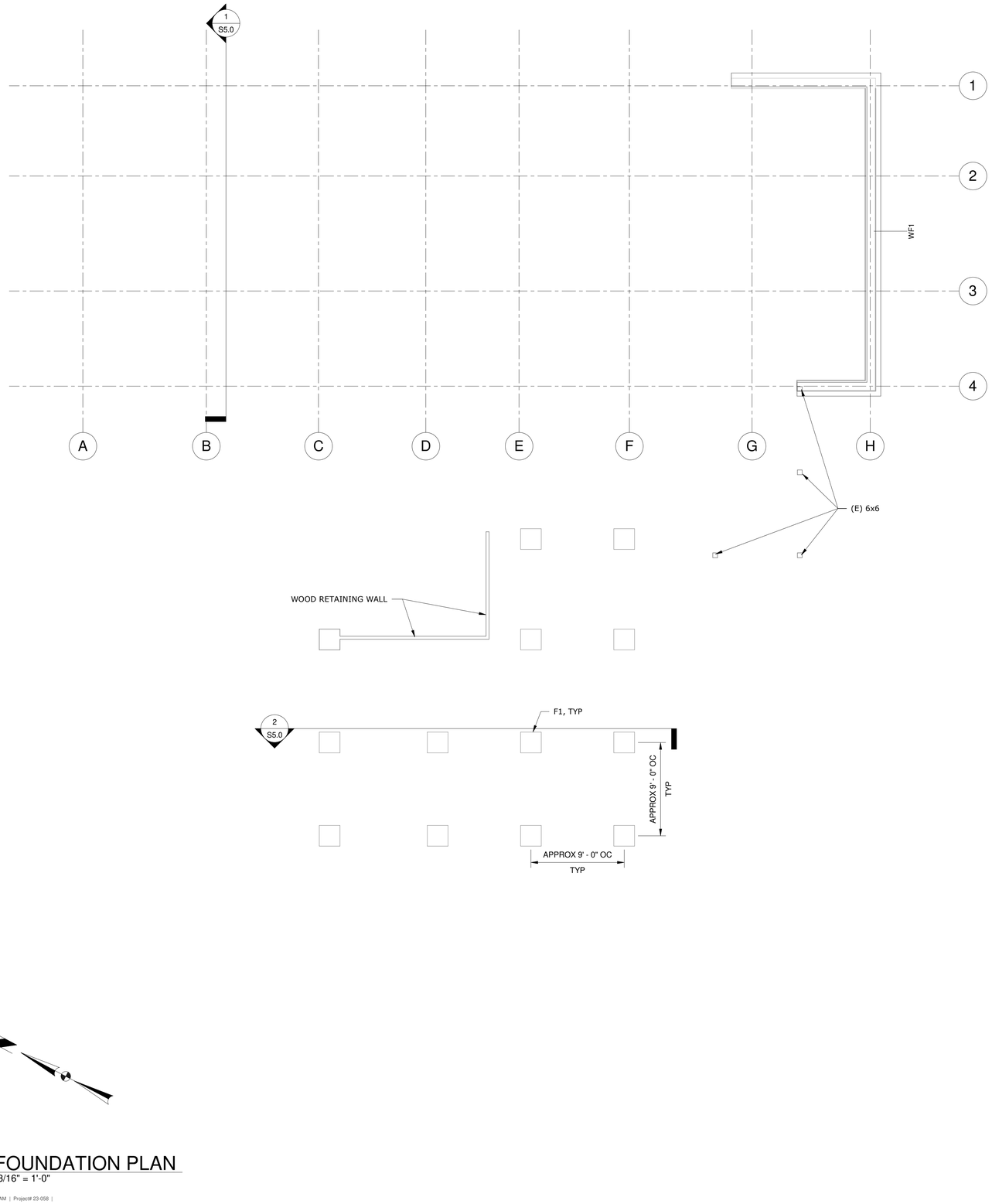

GENERAL NOTES

1. UNVERIFIED FOUNDATION ELEMENTS NOT INCLUDED. WF1 WALL ASSUMED AROUND PERIMETER NORTH SECTION. F1 ASSUMED SUPPORTING COLUMNS IN SOUTH SECTION.

LEGEND

WF1	STONE WALL FOOTING, WIDTH UNKNOWN.
F1	APPROX 2'x2' STONE SPREAD FOOTING

1 FOUNDATION PLAN
3/16" = 1'-0"

4/12/2023 9:21:20 AM | Project# 23-058 |

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4/12/2023
PROJ# | 23-058
DESIGNED BY | ATR
DRAWN BY | RLT
REVIEWED BY | Checker
REVISIONS

FOUNDATION PLAN

S2.0

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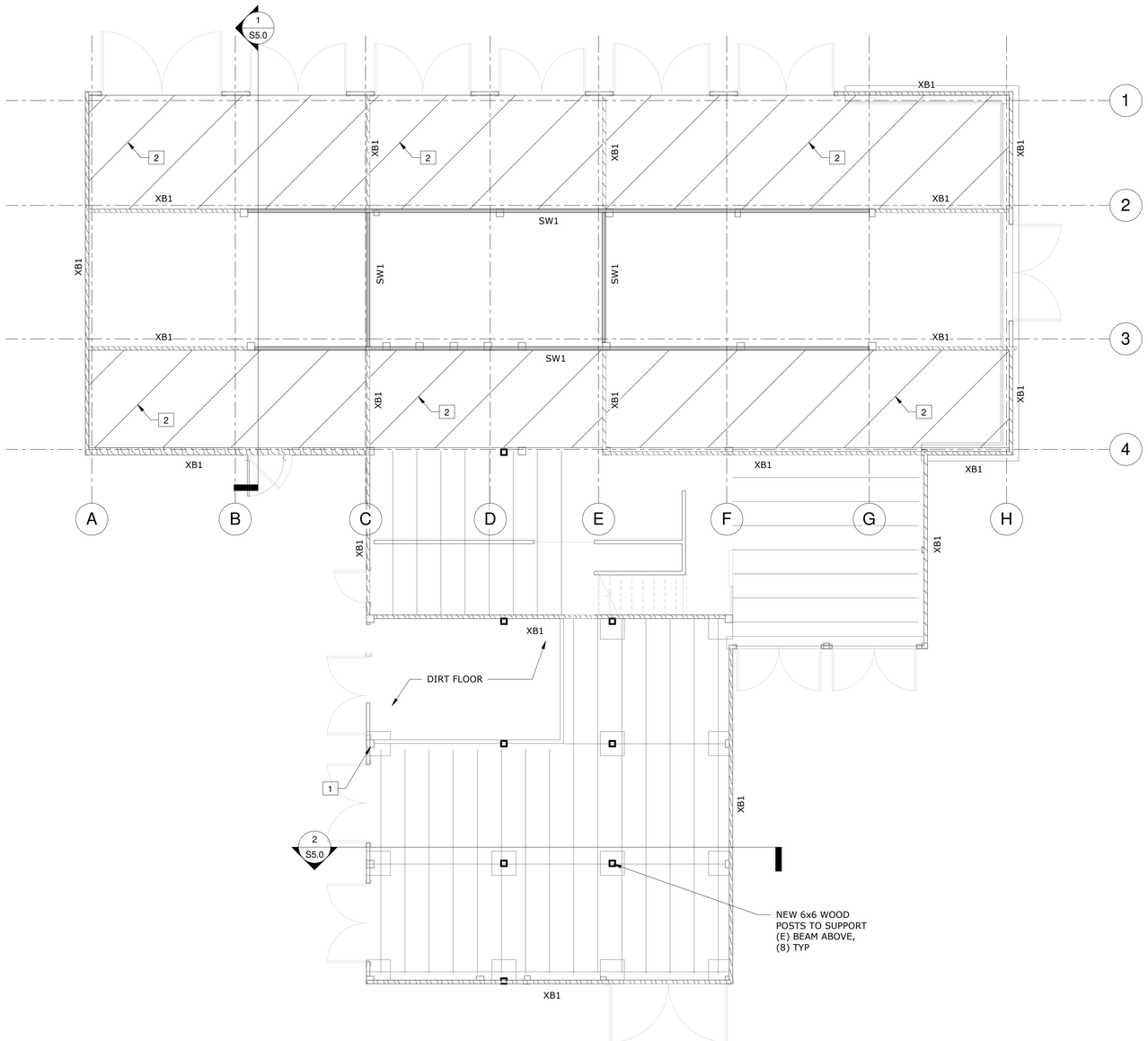

FLAG NOTES

1 DETERIORATED POST. REMOVE AND REPLACE PRIOR TO INITIAL BRACING.

2 2x4 LAID FLAT @ 4'-0" OC W/ (2) 16d NAILS INTO EA JOIST, MIN (3) JOIST LAP.

GENERAL NOTES

1. UNOBSERVED FLOOR FRAMING NOT INCLUDED. BEAMS AND JOISTS IN NORTH SECTION ASSUMED TO BE SIMILAR TO SOUTH SECTION.
2. PROVIDE DIAGONAL BRACING FROM BOTTOM OF WALL TO TOP OF WALL AT LARGE OPENINGS ALONG GRID LINE 1, THE WEST WALL OF THE SOUTH SECTION, AND THE SOUTH WALL IN THE SOUTHEAST SECTION.

LEGEND

SW1 — 2x6 WOOD SHEAR WALL W/ 7/16" SHEATHING, 8d NAILS @ 6" OC ALL PANEL EDGES, 12" OC FIELD. BLOCK HORIZONTAL EDGES.

XB1 — BRACE WALL WITH DIAGONAL 2x4'S @ 45° FROM BOTTOM OF WALL TO TOP OF WALL. MINIMUM (3) BRACES PER WALL.

1 MAIN FLOOR FRAMING PLAN
3/16" = 1'-0"

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MAIN FLOOR FRAMING PLAN

S3.0

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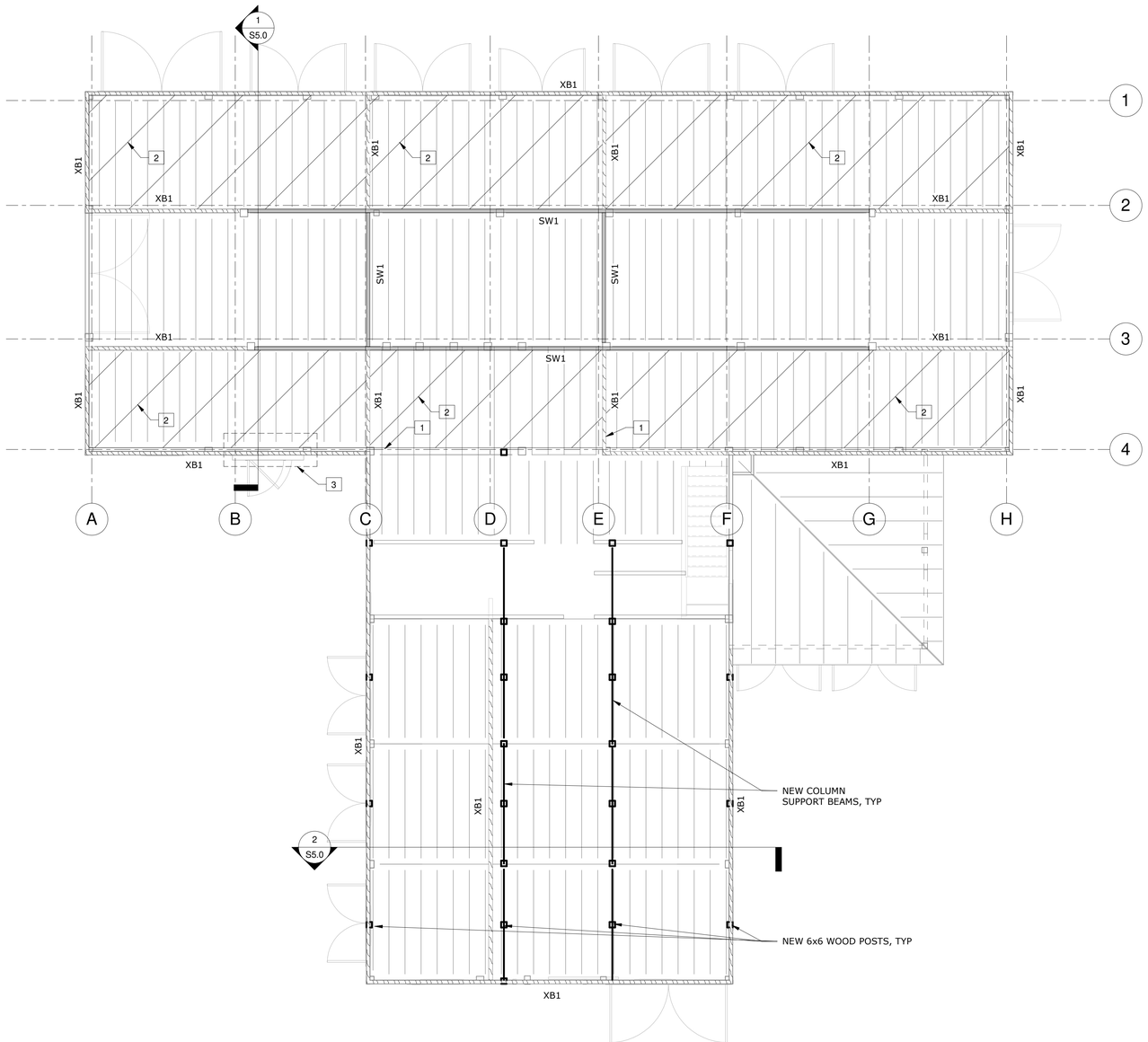

FLAG NOTES

1. DAMAGED FLOOR FRAMING MEMBER, REPAIR OR REPLACE.
2. 2x4 LAID FLAT @ 4'-0" OC W/ (2) 16d NAILS INTO EA JOIST, MIN (3) JOIST LAP.
3. FLOOR COLLAPSE AREA. NEW FRAMING & FLOORING REQUIRED.

GENERAL NOTES

1. UNOBSERVED FLOOR FRAMING NOT INCLUDED. BEAMS AND JOISTS IN NORTH SECTION ASSUMED TO BE SIMILAR TO SOUTH SECTION.
2. PROVIDE DIAGONAL BRACING FROM BOTTOM OF WALL TO TOP OF WALL AT LARGE OPENINGS ALONG GRID LINE 1, THE WEST WALL OF THE SOUTH SECTION, AND THE SOUTH WALL IN THE SOUTHEAST SECTION.

LEGEND

SW1	2x6 WOOD SHEAR WALL W/ 7/16" SHEATHING, 8d NAILS @ 6" OC ALL PANEL EDGES, 12" OC FIELD. BLOCK HORIZONTAL EDGES.
XB1	BRACE WALL WITH DIAGONAL 2x4'S @ 45° FROM BOTTOM OF WALL TO TOP OF WALL. MINIMUM (3) BRACES PER WALL.

1 SECOND FLOOR FRAMING PLAN
3/16" = 1'-0"

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SECOND FLOOR FRAMING PLAN

S3.1

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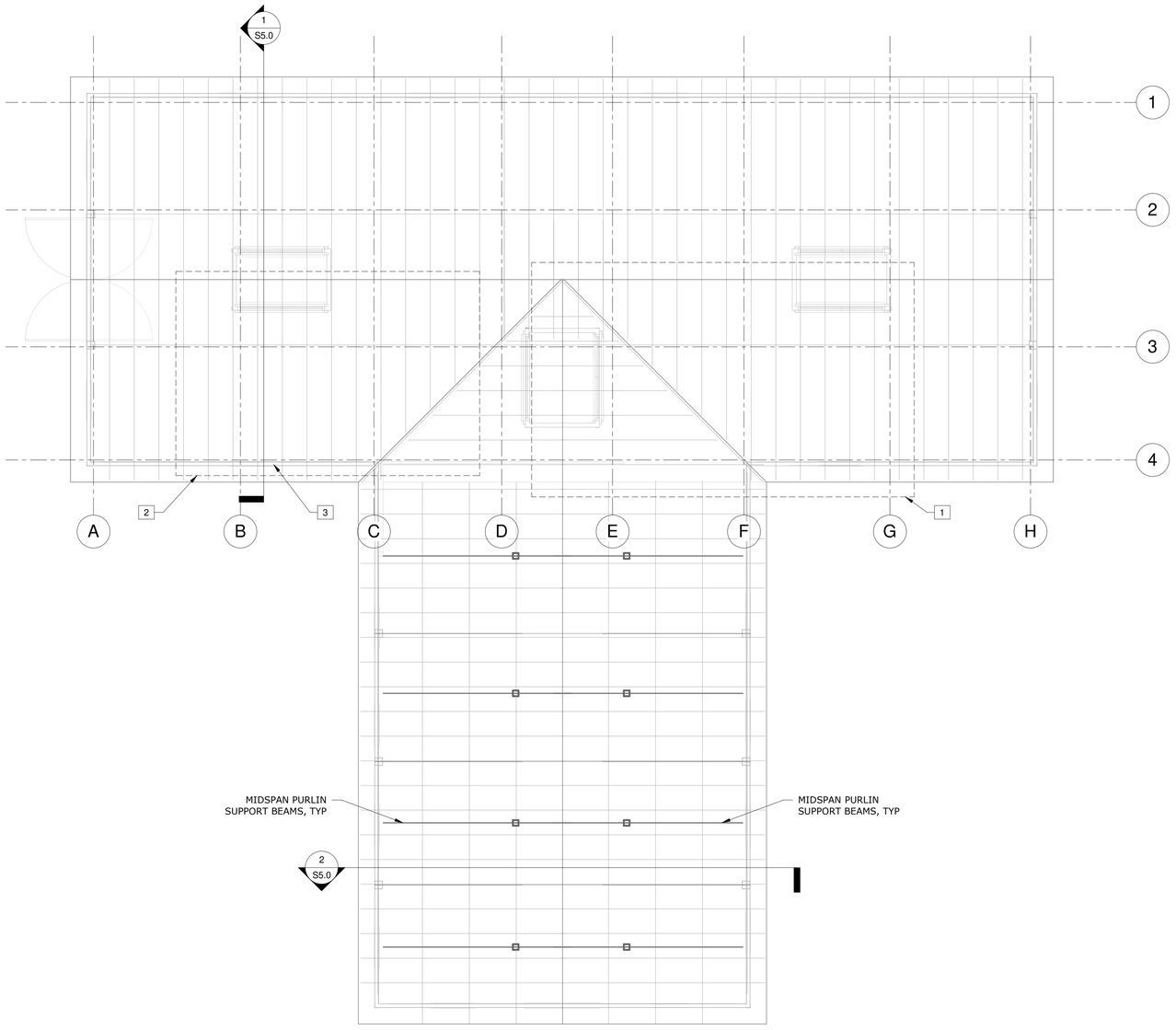

FLAG NOTES

1. ROOF COLLAPSE AREA, REMOVE AND REPLACE FRAMING.
2. RAFTERS FAILING, REMOVE AND REPLACE.
3. FAILED WINDOW HEADER, REMOVE AND REPLACE.

GENERAL NOTES

1. ROOF SHEATHING TO BE 19/32" 40/20 RATING OSB W/ 8d NAILS @ 6" OC PANEL EDGES, 12" OC FIELD.
2. WORKING PLATFORM TO BE ADDED BETWEEN WALLS ALONG GRID LINES 2 AND 3.

1 ROOF PLAN
3/16" = 1'-0"

Owner
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4/12/2023
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ROOF FRAMING PLAN

S4.0

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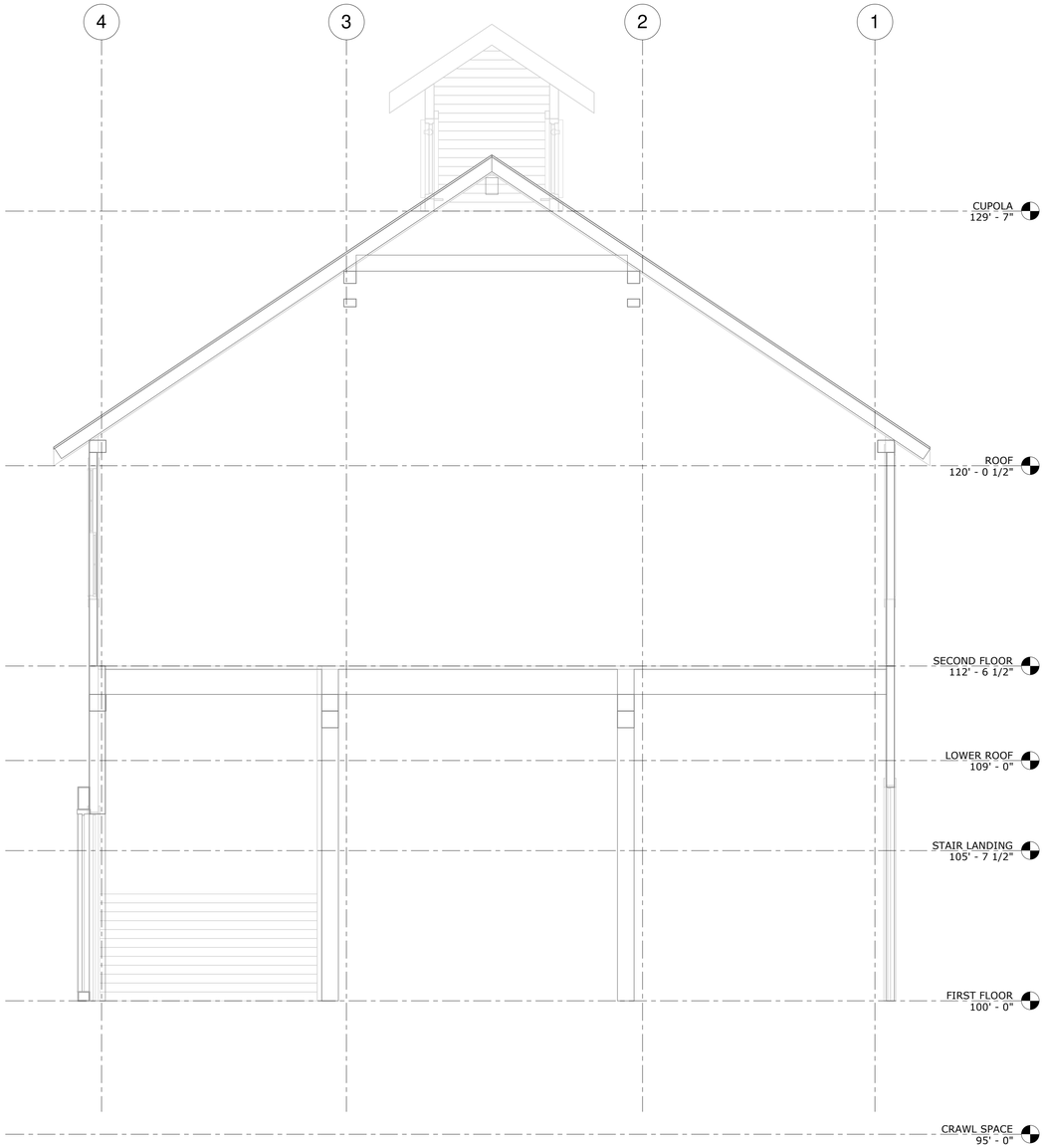
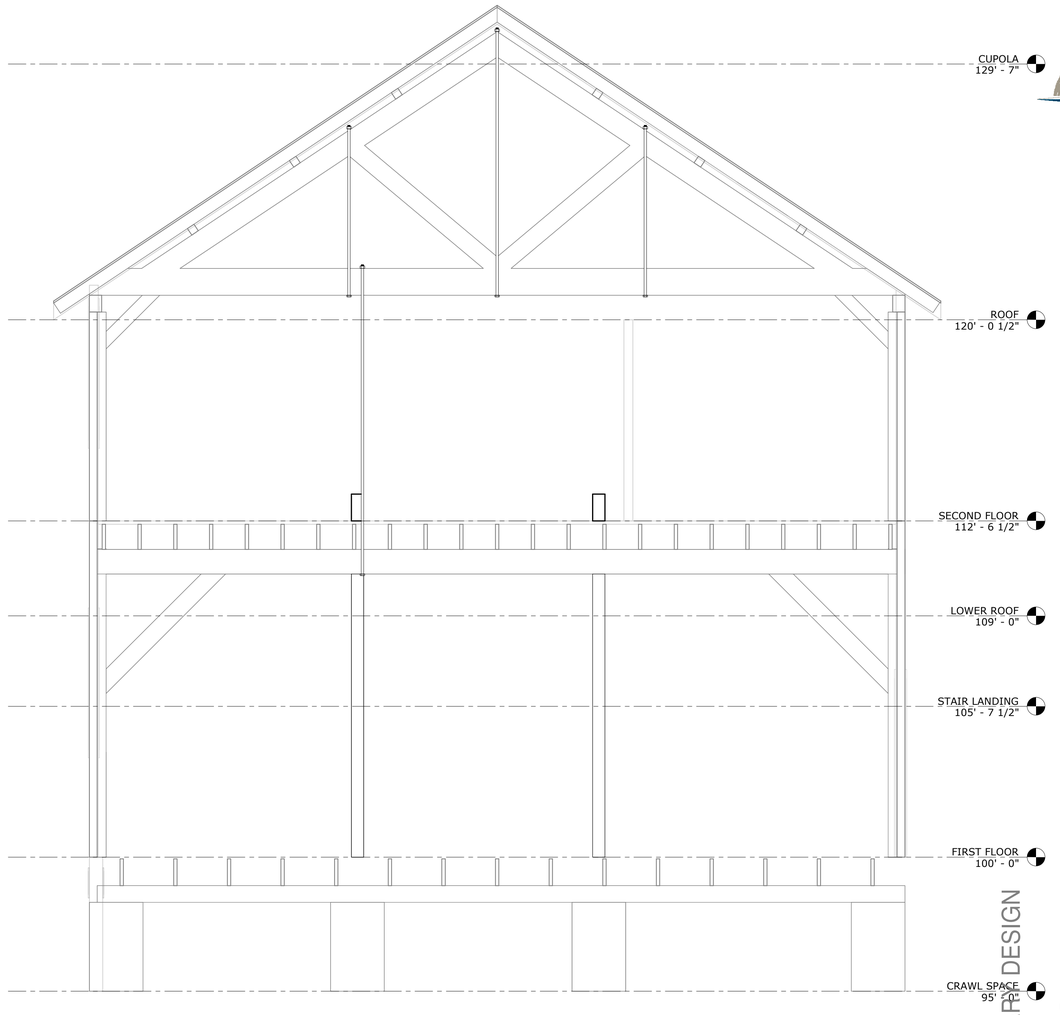


1 BUILDING SECTION
3/8" = 1'-0"



2 BUILDING SECTION
3/8" = 1'-0"

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DRAWN BY | Author
REVIEWED BY | Checker
REVISIONS

BUILDING SECTIONS

S5.0

Amendment 01
September 3, 2024

UPDATE FOR RECENT CHANGE OF CONDITIONS, SECTIONS 4.21, 4.23, 5.3

4.21 Roof

Since the time of the original report, the center of roof at the north section of the building has completely collapsed inward. The roof at the south section is still relatively in the same condition as described in the original report, aside from its connectivity to the north roof, which has completely severed. Though the center of the north roof has completely collapsed and most of the lateral pressure previously incurred to the exterior walls has been relieved, some lateral load from the collapsed material is still being placed against the exterior walls, and affecting their capacity for carrying and resisting load.

Due to the collapse of the primary roof, the second floor surface and framing is now much more exposed to weather conditions, particularly rain and snow. As the building faces more winter conditions it is anticipated that the floor system will see much faster weathering and movement due to exposure

4.23 Exterior Walls

As indicated above, the collapse of the roof has reduced a large amount of lateral pressure on the exterior bearing walls. Currently the north wall is drastically out of plumb and is in danger of separating from the floor framing at second floor. Fallen material is still in some areas leaning against the exterior wall and there is still concern for maintaining the viability of the north wall of the building. Furthermore, the force resistance of that upper level framing is not braced and is compromised in the event of any large wind loads or seismic events.

5.3 SET THE NORTH ROOF RIDGE ELEVATION LEVEL

The entire north roof system will now require full removal and replacement. There is remote possibility that some of the members of the existing roof system could be retained for reuse, but due to their age and the importance of the roof structure, it is recommended that the entire north roof structure be removed and replaced following stabilization of the perimeter bearing walls, restructuring of the window and door headers, and the central core construction.

All new sheathing, weather barrier, and roofing would need to occur and connection to the south roof structure would need to be carefully considered for movement and differing construction types. All three cupolas would need to be reconstructed entirely, flashed and weatherproofed.

Overall, it is our anticipation that the collapse of the roof will increase cost expectations for the scope outlined in the report, requiring more labor and material to reach a fully secure, enclosed and protected building for preservation.

End of Amendment 01

City of Great Falls Training Facility

1

Presentation Outline:

- HOW WE GOT HERE
- EXISTING SITE CONDITIONS
- WHERE WE'RE AT
- WHERE WE'RE GOING
- FIRE TRAINING TOWER CAPABILITIES
- TOWER SPECIFICATIONS
- SITE PLAN (CONCEPT)
- PUBLIC WORKS BENEFITS
- COST BREAKDOWN (ESTIMATED)
- PROJECT TIMELINE (ESTIMATED)
- QUESTIONS?

2

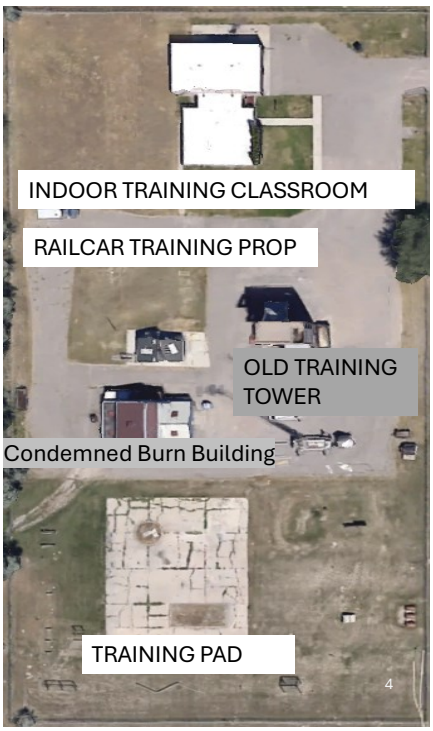
2

HOW WE GOT HERE

- FACILITY FAILED AFTER YEARS OF DEFERRED MAINTENANCE
- PAVEMENT NOT CONSTRUCTED FOR FIRE TRUCK WEIGHT
- FACILITY CAPABILITY DOES NOT MATCH CURRENT FIREFIGHTING TRAINING MEANS
  - NO ABILITY TO TRAIN TO ISO SPECIFICATIONS & NFPA STANDARDS
- COMMISSION APPROVED LOAN 4/15/2025
  - OTHER FINANCIAL OPTIONS EXPLORED:
    - BUDGET (NOT SUPPORTABLE)
    - GRANT FUNDING (NOT APPLICABLE)
    - THROUGH LEGISLATIVE PATHWAYS (UNSUCCESSFUL)

3

EXISTING SITE CONDITIONS



4

WHERE WE'RE AT

- ENGINEERING PREPARING REQUEST FOR BID FOR TOWER STRUCTURE
- FENCE CONTRACT AWARDED (INTERCAP LOAN $)
- ENGINEERING THE SITE
  - GRADING, UTILITIES, STORM POND, CONCRETE & ASPHALT WORK, STORMWATER IMPROVEMENT PLAN & PERMIT; WATER MAIN/HYDRANT

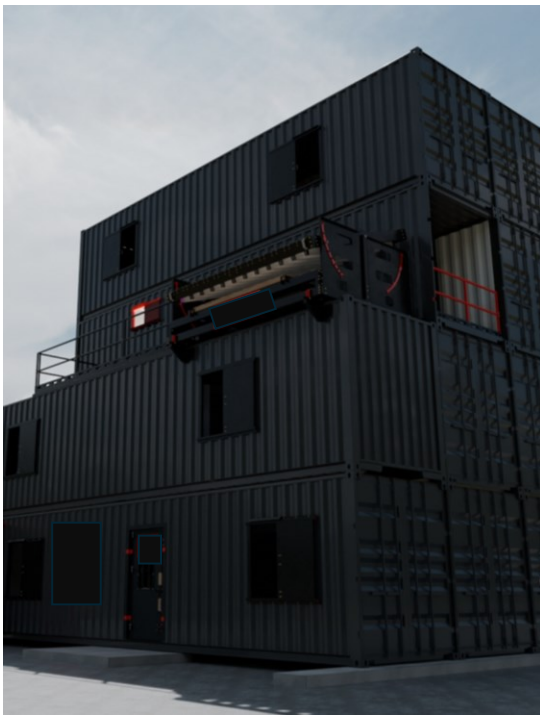
5

5

WHERE WE'RE GOING

- REAL LIFE TRAINING VENUE
  - STREETS, AVENUES, HYDRANTS, DRAFT POND
- MT'S 1ST BURN BUILDING OF THIS NATURE
  - MUTUAL AIDE: INVITE OTHERS
- INTERDEPARTMENT EFFORT: ONE TEAM
  - GFFR, PW, FINANCE, PCD, IT, ATTORNEY, PD
- SELECT TOWER CONTRACTOR
- COMPLETE DESIGN, OBTAIN PERMITS, DEMOLITION, CONSTRUCTION,

POSSIBLE RENDERING (ACTUAL RENDERING DEPENDS ON FINAL CONTRACT SELECTION)



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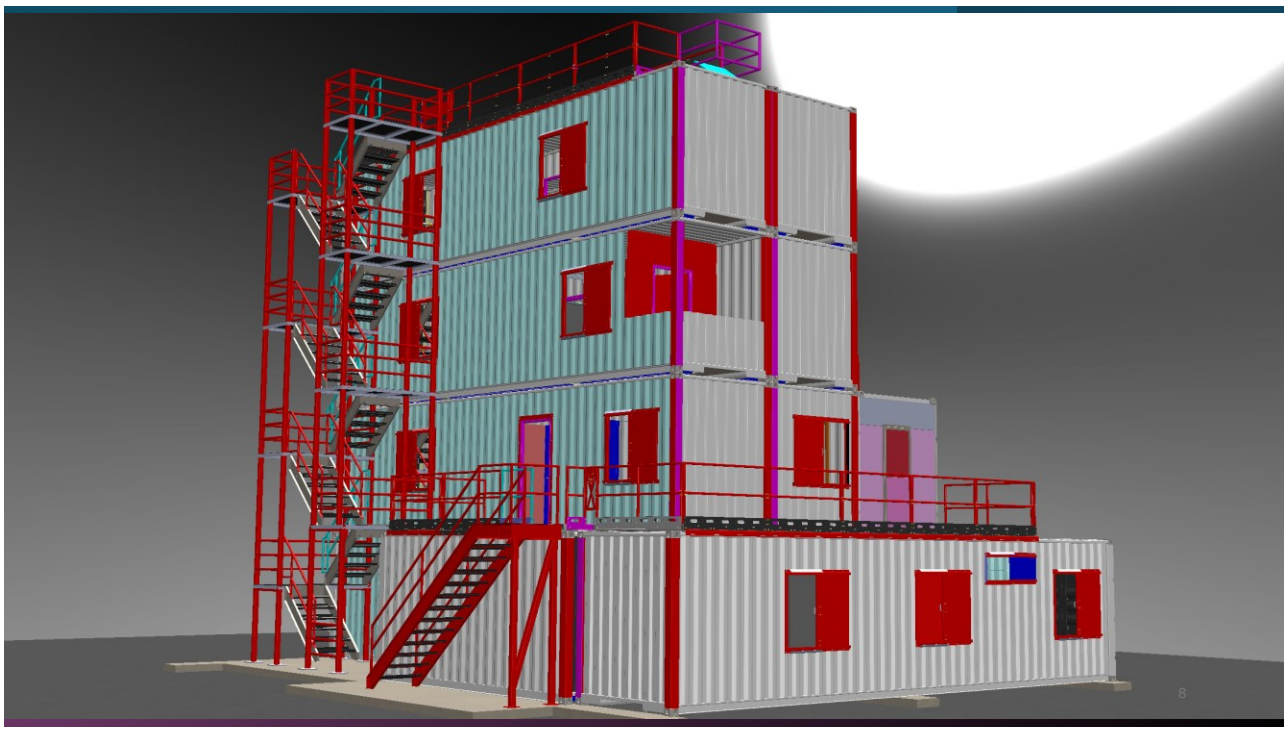
Training Tower Capabilities:

1. 4-5 Stories in height
2. Highrise/Standpipe training to simulate apartments and commercial structures
3. Aerial Apparatus Training (Operations from GFFR tower and ladder trucks)
4. 4-5 Burn cells (Real fire rooms for heat and limited visibility training)
5. High Angle technical rescue (Rappelling into confined spaces or over buildings)
6. Movable interior walls to change interior layouts for trapped victim rescue
7. Roof ventilation prop that allows for multiple pitch degrees

7

7



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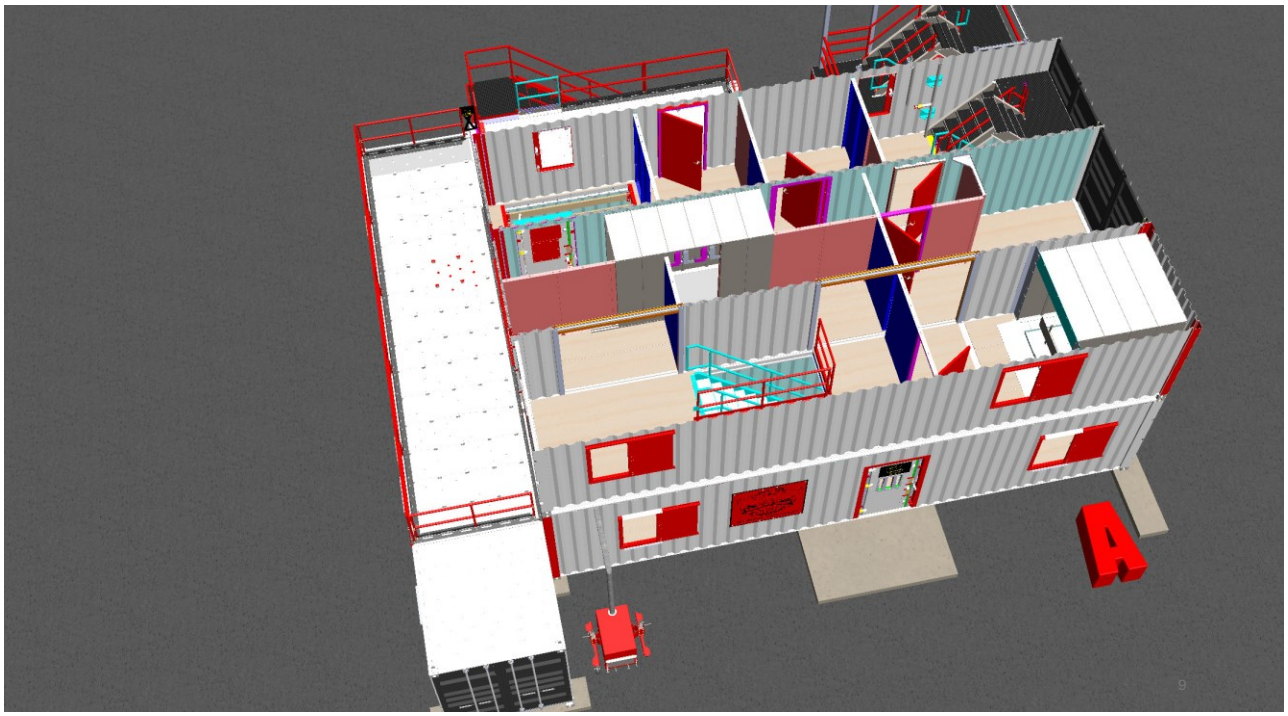

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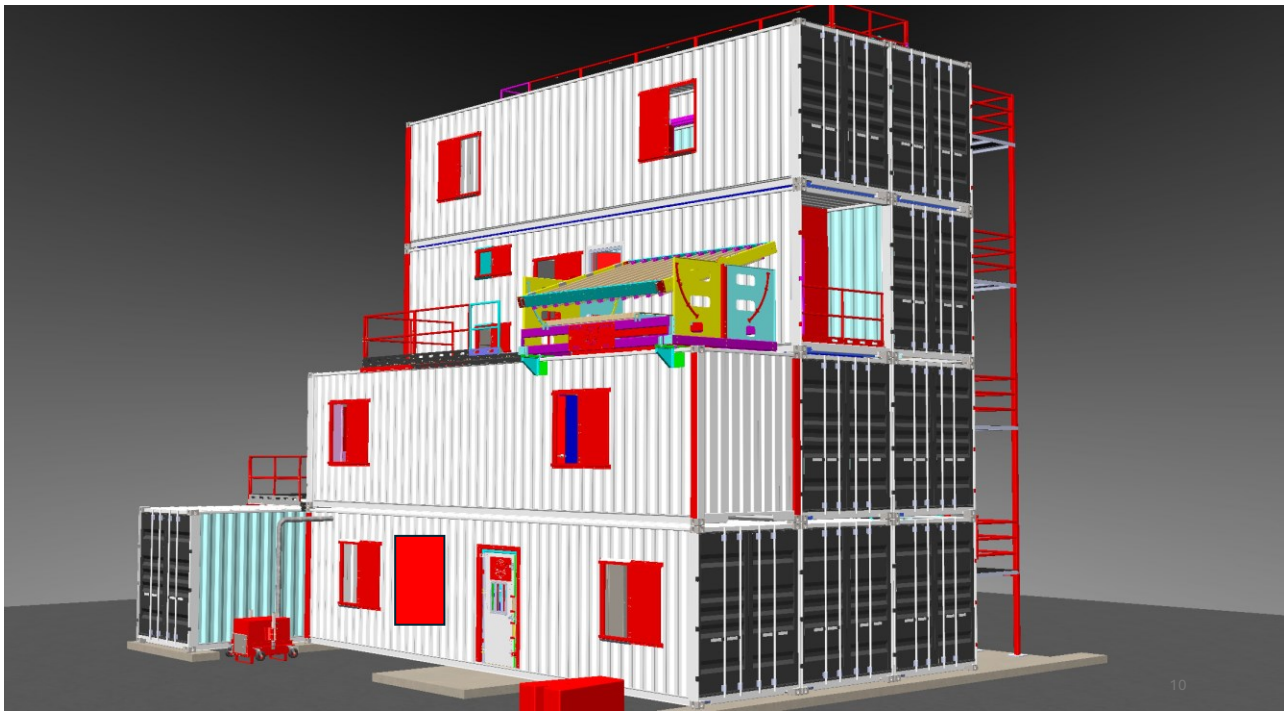

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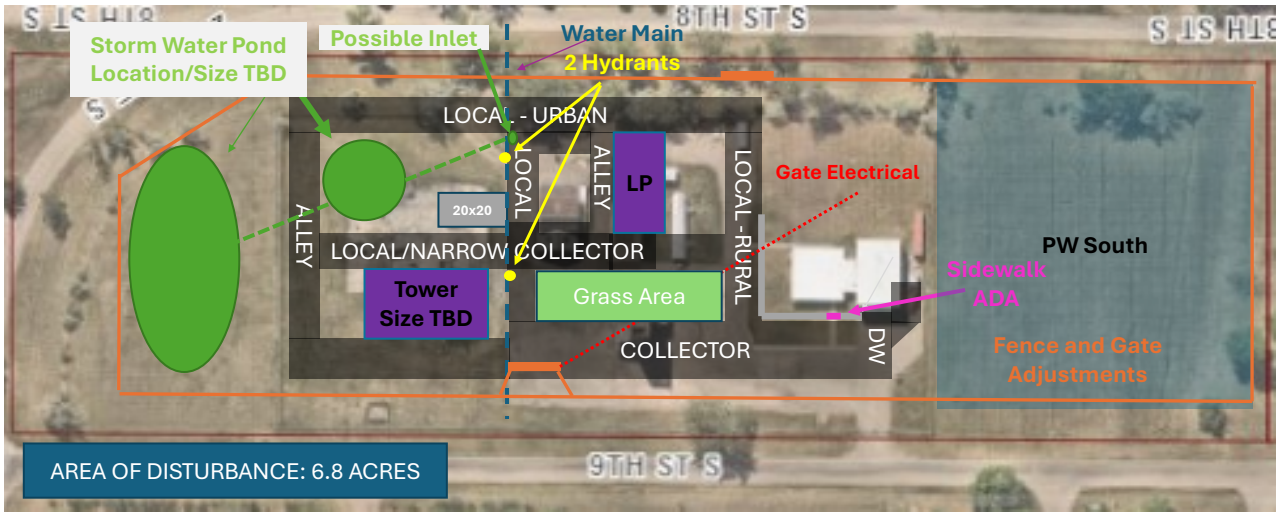
FIRE TRAINING TOWER

11

SITE PLAN (CONCEPT)



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PUBLIC WORKS: BENEFITS

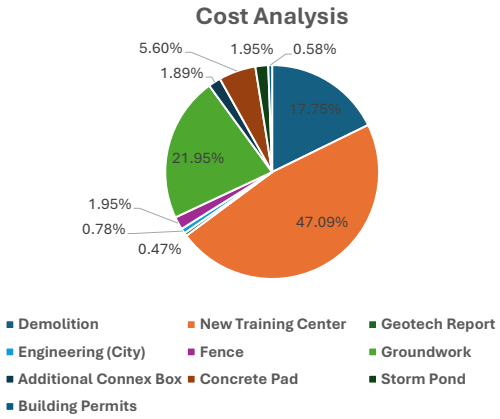
- PUBLIC WORKS – SOUTH COMPLEX
- TIME/COST SAVINGS; TRAINING
- EXAMPLE: STREET SWEEPING
  - 25% TIME SAVINGS FOR MOBILIZATION
  - 13 HOURS SAVED, TO REALLOCATE TO OTHER PRIORITIES
    - DOMINOES = GETTING TO A MILL & OVERLAY JOB ONE DAY EARLIER = ONE MORE BLOCK PAVED PER SEASON
- SIMILAR FOR PAVING, PLOWING, SNOW/ICE REMOVAL, GRAVEL SURFACE MAINTENANCE, POTHOLE REPAIR, ETC
- TRAINING: OPERATORS (STREET, UTILITIES); HYDRANT FLUSHING
- LONG TERM: CDL COURSE

13

13

COST BREAKDOWN (ESTIMATED)

- $2.5M DIRECT BUDGET (GFFR LOAN)
  - $65K: DEMOLITION OF EXISTING TOWER (COMPLETE)
  - $1.2M: NEW FIRE TRAINING TOWER BUILDING
  - $12K: GEOTECH REPORT (IN PROGRESS)
  - $20K: ENGINEERING (CITY)
  - $50K: FENCE
  - $564K: GROUNDWORK, ASPHALT, CONCRETE
  - $10K: ADDITIONAL CONNEX BOX
  - $150K: CONCRETE PAD (60X80)
  - $150K: WATER MAIN
  - $50K: STORM POND
  - $15K: BUILDING PERMIT
  - $2,290,479
- ALTERNATES (IF FUNDING AVAILABLE)
  - $200K: CONCRETE APRON IN FRONT OF TOWER
  - $25K: LANDSCAPING
  - $5K: SIGN
  - $5K: SECURITY CAMERAS



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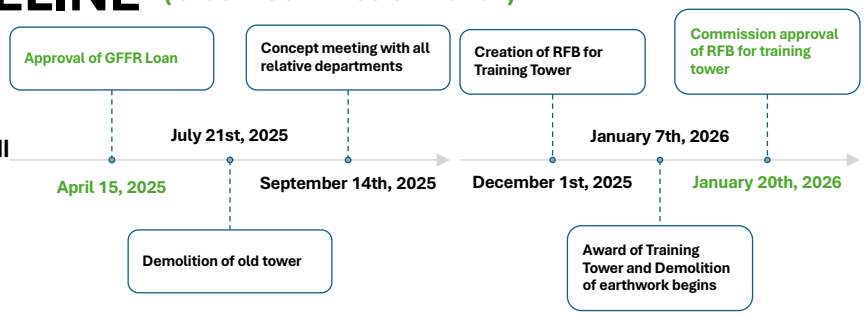
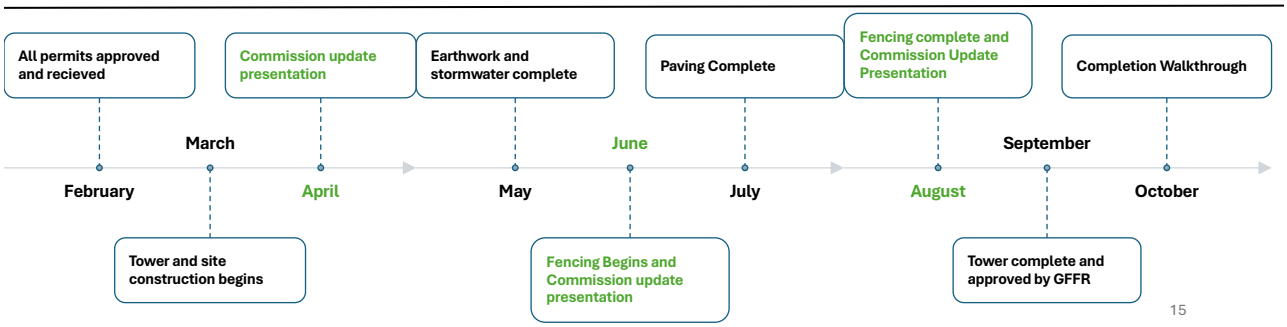
PROJECT TIMELINE (Green: Commission Action)

NOTIONAL

TBD:

- **Water Main/Hydrant Install**
- **PCD Permit Review**
- **Tower delivery timeline**





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