

**Great Falls – Cascade County Historic Preservation Advisory Commission**  
**Minutes from the October 11, 2023 meeting, held in the Gibson Room at the Civic Center**

**Members Present:** Suzanne Waring, Ken Robison, Rich Ecke, Carol Bronson, Channing Hartelius, Ellen Sievert, Chris Christians, Ken Sievert

**Members Absent:** Steve Taylor

**Staff Present:** Samantha Long

**Ex-Officio Members Present:** None

**The meeting was called to order by Rich Ecke at 12:00 PM**

**1. Approval of Meeting Minutes – September 13, 2023**

- Rich Ecke pointed out a typo on page 1.
- Ken Robison moved to accept the minutes as corrected. Channing Hartelius seconded, and the motion carried.

**2. HPO Report**

- Sam had recently attended the Montana History Conference, which she found very informative, as always.
- Staff is participating in a lengthy Section 106 process for the proposed Highland Development south of town.
- Ken Robison, Ken Sievert, and Sam are providing support for a grant application from the Union Bethel AME to the National Trust for Historic Preservation for repairs to their historic building.
- The Planning and Community Development office will be remodeling their reception area, and is bringing Sam in for consultation.
- The new PCD Director will attend the next HPAC meeting to introduce himself and brief us on his plans for incorporating historic preservation in the planning process.
- The International Traditional Games Society is hosting their Gathering of Families in Great Falls this week.

**3. 2023 Ornament Selection**

- The Committee received a draft design of this year's ornament from Sheree Nelson. After some discussion, they offered some change requests and directed staff to move forward with production.

**4. Vinegar Jones Cabin Committee Report**

- Chris reported that the roof contractor has told him the work will be done the coming weekend. Ken Sievert suggested the committee needs to meet soon to arrange a work day to apply oil to the cabin's logs.

**5. Boston and Montana Barn Report**

- Sam reported that the draft structural assessment she reported on at the September meeting has been returned for revisions and she's anticipating a new draft in the coming weeks.

**6. Reports from Commissioners**

- There were no commissioner reports.

**7. Public Comment**

- There was no public comment.

**Rich Ecke adjourned the meeting at 1:17 PM.**



# Boston and Montana Barn

Black Eagle, Montana

Existing Conditions Assessment

Recommendations for Stabilization and Protection

Jointly prepared by :

Cushing Terrell

TD&H Engineering

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## 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.

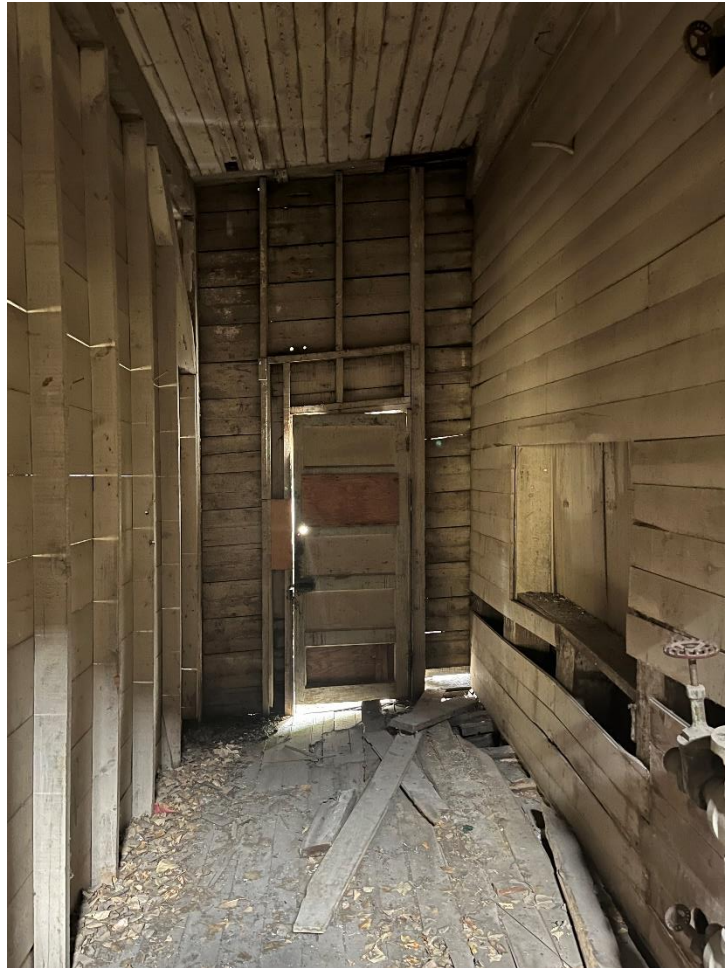
#### 4.23 Primary Structure

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. Secondly, 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 not 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 Seal the windows and doors

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 RSMean has been adjusted for a total 12.9% inflation. Bare values are RSMean 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	RSMean Online	Estimated duration of repairs
01 54	Construction Aids: Equipment Rental	33.40 2200	10kW gas generator	month	4					\$895.00	\$3,580.00	RSMean Online	Estimated duration of repairs
		33.60 3150	40 ton telehandler	month	4					\$10,527.00	\$42,108.00	RSMean 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	RSMean Online	
02 43	Building Relocation	13.13 0040	Wood Frame Bldg.	SF	4000					\$17.06	\$68,240.00	RSMean Online	Temporary building shoring
		05.10 3160	Beams 10"x12"	LF	300	\$0.00		\$9.85	\$16.57	\$16.57	\$4,970.93	2021 RSMean	
		05.10 4280	Joists, 2"x12"	LF	250			\$0.81	\$1.36	\$1.36	\$340.65	2021 RSMean	
		05.10 5480	Posts, 8"x8"	LF	84			\$2.37	\$3.99	\$3.99	\$334.89	2021 RSMean	Initial estimate: 7 posts @12'
06 05	Selective Demo Wood Framing	05.10 5688	Rafters, 2x6 @ 24" OC	SF	200			\$0.64	\$1.08	\$1.08	\$215.32	2021 RSMean	
		05.10 6056	2x6 Rafter tie	LF	680			\$0.73	\$1.23	\$1.23	\$835.05	2021 RSMean	
		05.10 6096	Board sheathing from roof	SF	5200			\$0.51	\$0.86	\$0.86	\$4,461.22	2021 RSMean	
		05.10 6159	Subfloor/roof deck, w/ tongue and groove boards	SF	450			\$0.36	\$0.61	\$0.61	\$272.52	2021 RSMean	
		05.10 6740	Wall Framing Inc. Studs, Plates, Blocking, 2x6	SF	360			\$0.74	\$1.24	\$1.24	\$448.14	2021 RSMean	
		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 RSMean	
		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 RSMean	
		10.26 1205	Partitions, 2x6x12, 16" OC	LF	500	\$12.90	\$16.02	\$10.40	\$17.49	\$33.52	\$16,757.75	2021 RSMean	
06 11	Wood Framing	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 RSMean	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 RSMean	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 RSMean	Steep slope addition included in labor O&P
		10.30 7780	Steep Slope Addition	30%					\$0.00		\$0.00	2021 RSMean	
06 13	Heavy Timber Construction	23.10 0100	Beams, 8x16	MBF	2.1					\$2,927.55	\$6,147.86	RSMean Online	
		23.10 0400	Columns, Structural Grade, 8x8	MBF	1.65					\$7,143.00	\$11,785.95	RSMean Online	
		23.10 0900	Floor Planks, 2"x10"	MBF	0.9					\$5,647.95	\$5,083.16	RSMean 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 RSMean	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 RSMean	
											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

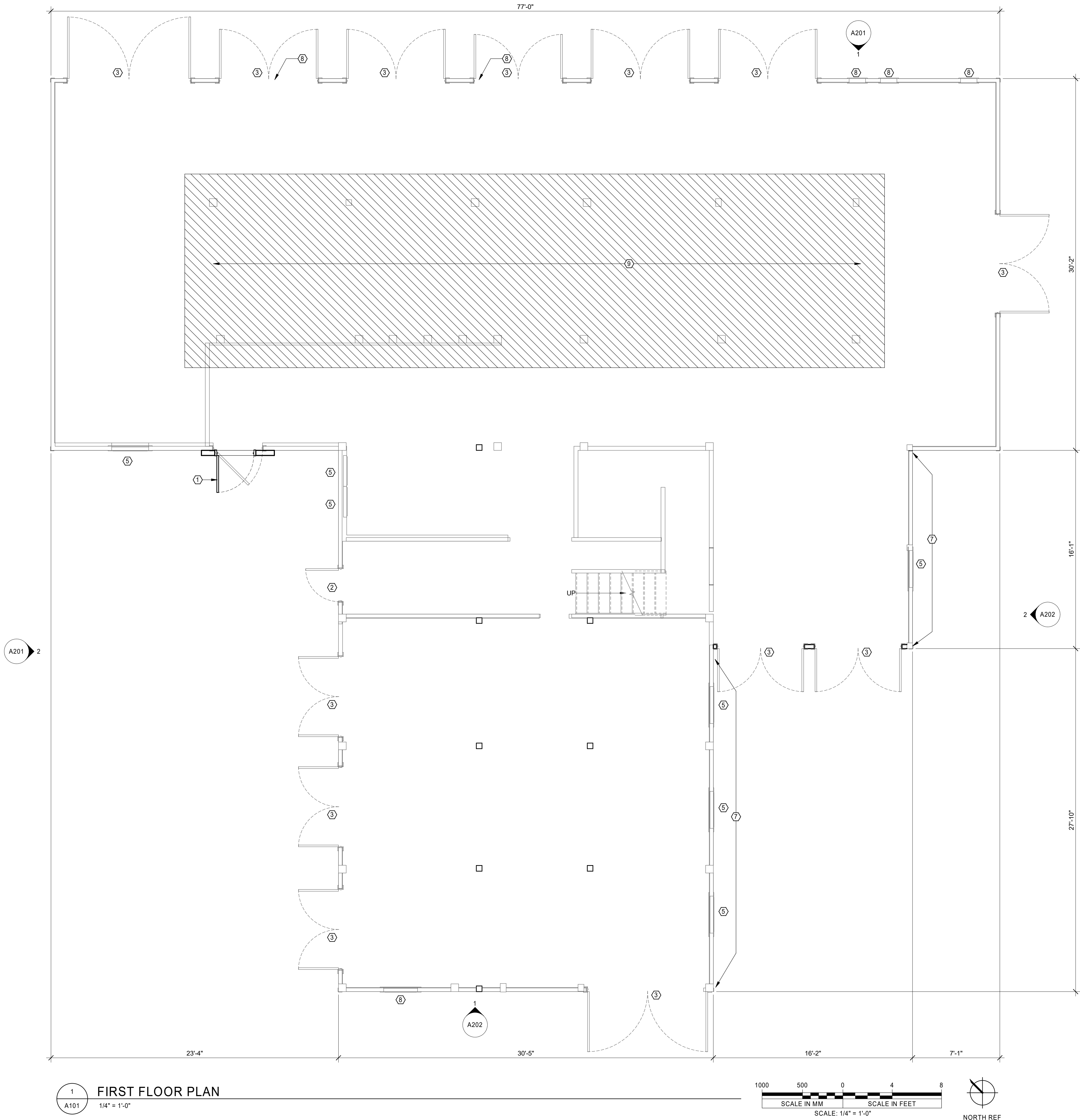
Cushing Terrell - Cost Estimating System

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

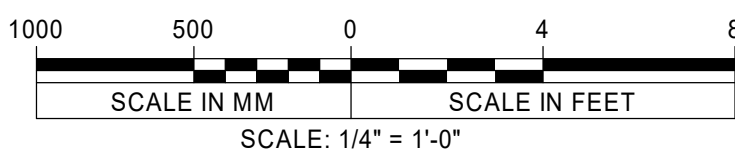
Division	Description	Material Total	Labor Total	Extended Total	Cost/SF	% Total
06	Wood, Plastics, and Composites	23,274	15,159	38,433	\$38,433	36%
07	Thermal and Moisture Protection	27,976	26,774	54,749	\$54,749	52%
08	Openings	10,828	1,636	12,465	\$12,465	12%
	Subtotal	62,078	43,569	105,647		
	General 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
<b>Division 06</b>	<b>Wood, Plastics, and Composites</b>								
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
	<b>Total Spec 1110</b>				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
	<b>Total Spec 1636</b>				5,493		2,889		8,381
	<b>Division 06 Subtotal</b>				16,191		10,545		26,736
	<b>Remote factor @ 15%</b>				2,429		1,582		4,010
	<b>Subtotal</b>				18,619		12,127		30,746
	<b>Size factor @ 25%</b>				4,655		3,032		7,687
	<b>Subtotal</b>				23,274		15,159		38,433
<b>Division 07</b>	<b>Thermal and Moisture Protection</b>								
072510100010	WEATHER BARRIERS								
3000	Weather barriers, building paper, spun bonded polyethylene	3,000	S.F.	0.21	618	0.27	813	0	1,430
	<b>Total Spec 2510</b>				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
	<b>Total Spec 3113</b>				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
	<b>Total Spec 4213</b>				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
	<b>Total Spec 4646</b>				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
	<b>Total Spec 7143</b>				671		872		1,544
	<b>Division 07 Subtotal</b>				19,461		18,625		38,087
	<b>Remote factor @ 15%</b>				2,919		2,794		5,713
	<b>Subtotal</b>				22,381		21,419		43,800
	<b>Size factor @ 25%</b>				5,595		5,355		10,950
	<b>Subtotal</b>				27,976		26,774		54,749
<b>Division 08</b>	<b>Openings</b>								
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
	<b>Total Spec 1213</b>				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
	<b>Total Spec 1313</b>				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
	<b>Total Spec 3113</b>				1,406		154		1,560
7120050015	Hardware Group 3-Exterior,Hinges,HD cyl.lock,closer,thrshd,whstrp	1	Ea.	1,134.90	1,135	486.90	487	1,622	1,622
	<b>Total Spec 7120</b>				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
	<b>Division 08 Subtotal</b>				7,533		1,138		8,671
	<b>Remote factor @ 15.0%</b>				1,130		171		1,301
	<b>Subtotal</b>				8,663		1,309		9,972
	<b>Size factor @ 25.0%</b>				2,166		327		2,493
	<b>Subtotal</b>				10,828		1,636		12,465
	<b>Grand Total</b>				62,078		43,569		105,647



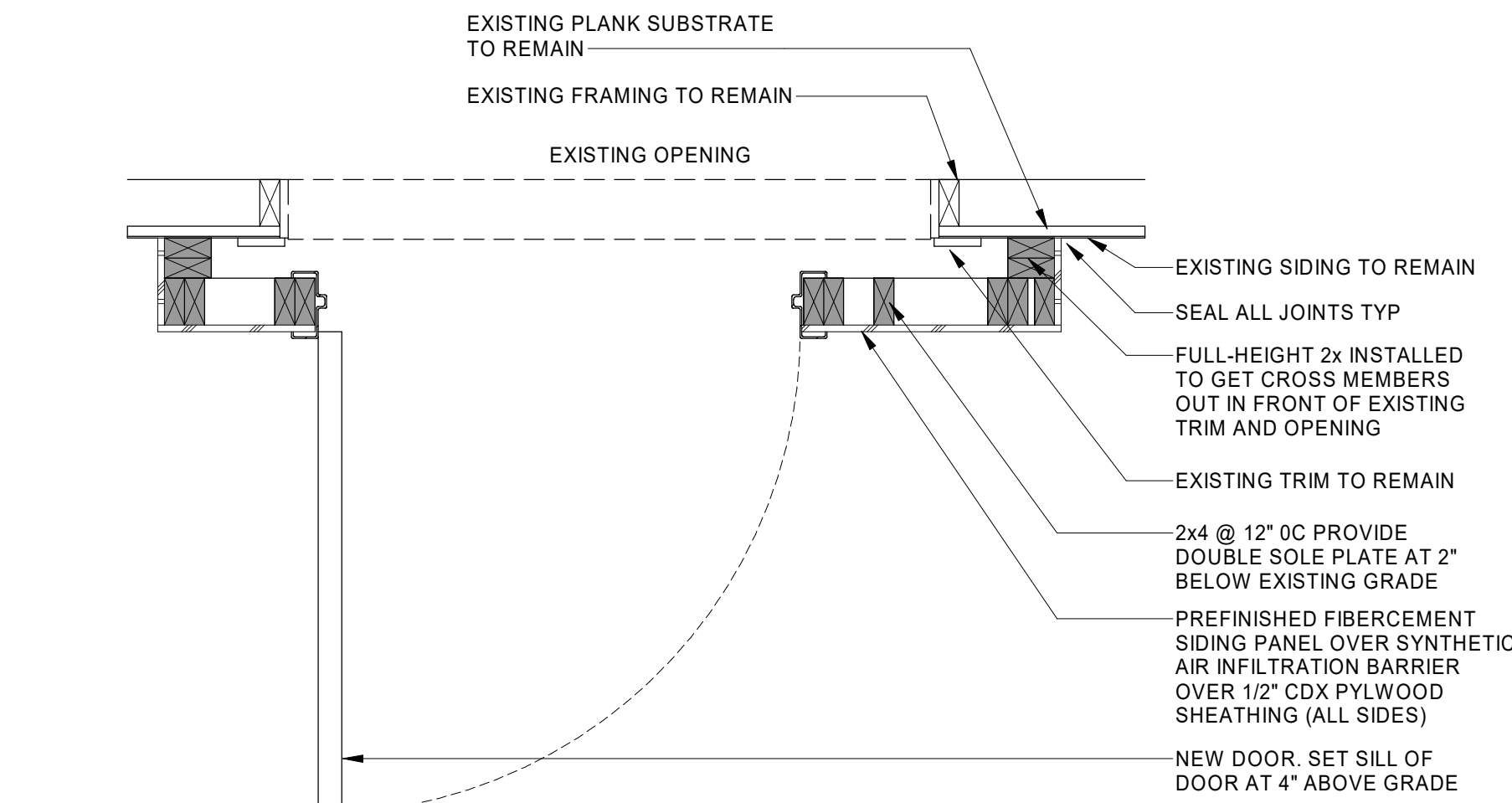


1  
A101  
FIRST FLOOR PLAN  
1/4" = 1'-0"

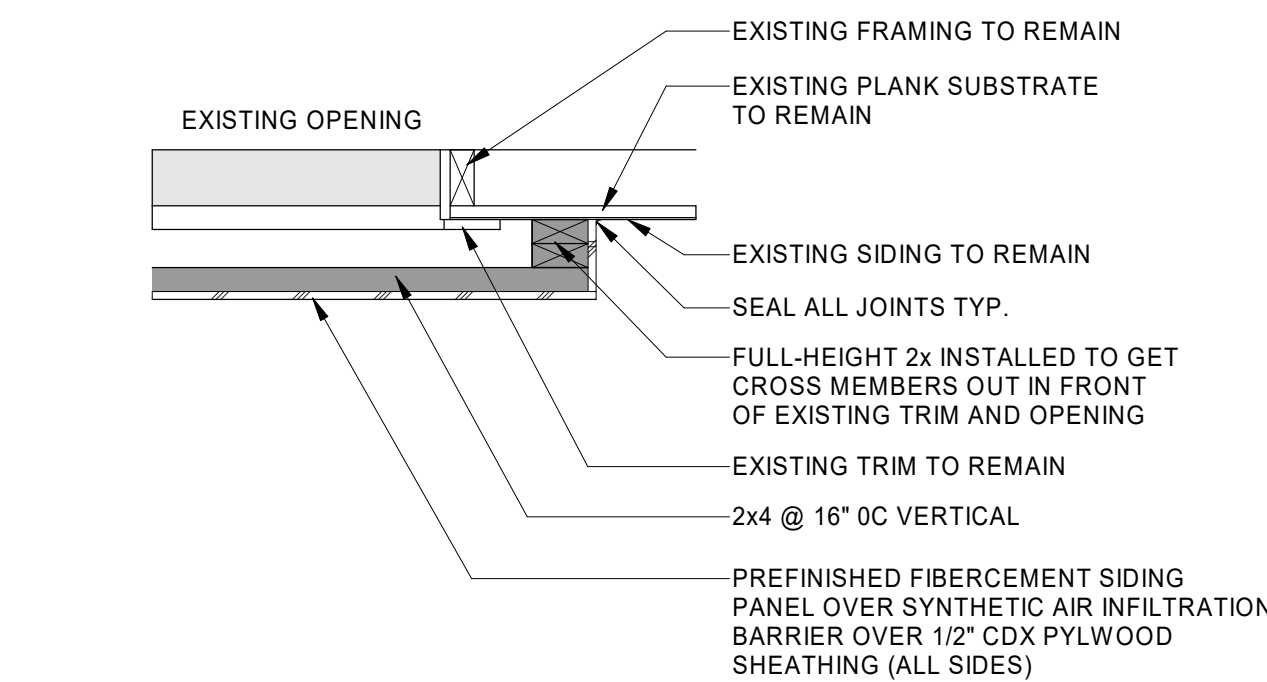


## KEYNOTES FLOOR PLAN:

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"

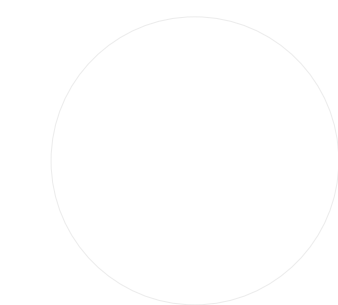


3  
A101  
OPENING COVER DTL  
1" = 1'-0"

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WHITE BARN ON ANACONDA SMELTER HILL  
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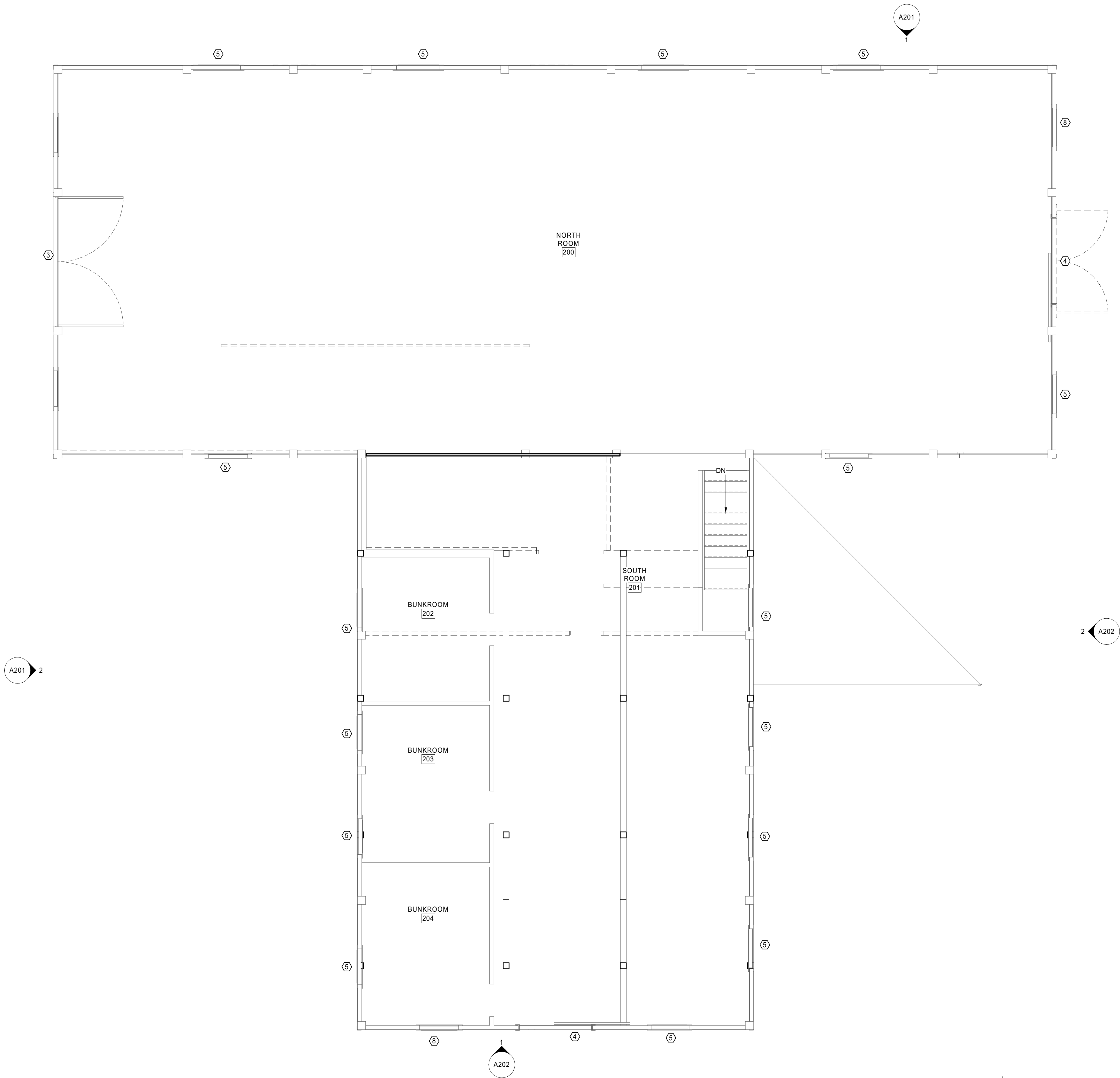
04.27.2023  
PROJ# | CITYGF\_BARN  
DESIGNED BY | HOUTZ  
DRAWN BY | SUMMERS

REVISIONS

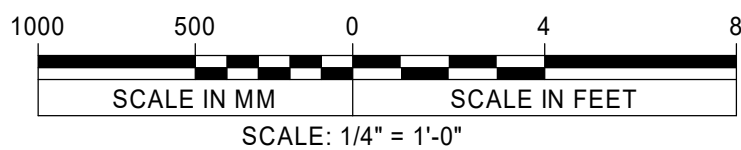
FIRST FLOOR PLAN

A101

NOT FOR CONSTRUCTION - PRELIMINARY DESIGN



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



#### 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.
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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.
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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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Terrell.

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

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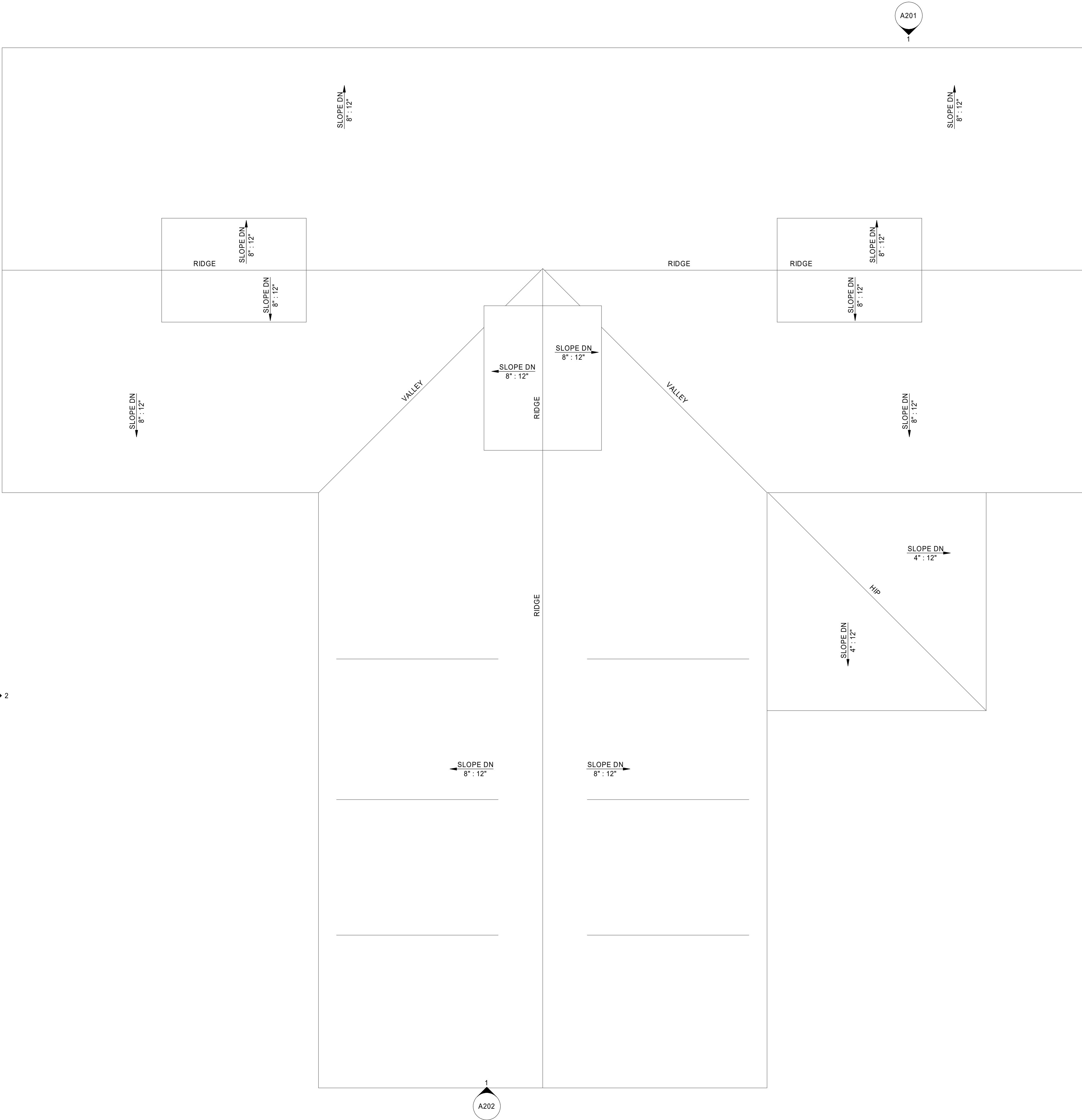
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PROJ# | CITYGF\_BARN  
DESIGNED BY | HOUTZ  
DRAWN BY | SUMMERS

REVISIONS

SECOND FLOOR PLAN

A102



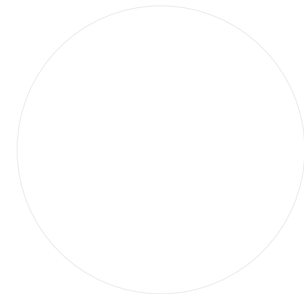
KEYNOTES ROOF PLAN:

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

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



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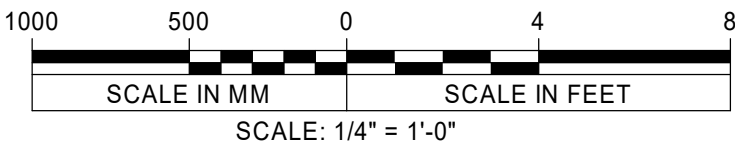
04.27.2023  
PROJ# | CITYGF\_BARN  
DESIGNED BY | HOUTZ  
DRAWN BY | SUMMERS

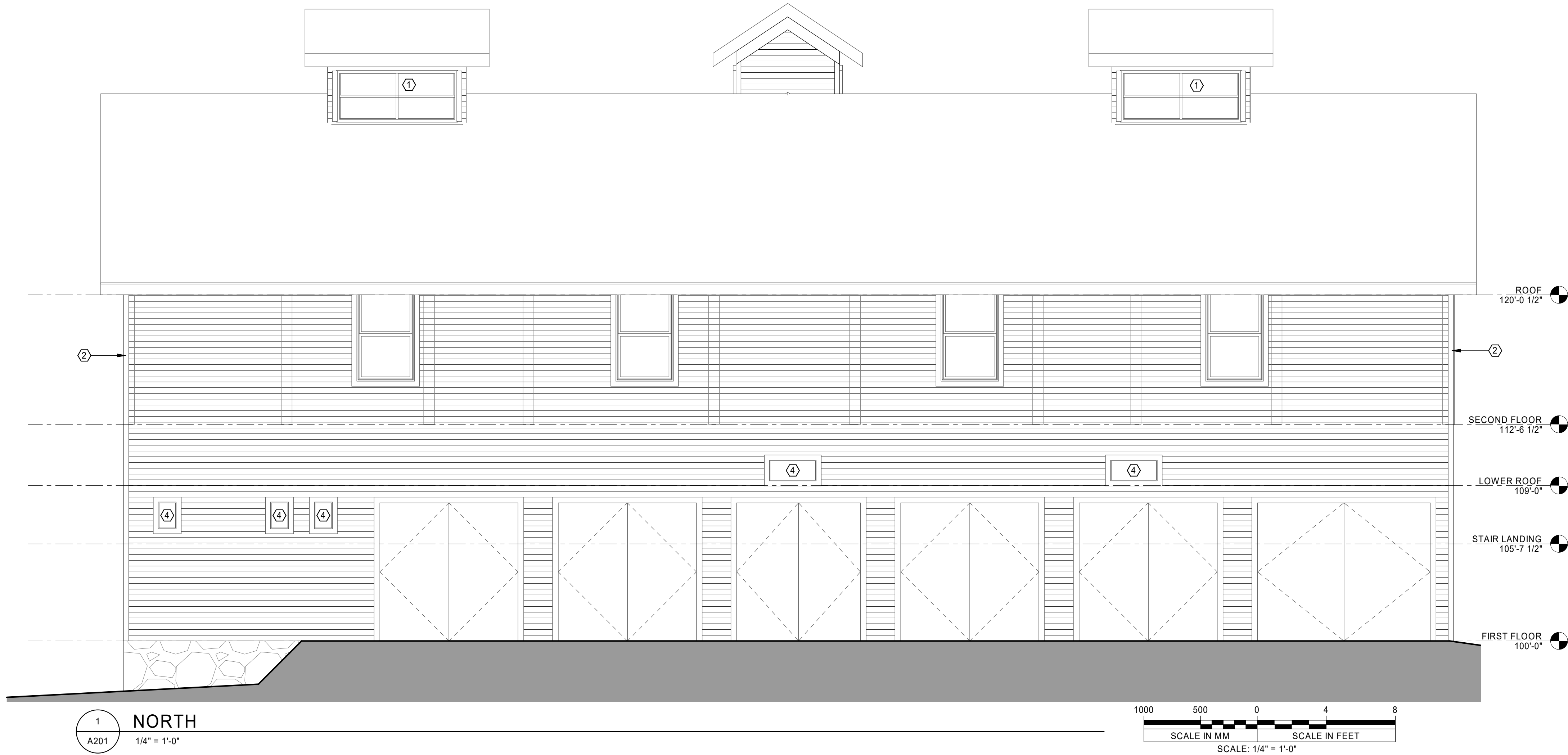
REVISIONS

ROOF PLANS

A110

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





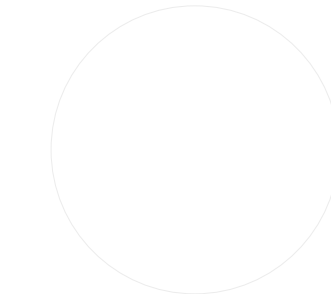
KEYNOTES ELEVATIONS:

1. CUPOLA LOUVERS: 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
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

A201

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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
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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.
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1 SOUTH  
A202  
1/4" = 1'-0"

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



2 EAST  
A202  
1/4" = 1'-0"

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

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

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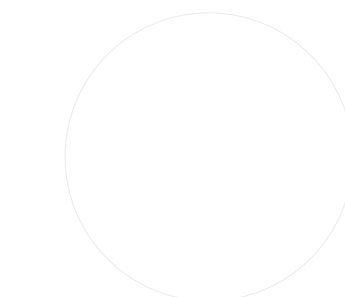
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REVISIONS

EXTERIOR  
ELEVATIONS

A202



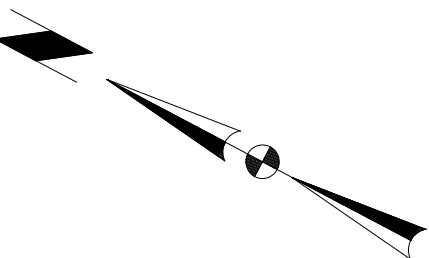
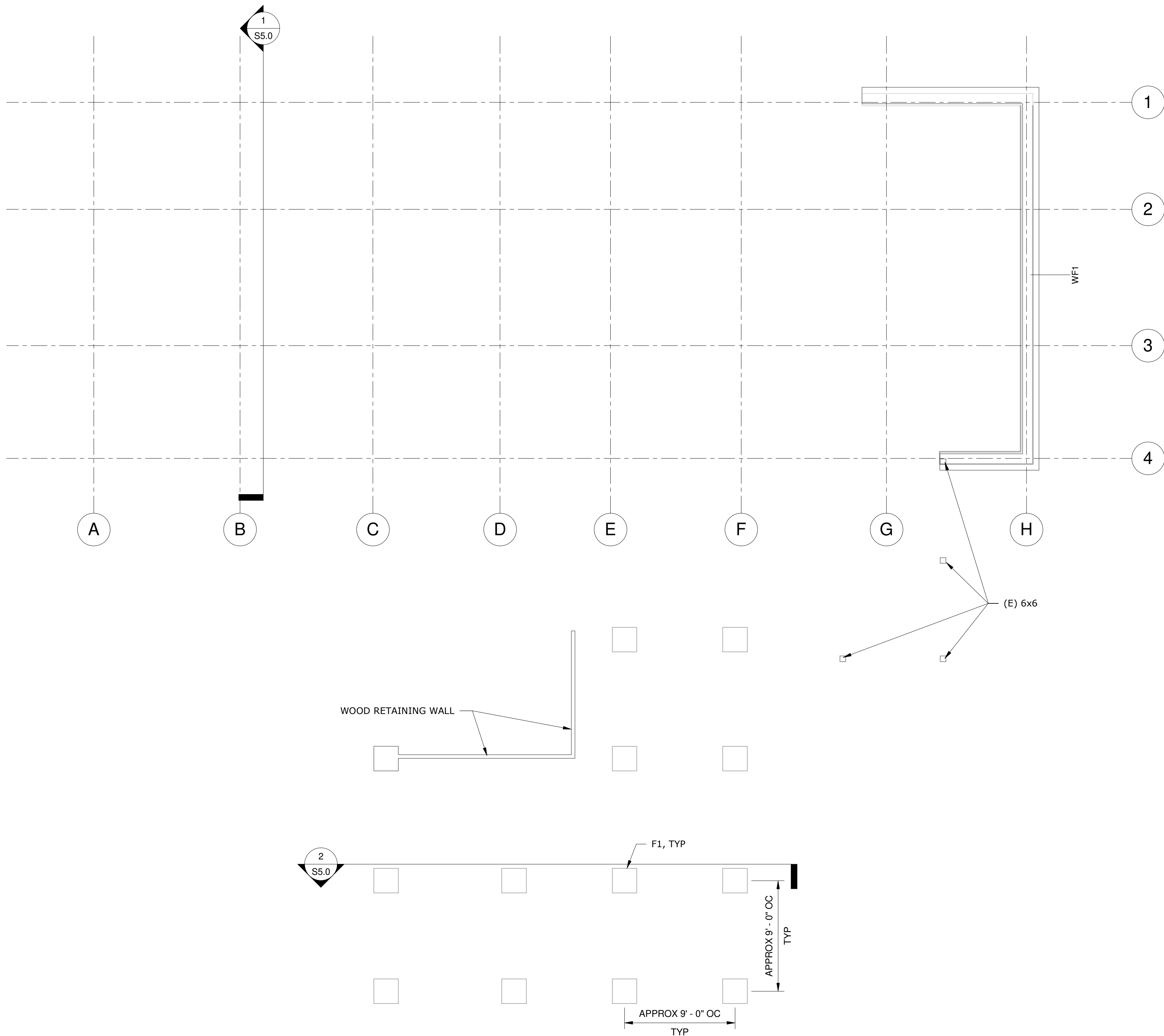
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### GENERAL NOTES

- 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



### FLAG NOTES

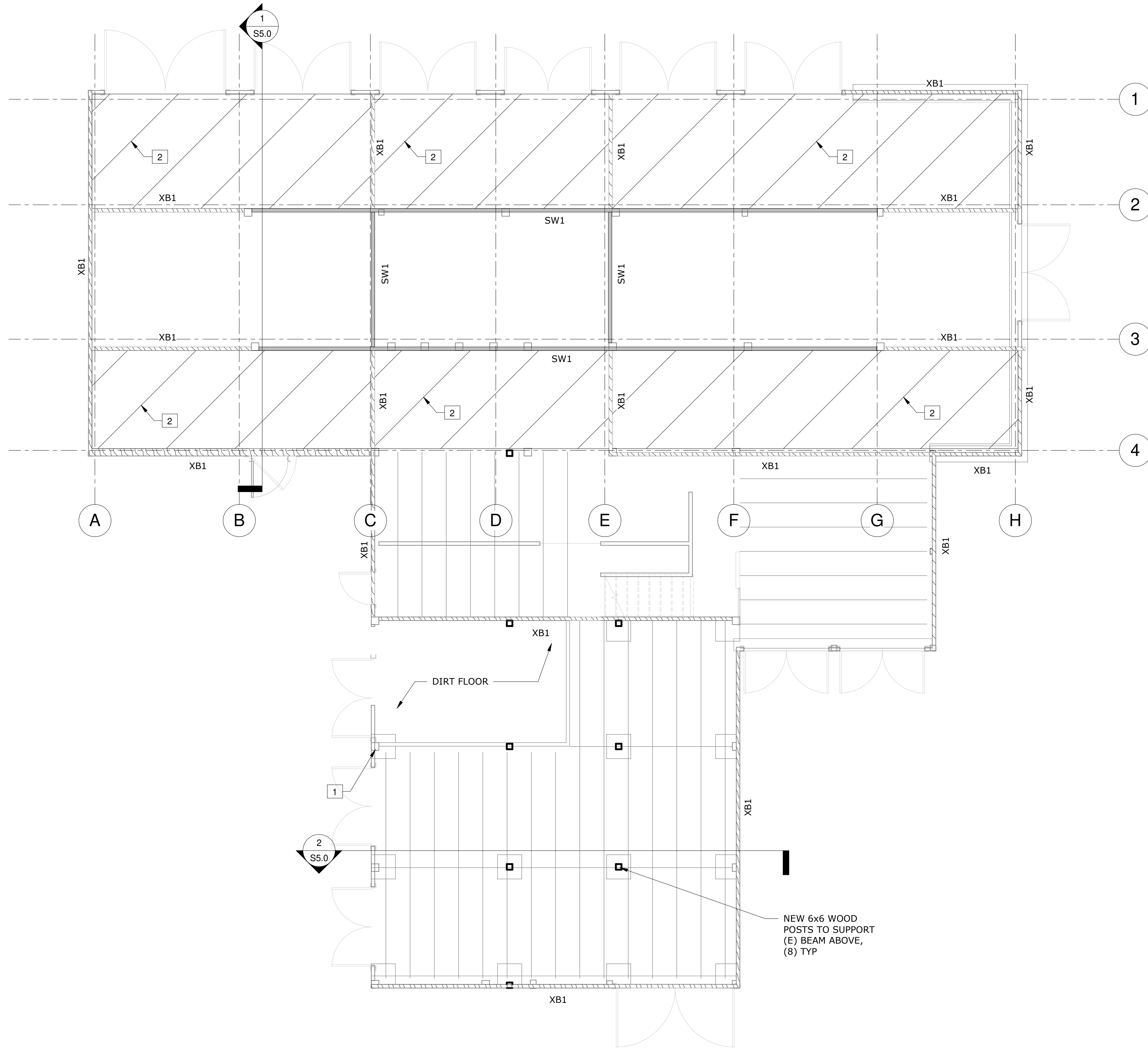
- 1 DETERIORATED POST. REMOVE AND REPLACE PRIOR TO INITIAL BRACING.
- 2 2x4 LAID FLAT @ 4'-0" OC W/ (2) 16d NAILS INTO EA JOIST, MIN (3) JOIST LAP.

### 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.



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### FLAG NOTES

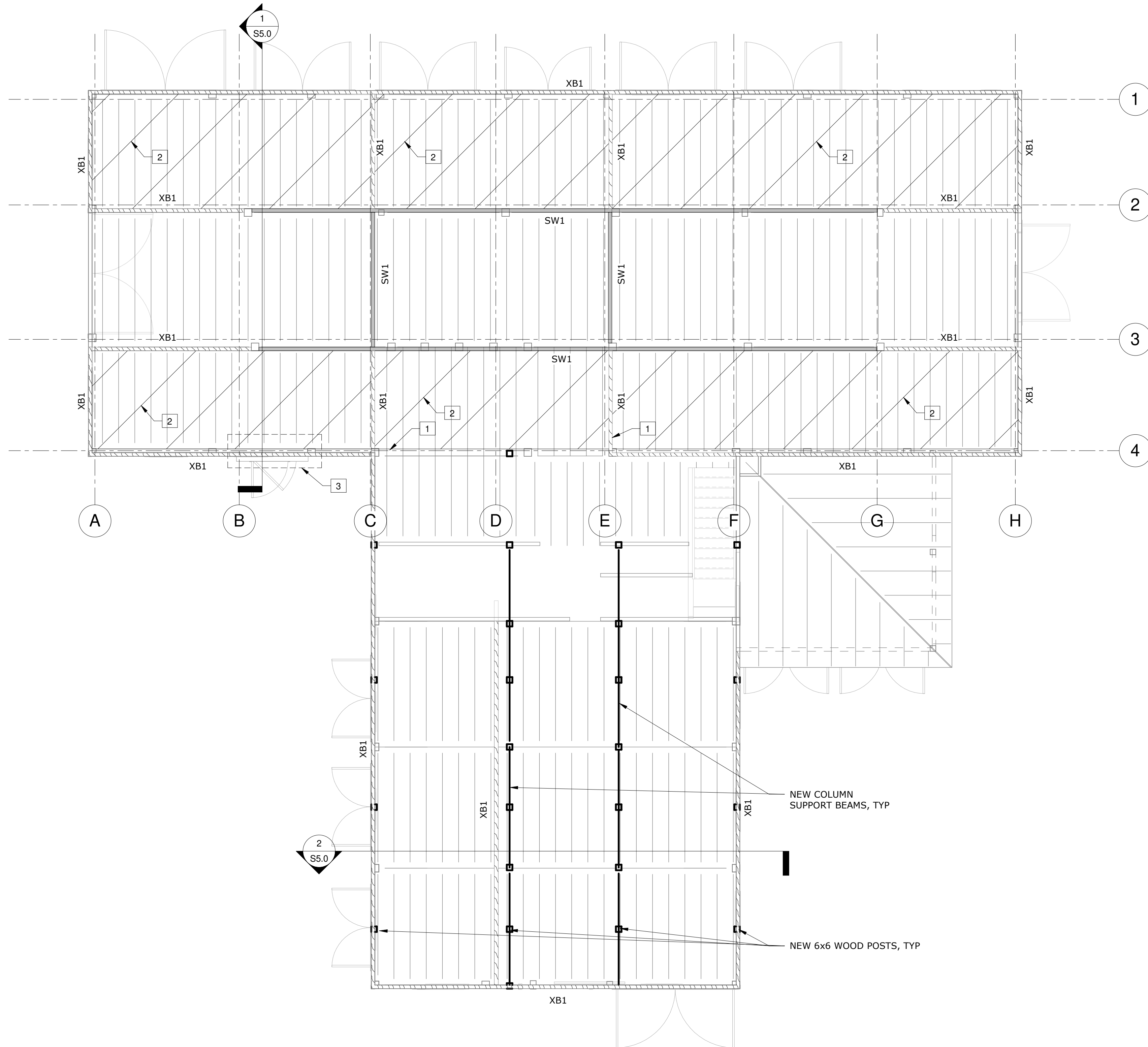
- 1 DAMAGED FLOOR FRAMING MEMBER, REPAIR OR REPLACE.
- 2 2x4 LAID FLAT @ 4'-0" OC W/ (2) 16d NAILS INTO EA JOIST, MIN (3) JOIST LAP.
- 3 FLOOR COLLAPSE AREA. NEW FRAMING & FLOORING REQUIRED.

### 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.

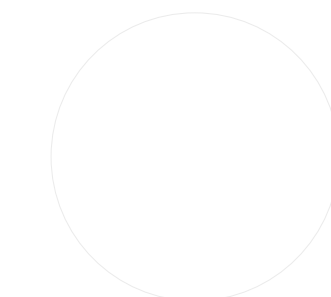
### LEGEND

- 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"





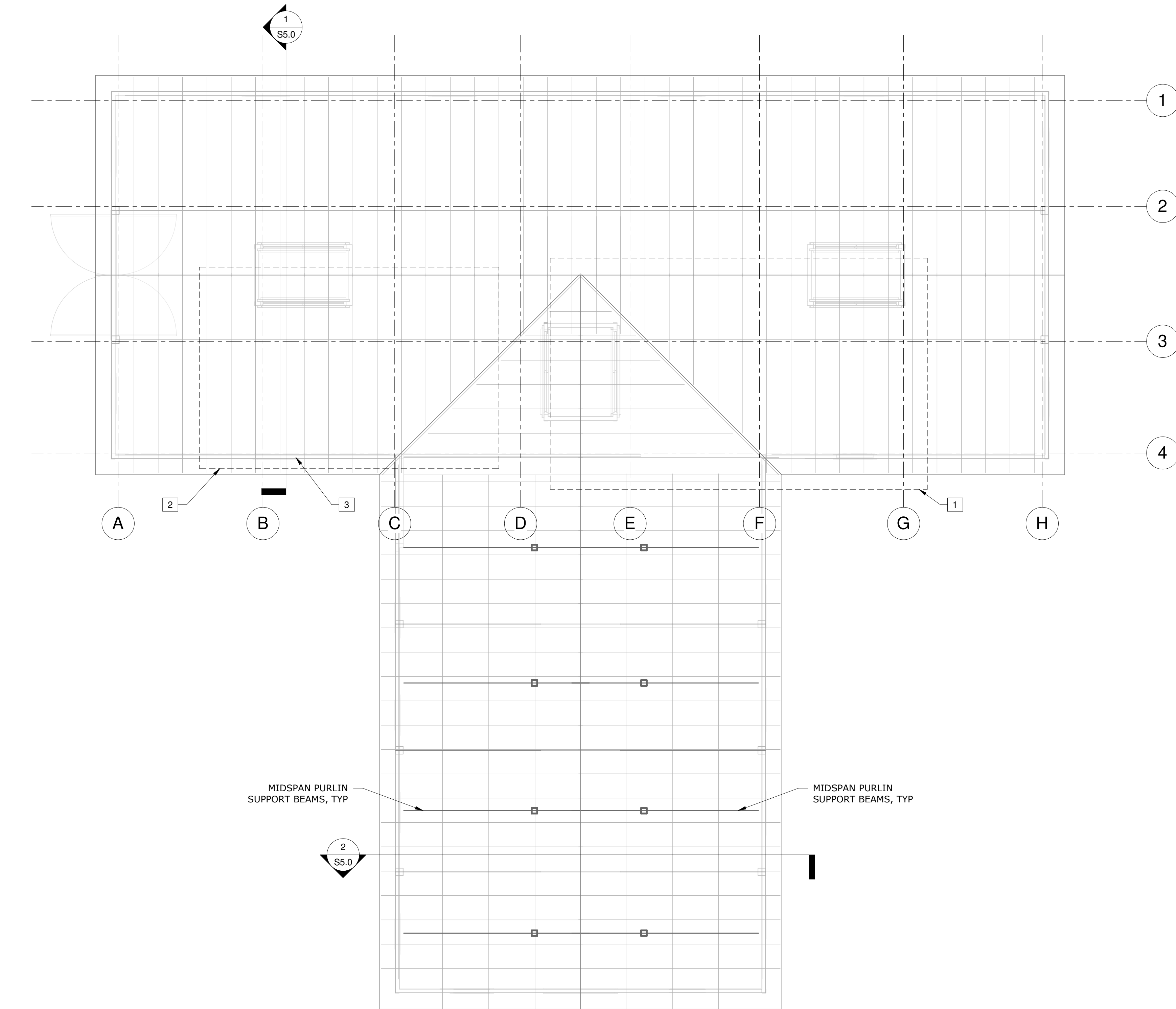
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### FLAG NOTES

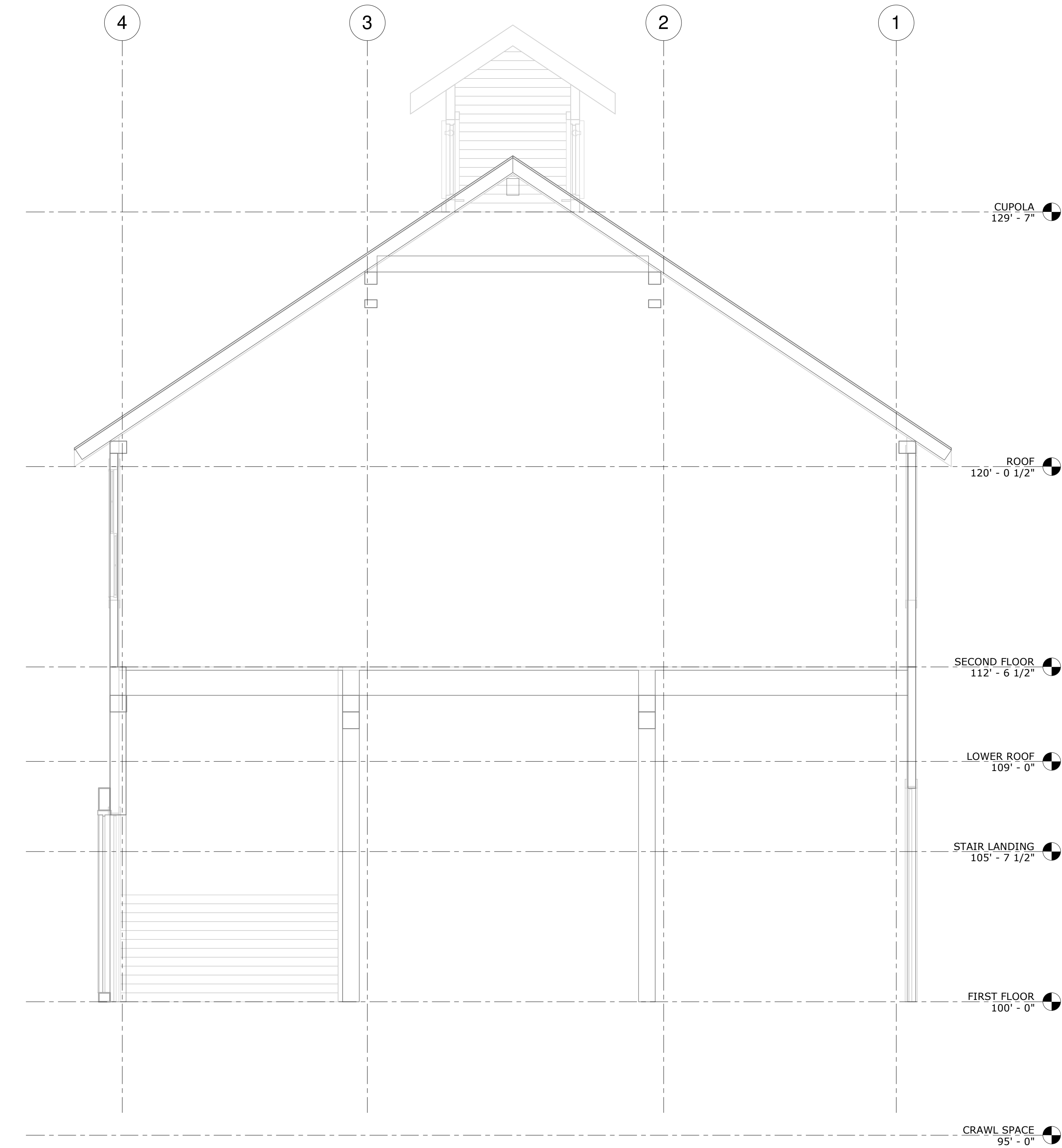
- 1 ROOF COLLAPSE AREA, REMOVE AND REPLACE FRAMING.
- 2 RAFTERS FAILING, REMOVE AND REPLACE.
- 3 FAILED WINDOW HEADER, REMOVE AND REPLACE.

### GENERAL NOTES

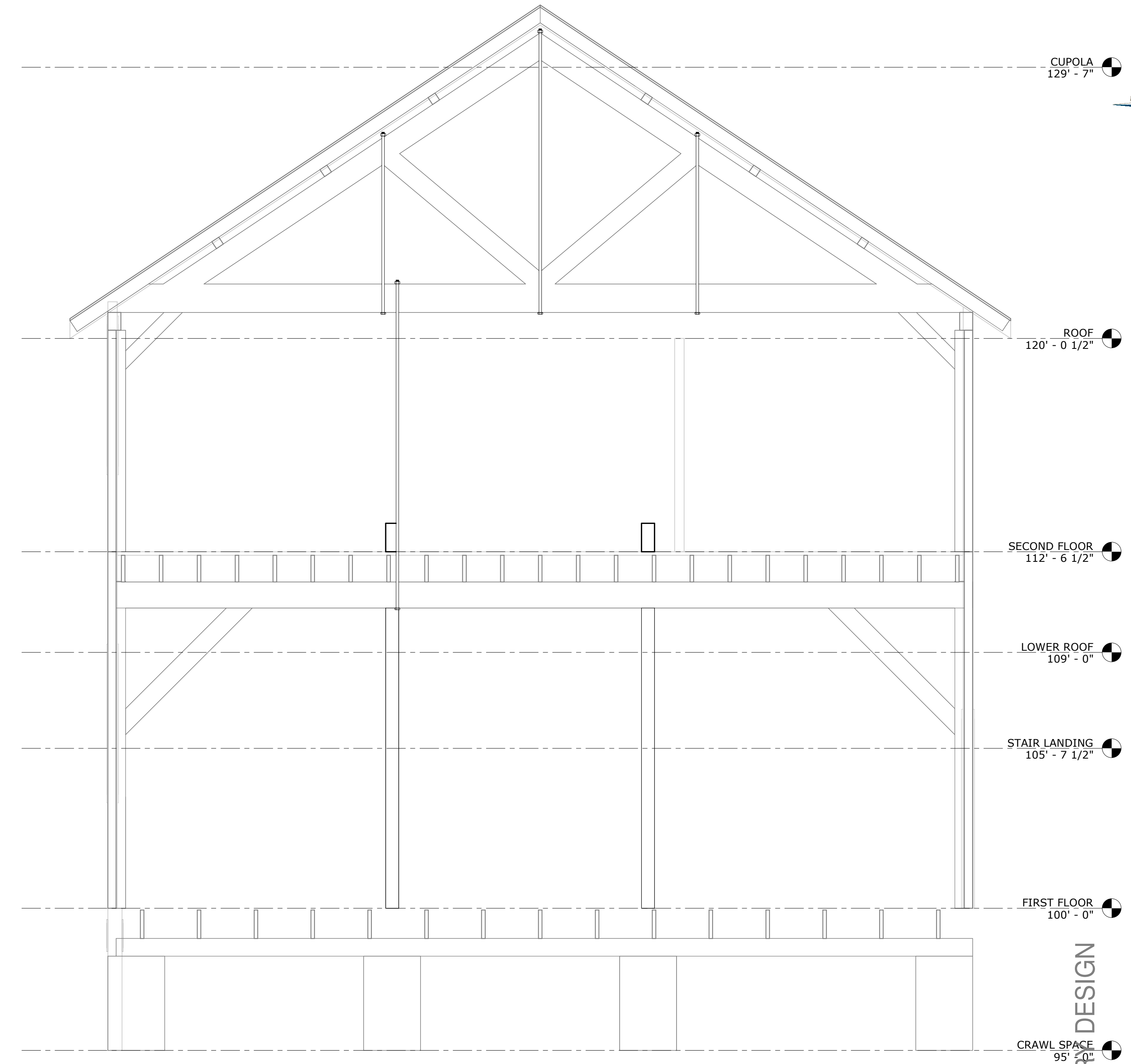
- ROOF SHEATHING TO BE 19/32" 40/20 RATING OSB W/ 8d NAILS @ 6" OC PANEL EDGES, 12" OC FIELD.
- WORKING PLATFORM TO BE ADDED BETWEEN WALLS ALONG GRID LINES 2 AND 3.



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



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



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