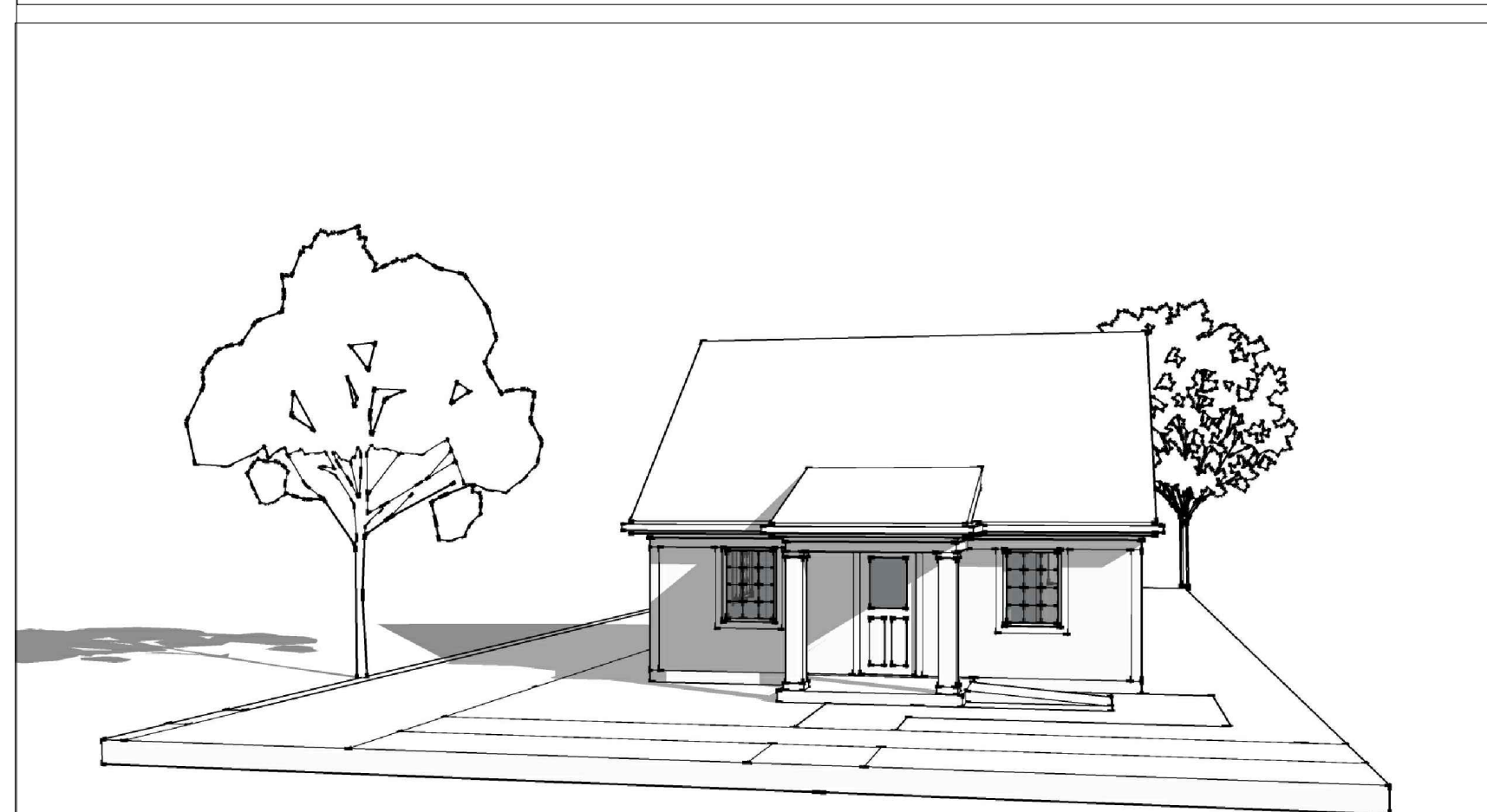


A Rendering - The Abbot Module A
No Scale



B Rendering - The Abbot Module B
No Scale

Assembly type	Standard	Description
wall assemblies	R-	_____
fenestration/openings	U-	_____
roof/ceiling assemblies	R-	_____
floors over conditioned spaces	R-	_____
slab on grade	R-	_____
crawl spaces	R-	_____
lower level walls: continuous insulation	R-	_____
lower level walls: cavity insulation	R-	_____

PROJECT DATA

Project Name: Prototype Cottage Residence

Project Address: _____

Building Owner: _____

Governing Codes
2015 Michigan Residential Code
Michigan Barrier Free Codes

R302.1(1) Exterior Walls

Exterior Wall Element	Minimum Fire Resistance Rating	Minimum Fire Resistance Separation
Walls	1-hour tested in accordance with STM E 1198 or URLL 263 with exposure from both sides	<5 feet
Projections	Not rated	0 hours => 5 feet
	Not allowed	N/A <2 feet
Openings in walls	Fire-resistance rated	1 hour on the underside > 2 feet to < 5 feet
	Not allowed	N/A > 5 feet < 3 feet
Penetrations	Unlimited	0 hours 3 feet 5 feet
	All	Comply with Section R302.4 <3 feet 3 feet

R302.2 Townhouses

Common wall separating townhouses shall be assigned a fire-resistance rating in accordance with Section R302.2

R302.3 Two-family dwellings

Dwelling units in two-family dwellings shall be separated from each other by wall and floor assemblies having not less than a 1-hour fire-resistance rating.

R302.4 Dwelling Unit Penetrations

Penetrations of wall or floor-ceiling assemblies required to be fire-resistance rated in accordance with Section R302.2 or R302.3 shall be protected in accordance with this section.

R302.5 Dwelling-garage opening and penetration protection

Openings and penetrations through the walls or ceilings separating the dwelling from the garage shall be in accordance with Sections R302.5.1 through R302.5.3.

R302.6 Dwelling-garage fire separation

The garage shall be separated as required by Table R302.6. Openings in garage walls shall comply with Section R302.5. Attachment of gypsum board shall comply with Table R702.3.5. The wall separation provisions of Table R302.6 shall not apply to garage walls that are perpendicular to the adjacent dwelling unit wall.

R302.6 Dwelling Garage Separation

SEPARATION	MATERIAL
From the residence and attic	Not less than 1/2-inch gypsum board or equivalent applied to the garage side
From habitable rooms above the garage	Not less than 5/8-inch Type X gypsum board or equivalent
Structure(s) supporting floor/ceiling assemblies used for separation required by this section	Not less than 1/2-inch gypsum board or equivalent
Garages located less than 3 feet from a dwelling unit on the same lot	Not less than 1/2-inch gypsum board or equivalent applied to the interior side of exterior walls that are within this area

302.7 Under-stair protection.
Enclosed accessible space under stairs shall have walls, under-stair surface and any soffits protected on the enclosed side with 1/2-inch gypsum board.

R302.11 Fireblocking.
In combustible construction, fireblocking shall be provided to cut off both vertical and horizontal concealed draft openings and to form an effective fire barrier between stories, and between a top story and the roof space.

R302.12 Draftstopping.
In combustible construction where there is usable space both above and below the concealed space of a floor-ceiling assembly, draftstops shall be installed so that the area of the concealed space does not exceed 1,000 square feet. Draftstopping shall divide the concealed space into approximately equal areas. Where the assembly is enclosed by a floor membrane above and a ceiling membrane below, draftstopping shall be provided in floor-ceiling assemblies under the following circumstances:
1. Ceiling is suspended under the floor framing.
2. Floor framing is constructed of truss-type open-web or perforated members.

R302.13 Fire protection of floors.
Floor assemblies that are not required elsewhere in this code to be fire-resistance rated, shall be provided with a 1/2-inch gypsum wall-board membrane, 5/8-inch wood structural panel membrane, or equivalent on the underside of the floor framing member. Penetrations or openings for ducts, vents, electrical outlets, lighting, devices, luminaires, wires, speakers, drainage, piping and similar openings or penetrations shall be permitted.

ANY PENETRATION IN THE RATED FLOOR/CEILING SHALL BE FIRE RATED.

Shop Drawings for ROOF TRUSSES to be provided in a deferred submittal, based on local conditions

DRAWING SCHEDULE

Module A Series (Accessory Dwelling)

- A1.0 Cover Sheet and Building Info
- A2.0 Foundation, Main, Upper and Roof Plans
- A3.0 Building Section & Wall Section
- A4.0 Exterior Elevations
- A5.0 Interior Elevations
- A6.0 Details & Schedules

Module B Series (Barrier-free Cottage)

- B1.0 Cover Sheet and Building Info
- B2.0 Foundation, Main and Roof Plans
- B3.0 Building Section & Wall Section
- B4.0 Exterior Elevations
- B5.0 Interior Elevations
- B6.0 Details & Schedules

Site Series

- L1.0 Alternate Site Plans

Electrical Series

- E0.1 Electrical Cover Sheet
- E1.1 Floor Plans Electrical
- E2.1 Floor Plans Electrical
- E5.1 Electrical Details
- E7.1 Electrical Schedules

Plumbing Series

- P0.1 Plumbing Cover Sheet
- P1.1 Plumbing Floor Plans
- P6.1 Plumbing Schedules & Details

HVAC Series

- M0.1 HVAC Cover Sheet
- M1.1 HVAC Floor Plans
- M6.1 HVAC Details & Schedules

Duplex Series

- X4.1 Front Elevation + Plan
MEP not provided for Duplex Series

Townhouse Series

- X5.1 Triplex Front Elevation + Plan
MEP not provided for Townhouse Series

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SYMBOL LEGEND

- Section Number
- Building Section
- Sheet Number
- Detail Number
- Detail flag
- Sheet Number
- Detail Numbers
- Interior Elevation
- Sheet Number
- Vertical Elevation
- Window Call Out
- Door Call Out
- Note Call Out

Owner

Architect

Engineer

Developer/Contractor

ABBREVIATIONS

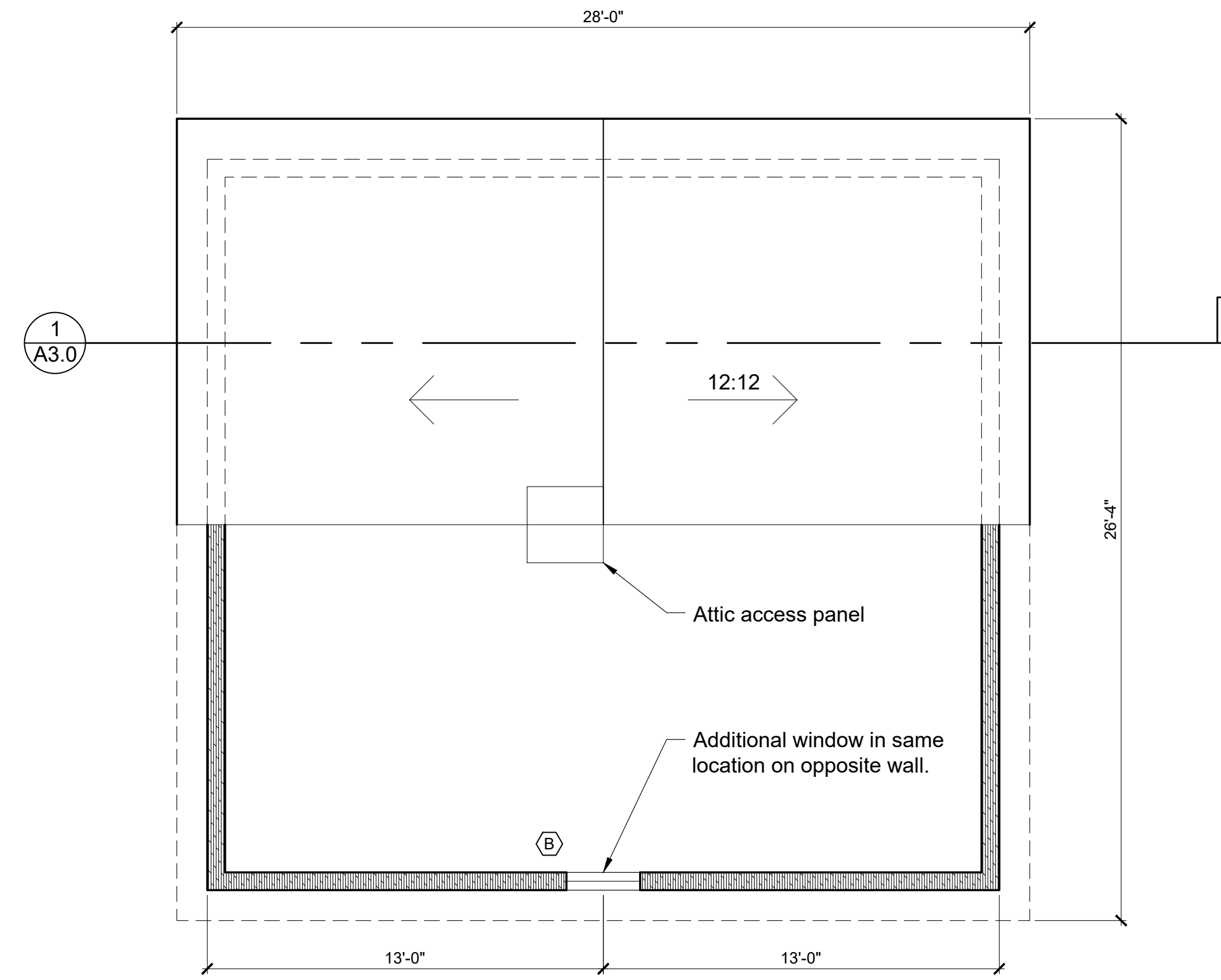
AB	Anchor Bolt	GALV	Galvanized	R	Radius
AC	Air Conditioning	GLB	Glue Laminated Beam	REF	Refrigerator
A/C	Asphaltic Concrete	GYP	Gypsum	REINF	Reinforced (ing)
ARCH	Architectural	HVAC	Heating & Cooling Equip	SC	Solid core
BLKG	Blocking	HRV	Heat Recovery Ventil.	SQFT	Square feet
CMU	Concrete Masonry Unit	HB	Hose Bib	SHTG	Sheathing
CONC	Concrete	HC	Hollow Core	SIM	Similar
CONT	Continuous	HDR	Header	SS	Stainless steel
DBL	Double	HORIZ	Horizontal	TBD	To be determined
DET	Detail	INSUL	Insulation	TO	Top of
DF	Douglas Fir	INT	Interior	TYP	Typical
DS	Downspout	MAX	Maximum	VERT	Vertical
DW	Dishwasher	MC	Medicine cabinet	W/	With
EA	Each	MFR	Manufacturer	WH	Water heater
EQUIP	Equipment	MIN	Minimum	W/O	Without
(E)	Equal	NTS	Not to Scale		
FF	Finish Floor	OC	On center		
FTG	Footing	PLYWD	Plywood		
GA	Gauge	RO	Rough opening		

BUILDING DATA

Module A Area	Module B Area	Heat Source: Electric Plumbing
Heated Area: 625 ft ²	Heated Area: 625 ft ²	
Porches: N/A	Front Porch: 40 ft ²	
Patio: N/A	Rear Stoop: 31 ft ²	
Garage: 625 ft ²	Garage: N/A	

DESIGN CRITERIA

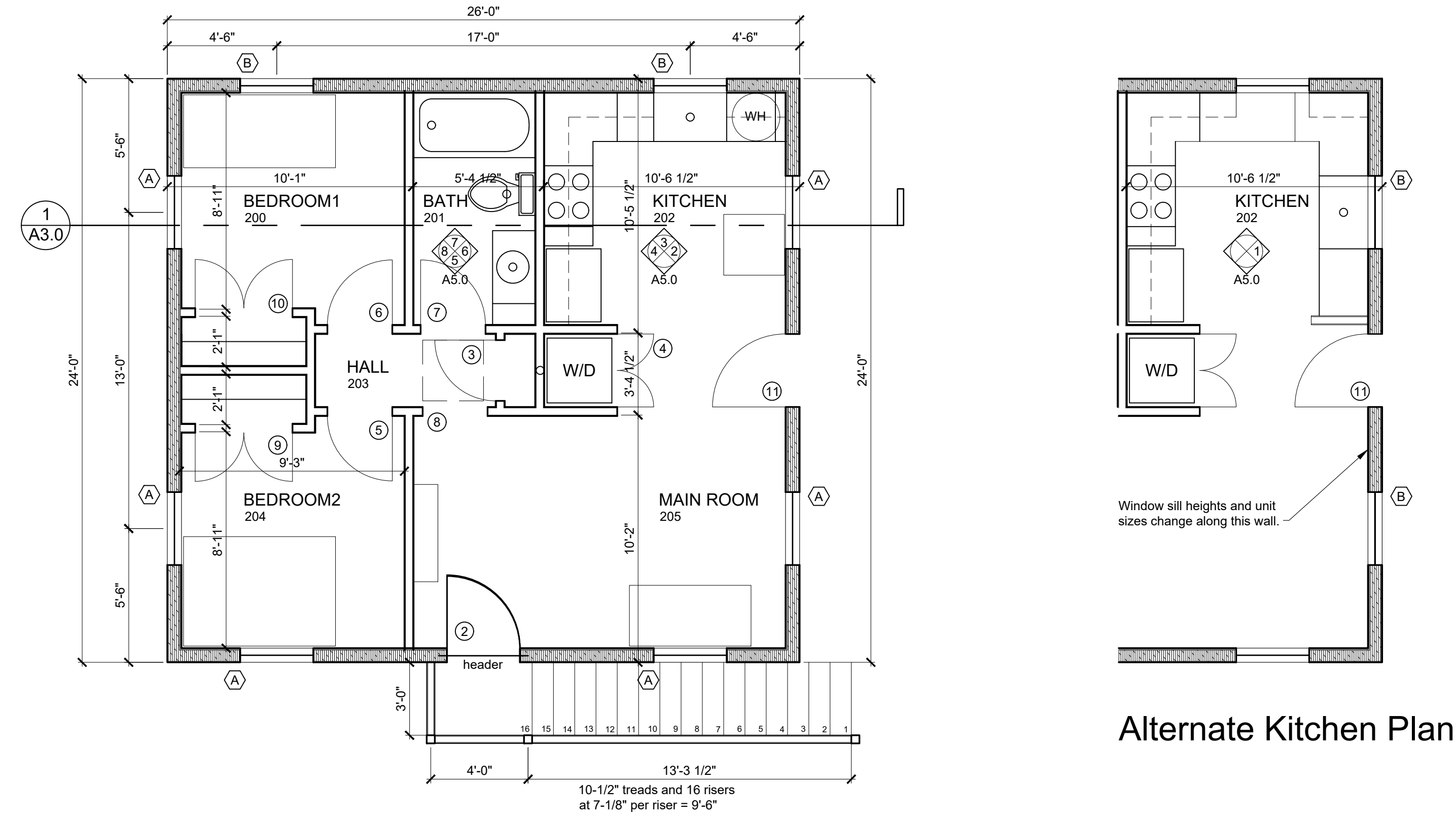
- Roof Dead: _____
- Roof Live: _____
- Wall Dead: _____
- Wind: _____
- Septic: _____
- Soil bearing: _____



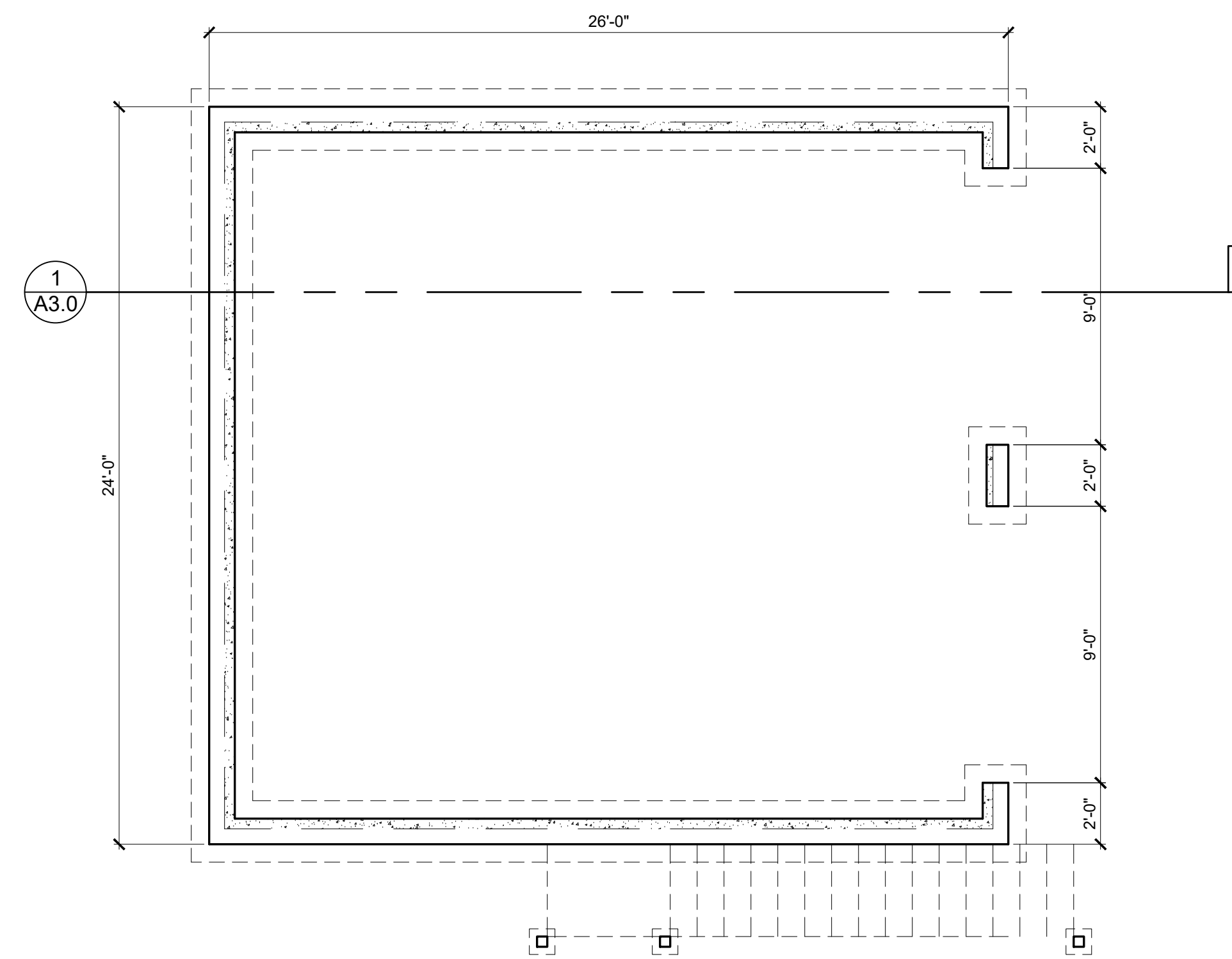
2 Module A Dwelling Unit Attic & Roof
1/4" = 1'-0"

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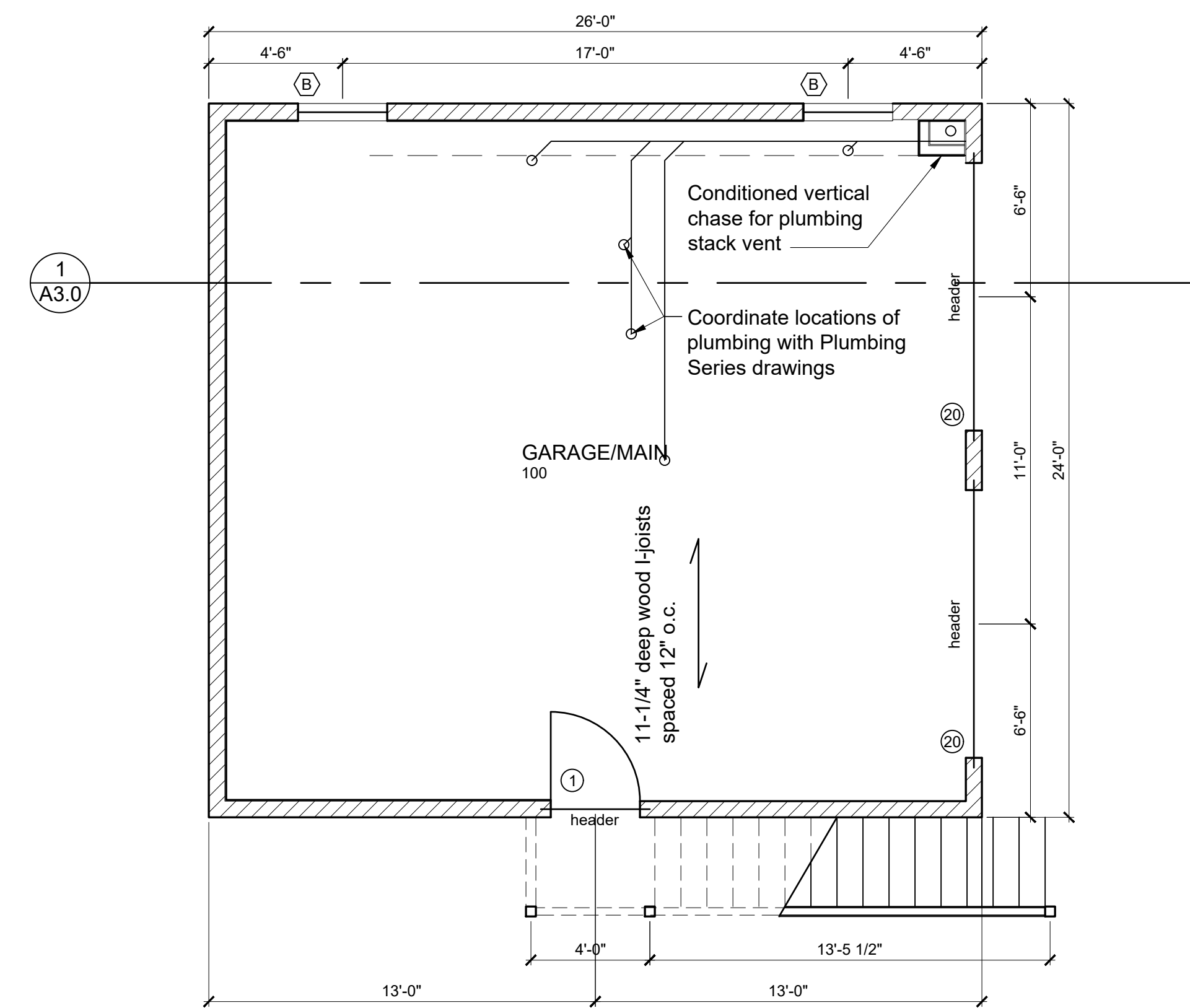
Do not scale.
Use figured dimensions only.
MML Review Set
15 October 2023



1 Module A Upper Level
1/4" = 1'-0"



4 Module A Foundation
1/4" = 1'-0"



3 Module A Main Level/Framing
1/4" = 1'-0"

NOT FOR CONSTRUCTION

THE ABBOT (Module A)
Michigan Municipal League

Job Number:
2023xx
Title:
FLOOR PLANS

A2.0

Three tab shingle over building paper and exterior grade sheathing. Apply ice and water shield at eave per manufacturers specifications

Truss with energy heel and batt insulation

5" ogee eavestrough over 1x fascia and soffit.

See Sheet A 6.0, Detail 5 for window header details.

Rout knee wall panel with 1-1/2" full recess to accommodate 2x let-in framing. See Sheet A 6.0, Detail 5 for notes and detail.

11-7/8" wood I-joists at 12" o.c., with batt insulation 5/8" Type-X drywall on ceiling. Verify member depth with manufacturer's literature.

2x6 framed wall with 5-1/2" batt insulation, interior 1/2" Type X painted drywall, double top plates and treated 2x6 sill plate.

Painted wood siding over furring strips and 30# felt building paper drainage plane.

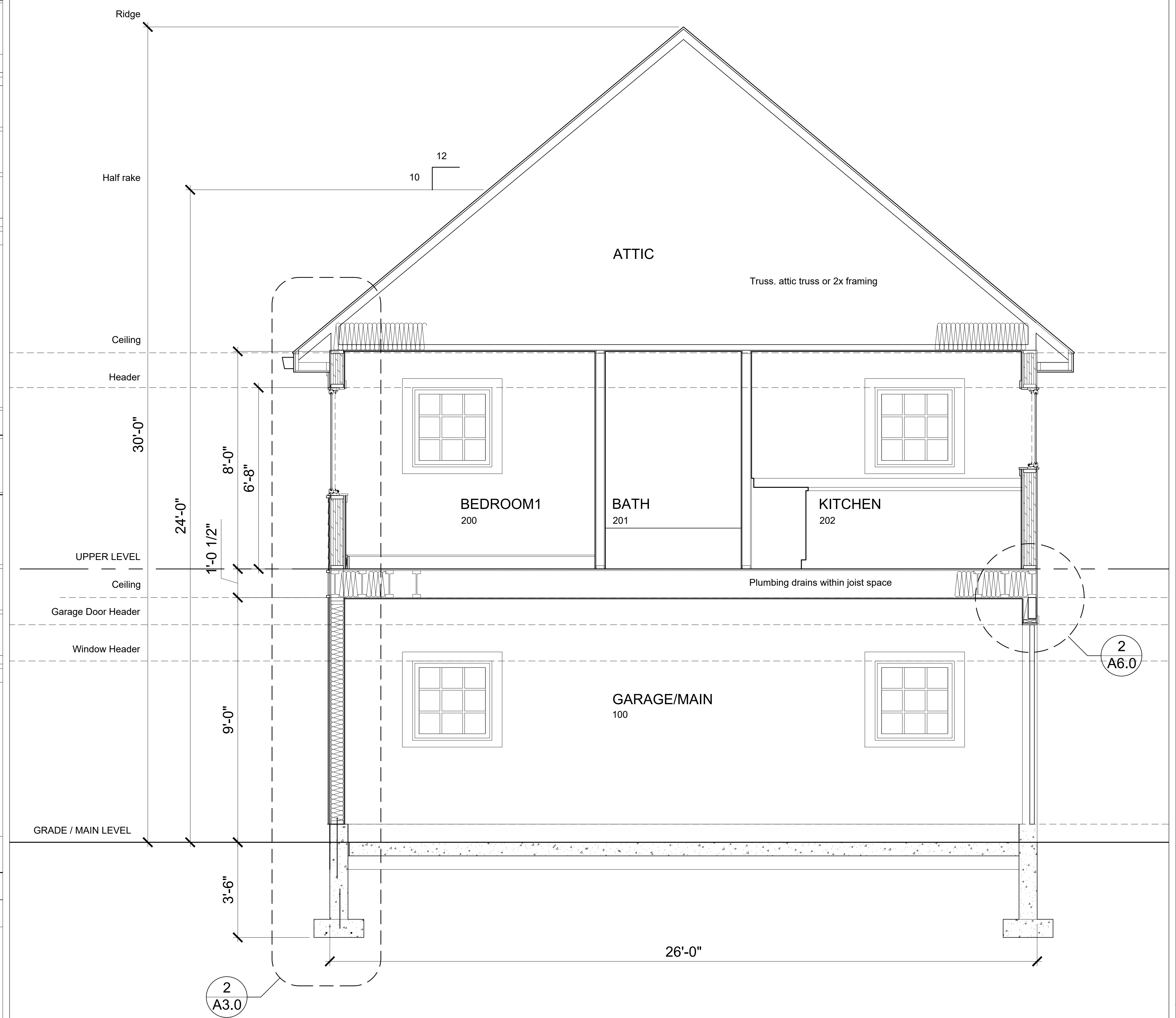
Protective membrane (also acts as capillary break and termite barrier) sealed to concrete

Ground slopes away from wall at 5% (6 inches per 10 feet)

Poured concrete footing and foundation wall with 8" curb. Anchor curb to sill plate with minimum 1/2" anchor bolts spaced a maximum of 60" o.c. embedded a minimum of 7" into concrete.

2 Module A Wall Section
1/2" = 1'-0"

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1 Module A Section
1/2" = 1'-0"

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15 October 2023

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THE ABBOT (Module A)
Michigan Municipal League

Job Number:
2023xx
Title:
BUILDING AND WALL SECTION

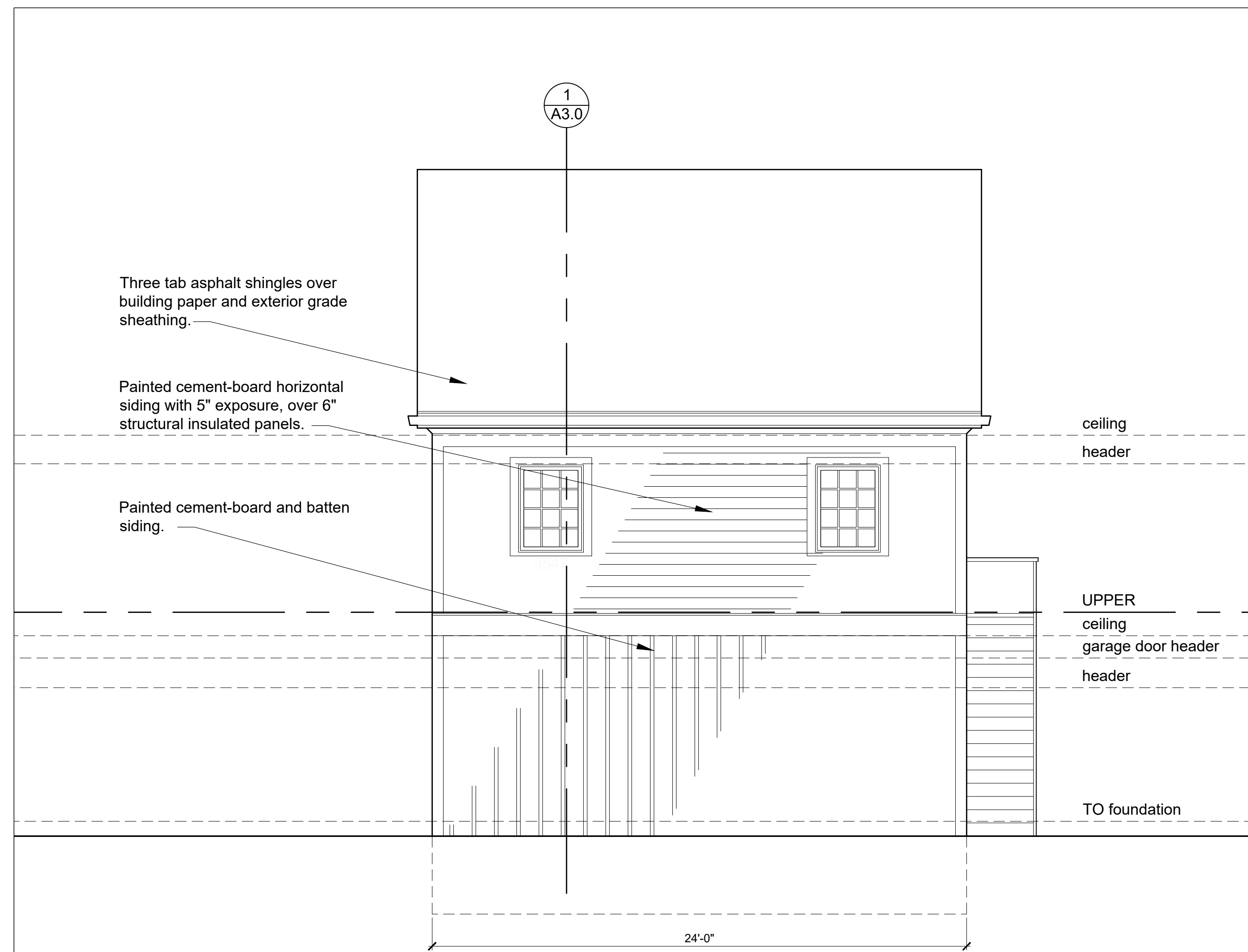
A3.0

NOT FOR CONSTRUCTION

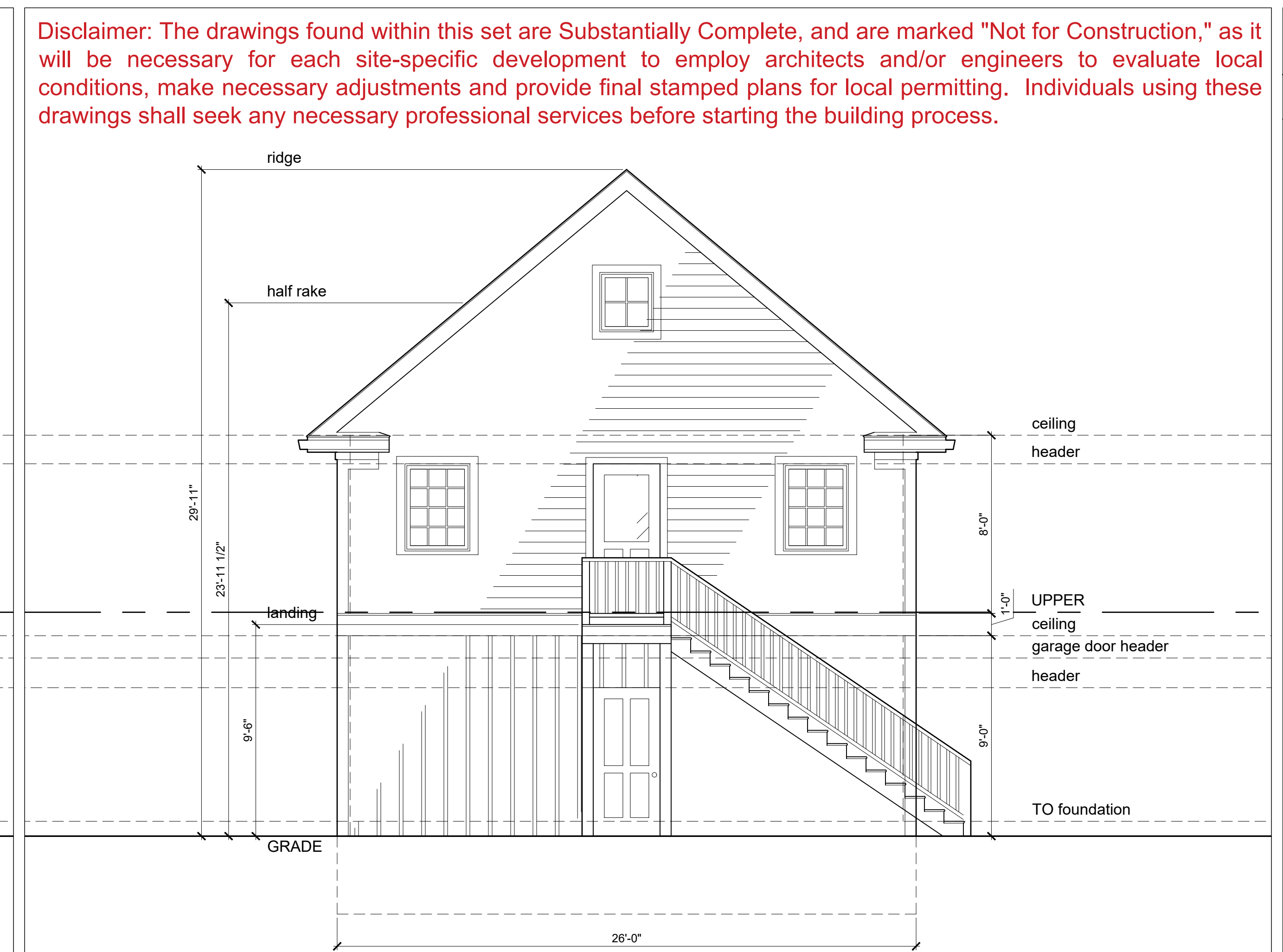
THE ABBOT (Module A)
Michigan Municipal League

A4.0

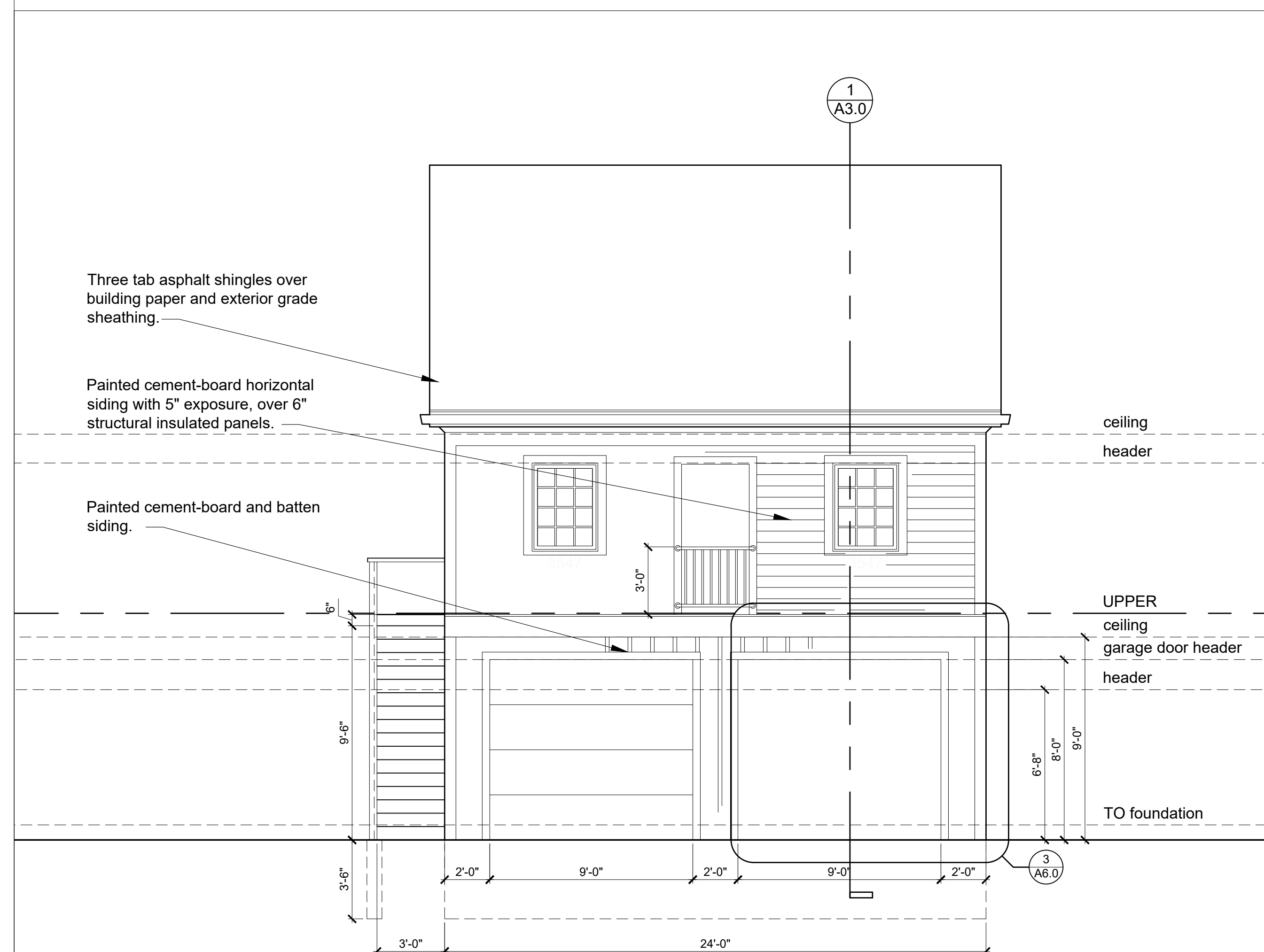
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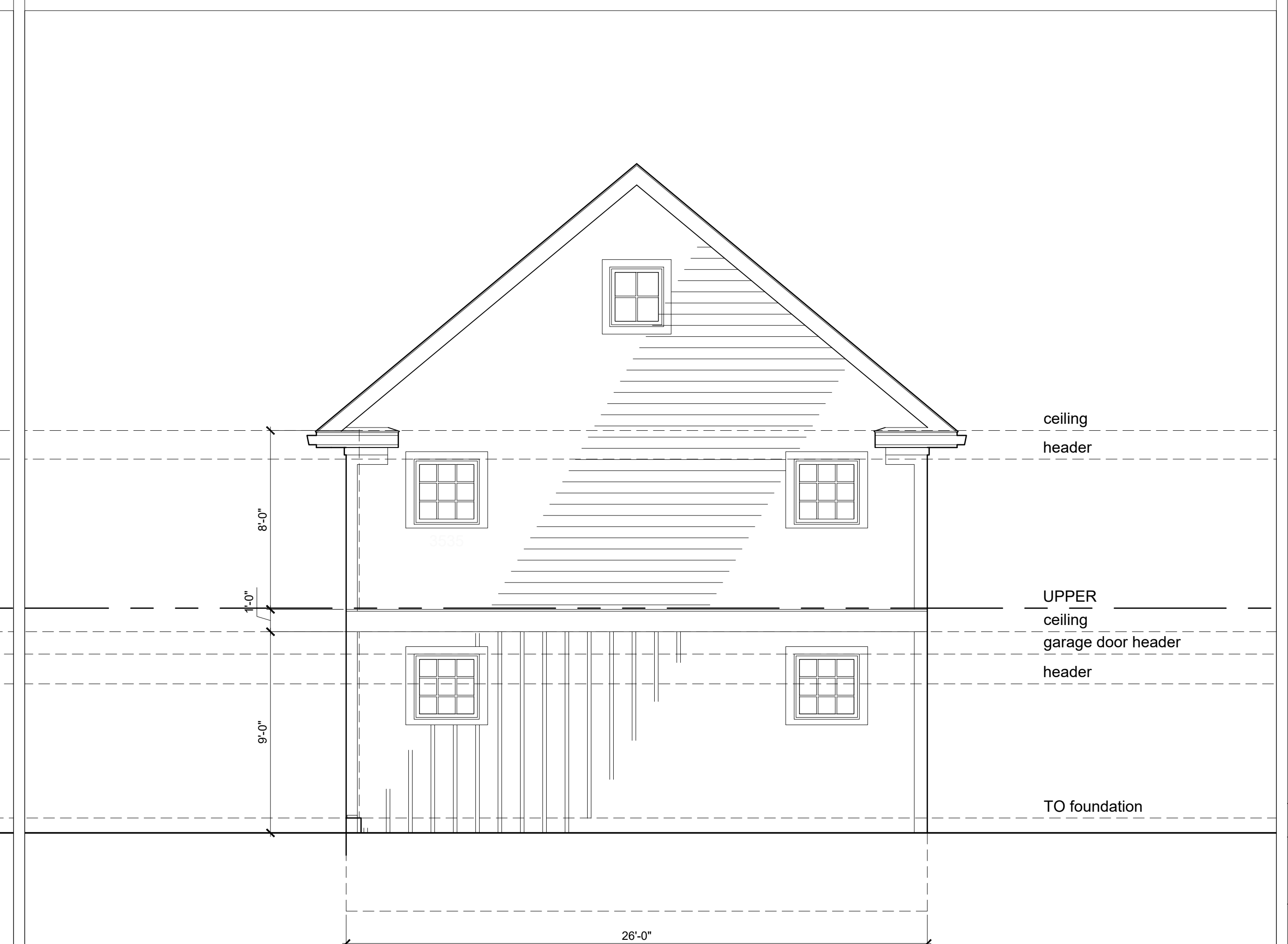
2 Module A Rear Elevation
1/4" = 1'-0"



2 Module A Side Elevation
1/4" = 1'-0"



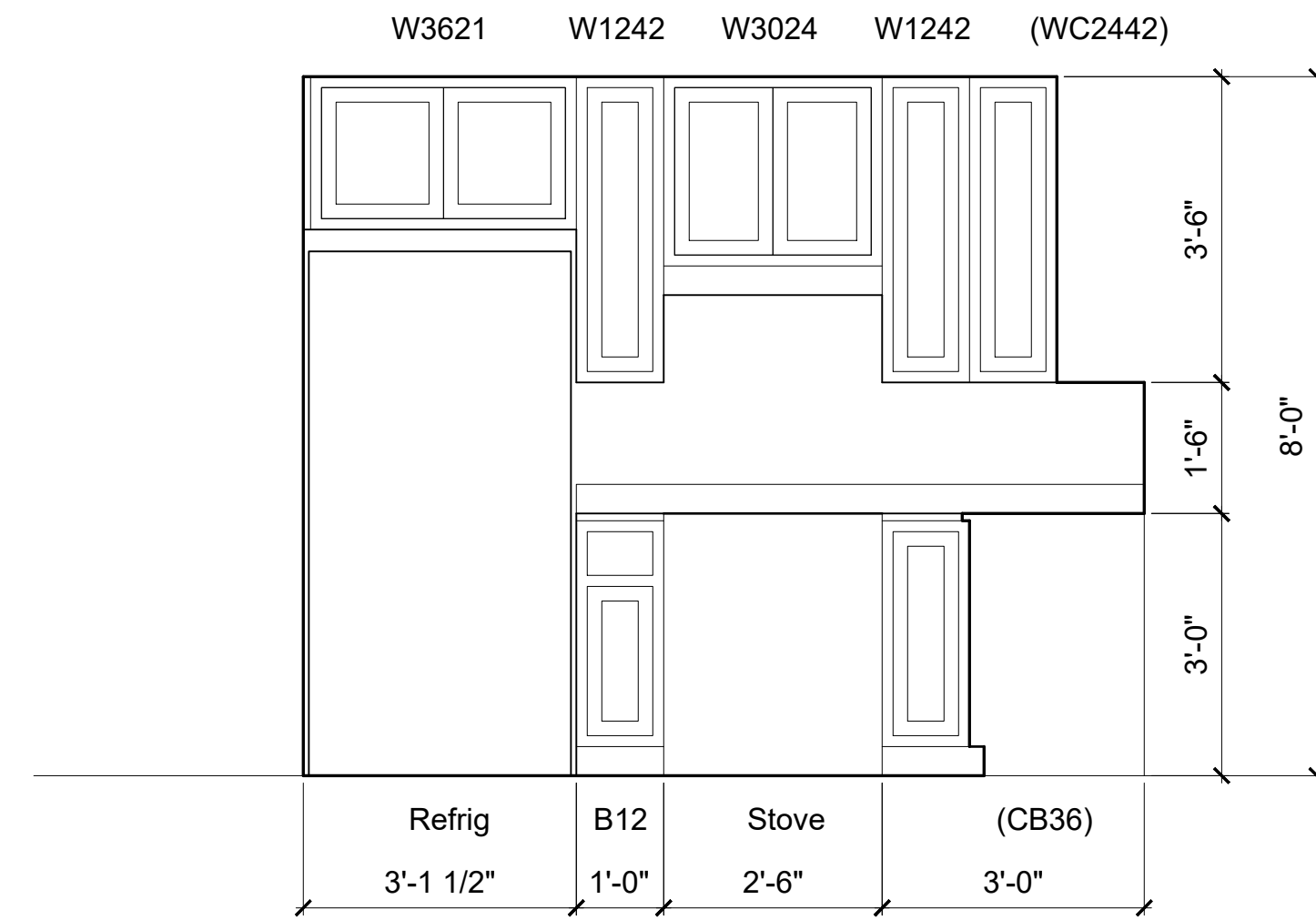
3 Module A Front Elevation
1/4" = 1'-0"



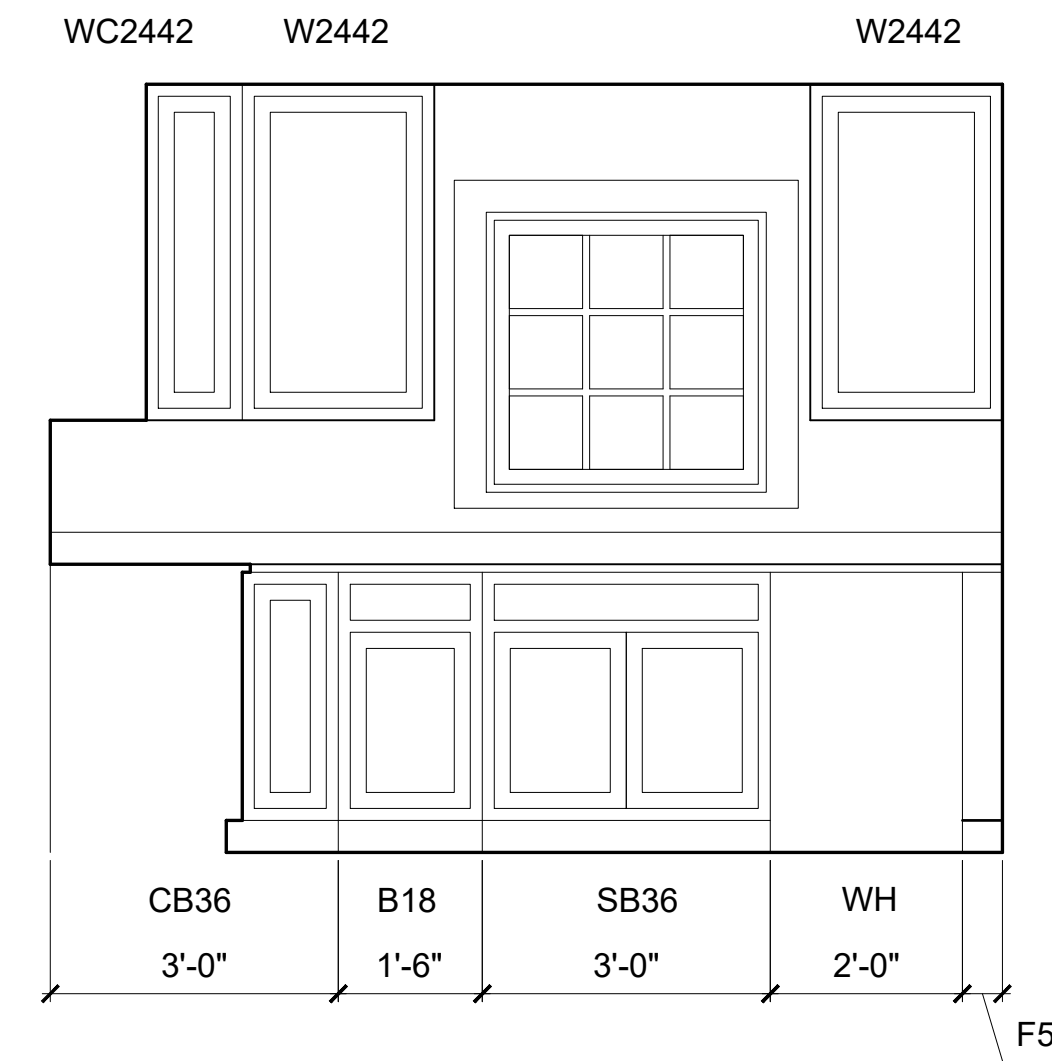
4 Module A Side Elevation
1/4" = 1'-0"

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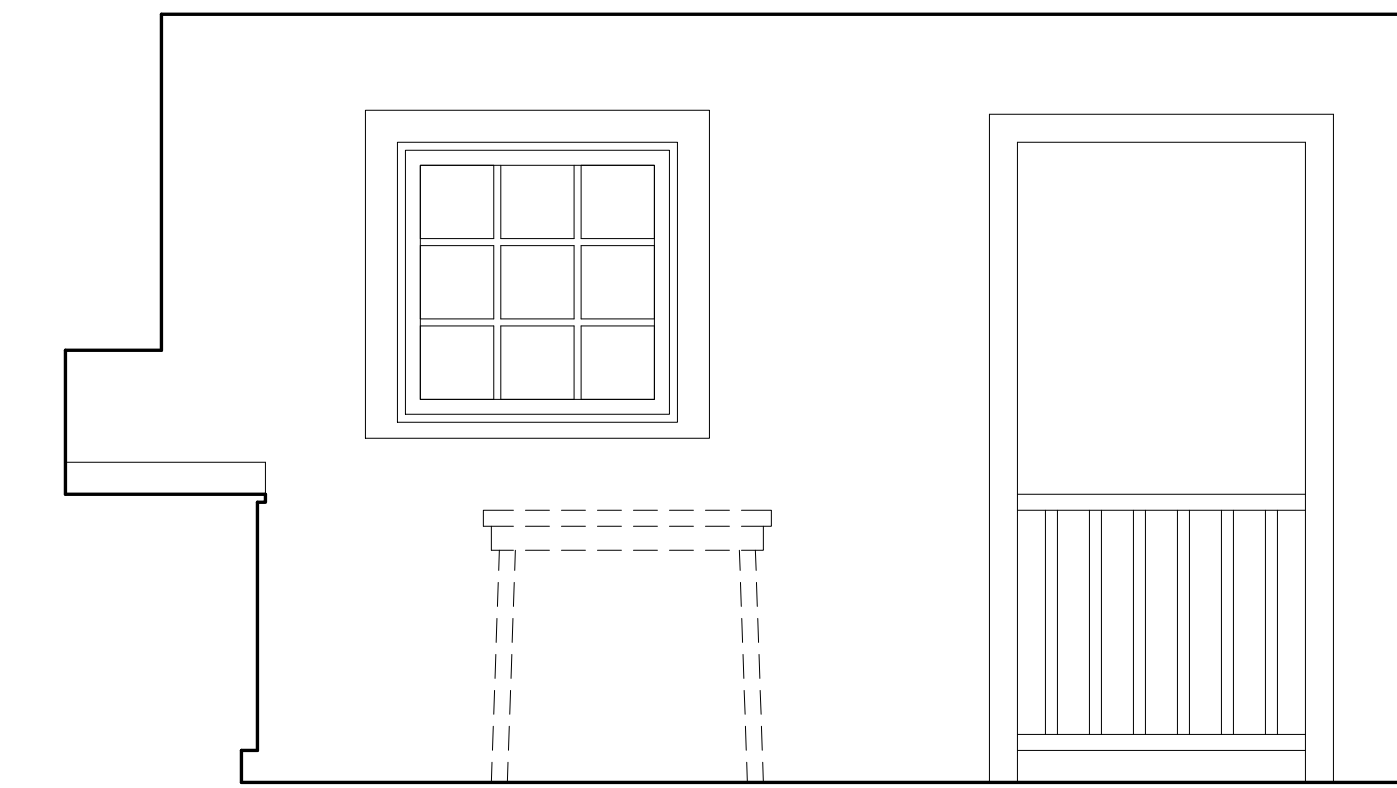
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③ Refrig/Stove Elevation

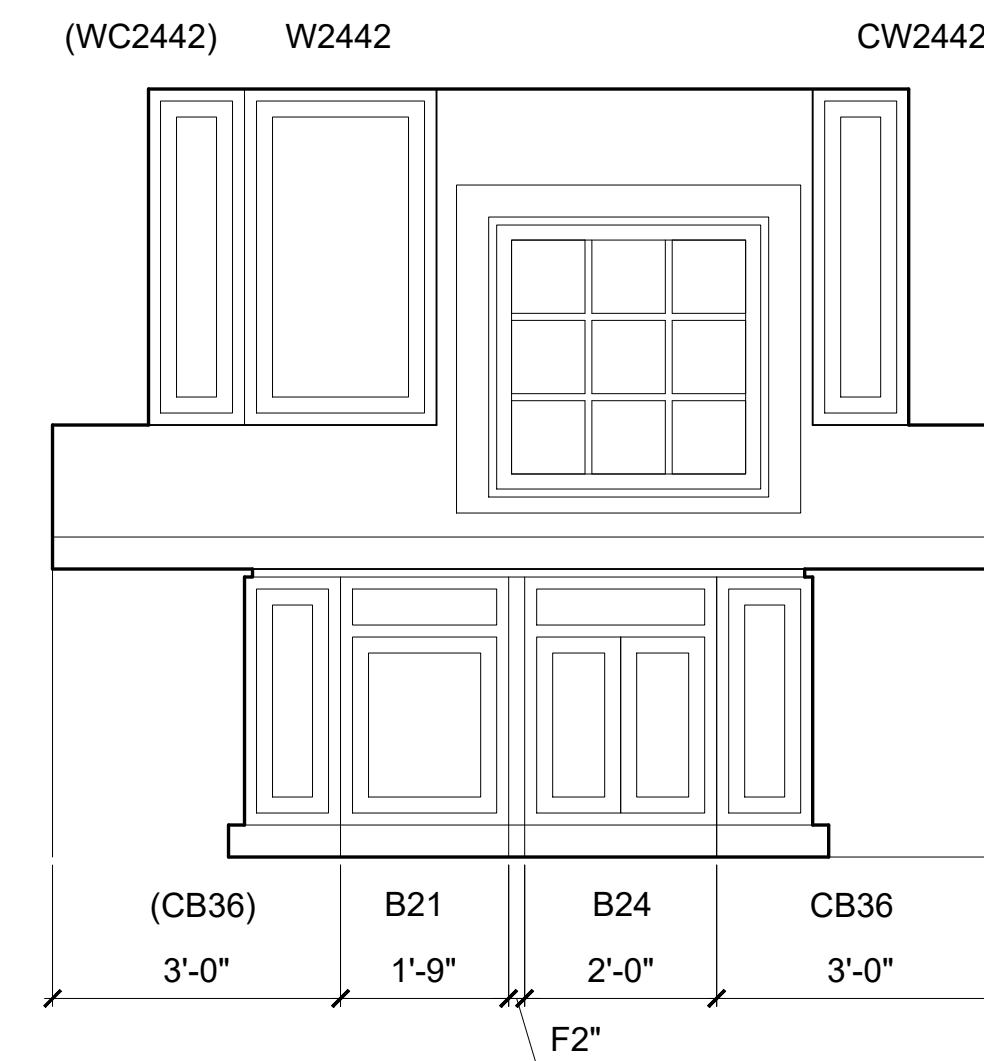


② Sink Elevation



① Kitchen Table Option

Module A Kitchen Elevations
1/2" = 1'-0"

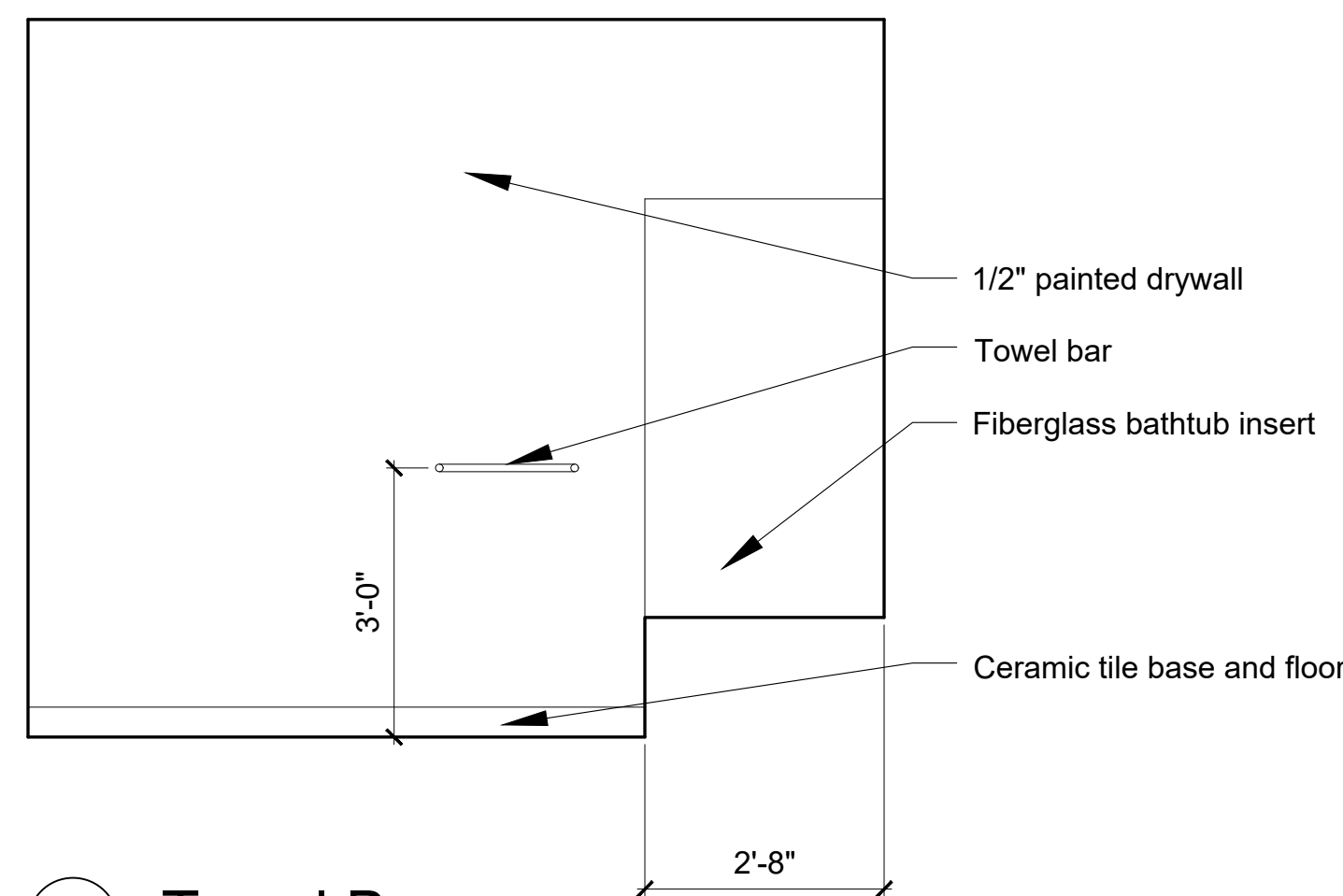


⑥ Alternate Sink Elevation

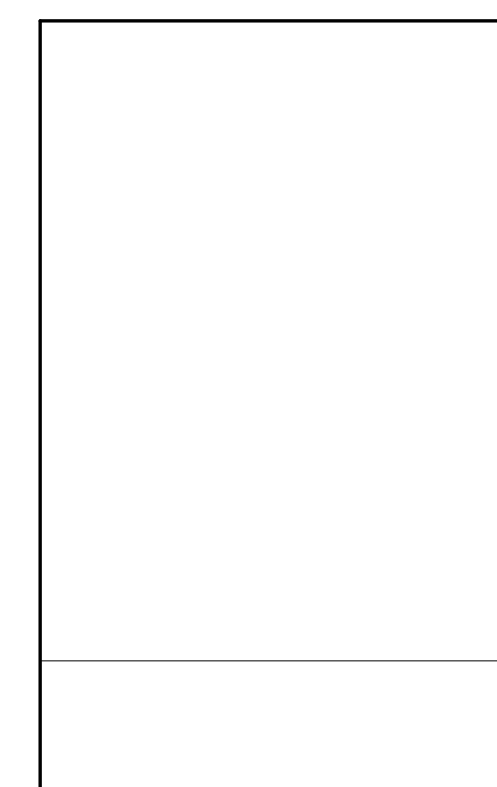


⑤ Alternate Cabinet Elevation

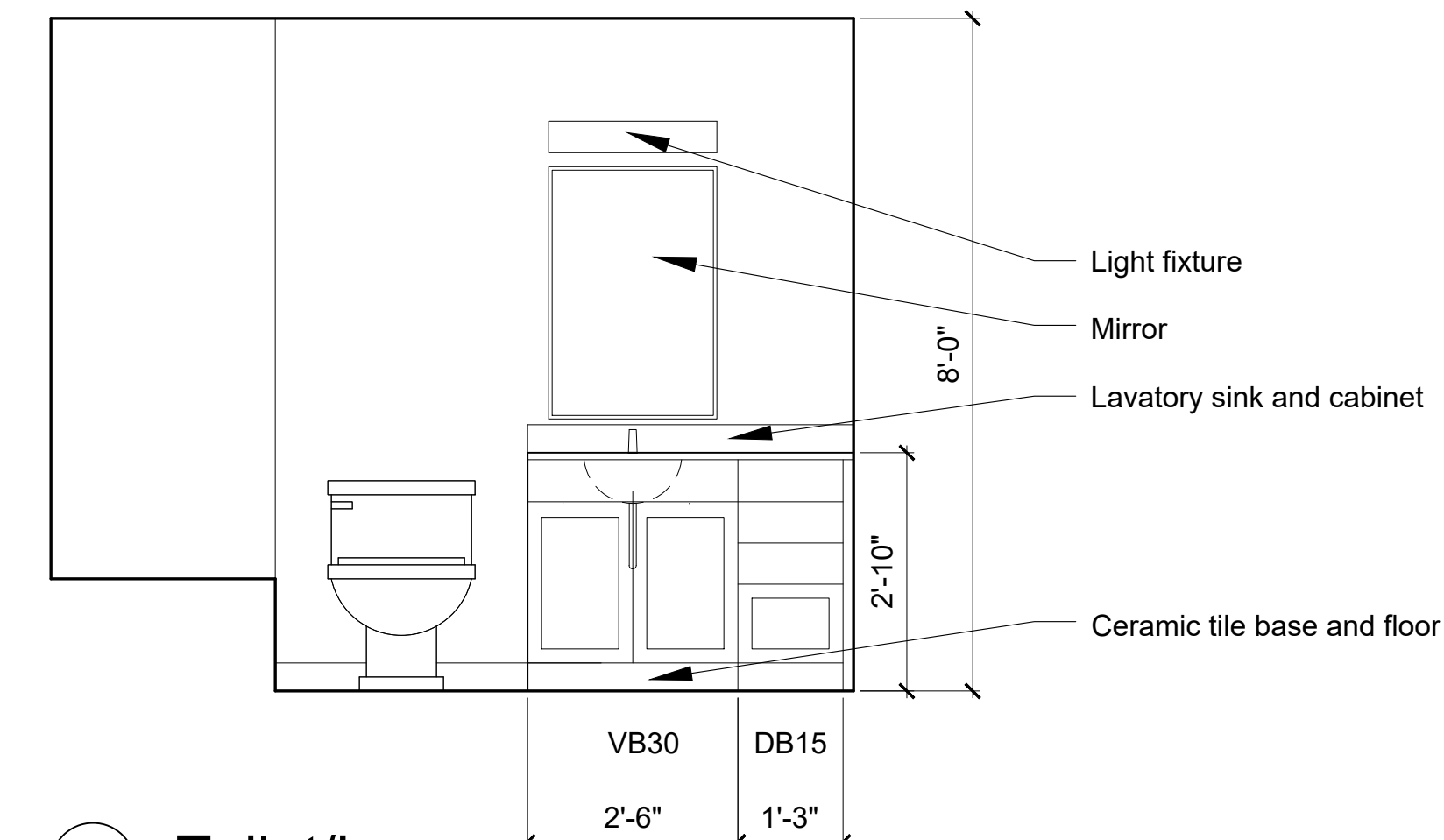
Module A Alternate Kitchen Elevations
1/2" = 1'-0"



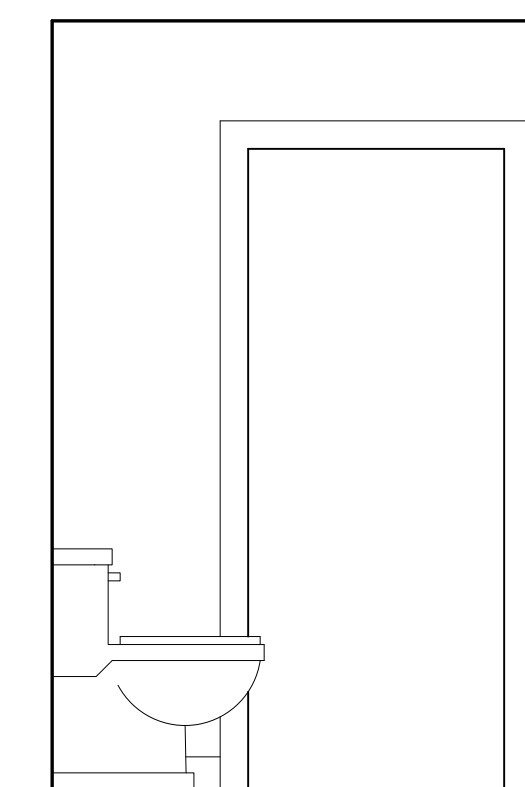
⑧ Towel Bar



⑦ Bath



⑥ Toilet/Lav



⑤ Door

Module A Bathroom Elevations
1/2" = 1'-0"

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THE ABBOT (Module A)
Michigan Municipal League

Job Number:
2023xx
Title:
INTERIOR
ELEVATIONS

A5.0

FINISH SCHEDULE

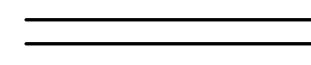
NO.	ROOM	FLOOR	BASE	WALLS	CEILING	NOTES
100	GARAGE	CONC	-	-	-	Ceiling treatment
200	BEDROOM1	CPT	WOOD	PAINT2	PAINT1	
201	BATH	VINYL	WOOD	PAINT2	PAINT1	
202	KITCHEN	VINYL	WOOD	PAINT2	PAINT1	
203	HALL	CPT	WOOD	PAINT2	PAINT1	
204	BEDROOM2	CPT	WOOD	PAINT2	PAINT1	
205	MAIN ROOM	CPT	WOOD	PAINT2	PAINT1	

Finish Descriptions

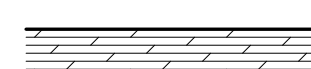
Mark	Description	Manufacturer	Collection	Color
PAINT	Painted drywall			
VINYL	Sheet Vinyl			
CPT1	Carpet			
WOOD	Wood Base			
VB	Vinyl Base			

WALL TYPES

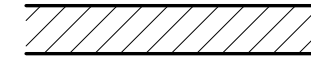
3-1/2" wood stud frame interior partition wall, finished with 1/2" drywall, primed and painted



6" Structural Insulated Panel (SIP), finished with 1/2" drywall, primed and painted on the interior and exterior cladding



5-1/2" wood stud frame with 5-1/2" batt insulation, finished with 1/2" primed and painted Type X drywall interior and exterior cladding.

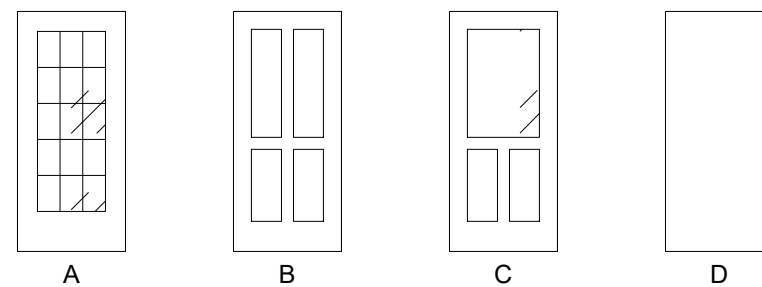


WINDOW SCHEDULE

MARK	SIZE	ROUGH OPG	TYPE	NOTES
A	36" W x 48" H		CASEMENT	Sized for egress
B	36" W x 36" H		CASEMENT	
C	29" W x 32" H		CASEMENT	

DOOR SCHEDULE

MARK	ID	SIZE	SWING	MATERIAL	HARDWARE	NOTES
1	C	36" x 80"	LEFT	STEEL	EGRESS	
2	C	36" x 80"	LEFT	STEEL	EGRESS	
3	C	30" x 80"	RIGHT	WOOD	CLOSET	
4	B	32" x 80"	PAIR	WOOD	CLOSET	Hinged pair
5	B	32" x 80"	LEFT	WOOD	PRIVACY	
6	B	32" x 80"	RIGHT	WOOD	PRIVACY	
7	B	32" x 80"	LEFT	WOOD	PRIVACY	
8	D	32" x 80"	OPEN	-	-	Cased opening
9	B	32" x 80"	PAIR	WOOD	CLOSET	Hinged pair
10	B	32" x 80"	PAIR	WOOD	CLOSET	Hinged pair
11	C	32" x 80"	LEFT	STEEL	EGRESS	Exterior guardrail installed in opening



Door Types

Hardware Descriptions

Schlage or approved equal

GENERAL

Handles, pulls, latches, locks, and other operable parts on doors and gates shall comply with 309.4. Operable parts of such hardware shall be 34 inches minimum and 48 inches maximum above the finish floor or ground.

CLOSET

Latch is retracted with handle from either side.

EGRESS

Latch is retracted with handle from inside and keyed lock from the outside.

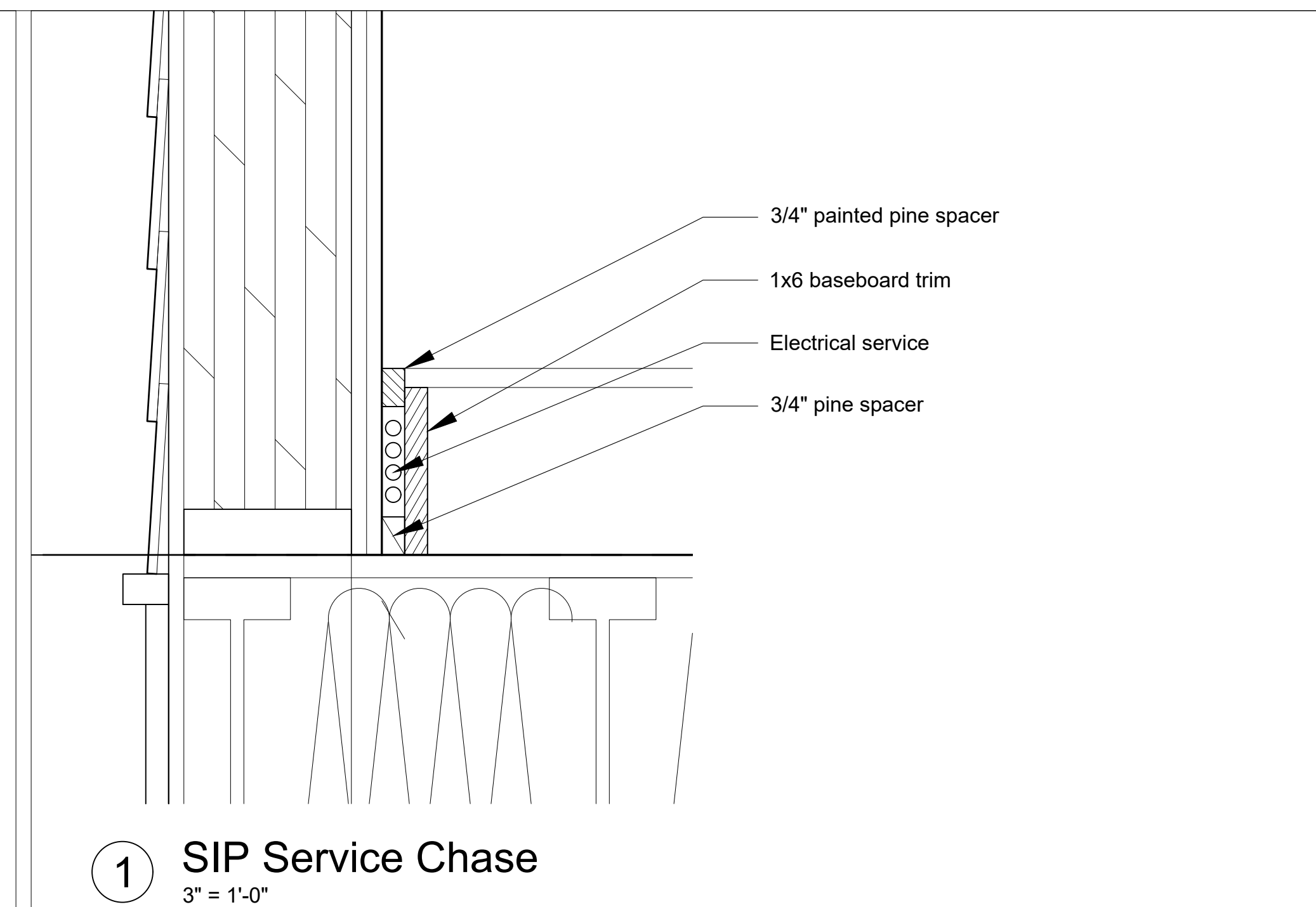
PASSAGE

Latch is retracted by grip on either side.

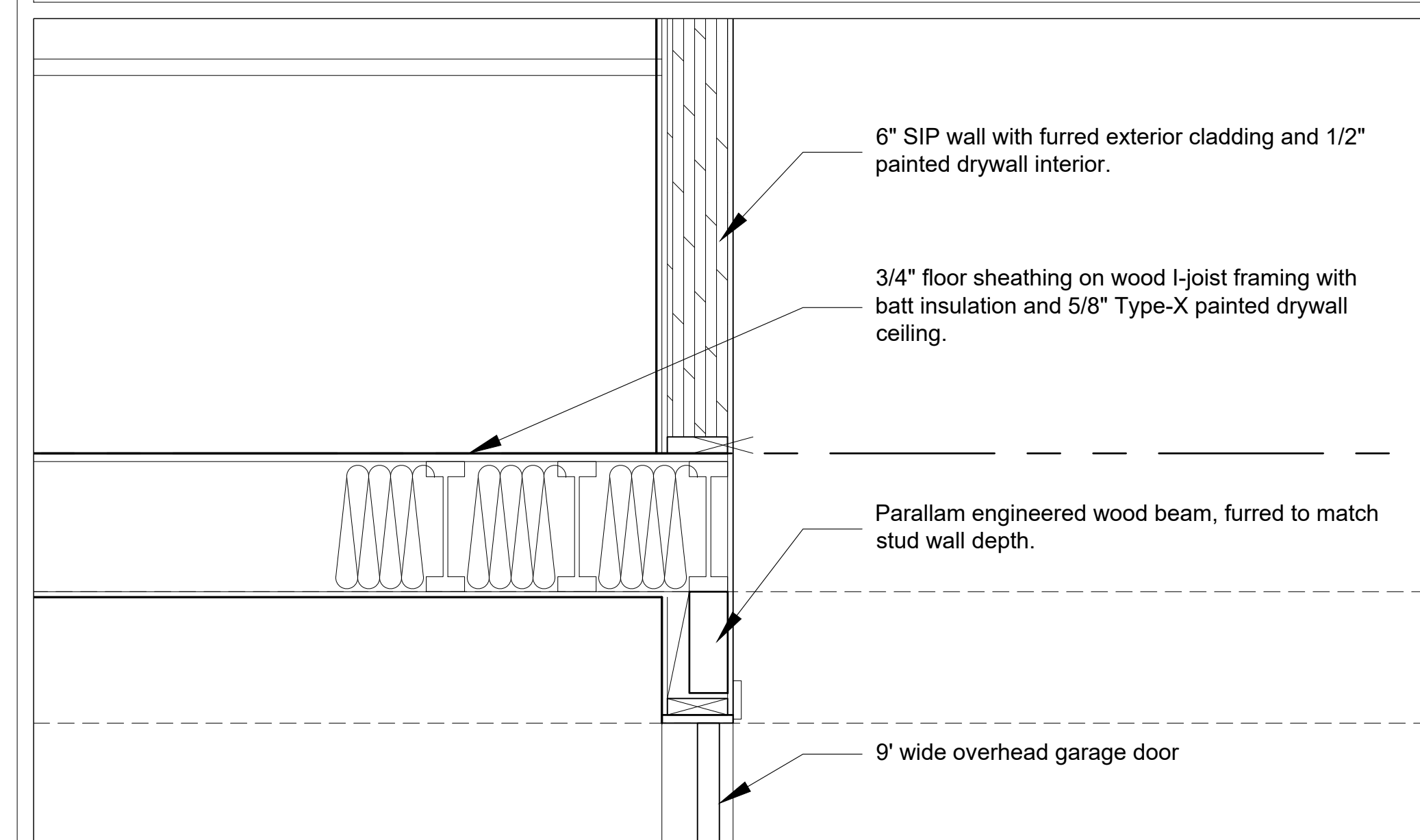
PRIVACY

The latchbolt is retracted by the inside grip. The latchbolt is retracted by the outside grip unless the grip is locked by a thumb-turn from the inside.

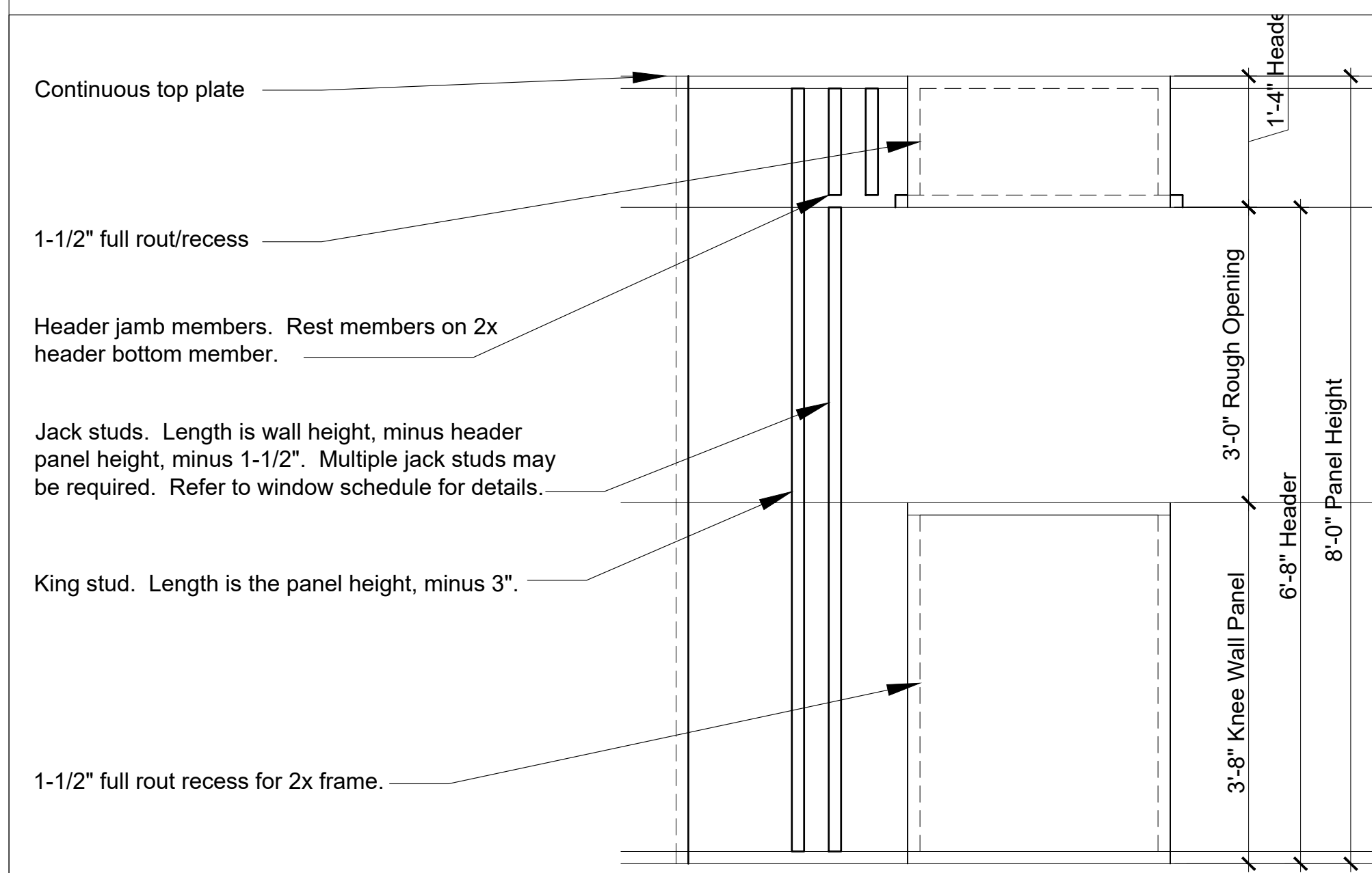
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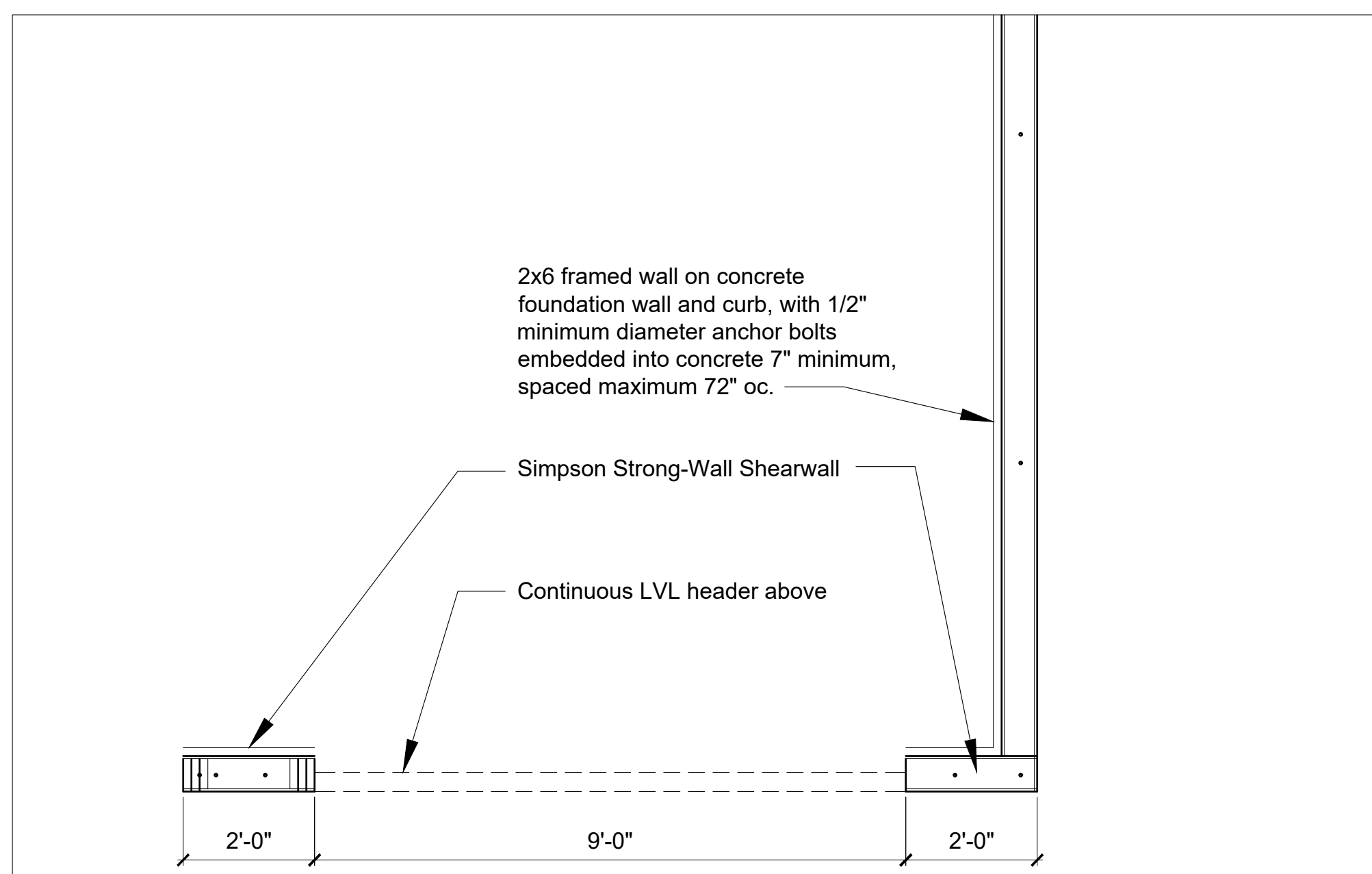
① SIP Service Chase
3" = 1'-0"



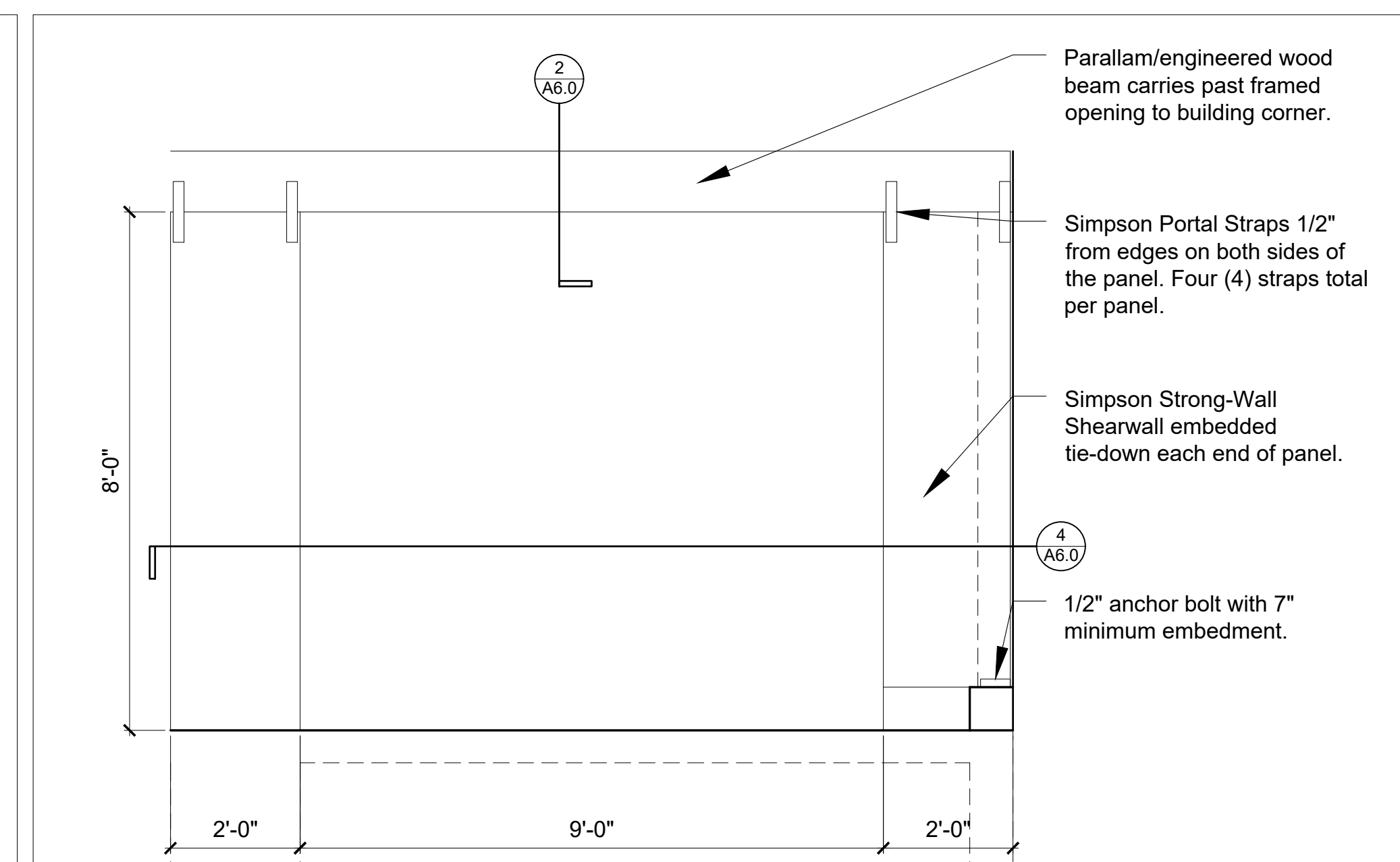
② Garage Header Detail
1" = 1'-0"



⑤ SIP Header Assembly
3/4" = 1'-0"



④ Portal Frame Details
1/2" = 1'-0"



③ Portal Frame Details
1/2" = 1'-0"

Do not scale. Use figured dimensions only.

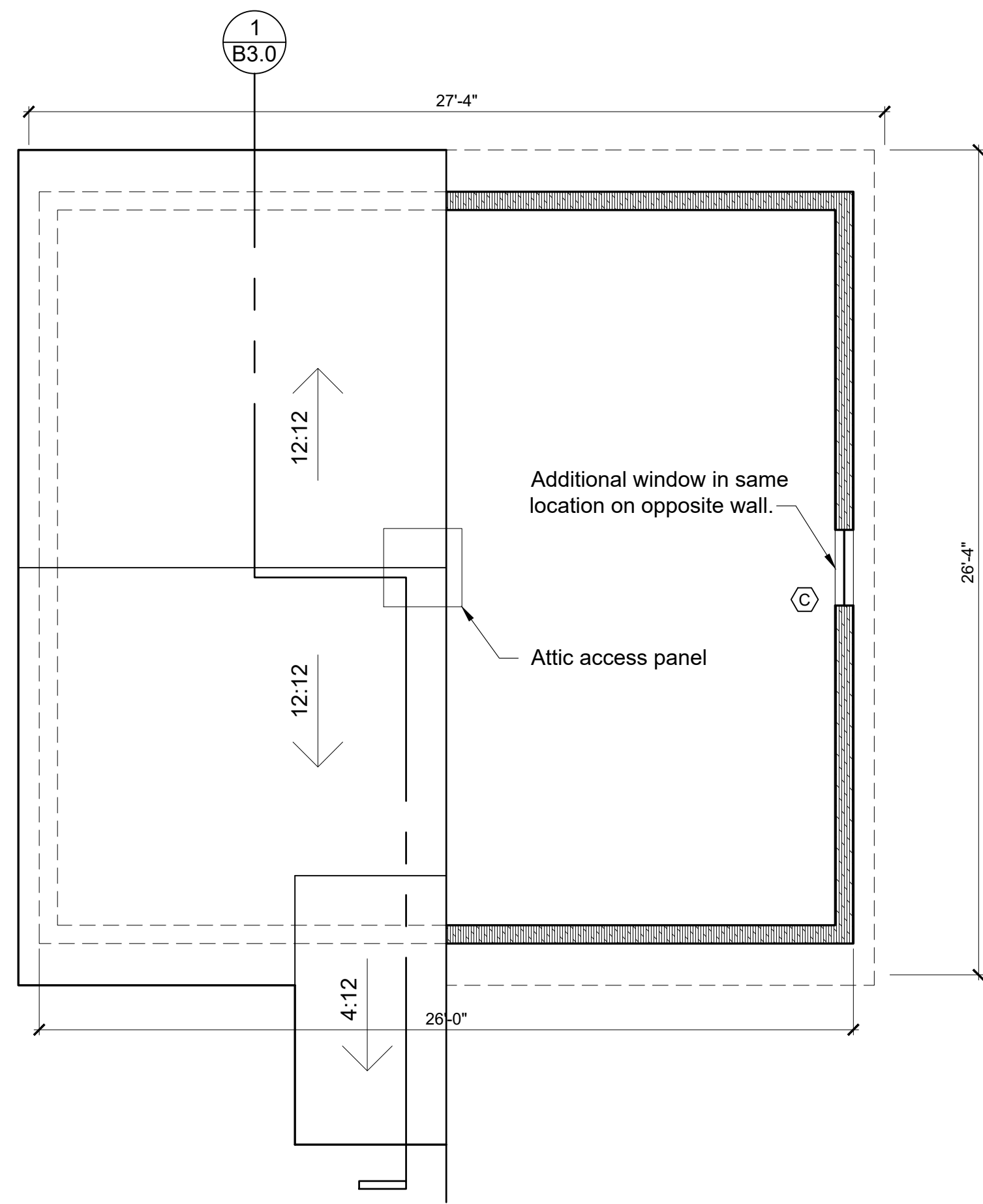
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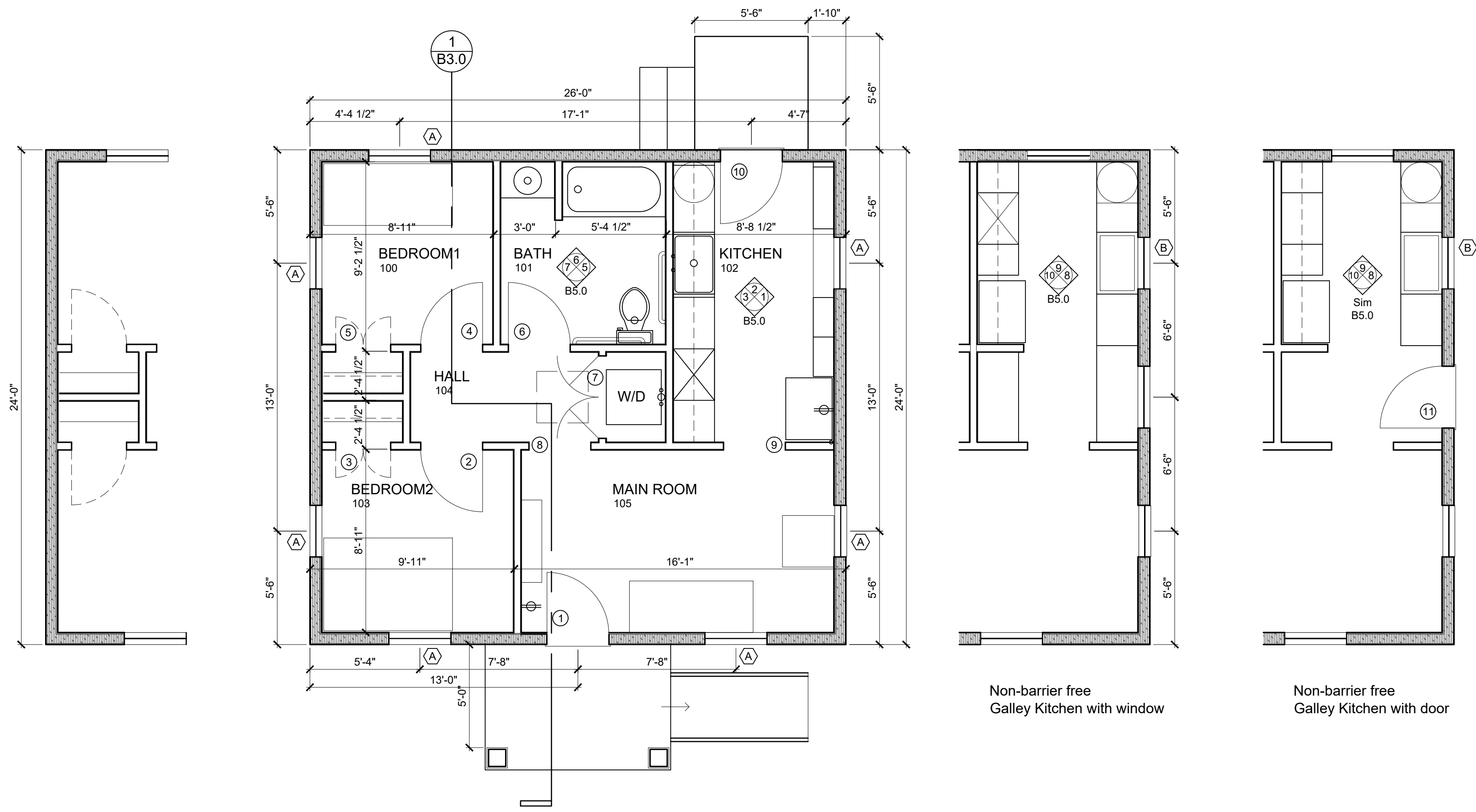
THE ABBOT (Module A)
Michigan Municipal League

Job Number:
2023xx
Title:
DETAILS &
SCHEDULES

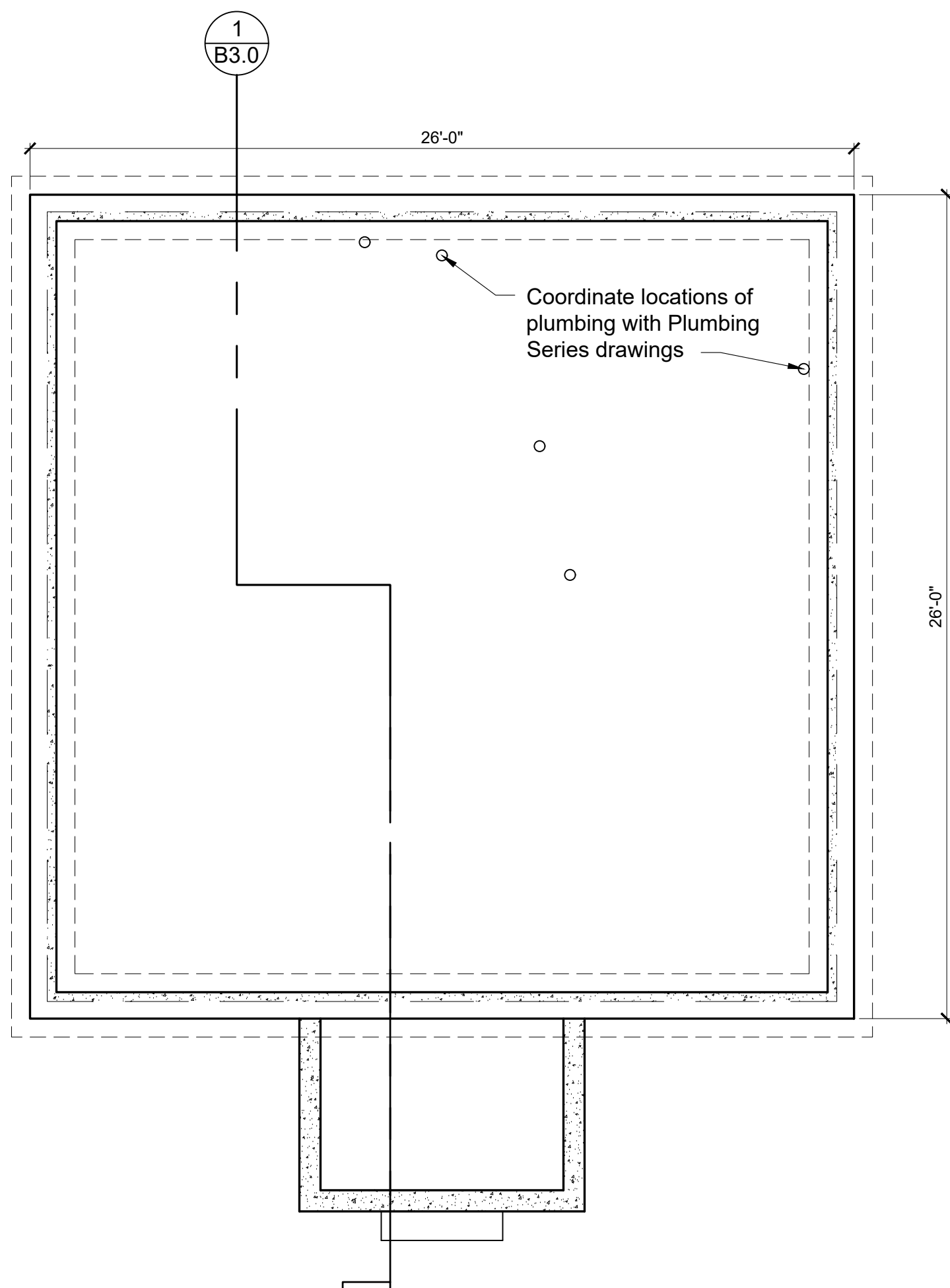
A6.0



2 Module B - Roof/Attic Plan
1/4" = 1'-0"



1 Module B - Main Level
1/4" = 1'-0"

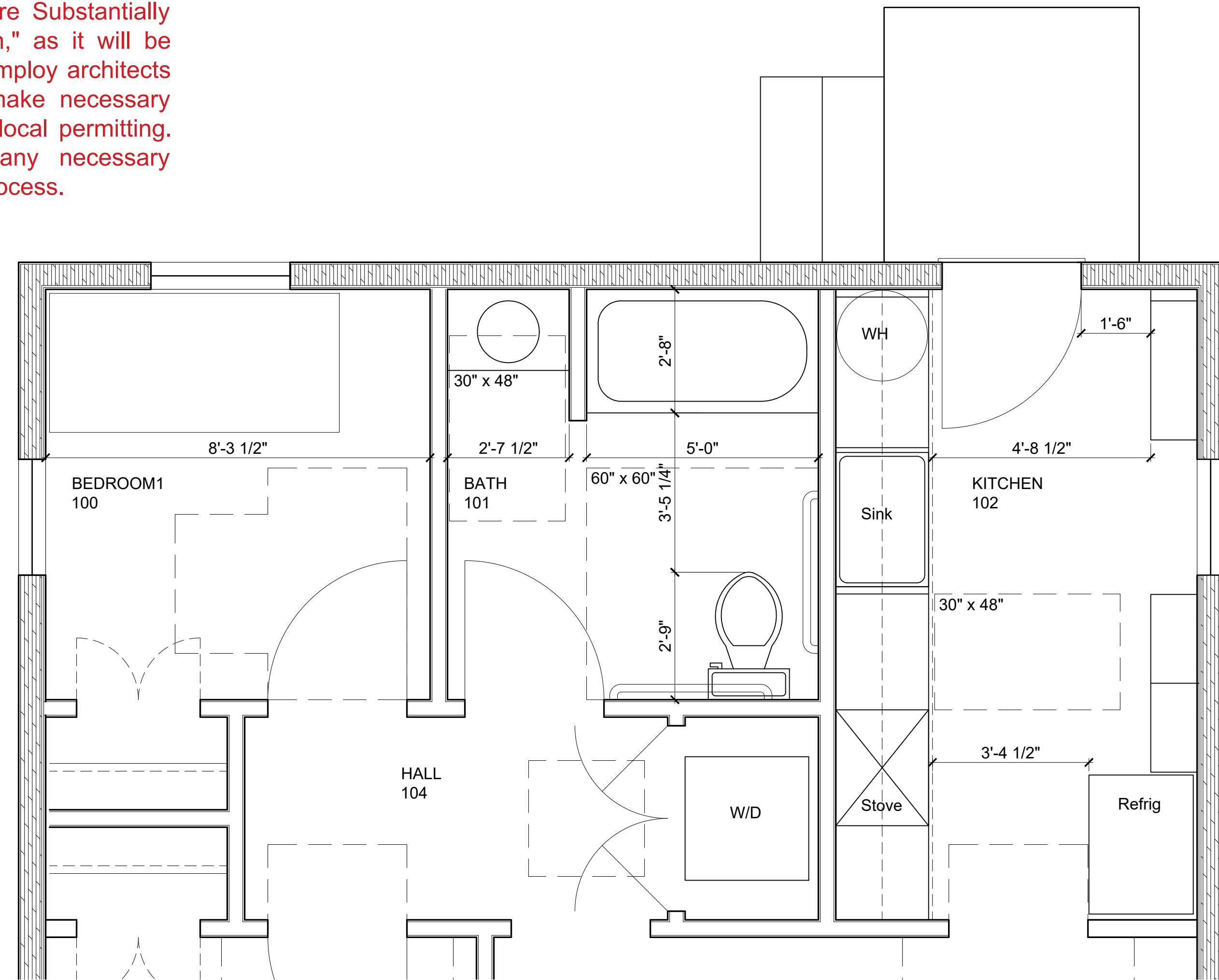


4 Module B - Foundation Plan
1/4" = 1'-0"

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All dimensions shown on this detail show clearances from finish and/or fixture.

3 Module B - Detail Plan
1/2" = 1'-0"



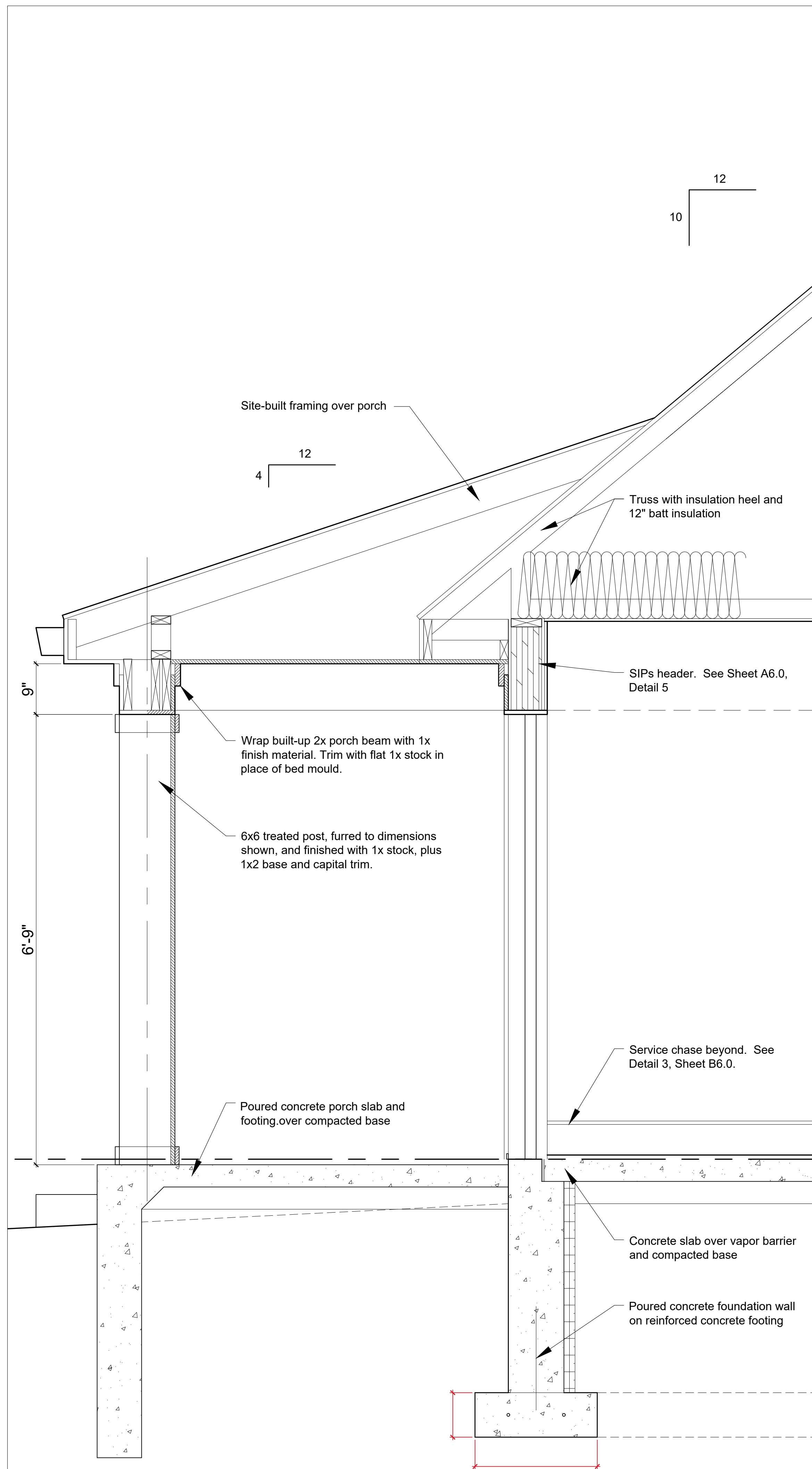
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THE ABBOT (Module B)
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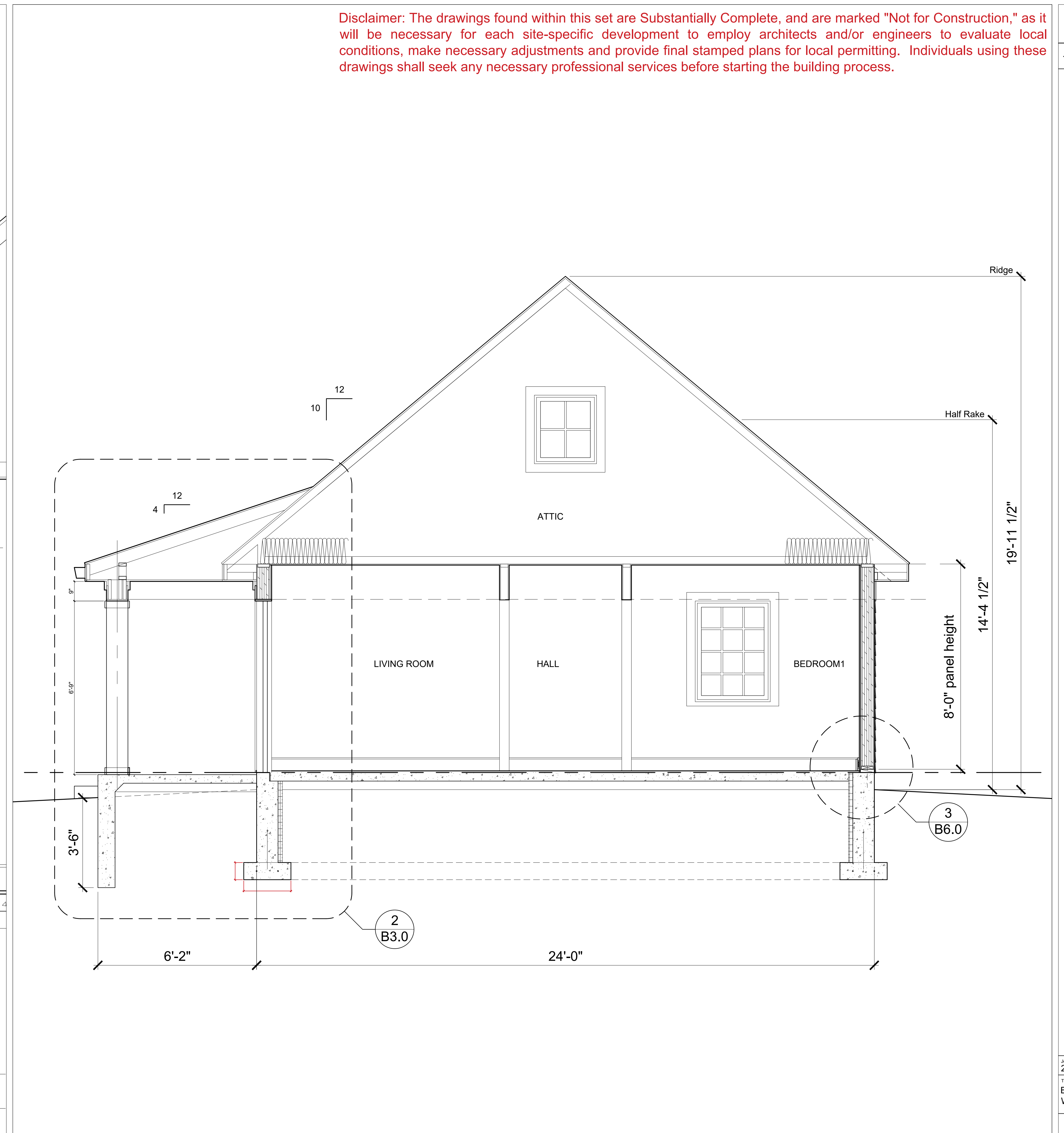
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MML Review Set
15 October 2023

NOT FOR CONSTRUCTION



2 Module B - Barrier Free Wall Section
1/2" = 1'-0"



1 Module B - Barrier Free Building Section
1/2" = 1'-0"

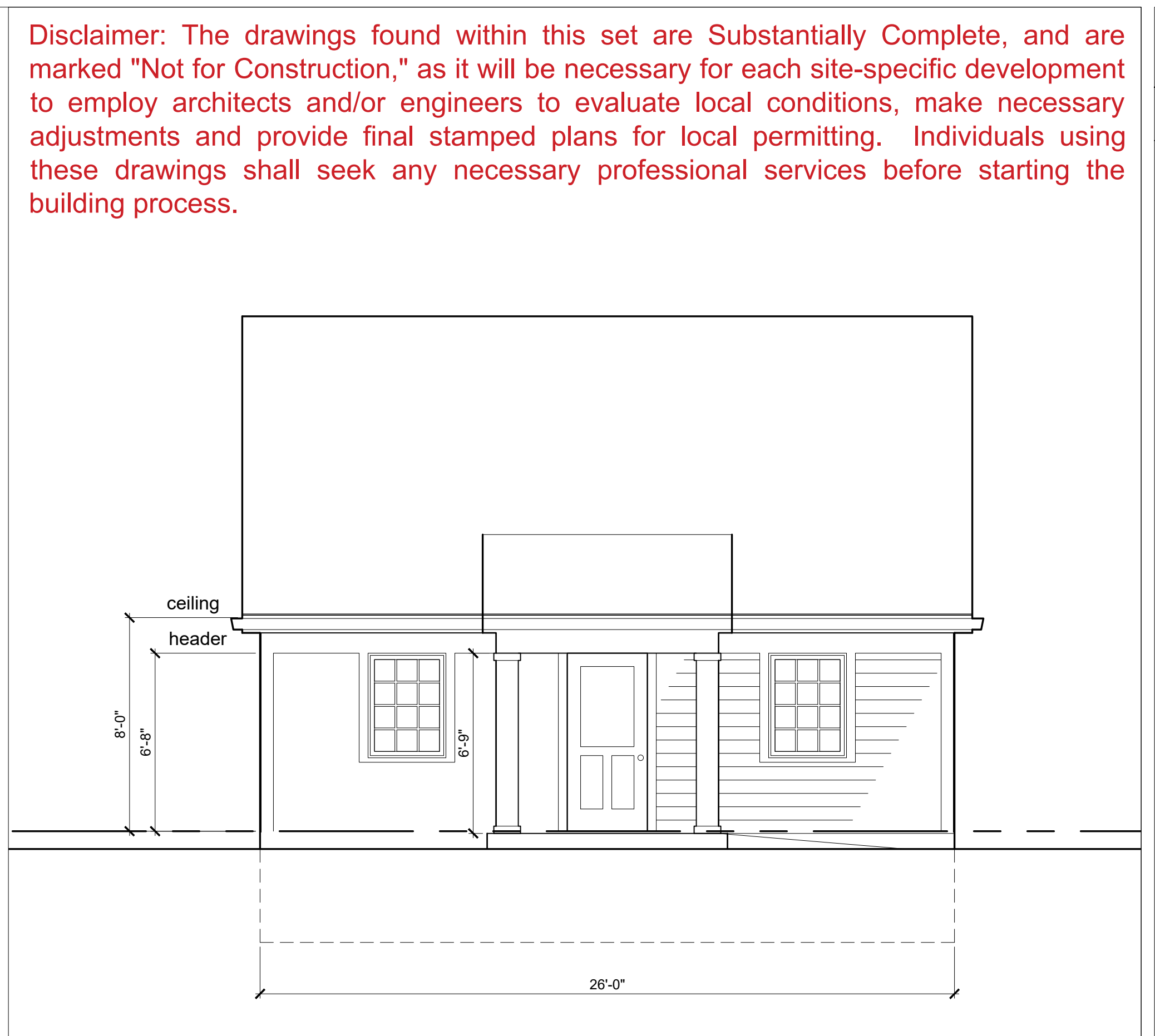
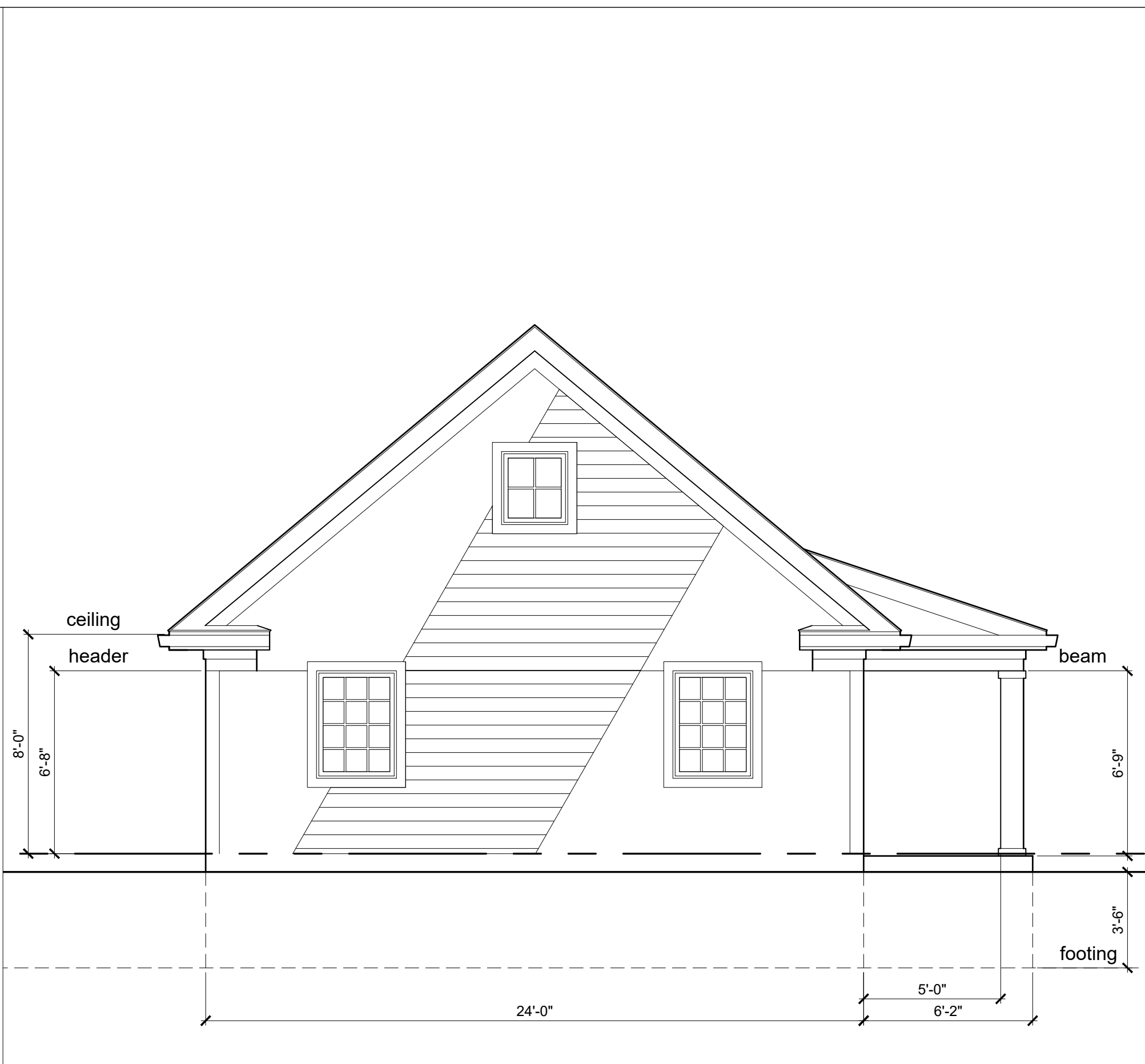
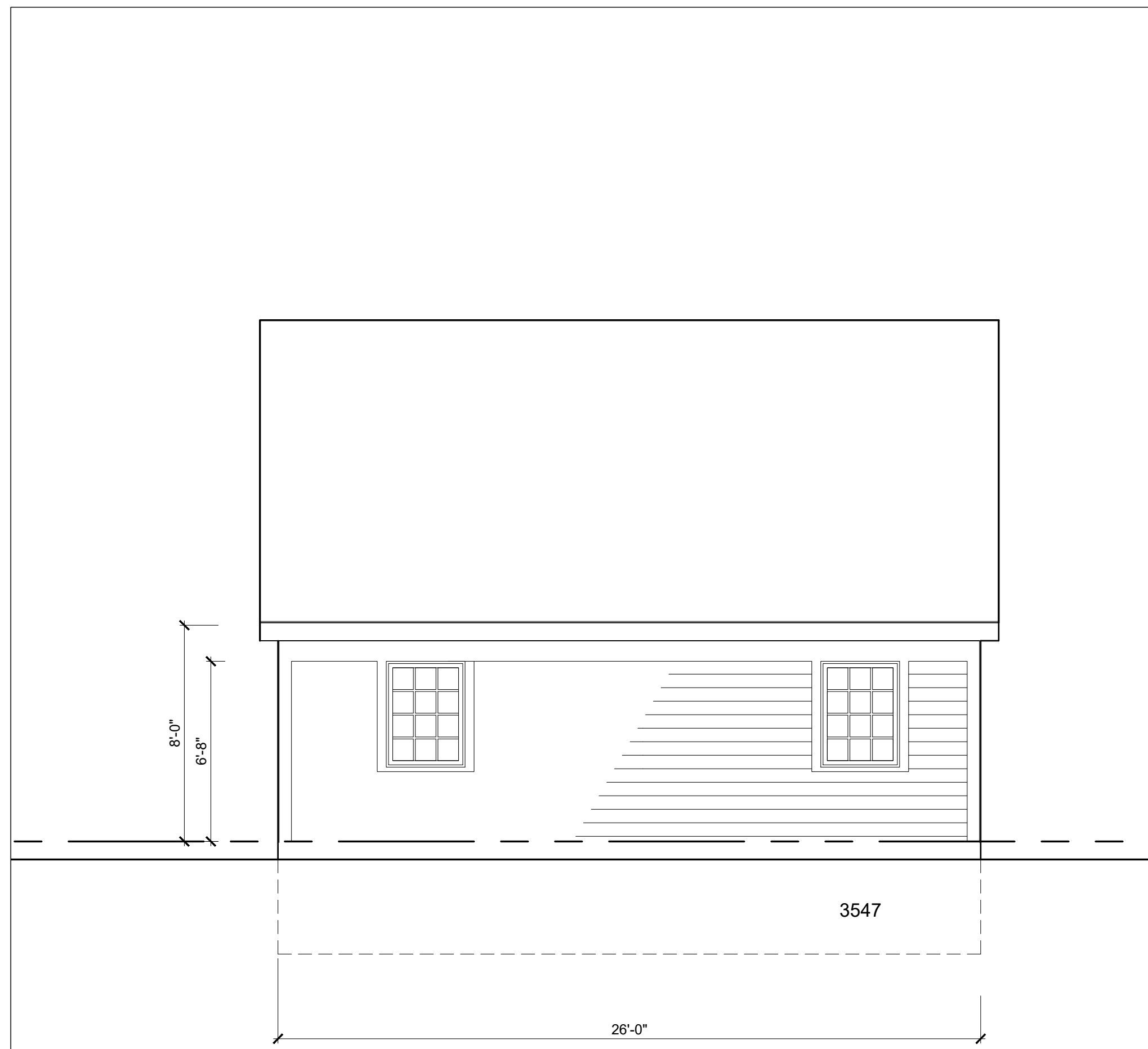
THE ABBOT (Module B)
Michigan Municipal League

Job Number:
2023xx
Title:
BUILDING AND
WALL SECTION

B3.0

NOT FOR CONSTRUCTION

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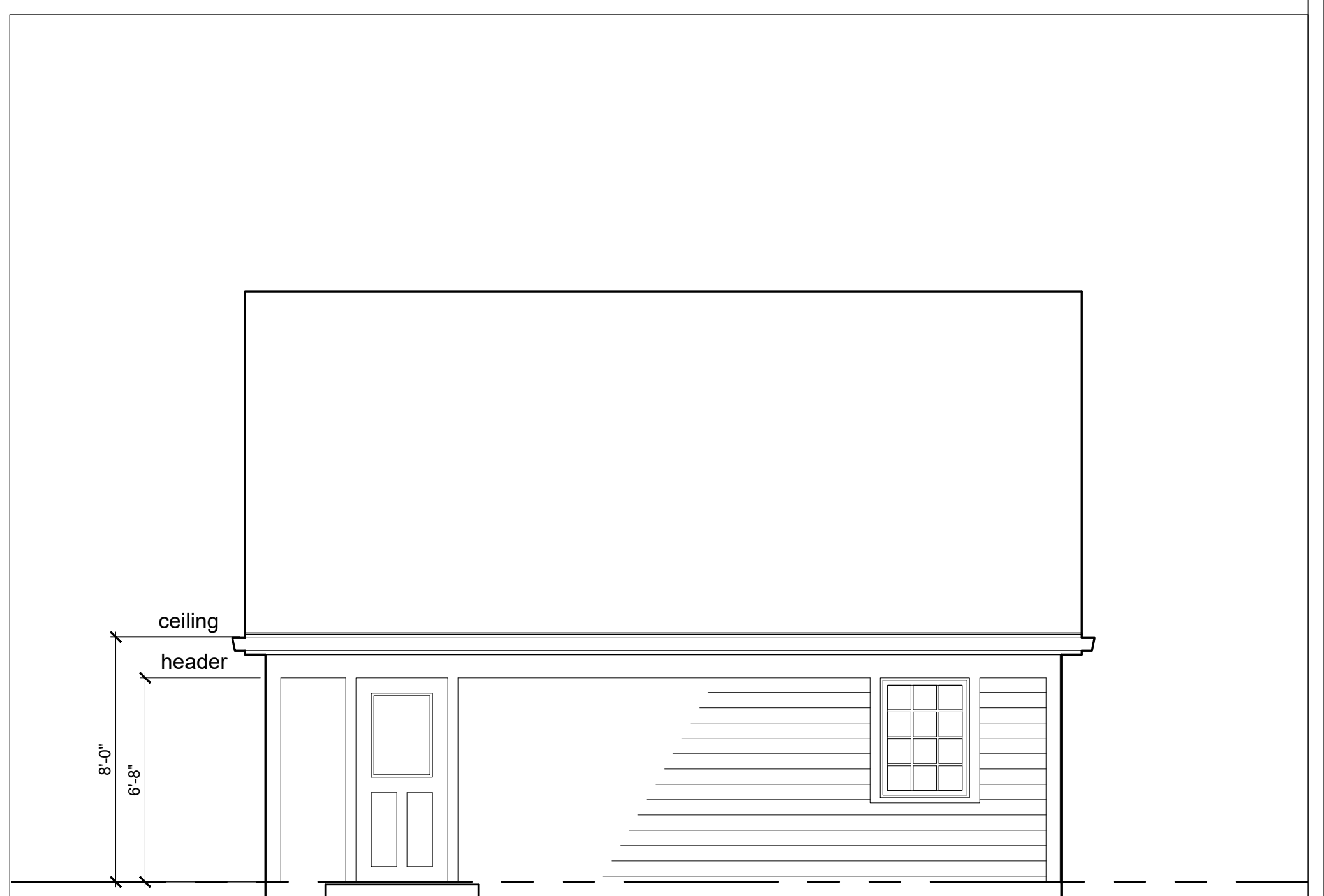
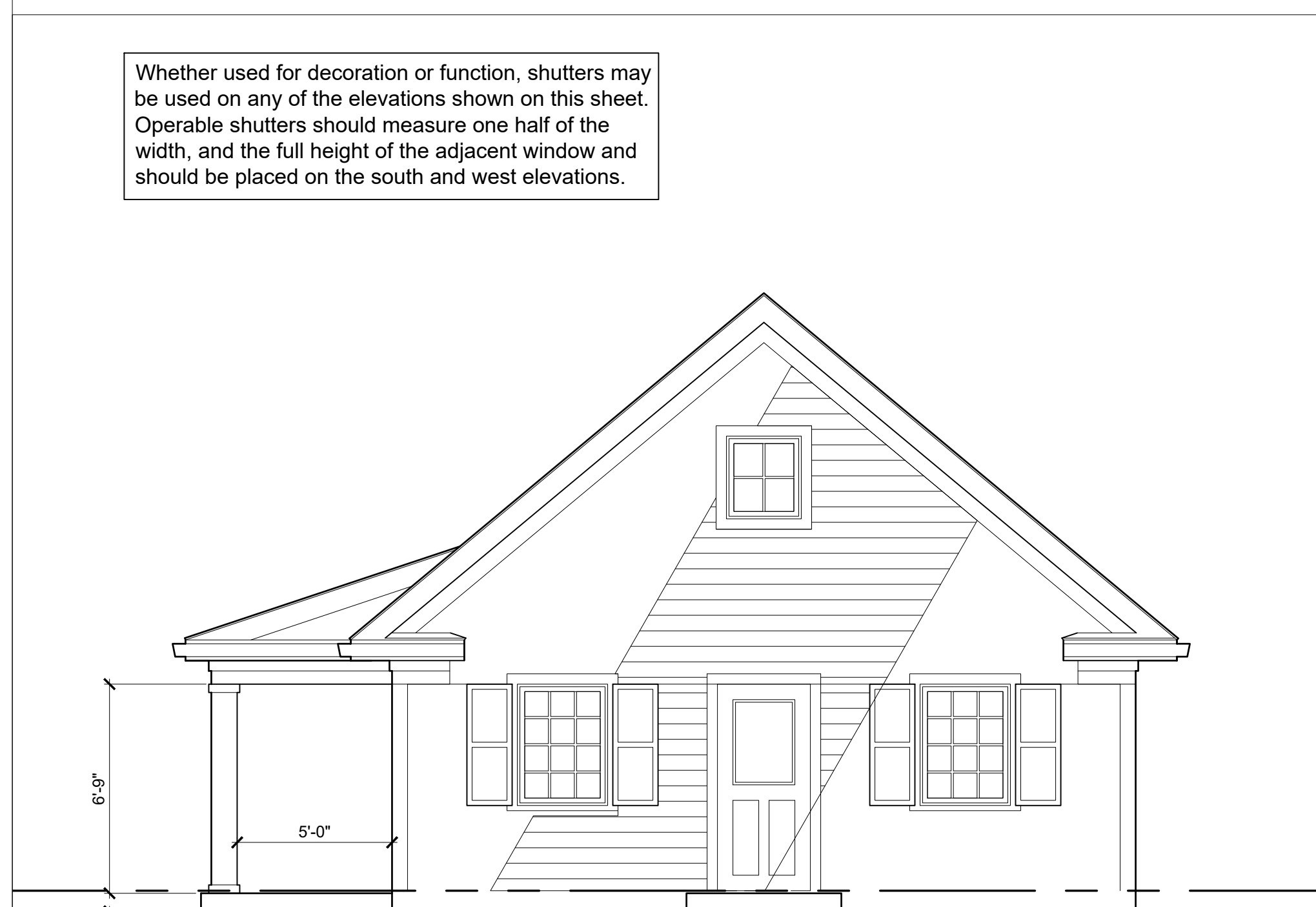


3 Module B Alternate Rear Elevation
1/4" = 1'-0"

2 Module B Left Side Elevation
1/4" = 1'-0"

1 Module B Front Elevation
1/4" = 1'-0"

Whether used for decoration or function, shutters may be used on any of the elevations shown on this sheet. Operable shutters should measure one half of the width, and the full height of the adjacent window and should be placed on the south and west elevations.



6 Module B Alternate Right Elevation
1/4" = 1'-0"

5 Module B Right Side Elevation
1/4" = 1'-0"

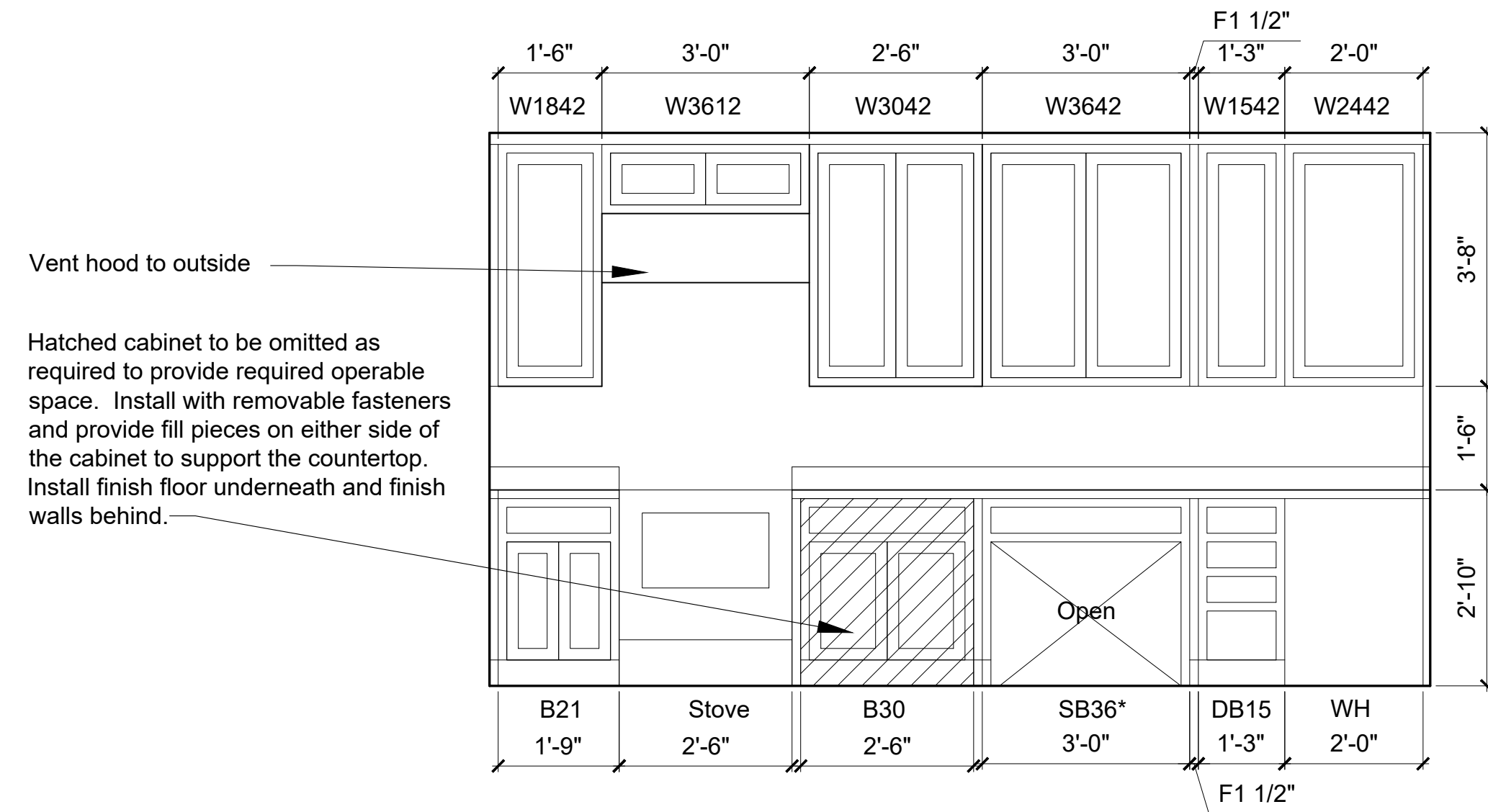
4 Module B Rear Elevation
1/4" = 1'-0"

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Michigan Municipal League

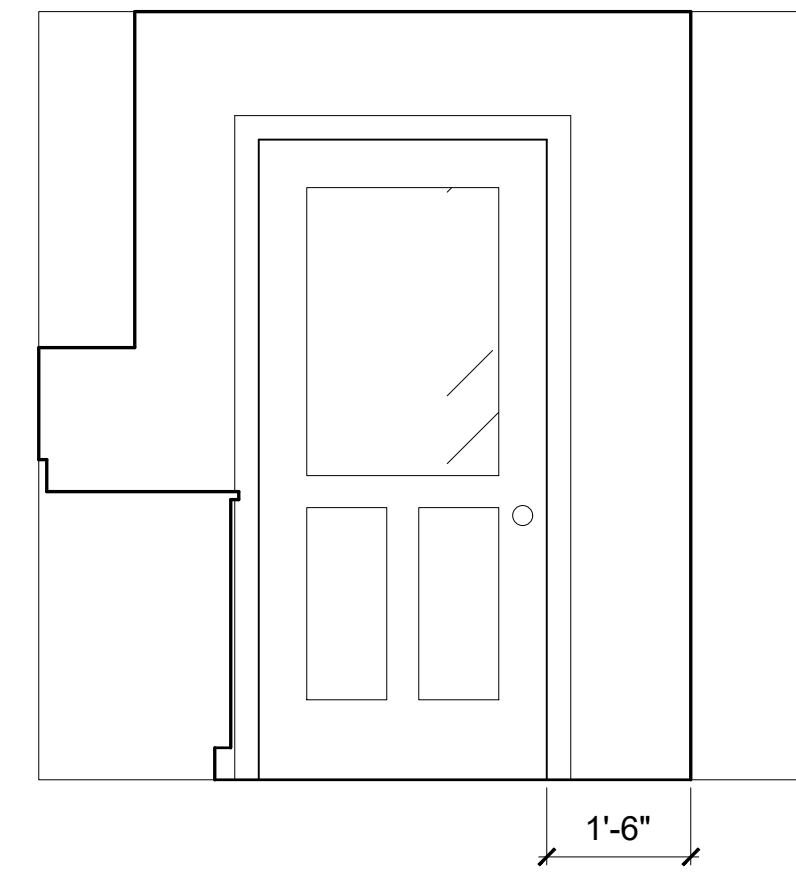
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Do not scale.
Use figured
dimensions only.
MML Review Set
15 October 2023

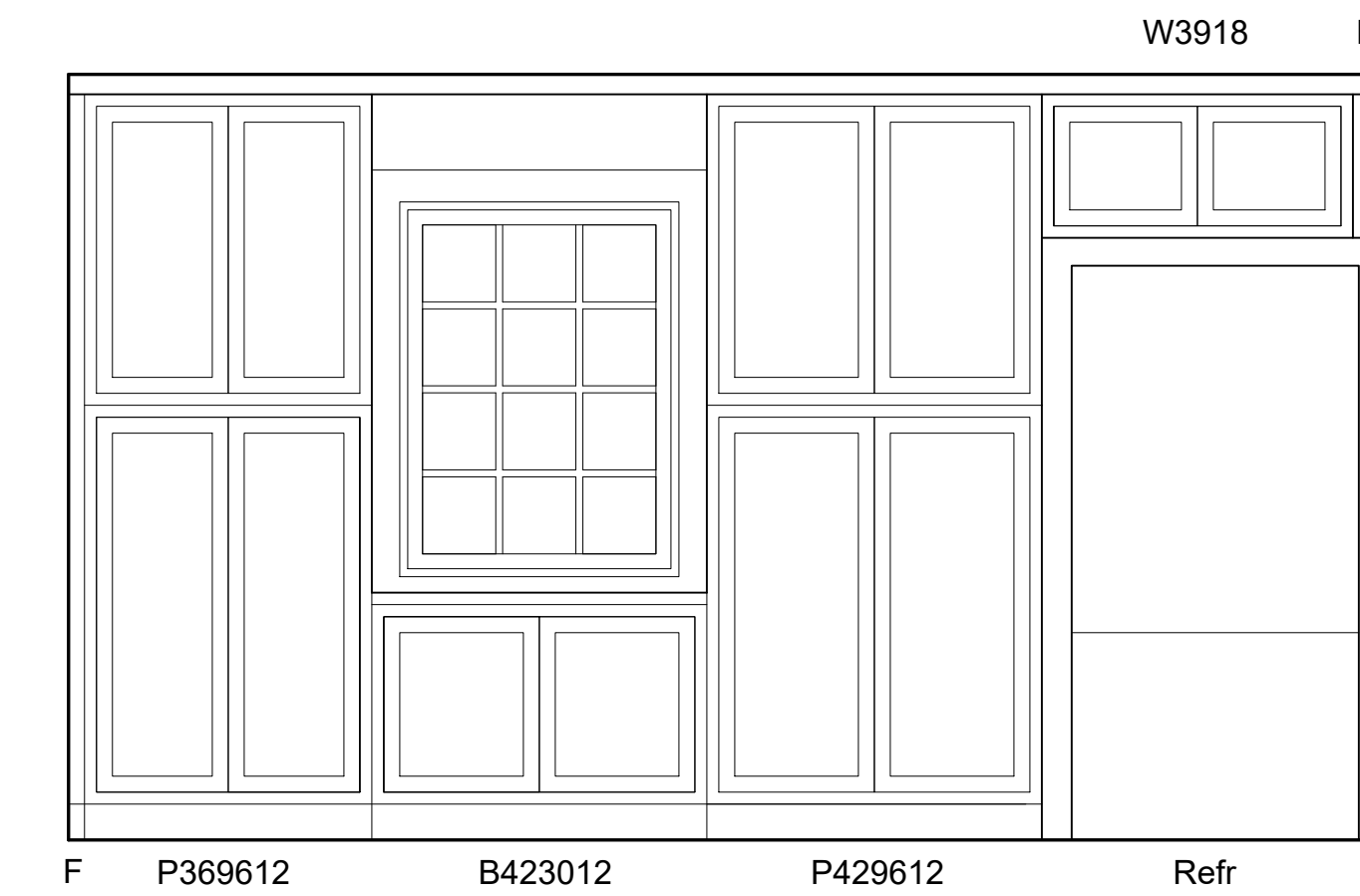
NOT FOR CONSTRUCTION



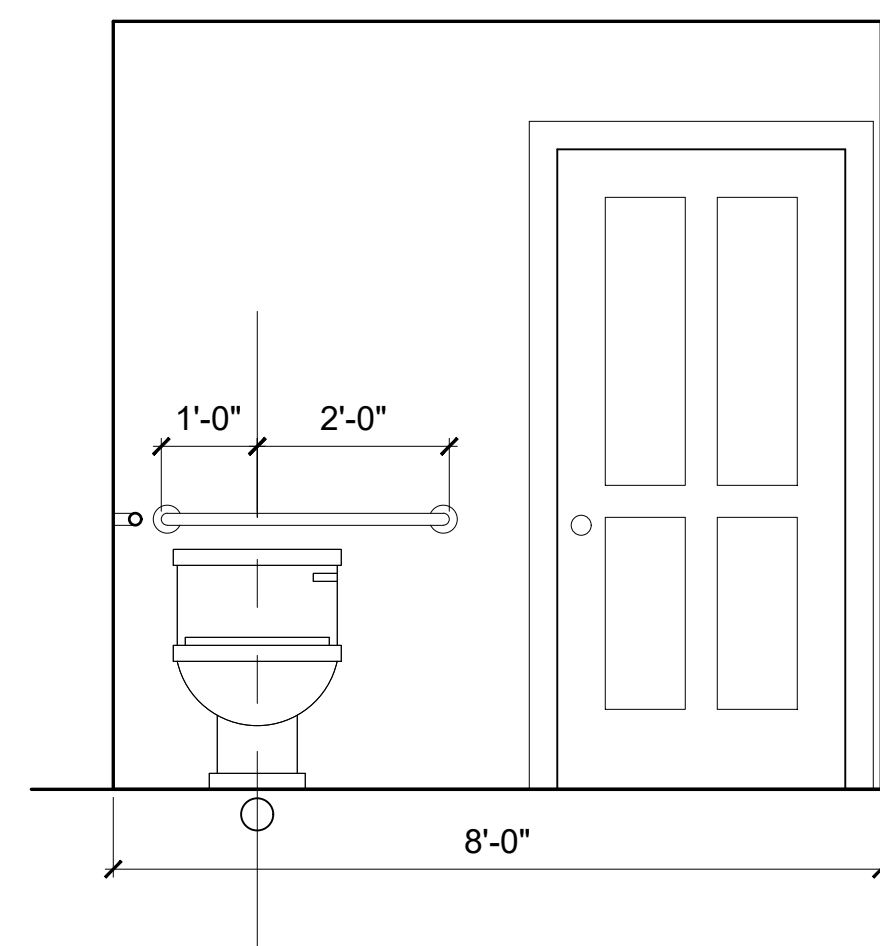
③ Module B - Barrier Free Kitchen Cabinets
1/2" = 1'-0"



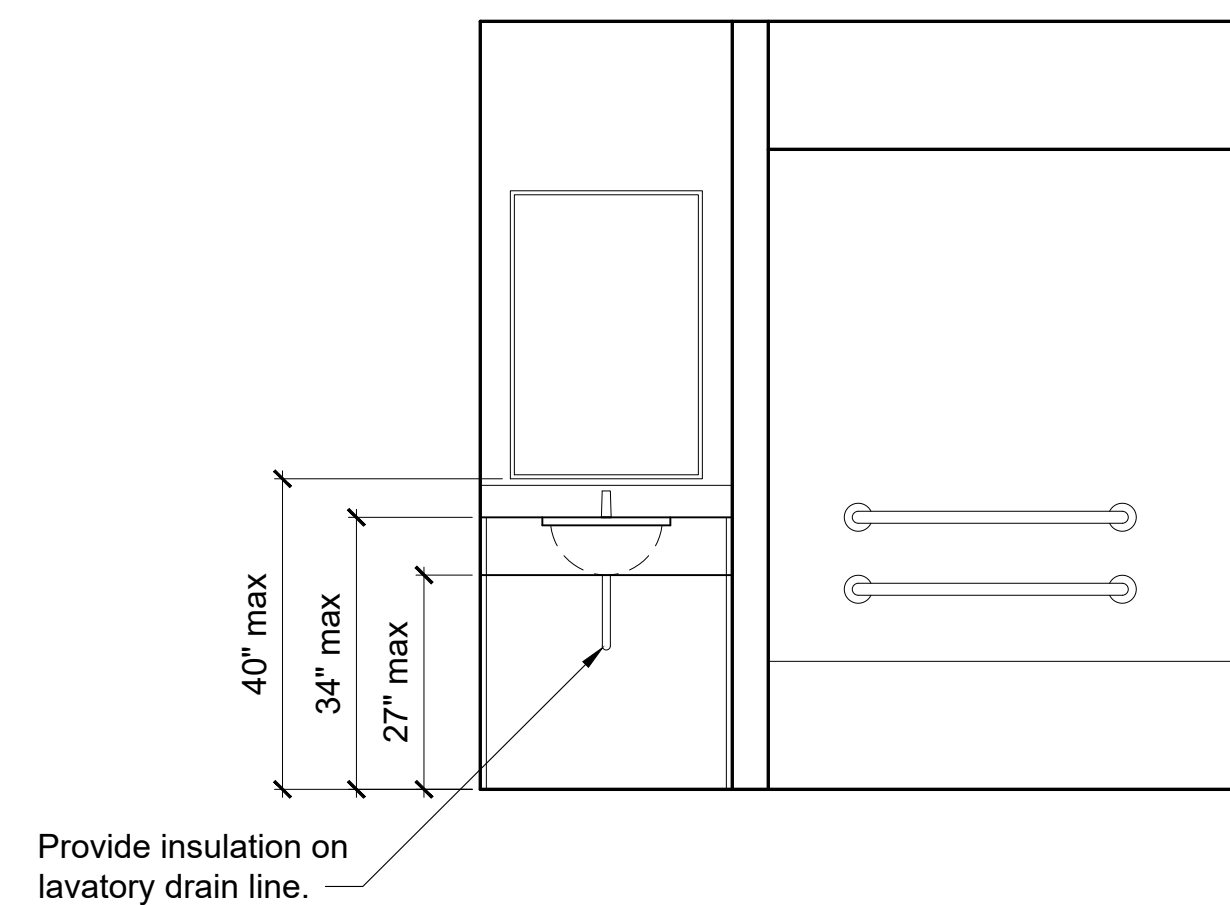
② Module B - Barrier Free Kitchen Entry
1/2" = 1'-0"



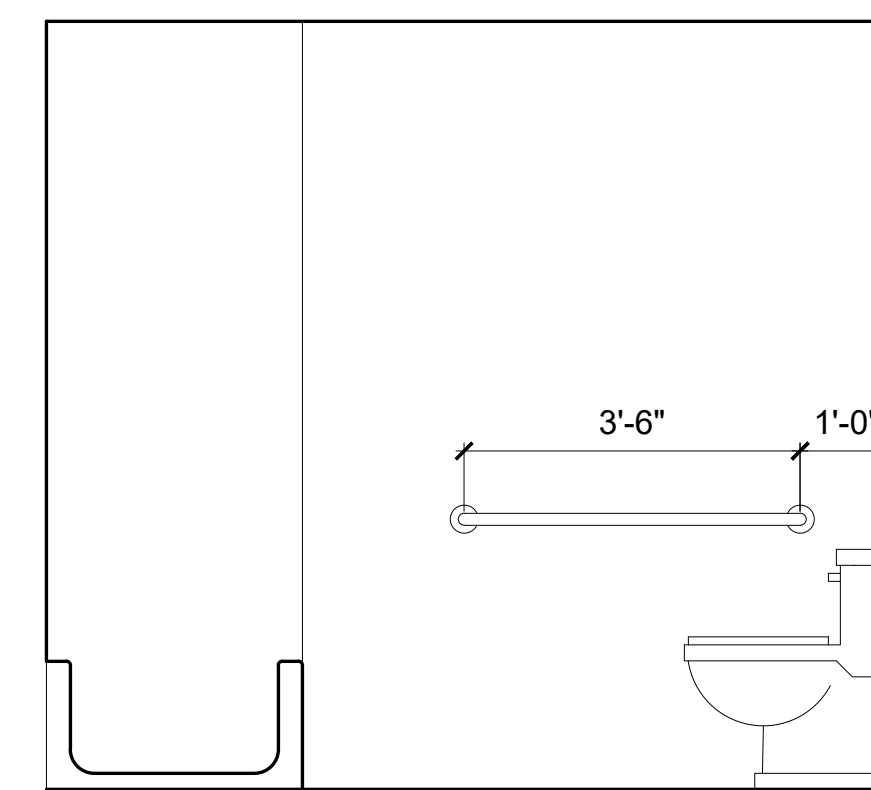
① Module B - Barrier Free Kitchen Pantry
1/2" = 1'-0"



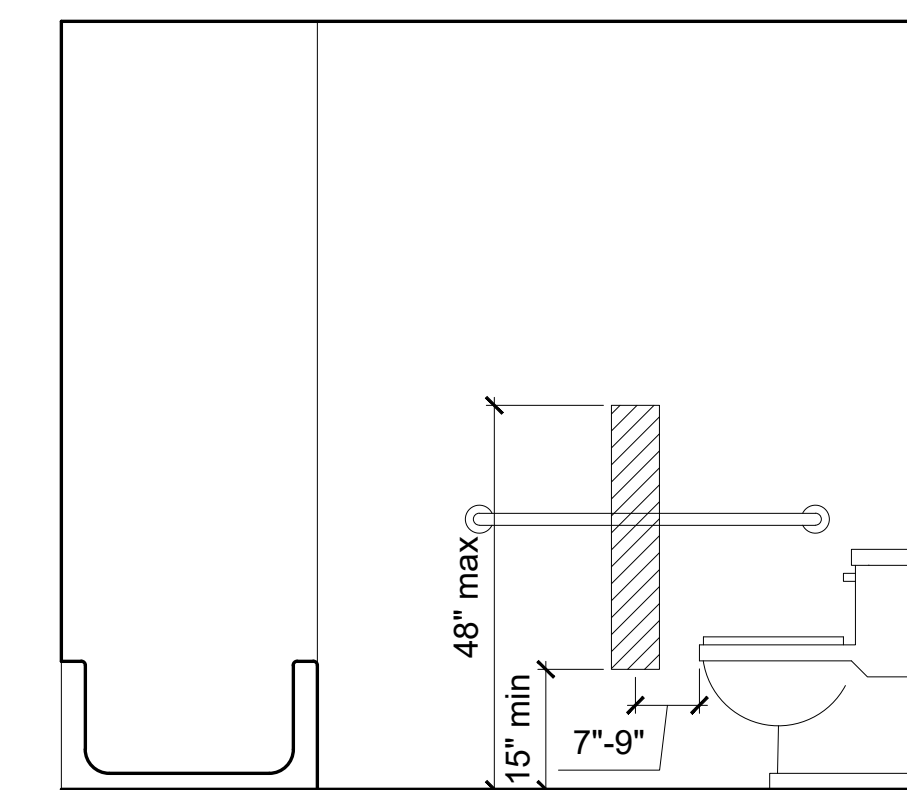
⑦ Module B - Barrier Free Toilet + Entry
1/2" = 1'-0"



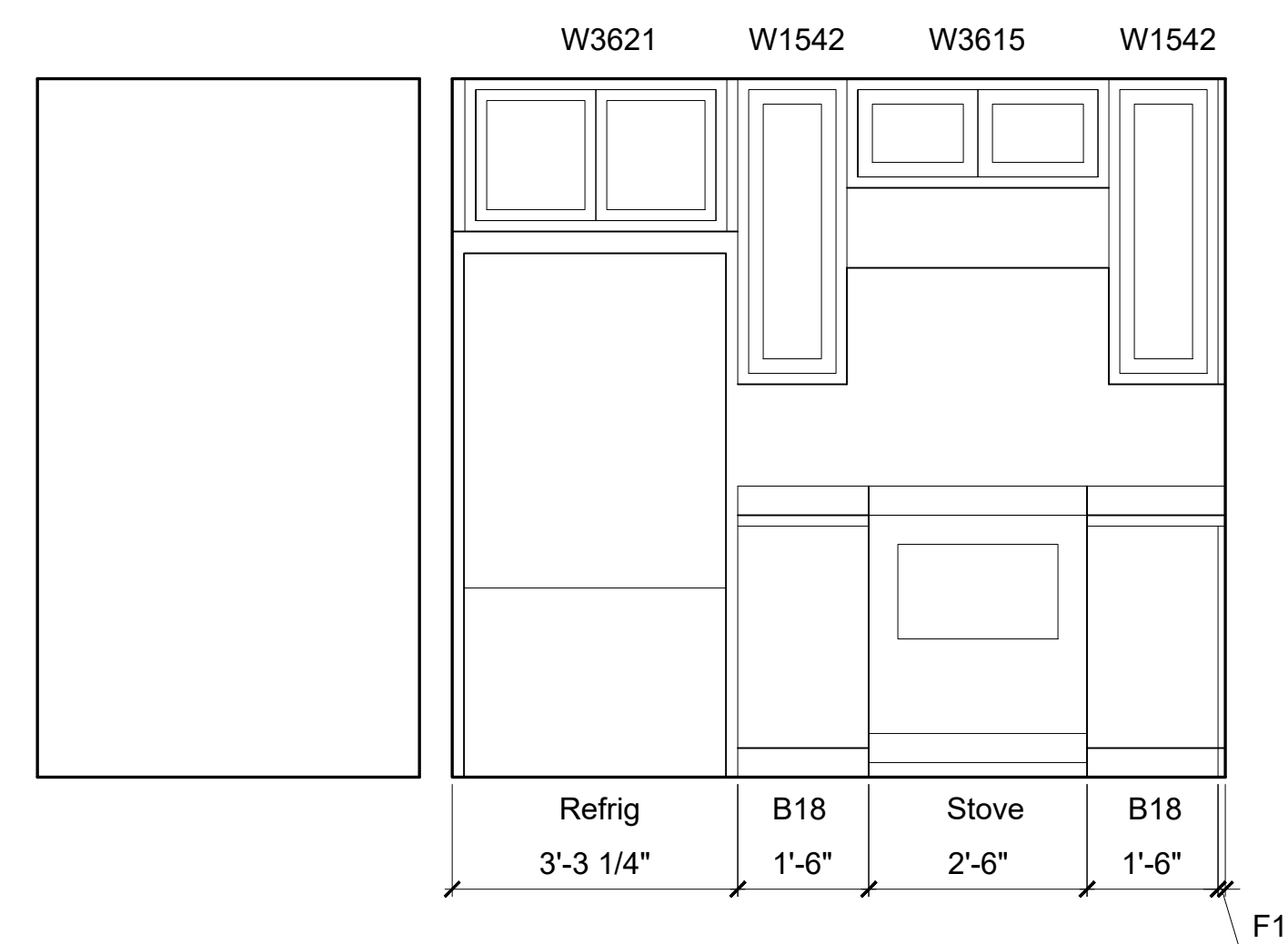
⑥ Module B - Barrier Free Lavatory + Tub
1/2" = 1'-0"



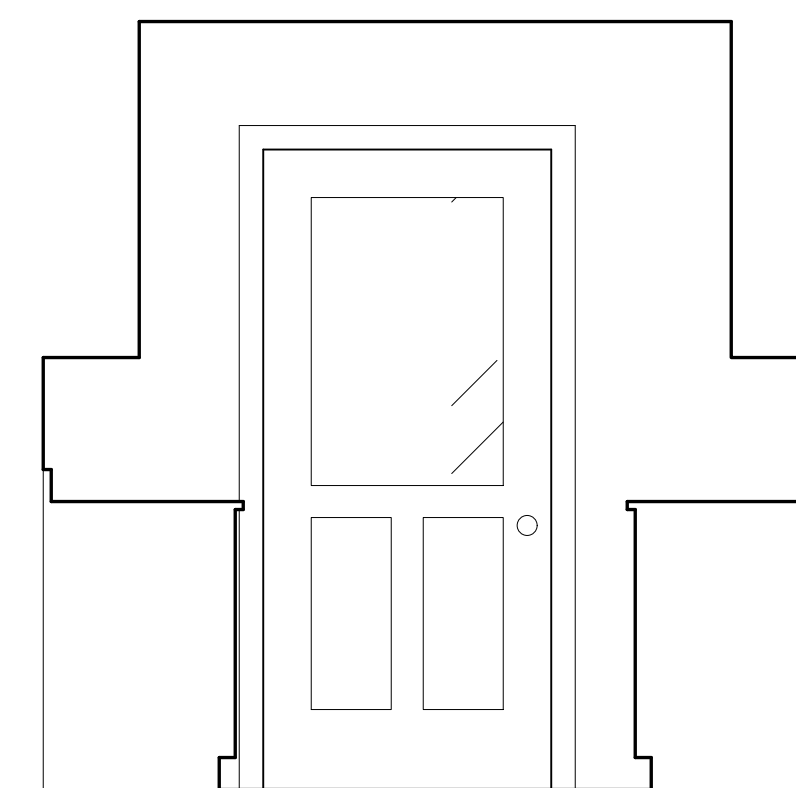
⑤ Module B - Barrier Free Tub + Toilet
1/2" = 1'-0"



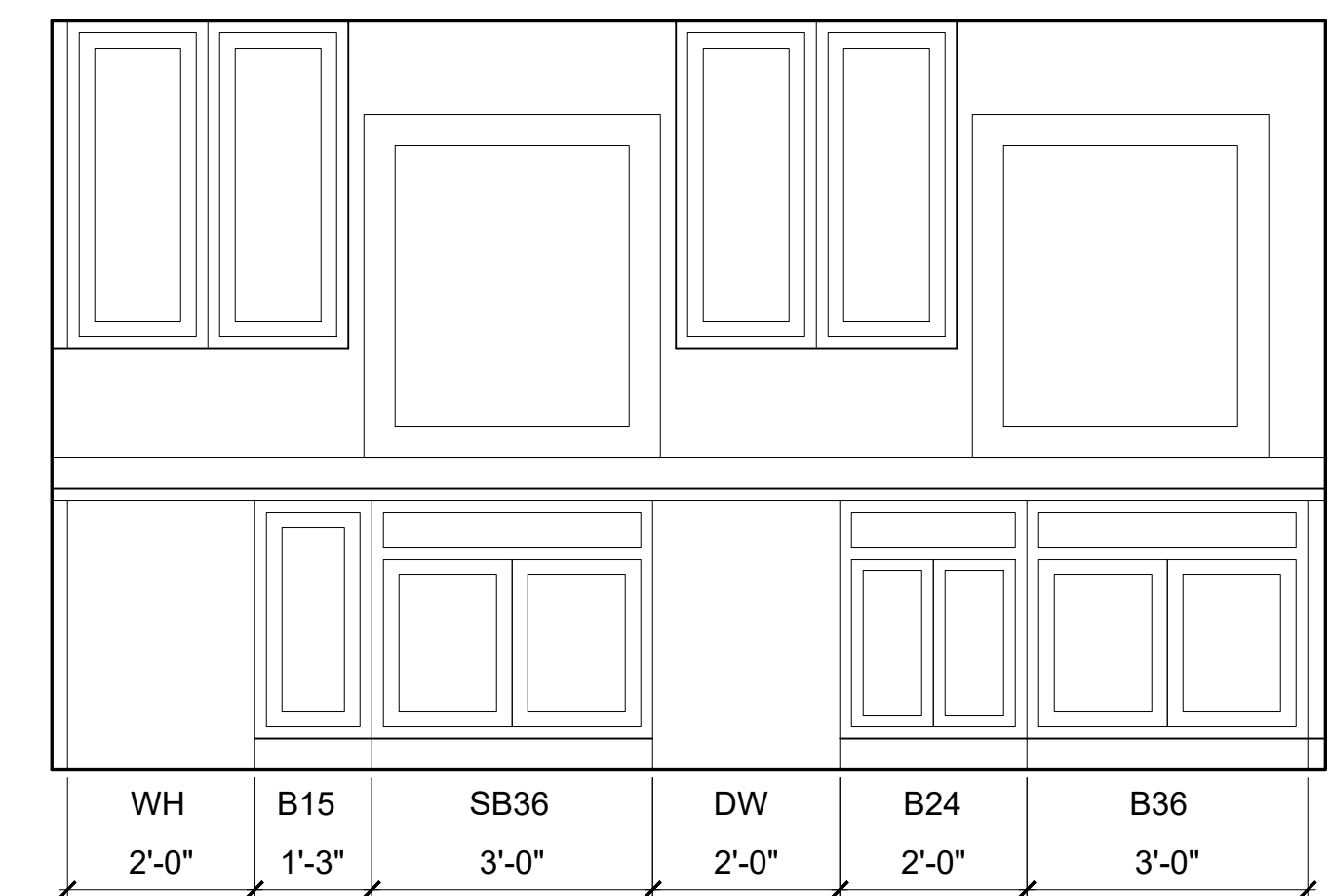
④ Module B - Dispenser Location
1/2" = 1'-0"



⑩ Module B - Non-Barrier Free Kitchen Cabinets
1/2" = 1'-0"



⑨ Module B - Non-Barrier Free Kitchen Entry
1/2" = 1'-0"



⑧ Module B - Non-Barrier Free Kitchen Pantry
1/2" = 1'-0"

THE ABBOT (Module B)
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Job Number:
2023xx
Title:
INTERIOR
ELEVATIONS

B5.0

FINISH SCHEDULE

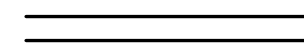
NO.	ROOM	FLOOR	BASE	WALLS	CEILING	NOTES
100	BEDROOM1	CPT	WOOD	PAINT2	PAINT1	
101	BATH	VINYL	WOOD	PAINT2	PAINT1	
102	KITCHEN	VINYL	WOOD	PAINT2	PAINT1	
103	BEDROOM2	CPT	WOOD	PAINT2	PAINT1	
104	HALL	CPT	WOOD	PAINT2	PAINT1	
105	MAIN ROOM	CPT	WOOD	PAINT2	PAINT1	

Finish Descriptions

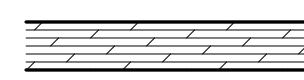
Mark	Description	Manufacturer	Collection	Color
PAINT	Painted drywall			
VINYL	Sheet Vinyl			
CPT1	Carpet			
WOOD	Wood Base			
VB	Vinyl Base			

WALL TYPES

3-1/2" wood stud frame interior partitions wall, finished with 1/2" drywall, primed and painted.



6" Structural Insulated Panel (SIP), finished with 1/2" drywall, primed and painted on the interior and exterior cladding.

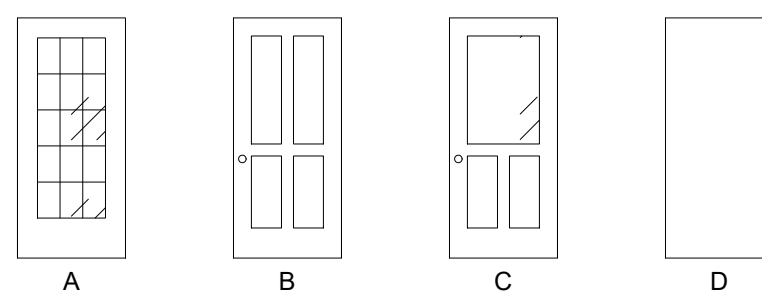


WINDOW SCHEDULE

MARK	SIZE	ROUGH OP'G	JACK	TYPE	NOTES
A	36" W x 48" H		1	CASEMENT	Sized for egress
B	36" W x 36" H		1	CASEMENT	
C	29" W x 32" H		1	CASEMENT	

DOOR SCHEDULE

MARK	ID	SIZE	SWING	JACK	MATERIAL	HARDWARE	NOTES
1	C	36" x 80"	LEFT	X	METAL	EGRESS	
2	B	36" x 80"	LEFT		WOOD	PRIVACY	
3	B	36" x 80"	PAIRED		WOOD	CLOSET	Hinged pair
4	B	36" x 80"	RIGHT		WOOD	PRIVACY	
5	B	36" x 80"	PAIRED		WOOD	CLOSET	Hinged pair
6	B	36" x 80"	LEFT		WOOD	PRIVACY	
7	B	36" x 80"	PAIRED		WOOD	CLOSET	Hinged pair
8	D	36" x 80"	OPEN		-	-	Cased opening
9	B	36" x 80"	OPEN		-	-	Cased opening
10	C	36" x 80"	RIGHT	X	METAL	EGRESS	Optional based on plan
11	C	36" x 80"	LEFT	X	METAL	EGRESS	Optional based on plan



Door Types

Hardware Descriptions
Schlage or approved equal

GENERAL
Handles, pulls, latches, locks, and other operable parts on doors and gates shall comply with 309.4. Operable parts of such hardware shall be 34 inches minimum and 48 inches maximum above the finish floor or ground.

CLOSET
Latch is retracted with handle from either side.

EGRESS
Latch is retracted with handle from inside and keyed lock from the outside.

PASSAGE
Latch is retracted by grip on either side.

PRIVACY
The latchbolt is retracted by the inside grip. The latchbolt is retracted by the outside grip unless the grip is locked by a thumb-turn from the inside.

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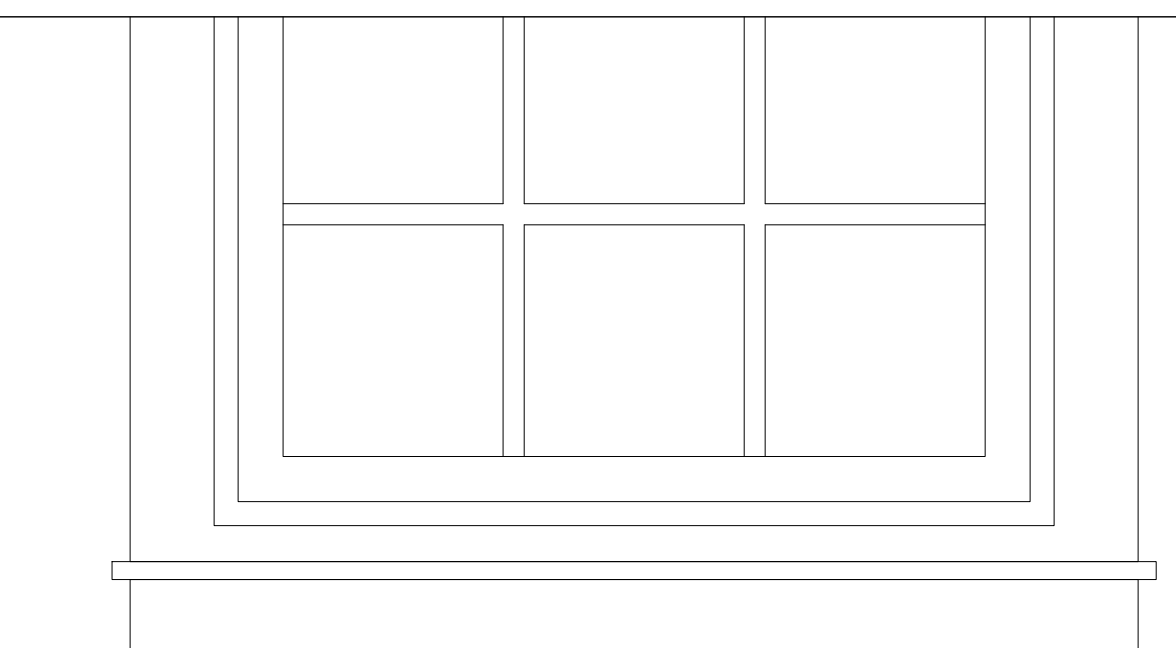
MML Review Set
15 October 2023

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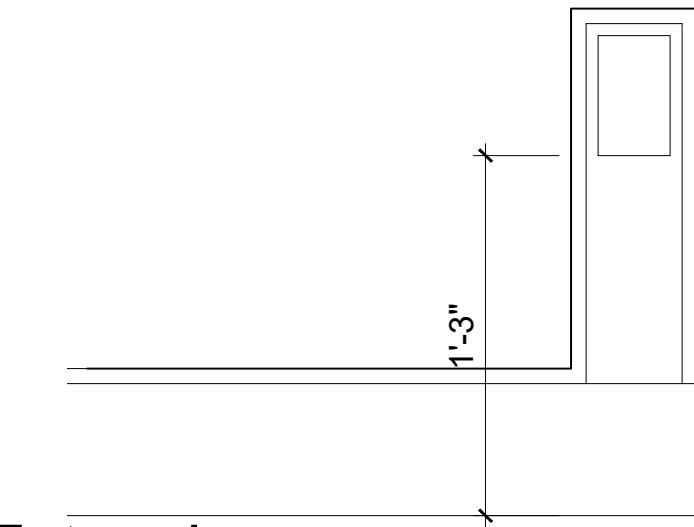
THE ABBOT (Module B)
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Job Number:
2023xx
Title:
DETAILS &
SCHEDULES

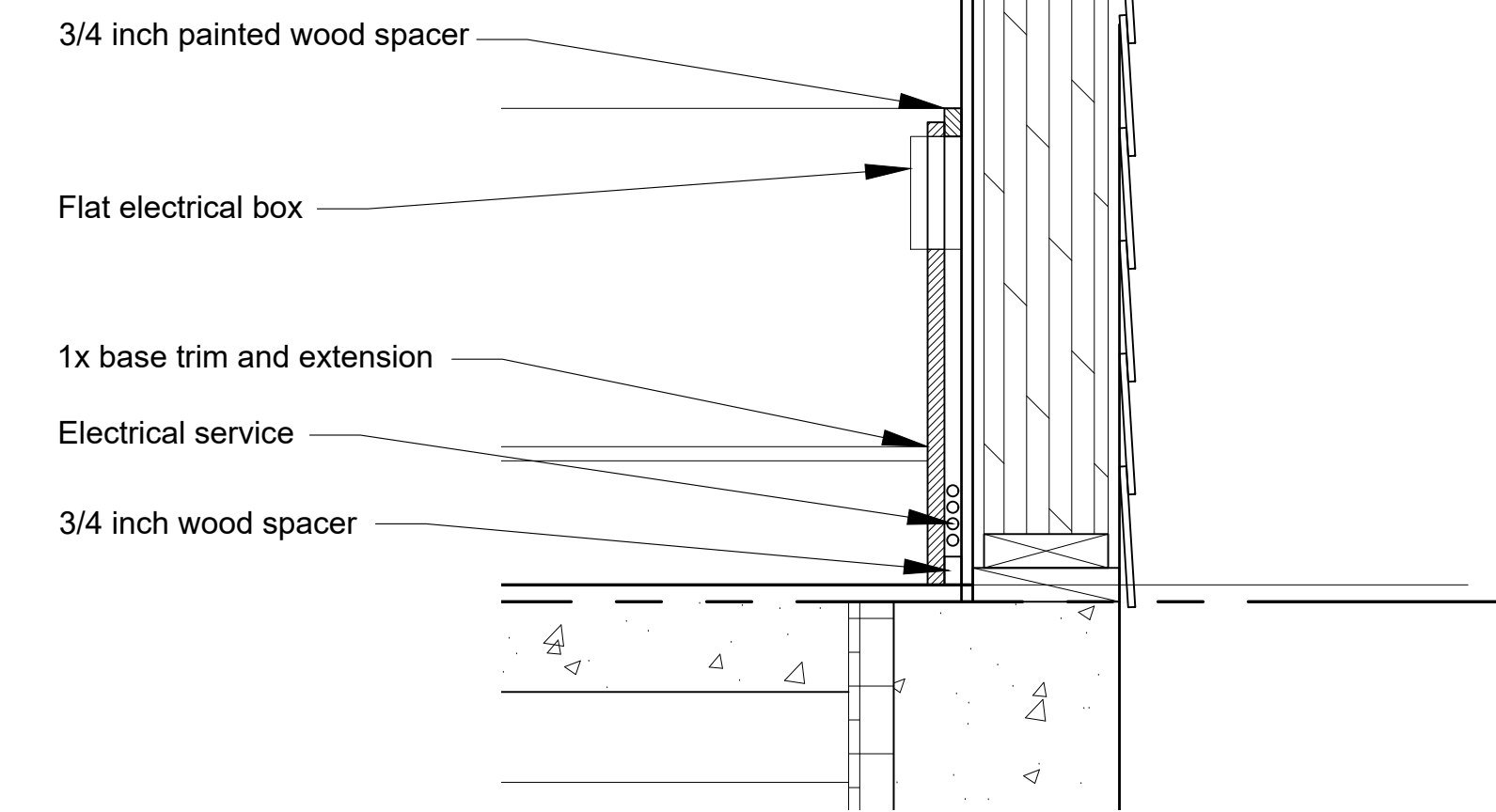
B6.0



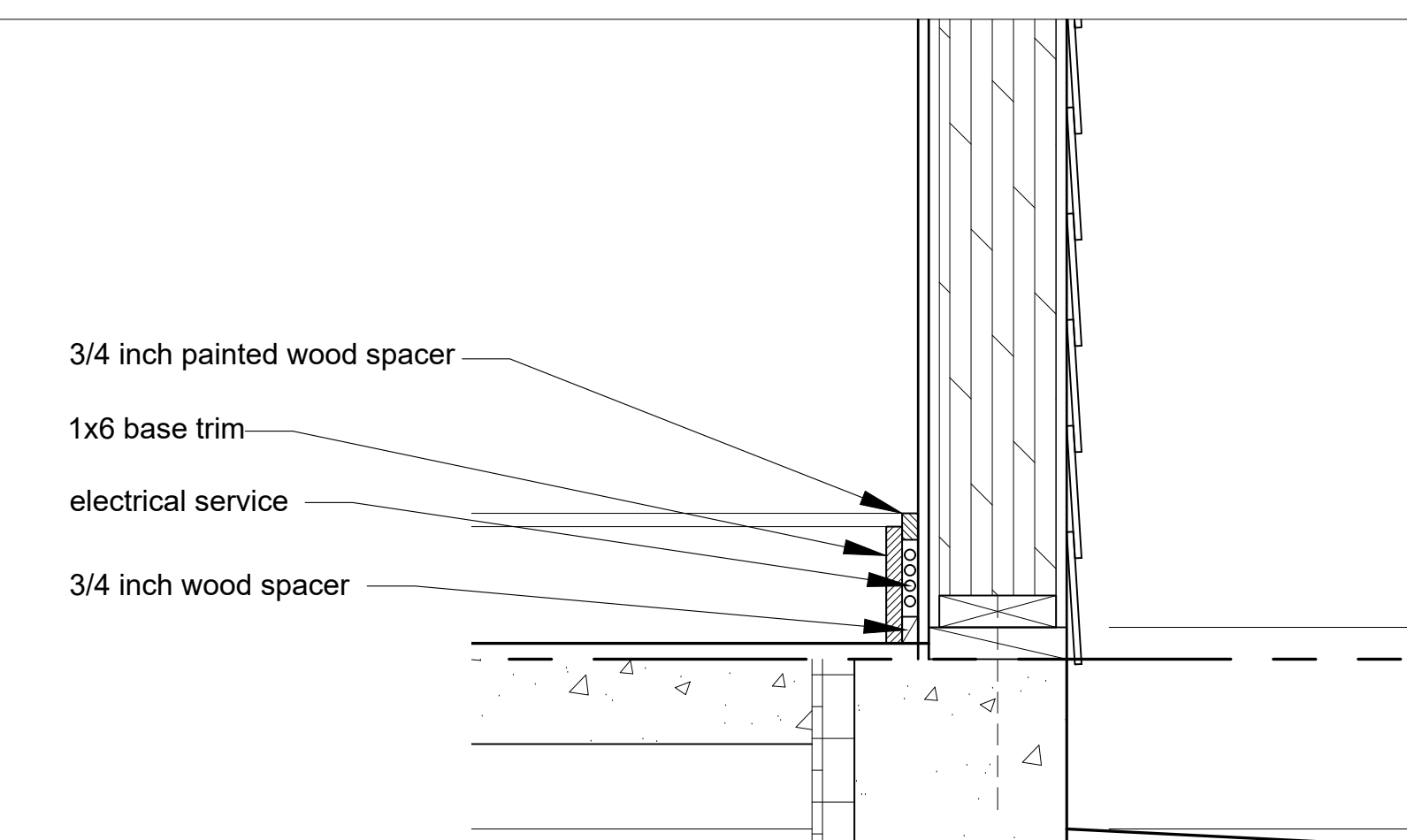
Barrier free facilities require the placement of service outlets at 15" above finish floor.



1 Service Chase Extension
1-1/2" = 1'-0"

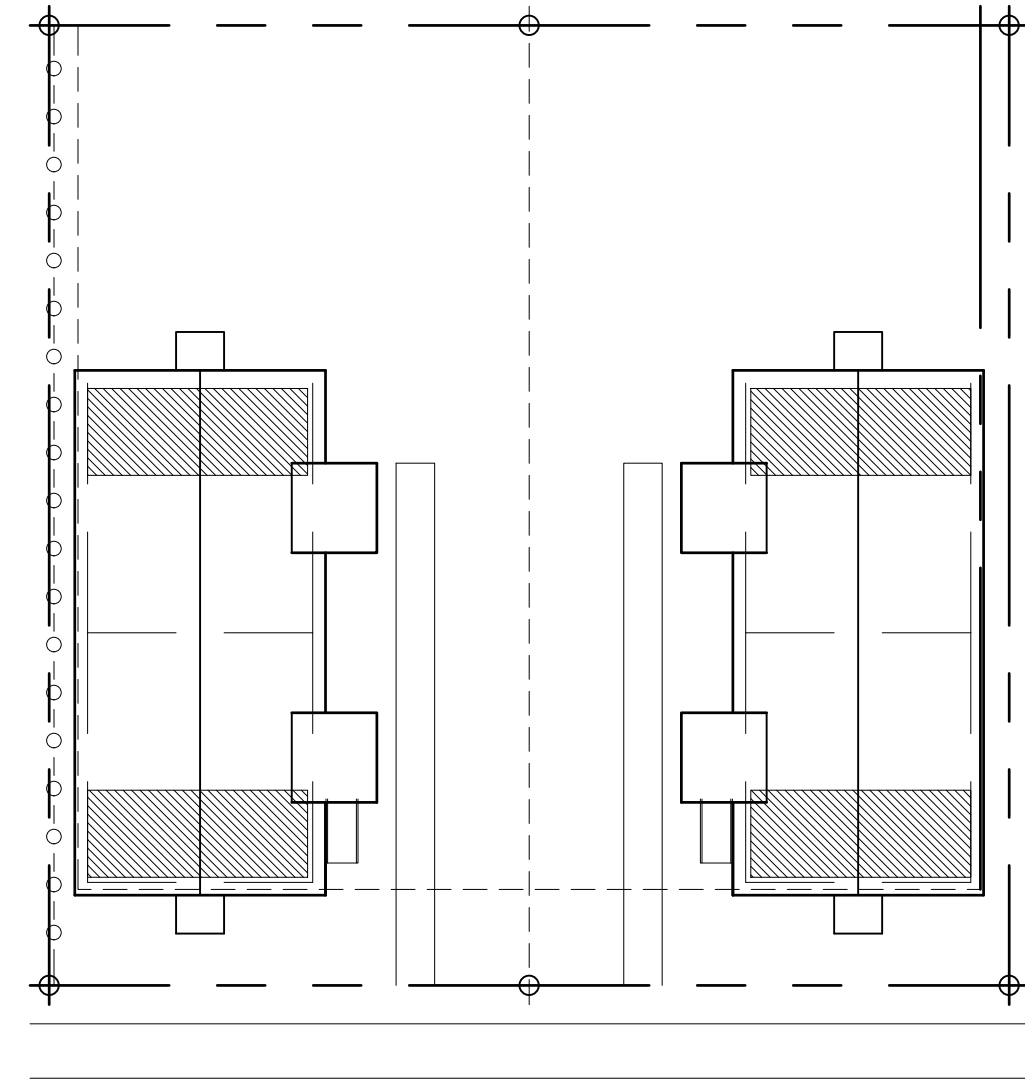


2 Service Chase Extension
3/4" = 1'-0"

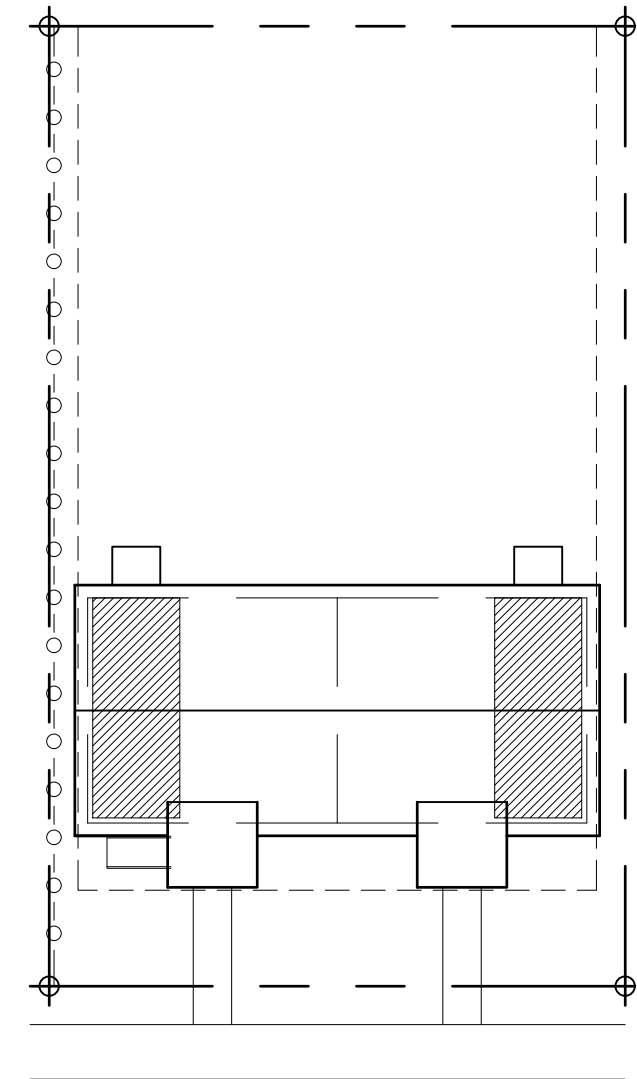


3 Service Chase
3/4" = 1'-0"

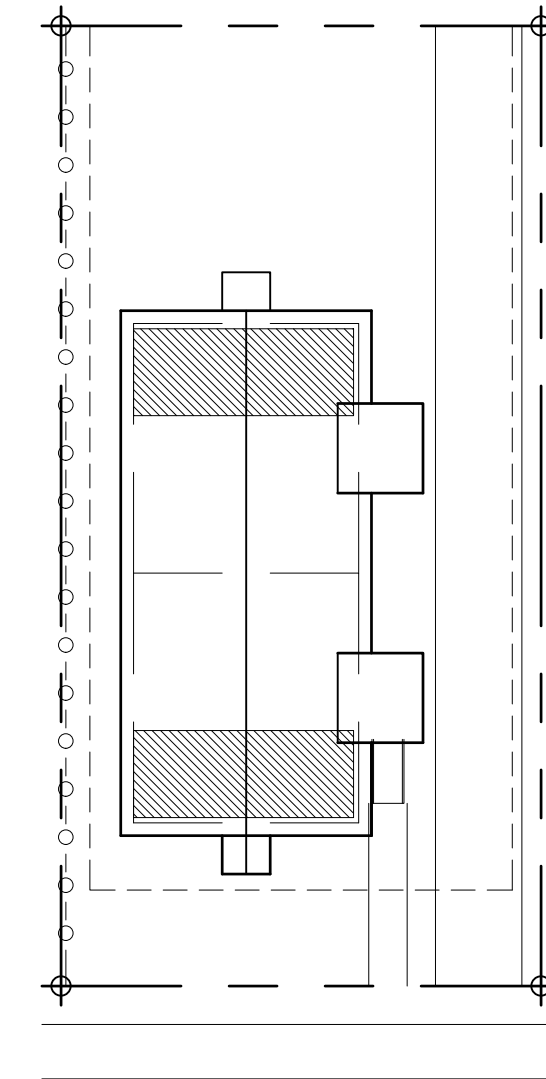
In Details 1 through 4, the shaded area indicates the location of the primary living spaces in the building: the Kitchen/Dining Room and the Living Room. In order to maximize daylighting, these spaces should be oriented to the south, or the outside walls, if the south elevation is not available. Achieving the best layout may require rotating and/or mirroring the established floor plans in the Duplex or Townhouse.



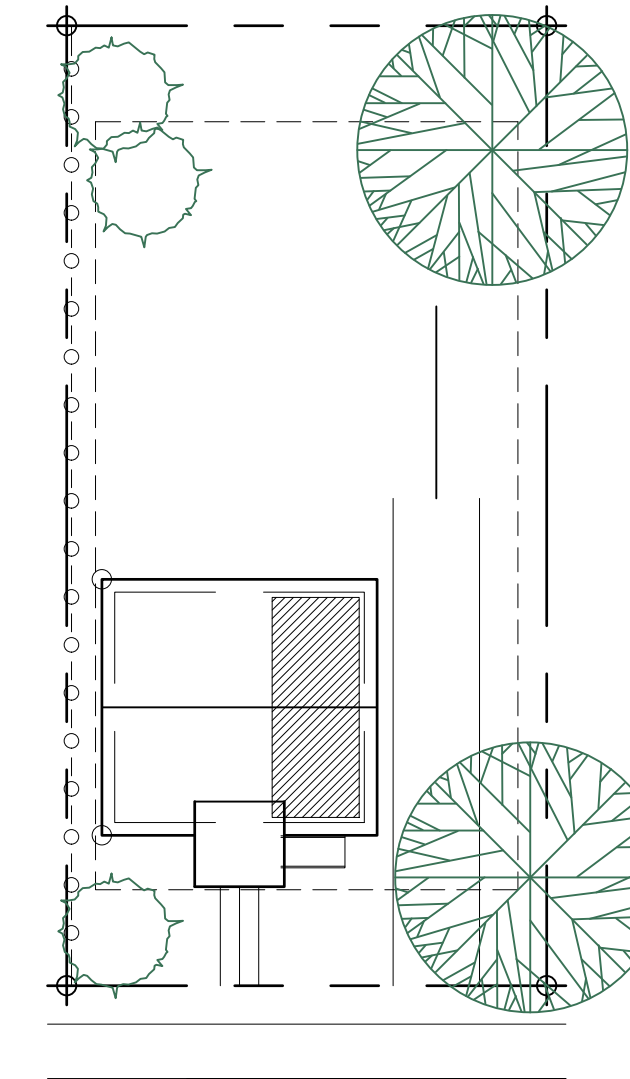
4 Courtyard Lot
No Scale



3 Side Duplex Lot
No Scale



2 Back Duplex Lot
No Scale

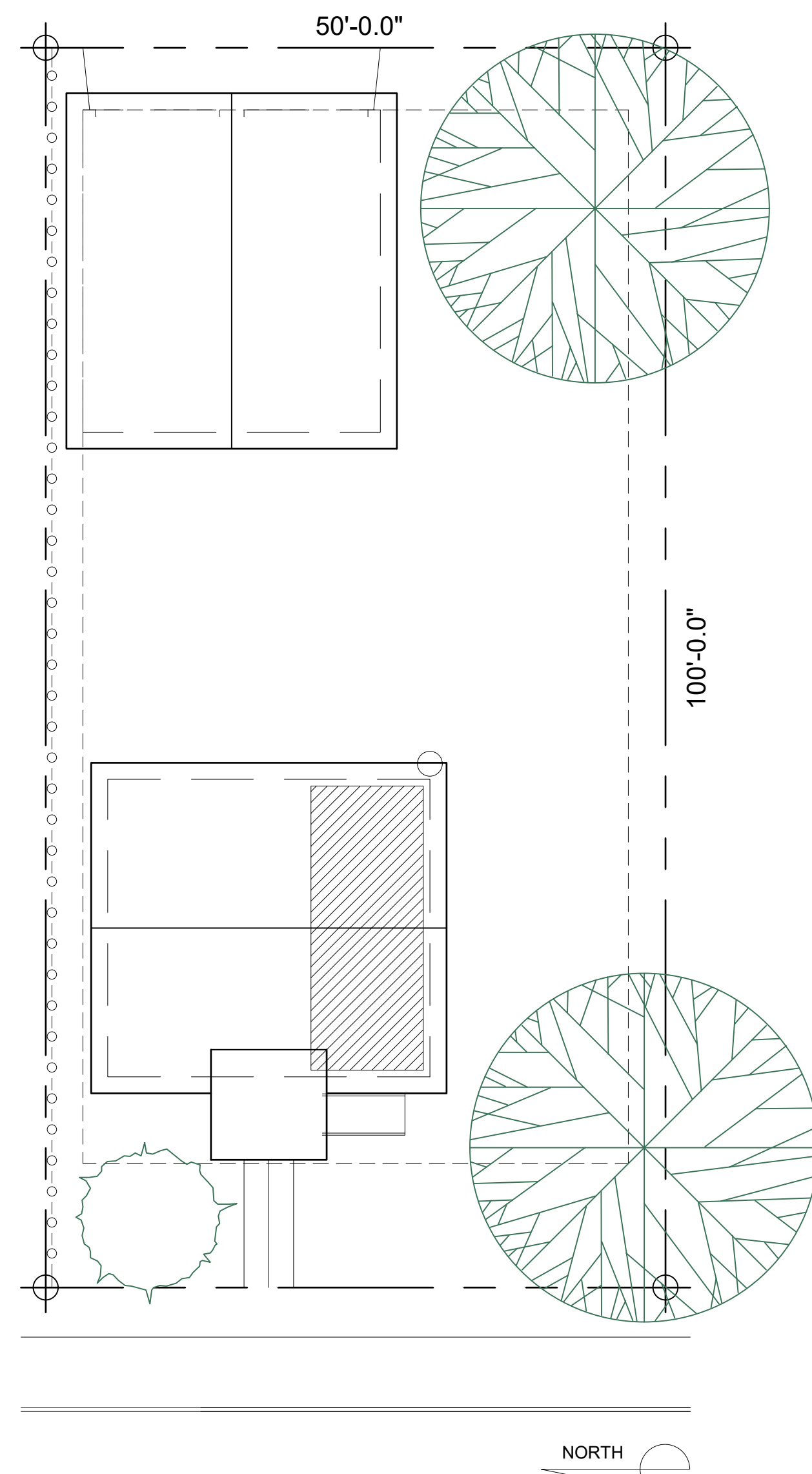


1 Standard Lot
No Scale

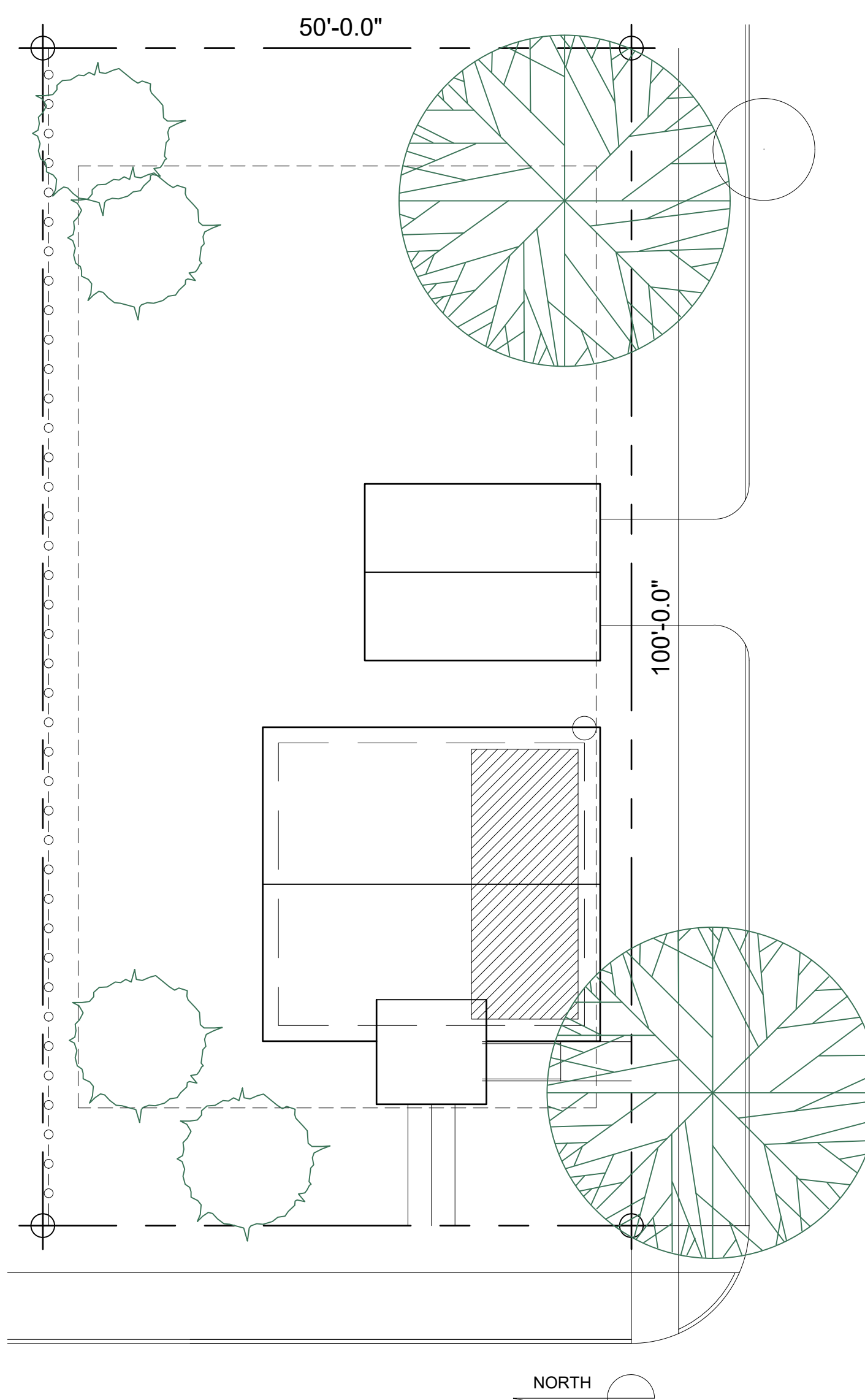
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MML Review Set
15 October 2023

NOT FOR CONSTRUCTION



A Alley Lot
No Scale



A Corner Lot
No Scale

BUILDING LAYOUT
Locate commonly used spaces where they will benefit the most from daylighting. Kitchens and Living spaces should be located to the south. Buffer spaces, like closets and mechanicals to the north. South and west facing porches provide additional moderation of temperature swings.

Achieving the best layout may require rotating and/or mirroring the established floor plans.

The shaded area indicates the location of the primary living spaces in the building: the Kitchen/Dining Room and the Living Room.

Deep overhangs block high summer sun, while allowing low altitude winter heat gain. In the cold, wet climate of the Midwest, deep overhangs are paired with steeper roof pitches to serve the additional purpose of keeping runoff rain and snow away from foundations and basement windows.

Light colored fences placed at the north side of the building can provide reflected daylighting. Natural ground cover placed south of the building, instead of light colored concrete will reduce reflected summer heat gain.

SITE CONSIDERATIONS

Capturing rain runoff

Use of eavestroughs and downspouts to capture rainwater will reduce runoff, helping to preserve topsoil and reducing the volume treated by municipal storm sewers. The rainbarrels should be capture water that can be used to supplement the home supply as needed for gardening.

Controlling solar heating and lighting

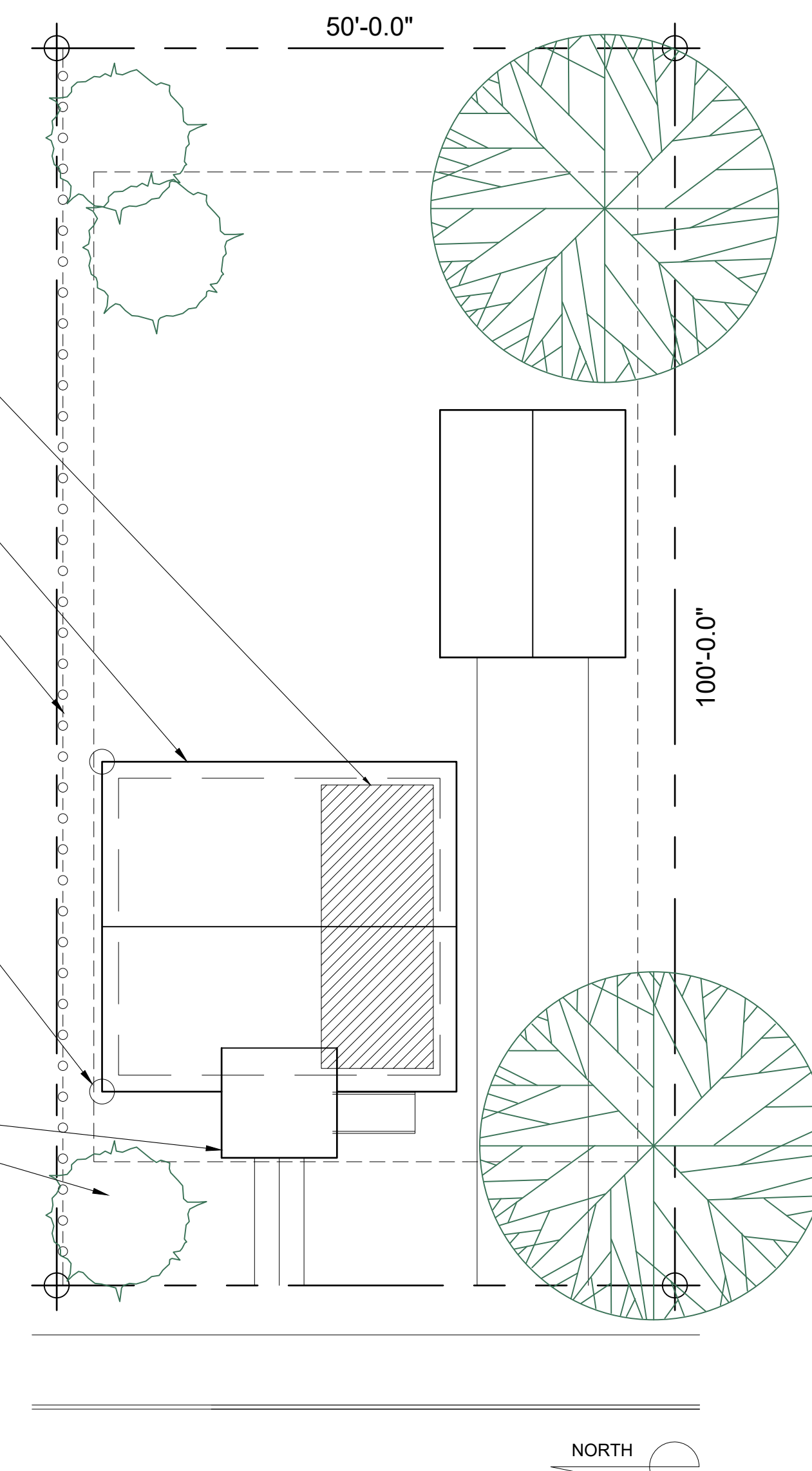
Elevation walls that face south (or nearly so) provide the best opportunities for daylighting and passive solar gains through south-facing windows. Reorienting the roof pitch away from mature trees and toward the sun will allow for increased active solar opportunities.

Use landscaping to protect the house from winter winds, to allow winter solar gains and daylighting, while shading and cooling in the summer. The west and south facing elevations should be protected from summer sun and should be shaded, either with plantings, porches, arbors and other similar shading devices can also provide effective control.

Southern exposures should be clear of any obstructions, except for deciduous trees that provide relief from the summer sun. East and west facing windows can cause the most summertime heat and should be minimized (as an option).

Similar to large shading structures, operable shutters are a less expensive option for controlling sunlight and radiant heat. They can be an attractive addition to any building, and can be found in a variety of styles to match the building. See Detail 6, Sheet B4.0 for detailing notes.

A Standard Lot - Site Planning
No Scale



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Job Number:
2023xx
Title:
SITE LAYOUT
OPTIONS

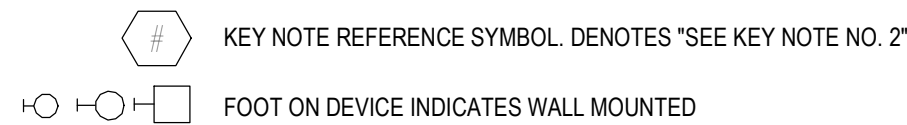
L1.0

ABBREVIATIONS

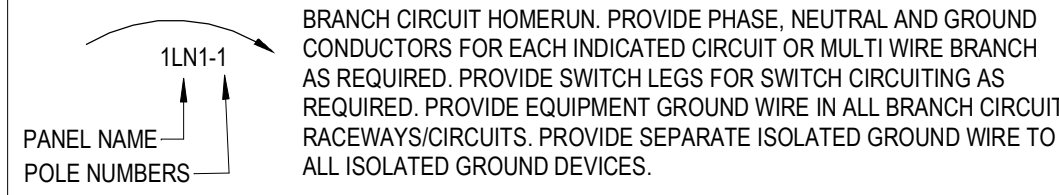
A, AMP	AMPERES
AF	AMP FUSE OR AMP FRAME
AFC	AVAILABLE FAULT CURRENT (SYMMETRICAL)
A.F.F.	ABOVE FINISHED FLOOR
AIC	AMPERE INTERRUPTING CAPACITY
AM	AMMETER
ASYM.	ASYMMETRICAL
AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CAP.	CAPACITY OR CAPACITOR
CATV	COMMUNITY ANTENNA TELEVISION
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT. CCT	CIRCUIT
C.O.	CONDUIT ONLY
CONN.	CONNECT OR CONNECTION
CU	COPPER
DA	DURESS ALARM
DB	DOOR BELL
DISC.	DISCONNECT
DPST	DOUBLE POLE SINGLE THROW
EC	ELECTRICAL CONTRACTOR
EWC	ELECTRIC WATER COOLER (COORDINATE ACCESSIBILITY OF GFCI)
ELEC	ELECTRIC OR ELECTRICAL
ELEV	ELEVATION OR ELEVATOR
EMERG. EM	EMERGENCY
EPO	EMERGENCY POWER OFF
EMT	ELECTRICAL METAL TUBING
FIXT.	FIXTURE
FLA	FULL LOAD AMPERES
FLUOR.	FLUORESCENT
GRC, GCR	GALVANIZED RIGID CONDUIT
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
GRD, GND, G	GROUND
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTO
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HZ	HERTZ
IMC	INTERMEDIATE METAL CONDUIT
I.G.	ISOLATED GROUND
INCAND.	INCANDESCENT
JB	JUNCTION BOX
KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY
KVA	KILOVOLT AMPERES
KW	KILOWATT
KWH	KILOWATT HOUR
LTG	LIGHTING
LV	LOW VOLTAGE
MATV	MASTER ANTENNA TELEVISION
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MH	MANHOLE, METAL HALIDE OR MOUNTING HEIGHT
MLO	MAIN LUGS ONLY
N.C.	NORMALLY CLOSED
N.E.C.	NATIONAL ELECTRICAL CODE
N.I.C.	NOT IN CONTRACT
NF	NON FUSIBLE
N.O.	NORMALLY OPEN
NTS	NOT TO SCALE
OL	OVERLOADS
P	POLE
PB	PULLBOX
PH OR Ø	PHASE
PNL	PANEL
PR	PAIR
PVC	POLYVINYL CHLORIDE
PWR.	POWER
REC	RECEPTACLE
RGS	RIGID GALVANIZED STEEL
SOL	SOLENOID
SPDT	SINGLE POLE DOUBLE THROW
SPKR	SPEAKER
SPST	SINGLE POLE SINGLE THROW
SW.	SWITCH
SWBD	SWITCHBOARD
SYM	SYMMETRICAL
TEL	TELEPHONE
XFMR	TRANSFORMER
TTB	TELEPHONE TERMINAL BACKBOARD
TV	TELEVISION
TYP	TYPICAL
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
V	VOLT
VA	VOLT AMPERES
VD	VOLTAGE DROP
VM	VOLT METER
W	WATTS OR WIRE
WI	WITH
W/O	WITHOUT
WP	WEATHERPROOF
XP	EXPLOSION PROOF

GENERAL

MOUNTING HEIGHTS TO BE AS INDICATED, UON. MOUNTING HEIGHTS ARE TO CENTER OF DEVICE FROM FINISHED FLOOR OR GRADE, UON. SEE SPECIFICATION DIV 26 FOR ADDITIONAL REQUIREMENTS.

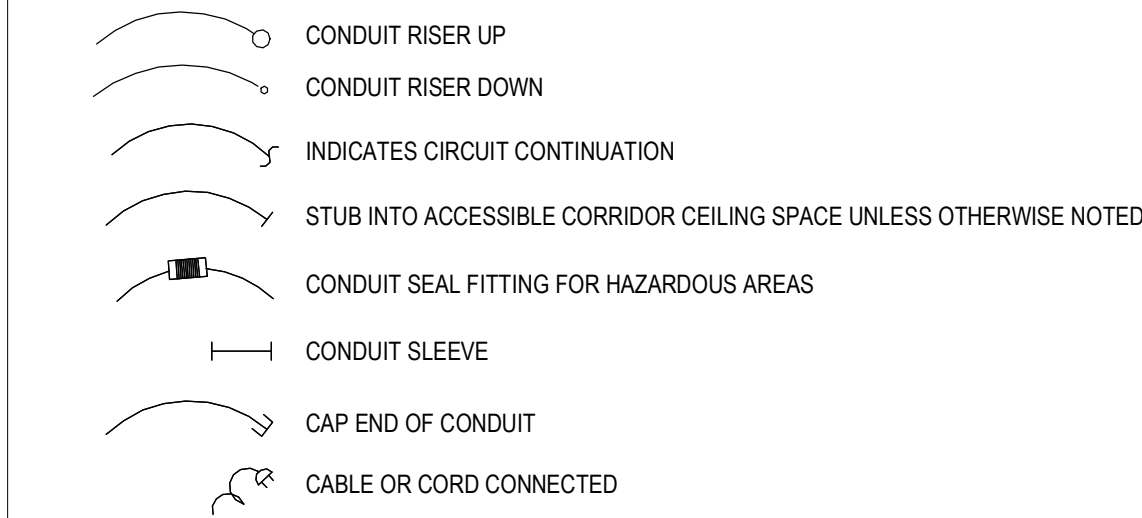


CIRCUIT DESIGNATIONS



CONDUIT SIZE	MAX QUANTITY OF CONDUCTORS PER CONDUIT			
	CONDUCTOR SIZE			
	12	10	8	
1/2 INCH	1 TO 4	1 TO 4	NA	
3/4 INCH	5 TO 8	5 TO 6	1 TO 3	
1 INCH	9 TO 13	7 TO 11	4 TO 5	

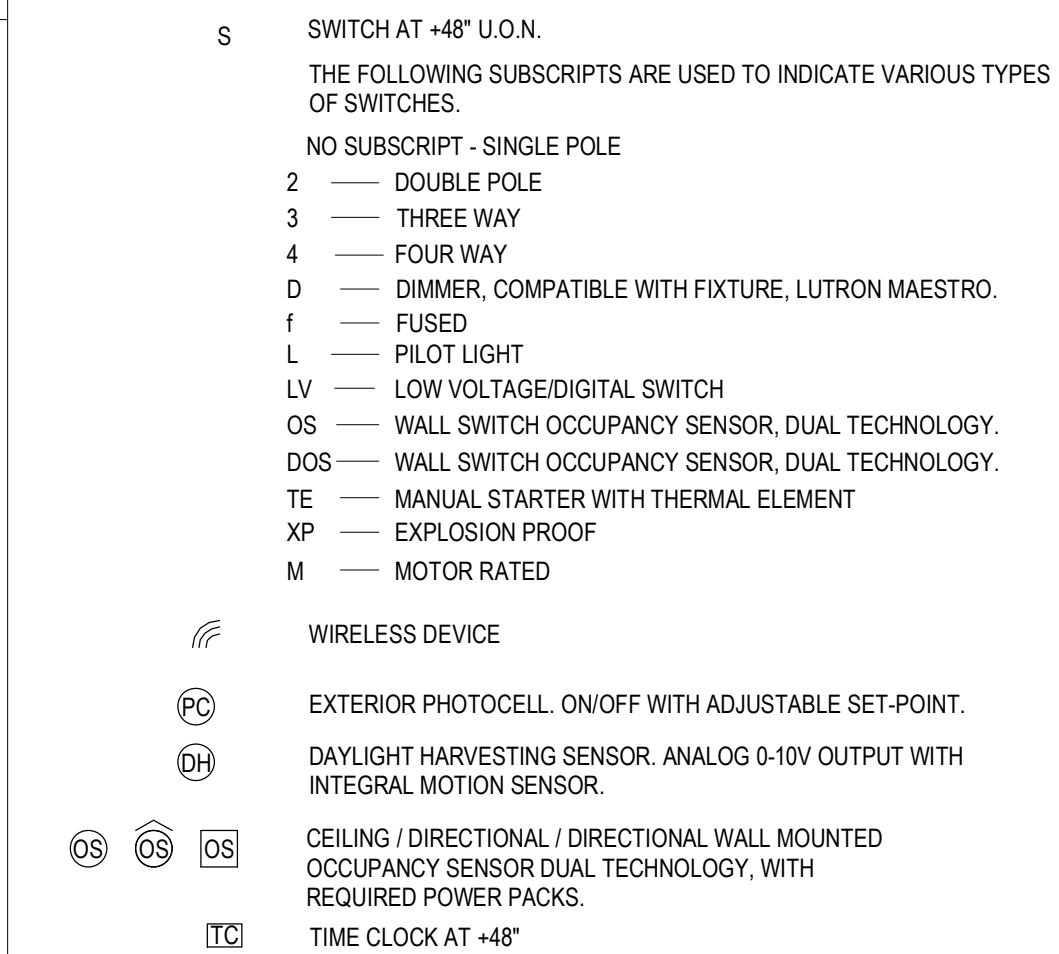
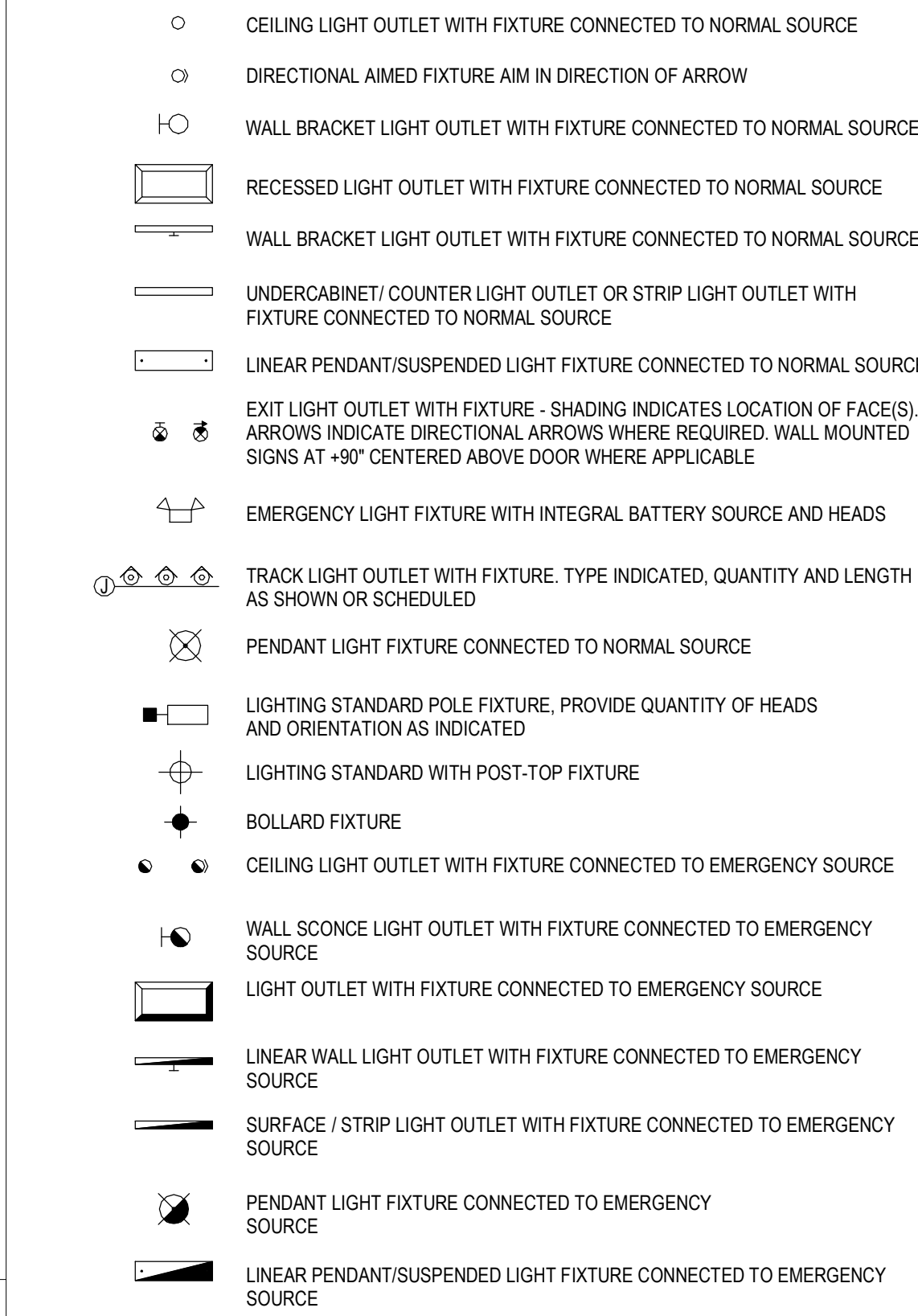
SEE SPECIFICATIONS FOR LIMITATIONS ON QUANTITY OF CURRENT CARRYING CONDUCTORS PER CONDUIT



LIGHTING

NOTE A: UPPER CASE ALPHANUMERIC SUBSCRIPT DENOTES FIXTURE TYPE. SEE SCHEDULE(S)

NOTE B: LOWER CASE LETTER SUBSCRIPT PROVIDED ADJACENT TO SWITCHING DEVICE AND ASSOCIATED LIGHT FIXTURE(S) WHERE REQUIRED FOR CLARIFICATION.



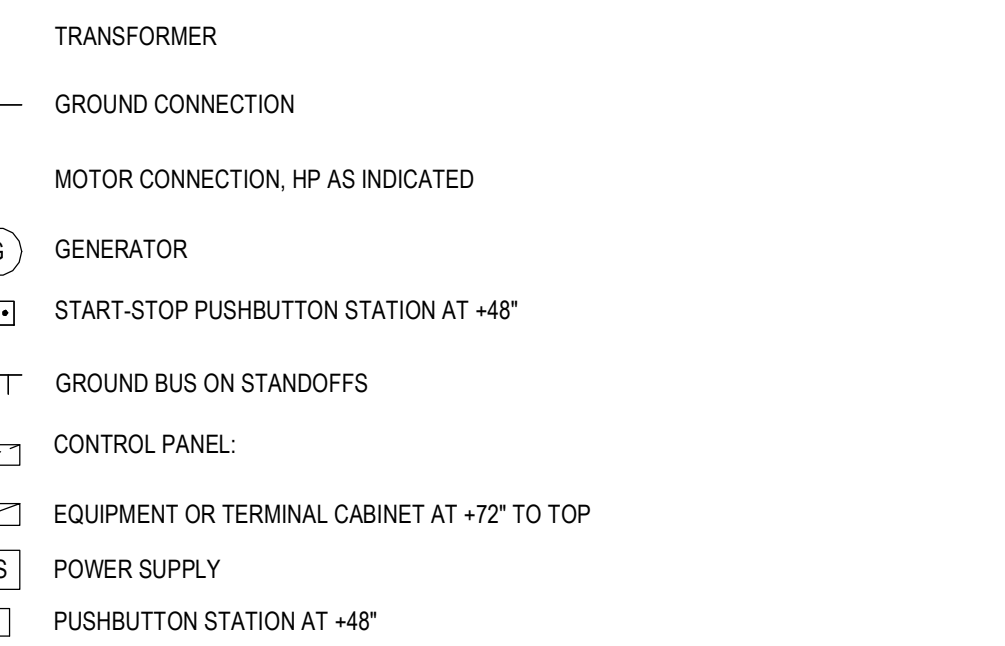
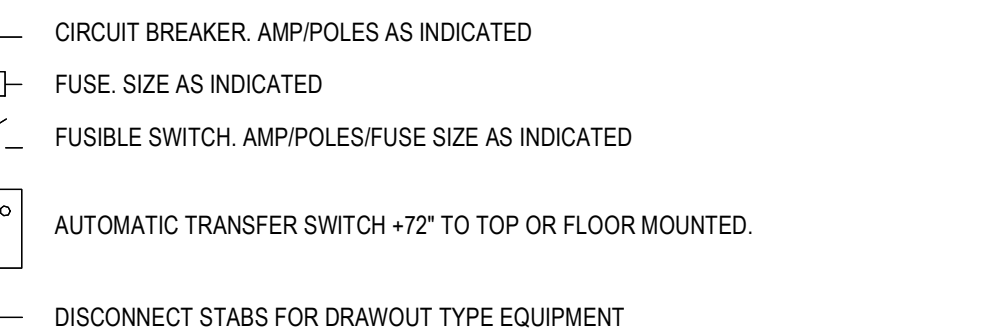
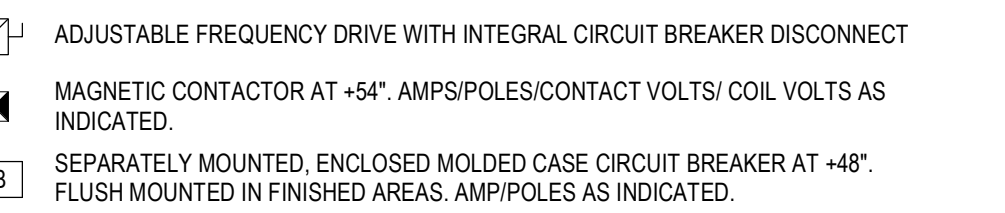
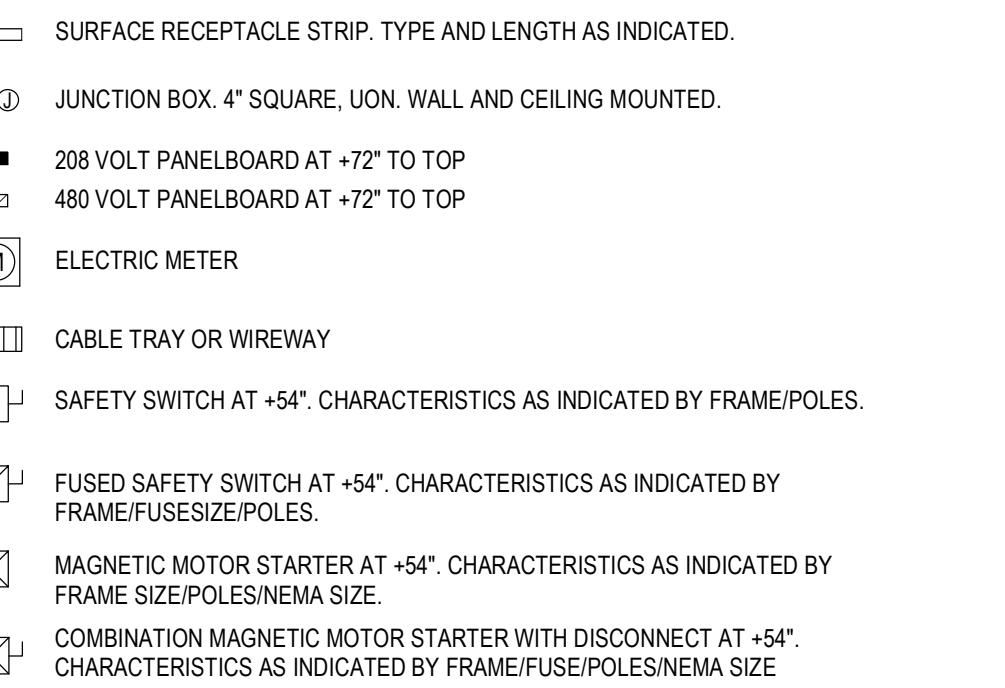
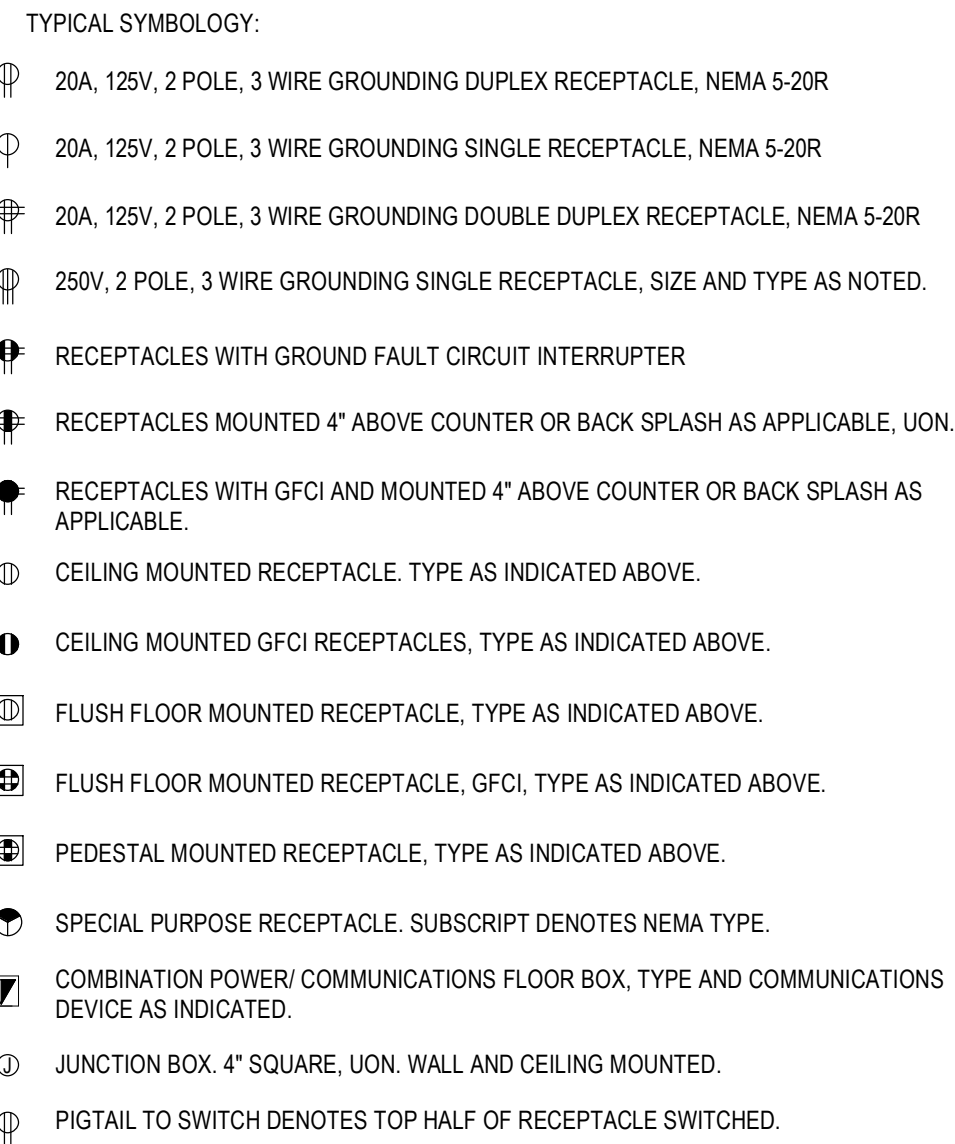
POWER AND DIAGRAMS

NOTE:

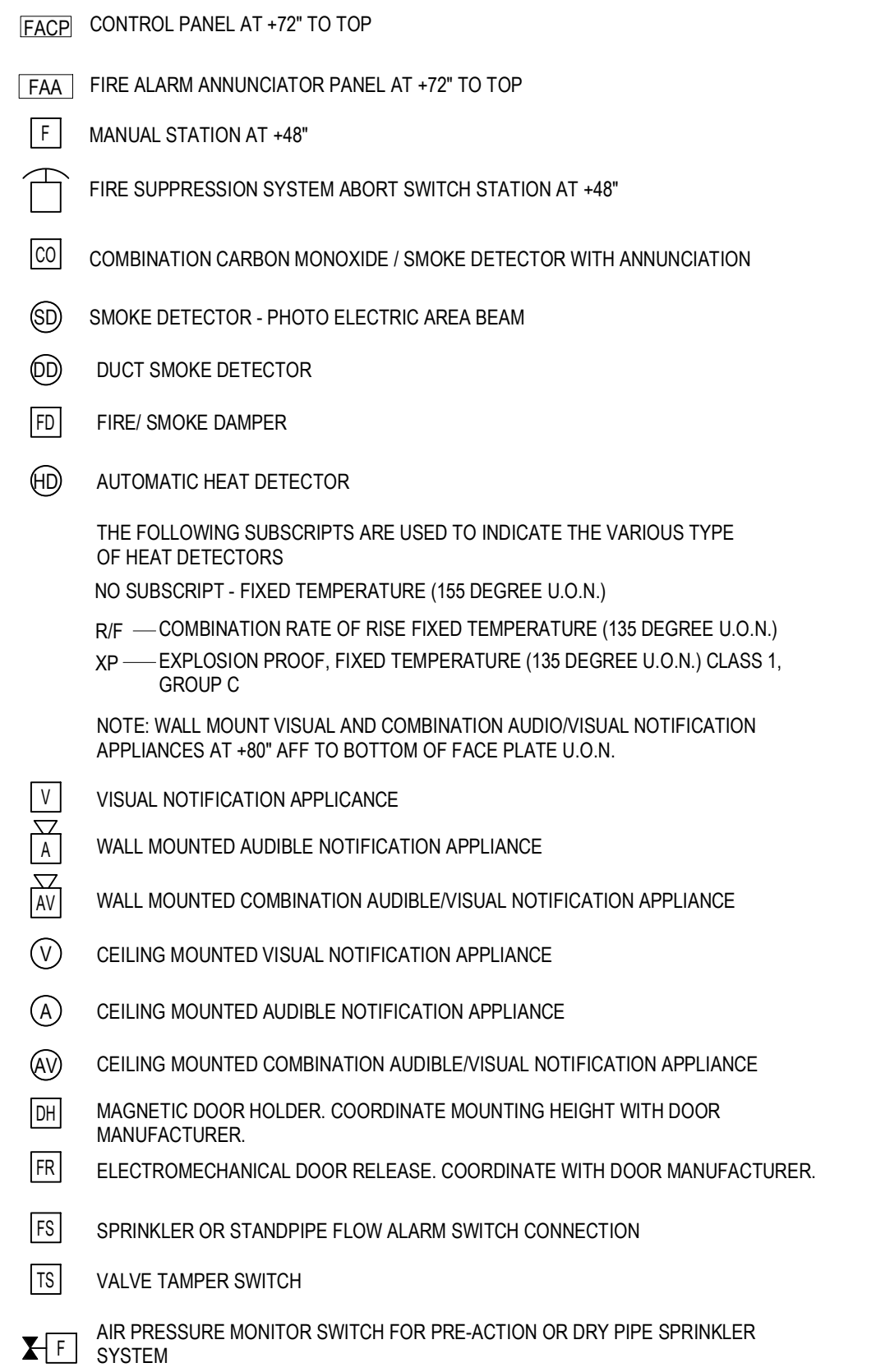
- OUTLETS IN FINISHED OR SHELL SPACES SHALL BE MOUNTED AT +18" UON.
- OUTLETS IN GARAGE, MECHANICAL, AND ELECTRICAL SPACES SHALL BE MOUNTED AT 48" UON.
- OUTLETS SHALL BE TAMPER PROOF, WHERE REQUIRED PER CODE.
- OUTLETS SHALL HAVE AFCI PROTECTION, WHERE REQUIRED PER CODE.
- OUTLETS SHALL HAVE GFCI PROTECTION, WHERE REQUIRED PER CODE.

THE FOLLOWING SUBSCRIPTS ARE USED TO INDICATE DIFFERENT TYPES OF RECEPTACLES

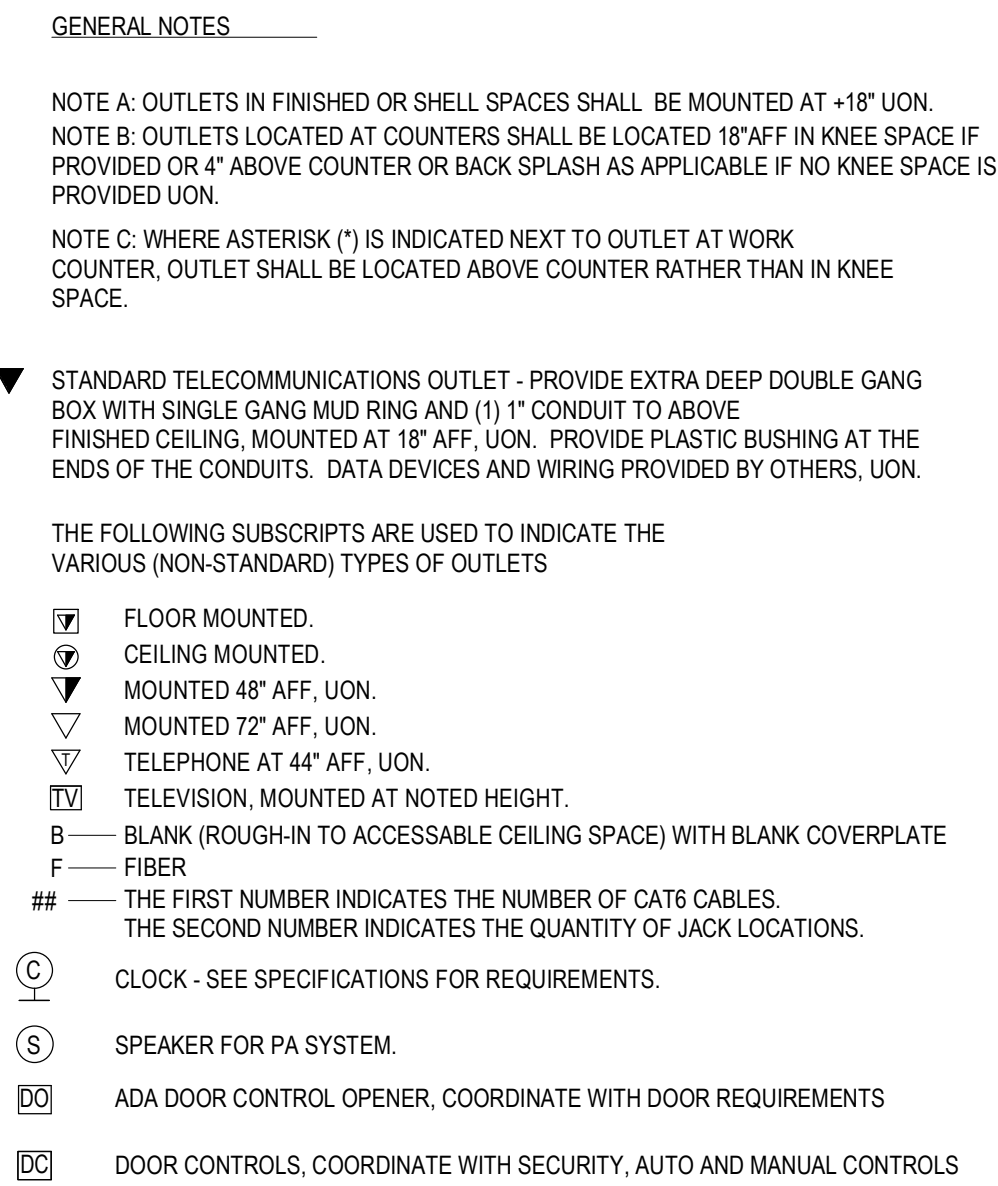
WP — WEATHERPROOF, EXTRA DUTY, WITH STEEL IN-USE COVER.
 CL — CLOCK MOUNTED AT +84", REGRESSED SINGLE RECEPTACLE, WITH CLOCK HANGER.
 H — HORIZONTAL MOUNTING
 U — DUAL USB INCLUDED WITH RECEPTACLE TYPE SHOWN.



FIRE DETECTION AND ALARM



TELECOMMUNICATION



NOTE:
 SYMBOLS SHOWN ARE FOR REFERENCE ONLY
 AND DO NOT CONSTITUTE A CHECK LIST OF
 DEVICES REQUIRED BY THE CONTRACT

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 dimensions only.

15 October 2023

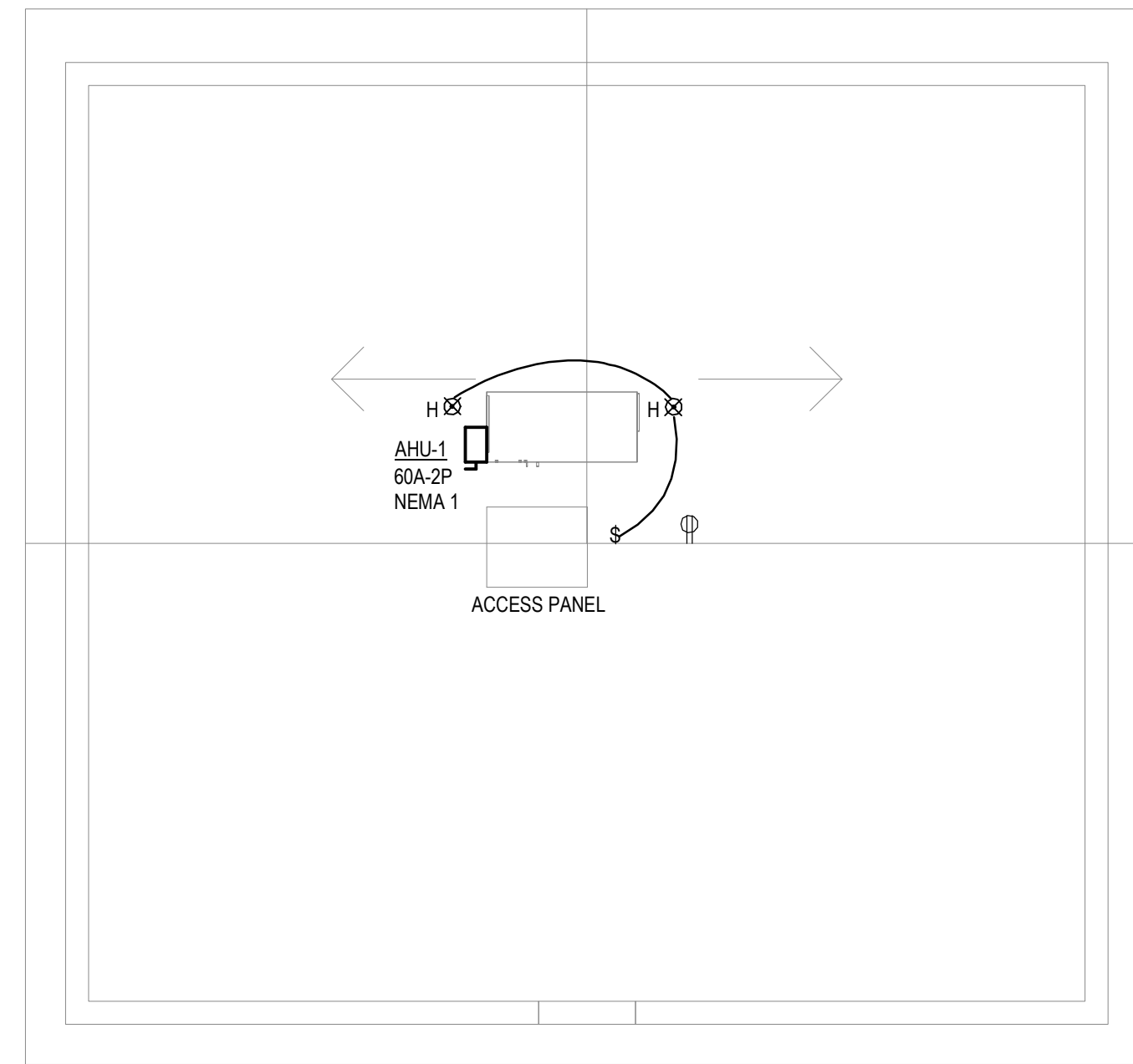
NOT FOR CONSTRUCTION

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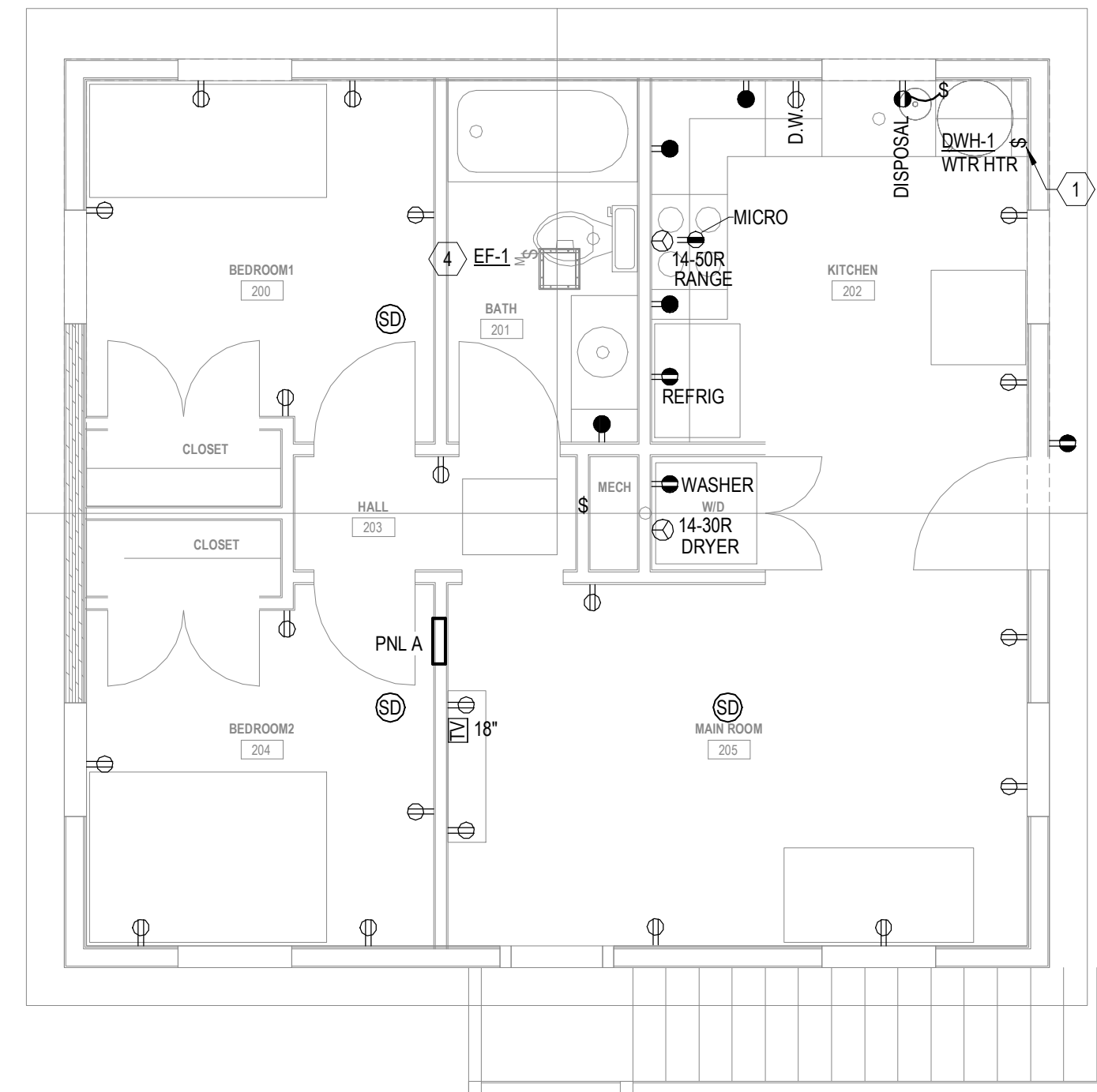
Job Number:
 2023xx

Title:
 ELECTRICAL
 COVER SHEET

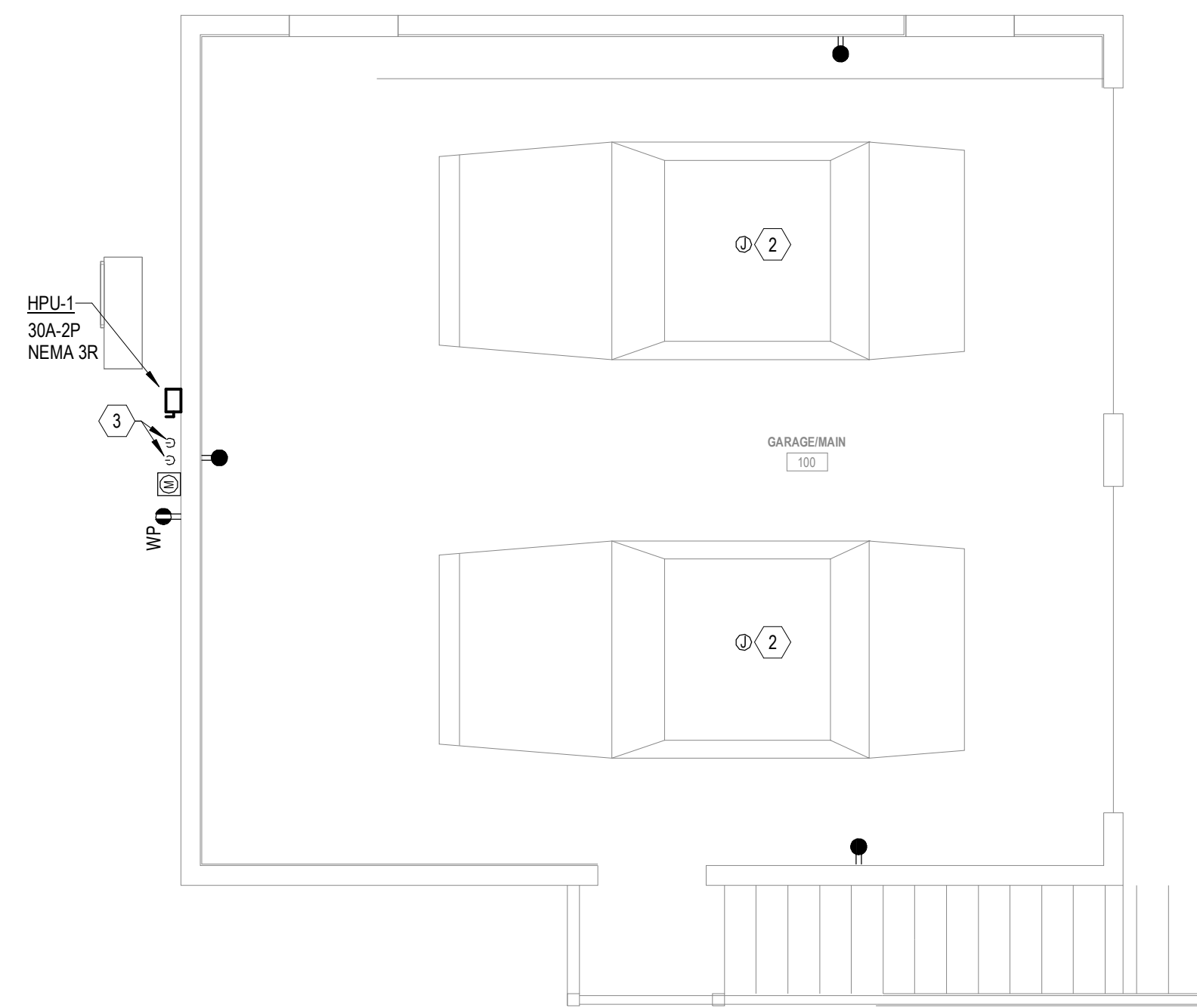
E0.1



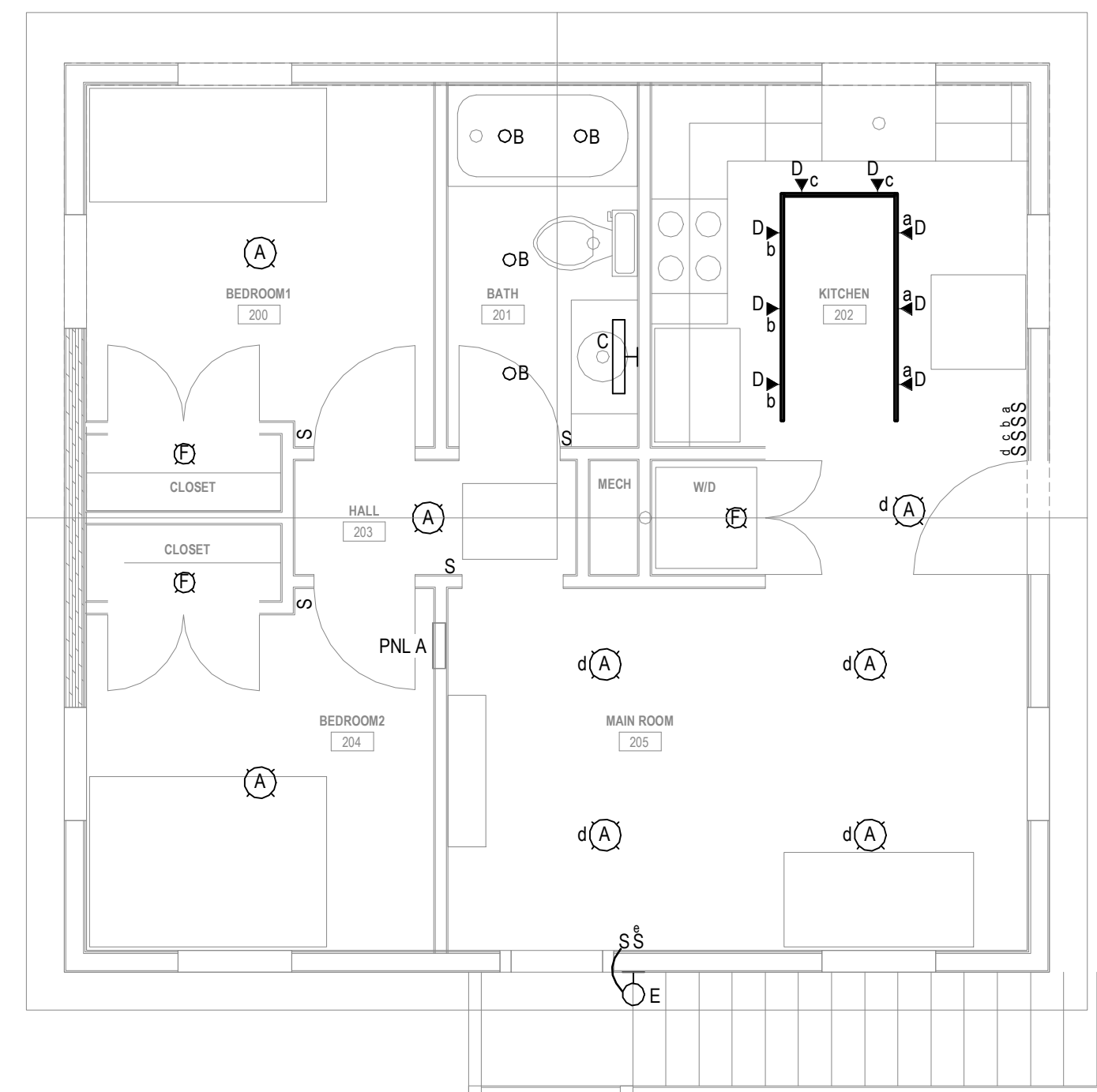
1 DWELLING UNIT MAIN LEVEL - ELECTRICAL
 E1.1 SCALE = 1/4" = 1'-0"



2 DWELLING UNIT UPPER LEVEL - POWER
 E1.1 SCALE = 1/4" = 1'-0"



3 DWELLING UNIT MAIN LEVEL - ELECTRICAL
 E1.1 SCALE = 1/4" = 1'-0"



4 DWELLING UNIT UPPER LEVEL - LIGHTING
 E1.1 SCALE = 1/4" = 1'-0"

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- KEYNOTES:**
- 1 LOCATE UNDER COUNTERTOP.
 - 2 POWER FOR OVERHEAD GARAGE DOOR OPENER.
 - 3 EMPTY 2" CONDUIT FOR POWER AND COMMUNICATION WITH PULL STRING STUBBED OUT 5'-0" FROM BUILDING.
 - 4 CONNECT EXHAUST FAN TO LOCAL LIGHT CIRCUIT. CONTROL EXHAUST WITH LIGHTING.

Do not scale.
 Use figured
 dimensions only.

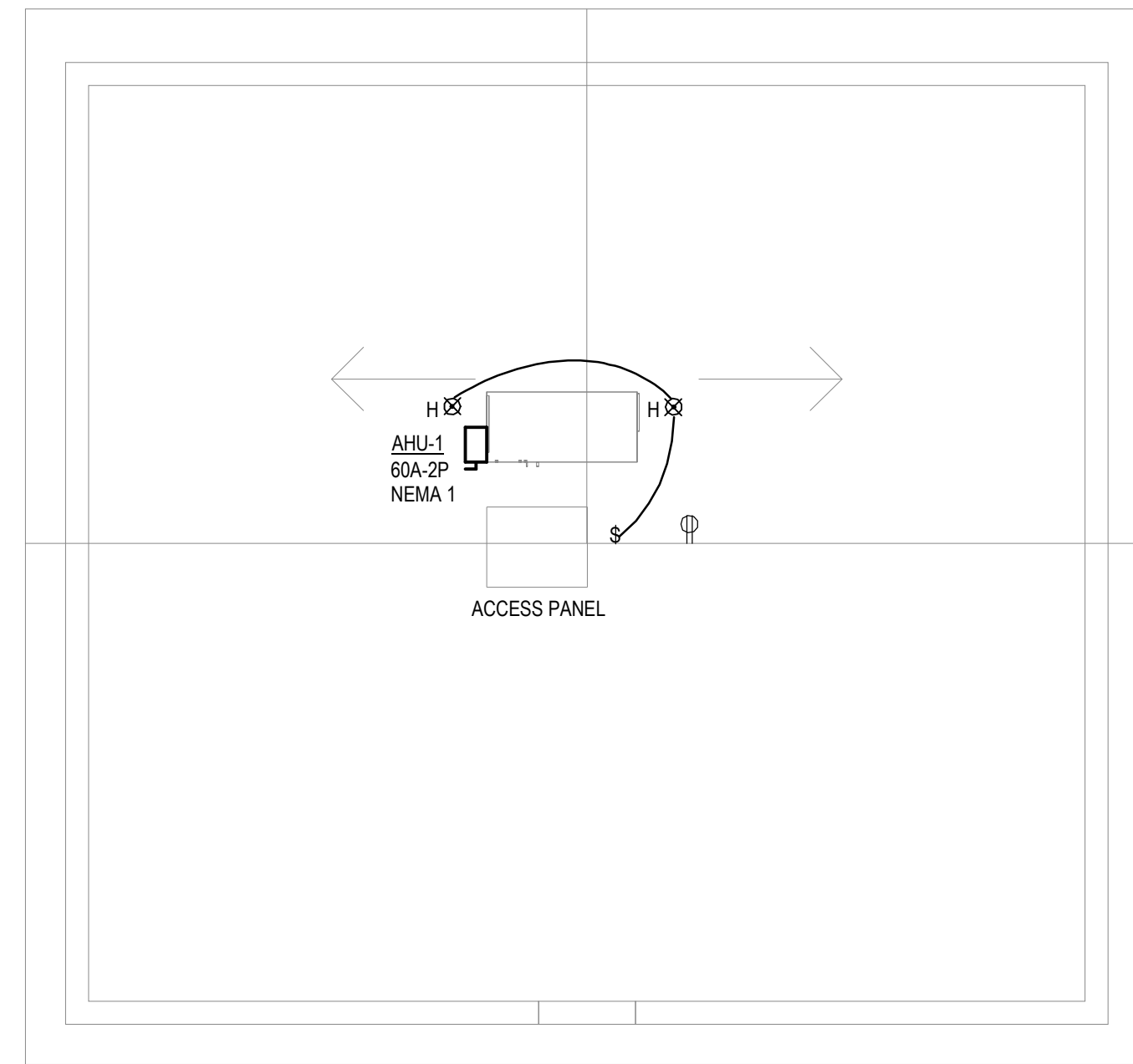
15 October 2023

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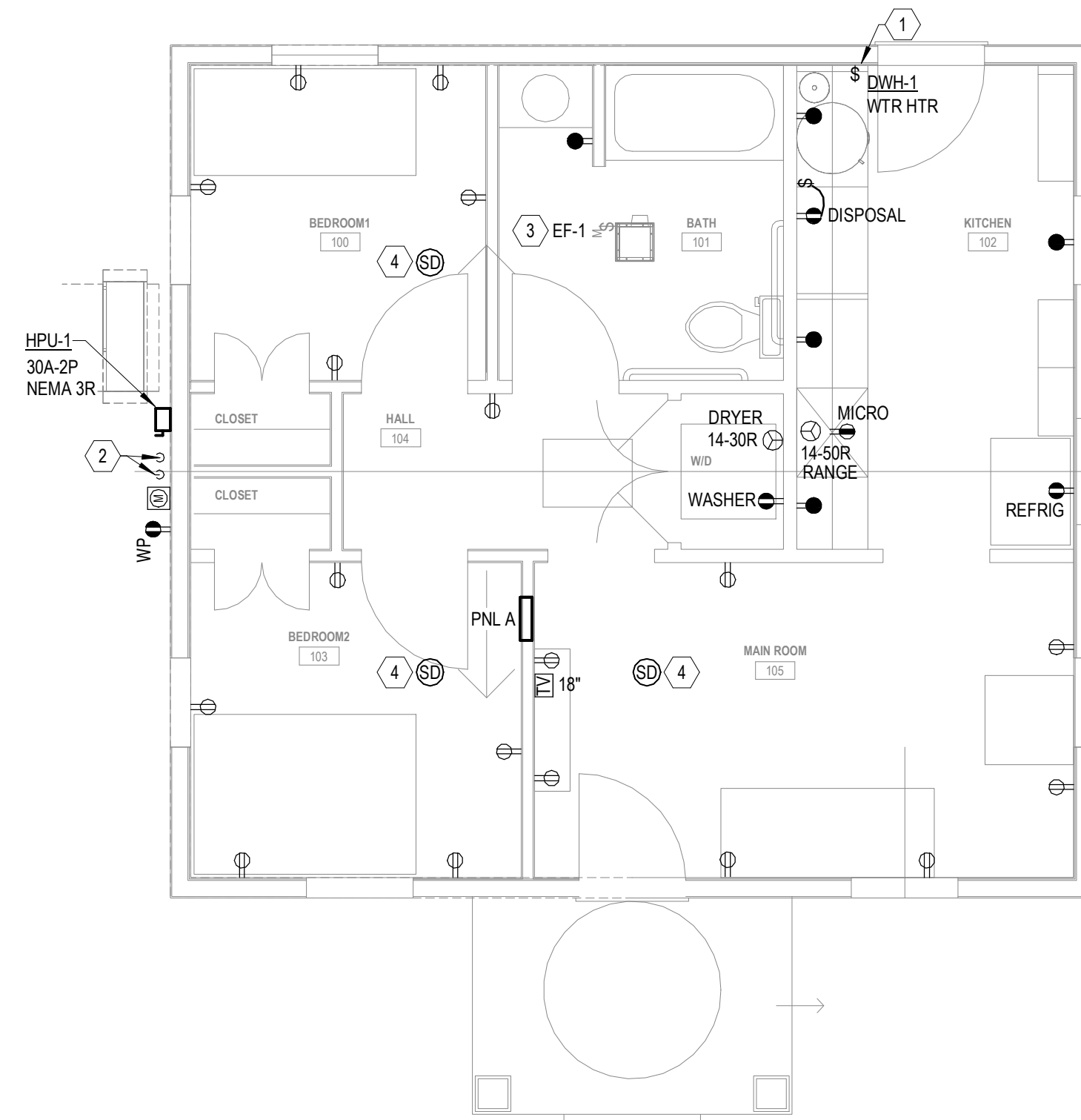
THE ABBOT
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Job Number:
 2023xx
 Title:
 FLOOR PLANS -
 ELECTRICAL

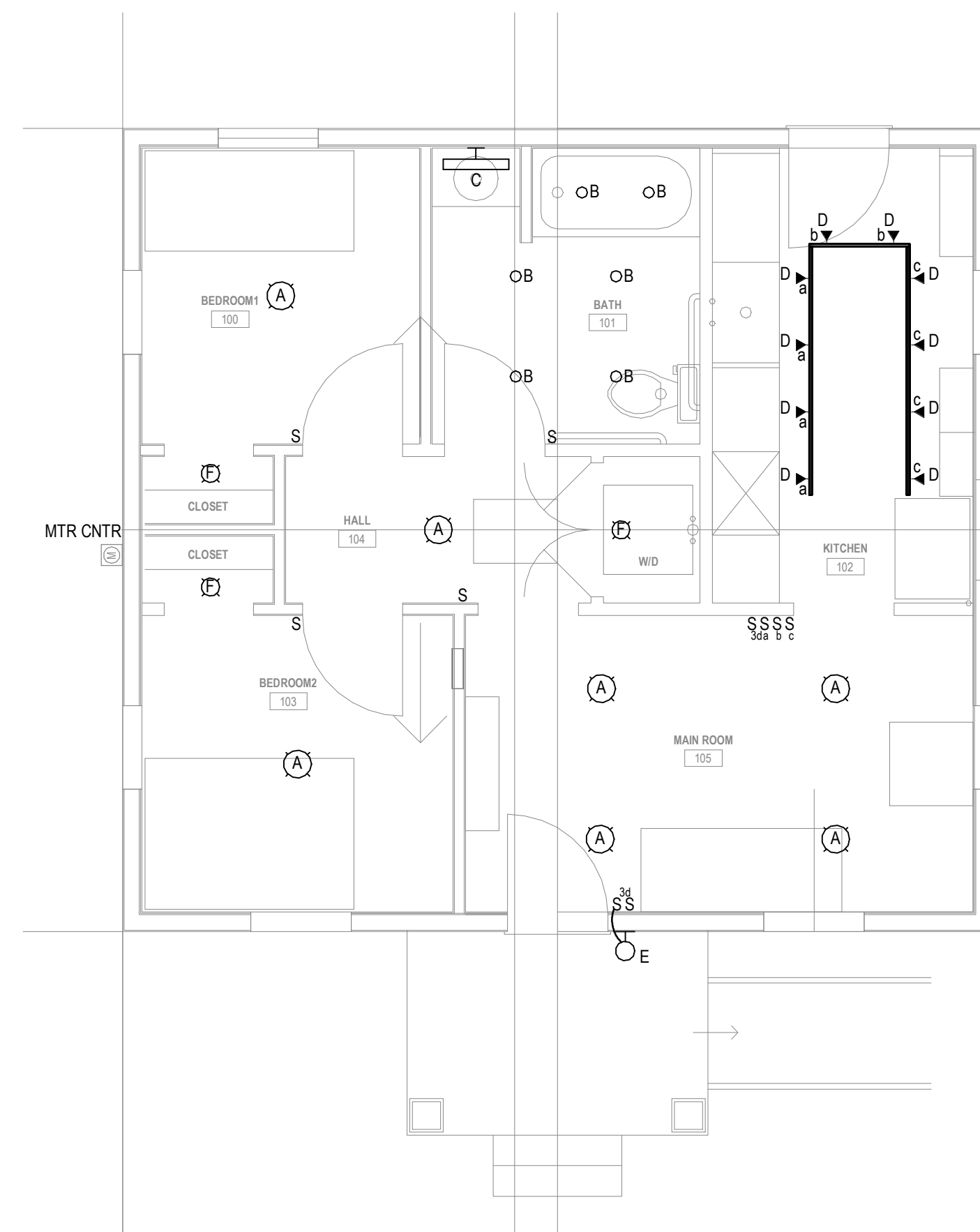
E1.1



1 BARRIER FREE MODULE ATTIC - ELECTRICAL
E2.1 SCALE = 1/4" = 1'-0"



2 BARRIER FREE MODULE MAIN LEVEL - POWER
E2.1 SCALE = 1/4" = 1'-0"



3 BARRIER FREE MODULE MAIN LEVEL - LIGHTING
E2.1 SCALE = 1/4" = 1'-0"

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- # KEYNOTES:**
- 1 LOCATE UNDER COUNTERTOP.
 - 2 EMPTY 2" CONDUIT FOR POWER AND COMMUNICATION WITH PULL STRING STUBBED OUT 5'-0" FROM BUILDING.
 - 3 CONNECT EXHAUST FAN TO LOCAL LIGHT CIRCUIT. CONTROL EXHAUST WITH LIGHTING.
 - 4 SMOKE DETECTORS WITH STROBE UNIT.

Do not scale.
Use figured
dimensions only.

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Job Number:
2023xx

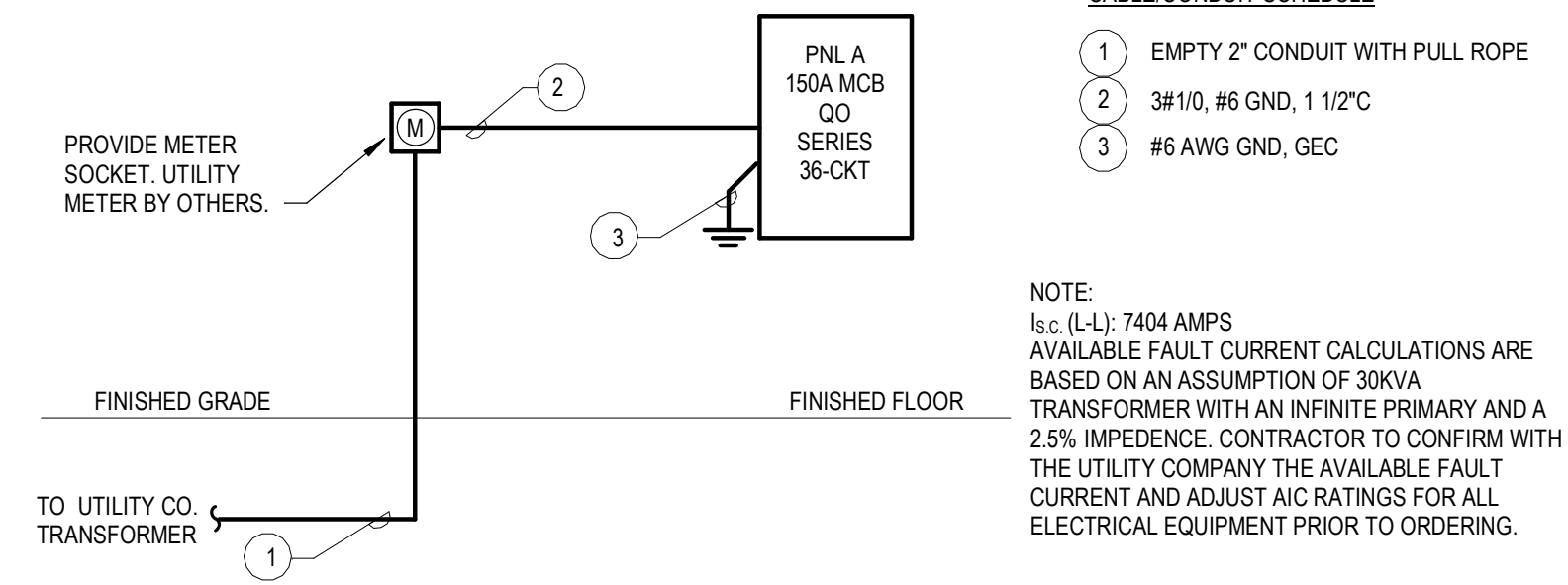
Title:
FLOOR PLANS -
ELECTRICAL

E2.1

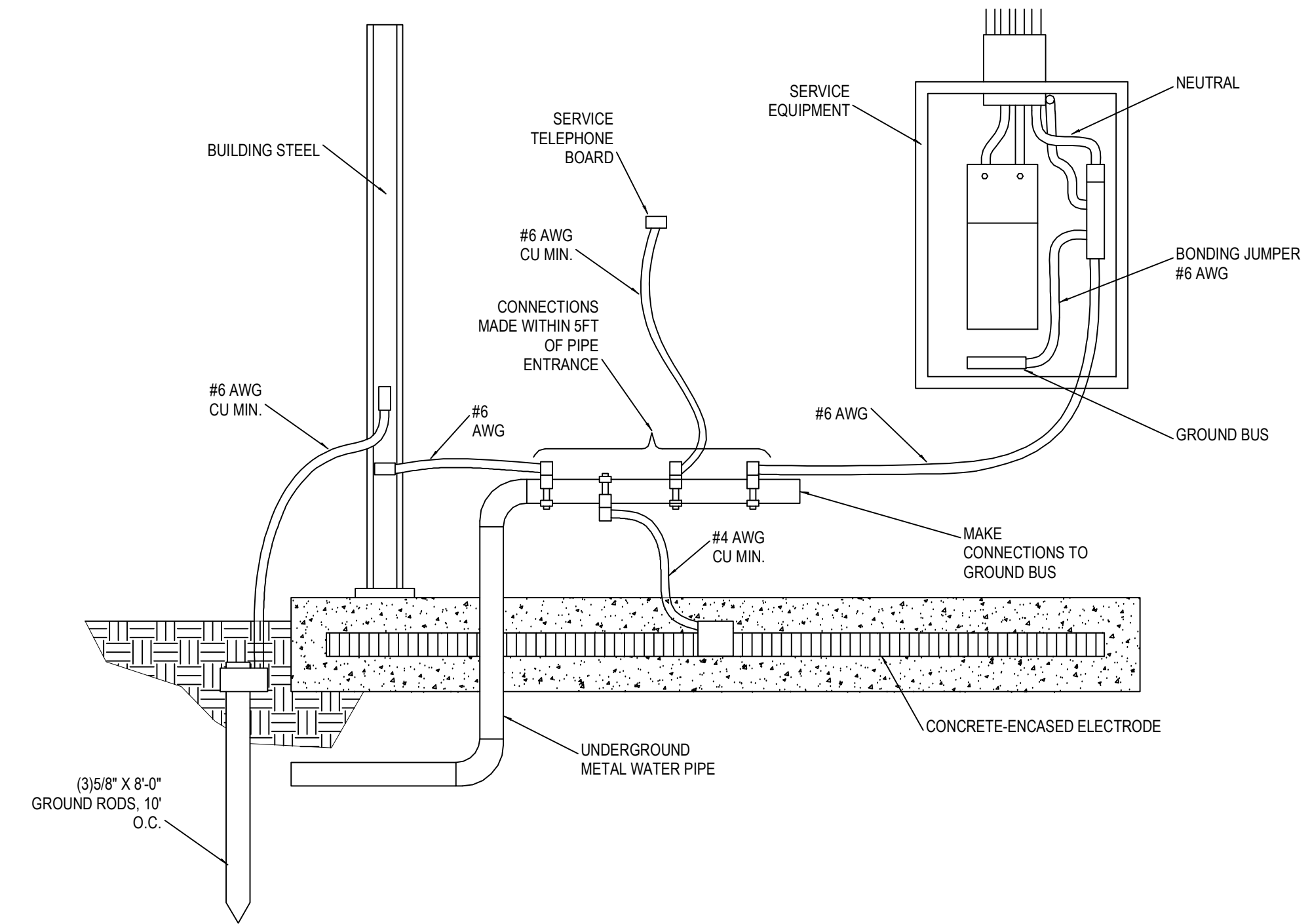
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15 October 2023



1 **120/240V ELECTRICAL RISER DIAGRAM**
E5.1 NOT TO SCALE



2 **GROUNDING AND BONDING DETAIL**
E5.1 NOT TO SCALE

NOT FOR CONSTRUCTION

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Job Number:
2023xx
Title:
ELECTRICAL
DETAILS

E5.1

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15 October 2023

NOT FOR CONSTRUCTION

THE ABBOT
Michigan Municipal League

Job Number:
2023xx

Title:
ELECTRICAL
SCHEDULES

E7.1

LIGHT FIXTURE SCHEDULE

ID	MANUFACTURER	MODEL NO.	VOLTAGE	REQUIRED LAMPS			DESCRIPTION	NOTES
				QTY	WATT	TYPE		
A	JUNO	JSF-11IN-35K-90CRI-MVOLTZT-WH	120-277V	1	15 W	LED, 3500K, 1300LM, 90CRI	LED SURFACE MOUNT DOWNLIGHT	
B	JUNO	ICILED-G4-14LM-35K-90CRI-MVOLT-ZT1	120-277V	1	17 W	LED, 3500K, 1400LM, 90CRI	4" DOWNLIGHT, WHITE FLANGE, 1% DIMMING	
C	LITHONIA	FMV7SL-24IN-MVOLT-30K90CRI-BN-MM	120-277V	1	10 W	LED, 3000K, 1300LM	2" LED VANITY	
D	JUNO	R65L-35K-90CRI-WFL-WH / TU-WH	120-277V	1	10 W	LED, 3500K, 3000LM, 90CRI	LED CYLINDER TRACK HEAD WITH TRACK SECTIONS	SEE LIGHTING PLAN FOR TRACK SECTION LENGTHS
E	SIGNATURE HARDWARE	SKU-941513	120V	1	10 W	LED, 3000K, 1300LM	OUTDOOR ENTRANCE WALL SCONCE	
F	CLOUDY BAY	JSF-11IN-35K-90CRI-MVOLTZT-WH	120V	1	10 W	LED, 5000K, 600LM, 90CRI	MOTION SENSOR CEILING LIGHT	
H	LITHONIA	OLVTCM-400-MVOLT-GREY	120-277V	1	15 W	LED, 4000K, 600LM	GENERAL PURPOSE LIGHT FIXTURE	

Panel: A

Location: BEDROOM2 204 Volts: 120/240 Single A.I.C. Rating: 10kAIC
Mouting: RECESSED Phases: 1 Mains Type: MCB
Enclosure: TYPE 1 Wires: 3 Mains Rating: 150 A
Series: LOAD CENTER Bus Rating: 150 A
Neutral Buss: Yes
Ground Buss: Yes

Notes:
* PROVIDE GFCI CIRCUIT BREAKER
** NON-BARRIER FREE UNIT ONLY

CKT	Circuit Description	Trip	Poles	A B		Circuit Description	CKT
				Poles	Trip		
1	LTG BEDRM, CLOSET, HALL	20	1	...	1	LTG KITCHEN	2
3	LTG MAIN ROOM, W/D,...	20	1	...	1	LTG KITCHEN	4
5	LTG ATTIC	20	1	...	1	LTG KITCHEN	6
7	RECEPT BEDROOM1	20	1	...	1	RECEPT HALL	8
9	RECEPT BATH	20	1	...	1	RECEPT BEDROOM2	10
11	* D.W. KITCHEN	20	1	...	1	RECEPT MAIN ROOM	12
13	DISPOSAL KITCHEN	20	1	...	1	RECEPT MAIN ROOM	14
15	* MICRO KITCHEN	20	1	...	1	WASHER W/D	16
17	REFRIG KITCHEN	20	1	...	2	DRYER W/D	18
19	RECEPT KITCHEN	20	1	...	...	...	20
21	RECEPT KITCHEN	20	1	...	2	WATER HEATER MECH	22
23	RECEPT KITCHEN	20	1	...	...	...	24
25	RANGE KITCHEN	50	2	...	2	AHU-1 ATTIC	26
27	...	...	...	...	...	...	28
29	HPU-1	20	2	...	1	RECEPT ATTIC	30
31	...	...	...	...	1	SPARE	32
33	** RECEPT GARAGE/MAIN	20	1	...	1	SPARE	34
35	** GDOP GARAGE/MAIN	20	1	...	1	SPARE	36

Notes:

PLUMBING ABBREVIATIONS

ATC	ARCHITECTURAL TRADES CONTRACTOR
AFF	ABOVE FINISHED FLOOR
BFS	BELOW FLOOR SLAB
BTU	BRITISH THERMAL UNIT
CA	COMPRESSED AIR
CD	CONDENSATE DRAIN
CO	CLEAN OUT
COTG	CLEAN OUT TO GRADE
CW	COLD WATER
DF	DRINKING FOUNTAIN
DIA/Ø	DIAMETER
DWH	DOMESTIC WATER HEATER
ETC	ELECTRICAL TRADES CONTRACTOR
EWC	ELECTRIC WATER COOLER
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
G	GAS (NATURAL)
G (2-PSI)	NATURAL GAS (2-PSI)
G (5-PSI)	NATURAL GAS (5-PSI)
GPM	GALLONS PER MINUTE
HB	HOSE BIBB
HP	HORSE POWER
HVAC	HEATING/VENTILATION/AIR CONDITIONING
HWR	HOT WATER RETURN
HW	HOT WATER
INV OR I.E.	INVERT ELEVATION
LAV	LAVATORY
MTC	MECHANICAL TRADES CONTRACTOR
MBH	BTU PER HOUR (THOUSAND)
MS	MOP SINK
ORC	OVER-FLOW RAIN CONDUCTOR
ORD	OVER-FLOW ROOF DRAIN
PVC	POLYVINYL CHLORIDE
RC	RAIN CONDUCTOR
RD	ROOF DRAIN
SAN	SANITARY
SH	SHOWER
SK	SINK
SS	SOIL STACK
ST	STORM
TYP	TYPICAL
UR	URINAL
VAC	VACUUM
VB	VACUUM BREAKER
V	VENT
VS	VENT STACK
VTR	VENT THRU ROOF
W	WASTE
WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WALL HYDRANT
WS	WASTE STACK
X-	EXISTING

NOTE:
ALL ABBREVIATIONS AND SYMBOLS SHOWN ON THIS SHEET MAY NOT BE USED ON THIS PROJECT.

PLUMBING SYMBOLS

	KEY NOTE
	CONNECTION POINT, NEW TO EXISTING
	DEMOLITION END POINT
	PIPE TURNED UP
	PIPE TURNED DOWN
	PIPE OUT OF TOP
	PIPE OUT OF BOTTOM
	COLD WATER
	HOT WATER
	HOT WATER RETURN
	VENT PIPE
	LOW PRESSURE GAS
	HIGH PRESSURE GAS
	MEDIUM PRESSURE GAS
	SANITARY
	SANITARY BELOW FLOOR SLAB
	RAIN CONDUCTOR
	RAIN CONDUCTOR BELOW FLOOR SLAB
	OVERFLOW RAIN CONDUCTOR
	FIRE PROTECTION
	UNION
	FLOW DIRECTION
	GATE VALVE
	GAS COCK
	CHECK VALVE
	BALL VALVE
	CIRCUIT BALANCE VALVE
	BUTTERFLY VALVE
	WATER METER
	GAS METER
	STRAINER
	HOSE BIBB/WALL HYDRANT
	GAS REGULATOR
	RELIEF VALVE
	SHOWER HEAD

GENERAL PLUMBING NOTES

- A. PIPING LAYOUT IS SCHEMATIC. EXACT LOCATION OF PIPING AND EQUIPMENT SHALL BE COORDINATED WITH BUILDING STRUCTURE, EQUIPMENT FURNISHED, ARCHITECTURAL DRAWINGS AND ALL OTHER TRADES PRIOR TO INSTALLATION. ANY CONTRACTOR INSTALLING WORK WITHOUT PRIOR COORDINATION SHALL RELOCATE HIS WORK AT HIS EXPENSE TO ALLOW PROPER INSTALLATION OF ANY AND ALL TRADES WORK.
- B. ALL WORK SHALL COMPLY WITH THE MICHIGAN PLUMBING CODE AND ALL APPLICABLE LOCAL CODES.
- C. ALL INVERTS, STATED OR NOT, NEW OR EXISTING, SHALL BE COORDINATED IN THE FIELD. VERIFY EXISTING INVERTS PRIOR TO STARTING WORK.
- D. UNLESS OTHERWISE NOTED, ALL PIPING SHALL BE CONCEALED WHEREVER POSSIBLE. PROVIDE CHROME ESCUTCHEON AT EACH PENETRATION OF A FINISHED SURFACE.
- E. PLUMBING UTILITY PIPING SHALL NOT BE RUN ABOVE ELECTRICAL GEAR OR IN THE SERVICE SPACE REQUIRED BY THE NATIONAL ELECTRICAL CODE.
- F. PROVIDE SHOCK ABSORBER IN THE DOMESTIC COLD AND HOT WATER PIPING. SHOCK ABSORBERS TO BE LOCATED IN AN ACCESSIBLE LOCATION.
- G. ALL WALL AND SLAB PENETRATIONS OF MASONRY OR CONCRETE CONSTRUCTION SHALL BE SLEEVED.
- H. PROVIDE ISOLATION SEPARATORS FOR COPPER PIPING RUNNING THROUGH METAL STUDS.
- I. ALL FLOOR DRAINS ARE TO HAVE AN APPROVED TRAP SEAL DEVICE.
- J. ALL FIXTURES SHALL HAVE SHUTOFF STOP VALVES IN AN ACCESSIBLE LOCATION. PIPING BEYOND THE STOP VALVES AND EXPOSED IN OCCUPIED SPACES SHALL BE CHROME-PLATED. ANY NOTED SHUTOFF VALVES ARE IN ADDITION TO THIS REQUIREMENT.
- K. PROVIDE FIRE STOPPING AT ALL PENETRATIONS OF FIRE RATED ENCLOSURES.

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PIPE INSULATION SCHEDULE								
FLUID OPERATING TEMP RANGE, °F	INSULATION CONDUCTIVITY		NOMINAL PIPE OR TUBE SIZE, INCHES				NOTE	
	CONDUCTIVITY RANGE BTU-IN/HR-FT ² -°F	MEAN TEMP RATING, °F	<1	1 TO <1.5	1.5 TO <4	4 TO <8		>8
105°+ (DOM. HW)	0.22 - 0.28	100°	0.5 ^a	0.5 ^a	1.0 ^a	1.0 ^a	1.0 ^a	2
DOM. HW W/ HWR	0.27	100°	1.0 ^c	1.0 ^c	1.0 ^{a,c}	1.0 ^{a,c}	1.0 ^{a,c}	2
40° TO 60°	0.21 - 0.27	75°	1.5 ^{b,d}	1.5 ^{b,d}	1.5 ^{b,d}	1.5 ^{b,d}	1.5 ^{b,d}	1
> 40°	0.20 - 0.26	50°	1.5 ^{b,d}	1.5 ^{b,d}	1.5 ^{b,d}	1.5 ^{b,d}	1.5 ^{b,d}	1
DOMESTIC CW	0.21 - 0.27	75°	1.0	1.0	1.0	1.0	1.0	1

NOTE: THE VALUES LISTED IN THE SCHEDULE ARE BASED ON THE MICHIGAN UNIFORM ENERGY CODE (BASED ON ASHRAE 90.1-2013), 2015 INTERNATIONAL ENERGY CONSERVATION CODE (IECC) (AS REFERENCED BY 2015 MICHIGAN MECHANICAL CODE), & 2018 MICHIGAN PLUMBING CODE (MPC). THE MORE STRINGENT REQUIREMENTS ARE USED AS LISTED BELOW. VERIFY THE VALUES COMPLY WITH THE CODES IN EFFECT AT THE TIME OF CONSTRUCTION AND ADJUST ACCORDINGLY.

CODE REFERENCES:

- a. FROM ASHRAE 90.1, TABLE 6.8.3-1 "MINIMUM PIPING INSULATION THICKNESS" FOR "HEATING AND HOT WATER SYSTEMS (STEAM, STEAM CONDENSATE, HOT WATER HEATING AND DOMESTIC WATER SYSTEMS)"
- b. FROM ASHRAE 90.1, TABLE 6.8.3-2 "MINIMUM PIPING INSULATION THICKNESS" FOR "COOLING SYSTEMS (CHILLED WATER, BRINE, AND REFRIGERANT)"
- c. FROM IECC, SECTION C404 "SERVICE WATER HEATING (MANDATORY)" PARAGRAPH C404.4 "INSULATION OF PIPING."
- d. FROM IECC, TABLE C403.2.10 "MINIMUM PIPE INSULATION THICKNESS."

NOTES:

1. PROVIDE WITH VAPOR BARRIER. HANGERS/SUPPORTS SHALL BE INSTALLED OUTSIDE OF INSULATION.
2. THE FOLLOWING DOMESTIC/SERVICE HOT WATER PIPING SHALL BE INSULATED AS INDICATED.
 - a. RECIRCULATING SYSTEM PIPING, INCL THE SUPPLY AND RETURN PIPING OF A CIRCULATING TANK TYPE WATER HEATER.
 - b. THE FIRST 8 FT. OF OUTLET PIPING FOR A CONSTANT TEMPERATURE NONRECIRCULATING STORAGE SYSTEM.
 - c. THE INLET PIPE BETWEEN THE STORAGE TANK AND A HEAT TRAP IN A NONRECIRCULATING STORAGE SYSTEM.
 - d. PIPES THAT ARE EXTERNALLY HEATED (SUCH AS HEAT TRACE OR IMPEDANCE HEATING).

Do not scale. Use figured dimensions only.

15 October 2023

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Michigan Municipal League

Job Number:
2023xx
Title:
PLUMBING COVER SHEET

P0.1

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15 October 2023

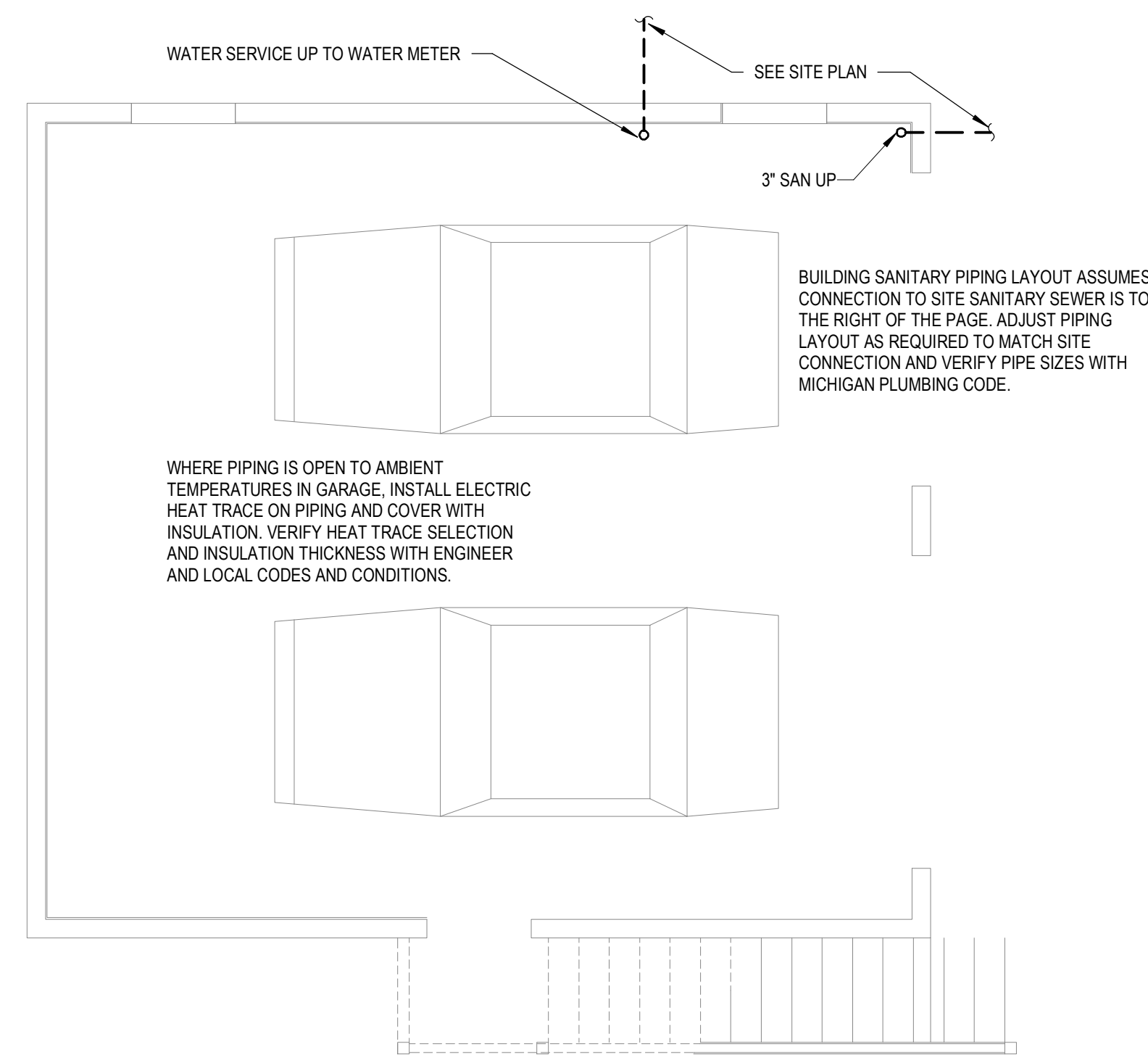
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Job Number:
2023xx

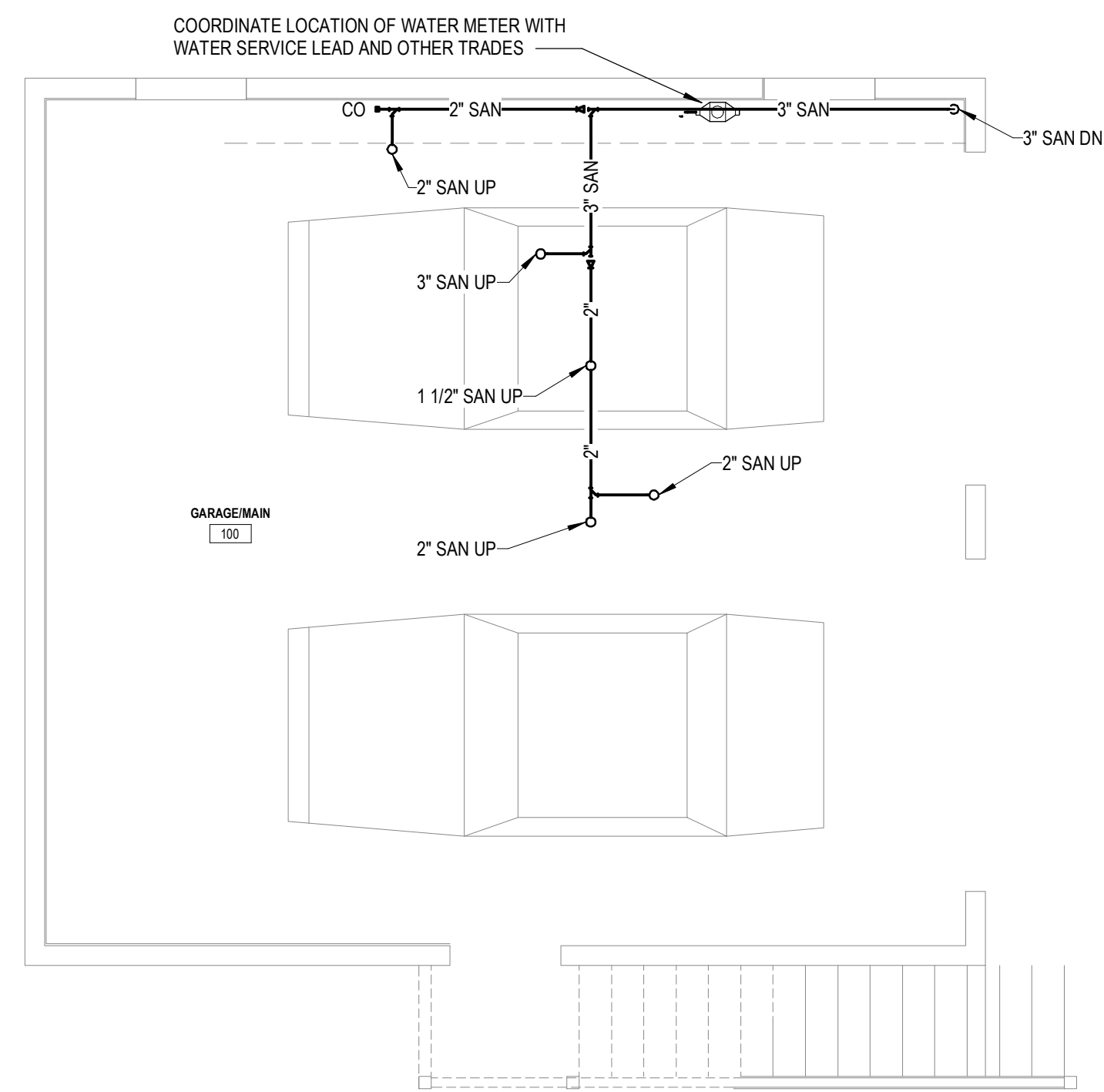
Title:
PLUMBING
FLOOR PLANS

P1.1



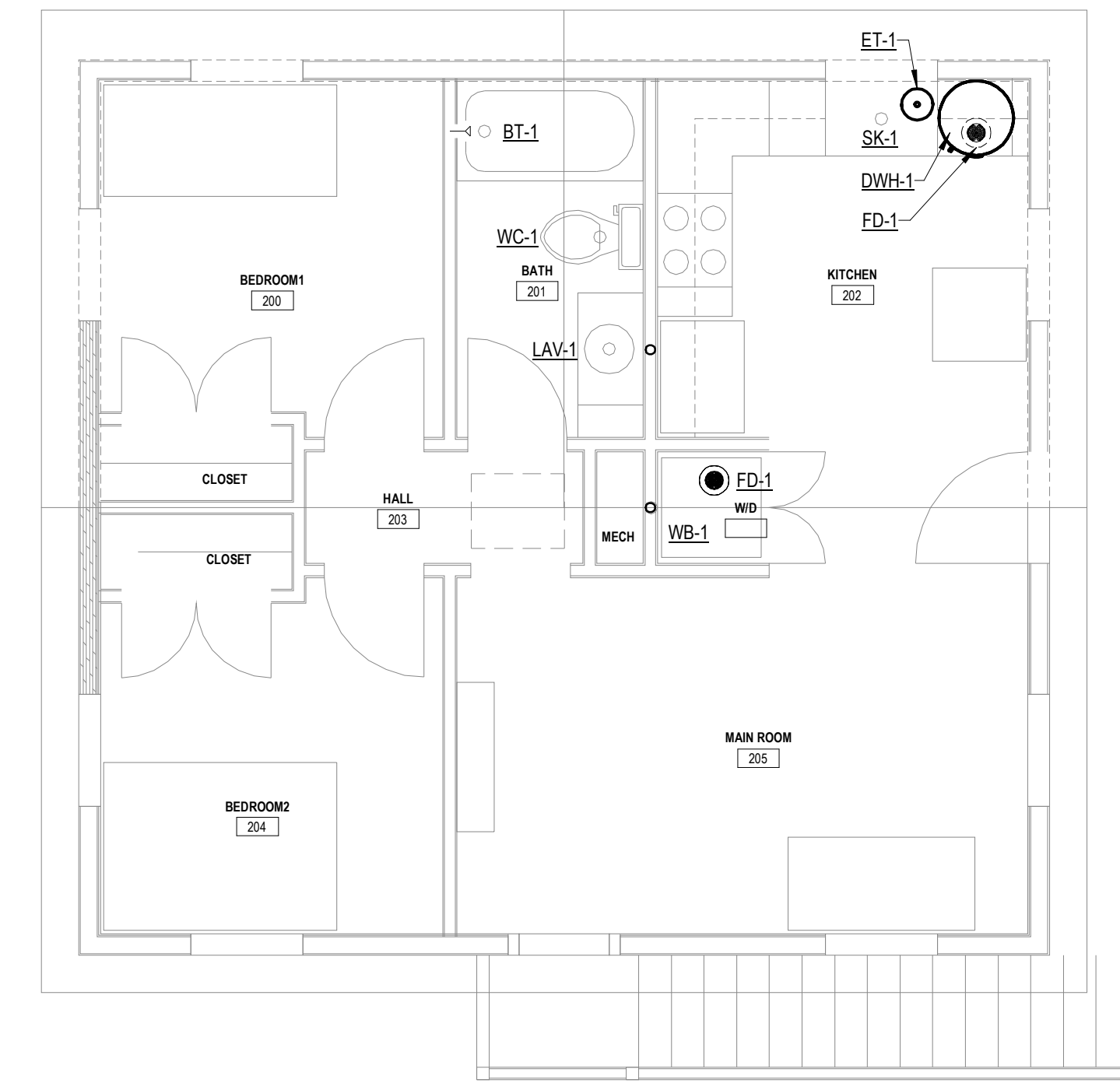
1
P1.1
**ACCESSORY DWELLING UNIT -
PLUMBING UNDERGROUND**

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



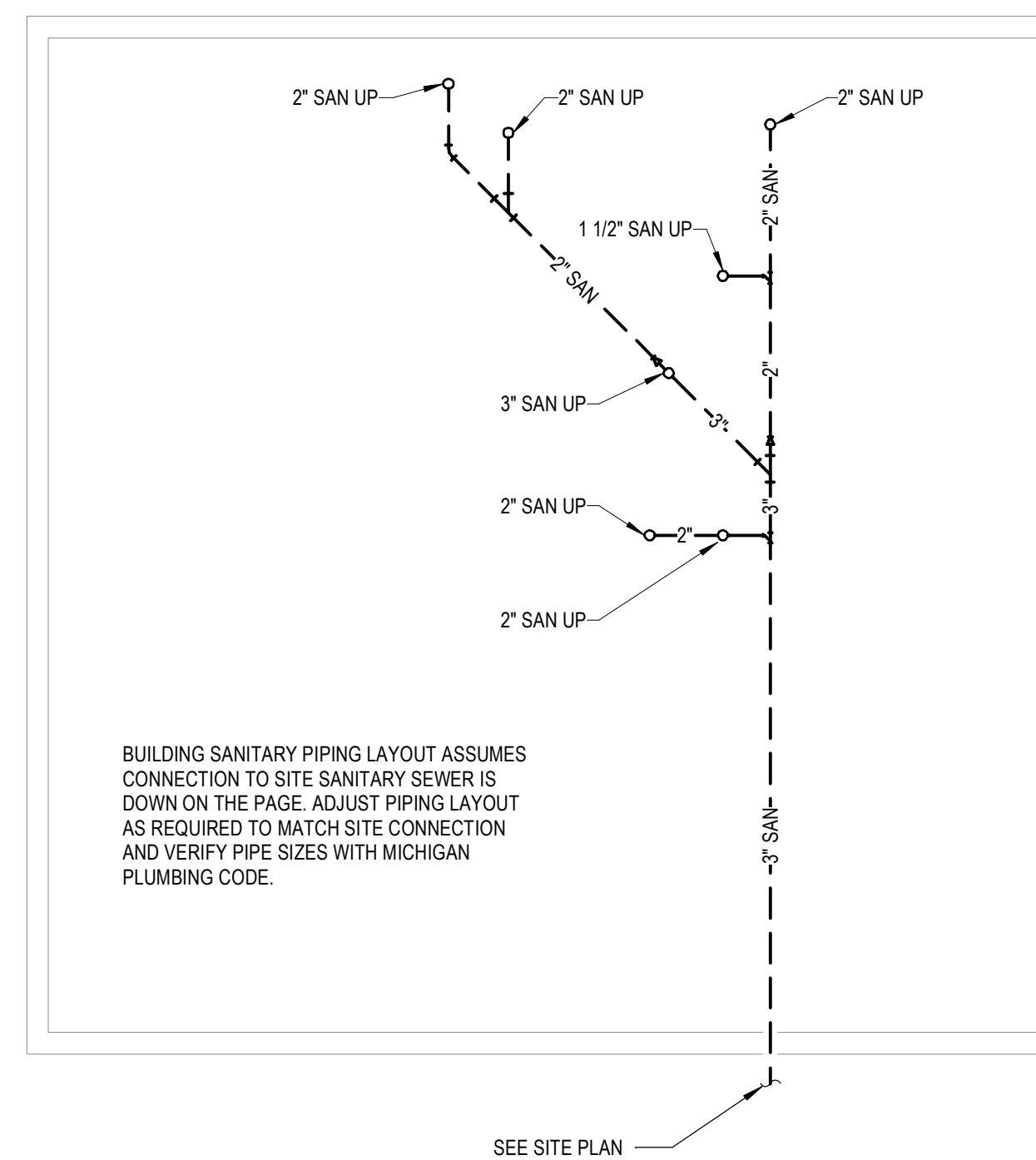
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P1.1
**ACCESSORY DWELLING UNIT MAIN LEVEL -
PLUMBING**

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



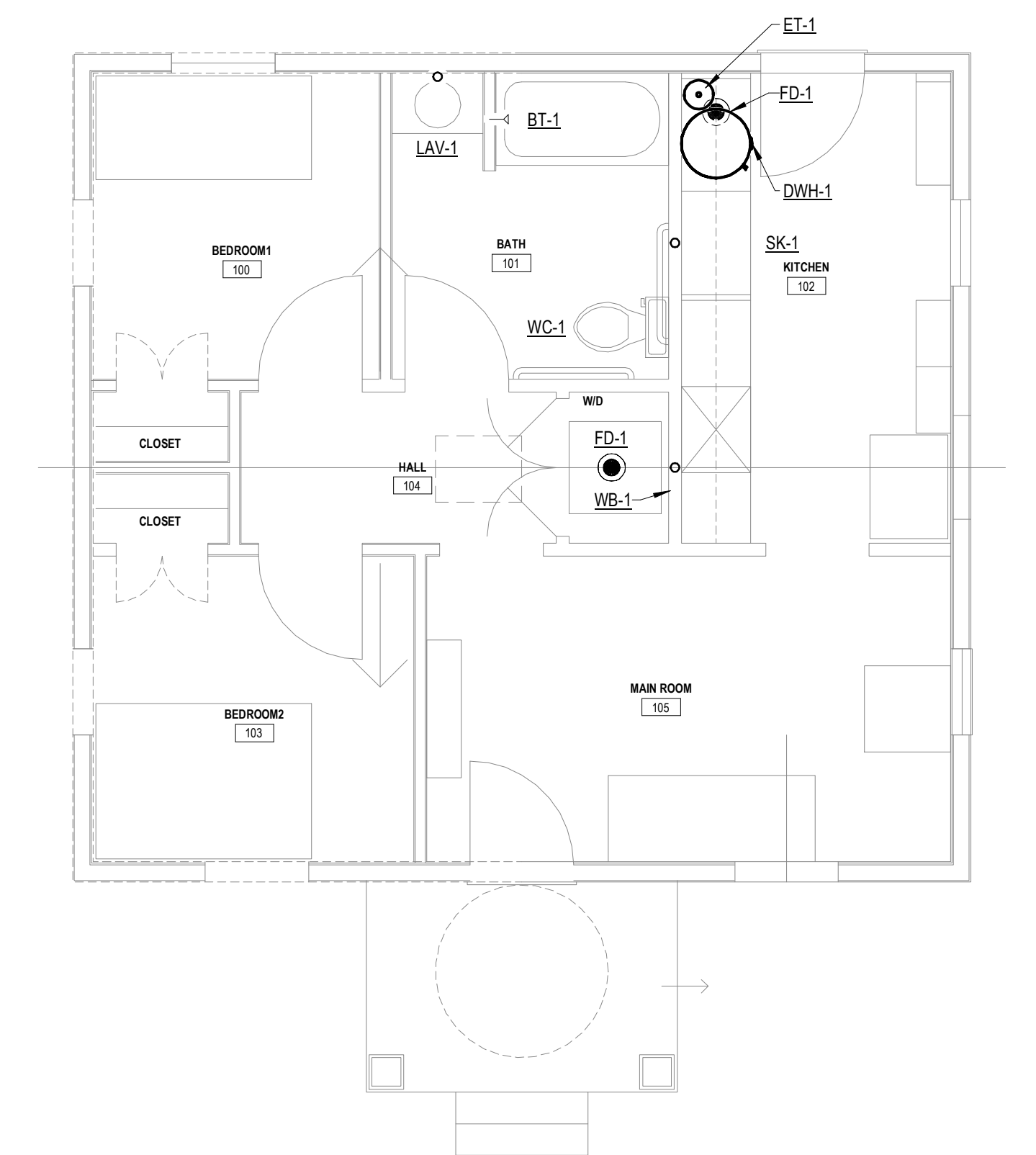
3
P1.1
**ACCESSORY DWELLING UNIT UPPER LEVEL -
PLUMBING**

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



4
P1.1
**BARRIER FREE MODULE - PLUMBING
UNDERGROUND**

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



5
P1.1
BARRIER FREE MODULE - PLUMBING

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

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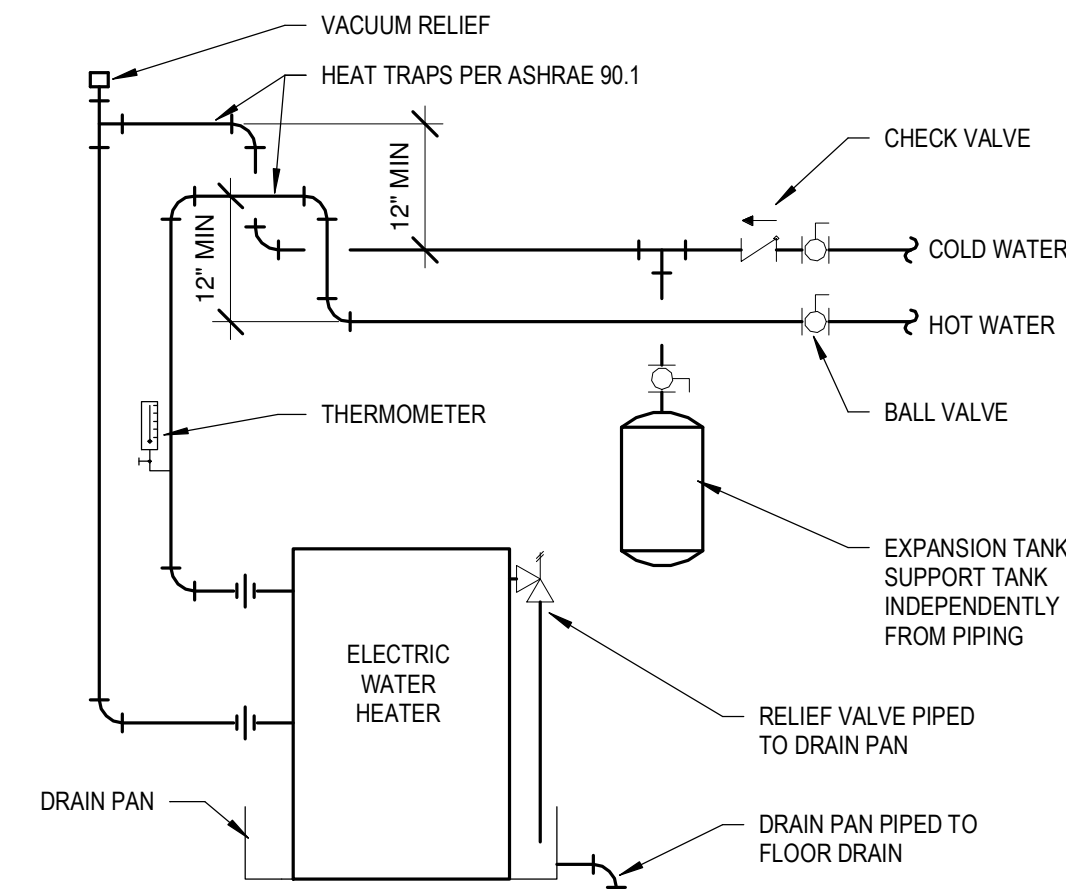
15 October 2023

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Job Number:
2023xx
Title:
PLUMBING
SCHEDULES &
DETAILS

P6.1



1
P6.1
DOMESTIC WATER HEATER PIPING SCHEMATIC
NOT TO SCALE

DOMESTIC WATER HEATER SCHEDULE

COMMENTS:
1. PROVIDE WITH TEMPERATURE & PRESSURE RELIEF VALVE.
2. PROVIDE WITH DRAIN PAN.
3. WATER HEATER SHALL INCLUDE INTEGRAL OR FACTORY INSTALLED HEAT TRAPS.
4. WATER HEATER SHALL HAVE SIDE INLET AND OUTLET CONNECTIONS.

TAG	BASIS OF DESIGN		DESCRIPTION	STORAGE CAPACITY (GALLONS)	RECOVERY GPH	1 HR DRAW (GALLONS)	RISE OF RECOVERY °F	EWT °F	LWT °F	ELECTRICAL DATA		COMMENTS
	MANUFACTURER	MODEL								DWH KW	DWH VOLTAGE	
DWH-1	Lochinvar	JEA030KD	SHORT ELECTRIC WATER HEATER	28	27	47	70	50	120	4.5	240V / 1Ø	1, 2, 3, 4

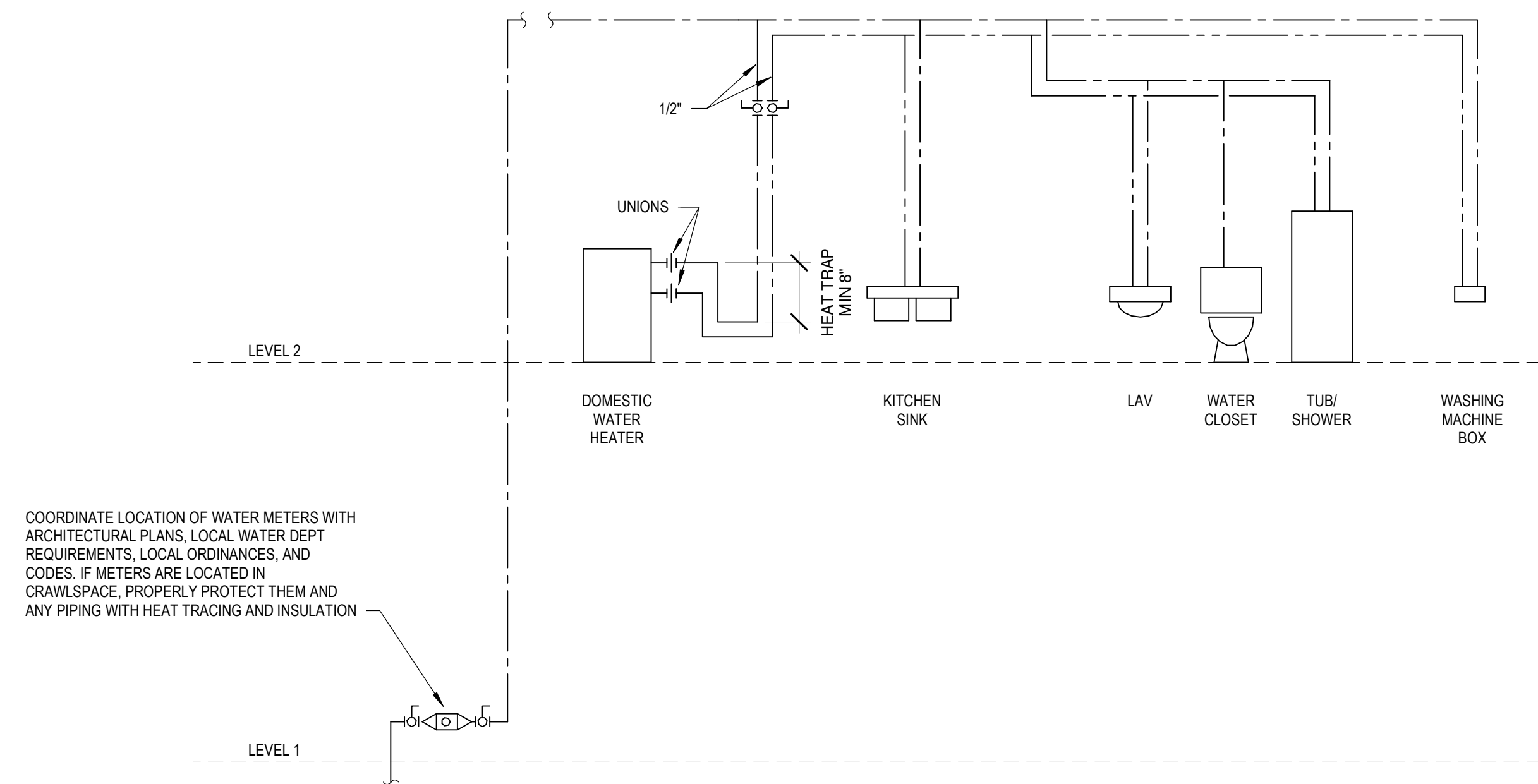
EXPANSION TANK SCHEDULE

COMMENTS:
1. CARBON STEEL SHELL
2. HEAVY DUTY BUTYL BLADDER
3. STAINLESS STEEL CONNECTION

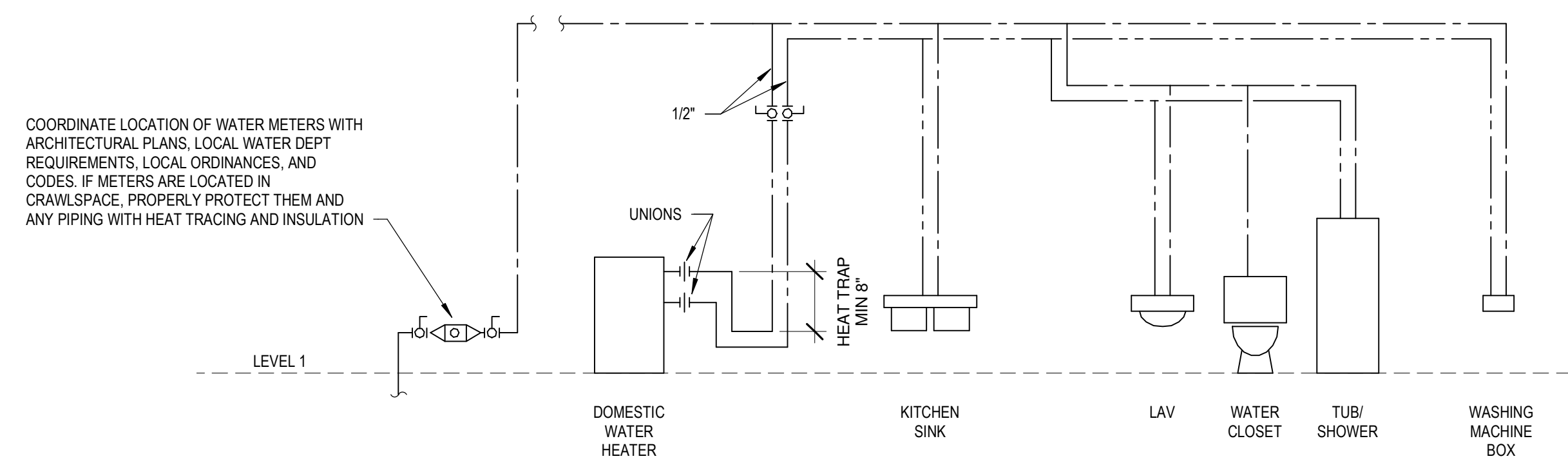
TAG	DESIGN BASIS		TANK VOLUME	MAXIMUM ACCEPTANCE VOLUME	SYSTEM CONNECTION SIZE	ASME Rated	COMMENTS
	MANUFACTURER	MODEL					
ET-1	Amtrol	ST-5	2.0 gal	0.9 gal	3/4"	No	1, 2, 3, 4, 5, 6

PLUMBING FIXTURE CONNECTION SCHEDULE

TAG	FIXTURE TYPE	PIPE CONNECTION DATA				ELECTRICAL DATA		COMMENTS
		COLD WATER	HOT WATER	VENT	SANITARY	FLA	VOLTAGE	
BT-1	BATHTUB / SHOWER	1/2"	1/2"	1-1/2"	2"	-	-	
FD-1	FLOOR DRAIN	-	-	1-1/2"	2"	-	-	
LAV-1	LAVATORY	1/2"	1/2"	1-1/4"	1-1/2"	-	-	
SK-1	KITCHEN SINK	1/2"	1/2"	1-1/4"	1-1/2"	-	-	
WB-1	WASHER BOX	1/2"	1/2"	1-1/2"	2"	-	-	
WC-1	TANK TYPE WATER CLOSET	1/2"	1/2"	1-1/2"	3"	-	-	



2
P6.1
DOMESTIC WATER PIPING SCHEMATIC - ACCESSORY DWELLING UNIT
NOT TO SCALE



3
P6.1
DOMESTIC WATER PIPING SCHEMATIC - BARRIER FREE MODULE
NOT TO SCALE

HVAC ABBREVIATIONS

ATC	ARCHITECTURAL TRADES CONTRACTOR
AC	AIR CONDITIONING(ER)
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AMB	AMBIENT
BDD	BACKDRAFT DAMPER
B.O.D.	BOTTOM OF DUCT
CONV	CONVECTOR
CFM	CUBIC FEET PER MINUTE
CWR	CHILLED WATER RETURN
CWS	CHILLED WATER SUPPLY
CU	CONDENSING UNIT
COR	CONDENSER WATER RETURN
COS	CONDENSER WATER SUPPLY
DB	DRY BULB TEMPERATURE
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EBB	ELECTRIC BASEBOARD
ECUH	ELECTRIC CABINET UNIT HEATER
EF	EXHAUST FAN
EG	EXHAUST GRILLE
ETC	ELECTRICAL TRADES CONTRACTOR
EUH	ELECTRIC UNIT HEATER
EXH	EXHAUST
F	FURNACE
F/SD	COMBINATION FIRE/SMOKE DAMPER
G	LOW PRESSURE GAS
GPM	GALLONS PER MINUTE
HR	HEATING HOT WATER RETURN
HS	HEATING HOT WATER SUPPLY
HP	HORSEPOWER
HPS	HIGH PRESSURE STEAM SUPPLY
HVAC	HEATING/VENTILATING/AIR CONDITIONING
LAT	LEAVING AIR TEMPERATURE
LPS	LOW PRESSURE STEAM SUPPLY
MAX	MAXIMUM
MTC	MECHANICAL TRADES CONTRACTOR
MBH	BTU PER HOUR (THOUSAND)
MFR	MANUFACTURER
MPS	MEDIUM PRESSURE STEAM SUPPLY
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
OA	OUTSIDE AIR
OD	OUTSIDE DIAMETER
P	PUMP
PRV	PRESSURE REDUCING VALVE
PSC	PUMPED STEAM CONDENSATE
PSI	POUNDS PER SQUARE INCH
RA	RETURN AIR
RG	RETURN GRILLE
RL	REFRIGERANT LIQUID
RP	RADIANT PANEL
RS	REFRIGERANT SUCTION
RTU	ROOF TOP UNIT
SA	SUPPLY AIR
SC	STEAM CONDENSATE
SD	SUPPLY DIFFUSER
SG	SUPPLY GRILLE
SP	STATIC PRESSURE
TG	TRANSFER GRILLE
TU	TERMINAL UNIT
TXV	THERMAL EXPANSION VALVE
TYP	TYPICAL
UH	UNIT HEATER
VFD	VARIABLE FREQUENCY DRIVE
WB	WET BULB TEMPERATURE
X	EXISTING
SD-1	TAG (DIFFUSERS AND GRILLES)
8"Ø	NECK SIZE
200 CFM	AIR FLOW
TYP.2	COMMENTS

NOTE:
ALL ABBREVIATIONS AND SYMBOLS SHOWN ON THIS SHEET MAY NOT BE USED ON THIS PROJECT.

PIPING SYMBOLS

	PIPE TURNED UP
	PIPE TURNED DOWN
	PIPE OUT OF TOP
	PIPE OUT OF BOTTOM
	PIPE ANCHOR
	PIPE ALIGNMENT GUIDE
	PIPE EXPANSION JOINT
	STRAINER
	UNION
	SHUT-OFF VALVE
	CHECK VALVE
	BALL VALVE
	GLOBE VALVE
	MOTOR OPERATED VALVE
	SOLENOID OPERATED VALVE
	2-WAY TEMPERATURE CONTROL VALVE
	3-WAY TEMPERATURE CONTROL VALVE
	STEAM TRAP
	CIRCUIT BALANCE VALVE
	HEATING HOT WATER SUPPLY
	HEATING HOT WATER RETURN
	CHILLED WATER SUPPLY
	CHILLED WATER RETURN
	CONDENSER WATER SUPPLY
	CONDENSER WATER RETURN
	REFRIGERANT LIQUID
	REFRIGERANT SUCTION
	CONDENSATE DRAIN
	COMPRESSED AIR
	HIGH PRESSURE STEAM 76-100 LBS.
	MEDIUM PRESSURE STEAM 21-75 LBS.
	LOW PRESSURE STEAM 0-20 LBS.
	STEAM CONDENSATE
	STEAM CONDENSATE PUMPED
	GAS PIPE - LOW PRESSURE
	GAS - HIGH PRESSURE
	GAS - MEDIUM PRESSURE
	GAS METER

GENERAL SYMBOLS

	KEY NOTE
	CONNECTION POINT, NEW TO EXISTING
	DEMOLITION END POINT

SHEET METAL SYMBOLS

	SUPPLY AIR DUCT
	RETURN AIR DUCT
	EXHAUST AIR DUCT
	BALANCE DAMPER
	CONICAL TEE
	90° TEE WITH 45° APPROACH
	TRANSITION CONCENTRIC
	TRANSITION ECCENTRIC
	VERTICAL FIRE DAMPER
	HORIZONTAL FIRE DAMPER
	VERTICAL COMBINATION FIRE SMOKE DAMPER
	HORIZONTAL COMBINATION FIRE SMOKE DAMPER
	VERTICAL SMOKE DAMPER
	HORIZONTAL SMOKE DAMPER
	MOTORIZED DAMPER
	AIR FLOW DIRECTION

CONTROL SYMBOLS

	THERMOSTAT
	TEMPERATURE SENSOR
	HUMIDISTAT
	DUCT SMOKE DETECTOR - INSTALLED BY M.T.C. PROVIDED AND WIRED BY E.T.C.

GENERAL HVAC NOTES

- PERFORM WORK IN ACCORDANCE WITH THE LATEST EDITIONS, REVISIONS, AMENDMENTS, OR SUPPLEMENTS OF APPLICABLE STATUTES, ORDINANCES, CODES OR REGULATIONS OF FEDERAL, STATE, AND LOCAL AUTHORITIES HAVING JURISDICTION IN EFFECT ON THE DATE BIDS ARE RECEIVED.
- WHERE APPROVED STANDARDS HAVE BEEN ESTABLISHED BY OSHA, UNDERWRITERS LABORATORIES, AMERICAN CODES, ASA, ASHRAE, ARI, NEC, STATE FIRE INSURANCE REGULATION BODY, NFPA OR OTHERS, THESE STANDARDS SHALL BE FOLLOWED WHETHER OR NOT INDICATED ON THE DRAWINGS AND SPECIFICATIONS.
- ALL WORK SHALL COMPLY WITH THE MICHIGAN MECHANICAL CODE AND ALL APPLICABLE LOCAL CODES.
- ALL DUCT TO BE OF 1" PRESSURE CLASS, UNLESS NOTED OTHERWISE.
- COORDINATE WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR EXACT LOCATION OF ROOF TOP EQUIPMENT.
- DUCTWORK SHALL BE ACOUSTICALLY LINED WITHIN 20 FT OF THE INTAKE AND/OR DISCHARGE OF A FAN.
- INSTALL VOLUME DAMPERS IN ALL BRANCH DUCTS SERVING A SINGLE GRILLE, REGISTER, OR DIFFUSER.
- INSTALL FLEXIBLE DUCT CONNECTIONS AT THE INLET AND DISCHARGE OF ALL FANS.
- MAXIMUM LENGTH OF FLEXIBLE DUCT TO AIR TERMINAL DEVICES SHALL NOT EXCEED 5'-0" IN LENGTH WITH A MAXIMUM OF ONE 90° TURN AND SHALL BE INSULATED. ELBOWS SHALL BE MIN. 1.5 RADIUS. CONNECTIONS TO TERMINAL DEVICES SHALL BE Banded AND TAPED.
- UNDERGROUND GAS SERVICE BY UTILITY COMPANY. REFER TO CIVIL DRAWINGS. COORDINATE SERVICE, METER, ETC. LOCATIONS WITH UTILITY COMPANY.
- DUCT/PIPING LAYOUT IS SCHEMATIC. EXACT LOCATION OF DUCT/PIPING AND EQUIPMENT SHALL BE COORDINATED WITH BUILDING STRUCTURE, EQUIPMENT FURNISHED, ARCHITECTURAL DRAWINGS AND ALL OTHER TRADES PRIOR TO INSTALLATION. ANY CONTRACTOR INSTALLING WORK WITHOUT PRIOR COORDINATION SHALL RELOCATE HIS WORK AT HIS EXPENSE TO ALLOW PROPER INSTALLATION OF ANY AND ALL TRADES' WORK.
- UNLESS OTHERWISE NOTED, ALL DUCT/PIPING SHALL BE CONCEALED WHEREVER POSSIBLE. PROVIDE CHROME ESCUTCHEON OR ALUMINUM DUCT COLLAR AT EACH PENETRATION OF A FINISHED SURFACE.
- DUCT/PIPING SHALL NOT BE RUN ABOVE ELECTRICAL GEAR OR IN THE SERVICE SPACE REQUIRED BY THE NATIONAL ELECTRICAL CODE.
- DUCT SIZES SHOWN ARE NET INSIDE CLEAR DIMENSIONS.
- ANY ADDITIONAL LOW VOLTAGE CONTROL WIRING THAT IS REQUIRED SHALL BE PROVIDED BY THE HVAC CONTRACTOR. CONTROL WIRING SHALL BE RUN IN CONDUIT IF REQUIRED BY LOCAL CODES. FIELD VERIFY PRIOR TO BID. POWER WIRING SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.
- PROVIDE TRAP FOR CONDENSATION DRAIN LINES.
- PROVIDE VIBRATION ISOLATION AT EACH CONNECTION TO A MOTORIZED PIECE OF EQUIPMENT BY THE HVAC CONTRACTOR.
- MOUNT THERMOSTAT/SENSORS AT 48" AFF UNLESS NOTED OTHERWISE.
- THE HVAC CONTRACTOR SHALL CLOSELY COORDINATE AIR DEVICE AND DUCTWORK LOCATIONS WITH REFLECTED CEILING AND STRUCTURAL PLANS.
- COORDINATE SENSOR AND THERMOSTAT LOCATION WITH ARCHITECT.

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Do not scale.
Use figured
dimensions only.

15 October 2023

NOT FOR CONSTRUCTION

THE ABBOT
Michigan Municipal League

Job Number:
2023xx
Title:
HVAC COVER
SHEET

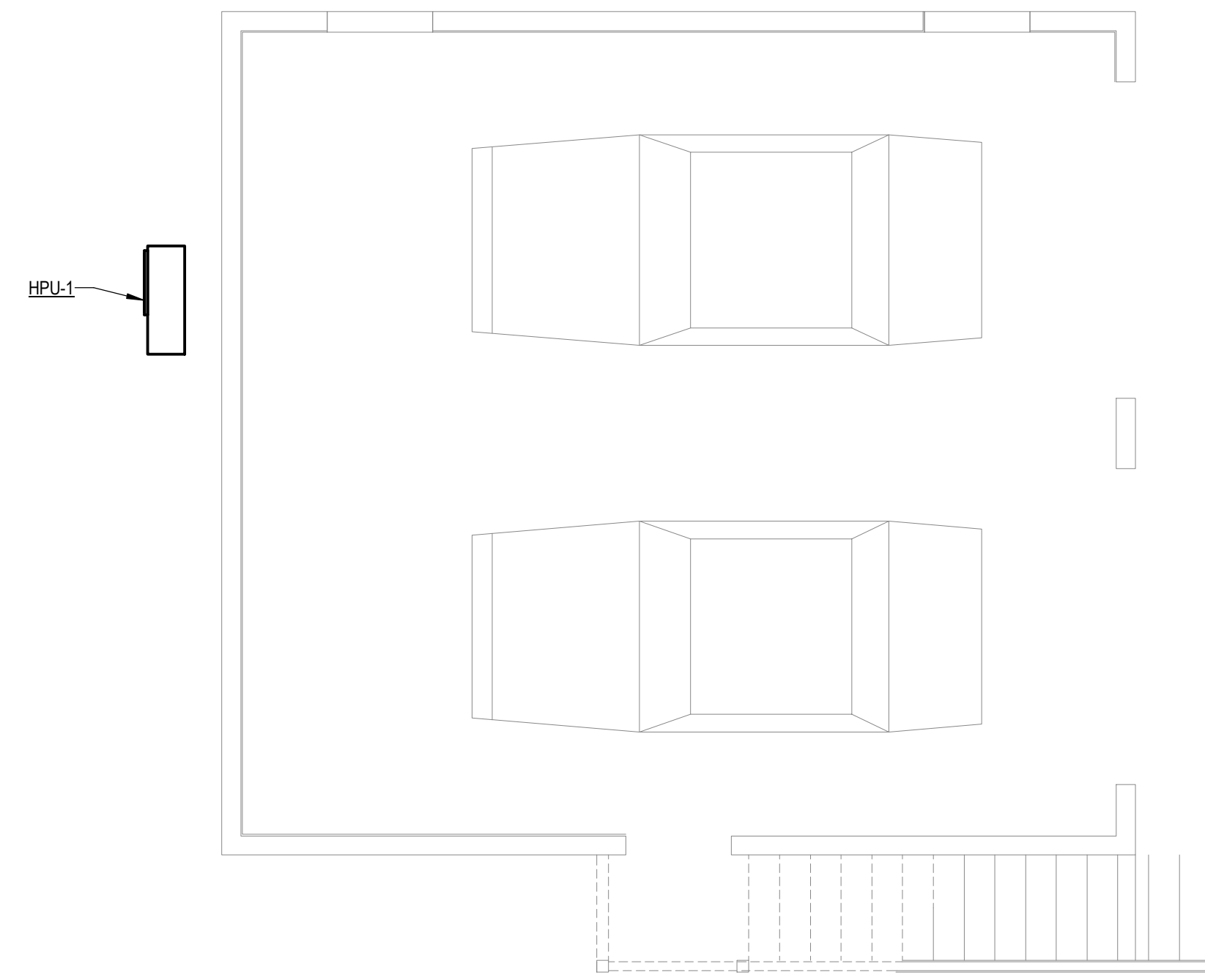
M0.1

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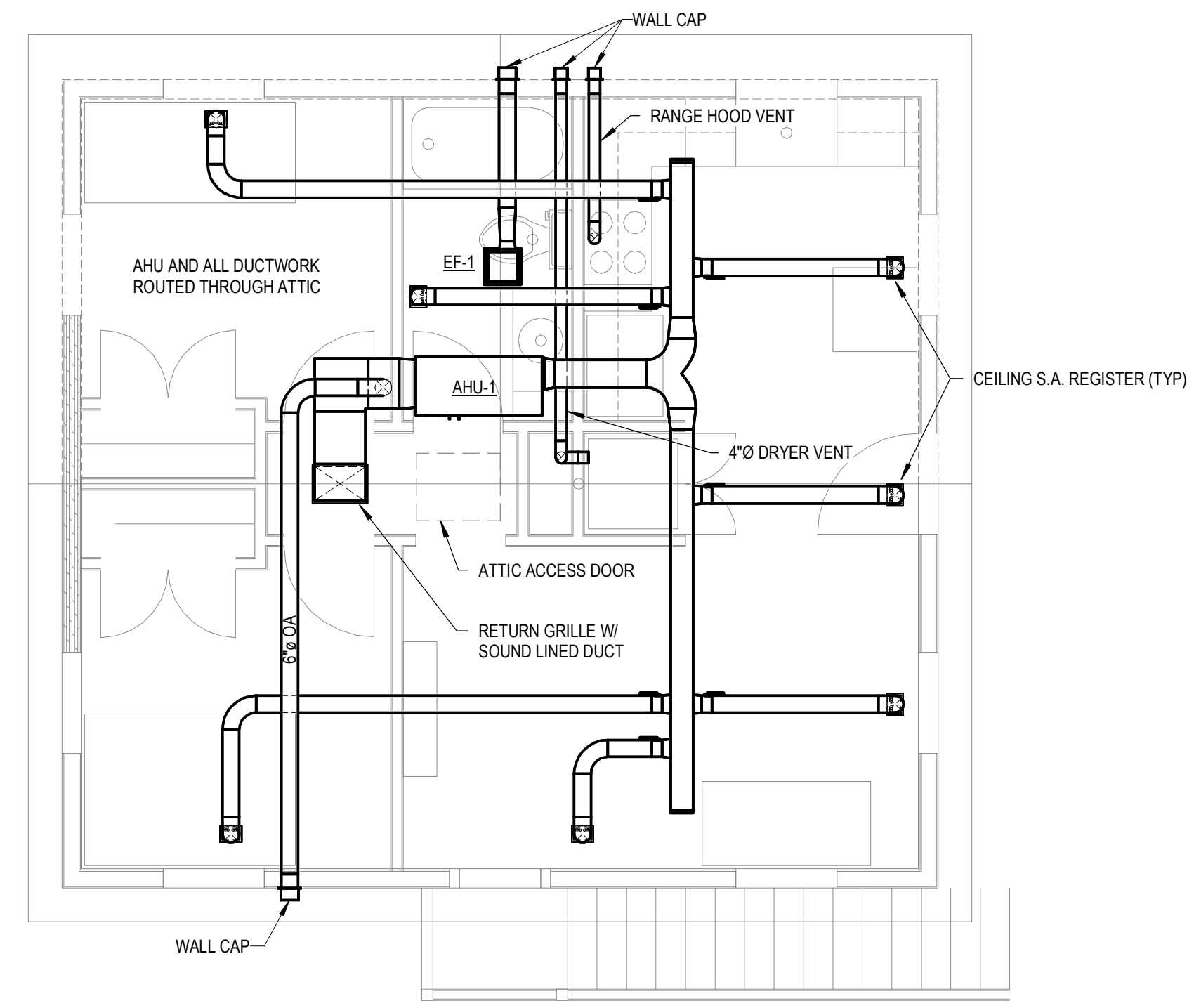
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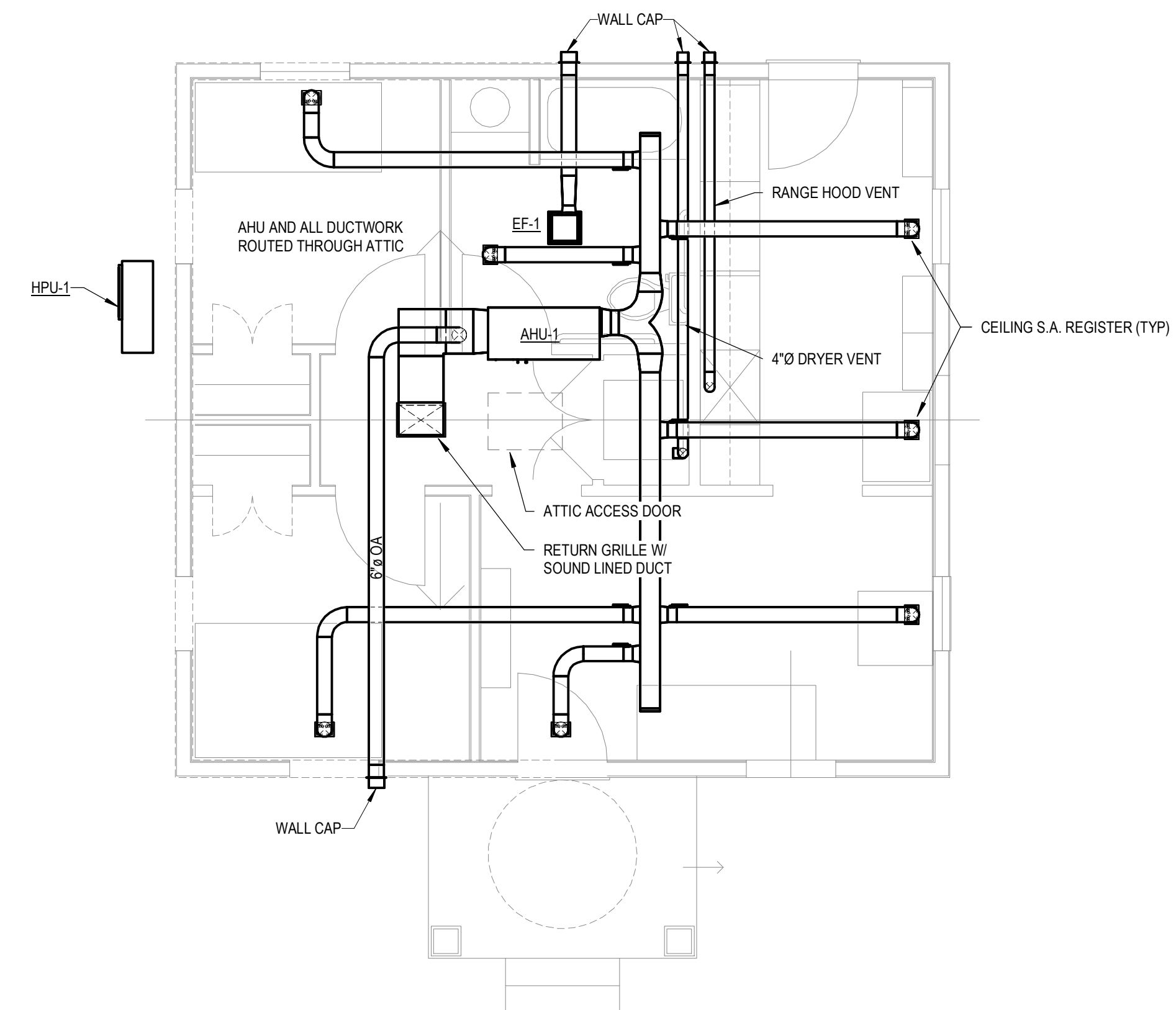
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1
M1.1
ACCESSORY DWELLING UNIT MAIN LEVEL -
HVAC
SCALE = 1/4" = 1'-0"



2
M1.1
ACCESSORY DWELLING UNIT UPPER LEVEL -
HVAC
SCALE = 1/4" = 1'-0"



3
M1.1
BARRIER FREE MODULE - HVAC
SCALE = 1/4" = 1'-0"

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Job Number:
2023xx
Title:
HVAC FLOOR
PLANS

M1.1

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Job Number:
2023xx
Title:
HVAC DETAILS &
SCHEDULES

M6.1

EXHAUST FAN SCHEDULE

COMMENTS:
1. PROVIDE WITH ELECTRONICALLY COMMUTATED MOTOR WITH CONSTANT CFM ADAPTIVE, VARIABLE SPEED TECHNOLOGY PROGRAMMED TO OVERCOME THE STATIC PRESSURE ASSOCIATED WITH COMMON RESIDENTIAL INSTALLATION SCENARIOS.
2. FOR SIDE WALL DISCHARGE: PROVIDE WITH WALL CAP INCLUDING BIRDSCREEN AND BACKDRAFT DAMPER.
3. FOR ROOF DISCHARGE: PROVIDE WITH ROOF CAP/JACK INCLUDING BIRDSCREEN AND BACKDRAFT DAMPER.

TAG	BASIS OF DESIGN		CFM	E.S.P. (in-wg)	FAN SPEED (RPM) DESIGN	DRIVE TYPE	SONES	ELECTRICAL DATA		DISCONNECT BY		VFD	CONTROL	COMMENTS
	MANUFACTURER	MODEL						WATTS	VOLTAGE	M.T.C.	E.T.C.			
EF-1	Greenheck	SP-LP0511	80	0.28	831	DIRECT	2	11	120V / 1Ø	X		No	LOCAL SWITCH	1, 2, 3

AIR HANDLING UNIT SCHEDULE

COMMENTS:
1. PROVIDE WITH FACTORY CONTROLS AND WALL MOUNTED, PROGRAMMABLE THERMOSTAT THAT WILL COORDINATE THE OPERATION OF THE AIR HANDLING AND REHEAT COIL. THERMOSTAT SHALL HAVE SETTINGS FOR 7-DAYS / 4- PERIODS.
2. PROVIDE WITH CONDENSATE DRAIN SENSOR TO SHUT-DOWN UNIT IN THE EVENT OF CONDENSATE DRAIN BLOCKAGE.
3. PROVIDE WITH ELECTRIC REHEAT COIL, ELECTRIC HEAT TO HAVE SEPARATE POWER CONNECTION.
4. AIR HANDLING UNIT FAN AND CONTROLS POWERED FROM OUTDOOR UNIT. ELECTRIC HEAT TO HAVE SEPARATE POWER CONNECTION.
5. PROVIDE WITH 1" MERV 8 FILTER.
6. UNIT SHALL COMMUNICATE WITH CONDENSING UNIT TO MATCH CAPACITY TO DEMAND AND FURNACE FAN SPEED.
7. UNIT SHALL HAVE ELECTRONICALLY COMMUTATED MOTOR (ECM) FOR SUPPLY FAN.
8. CONNECT MOTORIZED OUTSIDE AIR DAMPER TO SUPPLY FAN CONTROL. DAMPER SHALL OPEN WHEN FAN IS RUNNING.
9. VERIFY CAPACITY WITH LOCAL CLIMATE DESIGN CONDITIONS, SITE ORIENTATION, AND ENERGY CODE.

DESIGN CONDITIONS:
WINTER: 0°F OUTSIDE / 70°F INSIDE
SUMMER: 95°F DB OUTSIDE / 80°F DB INSIDE / 77°F WB INSIDE

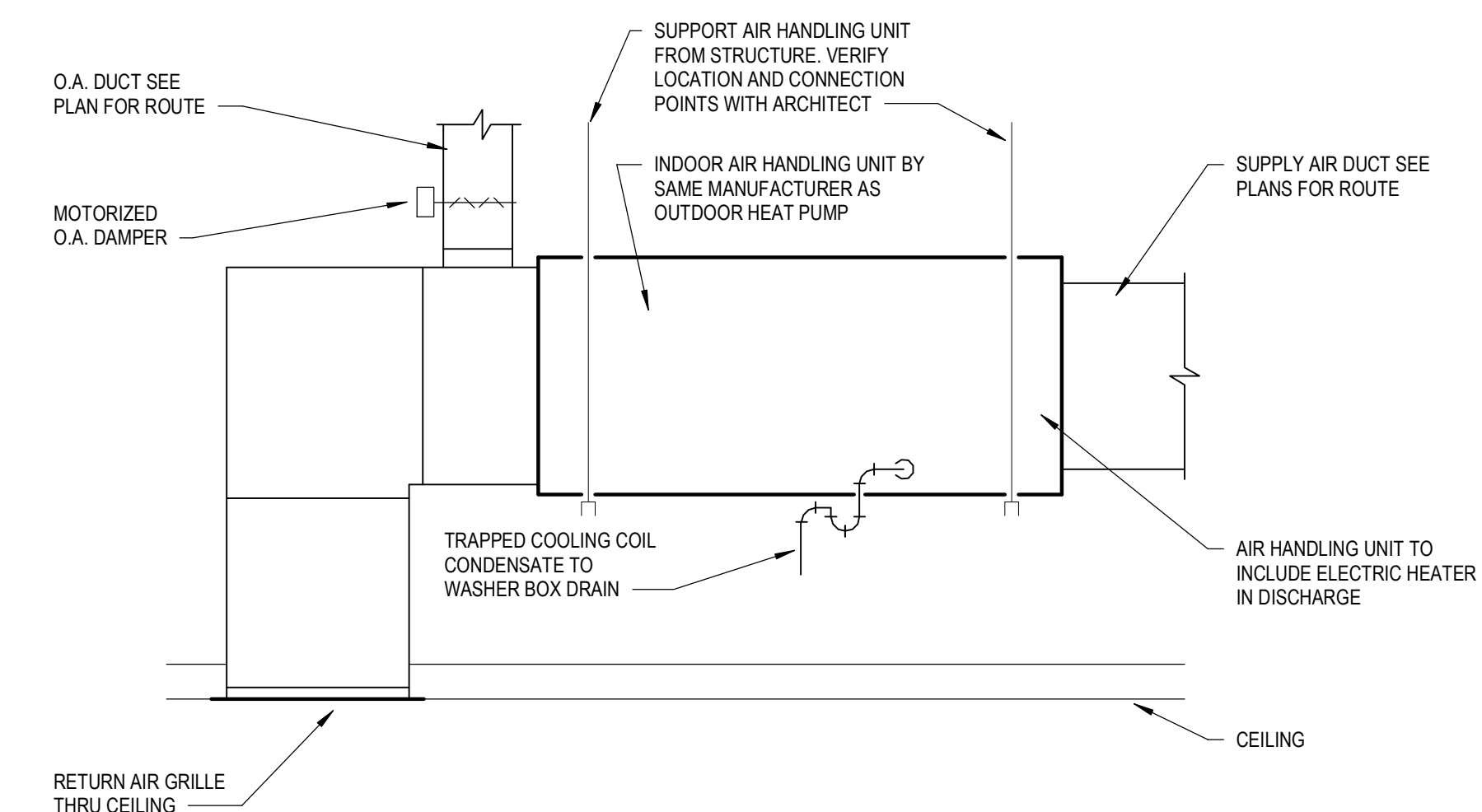
TAG	BASIS OF DESIGN			OUTDOOR UNIT	AIR FLOW DATA			HEAT PUMP CAPACITY (MBH)				ELECTRICAL DATA			COMMENTS			
	MANUFACTURER	MODEL NO.	DESCRIPTION		SUPPLY CFM	E.S.P.	OUTSIDE AIR CFM	AT AHRI CONDITIONS		AT CONDITIONS NOTED		SEER2	EER2	ELECTRIC HEAT				
								REFRIG.	HEATING @ 47°F	COOLING @ 95°F	HEATING @ 0°F			KW		MCA	VOLTAGE	
AHU-1	Daikin	FTQ24TA	Multi-Position Air Handling Unit	HPU-1	680	0.5	45	R-410A	24	27	21.5	27.0	15.2	10.3	5	29.9	230V / 1Ø	1, 2, 3, 4

HEAT PUMP UNIT SCHEDULE

COMMENTS:
1. UNIT SHALL BE RATED FOR LOW AMBIENT HEATING. REFER TO AIR HANDLING UNIT SCHEDULE FOR OUTDOOR CONDITIONS AND CAPACITIES AT THOSE CONDITIONS.
2. PROVIDE WITH HAIL GUARDS.
3. PROVIDE EQUIPMENT STANDS SUCH THAT UNIT IS INSTALLED 24" MIN. ABOVE GRADE.
4. PROVIDE WITH INVERTER (VARIABLE SPEED) COMPRESSOR.
5. UNIT SHALL COMMUNICATE WITH AHU TO MATCH CAPACITY TO DEMAND AND AHU FAN SPEED.
6. VERIFY CAPACITY WITH LOCAL CLIMATE DESIGN CONDITIONS, SITE ORIENTATION, AND ENERGY CODE.

NOTE:
RATED CAPACITIES ARE PER AHRI STANDARD. REFER TO FAN COIL SCHEDULE ON THIS SHEET TO SEE PERFORMANCE CAPACITIES AT DESIGN CONDITIONS.

TAG	BASIS OF DESIGN		DESCRIPTION	INDOOR UNIT	REFRIGERANT	NOMINAL TONS	RATED CAPACITY		ELECTRICAL DATA			COMMENTS
	MANUFACTURER	MODEL					COOLING MBH	HEATING MBH	MCA	MOCP	VOLTAGE	
HPU-1	Daikin	RZQ24TAVJUA	Outdoor Split System Heat Pump Unit	AHU-1	R-410A	2	23.4	27.4	16.5	20	208-230V / 1Ø	1, 2, 3, 4, 5, 6

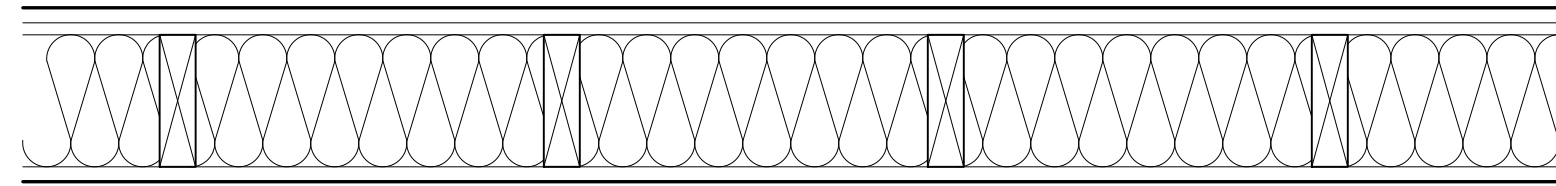


1 HORIZONTAL AIR HANDLING UNIT DETAIL
M6.1 NOT TO SCALE

Michigan Residential Code 2015

R302.3 Two-family dwellings.

Dwelling units in two-family dwellings shall be separated from each other by wall and floor assemblies having not less than a 1-hour fire-resistance rating where tested in accordance with ASTM E119 or UL 263. Fire-resistance-rated floor/ceiling and wall assemblies shall extend to and be tight against the exterior wall, and wall assemblies shall extend from the foundation to the underside of the roof sheathing.



UL U305 - 1 hour 7.25" thick STC 51

- Gypsum Panel 1 layer 5/8" Sheetrock Gypsum Panel (UL Type SCX)
- Resilient Channel 1 layer 1/2", 25 ga. 24" o.c
- Wood Studs 1 layer 2x6 wood studs, 16" o.c.
- Insulation 1 layer 5-1/2" Fiberglass insulation
- Gypsum Panel 1 layer 5/8" Sheetrock Gypsum Panel (UL Type SCX)

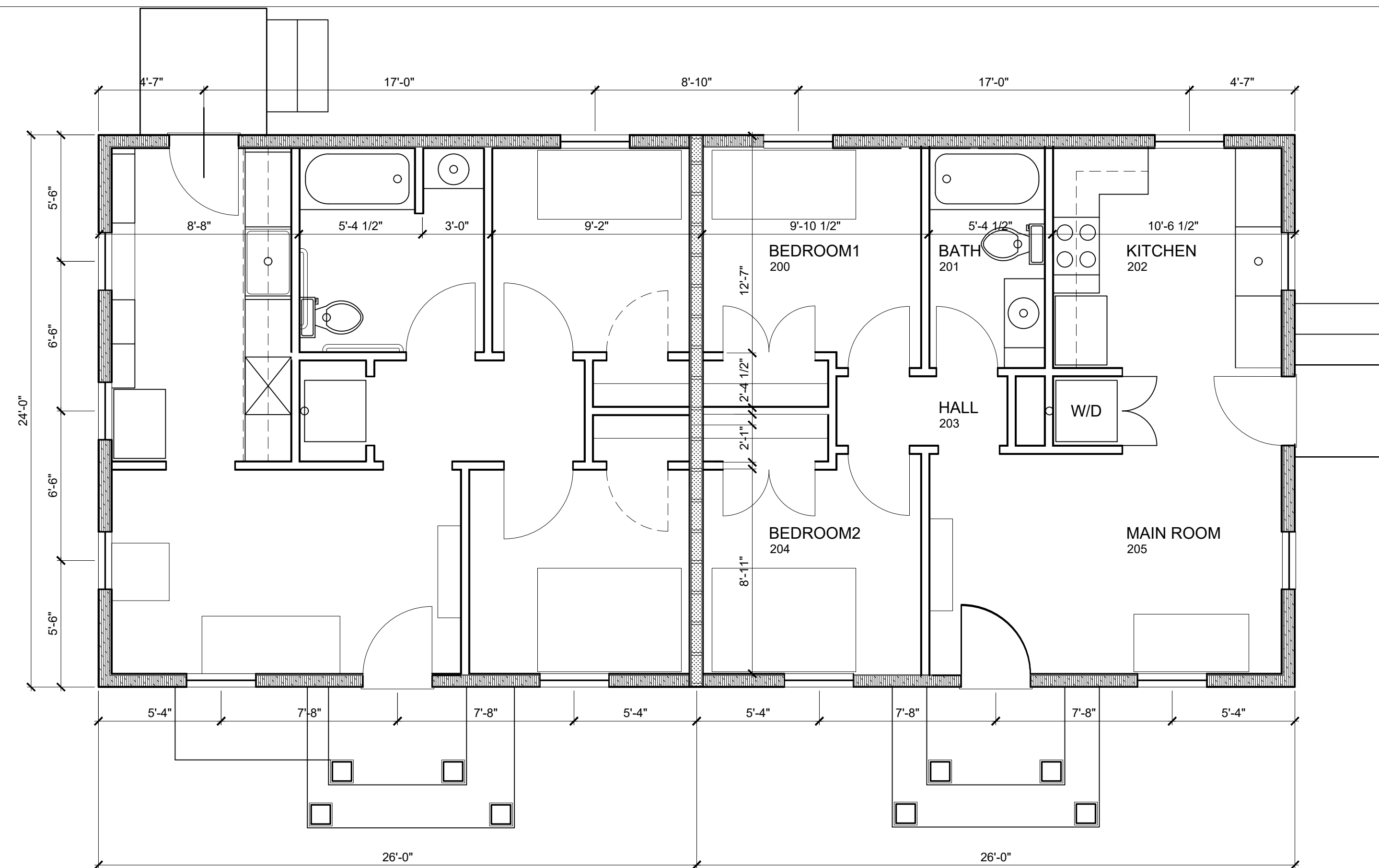
① Duplex - One-hour Wall Detail
1-1/2" = 1'-0"

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1 hour wall



① Duplex - Front Elevations
1/4" = 1'-0"



Barrier free with rear exit

Non barrier free with side exit

② Duplex - Plans
1/4" = 1'-0"

Do not scale.
Use figured
dimensions only.

MML Review Set
15 October 2023

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Michigan Municipal League

Job Number:
2023xx
Title:
DUPLEX PLANS
+ ELEVATIONS

X4.1

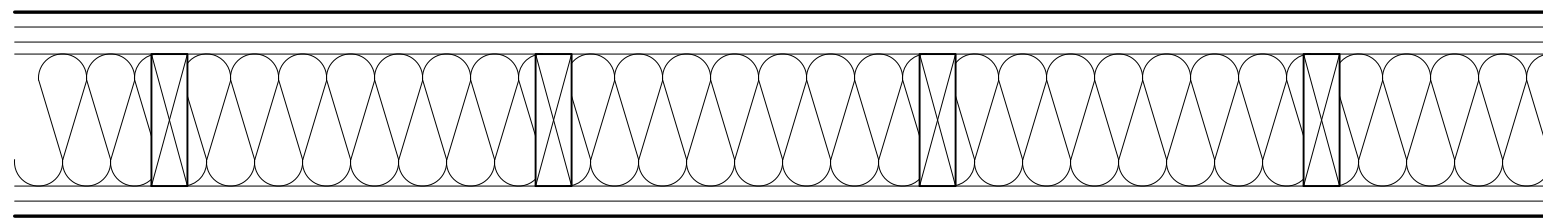
Michigan Residential Code 2015

Townhouse

A single family dwelling unit constructed in a group of three or more attached units in which each unit extends from foundation to roof and with a yard or public way on not less than two sides.

R302.2 Townhouses

Each townhouse shall be considered a separate building and shall be separated by a 2-hour fire-resistance-rated wall assembly tested in accordance with ASTM E119 or UL263 with exposure from both sides.



UL U301 - 2 hour 8.50" thick STC 56

Gypsum Panel 1 layer 5/8" Sheetrock Gypsum Panel (UL Type SCX)

Gypsum Panel 1 layer 5/8" Sheetrock Gypsum Panel (UL Type SCX)

Resilient Channel 1 layer 1/2", 25 ga. 24" o.c

Wood Studs 1 layer 2x6 wood studs, 16" o.c.

Insulation 1 layer 5-1/2" Fiberglass insulation

Gypsum Panel 1 layer 5/8" Sheetrock Gypsum Panel (UL Type SCX)

Gypsum Panel 1 layer 5/8" Sheetrock Gypsum Panel (UL Type SCX)

3 Townhouse - Two Hour Wall Detail

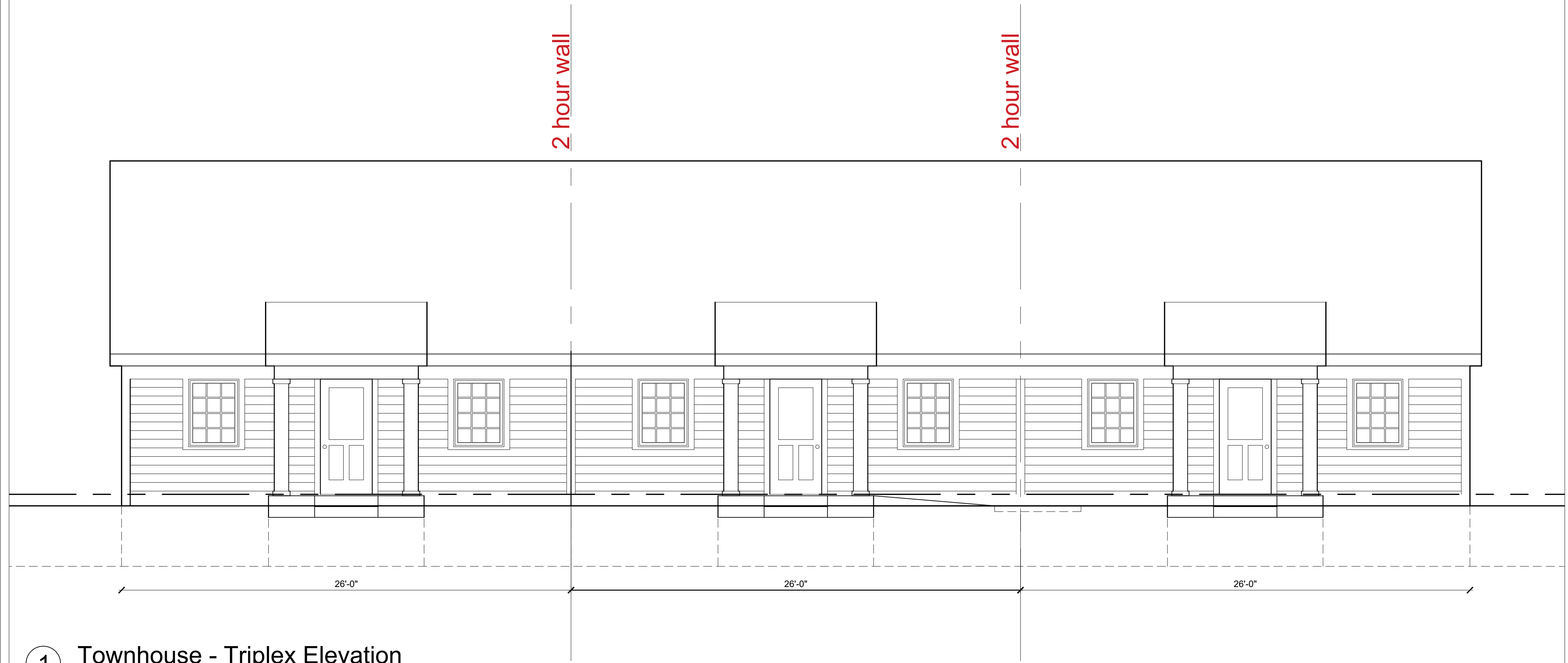
1-1/2" = 1'-0"

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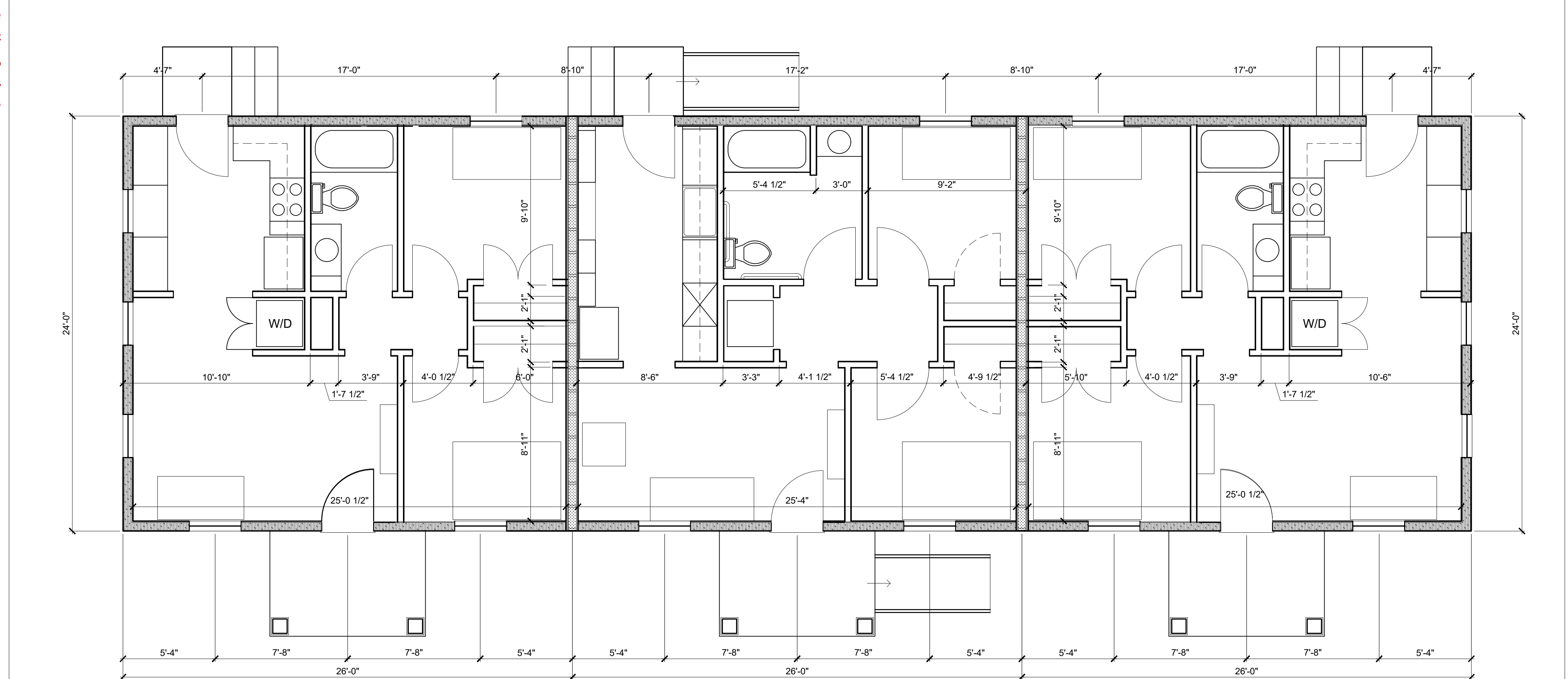
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1 Townhouse - Triplex Elevation

1/4" = 1'-0"



2 Townhouse - Triplex Plans

1/4" = 1'-0"

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Job Number:
2023xx
Title:
TRIPLE PLANS
+ ELEVATIONS

X5.1