

- TOILET ACCESSORIES NOTES:**
1. Solid Plastic Overhead Braced Toilet Partitions, by Art Metal, ASI, Global, Republic or equal.
 2. Provide Stainless steel shoes.
 3. All washroom accessories items designed to be touched (all items listed except mirrors) shall be coated with quatslane antimicrobial PSSMD.
 4. Provide Coat hooks at each Compartment.
 5. Center of Water Closet shall be between 16" and 18" from side wall. (ANSI 117.1 §604.2).
 6. Mount Coat Hooks @ 48" high maximum (ANSI 117.1 §604.8) in Accessible and Ambulatory Compartments.
 7. Grab bars shall have outside of diameter minimum of 1 1/2" and maximum 2". (ANSI 117.1 §609.2.1)
 8. The space between the wall and the grab bar shall be 1 1/2" inches. The space between the grab bar and projecting objects below and at the ends of the grab bar shall be 1 1/2" inches minimum. The space between the grab bar and projecting objects above the grab bar shall be 12 inches minimum. (ANSI 117.1 §609.3)
 9. Grab Bars shall be mounted with top of gripping surface minimum of 33" and maximum of 36" above the floor. (ANSI 117.1 §609.4.1)
 10. Provide a pull on all doors. Provide Pull each side (ANSI 117.1 §604.9.3) on Accessible and Ambulatory Compartments.
 11. Provide self closing doors (ANSI 117.1 §604.9.3) on Accessible and Ambulatory Compartments.
 12. Door latch shall be lever style (ANSI 117.1 §604.9.3 & §404.2.6) on Accessible and Ambulatory Compartments.

TOILET ROOM ACCESSORY SCHEDULE

Toilet Room 107 Shall have the Following:

Abbr.	Item	Model #	Bobrick	Others / Remarks
2436M	Mirror	B-290 2436		
18GB	18" Grab Bar 1 1/2"	B-B-8806 99x18		
36GB	36" Grab Bar 1 1/2"	B-B-8806 99x36		
42GB	42" Grab Bar 1 1/2"	B-B-8806 99x42		
CH	Coat Bumper Hook	B-212		
DF	Drinking Fountain			See Plumbing Schedule
DF/BFS	Drinking Fountain w/Bottle Filling Station			See Plumbing Schedule
ACS	Adult Changing Station	KB300-AHL		Koala Care
EHD	Electric Hand Dryer	Excel TA-SB + 89S Wall Guard		
EWC	Electric Water Cooler			See Plumbing Schedule
EWC/BFS	Electric Water Cooler w/ Bottle Filling Station			See Plumbing Schedule
FD	Floor Drain			See Plumbing Schedule
LAV	Lavatory			See Plumbing Schedule
LT	Laundry Tub			See Plumbing Schedule
SD	Soap Dispenser			By Soap Supply Company
SI	Sink Drain & Supply Insulation			See Plumbing Schedule
SK	Sink			See Plumbing Schedule
SNR-1	Sanitary Napkin Receptacle	B-4354		Single Partition Unit
SNR-2	Sanitary Napkin Receptacle	B-354		Two Compartment Unit
SNR-3	Sanitary Napkin Receptacle	B-35139		Wall Mount Unit
TTH	Toilet Paper Holder	B-4288		Surface Mounted
UR	Urinal			See Plumbing Schedule
WC	Water Closet			See Plumbing Schedule
WF	Wash Fountain			See Plumbing Schedule

Toilet Room 111 Shall have the Following:

1.0	Each	2436M		
1.0	Each	18GB		
1.0	Each	36GB		
5.0	Each	TTH		
5.0	Each	CH		
1.0	Each	SNR-1		
2.0	Each	SNR-2		
4.0	Each	EHD		
4.0	Each	SD		

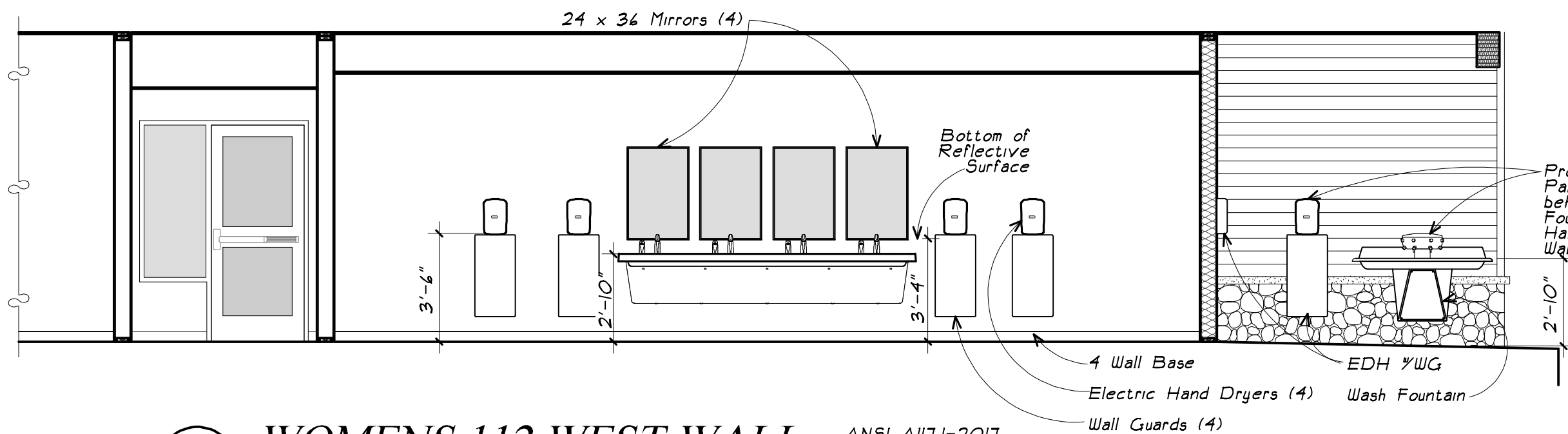
Toilet Room 112 Shall have the Following:

1.0	Each	2436M		
1.0	Each	18GB		
1.0	Each	36GB		
5.0	Each	TTH		
5.0	Each	CH		
1.0	Each	SNR-1		
2.0	Each	SNR-2		
4.0	Each	EHD		
4.0	Each	SD		

Exterior Wash Area Shall have the Following:

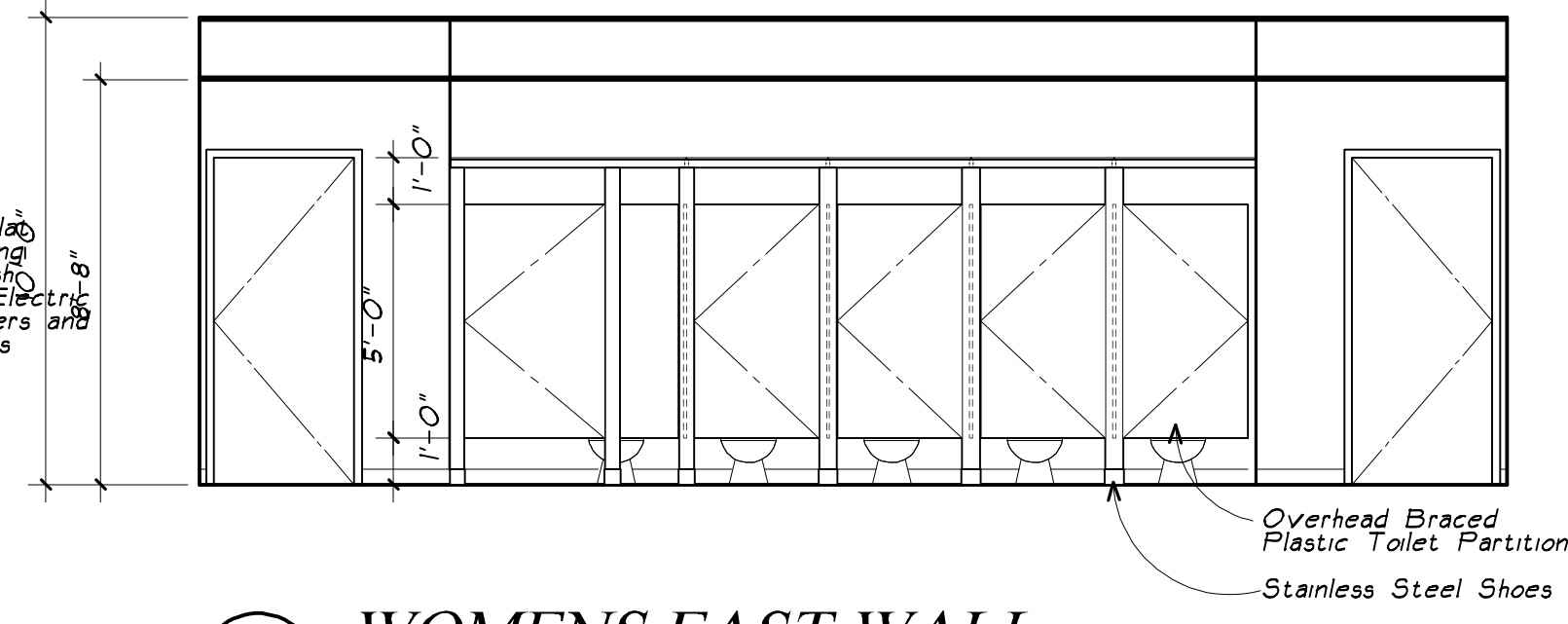
3.0	Each	EHD		
-----	------	-----	--	--

See Plumbing Drawing for Plumbing Fixtures

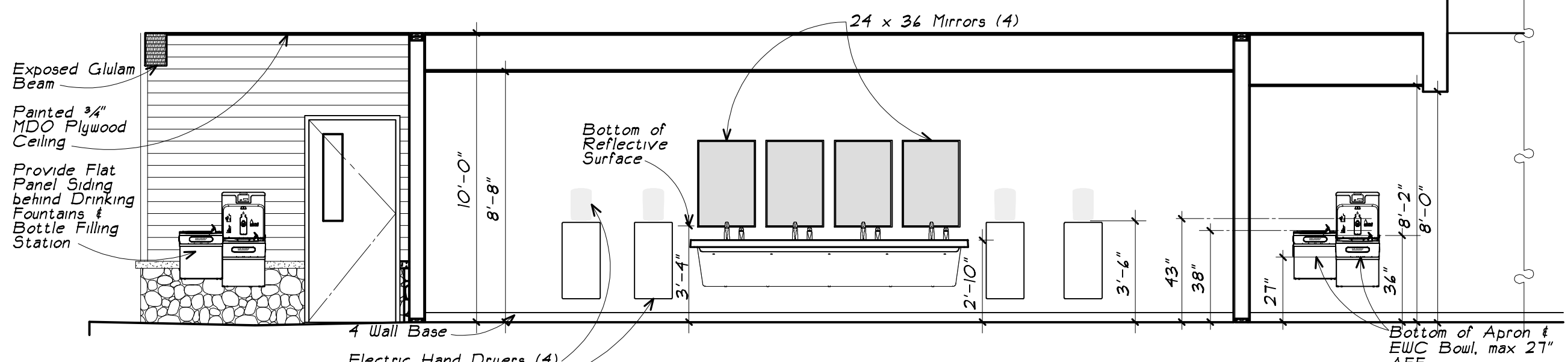


6 WOMENS 112 WEST WALL
A4.1 1/4" = 1'-0"

ANSI A117.1-2017
§602.4 Spout Outlet Height.
Spout outlets of wheelchair accessible drinking fountains shall be 36 inches maximum above the floor. Spout outlets of drinking fountains for standing persons shall be 38 inches minimum and 43 inches maximum above the floor.

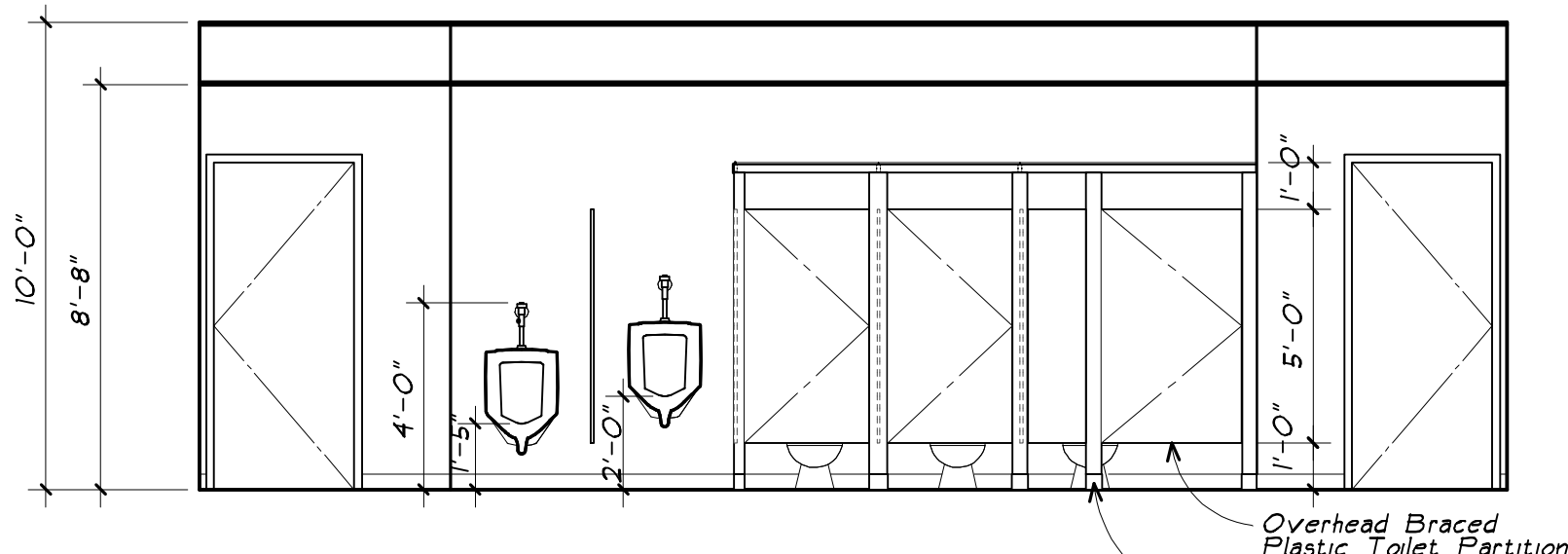


5 WOMENS EAST WALL
A4.1 1/4" = 1'-0"

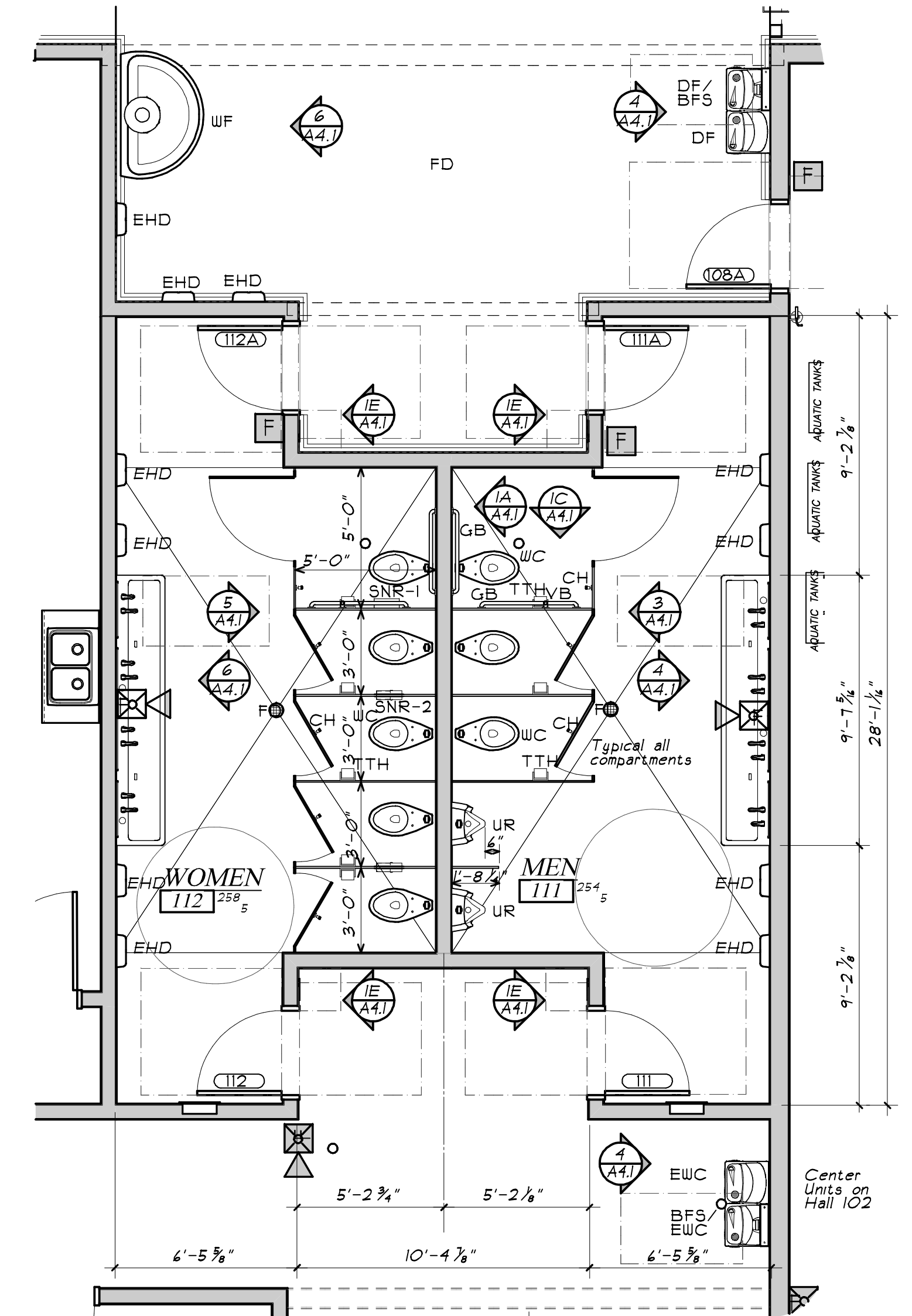


4 MENS EAST WALL
A4.1 1/4" = 1'-0"

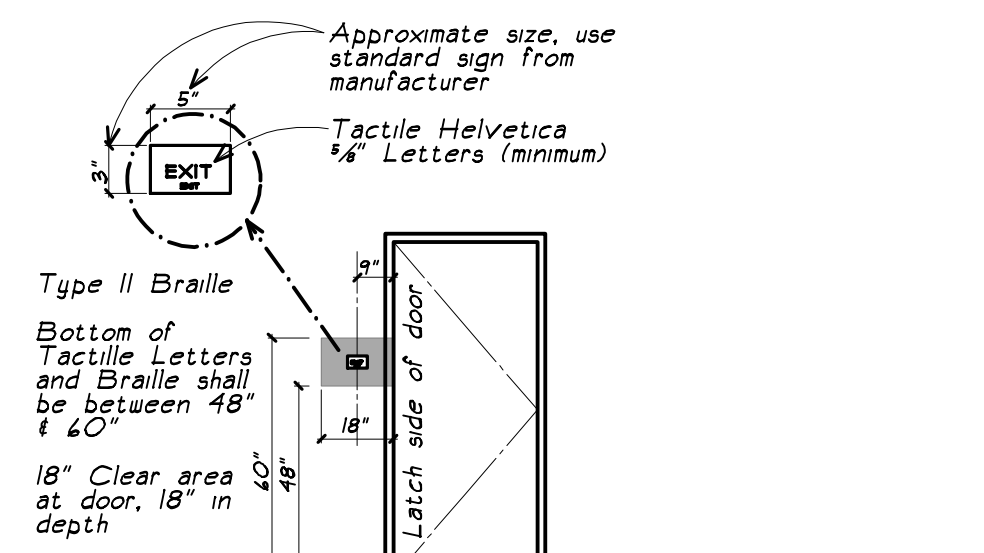
ANSI A117.1-2017
§602.4 Spout Outlet Height.
Spout outlets of wheelchair accessible drinking fountains shall be 36 inches maximum above the floor. Spout outlets of drinking fountains for standing persons shall be 38 inches minimum and 43 inches maximum above the floor.



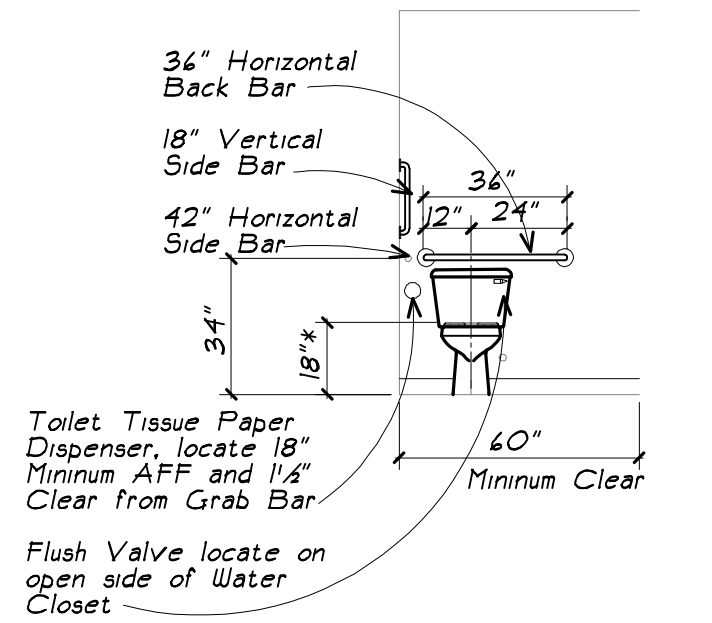
3 MENS WEST WALL
A4.1 1/4" = 1'-0"



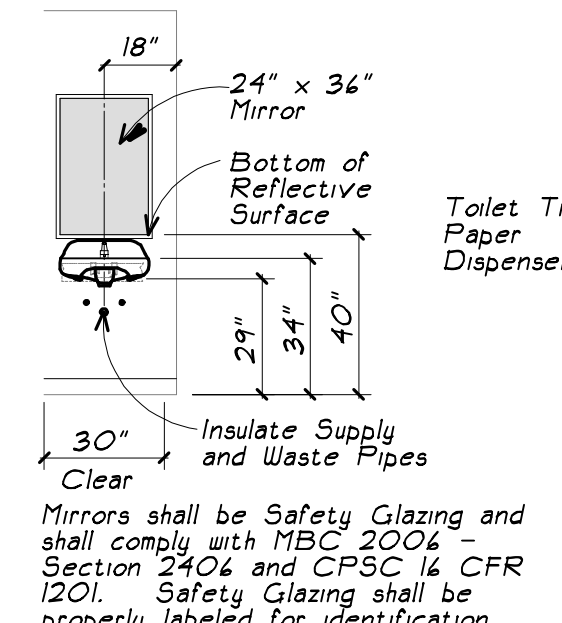
2 ENLARGED TOILET ROOMS 111, 112
A4.1 1/4" = 1'-0"



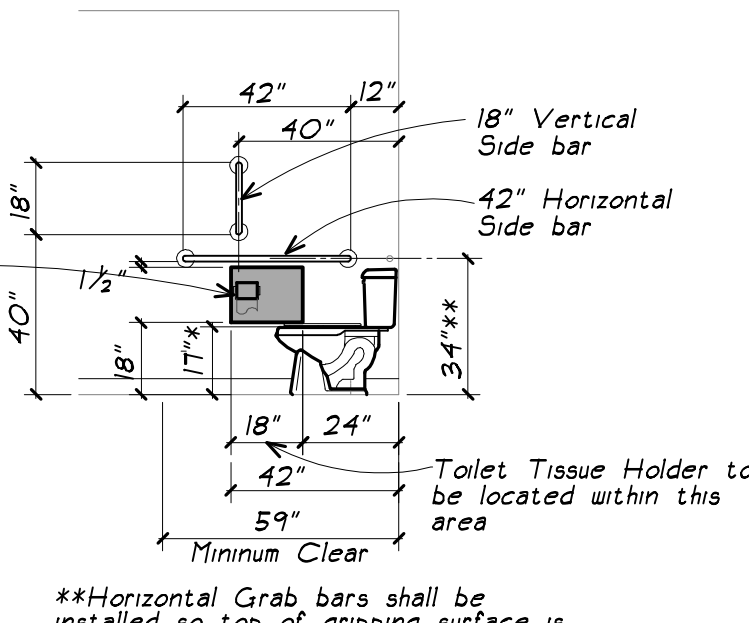
7 "EXIT" SIGN
A4.1 1/4" = 1'-0"



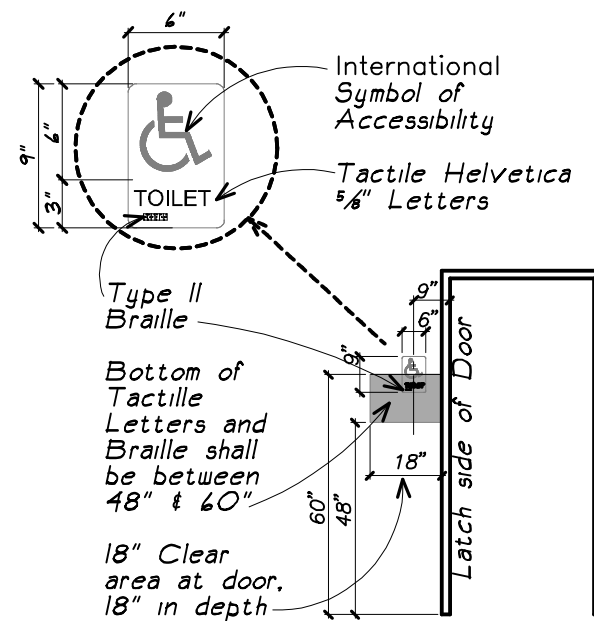
A WC FRONT
A1.1 1/4" = 1'-0"



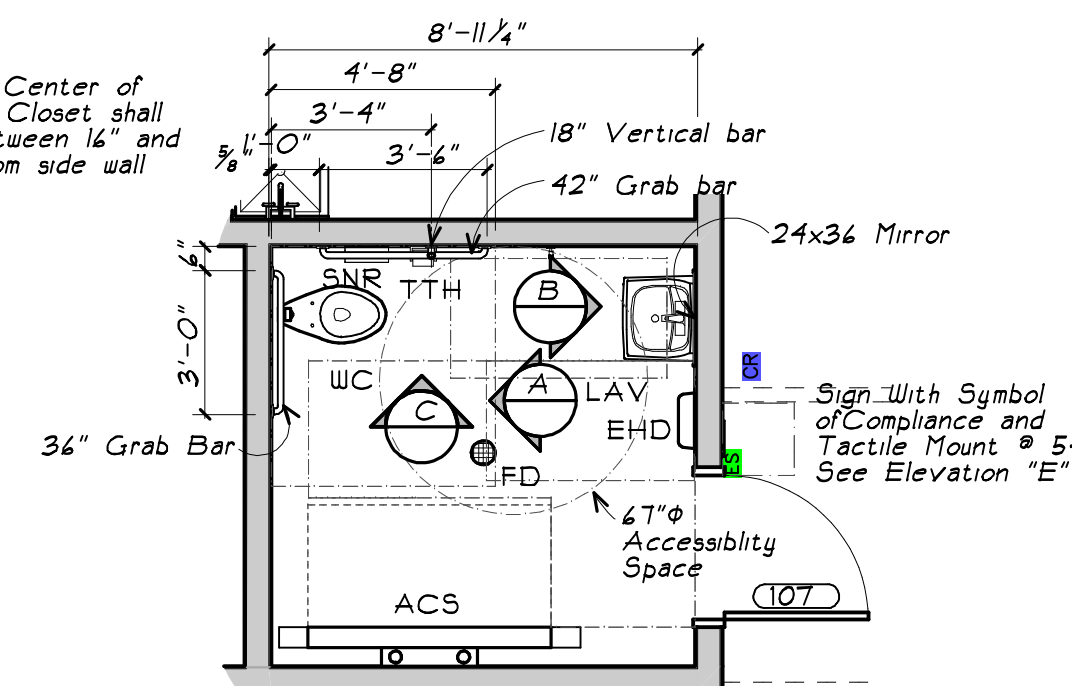
B LAV FRONT
A1.1 1/4" = 1'-0"



C WC SIDE
A1.1 1/4" = 1'-0"



E TOILET ROOM DOOR SIGN
A1.1 1/4" = 1'-0"



1 TOILET 107
A1.1 1/4" = 1'-0"

ROGER L. DONALDSON, AIA P.L.C.
ARCHITECT
4871 Tartan Lane
Livonia, Michigan 48150
(313) 658-0011
email: Roger.A@comcast.net

Forest Hills Nature Center
New Nature Center
11297 N Rich Rd
Seville Township, Gratiot County
Alma, Michigan 48801
PROJECT #24-43

ENLARGED TOILET ROOM PLANS,
ELEVATIONS & DETAILS
SHEET TITLE

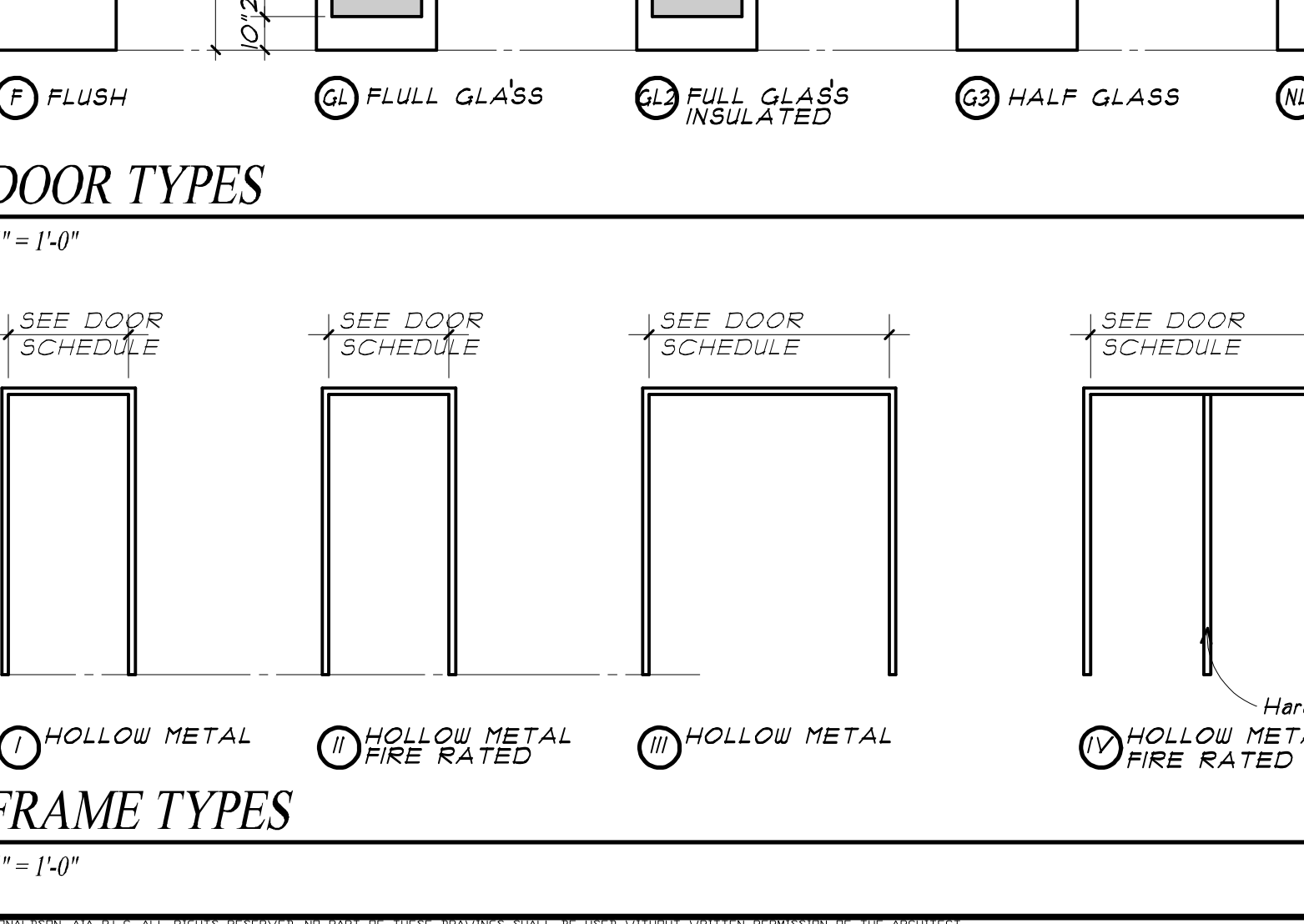
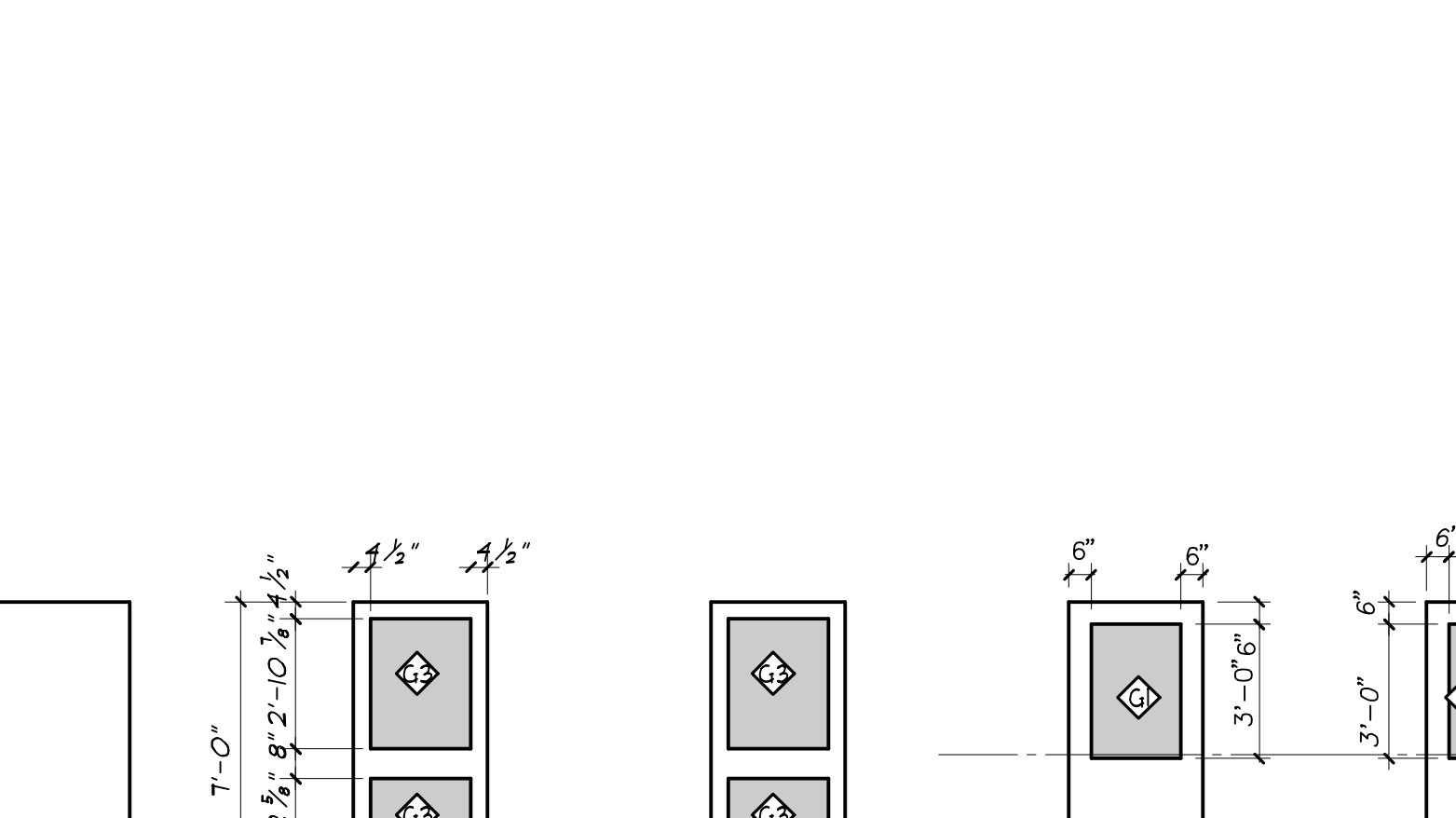
A4.1
SHEET NUMBER
FILE NO. 24-43 A400

Door & Frame Schedule												
Number	Size	Type	Material	Label	Glass	Type	Material	Frame	Jamb	Label	Remarks	
101	(2) 3070	GL	FRP	1	--	G3	IX	AL	--	--	See Note 8E	
102	(2) 3070	GL	FRP	2	--	G2	IX	AL	--	--	See Note 8E	
103	3070	NL	SCW	3	--	G1	I	HM	--	--	See Note 8G	
104	3070	NL	SCW	4	--	G1	I	HM	--	--		
105	3070	NL	SCW	4	--	G1	I	HM	--	--		
106	3070	NL	SCW	4	--	G1	I	HM	--	--		
107	3070	F	SCW	5	--	G1	I	HM	--	--	See Note 8C	
108	(2) 3070	NL	SCW	6	--	G1	I	HM	--	--		
109	3070	NL	FRP	7	--	G3	VI	AL	--	--		
110	(2) 3070	F	FRP	9	--	--	VI	AL	--	--	See Note 8A	
111	(2) 3070	F	FRP	9	--	--	VI	AL	--	--	See Note 8B	
112	3070	F	SCW	10	--	--	VI	AL	--	--	See Note 8D	
113	3070	F	FRP	9	--	--	VI	AL	--	--	See Note 8E	
114	3070	F	HM	12	--	--	VI	AL	--	--	See Note 8F	
115	(2) 3070	NL	FRP	14	--	G1	VI	AL	--	--		
116	(2) 3670	F	SCW	16	--	--	III	HM	--	--		
117	(2) 3070	NL	SCW	16	--	G1	VI	AL	--	--		
118	3070	NL	FRP	15	--	G3	V	HM	--	--		
119	(2) 3070	F	SCW	16	--	--	III	HM	--	--		
120	(2) 3670	F	SCW	16	--	--	III	HM	--	--		
121	(2) 3070	NL	SCW	14	--	G1	VI	AL	--	--		
121A	3070	NL	FRP	15	--	G3	VI	AL	--	--		
122	(2) 3070	F	SCW	16	--	--	III	HM	--	--		
123	(2) 3070	F	SCW	16	--	--	III	HM	--	--		
124	3070	NL	FRP	17	--	G1	VI	AL	--	--		
125	3070	NL	FRP	7	--	G3	VII	AL	--	--		

DOOR SCHEDULE NOTES												
1	The First two Digits of the Door Size Refers to the Door Width in Feet and Inches. (i.e. 3070 Represents 3'0" Wide x 7'0" High Door).											
2	All Doors are 1 3/4" Thick Unless Noted Otherwise.											
3	Frame Type Roman Numerals Refer to Door Frame Types Drawings Shown.											
4	Label Indications Refer to Fire-resistive Assembly.											
5	All Glazing in Doors, Sidelights and Mirrors shall be Safety Glazing and shall comply with MBC 2021 - Section 2406 and CPSC 16 CFR 1201. Safety Glazing shall be properly labeled for identification.											
6	Glazing in Fire Rated Assemblies, including Doors, shall also comply with NFPA 252, NFPA 251, and NFPA 257 as applicable.											
7	Handles, pulls, latches, locks and other operable parts on accessible doors shall have a shape that is easy to grasp with one hand and does not require tight grasping, pinching or twisting of the wrist to operate.											
8	Sign Schedule											

DOOR ABBREVIATIONS:												
AL	=	Aluminum										
FL	=	Flush										
GL	=	Glass Door										
GL2	=	Half Glass Door										
HM	=	Hollow Metal										
HR	=	Hour										
IM	=	Insulated Metal Door w/ Insulating Glass										
Insul.	=	Insulated / Safety Glass										
Lam.	=	Laminated (Safety Glass)										
NL	=	Narrow Light w/ Safety Glass										
NL2	=	Narrow Light w/ Insulating Glass										
FRP	=	Fiber Resin Panel										
SCW	=	Solid Core Wood										

FRAME TYPES												
(I)	HOLLOW METAL											
(II)	HOLLOW METAL FIRE RATED											
(III)	HOLLOW METAL											
(IV)	HOLLOW METAL FIRE RATED											
(V)	ALUMINUM THERMAL BROKEN											
(VI)	ALUMINUM THERMAL BROKEN											
(VII)	ALUMINUM											
(VIII)	ALUMINUM THERMAL BROKEN											



HARDWARE SCHEDULE												
Hard ware Set 1 Rim Panics + Pull Trim x Mullion x Electric Strikes [Card Access]- Full Header Dual Power Operator												
2	ea.	Continuous Hinge CG31		710	PBB							
1	ea.	Rim Panic Device 640R CD (01)		622	PDQ							
1	ea.	Rim Panic Device 640R CD (03)		622	PDQ							
1	ea.	Keyed Electric Mullion 930EM -Paint Black		689	PDQ							
2	ea.	Rim Cylinder I5308 x I5207-1 PDQ2 x trim ring (03 / KM)		622	PDQ							
2	ea.	Mortise Cylinder I5307 x I5207-1 PDQ2 x trim ring (CD)		622	PDQ							
1	set	Pull 1157 x 4 134 Mount at loose ends		315	Don Jo							
1	ea.	Closer 7101 BC EDA (push side mount)		693	PDQ							
2	ea.	Touchless Wall Actuator 474U		32D	SDC							
2	ea.	480-45B surface box (as required)		Black	SDC							
1	ea.	Threshold S205		AL	Reese							
2	ea.	Sweep 354		BLK	Reese							
1	set	Mullion x Electric Strike		315	SDC							
1	set	Weatherstrip by FRP Door & Frame Supplier		BLK	DFS							
2	ea.	Electric Strike 9910 24VDC Fail Secure		32D	SDC							
1	ea.	Power Supply 602RF X UR1		613	SDC							
1	ea.	Access Control Module & Card Reader by Security Vendor		---	Sec Vendor							
Note:		Access control module, card reader and peripherals furnished by Security Vendor, Coordinated by GC/CM.										

Hard ware Set 2 Push / Pull Set [Always Unlocked] + Full Header Dual Power Operator												
2	ea.	Continuous Hinge CG31		710	PBB							
2	sets	Push 1157/147 x 134 Mount at loose ends		315	Don Jo							
1	ea.	Full Header Dual Power Operator AUTOS2		335	SDC							
1	ea.	Touchless Wall Actuator 474U		32D	SDC							
2	ea.	480-45B surface box (as required)		Black	SDC							

Hard ware Set 3 Storeroom Lock x Electric Strike [Card Access] + Closer												
3	ea.	Butt Hinge BB81 4 1/2" x 4 1/2" NRP		800	PBB							
1	ea.	Storeroom Lockset GT115 BSN SF7 x PDQ2		622	PDQ							
1	ea.	Closer 7101 BC RA Regular Arm (pull side mount)		693	PDQ							
1	ea.	Kickplate 90 10 x 2" LDW BAE		622	Don Jo							
1	ea.	Wall Stop 1407		622	Don Jo							
1	ea.	Electric Strike 55-ABC 24VDC Fail Secure		613	SDC							
1	ea.	Power Supply 602RF X UR1		613	SDC							
1	ea.	Access Control Module & Card Reader by Security Vendor		---	Sec Vendor							
Note:		Access control module, card reader and peripherals furnished by Security Vendor, Coordinated by GC/CM.										

Hard ware Set 4 Storeroom Lock x Electric Strike [Card Access]												
3	ea.	Butt Hinge BB81 4 1/2" x 4 1/2" NRP		800	PBB							
1	ea.	Storeroom Lockset GT115 BSN SF7 x PDQ2		622	PDQ							
1	ea.	Wall Stop 1407		622	Don Jo							
1	ea.	Electric Strike 55-ABC 24VDC Fail Secure		613	SDC							
1	ea.	Power Supply 602RF X UR1		613	SDC							
1	ea.	Access Control Module & Card Reader by Security Vendor		---	Sec Vendor							
Note:		Access control module, card reader and peripherals furnished by Security Vendor, Coordinated by GC/CM.										

Hard ware Set 5 Privacy Lock w/ Indicator x Electric Strike [Card Access] + Closer												
3	ea.	Butt Hinge BB81 4 1/2" x 4 1/2" NRP		800	PBB							
1	ea.	Privacy Lockset w/ Indicator MR 236 BJSJ SF7 x PDQ2		622	PDQ							
1	ea.	Closer 7101 BC EDA (push side mount)		693	PDQ							
1	ea.	Kickplate 90 10 x 2" LDW BAE		622	Don Jo							
1	ea.	Wall Stop 1407		622	Don Jo							
1	ea.	Deadbolt Keeper Electric Strike 55-D 24VDC Fail Secure		613	SDC							
1	ea.	Power Supply 602RF X UR1		613	SDC							
1	ea.	Access Control Module & Card Reader by Security Vendor		---	Sec Vendor							
Note:		Access control module, card reader and peripherals furnished by Security Vendor, Coordinated by GC/CM.										

Hard ware Set 6 EL SVR Panics x Pull Trim [Card Access] + Closers + Wall Stop & Holder												
6	ea.	Butt Hinge BB81 4 1/2" x 4 1/2" NRP		800	PBB							
1	ea.	Electric SVR Panic 6300V LBR MLR (01)		622	PDQ							
1	ea.	Electric SVR Panic 6300V LBR MLR (03)		622	PDQ							
1	ea.	Rim Cylinder I5308 x I5207-1 PDQ2 x trim ring (03)		622	PDQ							
2	set	Pull 1157 x 4 134 Mount at loose ends		315	Don Jo							
2	ea.	Closer 7101 BC EDA (push side mount)		693	PDQ							
2	ea.	Kickplate 90 10 x 2" LDW BAE		622	Don Jo							
2	ea.	Wall Stop & Holder 1526		622	Don Jo							
2	ea.	Power Transfer PTM-10		335	SDC							
1	ea.	Power Supply 602RF X UR1		613	SDC							
1	ea.	Access Control Module & Card Reader by Security Vendor		---	Sec Vendor							
Note:		Access control module, card reader and peripherals furnished by Security Vendor, Coordinated by GC/CM.										

Hard ware Set 7 Panic Hardware x Pull Trim x Electric Strike [Card Access] + Closer												
6	ea.	Continuous Hinge CG31		710	PBB							
1	ea.	Panic Hardware 6300R (03)		622	PDQ							
1	ea.	Rim Cylinder I5308 x I5207-1 PDQ2 x trim ring (03)		622	PDQ							
1	set	Pull 1157 x 4 134 Mount at loose ends		315	Don Jo							
1	ea.	Closer 7101 BC EDA (push side mount)		693	PDQ							
1	ea.	Wall Stop 1407		622	Don Jo							
1	ea.	Threshold S205A (notch & cope as required)		BLK	Reese							
1	ea.	Sweep 354C Mount pull side		BLK	Reese							
1	set	Weatherstrip by FRP Door & Frame Supplier		BLK	DFS							
1	ea.	Electric Strike 9910 24VDC Fail Secure		32D	SDC							
1	ea.	Power Supply 602RF X UR1		613	SDC							
1	ea.	Access Control Module & Card Reader by Security Vendor		---	Sec Vendor							
Note:		Access control module, card reader and peripherals furnished by Security Vendor, Coordinated by GC/CM.										

Hard ware Set 8 Flushbolts x Classroom Lock [Lock / Unlock]												
6	ea.	Butt Hinge BB81 4 1/2" x 4 1/2" NRP		800	PBB							
1	set	Flushbolt 1555 x 1555		622	Don Jo							
1	ea.	Dust Proof Strike 1572		622	Don Jo							
1	ea.	Classroom Lockset GT 148 BSN SF7 x PDQ2		622	PDQ							
2	ea.	Door Stop 1407 or 1434 -type as required		622	Don Jo							

ROOM FINISH SCHEDULE													
Room	FLOOR	WALLS	CEILING	ROOM	ROOM								
Number	Name	Floor	Base	North	South	East	West	Ceiling	Height	Rating	Remarks	Area	Occupants
101	VESTIBULE	POL CONC	V-C	GD4PT	GD4PT	GD4PT	GD4PT	T&G C	Varies	---		137 sf	
102	ENTR/HALL	POL CONC	V-C	GD5PT	GD5PT	GD5PT	GD5PT	T&G C	Varies	---		729 sf	
103	STAFF	POL CONC	V-C	GD4PT	GD4PT	GD4PT	GD4PT	ACT	8'-0"	---		383 sf	4
104	OFFICE	POL CONC	V-C	GD4PT	GD4PT	GD4PT	GD4PT	ACT	8'-0"	---		180 sf	2
105	OFFICE	POL CONC	V-C	GD4PT	GD4PT	GD4PT	GD4PT	ACT	8'-0"	---		167 sf	2
106	LAUNDRY	POL CONC	V-C	GD4PT	GD4PT	GD4PT	GD4PT	ACT	8'-0"	---		167 sf	1
107	TOILET	POL CONC	V-C	GD4PT	GD4PT	GD4PT	GD4PT	ACT	8'-0"	---		76 sf	1
108	MAIN HALL	FRP	V-C	GD5PT	GD5PT	GD5PT	GD5PT	ACT	8'-0"	---		2,486 sf	83
109	STAFF	POL CONC	V-C	GD4PT	GD4PT	GD4PT	GD4PT	ACT	8'-0"	---		217 sf	1
110	MECHANICAL	POL CONC	V-C	GD4PT	GD4PT	GD4PT	GD4PT	ACT	14'-0"	---		217 sf	1
111	MEN	POL CONC	V-C	GD4PT	GD4PT	GD4PT	GD4PT	ACT	8'-8"	---		254 sf	5
112	WOMEN	POL CONC	V-C	GD4PT	GD4PT	GD4PT	GD4PT	ACT	8'-8"	---		258 sf	5
113	JANITOR	POL CONC	V-C	GD4PT	GD4PT	GD4PT	GD4PT	ACT	10'-0"	---		86 sf	1
114	MECHANICAL	POL CONC	V-C	GD4PT	GD4PT	GD4PT	GD4PT	ACT	10'-0"	1 Hour			



UTILITY WARNING
PROTECTION OF UNDERGROUND FACILITIES
PUBLIC ACT 53 OF 1974
 Underground and/or aboveground utility locations, as may be indicated on the plan, were obtained from utility owners or other documents and were not field located.
 A minimum of 12 hours (3 working days) prior to beginning construction, the contractor shall notify "Miss Dig" and have all underground utilities marked before any work may begin. (Excluding Saturdays, Sundays, or Holidays)
 The contractor shall be responsible for the protection of all utilities that may interfere with construction. Protection of utilities shall be required as part of construction.

GENERAL FOUNDATION NOTES:

- Do not scale these drawings, use dimensions indicated on the drawings and those verified at the project site. Any dimensions or areas that are unclear on the drawings shall be clarified by the Owner's Representative. Scaling of these drawings or other methods to determine dimensions will not be acceptable.
- Elevations based on Finish floor Elevation = 100'-0" (assigned, see Civil Drawings for USGS Elevation)
- Bottom of all footings exposed to frost shall be minimum of 3'-6" below grade. Verify grade with Civil Drawings.
- Foundation and Footing Design based on Available Soil Bearing Pressure of 2,000 psf Capacity. Excavate to Indicated Elevations, Compact soil and have Soil's Engineer test and verify required soil Bearing Capacity. Notify Architect of all Findings.
- During construction, the contractor shall provide for testing of soil capacity and ground water elevations at footing locations. Testing shall be performed by a Soil's Engineer, licensed in the state of Michigan. Engineer shall submit report of findings and recommendations for foundations and ground water impact on foundations.
- Testing: independent testing agency to design concrete mixes and to perform material evaluation tests. Provide 7 and 28 day cylinder Tests. Comply with ASTM C143, C173, C31 And C39.
- Standard procedures of frost protection for footings and Footing excavation shall be used for winter construction. Backfilling of footing excavations shall be done as soon as Possible to protect footings from frost action.
- Provide 3" x 24" (R-15) Minimum Vertical Rigid Insulation at all Exterior walls locations. Install insulation below slab.
- Provide 1/2" Expansion material joint when concrete slabs and building foundations occur. All Expansion Joint material shall be premoiled and installed per manufacturers specification requirements.
- Isolation joints: provide between slabs and vertical elements such as columns and structural walls.
- C.J. Indicates saw cut control joint in slab on-grade. Saw cuts Must be made within 12 hrs. after slab pour. Joint depth shall be 1/4 depth of slab thickness.
- Slope Floor Slabs to Drains and Exterior.
- Provide Control Joints in Floor slab at intervals not to Exceed 20' x 20'.
- Provide Control Joints in Exterior slabs at intervals not to exceed 10' x 10'.
- Provide Control Joints in Sidewalk slabs at intervals not to exceed 5' x 5'.
- Reinforcement:
 a. Bars: deformed steel, ASTM A15, Grade 60.
 c. Mesh: welded steel wire fabric, ASTM A185.
- All reinforcing steel shall be deformed per ASTM A615 Grade 40 or Grade 60. Lap continuous reinforcing bars 40 bar diameters, 1'-8" minimum unless otherwise noted.
- Reinforcement protection. (Unless noted otherwise)
 a. Concrete poured against Earth: 3"
 b. Concrete poured in forms but exposed to Weather, Earth or Liquid: 2"
 c. Slabs and walls: 1"
- Detailed bars in accordance with ACI Detailing Manual, ACI Building Code requirements for reinforced concrete, provide corner bars.
- Provide all accessories necessary to support reinforcing in position shown on the plans.
- All Verticals shall have Bottom hook of 4" Minimum.
- Provide 6x6-w1.4 x w1.4 welded wire mesh for all interior concrete slabs on grade unless noted otherwise. Place wire 2" below top of slab. Lap splice overlap length to be 6" and shall be measured between the outermost cross wires of each fabric sheet.
- Provide Fiber mesh for all exterior concrete slabs on grade unless noted otherwise.
- Welded Wire Mesh shall be in accordance with ASTM A185.
- Welded Wire Mesh shall lap one full mesh as sides and ends.
- Provide 1/2" Anchor Bolts at 6'-0" on center maximum, Minimum 2 Bolts for each Sill Plate above located not more than 12" from end of plate.
- Provide sleeves for all utility (Plumbing, Electric, Cable TV, Telephone), locate as required.
- Miscellaneous materials:
 Hardener: non-metallic, quartz-silica, interior/exterior type; Euclid Surfex or approved equal.
 Grout: non-metallic, non-shrink type
- Patch all concrete floors where removed for mechanical work with 4000 psi concrete.
- Tolerance: plus 1/8" in 10' for grade, alignment, and straightness.
- Provide a minimum 6-mil polyethylene vapor retarder with joints lapped not less than 6 inches placed between the base course of subgrades and the concrete floor slab.
- All exposed concrete, except floating surfaces of slabs shall receive a rubbed surface finish. Expose corners shall be chamfered 3/4" unless noted otherwise.
- Slab Finishes.** Provide uniform finish on concrete surface after completion of floating and troweling when excess moisture or surface sheen has disappeared, complete finishing, as follows:
 a. **Trowel:** provide smooth hard uniform surface for areas to receive Resilient flooring, carpet, or other thin finish material.
 b. **Scratch:** for surfaces to receive mortar setting beds or cementitious flooring materials.
 c. **Exposed to View Surfaces:** Provide a smooth finish for exposed concrete surfaces and surfaces to be covered with a coating or covering material applied directly to concrete. Remove fins and projections, patch defective areas with cement grout, and rub smooth.
 d. **Broom Finish:** by drawing aa fine-hair broom across concrete surface, perpendicular to line of traffic. Repeat operation if required to provide a fine line texture.
 e. **Inclined Surface Finish:** provide a coarse, non-slip finish by scoring surface with a stiff-bristled broom, perpendicular to line of traffic.
 f. **Burlap Finish:** Provide a finish by dragging a seamless strip of dam burlap across concrete, perpendicular to line of traffic. Repeat operation to provide a gritty texture.

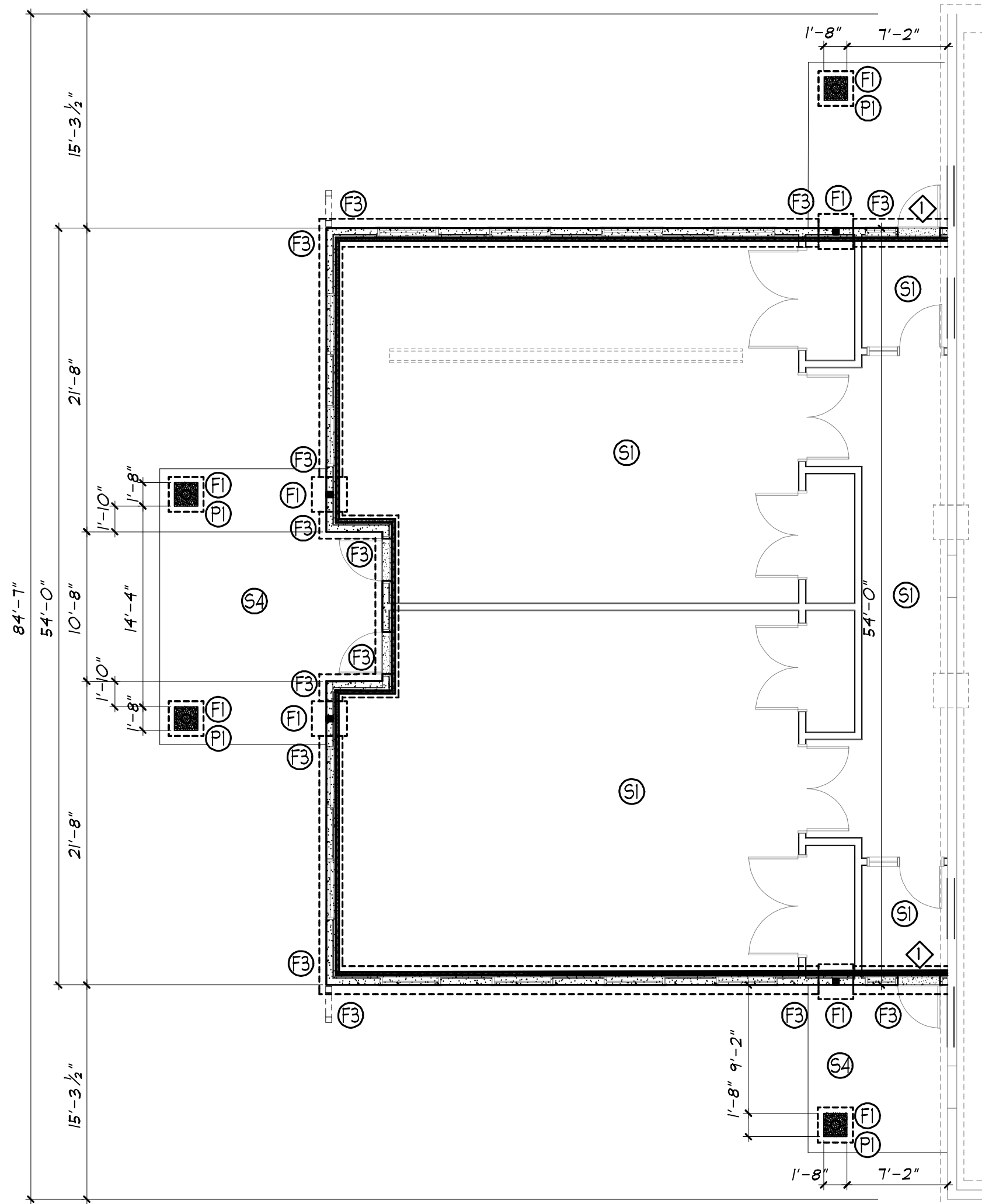
SPECIFIC FOUNDATION NOTES:

- Hold Top of wall down 8" at door, See 2/S1.1.
- Hold Top of wall down 8" below upper wall. See 1/S1.1..
- Slope concrete slab to floor drain this room.
- Slope concrete slab to the exterior 2%..

Concrete Schedule	
Mark	Description
Footings	
F1	2'-6" x 2'-6" x 12" Deep w/ (3) #5a bars each way, 3" up from bottom of footing
F2	2'-0" x 12" Deep continuous w/ (3) #5a bars each way, 3" up from bottom of footing
F3	1'-8" x 10" Deep continuous w/ (3) #5a bars each way, 3" up from bottom of footing
Piers	
P1	1'-8" x 1'-8" (14) 5a Verticals w/ 4" jooks into Footings and #3a Ties @ 10" on center.
Slabs	
S1	4" Concrete Floor Slab with 6x6 W1.4 x W1.4 WWM and In Floor Heat piping over on 6 mil Polyethylene Vapor Retarder on 2" Rigid Insulations (R-10) on 4" Compacted Sand over Compacted Grade. Exposed Polished Finish.
S2	4" Concrete Floor Slab with 6x6 W1.4 x W1.4 WWM and In Floor Heat piping over on 6 mil Polyethylene Vapor Retarder on 2" Rigid Insulations (R-10) on 4" Compacted Sand over Compacted Grade. Trowel Finished
S3	4" Concrete Floor Slab with 6x6 W1.4 x W1.4 WWM and In Floor Heat piping over on 6 mil Polyethylene Vapor Retarder on 2" Rigid Insulations (R-10) on 4" Compacted Sand over Compacted Grade. Trowel Finished
S4	4" Concrete Floor Slab with Fiber Mesh Reinforcing, Vapor Lock 10'10 and In Slab Snow Melt piping over on 2" Rigid Insulations (R-10) on 4" Compacted Sand over Compacted Grade. Broom Finish

GENERAL DESIGN LOADS:

FOUNDATION DESIGN LOADS:			
Foundations and Slabs on Grade	100 PSF		
Foundation Bearing Capacity	2000 PSF		
FLOOR DESIGN LOADS:			
LIVE LOADS (Table 1607.1)			
Classroom	40 PSF		
Corridors	100 PSF		
Office	50 PSF		
Public Areas	100 PSF		
ROOF DESIGN LOADS:			
Dead Loads			
Roof Trusses			
Top Chord	15 PSF		
Bottom Chord	10 PSF		
See Roof Framing Plan for Equipment Loads			
Live Loads			
Roof Trusses			
Ground Snow Load, P_g	35 PSF		
Flat Roof Snow Load, P_f	26.68 PSF		
Sloped Roof Snow Load, P_s	26.68 PSF		
Bottom Chord Construction	10 PSF		
Live Load	20 PSF		
Factor Table			
V_{5s}	1609.3.1	Wind Velocity (3 second gusts), V_w	90 MPH
V_{10s}	1609.3.1	Equivalent Basic Wind Speeds, V_{eb}	76 MPH
P_{net}		Wind Load	20 PSF
ASCE-7, ST.3			
II	Table 1-1	Building Category	III
	1609.4	Terrain Category	B
		Fully Exposed	
C_e	Table 7.2	Snow Exposure Factor	0.9
C_t	Table 7.3	Thermal Factor	1.1
		Tempered	
I_s	Table 7.4	Snow Load Importance Factor	1.1
C_s	Figure 7.2	Roof Slope Factor	1.0
I_w	1604.5	Wind Factor	1.00
C	1609.4	Wind Exposure	C
I_f	1604.5	Seismic Importance Factor	1.00
Deflection Limits on all Members			
	1604.3	Live Load	L/480
	1604.3	Total Load	L/360



Phase 2 < Phase 1

FOUNDATION PLAN - PHASE 2
 Scale: 1/8" = 1'-0"

Forest Hills Nature Center
New Nature Center
 11297 N Rich Rd
 Seville Township, Gratiot County
 Alma, Michigan 48801

CD	04/29/2024	Building and Plan Review
CD	04/29/2024	NOI, Zoning, Rezoning
MARK	DATE	DESCRIPTION
	04/29/2024	PROJECT

FOUNDATION PLAN - PHASE 2,
PLAN NOTES & DETAILS
 SHEET TITLE

S1.2
 SHEET NUMBER
 FILE NO.
 24-43 5100

ROGER L. DONALDSON, AIA P.L.C.
ARCHITECT
 4181 Tartan Lane
 101,
 (517) 694-0011
 Michigan 48842-9325
 email: Roger.A@rldon.com

These plans are copyright and are subject to copyright protection as provided by the U.S. Copyright Office and are the property of Roger L. Donaldson, AIA P.L.C. No part of these plans may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage and retrieval system, without the prior written permission of the Architect. The Architect's liability is limited to the extent of the contract documents. The Architect is not responsible for any construction or building being started and/or completed in violation of the provisions of these plans or for any other losses or damages resulting from the use of these plans. Reproduction is prohibited.

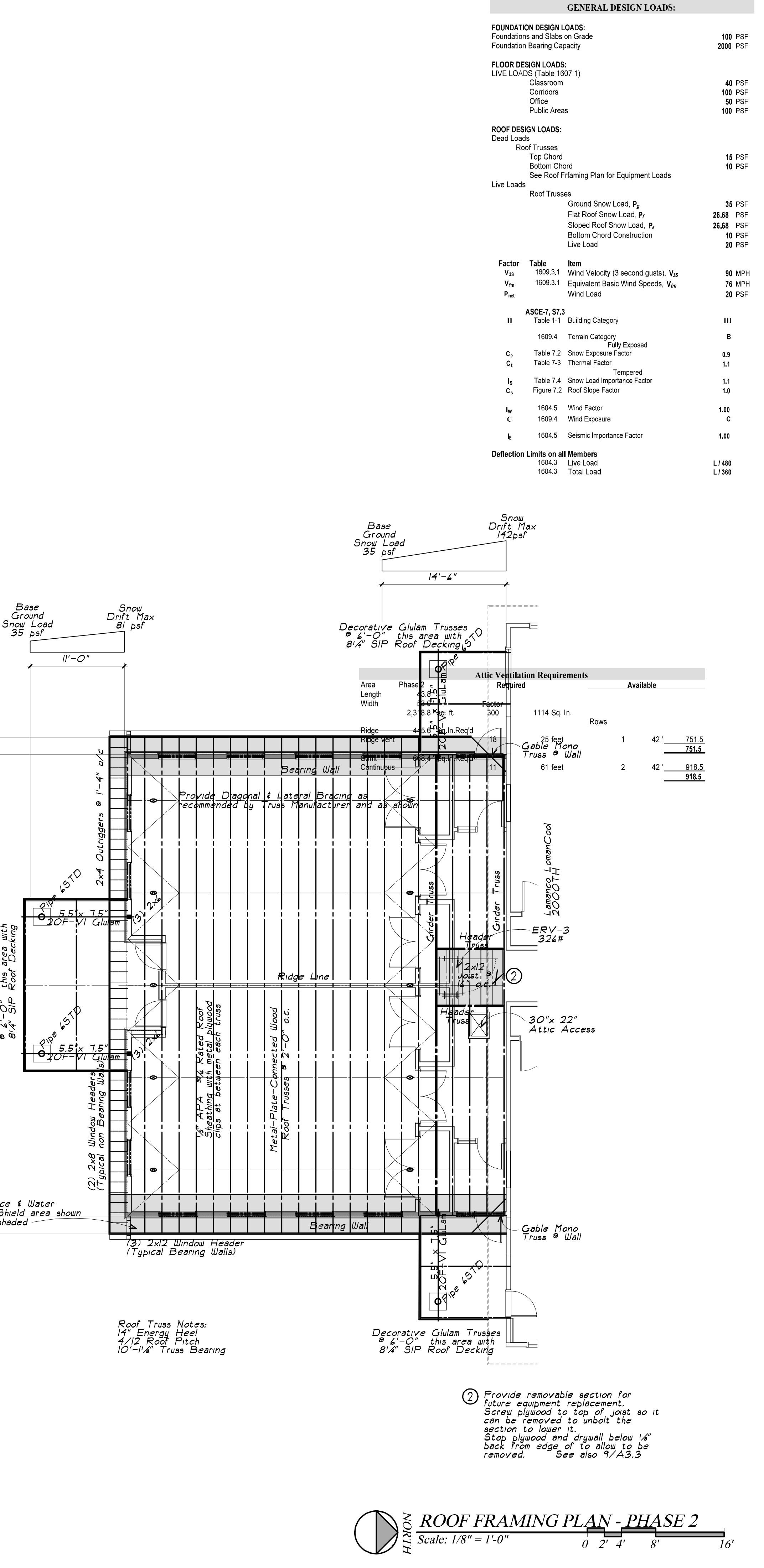
Drawing File: D:\Projects\Chassis\24-43\24-43 5102.dwg
 Plot Date: 04/29/2024 10:07 AM
 Plot Date: 04/29/2024 10:07 AM
 Plot Date: 04/29/2024 10:07 AM

- ROOF FRAMING NOTES:**
- Do not scale these drawings, use dimensions indicated on the drawings and those verified at the project site. Any dimensions or areas that are unclear on the drawings shall be clarified by the Owner's Representative. Scaling of these drawings or other methods to determine dimensions will not be acceptable.
 - WOOD TREATMENT:** Preservative-treated with waterborne Preservatives, to comply with AWPB LP-2 or LP-22, as applicable. Kln dry to 15% max. moisture content. Treat wood exposed to deterioration by moisture, such as items in contact with roofing, flashing, waterproofing, masonry, concrete, or the ground.
 - Comply with manufacturer's requirements for cutting, handling, fastening and working treated materials.
 - GENERAL FRAMING:**
Install roof sheathing stamp side down. No roof sheathing less than 2'-0" in any one direction.
Sheathing Nailing shall be minimum of 8d Common Nails, 6" o.c. in panel edges and 12" o.c. at intermediate supports except where noted otherwise on the Truss Framing Plan.
Provide nailers, blocking and grounds where required. Set work plumb, Level and accurately cut.
 - PREFABRICATED WOOD TRUSSES:**
Provide a complete Roof Framing System that consists of a minimum of Roof Trusses, Permanent Lateral Bracing, Permanent Diagonal Bracing, Strongbacks, and Truss Bearing Connectors (*Wind Hold Down Clips*) and other materials as required.
All trusses to have 2 x 4 (minimum) top and bottom chords. Trusses to be fabricated with wood chords and wood webs in accordance with design to be prepared under the supervision of a Registered Professional Engineer.
Metal connector plates shall securely fasten each joint on both sides of truss in accordance with current, accepted truss plate institute standards and procedures.
Provide Prefabricated Gable, Mono Sloped, Scissor and Girder & Special Profile Trusses as required. Submit for review Shop Drawings and Product Data prepared by Truss Manufacturer/Structural Engineer Licensed in the State of Michigan. Comply with governing codes and regulations. Provide Products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers.
Truss Profiles shown on Drawings are Generic and shall be verified with Contractor for each area. Provide Trusses indicated and special profile trusses as required to complete the project. Web members indicated are symbolic and the Truss Manufacturer/Structural Engineer shall engineer actual location, spacing, connections and sizes of all Truss Chord, Web and Bracing Members.
Standard dimensional lumber connected by metal plates. Wood: softwood meeting stress rating and design requirements. Metal plates: galvanized sheet steel ASTM A 446, Grade A, Coating G60.
Deliver, handle, and store materials in accordance with manufacturer's instructions.
Install materials and systems in accordance with manufacturer's instructions and approved Submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with work of other sections. Restore damaged components. Clean and protect work from damage. Provide temporary and permanent bracing as required by Truss Manufacturer/Structural Engineer and Truss Manufacturer.
Provide Plywood Sheathing on face of Truss or horizontal ties as required by Truss Manufacturer/Structural Engineer to eliminate Horizontal Thrusts from Scissor and Other Trusses onto Exterior Walls.
Roof Trusses shall be Tied to wall below to resist Wind Uplift in compliance with MBC 2021, Section 2308.10.1 Truss Manufacturer shall indicate required fasteners on Truss Shop Drawings.
Provide Truss Shop & Permanent Bracing Drawings prepared by Truss Manufacturer/Structural Engineer licensed in State of Michigan. Submit copies to Architect and Building Authority. Submit information shall include at a minimum that required by TPI-1-2014, Section 2.1.2 and necessary for proper installation by Contractor.
Truss Manufacturer/Structural Engineer shall provide in writing to the Architect special loading conditions and requirements to properly support roof system loads imposed upon the supporting walls and structure.
 - PREFABRICATED WOOD TRUSS BRACING:**
The Truss Engineer shall provide complete design services for the truss system, including the Permanent Bracing design, installation procedures and instructions.
Provide Temporary bracing during construction and Truss Erection as required by Truss Manufacturer and BCSI 1-2018, *Guide to Good Practice for Handling, Installing, & Bracing of Metal-Plate Connected Wood Trusses* - whichever is more stringent.
Provide Permanent Bracing as required by Truss Manufacturer and as shown on Permanent Bracing Drawings prepared by Truss Manufacturer's Structural Engineer Licensed in State of Michigan, and ANSITCIP 1-2014.
Provide Continuous Diagonal Bracing at each line of Lateral Bracing.
Lateral Roof Truss Bracing shall overlap a minimum of one Truss Space unless additional overlap is required by Truss Manufacturer. Butt Joint ends of Bracing shall not be allowed.
The Truss Manufacturer's Structural Engineer shall inspect the installed Truss & Permanent Bracing System for conformance with all truss design and installation requirements.
Provide minimum Bracing as indicated below or that required by Truss Manufacturer's Permanent Bracing design, installation procedures and instructions, whatever is more stringent.
Truss bracing shall be nominal 2 x 4 lumber and secured to each braced member with two 16d nails. Use double headed nails for temporary bracing. Pieces to be as long as practical for handling, minimum length shall be 10'-0".
Provide permanent bottom chord bracing consisting of continuous lateral members at approximately 8'-0" to 10'-0" intervals with diagonal bracing at 45 deg. to the lateral members and located at the end of each run of trusses, and intermittently at not over 20'-0", between ends of runs.
Provide permanent continuous lateral bracing of web members at not over 12'-0" intervals along truss length starting at center members(s).
Provide permanent diagonal bracing at approximately a 45° angle to the web lateral braces, attached where possible to the opposite side of each member requiring lateral bracing. This bracing to occur at end of truss runs and intermittently at not over 20'-0", between ends of runs.
Provide diagonally bracing from the top plate of end walls up to the top chord of the trusses, no steeper than 45° at spacing of 2'-0" on center. Provide solid blocking between top chords from end wall to each diagonal brace.
Provide at each truss, two (2) Galvanized Simpson H10A x 18 gage Truss Connectors secured to double plates, unless noted otherwise. Provide connectors with additional corrosion protection when plate are pressure treated.
See typical permanent bracing diagram(s) on S5.1.

- GENERAL FRAMING NOTES:**
- Do not scale these drawings, use dimensions indicated on the drawings and those verified at the project site. Any dimensions or areas that are unclear on the drawings shall be clarified by the Owner's Representative. Scaling of these drawings or other methods to determine dimensions will not be acceptable.
 - All Contractors (General and Sub Contractors, Vendors and Suppliers) shall review and verify all dimensions and shall notify Architect in writing of any discrepancies prior to starting work. Starting of work shall be Contractor's acceptance of these documents as being correct and valid as to their part of these work. Requests for changes based on these drawings after start of work will not be accepted.
 - Dimensions are to face of stud.
 - Finish First Floor Elevation = 100'-0" (assigned, see Civil Drawings for USGS Elevation)
 - Provide nailers, blocking and grounds where required. Set work plumb, Level and accurately cut.
 - Install materials and systems in accordance with manufacturer's instructions and approved Submittals. Install materials and systems in proper relation with adjacent construction.
 - Coordinate with work of other trades.
 - Exterior door concrete slab shall be flush with interior floor elevation with threshold no greater than 1/2" in height. Comply with Michigan Barrier Free Design Rules, including MBC 2021, Chapter 11.
 - Structural wood framing requirements:
Based on Spruce-Pine-Fir (Southern) No. 2 or better.
F_b = 750 PSI, F_v = 70 PSI, E = #975, E = 1,100,000 PSI.
 - Joist Framing requirements:
Based on Douglas Fir-Larch No. 2 or Better.
F_b = 875 PSI, F_v = 95 PSI, E = #925, E = 1,600,000 PSI.
 - Structural wood framing requirements (Pressure Treated)
Based on (Southern Pine) No. 2 or better.
F_b = 750 PSI, F_v = 175 PSI, E = #1,250, E = 1,400,000 PSI.
 - Joist Framing requirements (Pressure Treated)
Based on (Southern Pine) No. 2 or better.
F_b = 750 PSI, F_v = 175 PSI, E = #1,250, E = 1,400,000 PSI.
 - Wood for nailers, blocking, furring and sleepers: Construction Grade, Finished 4 sides, 15% moisture content.
 - The Maximum Total Deflection of Wood Beams Shall Not Exceed 1/360 of the Total Span.
 - All Wood Beams Shall have a Minimum Bearing of 4".
 - Provide diagonal bracing at all wall corners, at each floor level.
 - Provide Triple studs at bearing locations.
 - Performance Rated Panels (Plywood or Oriented Strand Board (OSB))**
APA rated for use and exposure:
Roof sheathing: APA sheathing, Exterior Exposure I
Wall sheathing: APA sheathing, Exterior Exposure I
BUILDING PAPER: Asphalt Saturated Felt, Non-Perforated, ASTM D 226, type
 - WOOD TREATMENT:** Preservative-treated with waterborne Preservatives, to comply with AWPB Standard U1, as applicable. Kln dry to 15% max. moisture content. Treat wood exposed to deterioration by moisture, such as items in contact with roofing, flashing, waterproofing, masonry, concrete, or the ground.
 - Comply with manufacturer's requirements for cutting, handling, fastening and working treated materials.
 - All Sill/Sole Plates shall be Pressure Treated.
 - Treat wood subject to insect attack.
 - Provide Fireblocking maximum 10'-0" on center in concealed framing areas (soffits, bulkheads, etc.). Fire Blocking Shall Consist of a full 2 x wood Member Placed Horizontally Within the stud Cavity or Fiber Insulation batts secured in place.
 - Provide 1/2" x Anchor Bolts at 6'-0" on center maximum. Minimum 2 Bolts for each Sill Plate above located not more than 12" from end of plate.

- ROOF PLAN NOTES:**
- Contractors shall review and verify all dimensions and shall notify Architect of any discrepancies.
 - Do not scale these drawings, use dimensions indicated on the drawings and those verified at the project site.
 - Provide Attic Draftstop constructed of 1/2" Gypsum Drywall or 3/8" Wood Structural Panels where indicated. Exterior Sheathing, Rigid Insulation and other materials are not acceptable.
- GENERAL FRAMING:**
- Install roof sheathing stamp side down. No roof sheathing less than 2'-0" in any one direction.
 - Provide nailers, blocking and grounds where required. Set work plumb, Level and accurately cut.
 - Provide continuous Ridge Vents where indicated with minimum of 18 sq. in. free vent area per lineal foot of vent.
 - On Asphalt Roofs, Ridge Vents shall be equal to Lamanco LPR, VUR or OR-4 Models, shall have wind baffles, colored finish or may be shingle over design. Nail down filter fabric vents shall not be allowed.
 - Provide continuous Soffit Vents with minimum of 11 sq. in. free vent area per lineal foot of vent. Equal to Lamanco Model 140.
 - Provide Ice Guard Shield at roof eaves and valleys and as indicated. Extend Ice Guard Shield to a point 2' to the interior of the Exterior Wall. 2021 MBC §1507.2.2
 - Provide a Minimum R-49 Attic Insulation. ASHRAE 90.1-2019, Table 5.5-5, Non Residential

Area	Phase 2	Attic Ventilation Requirements	
		Required	Available
Length	43.8'	Factor	1114 Sq. In.
Width	33.0'	300	Rows
Ridge	445.6' Sq In. Req'd	18	25 feet
Ridge Vent		1	42' <u>751.5</u>
			<u>751.5</u>
Soffit	668.4' Sq In. Req'd	11	61 feet
Continuous		2	42' <u>918.5</u>
			<u>918.5</u>

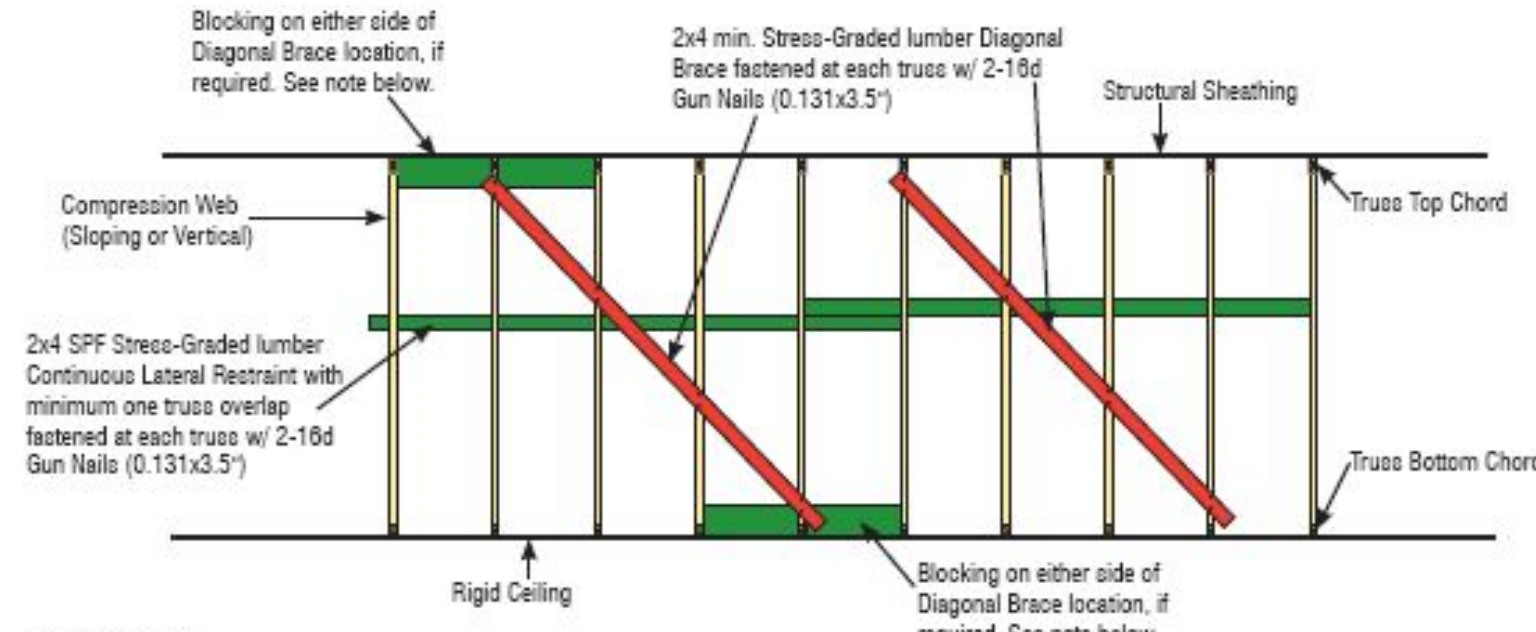


ROOF FRAMING PLAN - PHASE 2,
ROOF FRAMING PLAN NOTES &
DETAILS
 SHEET TITLE
 SHEET NUMBER
 FILE NO.
 24-43 5100

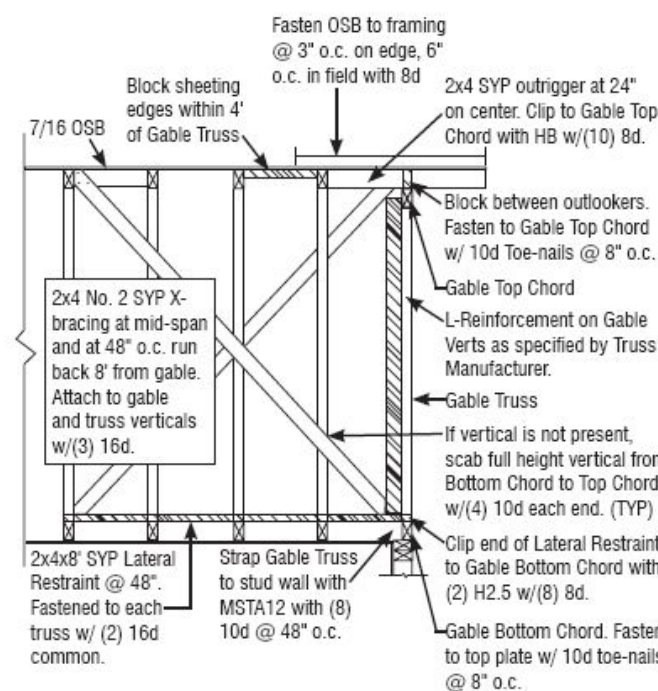
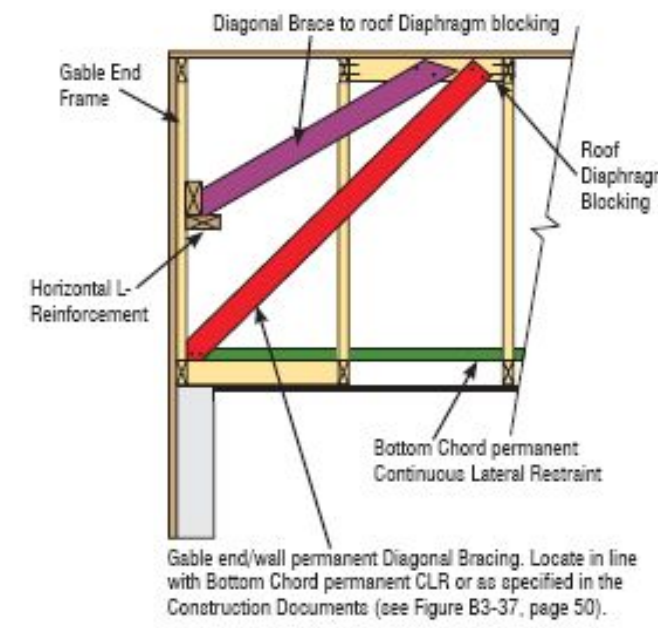
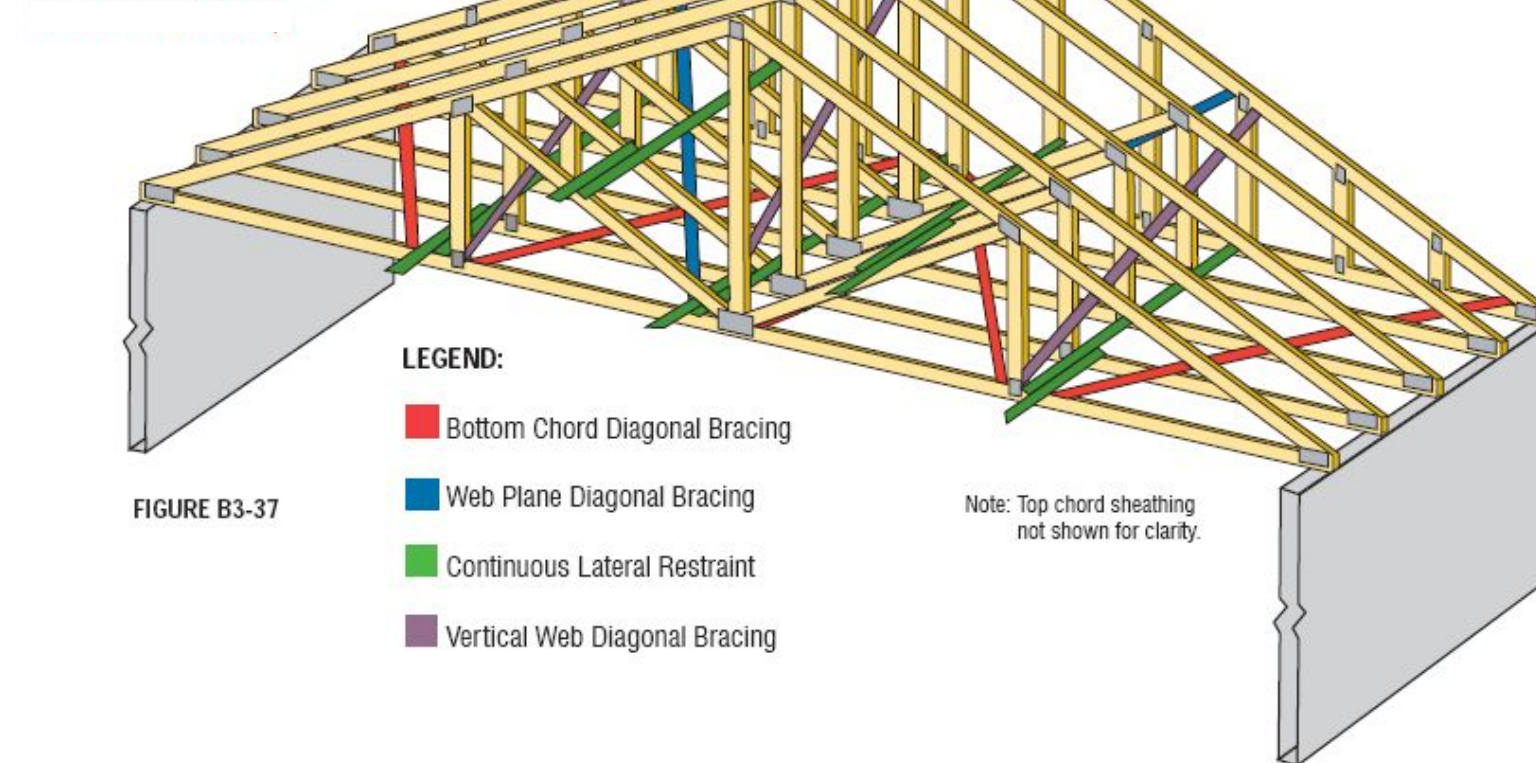
Forest Hills Nature Center
New Nature Center
 Seville Township, Gratiot County
 11297 N Rich Rd
 Alma, Michigan 48801
 PROJECT #24-43
 Plot Date: 04/29/2024

ROGER L. DONALDSON, AIA P.L.C.
 ARCHITECT
 4874 Tartan Lane
 48842-9325
 Michigan
 email: Roger.A.Donaldson@rogersinc.com

These plans are copyright and are subject to copyright protection as provided by the U.S. Copyright Office. No part of these plans may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage and retrieval system, without the prior written permission of the Architect. The Architect's liability is limited to the construction of buildings being noted and for meeting the requirements of the Michigan Building Code and other laws and regulations. The Architect's participation in the project is limited to the design and construction of the building.

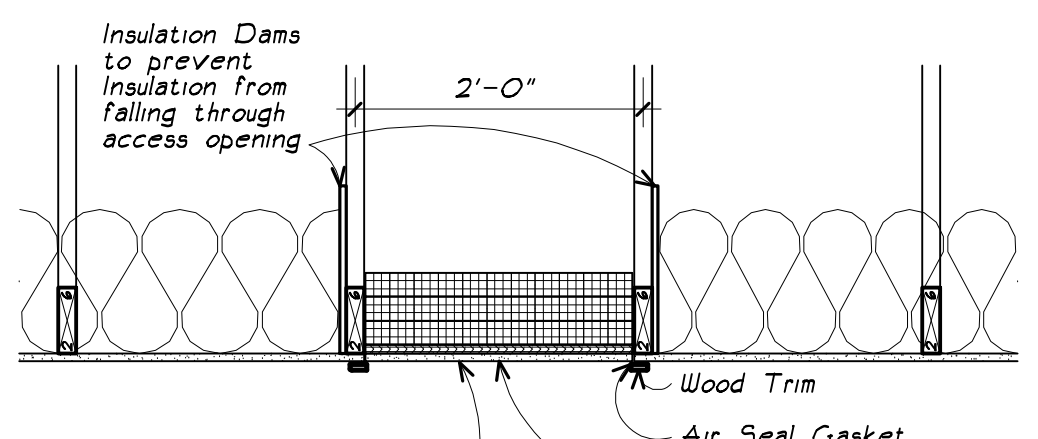


NOTE: ALL LATERAL RESTRAINT AND DIAGONAL BRACING MATERIAL SHALL BE A MINIMUM OF 2x4 STRESS-GRADED LUMBER (AS SPECIFIED ON THE TDD)

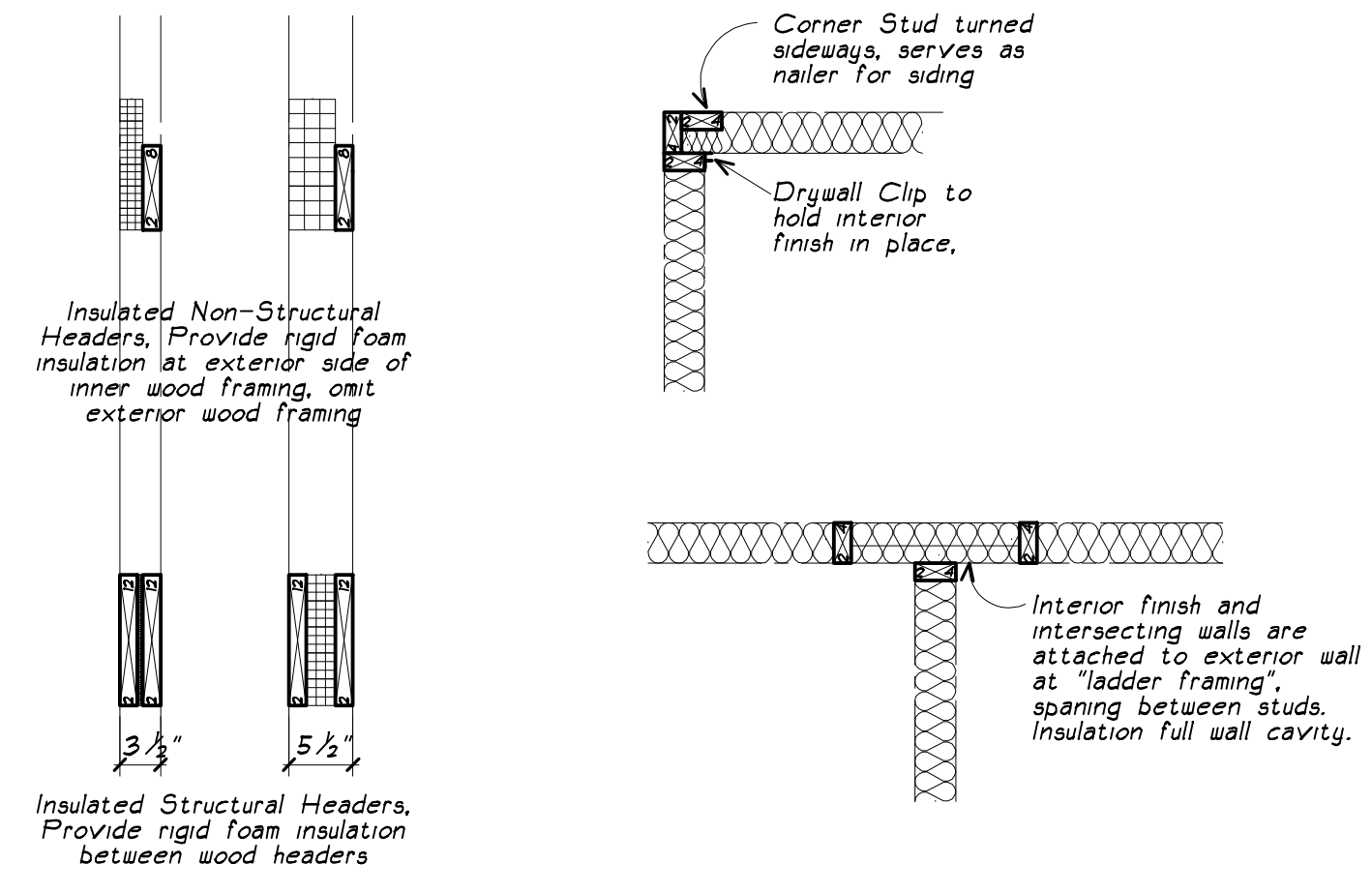


Provide cross bracing as shown above where indicated

ROOF TRUSS BRACING DETAILS



ATTIC ACCESS
3/4" = 1'-0"



Stud Sizes May vary, but the layout of members will be similar

ALTERNATE FRAMING DETAILS
3/4" = 1'-0"

These plans are copyright and are subject to copyright protection as provided by the U.S.C.O. as amended (December 1990) and to the Copyright Act of 1976. The protection includes but is not limited to the overall form as well as the arrangement and composition of spaces and elements. No part of these drawings may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage and retrieval system, without the prior written permission of the Architect. Reproduction is prohibited.

Forest Hills Nature Center
New Nature Center
11297 N Rich Rd
Seville Township, Gratiot County
Alma, Michigan 48801
PROJECT #24-43

CD	04/29/2024	Building and Plan Review
CD	04/29/2024	NOI, OMB, SDC, SDC
MARK	04/29/2024	CONSTRUCTION

Plt. Date: 04/29/2024

FRAMING DETAILS
SHEET TITLE

S5.1
SHEET NUMBER
FILE NO. 24-43 5100