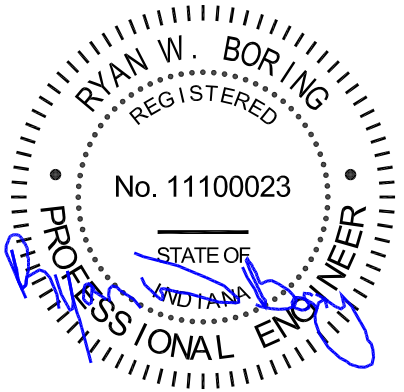
MANUFACTURED HOUSING UNIT

FEDERAL EMERGENCY MANAGEMENT AGENCY

NEXT GEN 1 BEDROOM UNIT
(FURNACE / AC SYSTEM)

JUNE 28, 2019

VERSION 1



Jun 28, 2019

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: COVER PAGE	DATE: 6/28/2019 SCALE: 1/8" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-1.1

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FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: INDEX	DATE: 6/28/2019 SCALE: 1/8" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-1.2

MANUFACTURED HOUSING UNIT

FEDERAL EMERGENCY MANAGMENT AGENCY

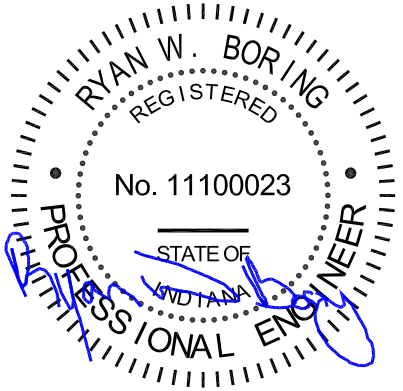
GENERAL NOTES

CODES AND STANDARDS

Manufactured Home Construction and Safety Standards 24 CFR 3280
Manufactured Home Procedural and Enforcement Regulations 24 CFR 3282
Uniform Federal Accessibility Standards (UFAS)
Standard for the Installation of Sprinkler Systems in Manufactured Homes (NFPA 13D)
Referenced 2005 National Electrical Code (NFPA 70) Articles as Incorporated in HUD 24 CFR 3280

STRUCTURAL LOADS

Floor Live Load 40 PSF
Floor Dead Load 10 PSF
Roof Live Load 40 PSF
Roof Dead Load 10 PSF
Comply with Wind Zone 3 Requirements of 24 CFR 3280
Wood Roof Diaphragm
Wall Height: 7'-6"



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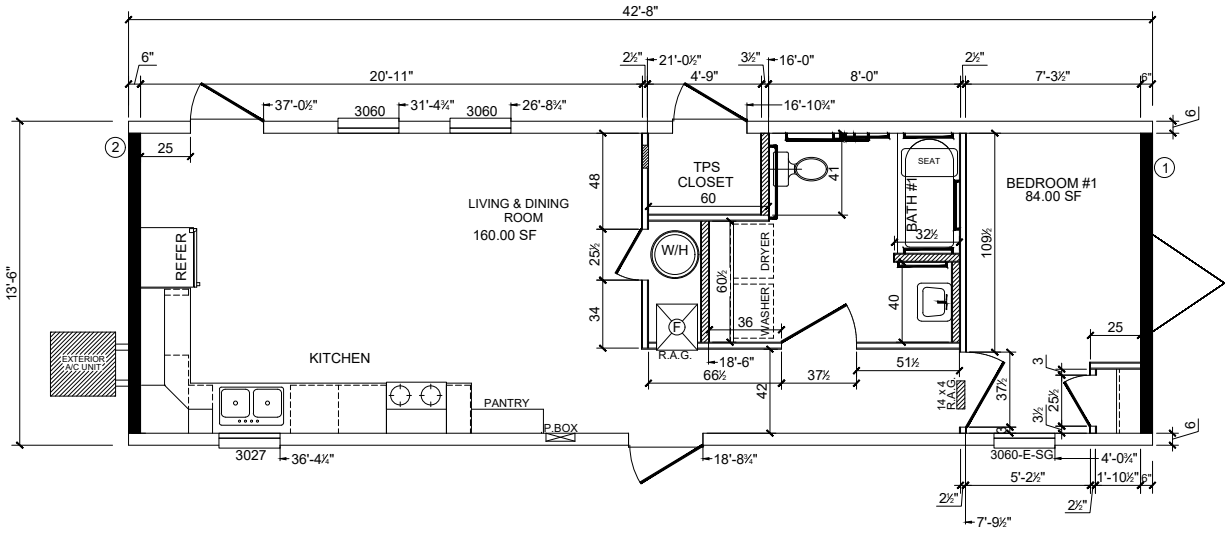
FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: GENERAL NOTES	DATE: 6/28/2019 SCALE: 1/8" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-1.3



SHEARWALLS - WIND ZONE 3		
NO.	LENGTH	PLF
1	162"	341
2	162"	341

SIDEWALL HEIGHT = 90"
TRUSS HEEL HEIGHT = 9-15/16"

LIGHT AND VENT SCHEDULE			
ROOM TITLE	AREA	REQUIRED LIGHT	REQUIRED VENT
LIVING / DINING ROOM	160.00 S.F.	12.80 S.F.	6.40 S.F.
BEDROOM #1	84.00 S.F.	6.72 S.F.	3.36 S.F.
BEDROOM #2	85.00 S.F.	6.80 S.F.	3.40 S.F.

■ SHEAR WALLS FOR WIND ZONE 3
▨ DESIGNATES A 2X4 WALL

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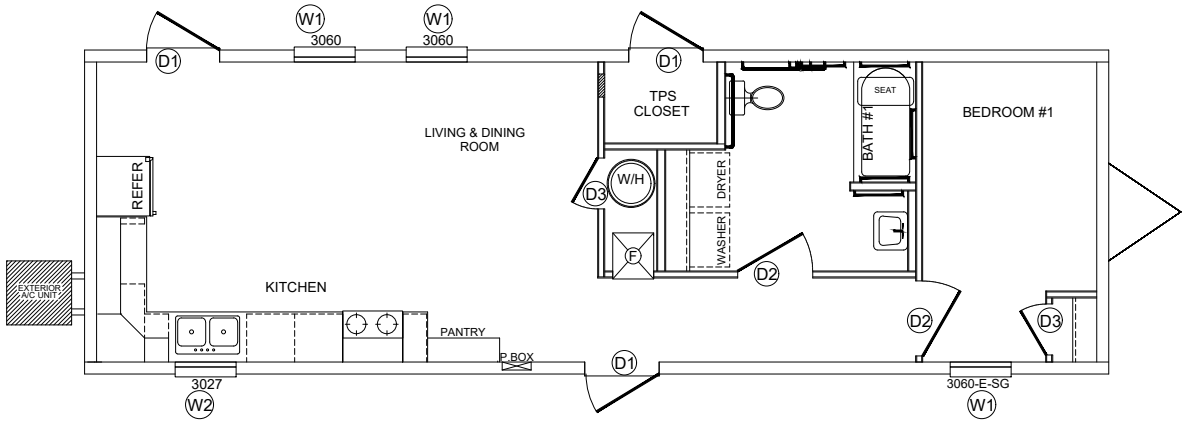
FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: FLOOR PLAN	DATE: 6/28/2019 SCALE: 1/8" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-2



DOOR SCHEDULE				
MARK	WIDTH	HEIGHT	THICKNESS	TYPE
D1	3'-0"	6'-8"	1-3/8"	Outswing Door
D2	3'-0"	6'-8"	1-3/8"	Hallway Doors
D3	2'-0"	6'-8"	1-3/8"	Closet & W/H Doors *

TOTAL EXTERIOR DOOR AREA: 62.67 SQ. FT.

WINDOW SCHEDULE			
MARK	WIDTH	HEIGHT	TYPE
W1	2'-6"	5'-0"	Single Hung Window
W2	2'-6"	2'-3"	Fixed Pane Window

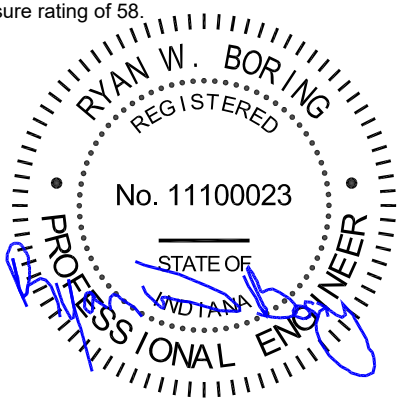
TOTAL WINDOW AREA: 69.87 SQ. FT.

Door Notes

1. Exterior doors shall meet 24 CFR 3280.405 requirements and shall comply with Wind Zone 3 requirements.
2. All exterior doors shall be insulated fiberglass or steel with a maximum U-Value of 0.33.
3. All doors shall have lever type handles in compliance with UFAS 4.13.9.
4. For additional information on exterior and interior doors see FEMA specifications and Appendix A.
5. Return air grills shall be installed above doors unless the grill will be blocked by the sprinkler system and then may be installed in the door or wall.
6. Door stops shall be installed at all interior and wardrobe doors. Door stops may be installed on the door or the floor baseboard. Door stop finish to match interior hardware finish.
7. All bathroom and bedroom doors shall have a privacy lock. The lock mechanism shall be the button type (UFAS 4.13.9) and located on the inside of the bathroom or bedroom.
8. The water heater compartment side of the water heater access door shall be covered with minimum 5/16 inch thick gypsum board.
9. The closet door shall be equipped with a passage lock.

Window Notes

1. Windows shall meet 24 CFR 3280.403 and 3280.404 requirements and shall comply with Wind Zone 3 requirements.
2. Windows shall be double paned, low E with vinyl frame. Windows shall have a maximum SHGC of 0.30 and a maximum U-Value of 0.36.
3. Windows shall have a design pressure rating of 58.
4. Windows shall have screens.



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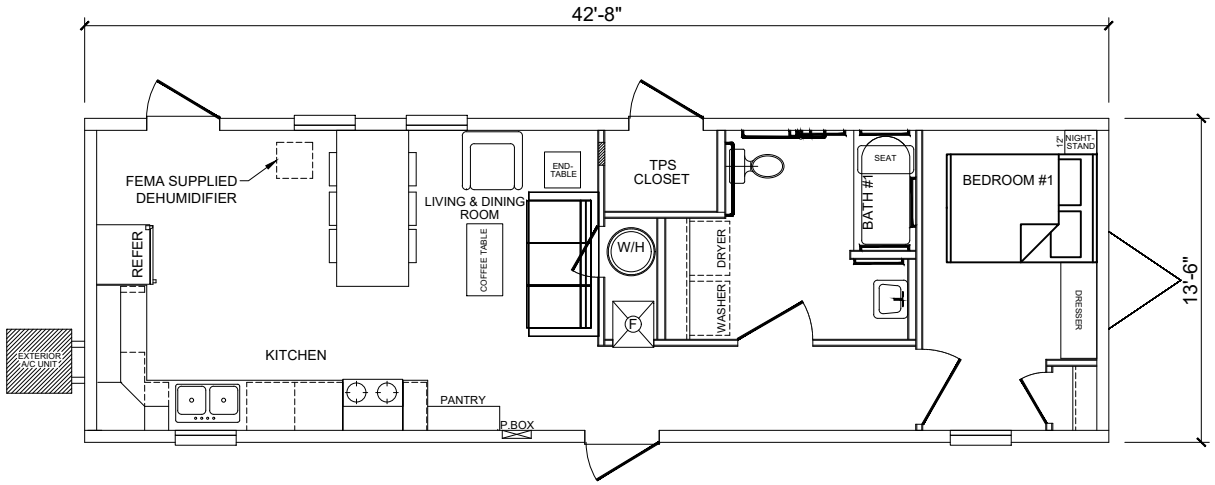
FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: DOOR AND WINDOW SCHEDULE	DATE: 6/28/2019 SCALE: 1/8" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-3



LIVING ROOM	
ITEM	SPECIFICATIONS
SOFA	72" W x 36" D
ARM-CHAIR	36" W x 32" D
COFFEE TABLE	30" W x 18" D
END TABLE	12" W x 12" D

DINING ROOM	
ITEM	SPECIFICATIONS
DINING TABLE	72" L x 36" W
DINING CHAIR	6 Identical Chairs
PANTRY	36" W x 12" D
WATER HEATER	40 GALLONS

BEDROOMS	
ITEM	SPECIFICATIONS
FULL BED	75" L x 54" W
BUNK BED	75" L x 39" W
DRESSER (4 DRAWER)	48" W x 18" D
NIGHTSTAND	12" W x 12" D

BATHROOM	
ITEM	SPECIFICATIONS
MEDICINE CABINET	15" W x 25" H X 3" D
BATH TUB	30" W x 60" L, FIBERGLASS
WC	SEE FEMA SPEC

KITCHEN	
ITEM	SPECIFICATIONS
REFRIGERATOR	30" W x 32.5" D, 18 CU. FT.
RANGE	30" W, 4 BURNERS
MICROWAVE	19" D MIN., 1.2 CU. FT.
DEHUMIDIFIER	PER FEMA

Furniture and Appliance Notes

1. All refrigerators shall be ENERGY STAR qualified and have the ENERGY STAR label affixed to the appliance when delivered with the MHU.
2. Range and oven controls shall be at the front of the appliance.
3. The range hood shall extend the width of the range and a minimum of 3" beyond the front face of the overhead cabinet.
4. The range hood vent opening at the cap shall be screened with a corrosion-resistant, non-combustible wire mesh with 1/4" openings or equivalent.
5. A shower rod and new, neutral-colored plastic shower curtain (71" L x 71" H) with full set of rings/hooks shall be provided for all shower/bath fixtures.
6. Two (2) metal, rust-resistant, wall-mounted towel bars with chrome finish shall be installed in each bathroom.
7. Metal, rust-resistant, toilet-paper holder with chrome finish shall be installed in each bathroom.
8. Mattresses shall be innerspring, non-latex (can be polyester, cotton, or blend ticking and wadding) new mattresses with medium firmness and 9" to 11" height.
9. The range hood vent shall be vented through the exterior wall.

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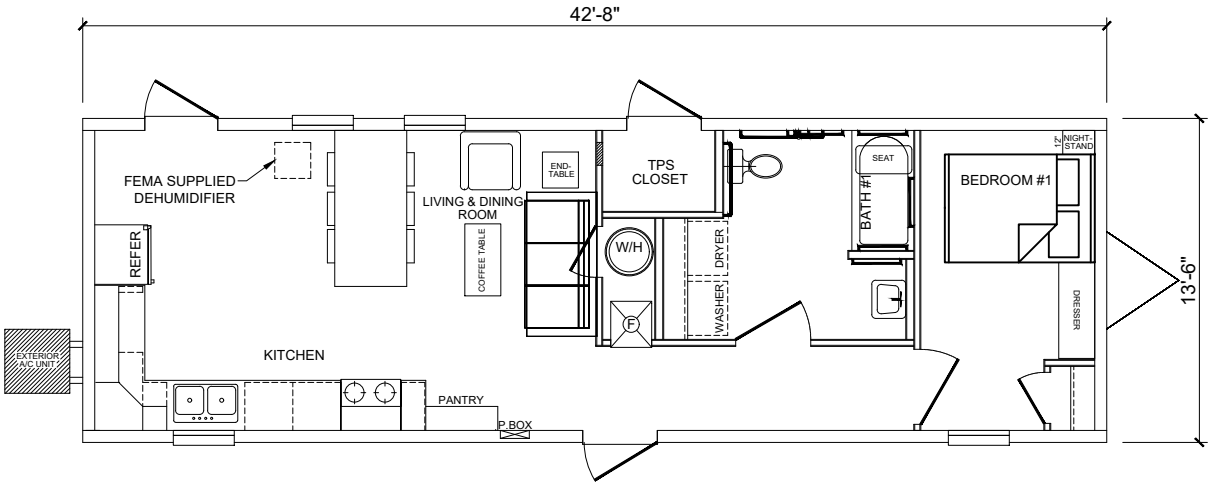
FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: FURNITURE PLAN	DATE: 6/28/2019 SCALE: 1/8" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-4.1



General Notes

1. Vendor to tape a copy of this drawing to the outside of the water heater compartment door.

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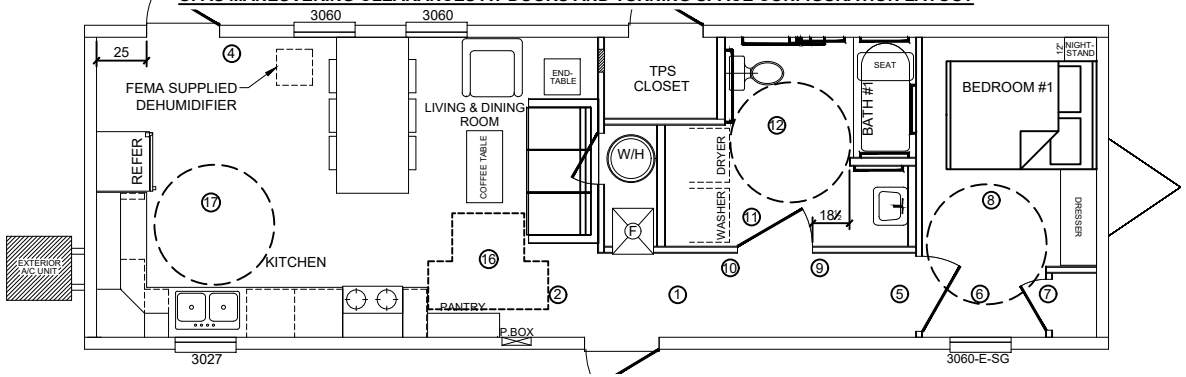
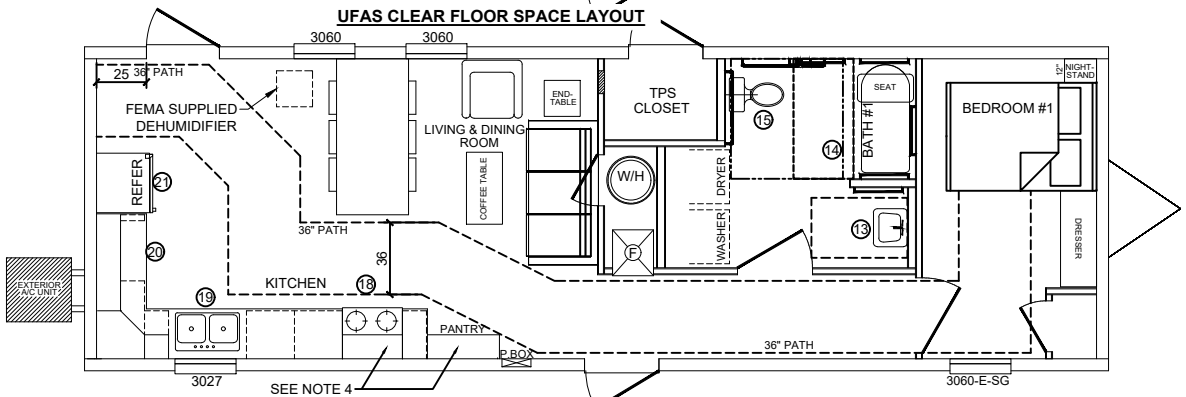
FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: INSTALLED FURNITURE LAYOUT	DATE: 6/28/2019 SCALE: 1/8" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-4.2

UFAS MANEUVERING CLEARANCES AT DOORS AND TURNING SPACE CONFIGURATION LAYOUT



UFAS CLEAR FLOOR SPACE LAYOUT



UFAS Maneuvering Clearances at Doors and Egress Chart - 3 Bedroom

Location	UFAS Section and/or Figure References
Exterior Doors	
1. Front Door - Hall to Front Door	4.13.6 - Figure b - Push side
2. Front Door - Living Room to Front Door	4.13.6 - Figure c - Push side
4. Rear Door - Kitchen to Rear Door	4.13.6 - Figure b - Push side
Bedroom 1	
5. Hallway to Bedroom 1	4.13.6 - Figure a - Push side - See Note 1.
6. Bedroom 1 to Hallway	4.13.6 - Figure a - Pull side
7. Bedroom 1 to Closet	4.13.6 - Figure a - Pull side
8. Turning Space Configuration	4.2.3 - Figure a - 60” Diameter Space
Bath 1	
9. Bedroom/Hallway to Bath 1	4.13.6 - Figure c - Push side
10. Kitchen/Hallway to Bath 1	4.13.6 - Figure b - Push side
11. Bath 1 to Hallway	4.13.6 - Figure a - Pull side
12. Turning Space Configuration	4.2.3 - Figure a - 60” Diameter Space
13. Lavatory Clear Floor Space	4.19.3 - 30” x 48”
14. Tub/Shower Clear Floor Space	4.20.2 - Figure 33(a) - 30” x 60”
15. Toilet Clear Floor Space	4.16.2 - Figure 28 - 56” x 60”
Living Room	
16. Turning Space Configuration	4.2.3 - Figure b - T-Shaped Space

Location	UFAS Section and/or Figure References
Kitchen	
17. Turning Space Configuration	4.2.3 - Figure a - 60” Diameter Space
18. Range Clear Floor Space	4.34.6.2 - 30” x 48”
19. Sink Clear Floor Space	4.34.6.5(7) - 30” x 48”
20. Counter Work Surface Clear Floor Space	4.34.6.2 - 30” x 48”
21. Refrigerator Clear Floor Space	4.34.6.2 - 30” x 48”

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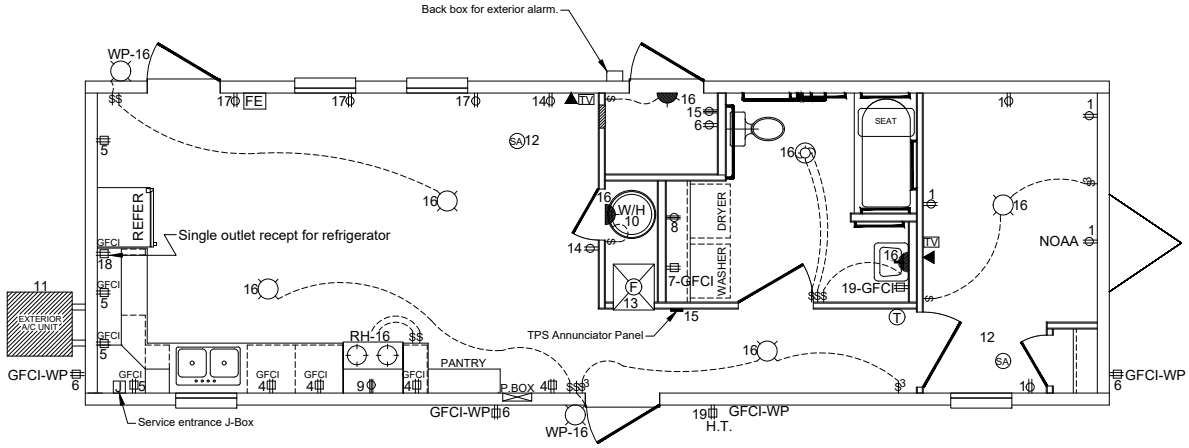
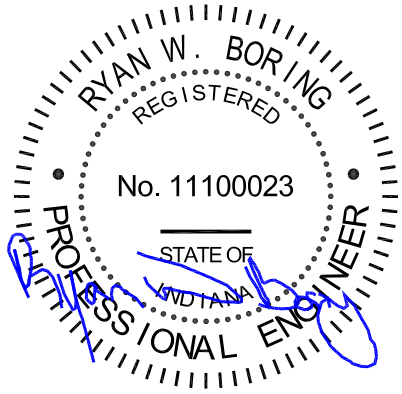
Notes

1. Door does not have closer.
2. The minimum clear width for a single wheelchair continuous path is 36” (UFAS 4.2.1).
3. All appliances shall be UFAS Compliant.
4. 50% of shelf space shall be below 54" reach range (UFAS 4.25.3)
5. Location of tub/shower seat shall be within UFAS forward reach range of tub/shower controls (UFAS 4.20.3 and Fig. 5(a)).)

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: UFAS LAYOUT	DATE: 6/28/2019 SCALE: 1/8" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-5





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Sym.	Description	Sym.	Description
J	Junction Box	SA	Smoke Alarm w/ Strobe Light - wired in series
	110 volt duplex-GFCI protected recept	▶	Telephone Recept
	110 volt duplex recep-wall mounted	TV	TV Outlet
	220 volt recept-wall mounted	FE	Fire Extinguisher
	Light Fixture - Ceiling Mounted	$	Switch
	Light Fixture - Wall mounted	$3	Switch - Three Way
	Exhaust fan - Light Combo	NOAA	Outlet for NOAA Weather radio
	Distribution panel board - 200 amp	T	Thermostat
WP	Exterior light fixture - weather proof		

Cir.	Purpose	Type	Wire Size	Amps	Pole
1	Bedroom 1		14-2	15	1
2	Bedroom 2		14-2	15	1
3	Bedroom 3		14-2	15	1
4	Kitchen	GFCI	12-2	20	1
5	Kitchen	GFCI	12-2	20	1
6	Ext. Recep	GFCI	12-2	20	1
7	Washer	GFCI	12-2	20	1
8	Dryer		10-3	30	2
9	Electric Range		Per MFR. Specs.		
10	Water Heater		Per MFR. Specs.		
11	A/C		Per MFR. Specs.		
12	Smoke Detectors		14-3	15	1
13	Furnace		Per MFR. Specs.		
14	Living Room		14-2	15	1
15	TPS System		Per MFR. Specs.		
16	Lights/Recep		14-2	15	1
17	Dining Room		14-2	20	1
18	Refrigerator	GFCI	14-2	15	1
19	Bath Receps / Heat Tape	GFCI	14-2	20	1

Electrical And Lighting Notes

1. The highest breaker in the panel box should be 48" high. Panel box bottom must be at least 24" from the floor.
2. The light bulbs shall be LED, equivalent to 60-watt incandescent bulbs, minimum 800 lumens, white in color, between 2,700 K and 4,100 K.
3. No glass shall be used in any of the lighting globes.
4. The exterior lights shall be stored in the refrigerator during transport.
5. Interconnected smoke alarms shall utilize the home's primary power source and shall have battery backup.
6. The center line of the switches and the top of the thermostat must be installed at no more than 48” above the finished floor.
7. Electrical outlets must be no lower than 18" above the floor to the center of the receptacle screw.
8. The junction box for the telephone and cable shall be located within 4' of the road side rear of the MHU.
9. Electric wiring may be done either through the floor or the ceiling.
10. The exterior service entrance junction box shall be rated NEMA 3 and minimum of 12” x 12” x 4”.
11. Service entrance junction shall be mounted to floor joist between the I-beam and sidewall.
12. Service entrance junction box to be located within 10' on the curb side rear of MHU.
13. The wiring from the service entrance junction box to service panel to be in seal-tight conduit.
14. Bathroom exhaust fan with light to be 75 cfm with an integrated timer to allow fan to operate sixty minutes minimum prior to turning off.
15. Kitchen range hood exhaust fan with a white light shall be a minimum 100 cfm exhaust fan, with separate switches.
16. Bathroom and kitchen exhaust fans shall vent directly to the outside.
17. Ceiling lights shall have 2 LED bulbs.
18. The bathroom vanity light shall be wall mounted with 3 LED bulbs.
19. The circuit breaker(s) providing power to the TPS unit shall be equipped with a UL-listed locking device that can secure the breaker(s) in the ON position. Devices shall be installed set to the ON position and shall be equipped with an appropriate lock that fits inside the panel board.
20. Kitchen countertop receptacles and switches must be furred out to be 24" (max) from front edge of countertop, and no more than 44" to the top of the switches or receptacles above finished floor.
21. See TPS closet and TPS closet elevations for electrical locations in Appendix A.

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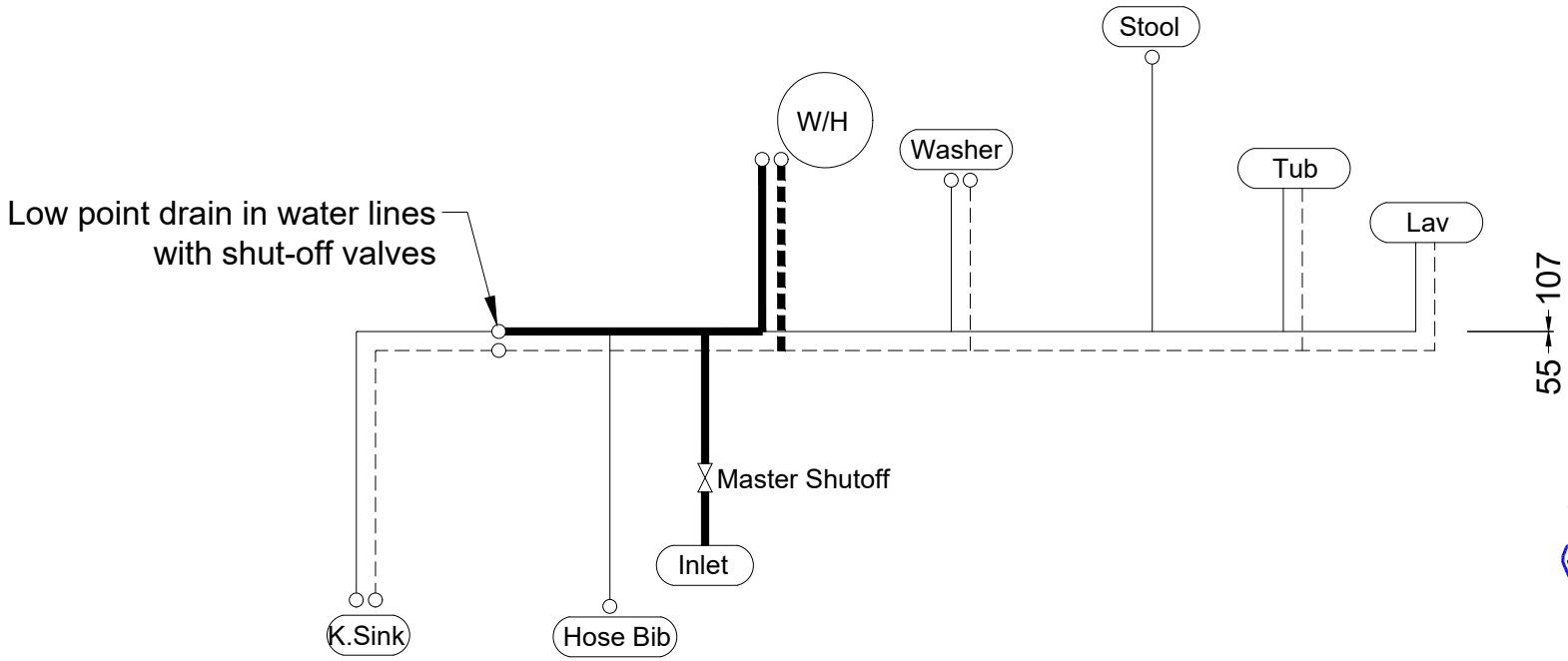

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Legend

- 1/2" LINE (COLD)
- 1/2" LINE (HOT)
- 3/4" LINE (COLD)
- 3/4" LINE (HOT)
- CUT OFF VALVE LOCATION

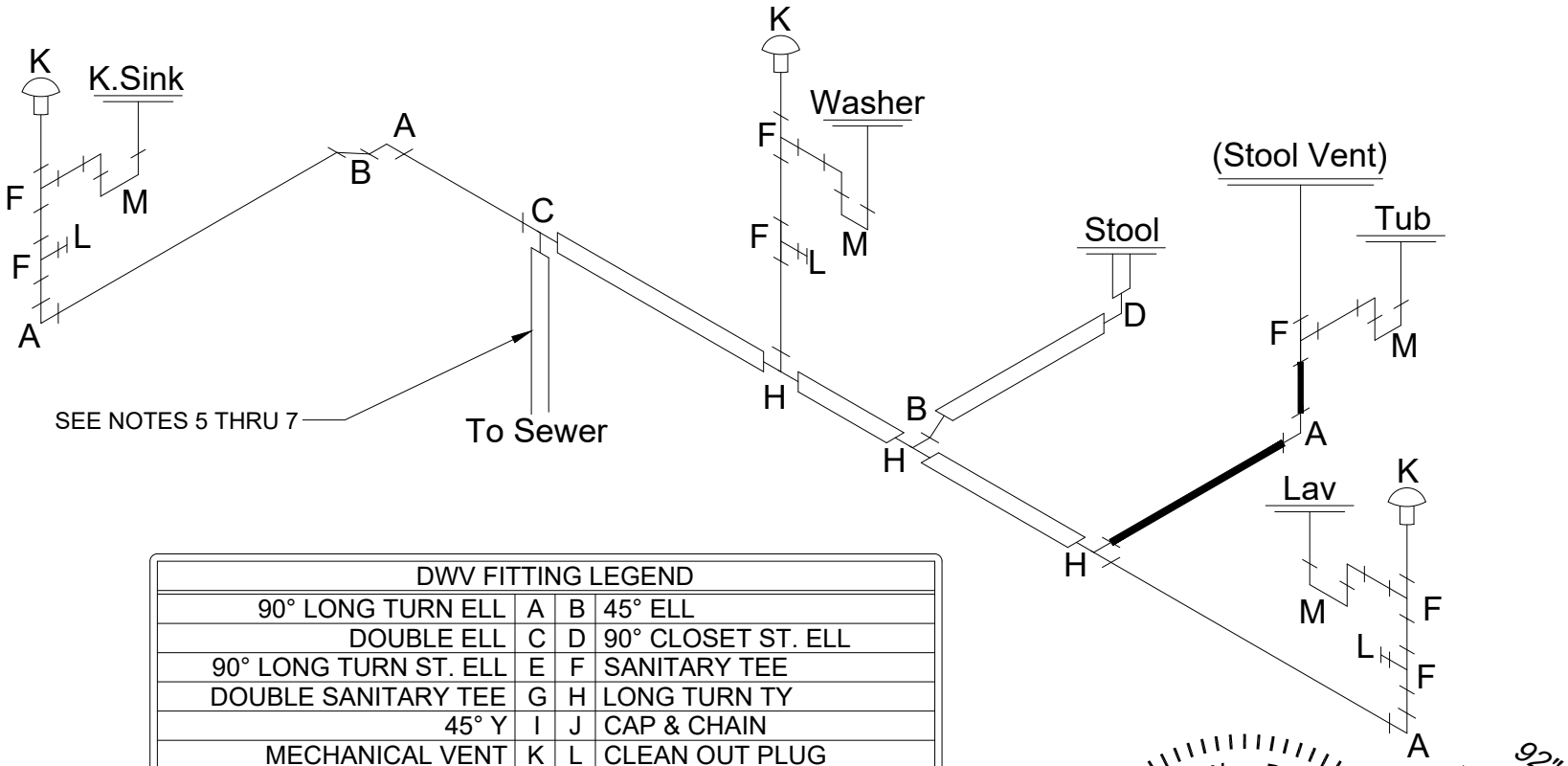
Notes

1) FITTING SIZES TO CORRESPOND TO ADJACENT PIPE SIZES.
2) ALL SIZING OF PIPE + OR -, MUST MEET OR EXCEED ANY APPLICABLE CODES.

Water Supply System Notes

1. The water supply lines shall be Cross-linked polyethylene (PEX) or chlorinated polyvinyl chlorine (CPVC) and comply with the requirements of 24 CFR 3280.
2. All water lines shall be 1/2” unless noted.
3. The water supply inlet shall be 3/4” and have a brass quarter turn ball valve.
4. The water supply inlet shall extend not more than 6” below the bottom board.
5. The water supply inlet shall be located within 12” of the curb side of the home.
6. The water supply inlet shall not be located under an exterior door.
7. Individual shut off valves shall be located on each water line at each fixture, except at the tub/shower or shower.
8. All water line floor penetrations shall be caulked or foamed. Caulk or foam shall be acceptable to be in contact with the water line material.
9. Adequately sized access panels (12” x 12” min) shall be located in the walls at all points where concealed plumbing slip joints exist. The access panels shall match the wall color and finish. Access panels shall be unobstructed and accessible for inspection and repair.
10. The MHU shall be equipped with a frost-free hose bib located near the main water supply inlet. It shall not be located under an exterior door.
11. Low point drain in water lines with shut-off valves shall be located above bottom board and insulation. Vendor to provide access panel, labeled "Low Point Drain".

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: WATER LINES	DATE: 6/28/2019 SCALE: NTS	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-7



DWV FITTING LEGEND			
90° LONG TURN ELL	A	B	45° ELL
DOUBLE ELL	C	D	90° CLOSET ST. ELL
90° LONG TURN ST. ELL	E	F	SANITARY TEE
DOUBLE SANITARY TEE	G	H	LONG TURN TY
45° Y	I	J	CAP & CHAIN
MECHANICAL VENT	K	L	CLEAN OUT PLUG
P-TRAP	M	N	REDUCER BUSHING
COUPLING	O	P	22.5° ELL
	Q	R	
	S	T	

Notes

1) FITTING SIZES CORRESPOND TO ADJACENT PIPE SIZES.
2) SINGLE (THIN) LINES REPRESENT 1-1/2" PIPE;
   DARK (THICK) LINES REPRESENT 2" PIPE;
   DOUBLE LINES REPRESENT 3" PIPE.
3) P-TRAP DIRECTIONS MAY VARY.

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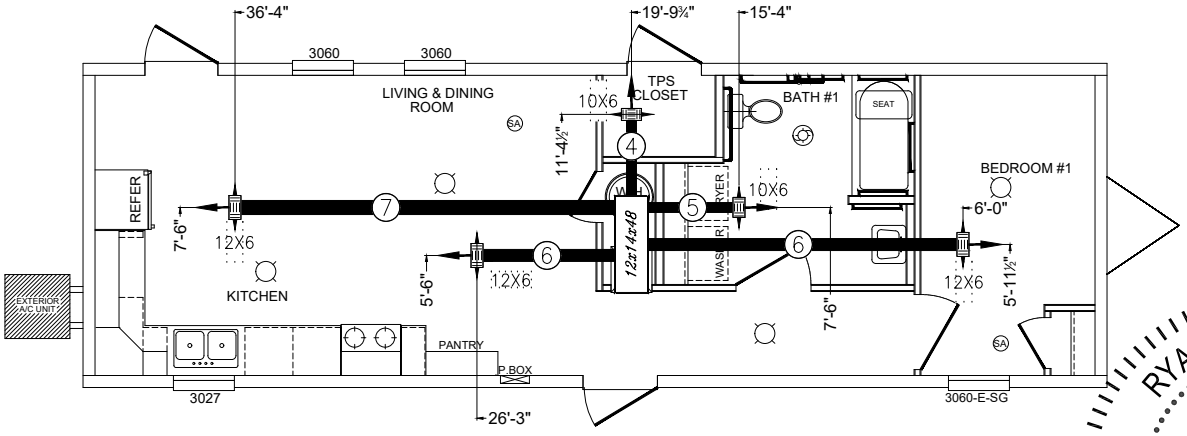
Drain System General Notes

1. Drain lines shall be ABS or PVC and comply with the requirements of 24 CFR 3280.
2. All drain lines shall be 1 ½" diameter unless noted.
3. The drain line system shall be accessible without removing the axles and wheels.
4. All drain line floor penetrations, except at tub/shower and shower floor penetrations shall be caulked or foamed. Caulk or foam shall be acceptable to be in contact with the drain line material.
5. The drain line which shall run below the floor and above the bottom board to the place of drain outlet not less than two feet (2') but not more than three feet (3') in front of the axle group.
6. The drain line outlet shall protrude at least six inches (6"), but not more than eight inches (8"), below the bottom board.
7. The drain line outlet shall have a threaded end and will be capped with a removable plastic cap and chain or strap.

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: DRAIN LINES	DATE: 6/28/2019 SCALE: NTS	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-8



HVAC PACKAGES UNIT SPECIFICATIONS	
Heating	(10 KW Electric Furnace)
Cooling	(Min. 1.5-Ton Air Conditioner)

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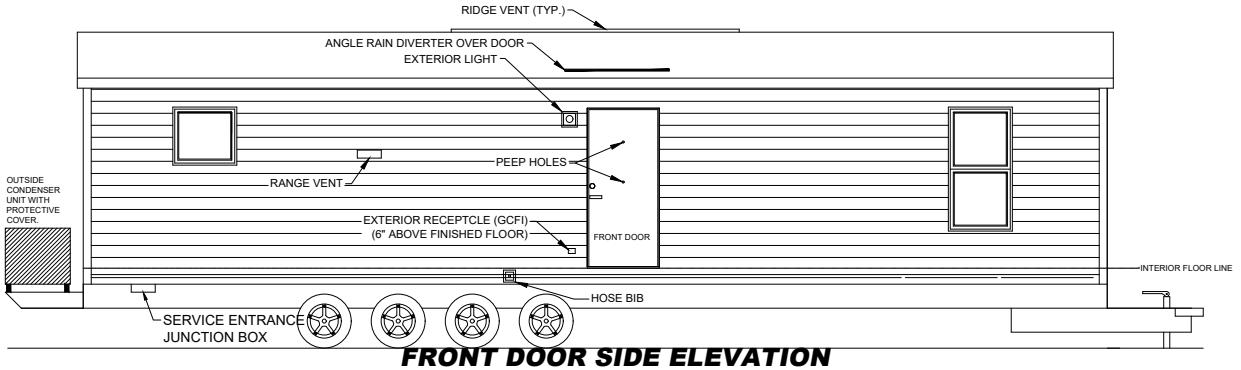
HVAC General Notes

1. See FEMA specifications for programable and configurable thermostat requirements.
2. Duct system shall be constructed of class 0 or class 1 circular insulated flex ductwork or equal. All ducts to be insulated with a minimum of R-4 insulation.
3. Metal supply register sizes as shown on duct layout.
4. All supply ducts shall be in the roof attic space.
5. All supply duct seams and fasteners shall be sealed with UL-181A or UL-181B listed duct tape.
6. The manufacturer shall provide a duct pressure test report (See FEMA Spec for testing procedure) for each MHU duct system showing duct leakage of 5 percent or less prior to FEMA acceptance of the MHU.
7. No construction debris or sawdust shall be left in the duct system.
8. Undercutting of interior doors is not permitted.
9. Return air grilles shall be sized per 24 CFR 3280.715(b)(4).
10. Return air grilles shall be located above interior doors.
11. When the sprinkler system obstructs the return air grille, it may be located in the interior door or interior wall.

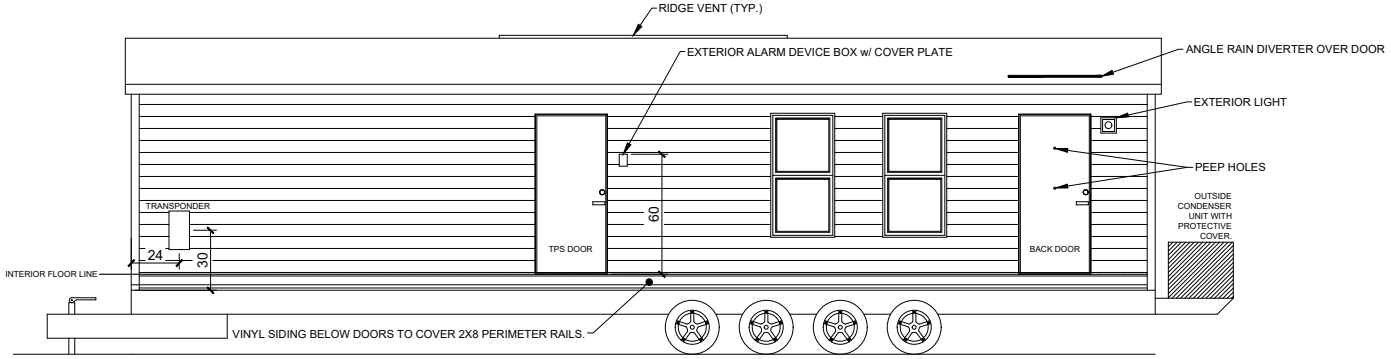
HVAC Split Furnace / AC Notes

1. The furnace shall be at least a ninety-five percent (95%) efficient electric furnace (central heating system) capable of maintaining an average temperature of seventy degrees Fahrenheit (70°F) in the MHU.
2. The MHU shall be equipped with a specifically engineered HVAC split furnace /AC system based on the size and intended use of the MHU, in accordance with 24 CFR 3280.506, that is compatible with the HVAC split furnace /AC system size.
3. The furnace shall also be built or equipped for the installation of a split type air conditioner and have enclosed space in water heater/furnace compartment for an A-coil evaporator unit, and with a 4-wire thermostat completely wired and installed.
4. A vibration damping pad shall be placed between the condensing unit and the mounting platform.
5. A 1" ratchet strap with 500 lb. capacity shall be installed around the outside of the condenser unit and bracket extension for transportation.
6. Air conditioning lines shall be pre-charged in the factory per manufacturers specifications and shall not have any leaks.
7. Furnace return air return grill shall be sized per furnace manufacturer's installation instructions.
8. Duct penetrations thru ceiling board shall be sealed.

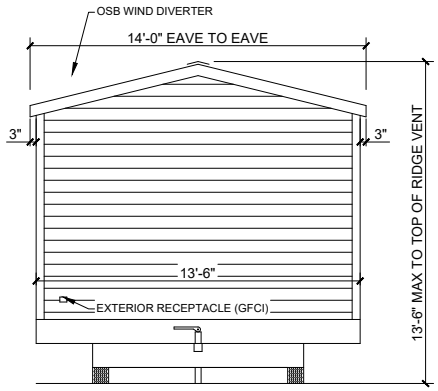
FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: HVAC DESIGN AND OVERHEAD DUCT LAYOUT	DATE: 6/28/2019 SCALE: 1/8" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-9



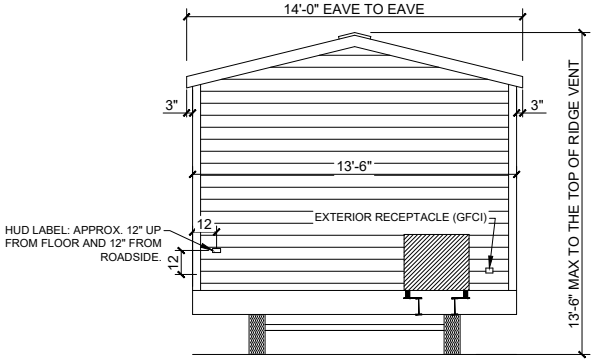
FRONT DOOR SIDE ELEVATION



BACK DOOR SIDE ELEVATION



HITCH END ELEVATION



TAIL END ELEVATION

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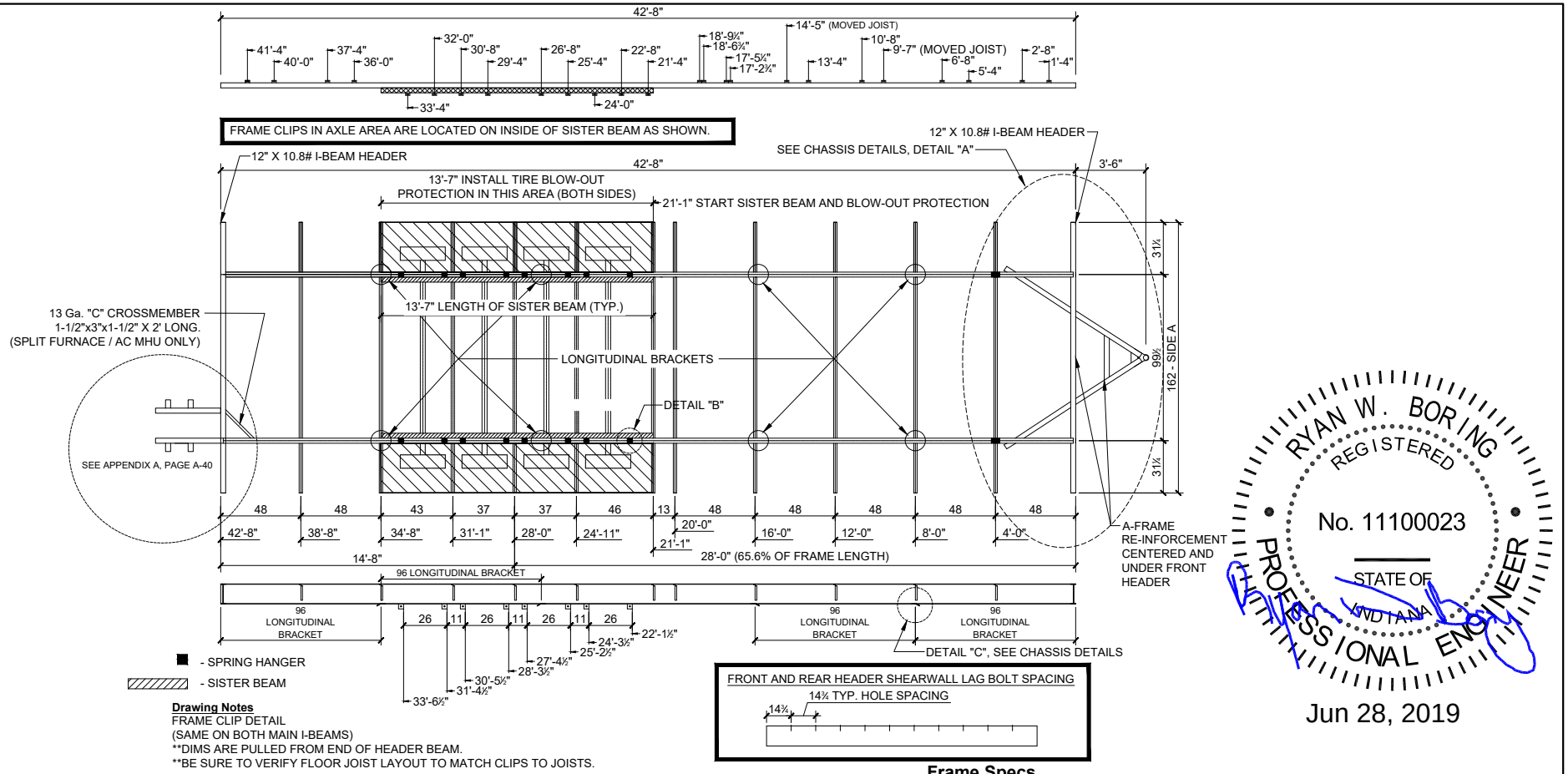
Exterior Finishes Notes

1. Siding shall be light gray vinyl.
2. Siding shall be double 4" lap.
3. Siding shall be approved for HUD Wind Zone 3 requirements.
4. The manufacturer shall provide a transponder sled. See Appendix A.
5. The sled shall be painted with a powder coat paint to match the exterior color of the MHU or White.
6. The transponder sled shall be made out of sheet metal.

FEMA	Manufactured Housing Units Federal Emergency Management Agency	TITLE: ELEVATIONS	Date: 6/28/2019 Scale: 1/8" = 1'-0"	14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-10



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Chassis Frame Notes

1. All metal-to-metal contact with 1/8" fillet weld minimum.
2. Floor shall be lagged to frame with frame clip, Fastec 9mm x 76mm listed lags or lags equivalent in size and strength at each joist and outrigger tip. Alternate lags must be reviewed and approved by FEMA or their designee.
3. Clips shall be welded to the I-beam.
4. All parts of the chassis including added/welded parts shall be completely coated with waterproof paint.
5. Tires shall be new, 14.5" rim diameter, 14 ply with "G" load range.
6. Wheels and tires shall meet or exceed the axle rating and be rated for continuous speeds of 65 mph or greater.
7. All axles shall be new.
8. All axles shall be brake axles.
9. A valve stem cover shall be present on every tire.
10. The serial number shall be permanently stamped to the front header to comply with 3280.6. In addition, the serial number shall be painted with rust resistance contrasting color paint, 2 inches (2") tall on the front header.
11. Rims, bolts, nuts, or other related tire-mounting hardware shall be new.
12. Longitudinal brackets shall be installed at 8'-0" and 16'-0" maximum from each end of the home.
13. Spring hangers shall be multi-leaf.
14. All rims shall be the same color.
15. Maximum typical pier spacing along main I-beams @ 8'-0" o.c. Typical pier load = 6,400 lbs.
16. Manufacturer to place permanent indicators (paint or label) on each I-Beam @ 2'-0" from each end, 12'-0" on center max, and at door jambs for location temporary piers for storage.
17. Longitudinal bracket slot to face towards closest end of home.

Frame Specs

- Main I-Beam: 12" x 10.8#
- Front and Rear Headers: 12" x 10.8#
- Crossmember: 13 Ga. C or Z, 1-1/2" x 3" x 1-1/2"x13 Ga.
- Outriggers: 9" Min Depth at I-Beam tapered to 1" , 13 Ga min., C or Z type, with 1-1/2" flange top and bottom.
- Frame Clips: 1" x 1-1/2" x 12 Ga.

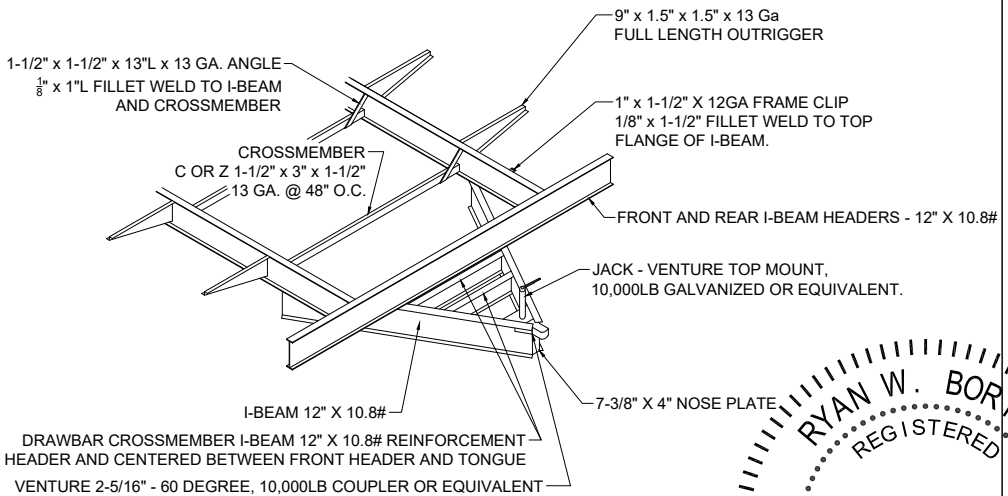
Hitch Specs

- See Chassis Details, Details "A"

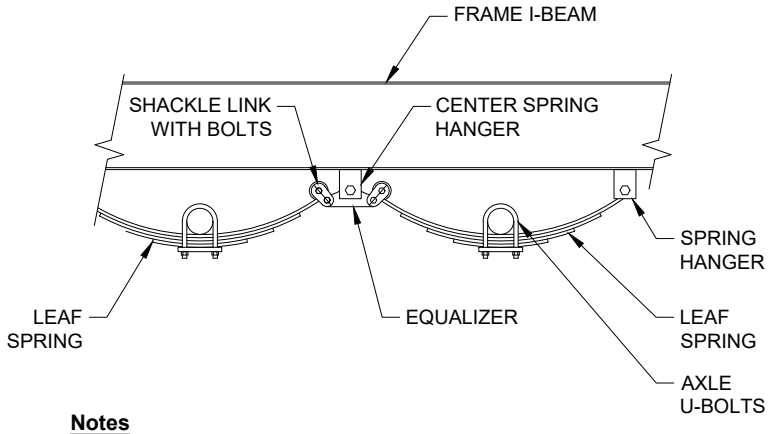
Welding Specs

1. All welds to be a minimum 1/8" unless otherwise noted. Weld beads can be concave in application as long as the weld size is met.
2. Coupler and Jack shall be welded per manufacturer's installation instructions.
3. I-Beam splice plate shall be 4" wide x height of I-Beam minus 1-1/4" x 13 GA. Splice plate can be offset +/- 1/4". Weld shall be full width of splice plate. Splice plate only required on one side of I-Beam.
4. Sister I-Beam shall be welded with 1/8" butt welds 2" long at 24" o.c. top and bottom of I-beam
5. All weld lengths stated or shown are minimum lengths and shall have a tolerance of minus 1/4" (except spring hangers). Weld lengths that are not noted shall be full length.

FEMA	Manufactured Housing Units Federal Emergency Management Agency	TITLE: CHASSIS	Date: 6/28/2019 Scale: 1/8" = 1'-0"	14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-11.1



DETAIL A: HITCH ASSEMBLY



Notes

1. Shoulder bolts are to be used at all equalizer and shackle link locations.
2. Shoulder bolts shall be torqued per axle manufacturer requirements. (Approximately 30 to 50 ft. lbs.)
3. Equalizer and shackle links are to move freely after shoulder bolts have been torqued.
4. Axle U-bolts shall be torqued per axle manufacturer requirements (Approximately 70 to 95 ft. lbs.)

DETAIL D: EQUALIZER & SHACKLE LINK FASTENING

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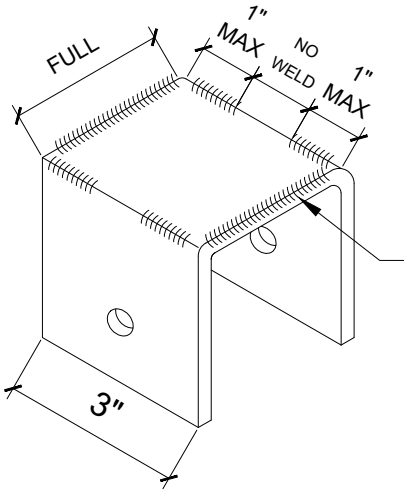
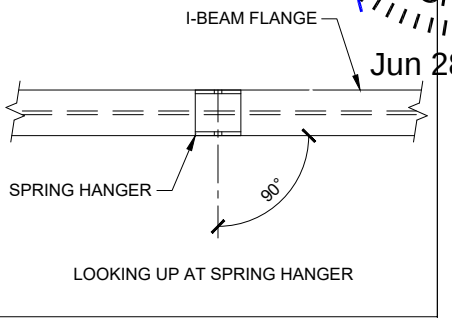
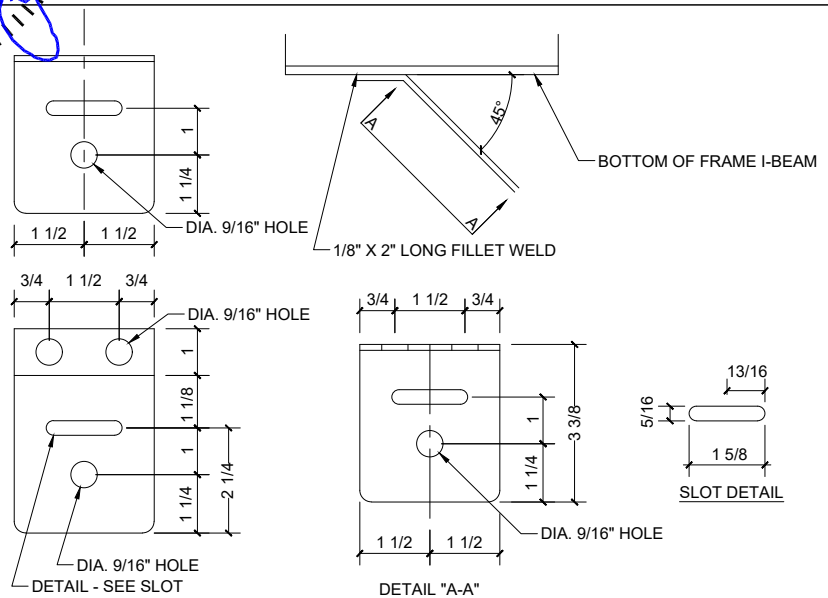




Notes

1. Thickness is 4 gauge.
2. Vendor to assure all spring hangers are 90° to I-Beam.
3. Shoulder bolts to be torqued per axle manufacturer requirements (Approximately 30 to 50 ft. lbs). Leaf Spring to move freely in hanger.

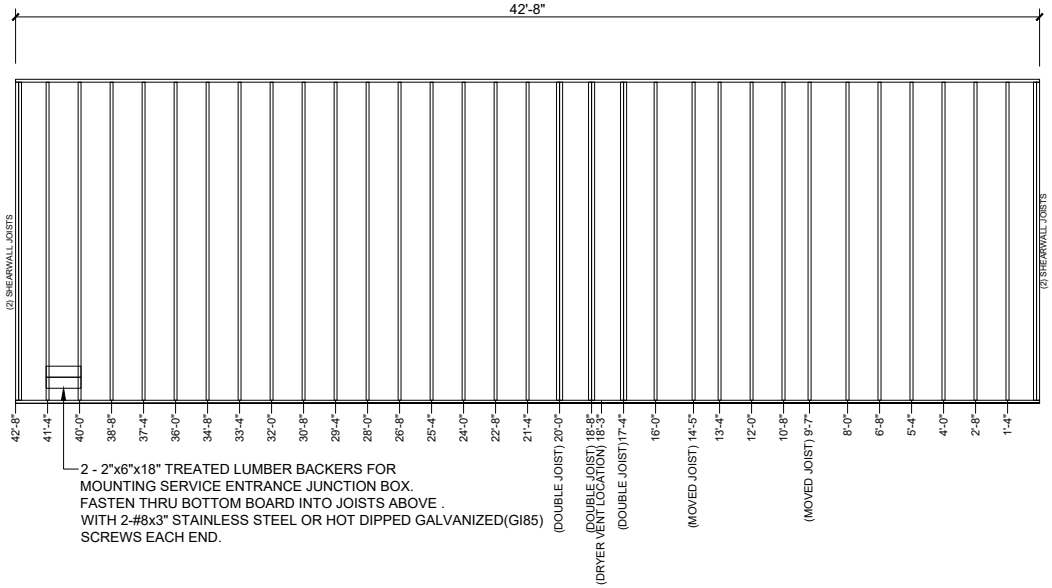
DETAIL B: AXLE HANGER



LONGITUDINAL TIE-DOWN BRACKET (12Ga. MIN.) SHALL HAVE
3150 LB WORKING LOAD CAPACITY.

DETAIL C: LONGITUDINAL TIE-DOWN BRACKET

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: CHASSIS DETAILS	DATE: 6/28/2019 SCALE: 1/8" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-11.2



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FASTENING SCHEDULE - FLOOR FRAMING		
DESCRIPTION	FASTENER	QTY
Floor joists to rim joist	7/16 x 2-1/2 x 15Ga staple	7 each
	OR 0.131 x 3" Nail	5 each
Multiple joists (to each other) (80% PVA glue coverage)	7/16 x 2-1/2 x 15Ga staple	12" o.c.
	OR 0.131 x 3" Nail	12" o.c.

Floor Framing Notes

1. The floor joists shall be 2 x 8 #2 SPF 16” o.c.
2. Edge rails shall be 2 x 8 #2 SPF.
3. Edge rail splice 4 x 5 x 20 GA metal connector plate on each side, or 2 x 8 x minimum 6" each side of joint centered +/- 1”, to be fastened with 7/16 x 2 ½ x 15 GA staples or .131 x 3” PD nails (8) each side of edge rail, with minimum 80% PVA coverage.

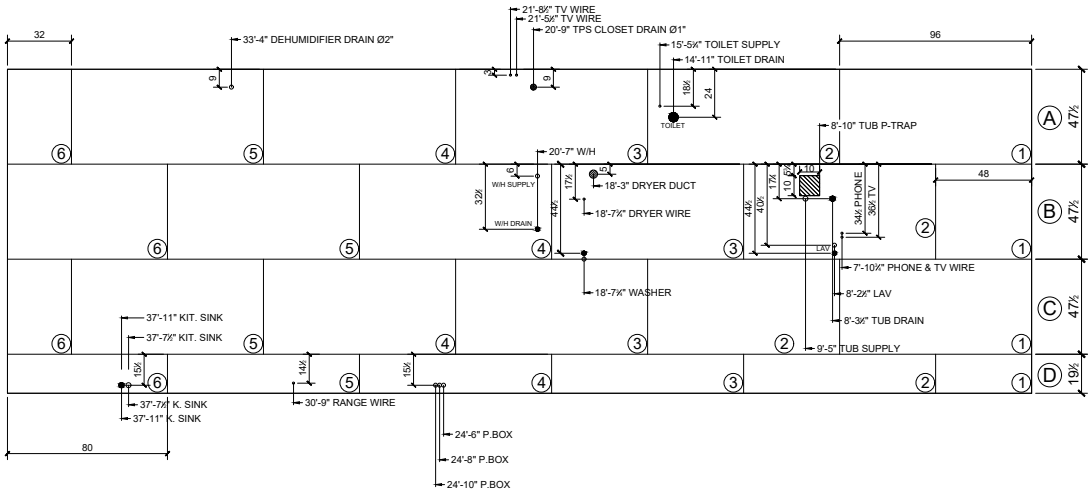
Floor Insulation Notes

1. The insulation shall have a flame spread of 25 or less and a smoke develop of 450 or less.
2. The floor insulation shall be a minimum of R-26 fiberglass blanket insulation. One full batt, one additional full width batt between the I-beams, and one additional 16” wide batt between joist outside of I-beams.

Bottom Board Notes

1. All penetrations sealed per bottom board manufacturer's installation instructions.
2. Bottom board shall be a minimum of twenty (20) mil thickness.
3. Multiple layers of acceptable material per 3280.305(g)(6) may be used.
4. Fasten bottom board to perimeter framing per manufacturer's installation instructions.

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: FLOOR FRAMING LAYOUT	DATE: 6/28/2019 SCALE: 1/8" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-12



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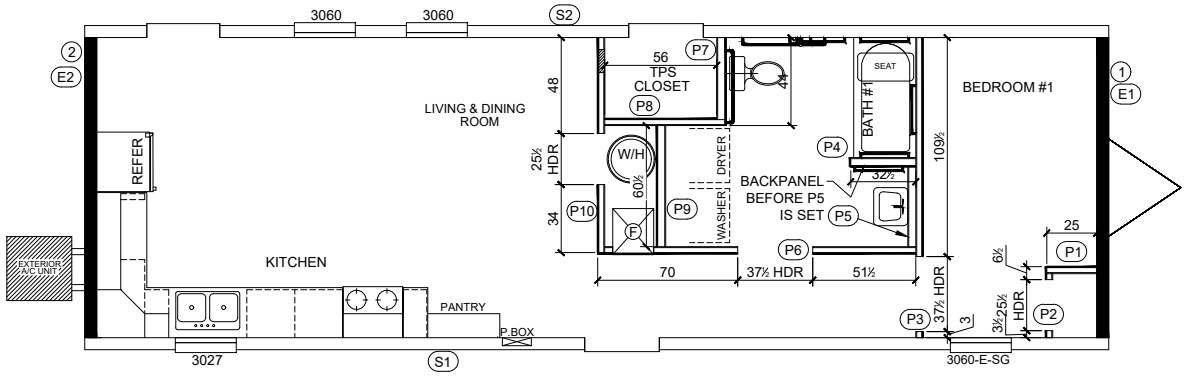
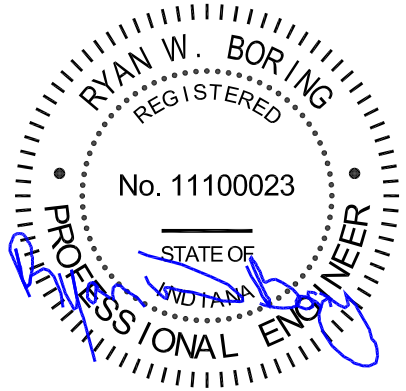
Floor Decking Notes

1. The floor decking shall be 23/32" Tongue and Grove (T&G) OSB or APA-rated plywood 24/0 index, laid out as shown on decking plan.
2. Decking shall be Exposure 1 rated.
3. Long edges of the panel shall be T&G installed perpendicular to the floor joists.
4. PVA (polyvinyl acetate) or equal shall be used as adhesive with 80% coverage.
5. Vinyl flooring shall be installed on all interior floors of the home installed per manufacturer's instructions.

FASTENING SCHEDULE - FLOOR DECKING		
DESCRIPTION	FASTENER	APPLICATION
Decking to Joists	7/16 x 1-3/4 x 16Ga staple	4" edges / 6" field w/ glue
	OR 0.092 x 2" Nail	6" edges / 10" field w/ glue

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: FLOOR DECKING LAYOUT	DATE: 6/28/2019 SCALE: 1/8" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-13





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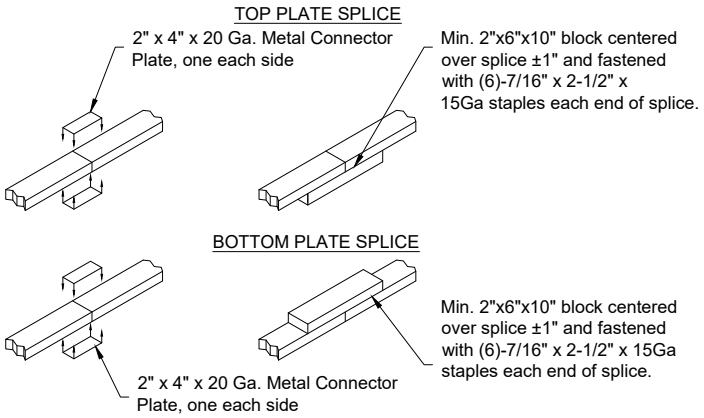


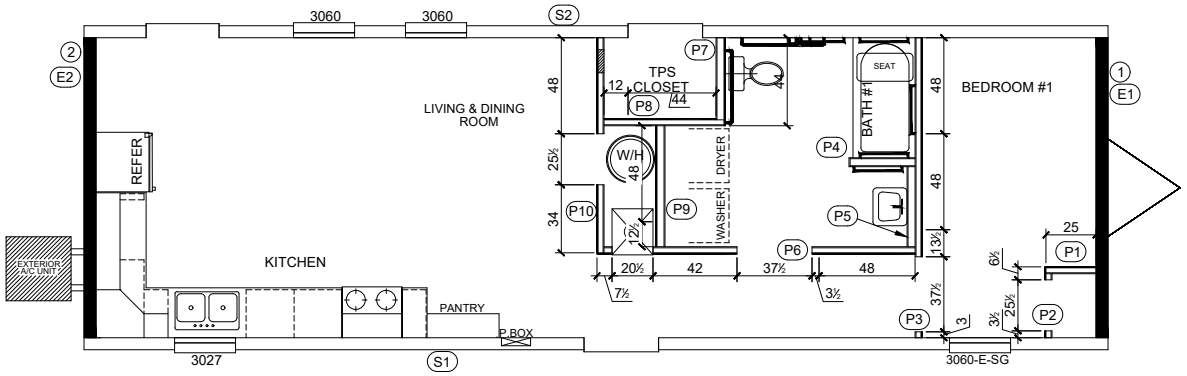
FASTENING SCHEDULE - INTERIOR WALLS

DESCRIPTION	FASTENER	APPLICATION
STUD TO TOP/BOTTOM PLATE	15Ga. x 7/16" x 2-1/2" STAPLES	3 EACH
	or 0.131" X 3" NAIL	2 EACH
DOOR HEADER TO STUD	15Ga. x 7/16" x 2-1/2" STAPLES	3 EACH
	or 0.131" X 3" NAIL	2 EACH
BOTTOM PLATE TO FLOOR	15Ga. x 7/16" x 2-1/2" STAPLES	12" O.C.
	or 0.131" X 3" NAIL	12" O.C.
	or #8 x 3" WOOD SCREW	6" O.C.
TOP PLATE TO CEILING INTO LAYFLAT INTO TRUSS	15Ga. x 7/16" x 2-1/2" STAPLES	12" O.C.
	or 0.131" X 3" NAIL	12" O.C.
	or #8 x 3" WOOD SCREW	12" O.C.
GYPSUM TO STUDS, 80% PVA GLUE	19Ga. x 3/16" x 1-1/4" STAPLES	6" Edges / 12" Field
	or DRYWALL SCREWS	6" Edges / 12" Field
ALTERNATE GYPSUM TO STUDS 100% ONE PART URETHANE GLUE	19Ga. x 3/16" x 1-1/4" STAPLES	6" EDGES
	or DRYWALL SCREWS	6" EDGES
GYPSUM TO STUDS	As per product manufacturer's instructions	
STUD TO STUD	15Ga. x 7/16" x 2-1/2" STAPLES	12" O.C.
	or 0.131" X 3" NAIL	12" O.C.
	or #8 x 3" WOOD SCREW	12" O.C.
LAYFLAT TO TOP/BOTTOM PLATE	15Ga. x 7/16" x 2-1/2" STAPLES	2 EACH
	or 0.131" X 3" NAIL	
INTERIOR WALL TO SIDEWALL	#8 SCREWS, MIN. 1" PENETRATION	16" O.C.
INTERIOR WALL TO INTERIOR WALL	.131" NAIL, MIN. 1" PENTRATION	16" O.C.
BACKERS TO STUD	15Ga. x 7/16" x 2-1/2" STAPLES (END GRAIN ONLY)	6 EACH
	OR .131" X 3" NAIL (END GRAIN OR TOED)	3 EACH

General Notes

1. Gypsum to be jointed above all doors in line with jambs.

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: INTERIOR WALL AND BACK PANEL LAYOUT (HORIZONTAL)	DATE: 6/28/2019 SCALE: 1/8" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-14



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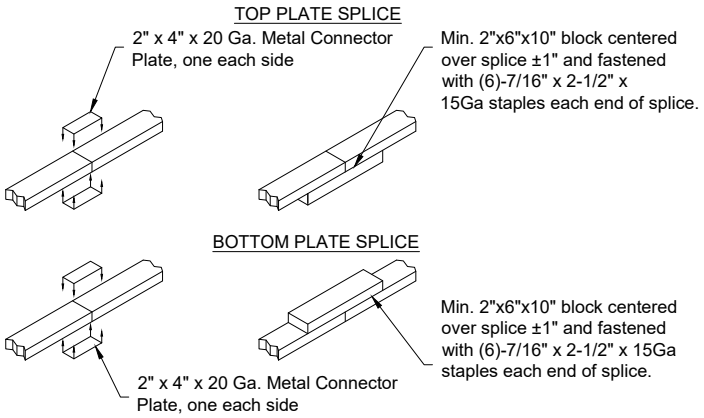


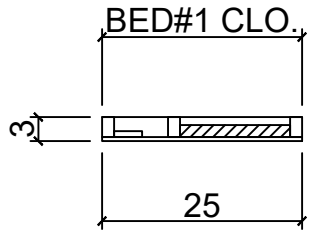
FASTENING SCHEDULE - INTERIOR WALLS

DESCRIPTION	FASTENER	APPLICATION
STUD TO TOP/BOTTOM PLATE	15Ga. x 7/16" x 2-1/2" STAPLES	3 EACH
	or 0.131" X 3" NAIL	2 EACH
DOOR HEADER TO STUD	15Ga. x 7/16" x 2-1/2" STAPLES	3 EACH
	or 0.131" X 3" NAIL	2 EACH
BOTTOM PLATE TO FLOOR	15Ga. x 7/16" x 2-1/2" STAPLES	12" O.C.
	or 0.131" X 3" NAIL	12" O.C.
	or #8 x 3" WOOD SCREW	6" O.C.
TOP PLATE TO CEILING INTO LAYFLAT INTO TRUSS	15Ga. x 7/16" x 2-1/2" STAPLES	12" O.C.
	or 0.131" X 3" NAIL	12" O.C.
	or #8 x 3" WOOD SCREW	12" O.C.
GYPSUM TO STUDS, 80% PVA GLUE	19Ga. x 3/16" x 1-1/4" STAPLES	6" Edges / 12" Field
	or DRYWALL SCREWS	6" Edges / 12" Field
ALTERNATE GYPSUM TO STUDS 100% ONE PART URETHANE GLUE	19Ga. x 3/16" x 1-1/4" STAPLES	6" EDGES
	or DRYWALL SCREWS	6" EDGES
GYPSUM TO STUDS	As per product manufacturer's instructions	
STUD TO STUD	15Ga. x 7/16" x 2-1/2" STAPLES	12" O.C.
	or 0.131" X 3" NAIL	12" O.C.
	or #8 x 3" WOOD SCREW	12" O.C.
LAYFLAT TO TOP/BOTTOM PLATE	15Ga. x 7/16" x 2-1/2" STAPLES	2 EACH
	or 0.131" X 3" NAIL	
INTERIOR WALL TO SIDEWALL	#8 SCREWS, MIN. 1" PENETRATION	16" O.C.
INTERIOR WALL TO INTERIOR WALL	.131" NAIL, MIN. 1" PENTRATION	16" O.C.
BACKERS TO STUD	15Ga. x 7/16" x 2-1/2" STAPLES (END GRAIN ONLY)	6 EACH
	OR .131" X 3" NAIL (END GRAIN OR TOED)	3 EACH

General Notes

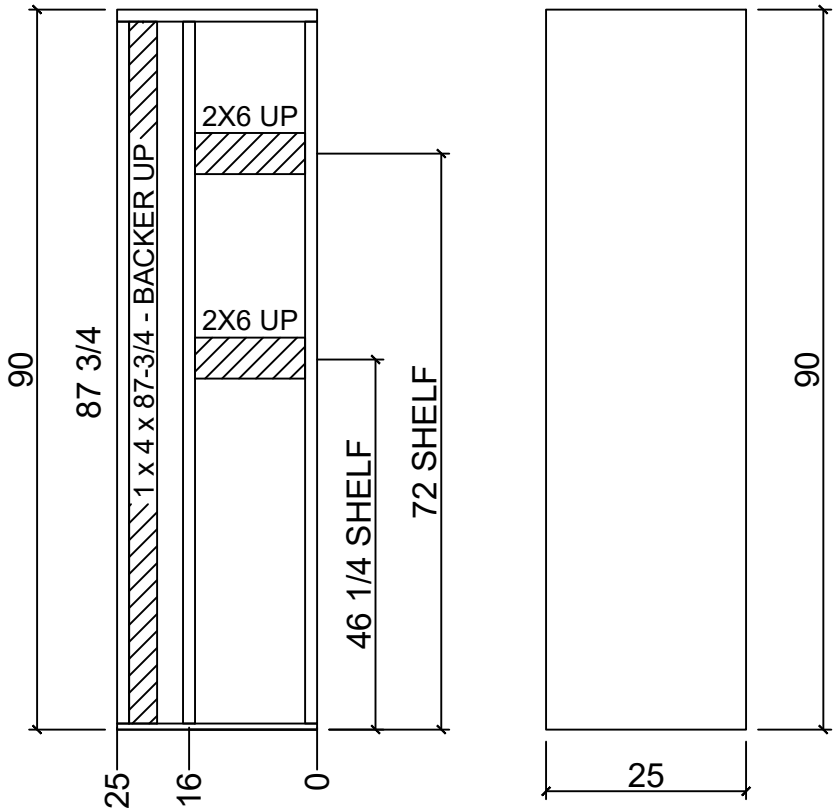
1. Gypsum to be jointed above all doors in line with jambs.

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: INTERIOR WALL AND BACK PANEL LAYOUT (VERTICAL) - OPTIONAL	DATE: 6/28/2019 SCALE: 1/8" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-15



VERTICAL WALL BOARD PANEL BREAKS

Jun 28, 2019

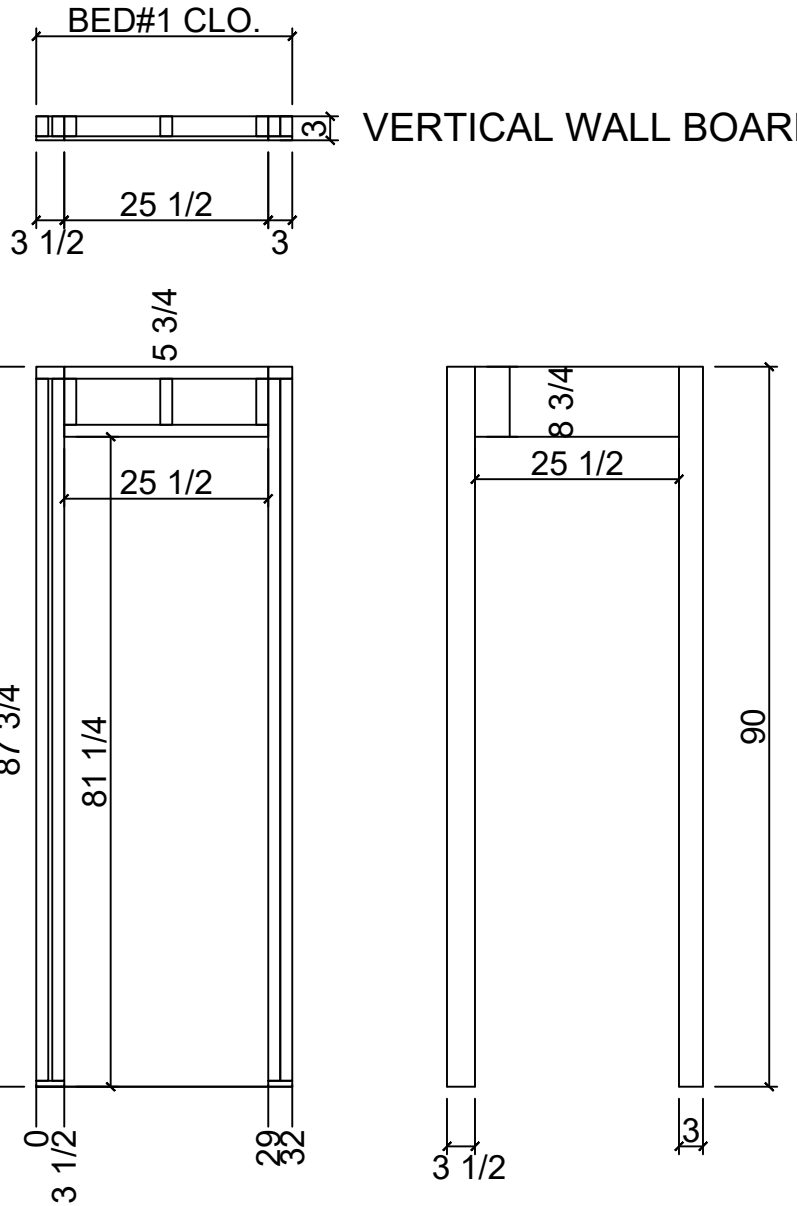


P1

Interior Wall Framing Notes

1. All interior walls are 2 x 3 (unless noted) #2 SPF at 16” maximum o.c., except washer wall.
2. Top plates to be 2 x 3 (unless noted) #2 SPF.
3. Bottom plates to be 1 x 3 (unless noted) #2 SPF.
4. Wall interiors shall be faced with ½” Gold Bond XP gypsum board with paint or equivalent installed per ASTM C840 and GA-216.
5. Gypsum board shall run vertically or horizontally along the entire height of wall interiors. See fastening schedule.
6. Wall panel trim (1/2” x 2”) shall be used to cover the gypsum panel joints. Trim fastened to only one of the two gypsum panels into stud, 10" O.C. fastener spacing.
7. Walls shall be sanded as needed to assure a smooth finish (level 3 finish minimum)
8. Paint shall be any latex paint. See FEMA spec.

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: INTERIOR WALLS	DATE: 6/28/2019 SCALE: 1/2" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-16.1



VERTICAL WALL BOARD PANEL BREAKS

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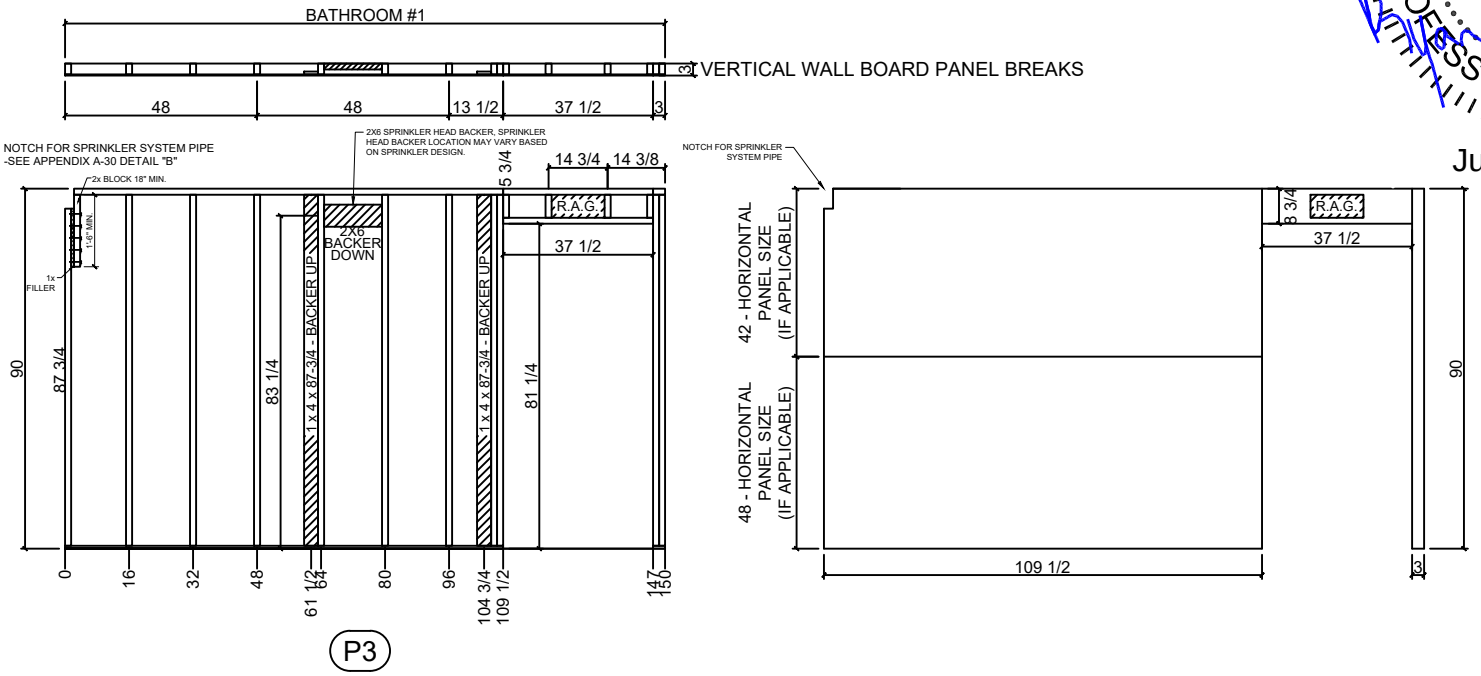
Jun 28, 2019

P2

Interior Wall Framing Notes

1. All interior walls are 2 x 3 (unless noted) #2 SPF at 16” maximum o.c., except washer wall.
2. Top plates to be 2 x 3 (unless noted) #2 SPF.
3. Bottom plates to be 1 x 3 (unless noted) #2 SPF.
4. Wall interiors shall be faced with ½” Gold Bond XP gypsum board with paint or equivalent installed per ASTM C840 and GA-216.
5. Gypsum board shall run vertically or horizontally along the entire height of wall interiors. See fastening schedule.
6. Wall panel trim (1/2” x 2”) shall be used to cover the gypsum panel joints. Trim fastened to only one of the two gypsum panels into stud, 10" O.C. fastener spacing.
7. Walls shall be sanded as needed to assure a smooth finish (level 3 finish minimum)
8. Paint shall be any latex paint. See FEMA spec.

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: INTERIOR WALLS	DATE: 6/28/2019 SCALE: 1/2" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-16.2



RYAN W. BORING
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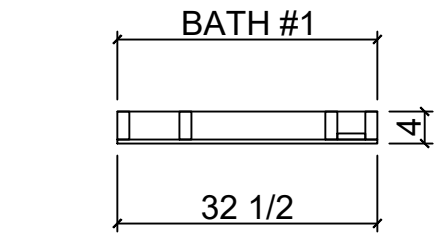
STATE OF INDIANA
PROFESSIONAL ENGINEER

Jun 28, 2019

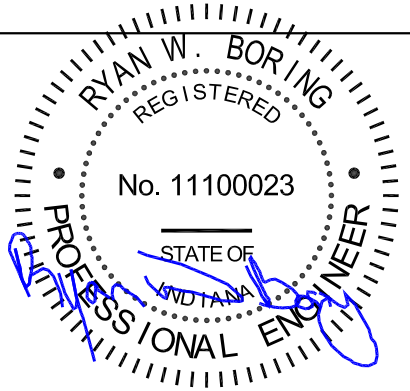
Interior Wall Framing Notes

1. All interior walls are 2 x 3 (unless noted) #2 SPF at 16" maximum o.c., except washer wall.
2. Top plates to be 2 x 3 (unless noted) #2 SPF.
3. Bottom plates to be 1 x 3 (unless noted) #2 SPF.
4. Wall interiors shall be faced with ½" Gold Bond XP gypsum board with paint or equivalent installed per ASTM C840 and GA-216.
5. Gypsum board shall run vertically or horizontally along the entire height of wall interiors. See fastening schedule.
6. Wall panel trim (1/2" x 2") shall be used to cover the gypsum panel joints. Trim fastened to only one of the two gypsum panels into stud, 10" O.C. fastener spacing.
7. Walls shall be sanded as needed to assure a smooth finish (level 3 finish minimum)
8. Paint shall be any latex paint. See FEMA spec.

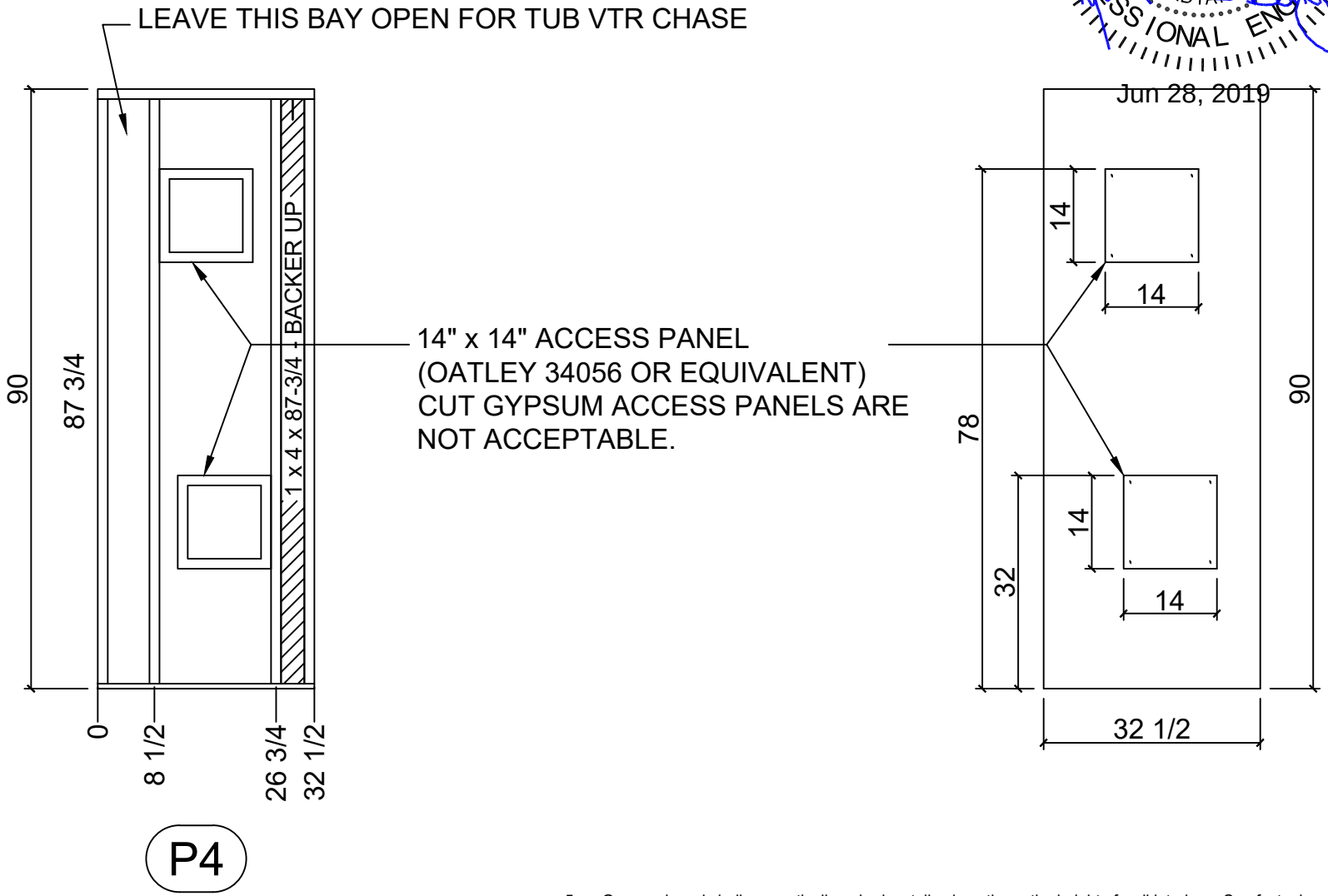
FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: INTERIOR WALLS	DATE: 6/28/2019 SCALE: 1/4" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-16.3



VERTICAL WALL BOARD PANEL BREAKS



Jun 28, 2019



P4

Interior Wall Framing Notes

1. All interior walls are 2 x 3 (unless noted) #2 SPF at 16” maximum o.c., except washer wall.
2. Top plates to be 2 x 3 (unless noted) #2 SPF.
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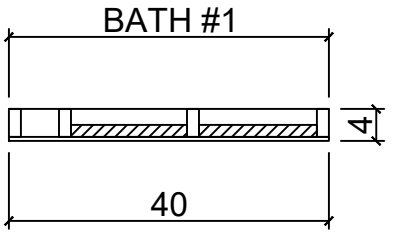
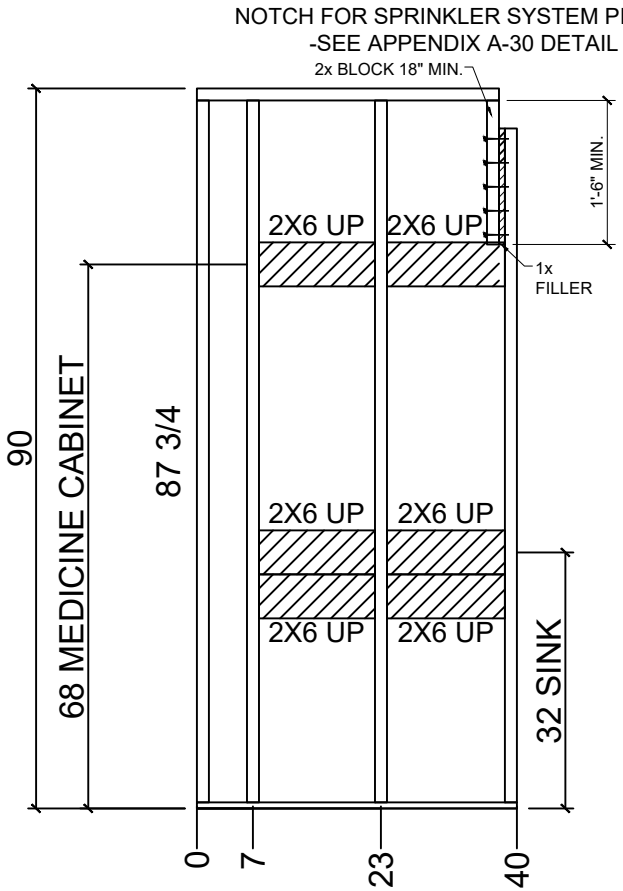
5. Gypsum board shall run vertically or horizontally along the entire height of wall interiors. See fastening schedule.
6. Wall panel trim (1/2” x 2”) shall be used to cover the gypsum panel joints. Trim fastened to only one of the two gypsum panels into stud, 10" O.C. fastener spacing.
7. Walls shall be sanded as needed to assure a smooth finish (level 3 finish minimum)
8. Paint shall be any latex paint. See FEMA spec.

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: INTERIOR WALLS	DATE: 6/28/2019 SCALE: 1/2" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-16.4



VERTICAL WALL BOARD PANEL BREAKS



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Note

This wall not to be paneled on framing jig. To be paneled after floor plumbing installed.

P5

Interior Wall Framing Notes

1. All interior walls are 2 x 3 (unless noted) #2 SPF at 16" maximum o.c., except washer wall.
2. Top plates to be 2 x 3 (unless noted) #2 SPF.
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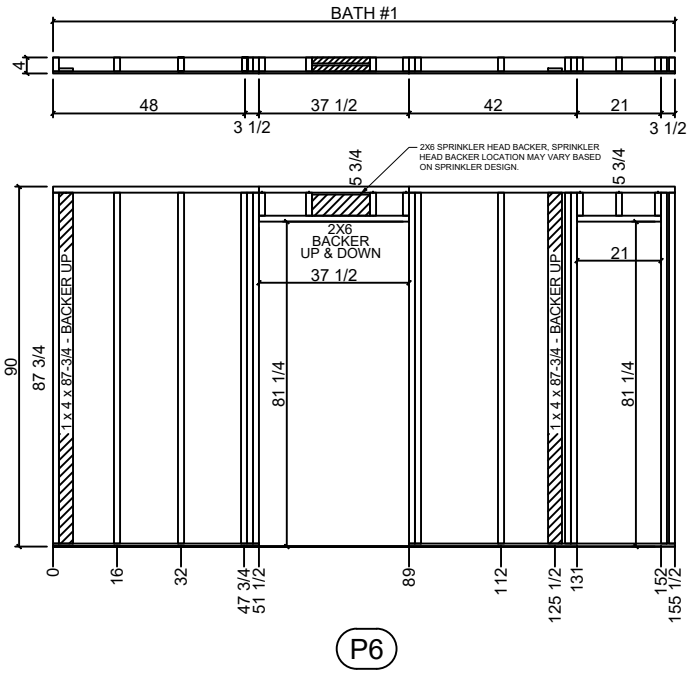
8. Paint shall be any latex paint. See FEMA spec.

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: INTERIOR WALLS	DATE: 6/28/2019 SCALE: 1/2" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-16.5



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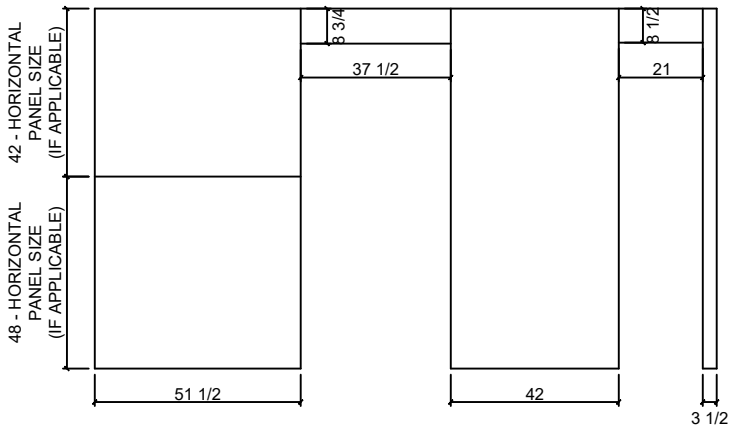

Jun 28, 2019

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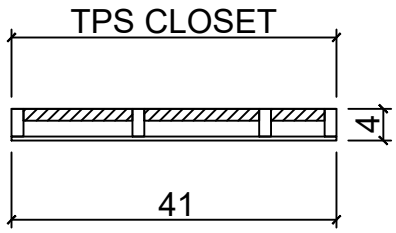
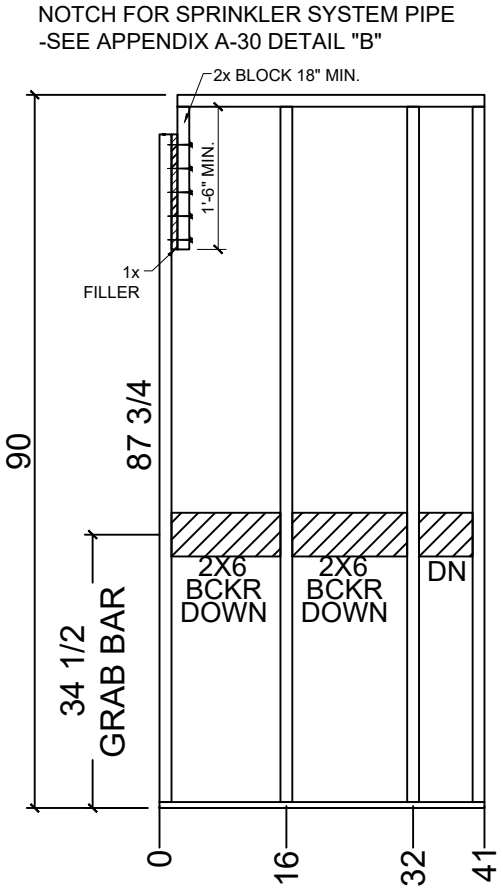
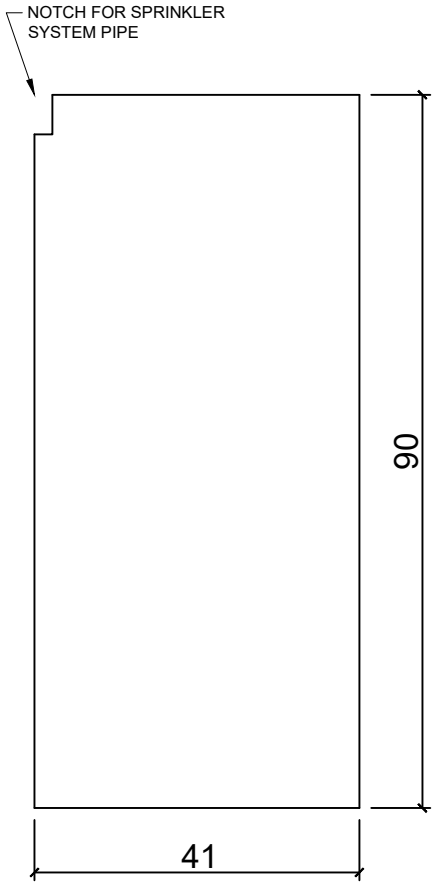
8. Paint shall be any latex paint. See FEMA spec.

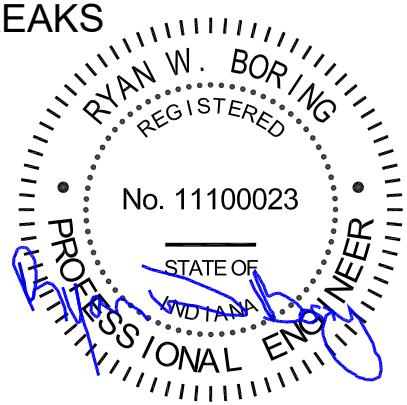
FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: INTERIOR WALLS	DATE: 6/28/2019 SCALE: 1/4" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-16.6



VERTICAL WALL BOARD PANEL BREAKS







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P7

Interior Wall Framing Notes

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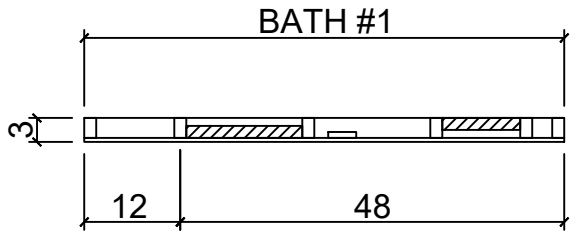
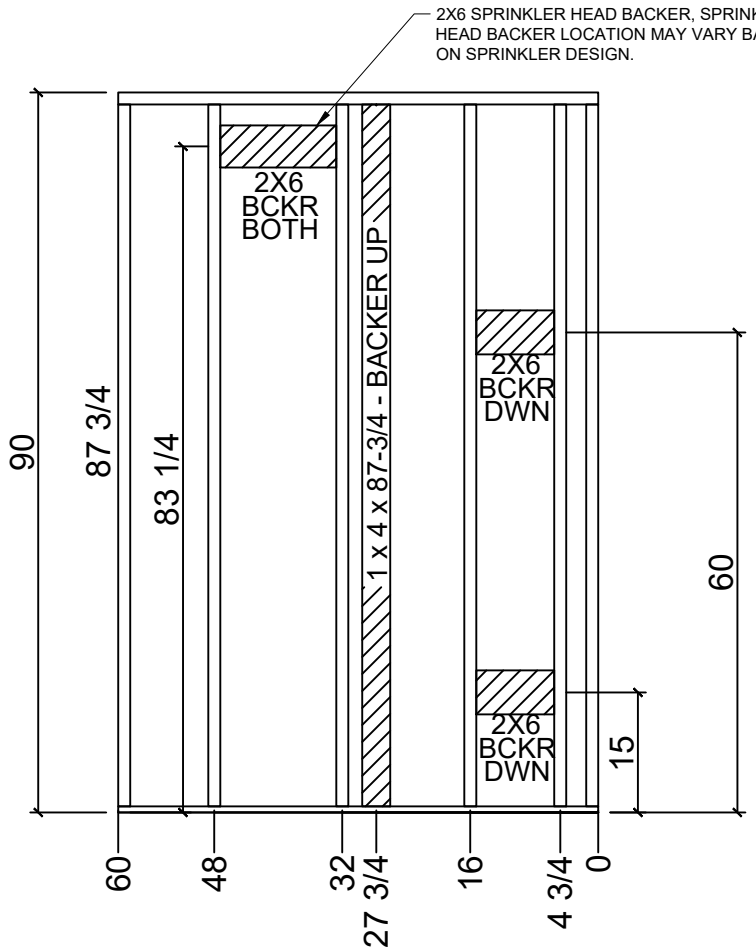
7. Walls shall be sanded as needed to assure a smooth finish (level 3 finish minimum)
8. Paint shall be any latex paint. See FEMA spec.

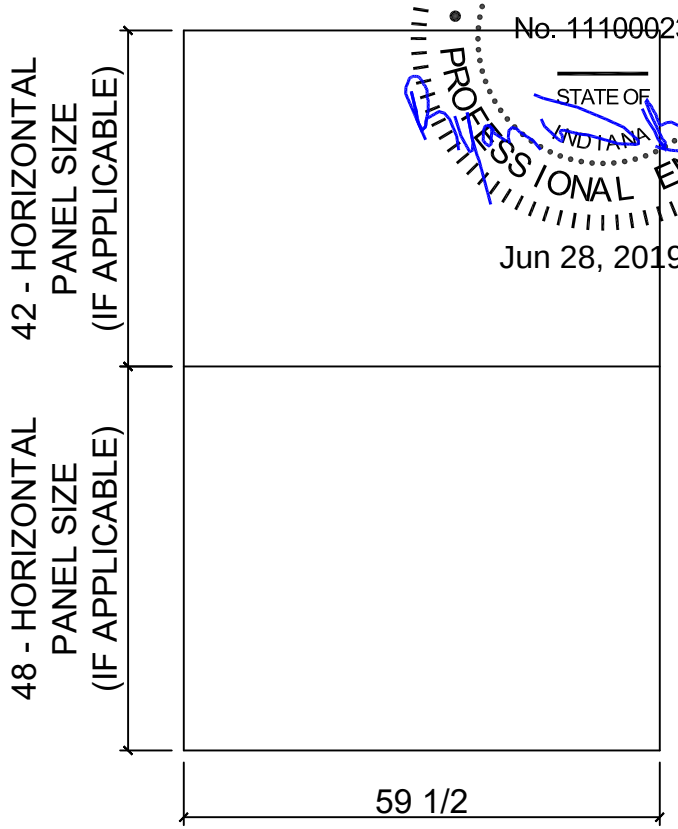
FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: INTERIOR WALLS	DATE: 6/28/2019 SCALE: 1/2" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-16.7

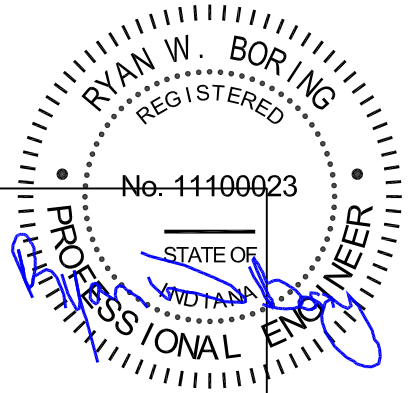


VERTICAL WALL BOARD PANEL BREAKS



P8





Interior Wall Framing Notes

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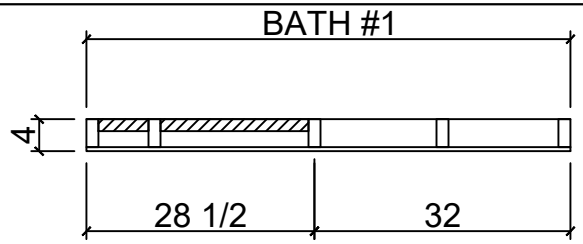
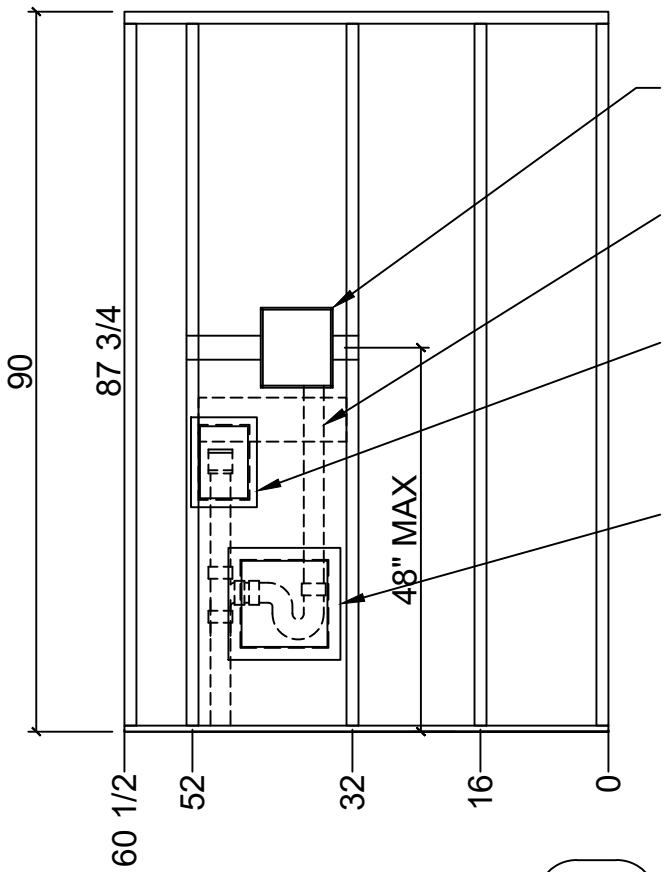
FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: INTERIOR WALLS	DATE: 6/28/2019 SCALE: 1/2" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-16.8



VERTICAL WALL BOARD PANEL BREAKS

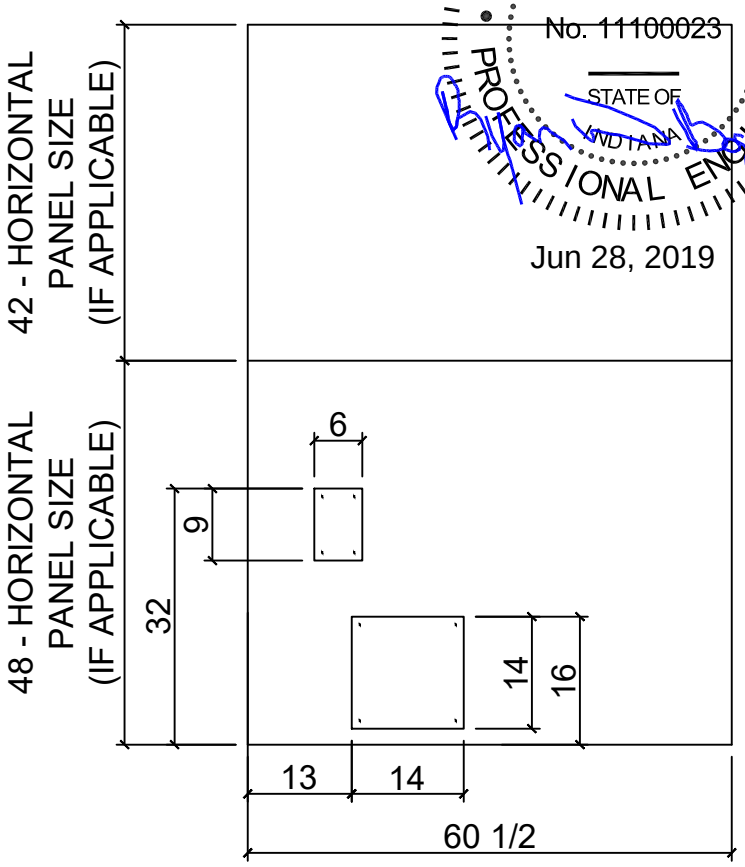


Nail on washer box size will vary. Manufacturer to verify size from the washer box vendor that will be used.

Standpipe cannot be more than 30" above the p-trap weir.

6"x9" louvered access panel (Oatley 34247 or equivalent) for recessed autovent

14"x14" washer p-trap access panel (Oatley 34056 or equivalent) for p-trap.



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P9

Interior Wall Framing Notes

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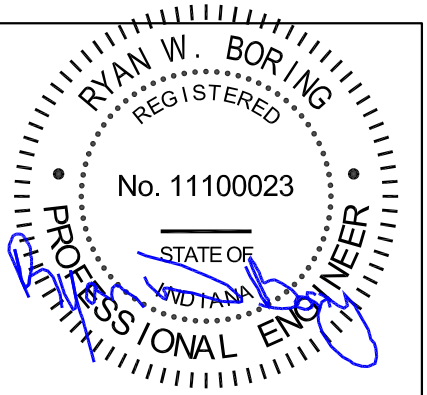
FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: INTERIOR WALLS	DATE: 6/28/2019 SCALE: 1/2" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-16.9



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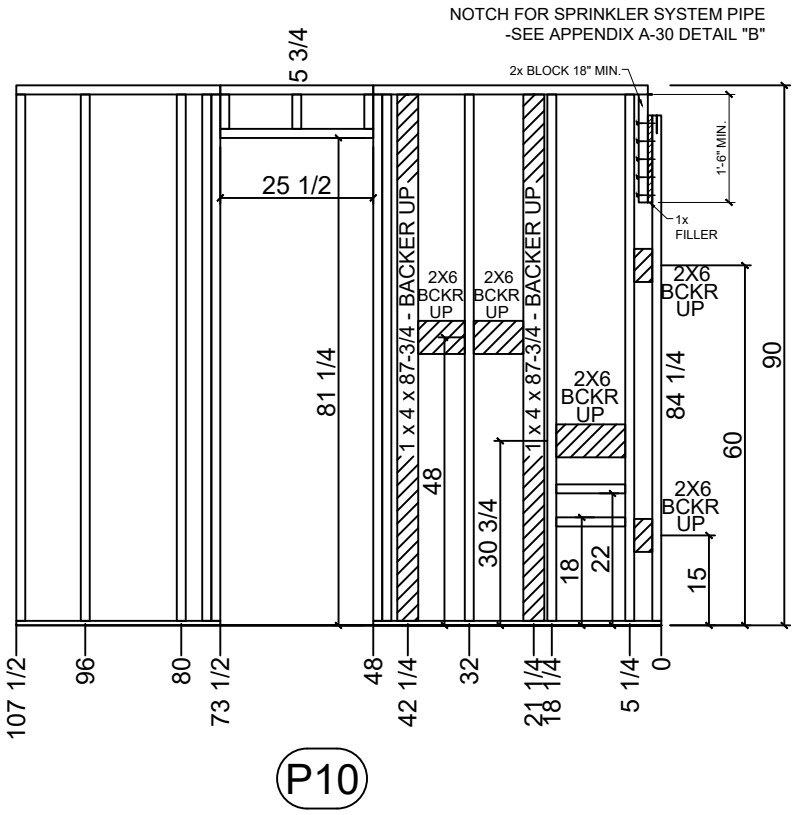
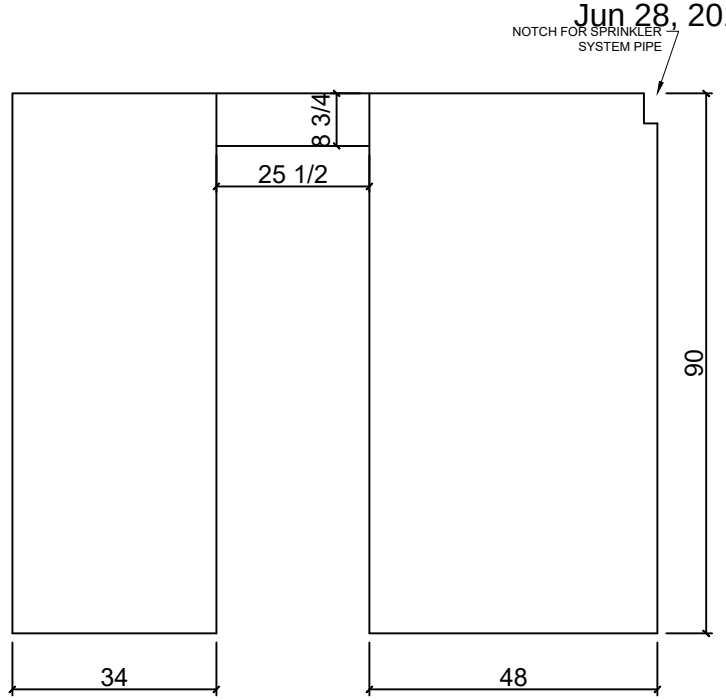
VERTICAL WALL BOARD PANEL BREAKS





P10

Interior Wall Framing Notes

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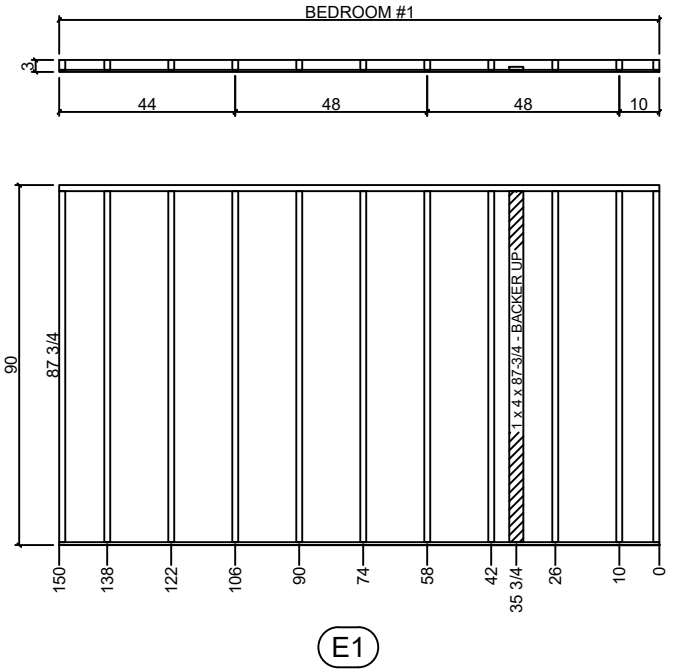
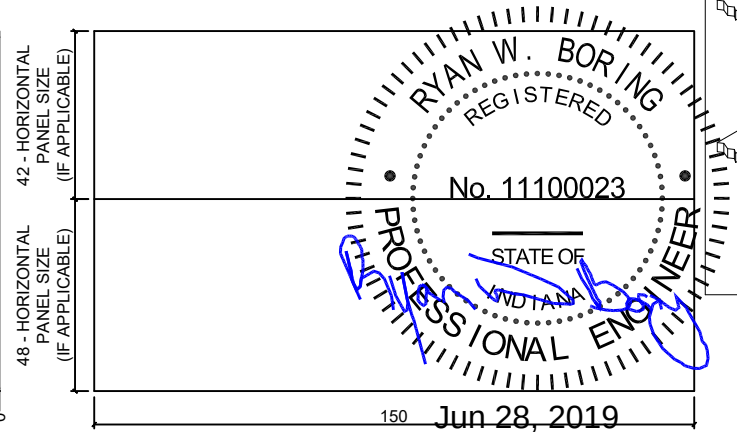
8. Paint shall be any latex paint. See FEMA spec.

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: INTERIOR WALLS	DATE: 6/28/2019 SCALE: 3/8" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-16.10



VERTICAL WALL BOARD PANEL BREAKS



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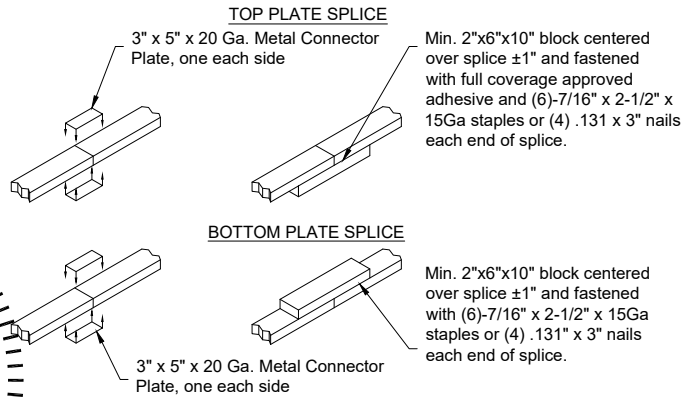
E1



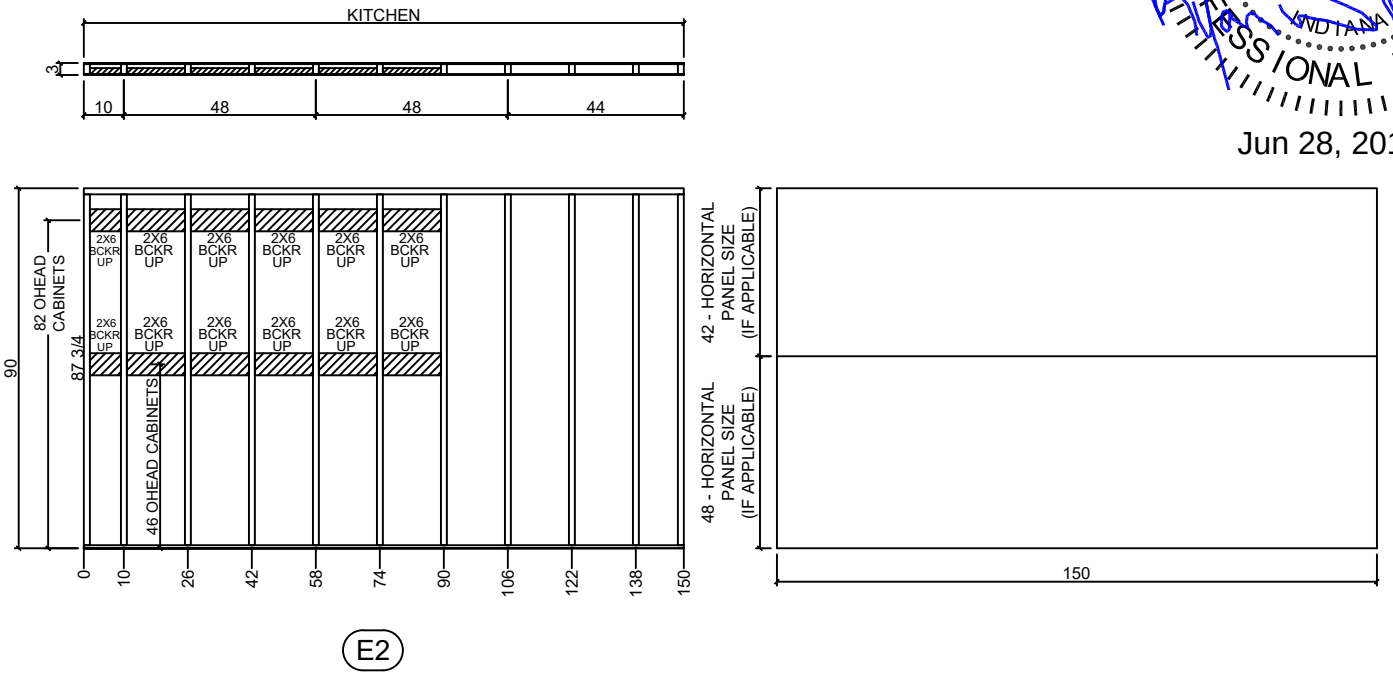
FASTENING SCHEDULE - EXTERIOR WALLS

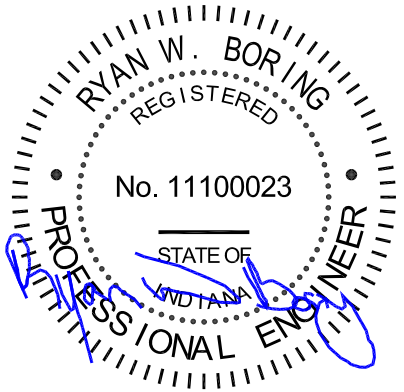
DESCRIPTION	FASTENER	APPLICATION
STUD TO PLATE	15Ga. x 7/16" x 2-1/2" STAPLES	7 EACH
	or 0.131" X 3" NAIL	4 EACH
BOTTOM PLATE TO FLOOR	0.131" X 3" NAIL	6" O.C.
	or #8 x 3" WOOD SCREW	6" O.C.
TOP PLATE TO TRUSS	0.131" X 3" NAIL	3 EACH
	or #8 x 4" WOOD SCREW	3 EACH
HEADER TO STUD	15Ga. x 7/16" x 2-1/2" STAPLES	9 EACH PLY
	or 0.131" X 3" NAIL	6 EACH PLY
SILL MEMBER (@ OPENING) TO STUD	15Ga. x 7/16" x 2-1/2" STAPLES	6 EACH
	or 0.131" X 3" NAIL	4 EACH
MULTIPLE STUDS (TO EACH OTHER)	15Ga. x 7/16" x 2-1/2" STAPLES	12" O.C.
	or 0.131" X 3" NAIL	12" O.C.
MULTIPLE FLAT HEADER MEMBERS	15Ga. x 7/16" x 2-1/2" STAPLES	6" O.C.
	or 0.131" X 3" NAIL	6" O.C.
CRIPPLES TO HEADER, SILL AND PLATES	15Ga. x 7/16" x 2-1/2" STAPLES	4 EACH
	or 0.131" X 3" NAIL	3 EACH
GYPSUM TO STUDS , 80% PVA GLUE	19Ga. x 3/16" x 1-1/4" STAPLES	6" Edges / 12" Field
	or DRYWALL SCREWS	6" Edges / 12" Field
ALTERNATE GYPSUM TO STUDS 100% ONE PART URETHANE GLUE	19Ga. x 3/16" x 1-1/4" STAPLES	6" EDGES
	or DRYWALL SCREWS	6" EDGES
EXTERIOR SIDING	As per product manufacturer's instructions	
LAYFLATS TO TOP/BOTTOM PLATE	15 Ga. x 7/16" x 2-1/2" STAPLES	2 EACH
OSB TO STUDS	0.131" X 2" NAIL	6" Edges / 6" Field Unless Noted Elsewhere
BACKERS TO STUD	15Ga. x 7/16" x 2-1/2" STAPLES (END GRAIN ONLY)	6 EACH
	OR .131" X 3" NAIL (END GRAIN OR TOED)	3 EACH

Wall Framing Notes

1. The exterior wall framing shall be 2 x 6 nominal #2 SPF at 16” o.c.
2. Wall framing shall be 7'-6” from floor to ceiling.
3. Sidewall top plates shall be single 2 x 6 nominal #2 SPF.
4. Sidewall bottom plate shall be single 1 x 6 nominal #2 SPF.
5. All major joints - wall to wall, wall to ceiling, wall to floor shall be caulked or gasketed to prevent air infiltration.
6. The wall insulation shall be R-19 and will be installed without voids, gaps, or compression.
7. 7/16” APA-rated 24/16 index oriented strand board (OSB) shall be attached to the wall studs.
8. The walls shall be painted with latex, low-VOC paint (10 mil wet film thickness) that shall qualify as a vapor retarder.
9. Housewrap applied over exterior sheathing.
10. All exterior penetrations (doors, vents, lights, outlets, etc.) shall be flashed with ice and water shield 12” wide around penetration.

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: ENDWALL FRAMING & INTERIOR SHEATHING	DATE: 6/28/2019 SCALE: 1/4" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-17.1





Jun 28, 2019

Wall Framing Notes

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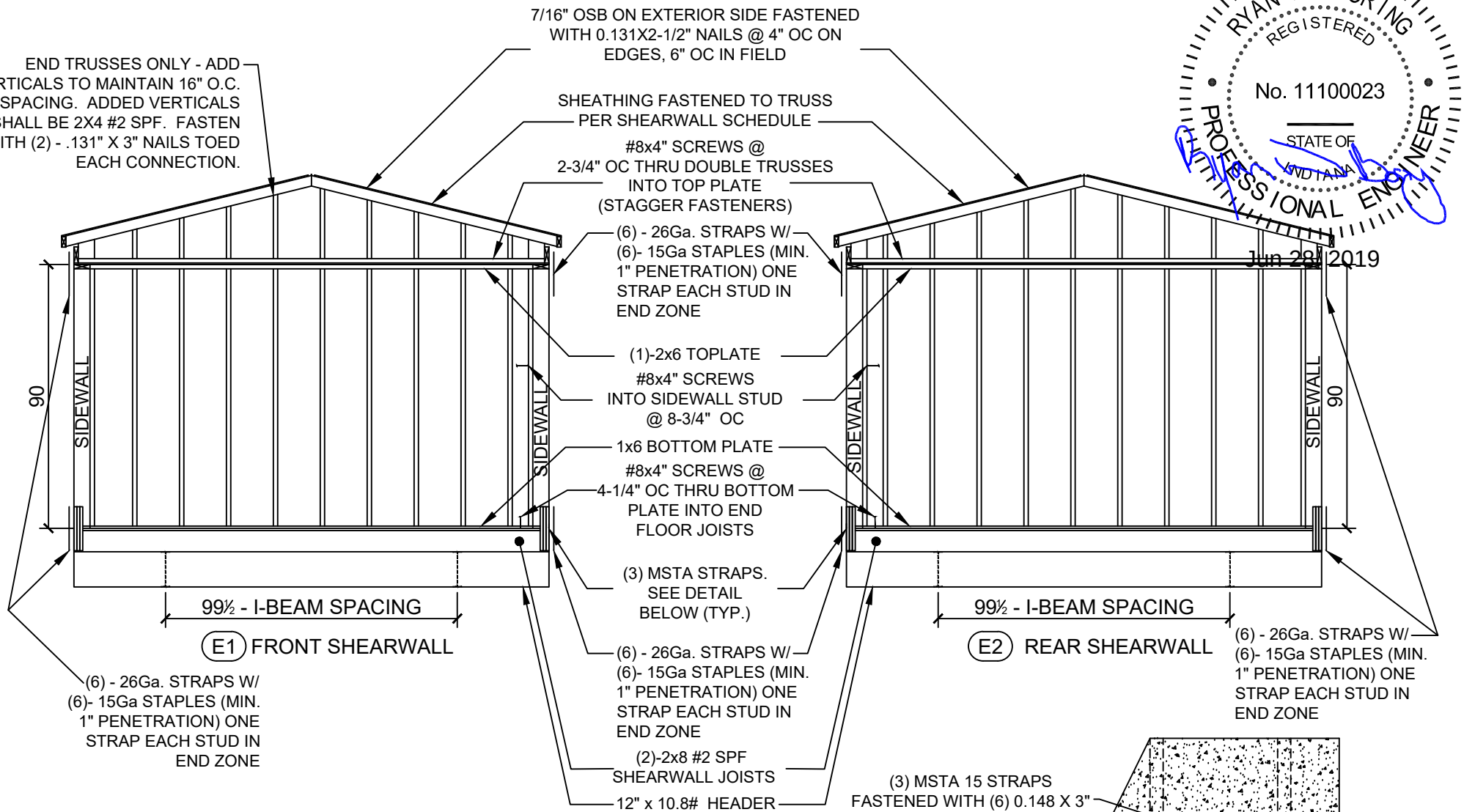

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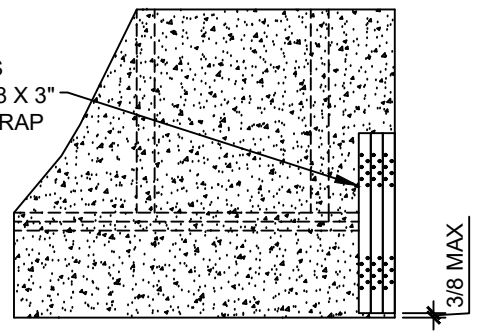


(INSTALL OVER SHEATHING)

MSTA STRAP DETAIL

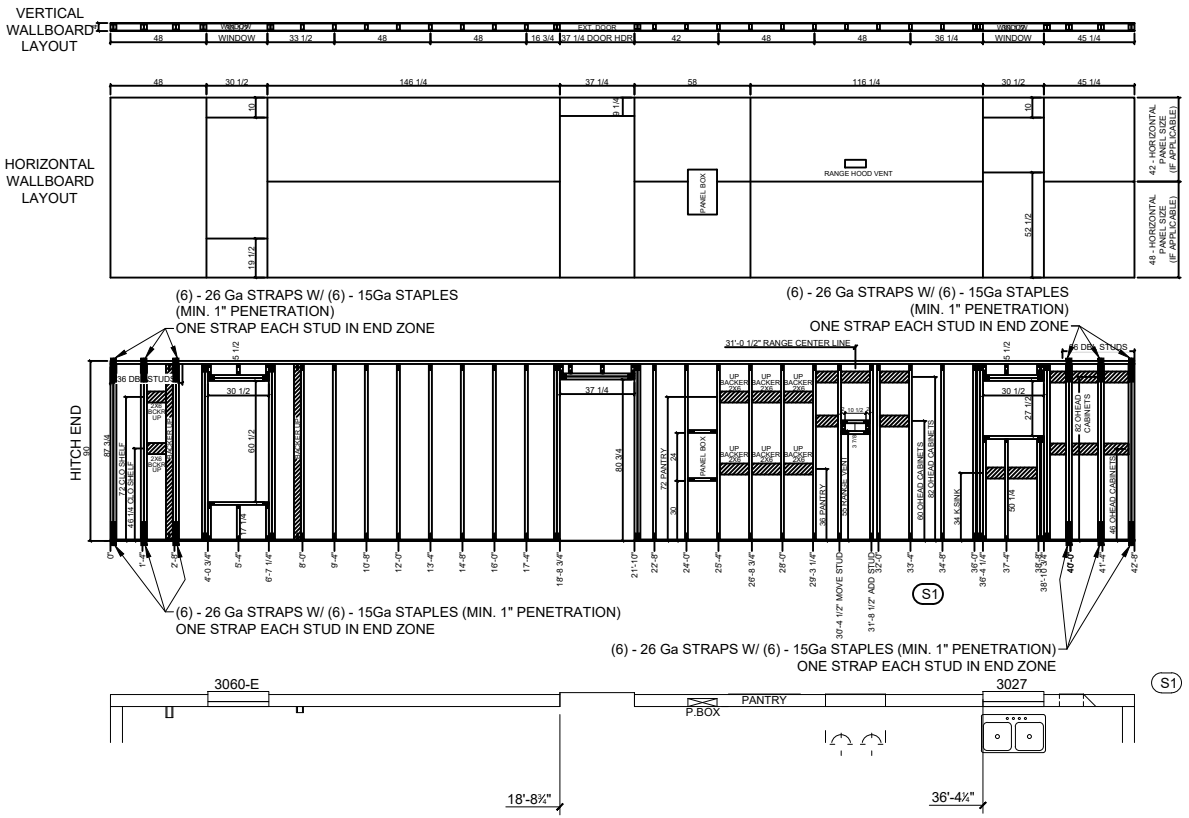
Shearwall Notes

1. Shearwall joists shall be (2)-2x8 #2 SPF.
2. Shearwall shall be lagged to 12" x 10.8# I-Beam header with six (6) equally spaced, Fastec 9mm x 76mm listed lags or equivalent.
3. 7/16" (24/16 span index) OSB shearwall sheathing shall be continuous over the shearwall joist and fastened with 1 row of .131 x 3" nails @ 4" o.c.
4. OSB shearwall sheathing shall be fastened to studs with .131 x 3" nails @ 4" o.c. at edges and 6" o.c. in field.
5. OSB shearwall sheathing shall be continuous over the truss bottom chord and fastened with 1 row of .131 x 3" nails at 4" o.c.

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: SHEARWALL FRAMING AND EXTERIOR SHEATHING	DATE: 6/28/2019 SCALE: 1/4" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-18.1

RESERVED

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: RESERVED	DATE: 6/28/2019 SCALE: 1/4" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-18.2



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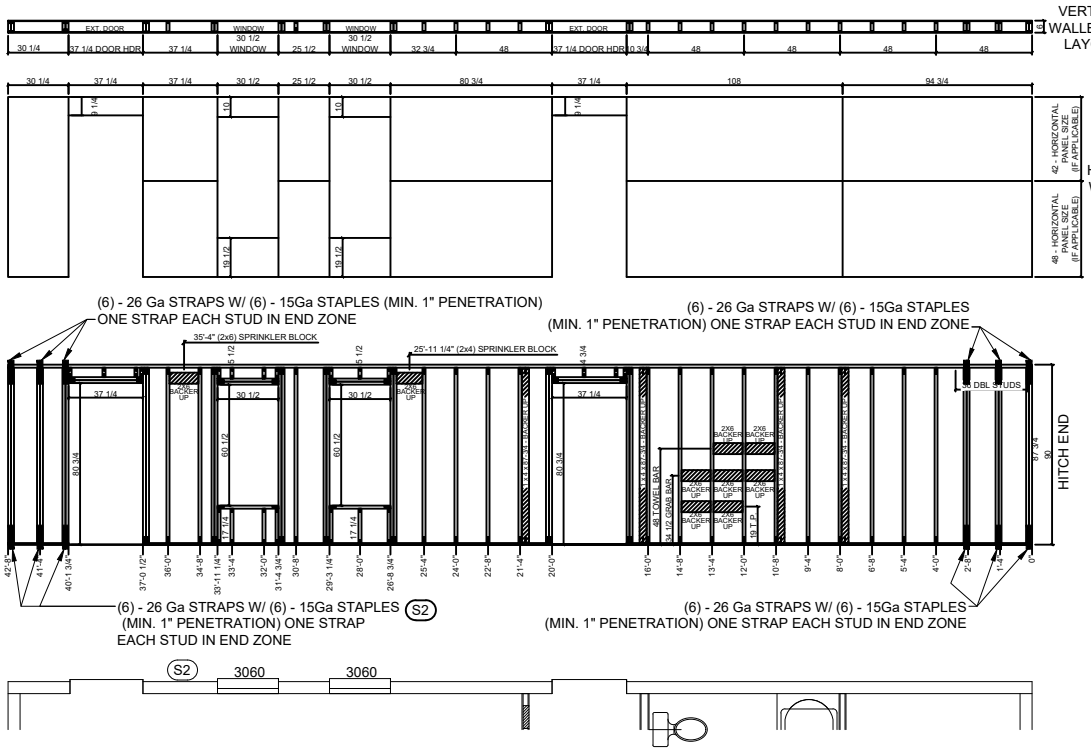
Jun 28, 2019

Wall Framing Notes

1. The exterior wall framing shall be 2 x 6 nominal #2 SPF at 16” o.c.
2. Wall framing shall be 7'-6” from floor to ceiling.
3. Sidewall top plates shall be single 2 x 6 nominal #2 SPF.
4. Sidewall bottom plate shall be single 1 x 6 nominal #2 SPF.
5. All major joints - wall to wall, wall to ceiling, wall to floor shall be caulked or gasketed to prevent air infiltration.
6. The wall insulation shall be R-19 and will be installed without voids, gaps, or compression.
7. 7/16” APA-rated 24/16 index oriented strand board (OSB) shall be attached to the wall studs.
8. The walls shall be painted with latex, low-VOC paint that shall qualify as a vapor retarder.
9. Headers shall be (2) 2 x 6 #2 SPF flat or equal fastened together with 80% adhesive and 7/16 x 2 ½ x 15 GA staples or .131 x 3” pd nails, 2 rows @ 6” o.c.
10. Housewrap applied over exterior sheathing.
11. All exterior penetrations (doors, vents, lights, outlets, etc.) shall be flashed with ice and water shield 12” wide around penetration.
12. OSB to lap floor and roof edge rails fastened to edge with .131 nails @ 4” o.c. (or 7/16 x 2 ½ x 15 GA staples at 2” o.c.).
13. BP-10 Tie-down brackets to be installed 2' from each end of home and spaced 5'-4” o.c. maximum. See 14F1-29.2.
14. Grab bar backers to be centered at grab bar mounting height.
15. Toilet paper holder backer to be centered at toilet paper holder mounting height.
16. Range hood vent through wall size and location may vary. Manufacturer to verify size and location from range hood vendor that will be used.
17. Gypsum to be jointed above all doors in line with jambs.
18. Gypsum to be jointed above and below all windows in line with jambs.

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: FRONT DOOR SIDEWALL	DATE: 6/28/2019 SCALE: 1/8" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-19



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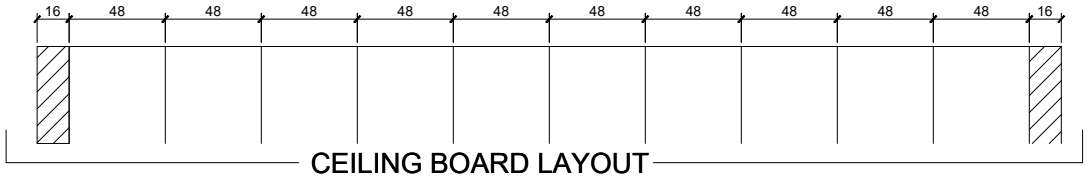
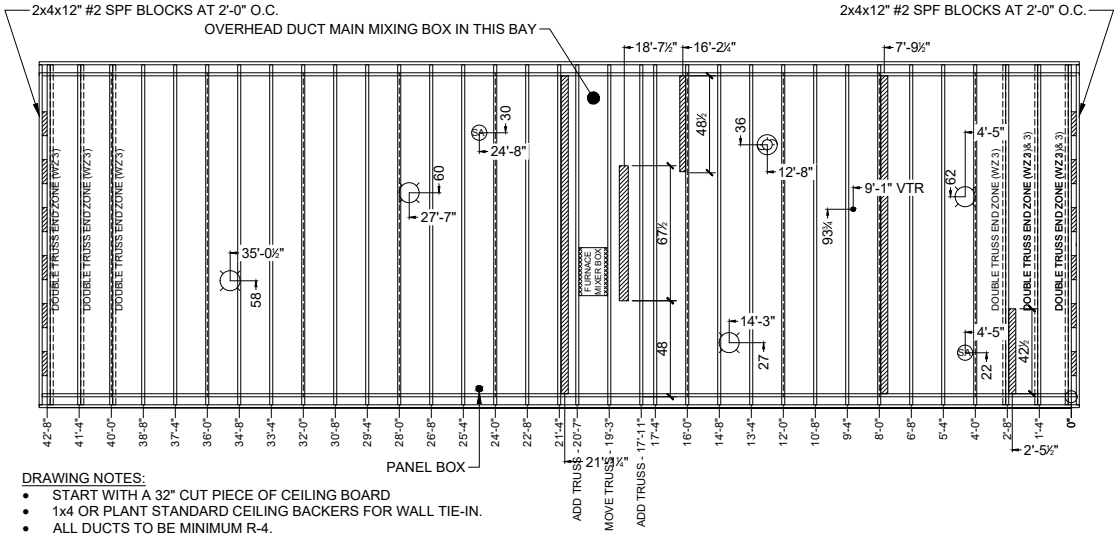
Wall Framing Notes

1. The exterior wall framing shall be 2 x 6 nominal #2 SPF at 16” o.c.
2. Wall framing shall be 7'-6” from floor to ceiling.
3. Sidewall top plates shall be single 2 x 6 nominal #2 SPF.
4. Sidewall bottom plate shall be single 1 x 6 nominal #2 SPF.
5. All major joints - wall to wall, wall to ceiling, wall to floor shall be caulked or gasketed to prevent air infiltration.
6. The wall insulation shall be R-19 and will be installed without voids, gaps, or compression.
7. 7/16” APA-rated 24/16 index oriented strand board (OSB) shall be attached to the wall studs.
8. The walls shall be painted with latex, low-VOC paint that shall qualify as a vapor retarder.
9. Headers shall be (2) 2 x 6 #2 SPF flat or equal fastened together with 80% adhesive and 7/16 x 2 ½ x 15 GA staples or .131 x 3” pd nails, 2 rows @ 6” o.c.
10. Housewrap applied over exterior sheathing.
11. All exterior penetrations (doors, vents, lights, outlets, etc.) shall be flashed with ice and water shield 12” wide around penetration.
12. OSB to lap floor and roof edge rails fastened to edge with .131 nails @ 4” o.c. (or 7/16 x 2 ½ x 15 GA staples at 2” o.c.).
13. BP-10 Tie-down brackets to be installed 2' from each end of home and spaced 5'-4” o.c. maximum. See 14F1-29.2.
14. Grab bar backers to be centered at grab bar mounting height.
15. Toilet paper holder backer to be centered at toilet paper holder mounting height.
16. Gypsum to be jointed above all doors in line with jambs.
17. Gypsum to be jointed above and below all windows in line with jambs.
18. Sprinkler head backer location may vary based on sprinkler design.

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: BACK DOOR SIDEWALL	DATE: 6/28/2019 SCALE: 1/8" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-20

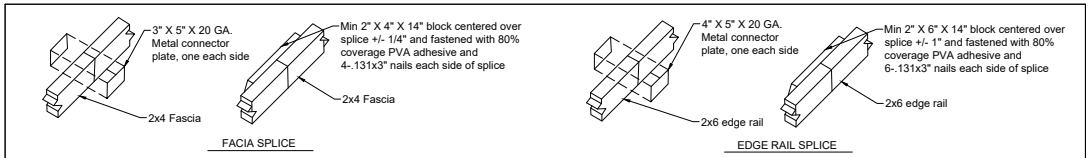


CEILING BOARD LAYOUT



DRAWING NOTES:

- START WITH A 32" CUT PIECE OF CEILING BOARD
- 1x4 OR PLANT STANDARD CEILING BACKERS FOR WALL TIE-IN.
- ALL DUCTS TO BE MINIMUM R-4.



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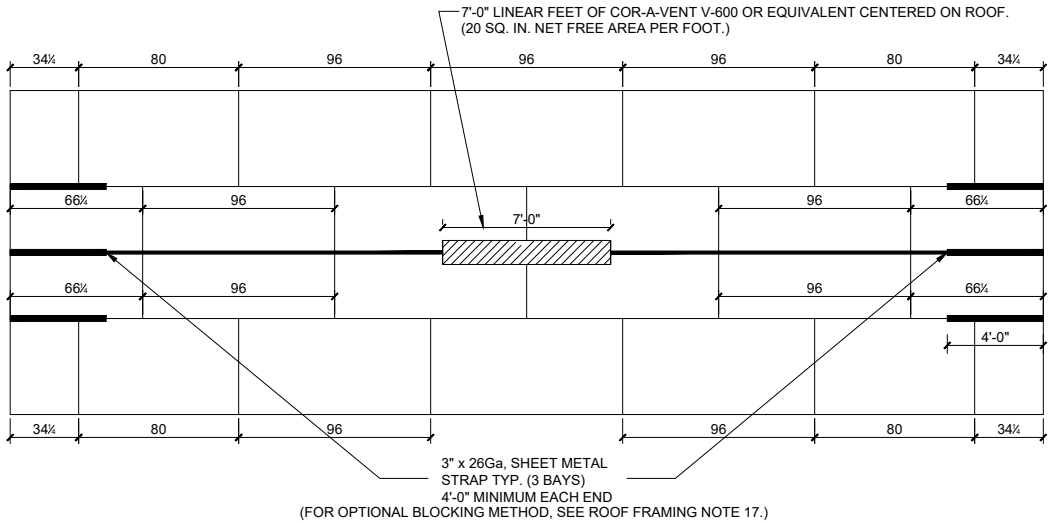
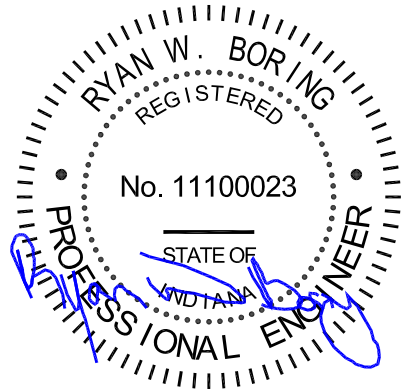
Roof Framing Notes

1. The roof trusses shall be a maximum of 16" o.c.
2. Overall shipping width shall not exceed 14'.
3. The roof pitch shall be nominal 3:12.
4. The attic insulation shall be R-38 blown insulation.
5. The roof sheathing shall be at least 7/16" structurally rated OSB with 24/16 index minimum span rating.
6. Roof felt shall be 2 layers of 15# felt or 1 layer of 30# felt.
7. The roof covering shall be cemented to the roof decking with 6" wide strip cement, around the perimeter.
8. Ice and water shield, per ASTM D1970 to be self-adhering rubberized asphalt 40 mils minimum thick shall be installed (36" width from eaves).
9. The roof shall have a light or white colored composition 240# architectural style shingle.
10. The roof shall have Cor-A-Vent V-600 ridge vents or equivalent.
11. The roof sheathing shall span at least 2 truss bays.
12. 24" x 24" ice and water shield shall be installed around all roof penetrations.
13. All roof penetrations shall be capped with a galvanized or aluminum metal cap.
14. Foam baffles designed for 16" o.c. truss spacing to be used to maintain 1" air gap between the roof decking and insulation.
15. All framing members to be #2 SPF or equal.
16. 3" x 26 GA sheet metal strap (per N370c) @ panel edges. See roof sheathing layout for location. Fasten with 2 rows of 7/16" x 1" x 16 GA staples @ 1.7" o.c. (one row each side of panel seam).
17. In place of sheet metal straps, block roof decking panel edges 12 truss bays from gable end. Fasten roof sheathing to blocking in this area with .131 nails @ 4" o.c. edge/10" o.c. field/2 ½" o.c. boundary. Blocks shall be 2x4 stud grade SPF. min. Fasten thru truss top chord to block with 2-7/16" x 2-1/2" x 15Ga. staples each end of block. Staples may be toed.
18. Foam nail polyurethane structural foam adhesive, or equivalent, to be installed per dead load test fastening requirements.

FASTENING SCHEDULE - ROOF		
DESCRIPTION	FASTENER	APPLICATION
Top plate to truss.	0.131 x 3" Nail	3 each
	OR #8 x 4" screw	3 each
Sheathing to trusses (for optional blocked diaphragm see Note 17.)	0.131 x 2" nail	6"o.c. edges 7-1/2"o.c. field into each truss unblocked diaphragm
Blocking to truss	7/16"C x 2-1/2"L x 15Ga staple	2 each at each end.
Gypsum ceiling to truss	Foam adhesive (as per installation instructions.)	
Layflat to Gypsum ceiling	Tack in place with foam adhesive.	
Fascia to truss	(3) each, 7/16"C x 2-1/2"L x 15Ga. staples through fascia	
Double trusses	7/16"C x 2-1/2"L x 15Ga. staples or .131 x 3" nail, 8" o.c.	
Edge rail to truss	(8) 7/16"C x 2-1/2"L x 15Ga. staples or (5) .131 x 3" nails	
Edge rail to top plate	0.131 x 3-1/2" nails or #10 x 4" screws @ 12" o.c. toed.	
Strap to edge rail	See sidewall drawings for type and quantity of fasteners	

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: ROOF FRAMING LAYOUT	DATE: 6/28/2019 SCALE: 1/8" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-21





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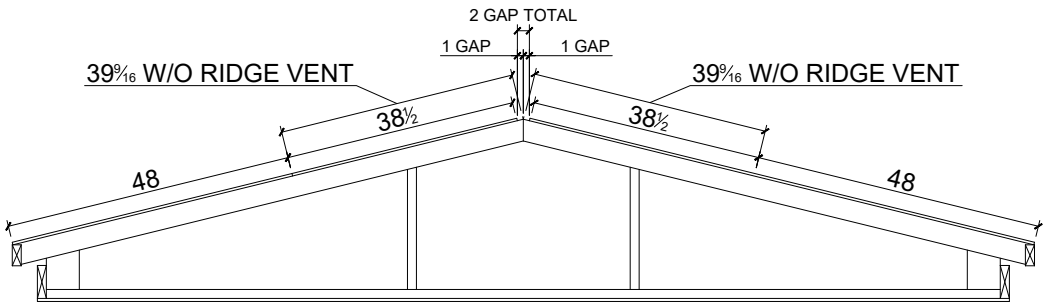
Note: Roof decking cut back only at ridge vent area.



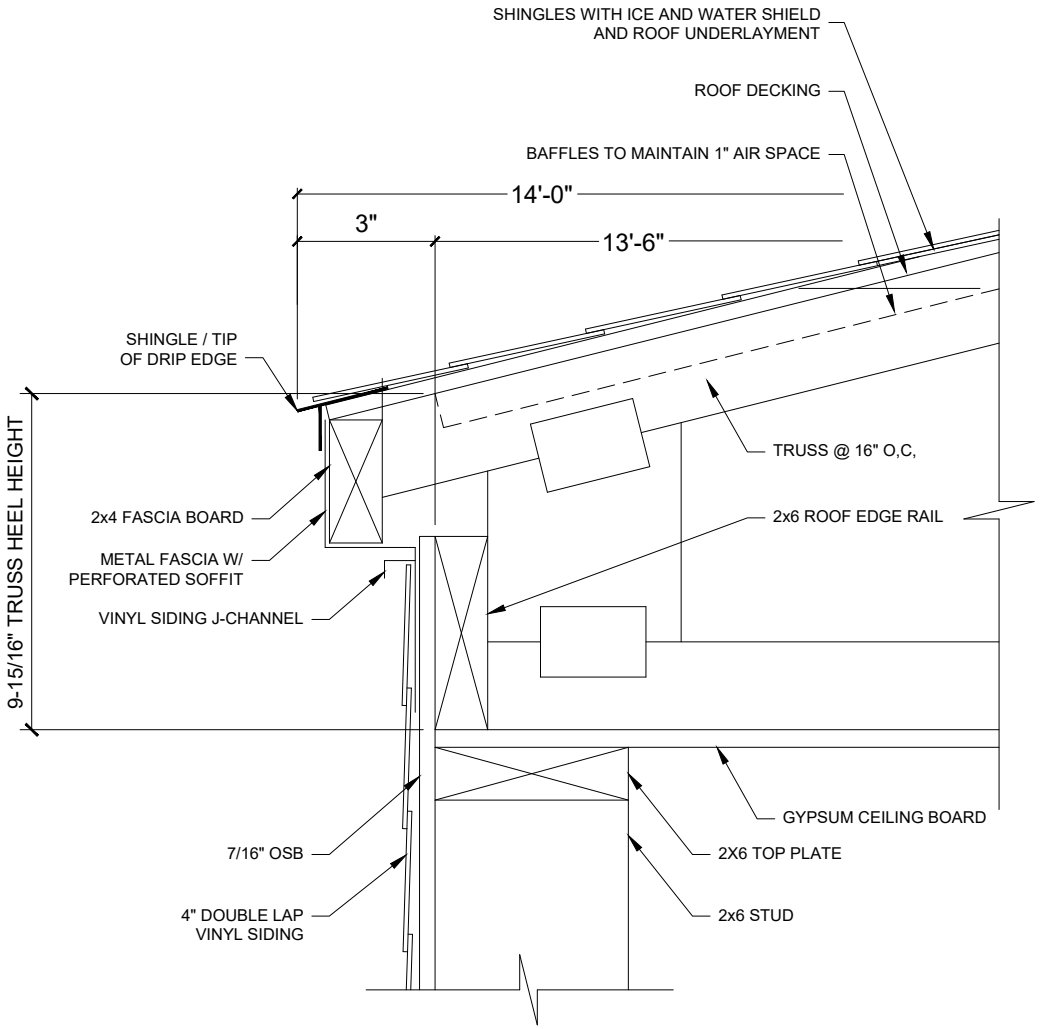
GAP DETAIL - ROOF DECKING AT RIDGE VENT LOCATION
SCALE 3/8" = 1'

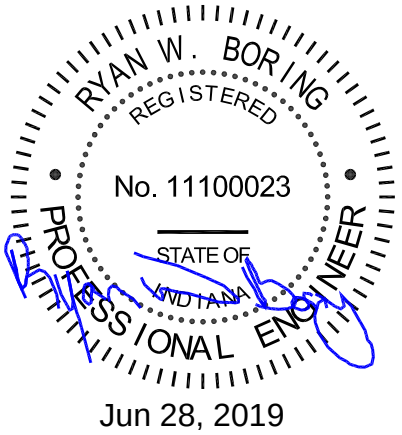
- ATTIC RIDGE VENT (INSTALL PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.

Roof Edge Detail Notes

1. The roof sheathing shall be at least 7/16" structurally rated OSb with 24/16 index minimum span rating.
2. Decking cuts include endwall overhangs.
3. Use roof decking off-fall for roof wind diverters and vinyl siding.
4. H-Clips shall be used at all joints between trusses.

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: ROOF SHEATHING LAYOUT	DATE: 6/28/2019 SCALE: 1/8" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-22





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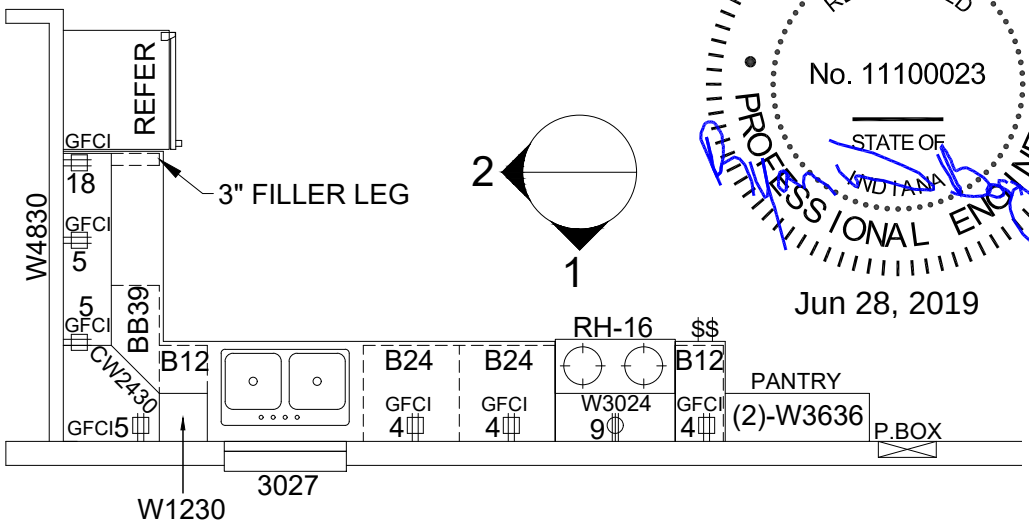
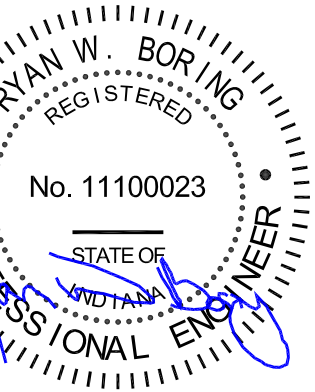
Roof Overhang General Notes

1. The roof trusses shall be spaced at 16” O.C. with a 3” overhang. Overall shipping width shall not exceed 14 feet.
2. The roof pitch shall be nominal 3:12.
3. The attic insulation shall be R-38 blown.
4. Foam baffles designed for 16” o.c. truss spacing to be used to maintain 1” air gap between the roof decking and insulation.
5. Perforated soffit at eave shall provide the free air area required by 3280.504(d)(1)(i).

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: ROOF OVERHANG DETAIL	DATE: 6/28/2019 SCALE: 1/2" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-23





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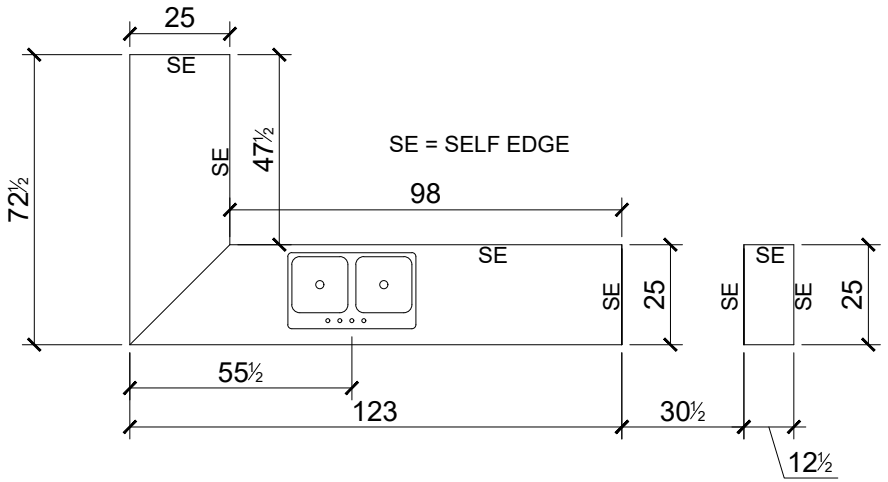
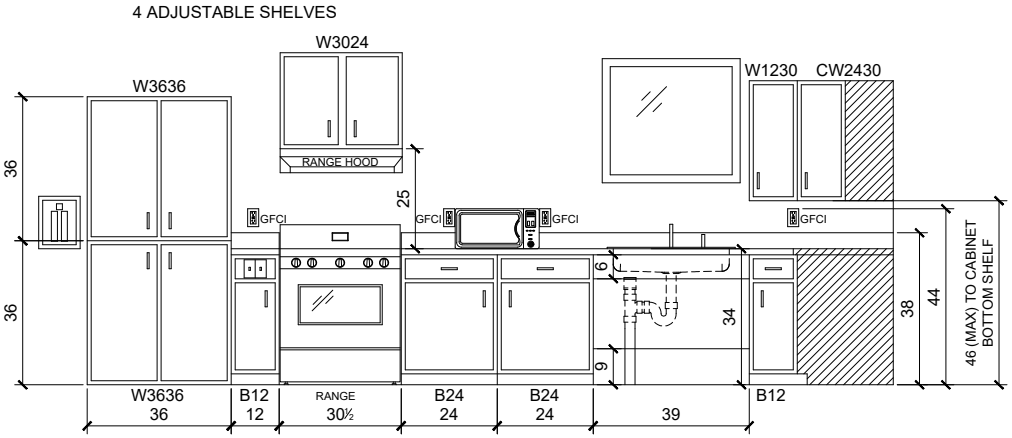
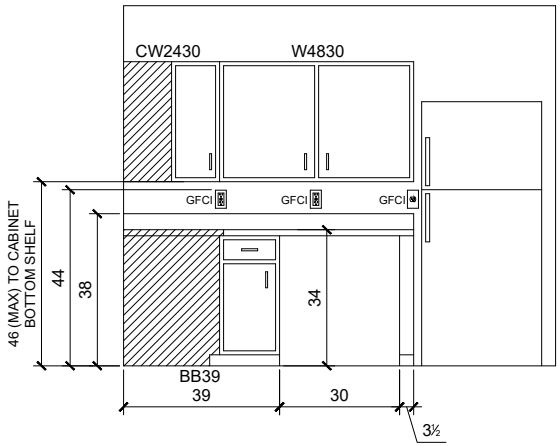
KITCHEN CABINET LAYOUT - 1/4" = 1'-0"



KITCHEN COUNTERTOP DETAILS - 1/4" = 1'-0"



"1" - KITCHEN CABINET ELEVATION - 1/4" = 1'-0"

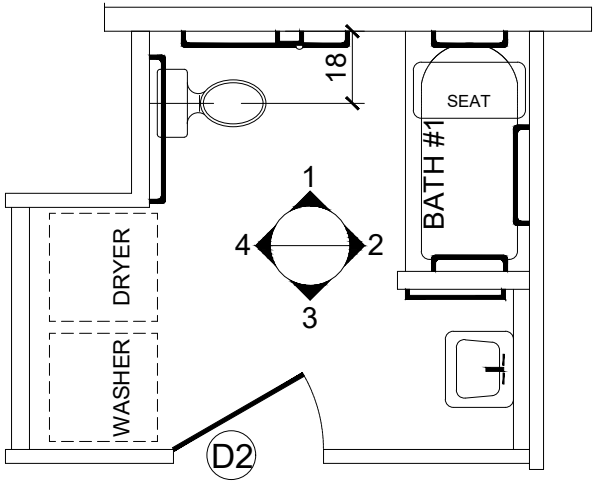


"2" - KITCHEN CABINET ELEVATION - 1/4" = 1'-0"

Notes

1. See appendix A-4 for details of access panel.
2. Access panel clearances shall conform to UFAS 4.24.3.

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: KITCHEN ELEVATIONS	DATE: 6/28/2019 SCALE: 1/8" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-24.1



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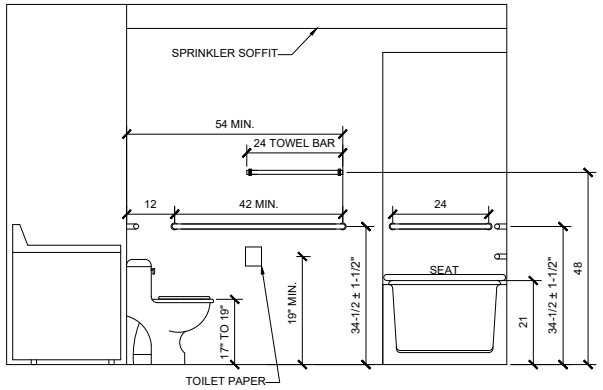
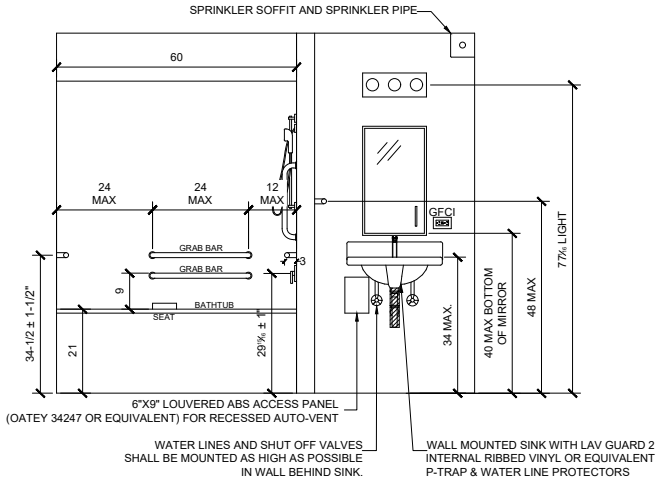
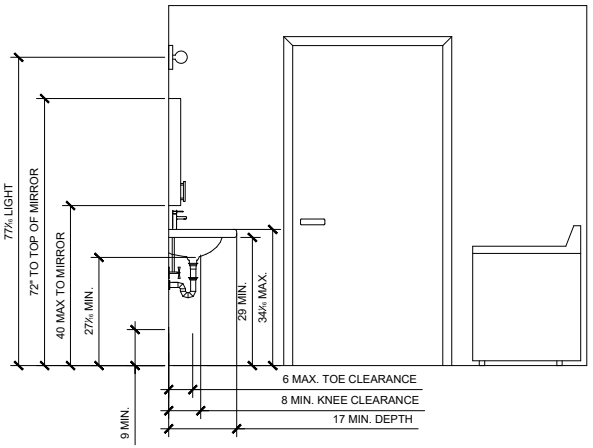


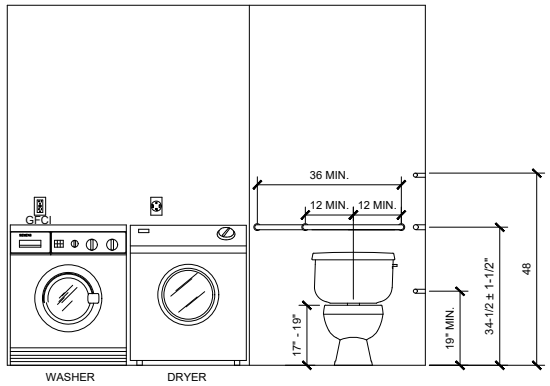
1 BATHROOM ELEVATION



2 BATHROOM ELEVATION



3 BATHROOM ELEVATION

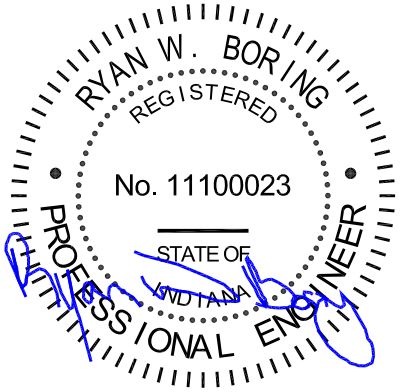


4 BATHROOM ELEVATION

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: BATHROOM #1 ELEVATIONS	DATE: 6/28/2019 SCALE: 1/4" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-24.2

RESERVED

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: RESERVED	DATE: 6/28/2019 SCALE: 1/8" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-24.3



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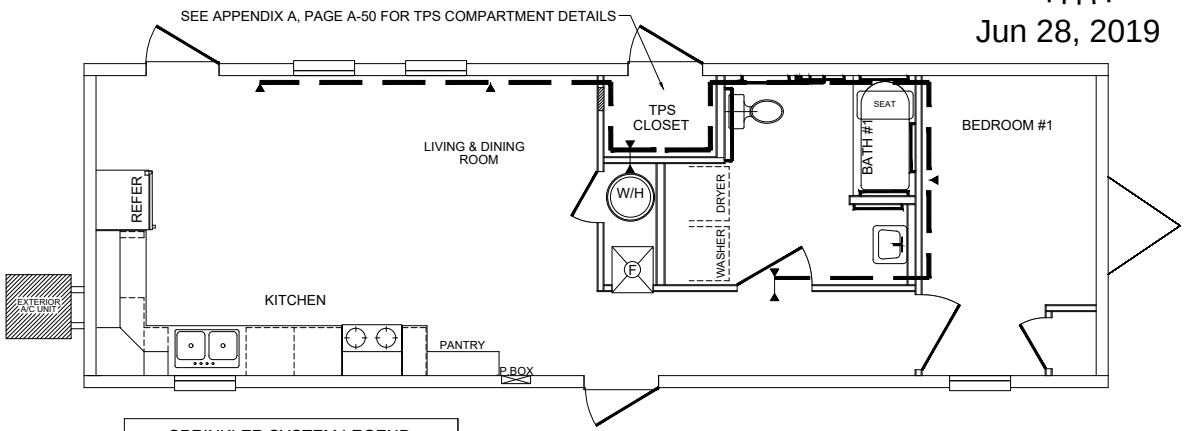


SPRINKLER SYSTEM LEGEND	
▶	SIDEWALL SPRINKLER HEAD
▬ ▬	1" SPRINKLER PIPE

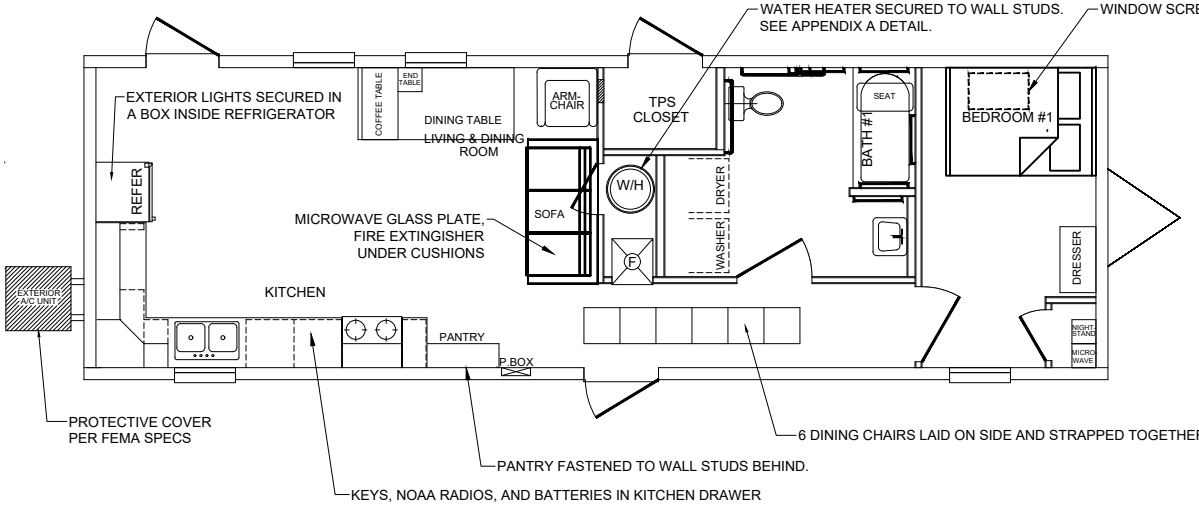
Sprinkler Notes:

1. See FEMA section 25 for sprinkler notes.

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: SPRINKLER SYSTEM LAYOUT	DATE: 6/28/2019 SCALE: 1/8" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-25.1

RESERVED

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: RESERVED	DATE: 6/28/2019 SCALE: 1/8" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-25.2



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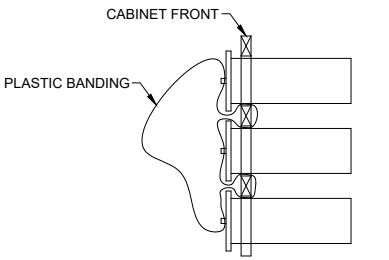
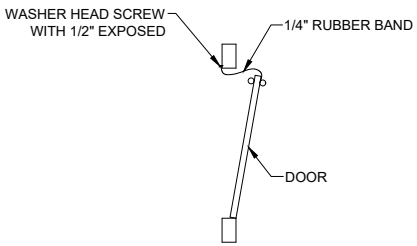


SECUREMENT OF DRAWERS

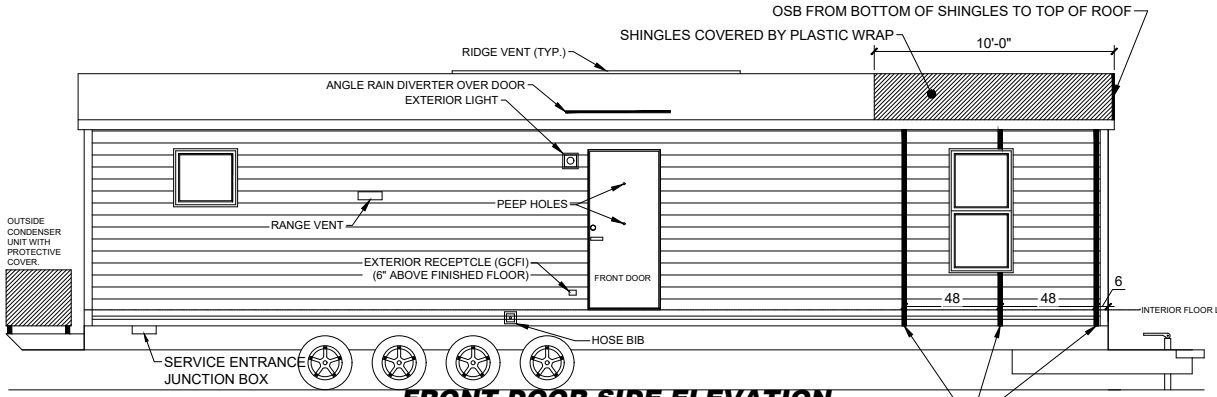


SECUREMENT OF INTERIOR DOORS

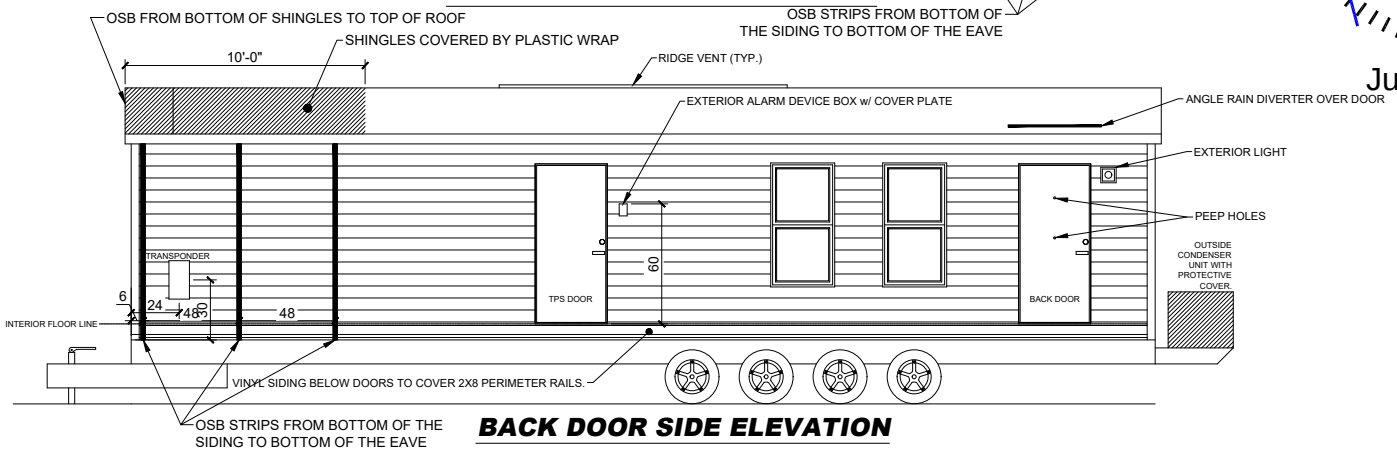
14' Wide - Ship Loose Plan General Notes

Sofa	Place against the interior wall. Microwave glass plate and fire extinguisher to be placed under cushions.
Coffee & end table	Turn upside down and place in the dining table.
Dining table	Laid upside down on the floor against the sidewall.
Dining table chairs	Chairs to be laid on their side in the hallway and strapped together.
Kitchen cabinets	All upper and lower cabinets to be held shut with rubber bands around door pulls.
Range / Oven	Secure to the floor and installed anti-tip bracket provided by the manufacturer.
Refrigerator	Secure to the floor and wall stud at top rear. Refrigerator is be unplugged.
Dresser	Fasten to wall studs with 2 - #8 x 3” screws. Drawers secured with plastic banding.
Microwave	Place in the bedroom closet.
Window Screens	Place under Bedroom #1 Bed.
Bunk Bed	Fasten to wall with (2) - #8 x 3" screws.
Pantry Shelves	Place all at bottom of pantry
Toilet Tank Lids	Place in sofa under cushions

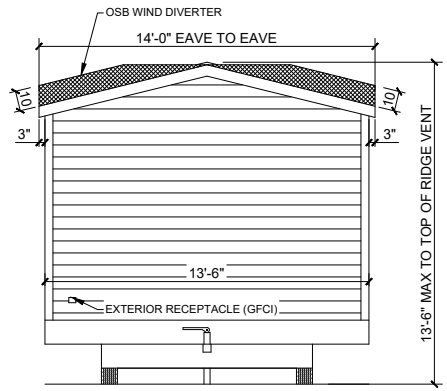
FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: SHIP LOOSE LAYOUT	DATE: 6/28/2019 SCALE: 1/8" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-26



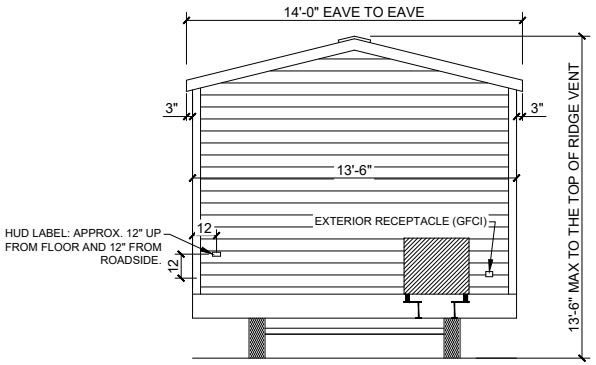
FRONT DOOR SIDE ELEVATION



BACK DOOR SIDE ELEVATION



HITCH END ELEVATION



TAIL END ELEVATION

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General Notes

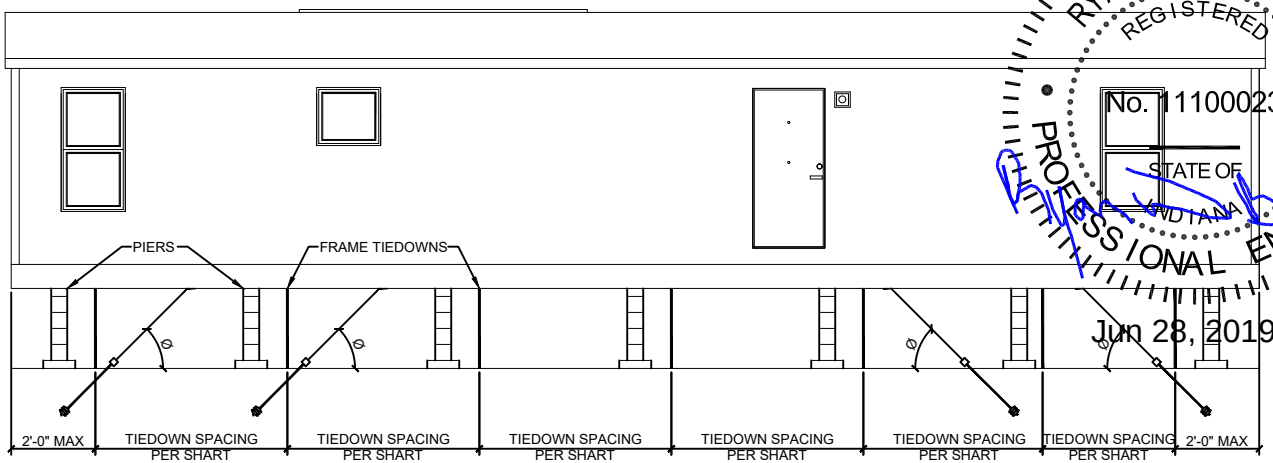
1. Temporary wind guards for both shingles and siding shall be installed on the MHU exterior.
2. Vinyl siding wind guards shall be made of OSB or 1x2's.
3. Shingle wind guards shall be made of OSB.
4. Shingle wind guards shall not extend above the maximum transportation height.
5. Shingles shall be secured with a plastic wrap on the first 10'-0" of the MHU from the hitch end.
6. OSB off-fall from roof decking may be used for roof wind diverter and vinyl siding wind guards.

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: TRANSIT PROTECTION (EXTERIOR)	DATE: 6/28/2019 SCALE: 1/8" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-27

RESERVED

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: RESERVED	DATE: 6/28/2019 SCALE: 1/8" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-28

TYPICAL SIDE ELEVATION SHOWING TIEDOWN SPACINGS.



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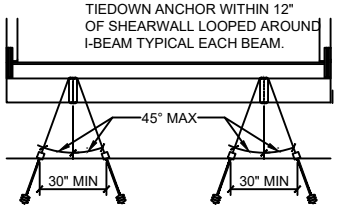
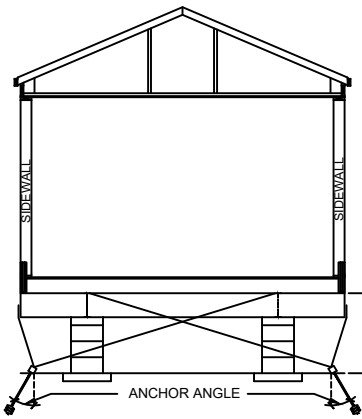
Tiedowns are based on roof diaphragm spanning the entire length of the unit (68'-0" Max) (i.e. Based on uplift and load into floor diaphragm only). Therefore tiedowns are required at each end for end shearwall overturning and lateral forces as follows.



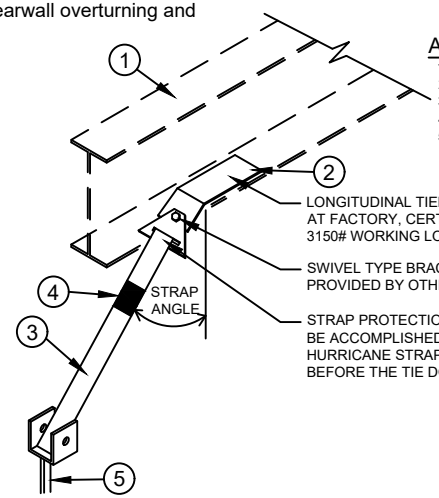
I-BEAM TIES FOR OVERTURNING



TYPICAL CROSS SECTION SHOWING TIEDOWNS

* PIER HEIGHT INCLUDES DEPTH OF I-BEAM

"H" MAX = MAXIMUM VERTICAL DISTANCE TO DIAGONAL TIE POINT OF LOAD.



ATTACHMENT DETAIL

1. TYPICAL LONGITUDINAL I-BEAM
2. FACTORY INSTALLED LONGITUDINAL TIEDOWN BRACKET
3. TIEDOWN STRAP
4. BANDING SEAL
5. GROUND ANCHOR - INSTALLED TO FULL DEPTH OF ANCHOR HEAD

Notes

1. VERTICAL TIES ARE REQUIRED IN ADDITION TO FRAME TIEDOWNS
2. VERTICAL TIES MAYBE SECURED TO THE SAME GROUND ANCHOR AS THE FRAME TIEDOWNS WHEN DOUBLE HEADED ANCHOR IS CAPABLE OF RESISTING COMBINED LOADING.
3. FRAME TIEDOWNS AND ANCHORS ARE NOT SUPPLIED BY FEMA.
4. VERTICAL TIE STRAPS ARE NOT SUPPLIED BY FEMA ANCHORS AND END TREATMENTS ARE TO BE SUPPLIED BY OTHERS.
5. GROUND ANCHORS AND FRAME TIES SHALL BE CAPABLE OF RESISTANCE AN ULTIMATE TENSION LOAD OF 4,725# AND ARE TO BE INSTALLED PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS, BUT ARE NOT TO EXTEND BEYOND THE SIDE-WALL OF THE HOME.
6. STEEL ANCHORING EQUIPMENT EXPOSED TO THE WEATHER SHALL BE PROTECTED WITH AT LEAST 0.30OZ OF ZINC PER SQUARE FOOT OF STEEL.
7. DESIGN BASED ON 99-1/2" I-BEAM SPACING AND A MAXIMUM SIDEWALL HEIGHT OF 7'-6".
8. LONGITUDINAL TIES ARE INSTALLED AT BOTTOM OF I-BEAMS IN ACCORDANCE WITH THE TABLE AND NOTES 4, 6, AND 7.
9. ANCHORS SHALL BE CERTIFIED FOR THESE CONDITIONS BY A PROFESSIONAL ENGINEER, ARCHITECT, OR A NATIONALLY RECOGNIZED TESTING LABORATORY AS TO THEIR RESISTANCE, BASED ON THE INSTALLED ANGLE OF DIAGONAL TIE AND/OR VERTICAL TIE LOADING AND ANGLE OF ANCHOR INSTALLATION AND TYPE OF SOIL IN WHICH ANCHOR IS TO BE INSTALLED.
10. GROUND ANCHORS SHALL BE IMBEDDED BELOW THE FROST LINE AND BE AT LEAST 12" ABOVE THE WATER TABLE.
11. GROUND ANCHORS SHALL BE INSTALLED TO THEIR FULL DEPTH AND STABILIZER PLATES SHALL BE INSTALLED TO PROVIDE ADDED RESISTANCE TO OVER TURNING OR SLIDING FORCES.
12. ANCHORING EQUIPMENT SHALL BE CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER OR ARCHITECT TO RESIST THE SPECIFIED FORCES IN ACCORDANCE WITH TESTING PROCEDURES IN ASTM STANDARD SPECIFICATION D3593-97. STANDARDS SPECIFICATION FOR STRAPPING FLAT STEEL AND SEALS.
13. STRAPPING TO BY TYPE 1, FINISH B, GRADE 1 STEEL STRAPPING , 1-1/4" WIDE AND .035 INCHES IN THICKNESS, CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER OR ARCHITECT AS CONFORMING WITH ASTM STANDARD SPECIFICATION D3953-97 STANDARD SPECIFICATION FOR STRAPPING STEEL AND SEALS.

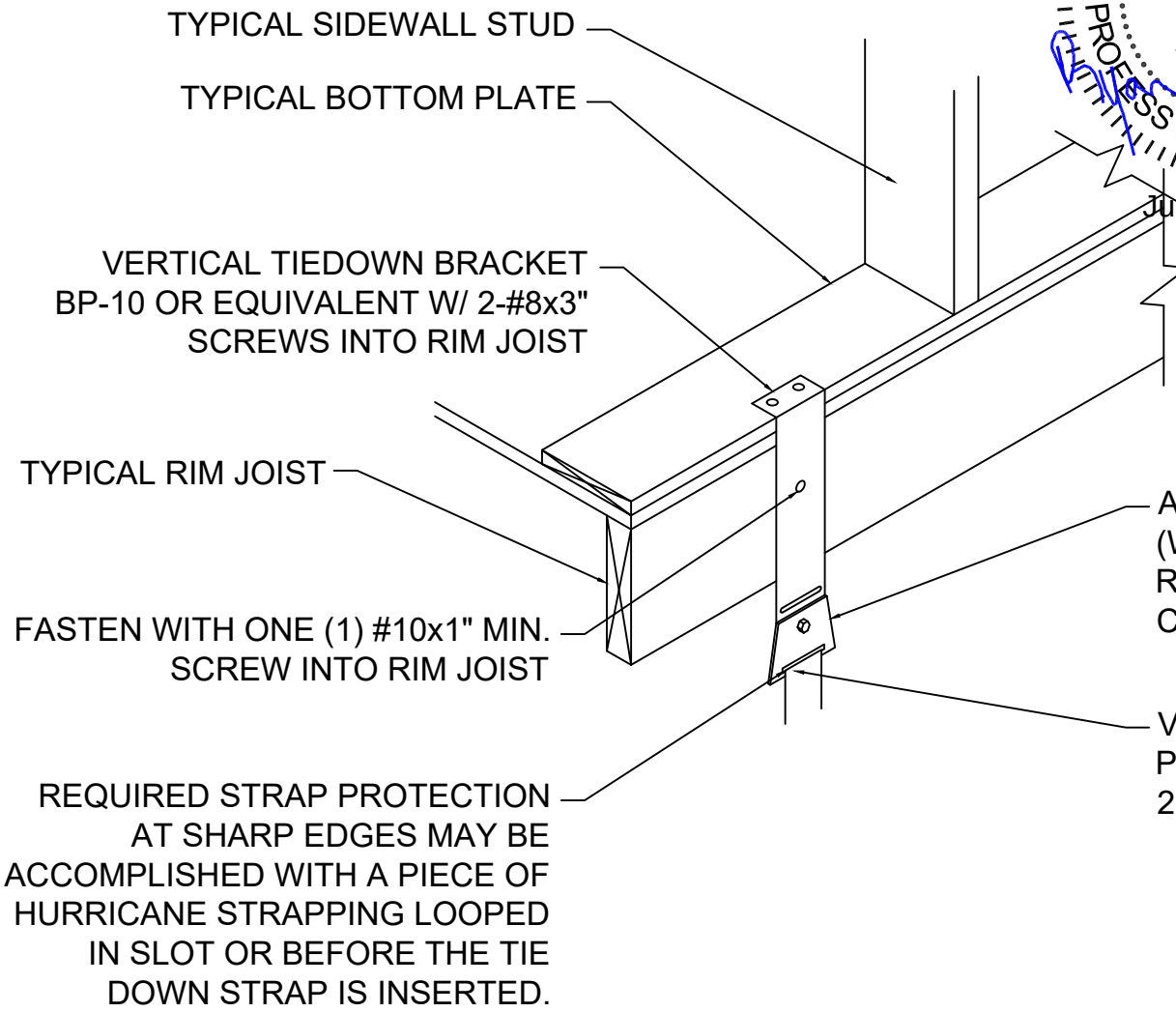
FRAME TIEDOWN SPACING CHART (SEE NOTE 10)

FLOOR WIDTH	ROOF SLOPE MAXIMUM	EAVE OVERHANG	WIND ZONE 3		
			SPACING	"H" MAX	ANCHOR ANGLE
162"	2.95 / 12	3" MAX	5'-4"	57"	24.6°

LONGITUDINAL TIEDOWN QUANTITY CHART

		WIND ZONE 3		
FLOOR WIDTH	ROOF SLOPE MAXIMUM	QUANTITY MIN. EACH END OF EACH SECTION	MINIMUM ANCHOR ANGLE Ø	MAXIMUM ANCHOR ANGLE Ø
162"	2.95 / 12	4	28.2°	45.0°

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: TIEDOWN SYSTEM	DATE: 6/28/2019 SCALE: 1/8" = 1'-0"	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-29.1



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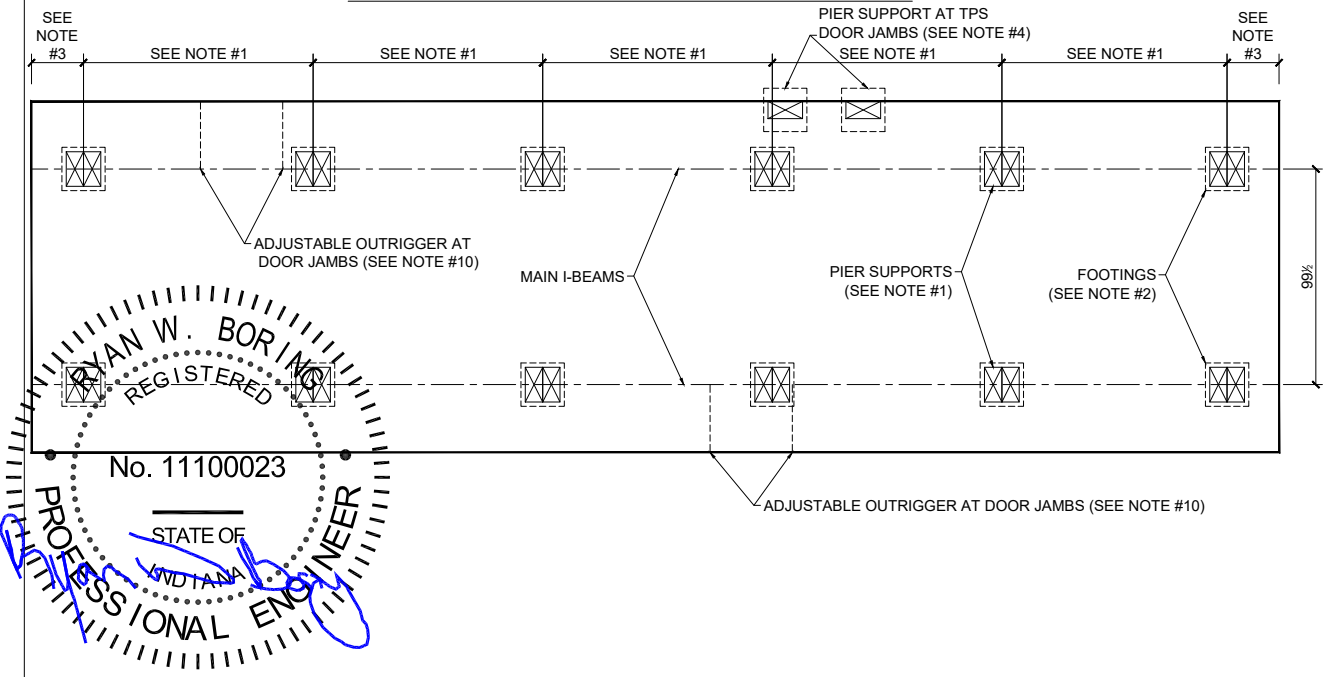
Notes

1. FOR USE IN WIND ZONE 3.
2. FOR USE WITH 99-1/2" I-BEAM SPACING.
3. USE BP-10 "SWIVEL STRAP ASSEMBLY" PART NO. 59337A FOR UP TO 1810# DESIGN LOAD CAPACITY OR EQUIVALENT.
4. REF BLUELINX CORPORATION TEST REPORT A13-D46-1 FOR BP-10 VERTICAL TIE CONNECTOR OR EQUIVALENT.

			WIND ZONE 3		
FLOOR WIDTH	SIDEWALL HEIGHT	ROOF SLOPE MAXIMUM	SPACING	REQUIRED DESIGN LOAD CAPACITY	REQUIRED ULTIMATE LOAD CAPACITY
162"	90"	2.95 / 12	5'-4"	1296#	1944#

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: EXTERIOR WALL TIEDOWN DETAILS	6/28/2019 SCALE: NTS	14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-29.2

TYPICAL BLOCKING LAYOUT FOR 14' WIDE MHU



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Pier and Footing Notes

1. SEE TABLE B - MINIMUM FOOTER SIZE TABLE FOR FOOTER SIZE AND THICKNESS.
2. PIERS SHALL BE LOCATED AT A MAXIMUM OF 2 FEET FROM BOTH ENDS.
3. PERIMETER PIERS ARE REQUIRED AT TPS EXTERIOR DOOR.
4. FOR DOUBLE STACK PIER CONSTRUCTION SEE DETAIL 1.
5. PIER LOADS ARE BASED ON:
   a. 40 PSF FLOOR LIVE LOAD
   b. 10 PSF FLOOR DEAD LOAD
   c. 5 PSF WALL LOAD
   d. 40 PSF ROOF LIVE LOAD
   e. 10 PSF ROOF DEAD LOAD
6. TABULATED LOADS INCLUDE 150 POUNDS FOR THE PIER LOAD AND 150 PSF FOR THE ASSUMED WEIGHT OF THE 6" THICK CONCRETE FOOTER.
7. SHIMS, WHEN REQUIRED, ARE TO BE USED IN PAIRS, INSTALLED IN OPPOSITE DIRECTIONS AND BE FITTED AND DRIVEN TIGHT BETWEEN MAIN I-BEAM FRAME AND SHIMS OR CAPS BELOW. SHIMS MUST BE INSTALLED SO THAT ALL GAPS BETWEEN THE HOME'S BEARING MEMBER (I-BEAM OR RIM OR CENTERLINE JOISTS) ARE FILLED FOR THE LENGTH OF THE PIER OR REQUIRED PLATES. MINIMUM COMPRESSIVE STRESS CAPACITY FOR SHIMS IS 425 PSI.
8. STEEL CAPS MUST BE PROTECTED BY A MINIMUM OF A 10 MIL COATING OF AN EXTERIOR PAINT OR AN EQUIVALENT CORROSION RESISTANT PROTECTION.
9. ADJUSTABLE OUTRIGGER, PART 1055-18 BY OLIVER TECHNOLOGIES, OR EQUIVALENT SHALL BE INSTALLED AT EXTERIOR DOOR JAMBS, EXCLUDING TPS DOOR LOCATION.
10. FEMA SET-UP VENDOR SHALL ADJUST PIER SPACING TO AVOID CONFLICT WITH PLANT INSTALLED TIEDOWN BRACKETS.

TABLE A - MINIMUM PIER CAPACITY (FRAME BLOCKING ONLY)

SECTION WIDTH (FEET)	SIDE OVERHANG (INCHES)	ROOF LIVE LOAD (PSF)	MINIMUM PIER CAPACITY (POUNDS) MAXIMUM PIER SPACING (FEET)			
			4	6	8	10
14'-0" WIDE (162" FLOOR)	3" MAX	40	3420#	4875#	6330#	7785#

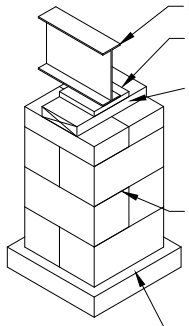
TABLE B - MINIMUM FOOTER SIZE TABLE

DOUBLE STACK SQUARE FOOTERS

FOOTER LOAD	SOIL BEARING CAPACITY (PSF) 1000			1500			2000			3000		
	Y	X	THICKNESS	Y	X	THICKNESS	Y	X	THICKNESS	Y	X	THICKNESS
3000	21	21	4	17	17	4	16	16	4	16	16	4
3500	23	23	4	19	19	4	16	16	4	16	16	4
4000	24	24	4	20	20	4	17	17	4	16	16	4
4500	26	26	5	21	21	4	18	18	4	16	16	4
5000	27	27	6	22	22	4	19	19	4	16	16	4
5500	29	29	7	23	23	4	20	20	4	17	17	4
6000	30	30	7	24	24	4	21	21	4	17	17	4
6500	31	31	8	25	25	5	22	22	4	18	18	4
7000	32	32	8	26	26	5	23	23	4	19	19	4
7500	33	33	9	27	27	6	24	24	4	19	19	4
8000	34	34	9	28	28	6	24	24	4	20	20	4

DETAIL 1 - DOUBLE STACKED CONCRETE BLOCKS

(MAX. HEIGHT IS 67")



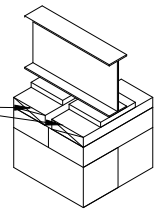
MAIN I-BEAM WITH 2.6" MINIMUM FLANGE WIDTH

SHIMS, NOT EXCEEDING 1" IN THICKNESS (SEE NOTE #8)

HARDWOOD PLATES OR OTHER LISTED MATERIALS NOT EXCEEDING 2" IN THICKNESS. 7 ¼" MIN. WIDTH UP TO 9000 LB LOAD DETERMINED FROM TABLE B. USE 14 ½" WIDE OR SPLIT CAP PER DETAIL FOR HIGHER LOADS (16,000 LBS MAXIMUM.)

DOUBLE STACKED SOLID OR CELLED, CONCRETE BLOCKS. EACH LAYER IS INTERLOCKED WITH LAYER BELOW AS SHOWN. OPEN CELLS ARE PLACED VERTICALLY ON FOOTING. MORTAR IS NOT REQUIRED.

TYPICAL FOOTING INSTALLED BELOW FROST LINE.



WHEN SPLIT CAPS ARE USED AND THE JOINT RUNS PERPENDICULAR TO THE MAIN I-BEAMS, SHIMS AND BLOCKS MUST BE INSTALLED OVER EACH INDIVIDUAL CAP.

FEMA	COMPANY: Manufactured Housing Units Federal Emergency Management Agency	TITLE: DOUBLE STACK PIER LAYOUT AND DETAILS	DATE: 6/28/2019 SCALE: NTS	VERSION: 14' WIDE MHU (FURNACE)	DRAWING NO. 14F1-30