

FINISH GRADE SHALL SLOPE AWAY FROM FOUNDATION A MINIMUM OF 6" WITHIN THE FIRST 10' PER SEC. R401.3



COTTAGE



2. Prior to commencement of any work the contractor shall visit the project to compare the scope of work shown on the Drawings and other contract Documents with existing conditions. Promptly report any errors, omissions, inconsistencies or other detrimental conditions. The Drafting Firm if the contractor fails to perform this obligation, the contractor will be responsible for all costs and damages associated with actions required to correct unreported conditions that otherwise could have been avoided.
3. The Contractor shall secure and pay for the Building Permit and other permits and Governmental fees, licenses and inspections necessary for proper execution and completion of the work. Scheduling of approvals and inspections by authorities having jurisdiction over the work is the responsibility of the contractor. unless otherwise specified on contract between Builder and Owner.
4. Unless otherwise stipulated in the contract documents, the contractor shall provide and pay for all labor, materials, taxes, equipment, tools, construction equipment, machinery, transportation and other facilities necessary for proper execution and completion of the work.
5. The Contractor warrants to the owner that materials and equipment furnished under the contract will be new and of good quality unless otherwise permitted by the contract documents. the work will be free of defects and will be completed in neat and workman like manner acceptable to the owner.
6. Contractor shall provide the owner with a written warranty covering all work preformed under the contract. warranty shall be for a period of one year commencing on the date of substantial completion.
7. The Contractor shall promptly correct, at no cost to the owner and without change in contract time, all nonconforming or defective work whether discovered before or after substantial completion.
8. In the event that discrepancies are found between drawings and drawing and specifications the contractor shall request a clarification from the Drafting Firm in writing.
9. The contract documents convey design intent and the contractor shall furnish all necessary labor and materials to complete the work even though all materials may not be specified called out or detailed on the drawings.
10. All manufactured articles, materials, and equipment shall be applied, installed connected, erected, used, cleaned, and conditioned in accordance with the manufacture's written specifications and instruction unless specified herein to the contrary.
11. Wiring and conduit is to be concealed in both new and existing partitions with all outlets, switches and similar devices mounted in recessed junction boxes with flush cover plates. surface mounted conduit, wire mold, outlets, etc. will not be permitted unless allowed buy building department.
12. Furnish and install all necessary components to provide a fully operational fire protection system that complies with applicable codes and the requirements of Authorities having jurisdiction. integrate the operation of this system with the shell building fire protection system.
13. Electrical and Telephone outlets are to be at 18" above finish floor unless otherwise noted on the drawings.
14. The contractor shall verify all mechanical, plumbing, and electrical requirements prior to commencement of the job.

1. Dimensions take precedence over scale on the construction drawings. notify the Drafting Firm of discrepancies between drawing dimensions and field conditions.
2. Dimensions are given to face of walls unless otherwise noted.
3. Partitions thickness is derived from description of the partition construction and or designated detail.

1. Cover Page
2. General Notes
3. Floor Plan
4. Foundation Plan
5. Wall Bracing
6. Cottage Elevation
7. Cottage Roof Framing
8. Bungalow Elev / Framing
9. Ranch Elev / Framing
10. Plumbing notes
11. Electrical 1
12. Electrical 2
13. HVAC PLAN

[illegible]

REVIEWED FOR CODE COMPLIANCE BY:
WILLDAN ENGINEERING

Approval of these plans & specifications shall not be construed to be a permit for, or an approval of any violation of any Federal, State, County or City laws or ordinances. One set of approved plans must be kept on the job until completion.

3:27:40 PM Mar 12, 2024

BUILDING AREA	
LIVABLE	1213
PATIO	139
PORCH	156
TOTAL	1508

3/11/2024

1/4" = 1'

1

Codes:
• 2018 International Building Code. • 2018 International Residential Code. • 2018 International Mechanical Code • 2018 International Plumbing Code • 2018 International Fire Code • 2017 National Electrical Code • 2018 International Energy Conservation Code

Structural Design Criteria:
• Basic Wind Speed; 90 mph (3 second gust) • Wind Exposure Category; C • Seismic Design Category; B • Roof live load; 20 lbs Minimum

Foundation:
1. Foundation design is base on minimal soil bearing values as per current Building Codes. 2. All footings to bear minimum 12" below native soil, or an engineered pad. When building Pad please provide certificate of compaction, to building department. 3. Place concrete only on clean and firm soil. 4. Allowable soil bearing pressure as follows: a. 1000 PSF @ 18" Below Natural Grade (for dead loads). b. 1500 PSF @ 18" Below Natural Grade (for Dead and Live Loads). c. Allow 1/3 increase in allowable stresses for toe pressures on eccentrically loaded foundation or foundations subject to overturning loads. 5. Bottom of all footing shall bear on undisturbed soil 12" below natural grade; R403.1.4 or as required by sec R403.1.4.1 and R403.1.4.2. 6. Top surface of footings shall be level; the bottom surface shall not have a slope exceeding one unit vertical in 10 units horizontal, 10%.

Termite Control:
R318.1. Subterranean termite control methods, in areas subject to damage from termites as indicated by Table R301.2 (1), methods of protection shall be one of the following methods or a combination of these methods: R318.2 Chemical termiticide treatment. Chemical termiticide treatment shall include soil treatment and/or field applied wood treatment. The concentration, rate of application and method of treatment of the chemical termiticide shall be in strict accordance with the termiticide <i>label</i>. R318.3 Barriers. <i>Approved</i> physical barriers, such as metal or plastic sheeting or collars specifically designed for termite prevention, shall be installed in a manner to prevent termites from entering the structure. Shields placed on top of an exterior foundation wall are permitted to be used only if in combination with another method of protection. R318.4 Foam plastic protection. In areas where the probability of termite infestation is "very heavy" as indicated in Figure R301.2(6), extruded and expanded polystyrene, polyisocyanurate and other foam plastics shall not be installed on the exterior face or under interior or exterior foundation walls or slab foundations located below <i>grade</i>. The clearance between foam plastics installed above <i>grade</i> and exposed earth shall be at least 6 inches (152 mm).

Mechanical:
R303.9 required heating. 1. When the winter design temperature in Table R301.2 (1) is below 60°F (16°C), every <i>dwelling unit</i> shall be provided with heating facilities capable of maintaining a minimum room temperature of 68°F (20°C) at a point 3 feet (914 mm) above the floor and 2 feet (610 mm) from exterior walls in all habitable rooms at the design temperature. The installation of one or more portable space heaters shall not be used to achieve compliance with this section. M1401.2 Access. 2. Heating and cooling <i>equipment</i> and appliances shall be located with respect to building construction and other <i>equipment</i> and appliances to permit maintenance, servicing and replacement. Clearances shall be maintained to permit cleaning of heating and cooling surfaces; replacement of filters, blowers, motors, controls and vent connections; lubrication of moving parts; and adjustments. M1401.3 Sizing. 3. Heating and cooling <i>equipment</i> and <i>appliances</i> shall be sized in accordance with ACCA Manual S based on building loads calculated in accordance with ACCA Manual J or other <i>approved</i> heating and cooling calculation methodologies.

Lumber:
1. R602.1 Identification. Load-bearing dimension lumber for studs, plates and headers shall be identified by a grade mark of a lumber grading or inspection agency that has been <i>approved</i> by an accreditation body that complies with DOC PS 20. In lieu of a grade mark, a certification of inspection issued by a lumber grading or inspection agency meeting the requirements of this section shall be accepted. 2. R602.2 Grade. Studs shall be a minimum No. 3, standard or stud grade lumber. 3. Drilling and notching of studs. Drilling and notching of studs shall be in accordance with the following: a. 1. Notching. Any stud in an exterior wall or bearing partition may be cut or notched to a depth not exceeding 25 percent of its width. Studs in nonbearing partitions may be notched to a depth not to exceed 40 percent of a single stud width. b. 2. Drilling. Any stud may be bored or drilled, provided that the diameter of the resulting hole is no more than 60 percent of the stud width, the edge of the hole is no more than 5/8 inch (16 mm) to the edge of the stud, and the hole is not located in the same section as a cut or notch. Studs located in exterior walls or bearing partitions drilled over 40 percent and up to 60 percent shall also be doubled with no more than two successive doubled studs bored. See Figures R602.6 (1) and R602.6 (2). Of 2018 IRC.

Structural Sawn Lumber
1. Joist, Beams and Ledgers, shall be Minimum Douglas Fir #2 or better. 2. Plates and Blocking, Hem Fir stud grade or better. 3. Column and Post. Douglas Fir #2 or better. 4. GLU LAM BEAMS: a. West Coast douth fb=2400 PSI, E=1.6X10-6 PSI. b. Fabrication and handling shall comply with latest AITC standards, each beam shall bear AITC stamp indicating species and stress grade. 5. Roof Sheathing: a. ½" OSB OR 5-ply CDX. With 8d nails 6" O.C. at supported edges (unblocked) and 12" in the field, staples may be used, provide the meet IRC Requirements, or as per local building department. 6. Wall Sheathing: a. 3/8" OSB with 8d nails 6" O.C. at edges, and 12" in field

Pre-Manufactured Trusses:
1. All Trusses shall be designed by an Arizona registered engineer. Truss fabrication shall be done by an approved licensed manufacture. 2. Engineered drawings shall be submitted to the local building department, and copies shall be available at job site for framing inspections.

Flashing:
1. Metal flashing to be 26 gauge.

Plumbing:
P2903.1 Water supply system design criteria. 1. The water service and water distribution systems shall be designed and pipe sizes shall be selected such that under conditions of peak demand, the capacities at the point of outlet discharge shall not be less than shown in Table P2903.1. P2903.2 Maximum flow and water consumption. 2. The maximum water consumption flow rates and quantities for all plumbing fixtures and fixture fittings shall be in accordance with Table P2903.2. P2903.3 Minimum pressure. 3. The static water pressure (as determined by the local water authority) at the building entrance for either public or private water service shall be not less than 40 psi (276 kPa). P2903.7 Size of water-service mains, branch mains and risers. 4. The size of the water service pipe shall be not less than 3/4 inch (19 mm) diameter. The size of water service mains, branch mains and risers shall be determined according to water supply demand [gpm (L/m)], available water pressure [psi (kPa)] and friction loss caused by the water meter and <i>developed length</i> of pipe [feet (m)], including <i>equivalent length</i> of fittings. The size of each water distribution system shall be determined according to design methods conforming to acceptable engineering practice, such as those methods in Appendix P and shall be <i>approved</i> by the code official.

TABLE R602.3(1) FASTENER SCHEDULE FOR STRUCTURAL MEMBERS				
ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENERa, b, c	SPACING OF FASTENERS	
Roof	1 Blocking between joists or rafters to top plate, toe nail	3-8d (2-1/2" × 0.113")		
	2 Ceiling joists to plate, toe nail	3-8d (2-1/2" × 0.113")		
	3 Ceiling joists not attached to parallel rafter, laps over partitions, face nail	3-10d		
	4 Collar tie to rafter, face nail or 1-1/4" × 20 gage ridge strap	3-10d (3" × 0.128")		
	5 Rafter or roof truss to plate, toe nail	3-16d box nails (3-1/2" × 0.135") or 3-10d common nails (3" × 0.148")	2 toe nails on one side and 1 toe nail on opposite side of each rafter or truss	
	6 Roof rafters to ridge, valley or hip rafters: toe nail face nail	4-16d (31/2? × 0.135?) 3-16d (3-1/2" × 0.135")		
Wall	7 Built-up studs-face nail	10d (3" × 0.128")	24" o.c.	
	8 Abutting studs at intersecting wall corners, face nail	16d (3-1/2" × 0.135")	12" o.c.	
	9 Built-up header, two pieces with 1/2" spacer	16d (3-1/2" × 0.135")	16" o.c. along each edge	
	10 Continued header, two pieces	16d (3-1/2" × 0.135")	16" o.c. along each edge	
	11 Continuous header to stud, toe nail	4-8d (2-1/2" × 0.113")		
	12 Double studs, face nail	10d (3" × 0.128")	24" o.c.	
	13 Double top plates, face nail	10d (3" × 0.128")	24" o.c.	
	14 Double top plates, minimum 24-inch offset of end joints, face nail in lapped area	8-16d (3-1/2" × 0.135")		
	15 Sole plate to joist or blocking, face nail	16d (3-1/2" × 0.135")	16" o.c.	
	16 Sole plate to joist or blocking at braced wall panels	3-16d (3-1/2" × 0.135")	16" o.c.	
	17 Stud to sole plate, toe nail	3-8d (2-1/2" × 0.113") or 2-16d (3-1/2" × 0.135") 2-16d (3-1/2" × 0.135")		
	18 Top or sole plate to stud, end nail	2-10d (3" × 0.128")		
	19 Top plates, laps at corners and intersections, face nail	2-8d (2-1/2" × 0.113") 2 staples 1- 3/4" ×		
Floor	20 1" brace to each stud and plate, face nail	2-8d (2-1/2" × 0.113") 2 staples 1- 3/4" ×		
	21 1" × 6" sheathing to each bearing, face nail	2-8d (2-1/2" × 0.113") 2 staples 1 -3/4?		
	22 1" × 8" sheathing to each bearing, face nail	2-8d (2-1/2" × 0.113") 3 staples 1- 3/ 4		
	23 Wider than 1" × 8" sheathing to each bearing, face nail	3-8d (2-1/2" × 0.113") 4 staples 1-3/4"		
	24 Joist to sill or girder, toe nail	3-8d (2-1/2" × 0.113")		
	25 Rim joist to top plate, toe nail (roof applications also)	8d (2-1/2" × 0.113")	6" o.c.	
	26 Rim joist or blocking to sill plate, toe nail	8d (2-1/2" × 0.113")	6" o.c.	
	27 1" × 6" subfloor or less to each joist, face nail	2-8d (2-1/2" × 0.113") 2 staples 13/4?		
	28 2" subfloor to joist or girder, blind and face nail	2-16d (3-1/2" × 0.135")	at each bearing	
	29 2" planks (plank & beam - floor & roof)	2-16d (3-1/2" × 0.135")		
	30 Built-up girders and beams, 2-inch lumber layers	10d (3" × 0.128")	Nail each layer as follows: 32" o.c. at top and bottom and staggered. Two nails at ends and at each splice.	
	31 Ledger strip supporting joists or rafters	3-16d (3-1/2" × 0.135")	At each joist or rafter	

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 mile per hour = 0.447 m/s; 1 Ksi = 6.895 MPa.

a. All nails are smooth-common, box or deformed shanks except where otherwise stated. Nails used for framing and sheathing connections shall have minimum average bending yield strengths as shown: 80 ksi for shank diameter of 0.192 inch (20d common nail), 90 ksi for shank diameters larger than 0.142 inch but not larger than 0.177 inch, and 100 ksi for shank diameters of 0.142 inch or less.

b. Staples are 16 gage wire and have a minimum 7/16-inch diameter crown width.

c. Nails shall be spaced at not more than 6 inches on center at all supports where spans are 48 inches or greater.

d. Four-foot by 8-foot or 4-foot by 9-foot panels shall be applied vertically.

e. Spacing of fasteners not included in this table shall be based on Table R602.3(2).

f. For regions having basic wind speed of 110 mph or greater, 8d deformed (21/2? × 0.120) nails shall be used for attaching plywood and wood structural panel roof sheathing to framing within minimum 48-inch distance from gable end walls, if mean roof height is more than 25 feet, up to 35 feet maximum.

g. For regions having basic wind speed of 100 mph or less, nails for attaching wood structural panel roof sheathing to gable end wall framing shall be spaced 6 inches on center. When basic wind speed is greater than 100 mph, nails for attaching panel roof sheathing to intermediate supports shall be spaced 6 inches on center for minimum 48-inch distance from ridges, eaves and gable end walls; and 4 inches on center to gable end wall framing.

h. Gypsum sheathing shall conform to ASTM C 1396 and shall be installed in accordance with GA 253. Fiberboard sheathing shall conform to ASTM C 208.

i. Spacing of fasteners on floor sheathing panel edges applies to panel edges supported by framing members and required blocking and at all floor perimeters only. Spacing of fasteners on roof sheathing panel edges applies to panel edges supported by framing members and required blocking. Blocking of roof or floor sheathing panel edges perpendicular to the framing members need not be provided except as required by other provisions of this code. Floor perimeter shall be supported by framing members or solid blocking.

j. Where a rafter is fastened to an adjacent parallel ceiling joist in accordance with this schedule, provide two toe nails on one side of the rafter and toe nails from the ceiling joist to top plate in accordance with this schedule. The toe nail on the opposite side of the rafter shall not be required.

SUPPLEMENTARY NOTES:
1. Verify all dimensions and conditions prior to starting work. Notify Designer of any discrepancies or inconsistencies. 2. Verify in the field all existing conditions shown on drawings. 3. Establish and verify all openings and inserts for Mechanical, Electrical, and Plumbing with appropriate trades and construction documents. 4. Provide all necessary temporary shoring, guying and other means to avoided excessive stresses and to hold structural elements in place during construction. 5. Options are for the General Contractors convenience. And She/he shall be responsible that any changes are within regulations of the current codes, and will submit for any require permits. 6. Any engineering design provided and submitted for review shall bear the seal and signature of an Arizona Registrant. Designer shall not be held responsible for any and all cost expenses, damages or other liability of any nature arising out of in connection with, or in any way related to the plans drawn by the designer

(continued)				
TABLE R602.3(1)continued FASTENER SCHEDULE FOR STRUCTURAL MEMBERS				
ITEM	DESCRIPTION OF BUILDING MATERIALS	DESCRIPTION OF FASTENERb, c, e	SPACING OF FASTENERS	
			Edges (inches)i	Intermediate supportsc, e (inches)
Wood structural panels, subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to framing	32	3/8" - 1/2"	6d common (2" × 0.113") nail (subfloor wall)j 8d common (2-1/2" × 0.131") nail (roof)f	6 12g
	33	19/32" - 1"	8d common nail (2-1/2" × 0.131")	6 12g
	34	11/8" - 11/4"	10d common (3" × 0.148") nail or 8d (2-1/2" × 0.131") deformed nail	6 12
	35	1/2" structural cellulose fiberboard sheathing	1-1/2" galvanized roofing nail, 7/16" crown or 1" crown staple 16 ga., 1-1/4" long	3 6
Other wall sheathingh	36	25/32" structural cellulose fiberboard sheathing	1-3/4" galvanized roofing nail, 7/16" crown or 1" crown staple 16 ga., 1-1/2" long	3 6
	37	1/2" gypsum sheathing	1-1/2" galvanized roofing nail; staple galvanized, 11/2" long; 11/4 screws, Type W or S	7 7
Wood structural panels, combination subfloor underlayment to framing	38	5/8" gypsum sheathing	1-3/4" galvanized roofing nail; staple galvanized, 1-5/8" long; 1-5/8" screws, Type W or S	7 7
	39	3/4" and less	6d deformed (2" × 0.120") nail or 8d common (2-1/2" × 0.131") nail	6 12
	40	7/8" - 1"	8d common (2-1/2" × 0.131") nail or 8d deformed (2-1/2" × 0.120") nail	6 12
	41	1-1/8" - 11/4"	10d common (3" × 0.148") nail or 8d deformed (2-1/2" × 0.120") nail	6 12

To the best of my knowledge these plans are drawn to comply with owner's and/or builder's specifications and any changes made on them after prints are made will be done at the owner's expense. I am not responsible for any errors or omissions. The contractor shall verify all dimensions and conditions on the drawing. Drafting Firm is not liable for errors once the drawing is issued. I am not responsible for any errors or omissions in the preparation of this plan to avoid mistakes, the maker can not guarantee against human error. The contractor of the job must check all dimensions and other details prior to construction and notify responsible architect.

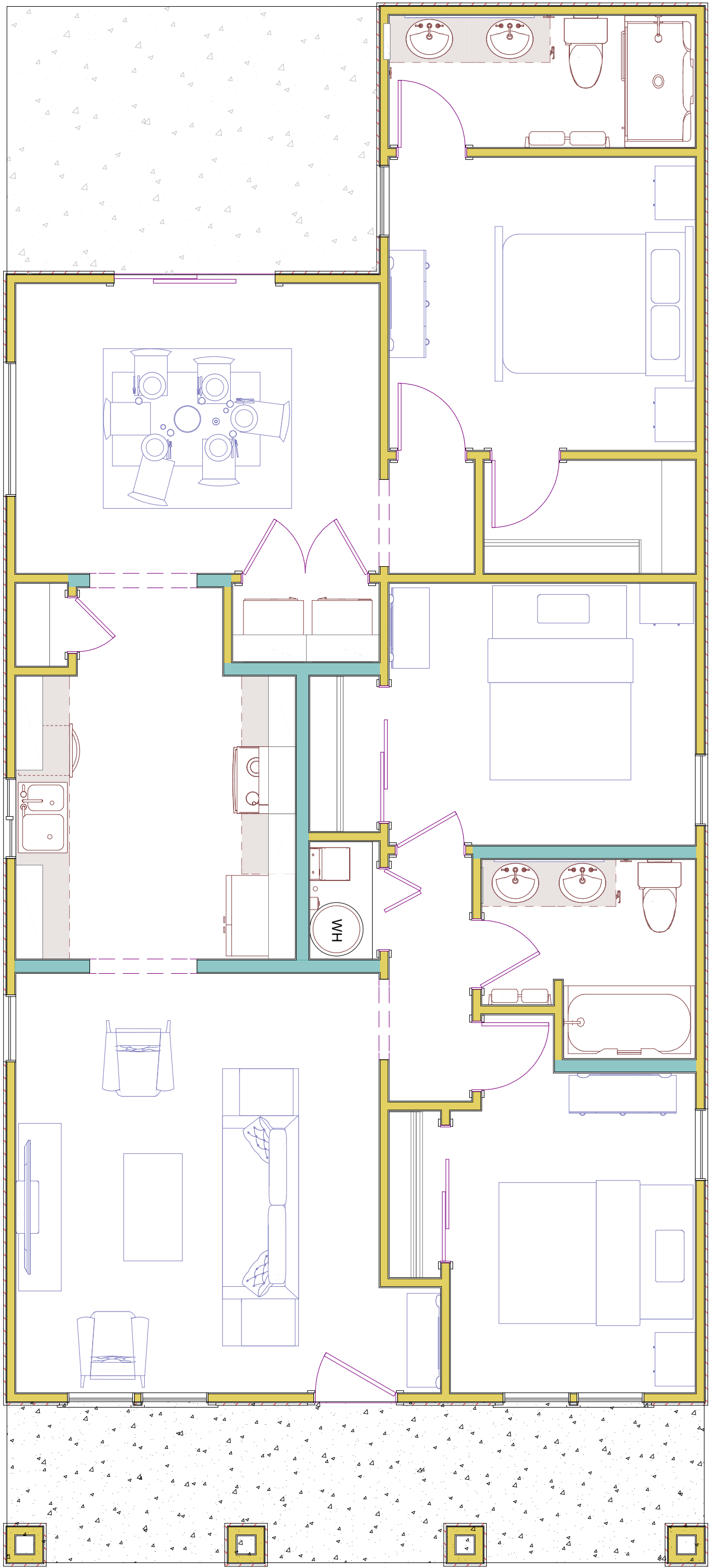
DATE				
DESCRIPTION				
NO.				

REVIEWED FOR CODE COMPLIANCE BY: WILLIAM CHRISTENSEN
Approval of these plans, a specification sheet and its amendment to be a part of, or an approval of any condition of any Federal, State, County or City/Local regulations. One set of approved plans. High 40' limit on the job until completion.
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PROJECT DESCRIPTION:	PLAN # 1213
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BUILDING AREA	1213
LIVABLE	139
PATIO	156
PORCH	
TOTAL	1508

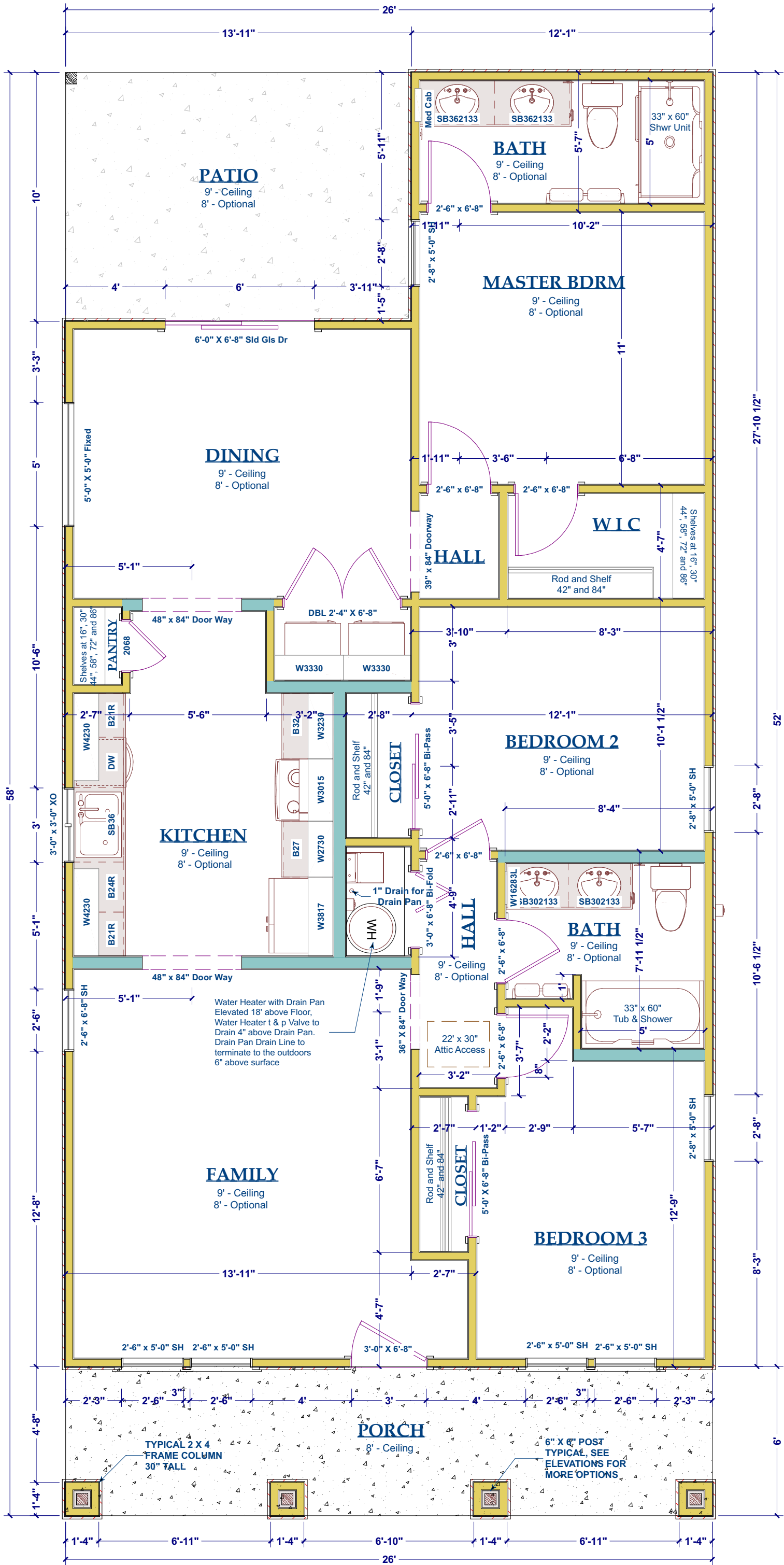
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3/11/2024
SCALE:
1/4" = 1'
SHEET:
2



FURNITURE----- PLAN

NOTES

- The Contractor shall verify all Dimensions and Conditions before construction begins, and shall report any errors or discrepancies to the designer in writing before proceeding
- Do not scale Dimensions. use written dimensions or where no dimensions are given, builder shall consult the designer for clarifications before proceeding with work. Dimensions at out side wall are to face of stem walls and edge of studs.
- All flooring, appliances, Cabinets, fixtures, finishes, etc are to be selected by others and verified and approved by Home Owner or Contractor
- Exterior Wall - 2x4 Hem Fir 16" O.C. Stud Grade or Better. Optional- 2 x 6 Hem Fir 16" O.C. Stud Grade or Better.
- Interior Wall- 2X4 Hem Fir 24" O.C. Stud Grade, use 2x6 at plumbing walls when possible,
- All Exterior and Interior Wall Plates to be pressure treated materials, Redwood and Cedar. R317.1.2.
- R310.2.1 Minimum opening area. Emergency escape and rescue openings shall have a net clear opening of not less than 5.7 square feet (0.530 m2). The net clear opening dimensions required by this section shall be obtained by the normal operation of the emergency escape and rescue opening from the inside. The net clear height of the opening shall be not less than 24 inches (610 mm) and the net clear width shall be not less than 20 inches (508 mm). Exception: Grade floor openings or below-grade openings shall have a net clear opening area of not less than 5 square feet (0.465 m2).
- R310.2.2 Window sill height. Where a window is provided as the emergency escape and rescue opening, it shall have a sill height of not more than 44 inches (1118 mm) above the floor; where the sill height is below grade, it shall be provided with a window well in accordance with Section R310.2.3.
- R311.3 Floors and landings at exterior doors. There shall be a landing or floor on each side of each exterior door. The width of each landing shall be not less than the door served. Landings shall have a dimension of not less than 36 inches (914 mm) measured in the direction of travel. The slope at exterior landings shall not exceed 1/4 unit vertical in 12 units horizontal (2 percent).
- R311.6 Hallways. The width of a hallway shall be not less than 3 feet (914 mm) after finish materials
- R302.11 Fireblocking. In combustible construction, fireblocking shall be provided to cut off both vertical and horizontal concealed draft openings and to form an effective fire barrier between stories, and between a top story and the roof space.
- R307.1 Attic access. Buildings with combustible ceiling or roof construction shall have an attic access opening to attic areas that have a vertical height of 30 inches (762 mm) or greater over an area of not less than 30 square feet (2.8 m2). The vertical height shall be measured from the top of the ceiling framing members to the underside of the roof framing members. The rough-framed opening shall be not less than 22 inches by 30 inches (559 mm by 762 mm) and shall be located in a hallway or other location with ready access.
- Appliances and Fixtures. Installations instructions shall be made available to building department building inspectors, when requested during building inspections.
- Cloth Dryer Note: General. Dryer exhaust systems shall be independent of all other systems, shall convey the moisture to the outdoors, and shall terminate on the outside of the building. M1502.4 Length limitation The maximum length of a clothes dryer exhaust duct shall not exceed 35 feet from the dryer location to the wall or roof termination. The maximum length of the duct shall be reduced 2.5 feet (762 mm) for each 45-degree (0.79 rad) bend and 5 feet (1524 mm) for each 90-degree (1.6 rad) bend. The maximum length of the exhaust duct does not include the transition duct. 504.6.5 Length Identification. Where the exhaust duct is concealed within the building construction, the equivalent length of the exhaust duct shall be identified on a permanent label or tag. The label or tag shall be located within 6 feet (1829 mm) of the exhaust duct connection. Exceptions: 1. Where a clothes dryer booster fan is installed and listed and labeled for the application, the maximum length of the exhaust duct, including any transition duct, shall be permitted to be in accordance with the booster fan manufacturer's installation instructions. Where a clothes dryer booster fan is installed and not readily accessible from the room in which the dryer is located, a permanent identifying label shall be placed adjacent to where the exhaust duct enters the wall. The label shall bear the words "This dryer exhaust system is equipped with a remotely located booster fan." 2. Where the make and model of the clothes dryer to be installed is known and the manufacturer's installation instructions for such dryer are provided to the building official, the maximum length of the exhaust duct, including any transition duct, shall be permitted to be in accordance with the dryer manufacturer's installation instructions.
- Shower Wall Finish: Ceramic or Stone Tile, attached with approve adhesive, over 1/2" Concrete Board, over approved moisture barrier, over 2x wall framing. R702.4.1 General. Ceramic tile surfaces shall be installed in accordance with ANSI A108.1, A108.4, A108.5, A108.6, A108.11, A118.1, A118.3, A136.1 and A137.1.



FLOOR ----- PLAN

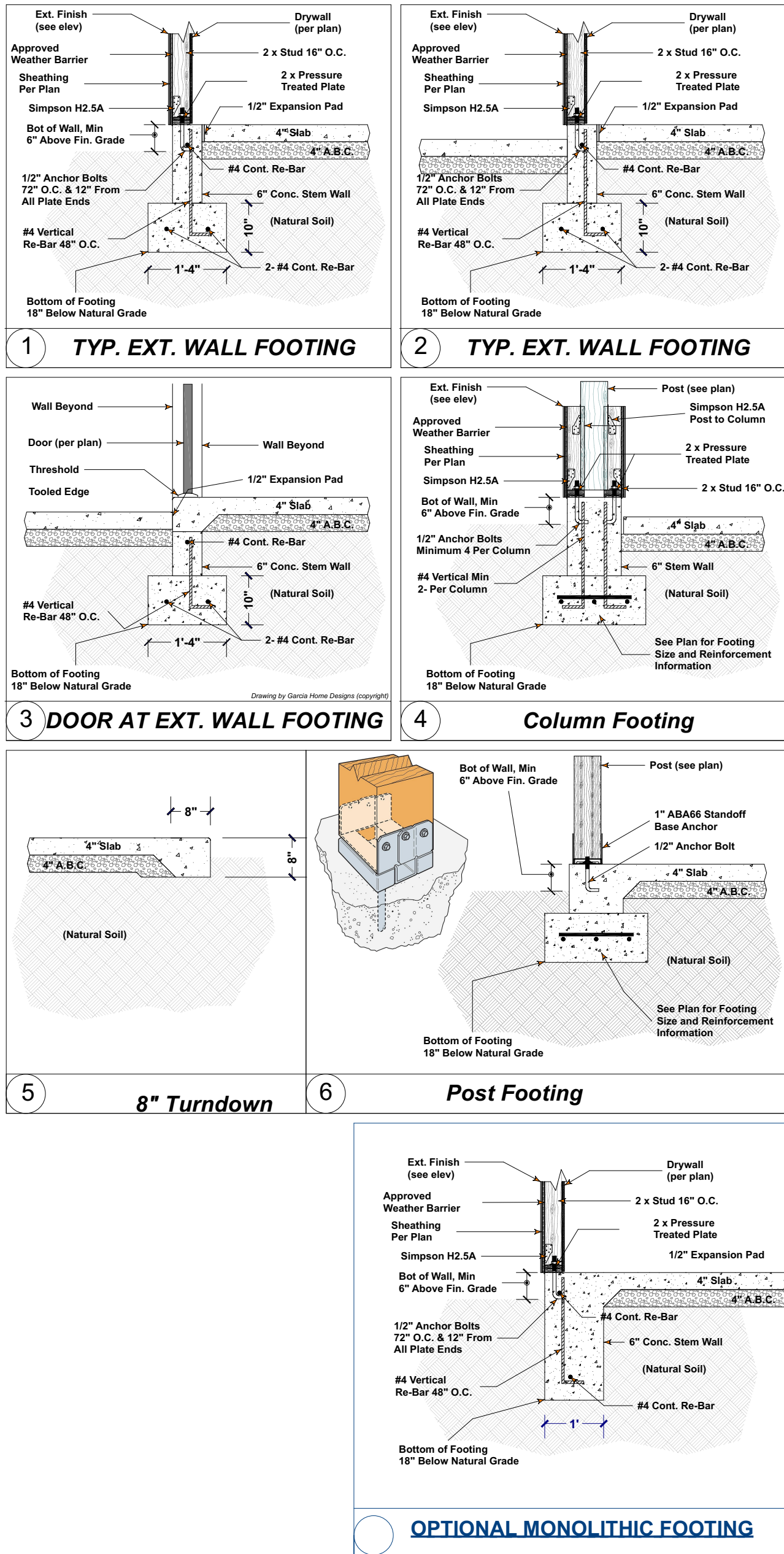
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DESCRIPTION	
NO.	

REVIEWED FOR CODE COMPLIANCE BY
WILSON ENGINEERING
Approval of these plans & specifications shall not be construed to be a permit fee, or an approval of any violation of any Federal, State, County or City laws or regulations. One set of approved plans shall be kept on the job until completion.
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PROJECT DESCRIPTION:	

BUILDING AREA	1213
LIVABLE	139
PATIO	156
PORCH	1508
TOTAL	

DATE:	
3/11/2024	
SCALE:	
1/4" = 1'	
SHEET:	
3	



1. R403.1.6 Foundation anchorage.

Wood sole plates at all exterior walls on monolithic slabs, wood sole plates of braced wall panels at building interiors on monolithic slabs and all wood sill plates shall be anchored to the foundation with minimum 1/2-inch-diameter (12.7 mm) anchor bolts spaced not greater than 6 feet (1829 mm) on center or approved anchors or anchor straps spaced as required to provide equivalent anchorage to 1/2-inch-diameter (12.7 mm) anchor bolts. Bolts shall extend not less than 7 inches (178 mm) into concrete or grouted cells of concrete masonry units. The bolts shall be located in the middle third of the width of the plate. A nut and washer shall be tightened on each anchor bolt. There shall be not fewer than two bolts per plate section with one bolt located not more than 12 inches (305 mm) or less than seven bolt diameters from each end of the plate section. Interior bearing wall sole plates on monolithic slab foundation that are not part of a braced wall panel shall be positively anchored with approved fasteners. Sill plates and sole plates shall be protected against decay and termites where required by Sections R317 and R318.

2. R403.1.7.3 Foundation

elevation. On graded sites, the top of any exterior foundation shall extend above the elevation of the street gutter at point of discharge or the inlet of an approved drainage device not less than 12 inches (305 mm) plus 2 percent. Alternate elevations are permitted subject to the approval of the building official, provided that it can be demonstrated that required drainage to the point of discharge and away from the structure is provided at all locations on the site.

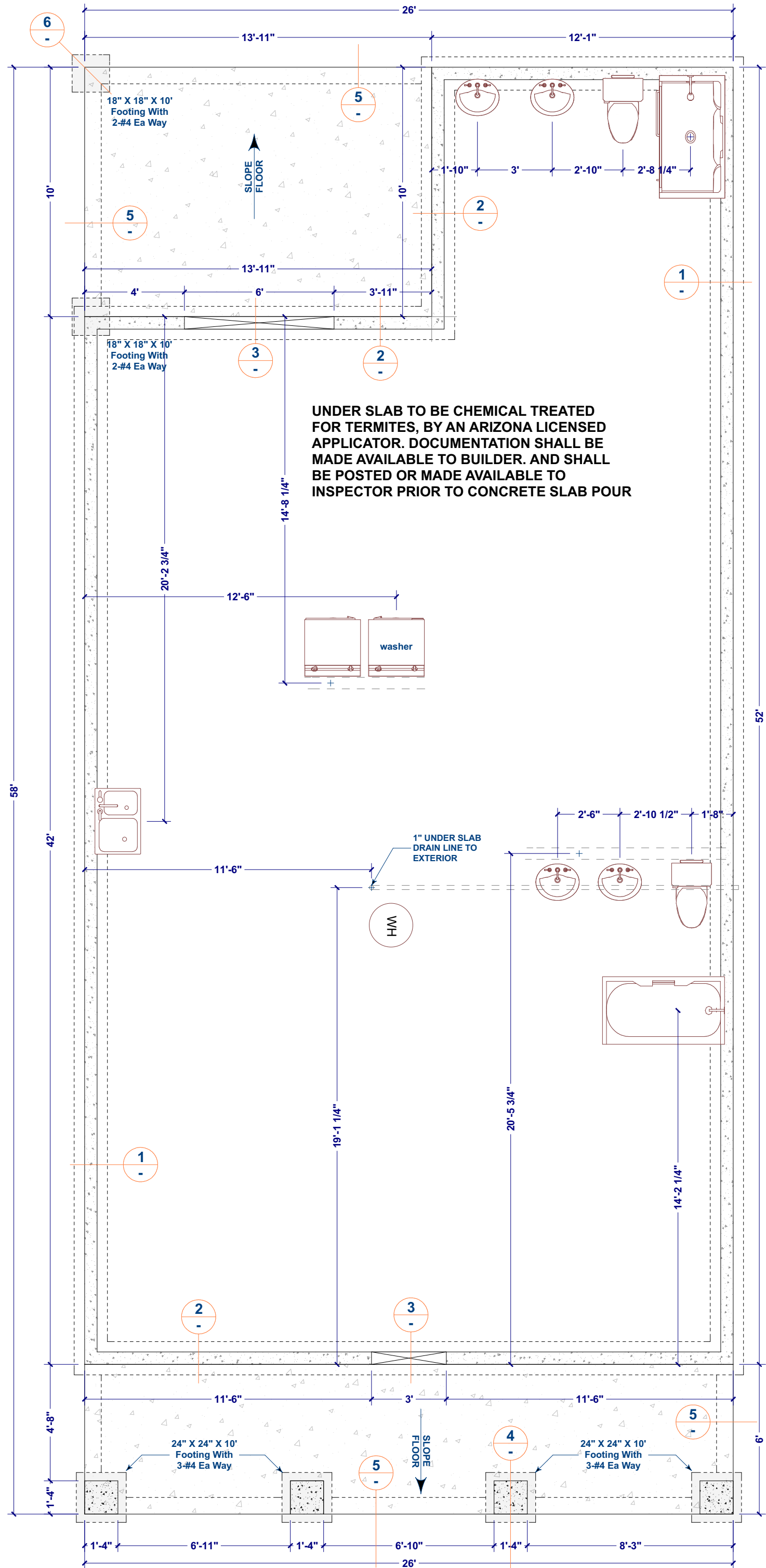
3. R401.3 Drainage. Surface drainage shall be diverted to a storm sewer conveyance or other approved point of collection that does not create a hazard. Lots shall be graded to drain surface water away from foundation walls. The grade shall fall not fewer than 6 inches (152 mm) within the first 10 feet (3048 mm).

4. FOOTING BEARING ALL FOOTINGS TO REST ON CLEAN, FIRM UNDISTURBED SOIL. STEP FOOTINGS A REQUIRED TO MAINTAIN REQUIRED DEPTH BELOW FINISH GRADES.

5. CONCRETE STRENGTH, 3,000 PSI AT 28 DAYS FOR ALL SLABS. (FOUNDATION DESIGN BASED ON 2,500 PSI). 3,000 PSI AT 28 DAYS FOR ALL OTHER CONDITION. MAXIMUM SLUMP, 4"

6. REBAR. USE ASTM A-615 GRADE 60 DEFORMED REINFORCING BARS UNLESS NOTED OTHERWISE

7. EXPANSION BOLTS. CONCRETE EXPANSION ANCHORS SHALL BE SIMPSON WEDGE-ALL STUD ANCHORS OR EQUAL (REDHEAD). REFER TO LOCAL BUILDING DEPARTMENT FOR SPECIAL INSPECTION REQUIREMENTS.



FOUNDATION ----- PLAN

MINIMUM NAIL		MINIMUM WOOD STRUCTURAL PANEL SPAN RATING	MINIMUM NOMINAL PANEL THICKNESS (inches)	MAXIMUM WALL STUD SPACING (inches)	PANEL NAIL SPACING		ULTIMATE DESIGN WIND SPEED V_{uit} (mph)		
Size	Penetration (inches)				Edges (inches o.c.)	Field (inches o.c.)	Wind exposure category		
							B	C	D
6d Common (2.0" × 0.113")	1.5	24/0	$\frac{3}{8}$	16	6	12	140	115	110
8d Common (2.5" × 0.131")	1.75	24/16	$\frac{7}{16}$	16	6	12	170	140	135
				24	6	12	140	115	110

- a. Panel strength axis parallel or perpendicular to supports. Three-ply plywood sheathing with studs spaced more than 16 inches on center shall be applied with panel strength axis perpendicular to supports.
- b. Table is based on wind pressures acting toward and away from building surfaces in accordance with Section R301.2. Lateral bracing requirements shall be in accordance with Section R602.10.
- c. Wood structural panels with span ratings of Wall-16 or Wall-24 shall be permitted as an alternate to panels with a 24/0 span rating. Plywood siding rated 16 o.c. or 24 o.c. shall be permitted as an alternate to panels with a 24/16 span rating. Wall-16 and Plywood siding 16 o.c. shall be used with studs spaced not more than 16 inches on center.

Buildings shall be braced in accordance with this section or, when applicable, Section R602.12. Where a building, or portion thereof, does not comply with one or more of the bracing requirements in this section, those portions shall be designed and constructed in accordance with Section R301.1.

Braced wall panels shall be full-height sections of wall that shall have no vertical or horizontal offsets. Braced wall panels shall be constructed and placed along a braced wall line in accordance with this section and the bracing methods specified in Section R602.10.4.

A braced wall panel shall begin within 10 feet (3810 mm) from each end of a braced wall line as determined in [Section R602.10.1.1](#). The distance between adjacent edges of braced wall panels along a braced wall line shall be no greater than 20 feet (6096 mm) as shown in Figure R602.10.2.2.

Braced wall lines with a length of 16 feet (4877 mm) or less shall have a minimum of two *braced wall panels* of any length or one *braced wall panel* equal to 48 inches (1219 mm) or more. *Braced wall lines* greater than 16 feet (4877 mm) shall have a minimum of two *braced wall panels*.

Top plates of exterior *braced wall panels* shall be attached to rafters or roof trusses above in accordance with Table R602.3(1) and this section. Where required by this section, blocking between rafters or roof trusses shall be attached to top plates of *braced wall panels* and to rafters and roof trusses in accordance with Table R602.3(1). A continuous band, rim, or header joist or roof truss parallel to the *braced wall panels* shall be permitted to replace the blocking required by this section. Blocking shall not be required over openings in continuously-sheathed *braced wall lines*. In addition to the requirements of this section, lateral support shall be provided for rafters and ceiling joists in accordance with [Section R802.8](#) and for trusses in accordance with [Section R802.10.3](#). Roof ventilation shall be provided in accordance with [Section R806.1](#).

-
- Architectural floor plan showing room layouts, structural details, and material specifications. The plan includes the following labels and dimensions:
- Top Wall:** 4'-0" x 8'-0" OR 9' x 3/8 OSB SHEATHING (WSP)
 - Right Wall:** 4'-0" x 8'-0" OR 9' x 3/8 OSB SHEATHING (WSP)
 - Bottom Wall:** 26'-0" x 8'-0" OR 9' x 3/8 OSB SHEATHING (CS-WSP)
 - Left Wall:** 4'-0" x 8'-0" OR 9' x 3/8 OSB SHEATHING (WSP)
 - Internal Partition:** 15'-11" x 8'-0" OR 9' x 3/8 OSB SHEATHING (CS-WSP)
 - Room Labels:**
 - KITCHEN (top right)
 - BED (middle right)
 - BATH (bottom right)
 - HALL (center)
 - CL. (closets)
 - ST. (storage)
 - Structural Details:**
 - Walls: 4'-0" x 8'-0" OR 9' x 3/8 OSB SHEATHING (WSP)
 - Partitions: 4'-0" x 8'-0" OR 9' x 3/8 OSB SHEATHING (WSP)
 - CS-WSP (Continuous Sheathing Wall Panel)

To the best of my knowledge these plans are drawn to comply with owner's and/or builder's specifications and any changes made on them after prints are made will be done at the owner's and/or builder's expense and responsibility. The contractor shall verify all dimensions and enclosed drawing. Drafting firm is not liable for errors once construction has begun. While every effort has been made in the preparation of this plan to avoid mistakes, the maker can not guarantee against human error. The contractor of the job must check all dimensions and other details prior to construction and be solely responsible thereafter.

NO.	DESCRIPTION	DATE

REVIEWED FOR CODE COMPLIANCE BY:
WILLDAN ENGINEERING
Approval of these plans & specifications shall not be construed to be a permit for, or an approval of any violation of any Federal, State, County or City laws or ordinances. One set of approved plans must be kept on the job until completion.

3:27:58 PM Mar 12, 2024

PROJECT DESCRIPTION:

PLAN # 1213

BUILDING AREA	
LIVABLE	1213
PATIO	139
PORCH	156
TOTAL	1508

DATE:

3/11/2024

SCALE:

1/4" = 1'

SHEET:

5

ROOF FRAMING CONSTRUCTION

IRC SECTIONS R801 – R803, CHAPTER 8: ROOF AND CEILING CONSTRUCTION SHALL BE CAPABLE OF ACCOMMODATING ALL LOADS IMPOSED ACCORDING TO SECTION R301 AND OF TRANSMITTING THE RESULTING LOADS TO THE SUPPORTING STRUCTURAL ELEMENTS. ALL FRAMING WILL FALL IN ACCORDANCE WITH CHAPTER 8 OF THE 2018 IRC.

R801.3 ROOF DRAINAGE – IN AREAS WHERE EXPANSIVE OR COLLAPSIBLE SOILS ARE KNOWN TO EXIST, ALL DWELLINGS SHALL HAVE A CONTROLLED METHOD OF WATER DISPOSAL FROM ROOFS THAT WILL COLLECT AND DISCHARGE ROOF DRAINAGE TO THE GROUND SURFACE AT LEAST 5 FEET (1524MM) FROM FOUNDATION WALLS OR TO AN APPROVED DRAINAGE SYSTEM.

R802.1 IDENTIFICATION – LOAD-BEARING DIMENSION LUMBER FOR RAFTERS, TRUSSES AND CEILING JOISTS SHALL BE IDENTIFIED BY A GRADE MARK OF A LUMBER GRADING OR INSPECTION AGENCY THAT HAS BEEN APPROVED BY AN ACCREDITATION BODY THAT COMPLIES WITH "DOC PS20". IN LIEU OF A GRADE MARK, A CERTIFICATE OF INSPECTION ISSUED BY A LUMBER GRADING OR INSPECTION AGENCY MEETING THE REQUIREMENTS OF THIS SECTION SHALL BE ACCEPTED. R802.1.1 BLOCKING – BLOCKING SHALL BE A MINIMUM OF UTILITY GRADE LUMBER.

R802.1.3.1 LABELING – FIRE-RETARDANT-TREATED LUMBER AND WOOD STRUCTURAL PANELS SHALL BE LABELED ACCORDING TO SECTION 802.1.3.1.

R802.1.3.2.1 WOOD STRUCTURAL PANELS – THE EFFECT OF TREATMENT AND THE METHOD OF RE-DRYING AFTER TREATMENT, AND EXPOSURE TO HIGH TEMPERATURES AND HIGH HUMIDITIES ON THE FLEXURE PROPERTIES OF FIRE RETARDANT TREATED SOFTWOOD PLYWOOD SHALL BE DETERMINED IN ACCORDANCE WITH "ASTM D 5516". THE TEST DATA DEVELOPED BY "ASTM D 5516" SHALL BE USED TO DEVELOP ADJUSTMENT FACTORS, MAXIMUM LOADS AND SPANS, OR BOTH FOR UNTREATED PLYWOOD DESIGNS VALUES IN ACCORDANCE WITH "ASTM D 6305". EACH MANUFACTURER SHALL PUBLISH THE ALLOWABLE MAXIMUM LOADS AND SPANS FOR EACH PRODUCT. FLOOR AND ROOF SHEATHING FOR THEIR TREATMENT.

R802.1.3.2.2 LUMBER – FOR EACH SPECIES OF WOOD TREATED, THE EFFECT OF THE TREATMENT AND METHOD OF RE-DRYING AFTER TREATMENT AND EXPOSURE TO HIGH TEMPERATURE AND HIGH HUMIDITIES ON THE ALLOWABLE DESIGN PROPERTIES OF FIRE RETARDANT TREATED LUMBER SHALL BE DETERMINED IN ACCORDANCE WITH "ASTM D 5664". THE TEST DATA DEVELOPED BY "ASTM D 5664" SHALL BE USED TO DEVELOP MODIFICATION FACTORS FOR USE AT OR NEAR ROOM TEMPERATURE AND AT ELEVATED TEMPERATURES AND HUMIDITY IN ACCORDANCE WITH "ATSM D 6841". EACH MANUFACTURER SHALL PUBLISH THE MODIFICATION FACTORS SHALL TAKE INTO CONSIDERATION THE CLIMATOLOGICAL LOCATION.

R802.3.1 CEILING JOIST AND RAFTER CONNECTIONS – CEILING JOISTS AND RAFTERS SHALL BE NAILED TO EACH OTHER IN ACCORDANCE WITH TABLE R802.5.1(9). THE RAFTER SHALL BE NAILED TO THE TOP PLATE. IN ACCORDANCE WITH TABLE R602.3(1), CEILING JOISTS SHALL BE CONTINUOUS OR SECURELY JOINED IN ACCORDANCE WITH TABLE R802.5.1 (9) WHERE THEY MEET OVER INTERIOR PARTITIONS AND ARE NAILED TO ADJACENT RAFTERS TO PROVIDE A CONTINUOUS TIE ACROSS THE BUILDING WHEN SUCH JOISTS ARE PARALLEL TO THE RAFTERS. WHERE CEILING JOISTS ARE NOT CONNECTED TO THE RAFTERS AT THE TOP PLATE, JOISTS CONNECTED HIGHER IN THE ATTIC SHALL BE INSTALLED AS RAFTER TIES, OR RAFTER TIES SHALL BE INSTALLED TO PROVIDE A CONTINUOUS TIE. WHERE CEILING JOISTS ARE NOT PARALLEL TO RAFTERS, RAFTER TIES SHALL BE INSTALLED. RAFTER TIES SHALL BE A MINIMUM OF 2-INCH BY 4-INCH (NOMINAL), INSTALLED IN ACCORDANCE WITH SECTION REQUIREMENTS IN TABLE R802.5.1(9), OR CONNECTIONS OF EQUIVALENT CAPACITIES SHALL BE PROVIDED. WHERE CEILING JOISTS OR RAFTER TIES ARE NOT PROVIDED, THE RIDGE FORMED BY THESE RAFTERS SHALL BE SUPPORTED BY A WALL OR GIRDER DESIGNED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE. COLLAR TIES OR RIDGE STRAPS TO RESIST WIND UPLIFT SHALL BE CONNECTED IN THE UPPER THIRD OF THE ATTIC SPACE IN ACCORDANCE WITH TABLE R602.3 (1). COLLAR TIES SHALL BE A MINIMUM OF 1-INCH BY 4-INCH (NOMINAL), SPACED NOT MORE THAN 4 FEET ON CENTER. R802.5 ALLOWABLE RAFTER SPAN – SPANS FOR RAFTERS SHALL BE IN ACCORDANCE WITH TABLES R802.5.1 (1) THROUGH R802.5.1 (8). FOR OTHER GRADES AND SPECIES AND FOR OTHER LOAD CONDITIONS, REFER TO THE AF&PA SPAN TABLES FOR JOISTS AND RAFTERS. THE SPAN OF EACH RAFTER SHALL BE MEASURED ALONG THE HORIZONTAL PROJECTION OF THE RAFTER. R802.5.1 PURLINS INSTALLATION OF PURLINS TO REDUCE THE SPAN OF RAFTERS IS PERMITTED AS SHOWN IN FIGURE R802.5.1.

PURLINS SHALL BE SIZED NO LESS THAN THE REQUIRED SIZE OF THE RAFTERS THAT THEY SUPPORT. PURLINS SHALL BE CONTINUOUS AND SHALL BE SUPPORTED BY 2-INCH BY 4-INCH BRACES INSTALLED TO BEARING WALLS AT A SLOPE NOT LESS THAN 45 DEGREES FROM HORIZONTAL. THE BRACES SHALL BE SPACED NOT MORE THAN 4 FEET ON CENTER AND THE UN-BRACED LENGTH OF BRACES SHALL NOT EXCEED 8 FEET.

R802.6 BEARING – THE ENDS OF EACH RAFTER OR CEILING JOIST SHALL HAVE NOT LESS THAN 1 ½ INCHES OF BEARING ON WOOD OR METAL AND NOT LESS THAN 3 INCHES ON MASONRY OR CONCRETE.

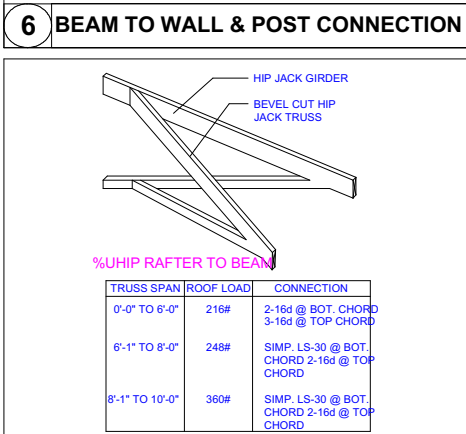
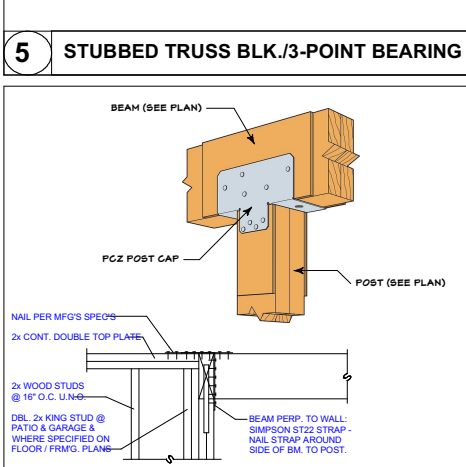
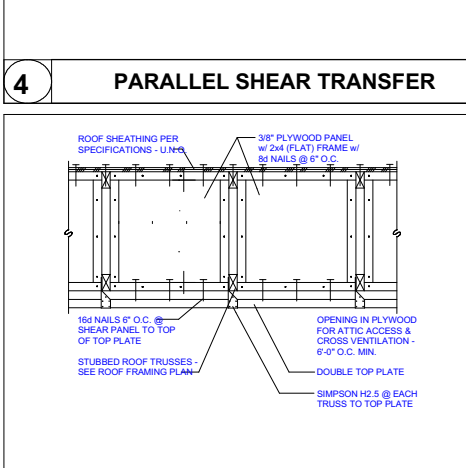
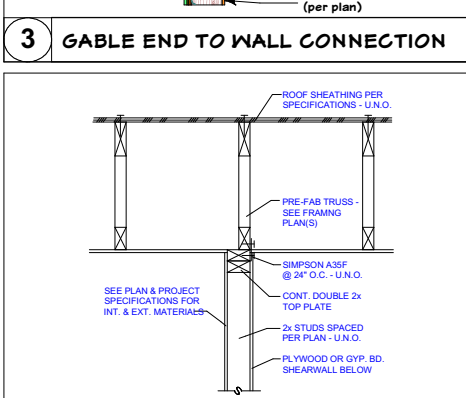
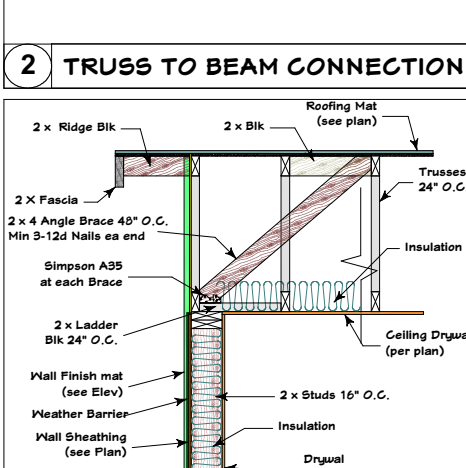
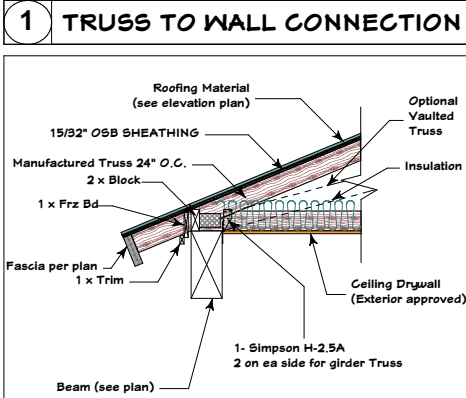
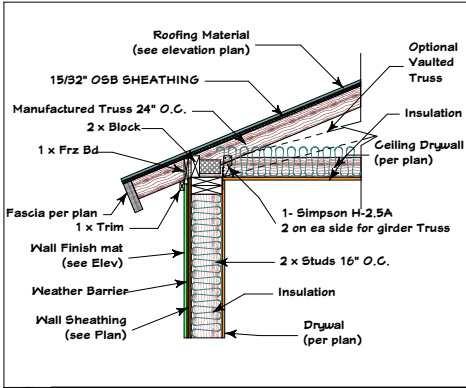
R802.7.1 SAWN LUMBER – NOTCHES IN SOLID LUMBER JOISTS, RAFTERS AND BEAMS SHALL NOT EXCEED ONE-SIXTH OF THE DEPTH OF THE MEMBER. SHALL NOT BE LONGER THAN ONE-THIRD OF THE DEPTH OF THE MEMBER AND SHALL NOT BE LOCATED IN THE MIDDLE ONE THIRD OF THE SPAN. NOTCHES AT THE ENDS OF THE MEMBER SHALL NOT EXCEED ONE-FOURTH THE DEPTH OF THE MEMBER. THE TENSION SIDE OF MEMBERS 4-INCHES OR GREATER IN NOMINAL THICKNESS SHALL NOT BE NOTCHED EXCEPT AT THE ENDS OF THE MEMBER. THE DIAMETER OF THE HOLES BORED OR CUT INTO MEMBERS SHALL NOT EXCEED ONE-THIRD THE DEPTH OF THE MEMBER. HOLES SHALL NOT BE CLOSER THAN 2-INCHES TO THE TOP OR BOTTOM OF THE MEMBER OR TO ANY OTHER HOLE LOCATED IN THE MEMBER. WHERE THE MEMBER IS ALSO NOTCHED, THE HOLE SHALL NOT BE CLOSER THAN 2-INCHES TO THE NOTCH.

R802.7.2 ENGINEERED WOOD PRODUCT – CUTS, NOTCHES AND HOLES BOADED IN TRUSSES, STRUCTURAL COMPOSITE LUMBER, STRUCTURAL GLUE-LAMINATED MEMBERS OR I-JOISTS ARE PROHIBITED EXCEPT WHERE PERMITTED BY THE MANUFACTURERS RECOMMENDATIONS OR WHERE THE EFFECTS OF SUCH ALTERATIONS ARE SPECIFICALLY CONSIDERED IN THE DESIGN OF THE MEMBER BY A REGISTERED DESIGN PROFESSIONAL. R802.9 FRAMING OF OPENINGS – OPENINGS IN ROOF AND CEILING FRAMING SHALL BE FRAMED WITH HEADER AND TRIMMER JOISTS. WHEN THE HEADER JOISTS SPAN DOES NOT EXCEED 4 FEET, THE HEADER JOIST MAY BE A SINGLE MEMBER THE SAME SIZE AS THE CEILING JOIST OR RAFTER. SINGLE TRIMMER JOISTS MAY BE USED TO CARRY A SINGLE HEADER JOIST THAT IS LOCATED WITHIN 3 FEET OF THE TRIMMER JOIST BEARING. WHEN THE HEADER JOIST SPAN EXCEEDS 4 FEET, THE TRIMMER JOISTS AND THE HEADER JOISTS SHALL BE DOUBLED AND OF SUFFICIENT CROSS SECTION TO SUPPORT THE CEILING JOISTS OR RAFTER FRAMING INTO THE HEADER. APPROVED HANGERS SHALL BE USED FOR THE HEADER JOISTS TO TRIMMER JOIST CONNECTIONS WHEN THE HEADER JOIST SPAN EXCEEDS 6 FEET. TAIL JOISTS OVER 12 FEET LONG SHALL BE SUPPORTED AT THE HEADER BY FRAMING ANCHORS OR ON LEDGER STRIPS NOT LESS THAN 2-INCHES BY 2-INCHES.

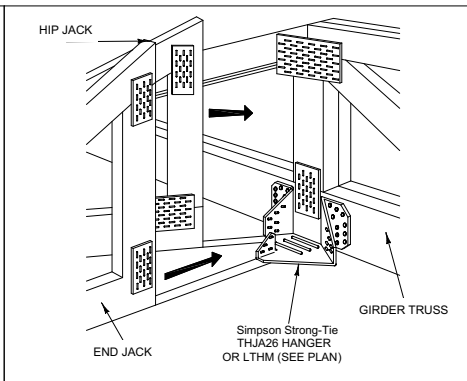
R802.10.1 TRUSS DESIGN DRAWINGS – TRUSS DESIGN DRAWINGS, PREPARED IN CONFORMANCE TO SECTION 802.10.1, SHALL BE PROVIDED TO THE BUILDING OFFICIAL AND APPROVED PRIOR TO INSTALLATION. TRUSS DESIGN DRAWINGS SHALL INCLUDE, AT A MINIMUM, THE INFORMATION SPECIFIED IN SECTION 802.10.1. TRUSS DESIGN AND DRAWINGS SHALL BE PROVIDED WITH THE SHIPMENT OF TRUSSES DELIVERED TO THE JOB SITE. R802.10.2 DESIGN – WOOD TRUSSES SHALL BE DESIGNED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE. THE DESIGN AND MANUFACTURE OF METAL PLATE CONNECTED WOOD TRUSSES SHALL COMPLY WITH "ANSI/TPI 1". THE TRUSS DESIGN DRAWINGS SHALL BE PREPARED BY A REGISTERED PROFESSIONAL WHERE REQUIRED BY THE STATUTES OF THE JURISDICTION IN WHICH THE PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH SECTION R106.1. R802.10.3 BRACING – TRUSSES SHALL BE BRACED TO PREVENT ROTATION AND PROVIDE LATERAL STABILITY IN ACCORDANCE WITH THE REQUIREMENTS SPECIFIED IN THE CONSTRUCTION DOCUMENTS FOR THE BUILDING AND ON THE INDIVIDUAL TRUSS DESIGN DRAWINGS. IN THE ABSENCE OF SPECIFIC BRACING REQUIREMENTS, TRUSSES SHALL BE BRACED IN ACCORDANCE WITH THE BUILDING COMPONENT SAFETY INFORMATION (BCSI 1-03) GUIDE TO GOOD PRACTICE FOR HANDLING, INSTALLING AND BRACING OF METAL PLATE CONNECTED WOOD TRUSSES. R802.10.4 ALTERATIONS TO TRUSSES – TRUSS MEMBERS SHALL NOT BE CUT, NOTCHED, DRILLED, SPLICED OR OTHERWISE ALTERED IN ANY WAY WITHOUT THE APPROVAL OF A REGISTERED DESIGN PROFESSIONAL. ALTERATIONS RESULTING IN THE ADDITION OF LOAD (IE HVAC OR WATER HEATER EQUIPMENT) THAT EXCEEDS THE DESIGN LOAD FOR THE TRUSS SHALL NOT BE PERMITTED WITHOUT VERIFICATION THAT THE TRUSS IS CAPABLE SUCH ADDITIONAL LOADING.

R802.11.1 UPLIFT RESISTANCE – ROOF ASSEMBLIES WHICH ARE SUBJECT TO WIND UPLIFT PRESSURES OF 20 PSF OR GREATER SHALL HAVE ROOF RAFTERS OR TRUSSES ATTACHED TO THEIR SUPPORTING WALL ASSEMBLIES BY CONNECTIONS CAPABLE OF PROVIDING THE RESISTANCE REQUIRED IN TABLE 802.11. WIND UPLIFT PRESSURES SHALL BE DETERMINED USING AN EFFECTIVE WIND AREA OF 100 SQ FT. AND ZONE 1 IN TABLE R301.2 (2), AS ADJUSTED FOR HEIGHT AND EXPOSURE PER TABLE R301.2(3). A CONTINUOUS LOAD PATH SHALL BE DESIGNED TO TRANSMIT THE UPLIFT FORCES FROM THE RAFTER OF TRUSS TIES TO THE FOUNDATION. R803.1 LUMBER SHEATHING – ALLOWABLE SPANS FOR LUMBER USED AS ROOF SHEATHING SHALL CONFIRM TO TABLE R803.1. SPACED LUMBER SHEATHING FOR WOOD SHINGLE AND SHAKE ROOFING SHALL CONFORM TO THE REQUIREMENTS OF SECTION R905.7 AND R905.8. SPACED LUMBER SHEATHING IS NOT ALLOWED IN SEISMIC DESIGN CATEGORY D (2). R803.2.1.2 FIRE RETARDANT TREATED PLYWOOD – THE ALLOWABLE UNIT STRESS'S FOR FIRE RETARDANT TREATED PLYWOOD, INCLUDING FASTENER VALUES, SHALL BE DEVELOPED FROM AN APPROVED METHOD OF INVESTIGATION THAT CONSIDERS THE EFFECTS OF ANTICIPATED TEMPERATURE AND HUMIDITY TO WHICH THE FIRE RETARDANT TREATED PLYWOOD WILL BE SUBJECTED. THE TYPE OF TREATMENT AND RE-DRYING PROCESS, THE FIRE RETARDANT TREATED PLYWOOD SHALL BE GRADED BY AN APPROVED AGENCY. R803.2.2 ALLOWABLE SPANS – THE MAXIMUM ALLOWABLE SPANS FOR ROOF STRUCTURAL PANEL ROOF SHEATHING SHALL NOT EXCEED THE VALUES SET FORTH IN TABLE R503.2.1.1 (1), OR "APA E30".

R803.2.3 INSTALLATION – WOOD STRUCTURAL PANEL USED AS ROOF SHEATHING SHALL BE INSTALLED WITH JOINTS STAGGERED OR NOT STAGGERED IN ACCORDANCE WITH TABLE R602.3 (1), OR "APA E30" FOR WOOD ROOF FRAMING OR WITH TABLE R804.3 FOR STEEL ROOF FRAMING.



7 CORNER JACK CONNECTION



8 HIP JACK TO GIRDER CONNECTION

ATTIC VENTING

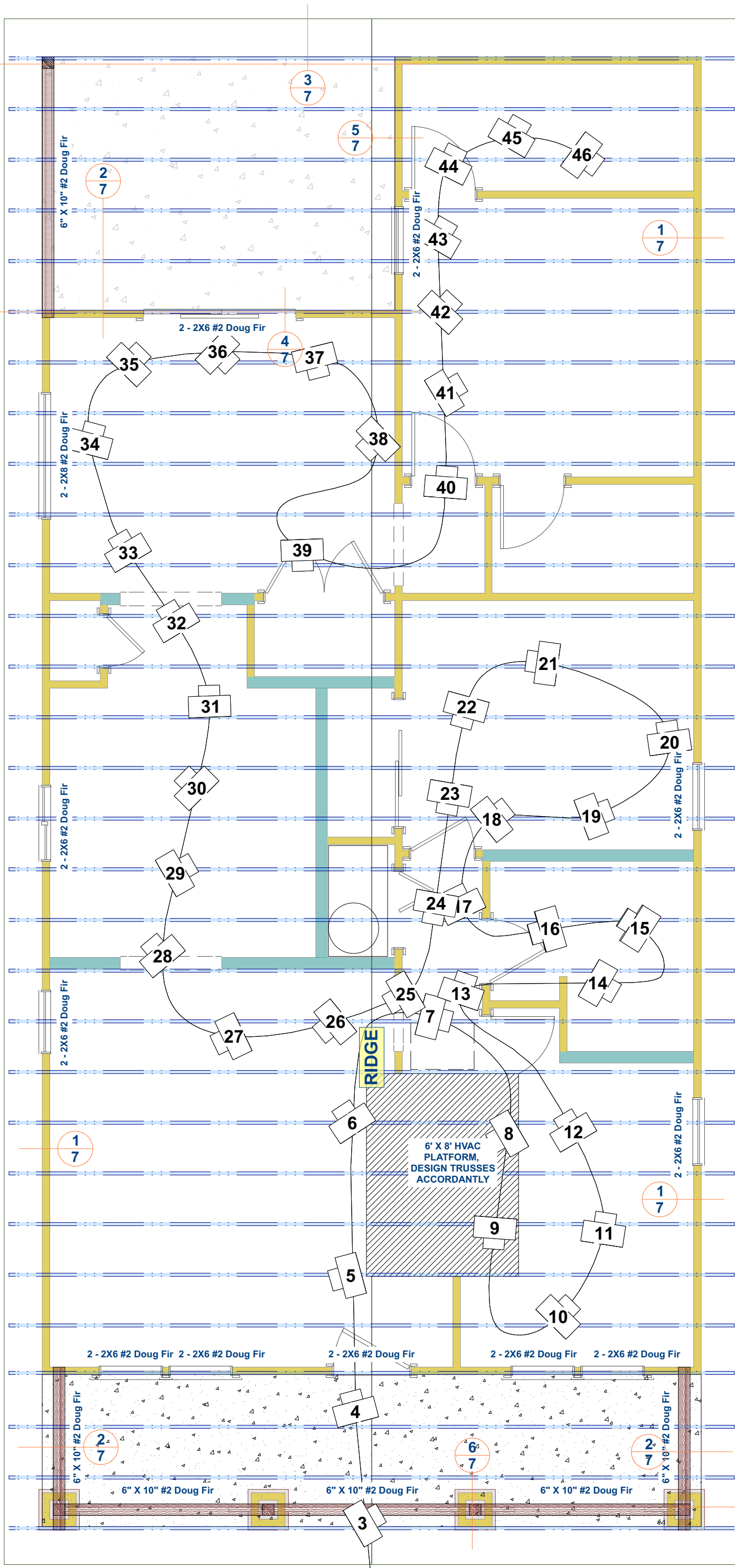
1352 / 300 = 4.51
4.51 * 144 = 649.44

Ea O'Hagin Vent =
72 Sqr Inches

Low Venting
6- O'Hagin
= 432 Sqr In. 60%

High Venting
4- O'Hagin
= 288 Sqr In. 40%

Total Venting = 720 Sqr In



ROOF FRAMING ----- PLAN

[illegible]

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PLA

BUILDING AREA	
LIVABLE	1213
PATIO	139
PORCH	156

DATE:

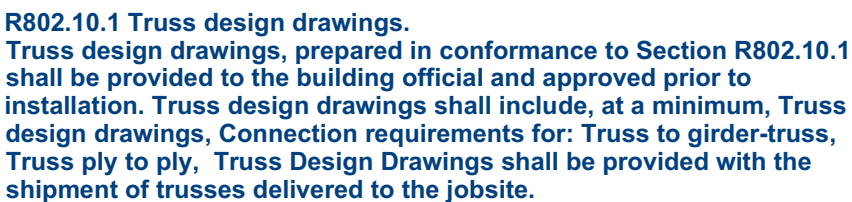
3/11/2024

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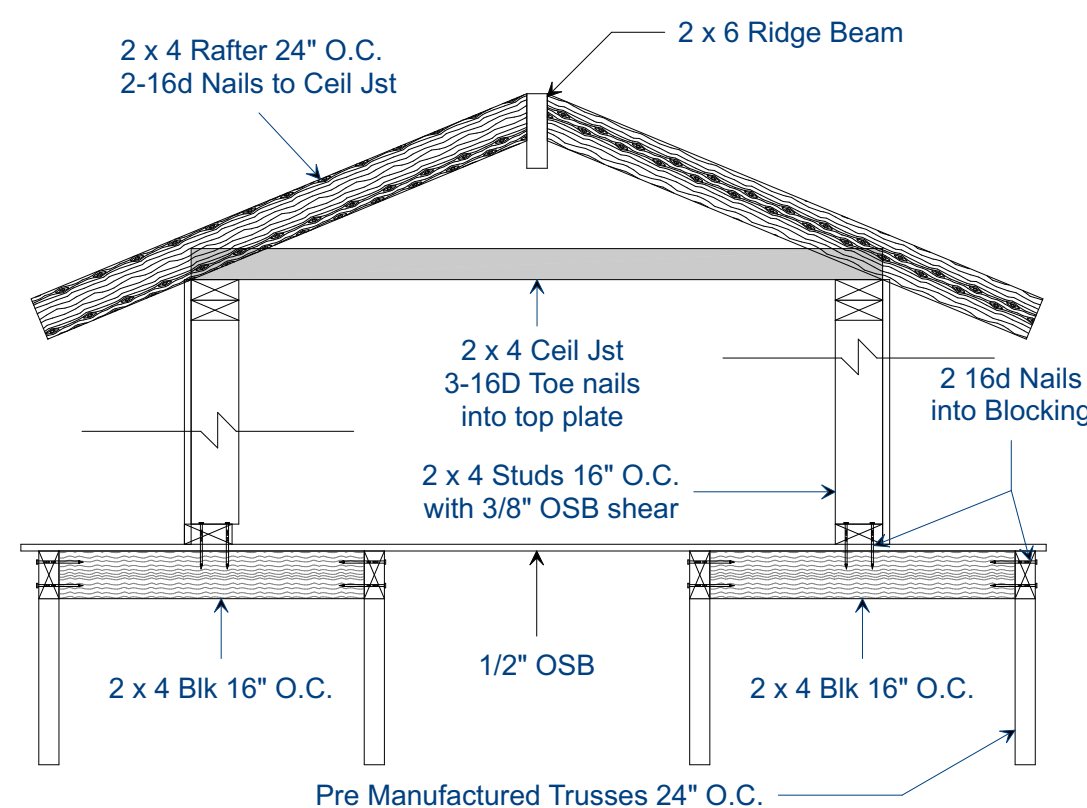
$$1/4" = 1'$$

SHEET:

8



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DORMER FRAMING



FRONT RANCH ----- ELEVATION

THESE DRAWINGS ARE THE PROPRIETARY WORK PRODUCT AND PROPERTY OF (CITY OF MARICOPA). DEVELOPED FOR THE EXCLUSIVE USE OF (THE CITY OF MARICOPA). USE OF THESE DRAWINGS AND CONCEPTS CONTAINED THEREIN WITHOUT THE WRITTEN PERMISSION OF (CITY OF MARICOPA) IS PROHIBITED AND MAY SUBJECT YOU TO A CLAIM FOR DAMAGES.

To the best of my knowledge these plans are drawn to comply with owner's and/or builder's specifications and any changes made on them after plans are made will be done at the owner's and/or builder's expense and responsibility. The contractor shall verify all dimensions and endorsed drawing. Drafting Firm is not liable for errors once construction has begun. While every effort has been made in the preparation of this plan to avoid mistakes, the maker can not guarantee against human error. The contractor of the job must check all dimensions and other details prior to construction and be solely responsible thereafter.

[illegible]

REVIEWED FOR CODE COMPLIANCE BY:
WILLDAN ENGINEERING

Approval of these plans & specifications shall not be construed to be a permit for, or an approval of any violation of any Federal, State, County or City laws or ordinances. One set of approved plans must be kept on the job until completion.

3:28:01 PM Mar 12, 2024

PROJECT DESCRIPTION:

BUILDING AREA	
LIVABLE	1213
PATIO	139
PORCH	156
TOTAL	1508

DATE:

3/11/2024

SCALE:

$$1/4" = 1'$$

SHEET:

9

Water Heater Notes:

P2503.1 Inspection required. New plumbing work and parts of existing systems affected by new work or alterations shall be inspected by the *building official* to ensure compliance with the requirements of the 2018 IRC codes.

P2503.5 DWV systems testing. Rough and finished plumbing installations shall be tested in accordance with Sections P2503.5.1 and P2503.5.2.

P2503.5.1 Rough plumbing.

DWV systems shall be tested on completion of the rough piping installation by water or for piping systems other than plastic, by air with no evidence of leakage. Either test shall be applied to the drainage system in its entirety or in sections after rough piping has been installed, as follows:

1. Water test. Each section shall be filled with water to a point not less than 10 feet (3048 mm) above the highest fitting connection in that section, or to the highest point in the completed system. Water shall be held in the section under test for a period of 15 minutes. The system shall prove leak free by visual inspection.
2. Air test. The portion under test shall be maintained at a gauge pressure of 5 pounds per square inch (psi) (34 kPa) or 10 inches of mercury column (34 kPa). This pressure shall be held without introduction of additional air for a period of 15 minutes.

P2503.5.2 Finished plumbing.

After the plumbing fixtures have been set and their traps filled with water, their connections shall be tested and proved gas tight and/or water tight as follows:

1. Water tightness. Each fixture shall be filled and then drained. Traps and fixture connections shall be proven water tight by visual inspection.
2. Gas tightness. When required by the local administrative authority, a final test for gas tightness of the DWV system shall be made by the smoke or peppermint test as follows:
 - 2.1. Smoke test. Introduce a pungent, thick smoke into the system. When the smoke appears at vent terminals, such terminals shall be sealed and a pressure equivalent to a 1-inch water column (249 Pa) shall be applied and maintained for a test period of not less than 15 minutes.
 - 2.2. Peppermint test. Introduce 2 ounces (59 mL) of oil of peppermint into the system. Add 10 quarts (9464 mL) of hot water and seal all vent terminals. The odor of peppermint shall not be detected at any trap or other point in the system.

P2503.6 Shower liner test. Where shower floors and receptors are made water tight by the application of materials required by Section P2709.2, the completed liner installation shall be tested. The pipe from the shower drain shall be plugged water tight for the test. The floor and receptor area shall be filled with potable water to a depth of not less than 2 inches (51 mm) measured at the threshold. Where a threshold of at least 2 inches high does not exist, a temporary threshold shall be constructed to retain the test water in the lined floor or receptor area to a level not less than 2 inches deep measured at the threshold. The water shall be retained for a test period of not less than 15 minutes and there shall be no evidence of leakage.

P2503.7 Water-supply system testing. Upon completion of the water-supply system or a section of it, the system or portion completed shall be tested and proved tight under a water pressure of not less than the working pressure of the system or, for piping systems other than plastic, by an air test of not less than 50 psi (345 kPa). This pressure shall be held for not less than 15 minutes. The water used for tests shall be obtained from a potable water source.

P2601.2 Connections to drainage system. Plumbing fixtures, drains, appurtenances and appliances used to receive or discharge liquid wastes or sewage shall be directly connected to the sanitary drainage system of the building or premises, in accordance with the requirements of this code. This section shall not be construed to prevent indirect waste systems.

P2604.1 Trenching and bedding. Where trenches are excavated such that the bottom of the trench forms the bed for the pipe, solid and continuous load-bearing support shall be provided between joints. Where over-excavated, the trench shall be backfilled to the proper grade with compacted earth, sand, fine gravel or similar granular material. Piping shall not be supported on rocks or blocks at any point. Rocky or unstable soil shall be over-excavated by two or more pipe diameters and brought to the proper grade with suitable compacted granular material.

P2605.1 General. Piping shall be supported in accordance with the following:

1. Piping shall be supported to ensure alignment and prevent sagging, and allow movement associated with the expansion and contraction of the piping system.
2. Piping in the ground shall be laid on a firm bed for its entire length, except where support is otherwise provided.
3. Hangers and anchors shall be of sufficient strength to maintain their proportional share of the weight of pipe and contents and of sufficient width to prevent distortion to the pipe. Hangers and strapping shall be of approved material that will not promote galvanic action. Rigid support sway bracing shall be provided at changes in direction greater than 45 degrees (0.79 rad) for pipe sizes 4 inches (102 mm) and larger.

P2607.1 General. Roof and exterior wall penetrations shall be made water tight. Joints at the roof, around vent pipes, shall be made water tight by the use of lead, copper or galvanized iron flashings or an approved elastomeric material. Counterflashing shall not restrict the required internal cross-sectional area of any vent

P2701.1 Quality of fixtures. Plumbing fixtures, faucets and fixture fittings shall be constructed of approved materials, shall have smooth impervious surfaces, shall be free from defects and concealed fouling surfaces, and shall conform to the standards cited in this code. Plumbing fixtures shall be provided with an adequate supply of potable water to flush and keep the fixtures in a clean and sanitary condition without danger of backflow or cross connection.

SECTION P3101 VENT SYSTEMS

P3101.1 General. This chapter shall govern the selection and installation of piping, tubing and fittings for vent systems. This chapter shall control the minimum diameter of vent pipes, circuit vents, branch vents and individual vents, and the size and length of vents and various aspects of vent stacks and stack vents. Additionally, this chapter regulates vent grades and connections, height above fixtures and relief vents for stacks and fixture traps, and the venting of sumps and sewers.

P3101.2 Trap seal protection. The plumbing system shall be provided with a system of vent piping that will permit the admission or emission of air so that the seal of any fixture trap shall not be subjected to a pneumatic pressure differential of more than 1 inch of water column (249 Pa).

P3101.2.1 Venting required. Every trap and trapped fixture shall Be vented in accordance with one of the venting methods specified in this chapter.

CLEAN OUTS.

P3005.2.1 Materials. Cleanouts shall be liquid and gas tight. Cleanout plugs shall be brass or plastic.

P3005.2.2 Spacing. Cleanouts shall be installed not more than 100 feet (30 480 mm) apart in horizontal drainage lines measured from the upstream entrance of the cleanout.

P3005.2.4 Change of direction. Cleanouts shall be installed at each fitting with a change of direction more than 45 degrees (0.79 rad) in the *building sewer, building drain* and horizontal waste or soil lines. Where more than one change of direction occurs in a run of piping, only one cleanout shall be required in each 40 feet (12 192 mm) of *developed length* of the drainage piping.

P3005.2.5 Accessibility. Cleanouts shall be accessible. The clearance in front of cleanouts shall be not less than 18 inches (457 mm) on 3-inch (76 mm) and larger pipes, and not less than 12 inches (305 mm) on smaller pipes. Concealed cleanouts shall be provided with access of sufficient size to permit removal of the cleanout plug and rodding of the system. Cleanout plugs shall not be concealed by permanent finishing material.

P3005.2.7 Building drain and building sewer junction. There shall be a cleanout near the junction of the *building drain* and *building sewer*. This cleanout shall be either inside or outside the building wall, provided that it is brought up to finish grade or to the lowest floor level. An *approved* two-way cleanout shall be permitted to serve as the required cleanout for both the *building drain* and the *building sewer*. The cleanout at the junction of the *building drain* and *building sewer* shall not be required where a cleanout on a 3-inch (76 mm) or larger diameter soil stack is located within a *developed length* of 10 feet (3048 mm) of the *building drain* and *building sewer* junction.

P3005.2.9 Cleanout size. Cleanouts shall be the same nominal size as the pipe they serve up to 4 inches (102 mm). For pipes larger than 4 inches (102 mm) nominal size, the size of the cleanout shall be not less than 4 inches (102 mm).

P3005.2.10 Cleanout equivalent. A fixture trap or a fixture with integral trap, readily removable without disturbing concealed piping shall be acceptable as a cleanout equivalent.

TEMPERATURE & PRESSURE RELIEF LINE FROM THE WATER HEATER TO BE EXTERIOR OF THE BUILDING. THE TEMPERATURE AND PRESSURE RELIEF LINE TO BE FULL SIZE STEEL PIPE OR HARD DRAWN COPPER TUBING, EXTENDING TO THE EXTERIOR OF THE BUILDING & TERMINATING IN A DOWNWARD POSITION NOT MORE THAN 2 FEET NOR LESS THAN 6 INCHES ABOVE GRADE. THE TEMPERATURE & PRESSURE RELIEF LINE SHALL NOT TERMINATE OVER WALKWAYS, PATIOS, CARPORTS, OR OTHER SIMILAR AREAS.

P2801.1 Required. Each *dwelling* shall have an *approved* automatic water heater or other type of domestic water-heating system sufficient to supply hot water to plumbing fixtures and appliances intended for bathing, washing or culinary purposes. Storage tanks shall be constructed of non-corrosive metal or shall be lined with non-corrosive material.

P2801.3 Location. Water heaters and storage tanks shall be installed in accordance with Section M1305 and shall be located and connected to provide access for observation, maintenance, servicing and replacement.

P2801.5 Required pan. Where a storage tank-type water heater or a hot water storage tank is installed in a location where water leakage from the tank will cause damage, the tank shall be installed in a galvanized steel pan having a material thickness of not less than 0.0236 inch (0.6010 mm) (No. 24 gage), or other pans approved for such use. Listed pans shall comply with CSA LC3.

P2801.5.1 Pan size and drain.

The pan shall be not less than 11/2 inches (38 mm) deep and shall be of sufficient size and shape to receive all dripping or condensate from the tank or water heater. The pan shall be drained by an indirect waste pipe of not less than 3/4 inch (19 mm) diameter. Piping for safety pan drains shall be of those materials listed in Table P2905.5.

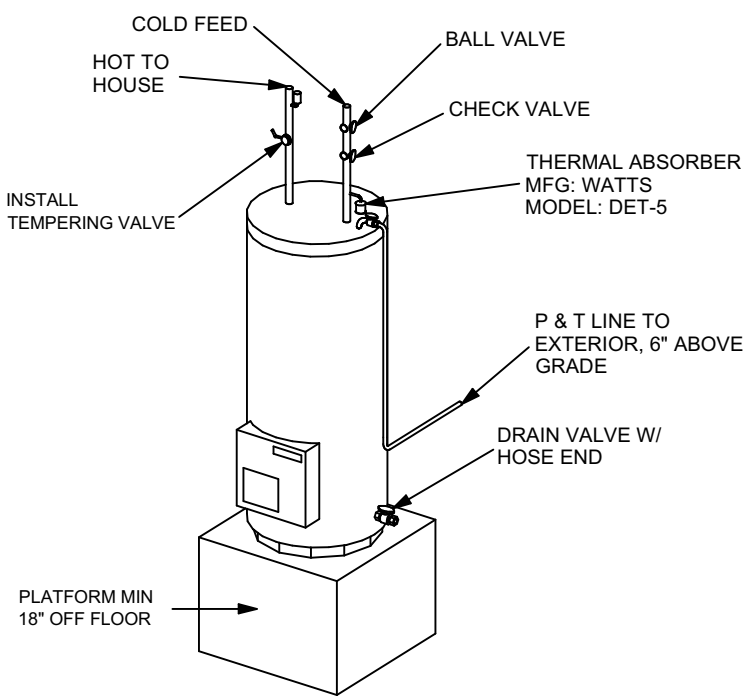
P2801.5.2 Pan drain termination.

The pan drain shall extend full-size and terminate over a suitably located indirect waste receptor or shall extend to the exterior of the building and terminate not less than 6 inches (152 mm) and not more than 24 inches (610 mm) above the adjacent ground surface.

P2803.6.1 Requirements for discharge pipe.

The discharge piping serving a pressure-relief valve, temperature-relief valve or combination valve shall:

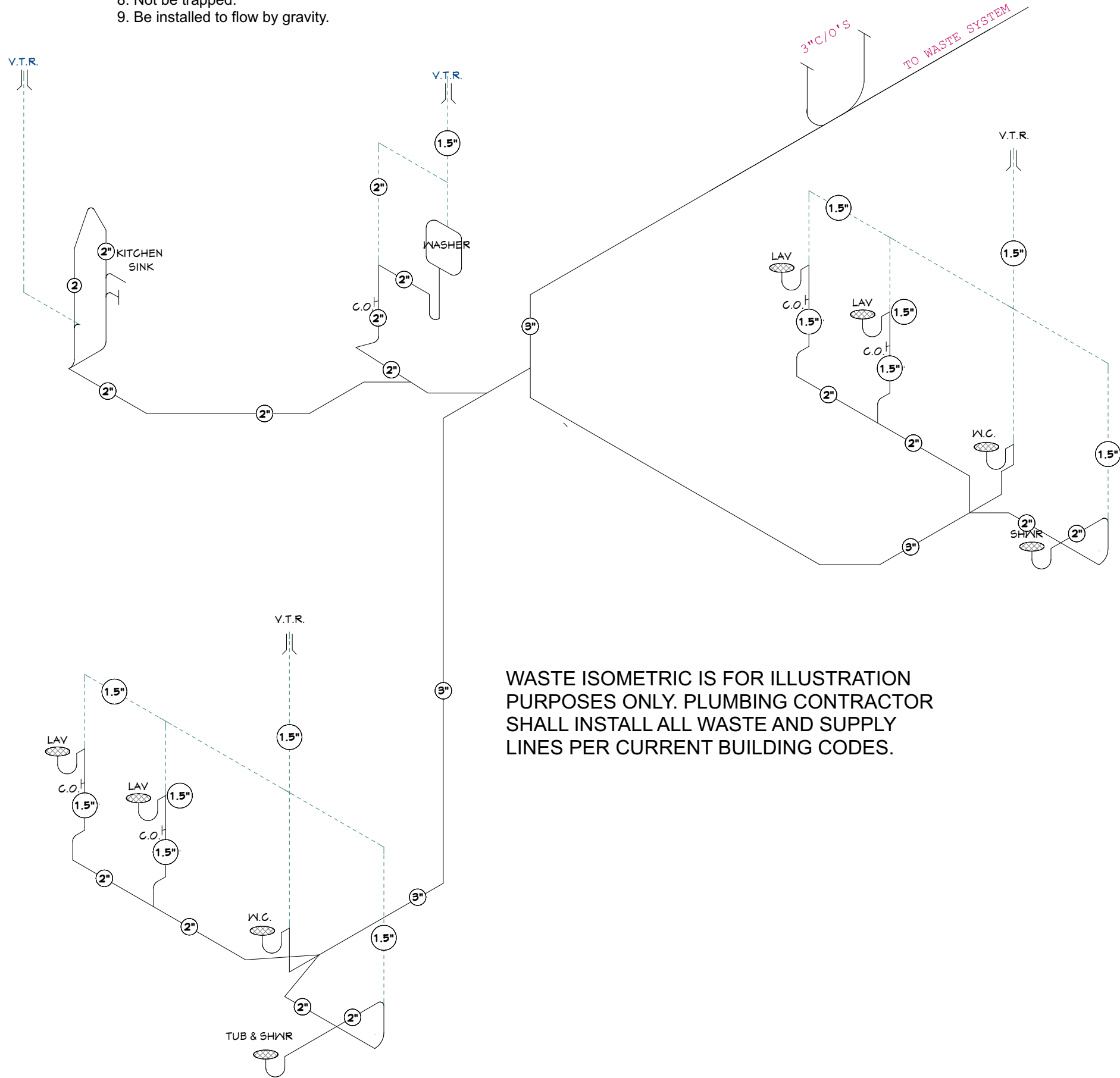
1. Not be directly connected to the drainage system.
2. Discharge through an air gap located in the same room as the water heater.
3. Not be smaller than the diameter of the outlet of the valve served and shall discharge full size to the air gap.
4. Serve a single relief device and shall not connect to piping serving any other relief device or equipment.
5. Discharge to the floor, to the pan serving the water heater or storage tank, to a waste receptor or to the outdoors.
6. Discharge in a manner that does not cause personal injury or structural damage.
7. Discharge to a termination point that is readily observable by the building occupants.
8. Not be trapped.
9. Be installed to flow by gravity.



ELECTRIC WATER HEATER DETAIL

WATER HEATER NOTES:

TEMPERATURE & PRESSURE RELIEF LINE FROM THE WATER HEATER TO BE EXTERIOR OF THE BUILDING. THE TEMPERATURE AND PRESSURE RELIEF LINE TO BE FULL SIZE STEEL PIPE OR HARD DRAWN COPPER TUBING, EXTENDING TO THE EXTERIOR OF THE BUILDING & TERMINATING IN A DOWNWARD POSITION NOT MORE THAN 2 FEET NOR LESS THAN 6 INCHES ABOVE GRADE. THE TEMPERATURE & PRESSURE RELIEF LINE SHALL NOT TERMINATE OVER WALKWAYS, PATIOS, CARPORTS, OR OTHER SIMILAR AREAS.



WASTE ISOMETRIC IS FOR ILLUSTRATION PURPOSES ONLY. PLUMBING CONTRACTOR SHALL INSTALL ALL WASTE AND SUPPLY LINES PER CURRENT BUILDING CODES.

To the best of my knowledge these plans are drawn to comply with all applicable codes and regulations. Any changes made on them after prints are made will be done at the owner's risk. I am not responsible for any errors or omissions. The contractor shall verify all dimensions and annotations on the drawing. Drafting Firm is not liable for errors once the drawings are released to the contractor. The contractor shall be responsible for all dimensions and annotations on the drawings. The contractor shall be responsible for all dimensions and annotations on the drawings. The contractor shall be responsible for all dimensions and annotations on the drawings.

DATE				
DESCRIPTION				
NO.				

REVIEWED FOR CODE COMPLIANCE BY: WILLIAM CHRISTENSEN
Approval of these plans & specifications shall not be construed to be a legal act, or an approval of any violation of any Federal, State, County or City laws or regulations. One set of approved plans shall be kept on the job until completion.
3/28/01 PM Mar 12, 2024

PROJECT DESCRIPTION:

PLAN # 1213

BUILDING AREA	1213
LIVABLE	139
PATIO	156
TOTAL	1508

DATE:

3/11/2024

SCALE:

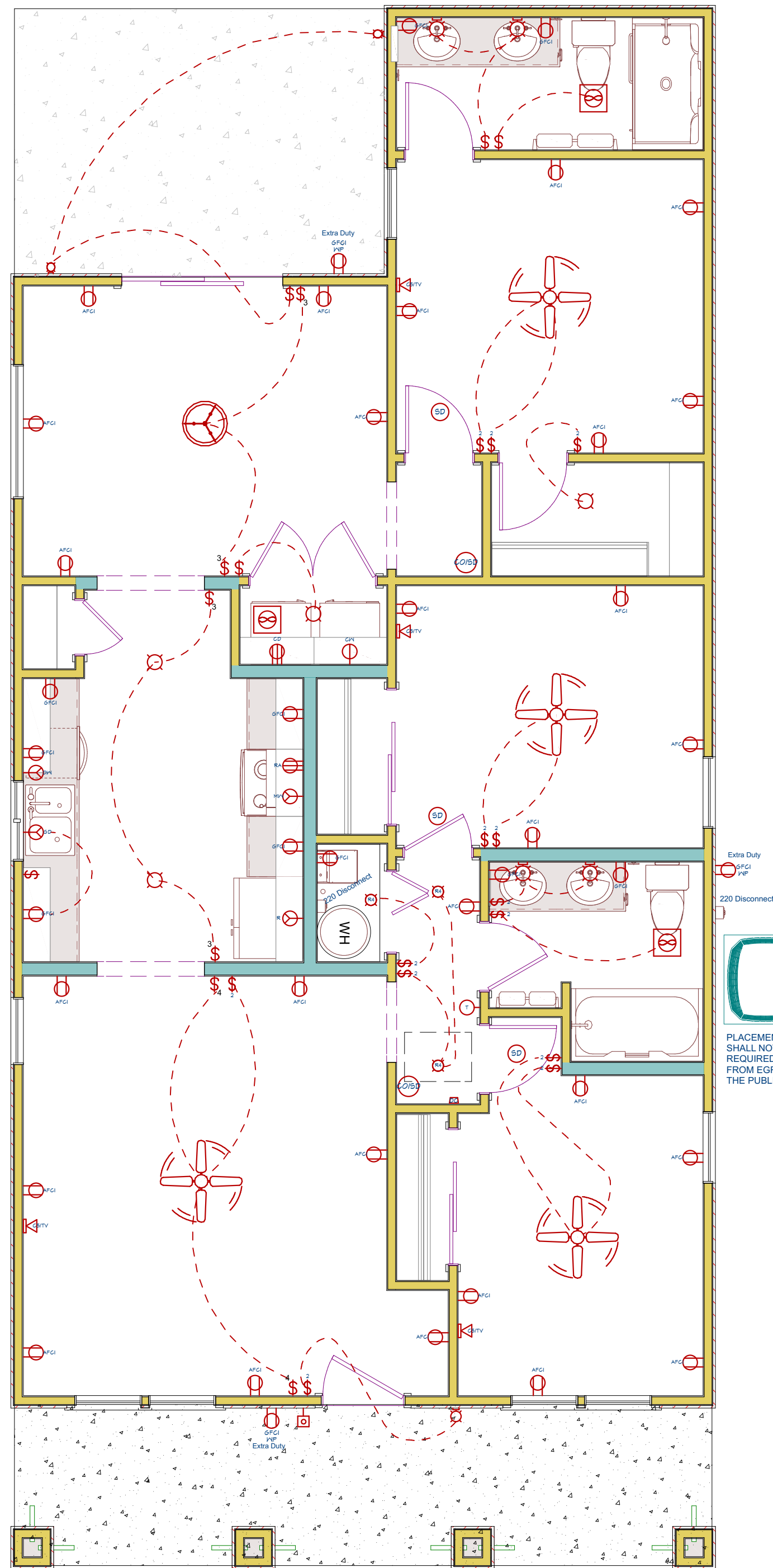
1/4" = 1'

SHEET:

10

		CO/Smoke Detector
Duplex (split wired)		
		Smoke Detector
Exhaust		
		C5/TV
		CAT5 w/ TV
Ceiling Fan		
		AFCI
		Arch Fault Circuit
		GFCI
		Ground Fault Circuit
Exterior Wall Mount		WP
		GFCI (weatherproof)
Wall Mount Fixture		Automatic Garage Door Opener
		A.G.D.O.
Pendant Light		Door Chime
		Doorbell
		Two Way Switch
		Three Way Switch
		Single Receptacle
		220V
Hanging Chandelier		CD
		Clothes Dryer
Mini Can Lite		CW
		Clothes Washer, HW
Recessed Vapor Light		DW
		Dishwasher, HW
		Electric Range
Recessed Light 6"		CT
		Gas Cooktop 110
Ceiling Mount Lite		H
		Hood w/ Vent
220 Disconnect		R
		Refrigerator, HW

E3903.4 Storage or equipment spaces.
In attics, under-floor spaces, utility rooms and basements, at least one lighting outlet shall be installed where these spaces are used for storage or contain equipment requiring servicing. Such lighting outlet shall be controlled by a wall switch or shall have an integral switch. At least one point of control shall be at the usual point of entry to these spaces. The lighting outlet shall be provided at or near the equipment requiring servicing.



NO.	DESCRIPTION	DATE

3:28:02 PM Mar 12, 2024

PROJECT DESCRIPTION:

BUILDING AREA	
LIVABLE	1213
PATIO	139
PORCH	156
TOTAL	1508

DATE:

3/11/2024

SCALE:

$$1/4" = 1'$$

SHEET:

11

ELECTRICAL ----- PLAN

R401.3 Certificate (Mandatory)
A permanent certificate shall be completed by the builder or registered design professional and posted on a wall in the space where the furnace is located, a utility room or an approved location inside the building. Where located on an electrical panel, the certificate shall not cover or obstruct the visibility of the circuit directory label, service disconnect label or other required labels. The certificate shall list the predominant R-values of insulation installed in or on ceiling/roof, walls, foundation (slab, basement wall, crawlspace wall and floor) and ducts outside conditioned spaces; U-factors for fenestration and the solar heat gain coefficient (SHGC) of fenestration, and the results from any required duct system and building envelope air leakage testing done on the building. Where there is more than one value for each component, the certificate shall list the value covering the largest area. The certificate shall list the types and efficiencies of heating, cooling and service water heating equipment. Where a gas-fired unvented room heater, electric furnace or baseboard electric heater is installed in the residence, the certificate shall list "gas-fired unvented room heater," "electric furnace" or "baseboard electric heater," as appropriate. An efficiency shall not be *listed* for gas-fired unvented room heaters, electric furnaces or electric baseboard heaters.

R402.2.3 Eave Baffle For air-permeable insulations in vented attics, a baffle shall be installed adjacent to soffit and eave vents. Baffles shall maintain an opening equal or greater than the size of the vent. The baffle shall extend over the top of the attic insulation. The baffle shall be permitted to be any solid material.

R402.4 Air Leakage (Mandatory)
The *building thermal envelope* shall be constructed to limit air leakage in accordance with the requirements of Sections R402.4.1 through R402.4.4. (Maximum 5 Air Changes per hour)

R402.4.1.2 Testing The building or dwelling unit shall be tested and verified as having an air leakage rate not exceeding 5 air changes per hour. Testing shall be conducted in accordance with ASTM E 779 or ASTM E 1827 and reported at a pressure of 0.2 inch w.g. (50 Pascals). Where required by the *code official*, testing shall be conducted by an *approved* party. The following parties shall be approved to conduct testing: Parties certified by BPI or RESNET, or licensed contractors who have completed training provided by Blower Door Test equipment manufacturers or other comparable training. A written report of the results of the test shall be signed by the party conducting the test and provided to the *code official*. Testing shall be performed at any time after creation of all penetrations of the *building thermal envelope*.

R402.4.5 Recessed Lighting Recessed luminaires installed in the *building thermal envelope* shall be sealed to limit air leakage between conditioned and unconditioned spaces. All recessed luminaires shall be IC-rated and *labeled* as having an air leakage rate not more than 2.0 cfm (0.944 L/s) when tested in accordance with ASTM E 283 at a 1.57 psf (75 Pa) pressure differential. All recessed luminaires shall be sealed with a gasket or caulk between the housing and the interior wall or ceiling covering.

R403.1 Controls (Mandatory)
At least one thermostat shall be provided for each separate heating and cooling system.
R403.1.1 Programmable Thermostat The thermostat controlling the primary heating or cooling system of the dwelling unit shall be capable of controlling the heating and cooling system on a daily schedule to maintain different temperature set points at different times of the day. This thermostat shall include the capability to set back or temporarily operate the system to maintain *zone* temperatures down to 55°F (13°C) or up to 85°F (29°C). The thermostat shall initially be programmed by the manufacturer with a heating temperature set point no higher than 70°F (21°C) and a cooling temperature set point no lower than 78°F (26°C).

R403.3 Ducts
Ducts and air handlers shall be in accordance with Sections R403.3.1 through R403.3.5.
R403.3.1 Insulation (Prescriptive)
Supply and return ducts in attics shall be insulated to a minimum of R-8 where 3 inches (76 mm) in diameter and greater and R-6 where less than 3 inches (76 mm) in diameter. Supply and return ducts in other portions of the building shall be insulated to a minimum of R-6 where 3 inches (76 mm) in diameter or greater and R-4.2 where less than 3 inches (76 mm) in diameter. **Exception:** Ducts or portions thereof located completely inside the *building thermal envelope*.
R403.3.2 Sealing (Mandatory) Ducts, air handlers and filter boxes shall be sealed. Joints and seams shall comply with either the *International Mechanical Code* or *International Residential Code*, as applicable.

R403.3.3 Duct Testing (Mandatory) Ducts shall be pressure tested to determine air leakage by one of the following methods:
1 Rough-in test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the system, including the manufacturer's air handler enclosure if installed at the time of the test. All registers shall be taped or otherwise sealed during the test.
2 Postconstruction test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. Registers shall be taped or otherwise sealed during the test.

R403.4 Mechanical System Piping Insulation (Mandatory) Mechanical system piping capable of carrying fluids above 105°F (41°C) or below 55°F (13°C) shall be insulated to a minimum of R-3.

R403.7 Equipment Sizing and Efficiency Rating (Mandatory) Heating and cooling equipment shall be sized in accordance with ACCA Manual S based on building loads calculated in accordance with ACCA Manual J or other *approved* heating and cooling calculation methodologies. New or replacement heating and cooling equipment shall have an efficiency rating equal to or greater than the minimum required by federal law for the geographic location where the equipment is installed.

R404.1 Lighting Equipment (Mandatory) Not less than 90 percent of the lamps in permanently installed lighting fixtures shall be high-efficacy lamps.

M1411.3.1 Auxiliary and Secondary Drain Systems In addition to the requirements of Section M1411.3, a secondary drain or auxiliary drain pan shall be required for each cooling or evaporator coil where damage to any building components will occur as a result of overflow from the *equipment* drain pan or stoppage in the condensate drain piping. Such piping shall maintain a minimum horizontal slope in the direction of discharge of not less than 1/8 unit vertical in 12 units horizontal (1-percent slope). Drain piping shall be a minimum of 3/4-inch (19 mm) nominal pipe size. One of the following methods shall be used

M1411.8 Locking Access Port Caps Refrigerant circuit access ports located outdoors shall be fitted with locking-type tamper-resistant caps or shall be otherwise secured to prevent unauthorized access.

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Design Indoor Cooling Temp.: 75 °F
Design Outdoor Cooling Temp.: 108 °F
Temp. Difference Cooling: 33°F
Indoor Humidity: 50 Grains difference: -14

1213 PLAN
MARICOPA, ARIZONA

Design Indoor Heating Temp.: 70 °F
Design Outdoor Heating Temp.: 37 °F
Temp. Difference Heating :33° F

Whole House Block Load

TD:Cool:33°F Heat:33°F	Sq. ft. -types 1 and 2	shading	Sq. ft. -types 1 and 2	shading	Sq. ft. -types 1 and 2	Sq. ft.
Outside Wall: North	1: 234 2:	Windows →	1: 50 2:	Glass Doors x	1: 21 2:	Doors
Outside Wall: South	1: 234 2:	Windows ↓	1: 2 2:	Glass Doors ↓	1: 42 2:	Doors
Outside Wall: E & W	1: 2340 2:	Windows ↓	1: 2 2:	Glass Doors ↓	1: 60 2:	Doors
Outside Wall: NE & NW	1: 2: 2:	Windows →	1: 2 2:	Glass Doors x	1: 2 2:	Doors
Outside Wall: SE & SW	1: 2: 2:	Windows ↓	1: 2 2:	Glass Doors ↓	1: 2 2:	Doors
Floor - (linear ft. if slab)	1: 216 2:	Ceiling	1: 1213 2:	Appliances 3	Fireplaces 0	
Sky Lights	N: S:	E-W: NE-NW: SE-SW:				
Number of People	5	Conditioned Sq. ft.	1213	Cubic Ft.	10917	

Basement	Above grade: Walls	Cubic Ft.	Below grade: walls	Floor	sq. ft. width 23ft. or below: 2 ft.
Fresh air recommended: 71cfm → 100 CFM			Construction: good	Duct system: attic	R-6 very tight
Calculate Load		Total Btu's Cooling 26377	Sensible Load 25377	Latent Load 1000	Total Btu's Heating 27831

Btu breakdown	Sensible	Latent	Heating
walls	6008		6522
windows	1190		1436
ceilings	1987		1041
doors	0		0
floors	0		9680
appliances	3600		
people	1150	1000	
glass doors	4922		2435
skylights	0		0
basement walls	0		0
basement floor	0		0
infiltration	1025	0	1986
fresh air	3521	0	3521
duct load	1974	0	1211
Totals	25377	1000	27831

Structure types

Outside Walls 1: Siding or Stucco R13 insulation w/R3 board
Outside Walls 2:
Windows 1: double pane - blinds
Windows 2:
Glass Doors 1: double pane french door
Glass Doors 2:
Floors 1: Concrete slab no edge insulation
Floor 2:
Ceiling 1: Ceiling under attic space R-38
Ceiling 2:
Doors:
Skylights:
Basement Walls:
Basement Floor:
Win ht.: 6' 6" Overhang: 1.5' Top to overhang: 2'

11/7/23, 7:14 PM

manual_s

Sizing Calculator based on Manual S

System Type:

Heat Pump air to air ▼

Load Calculation Data

Cooling - Sensible: 25377 btu/s

Cooling - Latent: 1000 btu/s

Cooling - Total: 26377 btu/s

Heating - Total: 27831 btu/s

Sensible Heat Ratio 0.96

Calculate

Climate:

Heating & Cooling ▼

Sizing Results

* Cooling - Minimum: 26377 btu/s

Cooling - Maximum: 30334 btu/s

Emergency - Minimum: 22474 btu/s

Emergency - Maximum: 41399 btu/s

Auxiliary Heat Minimum: 5 kw

Auxiliary Heat Maximum: 5 kw

Elevation: 1506 ft.

System Performance at Design Temp

Cooling - Sensible: 20424 btu/s

Cooling - Latent: 7176 btu/s

Heat Pump - Output: 27600 btu/s

↓ Totals After Altitude Correction ↓

Sensible: 19913 Latent: 6997 btu/s

Heat: 26910 Cooling: 26910 btu/s

Heat Pump air to air

Manufacturer's CFM rating at sea level :

Is system within specs: YES

Clear Load Data

Clear System Data

Clear All Data

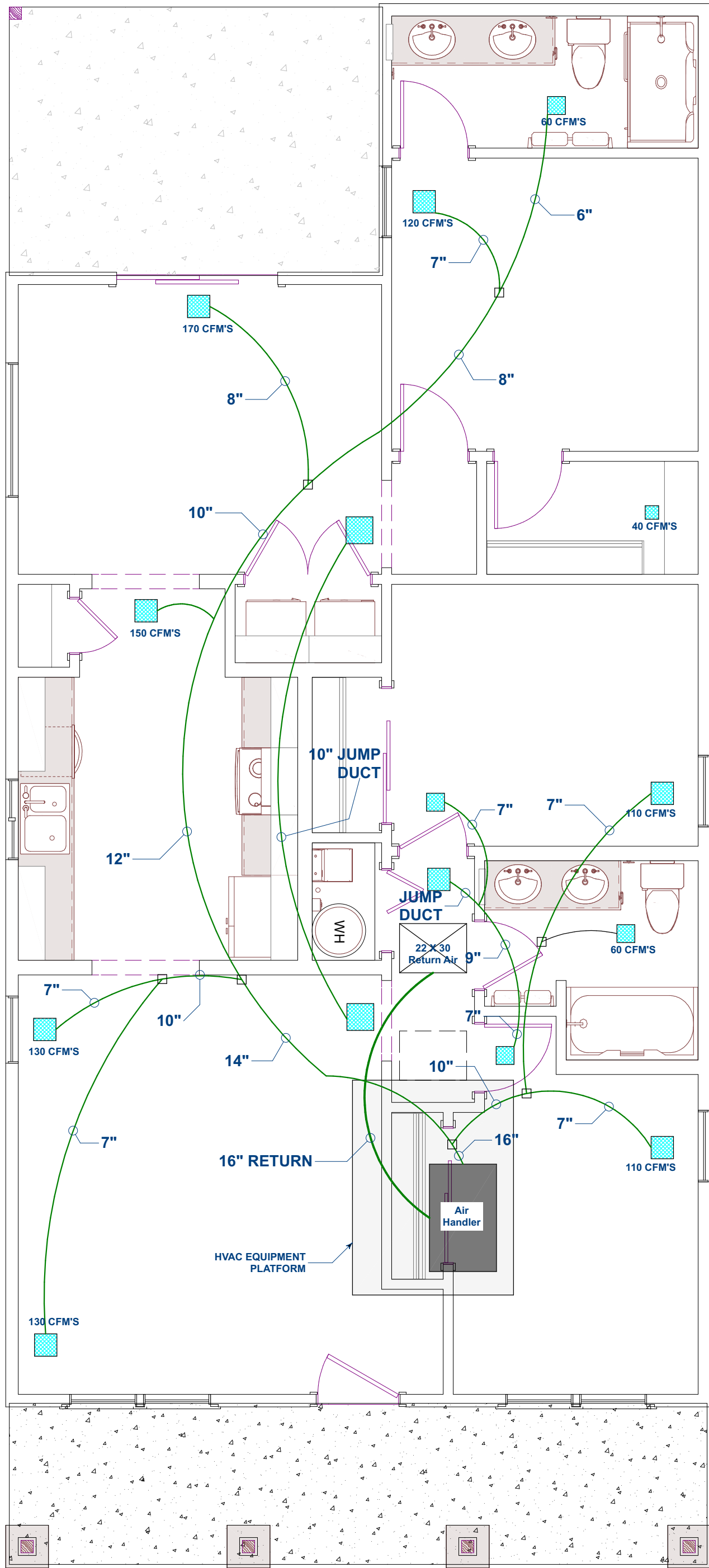
Instructions

Loadcalc Page

Balance Point

*Note: The total cooling minimum can be 90% of the total cooling load if the output of the sensible plus 50% of the excess latent equal at least 90% of the sensible load. If this condition exists the calculator will detect it but in most cases the cooling minimum will equal the total cooling load.

Altitude does not effect electric heat btu output



HVAC PLAN IS FOR ILLUSTRATION PURPOSES ONLY, HVAC CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALL OF AN EFFICIENT HEATING AND COOLING SYSTEM, ANY PER CURRENT BUILDING CODES.

To the best of my knowledge these plans are drawn to comply with all applicable codes and regulations. Any changes made on them after prints are made will be done at the owner's risk. The contractor shall verify all dimensions and annotations on the drawing. Drafting Firm is not liable for errors once the drawings are released. The contractor shall be responsible for the preparation of this plan to avoid mistakes. The contractor can not guarantee against human error. The contractor of the job must check all dimensions and other details prior to construction and notify the design professional if required.

DATE				
DESCRIPTION				
NO.				

REVIEWED FOR CODE COMPLIANCE BY: WILSON ENGINEERING
Approval of these plans & specifications shall not be construed to be a permit fee, or an approval of any violation of any federal, state, county or city laws or regulations. One set of approved plans shall be kept on the job until completion.
3:28:03 PM Mar 12, 2024

PROJECT DESCRIPTION:
PLAN # 1213

BUILDING AREA	1213
LIVABLE	139
PATIO	156
PORCH	
TOTAL	1508

DATE:	3/11/2024
SCALE:	1/4" = 1'
SHEET:	13