Adopted Codes: State of North Carolina

2018 North Carolina Residential Code
2017 North Carolina Electrical Code (2017 NEC)
2018 North Carolina Energy Code
2018 North Carolina Mechanical Code
2018 North Carolina Plumbing Code
2018 North Carolina Fuel Gas Code
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Project Location:

Oakrodge River Road
Fuquay Varina, NC 27526
HARNETT County

Occupancy:

Occupancy: .....IRC - Single Family Dwelling
Construction Type: .....5B (Wood Frame - Unprotected)
Number of Stories: .....One Story Cape

Design Load:

Floor Area: .....2781 Sq.Ft.
Ground Snow Load: .....20 psf
Top Chord Dead Load: .....10 psf
Ultimate Wind Speed: ..... 120 mph
Seismic Design Category: ...C
Floor Live Load: .....40 psf
Floor Dead Load: .....10 psf
Bottom Chord Live Load:.....40 psf
Wind Exposure Category: .....B
IECC Geographical Code: 3A

Insulation

Reference RESCheck for Requirements.

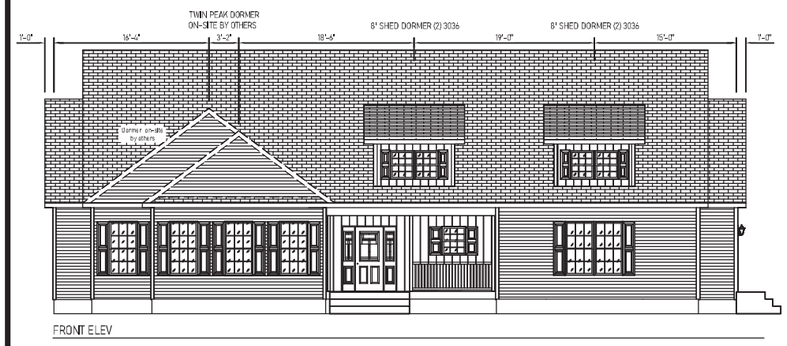
Attention Local Inspection Departments:

1. Set-up instructions for this modular unit are included by attachment to these plans. Any plans set that does not include an attachment entitled "MODULAR HOME INSTALLATION MANUAL" is incomplete.
2. The following items are not completed by the home manufacturer, are not inspected by in-factory third party inspectors, and are not certified by the modular compliance label: (A) Components or connections for heating or air conditioning systems which are NOT part of the factory installation. (B) Below floor ducts. (C) Electrical service disconnect. (D) Foundation designs and attachments. In order to verify that all required systems connections are complete, refer to the "Inspection Check Sheet" in the manufacturer's modular home installation manual. Regardless of factory or site installation, the furnace, water heater, and all elements of heating system must be per applicable codes, (refer to ResCheck if applicable).
3. Site installed furnace must meet IECC Energy Efficiency Certificate if applicable.
4. This unit must be connected to a public water supply and sewer system if these are available.
5. ***If this structure is in a thermal zone more stringent than that listed on these plans, is set on pilings, or is installed at a mountain region or coastal high hazard site such that wind or other design parameters are increased, the design must be determined to be adequate for actual site conditions. Alterations may be required to bring the home into compliance with the more stringent conditions.***
6. Soffit materials for this unit assume that the building face will be 10 feet or greater from the property line when installed on site. Where the building face is less than 10 feet from the property line, underlayment materials and ventilation in accordance with **Section R302.1.1, NC Residential Code**, must be provided and installed at the site and inspected by the local jurisdiction.
7. If after installation of this home, the lowest part of the clear opening of any window is more than 72" above the finished grade, guards will be required to be installed onsite in accordance with **Section R312**; subject to local inspection.
8. Partial plumbing installation (stubbed in) requires full DWV testing in field. Testing of factory portion of DWV is not required unless partial testing is mandated by code.
9. Smoke detectors required by code that are not shown on the plan will be site installed by others and are subject to inspection by the authority having jurisdiction.
10. Where required, window protection designed and provided on site by others to meet applicable local codes.

Model: 3R2202-R32
Customer: KING
Builder: HBV

Manufacturer:

R-Anell Housing Group, LLC
Commodore Homes, LLC
235 Anthony Grove Rd.
Crouse, NC 28033



Drawing Index

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Gas Lines	GA
Braced Walls-Prescriptive	BWP
Foundation 2x10 Marriage Line without Stair	FD20#
ResCheck	ATTACHED
UFP Rigid Collar Tie Connection Details	UFP-EB05-02
Truss Diagram	ATTACHED
Span Calcs	ATTACHED

NOTICE TO CONTRACTOR
All construction must comply with current NC Building Codes and is subject to field inspection and verification.
APPROVED
Limited building only review
Permit holder responsible for full compliance with the code
04/23/2024
Harnett COUNTY NORTH CAROLINA

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NTA 3/4/2024
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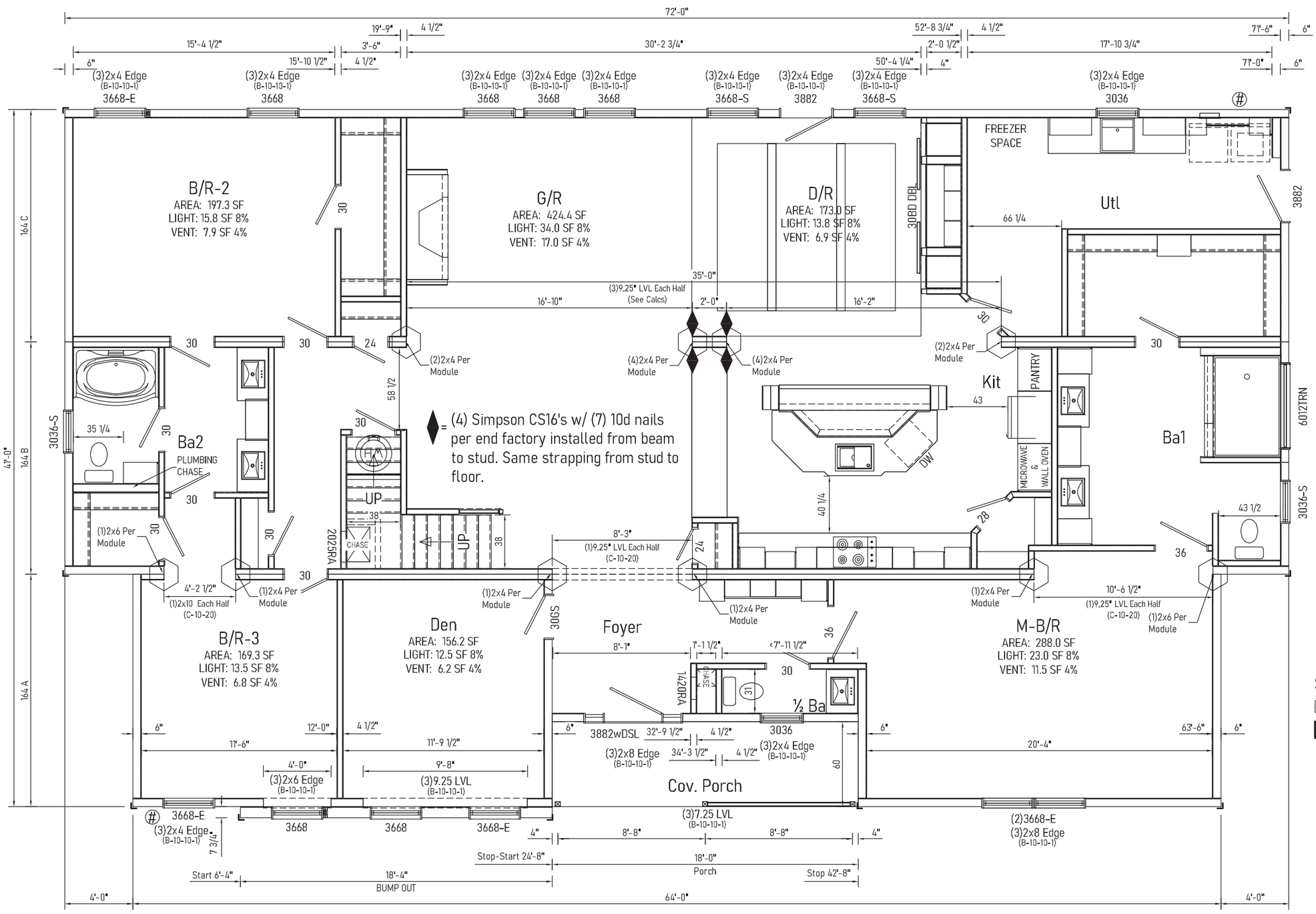
Kip Whitehead

Note: Window fall protection must be provided on-site where required in accordance with applicable code.



= (4) Simpson CS16's w/ (7) 10d nails per end factory installed from beam to stud. Same strapping from stud to floor.

Note:
* LVLs noted must extend past column on at least one end 24" minimum and be overlayed with OSB sheathing.

Notes:
1. Exterior opening headers and jack studs are SPF #2 unless otherwise noted.
2. Sidewall headers may use alternate construction per section B-10 of Systems Manual.
3. LVL's where specified to be minimum of 1 1/2" wide, M.O.E. = 2.0 and fb = 2900 PSI.
4. See C-10-45 for stair opening framing.
5. See C-10-105 for dormer opening framing.

See Schedules and General Notes Page
⬡ = Column Support Location
AC = Attic Access

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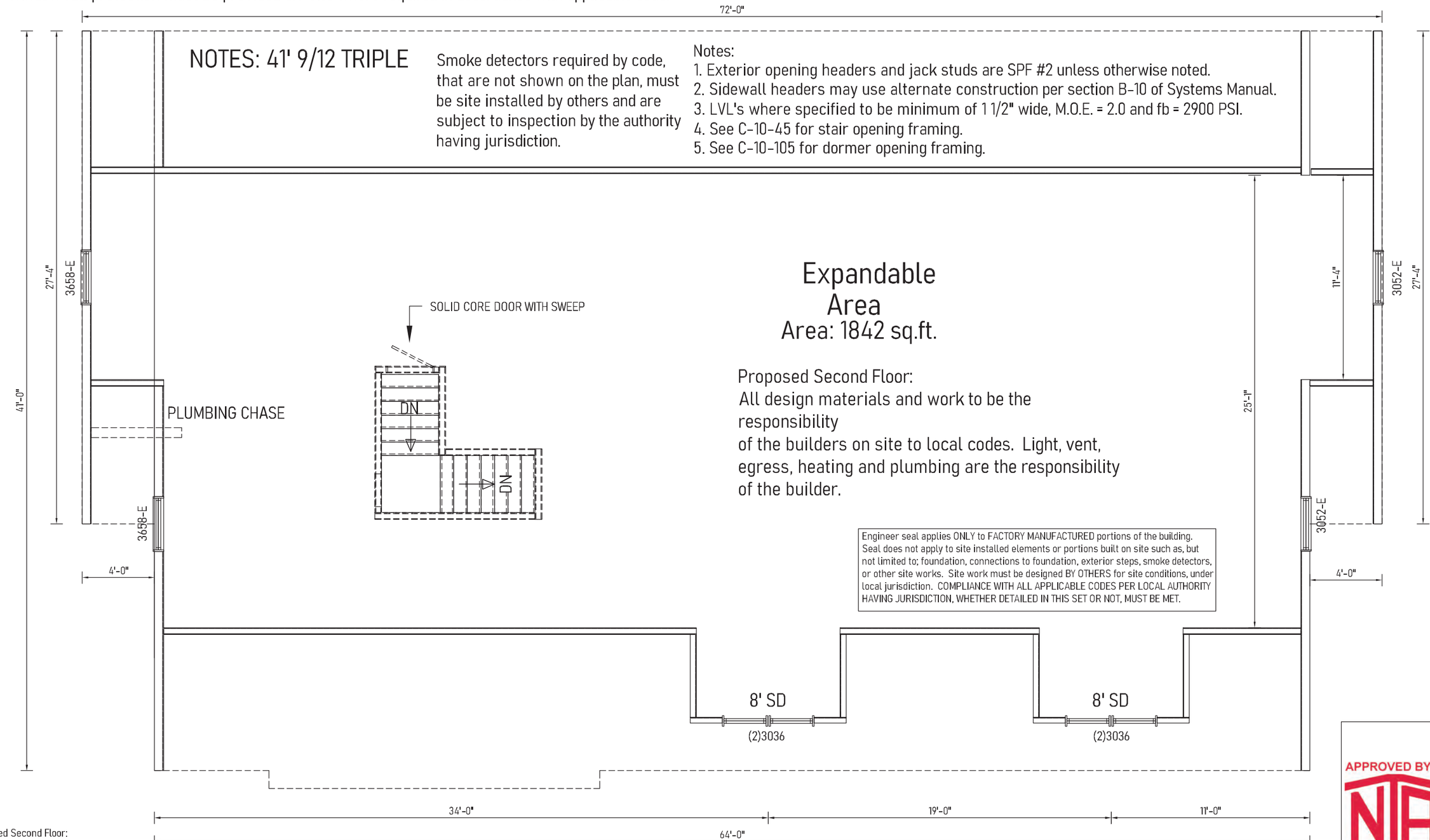
Builder: R-Anell Housing Group, LLC - Subsidiary of The Commodore Corp.	Address: 235 Anthony Grove Rd. Crouse, NC 28033	Callout: 4272/64	Revisions . .	Scale: 0.014008	Date: .	Cust: KING	Model/Eng. No.: 3R2202-R32
Title: Floor Plan			Drawn By: JT	Reference: RV110-A1		Dlr: HBV S/N: 44293	Pg.: FP

N:\R-ANELL\3R\22-3R2202-R32\

Note: Window fall protection must be provided on-site where required in accordance with applicable code.



NOTES: 41' 9/12 TRIPLE

Smoke detectors required by code, that are not shown on the plan, must be site installed by others and are subject to inspection by the authority having jurisdiction.

Notes:
1. Exterior opening headers and jack studs are SPF #2 unless otherwise noted.
2. Sidewall headers may use alternate construction per section B-10 of Systems Manual.
3. LVL's where specified to be minimum of 1 1/2" wide, M.O.E. = 2.0 and fb = 2900 PSI.
4. See C-10-45 for stair opening framing.
5. See C-10-105 for dormer opening framing.

Proposed Second Floor:
All design materials and work to be the responsibility of the builders on site to local codes. Light, vent, egress, heating and plumbing are the responsibility of the builder.
Area: 1842 sq. ft.

See Schedules and General Notes Page
⬡ = Column Support Location
AC = Attic Access

Note:
* LVLs noted must extend past column on at least one end 24" minimum and be overlayed with OSB sheathing.

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Builder: R-Anell Housing Group, LLC - Subsidiary of The Commodore Corp.	Address: 235 Anthony Grove Rd. Crouse, NC 28033	Callout: 4272/64	Revisions . .	Scale: 3/16" = 1'-0"	Date: 02/15/2024	Cust: KING	Model/Eng. No.: 3R2202-R32
Title: Proposed Cape Floor Plan			Drawn By: JT	Reference: RV110-A1		Dlr: HBV S/N: 44293	Pg.: PCFP

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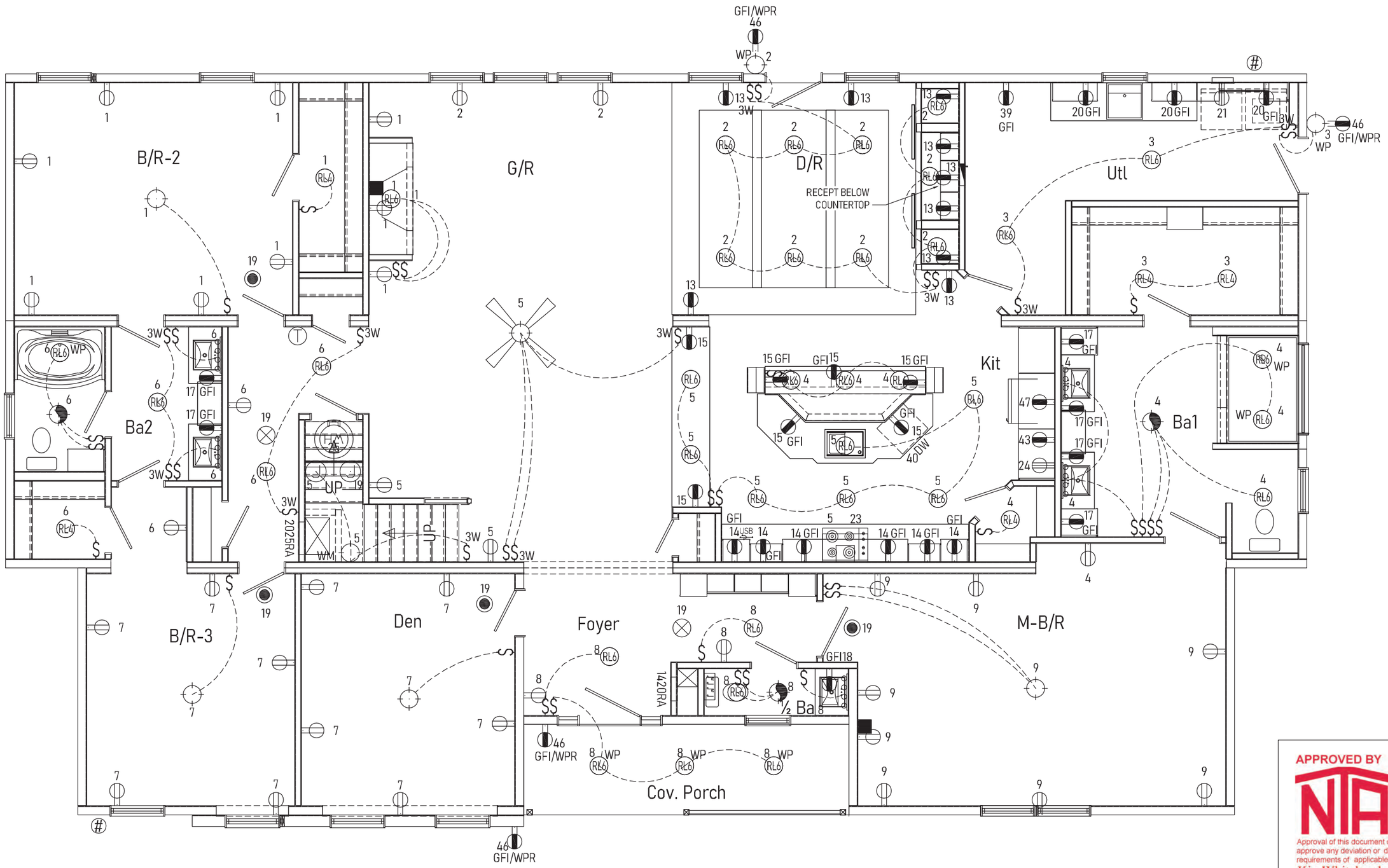

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See Schedules and General Notes Page

Builder: R-Anell Housing Group, LLC - Subsidiary of The Commodore Corp.	Address: 235 Anthony Grove Rd. Crouse, NC 28033	Callout: 4272/64	Revisions . .	Scale: 3/16" = 1'-0"	Date: 02/15/2024	Cust: KING	Model/Eng. No.: 3R2202-R32
Title: Electrical Plan			Drawn By: JT	Reference: RV110-A1		Dlr: HBV S/N: 44293	Pg.: EP

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Optional Method Load Calculation for One-Family Dwellings

Model # 3R2202-R32

1 General Lighting and Receptacle Loads 220.82(B)(1) *Do not include open porches, garages, or unused or unfinished spaces not adaptable for future use.*	3 x 2781 = (ft^2 using outside dimensions)	1	8343
2 Small-Appliance Branch Circuits 220.82(B)(2) *At least two small-appliance branch circuits must be included. 210.11(C)(1)*	1500 x 3 = (minimum of two)	2	4500
3 Laundry Branch Circuits(s) 220.82(B)(2) *At least one laundry branch circuit must be included. 210.11(C)(2)*	1500 x 1 = (minimum of one)	3	1500
4 Appliances 220.82(B)(3) and (4) *Use the nameplate rating of all appliances (fastened in place, permanently connected, or connected to a specific circuit), ranges, ovens, cooktops, motors, and clothes dryers. Convert any nameplate rating given in amperes to volt-amperes by multiplying the amperes by the rated voltage.*	*Do NOT include any heating or A/C equipment in this section.* Total volt-amps of all app. LISTED BLEOW	4	31100

(1) Electric H_2O Heater 4.5 KVA; (1) Electric Dryer 5.4 KVA; (1) Electric Cooktop 7.4 KVA; (1) Electric Wal Oven (S) 3.6 KVA; (0) Electric Wal Oven (D) 0 KVA; (2) Bath Circ's 3 KVA

(4) Vent Fans 1.2 KVA; (1) Microwave 1.5 KVA; (1) Dishwashe 1.5 KVA; (1) Freezer 1.5 KVA; (1) Refrigerato 1.5 KVA; KVA

5 Apply 220.82(B) demand factor to the total of lines 1 through 4.
45443 - 10,000 = 35443 x 40 % = 14177 + 10,000 = **24177**
(total of lines 1-4)

6 Heating or Air-Conditioning System 220.82(C). *Use the nameplate ratings in volt-amperes for all applicable systems in lines a through e.*

a) Air-conditioning and cooling systems, including heat pumps without any supplemental electric heating: 6000 x 100 % = **a)** 6000

b) Electric thermal storage & other heating systems where the usual load is expected to be continuous at full nameplate value. *Systems qualifying under this selection shall not be figured under any other selection in 220.82(C).* 0 x 100 % = **b)** 0

c) Supplemental electric heating equipment for heat-pump systems. Include the heat-pump compressor(s) at 100%. *If the heat-pump compressor is prevented from operating with the supplemental heat, omit the compressor.* 0 x 65 % = **c)** 0

d) Electric space-heating equipment, if fewer than four seperately controlled units: 20000 x 65 % = **d)** 13000

e) Electric space-heating equipment, if four or more seperately controlled units: 0 x 40 % = **e)** 0

7 Total Volt-Ampere Demand Load: 13000 (Largest VA rating, 6a - 6e) + 24177 (Line 5) = **7** **37177**

8 Minimum Amperes *Divide the total volt-amperes by voltage.* 37177 (line 7) ÷ 240 (voltage) = **155** (min. amperes)

9 Minimum Size Service or Feeder 240.6(A) — **200 Amps Installed**

10 Size the Service or Feeder Conductors. *Use 310.15(B)(6) to find the service conduct up to 400 amperes. Ratings in excess of 400 amperes shall comply w/ Table 310.16. 310.15(B)(6) also applies to feeder conductors serving as the main power feeder.* — 10 Minimum Size Conductors — **2/0 Copper OR 4/0 Aluminum**

LEGEND

=15 AMP RECPT; =15 AMP FLOOR RECPT; =20 AMP RECPT; =20 AMP FLOOR RECPT
=SWITCHED RECPT; =220 VOLT RECPT; WPR = WEATHERPROOF ENCLOSURE WITH WEATHE RESISTANT RECPT
=STD LIGHT; (R) =RECESSED LIGHT; (RL4) =RECESSED 4" LED LIGHT; (RL6) =RECESSED 6" LED LIGHT
18" FLOURESCENT; 48" FLOURESCENT; 24" STRIPLIGHT; (PC) =PULL CHAIN LIGHT
=UNDER CABINET LIGHT / WALL LIGHT; =UNDER CABINET STEREO
S =SWITCH; S^{DM} =DIMMER SWITCH; S^{3W} =3-WAY SWITCH; S^{3DM} =3-WAY DIMMER SWITCH
=STANDARD VENT; =WIRE; =DOORBELL; DJDJ =CHIMES
=WHOLE HOUSE VENTILATION FAN; =STANDARD FAN; =STANDARD FAN w/LIGHT
=PHONE JACK; =DATA JACK; =TV JACK; (J) =JUNCTION BOX; (#) =HOSE BIBB
GFI =GROUND FAULT CIRCUIT INTERRUPTER; =BULLET; =PANEL BOX
WP =WET LOCATION; =SPEAKER; =AV JACK; =MEDIA RECEPT
=IONIZATION SMOKE ALARM; (T) =THERMOSTAT; F = FIRE EXTINGUISHER
=SMOKE/CO ALARM; PE = PHOTOELECTRIC SMOKE/CO ALARM; = CO ALARM

CIRCUIT ID NO.	LOAD	AMPS	POLES REQ'D	WIRE SIZE
1-12	General Lighting/Receptacles	15	1	NM14-2/WG
13-16	Small Appliance	20	1	NM12-2/WG
17-18	Bath (GFCI)	20	1	NM12-2/WG
19	Smoke Alarms (AFCI)	15	1	NM14-2/WG
20	Laundry	20	1	NM12-2/WG
21	Electric Dryer	30	2	NM10-3/WG
22	Electric Range	50	2	NM6-3/WG
23	Electric Cooktop	40	2	NM8-3/WG
24	Electric Wall Oven	20	2	NM12-2/WG
	Electric Wall Oven	40	2	NM8-2/WG
25	Electric W/H	25	2	NM10-2/WG
25.1	Tankless W/H	20	1	NM12-2/WG
26	Gas Furnace	15	1	NM14-2/WG
27	Electric Furnace	60/30	4	NM4-2/WG
	Electric Furnace	60/60	4	NM4-2/WG
28-37	Electric BB Heat	20	2	NM12-2/WG
38	A/C	50	2	NM6-2/WG
39	Freezer	20	1	NM12-2/WG
40	Dishwasher	15	1	NM14-2/WG
41	Disposal (GFCI)	15	1	NM14-2/WG
42	Whirlpool Tub (GFCI)	20	1	NM12-2/WG
43	Microwave Oven	20	1	NM12-2/WG
44	Garage (GFCI)	20	1	NM12-2/WG
46	Exterior Receptacles	15 (Opt. 20)	1	NM14-2/WG (Opt. NM12-2/WG)
47	Refrigerator	20	1	NM12-2/WG

STAIRWAYS
RISER HEIGHT - 8 1/4" MAX.
TREAD DEPTH - 9" MIN.
HEAD ROOM 80" MIN.
NOTE: THE STAIRWELL GEOMETRY IN THIS HOME HAS BEEN DESIGNED TO THE CRITERIA ABOVE. IF MORE STRINGENT STAIR GEOMETRY IS REQUIRED OR DESIRED, PLEASE CONTACT THE PLANT OF MANUFACTURE FOR PLAN ADJUSTMENTS.

If an attached garage is to be added to this home, the entrance door to the home from the garage must be a self-closing fire rated door per applicable code.
Clothes dryer vents may need to be completed to the exterior of the home on site. Refer to sections of
applicable local codes and to Section 8 of the home installation manual for required completion of dryer
ventilation as necessary.

FOR PERMANENTLY CONNECTED APPLIANCES RATED AT OVER 300 VOLT-AMPERES OR 1/8 HP,THE BRANCH CIRCUIT BREAKER SHALL BE PERMITTED TO SERVE AS THE DISCONNECTING MEANS WHERE THE CIRCUIT BREAKER IS WITHIN SIGHT FROM THE APPLIANCE OR IS CAPABLE OF BEING LOCKED IN THE OPEN POSITION. THE LOCKING MEANS SHALL REMAIN IN PLACE WITH OR WITHOUT THE LOCK INSTALLED.
MAIN DISCONNECT SHALL BE LOCATED ON THE EXTERIOR OF THE HOME.

ELECTRICAL PLAN NOTES BASED ON NEC 2017:

1. ALL KITCHEN AND BATHROOM COUNTER RECEPTS TO BE GFCI PROTECTED.
2. ALL CLOSET LIGHTS TO BE ENCLOSED SURFACE MOUNT FIXTURES, 12" MIN. FROM STORAGE SPACE.
3. ALL RECEPTS TO BE GROUNDING TYPE, PER 210-7/NEC.
4. SPECS, WIRING, INSTALLATIONS, ETC. TO COMPLY WITH NEC REGULATIONS.
5. SERVICE PANEL MAY BE LOCATED IN GARAGE.
6. ALL SMOKE ALARMS TO HAVE BATTERY BACK-UP AND TO BE INTERCONNECTED WITH A 14 GA. MIN. INTERCONNECTION WIRE, 14-3 CABLE, OR EQUIVALENT PER MFG.S RECOMMENDATIONS.
7. EXTERIOR LIGHT AT GARAGE SIDE MAY BE REPLACED.
8. GAS APPLIANCES MAY BE SUBSTITUTED FOR ELECTRIC APPLIANCES WHERE APPLICABLE. WHEN GAS APPLIANCES ARE INSTALLED, ALL GAS PIPING, CONNECTIONS, HOOK-UPS, ETC, TO BE INSTALLED ON SITE BY OTHERS. THE OPTIONAL GARBAGE DISPOSAL CONNECTED TO INDEPENDENT RECEPTACLE AND WALL SWITCH.
9. 200 AMP PANEL BOX INSTALLED
10. ALL 120v GENERAL USE RECEPTS ARE TAMPER RESISTANT UNLESS MOUNTED AT LEAST 66" ABOVE FLOOR, OR ARE PART OF A LISTED LIGHT FIXTURE OR APPLIANCE, OR WHERE CORD & PLUG APPLIANCE IN DEDICATED SPACE IS NOT EASILY MOVED FOR USE.
11. ALL EXTERIOR RECEPTACLES ARE GFI, TAMPER RESISTANT AND LISTED FOR WET LOCATIONS.
12. COMBINATION TYPE AFCI BREAKERS ARE REQUIRED FOR ALL 120 V CIRCUITS EXCEPT THOSE SERVING BATHROOMS, GARAGE, LAUNDRY AREAS, KITCHENS, UNFINISHED BASEMENTS AND OUTDOORS.
13. ALL ELECTRICAL BOXES SUPPORTING LIGHTING FIXTURES MUST BE RATED @ 50# AND IDENTIFIED ON THE BOX.
14. WHIRLPOOL RECEPTACLES MUST BE GFCI, TAMPER RESISTANT AND READILY ACCESSIBLE PER NEC 680.71
15. A CIRCUIT BREAKER LOCKING DEVICE SHALL BE PROVIDED TO LOCK THE APPLICABLE BREAKERS IN THEIR "OFF" POSITION. THIS APPLIES TO CIRCUIT BREAKERS WHICH SERVE AS THE DISCONNECT FOR ELECTRIC WATER HEATERS, ELECTRIC BASEBOARD HEATERS, AND ANY APPLIANCE RATED OVER 300 WATTS OR 1/8 HORSEPOWER, WHICH ARE NOT LOCATED WITHIN CLEAR SIGHT OF THEIR DISCONNECT
16. A RECEPTACLE OUTLET IS REQUIRED FOR PORCHES, BALCONIES OR DECKS WHICH ARE ACCESSIBLE FROM THE INSIDE OF THE DWELLING UNIT REGARDLESS OF THE SIZE OF THE PORCH, BALCONY OR DECK.
17. NON-SWITCHED CIRCUIT NEUTRAL CONDUCTOR MUST BE PRESENT AT EACH WALL SWITCH. RE-IDENTIFIED CONDUCTORS WITH WHITE, GREY OR THREE STRIPE INSULATION MAY ONLY BE USED AS SUPPLY TO SWITCH AND NOT FOR HOT RETURN TO FIXTURE.
18. 120v 15 OR 20 AMP RECEPTS LOCATED WITHIN 6' FROM ANY DWELLING UNIT SINK MUST BE GFCI PROTECTED.
19. IF THE PERIMETERS OF THE AREAS OF THE ON-SITE INSTALLED STOOPS, PORCHES OR DECKS ARE NOT UNDER THE EXTERIOR ELECTRICAL RECEPTACLES SHOWN IN THE ELECTRICAL FLOOR PLAN, THEN ADDITIONAL RECEPTACLES SHALL BE SITE INSTALLED WITHIN THESE AREAS BY THE CONTRACTOR.

REFER TO RESCHECK FOR DOOR AND WINDOW U-VALUES

WINDOW SCHEDULE

AT LEAST ONE EGRESS WINDOW IS REQUIRED FOR EACH SLEEPING AREA WHERE NO EXTERIOR EXIT DOOR EXISTS.

S SUFFIX DENOTES SAFETY GLAZING / E SUFFIX DENOTES EGRESS

Label	Width R/O	Height R/O	R/O SF	Light	Vent	Room SF	U Value	Egress	Design Load	SHGC w/o Grids
(2)3668-E	73	68.5	34.73	28.01	13.84	346.00	0.34	Yes	+50/-50	0.23
3036	30.5	36.5	7.73	5.50	2.64	66.00	0.34	No	+50/-50	0.23
3036-S	30.5	36.5	7.73	5.50	2.64	66.00	0.34	No	+50/-50	0.23
3036-S	30.5	36.5	7.73	5.50	2.64	66.00	0.34	No	+50/-50	0.32
3668	36.5	68.5	17.36	14.00	6.92	173.00	0.34	Yes	+50/-50	0.23
3668-E	36.5	68.5	17.36	14.00	6.92	173.00	0.34	Yes	+50/-50	0.23
3668-S	36.5	68.5	17.36	14.00	6.92	173.00	0.34	Yes	+50/-50	0.23
6012TRN	61	12.5	5.30	3.71	0.00	0.00	0.32	No	+50/-50	0.35

DOOR SCHEDULE

Description	Label	R/O SF	Light	Vent	Design Load
3882 9 Lite Exterior Door	3882	21.70	5.12	20.76	+50/-50
3882 15 Lite Exterior Door	3882	21.70	9.21	20.76	+50/-50
3882 Hinged - Exterior - 1/2 Lite - 12in DSL	3882wDSL	40.08	9.35	20.76	+20/-20
24 Hinged Interior Door	24	14.99	0.00	0.00	NA
28 Hinged Interior Door	28	17.29	0.00	0.00	NA
30 Hinged Interior Door	30GS	18.44	0.00	0.00	NA
36 Hinged Interior Door	36	21.90	0.00	0.00	NA
30 Hinged Interior Door	30	18.44	0.00	0.00	NA

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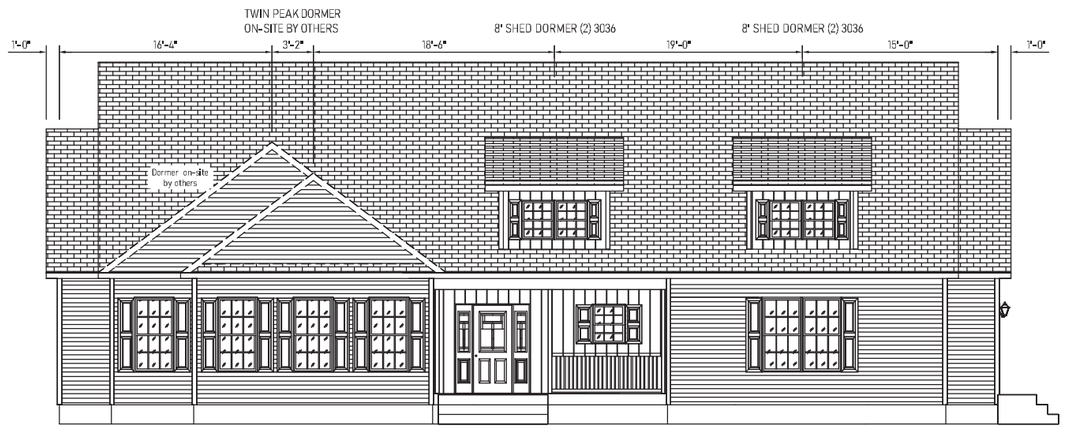
Title: Schedules and General Notes

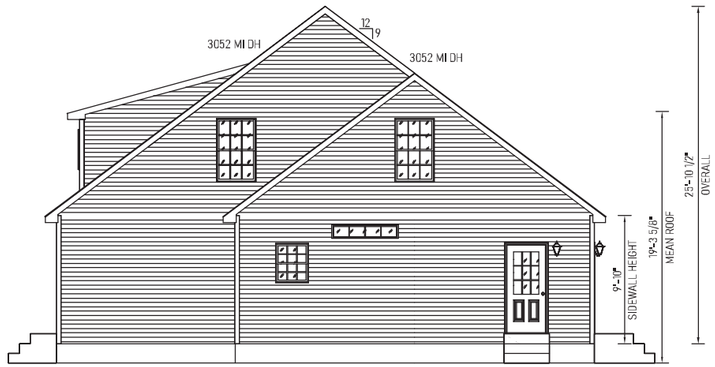
N:\R-ANELL\3R\22-3R2202-R32\

ELEVATIONS SHOWN ON THIS PAGE REPRESENT BASIC COMPONENTS AND ARE NOT INTENDED TO BE ALL INCLUSIVE, NOR DO THESE ELEVATIONS DETAIL EVERY CODE REQUIRED ASPECT OF THIS BUILDING. SITE BUILT STOOPS, STEPS, DECKS, PORCHES, HANDRAILS AND/OR SIMILAR ITEMS MUST BE PROVIDED BY OTHERS ON SITE FOR COMPLIANCE WITH APPLICABLE CODES. COMPLIANCE WITH ALL APPLICABLE CODES PER LOCAL AUTHORITY HAVING JURISDICTION, WHETHER DETAILED IN THIS SET OR NOT, MUST BE MET.

Note: Window fall protection must be provided on-site where required in accordance with applicable code.

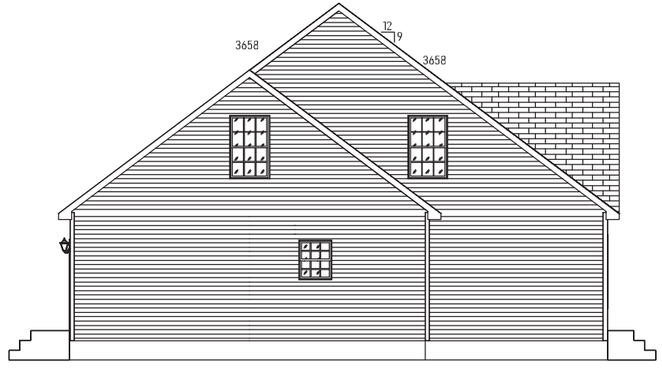


FRONT ELEV



RIGHT ELEV

REAR ELEV



LEFT ELEV

-NOTES-

1. FOUNDATION SHALL BE DESIGNED AND CONSTRUCTED BY OTHERS WHERE "OTHERS" REFERS TO THE DEALER BUILDER.
2. GUTTERS AND LEADERS SHALL BE INSTALLED BY OTHERS.
3. TYPICAL 12" OR 15" VINYL SHUTTERS PROVIDED BY MANUFACTURERS.
4. ALL FOOTINGS, RAILINGS AND STEPS SHALL BE FIELD INSTALLED IN COMPLIANCE WITH APPLICABLE STATE AND LOCAL CODES.
5. SIDING SHALL BE VINYL SIDING WITH VINYL TRIM, AND MAY BE PARTIALLY INSTALLED ON SITE.
6. EXTERIOR LIGHTS MAY BE SHIPPED LOOSE FOR INSTALLATION ON SITE.
7. ROOFING SHINGLES MAY BE PARTIALLY SITE INSTALLED.
8. PORCH RAILINGS ARE PVC. TREATED LUMBER PORCH POSTS MAY BE COVERED WITH VINYL. PORCH DECKING SHALL BE TREATED.
9. ALL EXTERIOR COVERINGS SHALL BE WEATHER AND DECAY RESISTIVE TO PROVIDE PROPER PROTECTION FOR UNTREATED MATERIALS.

NOTE:

- HOMES WITH ATTIC SPACE QUALIFYING AS HABITABLE, MUST BE EQUIPPED WITH EMERGENCY ESCAPE AND RESCUE OPENINGS REGARDLESS OF WHETHER ATTIC AREA IS FINISHED OR UNFINISHED. OPENINGS MAY OCCUR AT END WALL OF ATTIC AND/OR AT ROOF DORMERS IN WHATEVER ARRANGEMENT NECESSARY TO INSURE THAT ANY SLEEPING ROOM HAS AT LEAST ONE EGRESS OPENING.

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Builder: R-Anell Housing Group, LLC - Subsidiary of The Commodore Corp.	Address: 235 Anthony Grove Rd. Crouse, NC 28033	Callout: 4272/64	Revisions . .	Scale: N.T.S.	Date: 02/15/2024	Cust: KING	Model/Eng. No.: 3R2202-R32
Title: Elevations			Drawn By: JT	Reference: RV110-A1		Dlr: HBV S/N: 44293	Pg.: EL

N:\R-ANELL\3R\22-3R2202-R32\

LEGEND

1 JACK POST, PIER OR CONCRETE FILLED POST THAT MEETS OR EXCEEDS REQUIRED SUPPORT CAPACITY PER FOUNDATION DESIGN.

2 EXTERIOR WALL INSULATION (SEE INSULATION R-VALUES).

3 2X6 #3 SPF EXTERIOR WALL STUDS. (SEE STUD O.C. SPACING NOTE)

4 2X6 #3 SPF SIDEWALL BOTTOM PLATE.

5 7/16" RATED SHEATHING.

6 VINYL OR HARDBOARD SIDING (RAN VERT. OR HORZ.) INSTALLED PER MFGR.'S INSTRUCTIONS.

7 AIR INFILTRATION AND WATER RESISTANT BARRIER.

8 2X4 #3 SPF SINGLE OR DOUBLE TOP PLATE.

9 2X6 TREATED SILL PLATE. FASTENING OF SILL AND HOME TO FOUNDATION ON SITE PER CODES OR BY LOCAL ENGINEER WHEN APPLICABLE.

10 2X4 #3 SPF INTERIOR WALL STUDS. (SEE STUD O.C. SPACING NOTE)

11 2X4 #3 SPF BOTTOM PLATE INTERIOR WALLS, TYP.

12 ENGINEERED TRUSSES SPACED TO MEET DESIGNED GROUND LOAD SNOW LOAD.

13 VAPOR BARRIER.

14 CEILING BOARD 1/2" GYPSUM.

15 7/16" 24/16 RATED ROOF DECKING MIN. TYP.

16 2X4 #3 SPF MIN. VERT. RAIL CONT. ON BOTH SECTIONS OVER MATE WALL. USE APPLICABLE BEAM OVER OPEN SPANS (TYP.) PER PG'S C-10-10 OF SYSTEM DOCUMENT.

17 RIDGE VENT TYP. 50% VENTILATION OF ROOF CAVITY (UPPER PORTION), INSTALLED PER CODE REQUIREMENTS.

18 TYPICAL SHINGLES, INSTALLED PER MFGR'S INSTRUCTIONS.

19 SHINGLE UNDERLAYMENT TYP.

20 JOIST HANGERS AT MATELINE(S).

21 1" MIN. SPACE FOR ATTIC VENTILATION.

22 TYPICAL ICE BARRIER PER SECTION 905 OF APPLICABLE CODE.

23 CEILING INSULATION TYP. (SEE INSULATION R-VALUES).

24 23/32" (O.S.B.) BOARD DECKING.

25 ALUM., VINYL OR HARDIE BOARD FACIA AND DRIP EDGE.

26 FLOOR CAVITY OR PERIMETER WALL MUST BE INSULATED ON SITE OR AT THE FACTORY (SEE "INSULATION R-VALUES")

27 PERIMETER RIM JOIST MUST BE INSULATED TO R-VALUE LISTED FOR EXTERIOR WALLS

28 INSULATION INSTALLED ONSITE BY OTHERS PER THERMAL REQUIREMENTS AND/OR STATE AND LOCAL CODES

29 VENTED SOFFIT 50% OF LOWER ROOF VENTILATION.

30 BAFFLE REQUIRED

31 DRIFT BLOCKER

32 VAPOR RETARDER (AS REQUIRED PER CLIMATE ZONE).

33 FLOOR DECKING RATED FOR 19.2" O.C. JOIST SPACING MAX.

34 MIN. 2X10 #2 SPF FLOOR JOIST 16" O.C.

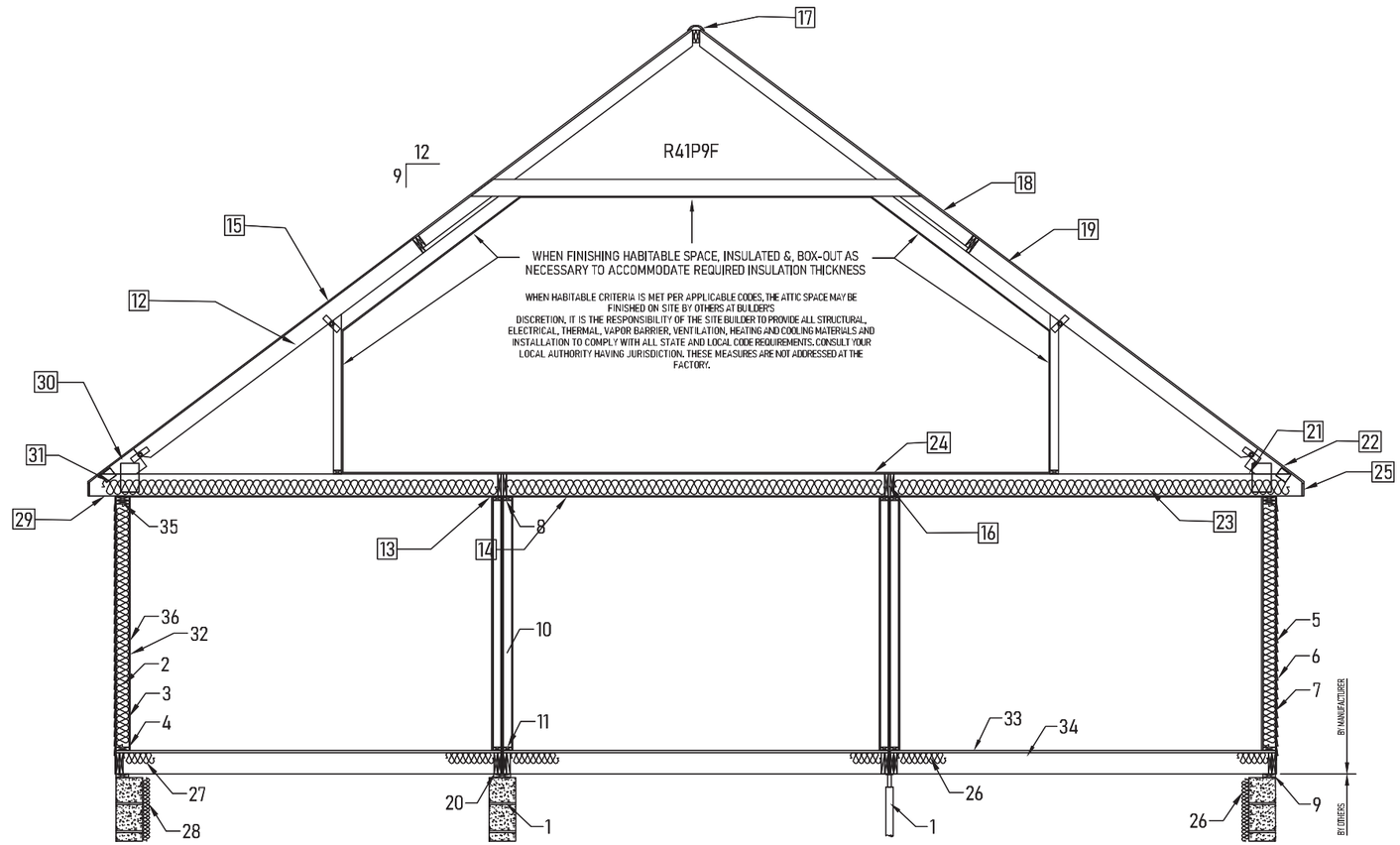
35 2X6 #3 SPF DOUBLE TOP PLATE.

36 WALL COVERING (MIN. 1/2" GYPSUM).

Truss Data			
Truss #	Spacing	Sidewall	Centerline
R41P9F	24	1372	1209
R28P9F	24	1174	722
.	.	.	.
.	.	.	.

STUD O.C. SPACING
EXTERIOR WALL: 16"
INTERIOR WALL: 24"

SYSTEMS MANUAL REFERENCES
FLOOR CONSTRUCTION: A-10-10 & 20
SIDEWALL CONSTRUCTION: B-10-10
CENTER WALL UPLIFT DETAIL: B-20-10
COLUMN REQUIREMENTS: B-20-20, 21 & 30
INTERIOR WALLS: B-30-10 & 11
BEAMS: C-10-10 THRU C-10-30



INSULATION R-VALUES
CEILING: 38
CEILING (Between Knee Walls: 30
EXTERIOR WALLS (continuous): 0
EXTERIOR WALLS (cavity): 19
FLOOR: 30
FOUNDATION WALLS (continuous): 0
FOUNDATION WALLS (cavity): 0

TRIMLINE RIDGE VENT: ALLOWS 13" OF NET FREE AIR PER LINEAL FOOT

FULL LENGTH OF HOUSE AIR FLO SOFFIT: FULL VENTED 5.89 SQ. IN PER LINEAL FOOT

FULL LENGTH OF HOUSE 2781/300 = 9.27 VENT REQUIRED

IMPORTANT!
MAIN LEVEL FLOORS, OVER ENCLOSED FOUNDATIONS, CONSTRUCTED WITH OPTIONAL ENGINEERED WEB FLOOR JOISTS (OPEN JOISTS) OR WITH JOISTS OF NOMINAL LUMBER LESS THAN 2X10, MAY BE SUBJECT TO SPECIAL FIRE PROTECTIVE REQUIREMENTS TO BE PERFORMED BY OTHERS ON SITE. CONSULT ADOPTED LOCAL CODES FOR COMPLIANCE WITH FIRE PROTECTION OF FLOORS. REFERENCE THE APPROVED SYSTEMS PACKAGE FOR ADDITIONAL AND SPECIFIC CROSS SECTION INFORMATION

NOTES:
FOLLOW RECOMMENDED ATTACHMENTS FOR FASTENING OF HOME TO FOUNDATION.
FOUNDATIONS TO BE BUILT AND CONSTRUCTED BY OTHERS ON SITE.
FOUNDATIONS (BY OTHERS) MUST MEET ALL APPLICABLE CODES.
NOTES AND/OR ILLUSTRATIONS SHOWN ARE TYPICAL AND MAY NOT APPLY TO ALL HOMES CONSTRUCTED.
CONSTRUCTION & SPECIFICATIONS MAY VARY PER PLAN.
REFER TO INSTALLATION MANUAL FOR MODULE CONNECTIONS.
REFER TO INSTALLATION MANUAL AND TRUSS MFG. DIAGRAM FOR ROOF TRUSS BRACING.

APPROVED BY NTA 3/4/2024
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Kip Whitehead

Builder: R-Anell Housing Group, LLC - Subsidiary of The Commodore Corp.	Address: 235 Anthony Grove Rd. Crouse, NC 28033	Callout: 4272/64	Revisions . .	Scale: 3/16" = 1'-0"	Date: 02/15/2024	Cust: KING	Model/Eng. No.: 3R2202-R32	
Title: Cross Section			Drawn By: JT	Reference: RV110-A1		Dlr: HBV S/N: 44293	Pg.: XS	

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LEGEND

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INTERIOR WALLS: B-30-10 & 11
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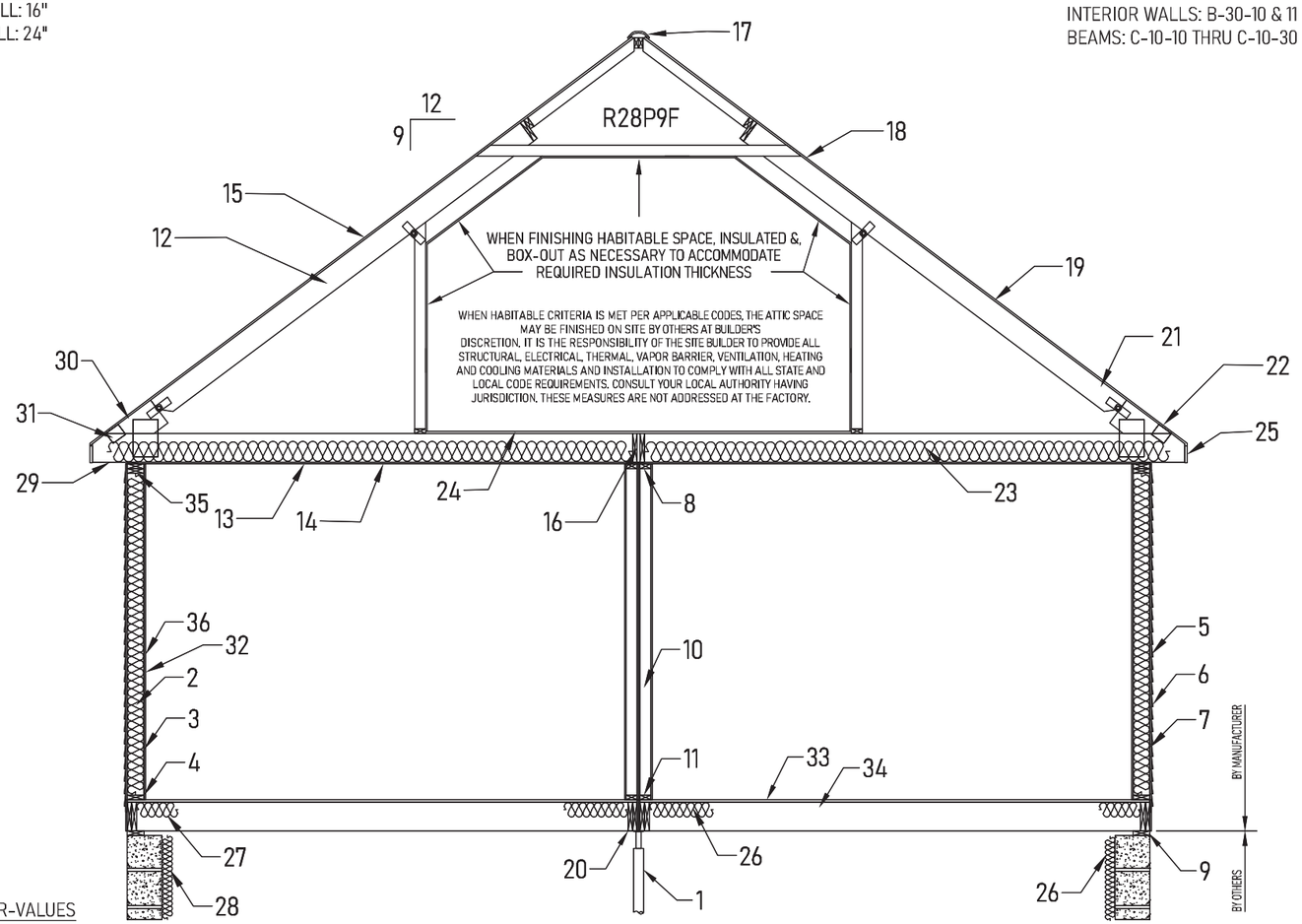

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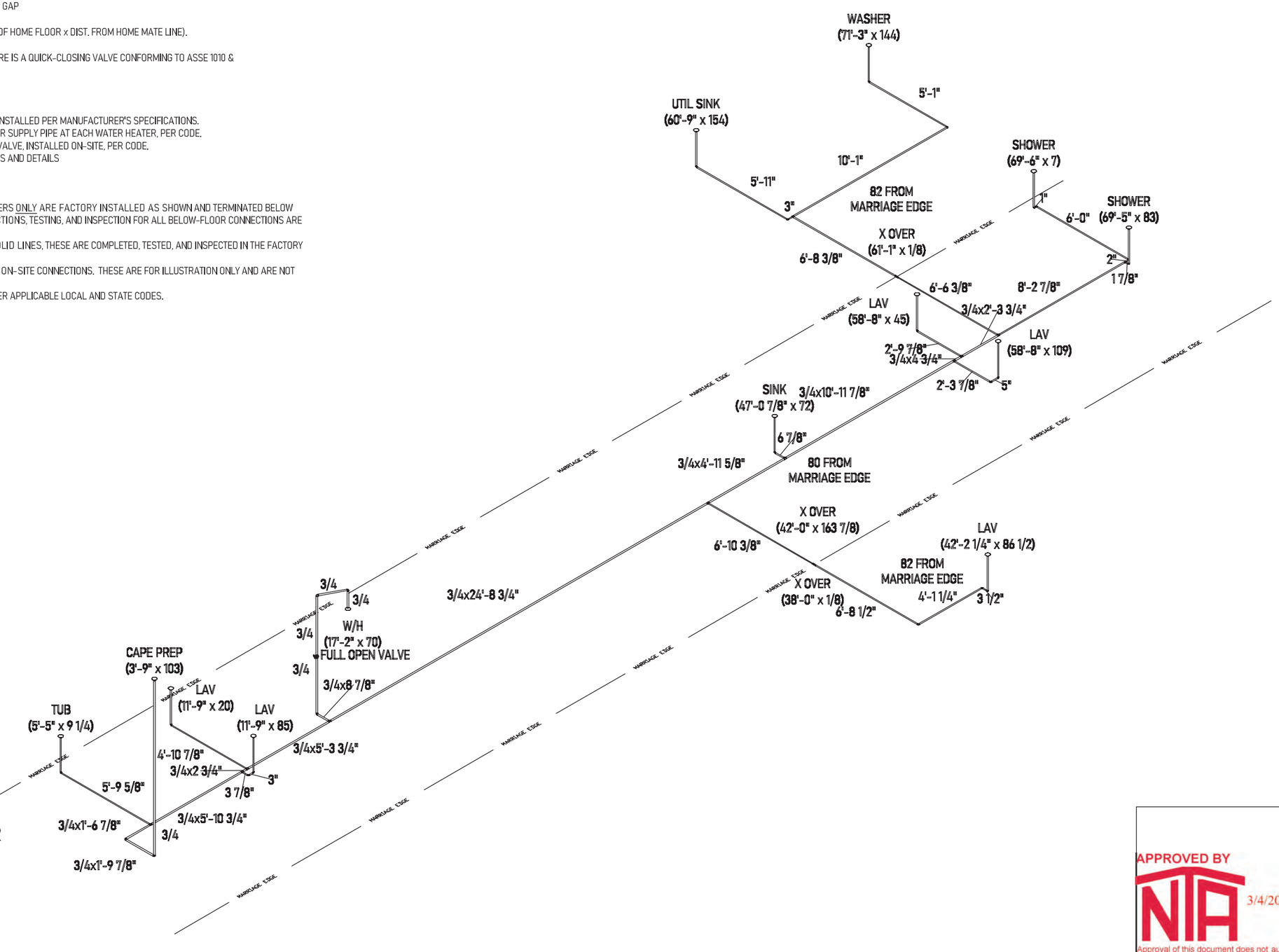
Builder: R-Anell Housing Group, LLC – Subsidiary of The Commodore Corp.	Address: 235 Anthony Grove Rd. Crouse, NC 28033	Callout: 4272/64	Revisions . .	Scale: 1/4" = 1'-0"	Date: 02/15/2024	Cust: KING	Model/Eng. No.: 3R2202-R32	
Title: Cross Section 2			Drawn By: JT	Reference: RV110-A1		Dlr: HBV S/N: 44293	Pg.: XS-2	

N:\R-ANELL\3R\22-3R2202-R32\

NOTE:
1. 3/4" GALVANIZED, OR COPPER RELIEF DRAIN (NOT SHOWN) THRU FLOOR w/VISIBLE AIR GAP
2. INLET WITH 1" CAP & CHAIN.
3. DIMENSIONS EXPRESSED IN PARENTHESIS (A x B) INDICATE: (DIST. FROM REAR END OF HOME FLOOR x DIST. FROM HOME MATE LINE).
4. ANTI-SCALD DEVICE ON ALL SHOWER, AND TUB/SHOWER COMBINATIONS.
5. WATER-HAMMER ARRESTORS AT BATTERY OF FIXTURES INSTALLED WHEREVER THERE IS A QUICK-CLOSING VALVE CONFORMING TO ASSE 1010 & MANUFACTURER'S INSTRUCTIONS.
6. SHUT-OFF VALVE IS REQUIRED AT EACH FIXTURE
7. BATHROOMS WITH DOUBLE LAVS ARE FED FROM THE SAME RISER.
8. ANY LINE NOT LABELED IS 1/2"
9. WATER HEATER TEMPERATURE & PRESSURE RELIEF VALVE AND RELIEF DRAIN PIPE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
10. SHUT-OFF VALVE AT WATER HEATER IS FULL OPEN VALVE INSTALLED ON COLD WATER SUPPLY PIPE AT EACH WATER HEATER, PER CODE.
11. FULLWAY SHUT-OFF VALVE WITH BLEED ORIFICE INSTALLED AT MAIN INLET SERVICE VALVE, INSTALLED ON-SITE, PER CODE.
12. SEE SYSTEMS PACKAGE PLUMBING SECTION PAGES FOR ADDITIOINAL PLUMBING NOTES AND DETAILS

SITE NOTES FOR DIAGRAM EXPLANATION:

A. WHEN VERTICAL FIXTURE WATER SUPPY RISERS ONLY ARE SHOWN ON THIS PLAN, RISERS ONLY ARE FACTORY INSTALLED AS SHOWN AND TERMINATED BELOW THE FLOOR AT THE INDICATED LOCATIONS. MATERIAL PROVISIONS, SYSTEM CONNECTIONS, TESTING, AND INSPECTION FOR ALL BELOW-FLOOR CONNECTIONS ARE ON SITE BY OTHERS IN ACCORDANCE WITH ALL STATE AND LOCAL CODES.
B. WHEN BELOW-FLOOR SYSTEM CONNECTIONS TO RISERS ARE SHOWN ON PLAN BY SOLID LINES, THESE ARE COMPLETED, TESTED, AND INSPECTED IN THE FACTORY TO THE TERMINATION POINT SHOWN ON ILLUSTRATED PLAN.
C. DOTTED LINES ON PLAN,(IF PRESENT), ARE INTENDED ONLY TO ILLUSTRATE TYPICAL ON-SITE CONNECTIONS. THESE ARE FOR ILLUSTRATION ONLY AND ARE NOT PROVIDED, INSTALLED, TESTED, OR INSPECTED BY THE FACTORY.
D. ALL BELOW FLOOR WATER LINES MUST BE SIZED, INSTALLED, AND TESTED ON SITE PER APPLICABLE LOCAL AND STATE CODES.



LINE SIZED FOR
DISHWASHER

ELECTRIC WATER HEATER-RHEEM MODEL #82V40-2
ELECTRIC WATER HEATER-RHEEM MODEL #82V52-2
ELECTRIC WATER HEATER-RHEEM MODEL #83VR52-2
GAS WATER HEATER-RHEEM MODEL #22V40F1
GAS WATER HEATER-RHEEM MODEL #22V50F1

HANGER SPACING - PEX PIPE (SUPPLY)	
MAX HORIZONTAL SPACING (FT.)	MAX VERTICAL SPACING (FT.)
2'-8"	4'-0"

ALL DIMENSIONS FROM REAR
AND MARRIAGE EDGE

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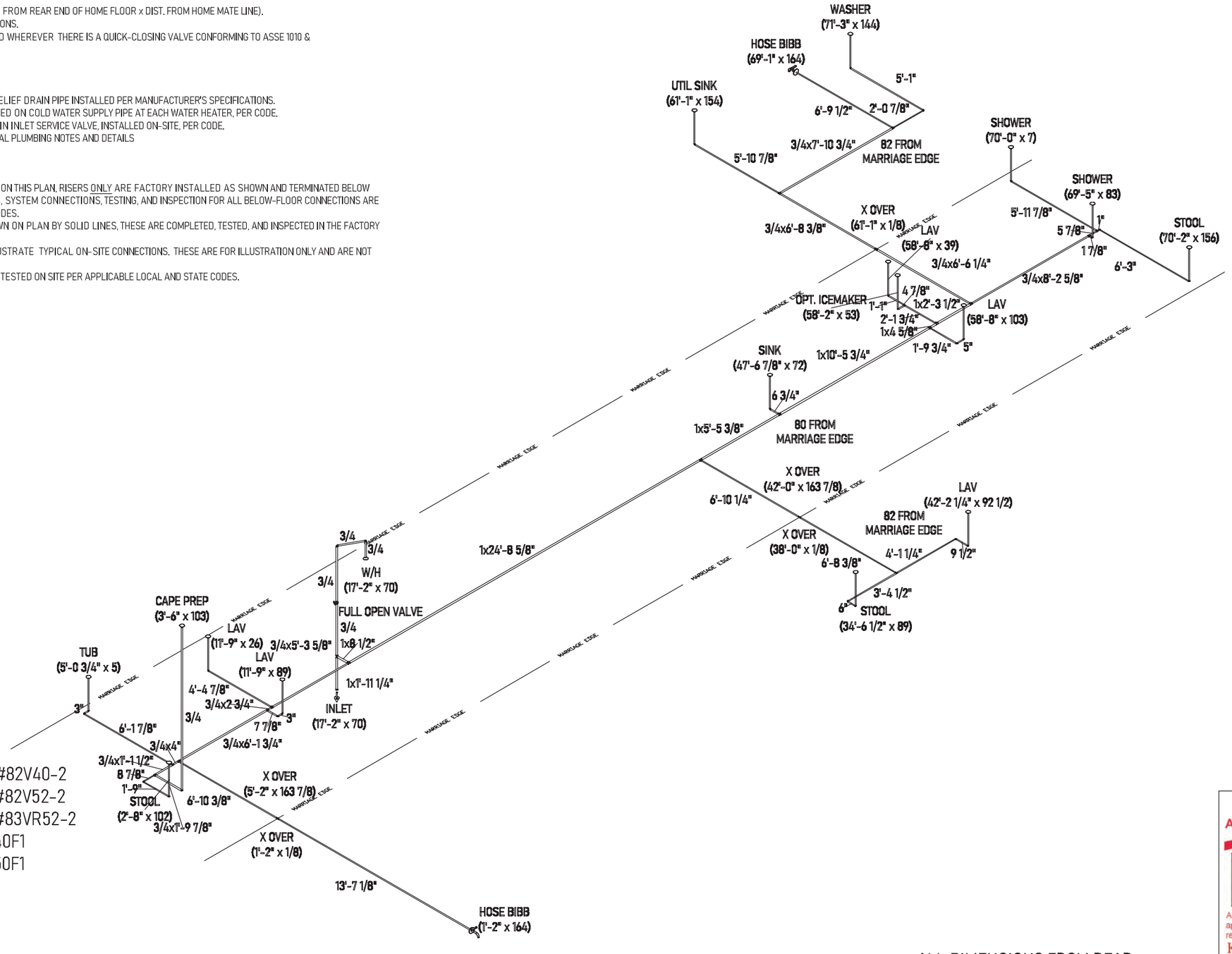
Title: Hot Water Lines			Drawn By: JT	Reference: RV110-A1		Dir: HBV S/N: 44293	Pg.: WH	

N:\R-ANELL\3R\22-3R2202-R32\

NOTE:
1. 3/4" GALVANIZED, OR COPPER RELIEF DRAIN (NOT SHOWN) THRU FLOOR w/VISIBLE AIR GAP
2. INLET WITH 1" CAP & CHAIN.
3. DIMENSIONS EXPRESSED IN PARENTHESIS (A x B) INDICATE: (DIST. FROM REAR END OF HOME FLOOR x DIST. FROM HOME MATE LINE).
4. ANTI-SCALD DEVICE ON ALL SHOWER, AND TUB/SHOWER COMBINATIONS.
5. WATER-HAMMER ARRESTORS AT BATTERY OF FIXTURES INSTALLED WHEREVER THERE IS A QUICK-CLOSING VALVE CONFORMING TO ASSE 1010 & MANUFACTURER'S INSTRUCTIONS.
6. SHUT-OFF VALVE IS REQUIRED AT EACH FIXTURE
7. BATHROOMS WITH DOUBLE LAVS ARE FED FROM THE SAME RISER.
8. ANY LINE NOT LABELED IS 1/2"
9. WATER HEATER TEMPERATURE & PRESSURE RELIEF VALVE AND RELIEF DRAIN PIPE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
10. SHUT-OFF VALVE AT WATER HEATER IS FULL OPEN VALVE INSTALLED ON COLD WATER SUPPLY PIPE AT EACH WATER HEATER, PER CODE.
11. FULLWAY SHUT-OFF VALVE WITH BLEED ORIFICE INSTALLED AT MAIN INLET SERVICE VALVE, INSTALLED ON-SITE, PER CODE.
12. SEE SYSTEMS PACKAGE PLUMBING SECTION PAGES FOR ADDITIOINAL PLUMBING NOTES AND DETAILS

SITE NOTES FOR DIAGRAM EXPLANATION:

A. WHEN VERTICAL FIXTURE WATER SUPPY RISERS ONLY ARE SHOWN ON THIS PLAN, RISERS ONLY ARE FACTORY INSTALLED AS SHOWN AND TERMINATED BELOW THE FLOOR AT THE INDICATED LOCATIONS. MATERIAL PROVISIONS, SYSTEM CONNECTIONS, TESTING, AND INSPECTION FOR ALL BELOW-FLOOR CONNECTIONS ARE ON SITE BY OTHERS IN ACCORDANCE WITH ALL STATE AND LOCAL CODES.
B. WHEN BELOW-FLOOR SYSTEM CONNECTIONS TO RISERS ARE SHOWN ON PLAN BY SOLID LINES, THESE ARE COMPLETED, TESTED, AND INSPECTED IN THE FACTORY TO THE TERMINATION POINT SHOWN ON ILLUSTRATED PLAN.
C. DOTTED LINES ON PLAN,(IF PRESENT), ARE INTENDED ONLY TO ILLUSTRATE TYPICAL ON-SITE CONNECTIONS. THESE ARE FOR ILLUSTRATION ONLY AND ARE NOT PROVIDED, INSTALLED, TESTED, OR INSPECTED BY THE FACTORY.
D. ALL BELOW FLOOR WATER LINES MUST BE SIZED, INSTALLED, AND TESTED ON SITE PER APPLICABLE LOCAL AND STATE CODES.



ELECTRIC WATER HEATER-RHEEM MODEL #82V40-2
ELECTRIC WATER HEATER-RHEEM MODEL #82V52-2
ELECTRIC WATER HEATER-RHEEM MODEL #83VR52-2
GAS WATER HEATER-RHEEM MODEL #22V40F1
GAS WATER HEATER-RHEEM MODEL #22V50F1

HANGER SPACING - PEX PIPE (SUPPLY)	
MAX HORIZONTAL SPACING (FT.)	MAX VERTICAL SPACING (FT.)
2'-8"	4'-0"

ALL DIMENSIONS FROM REAR AND MARRIAGE EDGE

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Title: Cold Water Lines			Drawn By: JT	Reference: RV110-A1		Dlr: HBV S/N: 44293	Pg.: WC

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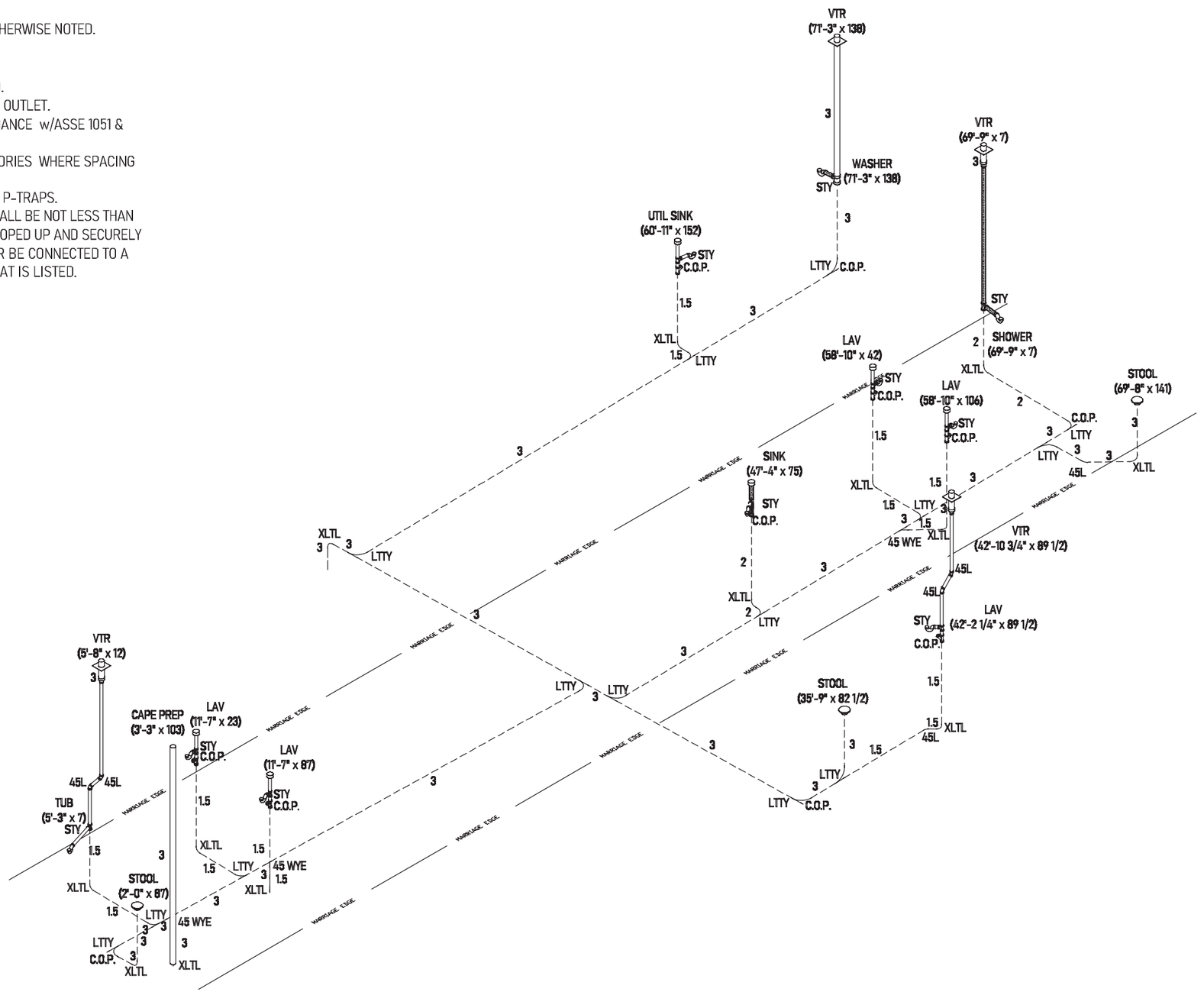
NOTE:

1. ALL LINES 1/4" SLOPE/FOOT MINIMUM UNLESS OTHERWISE NOTED.
2. ←o— DENOTES 1/8" SLOPE/FOOT.
3. ALL 2" DIA. LINES SHOWN FILLED (BOLD)
4. ALL LINES 1-1/2" DIA. MINIMUM OTHERWISE NOTED.
5. LINES SERVING STOOL ARE 3" DIA.CONTINUOUS TO OUTLET.
6. AIR ADMITTANCE VALVES SHOWN ARE IN ACCORDANCE w/ASSE 1051 & MANUFACTURER'S INSTRUCTIONS.
7. CONTINUOUS WASTE APPL. ON SINKS AND LAVATORIES WHERE SPACING DOES NOT EXCEED 30".
8. STACKS CLEANED THROUGH REMOVABLE FIXTURE P-TRAPS.
9. THE DISCHARGE LINE FROM THE DISHWASHER SHALL BE NOT LESS THAN 1/2 INCH NOMINAL SIZE AND SHALL EITHER BE LOOPED UP AND SECURELY FASTENED TO THE UNDERSIDE OF THE COUNTER OR BE CONNECTED TO A DECK-MOUNTED DISHWASHER AIR GAP FITTING THAT IS LISTED.



ALL DIMENSIONS FROM REAR AND MARRIAGE EDGE

HANGER SPACING - DRAIN PIPE (DWV)	
MAX HORIZONTAL SPACING (FT.)	VERTICAL SPACING
4'-0"	Vertical piping shall be supported at each story or floor level.

DWV FITTING IDENTIFICATION			
XLTL	LONG TURN 90° ELBOW	4X3CB	90° CLOSET ELBOW
XLSL	LONG TURN 90° STREET ELBOW	3-WAY-L	DOUBLE 90° ELBOW
45L	45° ELBOW	STY	SANITARY TEE
45SL	45° STREET ELBOW	LTTY	LONG RADIUS TY
22.5L	22 1/2° ELBOW	45 WYE	45° WYE
22.5SL	22 1/2° STREET ELBOW		

PLUMBING ABOVE THE FLOOR IS FACTORY INSTALLED. PLUMBING BELOW THE FLOOR INCLUDING CONNECTIONS SHALL BE INSTALLED ON SITE BY OTHERS ACCORDING TO SITE CONDITIONS, SUBJECT TO APPROVAL OF LOCAL INSPECTION. ON SITE PLUMBING SHOWN IS SUGGESTIVE ONLY.

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Title: DWV System			Drawn By: JT	Reference: RV110-A1		Dlr: HBV S/N: 44293	Pg.: DL

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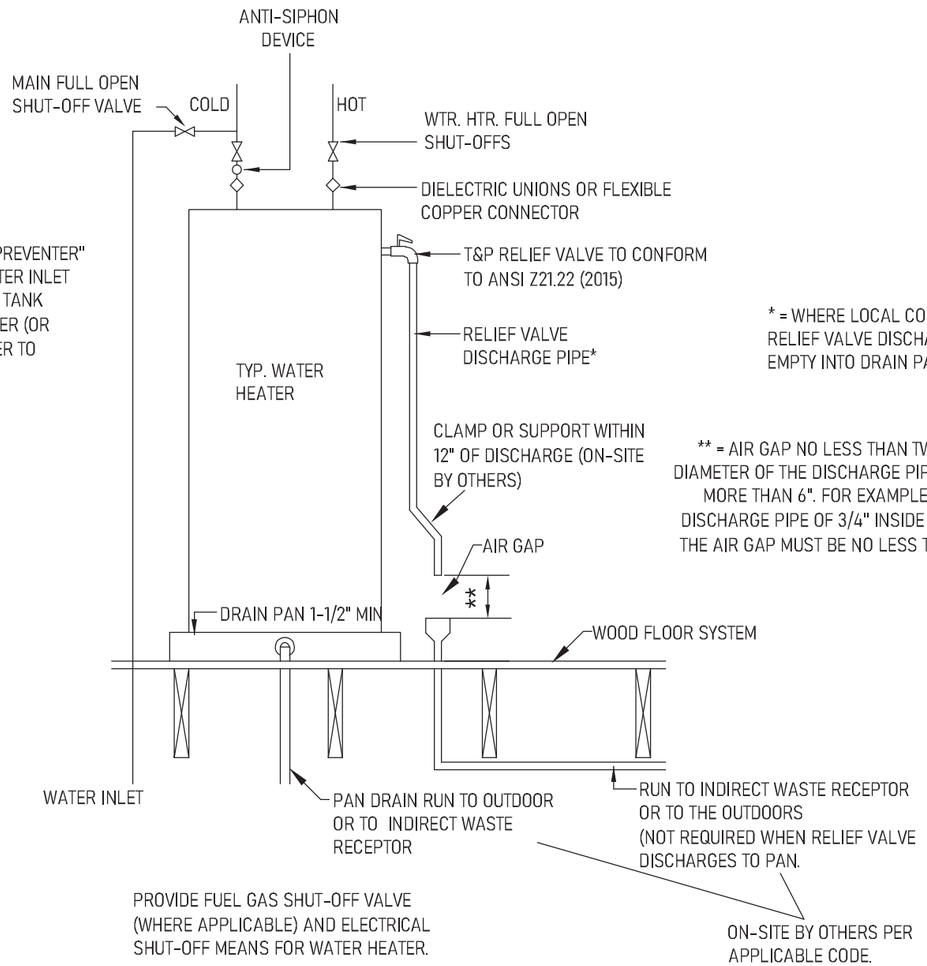
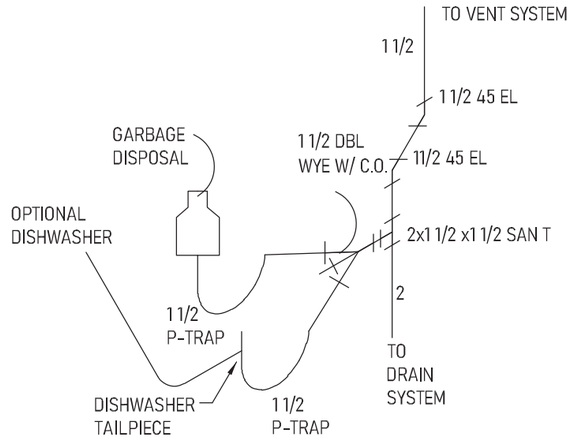
WATER HEATERS, WHICH HAVE A "BACK-FLOW PREVENTER" OR A "CHECK VALVE" LOCATED IN THE COLD WATER INLET LINE, ARE TO BE EQUIPPED WITH AN EXPANSION TANK INSTALLED BETWEEN THE BACK-FLOW PREVENTER (OR CHECK VALVE) AND THE WATER HEATER IN ORDER TO ALIEVIATE THERMAL EXPANSION.



* = WHERE LOCAL CODE ALLOWS, RELIEF VALVE DISCHARGE PIPE MAY EMPTY INTO DRAIN PAN.

** = AIR GAP NO LESS THAN TWICE THE DIAMETER OF THE DISCHARGE PIPE, BUT NOT MORE THAN 6". FOR EXAMPLE, FOR A DISCHARGE PIPE OF 3/4" INSIDE DIAMETER THE AIR GAP MUST BE NO LESS THAN 1 1/2".



OPTIONAL GARBAGE DISPOSAL PLUMBING ILLINOIS MODELS ONLY - USE DETAIL ABOVE FOR OPTIONAL GARBAGE DISPOSAL.

PIPE SUPPORT:

VERTICAL PIPING:

SUPPORTS AT 10' O.C. MAX. OR BETWEEN FLOOR LEVELS.

HORIZONTAL PIPING:

SUPPORTS AT 4' O.C. MAX. ENDS OF BRANCHES, AND AT CHANGES IN ELEVATION AND/OR DIRECTION.

TRAP ARMS:

SUPPORT LOCATED AS CLOSE TO TRAP AS POSSIBLE WHEN TRAP TO VENT EXCEEDS 3'.

NOTES:

ALL BELOW FLOOR PLUMBING BY OTHERS. ALL FITTINGS BELOW BOTTOM CAN BE SHIPPED LOOSE.
ALL BELOW FLOOR PLUMBING ILLUSTRATIONS ARE RECOMMENDATIONS ONLY. ON-SITE CONDITIONS AND/OR RESTRICTIONS MAY REQUIRE SOME MODIFICATIONS.
OPT. GARBAGE DISPOSAL TO BE LOCATED ON KITCHEN SINK WASTE ASSEMBLY. ALL VENTS THRU ROOF TO BE 3", 12" MIN. ABOVE AND BELOW ROOF PENETRATION.
ALL P-TRAPS TO BE 1 1/2" UNLESS NOTED.
HORIZONTAL VENT SLOPE : 1/8" PER FOOT
HORIZONTAL DRAIN SLOPE: 1/4" PER FOOT
DRAIN, WASTE, AND VENT PLUMBING TO BE PVC PLASTIC OR EQUAL, APPROVED FOR DWV APPLICATIONS.
DRAIN AND DISCHARGE PIPES SERVING WATER HEATERS TO BE CPVC OR OTHER CODE APPROVED MATERIAL.
ANY TRANSITIONS TO MATERIALS, OTHER THAN THE SPECIFIED MATERIAL, MUST INCORPORATE AN APPROVED FITTING FOR CONNECTION.
ALL TUBS WITH WHIRLPOOL MUST BE PROVIDED WITH ACCESS TO MOTOR. ALL PLUMBING TO MEET OR EXCEED CURRENT ADOPTED PLUMBING CODES.
IN CONCEALED SPACES WHERE PIPING IS INSTALLED THRU HOLES OR NOTCHES IN STUDS, JOISTS, TRUSSES, OR SIMILAR MEMBERS LESS THAN 1 1/2" FROM NEAREST EDGE OF THE MEMBER, THE PIPE SHALL BE PROTECTED BY SHIELD PLATES.
PROTECTIVE SHIELD PLATES SHALL BE A MINIMUM OF 16 GA. STEEL. PLATES SHALL COVER AREA OF THE PIPE WHERE THE MEMBERS ARE NOTCHED OR BORED, AND SHALL EXTEND A MINIMUM OF 2" ABOVE SOLE PLATES AND BELOW TOP PLATES.
AIR ADMITTANCE VALVES MAY SUBSTITUTE ROOF VENTS AT VARIOUS LOCATIONS PER APPLICABLE STATE AND LOCAL PLUMBING CODES. THE 3" MAIN VENT MUST BE VENTED THRU THE ROOF AND CANNOT BE MECHANICALLY VENTED.
IN SEISMIC CATEGORIES D0, D1, D2 OR E STRAP UPPER THIRD AND LOWER THIRD OF WATER HEATER TO RESIST A HORIZONTAL FORCE OF 1/3 THE OPERATING WEIGHT OF THE WATER HEATER.

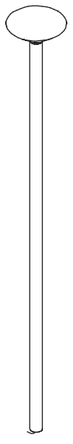
APPROVED BY NTA 3/4/2024
Approval of this document does not authorize or approve any deviation or deviations from the requirements of applicable State Laws.
Kip Whitehead

Builder: R-Anell Housing Group, LLC - Subsidiary of The Commodore Corp.	Address: 235 Anthony Grove Rd. Crouse, NC 28033	Callout: 4272/64	Revisions . .	Scale: N.T.S.	Date: 02/15/2024	Cust: KING	Model/Eng. No.: 3R2202-R32
Title: DWV Notes			Drawn By: JT	Reference: RV110-A1		Dlr: HBV S/N: 44293	Pg.: DN

NOTE:
1. TOTAL BTU's = 36,000
2. MAX. COLUMN LENGTH = 10'
3. SHUT-OFF VALVE REQ'D. FOR EACH APPLIANCE.
4. ONLY ONE F.P. AVAILABLE.
5. ALL LINES NOT SPECIFIED ARE 1/2" (OPTION FIXTURES NOT CONSIDERED)
6. GAS LINE MATERIAL IS BLACK STEEL PIPE AND CONFORMS TO ASTM A53 Gr. A.

ALL DIMENSIONS FROM REAR AND MARRIAGE EDGE

FIREPLACE
36000
(21'-10" x 65)



HANGER SPACING - STEEL PIPE (GAS)	
MAX HORIZONTAL SPACING (FT.)	MAX VERTICAL SPACING (FT.)
6'-0"	6'-0"

GAS PIPE SIZING BASED ON TABLE 402.4(2) FOR NATURAL GAS OR TABLE 402.4(26) FOR LPG. ALL PIPING IS SCHEDULE 40 METALLIC PIPE.

FINISHED AND INSPECTED ON-SITE BY OTHERS PER APPLICABLE CODES

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Builder: R-Anell Housing Group, LLC - Subsidiary of The Commodore Corp.	Address: 235 Anthony Grove Rd. Crouse, NC 28033	Callout: 4272/64	Revisions . .	Scale: CUSTOM	Date: 02/15/2024	Cust: KING	Model/Eng. No.: 3R2202-R32	
Title: Gas Lines			Drawn By: JT	Reference: RV110-A1		Dlr: HBV S/N: 44293	Pg.: GA	

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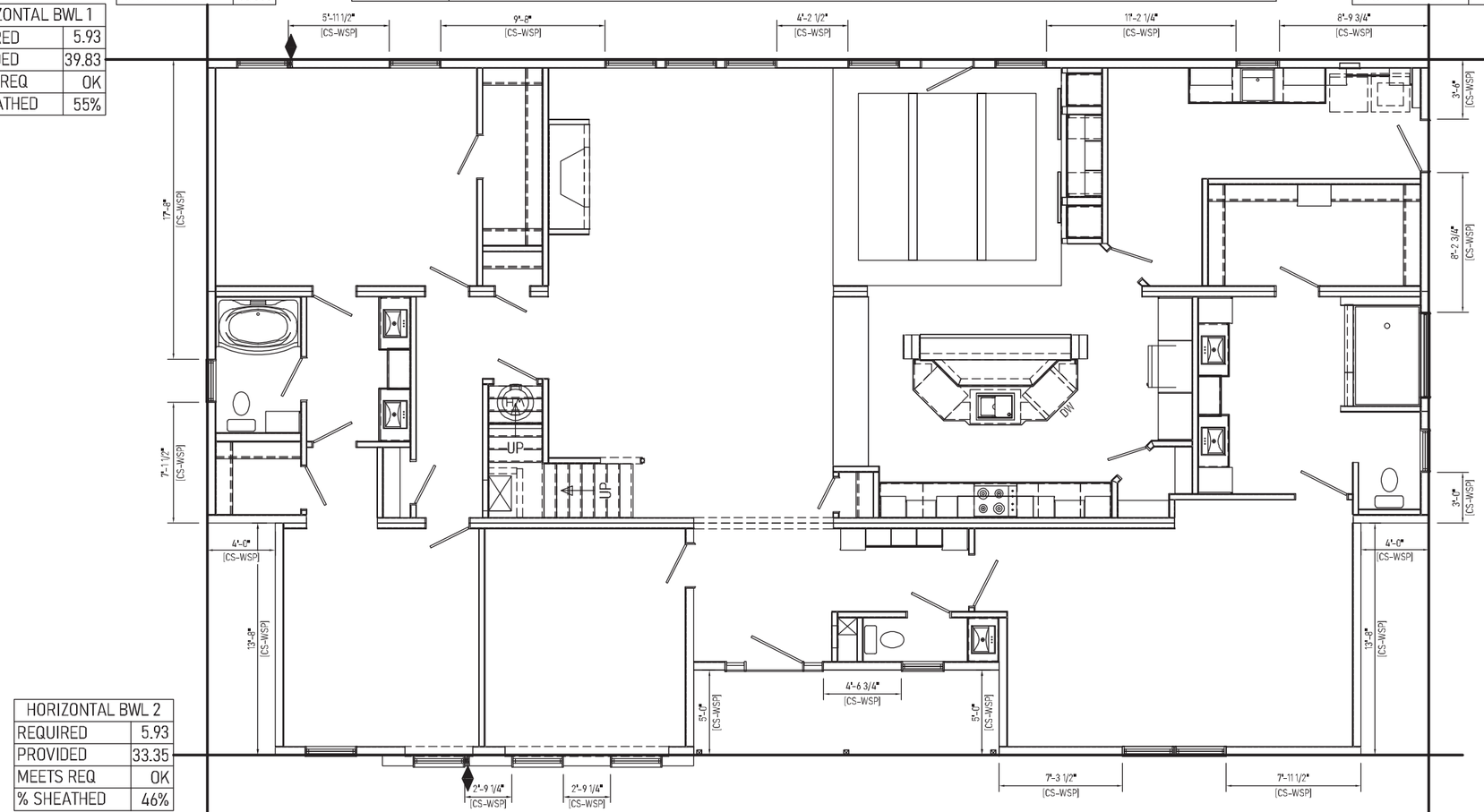
VERTICAL BWL 1	
REQUIRED	10.07
PROVIDED	43.46
MEETS REQ	OK
% SHEATHED	106%

NCRC BRACED WALL CONSTRUCTION DETAILS	
WALL TYPE	CONSTRUCTION
EXTERIOR	7/16" SHEATHING ONE SIDE WITH 15 GAUGE STAPLE AT 4" O/C EDGE SPACING AND 8" O/C FIELD SPACING.

VERTICAL BWL 2	
REQUIRED	10.07
PROVIDED	33.4
MEETS REQ	OK
% SHEATHED	81%

HORIZONTAL BWL 1	
REQUIRED	5.93
PROVIDED	39.83
MEETS REQ	OK
% SHEATHED	55%



HORIZONTAL BWL 2	
REQUIRED	5.93
PROVIDED	33.35
MEETS REQ	OK
% SHEATHED	46%

Braced Wall										
Unit	Method	Wind Load	Wind Load Method	Width	Length	Exposure	Roof Pitch	Sidewall Height	Seismic	Max. Mean Roof Height
MAIN	2018 NCRC	140 mph	Ultimate	41'-0"	72'-0"	B	9/12	9'-0"	C	IRC

= Hold-Down Device with a Minimum Uplift Design Value of 800 LB.

Bracing per prescriptive North Carolina 2018 Residential code.

In conjuction with the wall bracing requirements of Section 602.10, all exterior walls are sheathed with wood structural sheathing panels in accordance with 4506.2 for 140 to 150 MPH structural bracing.

FOUNDATION TIE-DOWN MUST BE CONNECTED ON-SITE BY POINT LOAD LOCATIONS AS NOTED (BY OTHERS). ALTERNATIVE TIE DOWN CONNECTION METHODS APPROVED BY A LOCAL ENGINEER MAY BE USED. REFER TO THE IRC FOR FOUNDATION TIE DOWN REQUIREMENTS FOR 130 MPH OR LESS WIND ZONES

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Builder: R-Anell Housing Group, LLC – Subsidiary of The Commodore Corp.	Address: 235 Anthony Grove Rd. Crouse, NC 28033	Callout: 4272/64	Revisions . .	Scale: 1/8" = 1'-0"	Date: 02/15/2024	Cust: KING	Model/Eng. No.: 3R2202-R32
Title: Braced Walls-Prescriptive			Drawn By: JT	Reference: RV110-A1		Dlr: HBV S/N: 44293	Pg.: BWP

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Footing size (in.)	Footing max. load (lbs.) for 8" x16" pier		
	1500 PSF	2000 PSF	2500 PSF
*16x16x6	2.5K	3.4K	4.3K
*20x20x6	4.0K	5.3K	6.7K
24x24x8	5.6K	7.6K	9.6K
30x30x10	8.5K	11.7K	14.8K
36x36x12	12.4K	16.7K	20.7K
42x42x14	16.5K	22.4K	28.2K
48x48x14	21.2K	N/A	N/A

* = A 4" thick pre-cast footer of equivalent width and length may be used in place of a 6" thick cast in place footer.

Footer size must be designed by others to site conditions if noted kip load exceeds capacities listed above

COLUMNS & FOOTINGS MUST BE RATED TO MEET THE CENTER LINE LOADS LISTED

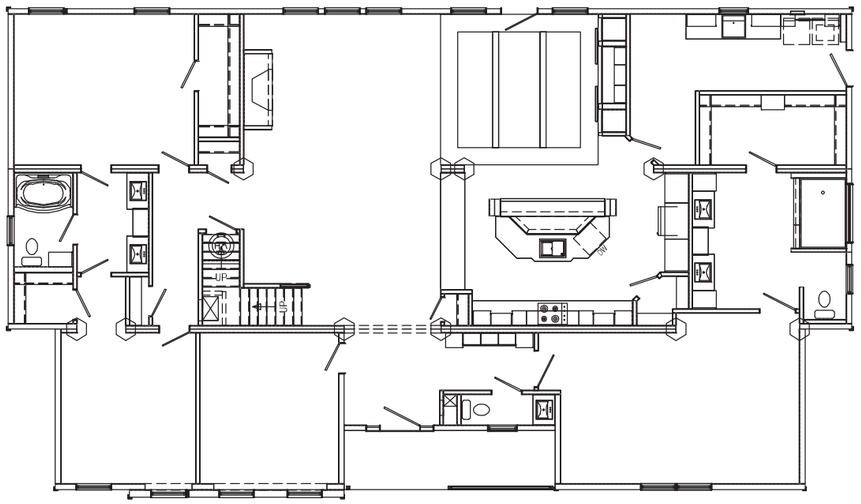
GROUND SNOW LOAD **20** PSF

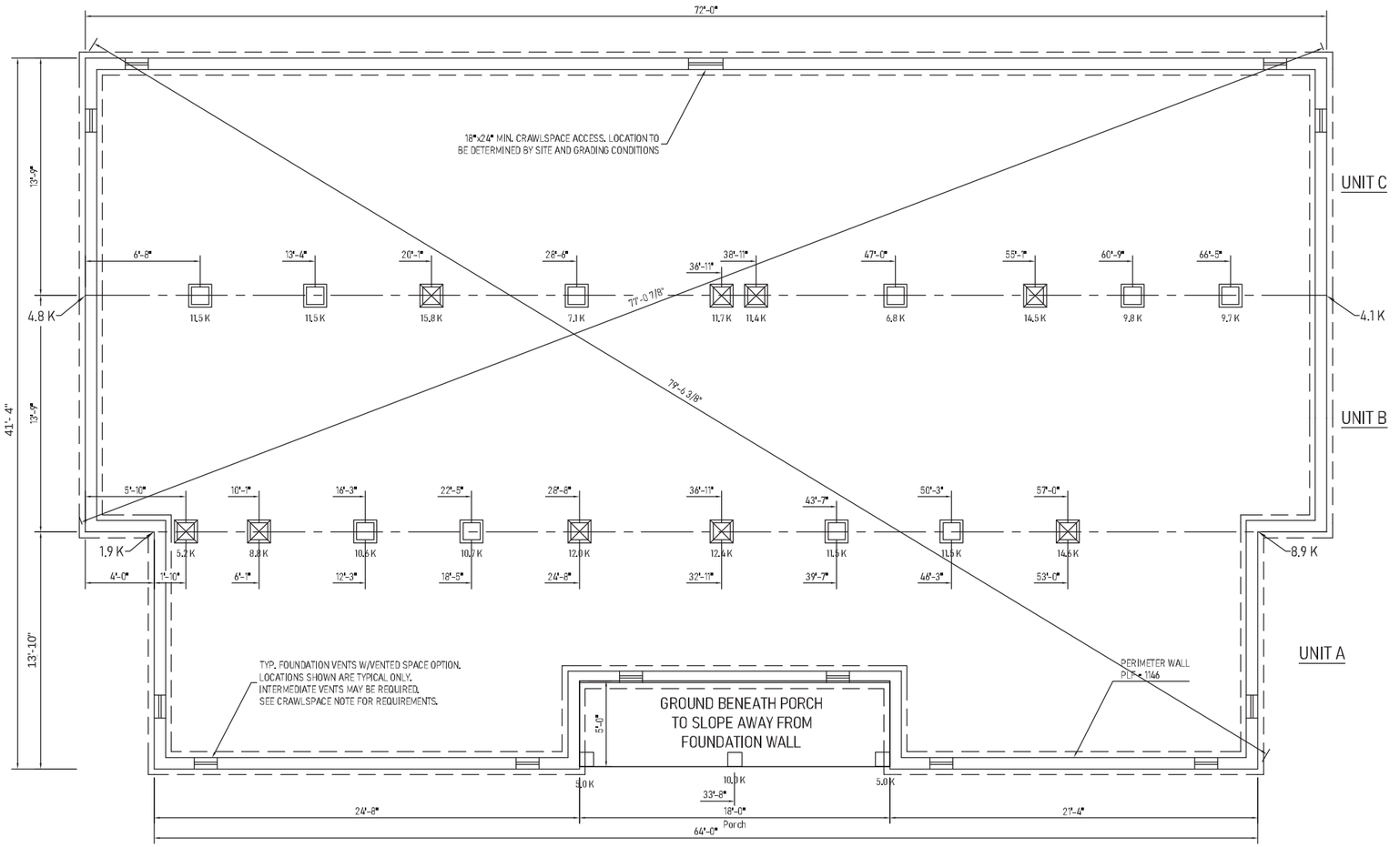
Kip loads noted are based on allowable stress design (ASD).
Capacity of supports (columns, footings, etc.) must exceed noted Kip loads.
Any changes to this plan that effect the foundation in any way will be the sole responsibility of the builder/dealer.

SELF-WEIGHT ON FOOTERS NOT INCLUDED IN LOADS SHOWN.
◆- IF APPLICABLE, REPRESENTS TIE DOWN LOADS FROM BRACE WALLS TO FOUNDATION. TO BE DESIGNED ON SITE BY OTHERS.

FOR CONNECTION OF THE HOME TO FOUNDATION AT BRACING WALLS, REFER TO "BRACED WALLS-CALCULATED" PAGE, IF APPLICABLE. WHEN THIS PAGE IS PRESENT, HORIZONTAL AND OVERTURNING (RACKING) LOADS AT BRACING WALL LOCATIONS ARE INDICATED FOR THESE FOUNDATION CONNECTIONS. THESE LOADS MAY BE RECALCULATED AND REDESIGNED PER LOCAL CODES TO CONFORM TO SITE CONDITIONS AS REQUIRED. REFER TO CHAPTER 3 (3.9 TIE DOWN TO FOUNDATION) OF THE "MODULAR HOME INSTALLATION MANUAL" FOR ADDITIONAL INFORMATION.
REFER TO APPLICABLE CODES FOR CONNECTION OF HOME TO FOUNDATION WHEN "BRACED WALLS-PRESCRIPTIVE" PAGE IS APPLICABLE.

FOUNDATION SHOWN MUST BE DESIGNED BY OTHERS TO THE SITE CONDITIONS. THIS INCLUDES SEISMIC DESIGN AND ATTACHING THE HOME TO THE FOUNDATION, ALONG WITH RESISTANCE TO LATERAL, LONGITUDINAL SHEAR, UPLIFT AND DOWNLIFT FORCES IN BOTH DIRECTIONS.





- 2X10 OR TRUSS FLOOR NOTES -

1. FOUNDATION LAYOUT IS APPLICABLE TO NOTED MAXIMUM SNOW LOADING AND MINIMUM SOIL BEARING PRESSURE. REFER TO INSTALLATION MANUAL FOR OTHER APPLICABLE INFORMATION. CONSULT LOCAL OFFICIALS AND THE APPLICABLE LOCAL CODES FOR OTHER REQUIREMENTS (I.E. DRAINAGE, DAMP-PROOFING, BACKFILL SUPPORT, ETC.).
2. WIDTH DIMENSIONS SHOWN INCLUDE A 3/4" ALLOWANCE PER HOME SECTION FOR HOMES WITH FACTORY-INSTALLED O.S.B. ON THE MARRIAGE WALL MATE LINE. THIS ALLOWANCE TAKES INTO ACCOUNT THE 7/16" O.S.B. MATERIAL INSTALLED ON EACH MARRIAGE WALL PLUS ALLOWANCE DUE TO OTHER FACTORS. IF HOME DOES NOT INCLUDE O.S.B. ON THE MARRIAGE MATE LINE, FOUNDATION WIDTH IS TO BE SIZED EQUAL TO ACTUAL MANUFACTURED FLOOR WIDTH. LESSER DIMENSION, IF SHOWN, INDICATES ACTUAL FLOOR WIDTH. THESE DIMENSIONS DO NOT ALLOW FOR ANY VARIANCE THAT MAY OCCUR IN SITE INSTALLATION SUCH AS GAPPING, OFF CENTER SET OR OTHER FIELD-ENCOUNTERED VARIABLES. ANY ADJUSTMENTS NEEDED IN FOUNDATION WIDTH DUE TO SUCH VARIANCES ARE AT THE DISCRETIONOF THE INSTALLER.
3. FOR DEVIATIONS &/OR OTHER FOUNDATION DESIGNS CONSULT A LOCAL PROFESSIONAL ENGINEER & YOUR LOCAL BUILDING OFFICIAL.
4. SILL PLATE FASTENING TO BE PER INSTALLATION MANUAL AND/OR LOCAL CODES. SILL FASTENING REQUIREMENT IS PER APPLICABLE WIND SPEED AND SEISMIC ZONES. SEE YOUR HOME DATA PLATE FOR APPLICABLE ZONES.
5. CONCRETE COMPRESSIVE STRENGTH (FC'): 2500 PSI MINIMUM.
6. CENTERLINE LINE SUPPORTS AND SPACING ARE BASED ON (2) 2X10's SPF#2 ON EACH HALF (4-2X10'S TOTAL).
7. CRAWLSPACE VENTILATION IS NOT REQUIRED WHEN INSULATION IS APPLIED TO CRAWLSPACE WALLS AS REQUIRED BY RESCHECK (CONDITIONED AIR). INSTALLATION OF VENTS IN CRAWLSPACE WALLS WOULD MANDATE INSULATING THE FLOOR SYSTEM PER APPLICABLE THERMAL CALCULATIONS. REFER TO APPLICABLE PRESCRIPTIVE CODES & GUIDELINES. WHEN REQUIRED, ONE VENT SHALL BE PROVIDED WITHIN 3 FEET OF EACH CORNER.
8. FOUNDATION CONSTRUCTION AND TIE DOWN REQUIREMENTS FOR HOMES LOCATED IN 90 MPH OR LESS WIND ZONES MAY USE APPLICABLE PRESCRIPTIVE CODES & GUIDELINES UNLESS NOTED OTHERWISE.

APPROVED BY NTA 3/4/2024

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Kip Whitehead

Builder: R-Anell Housing Group, LLC – Subsidiary of The Commodore Corp.	Address: 235 Anthony Grove Rd. Crouse, NC 28033	Callout: 4272/64	Revisions . .	Scale: 1/8" = 1'-0"	Date: 02/15/2024	Cust: KING	Model/Eng. No.: 3R2202-R32
Title: Foundation 2x10 Marriage Line without Stair			Drawn By: JT	Reference: RV110-A1		Dlr: HBV S/N: 44293	Pg.: FD20#

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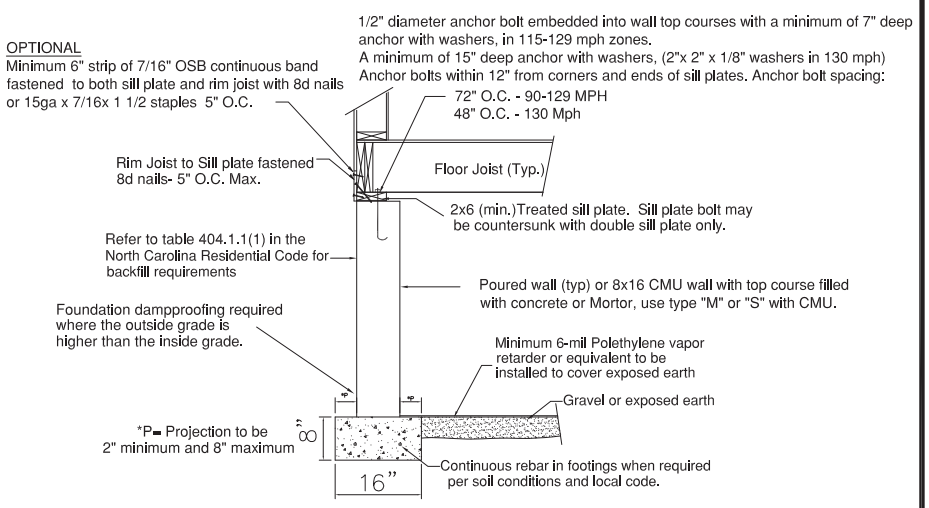
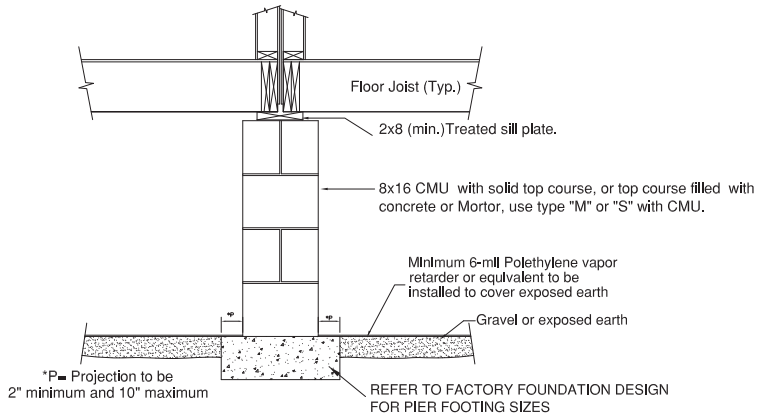
N.C. Foundation Cross Section- 90 to 130 Mph 1-1/2, 2, OR 2-1/2 STORY



BOTTOM OF FOOTINGS TO BE A MIN. OF 12" BELOW GRADE

Applicable to Seismic Zone C with minimum soil bearing capacity of 1500 PSF. Concrete 2500-PSI. min. Wind speed up to 130 Mph Exp. C. Refer to Chapter 4 in the North Carolina Residential Code for specific foundation application or CMU Construction. Refer to the wind bracing pages for additional tie down and braced wall requirements.

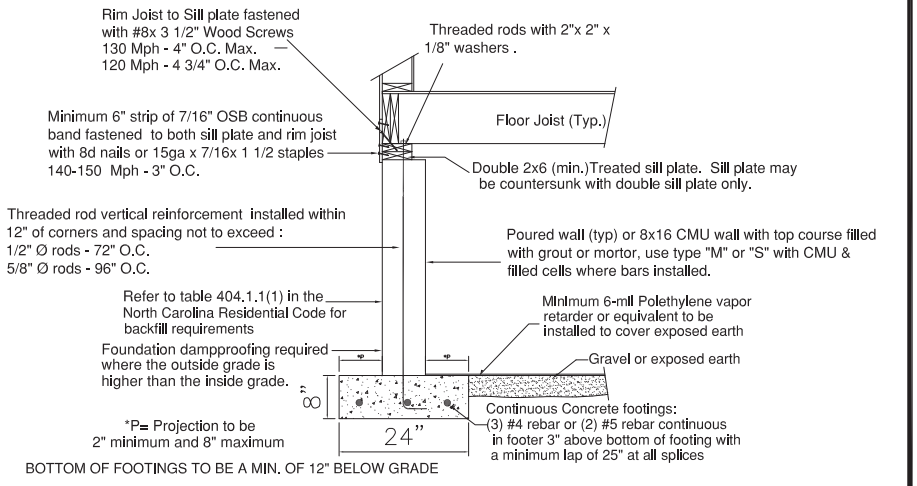
N.C. Pier Cross Section- All Zones- UP TO 3 STORIES



BOTTOM OF FOOTINGS TO BE A MIN. OF 12" BELOW GRADE

R404.1.5.4Piers.
The unsupported height of masonry piers shal lnot exceed 10 times their least dimension.
When structural clay tile or hollow concrete masonry units are used for isolated piers to support beams and girders, the cellular spaces shall be filled solidly with concrete or Type M or S mortar, except that unfilled hollow piers may be used if their unsupported height is not more than four times their least dimension. When hollow masonry units are solidly filled with concrete or Type M or S mortar, the allowable compressive stress may be increased as provided in Table 606.9.

N.C. High Wind Foundation Cross Section- 140 to 150 Mph 1-1/2, 2, OR 2-1/2 STORY

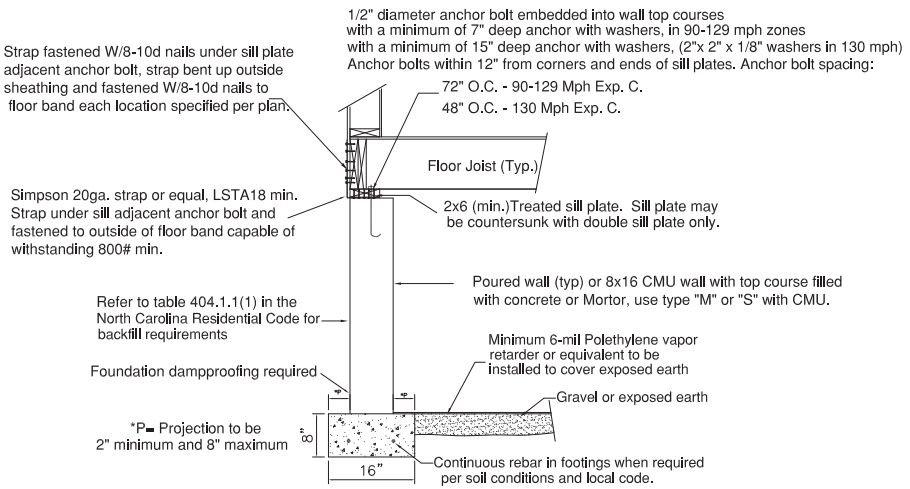


BOTTOM OF FOOTINGS TO BE A MIN. OF 12" BELOW GRADE

Applicable to Seismic Zone C, D0, D1 with minimum soil bearing capacity of 2500 PSF. Concrete-2500 PSI.min. Wind speed up to 130 Mph maximum. Refer to wind bracing pages for additional tie down requirements at braced wall locations. Refer to Chapters 4 & 45 in the North Carolina Residential Code for specific foundation application or CMU Construction.

REFER TO FIGURE R4504.2(B) FOUNDATION WALL WITH UPLIFT ANCHOR BOLTS FROM FOOTING TO SILL PLATE

N.C. 800# HOLD DOWN STRAP DEVICE



Applicable to Seismic Zone C with minimum soil bearing capacity of 2500 PSF. Concrete 2500-PSI. min. Wind speed up to 110 Mph Exp. C. Refer to Chapter 4 In the North Carolina Residential Code for specific foundation application or CMU Construction. Refer to the wind bracing pages for additional tie down and braced wall requirements.

CUSTOMER | ALL HOMES | COUNTY: ALL | STATE: NC | CITY | WIND SPEED: 110 – 150 | WIND LOAD | SNOW LOAD: 20 | CUST. NO. | DRAWING NAME

TYP FOUNDATION DETAILS

DATE:	REVISION:	BY:	NOTE:
11/18/18			
1/30/19	2018 CODE UPDATES		

T:\NC_WALL_PIER_DETAILS_2021.DWG

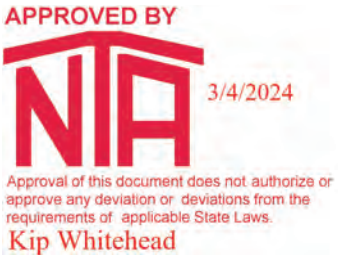
HOMES BY VANDERBUILT
3300 JEFFERSON DAVIS HWY
SANFORD, NC 27332
PHONE: (919) 718-2760
FAX: (919) 718-2799

Generated by RES*check-Web* Software

Compliance Certificate

Project 3R2202-R32

Energy Code:	**2018 IECC**
Location:	**Harnett County, North Carolina**
Construction Type:	**Single-family**
Project Type:	**New Construction**
Orientation:	**Unspecified**
Conditioned Floor Area:	**2,771 ft2**
Glazing Area	**10%**
Climate Zone:	**4 (3499 HDD)**
Permit Date:	
Permit Number:	



Construction Site:
Oakrodge River Road
Fuquay Varina, North Carolina
27526

Owner/Agent:
KING
HBV

Designer/Contractor:
R-Anell Housing Group, LLC
Commodore Homes, LLC
235 Anthony Grove Rd.
Crouse, NC 28033

Compliance: Passes using UA trade-off

Compliance: **2.2% Better Than Code** Maximum UA: **451** Your UA: **441** Maximum SHGC: **0.40** Your SHGC: **0.24**

The % Better or Worse Than Code Index reflects how close to compliance the house is based on code trade-off rules.
It DOES NOT provide an estimate of energy use or cost relative to a minimum-code home.

Slab-on-grade tradeoffs are no longer considered in the UA or performance compliance path in REScheck. Each slab-on-grade assembly in the specified climate zone must meet the minimum energy code insulation R-value and depth requirements.

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
Ceiling 1: Flat Ceiling or Scissor Truss	1,006	38.0	0.0	0.030	0.026	30	26
Ceiling 2 [Between knee walls]: Flat Ceiling or Scissor Truss	1,765	30.0	0.0	0.035	0.026	62	46
Wall [1walls]: Wood Frame, 16" o.c. Orientation: Right side	462	19.0	0.0	0.060	0.060	26	26
Door - Hinged - Exterior - 9 Lite {Qty 1}: null Orientation: Right side	22			0.290	0.320	6	7
Window - Kinro 6012TRN {Qty 1}: Vinyl Frame:Double Pane with Low-E SHGC: 0.35 Orientation: Right side	5			0.320	0.320	2	2
Window - Kinro SH 3036 {Qty 1}: Vinyl Frame:Double Pane with Low-E SHGC: 0.23 Orientation: Right side	8			0.340	0.320	3	3
Wall [1walls]: Wood Frame, 16" o.c. Orientation: Left side	462	19.0	0.0	0.060	0.060	27	27

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
Window - Kinro SH 3036 {Qty 1}: Vinyl Frame:Double Pane with Low-E SHGC: 0.32 Orientation: Left side	8			0.340	0.320	3	3
Wall [1walls]: Wood Frame, 16" o.c. Orientation: Back	704	19.0	0.0	0.060	0.060	33	33
Door - Hinged - Exterior - 15 Lite {Qty 1}: null Orientation: Back	22			0.370	0.320	8	7
Window - Kinro SH 3668 {Qty 7}: Vinyl Frame:Double Pane with Low-E SHGC: 0.23 Orientation: Back	122			0.340	0.320	41	39
Window - Kinro SH 3036 {Qty 1}: Vinyl Frame:Double Pane with Low-E SHGC: 0.23 Orientation: Back	8			0.340	0.320	3	3
Wall [1walls]: Wood Frame, 16" o.c. Orientation: Front	704	19.0	0.0	0.060	0.060	33	33
Door - Hinged - Exterior - Half Lite - 12DSL {Qty 1}: null Orientation: Front	40			0.280	0.320	11	13
Window - (2) Kinro SH 3668 {Qty 1}: Vinyl Frame:Double Pane with Low-E SHGC: 0.23 Orientation: Front	35			0.340	0.320	12	11
Window - Kinro SH 3036 {Qty 1}: Vinyl Frame:Double Pane with Low-E SHGC: 0.23 Orientation: Front	8			0.340	0.320	3	3
Window - Kinro SH 3668 {Qty 4}: Vinyl Frame:Double Pane with Low-E SHGC: 0.23 Orientation: Front	69			0.340	0.320	23	22
Wall [Cape Close Off Kit]: Wood Frame, 24" o.c. Orientation: Unspecified	200	11.0	0.0	0.087	0.060	16	11
Attic Door: Solid Orientation: Unspecified	18			0.460	0.320	8	6
Floor 1: All-Wood Joist/Truss:Over Outside Air	2,771	30.0	0.0	0.033	0.047	91	130

Compliance Statement: The proposed building design described here is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the 2018 IECC requirements in RES*check* Version : REScheck-Web and to comply with the mandatory requirements listed in the RES*check* Inspection Checklist.

Cameron LeCount
Name - Title

Signature

2/20/24
Date

APPROVED BY
NTA
3/4/2024
Approval of this document does not authorize or approve any deviation or deviations from the requirements of applicable State Laws.
Kip Whitehead

RES*check* Software Version : REScheck-Web

Inspection Checklist

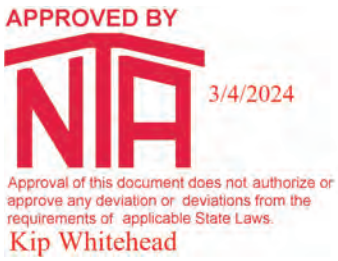
Energy Code: 2018 IECC

Requirements: 0.0% were addressed directly in the RES*check* software

Text in the "Comments/Assumptions" column is provided by the user in the REScheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Pre-Inspection/Plan Review	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
103.1, 103.2 [PR1][1]	Construction drawings and documentation demonstrate energy code compliance for the building envelope. Thermal envelope represented on construction documents.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
103.1, 103.2, 403.7 [PR3][1]	Construction drawings and documentation demonstrate energy code compliance for lighting and mechanical systems. Systems serving multiple dwelling units must demonstrate compliance with the IECC Commercial Provisions.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
302.1, 403.7 [PR2][2]	Heating and cooling equipment is sized per ACCA Manual S based on loads calculated per ACCA Manual J or other methods approved by the code official.	Heating: Btu/hr____ Cooling: Btu/hr____	Heating: Btu/hr____ Cooling: Btu/hr____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:



1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Foundation Inspection	Complies?	Comments/Assumptions
303.2.1 [FO11][2]	A protective covering is installed to protect exposed exterior insulation and extends a minimum of 6 in. below grade.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.9 [FO12][2]	Snow- and ice-melting system controls installed.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

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3/4/2024
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Kip Whitehead

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Framing / Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
402.1.1, 402.3.4 [FR1][1]	Door U-factor.	U-____	U-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
402.1.1, 402.3.1, 402.3.3, 402.5 [FR2][1]	Glazing U-factor (area-weighted average).	U-____	U-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
303.1.3 [FR4][1]	U-factors of fenestration products are determined in accordance with the NFRC test procedure or taken from the default table.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.4.1.1 [FR23][1]	Air barrier and thermal barrier installed per manufacturer's instructions.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.4.3 [FR20][1]	Fenestration that is not site built is listed and labeled as meeting AAMA /WDMA/CSA 101/I.S.2/A440 or has infiltration rates per NFRC 400 that do not exceed code limits.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.4.5 [FR16][2]	IC-rated recessed lighting fixtures sealed at housing/interior finish and labeled to indicate ≤2.0 cfm leakage at 75 Pa.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.3.1 [FR12][1]	Supply and return ducts in attics insulated >= R-8 where duct is >= 3 inches in diameter and >= R-6 where < 3 inches. Supply and return ducts in other portions of the building insulated >= R-6 for diameter >= 3 inches and R-4.2 for < 3 inches in diameter.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.3.2 [FR13][1]	Ducts, air handlers and filter boxes are sealed with joints/seams compliant with International Mechanical Code or International Residential Code, as applicable.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.3.5 [FR15][3]	Building cavities are not used as ducts or plenums.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.4 [FR17][2]	HVAC piping conveying fluids above 105 ºF or chilled fluids below 55 ºF are insulated to ≥R-3.	R-____	R-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.4.1 [FR24][1]	Protection of insulation on HVAC piping.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.5.3 [FR18][2]	Hot water pipes are insulated to ≥R-3.	R-____	R-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

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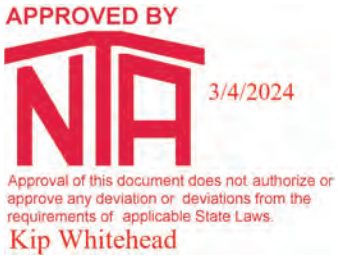
1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Framing / Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
403.6 [FR19][2]	Automatic or gravity dampers are installed on all outdoor air intakes and exhausts.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:



1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Insulation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
303.1 [IN13][2]	All installed insulation is labeled or the installed R-values provided.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.1.1, 402.2.6 [IN1][1]	Floor insulation R-value.	R-____ ☐ Wood ☐ Steel	R-____ ☐ Wood ☐ Steel	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
303.2, 402.2.8 [IN2][1]	Floor insulation installed per manufacturer's instructions and in substantial contact with the underside of the subfloor, or floor framing cavity insulation is in contact with the top side of sheathing, or continuous insulation is installed on the underside of floor framing and extends from the bottom to the top of all perimeter floor framing members.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.1.1, 402.2.5, 402.2.6 [IN3][1]	Wall insulation R-value. If this is a mass wall with at least ½ of the wall insulation on the wall exterior, the exterior insulation requirement applies (FR10).	R-____ ☐ Wood ☐ Mass ☐ Steel	R-____ ☐ Wood ☐ Mass ☐ Steel	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
303.2 [IN4][1]	Wall insulation is installed per manufacturer's instructions.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

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1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Final Inspection Provisions	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
402.1.1, 402.2.1, 402.2.2, 402.2.6 [FI1][1]	Ceiling insulation R-value.	R-____ ☐ Wood ☐ Steel	R-____ ☐ Wood ☐ Steel	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
303.1.1.1, 303.2 [FI2][1]	Ceiling insulation installed per manufacturer's instructions. Blown insulation marked every 300 ft².			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.2.3 [FI22][2]	Vented attics with air permeable insulation include baffle adjacent to soffit and eave vents that extends over insulation.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.2.4 [FI3][1]	Attic access hatch and door insulation ≥R-value of the adjacent assembly.	R-____	R-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.4.1.2 [FI17][1]	Blower door test @ 50 Pa. <=5 ach in Climate Zones 1-2, and <=3 ach in Climate Zones 3-8.	ACH 50 =____	ACH 50 =____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.3.3 [FI27][1]	Ducts are pressure tested to determine air leakage with either: Rough-in test: Total leakage measured with a pressure differential of 0.1 inch w.g. across the system including the manufacturer's air handler enclosure if installed at time of test. Postconstruction test: Total leakage measured with a pressure differential of 0.1 inch w.g. across the entire system including the manufacturer's air handler enclosure.	____ cfm/100 ft²	____ cfm/100 ft²	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.3.4 [FI4][1]	Duct tightness test result of <=4 cfm/100 ft2 across the system or <=3 cfm/100 ft2 without air handler @ 25 Pa. For rough-in tests, verification may need to occur during Framing Inspection.	____ cfm/100 ft²	____ cfm/100 ft²	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.3.2.1 [FI24][1]	Air handler leakage designated by manufacturer at <=2% of design air flow.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.1.1 [FI9][2]	Programmable thermostats installed for control of primary heating and cooling systems and initially set by manufacturer to code specifications.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.1.2 [FI10][2]	Heat pump thermostat installed on heat pumps.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.5.1 [FI11][2]	Circulating service hot water systems have automatic or accessible manual controls.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

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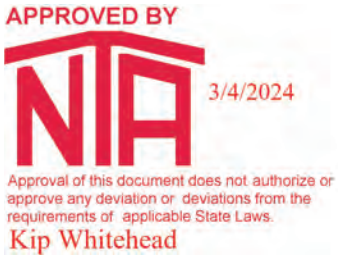
1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Final Inspection Provisions	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
403.6.1 [FI25]2	All mechanical ventilation system fans not part of tested and listed HVAC equipment meet efficacy and air flow limits per Table R403.6.1.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.2 [FI26]2	Hot water boilers supplying heat through one- or two-pipe heating systems have outdoor setback control to lower boiler water temperature based on outdoor temperature.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.5.1.1 [FI28]2	Heated water circulation systems have a circulation pump. The system return pipe is a dedicated return pipe or a cold water supply pipe. Gravity and thermos-syphon circulation systems are not present. Controls for circulating hot water system pumps start the pump with signal for hot water demand within the occupancy. Controls automatically turn off the pump when water is in circulation loop is at set-point temperature and no demand for hot water exists.	APPROVED BY NTA 3/4/2024 Approval of this document does not authorize or approve any deviation or deviations from the requirements of applicable State Laws. Kip Whitehead		☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.5.1.2 [FI29]2	Electric heat trace systems comply with IEEE 515.1 or UL 515. Controls automatically adjust the energy input to the heat tracing to maintain the desired water temperature in the piping.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.5.2 [FI30]2	Demand recirculation water systems have controls that manage operation of the pump and limit the temperature of the water entering the cold water piping to <= 104ºF.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.5.4 [FI31]2	Drain water heat recovery units tested in accordance with CSA B55.1. Potable water-side pressure loss of drain water heat recovery units < 3 psi for individual units connected to one or two showers. Potable water-side pressure loss of drain water heat recovery units < 2 psi for individual units connected to three or more showers.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
404.1 [FI6]1	90% or more of permanent fixtures have high efficacy lamps.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
404.1.1 [FI23]3	Fuel gas lighting systems have no continuous pilot light.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
401.3 [FI7]2	Compliance certificate posted.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Final Inspection Provisions	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
303.3 [FI18][3]	Manufacturer manuals for mechanical and water heating systems have been provided.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:



1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

2018 IECC Energy Efficiency Certificate

Insulation Rating	R-Value
Above-Grade Wall	19.00
Below-Grade Wall	0.00
Floor	30.00
Ceiling / Roof	30.00
Ductwork (unconditioned spaces):	_____

Glass & Door Rating	U-Factor	SHGC
Window	0.34	0.23
Door	0.28	

Heating & Cooling Equipment	Efficiency
Heating System:_____	_____
Cooling System:_____	_____
Water Heater:_____	_____

Name: _____ **Date:**_____

Comments

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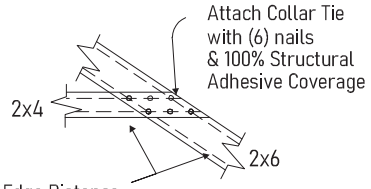
Job	Truss	Truss Type	Qty	Ply	
32802	A098601	RIGID COLLAR TIE CONNECTION DETAILS 1		1	UFP ENGINEERING Bulletin 05-02 REF # 2001092

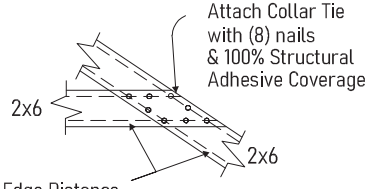
Universal Forest Products Inc., Grand Rapids, MI 49525,

2x4 Collar Tie Nailed to 2x6 Chord



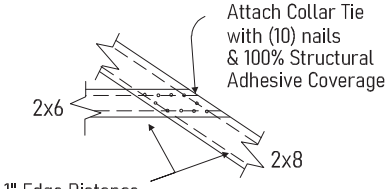
Detail (A)

2x6 Collar Tie Nailed to 2x6 Chord



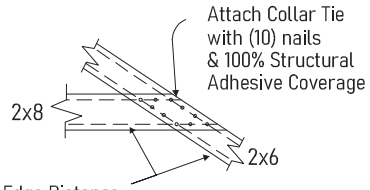
Detail (B)

2x6 Collar Tie Nailed to 2x8 Chord



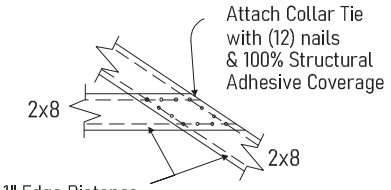
Detail (C)

2x8 Collar Tie Nailed to 2x6 Chord



Detail (D)

2x8 Collar Tie Nailed to 2x8 Chord

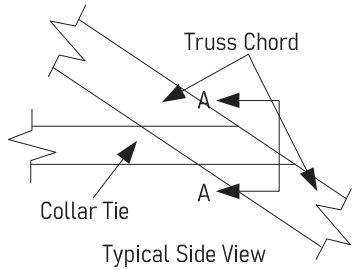


Detail (E)

Power Driven Nails Rigid Collar Tie Connection Details

A) Side member shall be fastened with structural adhesive that meets the requirements of ASTM-2559. Maximum wood to wood gap = 1/16".
B) Bostitch .131" Dia. x 3" nails (or equal)

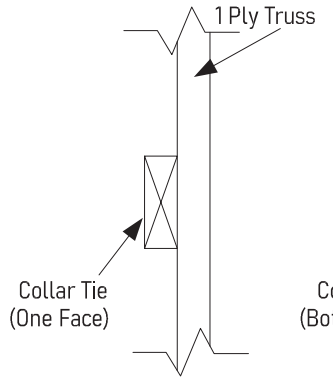
This Bulletin to be used only in conjunction with UFPI truss designs which specifically refer to this Bulletin by number for collar tie field fastening.



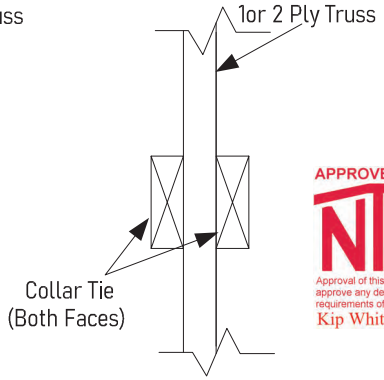
Typical Side View

Acceptable Alternate Applications

See truss print for which detail is actually used



Section A-A



Section A-A

* FOR 1 PLY, OFFSET NAILS WITH RESPECT TO EACH FACE.

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Kip Whitehead

WARNING - Verify design parameters and READ NOTES

Universal Forest Products, Inc.
PHONE (616)-364-6161 FAX (616)-365-0060
2801 EAST BELTLINE RD. NE
GRAND RAPIDS, MI 49505

This design is based only upon parameters shown, and is for an individual building component to be installed and loaded vertically. Applicability of design parameters and proper incorporation of component is responsibility of building designer - not truss designer. Bracing shown is for lateral support of individual web members only. Additional temporary bracing to insure stability during construction is the responsibility of the erector. Additional permanent bracing of the overall structure is the responsibility of the building designer. For general guidance regarding fabrication,quality control, storage, delivery, erection and bracing, consult QST-88 Quality Standard, DSB-89 Bracing Specification, and HIB-91 Handling Installing and Bracing Recommendation avaliable from Truss Plate Institute, 583 D'Onofrio Drive, Madison, WI 53719

copyright 2004 by: Universal Forest Products, Inc.

Job	Truss	Truss Type	Qty	Ply	COMMODORE (R41P9F)
112276	CCB37744	HINGED ATTIC	1	1	41' tri-wide 9/12 cape

Designed by ATM 274

UFP Industries Inc., Grand Rapids, MI 49525, Andrew Muisiner — 8.620 e Sep 22 2022 MiTek Industries, Inc. Tue Jan 31 08:57:51 2023 Page 1 of 1

-0-11-4 | 20-6-14 | 41-1-12 | 42-1-0
0-11-4 | 20-6-14 | 20-6-14 | 0-11-4

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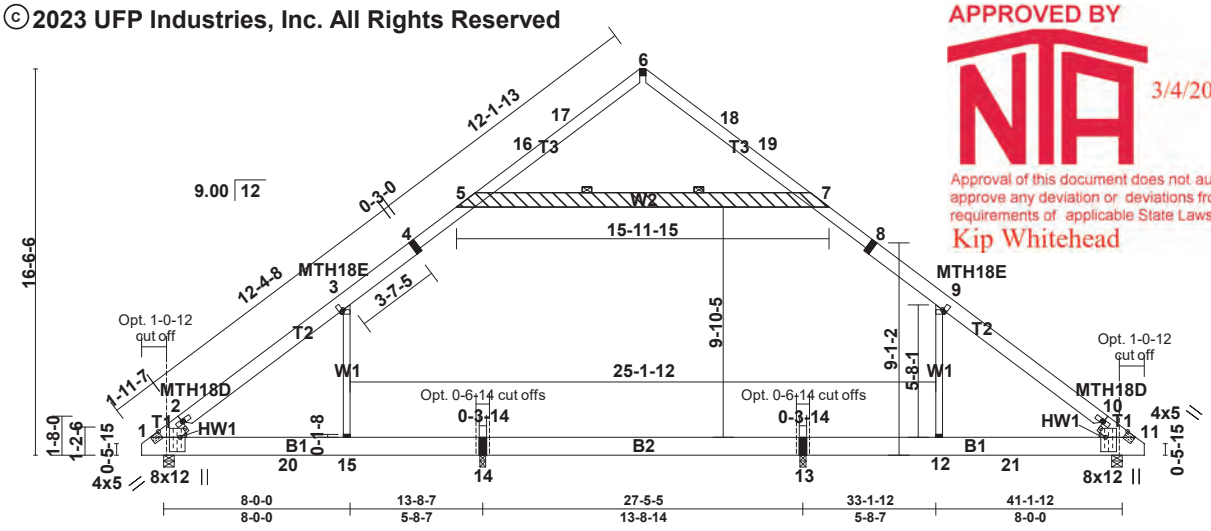

Plate Offsets (X,Y)-- [1:0-7-5,0-9-0], [1:0-4-8,0-2-8], [2:0-0-11,0-0-0], [3:0-0-11,0-1-2], [9:0-0-11,0-1-2], [10:0-0-11,0-0-0], [11:0-4-8,0-2-8], [11:0-7-4,0-9-1]

SPACING-: 2-0-0 LOADING (psf)		SPACING-: 1-4-0 LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	23.1	TCLL	34.7	Plate Grip DOL	1.15	TC	0.80	Vert(LL)	0.43	1-15	>373	240	MT20	197/144
(Ground Snow=30.0)		(Ground Snow=45.0)		Lumber DOL	1.15	BC	0.93	Vert(CT)	-0.44	1-15	>369	180	MT18HS	197/144
TCDL	10.0	TCDL	15.0	Rep Stress Incr	YES	WB	0.69	Horz(CT)	0.02	11	n/a	n/a		
BCLL	0.0 *	BCLL	0.0 *	Code IBC2021/TPI2014		Matrix-R		Attic	-0.34	13-14	484	360	Weight: 220 lb	
BCDL	10.0	BCDL	15.0										FT = 0%	

LUMBER-
TOP CHORD 2x10 SP No.2 or 2x10 SPF No.2 *Except*
T2: 2x8 SP No.2 or 2x8 SPF No.2, T3: 2x6 SP No.2 or 2x6 SPF No.2
BOT CHORD 2x10 SP DSS or 2x10 SP No.1 *Except* B2: 2x10 SP DSS
WEBS 2x4 SPF Stud *Except* W2: 2x8 SP No.2 or 2x8 SPF No.2
WEDGE Left: 2x3 SPF Stud , Right: 2x3 SPF Stud

BRACING-
TOP CHORD Structural wood sheathing directly applied or 4-11-14 oc purlins.
BOT CHORD Rigid ceiling directly applied or 2-2-0 oc bracing.
WEBS 2 Rows at 1/3 pts 5-7

REACTIONS. (lb/size) 14=439/0-3-0 (min. 0-1-8), 13=439/0-3-0 (min. 0-1-8), 1=1445/0-5-8 (min. 0-2-5), 11=1445/0-5-8 (min. 0-2-5)
Max Horz 1=735(LC 9)
Max Uplift14=-325(LC 12), 13=-323(LC 13), 1=-666(LC 13), 11=-662(LC 12)
Max Grav 14=1329(LC 22), 13=1327(LC 23), 1=1522(LC 23), 11=1518(LC 22)

FORCES. (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-1634/816, 2-3=-1564/852, 3-4=-1486/902, 4-5=-1258/934, 5-16=-505/260, 16-17=-378/270, 6-17=-348/288, 6-18=-345/286, 18-19=-374/269, 7-19=-503/259, 7-8=-1253/929, 8-9=-1486/897, 9-10=-1553/846, 10-11=-1628/810
BOT CHORD 1-20=-496/1344, 15-20=-496/1344, 14-15=-492/1341, 13-14=-492/1341, 12-13=-492/1341, 12-21=-492/1340, 11-21=-492/1340
WEBS 9-12=-633/744, 3-15=-637/747, 5-7=-1140/892

REQUIRED FIELD JOINT CONNECTIONS - Maximum Compression (lb)/ Maximum Tension (lb)/ Maximum Shear (lb)/ Maximum Moment (lb-in)
4=1349/919/266/0, 5=1151/900/78/0, 6=287/291/271/0, 7=1153/902/78/0, 8=1349/914/264/0, 12=633/744/0/0, 13=492/1341/777/0, 14=492/1341/779/0, 15=637/747/0/0

NOTES-
1) Wind: ASCE 7-16; Vult=150mph (3-second gust) Vasd=119mph @24in o.c.; TCDL=4.0psf; BCDL=4.0psf; (Alt. 180mph @16in o.c.; TCDL=6.0psf; BCDL=6.0psf); h=30ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Exterior(2E) 0-2-7 to 3-2-7, Interior(1) 3-2-7 to 17-6-5, Exterior(2R) 17-6-5 to 23-6-5, Interior(1) 23-6-5 to 37-11-5, Exterior(2E) 37-11-5 to 40-11-5 zone; cantilever left and right exposed ;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
2) TCLL: ASCE 7-16; Pg=30.0 psf; Ps=23.1 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat C; Partially Exp.; Ce=1.0; Cs=1.00; Ct=1.10
3) Roof design snow load has been reduced to account for slope.
4) Unbalanced snow loads have been considered for this design.
5) All plates are MT20 plates unless otherwise indicated.
6) See HINGE PLATE DETAILS for plate placement.
7) Provisions must be made to prevent lateral movement of hinged member(s) during transportation.
8) All additional member connections shall be provided by others for forces as indicated.
9) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
10) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit b the bottom chord and any other members, with BCDL = 10.0psf.
11) Ceiling dead load (5.0 psf) on member(s). 3-5, 7-9, 5-7
12) Bottom chord live load (40.0 psf) and additional bottom chord dead load (0.0 psf) applied only to room. 14-15, 13-14, 12-13
13) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 325 lb uplift at joint 14, 323 lb uplift at joint 13, 666 lb uplift at joint 1 and 662 lb uplift at joint 11.
14) Attic room checked for L/360 deflection.
15) This truss is designed in accordance with the 2021 IBC Sec 2306.1 and referenced standard ANSI/TPI 1
16) This truss is designed in accordance with the 2018 IBC Sec 2306.1 and referenced standard ANSI/TPI 1
17) This truss is designed in accordance with the 2015 IBC Sec 2306.1 and referenced standard ANSI/TPI 1
18) Take precaution to keep the chords in plane, any bending or twisting of the hinge plate must be repaired before the building is put into se
19) The field-installed members are an integral part of the truss design. Retain a design professional to specify final field connections and ten supports. All field-installed members must be properly fastened prior to applying any loading to the truss. This design anticipates the fina position.
20) Based on: CCB37726. Changes: IBC 2021, 150mph wind.

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
STUART LEE WALTER
PE071668
1/31/2023

The professional engineering seal indicates that a licensed professional engineer has designed the truss under the standards referenced within this document, not necessarily the current state building code. The engineering seal is not an approval to use in a specific state. The final determination on whether a truss design is acceptable under the locally adopted building code rest with the building official or designated appointee.

WARNING - *Verify design parameters and READ NOTES*

UFP Industries, Inc.
PHONE (616)-364-6161
2801 EAST BELTLINE RD, NE
GRAND RAPIDS, MI 49525

Truss shall not be cut or modified without approval of the truss design engineer.
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UFP INDUSTRIES

Job	Truss	MFG	Customer
112276	CCB37744	315	COMMODORE

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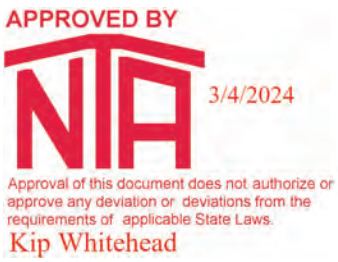

Job	Truss	Truss Type	Qty	Ply	COMMODORE (R28P9F)
112276	CCB41614	HINGED ATTIC	1	1	27' 4"w 9/12 cape (match tri-wide KW)

Designed by ATM 274

UFP Industries Inc., Grand Rapids, MI 49525, Andrew Muisiner — 8.620 e Sep 22 2022 MiTek Industries, Inc. Wed Jan 18 15:11:05 2023 Page 1 of 1

-0-11-4 / 0-11-4 — 13-8-7 / 13-8-7 — 27-4-14 / 13-8-7 — 28-4-2 / 0-11-4

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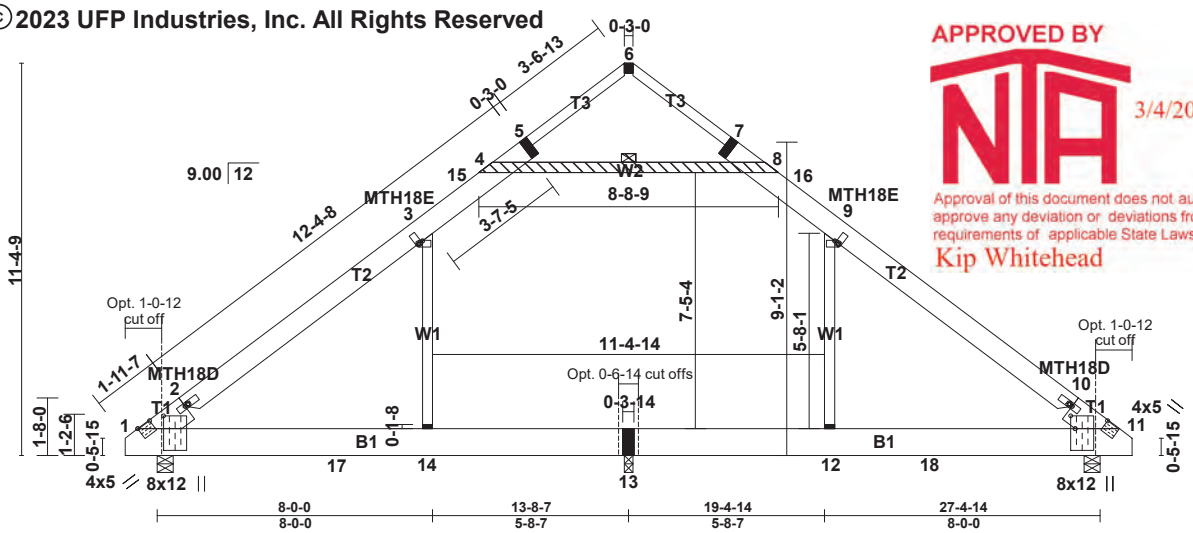

APPROVED BY NTA 3/4/2024

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Kip Whitehead

Plate Offsets (X,Y)-- [1:0-4-8,0-8-15], [1:0-5-0,0-0-4], [2:0-1-4,0-0-0], [3:0-1-4,0-1-0], [9:0-1-4,0-1-0], [10:0-1-4,0-0-0], [11:0-7-5,0-9-0], [11:0-4-8,0-1-9]

SPACING-: 2-0-0		SPACING-: 1-4-0		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
LOADING (psf)		LOADING (psf)		Plate Grip DOL	1.15	TC	0.47	Vert(LL)	0.27	1-14	>596	240	MT20	197/144
TCLL	23.1	TCLL	34.7	Lumber DOL	1.15	BC	0.71	Vert(CT)	-0.30	1-14	>541	180	MT18HS	197/144
(Ground Snow=30.0)		(Ground Snow=45.0)		Rep Stress Incr	YES	WB	0.45	Horz(CT)	0.01	11	n/a	n/a		
TCDL	10.0	TCDL	15.0	Code IBC2021/TPI2014		Matrix-R		Attic	-0.19	13-14	738	360	Weight: 218 lb	
BCLL	0.0 *	BCLL	0.0 *										FT = 0%	
BCDL	10.0	BCDL	15.0											

LUMBER-
TOP CHORD 2x10 SP No.2 or 2x10 SPF No.2 *Except* T2: 2x8 SP No.2 or 2x8 SPF No.2, T3: 2x4 SP No.2 or 2x4 SPF No.2
BOT CHORD 2x10 SP No.2 or 2x10 SPF No.2
WEBS 2x4 SPF Stud *Except* W2: 2x4 SP No.2 or 2x4 SPF No.2

BRACING-
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins.
BOT CHORD Rigid ceiling directly applied or 8-7-14 oc bracing.
WEBS 1 Row at midpt 4-8

REACTIONS. (lb/size) 1=1061/0-5-8 (min. 0-1-15), 11=1061/0-5-8 (min. 0-1-15), 13=323/0-3-0 (min. 0-1-8)
Max Horz 1=-502(LC 8)
Max Uplift1=-501(LC 12), 11=-504(LC 13), 13=-119(LC 12)
Max Grav 1=1290(LC 22), 11=1294(LC 23), 13=739(LC 18)

FORCES. (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-1346/559, 2-3=-1221/559, 3-15=-971/573, 4-15=-916/587, 4-5=-320/125, 5-6=-169/145, 6-7=-167/143, 7-8=-324/125, 8-16=-907/587, 9-16=-970/573, 9-10=-1210/554, 10-11=-1340/554
BOT CHORD 1-17=-261/1055, 14-17=-261/1055, 13-14=-259/1054, 12-13=-259/1054, 12-18=-259/1052, 11-18=-259/1052
WEBS 9-12=-310/408, 3-14=-313/410, 4-8=-790/591

REQUIRED FIELD JOINT CONNECTIONS - Maximum Compression (lb)/ Maximum Tension (lb)/ Maximum Shear (lb)/ Maximum Moment (lb-in)
4=790/591/38/0, 5=266/132/133/0, 6=139/147/128/0, 7=268/131/135/0, 8=790/591/38/0, 12=310/408/0/0, 13=259/1054/504/0, 14=313/410/0/0

NOTES-
1) Wind: ASCE 7-16; Vult=150mph (3-second gust) Vasd=119mph @24in o.c.; TCDL=4.0psf; BCDL=4.0psf; (Alt. 180mph @16in o.c.; TCDL=6.0psf; BCDL=6.0psf); h=30ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Exterior(2E) 0-2-7 to 3-2-7, Interior(1) 3-2-7 to 10-7-14, Exterior(2R) 10-7-14 to 16-7-14, Interior(1) 16-7-14 to 24-2-7, Exterior(2E) 24-2-7 to 27-2-7 zone; cantilever left and right exposed ;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
2) TCLL: ASCE 7-16; Pg=30.0 psf; Ps=23.1 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat C; Partially Exp.; Ce=1.0; Cs=1.00; Ct=1.10
3) Roof design snow load has been reduced to account for slope.
4) Unbalanced snow loads have been considered for this design.
5) All plates are MT20 plates unless otherwise indicated.
6) See HINGE PLATE DETAILS for plate placement.
7) Provisions must be made to prevent lateral movement of hinged member(s) during transportation.
8) All additional member connections shall be provided by others for forces as indicated.
9) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
10) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit b the bottom chord and any other members, with BCDL = 10.0psf.
11) Ceiling dead load (5.0 psf) on member(s). 3-4, 8-9, 4-8
12) Bottom chord live load (40.0 psf) and additional bottom chord dead load (0.0 psf) applied only to room. 13-14, 12-13
13) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 501 lb uplift at joint 1, 504 lb uplift at joint 11 and 119 lb uplift at joint 13.
14) Attic room checked for L/360 deflection.
15) This truss is designed in accordance with the 2021 IBC Sec 2306.1 and referenced standard ANSI/TPI 1
16) This truss is designed in accordance with the 2018 IBC Sec 2306.1 and referenced standard ANSI/TPI 1
17) This truss is designed in accordance with the 2015 IBC Sec 2306.1 and referenced standard ANSI/TPI 1
18) Take precaution to keep the chords in plane, any bending or twisting of the hinge plate must be repaired before the building is put into se
19) The field-installed members are an integral part of the truss design. Retain a design professional to specify final field connections and ten supports. All field-installed members must be properly fastened prior to applying any loading to the truss. This design anticipates the fina position.
20) Based on: CCB41611. Changes: IBC 2021, 150mph wind.

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — STUART LEE WALTER — PE071668

1/31/2023

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WARNING - *Verify design parameters and READ NOTES*

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UFP Industries, Inc.
PHONE (616)-364-6161
2801 EAST BELTLINE RD, NE
GRAND RAPIDS, MI 49525

UFP INDUSTRIES

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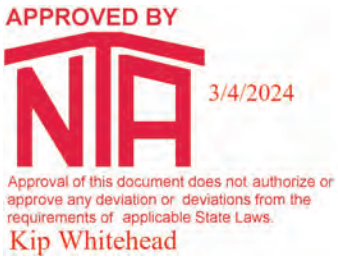

Project:

Location: 3R2202 G/R - D/R - Kit ML Beam (1253# Reaction @ 24" oc Max)
Multi-Loaded Multi-Span Beam
[2015 International Building Code(2015 NDS)]
(3) 1.5 IN x 9.25 IN x 35.0 FT (16.8 + 2 + 16.2)
2.0E-2900F - APA EWS LVL Stress Classes
Section Adequate By: 56.2%
Controlling Factor: Moment

StruCalc 9.0

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StruCalc Version 10.0.1.6 11/21/2019 2:56:01 PM

CAUTIONS
* Laminations are to be fully connected to provide uniform transfer of loads to all members

DEFLECTIONS	Left		Center		Right	
Live Load	0.36	IN L/567	-0.01	IN L/2396	0.31	IN L/630
Dead Load	0.14	in	0.00	in	0.12	in
Total Load	0.49	IN L/409	-0.01	IN L/1733	0.43	IN L/454

Live Load Deflection Criteria: L/360 Total Load Deflection Criteria: L/240

REACTIONS	A	B	C	D
Live Load	1556 lb	6591 lb	6170 lb	1501 lb
Dead Load	603 lb	1148 lb	857 lb	582 lb
Total Load	2159 lb	7739 lb	7027 lb	2083 lb
Uplift (1.5 F.S)	0 **lb**	**-2866 lb**	**-3389 lb**	0 **lb**
Bearing Length	0.64 in	2.29 in	2.08 in	0.62 in

BEAM DATA	Left	Center	Right
Span Length	16.83 ft	2 ft	16.17 ft
Unbraced Length-Top	2 ft	2 ft	2 ft
Unbraced Length-Bottom	2 ft	2 ft	2 ft
Live Load Duration Factor	1.00		
Notch Depth	0.00		

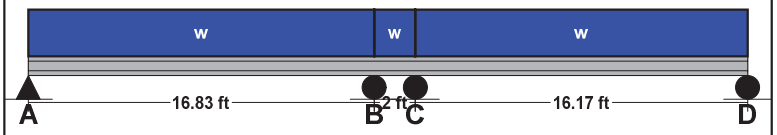
MATERIAL PROPERTIES
2.0E-2900F - APA EWS LVL Stress Classes

	Base Values		Adjusted	
Bending Stress:	Fb = 2900 psi		Fb' = 2987 psi	
	Cd=1.00 Cl=1.00 CF=1.03			
Shear Stress:	Fv = 285 psi		Fv' = 285 psi	
	Cd=1.00			
Modulus of Elasticity:	E = 2000 ksi		E' = 2000 ksi	
Comp. ⊥ to Grain:	Fc - ⊥ = 750 psi		Fc - ⊥' = 750 psi	

Controlling Moment: -10226 ft-lb
16.83 Ft from left support of span 1 (Left Span)
Created by combining all dead loads and live loads on span(s) 1, 2
Controlling Shear: 4386 lb
At left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 1, 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	41.08 in3	64.17 in3
Area (Shear):	23.09 in2	41.63 in2
Moment of Inertia (deflection):	188.46 in4	296.79 in4
Moment:	-10226 ft-lb	15974 ft-lb
Shear:	4386 lb	7909 lb

LOADING DIAGRAM



UNIFORM LOADS	Left	Center	Right
Uniform Live Load	235 plf	235 plf	235 plf
Uniform Dead Load	79 plf	79 plf	79 plf
Beam Self Weight	12 plf	12 plf	12 plf
Total Uniform Load	326 plf	326 plf	326 plf

Uniform Load
Live Load: [(1253 lbs / 2 halves) / 2' oc] x 0.75 LL = 235 plf Live Load
Dead Load: [(1253 lbs / 2 halves) / 2' oc] x 0.25 LL = 79 plf Dead Load

Uplift Straps
Simpson CS16 w/ (7)10d nails per end
Capacity: 1705 x (7 nails / 11 nails) = 1085 lbs
Straps Req'd: 3389 lbs / 1085 lbs = 4 straps

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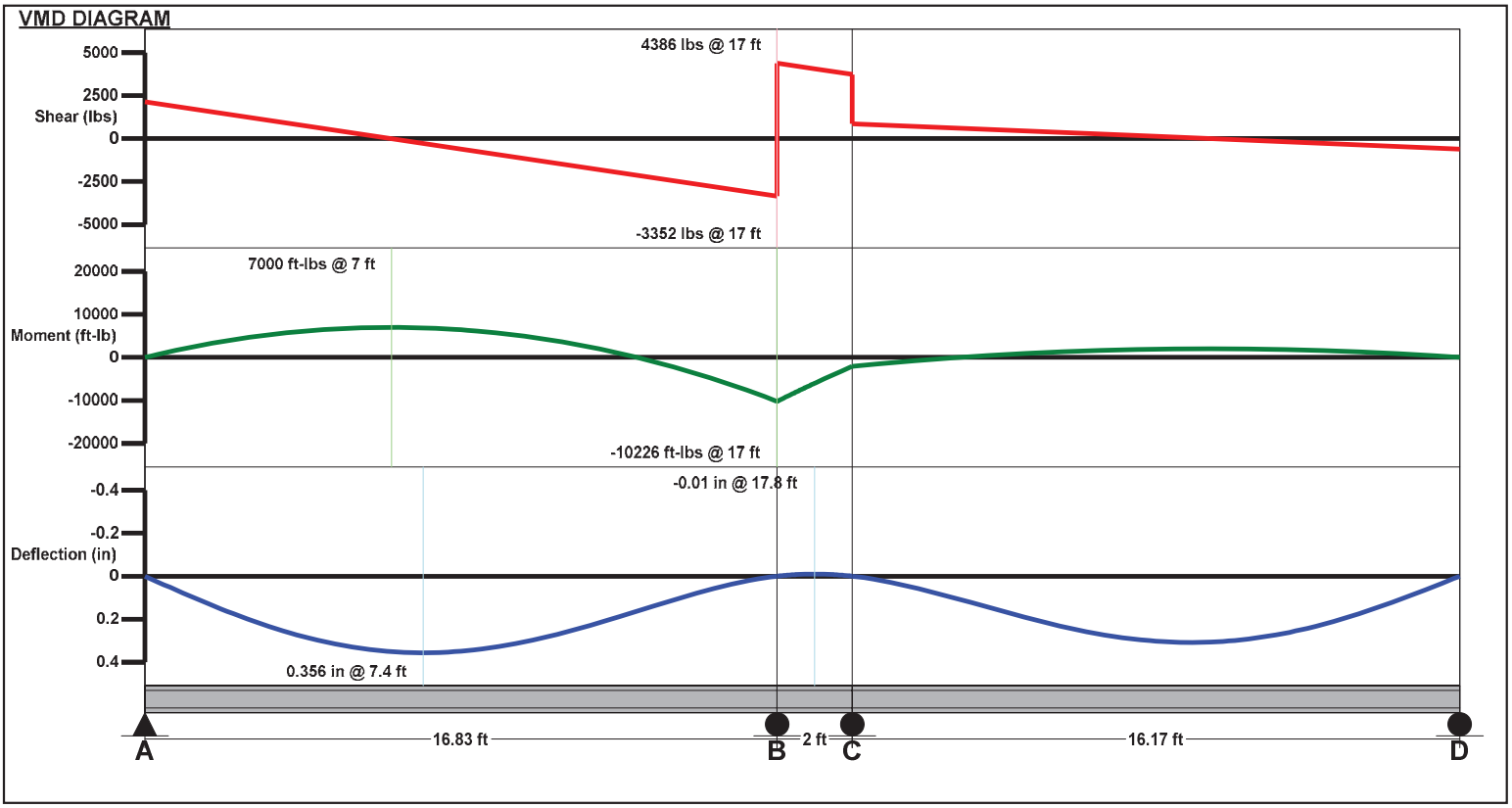

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Column Calc

Beam:

Material	Members	Size (in)	Orient. to wall
LVL	3	9.25	Parallel

Column:

Column Ht. (in)	Material	Members	Size (2x)	Column load
108	SPF #2	2	4	2182

Mateline Column (isolated column) **Column Passes: OK**

Column Properties:

Area	10.50	in^2
F_c	1150	psi
E_{min}	510000.00	psi

CP determination

F_{cE}	323.47	
F_{c*}	1322.50	

Column Adjustment Factors

C_F	1.15	
C_D	1.00	
C_p	0.23	

Column Compression Check

l_{ex}	108.00		
l_{ey}	108.00		
l_e/d	36.00	<50	**OK**
$F_{c'}$	305.16	psi	
Allowable Load	3204.00	lb	**OK**

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Beam Properties:

F_{c_perp}	750	psi

Bearing area Check

Required Bearing Area	2.95	in^2
Provided Bearing Area	10.5	in^2 **OK**

Column Calc

Beam:

Material	Members	Size (in)	Orient. to wall
LVL	3	9.25	Parallel

Column:

Column Ht. (in)	Material	Members	Size (2x)	Column load
108	SPF #2	4	4	7784

Mateline Column (isolated column) **Column Passes: OK**

Column Properties:

Area	21.00	in^2	
F_c	1150	psi	
E_{min}	510000.00	psi	

CP determination

F_{cE}	440.28		
F_{c*}	1322.50		

Column Adjustment Factors

C_F	1.15		
C_D	1.00		
C_p	0.31		

Column Compression Check

l_{ex}	108.00		
l_{ey}	108.00		
l_e/d	30.86	<50	**OK**
$F_{c'}$	404.61	psi	
Allowable Load	8496.00	lb	**OK**

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Beam Properties:

F_{c_perp}	750	psi

Bearing area Check

Required Bearing Area	10.4	in^2	
Provided Bearing Area	21	in^2	**OK**