Compliance Certificate

Generated by REScheck-Web Software

Project M25m141-38759_TNCHR-301

Energy Code:	**2018 IECC**
Location:	**Meigs County, Tennessee**
Construction Type:	**Single-family**
Project Type:	**New Construction**
Conditioned Floor Area:	**2,133 ft2**
Glazing Area	**14%**
Climate Zone:	**4 (3999 HDD)**
Permit Date:	
Permit Number:	
All Electric	**false**
Is Renewable	**false**
Has Charger	**false**
Has Battery:	**false**
Has Heat Pump:	**false**

JAMES W. HARRELL
REGISTERED ENGINEER
STATE OF TENNESSEE
10/01/2024

Clayton Homes Rutledge (Plant 925)

395 HWY 11W SOUTH Rutledge, TN 37861

PH: 865.828.5771 FAX: 865.828.8097

TN# CHR-301

Construction Site: Owner/Agent: Designer/Contractor:

Compliance: Passes using UA trade-off

Compliance: **3.3% Better Than Code** Maximum UA: **334** Your UA: **323** Maximum SHGC: **0.40** Your SHGC: **0.23**

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: Flat Ceiling or Scissor Truss	2,133	45.0	0.0	0.027	0.026	58	55
Wall: Wood Frame, 16" o.c.	1,812	21.0	0.0	0.057	0.060	88	93
Door: Solid Door (under 50% glazing)	22			0.190	0.320	4	7
Door 1: Glass Door (over 50% glazing) SHGC: 0.28	63			0.350	0.320	22	20
Window: Vinyl Frame SHGC: 0.21	183			0.300	0.320	55	59
Floor: Other	2,133			0.045	0.047	96	100

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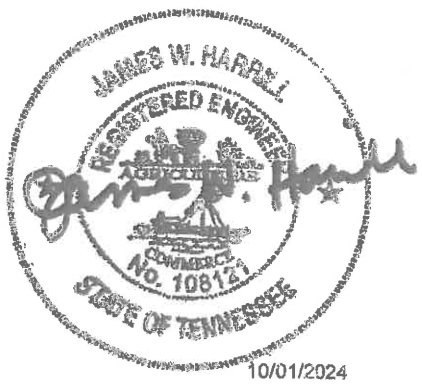
OCT 01 2024
HILBORN, WERNER, CARTER & ASSOC.

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.

Name - Title

Signature

Date



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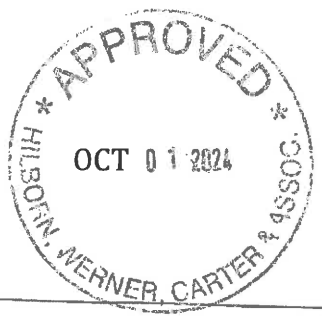

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REScheck Software Version : REScheck-Web

Inspection Checklist

Energy Code: 2018 IECC

Requirements: 100.0% were addressed directly in the REScheck 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	Requirement will be met.
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	Requirement will be met.
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	Requirement will be met.

Additional Comments/Assumptions:

JAMES W. HARRELL REGISTERED ENGINEER No. 108121 STATE OF TENNESSEE

10/01/2024

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395 HWY 11W SOUTH Rutledge, TN 37861

PH: 865.828.5771 FAX: 865.828.8097

TN# CHR-301

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	**Exception:** Requirement is not applicable.
403.9 [FO12][2]	Snow- and ice-melting system controls installed.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement is not applicable.

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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	Requirement will be met.
402.4.1.1 [FR23][1]	Air barrier and thermal barrier installed per manufacturer's instructions.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
402.4.3 [FR20][2]	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	Requirement will be met.
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	Requirement will be met.
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	Requirement will be met.
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	Requirement will be met.
403.3.5 [FR15][3]	Building cavities are not used as ducts or plenums.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
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	**Exception:** Requirement is not applicable.
403.4.1 [FR24][1]	Protection of insulation on HVAC piping.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement is not applicable.
403.5.3 [FR18][2]	Hot water pipes are insulated to ≥R-3.	R-____	R-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

JAMES W. HARRELL REGISTERED ENGINEER No. 108121 STATE OF TENNESSEE 10/01/2024

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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	Requirement will be met.

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Clayton Homes Rutledge (Plant 925)
395 HWY 11W SOUTH Rutledge, TN 37861
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TN# CHR-301

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	Requirement will be met.
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	Requirement will be met.
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	Requirement will be met.

Additional Comments/Assumptions:

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10/01/2024

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PH: 865.828.5771 FAX: 865.828.8097

TN# CHR-301

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	Requirement will be met.
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	Requirement will be met.
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	Requirement will be met.
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	Requirement will be met.
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	Requirement will be met.
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	Requirement will be met.
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	Requirement will be met.
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	Requirement will be met.
403.1.2 [FI10][2]	Heat pump thermostat installed on heat pumps.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
403.5.1 [FI11][2]	Circulating service hot water systems have automatic or accessible manual controls.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement is not applicable.

JAMES W. HARRELL REGISTERED ENGINEER No. 108121 STATE OF TENNESSEE 10/01/2024

* APPROVED * OCT 01 2024 HILBORN, WARNER, CARTER & ASSOC.

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	Requirement will be met.
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	**Exception:** Requirement is 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.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement is 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	**Exception:** Requirement is 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	**Exception:** Requirement is 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	**Exception:** Requirement is not applicable.
404.1 [FI6][1]	90% or more of permanent fixtures have high efficacy lamps.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
404.1.1 [FI23][3]	Fuel gas lighting systems have no continuous pilot light.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement is not applicable.
401.3 [FI7][2]	Compliance certificate posted.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

JAMES W. HARRIS REGISTERED ENGINEER NO. 108121 STATE OF TENNESSEE 10/01/2024

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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
303.3 [FI18][3]	Manufacturer manuals for mechanical and water heating systems have been provided.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

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Clayton Homes Rutledge (Plant 925)

355 HWY 11W SOUTH Rutledge, TN 37861

PH: 865.828.5771 FAX: 865.828.8097

TN# CHR-301

2018 IECC Energy Efficiency Certificate

Insulation Rating	R-Value
Above-Grade Wall	21.00
Below-Grade Wall	0.00
Floor	0.00
Ceiling / Roof	45.00
Ductwork (unconditioned spaces):	____

Glass & Door Rating	U-Factor	SHGC
Window	0.30	0.21
Door	0.35	0.28

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

Name: _____ Date: _____

Comments

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OCT 01 2024

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PH: 865.828.5771 FAX: 865.828.8097

TN# CHR-301

wrightsoft

Building Analysis
Entire House
Clayton Homes

Job: M25m141-38759_TNCHR-3...
Date:
By:

395 Hwy. 11-W South, Rutledge, TN 37861 Phone: 865-828-5771 Web: www.claytonrutledgehbf.com

Project Information

For: M25m141-38759_TNCHR-301

Design Conditions

Location:
Knoxville McGhee Tyson AP, TN, US
Elevation: 981 ft
Latitude: 36°N

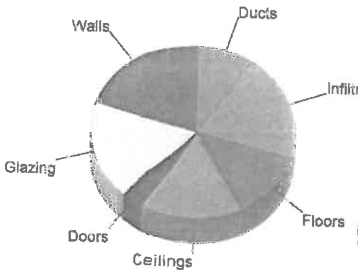
Outdoor:	Heating	Cooling
Dry bulb (°F)	20	90
Daily range (°F)	-	19 (M)
Wet bulb (°F)	-	74
Wind speed (mph)	15.0	7.5

Indoor:	Heating	Cooling
Indoor temperature (°F)	70	75
Design TD (°F)	50	15
Relative humidity (%)	50	50
Moisture difference (gr/lb)	44.2	37.7

Infiltration:
Method: Simplified
Construction quality: Semi-tight
Fireplaces: 0

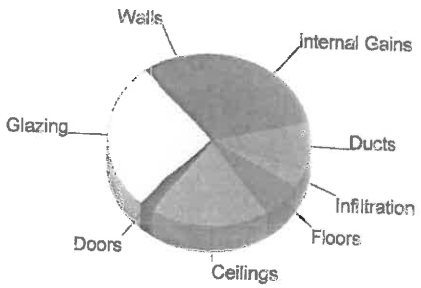
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	2.4	3715	20.0
Glazing	15.4	3415	18.4
Doors	15.9	669	3.6
Ceilings	1.3	2891	15.6
Floors	1.1	2409	13.0
Infiltration	2.1	3751	20.2
Ducts		1685	9.1
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	
Total		18537	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	1.1	1667	10.5
Glazing	20.1	4449	28.1
Doors	5.8	368	2.3
Ceilings	1.4	2952	18.7
Floors	0.5	1050	6.6
Infiltration	0.3	572	3.6
Ducts		1438	9.1
Ventilation		0	0
Internal gains		3320	21.0
Blower		0	0
Adjustments		0	
Total		15816	100.0



Latent Cooling Load = 1677 Btuh
Overall U-value = 0.051 Btuh/ft²-°F, Window / Floor Area = 10.3 %

Data entries checked.

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TN# CHR-301

wrightsoft

Component Constructions
Entire House
Clayton Homes

Job: M25m141-38759_TNCHR-3...
Date:
By:

395 Hwy 11-W South, Rutledge, TN 37861 Phone: 865-828-5771 Web: www.claytonrutledgehbf.com

Project Information

For: M25m141-38759_TNCHR-301

Design Conditions

Location:
Knoxville McGhee Tyson AP, TN, US
Elevation: 981 ft
Latitude: 36°N

Outdoor:	Heating	Cooling
Dry bulb (°F)	20	90
Daily range (°F)	-	19 (M)
Wet bulb (°F)	-	74
Wind speed (mph)	15.0	7.5

Indoor:	Heating	Cooling
Indoor temperature (°F)	70	75
Design TD (°F)	50	15
Relative humidity (%)	50	50
Moisture difference (gr/lb)	44.2	37.7

Infiltration:
Method: Simplified
Construction quality: Semi-tight
Fireplaces: 0

Construction descriptions

	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
DW - R-21 Wall: Double Wide - 2x6 wall R-21 Insulation	n	257	0.048	21.0	2.39	613	1.07	275
	e	544	0.048	21.0	2.39	1300	1.07	584
	s	254	0.048	21.0	2.39	606	1.07	272
	w	500	0.048	21.0	2.39	1196	1.07	537
	all	1554	0.048	21.0	2.39	3715	1.07	1667
Partitions								
(none)								
Windows								
Clayton - Thermopane Low-E: Clayton - Thermopane Low-E; 50% blinds 45°, medium; 50% outdoor insect screen; 6.67 ft head ht	n	18	0.300	0	14.9	269	6.99	126
	e	50	0.300	0	14.9	742	19.8	983
	e	41	0.350	0	17.4	711	25.7	1049
	w	113	0.300	0	14.9	1693	19.8	2244
	all	222	0.300	0	15.4	3415	19.8	4402
Doors								
CMH - Standard Door: CMH - Standard Door - Solid no storm	s	21	0.320	0	15.9	335	8.75	184
	w	21	0.320	0	15.9	335	8.75	184
	all	42	0.320	0	15.9	669	8.75	368
Ceilings								
DW-180 box R-45 Knauf: Double Wide- 180" box with R-45 insulation M-TH-53C.0		2150	0.027	45.0	1.34	2891	1.37	2952
Floors								
DW - R-22: DW R-22		2150	0.046	22.0	1.12	2409	0.49	1050

JAMES W. HARRELL REGISTERED ENGINEER No. 108121 STATE OF TENNESSEE 10/01/2024

APPROVED OCT 01 2024 HILBORN, WERNER, CARTER & ASSOC.

Clayton Homes Rutledge (Plant 925)
395 HWY 11W SOUTH Rutledge, TN 37861
PH: 865.828.5771 FAX: 865.828.8097
TN# CHR-301

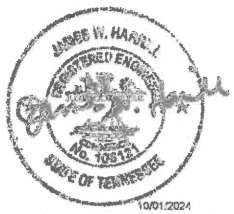
wrightsoft

Project Summary
Entire House
Clayton Homes

Job: M25m141-38759_TNCHR-3...
Date:
By:

395 Hwy. 11-W South, Rutledge, TN 37861 Phone: 865-828-5771 Web: www.claytonrutledgehbf.com

Project Information



For: M25m141-38759_TNCHR-301

Notes:

Clayton Homes Rutledge (Plant 925)
395 HWY 11W SOUTH Rutledge, TN 37861
PH: 865.828.5771 FAX: 865.828.8097
TN# CHR-301

Design Information

Weather: Knoxville McGhee Tyson AP, TN, US

Winter Design Conditions

Outside db	20	°F
Inside db	70	°F
Design TD	50	°F
Ventilation Method	MJ8	

Summer Design Conditions

Outside db	90	°F
Inside db	75	°F
Design TD	15	°F
Daily range	M	
Relative humidity	50	%
Moisture difference	38	gr/lb

Heating Summary

Structure	16852	Btuh
Ducts	1685	Btuh
Central vent (0 cfm)	0	Btuh
Outside air		
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	18537	Btuh

Sensible Cooling Equipment Load Sizing

Structure	14378	Btuh
Ducts	1438	Btuh
Central vent (0 cfm)	0	Btuh
Outside air		
Blower	0	Btuh
Use manufacturer's data	n	
Rate/swing multiplier	0.95	
Equipment sensible load	15057	Btuh

Infiltration

Method	Simplified
Construction quality	Semi-tight
Fireplaces	0

	Heating	Cooling
Area (ft²)	2150	2150
Volume (ft³)	19352	19352
Air changes/hour	0.22	0.11
Equiv. AVF (cfm)	71	35

Latent Cooling Equipment Load Sizing

Structure	1677	Btuh
Ducts	0	Btuh
Central vent (0 cfm)	0	Btuh
Outside air		
Equipment latent load	1677	Btuh
Equipment Total Load (Sen+Lat)	16734	Btuh
Req. total capacity at 0.70 SHR	1.6	ton

Heating Equipment Summary

Make	Smart Comfort
Trade	15 SEER2 R SERIES R410A HP
Model	R4H5S24*K*AAA*
AHRI ref	210537933

Efficiency	7.5 HSPF2	
Heating input		
Heating output	23000	Btuh @ 47°F
Temperature rise	27	°F
Actual air flow	813	cfm
Air flow factor	0.044	cfm/Btuh
Static pressure	0.30	in H2O
Space thermostat		
Capacity balance point = 18 °F		

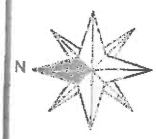
Backup: Smart Comfort
Input = 15 kW, Output = 51182 Btuh, 100 AFUE

Cooling Equipment Summary

Make	Smart Comfort
Trade	15 SEER2 R SERIES R410A HP
Cond	R4H5S24*K*AAA*
Coil	FEVA0036**+NAVA43601CK
AHRI ref	210537933

Efficiency	12.0 EER2,15.2 SEER2	
Sensible cooling	17080	Btuh
Latent cooling	7320	Btuh
Total cooling	24400	Btuh
Actual air flow	813	cfm
Air flow factor	0.061	cfm/Btuh
Static pressure	0.30	in H2O
Load sensible heat ratio	0.99	

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.



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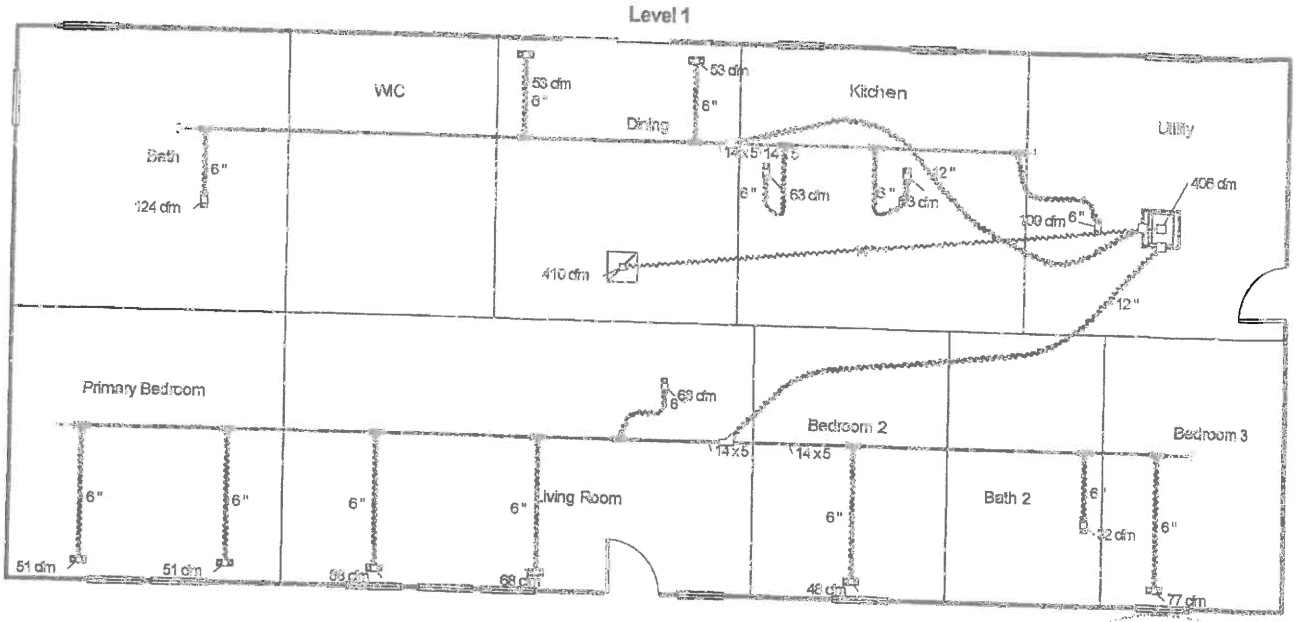

JAMES W. HARRELL
REGISTERED ENGINEER
No. 109121
STATE OF TENNESSEE

10/01/2024

APPROVED
OCT 01 2024
HILBORN, WERNER, CARTER & ASSOC.

Clayton Homes Rutledge (Plant 925)

395 HWY 11W SOUTH Rutledge, TN 37861

PH: 865.828.5771 FAX: 865.828.8097

TN# CHR-301

Job #: M25m141-38759_TNCHR-301 **Performed for:** M25m141-38759_TNCHR-301	**Clayton Homes** 395 Hwy. 11-W South Rutledge, TN 37861 Phone: 865-828-5771 www.claytonrutledgehbf.com	Scale: 1 : 118 Page 1 Right-Suite® Universal 2024 24.0.02 RSU59521 2024-Sep-25 08:07:16 ...5m141-38759_TNM25m141-38759....

Duct System Summary
Entire House
Clayton Homes

Job: M25m141-38759_TNCHR-3...
Date:
By:

395 Hwy. 11-W South, Rutledge, TN 37861 Phone: 865-828-5771 Web: www.claytonrutledgehbf.com

Project Information

For: M25m141-38759_TNCHR-301

Clayton Homes Rutledge (Plant 925)
395 HWY 11W SOUTH Rutledge, TN 37861
PH: 865.828.5771 FAX: 865.828.8097
TN# CHR-301

	Heating		Cooling	
External static pressure	0.30	in H2O	0.30	in H2O
Pressure losses	0	in H2O	0	in H2O
Available static pressure	0.30	in H2O	0.30	in H2O
Supply / return available pressure	0.248 / 0.052	in H2O	0.248 / 0.052	in H2O
Lowest friction rate	0.053	in/100ft	0.053	in/100ft
Actual air flow	813	cfm	813	cfm
Total effective length (TEL)		570 ft		

Supply Branch Detail Table

Name		Design (Btuh)	Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	H x W (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
Bath	h	2633	124	73	0.080	6.0	0x 0	VIFx	59.7	250.0	st5
Bath 2-A	h	721	32	17	0.086	6.0	0x 0	VIFx	51.4	235.0	st3
Bedroom 2-A	h	1097	48	44	0.086	6.0	0x 0	VIFx	42.4	245.0	st3
Bedroom 3	h	1759	77	53	0.087	6.0	0x 0	VIFx	58.9	225.0	st3
Dining-A	c	1036	48	53	0.082	6.0	0x 0	VIFx	42.9	260.0	st5
Dining-B	c	1036	48	53	0.082	6.0	0x 0	VIFx	33.3	270.0	st5
Kitchen-A	c	1226	34	63	0.062	6.0	0x 0	VIFx	42.1	355.0	st6
Kitchen-B	c	1226	34	63	0.076	6.0	0x 0	VIFx	36.9	290.0	st6
Living Room-A	c	1322	51	68	0.083	6.0	0x 0	VIFx	54.9	245.0	st4
Living Room-B	c	1322	51	68	0.082	6.0	0x 0	VIFx	45.9	255.0	st4
Living Room-C	c	1322	51	68	0.080	6.0	0x 0	VIFx	39.0	270.0	st4
Primary Bedroom	h	1174	51	48	0.083	6.0	0x 0	VIFx	62.8	235.0	st4
Primary Bedroom-A	h	1174	51	48	0.084	6.0	0x 0	VIFx	70.8	225.0	st4
Utility-A	h	2495	109	93	0.053	6.0	0x 0	VIFx	49.9	420.0	st6

Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st5	Peak AVF	221	180	0.080	454	8.0	5 x 14	ShtMetl	st2
st4	Peak AVF	257	300	0.080	618	10.8	5 x 14	ShtMetl	st1
st3	Peak AVF	157	114	0.086	323	8.0	5 x 14	ShtMetl	st1
st2	Peak AVF	399	399	0.053	508	12.0	0 x 0	VinlFlx	
st6	Peak AVF	178	219	0.053	450	8.0	5 x 14	ShtMetl	st2
st1	Peak AVF	414	415	0.080	528	12.0	0 x 0	VinlFlx	

APPROVED
OCT 01 2024
HILBORN, WERNER, CARTER & ASSOC.

Return Branch Detail Table

Name	Grille Size (in)	Htg (cfm)	Clg (cfm)	TEL (ft)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Stud/Joist Opening (in)	Duct Matl	Trunk
rb1	0x 0	410	407	99.7	0.053	383	14.0	0x 0		VIFx	
rb2	0x 0	404	406	0	0	0	0	0x 0		VIFx	

10/01/2024

Clayton Homes Rutledge (Plant 925)

395 HWY 11W SOUTH Rutledge, TN 37861

PH: 865.828.5771 FAX: 865.828.8097

TN# CHR-301

Job	Truss	Truss Type	Qty	Ply	Clayton Homes Rutledge (MFG: 00925)	
WFL-969-016-0215_(16W)	M751-13	MONO TRUSS	1	1	ETN-M751: 46 x 178-1/2 MOD Job Reference (optional)	I47349642

Wood Perfect Ltd, Guin, AL - 35563, 8.240 s Mar 9 2020 MiTek Industries, Inc. Fri Aug 6 13:30:53 2021 Page 1
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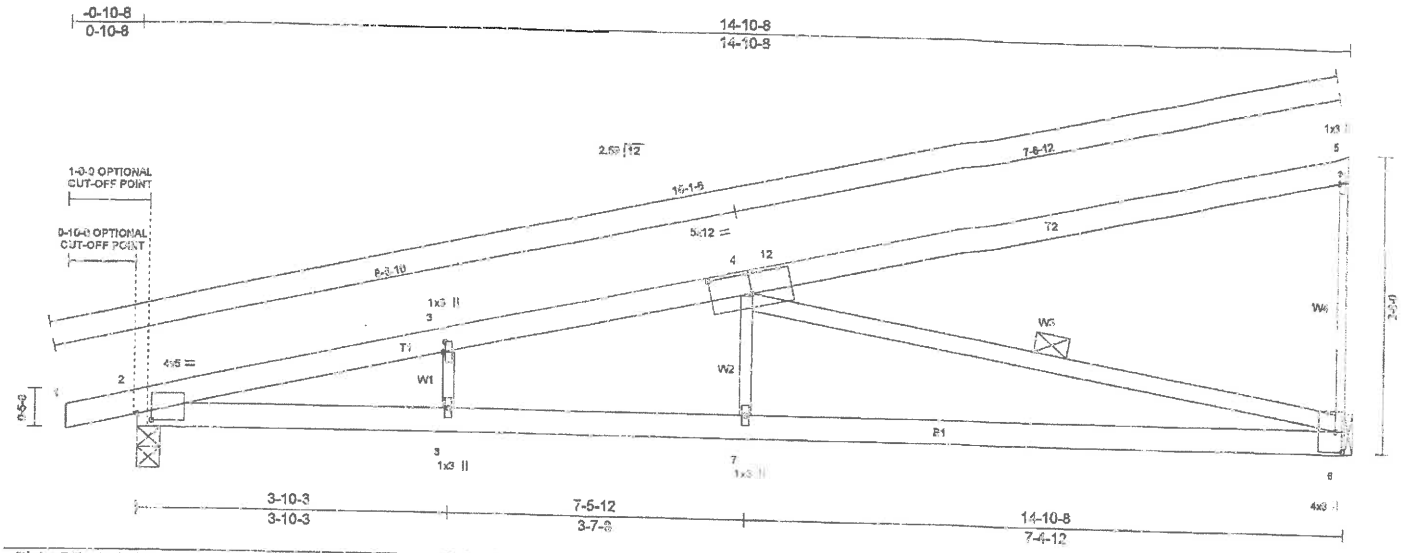


Plate Offsets (X,Y)— [2:0-2-3,0-0-15], [3:0-1-8,0-0-5], [4:0-3-0,0-3-0], [5:0-1-8,0-0-0], [6:0-3-0,0-1-4]

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	20.0	Plate Grip DOL	1.15	TC	0.84	Vert(LL)	-0.11	6-7	>999	240	MT20	197/144
(Ground Snow=20.0)		Lumber DOL	1.15	BC	0.63	Vert(CT)	-0.24	6-7	>753	180		
TCDL	11.0	Rep Stress Incr	YES	WB	0.93	Horz(CT)	0.04	6	n/a	n/a		
BCLL	0.0 *	Code IBC2018/TPI2014		Matrix-MS							Weight: 44 lb	FT = 0%
BCDL	10.0											

LUMBER-
TOP CHORD 2x4 SPF No.2
BOT CHORD 2x4 SPF No.2
WEBS 1-8/16x1-10/16 SPF Stud/Std *Except*
4-6: 2x3 SPF No.2

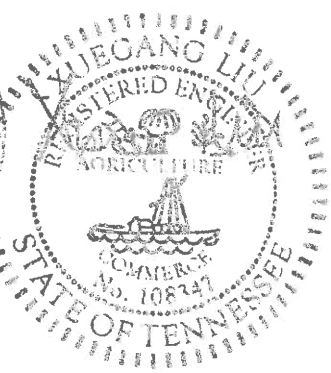
RIPPED LUMBER MUST BE RE-GRADED FOR SIZES AS SHOWN

BRACING-
TOP CHORD Structural wood sheathing directly applied or 2-10-0 oc purlins, except end verticals. [PSA]
BOT CHORD Rigid ceiling directly applied or 6-2-5 oc bracing.
WEBS 1 Row at midpt 4-6

REACTIONS. (lb/size) 6=605/Mechanical, 2=663/0-3-8 (min. 0-1-8)
Max Horz 2=137(LC 8)
Max Uplift 6=-185(LC 12), 2=-195(LC 8)
Max Grav 6=710(LC 19), 2=697(LC 19)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 2-3=-1733/740, 3-4=-1694/757
BOT CHORD 2-8=-880/1660, 7-8=-878/1660, 6-7=-879/1657
WEBS 4-7=0/325, 4-6=-1702/905

NOTES- (13-14)
1) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=4.4psf; BCDL=4.0psf; h=22ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Corner(3E) -0-10-8 to 2-1-8, Exterior(2N) 2-1-8 to 11-9-11, Corner(3E) 11-9-11 to 14-9-11 zone;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=20.0 psf; Ps=20.0 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; IBC 1607.11.2 minimum roof live load applied where required.; Min. flat roof snow load governs.
3) Roof design snow load has been reduced to account for slope.
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for greater of min roof live load of 20.0 psf or 2.00 times flat roof load of 15.4 psf on overhangs non-concurrent with other live loads.
6) As requested, plates have not been designed to provide for placement tolerances or rough handling and erection conditions. It is the responsibility of the fabricator to increase plate sizes to account for these factors.
7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
8) * 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 between the bottom chord and any other members.
9) Refer to girder(s) for truss to truss connections.
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 185 lb uplift at joint 6 and 195 lb uplift at joint 2.
11) n/a
12) This truss is designed in accordance with the 2018 International Building Code section 2306.1 and referenced standard ANSI/TPI 1.
13) This truss is designed in accordance with the 2018 International Residential Code (IRC) section R301.1.3, R601.2 and referenced standard ANSI/TPI 1.



Clayton Homes Rutledge (Plant 925)
395 HWY 11W SOUTH Rutledge, TN 37861
PH: 865.828.5771 FAX: 865.828.8097
TN# CHR-301

August 8,2021

MiTek
16023 Swingley Ridge Rd
Chesterfield, MO 63017

Date:
September 24, 2024

TYPE : MODULAR

MODEL PLAN INDEX

Model # -	M25m141-38759_TN
Manufacturer -	CMH Manufacturing, Inc.
Unit Size -	30'-4" x 70'-4"
Description -	Residential
Drawn by -	Cory C.

State Label
TN

Approx. Height	15'-0"
# of Stories	1
Sq. Ft.	2133

Category	Document Description	Page or Sheet #
Index	Index and Information Sheet	C-1
Tech Sheet	Rescheck w/ Checklists	See Attached
Tech Sheet	Duct Sizing Inputs	See Attached
Model Plan	Cover Sheet	C-2
Model Plan	Floor Plan	A-1
Model Plan	Front & Rear Elevations	A-2
Model Plan	Left & Right Elevations	A-3
Model Plan	Electrical Plan	E-1
Model Plan	HVAC / Ridgebeam Layout	M-1
Model Plan	DWV Lines	P-1
Model Plan	Supply Lines	P-2
Model Plan	On Frame Foundation	F-1
Model Plan	On Frame Cross Section	X-1
Model Plan	Cross Section Details	D-1
Tech Sheet	On Frame Foundation Notes & Details	See Attached

TRUSS INFORMATION

	Truss Job #	Manual Page #
TRUSS	M751-18	See Attached
OPT. TRUSS/TRUSSES		
DORMER TRUSSES OPT.(S)		

ELECTRICAL PANEL SIZE

Box: Width 30.33"
Length 70.33"

Electrical Appliances Standards				Gas Appliances Standards			
Floor Area	2072 sq. ft.	6.2	KVA	Floor Area	2072 sq. ft.	6.2	KVA
Small Appliance Circuits	3	4.5	KVA	Small Appliance Circuits	3	4.5	KVA
Range @	11.1 kw	11.1	KVA	Range @	11.1 kw	11.1	KVA
Water Heater @	3.6 kw	4.8	KVA	Washer @	1500 va	1.5	KVA
Washer @	1500 va	1.5	KVA	Dryer @	5 kw	5.0	KVA
Dryer @	5 kw	5.0	KVA	Dishwasher @	1.4 kw	1.4	KVA
Dishwasher @	1.4 kw	1.4	KVA	Garbage Disposal @	1.4 kw	1.4	KVA
Garbage Disposal @	1.4 kw	1.4	KVA	Spa @ N/A kw	N/A		KVA
Spa @ N/A kw	N/A		KVA	Blower @	0.8 kw	0.8	KVA
Total Load		35.9	KVA	Total Load		31.9	KVA
First 10 KVA @ 100%		10.0	KVA	First 10 KVA @ 100%		10.0	KVA
Remainder @ 40%		10.4	KVA	Remainder @ 40%		8.8	KVA
HVAC @ 100%		15.0	KVA				
Total		35.4	KVA	Total		18.8	KVA
Total Amps		147.3	AMPS	Total Amps		78.2	AMPS
Install a		200	AMP Panel	Install a		100	AMP Panel

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JAMES W. HARRILL PE
1001 OAK CHASE BLVD
LENOIR CITY, TN 37772

JAMES W. HARRILL REGISTERED ENGINEER No. 108121 STATE OF TENNESSEE
10/01/2024
P.E. SEAL

APPROVED * HILBORN, WERNER, CARTER & ASSOC. * OCT 01 2024
THIRD PARTY SEAL

BH
PROJECT #:M25M141-38759 _TN
SCALE: 3/16"=1'-0"
JOB #:1869-1684
TN#: CHR-301
STATE LABEL(S): TN

HILBORN, WERNER, CARTER, AND ASSOCIATES, INC.
1627 SOUTH MYRTLE AVE.
CLEARWATER, FL. 33756

Clayton - Plant 925
395 Hwy 11W South, Rutledge, TN 37861
PH: 865.828.5771 FAX: 865.828.8097

INDEX AND INFORMATION SHEET

SHEET: C-1

ELECTRICAL NOTES:
NEC, 2017 EDITION w/TN AMENDMENTS

1. ALL CIRCUITS AND EQUIPMENT SHALL BE GROUNDED IN ACCORDANCE WITH THE APPROPRIATE ARTICLES OF THE NEC.
2. WHEN LIGHT FIXTURES ARE INSTALLED IN CLOSETS THEY SHALL BE SURFACE MOUNTED OR RECESSED. INCANDESCENT FIXTURES SHALL HAVE COMPLETELY ENCLOSED LAMPS. SURFACE MOUNTED INCANDESCENT FIXTURES SHALL HAVE A MINIMUM CLEARANCE OF 12 INCHES AND ALL OTHER FIXTURES SHALL HAVE A MINIMUM CLEARANCE OF 6 INCHES FROM "STORAGE AREA" AS DEFINED BY NEC 410.2.
3. WHEN WATER HEATERS ARE INSTALLED THEY SHALL BE PROVIDED WITH READILY ACCESSIBLE DISCONNECTS ADJACENT TO THE WATER HEATERS SERVED. THE BRANCH CIRCUIT SWITCH OR CIRCUIT BREAKER SHALL BE PERMITTED TO SERVE AS THE DISCONNECTING MEANS ONLY WHERE THE SWITCH OR CIRCUIT BREAKER IS WITHIN SIGHT FROM THE WATER HEATER OR IS CAPABLE OF BEING LOCKED IN THE OPEN POSITION.
4. HVAC, WHIRLPOOL, GARBAGE DISPOSAL, DISHWASHER SHALL BE PROVIDED WITH READILY ACCESSIBLE DISCONNECTS ADJACENT TO THE EQUIPMENT SERVED. A UNIT SWITCH WITH A MARKED "OFF" POSITION THAT IS A PART OF THE APPLIANCE AND DISCONNECTS ALL UNGROUNDED CONDUCTORS SHALL BE PERMITTED AS THE DISCONNECTING MEANS WHERE OTHER DISCONNECTING MEANS ARE ALSO PROVIDED BY A READILY ACCESSIBLE CIRCUIT BREAKER.
5. PRIOR TO ENERGIZING THE ELECTRICAL SYSTEM THE INTERRUPTING RATING OF THE MAIN BREAKER MUST BE DESIGNED AND VERIFIED AS BEING IN COMPLIANCE WITH SECTION 110-9 OF THE N.E.C. BY LOCAL ELECTRICAL CONSULTANT.
6. THE MAIN ELECTRICAL PANEL AND FEEDERS ARE DESIGNED BY OTHERS, SITE INSTALLED AND SUBJECT TO LOCAL JURISDICTION APPROVAL.
7. ALL CIRCUITS CROSSING OVER MODULE MATING LINE(S) SHALL BE SITE CONNECTED WITH APPROVED ACCESSIBLE JUNCTION BOXES OR CABLE CONNECTORS.
8. SMOKE ALARMS SHALL BE WIRED SO THAT THE OPERATION OF ANY ONE SMOKE ALARM WILL CAUSE SIMULTANEOUS ACTIVATION OF ALL OTHERS. SMOKE ALARMS SHALL HAVE BATTERY BACKUP. SMOKE ALARMS SHALL BE PHOTO-ELECTRIC OR SILENCING WITHIN 20 FT. OF ANY COOKING APPLIANCE.
9. ALL RECEPTACLES INSTALLED IN WET LOCATIONS (EXTERIOR) SHALL BE WEATHER RESISTANT (WR) AND IN WEATHER PROOF (WP) ENCLOSURES, THE INTEGRITY OF WHICH IS NOT AFFECTED WHEN AN ATTACHMENT PLUG IS INSERTED OR REMOVED.

MECHANICAL NOTES:
2018 IRC/2018 IECC

1. DUCT DESIGN PER HVAC/RIDGEBEAM DETAIL SHEET.
2. INTERIOR DOORS MAY BE UNDERCUT 1.5 INCHES ABOVE FINISHED FLOOR FOR AIR RETURN OR RETURN AIR VENTS INSTALLED.
3. BATHROOM VENT FANS SHALL PROVIDE EXHAUST DIRECTLY TO THE EXTERIOR. CAPABLE OF 50 CFM FOR INTERMITTENT VENTILATION OR 20 CFM FOR CONTINUOUS VENTILATION.
4. KITCHEN VENT FANS SHALL PROVIDE EXHAUST DIRECTLY TO THE EXTERIOR. CAPABLE OF 100 CFM FOR INTERMITTENT VENTILATION OR 25 CFM FOR CONTINUOUS VENTILATION.
5. VENT FANS SHALL BE DUCTED TO THE EXTERIOR AND TERMINATE AT AN APPROVED VENT CAP.
6. HVAC EQUIPMENT SHALL BE EQUIPPED WITH OUTSIDE FRESH AIR INTAKE.
7. THIS BUILDING DESIGN COMPLIES WITH OR EXCEEDS MINIMUM REQUIREMENTS FOR TENNESSEE CLIMATE ZONE 4.
8. FOR COMBUSTION AIR AND VENTING REQUIREMENTS ON GAS APPLIANCES, SEE MANUFACTURER'S INSTALLATION MANUAL.
9. GAS WATER HEATERS SHALL BE THE DIRECT VENT TYPE.
10. HVAC MAY BE SITE INSTALLED BY OTHERS.
11. HEAT LOSS & GAIN ANALYSIS IS IN COMPLIANCE WITH THE 2018 INTERNATIONAL ENERGY CONSERVATION CODE.
12. ALL FLEX DUCTS ARE TO BE A MINIMUM OF R-6 DUCT WHEN DUCT IS WITH-IN THE BUILDING ENVELOPE. SUPPLY AND RETURN DUCTS IN ATTICS SHALL BE INSTALLED TO A MINIMUM OF R-8.
13. WHEN RULE 0750-02-23-.02(1)(b) EXCEPTION #3 IS USED: TABLE 402.1.2 INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT AND TABLE R402.1.4 EQUIVALENT U-FACTORS ARE DELETED AND REPLACED WITH TABLE 402.1.1 INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT AND TABLE 402.1.3 EQUIVALENT U-FACTORS 2009 IECC
14. NOT LESS THAN 90% OF THE PERMANENTLY INSTALLED FIXTURES SHALL CONTAIN ONLY HIGH EFFICACY LAMPS

GENERAL NOTES:
2018 IRC

1. ALL GLAZING WITHIN 24 INCH ARC OF DOORS, WHOSE BOTTOM EDGE IS LESS THAN 60 INCHES ABOVE THE FLOOR, AND ALL GLAZING IN DOORS SHALL BE SAFETY, TEMPERED OR ACRYLIC PLASTIC SHEET.
2. FLOOR DESIGN LIVE LOAD-40PSF.
3. ROOF LIVE LOAD-20PSF. GROUND SNOW LOAD 20PSF.
4. MAXIMUM WIND SPEED - 90 MPH VASD (117 MPH VULT) EXP. C
5. SEISMIC DESIGN CATEGORY C.
6. OCCUPANCY IS RESIDENTIAL (ONE & TWO FAMILY DWELLING)
7. OCCUPANT LOAD IS BASED ON ONE PERSON PER 200 SQUARE FEET OF FLOOR AREA.
8. CONSTRUCTION IS TYPE VB AND UNSPRINKLERED.
9. CEILING FANS SHALL BE 80 INCHES MINIMUM FROM BOTTOM OF BLADES TO FINISH FLOOR.
10. MINIMUM CORRIDOR WIDTH IS 36 INCHES.
11. ONE EXTERIOR DOOR TO BE 36" x 80". OTHER EXTERIOR HINGED OR SLIDING DOORS SHALL NOT BE REQUIRED TO COMPLY WITH THESE MINIMUM DIMENSIONS.
12. BUILDING MAY BE MIRRORED END FOR END.
13. ALL WINDOWS SHALL BE VERTICAL SLIDING, DOUBLE GLAZED, CLEAR GLASS, AND VINYL FRAMES UNLESS OTHERWISE NOTED.
14. EXTERIOR WALLS ARE BUILT WITH 2X6 STUDS.
15. SAFETY GLAZING MATERIAL, TENN. TITLE 68, CHAPTER 120, PART 3 (TENN. CODE ANN. 68-120-301 ET. SEQ).
16. ALL DOOR CALL-OUTS ARE LABELED IN INCHES.

PLUMBING NOTES:
2018 IRC

1. ALL PLUMBING FIXTURES SHALL HAVE SEPARATE SHUT-OFF VALVES.
2. WATER HEATER SHALL HAVE A 1 1/2" DEEP SAFETY PAN WITH 1 INCH DRAIN TO EXTERIOR, T&P RELIEF VALVE WITH DRAIN TO EXTERIOR, AND A SHUT-OFF VALVE WITHIN 3 FEET ON THE COLD WATER SUPPLY LINE.
3. WATER PIPES INSTALLED IN A WALL EXPOSED TO THE EXTERIOR SHALL BE LOCATED ON THE HEATED SIDE OF THE WALL INSULATION. WATER PIPING INSTALLED IN AN UNCONDITIONED ATTIC SHALL BE INSULATED WITH AN INSULATION OF R-6.5 MINIMUM.
4. WATER SUPPLY LINES SHALL BE CPVC OR QUESTPEX. WHEN QUESTPEX SUPPLY LINES ARE INSTALLED THE MAXIMUM WATER HEATER TEMPERATURE SETTING IS 180°F. THE QUESTPEX PIPE SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS LIMITATIONS AND INSTRUCTIONS.
5. BUILDING DRAIN AND CLEANOUTS ARE DESIGNED AND SITE INSTALLED BY OTHERS, SUBJECT TO LOCAL JURISDICTION APPROVAL.
6. TUB ACCESS PROVIDED UNDER HOME UNLESS OTHERWISE NOTED.
7. SHOWER STALLS SHALL BE COVERED WITH NON-ABSORBENT MATERIAL TO A HEIGHT OF 72 INCHES ABOVE FINISHED FLOOR.
8. THERMAL EXPANSION DEVICE REQUIRED BY WATER HEATER INSTALLED AND IF NOT SHOWN ON PLUMBING PLAN IS DESIGNED AND SITE INSTALLED BY OTHERS SUBJECT TO LOCAL APPROVAL.
9. SHOWERS SHALL BE CONTROLLED BY AN APPROVED MIXING VALVE WITH A MAXIMUM WATER OUTLET TEMPERATURE OF 120°F (48.8°C).
10. DWV SHALL BE EITHER ABS OR PVC - DWV.
11. THIS UNIT MUST BE CONNECTED TO A PUBLIC WATER SUPPLY AND SEWER SYSTEM IF THESE ARE AVAILABLE.
12. PIPING IN UNCONDITIONED SPACES & FROM WATER HEATERS TO DISTRIBUTION MANIFOLDS MUST BE PROTECTED WITH INSULATION HAVING A MINIMUM R FACTOR OF 3.
13. ALL GAS LINES TO BE STRAIGHT DROPS. ALL OTHER LINES TO BE COMPLETED ON SITE. SUBJECT TO LOCAL APPROVAL.
14. WATER HEATER MAY BE SITE INSTALLED BY OTHERS.

JAMES W. HARRILL REGISTERED ENGINEER No. 108121 STATE OF TENNESSEE
10/01/2024

APPROVED OCT 01 2024 HILBORN, WERNER, CARTER & ASSOC.

Clayton Homes Rutledge (Plant 925)
395 HWY 11W SOUTH Rutledge, TN 37861
PH: 865.828.5771 FAX: 865.828.8097
TN# CHR-301

JAMES W.HARRILL PE
1001 OAK CHASE BLVD
LENOIR CITY, TN 37772

CLAYTON HOMES

10/22/04

	REVISIONS	BY	DATE
CODES: SEE NOTES	Revised notes under Mechanical & Electrical note #8	AW	9/8/09
STATE LABEL(S): TN	Added CO Note under Electrical section.	SMW	9/17/09
SCALE: N.T.S.	Plumbing notes code changed to 2006 JDC 9/18/09	PLAN#	XX-X
	Revised note #3 & 12 JDC 11/5/09	TN#	CHR-301

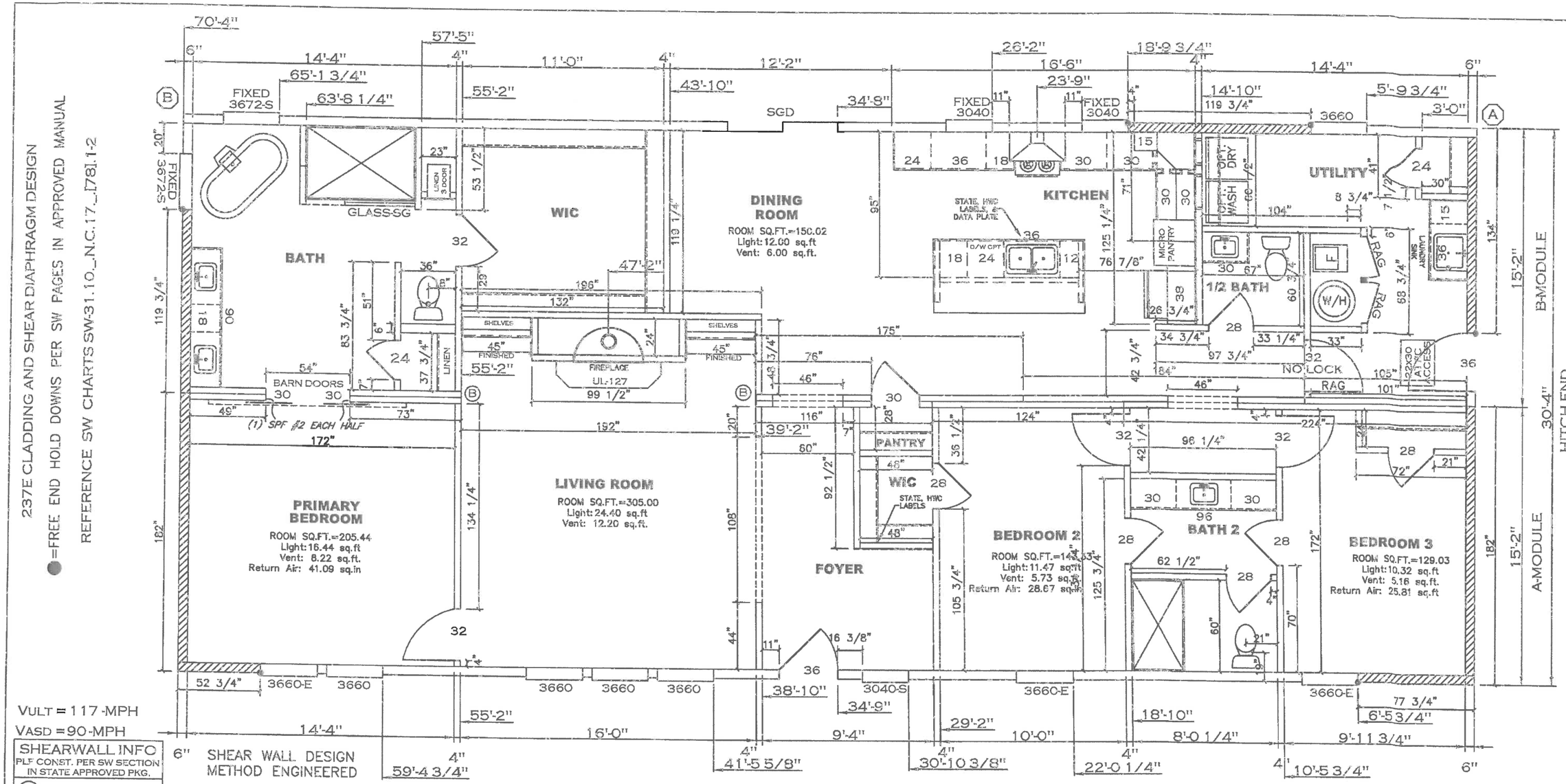
TENNESSEE COVER SHEET

SHEET C-2

237E CLADDING AND SHEAR DIAPHRAGM DESIGN

●=FREE END HOLD DOWNS PER SW PAGES IN APPROVED MANUAL

REFERENCE SW CHARTS SW-31.10_.N.C.17_.178.1-2



SHEARWALL INFO PLF CONST. PER SW SECTION IN STATE APPROVED PKG.	
(A)	= 195 PLF
(B)	= 195 PLF

6" SHEAR WALL DESIGN METHOD ENGINEERED

SIDE WALL SHEAR WALLS CONSTRUCTED TO 195 PLF

REFERENCE (SW-195.0) IN APPROVED MANUAL FOR SHEARWALL PLF CONSTRUCTION

COLUMN STRAPPING SCHEDULE	
(A) (2) 2x4 SPF #2 THIS HALF	(B) (2) 2x4 SPF #2 EACH HALF
(C) (3) 2x4 SPF #2 THIS HALF	(D) (3) 2x4 SPF #2 EACH HALF
(E) (4) 2x4 SPF #2 THIS HALF	(F) (4) 2x4 SPF #2 EACH HALF
(G) (5) 2x4 SPF #2 THIS HALF	(H) (5) 2x4 SPF #2 EACH HALF

* INDICATE BEARING STIFFENERS

NOTES:
1. ALL COLUMN STUDS SHALL BE GLUED/NAILED TOGETHER PVA GLUE WITH 100% COVERAGE SHALL BE USED.
2. INSTALL 2 STEEL STRAPS AT EACH END OF EACH STUD IN COLUMN.
3. COLUMN MAY NOT BE NOTCHED OR DRILLED.
4. MAX MARRIAGEWALL HEIGHT = 9'-0" MAX.

IF HOME IS PLACED ON SITE WHERE ANY WINDOW SILL IS LESS THAN 24" ABOVE FINISHED FLOOR AND 72" OR GREATER ABOVE THE EXTERIOR GRADE, A WINDOW GUARD MUST BE INSTALLED THAT COMPLIES WITH ASTM F2006 OR ASTM F2090.

WINDOW SYMBOLS WITH THE LETTERS 'E' OR 'S' BESIDE THEM DESIGNATE THAT WINDOW AS BEING EITHER AN 'EGRESS' OR 'SAFETY GLAZED' WINDOW

ex. 3054-E for EGRESS

3054-S for SAFETY GLAZED

ZONES	INSULATION PACKAGE R VALUES FLOOR	WALL	CEILING	FURNACE KW	SECTION #
4	.045 ASSEMBLY	21	45	15	MI-1.0

EXTERIOR DOOR SIZE	U-VALUE	SHGC	INTERIOR DOOR CALL NUMBER	SIZE
36	.19	.40	32	32"
GLAZED 36	.33	.28	30	30"
SGD	.33	.28	28	28"
			24	24"

EXTERIOR WINDOW SIZE	U-VALUE	SHGC	LIGHT	VENT
3660	.30	.21	12.20	6.14
3040	.30	.21	6.28	3.14
3672	.30	.21	14.90	N/A

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TN# CHR-301

10/01/2024

APPROVED
HILBORN, WERNER, CARTER & ASSOC.
OCT 01 2024

THIRD PARTY SEAL

HILBORN, WERNER, CARTER, AND ASSOCIATES, INC.
1627 SOUTH MYRTLE AVE.
CLEARWATER, FL 33756

PROJECT #:M25M141-38759_TN
SCALE: 3/16"=1'-0"
JOB #:1869-1684

BH
TN#: CHR-301
STATE LABEL(S): TN

Clayton - Plant 925
395 Hwy 11W South, Rutledge, TN 37861
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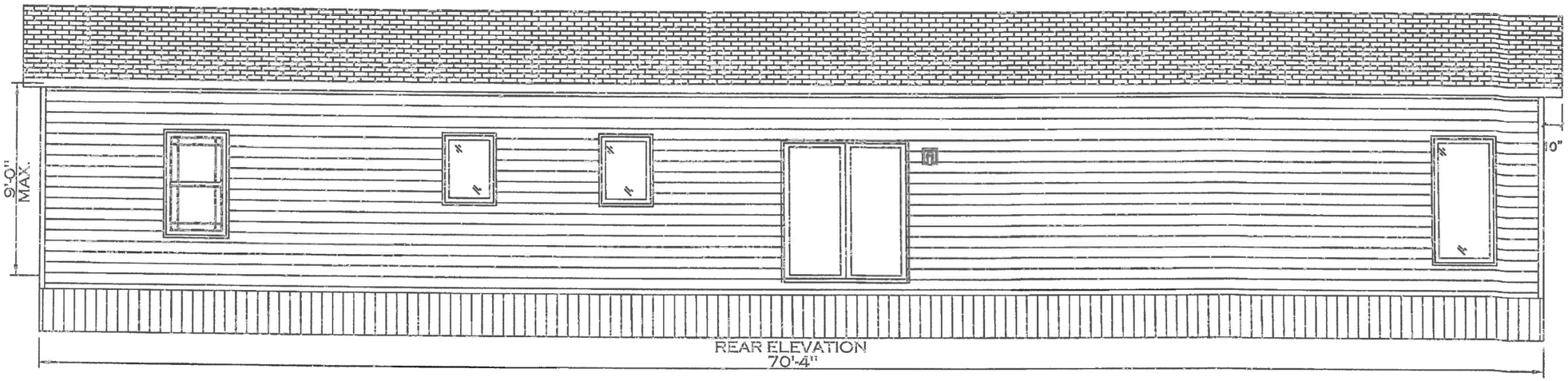
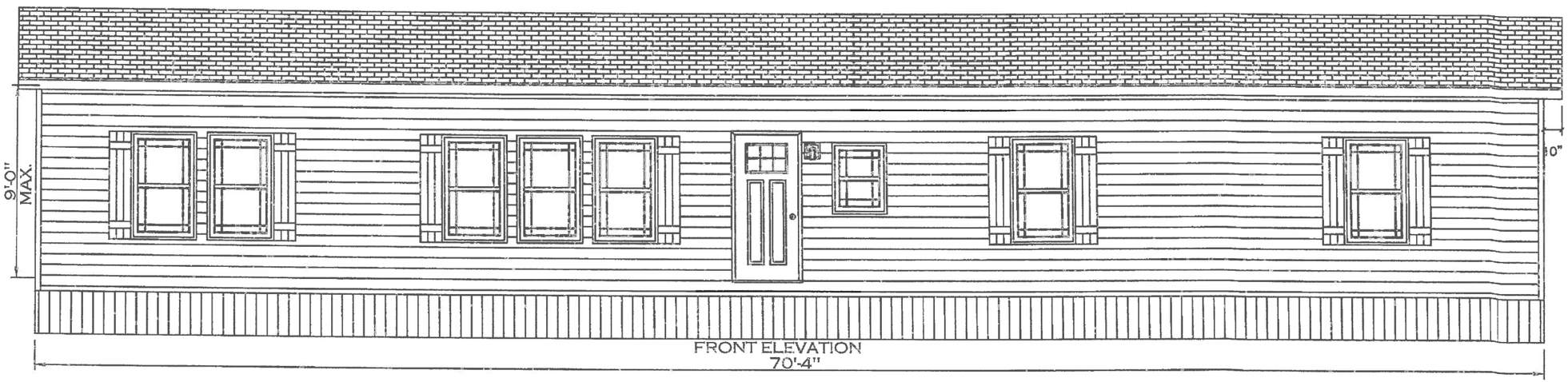
FLOOR PLAN

SHEET: A-1





ELEVATION NOTES: TYPICAL

SEE D-1 PAGE FOR METHOD OF ROOF VENTILATION.

ACCESSIBLE RAMP(S), STAIRS(S), AND HANDRAILS ARE SITE INSTALLED, DESIGNED BY OTHERS, AND SUBJECT TO LOCAL JURISDICTION.

FOUNDATION ENCLOSURE (WHEN PROVIDED) MUST HAVE 1 SQUARE FOOT NET VENT AREA PER 1/150TH OF THE FLOOR AREA, AND A 18" X 24" MINIMUM CRAWL SPACE ACCESS, SITE INSTALLED BY OTHERS SUBJECT TO LOCAL JURISDICTION.

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SITE WORK:
1. LEFT AND RIGHT SIDE VINYL SIDING INSTALLATION.
2. SHINGLES TO COMPLETE PEAK.

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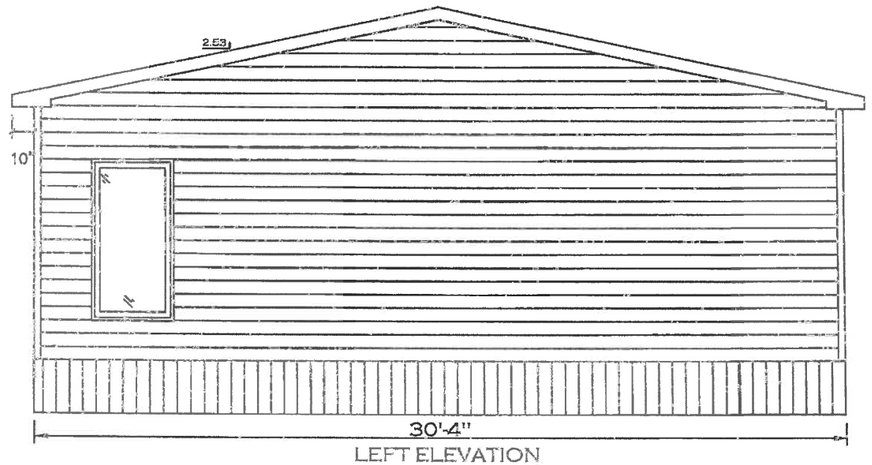
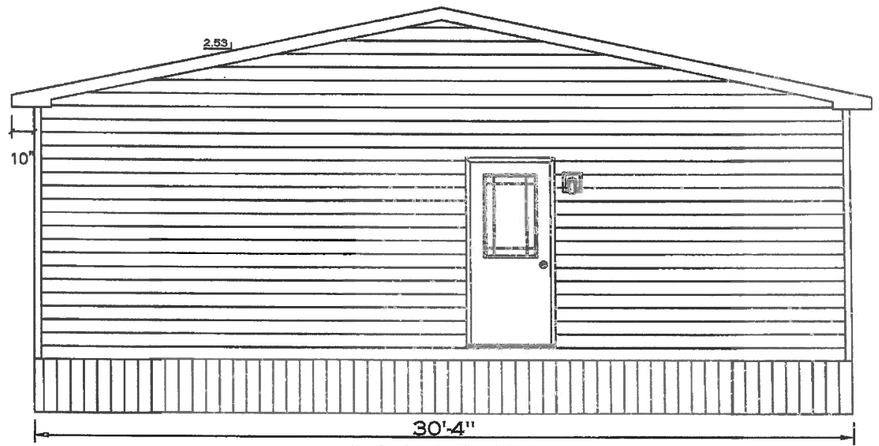
FRONT AND REAR ELEVATIONS

SHEET:
A-2



LEFT ELEVATION



RIGHT ELEVATION

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OCT 01 2024
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THIRD PARTY SEAL

BH

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JOB #:1869-1684

TN#: CHR-301

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HILBORN, WERNER, CARTER, AND ASSOCIATES, INC.
1527 SOUTH MYRTLE AVE.
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395 Hwy 11W South, Rutledge, TN 37861
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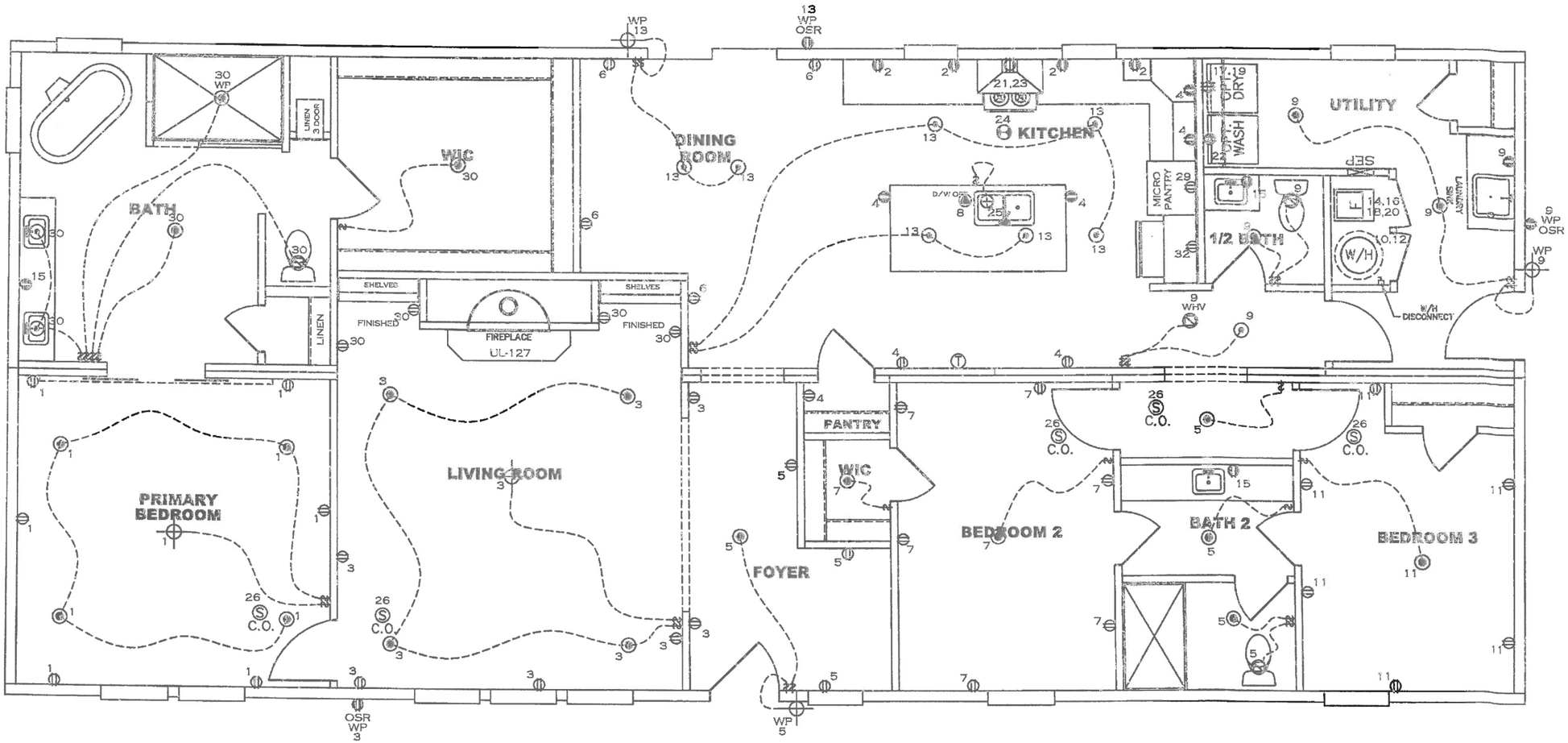
LEFT AND RIGHT ELEVATIONS

SHEET:
A-3



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ELECTRICAL SCHEDULE

NOMENCLATURE	CIRCUIT #	VOLTS	WIRE	BREAKER	NOMENCLATURE	CIRCUIT #	VOLTS	WIRE	BREAKER
LIGHT/RECEPT.	3,5,9,13,30	120	14-2	15-SP AFCI	DRYER	17,19	240	10-3	30-DP
BEDROOMS	1,7,11	120	14-2	15-SP AFCI	WATER HEATER	10,12	240	10-2	25-DP
DINING	6	120	12-2	20-SP AFCI	RANGE	21,23	220	8-3	40-DP
BATHROOM GFI	15	120	12-2	20-SP GFCI	FURNACE	14,16 18,20	240 240	#10 NM-B 6-6-6 SE	25-DP 60-DP
KITCHEN	2,4	120	12-2	20-SP GFCI/AFCI	OPT. D/WASH	8	120	14-2	15-SP GFCI/AFCI
WASHER	22	120	12-2	20-SP GFCI/AFCI	OPT. G/DISP	25	120	14-2	15-SP GFCI/AFCI
					OPT. SPA OR WP OR JAC	N/A	120	12-2	20-SP/GFI
					SMOKE ALARM	26	120	14-3	15-SP AFCI
					RANGE HOOD	24	120	12-2	20-SP GFCI/AFCI
					BUILT IN MICROWAVE	28	120	12-2	20-SP AFCI
					REFRIGERATOR	32	120	14-2	20-SP AFCI

(S) SMOKE ALARM
GFI RECEPTACLE 120 V.
DUPLEX RECEPTACLE 120 V.
SINGLE RECEPTACLE 240 V.
LED LIGHT W/ 60W BULB EQUIVALENT
VENT FAN
COMB. VENT FAN & LIGHT

SYMBOLS

- RECESSED CAN LIGHT
- DISHWASHER
- THERMOSTAT
- FLUORESCENT FIXTURE WITH 2- 40W TUBES
- EXIT SIGNS
- JUNCTION BOX (NON POWERED UNLESS CIRCUIT NO. IS SHOWN)
- TELEPHONE JACK
- SUPPLY AIR REGISTER
- RETURN AIR REGISTER
- FLOOD LIGHT 2-150W BULBS
- SWITCH & 3 WAY SWITCH
- EMERGENCY LIGHT WITH BATTERY BACKUP
- GARBAGE DISPOSAL
- SMOKE ALARM
- C.O. W/ CARBON MONO.

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BH

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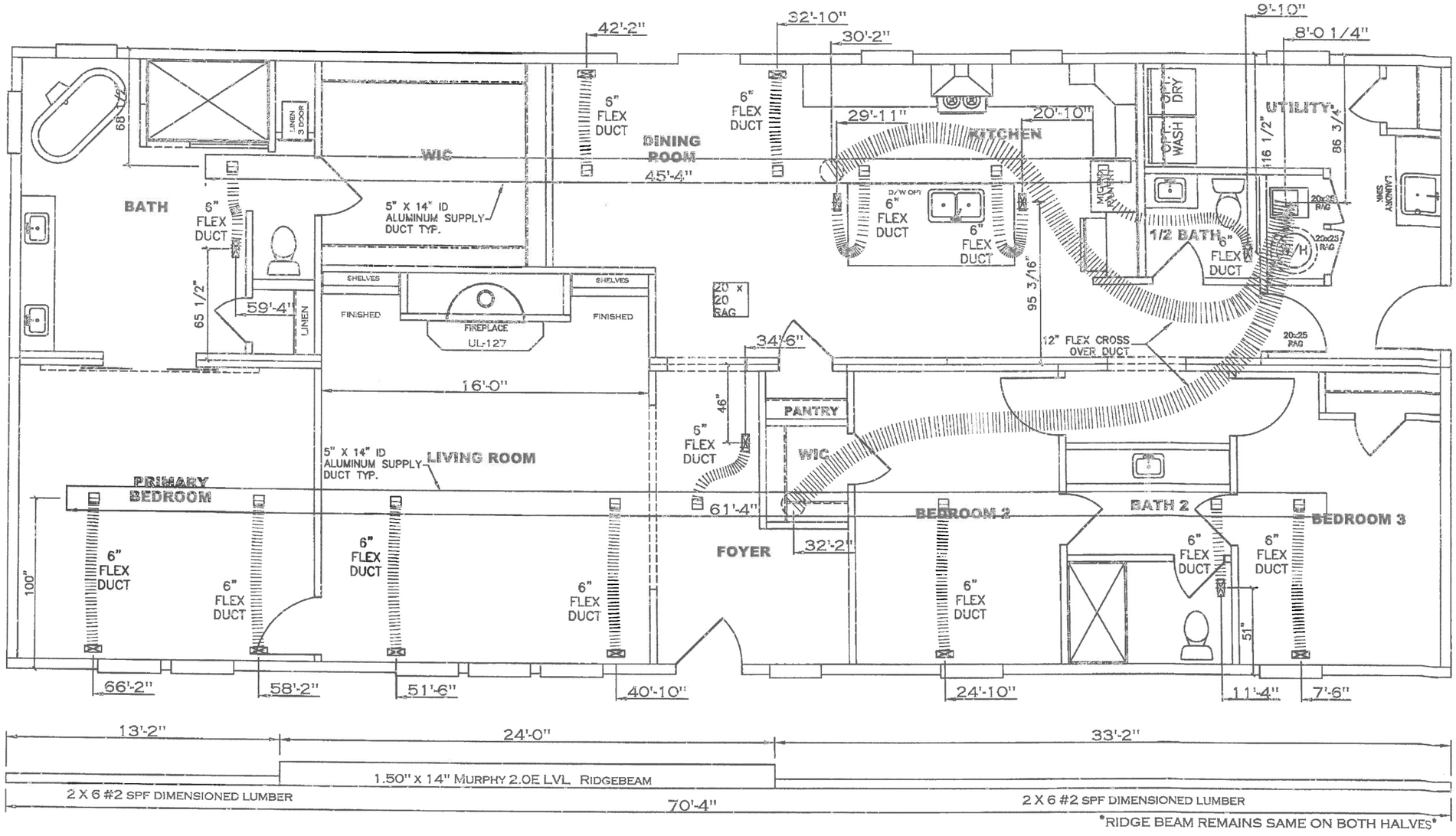
ELECTRICAL PLAN

SHEET:
E-1



**RETURN AIR NOTES:
ELECTRIC – 14" ROUND FLEX DUCT RETURNS AIR FROM THE R.A.G. IN THE CEILING TO THE FURNACE COMPARTMENT. DUCT SIZED PER MANUAL D.

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THIRD PARTY SEAL

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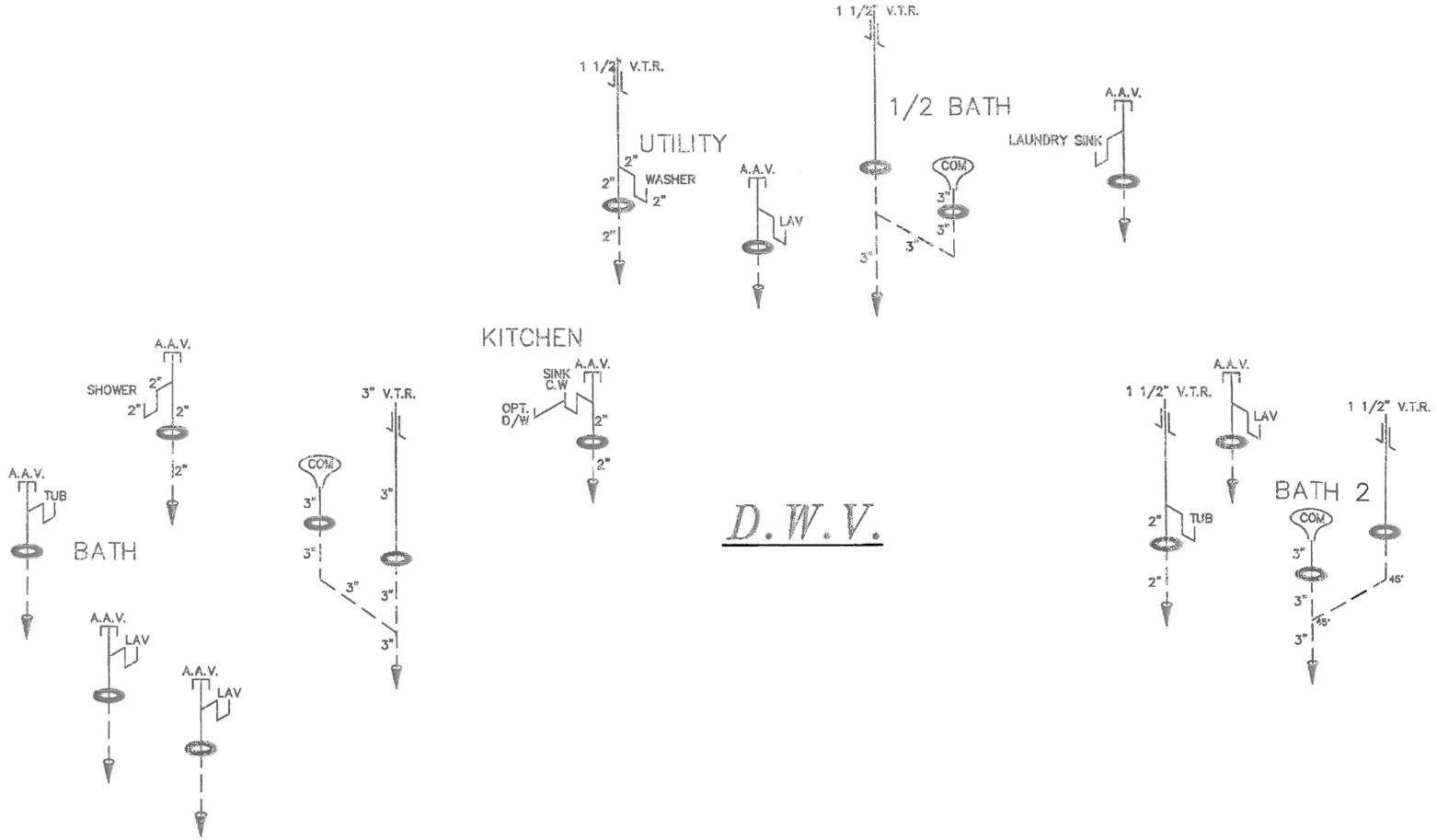
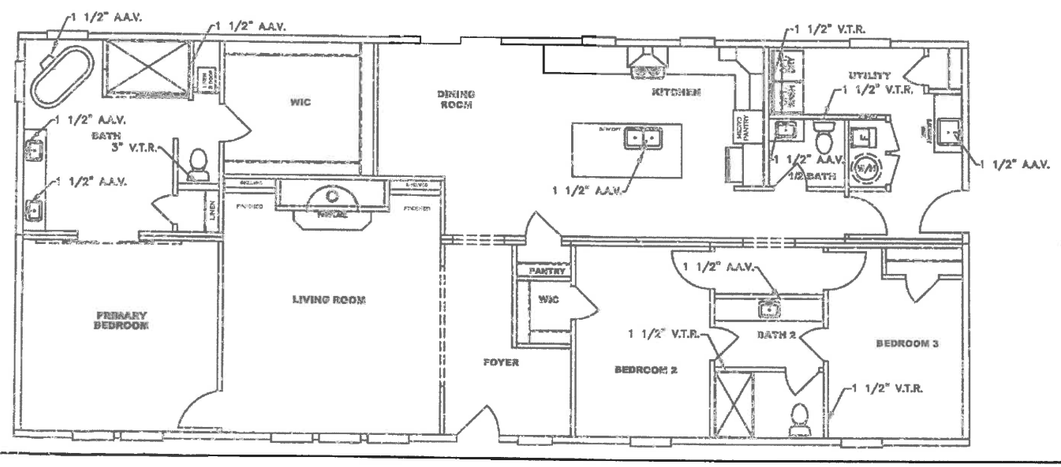
HVAC AND RIDGEBEAM LAYOUT

SHEET: M-1





ALL DASHED LINES ON D.W.V. ARE FIELD INSTALLED.

SITE WORK:
1. UNDER FLOOR DWV

***ALL DWV LINES 1 1/2" UNLESS OTHERWISE NOTED.**

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Clayton
Clayton - Plant 925
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DWV LINES

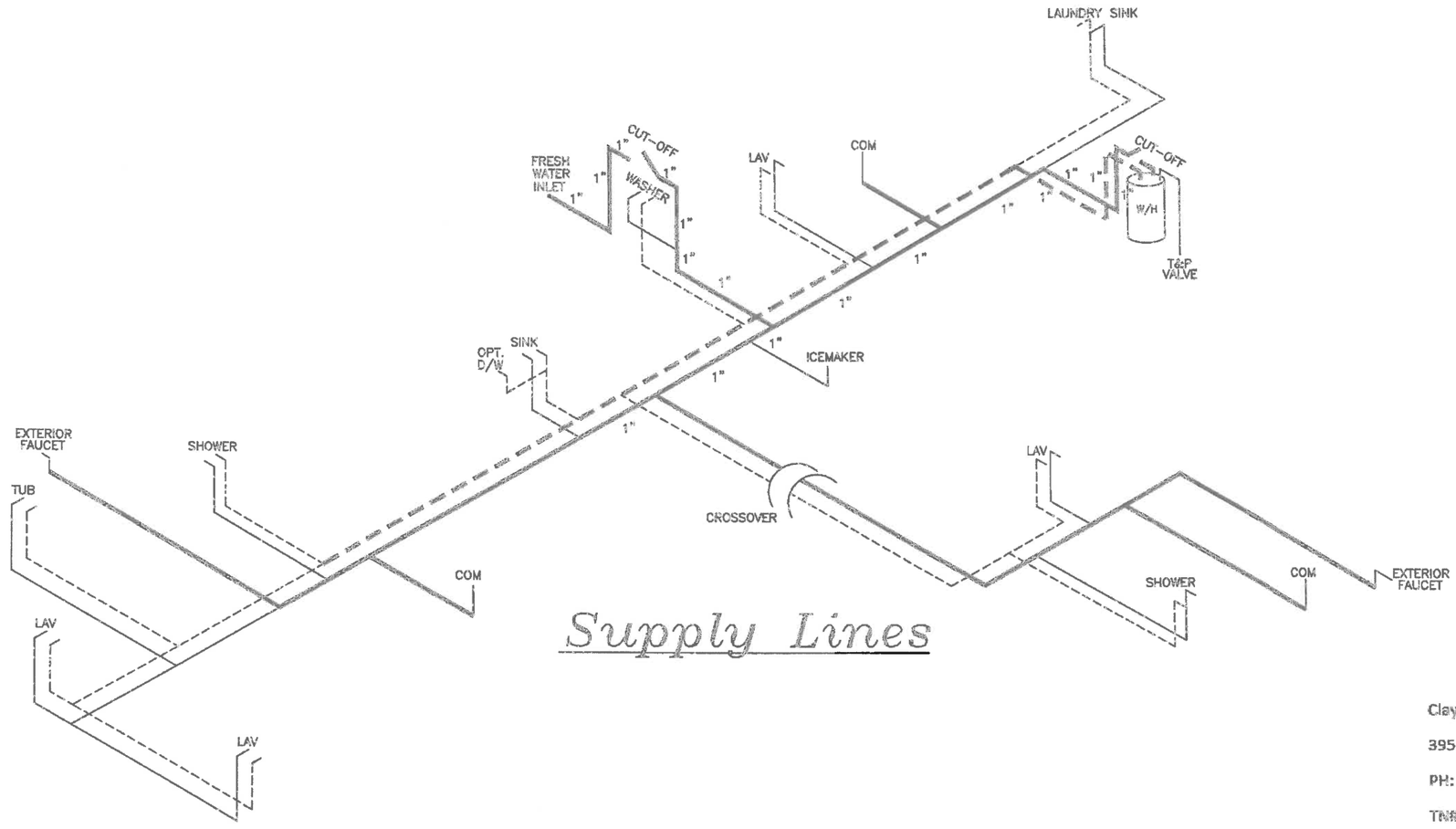
SHEET:
P-1

NOTE:
DASHED LINES INDICATE HOT WATER
SOLID LINES INDICATE COLD WATER

= 3/4"
= 1/2"
** 1" PIPE SIZE NOTED

MDL= 65'

SUPPLY LINE SIZING IS BASED ON AN ASSUMED AVAILABLE PRESSURE OF 40 TO 40 PSI AT MAIN INLET AND SHOULD BE VERIFIED PRIOR TO CONSTRUCTION.



Supply Lines

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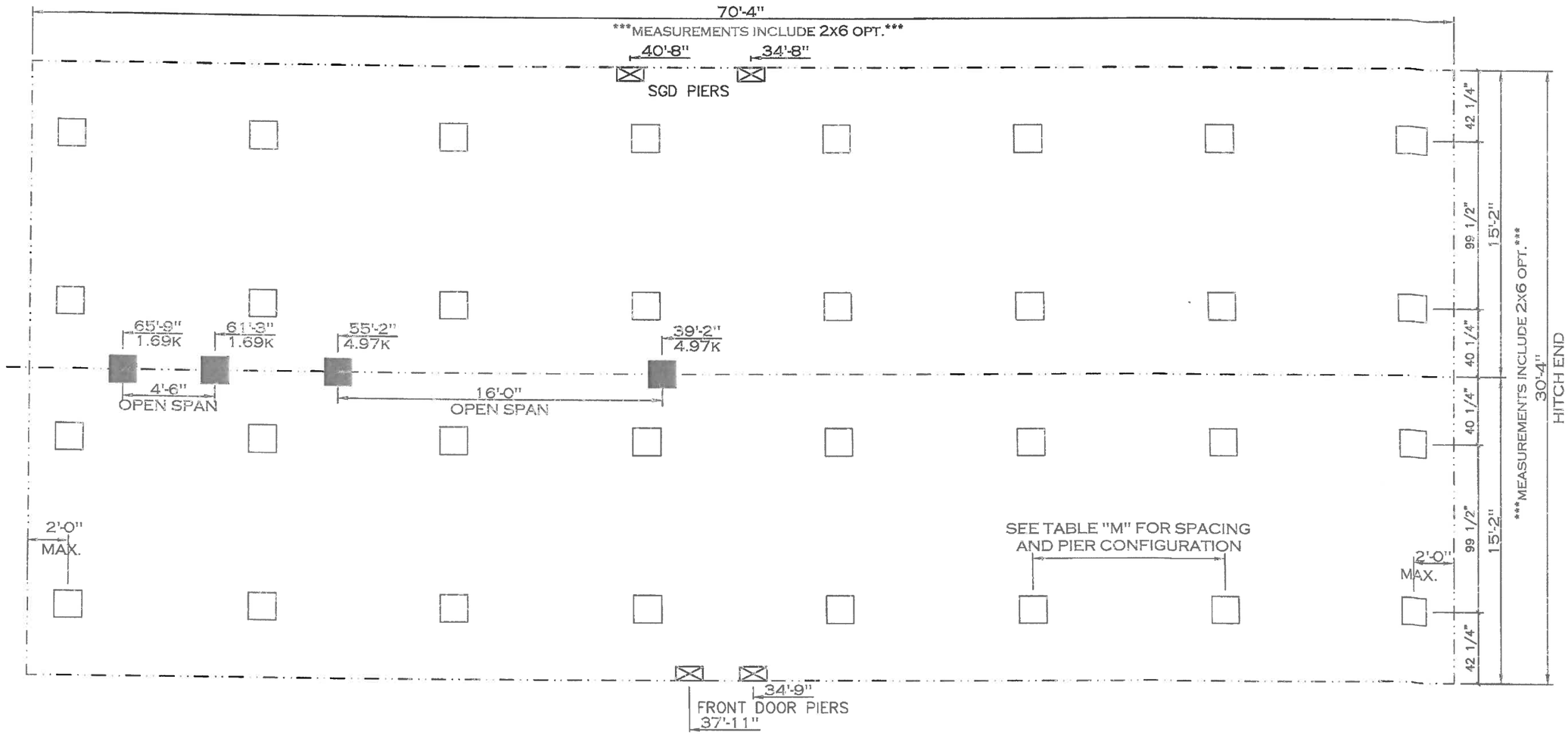
SUPPLY LINES

SHEET:
P-2



PIER LEGEND

- ☐ = SUPPORT UNDER MATING OPENING
- ■ = SUPPORT AT MATING COLUMN
- ▨ = SUPPORT UNDER MATING WALL
- ■ = PIER PORCH/RECESSED ENTRY
- ☐ = PIER MAIN BEAM
- ▣ = PIER PERIMETER
- ● = TIE-DOWN SUPPORT (QTY PER TBL M, SEE DETAIL D-6 IN FOUND. PKG.)

SEE FOUNDATION PACKAGE FOR ADDITIONAL DETAILS AND INFORMATION

FOUNDATION WIDTH IS NOMINAL AND DOES NOT TAKE INTO ACCOUNT THE OSB, SIDING, OR CABLES IN THE MATELINE AREA. WIDTH MAY NEED TO BE ADJUSTED ACCORDINGLY.

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FOUNDATION DESIGN SPECIFICATIONS

SEISMIC DESIGN CATEGORY = C
GROUND SNOW LOAD = 20 PSF MAX
MATING LINE GIRDER BEAM = (2) 2x8 #1 SP
GIRDER BEAM SPLICE PLATE = 3" x 6" MIN.

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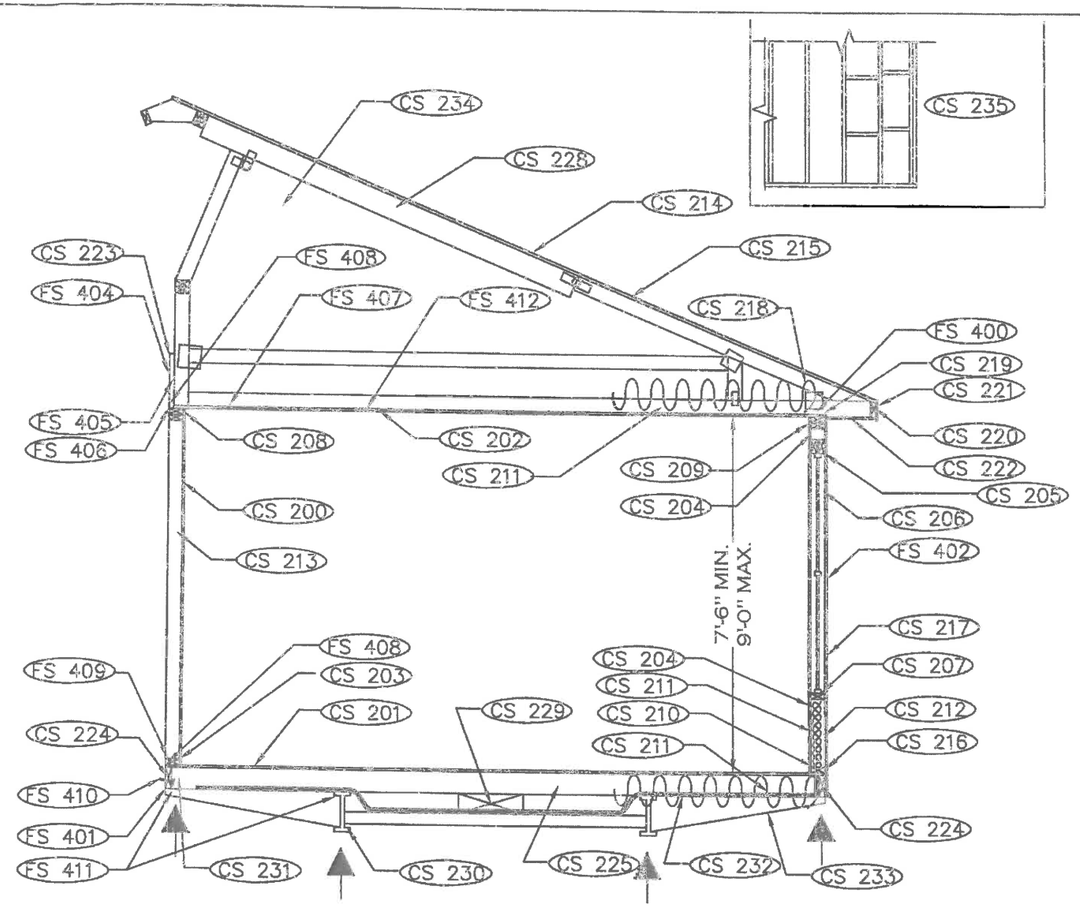
ON FRAME FOUNDATION

SHEET: F-1



FS 400 — ROOF TRUSS ATTACHMENT TO TOP PLATE PER RC-30.0 IN APPROVED PACKAGE.

FS 401 — EXTERIOR WALL STRAPPING AND FASTENING PER EW-31.0 IN APPROVED PACKAGE.

FS 402 — EXTERIOR STRUCTURAL SHEATHING PER SW SECTION IN APPROVED STATE PACKAGE.

FS 403 — RESERVED FOR FUTURE USES

FS 404 — SITE SET UP CONNECTION:
3/8" LAG BOLT WITH 1" MIN. PENETRATION LAG SCREW SPACED 16" O.C. STAGGERED FROM SIDE TO SIDE.
ALT. 1/2" DIA. BOLT WITH 1 3/8" WASHER SPACED 24" O.C. MAX.

FS 405 — FASTEN RIDGE BEAM TO EACH TRUSS PER RC-60.0 IN APPROVED PACKAGE.

FS 406 — RIDGEBEAM FASTENED TO TOP PLATE WITH #8x4" SCREWS 16" O.C.

FS 407 — INTERIOR PARTITIONS FASTENED TO TRUSS OR LAYFLATS IN ROOF AND FLOOR PER PT-40.0 IN APPROVED PACKAGE.

FS 408 — MARRIAGE WALL STRAPPING AND FASTENING PER MW-30.0 IN APPROVED PACKAGE. (TYPICAL EACH MARRIAGE WALL)

FS 409 — EXTERIOR WALLS FASTENED TO FLOOR PER EW-31.0 IN APPROVED PACKAGE.

FS 410 — SITE SET UP CONNECTION:
3/8" LAG SCREWS STAGGERED FROM SIDE TO SIDE AT 48" O.C. MAXIMUM. LAG SCREWS MUST PENETRATE 1.75" MINIMUM INTO ADJACENT MODULE RIM JOIST OR SITE INSTALL 1/2" X 4" BOLTS INTO PRE-DRILLED HOLES AT 48" O.C. MAX.

FS 411 — FRAME TO FLOOR PER FL-500.0 IN APPROVED PACKAGE.

FS 412 — ENDWALL
TRUSS TO PLATE AND PLATE TO FLOOR PER SW SECTION IN APPROVED STATE MANUAL.

CS 200 — 5/8" VINYL COVERED GYPSUM BOARD THROUGHOUT INSTALLED PER MANUFACTURER'S SPECIFICATIONS.

OPT. 1/2" GYPSUM BOARD TAPED, SANDED AND FINISHED MAY BE SUBSTITUTED IN ANY LOCATION FOR THE 3/8" VINYL COVERED GYPSUM.

CS 201 — 19/32" T&G OSB , EXP. 1, 24/16 OR 5/8" T&G PLYWOOD, STURD-I-FLOOR EXP. 1. ALL ENDS ARE BUTT JOINTS. INSTALLED PERPENDICULAR TO JOIST.

CS 202 — 1/2" MINIMUM GYPSUM BOARD INSTALLED PER MANUFACTURER'S SPECIFICATIONS. (ACOUSTICALLY TREATED) (WHEN SUPPORTS ARE 24" O.C. AND WET SPRAY-ON FINISH IS USED GYPSUM BOARD SHALL BE 5/8 INCH THICK OR GOLD BOND 1/2 INCH HIGH STRENGTH CEILING BOARD OR EQUAL SHALL BE USED). SPRAY APPLIED VAPOR BARRIER (ONE PERM MAX.).

CS 203 — BOTTOM SOLE PLATE 2X3 #3 SPF MIN.

CS 204 — CRIPPLE STUD 2X6 #2 SPF 16" O.C.

CS 205 — 2x HEADER PER EW-20.0 IN APPROVED PACKAGE.

CS 206 — TYPICAL WINDOW OR DOOR SEE FLOOR PLAN FOR SPECIFICATIONS.

CS 207 — WINDOW SILL PLATE MIN. 2x6 SPF#2

CS 208 — DOUBLE TOP PLATE MIN. 2X3 #3 SPF

CS 209 — DOUBLE TOP PLATE MIN. 2X6 #3 SPF

CS 210 — BOTTOM SOLE PLATE 2X6 #3 SPF

CS 211 — INSULATION W/ VAPOR BARRIER-SEE ATTACHED RESCHECKS OR FLOOR PLAN FOR R - VALUE.

CS 212 — EXTERIOR WALL STUDS 2X6 SPF #2 AT 16" O.C. OR SP #2 @ 12" O.C. WITHIN 36" CORNER ZONES & 16" O.C. ELSEWHERE.

CS 213 — MARRIAGE WALL STUDS MIN 2X3 SPF #3 AT 16" O.C.

CS 214 — 7/16" OSB SHEATHING RATED EXP 1, 24/16

CS 215 — ASPHALT OR FIBERGLASS SHINGLES OVER TWO LAYERS OF 15# FELT FOR PITCHES UP TO 4:12 AND ONE LAYER FOR 4:12 OR STEEPER INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
UNDERLAYMENT SHALL CONFORM WITH ASTM D 226, TYPE I, OR ASTM D 4869, TYPE I.
CLOSED VALLEY FLASHING SHALL COMPLY WITH ASTM D 6380 TYPE II OR TYPE III. ASTM D 1970 MAY BE USED IN LIEU OF LINING MATERIAL.

CS 216 — 7/16" OSB SHEATHING RATED EXP. 1, 24/16 WITH WEATHER RESISTIVE BARRIER BELOW ALL EXT. FINISH MATERIAL.
CORROSION-RESISTANT FLASHING REQUIRED AT ALL LOCATIONS AS SHOWN ON APPROVED MANUAL DETAILS

CS 217 — LAP BOARD, WOOD OR VINYL SIDING, HARDI SIDING, OR EXPOSED SHEATHING FOR ON SITE EXTERIOR FINISH INSTALLATION.

CS 218 — MAINTAIN 1" MIN. SPACE BETWEEN INSULATION AND ROOF SHEATHING.

CS 219 — COMPRESSION STRIP SHIM (2" CONTINUOUS)

CS 220 — 2X MIN. SPF #3 RIM

CS 221 — ALUMINUM OR HARDI FASCIA MATERIAL

CS 222 — CONTINUES VENTILATED SOFFIT

CS 223 — RIDGE BEAM PER RC-60.0 IN APPROVED PACKAGE

CS 224 — FLOOR RIM JOIST PER FL-500.0 IN APPROVED PACKAGE

CS 225 — FLOOR JOIST PER FL-500.0 IN APPROVED PACKAGE

CS 226 — ENDWALL OVERHANG DETAIL PER RC-10.0 DETAIL(S)

CS 227 — RESERVED FOR FUTURE USES

CS 228 — ENGINEERED TRUSSES PER C-1 SHEET

CS 229 — SEE MECH. NOTES FOR FLOOR DUCT SPECIFICATIONS

CS 230 — I-BEAM PER FL-510.0 IN APPROVED PACKAGE

CS 231 — INSTALL 2x6 SPF#3 MINIMUM BEARING BLOCK BETWEEN FLOOR JOISTS UNDER ALL COLUMNS HAVING A GREATER THAN 12 FEET MEASURED ALONG MARRIAGE.

CS 232 — .040" POLYMAX BOTTOM BOARD (TYP.)

CS 233 — OUTRIGGERS AND CROSSMEMBERS PER FL SECTION "FLOOR SYSTEM SUMMARY" IN APPROVED PACKAGE.

CS 234 — GABLE ENDWALL FRAMING PER RC-21.0 DETAIL(S).

CS 235 — 2x FULL DEPTH BLOCKING PER FL-500.0 AT ALL ENDWALL LOCATIONS WHEN AN UNBALANCED BACKFILL OCCURS.

NOTE:
1. BUILDING IS SYMMETRICAL.

JAMES W.HARRELL PE
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Clayton Homes Rutledge (Plant 925)

395 HWY 11W SOUTH Rutledge, TN 37861

PH: 865.828.5771 FAX: 865.828.8097

TN# CHR-301

JAMES W. HARRELL REGISTERED ENGINEER No. 109121 STATE OF TENNESSEE
10/01/2024
P.E. SEAL

APPROVED OCT 01 2024 HILBORN, WERNER, CARTER & ASSOC.
THIRD PARTY SEAL

DRAWN BY: B. RUSSELL
SCALE: N.T.S.
TN# CHR-301
STATE LABEL(S): TN

HILBORN, WERNER, CARTER, AND ASSOCIATES, INC.
1627 SOUTH MYRTLE AVE.
CLEARWATER, FL. 33756

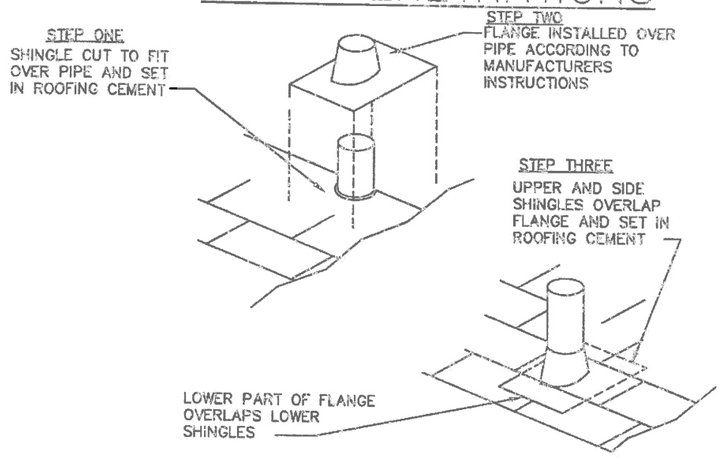
CMH MANUFACTURING, INC.
Clayton - Plant 925
395 Hwy 11W South Rutledge, TN 37861
PH: 865.828.5771 FAX: 865.828.8097

ON FRAME CROSS SECTION

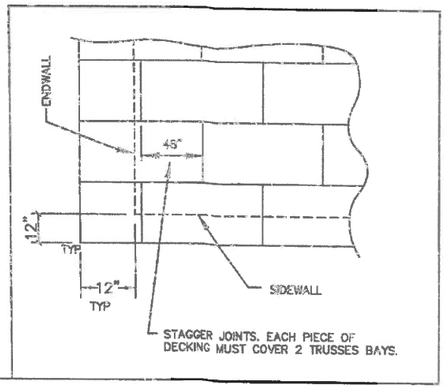
SHEET: X-1

Sep 24, 2024 - 3:24pm R:\MODULAR TYPICALS\Typical On-Frame Cross Section-925.dwg

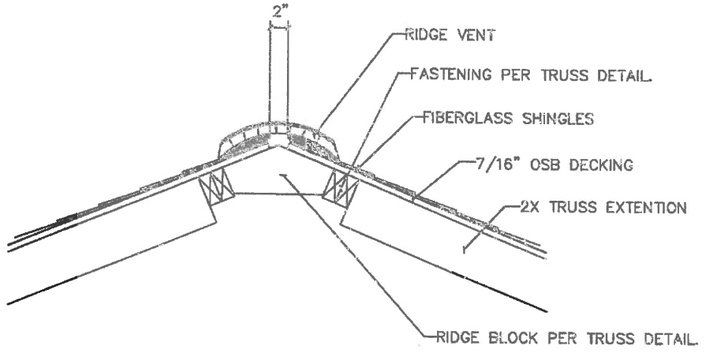
ROOF PENETRATIONS



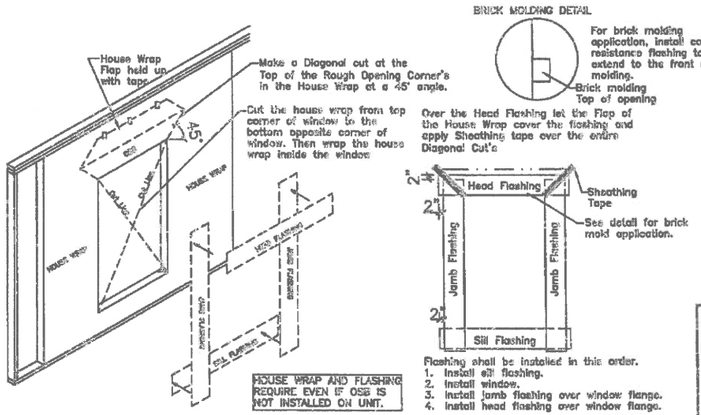
NOTES:
1. WHEN ROOF DECKING IS PENETRATED, THE AREA PENETRATED MAY BE 1/2" +/- 1/4" LARGER THEN ITEM PROTRUDING THRU OR PER THE MANUFACTURERS INSTALLATION INSTRUCTIONS.
2. ALL SHINGLES PENETRATIONS TO BE SEALED IN ACCORDANCE WITH THE FLASHING MANUFACTURER INSTALLATION INSTRUCTIONS WHEN APPLICABLE. OTHERWISE USE DETAIL ABOVE.
3. DO NOT USE PETROLEUM BASED SEALANTS ON BASE OF FLASHING WHEN USING A NO CAULK FLASHING.
4. PLUMBING VENT PENETRATION SHALL EXTEND A MINIMUM OF 12" ABOVE ROOF FINISH.
5. CHIMNEYS TO BE LOCATED BETWEEN TRUSSES TO MAINTAIN MINIMUM REQUIRED DISTANCES FROM COMBUSTIBLE MATERIAL.
6. DETAILS APPLICABLE TO PLUMBING VENTS, FLUES AND CHIMNEYS, AND ELECTRICAL MASTS.



STAGGER JOINTS. EACH PIECE OF DECKING MUST COVER 2 TRUSSES BAYS.



Ridge Cap Vent Length			
Floor Width	30.33	% High Vent	0.80
Floor Length	70.33	% Low Vent	0.20
Attic Area	2133	Sq. Ft.	
Required Vent	819	Sq. in.	
Ridge Cap Vent	18	Sq. in. per Ft.	
Length of Ridge Cap	46	Ft.	
LOW VENT WILL BE HANDLED BY SOFFIT VENTING			



HOUSE WRAP AND FLASHING REQUIRE EVEN IF OSB IS NOT INSTALLED ON UNIT.

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JAMES W. HARRILL REGISTERED ENGINEER No. 109131 STATE OF TENNESSEE
10/01/2024
P.E. SEAL

* APPROVED *
OCT 01 2024
HILBORN, WERNER, CARTER & ASSOC.
THIRD PARTY SEAL

HILBORN, WERNER, CARTER, AND ASSOCIATES, INC.
1627 SOUTH MYRTLE AVE.
CLEARWATER, FL 33756

PROJECT #:M25M141-38759_TN
SCALE: 3/16" = 1'-0"
JOB #1869-1684
TN#: CHR-301
STATE LABEL(S): TN

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CROSS SECTION DETAILS

SHEET:
D-1