CONSTRUCTION NOTES

1. COMPLY WITH ALL LOCAL, STATE AND FEDERAL APPLICABLE CODES, RULES AND REGULATIONS. OBTAIN & PAY FOR ALL PERMITS AND LICENSES AS REQUIRED. WHEN REQUIRED BY CODE, ALL WORK MUST BE INSPECTED AND APPROVED BY THE PROPER LOCAL AUTHORITIES.

2. CONTRACTOR SHALL VERIFY ALL CONDITIONS AND BECOME THOROUGHLY FAMILIAR WITH THE SITE BEFORE COMMENCEMENT OF WORK. THE G.C. SHALL REPORT ALL DISCREPANCIES TO THE OWNER AND DESIGNER. THE DRAWINGS REFLECT CONDITIONS AS CAN REASONABLY BE INFERRED FROM VISIBLE CONDITIONS, OR FROM DRAWINGS & INFORMATION FURNISHED BY OWNER, BUT CANNOT BE GUARANTEED.

3. ALL DIMENSIONS SHOULD BE CALCULATED, NEVER SCALED, AND SHALL BE VERIFIED BY THE CONTRACTOR, ON SITE, PRIOR TO CONSTRUCTION. DIMENSIONS SHOWN ON PLANS ARE FROM FINISHED FACE OF THE FINISHED SURFACE. THE G.C. IS TO WORK WITH OTHER TRADES AS REQUIRED TO MAKE ADJUSTMENTS IN PLAN SET FOR ALLOWANCES TO ENSURE PROPER FITMENT OF PLUMBING, ELECTRICAL, MECHANICAL AND STRUCTURAL COMPONENTS.

4. CONTRACTOR SHALL BE FAMILIAR WITH THE SITE AND IS RESPONSIBLE FOR INCORPORATING ALL REASONABLY INFERABLE CONDITIONS INTO THE WORK. NO CLAIM FOR ADDITIONAL COMPENSATION OR TIME BASED ON UNFAMILIARITY OF VISIBLE OR REASONABLY INFERABLE CONDITIONS WILL BE CONSIDERED. CONTRACTOR WARRANTS TO THE OWNER THAT THE SITE AND EXISTING CONDITIONS HAVE BEEN SURVEYED PRIOR TO SUBMITTING A FINAL CONTRACT PRICE. DISCREPANCIES ARE TO BE REPORTED TO THE OWNER.

5. CONTRACTOR SHALL KEEP THE CONSTRUCTION SITE CLEAN, FREE AND CLEAR OF DEBRIS AND SHALL MINIMIZE AND CLEARLY MARK ALL PHYSICAL HAZARDS. EMERGENCY EGRESS PATHS MUST BE MAINTAINED AT ALL TIMES.

6. CONTRACTOR SHALL KEEP THE SITE SECURE AND FREE OF UNAUTHORIZED PERSONS AND KEEP ALL EXPOSED, EXISTING CONDITIONS SECURE FROM VANDALISM OR THEFT.

7. ALL MATERIALS STORED ON THE SITE SHALL BE STORED PER MANUFACTURERS RECOMMENDATIONS AND SAFE FROM THEFT OR VANDALISM.

8. DIMENSIONS PULLED FROM EXTERIOR ARE FROM FACE OF EXTERIOR WALL. INTERIOR DIMENSIONS ARE SHOWN FROM WALL FACE TO WALL FACE.

9. CONTRACTOR SHALL FIELD VERIFY MEASUREMENTS, LOCATIONS, MATERIALS & FINISHES BEFORE CONSTRUCTION BEGINS.

10. GENERAL CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES.

11. GENERAL CONTRACTOR SHALL PATCH AND REPAIR ALL EXISTING WALLS, FLOORS, CEILINGS OR OTHER SURFACES IDENTIFIED TO REMAIN THAT MAY BECOME DAMAGED DURING THE COURSE OF THE WORK.

12. THE G.C. IS RESPONSIBLE FOR OBTAINING PERMITS FOR CONSTRUCTION, PLUMBING, MECHANICAL AND ELECTRICAL SYSTEMS PRIOR TO INSTALLATION OF EACH.

13. THE G.C. WILL KEEP ONE SET OF PERMITTED PLANS ON SITE AT ALL TIMES TO DOCUMENT ANY AND ALL CHANGES MADE DURING CONSTRUCTION. THE RECORD OF DRAWINGS SHALL BE MADE AVAILABLE TO THE OWNER AND ISSUED TO THEM AT THE CONCLUSION OF THE PROJECT.

GENERAL NOTES

1. INTERIOR BASEMENT WALLS MUST BE FRAMED WITH 2X4 WOOD STUDS AT A MINIMUM SPACING OF 16 INCHES ON CENTER AND FINISHED WITH 1/2-INCH GYPSUM BOARD ON ONE SIDE UNLESS OTHERWISE NOTED.

2. EXTERIOR WALLS SHALL BE FRAMED WITH 2X6 WOOD STUDS AT A MINIMUM SPACING OF 16 INCHES ON CENTER, WITH LAP SIDING AND SHEATHING ON THE EXTERIOR AND 1/2-INCH GYPSUM BOARD ON THE INTERIOR UNLESS OTHERWISE NOTED. EXTERIOR WALLS LOCATED LESS THAN 5 FEET FROM THE PROPERTY LINE MUST HAVE A 1-HOUR FIRE RATING ON BOTH SIDES, TESTED PER ASTM E119 OR UL 263. OVERHANGS LESS THAN 5 FEET FROM PROPERTY LINES MUST ALSO HAVE A 1-HOUR FIRE-RATED UNDERSIDE AS REQUIRED BY THE 2021 IRC.

3. FLOOR ASSEMBLIES THAT ARE NOT PROTECTED BY A FINISHED CEILING MUST HAVE FIRE PROTECTION AS REQUIRED BY SECTION R501.3 OF THE BUILDING CODE.

4. FRAMING DIMENSIONS ARE MEASURED TO THE FACE OF THE STUD OR CONCRETE WALL, WHILE BUILT-IN DIMENSIONS ARE MEASURED TO THE OUTSIDE FACE OF FINISHED CABINETRY UNLESS OTHERWISE NOTED.

5. EACH SLEEPING ROOM MUST HAVE AT LEAST ONE OPERABLE EGRESS WINDOW WITH A MINIMUM NET CLEAR OPENING OF 5.7 SQUARE FEET, A MINIMUM NET CLEAR HEIGHT OF 24 INCHES, A MINIMUM NET CLEAR WIDTH OF 20 INCHES, AND A MAXIMUM SILL HEIGHT OF 44 INCHES ABOVE THE FINISHED FLOOR.

6. STAIRWAYS MUST PROVIDE A MINIMUM HEADROOM CLEARANCE OF 6 FEET 8 INCHES, MEASURED FROM A LINE CONNECTING NOSING EDGES, EXCEPT FOR SPIRAL STAIRWAYS, WHICH ARE PERMITTED TO HAVE A MINIMUM HEADROOM OF 6 FEET 6 INCHES. RISER HEIGHTS MUST BE BETWEEN 4 INCHES AND 8-3/4 INCHES, WITH A MINIMUM TREAD DEPTH OF 9 INCHES. THE MAXIMUM VERTICAL RISE BETWEEN LANDINGS MUST NOT EXCEED 12 FEET. LANDINGS MUST BE PROVIDED AT THE TOP AND BOTTOM OF ALL STAIRWAYS, WITH A MINIMUM DEPTH EQUAL TO THE WIDTH OF THE STAIRWAY BUT NOT EXCEEDING 48 INCHES.

7. HANDRAILS ARE REQUIRED ON ONE SIDE OF STAIRWAYS WITH FOUR OR MORE RISERS, AS PER SECTION R311.7.8 OF THE BUILDING CODE. THEY MUST BE INSTALLED AT A HEIGHT OF 34 TO 38 INCHES ABOVE THE NOSING AND MUST EXTEND CONTINUOUSLY FROM THE TOP TO THE BOTTOM OF THE STAIR, TERMINATING AT A NEWEL POST OR RETURNING INTO THE WALL. HANDRAILS MUST HAVE A GRASPABLE CROSS-SECTION WITH A DIAMETER BETWEEN 1-1/4 INCHES AND 2 INCHES OR AN EQUIVALENT SHAPE WITH A PERIMETER BETWEEN 4 INCHES AND 6.25 INCHES. A MINIMUM CLEARANCE OF 1-1/2 INCHES FROM THE WALL MUST BE MAINTAINED, AND HANDRAILS MUST NOT PROJECT MORE THAN 4-1/2 INCHES INTO THE REQUIRED STAIR WIDTH.

8. GUARDRAILS MUST BE INSTALLED AT OPEN SIDES OF WALKING SURFACES, STAIRWAYS, RAMPS, AND LANDINGS THAT ARE MORE THAN 30 INCHES ABOVE THE ADJACENT FLOOR OR GRADE. THE MINIMUM HEIGHT FOR GUARDRAILS ON WALKING SURFACES IS 42 INCHES, WHILE GUARDRAILS ALONG STAIRWAYS MUST BE BETWEEN 34 AND 38 INCHES HIGH. OPENINGS IN GUARDRAILS MUST NOT ALLOW THE PASSAGE OF A 4-INCH DIAMETER SPHERE, EXCEPT FOR STAIR BALUSTERS, WHICH MAY ALLOW A MAXIMUM OPENING OF 4-3/8 INCHES, AND TRIANGULAR OPENINGS BETWEEN STAIR TREADS, RISERS, AND THE BOTTOM OF THE GUARDRAIL, WHICH MAY ALLOW A MAXIMUM OPENING OF 6 INCHES.

9. SHOWER AND TUB WALLS MUST HAVE A SMOOTH, HARD, NON-ABSORBENT SURFACE OVER A MOISTURE-RESISTANT UNDERLAYMENT EXTENDING AT LEAST 70 INCHES ABOVE THE DRAIN INLET, AS REQUIRED BY SECTION R307.2 OF THE BUILDING CODE. WATER-RESISTANT GYPSUM BOARD IS NOT PERMITTED IN SHOWER AND TUB COMPARTMENTS, IN ACCORDANCE WITH ASTM C 630.

10. SMOKE DETECTORS MUST BE INSTALLED IN EVERY BEDROOM AND IN HALLWAYS ADJACENT TO SLEEPING AREAS. CARBON MONOXIDE DETECTORS MUST BE INSTALLED OUTSIDE EACH SLEEPING AREA AND IN ALL DWELLINGS WITH FUEL-FIRED APPLIANCES OR ATTACHED GARAGES, AS PER SECTION R315 OF THE BUILDING CODE.

11. ALL INSULATION FOR THE PROJECT MUST ADHERE TO THE 2021 IECC ENERGY CODE. THIS INCLUDES SPECIFIC MINIMUM R-VALUES: R-60 FOR CEILINGS/ROOFS, R-20 + 5 OR R-13 + 10 FOR WOOD FRAME EXTERIOR WALLS, R-8/13 FOR MASS WALLS, R-19 FOR FLOORS OVER UNCONDITIONED SPACES, R-10/13 FOR BASEMENT WALLS, R-10 WITH A 4-FOOT DEPTH FOR UNDER SLABS, AND R-10/13 FOR CRAWL SPACE WALLS.
FURTHERMORE, HOT WATER PIPES MUST BE INSULATED TO A MINIMUM OF R-3. INSULATION MUST BE INSTALLED BEHIND SHOWERS AND TUBS ON EXTERIOR WALLS. THE INSTALLATION OF AIR BARRIERS AND INSULATION MUST STRICTLY FOLLOW MANUFACTURER'S INSTRUCTIONS AND COMPLY WITH BOTH ENERGY CODE TABLE R402.4.1.1 AND SECTION R402.4.

12. WATERPROOF MEMBRANES, VAPOR BARRIERS, AND MINIMUM REQUIRED INSULATION MUST BE INSTALLED AT ALL NEW EXTERIOR WALLS AND EXTERIOR WALL INFILLS.

13. ADDRESS NUMBERS MUST BE CLEARLY VISIBLE FROM THE STREET AND MUST BE AT LEAST 4 INCHES HIGH WITH A MINIMUM STROKE WIDTH OF 1/2 INCH, AS REQUIRED BY SECTION R319 OF THE BUILDING CODE.

14. BATHROOMS MUST HAVE MECHANICAL VENTILATION VENTED DIRECTLY OUTDOORS, AND VENTS MAY NOT TERMINATE IN ATTICS OR CRAWL SPACES, AS REQUIRED BY SECTION M1506.2 OF THE MECHANICAL CODE.
15. FLOODPLAIN MANAGEMENT & COMPLIANCE
FOR PROPERTIES LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA (SFHA) AS DESIGNATED ON THE CURRENT FEMA FIRM:
THE LOWEST FLOOR (INCLUDING BASEMENT AND ATTACHED GARAGE FLOOR), ALONG WITH ALL ATTENDANT UTILITIES AND ELECTRICAL SYSTEMS, SHALL BE ELEVATED TO A MINIMUM OF 2.5 FEET ABOVE THE BASE FLOOD ELEVATION (BFE).
ALL ENCLOSED AREAS BELOW THE BFE SHALL BE CONSTRUCTED WITH FLOOD-DAMAGE RESISTANT MATERIALS AND BE EQUIPPED WITH FLOOD OPENINGS (VENTS) PER IRC SECTION R322.
AN ELEVATION CERTIFICATE, PREPARED BY A LICENSED SURVEYOR OR ENGINEER, MUST BE SUBMITTED TO THE WARREN COUNTY BUILDING DEPARTMENT PRIOR TO THE FRAMING INSPECTION.

16. STRUCTURAL DRAWINGS TAKE PRECEDENCE OVER ARCHITECTURAL DRAWINGS FOR ALL STRUCTURAL ELEMENTS. ENLARGED DRAWINGS TAKE PRECEDENCE OVER OVERALL PLANS AND SECTIONS.

16. ALL CONDITIONS MUST BE VERIFIED IN THE FIELD. ANY EXTENSIONS OR INFILLS TO EXISTING WALLS MUST MATCH THE THICKNESS OF THE EXISTING CONSTRUCTION TO ENSURE A SEAMLESS TRANSITION. UNLESS OTHERWISE NOTED, ANNOTATIONS INDICATE NEW CONSTRUCTION, WITH (E) USED TO DENOTE EXISTING ELEMENTS AND (N) FOR NEW ELEMENTS.



LOCATION MAP

2021 IECC Insulation and Fenestration Requirements: Climate Zone 4A (except Marine)

COMPONENT	REQUIREMENT
Fenestration U-Factor[1]	0.30
Skylight U-Factor	0.55
Glazed Fenestration SHGC[2]	0.40
Ceiling R-Value	60
Wood Frame Wall R-Value	20 + 5 or 13 + 10
Mass Wall R-Value[3]	8/13
Floor R-Value	19
Basement Wall R-Value	10/13
Slab R-Value & Depth (ft.)	10 R-value, 4 ft. depth
Crawl Space Wall R-Value	10/13

ABBREVIATIONS

ACT - ACOUSTIC CEILING TILE
AD - AREA DRAIN
AFF - ABOVE FINISHED FLOOR
ALUM - ALUMINUM
ANOD - ANODIZED
BSMT - BASEMENT
BYND - BEYOND
BOT - BOTTOM
CIP - CAST IN PLACE
CHNL - CHANNEL
CJ - CONTROL JOINT
CLG - CEILING
CLR - CLEAR
CMU - CONCRETE MASONRY UNIT
COL - COLUMN
COMPR - COMPRESSIBLE
CONC - CONCRETE
CONT - CONTINUOUS
CPT - CARPET
CT - CERAMIC TILE
CTYD - COURTYARD
DBL - DOUBLE
DEMO - DEMOLISH OR DEMOLITION
DIA - DIAMETER
DIM - DIMENSION
DIMS- DIMENSIONS
DN - DOWN
DR - DOOR
DWG - DRAWING
EA - EACH
EJ - EXPANSION JOINT
EL - ELEVATION
ELEC - ELECTRICAL
ELEV - ELEVATOR OR ELEVATION
EP - ELECTRIC PANEL
EPDM - ETHYLENE PROPYLENE DIENE M-CLASS (ROOFING)
EQ - EQUAL
EXIST - EXISTING
EXP JT - EXPANSION JOINT
EXT - EXTERIOR
FD - FLOOR DRAIN OR FIRE DEPT. CONNECTION
FEC - FIRE EXTINGUISHER CABINET
FIXT - FIXTURE
FLR - FLOOR
FM - FILLED METAL
FO - FACE OF
FND - FOUNDATION
GA - GAUGE
GALV - GALVANIZED
GWB - GYPSUM WALL BOARD
HC - HOLLOW CORE
HI - HIGH
HM - HOLLOW METAL
HP - HIGH POINT
HR - HOUR
HVAC - HEATING, VENTILATING, AND AIR CONDITIONING
ILO - IN LIEU OF
INSUL - INSULATED OR INSULATION
INT - INTERIOR
LO - LOW
MAX - MAXIMUM
MO - MASONRY OPENING
MECH - MECHANICAL
MEMBR - MEMBRANE
MIN - MINIMUM
MRGWB - MOISTURE-RESISTANT GYPSUM WALL BOARD
MTL - METAL
NIC - NOT IN CONTACT
NO - NUMBER
NOM - NOMINAL
OC - ON CENTER
OH - OVERHANG OR OPPOSITE HAND
OPP - OPPOSITE OR OPPOSITE HAND
OZ - OUNCE
PCC - PRE CAST CONCRETE
PLUMB - PLUMBING
PLYD - PLYWOOD
PT - PRESSURE TREATED
PNT - PAINT OR PAINTED
PVC - POLYVINYL CHLORIDE
RBR - RUBBER
RCP - REFLECTED CEILING PLAN
RD - ROOF DRAIN
REQD - REQUIRED
RM - ROOM
SIM - SIMILAR
SPEC - SPECIFIED OR SPECIFICATION
SPK - SPRINKLER OR SPEAKER
SSTL - STAINLESS STEEL
STC - SOUND TRANSMISSION COEFFICIENT
STL - STEEL
STRUCT - STRUCTURE OR STRUCTURAL
T&G - TONGUE AND GROOVE
TELE - TELEPHONE
TME - TO MATCH EXISTING
TO - TOP OF
TOC - TOP OF CONCRETE
TOS - TOP OF STEEL
T/D - TELEPHONE/DATA
TYP - TYPICAL
UNO - UNLESS NOTED OTHERWISE
U/S - UNDERSIDE
VIF - VERIFY IN FIELD
VP - VISION PANEL
W/ - WITH
WD - WOOD

SYMBOLS

PROPERTY LINE
SETBACK LINE
ROOF LINE
6" INT. WALL
4" INT. WALL
CONCRETE
CMU WALL
BRICK
DEMO AREA
ELEVATION MARKER

BUILDING CONTRACTOR/HOME OWNER TO REVIEW AND VERIFY ALL DIMENSIONS, SPECS, AND CONNECTIONS BEFORE CONSTRUCTION BEGINS.

CLIMATE AND GEOGRAPHICAL DESIGN CRITERIA

ELEVATION FT.: 1120

RISK CATEGORY	SNOW DESIGN		WIND DESIGN			SUBJECT TO DAMAGE FROM			ICE BARRIER UNDER- LAYMENT REQUIRED	WINTER DESIGN TEMP	FLOOD HAZARDS	AIR FREEZING INDEX	MEAN ANNUAL TEMP, F	SEISMIC DESIGN CATEGORY
	GROUND SNOW LOAD PSF.	ROOF SNOW LOAD PSF.	SPEED NOMINAL	SP. WIND REGION	TOPOGRAPHIC EFFECT	WEATHERING	FROST LINE	TERMITE						
II	35 PSF	-	115 mph	NO	NO	SEVERE	24 IN.	M-H	YES	17° F	-	≤ 1500	59° F	B

SHEET SCHEDULE

SHEET NUMBER	SHEET NAME
A0.0	COVER SHEET & BUILDING NOTES
A0.1	EXISTING LOT LAYOUT
A0.2	PROPOSED LOT LAYOUT
A1.0	EXISTING FLOOR PLAN
A1.1	EXISTING ROOF FLOOR PLAN
A2.0	PROPOSED FLOOR PLAN - 1ST FLOOR
A2.1	PROPOSED FLOOR PLAN DIMENSIONED - 1ST FLOOR
A2.2	PROPOSED FLOOR PLAN - 2ND FLOOR
A2.3	PROPOSED FLOOR PLAN - DIMENSIONED- 2ND FLOOR
A2.4	PROPOSED ROOF PLAN - 1ST FLOOR
A2.5	PROPOSED ROOF PLAN - 2ND FLOOR
A2.6	PROPOSED FOUNDATION PLAN
A3.0	PROPOSED ELEVATIONS
A3.1	PROPOSED ELEVATIONS
A3.2	PROPOSED SECTIONS
A3.3	PROPOSED SECTIONS
A4.0	WALL SECTION DETAIL
A5.0	WINDOW AND DOOR SCHEDULES
A5.1	CABINET SCHEDULES
A6.0	THERMAL ENVELOPE & IECC INFORMATION
A7.0	CONCEPTUAL EXTERIOR RENDERING
S-0	GENERAL NOTES
S-1	FOUNDATION PLAN
S-2	FIRST FLOOR PLAN
S-3	SECOND FLOOR PLAN
S-4	BRACING PLAN
S-5	DETAILS
S-6	DETAILS

DESIGN CRITERIA & CONDITIONS

PROJECT CITY: BENTONVILLE
PROJECT COUNTY: WARREN COUNTY
PROJECT ELEVATION: 1120 FT. ABOVE SEA LEVEL
ZONING DISTRICT: AGRICULTURAL

APPLICABLE CODES:
- 2021 VIRGINIA CONSTRUCTION CODE (IBC)
- 2017 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES (ICC/ANSI A117.1)
- 2021 VIRGINIA RESIDENTIAL CODE (IRC)
- 2021 VIRGINIA ENERGY CONSERVATION CODE
- 2021 VIRGINIA MECHANICAL CODE (IMC)
- 2021 VIRGINIA PLUMBING CODE (IPC)
- 2020 NATIONAL ELECTRICAL CODE

PROJECT SCOPE

THE PROJECT INVOLVES DEMOLISHING THE REAR PORTION OF THE EXISTING HOUSE TO ACCOMMODATE A NEW LIVING SPACE ADDITION. ADDITIONALLY, THE CURRENT PORCH WILL BE RENOVATED AND EXPANDED LATERALLY TO EXTEND ALONG BOTH SIDES OF THE HOUSE

PROJECT DIRECTORY

OWNER 1:

BENTONVILLE, VA

PROJECT DATA

EXISTING BUILDING HEIGHT:
EXISTING 28'0" HIGHEST RIDGE (+/-) FROM TERRAIN

CONSTRUCTION TYPE:
V-B

OCCUPANCY TYPE:
RESIDENTIAL R3

FIRE PROTECTION:
-

NUMBER OF STORIES:
2

EXISTING STORIES (ABOVE GROUND)
2

ATTACHED GARAGE
-

GAS: NO

SEWER: SEPTIC FIELD
WATER: WELL

COOLING: CENTRAL AIR

HEATING: FORCED AIR

EXISTING SQ. FT.:
1ST FLOOR: 832 S.F
2ND FLOOR: 832 S.F
OPEN PORCH: 240 S.F

PROPOSED SQ. FT.:
1ST FLOOR: 1323 S.F (CONDITIONED)
2ND FLOOR: 1323S.F (CONDITIONED)
OPEN PORCH: 683 S.F (UNCONDITIONED)
TOTAL: 3329 S.F

TOTAL CONDITIONED SPACE: 2646 SQ.FT
TOTAL UNCONDITIONED SPACE: 683 SQ.FT

ZONING ANALYSIS

EX. LOT AREA:
5.176 ACRES

FRONT YARD SETBACK (MAIN/ACCESSORY):
MINIMUM 50 FEET

REAR YARD SETBACK (MAIN/ACCESSORY):
35'/10'

SIDE YARD SETBACK (MAIN/ACCESSORY):
15'/10'

REFERENCES

BENTONVILLE, VA

PLAN DISTRICT
05: SOUTH RIVER - COUNTY

ZONING DISTRICT:
AGRICULTURAL

SUBDIVISION:
-

PID/ACCOUNT #:
24649

PROP LR04-1143 SURVEY LR14-
1141

DEED BOOK & PAGE:
LR-2022, 5702

PROPERTY CLASS:
SINGLE FAMILY SUBURB

BENTONVILLE, VA 22610

DRAWN BY:

CHECKED BY:

REVISIONS:

No.	DESCRIPTION	DATE

ISSUE RECORD:

No.	DESCRIPTION	DATE

SCALE:

SHEET CONTENTS:

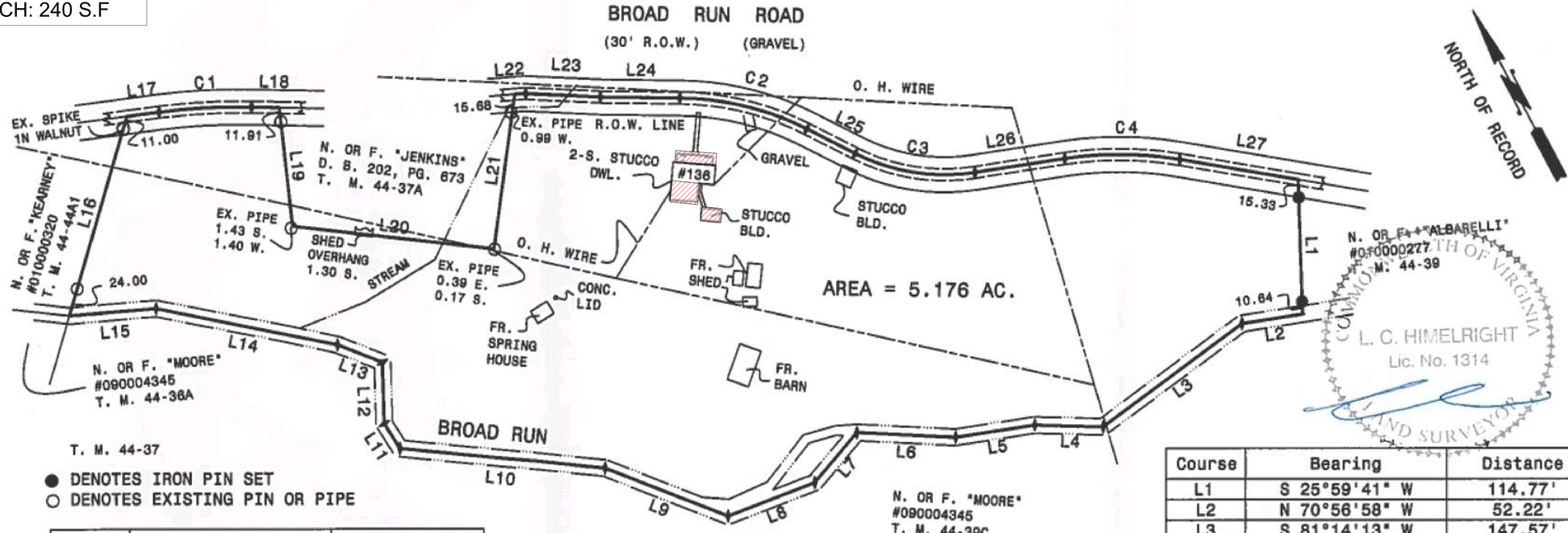
PROJECT NO.:

DATE: 10/9/2025

DRAWING NO.: **A0.0**

* G.C. TO FIELD VERIFY ALL MEASUREMENTS ON SITE.

EXISTING SQ. FT.:
1ST FLOOR: 832 S.F
2ND FLOOR: 832 S.F
OPEN PORCH: 240 S.F



● DENOTES IRON PIN SET
○ DENOTES EXISTING PIN OR PIPE

Course	Bearing	Distance
L15	N 66°46'38" W	74.19'
L16	N 44°15'08" E	176.84'
L17	S 69°33'06" E	27.63'
L18	S 60°51'35" E	23.51'
L19	S 21°42'15" W	101.66'
L20	S 55°34'39" E	172.16'
L21	N 35°40'49" E	132.75'
L22	S 66°32'07" E	9.38'
L23	S 59°21'22" E	63.55'
L24	S 61°19'58" E	67.56'
L25	S 35°15'18" E	46.07'
L26	S 70°51'09" E	77.55'
L27	S 52°32'35" E	102.02'

SURVEY OF THE CRYSTAL DARLENE MORRIS AND CRAIG A. MORRIS PROPERTY RECORDED IN INSTRUMENT #040001143.

SOUTH RIVER MAGISTERIAL DISTRICT

WARREN COUNTY, VIRGINIA

PREPARED BY
HIMELRIGHT & ASSOCIATES, PLLC
PROFESSIONAL LAND SURVEYORS
694 RED BUD ROAD, STRASBURG, VA.
PHONE 465-8767
NOVEMBER 1, 2013

Course	Bearing	Distance
L1	S 25°59'41" W	114.77'
L2	N 70°56'58" W	52.22'
L3	S 81°14'13" W	147.57'
L4	N 60°33'45" W	58.65'
L5	N 70°50'52" W	68.31'
L6	N 59°20'55" W	84.45'
L7	S 68°07'53" W	55.78'
L8	N 83°14'53" W	79.06'
L9	N 40°35'39" W	112.42'
L10	N 56°35'19" W	175.22'
L11	N 04°37'08" W	24.97'
L12	N 26°27'14" E	52.27'
L13	N 40°43'21" W	41.00'
L14	N 50°41'50" W	157.32'

Curve	Radius	Length	Delta	Chord	Chord Bear.
C1	520.19'	78.91'	8°41'31"	78.84'	S 65°12'21" E
C2	245.61'	111.79'	26°04'39"	110.82'	S 48°17'38" E
C3	169.09'	105.05'	35°35'51"	103.37'	S 53°03'14" E
C4	310.02'	99.07'	18°18'35"	98.65'	S 61°41'52" E

COMMONWEALTH OF VIRGINIA
L. C. HIMELRIGHT
Lic. No. 1314
LAND SURVEYOR

DEMO

1 EXISTING LOT LAYOUT
SCALE: 1" = 50 FT.

BENTONVILLE, VA 22610

DRAWN BY:
CHECKED BY:
REVISIONS:

No.	DESCRIPTION	DATE

ISSUE RECORD:

No.	DESCRIPTION	DATE

SCALE:

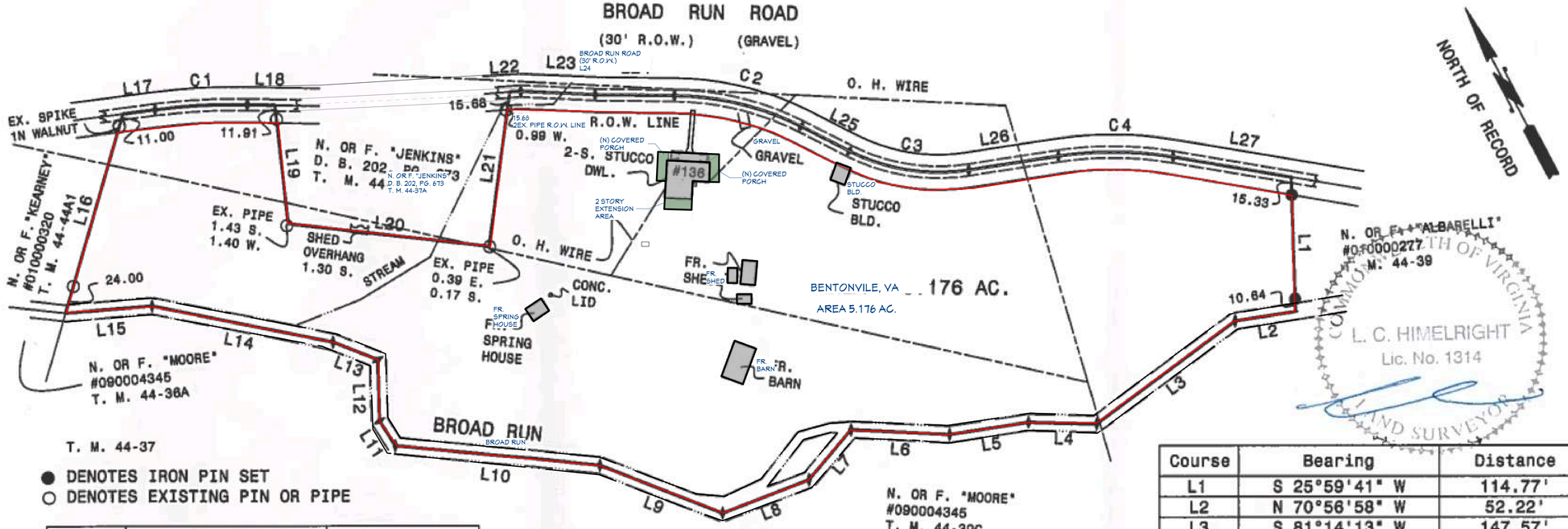
SHEET CONTENTS:

PROJECT NO.:
DATE: 10/9/2025

DRAWING NO.: A0.1

* G.C. TO FIELD VERIFY ALL MEASUREMENTS ON SITE.

* REFER TO ORGINAL SURVEY FOR PROPERTY DIMENSIONS



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C4	310.02'	99.07'	18°18'35"	98.65'	S 61°41'52" E

LEGEND	
LINE	DESCRIPTION
	PROPERTY LINE
	SUBJECT PROPERTY
	SETBACK LINE

PROPOSED SQ. FT.:
1ST FLOOR: 1323 S.F (CONDITIONED)
2ND FLOOR: 1323S.F (CONDITIONED)
OPEN PORCH: 683 S.F (UNCONDITIONED)
TOTAL: 3329 S.F

TOTAL CONDITIONED SPACE: 2646 SQ.FT
TOTAL UNCONDITIONED SPACE: 683 SQ.FT

2 PROPOSED LOT LAYOUT

SCALE: 1" = 50 FT.

BENTONVILLE, VA 22610

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SCALE:

SHEET CONTENTS:

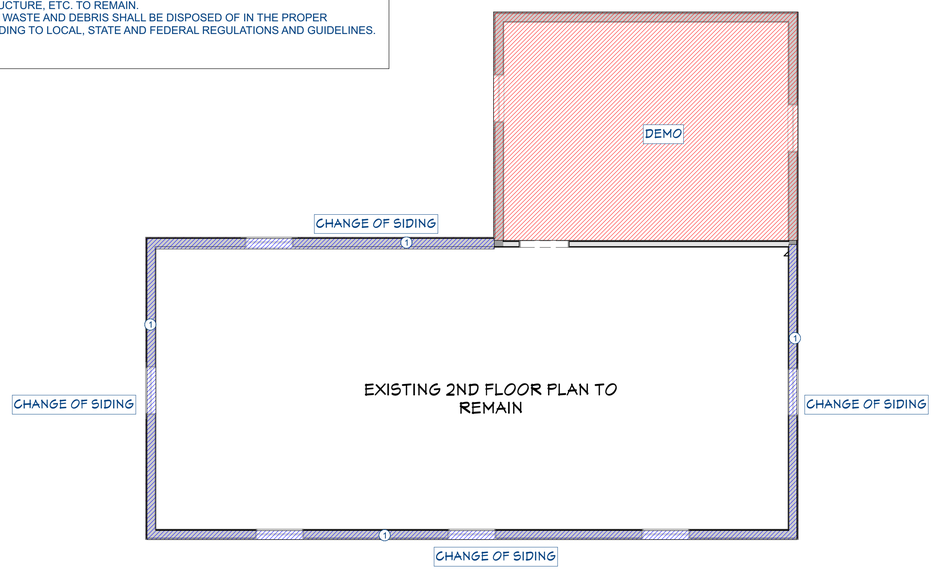
PROJECT NO.:
DATE: 10/9/2025

DRAWING NO.: **A0.2**

* G.C. TO FIELD VERIFY ALL MEASUREMENTS ON SITE.

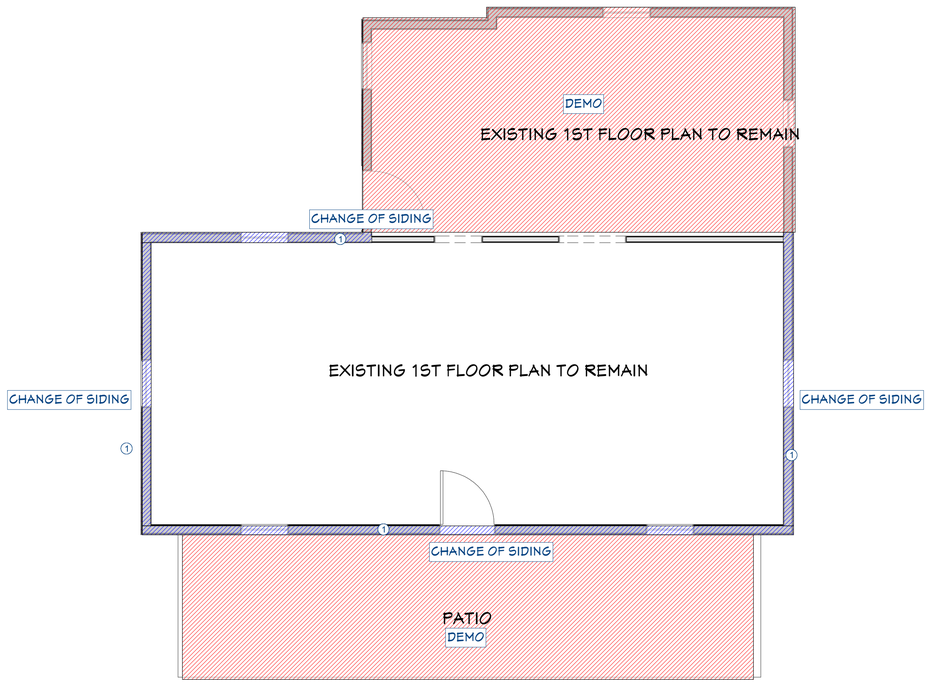
GENERAL DEMOLITION NOTES:

1. IF DURING DEMOLITION CONDITIONS ARE FOUND THAT MAY JEOPARDIZE THE INTEGRITY OF THE STRUCTURE OR PRECLUDE FOLLOWING DESIGN INTENT, THE G.C. IS TO NOTIFY OWNER IMMEDIATELY.
2. G.C. IS RESPONSIBLE FOR ALL ON SITE INVESTIGATION PRIOR TO DEMOLITION TO REVEAL THE FULL SCOPE OF WORK. NOTIFY OWNER IF EXISTING CONDITIONS DEVIATE FROM CONSTRUCTION DOCUMENTS.
3. PATCH, REPAIR AND PREP ANY WALLS, FLOORS OR CEILINGS THAT ARE TO REMAIN THAT ARE DAMAGED FROM CONSTRUCTION.
4. DEMOLITION PLANS REPRESENT APPROX. LOCATION OF EXISTING WALLS & ROOF SECTIONS TO BE DEMOLISHED. F.V. ALL TYPE OF EXISTING CONSTRUCTION AND THE HEIGHTS OF WALLS, CEILINGS, ROOF PITCH AND ACTUAL GRADE. PLANS DO NOT NECESSARILY INDICATE ALL WALLS TO BE DEMOLISHED, WINDOWS/DOORS TO BE REMOVED OR MOVED, COUNTERS, CLOSETS, SINKS, ETC.
5. PRIOR TO DEMO, F.V.THAT WALLS OR ROOF SECTIONS TO BE REMOVED DO NOT PROVIDE STRUCTURAL SUPPORT FOR THE EXISTING BUILDING ELEMENTS AND EXISTING CONSTRUCTION THAT IS TO REMAIN. NOTIFY ARCHITECT, STRUCTURAL ENGINEER AND OWNER IF DEMOLITION WALLS SUPPORT EXISTING BUILDING ELEMENTS.
6. PROTECT EXISTING WALLS, FLOORS, WINDOWS, DOORS, CABINETS AND CORNERS TO REMAIN DURING THE COURSE OF THE WORK.
7. THE G.C. SHALL PERFORM THE WORK IN A MANNER THAT DOES NOT DAMAGE THE EXISTING STRUCTURE OR ELEMENTS TO REMAIN. DEMOLITION SHALL NOT COMPROMISE THE STRUCTURAL INTEGRITY OF ANY WALLS, FLOORS, CEILINGS, SUPPORTS, STRUCTURE, ETC. TO REMAIN.
8. ALL DEMOLITION WASTE AND DEBRIS SHALL BE DISPOSED OF IN THE PROPER MANNER ACCORDING TO LOCAL, STATE AND FEDERAL REGULATIONS AND GUIDELINES.



A EXISTING 1ST FLOOR PLAN

SCALE: 1/4" = 1'-0" FT.



B EXISTING 2ND FLOOR PLAN

SCALE: 1/4" = 1'-0" FT.

DEMO NOTES	
1	EXT. EXTERIOR WALL SIDINGS TO BE CHANGED
2	DEMO ROOF

3 EXISTING FLOOR PLAN

SCALE: 1/4" = 1'-0" FT.

BENTONVILLE, VA 22610

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PROJECT NO.:

DATE: 10/9/2025

DRAWING NO.: **A1.0**

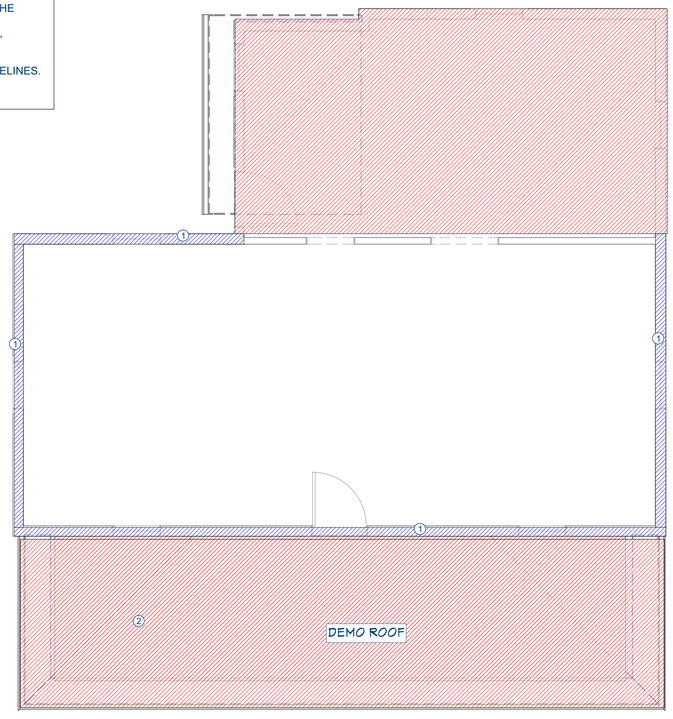
* G.C. TO FIELD VERIFY ALL MEASUREMENTS ON SITE.

GENERAL DEMOLITION NOTES:

1. IF DURING DEMOLITION CONDITIONS ARE FOUND THAT MAY JEOPARDIZE THE INTEGRITY OF THE STRUCTURE OR PRECLUDE FOLLOWING DESIGN INTENT, THE G.C. IS TO NOTIFY OWNER IMMEDIATELY.
2. G.C. IS RESPONSIBLE FOR ALL ON SITE INVESTIGATION PRIOR TO DEMOLITION TO REVEAL THE FULL SCOPE OF WORK. NOTIFY OWNER IF EXISTING CONDITIONS DEVIATE FROM CONSTRUCTION DOCUMENTS.
3. PATCH, REPAIR AND PREP ANY WALLS, FLOORS OR CEILINGS THAT ARE TO REMAIN THAT ARE DAMAGED FROM CONSTRUCTION.
4. DEMOLITION PLANS REPRESENT APPROX. LOCATION OF EXISTING WALLS & ROOF SECTIONS TO BE DEMOLISHED. F.V. ALL TYPE OF EXISTING CONSTRUCTION AND THE HEIGHTS OF WALLS, CEILINGS, ROOF PITCH AND ACTUAL GRADE. PLANS DO NOT NECESSARILY INDICATE ALL WALLS TO BE DEMOLISHED, WINDOWS/DOORS TO BE REMOVED OR MOVED, COUNTERS, CLOSETS, SINKS, ETC.
5. PRIOR TO DEMO, F.V.THAT WALLS OR ROOF SECTIONS TO BE REMOVED DO NOT PROVIDE STRUCTURAL SUPPORT FOR THE EXISTING BUILDING ELEMENTS AND EXISTING CONSTRUCTION THAT IS TO REMAIN. NOTIFY ARCHITECT, STRUCTURAL ENGINEER AND OWNER IF DEMOLITION WALLS SUPPORT EXISTING BUILDING ELEMENTS.
6. PROTECT EXISTING WALLS, FLOORS, WINDOWS, DOORS, CABINETS AND CORNERS TO REMAIN DURING THE COURSE OF THE WORK.
7. THE G.C. SHALL PERFORM THE WORK IN A MANNER THAT DOES NOT DAMAGE THE EXISTING STRUCTURE OR ELEMENTS TO REMAIN. DEMOLITION SHALL NOT COMPROMISE THE STRUCTURAL INTEGRITY OF ANY WALLS, FLOORS, CEILINGS, SUPPORTS, STRUCTURE, ETC. TO REMAIN.
8. ALL DEMOLITION WASTE AND DEBRIS SHALL BE DISPOSED OF IN THE PROPER MANNER ACCORDING TO LOCAL, STATE AND FEDERAL REGULATIONS AND GUIDELINES.

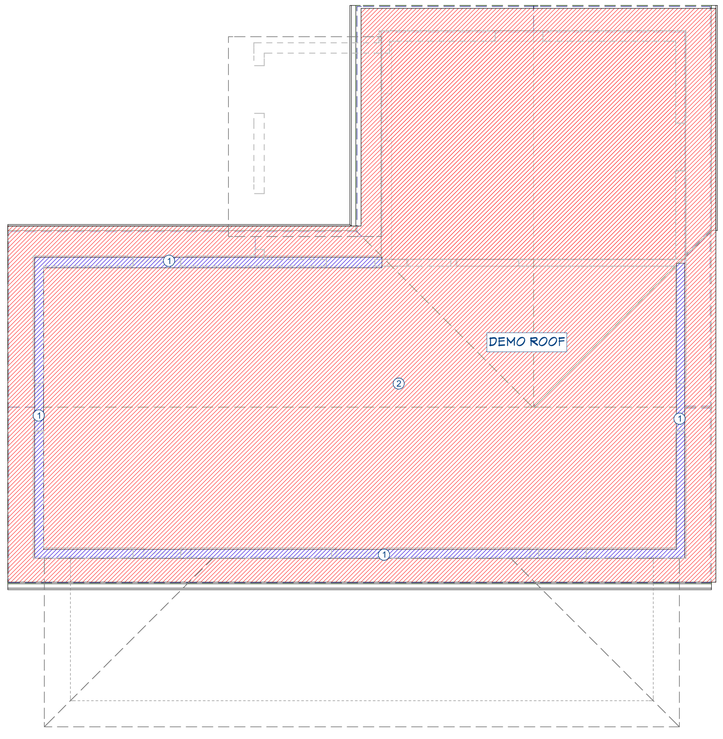
SIDING REMODEL NOTES:

1. REMOVE EXISTING SIDING ON ALL SIDES; DISPOSE PER LOCAL REGULATIONS.
2. INSTALL NEW HORIZONTAL VINYL LAP SIDING PER MFR. SPECS AND IRC 2021.
3. PROVIDE WEATHER-RESISTANT BARRIER (e.g., TYVEK OR EQUIV.) BEHIND SIDING.
4. FLASH ALL PENETRATIONS (WINDOWS, DOORS, VENTS) PER MFR. AND CODE.
5. MAINTAIN MIN. 6" CLEARANCE FROM GRADE; 1" FROM ROOF SURFACES.
6. FASTENERS TO BE CORROSION-RESISTANT; SPACING PER MFR.
7. ALIGN SIDING COURSES LEVEL AND PLUMB; VERIFY WITH CLIENT PRIOR TO INSTALL.
8. PROVIDE KICK-OUT FLASHING AT ROOF-WALL INTERSECTIONS.
9. CAULK ALL TRIM AND TRANSITIONS WITH PAINTABLE EXTERIOR-GRADE SEALANT.
10. COORDINATE WITH MEP TRADES FOR PENETRATION LOCATIONS.
11. FINAL INSTALLATION SUBJECT TO FIELD VERIFICATION AND COUNTY INSPECTION.



A EXISTING 1ST FLOOR PORCH ROOF PLAN

SCALE: 1/4" = 1'-0" FT.



B EXISTING 2ND FLOOR ROOF PLAN

SCALE: 1/4" = 1'-0" FT.

DEMO NOTES	
1	EXT. EXTERIOR WALL SIDINGS TO BE CHANGED
2	DEMO ROOF

4 EXISTING ROOF PLAN

SCALE: 1/4" = 1'-0" FT.

BENTONVILLE, VA 22610

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PROJECT NO.:

DATE: 10/9/2025

DRAWING NO.: **A1.1**

* G.C. TO FIELD VERIFY ALL MEASUREMENTS ON SITE.

NOTE: RE. STRUCTURAL FOR FOUNDATION, CONNECTION AND ALL FRAMING DETAILS

RANGE HOOD NOTES:

IMC CH. 5. SEC. 505.4; MAKEUP AIR:
- 505.4: MAKEUP AIR REQUIRED:
EXHAUST HOOD SYSTEMS CAPABLE OF EXHAUSTING IN EXCESS OF 400 CFM SHALL BE PROVIDED WITH MAKEUP AIR AT A RATE APPROXIMATELY EQUAL TO THE EXHAUST AIR RATE. SUCH MAKEUP AIR SYSTEMS SHALL BE EQUIPPED WITH A MEANS OF CLOSURE AND SHALL BE AUTOMATICALLY CONTROLLED TO START AND OPERATE SIMULTANEOUSLY WITH THE EXHAUST SYSTEM.

IMC CH. 5. SEC.505.3 EXHAUST DUCTS:
- DOMESTIC COOKING
EXHAUST EQUIPMENT SHALL DISCHARGE TO THE OUTDOORS THROUGH SHEET METAL DUCTS CONSTRUCTED OF GALVANIZED STEEL, STAINLESS STEEL, ALUMINUM OR COPPER. SUCH DUCTS SHALL HAVE SMOOTH INNER WALLS, SHALL BE AIRTIGHT AND SHALL BE EQUIPPED WITH A BACKDRAFT DAMPER.

IMC CH. 4, SEC. 403.1 VENTILATION SYSTEM:
- MECHANICAL VENTILATION SHALL BE PROVIDED BY A METHOD OF SUPPLY AIR AND RETURN OR EXHAUST AIR EXCEPT THAT MECHANICAL VENTILATION AIR REQUIREMENTS FOR GROUP R-2, R-3 AND R-4 OCCUPANCIES THREE STORIES AND LESS IN HEIGHT ABOVE GRADE PLANE SHALL BE PROVIDED BY AN EXHAUST SYSTEM, SUPPLY SYSTEM OR COMBINATION THEREOF. THE AMOUNT OF SUPPLY AIR SHALL BE APPROXIMATELY EQUAL TO THE AMOUNT OF RETURN AND EXHAUST AIR. THE SYSTEM SHALL NOT BE PROHIBITED FROM PRODUCING NEGATIVE OR POSITIVE PRESSURE. THE SYSTEM TO CONVEY VENTILATION AIR SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH CHAPTER 6.

IECC 2021 ZONE 4 INSULATION REQUIREMENTS:

CEILING R-VALUE: R-60
WOOD FRAME WALL R-VALUE: R-20 + 5 C.I
MASS WALL R-VALUE: R-8/13
FLOOR R-VALUE: R-19
BASEMENT WALL R-VALUE: R-10/13
SLAB R-VALUE AND DEPTH: R-10, 4 FT
CRAWL SPACE WALL R-VALUE: R-10/13

RADON GENERAL NOTES: SUB SLAB RADON SYSTEM
1. ALL POTENTIAL RADON ENTRY ROUTES INTO THE HOUSE SHALL BE SEALED OR OTHERWISE PROTECTED FROM POTENTIAL ENTRY.
2. AIR HANDLING UNITS IN CRAWL SPACES SHALL BE SEALED TO PREVENT AIR FROM BEING DRAWN INTO THE UNIT
3. CONCRETE AND MASONRY BLOCK WALL BELOW GRADE SHALL BE DAMPPROOFED IN ACCORDANCE WITH SECTION R406
4. VENT PIPE: AF103.6.1: A PLUMBING TEE OR OTHER APPROVED CONNECTION SHALL BE INSTALLED HORIZONTALLY BENEATH THE SHEETING AND CONNECTED TO A 3 OR 4 INCH DIAMETER VERTICAL PIPE EXTENDED UP THROUGH THE BUILDING FLOOR AND TERMINATED 12 INCHES ABOVE THE ROOF, NO LESS THAN 10 FEET AWAY FROM ANY WINDOW OR OPENING INTO THE CONDITIONED SPACE OF THE HOUSE.
5. A SINGLE PIPE HAS SOME LIMITATIONS WHEN THE SUB FLOOR AREA IS INTERRUPTED BY FOOTINGS OR OTHER CUTS.
6. VENT PIPE: A PLUMBING TEE OR OTHER APPROVE CONNECTION SHALL BE INSTALLED HORIZONTALLY BENEATH THE SHEETING AND CONNECTED TO A 3 OR 4 INCH DIAMETER VERTICAL PIPE EXTENDED UP THROUGH THE BUILDING AND TERMINATE 12 INCHES ABOVE THE ROOF, NOT LESS THAN 10 FEET AWAY FORM ANY WINDOW OR OPENING INTO THE CONDITIONED SPACE OF THE HOUSE (AF103.6.1)
7. 6 MIL POLYETHYLENE SHEETING OVER ENTIRE FLOOR, SECTIONS LAPPED 12", ALL PENETRATIONS TO BE SEALED (AF103.3)
8. 4" PERFORATED PIPE BURIED IN GAS PERMEABLE MATERIAL, MIN 4" BELOW SLAB (AF103.2)

GENERAL NOTE FOR EXTERIOR STAIRS (VIRGINIA USBC)

1. EXTERIOR STAIRS SHALL COMPLY WITH VIRGINIA RESIDENTIAL CODE SECTIONS R311.7.5.1 & R311.7.5.2.

2. MAXIMUM RISER HEIGHT: 8 1/4 INCHES (210 MM).

3. MINIMUM TREAD DEPTH: 9 INCHES (229 MM).

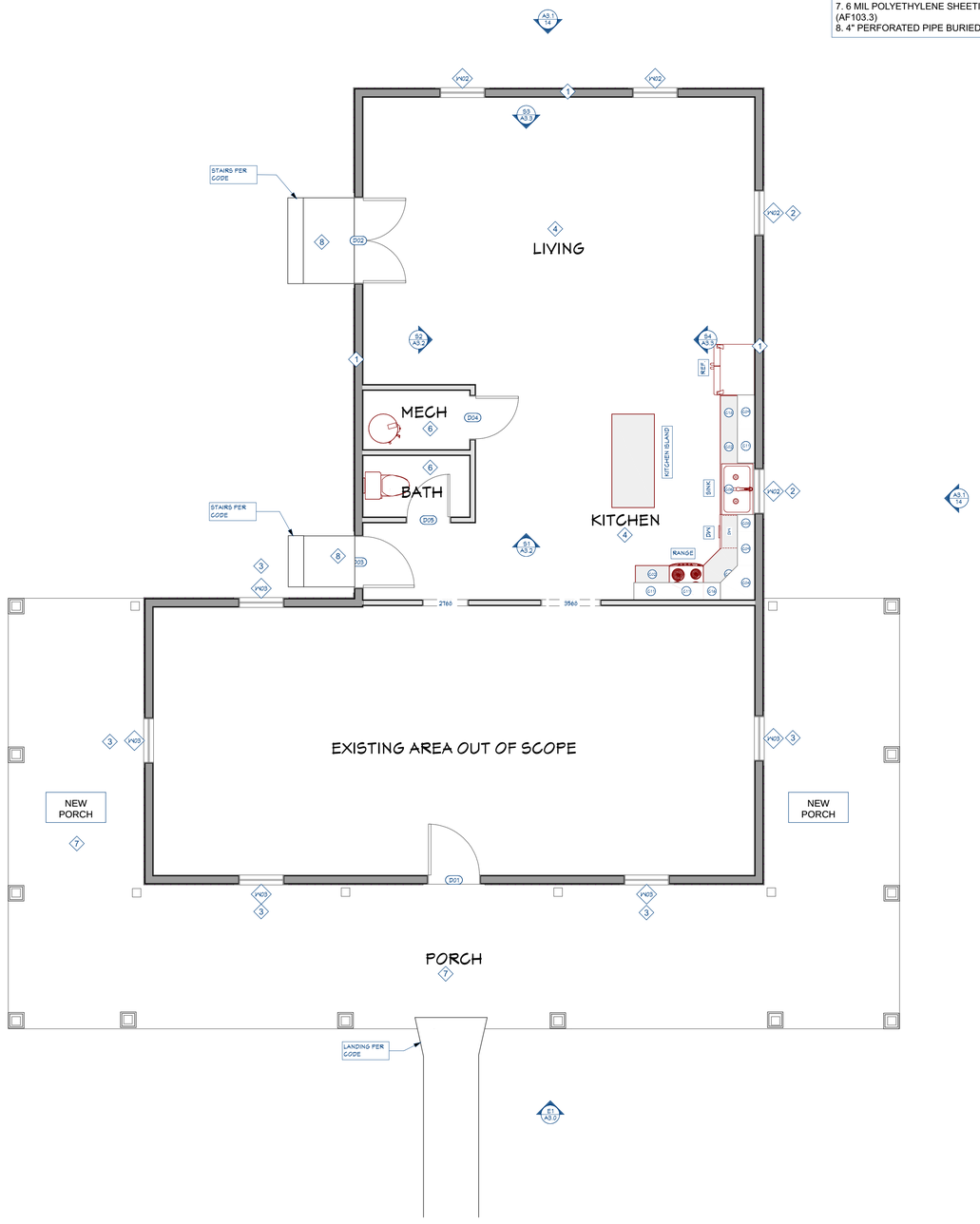
4. RISER AND TREAD DIMENSIONS SHALL BE UNIFORM WITHIN EACH FLIGHT, WITH A MAXIMUM VARIATION OF 3/8 INCH (9.5 MM).

5. NOSING SHALL PROJECT 3/4 INCH MINIMUM TO 1-1/4 INCH MAXIMUM WHERE TREAD DEPTH IS LESS THAN 11 INCHES.

6. HANDRAILS REQUIRED ON STAIRS WITH 4 OR MORE RISERS, INSTALLED PER SECTION R311.7.8.

6. GUARDS REQUIRED ON OPEN SIDES OF STAIRS AND LANDINGS PER SECTION R312.

7. ALL DIMENSIONS TO BE FIELD VERIFIED AND ADJUSTED AS NECESSARY TO MEET CODE PRIOR TO CONSTRUCTION.



CONSTRUCTION NOTES	
1	(N) EXT. WALLS: R20 + R-5 C.I HORIZONTAL LAP SIDING COLOR: TBD BY OWNER/G.C
2	NEW WINDOWS TO BE INSTALLED
3	EXISTING WINDOWS TO REMAIN
4	FLOORING TO BE CARPET. F.V. FINAL COLOR, BRAND AND STYLE W/OWNER
5	FLOORING TO BE VINYL WIDE PLANK OR HARDWOOD - F.V. FINAL COLOR, BRAND AND STYLE W/OWNER
6	TILE FLOORING
7	NEW PORCH CONCRETE FLOOR, SLOPED AWAY FROM HOUSE @1/4"
8	EXTERIOR STAIRS TO BE FIELD VERIFIED AND CONSTRUCTED PER VIRGINIA RESIDENTIAL CODE R311.7.5.1 & R311.7.5.2 (MAX RISER HEIGHT 8¼", MIN TREAD DEPTH 9", UNIFORM WITHIN 3/8").

5 PROPOSED FLOOR PLAN - 1ST FLOOR

SCALE: 1/4" = 1'-0" FT.

BENTONVILLE, VA 22610

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PROJECT NO.:

DATE: 10/9/2025

DRAWING NO.: **A2.0**

* G.C. TO FIELD VERIFY ALL MEASUREMENTS ON SITE.

AIR BARRIERS AND INSULATION SHALL BE INSTALLED ACCORDING TO THE MANUFACTURERS INSTRUCTIONS AND THE CRITERIA IN TABLE R402.4.1.1

NOTE: RE. STRUCTURAL FOR FOUNDATION, CONNECTION AND ALL FRAMING DETAILS

IECC 2021 ZONE 4 INSULATION REQUIREMENTS:

CEILING R-VALUE: R-60
WOOD FRAME WALL R-VALUE: R-20 + 5 C.I
MASS WALL R-VALUE: R-8/13
FLOOR R-VALUE: R-19
BASEMENT WALL R-VALUE: R-10/13
SLAB R-VALUE AND DEPTH: R-10, 4 FT
CRAWL SPACE WALL R-VALUE: R-10/13

GENERAL NOTE FOR EXTERIOR STAIRS (VIRGINIA USBC)

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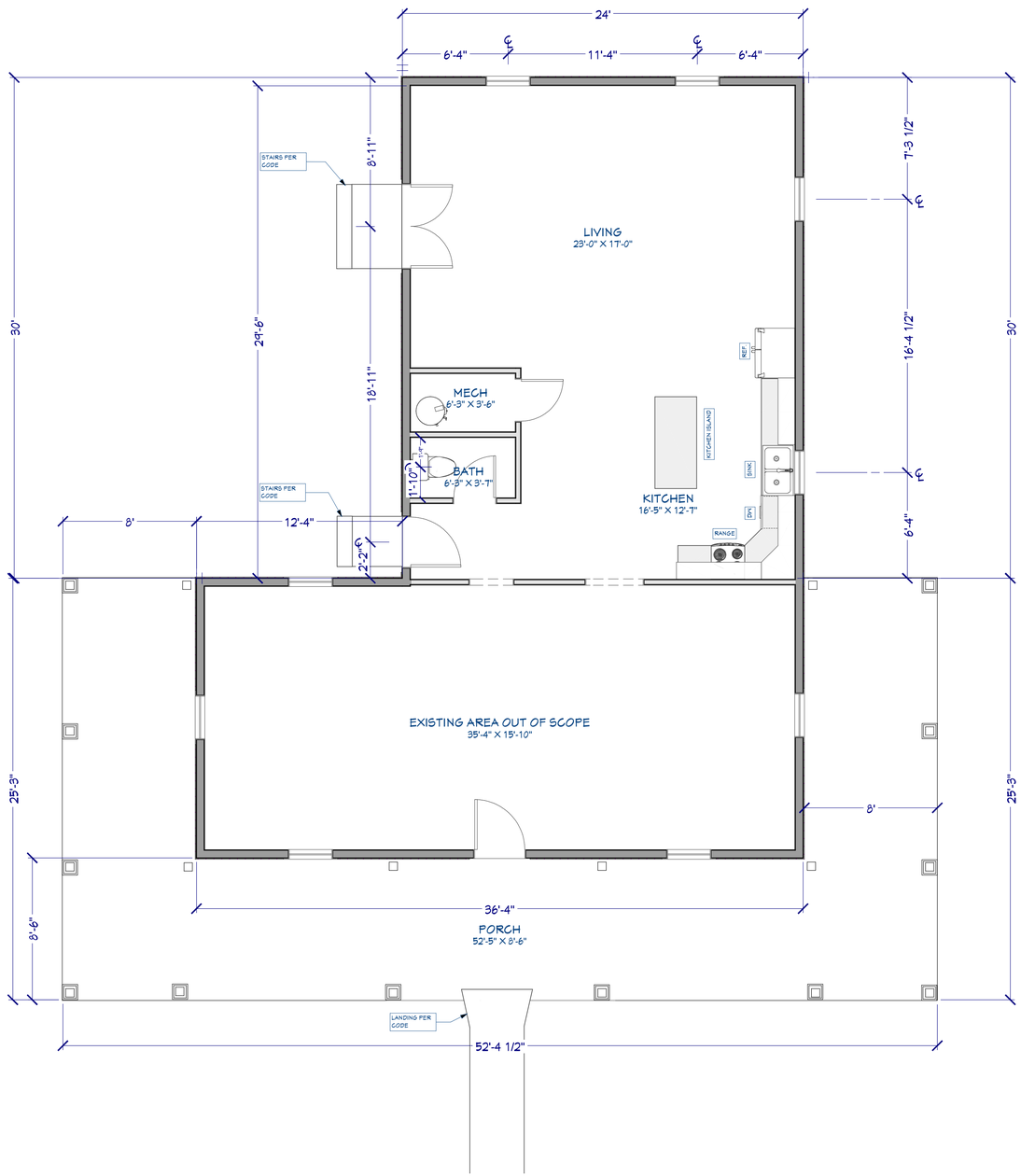

6 PROPOSED FLOOR PLAN DIMENSIONED - 1ST FLOOR

SCALE: 1/4" = 1'-0" FT.

BENTONVILLE, VA 22610

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No.	DESCRIPTION	DATE

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DATE: 10/9/2025

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* G.C. TO FIELD VERIFY ALL MEASUREMENTS ON SITE.

NOTE: RE. STRUCTURAL FOR FOUNDATION, CONNECTION AND ALL FRAMING DETAILS

RANGE HOOD NOTES:

IMC CH. 5. SEC. 505.4; MAKEUP AIR:
- 505.4: MAKEUP AIR REQUIRED:
EXHAUST HOOD SYSTEMS CAPABLE OF EXHAUSTING IN EXCESS OF 400 CFM SHALL BE PROVIDED WITH MAKEUP AIR AT A RATE APPROXIMATELY EQUAL TO THE EXHAUST AIR RATE. SUCH MAKEUP AIR SYSTEMS SHALL BE EQUIPPED WITH A MEANS OF CLOSURE AND SHALL BE AUTOMATICALLY CONTROLLED TO START AND OPERATE SIMULTANEOUSLY WITH THE EXHAUST SYSTEM.

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- MECHANICAL VENTILATION SHALL BE PROVIDED BY A METHOD OF SUPPLY AIR AND RETURN OR EXHAUST AIR EXCEPT THAT MECHANICAL VENTILATION AIR REQUIREMENTS FOR GROUP R-2, R-3 AND R-4 OCCUPANCIES THREE STORIES AND LESS IN HEIGHT ABOVE GRADE PLANE SHALL BE PROVIDED BY AN EXHAUST SYSTEM, SUPPLY SYSTEM OR COMBINATION THEREOF. THE AMOUNT OF SUPPLY AIR SHALL BE APPROXIMATELY EQUAL TO THE AMOUNT OF RETURN AND EXHAUST AIR. THE SYSTEM SHALL NOT BE PROHIBITED FROM PRODUCING NEGATIVE OR POSITIVE PRESSURE. THE SYSTEM TO CONVEY VENTILATION AIR SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH CHAPTER 6.

IECC 2021 ZONE 4 INSULATION REQUIREMENTS:

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FLOOR R-VALUE: R-19
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SLAB R-VALUE AND DEPTH: R-10, 4 FT
CRAWL SPACE WALL R-VALUE: R-10/13

RADON GENERAL NOTES: SUB SLAB RADON SYSTEM
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7. 6 MIL POLYETHYLENE SHEETING OVER ENTIRE FLOOR, SECTIONS LAPPED 12", ALL PENETRATIONS TO BE SEALED (AF103.3)
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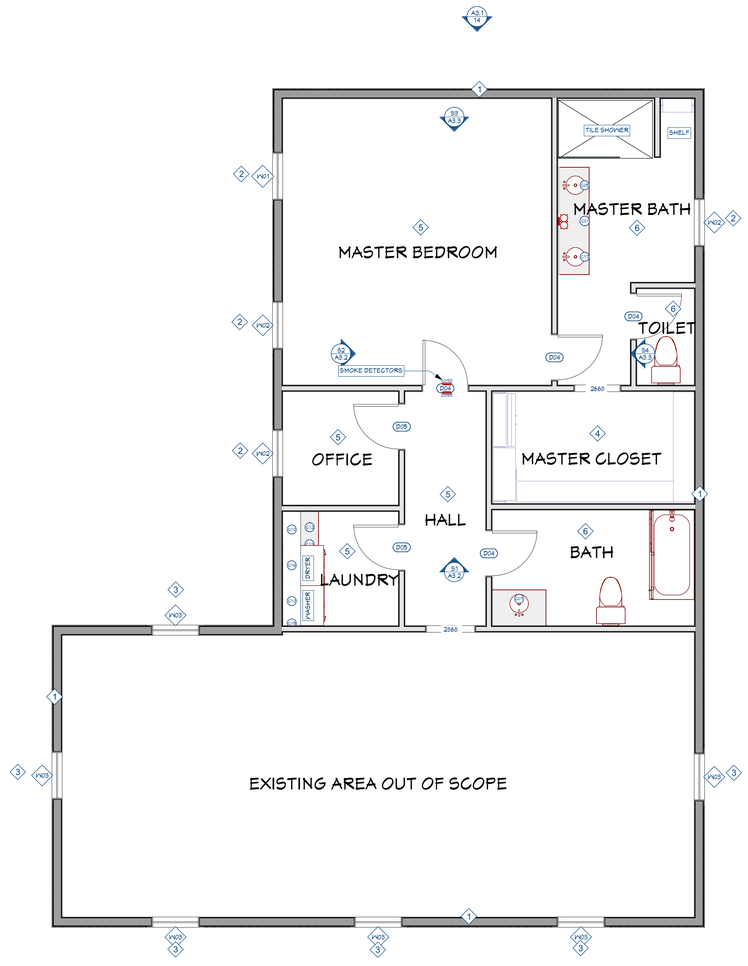

CONSTRUCTION NOTES	
1	(N) EXT. WALLS: R20 + R-5 C.I HORIZONTAL LAP SIDING COLOR: TBD BY OWNER/G.C
2	NEW WINDOWS TO BE INSTALLED
3	EXISTING WINDOWS TO REMAIN
4	FLOORING TO BE CARPET. F.V. FINAL COLOR, BRAND AND STYLE W/OWNER
5	FLOORING TO BE VINYL WIDE PLANK OR HARDWOOD - F.V. FINAL COLOR, BRAND AND STYLE W/OWNER
6	TILE FLOORING
7	CONCRETE FLOOR, SLOPED AWAY FROM HOUSE @1/4"

LIVING AREA
1329 SQ FT

7 PROPOSED FLOOR PLAN - 2ND FLOOR

SCALE: 1/4" = 1'-0" FT.

BENTONVILLE, VA 22610

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PROJECT NO.:

DATE: 10/9/2025

DRAWING NO.: **A2.2**

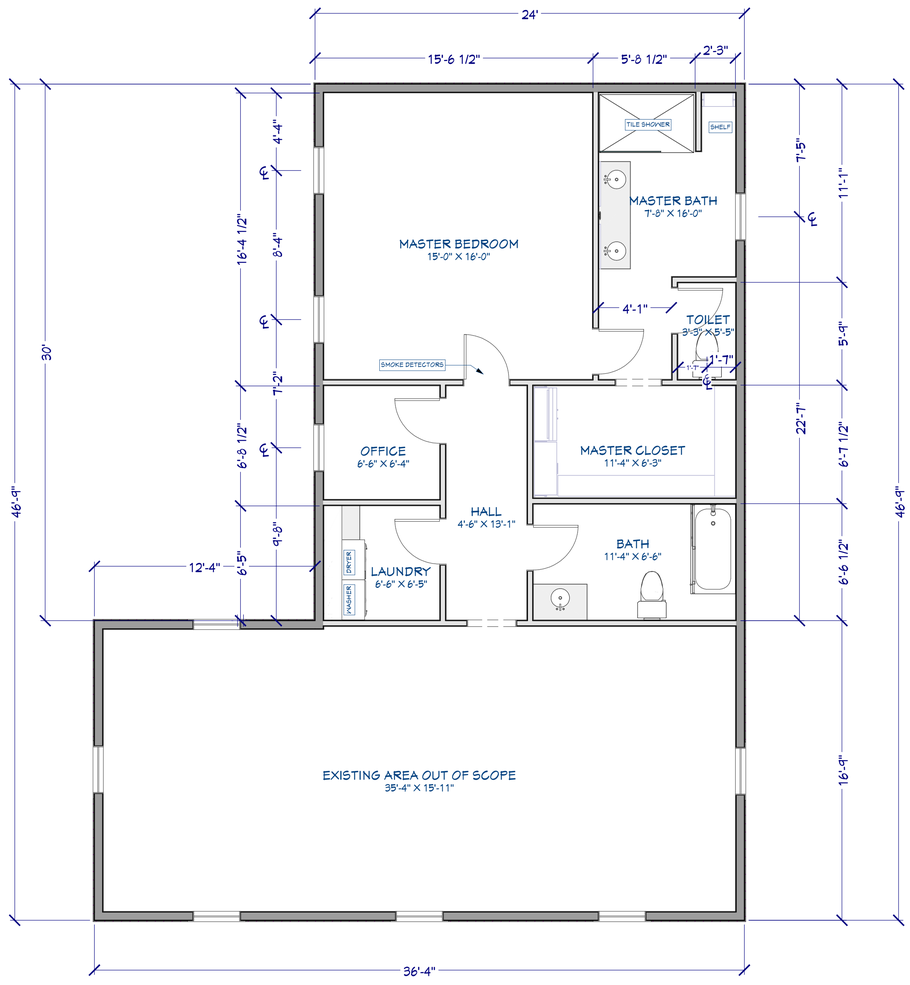
* G.C. TO FIELD VERIFY ALL MEASUREMENTS ON SITE.

AIR BARRIERS AND INSULATION SHALL BE INSTALLED ACCORDING TO THE MANUFACTURERS INSTRUCTIONS AND THE CRITERIA IN TABLE R402.4.1.1

NOTE: RE. STRUCTURAL FOR FOUNDATION, CONNECTION AND ALL FRAMING DETAILS

IECC 2021 ZONE 4 INSULATION REQUIREMENTS:

CEILING R-VALUE: R-60
WOOD FRAME WALL R-VALUE: R-20 + 5 C.I
MASS WALL R-VALUE: R-8/13
FLOOR R-VALUE: R-19
BASEMENT WALL R-VALUE: R-10/13
SLAB R-VALUE AND DEPTH: R-10, 4 FT
CRAWL SPACE WALL R-VALUE: R-10/13



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DATE: 10/9/2025

DRAWING NO.: **A2.3**

8 PROPOSED FLOOR PLAN DIMENSIONED - 2ND FLOOR

SCALE: 1/4" = 1'-0" FT.

*** G.C. TO FIELD VERIFY ALL MEASUREMENTS ON SITE.**

AIR BARRIERS AND INSULATION SHALL BE INSTALLED ACCORDING TO THE MANUFACTURERS INSTRUCTIONS AND THE CRITERIA IN TABLE R402.4.1.1

NOTE: RE. STRUCTURAL FOR FOUNDATION, CONNECTION AND ALL FRAMING DETAILS

VENTILATION:

1. ATTIC SHALL HAVE VENTILATION EQUAL TO 1 SQ. FT. PER 150 SQ. FT. OF ATTIC SPACE. VENTILATION SHALL BE PROTECTED FROM SNOW AND RAIN AND SHALL BE COVERED WITH GALVANIZED WIRE SCREEN. OPENINGS SHALL BE LOCATED TO PROVIDE CROSS VENTILATION.

- R806.2 MINIMUM VENT AREA:
THE MINIMUM NET FREE VENTILATING AREA SHALL BE 1/150 OF THE AREA OF THE VENTED SPACE.
EXCEPTION: THE MINIMUM NET FREE VENTILATION AREA SHALL BE 1/300 OF THE VENTED SPACE PROVIDED BOTH OF THE FOLLOWING CONDITIONS ARE MET:

1 IN CLIMATE ZONES 6, 7 AND 8, A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING.

2 NOT LESS THAN 40% AND NOT MORE THAN 50% OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE ATTIC OR RAFTER SPACE. UPPER VENTILATORS SHALL BE LOCATED NOT MORE THAN 3 FT. BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE, MEASURED VERTICALLY. THE BALANCE OF THE REQUIRED VENTILATION PROVIDED SHALL BE LOCATED IN THE BOTTOM ONE-THIRD OF THE ATTIC SPACE. WHERE THE LOCATION OF WALL OR ROOF FRAMING MEMBERS CONFLICTS WITH THE INSTALLATION OF UPPER VENTILATORS, INSTALLATION MORE THAN 3 FT. BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE SHALL BE PERMITTED.

*G.C. TO DETERMINE PROPER DETERMINING CALCULATION FOR USE

1/150:
ATTIC SQ. FT. = 1245 SQ. FT. +/-
REQ. EXHAUST NFVA (RIDGE/ROOF) = 597 SQ. IN. (MIN.)
REQ. INTAKE NFVA (SOFFIT) = 597 SQ. IN. (MIN.)

1/300:
ATTIC SQ. FT. = 805 SQ. FT. +/-
REQ. EXHAUST NFVA (RIDGE/ROOF)= 193 SQ. IN. (MIN.)
REQ. INTAKE NFVA (SOFFIT) = 193 SQ. IN. (MIN.)

IECC 2021 ZONE 4 INSULATION REQUIREMENTS:

CEILING R-VALUE: R-60
WOOD FRAME WALL R-VALUE: R-20 + 5 C.I
MASS WALL R-VALUE: R-8/13
FLOOR R-VALUE: R-19
BASEMENT WALL R-VALUE: R-10/13
SLAB R-VALUE AND DEPTH: R-10, 4 FT
CRAWL SPACE WALL R-VALUE: R-10/13

ROOF NOTE – 2:12 ASPHALT SHINGLES STANDING SEAM METAL PORCH ROOF

ROOF SLOPE IS 2:12. PER IRC SECTION R905.10 AND MANUFACTURER SPECIFICATIONS,ASPHALT SHINGLES OR STANDING SEAM METAL ROOFING OVER LOW-SLOPE ASSEMBLIES SHALL BE INSTALLED WITH TWO LAYERS OF UNDERLAYMENT OR A SINGLE LAYER OF SELF-ADHERED MEMBRANE. PROVIDE EITHER:
1. TWO LAYERS OF ASTM D226 TYPE II (NO. 30) ASPHALT-SATURATED FELT OR EQUIVALENT SYNTHETIC UNDERLAYMENT, INSTALLED IN SHINGLE FASHION WITH 19" HEADLAP, OR
2. ONE LAYER OF APPROVED SELF-ADHERED UNDERLAYMENT COVERING THE ENTIRE ROOF DECK. UNDERLAYMENT SHALL BE INSTALLED PER MANUFACTURER'S LOW-SLOPE INSTALLATION INSTRUCTIONS AND IRC REQUIREMENTS FOR SLOPES

ATTIC VENTILATION / NO-VENT ZONES
PROVIDE VENTED SOFFIT AT ALLOWABLE EAVES WITH INSULATION BAFFLES OVER TOP PLATE. NO VENTING AT EAVE WITHIN 5 FT OF PROPERTY LINE

Based on your 805 sq. ft. and the 1:150 guideline, you'll need a minimum of:

386 sq. in. — **Exhaust NFVA** (Near ridge of the roof)
386 sq. in. — **Intake NFVA** (On soffits / undereave)

Choose Exhaust System Product
Choose **ONE** of the following products to meet the recommended exhaust NFVA of **386 square inches:**


VentSure®
Rigid Roll Ridge Vent
Amount Required: **31 lineal feet**
Order Qty: **2 rolls**
Product Details


VentSure®
4-Foot Strip Heat & Moisture Ridge Vent with Weather PROtector® Moisture Barrier
Amount Required: **22 lineal feet**
Order Qty: **6 pieces**
Product Details


VentSure®
RidgeCat®
Amount Required: **26 lineal feet**
Order Qty: **2 rolls**
Product Details


VentSure®
4-Foot Strip Heat & Moisture Ridge Vent
Amount Required: **20 lineal feet**
Order Qty: **5 pieces**
Product Details

Based on your 805 sq. ft. and the 1:300 guideline, you'll need a minimum of:

193 sq. in. — **Exhaust NFVA** (Near ridge of the roof)
193 sq. in. — **Intake NFVA** (On soffits / undereave)

Choose Exhaust System Product
Choose **ONE** of the following products to meet the recommended exhaust NFVA of **193 square inches:**

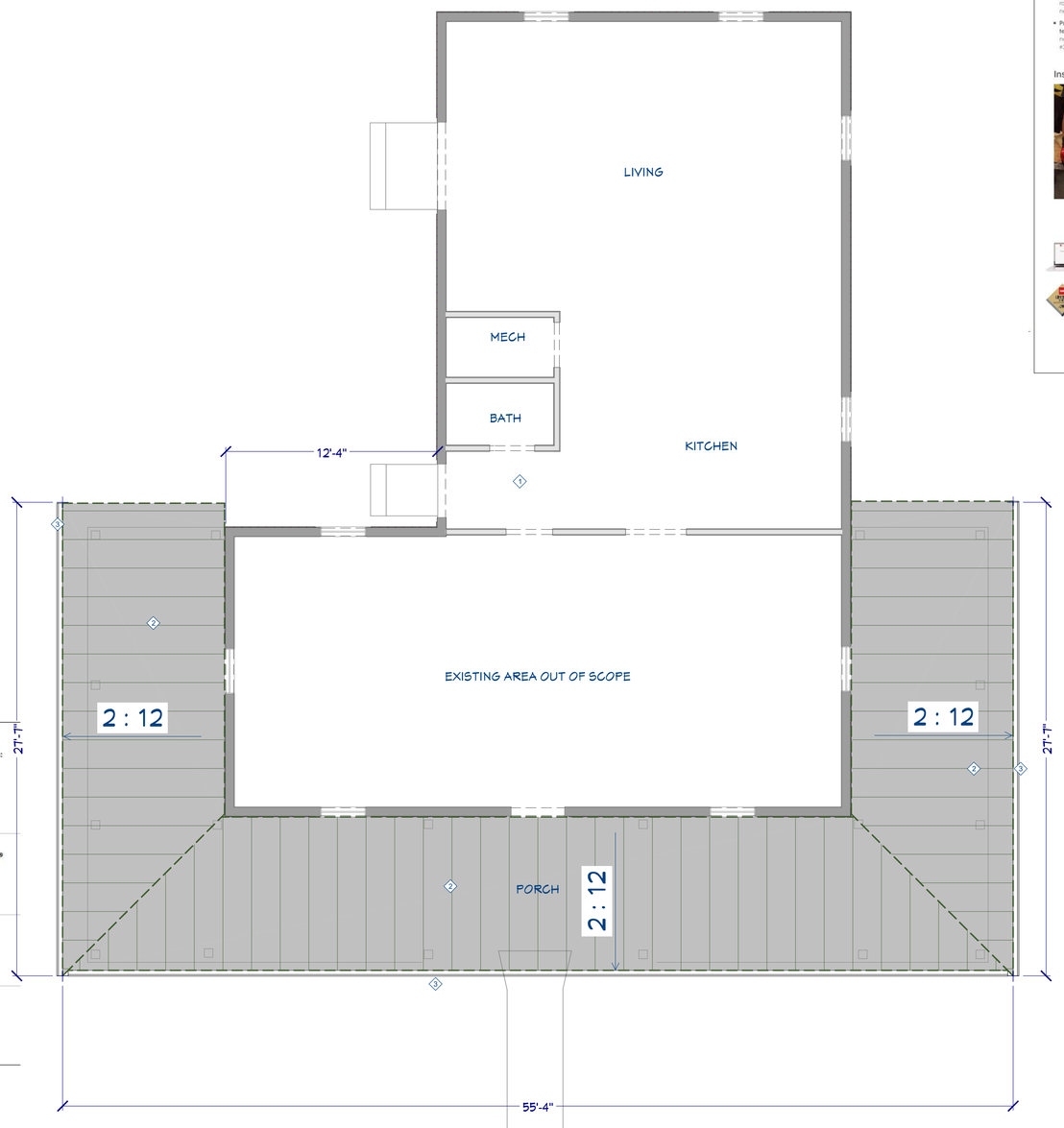

VentSure®
Rigid Roll Ridge Vent
Amount Required: **16 lineal feet**
Order Qty: **1 roll**
Product Details


VentSure®
4-Foot Strip Heat & Moisture Ridge Vent with Weather PROtector® Moisture Barrier
Amount Required: **11 lineal feet**
Order Qty: **3 pieces**
Product Details

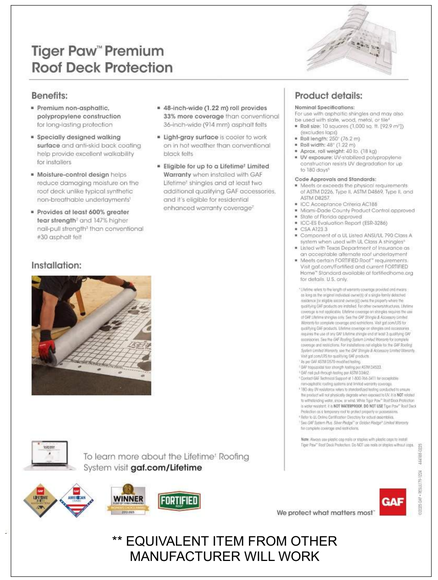

VentSure®
RidgeCat®
Amount Required: **13 lineal feet**
Order Qty: **1 roll**
Product Details


VENTING AREA
1:300 SQ. FT.
VentSure®
4-Foot Strip Heat & Moisture Ridge Vent
Amount Required: **10 lineal feet**
Order Qty: **3 pieces**
Product Details

	ROOF LEGENDS
1	COMPOSITE PRE-ENGINEERED ROOF
2	NEW ASPHALT SHINGLES OR NEW STANDING SEAM METAL ROOF
3	GUTTERS



9 PROPOSED ROOF PLAN - 1ST FLOOR
SCALE: 1/4" = 1'-0" FT.


Tiger Paw™ Premium Roof Deck Protection

Benefits:
- **Premium non-asphaltic polypropylene construction** for long-lasting protection
- **Specially designed walking surface** and anti-skid back coating help provide excellent walkability for installers
- **Moisture-control design** helps reduce damaging moisture on the roof deck unlike typical synthetic non-breathable underlayments[1]
- **Provides at least 400% greater tear strength**[2] and 147% higher nail-pull strength[3] than conventional #30 asphalt felt
- **48-inch-wide (1.22 m) roll provides 33% more coverage** than conventional 36-inch-wide (914 mm) asphalt felts
- **Light-gray surface** is cooler to work on in hot weather than conventional black felts
- **Eligible for up to a Lifetime[1] Limited Warranty** when installed with GAF Lifetime[1] shingles and of at least two additional qualifying GAF accessories, and it's eligible for residential enhanced warranty coverage[4]

Product details:
Nominal Specifications:
For use with asphaltic shingles and may also be used with slate, wood, metal, or tile.
- **Roll size:** 10 squares (1,000 sq. ft. [92.9 m²]) (excluded laps)
- **Roll length:** 250' (76.2 m)
- **Roll width:** 48" (1.22 m)
- **Aprox. roll weight:** 49 lb. (18 kg)
- **UV exposure:** UV-stabilized polypropylene fabric resists UV degradation for up to 180 days[5]

Code Approvals and Standards:
- Meets or exceeds the physical requirements of ASTM D4869, Type II; ASTM D4869 Type II; and ASTM D8257.
- ICC Acceptance Criteria AC188
- Miami-Dade County Product Control approved
- State of Florida approved
- ICC-ES Evaluation Report (ESR-3296)
- CSA A123.3
- Component of a UL Listed ANSI/UL 790 Class A system when used with UL Class A shingles
- Class A fire rating when used in accordance with an acceptable alternate roof underlayment
- Meets certain FORTIFIED Roof™ requirements. Visit gaf.com/Fortified and current FORTIFIED Home™ Standard available at fortifiedhome.org for details. U.S. only.

[1] Lifetime refers to the length of warranty coverage provided and means as long as the original individual owner(s) of a single-family detached residence (or eligible second owner(s)) owns the property where the qualifying GAF products are installed. For other owners/structures, Lifetime coverage is not applicable. Lifetime coverage on shingles requires the use of GAF accessories listed in GAF's Roofing System Limited Warranty. Refer to warranty for complete coverage and restrictions. Visit gaf.com/LSS for qualifying GAF products. Lifetime coverage on shingles and accessories requires the use of one GAF Lifetime shingle and/or wall & qualifying GAF accessories. See the GAF Roofing System Limited Warranty for complete coverage and restrictions. For complete details on GAF's Roofing System Limited Warranty, see the GAF Shingle & Accessory Limited Warranty. Visit gaf.com/LSS for qualifying GAF products.
See GAF 6239 ESR roofing warranty.
[2] GAF Associate tear strength testing per ASTM D5600.
[3] Tested per ASTM D1970 and UL 2218.
[4] Contact GAF Technical Support at 1.800.766.3477 for acceptable compatible roofing systems and limited warranty coverage.
[5] We protect your roof during installation for up to 180 consecutive days. Tiger Paw Premium Roof Deck Protection is eligible when installed in the NEXT video by synthetic underlayment within 180 consecutive days. Tiger Paw Premium Roof Deck Protection is not a temporary roof to protect property or possessions.
Refer to GAF Roofing System Limited Warranty for complete coverage and restrictions.
"Tiger Paw" Roof Deck Protection, "Shed Rite" or "Shed Rite Plus

*** G.C. TO FIELD VERIFY ALL MEASUREMENTS ON SITE.**

AIR BARRIERS AND INSULATION SHALL BE INSTALLED ACCORDING TO THE MANUFACTURERS INSTRUCTIONS AND THE CRITERIA IN TABLE R402.4.1.1

NOTE: RE. STRUCTURAL FOR FOUNDATION, CONNECTION AND ALL FRAMING DETAILS

VENTILATION:

1. ATTIC SHALL HAVE VENTILATION EQUAL TO 1 SQ. FT. PER 150 SQ. FT. OF ATTIC SPACE. VENTILATION SHALL BE PROTECTED FROM SNOW AND RAIN AND SHALL BE COVERED WITH GALVANIZED WIRE SCREEN. OPENINGS SHALL BE LOCATED TO PROVIDE CROSS VENTILATION.

- R806.2 MINIMUM VENT AREA:
THE MINIMUM NET FREE VENTILATING AREA SHALL BE 1/150 OF THE AREA OF THE VENTED SPACE.
EXCEPTION: THE MINIMUM NET FREE VENTILATION AREA SHALL BE 1/300 OF THE VENTED SPACE PROVIDED BOTH OF THE FOLLOWING CONDITIONS ARE MET:

1 IN CLIMATE ZONES 6, 7 AND 8, A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING.

2 NOT LESS THAN 40% AND NOT MORE THAN 50% OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE ATTIC OR RAFTER SPACE. UPPER VENTILATORS SHALL BE LOCATED NOT MORE THAN 3 FT. BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE, MEASURED VERTICALLY. THE BALANCE OF THE REQUIRED VENTILATION PROVIDED SHALL BE LOCATED IN THE BOTTOM ONE-THIRD OF THE ATTIC SPACE. WHERE THE LOCATION OF WALL OR ROOF FRAMING MEMBERS CONFLICTS WITH THE INSTALLATION OF UPPER VENTILATORS, INSTALLATION MORE THAN 3 FT. BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE SHALL BE PERMITTED.

*G.C. TO DETERMINE PROPER DETERMINING CALCULATION FOR USE

1/150:
ATTIC SQ. FT. = 1245 SQ. FT. +/-
REQ. EXHAUST NFVA (RIDGE/ROOF) = 597 SQ. IN. (MIN.)
REQ. INTAKE NFVA (SOFFIT) = 597 SQ. IN. (MIN.)

1/300:
ATTIC SQ. FT. = 805 SQ. FT. +/-
REQ. EXHAUST NFVA (RIDGE/ROOF)= 193 SQ. IN. (MIN.)
REQ. INTAKE NFVA (SOFFIT) = 193 SQ. IN. (MIN.)

IECC 2021 ZONE 4 INSULATION REQUIREMENTS:

CEILING R-VALUE: R-60
WOOD FRAME WALL R-VALUE: R-20 + 5 C.I
MASS WALL R-VALUE: R-8/13
FLOOR R-VALUE: R-19
BASEMENT WALL R-VALUE: R-10/13
SLAB R-VALUE AND DEPTH: R-10, 4 FT
CRAWL SPACE WALL R-VALUE: R-10/13

ROOF NOTE – 2:12 ASPHALT SHINGLES STANDING SEAM METAL PORCH ROOF

ROOF SLOPE IS 2:12. PER IRC SECTION R905.10 AND MANUFACTURER SPECIFICATIONS,ASPHALT SHINGLES OR STANDING SEAM METAL ROOFING OVER LOW-SLOPE ASSEMBLIES SHALL BE INSTALLED WITH TWO LAYERS OF UNDERLAYMENT OR A SINGLE LAYER OF SELF-ADHERED MEMBRANE. PROVIDE EITHER:
1. TWO LAYERS OF ASTM D226 TYPE II (NO. 30) ASPHALT-SATURATED FELT OR EQUIVALENT SYNTHETIC UNDERLAYMENT, INSTALLED IN SHINGLE FASHION WITH 19" HEADLAP, OR
2. ONE LAYER OF APPROVED SELF-ADHERED UNDERLAYMENT COVERING THE ENTIRE ROOF DECK. UNDERLAYMENT SHALL BE INSTALLED PER MANUFACTURER'S LOW-SLOPE INSTALLATION INSTRUCTIONS AND IRC REQUIREMENTS FOR SLOPES

ATTIC VENTILATION / NO-VENT ZONES
PROVIDE VENTED SOFFIT AT ALLOWABLE EAVES WITH INSULATION BAFFLES OVER TOP PLATE. NO VENTING AT EAVE WITHIN 5 FT OF PROPERTY LINE

Based on your 1245 sq. ft. and the 1:150 guideline, you'll need a minimum of:

597 sq. in. — **Exhaust NFVA** (Near ridge of the roof)
597 sq. in. — **Intake NFVA** (On soffits / undereave)

Choose Exhaust System Product
Choose **ONE** of the following products to meet the recommended exhaust NFVA of **597 square inches:**

VentSure®
Metal Slant Back Vent
Amount Required: **12 pieces**
Product Details

Choose Intake System Product
Choose **ONE** of the following products to meet the recommended intake NFVA of **597 square inches:**

VentSure®
InFlow® Intake Vent
Amount Required: **60 lineal feet**
Order Qty: **15 pieces**
Product Details

Soffit Vent
Amount Required: **246-938 pieces**
Order Qty: **938 2" pieces | 439 3" pieces | 246 4" pieces**
*These products are not offered by Owens Corning.

Undereave Intake Vent
Amount Required: **16-37 pieces**
Order Qty: **37 4x16" pieces | 22 6.16" pieces | 16 8x16" pieces**
*These products are not offered by Owens Corning.

Based on your 1245 sq. ft. and the 1:300 guideline, you'll need a minimum of:

298 sq. in. — **Exhaust NFVA** (Near ridge of the roof)
298 sq. in. — **Intake NFVA** (On soffits / undereave)

Choose Exhaust System Product
Choose **ONE** of the following products to meet the recommended exhaust NFVA of **298 square inches:**

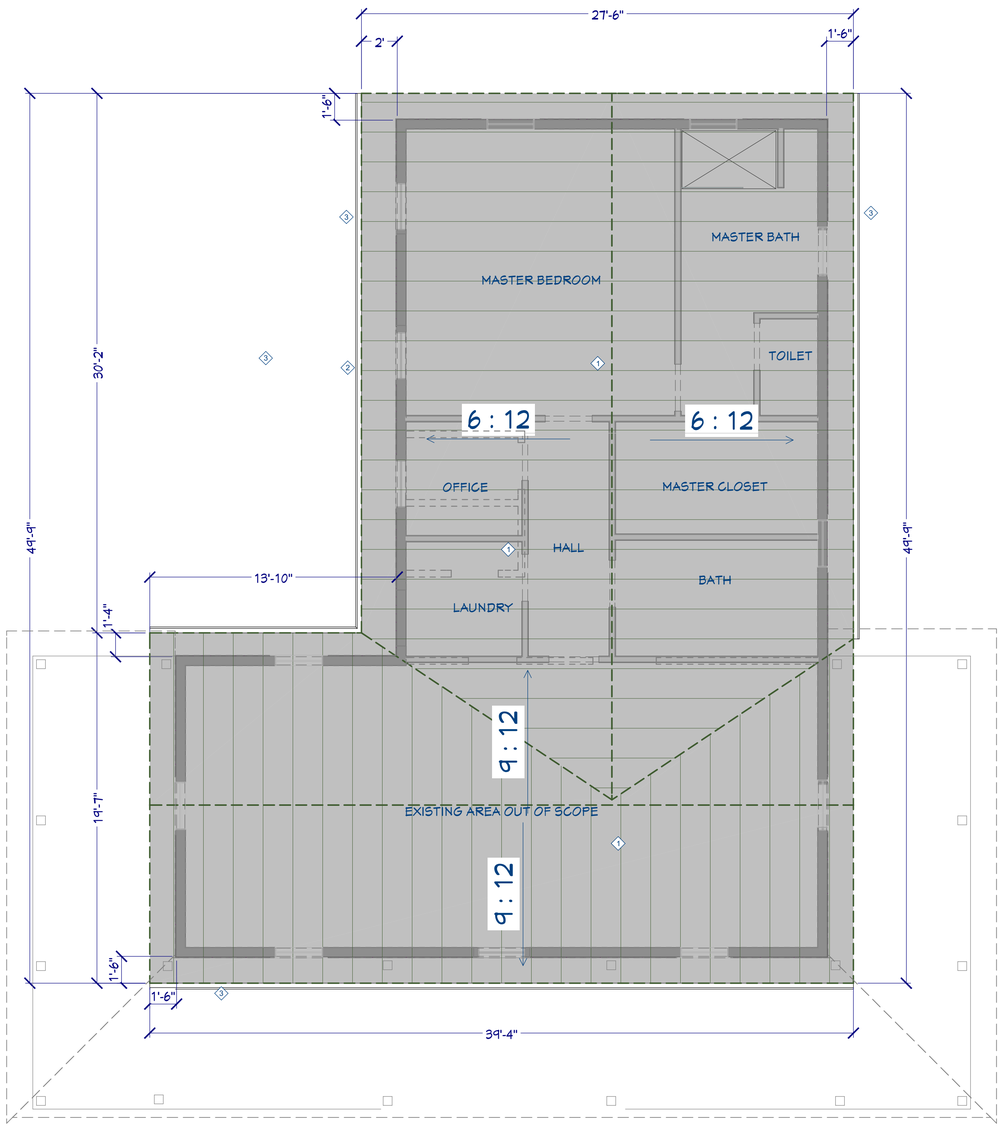
VentSure®
Metal Slant Back Vent
Amount Required: **6 pieces**
Product Details

Choose Intake System Product
Choose **ONE** of the following products to meet the recommended intake NFVA of **298 square inches:**

VentSure®
InFlow® Intake Vent
Amount Required: **30 lineal feet**
Order Qty: **8 pieces**
Product Details

Soffit Vent
Amount Required: **123-468 pieces**
Order Qty: **468 2" pieces | 220 3" pieces | 123 4" pieces**
*These products are not offered by Owens Corning.

Undereave Intake Vent
Amount Required: **8-19 pieces**
Order Qty: **19 4x16" pieces | 11 6.16" pieces | 8 8x16" pieces**
*These products are not offered by Owens Corning.



	ROOF LEGENDS
1	COMPOSITE PRE-ENGINEERED ROOF
2	NEW ASPHALT SHINGLES OR NEW STANDING SEAM METAL ROOF
3	GUTTERS

10 PROPOSED ROOF PLAN - 2ND FLOOR

SCALE: 1/4" = 1'-0" FT.

Tiger Paw™ Premium Roof Deck Protection



Benefits:
- **Premium non-asphaltic polypropylene construction** for long-lasting protection
- **Specially designed walking surface** and anti-skid back coating help provide excellent walkability for installers
- **Moisture-control design** helps reduce damaging moisture on the roof deck unlike typical synthetic non-breathable underlayments[1]
- **Provides at least 600% greater tear strength**[2] and 147% higher nail-pull strength[3] than conventional #30 asphalt felt
- **48-inch-wide (1.22 m) roll provides 33% more coverage** than conventional 36-inch-wide (914 mm) asphalt felts
- **Light-gray surface** is cooler to work on in hot weather than conventional black felts
- **Eligible for up to a Lifetime[1] Limited Warranty** when installed with GAF Lifetime[1] shingles and at least two additional qualifying GAF accessories, and it's eligible for residential enhanced warranty coverage[1]

Product details:
Nominal Specifications:
For use with asphaltic shingles and may also be used with slate, wood, metal, or tile
- **Roll coverage:** 4 squares (1,000 sq. ft. (92.9 m²)) (steel/cedar/tile)
- Roll length: 250' (76.2 m)
- Roll width: 48" (1.22 m)
- Aprox. roll weight: 40 lb. (18 kg)
- **UV exposure:** UV-stabilized polypropylene construction resists UV degradation for up to 180 days[4]

Code Approvals and Standards:
- Meets or exceeds the physical requirements of ASTM D226, *Type II*, ASTM D4869, Type II, and ASTM D8257
- ICC Acceptance Criteria AC188
- Miami-Dade County Product Control approved
- State of Florida approved
- ICC-ES Evaluation Report (ESR-3286)
- CSA A123.3
- Component of a UL Listed ANSI/UL 790 Class A system when used with UL Class A shingles[5]
- Listed with Texas Department of Insurance as an acceptable *alternate roof underlayment*
- Meets certain FORTIFIED Roof™ requirements. Visit gaf.com/fortified and current FORTIFIED Roof Standard available at fortifiedhome.org for details. U.S. only.

[1] Lifetime refers to the length of warranty coverage provided and means for as long as the original purchaser owns the home on which the roofing substance (in eligible asphalt roofing[s]) was first properly applied. For qualifying GAF products an installed, for-the-overall-structure, Lifetime coverage is not applicable. Lifetime coverage on shingles requires the use of GAF Lifetime shingles only. See the GAF Shingle & Accessory Limited Warranty for complete coverage and restrictions. For installations not eligible for the GAF Roofing System Limited Warranty, see the GAF Shingle & Accessory Limited Warranty. Visit gaf.com/Lifetime for qualifying GAF products.
As per GAF ASTM D7158 modified testing.
[2] GAF Velocitor® tear strength testing per ASTM D4533
[3] GAF nail pull-through testing per ASTM D1970
[4] Based on GAF testing per ASTM D4798. Not compatible with asphaltic roofing systems and limited warranty coverage.
[5] 90-day UV-resistance refers to standardized testing conducted to ensure the product will not prematurely degrade when exposed to UV (or RAYS' effect) for a 90-day period. Tiger Paw™ Roof Deck Protection is a temporary roof for protection during construction. Tiger Paw™ Roof Deck Protection is not a product meant for a permanent roof.
[6] Refer to UL Online Certification Directory for roof deck assemblies.
Tiger Paw™ System Plus, Shaw Ridge™, or Shaker Ridge™ Limited Warranty for complete coverage and restrictions.

Note: Photos are plastic cap nails or staples with plastic caps to reveal Tiger Paw™ Roof Deck Protection. Do NOT use nails or staples without caps.

Installation:



To learn more about the Lifetime[1] Roofing System visit **gaf.com/Lifetime**

WINNER

We protect what matters most GAF

** EQUIVALENT ITEM FROM OTHER MANUFACTURER WILL WORK

BENTONVILLE, VA 22610

DRAWN BY:
CHECKED BY:

REVISIONS:

No.	DESCRIPTION	DATE

ISSUE RECORD:

No.	DESCRIPTION	DATE

SCALE:

SHEET CONTENTS:

PROJECT NO.:
DATE: 10/9/2025

DRAWING NO.: **A2.5**

* G.C. TO FIELD VERIFY ALL MEASUREMENTS ON SITE.

AIR BARRIERS AND INSULATION SHALL BE INSTALLED ACCORDING TO THE MANUFACTURERS INSTRUCTIONS AND THE CRITERIA IN TABLE R402.4.1.1

NOTE: RE. STRUCTURAL FOR FOUNDATION, CONNECTION AND ALL FRAMING DETAILS

IECC 2021 ZONE 4 INSULATION REQUIREMENTS:

CEILING R-VALUE: R-60
WOOD FRAME WALL R-VALUE: R-20 + 5 C.I
MASS WALL R-VALUE: R-8/13
FLOOR R-VALUE: R-19
BASEMENT WALL R-VALUE: R-10/13
SLAB R-VALUE AND DEPTH: R-10, 4 FT
CRAWL SPACE WALL R-VALUE: R-10/13

SECTION 406 VENTILATION OF UNINHABITED SPACES

406.1 GENERAL:
- UNINHABITED SPACES, SUCH AS CRAWL SPACES AND ATTICS, SHALL BE PROVIDED WITH NATURAL VENTILATION OPENINGS AS REQUIRED BY THE INTERNATIONAL BUILDING CODE OR SHALL BE PROVIDED WITH A MECHANICAL EXHAUST AND SUPPLY AIR SYSTEM. THE MECHANICAL EXHAUST RATE SHALL BE NOT LESS THAN 0.02 CFM PER SQUARE FOOT (0.00001 M3/S • M2) OF HORIZONTAL AREA AND SHALL BE AUTOMATICALLY CONTROLLED TO OPERATE WHEN THE RELATIVE HUMIDITY IN THE SPACE SERVED EXCEEDS 60 PERCENT.

GRADING NOTES:
1 CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING UTILITIES.
2 PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDING.RE. IBC 1804.4
3 FINAL GRADE TO CONVEY SURFACE DRAINAGE TOWARD ROCK CHANNELS AND DISPERSION TRENCHES.

VENTED CRAWL SPACE VENTILATION: RE IRC CH. 4, SEC. 408

R408.2 OPENINGS FOR UNDER-FLOOR VENTILATION:

1. VENTILATION OPENINGS THROUGH FOUNDATION OR EXTERIOR WALLS SURROUNDING THE UNDER-FLOOR SPACE SHALL BE PROVIDED IN ACCORDANCE WITH THIS SECTION. THE MINIMUM NET AREA OF VENTILATION OPENINGS SHALL BE NOT LESS THAN 1 SQUARE FOOT FOR EACH 150 SQUARE FEET OF UNDER-FLOOR AREA.

2. ONE VENTILATION OPENING SHALL BE WITHIN 3 FEET OF EACH EXTERNAL CORNER OF THE UNDER-FLOOR SPACE.

3. VENTILATION OPENINGS SHALL BE COVERED FOR THEIR HEIGHT AND WIDTH WITH ANY OF THE FOLLOWING MATERIALS PROVIDED THAT THE LEAST DIMENSION OF THE COVERING SHALL NOT EXCEED 1/4 INCH, AND OPERATIONAL LOUVERS ARE PERMITTED:

3A. PERFORATED SHEET METAL PLATES NOT LESS THAN 0.070 INCH (1.8 MM) THICK.
3B. EXPANDED SHEET METAL PLATES NOT LESS THAN 0.047 INCH (1.2 MM) THICK.
3C. CAST-IRON GRILL OR GRATING.
3D. EXTRUDED LOAD-BEARING BRICK VENTS.
3E. HARDWARE CLOTH OF 0.035 INCH WIRE OR HEAVIER.
3F. CORROSION-RESISTANT WIRE MESH, WITH THE LEAST DIMENSION BEING 1/8 INCH THICK.

EXCEPTIONS:
1 THE TOTAL AREA OF VENTILATION OPENINGS SHALL BE PERMITTED TO BE REDUCED TO 1/1,500 OF THE UNDER-FLOOR AREA WHERE THE GROUND SURFACE IS COVERED WITH AN APPROVED CLASS I VAPOR RETARDER MATERIAL.
2 WHERE THE GROUND SURFACE IS COVERED WITH AN APPROVED CLASS 1 VAPOR RETARDER MATERIAL, VENTILATION OPENINGS ARE NOT REQUIRED TO BE WITHIN 3 FEET OF EACH EXTERNAL CORNER OF THE UNDER-FLOOR SPACE PROVIDED THAT THE OPENINGS ARE PLACED TO PROVIDE CROSS VENTILATION OF THE SPACE.

R408.3 UNVENTED CRAWL SPACE:

FOR UNVENTED UNDER-FLOOR SPACES, THE FOLLOWING ITEMS SHALL BE PROVIDED:

1 EXPOSED EARTH SHALL BE COVERED WITH A CONTINUOUS CLASS I VAPOR RETARDER. JOINTS OF THE VAPOR RETARDER SHALL OVERLAP BY 6 INCHES (152 MM) AND SHALL BE SEALED OR TAPED. THE EDGES OF THE VAPOR RETARDER SHALL EXTEND NOT LESS THAN 6 INCHES (152 MM) UP THE STEM WALL AND SHALL BE ATTACHED AND SEALED TO THE STEM WALL OR INSULATION.

2 ONE OF THE FOLLOWING SHALL BE PROVIDED FOR THE UNDER-FLOOR SPACE:

2A. CONTINUOUSLY OPERATED MECHANICAL EXHAUST VENTILATION AT A RATE EQUAL TO 1 CUBIC FOOT PER MINUTE (0.47 L/S) FOR EACH 50 SQUARE FEET (4.7 M2) OF CRAWL SPACE FLOOR AREA, INCLUDING AN AIR PATHWAY TO THE COMMON AREA (SUCH AS A DUCT OR TRANSFER GRILLE), AND PERIMETER WALLS INSULATED IN ACCORDANCE WITH SECTION N1102.2.10.1 OF THIS CODE.
2B. CONDITIONED AIR SUPPLY SIZED TO DELIVER AT A RATE EQUAL TO 1 CUBIC FOOT PER MINUTE (0.47 L/S) FOR EACH 50 SQUARE FEET (4.7 M2) OF UNDER-FLOOR AREA, INCLUDING A RETURN AIR PATHWAY TO THE COMMON AREA (SUCH AS A DUCT OR TRANSFER GRILLE), AND PERIMETER WALLS INSULATED IN ACCORDANCE WITH SECTION N1102.2.10.1 OF THIS CODE.
2C. PLENUM IN EXISTING STRUCTURES COMPLYING WITH SECTION M1601.5, IF UNDER-FLOOR SPACE IS USED AS A PLENUM.
2D. DEHUMIDIFICATION SIZED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

R408.4 ACCESS

1. ACCESS SHALL BE PROVIDED TO ALL UNDER-FLOOR SPACES.

2. ACCESS OPENINGS THROUGH THE FLOOR SHALL BE NOT SMALLER THAN 18 INCHES BY 24 INCHES

3. OPENINGS THROUGH A PERIMETER WALL SHALL BE NOT LESS THAN 16 INCHES BY 24 INCHES

4. WHERE ANY PORTION OF THE THROUGH-WALL ACCESS IS BELOW GRADE, AN AREAWAY NOT LESS THAN 16 INCHES BY 24 INCHES SHALL BE PROVIDED. THE BOTTOM OF THE AREAWAY SHALL BE BELOW THE THRESHOLD OF THE ACCESS OPENING. THROUGH WALL ACCESS OPENINGS SHALL NOT BE LOCATED UNDER A DOOR TO THE RESIDENCE.

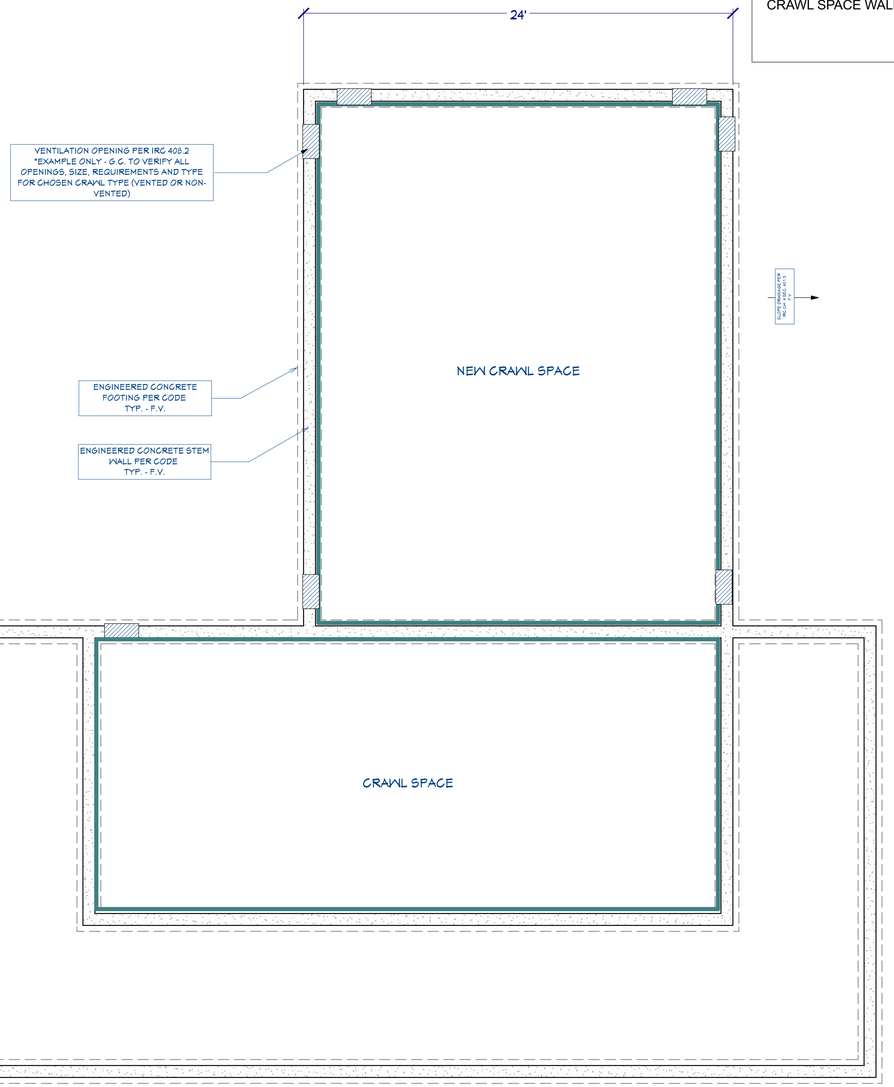
**SEE SECTION M1305.1.3 FOR ACCESS REQUIREMENTS WHERE MECHANICAL EQUIPMENT IS LOCATED UNDER FLOORS.*

*G.C. TO DETERMINE PROPER DETERMINING CALCULATION FOR USE

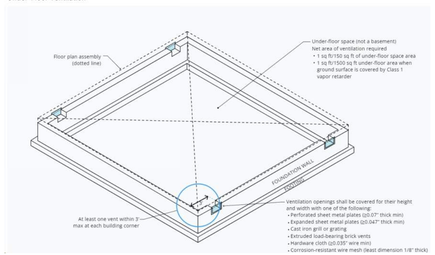
VENTED CRAWL:
1/150:
CRAWL SPACE SQ. FT. = 1217 SQ. FT. +/-
REQ. VENTILATION = 1168 SQ. INCH. +/- (MIN.)

UNVENTED CRAWL W/ VAPOR BARRIER:
1/1500:
CRAWL SPACE SQ. FT. = 719 SQ. FT. +/-
REQ. VENTILATION = 117 SQ. INCH. +/- (MIN.)

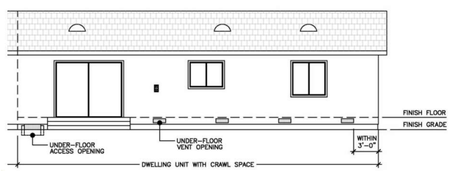
**ESTIMATION ONLY, G.C. TO MEASURE AND CALCULATE FINAL CRAWL SPACE SQ. FT. ON SITE DURING CONSTRUCTION AND PROVIDE ADEQUATE VENTILATION BASED OFF OF FOUND SQ. FT. AND DETERMINATION OF USING A VENTED OR NON VENTED CRAWL SPACE DESIGN*



Under-Floor Ventilation



VENTED CRAWL VENTILATION DETAIL - TYP.



***FOUNDATION PLAN IS PROVIDED FOR REFERENCE ONLY; STRUCTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER THIS SHEET.

11 PROPOSED FOUNDATION PLAN

SCALE: 1/4" = 1'-0" FT.

BENTONVILLE, VA 22610

DRAWN BY:

CHECKED BY:

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PROJECT NO.:

DATE: 10/9/2025

DRAWING NO.: **A2.6**

* G.C. TO FIELD VERIFY ALL MEASUREMENTS ON SITE.

NOTE: RE. STRUCTURAL FOR FOUNDATION, CONNECTION AND ALL FRAMING DETAILS

AIR BARRIERS AND INSULATION SHALL BE INSTALLED ACCORDING TO THE MANUFACTURERS INSTRUCTIONS AND THE CRITERIA IN TABLE R402.4.1.1

MATERIAL/FINISH LEGEND

1. EXISTING EXTERIOR WALL:
- TO BE DEMOLISHED - STUCCO SIDINGS

2. NEW PRE ENGINEERED ROOFING: MIN. R-60
- MATCH EXISTING - COMPOSITE
- F.V & MATCH OVERHANGS ≤ 2'

3. NEW ASPHALT SHINGLES OR NEW STANDING SEAM METAL ROOFING OVER PORCH OR PRE-ENGINEERED ROOFING.

4. NEW EXTERIOR WALL: MIN. R-20 + R-5 (CAVITY + CONTINUOUS INSULATION)
- VINYL HORIZONTAL LAP SIDING (RE. ARCH.)
- WEATHER-RESISTANT BARRIER
- R-5 CONTINUOUS INSULATION SHEATHING
- 2"X6" STUD WALL W/ R-20 CAVITY INSULATION
- VAPOR BARRIER
- 1/2" GYPSUM BD.
- PAINT BY BEHR OR SIMILAR. COLOR TBD BY OWNER

5. NEW INTERIOR WALLS (4"):
- 1/2" GYPSUM BD.
- 2"X4" STUD WALL @ 16" O.C.
- 1/2" GYPSUM BD.
- PAINT BY BEHR OR SIMILAR. COLOR TBD BY OWNER

6. CRAWL SPACE WALL INSULATION: MIN. R-10 (CONTINUOUS) OR R-13 (CAVITY)
- INSULATION TO EXTEND FROM TOP OF WALL DOWN TO INSIDE FINISHED GRADE

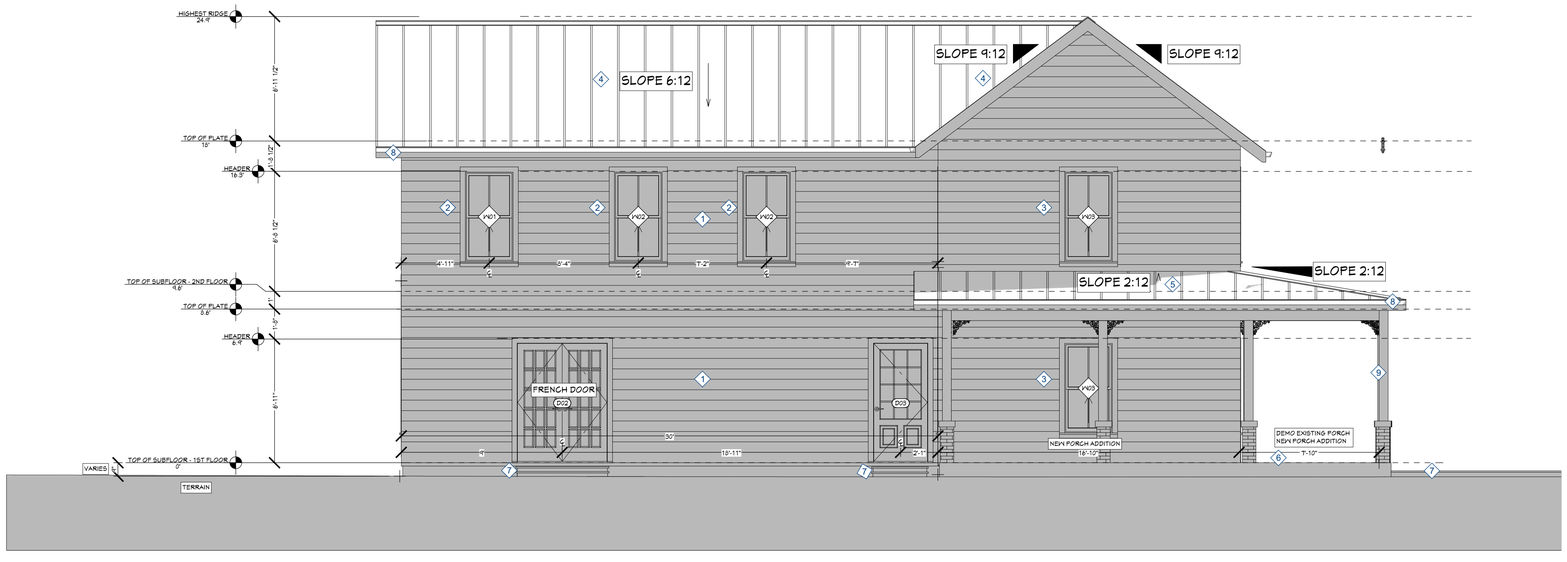
7. FLOORING (OVER UNCONDITIONED SPACE):
- FLOOR FINISH 1: CARPET (BRAND/COLOR TBD) TO BE IN ALL BEDROOMS/CLOSETS
- FLOOR FINISH 2: TO BE HARDWOOD (OR SIMILAR; COLOR TBD) IN ALL OTHER AREAS, F.V. W/ OWNER
- 3/4" TNG PLYWOOD DECKING RE: STRUCT.
- R-19 INSULATION
- FLOOR JOIST OR TRUSS RE: STRUCT.

CONSTRUCTION NOTES	
1	EXT. WALLS: R20 + R-5 C.I VINYL HORIZONTAL LAP SIDING COLOR: TBD BY OWNER/G.C
2	NEW WINDOWS TO BE INSTALLED
3	EXISTING WINDOWS TO REMAIN
4	COMPOSITE PRE-FABRICATED ROOF
5	NEW ASPHALT SHINGLES OR NEW STANDING SEAM METAL ROOF
6	CONCRETE FLOOR, SLOPED AWAY FROM HOUSE @1/4"
7	EXTERIOR STAIRS TO BE FIELD VERIFIED AND CONSTRUCTED PER VIRGINIA RESIDENTIAL CODE R311.7.5.1 & R311.7.5.2 (MAX RISER HEIGHT 8¼", MIN TREAD DEPTH 9", UNIFORM WITHIN 3/8").
8	ROOF GUTTER AND DOWNSPOUT TO BE INSTALLED
9	PORCH POST TO BEAM WITH BASE



E1 PROPOSED ELEVATIONS - SOUTH

SCALE:1/4"= 1 FT.



E2 PROPOSED ELEVATIONS - WEST

SCALE:1/4"= 1 FT.

12 PROPOSED ELEVATIONS

SCALE:1/4"= 1 FT.

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DRAWING NO.: **A3.0**

* G.C. TO FIELD VERIFY ALL MEASUREMENTS ON SITE.

NOTE: RE. STRUCTURAL FOR FOUNDATION, CONNECTION AND ALL FRAMING DETAILS

AIR BARRIERS AND INSULATION SHALL BE INSTALLED ACCORDING TO THE MANUFACTURERS INSTRUCTIONS AND THE CRITERIA IN TABLE R402.4.1.1

MATERIAL/FINISH LEGEND

1. EXISTING EXTERIOR WALL:
- TO BE DEMOLISHED - STUCCO SIDINGS

2. NEW PRE ENGINEERED ROOFING: MIN. R-60
- MATCH EXISTING - COMPOSITE
- F.V & MATCH OVERHANGS ≤ 2'

3. NEW ASPHALT SHINGLES OR NEW STANDING SEAM METAL ROOFING OVER PORCH OR PRE-ENGINEERED ROOFING.

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- VINYL HORIZONTAL LAP SIDING (RE. ARCH.)
- WEATHER-RESISTANT BARRIER
- R-5 CONTINUOUS INSULATION SHEATHING
- 2"X6" STUD WALL W/ R-20 CAVITY INSULATION
- VAPOR BARRIER
- 1/2" GYPSUM BD.
- PAINT BY BEHR OR SIMILAR. COLOR TBD BY OWNER

5. NEW INTERIOR WALLS (4"):
- 1/2" GYPSUM BD.
- 2"X4" STUD WALL @ 16" O.C.
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- PAINT BY BEHR OR SIMILAR. COLOR TBD BY OWNER

6. CRAWL SPACE WALL INSULATION: MIN. R-10 (CONTINUOUS) OR R-13 (CAVITY)
- INSULATION TO EXTEND FROM TOP OF WALL DOWN TO INSIDE FINISHED GRADE

7. FLOORING (OVER UNCONDITIONED SPACE):
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- FLOOR FINISH 2: TO BE HARDWOOD (OR SIMILAR; COLOR TBD) IN ALL OTHER AREAS, F.V. W/ OWNER
- 3/4" TNG PLYWOOD DECKING RE: STRUCT.
- R-19 INSULATION
- FLOOR JOIST OR TRUSS RE: STRUCT.

CONSTRUCTION NOTES	
1	EXT. WALLS: R20 + R-5 C.I VINYL HORIZONTAL LAP SIDING COLOR: TBD BY OWNER/G.C
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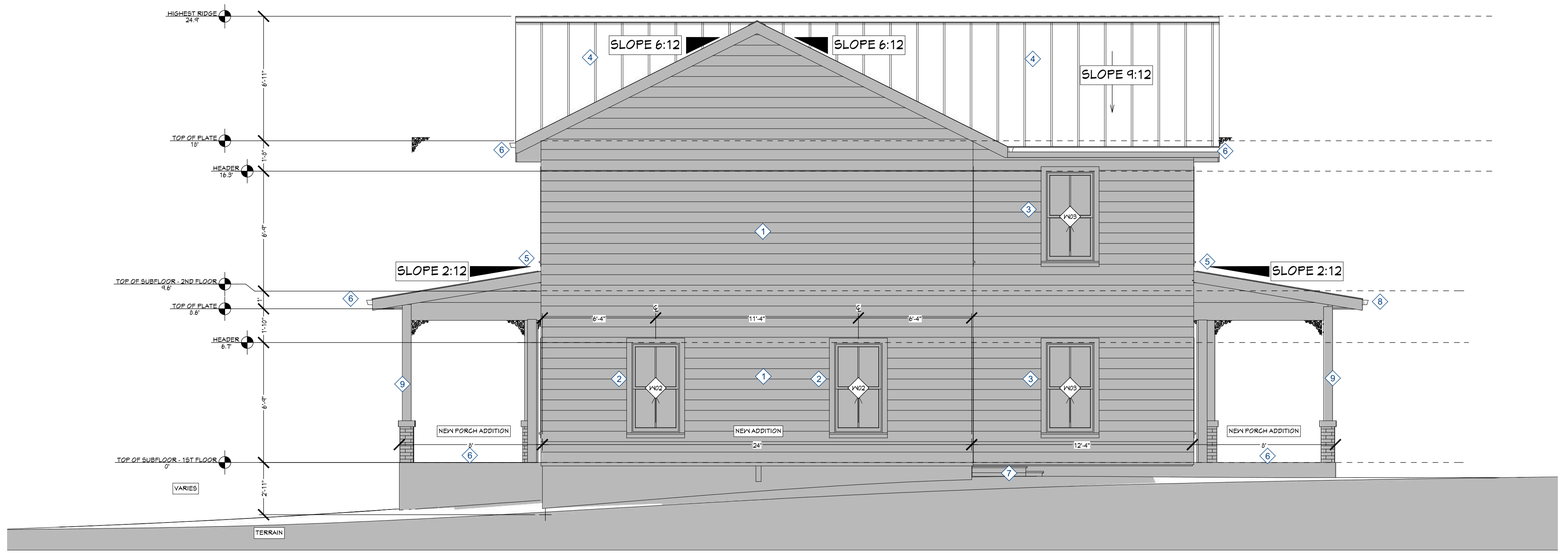
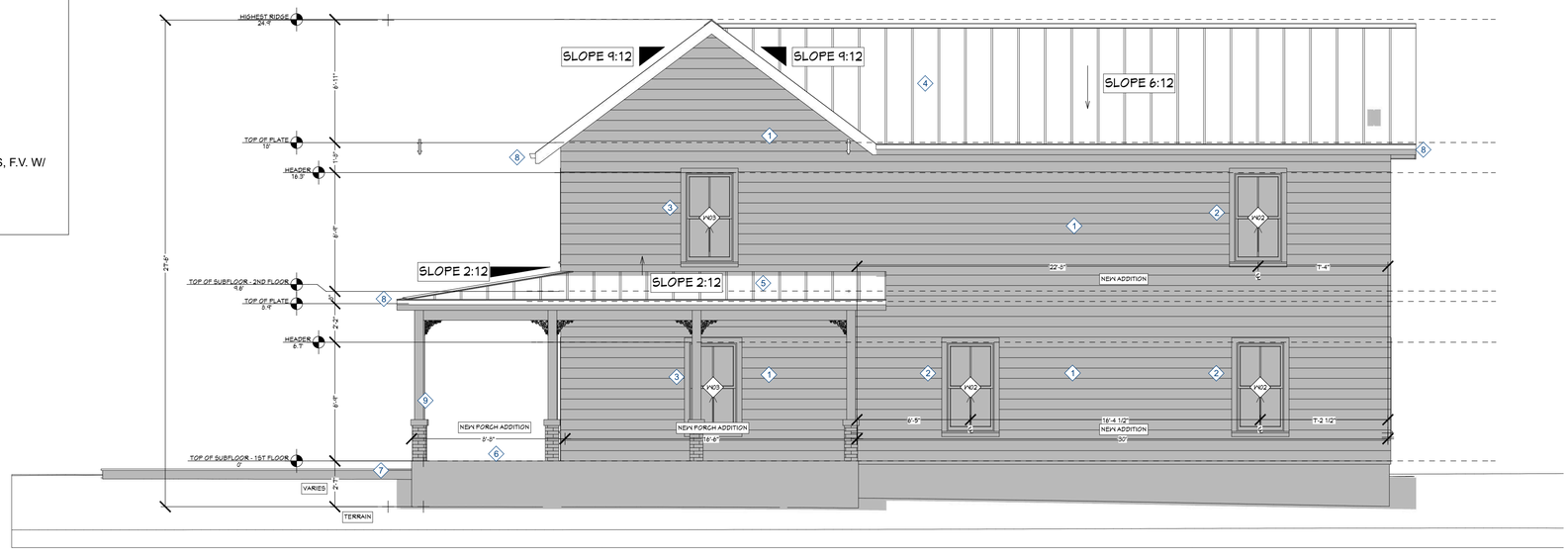
8	ROOF GUTTER AND DOWNSPOUT TO BE INSTALLED
9	PORCH POST TO BEAM WITH BASE



E3 PROPOSED ELEVATIONS - NORTH

SCALE:1/4"= 1 FT.



E4 PROPOSED ELEVATIONS - EAST

SCALE:1/4"= 1 FT.

13 PROPOSED ELEVATIONS

SCALE:1/4"= 1 FT.

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A3.1

* G.C. TO FIELD VERIFY ALL MEASUREMENTS ON SITE.

AIR BARRIERS AND INSULATION SHALL BE INSTALLED ACCORDING TO THE MANUFACTURERS INSTRUCTIONS AND THE CRITERIA IN TABLE R402.4.1.1

NOTE: RE. STRUCTURAL FOR FOUNDATION, CONNECTION AND ALL FRAMING DETAILS

IECC 2021 ZONE 4 INSULATION REQUIREMENTS:

CEILING R-VALUE: R-60
WOOD FRAME WALL R-VALUE: R-20 + 5 C.I
MASS WALL R-VALUE: R-8/13
FLOOR R-VALUE: R-19
BASEMENT WALL R-VALUE: R-10/13
SLAB R-VALUE AND DEPTH: R-10, 4 FT
CRAWL SPACE WALL R-VALUE: R-10/13

MATERIAL/FINISH LEGEND

1. EXISTING EXTERIOR WALL:
- TO BE DEMOLISHED - STUCCO SIDINGS

2. NEW PRE ENGINEERED ROOFING: MIN. R-60
- MATCH EXISTING - COMPOSITE
- F.V & MATCH OVERHANGS ≤ 2'

3. NEW ASPHALT SHINGLES OR NEW STANDING SEAM METAL ROOFING OVER PORCH OR PRE-ENGINEERED ROOFING.

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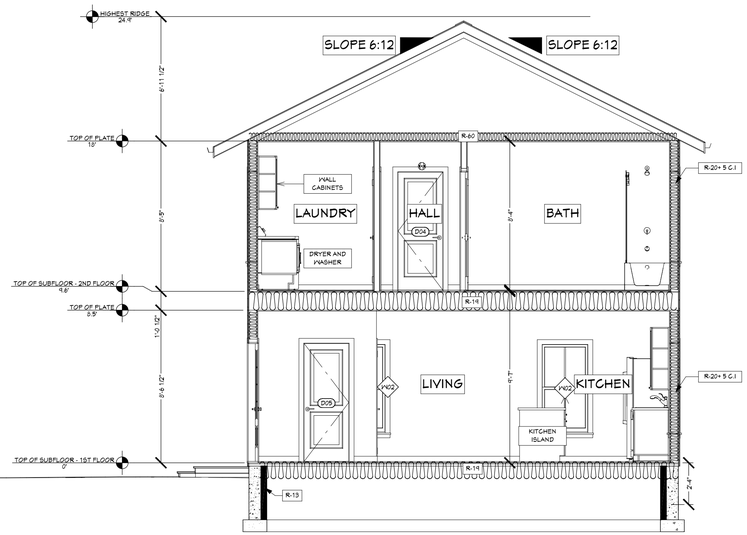
- WEATHER-RESISTANT BARRIER
- R-5 CONTINUOUS INSULATION SHEATHING
- 2"X6" STUD WALL W/ R-20 CAVITY INSULATION
- VAPOR BARRIER
- 1/2" GYPSUM BD.
- PAINT BY BEHR OR SIMILAR. COLOR TBD BY OWNER

5. NEW INTERIOR WALLS (4"):
- 1/2" GYPSUM BD.
- 2"X4" STUD WALL @ 16" O.C.
- 1/2" GYPSUM BD.
- PAINT BY BEHR OR SIMILAR. COLOR TBD BY OWNER

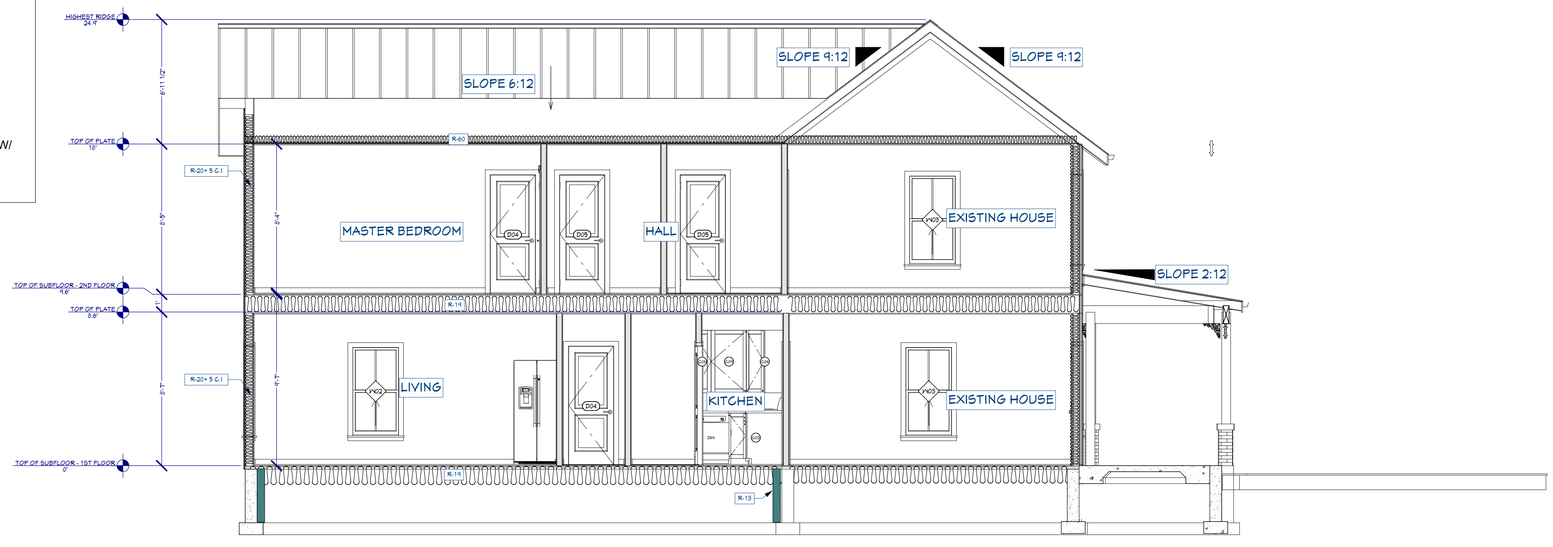
6. CRAWL SPACE WALL INSULATION: MIN. R-10 (CONTINUOUS) OR R-13 (CAVITY)
- INSULATION TO EXTEND FROM TOP OF WALL DOWN TO INSIDE FINISHED GRADE

7. FLOORING (OVER UNCONDITIONED SPACE):
- FLOOR FINISH 1: CARPET (BRAND/COLOR TBD) TO BE IN ALL BEDROOMS/CLOSETS
- FLOOR FINISH 2: TO BE HARDWOOD (OR SIMILAR; COLOR TBD) IN ALL OTHER AREAS, F.V. W/ OWNER
- 3/4" TNG PLYWOOD DECKING RE: STRUCT.
- R-19 INSULATION
- FLOOR JOIST OR TRUSS RE: STRUCT.



S1 PROPOSED SECTION

SCALE: 1/4" = 1'-0" FT.



S2 PROPOSED SECTION

SCALE: 1/4" = 1'-0" FT.

14 PROPOSED SECTIONS

SCALE:1/4"= 1 FT.

BENTONVILLE, VA 22610

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DATE: 10/9/2025

DRAWING NO.: **A3.2**

* G.C. TO FIELD VERIFY ALL MEASUREMENTS ON SITE.

IECC 2021 ZONE 4 INSULATION REQUIREMENTS:

CEILING R-VALUE: R-60
WOOD FRAME WALL R-VALUE: R-20 + 5 C.I
MASS WALL R-VALUE: R-8/13
FLOOR R-VALUE: R-19
BASEMENT WALL R-VALUE: R-10/13
SLAB R-VALUE AND DEPTH: R-10, 4 FT
CRAWL SPACE WALL R-VALUE: R-10/13

MATERIAL/FINISH LEGEND

1. EXISTING EXTERIOR WALL:
- TO BE DEMOLISHED - STUCCO SIDINGS

2. NEW PRE ENGINEERED ROOFING: MIN. R-60
- MATCH EXISTING - COMPOSITE
- F.V & MATCH OVERHANGS ≤ 2'

3. NEW ASPHALT SHINGLES OR NEW STANDING SEAM METAL ROOFing over porch OR PRE-ENGINEERED ROOFING.

4. NEW EXTERIOR WALL: MIN. R-20 + R-5 (CAVITY + CONTINUOUS INSULATION)
- VINYL HORIZONTAL LAP SIDING (RE. ARCH.)
- WEATHER-RESISTANT BARRIER
- R-5 CONTINUOUS INSULATION SHEATHING
- 2"X6" STUD WALL W/ R-20 CAVITY INSULATION
- VAPOR BARRIER
- 1/2" GYPSUM BD.
- PAINT BY BEHR OR SIMILAR. COLOR TBD BY OWNER

5. NEW INTERIOR WALLS (4"):
- 1/2" GYPSUM BD.
- 2"X4" STUD WALL @ 16" O.C.
- 1/2" GYPSUM BD.
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6. CRAWL SPACE WALL INSULATION: MIN. R-10 (CONTINUOUS) OR R-13 (CAVITY)
- INSULATION TO EXTEND FROM TOP OF WALL DOWN TO INSIDE FINISHED GRADE

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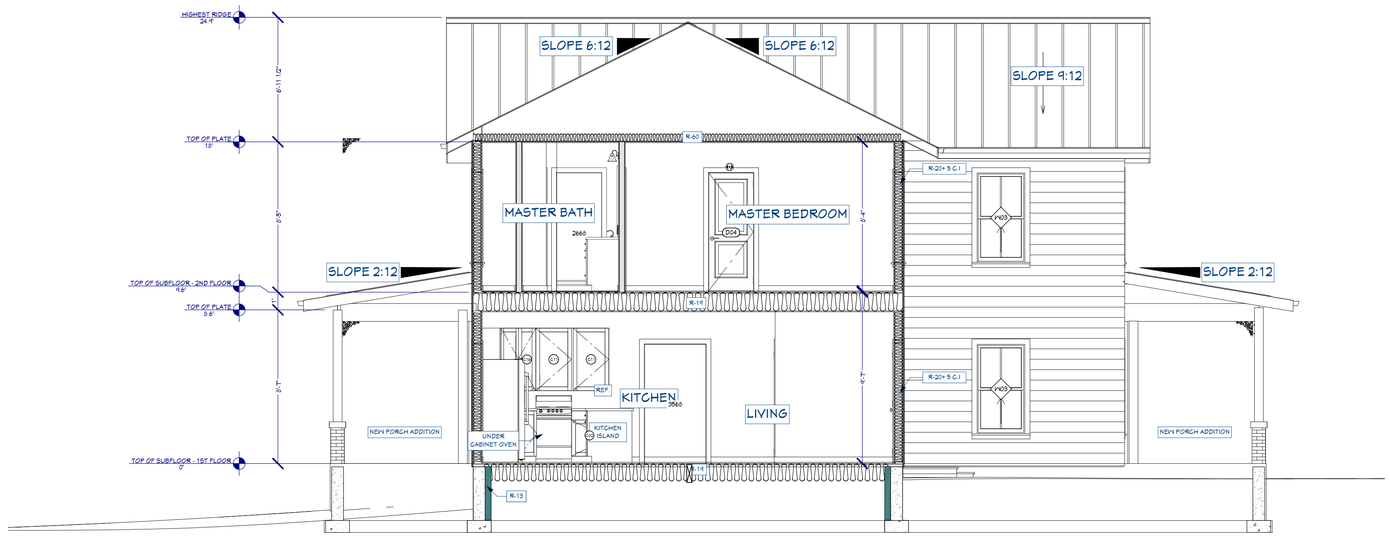
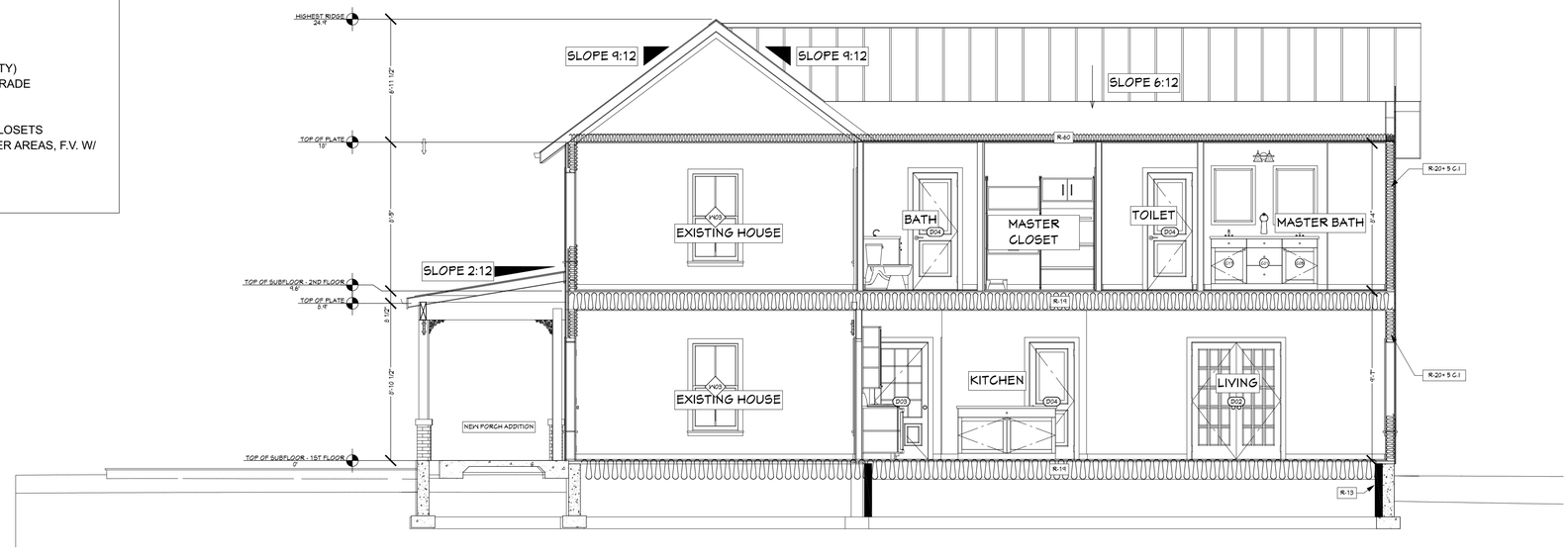
- 3/4" TNG PLYWOOD DECKING RE: STRUCT.
- R-19 INSULATION
- FLOOR JOIST OR TRUSS RE: STRUCT.



S3 PROPOSED SECTION
SCALE: 1/4" = 1'-0" FT.



S4 PROPOSED SECTION
SCALE: 1/4" = 1'-0" FT.

15 PROPOSED SECTIONS
SCALE:1/4"= 1 FT.

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PROJECT NO.:
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A3.3

IECC NOTES:

1. PER CITY AND COUNTY IECC REQUIREMENTS, METHOD OF COMPLIANCE SHALL BE PRESCRIPTIVE PERFORMANCE.
2. CLIMATE ZONE 4A
3. MAXIMUM FENESTRATION U-FACTOR: 0.30 (FOR ALL GLAZING)
4. GLAZED FENESTRATION SHGC: 0.40
5. SKYLIGHT U-FACTOR:0.55

6. A CONTINUOUS AIR BARRIER SHALL BE INSTALLED IN THE BUILDING ENVELOPE AND EXTERNAL THERMAL ENVELOPE. ANY BREAKS OR JOINTS SHALL BE SEALED. AIR BARRIER SHALL BE ALIGNED WITH INSULATION AND CONTINUOUS ACROSS ALL ENVELOPE COMPONENTS.
7. **R402.1.2 PRESCRIPTIVE INSULATION REQUIREMENTS (CLIMATE ZONE 4A):**
   CEILING: R-60
   WOOD FRAME WALL: R-20 CAVITY + R-5 CONTINUOUS OR R-13 CAVITY + R-10 CONTINUOUS
   MASS WALL: R-8 / R-13 (INTERIOR/EXTERIOR)
   FLOOR: R-19
   BASEMENT WALL: R-10 / R-13
   SLAB-ON-GRADE (≤12" BELOW GRADE): R-10, 4 FT DEPTH
   CRAWL SPACE WALL: R-10 / R-13

8. **R402.2.1 CEILINGS WITH ATTIC SPACES:** WHERE SECTION R402.1.2 REQUIRES R-60 INSULATION IN THE CEILING, NO REDUCTION IS PERMITTED UNDER THE PRESCRIPTIVE PATH.
   WHERE SECTION R402.1.2 REQUIRES R-49 INSULATION IN THE CEILING, INSTALLING R-38 OVER 100% OF THE CEILING AREA REQUIRING INSULATION SHALL SATISFY THE REQUIREMENT FOR R-49 INSULATION WHEREVER THE FULL HEIGHT OF UNCOMPRESSED R-38 INSULATION EXTENDS OVER THE WALL TOP PLATE AT THE EAVES.
   THIS REDUCTION SHALL NOT APPLY TO THE U-FACTOR ALTERNATIVE APPROACH IN SECTION R402.1.4 AND THE TOTAL UA ALTERNATIVE IN SECTION R402.1.5.

9. **R402.2.4 ACCESS HATCHES AND DOORS:** ACCESS DOORS FROM CONDITIONED SPACES TO UNCONDITIONED SPACES SUCH AS ATTICS AND CRAWL SPACES SHALL BE WEATHERSTRIPPED AND INSULATED TO A LEVEL EQUIVALENT TO THE INSULATION ON THE SURROUNDING SURFACES. ACCESS THAT PREVENTS DAMAGING OR COMPRESSING THE INSULATION SHALL BE PROVIDED TO ALL EQUIPMENT. WHERE LOOSE-FILL INSULATION IS INSTALLED, A WOOD-FRAMED OR EQUIVALENT BAFFLE OR RETAINER SHALL BE INSTALLED TO PREVENT THE LOOSE-FILL INSULATION FROM SPILLING INTO THE LIVING SPACE WHEN THE ATTIC ACCESS IS OPENED. THE BAFFLE OR RETAINER SHALL PROVIDE A PERMANENT MEANS OF MAINTAINING THE INSTALLED R-VALUE OF THE LOOSE-FILL INSULATION.

10. **R402.2.3 EAVE BAFFLE:** FOR AIR-PERMEABLE INSULATIONS IN VENTED ATTICS, A BAFFLE SHALL BE INSTALLED ADJACENT TO SOFFIT AND EAVE VENTS. BAFFLES SHALL MAINTAIN AN OPENING EQUAL OR GREATER THAN THE SIZE OF THE VENT. THE BAFFLE SHALL EXTEND OVER THE TOP OF THE ATTIC INSULATION. THE BAFFLE SHALL BE PERMITTED TO BE ANY SOLID MATERIAL.

11. **R402.2.8 FLOORS:** FLOOR FRAMING-CAVITY INSULATION SHALL BE INSTALLED TO MAINTAIN PERMANENT CONTACT WITH THE UNDERSIDE OF THE SUBFLOOR DECKING. EXCEPTION: AS AN ALTERNATIVE, THE FLOOR FRAMING-CAVITY INSULATION SHALL BE IN CONTACT WITH THE TOPSIDE OF SHEATHING OR CONTINUOUS INSULATION INSTALLED ON THE BOTTOM SIDE OF FLOOR FRAMING WHERE COMBINED WITH INSULATION THAT MEETS OR EXCEEDS THE MINIMUM WOOD FRAME WALL R-VALUE IN TABLE R402.1.2 AND THAT EXTENDS FROM THE BOTTOM TO THE TOP OF ALL PERIMETER FLOOR FRAMING MEMBERS.

12. **R402.2.9 BASEMENT:** WALLS ASSOCIATED WITH CONDITIONED BASEMENTS SHALL BE INSULATED FROM THE TOP OF THE BASEMENT WALL DOWN TO 10 FT. BELOW GRADE OR TO THE BASEMENT FLOOR, WHICHEVER IS LESS. WALLS ASSOCIATED WITH UNCONDITIONED BASEMENTS SHALL COMPLY WITH THIS REQUIREMENT EXCEPT WHERE THE FLOOR OVERHEAD IS INSULATED IN ACCORDANCE WITH SECTIONS R402.1.2 AND R402.2.8.

13. **R402.2.10 SLAB-ON-GRADE FLOORS:** SLAB-ON-GRADE FLOORS WITH A FLOOR SURFACE LESS THAN 12 INCHES BELOW GRADE SHALL BE INSULATED IN ACCORDANCE WITH TABLE R402.1.2. THE INSULATION SHALL EXTEND DOWNWARD FROM THE TOP OF THE SLAB ON THE OUTSIDE OR INSIDE OF THE FOUNDATION WALL. INSULATION LOCATED BELOW GRADE SHALL BE EXTENDED THE DISTANCE PROVIDED IN TABLE R402.1.2 BY ANY COMBINATION OF VERTICAL INSULATION, INSULATION EXTENDING UNDER THE SLAB OR INSULATION EXTENDING OUT FROM THE BUILDING.
- INSULATION EXTENDING AWAY FROM THE BUILDING SHALL BE PROTECTED BY PAVEMENT OR BY NOT LESS THAN 10 INCHES OF SOIL. THE TOP EDGE OF THE INSULATION INSTALLED BETWEEN THE EXTERIOR WALL AND THE EDGE OF THE INTERIOR SLAB SHALL BE PERMITTED TO BE CUT AT A 45-DEGREE ANGLE AWAY FROM THE EXTERIOR WALL.
- SLAB-EDGE INSULATION IS NOT REQUIRED IN JURISDICTIONS DESIGNATED BY THE CODE OFFICIAL AS HAVING A VERY HEAVY TERMITE INFESTATION.

MATERIAL/FINISH LEGEND

1. EXISTING EXTERIOR WALL:
- TO BE DEMOLISHED - STUCCO SIDINGS

2. NEW PRE ENGINEERED ROOFING: MIN. R-60
- MATCH EXISTING - COMPOSITE
- F.V & MATCH OVERHANGS ≤ 2'

3. NEW ASPHALT SHINGLES OR NEW STANDING SEAM METAL ROOFING OVER PORCH OR PRE-ENGINEERED ROOFING.

4. NEW EXTERIOR WALL: MIN. R-20 + R-5 (CAVITY + CONTINUOUS INSULATION)
- VINYL HORIZONTAL LAP SIDING (RE. ARCH.)
- WEATHER-RESISTANT BARRIER
- R-5 CONTINUOUS INSULATION SHEATHING
- 2"X6" STUD WALL W/ R-20 CAVITY INSULATION
- VAPOR BARRIER
- 1/2" GYPSUM BD.
- PAINT BY BEHR OR SIMILAR. COLOR TBD BY OWNER

5. NEW INTERIOR WALLS (4"):
- 1/2" GYPSUM BD.
- 2"X4" STUD WALL @ 16" O.C.
- 1/2" GYPSUM BD.
- PAINT BY BEHR OR SIMILAR. COLOR TBD BY OWNER

6. CRAWL SPACE WALL INSULATION: MIN. R-10 (CONTINUOUS) OR R-13 (CAVITY)
- INSULATION TO EXTEND FROM TOP OF WALL DOWN TO INSIDE FINISHED GRADE

7. FLOORING (OVER UNCONDITIONED SPACE):
- FLOOR FINISH 1: CARPET (BRAND/COLOR TBD) TO BE IN ALL BEDROOMS/CLOSETS
- FLOOR FINISH 2: TO BE HARDWOOD (OR SIMILAR; COLOR TBD) IN ALL OTHER AREAS, F.V. W/OWNER
- 3/4" TNG PLYWOOD DECKING RE: STRUCT.
- R-19 INSULATION
- FLOOR JOIST OR TRUSS RE: STRUCT.

GENERAL CONSTRUCTION NOTES

1 ATTIC VENTILATION / NO-VENT ZONES
PROVIDE CONTINUOUS VENTED SOFFIT AT ALLOWABLE EAVES WITH INSULATION BAFFLES OVER TOP PLATE.
PROVIDE 1-HR RATED SOFFIT UNDERSIDE WHERE EAVE IS WITHIN 2–5 FT OF PROPERTY LINE.
CONSTRUCTION: 5/8" TYPE X GYPSUM BOARD ATTACHED TO UNDERSIDE WITH SOLID BLOCKING AT RAFTER TAILS.
NO SOFFIT VENTS PERMITTED WITHIN 5 FT OF PROPERTY LINE. [REF: IRC R302.1(2)].

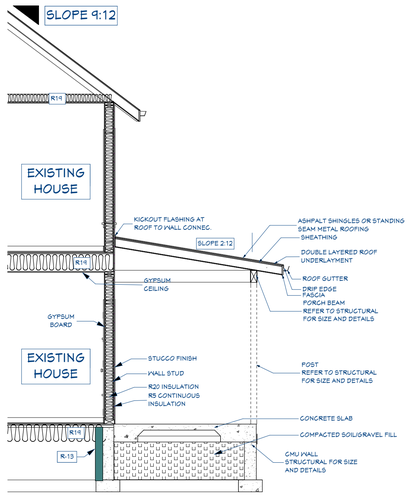
2 LOW-SLOPE ROOF UNDERLAYMENT
ROOF PITCH 2:12 TO 4:12: PROVIDE TWO LAYERS ASTM D226 TYPE II UNDERLAYMENT, LAPPED 19" OR EQUIVALENT PER MANUFACTURER.
DRIP EDGE FLASHING REQUIRED AT EAVES AND RAKES.
PROVIDE KICK-OUT FLASHING AT ALL ROOF-WALL INTERSECTIONS.

NOTE:

1. WALL ASSEMBLIES IN THE BUILDING THERMAL ENVELOPE SHALL COMPLY WITH THE VAPOR RETARDER REQUIREMENTS OF DRC SEC. R702.7 OR DBC SEC. 1404.3. ***AS APPLICABLE.***

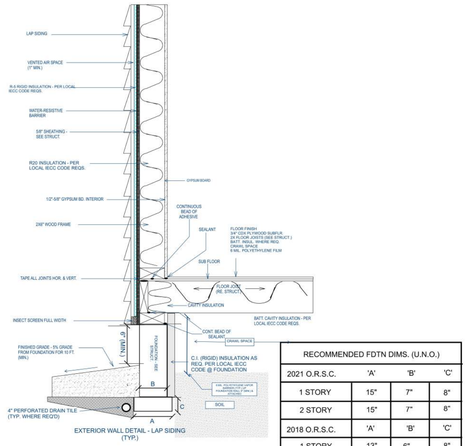
2. AIR BARRIERS AND INSULATION SHALL BE INSTALLED ACCORDING TO THE MANUFACTURERS INSTRUCTIONS AND THE CRITERIA IN TABLE R402.4.1.1

3. EAVE BAFFLE SHALL BE INSTALLED ADJACENT TO SOFFIT AND EAVE VENTS - G.C. TO VERIFY FINAL INSULATION LAYOUT AND EAVE BAFFLE PLACEMENT ON SITE. RE. R402.2.3



A WALL SECTION @ PORCH

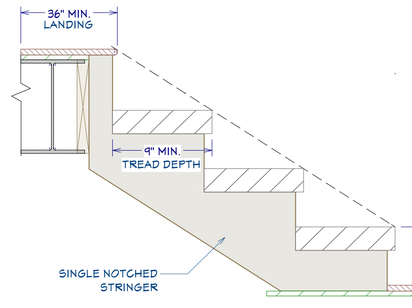
SCALE: 1/4"=1'-0"



RECOMMENDED FDTN DIMS. (U.N.O.)			
2021 O.R.S.C.	'A'	'B'	'C'
1 STORY	15"	7"	8"
2 STORY	15"	7"	8"
2018 O.R.S.C.	'A'	'B'	'C'
1 STORY	13"	6"	8"
2 STORY	17"	6"	8"

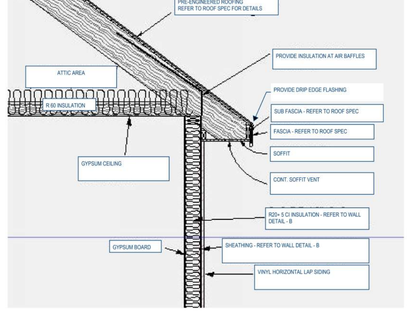
B EXTERIOR WALL DETAIL - VINYL HORIZONTAL LAP W/RIGID INSULATION (TYP.)

SCALE: NTS



C STAIRS SECTION TYP.

SCALE: NTS

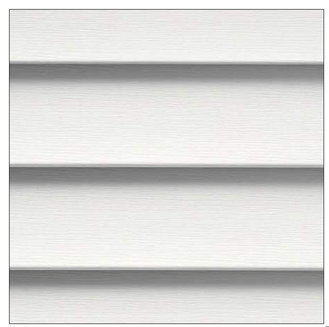


D TYP. ROOF EAVE AND ATTIC INSULATION DETAIL

SCALE: NTS

16 WALL SECTION DETAIL

SCALE: NTS



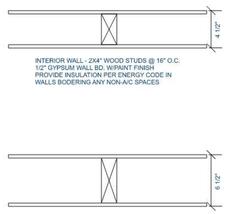
HORIZONTAL LAP SIDING - VINYL
COLOR: WOODGRAIN FINISH -COLONIAL WHITE OR TBD BY OWNER

SECTION 406 VENTILATION OF UNINHABITED SPACES

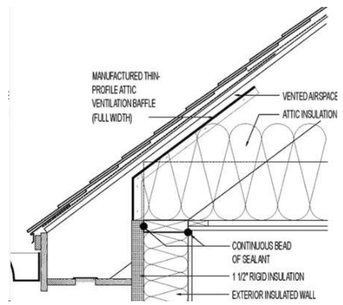
406.1 GENERAL:
- UNINHABITED SPACES, SUCH AS CRAWL SPACES AND ATTICS, SHALL BE PROVIDED WITH NATURAL VENTILATION OPENINGS AS REQUIRED BY THE INTERNATIONAL BUILDING CODE OR SHALL BE PROVIDED WITH A MECHANICAL EXHAUST AND SUPPLY AIR SYSTEM. THE MECHANICAL EXHAUST RATE SHALL BE NOT LESS THAN 0.02 CFM PER SQUARE FOOT (0.00001 M3/S • M2) OF HORIZONTAL AREA AND SHALL BE AUTOMATICALLY CONTROLLED TO OPERATE WHEN THE RELATIVE HUMIDITY IN THE SPACE SERVED EXCEEDS 60 PERCENT.

GRADING NOTES:
1 CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING UTILITIES.
2 PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDING.RE. IBC 1804.4
3 FINAL GRADE TO CONVEY SURFACE DRAINAGE TOWARD ROCK CHANNELS AND DISPERSION TRENCHES.

INTERIOR WALL DETAIL (TYP.)



EAVE BAFFLE DETAIL (TYP.)



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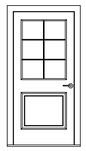
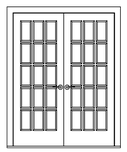
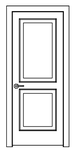
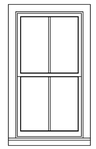
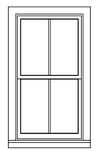
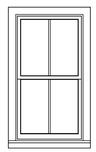
* G.C. TO FIELD VERIFY ALL MEASUREMENTS ON SITE.

DOOR SCHEDULE

3D EXTERIOR ELEVATION	NUMBER	QTY	SIZE	R/O	HEADER	DESCRIPTION	MANUFACTURER	COMMENTS
	D01	1	3068 L EX	38"X83"	2X6X41" (2)	EXT. HINGED-DOOR E02		EXISTING TO REMAIN
	D02	1	5068 L/R EX	62"X83"	2X8X65" (2)	EXT. DOUBLE HINGED-DOOR F07		FRENCH DOOR
	D03	1	3068 R EX	38"X83"	2X6X41" (2)	EXT. HINGED-DOOR E16		EXISTING TO REMAIN
	D04	5	2668 L IN	32"X82 1/2"	2X6X35" (2)	HINGED-DOOR P04		NEW
	D05	3	2668 R IN	32"X82 1/2"	2X6X35" (2)	HINGED-DOOR P04		NEW

WINDOW SCHEDULE

3D EXTERIOR ELEVATION	NUMBER	QTY	SIZE	R/O	AREA, ACTUAL (SQ FT)	HEADER	EGRESS	SHGC	U-FACTOR	DESCRIPTION	MANUFACTURER	COMMENTS
	W01	1	2850SH	33"X61"	13.33	2X6X36" (2)	YES	0.3	0.3	SINGLE HUNG		NEW
	W02	7	2850SH	33"X61"	13.33	2X6X36" (2)		0.3	0.3	SINGLE HUNG		NEW
	W03	11	2850SH	33"X61"	13.33	2X6X36" (2)		0.3	0.3	SINGLE HUNG		EXISTING TO REMAIN
TOTALS:					253.27							

DOOR AND WINDOW NOTES:

1 EVERY BEDROOM SHALL BE PROVIDED WITH AN EGRESS WINDOW WITH FINISH SILL HEIGHT NOT GREATER THAN 44" ABOVE THE FINISH FLOOR HEIGHT AND SHALL HAVE A MINIMUM AREA OF 5.7 SQ. FT. EGRESS WINDOWS SHALL NOT HAVE AN OPENABLE AREA LESS THAN 20" WIDE OR 24" HIGH.

2 ALL WALK-THRU DOORS SHALL BE SOLID CORE

3 INTERIOR DOORS SHALL BE PAINTED. ENTRY DOOR/REAR EXIT DOOR TO BE DEFINED BY HOME OWNER PRIOR ORDERING

4 EXTERIOR EXIT DOORS WILL BE 36" MIN. NET CLEAR DOORWAY SHALL BE 32" MIN. DOOR SHALL BE OPENABLE FROM INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT.

5. ALTERNATIVE SELECTIONS OF DOORS AND WINDOWS WILL BE CONSIDERED. ALL ALTERNATIVES MUST BE EQUAL OR BETTER IN PERFORMANCE TO MEET OR EXCEED IECC CODE REQS.

6. ROUGH OPENINGS ARE ESTIMATES ONLY, FIELD VERIFY ON SITE AND AFTER FINAL SELECTION OF BRAND, STYLE AND SIZE OF DOORS TO BE INSTALLED.

7. FINISHES, COLORS AND HARDWARE TO BE DISCUSSED AND DECIDED UPON BY THE CUSTOMER/ OWNER(S) BEFORE PURCHASE OR INSTALLATION.

8. IF GLASS IS POSITIONED WITHIN 18" OF THE FINISHED FLOOR, SAFETY/ TEMPERED GLASS IS REQUIRED. VERIFY TEMPERED GLASS REQUIREMENTS WITH YOUR LOCAL BUILDING CODES

17 WINDOW AND DOOR SCHEDULES

SCALE: NO SC ALE

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* G.C. TO FIELD VERIFY ALL MEASUREMENTS ON SITE.

CABINET SCHEDULE										
NUMBER	LABEL	QTY	FLOOR	WIDTH	DEPTH	HEIGHT	DESCRIPTION	CODE	MANUFACTURER	COMMENTS
C01	3DB2421	1	2	24 "	21 "	36 "	BASE CABINET			
C02	B24R	2	1	24 "	24 "	36 "	BASE CABINET			
C03	DCB36R	1	1	36 "	36 "	36 "	CORNER BASE CABINET			
C04	DCW2442R	1	1	24 "	24 "	42 "	CORNER WALL CABINET			
C05	SB2421R	1	2	24 "	21 "	36 "	BASE CABINET			
C06	SB36	1	1	36 "	24 "	36 "	BASE CABINET			
C07	SB36	1	2	36 "	24 "	36 "	BASE CABINET			
C08	W1242R	1	1	12 "	12 "	42 "	WALL CABINET			
C09	W2442L	2	1	24 "	12 "	42 "	WALL CABINET			
C10	W2436R	2	2	24 "	12 "	36 "	WALL CABINET			
C11	W2442R	3	1	24 "	12 "	42 "	WALL CABINET			
C12	B21R	1	2	21 "	24 "	36 "	BASE CABINET			
C13	BF2	1	2	1 3/4 "	24 "	36 "	BASE CABINET FILLER			
C14	W2436L	1	2	24 "	12 "	36 "	WALL CABINET			
C15	WF336	1	2	3 "	12 "	36 "	WALL CABINET FILLER			
C16	W1242L	1	1	12 "	12 "	42 "	WALL CABINET			
C17	SB2421L	1	2	24 "	21 "	36 "	BASE CABINET			
C18	B24L	1	1	24 "	24 "	36 "	BASE CABINET			

* CABINET SCHEDULE FOR REFERENCE ONLY. COORDINATE WITH SPECIFIC CABINET INSTALLER AN/OR REPRESENTATIVE FOR FINAL SIZE/DIMENSIONS & BUILD SCHEMATICS.

**ALL FINISHES TO BE DECIDED ON AND CHOSEN BY THE OWNER(S). MATERIALS, FINISHES, HARDWARE, COUNTERTOPS, COLORS, BRANDS AND STYLES REPRESENTED IN THESE PLANS ARE FOR CONCEPTUAL VISUALIZATION ONLY.

*** ALL CABINET SIZES TO BE FIELD VERIFIED BY THE GC AND TO BE MEASURED AND INSTALLED BY AN APPROPRIATE CABINET INSTALLER/COMPANY. DETAILS SHOWN IN PLAN AND IN CABINET SCHEDULE ON THESE PLANS ARE *REFERENCE ONLY.*

KITCHEN AND CABINET NOTES:

*ALTERNATIVE SELECTIONS AND SIZES OF CABINETS MAY BE SELECTED BY OWNER AND OR G.C.

* ALL DIMENSIONS SHOWN ARE ESTIMATES ONLY, FIELD VERIFY ON SITE AND AFTER FINAL SELECTION OF BRAND, STYLE AND SIZE OF CABINETS TO BE INSTALLED; G.C., OWNER, OWNER REPRESENTATIVE OR CABINET INSTALLER/MAKER TO FIELD VERIFY AFTER CONSTRUCTION IS COMPLETE FOR MORE EXACTING FINAL MEASUREMENTS TO BE TAKEN.

1. ALL CABINETS TO BE PAINTED - COLOR TBD WITH HOME OWNER PRIOR TO ORDERING OR INSTALLATION.
2. CONFIRM DOOR & DRAWER STYLES WITH HOME OWNER PRIOR TO ORDERING OR INSTALLATION.
3. INSTALL ALL HARDWARE ON SITE. - FINISH AND STYLE TBD BY HOMEOWNER BEFORE ORDERING OR INSTALLATION.
4. INSTALL CROWN MOLDING ON SITE; MATCH CABINET COLOR TO UPPER CABINETS IN AREA TO BE INSTALLED; CONFIRM PROFILE AND DIMENSION WITH HOME OWNER.
5. CUT OVEN OPENING ON SITE, SEE APPLIANCE MANUFACTURER SPECIFICATIONS FOR SPECIFIC APPLIANCE CHOSEN.
6. INSTALL HOOD AND ALL APPLIANCES PER MANUFACTURER SPECIFICATIONS AND PER CODE.
7. ALL APPLIANCES TO BE ON DEDICATED CIRCUITS.
8. USE MIN 6" DUCT FOR HOOD.
9. CONFIRM FINAL MATERIALS FOR BACKSPLASH AND COUNTERTOP WITH HOME OWNER PRIOR TO ORDERING OR INSTALLATION.

*ASG DESIGN GROUP TAKES NO RESPONSIBILITY FOR ILL FITTING, NON FITTING CABINETS AS CABINETS SHOWN ON PLAN ARE FOR REFERENCE ONLY. DIMENSIONS FOR REFERENCE ONLY. F.V. ALL FINAL MEASUREMENTS BEFORE CABINETS ORDERED.

18 CABINET SCHEDULE
SCALE: NO SC ALE

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1. PLUMBING PENETRATIONS TROUGH RIM JOISTS SHOULD BE SEALED WITH EXPANDING FOAM OR CAULK. VENT STACKS PENETRATING INTO ATTIC SHOULD BE SEALED WITH FLEXIBLE SEAL FOR ACCOMMODATION OF PIPE EXPANSION.

2. OUTLET BOXES SHOULD BE INSTALLED WITH AIRTIGHT BOXES ON EXTERIOR WALLS AND INSULATED CEILINGS OR SEALANTS MAY BE USED ON PENETRATIONS IN STANDARD OUTLET BOXES.

3. RECESSED LIGHT FIXTURES IN CEILING SHOULD BE INSULATION COVER (IC) RATED. THESE ARE AIRTIGHT AND CAN BE COVERED WITH INSULATION. RECESSED LIGHT FIXTURES INSTALLED IN DROPPED CEILINGS OR SOFFITS NEED TO BE DRAFT STOPPED. REF: R402.4.5

4. SEAL ALL ELECTRICAL PANELS INSTALLED ON EXTERIOR WALLS SO THAT THEY ARE SEALED FROM AIR PENETRATION.

IECC NOTES:

1. PER CITY AND COUNTY IECC REQUIREMENTS, METHOD OF COMPLIANCE SHALL BE PRESCRIPTIVE PERFORMANCE.
2. CLIMATE ZONE 4A
3. MAXIMUM FENESTRATION U-FACTOR: 0.30 (FOR ALL GLAZING)
4. GLAZED FENESTRATION SHGC: 0.40
5. SKYLIGHT U-FACTOR:0.55

6. A CONTINUOUS AIR BARRIER SHALL BE INSTALLED IN THE BUILDING ENVELOPE AND EXTERNAL THERMAL ENVELOPE. ANY BREAKS OR JOINTS SHALL BE SEALED. AIR BARRIER SHALL BE ALIGNED WITH INSULATION AND CONTINUOUS ACROSS ALL ENVELOPE COMPONENTS.
7. **R402.1.2 PRESCRIPTIVE INSULATION REQUIREMENTS (CLIMATE ZONE 4A):**
   CEILING: R-60
   WOOD FRAME WALL: R-20 CAVITY + R-5 CONTINUOUS OR R-13 CAVITY + R-10 CONTINUOUS
   MASS WALL: R-8 / R-13 (INTERIOR/EXTERIOR)
   FLOOR: R-19
   BASEMENT WALL: R-10 / R-13
   SLAB-ON-GRADE (≤12" BELOW GRADE): R-10, 4 FT DEPTH
   CRAWL SPACE WALL: R-10 / R-13

8. **R402.2.1 CEILINGS WITH ATTIC SPACES:** WHERE SECTION R402.1.2 REQUIRES R-60 INSULATION IN THE CEILING, NO REDUCTION IS PERMITTED UNDER THE PRESCRIPTIVE PATH.
   WHERE SECTION R402.1.2 REQUIRES R-49 INSULATION IN THE CEILING, INSTALLING R-38 OVER 100% OF THE CEILING AREA REQUIRING INSULATION SHALL SATISFY THE REQUIREMENT FOR R-49 INSULATION WHEREVER THE FULL HEIGHT OF UNCOMPRESSED R-38 INSULATION EXTENDS OVER THE WALL TOP PLATE AT THE EAVES.
   THIS REDUCTION SHALL NOT APPLY TO THE U-FACTOR ALTERNATIVE APPROACH IN SECTION R402.1.4 AND THE TOTAL UA ALTERNATIVE IN SECTION R402.1.5.

9. **R402.2.4 ACCESS HATCHES AND DOORS:** ACCESS DOORS FROM CONDITIONED SPACES TO UNCONDITIONED SPACES SUCH AS ATTICS AND CRAWL SPACES SHALL BE WEATHERSTRIPPED AND INSULATED TO A LEVEL EQUIVALENT TO THE INSULATION ON THE SURROUNDING SURFACES. ACCESS THAT PREVENTS DAMAGING OR COMPRESSING THE INSULATION SHALL BE PROVIDED TO ALL EQUIPMENT. WHERE LOOSE-FILL INSULATION IS INSTALLED, A WOOD-FRAMED OR EQUIVALENT BAFFLE OR RETAINER SHALL BE INSTALLED TO PREVENT THE LOOSE-FILL INSULATION FROM SPILLING INTO THE LIVING SPACE WHEN THE ATTIC ACCESS IS OPENED. THE BAFFLE OR RETAINER SHALL PROVIDE A PERMANENT MEANS OF MAINTAINING THE INSTALLED R-VALUE OF THE LOOSE-FILL INSULATION.

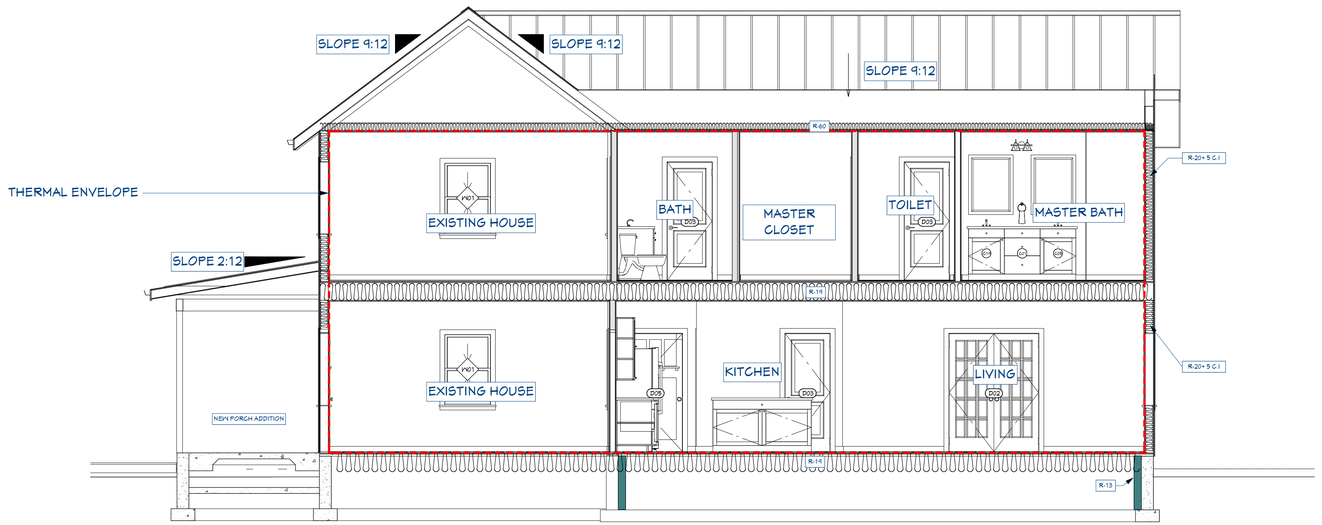
10. **R402.2.3 EAVE BAFFLE:** FOR AIR-PERMEABLE INSULATIONS IN VENTED ATTICS, A BAFFLE SHALL BE INSTALLED ADJACENT TO SOFFIT AND EAVE VENTS. BAFFLES SHALL MAINTAIN AN OPENING EQUAL OR GREATER THAN THE SIZE OF THE VENT. THE BAFFLE SHALL EXTEND OVER THE TOP OF THE ATTIC INSULATION. THE BAFFLE SHALL BE PERMITTED TO BE ANY SOLID MATERIAL.

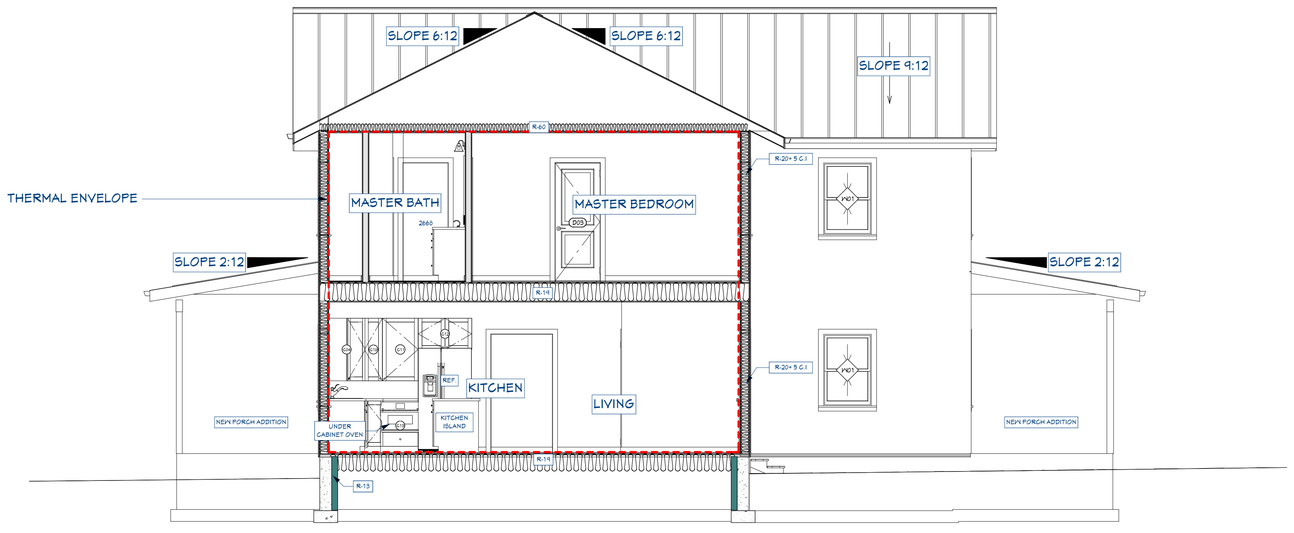
11. **R402.2.8 FLOORS:** FLOOR FRAMING-CAVITY INSULATION SHALL BE INSTALLED TO MAINTAIN PERMANENT CONTACT WITH THE UNDERSIDE OF THE SUBFLOOR DECKING. EXCEPTION: AS AN ALTERNATIVE, THE FLOOR FRAMING-CAVITY INSULATION SHALL BE IN CONTACT WITH THE TOPSIDE OF SHEATHING OR CONTINUOUS INSULATION INSTALLED ON THE BOTTOM SIDE OF FLOOR FRAMING WHERE COMBINED WITH INSULATION THAT MEETS OR EXCEEDS THE MINIMUM WOOD FRAME WALL R-VALUE IN TABLE R402.1.2 AND THAT EXTENDS FROM THE BOTTOM TO THE TOP OF ALL PERIMETER FLOOR FRAMING MEMBERS.

12.. **R402.2.9 BASEMENT:** WALLS ASSOCIATED WITH CONDITIONED BASEMENTS SHALL BE INSULATED FROM THE TOP OF THE BASEMENT WALL DOWN TO 10 FT. BELOW GRADE OR TO THE BASEMENT FLOOR, WHICHEVER IS LESS. WALLS ASSOCIATED WITH UNCONDITIONED BASEMENTS SHALL COMPLY WITH THIS REQUIREMENT EXCEPT WHERE THE FLOOR OVERHEAD IS INSULATED IN ACCORDANCE WITH SECTIONS R402.1.2 AND R402.2.8.

13. **R402.2.10 SLAB-ON-GRADE FLOORS:** SLAB-ON-GRADE FLOORS WITH A FLOOR SURFACE LESS THAN 12 INCHES BELOW GRADE SHALL BE INSULATED IN ACCORDANCE WITH TABLE R402.1.2. THE INSULATION SHALL EXTEND DOWNWARD FROM THE TOP OF THE SLAB ON THE OUTSIDE OR INSIDE OF THE FOUNDATION WALL. INSULATION LOCATED BELOW GRADE SHALL BE EXTENDED THE DISTANCE PROVIDED IN TABLE R402.1.2 BY ANY COMBINATION OF VERTICAL INSULATION, INSULATION EXTENDING UNDER THE SLAB OR INSULATION EXTENDING OUT FROM THE BUILDING.
- INSULATION EXTENDING AWAY FROM THE BUILDING SHALL BE PROTECTED BY PAVEMENT OR BY NOT LESS THAN 10 INCHES OF SOIL. THE TOP EDGE OF THE INSULATION INSTALLED BETWEEN THE EXTERIOR WALL AND THE EDGE OF THE INTERIOR SLAB SHALL BE PERMITTED TO BE CUT AT A 45-DEGREE ANGLE AWAY FROM THE EXTERIOR WALL.
- SLAB-EDGE INSULATION IS NOT REQUIRED IN JURISDICTIONS DESIGNATED BY THE CODE OFFICIAL AS HAVING A VERY HEAVY TERMITE INFESTATION.

* G.C. TO FIELD VERIFY ALL MEASUREMENTS ON SITE.





19 THERMAL ENVELOPE & IECC INFORMATION

SCALE: 1/8" = 1 FT.

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CONCEPTUAL RENDERINGS ONLY. NOT INTENDED FOR ACTUAL COLOR, MATERIALS OR DESIGN. VERIFY WITH OWNER FOR ALL COLOR, MATERIAL AND DESIGN QUESTIONS AND CHOICES.

RENDERINGS ARE NOT TO SCALE; ALL RENDERINGS ARE FOR ARTISTIC DEPICTION ONLY. PLAN UPDATES MAY NOT BE REFLECTED IN RENDERINGS. RENDERINGS SHALL NOT BE USED FOR CONSTRUCTION.

BASE BOARDS SHALL BE 6" IN ALL ROOMS, UNO.
FINAL FINISHES SHALL BE CONFIRMED WITH THE HOME OWNER PRIOR TO APPLICATION.

1 CONCEPTUAL DESIGN PHOTOS - EXTERIOR

SCALE: NO SCALE

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STRUCTURAL NOTES

BUILDING CODE AND STANDARDS

1.THE FOLLOWING CODES AND STANDARDS, INCLUDING ALL SPECIFICATIONS REFERENCED WITHIN, SHALL APPLY TO THE DESIGN, CONSTRUCTION AND QUALITY CONTROL OF ALL WORK PERFORMED ON THE PROJECT.
A.THE 2021 VIRGINIA RESIDENTIAL CODE.
B.ADDITIONAL DESIGN STANDARDS FOR MATERIALS SHALL BE FOUND IN THE APPROPRIATE SECTIONS THAT FOLLOW.

DESIGN LOADS

FLOOR LIVE LOAD 30PSF SLEEPING AREA / 40PSF LIVING AREA
FLOOR DEAD LOAD 15PSF
GROUND SNOW LOAD 25PSF
TOP CHORD DEAD LOAD 10PSF
BOTTOM CHORD DEAD LOAD 10PSF

WIND LOADS

A.WIND SPEED (VULT) 112MPH
B.RISK CATEGORY II
C.EXPOSURE CATEGORY B

STRUCTURAL WOOD

1.DESIGN, FABRICATION AND CONSTRUCTION OF WOOD FRAMING SHALL CONFORM WITH 2018 NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION.
2.ALL FRAMING LUMBER SHALL BE #2 SPF OR BETTER UNLESS SPECIFIED OTHERWISE.
3.UNLESS OTHERWISE NOTES, ALL FRAMING CONNECTIONS SHALL COMPLY WITH TABLE R602.3(1) OF THE 2021 IRC.
4.I-JOISTS SHALL BE 9-1/2” PJI-40 SERIES AS MANUFACTURED BY EACOM TIMBER CORP.
5.LAMINATED VENEER LUMBER (LVL) SHALL BE RIGIDLAM AS MANUFACTURED BY ROSEBURG FOREST PRODUCTS AND HAVE MINIMUM DESIGN VALUES OF
a.MODULUS OF ELASTICITY2,100,000PSI
b.BENDING STRESS3,100PSI
c.SHEAR STRESS290PSI
d.COMPRESSION PERPENDICULAR TO GRAIN750PSI
6.REFER TO MANUFACTURER'S REQUIREMENTS FOR FRAMING DETAILS, INSTALLATION, HANDLING, AND CONNECTION INFORMATION INCLUDING FASTENING OF MULTIPLY LVL BEAMS.
7.ALL BEAM SUPPORT LOCATIONS SHALL BE BLOCKED TO SUPPORT BEAMS OR FOUNDATIONS BELOW.
8.ALL HANGERS AND HARDWARE AS MANUFACTURED BY SIMPSON STRONG-TIE. FOLLOW FASTENER AND ACCESSORY REQUIREMENTS AS SPECIFIED BY SIMPSON AND ELP MANUFACTURER.

LATERAL WIND RESISTING SYSTEMS

1.LATERAL WIND RESISTING SYSTEMS SHALL BE INSTALLED PER CODE REQUIREMENTS AND SHALL CONSIST OF THE METHODS OUTLINED IN THIS SECTION AND/OR SPECIFIED ON THE PLANS.
2.CONTINUOUSLY SHEATHED WOOD STRUCTURAL PANEL (CS-WSP):
a.MAXIMUM STUD SPACING OF 16” O.C.
b.ALL EXTERIOR WALLS SHALL BE SHEATHED WITH WOOD STRUCTURAL SHEATHING (7/16” MINIMUM THICKNESS).
c.FASTENED TO WOOD FRAMING WITH 8D COMMON NAILS (0.131” X 2.5”) AT 6” O.C. AT EDGES AND 12” O.C. IN THE FIELD.

PREFABRICATED WOOD TRUSS ROOF

1.TRUSSES SHALL BE DESIGNED IN ACCORDANCE WITH ANSI/TPI 1, NATIONAL DESIGN STANDARD FOR METAL PLATE CONNECTED WOOD TRUSS CONSTRUCTION AND THIS SPECIFICATION.
2.TRUSS MANUFACTURER SHALL FURNISH TRUSS DESIGN DRAWINGS AND A TRUSS PLACEMENT DIAGRAM TO THE ARCHITECT/ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION AND DELIVERY.

FOUNDATION

1. ALL FOOTINGS, INCLUDING SLAB ON GRADE, SHALL BEAR ON UNDISTURBED SOIL OR COMPACTED
STRUCTURAL FILL WITH AN ALLOWABLE BEARING CAPACITY OF 1500 PSF, MIN.
2. ALL FOUNDATION CONCRETE SHALL OBTAIN A 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI. ALL SLAB ON GRADE CONCRETE AND CONCRETE EXPOSED TO WEATHER SHALL OBTAIN A 28-DAY COMPRESSIVE STRENGTH OF 3500 PSI AND BE AIR ENTRAINED.
3. ALL REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ASTM A615, GRADE 60.
4. CONCRETE PROTECTION FOR REINFORCING AS WELL AS PLACING AND FABRICATION OF REINFORCING SHALL BE IN ACCORDANCE WITH THE "AMERICAN CONCRETE INSTITUTE BUILDING CODE REQUIREMENTS" (ACI 318).
5. EARTH FORMED FOOTINGS SHALL CONFORM TO THE SHAPE, LINES, AND DIMENSIONS AS SHOWN ON THE
FOUNDATION PLAN. ALL WATER SHALL BE REMOVED PRIOR TO PLACING CONCRETE. FOOTING NOT TO BE
PLACED ON FROZEN GROUND.
6. BEFORE PLACING CONCRETE, ALL EMBEDDED ITEMS SHALL BE PROPERLY LOCATED, ACCURATELY
POSITIONED AND MAINTAINED SECURELY IN PLACE.
7. FOUNDATION FOOTING DEPTH MAY VARY ACCORDING TO LOCAL CODES AND FROST CONDITIONS.
8. DAMPPROOFING AND WATERPROOFING SHALL BE INSTALLED PER MANUF. SPECIFICATIONS AND LOCAL
CODE REQUIREMENTS.
9. PROVIDE 1/2" DOUBLE GALV. FOUNDATION ANCHOR BOLTS AT 6' O.C. MAX. 1'-0" FROM CORNERS. SECURE TO SILL PLATE OR BOTTOM PLATE WITH 1/2" WASHER & NUT. NO LESS THAN 2 ANCHORS PER SECTION.
10. SLABS SHALL HAVE CONTROL JOINTS IN PLACE WITHIN 48 HOURS AFTER POUR.
11. CONT. FOOTINGS @ FOUNDATIONS W/ BRICK & 8" BLOCK SHALL BE 36" WIDE X 14" THICK, U.N.O.
12. CONT. FOOTINGS @ FOUNDATIONS W/ 8" PARGED BLOCK SHALL BE 36" WIDE X 14" THICK, U.N.O.
13. ALL CONTINUOUS REINFORCING SHALL LAP 48 BAR DIAMETERS UNLESS OTHERWISE NOTED ON THE DRAWINGS.
14. FOUNDATION DRAINS SHALL BE LOCATED PER VCC2021.

CONTRACTOR RISPONSIBILITY

1. CONTRACTOR SHALL COMPLY WITH THE CONTENT OF THE SPECIFICATIONS FOR THIS HOUSE. THESE PLANS ARE NOT TO BE SCALED FOR CONSTRUCTION PURPOSES. ALL DIMENSIONS SUPERCEDE ANY SCALED REFERENCE. ANY DIMENSIONAL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGNER.
2. CONTRACTOR TO VERIFY ALL DIMENSIONS.
3. THE CONTRACTOR SHALL COORDINATE THE ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS, AND VERIFY THE REQUIREMENTS OF THE OTHER TRADES AS TO SLEEVES, CHASES, HANGERS, INSERTS, ANCHORS, HOLES, ETC.
4. FINAL CONNECTION OF ALL WATER AND SEWER TO THE RESIDENCE IS THE RESPONSIBILITY OF THE CUSTOMER. PLEASE COORDINATE IN ADVANCE ALL FEES, APPLICATIONS, AND AUTHORITIES INVOLVED IN THE CONNECTION OF WATER & SEWER.
5. CONTRACTOR SHALL VERIFY EXISTING BUILDING AND FOOTINGS WITH THE DRAWINGS AND NOTIFY THE STRUCTURAL ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.

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General Notes

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DATE: 9/29/2025

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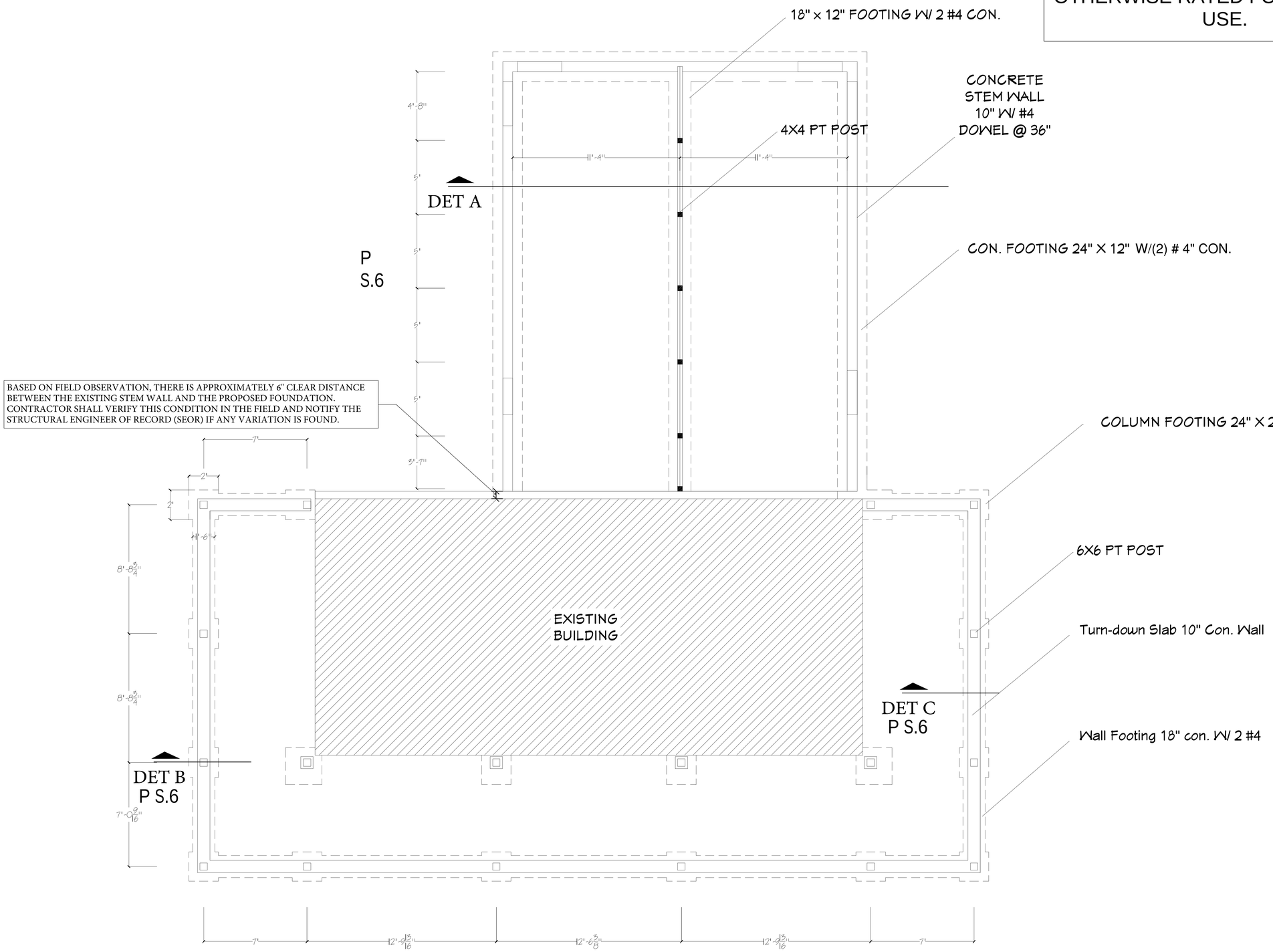
1. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND EXISTING CONDITIONS SHALL BE REPORTED TO THE STRUCTURAL ENGINEER OF RECORD (SEOR) FOR REVIEW AND DIRECTION BEFORE PROCEEDING WITH THE WORK.

2. ALL EXISTING AND PROPOSED FOUNDATIONS SHALL BEAR ON NATURAL UNDISTURBED SOIL. IF UNSUITABLE OR DISTURBED SOIL IS ENCOUNTERED, THE CONTRACTOR SHALL NOTIFY THE SEOR AND REPLACE OR RECOMPACT THE MATERIAL TO A MINIMUM OF 95% MAXIMUM DRY DENSITY USING SUITABLE STRUCTURAL FILL PER ASTM D698.

ALL EXPOSED FRAMING MEMBERS (LVLS, POSTS, JOISTS, ETC.) SHALL BE PRESSURE-TREATED OR OTHERWISE RATED FOR EXTERIOR USE.



BASED ON FIELD OBSERVATION, THERE IS APPROXIMATELY 6" CLEAR DISTANCE BETWEEN THE EXISTING STEM WALL AND THE PROPOSED FOUNDATION. CONTRACTOR SHALL VERIFY THIS CONDITION IN THE FIELD AND NOTIFY THE STRUCTURAL ENGINEER OF RECORD (SEOR) IF ANY VARIATION IS FOUND.

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Foundation Plan

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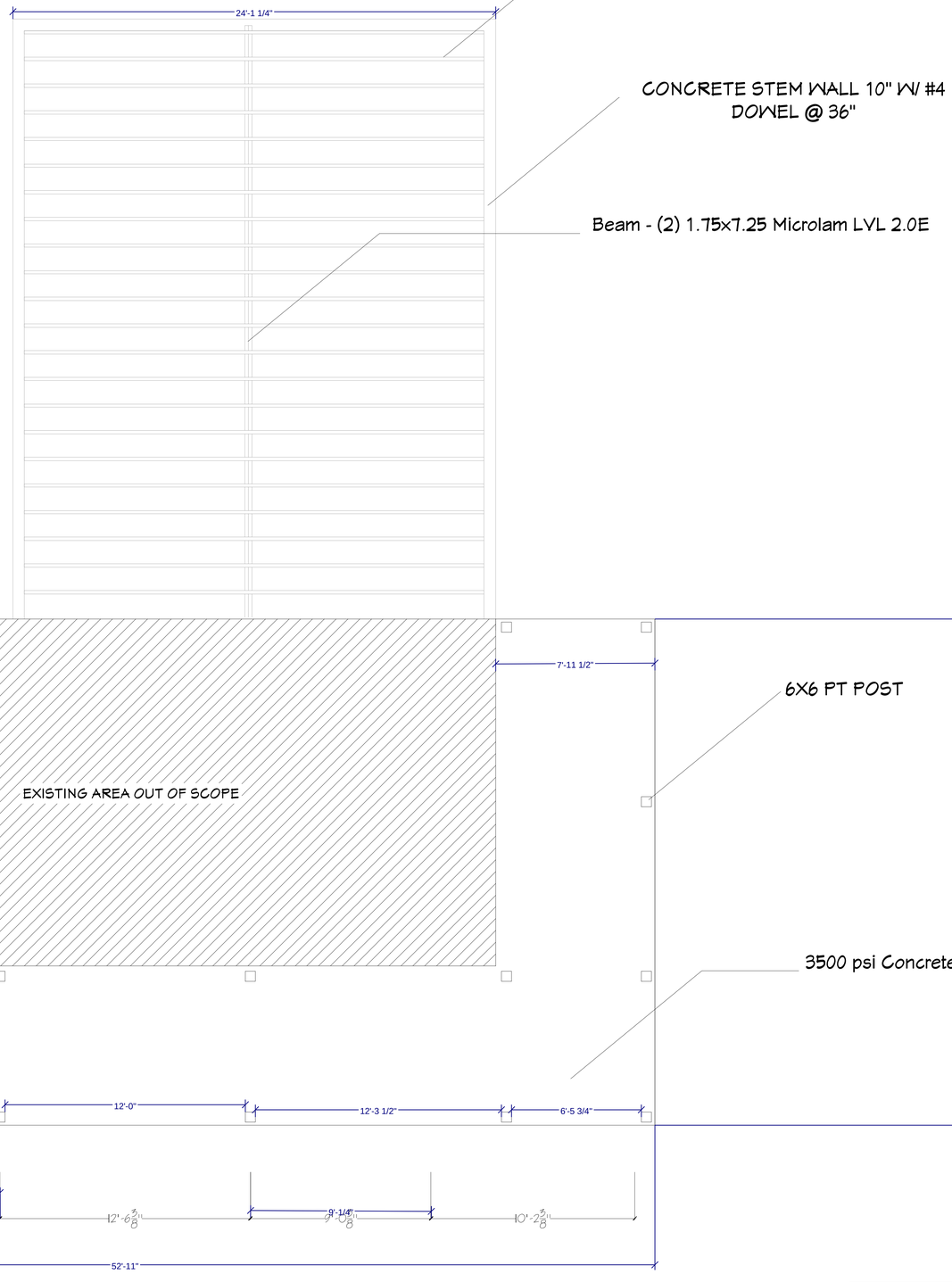
ALL 1st FLOOR'S EXTERIOR OPENINGS SHALL BE INCLUDED WITH SPF #2 (2) 2x10 HEADER W/KING STUDS & SINGLE JACK

ALL EXPOSED FRAMING MEMBERS (LVLS, POSTS, JOISTS, ETC.) SHALL BE PRESSURE-TREATED OR OTHERWISE RATED FOR EXTERIOR USE.



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First Floor Plan

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DRAWING NO.: S-2

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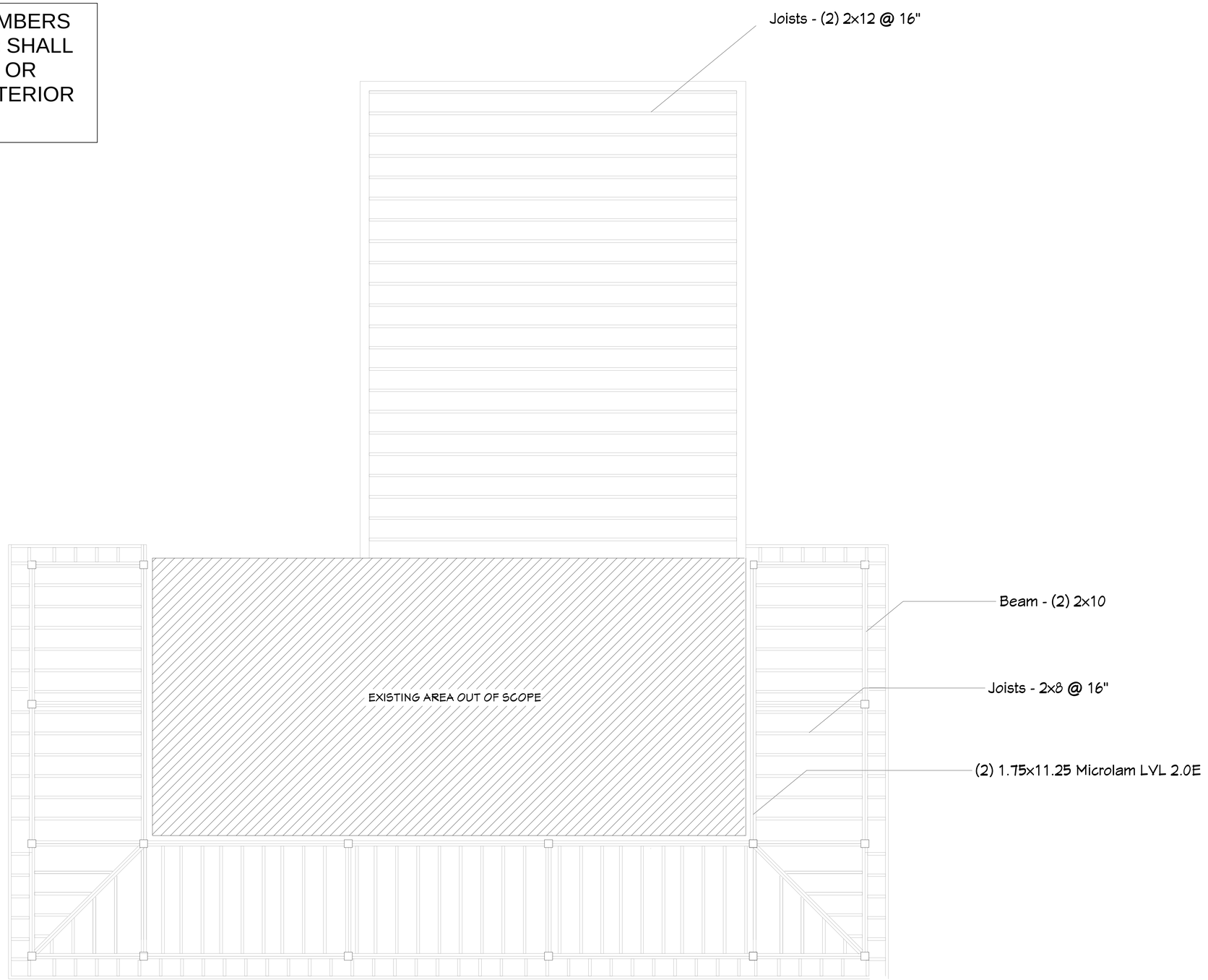
ALL 2nd FLOOR'S EXTERIOR OPENINGS SHALL BE INCLUDED WITH SPF #2 (2) 2x8 HEADER W/KING STUDS & SINGLE JACK

ALL EXPOSED FRAMING MEMBERS (LVLS, POSTS, JOISTS, ETC.) SHALL BE PRESSURE-TREATED OR OTHERWISE RATED FOR EXTERIOR USE.



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Second Floor Plan

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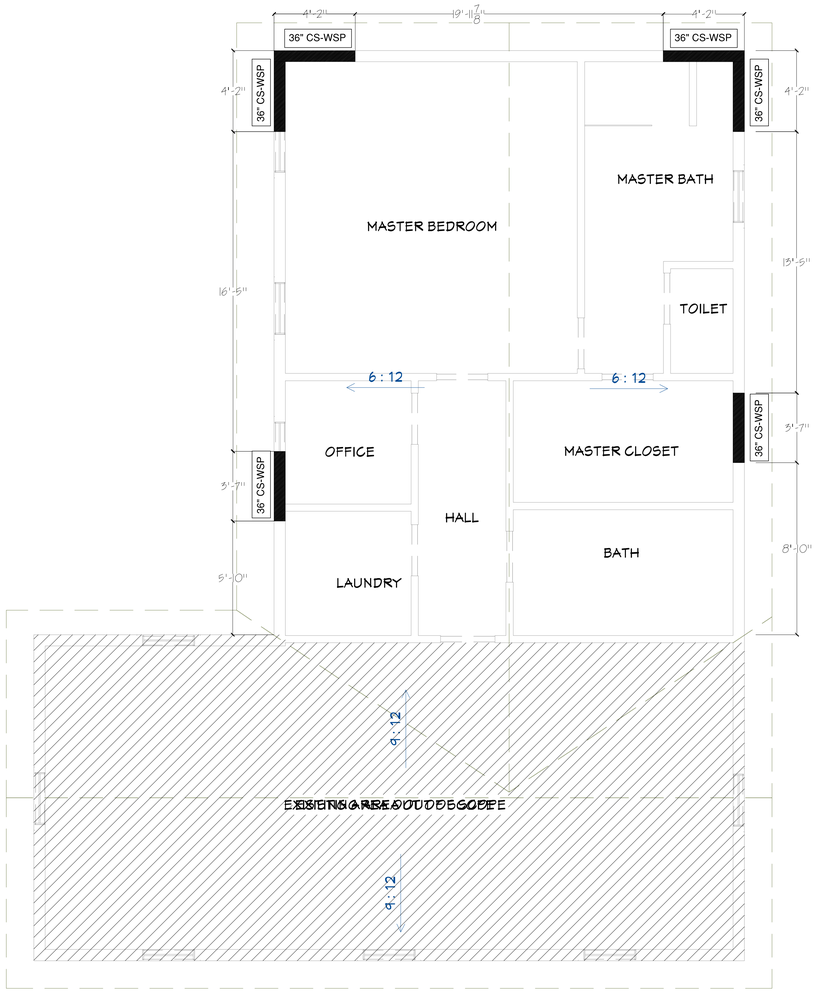
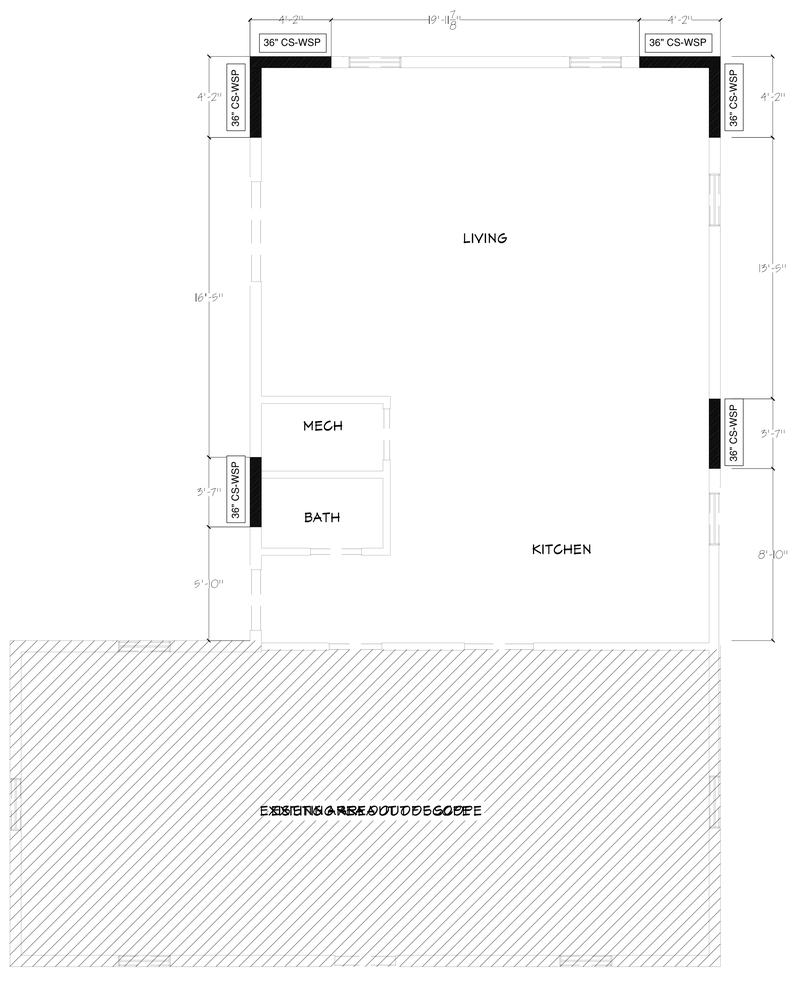
WALL BRACING NOTES:
1. THIS MODEL HAS BE DESIGNED TO RESIST THE LATERAL FORCES AS STATED IN THE DESIGN CRITERIA
2. WALL BRACING METHOD TO BE CONTINUOUS SHEATHING - WOOD STRUCTURAL PANEL (CS-WSP)
3. ALL PANELS TO BE 7/16" OSB SHEATHING OVER 2X4 STUDS & 16" O.C. WITH DOUBLE TOP PLATE & SINGLE BOTTOM PLATE.
4. SHEATHING TO EXTEND FROM BOTTOM EDGE OF BOTTOM PLATE TO TOP EDGE OF LOWER DOUBLE PLATE.
4. NAILING PATTERN AND FASTENERS SHALL CONFORM TO IRC 2021 CODE.
5. THE REQUIRED WIND AND SEISMIC BRACING AMOUNTS FOR METHOD GB BRACING ARE BASED ON DOUBLE-SIDED VERTICAL GYPSUM WALL BOARD.
6. SEE ATTACHED WIND CALCULATION SHEETS

ALL EXPOSED FRAMING MEMBERS (LVLS, POSTS, JOISTS, ETC.) SHALL BE PRESSURE-TREATED OR OTHERWISE RATED FOR EXTERIOR USE.



Second Floor



First Floor

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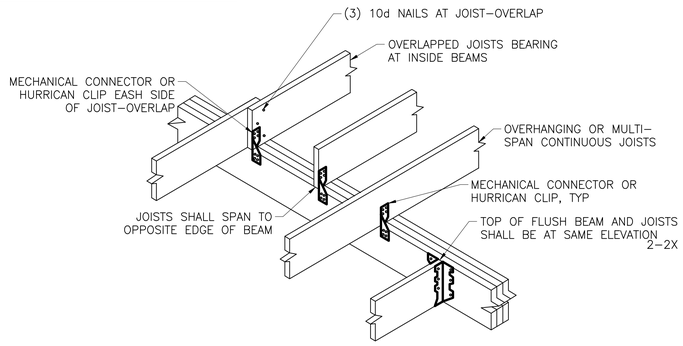
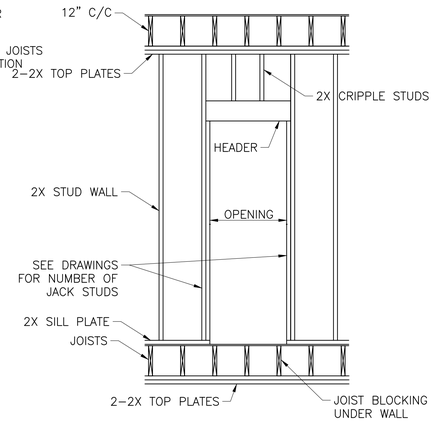
ALL EXTERIOR WALLS AND INTERIOR LOAD BEARING WALLS SHAL BE AT LEAST 2"x 6" SPF #2 OR BETTER MATERIAL

ALL EXPOSED FRAMING MEMBERS (LVLS, POSTS, JOISTS, ETC.) SHALL BE PRESSURE-TREATED OR OTHERWISE RATED FOR EXTERIOR USE.



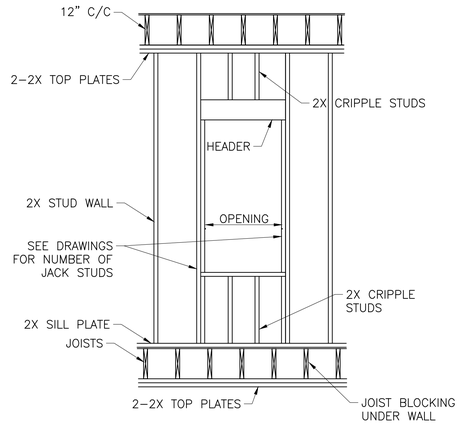
JOIST–TO–BEAM CONNECTION

NOT TO SCALE



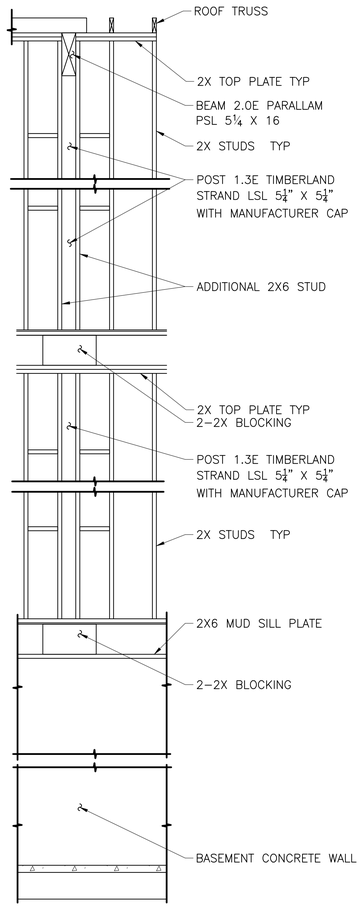
TYPICAL DOOR FRAME ELEVATION

NOT TO SCALE



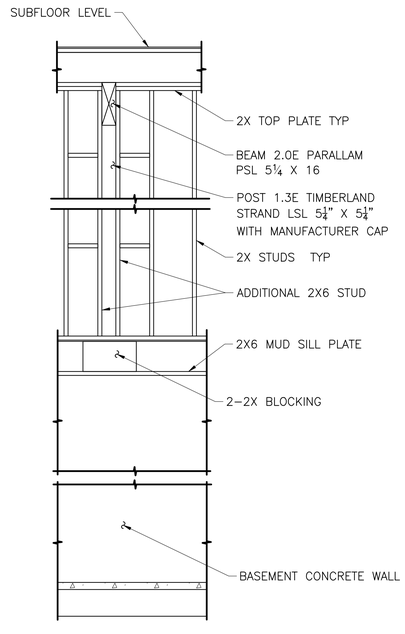
TYPICAL WINDOW FRAME ELEVATION

NOT TO SCALE



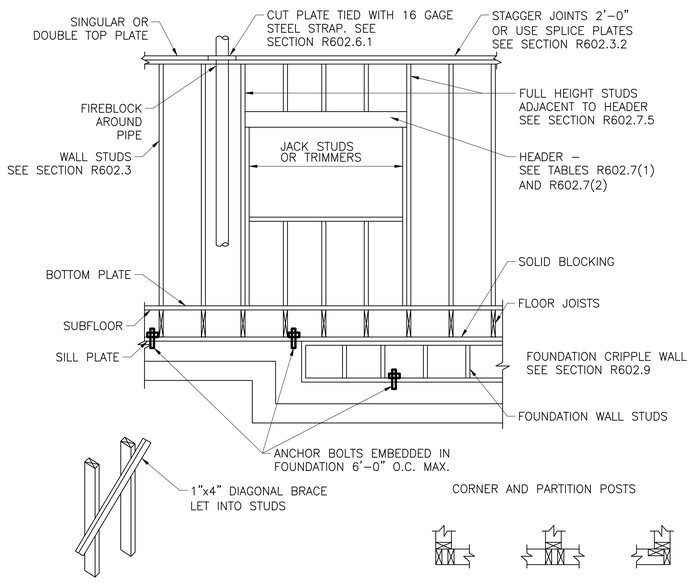
ROOF BEAM POST INSIDE STUD WALL DETAIL

NOT TO SCALE



FLOOR BEAM POST INSIDE STUD WALL DETAIL

NOT TO SCALE

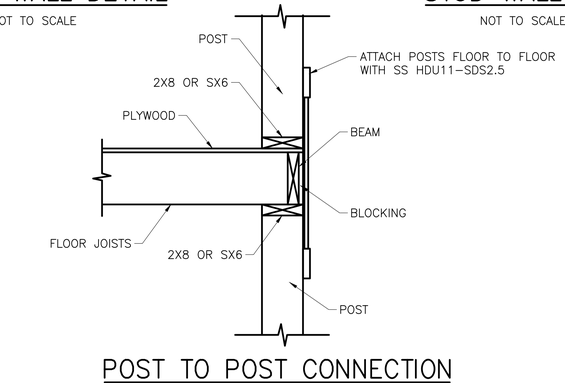


APPLY APPROVED SHEATHING OR BRACE EXTERIOR WALLS WITH 1"x4" BRACES LET INTO STUDS AND PLATES AND EXTENDING FROM BOTTOM PLATE TO TOP PLATE, OR OTHER APPROVED METAL STRAP DEVICES INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS SEE SECTION R602.10

NOTE:
A THIRD STUD ANCHOR PARTITION INTERSECTION BACKING STUDS SHALL BE PERMITTED TO BE OMITTED THROUGH THE USE OF WOOD BACKUP CLEATS, METAL DRYWALL CLIPS OR OTHER APPROVED DEVICES THAT WILL SERVE AS ADEQUATE BACKING FRO THE FACING MATERIALS.

TYPICAL WALL FLOOR ROOF FRAMING

NOT TO SCALE



POST TO POST CONNECTION

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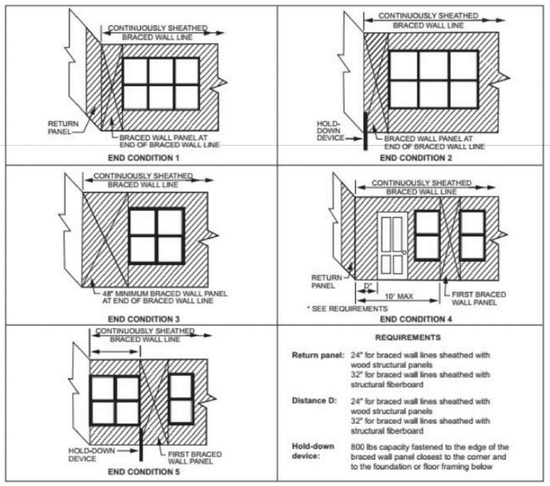
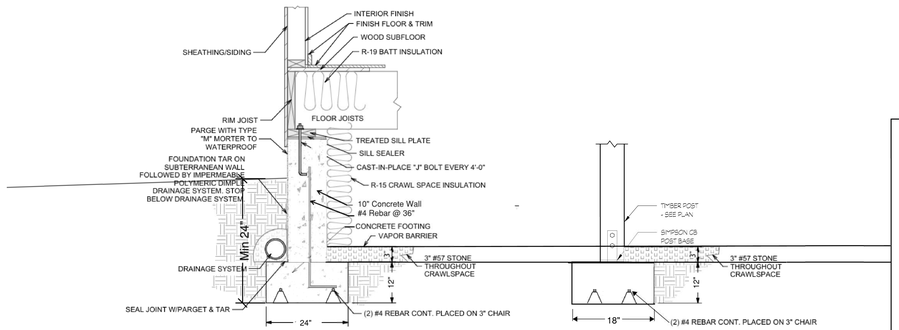


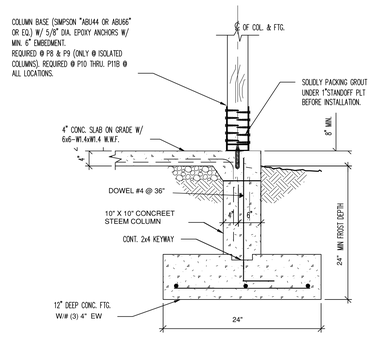
For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound = 4.45 N.

FIGURE R602.10.7END CONDITIONS FOR BRACED WALL LINES WITH CONTINUOUS SHEATHING

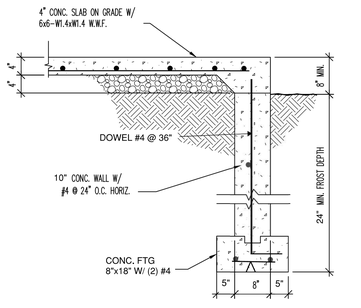
SCALE: NTS



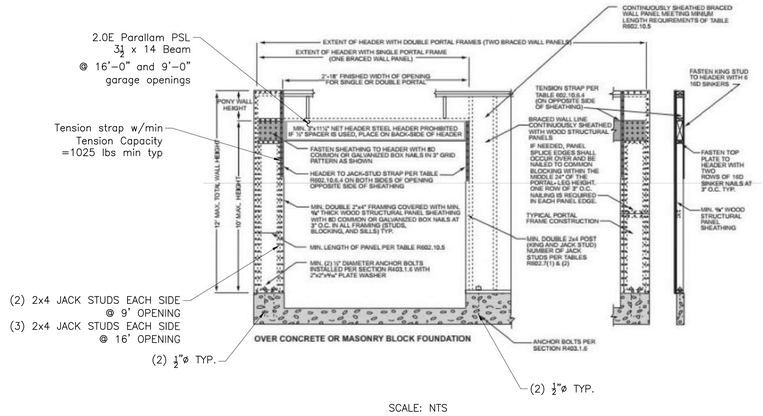
CRAWL SPACE DETAIL-DET A



PORCH FOUNDATION DETAIL - DET B



PORCH TURN-DOWN SLAB DETAIL - DET C



SCALE: NTS

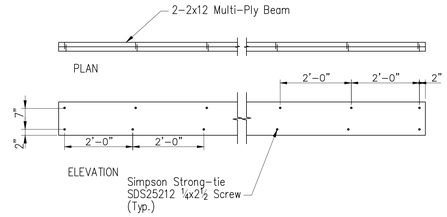
ALL EXPOSED FRAMING MEMBERS (LVLS, POSTS, JOISTS, ETC.) SHALL BE PRESSURE-TREATED OR OTHERWISE RATED FOR EXTERIOR USE.

Nails Installed on the Narrow Face

Nail Size	Closest On-Center Spacing Per Row		
	TimberStrand® LSL	Microllam® LVL	Parallam® PSL
8d (0.113" x 2½"), 8d (0.131" x 2½"), or 10d (0.128" x 3")	3"	4"	4"
10d (0.148" x 3") or 12d (0.148" x 3¼")	3"	5"	4"
16d (0.162" x 3½")	6"(3)	8"(2)	6"
(0.131" x 3"–3½")	3"	4"	4"

(1) Can be reduced to 3½" on-center if nail penetration into the narrow edge is no more than 1¼" (to minimize splitting).
(2) Can be reduced to 5" on-center if nail penetration into the narrow edge is no more than 1¼" (to minimize splitting).
- To minimize splitting, member edge distance and spacing between rows shall be 2.5 x nail diameter or ½", whichever is greater. Where multiple rows are used, fasteners in adjacent rows must be staggered and the rows must be equally spaced from the centerline of the narrow face axis.

Fastener Type	Placement	Number of Rows	Fastener On-Center Spacing	Assembly A: 3½" wide, 2-ply
10d (0.128" x 3") or (0.131" x 3") Nail(1)	As shown	2(6)	12"	370
		3	12"	560
½" A307 Through Bolt(2)(3)	–	2	24"	510
			19.2"	635
			16"	760
			Screw Length ▶	3½"
Simpson Strong-Tie® SDS(3)	As shown	2	24"	680
			19.2"	850
			16"	1,020
MiTek® WS(3)	As shown	2	24"	640
			19.2"	800
			16"	955
			Screw Length ▶	3½"
Simpson Strong-Tie® SDW22(3)(4)	One face	2	24"	800
			19.2"	1,000
			16"	1,200
MiTek® WSWH(3)(5)	One face	2	24"	600
			19.2"	750
			16"	905



2 MULTI–PLY BEAM DETAIL

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ELECTRICAL GENERAL NOTES

1. GENERAL CONTRACTOR IS RESPONSIBLE FOR THE SITE, VERIFICATION OF ALL EXISTING AND NEW EQUIPMENT AND SYSTEMS TO REMAIN. IF ANY SYSTEMS OR EQUIPMENT ARE MISSING, DAMAGED OR MALFUNCTIONING THE CONTRACTOR SHALL PROVIDE NEW TO BE INSTALLED AS SPECIFIED AND REQUIRED BY 2020 NEC CODE.

2. GENERAL CONTRACTOR AND ELECTRICAL TRADES INVOLVED IN THE PROJECT ARE TO INSTALL ALL ELECTRICAL EQUIPMENT IN ACCORDANCE WITH THEIR SPECIFIC MANUFACTURERS WRITTEN INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS, SPECIFIC CONTRACT DOCUMENTS AND ANY AND ALL APPLICABLE CODES AND REGULATIONS.

3. GENERAL CONTRACTOR TO COORDINATE ALL EQUIPMENT CONNECTIONS WITH MANUFACTURERS CERTIFIED DRAWINGS AND/OR DOCUMENTS. COORDINATE WITH AND PROVIDE ALL CONDUIT AND TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT.

4. COORDINATE WITH THE OWNER AND ARCHITECT TO ENSURE THAT THE PROGRESS OF ELECTRICAL WORK IS ON SCHEDULE AND THAT THE PROGRESS AND WORKMANSHIP OF OTHER TRADES IS ON SCHEDULE.

5. APPLY AND PAY FOR ALL PERMITS, FEES, LICENSEES AND INSPECTIONS FOR THIS DIVISION OF WORK.

6. COMPLY WITH ALL STATE AND LOCAL CODE REQUIREMENTS AND ORDINANCES. COMPLY WITH REQUIREMENTS OF THE UTILITY COMPANIES. IN THE CASE OF DIFFERENCES BETWEEN THESE REQUIREMENTS AND ORDINANCES, THE MOST STRINGENT SHALL GOVERN. CALL FOR INSPECTIONS REQUIRED BY LOCAL BUILDING INSPECTION AUTHORITY.

7. SUBMIT SHOP DRAWINGS FOR ALL MATERIALS AND EQUIPMENT SHOWING ANY CHANGES REQUIRED IN ELECTRICAL WIRING, SPACE ALLOCATION, ETC. TO ARCHITECT.

8. THE LOCATION OF EXISTING UNDERGROUND/OVERHEAD/CONCEALED UTILITIES IS SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR SHALL PAY FOR AND REPAIR ALL DAMAGES CAUSED BY FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

9. PATCH AND REPAIR TO MATCH EXISTING ANY WALLS, CEILINGS, OR FLOORS ACCESSED DURING THE INSTALLATION OF CONDUIT AND WIRING.

10. MAINTAIN ONE SET OF REDLINED DRAWINGS ON THE JOB SITE INDICATING ALL CHANGES AND DEVIATIONS FROM THE WORK SHOWN ON THE DRAWINGS.

12. AT COMPLETION OF WORK, DELIVER COMPLETED PROJECT RECORD DOCUMENTS MARKED WITH FIELD CHANGES TO OWNER'S REPRESENTATIVE.

13. PROVIDE A WRITTEN WARRANTY TO THE OWNER COVERING THE ENTIRE ELECTRICAL WORK TO BE FREE FROM DEFECTIVE MATERIALS, EQUIPMENT AND WORKMANSHIP FOR A PERIOD OF ONE YEAR AFTER DATE OF ACCEPTANCE.

14. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING CONSTRUCTION DOCUMENTS TO THE LOCAL UTILITY COMPANY FOR REVIEW AND APPROVAL PRIOR TO ORDERING EQUIPMENT OR INSTALLATION OF ANY EQUIPMENT, HARDWARE OR WORK TO BE DONE.

15. UNLESS OTHERWISE NOTED OR AGREED UPON, THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ALL WIRING, CABLES AND ELECTRICAL DEVICES EXISTING IN WALLS TO BE DEMOLISHED AND THE REMOVAL OF ALL OTHER REDUNDANT ELECTRICAL DEVICES NOT SHOWN ON PLANS. CUT BACK AND CAP UNUSED RACEWAYS AND OUTLETS AND REMOVE UNUSED WIRING BACK TO PANEL BOARD.

16. WHERE THE DISTRIBUTION OF POWER AND COMMUNICATION IS THROUGH A FLOOR SYSTEM., THE ELECTRICAL CONTRACTOR SHALL ENSURE ACCESS AT HAND HOLES AT ALL TIMES. PROVIDE FLOOR PAN COVERS THROUGHOUT THE PREMISES.

17. COORDINATION OF WORK SHALL BE DONE WITH ALL OTHER TRADES ON THE SITE TO THE EXTENT OF PROPERLY LOCATING ALL DEVICES, FIXTURES, EQUIPMENT, PIPING, DUCTWORK, ETC. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ACCURATE DIMENSIONS FROM THE ARCHITECTURAL DRAWINGS AND AT THE SITE.

18.PRIOR TO FINAL ACCEPTANCE, THOROUGHLY CLEAN ALL WORK.

19. ACCESS DOORS & PANELS ARE TO BE SUPPLIED BY CONTRACTOR AND LOCATED ON THE SITE BY THIS TRADE WHERE REQUIRED TO SERVICE NEW OR EXISTING EQUIPMENT AND/OR SYSTEMS. COORDINATE INSTALLATION WITH REQUIRED TRADES.

20. CONNECTIONS TO EQUIPMENT THAT PRODUCE NOISE AND OR VIBRATIONS (TRANSFORMERS, MOTORS, GENERATORS, ETC.) SHALL BE MADE WITH FLEXIBLE CONDUIT. USE A MINIMUM 3 FEET OF FLEXIBLE CABLE WITH SLACK AT EACH DEVICE.

21. PROVIDE HANGERS, INSERTS (OF A LEAD SHIELD TYPE) AND SUPPORTS, AS REQUIRED. SUPPORT ALL BRANCH CONDUITS FOR POWER AND COMMUNICATIONS FROM BUILDING STRUCTURE; DO NOT CADDIE CLIP TO CEILING HANGERS.

22. PULL BOXES SHALL BE PROVIDED FOR ALL CONDUIT RUNS OF 50' AND/OR MORE THAN THE EQUIVALENT OF 2-90° ENDS.

23. GROUNDING PROVIDE ALL EQUIPMENT GROUNDING AS REQUIRED TO CONFIRM WITH THE APPLICABLE SAFETY CODE. ARRANGE GROUNDS SO UNDER NORMAL OPERATING CONDITIONS NO INJURIOUS AMOUNT OF CURRENT WILL FLOW IN ANY GROUNDING CONDUCTOR. ENSURE CONTINUITY OF EQUIPMENT GROUNDING (CONDUCTORS, CONNECTORS, ACCESSORIES) AND CONNECT TO THE EXISTING BUILDING SYSTEM AT THE NEAREST LOCATION. CONFORM TO THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION. INSULATED GROUNDING CONDUCTORS SHALL BE GREEN.

24. LIGHTING SYSTEM TEMPORARY LIGHTING SHALL BE PROVIDED THROUGHOUT PROJECT AS REQ., WHERE REQUIRED BY GENERAL CONTRACTOR.

25. CIRCUITRY SHOWN ON PLANS *IS FOR GROUPING PURPOSES ONLY.* EXACT CIRCUITS ARE TO BE DETERMINED ON SITE BASED ON AVAILABILITY. EXISTING CIRCUITRY SHALL BE VERIFIED FOR CONTINUITY AND CODE COMPLIANCE ON SITE BY THE GENERAL CONTRACTOR PRIOR TO COMMENCING NEW WORK. VERIFY THAT NOT MORE THAN SIX DUPLEX RECEPTACLES ARE CONNECTED TO ANY ONE CIRCUIT.

26. CONTRACTOR TO VERIFY AND MAKE NECESSARY ADJUSTMENTS TO ENSURE THAT LOADING ON EACH PHASE IS BALANCED. (UNBALANCED LOAD SHALL BE LESS THAN 10 %). PROVIDE A TYPED CIRCUIT DIRECTORY IN EACH PANEL.

27. SMOKE DETECTORS SHALL BE FURNISHED AND WIRED BY THE ELECTRICAL CONTRACTOR. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR MOUNTING THE SMOKE DETECTOR IN DUCTWORK IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS AS APPLICABLE. ALL SMOKE DETECTORS SHALL BE INTERCONNECTED.

28. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS TO ARCHITECT AS APPLICABLE FOR REVIEW.

29. ALTERNATIVES TO THE MATERIALS SPECIFIED HEREIN AND/OR ON THE DRAWING MAY BE SUBMITTED SEPARATELY SHOWING ANY CHANGE TO THE BASE CONTRACT PRICE FOR THEIR SUBSTITUTION.

30. OPERATING & MAINTENANCE INSTRUCTIONS PREPARED BY MANUFACTURERS SHALL BE PROVIDED TO CUSTOMER.

31. SYSTEMS SHALL BE TESTED FOR PROPER OPERATION. IF TESTS SHOW THAT WORK IS DEFECTIVE, CONTRACTOR SHALL MAKE CORRECTIONS NECESSARY AT NO COST TO THE OWNER.

CONT.:

1. THE ELECTRICAL DRAWINGS ARE SCHEMATIC IN NATURE AND INDICATE THE GENERAL DESIGN AND ARRANGEMENT OF CONDUIT AND WIRING, EQUIPMENT, SYSTEMS, ETC. INFORMATION SHOWN IS DIAGRAMMATIC IN CHARACTER AND DOES NOT INDICATE EVERY REQUIRED OFFSET, FITTING, ETC. ANY AND ALL DESIGN ELEMENTS, FIXTURE LOCATIONS, ETC. TO BE FIELD VERIFIED BY THE GENERAL CONTRACTOR AND THE ELECTRICIAN ON SITE.

2. THE LOCATIONS OF THE ITEMS SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS THAT ARE NOT DEFINITELY FIXED BY DIMENSIONS ARE APPROXIMATE ONLY. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS MUST BE DETERMINED BY THE PROJECT SITE CONDITIONS AND SHALL HAVE THE APPROVAL OF THE ENGINEER BEFORE BEING INSTALLED. DO NOT SCALE THE DRAWINGS (UNLESS NOTED OTHERWISE).

3. CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND SIZES OF ALL EXISTING EQUIPMENT, ELECTRICAL CONDUIT, STRUCTURAL MEMBERS, ETC. PRIOR TO BID. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY AND ALL DISCREPANCIES BETWEEN FIELD CONDITIONS AND CONTRACT DRAWINGS.

4. WHERE BEAMS ARE INDICATED TO BE PENETRATED WITH CONDUITS AND WIRING, COORDINATE DUCTWORK AND PIPING LAYOUT WITH BEAM OPENING SIZE AND OPENING LOCATIONS. COORDINATION SHALL BE DONE PRIOR TO FABRICATION OF BEAMS.

5. ALL CONDUIT, WIRING AND EQUIPMENT SUPPORTED FROM STRUCTURAL STEEL SHALL BE COORDINATED WITH THE GC. ALL ATTACHMENTS TO STEEL BAR JOISTS, TRUSSES, OR JOIST GIRDERS, SHALL BE AT PANEL POINTS. PROVIDE BEAM CLAMPS MEETING MSS STANDARDS. WELDING TO STRUCTURAL MEMBERS SHALL NOT BE PERMITTED. THE USE OF C-CLAMPS SHALL NOT BE PERMITTED.

6. USE ADJUSTABLE PIPE HANGERS ON SUSPENDED CONDUIT. PROVIDE HANGERS TO SUPPORT THE SYSTEMS WITHOUT SAGGING. INCLUDE HANGERS AT EACH OFFSET OR CHANGE IN DIRECTION AND AT ENDS OF BRANCHES OVER FIVE FEET IN LENGTH.

7. SLEEVES AND BOXES SHALL BE PROVIDED WHEREVER CONDUITS PASS THROUGH FLOOR, WALL AND ROOF CONSTRUCTION.

8. WHERE HORIZONTAL CONDUITS AND WIRING PASS THROUGH WALLS AND VERTICAL DUCTS AND PIPES PASS THROUGH FLOORS OR ROOFS, SEAL OFF VOID BETWEEN OPENING AND DUCT OR PIPE AND SLEEVE, WITH AN APPROVED NON-COMBUSTIBLE MATERIAL.

9. INSTALL NICKEL-PLATED FLOOR, WALL AND CEILING ESCUTCHEONS OF ADJUSTABLE TYPE ON CONDUITS PASSING THROUGH WALLS, FLOOR OR CEILING IN FINISHED AREAS.

10. FURNISH AND INSTALL ALL FOUNDATIONS, BASES AND SUPPORTS.

11. ELECTRICAL RECEPTACLES IN BATHROOMS, KITCHENS AND GARAGES SHALL BE G.F.I. OR G.F.I.C. PER 2020 NATIONAL ELECTRICAL CODE REQUIREMENTS.

12. FIXTURES TO BE SELECTED BY THE DESIGNER AND OWNER.

13. ARC FAULT PROTECTION REQUIRED AT ELECTRICAL OPENINGS.

14. ALL LIGHT SWITCHES TO BE AT 48"-52" TO BTTM. (50"-54" O.C.) UNLESS OTHERWISE NOTED.

15. WORK, MATERIALS AND EQUIPMENT SHALL CONFORM TO THE LATEST EDITIONS OF LOCAL AND STATE CODES AND STANDARDS. SPECIFICALLY THE 2020 NEC.

16. PROVIDE PERMITS AND INSPECTIONS AS REQUIRED.

17. PROVIDE RECORD DRAWINGS TO ENGINEER. DRAWINGS SHALL INCLUDE ALL ADDENDUM ITEMS, CHANGE ORDERS , ALTERATIONS, REROUTING, ETC.

18. SYSTEMS SHALL BE COMPLETE, OPERABLE AND READY FOR CONTINUOUS OPERATION.

19. VERIFY EXACT LOCATIONS OF EXISTING AND NEW UNDERGROUND UTILITIES, PIPING, AND RACEWAY SYSTEMS PRIOR TO TRENCHING. PROVIDE NECESSARY TRENCHING, BACKFILL, EXCAVATION, SUPPORTS, SERVICE FEEDERS (CONDUIT AND/OR WIRE), PULLBOXES, TRANSFORMER PADS, SAWCUTTING AND PATCHING, CONCRETE/PAVING, ETC. REQUIRED. BACKFILL TRENCHES TO 90 PERCENT COMPACTION AND PATCH TO MATCH EXISTING. CONTRACTOR SHALL OBTAIN AND VERIFY EXACT UTILITY COMPANY DRAWINGS AND REQUIREMENTS.

20. FINAL CONNECTIONS TO EQUIPMENT SHALL BE IN ACCORDANCE WITH MANUFACTURERS APPROVED WIRING DIAGRAMS, DETAILS AND INSTRUCTIONS. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PROVIDE MATERIALS AND EQUIPMENT COMPATIBLE WITH EQUIPMENT ACTUALLY SUPPLIED AND SOURCED.

21. SYSTEMS SHALL BE TESTED FOR PROPER OPERATION. IF TESTS SHOW THAT WORK IS DEFECTIVE, CONTRACTOR SHALL MAKE CORRECTIONS NECESSARY AT NO COST TO THE OWNER.

22. ALUMINUM WIRE AND CABLE IN SIZES @#1/0 AND LARGER MAY BE SUBSTITUTED FOR COPPER ON SERVICES AND FEEDERS IF AMPACITY IS EQUAL TO OR GREATER THAN COPPER AND VOLTAGE DROP IS EQUAL TO OR LESS THAN COPPER AND SHALL BE TERMINATED AT SWITCHES, LUGS, CIRCUIT BREAKERS, ETC., WITH MAC-ADAPT SERIES "MPT" MACHINE COMPRESSION ADAPTERS OR EQUAL.

23. ALL ELECTRICAL SYSTEMS COMPONENTS SHALL BE LISTED OR LABELED BY U.L. OR OTHER RECOGNIZED TESTING FACILITY.



LOCATION MAP

ABBREVIATIONS

ACT - ACOUSTIC CEILING TILE
AD - AREA DRAIN
AFF - ABOVE FINISHED FLOOR
ALUM - ALUMINUM
ANOD - ANODIZED
BSMT - BASEMENT
BYND - BEYOND
BOT - BOTTOM
CIP - CAST IN PLACE
CHNL - CHANNEL
CJ - CONTROL JOINT
CLG - CEILING
CLR - CLEAR
CMU - CONCRETE MASONRY UNIT
COL - COLUMN
COMPR - COMPRESSIBLE
CONC - CONCRETE
CONT - CONTINUOUS
CPT - CARPET
CT - CERAMIC TILE
CTYD - COURTYARD
DBL - DOUBLE
DEMO - DEMOLISH OR DEMOLITION
DIA - DIAMETER
DIM - DIMENSION
DIMS- DIMENSIONS
DN - DOWN
DR - DOOR
DWG - DRAWING
EA - EACH
EJ - EXPANSION JOINT
EL - ELEVATION
ELEC - ELECTRICAL
ELEV - ELEVATOR OR ELEVATION
EP - ELECTRIC PANEL
EPDM - ETHYLENE PROPYLENE DIENE M-CLASS (ROOFING)
EQ - EQUAL
EXIST - EXISTING
EXP JT - EXPANSION JOINT
EXT - EXTERIOR
FD - FLOOR DRAIN OR FIRE DEPT.
FEC - FIRE EXTINGUISHER CABINET
FIXT - FIXTURE
FLR - FLOOR
FM - FILLED METAL
FO - FACE OF
FND - FOUNDATION
GA - GAUGE
GALV - GALVANIZED
GWB - GYPSUM WALL BOARD
HC - HOLLOW CORE
HI - HIGH
HM - HOLLOW METAL
HP - HIGH POINT
HR - HOUR
HVAC - HEATING, VENTILATING, AND AIR CONDITIONING
ILO - IN LIEU OF
INSUL - INSULATED OR INSULATION
INT - INTERIOR
LO - LOW
MAX - MAXIMUM
MO - MASONRY OPENING
MECH - MECHANICAL
MEMBR - MEMBRANE
MIN - MINIMUM
MRGWB - MOISTURE-RESISTANT GYPSUM WALL BOARD
MTL - METAL
NIC - NOT IN CONTACT
NO - NUMBER
NOM - NOMINAL
OC - ON CENTER
OH - OVERHANG OR OPPOSITE HAND
OPP - OPPOSITE OR OPPOSITE HAND
OZ - OUNCE
PCC - PRE CAST CONCRETE
PLUMB - PLUMBING
PLYD - PLYWOOD
PT - PRESSURE TREATED
PNT - PAINT OR PAINTED
PVC - POLYVINYL CHLORIDE
RBR - RUBBER
RCP - REFLECTED CEILING PLAN
RD - ROOF DRAIN
REQD - REQUIRED
RM - ROOM
SIM - SIMILAR
SPEC - SPECIFIED OR SPECIFICATION
SPK - SPRINKLER OR SPEAKER
SSTL - STAINLESS STEEL
STC - SOUND TRANSMISSION COEFFICIENT
STL - STEEL
STRUCT - STRUCTURE OR STRUCTURAL
T&G - TONGUE AND GROOVE
TELE - TELEPHONE
TME - TO MATCH EXISTING
TO - TOP OF
TOC - TOP OF CONCRETE
TOS - TOP OF STEEL
T/D - TELEPHONE/DATA
TYP - TYPICAL
UNO - UNLESS NOTED OTHERWISE
U/S - UNDERSIDE
VIF - VERIFY IN FIELD
VP - VISION PANEL
W/ - WITH
WD - WOOD

SYMBOLS

ELECTRICAL CONN.
CONCRETE
ELEVATION MARKER

BUILDING CONTRACTOR/HOME OWNER TO REVIEW AND VERIFY ALL DIMENSIONS, SPECS, AND CONNECTIONS BEFORE CONSTRUCTION BEGINS.

SHEET SCHEDULE

SHEET NUMBER	SHEET NAME
E0.0	COVER SHEET & NOTES
E0.1	LOT UTILITIES- ELECTRIC
E1.0	ELECTRICAL NOTES & PANEL SCHEDULE
E2.0	ELECTRICAL LAYOUT - MAIN FLOOR
E2.1	ELECTRICAL LAYOUT - SECOND FLOOR
E2.2	ELECTRICAL REFLECTED CEILING PLAN - MAIN FLOOR
E2.3	ELECTRICAL REFLECTED CEILING PLAN - SECOND FLOOR
E2.4	BASEMENT ELECTRICAL PLAN
E3.0	ELECTRICAL SERVICE - ELECTRICAL NOTES
E3.1	ELECTRICAL SERVICE - ONE LINE DIAGRAM
E4.0	ELECTRICAL EQUIPMENT SCHEDULE

DESIGN CRITERIA & CONDITIONS

PROJECT CITY: BENTONVILLE
PROJECT COUNTY: WARREN COUNTY
PROJECT ELEVATION: 1120 FT. ABOVE SEA LEVEL
ZONING DISTRICT: AGRICULTURAL

APPLICABLE CODES:
- 2021 VIRGINIA CONSTRUCTION CODE (IBC)
- 2017 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES (ICC/ANSI A117.1)
- 2021 VIRGINIA RESIDENTIAL CODE (IRC)
- 2021 VIRGINIA ENERGY CONSERVATION CODE
- 2021 VIRGINIA MECHANICAL CODE (IMC)
- 2021 VIRGINIA PLUMBING CODE (IPC)
- 2020 NATIONAL ELECTRICAL CODE

PROJECT SCOPE

THE PROJECT INVOLVES DEMOLISHING THE REAR PORTION OF THE EXISTING HOUSE TO ACCOMMODATE A NEW LIVING SPACE ADDITION. ADDITIONALLY, THE CURRENT PORCH WILL BE RENOVATED AND EXPANDED LATERALLY TO EXTEND ALONG BOTH SIDES OF THE HOUSE. TO ACCOMMODATE THE CHANGES THIS SHEET PROVIDES ELECTRICAL PLANS.

PROJECT DIRECTORY

OWNER 1:

BENTONVILLE, VA

PROJECT DATA

EXISTING BUILDING HEIGHT:
EXISTING 28'0" HIGHEST RIDGE (+/-) FROM TERRAIN

CONSTRUCTION TYPE:
V-B

OCCUPANCY TYPE:
RESIDENTIAL R3

FIRE PROTECTION:
-

NUMBER OF STORIES:
2

EXISTING STORIES (ABOVE GROUND)
2

ATTACHED GARAGE
-

GAS: NO

SEWER: SEPTIC FIELD
WATER: WELL

COOLING: CENTRAL AIR

HEATING: FORCED AIR

EXISTING SQ. FT.:
1ST FLOOR: 832 S.F
2ND FLOOR: 832 S.F
OPEN PORCH: 240 S.F

PROPOSED SQ. FT.:
1ST FLOOR: 1323 S.F (CONDITIONED)
2ND FLOOR: 1323S.F (CONDITIONED)
OPEN PORCH: 683 S.F (UNCONDITIONED)
TOTAL: 3329 S.F

TOTAL CONDITIONED SPACE: 2646 SQ.FT
TOTAL UNCONDITIONED SPACE: 683 SQ.FT

ZONING ANALYSIS

EX. LOT AREA:
5.176 ACRES

FRONT YARD SETBACK (MAIN/ACCESSORY):
MINIMUM 50 FEET

REAR YARD SETBACK (MAIN/ACCESSORY):
35'/10'

SIDE YARD SETBACK (MAIN/ACCESSORY):
15'/10'

REFERENCES

BENTONVILLE, VA

PLAN DISTRICT
05: SOUTH RIVER - COUNTY

ZONING DISTRICT:
AGRICULTURAL

SUBDIVISION:
-

PID/ACCOUNT #:
24649

PROP LR04-1143 SURVEY LR14-1121

DEED BOOK & PAGE:
LR-2022, 5702

PROPERTY CLASS:
SINGLE FAMILY SUBURB

- ELECTRICAL

BENTONVILLE, VA 22610

DRAWN BY:

CHECKED BY:

REVISIONS:

No.	DESCRIPTION	DATE

ISSUE RECORD:

No.	DESCRIPTION	DATE

SCALE:

SHEET CONTENTS:

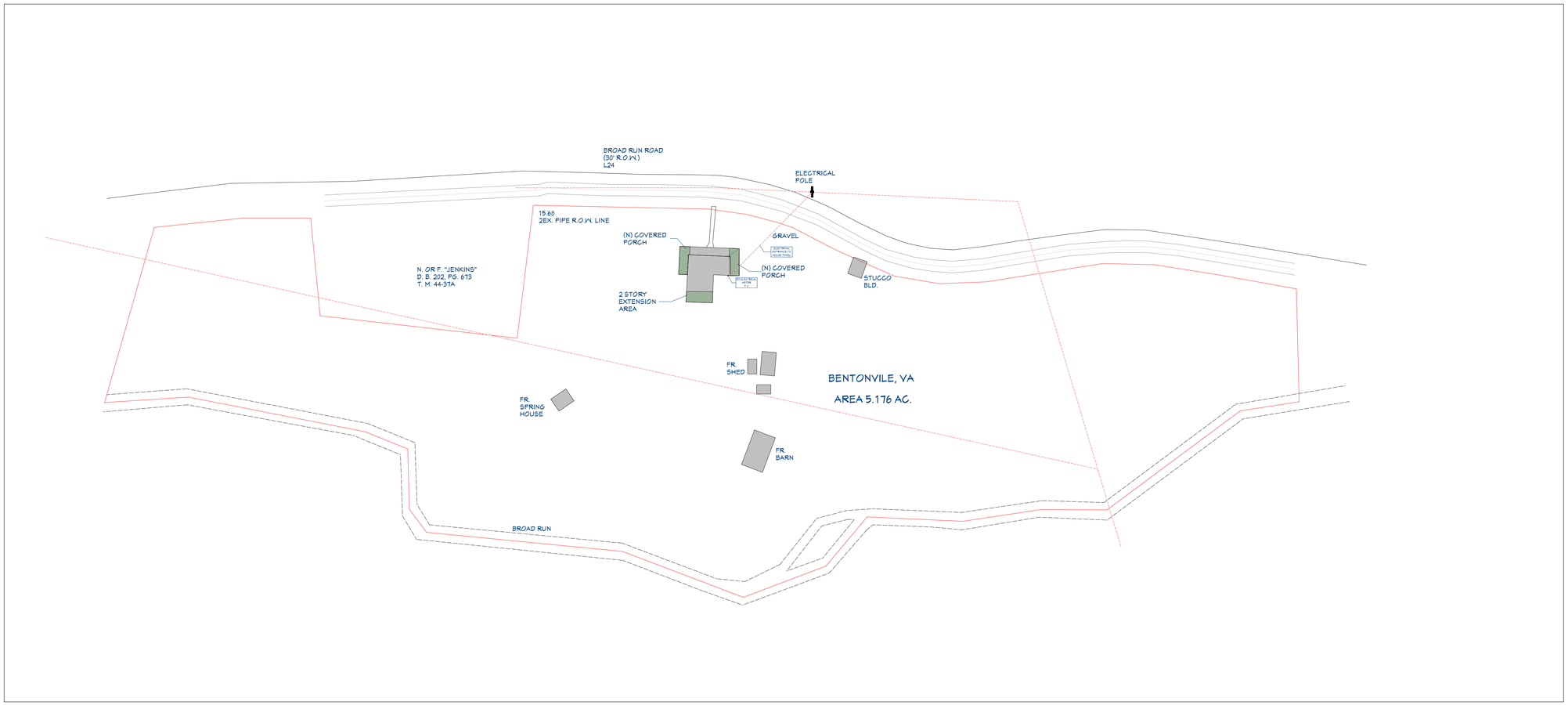
PROJECT NO.:

DATE: 11/6/2025

DRAWING NO.:

E0.0

FOR UTILITIES REFERENCE ONLY - REFER TO OFFICIAL SITE SURVEY AND FIELD VERIFY ALL UTILITIES



LEGEND	
LINE	DESCRIPTION
-OH — OH —	OVERHEAD ELECTRIC SERVICE LINES
-ug — ug —	UNDER GROUND ELECTRIC SERVICE LINES
	SUBJECT PROPERTY

* G.C. TO FIELD VERIFY ALL MEASUREMENTS ON SITE.

1 LOT UTILITIES- ELECTRIC

SCALE: 1" = 50'-0" FT.

- ELECTRICAL

BENTONVILLE, VA 22610

DRAWN BY:

CHECKED BY:

REVISIONS:

No.	DESCRIPTION	DATE

ISSUE RECORD:

No.	DESCRIPTION	DATE

SCALE:

SHEET CONTENTS:

PROJECT NO.:

DATE: 11/6/2025

DRAWING NO.: **E0.1**

ELECTRICAL SCHEDULE

2D SYMBOL	QTY	DESCRIPTION	COMMENTS
	2	220V OUTLET	220 V OUTLET FOR WATER HEATER AND DRYER
	1	AIR SWITCH - COUNTERTOP	AIR SWITCH FOR GARBAGE DISPOSAL
	2	CO/SMOKE DETECTOR	HARDWIRED INTERCONNECTED WITH BATTERY BACKUP
	2	CAGED LANTERN SCONCE	OUTDOOR, DAMP PROOF LED
	3	CEILING FAN	NEW
	3	CEILING FAN	EXISTING TO REMAIN
	1	DISHWASHER	110V RECEPTACLE FOR DISHWASHER
	28	DUPLEX	110V RECEPTACLE
	34	DUPLEX	EXISTING TO REMAIN
	1	ELECTRIC METER	(E) 200 AMP METER SERVICE TO REMAIN
	1	ELECTRICAL PANEL - SURFACE MOUNTED	NEW 200AMP ELEC. PANEL
	1	MICROWAVE	110V RECEPTACLE FOR MICROWAVE UNDER KITCHEN ISLAND
	3	EXHAUST	BATH EXHAUST 50 CFM MIN
	6	GFCI	GFCI 110V RECEPTACLE
	1	GFCI	110V GFCI FOR WASHER
	5	GFCI	COUNTERTOP 110V GFCI PROTECTED RECEPTACLE 44" A.F.F
	4	GFCI WP	110V GFCI PROTECTED WEATHERPRROF RECEPTACLE AT EXTERIOR
	1	GFCI WP	EXISTING TO REMAIN
	1	GARBAGE DISPOSAL	DEDICATED 110V RECEPTACLE GARBAGE DISPOSAL
	1	HOOD W/ VENT	DEDICATED 110V RECEPTACLE RANGE HOOD
	1	PENDANT	LED, WET RATED FIXTURE ABOVE KITCHEN ISLAND
	39	RECESSES DOWN LIGHT	LED FIXTURE
	1	RECESSED VAPOR LIGHT	LED WET RATED FIXTURE, HUMIDITY AND STEAM RESISTANCE
	1	REFRIGERATOR	110V RECEPTACLE FOR REFRIGERATOR
	4	ROPE LIGHT	ROPE LIGHT UNDER WALL CABINET
	3	WALL SCONCE	LED; ABOVE VANITY
	28	SINGLE POLE SWITCH	LIGHT AND FAN SWITCH
	1	ELECTRIC RANGE	240V OUTLET FOR ELECTRIC RANGE
	2	3-WAY SWITCH	3 WAY SWITCH

DWELLING UNITS:

ALL 120-VOLT, SINGLE-PHASE, 15- AND 20-AMPERE BRANCH CIRCUITS SUPPLYING OUTLETS OR DEVICES INSTALLED IN DWELLING UNIT KITCHENS, FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DENS, BEDROOMS, SUNROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS, LAUNDRY AREAS, OR SIMILAR ROOMS OR AREAS SHALL BE PROTECTED BY ANY OF THE MEANS DESCRIBED IN 210.12(A)(1) THROUGH (6):

1 A LISTED COMBINATION-TYPE ARC-FAULT CIRCUIT INTERRUPTER INSTALLED TO PROVIDE PROTECTION OF THE ENTIRE BRANCH CIRCUIT

2 A LISTED BRANCH/FEEDER-TYPE AFCI INSTALLED AT THE ORIGIN OF THE BRANCH-CIRCUIT IN COMBINATION WITH A LISTED OUTLET BRANCH-CIRCUIT-TYPE ARC-FAULT CIRCUIT INTERRUPTER INSTALLED AT THE FIRST OUTLET BOX ON THE BRANCH CIRCUIT. THE FIRST OUTLET BOX IN THE BRANCH CIRCUIT SHALL BE MARKED TO INDICATE THAT IT IS THE FIRST OUTLET OF THE CIRCUIT.

3 A LISTED SUPPLEMENTAL ARC PROTECTION CIRCUIT BREAKER INSTALLED AT THE ORIGIN OF THE BRANCH CIRCUIT IN COMBINATION WITH A LISTED OUTLET BRANCH-CIRCUIT-TYPE ARC-FAULT CIRCUIT INTERRUPTER INSTALLED AT THE FIRST OUTLET BOX ON THE BRANCH CIRCUIT WHERE ALL OF THE FOLLOWING CONDITIONS ARE MET.
1 THE BRANCH-CIRCUIT WIRING SHALL BE CONTINUOUS FROM THE BRANCH-CIRCUIT OVERCURRENT DEVICE TO THE OUTLET BRANCH-CIRCUIT ARC-FAULT CIRCUIT INTERRUPTER.
2 THE MAXIMUM LENGTH OF THE BRANCH-CIRCUIT WIRING FROM THE BRANCH-CIRCUIT OVERCURRENT DEVICE TO THE FIRST OUTLET SHALL NOT EXCEED 15.2 M (50 FT) FOR A 14 AWG CONDUCTOR OR 21.3 M (70 FT) FOR A 12 AWG CONDUCTOR.
3 THE FIRST OUTLET BOX IN THE BRANCH CIRCUIT SHALL BE MARKED TO INDICATE THAT IT IS THE FIRST OUTLET OF THE CIRCUIT.

4 A LISTED OUTLET BRANCH-CIRCUIT-TYPE ARC-FAULT CIRCUIT INTERRUPTER INSTALLED AT THE FIRST OUTLET ON THE BRANCH CIRCUIT IN COMBINATION WITH A LISTED BRANCH-CIRCUIT OVERCURRENT PROTECTIVE DEVICE WHERE ALL OF THE FOLLOWING CONDITIONS ARE MET.
1 THE BRANCH-CIRCUIT WIRING SHALL BE CONTINUOUS FROM THE BRANCH-CIRCUIT OVERCURRENT DEVICE TO THE OUTLET BRANCH-CIRCUIT ARC-FAULT CIRCUIT INTERRUPTER.
2 THE MAXIMUM LENGTH OF THE BRANCH-CIRCUIT WIRING FROM THE BRANCH-CIRCUIT OVERCURRENT DEVICE TO THE FIRST OUTLET SHALL NOT EXCEED 15.2 M (50 FT) FOR A 14 AWG CONDUCTOR OR 21.3 M (70 FT) FOR A 12 AWG CONDUCTOR.
3 THE FIRST OUTLET BOX IN THE BRANCH CIRCUIT SHALL BE MARKED TO INDICATE THAT IT IS THE FIRST OUTLET OF THE CIRCUIT.
4 THE COMBINATION OF THE BRANCH-CIRCUIT OVERCURRENT DEVICE AND OUTLET BRANCH-CIRCUIT AFCI SHALL BE IDENTIFIED AS MEETING THE REQUIREMENTS FOR A SYSTEM COMBINATION-TYPE AFCI AND SHALL BE LISTED AS SUCH.

5 IF METAL RACEWAY, METAL WIREWAYS, METAL AUXILIARY GUTTERS, OR TYPE MC, OR TYPE AC CABLE MEETING THE APPLICABLE REQUIREMENTS OF 250.118, WITH METAL BOXES, METAL CONDUIT BODIES, AND METAL ENCLOSURES ARE INSTALLED FOR THE PORTION OF THE BRANCH-CIRCUIT BETWEEN THE BRANCH-CIRCUIT OVERCURRENT DEVICE AND THE FIRST OUTLET, IT SHALL BE PERMITTED TO INSTALL A LISTED OUTLET BRANCH-CIRCUIT-TYPE AFCI AT THE FIRST OUTLET TO PROVIDE PROTECTION FOR THE REMAINING PORTION OF THE BRANCH CIRCUIT.

6 WHERE A LISTED METAL OR NONMETALLIC CONDUIT OR TUBING OR TYPE MC CABLE IS ENCASED IN NOT LESS THAN 50 MM (2 IN.) OF CONCRETE FOR THE PORTION OF THE BRANCH CIRCUIT BETWEEN THE BRANCH-CIRCUIT OVERCURRENT DEVICE AND THE FIRST OUTLET, IT SHALL BE PERMITTED TO INSTALL A LISTED OUTLET BRANCH-CIRCUIT-TYPE AFCI AT THE FIRST OUTLET TO PROVIDE PROTECTION FOR THE REMAINING PORTION OF THE BRANCH CIRCUIT.

EXCEPTION: AFCI PROTECTION SHALL NOT BE REQUIRED FOR AN INDIVIDUAL BRANCH CIRCUIT SUPPLYING A FIRE ALARM SYSTEM INSTALLED IN ACCORDANCE WITH 760.41(B) OR 760.121(B). THE BRANCH CIRCUIT SHALL BE INSTALLED IN A METAL RACEWAY, METAL AUXILIARY GUTTER, STEEL-ARMORED CABLE, TYPE MC OR TYPE AC, MEETING THE APPLICABLE REQUIREMENTS OF 250.118, WITH METAL BOXES, CONDUIT BODIES, AND ENCLOSURES.

INFORMATIONAL NOTE NO. 1: FOR INFORMATION ON COMBINATION-TYPE AND BRANCH/FEEDER-TYPE ARC-FAULT CIRCUIT INTERRUPTERS, SEE UL 1699-2011, STANDARD FOR ARC-FAULT CIRCUIT INTERRUPTERS. FOR INFORMATION ON OUTLET BRANCH-CIRCUIT TYPE ARC-FAULT CIRCUIT INTERRUPTERS, SEE UL SUBJECT 1699A, OUTLINE OF INVESTIGATION FOR OUTLET BRANCH CIRCUIT ARC-FAULT CIRCUIT-INTERRUPTERS. FOR INFORMATION ON SYSTEM COMBINATION AFCIS, SEE UL SUBJECT 1699C, OUTLINE OF INVESTIGATION FOR SYSTEM COMBINATION ARC-FAULT CIRCUIT INTERRUPTERS.

INFORMATIONAL NOTE NO. 2: SEE 29.6.3(5) OF NFPA 72-2013, NATIONAL FIRE ALARM AND SIGNALING CODE, FOR INFORMATION RELATED TO SECONDARY POWER-SUPPLY REQUIREMENTS FOR SMOKE ALARMS INSTALLED IN DWELLING UNITS.

INFORMATIONAL NOTE NO. 3: SEE 760.41(B) AND 760.121(B) FOR POWER-SUPPLY REQUIREMENTS FOR FIRE ALARM SYSTEMS.

ENGINEER'S NOTE:

1. G.C. AND ELECTRICAL TRADES AND INSTALLERS TO WALK SPACE AND CONSULT HOME OWNERS FOR SPECIFIC ELECTRICAL LAYOUT NEEDS PRIOR TO INSTALLATION OR ORDERING OF ELECTRICAL COMPONENTS.
2. COORDINATE W/OTHER TRADES AS REQ.
3. ELECTRICAL DESIGN DONE WITH ALL EXISTING AVAILABLE INFORMATION FOR THE PROPERTY. CERTIFIED ELECTRICIAN TO VERIFY PANEL CONNECTIONS, SIZING AND LAYOUT.
4. CERTIFIED ELECTRICIAN TO INSTALL PER NEC 2020 CODE.
5. CERTIFIED ELECTRICIAN TO NOTIFY ENGINEER W/ ANY CHANGES.
6. ALL ELECTRICAL LAYOUTS ARE SCHEMATIC IN NATURE
7. ELECTRICIAN TO REVIEW ALL SCHEDULES FOR ELECTRICAL COMPONENTS AND ADJUST ACCORDINGLY TO ON SITE CONDITIONS AND NEEDS, REQS. AND FINAL COUNT OF ALL LIGHTING FIXTURE BOXES, SWITCHES, RECEPTACLES, ETC. NEEDED FOR THE HOME.

Electrical Panel Schedule

Save to Cloud | Load Panel | Print | Reset Local

Panel "136 Broad Run Road Bentonville VA - V3" saved successfully!

136 Broad Run Road, Bentonville, VA - V3

DATE: 11/6/2025

Mounting Method	Panel Status	Panel Type
(•) SURFACE	( ) RELOCATED	(•) MAIN (from Utility)
( ) FLUSH	(•) NEW	( ) SUB (from Main)
	( ) EXISTING	

Panel Information

Volt:	240/120	**Bus Rating:**	200
Phase:	1	**Main Breaker:**	200
Wire:	3	**AIC Rating:**	22000
Circuits:	40		

			**Arc fault circuit interrupters (AFCI) per NEC required in all living areas									**Arc fault circuit interrupters (AFCI) per NEC required in all living areas								
			**Panel schedule/setup can be altered as conditions required			MAIN CIRCUIT BREAKER (AMP) 200						**Panel schedule/setup can be altered as conditions required								
Ckt #	Copper Wire (AWG)	Code	Description	Load VA	Bkr	P	Ph A	Ph B	P	Bkr	Load VA	Description	Code	Copper Wire (AWG)	Ckt #
1	10	4	Water Heater	4500	30	2	●		2	30	5000	Dryer	7	10	2
3	10		(see ckt #1)		30	2			1	30		(see ckt #2)		10	4
5	6	5	Range	8000	50	2	●		1	20	1200	Clothes Washer	3	12	6
7	6		(see ckt #5)		50	2		●	1	20	1000	Crawl Space, Exterior lighting and outlets	2	12	8
9	12	2	Living	1200	20	1	●		1	20	1000	WATER PUMP - Everbilt 1HP Model # DP550C	3	12	10
11	12	2	EXISTING BEDROOM 1 & 2	1200	20	1		●	1	20	1200	1ST Floor Entry & 2nd Floor Living	2	12	12
13	6 (A)	6	Indoor AHU-1 - AMVT30BP1300	8000	45 (A)	2	●		1	20	1200	FIRST FLOOR PLAY & GREAT RM	2	12	14
15	6		(see ckt #13)		45	2		●	1	20	500	1ST FLR HALF BATH	2	12	16
17	12	5	Dishwasher	1500	20	1	●		1	20	1500	LAUNDRY, OFFICE, HALL, MASTER CL. LTG and outlet	2	12	18
19	12	2	Mech & Kitchen Lighting, Outlet	1200	20	1		●	1	20	800	MASTER BATH	2	12	20
21	12	4	SMOKE CO2 DETECTOR	300	20	1	●		1	20	1500	MASTER BEDROOM	2	12	22
23	12	1	KITCHEN SMALL APPLIANCE 2 - REF.	1500	20	1		●	1	20	1500	KITCHEN SMALL APPLIANCE 1	1	12	24
25	12	4	ERV - 1 - ATMO 200E	200	20	1	●		2	25 (A)		Outdoor ACCU 1 - GLXS5B A3010A - non-coincident	6	10 (A)	26
27	12	5	Kitchen Island Microwave	1500	20	1			2	25		(see ckt #26)		10	28
29	6 (A)	6	Indoor AHU-2- AMVT30BP1300	8000	45 (A)	2	●		2	25 (A)		Outdoor ACCU 2 - GLXS5B A3010A - non-coincident	6	10 (A)	30
31	6		(see ckt #29)		45	2			2	25		(see ckt #30)		10	32
33			SPARE			1			1			SPARE			34
35			SPARE			1			1			SPARE			36
37			SPARE			1			1			SPARE			38
39			SPARE			1			1			SPARE			40

Code	Description	Load VA	Dem	Demand VA
1	SMALL APPLIANCE (MIN. 2 CKT @ 1500VA)	3000	100%	3000
2	Lighting/Outlets	11300	35%	3955
3	APPLIANCE W/MOTOR	2200	125%/75%	2250
4	APPLIANCE W/O MOTOR	5000	100%	5000
5	KITCHEN EQUIPMENT	11000	80%	8800
6	AC/HEAT	16000	100%	16000
7	ELECTRIC DRYER	5000	100%	5000

LOAD SUMMARY

Phase A Connected:	**26350 VA**
Phase B Connected:	**27150 VA**
Balance:	**97.1%**
Total Connected Load:	**53500 VA**
Total Code Demand:	**44005 VA**
Connected Amps (240V):	**222.92 A**
Code Demand Amps (240V):	**183.35 A**

MIN FEEDER SIZE: 2/0 AWG (Cu) or 4/0 AWG (Al)

EQUIPMENT GROUND: #4 AWG (Cu) or #2 AWG (Al)

INDOOR AIR HANDLING UNIT SCHEDULE

TAG	LOCATION	SUPPLY CFM	SEER2	BLOWER ESP (IN WG)	BLOWER TYPE	DX COOLING COIL COOLING CFM	ENTERING AIR TEMP. DB (°F)	ENTERING AIR TEMP. WB (°F)	MIN. NET TOTAL MBH	MIN. NET. SENSIBLE MBH	AMBIENT TEMP. (°F)	REFRIGERANT TYPE	ELECTRIC HEATING COIL HEATING CFM	EAT TEMP. (°F)	MIN. MBH	KW	HEATER KIT MODEL	ELECTRICAL DATA VOLT	PHASE	CYCLE	MCA	MOP	OPERATING WEIGHT (LBS)	DESIGN REFERENCE MANUFACTURER	MODEL	NOTES
AHU-1	EXISTING AREA	1000	15.9	0.1	ECM	1000	77.8	66.4	30.0	27.0	94.0	R32	1000	63.8	30	8	HKTS08X1	208	1	60	41.0	45.0	134	GOODMAN	AMVT30BP1300	ALL
AHU-2	EXISTING AREA	1000	15.9	0.1	ECM	1000	77.8	66.4	30.0	27.0	94.0	R32	1000	63.8	30	8	HKTS08X1	208	1	60	41.0	45.0	134	GOODMAN	AMVT30BP1300	ALL

OUTDOOR AIR-COOLED CONDENSING UNIT SCHEDULE

TAG	LOCATION	SERVES	NOMINAL CAPACITY (BTU/HR.)	OUTDOOR AIR TEMPERATURE (°F) COOLING	OUTDOOR AIR TEMPERATURE (°F) HEATING	SEER2	REFRIGERANT DATA TYPE	REFRIGERANT DATA MAXIMUM CHARGE QUANTITY (LBS.)	MAX. SOUND LEVEL (dBA)	ELECTRICAL REQUIREMENTS VOLT	PHASE	CYCLE	MCA	MOCP	OPERATING WEIGHT (LBS)	DESIGN REFERENCE MANUFACTURER	MODEL	NOTES
ACCU-1	OUTDOOR	AHU-1	30000	94	18	15.9	R32	4.19	73	208	1	60	15.4	25	192	GOODMAN	GLXS5B A3010A	ALL
ACCU-2	OUTDOOR	AHU-2	30000	94	18	15.9	R32	4.19	73	208	1	60	15.4	25	192	GOODMAN	GLXS5B A3010A	ALL

** LOADS FOR SYSTEMS 1 AND 2 (AHU-1/ACCU-1 & AHU-2/ACCU-2) ARE NON-COINCIDENT. FOR THE PURPOSE OF THE SERVICE LOAD CALCULATION, USE ONLY THE LARGER OF THE HEATING OR COOLING LOAD AS PERMITTED BY NEC 220.60

310.12 Single-Phase Dwelling Services and Feeders

For one-family dwellings and the individual dwelling units of two-family and multifamily dwellings, service and feeder conductors supplied by a single-phase, 120/240-volt system shall be permitted to be sized in accordance with 310.12(A) through (D).

For one-family dwellings and the individual dwelling units of two-family and multifamily dwellings, single-phase feeder conductors consisting of two ungrounded conductors and the neutral conductor from a 208Y/120 volt system shall be permitted to be sized in accordance with 310.12(A) through (C).

(A) Services

For a service rated 100 amperes through 400 amperes, the service conductors supplying the entire load associated with a one-family dwelling, or the service conductors supplying the entire load associated with an individual dwelling unit in a two-family or multifamily dwelling, shall be permitted to have an ampacity not less than 83 percent of the service rating. If no adjustment or correction factors are required, Table 310.12(A) shall be permitted to be applied.

Table 310.12(A) Single-Phase Dwelling Services and Feeders

Service or Feeder Rating (Amperes)	Conductor (AWG or kcmil) Copper	Aluminum or Copper-Clad Aluminum
100	4	2
110	3	1
125	2	1/0
150	1	2/0
175	1/0	3/0
200	2/0	4/0
225	3/0	250
250	4/0	300
300	250	350
350	350	500
400	400	600

Note: If no adjustment or correction factors are required, this table shall be permitted to be applied.

(B) Feeders

For a feeder rated 100 amperes through 400 amperes, the feeder conductors supplying the entire load associated with a one-family dwelling, or the feeder conductors supplying the entire load associated with an individual dwelling unit in a two-family or multifamily dwelling, shall be permitted to have an ampacity not less than 83 percent of the feeder rating. If no adjustment or correction factors are required, Table 310.12(A) shall be permitted to be applied.

Table 250.66 Grounding Electrode Conductor for Alternating-Current Systems

Size of Largest Ungrounded Conductor or Equivalent Area for Parallel Conductors (AWG/kcmil) Copper	Aluminum or Copper-Clad Aluminum	Size of Grounding Electrode Conductor (AWG/kcmil) Copper	Aluminum or Copper-Clad Aluminum
2 or smaller	1/0 or smaller	8	6
1 or 1/0	2/0 or 3/0	6	4
2/0 or 3/0	4/0 or 250	4	2
Over 3/0 through 350	Over 250 through 500	2	1/0
Over 350 through 600	Over 500 through 900	1/0	3/0
Over 600 through 1100	Over 900 through 1750	2/0	4/0
Over 1100	Over 1750	3/0	250

Notes
1. If multiple sets of service-entrance conductors connect directly to a service drop, set of overhead service conductors, set of underground service conductors, or service lateral, the equivalent size of the largest service-entrance conductor shall be determined by the largest sum of the areas of the corresponding conductors of each set.
2. Where there are no service-entrance conductors, the grounding electrode conductor size shall be determined by the equivalent size of the largest service-entrance conductor required for the load to be served.
3. See installation restrictions in 250.64.

(A) Connections to a Rod, Pipe, or Plate Electrode(s)

If the grounding electrode conductor or bonding jumper connected to a single or multiple rod, pipe, or plate electrode(s), or any combination thereof, as described in 250.52(A)(5) or (A)(7), does not extend on to other types of electrodes that require a larger size conductor, the grounding electrode conductor shall not be required to be larger than 6 AWG copper wire or 4 AWG aluminum or copper-clad aluminum wire.

(B) Connections to Concrete-Encased Electrodes

If the grounding electrode conductor or bonding jumper connected to a single or multiple concrete-encased electrode(s), as described in 250.52(A)(3), does not extend on to other types of electrodes that require a larger size of conductor, the grounding electrode conductor shall not be required to be larger than 4 AWG copper wire.

(C) Connections to Ground Rings

If the grounding electrode conductor or bonding jumper connected to a ground ring, as described in 250.52(A)(4), does not extend on to other types of electrodes that require a larger size of conductor, the grounding electrode conductor shall not be required to be larger than the conductor used for the ground ring.

- ELECTRICAL

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PROJECT NO.:

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DRAWING NO.: **E1.0**

2 ELECTRICAL NOTES & PANEL SCHEDULE

SCALE: NO SCALE

ELECTRICAL GENERAL NOTES

REF 2020 NEC CODE FOR ELECTRICAL

1 GENERAL CONTRACTOR TO COORDINATE ALL EQUIPMENT CONNECTIONS WITH MANUFACTURERS CERTIFIED DRAWINGS AND/OR DOCUMENTS. COORDINATE WITH AND PROVIDE ALL CONDUIT AND TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT.

2 ELECTRICAL RECEPTACLES IN BATHROOMS, KITCHENS AND GARAGES SHALL BE G.F.I. OR G.F.I.C. PER 2020 NATIONAL ELECTRICAL CODE REQUIREMENTS.

3 FIXTURES TO BE SELECTED BY THE GENERAL CONTRACTOR, ARCHITECT, OWNER OR OWNER REPRESENTATIVE.

4 - ALL FLOOR OUTLETS TO BE AT 12" TO BTTM. (14" OC), FROM F.F. UNLESS OTHERWISE NOTED, BATHROOM OUTLETS NEAR THE SINK(S) WHICH ARE TO BE 48" TO BTTM. (50" O.C.) FROM F.F. & RECEPTACLES ABOVE KITCHEN CABINETS TO BE AT 44" TO BTTM. (46 O.C.) FROM F.F.

5 THE US NATIONAL ELECTRICAL CODE, SECTION 210.52, STATES THAT THERE SHOULD BE AN ELECTRICAL OUTLET IN EVERY KITCHEN, BEDROOM, LIVING ROOM, FAMILY ROOM, AND ANY OTHER ROOM THAT HAS DEDICATED LIVING SPACE. THEY MUST BE POSITIONED AT LEAST EVERY SIX FEET MEASURED ALONG THE FLOOR LINE & INSTALLED IN EACH WALL SPACE 2 FT. OR MORE IN LENGTH.

6 ALL LIGHT SWITCHES TO BE AT 48" TO BTTM. (50" O.C.) UNLESS OTHERWISE NOTED. *KITCHEN SWITCHES ABOVE CABINETS TO BE @ 46" O.C.

7 CLOSETS:

- DISTANCES BETWEEN FIXTURES AND STORAGE ITEMS: FOR SURFACE-MOUNTED INCANDESCENT OR LED LIGHT FIXTURES, THERE MUST BE A MINIMUM DISTANCE OF 12 INCHES BETWEEN THE FIXTURE AND ANY ITEMS STORED IN THE CLOSET. FOR RECESSED INCANDESCENT OR LED LIGHT FIXTURES, THIS DISTANCE MUST BE AT LEAST 6 INCHES. FOR FLUORESCENT LIGHT FIXTURES, THE MINIMUM DISTANCE IS 6 INCHES.

- NO BARE BULBS ALLOWED. EXPOSED OR PARTIALLY EXPOSED INCANDESCENT OR LED LAMPS (BULBS) ARE NOT ALLOWED IN CLOSETS. WHILE UTILITY LIGHT FIXTURES WITH BARE BULBS IN A SOCKET WERE ONCE COMMON IN CLOSETS AND OTHER STORAGE AREAS, THESE ARE NO LONGER ALLOWED. ALL LIGHT BULBS MUST BE FULLY ENCLOSED IN A GLOBE OR OTHER HOUSING.

- GFCI PROTECTION:

REF. NEC, 210.8(A): DWELLING UNITS. ALL 125-VOLT THROUGH 250-VOLT RECEPTACLES INSTALLED IN THE LOCATIONS SPECIFIED IN 210.8(A)(1) THROUGH (A)(11) AND SUPPLIED BY SINGLE-PHASE BRANCH CIRCUITS RATED 150 VOLTS OR LESS TO GROUND SHALL HAVE GROUND-FAULT CIRCUIT-INTERRUPTER PROTECTION FOR PERSONNEL.

(1) BATHROOMS - MIN. 1 GFCI OUTLET AND WITHIN 3 FT. OF SINK.

(2) KITCHENS — WHERE THE RECEPTACLES ARE INSTALLED TO SERVE THE COUNTERTOP SURFACES

(3) SINKS — WHERE RECEPTACLES ARE INSTALLED WITHIN 1.8 M (6 FT) FROM THE TOP INSIDE EDGE OF THE BOWL OF THE SINK

(4) BATHTUBS OR SHOWER STALLS — WHERE RECEPTACLES ARE INSTALLED WITHIN 1.8 M (6 FT) OF THE OUTSIDE EDGE OF THE BATHTUB OR SHOWER STALL

(5) LAUNDRY AREAS

EXCEPTION TO (1) THROUGH (3), (5) THROUGH (8), AND (10): LISTED LOCKING SUPPORT AND MOUNTING RECEPTACLES UTILIZED IN COMBINATION WITH COMPATIBLE ATTACHMENT FITTINGS INSTALLED FOR THE PURPOSE OF SERVING A CEILING LUMINAIRE OR CEILING FAN SHALL NOT BE REQUIRED TO BE GROUND-FAULT CIRCUIT-INTERRUPTER PROTECTED. IF A GENERAL-PURPOSE CONVENIENCE RECEPTACLE IS INTEGRAL TO THE CEILING LUMINAIRE OR CEILING FAN, GFCI PROTECTION SHALL BE PROVIDED.

(6) INDOOR DAMP AND WET LOCATIONS

- SD TO BE INSTALLED INSIDE OF EACH SEPARATE SLEEPING AREA AND OUTSIDE EACH DOOR IN THE IMMEDIATE VICINITY OF THE BEDROOMS. (R315.3) CO MUST BE INSTALLED OUTSIDE EACH BEDROOM WITHIN 15' OF EACH ROOM.

-LAUNDRY AREAS REQUIRE A 20 AMP BRANCH CIRCUIT TO SUPPLY THE LAUNDRY RECEPTACLE OUTLET. THIS CIRCUIT SHALL SERVE ONLY RECEPTACLE OUTLETS LOCATED IN LAUNDRY AREA.

- HARDWIRED APPLIANCES ARE **REQ**. TO HAVE A DISCONNECT WITHIN SIGHT OR A LOCKABLE MEANS AT CIRCUIT BREAKER.

ARC FAULT CIRCUIT INTERRUPTERS (AFCI), PER NEC, REQUIRED IN ALL LIVING AREAS

SMOKE/CO ALARMS:

SD/CO - PER NFPA CODE - SMOKE ALARMS IN NEWLY CONSTRUCTED OR RENOVATED DWELLINGS ARE REQUIRED TO BE HARDWIRED WITH A BATTERY BACK-UP, INTERCONNECTED, AND UL-LISTED.

1. SMOKE ALARMS ARE REQUIRED IN EVERY RESIDENTIAL DWELLING OR SLEEPING UNIT, INCLUDING SINGLE-FAMILY HOMES.
2. EVERY MULTI-FAMILY RESIDENTIAL FACILITY IS REQUIRED TO HAVE SMOKE ALARMS, WHETHER BATTERY-OPERATED OR HARD-WIRED WITH BATTERY BACKUP.
3. SMOKE ALARMS ARE REQUIRED IN EVERY BEDROOM, OUTSIDE EACH SLEEPING AREA, AND ON EVERY LEVEL OF THE HOME INCLUDING THE BASEMENT.
4. CO DETECTORS SHALL BE PLACED ON EACH LEVEL OF THE HOME INCLUDING THE BASEMENT IF THERE IS ONE.
5. GC TO F.V. THAT SMOKE ALARMS AND CARBON MONOXIDE DETECTORS ARE PLACED AND INSTALLED PER REGULATIONS AND CODE.

VIDEO:

1 LOCATE JACKS AS REQUESTED BY CUSTOMER/OWNER - INSTALL DATA / CABLE PANEL IN LOCATIONS SPECIFIED BY CUSTOMER. SYSTEM TO BE APPROVED BY HOME OWNER. IF NO JACKS ARE INDICATED IN PLAN, CONTRACTOR TO PLACE IN ACCORDANCE WITH OWNERS REQUESTED LAYOUT

DATA / CABLE:

- LOCATE DATA JACKS EQUIPMENT IN SPECIFIED LOCATION BY AND APPROVED BY HOME OWNER.

KEYED NOTES (P)

1. PROVIDE 120 VOLT RECEPTACLE TO UNDER COUNTER FOR DISHWASHER.
2. PROVIDE 120 VOLT, RECEPTACLE TO RANGE HOOD CONTROL SYSTEM.
3. PROVIDE GFCI 120 VOLT , SINGLE PHASE DEDICATED RECEPTACLE TO ELECTRIC WASHER LOCATION.
4. PROVIDE 240 VOLT , DEDICATED RECEPTACLE TO ELECTRIC DRYER LOCATION.
5. PROVIDE 240 VOLT RECEPTACLE FOR WATER HEATER. G.C TO F.V FINAL LOCATION.
6. PROVIDE 120 VOLT RECEPTACLE FOR KITCHEN REFRIGERATOR. G.C TO F.V FINAL LOCATION.
7. PROVIDE 240 VOLT RECEPTACLE FOR KITCHEN RANGE.
8. PROVIDE 208/230 VOLT HARDWIRED CONN. WITH FUSE DISCONNECT FOR OUTDOOR A.C UNIT, G.C TO F.V FINAL LOCATION.
9. EXISTING 200A ELECTRICAL PANEL. COORDINATE FINAL LOCATION OF UNIT WITH INSTALLER IF RELOCATED.
10. PROVIDE 110V GFCI WEATHERPROOF RECEPTACLES AT EXTERIOR OF THE HOUSE

GENERAL NOTES:

1. REFER TO ARCHITECTURAL DRAWINGS FOR CONTINUED CONSTRUCTION AND SCOPE
DOCUMENTATION, DIMENSIONS AND LOCATIONS OF NEW DEVICES, APPLIANCE OPENING SIZES. IF ANY CONFLICTS BETWEEN DRAWINGS OCCUR, PLEASE CONTACT THE ENGINEER OR ARCHITECT FOR CLARIFICATION.

2. CONTRACTOR TO COORDINATE FINAL KITCHEN APPLIANCES WITH KITCHEN EQUIPMENT PROVIDER, CUSTOMER AND DESIGN TEAM PRIOR TO FINAL INSTALL AND ROUGH IN. FINAL LAYOUTS OF APPLIANCES MAY CHANGE AND COORDINATION WILL BE REQUIRED WITH DESIGN TEAM AND CONTRACTORS FOR ANY MADE CHANGES.

3. ARC FAULT CIRCUIT INTERRUPTERS (AFCI), PER NEC, REQUIRED IN ALL LIVING AREAS.

* ELECTRICAL SCHEDULE FOR REFERENCE ONLY. G.C. AND ELECTRICIAN TO FIELD VERIFY NEED AND COUNT OF ALL TYPES OF ELECTRICAL HARDWARE, SWITCHES, OUTLETS AND CONNECTIONS

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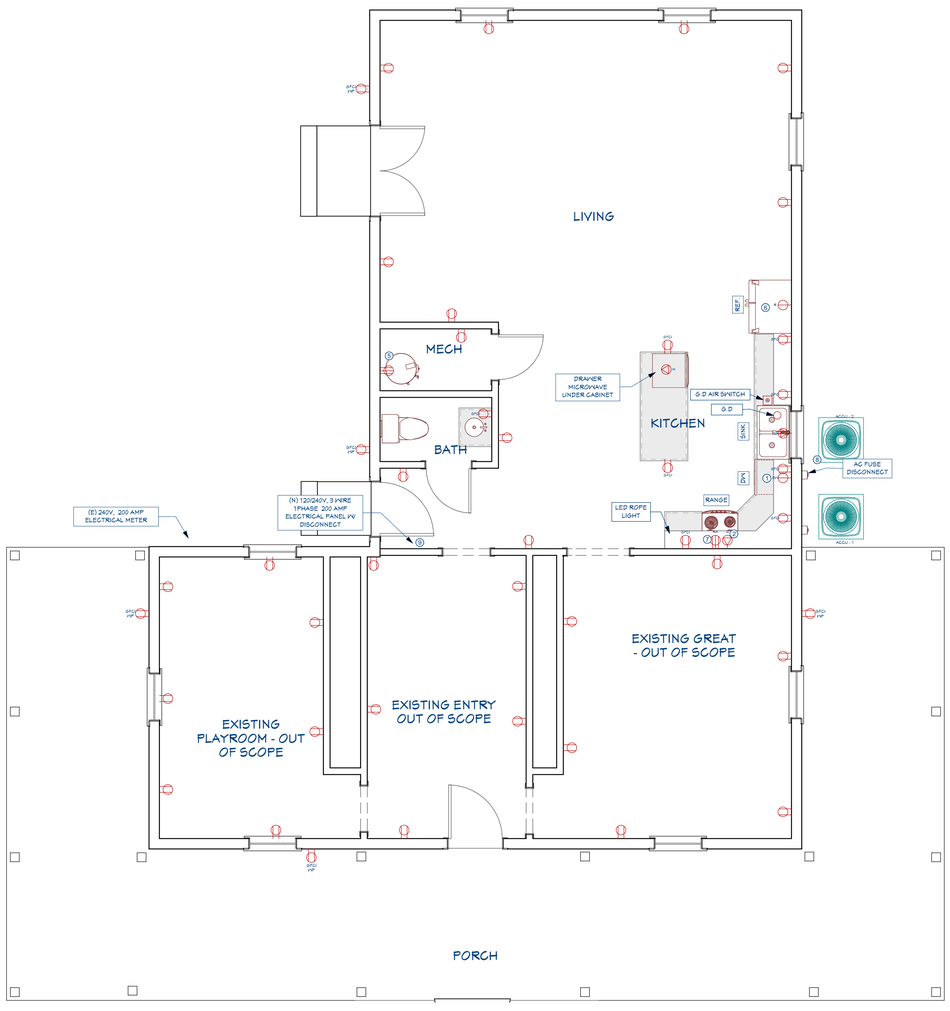
2. CERTIFIED ELECTRICIAN TO INSTALL PER NEC 2020 CODE.
3. CERTIFIED ELECTRICIAN TO NOTIFY ENGINEER W/ ANY CHANGES.
4. ALL ELECTRICAL LAYOUTS ARE SCHEMATIC IN NATURE
5. SERVICE DISCONNECTING MEANS SHALL BE INSTALLED AT A READILY ACCESSIBLE LOCATION
6. SERVICE DISCONNECT MEANS SHALL NOT BE INSTALLED IN BATHROOMS
7. ALL SERVICES SHALL MEET OR EXCEED THE 2020 NEC CODES AND REQS.



3 ELECTRICAL LAYOUT - MAIN FLOOR

SCALE: 1/4" = 1 FT.

- ELECTRICAL

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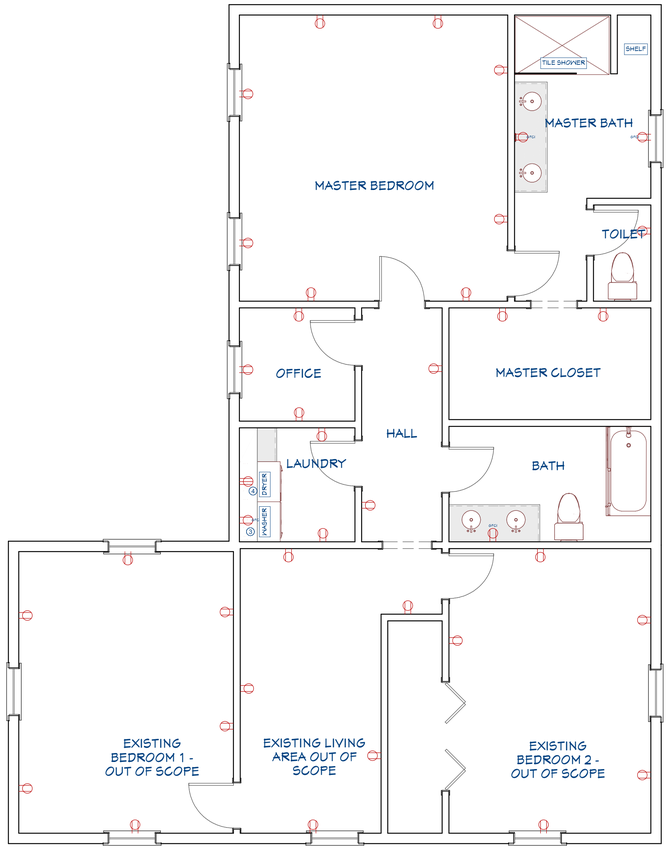
4. ALL ELECTRICAL LAYOUTS ARE SCHEMATIC IN NATURE
5. SERVICE DISCONNECTING MEANS SHALL BE INSTALLED AT A READILY ACCESSIBLE LOCATION
6. SERVICE DISCONNECT MEANS SHALL NOT BE INSTALLED IN BATHROOMS
7. ALL SERVICES SHALL MEET OR EXCEED THE 2020 NEC CODES AND REQS.



4 ELECTRICAL LAYOUT - SECOND FLOOR

SCALE: 1/4" = 1 FT.

- ELECTRICAL

BENTONVILLE, VA 22610

DRAWN BY:

CHECKED BY:

REVISIONS:

No.	DESCRIPTION	DATE

ISSUE RECORD:

No.	DESCRIPTION	DATE

SCALE:

SHEET CONTENTS:

PROJECT NO.:

DATE: 11/6/2025

DRAWING NO.: **E2.1**

REF 2020 NEC CODE FOR ELECTRICAL

1 GENERAL CONTRACTOR TO COORDINATE ALL EQUIPMENT CONNECTIONS WITH MANUFACTURERS CERTIFIED DRAWINGS AND/OR DOCUMENTS. COORDINATE WITH AND PROVIDE ALL CONDUIT AND TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT.

2 ELECTRICAL RECEPTACLES IN BATHROOMS, KITCHENS AND GARAGES SHALL BE G.F.I. OR G.F.I.C. PER 2020 NATIONAL ELECTRICAL CODE REQUIREMENTS.

3 FIXTURES TO BE SELECTED BY THE GENERAL CONTRACTOR, ARCHITECT, OWNER OR OWNER REPRESENTATIVE.

4 - ALL FLOOR OUTLETS TO BE AT 12" TO BTTM. (14" OC), FROM F.F. UNLESS OTHERWISE NOTED, BATHROOM OUTLETS NEAR THE SINK(S) WHICH ARE TO BE 48" TO BTTM. (50" O.C.) FROM F.F. & RECEPTACLES ABOVE KITCHEN CABINETS TO BE AT 44" TO BTTM. (46 O.C.) FROM F.F.

5 THE US NATIONAL ELECTRICAL CODE, SECTION 210.52, STATES THAT THERE SHOULD BE AN ELECTRICAL OUTLET IN EVERY KITCHEN, BEDROOM, LIVING ROOM, FAMILY ROOM, AND ANY OTHER ROOM THAT HAS DEDICATED LIVING SPACE. THEY MUST BE POSITIONED AT LEAST EVERY SIX FEET MEASURED ALONG THE FLOOR LINE & INSTALLED IN EACH WALL SPACE 2 FT. OR MORE IN LENGTH.

6 ALL LIGHT SWITCHES TO BE AT 48" TO BTTM. (50" O.C.) UNLESS OTHERWISE NOTED. "KITCHEN SWITCHES ABOVE CABINETS TO BE @ 46" O.C.

7 CLOSETS:

- DISTANCES BETWEEN FIXTURES AND STORAGE ITEMS: FOR SURFACE-MOUNTED INCANDESCENT OR LED LIGHT FIXTURES, THERE MUST BE A MINIMUM DISTANCE OF 12 INCHES BETWEEN THE FIXTURE AND ANY ITEMS STORED IN THE CLOSET. FOR RECESSED INCANDESCENT OR LED LIGHT FIXTURES, THIS DISTANCE MUST BE AT LEAST 6 INCHES. FOR FLUORESCENT LIGHT FIXTURES, THE MINIMUM DISTANCE IS 6 INCHES.

- NO BARE BULBS ALLOWED. EXPOSED OR PARTIALLY EXPOSED INCANDESCENT OR LED LAMPS (BULBS) ARE NOT ALLOWED IN CLOSETS. WHILE UTILITY LIGHT FIXTURES WITH BARE BULBS IN A SOCKET WERE ONCE COMMON IN CLOSETS AND OTHER STORAGE AREAS, THESE ARE NO LONGER ALLOWED. ALL LIGHT BULBS MUST BE FULLY ENCLOSED IN A GLOBE OR OTHER HOUSING.

- GFCI PROTECTION:

REF. NEC, 210.8(A): DWELLING UNITS. ALL 125-VOLT THROUGH 250-VOLT RECEPTACLES INSTALLED IN THE LOCATIONS SPECIFIED IN 210.8(A)(1) THROUGH (A)(11) AND SUPPLIED BY SINGLE-PHASE BRANCH CIRCUITS RATED 150 VOLTS OR LESS TO GROUND SHALL HAVE GROUND-FAULT CIRCUIT-INTERRUPTER PROTECTION FOR PERSONNEL.

(1) BATHROOMS - MIN. 1 GFCI OUTLET AND WITHIN 3 FT. OF SINK.

(2) KITCHENS — WHERE THE RECEPTACLES ARE INSTALLED TO SERVE THE COUNTERTOP SURFACES

(3) SINKS — WHERE RECEPTACLES ARE INSTALLED WITHIN 1.8 M (6 FT) FROM THE TOP INSIDE EDGE OF THE BOWL OF THE SINK

(4) BATHTUBS OR SHOWER STALLS — WHERE RECEPTACLES ARE INSTALLED WITHIN 1.8 M (6 FT) OF THE OUTSIDE EDGE OF THE BATHTUB OR SHOWER STALL

(5) LAUNDRY AREAS

EXCEPTION TO (1) THROUGH (3), (5) THROUGH (8), AND (10): LISTED LOCKING SUPPORT AND MOUNTING RECEPTACLES UTILIZED IN COMBINATION WITH COMPATIBLE ATTACHMENT FITTINGS INSTALLED FOR THE PURPOSE OF SERVING A CEILING LUMINAIRE OR CEILING FAN SHALL NOT BE REQUIRED TO BE GROUND-FAULT CIRCUIT-INTERRUPTER PROTECTED. IF A GENERAL-PURPOSE CONVENIENCE RECEPTACLE IS INTEGRAL TO THE CEILING LUMINAIRE OR CEILING FAN, GFCI PROTECTION SHALL BE PROVIDED.

(6) INDOOR DAMP AND WET LOCATIONS

- SD TO BE INSTALLED INSIDE OF EACH SEPARATE SLEEPING AREA AND OUTSIDE EACH DOOR IN THE IMMEDIATE VICINITY OF THE BEDROOMS. (R315.3) CO MUST BE INSTALLED OUTSIDE EACH BEDROOM WITHIN 15' OF EACH ROOM.

-LAUNDRY AREAS REQUIRE A 20 AMP BRANCH CIRCUIT TO SUPPLY THE LAUNDRY RECEPTACLE OUTLET. THIS CIRCUIT SHALL SERVE ONLY RECEPTACLE OUTLETS LOCATED IN LAUNDRY AREA.

- HARDWIRED APPLIANCES ARE **REQ**. TO HAVE A DISCONNECT WITHIN SIGHT OR A LOCKABLE MEANS AT CIRCUIT BREAKER.

ARC FAULT CIRCUIT INTERRUPTERS (AFCI), PER NEC, REQUIRED IN ALL LIVING AREAS

SMOKE/CO ALARMS:

SD/CO - PER NFPA CODE - SMOKE ALARMS IN NEWLY CONSTRUCTED OR RENOVATED DWELLINGS ARE REQUIRED TO BE HARDWIRED WITH A BATTERY BACK-UP, INTERCONNECTED, AND UL-LISTED.

1. SMOKE ALARMS ARE REQUIRED IN EVERY RESIDENTIAL DWELLING OR SLEEPING UNIT, INCLUDING SINGLE-FAMILY HOMES.
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3. SMOKE ALARMS ARE REQUIRED IN EVERY BEDROOM, OUTSIDE EACH SLEEPING AREA, AND ON EVERY LEVEL OF THE HOME INCLUDING THE BASEMENT.
4. CO DETECTORS SHALL BE PLACED ON EACH LEVEL OF THE HOME INCLUDING THE BASEMENT IF THERE IS ONE.
5. GC TO F.V. THAT SMOKE ALARMS AND CARBON MONOXIDE DETECTORS ARE PLACED AND INSTALLED PER REGULATIONS AND CODE.

VIDEO:

1 LOCATE JACKS AS REQUESTED BY CUSTOMER/OWNER - INSTALL DATA / CABLE PANEL IN LOCATIONS SPECIFIED BY CUSTOMER. SYSTEM TO BE APPROVED BY HOME OWNER. IF NO JACKS ARE INDICATED IN PLAN, CONTRACTOR TO PLACE IN ACCORDANCE WITH OWNERS REQUESTED LAYOUT

DATA / CABLE:

- LOCATE DATA JACKS EQUIPMENT IN SPECIFIED LOCATION BY AND APPROVED BY HOME OWNER.

RCP NOTES

1. MOUNT LIGHT SWITCHES IN ACCESSIBLE LOCATIONS, COORDINATE FINAL AND EXACTING LOCATIONS W/OWNER OR OWNER REPRESENTATIVE.

2. ALL SMOKE DETECTORS TO BE HARD WIRED W/ BATTERY BACKUP

3. ALL FANS NEED TO BE SWITCHED.

4. ENSURE LIGHTING IN DAMP AREAS, SUCH AS SHOWERS, BATHROOMS, OUTDOORS, ETC, ARE DAMP LOCATION RATED FIXUTURES. RE. NEC 410.10

5. ENSURE LIGHT FIXTURES ARE LED TYPE FIXTURES.

6. PROVIDE 208/230 VOLT HARDWIRED CONN. WITH FUSE DISCONNECT FOR INDOOR AIR HANDLER UNITS, G.C TO F.V FINAL LOCATION.

GENERAL NOTES:

1. REFER TO ARCHITECTURAL DRAWINGS FOR CONTINUED CONSTRUCTION AND SCOPE, DOCUMENTATION, DIMENSIONS AND LOCATIONS OF NEW DEVICES, APPLIANCE OPENING SIZES. IF ANY CONFLICTS BETWEEN DRAWINGS OCCUR, PLEASE CONTACT THE ENGINEER OR ARCHITECT FOR CLARIFICATION.

2. CONTRACTOR TO COORDINATE FINAL KITCHEN APPLIANCES WITH KITCHEN EQUIPMENT PROVIDER, CUSTOMER AND DESIGN TEAM PRIOR TO FINAL INSTALL AND ROUGH IN. FINAL LAYOUTS OF APPLIANCES MAY CHANGE AND COORDINATION WILL BE REQUIRED WITH DESIGN TEAM AND CONTRACTORS FOR ANY MADE CHANGES.

3. ARC FAULT CIRCUIT INTERRUPTERS (AFCI), PER NEC, REQUIRED IN ALL LIVING AREAS

* ELECTRICAL SCHEDULE FOR REFERENCE ONLY. G.C. AND ELECTRICIAN TO FIELD VERIFY NEED AND COUNT OF ALL TYPES OF ELECTRICAL HARDWARE, SWITCHES, OUTLETS AND CONNECTIONS

ENGINEERS NOTE:

1. ELECTRICAL DESIGN DONE WITH ALL EXISTING AVAILABLE INFORMATION FOR THE PROPERTY. CERTIFIED ELECTRICIAN TO VERIFY PANEL CONNECTIONS, SIZING AND LAYOUT.
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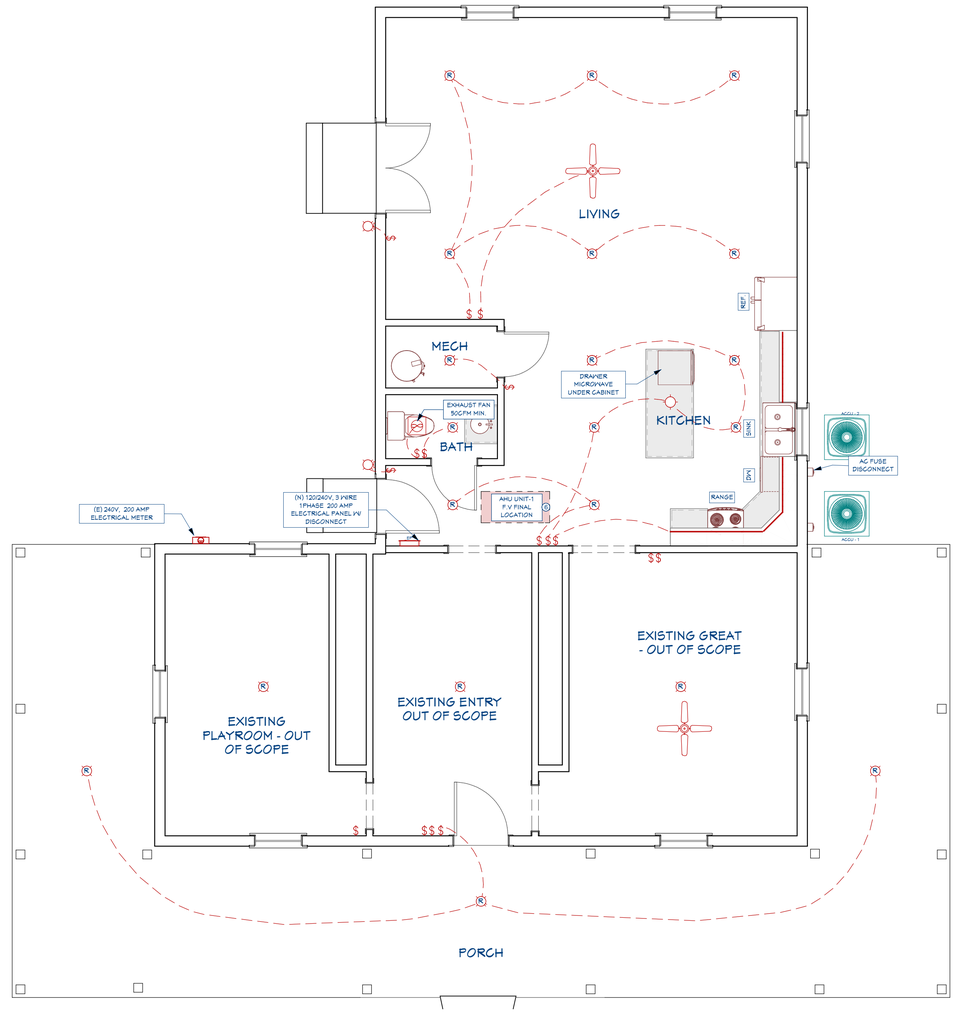

5 ELECTRICAL REFLECTED CEILING PLAN - MAIN FLOOR

SCALE: 1/4" = 1 FT.

- ELECTRICAL

BENTONVILLE, VA 22610

DRAWN BY:

CHECKED BY:

REVISIONS:

No.	DESCRIPTION	DATE

ISSUE RECORD:

No.	DESCRIPTION	DATE

SCALE:

SHEET CONTENTS:

PROJECT NO.:

DATE: 11/6/2025

DRAWING NO.: **E2.2**

REF 2020 NEC CODE FOR ELECTRICAL

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DATA / CABLE:

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3. ALL FANS NEED TO BE SWITCHED.

4. ENSURE LIGHTING IN DAMP AREAS, SUCH AS SHOWERS, BATHROOMS, OUTDOORS, ETC, ARE DAMP LOCATION RATED FIXUTURES. RE. NEC 410.10

5. ENSURE LIGHT FIXTURES ARE LED TYPE FIXTURES.

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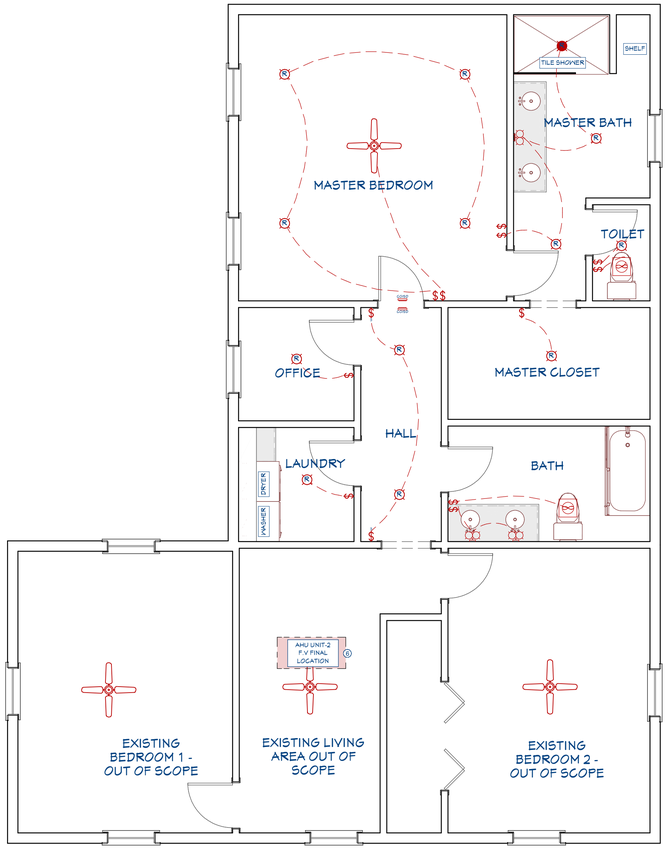

6 ELECTRICAL REFLECTED CEILING PLAN - SECOND FLOOR

SCALE: 1/4" = 1 FT.

- ELECTRICAL

BENTONVILLE, VA 22610

DRAWN BY:

CHECKED BY:

REVISIONS:

No.	DESCRIPTION	DATE

ISSUE RECORD:

No.	DESCRIPTION	DATE

SCALE:

SHEET CONTENTS:

PROJECT NO.:

DATE: 11/6/2025

DRAWING NO.: **E2.3**

REF 2020 NEC CODE FOR ELECTRICAL

1 GENERAL CONTRACTOR TO COORDINATE ALL EQUIPMENT CONNECTIONS WITH MANUFACTURERS CERTIFIED DRAWINGS AND/OR DOCUMENTS. COORDINATE WITH AND PROVIDE ALL CONDUIT AND TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT.

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- HARDWIRED APPLIANCES ARE **REQ**. TO HAVE A DISCONNECT WITHIN SIGHT OR A LOCKABLE MEANS AT CIRCUIT BREAKER.

ARC FAULT CIRCUIT INTERRUPTERS (AFCI), PER NEC, REQUIRED IN ALL LIVING AREAS

SMOKE/CO ALARMS:

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VIDEO:

1 LOCATE JACKS AS REQUESTED BY CUSTOMER/OWNER - INSTALL DATA / CABLE PANEL IN LOCATIONS SPECIFIED BY CUSTOMER. SYSTEM TO BE APPROVED BY HOME OWNER. IF NO JACKS ARE INDICATED IN PLAN, CONTRACTOR TO PLACE IN ACCORDANCE WITH OWNERS REQUESTED LAYOUT

DATA / CABLE:

- LOCATE DATA JACKS EQUIPMENT IN SPECIFIED LOCATION BY AND APPROVED BY HOME OWNER.

RCP NOTES

1. MOUNT LIGHT SWITCHES IN ACCESSIBLE LOCATIONS, COORDINATE FINAL AND EXACTING LOCATIONS W/OWNER OR OWNER REPRESENTATIVE.

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GENERAL NOTES:

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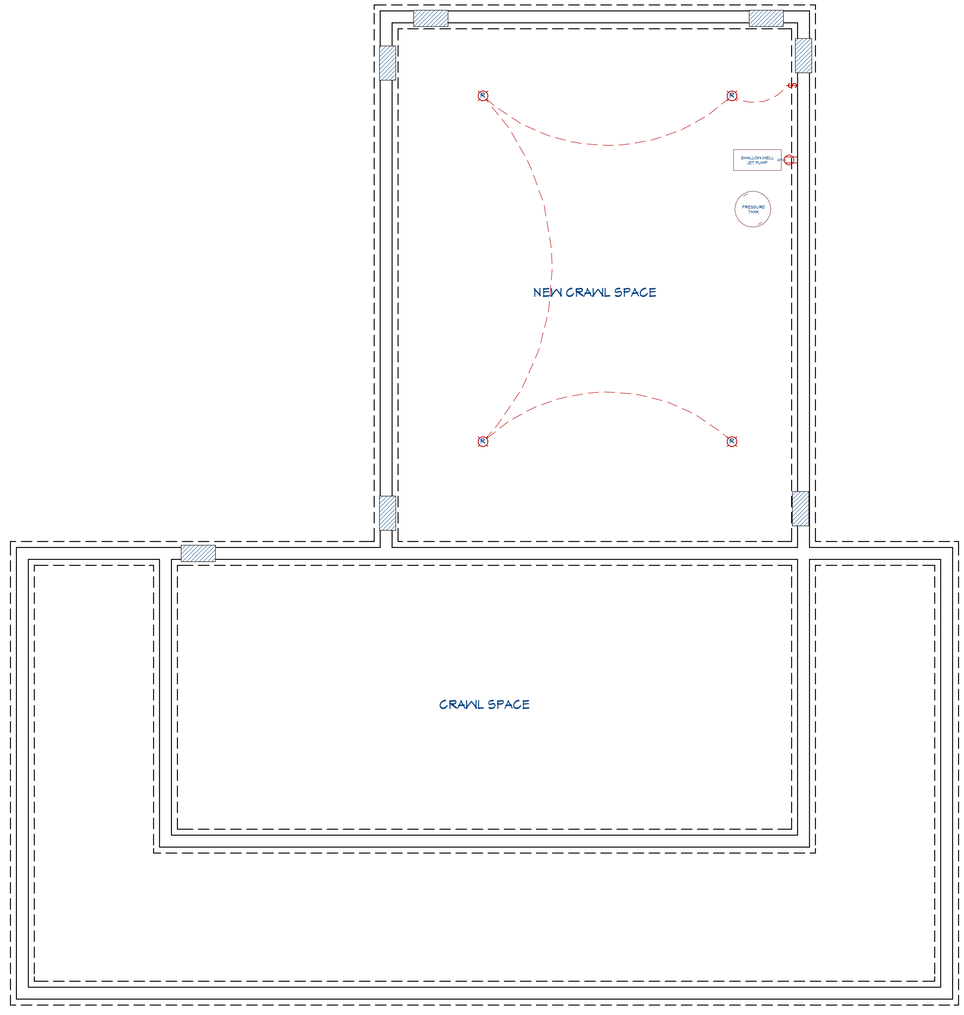
OUTLET NOTES

1. PROVIDE 120 VOLT RECEPTACLE/ CONNECTION PER MANUFACTURER FOR JET PUMP

* ELECTRICAL SCHEDULE FOR REFERENCE ONLY. G.C. AND ELECTRICIAN TO FIELD VERIFY NEED AND COUNT OF ALL TYPES OF ELECTRICAL HARDWARE, SWITCHES, OUTLETS AND CONNECTIONS

ENGINEERS NOTE:

1. ELECTRICAL DESIGN DONE WITH ALL EXISTING AVAILABLE INFORMATION FOR THE PROPERTY. CERTIFIED ELECTRICIAN TO VERIFY PANEL CONNECTIONS, SIZING AND LAYOUT.
2. CERTIFIED ELECTRICIAN TO INSTALL PER NEC 2020 CODE.
3. CERTIFIED ELECTRICIAN TO NOTIFY ENGINEER W/ ANY CHANGES.
4. ALL ELECTRICAL LAYOUTS ARE SCHEMATIC IN NATURE
5. SERVICE DISCONNECTING MEANS SHALL BE INSTALLED AT A READILY ACCESSIBLE LOCATION
6. SERVICE DISCONNECT MEANS SHALL NOT BE INSTALLED IN BATHROOMS
7. ALL SERVICES SHALL MEET OR EXCEED THE 2020 NEC CODES AND REQS.



7 BASEMENT ELECTRICAL PLAN

SCALE: 1/4" = 1 FT.

- ELECTRICAL

BENTONVILLE, VA 22610

DRAWN BY:

CHECKED BY:

REVISIONS:

No.	DESCRIPTION	DATE

ISSUE RECORD:

No.	DESCRIPTION	DATE

SCALE:

SHEET CONTENTS:

PROJECT NO.:

DATE: 11/6/2025

DRAWING NO.: **E2.4**

1. THE ELECTRICAL CONTRACTOR SHALL EXAMINE THE DRAWINGS OF ALL TRADES WHOSE WORK RELATES TO OR IS DEPENDENT ON ELECTRICAL WORK TO BECOME FULLY INFORMED OF THE EXTENT AND CHARACTER OF THEIR SPECIFIED WORK AND BE ABLE TO COORDINATE IT WHILE AVOIDING POSSIBLE INTERFERENCE WITH THE ELECTRICAL WORK.

2. ALL EQUIPMENT, INCLUDING MECHANICAL, MOTORS AND CONTROLS SHALL BE FURNISHED, SET IN PLACE, AND WIRED. THE EXACT FURNISHING AND INSTALLATION OF THE EQUIPMENT SHALL BE COORDINATED BY THE CONTRACTORS INVOLVED.

3. IT IS THE INTENTION OF THESE SPECIFICATIONS AND DRAWINGS TO CALL FOR FINISHED WORK, TESTED AND READY FOR OPERATION. WHEREVER THE WORD "PROVIDE" IS USED, IT SHALL MEAN, "FURNISH AND INSTALL COMPLETE AND READY FOR USE."

4. THE ARCHITECTURAL SPECIFICATIONS, GENERAL AND SPECIAL CONDITIONS FOR THE WORK OF THIS PROJECT SHALL BE EXAMINED BY ELECTRICAL CONTRACTOR BEFORE SUBMITTING A BID.

5. THE CONTRACTOR IS RESPONSIBLE FOR THE COMPLETE AND SATISFACTORY ELECTRICAL INSTALLATION IN ACCORDANCE WITH THE TRUE INTENT OF THE DRAWINGS AND SPECIFICATIONS. HE SHALL PROVIDE, WITHOUT EXTRA CHARGE, ALL INCIDENTAL ITEMS REQUIRED, AS A PART OF THIS ELECTRICAL INSTALLATION. THE INSTALLATION SHALL BE SO MADE THAT ITS SEVERAL COMPONENT PARTS WILL FUNCTION TOGETHER AS A WORKABLE SYSTEM, AND SHALL BE LEFT WITH ALL PARTS ADJUSTED AND IN WORKING ORDER.

6. SECURE AND PAY FOR ALL PERMITS, TAXES, ROYALTIES, LICENSES, AND INSPECTIONS IN ASSOCIATION WITH THE WORK SPECIFIED UNDER ELECTRICAL DIVISION AND INDICATED ON THE DRAWINGS. FILE ALL NECESSARY PLANS, PREPARE ALL DOCUMENTS, AND OBTAIN ALL NECESSARY APPROVALS REQUIRED BY ALL GOVERNMENTAL DEPARTMENTS HAVING JURISDICTION. ALL WORK PERFORMED UNDER THIS CONTRACT SHALL REMAIN EXPOSED TO VIEW UNTIL APPROVED BY THE INSPECTION AUTHORITY.

7. ALL WORK SHALL COMPLY WITH NATIONAL ELECTRICAL CODE (NEC), NATIONAL FIRE PROTECTION ASSOCIATION CODES (NFPA), INTERNATIONAL CODE COUNCIL (ICC) CODES, INCLUDING INTERNATIONAL ENERGY CONSERVATION CODE (IECC), AND ALL APPLICABLE LOCAL, STATE, MUNICIPAL, AND CITY CODES, ORDINANCES AND REGULATIONS.

8. THE NAMING OF THE MANUFACTURER OR BRAND WITH CATALOG NUMBER OR OTHER PRODUCT IDENTIFICATION WITHOUT THE WORDS "OR EQUAL" IN THE SPECIFICATIONS OR NOTES SHALL INDICATE THAT IT IS THE ONLY PRODUCT APPROVED FOR PURCHASE. IF THE WORDS "OR EQUAL" ARE USED, THEY SHALL BE INTERPRETED AS ESTABLISHING A QUALITY OR PERFORMANCE STANDARD FOR THE MATERIAL OR PRODUCT TO BE PURCHASED. THIS SHALL INDICATE THAT THE ELECTRICAL CONTRACTOR IS NOT RESTRICTED TO THE USE OF THE NAMED AND IDENTIFIED PRODUCT IF A SUBSTITUTE APPROVED BY THE ARCHITECT/ENGINEER IS AVAILABLE; HOWEVER, WHERE A SUBSTITUTION IS REQUESTED, IT WILL BE PERMITTED ONLY WITH THE WRITTEN APPROVAL OF THE ARCHITECT/ENGINEER. NO SUBSTITUTE MATERIAL OR PRODUCT SHALL BE ORDERED, FABRICATED, SHIPPED, OR PROCESSED IN ANY MATTER PRIOR TO THE APPROVAL OF THE ARCHITECT/ENGINEER. THE ELECTRICAL CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR ADDITIONAL EXPENSES, AS REQUIRED, MAKING CHANGES FROM THE ORIGINAL MATERIAL OR PRODUCT SPECIFIED.

9. THE TERM "AS REQUIRED" REFERS TO COMPONENTS THAT MAY BE REQUIRED TO COMPLETE THE NOTED SYSTEM INDICATED IN THE PROJECT DOCUMENTS.

10. THE TERM "VERIFY" REFERS TO A CONDITION WHICH MUST BE CONFIRMED PRIOR TO PROCEEDING WITH THE ORDERING OF MATERIAL OR THE FABRICATION AND INSTALLATION OF A COMPONENT.

11. ABBREVIATIONS THROUGHOUT THE DOCUMENTS COMPLY WITH DOCUMENT ABBREVIATION LIST ON LEGEND OR ARE THOSE IN COMMON USE. ENGINEER WILL DEFINE THE INTENT OF ANY IN QUESTION.

12. THE DRAWINGS ARE DIAGRAMMATIC IN CHARACTER. LOCATIONS SHOWN FOR ELECTRICAL EQUIPMENT, DEVICES, CIRCUITING, ETC., ARE APPROXIMATE. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE WORK WITH THE ARCHITECTURAL, PLUMBING, HVAC, AND OTHER TRADE DRAWINGS FOR THE EXACT DIMENSIONS, CLEARANCES, AND ROUGHING-IN LOCATIONS. THE ELECTRICAL CONTRACTOR SHALL COOPERATE WITH THE OTHER TRADES IF FIELD ADJUSTMENTS ARE REQUIRED TO ACCOMMODATE THE WORK OF OTHERS.

13. DRAWINGS SHALL NOT BE SCALED FOR ROUGH-IN MEASUREMENTS OR USED AS SHOP DRAWINGS. WHERE DIMENSIONS ARE SHOWN ON PLANS OR DETAILS, THESE DIMENSIONS ARE TO BE FIELD-VERIFIED BY THE ELECTRICAL CONTRACTOR AGAINST EXISTING FIELD CONDITIONS, INSTALLATION REQUIREMENTS OF OTHER TRADES, AND THE MANUFACTURER'S SUBMITTALS FOR EQUIPMENT TO BE INSTALLED. SHOULD ANY CONFLICTS ARISE WHICH CANNOT BE EASILY RESOLVED IN THE FIELD WITHOUT CHANGING THE DESIGN INTENT, THE ELECTRICAL CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.

14. RECORD DOCUMENTS
   A. THE ELECTRICAL CONTRACTOR SHALL MAINTAIN ACCURATE RECORDS OF ALL DEVIATIONS IN WORK AS INSTALLED FROM WORK SPECIFIED ON THE DRAWINGS, OR IN THE SPECIFICATIONS, AND IDENTIFY ORIGIN OF CHANGE.
   B. KEEP A COMPLETE SET OF RECORD DOCUMENT PRINTS IN CUSTODY DURING ENTIRE PERIOD OF CONSTRUCTION AT THE CONSTRUCTION SITE. ON COMPLETION OF THE PROJECT, TWO COMPLETE SETS OF MARKED-UP PRINTS SHOWING THESE DEVIATIONS SHALL BE DELIVERED TO GENERAL CONTRACTOR AND ARCHITECT/ENGINEER. THIS CONTRACT WILL NOT BE CONSIDERED COMPLETED UNTIL THESE RECORD DRAWINGS HAVE BEEN RECEIVED AND REVIEWED BY THE ENGINEER.
   C. THE FOLLOWING ITEMS ARE REPRESENTATIVE, BUT NOT ALL-INCLUSIVE, OF THE INFORMATION WHICH SHALL BE RECORDED ON THE AS-BUILT DRAWINGS:
      - POWER DISTRIBUTION SYSTEM, INCLUDING DISTRIBUTION EQUIPMENT AND EACH CONDUIT AND WIRE SIZE INSTALLED.
      - FINAL LAYOUT AND CIRCUITING FOR POWER AND LIGHTING, SURFACE RACEWAYS AND RELATED EQUIPMENT, INCLUDING EACH CONDUIT AND WIRE SIZE.
      - CHANGES IN PLAN, SECTIONS, ELEVATIONS, AND DETAILS, SUCH AS SHIFTS IN LOCATION OF WALLS, DOORS, AND WINDOWS.
      - LAST LOCATION AND ARRANGEMENT OF UNDERGROUND UTILITIES AND CONNECTIONS TO EXISTING UTILITIES, INCLUDING ELECTRICAL AND PHONE/TV.

17. BEFORE ANY EQUIPMENT IS INSTALLED, DETERMINE THAT SAID EQUIPMENT WILL PROPERLY FIT WITHIN THE SPACE ALLOCATED. INSTALL ALL EQUIPMENT AND MATERIALS IN SUCH A MANNER AS TO PROVIDE REQUIRED ACCESS FOR SERVICING AND MAINTENANCE. ALLOW AMPLE SPACE FOR REMOVAL OF ALL PARTS THAT REQUIRE REPLACEMENT OR SERVICING.

18. SUFFICIENT ACCESS AND WORKING SPACE SHALL BE PROVIDED AND MAINTAINED ABOUT ALL ELECTRICAL EQUIPMENT TO PERMIT READY AND SAFE OPERATION AND MAINTENANCE OF SUCH EQUIPMENT PER NEC ARTICLE 110 REQUIREMENTS.

19. ALL MATERIALS AND EQUIPMENT SHALL BE NEW, UNDAMAGED, BEAR THE UL LABEL WHERE APPLICABLE, AND BE AS SPECIFIED FOR USE IN EACH SPECIFIC LOCATION. ANY INCIDENTAL ACCESSORIES NECESSARY TO COMPLETE THE WORK IN ALL RESPECTS AND MAKE IT READY FOR OPERATION, EVEN IF NOT SPECIFICALLY SPECIFIED, SHALL BE FURNISHED, DELIVERED, AND INSTALLED BY THE ELECTRICAL CONTRACTOR WITHOUT ADDITIONAL EXPENSE TO THE CLIENT.

20. MINOR DETAILS NOT USUALLY SHOWN OR SPECIFIED, BUT NECESSARY FOR THE PROPER INSTALLATION AND OPERATION OF A SYSTEM OR EQUIPMENT, SHALL BE INCLUDED IN THE ELECTRICAL CONTRACTOR'S ESTIMATE, AS IF SPECIFIED OR SHOWN HEREIN.

21. COORDINATE THE INSTALLATION OF ELECTRICAL MATERIALS AND EQUIPMENT ABOVE AND BELOW CEILINGS WITH SUSPENSION SYSTEM, MECHANICAL EQUIPMENT, AND OTHER BUILDING COMPONENTS. ALL COMPONENTS SHALL BE LOCATED AS TIGHT TO STRUCTURE AS POSSIBLE. COORDINATE CEILING CAVITY SPACE CAREFULLY WITH ALL TRADES.

22. THE CONTRACTOR SHALL PREPARE AN OPERATING AND MAINTENANCE MANUAL COVERING ALL SYSTEMS AND EQUIPMENT INSTALLED UNDER THIS DIVISION. SUBMIT AN OUTLINE OF A PREVENTATIVE MAINTENANCE PROGRAM FOR EACH SYSTEM.

23. WARRANTIES:
   A. PROVIDE COMPLETE WARRANTY INFORMATION FOR EACH ITEM, WHICH SHALL INCLUDE NAME OF PRODUCT OR EQUIPMENT, DATE OF BEGINNING OF WARRANTY OR BOND, DURATION OF WARRANTY OR BOND, AND NAMES, ADDRESSES, AND TELEPHONE NUMBERS OF MANUFACTURING/SERVICING PERSONNEL, AS WELL AS PROCEDURES FOR FILING A CLAIM AND OBTAINING WARRANTY SERVICES.
   B. THE CONTRACTOR SHALL WARRANT ALL MATERIALS, WORKMANSHIP AND THE SUCCESSFUL OPERATION OF ALL EQUIPMENT AND APPARATUS INSTALLED FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE ENTIRE WORK AS IDENTIFIED IN THE GENERAL CONDITIONS.

25. THE CONDUIT SYSTEM AND ELECTRICAL ENCLOSURES SHALL BE SECURELY BONDED TOGETHER AND SUPPORTED PER NEC REQUIREMENTS.

26. CONDUIT JOINTS SHALL BE CUT SQUARE AND REAMED SMOOTH. BENDS OR OFFSETS SHALL BE MADE WITH AN APPROVED BENDER OR HICKEY, OR HUB-TYPE CONDUIT FITTINGS. BENDS SHALL BE MADE SO THAT THE CONDUIT IS NOT DAMAGED AND ITS INTERNAL DIAMETER IS NOT EFFECTIVELY REDUCED. THERE SHALL NOT BE MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360° TOTAL) BETWEEN PULL POINTS.

27. CONCEALED CONDUIT SYSTEMS SHALL BE RUN IN A DIRECT LINE WITH LONG SWEEP BENDS AND OFFSETS. EXPOSED CONDUIT RUNS SHALL BE PARALLEL TO AND AT RIGHT ANGLES TO BUILDING LINES, USING CONDUIT FITTINGS FOR ALL TURNS AND OFFSETS.

28. FEEDERS AND BRANCH CIRCUITS SHALL BE PROVIDED WITH APPROPRIATELY SIZED INSULATED EQUIPMENT GROUNDING CONDUCTOR, WHETHER SPECIFICALLY NOTED OR NOT. IF NOTED, THE ELECTRICAL CONTRACTOR IS REQUIRED TO USE THE SIZE OF GROUNDING CONDUCTOR INDICATED ON DRAWINGS. THIS CONDUCTOR SHALL BE CONNECTED FROM THE ELECTRICAL PANEL GROUND BAR TO THE DESIGNATED GROUNDING CONNECTION ON THE ELECTRICAL DEVICE SERVED. ENSURE LISTED GROUND BAR KITS HAVE BEEN INSTALLED PER NEC REQUIREMENTS IN THE ELECTRICAL PANELS.

29. FLOATING CONDUIT GROUNDS ARE NOT ACCEPTABLE. ENSURE ALL FEEDERS (NEW AND EXISTING) ARE PROVIDED WITH APPROPRIATELY–SIZED INSULATED GROUND WIRE, WHETHER NOTED OR NOT. IF NOTED, THE ELECTRICAL CONTRACTOR IS REQUIRED TO USE THE SIZE OF GROUND WIRE INDICATED ON DRAWINGS. THE GROUND WIRE SHALL BE CONNECTED FROM THE ELECTRICAL PANEL GROUNDED BUS BAR TO THE ELECTRICAL DEVICES. ENSURE FULL SIZE GROUND BUS HAS BEEN INSTALLED PER N.E.C. IN EXISTING ELECTRICAL PANELS. IF REQUIRED, PROVIDE GROUND BUS BAR KIT AND CONNECT AS REQUIRED PER N.E.C. ARTICLE 250.

30. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL JUNCTION AND PULL BOXES TO PROVIDE ACCESS POINTS FOR PULLING AND FEEDING CONDUCTORS INTO A RACEWAY SYSTEM. JUNCTION AND PULL BOXES AND THEIR COVERS SHALL BE FORMED FROM SHEET STEEL, AND SHALL BE BARE METAL OR FINISHED IN GRAY ENAMEL PAINT. BOXES SHALL BE IN INDUSTRY STANDARD SIZES.

31. OUTLET BOXES WITH THE CORRECT FITTING FOR THE APPLICATION SHALL BE LOCATED AT EACH CONDUCTOR SPLICE POINT, AT EACH OUTLET, SWITCH POINT, OR JUNCTION POINT, AND AT EACH PULL POINT FOR THE CONNECTION OF CONDUIT AND OTHER RACEWAYS. OUTLET BOXES FOR CONCEALED WIRING SHALL BE MADE FROM GALVANIZED OR CADMIUM-PLATED SHEET STEEL, AND THEY SHALL HAVE A DEPTH OF AT LEAST 1.5 INCHES, WHETHER SINGLE OR GANGED. THE BOXES SHALL BE LARGE ENOUGH SIZE TO ACCOMMODATE THE NUMBER OF WIRING DEVICES AND CONDUCTORS AS SPECIFIED IN THE FILL SCHEDULE OF THE CURRENT NEC. SECURE BOXES WITH MOUNTING BRACKET, BRACES, HANGER OR BOX MOUNTING SUPPORT.

32. REFER TO ARCHITECTURAL DRAWINGS FOR DEVICE INSTALLATION HEIGHTS PRIOR TO ROUGH-IN.

33. ELECTRICAL DEVICES (SWITCHES, RECEPTACLES, ETC.) SHALL BE 20A RATED UNLESS OTHERWISE SPECIFIED ON DRAWINGS. VERIFY DEVICE CONFIGURATION, COLOR, FINISH, AND MATERIAL REQUIREMENTS WITH ARCHITECT. DEVICES IN RESIDENTIAL UNITS SHALL BE A MINIMUM OF 15A RATED.

34. WIRING INSIDE THE BUILDING SHALL BE COPPER, INSULATION TYPE THHN/THWN, UNLESS OTHERWISE NOTED. THE MINIMUM CONDUCTOR SIZE SHALL BE 12 AWG. CONDUCTORS SIZED FROM #10 AWG AND LARGER SHALL BE STRANDED. WHERE MC TYPE FLEXIBLE CABLE IS INSTALLED IN LIEU OF WIRE AND CONDUIT, FULL-SIZE EQUIPMENT GROUNDING CONDUCTOR SHALL RUN WITH CURRENT CARRYING CONDUCTORS. NM TYPE CABLE MAY BE USED ONLY AS AUTHORIZED BY THE OWNER AND DESIGN ENGINEER, AND WITH APPROVAL OF LOCAL CODE AUTHORITY.

35. CONDUCTORS SIZES #6 AWG AND SMALLER SHALL BE FACTORY COLOR-CODED WITH AN INDUSTRYSTANDARD DESIGNATED COLOR FOR EACH PHASE AND A NEUTRAL CONDUCTOR. CONDUCTORS SIZES #4 AWG AND LARGER SHALL HAVE COLORS FIELD APPLIED USING THE COLOR MARKING TAPE OR BY PAINTING THE INSULATION. THESE COLORS SHALL BE USED CONSISTENTLY THROUGHOUT THE SYSTEM.

36. ALL JOINTS OR SPLICES FOR #10 AWG CONDUCTORS OR SMALLER SHALL BE MADE WITH UL-APPROVED WIRE NUTS, "IN-SURE" PUSH-IN CONNECTORS, OR COMPRESSION-TYPE CONNECTORS.

37. ALL JOINTS OR SPLICES FOR CONDUCTORS #8 AWG AND LARGER SHALL BE MADE WITH A MECHANICAL COMPRESSION CONNECTOR. AFTER THE CONDUCTORS HAVE BEEN MADE MECHANICALLY AND ELECTRICALLY SECURE, THE ENTIRE JOINT OR SPLICE SHALL BE COVERED WITH 3M SCOTCH BRAND NO. 33 TAPE, OR APPROVED EQUAL, TO MAKE THE INSULATION VALUE AT THE JOINT OR SPLICE EQUAL TO THE VALUE OF THE CONDUCTORS INSULATION. THE CONNECTORS SHALL BE UL APPROVED.

38. UNLESS OTHERWISE INDICATED, ALL WIRING FOR BRANCH CIRCUITS SHALL BE #12 AWG WHEN PROTECTED BY A 15- OR 20- AMP CIRCUIT BREAKER. IF DISTANCE FROM PANEL TO FIRST DEVICE IS 100 FEET OR GREATER FOR 120-VOLT CIRCUITS, OR 150 FEET OR GREATER FOR 277-VOLT CIRCUITS, #10 AWG WIRING SHALL BE INSTALLED.

39. FOR ALUMINUM CONDUCTOR TERMINATIONS, ALUMINUM BI-METALLIC PIN CONNECTORS ARE RECOMMENDED UNLESS COMPACT-TYPE CONDUCTORS ARE USED. THESE CONNECTORS SHALL BE UL LISTED PER UL486B, RATED FOR USE UP TO 600V AND TEMPERATURE UP TO 90°C. CONNECTORS SHALL BE INSTALLED WITH MANUFACTURER'S SPECIFIED CRIMPING TOOLS AND DIES.

40. INSTALLATION IN AREAS OF DRYWALL CEILING SHALL BE COORDINATED SUCH THAT ACCESS PANELS ARE NOT REQUIRED. ELEMENTS REQUIRING ACCESS SHALL BE LOCATED IN THE AREAS OF ACCESSIBLE CEILING, OR IN THE LOCATIONS COORDINATED WITH ARCHITECT. ACCESS PANELS REQUIRED WITHIN DRYWALL CEILINGS SHALL BE INSTALLED SYMMETRICALLY WITH OTHER PANELS OR DEVICES, AND SHALL BE MINIMUM SIZE REQUIRED, "MUD-IN" TYPE, AND FIRE RATED, IF REQUIRED. ACCESS PANELS IN FIRE-RATED WALLS AND CEILINGS SHALL HAVE PROPER UL LABEL AND FIRE RATING LISTING.

41. WALL AND CEILING ROUGH-IN INSTALLATIONS FOR LOW-VOLTAGE CONTROL WIRING OF ANY TYPE SUCH AS DATA/TELECOMMUNICATIONS WIRING, FIRE ALARM WIRING, HVAC CONTROL WIRING, SECURITY SYSTEMS WIRING, TV CABLING, OPTICAL FIBER CABLING, ETC., SHALL BE COMPLETE AND READY FOR INSPECTION AT THE TIME ELECTRICAL ROUGH-IN INSPECTIONS ARE REQUESTED. ALL SHARP EDGES, CONDUIT ENDS AND METAL STUDS, ETC., FOR LOW-VOLTAGE CABLING SHALL BE PROTECTED BY INSULATED BUSHINGS OR GROMMETS, AND SECURELY FASTENED IN THE OPENINGS FOR THE WALL ROUGH-IN INSPECTIONS. WORK SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER (GROUPED CABLES ROUTED WITH SQUARE CORNERS AND PARALLEL TO BUILDING LINES.) CABLES SHALL BE INSTALLED PER NEC REQUIRED SEPARATIONS, AND SUPPORTED FROM THE BUILDING STRUCTURE. CABLE TIES USED IN DUCTS, PLENUMS, AND OTHER AIR-HANDLING SPACES ARE REQUIRED TO HAVE A TESTING LABORATORY LISTING NUMBER AND LABEL ON EACH UNOPENED PACKAGE AS BEING APPROVED FOR USE IN THESE LOCATIONS.

42. ELECTRICAL CABINETS AND ENCLOSURES LOCATED IN PUBLIC AREAS SHALL BE LOCKABLE TYPE.

43. PENETRATIONS THROUGH STRUCTURAL MEMBERS SHALL NOT BE PERMITTED WITHOUT SPECIFIC WRITTEN PERMISSION FROM STRUCTURAL ENGINEER AND ARCHITECT. SUBMIT REQUESTS FOR PENETRATIONS TO ARCHITECT FOR REVIEW AND DISPOSITION. PRIOR TO CORE DRILLING THROUGH FLOORS, VERIFY CLEARANCE OF BEAMS, DUCTWORK, ETC., IN CEILING SPACE BELOW, AND X-RAY FOR CONDUIT AND/OR REBAR IN SLAB.

44. ALL ROOF PENETRATIONS SHALL BE SEALED WATER TIGHT. PROVIDE FLASHING AND COUNTER FLASHING AS REQUIRED. COORDINATE ROOFING WORK WITH THE GENERAL CONTRACTOR.

45. RACEWAYS SHALL BE PROVIDED WITH EXPANSION FITTINGS WHERE NECESSARY TO COMPENSATE FOR THERMAL EXPANSION AND CONTRACTION, AND TO ALLOW FOR MINOR MOVEMENT OF THE STRUCTURAL ELEMENTS OF THE BUILDING. EXPANSION FITTINGS FOR METAL RACEWAYS SHALL BE MADE ELECTRICALLY CONTINUOUS BY EQUIPMENT BONDING JUMPERS OR OTHER MEANS.

46. PROVIDE TYPEWRITTEN PANELBOARD DOOR DIRECTORIES WITH ACCURATE BRANCH CIRCUIT DESTINATIONS. CLEARLY MARK JUNCTION BOXES IN CEILING SPACE WITH PANEL DESIGNATIONS AND CIRCUIT NUMBERS. PROVIDE ENGRAVED PLASTIC LABELS FOR ALL DISTRIBUTION EQUIPMENT. ATTACH THESE LABELS PERMANENTLY TO EQUIPMENT WITH RIVETS OR SCREWS. SELF ADHESIVE TYPE IS NOT ACCEPTABLE. LABEL OUTLET AND SWITCH COVER PLATES WITH PANEL DESIGNATION AND CIRCUIT NUMBERS.

47. REQUIREMENTS FOR MECHANICAL EQUIPMENT ELECTRICAL CONNECTIONS:
   A. ELECTRICAL CONTRACTOR SHALL REVIEW MECHANICAL AND PLUMBING DRAWINGS AND SCHEDULES FOR VERIFICATION OF THE EQUIPMENT USED, WIRING AND ADDITIONAL INSTALLATION REQUIREMENTS PRIOR TO PROVIDING REQUIRED STARTERS/DISCONNECT SWITCHES. WHEN EQUIPMENT DELIVERED TO JOB SITE, ELECTRICAL CONTRACTOR SHALL VERIFY THIS DATA WITH EQUIPMENT NAMEPLATES OR MANUALS. IF SIGNIFICANT DISCREPANCIES OCCUR CONTACT ELECTRICAL ENGINEER FOR REVISION OF THE CONSTRUCTION DOCUMENTS.
   B. PROVIDE SAFETY DISCONNECT SWITCHES FOR ALL MECHANICAL EQUIPMENT UNLESS PROVIDED BY MECHANICAL CONTRACTOR AS SPECIFICALLY DIRECTED ON MECHANICAL DRAWING OR SPECIFICATION REQUIREMENTS.
   C. ELECTRICAL WIRING IN CONNECTION WITH THE AUTOMATIC TEMPERATURE CONTROL SYSTEM, WHERE SHOWN ON THE ELECTRICAL DIVISION DRAWINGS, SHALL BE PERFORMED BY THE ELECTRICAL CONTRACTOR. ALL OTHER WIRING, INCLUDING 120V REQUIRED FOR PROPER OPERATION OF THE AUTOMATIC TEMPERATURE CONTROL SYSTEM, SHALL BE PERFORMED BY THE MECHANICAL CONTRACTOR.

48. PROVIDE FIRE STOPPING MATERIAL AND SYSTEMS, AS LISTED IN THE UL FIRE RESISTANCE DIRECTORY, EQUAL TO THE FIRE RESISTANCE RATING OF THE RESPECTIVE WALL OR FLOOR ASSEMBLY FOR ALL PENETRATIONS OF CONDUIT, SLEEVES, WIRING, CABLES AND OTHER ELECTRICAL ITEMS THROUGH FIRERATED CORRIDOR WALLS, FIRE RESISTIVE WALLS, FIRE RESISTIVE SHAFTS, AND FLOOR PENETRATIONS.

8 ELECTRICAL SERVICE - ELECTRICAL NOTES

SCALE: NO SCALE

- ELECTRICAL

BENTONVILLE, VA 22610

DRAWN BY:

CHECKED BY:

REVISIONS:

No.	DESCRIPTION	DATE

ISSUE RECORD:

No.	DESCRIPTION	DATE

SCALE:

SHEET CONTENTS:

PROJECT NO.:

DATE: 11/6/2025

DRAWING NO.: **E3.0**

136 BROAD RUN RD, BENTONVILLE

Available Fault Current Calculation

by:John Sokolik Ver. 7.1
jmp1jds@comcast.net

Utility Fault Current ____ amperes kVA = 15
E = 240
trans. FLA = 63

I = kVA x 1000 = trans. FLA
E

I_{sca} = trans. FLA x 100 x PF = PF = 90%
transformer Z Z = 1.60%

I_{sca} = ampere short-circuit current RMS symmetrical. I_{sca} = 4,340 amperes

Point to Point Method — Single Phase 240/120

Length (distance) FEET L = 110 — Copper in Nonmetallic Raceway

'f ' factor = **2 x L x I / N x C x E L-N** (ASC) I_{sca} = 4,340

conductors per phase N = 1

Phase conductor constant C = 13,923 **Phase Conductor** 3/0

Volt Line to Line E_{L-L} = 240 Volt

f = 0.286

Neutral conductor constant C = 13,923 **Neutral Conductor** 3/0

Multiplier Volt Line to Neutral E_{L-N} = 120 Volt

M = 1 / (1 + f) f = 0.857

Line to Line M = 0.778

Line to Neutral M = 0.538

Fault Current at Service Equipment

I_{sca} x M = fault current at terminals of main disconnect **L- L =** → **3,376 amperes**

I_{sca} x M = fault current at terminals of main disconnect **L- N =** → **2,337 amperes**

Fault Current from ELECTRICAL METER TO PAIN PANEL — Copper in Nonmetallic Raceway — Single Phase

Single Phase Feeder Length (distance) L = 10

'f ' factor = **2 x L x I / N x C x E L-N** (ASC) I_{sca} = 3,376 Phase 2,337 Neutral

conductors per phase N = 1

Phase conductor constant C = 11,424 **Phase Conductor** 2/0

Volt Line to Line E_{L-L} = 240 Volt

f = 0.025

Neutral conductor constant C = 11,424 **Neutral Conductor** 2/0

Volt Line to Neutral E_{L-N} = 120 Volt

Multiplier f = 0.034

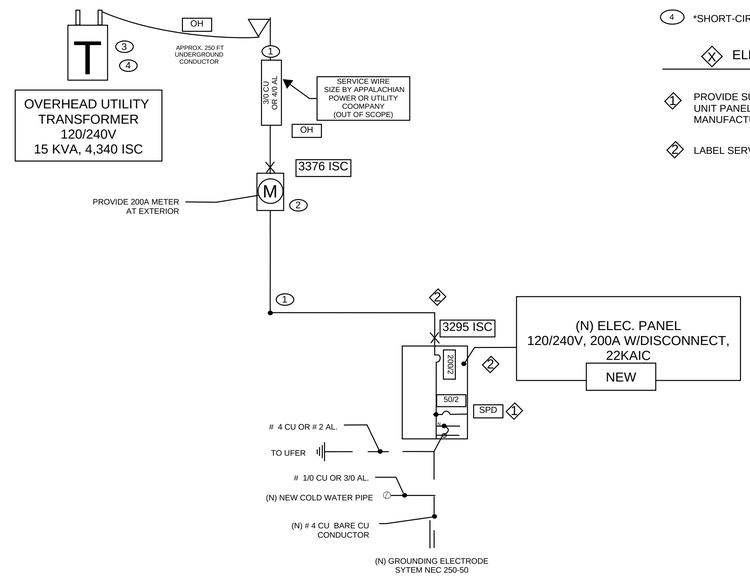
M = 1 / (1 + f) Line to Line M = 0.976

Line to Neutral M = 0.967

I_{sca} x M = fault current at terminal of the panel L- L = **3,295 amperes**

I_{sca} x M = fault current at terminal of the panel L- N = **2,260 amperes**

Calculation does not include motor contribution



GENERAL NOTES

1. EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE NEC AND ALL AUTHORITY HAVING JURISDICTION.
2. FOLLOW MANUFACTURERS SUGGESTED INSTALLATION INSTRUCTIONS AND WIRING SPECIFICATIONS.
3. COORDINATE ALL UTILITY RELATED WORK WITH APPALACHIAN ENERGY PRIOR TO CONSTRUCTION
4. *SHORT-CIRCUIT CALCULATIONS ARE BASED ON COPPER

ELECTRICAL DETAIL NOTES

1. PROVIDE SURGE-PROTECTION DEVICE (SPD) FOR ALL DWELLING UNIT PANELBOARDS, PER NEC 230.67. VERIFY OCPD WITH SPD MANUFACTURER.
2. LABEL SERVICE AND EMERGENCY DISCONNECT.

Table 310.16 Ampacities of Insulated Conductors with Not More Than Three Current-Carrying Conductors in Raceway, Cable, or Earth (Directly Buried)

Size AWG or kcmil	Temperature Rating of Conductor [See Table 310.104(A).] 60°C (140°F) Types TW, UF	75°C (167°F) Types RHW, THHW, THW, THWN, XHHW, USE, ZW	90°C (194°F) Types TBS, SA, SIS, FEP, FEPB, MI, RHH, RHW-2, THHN, THHW, THW-2, THWN-2, USE-2, XHH, XHHW, XHHW-2, ZW-2	60°C (140°F) Types TW, UF	75°C (167°F) Types RHW, THHW, THW, THWN, XHHW, USE	90°C (194°F) Types TBS, SA, SIS, THHN, THHW, THW-2, THWN-2, RHH, RHW-2, USE-2, XHH, XHHW, XHHW-2, ZW-2	Size AWG or kcmil
	COPPER			ALUMINUM OR COPPER-CLAD ALUMINUM			
18**	—	—	14	—	—	—	—
16**	—	—	18	—	—	—	—
14**	15	20	25	—	—	—	—
12**	20	25	30	15	20	25	12**
10**	30	35	40	25	30	35	10**
8	40	50	55	35	40	45	8
6	55	65	75	40	50	55	6
4	70	85	95	55	65	75	4
3	85	100	115	65	75	85	3
2	95	115	130	75	90	100	2
1	110	130	145	85	100	115	1
1/0	125	150	170	100	120	135	1/0
2/0	145	175	195	115	135	150	2/0
3/0	165	200	225	130	155	175	3/0
4/0	195	230	260	150	180	205	4/0
250	215	255	290	170	205	230	250
300	240	285	320	195	230	260	300
350	260	310	350	210	250	280	350
400	280	335	380	225	270	305	400
500	320	380	430	260	310	350	500
600	350	420	475	285	340	385	600
700	385	460	520	315	375	425	700
750	400	475	535	320	385	435	750
800	410	490	555	330	395	445	800
900	435	520	585	355	425	480	900
1000	455	545	615	375	445	500	1000
1250	495	590	665	405	485	545	1250
1500	525	625	705	435	520	585	1500
1750	545	650	735	455	545	615	1750
2000	555	665	750	470	560	630	2000

*Refer to 310.15(B)(2) for the ampacity correction factors where the ambient temperature is other than 30°C (86°F). Refer to 310.15(B)(3)(a) for more than three current-carrying conductors.

310.12 Single-Phase Dwelling Services and Feeders

For one-family dwellings and the individual dwelling units of two-family and multifamily dwellings, service and feeder conductors supplied by a single-phase, 120/240-volt system shall be permitted to be sized in accordance with 310.12(A) through (D).

For one-family dwellings and the individual dwelling units of two-family and multifamily dwellings, single-phase feeder conductors consisting of two ungrounded conductors and the neutral conductor from a 208Y/120-volt system shall be permitted to be sized in accordance with 310.12(A) through (C).

(A) Services

For a service rated 100 amperes through 400 amperes, the service conductors supplying the entire load associated with a one-family dwelling, or the service conductors supplying the entire load associated with an individual dwelling unit in a two-family or multifamily dwelling, shall be permitted to have an ampacity not less than 83 percent of the service rating, if no adjustment or correction factors are required, Table 310.12(A) shall be permitted to be applied.

Table 310.12(A) Single-Phase Dwelling Services and Feeders

Service or Feeder Rating (Amperes)	Conductor (AWG or kcmil) Copper	Aluminum or Copper-Clad Aluminum
100	4	2
110	3	1
125	2	1/0
150	1	2/0
175	1/0	3/0
200	2/0	4/0
225	3/0	250
250	4/0	300
300	250	350
350	350	500
400	400	600

Note: If no adjustment or correction factors are required, this table shall be permitted to be applied.

(B) Feeders

For a feeder rated 100 amperes through 400 amperes, the feeder conductors supplying the entire load associated with a one-family dwelling, or the feeder conductors supplying the entire load associated with an individual dwelling unit in a two-family or multifamily dwelling, shall be permitted to have an ampacity not less than 83 percent of the feeder rating, if no adjustment or correction factors are required, Table 310.12(A) shall be permitted to be applied.

Table 250.66 Grounding Electrode Conductor for Alternating-Current Systems

Size of Largest Ungrounded Conductor or Equivalent Area for Parallel Conductors (AWG/kcmil) Copper	Size of Largest Ungrounded Conductor or Equivalent Area for Parallel Conductors (AWG/kcmil) Aluminum or Copper-Clad Aluminum	Size of Grounding Electrode Conductor (AWG/kcmil) Copper	Size of Grounding Electrode Conductor (AWG/kcmil) Aluminum or Copper-Clad Aluminum
2 or smaller	1/0 or smaller	8	6
1 or 1/0	2/0 or 3/0	6	4
2/0 or 3/0	4/0 or 250	4	2
Over 3/0 through 350	Over 250 through 500	2	1/0
Over 350 through 600	Over 500 through 900	1/0	3/0
Over 600 through 1100	Over 900 through 1750	2/0	4/0
Over 1100	Over 1750	3/0	250

Notes:
1. If multiple sets of service-entrance conductors connect directly to a service drop, set of overhead service conductors, set of underground service conductors, or service lateral, the equivalent size of the largest service-entrance conductor shall be determined by the largest sum of the areas of the corresponding conductors of each set.
2. Where there are no service-entrance conductors, the grounding electrode conductor size shall be determined by the equivalent size of the largest service-entrance conductor required for the load to be served.
3. See installation restrictions in 250.64.

(A) Connections to a Rod, Pipe, or Plate Electrode(s)

If the grounding electrode conductor or bonding jumper connected to a single or multiple rod, pipe, or plate electrode(s), or any combination thereof, as described in 250.52(A)(5) or (A)(7), does not extend on to other types of electrodes that require a larger size conductor, the grounding electrode conductor shall not be required to be larger than 6 AWG copper wire or 4 AWG aluminum or copper-clad aluminum wire.

(B) Connections to Concrete-Encased Electrodes

If the grounding electrode conductor or bonding jumper connected to a single or multiple concrete-encased electrode(s), as described in 250.52(A)(3), does not extend on to other types of electrodes that require a larger size of conductor, the grounding electrode conductor shall not be required to be larger than 4 AWG copper wire.

(C) Connections to Ground Rings

If the grounding electrode conductor or bonding jumper connected to a ground ring, as described in 250.52(A)(4), does not extend on to other types of electrodes that require a larger size of conductor, the grounding electrode conductor shall not be required to be larger than the conductor used for the ground ring.

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PROJECT NO.:

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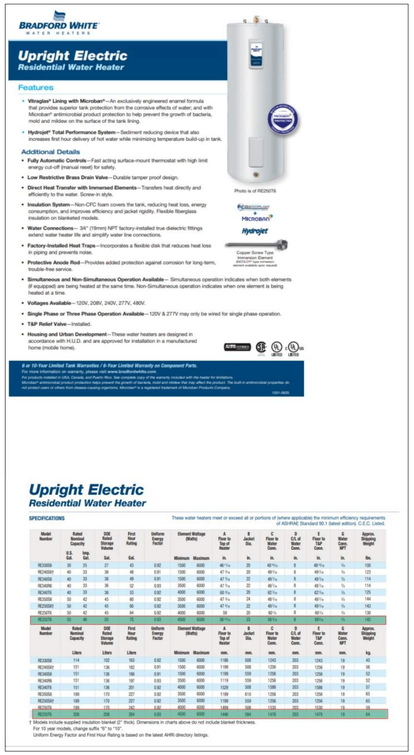
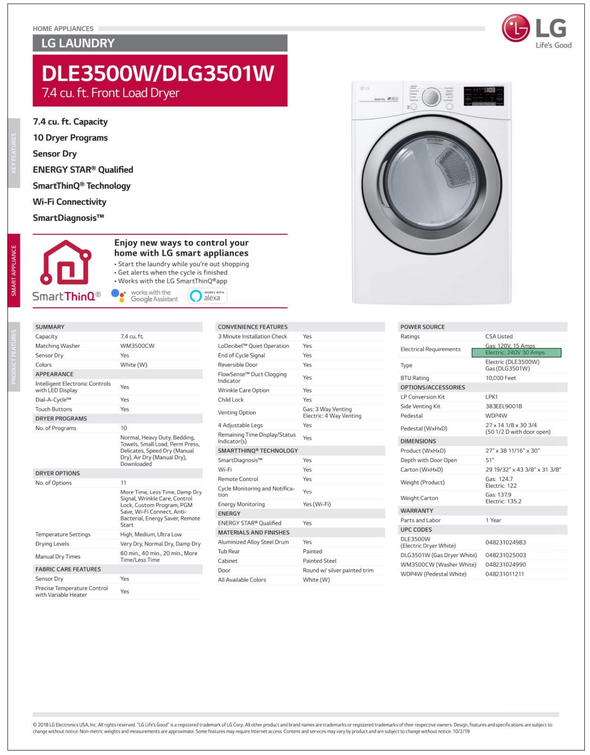
DRAWING NO.: **E3.1**

9 ELECTRICAL SERVICE - ONE LINE DIAGRAM

SCALE: NO SCALE







INDOOR AIR HANDLING UNIT SCHEDULE

TAG	LOCATION	SUPPLY CFM	SEER2	BLOWER ESP (IN WG)	BLOWER TYPE	DX COOLING COIL COOLING CFM	ENTERING AIR TEMP. DB (°F)	ENTERING AIR TEMP. WB (°F)	MIN. NET TOTAL MBH	MIN. NET. SENSIBLE MBH	AMBIENT TEMP. (°F)	REFRIGERANT TYPE	ELECTRIC HEATING COIL HEATING CFM	EAT TEMP. (°F)	MIN. MBH	KW	HEATER KIT MODEL	ELECTRICAL DATA VOLT	PHASE	CYCLE	MCA	MOP	OPERATING WEIGHT (LBS)	DESIGN REFERENCE MANUFACTURER	MODEL	NOTES
AHU-1	EXISTING AREA	1000	15.9	0.1	ECM	1000	77.8	66.4	30.0	27.0	94.0	R32	1000	63.8	30	8	HKTS08X1	208	1	60	41.0	45.0	134	GOODMAN	AMVT30BP1300	ALL
AHU-2	EXISTING AREA	1000	15.9	0.1	ECM	1000	77.8	66.4	30.0	27.0	94.0	R32	1000	63.8	30	8	HKTS08X1	208	1	60	41.0	45.0	134	GOODMAN	AMVT30BP1300	ALL

NOTES:
1. FURNISH AND INSTALL INDOOR AIR HANDLING UNIT AS PER MANUFACTURER'S RECOMMENDATIONS.
2. SIZE AND ROUTE INSULATED REFRIGERANT LINES TO ASSOCIATED OUTDOOR UNIT.
3. ELECTRICAL DISCONNECT SWITCH BY ELECTRICAL CONTRACTOR.
4. ENSURE ALL WORK COMPLIES WITH APPLICABLE LOCAL BUILDING CODES, MECHANICAL CODES, AND SAFETY REGULATIONS.
5. OTHER ACCEPTABLE MANUFACTURERS: ONLY AS LISTED WITHIN BUILDING STANDARDS AND APPROVED BY OWNER.

OUTDOOR AIR-COOLED CONDENSING UNIT SCHEDULE

TAG	LOCATION	SERVES	NOMINAL CAPACITY (BTU/HR.)	OUTDOOR AIR TEMPERATURE (°F) COOLING	OUTDOOR AIR TEMPERATURE (°F) HEATING	SEER2	REFRIGERANT DATA TYPE	REFRIGERANT DATA MAXIMUM CHARGE QUANTITY (LBS.)	MAX. SOUND LEVEL (dBA)	ELECTRICAL REQUIREMENTS VOLT	PHASE	CYCLE	MCA	MOCP	OPERATING WEIGHT (LBS)	DESIGN REFERENCE MANUFACTURER	MODEL	NOTES
ACCU-1	OUTDOOR	AHU-1	30000	94	18	15.9	R32	4.19	73	208	1	60	15.4	25	192	GOODMAN	GLXS5B A3010A	ALL
ACCU-2	OUTDOOR	AHU-2	30000	94	18	15.9	R32	4.19	73	208	1	60	15.4	25	192	GOODMAN	GLXS5B A3010A	ALL

NOTES:
1. FURNISH AND INSTALL OUTDOOR AIR-COOLED CONDENSING UNIT AS PER MANUFACTURER'S RECOMMENDATIONS. INSTALL ON LEVEL CONCRETE PAD. WEATHER PROOF ELECTRICAL DISCONNECT SWITCH BY ELECTRICAL CONTRACTOR. MAINTAIN REQUIRED CLEARANCES FOR PROPER MAINTENANCE & PERFORMANCE. SIZE AND ROUTE INSULATED REFRIGERANT LINES TO ASSOCIATED INDOOR UNIT. COORDINATE EXACT LOCATIONS WITH ARCHITECT.
2. MAINTAIN MANUFACTURER/CODE REQUIRED MINIMUM CLEARANCE (MINIMUM 12 INCHES) BETWEEN OUTDOOR AIR-COOLED CONDENSING UNIT AND ADJACENT WALL.
3. OTHER ACCEPTABLE MANUFACTURERS: ONLY AS LISTED WITHIN BUILDING STANDARDS AND APPROVED BY OWNER.

ENERGY RECOVERY VENTILATION SCHEDULE

TAG	LOCATION	OA FLOW (CFM)	EA FLOW (CFM)	ELECTRICAL DATA VOLT	PHASE	CYCLE	W	UNIT WEIGHT (LB)	DESIGN REFERENCE MANUFACTURER	MODEL	NOTES
ERV-1	MASTER BATHROOM	250	250	120	1	60	235	60	FANTECH	ATMO 300E	

11 ELECTRICAL EQUIPMENT SCHEDULE

SCALE: 1/4"=1'-0"

- ELECTRICAL

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PLUMBING GENERAL NOTES

1. PLANS ARE SCHEMATIC IN NATURE. LAYOUT IS BASED ON BEST AVAILABLE INFORMATION. PRIOR TO SUBMITTING BID CONTRACTOR SHALL VISIT JOB SITE AND BECOME FULLY ACQUAINTED WITH EXISTING CONDITIONS OF PROJECT. NOTIFY ARCHITECT, ENGINEER AND/OR CONSTRUCTION MANAGER OF CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.

2. COORDINATE INSTALLATION OF PLUMBING SYSTEMS WITH OTHER TRADES TO ENSURE NEAT AND ORDERLY INSTALLATION.

3. FIELD MEASURE AND VERIFY FINAL PIPING LOCATIONS PRIOR TO FABRICATION AND MAKE ADJUSTMENTS AS REQUIRED. MAINTAIN MANUFACTURER'S RECOMMENDATIONS REGARDING SERVICE CLEARANCE AND PROPER AIRFLOW CLEARANCE AROUND EQUIPMENT.

4. COORDINATE ROUTING OF PLUMBING LINES, DRAINS AND FIXTURES WITH DUCTWORK, LIGHTS, ARCHITECTURAL CEILING AND STRUCTURAL ELEMENTS. PIPING SHALL RISE AND DROP, JOG OR OFFSET AS REQUIRED TO AVOID CONFLICTS. DUCTWORK SHALL TAKE PRECEDENCE OVER ALL PIPING. PROVIDE ADDITIONAL MANUAL AIR VENTS FOR PIPING WHERE REQUIRED FOR PIPING TO OFFSET.

5. NO PIPING SHALL PENETRATE STRUCTURAL MEMBERS.

6. WALL CLEANOUT TO BE AT LOCATIONS REQUIRED BY CODE AND ACCESS DOORS SHALL MATCH ADJACENT SURFACES AND VERIFIED IN FIELD.

7. MAINTAIN MINIMUM *10'-0"* CLEARANCE BETWEEN OUTSIDE AIR INTAKES AND EXHAUST/VENT TERMINATIONS.

8. DO NOT ROUTE PIPING ABOVE ELECTRICAL PANELS OR ELECTRICAL GEAR. COORDINATE ROUTING WITH OTHER TRADES.

9. ALL WALL CAPS SHALL BE PAINTED TO MATCH WALL. ROOF CAPS AND VENTS SHALL BE PAINTED, COLOR SELECTED BY CUSTOMER.

10. PROVIDE WCO AT BASE OF ALL WASTE STACKS INCLUDING LAVATORIES AND SINKS.

11. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS FOR ROUTING AND CONNECTION OF SANITARY SEWER / WATER / GAS SERVICES. COORDINATE WITH LOCAL UTILITIES AND AUTHORITIES WHERE AND AS REQUIRED.

12. REFER TO PLUMBING SCHEMATICS FOR PIPING RUN-OUT SIZES TO INDIVIDUAL PLUMBING FIXTURES.

13. CONTRACTOR SHALL VERIFY ALL CONNECTION REQUIREMENTS TO EQUIPMENT PROVIDED BY OTHERS WITH ACTUAL EQUIPMENT PROVIDED ON SITE.

14. REF. IPC CHAPTER 6, SEC. 601- SEC. 613 FOR WATER SUPPLY AND DISTRIBUTION CODES.

15. THE WATER SERVICE PIPE SHALL BE SIZED TO SUPPLY WATER TO THE STRUCTURE IN THE QUANTITIES AND AT THE PRESSURES REQUIRED IN IPC CODE. THE WATER SERVICE PIPE SHALL BE NOT LESS THAN 3/4" IN DIA. (IPC 603.1)

16. WHERE THE WATER SERVICE PIPING IS LOCATED IN THE SAME TRENCH W/ THE BUILDING SEWER, SUCH SEWER SHALL BE CONSTRUCTED OF MATERIALS LISTED IN *Table 702.2*. WHERE SEWER PIPING IS NOT CONSTRUCTED OF MATERIALS LISTED IN *Table 702.2*, THE WATER SERVICE PIPE AND THE BUILDING SEWER PIPE SHALL BE HORIZONTALLY SEPARATED BY NOT LESS THAN 5 FT., HORIZONTALLY FROM THE SEWER PIPE CENTERLINE ON BOTH SIDES OF SUCH CROSSING. THE SLEEVE SHALL BE OF PIPE MATERIALS LISTED IN *TABLES 605.3, 702.2 OR 702.3*. THE REQUIRED SEPARATION DISTANCE SHALL NOT APPLY WHERE THE BOTTOM OF THE WATER SERVICE PIPE, LOCATED WITHIN 5 FT. OF THE SEWER, IS NOT LESS THAN 12 INCH ABOVE THE HIGHEST POINT OF THE TOP OF THE BUILDING (RE. IPC 603.2)

17. REF. *TABLE 604.3*; WATER DISTRIBUTION SYSTEM DESIGN CRITERIA REQ. CAPACITY AT FIXTURE SUPPLY PIPE OUTLETS

18. WATER HAMMER ARRESTORS REQUIRED @ WASHER VALVES

19. PROVIDE ANTI-SCALD VALVES ON SHOWER OR TUB/SHOWER COMBINATION VALVES

20. PROVIDE DIELECTRIC COUPLINGS AT ALL CONNECTIONS BETWEEN DISSIMILAR METALS

21. FREEZE PROTECT PIPES PER IPC 2603.5

VENTING:

REF. IPC: CHAPTER 9, SEC. 901 THROUGH 918.

1. HORIZONTAL VENT PIPING SHALL BE GRADED TO DRIP BACK TO THE SOIL OR WASTE PIPE BY GRAVITY.

2. PROVIDE SANITARY SEWER SYSTEM CLEANOUTS AS REQUIRED BY LOCAL CODES. ALL CLEANOUTS REQUIRED ARE NOT NECESSARILY SHOWN ON PLANS. CLEANOUTS TO BE AT A MINIMUM OF 100 FEET ON CENTER, AND AT THE BASE OF EACH WASTE STACK.

3. SOIL AND WASTE STACKS IN BUILDINGS HAVING MORE THAN 10 BRANCH INTERVALS SHALL BE PROVIDED W/ A RELIEF VENT AT EACH TENTH INTERVAL INSTALLED, BEGINNING W/ THE TOP FLOOR. (IPC: 908.1)

4. THE ONLY VERTICAL PIPE OF COMBINATION WASTE AND VENT SYSTEM SHALL BE THE CONNECTION BETWEEN FIXTURE DRAIN AND THE HORIZONTAL COMBINATION WASTE AND VENT PIPE. THE VERTICAL DISTANCE SHALL NOT EXCEED 6 FEET. (IPC: 915.2)

5. THE SLOPE OF A HORIZONTAL COMBINATION WASTE AND VENT PIPE SHALL NOT EXCEED 1/2 UNIT VERTICAL IN 12 UNITS HORIZONTAL (4% SLOPE) AND SHALL BE NOT LESS THAN THAT INDICATED IN TABLE *704.1*. (IPC: 915.2.1)

6. THE SIZE OF A COMBINATION WASTE AND VENT PIPE SHALL BE NOT LESS THAN THAT INDICATED IN TABLE 915.2.2. THE HORIZONTAL LENGTH OF A COMBINATION WASTE AND VENT SYSTEM SHALL BE UNLIMITED (IPC: 915.2.2)

7. THE COMBINATION WASTE AND VENT SYSTEM SHALL BE PROVIDED WITH A DRY VENT CONNECTED AT ANY POINT WITHIN THE SYSTEM OR THE SYSTEM SHALL CONNECT TO A HORIZONTAL DRAIN THAT SERVES VENTED FIXTURES ON THE SAME FLOOR. COMBINATION WASTE AND VENT SYSTEMS CONNECTING TO BUILDING DRAINS RECEIVING ONLY THE DISCHARGE FROM ONE OR MORE STACKS SHALL BE PROVIDED WITH A DRY VENT. THE VENT CONNECTION TO THE COMBINATION WASTE AND VENT PIPE SHALL EXTEND VERTICALLY TO A POINT NOT LESS THAN 6 INCH ABOVE THE FLOOD LEVEL RIM OF THE HIGHEST FIXTURE BEING VENTED BEFORE OFFSETTING HORIZONTALLY (IPC: 915.2.3)

8. THE FIXTURE BRANCH OR FIXTURE DRAIN SHALL CONNECT TO THE COMBINATION WASTE AND VENT WITHIN A DISTANCE SPECIFIED IN *TABLE 909.1*. THE COMBINATION WASTE AND VENT PIPE SHALL BE CONSIDERED TO BE THE VENT FOR THE FIXTURE. (IPC: 915.2.5)

9. A DRAINAGE STACK SHALL SERVE AS A SINGLE-STACK VENT SYSTEM WHERE SIZED AND INSTALLED IN ACCORDANCE WITH *SEC. 917.2 - 917.5*. THE DRAINAGE STACK AND BRACH PIPING SHALL BE THE VENTS FOR THE DRAINAGE SYSTEM. THE DRAINAGE STACK SHALL HAVE A STACK VENT. (IPC 917.1)

10. STACK SIZE REF. IPC: TABLE 917.2

- FLOOR DRAINS:

1. SHALL CONFORM TO ASME A112.3.3, ASME A112.6.3 OR CSA B79. (IPC: 413.1)

2. FLOOR DRAINS SHALL HAVE REMOVABLE STRAINERS. THE FLOOR DRAIN SHALL BE CONSTRUCTED SO THAT THE DRAIN IS CAPABLE OF BEING CLEANED. READY ACCESS SHALL BE PROVIDED TO FLOOR DRAINS. (IPC: 413.2)

3. FLOOR DRAINS SHALL HAVE A DRAIN OUTLET NOT LESS THAN *2 INCHES* IN DIA. (IPC: 413.3)

4. ALL PATCHING SHALL BE STRUCTURAL AND AESTHETICALLY EQUAL TO THE SURFACE SURROUNDING THE AREA PATCHED. NO STRUCTURAL MEMBER SHALL BE CUT OR NOTCHED.

5. ALL PIPING SHALL BE CLEANED AND FLUSHED PRIOR TO SERVICE. DOMESTIC WATER PIPING SHALL BE STERILIZED.

6. ALL PIPING SHALL BE PROPERLY SUPPORTED, WITH PROVISIONS FOR HORIZONTAL BRACING AND EXPANSION/ CONTRACTION AS REQUIRED. FOR INSULATED PIPING, AT EACH SUPPORT LOCATION, PROVIDE SHEET METAL SHIELDS FOR PIPING 2" AND SMALLER (EXCEPT WHERE REQUIRED TO BE CLAMPED) AND CALCIUM SILICATE THERMAL INSERTS WITH SHEET METAL SHIELDS FOR PIPING LARGER THAN 2" AND FOR ALL SIZES OF INSULTED PIPING REQUIRED TO BE CLAMPED. PROVIDE SUPPLEMENTAL STEEL SUPPORTS AS REQUIRED FOR INSTALLATION OF ALL PLUMBING MATERIALS, EQUIPMENT, AND APPURTENANCES.

PLAN NOTES:

1. ENGINEER'S FIELD VERIFICATION SITE VISIT WAS A LIMITED, NON-DESTRUCTIVE, VISUAL OBSERVATION. SOME AREAS WERE NOT AVAILABLE TO BE VERIFIED, DUE TO LOCATION OF STRUCTURAL ELEMENTS, WALLS, LIGHTS, EQUIPMENT AND PEOPLE.

2. UNDERGROUND WASTE LINES SHALL BE FIELD VERIFIED FOR LOCATION, DEPTH, AND DIRECTION OF FLOW PRIOR TO COMMENCING WORK, MAKING CONNECTIONS OR DEMO. EXISTING LOCATIONS ARE ASSUMED BASED UPON LIMITED SITE OBSERVATION.

GENERAL CONTRACTOR SHALL NOTIFY PROJECT MANAGER ARCHITECT AND ENGINEER IMMEDIATELY IF MAJOR DISCREPANCIES ARE FOUND IN FIELD.

DOMESTIC PLUMBING

-WATER PIPING MATERIALS:

1 ALL BALL, GATE, GLOBE AND PLUG VALVES ON HOT AND COLD WATER DOMESTIC PLUMBING SHALL MEET NSF-61 FOR LEAD CONTENT ON ALL POTABLE HOT AND COLD APPLICATIONS.

2 THE STATED MATERIALS ARE PREFERRED, HOWEVER, CONTRACTOR MAY SUBMIT ON ALTERNATE MATERIALS AS ALLOWED IN CH. 6 OF THE LOCALLY ADOPTED EDITION OF THE IPC/UPC AND PER LOCAL CODES.

SANITARY WASTE AND VENT MATERIALS:

1. ALL MATERIALS ALLOWED FOR USE IN CHAPTER 7 OF THE UPC AND IPC CODES ARE ALLOWED.

WATER PIPING:

1 WATER SERVICE: PROVIDE METER, VALVES, BYPASS, AND REDUCED PRESSURE BACKFLOW PREVENTER AS REQUIRED, INSTALLED IN ACCORDANCE WITH THE LOCAL WATER AUTHORITY'S REGULATIONS.

2 RUN PIPING AS DIRECT AS POSSIBLE TO REQUIRED CONNECTIONS, AND SLOPE TO DRAIN VALVES AT LOW POINTS FOR COMPLETE DRAINING OF SYSTEM. LOCATE DRAIN VALVES AT ACCESSIBLE POINTS WITHIN THE SYSTEM.

SANITARY WASTE PIPING:

1 ALL SANITARY WASTE PIPING SHALL BE SLOPED AT A MIN. OF 1/4" PER FOOT.

INSULATION:

1. FURNISH AND INSTALL INSULATION FOR ALL PIPING SYSTEMS. ALL COLD PIPING AND EQUIPMENT INSULATION SHALL INCLUDE A VAPOR BARRIER.

2. INSULATE ALL EXPOSED WATER SUPPLY AND WASTE ON ALL LAVATORIES AND SINKS AS APPLICABLE.

3. INSULATE ALL HOT WATER RETURN LINES THROUGHOUT STRUCTURE

4. PROTECT ALL INSULATED PIPE AT POINT OF SUPPORT WITH A 360-DEGREE INSULATION INSERT.

BASIC MATERIALS AND METHODS:

1. FOR ALL REMOVED EQUIPMENT CONTRACTOR SHALL REMOVE ALL SUPPORTS, HANGERS, CONTROLS, PIPING, UTILITIES, ETC. AND DISPOSE OF PROPERLY

2. FOR ANY EQUIPMENT AND DEVICES BEING REMOVED TO BE REUSED, CONTRACTOR SHALL CLEAN AND REFINISH AS NEEDED TO MAKE LIKE NEW AND INSPECT FOR PROPER FUNCTION AND THAT THEY MEET CURRENT CODES.

3. THE MECHANICAL DRAWINGS INDICATE THE GENERAL DESIGN AND ARRANGEMENT OF PIPING, EQUIPMENT, SYSTEMS, ETC. INFORMATION SHOWN IS DIAGRAMMATIC IN CHARACTER AND DOES NOT INDICATE EVERY REQUIRED OFFSET, FITTING, ETC. TRADES TO COORDINATE AS REQ.

4. THE LOCATIONS OF THE ITEMS SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS THAT ARE NOT DEFINITELY FIXED BY DIMENSIONS ARE APPROXIMATE ONLY. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS MUST BE DETERMINED BY THE PROJECT SITE CONDITIONS AND SHALL HAVE THE APPROVAL OF THE ENGINEER BEFORE BEING INSTALLED. DO NOT SCALE THE DRAWINGS (UNLESS NOTED OTHERWISE).

5. CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND SIZES OF ALL EXISTING EQUIPMENT, DUCTWORK, PIPING, ELECTRICAL CONDUIT, STRUCTURAL MEMBERS, ETC. PRIOR TO BID. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY AND ALL DISCREPANCIES BETWEEN FIELD CONDITIONS AND CONTRACT DRAWINGS.

6. USE ADJUSTABLE PIPE HANGERS ON SUSPENDED PIPE. PROVIDE HANGERS TO SUPPORT THE SYSTEMS WITHOUT SAGGING. INCLUDE HANGERS AT EACH OFFSET OR CHANGE IN DIRECTION AND AT ENDS OF BRANCHES OVER FIVE FEET IN LENGTH. (AS APPLICABLE)

7. WHERE HORIZONTAL DUCTS AND PIPES PASS THROUGH WALLS AND VERTICAL DUCTS AND PIPES PASS THROUGH FLOORS OR ROOFS, SEAL OFF VOID BETWEEN OPENING AND DUCT OR PIPE AND SLEEVE, WITH AN APPROVED NON-COMBUSTIBLE MATERIAL.

8. PROVIDE DIELECTRIC UNIONS FOR CONNECTIONS BETWEEN DISSIMILAR METALS.

9. TEST PIPING AND DUCTWORK SYSTEMS PRIOR TO CONCEALMENT.

10. PROVIDE VIBRATION ISOLATION FOR ALL MECHANICAL EQUIPMENT TO PREVENT TRANSMISSION OF VIBRATION TO BUILDING STRUCTURE.

11. ALL VALVES SHALL BE INSTALLED SO THAT VALVE REMAINS IN SERVICE WHEN EQUIPMENT OR PIPING ON EQUIPMENT SIDE OF VALVE IS REMOVED.

12. ALL BALANCING VALVES AND BUTTERFLY VALVES SHALL BE PROVIDED WITH POSITION INDICATORS AND MAXIMUM ADJUSTABLE STOPS (MEMORY STOPS).

13. ALL VALVES (EXCEPT CONTROL VALVES) AND STRAINERS SHALL BE FULL SIZE OF PIPE BEFORE REDUCING SIZE TO MAKE CONNECTIONS TO EQUIPMENT AND CONTROLS.

14. INSTALL ALL PIPING WITHOUT FORCING OR SPRINGING.

15. ALL VALVES SHALL BE ADJUSTED FOR SMOOTH AND EASY OPERATION.

16. ALL CLEANOUTS SHALL BE FULL SIZE OF PIPE FOR PIPE SIZES 6 INCHES AND SMALLER AND SHALL BE 6 INCHES FOR PIPE SIZES LARGER THAN 6 INCHES.

17. PROVIDE ACCESS PANELS FOR INSTALLATION IN WALLS AND CEILINGS, WHERE REQUIRED, TO SERVICE DAMPERS, VALVES, SMOKE DETECTORS, AND OTHER CONCEALED MECHANICAL EQUIPMENT. ACCESS PANELS SHALL BE TURNED OVER TO GENERAL CONTRACTOR FOR INSTALLATION.

18. ALL OPENINGS IN FIREWALLS DUE TO DUCTWORK, PIPING, CONDUIT, ETC., SHALL BE FIRE STOPPED WITH A PRODUCT SIMILAR TO 3M OR APPROVED EQUAL. (AS APPLICABLE)

19. ALL AIR CONDITIONING CONDENSATE DRAIN LINES FROM EACH AIR HANDLING UNIT OR ROOFTOP UNIT SHALL BE PIPED FULL SIZE OF THE UNIT DRAIN OUTLET, WITH A P-TRAP, AND PIPED TO NEAREST DRAIN. PROVIDE A CONDENSATE PUMP IF REQUIRED. FIELD VERIFY.

20. ALL DUCTWORK AND PIPING SHALL CLEAR DOORS AND WINDOWS.

21. TUBS/SHOWERS SHALL BE PROVIDED WITH INDIVIDUAL CONTROL VALVES OF THE PRESSURE BALANCE OR THE THERMOSTATIC MIXING TYPE., THE WATER TEMPERATURE SHALL BE SET TO A MAXIMUM OF 120°F.

22. EACH HOSE BIB SHALL BE EQUIPPED WITH A BACK FLOW PREVENTION DEVICE ANTI-FREEZE/FROST PROOF HOSE BIB.

23. INSULATE WASTE LINES FOR SOUND CONTROL AND FREEZE PROTECTIONS

MECHANICAL IDENTIFICATION:

1. IDENTIFY PIPING, DUCTS AND VALVES ABOVE CEILINGS, AS WELL AS EXPOSED TO VIEW EXCEPT IN FINISHED AREAS. CONFORM TO ASME A13.1. (AS APPLICABLE)

2. CONTRACTOR TO LABEL APPLIANCES IN AN APPROVED MANNER THAT UNIQUELY IDENTIFIES THE APPLIANCE AND THE AREA IT SERVES. WHEN APPLIANCE IS REMOTELY LOCATED FROM SPACE IT SERVES.

IPC 607: HOT WATER SUPPLY SYSTEM:

IPC 607.1 WHERE REQUIRED:
- IN RESIDENTIAL OCCUPANCIES, HOT WATER SHALL BE SUPPLIED TO PLUMBING FIXTURES AND EQUIPMENT UTILIZED FOR BATHING, WASHING, CULINARY PURPOSES, CLEANSING, LAUNDRY OR BUILDING MAINTENANCE.

607.1.1 TEMPERATURE LIMITING MEANS:
- A THERMOSTAT CONTROL FOR A WATER HEATER SHALL NOT SERVE AS THE TEMPERATURE LIMITING MEANS FOR THE PURPOSES OF COMPLYING WITH THE REQUIREMENTS OF THIS CODE FOR MAXIMUM ALLOWABLE HOT OR TEMPERED WATER DELIVERY TEMPERATURE AT FIXTURES.

607.1.2 TEMPERED WATER TEMPERATURE CONTROL:
- TEMPERED WATER SHALL BE SUPPLIED THROUGH A WATER TEMPERATURE LIMITING DEVICE THAT CONFORMS TO ASSE 1070/ASME A112.1070/CSA B125.70 AND SHALL LIMIT THE TEMPERED WATER TO NOT GREATER THAN 110°F (43°C). THIS PROVISION SHALL NOT SUPERSEDE THE REQUIREMENT FOR PROTECTIVE SHOWER VALVES IN ACCORDANCE WITH *SECTION 410.3*.

607.3 THERMAL EXPANSION CONTROL:
- WHERE A STORAGE WATER HEATER IS SUPPLIED WITH COLD WATER THAT PASSES THROUGH A CHECK VALVE, PRESSURE REDUCING VALVE OR BACKFLOW PREVENTER, A THERMAL EXPANSION CONTROL DEVICE SHALL BE CONNECTED TO THE WATER HEATER COLD WATER SUPPLY PIPE AT A POINT THAT IS DOWNSTREAM OF ALL CHECK VALVES, PRESSURE REDUCING VALVES AND BACKFLOW PREVENTERS. THERMAL EXPANSION TANKS SHALL BE SIZED IN ACCORDANCE WITH THE TANK MANUFACTURER'S INSTRUCTIONS AND SHALL BE SIZED SUCH THAT THE PRESSURE IN THE WATER DISTRIBUTION SYSTEM SHALL NOT EXCEED THAT REQUIRED BY *SECTION 604.8*.

607.4 FLOW OF HOT WATER TO FIXTURES:
- FIXTURE FITTINGS, FAUCETS AND DIVERTERS SHALL BE INSTALLED AND ADJUSTED SO THAT THE FLOW OF HOT WATER FROM THE FITTINGS CORRESPONDS TO THE LEFT-HAND SIDE OF THE FIXTURE FITTING. EXCEPTION: SHOWER AND TUB/SHOWER MIXING VALVES CONFORMING TO ASSE 1016/ASME A112.1016/CSA B125.16 OR ASME A112.18.1/CSA B125.1, WHERE THE FLOW OF HOT WATER CORRESPONDS TO THE MARKINGS ON THE DEVICE.

SECTION 409 DISHWASHING MACHINES

409.2 WATER CONNECTION:
-THE WATER SUPPLY TO A DISHWASHING MACHINE SHALL BE PROTECTED AGAINST BACKFLOW BY AN AIR GAP THAT IS INTEGRAL WITH THE MACHINE

409.4 RESIDENTIAL DISHWASHER WASTE CONNECTION
- THE WASTE CONNECTION OF A RESIDENTIAL DISHWASHER SHALL CONNECT DIRECTLY TO A WYE BRANCH FITTING ON THE TAILPIECE OF THE KITCHEN SINK DIRECTLY TO THE DISHWASHER CONNECTION OF A FOOD-WASTE DISPOSER, OR THROUGH AN AIR BREAK TO A STANDPIPE. THE WASTE LINE OF A RESIDENTIAL DISHWASHER SHALL RISE AND BE SECURELY FASTENED TO THE UNDERSIDE OF THE SINK RIM OR COUNTER TOP.

SECTION 413 FLOOR AND TRENCH DRAINS

413.1 APPROVAL:
- FLOOR DRAINS SHALL CONFORM TO ASME A112.3.1, ASME A112.6.3 OR CSA B79. TRENCH DRAINS SHALL COMPLY WITH ASME A112.6.3.

413.2 FLOOR DRAINS:
- FLOOR DRAINS SHALL HAVE REMOVABLE STRAINERS. THE FLOOR DRAIN SHALL BE CONSTRUCTED SO THAT THE DRAIN IS CAPABLE OF BEING CLEANED. ACCESS SHALL BE PROVIDED TO THE DRAIN INLET. READY ACCESS SHALL BE PROVIDED TO FLOOR DRAINS. EXCEPTION: FLOOR DRAINS SERVING REFRIGERATED DISPLAY CASES SHALL BE PROVIDED WITH ACCESS.

413.3 SIZE OF FLOOR DRAINS:
- FLOOR DRAINS SHALL HAVE A DRAIN OUTLET NOT LESS THAN 2 INCHES IN DIAMETER.



N

LOCATION MAP

ABBREVIATIONS

ACT - ACOUSTIC CEILING TILE	ILO - IN LIEU OF
AD - AREA DRAIN	INSUL - INSULATED OR INSULATION
AFF - ABOVE FINISHED FLOOR	INT - INTERIOR
ALUM - ALUMINUM	LO - LOW
ANOD - ANODIZED	MAX - MAXIMUM
BSMT - BASEMENT	MO - MASONRY OPENING
BYND - BEYOND	MECH - MECHANICAL
BOT - BOTTOM	MEMBR - MEMBRANE
CIP - CAST IN PLACE	MIN - MINIMUM
CHNL - CHANNEL	MRGWB - MOISTURE-RESISTANT GYPSUM WALL BOARD
CJ - CONTROL JOINT	
CLG - CEILING	MTL - METAL
CLR - CLEAR	NIC - NOT IN CONTACT
CMU - CONCRETE MASONRY UNIT	NO - NUMBER
COL - COLUMN	NOM - NOMINAL
COMPR - COMPRESSIBLE	OC - ON CENTER
CONC - CONCRETE	OH - OVERHANG OR OPPOSITE HAND
CONT - CONTINUOUS	
CPT - CARPET	OPP - OPPOSITE OR OPPOSITE HAND
CT - CERAMIC TILE	
CTYD - COURTYARD	OZ - OUNCE
DBL - DOUBLE	PCC - PRE CAST CONCRETE
DEMO - DEMOLISH OR DEMOLITION	PLUMB - PLUMBING
DIA - DIAMETER	PLYD - PLYWOOD
DIM - DIMENSION	PT - PRESSURE TREATED
DIMS- DIMENSIONS	PNT - PAINT OR PAINTED
DN - DOWN	PVC - POLYVINYL CHLORIDE
DR - DOOR	RBR - RUBBER
DWG - DRAWING	RCP - REFLECTED CEILING PLAN
EA - EACH	
EJ - EXPANSION JOINT	RD - ROOF DRAIN
EL - ELEVATION	REQD - REQUIRED
ELEC - ELECTRICAL	RM - ROOM
ELEV - ELEVATOR OR ELEVATION	SIM - SIMILAR
EP - ELECTRIC PANEL	SPEC - SPECIFIED OR SPECIFICATION
EPDM - ETHYLENE PROPYLENE DIENE M-CLASS (ROOFING)	SPK - SPRINKLER OR SPEAKER
EQ - EQUAL	SSTL - STAINLESS STEEL
EXIST - EXISTING	STC - SOUND TRANSMISSION COEFFICIENT
EXP JT - EXPANSION JOINT	
EXT - EXTERIOR	STL - STEEL
FD - FLOOR DRAIN OR FIRE DEPT.	STRUCT - STRUCTURE OR STRUCTURAL
FEC - FIRE EXTINGUISHER CABINET	
FIXT - FIXTURE	T&G - TONGUE AND GROOVE
FLR - FLOOR	TELE - TELEPHONE
FM - FILLED METAL	TME - TO MATCH EXISTING
FO - FACE OF	TO - TOP OF
FND - FOUNDATION	TOC - TOP OF CONCRETE
GA - GAUGE	TOS - TOP OF STEEL
GALV - GALVANIZED	T/D - TELEPHONE/DATA
GWB - GYPSUM WALL BOARD	TYP - TYPICAL
HC - HOLLOW CORE	UNO - UNLESS NOTED OTHERWISE
HI - HIGH	
HM - HOLLOW METAL	U/S - UNDERSIDE
HP - HIGH POINT	VIF - VERIFY IN FIELD
HR - HOUR	VP - VISION PANEL
HVAC - HEATING, VENTILATING, AND AIR CONDITIONING	W/ - WITH
	WD - WOOD

SYMBOLS

PROPERTY LINE

CONCRETE

CROSS SECTION VIEW/ ELEVATION

RISER

VENT

HOT WATER LINE

COLD WATER LINE

WASTE LINE

G — GAS LINE

ROOF VENT

CLEANOUT

FLOW DIRECTION

SHUTOFF VALVE

BUILDING CONTRACTOR/HOME OWNER TO REVIEW AND VERIFY ALL DIMENSIONS, SPECS, AND CONNECTIONS BEFORE CONSTRUCTION BEGINS.

CLIMATE AND GEOGRAPHICAL DESIGN CRITERIA

ELEVATION FT.: 473

RISK CATEGORY	SNOW DESIGN		WIND DESIGN			SUBJECT TO DAMAGE FROM			ICE BARRIER UNDER- LAYMENT REQUIRED	WINTER DESIGN TEMP	FLOOD HAZARDS	AIR FREEZING INDEX	MEAN ANNUAL TEMP, F	SEISMIC DESIGN CATEGORY
	GROUND SNOW LOAD PSF.	ROOF SNOW LOAD PSF.	SPEED NOMINAL	SP. WIND REGION	TOPOGRAPHIC EFFECT	WEATHERING	FROST LINE	TERMITE						
II	25 PSF	-	85 mph	NO	NO	MODERATE	12 IN.	S-M	NO	27 degrees	o, n	113	53 degrees	D2

SHEET SCHEDULE

SHEET NUMBER	SHEET NAME
P0.0	COVER SHEET & PLUMBING NOTES
P0.1	LOT UTILITIES
P0.2	PLUMBING - SPECIFICATIONS AND FIXTURE UNIT CALCULATIONS
P1.0	PLUMBING - H/C WATER LINES - CRAWL SPACE
P1.1	PLUMBING - H/C WATER LINES - 1ST FLOOR
P1.2	PLUMBING - H/C WATER LINES - 2ND FLOOR
P2.0	PLUMBING - WASTE LINES - CRAWL SPACE
P2.1	PLUMBING - WASTE LINES - 1ST FLOOR
P2.2	PLUMBING - WASTE LINES - 2ND FLOOR
P3.0	HOT WATER HEATER SPECIFICATION
P4.0	PLUMBING - DETAILS

DESIGN CRITERIA & CONDITIONS

PROJECT CITY: BENTONVILLE
PROJECT COUNTY: WARREN COUNTY
PROJECT ELEVATION: 1120 FT. ABOVE SEA LEVEL
ZONING DISTRICT: AGRICULTURAL

APPLICABLE CODES:
- 2021 VIRGINIA CONSTRUCTION CODE (IBC)
- 2017 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES (ICC/ANSI A117.1)
- 2021 VIRGINIA RESIDENTIAL CODE (IRC)
- 2021 VIRGINIA ENERGY CONSERVATION CODE
- 2021 VIRGINIA MECHANICAL CODE (IMC)
- 2021 VIRGINIA PLUMBING CODE (IPC)
- 2020 NATIONAL ELECTRICAL CODE

PROJECT SCOPE

THE PROJECT INVOLVES DEMOLISHING THE REAR PORTION OF THE EXISTING HOUSE TO ACCOMMODATE A NEW LIVING SPACE ADDITION. ADDITIONALLY, THE CURRENT PORCH WILL BE RENOVATED AND EXPANDED LATERALLY TO EXTEND ALONG BOTH SIDES OF THE HOUSE

PROJECT DIRECTORY

OWNER 1:

BENTONVILLE, VA

PROJECT DATA

EXISTING BUILDING HEIGHT:
EXISTING 280'0" HIGHEST RIDGE (+/-) FROM TERRAIN

CONSTRUCTION TYPE:
V-B

OCCUPANCY TYPE:
RESIDENTIAL R3

FIRE PROTECTION:
-

NUMBER OF STORIES:
2

EXISTING STORIES (ABOVE GROUND)
2

ATTACHED GARAGE
-

GAS: NO

SEWER: SEPTIC FIELD
WATER: WELL

COOLING: CENTRAL AIR

HEATING: FORCED AIR

EXISTING SQ. FT.:
1ST FLOOR: 832 S.F
2ND FLOOR: 832 S.F
OPEN PORCH: 240 S.F

PROPOSED SQ. FT.:
1ST FLOOR: 1323 S.F (CONDITIONED)
2ND FLOOR: 1323S.F (CONDITIONED)
OPEN PORCH: 683 S.F (UNCONDITIONED)
TOTAL: 3329 S.F

TOTAL CONDITIONED SPACE: 2646 SQ.FT
TOTAL UNCONDITIONED SPACE: 683 SQ.FT

ZONING ANALYSIS

EX. LOT AREA:
5.176 ACRES

FRONT YARD SETBACK (MAIN/ACCESSORY):
MINIMUM 50 FEET

REAR YARD SETBACK (MAIN/ACCESSORY):
35'/10'

SIDE YARD SETBACK (MAIN/ACCESSORY):
15'/10'

REFERENCES

BENTONVILLE, VA

PLAN DISTRICT
05: SOUTH RIVER - COUNTY

ZONING DISTRICT:
AGRICULTURAL

SUBDIVISION:
-

PID/ACCOUNT #:
24649

PROP LR04-1143 SURVEY LR14-1121

DEED BOOK & PAGE:
LR-2022, 5702

PROPERTY CLASS:
SINGLE FAMILY SUBURB

-PLUMBING

BENTONVILLE, VA 22610

DRAWN BY:

CHECKED BY:

REVISIONS:

No.	DESCRIPTION	DATE

ISSUE RECORD:

No.	DESCRIPTION	DATE

SCALE:

SHEET CONTENTS:

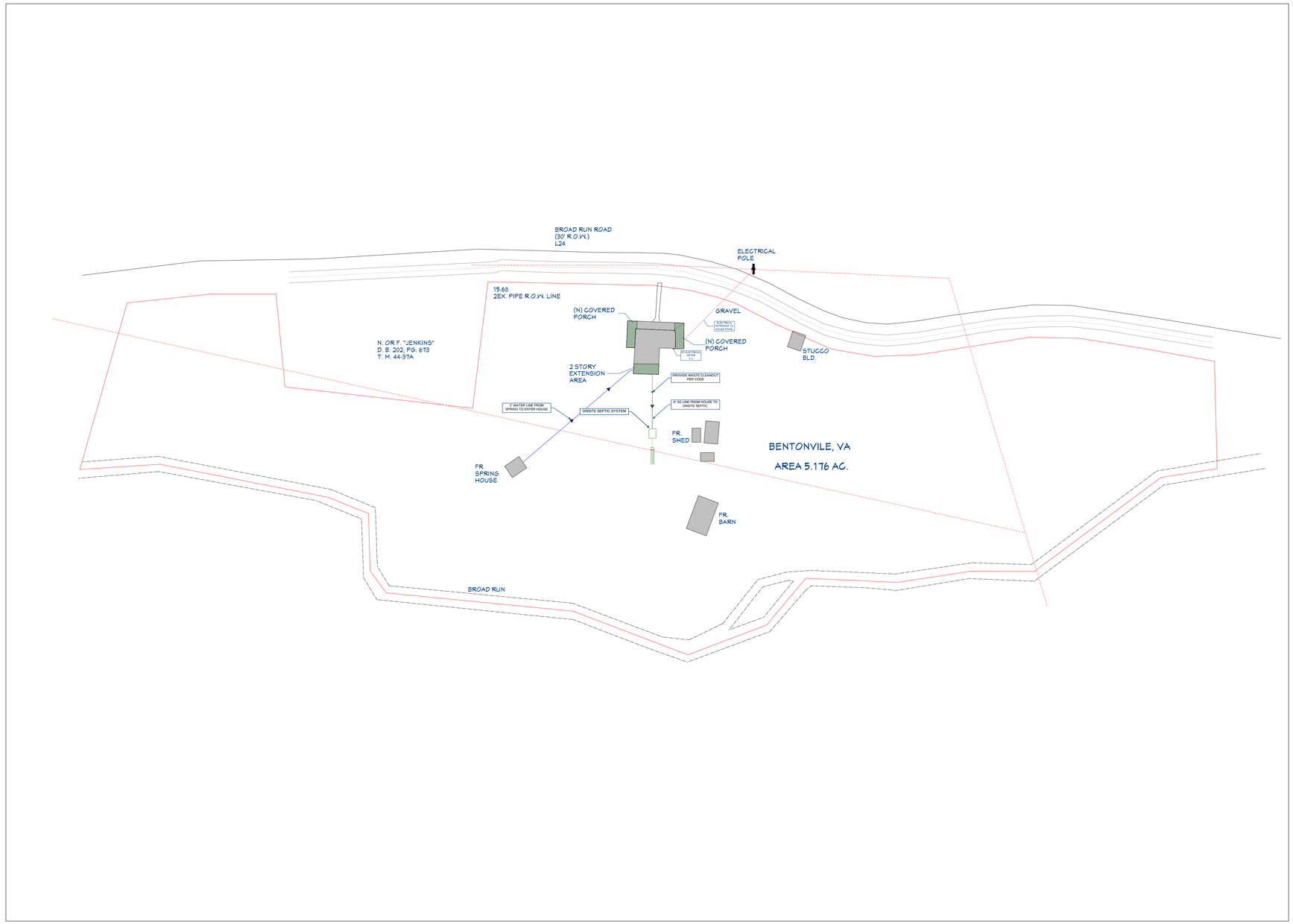
COVER SHEET & BUILDING NOTES

PROJECT NO.:

DATE: 10/20/2025

DRAWING NO.:

P0.0



LEGENDS

———	4" WASTE LINE
———	1" WATER LINE

1 LOT

SCALE: 1" = 10 FT.

-PLUMBING

BENTONVILLE, VA 22610

DRAWN BY:

CHECKED BY:

REVISIONS:

No.	DESCRIPTION	DATE

ISSUE RECORD:

No.	DESCRIPTION	DATE

SCALE:

SHEET CONTENTS:

PROJECT NO.:

DATE: 10/20/2025

DRAWING NO.: P0.1

136 BROAD RUN RD, BENTONVILLE, VA						10/28/2025
2021 IPC FIXTURE UNIT CALCULATIONS						
FIXTURE:	USE	Quantity	2021 IPC Water FU	2021 IPC Waste FU	TOTAL WATER F.U.	TOTAL WASTE F.U.
Hose Bibb	ALL	2	2.5	0	5	0
Lavatory	Private	5	0.7	1	3.5	5
Kitchen Sink - RESIDENTIAL	Private	1	1.5	2	1.5	2
Dish Washer - RESIDENTIAL	Private	1	1.5	2	1.5	2
2" Floor Drain (per IPC 709.4/709.1)	All	1	-	2	0	2
Shower Head	Private	2	1.5	2	3	4
Automatic Clothes Washer, RESIDENTIAL (8lb)	Private	1	1.5	2	1.5	2
Water Closet - FLUSH TANK	Private	3	2.200	4	6.6	12
		16			22.6 Water FU	29 Waste FU
				Estimated Probable Peak Demand Table E103.3(3) =	20.2	GPM
WASTE SIZING:				Irrigation Supplied on Separate Meter per ToCR Regulations =	0	GPM
4 " WASTE				TOTAL GPM =	20.2	GPM
				Minimum Tenant CW Pipe Size =	1"	Service

1. FIXTURES AND NEW EQUIPMENT SPECIFICATIONS TO BE VERIFIED BY OWNER BEFORE INSTALLATION OR PURCHASE. GENERAL CONTRACTOR, OWNER AND PLUMBER TO FIELD VERIFY ALL SPECS, SIZES, TYPES, BRANDS, CONNECTION SIZING AND LOCATIONS OF NEW AND RE-USED FIXTURES AND EQUIPMENT.
2. REFER TO MANUFACTURERS INSTALLATION INSTRUCTIONS FOR SPECIFIC SELECTED UNITS/FIXTURES TO BE INSTALLED PRIOR TO PURCHASE AND INSTALLATION.
3. ANY FIXTURE OR EQUIPMENT TO BE RE-USED IS TO BE CHECKED FOR PROPER AND CORRECT FUNCTION AND AS-NEW IN VISUAL INSPECTION. ANY MALFUNCTIONING OR TARNISHED BEYOND REPAIR SHALL BE DISCARDED AND REPLACED WITH NEW.

GENERAL PLUMBING NOTES

REF. IPC CHAPTER 6, SEC. 601- SEC. 613 FOR WATER SUPPLY AND DISTRIBUTION CODES.

-THE WATER SERVICE PIPE SHALL BE SIZED TO SUPPLY WATER TO THE STRUCTURE IN THE QUANTITIES AND AT THE PRESSURES REQUIRED IN IPC CODE. THE WATER SERVICE PIPE SHALL BE NOT LESS THAN 3/4" IN DIA. (IPC 603.1)

-WHERE THE WATER SERVICE PIPING IS LOCATED IN THE SAME TRENCH W/ THE BUILDING SEWER, SUCH SEWER SHALL BE CONSTRUCTED OF MATERIALS LISTED IN TABLE 702.2. WHERE SEWER PIPING IS NOT CONSTRUCTED OF MATERIALS LISTED IN TABLE 702.2, THE WATER SERVICE PIPE AND THE BUILDING SEWER PIPE SHALL BE HORIZONTALLY SEPARATED BY NOT LESS THAN 5 FT. HORIZONTALLY FROM THE SEWER PIPE CENTERLINE ON BOTH SIDES OF SUCH CROSSING. THE SLEEVE SHALL BE OF PIPE MATERIALS LISTED IN TABLES 605.3, 702.2 OR 702.3. THE REQUIRED SEPARATION DISTANCE SHALL NOT APPLY WHERE THE BOT. OF THE WATER SERVICE PIPE, LOCATED WITHIN 5 FT. OF THE SEWER, IS NOT LESS THAN 12 INCH. ABOVE THE HIGHEST POINT OF THE TOP OF THE BUILDING (IPC 603.2)

-REF. TABLE 604.3; WATER DISTRIBUTION SYSTEM DESIGN CRITERIA REQ. CAPACITY AT FIXTURE SUPPLY PIPE OUTLETS

-WATER HAMMER ARRESTORS REQUIRED @ WASHER VALVES

-PROVIDE ANTI-SCALD VALVES ON SHOWER OR TUB/SHOWER COMBINATION VALVES

-FREEZE PROTECT PIPES PER P2603.5

FLOOR DRAINS IPC: SEC 413

-FLOOR DRAINS SHALL CONFORM TO ASME A112.3.3, ASME A112.6.3 OR CSA B79. (IPC 413.1)

- FLOOR DRAINS SHALL HAVE REMOVABLE STRAINERS. THE FLOOR DRAIN SHALL BE CONSTRUCTED SO THAT THE DRAIN IS CAPABLE OF BEING CLEANED. ACCESS SHALL BE PROVIDED TO THE DRAIN INLET. READY ACCESS SHALL BE PROVIDED TO FLOOR DRAINS. (IPC 413.2)

- FLOOR DRAINS SHALL HAVE A DRAIN OUTLET NOT LESS THAN 2 INCHES IN DIAM. (IPC 413.3)

SHOWERS IPC: SEC. 421

-PREFABRICATED SHOWERS AND SHOWER COMPARTMENTS SHALL CONFORM TO ASME A112.19.2/CSA B45.1 OR CSA B45.5/IAPMO Z124. SHOWER VALVES FOR INDIVIDUAL SHOWERS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 412.3.(IPC 421.1)

-WASTE OUTLETS SERVING SHOWERS SHALL BE NOT LESS THAN 11/2 INCHES (38 MM) IN DIAMETER AND, FOR OTHER THAN WASTE OUTLETS IN BATHTUBS, SHALL HAVE REMOVABLE STRAINERS NOT LESS THAN 3 INCHES (76 MM) IN DIAMETER WITH STRAINER OPENINGS NOT LESS THAN 1/4 INCH (6.4 MM) IN LEAST DIMENSION. WHERE EACH SHOWER SPACE IS NOT PROVIDED WITH AN INDIVIDUAL WASTE OUTLET, THE WASTE OUTLET SHALL BE LOCATED, AND THE FLOOR PITCHED SO THAT WASTE FROM ONE SHOWER DOES NOT FLOW OVER THE FLOOR AREA SERVING ANOTHER SHOWER. WASTE OUTLETS SHALL BE FASTENED TO THE WASTE PIPE IN AN APPROVED MANNER. (IPC 421.3)

-SHOWER COMPARTMENTS SHALL BE NOT LESS THAN 900 SQUARE INCHES (0.58 M2) IN INTERIOR CROSSSECTIONAL AREA. SHOWER COMPARTMENTS SHALL BE NOT LESS THAN 30 INCHES (762 MM) IN LEAST DIMENSION AS MEASURED FROM THE FINISHED INTERIOR DIMENSION OF THE COMPARTMENT, EXCLUSIVE OF FIXTURE VALVES, SHOWERHEADS, SOAP DISHES AND SAFETY GRAB BARS OR RAILS. EXCEPT AS REQUIRED IN SECTION 404, THE MINIMUM REQUIRED AREA AND DIMENSION SHALL BE MEASURED FROM THE FINISHED INTERIOR DIMENSION AT A HEIGHT EQUAL TO THE TOP OF THE THRESHOLD AND AT A POINT TANGENT TO ITS CENTERLINE AND SHALL BE CONTINUED TO A HEIGHT NOT LESS THAN 70 INCHES (1778 MM) ABOVE THE SHOWER DRAIN OUTLET. (IPC 421.4)

-FLOOR SURFACES SHALL BE CONSTRUCTED OF IMPERVIOUS, NONCORROSIVE, NONABSORBENT AND WATERPROOF MATERIALS. (IPC 421.5)

- INSTALL WATERPROOF GYPSUM BOARD AT ALL WATER SPLASH AREAS AS APPROPRIEATE AND PER CODE

SINKS IPC: SEC 422

-SINKS SHALL CONFORM TO ASME A112.19.1/CSA B45.2, ASME A112.19.2/CSA B45.1, ASME A112.19.3/CSA B45.4 OR CSA B45.5/IAPMO Z124. (IPC 422.1)

-SINKS SHALL BE PROVIDED WITH WASTE OUTLETS HAVING A DIAMETER NOT LESS THAN 11/2 INCHES (38 MM). A STRAINER OR CROSSBAR SHALL BE PROVIDED TO RESTRICT THE CLEAR OPENING OF THE WASTE OUTLET. (IPC 422.2)

VENTING REF. IPC: CHAPTER 9, SEC. 901 THROUGH 918.

SECTION P3109 WASTE STACK VENT

P3109.1 WASTE STACK VENT PERMITTED

A WASTE STACK SHALL BE CONSIDERED A VENT FOR ALL OF THE FIXTURES DISCHARGING TO THE STACK WHERE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THIS SECTION.

P3109.2 STACK INSTALLATION

THE WASTE STACK SHALL BE VERTICAL. AND BOTH HORIZONTAL AND VERTICAL OFFSETS SHALL BE PROHIBITED BETWEEN THE LOWEST FIXTURE DRAIN CONNECTION AND THE HIGHEST FIXTURE DRAIN CONNECTION TO THE STACK. EVERY FIXTURE DRAIN SHALL CONNECT SEPARATELY TO THE WASTE STACK. THE STACK SHALL NOT RECEIVE THE DISCHARGE OF WATER CLOSETS OR URINALS.

P3109.3 STACK VENT

A STACK VENT SHALL BE INSTALLED FOR THE WASTE STACK. THE SIZE OF THE STACK VENT SHALL BE NOT LESS THAN THE SIZE OF THE WASTE STACK. OFFSETS SHALL BE PERMITTED IN THE STACK VENT AND SHALL BE LOCATED NOT LESS THAN 6 INCHES ABOVE THE FLOOD LEVEL OF THE HIGHEST FIXTURE, AND SHALL BE IN ACCORDANCE WITH SECTION P3104.5. THE STACK VENT SHALL BE PERMITTED TO CONNECT WITH OTHER STACK VENTS AND VENT STACKS IN ACCORDANCE W/ SECTION P3113.3.

P3109.4 WASTE STACK SIZE

THE WASTE STACK SHALL BE SIZED BASED ON THE TOTAL DISCHARGE TO THE STACK AND THE DISCHARGE WITHIN A BRANCH INTERVAL IN ACCORDANCE WITH TABLE P3109.4. THE WASTE STACK SHALL BE THE SAME SIZE THROUGHOUT THE LENGTH OF THE WASTE STACK.

-THE ONLY VERTICAL PIPE OF COMBINATION WASTE AND VENT SYSTEM SHALL BE THE CONNECTION BETWEEN FIXTURE DRAIN AND THE HORIZONTAL COMBINATION WASTE AND VENT PIPE. THE VERTICAL DISTANCE SHALL NOT EXCEED 8 FEET. (IPC 915.2)

-THE SLOPE OF A HORIZONTAL COMBINATION WASTE AND VENT PIPE SHALL NOT EXCEED 1/2 UNIT VERTICAL IN 12 UNITS HORIZONTAL (4% SLOPE) AND SHALL BE NOT LESS THAN THAT INDICATED IN TABLE 704.1. (IPC: 915.2.1)

-THE SIZE OF A COMBINATION WASTE AND VENT PIPE SHALL BE NOT LESS THAN THAT INDICATED IN TABLE 915.2.2. THE HORIZONTAL LENGTH OF A COMBINATION WASTE AND VENT SYSTEM SHALL BE UNLIMITED (IPC: 915.2.2)

-THE FIXTURE BRANCH OR FIXTURE DRAIN SHALL CONNECT TO THE COMBINATION WASTE AND VENT WITHIN A DISTANCE SPECIFIED IN TABLE 909.1. THE COMBINATION WASTE AND VENT PIPE SHALL BE CONSIDERED TO BE THE VENT FOR THE FIXTURE. (IPC: 915.2.5)

-A DRAINAGE STACK SHALL SERVE AS A SINGLE-STACK VENT SYSTEM WHERE SIZED AND INSTALLED IN ACCORDANCE WITH SEC. 917.2 - 917.9. THE DRAINAGE STACK AND BRACH PIPING SHALL BE THE VENTS FOR THE DRAINAGE SYSTEM. THE DRAINAGE STACK SHALL HAVE A STACK VENT. (IPC: 917.1)

-STACK SIZE REF. TABLE 917.2 IPC.

P3106.1: INDIVIDUAL VENT PERMITTED. EACH TRAP AND TRAPPED FIXTURE SHALL BE PERMITTED TO BE PROVIDED WITH AN INDIVIDUAL VENT. THE INDIVIDUAL VENT SHALL CONNECT TO THE FIXTURE DRAIN OF THE TRAP OR TRAPPED FIXTURE BEING VENTED

VENT CONNECTIONS AND GRADES REF IPC: SECTION 905

- THE VENT SYSTEM SERVING EACH BUILDING DRAIN SHALL HAVE NOT LESS THAN ONE VENT PIPE THAT EXTENDS TO THE OUTDOORS (IPC: 904.1) REF. IPC: 904.1.1 AND 904.1.2

- A VENT STACK OR STACK VENTS SHALL TERMINATE OUTDOORS TO THE OPEN AIR OR TO A STACK-TYPE AIR ADMITTANCE VALVE IN ACCORDANCE WITH SECTION 918 (IPC: 904.3)

- VENT STACKS SHALL CONNECT TO THE BASE OF THE DRAINAGE STACK. THE VENT STACK SHALL CONNECT AT OR BELOW THE LOWEST HORIZONTAL BRANCH. WHERE THE VENT STACK CONNECTS TO THE BUILDING DRAIN, THE CONNECTION SHALL BE LOCATED DOWNSTREAM OF THE DRAINAGE STACK AND WITHIN A DISTANCE OF 10 TIMES THE DIAMETER OF THE DRAINAGE STACK. (IPC 904.4)

CLEANOUTS AS REQUIRED (IPC SEC 708)

-CLEANOUTS SHALL BE PROVIDED FOR DRAINAGE PIPING IN ACCORDANCE WITH SECTIONS 708.1.1 THROUGH 708.1.11.

-CHANGES OF DIRECTION. CLEANOUTS SHALL BE INSTALLED AT EACH CHANGE OF DIRECTION GREATER THAN 45 DEGREES (0.79 RAD) IN THE BUILDING SEWER, BUILDING DRAIN AND HORIZONTAL WASTE OR SOIL LINES. (IPC: 708.3.3)

603.2 SEPARATION OF WATER SERVICE AND BUILDING SEWER

LEGEND

PLUMBING LEGEND	
NAME	SYMBOL
COLD WATER LINE (C/W)	
HOT WATER LINE (H/W)	
FLOW DIRECTION	
SHUT OFF VALVE	
COLD WATER UP	
HOT WATER UP	
COLD WATER DOWN	
HOT WATER DOWN	

WASTE LINE LEGEND	
NAME	SYMBOL
SANITARY SEWER (SS)	
VENT/ VENT LINE	
FLOW DIRECTION	
ROOF VENT	
CLEANOUT	
SS UP/ DOWN	
VENT TO ROOF	

GAS LEGEND	
NAME	SYMBOL
GAS LINE	G
FLOW DIRECTION	
SHUT OFF VALVE	

H/C WATER FIXTURE SCHEDULE - HOME TOTAL			
LABEL	FIXTURE	COUNT	HOT/COLD CONN.
SWR	SHOWER	2	1/2"-1/2"
DW	DISHWASHER	1	1/2" H/W
WC	WATER CLOSET (TOILET)	3	1/2" C/W
LAV	LAVATORY	5	1/2"-1/2"
KS	KITCHEN SINK	1	1/2"-1/2"
HWH	HOT WATER HEATER	1	3/4"-3/4"
CW	CLOTHES WASHER	1	1/2"-1/2"
HB	HOSE BIB	2	1/2" C/W
TOTAL FIXTURE COUNT		16	

WASTE FIXTURE SCHEDULE - HOME TOTAL			
LABEL	FIXTURE	COUNT	SS. CONN.
SWR	SHOWER	2	2"
FD	FLOOR DRAIN	1	2"
WC	WATER CLOSET (TOILET)	3	3"
LAV	LAVATORY	5	1.5"
KS	KITCHEN SINK	1	1.5"
CW	CLOTHES WASHER	1	2"
DW	DISHWASHER	1	PER. MANUF.
TOTAL FIXTURE COUNT		14	

2 PLUMBING - SPECIFICATIONS AND FIXTURE UNIT CALCULATIONS

SCALE: NTS

MORRIS REMODEL -PLUMBING

136 BROAD RUN RD
BENTONVILLE, VA 22610

DRAWN BY:

CHECKED BY:

REVISIONS:

No.	DESCRIPTION	DATE

ISSUE RECORD:

No.	DESCRIPTION	DATE

SCALE:

SHEET CONTENTS:

PROJECT NO.:

DATE: 10/20/2025

DRAWING NO.: P0.2

GENERAL NOTES

REF. IPC CHAPTER 6, SEC. 601- SEC. 613 FOR WATER SUPPLY AND DISTRIBUTION CODES.

- THE WATER SERVICE PIPE SHALL BE SIZED TO SUPPLY WATER TO THE STRUCTURE IN THE QUANTITIES AND AT THE PRESSURES REQUIRED IN IPC CODE. THE WATER SERVICE PIPE SHALL BE NOT LESS THAN 3/4" IN DIA. (IPC 603.1)

- REF. TABLE 604.3; WATER DISTRIBUTION SYSTEM DESIGN CRITERIA REQ. CAPACITY AT FIXTURE SUPPLY PIPE OUTLETS

- WATER HAMMER ARRESTORS REQUIRED @ WASHER VALVES

- FREEZE PROTECT PIPES PER P2603.5

FLOOR DRAINS IPC: SEC 413

- FLOOR DRAINS SHALL CONFORM TO ASME A112.3.3, ASME A112.6.3 OR CSA B79. (IPC: 413.1)

- FLOOR DRAINS SHALL HAVE REMOVABLE STRAINERS. THE FLOOR DRAIN SHALL BE CONSTRUCTED SO THAT THE DRAIN IS CAPABLE OF BEING CLEANED. ACCESS SHALL BE PROVIDED TO THE DRAIN INLET. READY ACCESS SHALL BE PROVIDED TO FLOOR DRAINS. (IPC 413.2)

- FLOOR DRAINS SHALL HAVE A DRAIN OUTLET NOT LESS THAN 2 INCHES IN DIAM. (IPC: 413.3)

SINKS IPC: SEC 422

-SINKS SHALL CONFORM TO ASME A112.19.1/CSA B45.2, ASME A112.19.2/ CSA B45.1, ASME A112.19.3/CSA B45.4 OR CSA B45.5/IAPMO Z124. (IPC: 422.1)

-SINKS SHALL BE PROVIDED WITH WASTE OUTLETS HAVING A DIAMETER NOT LESS THAN 1-1/2 INCHES. A STRAINER OR CROSSBAR SHALL BE PROVIDED TO RESTRICT THE CLEAR OPENING OF THE WASTE OUTLET. (IPC: 422.2)

HOT WATER HEATER: INSTALL PER IPC CH. 5

IPC SEC. 503.1 COLD WATER LINE VALVE:
- THE COLD WATER BRANCH LINE FROM THE MAIN WATER SUPPLY LINE TO EACH HOT WATER STORAGE TANK OR WATER HEATER SHALL BE PROVIDED WITH A VALVE, LOCATED NEAR THE EQUIPMENT AND SERVING ONLY THE HOT WATER STORAGE TANK OR WATER HEATER. THE VALVE SHALL NOT INTERFERE OR CAUSE A DISRUPTION OF THE COLD WATER SUPPLY TO THE REMAINDER OF THE COLD WATER SYSTEM. THE VALVE SHALL BE PROVIDED WITH ACCESS ON THE SAME FLOOR LEVEL AS THE WATER HEATER SERVED.

504.7 REQUIRED PAN WHERE A STORAGE TANK-TYPE WATER HEATER OR A HOT WATER STORAGE TANK IS INSTALLED IN A LOCATION WHERE WATER LEAKAGE FROM THE TANK WILL CAUSE DAMAGE, THE TANK SHALL BE INSTALLED IN A PAN CONSTRUCTED OF ONE OF THE FOLLOWING:

1 GALVANIZED STEEL OR ALUMINUM OF NOT LESS THAN 0.0236 INCH (0.6010 MM) IN THICKNESS.
2 PLASTIC NOT LESS THAN 0.036 IN. IN THICKNESS.
3 OTHER APPROVED MATERIALS.

A PLASTIC PAN SHALL NOT BE INSTALLED BENEATH A GAS-FIRED WATER HEATER. UNLESS THE PAN IS CONSTRUCTED OF MATERIAL HAVING A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE-DEVELOPED INDEX OF 450 OR LESS WHEN TESTED IN ACCORDANCE WITH ASTM E84 OR UL 723. EXCEPTION: REPLACEMENTS FOR WATER HEATERS THAT DID NOT HAVE A PAN PREVIOUSLY INSTALLED TO CODE IN EFFECT AT THE TIME OF THE ORIGINAL INSTALLATION.

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504.7.2 PAN DRAIN TERMINATION:
- THE PAN DRAIN SHALL EXTEND FULL SIZE AND TERMINATE OVER A SUITABLY LOCATED INDIRECT WASTE RECEPTOR OR FLOOR DRAIN OR EXTEND TO THE EXTERIOR OF THE BUILDING AND TERMINATE NOT LESS THAN 6 IN. AND NOT MORE THAN 24 IN. ABOVE THE ADJACENT GROUND SURFACE. WHERE A PAN DRAIN WAS NOT PREVIOUSLY INSTALLED, A PAN DRAIN SHALL NOT BE REQUIRED FOR A REPLACEMENT WATER HEATER INSTALLATION.

KEYED NOTES: (#)

1. EXISTING SHALLOW WELL JET PUMP TO REMAIN, RELOCATES AS NEEDED. G.C. AND PLUMBING TRADES TO FIELD VERIFY ALL NEW LINES, CONNECTION POINTS, LOCATIONS.

2. EXISTING PRESSURE TANK TO BE RELOCATES AS NEEDED IN CRAWL SPACE. G.C TO F.V

3. NEW ELECTRIC HOT WATER HEATER, COORDINATE WITH ELECTRICAL TRADES AS REQ.

4. 1" CW (MIN.) MAIN WATER SUPPLY LINE ENTERS ON NORTH-EAST SIDE OF BUILDING- F.V. PROVIDE ACCESSIBLE MAIN WATER LINE SHUT OFF VALVE @ LINE ENTRANCE TO PROPERTY. RE. IPC SEC. 606.1-606.4 - FIELD VERIFY.

5. COORDINATE WITH OTHER TRADES AS REQUIRED FOR PLUMBING AND FIXTURE INSTALLATIONS.

6. ENSURE TO FOLLOW ALL MANUFACTURERS INSTALLATION INSTRUCTIONS FOR CHOSEN FIXTURES AND INSTALL PER LATEST ADOPTED IPC, IRC,IMC, NEC CODE.

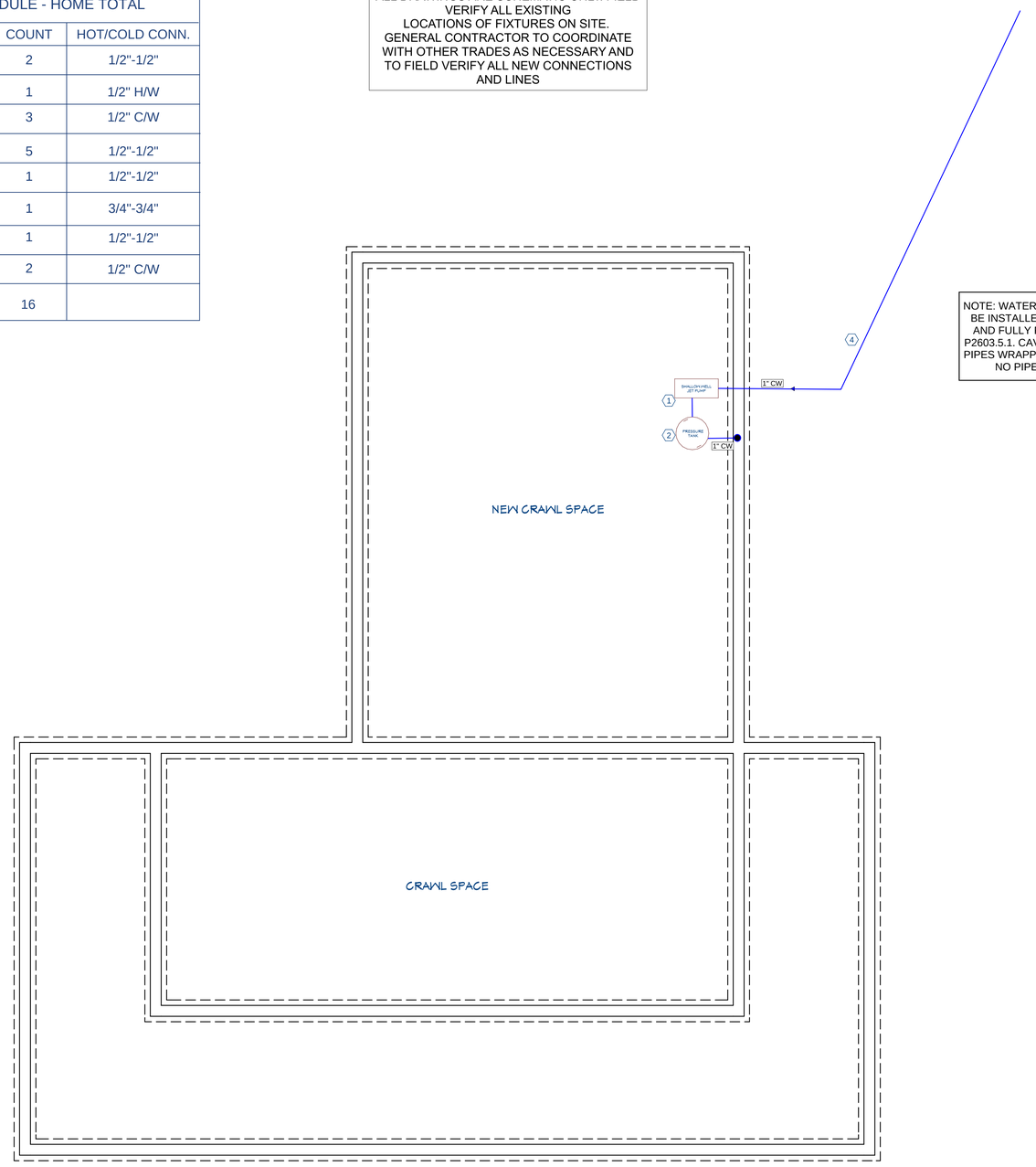
7. 3/4" COLD/HOT WATER UP TO FIXTURES ABV. - F.V. FINAL LOCATION.

8. PLANS ARE SCHEMATIC IN NATURE AND PLUMBING TRADES/CONTRACTOR TO FIELD VERIFY ALL NEW LINES, CONNECTION POINTS, LOCATIONS.

PLUMBING LEGEND	
NAME	SYMBOL
COLD WATER LINE	
HOT WATER LINE	
FLOW DIRECTION	
SHUT-OFF VALVE	

H/C WATER FIXTURE SCHEDULE - HOME TOTAL			
LABEL	FIXTURE	COUNT	HOT/COLD CONN.
SWR	SHOWER	2	1/2"-1/2"
DW	DISHWASHER	1	1/2" H/W
WC	WATER CLOSET (TOILET)	3	1/2" C/W
LAV	LAVATORY	5	1/2"-1/2"
KS	KITCHEN SINK	1	1/2"-1/2"
HWH	HOT WATER HEATER	1	3/4"-3/4"
CW	CLOTHES WASHER	1	1/2"-1/2"
HB	HOSE BIB	2	1/2" C/W
TOTAL FIXTURE COUNT		16	

ALL DRAWINGS ARE SCHEMATIC ONLY. FIELD VERIFY ALL EXISTING LOCATIONS OF FIXTURES ON SITE. GENERAL CONTRACTOR TO COORDINATE WITH OTHER TRADES AS NECESSARY AND TO FIELD VERIFY ALL NEW CONNECTIONS AND LINES



NOTE: WATER SUPPLY LINES IN EXTERIOR WALLS SHALL BE INSTALLED ON THE INTERIOR SIDE OF INSULATION AND FULLY PROTECTED AGAINST FREEZING PER IRC P2603.5.1. CAVITY INSULATION PER CODE TO PROVIDED. PIPES WRAPPED WITH CLOSED-CELL FOAM INSULATION. NO PIPES INSTALLED IN UNHEATED SPACES.

2 PLUMBING - H/C WATER LINES - CRAWL SPACE

SCALE: 1/4"- 1 FT.

-PLUMBING

BENTONVILLE, VA 22610

DRAWN BY:

CHECKED BY:

REVISIONS:

No.	DESCRIPTION	DATE

ISSUE RECORD:

No.	DESCRIPTION	DATE

SCALE:

SHEET CONTENTS:

PROJECT NO.:

DATE: 10/20/2025

DRAWING NO.: P1.0

GENERAL NOTES

REF. IPC CHAPTER 6, SEC. 601- SEC. 613 FOR WATER SUPPLY AND DISTRIBUTION CODES.

- THE WATER SERVICE PIPE SHALL BE SIZED TO SUPPLY WATER TO THE STRUCTURE IN THE QUANTITIES AND AT THE PRESSURES REQUIRED IN IPC CODE. THE WATER SERVICE PIPE SHALL BE NOT LESS THAN 3/4" IN DIA. (IPC 603.1)

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HOT WATER HEATER: INSTALL PER IPC CH. 5

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PLUMBING LEGEND	
NAME	SYMBOL
COLD WATER LINE	
HOT WATER LINE	
FLOW DIRECTION	
SHUT-OFF VALVE	

H/C WATER FIXTURE SCHEDULE - HOME TOTAL			
LABEL	FIXTURE	COUNT	HOT/COLD CONN.
SWR	SHOWER	2	1/2"-1/2"
DW	DISHWASHER	1	1/2" H/W
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TOTAL FIXTURE COUNT		16	

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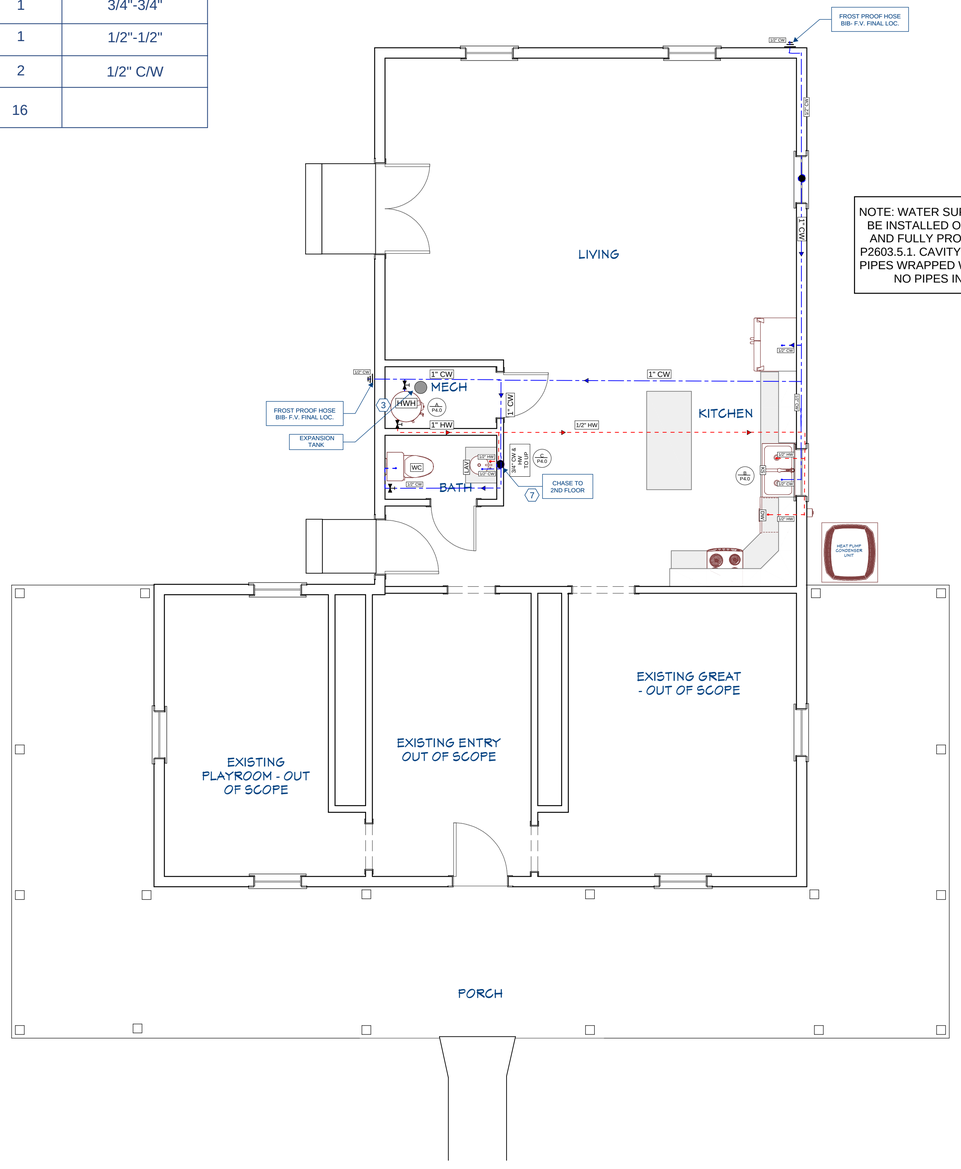

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3 PLUMBING - H/C WATER LINES - MAIN FLOOR

SCALE: 1/4"- 1 FT.

-PLUMBING

BENTONVILLE, VA 22610

DRAWN BY:

CHECKED BY:

REVISIONS:

No.	DESCRIPTION	DATE

ISSUE RECORD:

No.	DESCRIPTION	DATE

SCALE:

SHEET CONTENTS:

PROJECT NO.:

DATE: 10/20/2025

DRAWING NO.: P1.1

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HOT WATER HEATER: INSTALL PER IPC CH. 5

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7. 3/4" COLD/HOT WATER UP TO FIXTURES ABV. - F.V. FINAL LOCATION.

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PLUMBING LEGEND	
NAME	SYMBOL
COLD WATER LINE	
HOT WATER LINE	
FLOW DIRECTION	
SHUT-OFF VALVE	

H/C WATER FIXTURE SCHEDULE - HOME TOTAL			
LABEL	FIXTURE	COUNT	HOT/COLD CONN.
SWR	SHOWER	2	1/2"-1/2"
DW	DISHWASHER	1	1/2" H/W
WC	WATER CLOSET (TOILET)	3	1/2" C/W
LAV	LAVATORY	5	1/2"-1/2"
KS	KITCHEN SINK	1	1/2"-1/2"
HWH	HOT WATER HEATER	1	3/4"-3/4"
CW	CLOTHES WASHER	1	1/2"-1/2"
HB	HOSE BIB	2	1/2" C/W
TOTAL FIXTURE COUNT		16	

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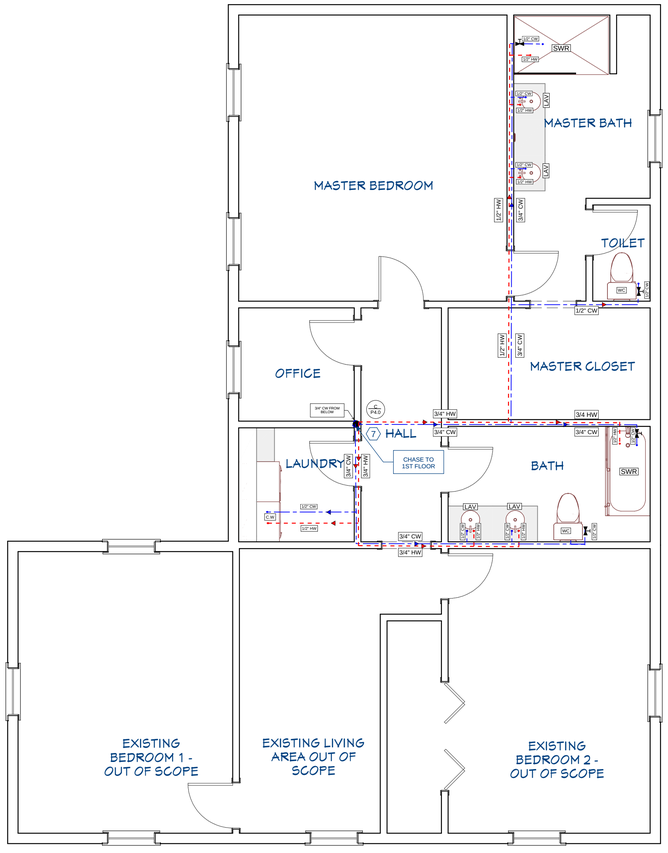

4 PLUMBING - H/C WATER LINES - 2ND FLOOR

SCALE: 1/4"- 1 FT.

-PLUMBING

BENTONVILLE, VA 22610

DRAWN BY:

CHECKED BY:

REVISIONS:

No.	DESCRIPTION	DATE

ISSUE RECORD:

No.	DESCRIPTION	DATE

SCALE:

SHEET CONTENTS:

PROJECT NO.:

DATE: 10/20/2025

DRAWING NO.: P1.2

WASTE FIXTURE SCHEDULE - HOME TOTAL

LABEL	FIXTURE	COUNT	SS. CONN.
SWR	SHOWER	2	2"
FD	FLOOR DRAIN	1	2"
WC	WATER CLOSET (TOILET)	3	3"
LAV	LAVATORY	5	1.5"
KS	KITCHEN SINK	1	1.5"
CW	CLOTHES WASHER	1	2"
DW	DISHWASHER	1	PER. MANUF.
TOTAL FIXTURE COUNT		14	

1. ALL SANITARY DRAINAGE PIPING SHALL COMPLY WITH IPC CHAPTER 7.

2. HORIZONTAL DRAINAGE PIPING SHALL BE INSTALLED WITH MIN. SLOPE OF 1/4" PER FOOT FOR PIPES ≤3", AND 1/8" PER FOOT FOR PIPES ≥4", PER IPC 704.1.

3. CLEANOUTS SHALL BE PROVIDED PER IPC 708.3 AT BASE OF STACKS, AT CHANGES IN DIRECTION >45°, AND AT INTERVALS NOT EXCEEDING 100' FOR HORIZONTAL DRAINS ≥4".

4. CLEANOUT SIZE SHALL MATCH PIPE SIZE UP TO 4". MIN. 4" CLEANOUT REQUIRED FOR LARGER PIPES PER IPC 708.7.

5. ALL FIXTURE DRAINS SHALL BE TRAPPED PER IPC 1002.1. TRAPS SHALL BE VENTED PER IPC CHAPTER 9.

6. NO DOUBLE TRAPPING OR S-TRAPS ALLOWED. DRY VENTS SHALL BE INSTALLED TO PREVENT SIPHONAGE.

7. MATERIALS FOR WASTE PIPING SHALL BE PVC DWV SCH. 40 OR APPROVED EQUIVALENT PER IPC 702.2.

8. UNDERGROUND PIPING SHALL BE BEDDED AND BACKFILLED PER IPC 306.2 TO PREVENT DAMAGE.

9. ALL PIPE PENETRATIONS THROUGH FRAMING SHALL COMPLY WITH STRUCTURAL CLEARANCES PER IRC R302.11 AND BE SEALED FOR FIRESTOP AS REQUIRED.

10. TESTING OF DRAINAGE SYSTEM SHALL BE CONDUCTED PER IPC 312.4 USING WATER OR AIR PRIOR TO COVERING.

GENERAL CONTRACTOR TO FIELD VERIFY EXISTING AND NEW WASTE LINE RISER AND VENTING LOCATIONS & ALL SIZES IN ACCORDANCE WITH THE IPC.

*CLEANOUTS REQUIRED (IPC SEC 708)

* INSTALL TRAPS PER IPC SEC. 709

BRANCH VENTS
*GC TO FIELD VERIFY SIZE AND LOCATIONS OF ALL VENTING AND PER CODE IPC: 906.2 & TABLE 710.1(2). ALSO IPC SEC. 907 THROUGH 918.

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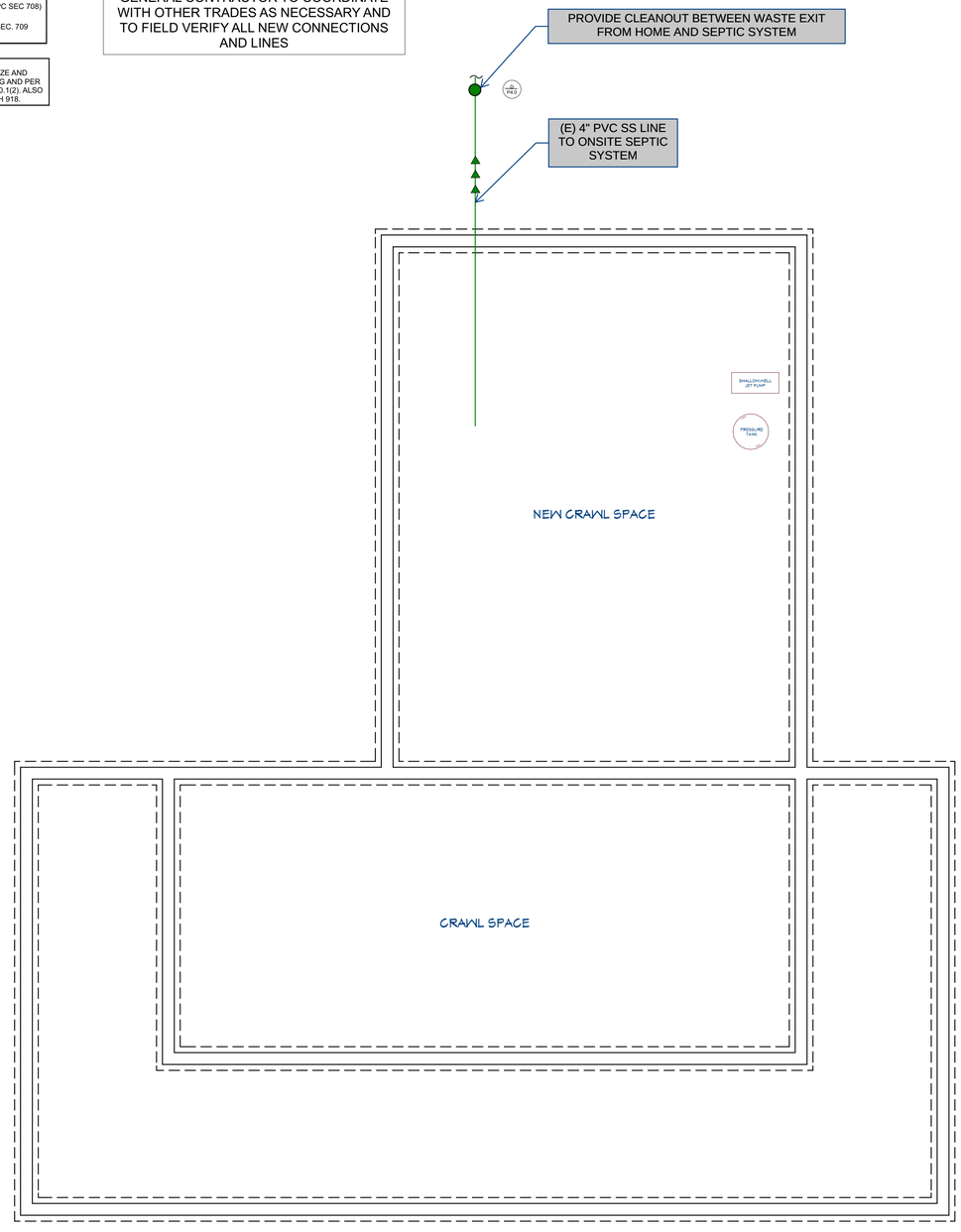

WASTE LINE LEGEND	
NAME	SYMBOL
(E) WASTE LINE	
VENT	
FLOW DIRECTION	

5 PLUMBING - WASTE LINES - CRAWL SPACE

SCALE: 1/4"- 1 FT.

PLUMBING NOTES:

IPC SEC. 606.1: LOCATION OF FULL-OPEN VALVES:

- FULL-OPEN VALVES SHALL BE INSTALLED IN THE FOLLOWING LOCATIONS:
1 ON THE BUILDING WATER SERVICE PIPE FROM THE PUBLIC WATER SUPPLY NEAR THE CURB.
2 ON THE WATER DISTRIBUTION SUPPLY PIPE AT THE ENTRANCE INTO THE STRUCTURE.
3 ON THE DISCHARGE SIDE OF EVERY WATER METER.
4 ON THE BASE OF EVERY WATER RISER PIPE IN OCCUPANCIES OTHER THAN MULTIPLE-FAMILY RESIDENTIAL OCCUPANCIES THAT ARE TWO STORIES OR LESS IN HEIGHT AND IN ONE- AND TWO-FAMILY RESIDENTIAL OCCUPANCIES.
5 ON THE TOP OF EVERY WATER DOWN-FEED PIPE IN OCCUPANCIES OTHER THAN ONE- AND TWO-FAMILY RESIDENTIAL OCCUPANCIES.
6 ON THE ENTRANCE TO EVERY WATER SUPPLY PIPE TO A DWELLING UNIT, EXCEPT WHERE SUPPLYING A SINGLE FIXTURE EQUIPPED WITH INDIVIDUAL STOPS.
7 ON THE WATER SUPPLY PIPE TO A GRAVITY OR PRESSURIZED WATER TANK.
8 ON THE WATER SUPPLY PIPE TO EVERY WATER HEATER.

IPC SEC. 606.2; LOCATION OF SHUTOFF VALVES:

- SHUTOFF VALVES SHALL BE INSTALLED IN THE FOLLOWING LOCATIONS:
1 ON THE FIXTURE SUPPLY TO EACH PLUMBING FIXTURE OTHER THAN BATHTUBS AND SHOWERS IN ONE- AND TWO-FAMILY RESIDENTIAL OCCUPANCIES, AND OTHER THAN IN INDIVIDUAL SLEEPING UNITS THAT ARE PROVIDED WITH UNIT SHUTOFF VALVES IN HOTELS, MOTELS, BOARDING HOUSES AND SIMILAR OCCUPANCIES.
2 ON THE WATER SUPPLY PIPE TO EACH SILLCOCK.
3 ON THE WATER SUPPLY PIPE TO EACH APPLIANCE OR MECHANICAL EQUIPMENT.

IPC SEC., 608.4 POTABLE WATER:

- HANDLING AND TREATMENT EQUIPMENT WATER PUMPS, FILTERS, SOFTENERS, TANKS AND OTHER APPLIANCES AND DEVICES THAT HANDLE OR TREAT POTABLE WATER TO BE SUPPLIED TO THE POTABLE WATER DISTRIBUTION SYSTEM SHALL BE LOCATED TO PREVENT CONTAMINATION FROM ENTERING THE APPLIANCES AND DEVICES.
OVERFLOW, RELIEF VALVE AND WASTE DISCHARGE PIPES FROM SUCH APPLIANCES AND DEVICES SHALL TERMINATE THROUGH AN AIR GAP.

608.5 WATER SERVICE PIPING WATER SERVICE PIPING SHALL BE PROTECTED IN ACCORDANCE WITH SECTIONS 603.2 AND 603.2.1.

608.16 PROTECTION OF POTABLE WATER OUTLETS:
- POTABLE WATER OPENINGS AND OUTLETS SHALL BE PROTECTED AGAINST BACKFLOW IN ACCORDANCE WITH SECTION 608.16.1, 608.16.2, 608.16.3, 608.16.4, 608.16.4.1 OR 608.16.4.2.

608.16.1 PROTECTION BY AIR GAP:
- OPENINGS AND OUTLETS SHALL BE PROTECTED BY AN AIR GAP BETWEEN THE OPENING AND THE FIXTURE FLOOD LEVEL RIM AS SPECIFIED IN TABLE 608.16.1. OPENINGS AND OUTLETS EQUIPPED FOR HOSE CONNECTION SHALL BE PROTECTED BY MEANS OTHER THAN AN AIR GAP.

TABLE 608.16.1

MINIMUM REQUIRED AIR GAPS

FIXTURE	MINIMUM AIR GAP	
	Away from a wall[a] (inches)	Close to a wall (inches)
Lavatories and other fixtures with effective openings not greater than 1/2 inch in diameter	1	1 1/2
Sinks, laundry trays, gooseneck back faucets and other fixtures with effective openings not greater than 3/4 inch in diameter	1 1/2	2 1/2
Over-rim bath fillers and other fixtures with effective openings not greater than 1 inch in diameter	2	3
Drinking water fountains, single orifice not greater than 7/16 inch in diameter or multiple orifices with a total area of 0.150 square inch (area of circle 7/16 inch in diameter)	1	1 1/2
Effective openings greater than 1 inch	Two times the diameter of the effective opening	Three times the diameter of the effective opening

For SI: 1 inch = 25.4 mm, 1 square inch = 645 mm².

a. Applicable where walls or obstructions are spaced from the nearest inside-edge of the spout opening a distance greater than three times the diameter of the *effective opening* for a single wall, or a distance greater than four times the diameter of the *effective opening* for two intersecting walls.

-PLUMBING

BENTONVILLE, VA 22610

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PROJECT NO.:

DATE: 10/20/2025

DRAWING NO.:

P2.0

WASTE FIXTURE SCHEDULE - HOME TOTAL			
LABEL	FIXTURE	COUNT	SS. CONN.
SWR	SHOWER	2	2"
FD	FLOOR DRAIN	1	2"
WC	WATER CLOSET (TOILET)	3	3"
LAV	LAVATORY	5	1.5"
KS	KITCHEN SINK	1	1.5"
CW	CLOTHES WASHER	1	2"
DW	DISHWASHER	1	PER. MANUF.
TOTAL FIXTURE COUNT		14	

1. ALL SANITARY DRAINAGE PIPING SHALL COMPLY WITH IPC CHAPTER 7.

2. HORIZONTAL DRAINAGE PIPING SHALL BE INSTALLED WITH MIN. SLOPE OF 1/4" PER FOOT FOR PIPES ≤3", AND 1/8" PER FOOT FOR PIPES ≥4", PER IPC 704.1.

3. CLEANOUTS SHALL BE PROVIDED PER IPC 708.3 AT BASE OF STACKS, AT CHANGES IN DIRECTION >45°, AND AT INTERVALS NOT EXCEEDING 100' FOR HORIZONTAL DRAINS ≥4".

4. CLEANOUT SIZE SHALL MATCH PIPE SIZE UP TO 4". MIN. 4" CLEANOUT REQUIRED FOR LARGER PIPES PER IPC 708.7.

5. ALL FIXTURE DRAINS SHALL BE TRAPPED PER IPC 1002.1. TRAPS SHALL BE VENTED PER IPC CHAPTER 9.

6. NO DOUBLE TRAPPING OR S-TRAPS ALLOWED. DRY VENTS SHALL BE INSTALLED TO PREVENT SIPHONAGE.

7. MATERIALS FOR WASTE PIPING SHALL BE PVC DWV SCH. 40 OR APPROVED EQUIVALENT PER IPC 702.2.

8. UNDERGROUND PIPING SHALL BE BEDDED AND BACKFILLED PER IPC 306.2 TO PREVENT DAMAGE.

9. ALL PIPE PENETRATIONS THROUGH FRAMING SHALL COMPLY WITH STRUCTURAL CLEARANCES PER IRC R302.11 AND BE SEALED FOR FIRESTOP AS REQUIRED.

10. TESTING OF DRAINAGE SYSTEM SHALL BE CONDUCTED PER IPC 312.4 USING WATER OR AIR PRIOR TO COVERING.

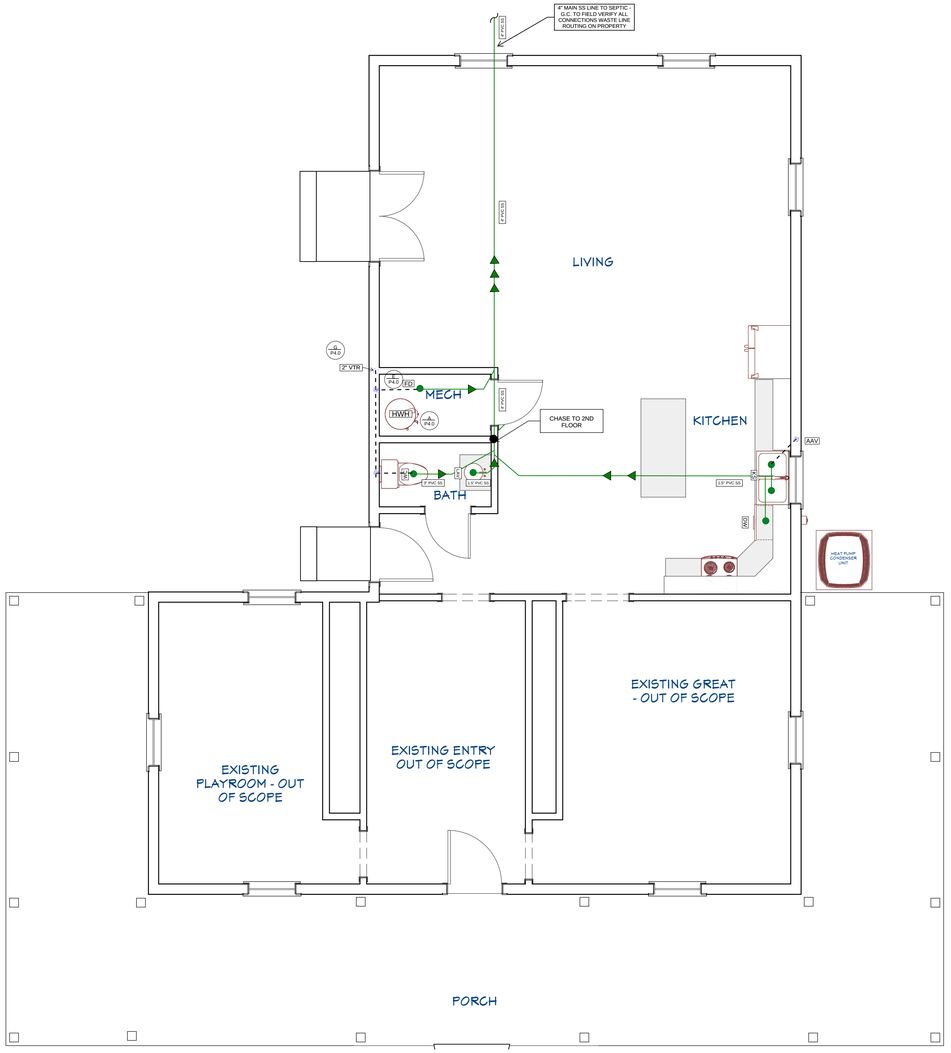
GENERAL CONTRACTOR TO FIELD VERIFY EXISTING AND NEW WASTE LINE RISER AND VENTING LOCATIONS & ALL SIZES IN ACCORDANCE WITH THE IPC.

*CLEANOUTS REQUIRED (IPC SEC 708)

* INSTALL TRAPS PER IPC SEC. 709

BRANCH VENTS
*GC TO FIELD VERIFY SIZE AND LOCATIONS OF ALL VENTING AND PER CODE IPC: 906.2 & TABLE 710.1(2). ALSO IPC SEC. 907 THROUGH 918.

ALL DRAWINGS ARE SCHEMATIC ONLY. FIELD VERIFY ALL EXISTING LOCATIONS OF FIXTURES ON SITE. GENERAL CONTRACTOR TO COORDINATE WITH OTHER TRADES AS NECESSARY AND TO FIELD VERIFY ALL NEW CONNECTIONS AND LINES



PLUMBING NOTES:

IPC SEC. 606.1: LOCATION OF FULL-OPEN VALVES:

- FULL-OPEN VALVES SHALL BE INSTALLED IN THE FOLLOWING LOCATIONS:
1 ON THE BUILDING WATER SERVICE PIPE FROM THE PUBLIC WATER SUPPLY NEAR THE CURB.
2 ON THE WATER DISTRIBUTION SUPPLY PIPE AT THE ENTRANCE INTO THE STRUCTURE.
3 ON THE DISCHARGE SIDE OF EVERY WATER METER.
4 ON THE BASE OF EVERY WATER RISER PIPE IN OCCUPANCIES OTHER THAN MULTIPLE-FAMILY RESIDENTIAL OCCUPANCIES THAT ARE TWO STORIES OR LESS IN HEIGHT AND IN ONE- AND TWO-FAMILY RESIDENTIAL OCCUPANCIES.
5 ON THE TOP OF EVERY WATER DOWN-FEED PIPE IN OCCUPANCIES OTHER THAN ONE- AND TWO-FAMILY RESIDENTIAL OCCUPANCIES.
6 ON THE ENTRANCE TO EVERY WATER SUPPLY PIPE TO A DWELLING UNIT, EXCEPT WHERE SUPPLYING A SINGLE FIXTURE EQUIPPED WITH INDIVIDUAL STOPS.
7 ON THE WATER SUPPLY PIPE TO A GRAVITY OR PRESSURIZED WATER TANK.
8 ON THE WATER SUPPLY PIPE TO EVERY WATER HEATER.

IPC SEC. 606.2; LOCATION OF SHUTOFF VALVES:

- SHUTOFF VALVES SHALL BE INSTALLED IN THE FOLLOWING LOCATIONS:
1 ON THE FIXTURE SUPPLY TO EACH PLUMBING FIXTURE OTHER THAN BATHTUBS AND SHOWERS IN ONE- AND TWO-FAMILY RESIDENTIAL OCCUPANCIES, AND OTHER THAN IN INDIVIDUAL SLEEPING UNITS THAT ARE PROVIDED WITH UNIT SHUTOFF VALVES IN HOTELS, MOTELS, BOARDING HOUSES AND SIMILAR OCCUPANCIES.
2 ON THE WATER SUPPLY PIPE TO EACH SILLCOCK.
3 ON THE WATER SUPPLY PIPE TO EACH APPLIANCE OR MECHANICAL EQUIPMENT.

IPC SEC., 608.4 POTABLE WATER:

- HANDLING AND TREATMENT EQUIPMENT WATER PUMPS, FILTERS, SOFTENERS, TANKS AND OTHER APPLIANCES AND DEVICES THAT HANDLE OR TREAT POTABLE WATER TO BE SUPPLIED TO THE POTABLE WATER DISTRIBUTION SYSTEM SHALL BE LOCATED TO PREVENT CONTAMINATION FROM ENTERING THE APPLIANCES AND DEVICES.
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WASTE LINE LEGEND	
NAME	SYMBOL
(E) WASTE LINE	
VENT	
FLOW DIRECTION	

6 PLUMBING - WASTE LINES - 1ST FLOOR

SCALE: 1/4"- 1 FT.

-PLUMBING

BENTONVILLE, VA 22610

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PROJECT NO.:

DATE: 10/20/2025

DRAWING NO.: P2.1

WASTE FIXTURE SCHEDULE - HOME TOTAL			
LABEL	FIXTURE	COUNT	SS. CONN.
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FD	FLOOR DRAIN	1	2"
WC	WATER CLOSET (TOILET)	3	3"
LAV	LAVATORY	5	1.5"
KS	KITCHEN SINK	1	1.5"
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TOTAL FIXTURE COUNT		14	

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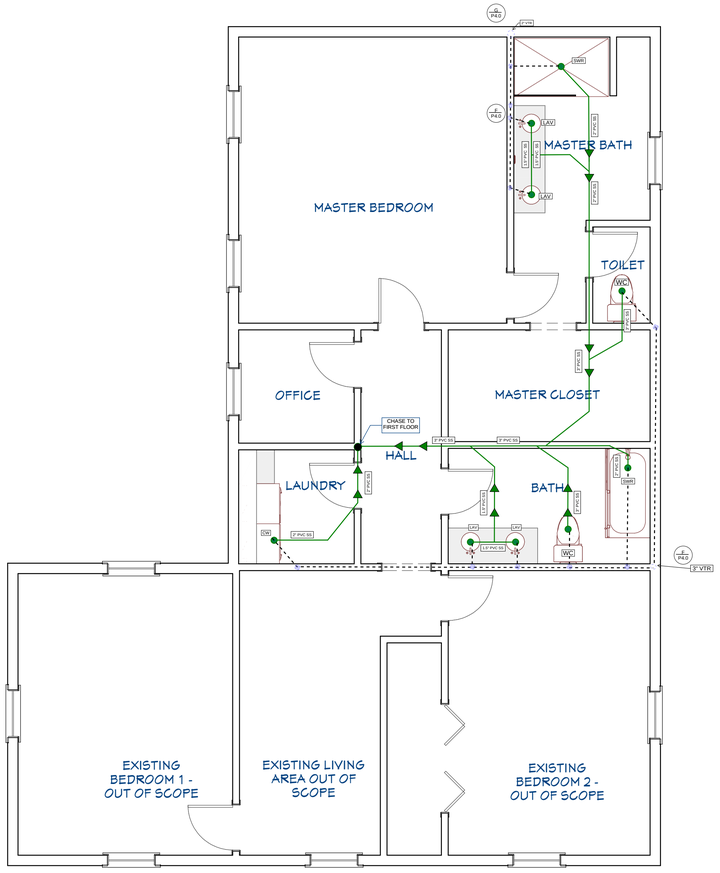

WASTE LINE LEGEND	
NAME	SYMBOL
(E) WASTE LINE	
VENT	
FLOW DIRECTION	

7 PLUMBING - WASTE LINES - 2ND FLOOR

SCALE: 1/4"- 1 FT.

PLUMBING NOTES:

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Drinking water fountains, single orifice not greater than 7/16 inch in diameter or multiple orifices with a total area of 0.150 square inch (area of circle 7/16 inch in diameter)	1	1 1/2
Effective openings greater than 1 inch	Two times the diameter of the effective opening	Three times the diameter of the effective opening

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a. Applicable where walls or obstructions are spaced from the nearest inside-edge of the spout opening a distance greater than three times the diameter of the *effective opening* for a single wall, or a distance greater than four times the diameter of the *effective opening* for two intersecting walls.

-PLUMBING

BENTONVILLE, VA 22610

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DATE: 10/20/2025

DRAWING NO.: P2.2

BRADFORD WHITE
WATER HEATERS

Upright Electric
Residential Water Heater

Features

- **Vitraglas® Lining with Microban®**—An exclusively engineered enamel formula that provides superior tank protection from the corrosive effects of water; and with Microban® antimicrobial product protection to help prevent the growth of bacteria, mold and mildew on the surface of the tank lining.
- **Hydrojet® Total Performance System**—Sediment reducing device that also increases first hour delivery of hot water while minimizing temperature build-up in tank.

Additional Details

- **Fully Automatic Controls**—Fast acting surface-mount thermostat with high limit energy cut-off (manual reset) for safety.
- **Low Restrictive Brass Drain Valve**—Durable tamper proof design.
- **Direct Heat Transfer with Immersed Elements**—Transfers heat directly and efficiently to the water. Screw-in style.
- **Insulation System**—Non-CFC foam covers the tank, reducing heat loss, energy consumption, and improves efficiency and jacket rigidity. Flexible fiberglass insulation on blanketed models.
- **Water Connections**— 3/4" (19mm) NPT factory-installed true dielectric fittings extend water heater life and simplify water line connections.
- **Factory-Installed Heat Traps**—Incorporates a flexible disk that reduces heat loss in piping and prevents noise.
- **Protective Anode Rod**—Provides added protection against corrosion for long-term, trouble-free service.
- **Simultaneous and Non-Simultaneous Operation Available**— Simultaneous operation indicates when both elements (if equipped) are being heated at the same time. Non-Simultaneous operation indicates when one element is being heated at a time.
- **Voltages Available**—120V, 208V, 240V, 277V, 480V.
- **Single Phase or Three Phase Operation Available**—120V & 277V may only be wired for single phase operation.
- **T&P Relief Valve**—Installed.
- **Housing and Urban Development**—These water heaters are designed in accordance with H.U.D. and are approved for installation in a manufactured home (mobile home).



Photo is of RE250T6

Vitraglas + Microban® Hydrojet



Copper Screw Type Immersion Element (INCOLOY® type immersion element available upon request)

6 or 10-Year Limited Tank Warranties / 6-Year Limited Warranty on Component Parts.

For more information on warranty, please visit **www.bradfordwhite.com**

For products installed in USA, Canada, and Puerto Rico. See complete copy of the warranty included with the heater for limitations.

Microban® antimicrobial product protection helps prevent the growth of bacteria, mold and mildew that may affect the product. The built-in antimicrobial properties do not protect users or others from disease-causing organisms. Microban® is a registered trademark of Microban Products Company.

1201-0625

Selected Product



Residential Upright Electric Water Heater

Heaters Required:	1
Model Number:	RE255T6
:	55 USG
Input per Hour:	4.5 KW
Thermal Efficiency	N/A
UEF	0.93
Venting:	N/A
First Hour Rating:	75 USG
Recovery	21 USGPH @ 90 °F Rise
% of Demand Satisfied[1]	112%

Documents

Spec Sheet
I/O Manual
Warranty
Pipe Drawing Diagram

Upright Electric
Residential Water Heater

SPECIFICATIONS

These water heaters meet or exceed all or portions of (where applicable) the minimum efficiency requirements of ASHRAE Standard 90.1 (latest edition). C.E.C. Listed.

Model Number	Rated Nominal Capacity U.S. Gal.	Rated Nominal Capacity Imp. Gal.	DOE Rated Storage Volume Gal.	First Hour Rating Gal.	Uniform Energy Factor	Element Wattage (Watts) Minimum	Element Wattage (Watts) Maximum	A Floor to Top of Heater in.	B Jacket Dia. in.	C Floor to Water Conn. in.	D C/L of Water Conn. in.	E Floor to T&P Conn. in.	G Water Conn. NPT in.	Approx. Shipping Weight lbs.
RE330S6	30	25	27	43	0.92	1500	6000	46 11/16	20	48 15/16	8	48 15/16	¾	100
RE240S6†	40	33	36	48	0.91	1500	6000	47 ⅜	20	49 ⅞	8	49 ⅞	¾	123
RE340S6	40	33	36	49	0.91	1500	6000	47 ⅜	22	49 ⅞	8	49 ⅞	¾	114
RE340R6	40	33	36	52	0.93	3500	6000	47 ⅜	22	49 ⅞	8	49 ⅞	¾	114
RE340T6	40	33	36	53	0.92	4000	6000	60 ⅛	20	62 ⅛	8	62 ⅛	¾	125
RE350S6	50	42	45	60	0.92	3500	6000	47 ⅛	24	49 ⅛	8	49 ⅛	¾	144
RE250S6†	50	42	45	60	0.92	3500	6000	47 ⅜	22	49 ⅞	8	49 ⅞	¾	143
RE250T6	50	42	45	64	0.92	4000	6000	59	20	60 ¼	8	60 ¼	¾	130
RE255T6	55	46	55	75	0.93	4500	6000	56 15/16	23	58 15/16	8	58 15/16	¾	142

Model Number	Rated Nominal Capacity Liters	DOE Rated Storage Volume Liters	First Hour Rating Liters	Uniform Energy Factor	Element Wattage (Watts) Minimum	Element Wattage (Watts) Maximum	A Floor to Top of Heater mm.	B Jacket Dia. mm.	C Floor to Water Conn. mm.	D C/L of Water Conn. mm.	E Floor to T&P Conn. mm.	G Water Conn. NPT mm.	Approx. Shipping Weight kg.
RE330S6	114	102	163	0.92	1500	6000	1186	508	1243	203	1243	19	45
RE240S6†	151	136	182	0.91	1500	6000	1199	508	1256	203	1256	19	56
RE340S6	151	136	186	0.91	1500	6000	1199	559	1256	203	1256	19	52
RE340R6	151	136	197	0.93	3500	6000	1119	559	1256	203	1256	19	52
RE340T6	151	136	201	0.92	4000	6000	1529	508	1586	203	1586	19	57
RE350S6	189	170	227	0.92	3500	6000	1199	610	1256	203	1256	19	65
RE250S6†	189	170	227	0.92	3500	6000	1199	559	1256	203	1256	19	65
RE250T6	189	170	242	0.92	4000	6000	1499	508	1530	203	1530	19	59
RE255T6	208	208	284	0.93	4500	6000	1446	584	1478	203	1478	19	64

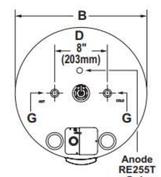
† Models include supplied insulation blanket (2" thick). Dimensions in charts above do not include blanket thickness.
For 10 year models, change suffix "6" to "10".
Uniform Energy Factor and First Hour Rating is based on the latest AHRI directory listings.

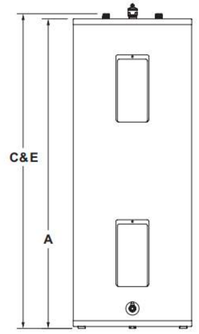
Refer to Element Wattage Minimum & Maximum in chart above

Wattage Limitations for Simultaneous Operation	Voltage 120V	208V	240V	277V	480V	Wattage Limitations for Non-Simultaneous Operation	Voltage 120V	208V	240V	277V	480V
1500W / 1500W	yes	yes	yes	yes	yes	1500W / 1500W	yes	yes	yes	yes	yes
2000W / 2000W	no	yes	yes	yes	yes	2000W / 2000W	yes	yes	yes	yes	yes
2500W / 2500W	no	yes	yes	yes	yes	2500W / 2500W	yes	yes	yes	yes	yes
3000W / 3000W	no	yes	yes	yes	yes	3000W / 3000W	yes	yes	yes	yes	yes
3500W / 3500W	no	yes	yes	no	no	3500W / 3500W	no	yes	yes	no	no
4000W / 4000W	no	yes	yes	yes	yes	4000W / 4000W	no	yes	yes	yes	yes
4500W / 4500W	no	yes	yes	yes	yes	4500W / 4500W	no	yes	yes	yes	yes
5000W / 5000W	no	yes	yes	yes	yes	5000W / 5000W	no	yes	yes	yes	yes
5500W / 5500W	no	yes	yes	no	no	5500W / 5500W	no	yes	yes	no	no
6000W / 6000W	no	no	yes	yes	yes	6000W / 6000W	no	yes	yes	yes	yes

Wattage	Recovery ▲ GPH Temperature Rise °F 60	80	90	100	120	Wattage	Recovery ▲ LPH Temperature Rise °C 34	45	50	56	67
1500W	10	8	7	6	5	1500W	38	30	26	23	19
2000W	14	10	9	8	7	2000W	53	38	34	30	26
2500W	17	13	11	10	9	2500W	64	49	42	38	34
3000W	21	15	14	12	10	3000W	79	57	53	45	38
3500W	24	18	16	14	12	3500W	91	68	61	53	45
4000W	28	21	18	16	14	4000W	106	79	68	61	53
4500W	31	23	21	19	15	4500W	117	87	79	72	57
5000W	34	26	23	21	17	5000W	129	98	87	79	64
5500W	38	29	25	23	19	5500W	144	110	95	87	72
6000W	41	31	28	25	21	6000W	155	117	106	95	79

▲ (GPH based on Non-Simultaneous operation, when Simultaneous operation the GPH will approximately double.)





GENERAL:

Meets NAECA Requirements

All models UL® listed. These heaters are wired inter-locking (Non-Simultaneous, Single Phase) 240V with two 4500W elements, unless otherwise specified. All water connections are 3/4" NPT (19mm). All models certified at 300 PSI test pressure (2068 kPa) and 150 PSI working pressure (1034 kPa.).

Dimensions and specifications subject to change without notice in accordance with our policy of continuous product improvement.

BRADFORD WHITE WATER HEATERS
Built to be the Best

Sales: 800-523-29312
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— BRADFORD WHITE IS —
AMERICAN STRONG

1201-0625

***EQUIVALENT UNIT FROM OTHER BRANDS/MODELS CAN BE USED.

8 HOT WATER HEATER SPECIFICATION
SCALE: NTS

-PLUMBING
BENTONVILLE, VA 22610

DRAWN BY:
CHECKED BY:
REVISIONS:

No.	DESCRIPTION	DATE

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PROJECT NO.:
DATE: 10/20/2025
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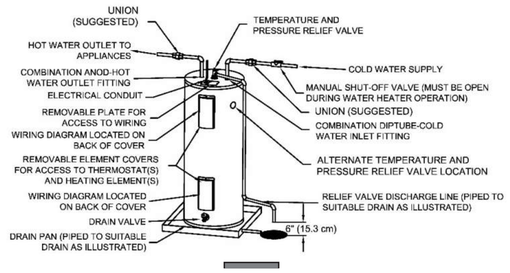
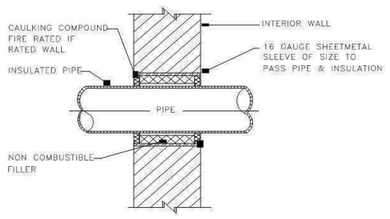


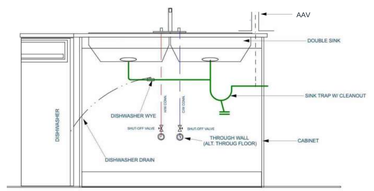
A UPRIGHT HOT WATER HEATER (TYP)

SCALE: NTS



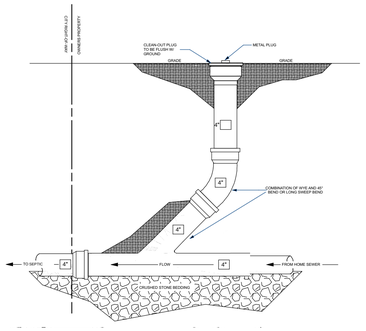
B PIPE PENETRATION THRU WALL DETAIL (TYP)

SCALE: NTS



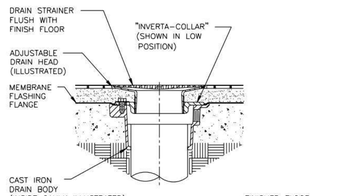
C KITCHEN SINK/DW DETAIL

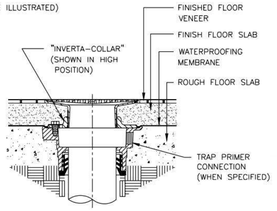
SCALE: NTS

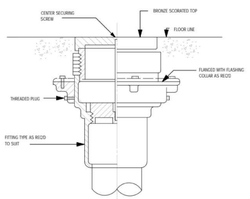


D CLEAN-OUT DETAIL

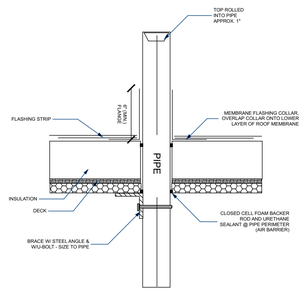
SCALE: NTS





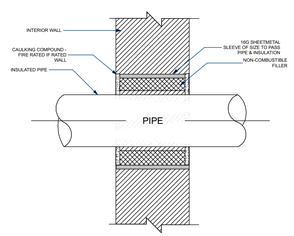


E FLOOR DRAIN INSTALLATION (TYPICAL)



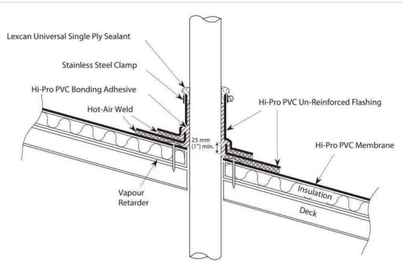
F PLUMBING VENT FLASHING DETAIL (TYP.)

SCALE: NTS



H PIPE PENETRATION THROUGH WALL DETAIL (TYP.)

SCALE: NTS



Comments: Pipe Flashing must extend minimum 200 mm (8") above roof flood level.

REFER TO PLANS FOR VTR PIPE SIZES AND LOCATIONS. LOCATE VTR MINIMUM THREE FEET FROM PROPERTY LINE, OR TEN FEET HORIZONTAL OR THREE FEET VERTICAL ABOVE ANY BUILDING OPENING OR FRESH AIR INTAKE, OR ONE FOOT FROM ANY VERTICAL SURFACE. LOCATE VTR MINIMUM 18" FROM PARAPET, EXPANSION JOINT, EQUIPMENT CURB, ETC. OFFSET IN CEILING SPACE WHERE REQUIRED TO MEET THESE CONDITIONS.

G PIPING THROUGH ROOF (TYP.)

SCALE: NTS

9 PLUMBING - DETAILS

SCALE: NO SCALE

-PLUMBING

BENTONVILLE, VA 22610

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