PLANS DESIGNED TO THE NC
STATE CODE, 2018 EDITION

FRONT ELEVATION

1/4" = 1'-0"

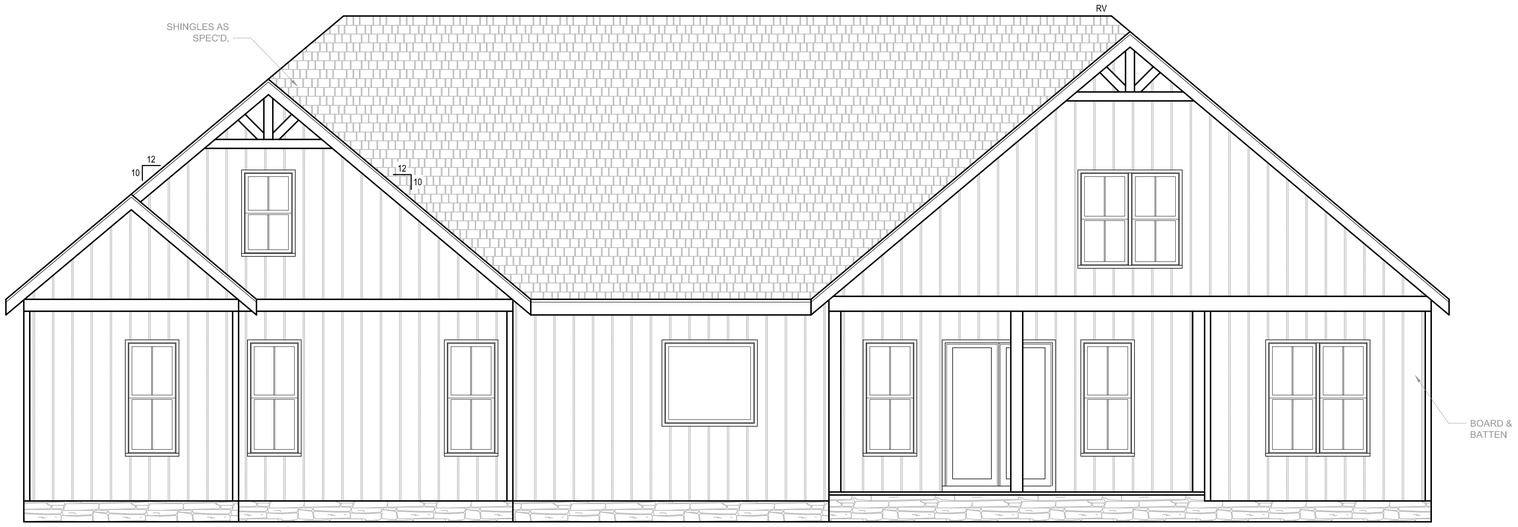
RIGHT ELEVATION

1/4" = 1'-0"

ROBERTS RESIDENCE

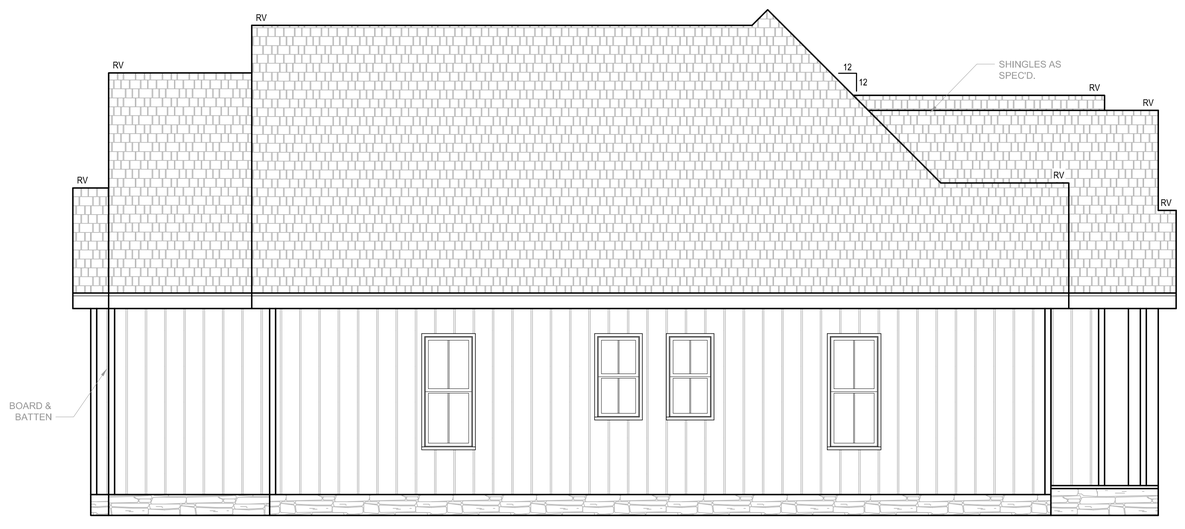
CIDER HOUSE STUDIO, INC.
424 E. MAIN ST.
CLAYTON, NC 27520
919.624.4776

JASMINE ROBERTS



REAR ELEVATION

1/4" = 1'-0"



LEFT ELEVATION

1/4" = 1'-0"

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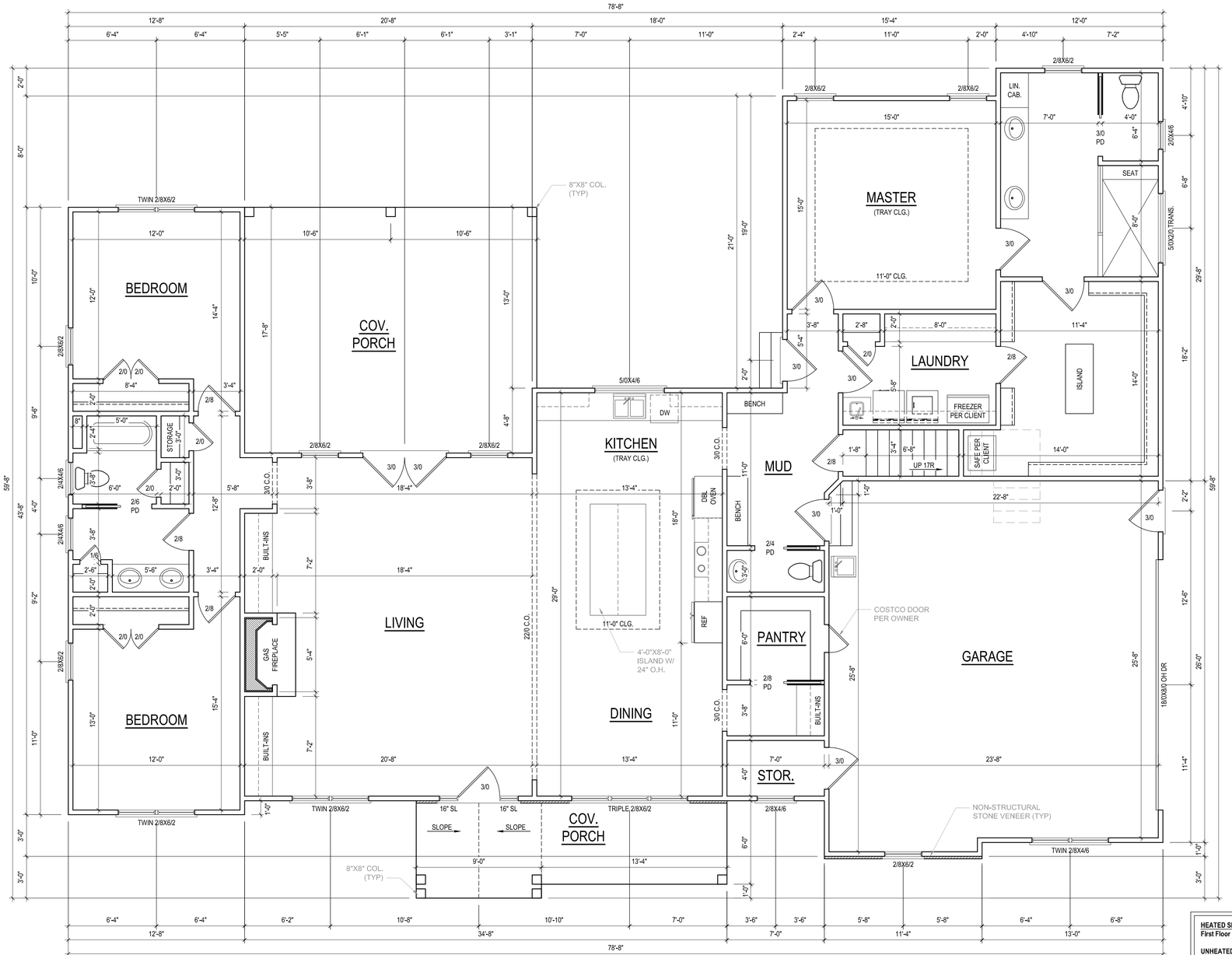

HEATED SF	
First Floor	2399
UNHEATED SF	
Garage & Storage	668
Front Porch	143
Rear Porch	369
Future Rec.	398

FIRST FLOOR PLAN

1/4" = 1'-0" **CEILING HGT. = 10'-0"**

*ALL LUMBER TO BE #2 SPF, UNO
ALL WALLS TO BE 4" THICK

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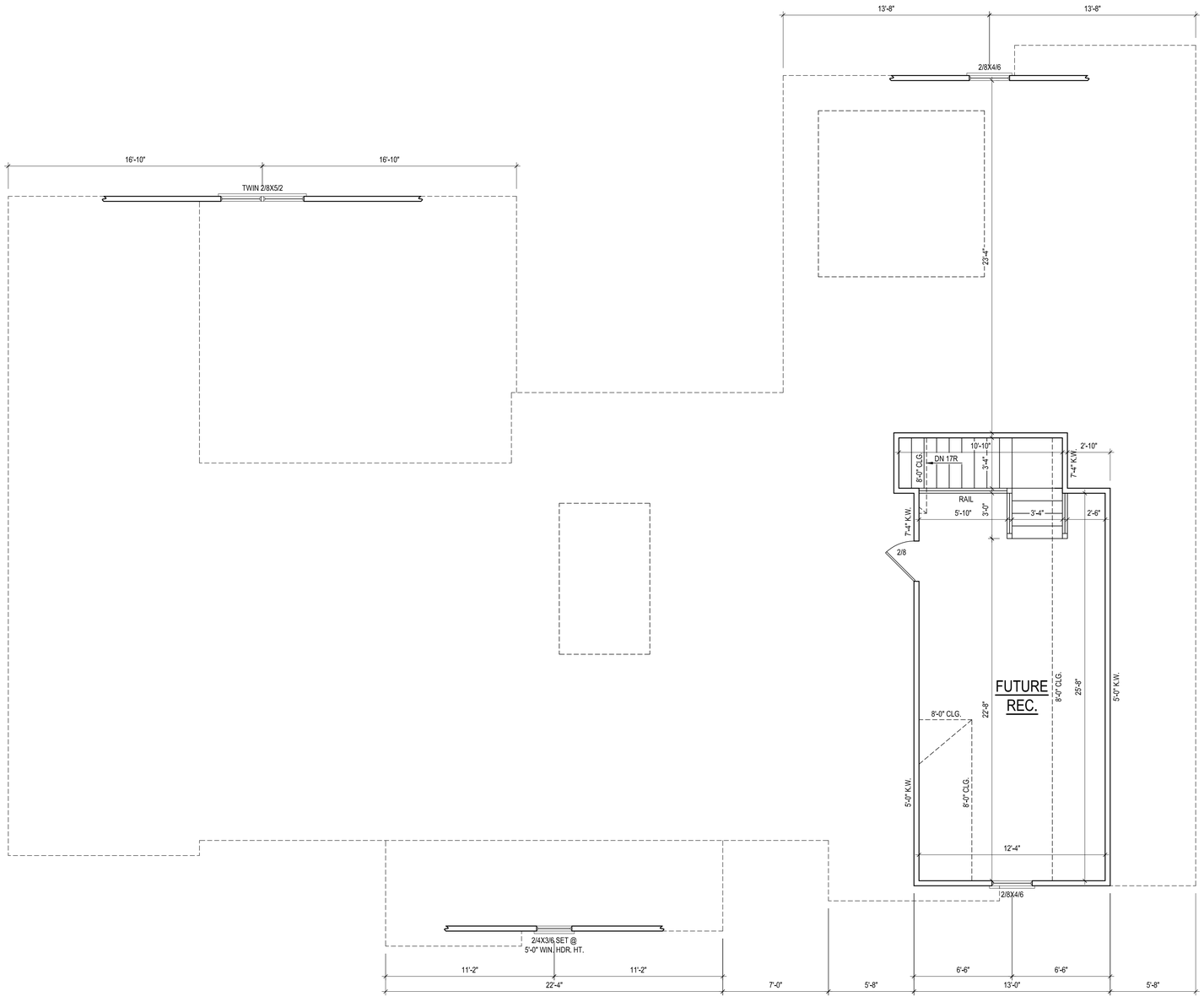

SECOND FLOOR PLAN

1/4" = 1'-0" **CEILING HGT. = 8'-0"**

*ALL LUMBER TO BE #2 SPF, UNO
ALL WALLS TO BE 4" THICK

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CLAYTON, NC 27520
919.624.4776

JASMINE ROBERTS

GENERAL STRUCTURAL SPECIFICATIONS

APPLICABLE DESIGN CODES:

- 2018 NORTH CAROLINA STATE RESIDENTIAL BUILDING CODE
- DESIGN WIND SPEED: Vult: 120 MPH

FOUNDATIONS AND SOIL CONDITIONS

- ALLOWABLE BEARING CAPACITY FOR SHALLOW PAD FOUNDATIONS: 2000 PSF (ASSUMED VALUE BASED ON CODE RECOMMENDATIONS)
- EXCAVATIONS TO BE FREE OF LOOSE SOIL MATERIAL, DEBRI, AND EXCESS WATER.

EXCAVATIONS

- CONTRACTOR SHALL FOLLOW ALL OSHA STANDARDS AND RECOMMENDATIONS FOR EXCAVATIONS. THIS INCLUDES BUT NOT NOT LIMITED TO SLOPES OF CUTS AND SHORING OF EXCAVATIONS.
- CONTRACTOR IS RESPONSIBLE FOR VERIFYING ANY EXISTING UTILITIES ON THE PROJECT SITE PRIOR TO ANY EXCAVATION. THE ENGINEERS OF RECORD SHALL BE NOTIFIED OF ANY CONFLICT DUE TO ANY EXISTING UTILITIES OR CONDITIONS.

CONCRETE

- COMPRESSIVE STRENGTH (F'C) = 3000 PSI
- ENTRAINED AIR = 6% ±1% BY VOLUME
- ALL CONCRETE TO BE DESIGNED AND CONSTRUCTION USING THE SPECIFICATIONS STATED IN ACI 318 (LATEST CODE ADOPTED EDITION).
- MINIMUM CONCRETE COVER AND EDGE DISTANCES TO FOLLOW ACI 318 (LATEST CODE ADOPTED EDITION).
- CONSTRUCTION JOINTS REQUIRE APPROVAL BY THE STRUCTURAL ENGINEER.
- CONCRETE SHALL BE THROUGHLY VIBRATED IN FORMS.
- WHEN MULTIPLE POURS ARE REQUIRED, EXISTING CONCRETE SURFACES SHALL BE ROUGHENED. CONCRETE BONDING AGENT SHALL THEN BE APPLIED TO ALL ROUGHENED SURFACES. BONDING AGENT MUST CONFORM TO ASTM C1059, TYPE II.
- CONCRETE SLABS ON GRADE MUST SATISFY THE FOLLOWING
  - -- MIN. 4" THICK.
  - -- CONTAIN WELDED WIRE FABRIC OR SYNTHETIC MICROFIBERS. MICROFIBERS MUST BE 1.5" LONG, HAVE A MINIMUM COMPRESSION STRESS OF 3400 PSI, AND APPLIED AT A RATE OF 1-15 LBS PER CUBIC YARD OF CONCRETE.
  - -- 6 MIL VAPOR BARRIER BELOW SLAB (CAN BE OMITTED FOR NON-HEATED SPACES)
  - -- PLACED ON 4" OF GRANULAR FILL THAT RESTS ON SOIL ACHIEVING 90% COMPACTION (OR GEOTECH APPROVED FILL)
- CONCRETE MUST CURE FOR A MINIMUM OF 28 DAYS PRIOR TO INSTALLING ANY STRUCTURE UNLESS GIVEN APPROVAL FROM ENGINEER OF RECORD.

REINFORCEMENT (IF REQ'D BY PLANS)

- REINFORCEMENT SHALL BE GRADE 60 AND CONFORM TO ASTM A615. SEE THE "MANUAL OF STEEL PRACTICE", LATEST EDITION, FOR DETAILING, FABRICATION, AND PLACEMENT PRACTICES
- REINFORCEMENT LAP SPLICES SHALL BE CLASS B AS DEFINED BY ACI 318, TYP UNO

MINIMUM LAP SPLICES

REBAR SIZE	MIN. LAP SPLICE (IN)
#4	18"

- MINIMUM CONCRETE COVER FOR REINFORCEMENT (UNO)
  - -- EXPOSED TO EARTH = 2" MIN.
  - -- ALL OTHER = 1.5" MIN.

POST - INSTALLED ANCHORS

- POST INSTALLED ANCHORS INDICATED ON PLANS CAN BE SUBSTITUTED WITH AN ENGINEER APPROVED EQUIVALENT PRODUCT.
- IF ANCHOR NOT LISTED ON PLANS, THE FOLLOWING PRODUCTS CAN BE USED
  - -- ADHESIVE ANCHOR: HILTI HIT-RE 500 V3 EPOXY (USE MANUFACTURED APPROVED ANCHOR WITH EPOXY)
  - -- MECHANICAL ANCHOR: HILTI KWIK BOLT TZ, HILTI KWIK HUS-EZ
- SUBSTITUTIONS FOR ANCHORING PRODUCTS MUST BE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD.
- FOLLOW MANUFACTURE'S GUIDELINES FOR INSTALLATION.
- CONCRETE MUST CURE FOR A MINIMUM OF 7 DAYS PRIOR TO INSTALLING ANY POST - INSTALLED ANCHORS UNLESS GIVEN APPROVAL FROM ENGINEER OF RECORD.

WOOD LUMBER

- SAWN WOOD MEMBERS ARE DESIGNED BASED ON SOUTHERN YELLOW PINE #2 OR SPRUCE PINE #2. (LUMBER MUST MEET OR EXCEED THE PROPERTIES FOR THESE SPECIES)

ENGINEERED LUMBER

- MINIMUM PROPERTIES
  - -- LSL: E = 1300 KSI ; FB = 1900 PSI ; FV = 150 PSI ; FC = 670 PSI
  - -- LVL: E = 2000 KSI ; FB = 2600 PSI ; FV = 285 PSI ; FC = 750 PSI
  - -- PSL: E = 2000 KSI ; FB =2900 PSI ; FV = 290 PSI ; FC = 625 PSI
- MULTI PLY BEAMS TO BE FASTENED TOGETHER PER MANU. RECOMMENDATIONS.

BOLTS AND LAG SCREWS

- BOLTS SHALL CONFORM TO ASTM A307 MINIMUM GRADE TYP UNO.
- BOLTS, WASHERS, AND NUTS SHALL BE GALVANIZED IN ACCORDANCE TO ASTM A153 IF EXPOSED TO ELEMENTS.
- LAG SCREWS SHALL CONFORM TO ANSI/ASME STANDARD B18.2.1-1981.D
- CAST IN PLACE CONCRETE ANCHORS TO BE PROTECTED FROM DAMAGE DURING CONCRETE INSTALL, INCLUDING THREAD CONTACT WITH WET CONCRETE.

ADDITIONAL NOTES

- THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING PLANS PRIOR TO CONSTRUCTION. THE ENGINEER OF RECORD SHOULD BE CONTACTED PRIOR TO CONSTRUCTION IF:
  - -- THE PLANS CONTAINS INACCURATE INFORMATION
  - -- PLANS ARE INCOMPLETE OR LACK NECESSARY INFORMATION FOR CONSTRUCTION
- THE CONTRACTOR SHALL REVIEW ALL DIMENSION. ANY DISCREPANCY SHOULD BE REPORTED TO ENGINEER OF RECORD PRIOR TO CONSTRUCTION OR PROCEEDING.
- FOUNDATION CONTRACTOR SHALL COMPLY WITH ALL OSHA STANDARDS.

WALL BRACING

- CONTINUOUS SHEATHING
  - -- $\frac{7}{16}$" (MIN.) OSB ON ALL EXTERIOR WALLS
  - -- INTERIOR OF PANEL NAILING: 6d NAILS @ 12" O.C.
  - -- PANEL EDGE NAILING: 6d NAILS @ 6" O.C.

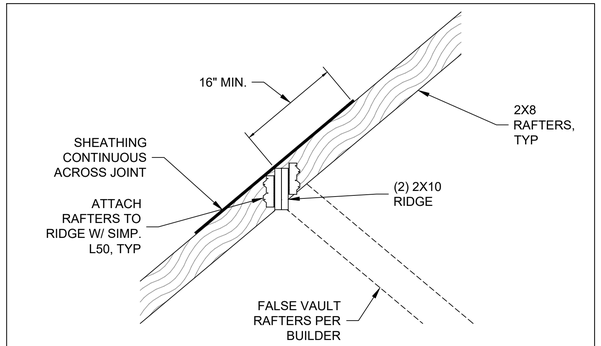
- GB: GYPSUM BOARD BRACING (WHERE INDICATED)
  - -- $\frac{1}{2}$" (MIN.) INSTALLED ON BOTH SIDES OF WALL
  - -- INTERIOR OF PANEL NAILING: 5d NAILS @ 7" O.C.
  - -- PANEL EDGE NAILING: 5d NAILS @ 7" O.C.

- WSP: WOOD STRUCTURAL PANEL BRACING (WHERE INDICATED)
  - -- $\frac{3}{8}$" (MIN.) WSP
  - -- INTERIOR OF PANEL NAILING: 6d NAILS @ 12" O.C. (8d FOR $\frac{7}{16}$" WSP) PANEL EDGE NAILING: 6d NAILS @ 6" O.C. (8d FOR $\frac{7}{16}$" WSP)

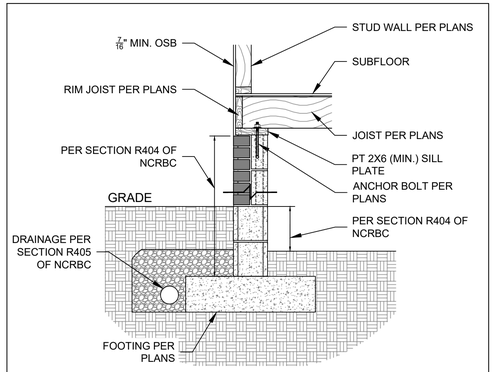
DOCUMENTS AND LIMITATIONS

- THIS DOCUMENT SERVES TO PROVIDE A TOOL FOR THE SPECIFIC NEEDS OF THE PARTICULAR JOB SITE AND INFORMATION GIVEN. ENDURE ENGINEERING PLLC DOES NOT ACCEPT LIABILITY FOR REUSE OR IMPROPER USE OF THIS DOCUMENT UNLESS GIVEN PRIOR WRITTEN AUTHORIZATION.
- THE DESIGNS IN THIS DOCUMENT ARE BASED ON THE STATED ADOPTED CODE TO BE USED AND CURRENT GENERALLY ACCEPTED PROFESSIONAL ENGINEERING PRACTICES. THE STRUCTURAL ENGINEER OF RECORD GIVES NO WARRANTY FOR ANY FINDINGS, DESIGNS, RECOMMENDATIONS, SPECIFICATIONS, OPINION, OR PROFESSIONAL ADVICE.
- ALL FIELD MODIFICATIONS REQUIRE WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER OF RECORD. THE ENGINEER OF RECORD IS NOT RESPONSIBLE FOR ANY WORK THAT HE/SHE DID NOT REVIEW OR WAS NOT COMPLETED IN ACCORDANCE WITH THE SEALED RELEASED PLANS.

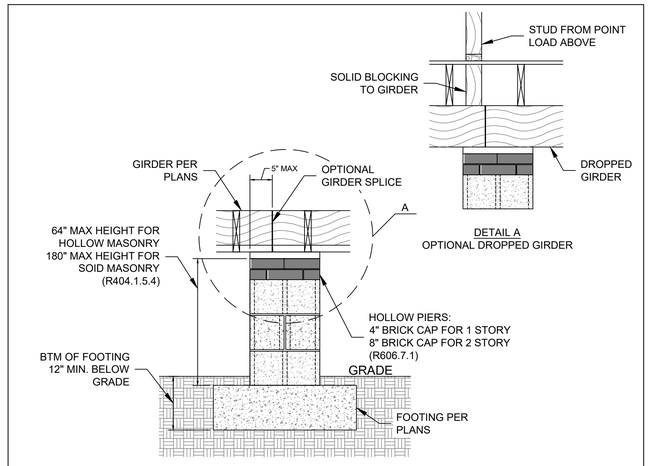
ABBREVIATION	TERM
ABV	ABOVE
AFF	ABOVE FINISHED FLOOR
BE	BOTH ENDS
BF	BOTTOM FLUSH
BTWN	BETWEEN
BW	BOTH WAYS
CLR	CLR
CONC	CONCRETE
DIA	DIAMETER
DBL	DOUBLE
EQ	EQUAL
EA	EACH
FLG	FLANGE
FND	FOUNDATION
HDG	HOT-DIPPED GALVANIZED
MSN	MASONRY
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
PL	PLATE
STD	STANDARD
SQ	SQUARE
THK	THICK
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
XJ	EXTRA JOIST
XS	EXTRA STRONG



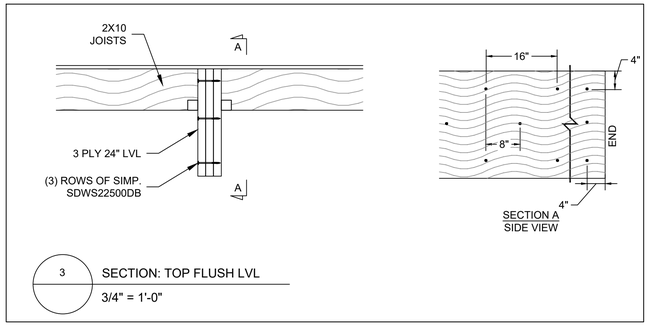
4 SECTION: PORCH VAULT FRAMING
3/4" = 1'-0"



1 SECTION: CRAWLSPACE FND WALL
3/4" = 1'-0"



2 SECTION: 16" SQ. MSN PIER
3/4" = 1'-0"



3 SECTION: TOP FLUSH LVL
3/4" = 1'-0"

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ClaytonHudson@EndureEngineering.com
www.EndureEngineering.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 055064 CLAYTON L. HUDSON
11/12/2024

PROJECT DETAILS
CLIENT: JASMINE ROBERTS
CLIENT EMAIL:
SCOPE OF WORK: STRUCTURAL PLANS
ADDRESS: 6530 NC 27 EAST COASTS, NC 27521
NOTES:

REV. #	DESCRIPTION	BY	DATE
0	STRUCTURAL PLANS AND FOUNDATION	CLH	11/12/2024
1	STRUCTURAL PLANS AND FOUNDATION	CLH	01/03/2025

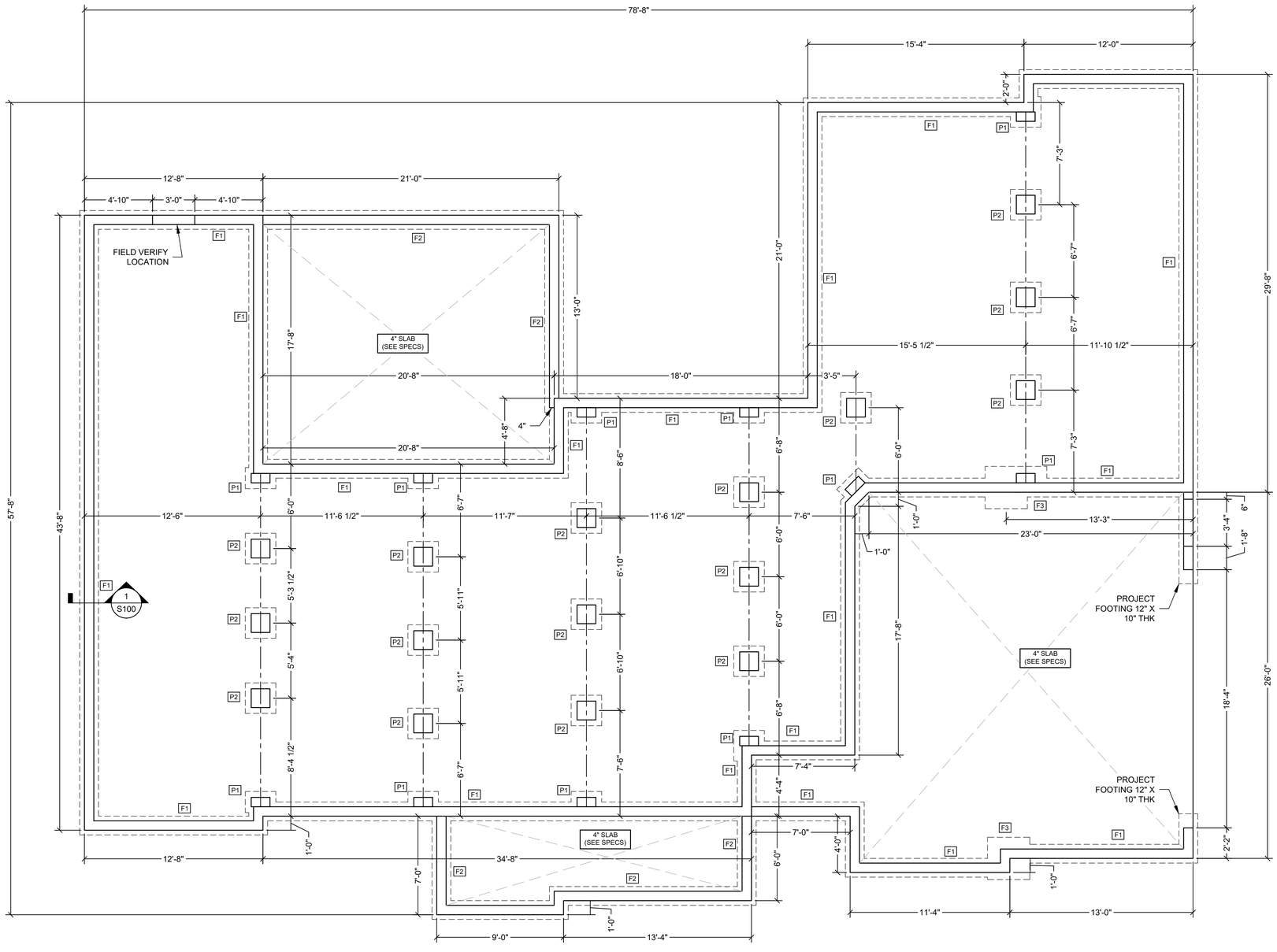
SPECIFICATIONS AND DETAILS
SCALE:

PROJECT #
24-1-1-97
SHEET #
S100

FOUNDATION SCHEDULE	
TAG	DESCRIPTION
F1	8" MSN WALL ON A 18" WIDE BY 10" THK FOOTING
F2	8" MSN WALL ON A 18" WIDE BY 8" THK FOOTING
F3	36" X 36" X 10" THK ENLARGED FOOTING
P1	8" X 16" MSN PIER, PROJECT FOOTING 6" X 10" THK
P2	16" X 16" MSN PIER ON A 30" X 30" X 10" THK FOOTING

NOTES

- 5/8" MIN. Ø ANCHOR BOLTS / 6'-0" O.C. SPACING / 12" MAX FROM CORNERS / 2 BOLT MIN. PER PLATE SECTION INSTALLED IN MIDDLE THIRD OF PLATE. 7" MIN. EMBED (SECTION R403.1.6 OF NCRBC)



FOUNDATION PLAN
SCALE: $\frac{1}{4}$" = 1'-0"

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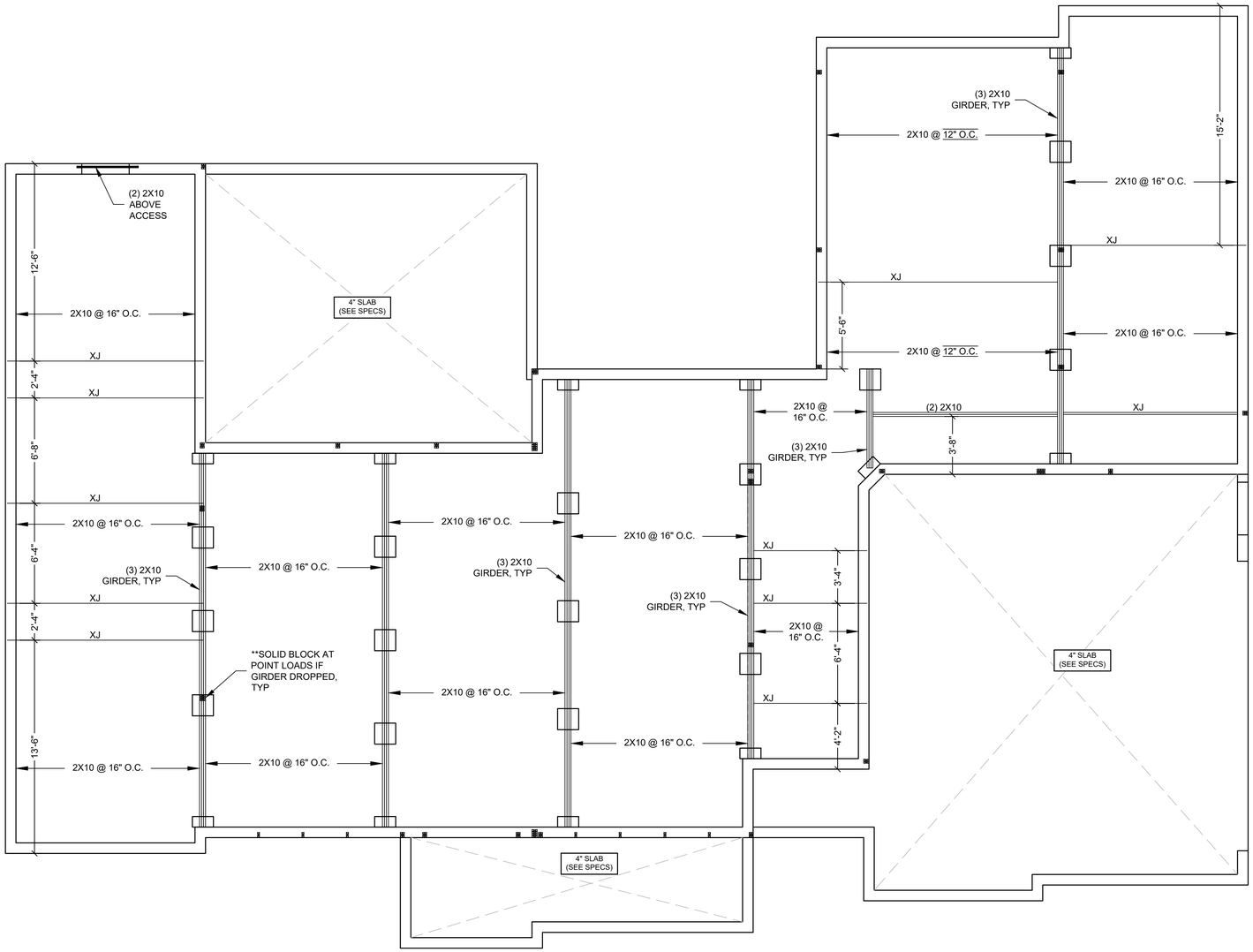
FOUNDATION PLAN
SCALE: 1/4" = 1'-0"

PROJECT #
24-1-1-97

SHEET #
S200



CRAWLSPACE FRAMING PLAN
SCALE: $\frac{1}{4}$" = 1'-0"

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11/12/2024

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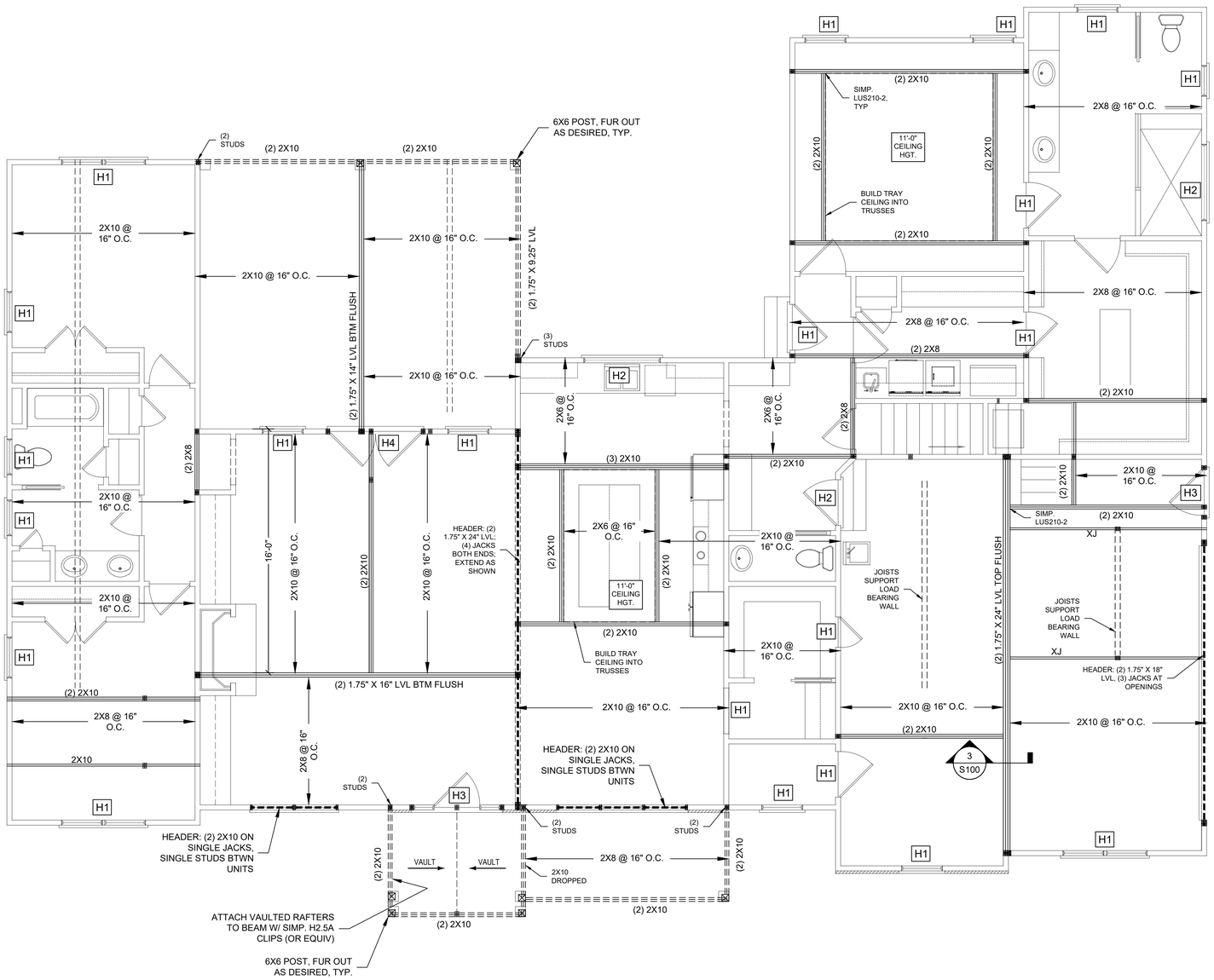
CRAWLSPACE FRAMING PLAN

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

PROJECT #
24-1-1-97

SHEET #
S210



1ST FLOOR WALLS AND CEILING PLAN
SCALE: $\frac{1}{4}$" = 1'-0"

HEADER SCHEDULE

LOAD BEARING HEADERS (LABELED)

TAG	DESCRIPTION
H1	(2) 2X8 ON SINGLE JACKS
H2	(2) 2X10 ON SINGLE JACKS
H3	(2) 2X10 ON DBL JACKS
H4	(2) 1.75" X 9.25" LVL ON DBL JACKS

NON- LOAD BEARING HEADERS:

0" - 38" OPENINGS: SINGLE 2X4 TURNED FLAT
38" TO 72" OPENINGS: DBL 2X4 ON SINGLE JACKS

KING STUDS FOR BRACED WALLS (BOTH SIDES OF OPENING)

# STUDS	MAX OPENING
1	5'-0"
2	8'-0"
3	10'-0"
4	12'-0"
5	15'-0"

NOTES

- BEAMS ARE ASSUMED TO BE SET BOTTOM FLUSH WITH FLOOR SYSTEM UNO
- BEAMS SHALL BE SUPPORTED BY A CENTERED GANGED STUD COLUMN MATCHING OR EXCEEDING THE WIDTH OF THE BEAM, UNO.

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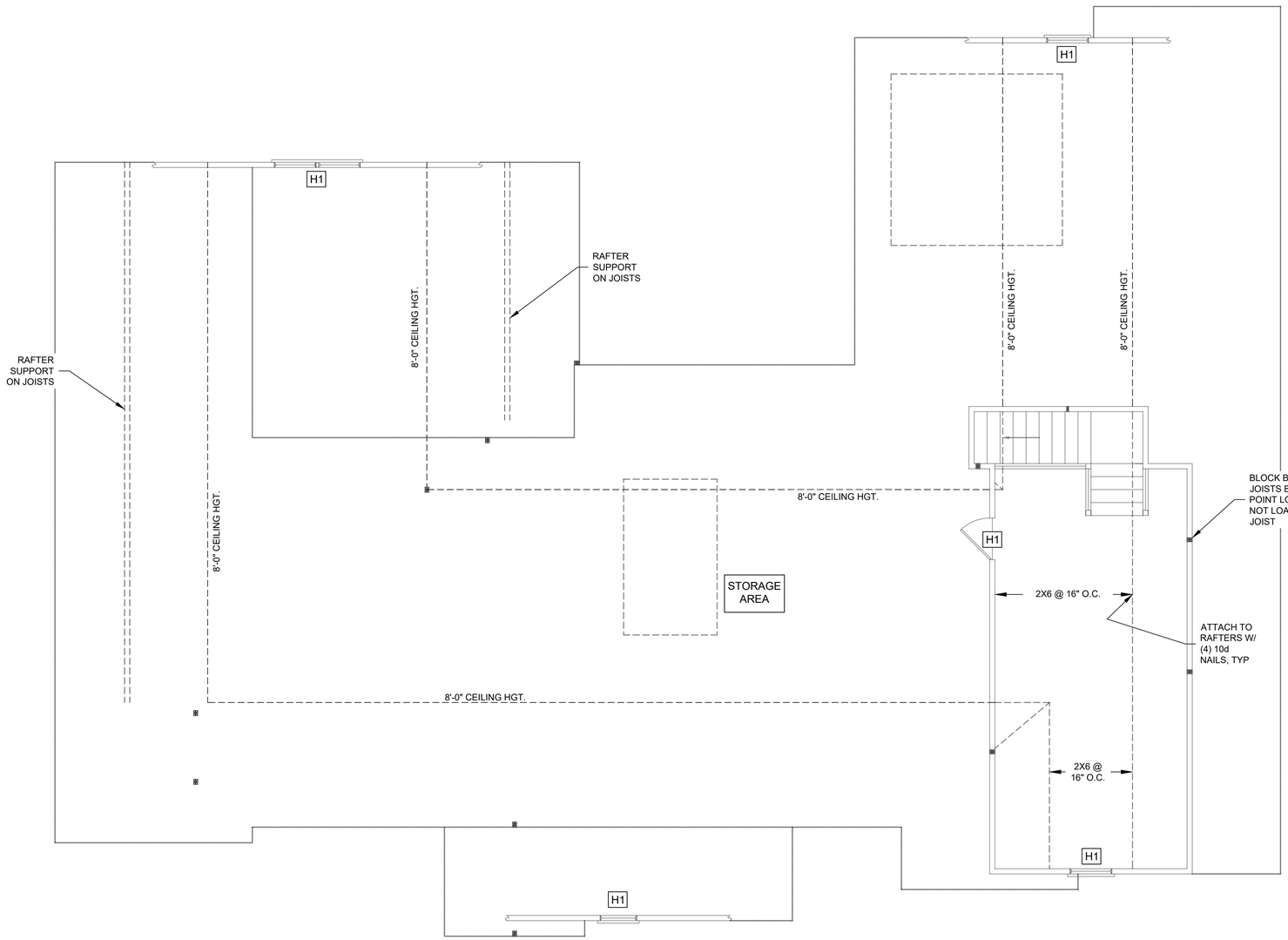
1ST FLOOR WALLS AND CEILING PLAN
SCALE: 1/4" = 1'-0"

PROJECT #
24-1-1-97
SHEET #
S220



2ND FLOOR WALLS AND CEILING PLAN
SCALE: $\frac{1}{4}$" = 1'-0"

HEADER SCHEDULE

LOAD BEARING HEADERS (LABELED)

TAG	DESCRIPTION
H1	(2) 2X8 ON SINGLE JACKS
H2	(2) 2X10 ON SINGLE JACKS
H3	(2) 2X10 ON DBL JACKS
H4	(2) 1.75" X 9.25" LVL ON DBL JACKS

NON- LOAD BEARING HEADERS:

0" - 38" OPENINGS: SINGLE 2X4 TURNED FLAT

38" TO 72" OPENINGS: DBL 2X4 ON SINGLE JACKS

KING STUDS FOR BRACED WALLS (BOTH SIDES OF OPENING)

# STUDS	MAX OPENING
1	5'-0"
2	8'-0"
3	10'-0"
4	12'-0"
5	15'-0"

NOTES

- BEAMS ARE ASSUMED TO BE SET BOTTOM FLUSH WITH FLOOR SYSTEM UNO
- BEAMS SHALL BE SUPPORTED BY A CENTERED GANGED STUD COLUMN MATCHING OR EXCEEDING THE WIDTH OF THE BEAM, UNO.

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NORTH CAROLINA PROFESSIONAL SEAL 055064 ENGINEER CLAYTON L. HUDSON 11/12/2024

PROJECT DETAILS

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CLIENT EMAIL:
SCOPE OF WORK: STRUCTURAL PLANS
ADDRESS: 6530 NC 27 EAST COASTS, NC 27521
NOTES:

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1	STRUCTURAL PLANS AND FOUNDATION	CLH	01/03/2025

2ND FLOOR WALLS AND CEILING PLAN

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

PROJECT #
24-1-1-97

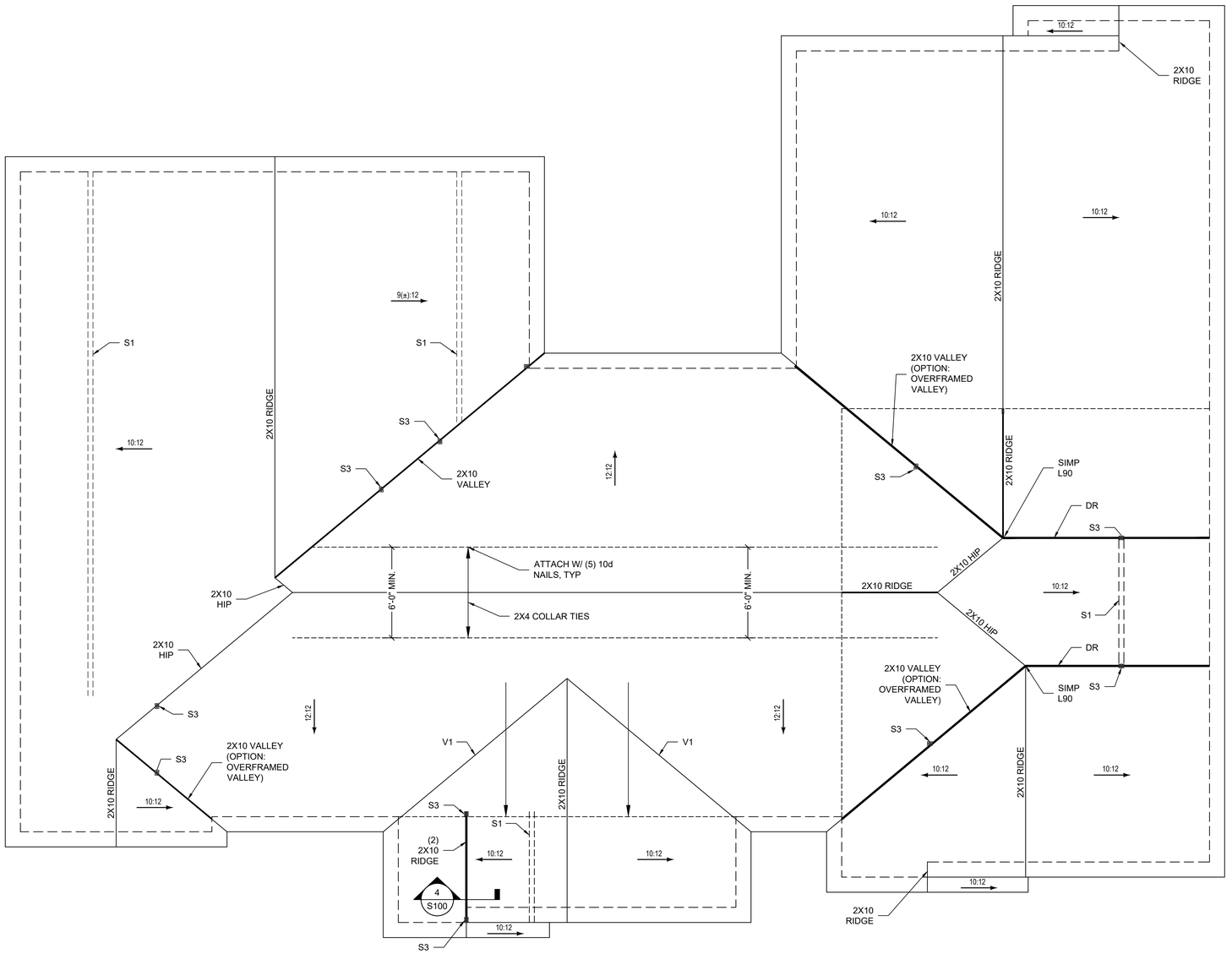
SHEET #
S230

ROOF FRAMING NOTES

- RAFTERS ARE 2X8 @ 16" O.C. UNO
- COLLAR TIES ARE TO BE 2X4 MIN. AND INSTALLED EVERY THIRD RAFTER UNO
- ROOF PITCHES, KNEEWALLS, AND OVERHANGS TO BE VERIFIED WITH ARCH. DRAWINGS

LEGEND

NOTATION	DESCRIPTION
DR	DOUBLE RAFTER
S1	SUPPORT OR SPLICE RAFTERS ON KNEEWALL
S2	SUPPORT OR SPLICE RAFTERS ON BEAM
S3	DBL STUD SUPPORT FOR RAFTER, RIDGE, VALLEY, OR HIP
PC	PITCH CHANGE
V1	OVERFRAMED VALLEY; OPPOSING RAFTER FRAME TO 2X10 SLEEPER OR (2) 2X4'S ON MAIN RAFTERS



ROOF PLAN
SCALE: $\frac{1}{4}$" = 1'-0"

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ROOF FRAMING PLAN
SCALE: 1/4" = 1'-0"

PROJECT #
24-1-1-97
SHEET #
S240