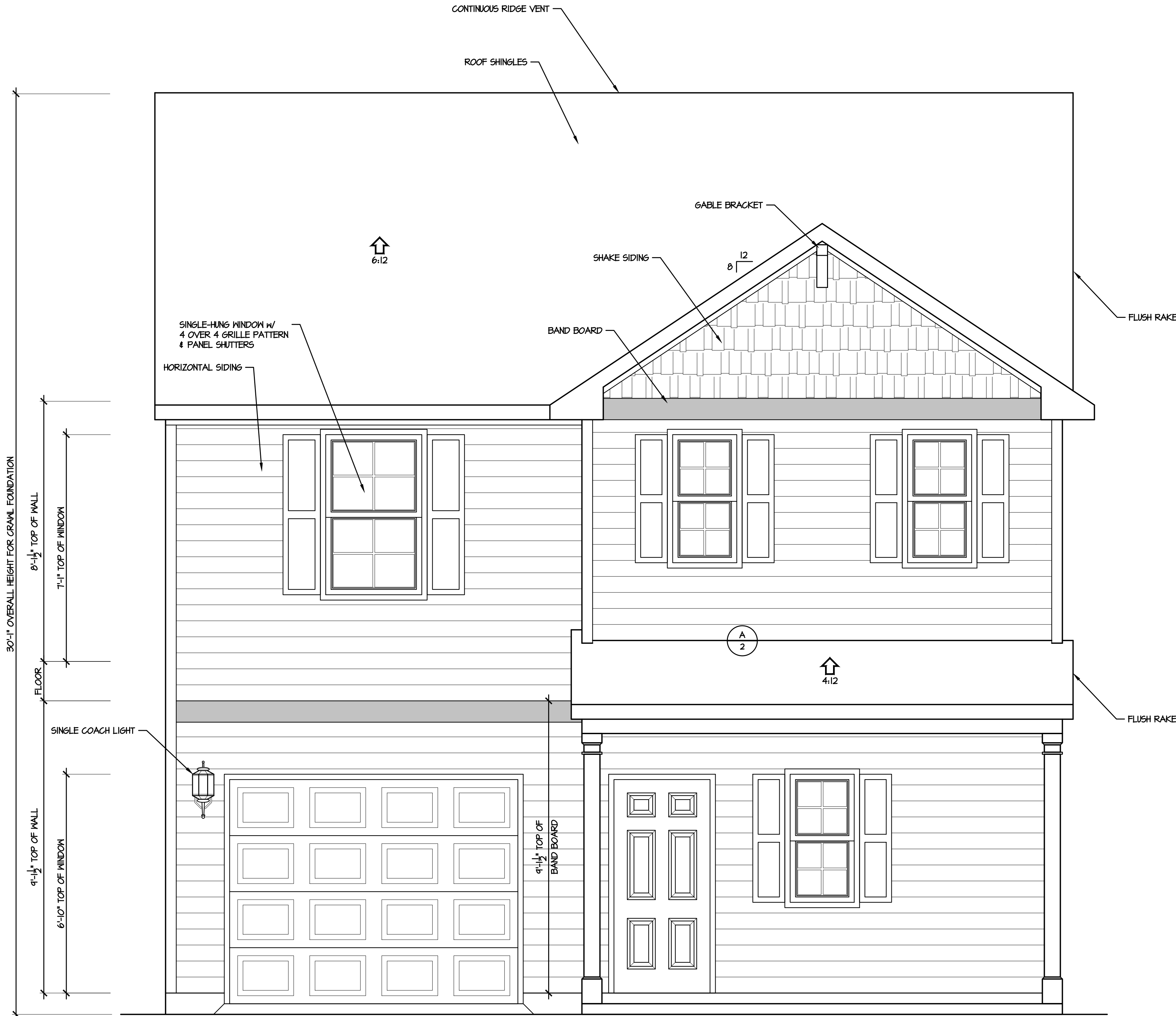


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REDLINE NOTES

① A ELEVATION
1/2" = 1'-0"



LIST OF ABBREVIATIONS

ACCESS	ACCESS TO ATTIC OR CRAWL SPACE	DN	DISH WASHER	PKT	POCKET DOOR	T.C.	TOP CHORD
AFF	ABOVE FLOOR	EQ	EQUAL	PERF	PERFORATED	TOW	TOP OF WALL
ASL	ABOVE SEA LEVEL	FDN	FOUNDATION VENT	PL	PLATE	TRANS	TRANSOM
BD	BOARD	FV	FOUNDATION VENT	PL	PRESSURE TREATED FOR EXPOSURE	TYP	TYPICAL
BDRM	BEDROOM	GL	GLASS (DOOR)	PT	POINT LOAD (SOLID BLOCK)		
BM	BEAM	HB	HOSE BIB	R4S	ROD & SHELF (CLOSETS)	UON	UNLESS OTHERWISE NOTED
CAB	CABINETS / CABINETRY	HDR	DOOR / WINDOW / OPENING HEADER	REF	REFRIGERATOR	V.B.	VAPOR BARRIER
CJ	CONTROL JOINT	HJ	WATER/ELECTRICAL HOOK UPS	REINF	REINFORCEMENT	VAN	VANITY
CL	CENTERLINE	HVAC	HEATING, VENTING & AIR CONDITION	RH	ROOM	W	WIDE
CMU	CONCRETE MASONRY UNIT	KHALL	KNEEWALL	SEG	SEGMENTED	W	WITH
CO	CLEAR OPENING	LVL	LAMINATED VENEER LUMBER	SHWR	SHOWER	WP	WATER PROOF
COL	COLUMN	MANF	MANUFACTURED	SHLV(S)	SHELVES(S)	WV	MAIN WATER VALVE SHUTOFF
CONC	CONCRETE	MAS	MASONRY	SG	SPECIFICATION / SPECIFIED	#SP	NUMBER OF STUD POCKETS @ WINDOW/DOOR JAMB
CSMT	CASEMENT	MM	MICRONAVE	SG	SQUARE		
D/W or W/D DRYER & WASHER (WASHER ON LEFT)		OC	ON CENTER	SS	STAINLESS STEEL		
DIAM	DIAMETER	OH	OVERHANG	SST	SIMPSON STRONG-TIE OR EQUAL		
DH/SH	DOUBLE HUNG / SINGLE HUNG WINDOW	OPNG	OPENING	SUBFLR	SUB-FLOOR		
DN	DOWN	OFT	OPTIONAL	SYP	SOUTHERN YELLOW PINE		
DR	DOOR(S)						

SUMMARY

PROJECT INFO	
NAME OF PROJECT:	LOT 78 DUCKS LANDING / CC1790A
PROJECT ADDRESS:	416 BLACK DUCK LANE
PROPOSED USE:	RESIDENTIAL
CONTACT:	CAVINNESS & CATES, INC
CODE COMPLIANCE:	2018 NC STATE RESIDENTIAL BUILDING CODE
MUNICIPALITY:	HARNETT COUNTY
GAS COMMUNITY:	NO
DESIGNER:	TODD TUCKER, AIBD, CPED 910-366-2636
SPACE DATA:	
FIRST FLOOR:	180 SF
SECOND FLOOR:	100 SF
TOTAL HEATED:	1790 SF
FRONT PORCH:	75 SF
GARAGE:	212 SF
TOTAL UNDER ROOF:	2137 SF
OVERALL BUILDING HEIGHT 30'-1" WITH CRAWL FOUNDATION	
DESIGN LOADS	
ROOF LOADS:	20 PSF LIVE, 20 PSF DEAD
ATTIC LOADS:	20 PSF LIVE, WHERE INDICATED (SEE TRUSS DWGS)
FIRST FLOOR:	40 PSF LIVE, 10 PSF DEAD
UPPER FLOORS:	30 PSF LIVE, 15 PSF DEAD
WIND LOAD:	FOR ASCE 7-10, RISK CATEGORY II, EXPOSURE 'B', 120 mph
ALL GARAGE PORTAL WALLS TO BE FRAMED WITH 2x6 STUDS	

ATTIC VENT CALCULATIONS R206

ATTIC AREA: 1010 S.F.	FRONT PORCH ROOF AREA: 75 SF
RIDGE VENTS*: 41 L.F. / 5 S.F. (55%)	REAR PORCH ROOF AREA: 120 SF
SOFFIT VENT*: 51 L.F. / 4 S.F. (45%)	R206.2 EXCEPTIONS 1 & 2
RATIO: $\frac{9}{1010} = \frac{1}{113}$	

* CALCS BASED ON VENT FREE AREA OF 18 S.I., FOR RIDGE & 9 S.I. FOR SOFFIT (PLF)

FOUNDATION NOTES

1. CRAWL SPACE GRADE MINIMUM 12" BELOW GIRDER / 18" BELOW JOISTS
2. PROVIDE VAPOR BARRIER FOR CRAWL SPACE
3. FIELD LOCATE CRAWL SPACE ACCESS, SIZED PER CODE
4. USE 16"x8" VENT WITH MINIMUM 60" NET FREE AREA (AirVent, INC OR EQUAL)

FOUNDATION VENT CALCULATIONS R408

CRAWL SPACE AREA: 180 SF
1 SQUARE FOOT OF VENT PER 1500 SF OF FOUNDATION AREA*
INSTALL VENT WITH MINIMUM OF 60 SQUARE INCHES NET FREE AREA
$180 / 1500 = 0.52$ TOTAL SQUARE FEET OR MINIMUM 2 VENTS PLUS 4 VENTS AT CORNERS
* CALCS BASED ON USING A VAPOR RETARDER & INSTALLING A VENT WITHIN 36" OF EA CORNER

ENERGY COMPLIANCE (CHAPTER ELEVEN)

CLIMATE ZONE:	4A HARNETT COUNTY
CHAPTER 11 ENERGY EFFICIENCY COMPLIANCE (CHECK ONE)	
☒ PRESCRIPTIVE CODE	
☐ PERFORMANCE	
CEILING INSULATION:	R38
WALL INSULATION:	R15 FOR ZONE 3 / R19 FOR ZONE 4
FLOOR INSULATION:	R19 FOR CRAWL SPACE / R10 FOR SLAB

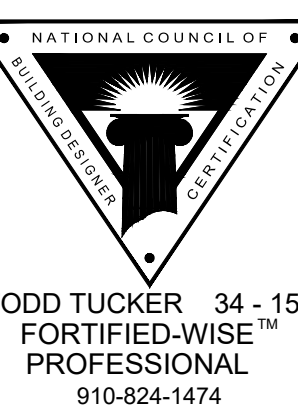
LIST OF SYMBOLS

SECTION SHEET	SECTION MARK	↑ 12:12	SLOPE UP PITCH
SECTION SHEET	DETAIL MARK	[Hatched Box]	EARTH
[Circle with X]	TITLE MARK	[Wavy Box]	INSULATION
[Diagonal Lines Box]	INTERIOR BEARING WALL	[Solid Grey Box]	STANDARD WALL



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CC1790

FRONT ELEVATION / DATA

PLAN NUMBER:
CC1790

DATE:
MAY 2025

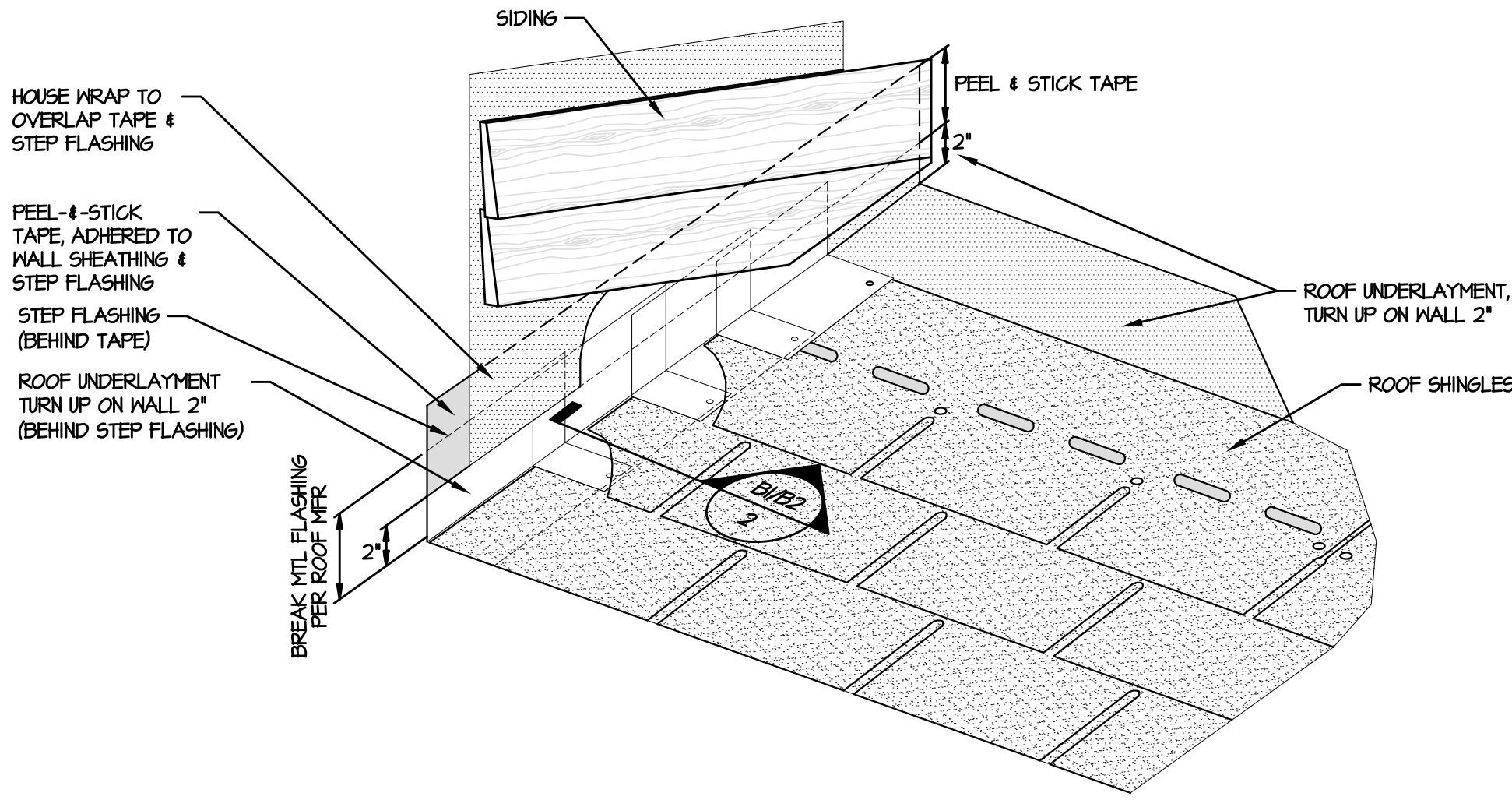
REVISIONS:	

SHEET NO:
1
LOT DU78

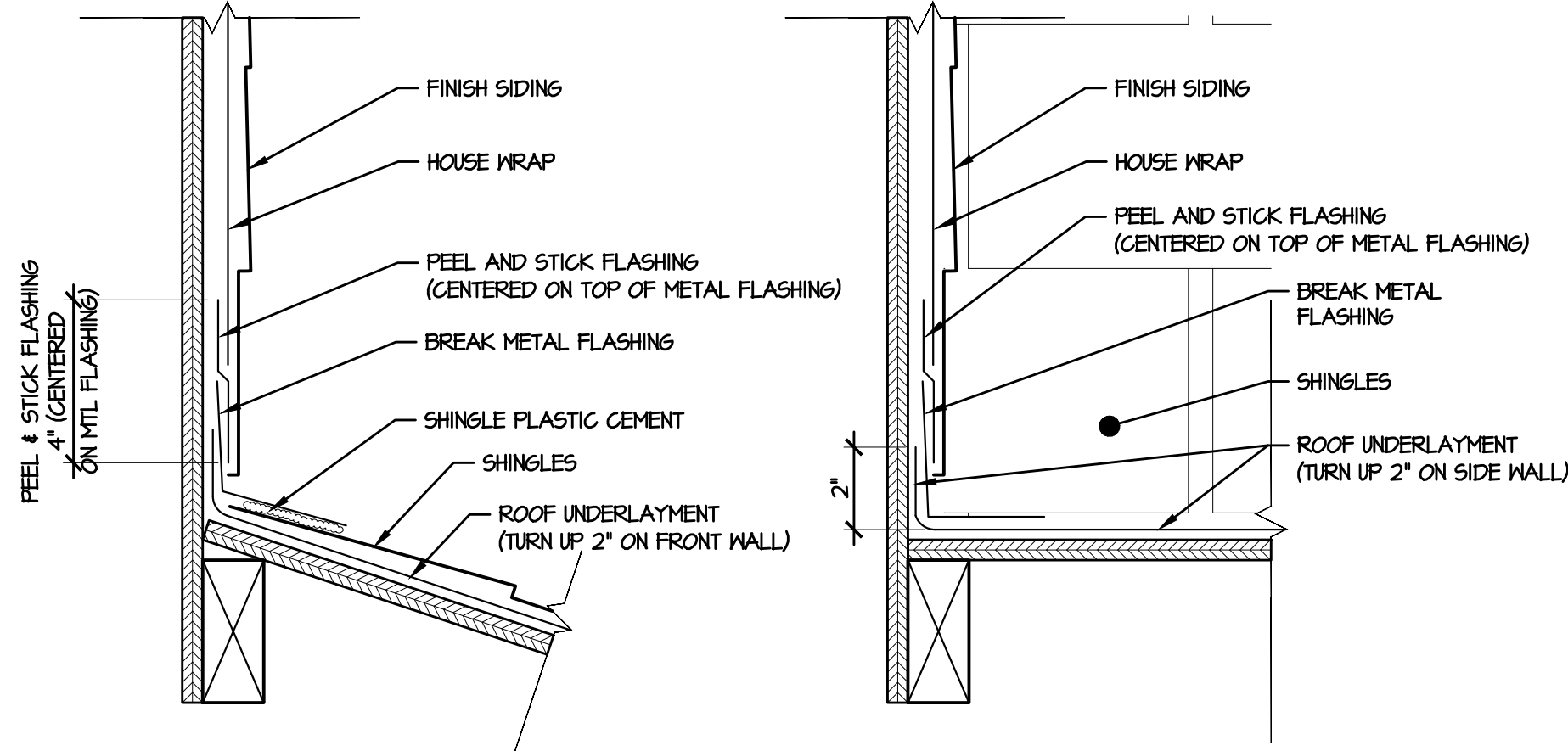
CONSTRUCTION SET 7-19-2025

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REDLINE NOTES



A ROOF-TO-WALL FLASHING DETAIL
NOT TO SCALE (FOR ALL ROOF/WALL TRANSITIONS)

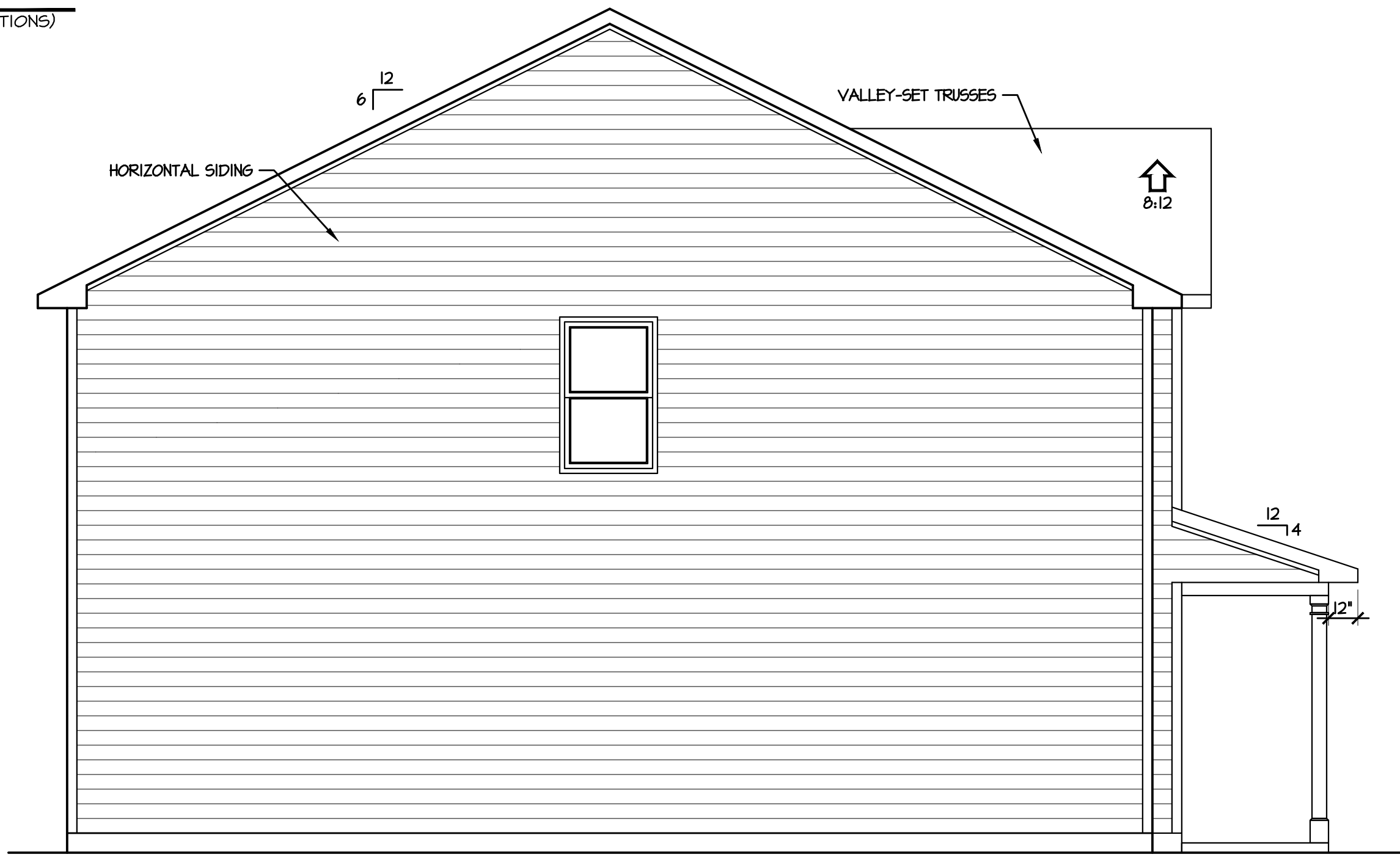


B1 FRONT WALL FLASHING
3" = 1'-0" (SECTION)

B2 SIDE WALL FLASHING
3" = 1'-0" (SECTION)



2 RIGHT SIDE ELEVATION
1/4" = 1'-0"



1 LEFT SIDE ELEVATION
1/4" = 1'-0"

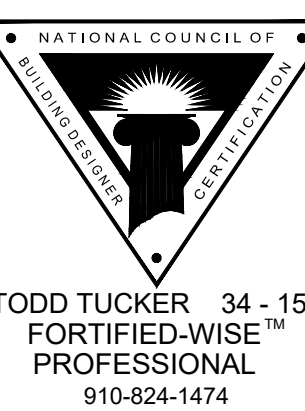
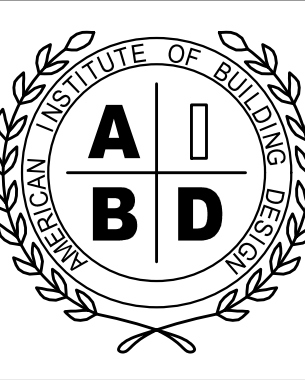


3 REAR ELEVATION
1/4" = 1'-0"



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Fax: 910-481-0585



PLAN NAME/NUMBER:
CC1790

SHEET TITLE:
ELEVATIONS / ROOF DETAILS

PLAN NO:
CC1790

DATE:
MAY 2025

REVISIONS:	

SHEET NO:

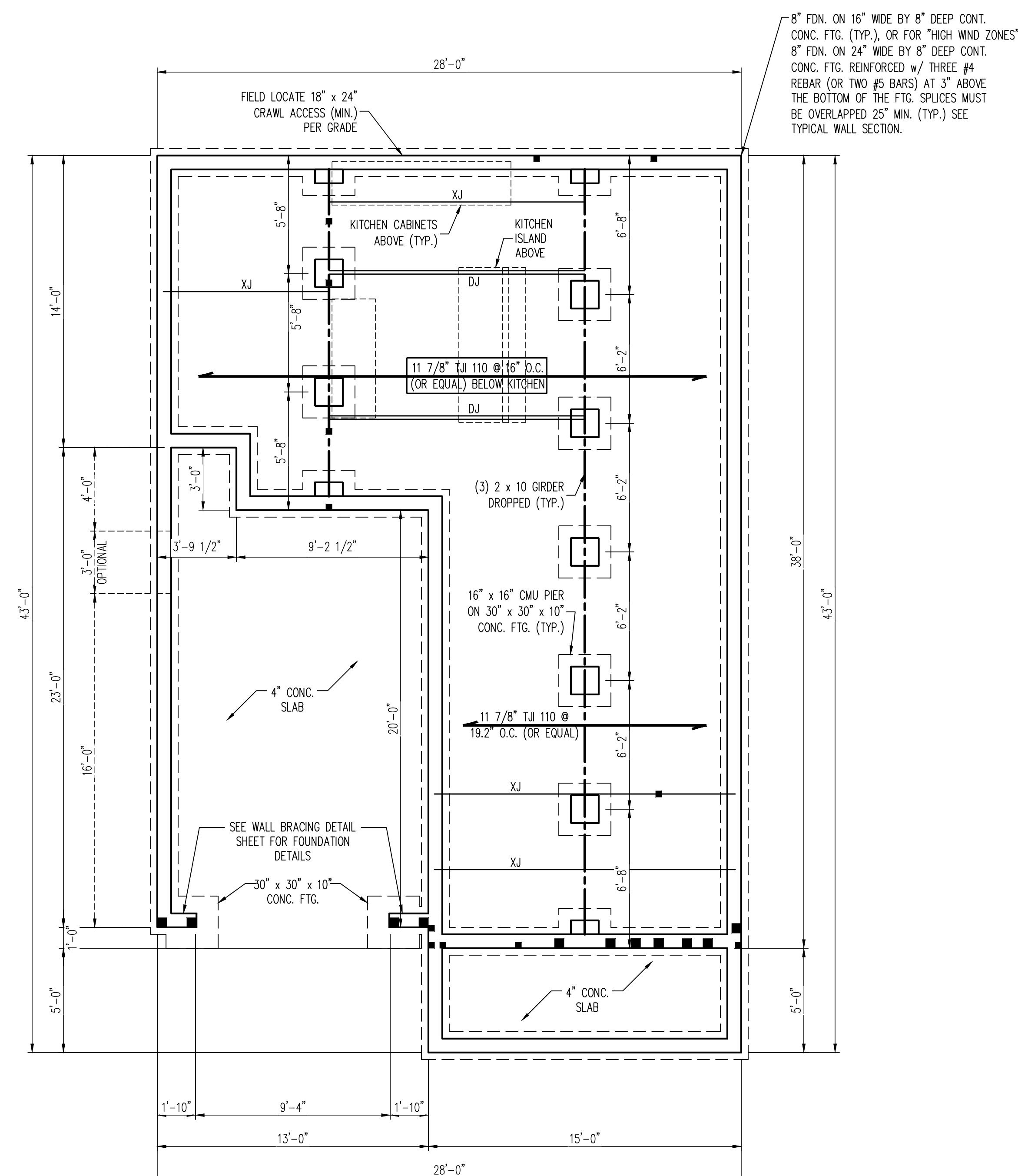
2
LOT DU78



NOTE:
BCI 4500s-1.8 I-JOISTS MAY
BE USED IN LIEU OF TJI 110
JOISTS AT THE DEPTH AND
SPACING NOTED ON THE PLAN.

- 120 MPH ULTIMATE DESIGN WIND SPEED**
NOTES FOR LESS THAN
30' MEAN ROOF HEIGHT:
1. ENGINEER'S SEAL APPLIES ONLY TO STRUCTURAL COMPONENTS. ENGINEER'S SEAL DOES NOT CERTIFY ON THE ACCURACY OF THE ARCHITECTURAL/MECHANICAL LAYOUT INCLUDING ROOF SYSTEM.
 2. STRUCTURAL DESIGN PER NORTH CAROLINA RESIDENTIAL CODE, 2018 EDITION.
 3. INSTALL 1/2" ANCHOR BOLTS 6'-0" O.C. AND WITHIN 6" FROM END OF EACH CORNER. ANCHOR BOLTS MUST EXTEND A MINIMUM OF 7" INTO MASONRY OR CONCRETE. LOCATE BOLT WITHIN MEAN ROOF HEIGHT OF THREE PLATE WIDTH.
 4. MEAN ROOF HEIGHT IS LESS THAN 30 FEET.
 5. EXTERIOR WALLS DESIGNED FOR 120 MPH WINDS.
 6. WALL CLADDING DESIGNED FOR +15.5 PSF AND -20 PSF (+/- INDICATE POSITIVE / NEGATIVE PRESSURE (TYP)).
 7. ROOF CLADDING DESIGNED FOR +14.2 PSF AND -18 PSF FOR ROOF PITCHES 7/12 TO 12/12 AND +10 PSF AND -36 PSF FOR ROOF PITCHES 2.25/12 TO 7/12.
 8. INSTALL 7/16" OSB SHEATHING ON ALL EXTERIOR WALLS OF ALL STORIES IN ACCORDANCE WITH SECTION 906.10.3 OF THE NCRC, 2018 EDITION.
 9. WALL BRACING NOTES AND DETAILS SHEET FOR MORE INFORMATION.
 10. ENERGY EFFICIENCY COMPLIANCE AND INSULATION VALUES OF THE BUILDING TO BE IN ACCORDANCE WITH CHAPTER 11 OF THE NCRC, 2018 EDITION.
 11. REFER TO NOTES AND DETAILS SHEET FOR ADDITIONAL STRUCTURAL INFORMATION.

J.S. THOMPSON
ENGINEERING, INC.
535 EAST SIX FORKS ROAD, SUITE 180 RALEIGH, NC 27609
PHONE: (919) 789-9919 FAX: (919) 789-9921
N.C. LICENSE NO.: C1733



- 150 MPH ULTIMATE DESIGN WIND SPEED**
NOTES FOR LESS THAN
30" MEAN ROOF HEIGHT:
1. ENGINEER'S SEAL APPLIES ONLY TO STRUCTURAL COMPONENTS. ENGINEER'S SEAL DOES NOT CERTIFY DIMENSIONAL ACCURACY OR ARCHITECTURAL LAYOUT INCLUDING ROOF SYSTEM
 2. STRUCTURAL DESIGN PER NORTH CAROLINA RESIDENTIAL CODE, 2018 EDITION WITH SPECIAL CONSIDERATION TO CHAPTER 45 ("HIGH WIND ZONES" FOR 150 MPH WINDS).
 3. BUILDER IS TO PROVIDE FRAMING CONNECTIONS AS REQUIRED BY CHAPTER 45 ("HIGH WIND ZONES") FOR 150 MPH WINDS PER NORTH CAROLINA RESIDENTIAL CODE, 2018 EDITION.
 4. FOUNDATION ANCHORAGE TO COMPLY WITH SECTION 4504 OF THE NORTH CAROLINA RESIDENTIAL CODE, 2018 EDITION.
 5. MEAN ROOF HEIGHT IS LESS THAN 30 FEET.
 6. $+3.2$ PSF IS TO BE DESIGNED FOR $+4.3$ PSF AND -3.2 PSF (+/- INDICATE POSITIVE / NEGATIVE PRESSURE) TP.
 7. ROOF CLADDING DESIGNED FOR $+2.2$ PSF AND -28 PSF (SEE ROOF PITCHES 7/12 TO 12/12 AND $+14$ PSF AND -57 PSF FOR ROOF PITCHED 2/12/12 TO 7/12).
 8. 7/8" OSG SHEATHING IS REQUIRED ON ALL EXTERIOR WALLS.
 9. WALLS TO BE BRACED IN ACCORDANCE WITH SECTION R602.10 OF THE NORTH CAROLINA RESIDENTIAL CODE, 2018 EDITION AND AS NOTED ON PLANS.
 10. ENERGY EFFICIENCY COMPLIANCE AND INSULATION VALUE OF THE BUILDING TO BE IN ACCORDANCE WITH CHAPTER 15 OF THE NRC, 2018 EDITION.

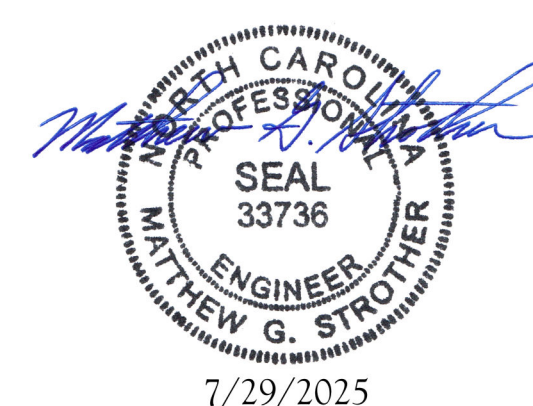
- STRUCTURAL NOTES:**

 1. ALL FRAMING LUMBER TO BE #2 SPF (UNO). ALL TREATED LUMBER TO BE #2 SYP (UNO).
 2. INSTALL AN EXTRA OR DOUBLE JOIST UNDER WALLS PARALLEL TO FLOOR JOISTS WHERE NOTED ON THE PLANS.
 3. SQUARES DENOTE POINT LOADS WHICH REQUIRE SOIL BLOCKING TO GIRDER OR FOUNDATION.
 4. SHARED PIERS TO BE FILLED SOLID.
 5. INSTALL LADDER W/RE @ 16" O.C. TO SECURE MULTIPLE WYTHE FOUNDATION WALLS TOGETHER.
 6. REFER TO NOTES AND DETAIL SHEETS FOR ADDITIONAL STRUCTURAL INFORMATION.

LEGEND	
CONT	CONTINUOUS
XJ	EXTRA JOIST
DJ	DOUBLE JOIST
TJ	TRIPLE JOIST
EA	EACH
FDN	FOUNDATION
FTG	FOOTING
OC	ON CENTER
SPF	SPRUCE PINE FIR
SYP	SOUTHERN YELLOW PINE
TRTD	PRESSURE TREATED
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE

ENGINEERED BY: JAG

S-1a
CRAWL
FOUNDATION PLAN



J.S. THOMPSON
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333 EAST SIX FORKS ROAD, SUITE 180 RALEIGH, NC 27609
PHONE: (919) 7899919 FAX: (919) 7899921
N.C. LICENSE NO.: C-1733

CC 1790
CAVINESS AND CATES

DATE: JULY 29, 2025

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

DRAWN BY: TT

ENGINEERED BY: JAG

S-3
ATTIC FLOOR
FRAMING PLAN

BRACED WALL DESIGN NOTES:

1. BRACED WALL DESIGN PER SECTION R602.10.5 "WALL BRACING BY ENGINEERED DESIGN" OF THE NCRC 2018 EDITION USING BRACING MATERIALS AND METHODS LISTED IN TABLE R602.10.1 ALONG WITH ALTERNATIVE MATERIALS AND METHODS THAT COMPLY WITH ACCEPTED ENGINEERING PRACTICE. BRACED WALL DESIGN IS NOT PRESCRIPTIVE.
2. SHEATH ALL EXTERIOR WALLS w/ 7/16" OSB TO PROVIDE CS-WSP WALL BRACING THAT WILL BRACE THE STRUCTURE FOR ALL LATERAL LOADS AS REQUIRED BY THE NCRC 2018 EDITION.
3. CS-WSP REFERS TO "CONTINUOUSLY SHEATHED WOOD STRUCTURAL PANELS." CONTRACTOR IS TO INSTALL 7/16" OSB ON ALL EXTERIOR WALLS ATTACHED w/ 8d NAILS SPACED 6" O.C. ALONG PANEL EDGES AND 12" O.C. IN THE FIELD.
4. GB REFERS TO "GYPSUM BOARD." CONTRACTOR IS TO INSTALL 1/2" (MIN.) GYPSUM BOARD ON BOTH SIDES OF WALL WHERE NOTED ON THE PLANS ATTACHED WITH 1 1/4" LONG #6 SCREWS OR 1 5/8" LONG 5d COOLER NAILS SPACED 7" O.C. ALONG PANEL EDGES AND IN THE FIELD.
5. BRACED WALL DESIGN APPLIED IN WIND ZONES UP TO 130 MPH. FOR HIGH WIND ZONES, BRACED WALLS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH CHAPTER 45 OF THE NCRC 2018 EDITION.
6. SEE NOTES AND DETAIL SHEETS FOR ADDITIONAL BRACED WALL INFORMATION.

STRUCTURAL NOTES:

1. ALL FRAMING LUMBER TO BE #2 SPF (UNO).
2. ALL LOAD BEARING HEADERS TO BE (2) 2 x 6 (UNO).
3. WINDOW AND DOOR HEADERS TO BE SUPPORTED w/ (1) JACK STUD AND (1) KING STUD EA. END (UNO.). SEE TABLE R602.7.5 FOR ADDITIONAL KING STUD REQUIREMENTS.
4. SQUARES DENOTE POINT LOADS WHICH REQUIRE SOLID BLOCKING TO GIRDER OR FOUNDATION. SQUARES TO BE (2) STUDS (UNO.)
5. FOR HIGH WIND ZONES, ALL EXTERIOR WALLS TO BE SHEATHED WITH 7/16" OSB SHEATHING WITH JOINTS BLOCKED AND SECURED WITH 8d NAILS AT 3" O.C. ALONG EDGES AND 6" O.C. IN THE FIELD.
6. FOR HIGH WIND ZONES, SECURE ALL EXTERIOR WALL SHEATHING PANELS TO DOUBLE TOP PLATES, BANDS, JOISTS, AND GIRDERS WITH (2) ROWS OF 8d NAILS STAGGERED AT 3" O.C. PANELS SHALL EXTEND 12" BEYOND CONSTRUCTION JOINTS AND SHALL OVERLAP ORDERS AND DOUBLE SILL PLATES THEIR FULL DEPTH.
7. SPECIFIED SIMPSON STRONG-TIE PRODUCTS MAY BE SUBSTITUTED WITH THOSE MANUFACTURED BY USP STRUCTURAL CONNECTORS PROVIDED THAT THE LOAD CAPACITY AND FUNCTION IS EQUIVALENT.
8. REFER TO NOTES AND DETAIL SHEETS FOR ADDITIONAL STRUCTURAL INFORMATION.

TABLE R602.7.5
MINIMUM NUMBER OF FULL HEIGHT KING STUDS AT EACH END OF HEADERS IN EXTERIOR WALLS

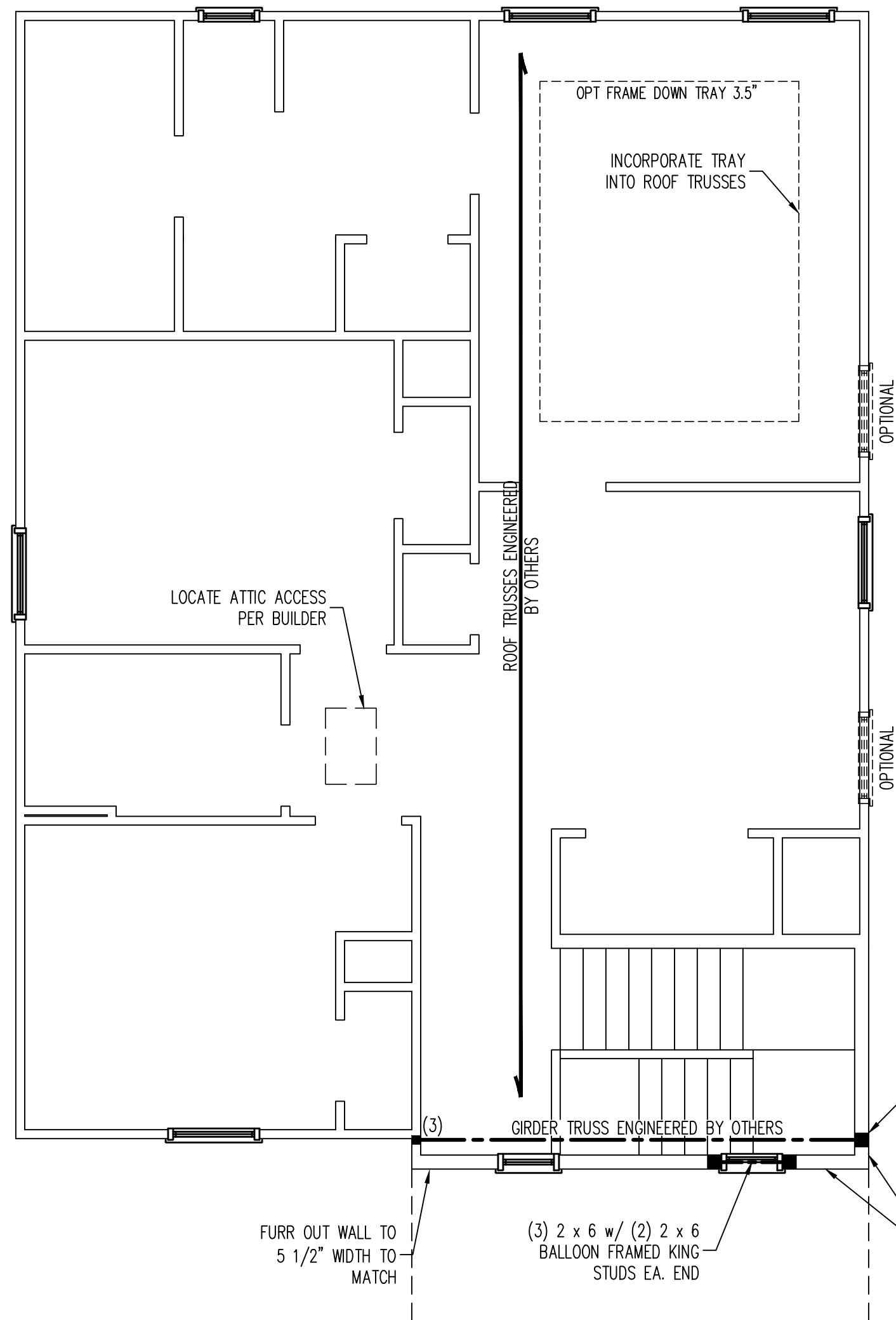
HEADER SPAN (FEET)	MINIMUM NUMBER OF FULL HEIGHT STUDS (KINGS)
UP TO 3'	2
> 3' TO 6'	3
> 6' TO 9'	4
> 9' TO 12'	5
> 12' TO 15'	6

TABLE R602.7.5
MINIMUM NUMBER OF FULL HEIGHT KING STUDS AT EACH END OF HEADERS IN EXTERIOR WALLS

HEADER SPAN (FEET)	MINIMUM NUMBER OF FULL HEIGHT STUDS (KINGS)
UP TO 3'	1
> 3' TO 6'	2
> 6' TO 9'	3
> 9' TO 12'	4
> 12' TO 15'	5

LEGEND

CONT	CONTINUOUS
XJ	EXTRA JOIST
DJ	DOUBLE JOIST
TJ	TRIPLE JOIST
EA	EACH
()	NUMBER OF STUDS
DSP	DOUBLE STUD POCKET
TSP	TRIPLE STUD POCKET
OC	ON CENTER
SPF	SPRUCE PINE FIR
SYP	SOUTHERN YELLOW PINE
TRTD	PRESSURE TREATED
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE



OPTIONAL ELEVATION

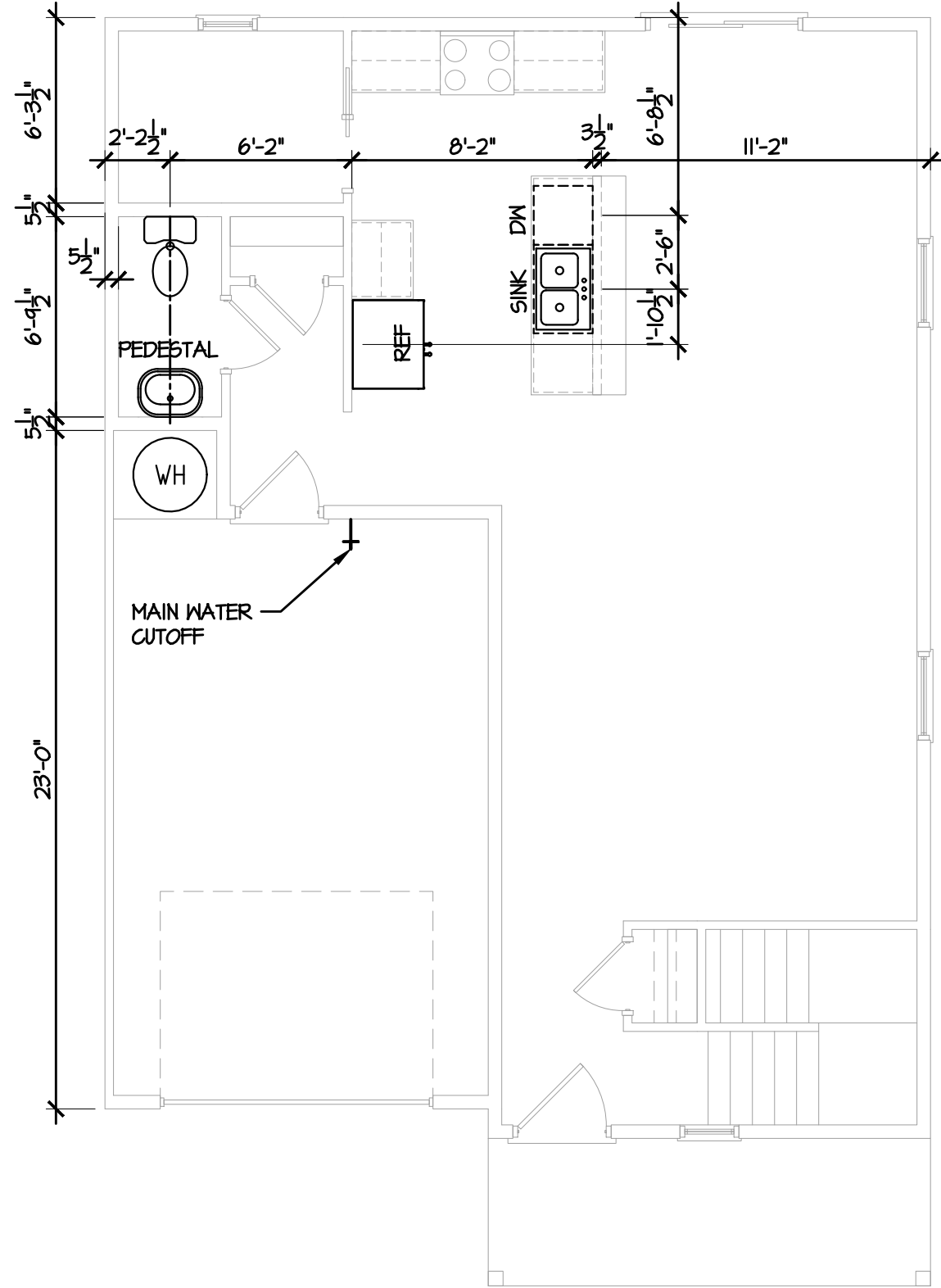
(3) 2 x 6 w/ (2) 2 x 6
BALLOON FRAMED KING
STUDS EA. END

(4) 2 x 6 BALLOON
FRAMED KING STUDS

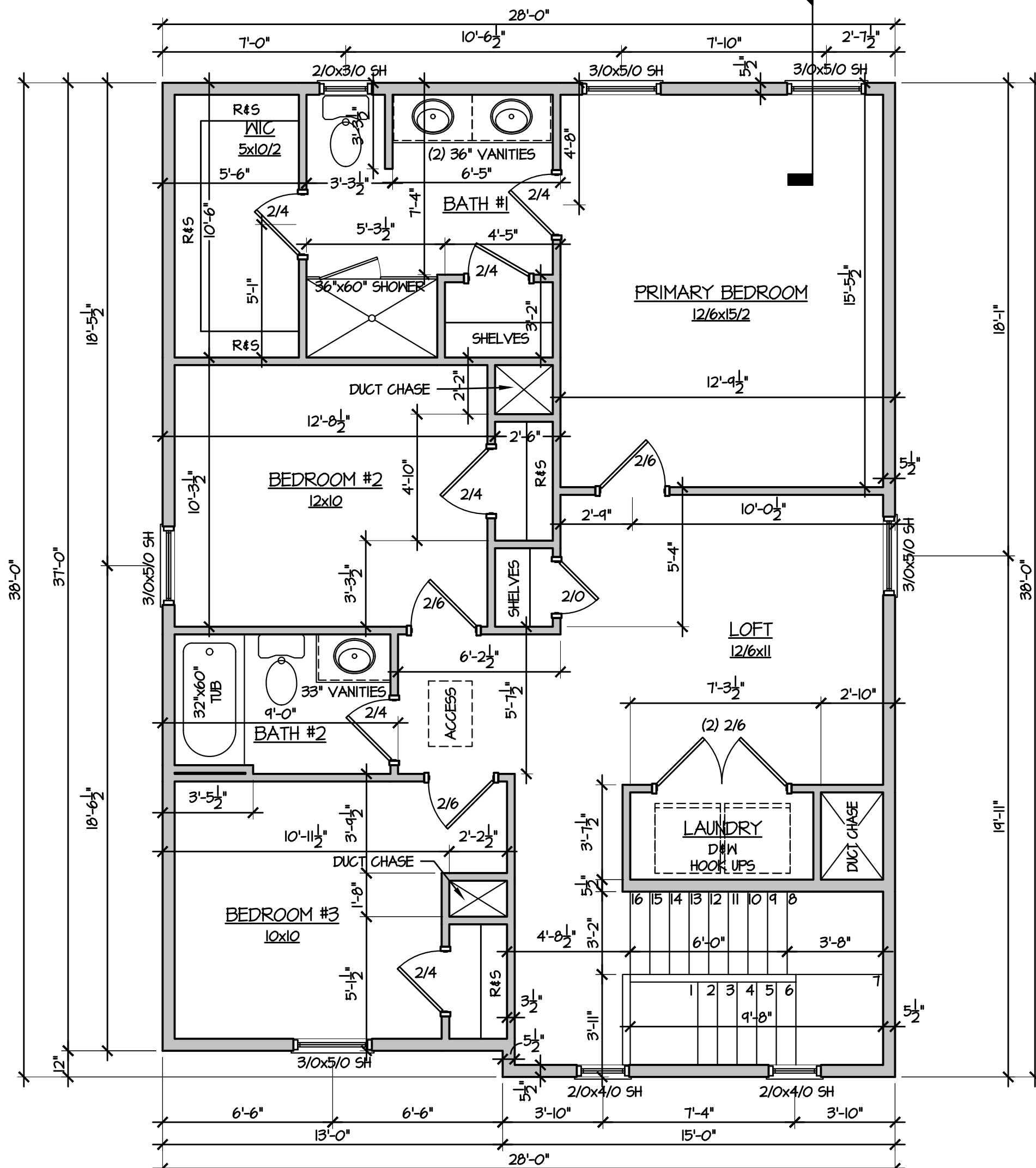
2 x 6 @ 16\"/>

2 x 6 @ 16\"/>

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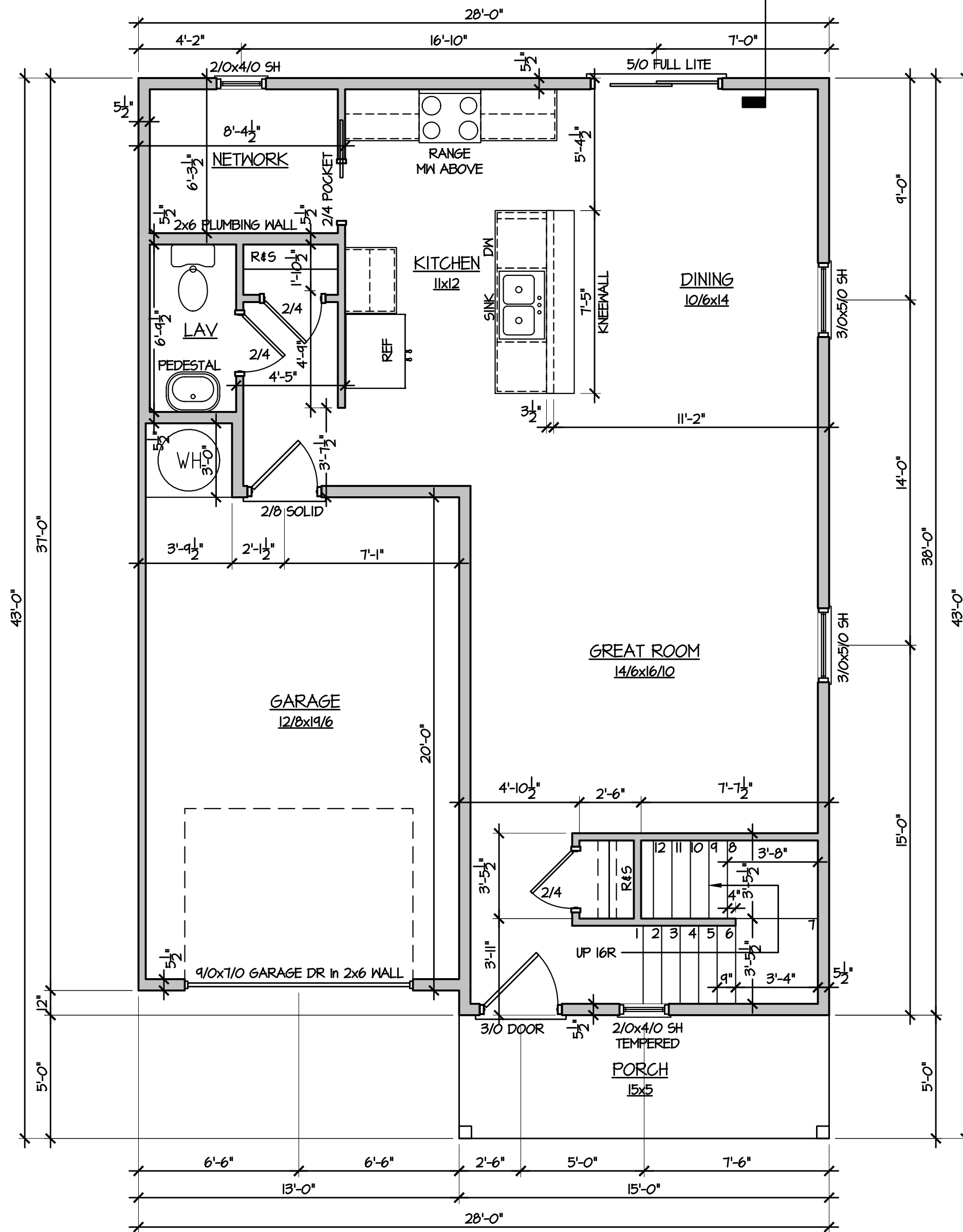


1 PLUMBING FIXTURE PLAN
3/16" = 1'-0"



FRAMING NOTE:
ALL EXTERIOR HEATED WALLS TO BE
FRAMED WITH 2x6 STUDS

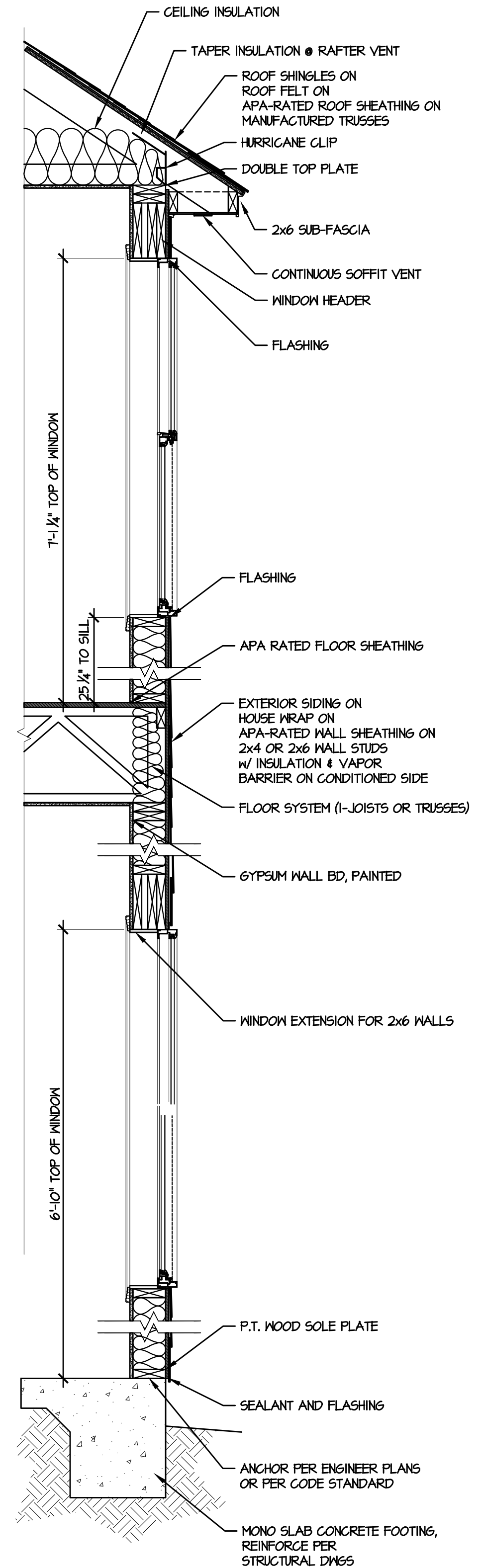
3 SECOND FLOOR FRAMING PLAN
1/4" = 1'-0"



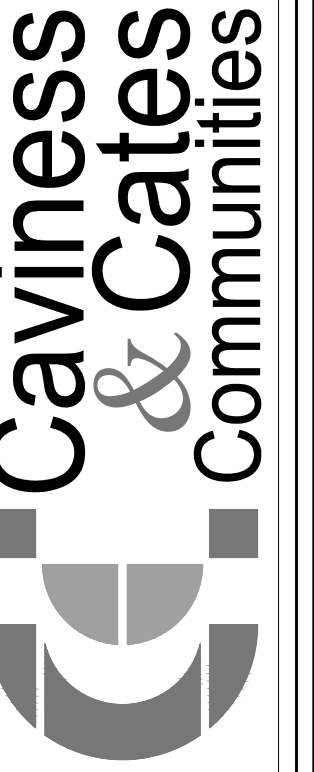
FRAMING NOTE:
ALL EXTERIOR HEATED WALLS TO BE
FRAMED WITH 2x6 STUDS

2 FIRST FLOOR FRAMING PLAN
1/4" = 1'-0"

REDLINE NOTES

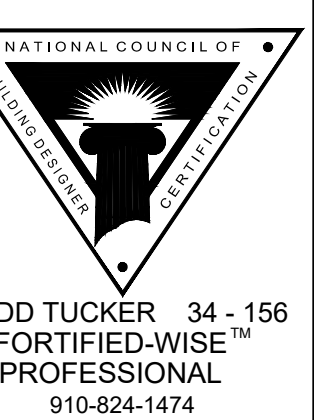
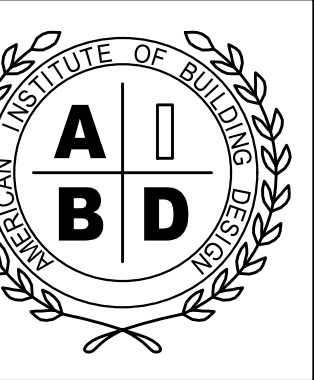


A TYPICAL WALL SECTION
3/4" = 1'-0" TWO STORY



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PLAN NAME/NUMBER:
CC1790

SHEET TITLE:
PLUMBING FIXTURE / FRAMING PLANS / SECTION

PLAN NO:
CC1790

DATE:
MAY 2025

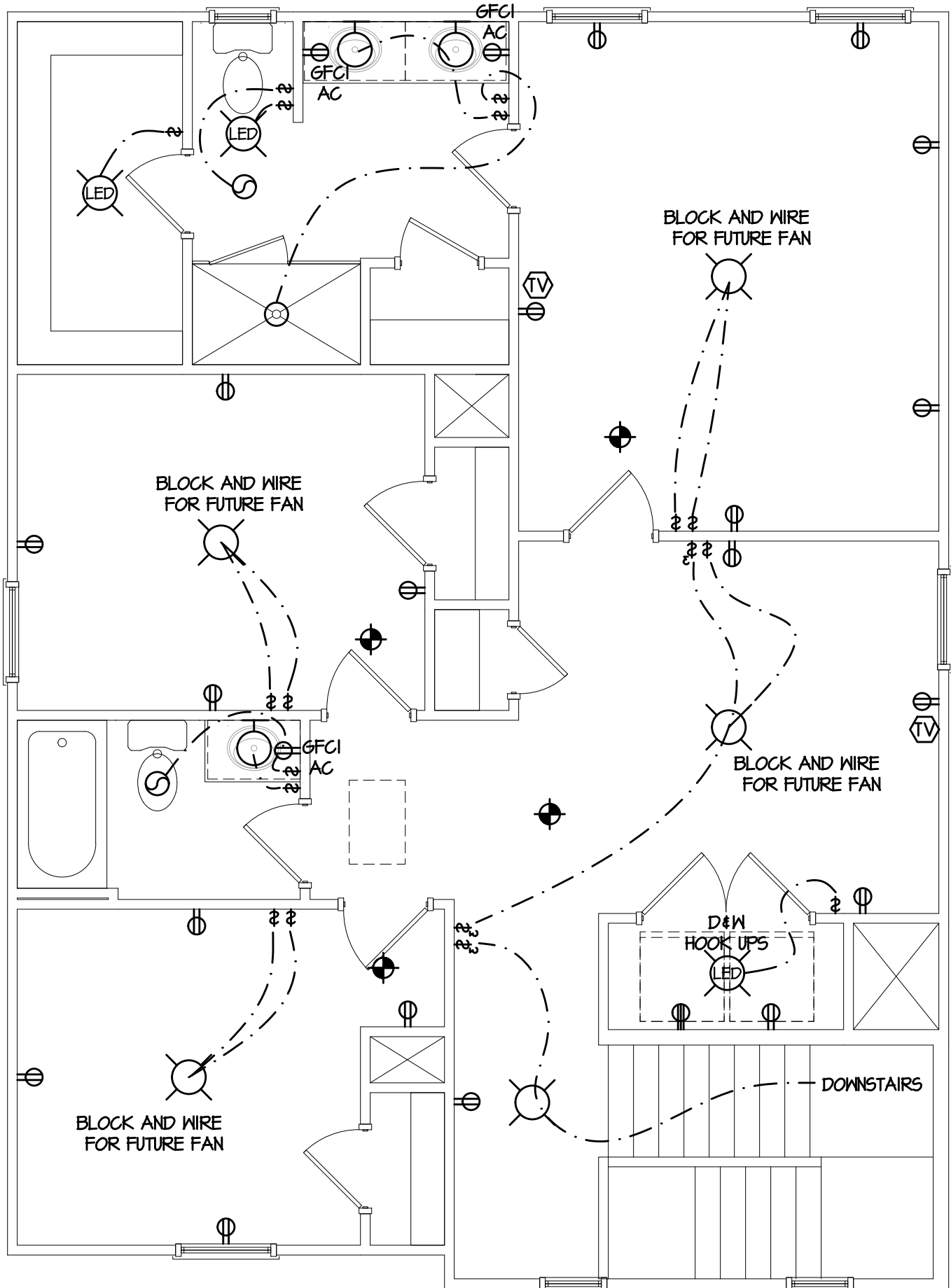
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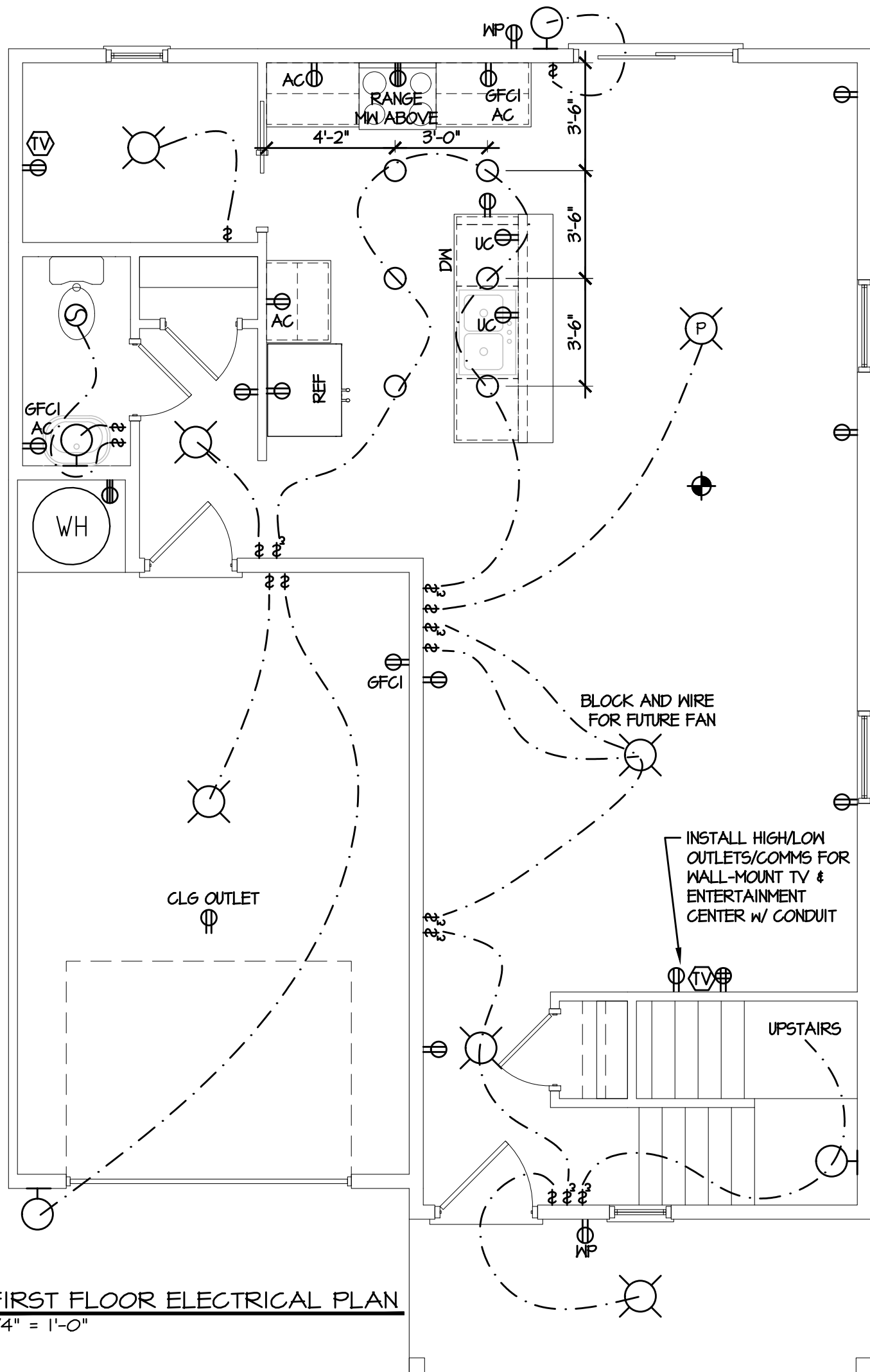
3
LOT DU78

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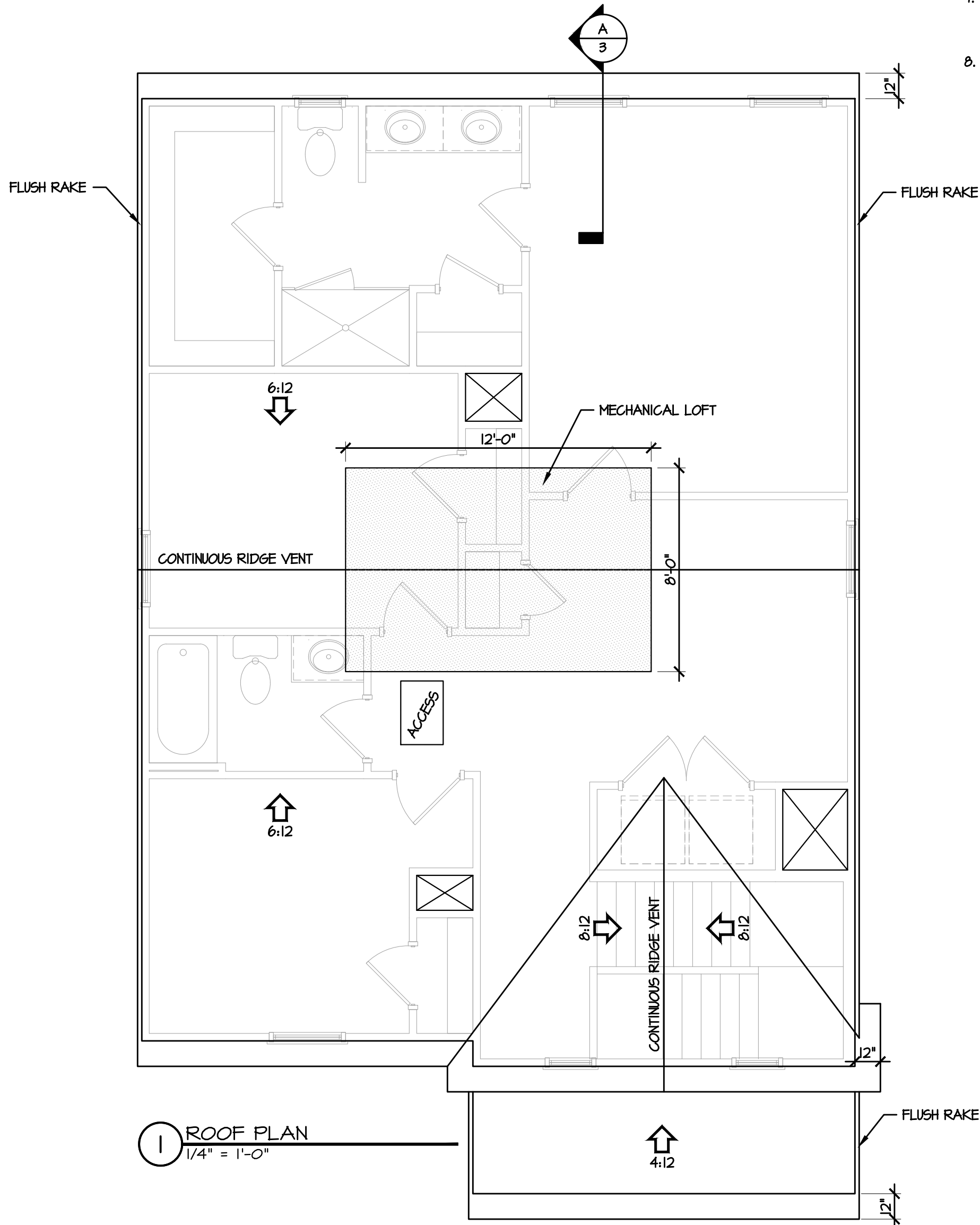
REDLINE NOTES



3 SECOND FLOOR ELECTRICAL PLAN
1/4" = 1'-0"

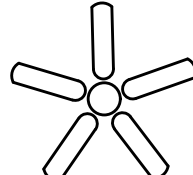
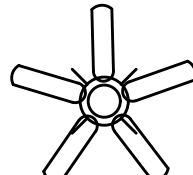
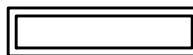


2 FIRST FLOOR ELECTRICAL PLAN
1/4" = 1'-0"



1 ROOF PLAN
1/4" = 1'-0"

ELECTRICAL LEGEND

	CEILING FAN	LOW-VOLTAGE OPTIONS		USB PORT		SINGLE POLE SWITCH
	CEILING FAN w/ LIGHT			COMMUNICATIONS		DIMMER SWITCH
	FLUORESCENT LIGHT			UL APPROVED SMOKE / CO DETECTOR		3 WAY SWITCH
	WALL MOUNT LIGHT			SURROUND SOUND CEILING SPEAKER		4 WAY SWITCH
	SURFACE LIGHT			DOOR CONTACT		DUPLEX OUTLET ABOVE COUNTER UNDER COUNTER
	PENDANT LIGHT			DIRECTIONAL MOTION SENSOR		EXTERIOR DUPLEX OUTLET
	LED LIGHT			SECURITY KEYPAD		1/2 HOT DUPLEX OUTLET ON SWITCH
	UNDER-WALL-CABINET LIGHT			20" ON-G ENCLOSURE HOUSING PHONE, CABLE, ALARM & REQUIRES 110V OUTLET		GROUND FAULT CIRCUIT INTERRUPT DUPLEX OUTLET
	FLOOD LIGHTS			SURROUND SOUND TERMINATION POINT-PHONE, CABLE, S6 & FUTURE PIPE WILL TERMINATE IN ONE PHONE/CABLE JACK & SPOUT PLATE		QUAD OUTLET
	RECESS LIGHT					FLOOR OUTLET
	LIGHT / EXHAUST FAN COMBO				220 V OUTLET	
	EXHAUST FAN					

ELECTRICAL NOTES:

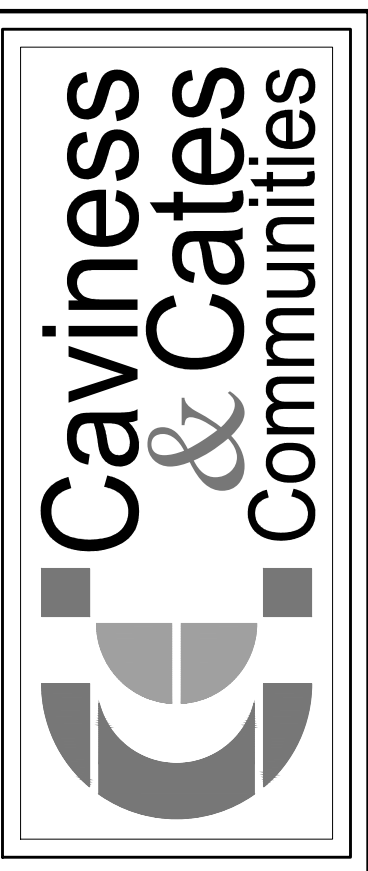
1. INSTALL LOW-VOLTAGE LED LIGHTING IN SMALL CLOSETS PER 2023 NCEC ARTICLE 410.2 & ARTICLE 410.16

BATHROOM LIGHT SWITCH NOTES:

1. FIRST LIGHT SWITCH TO VANITY LIGHT (CLOSEST TO DOOR)
2. SECONDARY SWITCHES TO RECESSED TUB/SHOWER/PANTRY LIGHTS, ETC.
3. FINAL SWITCH TO FAN (FURTHEST FROM DOOR)

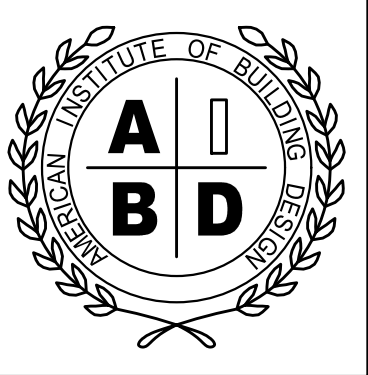
SMOKE DETECTOR NOTES:

1. INSTALL SMOKE DETECTORS ON EVERY LEVEL, IN ALL SLEEPING AND GUEST ROOMS, AND OUTSIDE OF EACH SLEEPING ROOM NO GREATER THAN 21' FROM ANY DOOR TO A SLEEPING ROOM [2022 NFPA T2, 24.8.1.1]
2. WHERE AN INTERIOR FLOOR LEVEL EXCEEDS 1000 SQUARE FEET, SMOKE ALARMS SHALL BE INSTALLED WHERE ALL POINTS FALL WITHIN 30' OF TRAVEL DISTANCE OR ONE SMOKE ALARM PER 500 SQUARE FEET. FOR VAULTED CEILING OVER MULTIPLE LEVELS, SMOKE ALARMS IN THE UPPER LEVEL NEAR THE CATHEDRAL SHALL BE CONSIDERED AS PART OF THE LOWER FLOOR PROTECTION [2022 NFPA T2, 24.8.1.3, 24.8.1.3.1 and 24.8.1.3.2]
3. MAINTAIN 120" MIN FROM KITCHEN COOKING APPLIANCES [2022 NFPA T2, 24.11.3.4(5)]
4. MAINTAIN 36" MIN FROM A BATHROOM DOOR CONTAINING A TUB OR SHOWER [2022 NFPA T2, 24.11.3.4(6)]
5. MAINTAIN 36" MIN FROM A SUPPLY REGISTER OF A FORCED HEATING/COOLING SYSTEM AND OUTSIDE OF THE DIRECT AIRFLOW [2022 NFPA T2, 24.11.3.4(7)]
6. MAINTAIN 36" MIN FROM TIP OF CEILING FAN BLADE [2014 NFPA T2, 24.11.3.4(8)]
7. WHERE STAIRS LEAD TO AN ABOVE-OCCUPIABLE LEVEL, A SMOKE DETECTOR SHALL BE LOCATED SO THAT RISING SMOKE IN THE STAIRWAY CANNOT BE BLOCKED BY AN INTERVENING DOOR [2014 NFPA T2, 24.11.3.4(9)]
8. PLACE SMOKE DETECTORS AT HIGHEST POINT OF TRAY CEILING [2014 NFPA T2, 24.11.3.4(10)]



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PLAN NAME/NUMBER:
CC1790

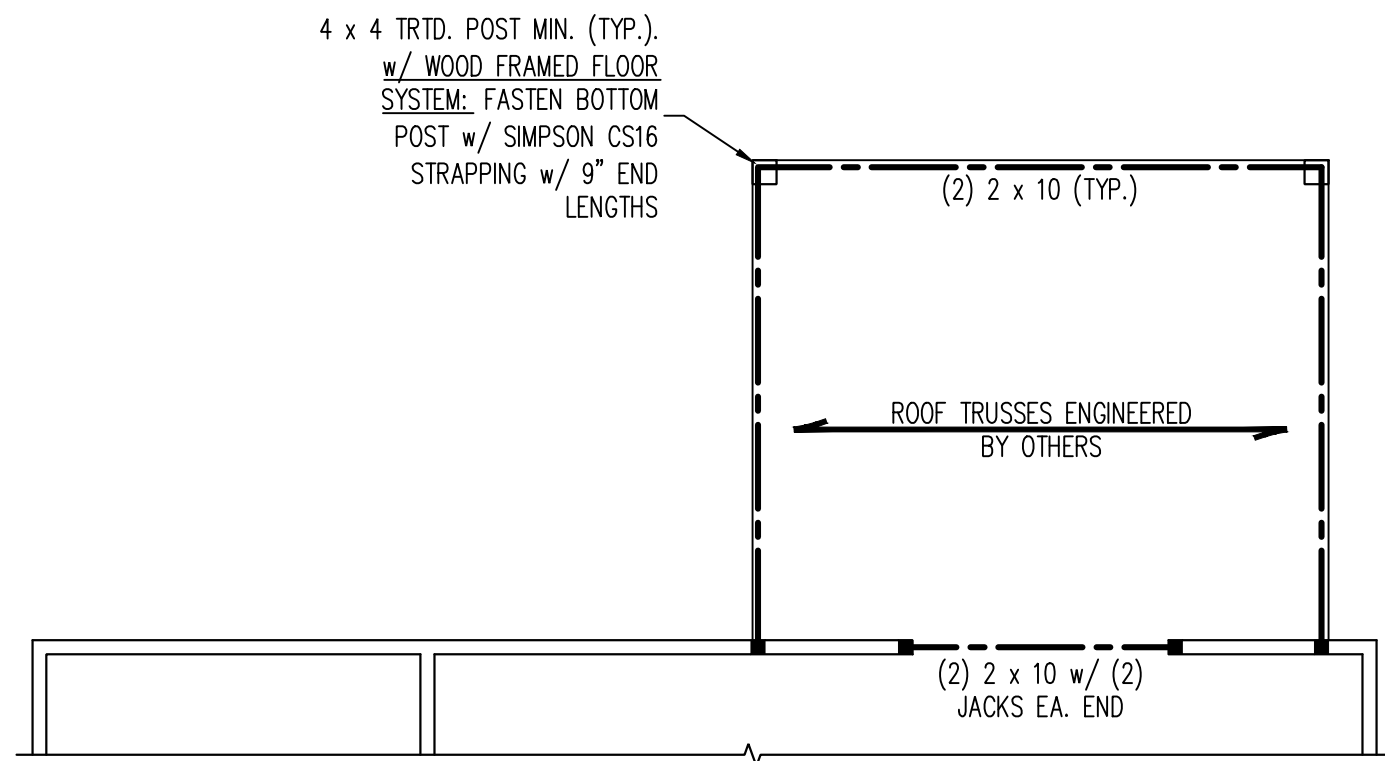
SHEET TITLE:
ELECTRICAL & ROOF PLANS

PLAN NO:
CC1790

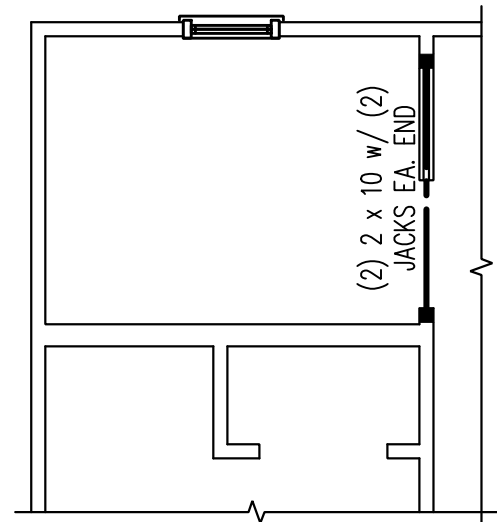
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MAY 2025

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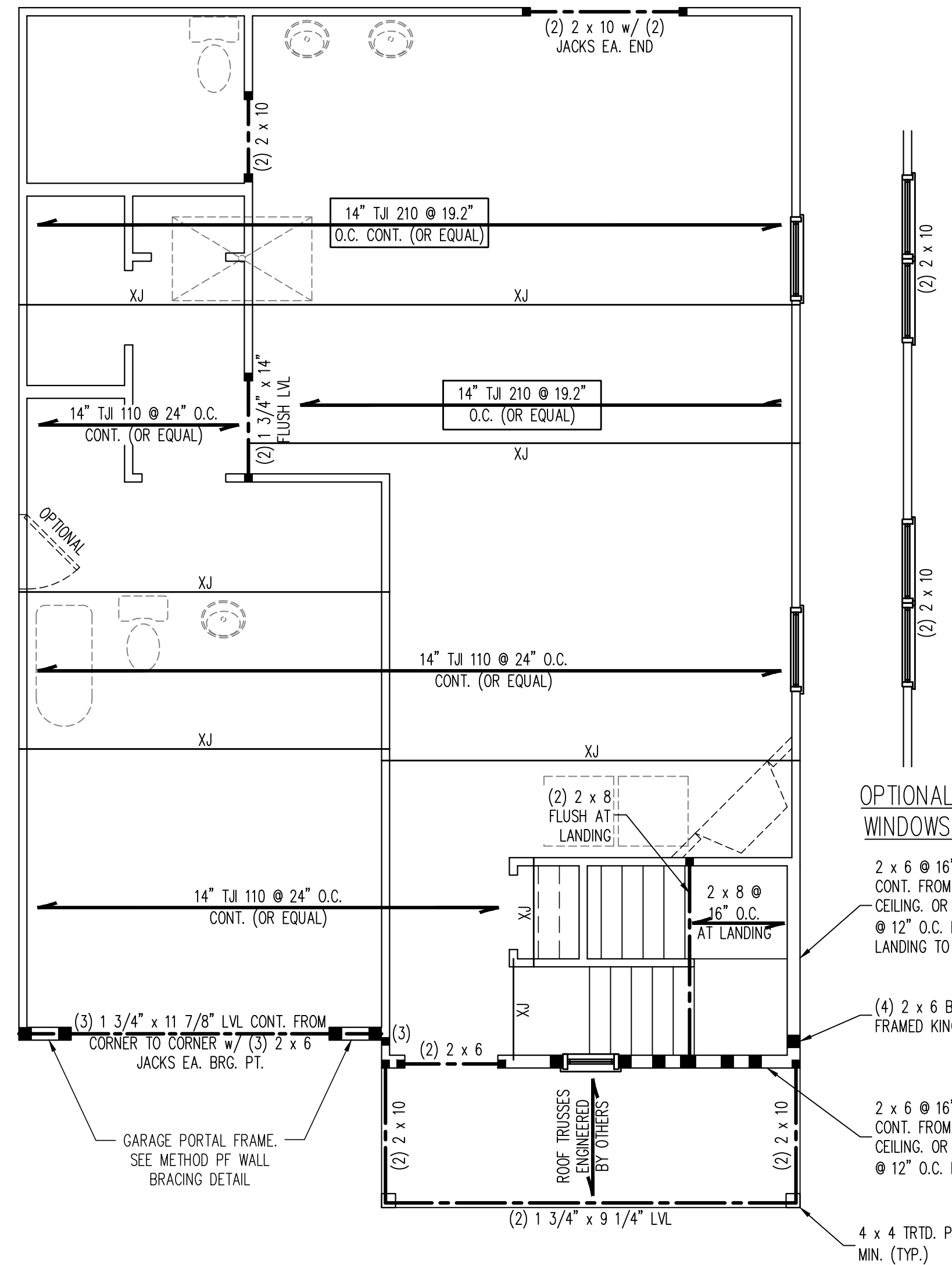
SHEET NO:
4
LOT DU78



OPTIONAL COVERED PORCH



OPTIONAL NETWORK ROOM



OPTIONAL
WINDOWS

BRACED WALL DESIGN NOTES:

1. BRACED WALL DESIGN PER SECTION R602.10.5 "WALL BRACING BY ENGINEERED DESIGN" OF THE NRCR 2018 EDITION USING BRACING MATERIALS AND METHODS LISTED IN TABLE R602.10.1 ALONG WITH ALTERNATIVE MATERIALS AND METHODS THAT COMPLY WITH ACCEPTED ENGINEERING PRACTICE. BRACED WALL DESIGN IS NOT PRESCRIPTIVE.
2. SHEATH ALL EXTERIOR WALLS w/ 7/16" OSB TO PROVIDE CS-WSP WALL BRACING THAT WILL BRACE THE STRUCTURE FOR ALL LATERAL LOADS AS REQUIRED BY THE NRCR 2018 EDITION.
3. CS-WSP REFERS TO "CONTINUOUSLY SHEATHED WOOD STRUCTURAL PANELS." CONTRACTOR IS TO INSTALL 7/16" OSB ON ALL EXTERIOR WALLS ATTACHED w/ 8d NAILS SPACED 6" O.C. ALONG PANEL EDGES AND 12" O.C. IN THE FIELD.
4. GB REFERS TO "GYPSUM BOARD." CONTRACTOR IS TO INSTALL 1/2" (MIN.) GYPSUM BOARD ON BOTH SIDES OF WALL WHERE NOTED ON THE PLANS ATTACHED WITH 1 1/4" LONG #6 SCREWS OR 1 5/8" LONG 5d COOLER NAILS SPACED 7" O.C. ALONG PANEL EDGES AND IN THE FIELD.
5. BRACED WALL DESIGN APPLIED IN WIND ZONES UP TO 130 MPH. FOR HIGH WIND ZONES, BRACED WALLS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH CHAPTER 45 OF THE NRCR 2018 EDITION.
6. SEE NOTES AND DETAIL SHEETS FOR ADDITIONAL BRACED WALL INFORMATION.

STRUCTURAL NOTES:

1. ALL FRAMING LUMBER TO BE SPF #2 (UNO). ALL TREATED LUMBER TO BE SYP #2 (UNO.)
2. ALL LOAD BEARING HEADERS TO BE (2) 2 x 6 (UNO).
3. PROVIDE AN EXTRA JOIST UNDER ALL WALLS PARALLEL TO FLOOR JOISTS WHERE NOTED ON THE PLANS.
4. WINDOW AND DOOR HEADERS TO BE SUPPORTED w/ (1) JACK STUD AND (1) KING STUD EA. END (UNO.). SEE KING STUD TABLES FOR ADDITIONAL KING STUD REQUIREMENTS.
5. SQUARES DENOTE POINT LOADS WHICH REQUIRE SOLID BLOCKING TO GIRDER OR FOUNDATION. ALL SQUARES TO BE (2) STUDS (UNO.)
6. FOR HIGH WIND ZONES, ALL EXTERIOR WALLS TO BE SHEATHED WITH 7/16" OSB SHEATHING WITH JOINTS BLOCKED AND SECURED WITH 8d NAILS AT 3" O.C. ALONG EDGES AND 6" O.C. IN THE FIELD.
7. FOR HIGH WIND ZONES, SECURE ALL EXTERIOR WALL SHEATHING PANELS TO DOUBLE TOP PLATES, BANDS, JOISTS, AND GIRDERS WITH (2) ROWS OF 8d NAILS STAGGERED AT 3" O.C. PANELS SHALL EXTEND 12" BEYOND CONSTRUCTION JOINTS AND SHALL OVERLAP GIRDERS AND DOUBLE SILL PLATES THEIR FULL DEPTH.
8. SPECIFIED SIMPSON STRONG-TIE PRODUCTS MAY BE SUBSTITUTED WITH THOSE MANUFACTURED BY USP STRUCTURAL CONNECTORS PROVIDED THAT THE LOAD CAPACITY AND FUNCTION IS EQUIVALENT.
9. ALL 4 x 4 POSTS SHALL BE ANCHORED TO SLABS w/ SIMPSON ABU44 POST BASES (OR EQUAL) AND 6 x 6 POSTS w/ ABU66 POST BASES (OR EQUAL) (UNO). ALL 4 x 4 AND 6 x 6 POSTS TO BE INSTALLED WITH 700 LB CAPACITY UPLIFT CONNECTORS AT TOP AND BOTTOM (UNO.)
10. FOR FIBERGLASS, ALUMINUM, OR COLUMN ENG. BY OTHERS, SECURE TO SLAB w/ (2) METAL ANGLES USING 2" CONC. SCREWS. FASTEN ANGLES TO COLUMNS w/ 1/4" THROUGH BOLTS w/ NUTS AND WASHERS. LOCATE ANGLES ON OPPOSITE SIDES OF COLUMN. THROUGH BOLTS MUST BE INSTALLED PRIOR TO SETTING COLUMN.
11. REFER TO NOTES AND DETAIL SHEETS FOR ADDITIONAL STRUCTURAL INFORMATION.

NOTE:

- BCI 4500s-1.8 JOISTS MAY BE INSTALLED IN LIEU OF TJI 110 JOISTS AT THE DEPTH AND SPACING INDICATED ON THE PLAN.
- BCI 5000s-1.8 JOISTS MAY BE INSTALLED IN LIEU OF TJI 210 JOISTS AT THE DEPTH AND SPACING INDICATED ON THE PLAN.

LEGEND

CONT	CONTINUOUS
XJ	EXTRA JOIST
DJ	DOUBLE JOIST
TJ	TRIPLE JOIST
EA	EACH
()	NUMBER OF STUDS
DSP	DOUBLE STUD POCKET
TSP	TRIPLE STUD POCKET
OC	ON CENTER
SPF	SPRUCE PINE FIR
SYP	SOUTHERN YELLOW PINE
TRTD	PRESSURE TREATED
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE

MINIMUM NUMBER OF FULL HEIGHT KING STUDS AT EACH END OF HEADERS IN EXTERIOR WALLS IN 150 MPH WIND ZONES

HEADER SPAN (FEET)	MINIMUM NUMBER OF FULL HEIGHT STUDS (KINGS)
UP TO 3'	2
> 3' TO 6'	3
> 6' TO 9'	4
> 9' TO 12'	5
> 12' TO 15'	6

TABLE R602.7.5
MINIMUM NUMBER OF FULL HEIGHT KING STUDS AT EACH END OF HEADERS IN EXTERIOR WALLS

HEADER SPAN (FEET)	MINIMUM NUMBER OF FULL HEIGHT STUDS (KINGS)
UP TO 3'	1
> 3' TO 6'	2
> 6' TO 9'	3
> 9' TO 12'	4
> 12' TO 15'	5



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CC 1790
CAVINESS AND CATES

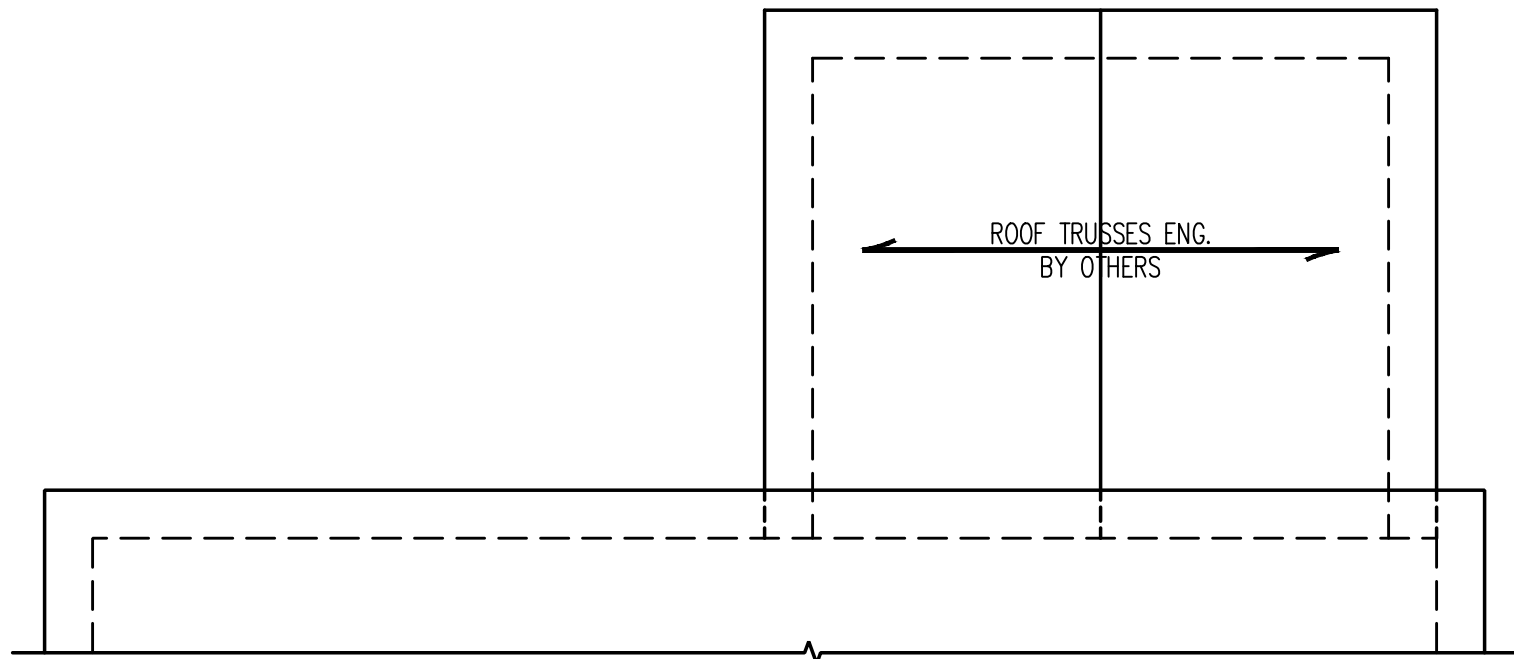
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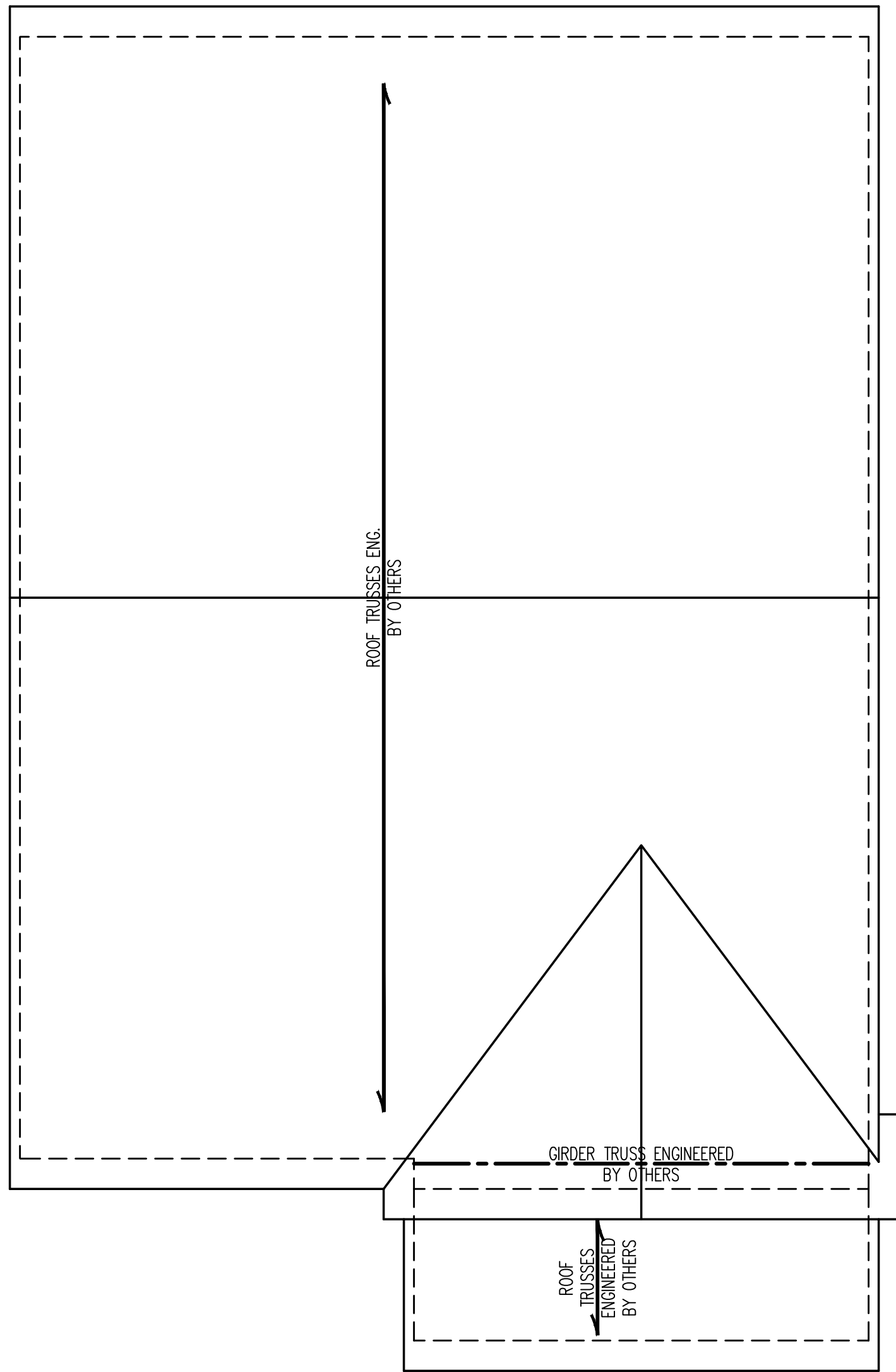
DRAWN BY: TT

ENGINEERED BY: JAG

S-2
SECOND FLOOR
FRAMING PLAN



OPTIONAL COVERED PORCH



STRUCTURAL NOTES:

1. ALL FRAMING LUMBER TO BE #2 SPF (UNO).
2. CIRCLES DENOTE (3) 2 x 4 POSTS FOR ROOF SUPPORT.
3. FRAME DORMER WALLS ON TOP OF DOUBLE OR TRIPLE RAFTERS.
4. HIP SPICES ARE TO BE SPACED A MIN. OF 8'-0". FASTEN MEMBERS WITH THREE ROWS OF 12d NAILS @ 16" O.C. (TYP.)
5. STICK FRAME OVER-FRAMED ROOF SECTIONS W/ 2 x 8 RIDGES, 2 x 6 RAFTERS @ 16" O.C. AND FLAT 2 x 10 VALLEYS OR USE VALLEY TRUSSES.
6. FASTEN FLAT VALLEYS TO RAFTERS OR TRUSSES WITH SIMPSON H2.5A HURRICANE TIES @ 32" O.C. MAX. PASS HURRICANE TIES THROUGH NOTCH IN ROOF SHEATHING. EACH RAFTER IS TO BE FASTENED TO THE FLAT VALLEY WITH A MIN. OF (6) 12d TOE NAILS.
7. REFER TO SECTION R802.11 OF THE 2018 NRC FOR REQUIRED UPLIFT RESISTANCE AT RAFTERS AND TRUSSES. IN HIGH WIND ZONES, SECURE EA. RAFTER OR TRUSS TO BEARING WALL WITH SIMPSON H10 HURRICANE TIE (OR EQUAL) UNLESS NOTED OTHERWISE BY TRUSS ENGINEER BASE ON DESIGN UPLIFT FOR EA. TRUSS. REFER TO SECTION R405.8 OF THE 2018 NRC TO ENSURE COMPLIANCE WITH REQUIRED UPLIFT AND LATERAL CONNECTIONS.
8. REFER TO NOTES AND DETAIL SHEETS FOR ADDITIONAL STRUCTURAL INFORMATION.

NOTE:- REFER TO ARCHITECTURAL DRAWINGS FOR ROOF PITCHES, PLATE HEIGHTS, DIMENSIONS, OVERHANG WIDTHS, AND ATTIC VENT CALCS.

LEGEND

XT	EXTRA TRUSS
TS	TRUSS SUPPORT
XR	EXTRA RAFTER
RS	RAFTER SUPPORT
CONT	CONTINUOUS
EA	EACH
OC	ON CENTER
SPF	SPRUCE PINE FIR
SYP	SOUTHERN YELLOW PINE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE

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CAVINESS AND CATES

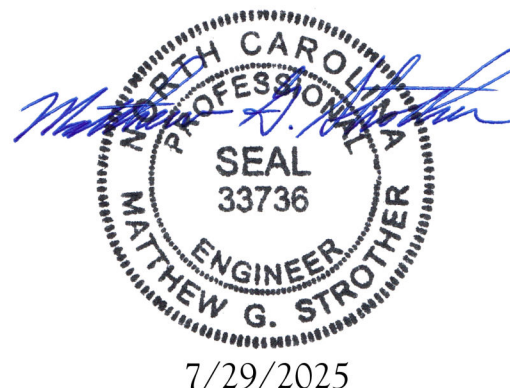
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ENGINEERED BY: JAG

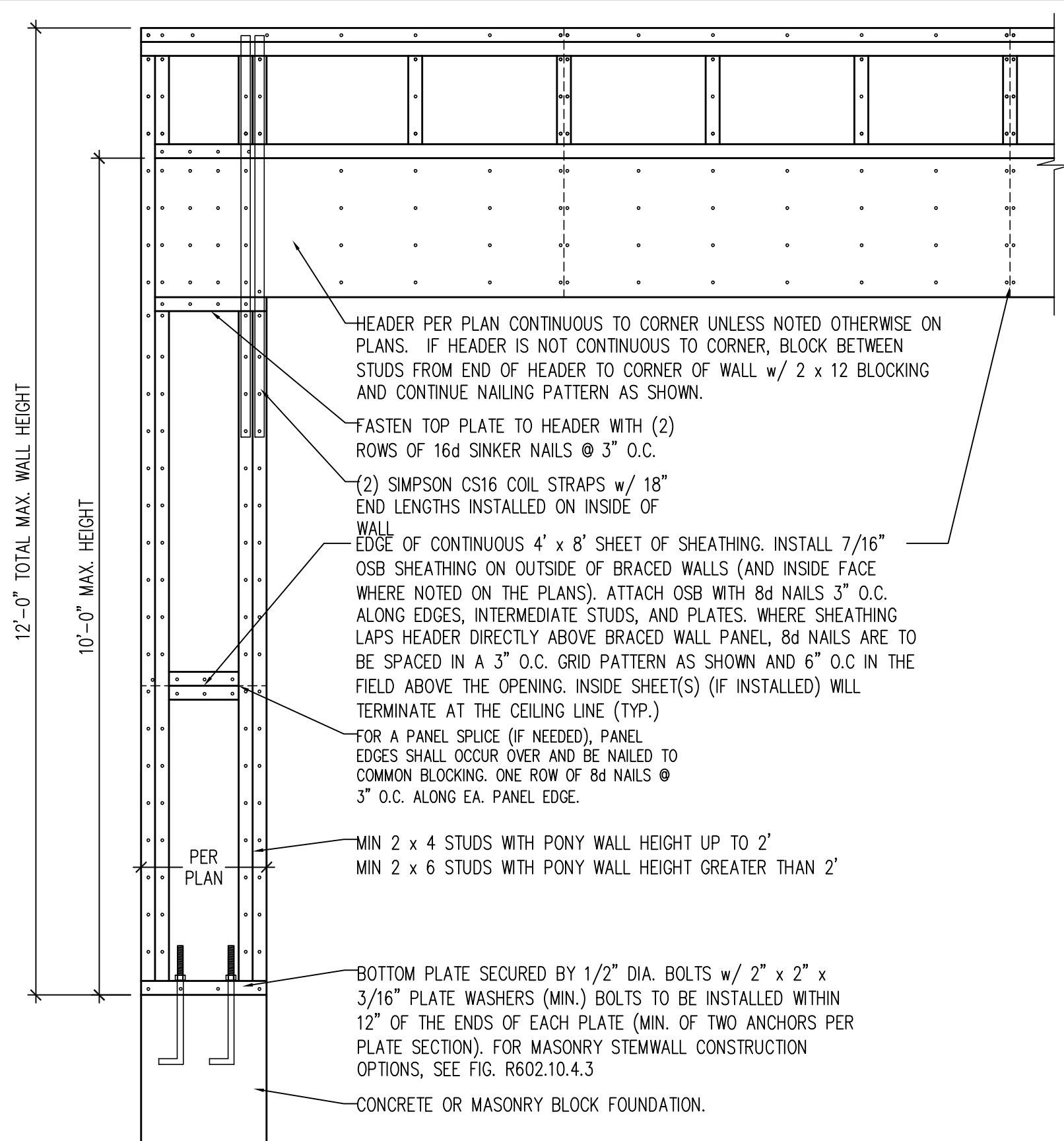
S-4
ROOF FRAMING
PLAN



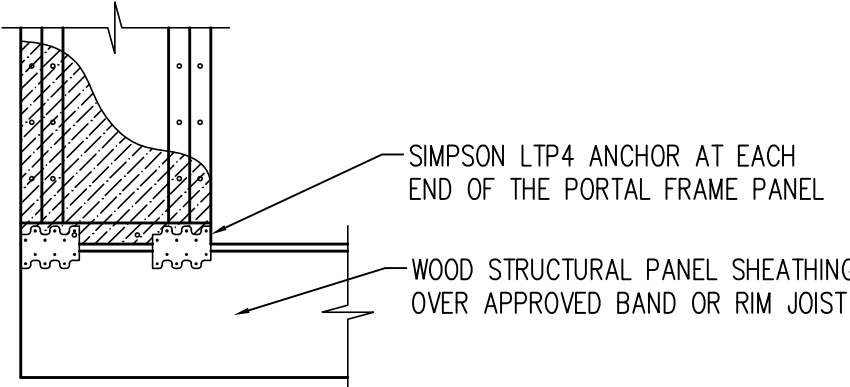
7/29/2025

GENERAL WALL BRACING NOTES:

- WALL BRACING DESIGNED IN ACCORDANCE WITH CHAPTER 6 OF THE 2018 NC RESIDENTIAL BUILDING CODE (NRC). TABLES AND FIGURES REFERENCED ARE FROM THE 2018 NRC.
- SEE THIS SHEET FOR GENERAL DETAILS. REFER TO THE 2018 NRC FOR ADDITIONAL INFORMATION AS NEEDED.
- BRACED EXTERIOR WALLS SUPPORTING ROOF TRUSSES AND RAFTERS, INCLUDING STORIES BELOW THE TOP FLOOR, HAVE BEEN DESIGNED PER R602.3.5 (3). WALL SHEATHING AND FASTENERS HAVE BEEN DESIGNED TO RESIST COMBINED UPLIFT AND SHEAR FORCES IN ACCORDANCE WITH ACCEPTED ENGINEERED PRACTICE.
- SEE STRUCTURAL SHEETS FOR BRACED WALL LOCATIONS, DIMENSIONS, HOLD DOWN TYPE AND LOCATIONS, BRACED WALL LINE KEY WITH WALL DESIGN SUMMARY OF REQUIRED/PROVIDED TOTALS FOR EACH WALL LINE AND ANY SPECIAL NOTES OR REQUIREMENTS.
- ALL EXTERIOR WALLS ARE TO BE SHEATHED WITH CS-WSP IN ACCORDANCE WITH SECTION R602.10.3 UNLESS NOTED OTHERWISE.
- ALL EXTERIOR AND INTERIOR WALLS TO HAVE 1/2" GYPSUM INSTALLED. WHEN NOT USING METHOD "GB", GYPSUM TO BE FASTENED PER TABLE R702.3.5. METHOD GB TO BE FASTENED PER TABLE R602.10.1
- CS-WSP REFERS TO THE "CONTINUOUS SHEATHING - WOOD STRUCTURAL PANELS" WALL BRACING METHOD. 7/16" OSB SHEATHING IS TO BE INSTALLED ON ALL EXTERIOR WALLS ATTACHED w/ 6d COMMON NAILS OR 8d (2 1/2" LONG x 0.113" DIAMETER) NAILS SPACED 6" O.C. ALONG PANEL EDGES AND 12" O.C. IN THE FIELD (U.N.O.).
- GB REFERS TO THE "GYPSUM BOARD" WALL BRACING METHOD. 1/2" (MIN.) GYPSUM WALL BOARD IS TO BE INSTALLED ON BOTH SIDES OF THE BRACED WALL FASTENED WITH 1 1/4" SCREWS OR 1 5/8" NAILS SPACED 7" O.C. ALONG PANEL EDGES INCLUDING TOP AND BOTTOM PLATES AND INTERMEDIATE SUPPORTS (U.N.O.). VERIFY ALL FASTENER OPTIONS FOR 1/2" AND 5/8" GYPSUM PRIOR TO CONSTRUCTION. FOR INTERIOR FASTENER OPTIONS SEE TABLE R702.3.5. FOR EXTERIOR FASTENER OPTIONS SEE TABLE R602.3(1). EXTERIOR GB TO BE INSTALLED VERTICALLY.
- REQUIRED BRACED WALL LENGTH FOR EACH SIDE OF THE CIRCUMSCRIBED RECTANGLE ARE INTERPOLATED PER TABLE R602.10.3. METHOD CS-WSP CONTRIBUTES ITS ACTUAL LENGTH, METHOD GB CONTRIBUTES .5 ITS ACTUAL LENGTH, AND METHOD PF CONTRIBUTES 1.5 TIMES ITS ACTUAL LENGTH.



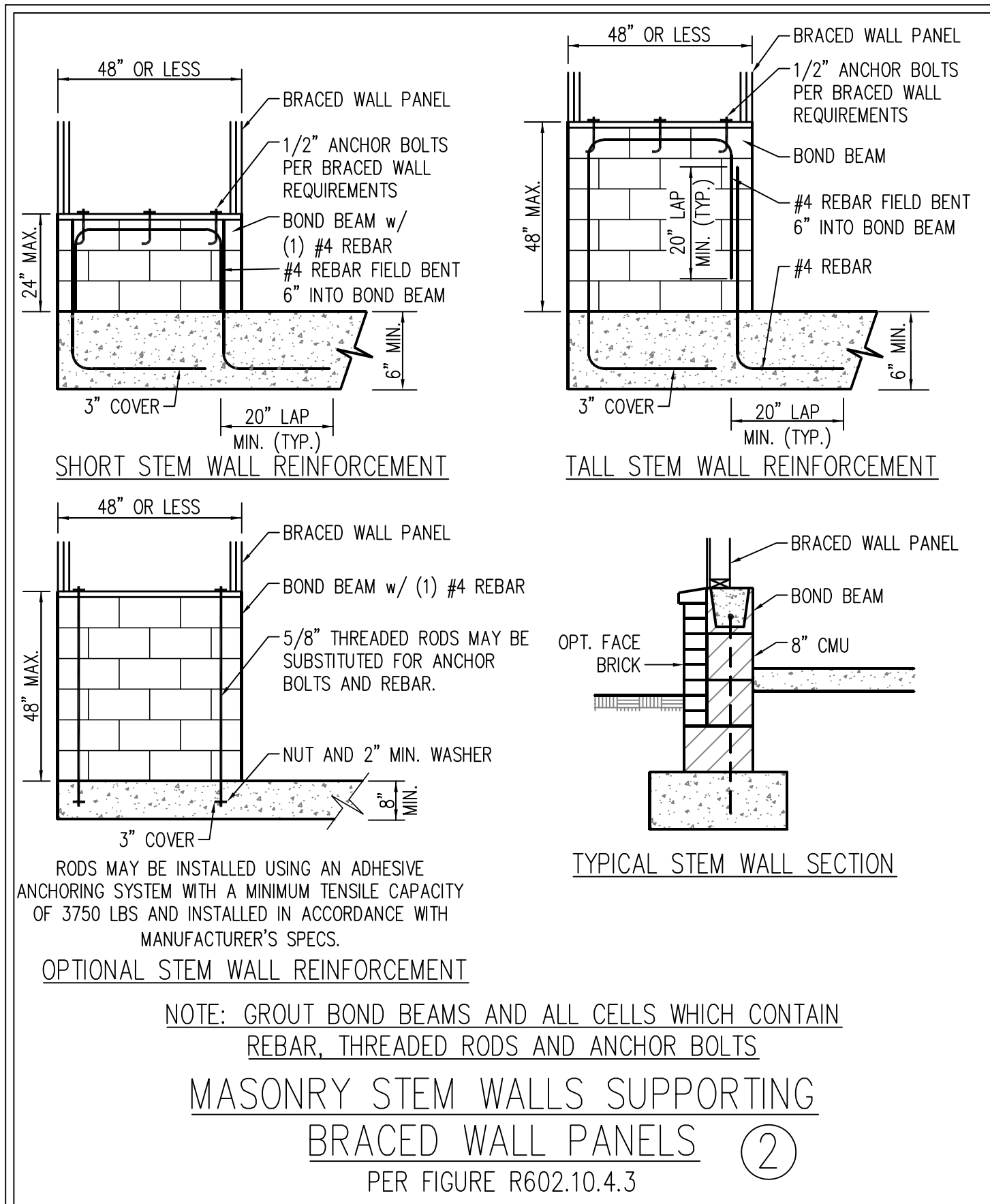
OVER CONCRETE OR MASONRY BLOCK FOUNDATION



OVER RAISED WOOD FLOOR - FRAMING ANCHOR OPTION

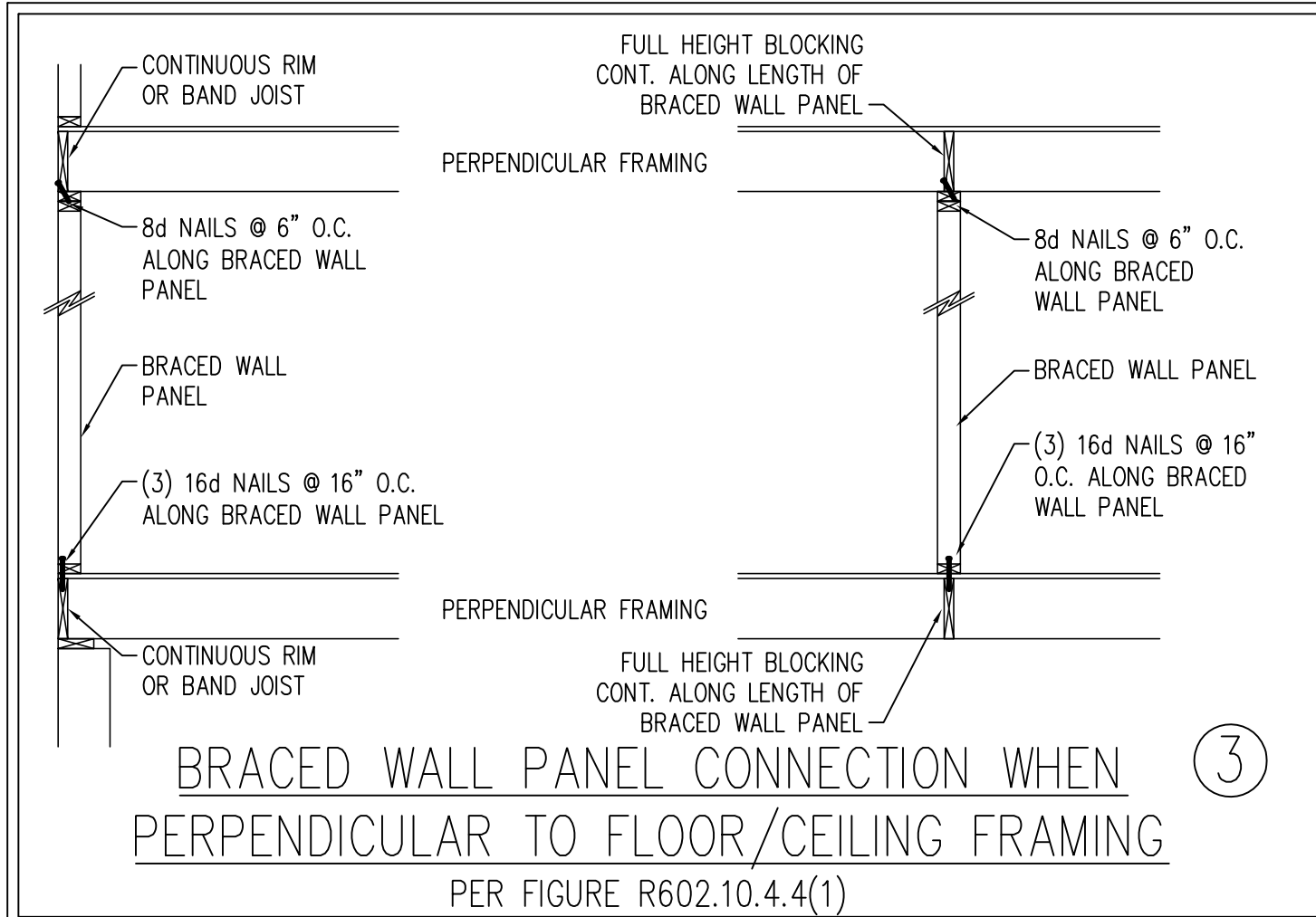
* APPLICABLE w/ GREATER THAN 12" KNEE WALL HEIGHTS IN CRAWL SPACE AND ABOVE FRAMED BASEMENT WALLS *

METHOD PF-PORTAL FRAME DETAIL ①

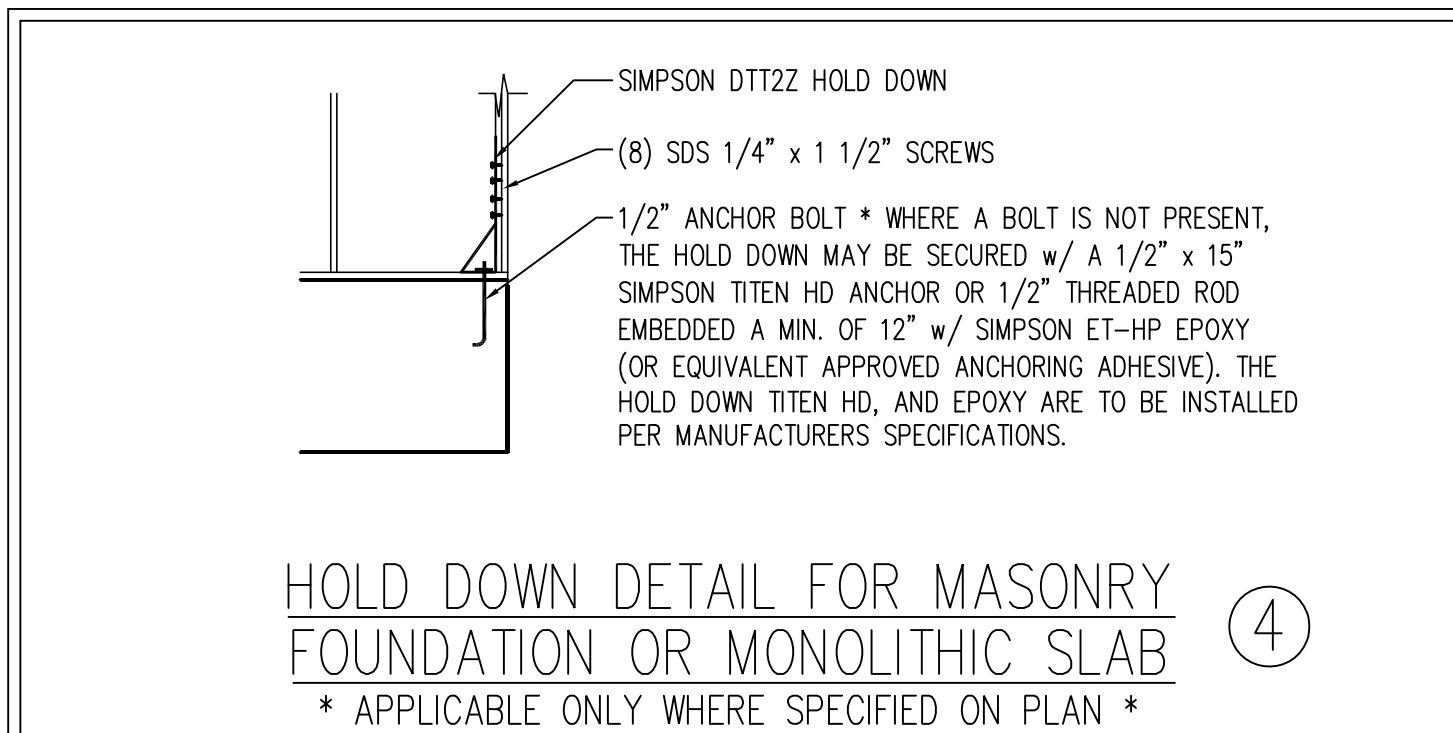


NOTE: GROUT BOND BEAMS AND ALL CELLS WHICH CONTAIN REBAR, THREADED RODS AND ANCHOR BOLTS

MASONRY STEM WALLS SUPPORTING BRACED WALL PANELS ②



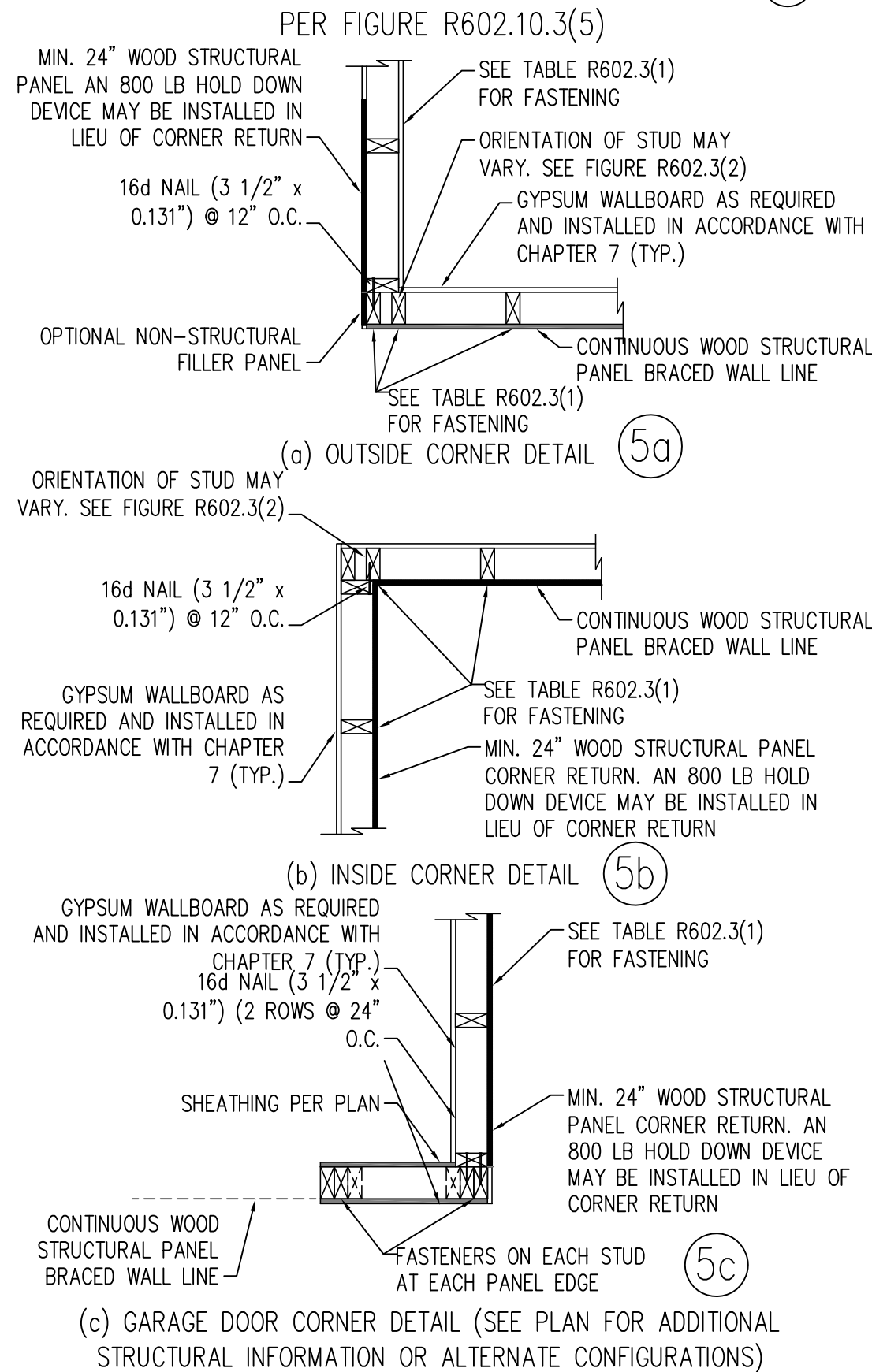
BRACED WALL PANEL CONNECTION WHEN PERPENDICULAR TO FLOOR/CEILING FRAMING ③



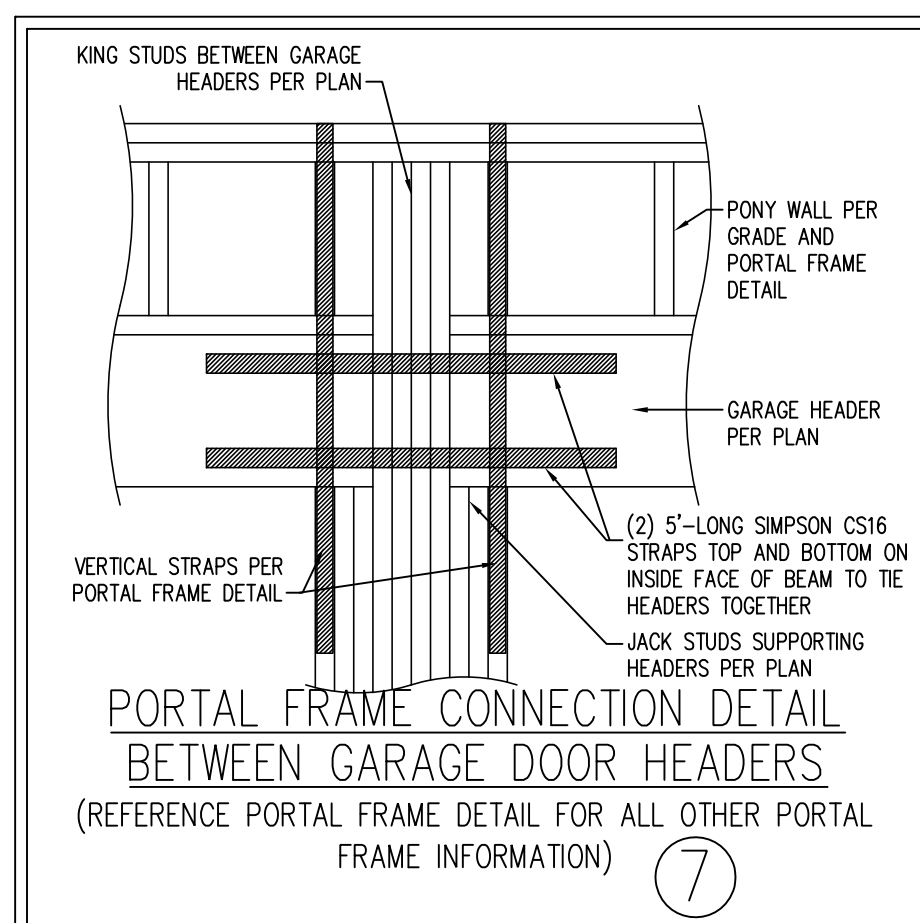
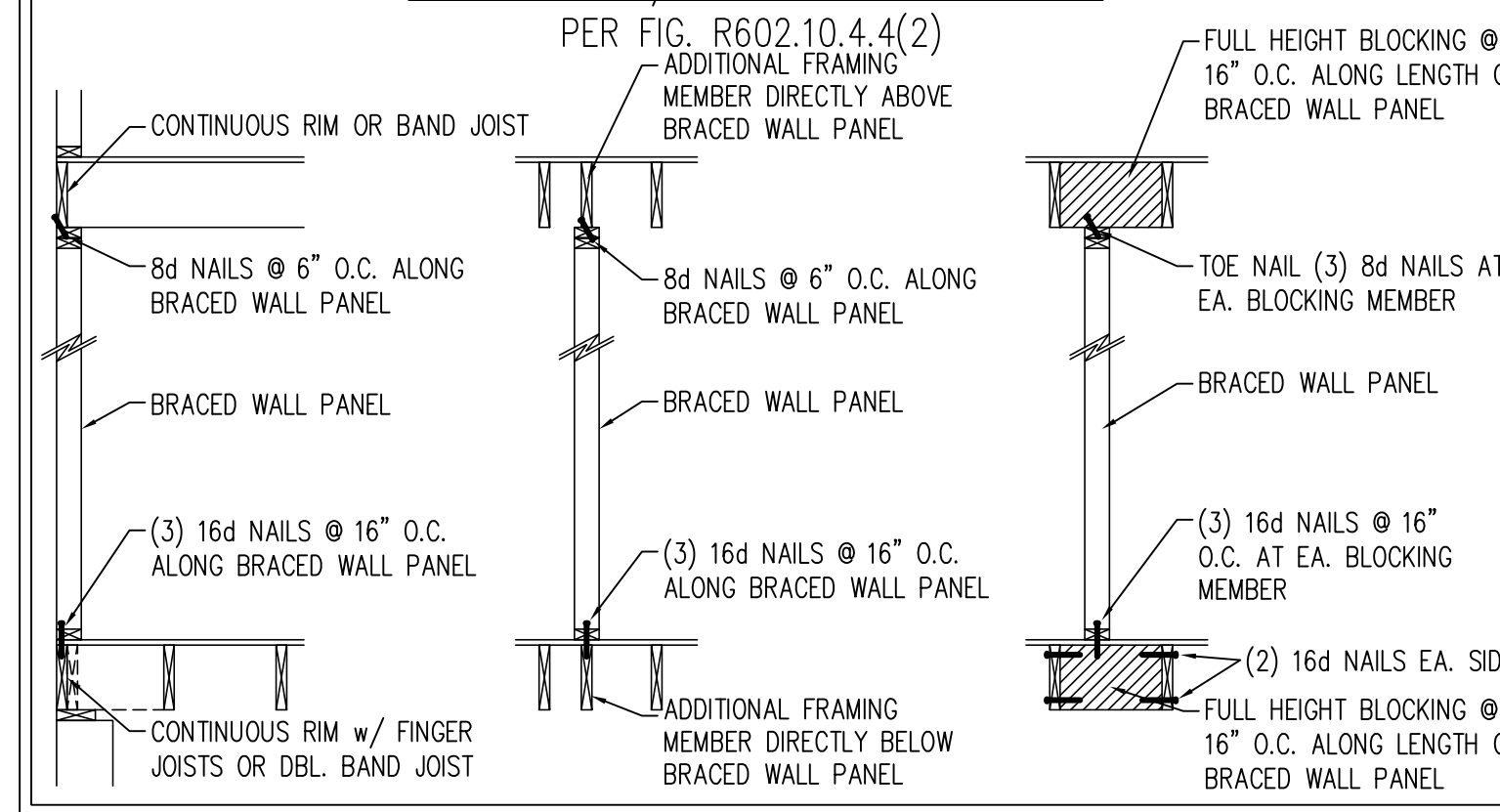
HOLD DOWN DETAIL FOR MASONRY FOUNDATION OR MONOLITHIC SLAB ④

* APPLICABLE ONLY WHERE SPECIFIED ON PLAN *

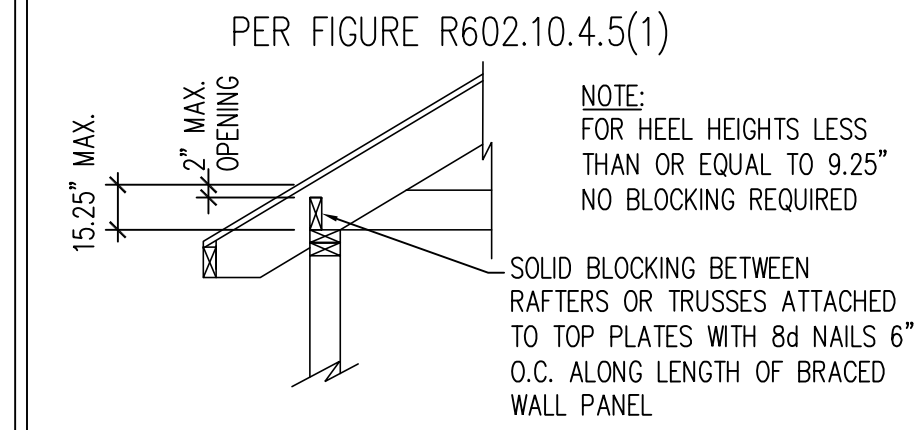
TYPICAL EXTERIOR CORNER FRAMING FOR CONTINUOUS SHEATHING ⑤



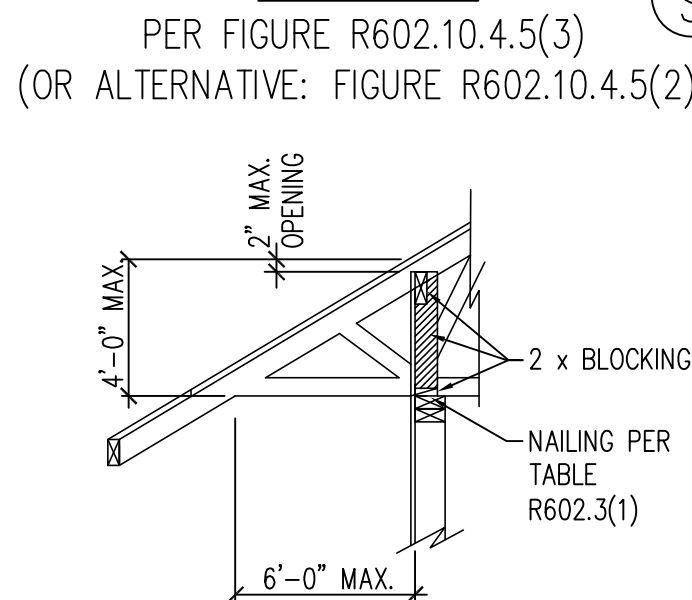
BRACED WALL PANEL CONNECTION WHEN PARALLEL TO FLOOR/CEILING FRAMING ⑥



BRACED WALL PANEL CONNECTION TO PERPENDICULAR RAFTERS ⑧



BRACED WALL PANEL CONNECTION TO PERPENDICULAR ROOF TRUSSES ⑨



7/29/2025

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WALL BRACING NOTES AND DETAILS

DATE: AUGUST 30, 2022
SCALE: 1/4" = 1'-0"
DRAWN BY: JST
ENGINEERED BY: JST

BRACED WALL NOTES AND DETAILS AND PF DETAIL

GENERAL NOTES

1. ENGINEER'S SEAL APPLIES ONLY TO STRUCTURAL COMPONENTS INCLUDING ROOF RAFTERS, HIPs, VALLEYS, RIDGES, FLOORS, WALLS, BEAMS, HEADERS, COLUMNS, CANTILEVERS, OFFSET LOAD BEARING WALLS, PIERS, GIRDER SYSTEM AND FOOTING. ENGINEER'S SEAL DOES NOT CERTIFY DIMENSIONAL ACCURACY OF ARCHITECTURAL LAYOUT INCLUDING ROOF. ENGINEER'S SEAL DOES NOT APPLY TO I-JOIST OR FLOOR/ROOF TRUSS LAYOUT DESIGN AND ACCURACY.
2. ALL CONSTRUCTION SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE NORTH CAROLINA RESIDENTIAL CODE (NRCR), 2018 EDITION, PLUS ALL LOCAL CODES AND REGULATIONS. THE STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR, AND WILL NOT HAVE CONTROL OF, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, OR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE CONSTRUCTION WORK. NOR WILL THE ENGINEER BE RESPONSIBLE FOR THE CONTRACTORS FAILURE TO CARRY OUT THE CONSTRUCTION WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

DESIGN CRITERIA:	LIVE LOAD (PSF)	DEAD LOAD (PSF)	DEFLECTION (IN)
ATTIC WITH LIMITED STORAGE	20	10	L/240 (L/360 w/ BRITTLE FINISHES)
ATTIC WITHOUT STORAGE	10	10	L/360
DECKS	40	10	L/360
EXTERIOR BALCONIES	40	10	L/360
FIRE ESCAPES	40	10	L/360
HANDRAILS/GUARDRAILS	200	10	L/360
PASSENGER VEHICLE GARAGE	50	10	L/360
ROOMS OTHER THAN SLEEPING ROOM	40	10	L/360
SLEEPING ROOMS	30	10	L/360
STAIRS	40	10	L/360
WIND LOAD	(BASED ON TABLE R301.2(4) WIND ZONE AND EXPOSURE)		
GROUND SNOW LOAD: Pg	20 (PSF)		
- I-JOIST SYSTEMS DESIGNED WITH 12 PSF DEAD LOAD AND DEFLECTION (IN) OF L/480			
- FLOOR TRUSS SYSTEMS DESIGNED WITH 15 PSF DEAD LOAD			

4. FOR 115 AND 120 MPH WIND ZONES, FOUNDATION ANCHORAGE IS TO COMPLY WITH SECTION R403.1.6 OF THE NRCR, 2018 EDITION. FOR 130 MPH, 140 MPH, AND 150 MPH WIND ZONES, FOUNDATION ANCHORAGE IS TO COMPLY WITH SECTION 4504 OF THE NRCR, 2018 EDITION.
5. ENERGY EFFICIENCY COMPLIANCE AND INSULATION VALUES OF THE BUILDING TO BE IN ACCORDANCE WITH CHAPTER 11 OF THE NRCR, 2018 EDITION.

FOOTING AND FOUNDATION NOTES

1. FOUNDATION DESIGN BASED ON A MINIMUM ALLOWABLE BEARING CAPACITY OF 2000 PSF. CONTACT GEOTECHNICAL ENGINEER IF BEARING CAPACITY IS NOT ACHIEVED.
2. FOR ALL CONCRETE SLABS AND FOOTINGS, THE AREA WITHIN THE PERIMETER OF THE BUILDING ENVELOPE SHALL HAVE ALL VEGETATION, TOP SOIL AND FOREIGN MATERIAL REMOVED. FILL MATERIAL SHALL BE FREE OF VEGETATION AND FOREIGN MATERIAL. THE FILL SHALL BE COMPACTED TO ASSURE UNIFORM SUPPORT OF THE SLAB, AND EXCEPT WHERE APPROVED, THE FILL DEPTHS SHALL NOT EXCEED 24" FOR CLEAN SAND OR GRAVEL. A 4" THICK BASED COURSE CONSISTING OF CLEAN GRADED SAND OR GRAVEL SHALL BE PLACED. A BASE COURSE IS NOT REQUIRED WHERE A CONCRETE SLAB IS INSTALLED ON WELL-DRAINED OR SAND-GRAVEL MIXTURE SOILS CLASSIFIED AS GROUP 1, ACCORDING TO THE UNITED SOIL CLASSIFICATION SYSTEM IN ACCORDANCE WITH TABLE R405.1 OF THE NRCR, 2018 EDITION.
3. PROPERLY DEWATER EXCAVATION PRIOR TO POURING CONCRETE WHEN BOTTOM OF CONCRETE SLAB IS AT OR BELOW WATER TABLE. IF APPLICABLE, 3/4" - 1" DEEP CONTROL JOINTS ARE TO BE SAWED WITHIN 4 TO 12 HOURS OF CONCRETE FINISHING AND WALL LOCATIONS HAVE BEEN MARKED. ADJUST WHERE NECESSARY.
4. CONCRETE SHALL CONFORM TO SECTION R402.2 OF THE NRCR, 2018 EDITION. CONCRETE REINFORCING STEEL TO BE ASTM A615 GRADE 60. WELDED WIRE FABRIC TO BE ASTM A185. MAINTAIN A MINIMUM CONCRETE COVER AROUND REINFORCING STEEL OF 3" IN FOOTINGS AND 1 1/2" IN SLABS. FOR POURED CONCRETE WALLS, CONCRETE COVER FOR REINFORCING STEEL MEASURED FROM THE INSIDE FACE OF THE WALL SHALL NOT BE LESS THAN 3/4". CONCRETE COVER FOR REINFORCING STEEL MEASURED FROM THE OUTSIDE FACE OF THE WALL SHALL NOT BE LESS THAN 1 1/2" FOR #5 BARS OR SMALLER, AND NOT LESS THAN 2" FOR #6 BARS OR LARGER.
5. MASONRY UNITS TO CONFORM TO ACE 530/ASCE 5/TMS 402. MORTAR SHALL CONFORM TO ASTM C270.
6. THE UNSUPPORTED HEIGHT OF MASONRY PIERS SHALL NOT EXCEED FOUR TIMES THEIR LEAST DIMENSION FOR UNFILLED HOLLOW CONCRETE MASONRY UNITS AND TEN TIMES THEIR LEAST DIMENSION FOR SOLID OR SOLID FILLED PIERS. PERS MAY BE FILLED SOLID WITH CONCRETE OR TYPE M OR S MORTAR. PIERS AND WALLS SHALL BE CAPPED WITH 8" OF SOLID MASONRY.
7. THE CENTER OF EACH OF THE PIERS SHALL BEAR IN THE MIDDLE THIRD OF ITS RESPECTIVE FOOTING. EACH GIRDER SHALL BEAR IN THE MIDDLE THIRD OF THE PIERS.
8. ALL CONCRETE AND MASONRY FOUNDATION WALLS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF SECTION R404 OF THE NRCR, 2018 EDITION OR IN ACCORDANCE WITH ACI 318, ACI 332, NOMA TR68-A OR ACE 530/ASCE 5/TMS 402. MASONRY FOUNDATION WALLS ARE TO BE REINFORCED PER TABLE R404.1.1(1), R404.1.1(2), R404.1.1(3), OR R404.1.1(4) OF THE NRCR, 2018 EDITION. CONCRETE FOUNDATION WALLS ARE TO BE REINFORCED PER TABLE R404.1.1(5) OF THE NRCR, 2018 EDITION. STEP CONCRETE FOUNDATION WALLS TO 2 x 6 FRAMED WALLS AT 16" O.C. WHERE GRADE PERMITS (UNO).

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FRAMING NOTES

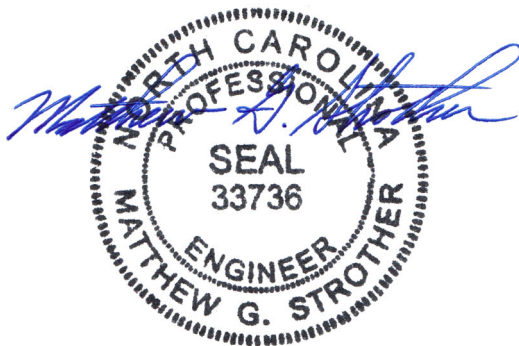
1. ALL FRAMING LUMBER SHALL BE #2 SPF MINIMUM (Fb = 875 PSI, Fv = 375 PSI, E = 1600000 PSI) UNLESS NOTED OTHERWISE (UNO). ALL TREATED LUMBER SHALL BE #2 SYP MINIMUM (Fb = 975 PSI, Fv =175 PSI, E = 1600000 PSI) UNLESS NOTED OTHERWISE (UNO).
2. LAMINATED VENEER LUMBER (LVL) SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES: Fb =2600 PSI, Fv = 285 PSI, E = 1900000 PSI. LAMINATED STRAND LUMBER (LSL) SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES: Fb = 2325 PSI, Fv = 310 PSI, E = 1550000 PSI. PARALLEL STRAND LUMBER (PSL) UP TO 7" DEPTH SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES: Fc = 2500 PSI, E =1800000 PSI. PARALLEL STRAND LUMBER (PSL) MORE THAN 7" DEPTH SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES: Fc = 2900 PSI, E = 2000000 PSI. INSTALL ALL CONNECTIONS PER MANUFACTURER'S SPECIFICATIONS.
3. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING ASTM SPECIFICATIONS
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| A. W AND WT SHAPES: | ASTM A992 |
| B. CHANNELS AND ANGLES: | ASTM A36 |
| C. PLATES AND BARS: | ASTM A36 |
| D. HOLLOW STRUCTURAL SECTIONS: | ASTM A500 GRADE B |
| E. STEEL PIPE: | ASTM A53, GRADE B, TYPE E OR S |

4. STEEL BEAMS SHALL BE SUPPORTED AT EACH END WITH A MINIMUM BEARING LENGTH OF 3 1/2" AND FULL FLANGE WIDTH (UNO). PROVIDE SOLID BEARING FROM BEAM SUPPORT TO FOUNDATION. BEAMS SHALL BE ATTACHED AT THE BOTTOM FLANGE TO EACH SUPPORT AS FOLLOWS (UNO):

A. WOOD FRAMING	(2) 1/2" DIA. x 4" LONG LAG SCREWS
B. CONCRETE	(2) 1/2" DIA. x 4" WEDGE ANCHORS
C. MASONRY (FULLY GROUTED)	(2) 1/2" DIA. x 4" LONG SIMPSON TITEN HD ANCHORS
D. STEEL PIPE COLUMN	(4) 3/4" DIA. A325 BOLTS OR 3/16" FILLET WELD

LATERAL SUPPORT IS CONSIDERED ADEQUATE PROVIDING THE JOISTS ARE TOE NAILED TO THE 2x NAILER ON TOP OF THE STEEL BEAM, AND THE 2x NAILER IS SECURED TO THE TOP OF THE STEEL BEAM w/ (2) ROWS OF SELF TAPPING SCREWS @ 16" O.C. OR (2) ROWS OF 1/2" DIAMETER BOLTS @ 16" O.C. IF 1/2" BOLTS ARE USED TO FASTEN THE NAILER, THE STEEL BEAM SHALL BE FABRICATED w/ (2) ROWS OF 9/16" DIAMETER HOLES @ 16" O.C.

5. SQUARES DENOTE POINT LOADS WHICH REQUIRE SOLID BLOCKING TO GIRDER OR FOUNDATION. SHADED SQUARES DENOTE POINT LOADS FROM ABOVE WHICH REQUIRE SOLID BLOCKING TO SUPPORTING MEMBER BELOW.
6. ALL LOAD BEARING HEADERS TO CONFORM TO TABLE R602.7(1) AND R602.7(2) OF THE NRCR, 2018 EDITION OR BE (2) 2 x 6 WITH (1) JACK AND (1) KING STUD EACH END (UNO), WHICHEVER IS GREATER ALL HEADERS TO BE SECURED TO EACH JACK STUD WITH (4) 8d NAILS. ALL BEAMS TO BE SUPPORTED WITH (2) STUDS AT EACH BEARING POINT (UNO). INSTALL KING STUDS PER SECTION R602.7.5 OF THE NORTH CAROLINA RESIDENTIAL CODE, 2018 EDITION.
7. ALL BEAMS, HEADERS, OR GIRDER TRUSSES PARALLEL TO WALL ARE TO BEAR FULLY ON (1) JACK OR (2) STUDS MINIMUM OR THE NUMBER OF JACKS OR STUDS NOTED. ALL BEAMS OR GIRDER TRUSSES PERPENDICULAR TO WALL AND SUPPORTED BY (3) STUDS OR LESS ARE TO HAVE 1 1/2" MINIMUM BEARING (UNO). ALL BEAMS OR GIRDER TRUSSES PERPENDICULAR TO WALL AND SUPPORTED BY MORE THAN (3) STUDS OR OTHER NOTED COLUMN ARE TO BEAR FULLY ON SUPPORT COLUMN FOR ENTIRE WALL DEPTH (UNO). BEAM ENDS THAT BUTT INTO ONE ANOTHER ARE TO EACH BEAR EQUAL LENGTHS (UNO).
8. FLITCH BEAMS SHALL BE BOLTED TOGETHER USING 1/2" DIAMETER BOLTS (ASTM A307) WITH WASHERS PLACED AT THREADED END OF BOLT. BOLTS SHALL BE SPACED AT 24" CENTERS (MAXIMUM), AND STAGGERED AT TOP AND BOTTOM OF BEAM (2" EDGE DISTANCE), WITH (2) BOLTS LOCATED AT 6" FROM EACH END (UNO).
9. ALL I-JOIST OR TRUSS LAYOUTS ARE TO BE IN COMPLIANCE WITH THE OVERALL DESIGN SPECIFIED ON THE PLANS. ALL DEVIATIONS ARE TO BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD PRIOR TO INSTALLATION.
10. BRACED WALL PANELS SHALL BE CONSTRUCTED ACCORDING TO THE NORTH CAROLINA RESIDENTIAL CODE 2018 EDITION WALL BRACING CRITERIA. THE AMOUNT, LENGTH, AND LOCATION OF BRACING SHALL COMPLY WITH ALL APPLICABLE TABLES IN SECTION R602.10.
11. PROVIDE DOUBLE JOIST UNDER ALL WALLS PARALLEL TO FLOOR JOISTS. PROVIDE SUPPORT UNDER ALL WALLS PARALLEL TO FLOOR TRUSSES OR I-JOISTS PER MANUFACTURER'S SPECIFICATIONS. INSTALL BLOCKING BETWEEN JOISTS OR TRUSSES FOR POINT LOAD SUPPORT FOR ALL POINT LOADS ALONG OFFSET LOAD LINES.
12. FOR ALL HEADERS SUPPORTING BRICK VENEER THAT ARE LESS THAN 8'-0" IN LENGTH, REST A 6" x 4" x 5/16" STEEL ANGLE WITH 6" MINIMUM EMBEDMENT AT SIDES FOR BRICK SUPPORT (U.N.O.). FOR ALL HEADERS 8'-0" AND GREATER IN LENGTH, BOLT A 6" x 4" x 5/16" STEEL ANGLE TO HEADER WITH 1/2" LAG SCREWS AT 12" O.C. STAGGERED FOR BRICK SUPPORT. FOR ALL BRICK SUPPORT AT ROOF LINES, BOLT A 6" x 4" x 5/16" STEEL ANGLE TO (2) 2 x 10 BLOCKING INSTALLED w/ (4) 12d NAILS EA. PLY BETWEEN WALL STUDS WITH (2) ROWS OF 1/2" LAG SCREWS AT 12" O.C. STAGGERED AND IN ACCORDANCE WITH SECTION R703.8.2.1 OF THE NRCR, 2018 EDITION.
13. FOR STICK FRAMED ROOFS: CIRCLES DENOTE (3) 2 x 4 POSTS FOR ROOF MEMBER SUPPORT. HIP SPLICES ARE TO BE SPACED A MINIMUM OF 8'-0". FASTEN MEMBERS WITH THREE ROWS OF 12d NAILS AT 16" O.C. FRAME DORMER WALLS ON TOP OF DOUBLE OR TRIPLE RAFTERS AS SHOWN (UNO).
14. FOR TRUSSED ROOFS: FRAME DORMER WALLS ON TOP OF 2 x 4 LADDER FRAMING AT 24" O.C. BETWEEN ADJACENT ROOF TRUSSES. STICK FRAME OVER-FRAMED ROOF SECTIONS WITH 2 x 8 RIDGES, 2 x 6 RAFTERS AT 16" O.C. AND FLAT 2 x 10 VALLEYS (UNO).
15. ALL 4 x 4 AND 6 x 6 POSTS TO BE INSTALLED WITH 700 LB CAPACITY UPLIFT CONNECTORS TOP AND BOTTOM (UNO). POSTS MAY BE SECURED USING ONE SIMPSON H6 OR LTS12 UPLIFT CONNECTOR FASTENED TO THE BAND AT THE BOTTOM AND THE BEAM AT THE TOP OF EACH POST. ONE 16" SECTION OF SIMPSON CS16 COIL STRAPPING WITH (8) 8d HDG NAILS AT EACH END MAY BE USED IN LIEU OF EACH TWIST STRAP IF DESIRED. FOR MASONRY OR CONCRETE FOUNDATION USE SIMPSON POST BASE.



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STANDARD STRUCTURAL NOTES

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NOTES