

# GENERAL STRUCTURAL NOTES

## 001000:

TO THE BEST OF THE ENGINEER'S KNOWLEDGE THE PLANS AND SPECIFICATIONS FOR THIS PROJECT COMPLY WITH THE APPLICABLE MINIMUM BUILDING CODES AS DETERMINED BY THE LOCAL AUTHORITY IN ACCORDANCE WITH THE NORTH CAROLINA STATUTES.

DO NOT SCALE DRAWINGS, USE DIMENSIONS PROVIDED, TYPICALLY. IN THE CASE OF DIMENSIONAL CONFLICT ARCHITECTURAL DIMENSIONS GOVERN OVER STRUCTURAL DIMENSIONS, TYPICALLY.

STRUCTURAL DRAWINGS ARE NOT TO BE REPRODUCED WITHOUT WRITTEN CONSENT FROM R. L. FLOWFIELD & ASSOCIATES, INC.

SHOP DRAWING REVIEW SHALL REQUIRE TWO (2) WEEKS FOR COMPLETION FROM TIME OF DELIVERY TO R. L. FLOWFIELD & ASSOCIATES, INC. SHOP DRAWINGS SHALL BE CHECKED & "APPROVED" BY GENERAL CONTRACTOR PRIOR TO SUBMITTAL TO ARCHITECT.

CONTRACTORS SUBMITTING SHOP DRAWINGS TO PROVIDE ONE (1) PDF FOR MARK-UP.

## 002000 BUILDING CODES:

NORTH CAROLINA BUILDING CODE (2018)

ASCE 7-10

RISK CATEGORY = TYPE III  
 BASIC WIND SPEED,  $V_{ult}$  = 125 MPH, ( $V_{ref}$  = 91 MPH)  
 EXPOSURE B  
 INTERNAL PRESSURE COEFFICIENT,  $GCP1$  = +/- .18 (ENCLOSED)  
 SEISMIC IMPORTANCE FACTOR,  $I_e$  = 1.0  
 MAPPED SPECTRAL RESPONSE ACCELERATION PARAMETERS,  $S_{ps}$  @ 0.1 Hz,  $S_{ps}$  @ 0.2 Hz  
 SITE CLASS D  
 DESIGN SPECTRAL RESPONSE ACCELERATION PARAMETERS,  $S_{ps}$  @ 0.1 Hz,  $S_{ps}$  @ 0.2 Hz  
 SEISMIC DESIGN CATEGORY = B  
 BASIC SEISMIC FORCE-RESISTING SYSTEM:  
 WOOD SHEAR WALLS (R = 6.5)  
 STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE, EXCLUDING CANTILEVER COLUMN SYSTEMS (R = 3)  
 DESIGN BASE SHEAR = 125 kips  
 SEISMIC RESPONSE COEFFICIENT,  $C_s$  = 0.021

ANALYSIS PROCEDURE USED: SIMPLIFIED DESIGN METHOD

## 005000 STRUCTURAL LOADING:

THE STRUCTURE HAS BEEN DESIGNED IN ACCORD WITH THE BUILDING CODE AND/OR MORE RESTRICTIVE REQUIREMENTS FOR LOADS AS GIVEN BELOW UNLESS SPECIFIC AREAS OF THE DRAWING SPECIFICALLY CALL FOR DIFFERENT LOADING CRITERIA.

GRAVITY LOADING UNIFORM LIVE LOAD:  
 ROOFS-SLOPED ----- 20 PSF (REDUCIBLE)

SNOW LOAD:  
 GROUND SNOW LOAD,  $P_g$  = 15 PSF  
 FLAT-ROOF SNOW LOAD,  $P_f$  = 13.9 PSF  
 SNOW EXPOSURE FACTOR,  $C_e$  = 1.2  
 SNOW LOAD IMPORTANCE FACTOR,  $I_s$  = 1.0  
 THERMAL FACTOR,  $C_t$  = 1.1  
 DRIFT SURCHARGE LOADS,  $P_d$  = 21.9 psf  
 WIDTH OF SNOW DRIFTS,  $w$  = 1.0 ft

WIND LOAD AS PER BUILDING CODE (SEE SECTION 002000)

## 010510 DRAWING DIMENSIONS AND COORDINATION:

DIMENSIONAL INFORMATION, PRICING, ALL DETAILS AND CONSTRUCTION SHALL BE BASED ON THE ENTIRE SET OF CONTRACT DOCUMENTS, COORDINATE THE REQUIREMENTS OF ALL PROFESSIONALS, USE INFORMATION FROM APPROVED SHOP DRAWINGS TO SUPPLEMENT CONTRACT DOCUMENTS WHERE NECESSARY, REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO PROCEEDING.

## 011000 SCOPE OF SERVICE FOR DELEGATED ENGINEERING:

R.L. FLOWFIELD & ASSOCIATES HAS DESIGNED AND IS RESPONSIBLE FOR ONLY THE SPECIFIC STRUCTURAL COMPONENTS SHOWN IN THIS SET OF STRUCTURAL CONSTRUCTION DOCUMENTS. IF A SPECIALTY ENGINEER, AS DEFINED BY THE DEPARTMENT OF PROFESSIONAL REGULATION, IS REQUIRED, HIS SERVICES MUST COMPLY WITH THE SCOPE OF SERVICES AS OUTLINED IN THE PROJECT CONSTRUCTION DOCUMENTS.

## 022000 FOUNDATIONS:

GEOTECHNICAL DATA AND RECOMMENDATIONS HAVE BEEN PROVIDED BY ENGINEERING AND ENVIRONMENTAL SCIENCE CO, REPORT DATED JULY 29, 2022, SHALLOW STRIP AND SPREAD FOOTINGS - ALLOWABLE BEARINGS = 2000 PSF.

GEOTECHNICAL ENGINEER IS RESPONSIBLE FOR SPECIFYING AND MONITORING ALL TESTING, INSTALLATION, EVALUATION AND REPORTING RELATED TO THE FOUNDATION SYSTEM, INCLUDING ALL WORKMANSHIP PROVISIONS RELATING TO THE SOIL - STRUCTURE INTERFACE. THE STRUCTURAL ENGINEER IS RESPONSIBLE FOR SPECIFYING THE MATERIALS USED TO CONSTRUCT THE FOUNDATION UNITS AND FOR THE SELECTION OF VARIOUS SIZE UNITS TO SUPPORT THE STRUCTURAL FRAME.

DO NOT PLACE ANY FOOTINGS OR MATS UNTIL RECEIPT OF WRITTEN AUTHORIZATION BY THE GEOTECHNICAL ENGINEER THAT THE PREPARED SUBGRADE OR DEEP FOUNDATION SYSTEM HAS BEEN PROPERLY EXECUTED IN ACCORD WITH THE DESIGN AND THAT ANY VARYING CONDITIONS ENCOUNTERED DURING CONSTRUCTION HAVE BEEN EVALUATED AND CORRECTED WHERE NECESSARY TO INSURE PROPER FOUNDATION PERFORMANCE.

## 022000 EARTHWORK:

CONTRACTOR SHALL DEWATER SITE AS NECESSARY, SO THAT ALL CONCRETE CAN BE PLACED IN THE DRY. ALL BACKFILL SHALL BE ACCOMPLISHED USING MATERIAL CONSISTING OF CRUSHED STONE AND/OR MATERIAL APPROVED BY THE GEOTECHNICAL ENGINEER. THE BACKFILL SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D-1557. NO BACKFILL MATERIAL SHALL BE PLACED AGAINST WALLS WHICH DO NOT HAVE PERMANENT FLOORS AT THE TOP AND BOTTOM WITHOUT PROVISIONS FOR ADEQUATE TEMPORARY BRACING OF THOSE WALLS. PROVIDE ADEQUATE EXCAVATION BRACING IN ACCORD WITH GEOTECHNICAL ENGINEER RECOMMENDATIONS TO MAINTAIN EXISTING FOOTINGS, UTILITIES, AND OTHER IMPROVEMENTS IN A SAFE CONDITION.

## 031000 FORMWORK:

CONTRACTOR SHALL DESIGN AND ERECT FORMWORK IN STRICT COMPLIANCE WITH ACI 347. SEE TYPICAL DETAILS FOR CAMBER REQUIREMENTS. CONTRACTOR SHALL COORDINATE ALL OPENINGS AS REQUIRED FOR OTHER TRADES. OPENINGS WHERE SHOWN ON THE STRUCTURAL DRAWINGS ARE TO IDENTIFY DESIGN INTENT ONLY. THE SPECIFIC DIMENSIONS AND LOCATIONS SHALL BE FURNISHED OR CONFIRMED BY THE TRADE REQUIRING THE OPENING. PROVIDE CHAMBERS AT ALL CORNERS IN CONCRETE MEMBERS EXPOSED TO VIEW. FORMWORK TO REMAIN IN PLACE UNTIL CONCRETE HAS ATTAINED ENOUGH STRENGTH TO SUPPORT ALL DEAD LOADS PLUS A MINIMUM OF 50 PSF OF ADDITIONAL CONSTRUCTION LOAD. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

## 032000 CONCRETE REINFORCEMENT:

WORK SHALL BE IN ACCORD WITH THE LATEST VERSION OF ACI 318, ACI 318R, ACI 318, CRSI "MANUAL OF STANDARD PRACTICE" CRSI "PLACING REINFORCING BARS", WIRE REINFORCEMENT INSTITUTE (WRI) "MANUAL OF STANDARD PRACTICE-STRUCTURAL WELDED WIRE REINFORCEMENT". BARS SHALL CONFORM TO THE LATEST VERSION OF ASTM SPECIFICATION A615, GRADE 60. WELDED WIRE FABRIC SHALL CONFORM TO THE LATEST VERSION OF ASTM A1064. CONCRETE COVER REQUIRED AS FOLLOWS:  
 A.) CAST AGAINST AND EXPOSED TO EARTH OR WEATHER  
 #5 AND LARGER 2"  
 #6 AND SMALLER 1-1/2"  
 C.) SLABS AND WALLS - NO EARTH OR WEATHER EXPOSURE  
 #1 AND SMALLER 3/4"  
 3 HOUR FIRE RATING AND LESS 3/4"  
 D.) BEAMS - 1 1/2" (3 HOUR FIRE RATING AND LESS)  
 E.) COLUMNS - 1" x HOUR RATING OR 2" WHICHEVER IS LESS. (TO MAIN VERTICAL REINFORCING)  
 LAP SPLICE LENGTHS SHALL BE AS FOLLOWS:  
 1. ALL LAP SPLICES SHALL BE TENSION CLASS "B" UNLESS OTHER LAP CONDITIONS ARE SPECIFICALLY SHOWN ON THE DRAWINGS.  
 2. SPLICE LENGTHS SHALL BE SHOWN ON SHOP DRAWINGS.  
 3. USE GENERAL HOOK BAR DEVELOPMENT LENGTHS UNLESS SPECIAL CONFINEMENT CONDITIONS ARE SATISFIED IN ACCORD WITH ACI 318.

## 033000 CAST-IN-PLACE CONCRETE:

TO BE MIXED AND PLACED IN ACCORDANCE WITH THE LATEST VERSION OF ACI 309. ALL REINFORCED CONCRETE TO HAVE 28 DAY COMPRESSIVE STRENGTHS AS FOLLOWS:  
 ALL STRUCTURAL ELEMENTS  $f'_c$  = 4000 PSI UNLESS NOTED OTHERWISE.  
 COLUMNS:  $f'_c$  = 4000 PSI  
 BEAMS:  $f'_c$  = 4000 PSI  
 SHEARWALLS  $f'_c$  = 4000 PSI  
 ELEVATED SLABS  $f'_c$  = 4000 PSI  
 FOUNDATION  $f'_c$  = 3000 PSI  
 SLAB ON GRADE  $f'_c$  = 3000 PSI  
 ALL CONCRETE MIX DESIGN SUBMITTALS SHALL INCLUDE A WRITTEN DESCRIPTION INDICATING WHERE EACH PARTICULAR MIX IS TO BE PLACED WITHIN THE STRUCTURE.

## 033100 CONCRETE TESTING:

OWNER WILL EMPLOY AN INDEPENDENT TESTING LABORATORY TO PERFORM THE FOLLOWING TESTS AND SUBMIT TEST REPORTS ON CAST IN PLACE CONCRETE:

ASTM C143 "STANDARD TEST METHOD FOR SLUMP OF PORTLAND CEMENT CONCRETE" SLUMP SHALL NOT EXCEED LIMIT INDICATED ON APPROVED MIX DESIGN, OR 6" (WHICHEVER IS SMALLER)

ASTM C39 "STANDARD TEST METHOD FOR COMPRESSIVE STRENGTH OF CYLINDRICAL CONCRETE SPECIMENS" CYLINDERS SHALL BE TAKEN FOR EACH MIX DESIGN USED, AND FOR EVERY 50 CUBIC YARDS OF CONCRETE PLACED. TEST CYLINDERS AT THE FOLLOWING AGES:

- 1 AT 3 DAYS
- 1 AT 7 DAYS
- 2 AT 28 DAYS

HOLD ONE RESERVE CYLINDER TO BE TESTED AS REQUESTED BY THE ENGINEER. IF REQUIRED 28 DAY STRENGTH IS ACHIEVED, THE RESERVE CYLINDER MAY BE DISCARDED.

## 036000 GROUT:

GROUTING IS CLASSIFIED AS "PRECISION GROUTING" FOR SUPPORT OF OPERATING MACHINE BASES, EQUIPMENT SUBJECT TO THERMAL MOVEMENT, AND BASE PLATES, BEARING PLATES, AND EXPANSION BEARINGS EXCEEDING 8" IN LEAST DIMENSION. ALL OTHER GROUTING MAY BE "ORDINARY GROUTING". METALLIC AGGREGATE GROUT MAY BE USED ONLY IN INTERIOR APPLICATIONS NOT EXPOSED TO VIEW IN FINISHED BUILDING AREAS. USE ORDINARY CEMENT GROUT ONLY WHERE SPECIFICALLY NOTED AS "CEMENT GROUT" ON DETAILS. USE NON-SHRINK GROUT FOR ALL OTHER LOCATIONS. PRECISION GROUT SHALL CONFORM TO CRD-C621-80 WHEN MIXED TO FLUID CONSISTENCY OF 22 TO 25 SECONDS (FLOW CONE METHOD, CRD-C611). REQUIRED 28 DAY STRENGTHS SHALL BE AS FOLLOWS:  
 CEMENT GROUT 1800 PSI  
 NON-SHRINK GROUT 5000 PSI  
 PRECISION GROUT 6500 PSI

## 050550 WELDING:

ALL WELDING TO BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN WELDING SOCIETY (AWS) "STRUCTURAL WELDING CODE-STEEL" D11 AND AS INDICATED ON THE STRUCTURAL DRAWINGS. WELDING ELECTRODES SHALL BE E70XX, UNLESS NOTED OTHERWISE. WELDING ELECTRODES, WELDING PROCESS, MINIMUM PREHEAT AND INTERPASS TEMPERATURES TO BE IN ACCORDANCE WITH THE AWS SPECIFICATIONS. ANY STRUCTURAL STEEL DAMAGED IN WELDING TO BE REPLACED OR ACCEPTABLY REINFORCED. ALL FULL PENETRATION GROOVE WELDS TO BE SUBJECT TO RADIOGRAPHIC, MAGNETIC PARTICLE, ULTRASONIC, AND LIQUID PENETRANT INSPECTION CONDUCTED BY AN INDEPENDENT TESTING AGENCY PAID BY THE OWNER.

## 051000 STRUCTURAL STEEL:

ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".

STRUCTURAL STEEL TO CONFORM TO:  
 WF SHAPES ----- ASTM A572, GRADE 50 OR A992  
 SHAPES & PLATES ----- ASTM A36  
 PIPE ----- ASTM A53 GRADE B  
 TUBES ----- ASTM A500 GRADE B

ALL SHOP AND FIELD CONNECTIONS SHALL BE MADE WITH ASTM A325 HIGH STRENGTH BOLTS OR WELDED. BOLTING TO BE IN ACCORDANCE WITH AISC SPECIFICATIONS. ANY CONNECTION NOT SPECIFICALLY DETAILED SHALL BE DESIGNED BY THE SPECIALTY ENGINEER FOR THE FORCES SHOWN ON THE STRUCTURAL CONSTRUCTION DOCUMENTS. WHERE FORCES ARE NOT PROVIDED DESIGN SHALL BE BASED ON THE MAXIMUM LOAD CAPACITIES OF THE CONNECTING MEMBERS. ALL STRUCTURAL SUBMITTALS REQUIRING ENGINEERING INPUT SHALL BE ACCOMPANIED BY DESIGN CALCULATIONS AND BE SIGNED AND SEALED BY THE SPECIALTY ENGINEER. ALL STEEL AT AND BELOW FINISHED GRADE TO BE FIELD PAINTED AND COVERED WITH A MINIMUM OF 2" CONCRETE. ALL BEAMS BEARING ON CONCRETE TO HAVE A 3/8" X 1/2" X 8" BEARING PLATE WITH TWO (2) 1/2" HEADED ANCHOR BOLTS 12" LONG, UNLESS NOTED OTHERWISE.

STRUCTURAL STEEL EXPOSED TO WEATHER OR CORROSIVE ENVIRONMENTS SHALL BE HOT DIPPED GALVANIZED PER ASTM A123 AND A308. FABRICATOR TO COORDINATE DRAINAGE AND VENTING REQUIREMENTS FOR GALVANIZING PROCESS.

## 061100 STRUCTURAL WOOD FRAMING:

ALL DIMENSION LUMBERS 2" AND LESS IN NOMINAL THICKNESS SHALL BE SURFACED DRY AND STAMPED BY AN AGENCY CERTIFIED BY THE BOARD OF REVIEW OF THE AMERICAN LUMBER STANDARDS COMMITTEE AND MANUFACTURED IN ACCORD WITH PS 20. MEMBERS THICKER THAN 2" NOMINAL MAY BE SURFACED GREEN. MINIMUM SPECIES AND GRADES SHALL BE AS FOLLOWS (ALL VALUES IN POUNDS PER SQUARE INCH (PSI)):

SOUTHERN PINE (NO. 2)  
 2x4:  $F_b$  = 1100,  $F_t$  = 675,  $F_v$  = 175,  $F_{cp}$  = 565,  $E$  = 1,400,000.  
 2x6:  $F_b$  = 1000,  $F_t$  = 600,  $F_v$  = 175,  $F_{cp}$  = 565,  $E$  = 1,400,000.  
 2x8:  $F_b$  = 925,  $F_t$  = 550,  $F_v$  = 175,  $F_{cp}$  = 565,  $E$  = 1,400,000.  
 2x10:  $F_b$  = 800,  $F_t$  = 475,  $F_v$  = 175,  $F_{cp}$  = 565,  $E$  = 1,400,000.  
 2x12:  $F_b$  = 750,  $F_t$  = 450,  $F_v$  = 175,  $F_{cp}$  = 565,  $E$  = 1,400,000.  
 4x4:  $F_b$  = 1100,  $F_t$  = 675,  $F_v$  = 175,  $F_{cp}$  = 565,  $E$  = 1,400,000.  
 6x6:  $F_b$  = 850,  $F_t$  = 550,  $F_v$  = 165,  $F_{cp}$  = 375,  $E$  = 1,200,000.

ALL STUDS AND HEADER SHOULDERS SHALL BE ONE PIECE BETWEEN PLATES AND/OR HEADERS. DO NOT USE BLOCKING BETWEEN HEADERS AND SHOULDERS WITH SOFTER COMPRESSION PERPENDICULAR ( $F_{cp}$ ) THAN REQUIRED FOR HEADER. DO NOT CUT LET-IN BRACING INTO STUDS. PROVIDE G90 GALVANIZED HURRICANE CLIPS IN ACCORD WITH LOCAL CODE AT ALL ROOF ANCHORAGES AND AT ALL FLOORS.

ALL WOOD MEMBERS IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED.

## 061150 STRUCTURAL SHEATHING:

PLYWOOD SHALL CONFORM TO PS1 AND SHALL BE APA GRADE-STAMPED. ROOF SHEATHING SHALL BE "APA RATED SHEATHING EXTERIOR EXP. 5/8" THICK WITH PLY CLIPS AT JOINTS BETWEEN JOISTS OR TRUSSES. CONFORM TO APA RECOMMENDATIONS FOR INSTALLATION OF PLYWOOD. TREAT ALL FRAMING IN CONTACT WITH CONCRETE OR MASONRY IN ACCORD WITH AMERICAN WOOD PRESERVER'S BUREAU LP-2 OR PROVIDE 1/4" THICK 60 DUROMETER BEARING PAD BETWEEN CONCRETE OR MASONRY AND UNTREATED WOOD MEMBER.

## 061153 WOOD TRUSSES:

THIS IS A SYSTEM OF CUSTOM ENGINEERED COMPONENTS AND CONNECTIONS IN ACCORD WITH THE APPLICABLE STANDARDS OF TRUSS PLATE INSTITUTE, INCLUDING BUT NOT LIMITED TO THE DESIGN SPECIFICATION FOR METAL PLATE CONNECTED WOOD TRUSSES AND "INTERIM GUIDELINES", CSP "RECOMMENDED CODE OF STANDARD PRACTICE," HET "HANDLING AND ERECTING WOOD TRUSSES", BUT "BRACING WOOD TRUSSES", QCM "QUALITY CONTROL MANUAL" AND THE DEPARTMENT OF PROFESSIONAL REGULATION'S GUIDELINES. THE ENTIRE SYSTEM INCLUDING ALL TRUSSES, CONNECTORS BETWEEN TRUSSES, BRIDGING TEMPORARY BRACING FOR ERECTION, ANCHORAGE, AND EMBEDMENTS SHALL BE DESIGNED BY A SPECIALTY ENGINEER. THE REVIEW OF ALL STRUCTURAL SUBMITTALS BY THE STRUCTURAL ENGINEER OF RECORD SHALL BE TO INSURE THAT HIS INTENT HAS BEEN UNDERSTOOD AND THAT THE SPECIFIED CRITERIA HAVE BEEN USED. A COPY OF ALL STRUCTURAL SUBMITTALS WILL BE RETAINED FOR RECORD KEEPING PURPOSES ONLY. TRUSS CALCULATIONS, COMPONENT DRAWINGS, CONNECTOR CALCULATIONS, AND ERECTION PLANS SHALL BE SIGNED AND SEALED BY TRUSS ENGINEER AND SUBMITTED TO LOCAL BUILDING OFFICIAL FOR APPROVAL. DESIGN TRUSSES FOR LOADS SHOWN ON PLANS. IN THE ABSENCE OF LOADS, USE APPLICABLE LOCAL CODE FOR LIVE LOAD AND ACTUAL WEIGHT OF BUILDING MATERIALS FOR DEAD LOAD. USE PATTERNED AND PARTIAL SPAN LIVE LOADS WHERE REQUIRED TO PRODUCE MAXIMUM FORCE IN ANY TRUSS MEMBER. APPLY NET WIND UPLIFT ON ROOFS WHEN APPLICABLE. TRUSS TOP CHORDS SHALL BE GROUP II SPECIES LUMBER EXPOSED TO VIEW. TRUSSES SHALL BE OF SELECT STRUCTURAL GRADE. ALL OTHER GRADE AND SPECIES SELECTION IS AT THE DISCRETION OF THE SUPPLIER. COORDINATE ALL TRUSS DETAILS WITH ARCHITECTURAL DRAWINGS FOR CONCEALED TO VIEW TRUSSES, USE CONFIGURATIONS WHERE SHOWN AS PER SUGGESTIONS AND MAY BE MODIFIED BY THE SUPPLIER FOR ECONOMY. PROVIDE SIMPSON "T65" PLATE, TAR IMPREGNATED FELT PAPER, OR OTHER SUITABLE VAPOR BARRIER BETWEEN TRUSSES AND CONCRETE OR MASONRY BEARING SURFACES. PROVIDE G90 GALVANIZED HURRICANE ANCHORS DESIGNED FOR NET WIND UPLIFT AT ALL BEARINGS.

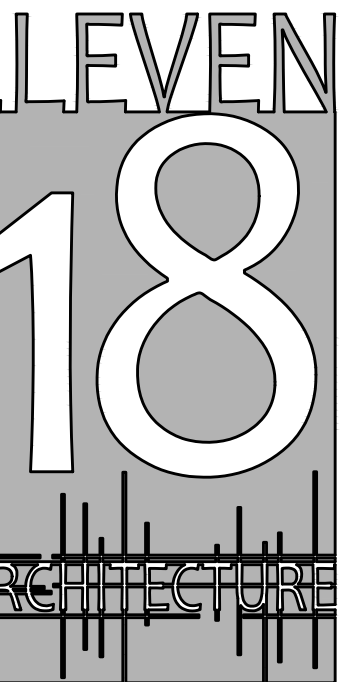
## 062000 PARALLAM WOOD BEAMS:

THIS IS A SYSTEM OF CUSTOM ENGINEERED WOOD COMPONENTS MANUFACTURED BY WEYERHAEUSER WITH THE FOLLOWING CERTIFIED MINIMUM PROPERTIES:  
 F<sub>b</sub> = 2,900 PSI  
 F<sub>t</sub> = 290 PSI  
 E = 2,000,000 PSI  
 SEE PLAN FOR BEAM SIZES.  
 ALL WOOD BEAMS WITH THE PREFIX PL ARE TO BE CONSTRUCTED AS PARALLAM BEAMS.

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11 APRIL 2022

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PROJECT NAME:

THE SPRINGS  
 OF  
 BALLENTINE

40 RAWLS CLUB RD  
 FUQUAY-VARINA NC

PROJECT CLIENT:

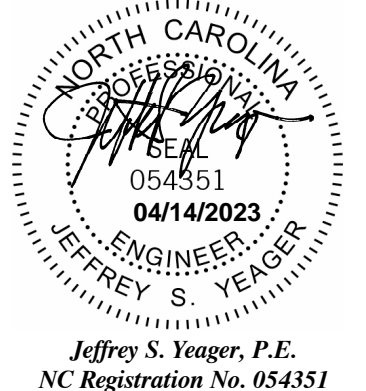
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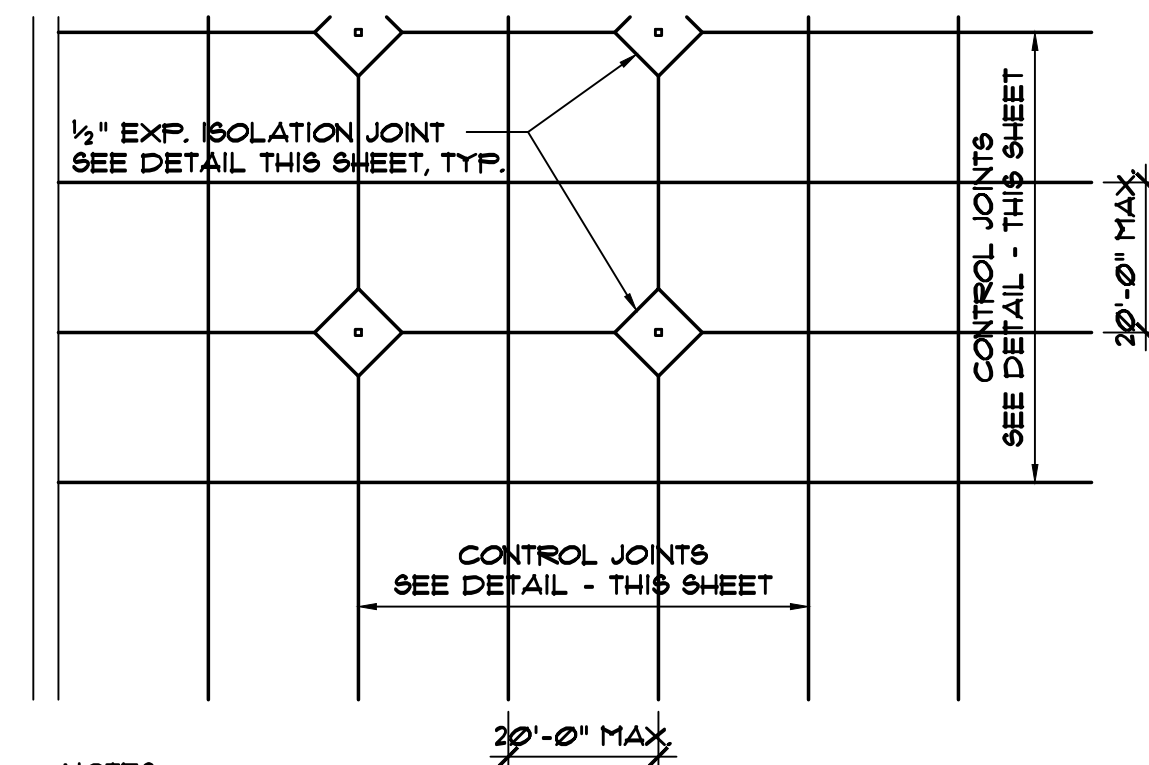
REVISIONS		
#	DATE	DESC.
-		PERMIT SUBMITTAL
	01.20.23	REV 1
	03.13.23	REV 2
	04.11.23	REV 4

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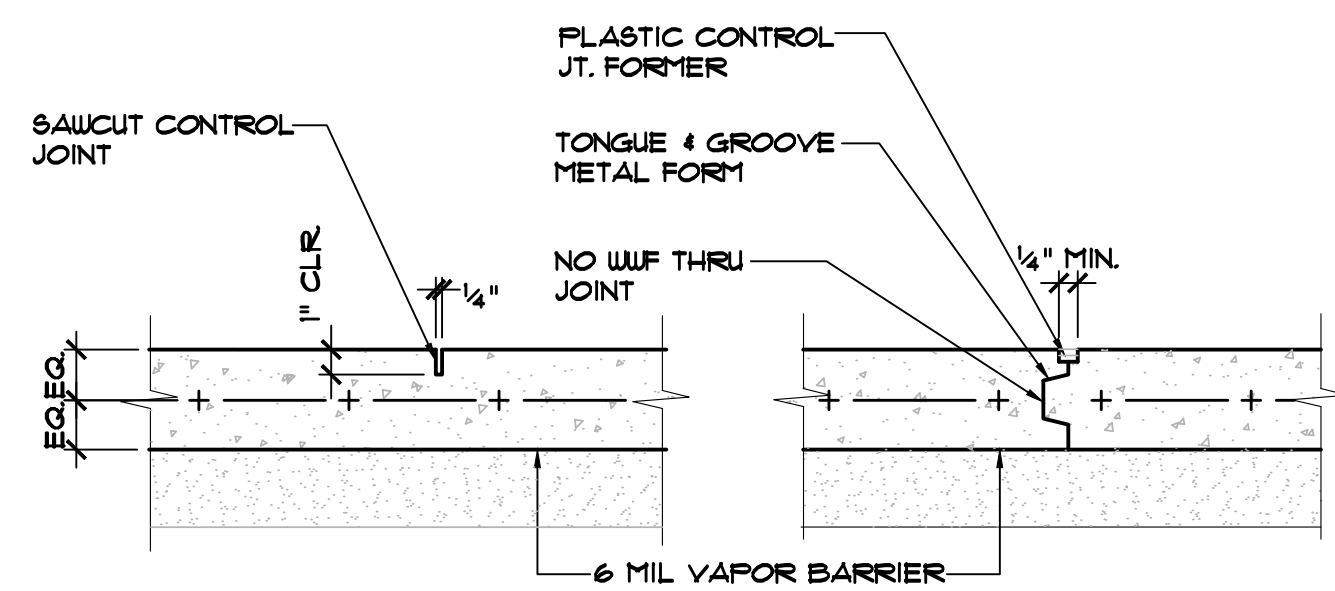
Jeffrey S. Yeager, P.E.  
 NC Registration No. 054351

\$100  
 GENERAL NOTES



- NOTES:
1. CAST SLAB USING LASER SCREED METHOD.
  2. DIVIDE SLAB BY CONTROL JOINTS @ 4' OF COLUMNS + SUBDIVIDED @ A MAXIMUM OF 20'-0" CENTERS.
  3. IN AREAS WHERE COLUMNS DO NOT OCCUR, PROVIDE CONTROL JOINTS AS SHOWN.
  4. SAWCUT JOINTS TO BE COMPLETED WITHIN 24 HOURS OF CONCRETE PLACEMENT.

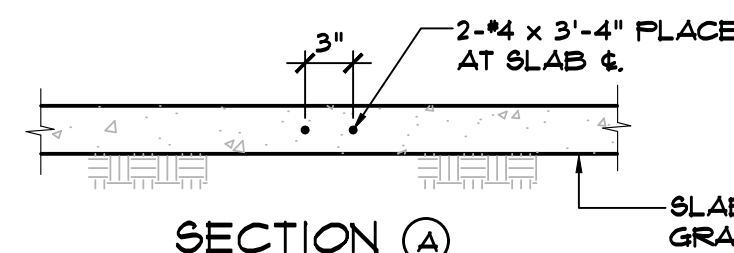
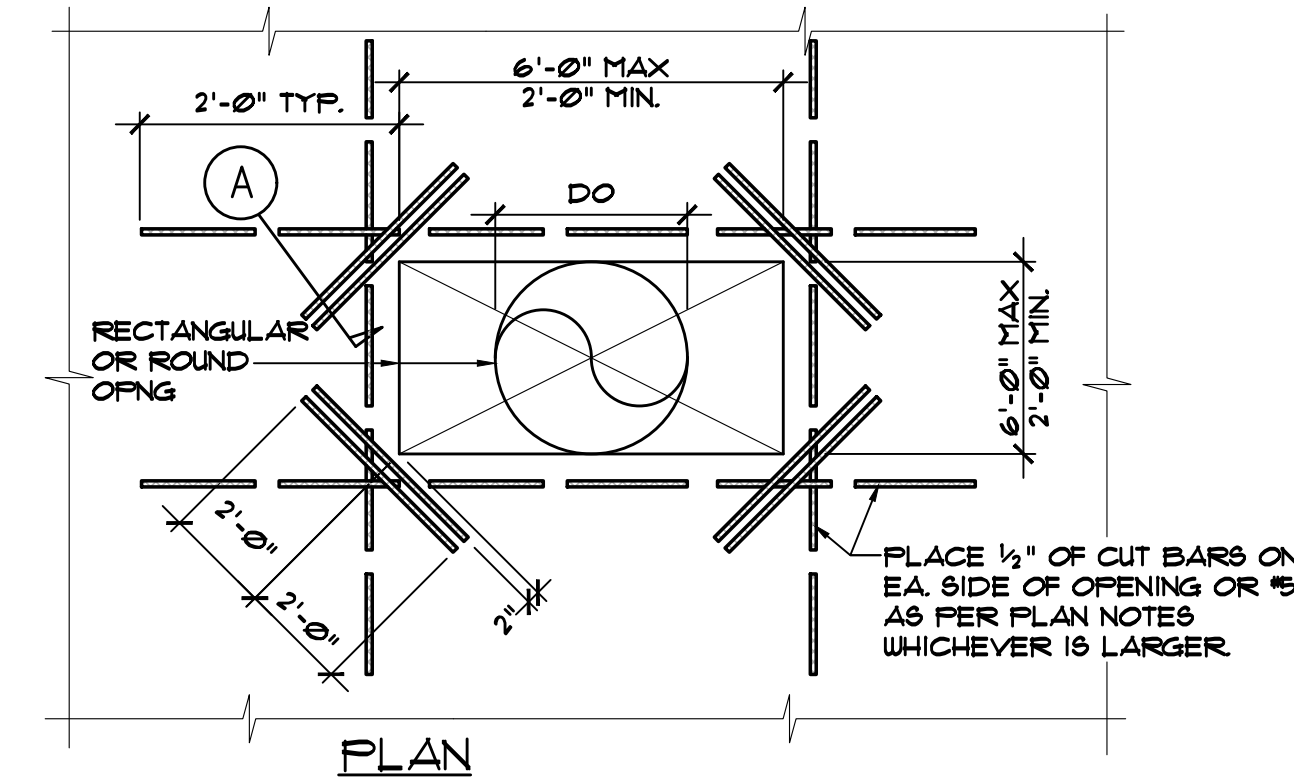
**1 CONCRETE SLAB-ON-GRADE**  
SCALE: N.T.S.



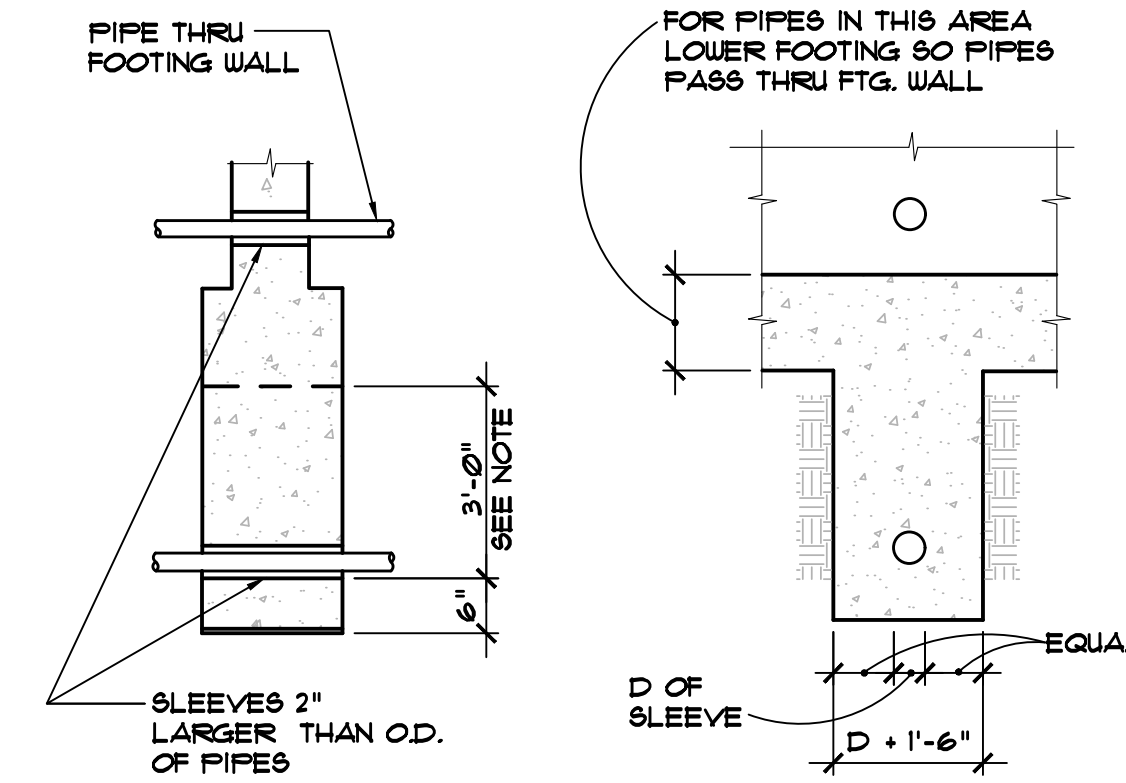
PROVIDE CONTROL JOINTS AT ALL COLUMNS AND OR 20'-0" c/c.

CONSTRUCTION JOINT MAY REPLACE CONTROL JOINT.

**2 SLAB-ON-GRADE JOINT DETAILS**  
SCALE: N.T.S.

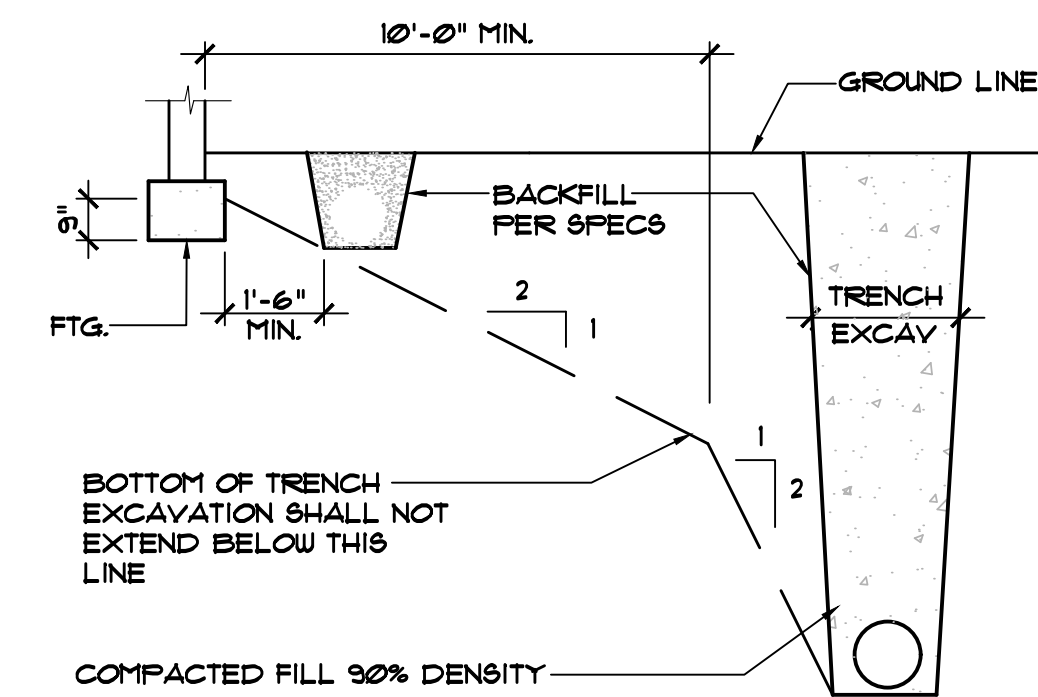


**3 OPENINGS IN SLAB-ON-GRADE**  
SCALE: N.T.S.



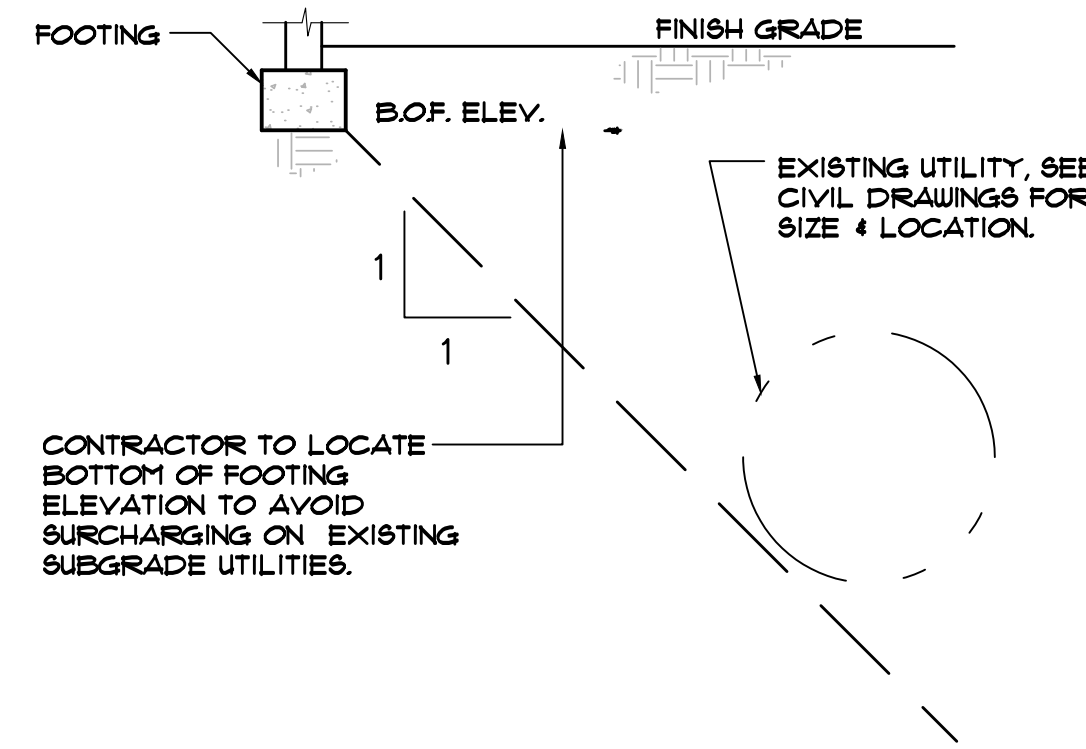
PROVIDE SLEEVE AND CONCRETE AS SHOWN: MORE THAN 3'-0" COMPACT BACKFILL OVER PIPE TO 90% AS APPROVED BY SOILS ENGINEER, OR USE STEPPED FOOTING BELOW PIPE.

**4 EXCAVATION PERPENDICULAR TO FOOTING**  
SCALE: N.T.S.

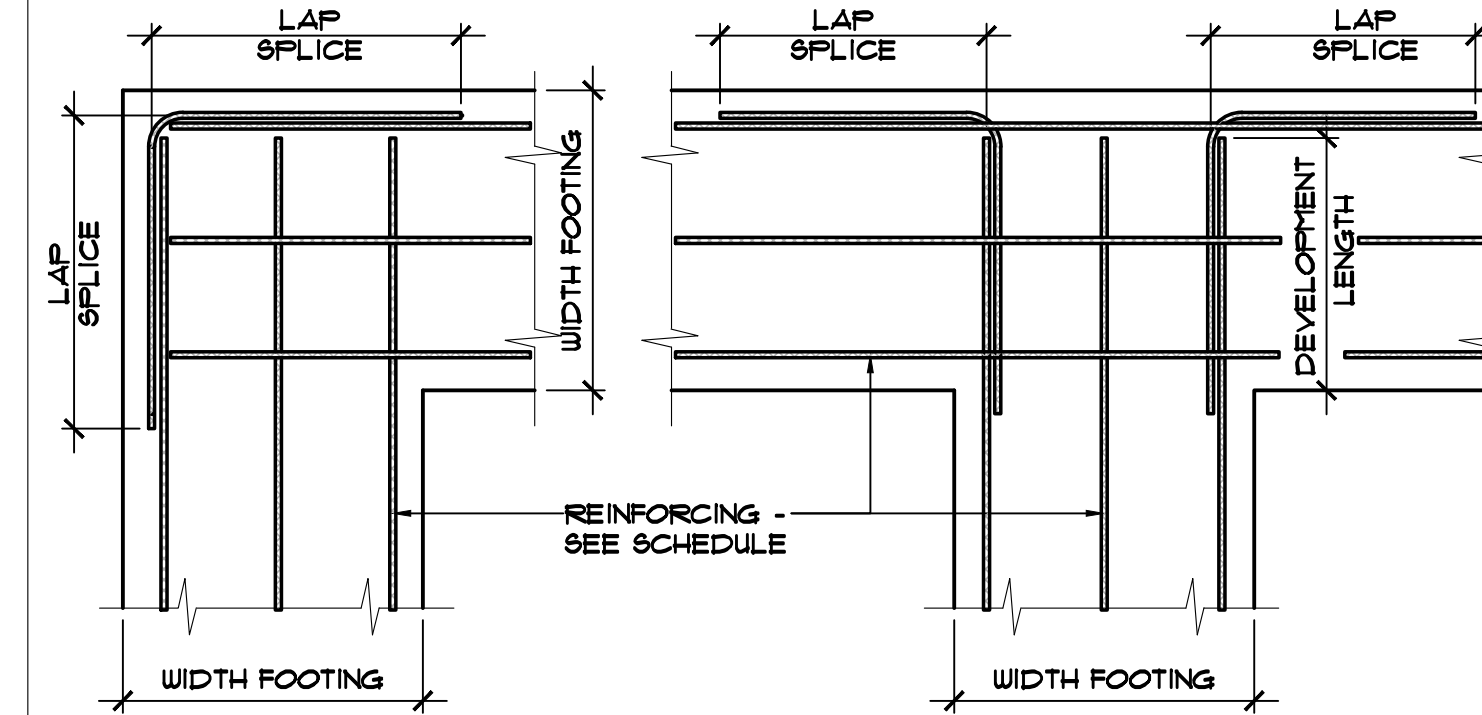


NOTE: THE CONTRACTOR SHALL BE RESPONSIBLE FOR SHORING, SHEATHING OR OTHERWISE MAINTAINING THE SIDES OF THE EXCAVATION FROM CAVE-INS UNTIL ALL BACKFILL IS COMPLETED PER SPECIFICATIONS

**5 EXCAVATIONS PARALLEL TO FOOTING**  
SCALE: N.T.S.

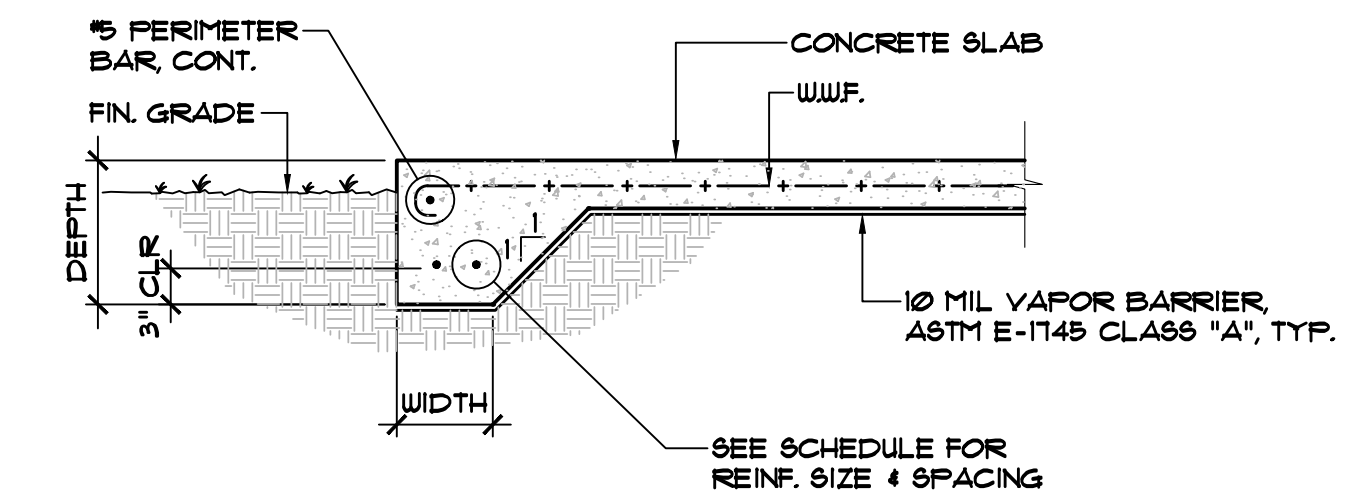


**6 FOOTING PARALLEL TO EXISTING UTILITY**  
SCALE: 3/4" = 1'-0"

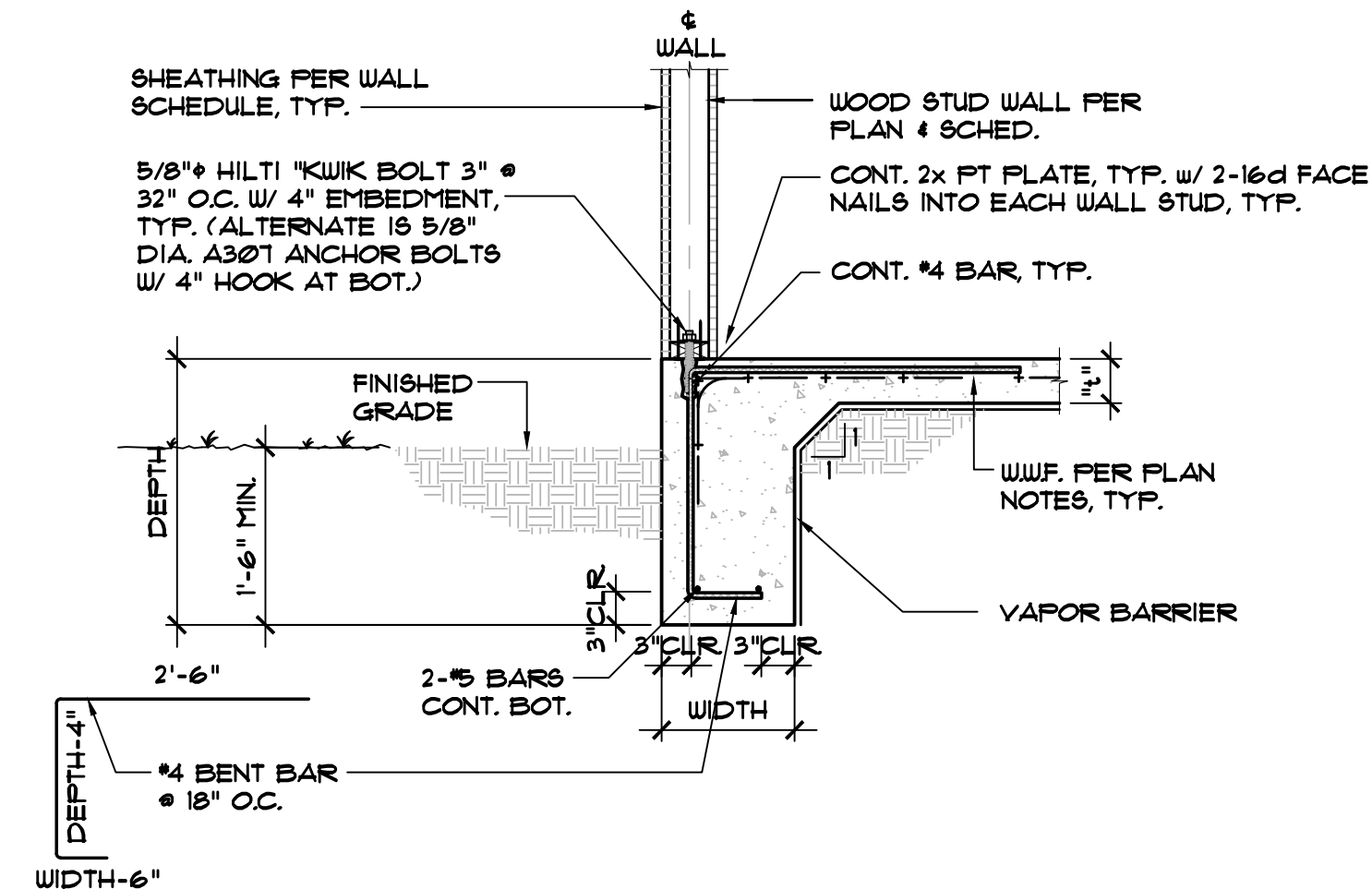


\* CORNER BARS ARE REQUIRED IF REINF. BAR DOES NOT DEVELOP FULL LAP IN FOOTING.

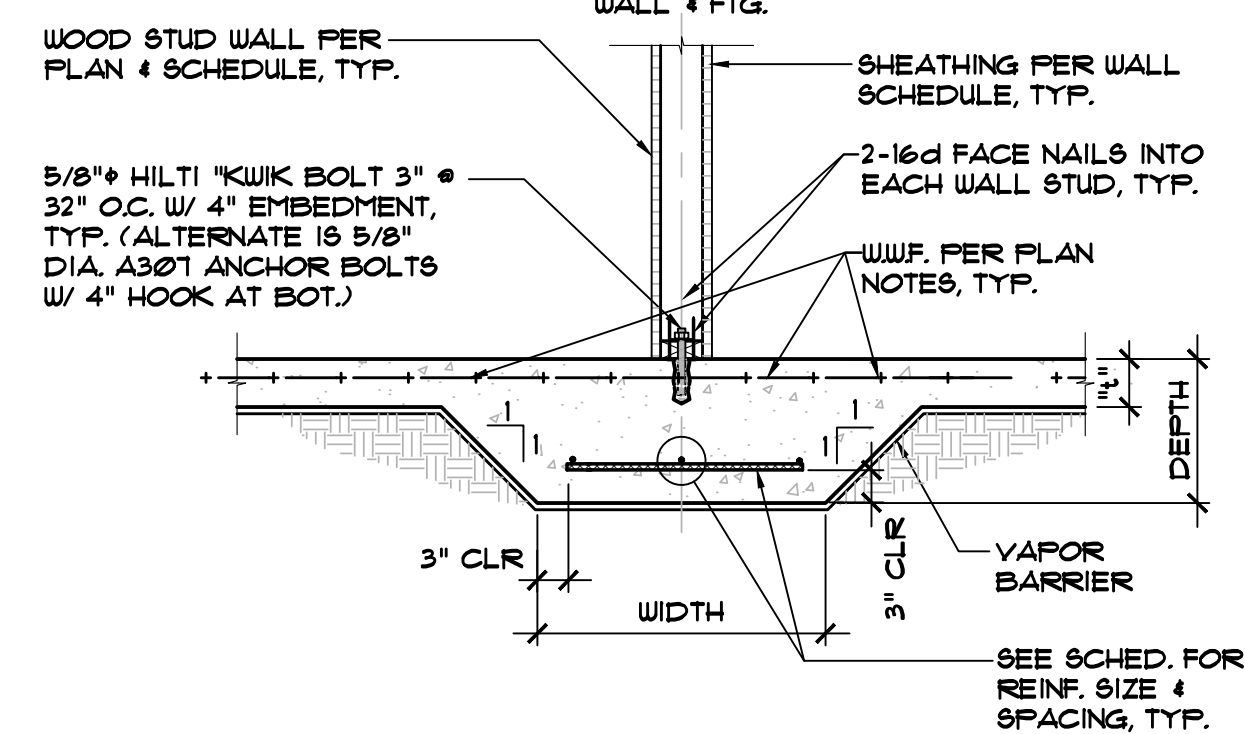
**7 FOOTING INTERSECTION**  
SCALE: 3/4" = 1'-0"



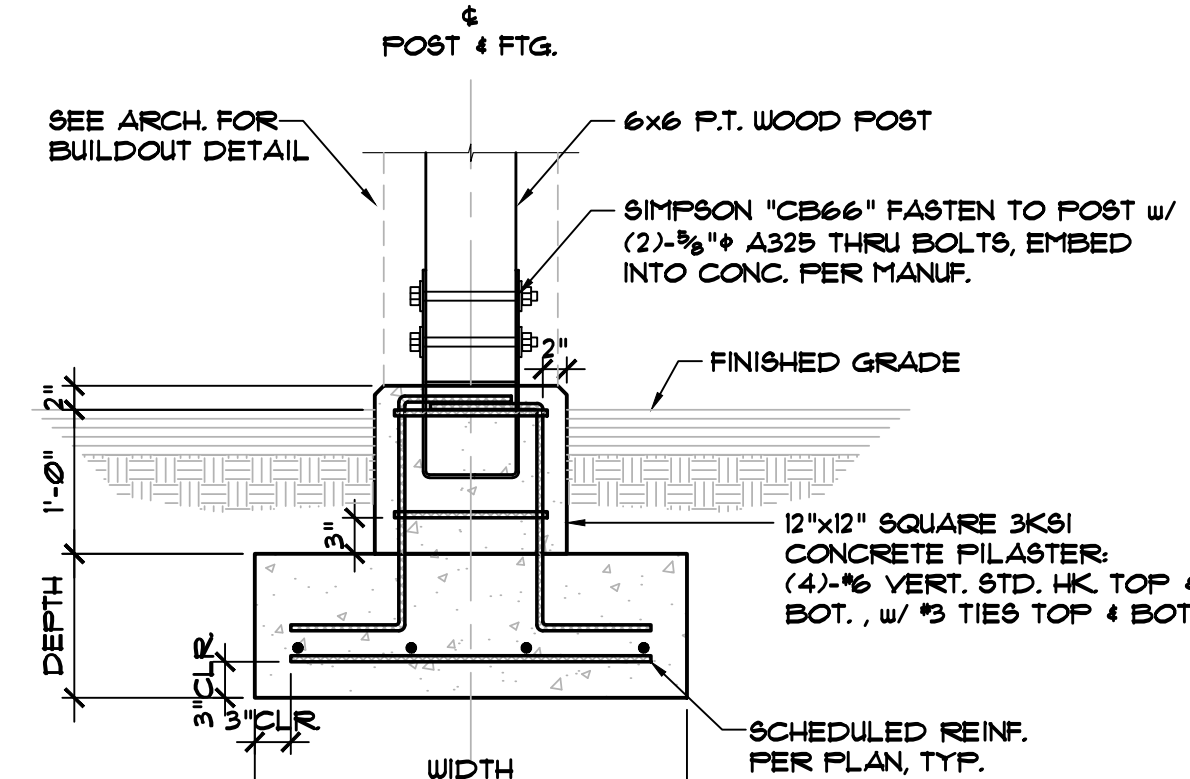
**8 SECTION**  
SCALE: 3/4" = 1'-0"



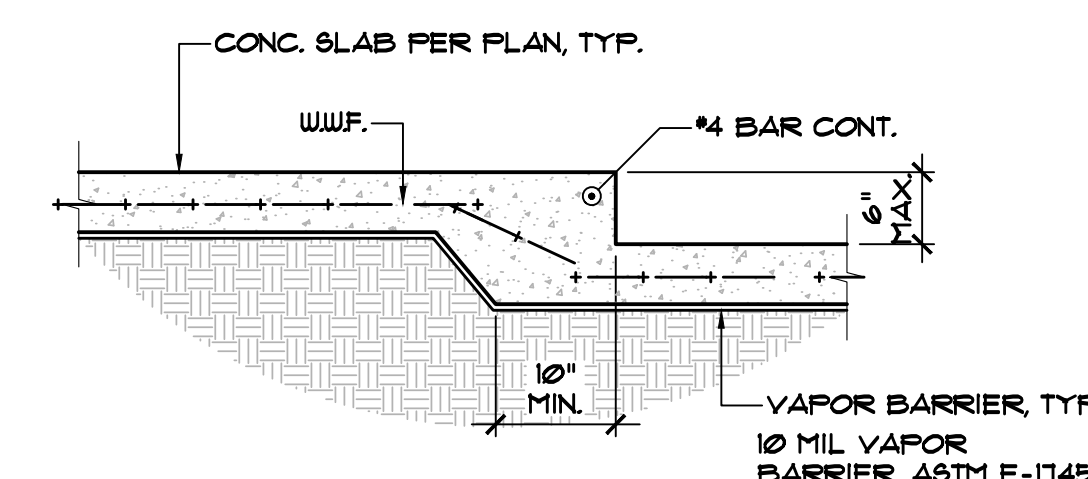
**9 EXTERIOR FOOTING**  
SCALE: 3/4" = 1'-0"



**10 TYPICAL INTERIOR WALL FOOTING**  
SCALE: 3/4" = 1'-0"



**11 EXTERIOR COLUMN FOOTING**  
SCALE: 3/4" = 1'-0"



**12 TYPICAL STEP IN SLAB-ON-GRADE**  
SCALE: 3/4" = 1'-0"

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PROJECT NAME: **THE SPRINGS OF BALLENTINE**

40 RAWLS CLUB RD  
FUQUAY-VARINA NC.

PROJECT CLIENT: **CAROLINA COMMERCIAL CONTRACTORS**

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PROJECT TEAM:  
Gabriela Salazar  
Pamela Friday  
Yuan Ping Lien

REVISIONS

#	DATE	DESC.
-		PERMIT SUBMITTAL
1	01-20-23	REV 1
2	03-13-23	REV 2

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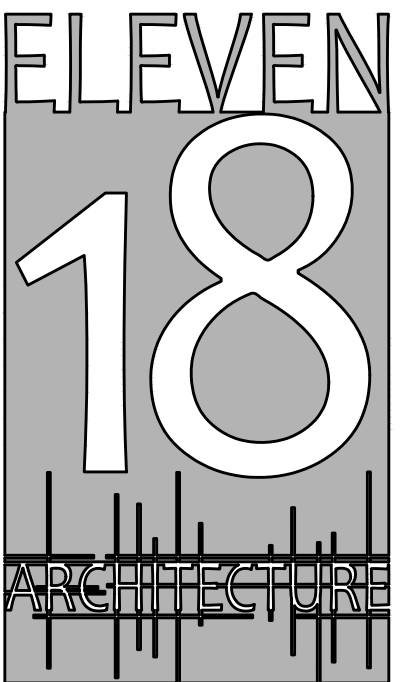
**S101**  
STRUCTURAL DETAILS



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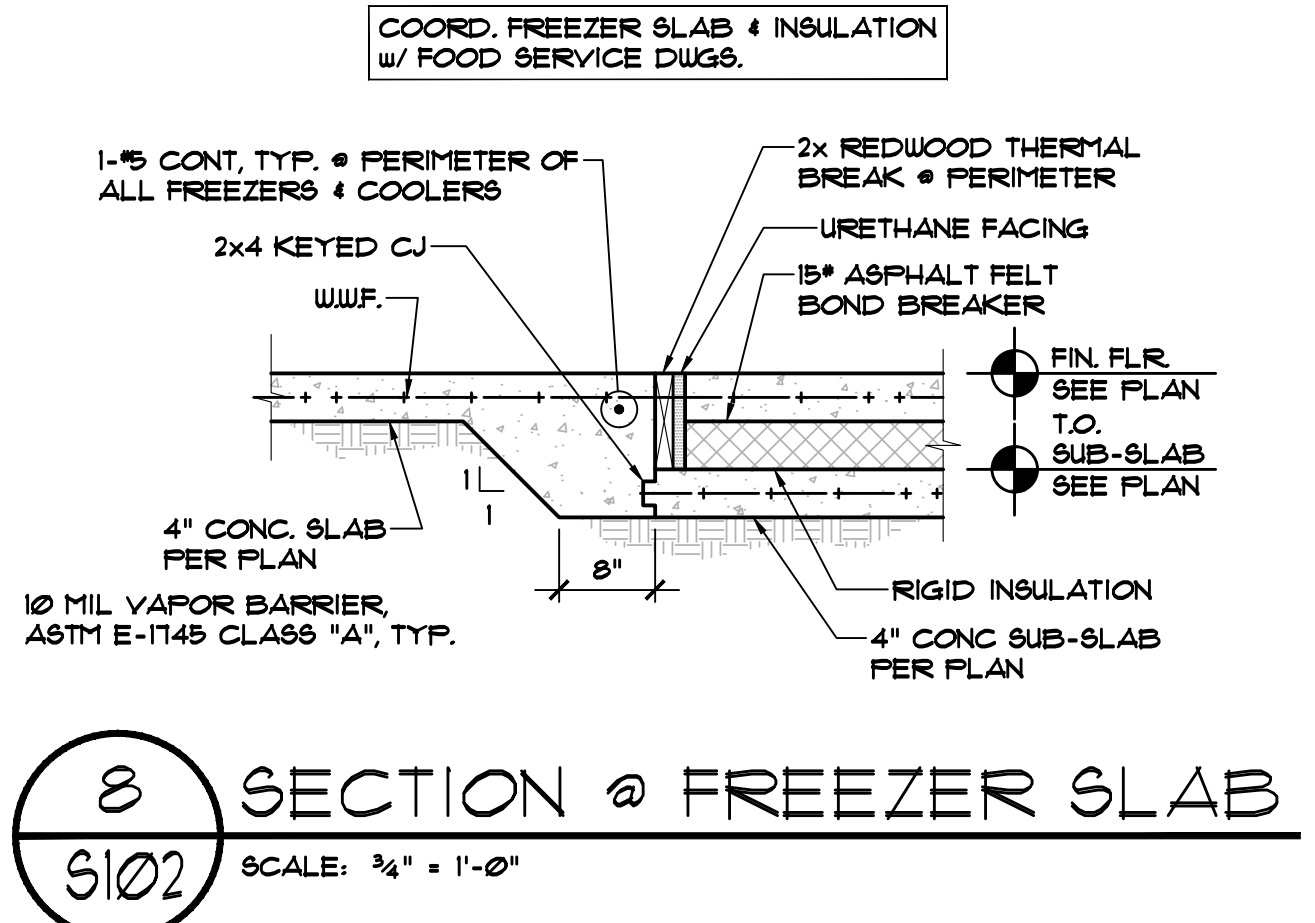
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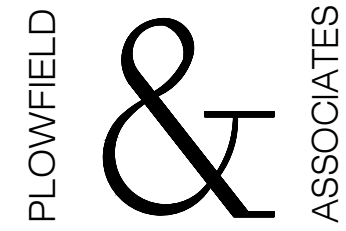
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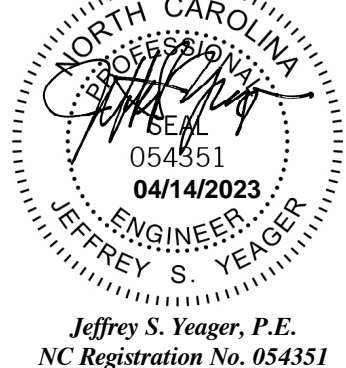
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4	04-11-23	REV 4



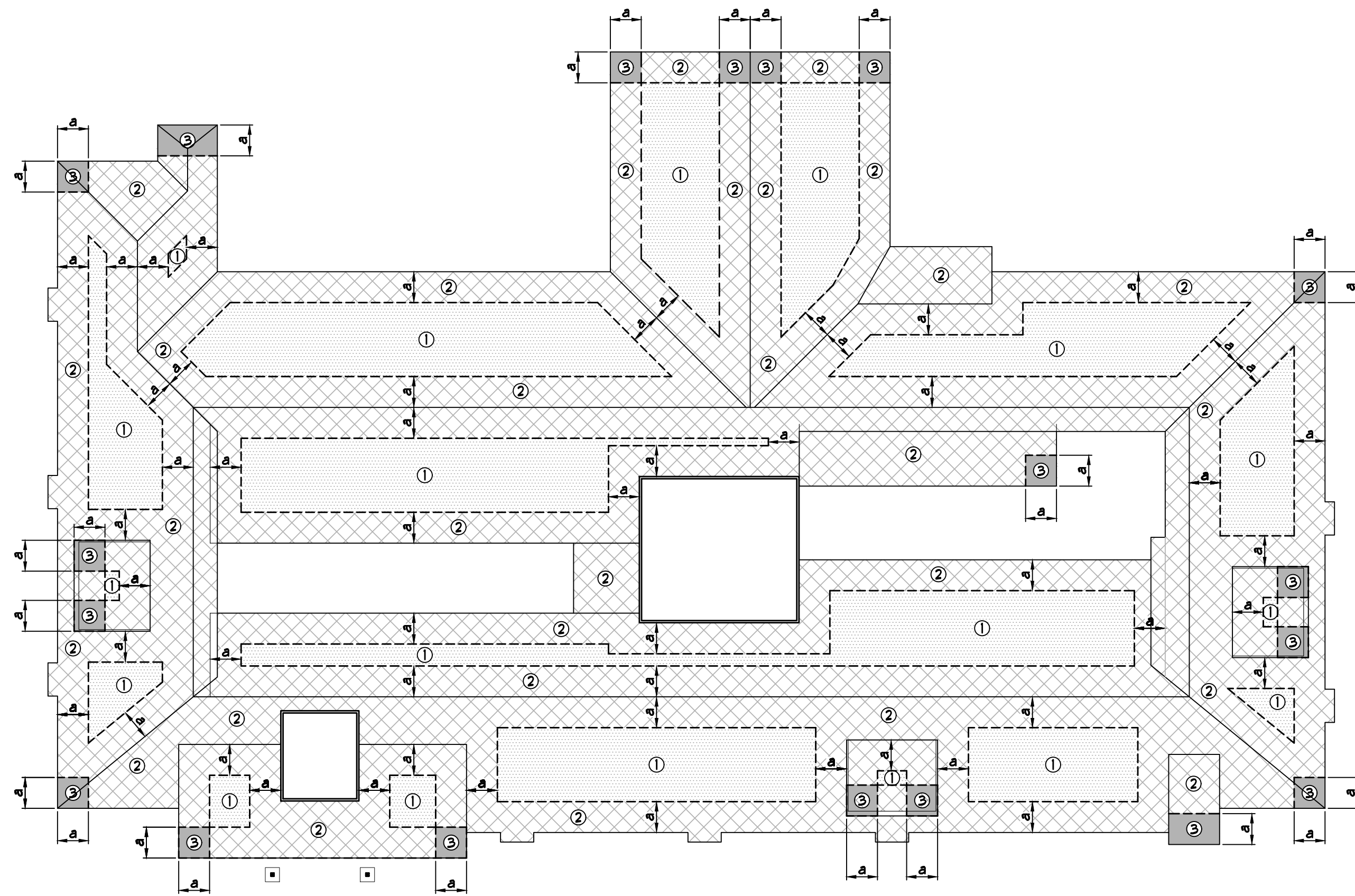
**SECTION @ FREEZER SLAB**  
 SCALE: 3/4" = 1'-0"



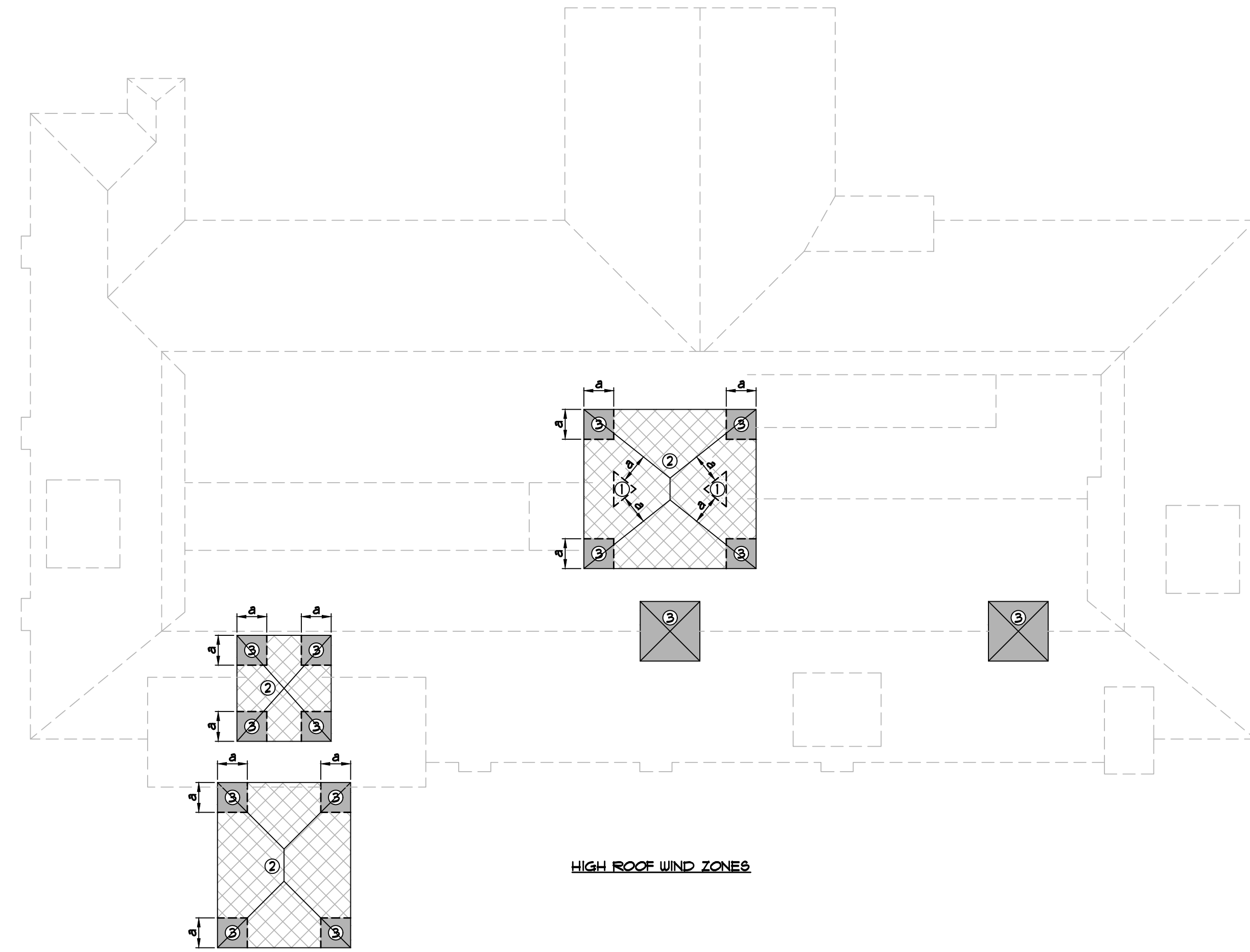
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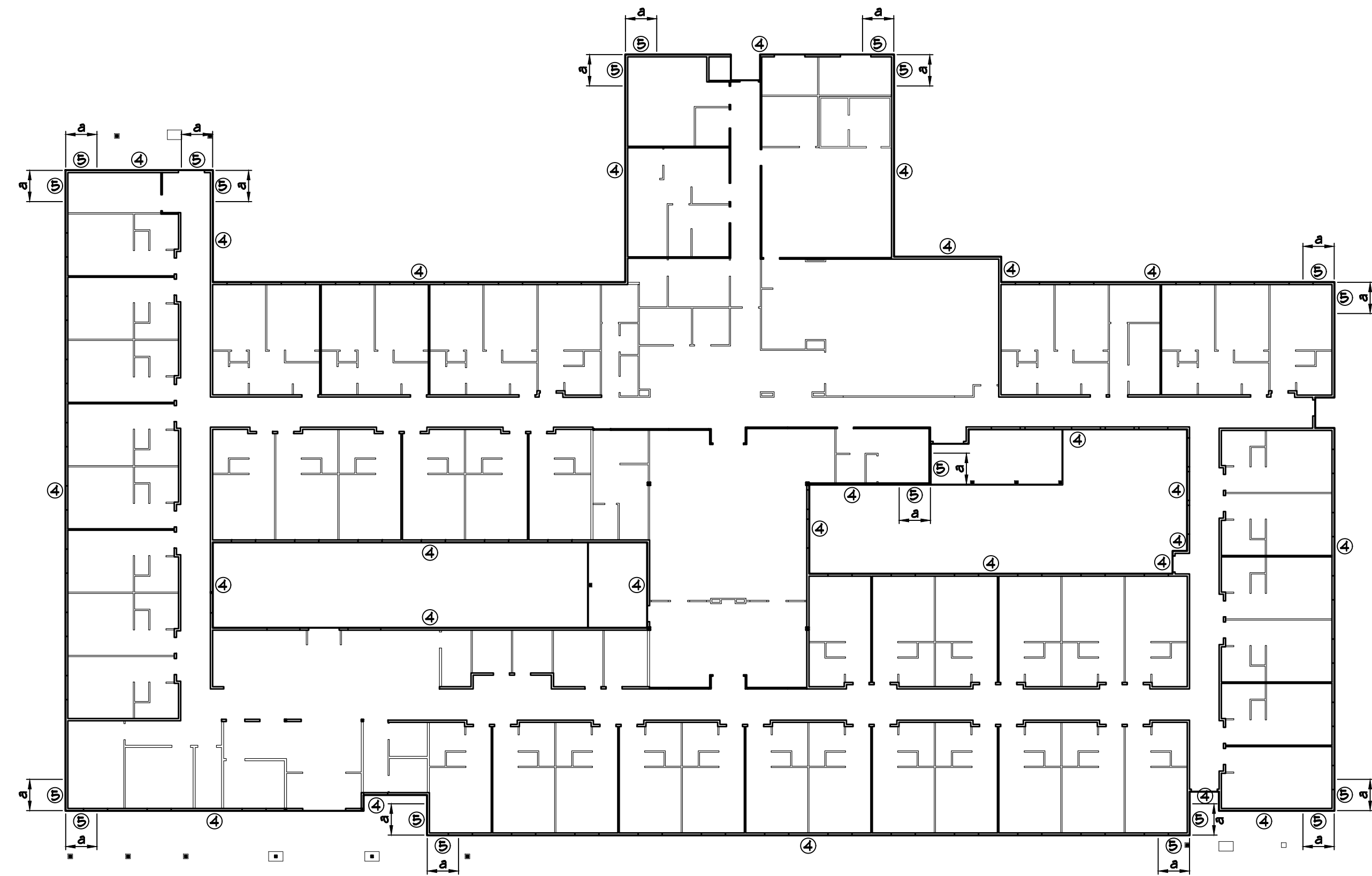
**S102**  
 STRUCTURAL DETAILS



MAIN ROOF WIND ZONES



HIGH ROOF WIND ZONES



WALL WIND ZONES

COMPONENT & CLADDING WIND LOADS			
BASIC WIND SPEED = 125 M.P.H.		MEAN ROOF HEIGHT = 15.00 FT.	
ZONE	WIND AREA (SF.)	DESIGN PRESSURE (P&F)	
		POSITIVE	NEGATIVE
1	10	16.0	-21.0
1	20	16.0	-20.6
1	50	16.0	-19.4
1	100	16.0	-19.0
2	10	16.0	-36.5
2	20	16.0	-33.6
2	50	16.0	-29.1
2	100	16.0	-26.8
3	10	16.0	-53.9
3	20	16.0	-50.1
3	50	16.0	-46.2
3	100	16.0	-42.3
4	10	22.9	-24.8
4	20	21.9	-23.9
4	50	20.0	-22.9
4	100	19.0	-21.0
5	10	22.9	-30.1
5	20	21.9	-28.1
5	50	20.0	-25.8
5	100	19.0	-23.9

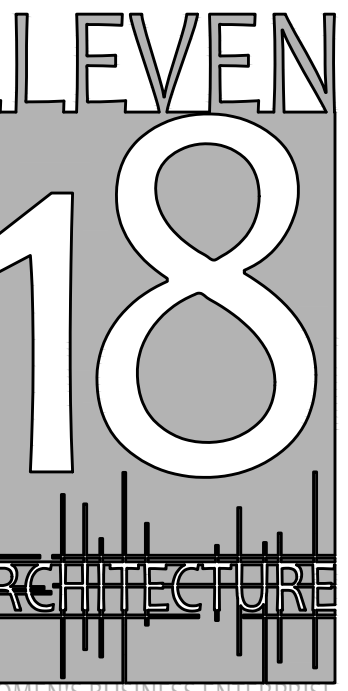
\* END ZONE a = 6.5 FT

**1** COMPONENTS AND CLADDING WIND PRESSURES  
 S110 SCALE: N.T.S.

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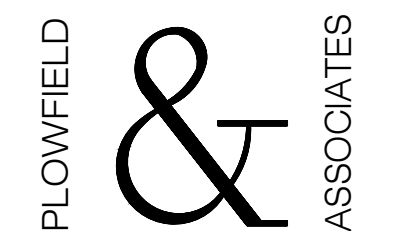
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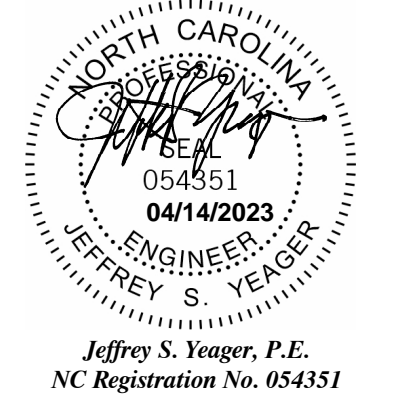
PROJECT TEAM:  
 Gabriela Salazar  
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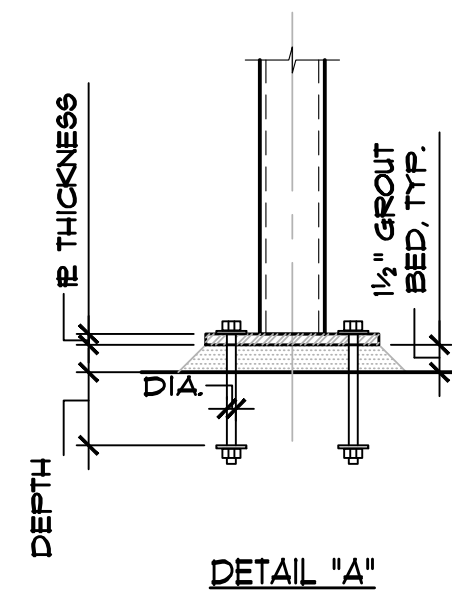
Jeffrey S. Yeager, P.E.  
 NC Registration No. 054351

**S110**  
 STRUCT. SCHEDULES



FOUNDATION SCHEDULE						
MARK	SIZE	DEPTH	REINFORCING			REMARKS
			BOTTOM	TOP	TRANSVERSE	
F-1	3'-0" X 3'-0"	1'-0"	(4)-#5 EA WAY	-----	-----	SPREAD FOOTING
F-2	5'-6" X 5'-6"	1'-0"	(5)-#5 EA WAY	-----	-----	SPREAD FOOTING
F-3	4'-0" X 4'-0"	1'-0"	(4)-#5 EA WAY	-----	-----	SPREAD FOOTING
TD5-1	1'-6" CONT.	2'-0"	(2)-#5 CONT.	(1)-#5 CONT.	#4 @ 18" O.C.	THICKENED EDGE
TD5-2	1'-0" CONT.	1'-0"	(2)-#5 CONT.	(1)-#5 CONT.	#4 @ 24" O.C.	THICKENED EDGE
UF-1	2'-0" CONT.	1'-0"	(3)-#5 CONT.	-----	#5 @ 12" O.C. BOT.	THICKENED SLAB

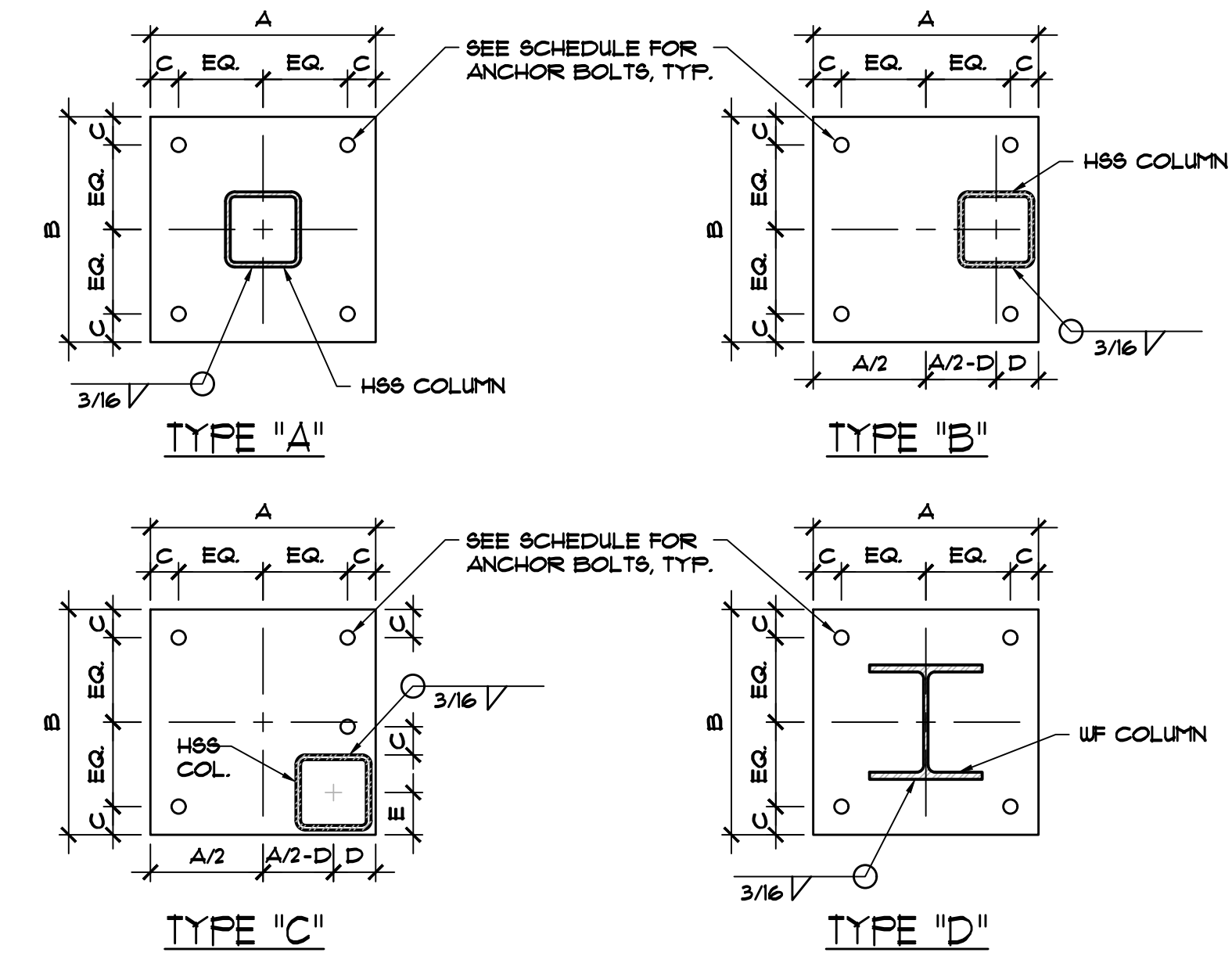
**1 FOUNDATION SCHEDULE**  
SCALE: N.T.S.



BASE IR / ANCHOR BOLT SCHEDULE										
COLUMN SIZE	PLATE TYPE	BASE PLATE DIMS.					ANCHOR BOLT DIMS.			
		A	B	C	D	E	PLATE THICKNESS	ANCHOR BOLT DIA.	DEPTH	NUM.
HSS 8" x 8"	A	14"	14"	1 1/2"	-----	-----	3/4"	3/4"	9"	4
HSS 6" x 6"	A	12"	12"	1 1/2"	-----	-----	3/4"	3/4"	9"	4

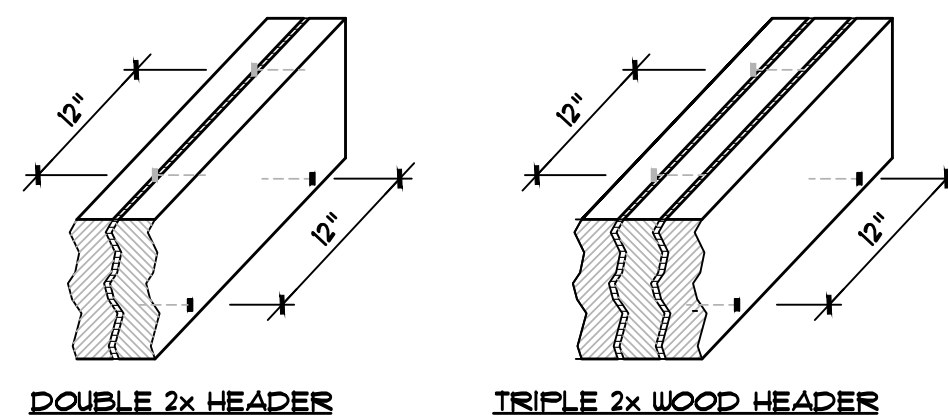
NOTE: ALL BASE IR'S SHALL BE SET IN NON-SHRINK GROUT BED (1/2") w/ 1/8" STEEL LEVELER IR OR LEVELER NUTS ON EACH BOLT, TYP.

**2 BASE PLATE/ANCHOR BOLT SCHEDULE**  
SCALE: N.T.S.



WOOD HEADER/BEAM SCHEDULE												
MARK	H-1(1)S		H-2(1)S		H-3(1)S		H-4(1)S		B-1(2)S		B-2(2)S	
	2 - 2x12 STYP#2 JACKS(3)	3 - 2x6 STYP#2 JACKS(3)	3 - 2x6 STYP#2 JACKS(3)	3 - 2x6 STYP#2 JACKS(3)	3 - 2x6 STYP#2 JACKS(3)	3 - 2x6 STYP#2 JACKS(3)	3 - 2x6 STYP#2 JACKS(3)	3 - 2x6 STYP#2 JACKS(3)	5/4"x9 1/4" P&L JACKS(3)	5/4"x9 1/4" P&L JACKS(3)	5/4"x11 1/4" P&L JACKS(3)	5/4"x11 1/4" P&L JACKS(3)
1st	2 - 2x4	2 - 2x4	1 - 2x6	1 - 2x6	2 - 2x6	2 - 2x6	2 - 2x6	2 - 2x6	2 - 2x6	2 - 2x6	2 - 2x6	3 - 2x6

- DOUBLE & TRIPLE 2x HEADER. ATTACH LUMBER EITHER SIDE OF EACH 1/2" PLYWOOD FLITCH PLATE w/ 10d COMMON NAILS @ 12" O.C. HIGH & LOW ALTERNATING SIDES, TYP. SEE BELOW.
- ALL PARALLAM P&L GLUE-LAMINATED MEMBERS TO BE 2025 (FD+25000) BY WEYERHAEUSER OR APPROVED EQUAL, TYP. (UNO.)
- ONLY SINGLE KING STUD REQUIRED AT INTERIOR HEADER CONDITIONS.
- SEE "S/C2.1" FOR BEAM & HEADER ANCHORAGE SCHEDULE.



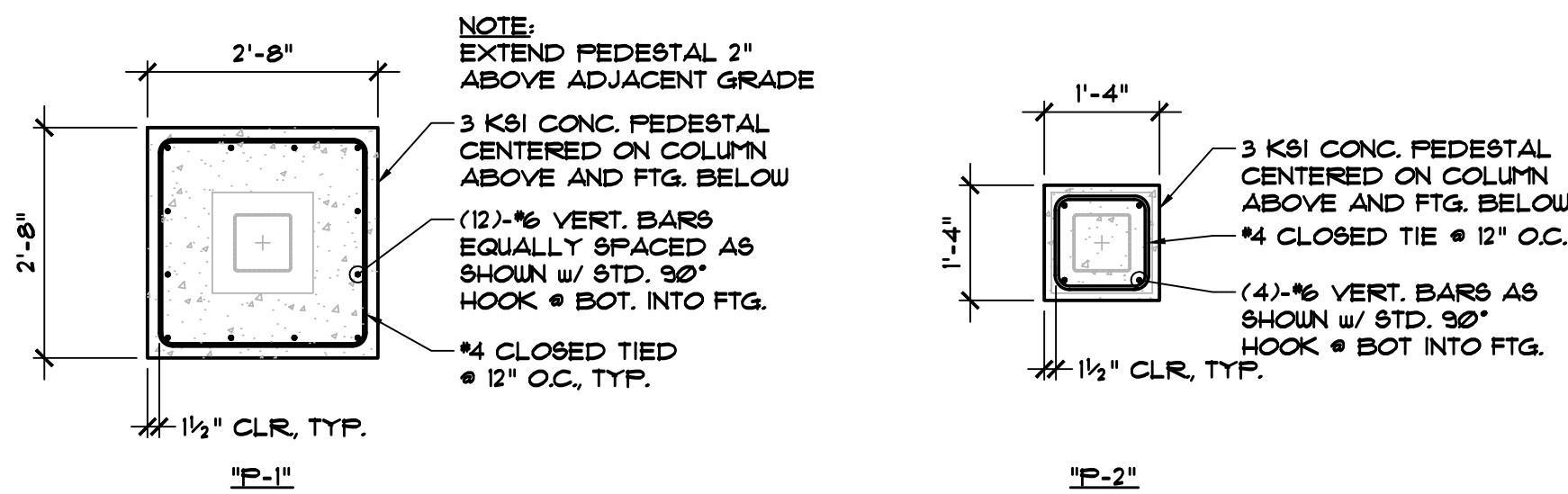
**3 WOOD HEADER/BEAM SCHEDULE**  
SCALE: N.T.S.

SHEARWALL MARK	WOOD STUD SHEARWALL SCHEDULE (2) (3)										
	FRAMING (4)		SHEATHING JOINT BLOCKING	EXTERIOR SHEATHING			INTERIOR SHEATHING			BASE CONNECTIONS @ BOT. OF SHEARWALL	
	TYPICAL STUDS	NO. STUDS @ EA. END & @ EA. OPENING		SHEATHING	NAILING PATTERN (5)		SHEATHING	NAILING PATTERN (5)		CONT. PLATE CONNECT. TO FLOOR DECK	HOLD DOWN @ EACH END OF WALL
"SW-1" INTERIOR WALL	2x4 @ 16" O.C.	(2)-2x4	BLOCKED	5/8" GYPSUM BOARD	6d COOLER NAILS @ 4" O.C.	6d COOLER NAILS @ 4" O.C.	5/8" GYPSUM BOARD	6d COOLER NAILS @ 4" O.C.	6d COOLER NAILS @ 4" O.C.	1/2" #8 HAS-E ROD x 6" EMBED. @ 32" O.C. w/ HILTI "HY-200" (1)	SIMPSON "HDU2-SD825" w/ (6)-1/4"x2 1/2" SDB SCREWS INTO STUDS & 3/8" # HILTI HAS-E ROD w/ 10" EMBED. w/ HILTI "HY-200" (1)
"SW-2" INTERIOR WALL	2x6 @ 16" O.C.	(2)-2x6	BLOCKED	5/8" GYPSUM BOARD	6d COOLER NAILS @ 4" O.C.	6d COOLER NAILS @ 4" O.C.	5/8" GYPSUM BOARD	6d COOLER NAILS @ 4" O.C.	6d COOLER NAILS @ 4" O.C.	1/2" #8 HAS-E ROD x 6" EMBED. @ 32" O.C. w/ HILTI "HY-200" (1)	SIMPSON "HDU2-SD825" w/ (6)-1/4"x2 1/2" SDB SCREWS INTO STUDS & 3/8" # HILTI HAS-E ROD w/ 10" EMBED. w/ HILTI "HY-200" (1)
"SW-3" EXTERIOR WALL	2x6 @ 16" O.C.	(2)-2x6	BLOCKED	1/2" OSB	10d COMMON NAILS @ 6" O.C.	10d COMMON NAILS @ 12" O.C.	-----	-----	-----	1/2" #8 HAS-E ROD x 6" EMBED. @ 32" O.C. w/ HILTI "HY-200" (1)	SIMPSON "HDU2-SD825" w/ (6)-1/4"x2 1/2" SDB SCREWS INTO STUDS & 3/8" # HILTI HAS-E ROD w/ 10" EMBED. w/ HILTI "HY-200" (1)
"SW-4" EXTERIOR WALL	2x6 @ 16" O.C.	(2)-2x6	BLOCKED	1/2" OSB	10d COMMON NAILS @ 6" O.C.	10d COMMON NAILS @ 12" O.C.	-----	-----	-----	1/2" #8 HAS-E ROD x 6" EMBED. @ 24" O.C. w/ HILTI "HY-200" (1)	SIMPSON "HDU8-SD825" w/ (20)-1/4"x2 1/2" SDB SCREWS INTO STUDS & 3/8" # HILTI HAS-E ROD w/ 17 1/2" EMBED. w/ HILTI "HY-200" (1)

NOTES:

- SIMPSON "HAS" MUDSILL ANCHORS OR 1/2" # A307 x 9" EMBED. ANCHOR BOLTS @ 32" O.C. MAY BE USED IN PLACE OF EMBED RODS FOR CONT. PLATE CONNECTION, TYP.
- ALL TRUSSES AND CONSTRUCTION SHALL BE DESIGNED TO 134 MPH WINDLOAD.
- ALL STRAP NAILS SHALL PENETRATE THE BEARING MEMBER MIN. 12 NAIL DIAMETERS.
- SEE PLAN "\*" FOR STRAPPING LOCATIONS AT EACH END OF SHEARWALL, TYP.
- NAIL PATTERN BASED ON P-NAIL CRITERIA.
- CONFIRM DIAMETER OF ANCHOR BOLT FOR HOLD-DOWN w/ STRAP MANUFACTURER.
- 3/8" x 1 1/4" TYPE W DRYWALL SCREWS MAY BE SUBSTITUTED FOR 6d COOLER NAILS.

**4 WOOD STUD SHEARWALL SCHEDULE**  
SCALE: N.T.S.



**5 CONC. PEDESTALS**  
SCALE: 1/2" = 1'-0"

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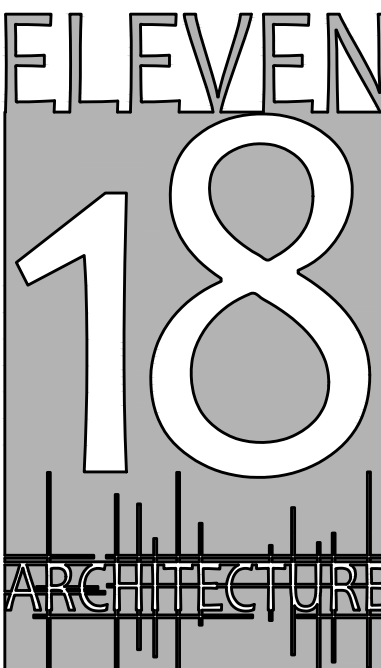
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**S111**  
STRUCT. SCHEDULES

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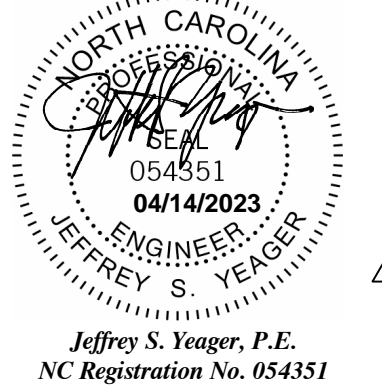
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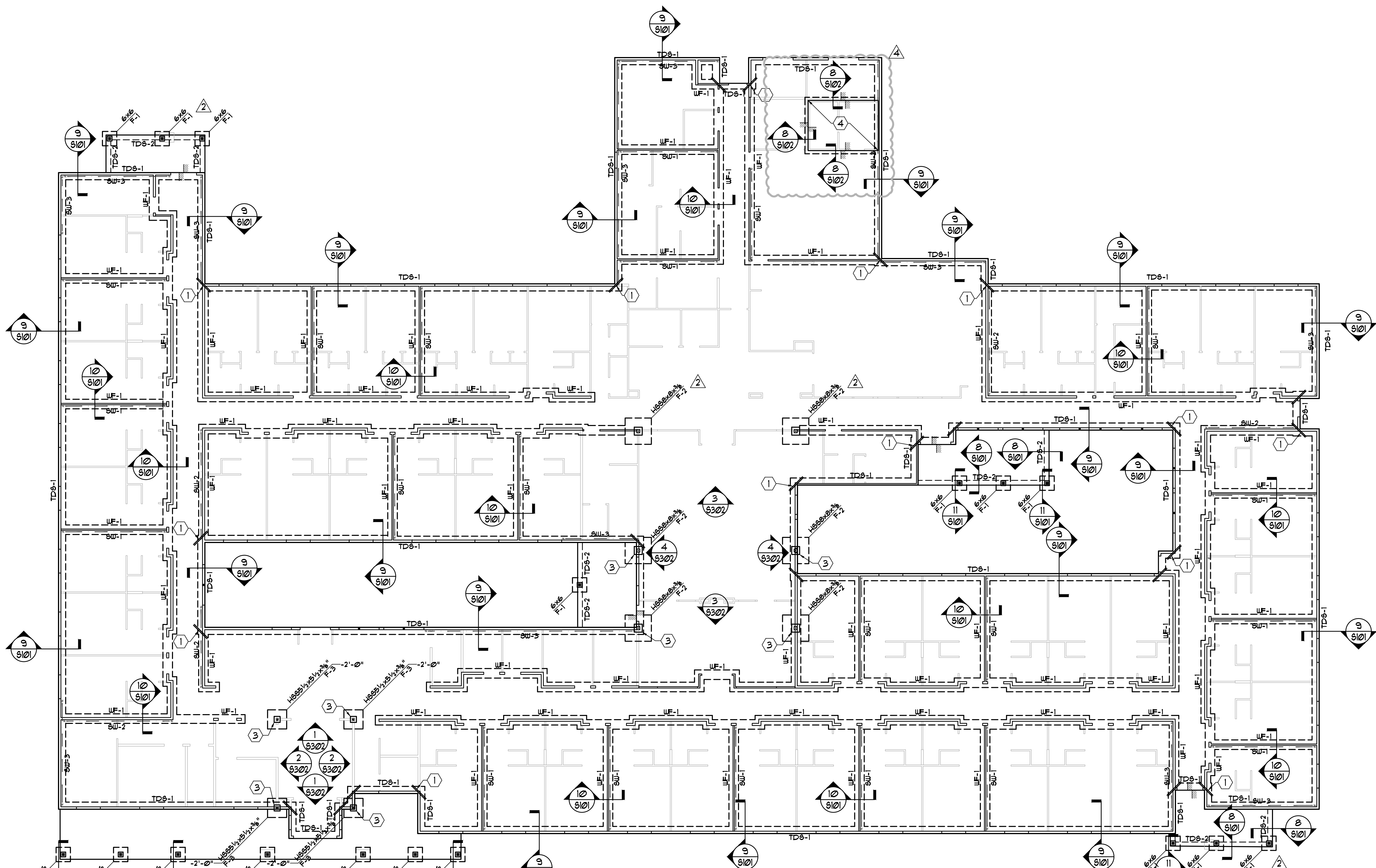
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**S200**  
 FOUNDATION PLAN



**FOUNDATION PLAN NOTES**

- FLOOR SLAB CONSTRUCTION SHALL BE 4" THICK CONCRETE SLAB-ON-GRADE REINFORCED WITH W20 x W20 - 6 x 6 UWF. PLACED IN THE TOP ONE-THIRD OF THE SLAB DEPTH. CONCRETE SHALL BE PLACED OVER 10 MIL VAPOR RETARDANT ON COMPACTED SUB-GRADE.
- SLAB-ON-GRADE CONSTRUCTION, SEE TYPICAL FOUNDATION DETAILS ON SHEET S101.
- T/SLAB EL = 0'-0" - REFER TO CIVIL DWGS FOR REFERENCE ELEVATION
- REFERENCE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR FLOOR SLOPES, DRAINS, AND DEPRESSION LOCATIONS.
- MAINTAIN SLAB THICKNESS AT ALL FLOOR SLOPES, DRAINS, AND DEPRESSIONS.
- REFERENCE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR CONCRETE EQUIPMENT PAD LOCATIONS, SEE TYPICAL FOUNDATION DETAILS.
- FOOTING CONSTRUCTION SHALL BE AS INDICATED ON THE DRAWING
- SEE FOUNDATION SCHEDULE ON SHEET S111 FOR THE FOLLOWING:  
 'UF-X' - INDICATES WALL FOOTING  
 'F-X' - INDICATES SPREAD FOOTING  
 'TDS-X' - INDICATES TURN DOWN SLAB

- FOUNDATION REINFORCEMENT AT CORNERS AND INTERSECTIONS: SEE TYPICAL FOUNDATION DETAILS
- STEP FOOTING LOCATIONS ARE DESIGNATED ON PLAN AS THUS '1'. COORDINATE ADDITIONAL STEP FOOTING LOCATIONS WITH CIVIL AND MEP AS REQUIRED. SEE TYPICAL FOUNDATION DETAILS.
- SEE TYPICAL FOUNDATION DETAILS FOR ADDITIONAL INFORMATION.

- NON-LOAD BRG WALLS ARE NOT SHOWN ON THE FOUNDATION PLAN. SEE ARCH DWGS FOR LOCATIONS OF ALL NON-LOAD BRG WALLS.

**GENERAL NOTES**

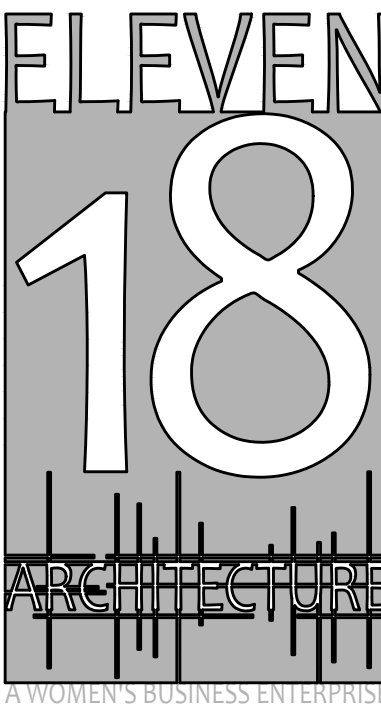
- SEE GENERAL NOTES SHEETS FOR ADDITIONAL INFORMATION
- KEYED NOTES**
- 1) RE-ENTRY BARS: PLACE (2) #4 x 4'-0" LONG @ 3" OC AND 3" CLR FROM CORNER AT MID-DEPTH OF THE SLAB
- 2) PEDESTAL "P-1" PER DETAIL "B/S111"
- 3) PEDESTAL "P-2" PER DETAIL "B/S111"
- 4) 4" RECESSED SLAB AT FREEZER/COOLER AREA

**1 FOUNDATION PLAN**  
 SCALE: 3/32" = 1'-0"

- T/EXT. SPREAD FTG. EL = -2'-0" UNO.
- T/INT. SPREAD FTG. EL = -1'-4" UNO.
- CONDUIT AND PIPE PENETRATIONS: STEP AND/OR LOWER FOUNDATIONS WHERE SHOWN AND AS NECESSARY TO AVOID INTERFERENCE WITH OTHER TRADES. SEE TYPICAL FOUNDATION DETAILS

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PROJECT NAME: **THE SPRINGS OF BALLENTINE**  
 40 RAWLS CLUB RD  
 FUQUAY-VARINA NC

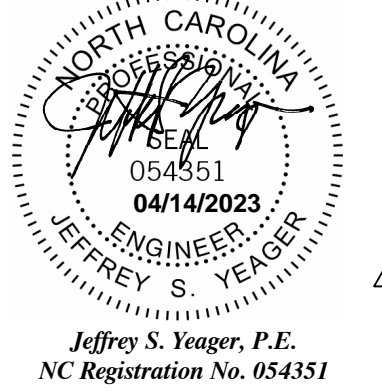
PROJECT CLIENT:  
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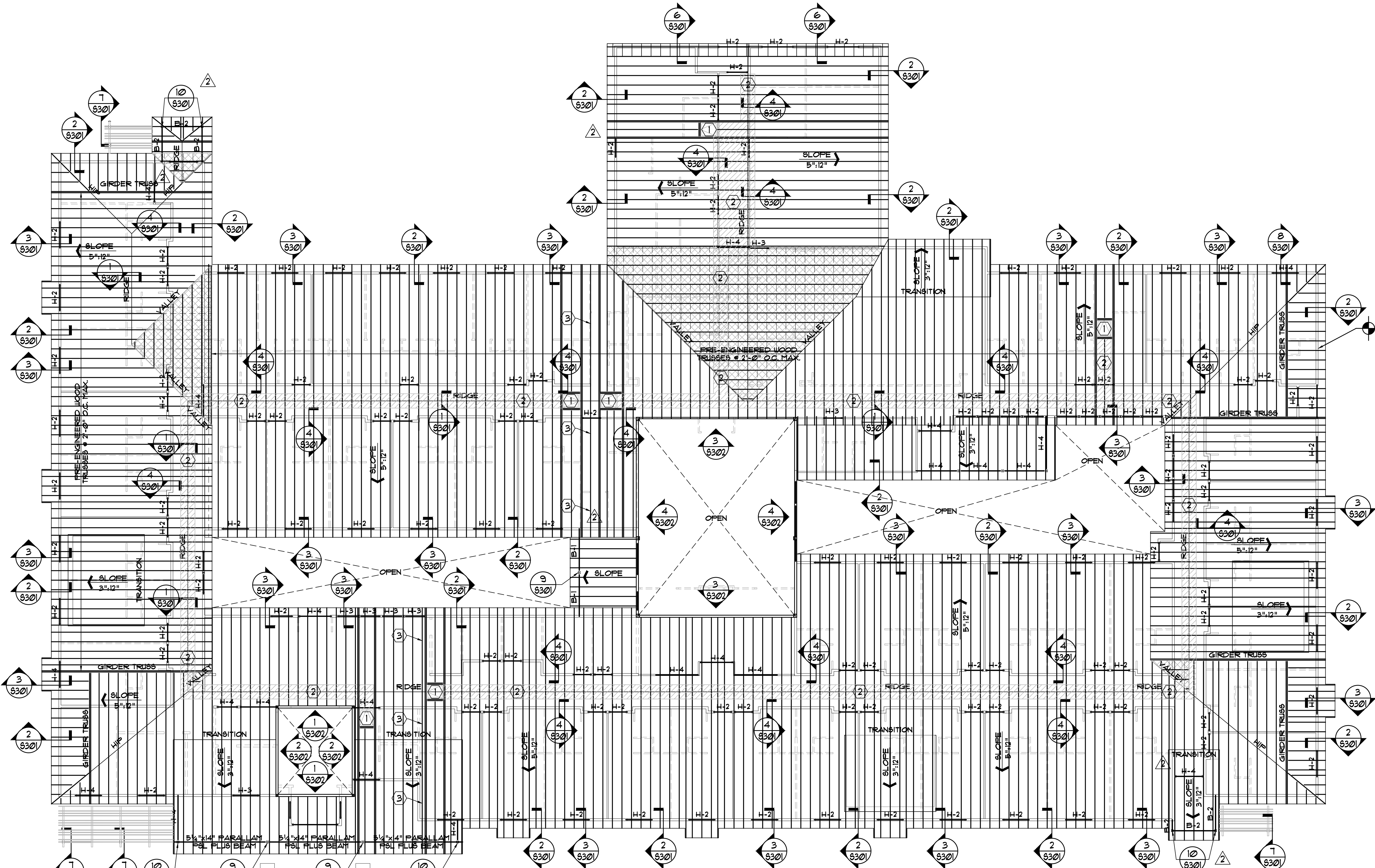
PROJECT TEAM:  
 Gabriela Salazar  
 Pamela Friday  
 Yuan Ping Lien

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4	04.11.23	REV 4

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**S201**  
 ROOF FRAMING PLAN



SEE SHEET "S202"  
 FOR FORTÉ  
 COCHERE ROOF  
 FRAMING

**ROOF PLAN NOTES**

- ROOFING CONSTRUCTION SHALL CONSIST OF ROOFING MATERIAL SUPPORTED BY 5/8" STRUCTURAL I SHEATHING (PER USDOC PS-1) ON PRE-ENGINEERED, PRE-MANUFACTURED WOOD TRUSSES SPACED AT 2'-0" O.C. MAX.
- FASTEN ROOF SHEATHING TO WOOD SUPPORTS WITH 10d NAILS @ 3" O.C. AT THE PANEL EDGES AND 6" O.C. IN THE PANEL FIELD, UNO.
- WOOD TRUSSES**
  - ATTACH OVERLAY TRUSSES TO MAIN ROOF TRUSSES WITH SIMPSON 'VTCR' @ 4'-0" O.C. MAX
  - SEE GENERAL NOTES AND SHEET S300 FOR ADDITIONAL TRUSS INFORMATION AND BRACING REQUIREMENTS
- WOOD SHEAR WALLS**
  - SEE SHEARWALL SCHEDULE ON SHEET S111
  - 'SW-X' - INDICATES WOOD SHEARWALL (SEE FOUNDATION PLAN S200 FOR LOCATIONS)
- EXTERIOR WOOD BEARING WALLS**
  - WALL CONSTRUCTION SHALL BE APPLIED TO 5/8" STRUCTURAL I SHEATHING (PER USDOC PS-1) ATTACHED TO 2x6 STUDS @ 16" O.C. MAX WITH 8d NAILS @ 6" O.C.
  - USE (2) 2x PLATE @ TOP OF STUD WALL. T/ PLATE ELEVATION = SEE PLAN.
- OPENINGS IN WOOD BEARING WALLS**
  - 'H-X' - INDICATES WOOD HEADER
  - OPENINGS LESS THAN 4'-0":
    - HEADERS SHALL BE (3) 2x6'S NAILED TOGETHER WITH 10d NAILS @ 6" O.C., STAGGERED

- HEADERS SHALL BE SUPPORTED BY (1) 2x JACK STUD WITH (1) KING STUD EACH SIDE OF OPENING. NAIL JACK STUD TO KING STUD WITH 8d NAILS @ 6" O.C. STAGGERED
  - ATTACH HEADERS TO JACK STUDS WITH (2) SIMPSON 'H3' TIES AT EACH END
- OPENINGS GREATER THAN 4'-0" AND LESS THAN 6'-0":
- HEADERS SHALL BE (3) 2x6'S NAILED TOGETHER WITH 10d NAILS @ 6" O.C. STAGGERED
  - HEADERS SHALL BE SUPPORTED BY (1) 2x JACK STUD WITH (2) KING STUDS EACH SIDE OF OPENING. NAIL JACK STUD TO KING STUD WITH 8d NAILS @ 6" O.C. STAGGERED
  - ATTACH HEADERS TO JACK STUDS WITH (2) SIMPSON 'H3' TIES AT EACH END

**GENERAL NOTES**

- SEE GENERAL NOTES FOR ADDITIONAL INFORMATION

**KEYED NOTES**

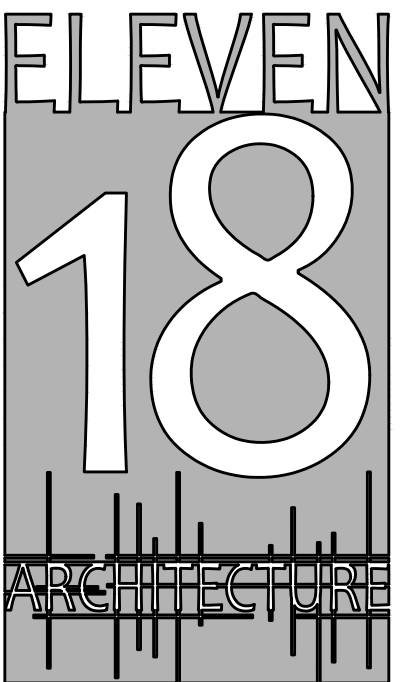
- 1) ATTIC ACCESS HATCH - TRUSS DESIGNER TO PROVIDE GIRDER TRUSSES FOR INTERRUPTED TRUSS FRAMING AT HATCH LOCATIONS, COORDINATE W/ ARCHITECTURAL DWGS.
- 2) 3'-0" WIDE ATTIC WALKWAY - TRUSS DESIGNER TO COORDINATE REQUIRED CLEARANCES W/ ARCHITECTURAL DWGS. SEE DETAIL 16/S300
- 3) ROOF TRUSS DRAFTSTOP - PROVIDE ROOF TRUSS DRAFTSTOPPING AS SPECIFIED ON ARCH. DWGS, G.C. TO COORDINATE TRUSS LAYOUT

**1 ROOF FRAMING PLAN**  
 SCALE: 3/32" = 1'-0"



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PROJECT NAME: <sup>2</sup>  
**THE SPRINGS OF BALLENTINE**

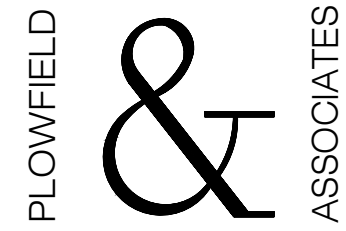
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**CAROLINA COMMERCIAL CONTRACTORS**

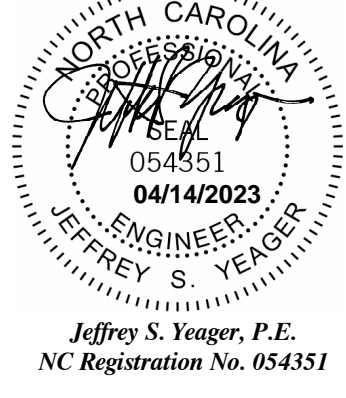
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 Pamela Friday  
 Yuan Ping Lien

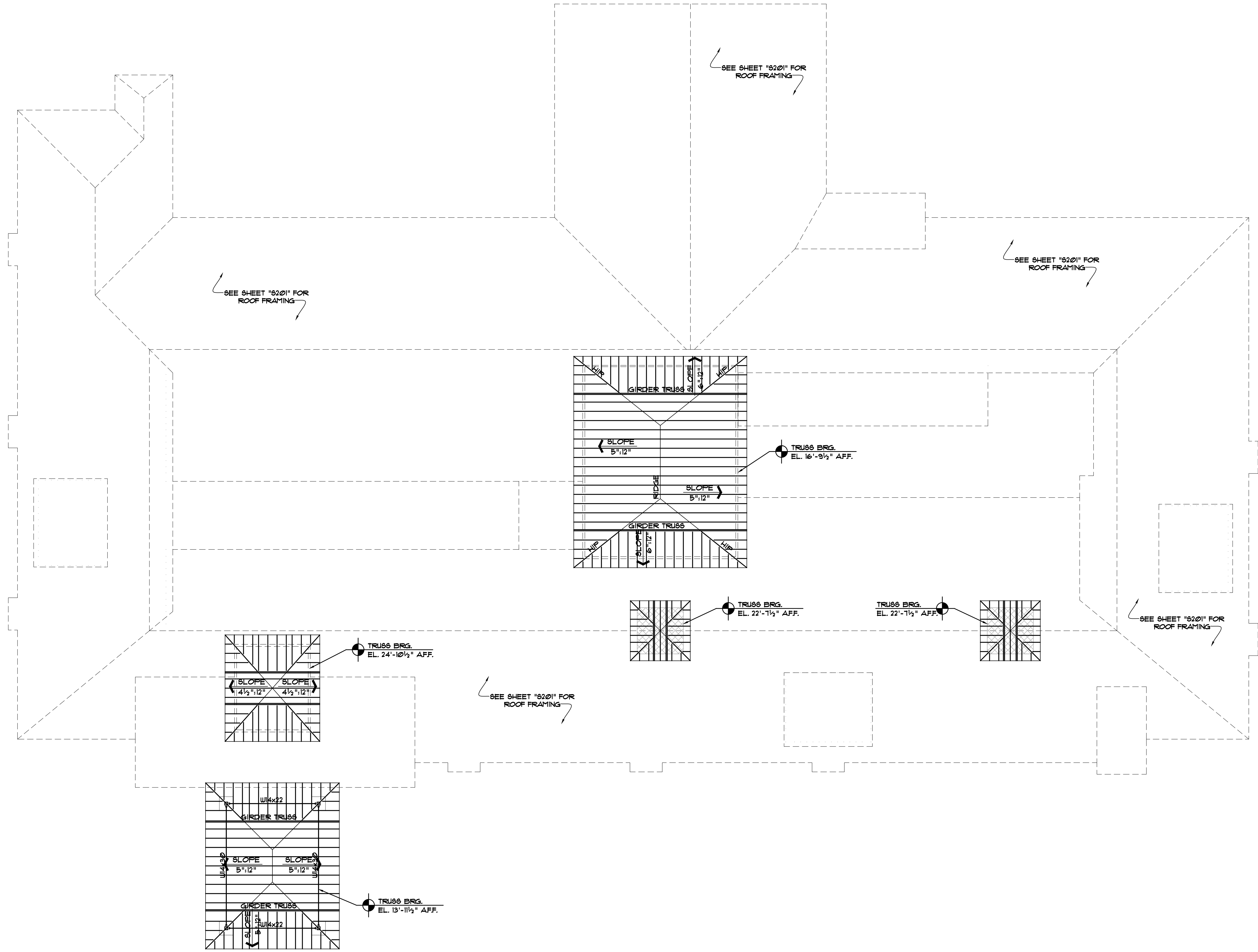
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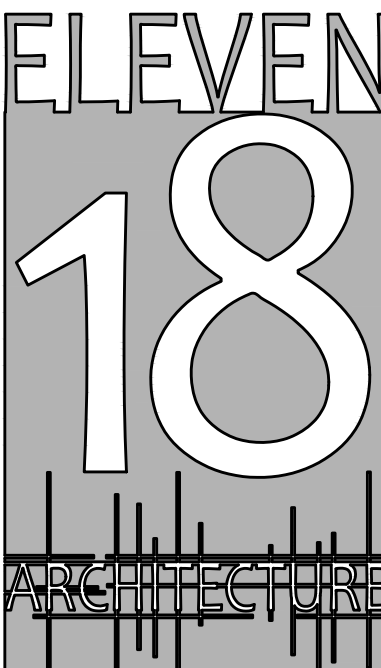
**S202**  
 HIGH ROOF PLAN



**1 HIGH ROOF FRAMING PLAN**  
 SCALE: 3/32" = 1'-0"  
**S202**

11 APRIL 2022

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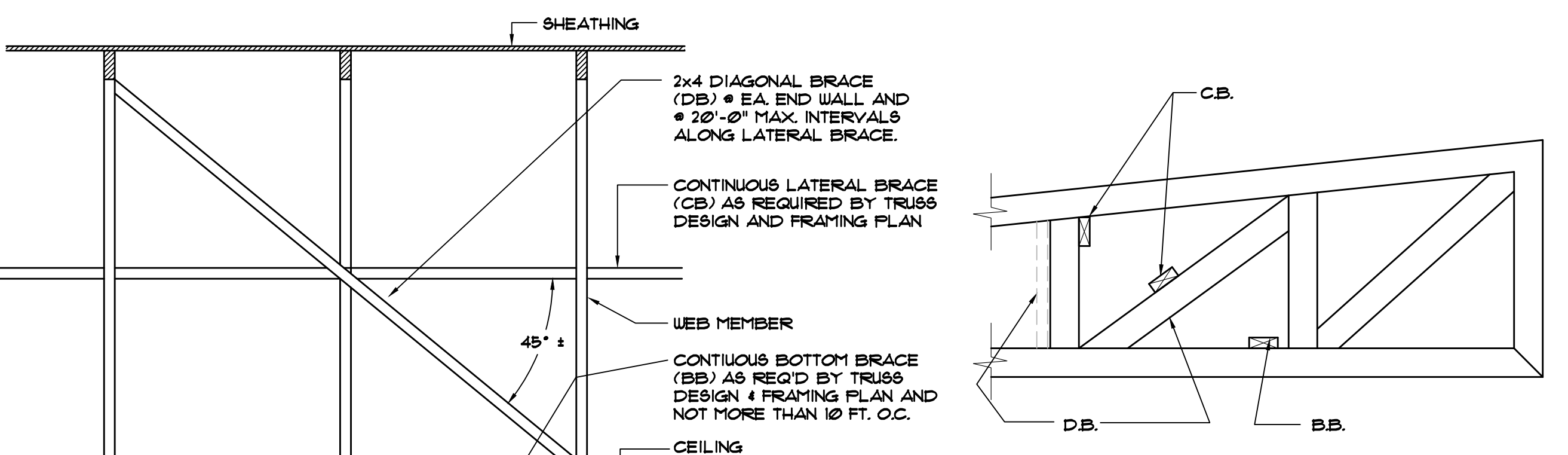
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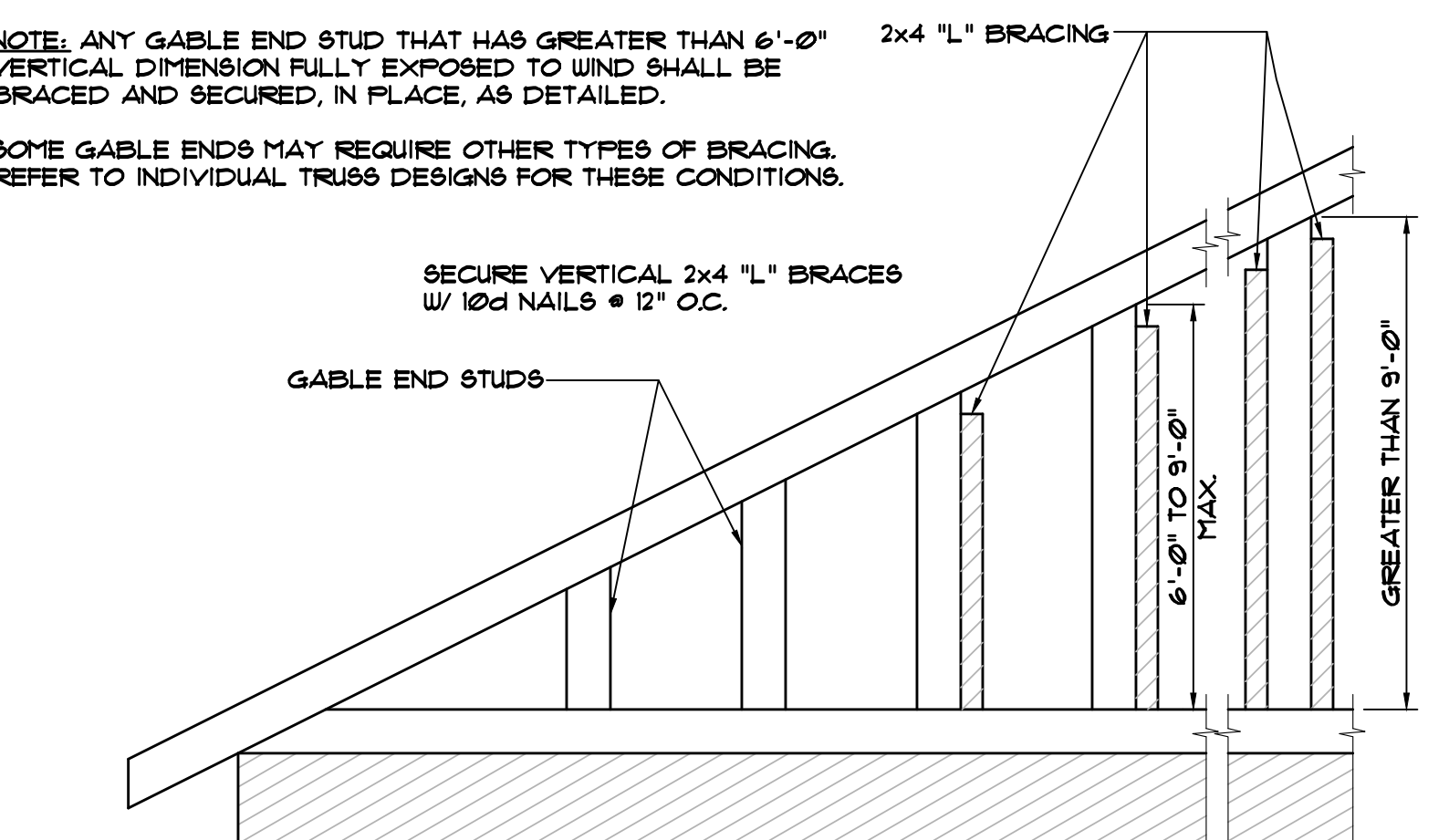
JEFFREY S. YEAGER  
 ENGINEER  
 054551  
 04/14/2023  
 Jeffrey S. Yeager, P.E.  
 NC Registration No. 054351

**S300**  
 STRUCTURAL DETAILS



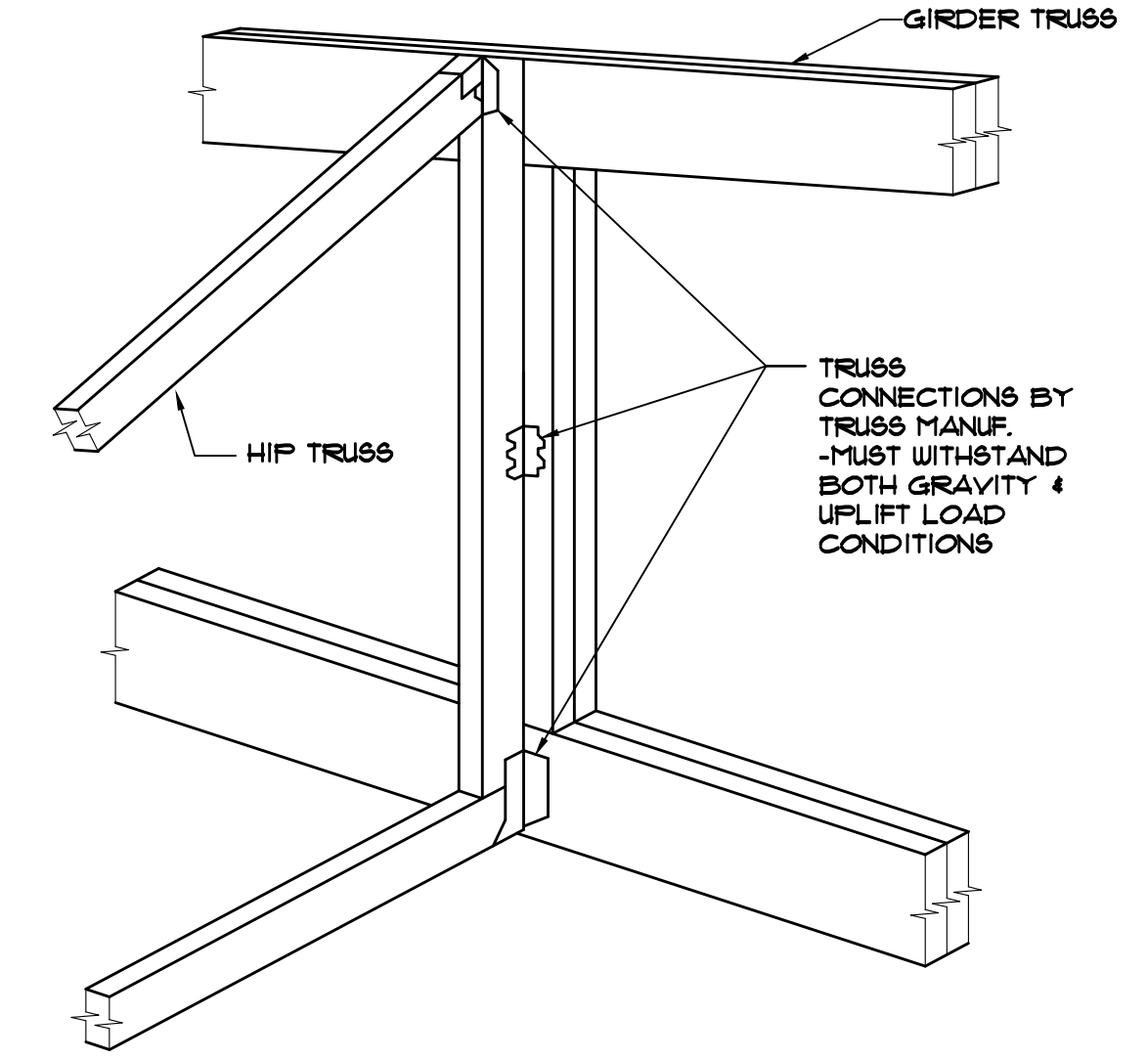
- WOOD TRUSS ERECTOR SHALL PROVIDE BRACING ACCORDING TO BRACING WOOD TRUSSES COMMENTARY AND RECOMMENDATION, BUT (TRUSS PLATE INSTITUTE). INSTALL BRACING AS THE TRUSSES ARE ERECTED. FULL BUNDLES OF PLYWOOD SHALL NOT BE PLACED ON TRUSSES. THE CONSTRUCTION LOAD SHALL BE LIMITED TO 8 SHEETS OF PLYWOOD ON ANY PAIR OF TRUSSES AND SHALL BE LOCATED ADJACENT TO THE SUPPORTS. NO EXCESS CONCENTRATION OF ANY CONSTRUCTION MATERIALS (SUCH AS GRAVEL OR SHINGLES) SHALL BE PLACED ON THE TRUSSES IN ANY ONE AREA & THEY SHALL BE SPREAD OUT EVENLY OVER A LARGE AREA SO AS TO AVOID OVERLOADING ANY ONE TRUSS.
- ALL BRACING (DB,CB,BB) SHOWN IN THE FRAMING PLAN SHALL BE IN ADDITION TO CONTINUOUS LATERAL SPECIFIED BY THE TRUSS MANUF. ALL LATERAL BRACING SPECIFIED SHALL HAVE ADDITIONAL DIAGONAL BRACES @ 20'-0" MAX.
- ALL BRACES SHALL BE 2x4 NOMINAL DIMENSION LUMBER AND SHALL BE ATTACHED WITH 2-16d NAILS @ EA. TRUSS INTERSECTION.

**2 TYPICAL WOOD TRUSS BRACING**  
 SCALE: N.T.S.



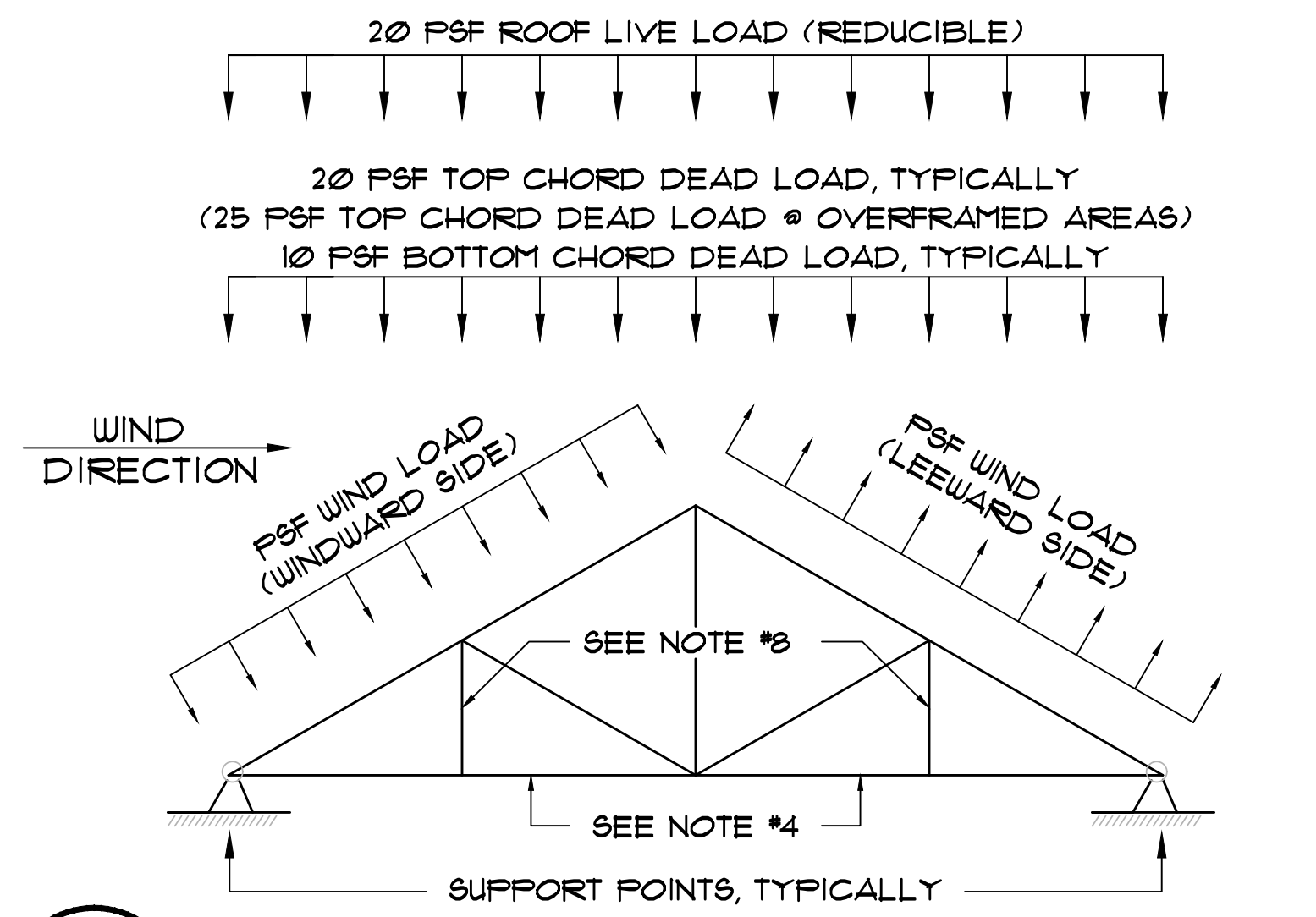
NOTE: ANY GABLE END STUD THAT HAS GREATER THAN 6'-0" VERTICAL DIMENSION FULLY EXPOSED TO WIND SHALL BE BRACED AND SECURED, IN PLACE, AS DETAILED.  
 SOME GABLE ENDS MAY REQUIRE OTHER TYPES OF BRACING. REFER TO INDIVIDUAL TRUSS DESIGNS FOR THESE CONDITIONS.

**4 GABLE END BRACING DETAIL**  
 SCALE: N.T.S.

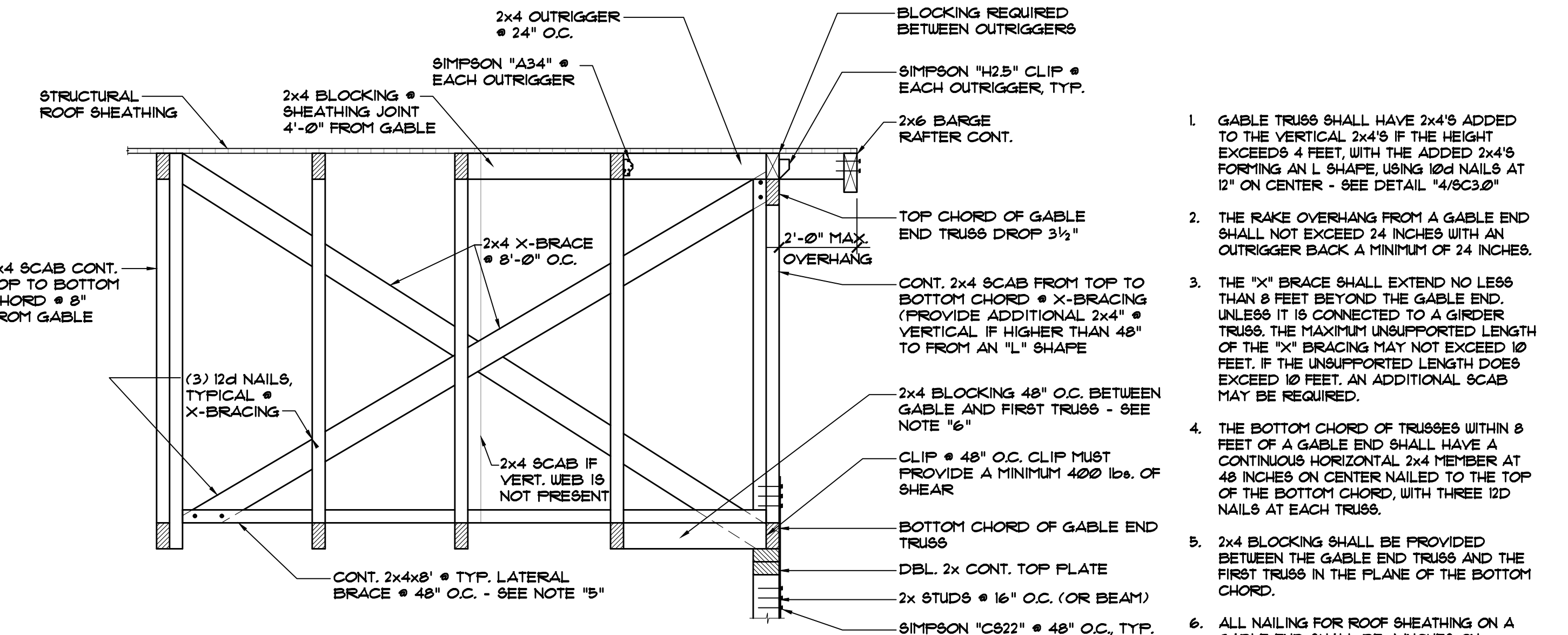


**5 GIRDER TRUSS**  
 SCALE: N.T.S.

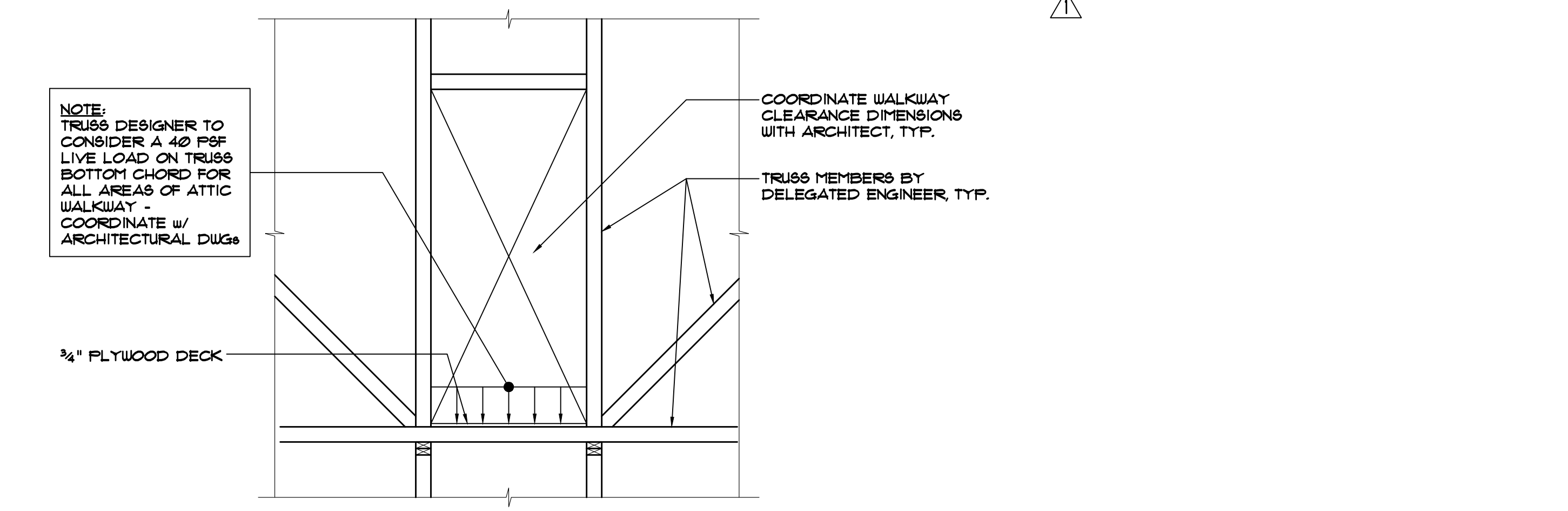
- ROOF TRUSS NOTES:**
- PREFABRICATED WOOD ROOF TRUSSES SHALL BE DESIGNED FOR THE DEAD, LIVE, SNOW AND WIND LOADS SHOWN AND ALL COMBINATIONS OF THESE LOADS AS SET FORTH IN THE 2018 NORTH CAROLINA BUILDING CODE. SEE GENERAL STRUCTURAL NOTES FOR ADDITIONAL DESIGN CRITERIA. TRUSS FABRICATOR SHALL SUBMIT DRAWINGS AND DESIGN CALCULATIONS SEALED BY A NORTH CAROLINA REGISTERED ENGINEER FOR REVIEW PRIOR TO TRUSS FABRICATION.
  - ROOF DEAD LOADS SHOWN SHALL BE DIVIDED EQUALLY BETWEEN TOP AND BOTTOM CHORDS TO ACCOUNT FOR DEAD LOAD OF ROOFING AS WELL AS HANGING MECHANICAL AND CEILING DEAD LOADS.
  - WIND LOADS SHOWN ARE FOR WINDS APPROACHING FROM THE LEFT OF THE TRUSS ELEVATIONS SHOWN. FABRICATOR SHALL DESIGN AND FABRICATE ALL TRUSSES SYMMETRICALLY (REVERSE WINDWARD AND LEEWARD WIND LOADINGS) THEREBY ACCOUNTING FOR WIND LOAD IN THE OPPOSITE DIRECTION. A MAXIMUM OF 10 PSF DEAD LOAD MAY BE USED TO RESIST UPLIFT, TYP.
  - SEE ARCHITECTURAL DRAWINGS, MECHANICAL DRAWINGS, AND ROOF FRAMING PLANS FOR ADDITIONAL DEAD LOADS ON TOP OR BOTTOM CHORDS OF TRUSSES DUE TO MECHANICAL EQUIPMENT, WHERE APPLICABLE.
  - MAXIMUM TRUSS SPACING IS 2'-0", TYPICALLY. "PSF" LOADINGS SHALL BE MULTIPLIED ACCORDINGLY IN ORDER TO OBTAIN "PLF" TRUSS LOADINGS.
  - POINT LOADINGS WHICH ARE GENERATED BY SPECIAL TRUSS CONFIGURATIONS HAVING TRIBUTARY WIDTHS GREATER THAN 2'-0" (HIP TRUSSES, TRANSFER TRUSSES, ETC.) SHALL BE ACCOUNTED FOR IN TRUSS DESIGN, AND MAGNITUDE OF SUCH POINT LOADS SHALL BE CLEARLY NOTED ON SHOP DRAWINGS. TRUSSES SHALL ACCEPT POINT LOADS FROM ADJACENT TRUSSES AT TRUSS PANEL POINTS ONLY.
  - COORDINATE ROOF CONFIGURATION, SLOPE, DIMENSIONS, OVERHANGS, HIPS AND VALLEYS WITH ARCHITECTURAL DRAWINGS, TYPICALLY.
  - TRUSS WEB CONFIGURATIONS SHOWN IN TRUSS ELEVATIONS ARE SCHEMATIC IN NATURE. FINAL LOCATION AND CONFIGURATION OF TRUSS WEB MEMBERS SHALL BE COORDINATED WITH ARCHITECTURAL AND MECHANICAL SPACE REQUIREMENTS.
  - PERMANENT TRUSS BRACING AND BRIDGING SHALL BE PROVIDED IN ACCORDANCE WITH TRUSS PLATE INSTITUTE IN ORDER TO PROVIDE ADEQUATE LATERAL WIND STABILITY FOR TRUSS SYSTEM, TYPICALLY.



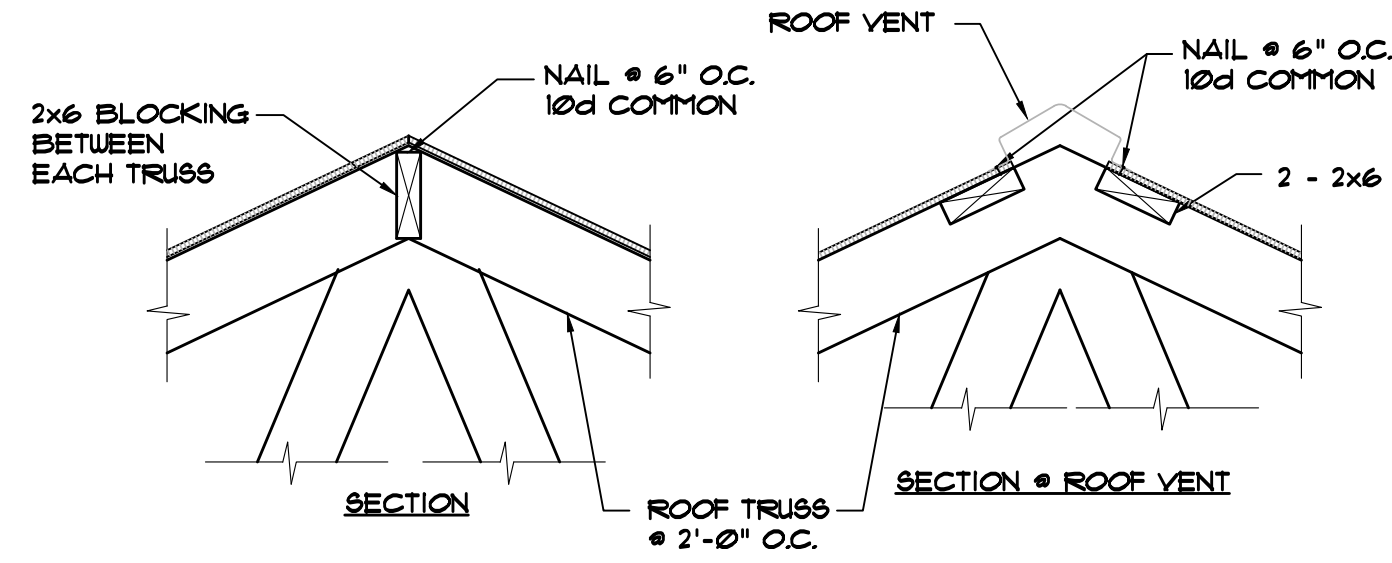
**1 PRE-ENGINEERED WOOD TRUSSES**  
 SCALE: N.T.S.



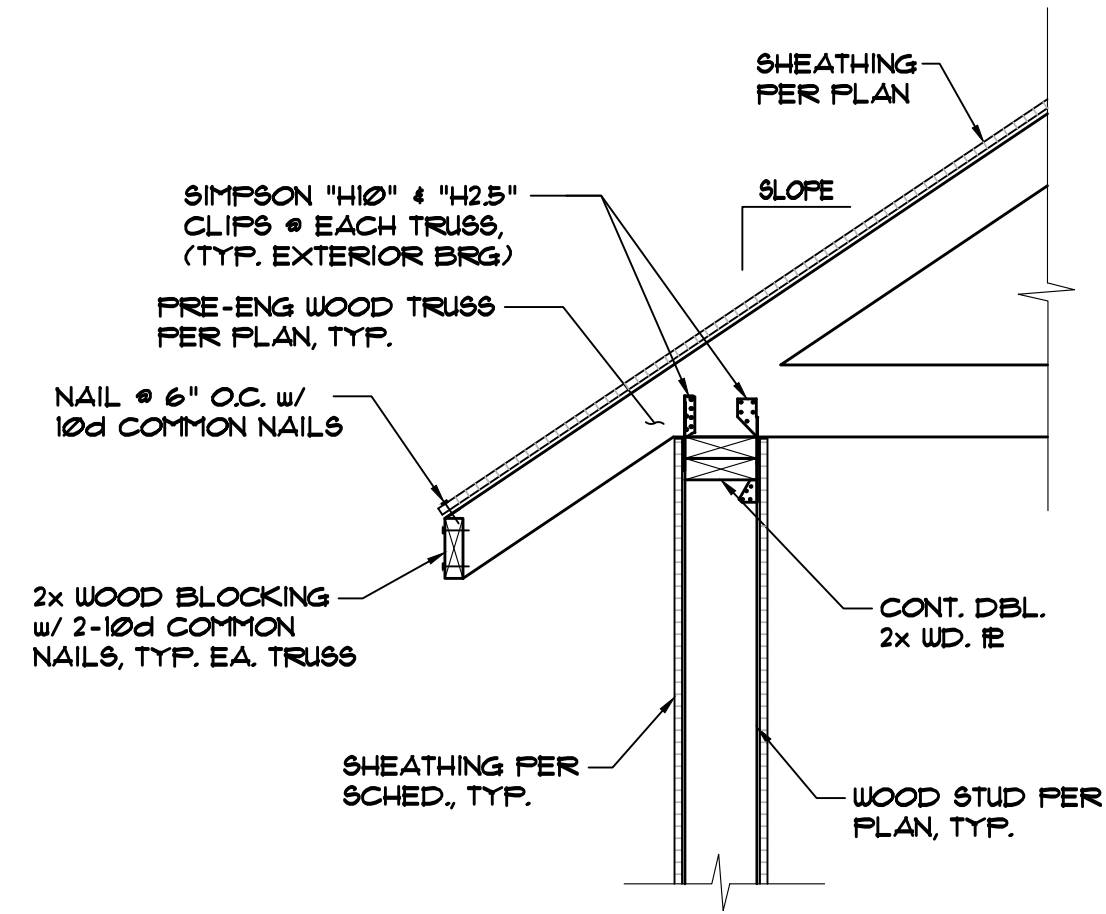
**3 TYPICAL GABLE END FRAMING / BRACING**  
 SCALE: N.T.S.



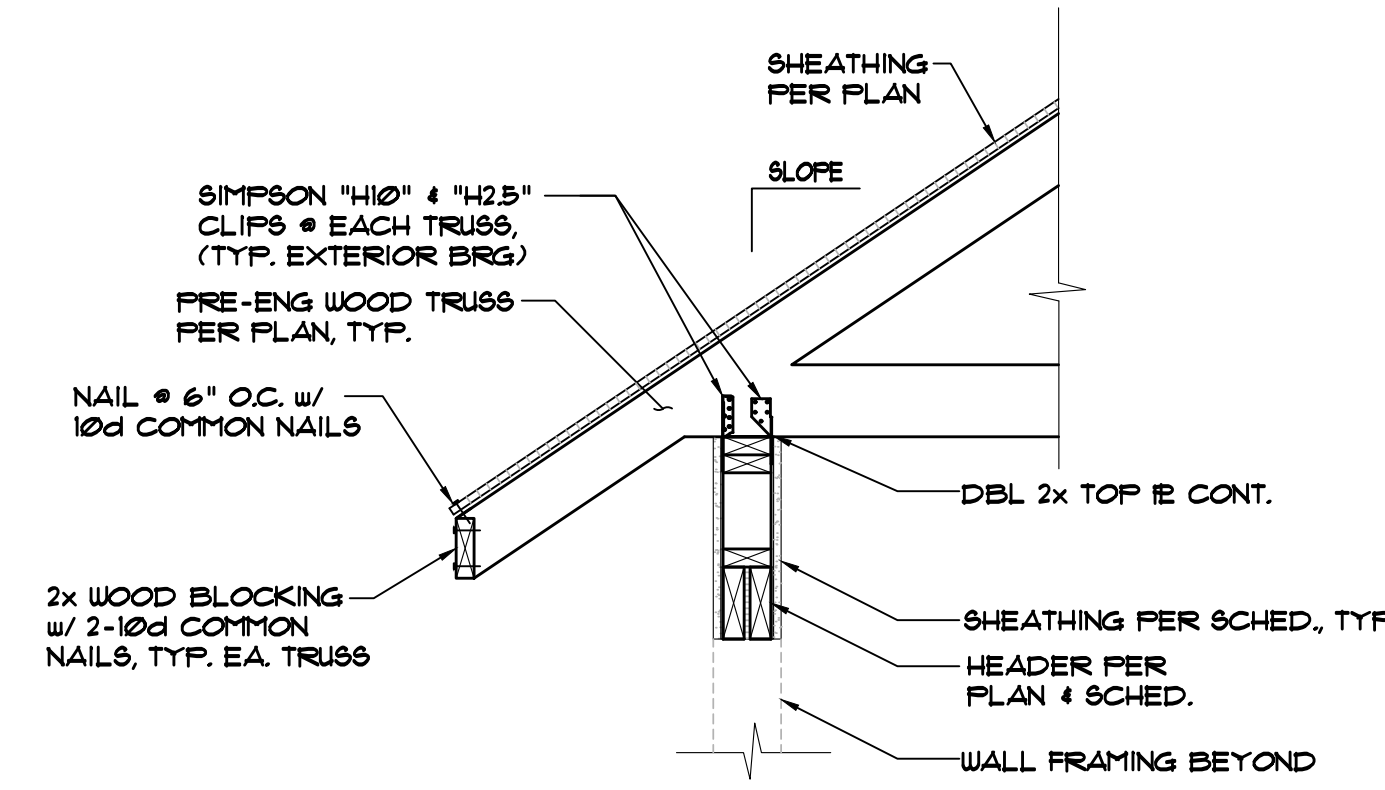
**6 ATTIC WALKWAY**  
 SCALE: N.T.S.



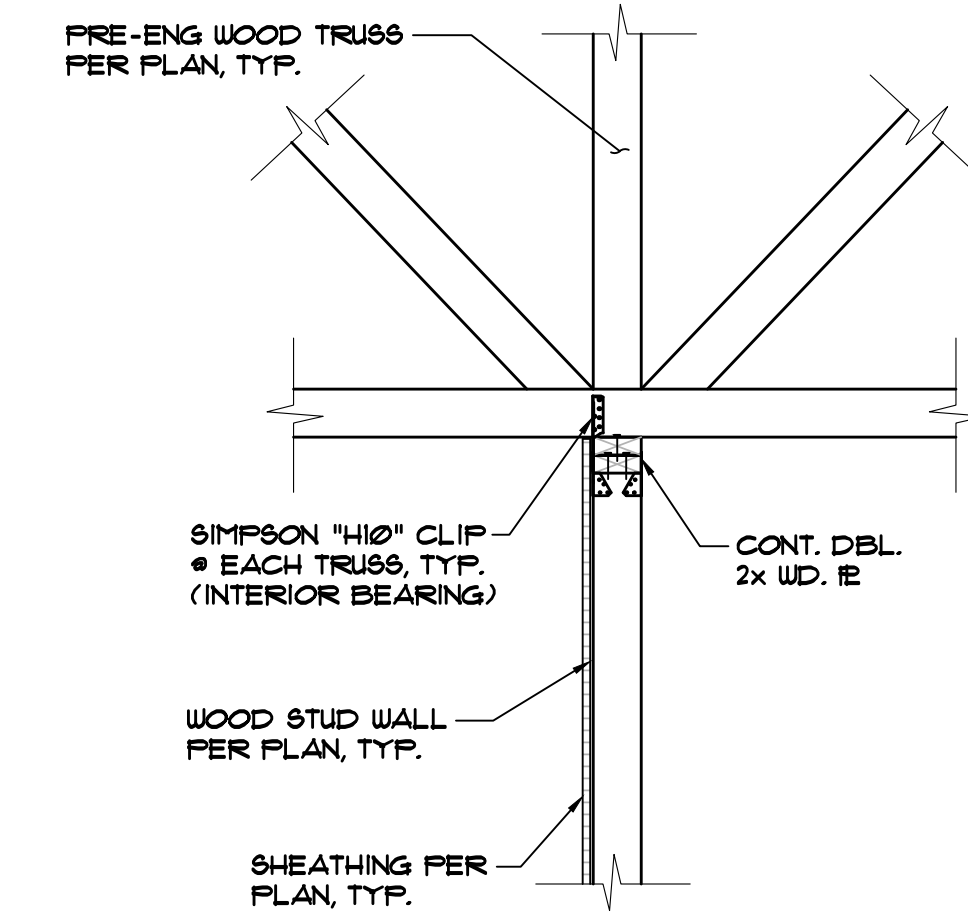
**1** TYPICAL RIDGE CONNECTIONS  
 5301 SCALE: 3/4" = 1'-0"



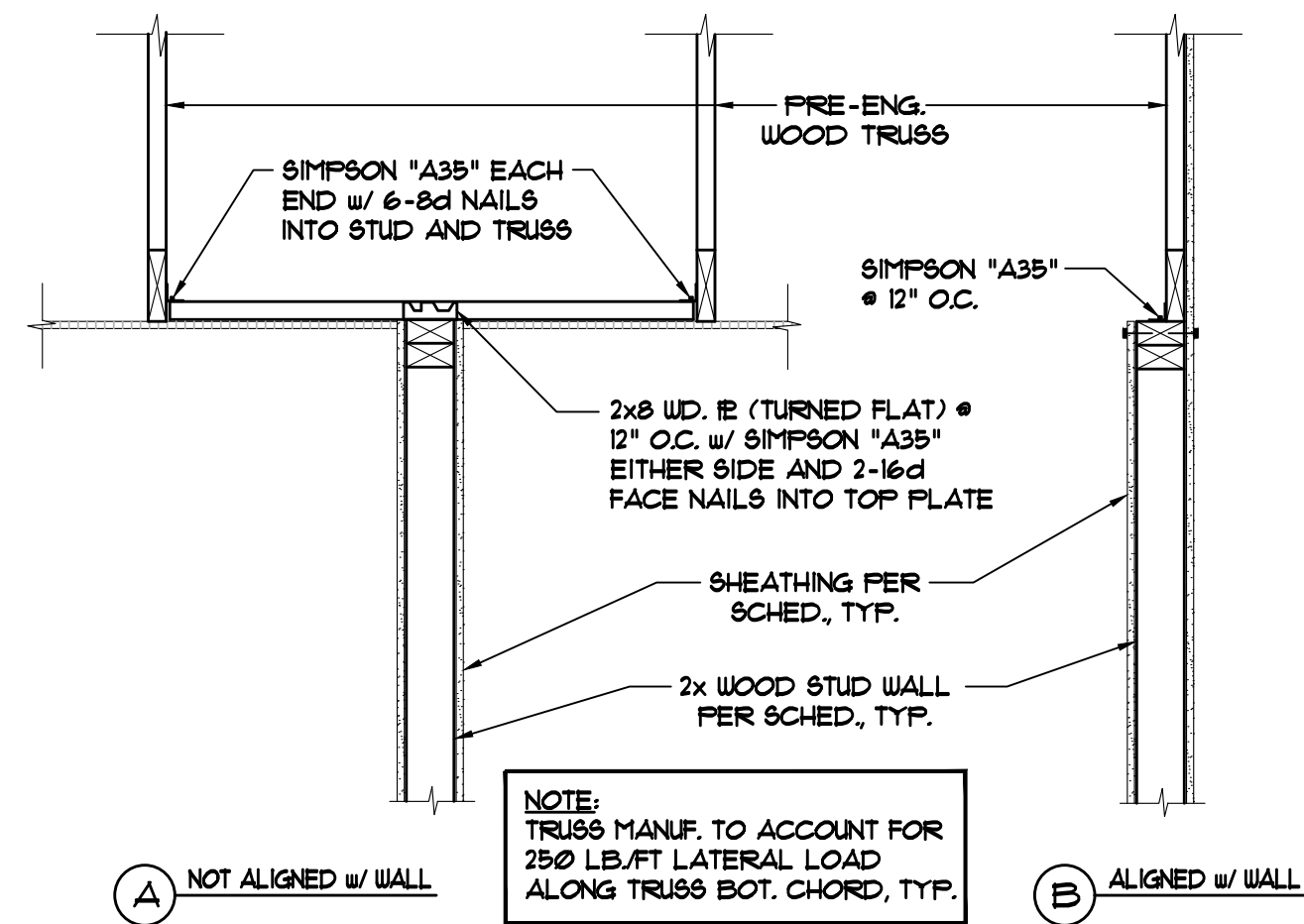
**2** TRUSS BEARING @ WALL  
 5301 SCALE: 3/4" = 1'-0"



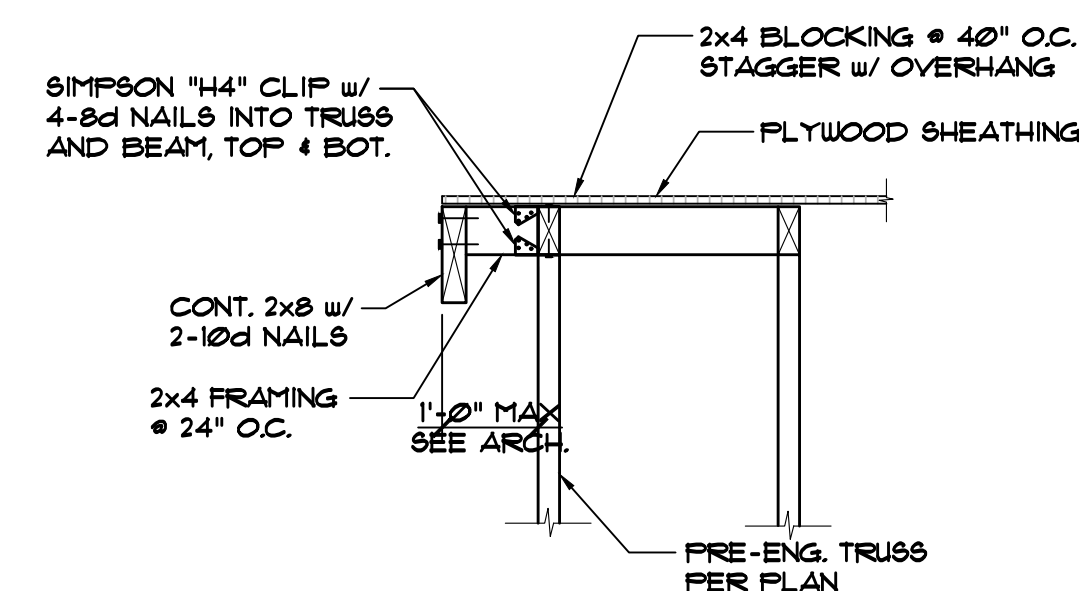
**3** TRUSS BEARING @ HEADER  
 5301 SCALE: 3/4" = 1'-0"



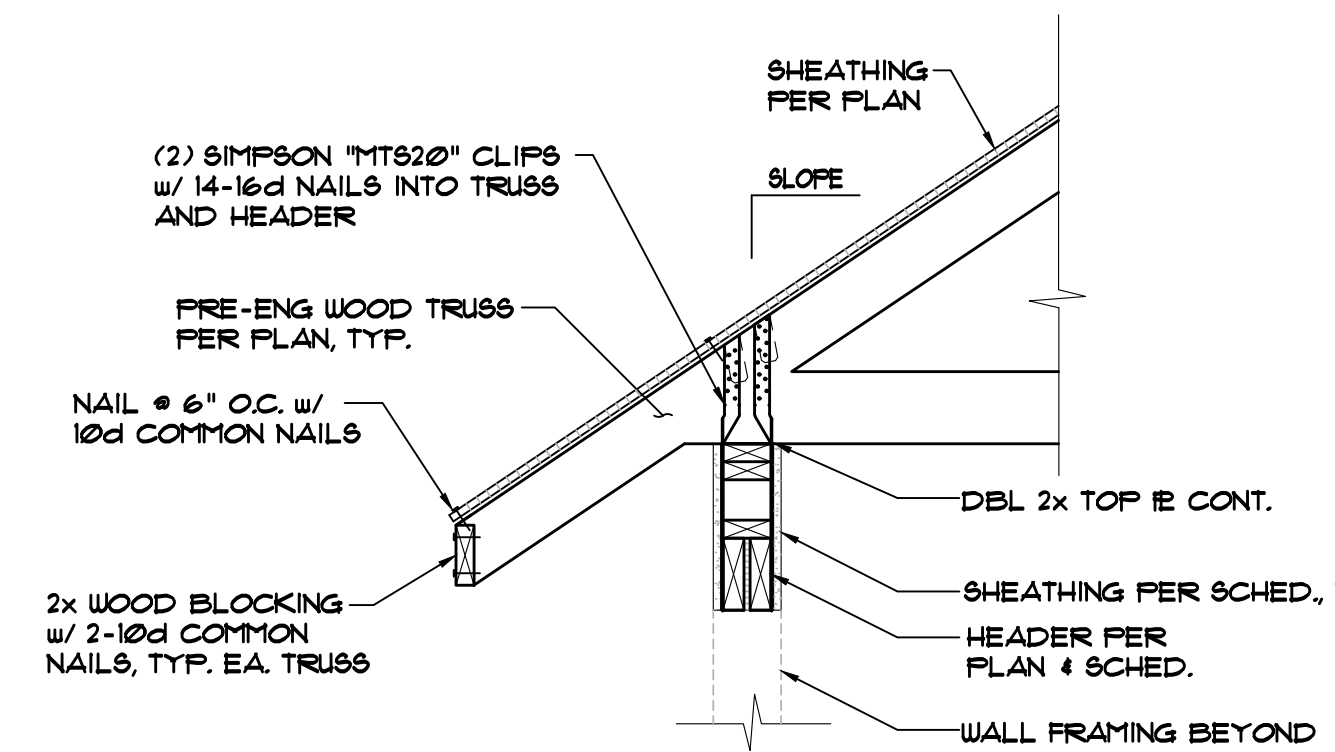
**4** INTERIOR TRUSS BEARING  
 5301 SCALE: 3/4" = 1'-0"



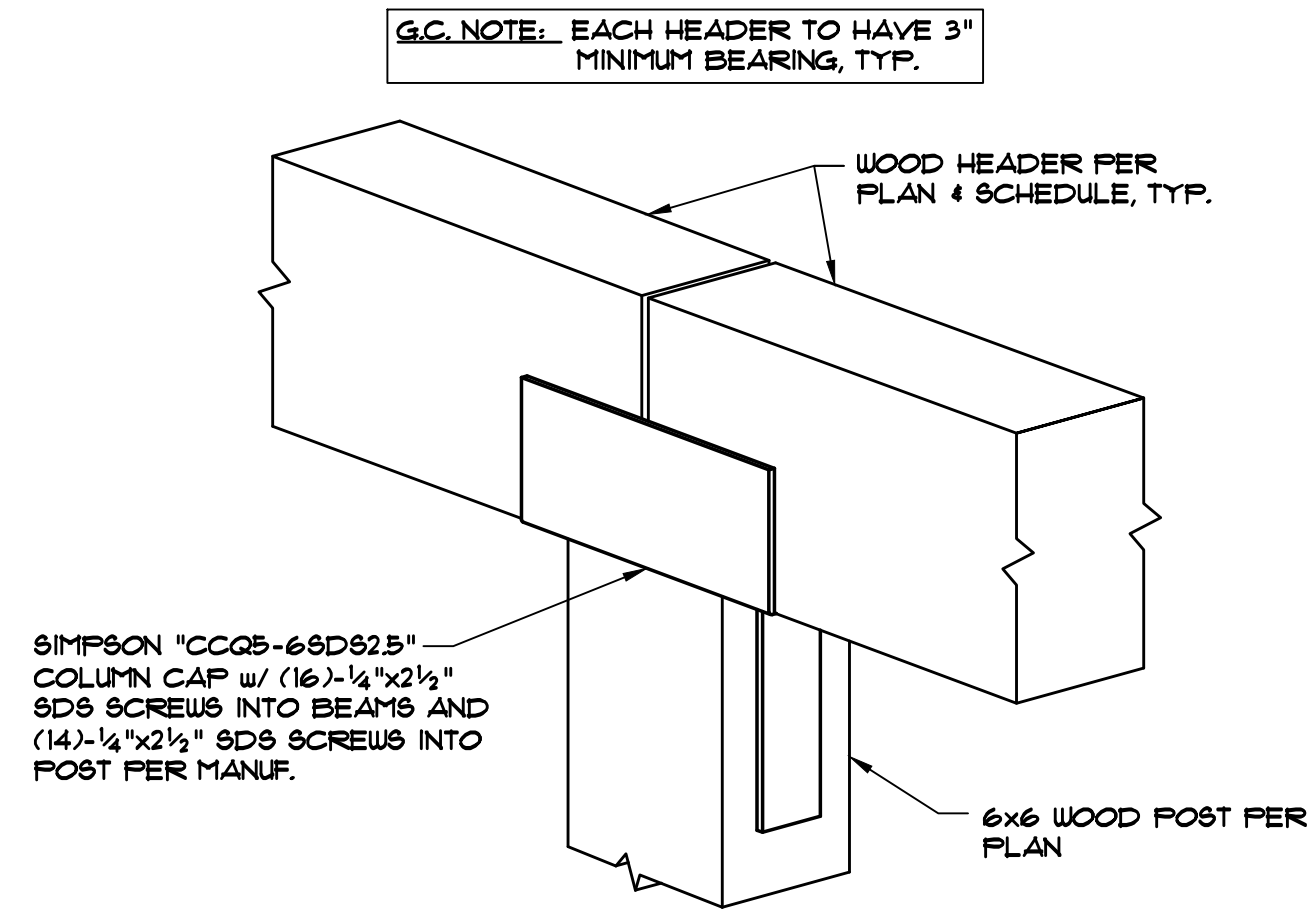
**5A** **5B** SHEAR WALL CONNECTION @ TRUSS  
 5301 5301 SCALE: 3/4" = 1'-0"



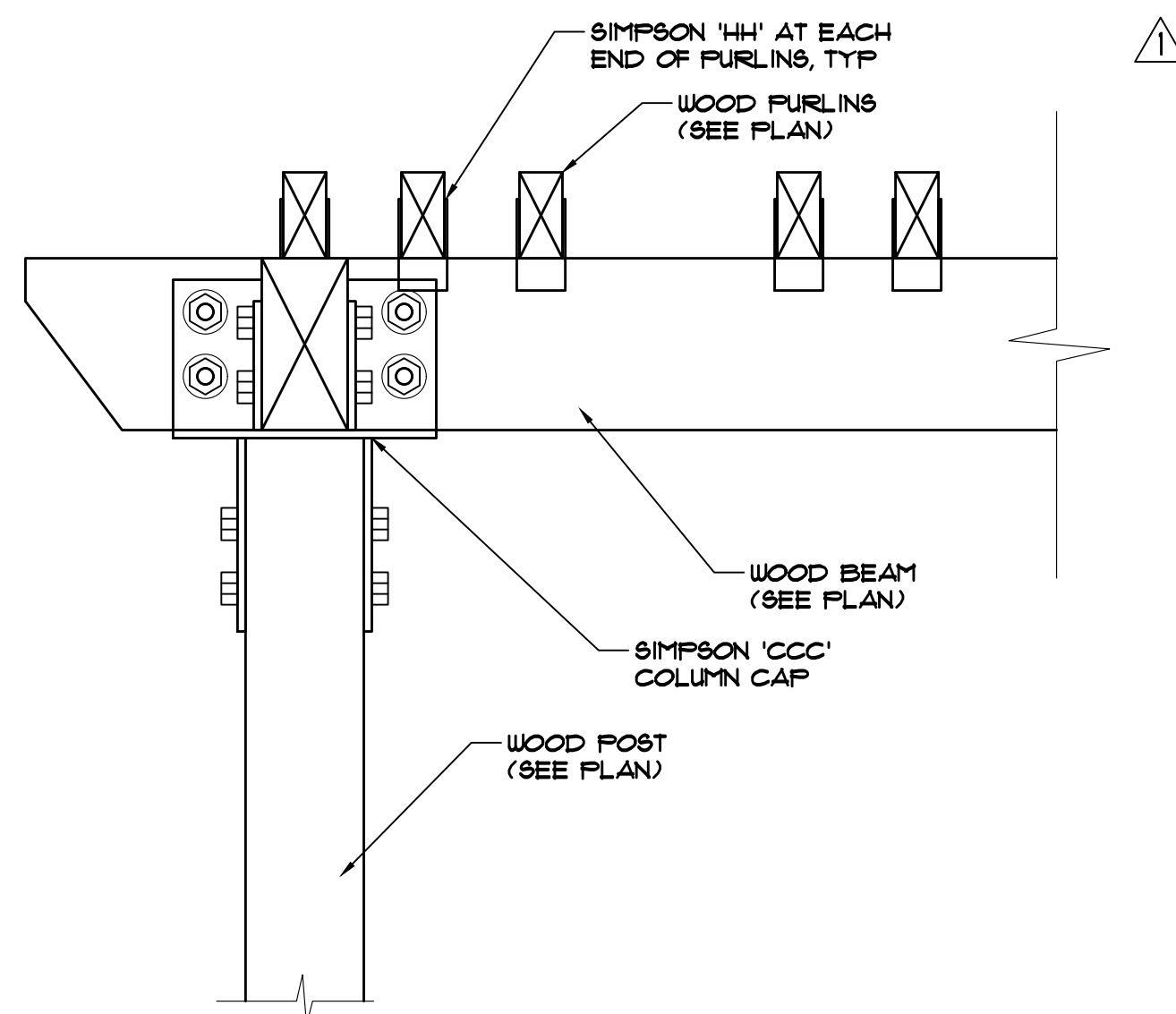
**6** RAKE/OVERHANG DETAIL  
 5301 SCALE: 3/4" = 1'-0"



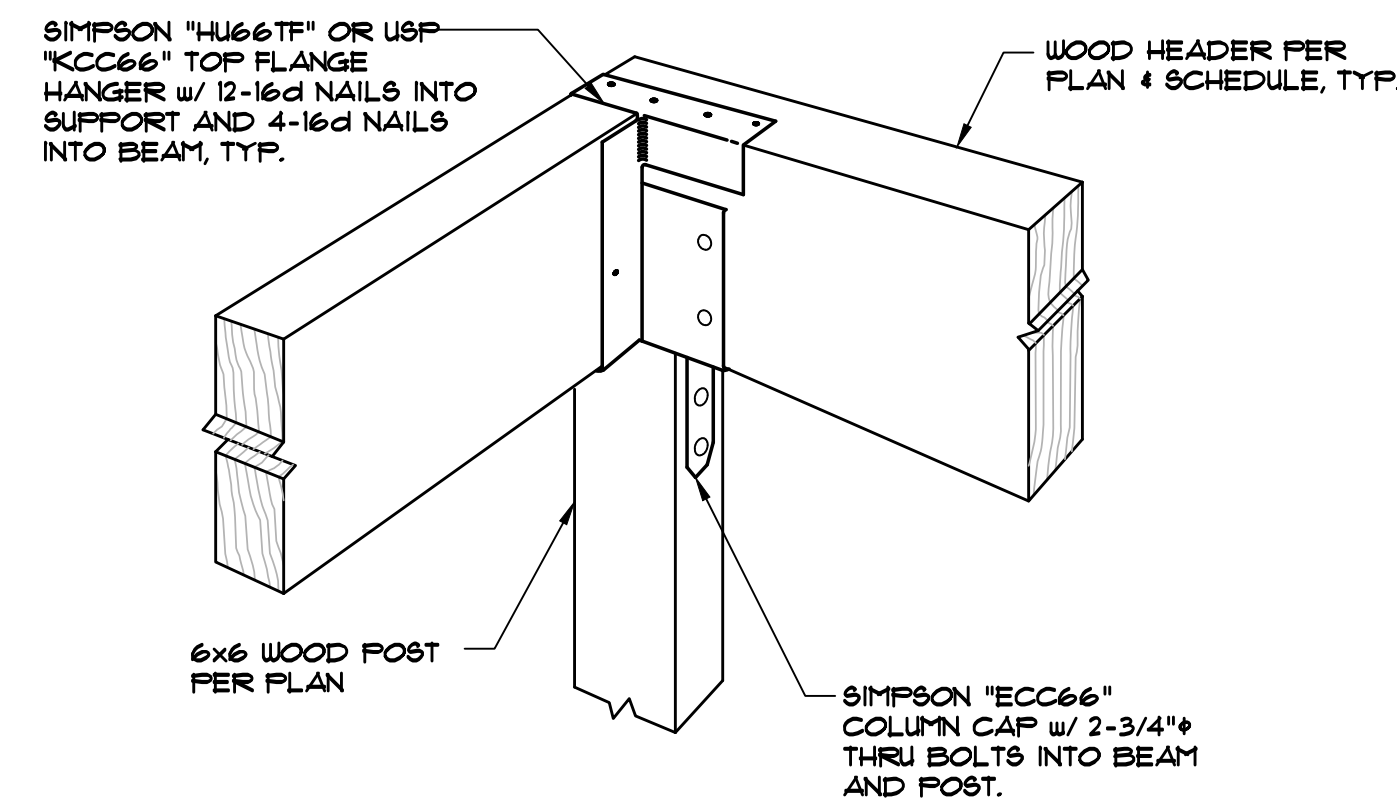
**8** GIRDER HOLD DOWN  
 5301 SCALE: 3/4" = 1'-0"



**9** HEADER TO POST CONNECTION  
 5301 SCALE: 3/4" = 1'-0"



**7** TRELLIS DETAIL  
 5301 SCALE: 1 1/2" = 1'-0"

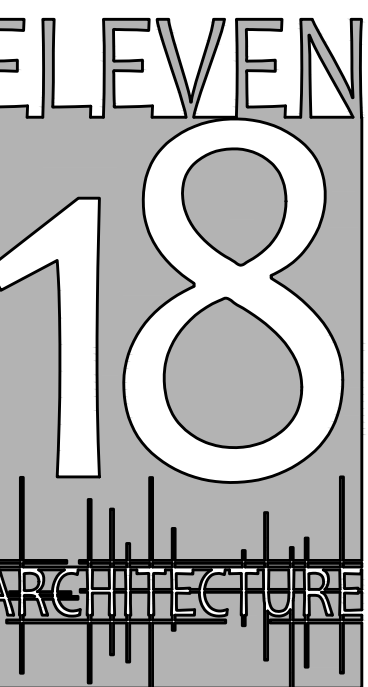


**10** HEADER TO POST CONNECTION  
 5301 SCALE: 3/4" = 1'-0"

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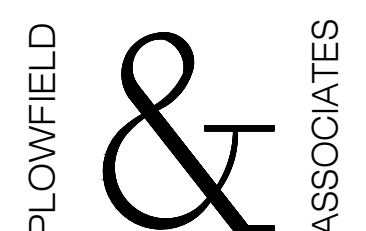
PROJECT NAME: **THE SPRINGS OF BALLENTINE**

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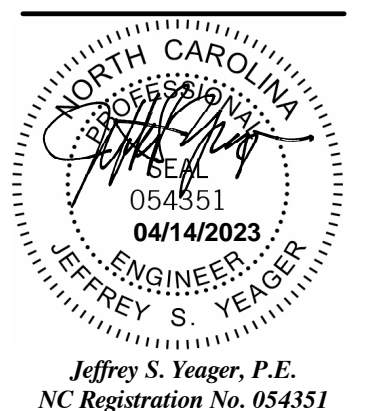
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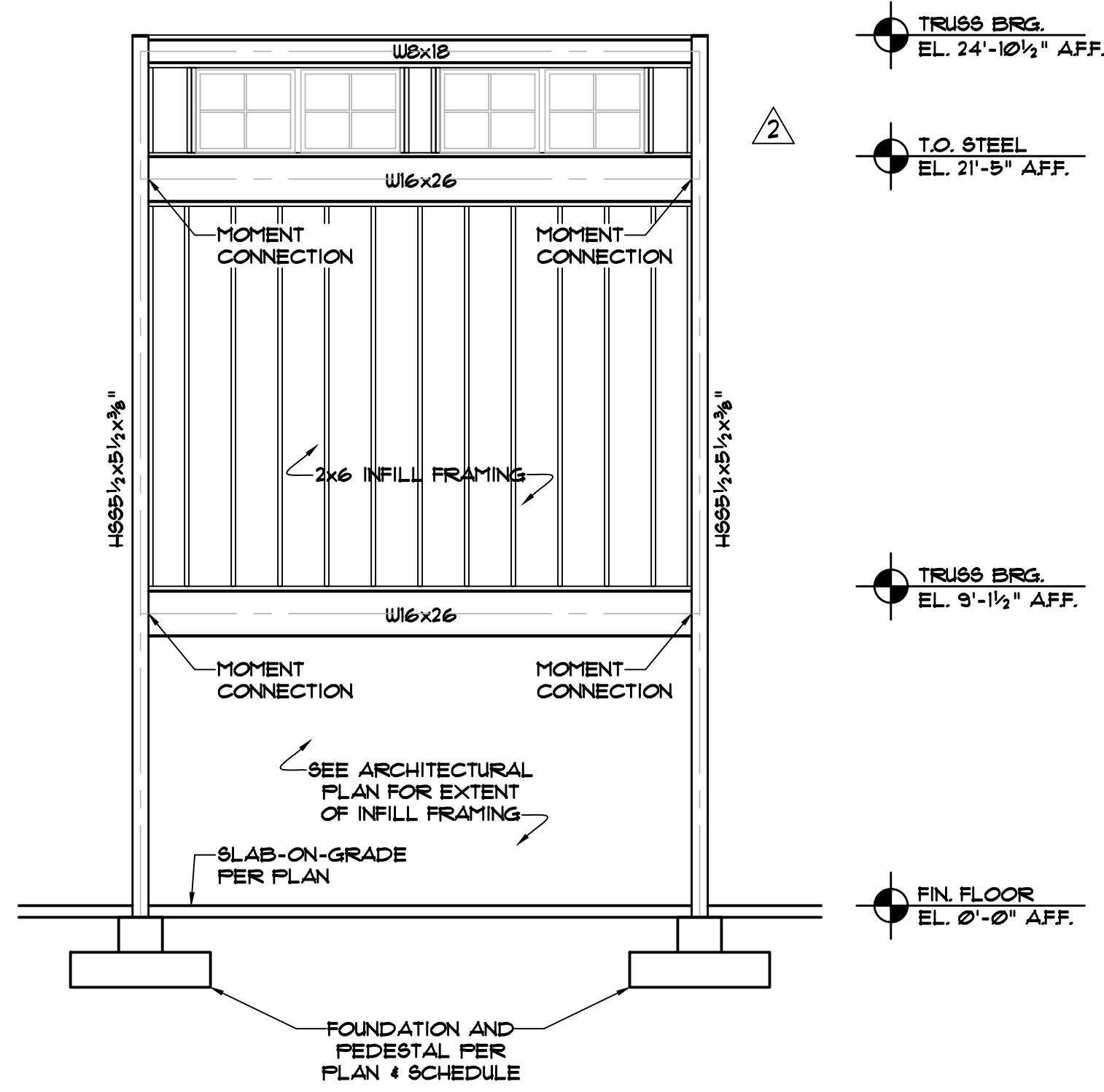
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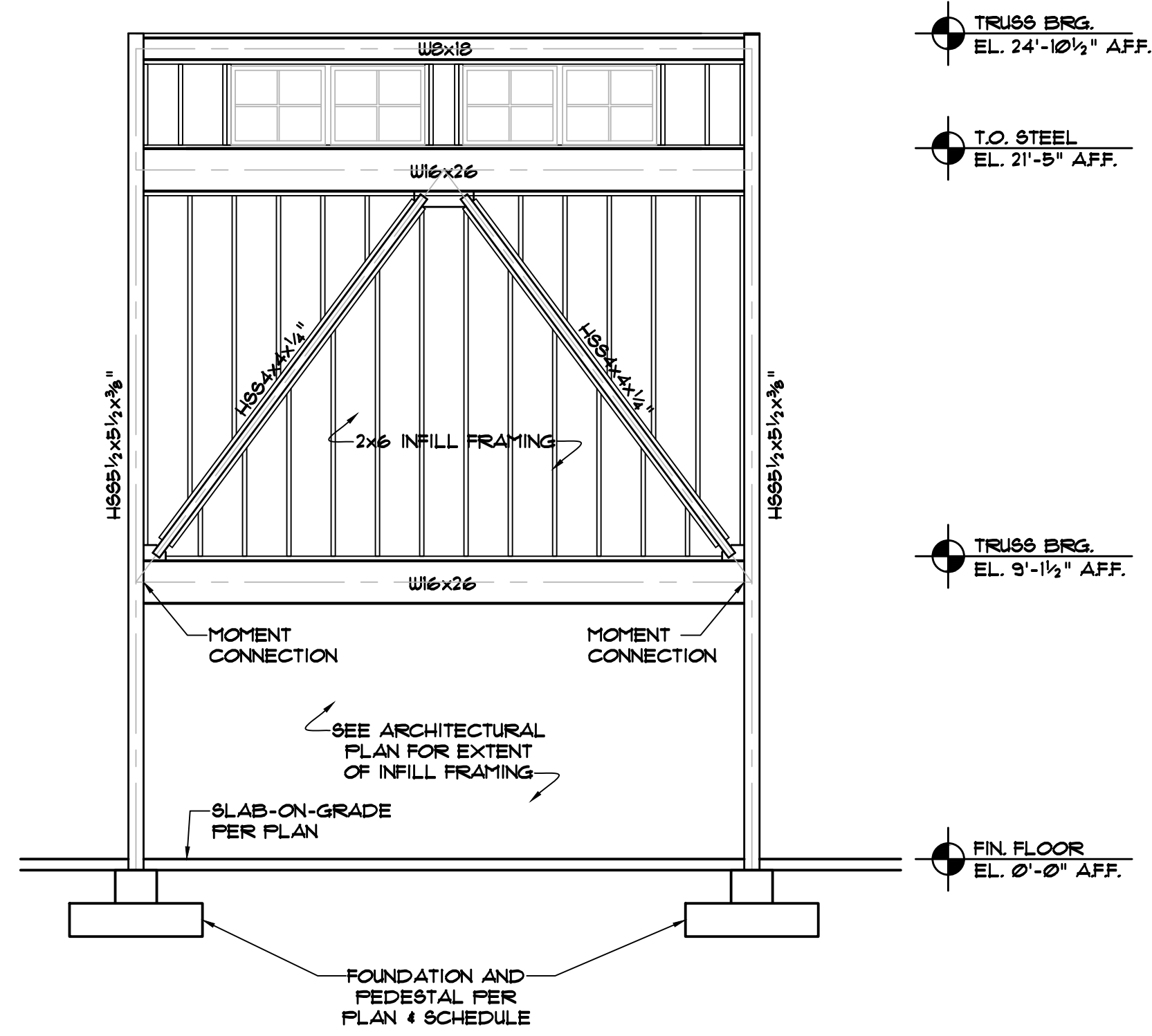
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**S301**  
 STRUCTURAL DETAILS

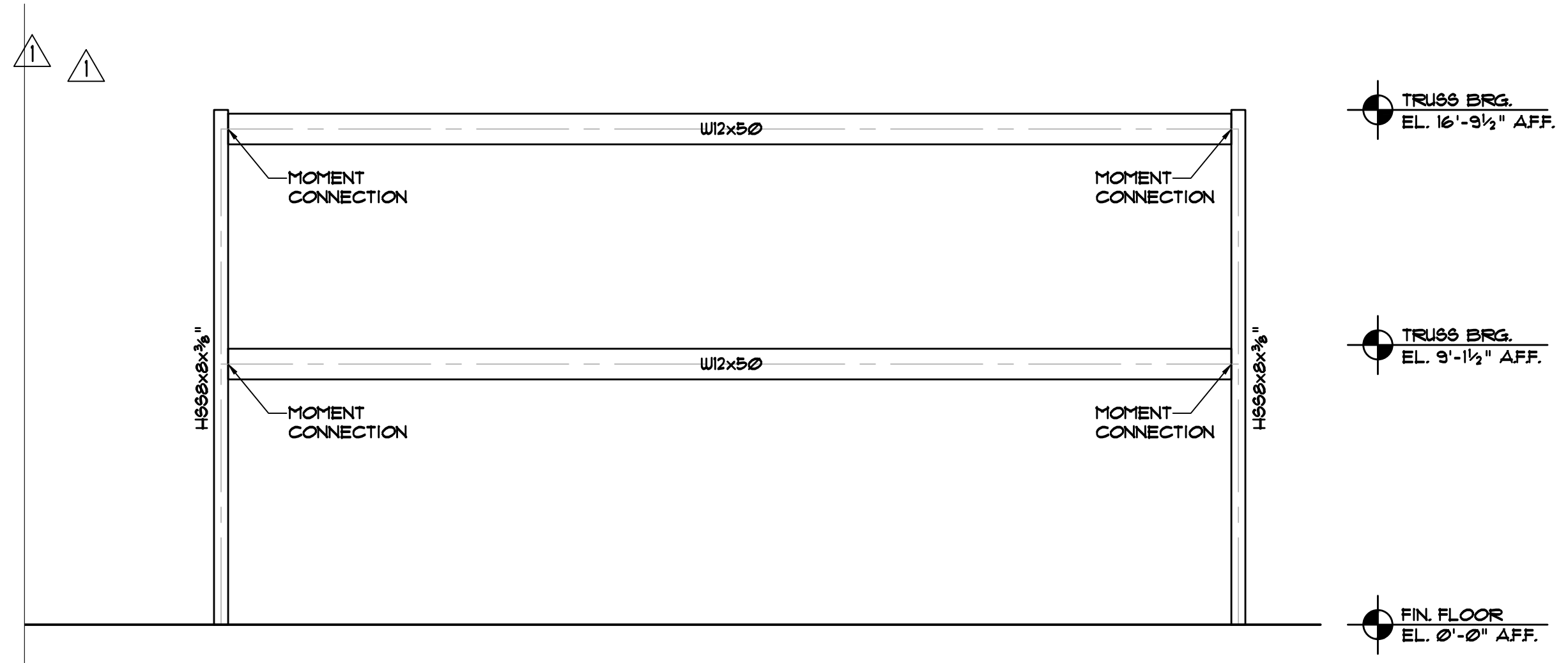




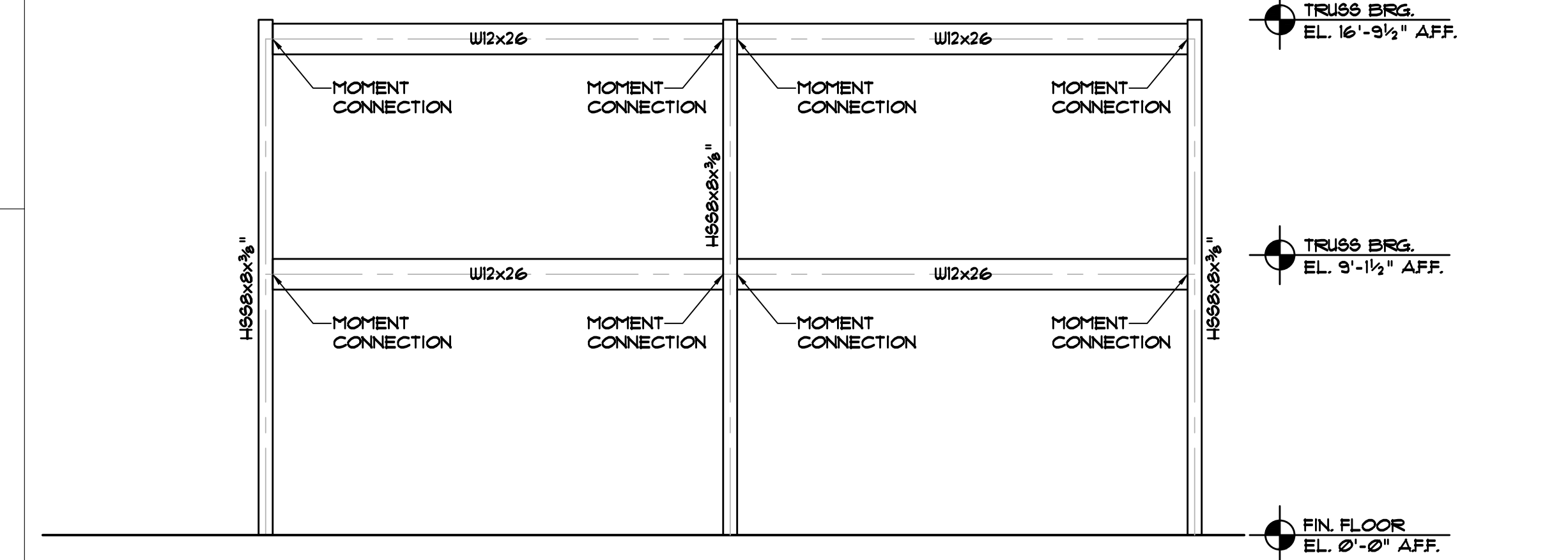
**1** FRAME ELEVATION  
S302 SCALE: 1/4" = 1'-0"



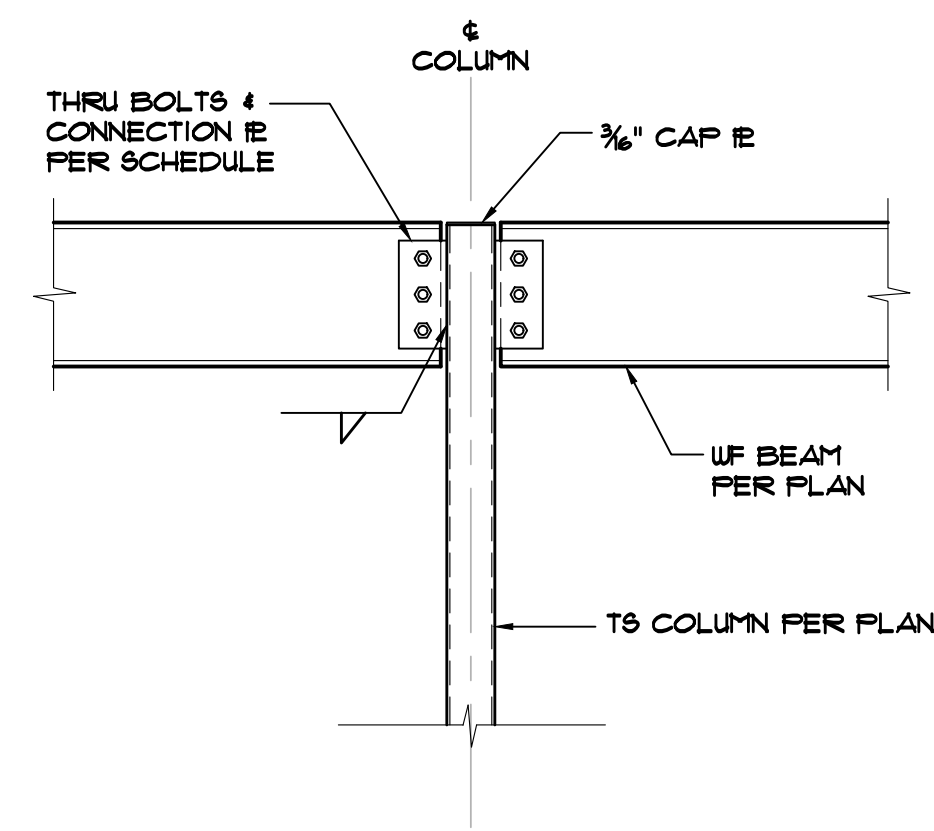
**2** FRAME ELEVATION  
S302 SCALE: 1/4" = 1'-0"



**3** FRAME ELEVATION  
S302 SCALE: 1/4" = 1'-0"



**4** FRAME ELEVATION  
S302 SCALE: 1/4" = 1'-0"



**5** BEAM CONNECTION  
S302 SCALE: 3/4" = 1'-0"

SIMPLE BEAM CONNECTION SCHEDULE			
SHEAR PL CONNECTION			
MEMBER DEPTH	# OF BOLTS 3/4" A325	CONN. PL. THICK.	WELD SIZE "A"
6"	2	3/8"	1/4"
8" - 10"	2	3/8"	1/4"
12" - 14"	3	3/8"	1/4"
15" - 16"	4	3/8"	3/8"
18"	5	3/8"	3/8"
20" - 21"	5	1/2"	3/8"
24"	6	1/2"	3/8"
27"	7	1/2"	3/8"
30" - 33"	8	3/8"	3/8"
36"	10	3/8"	3/8"

**NOTES:**

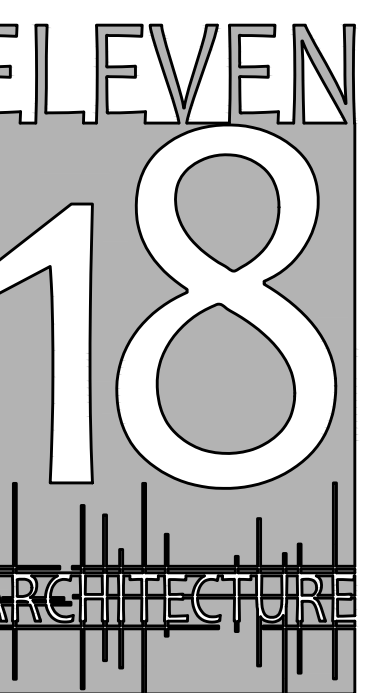
- 1) FILLET WELDS SHALL BE AS SHOWN UNLESS A GREATER SIZED IS REQUIRED BY A.I.S.C. TABLE J2.4
- 2) ALL BOLTS TO BE A325 BOLTS (UNO.)
- 3) DOUBLE ANGLES MAY BE SUBSTITUTED FOR CONNECTOR PLATES, PROVIDED THEY MEET OR EXCEED THE REQUIREMENTS OF THE A.I.S.C.
- 4) ALL CONNECTIONS TO COLUMNS AND ALL CONNECTIONS AT VIBRATION LOAD AREAS TO BE NON SLIP (A325 S.C.). ALL OTHER CONNECTIONS MAY BE BEARING TYPE (A325 N).

**6** SIMPLE BEAM CONNECTION SCHEDULE  
S302 SCALE: N.T.S.

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11 APRIL 2022

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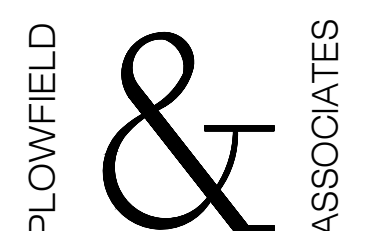
PROJECT NAME: **THE SPRINGS OF BALLENTINE**

40 RAWLS CLUB RD  
FUQUAY-VARINA NC.

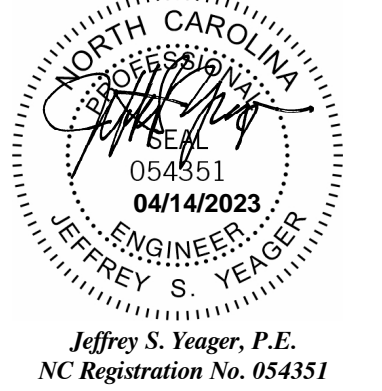
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REVISIONS		
#	DATE	DESC.
-		PERMIT SUBMITTAL
1	01.20.23	REV 1
2	03.13.23	REV 2

**S302**  
STRUCTURAL DETAILS