### **GENERAL STRUCTURAL NOTES** (THE FOLLOWING APPLY UNLESS SHOWN OTHERWISE ON THE PLANS.)

## A. GENERAL

- 1. ALL MATERIALS, WORKMANSHIP, DESIGN, AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, AND THE INTERNATIONAL BUILDING CODE (IBC), 2018 EDITION, AS AMENDED BY LOCAL JURISDICTION.
- 2. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS FOR BIDDING AND CONSTRUCTION. CONTRACTOR SHALL VERIFY DIMENSIONS AND CONDITIONS FOR COMPATIBILITY AND SHALL NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND DIMENSIONS OF DOOR AND WINDOW OPENINGS. SEE MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF MISCELLANEOUS MECHANICAL OPENINGS.
- 3. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED TO PERFORM HIS WORK. STRUCTURAL DESIGN OF THE BUILDING IS BASED ON RESISTANCE TO DEAD LOADS, CODE SPECIFIED LATERAL LOADS, AND MAXIMUM EXPECTED SERVICE LOADS. NO CONSIDERATION HAS BEEN GIVEN TO LOADS WHICH WILL BE INDUCED BY ERECTION PROCEDURES. THE CONTRACTOR SHALL VERIFY, TO THE SATISFACTION OF HIMSELF AND THE OWNER, THE ABILITY OF THE STRUCTURE TO RESIST ALL ERECTION LOADS WITHOUT EXCEEDING THE ALLOWABLE STRESSES OF THE MATERIALS USED. WHERE ERECTION LOADS WOULD OVERSTRESS THE STRUCTURE, THE CONTRACTOR SHALL SUBMIT DESIGN DOCUMENTS FOR TEMPORARY BRACING AND STRENGTHENING, INCLUDING FABRICATION AND ERECTION DRAWINGS, TO THE ARCHITECT FOR REVIEW. THESE DOCUMENTS SHALL BEAR THE SEAL AND SIGNATURE OF A REGISTERED STRUCTURAL ENGINEER IN THE STATE OF WASHINGTON. THE CONTRACTOR SHALL PROVIDE, INSTALL AND IF NECESSARY REMOVE SUCH TEMPORARY WORK AS REQUIRED.
- 4. CONTRACTOR-INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO FABRICATION OR CONSTRUCTION. CHANGES SHOWN ON SHOP DRAWINGS ONLY WILL NOT SATISFY THIS REQUIREMENT.
- 5. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED, BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND THE STRUCTURAL ENGINEER.
- 6. ALL STRUCTURAL SYSTEMS WHICH ARE TO BE COMPOSED OF COMPONENTS TO BE FIELD ERECTED SHALL BE SUPERVISED BY THE SUPPLIER DURING MANUFACTURING, DELIVERY, HANDLING, STORAGE AND ERECTION IN ACCORDANCE WITH INSTRUCTIONS PREPARED BY THE SUPPLIER.
- 7. INSPECTIONS: INSPECTIONS OF THE WOOD FRAMING, THE STEEL REBAR AND WOOD FORMS FOR CONCRETE FOOTINGS & FOUNDATIONS, AND CONCRETE SLABS ARE REQUIRED PER IBC SECTION 109.3.
- 8. PRE-MANUFACTURED. PRE-ENGINEERED STRUCTURAL COMPONENTS SHALL BE DESIGNED BASED ON THE CRITERIA PRESENTED IN THE CONTRACT DOCUMENTS. THE COMPONENT DESIGNER IS RESPONSIBLE FOR CODE CONFORMANCE, TEMPORARY AND PERMANENT BRACING AND ALL NECESSARY CONNECTIONS, INCLUDING CONNECTIONS TO THE PRIMARY STRUCTURE, NOT SPECIFICALLY CALLED OUT ON THE ARCHITECTURAL OR STRUCTURAL DRAWINGS. SHOP DRAWINGS SHALL INDICATE THE MAGNITUDE AND DIRECTION OF ALL LOADS IMPOSED ON THE PRIMARY STRUCTURE. SHOP DRAWINGS AND CALCULATIONS SHALL BE SUBMITTED AS NOTED PREVIOUSLY.

### **B. DESIGN CRITERIA**

1. DESIGN LOADS

ROOF LIVE LOAD 25 PSF (SNOW) RESIDENTIAL LIVE LOAD 40 PSF 100 MPH, EXPOSURE "B", Kzt = 1.0 WIND (IBC SIMPLIFIED) SITE CLASS D EARTHQUAKE (ASCE) SEISMIC USE GROUP 1 (le = 1.0) SEISMIC DESIGN CATEGORY D Ss = 1.422g, Sds = 1.137g ALLOWABLE SOIL PRESSURE 1,500 PSF AT 1'-6" DEPTH LATERAL EARTH PRESSURE 50 PCF PASSIVE PRESSURE 300 PCF COEFFICIENT OF FRICTION 0.4

2. LATERAL RESISTANCE SYSTEM: SHEATHED BEARING WALLS, ASCE 7-16

### C. RENOVATION

DEMOLITION: CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS BEFORE COMMENCING ANY DEMOLITION. SHORING SHALL BE INSTALLED TO SUPPORT EXISTING CONSTRUCTION AS REQUIRED AND IN A MANNER SUITABLE TO THE WORK SEQUENCES. DEMOLITION DEBRIS SHALL NOT BE ALLOWED TO DAMAGE OR OVERLOAD THE EXISTING STRUCTURE. LIMIT CONSTRUCTION LOADING (INCLUDING DEMOLITION DEBRIS) ON EXISTING FLOOR SYSTEMS TO 40 PSF.

CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS, MEMBER SIZES, AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS ARE INTENDED AS GUIDELINES ONLY AND MUST BE VERIFIED. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEER IS EXISTING CONDITIONS DETERMINED DURING WORK VARY FROM THE EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS.

EXISTING REINFORCING SHALL BE SAVED WHERE AND AS NOTED ON THE PLANS. SAW CUTTING, IF AND WHERE USED, SHALL NO CUT EXISTING REINFORCING THAT IS TO BE SAVED.

- A. ALL NEW OPENINGS THROUGH EXISTING WALLS, SLABS, AND BEAMS SHALL BE ACCOMPLISHED BY SAW CUTTING WHEREVER POSSIBLE. CORNERS SHALL NOT BE OVER
- B. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND LOCATION OF MEMBERS PRIOR TO CUTTING ANY OPENINGS.
- C. SMALL ROUND OPENINGS SHALL E ACCOMPLISHED BY CORE DRILLING.
- D. WHERE NEW REINFORCING TERMINATES AT EXISTING CONCRETE, DRILL AND EPOXY

CONTRACTOR SHALL CHECK FOR DRY ROT AT ALL AREAS OF NEW WORK. ALL ROT SHALL BE REMOVED AND DAMAGED MEMBERS SHALL BE REPLACED OR REPAIRED AS DIRECTED BY THE ENGINEER OR ARCHITECT.

### ABBREVIATIONS

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(THIS IS A COMPREHENSIVE LIST OF ABBREVIATIONS, SOME OF WHICH MAY NOT APPEAR ON THESE DRAWINGS.)										
AB	ANCHOR BOLT	CL	CENTERLINE	(E)	EXISTING					
ACI	AMERICAN CONCRETE INSTITUTE	CLR	CLEAR	EA	EACH					
ADDL	ADDITIONAL	CMU	CONCRETE MASONRY UNIT	EF	EACH FACE					
ADJ	ADJACENT	COL	COLUMN	EL	ELEVATION					
AFF	ABOVE FINISHED FLOOR	CONC	CONCRETE	ELEC	ELECTRICAL					
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	CONN	CONNECTION, CONNECT	ELEV	ELEVATOR					
ALT	ALTERNATE	CONSTR	CONSTRUCTION	EMB	EMBED, EMBEDDED, EMBEDMENT					
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	CONT	CONTINUOUS	ENGR	ENGINEER					
APA	AMERICAN PLYWOOD ASSOCIATION	CONTR	CONTRACTOR	EQ	EQUAL					
APPROX	APPROXIMATE; APPROXIMATELY	COORD	COORDINATE	EQUIP	EQUIPMENT					
ARCH	ARCHITECT; ARCHITECTURAL	CP	COMPLETE PENETRATION	ES	EACH SIDE					
ASSY		CSK	COUNTERSINK; COUNTERSUNK	EW	EACH WAY					
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS	CTR	CENTER	EXP	EXPANSION; EXPOSED					
AWS	AMERICAN WELDING SOCIETY	CU FT	CUBIC FOOT	EXP JT	EXPANSION JOINT					
		CU IN	CUBIC INCH	EXT	EXTERIOR					
BD		CY	CUBIC YARD							
BLDG	BUILDING			FD	FLOOR DRAIN					
BLKG	BLOCKING	d	PENNY (NAILS)	FDN	FOUNDATION					
BM		DBL	DOUBLE	FF	FAR FACE, FINISHED FLOOR					
BMU	BRICK MASONRY UNIT(S)	DEPT	DEPARTMENT	FLR	FLOOR; FLOOR LINE					
BOF	BOTTOM OF SLAB	DET	DETAIL	FLG	FLANGE					
BOS		DIA	DIAMETER (SEE SYMBOLS)	FOC	FACE OF CONCRETE					
BOT	BOTTOM	DIAG	DIAGONAL	FOM	FACE OF MASONRY					
BRG	BEARING	DIAPH	DIAPHRAGM	FOS	FACE OF STUD					
	BEAM	DICA	DRILLED-IN CONCRETE ANCHOR	FS	FULL SIZE; FAR SIDE					
С	STANDARD CHANNEL	DIM	DIMENSION	FT	FEET; FOOT					
CG	CENTER OF GRAVITY	DN	DOWN	FTG	FOOTING					
CGS	CENTER OF GRAVITY OF STRANDS	DO	DITTO							
CIP	CAST-IN-PLACE	DWG	DRAWING	GA	GAUGE					
CJ	CONSTRUCTION JOINT/CONTROL JOINT	DWL	DOWELS	GALV	GALVANIZED					

## D. FOUNDATION

- 1. FOUNDATION EXCAVATION, BACKFILL AND COMPACTION SHALL CONFORM TO SPECIFICATION REQUIREMENTS. THIS CONSTRUCTION WORK, INCLUDING DRAINAGE. SHORING AND SUCH OTHER RELATED WORK AS REQUIRED. SHALL BE CONDUCTED BY THE CONTRACTOR UNDER THE OBSERVATION AND DIRECTION OF THE GEOTECHNICAL ENGINEER.
- 2. FOOTINGS SHALL BEAR ON SOLID UNDISTURBED EARTH (CONTROLLED, COMPACTED STRUCTURAL FILL OR BOTH) AT LEAST 18" BELOW LOWEST ADJACENT FINISHED GRADE. MATERIAL TO BE COMPACTED TO 95% MINIMUM OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557
- INCREASED 3" AT EACH INTERFACE WITH SOIL.
- 4. ALL FOOTING EXCAVATIONS SHALL BE HAND CLEANED PRIOR TO PLACING CONCRETE.
- 5. ALL ABANDONED FOOTINGS, UTILITIES, ETC. THAT INTERFERE WITH NEW CONSTRUCTION SHALL BE REMOVED.
- 6. CONTRACTOR SHALL PROVIDE FOR DESIGN AND INSTALLATION OF ALL CRIBBING, SHEATHING, AND SHORING REQUIRED TO SAFELY RETAIN EXCAVATIONS.
- 7. BACKFILL BEHIND ALL WALLS WITH WELL DRAINING, GRANULAR FILL MATERIAL, AND PROVIDE PERFORATED PIPE DRAINS AS DESCRIBED IN THE SOILS REPORT. BACKFILL BEHIND WALLS SHALL NOT BE PLACED BEFORE THE WALL IS PROPERLY SUPPORTED BY THE FLOOR SLAB, OR TEMPORARY BRACING. ALL FOOTINGS SHALL BE CENTERED BELOW CENTERLINE OF COLUMNS OR WALLS ABOVE, UNLESS NOTED OTHERWISE.

## E. CONCRETE

- 1. ULTIMATE STRENGTH DESIGN PER INTERNATIONAL BUILDING CODE AND ACI 318-14
- 2. CONCRETE FOR FOOTINGS AND SLABS-ON-GRADE SHALL CONFORM TO A 28-DAY STRENGTH OF fc = 2500 PSI, SHALL CONTAIN NOT LESS THAN 5-1/2 SACKS OF CEMENT PER CUBIC YARD, AND SHALL BE PROPORTIONED TO PRODUCE A SLUMP OF 5" OR LESS. CONCRETE EXPOSED TO EARTH OR WEATHER SHALL HAVE A 28-DAY STRENGTH OF f'c = 3000 psi.

THE MINIMUM AMOUNTS OF CEMENT AND MAXIMUM AMOUNTS OF WATER MAY BE CHANGED IF A CONCRETE DESIGN MIX IS SUBMITTED TO THE ENGINEER AND THE BUILDING OFFICIAL FOR APPROVAL TWO WEEKS PRIOR TO PLACEMENT OF CONCRETE. THE CONCRETE PERFORMANCE MIX SHALL INCLUDE THE AMOUNTS OF CEMENT, FINE AND COARSE AGGREGATES, WATER AND ADMIXTURES AS WELL AS THF WATER-CEMENT RATIO, SLUMP, CONCRETE YIELD AND SUBSTANTIATING STRENGTH DATA IN ACCORDANCE WITH ACI 318. SECTION 5.3. CONTRACTOR MAINTAINS RESPONSIBILITY FOR SPECIFIED PERFORMANCE OF CONCRETE PRODUCTS. ALL CONCRETE EXPOSED TO FREEZING TEMPERATURES WHILE CURING AND ALL CONCRETE PERMANENTLY EXPOSED TO WEATHER SHALL BE AIR-ENTRAINED WITH AN AIR-ENTRAINING AGENT CONFORMING TO IBC SECTION 1904.2. TOTAL AIR CONTENT SHALL BE IN ACCORDANCE WITH TABLE 1904.2.1 OF THE INTERNATIONAL BUILDING CODE.

NO ADMIXTURES, OTHER THAN FOR AIR-ENTRAINMENT AS NOTED ABOVE, SHALL BE USED WITHOUT PRIOR REVIEW BY THE STRUCTURAL ENGINEER.

ALL CONCRETE IN ELEVATED STRUCTURAL SLABS AND BEAMS SHALL BE POURED MONOLITHICALLY UNLESS SHOWN OTHERWISE OR APPROVED BY THE ENGINEER PRIOR TO PLACEMENT.

3. REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615 (INCLUDING SUPPLEMENT S1), GRADE 60, fy = 60,000 PSI. EXCEPTIONS: ANY BARS SPECIFICALLY NOTED ON THE DRAWINGS AS GRADE 40, fy = 40,000 PSI.

WELDED WIRE FABRIC: ASTM A82 AND ASTM A185, SPLICE WITH AT LEAST ONE FULL MESH. PLACE AT MID-DEPTH, OR SLIGHTLY ABOVE, OF SLAB. MATERIAL TO BE SUPPLIED IN FLAT SHEETS.

- 4. REINFORCING STEEL SHALL BE DETAILED (INCLUDING HOOKS AND BENDS) IN ACCORDANCE WITH ACI 315-02. LAP ALL CONTINUOUS REINFORCEMENT PER NOTE D.5. PROVIDE CORNER BARS AT ALL WALL INTERSECTIONS. LAP CORNER BARS PER NOTE D.5. LAP ADJACENT MATS OF WELDED WIRE FABRIC A MINIMUM OF 8" AT SIDES AND ENDS.
- 5. REINFORCING STEEL LAPS AND EMBEDMENT SHALL BE AS NOTED BELOW, UNLESS NOTED OTHERWISE: DEVELOPMENT LENGTH

DEVELOPMENT LENGTH, top bar\* 64 BAR DIAM. 64 BAR DIAM. LAP SPLICE LENGTH LAP SPLICE LENGTH, top bar\* 80 BAR DIAM.

TOP BARS ARE HORIZONTAL REINFORCEMENT SO PLACED THAT MORE THAN 12" OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR.

ALL HOOKS SHALL BE "STANDARD" IN ACCORDANCE WITH ACI 318. REINFORCING SHALL NOT BE TACK WELDED.

6. CONCRETE PROTECTION (COVER) FOR REINFORCING STEEL SHALL BE AS FOLLOWS

FOOTINGS AND OTHER UNFORMED SURFACES, EARTH FACE 3" FORMED SURFACES EXPOSED TO EARTH (i.e. WALLS BELOW GROUND) OR WEATHER SLABS AND WALLS (INTERIOR FACE)

7. CONCRETE WALL REINFORCING - PROVIDE THE FOLLOWING UNLESS DETAILED OTHERWISE:

6" WALLS #4 @ 16" HORIZ. #4 @ 18" VERTICAL 1 CURTAIN @ CENTER 8" WALLS #5 @ 18" HORIZ. #5 @ 18" VERTICAL 1 CURTAIN @ CENTER 8. EPOXY GROUTED ITEMS SPECIFIED ON THE DRAWINGS SHALL BE GROUTED WITH SIMPSON SET ADHESIVE BY SIMPSON STRONG TIE, PER ER-5729, FOLLOWING

3. FOOTINGS MAY BE POURED IN NEAT EXCAVATIONS PROVIDED SIZE IS

48 BAR DIAM.

1 1/2"

# MANUFACTURER'S INSTALLATION INSTRUCTIONS

# F. CARPENTRY

1. GLUED LAMINATED MEMBERS SHALL BE FABRICATED IN CONFORMANCE WITH ANSI STANDARD A190.1. EACH MEMBER SHALL BEAR AN AITC OR APA EWS IDENTIFICATION MARK AND SHALL BE ACCOMPANIED BY AN AITC OR APA EWS CERTIFICATE OF CONFORMANCE. ALL SIMPLE SPAN BEAMS SHALL BE DOUGLAS FIR COMBINATION 24F-V4, Fb = 2,400 PSI, Fv = 240 PSI. ALL CANTILEVERED BEAMS SHALL BE DOUGLAS FIR COMBINATION 24F-V8, Fb = 2400 PSI, Fv = 240 PSI. CAMBER ALL GLULAM BEAMS TO 2,000' RADIUS, UNLESS SHOWN OTHERWISE ON THE PLANS.

FURNISH TO THE FOLLOWING MINIMUM STANDARDS:

MEMBER	SIZE	SPECIES GRADE	MIN. BASIC DESIGN STRESS
JOISTS AND RAFTERS:	2x-3x	DF #2	Fb = 875 PSI
JOISTS AND RAFTERS:	4x	DF #1	Fb = 1000 PSI
BEAMS AND STRINGERS:	6x-LRGR.	DF #1	Fb = 1350 PSI
POSTS AND TIMBERS	6x-LRGR.	DF #1	Fc = 1000 PSI
TOP AND BOTTOM PLATE AT SHEARWALLS & BEARING WALLS:		DF #2	Fb = 1000 PSI

STUDS, PLATES, & MISC. LIGHT FRAMING:

> ALL LUMBER WITH A LEAST DIMENSION OF 2" (NOMINAL) SHALL BE STAMPED SURFACE-DRY AND SHALL HAVE A MOISTURE CONTENT WHEN SURFACED AND WHEN INSTALLED OF NOT MORE THAN 19 PERCENT. LUMBER WITH A LEAST DIMENSION OF 4" (NOMINAL) OR GREATER SHALL BE STAMPED SURFACE-GREEN AND AIR-DRIED TO A MOISTURE CONTENT OF NOT MORE THAN 19 PERCENT PRIOR TO ITS USE IN FRAMING THE STRUCTURE.

DF #2

Fb = 875 PSI

3. MANUFACTURED LUMBER SHALL BE AS MANUFACTURED BY TRUS JOIST MacMILLAN OR APPROVED EQUAL. REQUESTS FOR APPROVAL AS EQUAL WILL REQUIRE SUBMITTAL OF NER "NATIONAL EVALUATION REPORTS" EQUIVALENT TO NER 292 FOR PARALLEL STRAND LUMBER (PSL), OR NER-481 FOR LAMINATED STRAND LUMBER (LSL). THE MINIMUM ALLOWABLE DESIGN VALUES ARE AS FOLLOWS:

PSL - Fb = 2,900; Fv = 290 PSI; E = 2,000,000 PSI LSL - Fb = 2,250; Fv = 400 PSI; E = 1,500,000 PSI

4. SHEATHING SHALL BE APA PERFORMANCE RATED PANELS PER APA "PLYWOOD DESIGN SPECIFICATION, "INCLUDING APPLICABLE SUPPLEMENTS, UNLESS NOTED OTHERWISE. PLYWOOD PANELS SHALL BE GRADE CD AND ALSO CONFORM TO DOC PS-1 & PS-2. ALL PANELS SHALL BE IDENTIFIED AS EXPOSURE 1 UNLESS NOTED OTHERWISE. PANEL RATING TO BE AS FOLLOWS UNLESS NOTED OTHERWISE

ROOF: 19/32" THICK, 32/16, (OR 5/8" THICK, 32/16) WALLS: 15/32" THICK, 32/16, (OR 1/2" THICK, 24/0) FLOORS: 23/32" (OR 3/4") THICK, TONGUE & GROOVE, 48/24

UNLESS NOTED OTHERWISE ON THE PLANS, ROOF AND FLOOR SHEATHING SHALL BE LAID UP WITH GRAIN PERPENDICULAR TO SUPPORTS AND NAILED WITH 10d NAILS @ 6"oc TO FRAMED PANEL EDGES AND OVER STUD WALLS SHOWN ON PLANS AND @ 12"oc (10"oc AT FLOORS) TO INTERMEDIATE SUPPORTS. PROVIDE APPROVED SHEATHING EDGE CLIPS @ 16"oc AT UNBLOCKED ROOF SHEATHING EDGES. ALL FLOOR SHEATHING EDGES SHALL HAVE APPROVED TONGUE-AND-GROOVE JOINTS AND SHALL BE SUPPORTED WITH SOLID BLOCKING. TOENAIL BLOCKING TO SUPPORTS WITH 16d NAILS, UNLESS NOTED OTHERWISE.

UNLESS NOTED OTHERWISE ON THE PLANS, WALL SHEATHING MAY BE LAID UP HORIZONTALLY OR VERTICALLY, UNSUPPORTED EDGES SHALL BE BLOCKED AND ALL EDGES SHALL BE NAILED WITH 10d @ 6"oc, NAIL WITH 10d @ 12"oc AT INTERMEDIATE SUPPORTS. NAIL SHEAR WALL SHEATHING TO ALL HOLDOWN STUDS USING EDGE NAIL SPACING WHEN HOLDOWN STUD DOES NOT OCCUR AT PANEL EDGES.

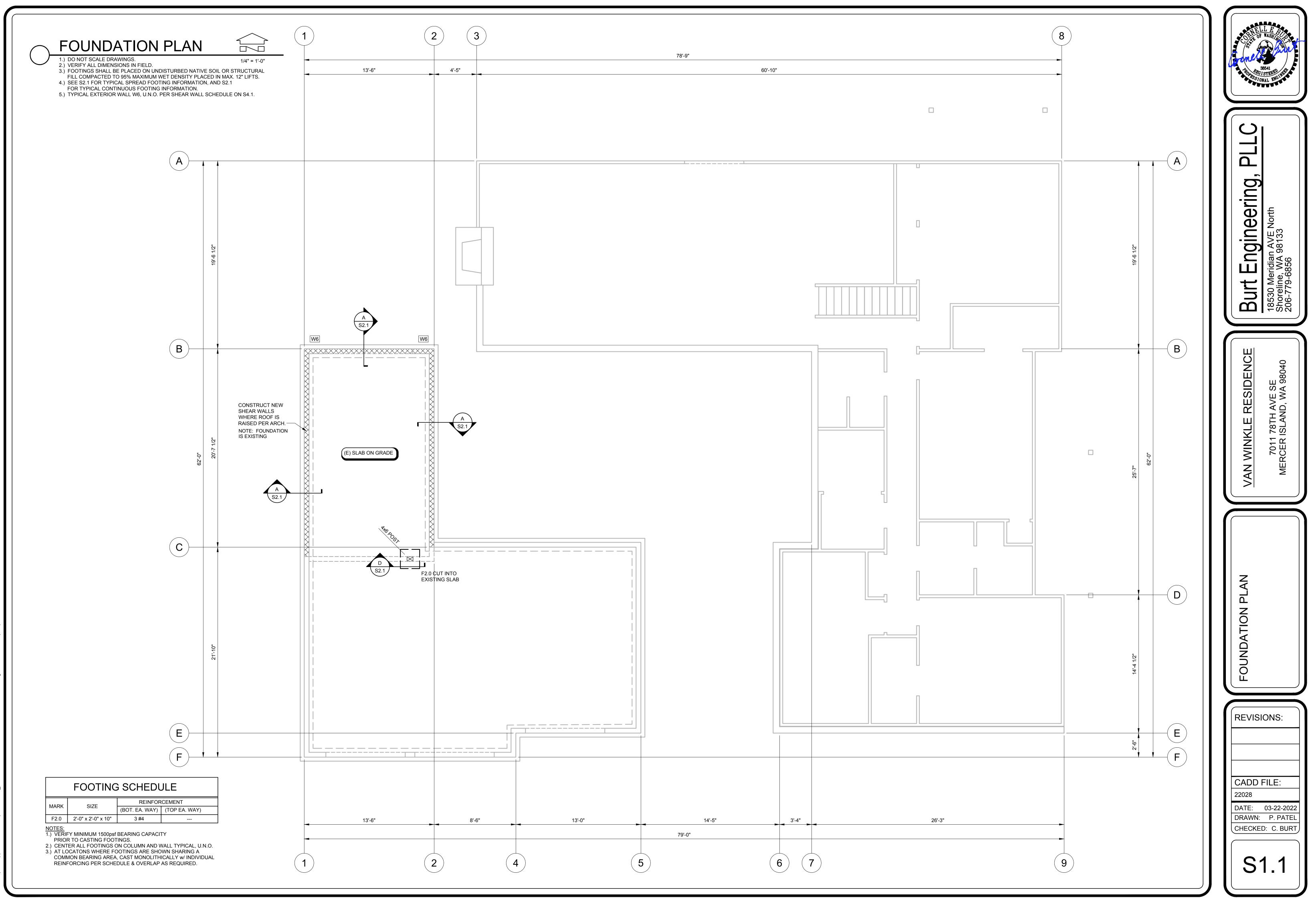
SHEATHING NAILS SHALL BE DRIVEN FLUSH BUT SHALL NOT FRACTURE THE SURFACE OF THE SHEATHING.

- 5. ALL WOOD PLATES IN DIRECT CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE-TREATED WITH AN APPROVED PRESERVATIVE. PROVIDE TWO LAYERS OF ASPHALT IMPREGNATED BUILDING PAPER BETWEEN UNTREATED LEDGERS, BLOCKING, ETC., AND CONCRETE OR MASONRY. ALL METAL CONNECTORS TO PRESSURE TREATED LUMBER SHALL BE HOT DIP GALVANIZED, INCLUDING WASHERS, NAILS, SCREWS, AND SIMPSON STRONG-TIE HANGERS, STRAPS, AND PLATES, AND BOLTS LESS THAN 1/2" DIAMETER.
- 6. NOTATIONS ON DRAWINGS RELATING TO FRAMING CLIPS, JOIST HANGERS AND OTHER CONNECTING DEVICES REFER TO CATALOG NUMBERS OF CONNECTORS MANUFACTURED BY THE SIMPSON STRONG-TIE COMPANY, SAN LEANDRO CALIFORNIA. EQUIVALENT DEVICES BY OTHER MANUFACTURERS MAY BE SUBSTITUTED, PROVIDED THEY HAVE ICC APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. SUBMIT MANUFACTURER'S CATALOG AND ICC REPORTS TO ARCHITECT AND ENGINEER FOR REVIEW WHEN REQUESTING SUBSTITUTIONS. ALL SPECIFIED FASTENERS MUST BE USED AND PROPER INSTALLATION PROCEDURES MUST BE OBSERVED IN ORDER TO OBTAIN ICC APPROVED LOAD CAPACITIES. VERIFY THAT THE DIMENSIONS OF THE SUPPORTING MEMBER ARE SUFFICIENT TO RECEIVE THE SPECIFIED FASTENERS.

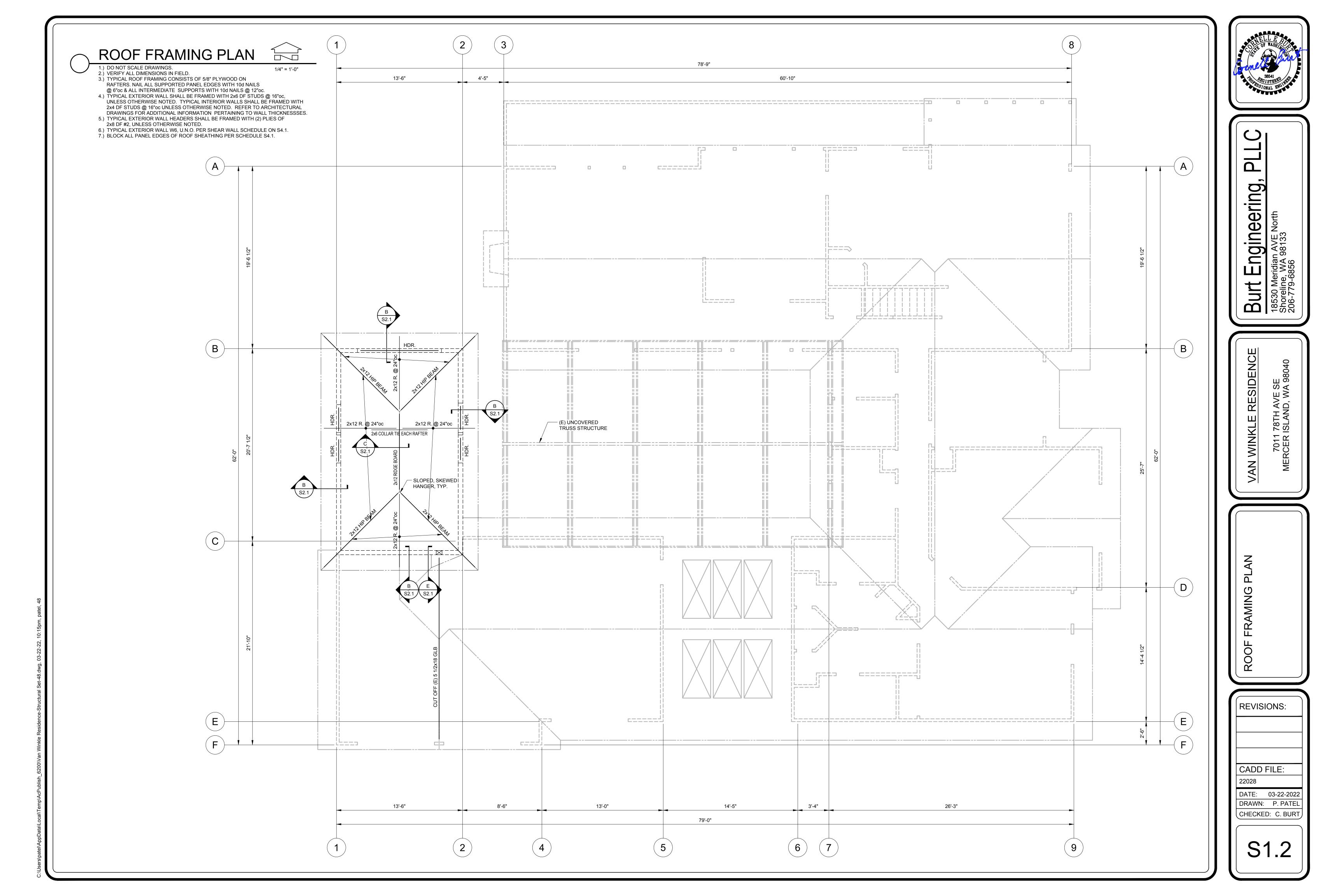
P GYPSUM LSL LONG SLOTTED HOLE SYM SYMMETRICAL LVL LAMINATED VENEER LUMBER PAR PARALLEL R HEADER LWC LIGHT WEIGHT CONCRETE PERP PERPENDICULAR T TOP G HANGER PL PLATE T&B TOP AND BOTTOM								
P GYPSUM LSL LONG SLOTTED HOLE SYMM SYMMETRICAL   R HEADER LVL LAMINATED VENEER LUMBER PAR PARALLEL TOP AND BOTTOM   R HEADER LWC LIGHT WEIGHT CONCRETE PERP PERPP PERPL Tab TOP AND BOTTOM   3 HANGER PL PLATE Tab TOP AND BOTTOM   2 HORZONTAL M MISC SHAPE PLWD PLVDD Tab ToNGUE AND GROOVE   4 HP SHAPE MAS MASONRY PREFAB PREFAB REAGRICATED TEMP TEMPERATURE   HIGH STRENGTH MAT MATERIAL PROP PROP POOPERTY THK THICKNESS   HIGH STRENGTH MAT MAX MAXIMUM PSF POUNDS PER SQUARE FOOT THRU THROUGH   INSIDE DIAMETER MFR MANUFACTURER PSI POUNDS PER SQUARE FOOT THRU TOP OF EASM   INSIDE FACE MIR MINUMINUTE PT POST TENSION TOF TOP OF FOOTING   INCLUDE; INCLUDING; INCLUSIVE MO MASORRY OPENING REF REFRERENCE TOS TOP OF FUELE   JOINT NF NEAR FACE RO ROURGH OPENING TYP TYPICAL <td></td> <td>GLUE-LAMINATED</td> <td>LOC</td> <td>LOCATION</td> <td>OPP</td> <td>OPPOSITE</td> <td>STL</td> <td>STEEL</td>		GLUE-LAMINATED	LOC	LOCATION	OPP	OPPOSITE	STL	STEEL
VL S A HANGERLVL LUGHT WEIGHT CONCRETEPAR PERP PERPENDICULARVVVS A HANGERLWC HC LIGHT WEIGHT CONCRETEPL PL PL PLATET&BTOP AND BOTTOMRZHORIZONTAL 	Β	GYPSUM WALL BOARD	LONGIT	LONGITUDINAL	OSB	ORIENTED STRAND BOARD	STRUCT	STRUCTURAL
R HEADER LWC LIGHT WEIGHT CONCRETE PERP PERPP PERPDENDICULAR T TOP   HANGER T TOP AND BOTTOM   RIZ HORIZONTAL M MISC SHAPE PL PLATE TEMP TEMP TEMP TEMPERATURE   HIGH STRENCTH MAS MASONRY PREFAB PROPERTY TH THEMERATURE   HIGH STRENCTH MAT MAXIMUM PSF POUNDS PER SQUARE FOOT THRU THROUGH   HEIGHT MAX MAXIMUM PSF POUNDS PER SQUARE FOOT THRU THROUGH   INSIDE DIAMETER MFR MANUFACTURER PSI POUNDS PER SQUARE FOOT THRU THROUGH   INSIDE DIAMETER MFR MANUFACTURER PSI POUNDS PER SQUARE INCH TO TOP OF FOOTING   INSIDE DIAMETER MFR MANUFACTURER PSI PORTENSION TO TOP OF OF OCHORETE; TOP OF CURB   INSIDE FACE MIN MINIMUM; MINUTE PT PAST TENSION TOL TOP OF OF OSTELL, TOP OF STRUCTURE   INCH INCLUDE; INCLUDING; INCLUSIVE MSC MASONRY OPENING REF REFERENCE TO TOP OF OF OSTELL, TOP OF STRUCTURE   INTERIOR NF NEAR FACE REF	5	GYPSUM	LSL	LONG SLOTTED HOLE			SYM	SYMMETRICAL
AMAGER PLATE TAB TOP AND BOTTOM   NUM HORIZONTAL MA MASONRY PLWD PLWD PLWD TEMP TAB TONGUE AND GROOVE   HORIZONTAL MAS MASONRY PREFAB PREFAB PREFABRICATED TEMP TEMPERATURE   HIGH STRENGTH MAT MATERIAL PROP PROPERTY THK THROUGHA   HIGH STRENGTH MAX MAXIMUM PSF POUNDS PER SQUARE FOOT THRU THROUGHA   HISIDE DIAMETER MFR MANUFACTURER PSI POUNDS PER SQUARE FOOT TOF TOP OF POCORETE; TOP OF CURB   INSIDE FACE MIN MINUMI, MINUTE PT POST TENSION TOF TOP OF PASONRY   INCH MISC MASCRUPENING RD ROF ORAIN TOM TOM TOP OF STELL, TOP OF STRUCTURE   INSIDE FACE MIN MISCELLANEOUS RD NORTH REF REFERENCE TOS TOP OF MASONRY   O INFORMATION NORTH REQ REQU REQUIRED TS TUBING, STRUCTURAL   INTERIOR N NORTH REQU REQU REQUIRED TS TUBING, STRUCTURAL   INTER 1000 POUNDS NIC NOT IN CONTRACT								
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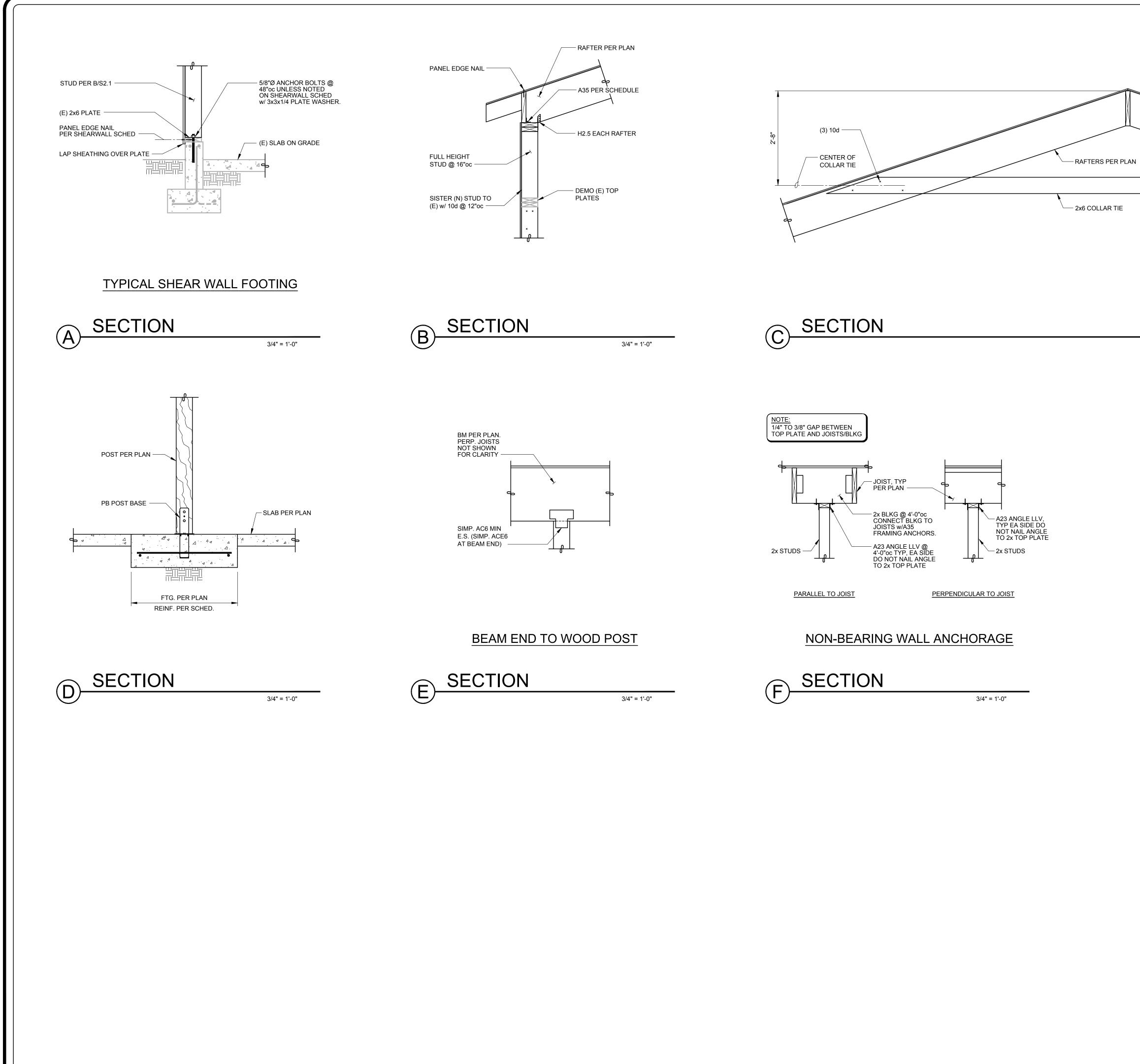
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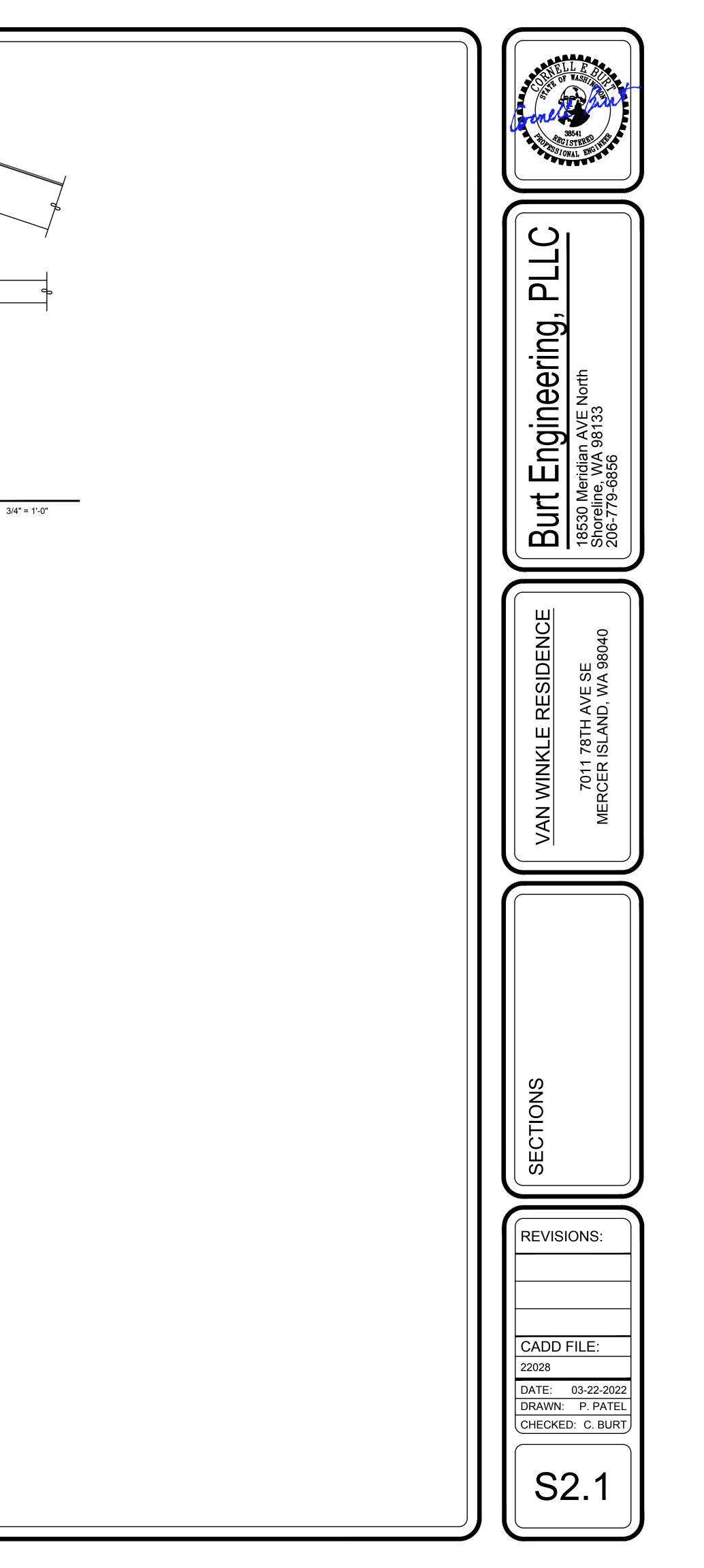


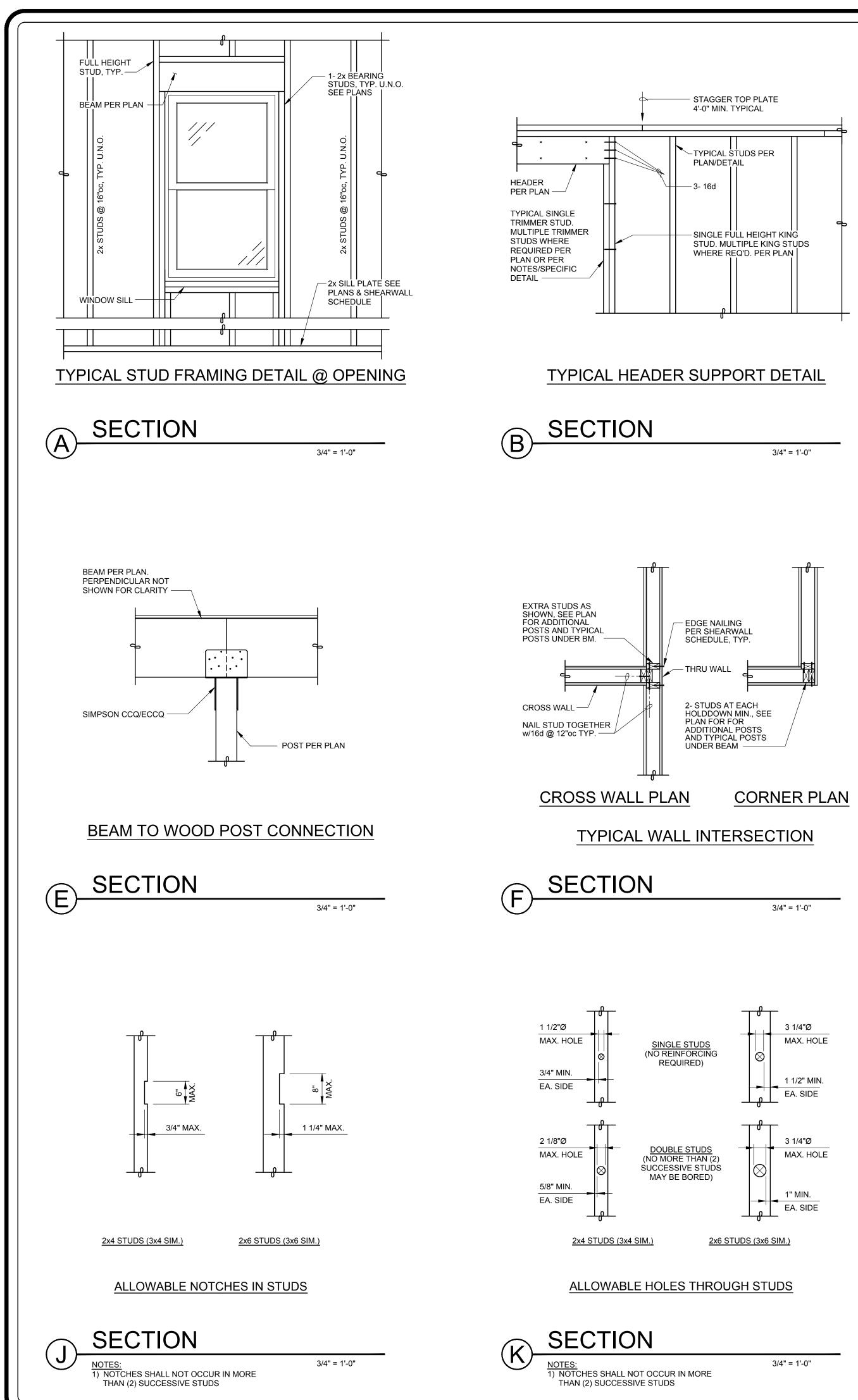
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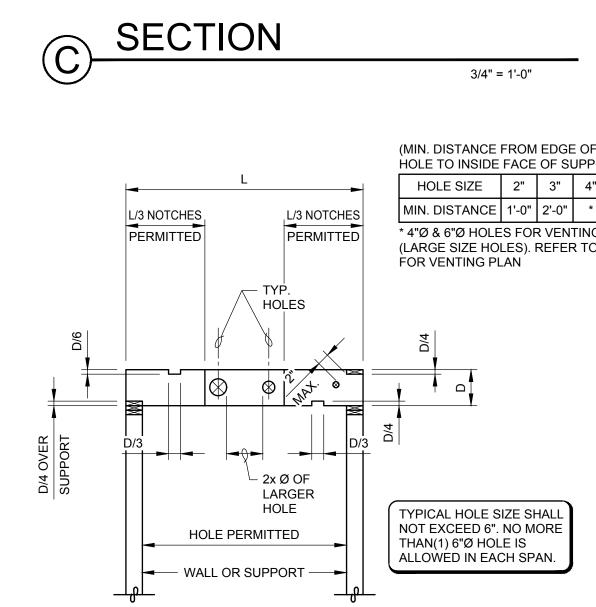




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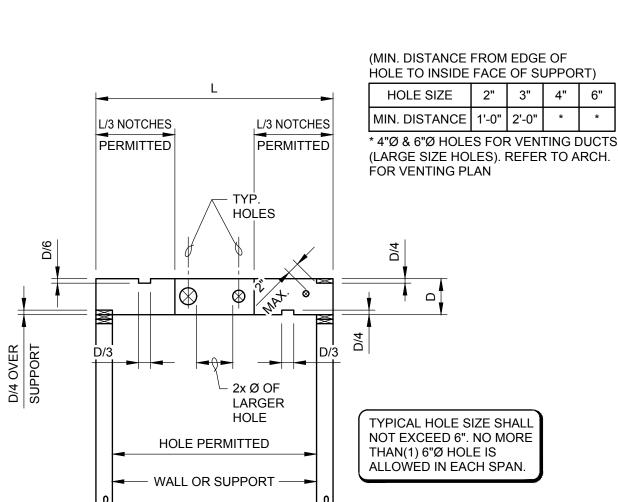




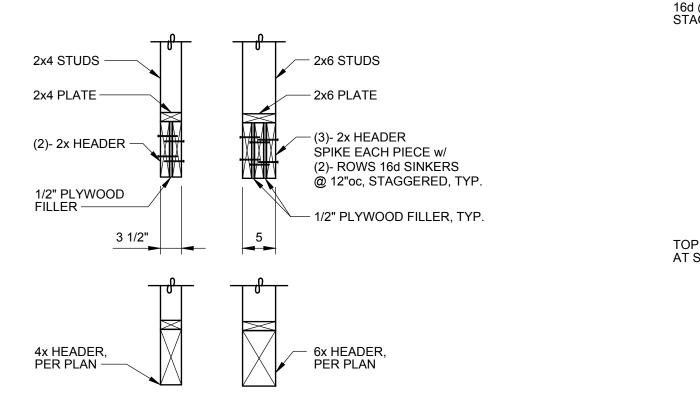
# ALLOWABLE CUTTING IN LSL, LVL, OR PSL MEMBERS

3/4" = 1'-0"

G SECTION

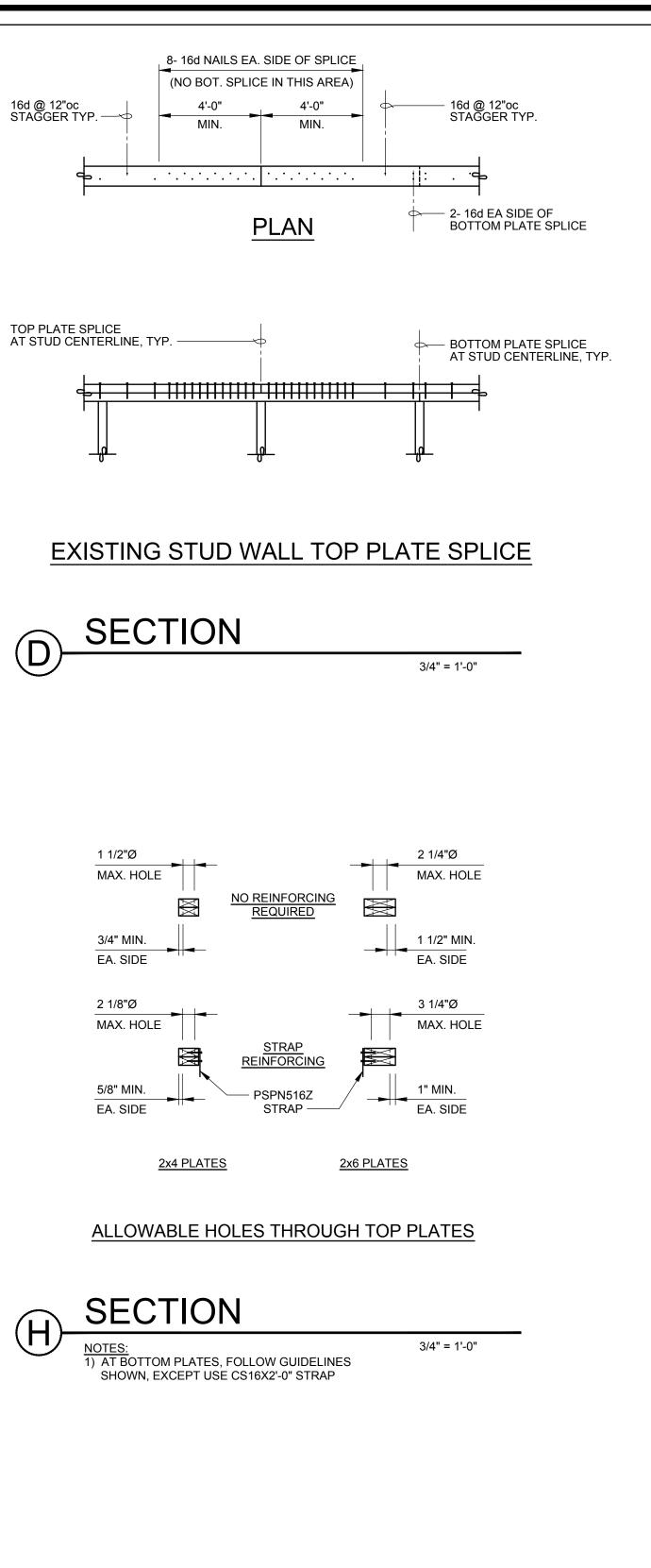


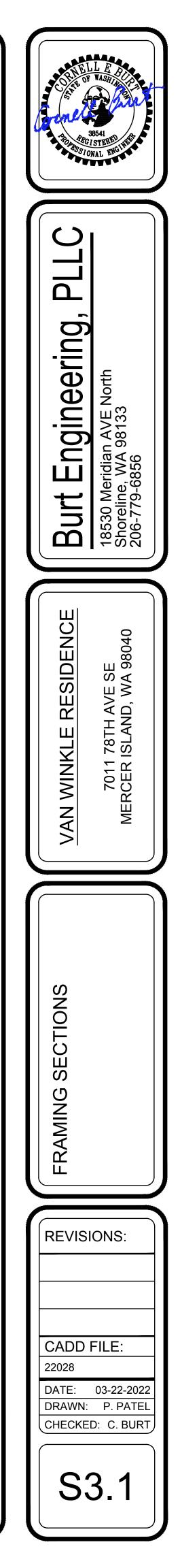
# TYPICAL HEADER SECTIONS



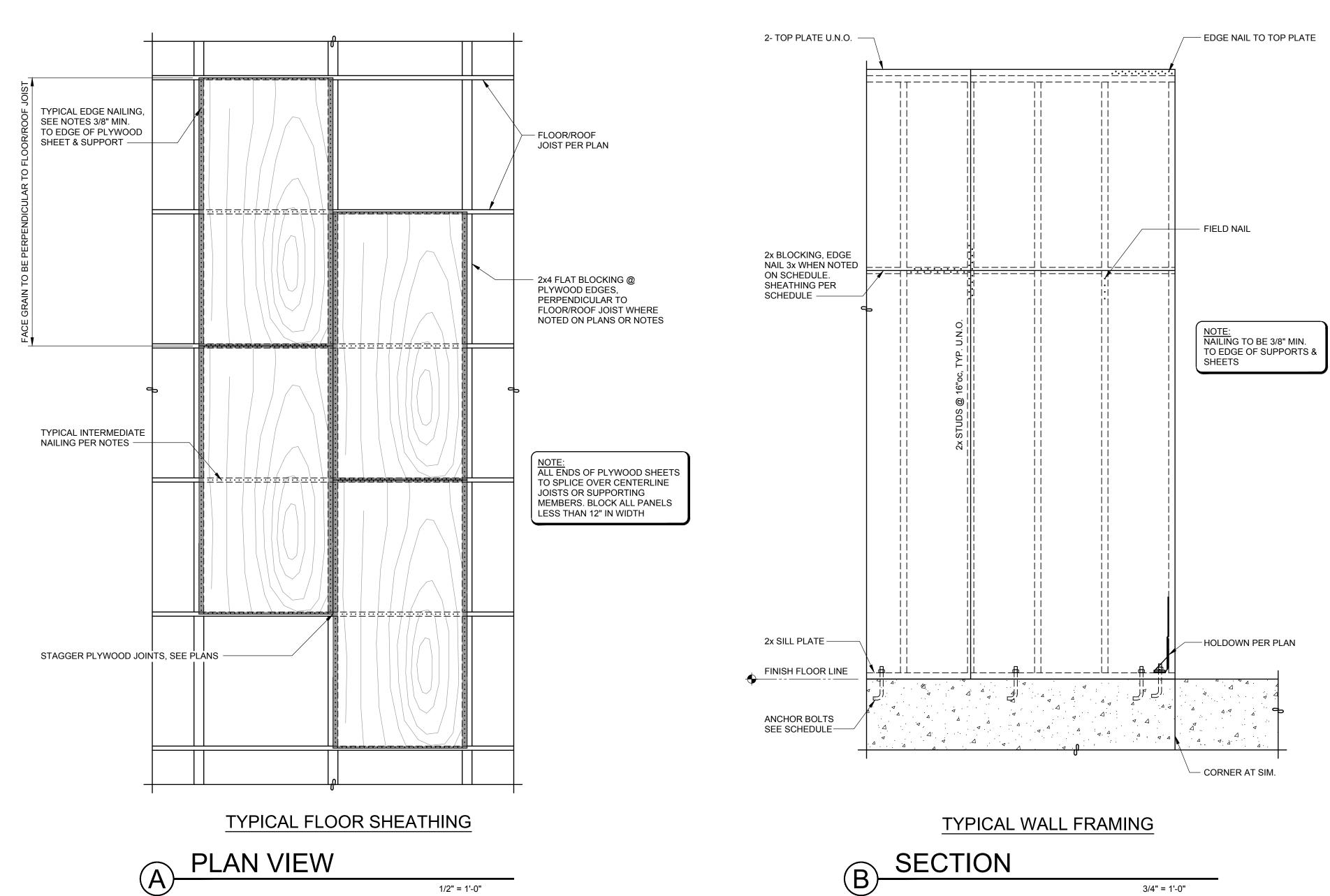
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1/2" = 1'-0"

SHEARWALL SCHEDULE (DOUG FIR OR HEM FIR LUMBER PER GENERAL NOTES)									
	APA RATED SHEATHING (NOTES 1,2,4,12,13)			RIM JOIST/BLOCK TO	2x WALL PLATE	SILL PLATE ATTACHMENT		DOUG-FIR	HEM-FIR
MARK	APPLICATION	PANEL EDGE NAIL SPACING (NOTES 4,5)	STUD & EDEGE BLKG. (NOTES 3,6,14)	TOP PLATE (NOTE 7,8)	TO BLOCKING/RIM (NOTE 9)	5/8" Ø ANCHOR BOLT SPACING (NOTES 10,15)	FOUNDATION SILL PLATE (NOTE 11)		SHEAR CAPACITY (PLF)
W3	ONE SIDE	0.131x2 1/2" @ 3"oc	2x	CLIP @ 11"oc	0.148x3 1/4 @ 3"oc	21"oc	2x	490	455
W4	ONE SIDE	0.131x2 1/2" @ 4"oc	2x	CLIP @ 14"oc	0.148x3 1/4 @ 4"oc	28"oc	2x	380	353
W6	ONE SIDE	0.131x2 1/2" @ 6"oc	2x	CLIP @ 20"oc	0.148x3 1/4 @ 6"oc	40"oc	2x	260	242
2W2	BOTH SIDE	0.131x2 1/2" @ 2"oc STAGGERED	3х	3- CLIPS @ 12"oc	3- CLIPS @ 12"oc	10"oc	Зх	1280	1190
2W3	BOTH SIDE	0.131x2 1/2" @ 3"oc STAGGERED	3х	2- CLIPS @ 11"oc	2- CLIPS @ 11"oc	12"oc	2x	980	912
2W4	BOTH SIDE	0.131x2 1/2" @ 4"oc	3х	2- CLIPS @ 14"oc	2- CLIPS @ 14"oc	18"oc	Зx	760	706
2W6	BOTH SIDE	0.131x2 1/2" @ 6"oc	3x	2- CLIPS @ 20"oc	2- CLIPS @ 20"oc	26"oc	Зх	520	484

SHEARWALL SCHEDULE NOTES:

1. INSTALL PANELS EITHER HORIZONTALLY OR VERTICALLY FOR ENTIRE LENGTH SHOWN ON PLANS. WHERE SHEATHING IS APPLIED ON BOTH SIDES OF WALL, PANEL EDGE JOINTS ON 2x FRAMING SHALL BE STAGGERED SO THAT JOINTS ON OPPOSITE SIDES ARE NOT LOCATED ON THE SAME STUDS.

3. BLOCKING IS REQUIRED AT ALL PANEL EDGES.

4. PROVIDE SHEAR WALL SHEATHING AND NAILING FOR THE ENTIRE LENGTH OF THE WALLS INDICATED ON THE PLANS. ENDS OF FULL HEIGHT WALLS ARE DESIGNATED BY EXTERIOR OF THE BUILDING, CORRIDORS, WINDOWS, OR DOORWAYS OR AS DESIGNATED ON THE PLANS. SEE PLANS FOR HOLDDOWN REQUIREMENTS. ALTERNATE WALLS DESIGNATED AS PERFORATED SHEARWALLS REQUIRE SHEATHING ABOVE AND BELOW ALL OPENINGS.

- 5. SHEATHING EDGE NAILING IS REQUIRED AT ALL HOLDDOWN POSTS. EDGE NAILING MAY ALSO BE REQUIRED TO EACH STUD USED IN BUILT-UP HOLDDOWN POSTS. REFER TO THE HOLDDOWN DETAILS FOR ADDITIONAL INFORMATION.
- 6. INTERMEDIATE FRAMING TO BE WITH 2x MINIMUM MEMBERS. FIELD NAILING SHALL BE AT 12" oc MAX.
- 7. USE 0.131x1 1/2" LONG NAILS TO ATTACH FRAMING CLIPS DIRECTLY TO FRAMING. USE 0.131x2 1/2" NAILS WHEN CLIPS ARE INSTALLED OVER SHEATHING.
- 8. FRAMING CLIPS ARE EITHER A35 OR LTP5, OR APPROVED EQUIVALENT

- EQUAL. ATTACH PER DETAILS
- ALTERNATE NOTES:
- AND APPROVES.
- SPACING AND DIAMETER AS THE PLATE NAILING.

B SECTION

3/4"	= 1	1'-0"	

9. WHERE PLATE ATTACHMENT SPECIFIES 2- ROWS OF NAILS, PROVIDE DOUBLE JOIST, RIM, OR

10. IN SEISMIC DESIGN CATEGORY D, E, AND F, ANCHOR BOLTS SHALL BE PROVIDED WITH 3x3x1/4" PLATE WASHERS. EMBED ANCHOR BOLTS 7" INTO CONCRETE.

11. PRESSURE PRESERVATIVE TREATED STAINLESS OR MATERIAL CAN CAUSE EXCESSIVE CORROSION AND DEGRADATION OF FASTENERS. PROVIDE HOT DIPPED GALVANIZED NAILS AND CONNECTOR PLATES FOR ALL CONNECTORS IN CONTACT WITH PRESERVATIVE TREATED FRAMING MEMBERS.

12. 7/16" APA RATED SHEATHING (OSB) MAY BE USED IN LIEU OF 15/32" SHEATHING PROVIDED THAT ALL STUDS ARE SPACED 16" oc AND ENGINEER OF RECORD HAS BEEN NOTIFIED IN WRITING

13. WHERE WOOD SHEATHING IS APPLIED OVER GYPSUM WALL BOARD SHEATHING (GWB), CONTACT ENGINEER OF RECORD FOR APPROVAL AND ALTERNATE FASTENING REQUIREMENTS. 14. AT ADJOINING PANEL EDGES, 2- 2x STUDS NAILED TOGETHER MAY BE USED IN LIEU OF A SINGLE 3x STUD. DOUBLE 2X STUDS MAY BE CONNECTED TOGETHER WITH 3" NAILS OF THE SAME

15. CONTACT ENGINEER OF RECORD FOR ADHESIVE OR EXPANSION BOLT ALTERNATIVES TO CAST-IN-PLACE ANCHOR BOLTS. TYPICALLY SET ADHESIVE WILL BE ALLOWED AS AN ALTERNATE. ALL ANCHOR BOLTS SHALL HAVE PLATE WASHER 3"x3"x1/4". PLATE WASHERS TO BE SLOTTED SO WASHERS IS WITHIN 1/2" OF FACE OF SHEATHING.

### **ROOF NAILING SCHEDULE** NAIL SPACING NAIL SPACING @ NAIL SPACING @ INTERMEDIATE ZONE CONTINUOUS OTHER EDGES EDGES SUPPORT 0.131"Ø @ 6"oc AT (1)0.131"Ø @ 12"oc 0.131"Ø @ 12"oc SUPPORTED EDGES

ROOF NAILING NOTES:

1.) ALL NAILS SHALL BE 10d COMMON (0.148"Ø) w/11/2" MIN. PENETRATION INTO FRAMING. 2.) ALL NAILS TO BE FLUSH DRIVEN & SHALL NOT FRACTURE PLYWOOD SURFACE. 3.) PROVIDE 3/8" MIN. CLEARANCE BETWEEN NAIL CENTERLINE AND PANEL EDGE. 4.) PROVIDE 2 ROWS 10d @ 4"oc EA. ROW AT EXTERIOR DIAPHRAGM BOUNDARIES, (BLDG. PERIMETER) TYP. (U.N.O.) 5.) AT STEEL STRAP TIE LOCATIONS, NAIL ALL HOLES w/11/2" MIN. PENETRATION INTO SAWN LUMBER FRAMING. DO NOT USE 10d x 11/2" NAILS AS SPECIFIED IN SUPPLIER LITERATURE. 6.) INSTALL SIMPSON PSCL @ UNSUPPORTED PANEL EDGES. 7.) ZONE 1 APPLIES U.N.O.



STIFFENERS N/A