GENERAL STRUCTURAL NOTES

GENERAL

1. The contractor shall verify all dimensions prior to starting construction. The architect shall be notified of any discrepancies or inconsistencies.
2. Dimensions shall take precedence over scale shown on drawings.
3. Notes and details on drawings shall take precedence over general notes and typical notes.
4. All work shall conform to the minimum standards of the following code. The North Carolina Building Code, 2018 Edition (2015 IBC), and any other regulating agencies which have authority over any portion of the work, and those codes and standards listed in these notes and specifications.
5. See architectural drawings for the following:
   - Size and location of all door and window openings, except as noted
   - Size and location of all interior and exterior nonbearing partitions
   - Size and location of all concrete curbs, floor drains, slopes, depressed areas, changes in level, chamfers, grooves, inserts, etc.
   - Size and location of floor and roof openings except as shown
   - Floor and roof finishes
   - Stair framing and details (except as shown)
6. See mechanical, plumbing, and electrical drawings for the following:
   - Pipe runs, sleeves, hangers, trenches, wall and slab openings, etc. Except as shown or noted
   - Electrical conduit runs, boxes, outlets in walls and slabs
   - Concrete inserts for electrical, mechanical or plumbing fixtures
   - Size and location of machine or equipment bases, anchor bolts for mounts
7. The contract structural drawings and specifications represent the finished structure. They do not indicate the method of construction. The contractor shall provide all measures necessary to protect the structure during construction. Such measure shall include, but not be limited to, bracing, shoring for loads due to construction equipment, etc. Observation visits to the site by the structural engineer shall not include inspection of the above structural members.
8. Openings, pockets, etc. larger than 6 inches shall not be placed in slabs, decks, walls, etc. unless specifically detailed on the structural drawings. Notify the structural engineer when drawings by others show openings, pockets, etc. not shown on the structural drawings, but which are located on structural members.
9. ASTM specifications noted shall be the latest revision.
10. Contractor shall investigate site during clearing and earthwork operations for filled excavations or buried structures such as cesspools, cisterns, foundations, etc. If any such structures are found, the structural engineer shall be notified immediately.
11. Construction materials shall be spread out if placed on floors or roof. Load shall not exceed the design live load per square foot. Provide adequate shoring and/or bracing where structure has not attained design strength.
12. Design Loads:
    - Roof:
      - 18 psf DEAD
      - 20 psf LIVE
      - 11 psf SNOW (Pg = 15 psf)
    - Floor:
      - 12 psf DEAD
      - 40 psf LIVE (Reducible)
    - Wind:
      - Basic Wind Speed = 120 mph (3 sec. Gust)
      - Exposure: B
      - Risk Category: II
    - Seismic:
      - Importance Factor: I = 1
      - S_S = 0.136 S_1 = 0.066
      - Site Class: D
      - S_{DS} = 0.145 S_{D1} = 0.106
      - Seismic Design Category: B
      - Seismic Force Resisting System: Timber roof & floor diaphragms with wood shear walls
      - Base Shear:
        - V = 1.0 kips
      - C_S = 0.022
      - R = 6.5
      - Analysis Procedure: Equivalent lateral force procedure
      - Risk Category: II

FOUNDATION

1. Footings are designed based on an allowable soil pressure of 1500 PSF. Vector Structural Engineering strongly recommends independent soils testing be performed by a licensed geotechnical engineer to verify soil bearing capacity, slope stability, and any other related soil parameters, as required.
2. Contractor shall provide for proper de-watering of excavations from surface water, ground water, seepage, etc.
3. Footings shall be placed according to depths shown on the drawings.
4. Footing back fill and utility trench back fill within building area shall be mechanically compacted in layers. Flooding will not be permitted.
5. All abandoned footings, utilities, etc. that interfere with new construction shall be removed.
6. The soil under perimeter beams and slabs shall be above optimum moisture prior to concrete placement.
7. Clearing and Site Preparation – Debris, vegetation, and deleterious material should be stripped and removed from the site. Trees and vegetation should be removed from the site. Exposed surfaces should be scarified 12 inches, brought to within 2% of optimum moisture content, and compacted to a minimum relative compaction of 90% per ASTM D1557.
8. Undocumented Fill – All undocumented fill materials and loose materials should be removed to expose native confident material. Exposed surfaces should be scarified 12 inches, moisture conditioned, and compacted as described above.
9. Fill Materials – Fill material should be imported engineered fill.
10. All ø1/2" sill anchor bolts in concrete may be replaced with one of these options at the spacing indicated below:
    - ø1/2" Simpson Titen HD screws with 4" min embed, or approved equal
    - ø1/2" all-thread rod in ø5/8" hole with 4" embed using Simpson SET-3G epoxy, Simpson AT-3G epoxy, or approved equal

SILL ANCHORAGE TYPE	RETROFIT ø1/2" TITEN OR ALL-THREAD ROD SPACING
S1 & S2	SAME AS ø1/2" AB
S3 & S4	12" OC

CONCRETE

1. All phases of work pertaining to the concrete construction shall conform to the "Building Code Requirements for Reinforced Concrete" (ACI 318 latest approved edition) with modifications as noted in the drawings and specifications.
2. Reinforced concrete design is by the "Ultimate Strength Design Method", ACI 318-(latest edition)
3. Schedule of structural concrete 28-day strengths and types:

Location in structure	Strength PSI	Type
Slabs on Grade	4000	Hard rock
Footings	4000	Hard rock

   Design based on 2500 PSI, 28-day strength. Special inspection is not required unless noted otherwise in the SPECIAL INSPECTION / QUALITY ASSURANCE PLAN notes on this sheet.
4. Concrete mix design shall be submitted to the engineer for approval with the following requirements:
   a. Compressive strength at age 28 days as specified above
   b. Large aggregate-hardrock, 3/4" maximum size conforming to ASTM C33
   c. Cement-ASTM C150, Type II Portland cement
   d. Maximum slump 5-inches, max water cement ratio: 0.50
   e. No admixtures, except for entrained air, and as approved by the engineer
5. Concrete mixing operations, etc. shall conform to ASTM C94.
6. Concrete placement, consolidation and curing shall conform to ACI 318, Section 26.5.
7. Clear coverage of concrete over outer reinforcing bars shall be as follows: Concrete poured directly against earth – 3 inches clear, structural slabs – 3/4 inches clear (top and bottom), formed concrete with earth back fill – 2 inches clear.
8. All reinforcing bars, anchor bolts and other concrete inserts shall be well secured in position prior to placing concrete.
9. Provide sleeves for plumbing and electrical openings in concrete before placing. Do not cut any reinforcing that may conflict. Coring in concrete is not permitted except as shown. Notify the structural engineer in advance of conditions not shown on the drawings.
10. Conduit or pipe size (O.D.) shall not exceed 30% of slab thickness and shall be placed between the top and bottom reinforcing, unless specifically detailed otherwise. Concentrations of conduits or pipes shall be avoided except where detailed openings are provided.
11. Modulus of elasticity of concrete, when tested in accordance with ASTM C469, shall be at least the value given by the equations in section 8.5.1 of ACI 318 for the specified 28-day strength.
12. Shrinkage of concrete, when tested in accordance with ASTM C157, shall not exceed 0.0004 inches/inch.
13. Post-installed anchors shall only be used where specified on the plans. The contractor shall obtain approval from the EOR prior to installing post-installed anchors in place of missing or misplaced cast-in-place anchors.
14. Contact the EOR for adhesive anchor alternate when the install temperature is outside the approved temperature range provided by the manufacturer.

WOOD

1. Framing Lumber
   a. Southern Yellow Pine #2 grade for 2x and 4x framing except for 2x4, 2x6 studs use Southern Yellow Pine Stud grade, UNO
   b. 6x framing Southern Yellow Pine #1 5x And Larger grade
2. Bolt holes shall be 1/16" maximum larger than the bolt size. Re-tighten all nuts prior to closing in.
3. Standard cut washers shall be used under all sill plate anchor bolts, UNO at shear walls. See the Shear Wall Schedule on sheet S1.1 for anchor bolt spacing and washer requirements at shear walls.
4. All sills or plates resting on concrete or masonry shall be preservative treated Douglas Fir. Bolts shall be placed 9 inches from the end of a plate, or from a notch greater than ½ the width of the plate, and spaced at intervals noted.
5. Do not notch joists, rafters or beams except where shown in details. Obtain engineer's approval for any holes or notches not detailed. Holes through sills, plates, studs and double plates in interior, bearing and shear walls shall conform with detail 6/S1.2.
6. Connection hardware shall be by USP or Simpson Strong-Tie, or ICC approved equal.

DUAL SPECIFICATION TABLE

SIMPSON CONNECTOR	USP CONNECTOR	SIMPSON CONNECTOR	USP CONNECTOR
CS16	RS150	HDU2	PHD2A
ST6224	KST224	HDU4	PHD4A
A35	MPA1	HDU5	PHD5A
LUS24-2	JUS24-2	HDU8	PHD8
H1A	RT15	HDU11	UPHD11
H10A	RT16A		
LTP4	MP4F	STHD10	STAD10
LSSR	LSSH	STHD14	STAD14

7. Fastening schedule per North Carolina Building Code, 2018 Edition (2015 IBC), table No. 2304.10.2. Unless noted otherwise.
8. All nails, bolts, holdowns, straps or other steel fasteners in contact with preservative treated timber shall be hot-dipped galvanized, stainless steel or otherwise treated or isolated to prevent chemical attack. Contractor shall verify treatment method and confirm appropriate corrosion resistance be provided in accordance with hardware supplier recommendations.
9. Non-bearing, non-shear interior walls to be anchored to floor and/or roof as indicated on detail 10/S1.1.
10. All exposed deck members shall be preservative treated lumber. Members in contact with ground shall be rated for 'ground contact' exposure.

PREFABRICATED WOOD TRUSSES

1. Prefabricated wood roof trusses shall be as designed by the truss manufacturer. Bridging size and spacing by truss manufacturer unless noted otherwise. Contractor shall submit shop drawings, erection drawings and design calculations sealed by an engineer, registered in the state of North Carolina, for review prior to manufacture. Calculations and shop drawings shall show any special details required at bearing points. All connectors shall be Simpson or equivalent with current ICC approval.
2. Truss manufacturer to design trusses for lateral load (LAT. = xxxx) in pounds, as shown on plans. Lateral loads are ASD level loads.
3. Additional trusses shall be supplied as required to support mechanical equipment.
4. All truss-to-truss and truss-to-beam connectors per truss manufacturer.

WOOD STRUCTURAL PANELS

1. All wood structural panels shall be plywood or APA rated oriented strand board. Panels shall bear the stamp of an approved agency. Panels shall be of the span/index rating shown on the plans. Fastening shall be indicated on the plans.
2. All plywood shall be C-D interior sheathing with exterior glue. Plywood shall be 4-ply, minimum.

SHOP DRAWINGS

1. Shop drawings shall be submitted for all structural items in addition to items required by architectural specifications.
2. The contractor shall review all shop drawings prior to submittal. Items not in accordance with contract drawings shall be flagged for review.
3. Verify all dimensions with architect.
4. Any changes, substitutions, or deviations from original contract drawings shall be redlined or flagged by submitting parties, shall be considered approved after engineers review, unless noted otherwise.
5. The engineer has the right to approve or disapprove any changes to the original drawings at anytime before or after shop drawings review.
6. The shop drawings do not replace the original contract drawings. Items omitted or shown incorrectly and are not flagged by the structural engineer or architect are not to be considered changes to the original contract drawings.
7. The adequacy of engineering designs and layout performed by the others rests with the designing or submitting authority.
8. Reviewing is intended only as an aid to the contractor in obtaining correct shop drawings. Responsibility for corrections shall rest with the contractor.

SHEATHING

1. Roof sheathing
   7/16" wood structural panel: plywood or oriented strand board (OSB) panel index = 24/16, unblocked, nail with 8d common nails at 6" OC at all boundaries and supported edges, 12" OC field. Strong axis of sheathing to run perpendicular to supports.
2. Floor sheathing
   3/4" (min) wood structural panel: plywood or oriented strand board (OSB) T & G, panel index = 48/24, unblocked, nail with 10d common nails at 6" OC at all boundaries and supported edges, 12" OC field. Strong axis of sheathing to run perpendicular to supports.
3. Shear wall sheathing
   Sheathing for shear walls shall be as indicated on the shear wall plans and schedules. Sheathing at shear walls may be installed with panels horizontal or vertical. All shear wall panels shall have minimum wood structural panel span rating of 24/0 or "Wall-16."

SPECIAL INSPECTION / QUALITY ASSURANCE PLAN

1. The lateral force resisting system consists of timber roof & floor diaphragms with wood shear walls.
2. The following special inspections are required:
   - When required by the local building department: All timber elements of the lateral force resisting system components
   a. The owners shall employ special inspectors who shall provide additional inspections during construction in accordance with IBC section 17.
   b. All special inspections shall be performed by an independent certified inspector from an established testing agency, licensed and approved by the building department.
   c. The testing agency shall send copies of all structural testing and inspection reports directly to Vector Structural Engineering and all interested parties.
3. Structural testing is not required.
4. All reports shall be distributed on a monthly basis to the engineer of record, owner, contractor, and to the building official.
5. No structural observation is required. However, the engineer of record reserves the right to make field observations during construction approximately once per week.

REMODEL OR ADDITION

1. Information used to provide remodel and/or addition structural design is based on information provided by the owner or contractor. Vector Structural Engineering has not visited the site and verified the information provided. The contractor is to notify the Engineer of Record of any significant discrepancies between the structural drawings and the as-built condition. Work should not continue until discrepancies are resolved.
2. The scope of work is to be limited to that shown on the structural drawings. Additional remodeling or additions require design by the Engineer of Record. The existing structure is to remain undisturbed and has not been analyzed for structural integrity, methods of construction or compliance with current codes.
3. The structural drawings and specifications represent the finished structure. See note 7 in the GENERAL notes on this sheet.
4. Appropriate permits and licenses are required and the structural drawings and specifications provided do not remove the responsibility of the owner or contractor to obtain required permits from the appropriate governing authority.

SHEET INDEX

SHT #	SHEET NAME	ORIGINAL	1 MM-DD-YY	2 MM-DD-YY	3 MM-DD-YY	4 MM-DD-YY	5 MM-DD-YY	6 MM-DD-YY	7 MM-DD-YY	8 MM-DD-YY
S1	GENERAL STRUCTURAL NOTES	●								
S1.1	STANDARD DETAILS & SCHEDULES	●								
S1.2	STANDARD DETAILS & SCHEDULES	●								
S2	FOUNDATION PLAN	●								
S3	FRAMING PLAN	●								
S5	ROOF FRAMING PLAN	●								
S6	MAIN LEVEL SHEAR WALL PLAN	●								
SD-1	STRUCTURAL DETAILS	●								

ABBREVIATIONS

AB	ANCHOR BOLT	EJ	EXPANSION JOINT	o/	OVER
ABV	ABOVE	EL	ELEVATION	OC	ON CENTER
ADDL	ADDITONAL	EMBED	EMBEDMENT	OD	OUTSIDE DIAMETER
ARCHL	ARCHITECTURAL DRAWINGS	EOR	ENGINEER OF RECORD	OPNG	OPENING
b/	BOTTOM OF	EQ	EQUAL	OPP	OPPOSITE
BLDG	BUILDING	EW	EACH WAY	OPT	OPTIONAL
BLK	BLOCK/BLOCKING	FIN	FINISHED	OSB	ORIENTED STRAND BOARD
BLW	BELOW	FL or FLR	FLOOR	OSF	OUTSIDE FACE
BM	BEAM	FND	FOUNDATION	PL	PLATE
BOT	BOTTOM	FS	FAR SIDE	PSL	PARALLEL STRAND LUMBER
BRG	BEARING	FTG	FOOTING	PT	POST-TENSION
CANTL	CANTILEVERED	GL	GLUE LAMINATED	PT	PRESSURE TREATED
CFS	COLD-FORMED STEEL	GSN	GENERAL STRUCTURAL NOTES	REINF	REINFORCEMENT
CIP	CAST IN PLACE	HD	HOLDOWN	REQD	REQUIRED
CJ	CONTROL JOINT	HDR	HEADER	SHT	SHEET
CL	CENTER LINE	HGR	HANGER	SHTHG	SHEATHING
CLG	CEILING	HOR	HORIZONTAL	SIM	SIMILAR
CLR	CLEAR	ID	INSIDE DIAMETER	SQ	SQUARE
CMU	CONCRETE MASONRY UNIT	ISF	INSIDE FACE	STD	STANDARD
COL	COLUMN	JT	JOINT	STL	STEEL
CONC	CONCRETE	KP	KING POST	SYM	SYMMETRICAL
CONN	CONNECT/CONNECTION	KS	KING STUD	t/	TOP OF
CONST	CONSTRUCTION	LLH	LONG LEG HORIZONTAL	T&B	TOP AND BOTTOM
CONT	CONTINUOUS	LLV	LONG LEG VERTICAL	THK	THICK
C.W.	CROSSWISE	LSH	LONG SIDE HORIZONTAL	TOF	TOP OF FOOTING
DBL	DOUBLE	LSL	LAMINATED STRAND LUMBER	TOW	TOP OF WALL
DIM	DIMENSION	LSV	LONG SIDE VERTICAL	TS	TRIMMER STUD
DIR	DIRECTION	LVL	LAMINATED VENEER LUMBER	TYP	TYPICAL
DTL	DETAIL	L.W.	LENGTHWISE	u/	UNDER
DWG	DRAWING	MFR	MANUFACTURER/MANUFACTURED	UNO	UNLESS NOTED OTHERWISE
DWL	DOWEL	MIR	MIRRORED	VERT	VERTICAL
(E)	EXISTING	(N)	NEW	w/	WITH
EA	EACH	NS	NEAR SIDE	WP	WORK POINT
EF	EACH FACE	NTS	NOT TO SCALE		

ORIGINAL: 07-04-25 | ENG: RAM | DWN: SEH | CHK: RAM

REV. #	DATE	BY:	DESCRIPTION

VECTOR ENGINEERS
MERIDIAN, IDAHO
(208) 996-0303
WWW.VECTORSE.COM
NC FIRM LICENSE NUMBER
COA #P0742

Evolution Drafting LLC
Anna Roberts
347 Shue Road
Broadway, NC 27505

GENERAL STRUCTURAL NOTES

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049893 JACOB S. PROCTOR

07/02/2025

JACOB S. PROCTOR, P.E.
049893

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S1

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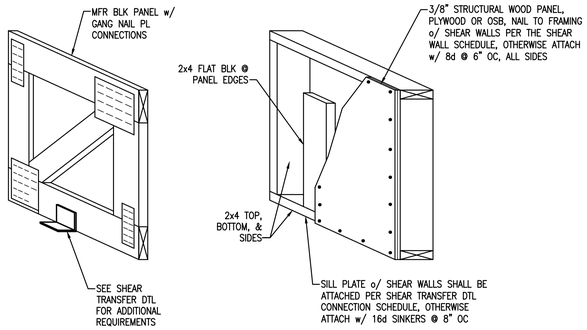

TYP BLOCKING PANEL 7

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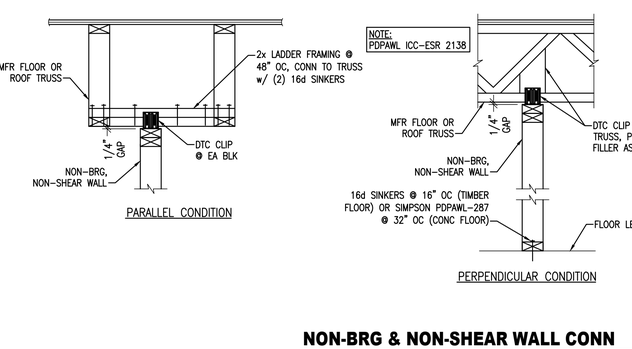

TYP WALL FRAMING 8

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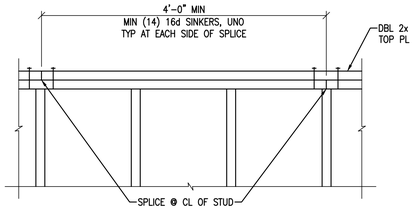

NOTE:
WHERE SPLICE LENGTH IS LESS THAN 4'-0" INSTALL ST6224 STRAP AT PL SPLICES. STRAPS ARE NOT REQUIRED WHERE ONE OF THE PLATES IS CONTINUOUS FOR AT LEAST 4'-0" IN EACH DIRECTION.

TYP TOP PLATE SPLICE 9

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NON-BRG & NON-SHEAR WALL CONN 10

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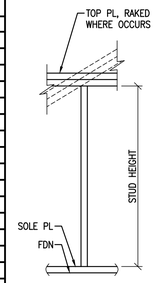
STUD HEIGHT TABLE

STUD WALL TYPE	BEARING AND/OR SHEAR WALLS (MAX HEIGHT)		NON-BEARING AND NON-SHEAR WALLS (MAX HEIGHT)
	EXTERIOR	INTERIOR	INTERIOR ONLY
2x4 STUD @ 16" OC	8'-6"	10'-0"	13'-0"
2x4 STUD @ 12" OC	9'-6"	11'-6"	14'-0"
(2) 2x4 STUD @ 16" OC	12'-0"	13'-6"	14'-0"
2x4 DFL #2 @ 16" OC	9'-0"	11'-0"	13'-0"
2x4 DFL #2 @ 12" OC	10'-6"	13'-0"	14'-0"
(2) 2x4 DFL #2 @ 16" OC	13'-0"	13'-6"	14'-0"
2x6 STUD @ 16" OC	14'-6"	19'-0"	20'-0"
2x6 STUD @ 12" OC	17'-0"	21'-0"	22'-0"
(2) 2x6 STUD @ 16" OC	21'-0"	22'-0"	22'-6"
2x6 DFL #2 @ 16" OC	16'-6"	19'-6"	20'-0"
2x6 DFL #2 @ 12" OC	18'-6"	21'-6"	22'-0"
(2) 2x6 DFL #2 @ 16" OC	22'-6"	22'-6"	22'-6"
2x8 DFL #2 @ 16" OC	22'-0"	26'-6"	27'-0"
2x8 DFL #2 @ 12" OC	25'-6"	28'-0"	30'-0"
(2) 2x8 DFL #2 @ 16" OC	29'-6"	29'-6"	30'-0"
1-3/4 x 7-1/4 LVL STUDS @ 16" OC	27'-0"	30'-0"	30'-0"
1-3/4 x 5-1/2 LVL STUDS @ 16" OC	20'-6"	21'-6"	22'-0"
2x4 OR 2x6 STUD @ 24" OC	–	–	11'-6"



NOTES:
1. THIS TABLE ASSUMES IBC WIND LOADS w/ 115 mph, EXP "C" AT EXTERIOR WALLS & 5 psf LATERAL LOAD AT INTERIOR WALLS.
2. THIS TABLE ASSUMES AXIAL DL = 710 lb/ft, LL = 760 lb/ft AT EXTERIOR AND INTERIOR WALLS.

STANDARD STUD TABLE 4

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NOT USED 5

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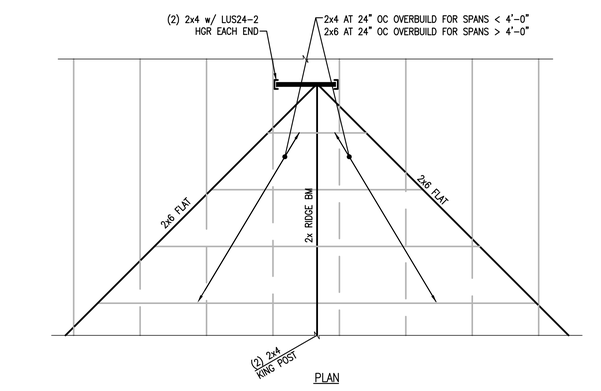
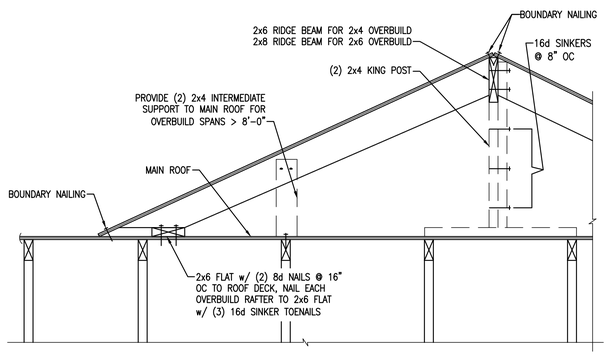


PLAN



TYP OVERBUILD 6

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SHEAR WALL SCHEDULE

MARK	MIN BLOCKED MATERIAL	EDGE / BOUNDARY NAILING	FIELD NAILING	SOLE PL NAILING, WHERE OCCURS	WALL CAPACITY		DEFAULT SILL ANCHORAGE, UNO
					SEISMIC	WIND	
G1	1/2" GYPBOARD	#6 SCREWS @ 8" OC	#6 DRYWALL SCREWS @ 12" OC	16d SINKERS @ 6" OC	60 plf	60 plf	S0
P1	3/8" PLYWOOD OR OSB	8d COMMON NAILS @ 6" OC	8d COMMON NAILS @ 12" OC	16d SINKERS @ 6" OC	260 plf	365 plf	S1
P2	3/8" PLYWOOD OR OSB	8d COMMON NAILS @ 4" OC	8d COMMON NAILS @ 12" OC	16d SINKERS @ 4" OC	365 plf	520 plf	S2
P3	3/8" PLYWOOD OR OSB	8d COMMON NAILS @ 3" OC	8d COMMON NAILS @ 12" OC	16d SINKERS @ 3" OC	490 plf	685 plf	S3
P4	3/8" PLYWOOD OR OSB	8d COMMON NAILS @ 2" OC	8d COMMON NAILS @ 12" OC	16d SINKERS @ 2" OC	640 plf	895 plf	S4

SILL ANCHORAGE SCHEDULE

MARK	NOMINAL SILL PL THICKNESS	#1/2" AB SPACING	#5/8" AB SPACING	CAPACITY
S0	2x	48" OC	72" OC	260 plf
S1	2x	32" OC	48" OC	370 plf
S2	2x	24" OC	32" OC	520 plf
S3	2x	16" OC	24" OC	740 plf
S4	2x	12" OC	16" OC	1040 plf

SHEAR WALL LENGTH TOLERANCES

SPECIFIED SHEAR WALL LENGTH	ACCEPTABLE SHEAR WALL TOLERANCE
UP TO 3'-0"	± 2"
OVER 3'-0" AND UP TO 5'-0"	± 3"
OVER 5'-0" AND UP TO 7'-0"	± 4"
OVER 7'-0" AND UP TO 10'-0"	± 6"
OVER 10'-0"	± 8"

1. ALL SHEAR WALLS SHALL BE FRAMED TO THE MINIMUM LENGTHS SHOWN ON THE PLANS WITH THE TOLERANCES INDICATED ON THE TABLE ABOVE, UNO ON PLAN w/ MINIMUM WALL LENGTH.
2. ALL SHEAR WALLS SHALL TERMINATE ON AT LEAST (1) FULL HEIGHT STUD. ADDITIONAL STUDS OR SOLID POSTS SHALL BE INSTALLED AS REQUIRED FOR HOLDOWNS WHERE THEY OCCUR.
3. 8d COMMON NAIL SHANK DIAMETER = 0.131", 16d SINKER SHANK DIAMETER = 0.148"
4. FOR "P2", "P3" AND "P4" SHEAR WALLS, ALL FRAMING RECEIVING EDGE NAILING FROM ADJOINING PANEL EDGES SHALL BE 3-INCH NOMINAL OR WIDER AND NAILS SHALL BE STAGGERED. AS AN ALTERNATE, (2) 2x STUDS MAY BE USED PROVIDED THEY ARE NAILED TOGETHER w/ (2) 16d SINKERS @ 6" OC FULL HEIGHT.
5. FOR "P2", "P3" AND "P4" DOUBLE-SIDED SHEAR WALLS, PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT FRAMING MEMBERS, OR FRAMING SHALL BE 3-INCH NOMINAL OR WIDER AT ADJOINING PANEL EDGES AND NAILS ON EACH SIDE SHALL BE STAGGERED.
6. ALL ANCHOR BOLTS SHALL HAVE 7" MINIMUM EMBEDMENT.
7. ALL SHEAR WALL ANCHOR BOLTS SHALL INCLUDE A STEEL 3"x3"x0.229" PLATE WASHER BETWEEN THE SILL PL & NUT. THE HOLE IN THE PLATE WASHER IS PERMITTED TO BE DIAGONALLY SLOTTED WITH A WIDTH OF UP TO 3/16" LARGER THAN THE BOLT DIAMETER AND A SLOT LENGTH NOT TO EXCEED 1-3/4", PROVIDED A STANDARD CUT WASHER IS PLACED BETWEEN THE PLATE WASHER AND THE NUT. ANCHOR BOLTS & PLATE WASHERS ARE TO BE OFFSET TOWARD THE SHEATHED WALL EDGE TO LIMIT THE GAP BETWEEN THE EDGE OF WASHER TO SHEATHING TO A MAXIMUM OF 1/2". WHERE BOTH SIDES OF A 2x6 WALL IS SHEATHED A STEEL 4-1/2"x3"x0.229" PLATE WASHER SHALL BE CENTERED ON THE SILL PLATE, PER DTL 2/-.

STANDARD SHEAR WALL SCHEDULE 1

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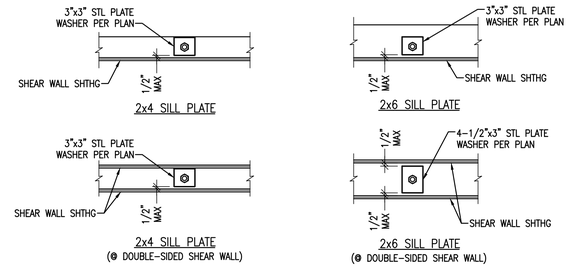

TYP SHEAR WALL WASHERS 2

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FOOTING SCHEDULE

MARK	SIZE	REINFORCING, BOTTOM
F2.0	2'-0" SQ x 10" THICK	(3) #4 EACH WAY
F2.5	2'-6" SQ x 10" THICK	(3) #4 EACH WAY
F3.0	3'-0" SQ x 12" THICK	(4) #4 EACH WAY
F3.5	3'-6" SQ x 12" THICK	(5) #4 EACH WAY
F4.0	4'-0" SQ x 12" THICK	(6) #4 EACH WAY
F4.5	4'-6" SQ x 14" THICK	(7) #4 EACH WAY
F5.0	5'-0" SQ x 14" THICK	(8) #4 EACH WAY
F5.5	5'-6" SQ x 16" THICK	(10) #4 EACH WAY
CF1.0	1'-0" WIDE x 10" THICK	(2) #4 CONT
CF1.33	1'-4" WIDE x 10" THICK	(2) #4 CONT
CF1.5	1'-6" WIDE x 10" THICK	(2) #4 CONT

STANDARD FOOTING SCHEDULE 3

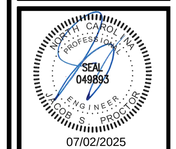
NTS

ORIGINAL: 07-04-25	ENG: RAM	DWN: SEH	CHK: RAM
REV. #	DATE	BY:	DESCRIPTION

VECTOR ENGINEERS
MERIDIAN, IDAHO
(208) 996-0303
WWW.VECTORSE.COM
NC FIRM LICENSE NUMBER
COA #P0742

Evolution Drafting LLC
Anna Roberts
347 Shue Road
Broadway, NC 27505

STANDARD DETAILS & SCHEDULES



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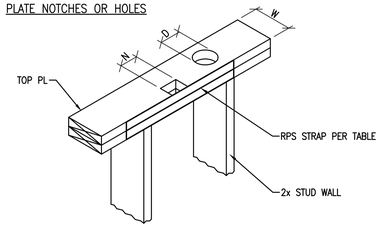
S1.1

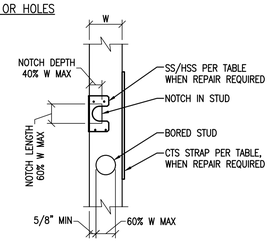
PLATE NOTCHES OR HOLES



2x4 STUD	2x6 STUD	2x4 & 2x6 PLATE	
HOLE DIA. 'D'	HOLE DIA. 'D'	NOTCH WIDTH 'N' (MAX NOTCH DEPTH = W/2	RPS STRAP
≤ 7/8"	≤ 1"	≤ 1"	NONE
≤ 1"	≤ 1 3/8"	≤ 2 1/2"	(1) RPS18
≤ 1 3/8"	≤ 2 1/8"	≤ 5 1/2"	(2) RPS18
≤ 2"	≤ 3 1/4"	≤ 12"	(2) RPS28

NOTES:
1. USE RPSZ FOR SILL PLATE.
2. CENTER STRAPS @ NOTCH OR HOLE.
3. WHERE ROOF TRUSS OR FLOOR JOIST IS BEARING WITHIN STUD BAY OF THE HOLE OR NOTCH, INSTALL AN ADDITIONAL STUD DIRECTLY BELOW THE TRUSS OR JOIST UNLESS NO RPS STRAP IS REQUIRED OR WHERE EXISTING STUD FACE IS WITHIN 3" OF TRUSS OR JOIST FACE.
4. NOTCHES & HOLES MUST BE SEPARATED BY "2xD" OR "2xN".
5. WHERE MULTIPLE HOLES ARE LOCATED ADJACENT TO EACH OTHER, THE STRAP REPAIR MAY BE WITH A CS16 STRAP ON EACH SIDE OF THE UPPER PLATE. THE STRAPS AND NAILING SHALL EXTEND AT LEAST 9" BEYOND EACH END OF THE WHOLE GROUP. NAILING BETWEEN THE HOLES IS NOT REQUIRED. NAILS IN THE CS16 STRAPS MAY BE N8'S OR N10'S.

STUD NOTCHES OR HOLES



ALLOWABLE HOLES OR NOTCHES FOR NON-BEARING, NON-SHEAR OR INTERIOR PARTITIONS (NO REPAIR REQD)

HOLE / NOTCH SCHEDULE

HOLE / NOTCH % OF 'W'	2x4 STUD	2x6 STUD
25%	3/4"	1-3/8"
40%	1-3/8"	2-1/8"
60%	2"	3-1/4"

NOTES:
1. HOLES & NOTCHES SHALL NOT OCCUR IN THE SAME STUD.
2. WHERE HOLES OR NOTCHES EXCEED THOSE SHOWN ABOVE, REPAIR PER TABLE BELOW.
3. ALL NOTCHES IN BEARING OR SHEAR OR EXTERIOR WALLS REQUIRE REPAIRS.

STUD HOLE REPAIR

	2x4 STUD	2x6 STUD	
	HOLE DIA. 'D'	HOLE DIA. 'D'	REPAIR
NON-BEARING & NON-SHEAR & INTERIOR	≤ 2 3/4"	≤ 4 1/2"	(1) CTS218 w/ 10d
BEARING OR SHEAR OR EXTERIOR WALL	≤ 3/4"	≤ 1 3/8"	(1) CTS218 w/ 10d
BEARING OR SHEAR OR EXTERIOR	≤ 2 3/4"	≤ 4 1/2"	(2) CTS218 TWO-SIDED w/ 10d

STUD NOTCH REPAIR

	2x4 STUD	2x4 STUD	2x6 STUD	2x6 STUD	
	NOTCH DEPTH	NOTCH LENGTH	NOTCH DEPTH	NOTCH LENGTH	REPAIR
NON-BEARING & NON-SHEAR & INTERIOR	≤ 2 1/2"	≤ 4 1/2"	≤ 3 3/4"	≤ 4 1/2"	(1) CTS218 w/ 10d
BEARING OR SHEAR OR EXTERIOR WALL	≤ 2 1/2"	≤ 2 1/2"	≤ 2 1/2"	≤ 2 1/2"	SS w/ 10d
BEARING OR SHEAR OR EXTERIOR	≤ 2 3/4"	≤ 4 1/2"	≤ 4 1/2"	≤ 4 1/2"	(2) CTS218 TWO-SIDED w/ 10d

DRILLING & NOTCHING OF PLATES & STUDS (6)

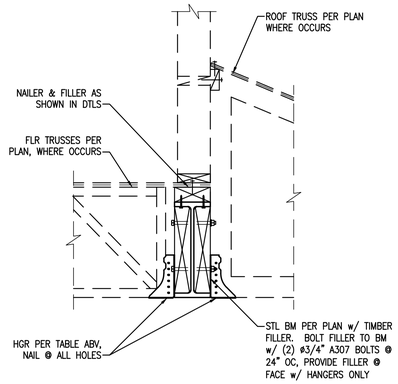
NTS

MFR TRUSS TO BEAM HANGERS

CARRYING MEMBER	CARRIED MBR WIDTH	HANGER TYPE	MAX REACTION (FROM TRUSS CALCS.) (LBS)	NOTES
STEEL OR TIMBER	1-1/2"	LUS210	1275	FACE MOUNT
STEEL OR TIMBER	1-1/2"	HUS26	2565	FACE MOUNT
STEEL OR TIMBER	1-1/2"	HGUS26	3750	FACE MOUNT
STEEL OR TIMBER	1-1/2"	HGUS28	5720	FACE MOUNT
STEEL OR TIMBER	3"	LUS26-2	1000	FACE MOUNT
STEEL OR TIMBER	3"	HHUS26-2	2580	FACE MOUNT
STEEL OR TIMBER	3"	HGU26-2	3940	FACE MOUNT
STEEL OR TIMBER	3"	HGUS28-2	6805	FACE MOUNT
STEEL OR TIMBER	3"	HGUS210-2	8650	FACE MOUNT
STEEL OR TIMBER	3-1/2"	LUS46	1000	FACE MOUNT
STEEL OR TIMBER	3-1/2"	HHUS46	2580	FACE MOUNT
STEEL OR TIMBER	3-1/2"	HGUS46	3940	FACE MOUNT
STEEL OR TIMBER	3-1/2"	HGUS48	6805	FACE MOUNT
STEEL OR TIMBER	6"	HGUS26-4	3940	FACE MOUNT
STEEL OR TIMBER	6"	HGUS210-4	8780	FACE MOUNT
STEEL OR TIMBER	6"	HGUS212-4	9155	FACE MOUNT

NOTES:

1. FOR STEEL BEAMS CARRYING FLOOR TRUSSES, PROVIDE TIMBER FILLER PER DTL BELOW.
2. ALTERNATE HANGERS MAY BE USED AT THE CONTRACTOR'S OPTION. SUBMIT TO ENGINEER OF RECORD FOR APPROVAL.
3. HANGERS APPLICABLE FOR TIMBER BEAMS.



TYP STEEL BEAM

TYP TRUSS HANGERS (4)

NTS

NOT USED (5)

NTS

STANDARD TRUSS TIE-DOWNS

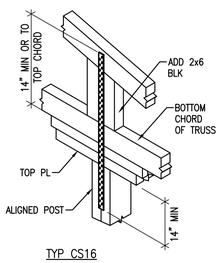
UPLIFT LOAD PER TRUSS MANUFACTURER	SIMPSON TIE-DOWN	REQD ALIGNED HOLDOWN & POST
130 TO 425 lbs	H1A or CS16	NOT REQD
< 485 lbs	SDWC TRUSS SCREW	NOT REQD
< 615 lbs	H2.5A or CS16	NOT REQD
< 1015 lbs	H10A or CS16	HDU2 & (2) 2x4 POST
< 1180 lbs	H16 or CS16	HDU2 & (2) 2x4 POST
< 6485 lbs	HGT-2	(2) 2x4 POST w/ HDU4 (2) HDU2 @ TOP TO HGT-2 AT (1) PLY TRUSS, INSTALL 2x SHAPED FILLER ADJACENT TO TRUSS AT BEARING

NOTES:
1. TIE-DOWN CAPACITIES ARE BASED ON SPRUCE PINE FIR
2. TRUSS UPLIFT OF LESS THAN 130lbs: TIE-DOWN NOT REQD, ATTACH w/ (3) 16d SINKER TOENAILS TRUSS TO PL
3. SEE TYP HOLDOWN ANCHORAGE DETAIL FOR HDU HOLDOWN INSTALLATION

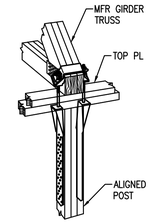
STANDARD FLOOR-TO-FLOOR STRAPS

*UPLIFT LOAD PER TRUSS MANUFACTURER	SIMPSON TIE-DOWN	REQD ALIGNED POST
< 1705 lbs	CS16	2x4 POST
< 3410 lbs	(2) CS16	(2) 2x4 POST

NOTES:
1. INSTALL CS16 STRAPS TO 2x STUDS ABOVE AND BELOW FLOOR FRAMING. NAIL EACH END w/ (11) 10d NAILS. STRAP TO EXTEND MIN 14" ONTO STUDS ABOVE AND BELOW FLOOR FRAMING.
2. WHERE UPLIFT OCCURS ABOVE HDR OR BM, INSTALL STRAP PER SCHEDULE AT EACH TRIMMER OR POST
3. FLOOR TO FLOOR STRAPS REQD ALIGNED WITH ROOF TRUSS ABV



TYP CS16



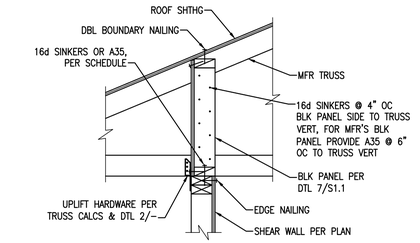
TYP HGT-2 INSTALLATION

TYP TRUSS ANCHORAGE (2)

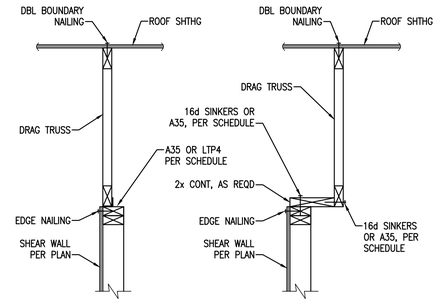
NTS

NOT USED (3)

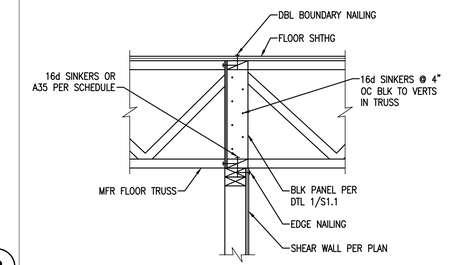
NTS



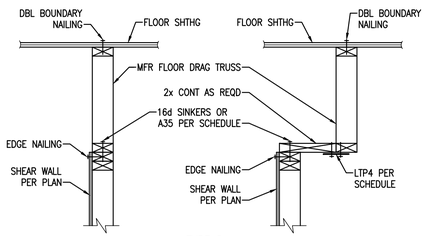
TYPE A



TYPE B



TYPE C



TYPE D

CONNECTION SCHEDULE

SHEAR WALL	A35 OR LTP4	16d SINKERS
P1	18" OC	6" OC
P2	12" OC	4" OC
P3	10" OC	3" OC (STAGGERED)
P4	8" OC	2" OC (STAGGERED)
DBL P3 OR P4	6" OC	(2) @ 3" OC (STAGGERED)

SHEAR TRANSFER (1)

NTS

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WWW.VECTORSE.COM
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STANDARD DETAILS & SCHEDULES

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JACOB S. PROCTOR, P.E.
049893

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S1.2

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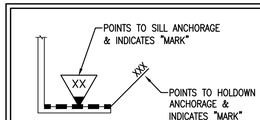
FOUNDATION NOTES:

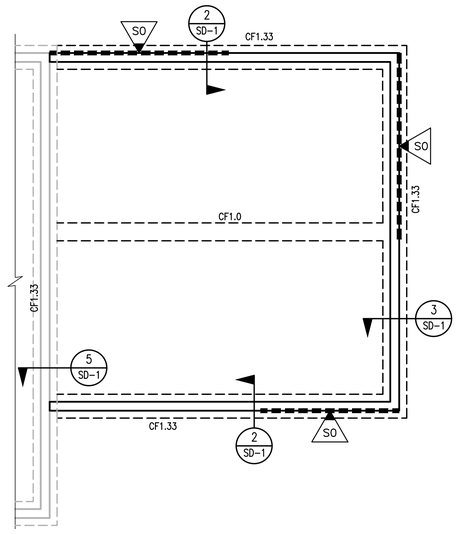
1. CONTRACTOR TO CONFIRM DIMENSIONS WITH ALL ARCHL PLANS PRIOR TO CONSTRUCTION.
2. ALL EXTERIOR WALLS, INTERIOR BEARING WALLS & SHEAR WALLS TO BE ATTACHED TO THE FOUNDATION w/ #1/2" x 10" LONG ANCHOR BOLTS (7" EMBED) AT 72" OC, UNO. SEE THIS PLAN & SHEAR WALL SCHEDULE FOR ANCHOR BOLT REQUIREMENTS AT SHEAR WALLS. ANCHOR BOLTS AT SHEAR WALLS TO HAVE WASHERS PER SHEAR WALL SCHEDULE (S1.1). ALL OTHER ANCHOR BOLTS TO HAVE WASHERS PER "WOOD" NOTE 3 ON SHEET S1.
3. ISOLATED FOOTINGS & INTERIOR STRIP FOOTINGS TO BE CENTERED BELOW POSTS & BEARING/SHEAR WALLS, RESPECTIVELY.
4. SEE SHEET S1.1 FOR FOOTING SCHEDULE.
5. MASA MUDSILL ANCHORS MAY BE USED IN PLACE OF ANCHOR BOLTS, INSTALLED AT THE SAME SPACING INDICATED FOR ANCHOR BOLTS, INCLUDING REDUCED SPACING AT SHEAR WALLS.
6. STRIP & REMOVE EXISTING VEGETATION, REMOVE UNCONTROLLED FILL, OVEREXCAVATE AND REPLACE w/ PROPERLY COMPACTED FILL.
7. FOUNDATION VENTS, WHEN REQUIRED, TO BE INSTALLED AND SPACED PER IRC R408. MAINTAIN 1'-0" HORIZONTAL CLEARANCE BETWEEN VENTS AND HOLDOWNS/POSTS.



NOTES:
SEE SHEET S1.1 FOR SILL ANCHORAGE SCHEDULE.
SEE SHEET SD-1 FOR HOLDOWN ANCHORAGE SCHEDULE.

SILL ANCHORAGE KEY

NOTE:
ALL EXISTING ELEMENTS OF THE STRUCTURE ARE TO REMAIN UNDISTURBED, UNO. CONTRACTOR TO VERIFY ALL EXISTING FRAMING MEMBER SIZES, CONFIGURATION, SPAN DIRECTIONS, ETC, PRIOR TO ANY DEMOLITION OR CONSTRUCTION, AND SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY IF ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS ARE FOUND.



FOUNDATION PLAN

1/4" = 1'-0"

ORIGINAL: 07-04-25	ENG: RAM	DWN: SEH	CHK: RAM
REV. #	DATE	BY:	DESCRIPTION

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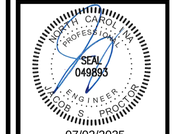
FOUNDATION PLAN



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S2

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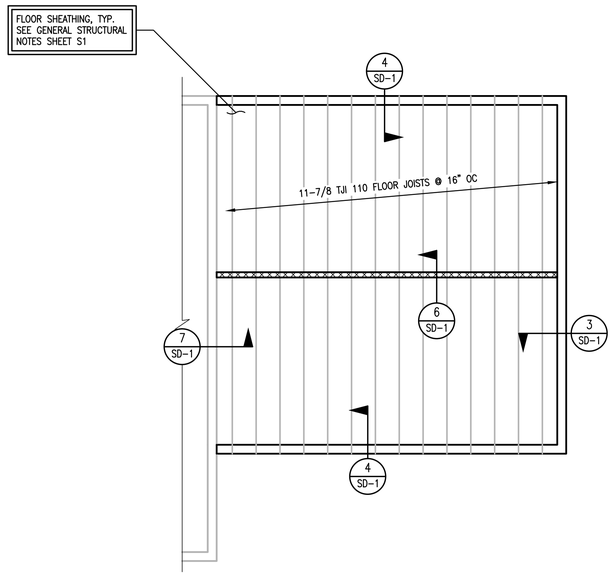
CRAWL SPACE FRAMING NOTES:

1. ALL PONY WALLS TO BE 2x4 @ 16" OC, UNO.
2. FACE NAIL MULTIPLE 2x POSTS WITH 16d SINKERS @ 6" OC.
3. PROVIDE CONTINUOUS LOAD PATH TO FOUNDATION WITH POSTS AND SQUASH BLOCKS AS REQUIRED.
4. ⊠ INTERIOR BEARING WALLS.

NOTE:
ALL EXISTING ELEMENTS OF THE STRUCTURE ARE TO REMAIN UNDISTURBED, UNO. CONTRACTOR TO VERIFY ALL EXISTING FRAMING MEMBER SIZES, CONFIGURATION, SPAN DIRECTIONS, ETC, PRIOR TO ANY DEMOLITION OR CONSTRUCTION, AND SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY IF ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS ARE FOUND.



FRAMING PLAN

1/4" = 1'-0"

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(208) 996-0303
WWW.VECTORSE.COM
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347 Shue Road
Broadway, NC 27505

FRAMING PLAN

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049893 JACOB S. PROCTOR

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S3

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FRAMING NOTES:

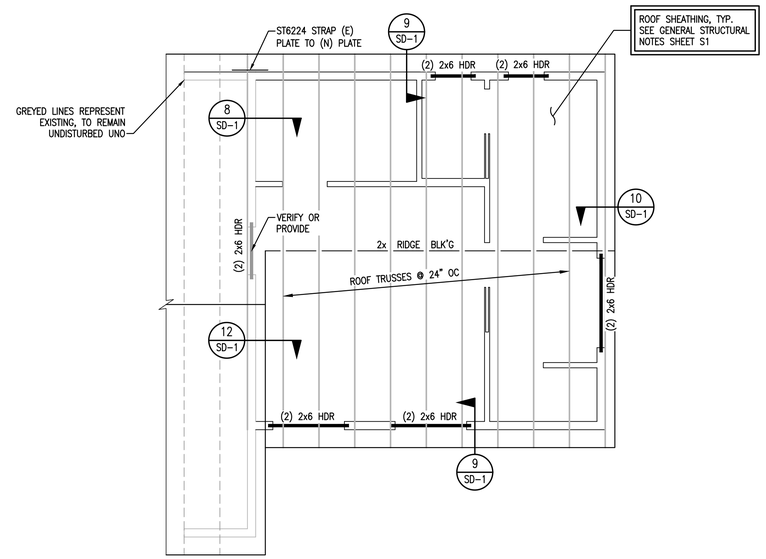
1. ALL FRAMED WALLS TO BE 2x @ 16" OC (MAX) PER ARCHITECTURAL PLANS AND SHALL MEET REQUIREMENTS OF STANDARD STUD TABLE ON SHEET S1.1 AND SHALL MEET FRAMING REQUIREMENTS OF DETAIL 8/S1.1.
2. FACE NAIL MULTIPLE 2x POSTS WITH 16d SINKERS @ 6" OC.
3. SHADED AREAS ARE TYPICAL OVERBUILD, STICK FRAMED PER DETAIL 6/S1.1 OR OVERBUILD TRUSSES PER TRUSS MANUFACTURER.
4. INTERIOR BEARING WALLS.
5. PROVIDE (2) 2x POST, EACH END OF ALL BEAMS & GIRDER TRUSSES, UNO.
6. PROVIDE CONTINUOUS LOAD PATH TO FOUNDATION WITH POSTS, CRIPPLES, AND SQUASH BLOCKS AS REQUIRED.
7. BEAM AND HEADER SIZES INDICATED ON THE PLANS ARE MINIMUM SIZES. LARGER SIZES MAY BE INSTALLED AT THE CONTRACTOR'S OPTION.
8. CONTINUOUS TOP PLATE MAY BE USED IN LIEU OF STRAP FROM BEAM TO PLATE.

NOTE:
ALL EXISTING ELEMENTS OF THE STRUCTURE ARE TO REMAIN UNDISTURBED, UNO. CONTRACTOR TO VERIFY ALL EXISTING FRAMING MEMBER SIZES, CONFIGURATION, SPAN DIRECTIONS, ETC, PRIOR TO ANY DEMOLITION OR CONSTRUCTION, AND SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY IF ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS ARE FOUND.

KING STUD & TRIMMER SCHEDULE

NUMBER OF KS / TS	(1) KS / (1) TS	(2) KS / (2) TS	(3) KS / (2) TS
WALL SIZE	MAX OPENING WIDTH		
2x6	5'-0"	14'-0"	20'-0"

NOTES:
1. THE NUMBER OF KING STUDS AND TRIMMERS ARE TO BE INSTALLED AS SHOWN IN THE SCHEDULE, UNO ON PLANS.
2. FACE NAIL MULTIPLE STUDS w/ 16d SINKERS @ 12" OC.



ROOF FRAMING PLAN

1/4" = 1'-0"

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ROOF FRAMING PLAN

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049893 JACOB S. PROCTOR

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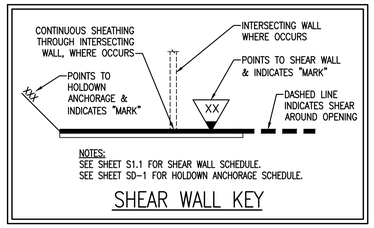


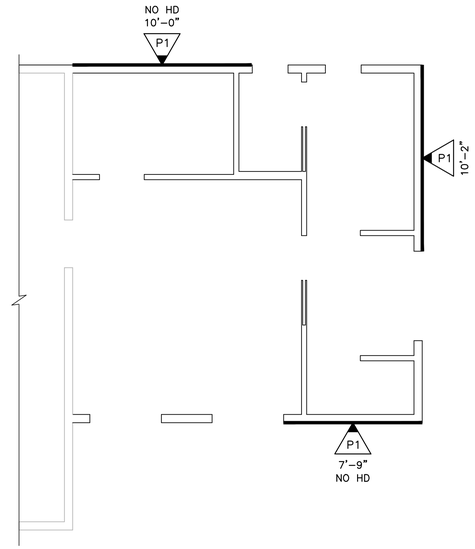
NOTES:
SEE SHEET S1.1 FOR SHEAR WALL SCHEDULE.
SEE SHEET SD-1 FOR HOLDOWN ANCHORAGE SCHEDULE.

SHEAR WALL KEY

NOTE:
ALL EXISTING ELEMENTS OF THE STRUCTURE ARE TO REMAIN UNDISTURBED, UNO. CONTRACTOR TO VERIFY ALL EXISTING FRAMING MEMBER SIZES, CONFIGURATION, SPAN DIRECTIONS, ETC, PRIOR TO ANY DEMOLITION OR CONSTRUCTION, AND SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY IF ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS ARE FOUND.

NOTE:
WHERE STRAP HOLDOWN IS ATTACHED TO A SINGLE KINGSTUD & A SINGLE TRIMMER, ATTACH THE TWO TOGETHER w/ (2) 16d SINKERS @ 6" OC FULL HEIGHT OR w/ LTP4 @ 12" OC FULL HEIGHT.

NOTE:
SHEAR WALL SHEATHING MAY BE ON EITHER SIDE OF INDICATED WALL.



SHEAR WALL PLAN

1/4" = 1'-0"

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ORIGINAL: 07-04-25 | ENG: RAM | DWN: SEH | CHK: RAM

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SHEAR WALL PLAN

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07/02/2025
JACOB S. PROCTOR, P.E.
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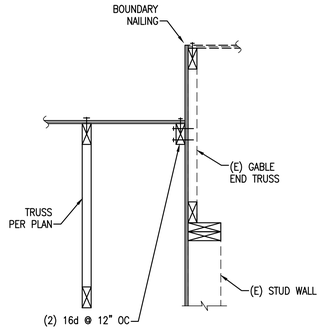
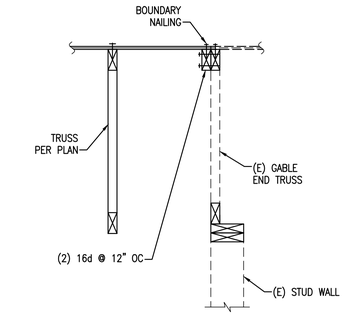
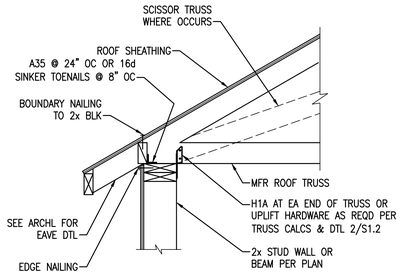
S6



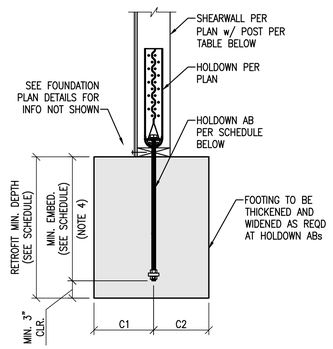
NTS **12**



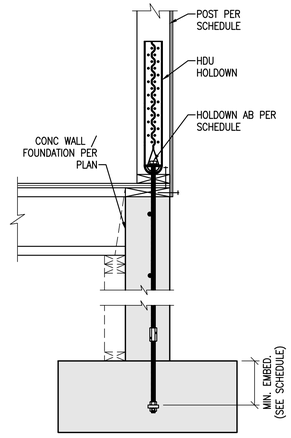
NTS **8**



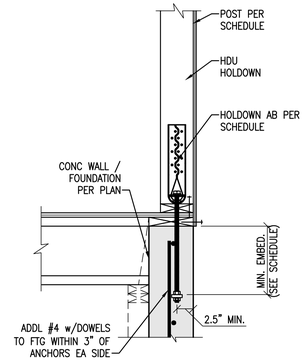
NTS **9**



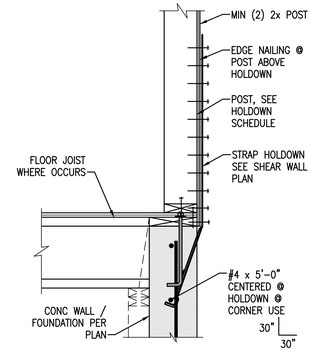
HDU HOLDOWN



HDU HOLDOWN
HDU8–HDU14



HDU HOLDOWN
HDU2–HDU5

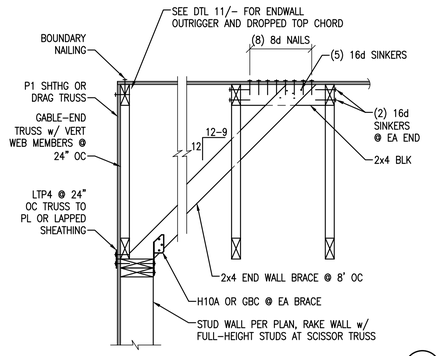


STRAP HOLDOWN

ANCHORAGE										
	ANCHORAGE (CAST IN PLACE)			ANCHORAGE (RETROFIT)		CAST IN PLACE OR RETROFIT				
HOLDOWN	SIMPSON STRONG-TIE PRODUCT	ALL THREAD ROD (NOTE 1)	EMBEDMENT	ALL THREAD ROD (NOTE 2, 3, & 6)	HOLE DIAMETER	C1	C2	RETROFIT DEPTH	POST	FOOTING
HDU2 – SDS2.5	SSTB16	ø5/8" F1554	9"	ø5/8" F1554	3/4"	6"	6"	6.5"	(2) 2x	PER FOUNDATION DETAILS
HDU4 – SDS2.5	SB5/8x24	ø5/8" F1554	12"	ø5/8" F1554	3/4"	8"	8"	5"	(2) 2x	SPREAD FOOTING REQUIRED
HDU5 – SDS2.5	SB5/8x24	ø5/8" F1554	18"	ø5/8" F1554	3/4"	9"	9"	6"	(2) 2x	SPREAD FOOTING REQUIRED
HDU8 – SDS2.5	NONE	ø7/8" F1554	7"	ø7/8" F1554	1"	9"	9"	10"	(3) 2x	SPREAD FOOTING REQUIRED
HDU11 – SDS2.5	NONE	ø1" F1554	7"	ø1" F1554	1–1/4"	11"	11"	10"	6x6	SPREAD FOOTING REQUIRED
HDU14 – SDS2.5	NONE	ø1" F1554	7"	ø1" F1554	1–1/4"	14"	14"	12"	6x6	SPREAD FOOTING REQUIRED

NOTES:
1. PROVIDE 2-1/8"x2-1/8"x3/8" STEEL PLATE w/ (2) NUTS @ CAST IN PLACE ANCHORS.
2. RETROFIT ALL-THREAD ROD IN HOLES w/ SIMPSON SET-3G EPOXY. PREPARE HOLES & INSTALL EPOXY PER MFR DIRECTIONS w/ EMBEDMENT AND EDGE DISTANCES AS SHOWN.
3. SIMPSON SET-3G EPOXY PER ICC-ES 4057.
4. INCREASE FOOTING DEPTH AS REQUIRED FOR 3" MIN COVER BELOW BOLT & COORDINATE EXACT LOCATIONS WITH THE FRAMING CONTRACTOR.
5. HOLDOWNS MAY BE INSTALLED 4" MAX FROM SHEAR WALL EDGE. BOUNDARY NAILING MUST BE PROVIDED @ STUDS ALIGNED WITH HOLDOWNS.
6. RETROFIT OPTION NOT PERMITTED IN STEM WALL APPLICATIONS.

NTS **1**



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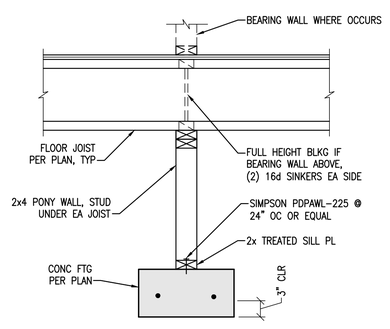

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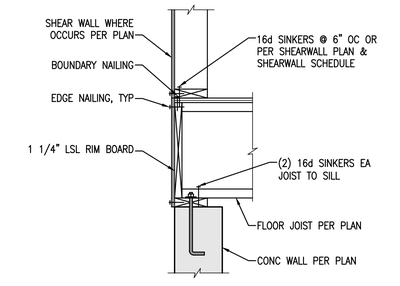

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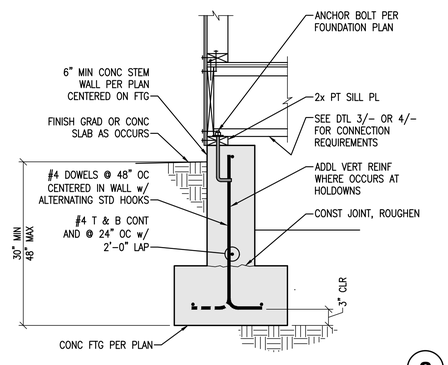

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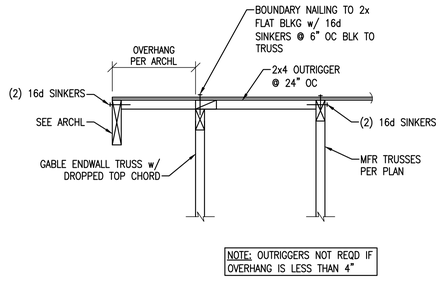

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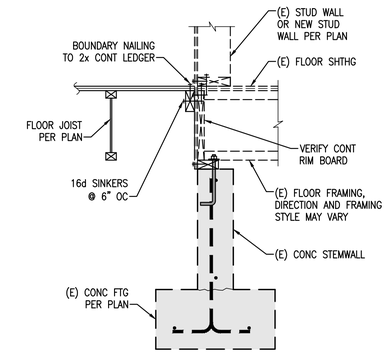

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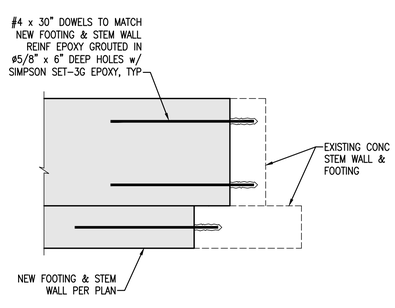
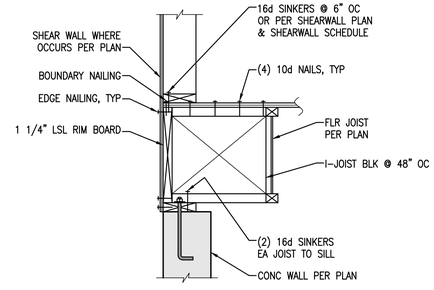


NTS **5**



NTS **3**

ORIGINAL: 07–04–25 | ENG: RAM | DWN: SEH | CHK: RAM
REV. # | DATE | BY: | DESCRIPTION

VECTOR ENGINEERS
MERIDIAN, IDAHO
(208) 996-0303
WWW.VECTORSE.COM
NC FIRM LICENSE NUMBER
COA #P0742

Evolution Drafting LLC
Anna Roberts
347 Shue Road
Broadway, NC 27505

STRUCTURAL DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 049893 ENGINEER JACOB S. PROCTOR

07/02/2025

JACOB S. PROCTOR, P.E.
049893

U6489.0090.251

SD-1

2/18/2019 12:06 PM