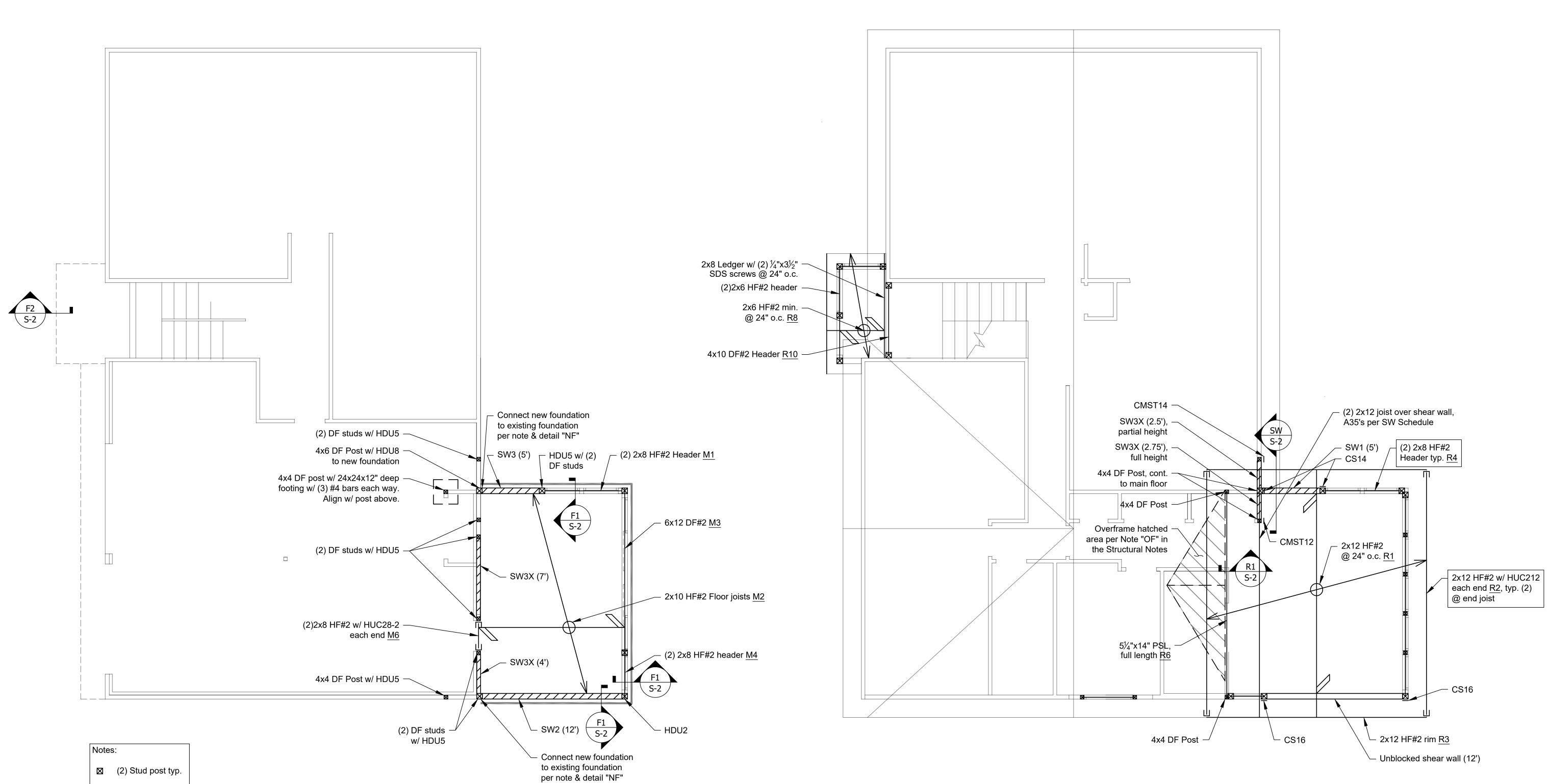


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Revisions:

Date:

9/17/21

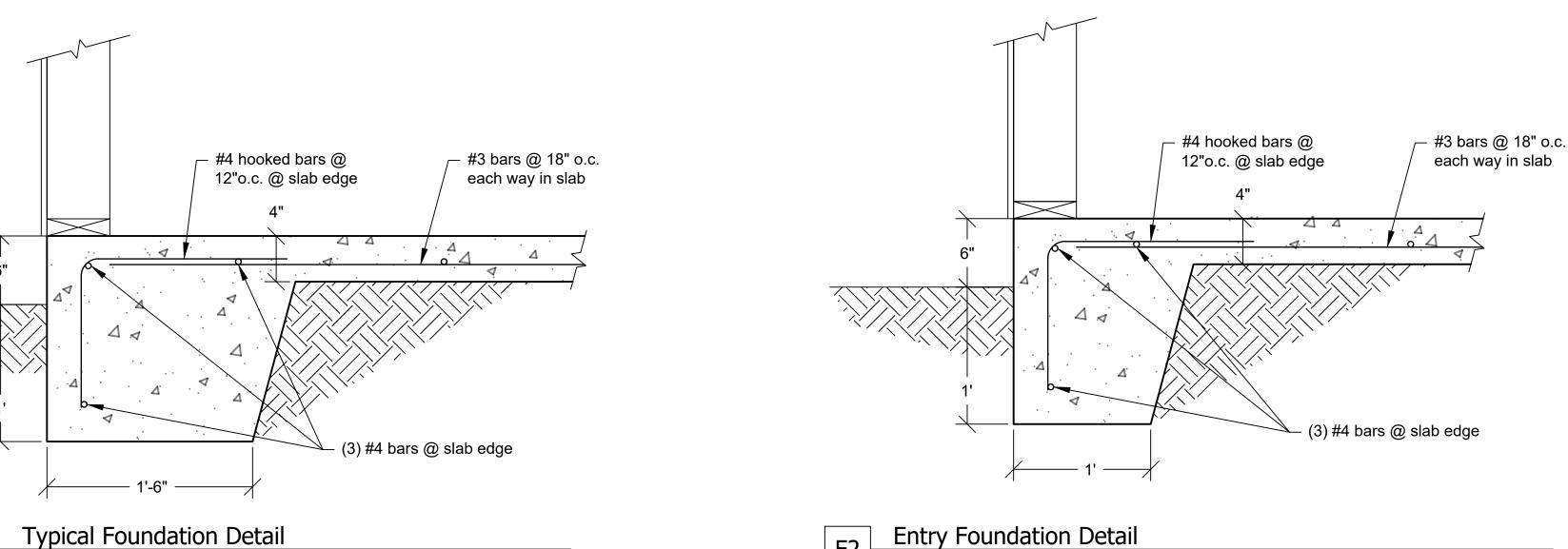
Sheet:

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

S-1

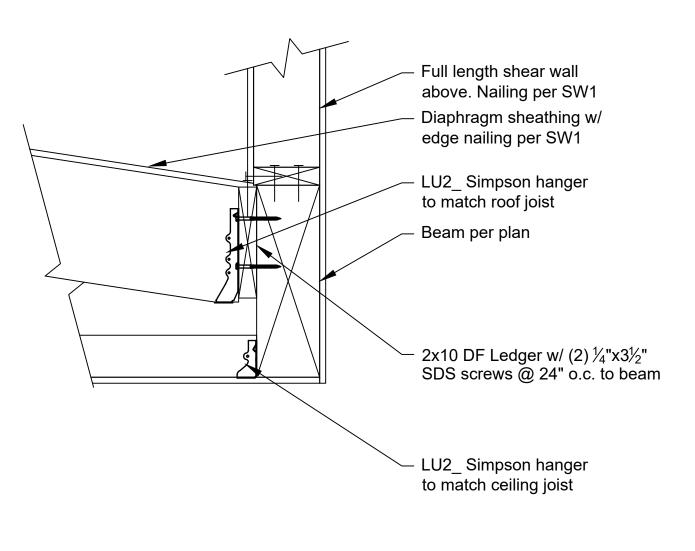
Sheet:

S-2



Scale: 1-1/2"=1'-0"

Entry Foundation Detail Scale: 1-1/2"=1'-0"



Existing to New Roof Transition Detail Scale: 3/4"=1'-0"

Note: Contractor to verify that

existing foundation is sound and in

good condition. Contact the

engineer of record for clarfication, or

if the existing foundation does not

meet the minimum requirements of

Existing foundation, verify

existing wall thickness,

6" min, 12" max —►

minimum 5-1/2"

this detail

New roof framing, (2) joists over shear wall New SW3X shear wall @ hatched area Full height (11') 4x4 Existing roof framing DF post in wall MSTC66B3 strap from existing top plate to double 2x_ blocking in shear wall Shear wall sheathing continuous over post Strap hold downs per plan

At roof framing, roof vent block per vent block typical detail Roof framing, flat or Edge nailing per sloped per plan shear wall schedule A35 per shear wall schedule Plate nailing per Diaphragm edge nailing per shear wall schedule diaphragm schedule Rim joist, provide Diaphragm sheathing per hangers to match joist diaphragm schedule size where rim joist is used as a header Where joists are parallel to wall, Edge nailing per provide 1 bay of shear wall schedule solid wood blocking @ 4'0" A35 per shear wall o.c. attached with schedule A35 both ends Shear wall sheathing per Joists perpendicular shear wall schedule to wall, where applicable Edge nailing per shear wall schedule Anchor bolt per shear wall schedule. Washer edge must be Concrete foundation within 1/2" of sheathing for SW3 and greater 2" clear, minimum Anchor bolt per shear wall Edge nailing per shear schedule. Washer edge must be wall schedule within 1/2" of sheathing for SW3 and greater A35 per shear wall schedule. Okay to notch rim joist around anchor bolts as needed ⁻ 2" clear, Concrete foundation minimum **Alternate Condition**

(2) 16d @ 16" o.c. min, or Shear wall above plate nailing per shear wall schedule, where applicable Diaphragm edge nailing per diaphragm schedule (where solid 2x_ blocking typical noted on the plan) between joists, provide 4x_ Diaphragm sheathing per blocking for SW3 and greater diaphragm schedule Min 8d @ 12" o.c., or edge nailing per Where joists are shear wall schedule, parallel to wall, < where applicable provide solid blocking @ 4'0" o.c. attached with A35 @ 4'0" o.c. min, or A35 both ends per shear wall schedule, Joists where applicable perpendicular to wall, where Shear wall sheathing per applicable shear wall & sheathing schedule

New or existing wall

per structural plan

(Minimum 3) #4x12"

dowels, epoxy grouted into

existing foundation. Dowels

shall be spaced minimum 6"

5" deep holes drilled into

apart, and no less than 4"

provide dowels at 12" o.c.

vertically, for the full height

Scale: 3/4"=1'-0"

from top and bottom of

footing. For taller walls,

New reinforced concrete

foundation, refer to new

of the wall

foundation detail

New Foundation Connection to Existing Foundation Detail

Interior Shear Wall Typical Detail

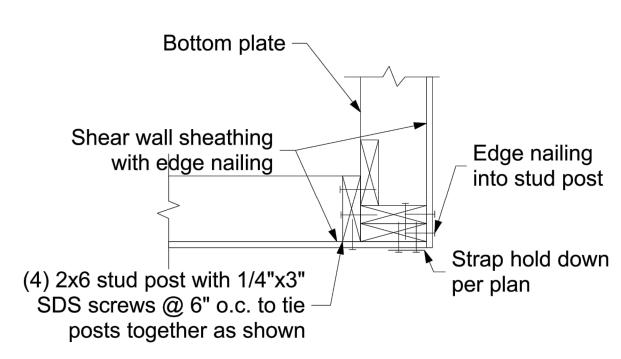
Exterior Shear Wall Framing Typical Detail

Scale: 3/4"=1'-0"

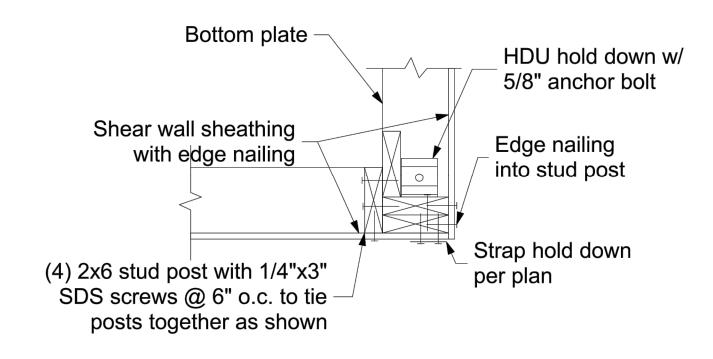
Roof Level Shear Wall Section

Scale: 1"=1'-0"

Scale: 1-1/2"=1'-0"



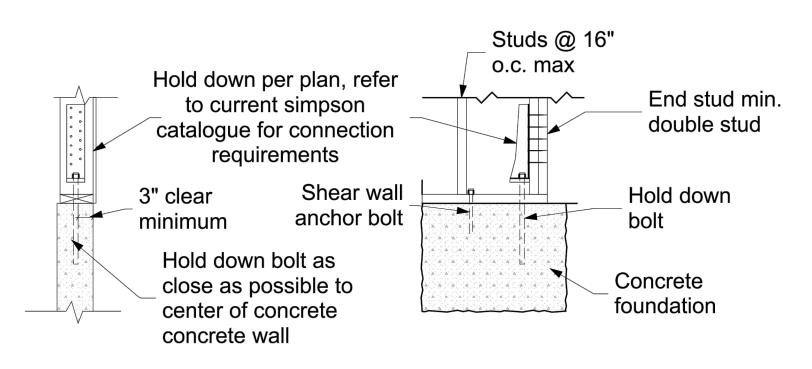
Strap Hold Down Configuration



HDU Configuration

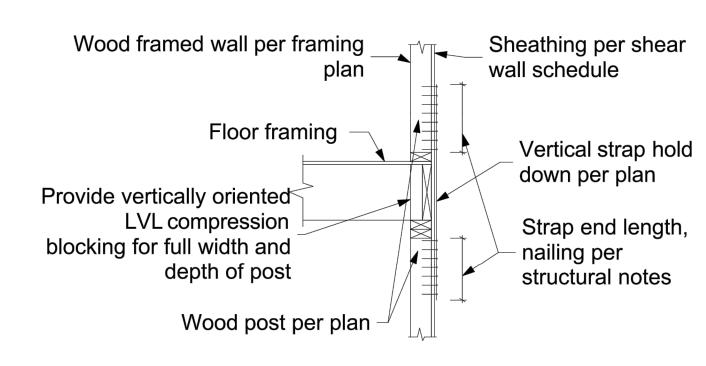
Corner Hold Down Typical Detail

Scale: 1-1/2"=1'-0"



Retrofit HDU Hold Dwon Typical Detail

Scale: 3/4"=1'-0"



Strap Hold Down Typical Detail

Scale: 3/4"=1'-0"



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Structural Notes:

Applicable Codes and Standards:

2018 International Building Code (IBC) and other applicable local building codes.
ASCE/SEI 7-16 - "Minimum Design Loads for Buildings and Other Structures"

2018 NDS for wood structures.

American Wood Preservers Bureau - AWPB Standards for Pressure Treated Material.

American Concrete Institute - ACI 315, ACI 318, ACI 301, ACI 307.

Structural design shall be in accordance with the latest edition of above codes and standards. Contractor shall comply with the latest edition of all applicable codes and standards.

Special Inspections:

Special Inspections are required for: Epoxy Grouted Anchor Bolt Installation

Design Loads:

Live load: roof 25 psf (snow) solar panels 4 psf dead load

Wind load:

Basic wind speed
Building Category: Enclosed, Wind Important Factor Iw = 1.0

Refer to calculation page L1 for design wind forces.
Internal pressure 5 psf, Components and cladding design per 1609.6.4.4.1

Seismic loading per IBC Section 1613, Site Class D.

The basic structural type is a bearing wall system with light framed walls with shear panels. Rw = 6.5 (wood structural panels), soil type D.

Seismic importance factor 1.0, Seismic Use Group I Design and Analysis by Simplified Design Procedure

Peak Ground Accelerations (PGA) based on USGS Hazards Program, by lat/long.

PGA 1 sec = .426 PGA .2 sec = 1.326 Seismic base shear = 0.136 * Dead Load

Foundations:

Soil parameters (assumed): Vertical allowable soil pressure: 1,500 psf

All soil conditions are to be field verified during construction. Footings shall bear on firm natural soils or on structural fill placed over firm natural soils, and inspected in place. Footings shall extend 18 inches minimum below adjacent exterior finished grade and shall extend 12 inches minimum below existing interior grade unless otherwise noted on plans. Structural fill shall be placed in 12-inch maximum horizontal lifts (loose thickness) and compacted to 90 percent of maximum dry density in accordance with ASTM D-1557. Imported structural fill shall be granular material containing no more than 5 percent fines, passing no. 200 sieve. Structural fill in place shall be tested by a licensed soil engineer or approved by the building inspector.

Drainage behind the concrete walls shall be provided conforming to the construction details.

Cast in Place Concrete:

Concrete shall attain a minimum compressive strength of 2,500 psi at 28 days (5-½ sack mix). An alternate mix provided by the concrete supplier and pre-approved by the building department is acceptable. Reinforcing steel shall conform to ASTM A-615, Grade 60 (Fy=60,000 psi) for all bars. Provide all wall and footing horizontal bars with 2'-0" x 2'-0" corner bars of the same size at all corners and wall intersections. Minimum lap splice 48 bar diameters.

Concrete protection for reinforcement shall be:

Concrete exposed to earth or weather 1.5" (#5 & smaller) 2" (#6 & larger)

Concrete cast against earth

Slabs 0.75"

Bolts:

Anchor bolts shall conform to F1554. All other bolts shall conform to ASTM A307. Minimum anchor bolt size and spacing shall be $\frac{1}{2}$ " diameter bolts @ 6' o.c. Shear wall anchor bolts per the

shear wall schedule.

For cast-in-place anchors, provide 7" minimum embedment into the new concrete foundation. For retrofitted anchors, provide 5" minimum embedment into the existing concrete foundation. Epoxy grout

For retrofitted anchors, provide 5" minimum embedment into the existing concrete foundation. E with Simpson SET enoxy.

Provide 3"x3" square x 0.229" thick bolt washers where anchor bolts connect the sill plate to the concrete foundation.

Wood Framing Specifications:

All sill plates and other wood framing which is in contact with concrete or masonry must be preservative-treated in accordance with AWPA U1 and M4 standards. For anchor bolts connecting wood sill plates to concrete or masonry, provide galvanized steel washers and nuts on top of the sill, minimum washer size 3" x 3" x 1/4" thick.

Where toenails are used for stud wall construction, a minimum of (2) toenails at top and bottom of each stud shall be provided. Toenails shall be 16d nails driven at approximately a 45 degree angle, with a minimum of 1-1/2" of the nail shank shall be embedded in both the stud and the plate. End nails driven through the plate and into the stud end grain are not permitted. Simpson A34 clips at top and bottom of each stud are permitted where correct toenailing is not provided.

Wherever joists bear on a wall or beam, either a continuous rim joist or solid wood blocking must be provided. Blocking shall be connected to the joists with A35 angles at each end. Individual blocks may be omitted to allow for ducting or other openings. Consult with the engineer of record if more than 25% of the blocking is omitted.

Unless noted otherwise, the following grades and species shall be used for structural lumber:

2x joists Hem-Fir #

2x, 3x, and 4x studs

DF/L standard for plywood or WSP shear walls

Hem-Fir standard for other walls

4x and 6x beams DF-L #1

Parallam lumber 2.0 WS, Fb = 2900 psi, Fv = 290 psi (minimums)

All framing connections shall be per Table 2304.9.1 of the IBC, unless otherwise noted.

Preservative-Treated Wood and Fasteners:

All wood in contact with concrete or masonry shall be preservative-treated, in accordance with AWPA U1 and M4 standards.

All fasteners installed in preservative-treated wood shall be hotdipped zinc-coated galvanized with a minimum coating weight complying with ASTM A 153.

Fasteners other than nails and timber rivets are permitted to be mechanically deposited zinc-coated with coating weights complying with ASTM B 695, Class 55 minimum. Plain carbon steel fasteners in wood preservated-treated with SBX/DOT or zinc borate are not required to be galvanized.

Plywood Thickness, Grade, and Nailing:

Install plywood sheets with face grain perpendicular to framing. Stagger joints in adjacent sheets. If not otherwise noted, use nailing schedule, Table 2304.9.1 of the IBC.

Metal Framing Connectors:

<u>Unless otherwise noted:</u> Metal framing connectors shall be manufactured by the Simpson company, or approved equal. Unless noted otherwise, use U-series joist hangers to match joist size (e.g., U210 for 2x10 joist). Provide H1 or H2.5 hurricane ties, or other connectors with similar capacity, at every roof joist or truss, and H6 or H7 at ends of roof beams and girder trusses. Where supported by wood posts, wood beams shall be connected to the tops of the posts using Simpson AC, PCZ or EPCZ post caps, and to the bottoms of the posts bearing on wood framing using Simpson AC connectors. Where supported by perpendicular beams, wood beams shall be connected by HU-series face mount beam hangers. Provide Simpson AB or PB post bases to connect posts to concrete foundations. Unless otherwise specified, the maximum number of nails or screws should always be installed on any connector.

Bearing Walls:

All walls supported by continuous concrete footings shall be connected to the foundation per 2018 SRC section 403.1.6. 1/2" diameter anchor bolts shall be provided at 4' o.c., or two per wall segment, minimum. Anchor bolts shall penetrate 7" into the concrete foundation.

Connection of New Foundation to Existing, Note NF:

engineer of record, for review and approval prior to construction.

At each location where the new concrete foundation abuts the existing foundation, connect the new to the existing using minimum (3) #4 by 18" long rebar dowels, epoxy grouted into 5/8" diameter by 5" deep holes drilled into the existing foundation. Each dowel shall be no closer than 3" to any edge or corner of concrete. Minimum spacing between dowels shall be 6". For concrete wall intersections longer than 3'-0" in any direction, additional dowels shall be located at 12" o.c. for the full height or length of the new foundation concrete.

Contact the engineer (prior to construction) for evaluation and approval of the existing foundation system, if there are any significant cracks in the existing foundation within 6 feet of the new foundation, or if there is any indication that the existing foundation is in poor condition, including visible rock pockets, non-uniform concrete, spalling, noticeable settlement of the existing footing, or other distress.

Roof Over Framing Note, Note OF:

The new roof area shown hatched consists of new roof framing constructed over the existing roof framing below. The over built framing shall be constructed in such a way as to distribute the roof loads from the new framing uniformly to the existing roof structure (for example, no new concentrated loads, such as from a beam, shall be added to the existing roof structure). This equal distribution may be accomplished by constructing the new overbuild roof using framed 2x4 cripple walls spaced at 2 feet on center, located on top of and perpendicular to the existing roof sheathing supported by the existing roof framing. No sheathing is required for these cripple walls.

The new cripple walls and roof rafters (spanning 2 feet, perpendicular to the cripple walls) may be constructed using 2x4 lumber, stud grade at minimum. The new plates shall be nailed to each existing rafter with (2) 16d nails minimum. New roof sheathing shall be per the diaphragm schedule.

A new 2x_ plate shall be constructed along the new valley lines, and nailed to each existing rafter,

along its entire length, with (2) 16d nails per existing rafter.

If desired, an alternate method for distributing the loads may be submitted to the structural

Hold Down Notes

<u>Convention for showing shear walls and hold downs:</u> Shear walls are shown on the framing plan for the floor above. (For example, first floor shear walls will be shown on the second floor framing plan, and the shear walls for the topmost floor will be shown on the roof framing plan.) Hold downs are located at the <u>bottom</u> of that shear wall, and connect the end of the shear wall to wall framing or a structural beam located in the floor below the shear wall. Contact the engineer of record for clarification if needed.

Hold downs for each floor must be continuously connected to hold downs on the floor below (or to other intermediate wood framing where so indicated), until they are finally connected to the concrete foundation.

Hold downs shall be installed so as to be as far apart as is reasonable. Hold downs may be located on either the near side or the far side of the post or double stud to which they are attached. In no case shall a hold down bolt be located farther than 6" from the end of the shear wall, except with prior written approval of the engineer. Refer to the latest edition of the Simpson Catalog for details.

Where multiple studs are called out at a hold down, nail studs together with (2) 16d nails at 8" o.c. or 1/4" x 3" Simpson SDS Screws at 12" o.c.

Strap Hold Downs:

Provide a vertically oriented strap hold down consisting of one or two of the Simpson vertical strap ties listed below, connecting the end stud or post of the shear wall indicated to new or existing studs in the wall framing below, or to a wood beam supporting the shear wall, where applicable. Straps shall be installed so that the minimum end length is provided to both connected posts or studs. Where a strap is connected to a below below, the strap shall be wrapped around the beam until the minimum end length is reached.

denotes a Simpson CS16 strap, with a minim end length of 14", and (13) 8d nails each end.

CMSTC16 denotes a Simpson CMSTC16 strap, with a minim end length of 25", and (29) 16d sinker nails each end.

CMST14 denotes a Simpson CMST14 strap, with a minim end length of 34", and (38) 10d nails each

CMST12 denotes a Simpson CMST12 strap, with a minim end length of 44", and (49) 10d nails each

Rod Hold Downs:

HDUx denotes a Simpson HDU(2,4,5,8,or 11)-SDS2.5 hold down. For hold down bolts at existing concrete foundations, use the following bolts:

For HDU2,4,5: 5/8" diameter A307 threaded steel rod may be used, which shall be epoxy grouted into a 3/4" diameter hole with a minimum embedment of 10".

For hold downs at new concrete foundations, provide the following bolts.

<u>For HDU2,4,5:</u> Simpson SB5/8x24 may be used, installed per the most recent edition of the Simpson Strong-Tie Literature.

The PAB anchor shall be continuous through the foundation stem wall, into the footing. Footings containing an anchor bolt shall be a minimum of 16" wide by 12" deep. The embedment depth shall be as shown in the Hold Down Bolt Embedment Table. The PAB threaded rod may be extended using an ASTM A194-2H coupler connecting to a 1" diameter ASTM A449 threaded rod.

Special Note:

All holes for hold down bolts which are installed into existing foundations must be inspected during the installation of the hold down. Either the building inspector, the structural engineer of record, or the special inspection agency must perform the inspection and approve it before the bolts may be epoxy grouted into the holes. The epoxy grout used must be Simpson SET-XP unless otherwise noted by the engineer of record.

For drilled holes into existing concrete, no less than 2" must be provided between the edge of the hole and the face of concrete. The Engineer of Record or Special Inspector must witness the installation of hold down bolts, including cleaning the holes with compressed air and a wire brush before the anchor is installed. The hole shall be filled with enough epoxy that when the anchor is inserted, the epoxy rises to the top of the concrete. Care shall be taken that no air bubbles persist in the epoxy.

The contractor must verify that the existing foundation stem wall is uncracked and continuous, and is sound and in good condition, within 5 feet of any retrofitted shear wall or hold down, in any direction, except with prior written approval of the engineer. The existing concrete foundation stem wall shall be at least 6" thick and 2'-6" in height. The concrete shall be of good quality, hard and uniform, with appropriate aggregate type, size and distribution, and with no visible rock pockets or other similar deficiencies.

Any existing cracks located within 10' of any hold down must be completely filled with an appropriate epoxy based concrete repair product. The product to be used shall be approved in writing by the engineer prior to filling the cracks.

Contact the engineer of record prior to proceeding if any of these requirements are not met, or if the installation of the hold downs results in any visible damage to the existing foundation.



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Taterial Edge Nailing Field Nailing Edge Blocking

Diaphragm Schedule

(Lumber for diaphragm construction is HF#2 or better, unless otherwise noted.)

SHEAR WALL SCHEDULE

(Lumber for shear walls is HF#2 or better, unless otherwise noted.)

A.B.

Nailing Field Nailing Size/Spacing Plate Nailing Plates

10d @ 3" 10d @ 12" 5/8"Ø @ 24" (2) 16d @ 4"

For shear wall callouts on the Structural Framing Plans: SW x (y') denotes a shear wall type "x" with a

• For SW3 and greater: studs, plates, and blocking where two WSP panels abut shall have a minimum 3" nominal thickness. Double 2x

• At the roof or top level of any shear wall, "A35 spacing", and all other relevant connector specifications, apply to assemblies at both the top

• Provide floor diaphragm edge nailing per diaphragm schedule through floor plywood into blocking, parallel joist framing, or top plates

• Where shear wall edge nails are spaced closer than 3" o.c., or spaced 3" o.c. with 10d nails, foundation sill plates and all framing members

• Where a shear wall terminates above the foundation level (no shear wall below), provide minimum 4x blocking or double joist framing (as

Shear wall nailing shall be common or galvanized box nails, unless lag screws are noted. Galvanized nails shall be hot dipped or tumbled.

• Lag screw plate connectors shall penetrate 3.5" minimum, and plates or beams receiving lag screws shall have a minimum width of 3.5".

• Where hold downs are specified, the shear wall bolt shall be located within 6 inches of the end of the shear wall, unless otherwise approved

applicable) below the shear wall."&" Plate nailing per this schedule shall be nailed into this blocking at the bottom of the shear wall.

10d @ 2" 10d @ 12" 5/8"Ø @ 24"

nembers may be used for study if the members are connected by plate nailing. Note 10d nails at WSP panel edges.

1/2"Ø @ 48" (2) 16d @ 9" 2x_

5/8"Ø x 8"

Lag @ 24"

A35

Spacing

Shear

Capacity

100 plf

230 plf

350 plf

550 plf

710 plf

Edge

• "WSP" refers to "Wood Structural Panel", either plywood or other wood materials.

and bottom of the shear wall. At lower levels, apply to the bottom of the wall only.

receiving edge nailing from abutting panels shall not be less than a single 3x_ member.

• Provide 3x_ plates, and 4x_ rim joists, minimum, where lag screws are specified for plate nailing.

• Provide 4x or double 2x framing where A35 angles are used on both sides of one piece of wood.

• Shear wall nails shall be placed no closer than 3/8" from a panel edge or perpendicular face of stud.

by the engineer of record. Minimum end studs shall be as specified in the most recent Simpson catalog.

• 2x_ plates may be substited for 3x_ plates if panels are nailed with edge nailing directly to the rim joist.

•Retrofit anchor bolts shall have a minimum embedment of 5" into the concrete foundation.

• Cast in place anchor bolts shall have a minimum embedment of 7" into the concrete foundation.

• Shear wall edge nailing through shear wall sheathing shall be provided into all study attached to a hold down.

• For SW3 and greater, foundation anchor bolt plate washers shall extend to within 1/2" of the edge of the sheathing.

Provide double stud minimum at both ends of all shear walls.

Maximum spacing between nails shall not exceed 12".

• Plate nails shall be nailed into a solid wood rim joist.

Material

side, unblocked

one side

one side

15/32" WSP

one side

15/32" WSP

minimum length of "v" feet.

(whichever applies) of all shear walls.

Unblocked 15/32" WSP one

SW1

SW3

Type Material Edge Nailing Field Nailing Edge Blocking Remarks
Roof 15/32" CDX 24/0 8d @ 6" o.c. 8d @ 12" o.c. no Minimum Standard
Floor 23/32" CDX 48/24 8d @ 6" o.c. 8d @ 12" o.c. no Minimum Standard

• "WSP" refers to "Wood Structural Panel", either plywood or other wood materials.

• Where 3x plates are used, (2) 20d common nails must be used instead of (2) 16d common nails to connect study to the bottom plate.

Rim joists at exterior walls shall be continuous for tension. At rim joist splice locations, provide (2) CS16 horizontal straps, minimum 24"
Where roof or floor framing is cantilevered over an exterior wall below, provide solid blocking with Diaphragm edge nailing between joists.
This is the minimum required diaphragm construction. Where otherwise noted on the plans, additional blocking or nailing may be required.