

GENERAL STRUCTURAL NOTES

GENERAL: All materials and workmanship shall conform to the International Building Code 2021 and all other standards and specifications adopted by the IBC 2021 Code, the local City or County building code, and the requirements of the drawings and specifications. The drawings indicate general and typical details of construction. Where conditions are not specifically indicated, but are of a similar character to details shown, similar details of construction shall be used subject to approval by the Architect and the Engineer of Record in writing.

The contractor shall provide temporary bracing for the structural components until all final connections have been completed. All structural systems, which are composed of components to be field erected shall be supervised by the supplier during manufacturing, delivery, handling storage and erection. Erection shall be in accordance with the instructions prepared by the supplier. Verify all existing dimensions, elevations, mechanical and electrical openings before proceeding with the work.

Any discrepancies between architectural, mechanical, and structural drawings shall be brought to the attention of the Architect and the Engineer in writing. Where there is conflict between the drawings and the IBC 2021, The International Building Code shall govern.

CONCRETE: All concrete shall conform to Chapter 19 of the IBC 2021 International Building Code and the American Concrete Institute ACI-318 Code latest edition adopted by the IBC 2021 Code. Construction documents for structural concrete shall conform to Section 1901.5.

SPECIAL INSPECTIONS: The special inspection of concrete elements shall be as required by Chapter 17 of the IBC 2021 Code Sections 1704, 1705 and Table 1705.3.

STANDARDS FOR TESTS AND MATERIALS: The materials to produce concrete, concrete itself and testing thereof shall comply with the applicable standards listed in Chapter 3 of the ACI 318 Code. Cement, aggregates, water, plain and deformed steel reinforcement shall be as required by Chapter 3 of the ACI 318 Code.

CONCRETE DESIGN PROPERTIES & STRENGTH: The value of  $f_c$  shall be in accordance with Section 19.2 of the ACI 318 Code item a through d. Limits for  $f_c$  for lightweight and normal weight concrete shall be in accordance with Table 19.3.2.1 of the ACI 318 Code. The specified compressive strength shall be used for proportioning of concrete mixtures according to Sections 26.4.3 and Section 26.12.3 for testing and acceptance. Unless otherwise specified  $f_c$  shall be based on 28-day test. Modulus of Elasticity and Modulus of Rupture shall be per Sections 19.2.2.1 and 19.2.3.1 of the ACI 318 Code.

DURABILITY REQUIREMENTS: Concrete durability requirements shall be in conformance with Section 1904.1 of the IBC 2021 Code and Section 19.3 of the ACI-318 Code. For Group R-2 and R-3 occupancies not more than three above grade plane, the compressive strength shall be not less than 3000 psi. Nonstructural concrete shall be in conformance with Section 1904.2 of the IBC 2021 Code. Concrete Durability shall be based on concrete exposure categories and exposure classes per Table 19.3.1.1 of the ACI-318 Code.

$f_c$ (psi)	Category	Class	Special inspection required	Application
2500	Freezing and Thawing (F)	F0	YES	Mat Foundation, Walls, and Ceiling

STEEL REINFORCEMENT PROPERTIES & DURABILITY: Non-prestressed bars and wires shall be deformed except plain bars and wires shall be permitted for use in spirals. All reinforcement shall be as required by Chapter 20 and Tables 20.1.3(a), Table 20.1.3(b) and Table 20.1.3(c) of the ACI 318 Code.

Use	Grade	$F_y$	$F_u$
All Reinforcement	60	60 ksi	24 ksi
Field Bent Bars & Welded Bars	60	60 ksi	24 ksi

Bars in beams and slabs shall be detailed in accordance with the ACI Manual of Standard Practice, for Detailing Reinforced Concrete Structures, latest edition. Minimum spacing, Standard Hooks, Seismic Hooks and Cross-ties, Splices, Bundled Reinforcement, Transverse Reinforcement and Post-tensioning anchorages and Couplers shall be as required by Chapter 25 of the ACI 318 Code.

REINFORCING STEEL PROTECTION  
Beam and Columns bars (to ties) 1-1/2"  
Slab and wall Bars Interior Faces 3/4"  
Exposed to Weather or Earth 2" (#6 and larger)  
1-1/2" (#5 and smaller)  
Footings & other unformed Surfaces, Earth Face 3"

CONCRETE WALL REINFORCING  
(Unless Shown Other Wise on Drawings)

Wall Thickness	Horizontal Bars	Vertical Bars	Location
6"	#4 @ 12" o.c.	#4 @ 18" o.c.	@ CL of wall
8"	#4 @ 10" o.c.	#4 @ 16" o.c.	@ CL of wall
8"	#5 @ 15" o.c.	#5 @ 18 o.c.	@ CL of wall

At all openings provide a minimum of two bars over, under and at sides. Provide two bars at the end of all walls. Extend horizontal bars at least 24" past the opening or as far as possible and hook. Extend vertical bars the full story height or as far as possible and hook. Provide one #5, 4'0" long, diagonally at each corner of all openings. Provide corner bars to match horizontal reinforcement in footings and walls.

MODIFICATIONS TO ACI 318: The following Sections of the ACI 318 Code shall be modified per Section 1905 of the IBC 2021 Code.

- Modify ACI 318 Sections 2.3 per Section 1905.1.1 of the IBC Code 2021
- Modify ACI 318 Section 18.2.1 per Section 1905.1.2 of the IBC Code 2021
- Modify ACI 318 Section 18.5 per Section 1905.1.3 of the IBC Code 2021
- Modify ACI 318 Section 18.1 per Section 1905.1.4 of the IBC Code 2021
- Modify ACI 318 Section 18.13.1.1 per Section 1905.1.5 of the IBC Code 2021
- Modify ACI 318 Section 14.6 per Section 1905.1.6 of the IBC Code 2021
- Delete ACI 318 Section 14.1.4 and replace it with Section 1905.1.7 of the IBC Code 2021
- Modify ACI 318 Section 17.2.3 per Section 1905.1.8 of the IBC Code 2021

STRUCTURAL PLAIN CONCRETE: The design and construction of structural plain concrete, both cast-in-place and precast, shall comply with the minimum requirements of ACI 318, as modified by Section 1905 of the IBC 2021.

MINIMUM SLAB PROVISIONS: The thickness of concrete floor slab supported directly on the ground shall not be less than 3-1/2" thick. A 6-mil (0.006 inch) polyethylene vapor retarder with joints lapped not less than 6" shall be placed between the base course or subgrade and the concrete floor slab. Exceptions shall be as listed on Section 1907 of the IBC Code 2021.

ANCHORING TO CONCRETE: The design of anchors in concrete used to transmit loads by means of tension, shear or combination of tension and shear between (a) connected structural elements; b) or safety-related attachments and structural elements. Safety levels specified are intended for in-service conditions rather than for short-term handling and construction conditions. Section 17.1.2 of the ACI-318 Code covers the following types of anchors:

- Headed Studs and Headed Bolts.
- Hooked bolts.
- Post installed expansion (torque controlled and displacement controlled) anchors.
- Post installed undercut anchors.
- Post installed screw anchors.

STRUCTURAL STEEL: The quality, design, fabrication, and erection of steel construction shall be in conformance with Chapter 22 of the IBC 2021.

IDENTIFICATION OF STEEL FOR STRUCTURAL PURPOSES: Identification of structural steel elements shall be in conformance with Section 2202 of the IBC 2021.

STEEL CONNECTIONS: The design, installation and inspection of bolts shall be in accordance with the requirements of Sections 2205, 2206, 2207, 2210 and 2211. The details of design, workmanship and technique for welding and qualifications of welding personnel shall be in accordance with specifications listed in Sections 2205, 2206, 2207, 2208, 2210 and 2211. Anchor rods shall as specified on the construction drawings.

STRUCTURAL STEEL DESIGN, FABRICATION AND ERECTION: The design, fabrication, and erection of Structural Steel Elements in buildings and portions thereof shall be in accordance with AISI 360. The seismic design, fabrication and erection of buildings, structures and portions thereof shall be in accordance with Section 2205.2.1 or 2205.2.2, as applicable.

ITEM	ASTM	
Plates, Shapes/Angles, and Rods	A36	$F_y = 36$ ksi
Anchor Bolts (Embedded in Mas. Or Conc.)	A307	$F_v = 10$ ksi
Structural Tubing (square or Rec.)	A500 Grade B	$F_y = 46$ ksi
Structural Steel Bolts	A325F	$F_v = 15$ ksi

Fabrication and erection shall be in accordance with the latest edition of the AISI Specification for the Design, Fabrication, and Erection of structural Steel for buildings. All bolts shall conform to ASTM A325F 3/4" diameter unless noted otherwise. All welding shall conform to the AWS codes for arc and gas welding in building construction. All welds shall be 3/16" minimum or per Section 1.17.5 of AISI (whichever is larger), unless otherwise noted. Welding electrodes shall be E70XX electrodes for manual shielding metal-arc welding. Welded joints shall conform to AWS prequalified joint details for welded construction. All welding shall be performed by AWS/WABO Certified welders. Fabricator must submit details to the local Building Authority for approval prior to fabrication. Three sets are required.

COLD-FORMED STEEL: The design of cold-formed steel shall be in accordance with AISI S100. The design of cold-formed stainless-steel structural members shall be in accordance with AISI S108. Cold formed steel light-frame construction shall also comply with the additional provisions of Section 2210.2 of the IBC 2021 Code.

LUMBER DECKING: Lumber decking shall be in conformance with Sections 2304.9.1 through 2304.9.5.3 of the IBC 2021 Code. Layup patterns shall be Single Span Pattern per Section 2304.9.2.1, Two Span Continuous Pattern per Section 2304.9.2.2, Combination Simple and Two Span Continuous Pattern per Section 2304.9.2.3, Cantilever Joist Intermixed Pattern per Section 2304.9.2.4 and Controlled Random Pattern per Section 2304.9.2.5. Mechanically Laminated Decking shall be in conformance with Section 2304.9.3 of the IBC 2021 Code.

SAWN LUMBER: Sawn lumber shall conform to West Coast Lumber Inspection Bureau Grading and Dressing Rules, latest edition. Each piece shall bear a grade mark as delivered. The base design values for visually graded dimension lumber are from 4A through 4F of the National Design Specification NDS 2018.

LUMBER SPECIFICATION FOR DOUGLAS FIR LARCH LUMBER

MEMBER	TYPE	SPECIES/GRADE	$F_b$ [PSI]	$F_v$ [PSI]	$E$ [KSI]
2x	Plates	DF-L Stud Grade	700	180	1400
2x	Studs	DF-L Stud Grade	700	180	1400
4x	Posts	DF-L # 2	900	180	1600
4x	Beams	DF-L # 2	900	180	1600
6x	Beams	DF-L # 1	1350	170	1600
8x	Beams	DF-L # 1	1350	170	1600
6x	Posts	DF-L # 1	1200	170	1600
8x	Posts	DF-L # 1	1200	170	1600
2x	Joints	DF-L # 2	900	180	1600
2x	Decking	Commercial Dex	1450		1700

LUMBER SPECIFICATIONS FOR HEM FIR LUMBER

MEMBER	TYPE	SPECIES/GRADE	$F_b$ [PSI]	$F_v$ [PSI]	$E$ [KSI]
2x	Plates	HF-Stud Grade	675	150	1200
2x	Studs	HF-Stud Grade	675	150	1200
4x	Posts	HF- # 2	850	150	1300
4x	Beams	HF- # 2	850	150	1300
6x	Beams	HF- # 1	1050	140	1300
8x	Beams	HF- # 1	1050	140	1300
6x	Posts	HF- # 1	975	140	1300
8x	Posts	HF- # 1	975	140	1300
2x	Joints	HF- # 1	850	150	1300
2x	Decking	HF- # 2	1150		1400

NORE: Applicable Adjustment Factors shall be used for design according to Table 4A & 4D of the National Design Specification NDS 2018

WOOD FRAMING NOTES:

- Minimum nailing requirements: Unless otherwise noted, minimum nailing shall be in accordance with Table 2304.10.1 of the IBC 2021 Code. Use common nails for shear walls and for horizontal diaphragms.
- At Sawn Timber Joint Areas: Provide cross bridging at 8'0" o.c. maximum spacing and solid blocking at bearing points. Provide double joists each side of openings unless detailed otherwise. Provide double joist under all non-load bearing, load bearing and shear walls, unless otherwise shown on the plans.
- Attach timber joists to flush headers and beams with Simpson "U" series metal joist hanger or similar to suit the joist size. Simpson Strong Tie Phone (800)999-5099 or www.strongtie.com.
- 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, Stockton, California. Equivalent devices by other manufacturers may be substituted, provided they have IBC 2018 Code approval for equal load capacities.
- Individual members of built-up posts and beams shall each be attached as specified on Table 2304.10.1 Item 26 or as specified on these plans.
- All wood framing details not shown otherwise shall be constructed to the minimum standards as set forth under "Conventional Light-Frame Construction Provisions" per Section 2308 of the IBC 2021.

- Joist framing from opposite sides of a beam, girder or partition shall be lapped at least 3" or the opposing joist shall be tied together in an approved manner.
- All posts and beams shall be connected in an approved manner to prevent against uplift and lateral displacement. Use Simpson connectors or approved equal.

PREFABRICATED WOOD TRUSSES: Trusses shall be designed by the manufacturer for the spans and conditions shown on the plans. Loading shall be as follows:

	ROOF ps.f.
Top Chord Snow Load	25 ps.f.
Top Chord Dead Load	7 ps.f.
Bottom Chord Dead Load	6 ps.f.
Total Load	38 ps.f.
Bottom chord Live Load Uninhabitable Attic no storage	10 (IBC 2021 Table 1607.1 Item 25)
Bottom chord Live Load Uninhabitable Attic with storage	20 (IBC 2021 Table 1607.1 Item 25)

The floor trusses shall also be designed to meet the requirements of IBC 2021 Sections 1605, 1606 & 1607 with a concentrated load where required by the type of occupancy and the live loads per Table 1607.1. Wood trusses shall be designed in accordance with section 2303.4 of the IBC 2021 Code. Wood trusses shall comply with sections 2303.4.1 through 2303.4.7. Truss drawings shall be provided for review to the engineer of record, and they shall be sealed by a professional engineer prior to submittal for review to the jurisdiction.

- If a different system is proposed which requires revisions to present structural framing, truss manufacturer shall deduct from his subcontract, the cost of revision by the Engineer of Record. This will subsequently be charged to the owner.
- Truss manufacturer shall clearly show all connection details, with loads, in calculations and on drawings. Loads from Jack, hip, valley trusses shall be accounted for on girder trusses. Reactions to beam and columns, or walls, shall be clearly shown on plans.
- Trusses shall be designed for the loads listed on Table 1607.1 of the IBC 2021 Code and the duration factors shall be per Table 2.3.2 of the NDS-2018.
- Trusses shall be designed using load combinations according to Sections 1605 of the IBC 2021 Code.
- Deflection under dead load and full dead plus live load shall not exceed the limits specified on Sections 1604.3 and Table 1604.3 of the IBC 2021 Code.
- Uplift wind loads shall be accounted for, especially local forces at discontinuities.
- Trusses connected to shear walls shall be designed for the allowable shear load of the connected shear wall for wind and seismic loads. Refer to the shear wall plan on the drawings and the trusses shall be designed for the combined loads of gravity and lateral load per Section 1605 of the IBC 2021 Code.

GLUED LAMINATED MEMBERS: Glued laminated members shall be manufactured and identified as required by IBC 2021 Sections 2303.1.3, ATIC A190.1 and ASTM D 3737. Each member shall bear an ATIC identification mark and be accompanied by an ATIC certificate of conformance. One coat of end sealer shall be applied immediately after trimming in field or shop. Beam shall be combination 24F-1.8E-24F-V4 DF/DF for simple span beams and 24F-1.8E-24F-V8 DF/DF for continuous span or cantilever beams unless otherwise specified on the plans. Glued laminated material must be obtained from a fabricator approved by the local building authority. Notify the local building authority when glued laminated materials arrive on site, prior to erection.

WOOD STRUCTURAL PANELS: Wood structural panels, when used structurally for siding, roof and wall sheathing, subflooring, diaphragms and build up members shall conform to the requirements for their type in DOC PS 1, DOC PS 2 or ANSI/APA PRP 210.

TRUSS JOISTS TJS: Should be as provided by Weyerhaeuser and spaced as specified on the plans. The installation should be as specified by the manufacturer and by the latest IBC Evaluation Report from IBC Evaluation Service, Inc. (www.IBC-es.org)

MICROLLAM\* LAMINATED VENEER LUMBER (LVL) BEAMS: Beams noted "ML" on the drawings are Microllam\* beams as manufactured by the Weyerhaeuser Corporation, with the following design properties:

1-3/4" 1.9E Microllam\* Laminated Veneer Lumber (LVL)

Shear Modulus of Elasticity	G	=	118750	Psi
Modules of Elasticity	E	=	1900000	Psi
Flexural Stress	Fb	=	2600	Psi
Comp. Perp. To grain Parallel to glue line	Fc	=	750	Psi
Comp. Parallel to grain	Ft	=	2510	Psi
Horizontal shear Perp. To glue	Fv	=	285	Psi

For installation and additional information refer to latest IBC Evaluation Report from IBC Evaluation Service, Inc. (www.IBC-es.org). Any drilled holes or cuts shall be approved in writing by the engineer of record.

PARALLAM\* PARALLEL STRAND LUMBER (PSL) BEAMS: Beams noted "PSL" on the drawings are Parallam\* beams as manufactured by the Weyerhaeuser Corporation with the following design properties:

1-3/4" to 7" 2.0E Parallam\* Parallel Strand Lumber (PSL)

Shear Modulus of Elasticity	G	=	125000	Psi
Modules of Elasticity <td>E <td>= <td>2000000 <th>Psi</th> </td></td></td>	E <td>= <td>2000000 <th>Psi</th> </td></td>	= <td>2000000 <th>Psi</th> </td>	2000000 <th>Psi</th>	Psi
Flexural Stress <td>Fb <td>= <td>2900 <th>Psi</th> </td></td></td>	Fb <td>= <td>2900 <th>Psi</th> </td></td>	= <td>2900 <th>Psi</th> </td>	2900 <th>Psi</th>	Psi
Comp. Perp. To grain Parallel to glue line <td>Fc <td>= <td>750 <th>Psi</th> </td></td></td>	Fc <td>= <td>750 <th>Psi</th> </td></td>	= <td>750 <th>Psi</th> </td>	750 <th>Psi</th>	Psi
Comp. Parallel to grain <td>Ft <td>= <td>2900 <th>Psi</th> </td></td></td>	Ft <td>= <td>2900 <th>Psi</th> </td></td>	= <td>2900 <th>Psi</th> </td>	2900 <th>Psi</th>	Psi
Horizontal shear parallel to grain <td>Fv <td>= <td>290 <th>Psi</th> </td></td></td>	Fv <td>= <td>290 <th>Psi</th> </td></td>	= <td>290 <th>Psi</th> </td>	290 <th>Psi</th>	Psi

For installation and additional information refer to latest IBC Evaluation Report from IBC Evaluation Service, Inc. (www.IBC-es.org). Any drilled holes or cuts shall be approved in writing by the engineer of record.

PLYWOOD ROOF AND FLOOR SHEATHING: Roof and Floor structural sheathing shall be in conformance with Sections 2301.8 of the IBC 2021 Code. Plywood for roof shall have Exposure Durability Classification of Exterior, and Plywood for floors shall be T & G (Tongue - and - Groove) Exposure 1. Use T&G or ply clips where span exceeds unblocked edge span rating. Floor sheathing conforming to the provisions of Tables 2304.8(1), 2308.8(2), 2304.8(3) or 2304.8(4) shall be deemed to meet the requirements of the IBC 2021 Code. Roof sheathing conforming to the provisions of Table 2304.8(1), 2304.8(2), 2304.8(3) or 2305.8(5) shall be deemed to meet the requirements of the IBC 201 Code.

Plywood thickness shall be as shown on plans. Nail all plywood to supporting members as follows: 10d commons @ 6" o.c. at sheet edges and diaphragm boundaries, and 10d commons @ 12" o.c. at interior bearing points, unless shown otherwise on the drawings. 14-gauge staples, 1-3/4" long with a minimum crown width of 7/16" may be substituted for nails, installed with their crowns parallel to the framing members at wood panel diaphragms and shear walls.

CONNECTORS AND FASTENERS: The installation of all mechanical connections for wood construction shall be as specified on Chapter 11 through 14 of the National Design Specification NDS 2018 and adopted by the IBC 2021 on section 2301.2 and 2306. Fasteners and Connectors shall be in conformance with the provisions of Section 2304.10 of the IBC 2021 Code. Fasteners and connectors in contact with preservative-treated and fire-retardant-treated wood shall be in conformance with sections 2304.10.5 through 2304.10.5.4 of the IBC 2021 Code. Connectors that are used in exterior applications and in contact with preservative-treated wood shall have coating types and weights in accordance with the treated wood or connector's manufacturer's recommendations, a minimum of ASTM A 653, Type G185 zinc-coated galvanized steel, or equivalent, shall be used.

TIMBERSTRAND\* LAMINATED STRAND LUMBER (LSL): Beams noted "LSL" on the drawings are Timber Strand\* beams as manufactured by Weyerhaeuser Corporation, with the following design properties:

1-3/4" & 3-1/2" 1.5SE Timber Strand\* LSL

Shear Modulus of Elasticity	G	=	96875	Psi
Modules of Elasticity <td>E</td> <td>=</td> <td>1550000</td> <th>Psi</th>	E	=	1550000	Psi
Flexural Stress <td>Fb</td> <td>=</td> <td>2325</td> <th>Psi</th>	Fb	=	2325	Psi
Comp. Perp. To grain Parallel to glue line <td>Fc</td> <td>=</td> <td>800</td> <th>Psi</th>	Fc	=	800	Psi
Comp. Parallel to grain <td>Ft</td> <td>=</td> <td>2050</td> <th>Psi</th>	Ft	=	2050	Psi
Horizontal shear Perp. To glue <td>Fv</td> <td>=</td> <td>310</td> <th>Psi</th>	Fv	=	310	Psi

For installation and additional information refer to latest IBC Evaluation Report from IBC Evaluation Service, Inc. (www.IBC-es.org). Any drilled holes or cut-outs shall be approved in writing by the engineer of record.

BOLTS: Design provisions and values per Chapters 11 & 12 of the National Design Specifications NDS 2018. Bolt holes shall be a minimum of 1/32" to a maximum 1/16" larger than the bolt diameter. Careful centering of holes in main members and splice plates is required. Tight fit requiring forcible driving is not allowed. A metal plate, metal strap, or washer not less than a standard cut washer shall be between the wood and the bolt head and between the wood and the nut.

EDGE DISTANCE REQUIREMENTS FOR BOLTS

Direction of Load Minimum Edge Distance  
Parallel to grain when  $L/D \leq 6$  1.5"D  
Parallel to grain when  $L/D > 6$  1.5"D or 1/2" the spacing between rows, whichever is greater.  
Perpendicular to grain loaded edge 4"D  
Perpendicular to grain unloaded edge 1.5"D

The L/D used to determine the minimum edge distance shall be the lesser of the (length of bolt in main member)/D or (length of bolt in the side member)/D.

LAG SCREWS: Lead holes for lag screws shall be prepared by the contractor as specified on Section 12.1.5.1 of the NDS 2018 specifications.

- The clearance hole for the shank shall have the same diameter as the shank, and the same depth of penetration as the length of unthreaded shank.
- The lead holes for the threaded portion shall be as listed below:  
65% to 85% of the shank diameter in wood with  $0.6 < G < 0.6$   
60% to 70% of the shank diameter in wood with  $0.5 < G < 0.6$   
40% to 70% of the shank diameter in wood with  $G < 0.5$

Refer to Table 12.3.3.A of the NDS 2018, to determine the "G" Specific Gravity values for the species of wood applicable to the installation of the large screws. Minimum edge distances, and distances, spacing and associated geometry factors for lag screws shall be the same as for bolts with a diameter equal to the shank diameter of the lag screws.

WOOD SCREWS: Design provisions and values per chapter 11 & 12 of the NDS 2018. The wood screw shall be inserted in its lead hole by turning with a screwdriver or other tool, not by driving with a hammer. Lead holes shall be prepared as follows prior to the installation of the wood screws:

- The lead holes for wood screws loaded in withdrawal shall have diameters equal the root diameter percentages listed below:  
90% of the wood screw root diameter for wood of  $G > 0.6$   
70% of the wood screw root diameter for wood of  $0.5 < G < 0.6$   
No lead hole may be provided for wood of  $0.5 < G < 0.6$

- Lead holes for wood screws loaded laterally should be bored as follows:  
For wood  $G < 0.6$  the part of the lead hole receiving the shank and the threaded portion shall have about seven eighths of the shank and threaded part of the wood screw respectively.
- Refer to Table 12.3.3.A of the NDS 2018 to determine the "G" Specific Gravity values for the species of wood applicable to the installation of the wood screws.

Nominal wood screw lateral design values are based on wood screw penetration into the main member of approximately seven times the shank diameter  $p=7D$ . The minimum wood screw penetration into the main member for reduced design value shall be four times the shank diameter,  $p_{min} = 4D$ .

Edge distance, end distance and spacing for wood screws shall be enough to prevent splitting of the wood.

NAILS AND SPIKES: Nails & Spikes shall be per Chapters 11 & 12 of the NDS 2018. Common steel wire nails and pikes, box nails and threaded hardened-steel nails shall conform to nominal sizes specified in Federal Specifications FF-N-105B. Threaded, hardened-steel nails and spikes shall be made of high carbon steel wire, heat, pointed, annularly or helically treated and tempered to provide greater yield strength than common wire nails of same size.

When bored holes are required to prevent splitting of wood, the diameter of the bored holes shall not exceed 90 percent of the nail or spike for wood with  $G < 0.6$ , or 75 percent of the nail or spike diameter for wood with  $G > 0.6$ .

Refer to Table 12.3.3.A of the NDS 2018, to determine the "G" Specific Gravity values for the species of wood applicable to the installation of the nails and spikes.

PROTECTION AGAINST DECAY AND TERMITES: Wood support embedded in the ground or indirect or indirect contact with the earth and used for support of permanent structures shall be treated wood. Round or rectangular posts, poles and sawn timber columns supporting permanent structures which are embedded in concrete or masonry exposed to weather shall be treated wood. Refer to Section 2304.11 of the IBC 2021 Code.

PLATES, SILLS AND SLEEPERS: Sleepers and sills on a concrete or masonry slab or foundation that is in direct contact with earth shall be of naturally durable or preservative-treated wood per Section 2304.12 of the IBC 2021 Code.

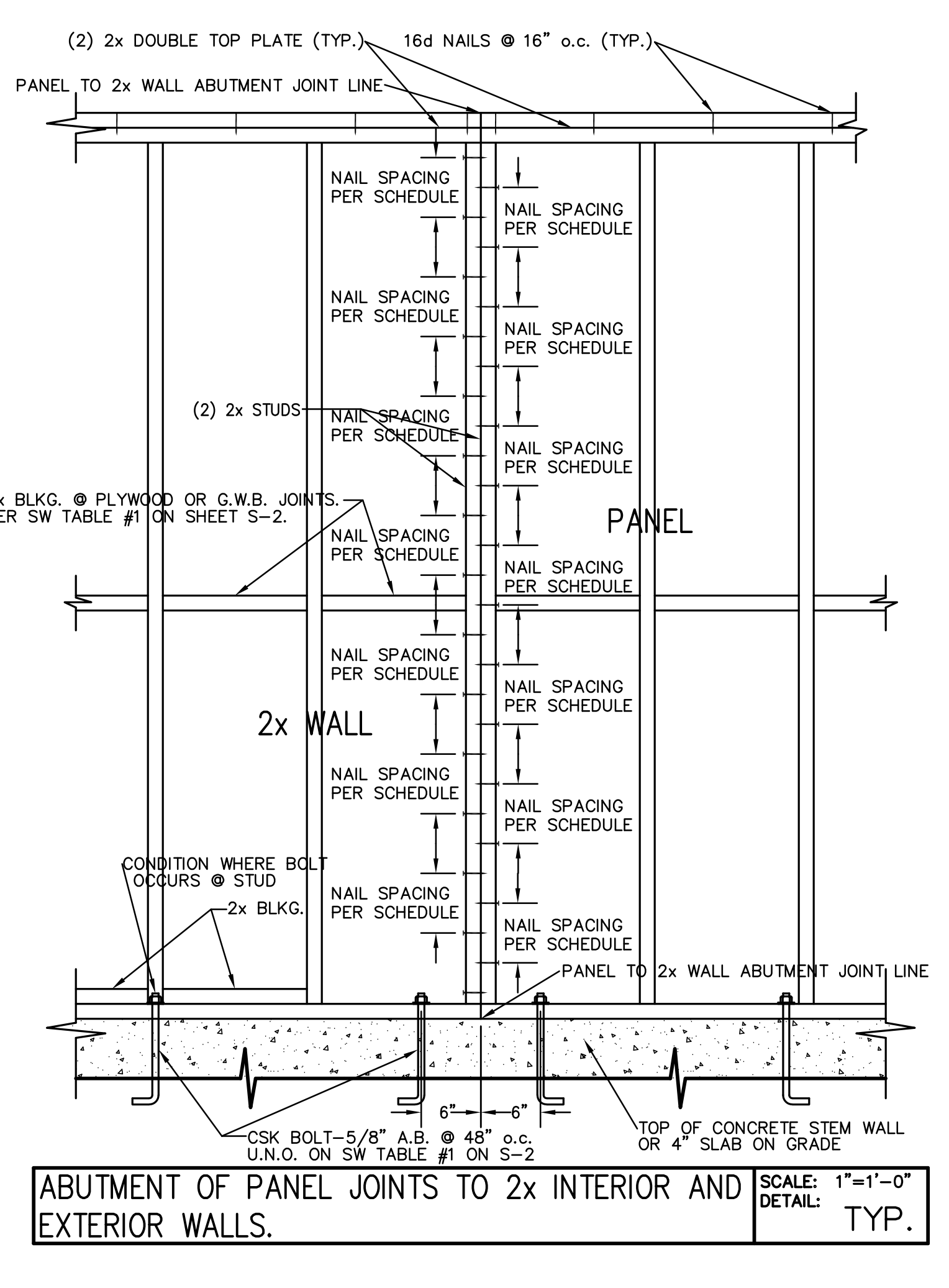
PROTECTION AGAINST DECAY AND TERMITES: Wood shall be protected from decay and termites in accordance with Section 2304.12. Locations requiring waterborne preservatives or naturally durable woods shall be as specified on Sections 2304.12.1.1 through 230



**TABLE # 1 (SHEAR WALL TABLE # 1 ON S-02)**

SHEAR WALL TABLE DOUGLAS FIR LARCH 7/16" PANEL THICKNESS AND 1/2" OR 5/8" GYPSUM WALL BOARD																					
See the plans to determine the different designators for shear wall materials, nailing, anchor bolts and holdowns																					
Locate holdowns as close as possible to the end of the designated shear wall																					
Blocking for the horizontal joints in the Gypsum Wall Board (GWB) or Gypsum Sheathing Board (GSB) is required only if specifically called out below.																					
Specific Gravity	0.50	Allowable Lateral Load 10d Nails	118	Allowable Lateral Load 16d Nails	141	Allowable Lateral Load 5/8" Diameter Bolt	650	Allowable Lateral Load 5/8" Diameter Bolt	930	A35	670	LPT4	670								
G1 - ONE SIDE GWB OR GSB					G2 - TWO SIDED GWB OR GSB					P1 - ONE SIDE PLYWOOD					P2 - TWO SIDED PLYWOOD						
WALL		NAILING		NAIL SPACING BLKG		PLATE		PLATE		PLATE		TOE NAILING OR SIMPSON CLIP (SEE NOTE (B) FOR SEISMIC DESIGN CATEGORY D, E & F)				HARDWARE LPT4/A35		ALLOWABLE LOAD (#/LF)			
TYPE	1 1/2" GYP	5/8" GYP	EDGES	STUDS	REQD	ANCHOR BOLTS 1/2"	ANCHOR BOLTS 5/8"	NAILING 10d	NAILING 16d	NAILING 10d	NAILING 16d	NAILING 10d	NAILING 16d	NAILING 10d	NAILING 16d	LPT4	A35	WIND	SEISMIC	COMMENTS	
G1-7	5D		7"	7"	no	1/2" @ 72	5/8" @ 72	(2) 10d @ 32	(2) 16d @ 48	10d @ 32	16d @ 32	72	72	100	100						
G1-4	5D		4"	4"	no	1/2" @ 72	5/8" @ 72	(2) 10d @ 32	(2) 16d @ 32	10d @ 24	16d @ 32	48	48	125	125						
G1-4B	5D		4"	4"	no	1/2" @ 72	5/8" @ 72	(2) 10d @ 32	(2) 16d @ 32	10d @ 24	16d @ 32	48	48	150	150						
G1-4B+	5D	6D	4"	4"	no	1/2" @ 72	5/8" @ 72	(2) 10d @ 24	(2) 16d @ 24	10d @ 18	16d @ 24	32	32	175	175						
G2-B9F7	5D	6D	B-9" F-7"	B-9" F-7"	2x4	1/2" @ 48	5/8" @ 48	(2) 10d @ 18	(2) 16d @ 18	10d @ 12	16d @ 12	32	32	250	250						B=Base Layer / F=Face Layer
G2-7	5D		7"	7"	no	1/2" @ 48	5/8" @ 48	(2) 10d @ 18	(2) 16d @ 18	10d @ 12	16d @ 12	32	32	200	200						
G2-4	5D		4"	4"	no	1/2" @ 48	5/8" @ 48	(2) 10d @ 18	(2) 16d @ 18	10d @ 12	16d @ 12	32	32	250	250						
G2-4B	5D		4"	4"	no	1/2" @ 48	5/8" @ 48	(2) 10d @ 18	(2) 16d @ 18	10d @ 12	16d @ 12	24	24	300	300						
G2-4B+	5D	6D	4"	4"	no	1/2" @ 48	5/8" @ 48	(2) 10d @ 18	(2) 16d @ 18	10d @ 12	16d @ 12	24	24	300	300						
G2-4B+	5D	6D	B-9" F-7"	B-9" F-7"	2x4	1/2" @ 24	5/8" @ 32	(2) 10d @ 18	(2) 16d @ 11	10d @ 12	16d @ 9	12	12	500	500						B=Base Layer / F=Face Layer

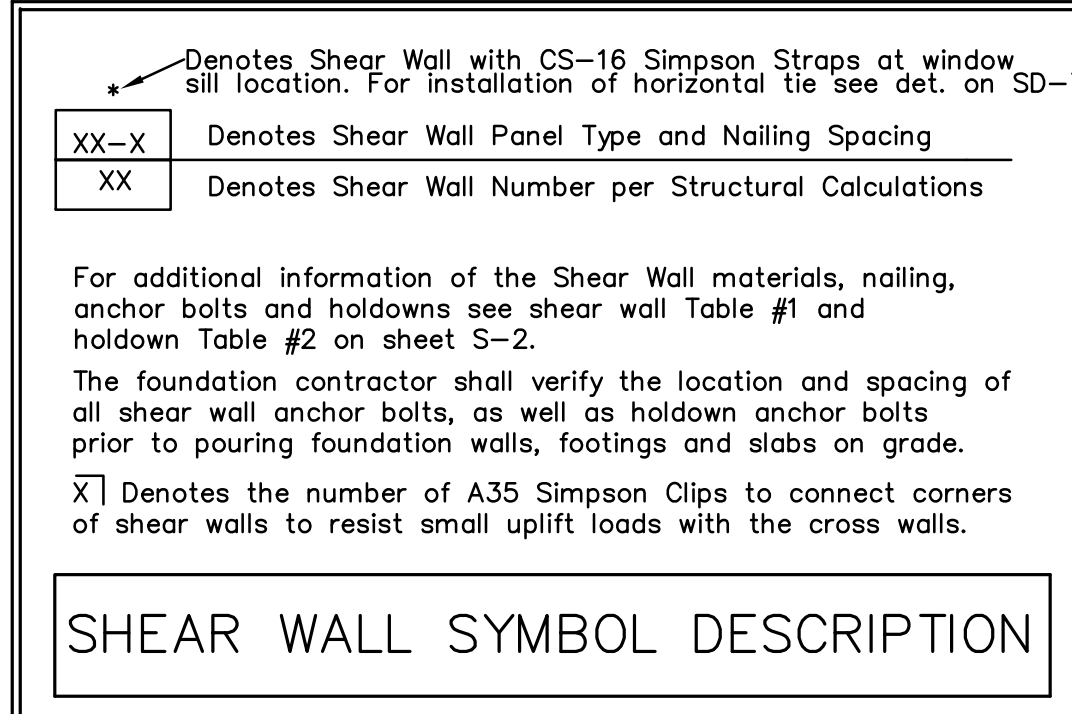
- Nominal unit shear capacities shall be adjusted in accordance with 4.3.3 to determine ASD allowable unit shear capacity and LRFD factored unit resistance. For general construction requirement see 4.3.6. For specific requirements see 4.3.7.1 for wood structural panel shear walls 4.3.7.2 for particle-board shear walls. See Appendix A for common and boxinal dimensions.
- Shears are permitted to be increased to values shown for 15/32 inch (nominal) sheathing with same nailing provided (a) studs are spaced a maximum of 16 inches on center, or (b) panels are applied with long dimension across studs.
- For species and grades of framing other than Douglas-Fir-Larch or Southern Pine, reduced nominal unit shear capacities shall be determined by multiplying the tabulated unit shear capacity by the Specific Gravity Adjustment Factor =  $[1 - (0.5G)^2]$ , where G = Specific Gravity of the framing lumber from NDS (Table 12.3.3A). The Specific Gravity Adjustment Factor shall not be greater than 1.
- Apparent shear stiffness Value  $G_a$  is based on nail slip in framing with moisture content less than or equal to 19% at time of fabrication and panel stiffness values for shear walls constructed with either OSB or 3-ply plywood panels or composite panels are used,  $G_a$  values shall be permitted to be multiplied by 1.2.
- Where moisture content of the framing is greater than 19% at time of fabrication,  $G_a$  values shall be multiplied by 10.5.
- Where panels are applied on both faces of a shear all and nail spacing is less than 6" on center on either side, panel joints shall be offset to fall on different framing members. Alternatively, the width of the nailed face of framing members shall be 3" nominal or greater at adjoining panel edges and nails at all panel edges shall be staggered.
- Galvanized nails shall be hot-dipped and tumbled.
- In seismic design categories D, E and F, the capacity of toe-nail connections shall not be used where calculated lateral load resistance to transfer seismic forces is greater than 150 #/Ft. for ADS and 205 #/Ft. for LRFD from diaphragms to shear wall. See section 4.1.7. of the NDS Code.
- Where anchor bolts are used, a minimum 0.299" x 3" x 3" steel plate washer shall be used at each anchor bolt location. The edge of the plate washer shall extend to within 1/2" of the edge of the bottom plate on the sheathing unless other approved method is used.



**NAILING SCHEDULE FOR PANEL TO 2x WALL ABUTMENT JOINT.**

SHEAR WALL TYPE	NAIL SPACING AT ABUTMENT JOINT	
	(2) 10d NAILS	(2) 16d NAILS
P1-6 (1)	Nail Spacing @ 12" o.c.	Nail Spacing @ 12" o.c.
P1-4	Nail Spacing @ 8" o.c.	Nail Spacing @ 10" o.c.
P1-3	Nail Spacing @ 7" o.c.	Nail Spacing @ 8" o.c.
P1-2	Nail Spacing @ 5" o.c.	Nail Spacing @ 6" o.c.

(1) Double studs are required only when P1-6 seismic allowable loads are greater than 350 #/Ft. as shown on the shear wall table above



**TABLE # 2 (HOLDOWN TABLE # 2 ON S-02) HOLDOWNS & TENSION TIES PER SIMPSON STRONG-TIE**  
(See detail 4/SD5 for anchor bolt end and edge distance guide by Simpson)

**CS/CMST Coiled Straps**

CMST provides nail slots for easy installation and covered edges. It can be cut to length. CMST continuous utility straps which can be cut to length on the job site. Packaged in lightweight (about 40 pounds) cartons.

**FINISH:** Galvanized. Some products available in ZMAX® coating. See Corrosion Information, page 18-19.

**INSTALLATION:** Use all specified fasteners. See General Notes.

- Wood shrinkage after strap installation across horizontal wood members may cause strap to buckle outward.
- Refer to the applicable code for minimum nail penetration and minimum wood edge and end distances.
- The table shows the maximum allowable loads and the nails required to obtain them.
- Lower nails may be used, inside the allowable load as shown in footnote #3.
- The cut length of the strap shall be equal to twice the "End Length" noted in the table plus the clear span dimension.
- CMST only-Use every other round hole if the wood tends to split. Use round and triangle holes for compatible MST loads, providing wood does not tend to split.
- For lap splice and alternate nailing information, refer to technical bulletin T-CMST (see page 2/5 for details).
- CS straps are available in 25' lengths, either CS14-R, CS16-R, CS18-R, CS20-R or CS22-R.

**CODES:** See page 20 for Code Reference Key Chart.

These products are available with additional corrosion protection. Additional products on this page may also be available with this option. Check with Simpson Strong-Tie for details.

Model No.	Total L	Ga	DF/SP		SP/FF		Allowable Tension Loads (16d)	Code Ref.
			Fasteners	End Length	Fasteners	End Length		
CMST12	40	12	16d	16d	16d	16d	2975	
CMST14	52 1/2	14	16d	16d	16d	16d	4490	
CMST16	54	16	16d	16d	16d	16d	4585	
CMST18	100	18	16d	16d	16d	16d	2490	
CMST20	150	20	16d	16d	16d	16d	1705	
CMST22	300	22	16d	16d	16d	16d	845	

1. Loads include a 60% load duration increase on the fasteners for wind or seismic loading.  
2. Use half of the required nails in each member being connected to achieve the listed loads.  
3. Calculate the connector value for a reduced number of nails as follows: Allowable Load = No. of Nails in Table x Table Load. Example: CMST14 (16d) @ 8" o.c. nails total. No. of nails used = 10. Allowable Load = 10/52.5 x 4490 lbs = 858 lbs (Half of the nails in each member being connected). Allowable Load = 50 Nails (10d) x 4585 lbs = 22925 lbs.  
4. Tension loads apply for uplift when installed vertically.  
5. NAILS: 16d = 0.148" dia x 3 1/2" long, 16d Sinker = 0.148" dia x 3 1/2" long, 16d = 0.148" dia x 3" long. See page 24 for other nail sizes and information.

**TS Twist Straps**

Twist straps provide a tension connection between two wood members. An equal number of right and left hand twists are supplied in each carton.

**MATERIAL:** 16 gauge. **FINISH:** Galvanized. See Corrosion Information, page 18-19.

**INSTALLATION:** Use all specified fasteners. See General Notes.

- TS should be installed in pairs to reduce eccentricity.

**CODES:** See page 20 for Code Reference Key Chart.

Model No.	L	Fasteners (Total)	Allowable Loads (16d)	Code Ref.
TS9	9	8-16d	530	
TS12	11 1/2	10-16d	665	
TS18	17 1/2	14-16d	930	
TS22	21 1/2	18-16d	1215	

1. Install half of the fasteners on each end of the strap to achieve full loads.  
2. Loads have been increased 60% for wind or seismic loading with no further increase allowed, reduce where other loads govern.  
3. 16d sinkers (0.148" dia x 3 1/2") may be substituted for the specified 16d connectors at 0.94 of the table loads.  
4. Loads are for a single TS.  
5. NAILS: 16d = 0.148" dia x 3 1/2" long. See page 24 for other nail sizes and information.

**LSTHD/STHD Strap-Tie Holdown**

This product is preferable to similar connectors because of a) easier installation, b) higher loads, c) lower installed cost, or a combination of these features.

The STHD is an embedded strap-tie holdown offering high load capacity and a staggered nail pattern to help minimize splitting. The STHD incorporates many features that aid correct installation and improve performance. When installed on the forms with the StrapMate® strap holder the unique design of the STHD delivers enhanced stability before and during the pour to help prevent both parallel and perpendicular movement (relative to the form). This results in accurate positioning of the strap and reduced possibility of spalling.

The Simpson Strong-Tie® STHD strap-tie holdowns are now code listed by ICC-ES under the 2006 and 2010 IRC and IBC to meet the requirements of ICC-ES acceptance criteria AC 309. See ICC-ES ESR-2320 for more information.

**FEATURES:**

- The nailing pattern allows for nailing to the edges of double 2x's
- Strap nail slots are countersunk to provide a lower nail head profile
- The slots below the embedment line enable increased front-to-back concrete bond and help to reduce spalling.
- Rim joint models accommodate up to a 1 1/2" clear span without any loss of strap nailing.

**MATERIAL:** LSTHD: LSTHD18R-14 gauge, all others-12 gauge  
**FINISH:** Galvanized

**INSTALLATION:** Use all specified fasteners. See General Notes.

- Use StrapMate for both standard concrete and post-tension slab installations.
- Install before concrete pour with a StrapMate, or other holding device.
- Nail strap from the bottom up.
- Strap may be bent one full cycle (bent horizontal 90° then bent vertical) to aid wall placement, but may cause spalling behind the strap. If the spall is 1" or less, measured from the embedment line to the bottom of the spall, full loads apply. Any portion of the strap left exposed should be protected against corrosion.
- Unless otherwise noted, do NOT install where: (a) a horizontal cold joint exists within the embedment depth between the slab and foundation wall or footing beneath, unless provisions are made to transfer the load, or (b) slabs are poured over concrete block foundation walls.
- Additional studs attached to the shearwall studs or post may be required by the Designer for wall sheathing nailing.

**CS16 Hole Pattern**  
(All other CS Straps similar)

**CS14 Hole Pattern**  
(CMST14 similar)

**CMST14 Hole Pattern**

**CMST16 Hole Pattern**

Gauge stamped on part for easy identification

Typical TS Installation

Typical STHD14RJ Rim Joint Application

**Holdowns & Tension Ties**

**WIND AND SOCA & B - ALLOWABLE TENSION LOADS FOR DF/SP/FF/FF (16d)**

Min. Stem Wall (in)	Model No.	Strap Length (L) (in)	Req. 4' Nails		Non Cracked				Cracked				Code Ref.
			Standard	Rim Joint	Midwall	Corner	Endwall	Midwall	Corner	Endwall			
6	LSTHD18	18	32	32	8	20-16d Sinks	2960	1060	2675	2335	1835	05	
	STHD18	18	24	24	14	24-16d Sinks	3820	3070	3160	3140	1700		
	LSTHD14	14	26	26	14	30-16d Sinks	5150	5150	3200	5150	3200		
	STHD14	14	20	20	8	20-16d Sinks	3115	2960	2220	2675	2335		
8	LSTHD10	10	24	24	8	20-16d Sinks	4735	4170	3145	4195	3500	05	
	STHD10	10	24	24	10	20-16d Sinks	5245	5245	4195	5245	4195		
	LSTHD4	4	26	26	14	30-16d Sinks	3015	3015	3500	3015	3500		
	STHD4	4	20	20	8	20-16d Sinks	3015	3015	3500	3015	3500		

**SDC C-F - ALLOWABLE TENSION LOADS FOR DF/SP/FF/FF (16d)**

Min. Stem Wall (in)	Model No.	Strap Length (L) (in)	Req. 4' Nails		Non Cracked				Cracked				Code Ref.
			Standard	Rim Joint	Midwall	Corner	Endwall	Midwall	Corner	Endwall			
6	LSTHD18	18	32	32	8	16-16d Sinks	2770	2185	1720	2250	1875	05	
	STHD18	18	24	24	10	16-16d Sinks	2750	2750	1615	2640	1615		
	LSTHD14	14	26	26	14	22-16d Sinks	3605	3605	2605	3605	2605		
	STHD14	14	20	20	8	16-16d Sinks	2615	2185	1635	2250	1875		
8	LSTHD10	10	24	24	8	16-16d Sinks	3400	2940	2290	3400	2940	05	
	STHD10	10	24	24	10	20-16d Sinks	3400	2940	2290	3400	2940		
	LSTHD4	4	26	26	14	24-16d Sinks	3015	3015	3500	3015	3500		
	STHD4	4	20	20	8	16-16d Sinks	3015	3015	3500	3015	3500		

1. Allowable loads are for wind or seismic loading. Nail quantities reflect an increase in duration of load with no further increase allowed. Reduce where other loads govern.  
2. Concrete shall have a minimum concrete strength,  $f_c$ , of 2500 psi.  
3. 10d common CS 1" long x 0.148" diameter nails may be used with no load reduction when installed directly over framing. For installation over structural sheathing, use 10d common or 16d sinkers.  
4. Use the specified number of nails listed in table or as specified, in many cases all nail lengths may be listed from the bottom up.  
5. The Designer may specify a reduced quantity of nails for some applications. See F-NAILPPT for details.  
6. Deflection at highest allowable loads for install over wood double studs are as follows: Included on forms: LSTHD18 = 0.08", STHD18 = 0.09", STHD18 = 0.11", and STHD18 = 0.11". Installed over structural sheathing: LSTHD18 = 0.14", STHD18 = 0.12", STHD18 = 0.14" and STHD18 = 0.14".  
7. Multiple Seismic and Wind ASD load values by 1.4 or 1.6 respectively to obtain LRFD capacities.  
8. The Wind and SOCA & B Section 1013.1. Attached one- and two-family dwellings in Seismic Design Category (SDC) C may use "Wind and SOCA & B" allowable loads.  
9. Members cast to concrete quality 3 times the region embedment ( $f_{cm} = 3f_c$ ) for STHD's acting in tension simultaneously. Midwall install is based on 1.5x, end distance.  
10. See SDC C-1013B for installation on structural composite beam/ post/ columns (see page 2/5 for details).  
11. NAILS: 16d sinker = 0.148" dia x 3 1/2" long. See page 24 for other nail sizes and information.

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Mercer Island, WA 98040

Designer: Elizabeth Scallon And Shena Smith-Connolly  
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Mercer Island, WA 98040

Owners: Elizabeth Scallon And Shena Smith-Connolly  
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Applicable Codes:  
IBC & IRC 2021

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Plot Date: Jan. 24, 2025

Revisions:

Mark	Description	Date

Sheet Content:  
SHEAR WALL TABLES,  
HOLDOWN TABLES,  
SHEAR WALL SYMBOL.

Drawn By: \_\_\_\_\_ Checked By: JCL

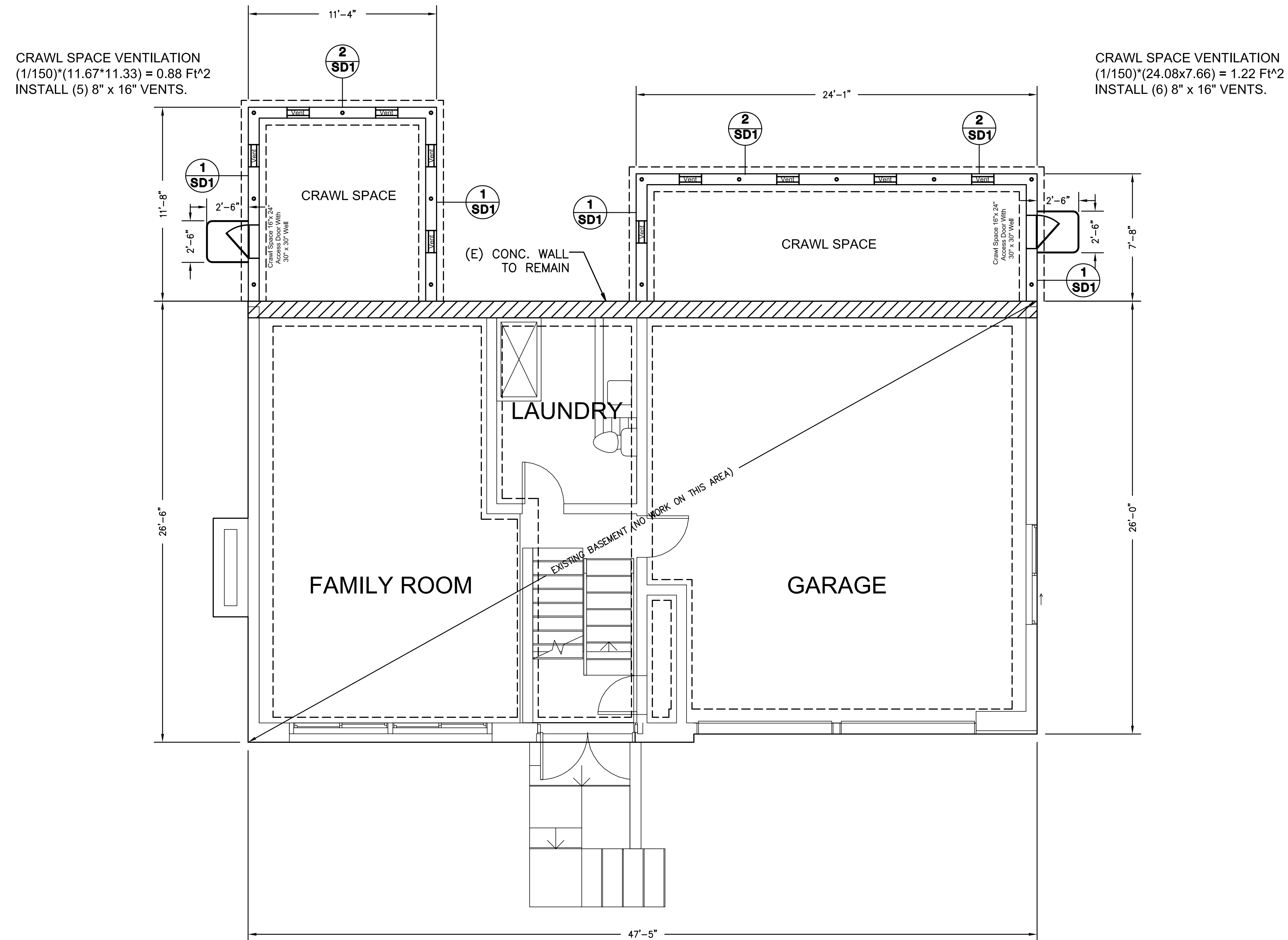
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Project No. 23-41 Sheet No. S-2

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**FOUNDATION PLAN SHOWING 2" STEEL PILES**  
**Scale 1/4" = 1'-0"**

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Revisions:		
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Sheet Content:  
 PROPOSED FOOTINGS & FOUNDATION WALLS FOR ADDITION

Drawn By: R.I. | Checked By: JCI

Date of Issue: Jan. 24, 25  
 Project No. Sheet No.  
 23-41 S-03

## 2" PIPE PILE SPECIFICATIONS

### PIPE PILES

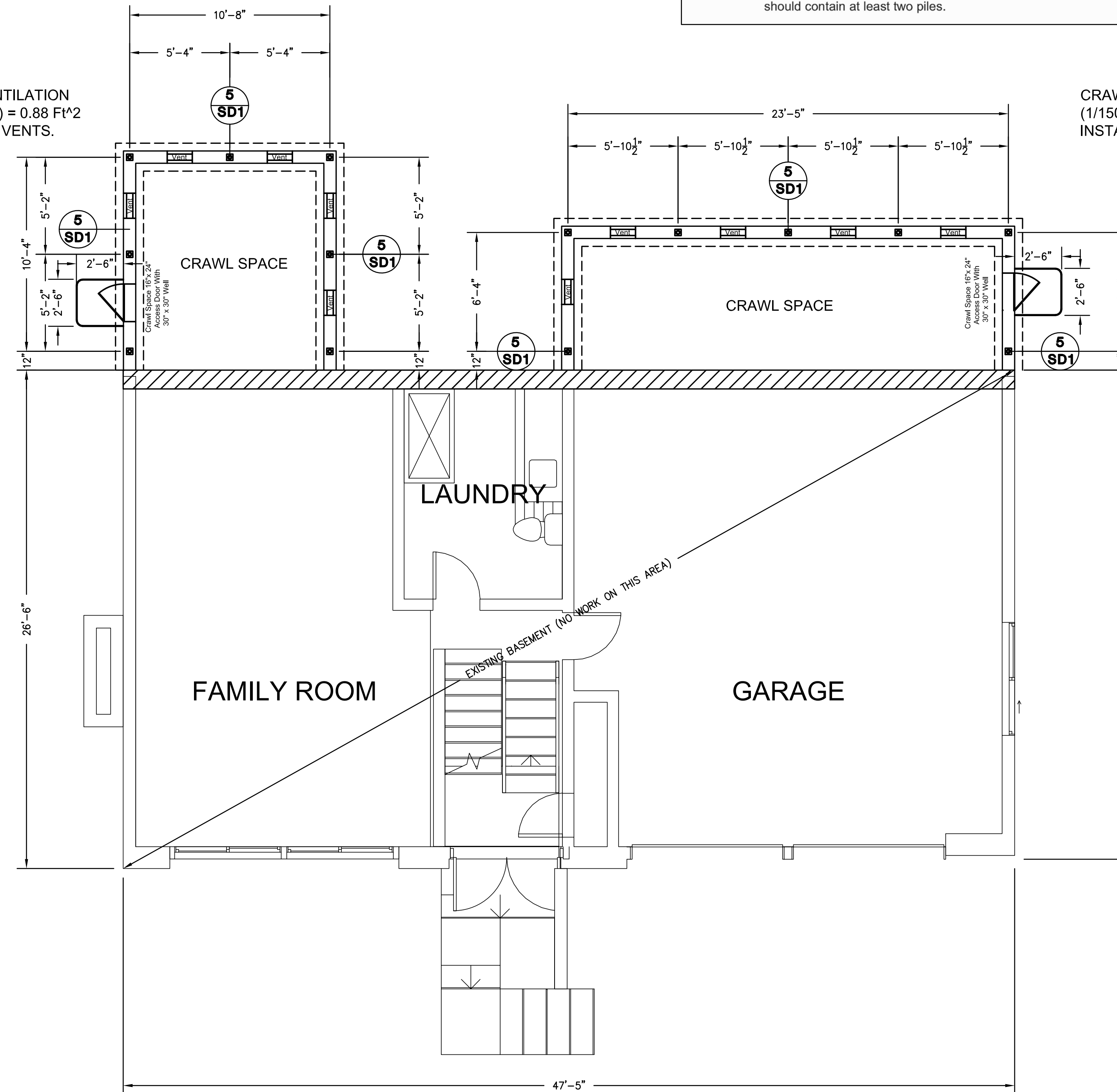
A 2-inch-diameter pipe pile driven with a minimum 90-pound jackhammer or a 140-pound Rhino hammer to a final penetration rate of 1-inch or less for one minute of continuous driving may be assigned an allowable compressive load of 3 tons. Load tests are not required to verify this allowable capacity.

Extra-strong steel pipe should be used. The site soils are not highly organic, and are not located near salt water. As a result, they do not have an elevated corrosion potential. Considering this, it is our opinion that standard "black" pipe can be used, and corrosion protection, such as galvanizing, is not necessary for the pipe piles. Subsequent pipe sections should be connected together using threaded or slip couplers, or by welding. If slip couplers are used, they must fit snugly into the ends of the pipes. This can require that shims or beads of welding flux be applied to the couplers.

Pile caps and grade beams should be used to transmit loads to the piles. Any isolated pile caps should contain at least two piles.

CRAWL SPACE VENTILATION  
 $(1/150) * (11.67 * 11.33) = 0.88 \text{ Ft}^2$   
 INSTALL (6) 8" x 16" VENTS.

CRAWL SPACE VENTILATION  
 $(1/150) * (24.08 * 7.66) = 1.22 \text{ Ft}^2$   
 INSTALL (6) 8" x 16" VENTS.



## 2" STEEL PILES FOUNDATION DIMENSTION LAYOUT

Scale 1/4" = 1'-0"

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Sheet Content:  
 PROPOSED FOOTINGS  
 & FOUNDATION  
 WALLS FOR ADDITION

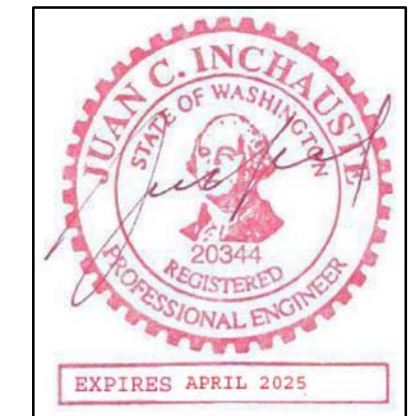
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 Project No. | Sheet No.  
 23-41 | S-03.1



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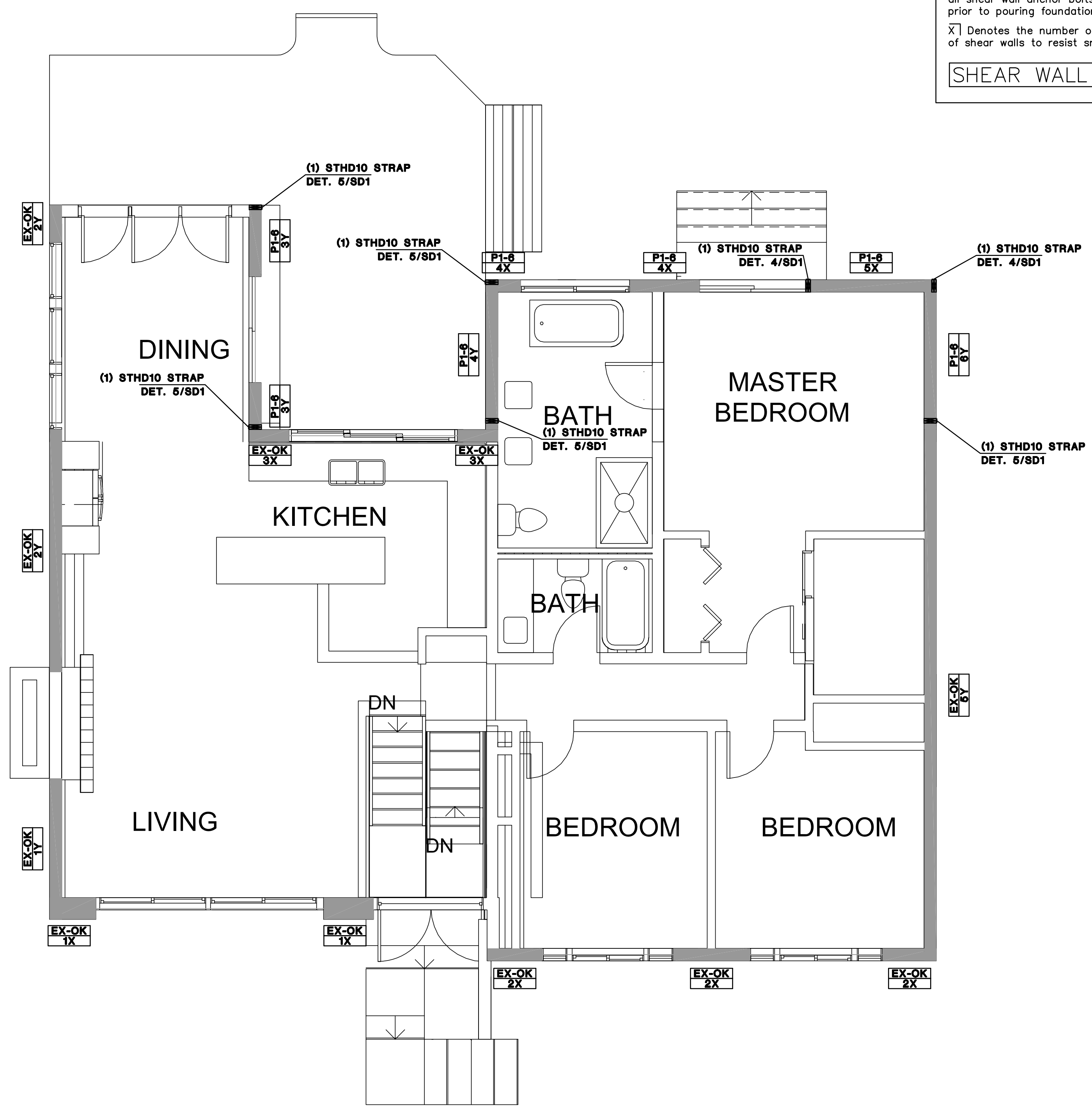
\* Denotes Shear Wall with CS-16 Simpson Straps at window sill location. For installation of horizontal tie see 1/SD2  
 XX-X Denotes Shear Wall Panel Type and Nailing Spacing  
 XX Denotes Shear Wall Label per Structural Calculations

For additional information of the Shear Wall materials, nailing, anchor bolts and holdowns see shear wall Table #1 and holdown Table #2 on sheet S-2.

The foundation contractor shall verify the location and spacing of all shear wall anchor bolts, as well as holdown anchor bolts prior to pouring foundation walls, footings and slabs on grade.

X Denotes the number of A35 Simpson Clips to connect corners of shear walls to resist small uplift loads with the cross walls.

**SHEAR WALL SYMBOL DESCRIPTION**



**FIRST FLOOR SHEAR WALLS & HOLDOWNS**  
 Scale 1/4" = 1'-0"

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Mark	Description	Date

Sheet Content:  
 PROPOSED MAIN LEVEL SHEAR WALLS & HOLDOWNS FOR ADDITION

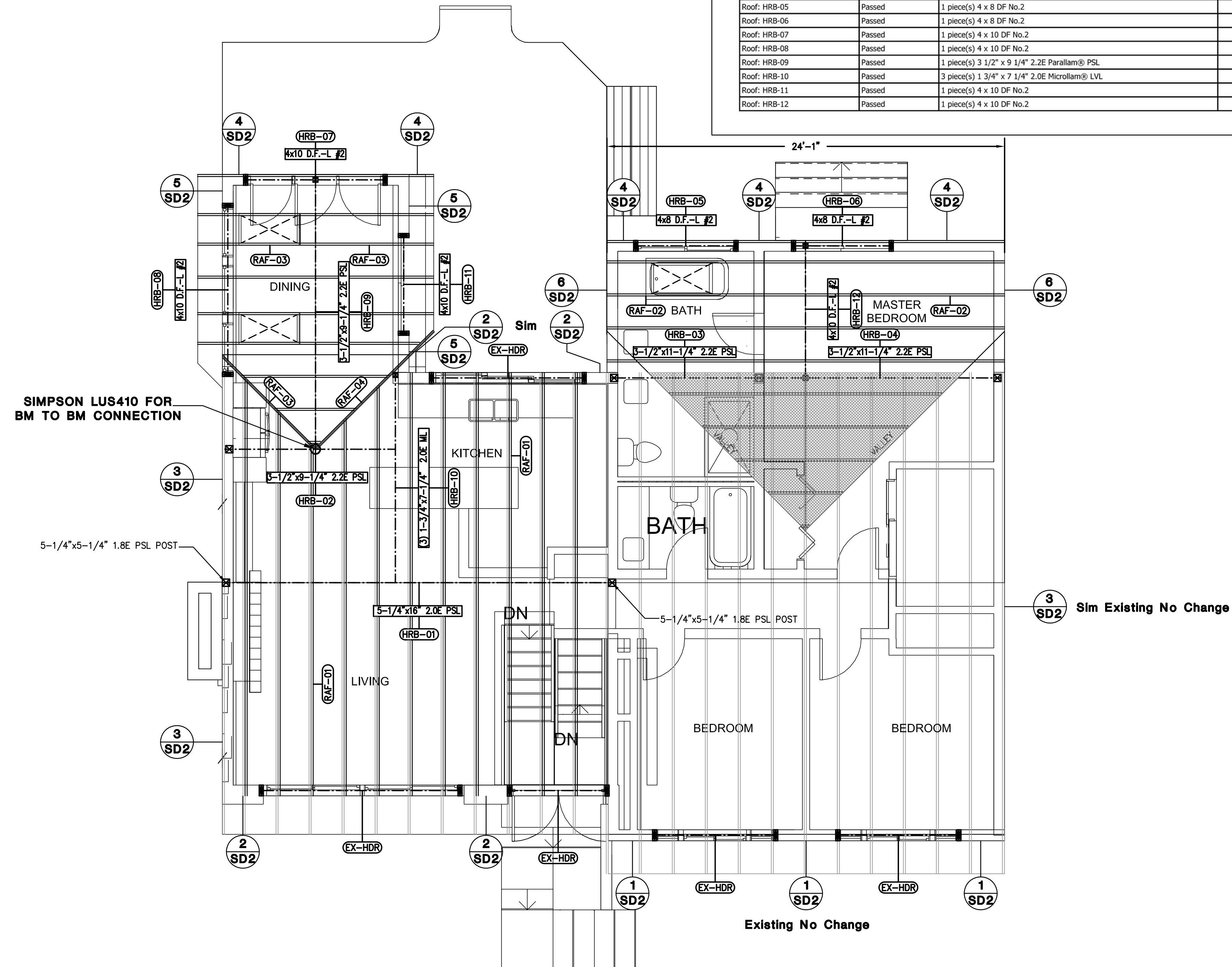
Drawn By: R.I. | Checked By: JCI

Date of Issue: Jan. 24, 25  
 Project No. 23-41 | Sheet No. S-05

# ROOF BEAM SCHEDULE

**FORTEWEB** JOB SUMMARY REPORT  
SCALLON-SMITH-CONNOLLY

Member Name	Results	Current Solution	Comments
Roof: RAF-01	Passed	1 piece(s) 2 x 8 DF No.2 @ 24" OC	
Roof: RAF-02	Passed	1 piece(s) 2 x 8 DF No.2 @ 24" OC	
Roof: RAF-03	Passed	1 piece(s) 2 x 8 DF No.2 @ 24" OC	
Roof: RAF-04	Passed	1 piece(s) 2 x 8 DF No.2	
Roof: HRB-01	Passed	1 piece(s) 5 1/4" x 16" 2.2E Parallam® PSL	
Roof: HRB-02	Passed	1 piece(s) 3 1/2" x 9 1/4" 2.2E Parallam® PSL	
Roof: HRB-03	Passed	1 piece(s) 3 1/2" x 11 1/4" 2.2E Parallam® PSL	
Roof: HRB-04	Passed	1 piece(s) 3 1/2" x 11 1/4" 2.2E Parallam® PSL	
Roof: HRB-05	Passed	1 piece(s) 4 x 8 DF No.2	
Roof: HRB-06	Passed	1 piece(s) 4 x 8 DF No.2	
Roof: HRB-07	Passed	1 piece(s) 4 x 10 DF No.2	
Roof: HRB-08	Passed	1 piece(s) 4 x 10 DF No.2	
Roof: HRB-09	Passed	1 piece(s) 3 1/2" x 9 1/4" 2.2E Parallam® PSL	
Roof: HRB-10	Passed	3 piece(s) 1 3/4" x 7 1/4" 2.0E Microllam® LVL	
Roof: HRB-11	Passed	1 piece(s) 4 x 10 DF No.2	
Roof: HRB-12	Passed	1 piece(s) 4 x 10 DF No.2	

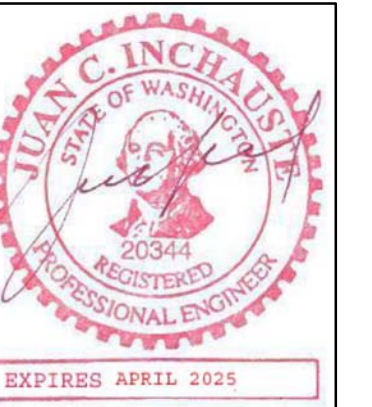


**FIRST FLOOR SHEAR WALLS & HOLDOWNS**  
Scale 1/4" = 1'-0"

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The Seal below shall be valid only if seal is wet stamped and bears original signature:



The liability of the above named consultant shall be limited to the area of expertise and to those services provided by the consultant.

**I.B.I. Company**  
Consulting Engineers

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Bellevue, Washington 98009  
1372 Bellevue Way N.E. # 3  
Bellevue, Washington 98004  
Phone: (425) 450-0316  
Fax: (425) 454-0316  
ibicompany@comcast.net

Project: Scallon-Smith Connolly Residence Remodel  
3450 79th Ave. S.E.  
Mercer Island, WA 98040

Designer: Elizabeth Scallon And Shena Smith-Connolly  
3450 79th Ave. S.E.  
Mercer Island, WA 98040

Owners: Elizabeth Scallon And Shena Smith-Connolly  
3450 79th Ave. S.E.  
Mercer Island, WA 98040

Jurisdiction: City of Edmonds  
Department of Planning & Community Development  
121 5th Ave. North  
Edmonds, WA 98020  
Phone: (425)-771-0220

Applicable Codes:  
IBC & IRC 2021

I.B.I. Co. FILE DIRECTORY  
B:\JOBS23\JOB23-41  
Start Date: Feb. 15, 2024  
Plot Date: Jan. 24, 2025

Mark	Description	Date

Sheet Content:  
PROPOSED ROOF FRAMING PLAN FOR ADDITION

Drawn By: R.I. | Checked By: J.C.I.

Date of Issue: Jan. 24, 25  
Project No. 23-41 | Sheet No. S-06

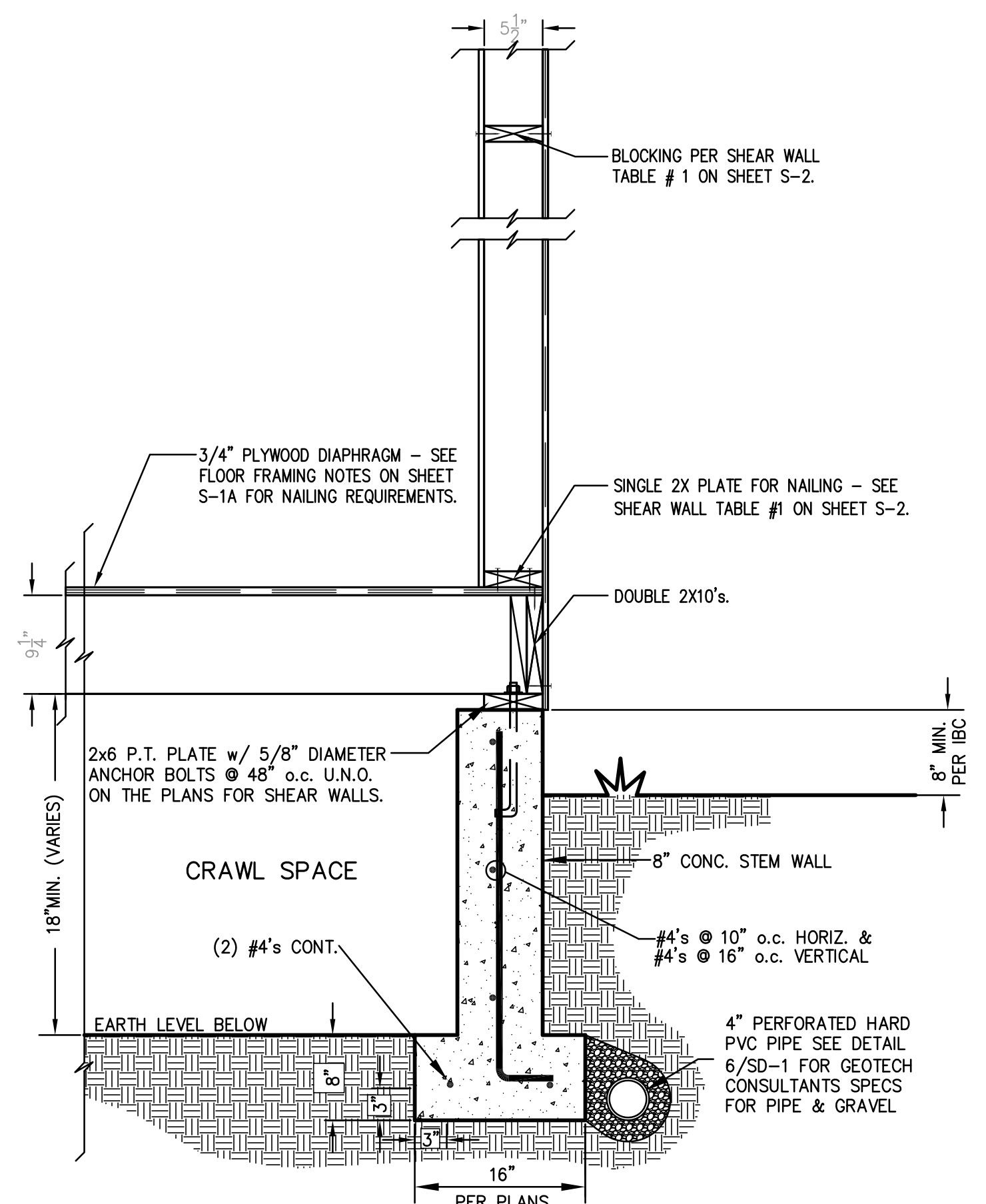
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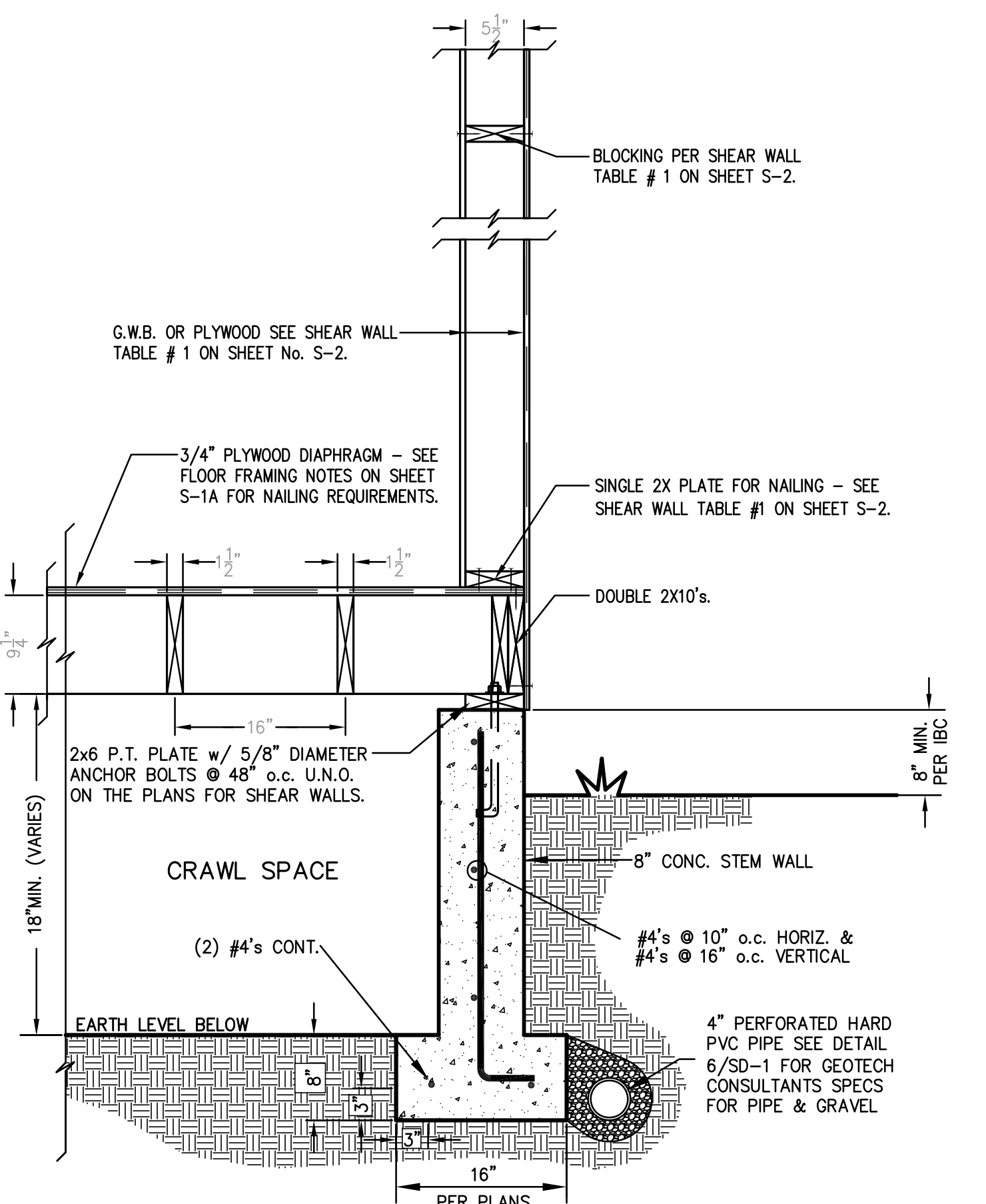


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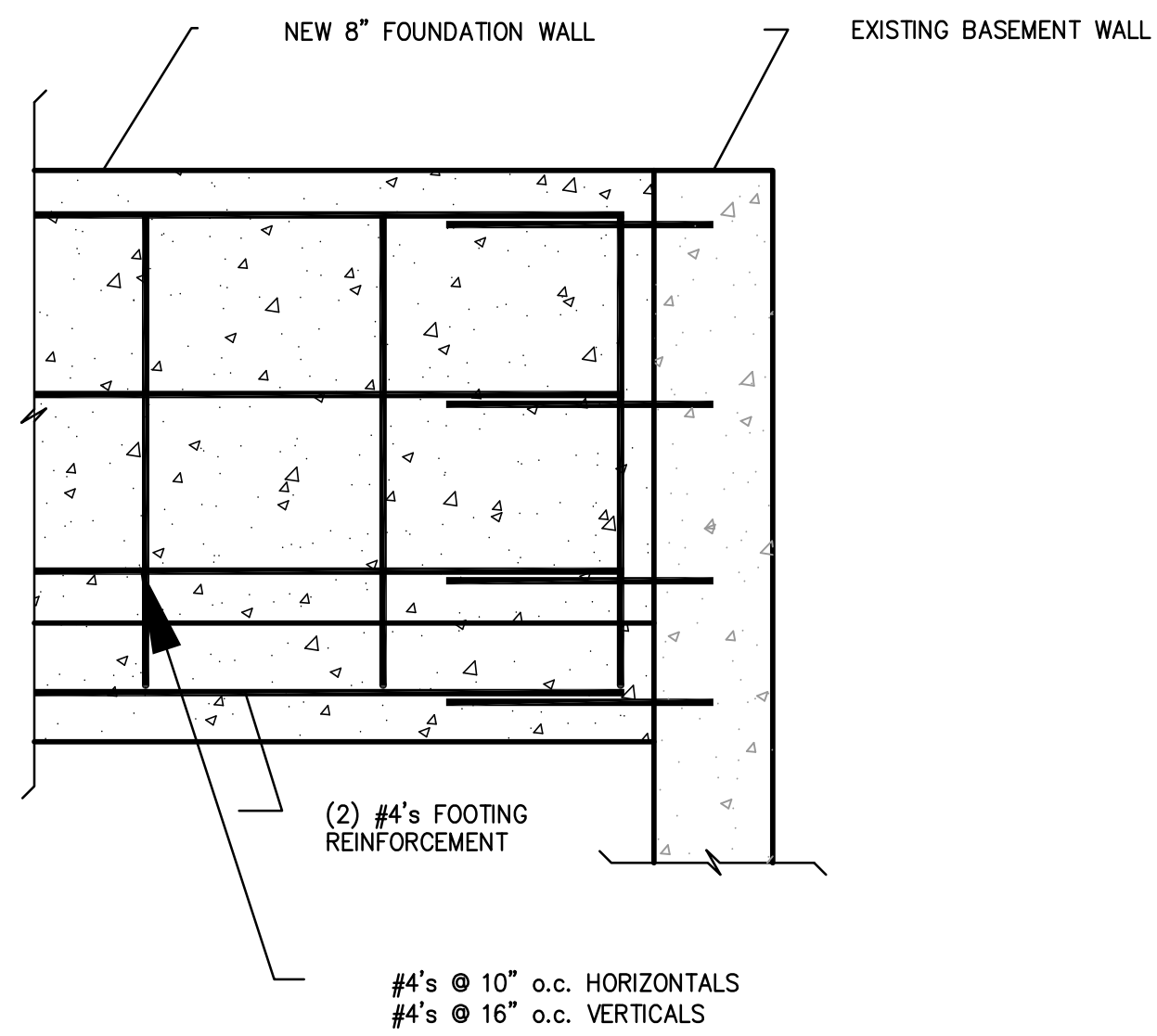
**I.B.I. Company**  
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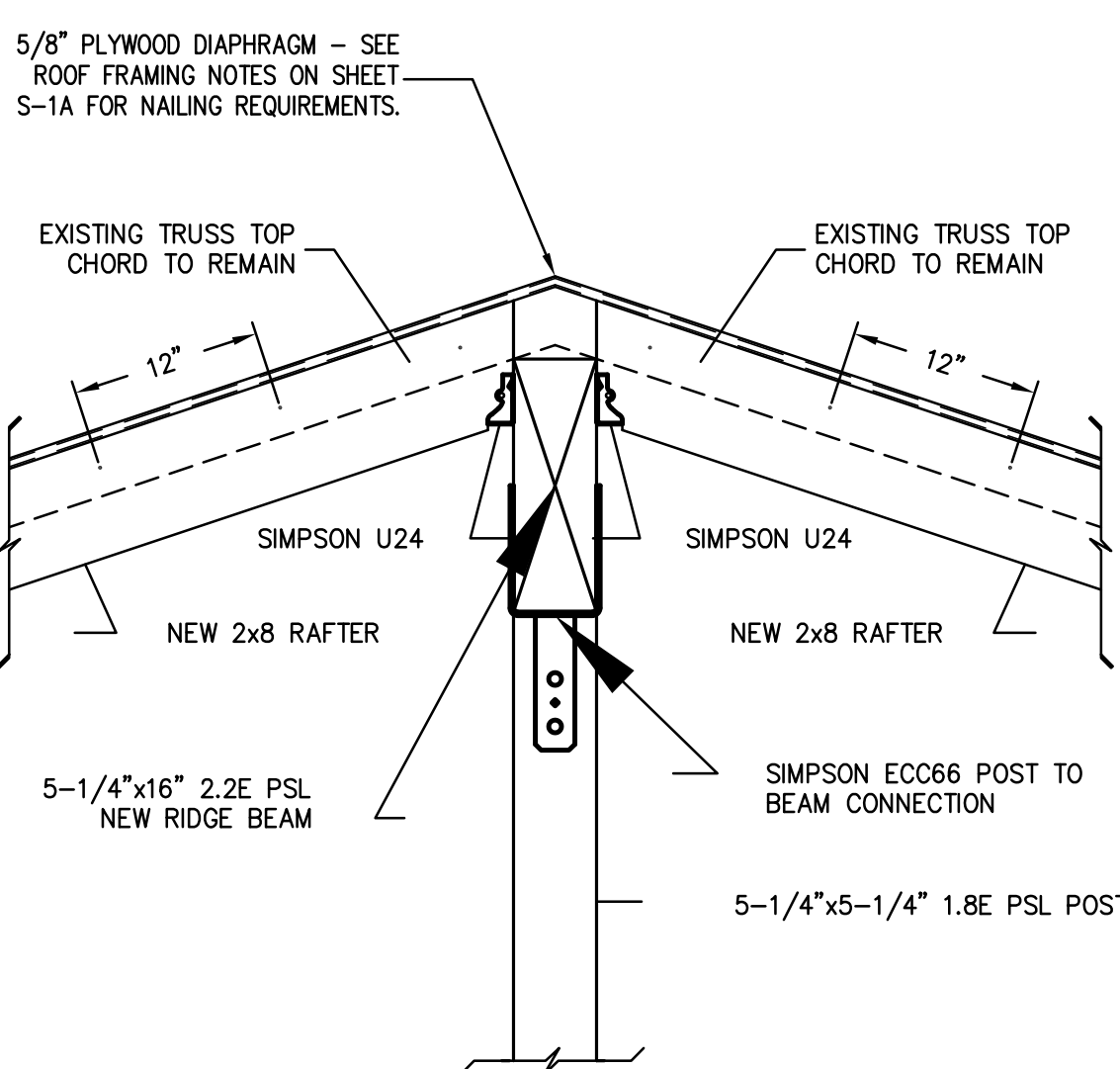
PARALLEL ASSEMBLY  
**EXTERIOR FOUNDATION WALL PERPENDICULAR TO 2x10 FLOOR JOISTS**  
 SCALE: 1"=1'-0" DETAIL: 1/SD-1  
 COPYRIGHT © 2025 IBICOMPANY



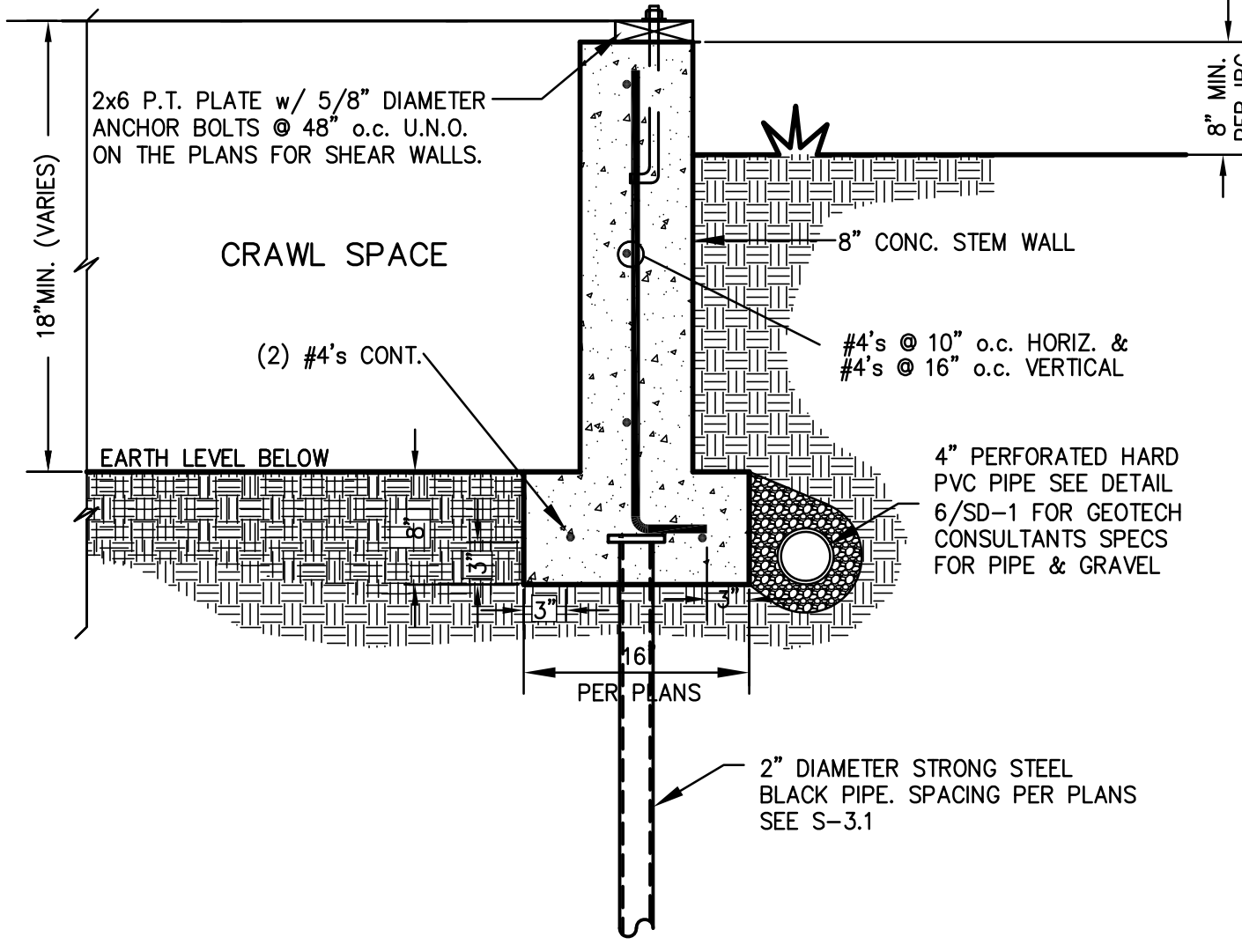
PARALLEL ASSEMBLY  
**EXTERIOR FOUNDATION WALL PARALLEL TO 2x10 FLOOR JOISTS**  
 SCALE: 1"=1'-0" DETAIL: 2/SD-1  
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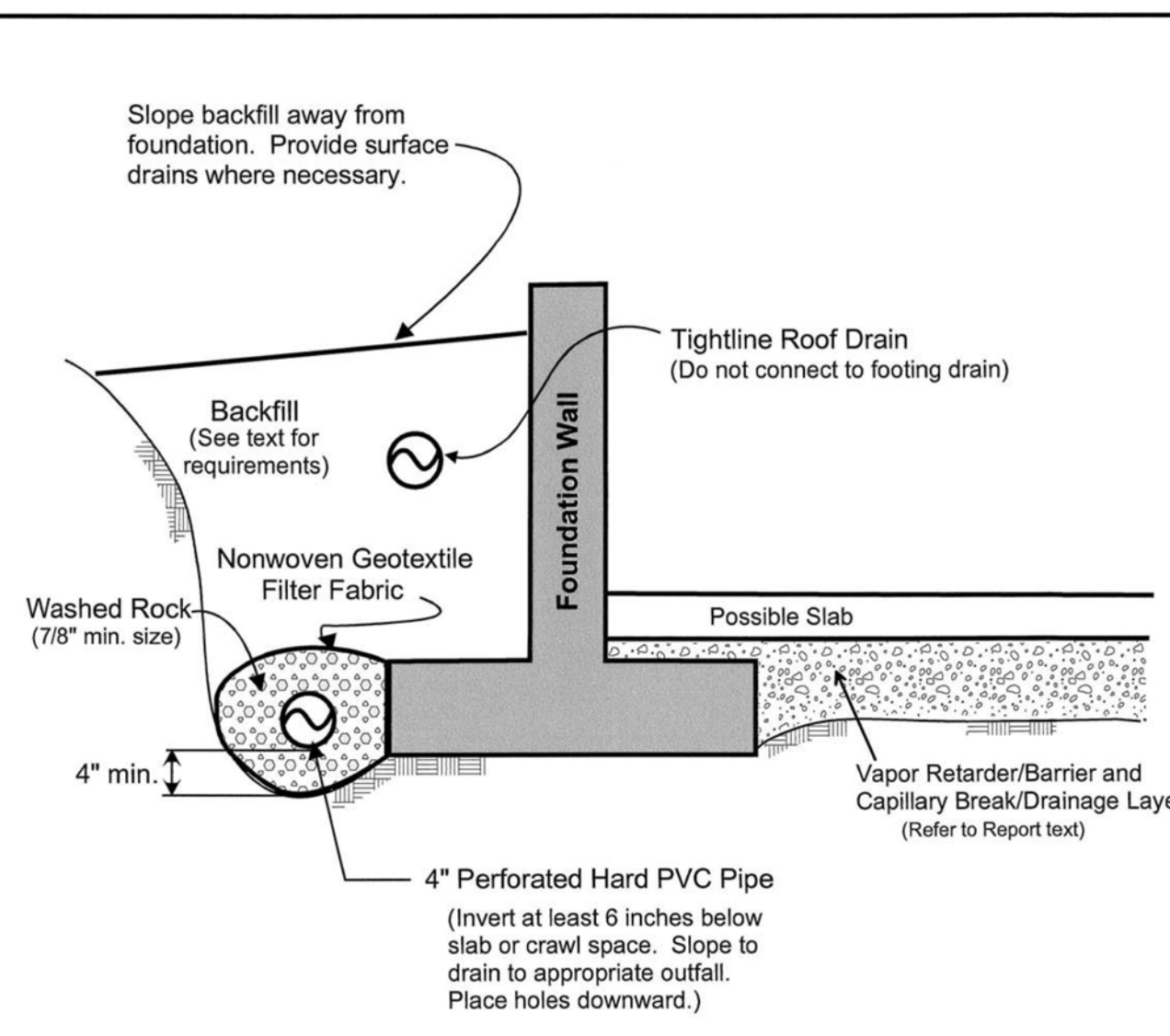
CONNECTION TO EXISTING BUILDING  
**NEW FOUNDATION WALL AND FOOTING CONNECTION TO EXISTING CONCRETE**  
 SCALE: 1"=1'-0" DETAIL: 3/SD-1  
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**PROPOSED 2x8 RAFTERS NAILED TO TOP CHORD NEW 2x8 RAFTERS & EXISTING TRUSS TOP CHORD TO 5-1/4\"/>
 SCALE: 1"=1'-0" DETAIL: 4/SD-1  
 COPYRIGHT © 2025 IBICOMPANY**



TYPICAL DETAIL OF 2" STEEL PIPE PILE ASSEMBLY  
**TYPICAL DETAIL FOR 2" STRONG PIPE PILE SUPPORTING FOOTINGS**  
 SCALE: 1"=1'-0" DETAIL: 5/SD-1  
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**NOTES:**  
 (1) In crawl spaces, provide an outlet drain to prevent buildup of water that bypasses the perimeter footing drains.  
 (2) Refer to report text for additional drainage, waterproofing, and slab considerations.

**GEOTECH CONSULTANTS, INC.**  
 3450 - 79th Avenue S.E.  
 Mercer Island, Washington  
 Job No: 24233 Date: June 2024 Plate: 4

**GEOTECH CONSULTANTS, INC DETAIL FOR 4" DRAINAGE PIPE**  
 SCALE: 1"=1'-0" DETAIL: 6/SD-1  
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Project: Scallon-Smith Connolly Residence Remodel  
 3450 79th Ave. S.E.  
 Mercer Island, WA 98040  
 Designer: Elizabeth Scallon And Shena Smith-Connolly  
 3450 79th Ave. S.E.  
 Mercer Island, WA 98040  
 Owners: Elizabeth Scallon And Shena Smith-Connolly  
 3450 79th Ave. S.E.  
 Mercer Island, WA 98040  
 Jurisdiction: City of Edmonds  
 Department of Planning & Community Development  
 121 5th Ave. North  
 Edmonds, WA 98020  
 Phone: (425)-771-0220  
 Applicable Codes:  
 IBC & IRC 2021  
 I.B.I. Co. FILE DIRECTORY  
 B:\JOBS23\JOB23-41  
 Start Date: Feb. 15, 2024  
 Plot Date: Jan. 24, 2025

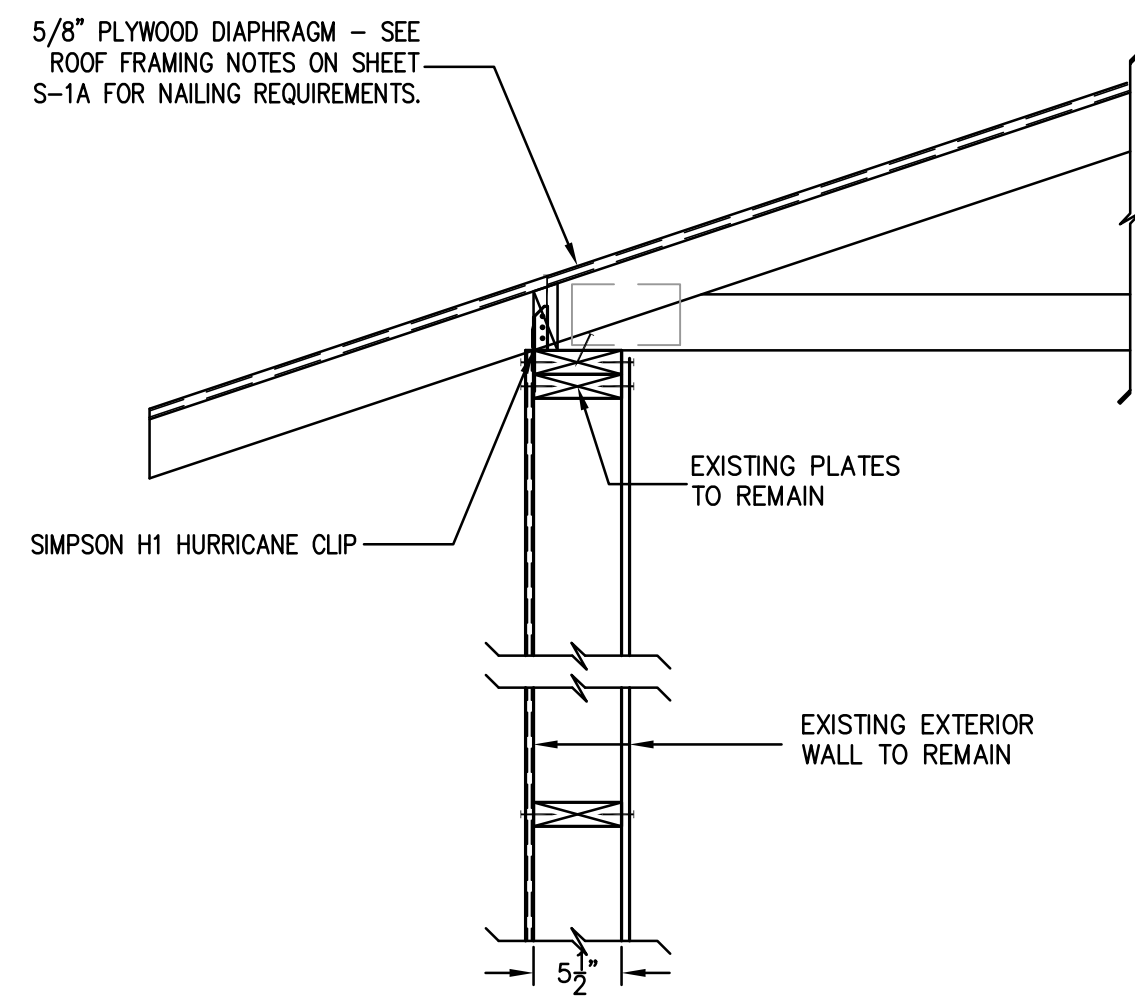
Revisions:

Mark	Description	Date

Sheet Content:  
 SHEAR WALL TABLES.  
 HOLDOWN TABLES.  
 SHEAR WALL SYMBOL.

Drawn By: R.I. Checked By: J.C.I.  
 Date of Issue: Jan. 24, 2025  
 Project No. Sheet No.  
**23-41 SD-1**

SLOPE 4:12

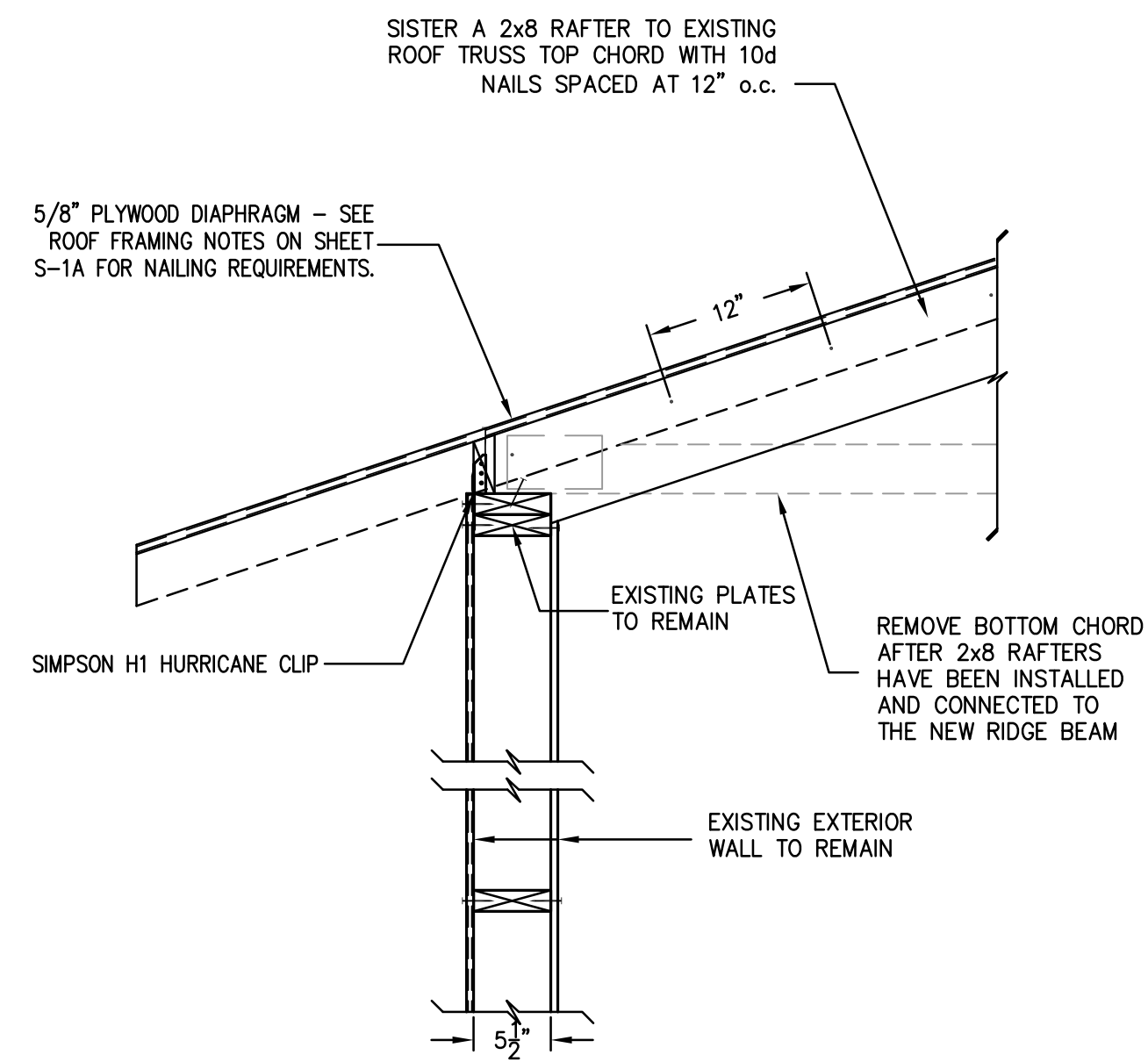


EXISTING CONDITION NO CHANGE  
 EXTERIOR SHEAR WALL PERPENDICULAR TO  
 STANDARD TRUSS CONNECTION DETAIL

SCALE: 1"=1'-0"  
 DETAIL: 1/SD-2

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SLOPE 4:12



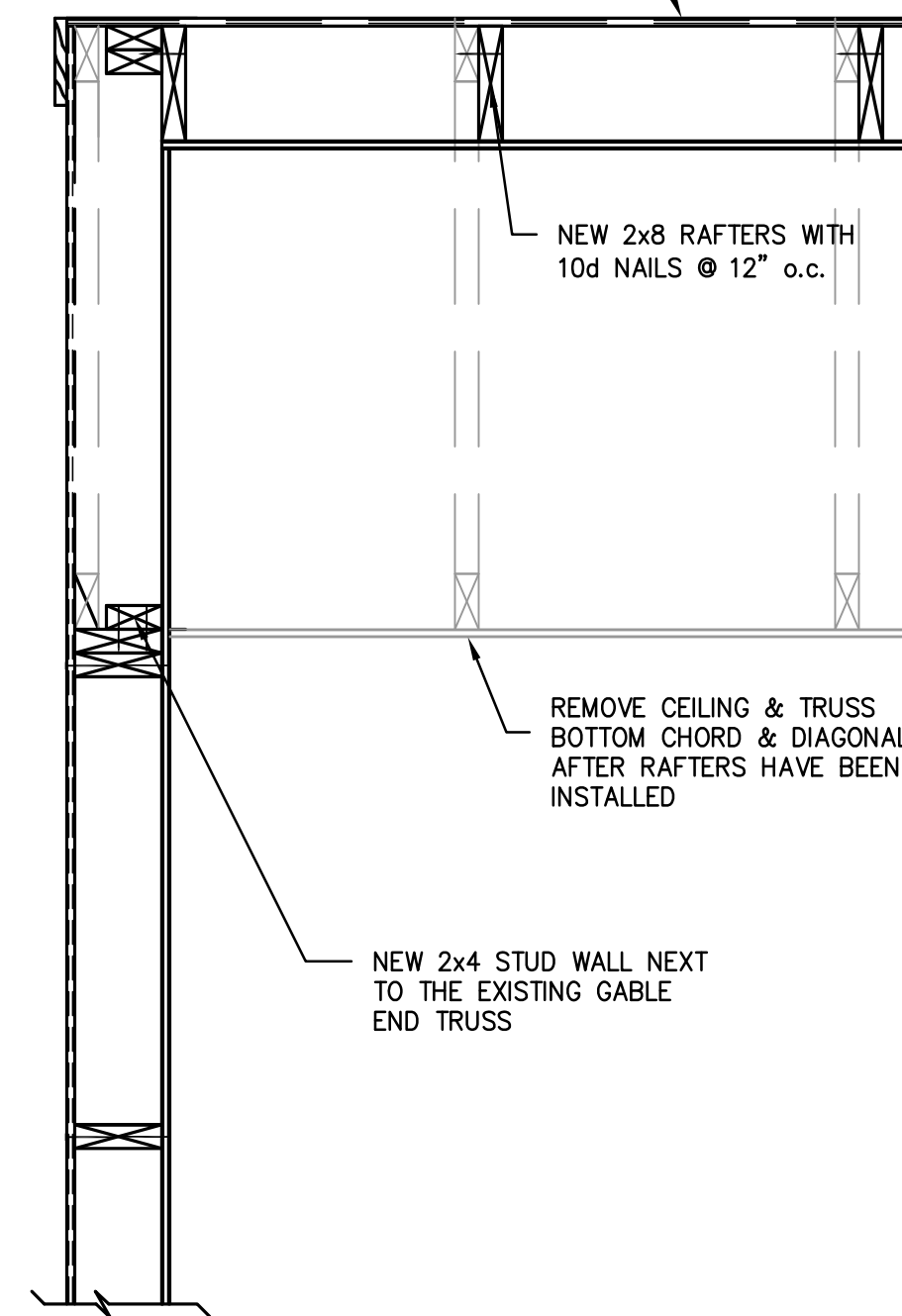
- SPRAY FOAM INSULATION NOTES
- 1.- CLOSED CELL SPRAY FOAM INSULATION TO BE GACO WESTERN - GACO ONE PASS F-1850 CODE COMPLIANCE RESEARCH REPORT #CRR-1043. 7" OF INSULATION ACHIVES R49.
  - 2.- A COPY OF CRR-1043 WILL BE PROVIDED ON THE JOB SITE FOR INSPECTOR VERIFICATION

EXTERIOR SHEAR WALL PERPENDICULAR TO  
 2x8 RAFTERS NAILED TO TOP CHORD OF TRUSSES

SCALE: 1"=1'-0"  
 DETAIL: 2/SD-2

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5/8" PLYWOOD DIAPHRAGM - SEE  
 ROOF FRAMING NOTES ON SHEET  
 S-1A FOR NAILING REQUIREMENTS.



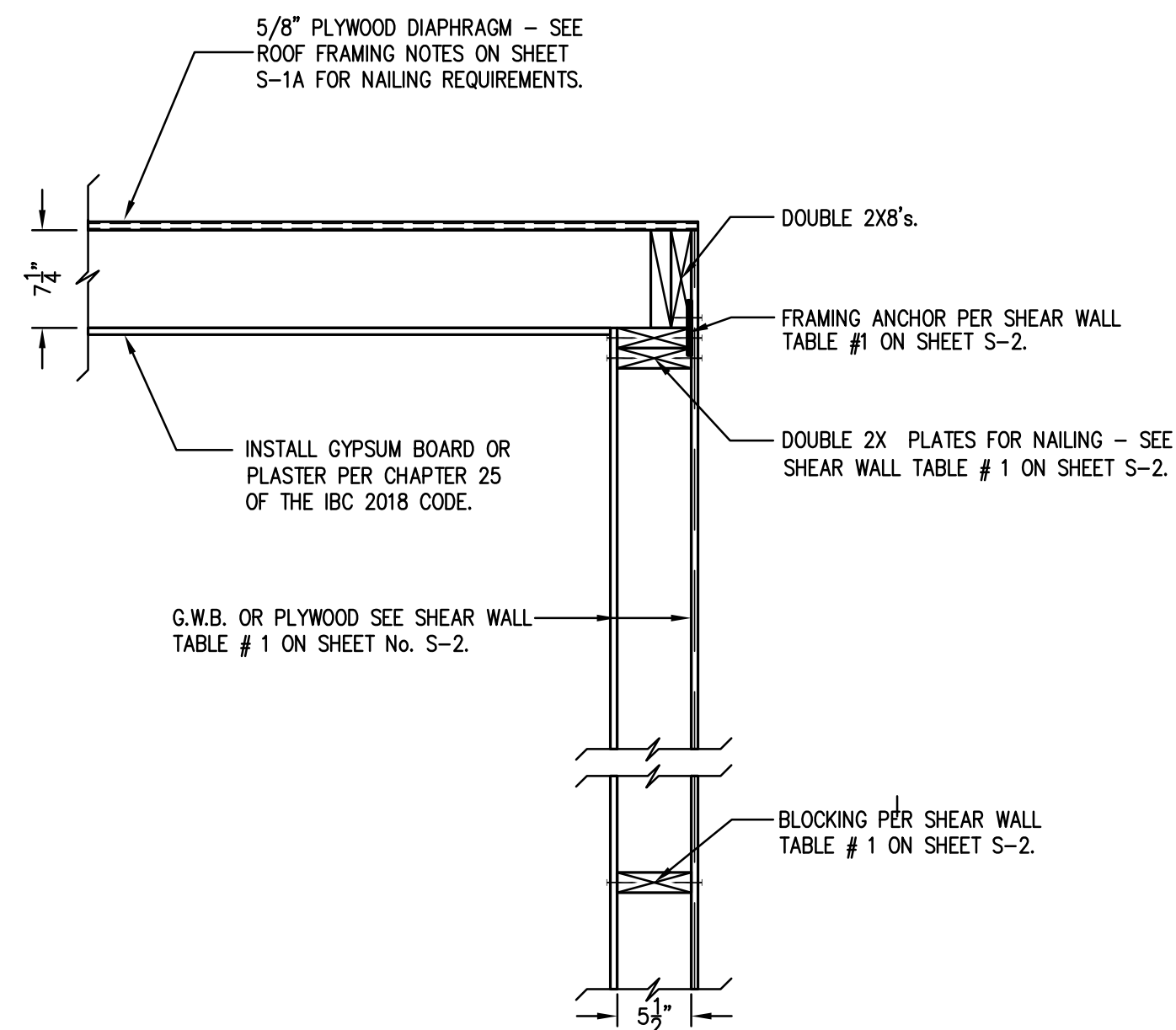
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EXTERIOR SHEAR WALL TO GABLE END TRUSS  
 CONNECTION & NEW STUD WALL

SCALE: 1"=1'-0"  
 DETAIL: 3/SD2

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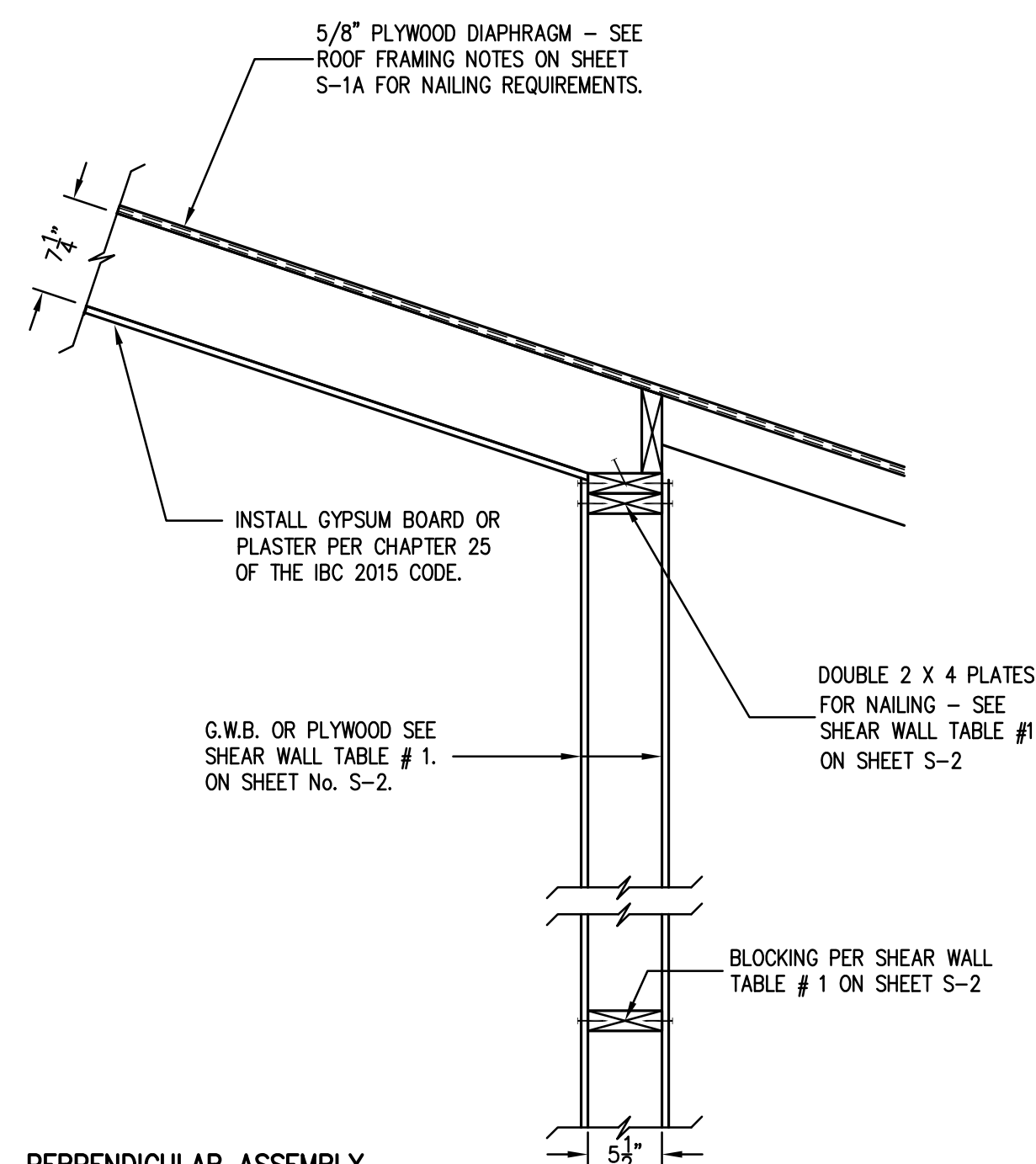


PERPENDICULAR ASSEMBLY  
 EXTERIOR WALL PERPENDICULAR TO 2x8 ROOF  
 RAFTERS SPACED AT 24" o.c.

SCALE: 1"=1'-0"  
 DETAIL: 4/SD-2

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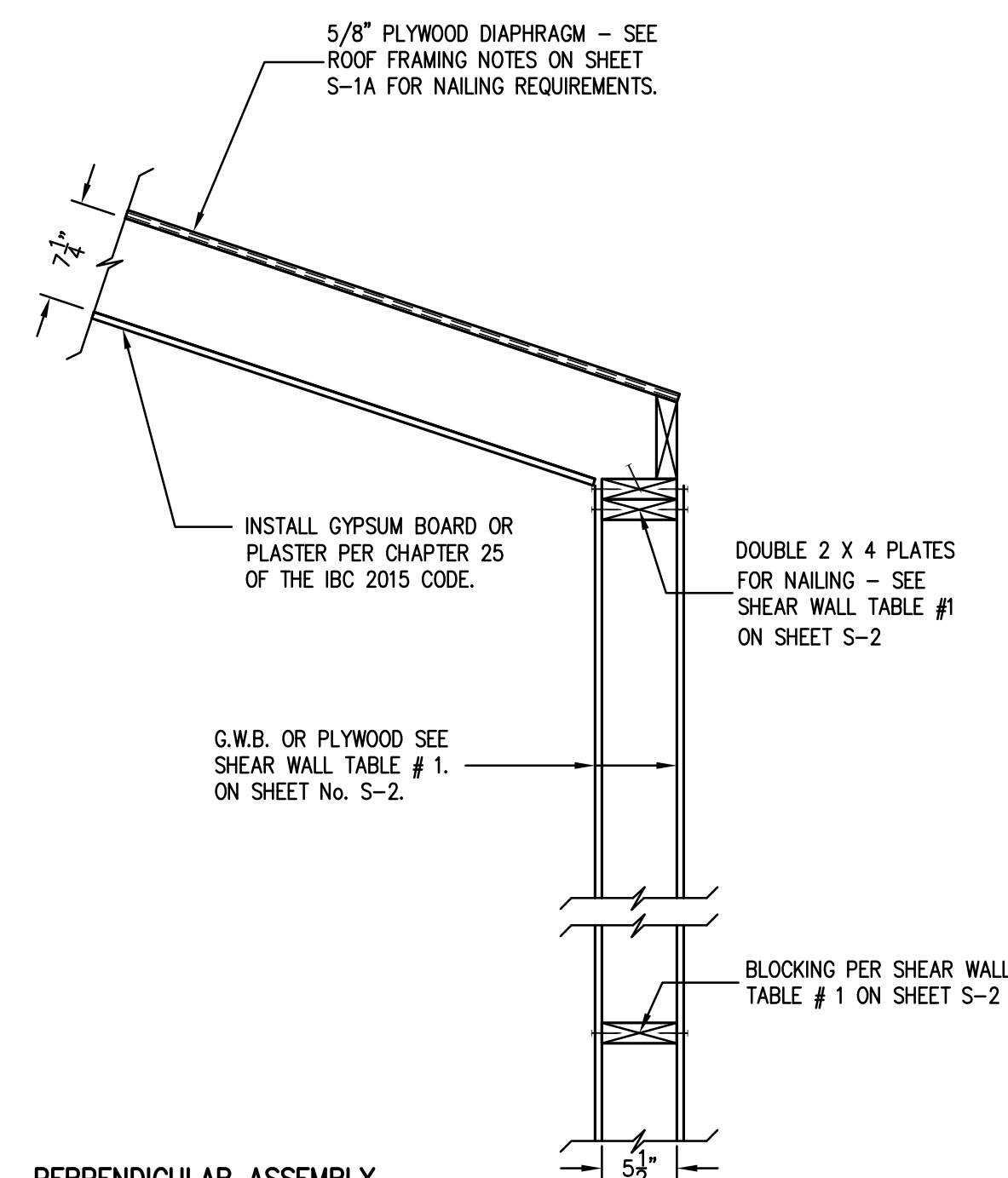


PERPENDICULAR ASSEMBLY  
 EXTERIOR WALL PERPENDICULAR TO 2x8 ROOF  
 RAFTERS SPACED AT 24" o.c.

SCALE: 1"=1'-0"  
 DETAIL: 5/SD-2

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PERPENDICULAR ASSEMBLY  
 EXTERIOR WALL PERPENDICULAR TO 2x8 ROOF  
 RAFTERS SPACED AT 24" o.c.

SCALE: 1"=1'-0"  
 DETAIL: 6/SD2

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Sheet Content:  
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 SHEAR WALL SYMBOL.

Drawn By: R.I. Checked By: J.C.I.

Date of Issue: Jan. 24, 2025

Project No. Sheet No.  
 23-41 SD-2