CODE: INTERNATIONAL BUILDING CODE (IBC) 2018

LOADINGS
- FLOOR LIVE LOAD..... 40 PSF
- DECK LIVE LOAD..... 60 PSF
- ROOF SNOW LOAD..... 25 PSF

WIND CRITERIA
- BUILDING CLASSIFICATION..... II
- ULTIMATE WIND SPEED..... 97 MPH
- WIND EXPOSURE..... B
- TOPOGRAPHIC FACTOR, Kzt..... 1.0

SEISMIC CRITERIA
- SEISMIC RISK CATEGORY..... II
- SPECTRAL RESPONSE COEFFICIENT, Ss 1.40
- SPECTRAL RESPONSE COEFFICIENT, S1 .... 0.50
- SEISMIC SITE CLASS ..... D
- SEISMIC DESIGN CATEGORY..... D

STRUCTURAL DESCRIPTIONS

GENERAL CONDITIONS

1. THE CONTRACTOR SHALL EXAMINE THE STRUCTURAL DRAWINGS AND SHALL NOTIFY THE STRUCTURAL ENGINEER IN WRITING OF ANY DISCREPANCIES HE MAY FIND BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS AND SITE CONDITIONS BEFORE STARTING WORK.

2. ALL OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND THE STRUCTURAL ENGINEER BEFORE PROCEEDING WITH ANY WORK SO INVOLVED.

3. SPECIFIC NOTES AND DETAILS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE THE NOTES, DRAWINGS, AND/OR SPECIFICATIONS DIFFER, THE MORE STRINGENT REQUIREMENT SHALL APPLY.

4. IF A SPECIFIC DETAIL IS NOT SHOWN FOR ANY PART OF THE WORK, THE CONSTRUCTION SHALL BE THE SAME AS FOR SIMILAR WORK.

5. WORKING DIMENSIONS SHALL NOT BE SCALED FROM PLANS, SECTIONS, OR DETAILS ON THESE DRAWINGS.

6. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT AND THE STRUCTURAL ENGINEER OF ANY CONDITION THAT, IN HIS OPINION, MIGHT ENDANGER THE STABILITY OF THE STRUCTURE OR CAUSE DISTRESS TO THE STRUCTURE.

7. THE CONTRACTOR SHALL SUPERVISE AND DIRECT HIS WORK AND HE SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES. PROVIDE ADEQUATE SHORING AND BRACING OF ALL STRUCTURAL MEMBERS DURING CONSTRUCTION. NOTIFY ENGINEER OF ALL FIELD CHANGES PRIOR TO INSTALLATION.

8. REFER TO THE ARCHITECTURAL DRAWINGS FOR INFORMATION NOT COVERED BY THESE GENERAL NOTES OR THE STRUCTURAL DRAWINGS.

9. ALL CONSTRUCTION SHALL BE DONE WITH MATERIALS, METHODS, AND WORKMANSHIP ACCEPTED AS GOOD PRACTICE BY THE CONSTRUCTION INDUSTRY AND IN CONFORMANCE WITH THE PROVISIONS OF PREVAILING CODE EDITION OF THE "INTERNATIONAL BUILDING CODE" (IBC) AND STANDARDS REFERENCED THEREIN.

10. PIPES, DUCTS, SLEEVES, OPENINGS, POCKETS, CHASES, BLOCK-OUTS, ETC., SHALL NOT BE PLACED IN SLABS, FOUNDATIONS, ETC., NOR SHALL ANY STRUCTURAL MEMBER BE CUT FOR SUCH ITEMS, UNLESS SPECIFICALLY DETAILED ON THESE STRUCTURAL DRAWINGS.

11. ALTERNATE ASSEMBLIES AND MATERIALS WILL BE CONSIDERED FOR REVIEW. ENGINEER MAY REQUEST PAYMENT FOR REVIEW.

FOUNDATION

1. STRUCTURAL DESIGN COMPLIES WITH SOILS REPORT PRODUCED BY:
   N.A.
   FOOTING BEARING PRESSURE: 1500 PSF (ASSUMED)
   LATERAL EARTH PRESSURE ON RETAINING WALLS N.A.

2. SUBGRADE PREPARATION, DRAINAGE PROVISIONS, AND OTHER RELEVANT SOIL CONSIDERATIONS ARE TO BE IN ACCORDANCE WITH SAID SOILS REPORT.

DIMENSIONAL LUMBER, ANCHOR BOLT AND NAILING SPECIFICATIONS

1. MEET REQUIREMENTS OF PS 20-70 AND NATIONAL GRADING RULES FOR SOFTWOOD DIMENSIONAL LUMBER. BEAR STAMP OF WWPA.

2. MINIMUM DIMENSIONAL LUMBER GRADES TO BE:

WALL STUDS, 2X, 3 X.....	HF STUD GRADE
WALL PLATES, 2X, 3X.....	HF STANDARD GRADE U.N.O
JOISTS, 2 X 6:.....	HF #2
JOISTS, 2 X 8 AND UP.....	DF #2
BEAMS, HEADERS, 6X	DF #2
BEAMS, HEADERS, 4X.....	DF #2, WWPA GRADING
POSTS, 4X, 6X.....	DF #2 U.N.O
LUMBER NOT NOTED HERE...	DF #2 U.N.O

3. PROVIDE STANDARD CUT WASHERS FOR BOLT HEADS AND NUTS BEARING AGAINST WOOD.

4. ALL SILLS OR PLATES RESTING ON CONCRETE OR MASONRY THAT IS IN CONTACT WITH OR RESTING ON FOUNDATIONS SHALL BE PRESSURE-TREATED DOUGLAS FIR/ HEMFIR IN ACCORDANCE TO WITH AWPA U1 (PLANT/SHOP TREATMENT) AND M4 (FIELD TREATMENT) STANDARDS. ALL BEARING WALL PLATES SHALL HAVE 5/8" Ø x10" J-BOLTS PLACED AT MAXIMUM OF 9" FROM THE END OF A PLATE AND SPACED AT INTERVALS SHOWN ON THE SHEARWALL SCHEDULE (MAXIMUM 4'-0" OC SPACING). PROVIDE BP PLATE WASHER AT ALL FOUNDATION SILL PLATE ANCHOR BOLTS. PROVIDE TWO ANCHOR BOLTS MINIMUM PER SECTION OF SILL. FOR NON-SHEARWALL, PLACE ANCHORS AT 48".

5. BOLTS IN WOOD SHALL NOT BE LESS THAN 7 DIAMETERS FROM THE END AND 4 DIAMETERS FROM THE EDGE OF THE MEMBER.

6. NAILS: COMMON WIRE NAILS. NAILING IN ACCORDANCE WITH IBC TABLE 2304.9.1.

7. PRESSURE TREATED WOOD: ALL NAILS INTO PT WOOD SHALL BE HOT DIPPED GALVANIZED PER ASTM A153 OR STAINLESS STEEL. ALL METAL CONNECTORS IN CONTACT WITH PT WOOD SHALL BE HOT DIPPED GALVANIZED AND MEET ASTM A653 CLASS G185 (1.85 OZ OF ZINC PER SQ FT MINIMUM) OR TYPE 304 / 316 STAINLESS STEEL SIMPSON Z-MAX CONNECTORS MEET THIS REQUIREMENT. FASTENERS AND CONNECTORS USED TOGETHER SHALL BE OF THE SAME TYPE (E.G. HOT DIPPED NAILS WITH HOT DIPPED HANGERS)

8. ALL LUMBER WITH A LEAST DIMENSION OF 2" (NOMINAL) SHALL BE STAMPED "SURFACE-DRY" AND SHALL HAVE A MOISTURE CONTENT WHEN SURFACED AND WHEN INSTALLED OF NO MORE THAN 19 PERCENT. LUMBER WITH A LEAST DIMENSION OF 4" (NOMINAL) OR GREATER SHALL BE STAMPED "SURFACE-GREEN" AND AIR-DRIED TO A MOISTURE CONTENT OF NOT MORE THAN 19 PERCENT PRIOR TO ITS USE IN FRAMING THE STRUCTURE.

9. NOTCHING AND BORING OF BEAMS AND JOISTS IS NOT ALLOWED WITHOUT PRIOR APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD.

REQUIRED? (Y/N)		MATERIAL / ACTIVITY	EXTENT
		1704.2.5 Inspection of Fabricators	Periodic
		Verify fabrication/quality control procedures	
Y	N	**1705.1.1 Special Cases** (work unusual in nature, including but not limited to alternative materials and systems, unusual design applications, materials and systems with special manufacturer's requirements)	
		1705.2 Steel Construction	
Y	N	1. Fabricator and erector documents (Verify reports and certificates as listed in AISC 360, chapter N. paragraph 3.2 for compliance with construction documents)	Each submittal
Y	N	2. Material verification of structural steel	Periodic
Y	N	3. Embedments (Verify diameter, grade, type, length, embedment. See 1705.3 for anchors)	Continuous
Y	N	4. Verify member locations, braces, stiffeners, and application of joint details at each connection comply with construction documents	Periodic
		5. Structural steel welding:	
Y	N	a. Inspection tasks Prior to Welding (Observe, or perform for each welded joint or member, the QA tasks listed in AISC 360, Table N5.4-1)	Observe or Perform as noted (4)
Y	N	b. Inspection tasks During Welding (Observe, or perform for each welded joint or member, the QA tasks listed in AISC 360, Table N5.4-1)	Observe (4)
Y	N	c. Inspection tasks After Welding (Observe, or perform for each welded joint or member, the QA tasks listed in AISC 360, Table N5.4-3)	Observe or Perform as noted (4)
		d. Nondestructive testing (NDT) of welded joints: see Commentary	
Y	N	1) Complete penetration groove welds 5/16" or greater in risk category III or IV	Periodic
Y	N	2) Complete penetration groove welds 5/16" or greater in risk category II	Periodic
Y	N	3) Thermally cut surfaces of access holes when material t > 2"	Periodic
Y	N	4) Welded joints subject to fatigue when required by AISC 360, Appendix 3, Table A-3.1	Periodic
Y	N	5) Fabricator's NDT reports when fabricator performs NDT	Each submittal (5)
		6. Structural steel bolting:	
Y	N	a. Inspection tasks Prior to Bolting (Observe, or perform tasks for each bolted connection, in accordance with QA tasks listed in AISC 360, Table N5.6-1)	Observe or Perform as noted (4)
Y	N	b.Inspection tasks During Bolting (Observe the QA tasks listed in AISC 360, Table N5.6-2)	Observe (4)
		1) Pre-tensioned and slip-critical joints	
Y	N	a) Turn-of-nut with matching markings	Periodic
Y	N	b) Direct tension indicator	Periodic
Y	N	c) Twist-off type tension control bolt	Periodic
Y	N	d) Turn-of-nut without matching markings	Continuous
Y	N	e) Calibrated wrench	Continuous
		2) Snug-tight joints	Periodic
Y	N	c. Inspection tasks After Bolting (Perform tasks for each bolted connection in accordance with QA tasks listed in AISC 360, Table N5.6-3)	Perform (4)
Y	N	7. Inspection of steel elements of composite construction prior to concrete placement in accordance with QA tasks listed in AISC 360, Table N6.1	Observe or Perform as noted (4)
		1705.2.2 Steel Construction Other Than Structural Steel	
		1. Material verification of cold-formed steel deck:	
Y	N	a. Identification markings	Periodic
Y	N	b. Manufacturer's certified test reports	Each submittal
		2. Connection of cold-formed steel deck to supporting structure:	
Y	N	a. Welding	Periodic
Y	N	b. Other fasteners (in accordance with AISC 360,Section N6)	
Y	N	1) Verify fasteners are in conformance with approved submittal	Periodic
Y	N	2) Verify fastener installation is in conformance with approved submittal and manufacturer's recommendations	Periodic
		3. Reinforcing steel	
Y	N	a. Verification of weldability of steel other than ASTM A706	Periodic
Y	N	b. Reinforcing steel resisting flexural and axial forces in intermediate and special moment frames, boundary elements of special concrete structural walls and shear reinforcement	Continuous
Y	N	c. Shear reinforcement	Continuous
Y	N	d. Other reinforcing steel	Periodic
		4. Cold-formed steel trusses spanning 60 feet or greater	
Y	N	a. Verify temporary and permanent restraint/bracing are installed in accordance with the approved truss submittal package	Periodic
		1705.3 Concrete Construction	
Y	N	1. Inspection of reinforcing steel installation (see 1705.2.2 for welding)	Periodic.
Y	N	2. Inspection of prestressing steel installation	Periodic
Y	N	3. Inspection of anchors cast in concrete where allowable loads have been increased per section 1908.5 or where strength design is used	Continuous
Y	N	4. Inspection of anchors and reinforcing steel post-installed in hardened concrete: Per research reports including verification of anchor type, anchor dimensions, hole dimensions, hole cleaning procedures, anchor spacing, edge distances, concrete minimum thickness, anchor embedment and tightening torque	Periodic or as required by the research report issued by an approved source
Y	N	5. Verify use of approved design mix	Periodic
Y	N	6. Fresh concrete sampling, perform slump and air content tests and determine temperature of concrete	Continuous
Y	N	7. Inspection of concrete and shotcrete placement for proper application techniques	Continuous
Y	N	8. Inspection for maintenance of specified curing temperature and techniques	Periodic
		9. Inspection of prestressed concrete:	
Y	N	a. Application of prestressing force	Continuous
Y	N	b. Grouting of bonded prestressing tendons in the seismic-force-resisting system	Continuous
		10. Erection of precast concrete members	
Y	N	a. Inspect in accordance with construction documents	In accordance with construction documents
Y	N	b. Perform inspections of welding and bolting in accordance with Section 1705.2	In accordance with Section 1705.2
Y	N	11. Verification of in-situ concrete strength, prior to stressing of tendons in post tensioned concrete and prior to removal of shores and forms from beams and structural slabs	Periodic
Y	N	12. Inspection of formwork for shape, lines, location and dimensions	Periodic
Y	N	13. Concrete strength testing and verification of compliance with construction documents	Periodic

Notes:
1. The inspection and testing agent(s) shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official prior to commencing work. The qualifications of the Special Inspector(s) and/or testing agencies may be subject to the approval of the Building Official and/or the Design Professional.
2. The list of Special Inspectors may be submitted as a separate document, if noted so above.

3. Special Insepctions as required by Section 1704.2.5 are not required where the fabricator is approved in accordance with IBC Section 1704.2.5.2

4. Observe on a random basis, operations need not be delayed pending these inspections. Perform these tasks for each welded joint, bolted connection, or steel element.

5. NDT of welds completed in an approved fabricator's shop may be performed by that fabricator when approved by the AHJ. Refer to AISC 360, N7.

CONCRETE AND REINFORCING

1. CONCRETE SHALL CONFORM TO THE INDICATED REFERENCE CODES AND STANDARDS EXCEPT AS MODIFIED BELOW:

   ACI-301 - "STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE"
   ACI-318 - "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE"
   ACI-305R - "HOT WEATHER CONCRETING"
   ACI-306R - "COLD WEATHER CONCRETING"
   ACI-304 - "GUIDE FOR MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE"

2. CONCRETE MIX SPECIFICATIONS

LOCATION	COMP. SRENGTH	W/C RATIO	AIR CONTENT	REMARK
FOOTING	3000 PSI (MIN. OF 5.5 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE)			
SLAB ON GRADE	3000 PSI (MIN. OF 5.5 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE)			
FOUNDATION WALL	3000 PSI (MIN. OF 5.5 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE)			
TOPPING	N.A.			

   a. TOTAL AIR CONTENT IS SPECIFIED IN THE TABLE ABOVE. AIR CONTENT TOLERANCE SHALL BE ± 1% AND SHALL BE MEASURED AT THE POINT OF PLACEMENT. (AFTER PUMPING IF APPLICABLE). ALL CONCRETE EXPOSED TO THE WEATHER SHALL HAVE AN APPROVED ADMIXTURE TO ENTRAIN AIR - 5% TOTAL AIR REQUIRED. CONCRETE THAT CAN BE SUBJECTED TO FREEZING AND THAWING DURING CONSTRUCTION SHALL BE AIR ENTRAINED.

3. PROVIDE GRADE 60 KSI (A615) FOR CONCRETE STEEL REINFORCING

REQUIRED? (Y/N)		MATERIAL / ACTIVITY	EXTENT
		1705.4 Masonry Construction	
		(A) Level A, B and C Quality Assurance:	
Y	N	1. Verify compliance with approved submittals	Periodic
		(B) Level B Quality Assurance:	
Y	N	1. Verification of f'm and f'AAC prior to construction	Periodic
		(C) Level C Quality Assurance:	
Y	N	1. Verification of f'm and f'AAC prior to construction and for every 5,000 SF during construction	Periodic
Y	N	2. Verification of proportions of materials in premixed or preblended mortar, prestressing grout, and grout other than self-consolidating grout, as delivered to the project site	Continuous
Y	N	3. Verify placement of masonry units	Periodic
		(D) Levels B and C Quality Assurance:	
Y	N	1. Verification of Slump Flow and Visual Stability Index (VSI) of self-consolidating grout as delivered to the project	Continuous
Y	N	2. Verify compliance with approved submittals	Periodic
Y	N	3. Verify proportions of site-mixed mortar, grout and prestressing grout for bonded tendons	Periodic
Y	N	4. Verify grade, type, and size of reinforcement and anchor bolts, and prestressing tendons and anchorages	Periodic
Y	N	5. Verify construction of mortar joints	Periodic
Y	N	6. Verify placement of reinforcement, connectors, and prestressing tendons and anchorages	Level B - Periodic Level C - Continuous
Y	N	7. Verify grout space prior to grouting	Level B - Periodic Level C - Continuous
Y	N	8. Verify placement of grout and prestressing grout for bonded tendons	Continuous
Y	N	9. Verify size and location of structural masonry elements	Periodic
Y	N	10. Verify type, size, and location of anchors, including details of anchorage of masonry to structural members, frames, or other construction.	Level B - Periodic Level C - Continuous
Y	N	11. Verify welding of reinforcement (see 1705.2.2)	Continuous
Y	N	12. Verify preparation, construction, and protestion of masonry during cold weather (temperature below 40oF) or hot weather (temperature above 90oF)	Periodic
Y	N	13. Verify application and measurement of prestressing force	Continuous
Y	N	14. Verify placement of AAC masonry units and construction of thin-bed mortar joints (first 5000 SF of AAC masonry)	Continuous
Y	N	15. Verify placement of AAC masonry units and construction of thin-bed mortar joints (after the first 5000 SF of AAC masonry)	Level B - Periodic Level C - Continuous
Y	N	16. Verify properties of thin-bed mortar for AAC masonry (first 5000 SF of AAC masonry)	Continuous
Y	N	17. Verify properties of thin-bed mortar forAAC masonry (after the first 5000 SF of AAC masonry)	Level B - Periodic Level C - Continuous
Y	N	18. Prepare grout and mortar specimens	Level B - Periodic Level C - Continuous
Y	N	19. Observe preparation of prisms	Level B - Periodic Level C - Continuous
		1705.5 Wood Construction	
Y	N	1. Inspection of the fabrication process of wood structural elements and assemblies in accordance with Section 1704.2.5	Periodic
Y	N	2. For high-load diaphragms, verify grade and thickness of structural panel sheathing agree with approved building plans	Periodic
Y	N	3. For high-load diaphragms, verify nominal size of framing members at adjoining panel edges, nail or staple diameter and length, number of fastener lines, and that spacing between fasteners in each line and at edge margins agree with approved building plans	Periodic
Y	N	4. Metal-plate-connected wood trusses spanning 60 feet or greater: verify temporary and permanent restraint/bracing are installed in accordance with the approved truss submittal package	Periodic
		1705.6 Soils	
		1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.	
Y	N	2. Verify excavations are extended to proper depth and have reached proper material.	Periodic
Y	N	3. Perform classification and testing of controlled fill materials.	Periodic
Y	N	4. Verify use of proper materials, densities, and lift thicknesses during placement and compaction of controlled fill	Periodic Continuous
Y	N	5. Prior to placement of controlled fill, observe subgrade and verify that site has been prepared properly	Periodic
		1705.7 Driven Deep Foundations	
Y	N	1. Verify element materials, sizes and lengths comply with requirements	Continuous
Y	N	2. Determine capacities of test elements and conduct additional load tests, as required	Continuous
Y	N	3. Observe driving operations and maintain complete and accurate records for each element	Continuous
Y	N	4. Verify placement locations and plumbness, confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and document any damage to foundation element	Continuous
Y	N	5. For steel elements, perform additional inspections per Section 1705.2	See Section 1705.2
Y	N	6. For concrete elements and concrete-filled elements, perform additional inspections per Section 1705.3	See Section 1705.3
Y	N	7. For specialty elements, perform additional inspections as determined by the registered design professional in responsible charge	In accordance with construction documents
Y	N	8. Perform additional inspections and tests in accordance with the construction documents	In accordance with construction documents
		1705.8 Cast-in-Place Deep Foundations	
Y	N	1.Observe drilling operations and maintain complete and accurate records for each element	Continuous
Y	N	2. Verify placement locations and plumbness, confirm element diameters, bell diameters (if applicable), lengths, embedment into bedrock (if applicable) and adequate end-bearing strata capacity. Record concrete or grout volumes	Continuous
Y	N	3. For concrete elements, perform additional inspections in accordance with Section 1705.3	See Section 1705.3
Y	N	4. Perform additional inspections and tests in accordance with the construction documents	In accordance with construction documents
		1705.9 Helical Pile Foundations	
Y	N	1. Verify installation equipment, pile dimensions, tip elevations, final depth, final installation torque and other data as required.	Continuous
Y	N	2. Perform additional inspections and tests in accordance with the construction documents	In accordance with construction documents
		1705.10.1 Structural Wood Special Inspections For Wind Resistance	
Y	N	1. Inspection of field gluing operations of elements of the main windforce-resisting system	Continuous
Y	N	2. Inspection of nailing, bolting, anchoring and other fastening of components within the main windforce-resisting system	Periodic
		1705.10.2 Cold-formed Steel Special Inspections For Wind Resistance	
Y	N	1.Inspection during welding operations of elements of the main windforce-resisting system	Periodic
Y	N	2.Inspections for screw attachment, bolting, anchoring and other fastening of components within the main windforce-resisting system	Periodic
		1705.10.3 Wind-resisting Components	
Y	N	1. Roof cladding	Periodic
Y	N	2. Wall cladding	Periodic
Y	N	**1705.11.1 Structural Steel Special Inspections for Seismic Resistance** **Inspection of structural steel in accordance with AISC 341**	In accordance with AISC 341
		1705.11.2 Structural Wood Special Inspections for Seismic Resistance	
Y	N	1. Inspection of field gluing operations of elements of the seismic-force resisting system	Continuous
Y	N	2. Inspection of nailing, bolting, anchoring and other fastening of components within the seismic-force-resisting system	Periodic
		1705.11.3 Cold-formed Steel Light-Frame Construction Special Inspections for Seismic Resistance	
Y	N	1. Inspection during welding operations of elements of the seismic-force-resisting system	Periodic
Y	N	2. Inspections for screw attachment, bolting, anchoring and other fastening of components within the seismic-force-resisting system	Periodic

STRUCTURAL AND MISCELLANEOUS STEEL

STEEL MEMBERS, HARDWARE, FASTENERS SHALL BE HOT DIPPED GALVANIZED OR EPOXY PAINTED PER ARCHITECT REQUIREMENTS. ALL CUT, REPAIRED AND EXPOSED SURFACE SHALL BE PAINTED WITH (2) COAT OF 95% ZINC RICH PAINT PER ASTM A780. COLOR TO MATCH EXISTING.

STEEL SHALL CONFORM TO THE FOLLOWING STANDARDS:
- TUBE COLUMNS: ASTM A500, GRADE B (Fy = 46 KSI)
- WIDE FLANGE COLUMNS / BEAMS: ASTM 572 GR50
- STEEL PIPE: SCHEDULE 40, CONFORMING TO ASTM A53, TYPE E OR S, GRADE B (Fy = 35 KSI.)
- ALL OTHER STEEL: ASTM A36 (Fy = 36 KSI) OR ASTM A992
- BOLTS: ASTM A307 (WOOD/STEEL CONN)
- BOLTS: ASTM A325/A490 WITH LOCK WASHERS (STEEL/STEEL AND STEEL/CONC CONN)
- ANCHOR BOLTS: ASTM A307 (WOOD FRAMING)
- ANCHOR BOLTS: ASTM A325 (STEEL FRAMING)

ALL SLIP CRITICAL CONNECTIONS SHALL BE ASTM A325 BOLTS AND SHALL BE ENGINEER-APPROVED, SELF-LOAD INDICATING TYPES, AND SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

STRUCTURAL STEEL WELDING
CONFORM TO THE AWS CODES D1.1 AND D1.3, AND USE ONLY CERTIFIED WELDERS. WELDS NOT SPECIFIED ARE TO BE 1/4" CONTINUOUS FILLET MINIMUM. INCREASE WELD SIZE TO AWS MINIMUM SIZES, BASED ON PLATE THICKNESS. USE DRY E70 ELECTRODES. ALL WELDING SHALL CONFORM TO THE AWS CODES, AND SHALL BE BY CERTIFIED WELDERS. WELDS NOT SPECIFIED SHALL BE 1/4" CONTINUOUS FILLET MINIMUM. USE DRY E70 ELECTRODES.

DRAWING LIST

SHEET NUMBER	SHEET NAME	ISSUE DATE
S-0	GENERAL NOTES AND SPECIFICATIONS	07-07-23
S-1	FRAMING PLANS	07-07-23
S-2	FRAMING DETAILS	07-07-23
S-3	WSW DETAILS	07-07-23

Grand total: 4

b2 structural engineers
info@b2engineers.com
425-318-7047 (O)
425-318-0031 (C)

BASRI BASRI STATE OF WASHINGTON 43789 STRUCTURAL ENGINEER PROFESSIONAL ENGINEER

TSO ADDITION

8802 SE 37TH ST
MERCER ISLAND, WA
98040

DRAWING INFO

ISSUE DATE 07-07-23

ISSUED FOR REVIEW

PROJECT NO.22126

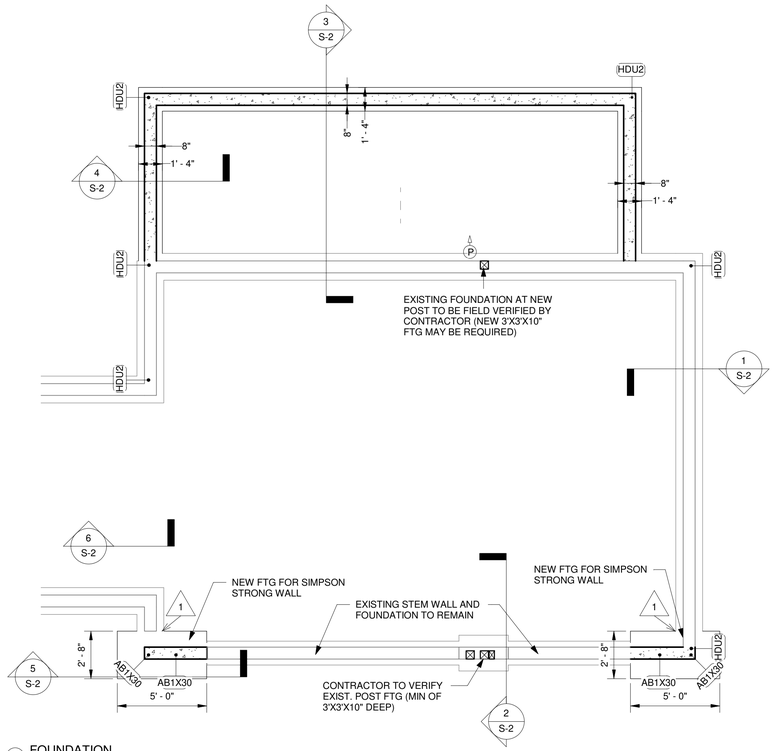
ENGINEER BB

REVISION SCHEDULE

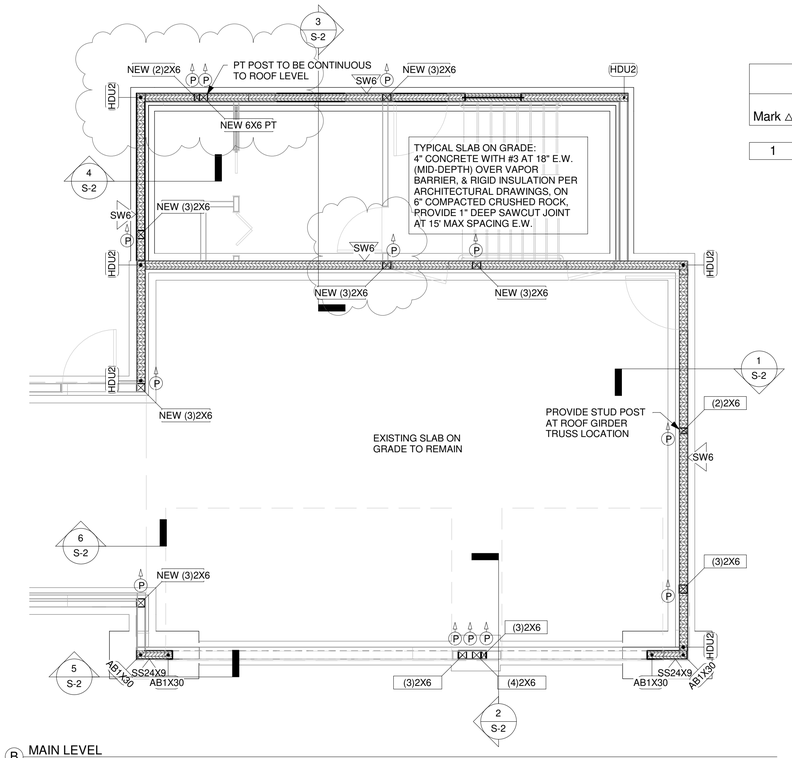
NO.	DATE	DESCRIPTION

GENERAL NOTES AND SPECIFICATIONS

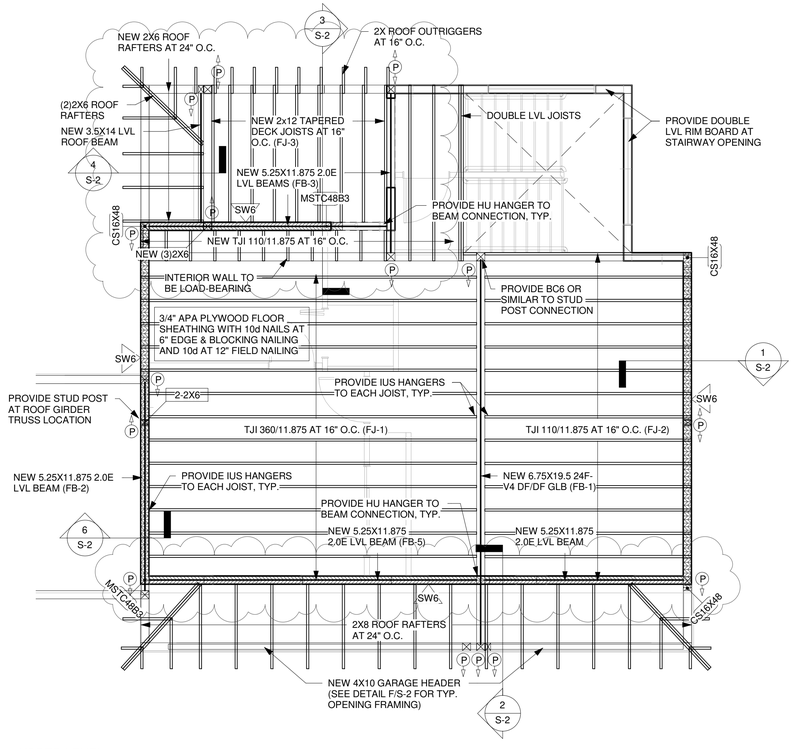
S-0



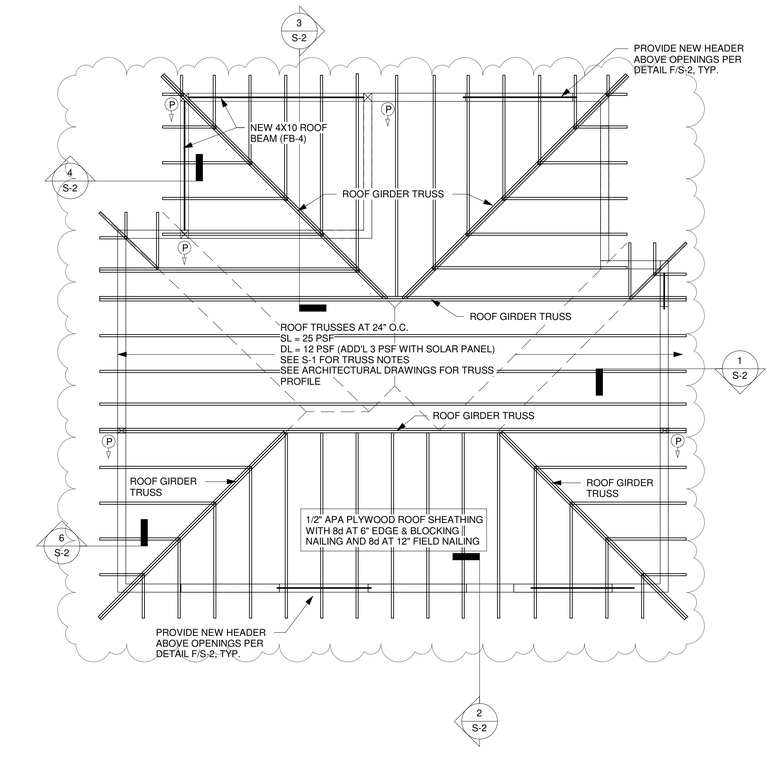
A FOUNDATION
1/4" = 1'-0"



B MAIN LEVEL
1/4" = 1'-0"



C UPPER LEVEL
1/4" = 1'-0"



D ROOF PLAN
1/4" = 1'-0"

IMPORTANT NOTES ON DRAWING REVIEW, FIELD VERIFICATION, TEMPORARY SHORING AND WATERPROOFING:

1. CONTRACTOR MUST REVIEW STRUCTURAL DRAWINGS PRIOR TO CONSTRUCTION & NOTIFY DESIGN TEAM/OWNER OF ANY DISCREPANCY IN COMPARISON WITH ARCHITECTURAL DOCUMENTS OR FIELD CONDITIONS.
2. IN REMODEL/RETROFIT PROJECTS, CONTRACTOR MUST FIELD VERIFY & NOTIFY DESIGN TEAM/OWNER OF EXISTING MECHANICAL, PLUMBING, AND ELECTRICAL LINES THAT MAY INTERFERE WITH STRUCTURAL WORK PRIOR TO CONSTRUCTION. STRUCTURAL DRAWINGS MAY NOT REFLECT ALL EXISTING FRAMING CONDITIONS DUE TO LIMITED AVAILABLE INFORMATION.
3. CONTRACTOR IS SOLELY RESPONSIBLE IN PROVIDING PROPER TEMPORARY SHORING PRIOR TO REMOVING ANY STRUCTURAL ELEMENTS.
4. ENGINEER IS NOT RESPONSIBLE FOR WATERPROOFING SYSTEM OR DETAILS. CONTRACTOR/OWNER SHALL CONSULT WITH QUALIFIED PROFESSIONALS AS REQUIRED

IMPORTANT NOTES ON FOUNDATION AND FRAMING:

1. ALL FOOTINGS SHALL BEAR ON SUITABLE SOIL SUCH AS MIN. OF MEDIUM DENSE NATIVE SOIL OR COMPACTED STRUCTURAL FILL (NO SOFT OR ORGANIC MATERIALS). GEOTECHNICAL ENGINEER MAY BE REQUIRED TO ASSESS EXISTING SOIL CONDITIONS.
2. FOR FRAMING LUMBER TYPES AND GRADES, AND CONCRETE MIX REQUIREMENTS PLEASE SEE S-0
3. FOR PLYWOOD/OSB SHEARWALL SCHEDULE, PLEASE SEE S-XX
4. FOR COMMON HEADER FRAMING DETAIL AND HEADER SIZE, SEE S-XX
5. PROVIDE (2) 2X6 OR (3) 2X4 STUD POSTS AT EACH END OF BEAMS, UNLESS NOTED OTHERWISE ON PLAN
6. SLAB ON GRADE SHALL BE MIN. 4" THICK WITH #3 AT 18" EACH WAY (AT MID-DEPTH) ON 6" COMPACTED CRUSHED ROCK. SAWCUT JOINT (1" DEEP) AT 15 FT MAX. SPACING EACH WAY SHALL BE DONE WITHIN 4 TO 12 HOURS AFTER FINISHING, DEPENDING ON WEATHER.
7. FLOOR SHEATHING SHALL BE 3/4" PLYWOOD OR OSB WITH 10d AT 6" NAILING AT EDGES & BLOCKING AND AT 12" AT FIELD
8. ROOF SHEATHING SHALL BE 1/2" PLYWOOD OR OSB WITH 8d AT 6" NAILING AT EDGES & BLOCKING AND AT 12" AT FIELD

IMPORTANT NOTES ON TRUSS AND LUMBER PACKAGE/LUMBER PACKAGE REVIEW:

1. TRUSS FRAMING LAYOUT SHOWN IS GENERAL CONCEPT ONLY. CONTRACTOR/ TRUSS SUPPLIER MUST SUBMIT TRUSS SHOP DRAWINGS INCLUDING TRUSS TEMPORARY/ PERMANENT BRACING PLANS FOR ENGINEER'S REVIEW
2. TRUSS FRAMING PROFILE/ LAYOUT SHOULD CONFORM TO BOTH STRUCTURAL AND ARCHITECTURAL DRAWINGS. ANY DEVIATIONS SHALL BE APPROVED BY ENGINEER/ ARCHITECT PRIOR TO TRUSS DESIGN WORK.
3. TRUSS DEFLECTION CRITERIAS:
FLOOR/DECK TOTAL LOAD = L/480 ROOF TOTAL LOAD = L/240
FLOOR/DECK LIVE LOAD = L/600 ROOF SNOW LOAD = L/300
** MAXIMUM TOTAL LOAD DEFLECTION SHOULD NOT EXCEED 1.0" IN ALL CASES
4. FLOOR/ROOF FRAMING LAYOUT AND CONNECTORS (SUCH AS LUMBER PACKAGE BY SUPPLIERS) MUST BE SUBMITTED FOR ENGINEER'S REVIEW PRIOR TO CONSTRUCTION

FRAMING SYMBOLS:

SS24 — SIMPSON WSW WOOD STRONG WALL (24" WIDE)
SW6 — PLYWOOD SHEARWALL
A — SHEARWALL HOLDOWN
(P) — CONTINOUS POST
(P) — POST STOPS BELOW THIS FLOOR
(P) — POST STARTS AT THIS FLOOR

LEGEND AND NOTES
1/4" = 1'-0"

FOOTING SCHEDULE

Mark △	TYPE	WIDTH / DIAMETER	LENGTH / DIAMETER	THICKNESS	COUNT	REINFORCEMENT
1	Footing-Rectangular	2' - 8"	5' - 0"	1' - 0"	2	3 - #4 E.W.

b2 structural engineers
info@b2engineers.com
425-318-7047 (O)
425-318-0031 (C)

BASRI 43789 STATE OF WASHINGTON STRUCTURAL ENGINEER PROFESSIONAL ENGINEER

TSO ADDITION

8802 SE 37TH ST
MERCER ISLAND, WA
98040

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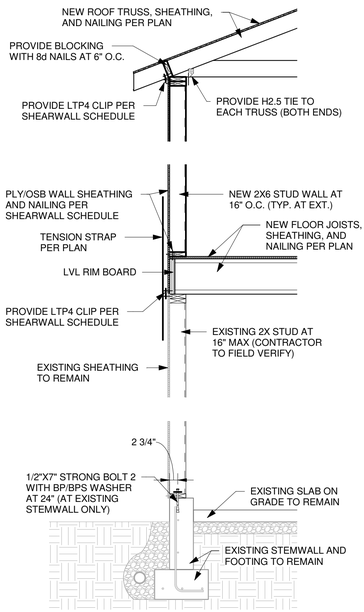
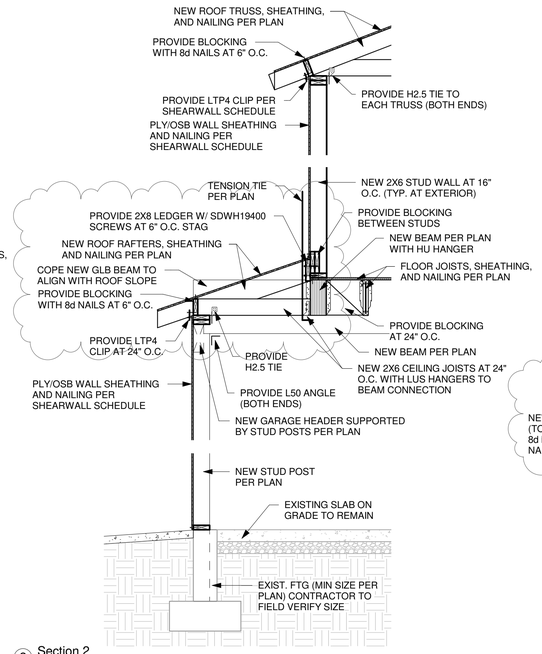
FRAMING PLANS

S-1



1 Section 1
1/2" = 1'-0"



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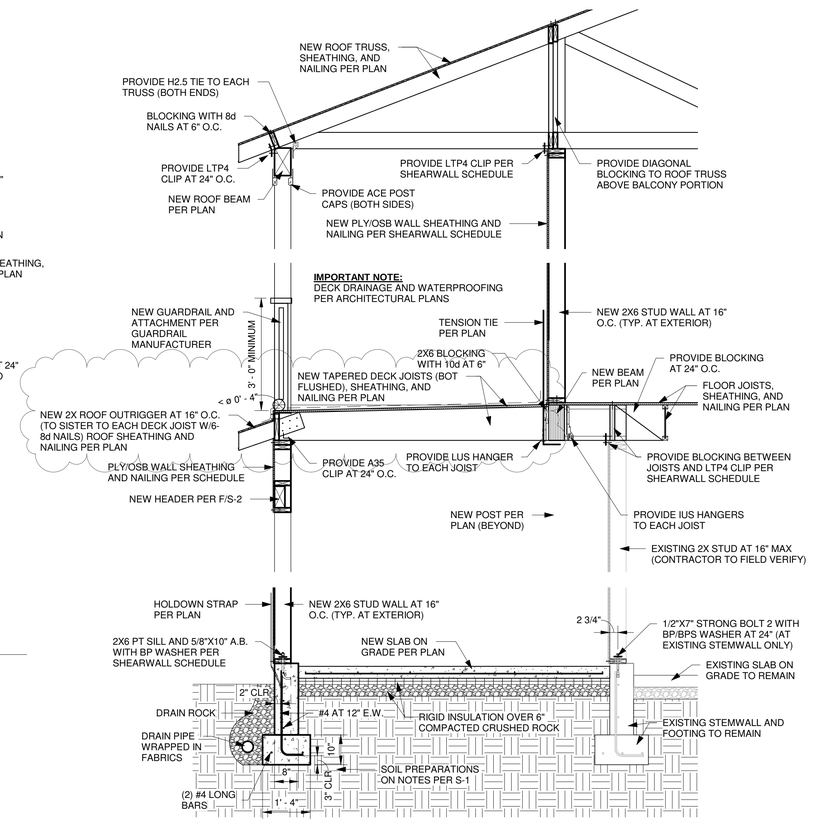

3 Section 3
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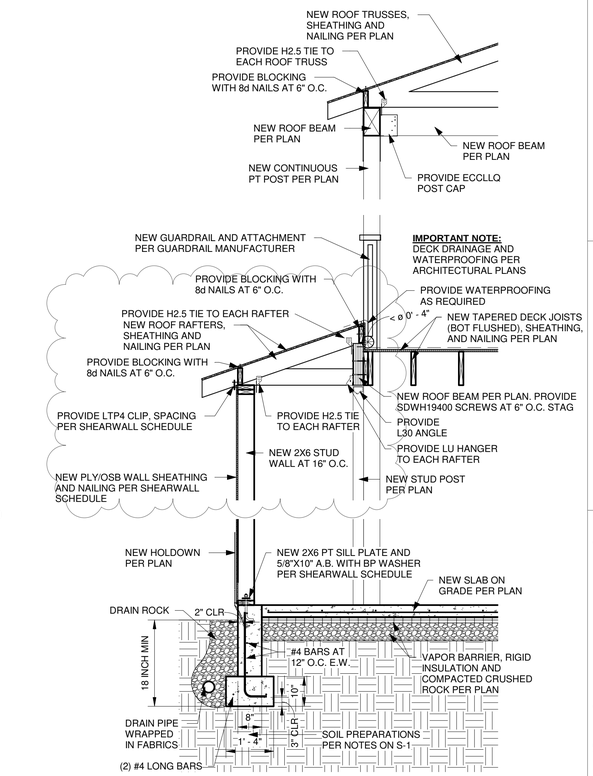


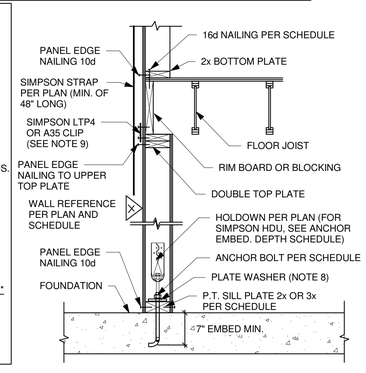
4 Section 4
1/2" = 1'-0"

TYPE	PLYWOOD OR OSB SHEATHING (NOTE 7)	PANEL EDGE NAILING (NOTE 4)	PANEL EDGE STUDS AND BLKG	ANCHOR BOLTS AT SILL PLATE (NOTE 8)	TOP/SILL PLATE TO BLOCKING/ RIM (NOTE 9)	BOTTOM PLATE TO BLOCKING/ RIM (NOTE 4)	CAPACITY (LRFD) (SEISMIC/WIND)
SW6	15/32" PLY/OSB ONE SIDE	10d COM AT 6"	2x	5/8" AT 36" O.C.-2x	SIMPSON LTP4 AT 24" O.C.	16d COM AT 6" O.C.-NARROW	496 PLF/ 696 PLF
SW4	15/32" PLY/OSB ONE SIDE	10d COM AT 4"	2x (SEE NOTE 5)	5/8" AT 24" O.C.-2x	SIMPSON LTP4 AT 16" O.C.	16d COM AT 4" O.C.-NARROW	736 PLF/ 1032 PLF
SW3	15/32" PLY/OSB ONE SIDE	10d COM AT 3"	3x	5/8" AT 18" O.C.-2x	SIMPSON LTP4 AT 12" O.C.	16d COM AT 3" O.C.-WIDE	960 PLF/ 1344 PLF
SW2	15/32" PLY/OSB ONE SIDE	10d COM AT 2"	3x	5/8" AT 12" O.C.-2x	SIMPSON LTP4 AT 8" O.C.	16d COM AT 2" O.C.-WIDE	1232 PLF/ 1724 PLF
SW44	15/32" PLY/OSB TWO SIDES	10d COM AT 4"	2x	5/8" AT 18" O.C.-3x	SIMPSON LTP4 AT 16" O.C. B.S.	(2) 16d COM AT 4" O.C.-WIDE	1472 PLF/ 2064 PLF
SW33	15/32" PLY/OSB TWO SIDES	10d COM AT 3"	3x	5/8" AT 16" O.C.-3x	SIMPSON LTP4 AT 12" O.C. B.S.	(2) 16d COM AT 3" O.C.-WIDE	1920 PLF/ 2688 PLF
SW22	15/32" PLY/OSB TWO SIDES	10d COM AT 2"	3x	5/8"AT 12" O.C.-3x	SIMPSON LTP4 AT 8" O.C. B.S.	(2) 16d COM AT 2" O.C.-WIDE	2464 PLF/ 3448 PLF

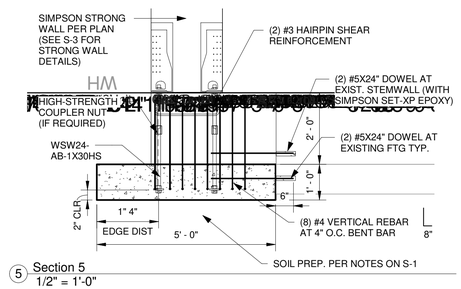
SHEARWALL SCHEDULE NOTES:

1. ALL PANEL EDGES TO OCCUR OVER STUDS, PLATES, RIMS OR HORIZONTAL BLOCKING AT WALLS
2. NAIL SHEATHING TO INTERMEDIATE SUPPORTS/ FIELD NAILING 10d AT 12" O.C.
3. ALL NAILS INTO 3x MEMBERS SHALL BE STAGGERED.
   (2)2x STUDS MAY BE USED IN LIEU OF 3x STUDS AT PANEL JOINTS.
   NAIL STUDS TOGETHER W/2 ROWS 16d COMMON AT 6" O.C. AT SINGLE SIDE SHEATHING AND NAIL WITH 2 ROWS OF 16d COMMON AT 3" O.C. AT DOUBLE SHEATHED WALLS.
4. COM DENOTES COMMON NAILS. MIN. NAIL PENETRATION INTO PLATE, RIM OR BLOCKING SHALL BE 1 5/8". STAGGER BOTTOM PLATE NAILING
5. FOR SHEARWALL SW4, ALL FRAMING MEMBERS RECEIVING EDGE NAILINGS FROM ABUTTING PANELS SHALL BE 3X OR (2) 2X NAILED TOGETHER WITH 16d AT 6"
6. WHERE SHEATHING IS APPLIED TO BOTH SIDES OF WALL, OFFSET PANEL EDGES TO FALL ON DIFFERENT STUDS.
7. PROVIDE SHEAR WALL SHEATHING AND NAILING FOR ENTIRE LENGTH OF WALLS NOTED ON PLAN.
   PROVIDE HOLDOWNS PER PLAN AT EACH END OF WALL, LINO.
   PROVIDE (2) 2X STUDS AT ENDS OF ALL SHEARWALL. FACE NAIL MULTIPLE STUDS WITH 16d AT 12"
   PROVIDE PANEL EDGE NAILING IN EACH HOLDOWN STUD AT END OF WALL.
8. ALL FOUNDATION SILL PLATES SHALL BE PT MEMBERS AND THE ANCHOR BOLTS SHALL HAVE MIN. OF 7" EMBEDMENT WITH SIMPSON'S BP/ BPS WASHER PLATE. END OF WALL ANCHOR BOLTS SHALL BE LOCATED MAX 12" AND MIN 5" FROM END OF THE PLATE.
9. WHERE NOTED IN DETAILS, USE SIMPSON A35 IN LIEU OF LTP4 PLATES SPACE AT 2/3 OF LTP4 SPACING.

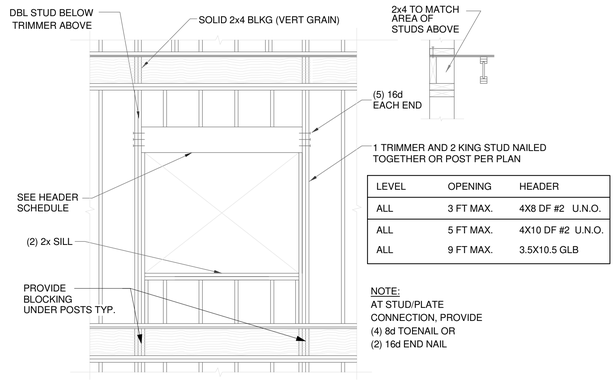
SIMPSON HOLDOWN	SIMPSON CAST IN PLACE ANCHOR BOLTS*	SIMPSON EPOXY ALL THREAD ANCHORS*
HDU2	SSTB16 (5/8"ANCHOR WITH 12 5/8" MIN. EMBED.)	5/8" (12" EMBED WITH SET-3G)
HDU4	SB 5/8X 24 (5/8"ANCHOR WITH 18" MIN. EMBED.)	5/8" (14" EMBED WITH SET-3G)
HDU5	SB 5/8X 24 (5/8"ANCHOR WITH 18" MIN. EMBED.)	5/8" (16" EMBED WITH SET-3G)
HDU8	SB 7/8X 24 (7/8"ANCHOR WITH 18" MIN. EMBED.)	
HDU11	SB 1X 30 (1" ANCHOR WITH 24" MIN. EMBED.)	* ALL ANCHORS SHALL BE 2.5" MIN.
HDU14	SB 1X 30 (1" ANCHOR WITH 24" MIN. EMBED.)	FROM EDGE OF CONCRETE WALL



E SHEARWALL SCHEDULE
3/4" = 1'-0"



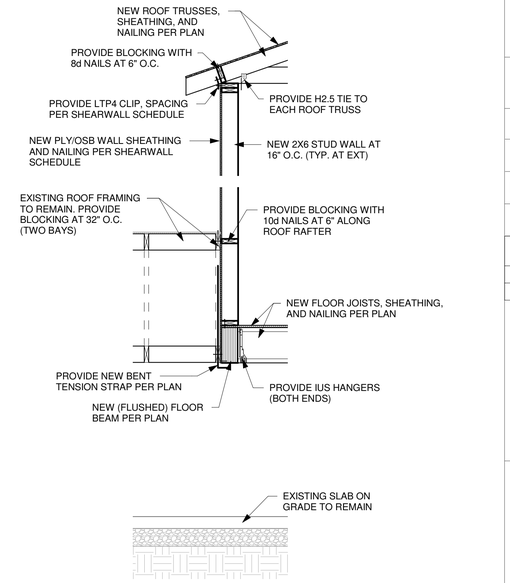
5 Section 5
1/2" = 1'-0"



LEVEL	OPENING	HEADER
ALL	3 FT MAX.	4X8 DF #2 U.N.O.
ALL	5 FT MAX.	4X10 DF #2 U.N.O.
ALL	9 FT MAX.	3.5X10.5 GLB

NOTE:
AT STUD/PLATE CONNECTION, PROVIDE (4) 8d TOENAIL OR (2) 16d END NAIL

F TYP. WALL OPENING FRAMING
3/4" = 1'-0"



6 Section 6
1/2" = 1'-0"

b2 structural engineers
info@b2engineers.com
425-318-7047 (O)
425-318-0031 (C)

TSO ADDITION

8802 SE 37TH ST
MERCER ISLAND, WA
98040

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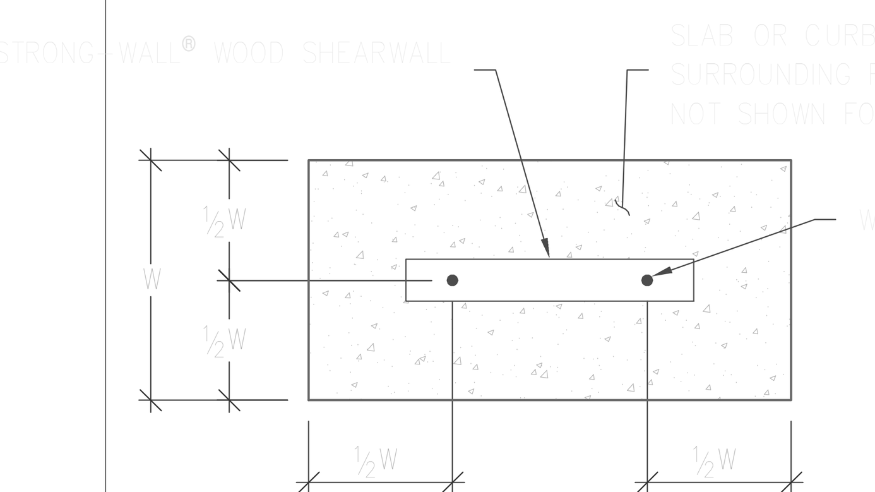
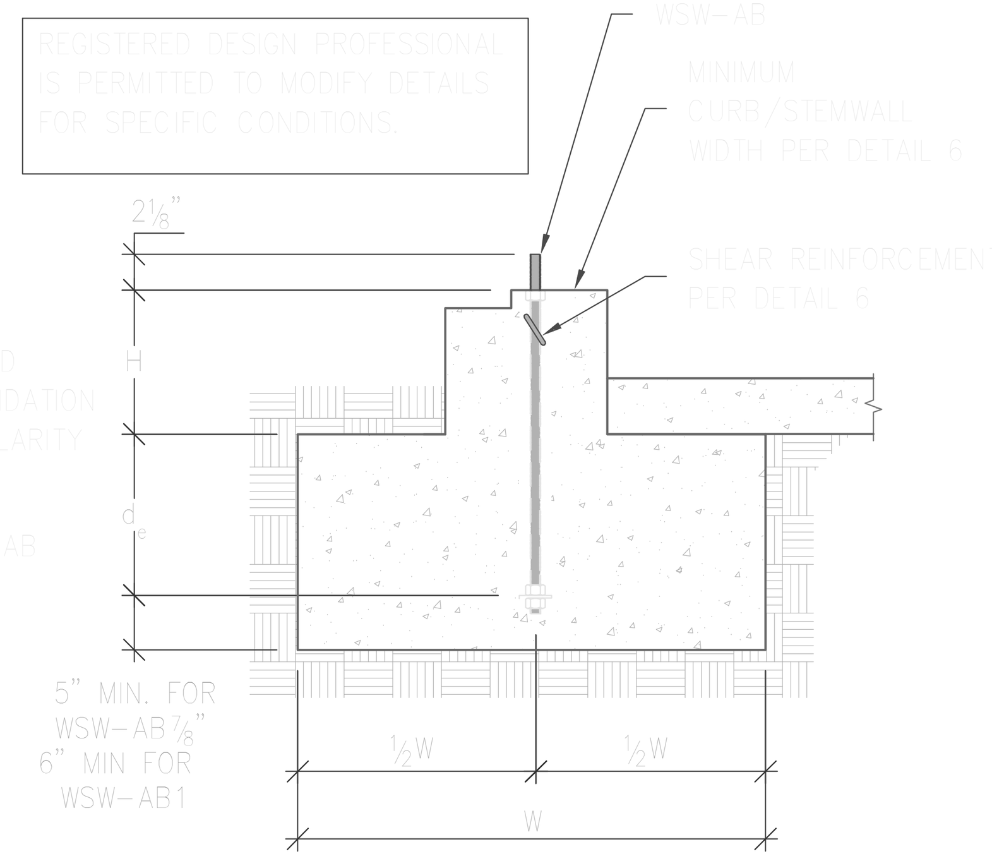
FRAMING DETAILS

S-2



FOUNDATION PLAN VIEW

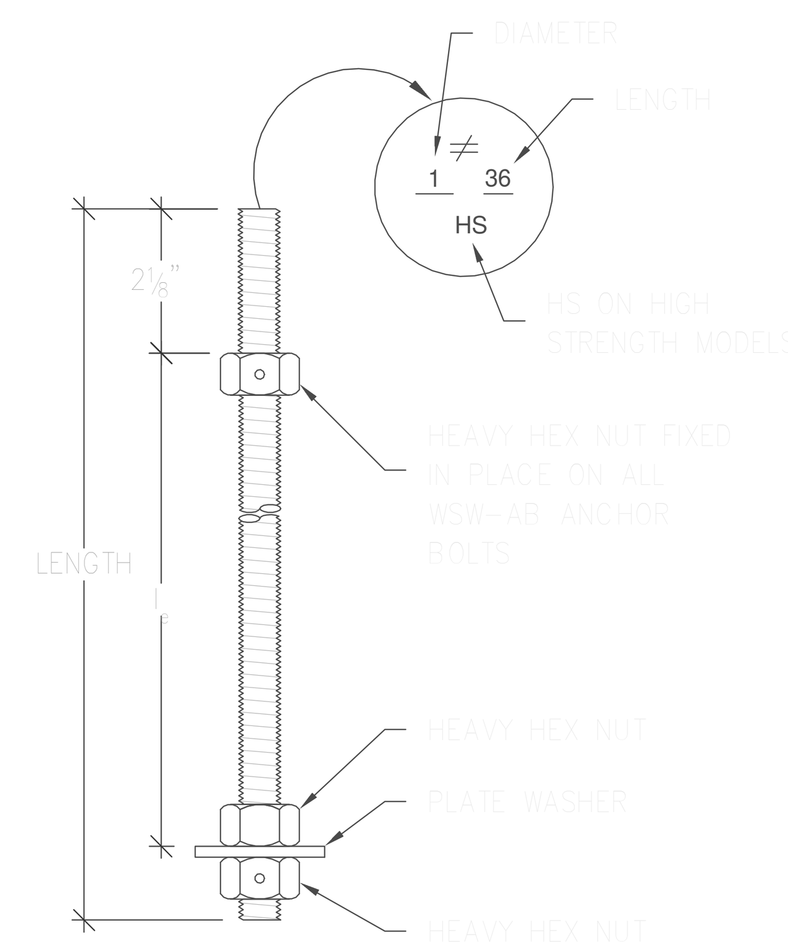


CURB OR STEMWALL FOUNDATION SECTION VIEW

WSW ANCHORAGE SOLUTIONS FOR 2500 PSI CONCRETE								
DESIGN CRITERIA	CONCRETE CONDITION	ANCHOR STRENGTH	WSW-AB 7/8 ANCHOR BOLT			WSW-AB1 ANCHOR BOLT		
			ASD ALLOWABLE UPLIFT (lbs)	W (in)	de (in)	ASD ALLOWABLE UPLIFT (lbs)	W (in)	de (in)
SEISMIC	CRACKED	STANDARD	11,900	27	9	16,100	33	11
			13,100	29	10	17,100	35	12
		HIGH STRENGTH	24,900	43	15	33,000	51	17
			27,100	46	16	35,300	54	18
	UNCRACKED	STANDARD	12,500	24	8	15,700	28	10
			13,100	25	9	17,100	30	10
		HIGH STRENGTH	25,300	38	13	32,300	44	15
			27,100	40	14	35,300	47	16
WIND	CRACKED	STANDARD	5,100	14	6	6,200	16	6
			8,700	20	7	11,400	24	8
			13,100	27	9	17,100	32	11
		HIGH STRENGTH	15,900	30	10	21,100	36	12
			18,400	33	11	27,300	42	14
			23,100	38	13	31,800	46	16
			27,100	42	14	35,300	50	17
	UNCRACKED	STANDARD	5,000	12	6	6,400	14	6
			9,300	18	6	12,500	22	8
			13,100	23	8	17,100	28	10
		HIGH STRENGTH	15,200	25	9	21,900	32	11
			19,900	30	10	26,400	36	12
			24,000	34	12	31,500	40	14
			27,100	37	13	35,300	43	15

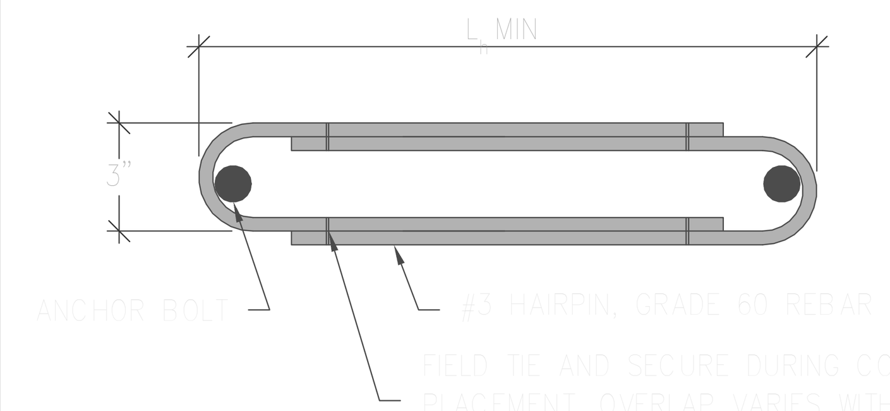
NOTES:
1. ANCHORAGE DESIGNS CONFORM TO ACI 318-11 APPENDIX D AND ACI 318-14 WITH NO SUPPLEMENTARY REINFORCEMENT FOR CRACKED OR UNCRACKED CONCRETE AS NOTED.
2. ANCHOR STRENGTH INDICATES REQUIRED GRADE OF WSW-AB ANCHOR BOLT. STANDARD (ASTM F1554 GRADE 36) OR HIGH STRENGTH (HS) (ASTM A449).
3. SEISMIC INDICATES SEISMIC DESIGN CATEGORY C-F. DETACHED 1 AND 2 FAMILY DWELLINGS IN SDC C MAY USE WIND ANCHORAGE SOLUTIONS. SEISMIC ANCHORAGE DESIGNS CONFORM TO ACI 318-11 SECTION D.3.3.4.3 AND ACI 318-14 SECTION 17.2.3.4.3.
4. WIND INCLUDES SEISMIC DESIGN CATEGORY A AND B AND DETACHED 1 AND 2 FAMILY DWELLINGS IN SDC C.
5. FOUNDATION DIMENSIONS ARE FOR ANCHORAGE ONLY. FOUNDATION DESIGN (SIZE AND REINFORCEMENT) BY OTHERS. THE REGISTERED DESIGN PROFESSIONAL MAY SPECIFY ALTERNATE EMBEDMENT, FOOTING SIZE OR ANCHOR BOLT.
6. REFER TO SECTION VIEW FOR d_e.

2500 PSI CONCRETE ANCHORAGE SOLUTIONS 4

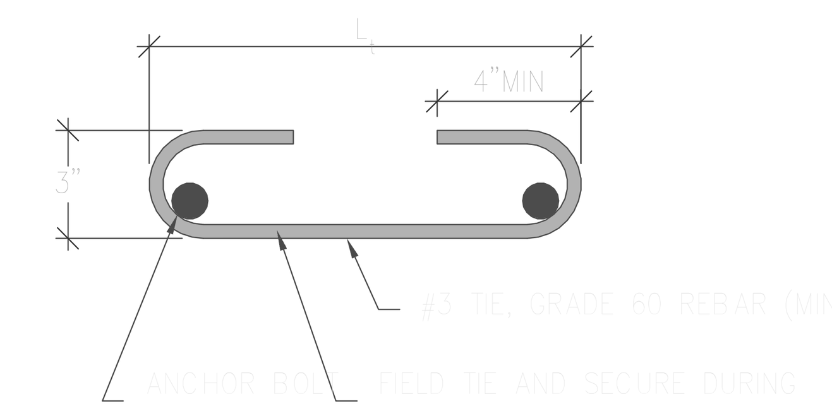


WSW PANEL MODEL	MODEL NO.	DIAMETER	LENGTH	l_e
WSW12 AND WSW18	WSW-AB 7/8x24	7/8"	24"	20"
	WSW-AB 7/8x24HS	7/8"	24"	20"
	WSW-AB 7/8x30	7/8"	30"	26"
	WSW-AB 7/8x30HS	7/8"	30"	26"
	WSW-AB 7/8x36HS	7/8"	36"	32"
WSW24	WSW-AB1x24	1"	24"	20"
	WSW-AB1x24HS	1"	24"	20"
	WSW-AB1x30	1"	30"	26"
	WSW-AB1x30HS	1"	30"	26"
	WSW-AB1x36HS	1"	36"	32"

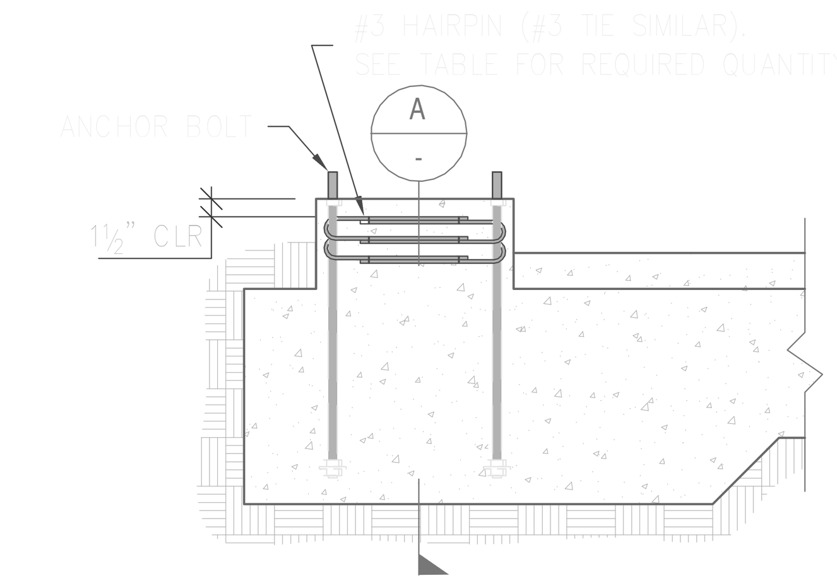
WSW ANCHOR BOLTS 5



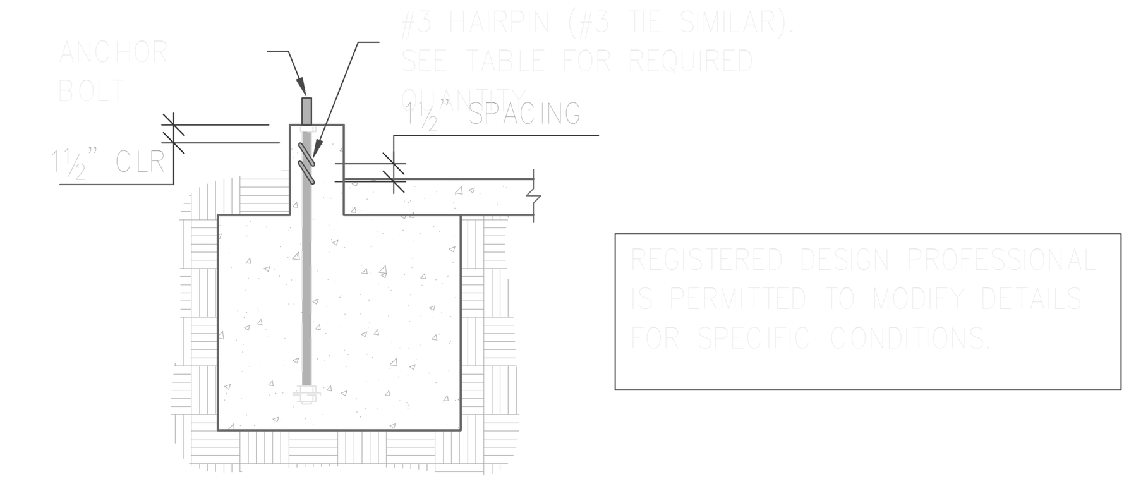
HAIRPIN SHEAR REINFORCEMENT



TIE SHEAR REINFORCEMENT



HAIRPIN INSTALLATION
(GARAGE CURB SHOWN. OTHER FOOTING TYPES SIMILAR.)

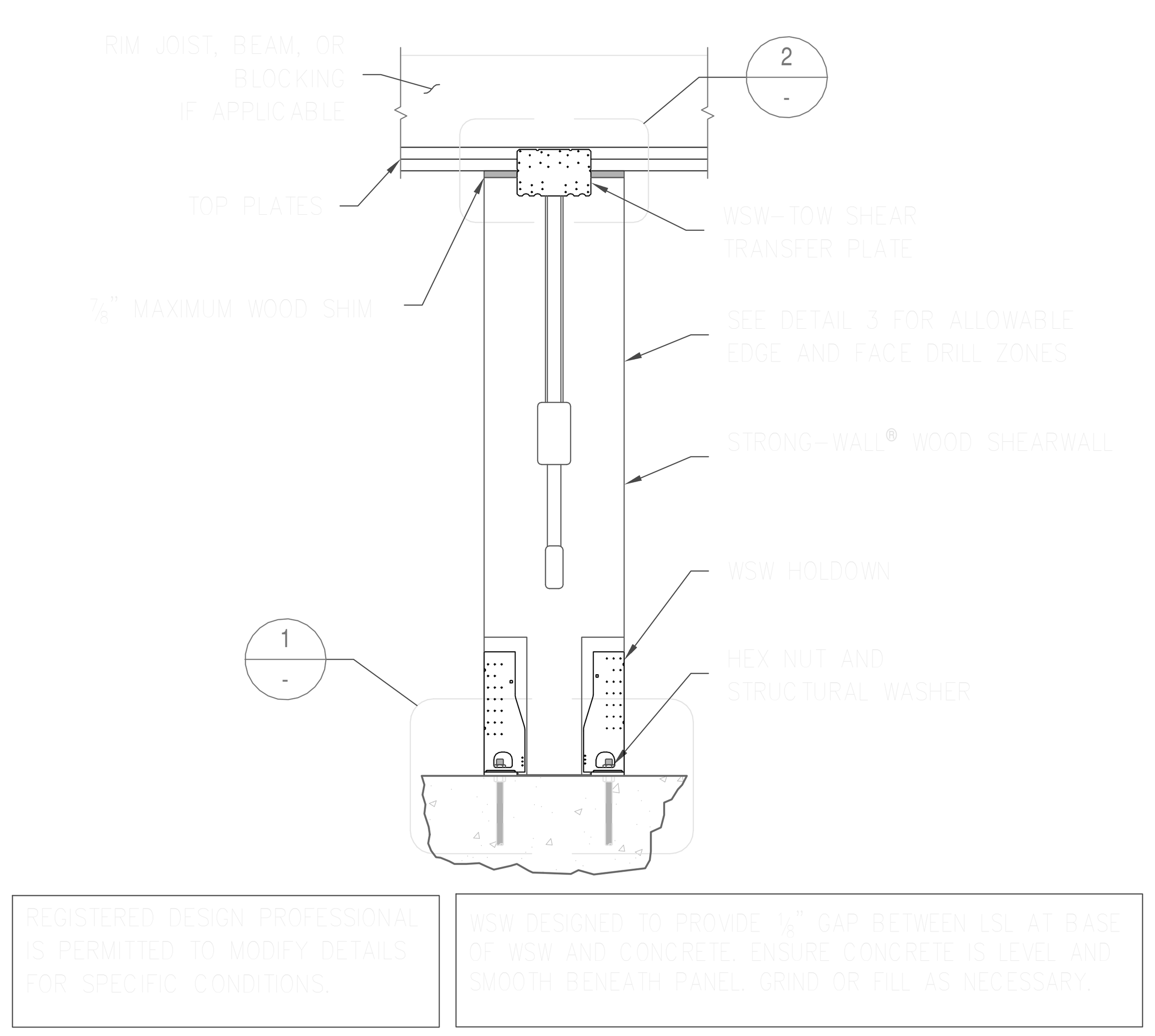


SECTION A

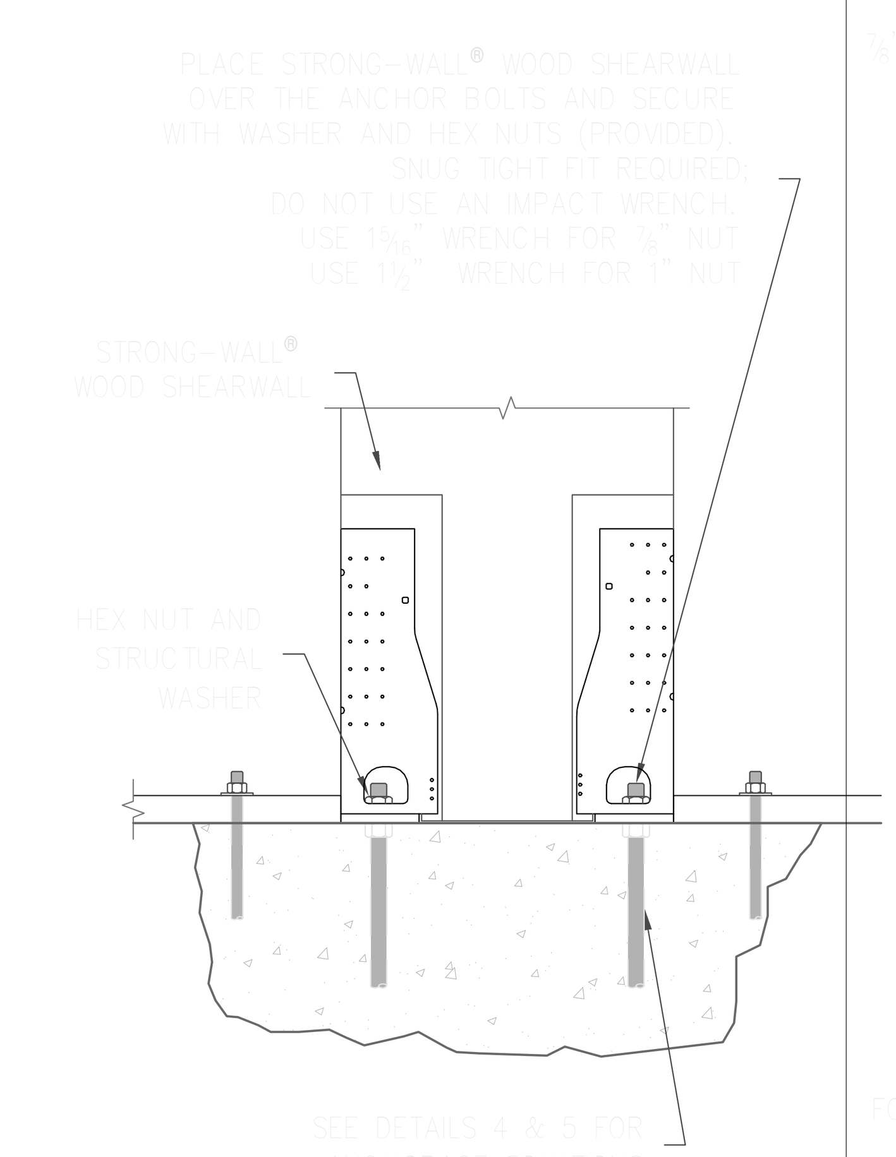
STRONG-WALL® WOOD SHEARWALL SHEAR ANCHORAGE							
MODEL	SEISMIC[3]			WIND[4]			
	L_t OR L_h (in.)	SHEAR REINFORCEMENT	MIN. CURB/ STEMWALL WIDTH (in.)	SHEAR REINFORCEMENT	MIN. CURB/ STEMWALL WIDTH (in.)	ASD ALLOWABLE SHEAR LOAD V (lbs.)[6] 6" MIN CURB/STEMWALL	
						UNCRACKED	CRACKED
WSW12	10¼"	(1) #3 TIE	8[5]	SEE NOTE 6	6	1,035	740
WSW18	15	(1) #3 HAIRPIN	8[5]	(1) #3 HAIRPIN	6	HAIRPIN REINFORCEMENT ACHIEVES MAXIMUM ALLOWABLE SHEAR LOAD OF THE WSW	
WSW24	19	(2) #3 HAIRPIN	8[5]	(1) #3 HAIRPIN	6		

NOTES:
1. SHEAR ANCHORAGE DESIGNS CONFORM TO ACI 318-11 AND ACI 318-14 AND ASSUME MINIMUM 2,500 PSI CONCRETE.
2. SHEAR REINFORCEMENT IS NOT REQUIRED FOR INTERIOR FOUNDATION APPLICATIONS (PANEL INSTALLED AWAY FROM EDGE OF CONCRETE), OR BRACED WALL PANEL APPLICATIONS.
3. SEISMIC INDICATES SEISMIC DESIGN CATEGORY C THROUGH F. DETACHED 1 AND 2 FAMILY DWELLINGS IN SDC C MAY USE WIND ANCHORAGE SOLUTIONS.
4. WIND INCLUDES SEISMIC DESIGN CATEGORY A AND B AND DETACHED 1 AND 2 FAMILY DWELLINGS IN SDC C.
5. WHERE NOTED, MINIMUM CURB/STEMWALL WIDTH IS 6 INCHES WHEN STANDARD STRENGTH ANCHOR BOLT IS USED.
6. USE (1) #3 TIE FOR WSW12 WHEN PANEL DESIGN SHEAR FORCE EXCEEDS TABULATED ANCHORAGE ALLOWABLE SHEAR LOAD.
7. #4 GRADE 40 SHEAR REINFORCEMENT MAY BE SUBSTITUTED FOR WSW SHEAR ANCHORAGE SOLUTIONS.

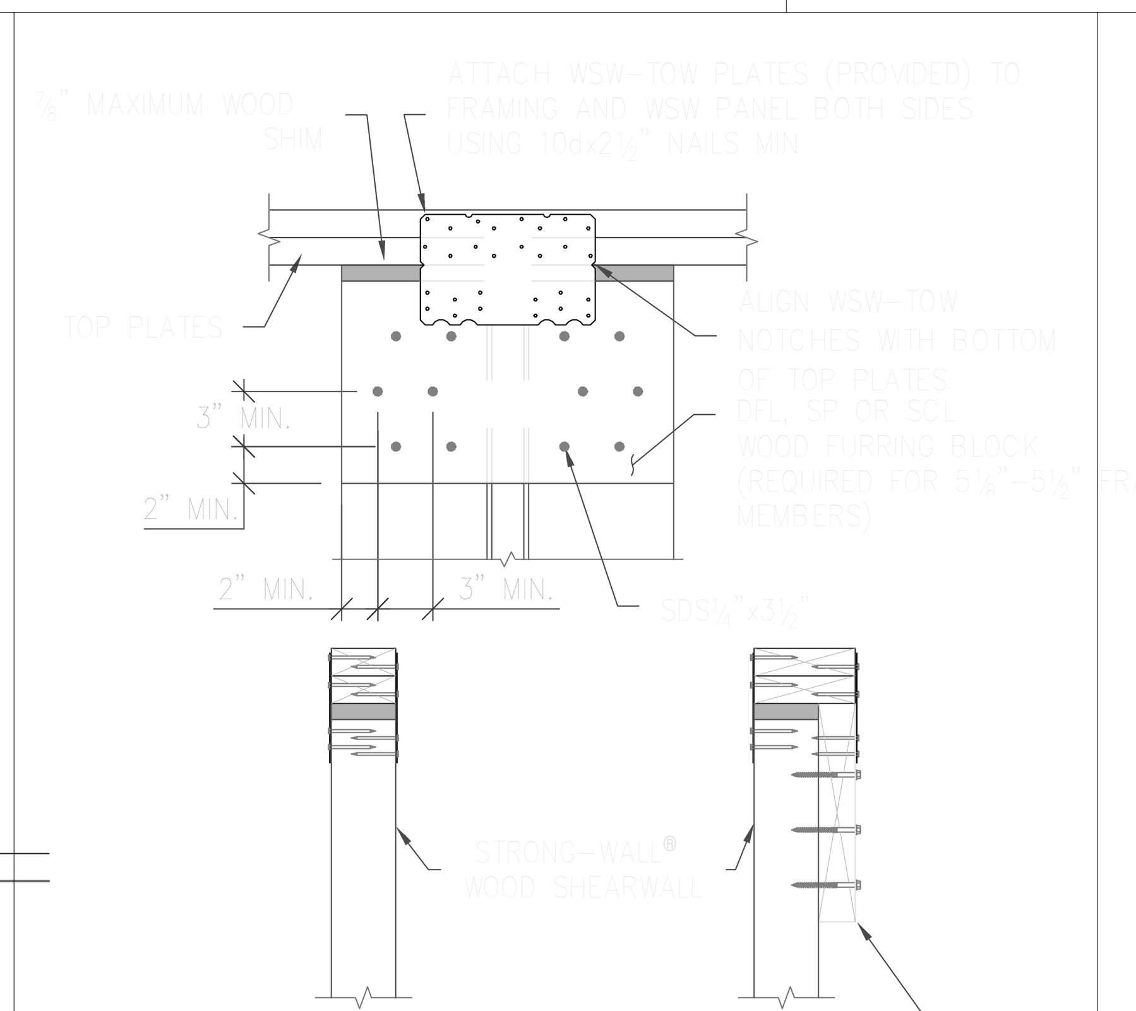
STRONG-WALL® WSW SHEAR ANCHORAGE SCHEDULE AND DETAILS 6



SINGLE STORY WSW ON CONCRETE 0



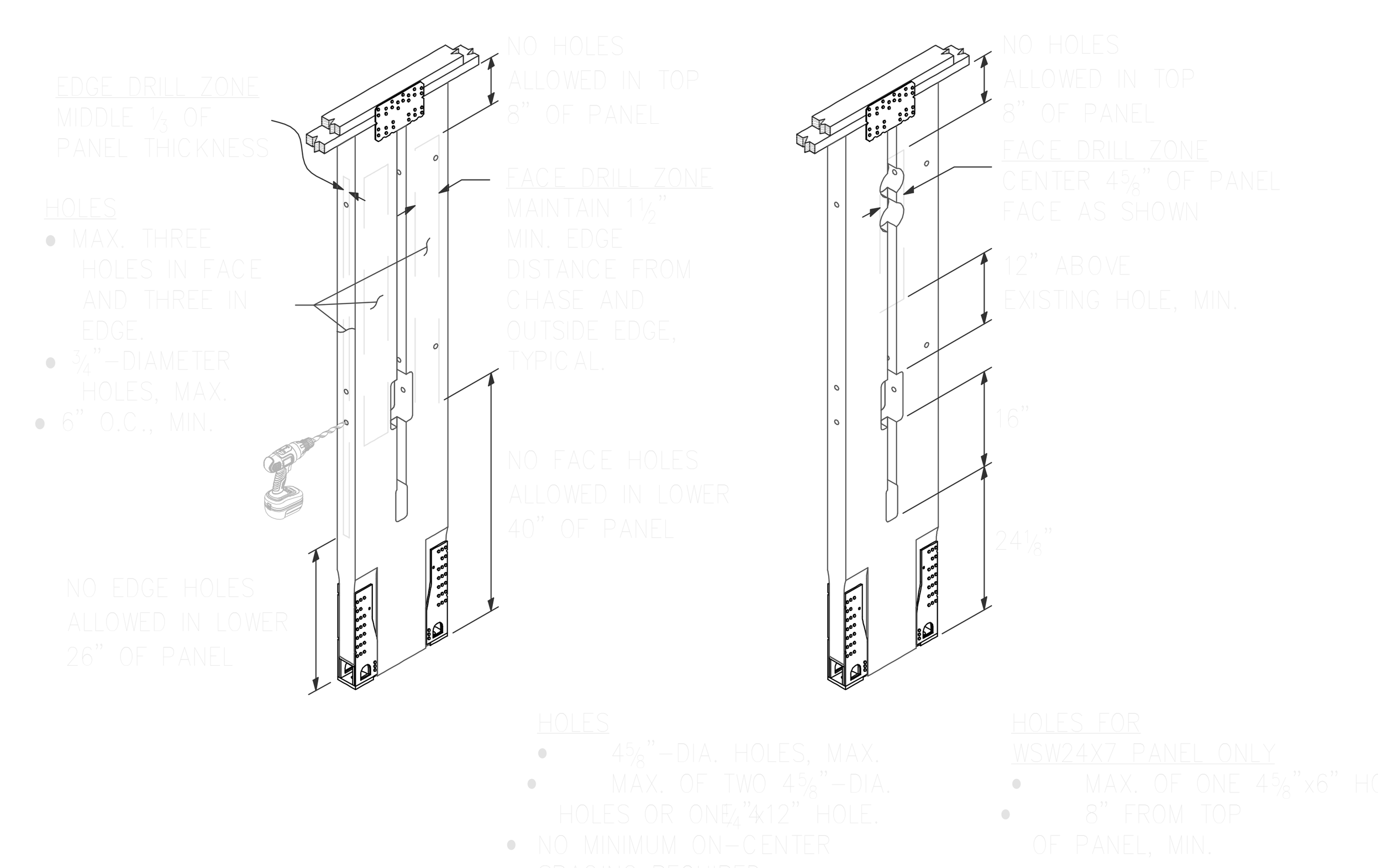
STANDARD INSTALLATION 1



SECTION
4x FRAMING

SECTION
6x FRAMING

STANDARD TOP CONNECTION 2



ALLOWABLE SMALL HOLES
FACE AND EDGE DRILL ZONES

ALLOWABLE LARGE HOLES
IN ADDITION TO ALLOWABLE SMALL HOLES

TRIM ZONE AND ALLOWABLE HOLES 3

b2 structural engineers
info@b2engineers.com
425-318-7047 (O)
425-318-0031 (C)

TSO ADDITION

8802 SE 37TH ST
MERCER ISLAND, WA
98040

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WSW DETAILS

S-3