

Structural General Notes

Tutorial Sample Residence - SL-2026-001 - 100 Example Street - Anytown

Governing Codes

IBC 2024
ASCE 7-22
NDS 2024
AISC 360-22
ACI 318-19

Gravity Loads

House Roof 6:12: Dead Load: 16.8 psf; Snow Load: 30.0 psf; Roof Live Load: 18.0 psf.
Garage Roof 3:12: Dead Load: 12.4 psf; Snow Load: 30.0 psf; Roof Live Load: 20.0 psf.
Floor: Dead Load: 25.0 psf; Live Load: 40.0 psf.
Deck and Balcony: Dead Load: 10.0 psf; Live Load: 60.0 psf; Snow Load: 30.0 psf.
Exterior Wall: Dead Load: 12.0 psf.

Wind

ASCE 7-22
Basic Wind Speed, V: 105 mph
Exposure Category: Exposure C — Open Terrain with Scattered Obstructions
Reference Height: 31.3 ft
Topographic Factor, Kzt: 1.00
Directionality Factor, Kd: 0.85
Velocity Pressure Exposure Coefficient, Kz: 0.989
Ground Elevation Factor, Ke: 0.951
Velocity Pressure, qz: 26.5 psf
Nominal Wind Speed for Allowable Stress Design: 81.33 mph

Seismic

ASCE 7-22
Site Class: Site Class D
Risk Category: Risk Category II
Mapped Short-Period Acceleration, SS: 1.250 g
Mapped One-Second Acceleration, S1: 0.450 g
Site-Adjusted Short-Period Acceleration, SMS: 1.200 g
Site-Adjusted One-Second Acceleration, SM1: 0.840 g
Long-Period Transition Period, TL: 8.00 s
Site-Adjusted Short-Period Acceleration, SMS: 1.200 g
Site-Adjusted One-Second Acceleration, SM1: 0.840 g
Short-Period Design Acceleration, SDS: 0.800 g
One-Second Design Acceleration, SD1: 0.560 g
Seismic Importance Factor, Ie: 1.000
Spectrum Corner Period, Ts: 0.70 s
Spectrum Corner Period, T0: 0.14 s
Seismic Design Category: D

Snow

ASCE 7-22
Ground Snow Load, pg: 43.0 psf
Risk Category: Risk Category II
Terrain Category: Terrain Category C — Open Terrain with Scattered Obstructions
Roof Exposure: Partially Exposed
Winter Wind Parameter, W2: 0.45
Exposure Factor, Ce: 1.000
Snow Density: 19.6 pcf
Minimum Snow Load Limit: 30.0 psf
SA-001 House Roof: flat roof snow load 30.1 psf, governing uniform roof snow load 30.1 psf.
SA-002 Garage Roof: flat roof snow load 30.1 psf, governing uniform roof snow load 30.1 psf.

Foundation Criteria

Allowable soil bearing: 1,500 ksf
Frost embedment: 30.00 in

General and Scope

- THE STRUCTURAL PLANS AND SPECIFICATIONS, TO THE BEST OF OUR KNOWLEDGE, COMPLY WITH THE APPLICABLE REQUIREMENTS OF IBC 2024, AS ADOPTED AND AMENDED BY THE AUTHORITY HAVING JURISDICTION.
- THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF IBC 2024, AS ADOPTED AND AMENDED BY THE AUTHORITY HAVING JURISDICTION, AND WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES, STANDARDS, REGULATIONS AND LAWS.
- ALL REFERENCED STANDARDS ARE THE EDITIONS IDENTIFIED IN THE DESIGN CRITERIA ON THIS SHEET: ASCE 7-22; NDS 2024; AISC 360-22; ACI 318-19; TMS 402-22.
- WORK NOT INDICATED ON A PART OF THE DRAWINGS, BUT REASONABLY IMPLIED TO BE SIMILAR TO THAT SHOWN AT CORRESPONDING PLACES, SHALL BE REPEATED.
- IN ANY CASE OF CONFLICT BETWEEN THE NOTES, DETAILS AND SPECIFICATIONS, THE MOST RIGID REQUIREMENT SHALL GOVERN. THE CONTRACTOR SHALL MAKE NO DEVIATION FROM THE CONTRACT DOCUMENTS WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS, AND SHALL COORDINATE WITH THE ARCHITECTURAL DRAWINGS, THE DRAWINGS OF OTHER CONSULTANTS, THE PROJECT SHOP DRAWINGS AND THE FIELD CONDITIONS.
- THE CONTRACTOR SHALL PROTECT EXISTING FACILITIES, STRUCTURES AND UTILITY LINES FROM ALL DAMAGE.
- JOB SAFETY AND CONSTRUCTION PROCEDURES ARE THE RESPONSIBILITY OF THE CONTRACTOR.

Foundations

- FOUNDATIONS ARE DESIGNED FOR AN ALLOWABLE SOIL BEARING PRESSURE OF 1,500 ksf. MINIMUM FROST EMBEDMENT BELOW FINISHED GRADE: 30.00 in.
- THE CONTRACTOR SHALL BE FAMILIAR WITH THE SUBSURFACE CONDITIONS.
- DOWELS FROM FOOTINGS INTO PIERS AND WALLS ABOVE SHALL BE THE SAME SIZE AND NUMBER AS VERTICAL REBAR IN PIERS AND WALLS, AND SHALL BE EXTENDED "LTE" INTO FOOTINGS AND "LTS" INTO PIERS AND WALLS UNLESS OTHERWISE SHOWN.
- DROP BOTTOM OF WALLS AND PIERS TO TOP OF FOOTINGS TO OBTAIN FULL EXTENT OF CONTACT, UNLESS OTHERWISE SHOWN.
- CENTERLINE OF FOOTINGS SHALL BE CENTERLINE OF WALLS, PIERS AND COLUMNS, UNLESS OTHERWISE SHOWN.
- NO BACKFILLING SHALL BE DONE AGAINST FOUNDATION AND RETAINING WALLS UNTIL THE CONCRETE HAS ATTAINED AT LEAST 75 PERCENT OF ITS DESIGN STRENGTH. BEFORE BACKFILLING, PROVIDE BRACING FOR WALLS SUSTAINING MORE THAN 3 FEET OF EARTH PRESSURE. THIS BRACING SHALL REMAIN IN PLACE UNTIL ALL SLABS AND BEAMS FRAMING INTO THE WALL HAVE BEEN PLACED AND SET.
- BULLDOZERS AND OTHER HEAVY EQUIPMENT SHALL NOT BE OPERATED CLOSER THAN 8 FEET TO ANY FOUNDATION WALL. IF IT IS NECESSARY TO OPERATE SUCH EQUIPMENT CLOSER THAN 8 FEET TO THE WALL, THE CONTRACTOR SHALL BE THE SOLE RESPONSIBLE PARTY AND SHALL, AT THEIR OWN EXPENSE, PROVIDE ADEQUATE SUPPORTS OR BRACE THE WALL TO WITHSTAND THE ADDITIONAL LOADS SUPERIMPOSED BY SUCH EQUIPMENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO ADEQUATELY PROTECT ALL EXCAVATION SLOPES, WHERE NECESSARY, SHEETING AND SHORING OF THE EXCAVATION SHALL BE PROVIDED WITH ALL REQUIRED TIEBACKS AND BRACING.

- METHODS EMPLOYED IN ALL SHEETING AND SHORING SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF THE PROJECT.
- MATERIAL FOR CONTROLLED FILL SHALL MEET THE FOLLOWING CRITERIA: SELECT EXCAVATED GRAVEL OR STONE MATERIALS FREE OF ORGANIC MATERIAL, LOAM, TRASH, SNOW, ICE, FROZEN SOIL, AND OTHER OBJECTIONABLE MATERIAL.
- ON-SITE EXCAVATED MATERIAL IS SUITABLE FOR USE AS GRANULAR FILL ONLY IF IT CONFORMS TO THE SPECIFICATIONS NOTED AND IS APPROVED FOR USE BY THE GEOTECHNICAL ENGINEER. REFER TO THE GEOTECHNICAL REPORT FOR MORE INFORMATION.
- STRUCTURAL FILL MATERIAL SHALL BE PLACED IN UNIFORM 12 INCH THICK LOOSE LIFTS AND COMPACTED TO 95 PERCENT OF ITS MAXIMUM DRY DENSITY, AT OPTIMUM MOISTURE CONTENT, IN ACCORDANCE WITH ASTM D1557, UNLESS THE PROJECT GEOTECHNICAL REPORT REQUIRES OTHERWISE. IN RESTRICTED AREAS WHERE ONLY HAND-OPERATED EQUIPMENT IS PERMITTED, THE MAXIMUM LOOSE LIFT SHALL BE 8 INCHES.

Formwork and Shoring Notes

- SHORES SHALL BE DESIGNED AND DETAILED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF THE PROJECT. DRAWINGS ILLUSTRATING THE SHORING SYSTEM AND ITS SEQUENCING SHALL BE SIGNED AND SEALED BY THAT ENGINEER.
- DESIGN AND ERECT FORMS AND SHORES IN ACCORDANCE WITH ACI 347. DESIGN FORMS AND SHORES FOR HORIZONTAL CONCRETE CONSTRUCTION FOR NOT LESS THAN THE DEAD LOAD PLUS A 50 PSF CONSTRUCTION LOAD, AND FOR THE CUMULATIVE LOADS OF THE SUPPORTING FLOOR SLABS. DESIGN SHORES WITH A MINIMUM FACTOR OF SAFETY OF 3.
- PROVIDE TEMPORARY BRACING AS NEEDED TO ENSURE THE STABILITY OF THE STRUCTURE DURING CONSTRUCTION.
- FORMING, SHORING AND RE-SHORING SHALL BE INSPECTED BY THE PROFESSIONAL ENGINEER WHO PREPARED THOSE DRAWINGS. THAT ENGINEER SHALL SUBMIT A STATEMENT TO THE ENGINEER OF RECORD THAT THIS WORK WAS PERFORMED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

Reinforced Concrete Notes

- STRUCTURAL CONCRETE AND CONCRETING PRACTICES SHALL CONFORM TO ACI 318-19.
- CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF 3500 psi, NORMAL WEIGHT, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- ALL EXPOSED CONCRETE SHALL HAVE AN AIR ENTRAINING AGENT.
- ALL REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60, UNLESS REQUIRED TO BE WELDED AS SHOWN ON THE PLANS. ALL REINFORCING BARS REQUIRED TO BE WELDED SHALL CONFORM TO ASTM A706, GRADE 60.
- WELDED WIRE REINFORCEMENT SHALL CONFORM TO ASTM A1064. SUPPORT WIRE REINFORCEMENT WITH CHAIRS OR LIFTS DURING CONCRETE PLACEMENT TO ENSURE ITS PROPER POSITION IN THE SLAB.
- ALL REINFORCEMENT SHALL BE SECURELY HELD IN PLACE WHILE PLACING CONCRETE. IF REQUIRED, ADDITIONAL BARS OR STIRRUPS SHALL BE PROVIDED BY THE CONTRACTOR TO FURNISH SUPPORT FOR ALL BARS.
- ALL REINFORCING BARS SHALL BE LAPPED AS SPECIFICALLY DETAILED ON THE DRAWINGS. SPLICES AND EMBEDMENTS SHALL BE IN ACCORDANCE WITH ACI 318-19. WHERE NOT SPECIFICALLY INDICATED ON THE DRAWINGS, ALL REINFORCING BARS SHALL BE LAPPED USING THE TENSION SPLICE LENGTHS IN THE LAP SPLICE SCHEDULE: A. LAP GRADE BEAM AND WALL TOP HORIZONTAL REINFORCEMENT AT CENTER OF SPAN. B. LAP GRADE BEAM AND WALL BOTTOM HORIZONTAL REINFORCEMENT AT SUPPORT. C. LAP INSIDE FACE WALL VERTICAL REINFORCEMENT AT SUPPORT. D. LAP OUTSIDE FACE VERTICAL WALL REINFORCEMENT AT MID-HEIGHT OF WALL. E. UNLESS OTHERWISE NOTED, TERMINATE BARS AT DISCONTINUOUS ENDS WITH STANDARD HOOKS. F. ALL HOOKED BARS NOT DIMENSIONED SHALL BE STANDARD HOOKS.
- MINIMUM CONCRETE COVER SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE ON THE DRAWINGS: A. SLABS: 3/4 INCH. B. WALLS: 1 INCH. C. COLUMNS: 1-1/2 INCHES. D. ALL CONCRETE EXPOSED TO WEATHER OR EARTH: 2 INCHES. E. ALL CONCRETE PLACED AGAINST EARTH: 3 INCHES.
- PROVIDE CONSTRUCTION JOINTS IN ACCORDANCE WITH ACI 318-19. SUBMIT SHOP DRAWINGS SHOWING CONSTRUCTION JOINT DETAILS, LOCATIONS AND THE SEQUENCE OF POURS FOR THE STRUCTURAL ENGINEER'S REVIEW PRIOR TO BEGINNING WORK.
- WALL AND GRADE BEAM CONSTRUCTION JOINTS SHALL BE LOCATED TO PROVIDE A 60 FOOT MAXIMUM LENGTH OF CONCRETE PLACEMENT.
- VERTICAL CONSTRUCTION JOINTS IN GRADE BEAMS AND WALLS SHALL BE USED ONLY WITH PRIOR APPROVAL OF THE ENGINEER. A. FOUNDATION WALLS: AT OPENINGS. B. GRADE BEAMS: AT CENTERLINES BETWEEN SUPPORTS.
- NO HORIZONTAL CONSTRUCTION JOINTS WILL BE PERMITTED IN BEAMS, WALLS AND SLABS UNLESS SPECIFICALLY SHOWN ON THE DRAWINGS OR APPROVED IN WRITING PRIOR TO CONSTRUCTION BY THE ENGINEER.
- NO CONCRETE TEST WILL BE ACCEPTED IF THE CONCRETE IS TAMPERED WITH IN ANY WAY AFTER THAT TEST IS PERFORMED. REPEAT THE TEST IF WATER IS ADDED AFTER INITIAL SAMPLING.
- THE CONTRACTOR SHALL PROVIDE THE REINFORCING STEEL ERECTOR WITH A SET OF APPROVED SHOP DRAWINGS FOR FIELD USE.
- ALL ADJOINING SURFACES NOT CAST MONOLITHICALLY SHALL BE ROUGHENED.
- THE CONTRACTOR SHALL FIELD VERIFY THE DIMENSIONS AND LOCATIONS OF ALL OPENINGS, PIPE SLEEVES, CURBS AND SIMILAR ITEMS REQUIRED BY OTHER TRADES BEFORE CONCRETE IS PLACED.
- THE CONTRACTOR SHALL COORDINATE SLAB DEPRESSIONS FOR FLOOR FINISHES WITH THE ARCHITECTURAL DRAWINGS.
- THE CONTRACTOR SHALL COORDINATE THE LOCATION OF FLOOR DRAINS, CURBS, CONCRETE PADS, FLOOR DEPRESSIONS AND SIMILAR ITEMS WITH THE ARCHITECTURAL AND MECHANICAL DRAWINGS.
- THE CONTRACTOR SHALL COORDINATE THE LOCATION OF INSERTS, WELDED PLATES AND OTHER ITEMS TO BE EMBEDDED IN CONCRETE WITH THE ARCHITECTURAL AND MECHANICAL DRAWINGS.
- HORIZONTAL PIPES AND CONDUITS PLACED IN SLABS SHALL NOT BE SPACED CLOSER THAN 3 TIMES THEIR DIAMETER ON CENTER, AND SHALL NOT HAVE AN OUTSIDE DIAMETER LARGER THAN ONE THIRD OF THE SLAB THICKNESS. ALUMINUM CONDUITS SHALL NOT BE PLACED IN CONCRETE. NO CONDUITS SHALL BE PLACED IN THE SLAB WITHIN 12 INCHES OF ANY COLUMN FACE.

Steel and Connections

- FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO AISC 360-22 AND TO THE AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES.
- ALL STEEL DETAILS AND CONNECTIONS SHALL BE IN ACCORDANCE WITH AISC 360-22.
- ALL ROLLED SHAPES AND CHANNELS SHALL CONFORM TO ASTM A992, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- MISCELLANEOUS ANGLES AND PLATES SHALL CONFORM TO ASTM A36, WITH A MINIMUM YIELD STRENGTH OF 36 KSI, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- HOLLOW STRUCTURAL SECTIONS SHALL CONFORM TO ASTM A500 GRADE B, WITH A MINIMUM YIELD STRENGTH OF 42 KSI FOR ROUND SECTIONS AND 46 KSI FOR SQUARE AND RECTANGULAR SECTIONS, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- ALL CONNECTION MATERIAL AND BASE PLATES SHALL CONFORM TO ASTM A36, WITH 50 KSI STEEL PLATE WHERE NOTED.
- ALL HIGH-STRENGTH BOLTS SHALL CONFORM TO ASTM F3125 GRADE A325 OR GRADE A490. NUTS SHALL CONFORM TO ASTM A563 AND WASHERS SHALL CONFORM TO ASTM F436.
- ALL ANCHOR RODS SHALL CONFORM TO ASTM F1554 GRADE 36 WITH WELDABILITY SUPPLEMENT S1, UNLESS OTHERWISE NOTED. SUBMIT GRADE CERTIFICATIONS FOR THE RECORD. THE STEEL SUPPLIER SHALL SUPPLY RIGID TIE TEMPLATES FOR ANCHOR ROD INSTALLATION.
- ALL SHOP AND FIELD BOLTED CONNECTIONS SHALL USE 3/4 INCH DIAMETER A325-N BOLTS IN STANDARD HOLES, UNLESS SPECIFICALLY NOTED OTHERWISE.
- OVERSIZED OR SLOTTED HOLES SHALL NOT BE USED FOR ANY CONNECTIONS UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS OR APPROVED IN WRITING BY THE ENGINEER.

- ALL BUTT AND COMPLETE JOINT PENETRATION WELDS SHALL BE MADE USING RUN-OFF TABS, WHICH SHALL BE REMOVED AND GROUND SMOOTH AFTER THE WELD IS COMPLETED.
- ALL WELD BACKING BARS SHALL BE REMOVED AND GROUND SMOOTH AFTER THE WELD IS COMPLETED, UNLESS NOTED OTHERWISE.
- ALL WELDS INDICATED SHALL MEET THE MINIMUM WELD SIZE REQUIRED BY AISC 360-22.
- ALL WELDING SHALL BE PERFORMED BY QUALIFIED WELDERS IN ACCORDANCE WITH AWS D1.1. ALL WELDING ELECTRODES SHALL CONFORM TO AWS A5.1, GRADE E70. BARE ELECTRODES AND GRANULAR FLUX SHALL CONFORM TO AWS A5.17, F7X FLUX CLASSIFICATION.
- ALTERNATE CONNECTIONS WILL BE ACCEPTED ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER, WHO SHALL BE THE SOLE JUDGE OF THEIR ACCEPTABILITY. THE CONTRACTOR'S BID SHALL ANTICIPATE THE USE OF THE SPECIFIC DETAILS SHOWN ON THE DRAWINGS. IN ANY EVENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF ANY ALTERNATE DETAIL THEY PROPOSE.
- SHOP AND FIELD CONNECTIONS NOT SPECIFICALLY DETAILED ON THE DRAWINGS SHALL BE BOLTED OR WELDED.
- WHEN NOT SPECIFICALLY DETAILED ELSEWHERE ON THE DRAWINGS, ALL BEAM TO BEAM AND BEAM TO COLUMN CONNECTIONS SHALL BE DETAILED AS SHOWN IN THE TYPICAL BEAM CONNECTION DETAILS.
- ALL HOLES AND CUTS SHALL BE SHOWN ON THE SHOP DRAWINGS AND MADE IN THE SHOP. CUTS OR BURNING OF HOLES IN STRUCTURAL STEEL MEMBERS IN THE FIELD WILL NOT BE PERMITTED.
- THE STRUCTURAL STEEL CONTRACTOR SHALL COORDINATE THE BOTTOM OF BASE PLATE ELEVATION WITH THE TOP OF CONCRETE ELEVATION.
- PROVIDE ANY TEMPORARY BRACING OR GUYS REQUIRED TO LATERALLY SUPPORT THE STRUCTURE AND ITS INDIVIDUAL ELEMENTS UNTIL THE PERMANENT FRAME IS COMPLETELY INSTALLED.
- ALL STRUCTURAL STEEL EXPOSED TO WEATHER SHALL BE GALVANIZED.
- ALL HOLLOW STRUCTURAL SECTIONS EXPOSED TO WEATHER SHALL HAVE THEIR OPEN ENDS CAPPED WITH 1/4 INCH PLATE.
- THE STEEL FABRICATOR SHALL COORDINATE ALL HOLE LOCATIONS FOR HOLD-DOWN ANCHORS. ALL SUCH HOLES SHALL BE SHOP DRILLED THROUGH THE BEAM FLANGES.

Contractors Design Responsibility

- THE PROJECT ITEMS LISTED BELOW, ASSOCIATED WITH FABRICATION, ERECTION AND THE CONTRACTOR'S MEANS AND METHODS AND REQUIRING STRUCTURAL DESIGN, ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL RETAIN THE SERVICES OF A STRUCTURAL PROFESSIONAL ENGINEER LICENSED IN THE STATE OF THE PROJECT TO PERFORM THE DESIGN OF THESE ITEMS.
- CALCULATIONS FOR ITEMS MARKED THUS (*) SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL. ALL OTHER ITEMS SHALL BE SUBMITTED FOR THE OWNER'S RECORD ONLY.
- ERECTION: GUYING, BRACING, CONSTRUCTION LOADS, SCAFFOLDING, RIGGING, CONSTRUCTION HOISTS AND CRANES, TEMPORARY SUPPORTS AND THEIR CONNECTIONS.

Timber Framing Notes

- ALL WOOD FRAMING SHALL CONFORM TO NDS 2024 AND TO THE APPLICABLE REQUIREMENTS OF IBC 2024.
- ALL DIMENSION LUMBER SHALL BE KILN-DRIED DOUGLAS FIR-LARCH, NO. 2 OR BETTER, OR AN APPROVED EQUIVALENT, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- ALL WOOD IN CONTACT WITH SOIL, WEATHER OR CONCRETE SURFACES SHALL BE PRESERVATIVE TREATED (P.T.).
- ALL WOOD STRUCTURAL PANEL DECKING AND SHEATHING SHALL BE APA RATED SHEATHING WITH EXTERIOR GLUE, CONFORMING TO DOC P5 1 OR P5 2.
- ALL LAG SCREW CONNECTIONS SHALL BE PREDRILLED WITH THE PROPER LEAD HOLE DIAMETER IN ACCORDANCE WITH NDS 2024.
- ALL WOOD FRAMING CLIPS AND FASTENERS SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION. CONNECTORS AND FASTENERS IN CONTACT WITH PRESERVATIVE TREATED WOOD, OR EXPOSED TO WEATHER, SHALL HAVE A MINIMUM G185 GALVANIZED COATING.
- ENGINEERED WOOD PRODUCTS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED PROCEDURES. DO NOT DRILL OR CUT ANY STRUCTURAL HEADER OR BEAM WITHOUT THE APPROVAL OF THE ARCHITECT OR ENGINEER.
- PROVIDE TORQUE LOCKING NUTS AT ALL BOLTED CONNECTIONS.
- WOOD STRUCTURAL PANELS AND THEIR FRAMING SHALL CONFORM TO: THE SHEAR WALL SCHEDULES ON S2.0 AND S2.1 AND THE DIAPHRAGM NAILING TABLE ON S1.3, WHICH STATE THE WALL, ROOF AND FLOOR SHEATHING AND ITS NAILING.
- WOOD CONNECTIONS SHALL ADDITIONALLY CONFORM TO: THE FASTENING SCHEDULE, IBC 2024 TABLE 2304.10.2, WHERE A FASTENING IS NOT SHOWN ON THE DRAWINGS, INCLUDING BLOCKING TO PLATES, TOP PLATE LAPS AND SPLICES, AND BUILT-UP HEADERS AND BEAMS.
- ENGINEERED WOOD PRODUCTS SHALL CONFORM TO: LAMINATED VENEER LUMBER (LVL), GRADE 1.6E-2140Fb: E = 1,600,000 PSI, Fb = 2,140 PSI, Fv = 285 PSI AND Fc PERPENDICULAR = 750 PSI OR GREATER. PREFABRICATED WOOD I-JOISTS, APA PERFORMANCE RATED (PRI-400) PRI-60 AT 11-7/8 IN.: Mr = 4,900 LB-FT, Vr = 1,420 LB AND EI = 371 x 10⁶ LB-IN.² OR GREATER. EACH PRODUCT SHALL HAVE A CURRENT ICC-ES EVALUATION REPORT SHOWING THESE VALUES.

Inspections and Verification

- SPECIAL INSPECTIONS AND TESTS SHALL BE PERFORMED IN ACCORDANCE WITH IBC 2024. THE WORK REQUIRING SPECIAL INSPECTION, THE TESTS TO BE PERFORMED, AND THE EXTENT AND FREQUENCY OF EACH, ARE IDENTIFIED IN THE PROJECT STATEMENT OF SPECIAL INSPECTIONS.



Strux Labs

PROJECT
Tutorial Sample Residence
100 Example Street
Anytown
CLIENT

REV	DESCRIPTION	DATE
1		10/19/2026
PLAN SET Demonstration		
DATE 10/19/2026	PROJECT NUMBER SL-2026-001	
DRAWN BY Claude	CHECKED BY KJP	

SHEET TITLE
Structural General
Notes

SHEET

S0.0



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Tutorial Sample Residence

PROJECT
100 Example Street
Anytown
CLIENT

REV	DESCRIPTION	DATE
1		10/19/2026

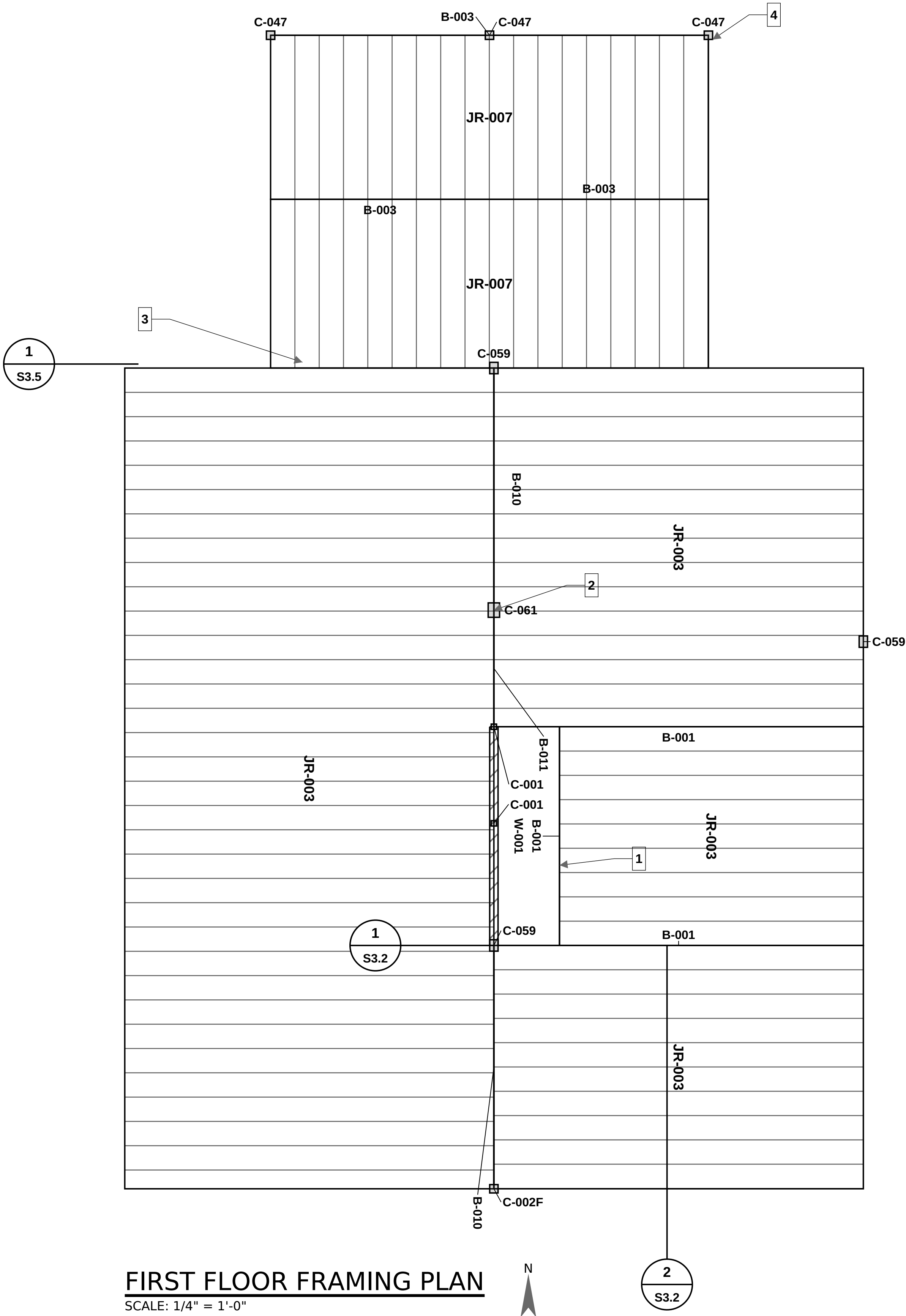
PLAN SET
Demonstration

DATE 10/19/2026	PROJECT NUMBER SL-2026-001
DRAWN BY Claude	CHECKED BY KJP

SHEET TITLE
First Floor Framing Plan

SHEET

S1.1



JOIST SCHEDULE						
MARK	SIZE	TYPE	GRADE	SPAN	SPACING	COMMENTS
JR-003	PRI-60 11-7/8	I-Joist	PRI-60	16'-8 1/16" to 20'-3 1/4"	16" O.C.	
JR-007	2x10	Dimension	DF-L #2 P.T.	9' to 9'-3 1/8"	16" O.C.	

BEAM SCHEDULE				
MARK	SIZE	TYPE	GRADE	COMMENTS
B-001	3-1/2x11-7/8	LVL	1.6E-2140Fb	
B-003	6x12	Dimension	DF-L #1 P.T.	
B-010	7x14	LVL	1.6E-2140Fb	
B-011	5-1/4x11-7/8	LVL	1.6E-2140Fb	

COLUMN SCHEDULE				
MARK	SIZE	TYPE	GRADE	COMMENTS
C-001	4x4	Dimension	DF-L #2	
C-002F	6x6	Dimension	DF-L #2	
C-047	6x6	Dimension	DF-L #2 P.T.	
C-059	6x8	Dimension	DF-L #2	
C-061	8x10	Dimension	DF-L #2	

STRUCTURAL FOOTING SCHEDULE Sheet S1.0				
MARK	SIZE (WxLxT)	REINF. X / LONG.	REINF. Y / TRANS.	REMARKS
SF-001	54"x54"x12"	BOTTOM X: #5 @ 12" O.C. TOP X: —	BOTTOM Y: #5 @ 12" O.C. TOP Y: —	f _c =3500 psi
SF-002	34"x34"x12"	BOTTOM X: #5 @ 12" O.C. TOP X: —	BOTTOM Y: #5 @ 12" O.C. TOP Y: —	f _c =3500 psi
SF-003	66"x66"x12"	BOTTOM X: #5 @ 12" O.C. TOP X: —	BOTTOM Y: #5 @ 12" O.C. TOP Y: —	f _c =3500 psi
SF-004	30"x30"x12"	BOTTOM X: #5 @ 12" O.C. TOP X: —	BOTTOM Y: #5 @ 12" O.C. TOP Y: —	f _c =3500 psi
SF-005	40"x40"x12"	BOTTOM X: #5 @ 12" O.C. TOP X: —	BOTTOM Y: #5 @ 12" O.C. TOP Y: —	f _c =3500 psi
SF-007	24"x24"x12"	BOTTOM X: #5 @ 12" O.C. TOP X: —	BOTTOM Y: #5 @ 12" O.C. TOP Y: —	f _c =3500 psi
SF-010	38"x38"x12"	BOTTOM X: #5 @ 12" O.C. TOP X: —	BOTTOM Y: #5 @ 12" O.C. TOP Y: —	f _c =3500 psi
SF-011	48"x48"x12"	BOTTOM X: #5 @ 12" O.C. TOP X: —	BOTTOM Y: #5 @ 12" O.C. TOP Y: —	f _c =3500 psi
CF-001	42"xCONTx8"	BOTTOM LONG.: (4) #4 TOP LONG.: —	BOTTOM TRANS.: #5 @ 12" O.C.	f _c =3500 psi
CF-005	24"xCONTx8"	BOTTOM LONG.: (4) #4 TOP LONG.: —	BOTTOM TRANS.: #5 @ 12" O.C.	f _c =3500 psi
CF-006	40"xCONTx8"	BOTTOM LONG.: (4) #4 TOP LONG.: —	BOTTOM TRANS.: #5 @ 12" O.C.	f _c =3500 psi
CF-007	26"xCONTx8"	BOTTOM LONG.: (4) #4 TOP LONG.: —	BOTTOM TRANS.: #5 @ 12" O.C.	f _c =3500 psi

STRUCTURAL KEYNOTES	
MARK	NOTE
1	BASEMENT STAIR OPENING: HANG THE HEADER FROM THE TRIMMERS AND THE I-JOISTS FROM THE HEADER WITH FACE-MOUNT HANGERS SIZED FOR EACH MEMBER. SEE 2/S3.2.
2	CENTER LINE POSTS: POST CAP AT THE BEAMS AND POST BASE ON THE FOOTING. SQUASH BLOCKS UNDER POSTS ABOVE PER 1/S3.2.
3	DECK LEDGER TO THE HOUSE RIM PER 1/S3.5: 1/2 IN. THROUGH BOLTS OR LAG SCREWS, STAGGERED, SPACED PER IRC TABLE R507.9.1.3(1), 2 IN. MINIMUM FROM THE LEDGER EDGES. TWO LATERAL LOAD CONNECTORS PER IRC R507.9.2. A JOIST HANGER AT EACH DECK JOIST.
4	DECK: HURRICANE TIE AT EACH JOIST TO BEAM, POST CAP AT EACH BEAM TO POST, POST BASE AT EACH PIER, ALL G185 GALVANIZED, P.T. LUMBER.

FIRST FLOOR FRAMING PLAN NOTES		
MARK	NOTE	REFERENCE
1	FASTEN FRAMING PER THE GENERAL NOTES UNLESS NOTED OTHERWISE.	S0.0
2	INSTALL I-JOISTS, RIM BOARD, BLOCKING AND WEB STIFFENERS PER THE I-JOIST MANUFACTURER.	—



Strux Labs

Tutorial Sample Residence

100 Example Street
Anytown
CLIENT

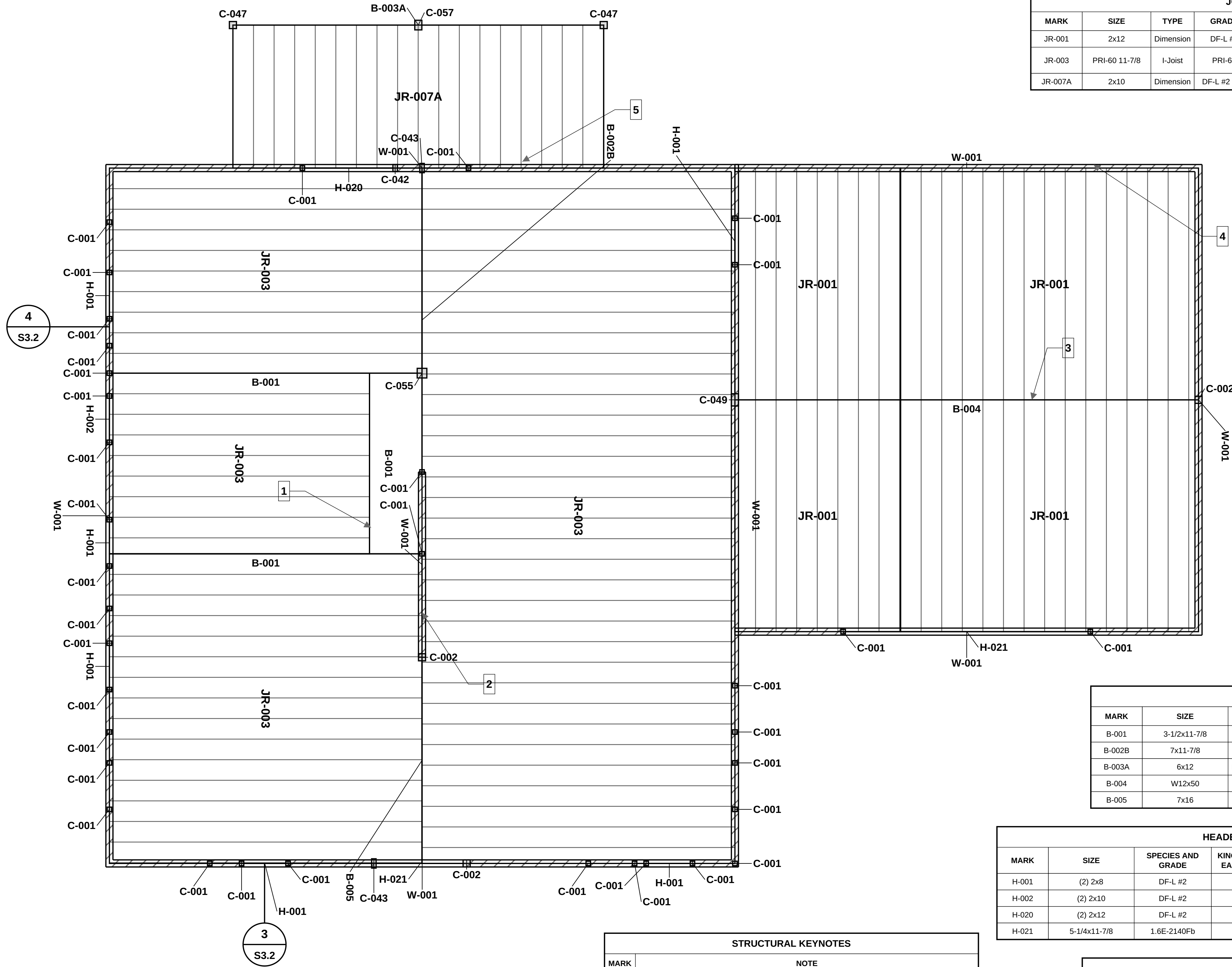
REV	DESCRIPTION	DATE
1		10/19/2026

PLAN SET Demonstration	
DATE 10/19/2026	PROJECT NUMBER SL-2026-001
DRAWN BY Claude	CHECKED BY KJP

SHEET TITLE
**Second Floor
Framing Plan**

SHEET

S1.2



JOIST SCHEDULE						
MARK	SIZE	TYPE	GRADE	SPAN	SPACING	COMMENTS
JR-001	2x12	Dimension	DF-L #2	15'-0 1/8"	16" O.C.	
JR-003	PRI-60 11-7/8	I-Joist	PRI-60	16'-10 3/16" to 20'-3 1/4"	16" O.C.	
JR-007A	2x10	Dimension	DF-L #2 P.T.	9'-3 1/8"	16" O.C.	

SECOND FLOOR FRAMING PLAN NOTES		
MARK	NOTE	REFER ENCE
1	HEADERS, JACK AND KING STUDS PER THE HEADER SCHEDULE.	3/S3.2
2	FASTEN FRAMING PER THE GENERAL NOTES UNLESS NOTED OTHERWISE.	S0.0

BEAM SCHEDULE				
MARK	SIZE	TYPE	GRADE	COMMENTS
B-001	3-1/2x11-7/8	LVL	1.6E-2140Fb	
B-002B	7x11-7/8	LVL	1.6E-2140Fb	
B-003A	6x12	Dimension	DF-L #1 P.T.	
B-004	W12x50	Steel	A992	
B-005	7x16	LVL	1.6E-2140Fb	

HEADER SCHEDULE					
MARK	SIZE	SPECIES AND GRADE	KING STUDS EACH END	JACK STUDS EACH END	COMMENTS
H-001	(2) 2x8	DF-L #2	1	4x4	
H-002	(2) 2x10	DF-L #2	1	4x4	
H-020	(2) 2x12	DF-L #2	2	4x4	
H-021	5-1/4x11-7/8	1.6E-2140Fb	4	4x8	

COLUMN SCHEDULE					
MARK	SIZE	TYPE	GRADE	STACK	COMMENTS
C-001	4x4	Dimension	DF-L #2	Varies	
C-002	6x6	Dimension	DF-L #2	Varies	
C-042	4x6	Dimension	DF-L #2		
C-043	4x8	Dimension	DF-L #2		
C-047	6x6	Dimension	DF-L #2 P.T.	Above & Below	
C-049	6x10	Dimension	DF-L #2	Above & Below	
C-055	8x8	Dimension	DF-L #2		
C-057	6x8	Dimension	DF-L #2 P.T.	Above & Below	

STRUCTURAL KEYNOTES	
MARK	NOTE
1	STAIR OPENING: FACE-MOUNT HANGERS AT THE HEADER AND AT EACH I-JOIST. SEE 2 /S3.2.
2	STAIR BEARING WALL: 2X6 STUDS AT 16 IN., BEARING ON THE BASEMENT STAIR WALL BELOW, WITH POST P1-T IN THE WALL UNDER THE STAIR TRIMMER.
3	GARAGE RIDGE BEAM ON A POST AT EACH END, POSTS CONTINUOUS TO THE FOUNDATION. STEEL BEAM TO WOOD POST CONNECTION BY THE ENGINEER, DETAIL TO FOLLOW.
4	GARAGE RAFTERS: HURRICANE TIE AT EACH RAFTER AND A STRAP ACROSS THE RIDGE AT EACH PAIR.
5	BALCONY: LEDGER AND HANGERS AS AT THE DECK (1/S3.5). POST CAPS, POSTS CONTINUOUS TO THE PIERS ON S1.0.

SECOND FLOOR FRAMING PLAN

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





100 Example Street
Anytown
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10. *Journal of the American Medical Association*, 2000; 283: 2639-2644.

SHEET TITLE

Roof Framing Plan

S1.3

BEAM SCHEDULE				
MARK	SIZE	TYPE	GRADE	COMMENTS
B-001A	3-1/2x11-7/8	LVL	1.6E-2140Fb	
B-002A	7x11-7/8	LVL	1.6E-2140Fb	

COLUMN SCHEDULE					
MARK	SIZE	TYPE	GRADE	STACK	COMMENTS
C-001	4x4	Dimension	DF-L #2		
C-002	6x6	Dimension	DF-L #2	Above & Below	

STRUCTURAL KEYNOTES	
MARK	NOTE
1	RIDGE: RAFTERS BEAR ON THE RIDGE BEAMS AND ON THE BEARING WALL UNDER THE RIDGE. STRAP ACROSS THE RIDGE AT EACH RAFTER PAIR. SEE 2/3.3.
2	GABLE END WALLS FRAMED FULL HEIGHT TO THE RAKE. SEE 3/5.3.
3	BEARING WALL UNDER THE RIDGE: 2X6 STUDS AT 16 IN. FULL HEIGHT TO THE ROOF FRAMING, WITH A POST AT EACH END UNDER THE RIDGE BEAMS.

DIAPHRAGM NAILING					
LOCATION	SHEATHING / BLOCKING	BOUNDARY NAILING	EDGE NAILING	FIELD NAILING	REFERENCE
HOUSE ROOF, SECOND FLOOR AND GARAGE ROOF	15/32 IN. MIN. WOOD STRUCTURAL PANELS, SHEATHING AND SINGLE-FLOOR GRADE, UNLOCKED	8d COMMON NAILS AT 6 IN. O.C.	8d COMMON NAILS AT 6 IN. O.C. AT SUPPORTED PANEL EDGES	8d COMMON NAILS AT 12 IN. O.C.	SDPWS 2021 TABLE 4.2C, 4.2.8.1.3 (DIA-1)
PANELS 4 FT X 8 FT MINIMUM EXCEPT AT BOUNDARIES AND CHANGES IN FRAMING. NAILS 3/8 IN. MINIMUM FROM PANEL EDGES. FIELD NAILS ALONG INTERMEDIATE FRAMING MEMBERS ARE THE SAME NAILS AS AT THE PANEL EDGES.					
A FLOOR SHEATHED THICKER THAN THE MINIMUM, AS THE DETAILS SHOW, IS NAILED AS SCHEDULED.					

ROOF FRAMING PLAN NOTES		
MARK	NOTE	REFERENCE
1	HURRICANE TIE AT EACH RAFTER TO THE TOP PLATE.	1/S3.3
2	ROOF AND FLOOR SHEATHING AND NAILING PER THE DIAPHRAGM NAILING TABLE.	S1.3



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





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PROJECT
Tutorial Sample Residence
100 Example Street
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REV	DESCRIPTION	DATE
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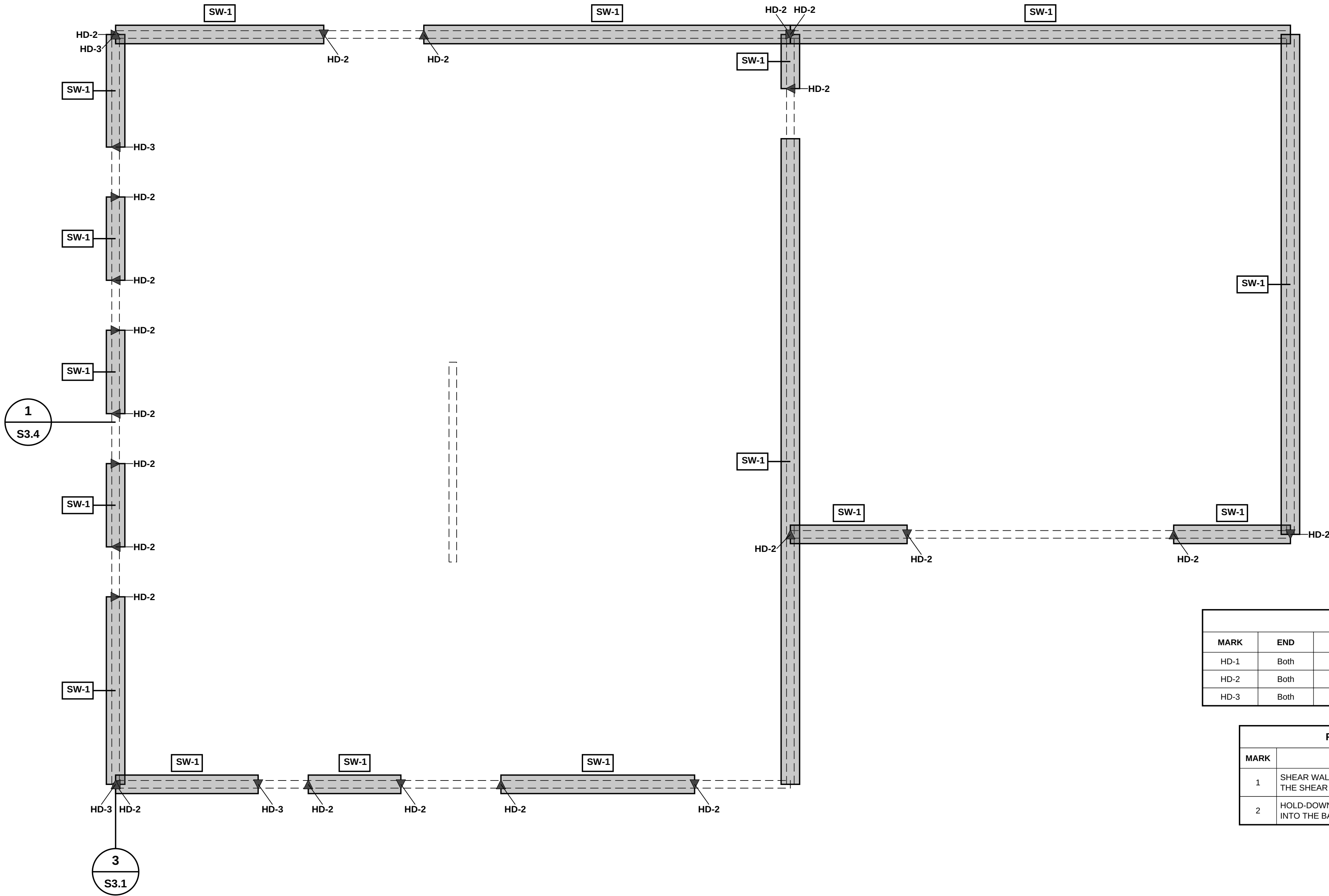
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Demonstration	
DATE 10/19/2026	PROJECT NUMBER SL-2026-001
DRAWN BY Claude	CHECKED BY KJP

SHEET TITLE
First Floor Shear Wall Plan

SHEET
S2.0

FIRST FLOOR SHEAR WALL PLAN

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



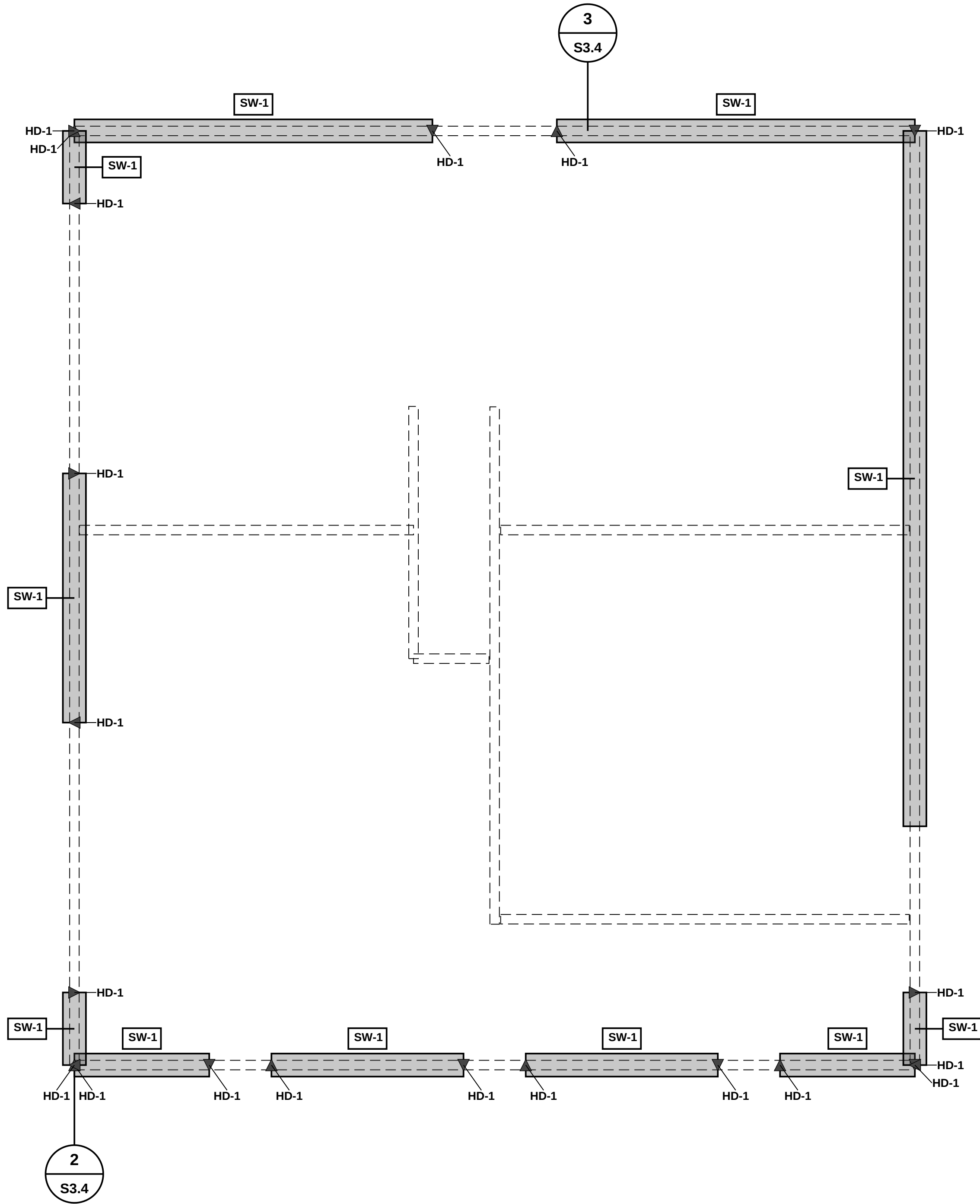
SHEAR WALL SCHEDULE						
MARK	SHEATHING	NAILING	FACES SHEATHED	FRAMING	UNIT SHEAR CAPACITY (ASD)	SILL ANCHORAGE ON CONCRETE
SW-1	15/32" Wood Structural Panels - Sheathing	8d common nail @ 6" O.C. Edge, 12" O.C. Field	One Side	2x6 Douglas Fir-Larch No. 2	226 plf	(2) 2x6 Douglas Fir-Larch No. 2 / (3) 2x6 Douglas Fir-Larch No. 2 1/2" Diameter Anchor Bolts @ 43" O.C.

HOLD-DOWN SCHEDULE				
MARK	END	DEVICE	ASD TENSION	ALLOWABLE
HD-1	Both	MSTC28	1.81 kip	3.46 kip
HD-2	Both	HDU2-SDS2.5	2.87 kip	3.08 kip
HD-3	Both	HDU4-SDS2.5	3.60 kip	4.57 kip

FIRST FLOOR SHEAR WALL PLAN NOTES		
MARK	NOTE	REFERENCE
1	SHEAR WALL SHEATHING, NAILING AND SILL ANCHORAGE PER THE SHEAR WALL SCHEDULE.	1/S3.4
2	HOLD-DOWNS PER THE HOLD-DOWN SCHEDULE, ANCHORED INTO THE BASEMENT AND STEM WALLS.	3/S3.1

SECOND FLOOR SHEAR WALL PLAN

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



SHEAR WALL SCHEDULE							
MARK	SHEATHING	NAILING	FACES SHEATHED	FRAMING	UNIT SHEAR CAPACITY (ASD)	END POST	SOLE PLATE FASTENING ON FRAMING
SW-1	15/32" Wood Structural Panels - Sheathing	8d common nail @ 6" O.C. Edge, 12" O.C. Field	One Side	2x6 Douglas Fir-Larch No. 2	233 plf	(2) 2x6 Douglas Fir-Larch No. 2	16d Common Nails @ 6" O.C.

HOLD-DOWN SCHEDULE				
MARK	END	DEVICE	ASD TENSION	ALLOWABLE
HD-1	Both	MSTC28	1.81 kip	3.46 kip
HD-2	Both	HDU2-SDS2.5	2.87 kip	3.08 kip
HD-3	Both	HDU4-SDS2.5	3.60 kip	4.57 kip

SECOND FLOOR SHEAR WALL PLAN NOTES		
MARK	NOTE	REFERENCE
1	SHEAR WALL SHEATHING AND NAILING PER THE SHEAR WALL SCHEDULE.	1/S3.4
2	STRAPS ACROSS THE FLOOR AT EACH HOLD-DOWN MARK PER THE HOLD-DOWN SCHEDULE.	2/S3.4



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SHEET TITLE
Second Floor Shear Wall Plan

SHEET
S2.1



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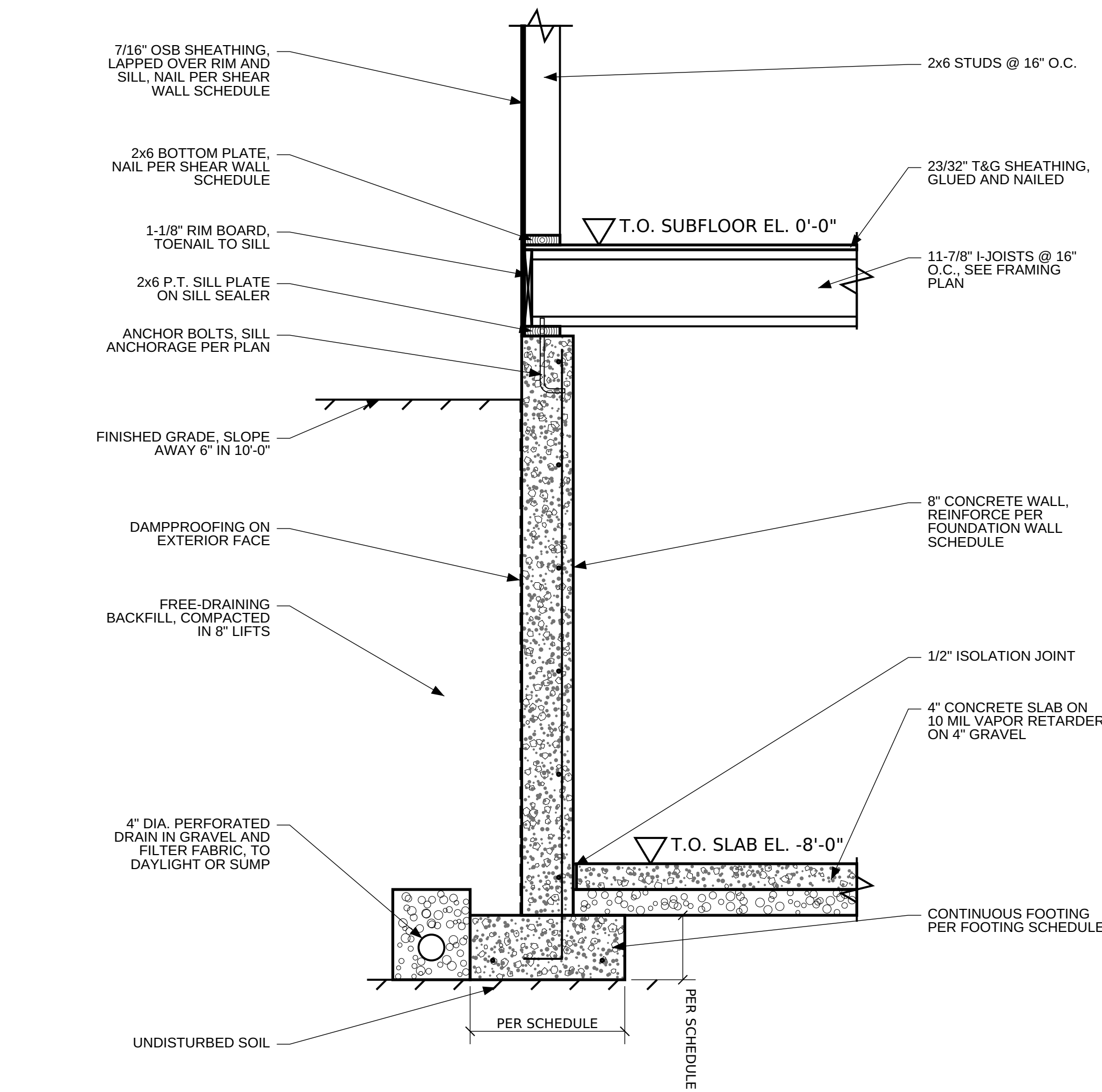
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Anytown
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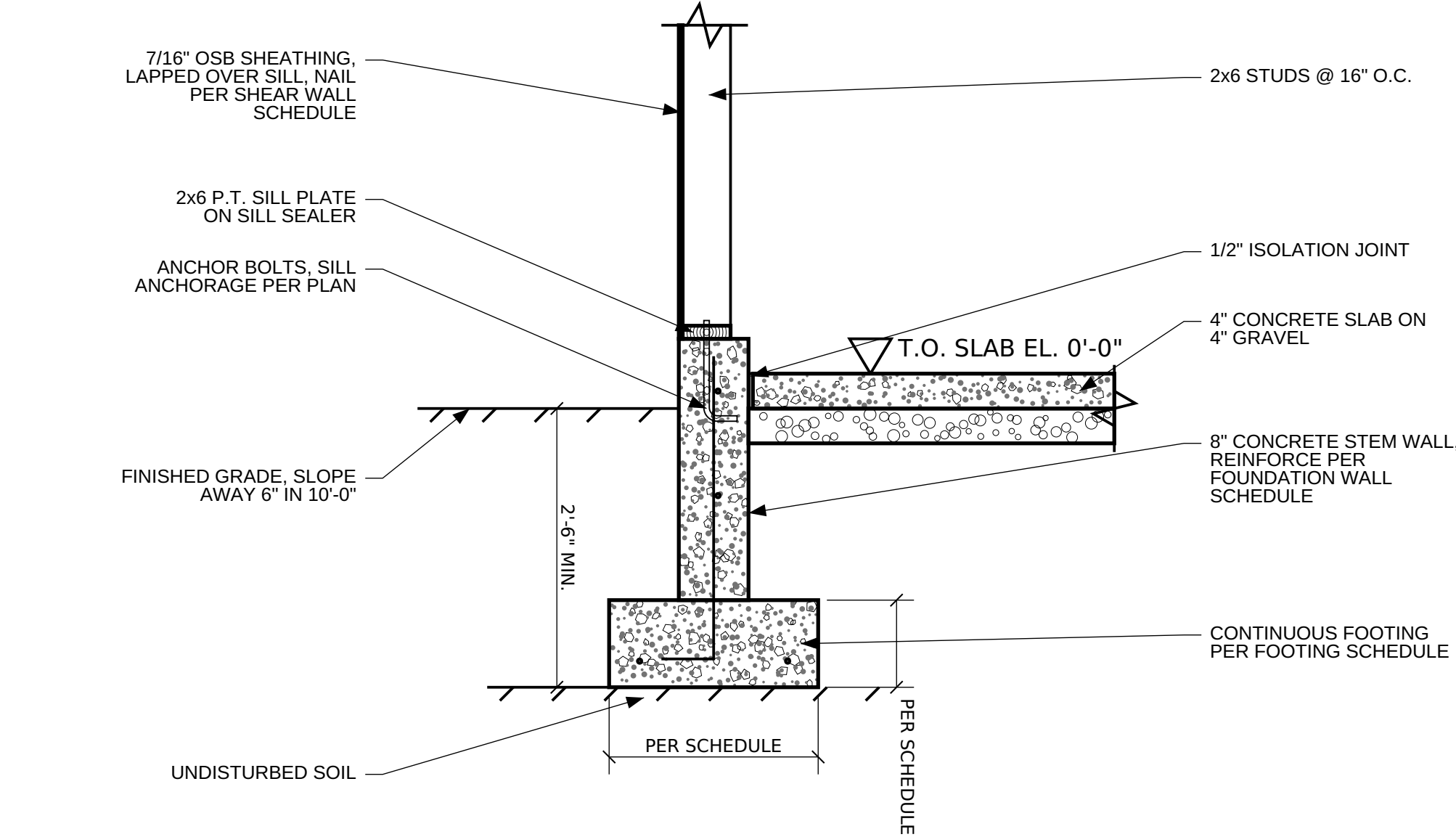
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SHEET TITLE
Structural Details

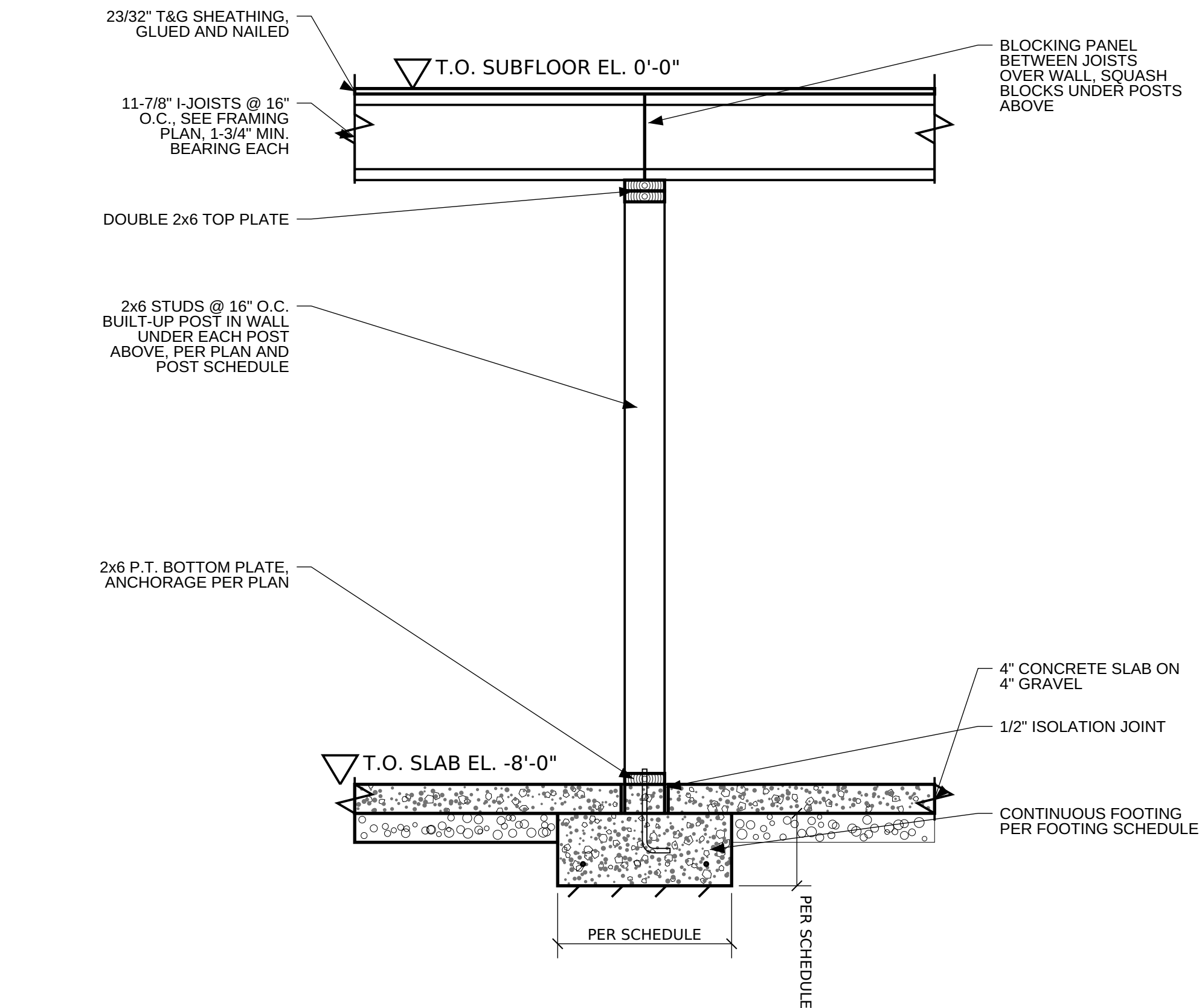
SHEET
S3.0



1/53.0 — Typical Basement Wall Section — 3/4" = 1'-0"



2/53.0 — Garage Stem Wall Section — 3/4" = 1'-0"



3/53.0 — Interior Bearing Wall at Basement — 3/4" = 1'-0"



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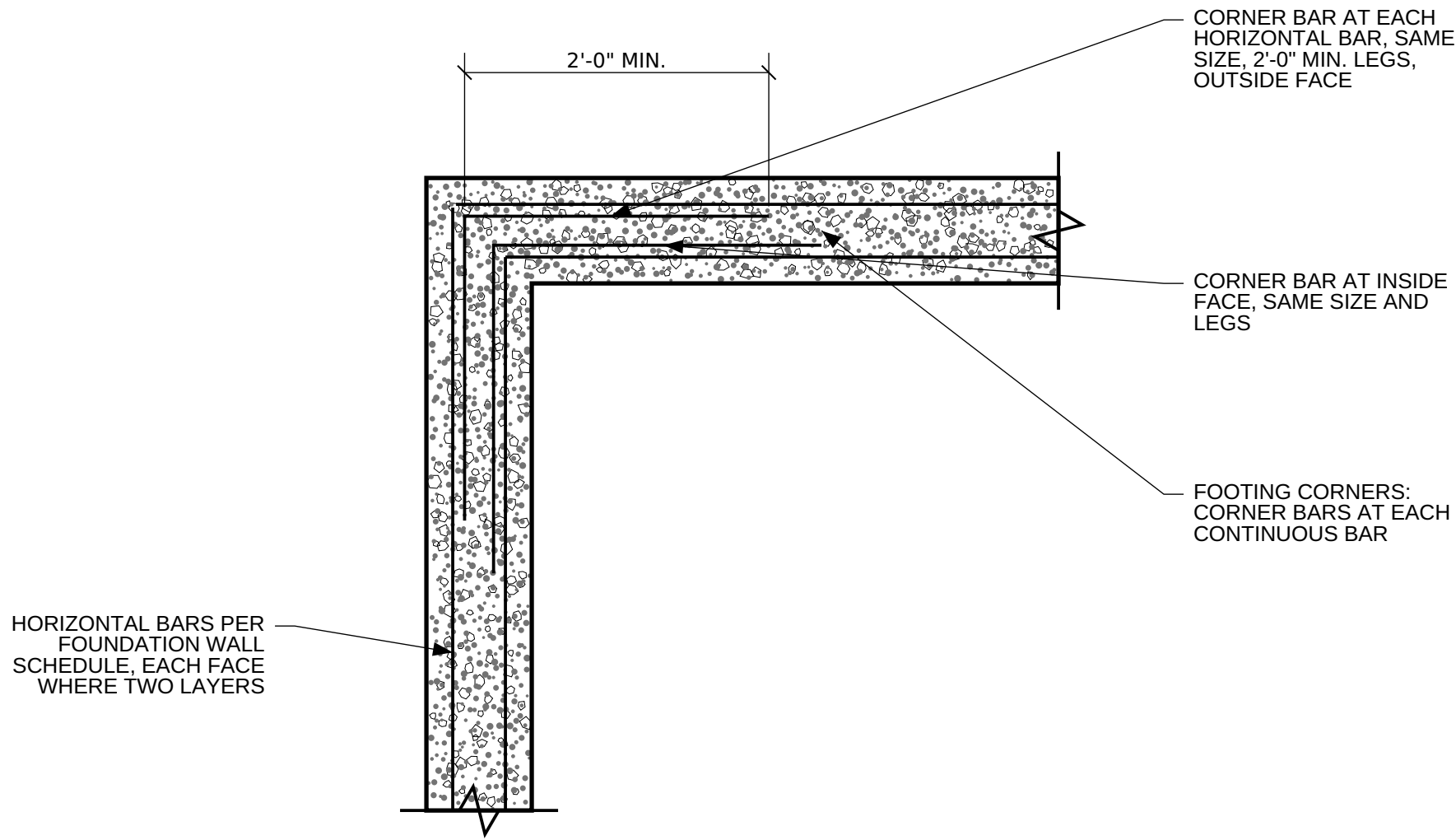
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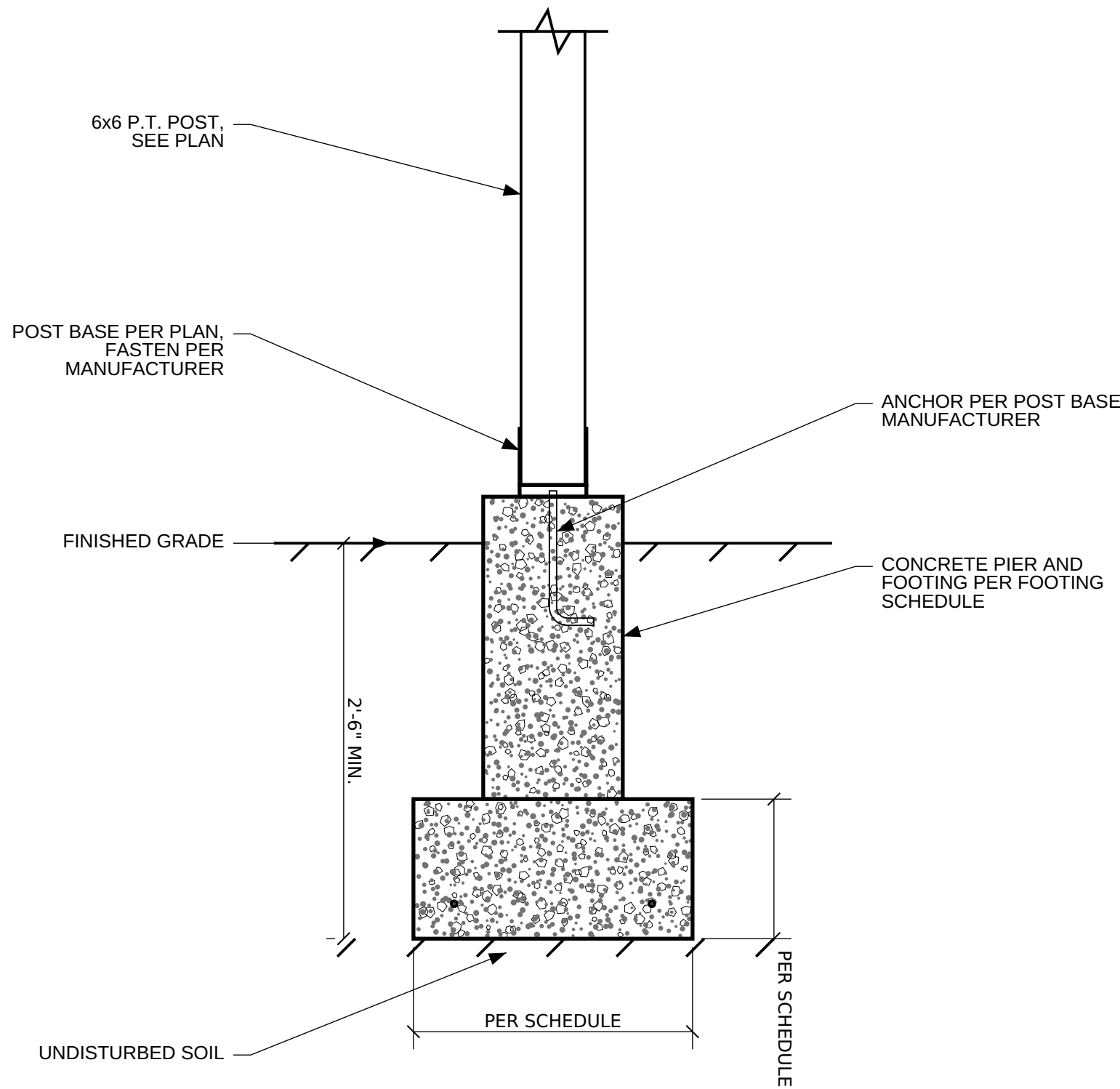
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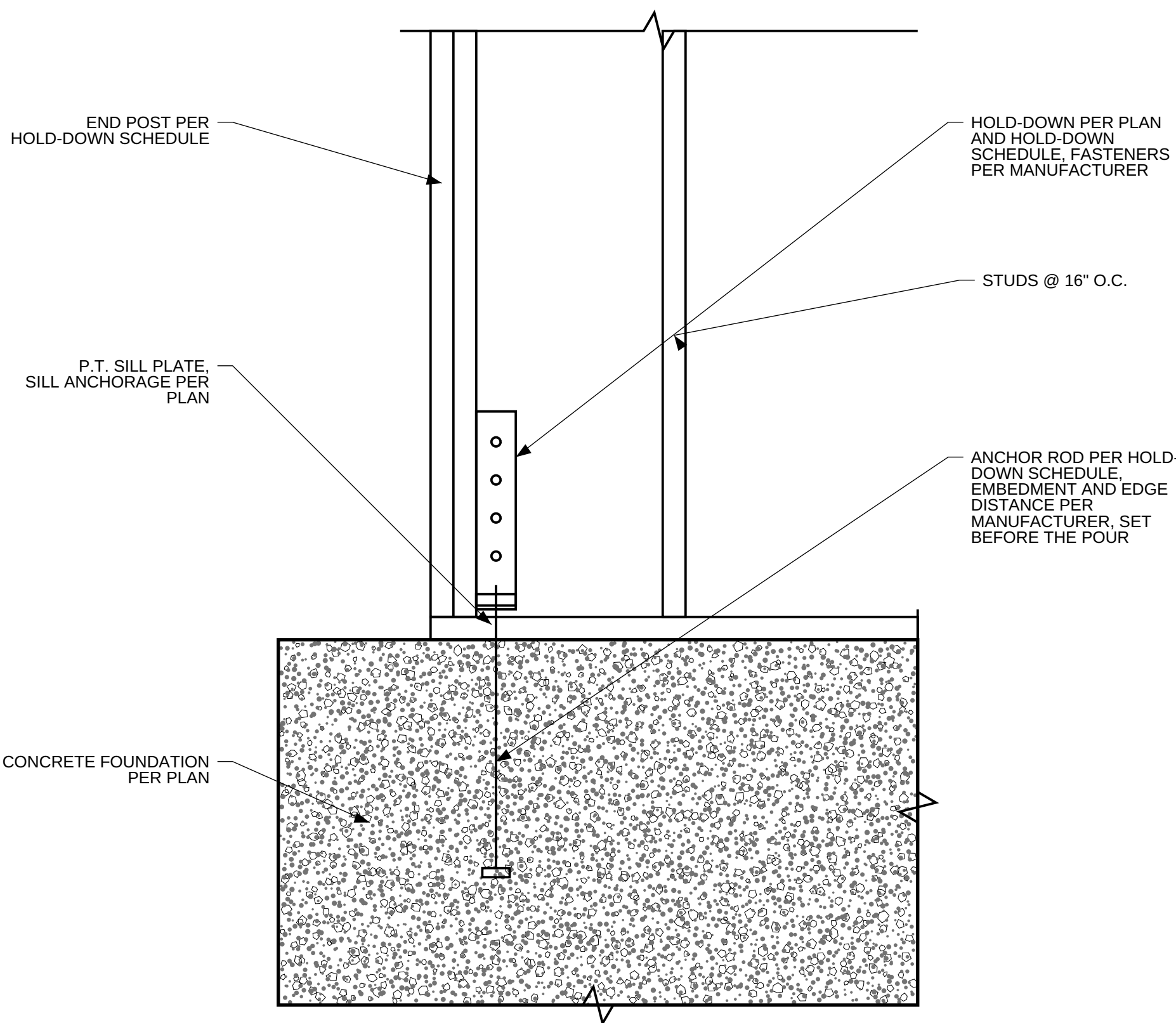
SHEET
S3.1



1/53.1 — Concrete Wall Corner Bars — 1" = 1'-0"



2/53.1 — Deck Post at Pier — 1" = 1'-0"



3/53.1 — Hold-Down at Foundation — 1 1/2" = 1'-0"



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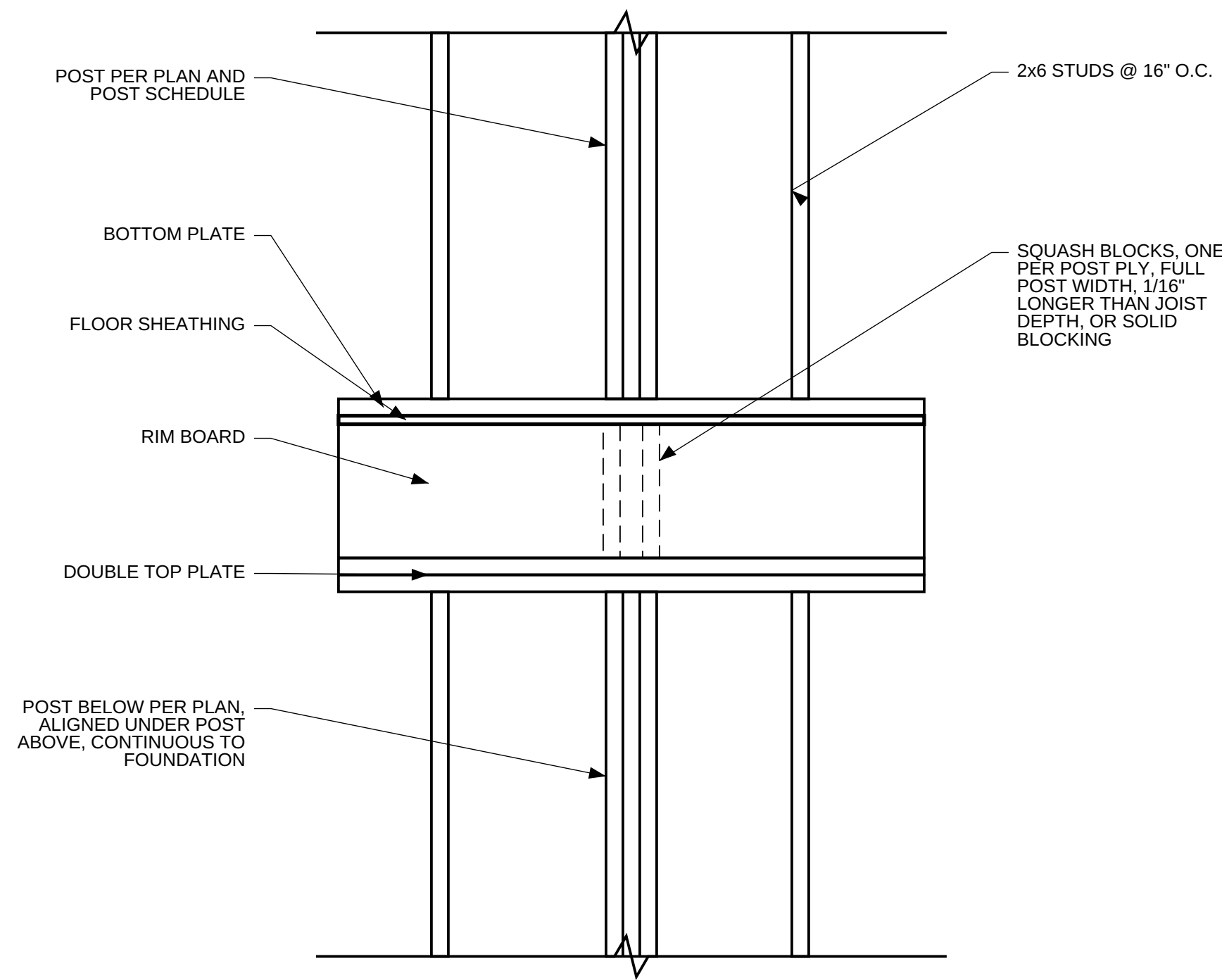
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100 Example Street
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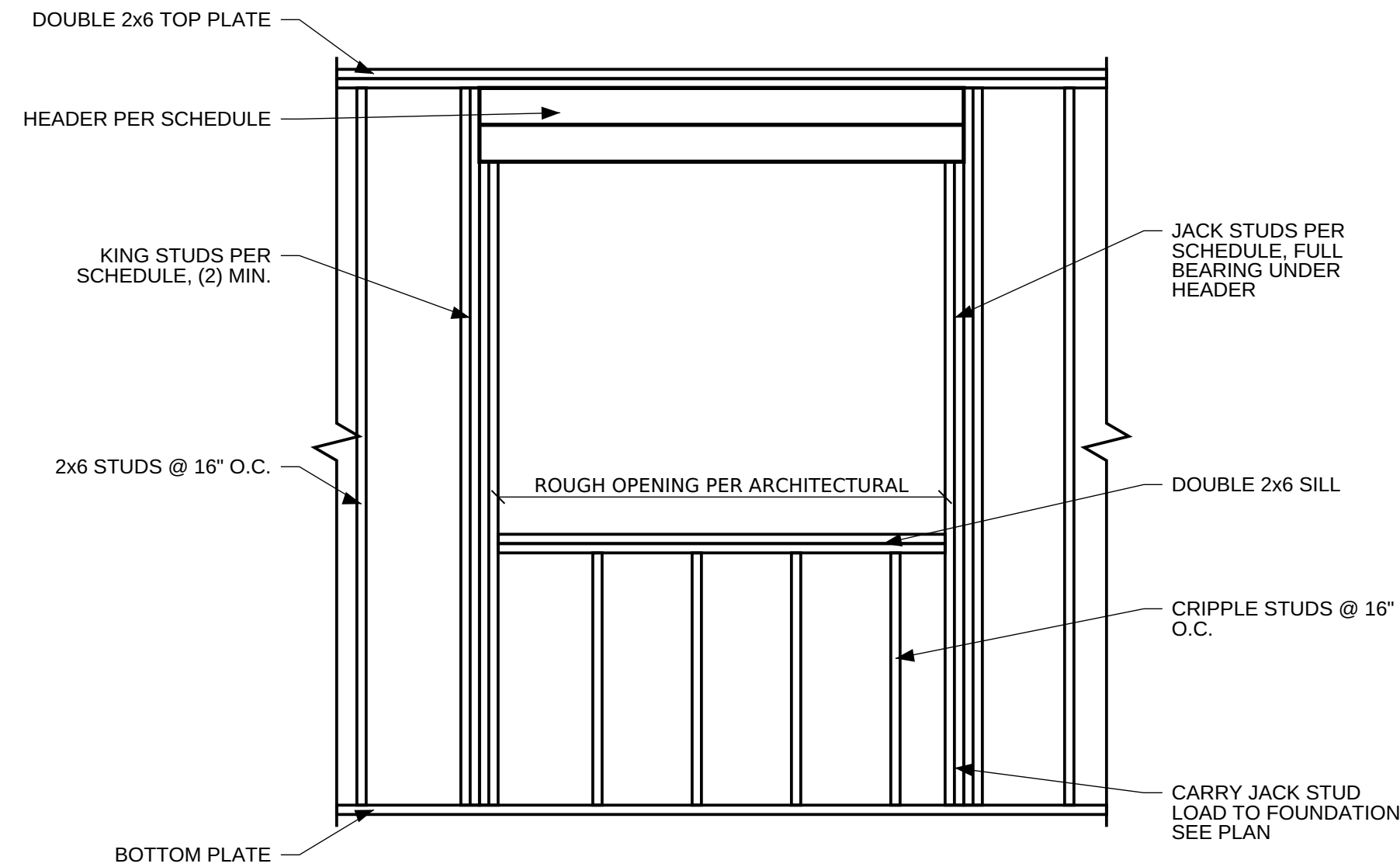
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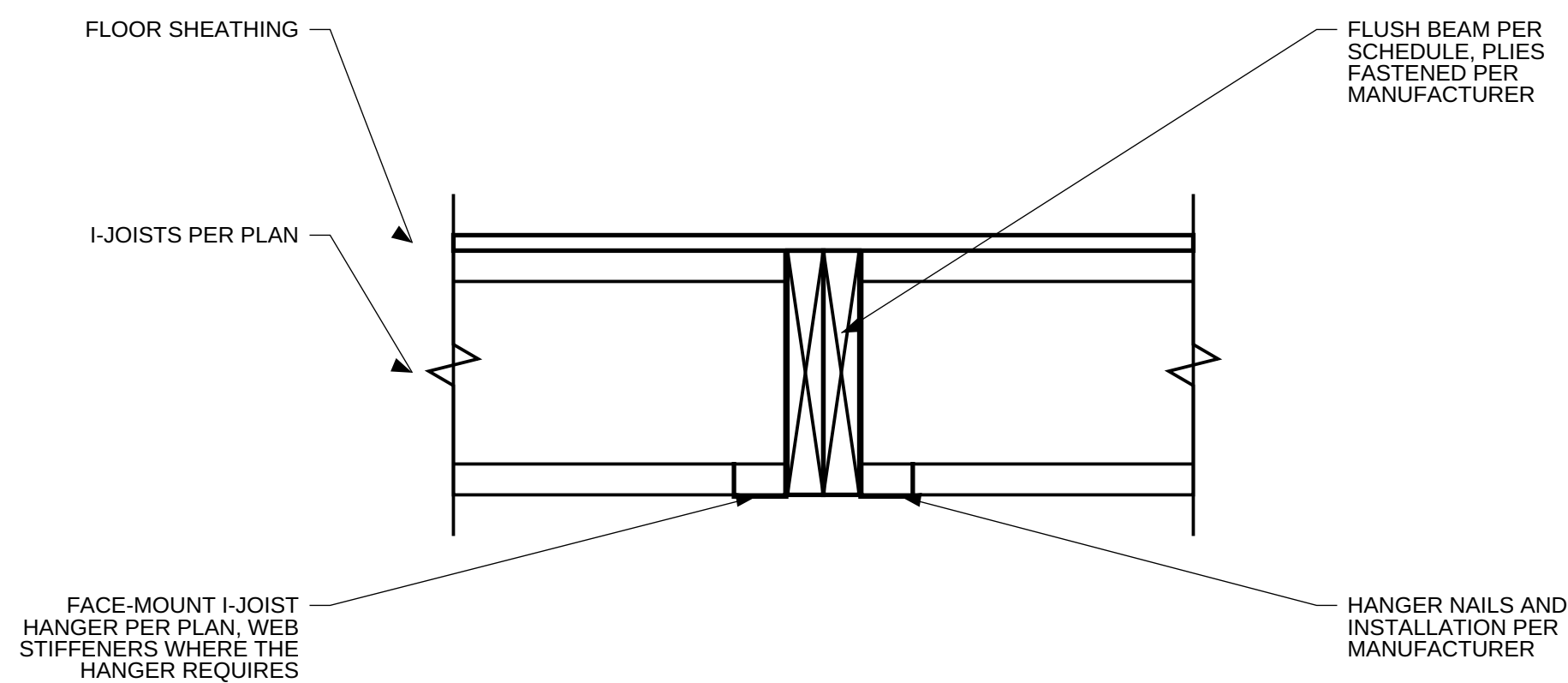
SHEET
S3.2



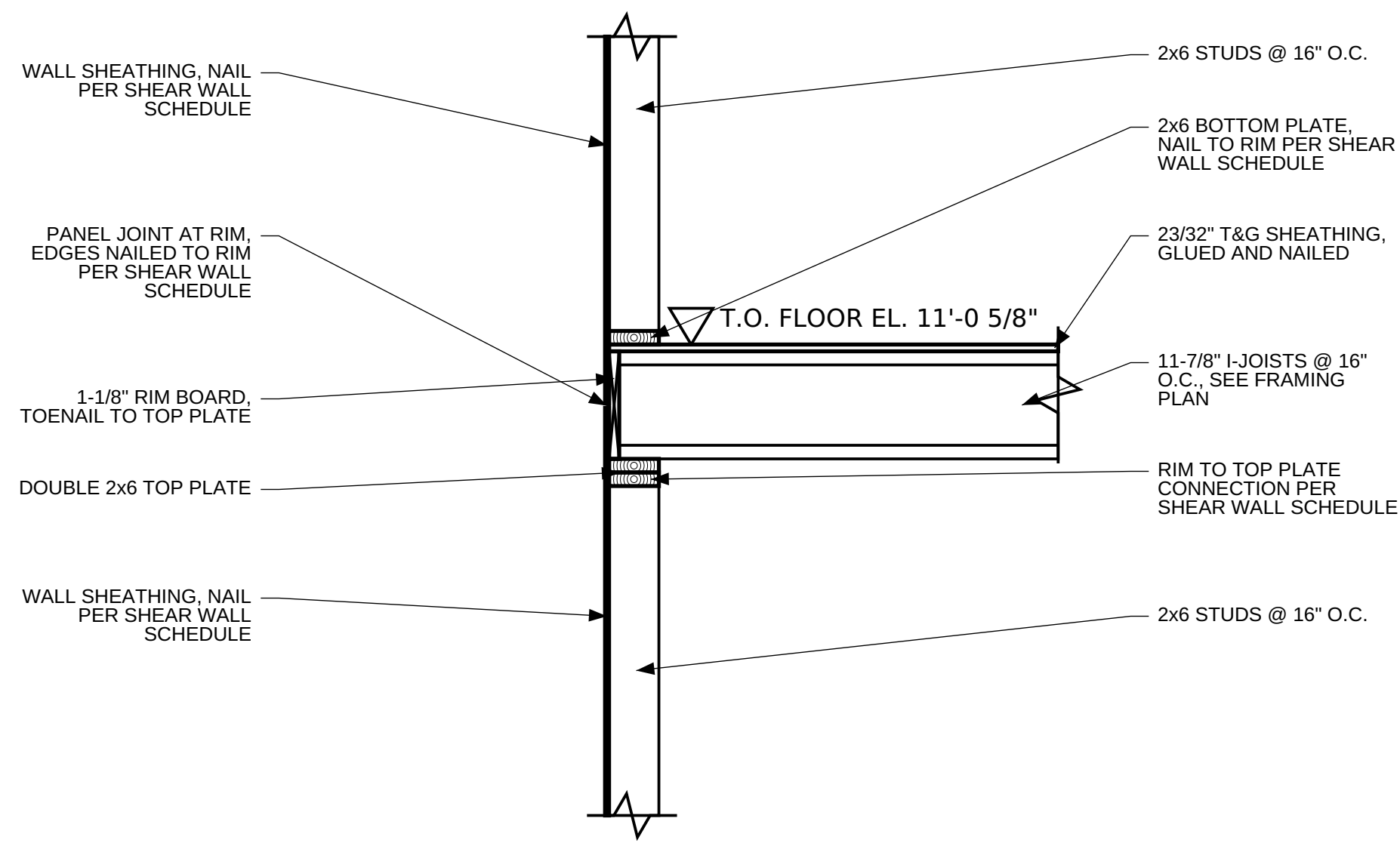
1/53.2 — Post Load Through Floor — 1" = 1'-0"



3/53.2 — Typical Header at Wall Opening — 1/2" = 1'-0"



2/53.2 — Flush Beam With I-Joist Hangers — 1 1/2" = 1'-0"



4/53.2 — Exterior Wall at Second Floor — 3/4" = 1'-0"



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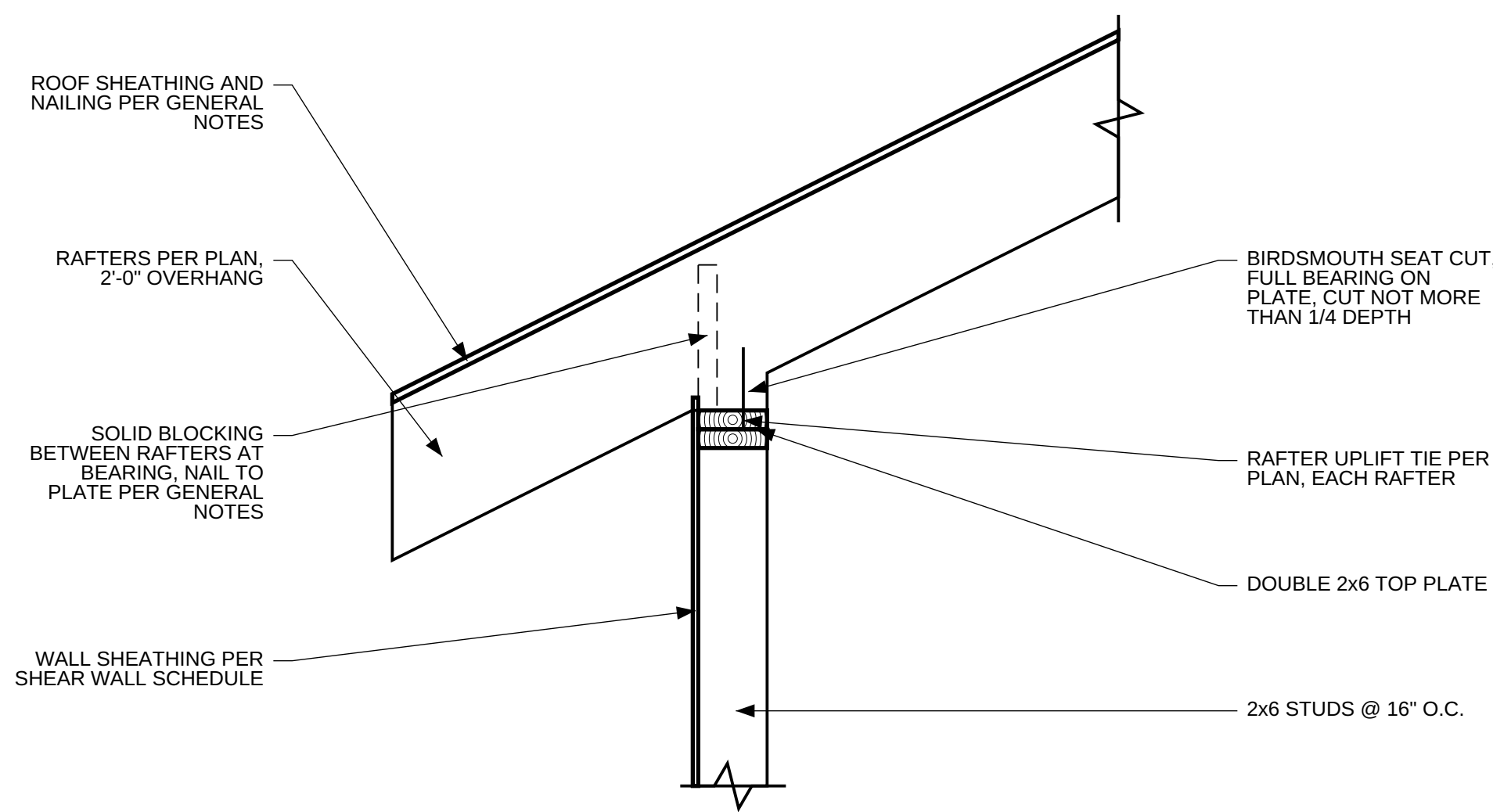
PROJECT

Tutorial Sample Residence

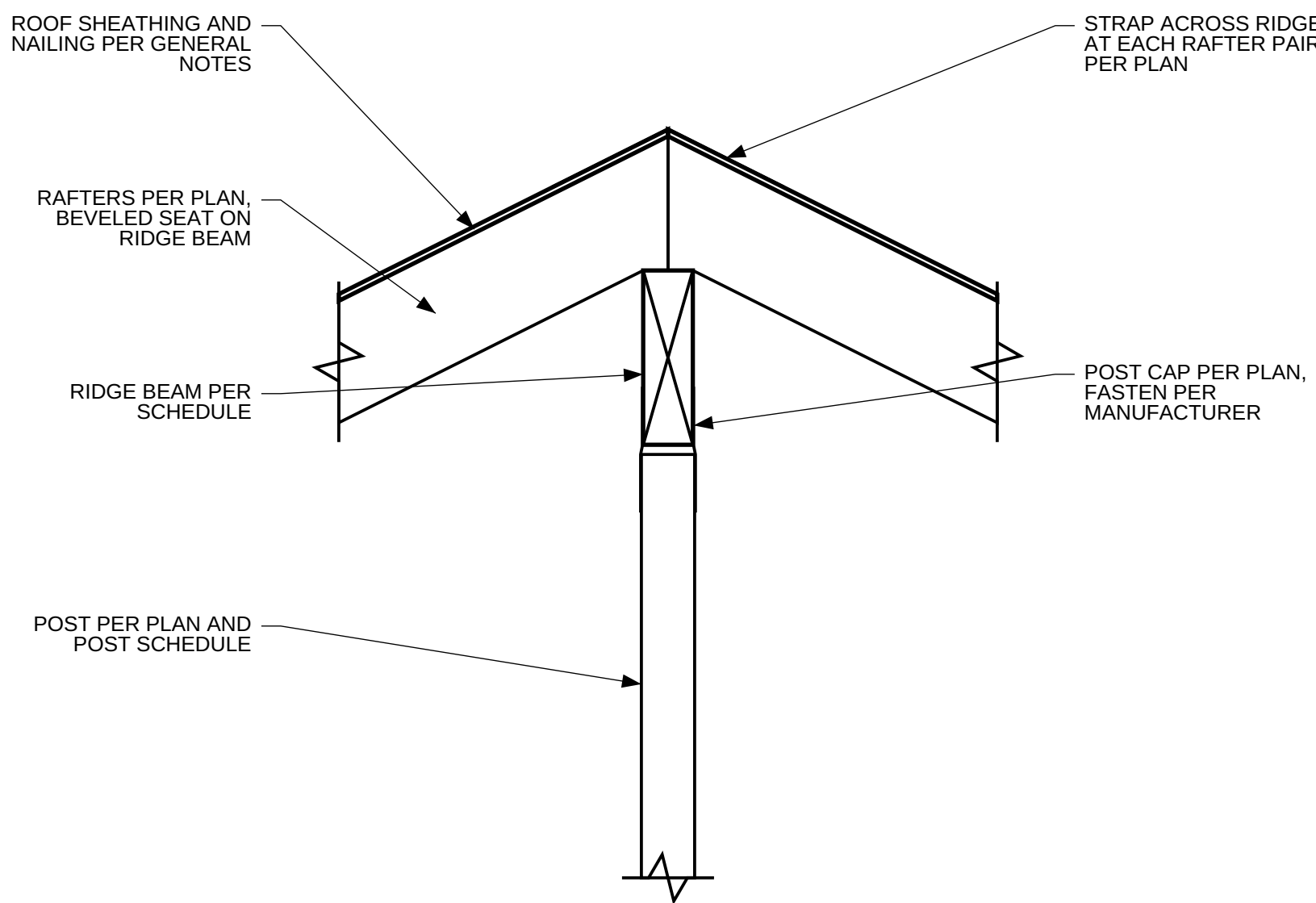
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REV	DESCRIPTION	DATE
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PLAN SET		
Demonstration		
DATE	PROJECT NUMBER	
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DRAWN BY	CHECKED BY	
Claude	KJP	
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Structural Details		
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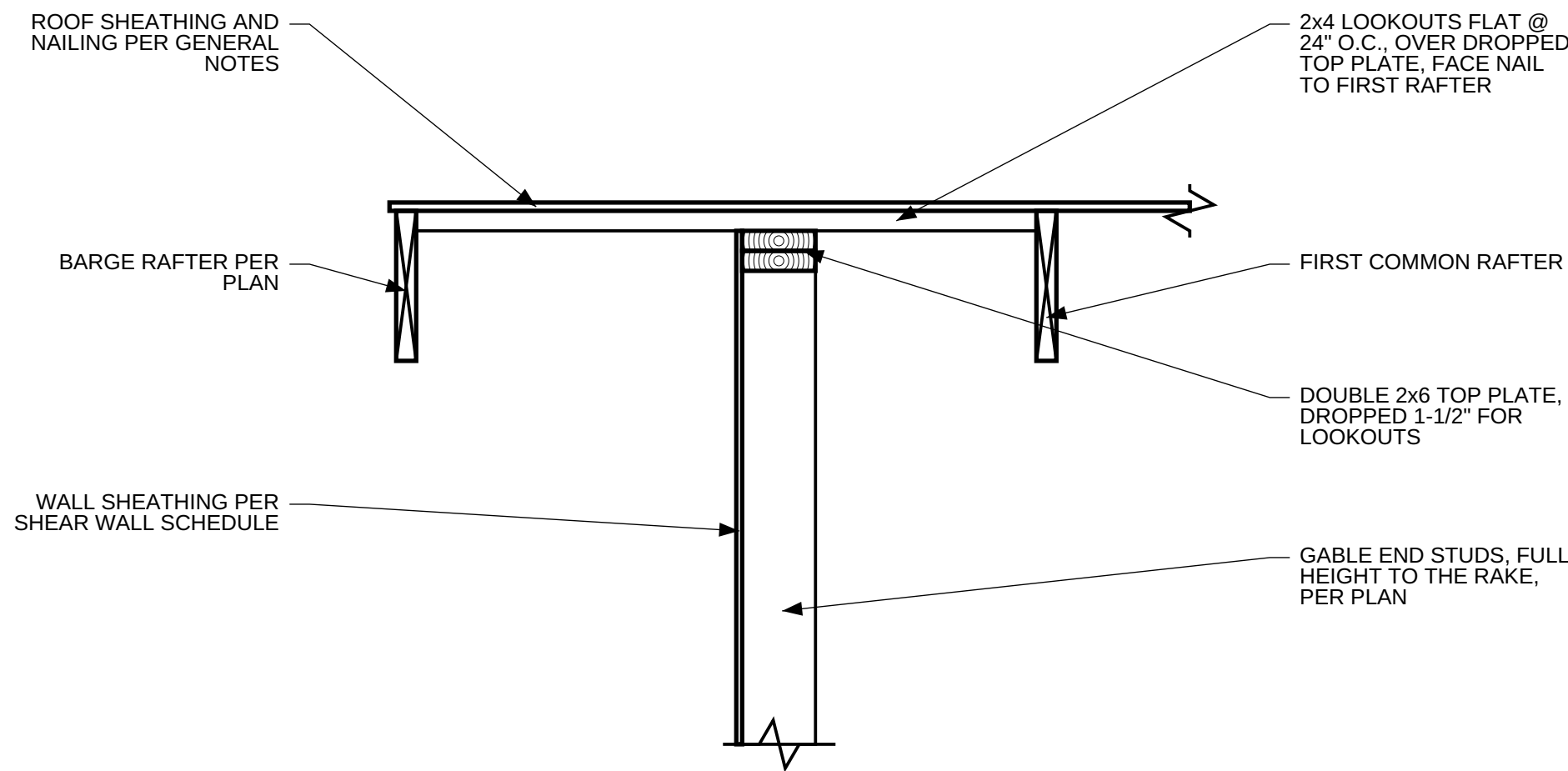
S3.3



1/53.3 — Rafter at Exterior Wall — 1" = 1'-0"



2/53.3 — Rafters at Ridge Beam — 3/4" = 1'-0"



3/53.3 — Gable End Wall at Rake — 1" = 1'-0"



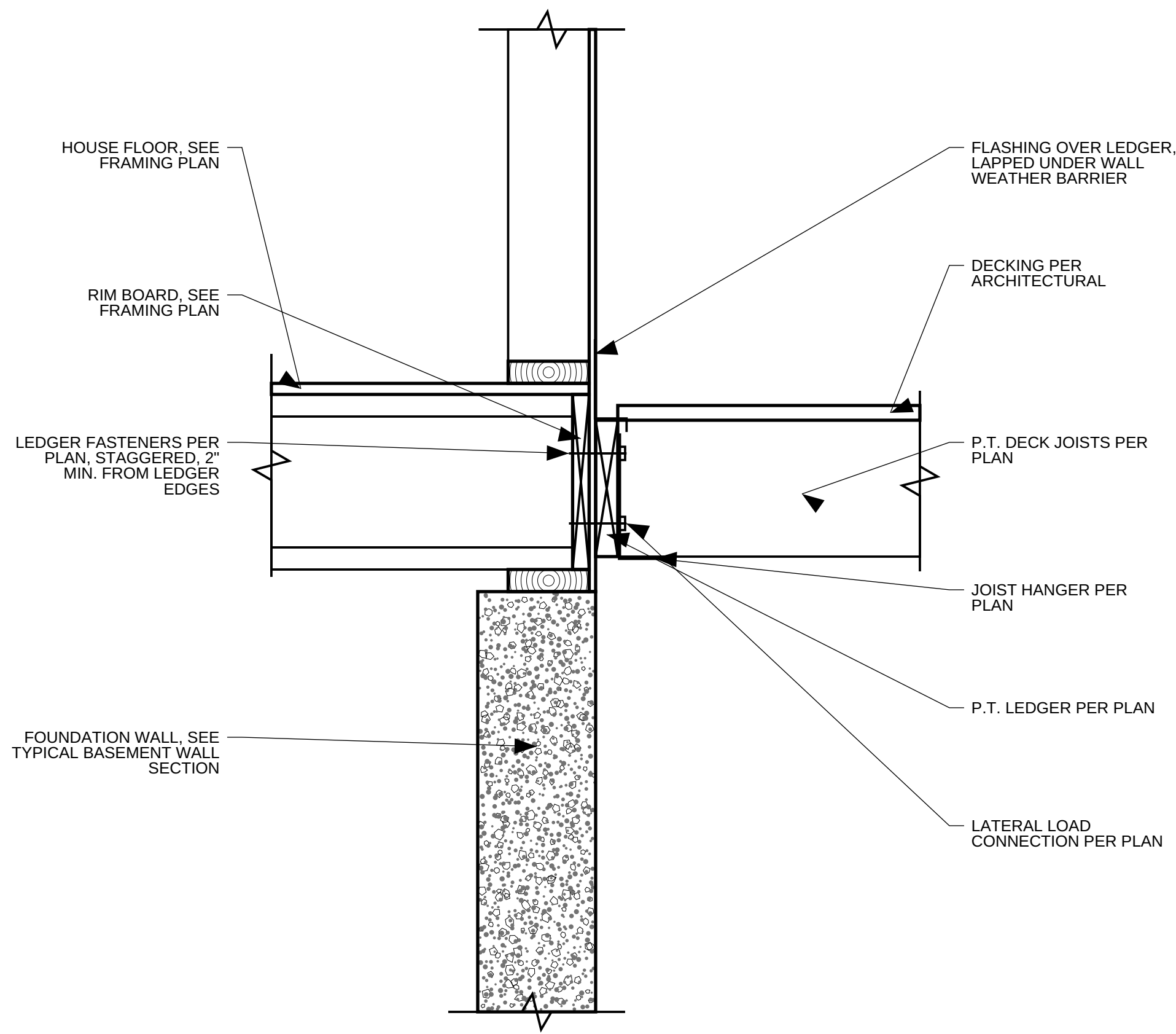
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SHEET

S3.4



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1/S3.5 — Deck Ledger at Rim — 1 1/2" = 1'-0"

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REV	DESCRIPTION	DATE
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PLAN SET		
Demonstration		
DATE	PROJECT NUMBER	
10/19/2026	SL-2026-001	
DRAWN BY	CHECKED BY	
Claude	KJP	
SHEET TITLE		
Structural Details		
SHEET		
S3.5		