ABBREVIATIONS

AB	ANCHOR BOLT	JNT	JOINT
ABV	ABOVE	JST	JOIST
ADH	ADHESIVE	LOCN	LOCATION
ALT	ALTERNATE	LSL	LAMINATED STRAND LUMBER
ARCH	ARCHITECTURAL	LVL	LAMINATED VENEER LUMBER
AWS	AMERICAN WELDING SOCIETY	LWC	LIGHT WEIGHT CONCRETE
BLW	BELOW	MATL	MATERIAL
BLDG	BUILDING	MAX	MAXIMUM
BLK	BLOCK	MECH	MECHANICAL
BLKG	BLOCKING	MFR	MANUFACTURER
BM	BEAM	MIN	MINIMUM
BO	BOTTOM OF	(N)	NEW
BRG	BEARING	NA	NOT APPLICABLE
BOTT	BOTTOM	NIC	NOT IN CONTRACT
BTWN	BETWEEN	NO, #	NUMBER
CIP	CAST IN PLACE	NS	NEAR SIDE
CL	CENTERLINE	NTS	NOT TO SCALE
CLG	CEILING	NWC	NORMAL WEIGHT CONCRETE
CLR	CLEAR	O/	OVER
COL	COLUMN	OC	ON CENTER
CONC	CONCRETE	OH	OPPOSITE HAND
CONN	CONNECTION	OPP	OPPOSITE
CONST	CONSTRUCTION	OPNG	OPENING
CONT	CONTINUOUS	OSB	ORIENTED STRAND BOARD
CP	COMPLETE PENETRATION	OWSJ	OPEN WEB STEEL JOISTS
CTR	CENTER	PDF	POWER DRIVEN FASTENER
DBL	DOUBLE	PERP	PERPENDICULAR
DET	DETAIL	PERIM	PERIMETER
DF	DOUGLAS FIR	PL	PLATE
DF-L	DOUGLAS FIR-LARCH	PLWD	PLYWOOD
DIA	DIAMETER	PSL	PARALLEL STRAND LUMBER
DIAG	DIAGONAL	PT	POST TENSIONED OR
DIM	DIMENSION		PRESSURE TREATED
DWG	DRAWING	RCJ	ROUGHENED CONCRETE
(E)	EXISTING		JOINT
EA	EACH	REF	REFERENCE
EF	EACH FACE	REINF	REINFORCING
EL	ELEVATION	REQ'D	REQUIRED
EMBED	EMBEDMENT	RET	RETAINING
EN	EDGE NAIL	RO	ROUGH OPENING
EQUIP	EQUIPMENT	RDWD	REDWOOD
EW	EACH WAY	SAD	SEE ARCHITECTURAL DRAWINGS
EXP	EXPANSION	SCHED	SCHEDULE
EXT	EXTERIOR	SEL. STRUCT	SELECT STRUCTURAL
FNDN	FOUNDATION	SFRS	SEISMIC FORCE RESISTING
FIN FLR, FF	FINISHED FLOOR		SYSTEM
FLR	FLOOR	SHTG	SHEATHING
FO	FACE OF	SIM	SIMILAR
FRMG	FRAMING	SOG	SLAB ON GRADE
FS	FAR SIDE	SPEC	SPECIFICATIONS
FT	FOOT	SQ	SQUARE
FTG	FOOTING	SS	STAINLESS STEEL
GA, ga	GAGE	STD	STANDARD
GALV	GALVANIZED	T&B	TOP AND BOTTOM
GR	GRADE	T&G	TONGUE AND GROOVE
GL	GLULAM	TN	TOE NAIL
GYP BD	GYPSUM BOARD	T.O.	TOP OF
HDG	HOT DIPPED GALVANIZED	TYP	TYPICAL
HDR	HEADER	UON	UNLESS OTHERWISE NOTED
HGR	HANGER	VERT	VERTICAL
HK	HOOK	WP	WATER PROOFING OR
HORIZ	HORIZONTAL		WORK POINT
HSB	HIGH STRENGTH BOLT	WT	WEIGHT
HSS	HOLLOW STRUCTURAL STEEL	WWF	WELDED WIRE FABRIC
INFO	INFORMATION	W/	WITH
INSUL	INSULATION	XS	EXTRA STRONG
INT	INTERIOR	XXS	DOUBLE-EXTRA STRONG

DESIGN CRITERIA

CODE AND STANDARDS

DESIGN IS BASED ON THE INTERNATIONAL BUILDING CODE, 2018 EDITION. CONSTRUCTION SHALL CONFORM WITH APPLICABLE SECTIONS OF THE CODE. REFERENCE STANDARDS SHALL BE THE EDITION NOTED IN THE CODE, UNLESS OTHERWISE INDICATED.

LIVE LOADS	
DESIGN LIVE LOADS PER IBC TABLE 1607.01 AND AS FOLLOWS. LIVE LOADS MAY BE REDUCED IN ACCORDANCE WITH IBC 1607.10.	
ROOF LIVE	20 PSF
FLOOR LIVE	NA
EARTHQUAKE DESIGN DATA	
SEISMIC FORCE-RESISTING SYSTEM:	
Ie	1.0
Ss	1.5
S1	0.552
SITE CLASS	D
Sds	1.0
Sd1	0.552
SEISMIC DESIGN CATEGORY	D
Cs	0.154
R	6.5 PLYWOOD SHEAR WALL
ANALYSIS PROCEDURE	EQUIVALENT LATERAL FORCE
REDUNDANCY FACTOR	1.0
WIND DESIGN DATA	
BASIC ULTIMATE WIND SPEED,V	130 MPH
EFFECTIVE ULTIMATE WIND SPEED	120 MPH
Iw	1.0 (CATEGORY II)
EXPOSURE	C (OPEN TERRAIN)
MAIN WIND-FORCE RESISTING SYSTEMS	
ANALYSIS PROCEDURE	METHOD 1, RIGID, LOW-RISE, h < OR = 60 FT
COMPONENTS AND CLADDING	
ANALYSIS PROCEDURE	METHOD 1, RIGID, LOW-RISE, h < OR = 60 FT
FOUNDATIONS	
SPREAD FOOTINGS - MAXIMUM ALLOWABLE SOIL BEARING PRESSURE:	
DEAD PLUS LIVE	1500 PSF
TOTAL LOADS, INCLUDING WIND OR SEISMIC	2000 PSF

STRUCTURAL OBSERVATIONS

NOTE: GFDS ENGINEERS WILL PROVIDE STRUCTURAL OBSERVATION IN ACCORDANCE WITH IBC 2018, CHAPTER 17, SECTION 1704.6. CONTRACTOR SHALL REVIEW THE REQUIRED STRUCTURAL OBSERVATION ITEMS BELOW AND NOTIFY GFDS ENGINEERS AT LEAST 48 HOURS PRIOR TO A REQUIRED STRUCTURAL OBSERVATION.

OBSERVATION ITEM	REQUIRED (R)
STRUCTURAL FOUNDATION	R
STEEL FRAMING	R
CONCRETE CONSTRUCTION	
MASONRY CONSTRUCTION	
WOOD FRAMING	R

SHEET LIST

PLAN MATERIAL LEGEND

- CONCRETE FOOTING
- CONCRETE SLAB
- CONCRETE WALL
- MASONRY WALL
- WOOD STRUCTURAL WALL ABOVE
- STRUCTURAL WALL BELOW
- WOOD SHEAR WALL, MIN OUT-OUT LENGTH — SHT S08.2
- TIEDOWN — 8 S08.1
- PERFORATED WOOD SHEAR WALL WITH STRAPS — 8 S08.2
- WOOD SHEAR WALL BELOW
- STRAP — 5 S08.1
- STEEL BEAM
- WOOD BEAM, FLUSH UON
- HEADER OR DROPPED BEAM, SIZE PER — 3 S08.1
- RAFTER OR JOIST
- HANGER
- WOOD POST ABOVE 4X4, UON
- WOOD POST BELOW 4X4, UON
- WOOD POST ABV & BLW 4X4, UON
- HSS STEEL COLUMN
- OVER FRAMING AT ROOF — 10 S08.1
- SHEATHING

REVIEWED
BLDG DIV. - STRUCTURAL
dhlee 12/30/2022
REVIEWER DATE

REVIEWED
BUILDING DIVISION
nosorio 01/03/2023
REVIEWER DATE

CHRIS WILSON
LICENSED PROFESSIONAL ENGINEER
No. 14056-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

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SCALE: NO SCALE

SHEET TITLE:
TITLE SHEET

SHEET NUMBER:
S00.0

GENERAL NOTES

SCOPE

THE SCOPE OF WORK INCLUDES A NEW RESIDENCE.

COORDINATION

DETAILS SHOWN ARE TYPICAL, SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS. QUESTIONS OF IDENTIFICATION OF APPLICABLE DETAIL OR STRUCTURAL MEMBER SHALL BE BROUGHT TO THE ARCHITECT FOR RESOLUTION BEFORE PROCEEDING WITH WORK. CONTRACTOR SHALL COMPARE STRUCTURAL DRAWINGS WITH ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS AS TO LAYOUT, DETAILS, DIMENSIONS AND ELEVATIONS. ALL QUESTIONS, DISCREPANCIES AND CONFLICTS SHALL BE REPORTED TO THE ARCHITECT FOR ADJUSTMENT BEFORE PROCEEDING WITH WORK.

CONTRACTOR MEANS AND METHODS

GFDS ENGINEERS SHALL NOT SUPERVISE, DIRECT OR HAVE ANY CONTROL OVER THE CONTRACTOR'S WORK NOR HAVE ANY RESPONSIBILITY FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES SELECTED BY THE CONTRACTOR NOR FOR THE CONTRACTOR'S SAFETY PRECAUTIONS OR PROGRAMS IN CONNECTION WITH THE WORK. THESE RIGHTS AND RESPONSIBILITIES ARE SOLELY THOSE OF THE CONTRACTOR.

UNLESS OTHERWISE APPROVED BY THE ARCHITECT, THE CONTRACTOR SHALL INSTALL DOORS, WINDOWS, PARTITIONS AND FINISHES AFTER THE MAJORITY OF THE DEAD LOADS HAVE BEEN INSTALLED (I.E. STRUCTURAL FRAMING, ROOFING, HEAVY FINISHES, ETC.) IN ORDER TO LIMIT DAMAGE TO FINISHES, WINDOWS, DOORS AND PARTITIONS DUE TO DEAD LOAD DEFLECTIONS.

CONSTRUCTION PHASE SITE VISITS

GFDS ENGINEERS WILL PROVIDE CONSTRUCTION SITE VISITS AND OBSERVE THE PROGRESS AND QUALITY OF STRUCTURAL PORTIONS OF THE WORK. THESE VISITS AND OBSERVATIONS ARE NOT INTENDED TO BE AN EXHAUSTIVE CHECK OR DETAILED INSPECTION OF THE CONTRACTOR'S WORK, BUT RATHER TO ALLOW GFDS ENGINEERS TO BECOME GENERALLY FAMILIAR WITH THE WORK IN PROGRESS AND TO DETERMINE, IN GENERAL, IF THE WORK IS PROCEEDING IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

THE GENERAL CONTRACTOR SHALL TAKE THE APPROPRIATE ACTION TO CORRECT PORTIONS OF THE WORK INDICATED AS BEING NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS.

SPECIAL INSPECTION AND TESTING

IN ACCORDANCE WITH IBC 2018, CHAPTER 17 THE OWNER OR OWNER'S AGENT SHALL ENGAGE A SPECIAL INSPECTOR TO PROVIDE SPECIAL INSPECTIONS. UNLESS OTHERWISE SPECIFICALLY INDICATED, GFDS ENGINEERS SHALL NOT PROVIDE SPECIAL INSPECTION. CONTRACTOR SHALL REVIEW THE SPECIAL INSPECTION REQUIREMENTS SHOWN ON THE CONTRACT DOCUMENTS AND/ OR ON COMPLETED FORMS ISSUED BY THE BUILDING DEPARTMENT HAVING JURISDICTION OVER THE WORK AND SHALL NOTIFY TESTING AGENCIES AT LEAST 24 HOURS IN ADVANCE OF TIME WHEN WORK THAT REQUIRES TESTING OR INSPECTING WILL BE PERFORMED.

STRUCTURAL OBSERVATION

GFDS ENGINEERS WILL PROVIDE STRUCTURAL OBSERVATION IN ACCORDANCE WITH IBC 2018, CHAPTER 17, SECTION 1704.6 AS INDICATED ON THE DRAWINGS. CONTRACTOR SHALL REVIEW THE STRUCTURAL OBSERVATION REQUIREMENTS SHOWN ON THE CONTRACT DOCUMENTS AND NOTIFY GFDS ENGINEERS AT LEAST 48 HOURS IN ADVANCE OF TIME WHEN WORK THAT REQUIRES STRUCTURAL OBSERVATION WILL BE COMPLETED.

SUBMITTALS

THE FOLLOWING SHALL BE SUBMITTED TO GFDS ENGINEERS, WITH COPY TO THE ARCHITECT, FOR REVIEW.

CONTRACTOR PROPOSED CHANGES IN PRODUCTS, MATERIALS, EQUIPMENT, AND METHODS OF CONSTRUCTION FROM THOSE SPECIFIED ON THE STRUCTURAL DRAWINGS.

CONCRETE MIX DESIGN
STRUCTURAL STEEL ERECTION AND DETAIL DRAWINGS
SHOP FABRICATED WOOD TRUSS CALCULATIONS AND PLACEMENT DRAWINGS

FOUNDATIONS

FOUNDATION DESIGN IS BASED ON IBC TABLE 1804.2. FOUNDATION DESIGN CRITERIA IS SPECIFIED ON THE TITLE SHEET.

CONTRACTOR SHALL REVIEW AND FOLLOW THE RECOMMENDATIONS IN THE REPORT AND SHALL COORDINATE WITH THE GEOTECHNICAL ENGINEER WITH REGARD TO THE REQUIRED INSPECTION/ TESTING OF FOUNDATION EXCAVATION.

EXCEPT WHERE OTHERWISE SHOWN, EXCAVATIONS SHALL BE MADE AS NEAR AS POSSIBLE TO THE NEAT LINES REQUIRED BY THE SITE AND SHAPE OF THE STRUCTURE. ALL FOUNDATIONS SHALL BE POURED WITH OUT THE USE OF SIDE-FORMS WHEREVER POSSIBLE. IF THE TRENCHES CAN NOT FULLY STAND, FULLY FORM SIDES TO DIMENSIONS SHOWN.

DO NOT ALLOW WATER TO STAND IN TRENCHES. IF BOTTOMS OF TRENCHES BECOMES SOFTENED DUE TO RAIN OR OTHER WATER BEFORE CONCRETE IS CAST, EXCAVATE SOFTENED MATERIAL AND REPLACE WITH PROPERLY COMPACTED BACKFILL OR CONCRETE.

WATERPROOFING

WHERE STRUCTURAL DETAILS INDICATE ANY WATERPROOFING OR VENTILATION ITEMS, THEY ARE SCHEMATIC ONLY AND FOR THE PURPOSE OF ASSISTING IN SHOWING A COMPLETE STRUCTURAL DETAIL. REFER ONLY TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR THE COMPLETE DESCRIPTION OF ALL REQUIRED WATERPROOFING AND VENTILATION SYSTEMS.

CONCRETE

CONCRETE SHALL BE NORMAL WEIGHT AND SHALL BE REINFORCED UNLESS OTHERWISE NOTED. CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF ACI 301-16, SPECIFICATIONS FOR STRUCTURAL CONCRETE. CONCRETE SHALL ATTAIN A MINIMUM ULTIMATE COMPRESSIVE STRENGTH (F'c) OF 2500 PSI AT 28 DAYS UNLESS NOTED OTHERWISE.

REINFORCING STEEL

REINFORCING STEEL SHALL CONFORM TO ASTM A-615, GRADE 60.

REINFORCING BARS NOTED OR SHOWN AS CONTINUOUS SHALL RUN IN AS LONG LENGTHS AS PRACTICAL. IN SLAB AND BEAMS LOCATE TOP BAR SPLICES MIDWAY BETWEEN SUPPORTS, BOTTOM BAR SPLICES AT SUPPORTS. SPLICE LOCATIONS SHALL BE SUBMITTED FOR REVIEW. THE FOLLOWING SPLICE LENGTHS APPLY UNLESS OTHERWISE DETAILED OR NOTED IN THE STRUCTURAL DRAWINGS.

WELDING OF REINFORCEMENT BARS SHALL COMPLY WITH AWS D1.4 STRUCTURAL WELDING CODE-REINFORCING STEEL. USE GRADE A706 UNLESS SHOWN OTHERWISE.

UNLESS OTHERWISE NOTED, THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT:

CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH:	3"
CONCRETE EXPOSED TO EARTH OR WEATHER:	2½"
CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND	
SLABS AND WALLS:	2"
BEAMS AND COLUMNS:	2"

STRUCTURAL AND MISCELLANEOUS STEEL

CONFORM TO THE FOLLOWING:
WIDE FLANGE SHAPES: ASTM A992.
CONNECTION PLATE FOR WIDE FLANGE MEMBERS: ASTM A36.
MISCELLANEOUS CHANNELS, ANGLES, AND PLATE: ASTM A36.
RECTANGULAR AND ROUND HSS SECTIONS: ASTM A500, GRADE B.
STEEL PIPE: ASTM A53, TYPE E, GRADE B.

STEEL NOT RECEIVING FIREPROOFING OR STEEL EXPOSED TO WEATHER SHALL HAVE ONE COAT OF SHOP PRIMER. STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED OR OTHER APPROVED PROTECTIVE COATING.

DETAILS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE LATEST AISC STANDARD SPECIFICATIONS.

WELDING SHALL SHALL CONFORM TO AWS D1.1 STRUCTURAL WELDING CODE USING E70XX ELECTRODES. WELDS THAT ARE PART OF THE SEISMIC LOAD RESISTING SYSTEM (SLRS) SHALL, IN ADDITION, CONFORM TO AWS D1.8. FILLER MATERIAL FOR ALL DEMAND CRITICAL WELDS SHALL CONFORM TO AWS D1.8 CURRENT EDITION, PROVIDING A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20 FOOT-POUNDS AT A TEMPERATURE OF -20 DEGREES FAHRENHEIT WHEN TESTED IN ACCORDANCE WITH AWS A5 AND 40 FT-POUNDS AT 70° F AS DETERMINED BY APPENDIX X OR OTHER APPROVED METHOD, WHEN THE STEEL IS NORMALLY ENCLOSED AND MAINTAINED AT 50° F OR HIGHER. FOR SERVICE TEMPERATURES LOWER THAN 50º F, THE QUALIFICATION TEMPERATURE FOR APPENDIX X SHALL BE 20º F ABOVE THE LOWEST ANTICIPATED SERVICE TEMPERATURE, OR AT A LOWER TEMPERATURE.

HIGH STRENGTH BOLTS (H.S.B.) SHALL CONFORM TO ASTM A325 TYPE N.
COMMON BOLTS SHALL CONFORM TO ASTM A307 USE UNLESS OTHERWISE SPECIFIED.
ANCHOR RODS SHALL CONFORM TO ASTM F1554 GR. 36.
THREADED ROD SHALL CONFORM TO ASTM A36.

BEAM WEB OPENINGS MUST BE APPROVED BY GFDS ENGINEERS PRIOR TO CUTTING. OPENINGS SHALL BE THERMALLY CUT, USING A MACHINE GUIDE OR TEMPLATE, UNLESS APPROVED OTHERWISE, IN ACCORDANCE WITH AWS D1.1 SECTION 5. EDGES OF OPENINGS SHALL HAVE A SURFACE ROUGHNESS VALUE NOT EXCEEDING 1000 AS DEFINED IN ASME B46.1.

ROUGH CARPENTRY

MOISTURE CONTENT AND PROTECTION

MOISTURE CONTENT SHALL MEET THE FOLLOWING LIMITS: "DRY" FOR VERTICAL FRAMING (19% MAXIMUM). FINISHES SHALL NOT BE INSTALLED OVER DIMENSIONAL LUMBER FRAMING UNTIL MOISTURE CONTENT IS BELOW 12% MAXIMUM.

MATERIALS SHALL BE PROPERLY STORED ON THE JOB SITE. MATERIALS SHALL BE STORED OFF OF THE GROUND, AND PROTECTED FROM EXPOSURE TO THE ELEMENTS.

PRESERVATIVE TREATMENT

FRAMING MEMBERS EXPOSED TO WEATHER OR IN CONTACT WITH CONCRETE, BUT NOT IN CONTACT WITH THE GROUND SHALL BE PRESSURE TREATED IN ACCORDANCE WITH AWPA STANDARD U1 & T1, USE CATEGORY UC3B. FIELD CUTS AND HOLES SHALL BE FIELD TREATED IN ACCORDANCE WITH THE AWPA M-4.

STRUCTURAL LUMBER AND SHEATHING SHALL BE TREATED WITH INORGANIC BORAN (SBX) IN ACCORDANCE WITH AWPA P25-10.

ENGINEERED LUMBER PRODUCTS BY iLEVEL SUCH AS PARALLAM PSL, MICROLAM LVL, OR TJI JOISTS SHALL BE TREATED WITH HI-CLEAR II OR TRIBB II IN ACCORDANCE WITH WEYERHAUESER PRESERVATIVE TREATMENTS TECHNICAL RESOURCE SHEET TJ-1020.

DIMENSION LUMBER AND TIMBER

DIMENSIONAL LUMBER AND TIMBER SHALL CONFORM TO THE FOLLOWING WCLIB MINIMUM GRADES AND SHALL BE DOUGLAS FIR, UNLESS OTHERWISE NOTED.

JOISTS (2"-4", 5" AND WIDER)	NO. 2
HEADERS (4" THICK, 5" AND WIDER)	NO. 1
BEAMS (6" THICK, 10" AND WIDER)	NO. 1
POSTS (6" THICK, 6"-8" WIDE)	NO. 1
POSTS (4X4)	NO. 1
MUD SILLS (3X)	NO. 1, PRESSURE TREATED (DO NOT USE HEM-FIR)
STUDS (2X, 3X)	STUD
TOP AND BOTTOM PLATES	STUD

NO SUBSTITUTIONS SHALL BE MADE WITHOUT PRIOR APPROVAL.

PARALLAM PSL LUMBER (PSL)

PARALLAM PSL HEADERS AND BEAMS SHALL BE 2.2E, CONFORMING TO ICC-ES RESEARCH REPORT NO. ESR-1387, OR EQUAL AND SHALL HAVE DESIGN VALUES EQUAL TO OR EXCEEDING THE FOLLOWING:

BENDING (Fb):	2900 PSI
COMPRESSION PARALLEL TO THE GRAIN (Fc PARALLEL):	2900 PSI
MODULUS OF ELASTICITY (E):	2,200,000 PSI
HORIZONTAL SHEAR:	290 PSI

MICROLLAM LVL LUMBER (LVL)

MICROLAM LVL HEADERS AND BEAMS SHALL BE 2.0E, CONFORMING TO ICC-ES RESEARCH REPORT NO. ESR-1387, OR EQUAL AND SHALL HAVE DESIGN VALUES EQUAL TO OR EXCEEDING THE FOLLOWING:

BENDING (Fb):	2600 PSI
COMPRESSION PARALLEL TO THE GRAIN (Fc PARALLEL):	2510 PSI
MODULUS OF ELASTICITY (E):	2,000,000 PSI
HORIZONTAL SHEAR:	285 PSI

STRUCTURAL GLUED LAMINATED WOOD MEMBERS (GLULAMS)

"GLULAMS," (GL) SHALL BE MANUFACTURED FROM SPECIES AND GRADES OF LUMBER WHICH WILL PRODUCE DESIGN VALUES EQUAL TO OR EXCEEDING THE FOLLOWING, WHEN LOADED PERPENDICULAR TO THE WIDE FACES OF THE LAMINATIONS:

BENDING (Fb)	-TENSION ON TENSION FACE:	2400 PSI
	-TENSION ON COMPRESSION FACE:	1850 PSI
HORIZONTAL SHEAR (Fv):		265 PSI
COMPRESSION PERPENDICULAR TO THE GRAIN		
ON THE TENSION FACE (Fc PERP):		650 PSI
MODULUS OF ELASTICITY (E):		1,800,000 PSI

DESIGN AND CONSTRUCTION SHALL CONFORM TO ANSI STANDARD A190.1 AND ASTM STANDARD D3737-85.

FASTENERS

FOR SCHEDULE OF MINIMUM NAILING SEE INTERNATIONAL BUILDING CODE TABLE 2304.9.1. NAILING SHALL BE WITH COMMON WIRE NAILS UNLESS NOTED OTHERWISE. CONTRACTOR SHALL SUBMIT FOR APPROVAL A DESCRIPTION OF NAIL GAGE, LENGTH, HEAD TYPE AND COATING (IF ANY) FOR ANY PROPOSED SUBSTITUTION FOR NAILS SHOWN ON THE STRUCTURAL DRAWINGS. BOLTS AND LAG SCREWS BEARING ON WOOD SHALL HAVE WASHERS.

METAL FRAMING ANCHORS SHALL BE MANUFACTURED BY SIMPSON COMPANY OR EQUAL. JOIST HANGERS SHALL BE "U" SERIES U.N.O. ON DRAWINGS. BOLTS IN CONNECTIONS SHALL BE RETIGHTENED JUST PRIOR TO CLOSING OF THE WALL AND/OR FLOOR.

FASTENERS FOR INTERIOR APPLICATIONS PENETRATING PRESSURE-TREATED LUMBER SHALL BE HOT DIPPED ZINC-COATING GALVANIZED WITH A MINIMUM G185 (1.85 OZ/ SF) COATING OR STAINLESS STEEL. FASTENERS EXPOSED TO WEATHER INCLUDING EXTERIOR APPLICATIONS OF PRESSURE-TREATED LUMBER, SHALL USE STAINLESS STEEL FASTENERS. FASTENERS EXPOSED TO WEATHER FOR ARCHITECTURAL FEATURES MAY ALSO BE SILICON BRONZE OR COPPER.

FASTENERS PENETRATING LUMBER TREATED WITH INORGANIC BORON (SBX), HI-CLEAR II, OR TRIBB II SHALL BE HOT-DIPPED ZINC-COATING GALVANIZED WITH A MINIMUM G90 (0.09 OZ/ SF) COATING.

SILLS OR PLATES SHALL BE BOLTED TO CONCRETE WITH 5/8" DIAMETER BOLTS WITH 3X3X1/4" WASHERS, EMBEDDED 7" MINIMUM AT 4'-0" MAXIMUM ON CENTER, U.O.N.

FOR ALL SHEATHING REQUIREMENTS SEE PLANS

CONCRETE AND MASONRY ANCHORS

INSTALL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALTERNATES MAY BE SUBMITTED FOR CONSIDERATION IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

UNLESS NOTED OTHERWISE, BOLTS, ANCHOR RODS OR THREADED RODS SHALL BE AS SPECIFIED IN STRUCTURAL STEEL. REINFORCING BARS SHALL BE A-615, GRADE 60.

ADHESIVE ANCHORS (DOWELS) IN CONCRETE

INSTALLATION OF ADHESIVE ANCHORS THAT ARE TO BE UNDER SUSTAINED TENSION LOADING IN HORIZONTAL TO VERTICALLY OVERHEAD ORIENTATION SHALL BE DONE BY A CERTIFIED ADHESIVE ANCHOR INSTALLER (AAI) AS CERTIFIED THROUGH ACI AND IN ACCORDANCE WITH ACI 318-2014 (SECTION 17.8,2,4). PROOF OF CURRENT CERTIFICATION SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCEMENT OF INSTALLATION.

PER ACI 318-2014 (SECTION 17.1,2) ADHESIVE ANCHORS SHALL BE INSTALLED IN CONCRETE HAVING A MINIMUM AGE OF 21 DAYS AT TIME OF ANCHOR INSTALLATION, FOR INSTALLATIONS SOONER THAN 21 DAYS CONSULT ADHESIVE MANUFACTURER.

HILTI HIT-RE 500 v3 SYSTEM CONFORMING TO ICC-ES REPORT ESR-3814.

POWDER ACTUATED FASTENERS(PAF) IN CONCRETE

HILTI X-CP (0.145Ø) EMBEDDED 1-1/4", U.O.N. CONFORMING TO ICC-ES REPORT ESR-1663.

POWDER ACTUATED FASTENERS(PAF) IN STEEL

HILTI X-ENP-19 (0.177Ø) EMBEDDED 1/2", U.O.N. CONFORMING TO ICC-ES REPORT ESR-2776.

SCREW ANCHORS IN CONCRETE OR GROUTED MASONRY

HILTI KH-EZ SCREW ANCHORS CONFORMING TO ICC-ES REPORT ESR-3027.
SIMPSON STRONG-TIE TITEN HD SCREW ANCHORS CONFORMING TO ICC-ES REPORT ESR-2713.
DEWALT/ POWERS SCREWBOLT+ SCREW ANCHORS CONFORMING TO ICC-ES REPORT ESR-3889 (CONCRETE), ESR-1678 (MASONRY).

ROOF TRUSSES

MINIMUM DESIGN LOADS:	DL	LL
TOP CHORD	10 PSF	20 PSF
BOTTOM CHORD	10 PSF	10 PSF

THE TRUSS SUPPLIER SHALL SUBMIT DESIGN CALCULATIONS BASED ON DESIGN LOADING AND CONFIGURATION SHOWN, ACCOMPANIED BY SHOP DRAWINGS SHOWING LAYOUT OF TRUSSES ON EACH BUILDING, ALL MEMBER SIZES AND GRADES, CONNECTIONS PROPOSED FOR EACH JOINT, AND THE LOCATIONS OF PERMANENT AND TEMPORARY BRACING.

DESIGN SHALL CONFORM TO RECOMMENDATIONS OF "DESIGN SPECIFICATIONS FOR LIGHT METAL PLATE CONNECTED WOOD TRUSSES," TPI-85, WITH LUMBER STRESSES AND GRADES IN CONFORMANCE WITH THE APPLICABLE BUILDING CODE. BOTH CALCULATIONS AND SHOP DRAWING SHALL BE SIGNED BY A REGISTERED CIVIL OR STRUCTURAL ENGINEER. THE SUBMISSION SHALL INCLUDE SUFFICIENT BACKGROUND ENGINEERING DATA TO PERMIT AN INDEPENDENT APPRAISAL BY THE ARCHITECT OF THE SUITABILITY OF ANY STANDARD DEVICES PROPOSED FOR USE IN THE CONNECTIONS. ALTERNATE CONFIGURATIONS AND SIZES MAY BE SUBMITTED FOR CONSIDERATION BY THE ARCHITECT.

SUBMIT TRUSS DRAWINGS TO THE BUILDING DEPARTMENT FOR APPROVAL PRIOR TO ERECTION.

REVIEWED
BUILDING DIVISION
nosorio 01/03/2023
REVIEWER DATE

CHRIS WILSON
LICENSED PROFESSIONAL ENGINEER
No. 14056-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

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DATE : 05/17/22

SCALE : NO SCALE

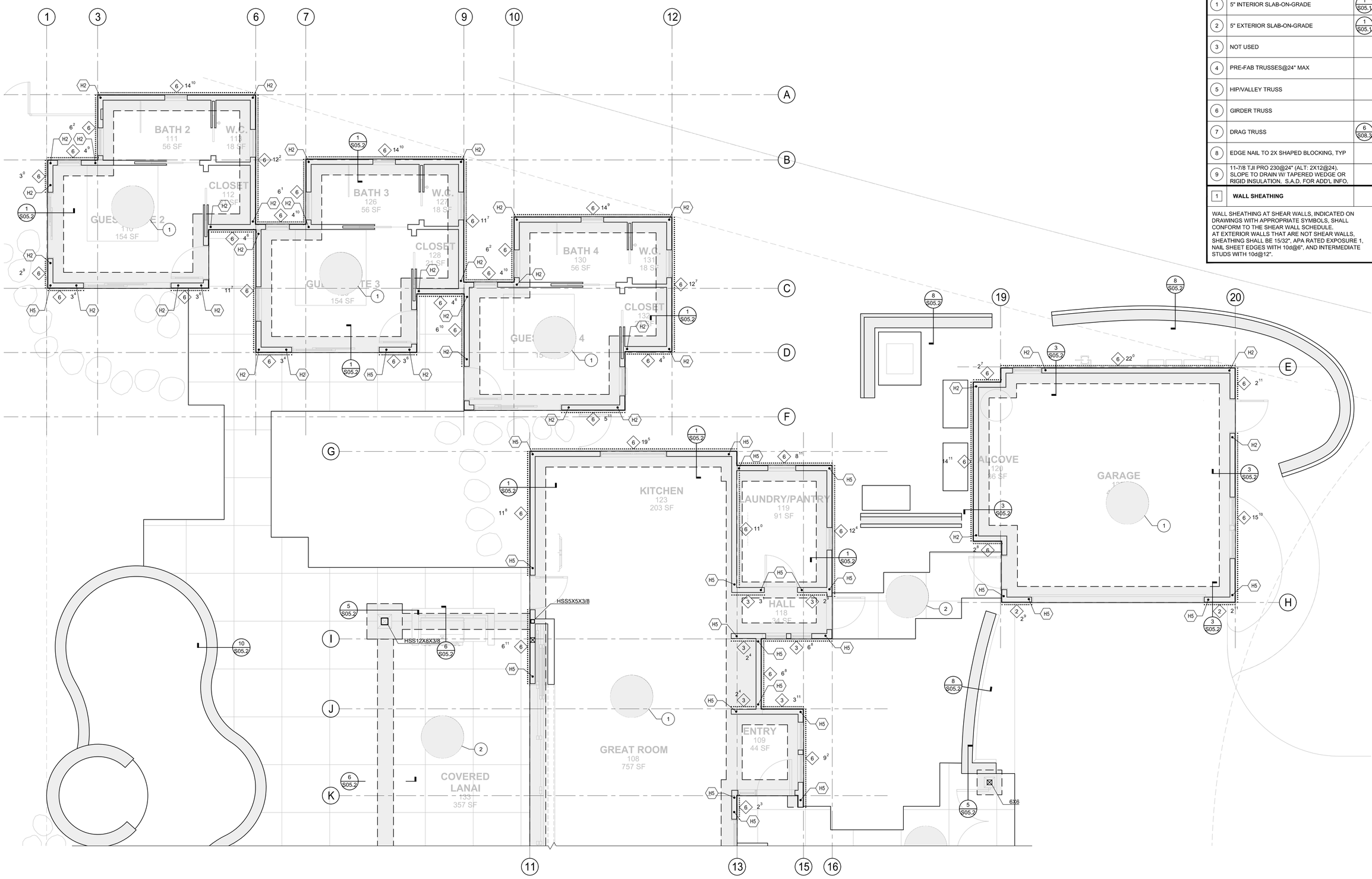
SHEET TITLE: **GENERAL NOTES**

SHEET NUMBER: S00.1

SHEET NOTES

1	5" INTERIOR SLAB-ON-GRADE	1 S05.1
2	5" EXTERIOR SLAB-ON-GRADE	1 S05.1
3	NOT USED	
4	PRE-FAB TRUSSES@24" MAX	
5	HIP/VALLEY TRUSS	
6	GIRDER TRUSS	
7	DRAG TRUSS	6 S08.3
8	EDGE NAIL TO 2X SHAPED BLOCKING, TYP	
9	11-7/8 TJI PRO 230@24" (ALT: 2X12@24). SLOPE TO DRAIN W/ TAPERED WEDGE OR RIGID INSULATION. S.A.D. FOR ADD'L INFO.	
1	**WALL SHEATHING**	

WALL SHEATHING AT SHEAR WALLS, INDICATED ON DRAWINGS WITH APPROPRIATE SYMBOLS, SHALL CONFORM TO THE SHEAR WALL SCHEDULE.
AT EXTERIOR WALLS THAT ARE NOT SHEAR WALLS, SHEATHING SHALL BE 15/32", APA RATED EXPOSURE 1, NAIL SHEET EDGES WITH 10d@6", AND INTERMEDIATE STUDS WITH 10d@12".



1 S02.1 PARTIAL FOUNDATION PLAN

1/4"=1'-0"

REVIEWED
BUILDING DIVISION
nosorio 01/03/2023
REVIEWER DATE

CHRIS WILSON
LICENSED PROFESSIONAL ENGINEER
No. 14056-S
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Chris Wilson Exp. 4-30-24

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808.887.0200
GFDS ENGINEERS

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JOB NUMBER: 22022.H0

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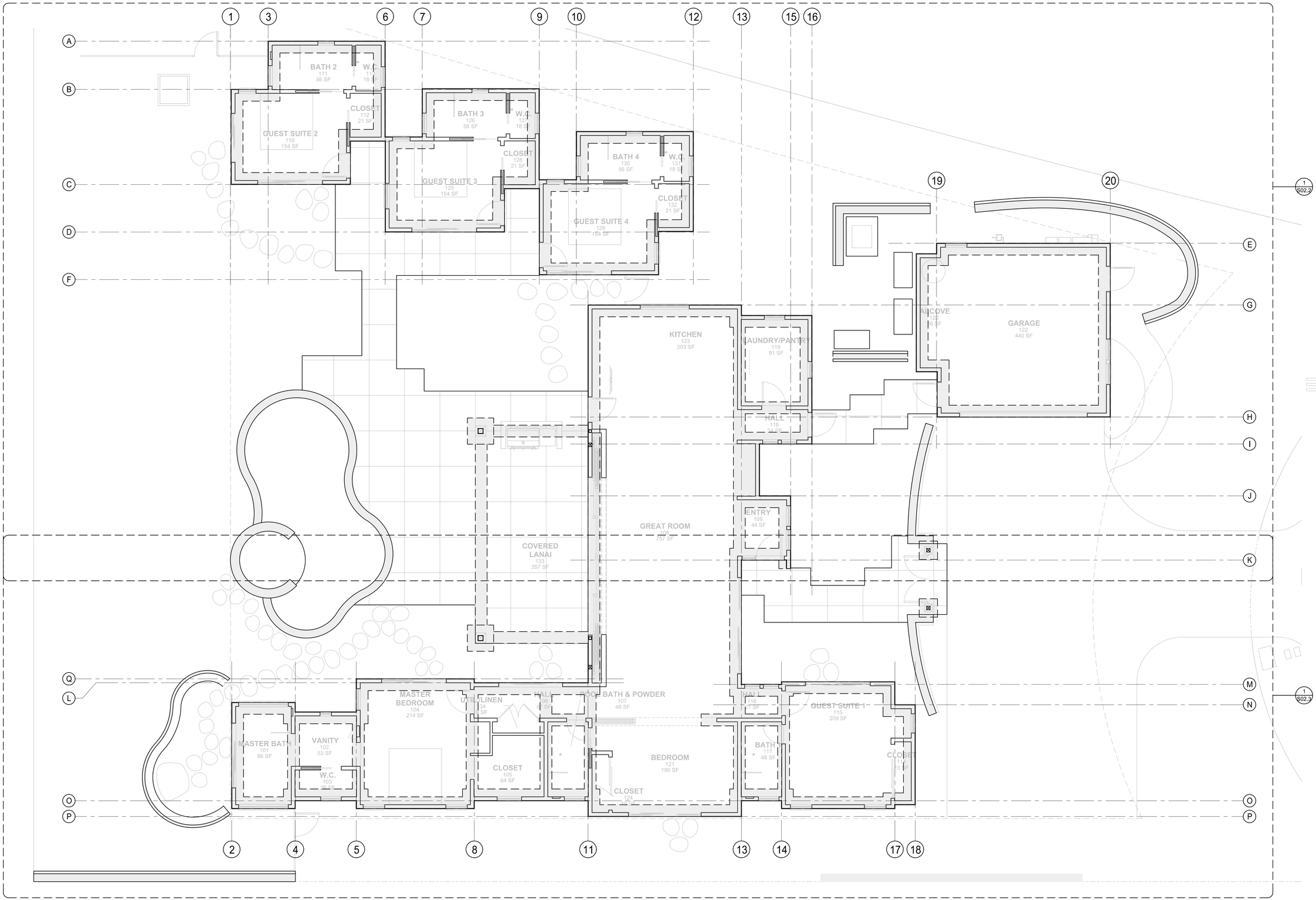
PH: 503-522-9000
monaghan.craig@gmail.com

DATE: 05/17/22

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

SHEET TITLE:
PARTIAL FOUNDATION PLAN

SHEET NUMBER:
S02.1



1 S02.0 FOUNDATION PLAN
OVERALL SITE PLAN

3/16"=1'-0"

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BUILDING DIVISION
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U:\PROJECTS\2022 FOLDER\220506.H0 Nohea Lot 22\Dwg\S21.dwg WAS PLOTTED ON 6/13/2022 7:54 AM BY CHRIS WILSON

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LICENSED PROFESSIONAL ENGINEER
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	PERMIT SET	05/17/22

JOB NUMBER: 22022.H0

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monaghan.craig@gmail.com

DATE: 05/17/22

SCALE: 3/16" = 1'-0"

SHEET TITLE: **SITE PLAN**

SHEET NUMBER: S02.0

SHEET NOTES

1	5" INTERIOR SLAB-ON-GRADE	1 S05.1
2	5" EXTERIOR SLAB-ON-GRADE	1 S05.1
3	NOT USED	
4	PRE-FAB TRUSSES@24" MAX	
5	HIP/VALLEY TRUSS	
6	GIRDER TRUSS	
7	DRAG TRUSS	6 S08.3
8	EDGE NAIL TO 2X SHAPED BLOCKING, TYP	
9	11-7/8 TJI PRO 230@24" (ALT: 2X12@24). SLOPE TO DRAIN W/ TAPERED WEDGE OR RIGID INSULATION. S.A.D. FOR ADD'L INFO.	

1	**WALL SHEATHING**	

WALL SHEATHING AT SHEAR WALLS, INDICATED ON DRAWINGS WITH APPROPRIATE SYMBOLS, SHALL CONFORM TO THE SHEAR WALL SCHEDULE.
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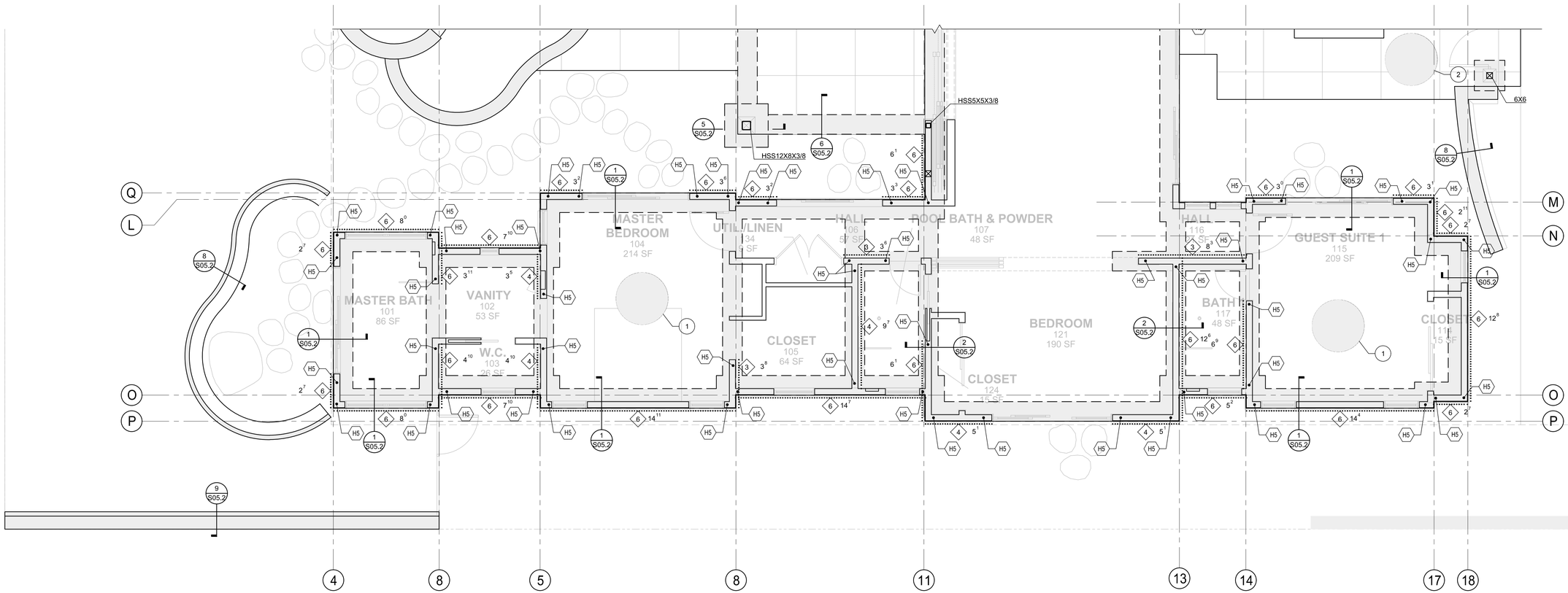

1 S02.2 PARTIAL FOUNDATION PLAN
1/4"=1'-0"

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REVIEWER DATE

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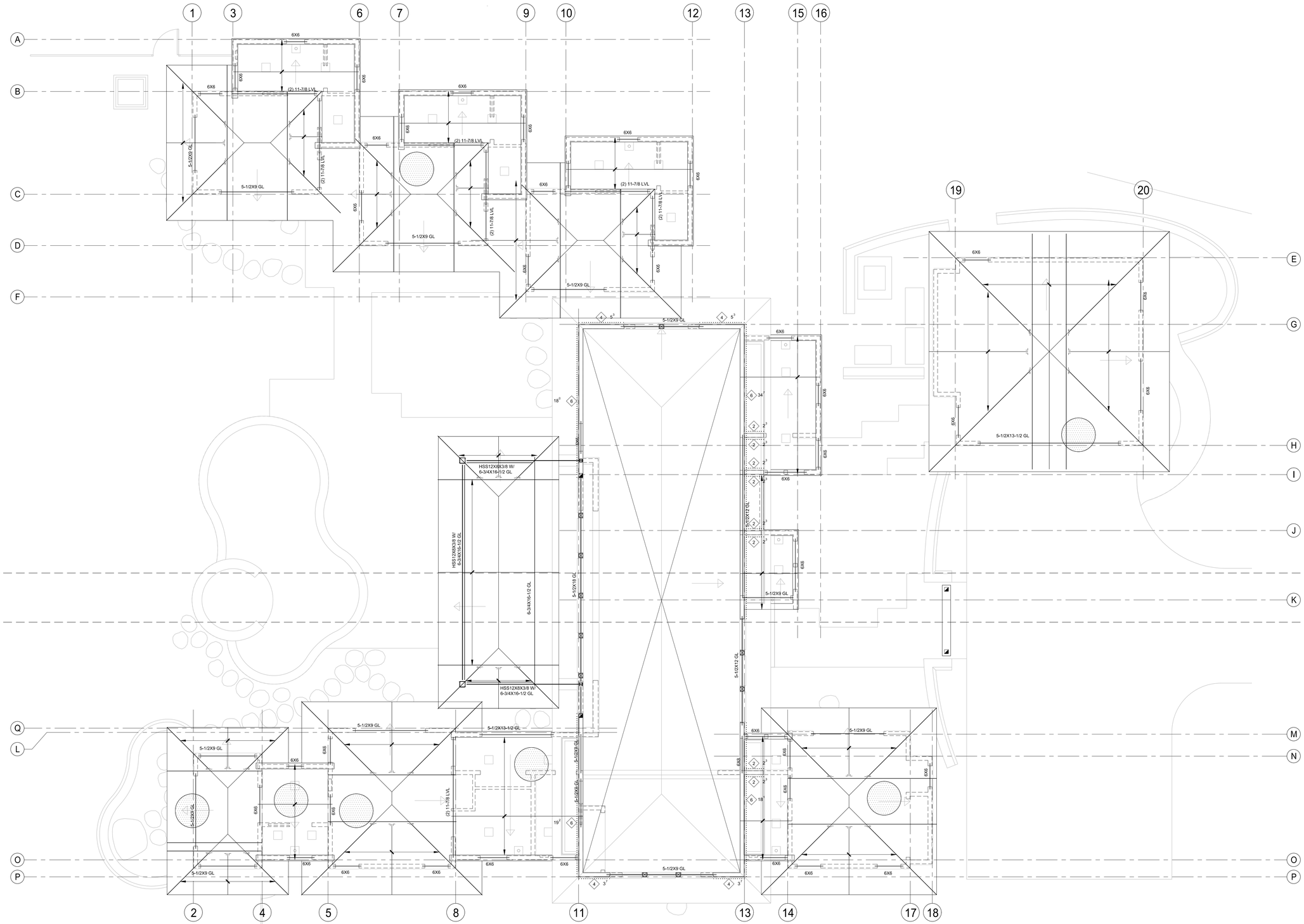
DATE: 05/17/22

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

SHEET TITLE:
PARTIAL FOUNDATION PLAN

SHEET NUMBER:
S02.2



1 S02.3 ROOF FRAMING PLAN
OVERALL SITE PLAN
3/16"=1'-0"

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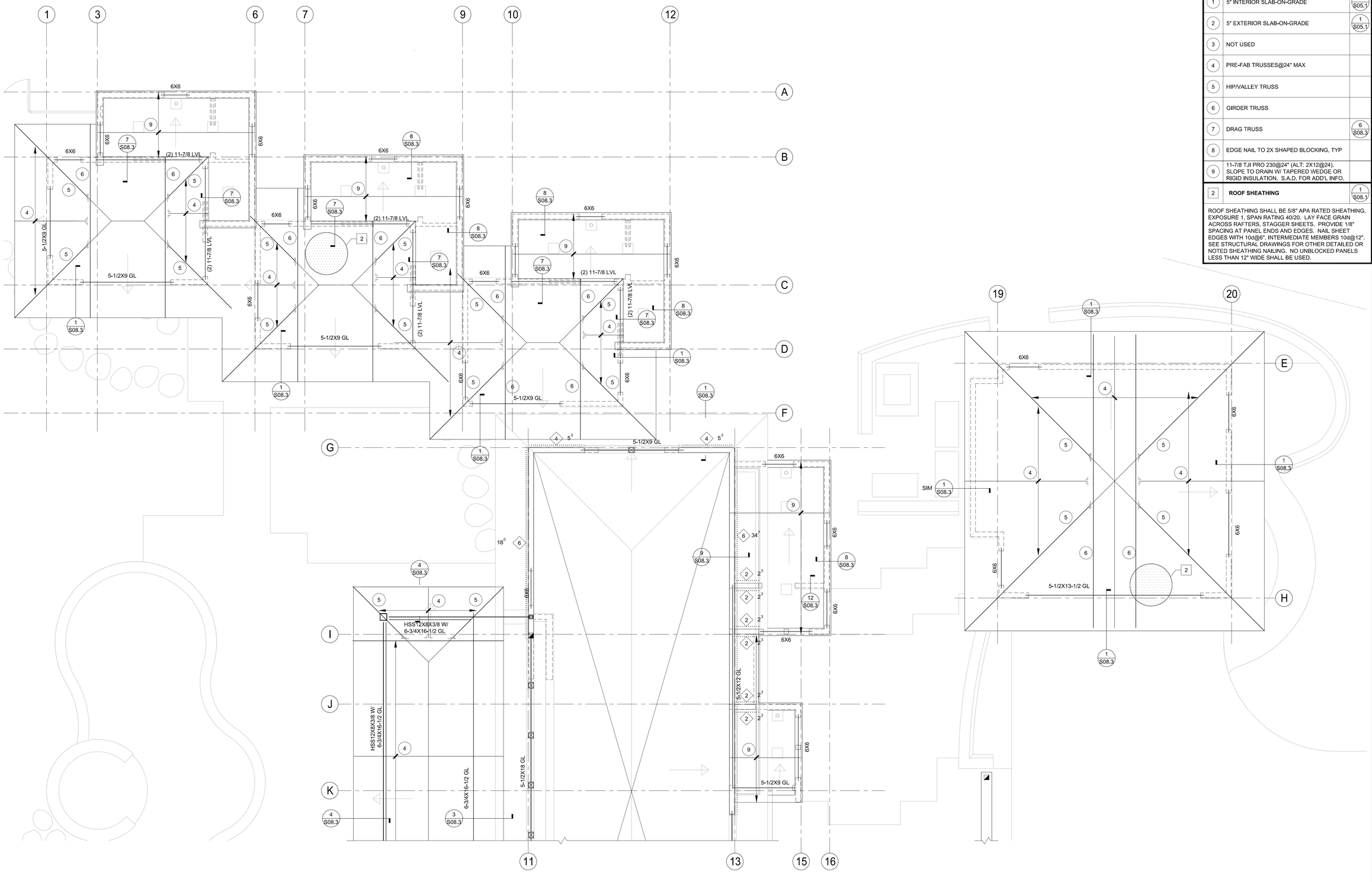
DATE : 05/17/22

SCALE : 3/16" = 1'-0"

SHEET TITLE:
SITE ROOF PLAN

SHEET NUMBER:
S02.3



1 S02.4 PARTIAL ROOF FRAMING PLAN

1/4"=1'-0"

SHEET NOTES

1	5" INTERIOR SLAB-ON-GRADE	1 S05.1
2	5" EXTERIOR SLAB-ON-GRADE	1 S05.1
3	NOT USED	
4	PRE-FAB TRUSSES@24" MAX	
5	HIP/VALLEY TRUSS	
6	GIRDER TRUSS	
7	DRAG TRUSS	6 S08.3
8	EDGE NAIL TO 2X SHAPED BLOCKING, TYP	
9	11-7/8 TJI PRO 230@24" (ALT: 2X12@24). SLOPE TO DRAIN W/ TAPERED WEDGE OR RIGID INSULATION. S.A.D. FOR ADD'L INFO.	
2	**ROOF SHEATHING**	1 S08.1

ROOF SHEATHING SHALL BE 5/8" APA RATED SHEATHING, EXPOSURE 1, SPAN RATING 40/20. LAY FACE GRAIN ACROSS RAFTERS, STAGGER SHEETS. PROVIDE 1/8" SPACING AT PANEL ENDS AND EDGES. NAIL SHEET EDGES WITH 10d@6". INTERMEDIATE MEMBERS 10d@12". SEE STRUCTURAL DRAWINGS FOR OTHER DETAILED OR NOTED SHEATHING NAILING. NO UNBLOCKED PANELS LESS THAN 12" WIDE SHALL BE USED.

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JOB NUMBER: 22022.H0

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monaghan.craig@gmail.com

DATE: 05/17/22

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

SHEET TITLE:
PARTIAL ROOF FRAMING PLAN

SHEET NUMBER:
S02.4

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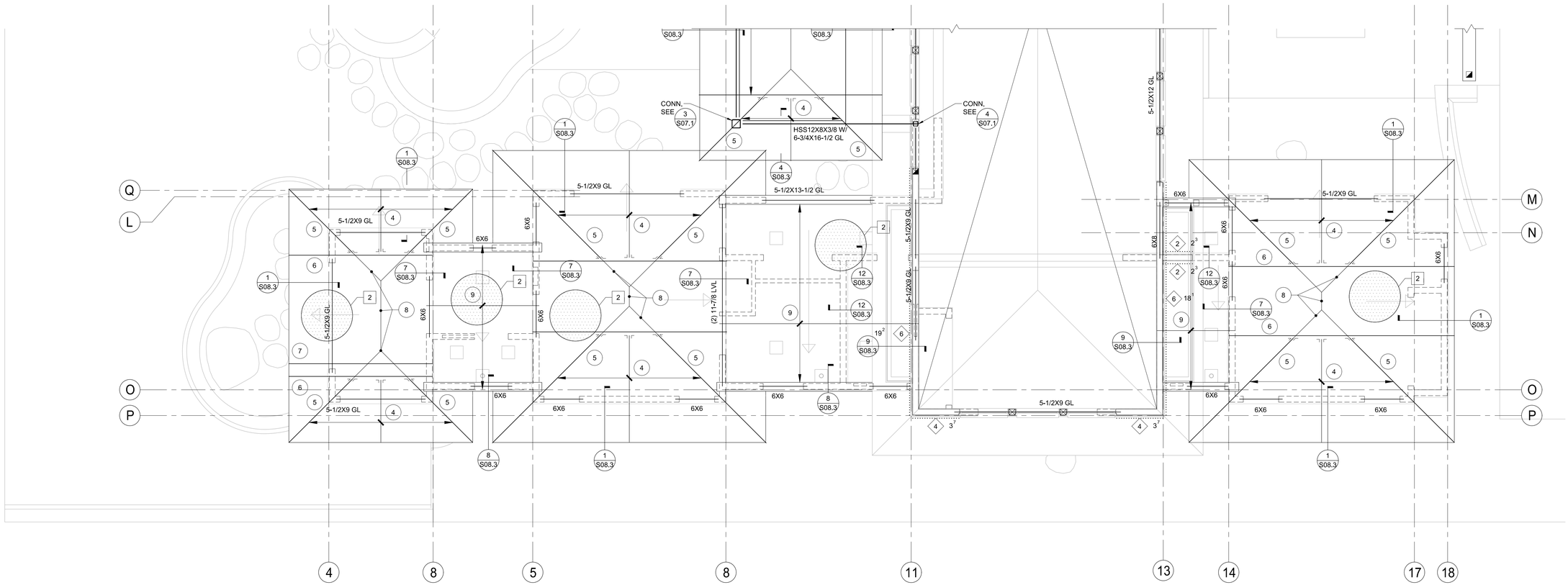
nosorio 01/03/2023
REVIEWER DATE

SHEET NOTES

1	5" INTERIOR SLAB-ON-GRADE	1 S05.1
2	5" EXTERIOR SLAB-ON-GRADE	1 S05.1
3	NOT USED	
4	PRE-FAB TRUSSES@24" MAX	
5	HIP/VALLEY TRUSS	
6	GIRDER TRUSS	
7	DRAG TRUSS	6 S08.3
8	EDGE NAIL TO 2X SHAPED BLOCKING, TYP	
9	11-7/8 TJI PRO 230@24" (ALT: 2X12@24). SLOPE TO DRAIN W/ TAPERED WEDGE OR RIGID INSULATION. S.A.D. FOR ADD'L INFO.	
2	**ROOF SHEATHING**	1 S08.1

ROOF SHEATHING SHALL BE 5/8" APA RATED SHEATHING, EXPOSURE 1, SPAN RATING 40/20. LAY FACE GRAIN ACROSS RAFTERS, STAGGER SHEETS. PROVIDE 1/8" SPACING AT PANEL ENDS AND EDGES. NAIL SHEET EDGES WITH 10d@6", INTERMEDIATE MEMBERS 10d@12". SEE STRUCTURAL DRAWINGS FOR OTHER DETAILED OR NOTED SHEATHING NAILING. NO UNBLOCKED PANELS LESS THAN 12" WIDE SHALL BE USED.



1 S02.5 PARTIAL ROOF FRAMING PLAN

1/4"=1'-0"

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REVIEWER DATE

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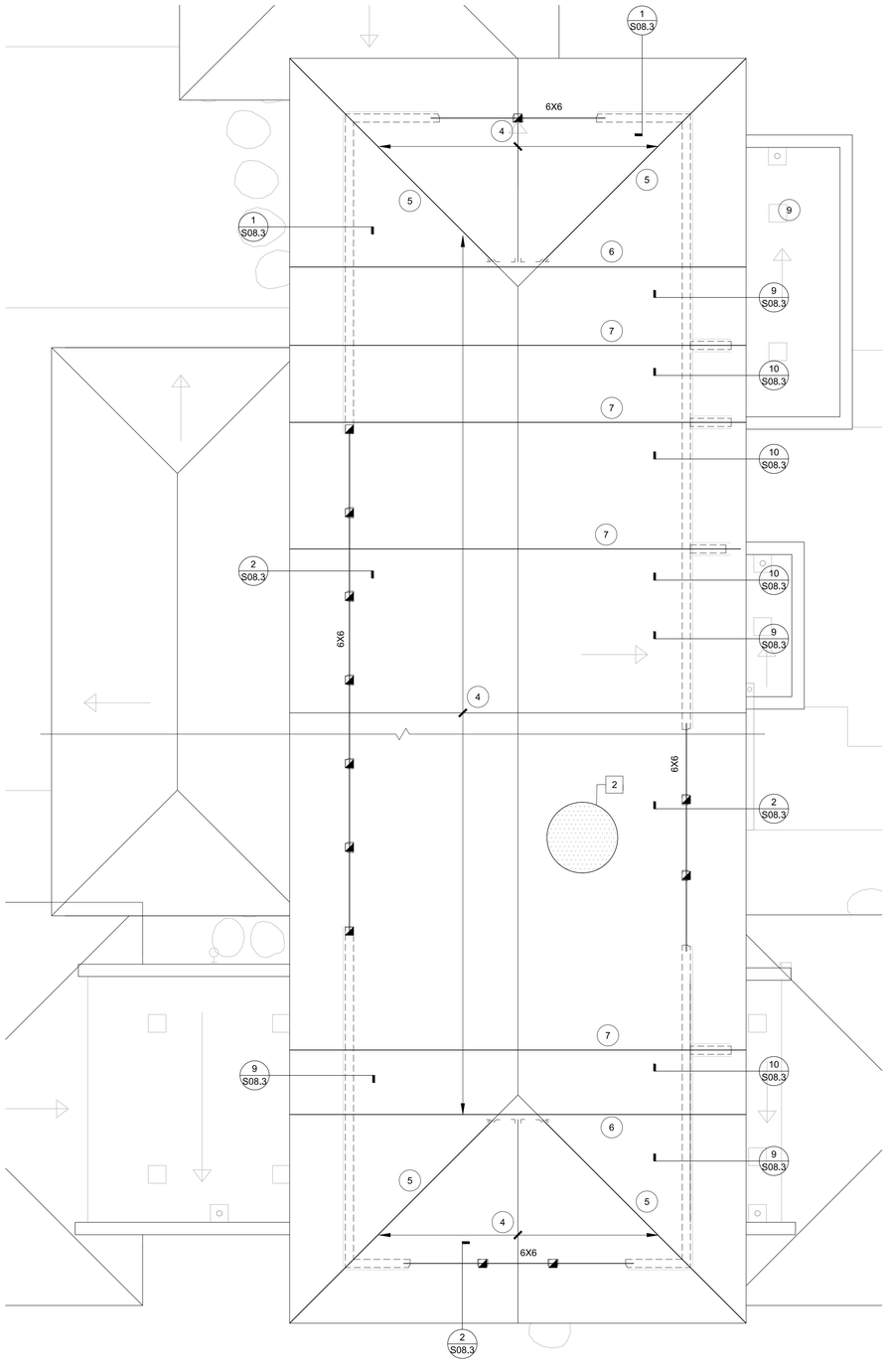
PH: 503-522-9000
monaghan.craig@gmail.com

DATE: 05/17/22

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

SHEET TITLE:
PARTIAL ROOF FRAMING PLAN

SHEET NUMBER:
S02.5



1 S02.6 HIGH ROOF FRAMING PLAN

1/4"=1'-0"

SHEET NOTES

1	5" INTERIOR SLAB-ON-GRADE	1 S05.1
2	5" EXTERIOR SLAB-ON-GRADE	1 S05.1
3	NOT USED	
4	PRE-FAB TRUSSES@24" MAX	
5	HIP/VALLEY TRUSS	
6	GIRDER TRUSS	
7	DRAG TRUSS	6 S08.3
8	EDGE NAIL TO 2X SHAPED BLOCKING, TYP	
9	11-7/8 TJI PRO 230@24" (ALT: 2X12@24). SLOPE TO DRAIN W/ TAPERED WEDGE OR RIGID INSULATION. S.A.D. FOR ADD'L INFO.	
2	**ROOF SHEATHING**	1 S08.1

ROOF SHEATHING SHALL BE 5/8" APA RATED SHEATHING, EXPOSURE 1, SPAN RATING 40/20. LAY FACE GRAIN ACROSS RAFTERS, STAGGER SHEETS. PROVIDE 1/8" SPACING AT PANEL ENDS AND EDGES. NAIL SHEET EDGES WITH 10d@6", INTERMEDIATE MEMBERS 10d@12". SEE STRUCTURAL DRAWINGS FOR OTHER DETAILED OR NOTED SHEATHING NAILING. NO UNBLOCKED PANELS LESS THAN 12" WIDE SHALL BE USED.

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JOB NUMBER: 22022.H0

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monaghan.craig@gmail.com

DATE: 05/17/22

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

SHEET TITLE:
HIGH ROOF FRAMING PLAN

SHEET NUMBER:
S02.6

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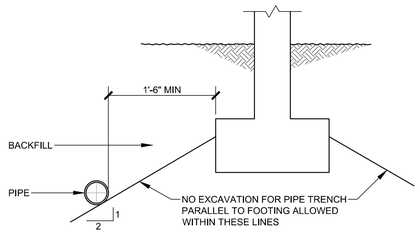
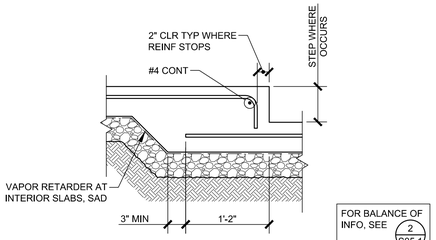


9 S05.1 PIPE PARALLEL TO FOOTING

1"=1'-0"

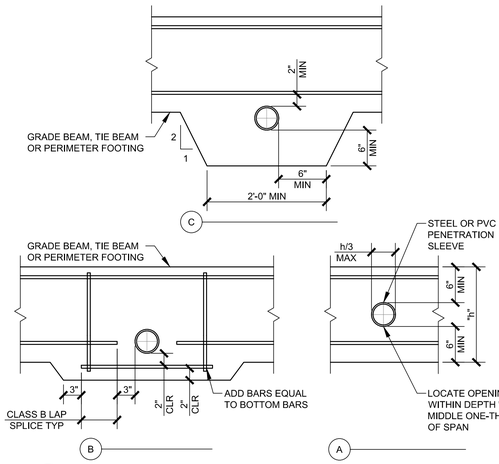
CLASS B TENSION SPLICE LENGTH (IN)*								
F'C	2500 PSI		3000 PSI		4000 PSI		5000 PSI	
BAR SIZE	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS
#3	31	24	28	22	25	19	22	17
#4	41	32	37	29	33	25	29	23
#5	51	39	47	36	41	31	36	28
#6	61	47	56	43	49	37	44	34
#7	89	69	81	63	71	54	63	49
#8	102	78	93	72	81	62	72	56
#9	115	88	105	81	91	70	81	63

*SEE GENERAL NOTES AND 5/- FOR ADDITIONAL INFORMATION



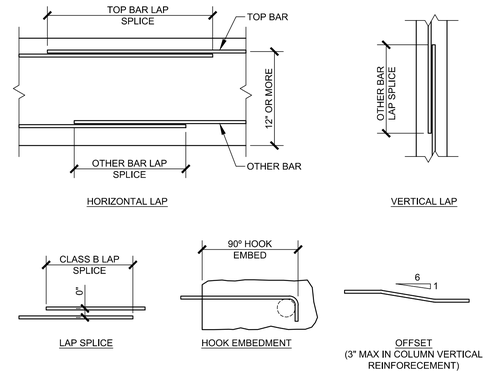
3 S05.1 SLAB ON GRADE WITH STEP

1"=1'-0"



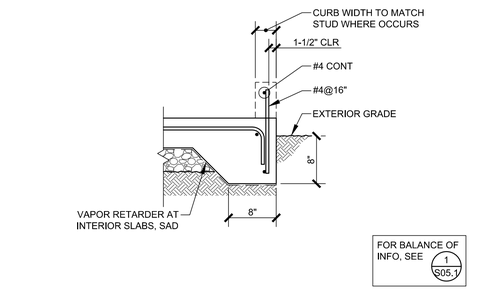
8 S05.1 PIPE PENETRATION THRU FOOTING

1"=1'-0"



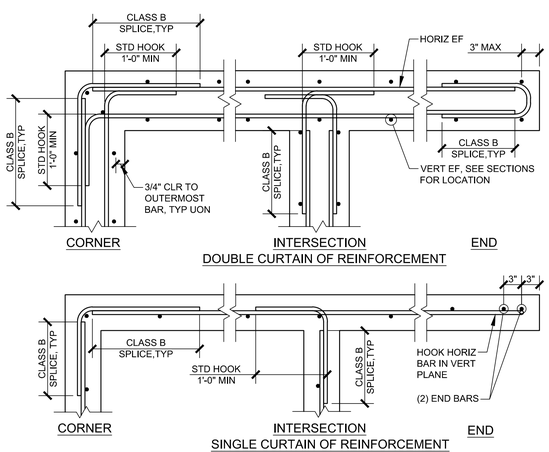
6 S05.1 TYPICAL REINFORCEMENT LAP SPLICE LENGTH (ld)

1"=1'-0"



2 S05.1 SLAB ON GRADE EDGE

1"=1'-0"



7 S05.1 TYPICAL REINFORCEMENT AT INTERSECTING CONCRETE MEMBERS

NTS

HOOK EXTENSION				
BAR SIZE	STANDARD HOOK		STIRRUP & TIE HOOK	
	90°	180°	90°	135°
#3	4-1/2"	2-1/2"	2-1/4"	2-1/4"
#4	6"	2-1/2"	3"	3"
#5	7-1/2"	2-1/2"	3-3/4"	3-3/4"
#6	9"	3"	9"	4-1/2"
#7	10-1/2"	3-1/2"	10-1/2"	5-1/4"
#8	12"	4"	12"	6"
#9	13-1/2"	4-1/2"	-	-
#10	15"	5"	-	-
#11	16-1/2"	5-1/5"	-	-

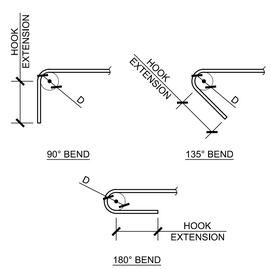
HOOK EMBEDMENT (ldh)				
F'C	2500 PSI	3000 PSI	4000 PSI	5000 PSI
BAR SIZE	EMBED	EMBED	EMBED	EMBED
#3	9"	9"	8"	7"
#4	12"	11"	10"	9"
#5	15"	14"	12"	11"
#6	18"	17"	15"	13"
#7	21"	20"	17"	15"
#8	24"	22"	19"	17"
#9	27"	25"	22"	20"

λ = 1.0, Ψe = 1.0, Ψc = 1.0, Ψr = 1.0 - ACI TABLE 25.4.3.2

STANDARD HOOK BEND DIAMETER
#3 THROUGH #8: D = 6d
#9, #10, #11: D = 8d

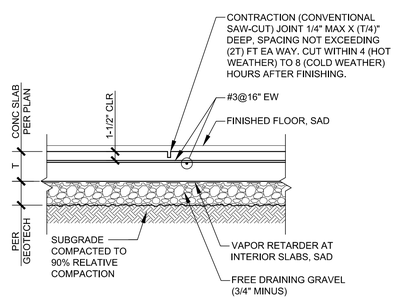
STIRRUP & TIE HOOK BEND DIAMETER
#3 THROUGH #5: D = 4d
#6 THROUGH #8: D = 6d

NOTE:
d=BAR DIAMETER
D=INSIDE DIAMETER OF BEND

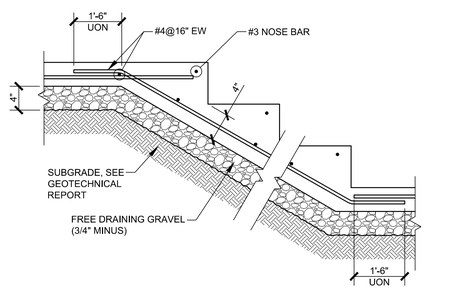


4 S05.1 STANDARD REINFORCING HOOKS EXTENSION, BEND Ø AND EMBEDMENT

NTS



1 S05.1 SLAB ON GRADE



10 S05.1 STAIRS ON GRADE EXTERIOR

1"=1'-0"

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REVISIONS		
NO.	DESCRIPTION	Date
	PERMIT SET	05/17/22

JOB NUMBER: 22022.H0

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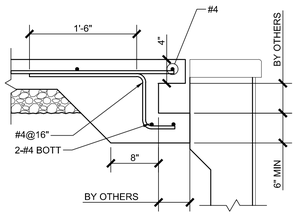
DATE: 05/17/22

SCALE: AS SHOWN

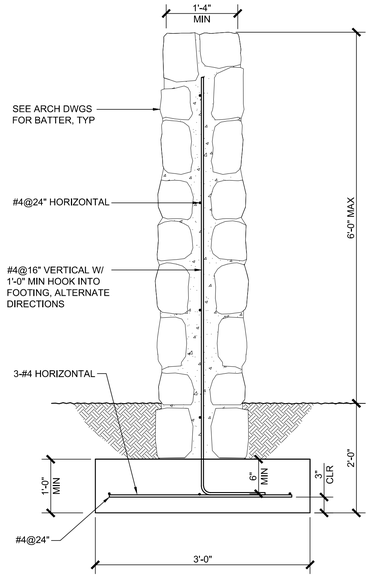
SHEET TITLE:
CONCRETE DETAILS

SHEET NUMBER:
S05.1



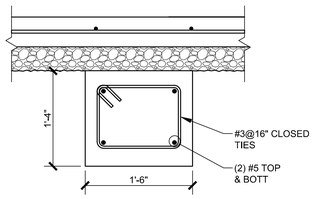
10 S05.2 DECK EDGE

1"=1'-0"



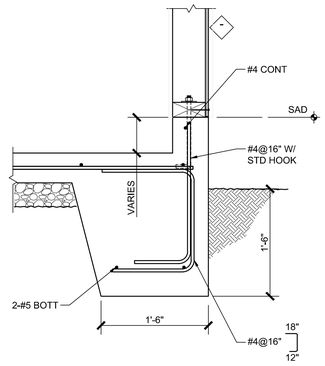
8 S05.2 EXTERIOR ROCK WALL

3/4"=1'-0"



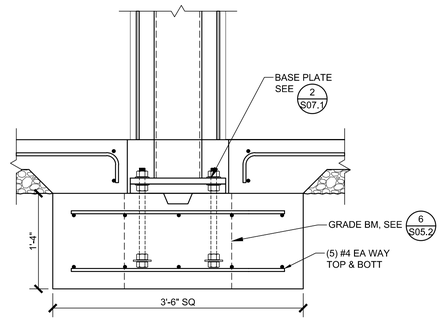
6 S05.2 LANAI GRADE BM

1"=1'-0"



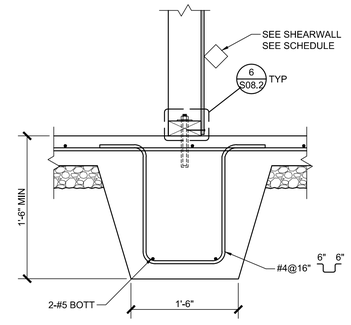
3 S05.2 GARAGE FOUNDATION

1"=1'-0"



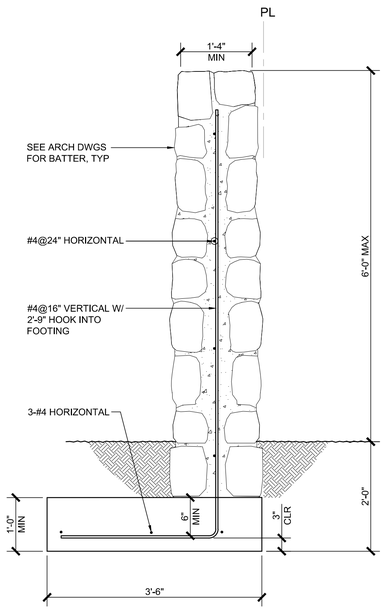
5 S05.2 SPREAD FOOTING

1"=1'-0"



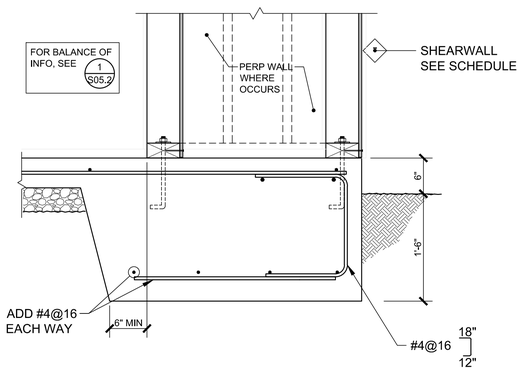
2 S05.2 TYPICAL INTERIOR FOUNDATION

1"=1'-0"



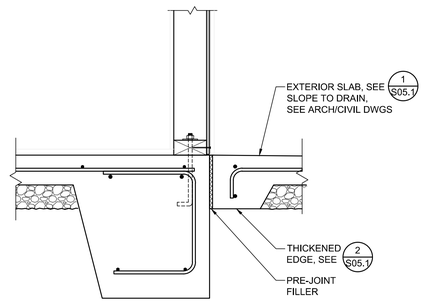
9 S05.2 EXTERIOR ROCK WALL AT PROPERTY LINE

3/4"=1'-0"



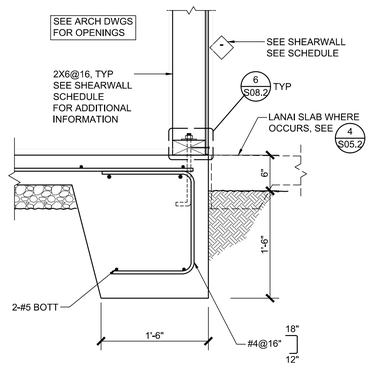
7 S05.2 WIDENED EXTERIOR FOUNDATION

1"=1'-0"



4 S05.2 LANAI SLAB AT EXTERIOR FOUNDATION

1"=1'-0"



1 S05.2 TYPICAL EXTERIOR FOUNDATION

1"=1'-0"

REVIEWED
BUILDING DIVISION
nosorio 01/03/2023
REVIEWER DATE

CHRIS WILSON
LICENSED PROFESSIONAL ENGINEER
No. 14056-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Chris Wilson Exp. 4-30-24

Structural design for fine architecture™
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REVISIONS NO.	DESCRIPTION	Date
	PERMIT SET	05/17/22

JOB NUMBER: 22022.H0

SINGLE FAMILY RESIDENCE
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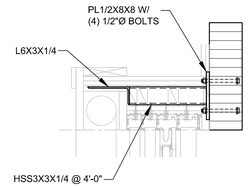
CRAIG MONAGHAN, ARCHITECT
4522 LOWER DR. LAKE OSWEGO, OR 97035
PH: 503-522-9000
monaghan.craig@gmail.com

DATE: 05/17/22

SCALE: AS SHOWN

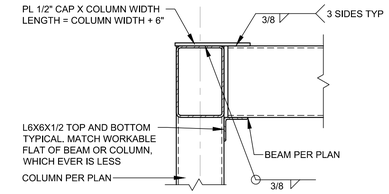
SHEET TITLE:
CONCRETE DETAILS

SHEET NUMBER:
S05.2



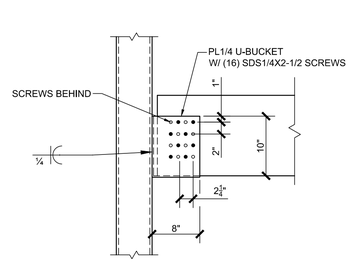
6 S07.1 DRAPERY SUPPORT

1"=1'-0"



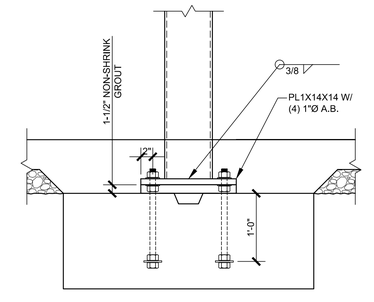
3 S07.1 HSS BEAM TO HSS COLUMN CONNECTION

1"=1'-0"



5 S07.1 BEAM TO HSS COL

1"=1'-0"

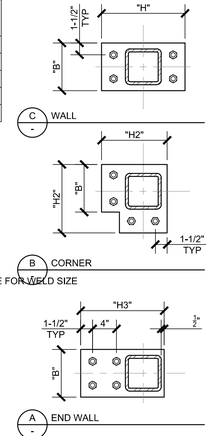


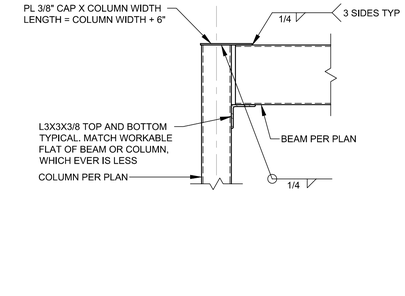
2 S07.1 HSS FIXED BASE

1"=1'-0"

A36 BASE PLATE SCHEDULE

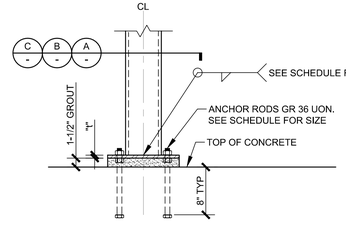
COLUMN	"B"	"t"	"H"	"H2"	"H3"	BOLT Ø	WELD
HSS3X3	5"	3/4	8"	8"	11"	3/4	1/4
HSS4X4	5"	3/4	10"	8"	12"	3/4	1/4
HSS5X5	6"	3/4	11"	10"		3/4	1/4
HSS6X6	7"	3/4	12"	11"		3/4	1/4





4 S07.1 HSS BEAM TO HSS COLUMN CONNECTION

1"=1'-0"



1 S07.1 COLUMN BASE PLATE
SQUARE HSS - CORNER, END, WALL

REVIEWED
BUILDING DIVISION
01/03/2023
REVIEWER DATE

CHRIS WILSON
LICENSED PROFESSIONAL ENGINEER
No. 14056-S
HAWAII, U.S.A.

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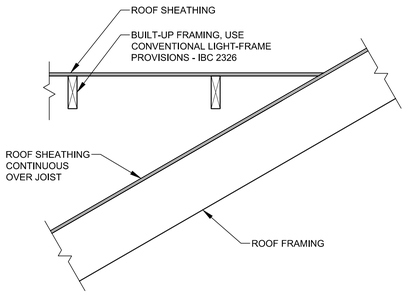
DATE : 05/17/22

SCALE : AS SHOWN

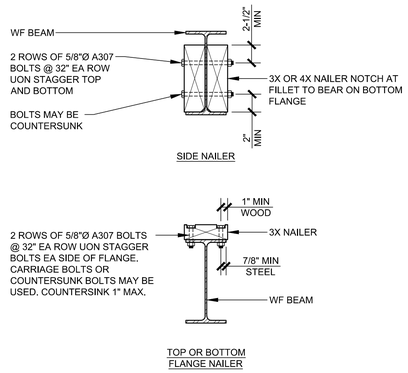
SHEET TITLE: **STEEL DETAILS**

SHEET NUMBER: S07.1



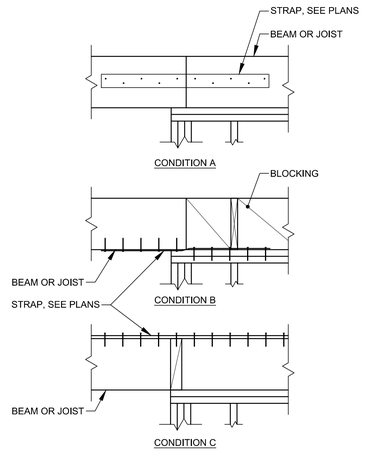
10 S08.1 TYPICAL CALIFORNIA FRAMING

1"=1'-0"



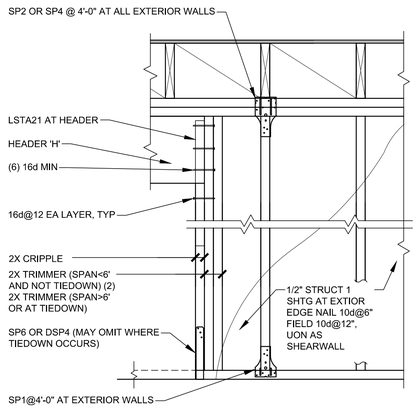
7 S08.1 WF STEEL BEAM NAILER

1"=1'-0"



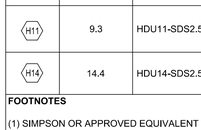
5 S08.1 TIE STRAPS

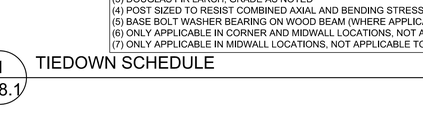
3/4"=1'-0"



3 S08.1 HEADER AND WALL FRAMING

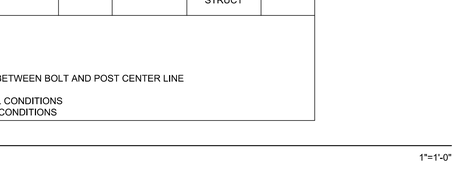
1"=1'-0"





9 S08.1 TIEDOWN AT INTERSECTING SHEARWALL

1"=1'-0"



6 S08.1 PARALLEL JOISTS AT EXTERIOR WALL

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

4 S08.1 TOP PLATE SPLICE

1½"=1'-0"

2 S08.1 HOLES IN SAWN LUMBER

REF: 2018 IBC 2308.4, .5

NTS

TIEDOWN LOADING & POST SCHEDULE

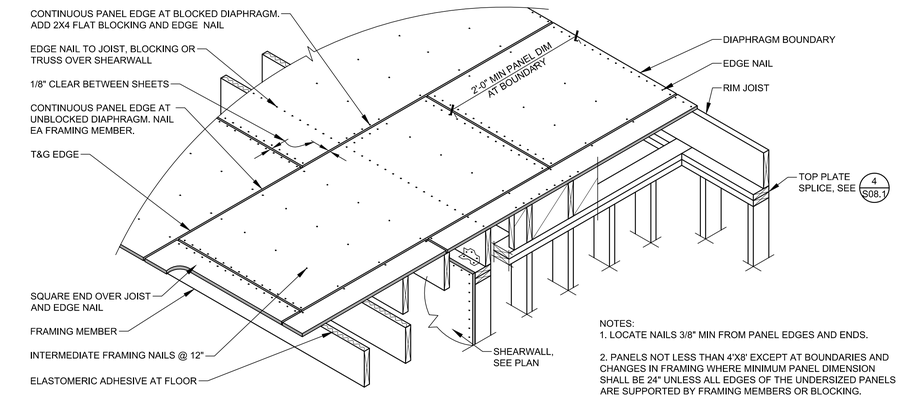
SYMBOL	ASD TENSION LOAD (KIPS) SIMPSON C-2017	TIEDOWN ASSEMBLY (1)	SSTB/ SB ANCHOR BOLT (1)		ALL-THREAD ANCHOR BOLT		SPLICE 2-2X TIEDOWN POSTS		TIEDOWN POST 4" OR 6" THICK WALLS (3)(4)	SQUARE WASHER ON WOOD (5)
			ANCHOR	MINIMUM EMBEDMENT	DIAMETER (2)	CAST IN PLACE MIN EMBEDMENT	BOX OR SINKER NAILS	SDS1/4"X2-1/2"		
H2	3.1	HDU2-SDS2.5	SSTB24 OR SB 5/8X24	20-5/8" 18"	5/8"	16"	16d@4"	5 TOTAL EQUAL SPACE	(2) 2X OR 4X NO.1	1/2"X3"X3"
H4	4.6	HDU4-SDS2.5	SB 5/8X24	24-7/8" 18"	5/8"	20"	16d@3"	8 TOTAL EQUAL SPACE	(2) 2X OR 4X NO.1	1/2"X3"X3"
H5	5.6	HDU5-SDS2.5	SB 5/8X24	18"	5/8"	20"	(2) 16d@4"	11 TOTAL EQUAL SPACE	(2) 2X OR 4X NO.1	1/2"X3"X3"
H8	7.9	HDU8-SDS2.5	SB 7/8X24 (6)	18"	7/8"	20"	N/A	N/A	4X6 (4X WALL) 6X6 (6X WALL)	5/8"X4"X4"
H11	9.3	HDU11-SDS2.5	SB 1X30 (7)	24"	1"	24"	N/A	N/A	4X6 SELECT STRUCT 6X6 NO.1	N/A
H14	14.4	HDU14-SDS2.5	N/A	N/A	1" W/ HEAVY HEX ANCHOR NUT PROVIDED	24"	N/A	N/A	6X6 SELECT STRUCT	N/A

FOOTNOTES

(1) SIMPSON OR APPROVED EQUIVALENT
(2) ASTM A36
(3) DOUGLAS FIR LARCH, GRADE AS NOTED
(4) POST SIZED TO RESIST COMBINED AXIAL AND BENDING STRESS DUE TO ECCENTRICITY BETWEEN BOLT AND POST CENTER LINE
(5) BASE BOLT WASHER BEARING ON WOOD BEAM (WHERE APPLICABLE)
(6) ONLY APPLICABLE IN CORNER AND MIDWALL LOCATIONS, NOT APPLICABLE TO END WALL CONDITIONS
(7) ONLY APPLICABLE IN MIDWALL LOCATIONS, NOT APPLICABLE TO CORNER OR END WALL CONDITIONS

1 S08.1 TIEDOWN SCHEDULE

1"=1'-0"



NOTES:
1. LOCATE NAILS 3/8" MIN FROM PANEL EDGES AND ENDS.

2. PANELS NOT LESS THAN 4'X8' EXCEPT AT BOUNDARIES AND CHANGES IN FRAMING WHERE MINIMUM PANEL DIMENSION SHALL BE 24" UNLESS ALL EDGES OF THE UNDERSIZED PANELS ARE SUPPORTED BY FRAMING MEMBERS OR BLOCKING.

1 S08.1 DIAPHRAGM SHEATHING

CASE 1 & 3 RE: 2005 NDS SPECIAL DESIGN PROVISIONS FOR WIND & SEISMIC

REVIEWED BUILDING DIVISION
nosorio 01/03/2023
REVIEWER DATE

CHRIS WILSON LICENSED PROFESSIONAL ENGINEER No. 14056-S HAWAII, U.S.A.
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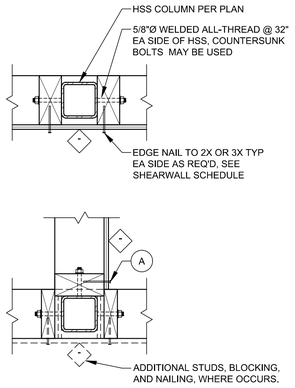
DATE: 05/17/22

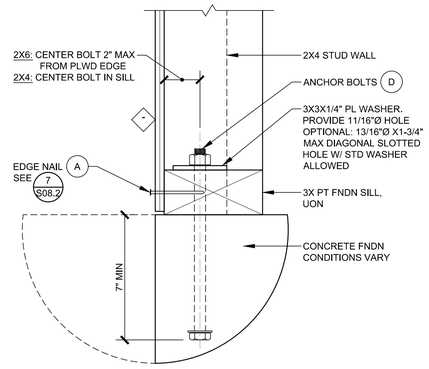
SCALE: AS SHOWN

SHEET TITLE: **WOOD DETAILS**

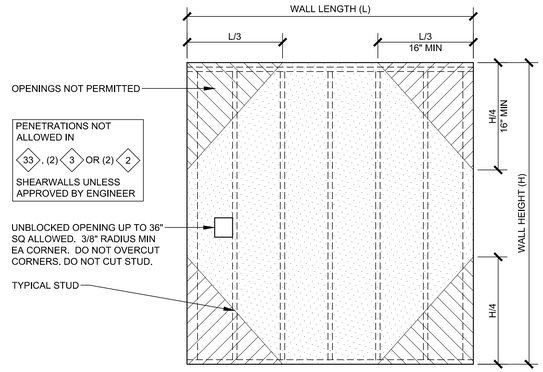
SHEET NUMBER: S08.1



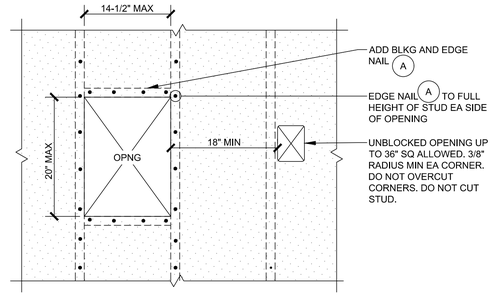
9 S08.2 HSS COLUMN SHEARWALL ANCHOR 1"=1'-0"



6 S08.2 SHEAR WALL BOLTED SILL TO CONCRETE 3"=1'-0"



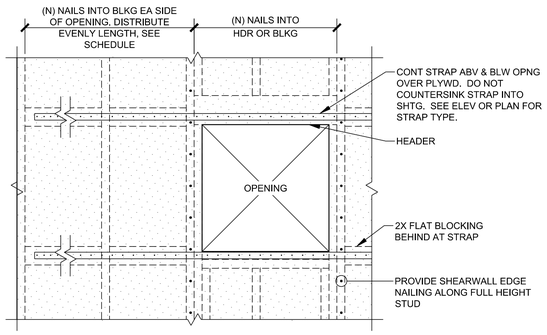
4 S08.2 SHEAR WALL UNBLOCKED OPENING ½"=1'-0"



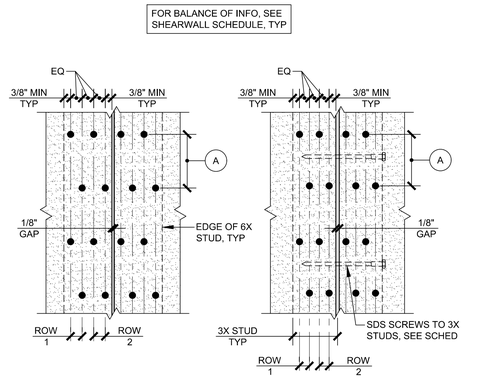
3 S08.2 SHEAR WALL OPENING 1"=1'-0"

STRAP SCHEDULE

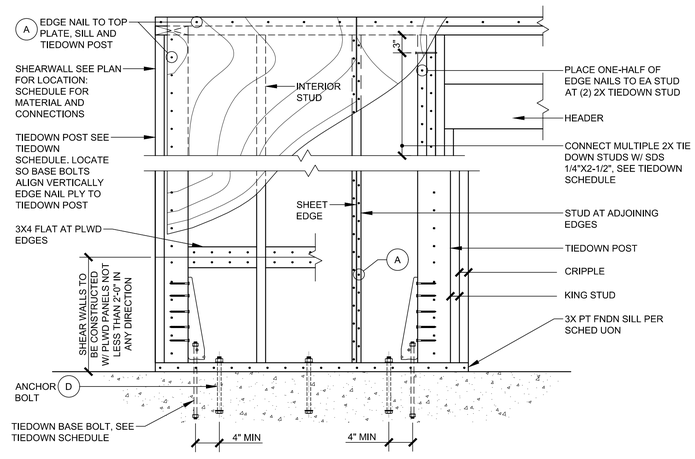
STRAP	NO. OF NAILS (#)	MIN LENGTH EA SIDE OF OPNG
CS16	(12) 10d COMMON	2'-0"



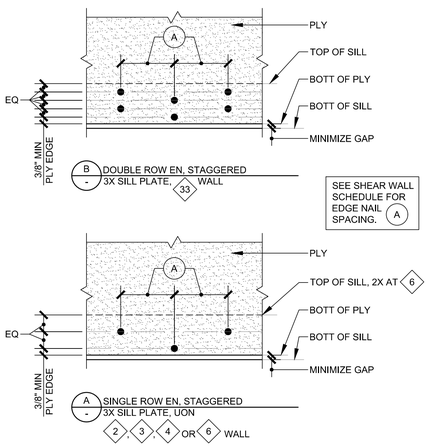
8 S08.2 SHEARWALL STRAPS AROUND OPENING 1" = 1'-0"



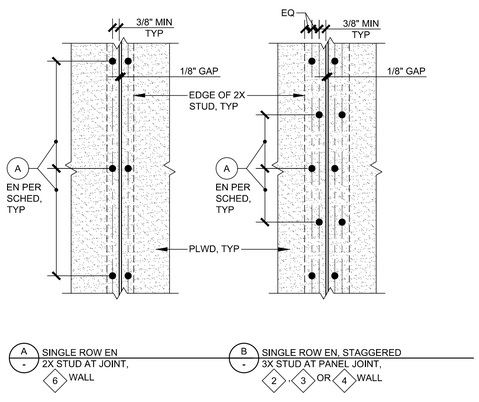
5 S08.2 SHEAR WALL PLWD PANEL JOINT NAILING 3"=1'-0"



2 S08.2 SHEARWALL SCHEMATIC ELEVATION 1"=1'-0"



7 S08.2 SHEAR WALL PLWD EDGE NAIL AT SILL, TIEDOWN POST SIMILAR 3"=1'-0"



1 S08.2 SHEARWALL SCHEDULE

WOOD SHEAR WALL SCHEDULE - ANSI 2008 SDPWS SEISMIC

SYMBOL	ASD/(LRFD) SHEAR CAPACITY FOR SEISMIC (PLF)	SHEATHING MATERIAL (PLF)	MIN STUD AT ADJOINING PANEL EDGES (1.)	FOUNDATION SILL (2.)	SILL AT UPPER FLOOR	EDGE NAILS (3.) A	2X BLOCK OR TRANSFER STUD (4.) B	3X BLOCK OR TRANSFER STUD (5.) B	FLOOR SILL (5.) C	ANCHOR BOLT (6.) D	CLIPS (7.) E
6	340 (544)	15/32" STRUCT 1 SHEATHING	2X	2X	2X	10d@6"	16d@6"	SDS1/4"X4-1/2" @12"	SDS1/4"X6" (2) @16"	5/8"Ø@48"	A34@16" OR LTP4@16"
4	510 (816)		3X	3X	2X	10d@4"	16d@4"	SDS1/4"X4-1/2" @8"	SDS1/4"X6" (2) @16"	5/8Ø"@32"	(2) A34@16" OR (2) LTP4@16"
3	665 (1064)		3X	3X	2X	10d@3"	16d@3"	SDS1/4"X4-1/2" @6"	SDS1/4"X6" (3) @16"	5/8Ø"@32"	(2) A34@16" OR (2) LTP4@16"
2	870 (1392)		3X	3X	2X	10d@2"	16d@3"	SDS1/4"X4-1/2" @4"	SDS1/4"X6" (3) @16"	5/8Ø"@16"	(3) A34@16" OR (2) LTP4@16"
33	1240 (1984)		4X	3X	3X	2 ROWS 10d@3"	NA	SDS1/4"X4-1/2" @3"	SDS1/4"X6" (4) @16"	5/8Ø"@16"	(2) HGA 10KT@16" OR (3) LTP4@16"
(2) 3 (8.)	1330 (2128)		3X	3X	3X	10d@3"	NA	SDS1/4"X4-1/2" @3"	SDS1/4"X6" (5) @16"	5/8Ø"@16"	(2) HGA 10KT@16" OR (3) LTP4@16"
(2) 2 (8.)	1740 (2784)		3X	3X	3X	10d@2"	NA	SDS1/4"X4-1/2" @2"	SDS1/4"X6" (6) @16"	5/8Ø"@12"	(2) HGA 10KT@16"

FOOTNOTES

1. (2) 2X STUDS MAY BE SUBSTITUTED FOR 3X STUD AT ADJOINING PANEL EDGES FOR SINGLE-SIDED SHEAR WALLS ONLY. FASTEN (2) 2X STUDS TOGETHER WITH 2 ROWS 16d@4" STAGGER NAILS.
2. FOUNDATION SILLS SHALL BE PRESSURE TREATED DF-L OR NON-PRESSURE TREATED WITH BITUTHENE MEMBRANE BETWEEN SILL & CONCRETE.
3. PROVIDE FLAT BLOCKING AT UNSUPPORTED EDGES, 2X4 FOR ONE ROW, 2X6 FOR TWO ROWS. COMMON OR GALVANIZED BOX NAILS MAY BE USED.
4. COMMON, BOX OR SINKER NAILS. STAGGER NAILS.
5. SIMPSON COMPANY OR APPROVED EQUIVALENT. STAGGER SCREWS.
6. MINIMUM TWO BOLTS PER PIECE OF SILL. PROVIDE 3"X3"X1/4" PL WASHER WITH 11/16"Ø HOLE BETWEEN SILL PLATE AND NUT. SEE GENERAL NOTES.
7. SIMPSON COMPANY OR APPROVED EQUIVALENT.
8. SHEAR WALL IS SHEATHED WITH PLYWOOD ON EACH FACE. ALL NAILING REQUIREMENTS APPLY TO EACH SIDE. PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT FRAMING MEMBERS.

NAIL NOTES

NAILS SHALL BE SPACED 2" OC MINIMUM. USE HOT DIPPED GALVANIZED OR STAINLESS STEEL WHEN PENETRATING PRESSURE-TREATED WOOD. DO NOT DRIVE NAILS THROUGH FACE LAYER OF PLYWOOD. DO NOT SPLIT LUMBER. ANY STRUCTURAL LUMBER SPLIT DUE TO NAILING SHALL BE REPLACED. IF REQUIRED, PRE-DRILL NAIL HOLES TO AVOID SPLITTING.

REVIEWED BUILDING DIVISION
nosorio 01/03/2023
REVIEWER DATE

CHRIS WILSON LICENSED PROFESSIONAL ENGINEER No. 14056-S HAWAII, U.S.A.
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
Chris Wilson Exp. 4-30-24

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REVISIONS NO.	DESCRIPTION	Date
	PERMIT SET	05/17/22

JOB NUMBER: 22022.H0

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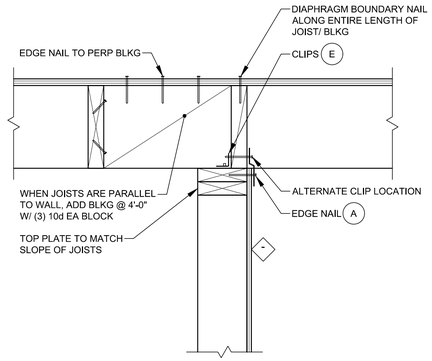
DATE: 05/17/22
SCALE: AS SHOWN

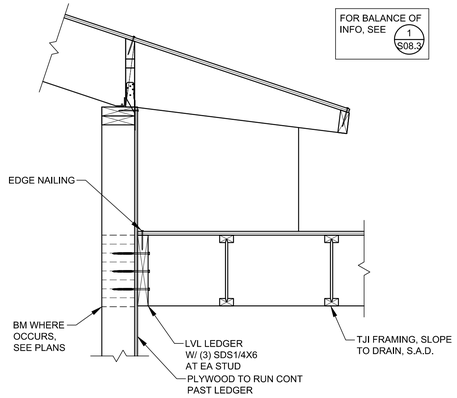
SHEET TITLE: **WOOD DETAILS**

SHEET NUMBER: S08.2



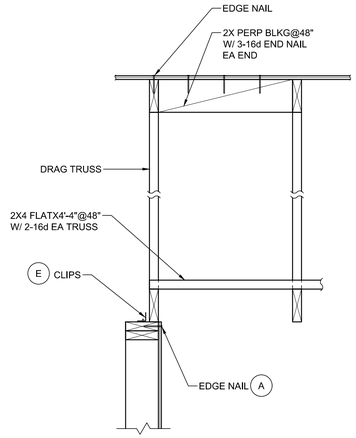
12 S08.3 SHEAR WALL TOP PLWD STOPS AT BOTT OF JOIST

1½"=1'-0"



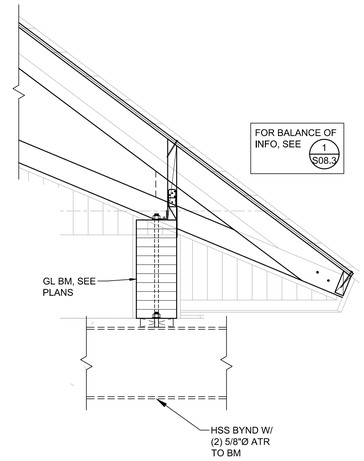
9 S08.3 FLAT ROOF EXTERIO WALL SHEAR TRANSFER

1"=1'-0"



6 S08.3 INTERIOR SHEAR TRANSFER

1"=1'-0"



3 S08.3 LANAI EAVE

1"=1'-0"

11 S08.3 SHEAR WALL AT LOW ROOF

1"=1'-0"

8 S08.3 FLAT ROOF EXTERIO WALL SHEAR TRANSFER

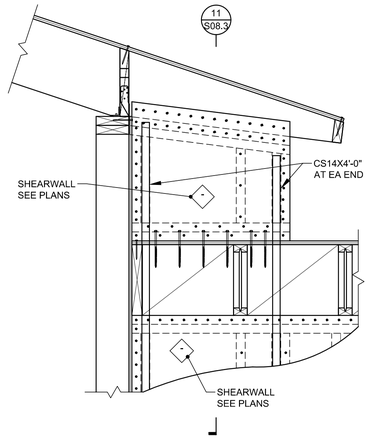
1"=1'-0"

5 S08.3 GREAT ROOM BEAM SUPPORT

1"=1'-0"

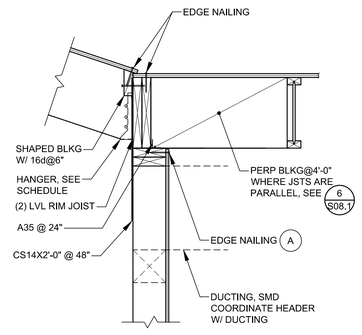
2 S08.3 CLERESTORY EAVE

1"=1'-0"



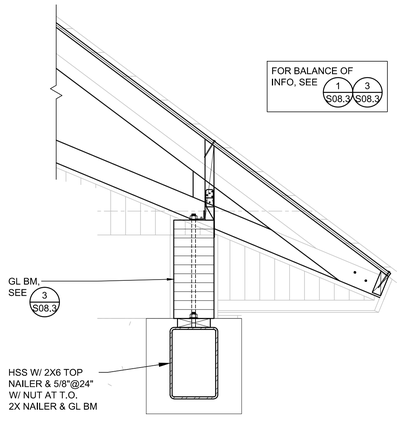
10 S08.3 SHEAR WALL AT LOW ROOF

1"=1'-0"



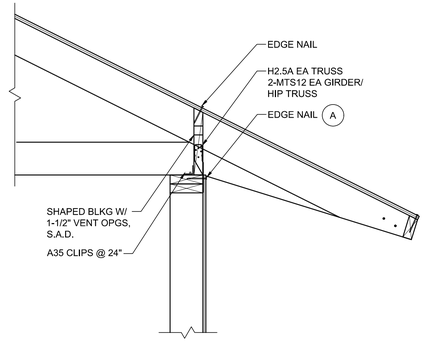
7 S08.3 TRUSS AND FLAT-ROOF SHEAR TRANSFER

1"=1'-0"



4 S08.3 LANAI EAVE

1"=1'-0"



1 S08.3 TYPICAL EAVE

1"=1'-0"

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nosorio 01/03/2023
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CHRIS WILSON
LICENSED PROFESSIONAL ENGINEER
No. 14056-S
HAWAII, U.S.A.

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DATE: 05/17/22

SCALE: AS SHOWN

SHEET TITLE: **WOOD DETAILS**

SHEET NUMBER: S08.3