

GENERAL NOTES:

- ALL CONSTRUCTION AND DESIGN SHALL CONFORM TO THE 2020 FBC (7TH ED)
- THE STRUCTURAL DRAWINGS SHALL BE UTILIZED IN CONJUNCTION WITH OTHER CONSULTANTS' DRAWINGS.
- THE STRUCTURAL DRAWINGS ARE INTENDED FOR THE STRUCTURE TO ACT AS WHOLE ONCE CONSTRUCTION IS COMPLETE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE SAFETY AND STABILITY (I.E, TEMPORARY BRACING IF REQUIRED) DURING CONSTRUCTION AS A RESULT OF CONSTRUCTIONS METHODS AND SEQUENCES.
- THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING STRUCTURES. THE ENGINEER SHALL BE NOTIFIED ON ANY DISCREPANCY BETWEEN THE EXISTING CONDITIONS AND CONSTRUCTION DOCUMENTS.
- DESIGN CRITERIA**
 - CODE: 2020 FBC (7TH ED)
 - LOADS AND DESIGN CRITERIA: THE FOLLOWING LOADS AND CRITERIA WERE USED IN ADDITION TO THE DEAD LOAD OF THE STRUCTURE.

LIVE LOADS:	
ROOF	20 PSF
CEILING	10 PSF

 - SOIL CRITERIA:

ALLOWABLE SOIL BEARING	2000 PSF
PASSIVE PRESSURE	150 PCF
FRICTION COEFFICIENT	0.35

 - WIND CRITERIA:

WIND SPEED:	130 MPH (3-SECOND GUST)
CATEGORY:	II
EXPOSURE	B
INTERNAL PRESSURES:	=/- 0.18
CLADDING AND COMPONENTS	
ZONE 1	21.3 / -34.15 PSF
ZONE 2	21.5 / -59.45 PSF
ZONE 3	21.5 / -69.75 PSF
ZONE 4	37.32 / -40.48 PSF
ZONE 5	37.32 / 49.96 PSF

REINFORCING STEEL:

- ALL BAR REINFORCEMENT SHALL BE CONFORM TO ASTM 615 GRADE 60.
- WELD WIRE FABRIC REINFORCEMENT SHALL CONFORM TO ASTM A185
- CLEARANCE OF MAIN REINFORCEMENT FROM ADJACENT SHALL BE CONFORM TO THE FOLLOWING (UNLESS OTHERWISE SHOWN IN DETAIL).
 - UNFORMED SURFACES IN CONTACT WITH GROUND (FOOTING OR WALL BOTTOM).....3"
 - SLAB ON GRADE2 1/2"
 - FORMED SURFACE IN CONTACT WITH GROUND OR EXPOSED TO WEATHER (WALLS, PIERS).....2"
 - IN ALL CASES, CLEARANCE NOT LESS THAN DIAMETER OF BARS.

NOTE: MAXIMUM DEVIATION FROM THESE REQUIREMENTS SHALL BE + 1/4" FOR SECTIONS 10" OR LESS AND +1/2" FOR SECTIONS OVER 10" THICK.
- REINFORCEMENT SHALL BE CONTINUOUS THROUGH ALL CONSTRUCTION JOINTS UNLESS OTHERWISE INDICATED ON DRAWS
- WHERE REINFORCEMENT IS NOT SHOWN ON DRAWINGS, PROVIDE REINFORCEMENT IN ACCORDANCE WITH APPLICABLE TYPICAL DETAILS OR SIMILAR TO THAT SHOWN FOR MOST NEARLY SIMILAR SITUATION, AS DETERMINED BY THE ARCHITECT / ENGINEER. IN NO CASE SHALL REINFORCEMENT BE LESS THAN MINIMUM PERMITTED BY APPLICABLE CODES.
- ALL WORKMANSHIP AND MATERIAL SHALL BE CONFORMED TO THE MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" (ACI-315)
- ALL REINFORCEMENT SHALL BE INSPECTED AND APPROVED BY THE ARCHITECT/ENGINEER OR OWNER TESTING AGENCY BEFORE CONCRETE IS PLACED.
- WHERE CONTINUOUS BARS ARE CALLED FOR THEY SHALL BE CONTINUOUSLY AROUND CORNERS, LAPPED AT NECESSARY SPLICES AND HOOKED AT CONTINUOUS ENDS.
- WELDED WIRE FABRIC SHALL BE LAPPED ONE FULL MESH PANEL OR 6" MIN.
- ALL REINFORCING SPLICES SHALL CONFORM TO THE TABLE(S) PROVIDED IN THE GENERAL NOTES FOR STRENGTH OF CONCRETE BUT IN NO CASE LESS THAN THE REQUIREMENTS OF THE LATEST EDITION OF A318
- SLABS AND WALLS SHALL NOT BE SLEEVED OR BOXED OUT OR HAVE THEIR REINFORCEMENT INTERRUPTED EXCEPT SPECIFICALLY NOTED ON THE DRAWINGS. PROVIDE ADDITIONAL REINFORCEMENT AROUND OPENINGS AS SHOWN IN THE DETAILS.
- SUBMIT CHECKED SHOP DRAWINGS TO THE ARCHITECT / ENGINEER FOR REVIEW PRIOR TO FABRICATION OF REINFORCEMENT.
- BAR SUPPORTS SHALL BE GALVANIZED OR STAINLESS STEEL. BAR SUPPORTS IN CONTACT WITH EXPOSE SURFACE SHALL BE GALVANIZE AND PLASTIC TIPPED.

ADDITION CONCRETE ITEMS:

SLAB AND WALL REINFORCING LAP SPLICE LENGTHS

LAP SPLICE LENGTHS FOR REINFORCING IN 4000 PSI CONCRETE AS FOLLOWS

BAR SIZE	TENSION SPLICE		DEVELOPMENT LENGTH
	TOP	OTHER	
#3	21"	15"	13"
#4	29"	20"	17"
#5	35"	25"	21"
#6	43"	31"	25"
#7	54"	39"	32"
#8	71"	51"	42"

LAP SPLICE LENGTHS FOR REINFORCING IN 3000 PSI CONCRETE AS FOLLOWS

BAR SIZE	TENSION SPLICE		DEVELOPMENT LENGTH
	TOP	OTHER	
#3	21"	15"	13"
#4	29"	20"	17"
#5	35"	25"	21"
#6	46"	33"	27"
#7	63"	45"	37"
#8	83"	59"	49"

- NOTES:
- LAPPED SPLICE LENGTHS BASED ON ASTM A-615, GRADE 60, REBAR
 - REINFORCING BARS CLASSIFIED AS TOP BARS WHEN MORE THAN 12" ON CONCRETE IS CAST BENEATH RESPECTIVE REINFORCING BAR.
 - COMPRESSION SPLICES SHALL PERMISSIBLE ONLY WHERE SPECIFICALLY NOTED ON THE DRAWINGS
 - TENSION SPLICES SHALL BE USED IN ALL BEAMS, SLABS, AND WALLS UNLESS OTHERWISE NOTED.
 - WHEN LAPPING LARGER BARS WITH SMALLER BARS, LAP LENGTH FOR SMALLER BAR SHALL GOVERN RESPECTIVE SPLICE.
 - SPLICE CONTINUOUS TOP REINFORCING BARS AT CENTER OF CLEAR SPAN WITH COMPRESSION SPLICES
 - SPLICE CONTINUOUS REINFORCING BARS AT CENTER OF SUPPORTING ELEMENT WITH COMPRESSION SPLICES.

FLOOR SLABS:

- FLOOR SLABS SHALL BE ON AT LEAST 4" OF RELATIVELY CLEAN GRANULAR MATERIAL SUCH AS SAND, SAND AND GRAVEL, OR CRUSHED STONE. GRANULAR MATERIAL SHALL HAVE 100% PASSING THE 1 1/2" SIEVE AND A MAXIMUM OF 10% PASSING THE NO. 200 SIEVE.
- STRUCTURAL FILL SHALL BE PLACED IN THIN LOOSE LIFTS NOT EXCEEDING 12" IN THICKNESS AND COMPACTED WITH A HEAVY ROLLER. EACH LIFT SHALL BE THOROUGHLY COMPACTED WITH THE LABORATORY ROLLER TO PROVIDE DENSITIES TO AT LEAST 95% OF THE PROCTOR MAXIMUM DRY DENSITY. STRUCTURAL FILL SHALL CONSIST OF AN INORGANIC NON-PLASTIC, GRANULAR SOIL CONTAINING LESS THAN 10% MATERIAL PASSING THE 200 MESH SIEVE.

POST-INSTALLED REBAR:

- POST-INSTALLED REINFORCING BAR CONNECTIONS SHALL BE DESIGNED PER THE ACI BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318). POST-INSTALLED REINFORCING BAR CONNECTIONS SHALL BE CONSIST OF HILTI EPOXY SYSTEMS OR EQUAL
- THE DESIGN OF STRAIGHT POST-INSTALLED REINFORCING BARS SHALL BE PREFORMED PER THE DEVELOPMENT AND SPLICE REQUIREMENTS OF THE ACI 318. THE POST-INSTALLED REINFORCING BAR SYSTEM IS AN ALTERNATIVE TO CAST-IN-PLACE REINFORCING BARS GOVERNED BY ACI 318 AND IBC CHAPTER 19.
- THE EPOXY SYSTEM SHALL BE TESTED IN ACCORDANCE WITH THE ICC-ES ACCEPTANCE CRITERIA FOR POST-INSTALLED EPOXY ANCHORS IN CONCRETE ELEMENTS (ACI 308), TABLE 3.8 TECHNICAL DATE SHALL BE PUBLISHED IN AN ICC-ES EVALUATION SERVICE REPORT SHOWING COMPLIANCE WITH IBC.
- POST-INSTALLED REINFORCING BAR INSTALLATION SHALL BE PERFORMED BY PERSONNEL TRAINED TO INSTALL THE SYSTEM PER THE MANUFACTURED PRINTED INSTALLATION INSTRUCTION (MP1), AS INCLUDED IN THE ANCHOR PACKAGING.

GENERAL WOOD NOTES:

- DIMENSIONAL LUMBER
- DIMENSIONAL LUMBER USED AS STRUCTURAL FRAMING (i.e. JOISTS, RAFTERS, HEADERS) SHALL BE SOUTHERN YELLOW PINE NO.2 OR EQUAL.
 - DIMENSIONAL LUMBER USED FOR STUDS WALLS SHALL BE STUD GRADE UNLESS NOTED OTHERWISE. STUDS SHALL HAVE BE SPACES AT 16" MIN WITH A DOUBLE TOP PLATE. SPLICES IN THE DOUBLE TOP WALLS SHALL BE ALTERNATE TOP AND BOTTOM. IN NO CASE SHALL 2x4 BEARING WALLS SUPPORT MORE THAN TWO FLOORS OF FRAMING IN ADDITION TO ROOF AND CEILING
 - ROUGH CUT TIMBER USED AS STRUCTURAL FRAMING SHALL BE AS SPECIFIED IN THE CONSTRUCTION DOCUMENTS
 - ALL LUMBER IN CONTACT WITH THE GROUND, CONCRETE SHALL BE PRESSURED-TREATED. CONTRACTOR MAY SUBMIT FOR APPROVAL A MOISTURE BARRIER IN-LIEU OF THE PRESSURE TREATED WOOD.
 - FASTENERS FOR PRESERVATIVE-TREATED AND FIRE-RETARDANT TREATED WOOD SHALL BE OF HOT-DIPPED ZINC COATED GALVANIZED STEEL OR STAINLESS STEEL AND SHALL FOLLOW CURRENT SIMPSON GUIDELINES BASED ON WEATHER EXPOSURE WHERE STAINLESS STEEL CONNECTORS OR HOT DIPPED CONNECTORS ARE SPECIFIED IN THE DRAWINGS, STAINLESS STEEL OR HOT DIPPED GALVANIZED FASTENERS SHALL BE USED TO MATCH THE CONNECTORS TYPE.
 - ALL NAILS FOR STRUCTURAL WORK SHALL BE COMMON WIRE NAILS UNLESS NOTED OR DETAILED OTHERWISE MEETING ASTM F1667. HOLES SHALL BE PRE-DRILLED WHERE NECESSARY TO PREVENT SPLITTING. NAILS SHALL HAVE THE MINIMUM PROPERTIES SPECIFIED IN THE TABLE BELOW:

NAIL TYPE	SHANK DIAMETER- INCHES	MINIMUM PENETRATION - INCHES
6d	0.113	1.13
8d	0.131	1.31
10d	0.148	1.48
12d	0.148	1.48
16d	0.162	1.63
20d	0.192	1.92

NAILING NOT SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE PER THE NAILING SCHEDULE BELOW:

- | | |
|---|--------------------------------------|
| A. JOIST SITTING ON SILL OR GIRDER | (3) 8d TOENAILS, EA. SIDE |
| B. BLOCKING BETWEEN JOIST/RAFTERS | (2) 10d TOENAILS EA. SIDE, EA. END |
| RIM BLOCKING BETWEEN JOIST/RAFTERS | (3) 10d TOENAILS EA. END |
| C. TOP PLATE TO STUD | (2) 16d END NAILS |
| D. STUD TO SILL PLATE | (2) 16d END NAILS OR (4) 8d TOENAILS |
| E. DOUBLE STUDS | (2) 10d @ 12" O.C. |
| F. DOUBLE TOP STUDS - BETWEEN SPLICE NAILING | 16d @ 16" O.C. FACE NAILS |
| G. DOUBLE TOP STUDS - EACH SIDE OF SPLICE PLATE | (8) 16d |
| H. BLOCKING TO TOP PLATE | (2) 10d TOENAILS EACH SIDE |
| BLOCKING TO FLOOR/ROOF SHEATHING | (4) 10d NAILS |
| I. RIM JOIST OR BLK TO TOP PLATE OR SILL PLATE | 8d TOENAILS @ 6" O.C. |
| J. CONTINUOUS (2) AND (3) PIECE HEADERS | 16d @ 16" O.C. ALONG EACH EDGE |
| K. CEILING JOIST LAPS OVER PARTITIONS | (3) 16d FACE NAILS, MINIMUM |
| L. RAFTER TO TOP PLATE OR SILL PLATE | (3) 8d TOENAILS EACH SIDE |
| M. BUILT-UP CORNER STUDS | 16d @ 24" O.C. |
| N. TONGUE AND GROOVE DECKING | (2) 16d AT EACH BEARING |
| P. CROSS BRIDGING | (2) 10d EACH END |
| R. HORIZONTAL BLOCKING BETWEEN WALL STUDS | (2) 10d TOENAILS EACH END |
| S. I-JOISTS SITTING ON TOP PLATE OR BEAM | (2) 10d NAILS THROUGH JOIST FLANGE |

NAILING SCHEDULE NOTES:

- ALL OTHER NAILING REQUIREMENTS NOTE SHOWN ON DRAWINGS OR IN SCHEDULE ABOVE SHALL BE IN ACCORDANCE WITH 2012 FBC.
- POWER DRIVEN OR PNEUMATIC NAILS OTHER THAN COMMON NAILS MAY BE USED IF DATA IS SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO USE.
- MINIMUM NAIL LENGTHS SHALL BE SUFFICIENT TO ACHIEVE MINIMUM PENETRATION INTO MAIN MEMBER AS NOTED IN SCHEDULE ON NOTE ABOVE.

WOOD STRUCTURAL PANELS

- STRUCTURAL WOOD PANELS SHALL CONFORM TO THE REQUIREMENTS ON ONE OF THE FOLLOWING STANDARDS AND PUBLICATIONS:
 - U.S. PRODUCT STANDARD PS-1 FOR CONSTRUCTION AND INDUSTRIAL PLYWOOD
 - U.S. PRODUCT STANDARD PS-2 PERFORMANCE STANDARD FOR WOOD BASED STRUCTURAL USE PANELS
 - APA PRP-108 PERFORMANCE STANDARDS
- ROOF AND WALL PANELS SHALL BE APA RATED, EXPOSURE 1, 1/2" OR 5/8" (AS NOTED ON DRAWINGS), 5 PLY PLYWOOD WITH A MIN. 32/16 SPAN RATING UNLESS NOTE OTHERWISE ON THE DRAWINGS. SHEATHING SHALL BE EXTERIOR GRADE WHERE EITHER SIDE OF SHEATHING IS PERMANENTLY EXPOSED TO WEATHER.
- FLOOR SHEATHING SHALL BE TONGUE AND GROOVE APA RATED 5-PLY 3/4" PLYWOOD OR OSB SHEATHING (MIN APA RATED 48/24 SPAN RATING) PROVIDE A-C GRADE PLYWOOD AT ALL DECK SHEATHING LOCATIONS.
- ALL FLOOR AND ROOF SHEATHING SHALL BE INSTALLED WITH THE FACE GRAIN PERPENDICULAR TO THE SUPPORTS AND A 1/8" GAP AT ALL PANEL EDGES UNLESS RECOMMENDED OTHERWISE BY THE PANEL MANUFACTURER.
- ALL SHEATHING PANELS SHALL BE INSTALLED WITH END JOINTS STAGGERED UNLESS NOTED OTHERWISE ON THE DRAWINGS.
- WHERE BLOCKING IS NOT SPECIFICALLY REQUIRED FOR THE ROOF SHEATHING, PLY CLIPS ON OR TONGUE AND GROOVE PLYWOOD SHALL BE USED.
- SUB-FLOORING SHEATHING SHALL BE UNBLOCKED UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS, SUB-FLOOR SHEATHING SHALL BE GLUED DOWN TO THE SUPPORTING MEMBERS AND GLUED AT THE TONGUE AND GROOVE JOINTS.
- ALL NAILS SHALL BE COMMON NAILS. ROOF SHEATHING SHALL UTILIZE RING SHANK NAILS.. STAINLESS STEEL (TYPE 316) NAILS SHALL BE USED AT PERMANENTLY EXPOSED EXTERIOR AREAS. ALL NAILS THAT ARE NOT EXPOSED TO THE ELEMENTS BUT IN CONTACT WITH PRESERVATIVE TREATED LUMBER SHALL BE MINIMUM HOT DIPPED GALVANIZED MEETING ASTM A153.

Revision Schedule		
Revision Number	Revision Description	Revision Date
0	ISSUED FOR PERMITTING	6/2/23

SCOPE OF ENGINEERING LIMITED TO WIND LOAD CALCULATIONS, AND RELATED COMPONENTS AND CLADDING.

SHEET SCHEDULE				
SHEET NUMBER	SHEET NAME	REVISION	REVISION DATE	DESCRIPTION
S-001	STRUCTURAL NOTES	0	6/2/23	ISSUED FOR PERMITTING
S-002	STRUCTURAL PLANS, SECTIONS, AND DETAILS	0	6/2/23	ISSUED FOR PERMITTING

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NEW PATIO COVER

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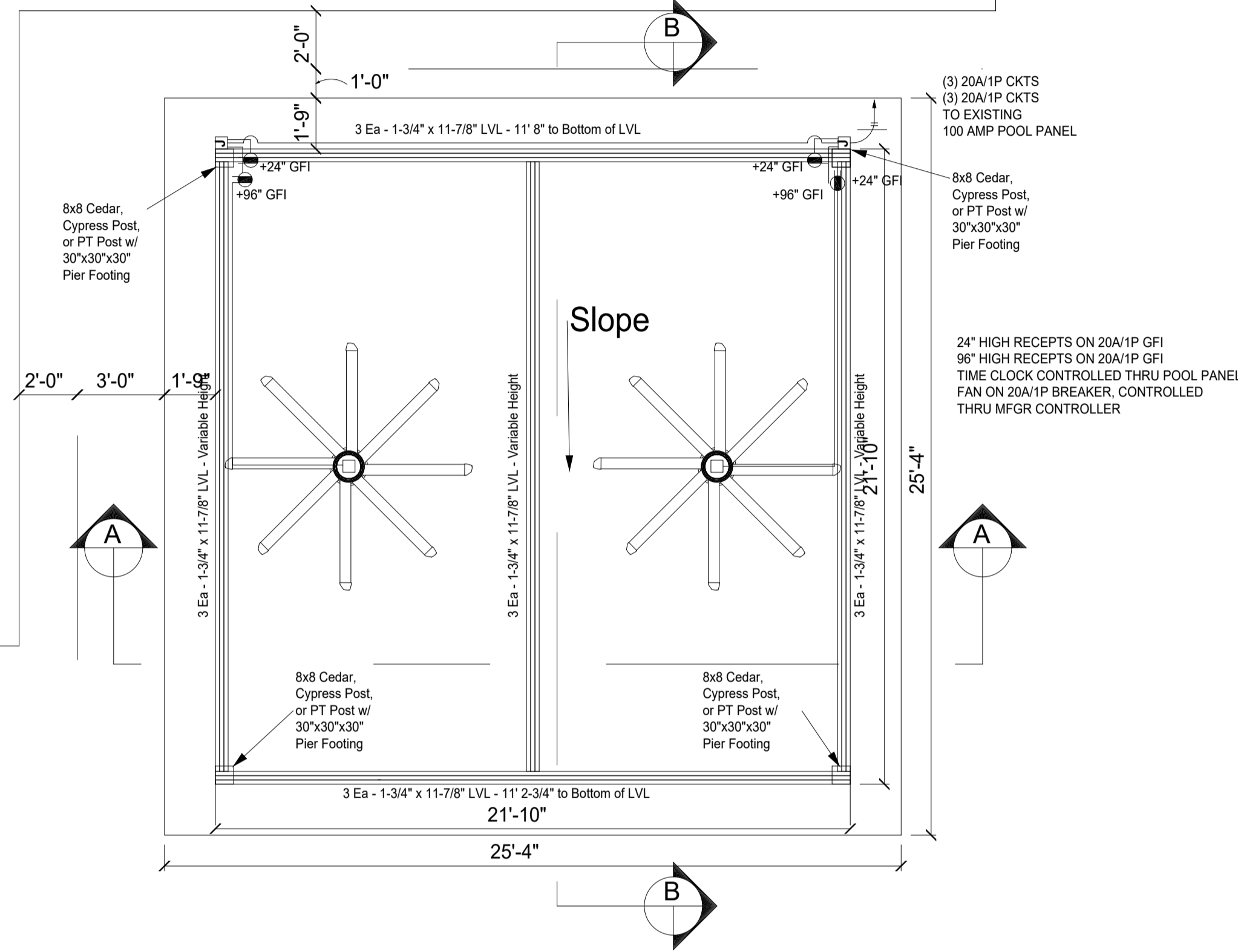
STRUCTURAL NOTES

PROJECT #: 2322-057	DWG #: S-001	REV #: 0
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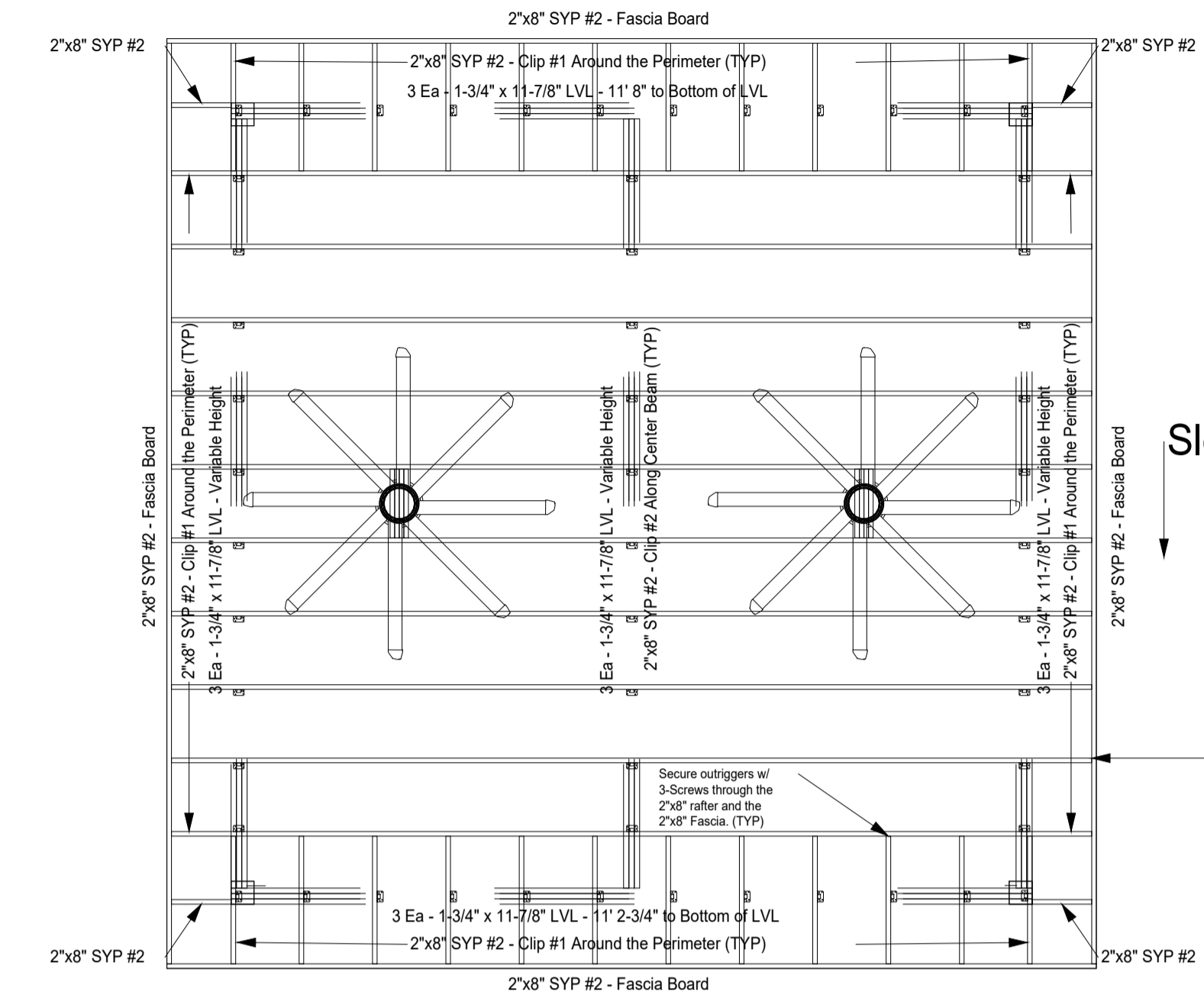
POWER LEGEND

	DUPLEX RECEPTACLE
	DUPLEX RECEPTACLE GFI
	QUADPLEX RECEPTACLE
	SPECIAL PURPOSE RECEPTACLE AS NOTED
	FLOOR OUTLET
	JUNCTION BOX
	DATA OUTLET UP TO 12" UNLESS NOTED- EACH SYMBOL = 2 CAT5E CABLES AND TWO RJ45 JACKS IN SINGLE GANG BOX - (4) PIPES AND 4 JACKS DOUBLE GANG BOX - EACH ETC.
	ELECTRICAL DISTRIBUTION OR POWER PANEL BOARD
	DISCONNECT, 3-NO. OF POLES, 30-FRAME SIZE, 15-FUSE SIZE, X-NO FUSE
	MOTION SENSOR LIGHT SWITCH
	EXIT LIGHT-DIRECTIONAL (ARROWS) AS INDICATED-SURFACE OR WALL MTD.
	FIXTURE WITH BATTERY PACK AND INVERTER
	EMERGENCY BATTERY OPERATED LIGHT, SEE SCHEDULE

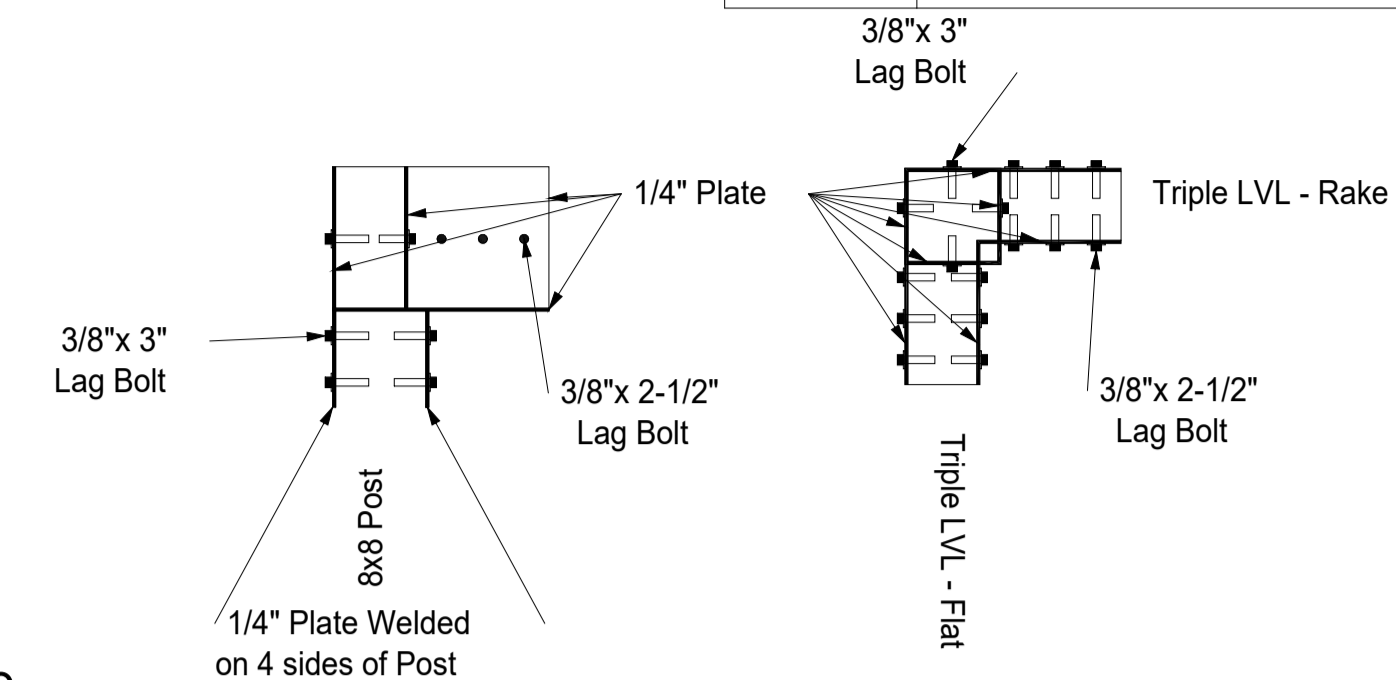
6 LEGEND
1/4" = 1'-0"



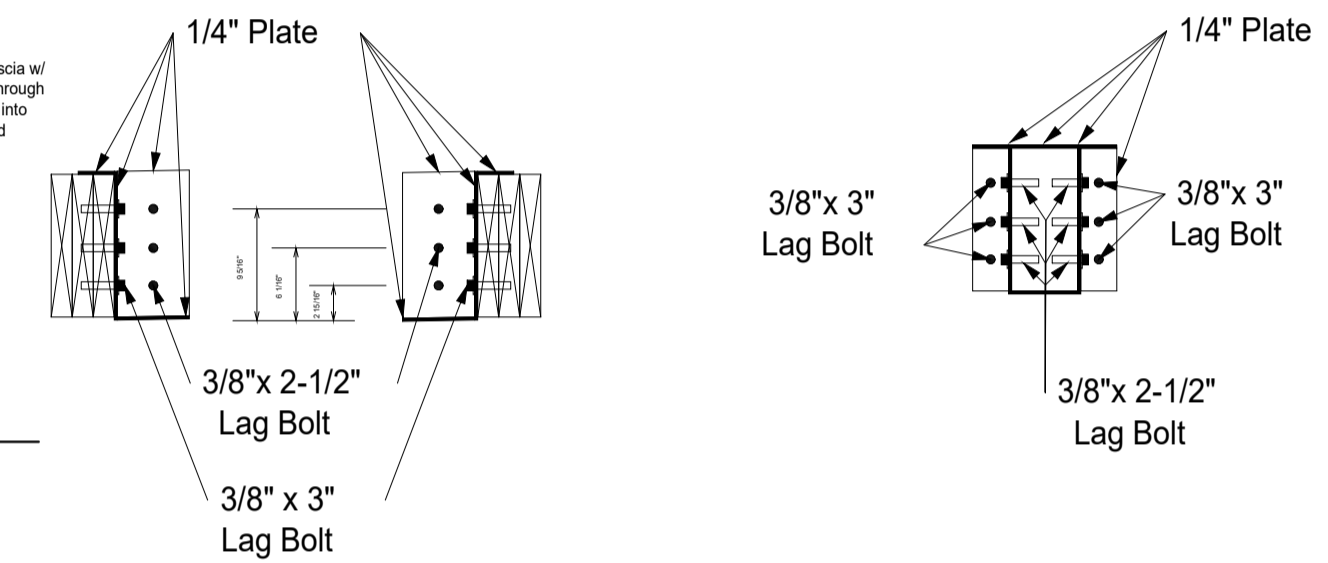
1 GARAGE STRUCTURAL PLAN
1/4" = 1'-0"



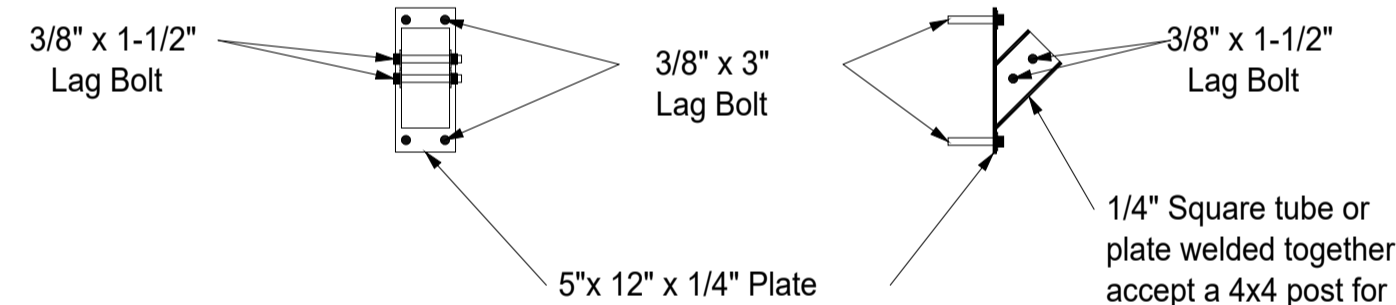
2 ROOF FRAMING PLAN
1/4" = 1'-0"



Side View
Top View
Bracket #1

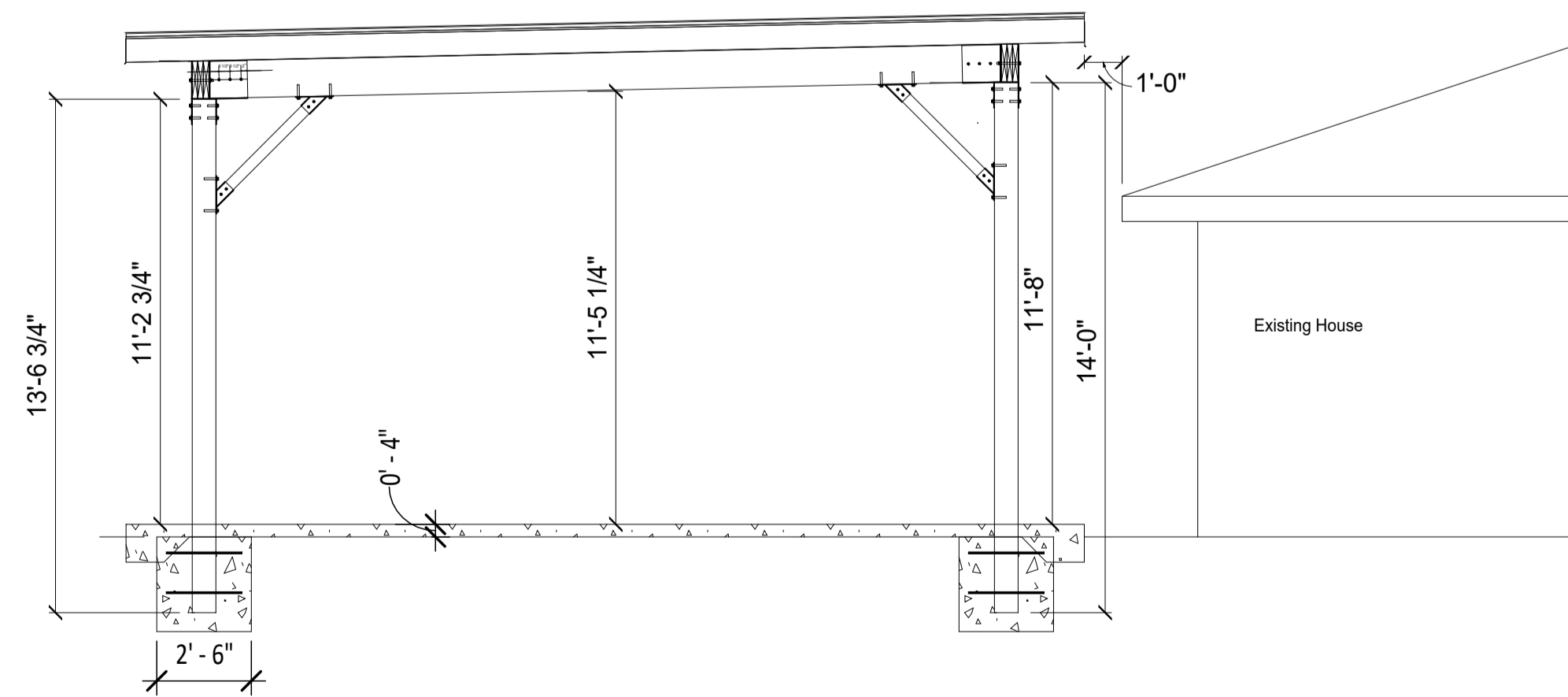


Side View
Front View
Bracket #2



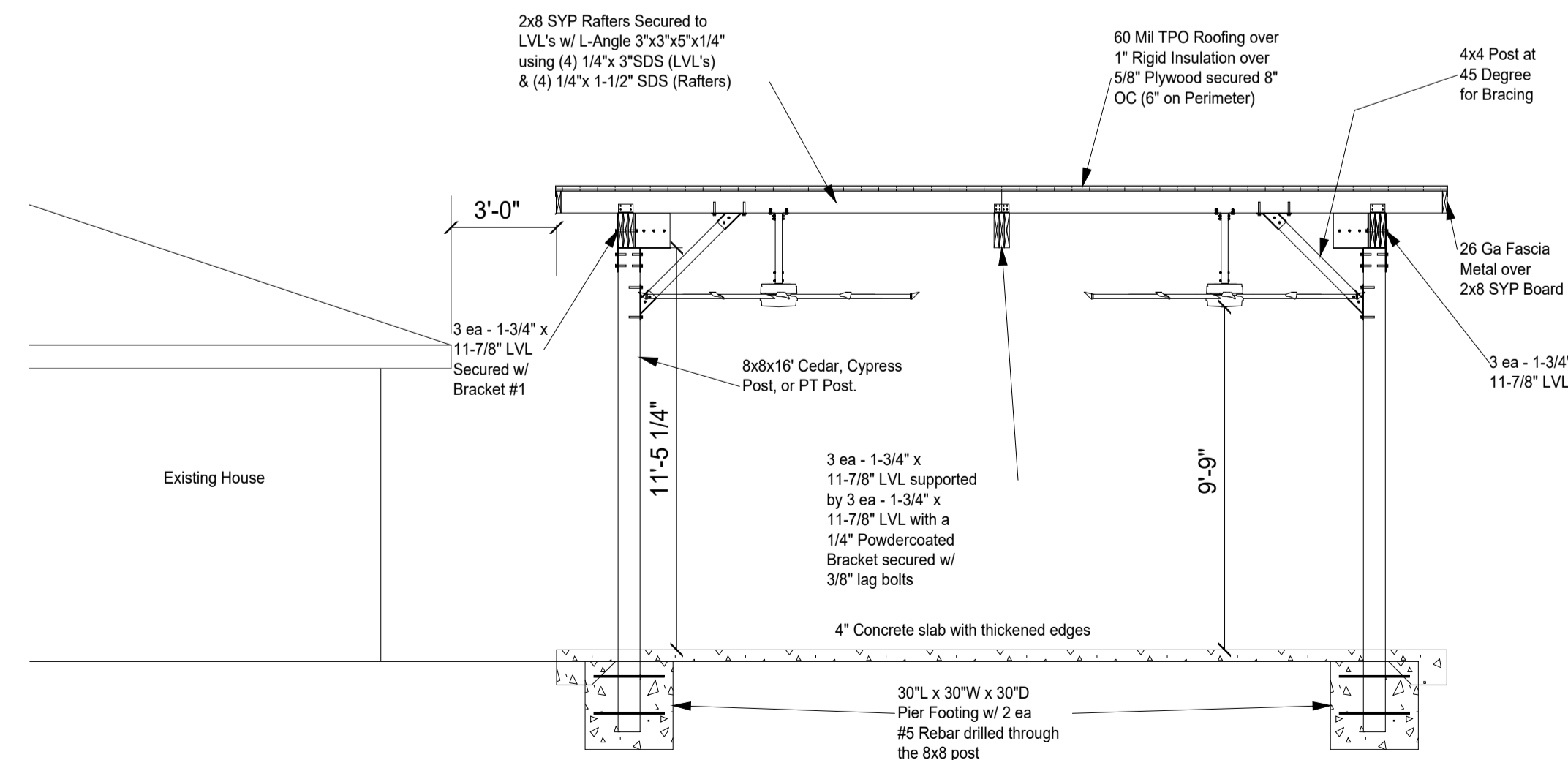
Top View
Side View
Bracket #3

5 BRACKETS DETAILS
3/4" = 1'-0"



Cross Section B

3 CROSS SECTION B
1/4" = 1'-0"



Cross Section A

4 CROSS SECTION A
1/4" = 1'-0"

Revision Schedule		
Revision Number	Revision Description	Revision Date
0	ISSUED FOR PERMITTING	6/2/23

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NEW PATIO COVER

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APPRD BY:	GG	

STRUCTURAL PLANS, SECTIONS, AND DETAILS

PROJECT #:	DWG #:	REV #:
2322-057	S-002	0