

BRACED WALL METHODOLOGY
CONTINUOUS EXTERIOR SHEATHING PER WSP METHOD (BELOW)
UNLESS OTHERWISE NOTED ON THE PLAN

XXXX EXTERIOR BRACED WALLS:

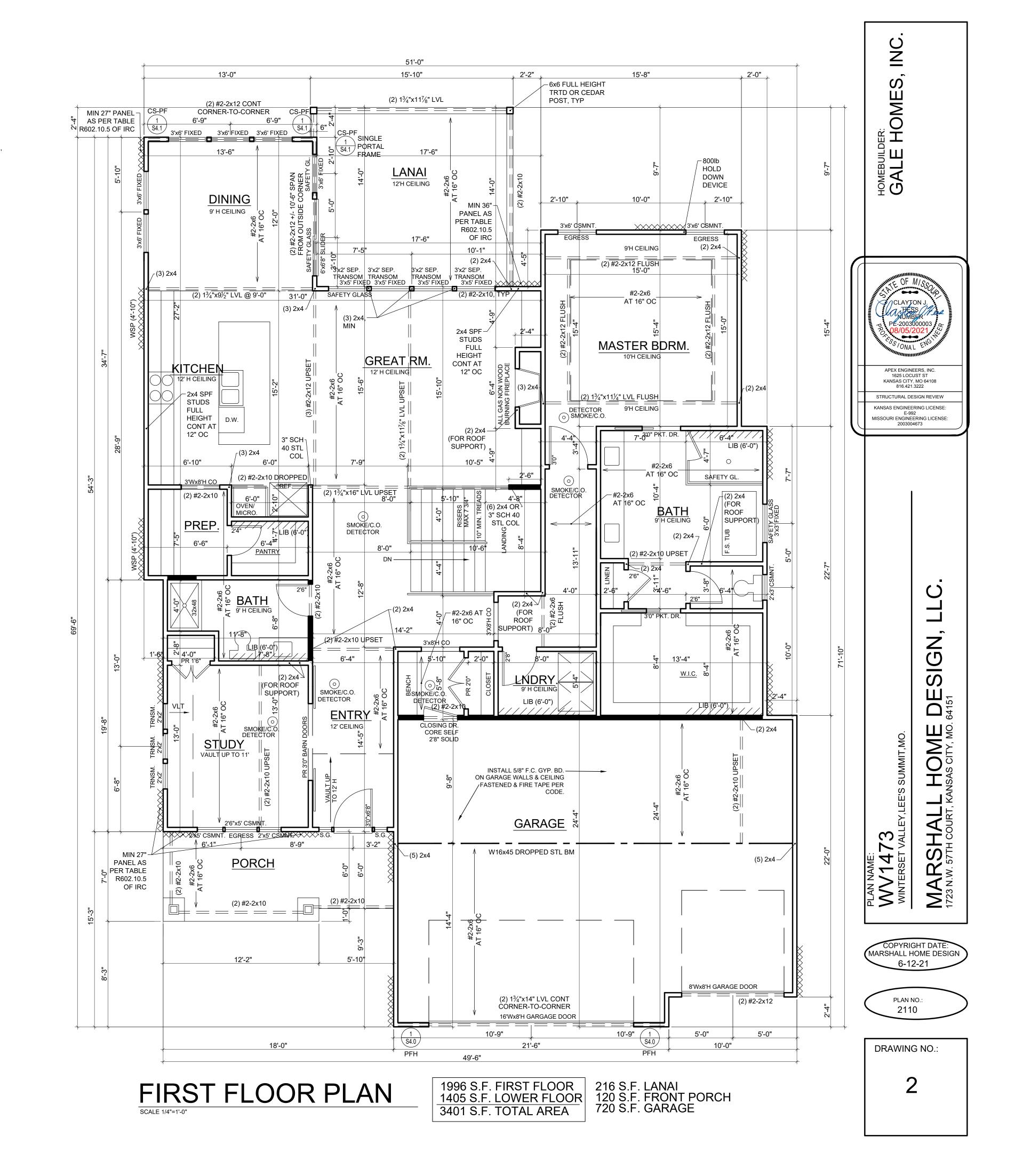
OR

WSP METHOD: WOOD STRUCTURAL PANEL SHEATHING WITH A THICKNESS NOT LESS THAN 38 " WITH MINIMUM SPAN RATING OF 24/0 FOR 16" OC STUD SPACING WITH 6d COMMON NAILS AT 6" OC EDGES AND 12" OC FIELD OR SHEATHING THICKNESS NOT LESS THAN 7 /6" WITH MINIMUM SPAN RATING OF 24 /6 FOR 24" OC SPACING WITH 8d COMMON NAILS AT 6" OC EDGES AND 12" OC IN FIELD. (NOTE: FRAMING MEMBERS 16" OC MAX,UNBLOCKED, AND WITH SHEATHING APPLIED DIRECTLY TO FRAMING

//// INTERIOR BRACED WALLS (REF 2-S4.0):

GB METHOD: ½" MIN. GYPSUM BOARD OVER STUDS SPACED 24" MAX. FASTENED WITH No 6 - 1½" TYPE 'W' OR 'S' DRYWALL SCREWS AT 7" OC EDGES AND FIELD (MIN. 4'-0" SECTION FOR BOTH SIDES.)

LIB METHOD: 1x4 WOOD FASTENED WITH (3) 8d COMMON NAILS OR SIMPSON / USP 16 GA.
TYPE WB (OR EQUAL) STL. X-BRACE(S) AT 45° TO 60° ANGLES, MAXIMUM 16"
O.C. STUD FASTENED PER MANUFACTURER'S SPECIFICATIONS.



COLUMN & F	PIER PAD SCH	HEDULE (REF.	5/S2.0)	
COLUMN MARK	PAD SIZE	REINFORCEMENT	COLUMN SIZE	COLUMN TYPE
Á	30" x 30" x 12"	(4) #4 BAR E.W.	3" NOMINAL	
B	36" x 36" x 12"	(4) #4 BAR E.W.	3" NOMINAL	.0 .7
<u>Ĉ</u>	42" x 42" x 12"	(5) #4 BAR E.W.	3" NOMINAL	DULE 40 PIPE KSI MIN.)
<u></u>	48" x 48" x 12"	(6) #4 BAR E.W.	3" NOMINAL	HEDU EL PI, 36 Ks
É	54" x 54" x 16"	(8) #4 BAR E.W.	3½" NOMINAL (4" OD)	GHi
F	60" x 60" x 16"	(10) #4 BAR E.W.	3½" NOMINAL (4" OD)	

STRUCTURAL NOTES:
- ALL UNMARKED HEADERS MIN

GRADE DF/L (OR EQ.)

= BEARING WALL

- ALL HEADERS AND BEAMS MIN #2

54" x 54" x 16" (8) #4 BAR E.W. 3½" NOMINAL (4" OD)

60" x 60" x 16" (10) #4 BAR E.W. 3½" NOMINAL (4" OD)

1. COLUMN & PAD SIZES SHOWN ARE FOR MAXIMUM COLUMN HEIGHT OF 10'-0", REQUIRES SEPARATE ENGR'D DESIGN IF GREATER THAN 10'-0" TALL.

2. COLUMN & PIER PAD SIZES SHOWN ARE BASED ON AN ASSUMED MINIMUM

ALLOWABLE SOIL BEARING CAPACITY OF 1,500PSF.

COLUM	N & PIER SCHED	ULE
MARK	COLUMN SIZE	PIER DIA.
Ġ	6x6	12"
Â	6x6	16"
À	6x6	18"
k	6x6	24"
\triangle	6x6	28"

- 1. ALL PIERS TO BEAR ON ORIGINAL, UNDISTURBED SOIL OF 1,500 PSF BEARING CAPACITY OR FILL COMPACTED AND TESTED TO CONFORM TO THE RECOMMENDATIONS OF A GEOTECHNICAL ENGINEER.
- PIERS SHALL EXTEND BELOW THE FROST LINE: MIN. DEPTH OF 36" BELOW GRADE.
 POST SHALL BE TREATED OR CEDAR WITH SIMPSON ABU66 POST BASE

DETAIL REFERENCES

- 1 S2.0 TYPICAL FOUNDATION WALL DETAIL
- 2 TYPICAL "UNRESTRAINED" FOUNDATION WALL DETAIL
- 3 S2.0 TYPICAL DEAD MAN DETAIL
- (4) FOUNDATION WALL JUMP DETAIL
- $\frac{5}{(S2.0)}$ COLUMN PAD DETAIL
- 1 TYPICAL STRUCTURAL GARAGE S2.1 SLAB PLAN
- STRUCTURAL GARAGE SLAB
 PIER PAD DETAIL
- 3 STRUCTURAL GARAGE SLAB / WALL SECTION
- 6 S2.1 BASEMENT SLAB
- 1 ALTERNATE BRACED WALL PANEL DETAIL
- 1 APA NARROW WALL BRACING

(SHEET S2.0)

COLUMN AND PIER PAD SCHEDULE

S4.0 METHOD WITHOUT HOLD-DOWNS

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XXXX EXTERIOR BRACED WALLS:

WSP METHOD: WOOD STRUCTURAL PANEL SHEATHING WITH A THICKNESS NOT LESS THAN $\frac{3}{8}$ " WITH MINIMUM SPAN RATING OF 24/0 FOR 16" OC STUD SPACING WITH 6d COMMON NAILS AT 6" OC EDGES AND 12" OC FIELD OR SHEATHING THICKNESS NOT LESS THAN $\frac{7}{16}$ " WITH MINIMUM SPAN RATING OF $\frac{24}{16}$ FOR 24" OC SPACING WITH 8d COMMON NAILS AT 6" OC EDGES AND 12" OC IN FIELD. (NOTE: FRAMING MEMBERS 16" OC MAX, UNBLOCKED, AND WITH SHEATHING APPLIED DIRECTLY TO FRAMING MEMBERS)

//// INTERIOR BRACED WALLS (REF 2-S4.0):

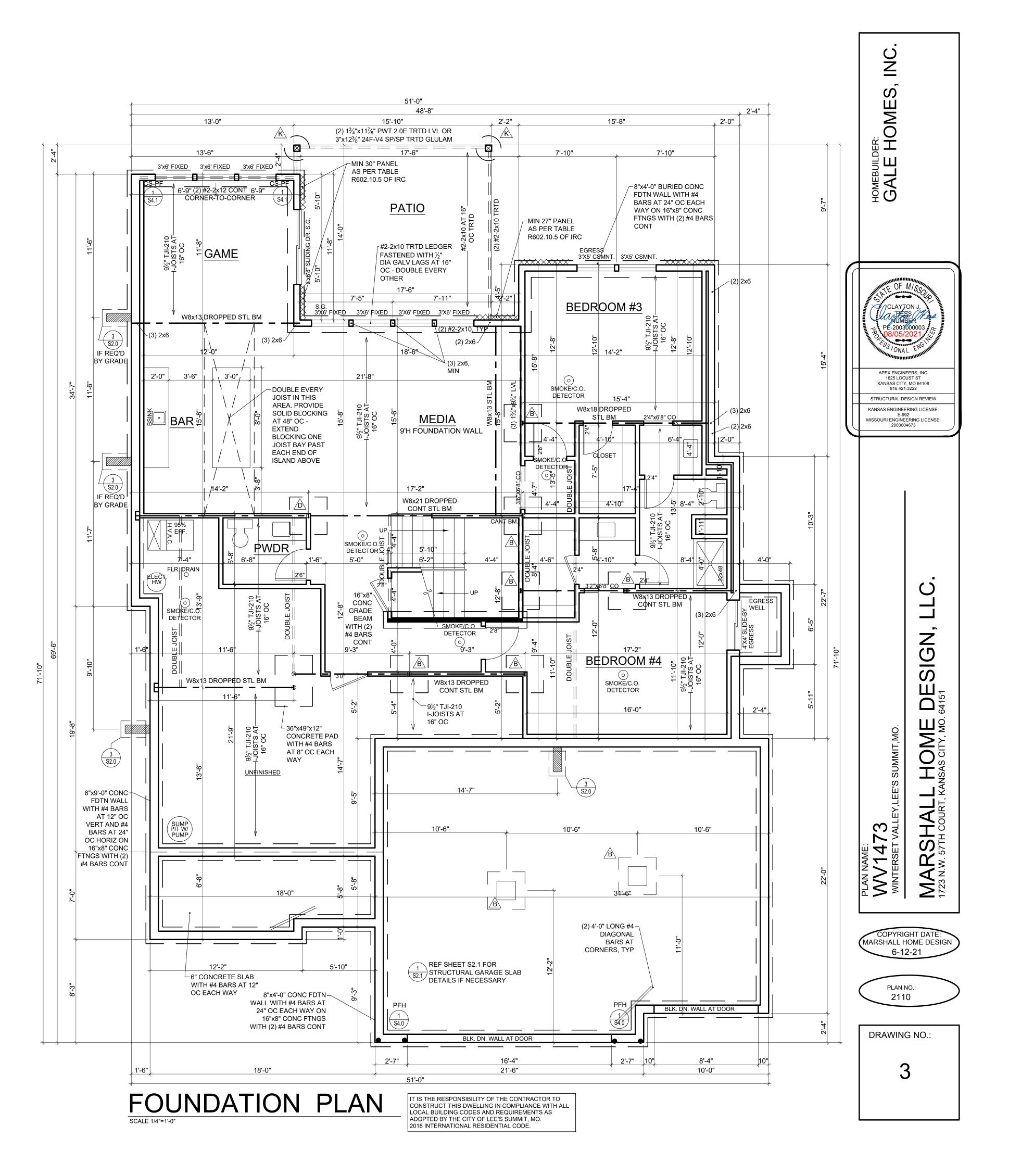
- GB METHOD: ½" MIN. GYPSUM BOARD OVER STUDS SPACED 24" MAX. FASTENED WITH No 6 1¼" TYPE 'W' OR 'S' DRYWALL SCREWS AT 7" OC EDGES AND FIELD (MIN. 4'-0" SECTION FOR BOTH SIDES.)
 OR
- LIB METHOD: 1x4 WOOD FASTENED WITH (3) 8d COMMON NAILS OR SIMPSON / USP 16 GA. TYPE WB (OR EQUAL) STL. X-BRACE(S) AT 45° TO 60° ANGLES, MAXIMUM 16" O.C. STUD FASTENED PER MANUFACTURER'S SPECIFICATIONS.

DEFERRED JOIST SUBMITTAL:

- JOIST DESIGN SHALL BE SUBMITTED TO APEX ENGINEERS, INC. FOR REVIEW PRIOR TO CONSTRUCTION AND INSTALLATION OF JOISTS

- JOIST DESIGNER/ MANUFACTURER SHALL FOLLOW ASSUMED JOIST DIRECTIONS AS CLOSELY AS POSSIBLE TO CONFORM WITH HOUSE STRUCTURE AS A WHOLE

- IF DEVIATIONS FROM ASSUMED JOIST DESIGN ARE REQUIRED, MANUF. SHALL CONTACT APEX



SHEAT		
BUILDING COMPONENT	MATERIAL	FASTENING
	7/16" PLYWOOD	16 GA x 1-3/4" STAPLES AT 3" OC EDGES AND 6" OC IN FIELD
ROOF SHEATHING ¹	1x4 #3 FURRING	1/2" CROWN STAPLES
		8d COMMON NAILS AT 6" OC EDGES
	3/4" T&G YELLOW PINE PLYWOOD	AND 12" OC IN THE FIELD 14 GA x 2" STAPLES AT 4" OC
FLOOR SHEATHING ¹	APPLIED PERPENDICULAR TO	EDGES AND 8" OC IN THE FIELD
	JOISTS AND ENDS STAGGERED	12.5 GA x 1-1/2" RING OR SCREW
		SHANK NAILS AT 6" OC EDGES AND 8" OC IN THE FIELD
		7" OC NAILED / 12" OC SCREWED WITH
		13 GA, 1-3/8" LONG, 19/64" HEAD; 0.098
CEILING COVERING ¹	1/2" GYPSUM SHEATHING	DIA, 1-1/4" LONG, ANGRINGED; 5d COOLER NAIL, 0.086 DIA, 1-5/8" LONG,
		15/64" HEAD; OR GYP BD NAIL, 0.086 DIA,
		1-5/8" LONG, 9/32" HEAD
INTERIOR WALL		6d COMMON NAILS; 1-5/8" GALVANIZED STAPLES; 1-1/4"
COVERING ¹	1/2" GYPSUM SHEATHING	SCREWS, TYPE W OR S- AT 4" OC
EVERIOR WALL		EDGES AND 8" OC IN THE FIELD
EXTERIOR WALL SHEATHING	MIN 3/8" APA RATED SHEATHING	8d COMMON NAILS AT 6" OC EDGES AND 12" OC IN THE FIELD
		7.1.2 .2
	*SUPPORTING 2 FLOORS, ROOF,	*TOE NAIL RIM JOIST TO SILL OR TOP 8d COMMON AT 6" OC; 3"x0.131" AT 6" OC; 3"x0.131"
	AND CEILING OR LESS.	PLATE: AT 6" OC *TOE NAIL STUD TO TOP AND SOLE PLATE: (4) 8d COMMON; (4) 3"x0.131"
	*HEIGHT: 10'-0" OR LESS SIZE: NOM 2x4 (NOM 2x6 WHEN	*END NAIL TOP AND SOLE PLATE TO STUD: (2) 16d COMMON; (3) 3"x0.131" *FACE NAIL BUILT-UP CORNER STUDS: 16d AT 24" OC; 3"x0.131" AT 16"
	SUPPORTING 2 FLOORS, CEILING,	*FACE NAIL BUILT-UP CORNER STUDS (AT BRACED WALL PANELS): 16d COMMON NAILS AT 16" OC; 3"x0.131" AT 12" OC
CONVENTIONAL WOOD	AND ROOF)	*FACE NAIL JACK STUDS/TRIMMERS SUPPORTING HEADERS WITH: 10d NAILS AT 6" OC
FRAMED WALLS	*SPECIES: DOUG-FIR, HEM-FIR, SOUTH PINE, SPRUCE-PINE-FIR	*FACE NAIL DBL TOP PLATE: 16d COMMON AT 16" OC; 3"x0.131" AT 12" OC; 3"x0.128" AT 12" OC
	*MAXIMUM SPACING 16" OC	*DBL TOP PLATES WITH MIN 48" OFFSET OF EACH. FACE NAIL LAPPED AREA WITH: (8) 16d COMMON; (12) 3"x0.131"; (12) 3"x0.128"
	*STUDS 10' LENGTH OR LESS	*FACE NAIL DBL TOP PLATES AT LAPPED CORNERS AND INTERSECTIONS WITH: (2) 16d COMMON; (3) 3"x0.131"; (3) 3"x0.128"
	SHALL BE #3 STANDARD, OR STUD GRADE	*FACE NAIL SOLE PLATE TO FRAMING SYSTEM WITH: 16d COMMON AT 16" OC; 3"x0.131" AT 12" OC
	*STUDS OVER 10' LENGTH SHALL	*TOENAIL BRIDGING TO JOIST, EACH END: (2) 8d COMMON; (2) 3"x0.131"; (3) 3"x0.128" *FACE NAIL LEDGER STRIPS SUPPORTING
	BE MIN #2 GRADE	JOISTS OR RAFTERS WITH: (3) 16d COMMON; (4) 3"x0.131"; (4) 3"x0.128"
		*TOE NAIL HEADERS TO WALL STUDS WITH (4) 8d
CONVENTIONAL WOOD	PER PLAN	NAILS AT EACH END.
HEADER FRAMING		*FACE NAIL DOUBLE PIECE HEADERS WITH 16d NAILS AT 16" CENTERS ALONG EACH EDGE.
RAFTER TIES ²	MIN 2x4 MEMBERS AT EACH RAFTER	REF TABLE R802.5.2
COLLAR TIES	MIN 1x4 MEMBERS AT 48" OC	FACENAIL TO RAFTERS IN UPPER 1/3 OF ATTIC SPACE WITH (3) 10d NAILS AT EACH
NOTE: ALL SHEATHING MA	TERIALS TO BE APPLIED PERPENDICUL	
	E REQUIRED WHEN A STRUCTURAL RIDULTED ROOM). SUCH SHALL BE NOTED	DGE HAS BEEN PROVIDED AND ADEQUATELY AS "STRUCTURAL" ON THE PLAN.
BUILDING COMPONENT	FASTEN TO	FASTEN WITH
DAETERO	TO RIDGE/VALLEY/HIP RAFTERS	TOENAIL WITH (4) 16d ENDNAIL WITH (3) 16d
RAFTERS	TO PLATE	TOENAIL WITH (2) 16d
	TO TOP PLATE	TOENAIL WITH (3) 8d AT EACH END
CEILING JOISTS		DISTS RUN PARALLEL TO RAFTERS D RAFTERS WITH (3) 10d MIN
FI C C P 15:555	TO SILL OR GIRDER	TOENAL WITH: (3) 8d COMMON; (3) 3"x0.131"; (4) 3"x0.128"
FLOOR JOISTS	TO RIM JOIST	ENDNAIL WITH: (3) 16d COMMON; (4) 3"x0.131"; (4) 3"x0.128
RACED WALL PANELS ERP TO FRAMING	TO FRAMING MEMBER	SOLE PL, 16" OC WITH: (3) 16d COMMON; (4) 3"x0.131" TOP PL, 6" OC WITH: 8d COMMON; 3"x0.131"
EMBERS ABOVE/BELOW:	TO FRAMING AND	SOLE PL, 16" OC WITH: (3) 16d COMMON; (4) 3"x0.131"
RALLEL TO FRAMING EMBERS ABOVE/BELOW:	BLOCKING AT 16" OC	AND AT EACH BLOCK: (3) 16d COMMON; (4) 3"x0.131" TOP PL, 6" OC WITH: 8d COMMON; 3"x0.131"
		AND AT EACH BLOCK: (3) 8d COMMON; 3"x0.131"
		ULE ARE MINIMUM IRC REQUIREMENTS. SPECIFIC PROJECT RAL DRAWINGS, IF REQUIRED BY APEX ENGINEERS DESIGN

ENERGY REQUIREMENTS

1. LIGHTING FIXTURES PENETRATING THE THERMAL ENVELOPE SHALL BE IC-RATED, LEAKAGE RATED, AND SEALED TO THE GYPSUM WALLBOARD AS REQUIRED PER N1102.4.5. 2. PROGRAMMABLE THERMOSTATS SHALL BE INSTALLED AS REQUIRED PER

3. AIR HANDLERS SHALL BE RATED FOR MAXIMUM 2% AIR LEAKAGE RATE PER

N1103.3.2.1. 4. BUILDING FRAMING CAVITIES SHALL NOT BE USED AS DUCTS OR PLENUMBS PER N1103.3.5

5. HOT WATER PIPES SHALL BE INSULATED AS REQUIRED PER N1103.4. 6. ALL EXHAUST FANS SHALL TERMINATE TO THE BUILDING EXTERIOR AS REQUIRED PER M1501.1.

7. MAKEUP AIR SYSTEMS SHALL BE INSTALLED FOR KITCHEN EXHAUST HOODS THAT EXCEED 400 CFM AS REQUIRED PER M1503.6. 8. AN AIR HANDLING SYSTEM SHALL NOT SERVE BOTH THE LIVING SPACE AND THE GARAGE PER M1601.6.

ENERGY CONSERVATION

THE ENERGY EFFICIENCY OF THE DWELLING SHALL COMPLY WITH THE FOLLOWING TABLE(S) (WHERE THERE ARE DISCREPANCIES BETWEEN THIS TABLE AND THE PLANS, THE MOST RESTRICTIVE SHALL APPLY). IF TABLE 1 IS NOT COMPLETED AND ACCOMPANIED BY RESCHECK CALCULATIONS, THEN TABLE 2 SHALL BE APPLIED. TARLE 1 - ResCheck COMPLIANCE SOFTWARE (FILL IN APPLICABLE

TABLE 1 - RESCHECK COMPLIANCE SOFTWARE (FILL IN APPLICABLE
VALUES FROM ResCheck CALCS.)	1
BUILDING ELEMENT	MIN VALUE
WALLS - FRAMED	R-
WALLS - BASEMENT	R-
FLOORS - UNCONDITIONED SPACE	R-
FLOORS - OVER OUTSIDE AIR	R-
FLOORS - CRAWL SPACE	R-
SLAB - PERIMETER	R-
CEILING - FLAT	R-
CEILING - CATHEDRAL	R-
DOORS - GLASS	U-
DOORS - SOLID	U-
WINDOWS - OPERABLE	U-
WINDOWS - FIXED	U-
WINDOWS - OTHER	U-
FURNACE	AFUE-
AIR CONDITIONER	SEER-
NOTE: FOR LISE OF TARLE 1 A ResCheck COMPI	IANCE FORM MUST BE

INOTE: FOR USE OF TABLE 1 A ResCheck COMPLIANCE FORM MUST BE SUBMITTED WITH PLANS.
 TABLE 2 -PRESCRIPTIVE ENVELOPE (MIN PRESCRIPTIVE APPROACH

ACCEPTABLE FOR ANY DWELLING.)

BUILDING ELEMENT	MIN VALUE
CEILING - FLAT	R-49
CEILING - CATHEDRAL**	R-30
CEILING - CATHEDRAL	R-38
FLOORS - UNCONDITIONED SPACED	R-19
FLOORS - OVER OUTSIDE AIR	R-30
WALLS - BASEMENT	R-10 (CONT) OR R-13 (CAVITY)
CONCRETE SLAB ON GRADE	R-10 (FOR 2FT)
SKYLIGHTS	U=0.55
WALLS - EXTERIOR (2x4)	R-13 (CAVITY) + R-5 (CONT)
WALLS - EXTERIOR (2x6)	R-20
WALLS - CRAWL SPACE	R-19
GLAZING*	U<=0.32
GLAZING*	SHGF<=0.40
NOTE:	

TABLE 2 PER IRC TABLE N1102.1.2 *DEFAULT U-FACTOR FOR DOUBLE PANE, ARGON FILLED LOW-E TREATMENT IS U=0.35 **LIMITED TO AREAS LESS THAN 500 SQ-FT OR 20% OF CEILING AREA

DEFERRED SUBMITTALS

1. THE ARCHITECT OR ENGINEER OF RECORD SHALL LIST THE DEFERRED SUBMITTALS ON THE PLANS FOR REVIEW BY THE BUILDING OFFICIAL. DOCUMENTS FOR DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE ARCHITECT OR ENGINEER OF RECORD WHO SHALL REVIEW THEM AND FORWARD THEM TO THE BUILDING OFFICIAL WITH A NOTATION INDICATING THAT THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED AND FOUND TO BE IN THE GENERAL CONFORMANCE TO THE DESIGN OF THE BUILDING. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL. DEFERRED SUBMITTALS ARE DEFINED AS THOSE PORTIONS OF THE DESIGN THAT ARE NOT SUBMITTED AT THE TIME OF THE APPLICATION AND THAT ARE TO BE SUBMITTED TO THE BUILDING OFFICIAL WITH A SPECIFIED PERIOD. DEFERRAL OF ANY SUBMITTAL ITEMS SHALL HAVE THE PRIOR APPROVAL OF THE BUILDING OFFICIAL.

2. DEFERRED SUBMITTAL ITEMS (WHEN APPLICABLE):

- A. TRUSSES B. I-JOISTS
- C. GUARDRAILS AND HANDRAILS
- D. STEEL FABRICATED STAIRS
- E. PRE-MANUFACTURED CANOPIES AND AWNINGS
- F. PRECAST HOLLOW CORE SLABS G. GROUND IMPROVEMENT AND/OR STRUCTURAL FOUNDATION SOLUTIONS (SUCH AS DRILLED PIERS)

CONCRETE

CONCRETE SHALL BE AIR ENTRAINED WITH A MINIMUM COMPRESSIVE STRENGTH OF 28 DAYS OF 2,500 PSI FOR BASEMENT AND INTERIOR FLOOR SLABS, 3,000 PSI FOR BASEMENT AND FOUNDATION WALLS. AND 3.500 FOR PORCHES, CARPORTS, AND GARAGE FLOOR SLABS.

GLAZING

GLAZING IN HAZARDOUS LOCATIONS AS IDENTIFIED IN IRC SECTION R308.4 SHALL BE OF APPROVED SAFETY GLAZING MATERIALS: GLASS IN STORM DOORS: INDIVIDUAL FIXED OR OPENABLE PANELS ADJACENT TO A DOOR WHERE THE NEAREST VERTICAL EDGE IS WITHIN A 24" ARCH OF THE DOOR IN A CLOSED POSITION AND WHOSE BOTTOM EDGE IS WITHIN 60" OF THE FLOOR: WALLS ENCLOSING STAIRWAYS AND LANDINGS WHERE THE GLAZING IS WITHIN 60" OF THE TOP OR BOTTOM OF THE STAIR; ENCLOSURES FOR SPAS, TUBS, SHOWERS, AND WHIRLPOOLS; GLAZING IN FIXED OR OPENABLE PANELS EXCEEDING 9 SQUARE FEET AND WHOSE BOTTOM EDGE IS LESS THAN 18"

ABOVE THE FLOOR OR WALKING SURFACE WITHIN 36".

EMERGENCY EGRESS AND RESCUE

1. PROVIDE ONE WINDOW FROM EACH BEDROOM THAT HAS A MINIMUM OPENABLE AREA OF 5.7 SQUARE FEET WITH A MINIMUM OPENABLE HEIGHT OF 24 INCHES AND WIDTH OF 20 INCHES.

2. BASEMENT EGRESS TO MEET THE REQUIREMENTS OF IRC SECTION 310. 3. SMOKE ALARMS SHALL BE INSTALLED AS REQUIRED PER IRC 2018 SECTION R314. 4. PROVIDE SMOKE ALARMS IN EACH SLEEPING ROOM, OUTSIDE OF EACH SLEEPING AREA, ON EACH FLOOR INCLUDING BASEMENTS AND HABITABLE ATTICS, AND NOT LESS THAN 3'-0" HORIZONTALLY FROM DOOR OR OPENING OF A BATHROOM THAT CONTAINS A BATHTUB OR SHOWER. ALARMS SHALL BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTUATION OF ONE ALARM WILL ACTIVATE ALL OF THE ALARMS IN THE DWELLING

5. CARBON MONOXIDE ALARMS SHALL BE INSTALLED AS REQUIRED PER IRC 2018 SECTION R315.

6. CARBON MONOXIDE ALARMS SHALL BE INSTALLED OUTSIDE OF EACH SEPARATE SLEEPING AREA. WHERE A FUEL-BURNING APPLIANCE IS LOCATED WITHIN A BEDROOM OR ITS ATTACHED BATHROOM, A CARBON MONOXIDE ALARM SHALL BE INSTALLED WITHIN THE BEDROOM.

FRAMING GENERAL

1. ALL LUMBER SIZES ARE FOR DOUGLAS FIR-LARCH UNLESS NOTED OTHERWISE. 2. ALL HEADERS TO BE MIN (2) #2-2x10 UNLESS NOTED OTHERWISE. 3. BLOCK CANTILEVERS, DOORJAMBS, AND OVER BEAMS.

4. ALL HEADERS TO BEAR ON A MINIMUM OF (2) 2x4 STUD POSTS UNLESS NOTED 5. INTERIOR NON-BEARING WALLS, OTHER THAN THOSE RESTING DIRECTLY ON

THE FOOTING SHALL BE ISOLATED FROM THE FLOOR FRAMING ABOVE. 6. WHERE JOISTS RUN PARALLEL TO FOUNDATION WALLS, SOLID BLOCKING FOR A MINIMUM OF (2) JOIST SPACES BE PROVIDED TO A MAXIMUM OF 2'-0" CENTERS TO TRANSFER LATERAL LOADS ON THE WALL TO THE FLOOR DIAPHRAGM. THE BLOCKING SHALL BE SECURELY NAILED TO THE JOISTS AND FLOORING. NAIL JOISTS AND BLOCKING TO SILL PLATE WITH (3) 10d NAILS (IRC SECTION R602.3.(1) 7. IF DUCTS ARE INSTALLED IN THE FIRST JOIST SPACE(S), NAIL 2x4s FLAT AT 2'-0" CENTERS WITHIN THE JOIST SPACE(S) AND THEN PROVIDE SOLID BLOCKING. INSTALLED UPRIGHT, IN THE NEXT TWO JOIST SPACES. SECURE THE 2x4s TO THE SILL PLATE WITH (4) 10d NAILS.

8. ALL SILLS AND SLEEPERS SUPPORTED ON CONCRETE OR MASONRY AND FURRING ATTACHED TO CONCRETE OR MASONRY SHALL BE OF DECAY RESISTANT MATERIALS

9. JOISTS UNDER BEARING PARTITIONS SHALL BE DOUBLED AND COMPLY WITH IRC SECTION R502.4. 10. JOISTS FRAMING FROM OPPOSITE SIDES OVER BEARING SUPPORTS SHALL LAP A

MINIMUM 3" AND SHALL BE NAILED TOGETHER WITH A MINIMUM 10d FACE NAILS. 11. JOISTS FRAMING INTO A WOOD GIRDER OR BEAM SHALL BE SUPPORTED BY APPROVED FRAMING ANCHORS OR MINIMUM 2"x2" LEDGER STRIPS. 12. FRAMING OF OPENINGS - HEADERS AND TRIMMERS SHALL BE OF SUFFICIENT CROSS SECTION TO SUPPORT THE FLOOR FRAMING. TRIMMER JOISTS SHALL BE DOUBLED WHEN THE HEADER IS SUPPORTED MORE THAN 3'-0" FROM THE TRIMMER JOIST BEARING. WHEN THE HEADER SPAN EXCEEDS 4'-0", THE

HEADER AND TRIMMER SHALL BE DOUBLED. 13. JOISTS AT SUPPORTS SHALL BE SUPPORTED LATERALLY AT THE ENDS BY FULL-DEPTH SOLID BLOCKING NOT LESS THAN 2" NOMINAL THICKNESS OR BY ATTACHMENT TO A HEADER, BAND OR RIM JOIST OR TO AN ADJOINING STUD OR OTHERWISE PROVIDED WITH LATERAL SUPPORT TO PREVENT ROTATION. 14. WATER-RESISTIVE BARRIER SHALL BE PROVIDED OVER ALL EXTERIOR WALLS. ONE LAYER OF No 15 ASPHALT FELT OR ANY OTHER BARRIER THAT

MEETS ASTM D226 TYPE 1 FELT. (R703.2)

15. WHERE CEILING JOISTS ARE NOT INSTALLED CONNECTED TO THE RAFTERS AT THE TOP PLATE AND/OR WHERE CEILING JOISTS ARE NOT INSTALLED PARALLEL TO THE RAFTERS, RAFTER TIES SHALL BE INSTALLED IN THE LOWER 1/3 OF THE ATTIC SPACE AND IN ACCORDANCE WITH TABLE 1-S1.0. 16. COLLAR TIES SHALL BE PROVIDED IN THE UPPER 1/3 OF THE ATTIC SPACE IN ACCORDANCE WITH TABLE 1-S1.0.

GARAGE

1. THE GARAGE FLOOR SHALL SLOPE TOWARDS THE GARAGE DOORWAYS. 2. DOORS BETWEEN THE GARAGE AND THE DWELLING - MINIMUM 1-3/8" SOLID CORE OR HONEY COMBED STEEL DOOR OR 20-MINUTE FIRE RATED. 3. THE GARAGE SHALL BE SEPARATED FROM THE RESIDENCE AND ITS ATTIC AREA BY 5/8", TYPE X GYPSUM BOARD, OR EQUIVALENT MATERIALS APPROVED FOR ONE-HOUR FIRE-RESISTIVE CONSTRUCTION, APPLIED TO GARAGE SIDE. WHERE THE SEPARATION IS A FLOOR-CEILING ASSEMBLY, THE STRUCTURE SUPPORTING THE SEPARATION SHALL ALSO BE PROTECTED BY 5/8", TYPE X GYPSUM BOARD, OR MATERIALS APPROVED FOR ONE-HOUR FIRE-RESISTIVE CONSTRUCTION OR EQUIVALENT, APPLIED TO THE GARAGE SIDE. PULL DOWN STAIRS LOCATED WITHIN GARAGE SHALL BE RATED TO BE ADEQUATELY PROTECTED WITH MATERIALS APPROVED FOR ONE-HOUR FIRE-RESISTIVE CONSTRUCTION. ATTIC ACESS PANELS LOCATED WITHIN GARAGE SHALL BE OF 5/8", TYPE X GYPSUM BOARD, OR MATERIALS FOR ONE-HOUR FIRE-RESISTIVE

CONSTRUCTION.

4. GARAGE DOOR AND FRAME- THE H-FRAME FOR THE ATTACHMENT OF THE

CONSIDER OF THE FOLLOWING: 2x6 TRACK AND COUNTER BALANCE SHALL CONSIST OF THE FOLLOWING: 2x6 VERTICAL JAMBS RUNNING FROM THE FLOOR TO CEILING ATTACHED WITH 1-3/4" x 0.120" NAILS AT 7" OC STAGGERED WITH (7) 3-1/4" x 0.120" NAILS THRU THE JAMB INTO THE HEADER, MINIMUM 2x8 HEADER FOR ATTACHMENT OF COUNTER BALANCE SYSTEM.

STAIRWAYS

1. STAIRWAYS SHALL PROVIDE A MAXIMUM 7-3/4" RISE AND MINIMUM 10" RUN. 2. PROVIDE MINIMUM 36" GUARDRAILS ON THE OPEN SIDES OF RAISED FLOORS, PORCHES. AND BALCONIES: MINIMUM 34" GUARDRAILS ON THE OPEN SIDES OF STAIRWAYS LOCATED MORE THAN 30" ABOVE THE FLOOR OR GRADE BELOW. GUARDRAIL ENCLOSURES SHALL HAVE INTERMEDIATE RAILS OR ORNAMENTAL PATTERNS THAT DO NOT ALLOW PASSAGE OF A SPHERE 4" IN DIAMETER. 3. EACH STAIRWAY OF THREE OR MORE RISERS SHALL PROVIDE A CONTINUOUS HANDRAIL ON AT LEAST ONE SIDE BETWEEN 34" AND 38" ABOVE THE NOSING OF THE TREADS

4. HANDRAILS SHALL HAVE A CIRCULAR CROSS SECTION OF 1-1/4" MINIMUM TO 2" MAXIMUM OR OTHER APPROVED GRASPABLE SHAPER PER IRC SECTION

5. PROVIDE A MINIMUM 6'-8" OF HEADROOM CLEARANCE IN STAIRWAYS. 6. ENCLOSED ACCESSIBLE SPACE UNDER STAIRWAYS SHALL HAVE WALLS AND THE UNDERSIDE OF THE STAIR AND LANDING PROTECTED WITH 1/2" GYPSUM BOARD ON ENCLOSURE SIDE PER IRC SECTION 302.7. 7. SPIRAL STAIRS TO BE CONSTRUCTED PER IRC SECTION 311.7.10.1.

8. SPACE STRINGERS AT 16" OC MAX.

GENERAL

1. PLANS SHALL COMPLY WITH THE 2018 INTERNATIONAL RESIDENTIAL CODE WITH AMENDMENTS AS ADOPTED BY THE GOVERNING JURISDICTION. IF ANY CHANGES OR DEVIATIONS FROM THE PLANS ARE MADE DURING CONSTRUCTION, CONTRACTOR SHALL NOTIFY THE APPROPRIATE AUTHORITY AND ENGINEER OF RECORD. EITHER (OR BOTH) OF WHOM MAY REQUIRE REVISED DRAWINGS OR CALCULATIONS AT ITS DISCRETION

2. REPRODUCTION, ALTERATION, OR RE-USE BY ANY METHOD OF ALL OR PORTIONS OF THESE STRUCTURAL PLANS OR VARIATIONS THEREOF WITHOUT WRITTEN PERMISSION FROM APEX ENGINEERS, INC IS STRICTLY PROHIBITED. THE DRAWINGS AND DETAILS OF THIS SHEET SET, BEING INSTRUMENTS OF SERVICE. ARE AND SHALL REMAIN THE PROPERTY OF APEX ENGINEERS, INC. AN UNSEALED VERSION, OR A VERSION VOID OF APEX ENGINEERS LOGO AND/OR TITLE BLOCK,

SHALL BE CONSIDERED AN UNAUTHORIZED REPRODUCTION. 3. WHERE DISCREPENCIES EXIST BETWEEN THE STANDARD COMMENTS, NOTES FROM THE DESIGN PROFESSIONAL OR THE CODE, THE MOST RESTRICTIVE SHALL

APPLY. THE DWELLING SHALL COMPI	<u>LY WITH THE FOLLOWIN</u>	NG LOAD CONDITIONS:
AREA	MIN DEAD LOAD	MIN LIVE LOAD
EXTERIOR BALCONIES	10 PSF	60 PSF
DECKS	10 PSF	40 PSF
CEILING JOISTS/ATTICS NO STORAGE - SCUTTLE ACCESS ONLY ROOF SLOPE 3:12 OR LESS	5 PSF	10 PSF
CEILING JOISTS/ATTICS WITHOUT STORAGE - SCUTTLE ACCESS ONLY ROOF SLOPE OVER 3:12 OR LESS	10 PSF	10 PSF
CEILING JOISTS/ATTICS WITH STORAGE - DOOR/PULL DOWN LADDER ACCESS	10 PSF	20 PSF
ROOMS - NON-SLEEPING	10 PSF	40 PSF
ROOMS - SLEEPING	10 PSF	30 PSF
ROOF - LIGHT ROOF COVERING	10 PSF	20 PSF
ROOF - HEAVY ROOF COVERING CONCRETE/TILE/SLATE	20 PSF	20 PSF
NOTE: HEAVY ROOF COVERING WILL	NOT BE INSTALLED OR	LISED IN

NOTE: HEAVY ROOF COVERING WILL NOT BE INSTALLED OR USED IN THE DESIGN CALCULATIONS UNLESS IT IS SPECIFICALLY NOTED ON

THE PLANS THAT THE DESIGN IS FOR HEAVY ROOF COVERINGS.

FOUNDATIONS

1. THE FOUNDATION DESIGN SHALL BE BASED ON A MINIMUM SOIL BEARING CAPACITY OF 2000 PSF. UNLESS OTHERWISE INDICATED ON THE PLANS OR IF MODIFIED BY AN ENGINEERING REPORT BASED ON ACTUAL SITE CONDITIONS. 2. CONCRETE SHALL MEET THE FOLLOWING SPECIFIED DESIGN STRENGTH

- 2500 PSI FOR BASEMENT FLOOR SLABS ON UNDISTURBED SOIL - 3000 PSI FOR FOOTINGS AND FOUNDATION WALLS

CRITERIA:

- 3500 PSI FOR GARAGE FLOOR SLABS 3. FOOTINGS SHALL EXTEND BELOW THE FROST LINE; MINIMUM DEPTH 36 INCHES BELOW GRADE.
- 4. UNLESS OTHERWISE NOTED ON THE PLANS OR IF SITE CONDITIONS REQUIRE OTHERWISE, FOOTINGS SHALL BE A MINIMUM OF 16" WIDE AND 8" DEEP WITH (2) #4 BARS CONTINUOUS. 5. COLUMN PÁDS SHALL BE A MINIMUM 30"x30"x12" WITH (4) #4 BARS EACH WAY
- UNLESS NOTED OTHERWISE. 6. UNLESS NOTED OTHERWISE ON THE PLANS, FOUNDATION WALLS SHALL BE MINIMUM 8" THICK x 8'-0" (OR 9'-0") TALL AND REINFORCED PER DETAIL 1-S2.0 (AND 2-S2.0 WHERE APPLICABLE). FOUNDATION WALLS GREATER THAN 10'-0"
- INTERIOR OR EXTERIOR DEAD-MAN FOR ANY STRAIGHT WALL PANELS EXCEEDING 20'-0" IN LENGTH (REF 3-S2.0) 7. REINFORCEMENT SHALL BE MINIMUM GRADE 40 UNLESS NOTED OTHERWISE. REINFORCEMENT SHALL LAP A MINIMUM OF 24" AT ENDS, SPLICES, AND AROUND

TALL REQUIRE A SEPERATE ENGINEERED DESIGN. PROVIDE A 2'-0" LONG

- CORNERS 8. FOUNDATION WALLS SHALL BE BACKFILLED WITH A CLEAN LEAN CLAY (OR BETTER) LOW VOLUME CHANGE MATERIAL, ON-SITE MATERIAL MAY BE USED IF DEEMED ACCEPTABLE BY THE GEOTECHNICAL ENGINEER OF RECORD. 9. FOUNDATION WALLS WILL NOT ACHIEVE FULL STRENGTH UNTIL THE BASEMENT SLAB AND THE FIRST FLOOR DECK HAVE BEEN PROPERLY PLACED. IF BACKFILLING THE INTERIOR OF THE FOUNDATION WALL WITH GREATER THAN 8" OF EARTHEN FILL OR 24" OF GRANULAR FILL, A STRUCTURAL BASEMENT SLAB. OR ALTERNATE ENGINEERED SOLUTION (i.e. ENGINEERED FILL) WILL BE
- REQUIRED. 10. WHERE JUMPS OR STEPS IN ELEVATION OCCUR FOUNDATION WALLS AND FOOTINGS SHALL BE FORMED CONTINUOUS AND POURED PER DETAIL 4-S2.0. 11. CONCRETE FLOOR SLABS SHALL BE A MINIMUM 4" THICK OVER A MINIMUM 4" BASE OF 1/2" OR 3/4" CLEAN GRADED ROCK, UNLESS NOTED OTHERWISE OR IF
- SITE CONDITIONS REQUIRE OTHERWISE. 12. PROVIDE A MIN 6 MIL THICK POLYETHYLENE MOISTURE BARRIER OVER POURUS GRAVEL BASE UNDER BASEMENT FLOOR SLAB PER R405.2.2. LAP JOINTS MINIMUM 6" (NOT REQUIRED FOR GARAGE SLABS OR DETACHED
- ACCESSORY BUILDINGS). 13. FOR A STRUCTURAL REINFORCED CONCRETE FLOOR OVER A USABLE AREA, SUCH AS A GARGE FLOOR LOCATED OVER A STORAGE AREA. SUBMIT SEALED ENGINEERED DETAILS AND CALCULATIONS.
- 14. GARAGE SLABS AND BASEMENT OVERDIGS SUPPORTED BY FILL CONSISTING OF MORE THAN 24" OF GRANULAR FILL OR 8" OF EARTH SHALL BE REINFORCED PER DETAILS 1-S2.1 AND 6-2.1 RESPECTIVELY. WHERE THE LIMITATIONS OF DETAILS 1-S2.1 AND 6-S2.1 ARE NOT MET, A SEPARATE ENGINEERED DESIGN SHALL BE REQUIRED.
- 15. BASEMENT FOUNDATION SILL PLATES SHALL BE BOLTED TO THE FOUNDATION WITH A MINIMUM OF 1/2" ANCHOR BOLTS EMBEDDED AT LEAST 7" INTO THE CONCRETE AND SPACED NOT MORE THAN 3'-0" ON CENTER AND WITHIN 12" OF EACH END PIECE.
- 16. FOUNDATION WALLS SHALL BE DAMP-PROOFED PER IRC SECTION R406. 17. PROVIDE A MINIMUM 4" PERFORATED DRAIN AROUND USABLE SPACE BELOW GRADE OR OTHER EQUIVALENT MATERIALS PER IRC SECTION 405.1. THE PIPE SHALL BE PLACED ON A MINIMUM OF 2" OF WASHED GRAVEL OR CRUSHED ROCK AND COVERED WITH NOT LESS THAN 6". THE DRAIN SHALL DAYLIGHT TO THE EXTERIOR BELOW THE FLOOR LEVEL OR TERMINATE IN A MINIMUM 20 GALLON
- 18. INTERIOR BEARING WALLS AND COLUMNS SHALL BE ISOLATED FROM THE
- BASEMENT FLOOR SLAB. 19. INTERIOR NON-BEARING WALLS, OTHER THAN THOSE RESTING DIRECTLY ON THE FOOTING, SHALL BE ISOLATED FROM THE FLOOR FRAMING ABOVE. 20. ALL EARTH RETAINING STRUCTURES ON THE SITE GREATER THAN 4'-0" TALL (EXCLUDING CONCRETE FOUNDATION WALLS RESTRAINED AT BOTH TOP AND BOTTOM) SHALL REQUIRE A SEPARATE ENGINEERED DESIGN (i.e. RETAINING
- WALLS, WING WALLS, ETC.). 21. INSULATION SHALL BE INSTALLED FOR ALL BASEMENT WALLS AS REQUIRED PER N1102.2.9. 22. A CONCRETE ENCASED GROUNDING ELECTRODE CONNECTION SHALL BE
- PROVIDED TO THE ELECTRICAL SERVICES PER E3608.1. 23. ANY GEOTECHNICAL IMPROVEMENT METHODS AND/OR STRUCTURAL SOLUTIONS (SUCH AS DRILLED PIERS) EMPLOYED TO ADDRESS UNACCEPTABLE SUBGRADE CONDITIONS SHALL BE SUBMITTED TO EOR AS ENGINEERED SHOP DRAWINGS FOR REVIEW AND APPROVAL.

EXPANSIVE SOILS DISCLAIMER:

THESE PLANS HAVE BEEN PREPARED BASED ON A PRESUMPTIVE ALLOWAB BEARING CAPACITY AS ALLOWED BY IRC CODE AND THE LOCAL ENFORCING JURISDICTION.

APEX ENGINEERS, INC. (APEX) RECOMMENDS THAT ALL FOOTING EXCAVATION BE EVALUATED BY A LICENSED GEOTECHNICAL ENGINEER PRIOR TO THE PLACEMENT OF ANY FOUNDATION ELEMENTS. GEOTECHNICAL INVESTIGATION AND/OR TESTING IS NOT A SERVICE PROVIDED OR OFFERED BY APEX.

APEX HAS NOT BEEN RETAINED TO DETERMINE THE EXPANSIVE SOIL CHARACTERISTICS OF THE SUBGRADE SOIL AND THEREFORE CANNOT BE H RESPONSIBLE FOR THE VOLUMETRIC CHANGES OF THE SOIL (INCLUDING BELOW THE BASEMENT SLAB). BY USE OF THESE PLANS WITHOUT AN ACCOMPANYING GEOTECHNICAL ENGINEERING REPORT, APEX SHALL NOT BE HELD LIABLE FOR ANY FUTURE MOVEMENT AND/OR DIFFERENTIAL MOVEMENT OF THE PROPOSED STRUCTURE AND THE POSSIBLE DAMAGE THAT MAY BE CAUSED AS A RESULT OF SUCH MOVEMENT. DAMAGE FROM EXPANSIVE SOILS AND/OR SETTLEMENT CAN RESULT IN AMONGST OTHER THINGS. THE FOLLOWING: BASEMENT SLAB HEAVE, SHEETROCK CRACKS, WINDOWS AND DOOR BECOMING OUT OF PLUMB AND STICKING AND/OR NOT OPENING. DAMAGE TO TILE, MOULDING, AND OTHER COSMETIC FINISHES.





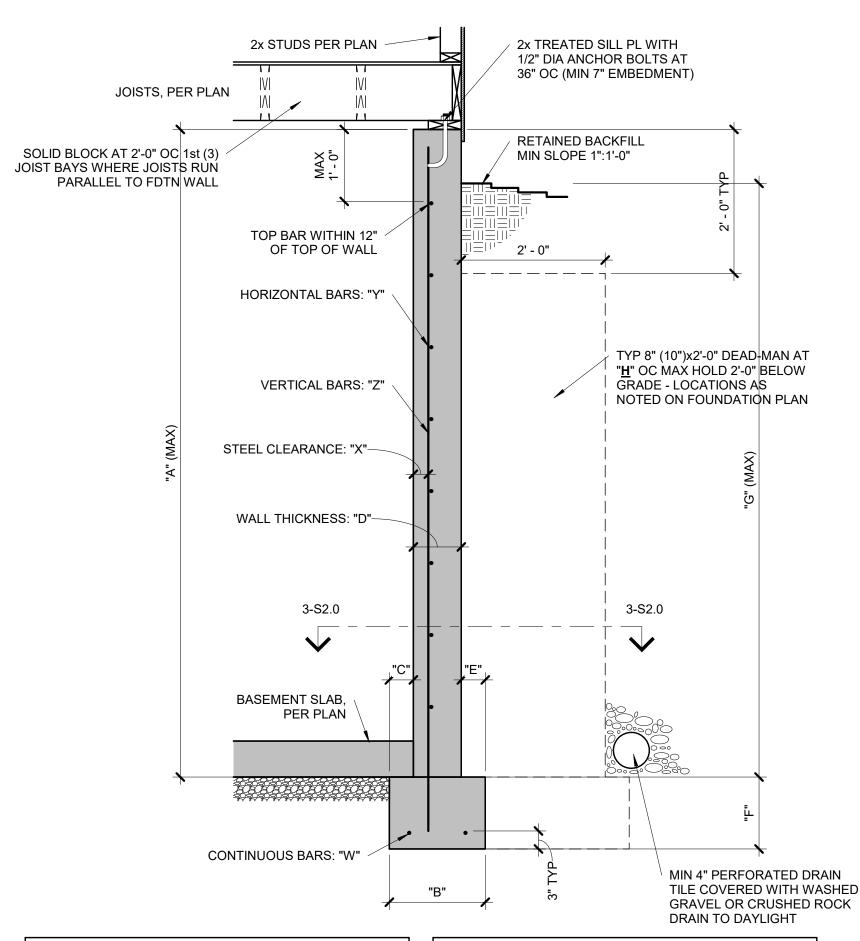
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	PROJECT #:	42139
	DRAWN BY:	ВСН
	CHECKED BY:	BDC
	SUBMITTAL DATE	2021.08.05
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SHEET:

GENERAL NOTES



CONCRETE DIMENSIONS REINFORCING BARS(GRADE 40 BARS) "W" "X" "Y" 8'-0" 1'-4" 4" 8" 4" 8" 7'-6" 20'-0" | │ (2) #4 │ 2 1/2" │ #4 BARS AT 24" OC │ #4 BARS AT 24" OC 9'-0" | 1'-4" | 4" | 8" | 4" | 8" | 8'-6" | 20'-0" | (2) #4 | 2 1/2" | #4 BARS AT 24" OC | #4 BARS AT 24" OC 10'-0" 1'-8" 5" 10" 5" 10" 9'-6" 20'-0" | (2) #4 | 2 1/2" | #4 BARS AT 18" OC | #4 BARS AT 18" OC

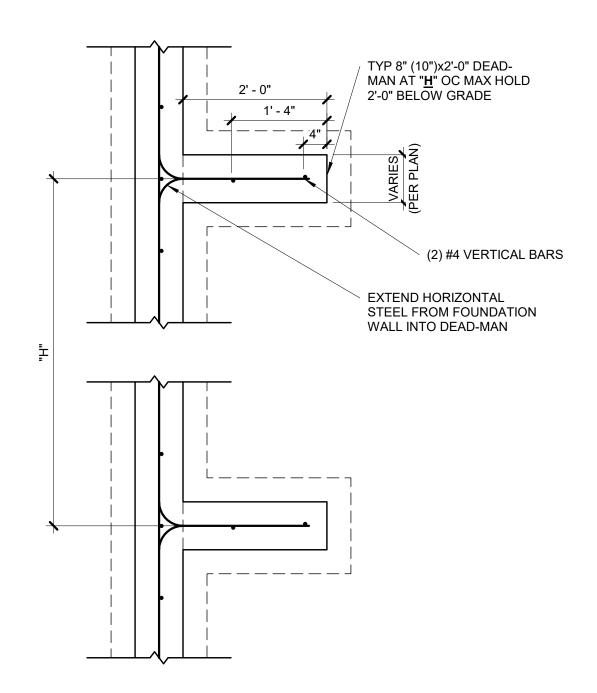
1. DIMENSION SHOWN IS FOR MAXIMUM UNINTERRUPTED WALL PANEL LENGTH BEFORE A DEAD-MAN SHALL BE INSTALLED. NOTE, A MINIMUM 2'-0" RETURN OR OFFSET IN THE FOUNDATION WALL SHALL SUBSTITUTE AS A DEAD-MAN AND/OR BREAK IN THE WALL PANEL LENGTH. 2. VERTICAL REINFORCING STEEL TO EXTEND TO WITHIN 8" OF TOP WALL. MINIMUM (1) #4 HORIZONTAL BAR WITHIN 12" OF TOP AND BOTTOM OF WALL.

3. BURIED CONCRETE FOUNDATION WALLS UP TO 9'-0" TALL MAY BE 8" NOMINAL THICKNESS WITH #4 BARS AT 24" OC BOTH WAYS OVER 16"x8" CONCRETE FOOTINGS WITH (2) #4 BARS CONTINUOUS, UNLESS OTHERWISE REQUIRED BY ENGINEERING REPORT BASED ON ACTUAL SITE CONDITIONS. 4. WALL WILL NOT ACHIEVE FULL STRENGTH UNTIL FIRST FLOOR DECK AND BASEMENT SLAB HAVE BEEN PLACED.

TYPICAL FOUNDATION WALL

1 DETAIL

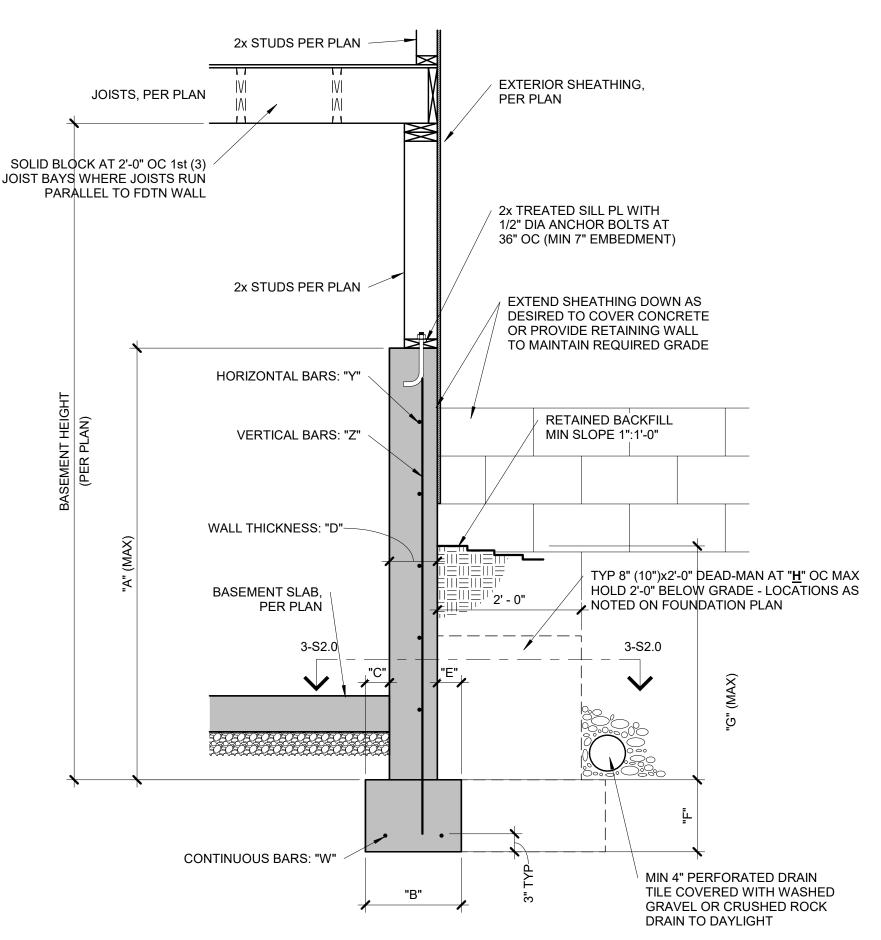
S2.0 3/4" = 1'-0"



- 1. MIN 3000 PSI FOOTING COMPRESSIVE CONCRETE STRENGTH.
- 2. MIN 3000 PSI WALL COMPRESSIVE CONCRETE STRENGTH. 3. AIR ENTRAINED BETWEEN 5% & 7% OF CONCRETE VOLUME.
- 4. GRADE 40 REINFORCING STEEL UNLESS OTHERWISE NOTED. 5. LAP SPLICES 24" MIN.
- 6. WALL SHALL BE BACK-FILLED WITH CLEAN, LEAN CLAY (OR BETTER) LOW VOLUME CHANGE MATERIAL. ON-SITE MATERIAL MAY BE USED IF DEEMED
- ACCEPTABLE BY THE GEOTECHNICAL ENGINEER.
 7. ASSUMED 2,000 PSF BEARING (TO BE VERIFIED BY GEOTECHNICAL ENGINEER).

3 TYPICAL DEAD-MAN SECTION

S2.0 3/4" = 1'-0"



C	CON	CRE	TE	OIME	ENSI	ONS	8
"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H" ¹
4'-0"	1'-4"	4"	8"	4"	8"	3'-4"	20'-0"
6'-0"	1'-4"	4"	8"	4"	8"	4'-4"	20'-0"

S2.0 3/4" = 1'-0"

C	CON	CRE	TE	OIME	ENS	ONS	3	RE	INF	ORCING BAI	RS(GRADE 40 BARS)
"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H" ¹	"W"	"X"	"Y"	"Z"
4'-0"	1'-4"	4"	8"	4"	8"	3'-4"	20'-0"	(2) #4	N/A	#4 BARS AT 24" OC	#4 BARS AT 24" OC
6'-0"	1'-4"	4"	8"	4"	8"	4'-4"	20'-0"	(2) #4	N/A	#4 BARS AT 24" OC	#4 BARS AT 24" OC
9'-0"	1'-8"	5"	8"	4"	8"	4'-4"	20'-0"	(2) #4	N/A	#4 BARS AT 24" OC	#4 BARS AT 24" OC

1. DIMENSION SHOWN IS FOR MAXIMUM UNINTERRUPTED WALL PANEL LENGTH BEFORE A DEAD-MAN SHALL BE INSTALLED. NOTE, A MINIMUM 2'-0" RETURN OR OFFSET IN THE FOUNDATION WALL SHALL SUBSTITUTE AS A DEAD-MAN AND/OR BREAK IN THE WALL PANEL LENGTH.

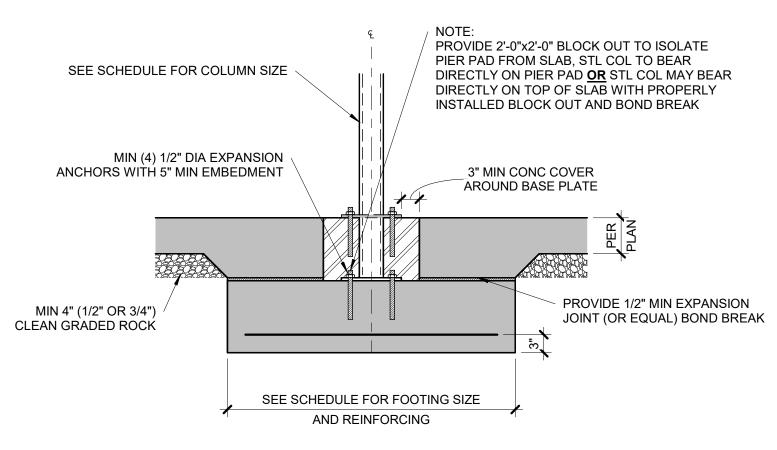
2. VERTICAL REINFORCING STEEL TO EXTEND TO WITHIN 8" OF TOP WALL. MINIMUM (1) #4 HORIZONTAL BAR WITHIN 12" OF TOP AND BOTTOM OF WALL. 3. THE BASEMENT SLAB IS AN INTEGRAL PART OF THE 'UNRESTRAINED' FOUNDATION WALL DESIGN THEREFORE, IF THE

WALL IS BACKFILLED PRIOR TO PLACEMENT OF THE BASEMENT SLAB, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY BRACING THE WALL UNTIL THE BASEMENT SLAB HAS BEEN PLACED.

> TYPICAL 'UNRESTRAINED' 2 FOUNDATION WALL DETAIL

COLUMN AND PIER PAD SCHEDULE COLUMN MARK PAD SIZE REINFORCING COL SIZE 30"x30"x12" (4) #4 BARS E-W 36"x36"x12" (4) #4 BARS E-W 3" NOMINAL 42"x42"x12" (5) #4 BARS E-W 3" NOMINAL 48"x48"x12" (6) #4 BARS E-W 3" NOMINAL 3 1/2" NOMINAL 54"x54"x16" (8) #4 BARS E-W 60"x60"x16" (10) #4 BARS E-W 1. COLUMN AND PIER PAD SIZES SHOWN ARE FOR MAXIMUM COLUMN HEIGHT

OF 10'-0", REQUIRES SEPERATE ENGINEERED DESIGN IF GREATER THAN 10'-0" 2. COLUMN AND PIER PAD SIZES SHOWN ARE BASED ON AN ASSUMED MINIMUM ALLOWABLE SOIL BEARING CAPACITY OF 2,000 PSF.



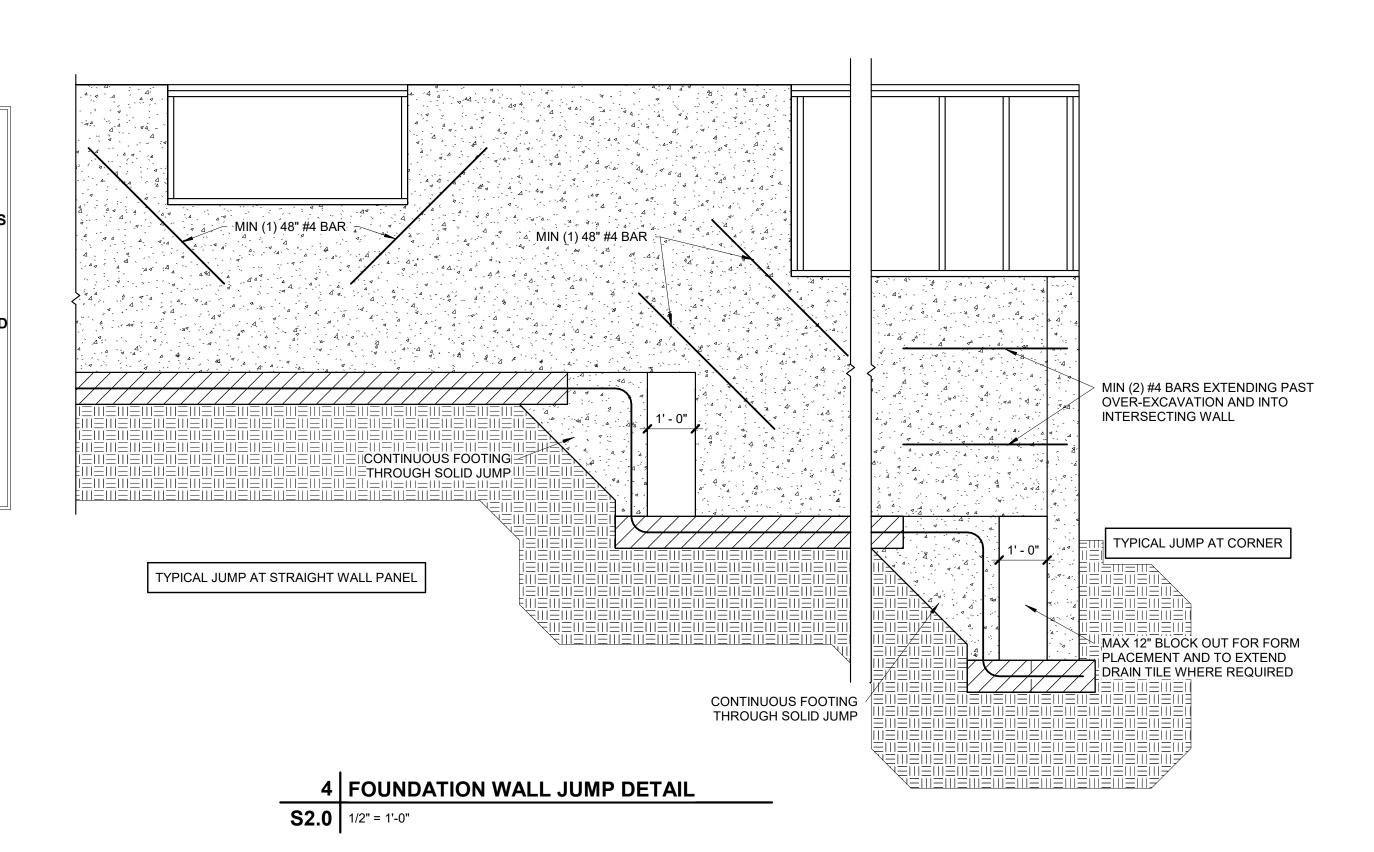
5 COLUMN PAD DETAIL **\$2.0** 3/4" = 1'-0"

EXPANSIVE SOILS DISCLAIMER:

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SHEET: FOUNDATION DETAILS

PROJECT #:

DRAWN BY:

CHECKED BY

SUBMITTAL DATE:

42139

BCH

BDC

2021.08.05

ENGINEERS, INC

1625 LOCUST ST

816.421.3222

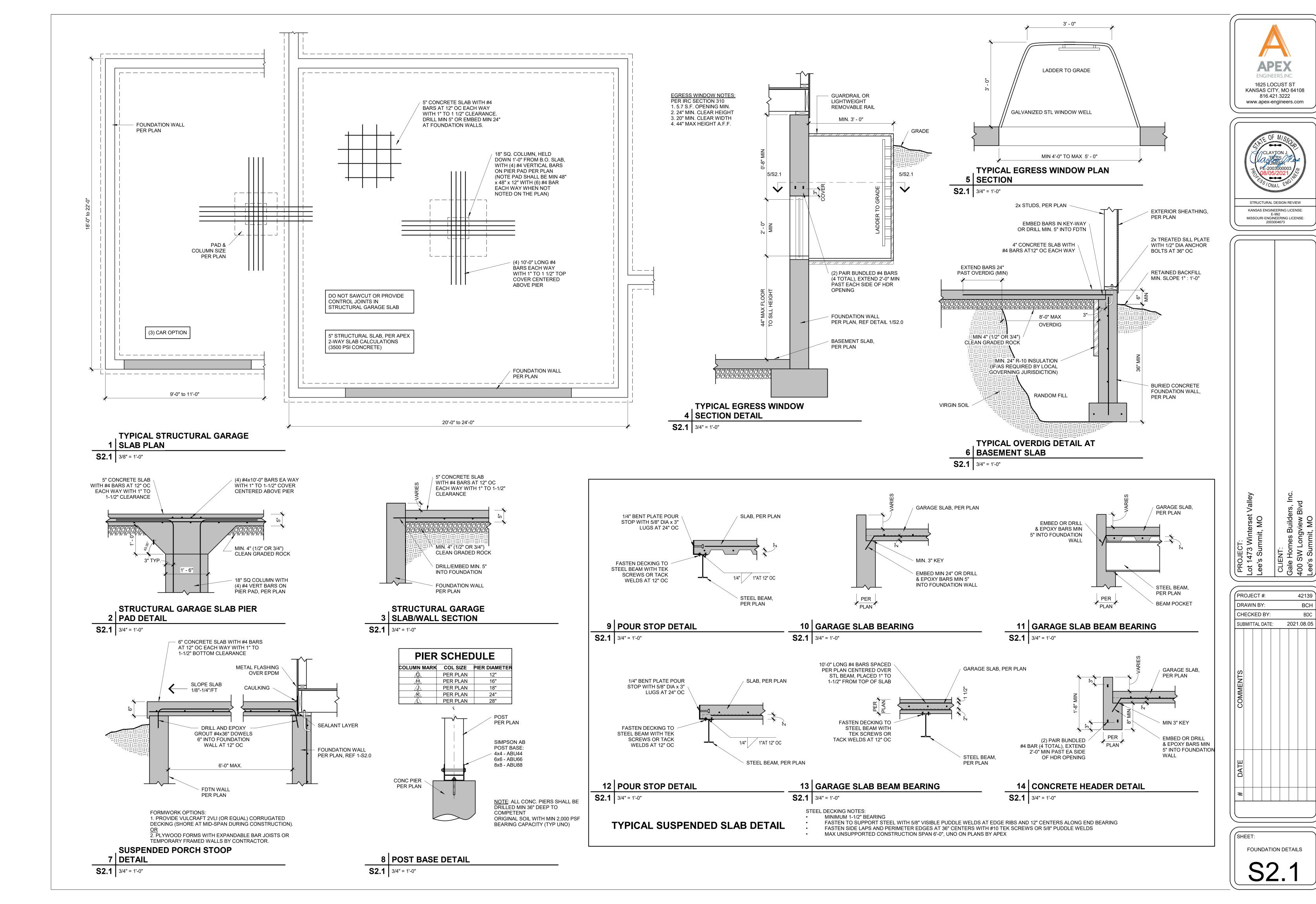
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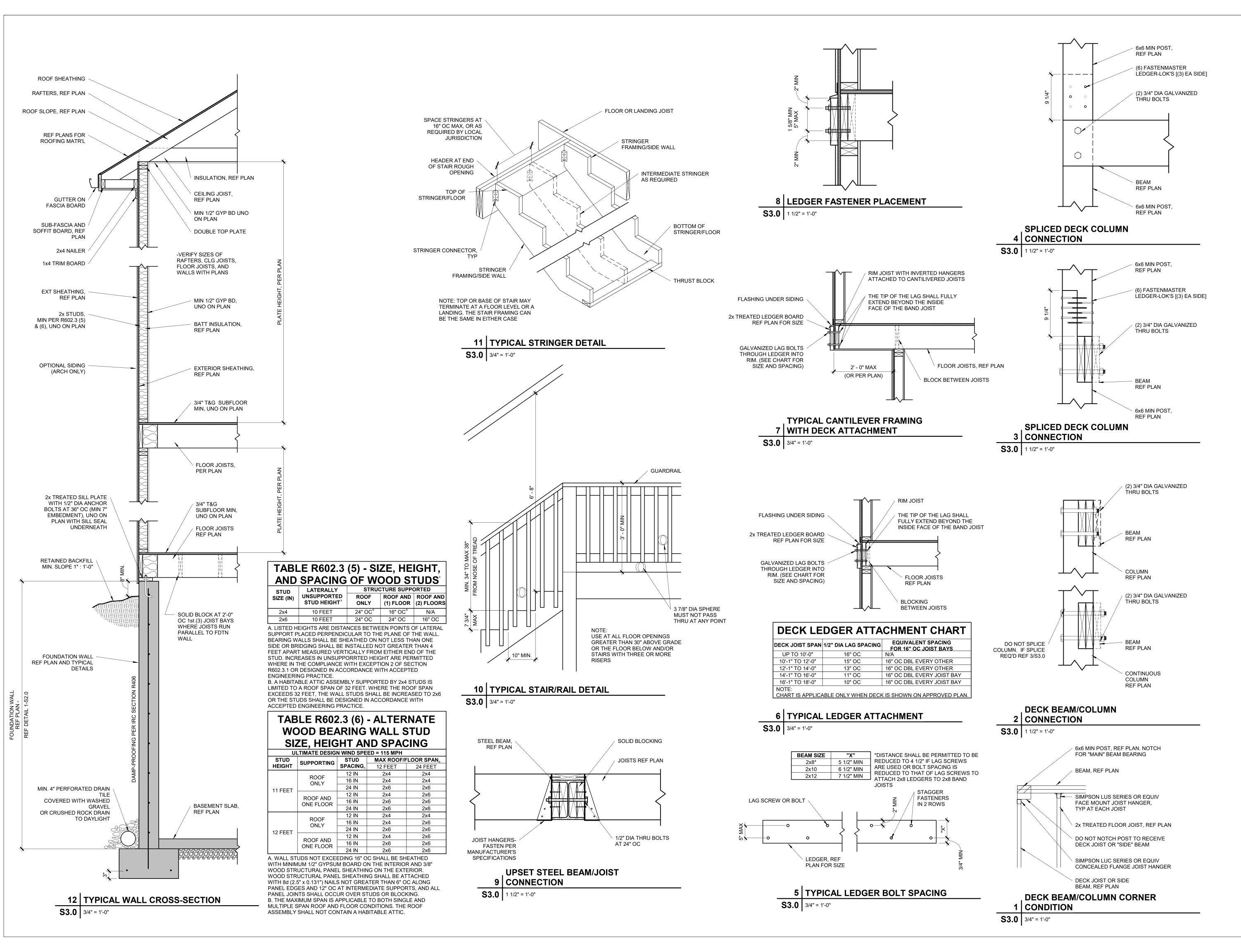
STRUCTURAL DESIGN REVIEW

MISSOURI ENGINEERING LICENSE:

2003004673

KANSAS CITY, MO 64108





ENGINEERS, INC.

1625 LOCUST ST

KANSAS CITY, MO 64108

816.421.3222

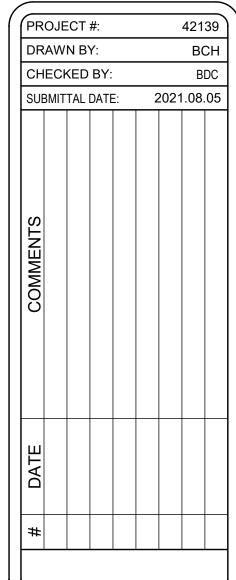
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STRUCTURAL DESIGN REVIEW

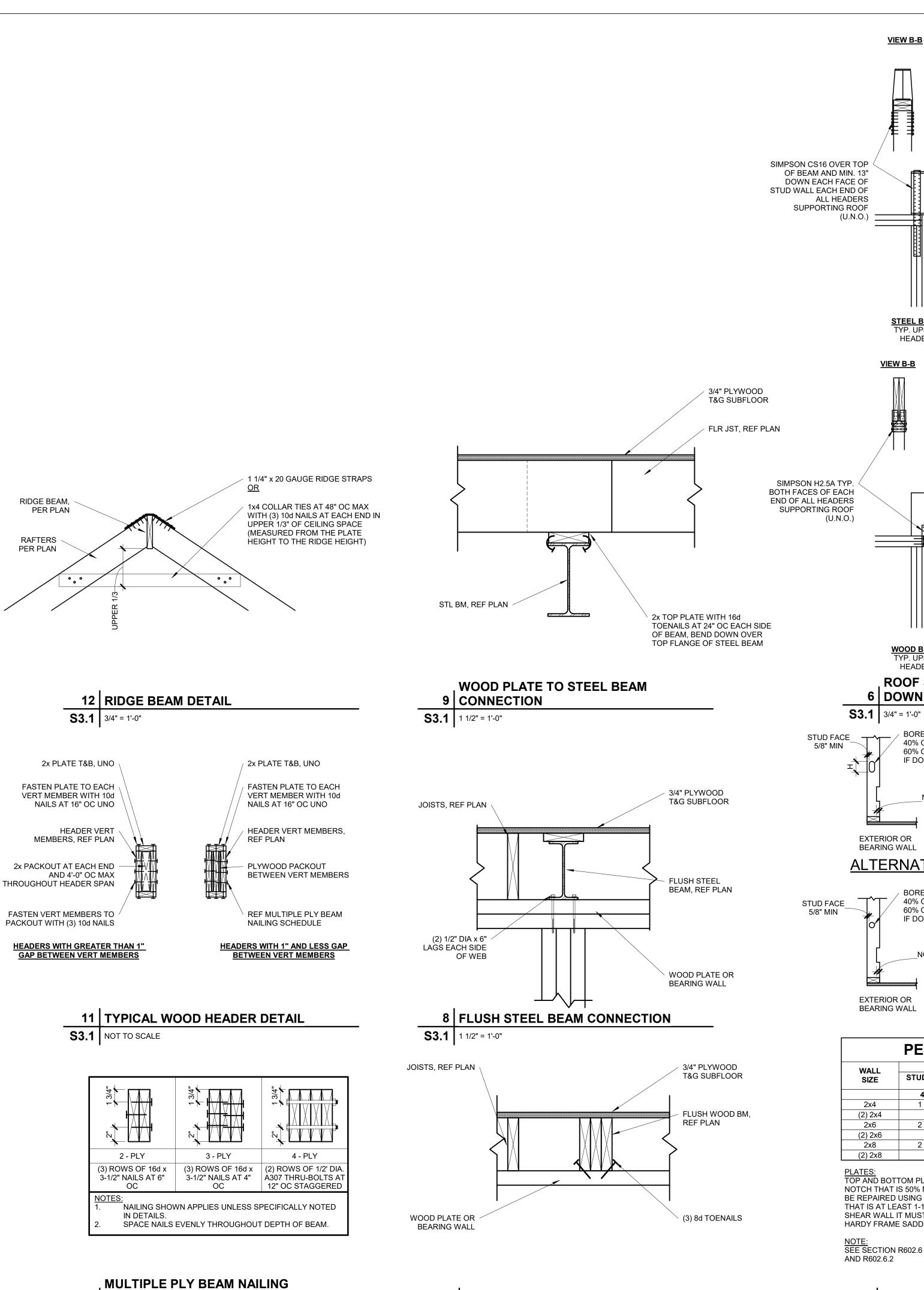
KANSAS ENGINEERING LICENSE:
E-992
MISSOURI ENGINEERING LICENSE:
2003004673

Vinterset Valley
Imit, MO
es Builders, Inc.



FRAMING DETAILS

SHEET:

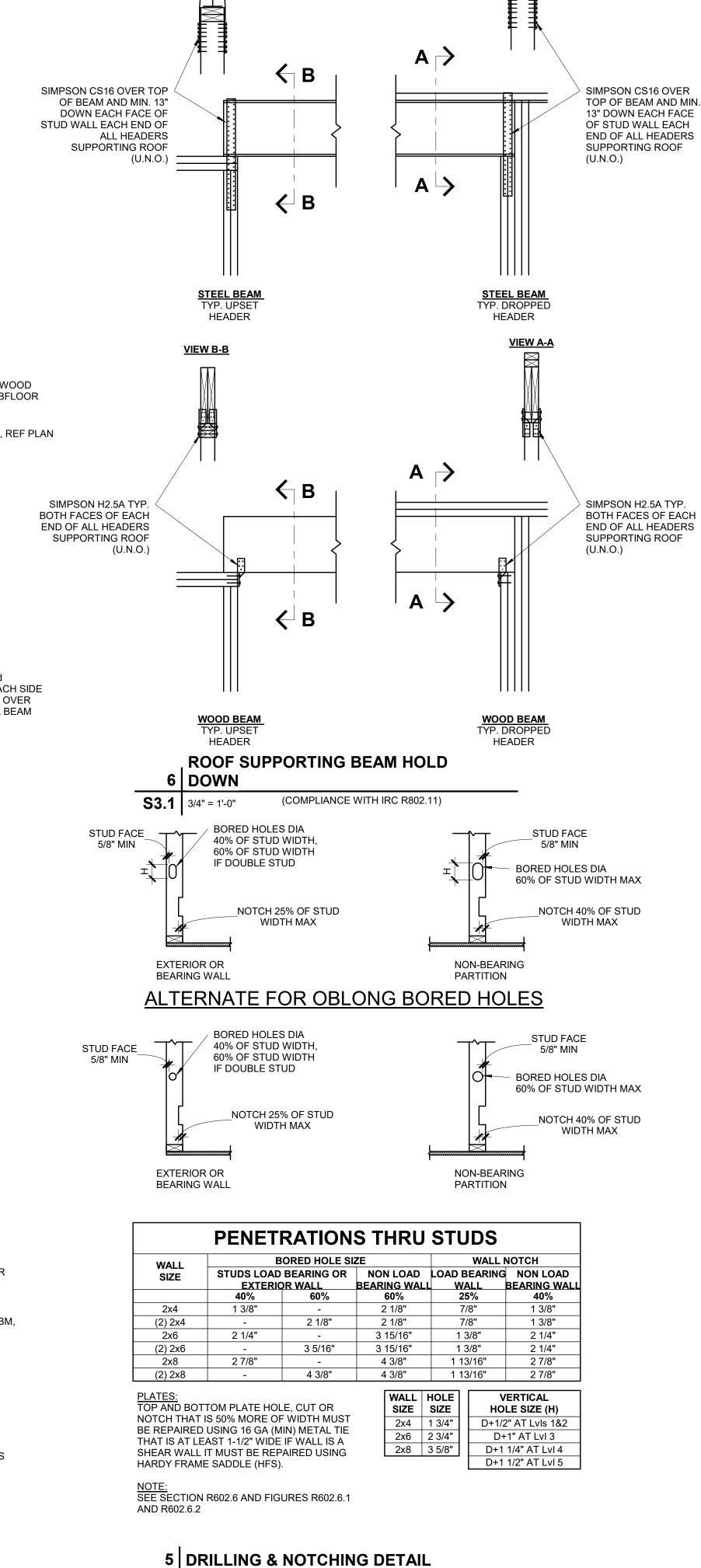


7 FLUSH WOOD BEAM CONNECTION

S3.1 1 1/2" = 1'-0"

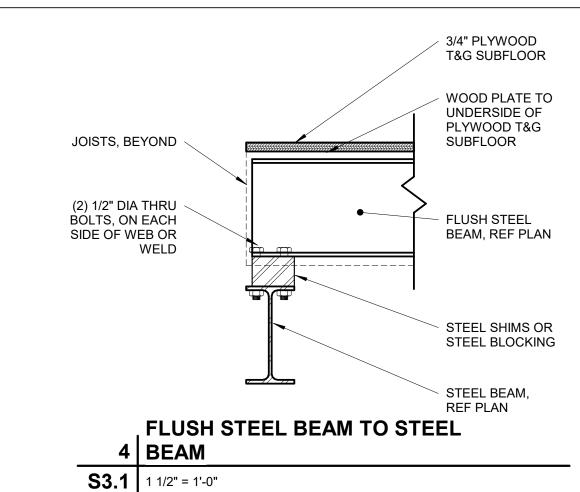
10 SCHEDULE

S3.1 NOT TO SCALE



S3.1 3/4" = 1'-0"

VIEW A-A



COPE WHERE APPLICABLE 1/4" DOUBLE ANGLE OR SHEAR TAB

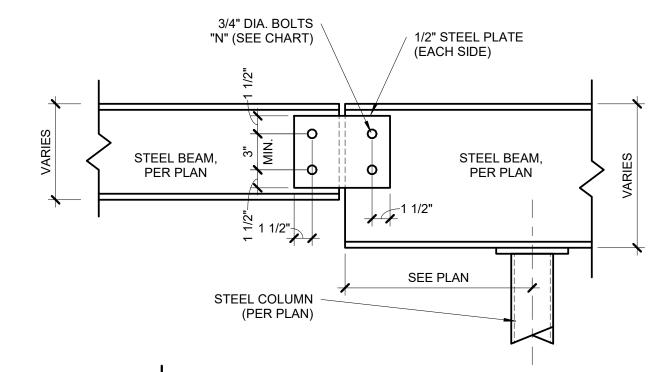
NUMBER OF BOLTS "M" INTO GIRDER GIRDER PER PLAN STEEL BEAM, PER PLAN NUMBER OF BOLTS "N" INTO BEAM

3 BEAM TO GIRDER CONNECTION

S3.1 1 1/2" = 1'-0"

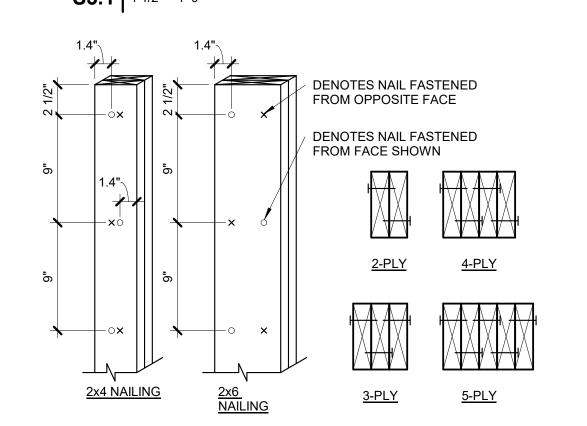
BEAM C	ONNECTION S	CHEDULE
BEAM SIZE	# OF BOLTS "N"	# OF BOLTS "M"
W8, W10	2	4
W12, W14	3	6
W16, W18	4	8
	NS ARE TYPICAL, UNO. IN UPSET BEAM CONNECT	CONO DETERMINED DV

3. ALL AROUND 1/4" FILLET WELD MAY BE SUBSTITUTED FOR EITHER BOLTED CONNECTION. 4. ALL BOLTS, 3/4" DIAMETER, A325-N, UNC



2 BEAM SPLICE DETAIL

S3.1 1 1/2" = 1'-0"

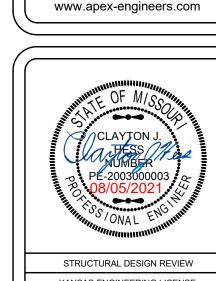


EACH 2x PLY SHALL BE FASTENED WITH (1) ROW OF 10d NAILS AT 9" OC, ALTERNATING SIDE TO SIDE
1.4" MIN EDGE DISTANCE, AND STARTING 2 1/2" FROM EACH END.

EXTEND FULL AREA OF COLUMN AS SOLID BLOCKING THROUGH JOIST BAYS AND WALLS TO LOAD-BERAING BEAM/WALL BELOW

1 BUILT-UP STUD COLUMN

S3.1 1 1/2" = 1'-0"



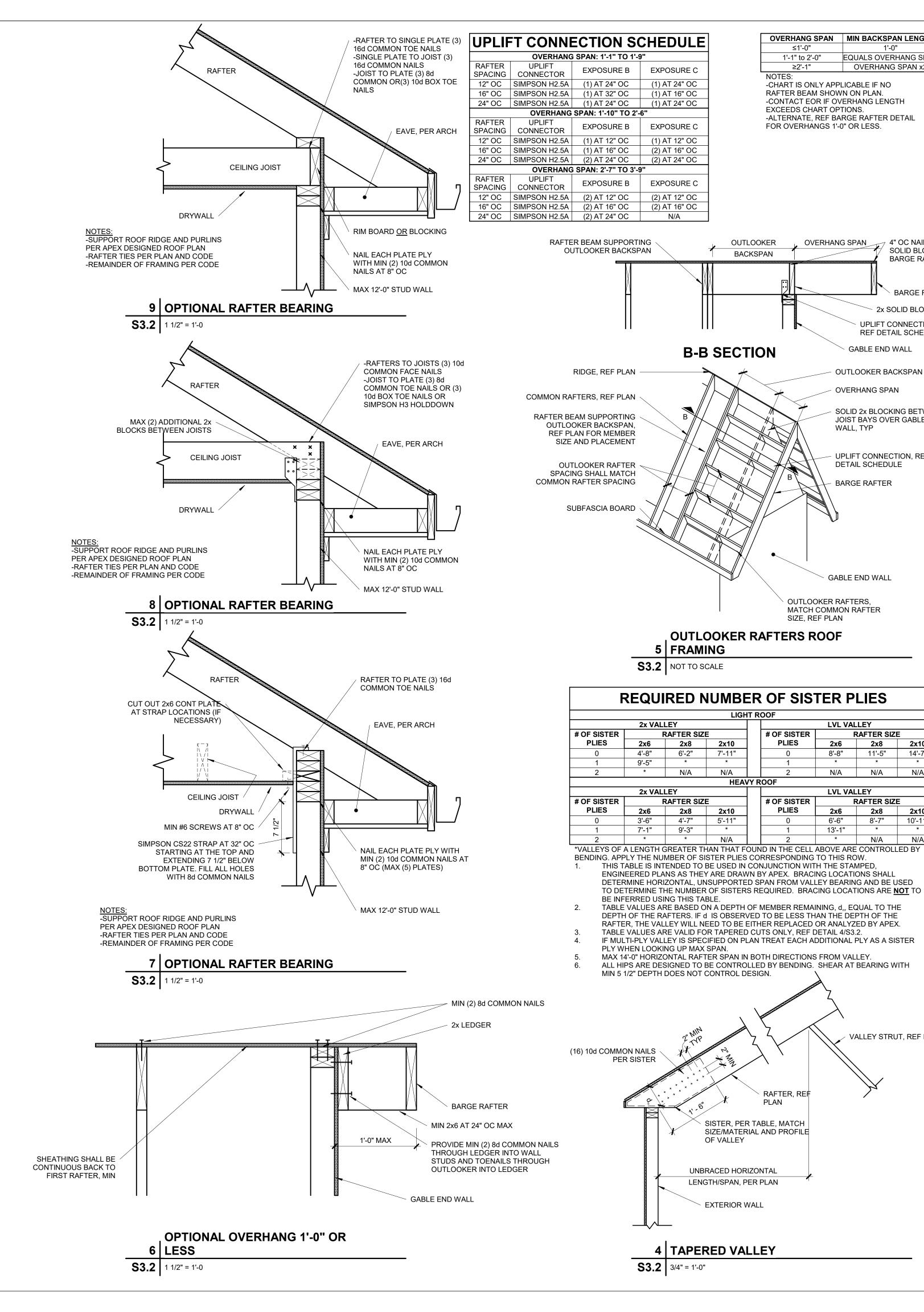
ENGINEERS, INC. 1625 LOCUST ST KANSAS CITY, MO 64108

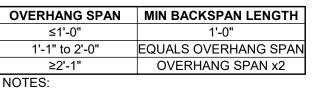
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PROJECT #: 42139 DRAWN BY: BCH CHECKED BY: BDC 2021.08.05 SUBMITTAL DATE:

SHEET: FRAMING DETAILS





-CHART IS ONLY APPLICABLE IF NO RAFTER BEAM SHOWN ON PLAN. -CONTACT EOR IF OVERHANG LENGTH EXCEEDS CHART OPTIONS.

OVERHANG SPAN

4" OC NAIL SPACING AT

BARGE RAFTER

BARGE RAFTER

2x SOLID BLOCKING

UPLIFT CONNECTION, REF DETAIL SCHEDULE

GABLE END WALL

OUTLOOKER BACKSPAN

SOLID 2x BLOCKING BETWEEN

JOIST BAYS OVER GABLE END

UPLIFT CONNECTION, REF

DETAIL SCHEDULE

BARGE RAFTER

GABLE END WALL

LVL VALLEY

LVL VALLEY

13'-1"

RAFTER SIZE

2x6 2x8 2x10

8'-8" | 11'-5" | 14'-7"

N/A N/A N/A

RAFTER SIZE

2x6 2x8 2x10

6'-6" 8'-7" 10'-11"

N/A N/A

VALLEY STRUT, REF PLAN

OUTLOOKER RAFTERS,

SIZE, REF PLAN

OUTLOOKER RAFTERS ROOF

LIGHT ROOF

HEAVY ROOF

N/A N/A

N/A

OF SISTER

PLIES

OF SISTER

RAFTER, REF PLAN

SISTER, PER TABLE, MATCH

SIZE/MATERIAL AND PROFILE

OF VALLEY

UNBRACED HORIZONTAL

LENGTH/SPAN, PER PLAN

EXTERIOR WALL

PLIES

MATCH COMMON RAFTER

OVERHANG SPAN

WALL, TYP

SOLID BLOCKING AND

OUTLOOKER

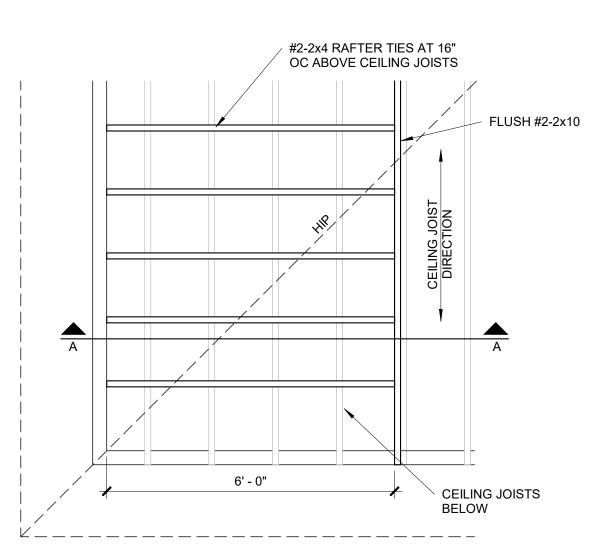
BACKSPAN

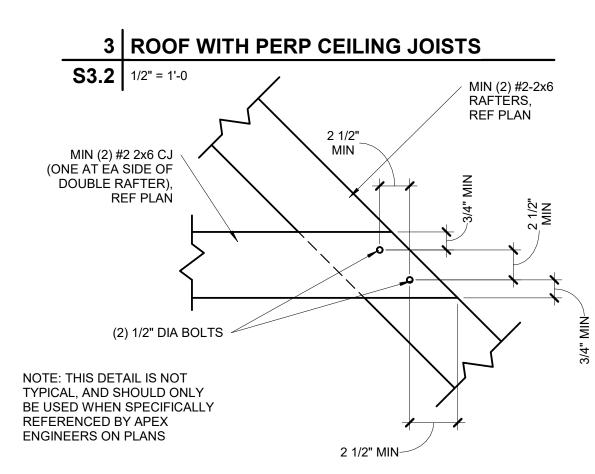
B-B SECTION

-ALTERNATE, REF BARGE RAFTER DETAIL FOR OVERHANGS 1'-0" OR LESS.

RAFTERS, REF PLAN #2-2x4 RAFTER TIES AT EACH RAFTER, MAX 24" OC, ABOVE **CEILING JOISTS** (4) 10d NAILS (3) 8d TOENAILS AT **EACH RAFTER TIE** 6' - 0" +/-8" FLUSH #2-2x10 CEILING JOISTS

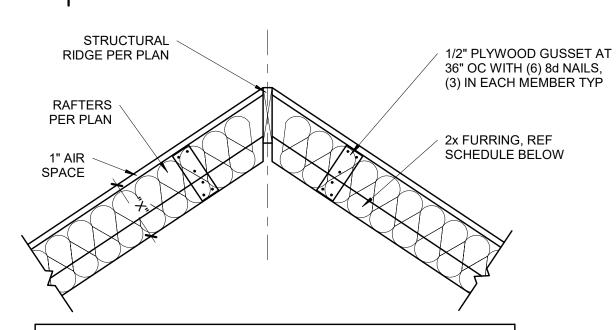
A-A SECTION





BOLTED RAFTER HIP 2 CONNECTION

S3.2 1 1/2" = 1'-0"



RAFTER SIZE	R-30C INSULATION (X= 9 1/4")	R-38C INSULATION (X=11 1/4")
2x6	2x6	2x8
2x8	2x4	2x6
2x10	NOT REQUIRED	2x4
2x12	NOT REQUIRED	REQUIRED
CDAN CHADT	UNLESS NOTED OTHERWISE.	

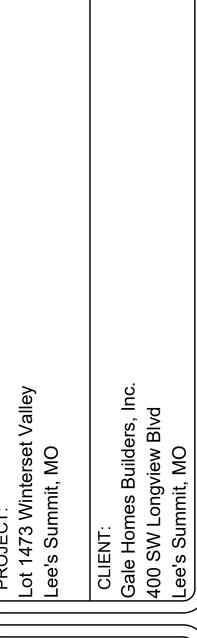
, VAULTED RAFTER INSULATION 1 FURR OUT **S3.2** 3/4" = 1'-0"

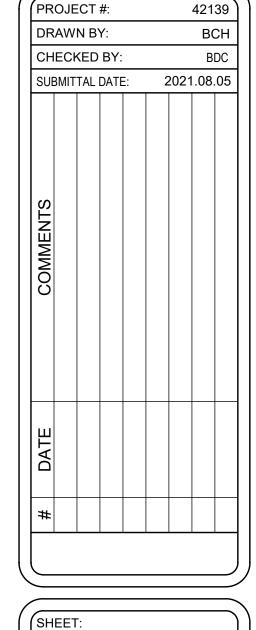
WHICHEVER IS LESS. (PER N1102.2.2)

ENGINEERS, INC 1625 LOCUST ST KANSAS CITY, MO 64108 816.421.3222 www.apex-engineers.com



MISSOURI ENGINEERING LICENSE: 2003004673





FRAMING DETAILS

