



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

#### STRUCTURAL NOTES: - ALL UNMARKED HEADERS MIN

(2)#2-2x10

- ALL HEADERS AND BEAMS MIN #2 GRADE DF/L (OR EQ.)

- XXXX = BEARING WALL - STRUCTURE NOTED AS FLUSH TO BE

FLUSH WITH SUB-FLOOR ABOVE.

BRACED WALL METHODOLOGY

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

#### XXXX EXTERIOR BRACED WALLS:

WSP METHOD: WOOD STRUCTURAL PANEL SHEATHING WITH A THICKNESS NOT LESS THAN %" 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  $\frac{7}{6}$ " WITH MINIMUM SPAN RATING OF  $\frac{24}{6}$  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 MEMBERS)

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

GB METHOD:	$\frac{1}{2}$ " 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. COLUMN & DED DAD SCHEDI II E (REE 5/S2 0)

COLUMN & PIER PAD SCHEDULE (REF. 5/S2.0)			
COLUMN MARK	PAD SIZE	REINFORCEMENT	COLUMN SIZE
A	30" x 30" x 12"	(4) #4 BAR E.W.	3" SCH 40 (3.5" OD)
B	36" x 36" x 12"	(4) #4 BAR E.W.	3" SCH 40 (3.5" OD)
Â	42" x 42" x 12"	(5) #4 BAR E.W.	3" SCH 40 (3.5" OD)
$\square$	48" x 48" x 12"	(6) #4 BAR E.W.	3½" SCH 40 (4" OD)
Â	54" x 54" x 16"	(8) #4 BAR E.W.	REF PLAN
	60" x 60" x 16"	(10) #4 BAR E.W.	REF PLAN

1. COLUMN & PAD SIZES SHOWN ARE FOR MAXIMUM ADJUSTABLE COLUMN HEIGHT OF 9'-1", REQUIRES SEPARATE ENGR'D DESIGN IF GREATER THAN 9'-1" TALL. COLUMNS SIZED AS QWIK-ADJUST COLUMN, BY QUALITY WAY PRODUCTS, LLC. REFER TO SAFE LOADING CAPACITIES PER MANUF SPECS, OR SUBSTITUTION TO ANOTHER PRODUCT ONLY WITH PRIOR APPROVAL BY APEX ENGINEERS. 2. COLUMN & PIER PAD SIZES SHOWN ARE BASED ON AN ASSUMED MINIMUM

ALLOWABLE SOIL BEARING CAPACITY OF 2,000PSF.

COLUMN & PIER SCHEDULE

M	ARK	COLUMN SIZE	PIER DIA.
	a	6x6	12"
	A	6x6	16"
	$\overline{\mathbb{V}}$	6x6	18"
	R	6x6	24"
	$\underline{\mathbb{A}}$	6x6	28"

1. ALL PIERS TO BEAR ON ORIGINAL, UNDISTURBED SOIL OF 2,000 PSF BEARING CAPACITY OR FILL COMPACTED AND TESTED TO CONFORM TO THE RECOMMENDATIONS OF A GEOTECHNICAL ENGINEER.

- 2. PIERS SHALL EXTEND BELOW THE FROST LINE: MIN. DEPTH OF 36" BELOW GRADE.
- 3. POST SHALL BE TREATED OR CEDAR WITH SIMPSON ABU66 POST BASE

DETAIL REFERENCES

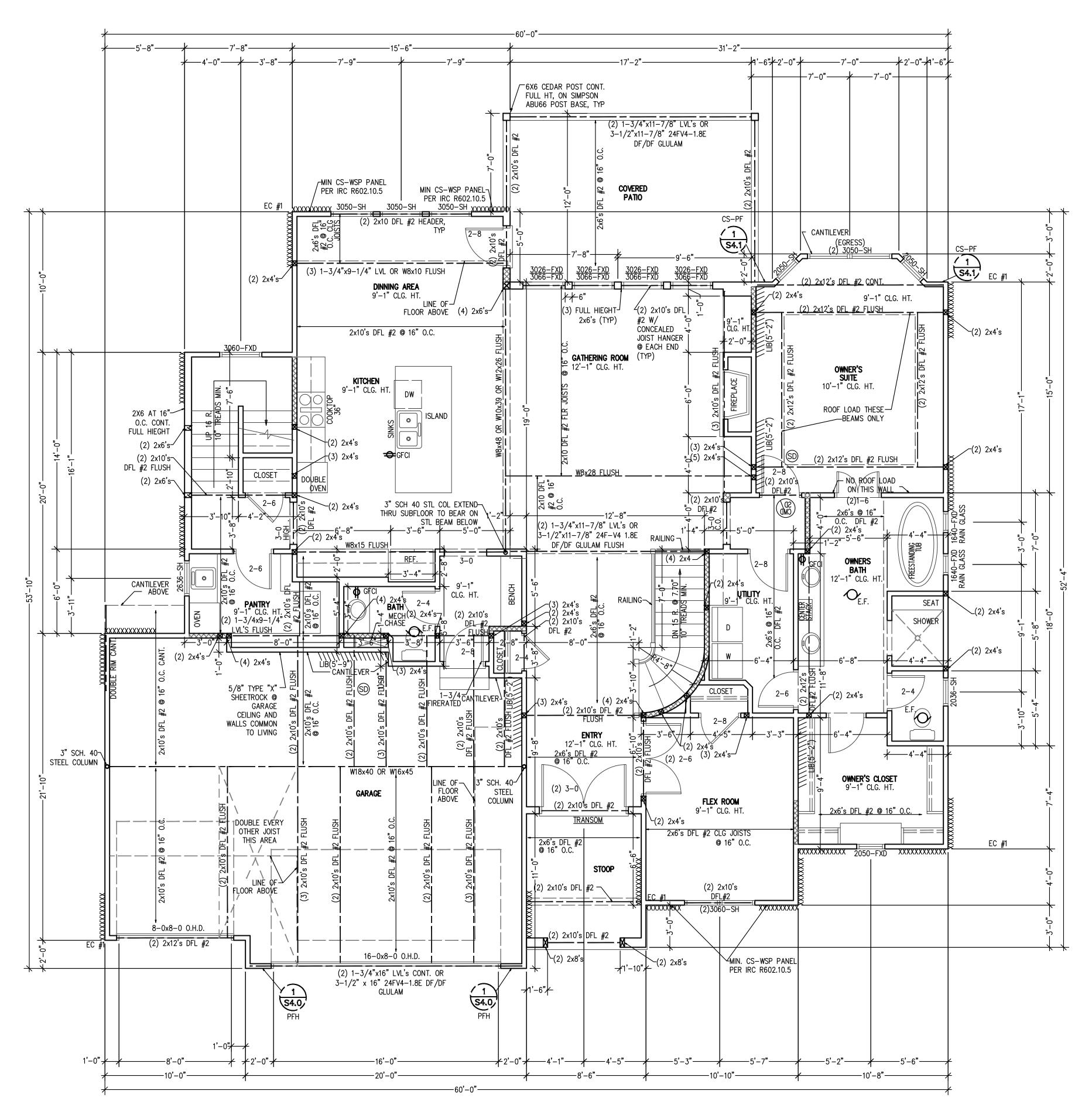
$\frac{1}{1}$ TYPICAL FOUNDATION WALL DETAIL	2 STRUCTURAL GARAGE SLAB S2.1 PIER PAD DETAIL		
2 52.0 FOUNDATION WALL DETAIL	3 STRUCTURAL GARAGE SLAB / S2.1 WALL SECTION		
3 TYPICAL DEAD MAN DETAIL	6 TYPICAL OVERDIG DETAIL AT S2.1 BASEMENT SLAB		
$\frac{4}{32.0}$ FOUNDATION WALL JUMP DETAIL	ALTERNATE BRACED WALL PANEL S4.0 DETAIL		
5 52.0 COLUMN PAD DETAIL	APA NARROW WALL BRACING S4.0 METHOD WITHOUT HOLD-DOWNS ALT.		
1 S2.1 SLAB PLAN	COLUMN AND PIER PAD SCHEDULE (SHEET S2.0)		
EXPANSIVE SOILS DISCLAIMER:			
THESE PLANS HAVE BEEN PREPARED BASED ON A PRESUMPTIVE ALLOWABLE BEARING CAPACITY AS ALLOWED BY IRC CODE AND THE LOCAL ENFORCING JURISDICTION.			
APEX ENGINEERS, INC. (APEX) RECOMMENDS THAT ALL FOOTING EXCAVATIONS 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 HELD 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.

<u>NOTE:</u> PLANS DESIGNED PER IRC AS ADOPTED BY GOVERNING JURISDICTION

New Mark Homes P.O. Box 12025 Parkville, Missouri 64152 Ph. (816) 969-9010	
New Mark Homes	
APEX ENGINEERS, INC. 1625 LOCUST ST KANSAS ENGINEERING LICENSE: 992 MISSOURI ENGINEERING LICENSE: 2023, 03, 07 4, 00 1, 05 1, 0	
Haley Spec 2742 SW Heartland Rd Hook Farms - Lot 195 Lee's Summit, Missouri Copyright 2025	
DRAWN BY: LIR CHECKED BY: CA DATE:3/6/2025	





MAIN FLOOR PLAN SCALE: 1/4" = 1'-0"

# <u>STRUCTURAL NOTES:</u> - ALL UNMARKED HEADERS MIN

(2)#2-2x10 - ALL HEADERS AND BEAMS MIN #2

- GRADE DF/L (OR EQ.)
- EBEARING WALL

BRACED WALL METHODOLOGY

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

XXXX EXTERIOR BRACED WALLS:

WSP METHOD: WOOD STRUCTURAL PANEL SHEATHING WITH A THICKNESS NOT LESS THAN %" 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:	1/2" MIN. GYPSUM BOARD OVER STUDS SPACED 24" MAX. FASTENED WITH
	No 6 - $1\frac{1}{4}$ " 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.

issouri 641. 969-9010 Mark ille, Miss (816) 9 Box ville Parkvii Ph. New New Mark Homes APEX ENGINEERS, INC. 1625 LOCUST ST KANSAS CITY, MO 64108 816.421.3222 STRUCTURAL DESIGN REVIEW KANSAS ENGINEERING LICENSE: 992 MISSOURI ENGINEERING LICENSE: 2003004673 95 y Spec ? SW Heartland Rd. -s Summit, Missouri Haley 2742 . Lee's .

Homes

20

152

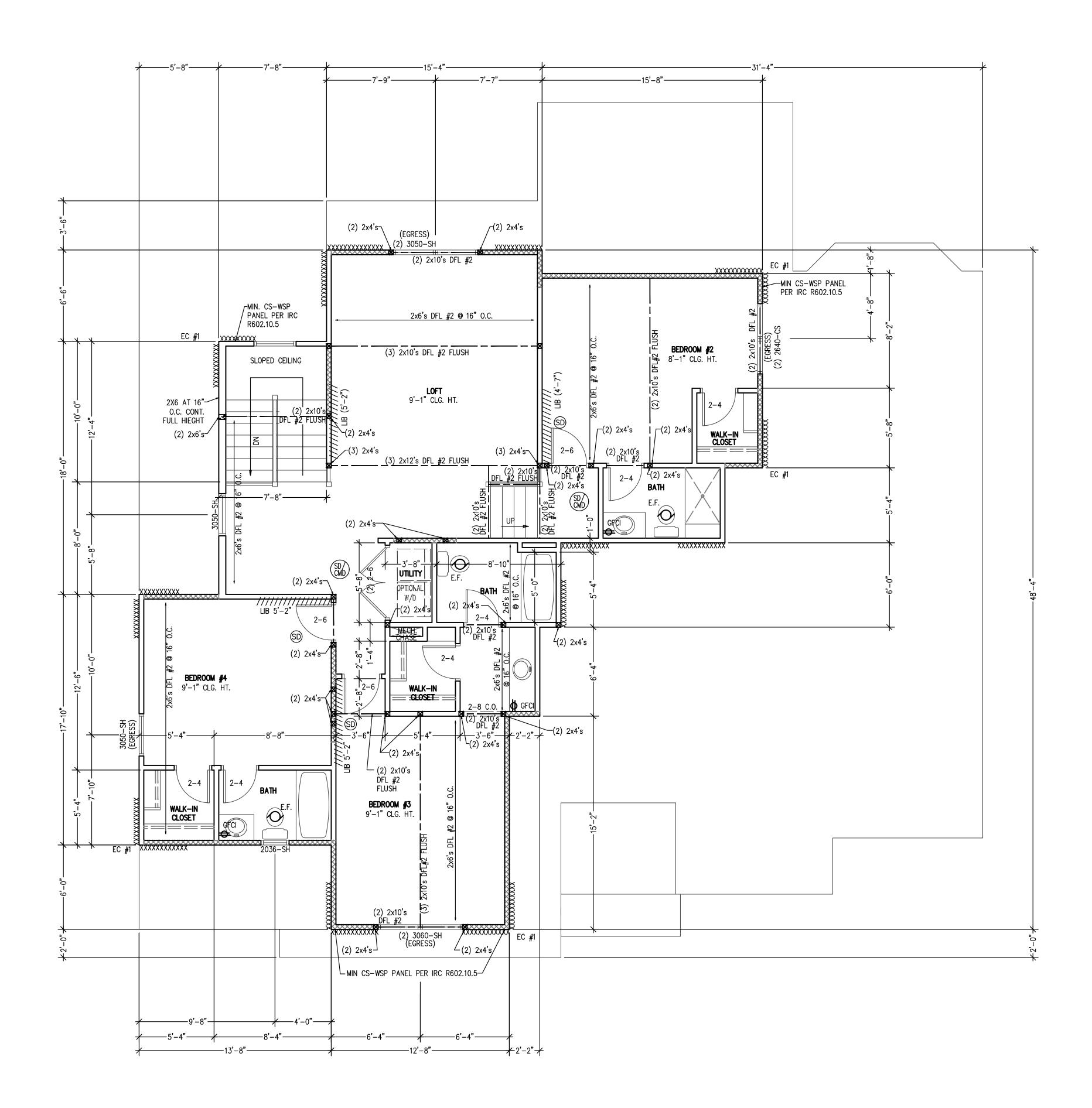
DRAWN BY: LIR CHECKED BY: CA DATE:3/6/2025



\*ALL WINDOWS TO HAVE U = 0.4 OR LESS.







# SECOND FLOOR PLAN SCALE: 1/4" = 1'-0"

# <u>STRUCTURAL NOTES:</u> - ALL UNMARKED HEADERS MIN

(2)#2-2x10 - ALL HEADERS AND BEAMS MIN #2

GRADE DF/L (OR EQ.) - ERARING WALL

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

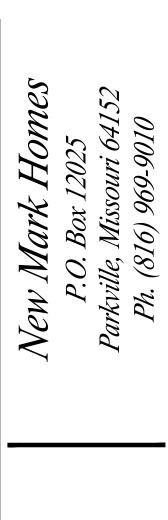
XXXX EXTERIOR BRACED WALLS:

WSP METHOD: WOOD STRUCTURAL PANEL SHEATHING WITH A THICKNESS NOT LESS THAN %" 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)

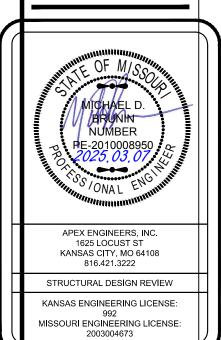
//// INTERIOR BRACED WALLS (REF 2-S4.0):

GB METHOD:	$\car{2}$ " MIN. GYPSUM BOARD OVER STUDS SPACED 24" MAX. FASTENED WITH
	No 6 - 1 <sup>1</sup> / <sub>4</sub> " 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.







95



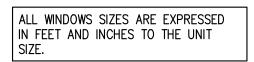
DRAWN BY: LIR

CHECKED BY: CA

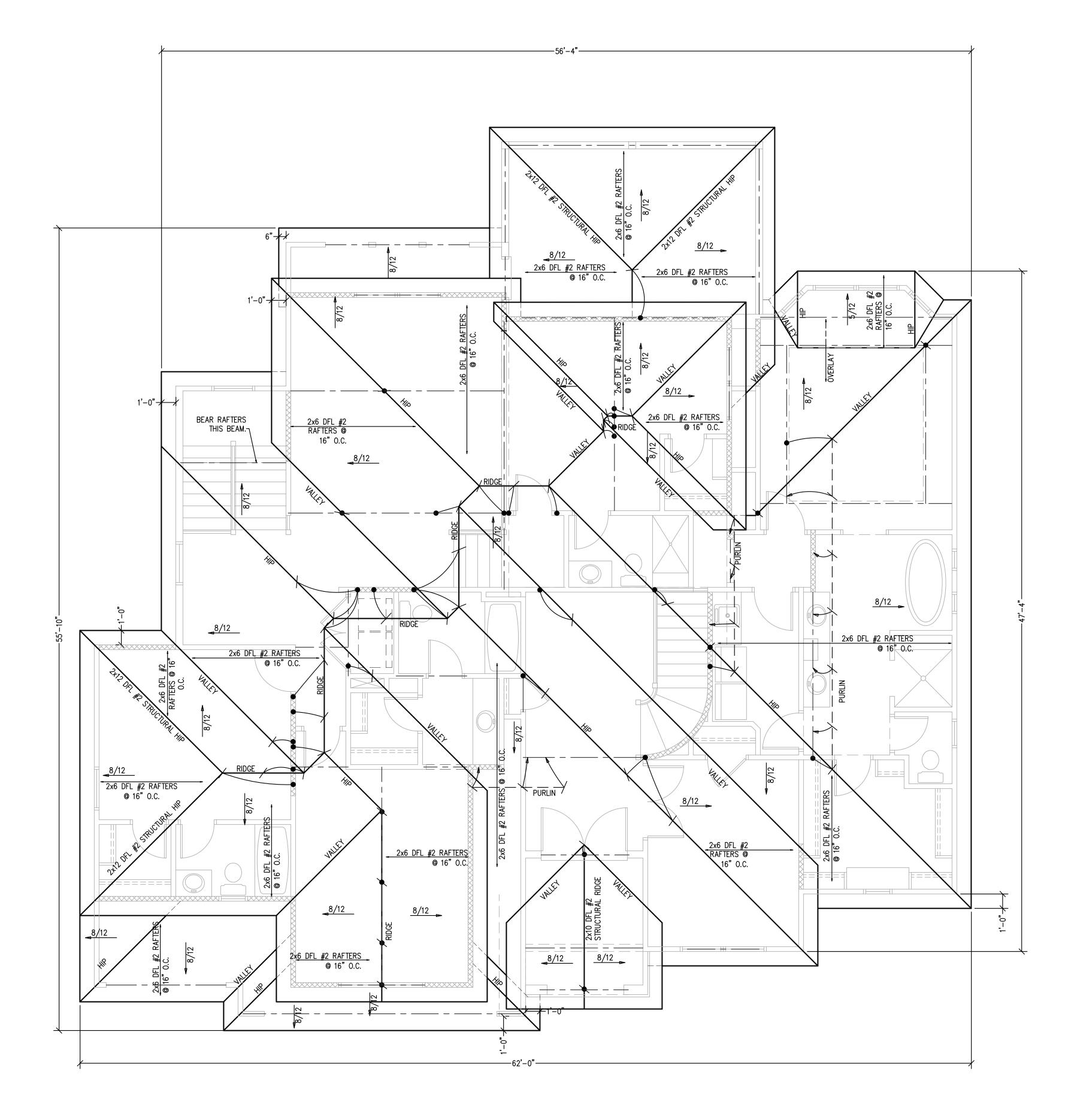
DATE:3/6/2025

RELEASE FOR CONSTRUCT

\*ALL WINDOWS TO HAVE U = 0.4 OR LESS.







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

# <u>STRUCTURAL NOTES:</u> - ALL UNMARKED HEADERS MIN

- (2)#2-2x10
- ALL HEADERS AND BEAMS MIN #2 GRADE DF/L (OR EQ.)
- EARING WALL

#### **ROOF FRAMING NOTES**

ROOF DESIGNED FOR LIGHT ROOF COVERING 30psf TOTAL LOAD [10psf DL, 20psf LL (SL)]

ROOF SYSTEM IS DESIGNED TO MEET REQUIREMENTS OF IRC 802

\*RAFTERS (HEM-FIR, DOUG-FIR, OR EQUAL): SEE SPAN CHARTS BELOW

CODE MINIMUM

RAFTERS	SPACING	MAX HORIZONTAL CLEARSPAN
#2-2x6	AT 24" OC	11'-7"
#2-2x6	AT 16" OC	14'-2"
#2-2x8	AT 24" OC	14'-8"
#2-2x8	AT 16" OC	17'-11"
#2-2x10	AT 24" OC	17'-10"
#2-2x10	AT 16" OC	21'-11"

NOTE: CODE MINIMUM ALLOWS FOR A RAFTER DEFLECTION OF L/180 TOTAL LOAD

#### HIGHER PERFORMANCE

RAFTERS	SPACING	MAX HORIZONTAL CLEARSPAN
#2-2x6	AT 24" OC	8'-6"
#2-2x6	AT 16" OC	9'-9"
#2-2x8	AT 24" OC	11'-3"
#2-2x8	AT 16" OC	12'-9"
#2-2x10	AT 24" OC	14'-3"
#2-2x10	AT 16" OC	16'-3"

APEX ENGINEERS, INC. RECOMMENDED DEFLECTION = L/360 LIVE LOAD, L/240 TOTAL LOAD

\*RIDGE BOARDS ARE (UNLESS OTHERWISE NOTED)

#2-2x10 UP TO 9:12 PITCH #2-2x12 OVER 9:12 PITCH

\*ALL HIPS AND VALLEYS ARE (UNLESS OTHERWISE NOTED) #2-2x10 UP TO 9:12 PITCH

#2-2x12 OVER 9:12 PITCH

\*PURLINS ARE 2x6 MIN - PURLIN STRUTS ARE AT 4'-0" OC

- PURLIN STRUTS SHALL BE INSTALLED AT NOT LESS
- THAN A 45 DEGREE ANGLE WITH THE HORIZONTAL - ALL PURLIN STRUTS SHALL HAVE A MAX UNBRACED
- LENGTH OF 8'-0"
- PURLIN STRUTS SHALL BE CONSTRUCTED IN A "T"
- CONFIGURATION AND PER THE FOLLOWING CHART:

PURLIN STRUT	MAX PURLIN STRUT LENGTH
(2)2x4	8'-0"
(1)2x4 AND (1)2x6	12'-0"
(1)2x6 AND (1)2x8	20'-0"
(2)2x6 AND (1)2x8	30'-0"
CONSULT ARCH ENGR	>30'-0"

\*EACH END OF STRUT SHALL BE FASTENED WITH MIN (3)8d OR (2)16d NAILS \*RIDGE BRACERS ARE SAME AS PURLIN BRACES-SPACING,

- SIZE, CONFIGURATION, AND INSTALLATION (SEE PURLIN
- BRACE NOTES ABOVE) \*HIP AND VALLEY BRACES ARE THE SAME AS PURLINS SIZE, CONFIGURATION, AND INSTALLATION (SEE PURLIN BRACE NOTES ABOVE)

= ROOF BRACE/STRUT (PER CHART)

-SLASH IS TOP END OF BRACE -CIRCLE IS BOTTOM END OF BRACE

/ = PURLIN STRUTS AT 48" OC (PER CHART) U.N.O. -SLASH IS TOP END OF BRACE -ARROW IS BEARING LOCATION

 
 XXXXXXXX
 DENOTES BEARING WALL
 ---- DENOTES PURLIN — · — · — · — · — DENOTES BEARING STRUCTURE

- THIS IS AN ENGINEERED ROOF **1**. STRUCTURE DESIGNED FOR COMPLIANCE WITH IRC 802.3, BUILD AS SHOWN WITH NO DEVIATIONS. ALL HIPS ARE DESIGNED TO BE **||2.**
- CONTROLLED BY BENDING. SHEAR AT BEARING WITH MIN  $5\frac{1}{2}$ " ∥3. **DEPTH DOES NOT CONTROL**
- DESIGN. FOR VALLEYS REF 4/S3.2

New Mark Homes P.O. Box 12025 Parkville, Missouri 64152 Ph. (816) 969-9010	
New Mark Homes	
APEX ENGINEERS, INC. 1625 LOCUST ST KANSAS CITY, MO 64108 816.421.3222 STRUCTURAL DESIGN REVIEW KANSAS ENGINEERING LICENSE: 992 MISSOURI ENGINEERING LICENSE: 2003004673	
Haley Spec 2742 SW Heartland Rd Hook Farms - Lot 195 Lee's Summit, Missouri ©Copyright 2025	
DRAWN BY: LIR Checked by: CA Date:3/6/2025	

PROJ 03712/2025

BUILDING COMPONENT ROOF SHEATHING <sup>1</sup> FLOOR SHEATHING <sup>1</sup> CEILING COVERING <sup>1</sup>	MATERIAL 7/16" PLYWOOD 1x4 #3 FURRING 3/4" T&G YELLOW PINE PLYWOOD APPLIED PERPENDICULAR TO JOISTS AND ENDS STAGGERED	FASTENING         16 GA x 1-3/4" STAPLES AT 3"         OC EDGES AND 6" OC IN FIELD         1/2" CROWN STAPLES         8d COMMON NAILS AT 6" OC EDGES         AND 12" OC IN THE FIELD         14 GA x 2" STAPLES AT 4" OC         EDGES AND 8" OC IN THE FIELD         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		
FLOOR SHEATHING <sup>1</sup>	1x4 #3 FURRING 3/4" T&G YELLOW PINE PLYWOOD APPLIED PERPENDICULAR TO	OC EDGES AND 6" OC IN FIELD 1/2" CROWN STAPLES 8d COMMON NAILS AT 6" OC EDGES AND 12" OC IN THE FIELD 14 GA x 2" STAPLES AT 4" OC EDGES AND 8" OC IN THE FIELD 12.5 GA x 1-1/2" RING OR SCREW SHANK NAILS AT 6" OC EDGES AND 8" OC IN THE FIELD		
FLOOR SHEATHING <sup>1</sup>	3/4" T&G YELLOW PINE PLYWOOD APPLIED PERPENDICULAR TO	1/2" CROWN STAPLES 8d COMMON NAILS AT 6" OC EDGES AND 12" OC IN THE FIELD 14 GA x 2" STAPLES AT 4" OC EDGES AND 8" OC IN THE FIELD 12.5 GA x 1-1/2" RING OR SCREW SHANK NAILS AT 6" OC EDGES AND 8" OC IN THE FIELD		
	3/4" T&G YELLOW PINE PLYWOOD APPLIED PERPENDICULAR TO	8d COMMON NAILS AT 6" OC EDGES AND 12" OC IN THE FIELD 14 GA x 2" STAPLES AT 4" OC EDGES AND 8" OC IN THE FIELD 12.5 GA x 1-1/2" RING OR SCREW SHANK NAILS AT 6" OC EDGES AND 8" OC IN THE FIELD		
	APPLIED PERPENDICULAR TO	AND 12" OC IN THE FIELD 14 GA x 2" STAPLES AT 4" OC EDGES AND 8" OC IN THE FIELD 12.5 GA x 1-1/2" RING OR SCREW SHANK NAILS AT 6" OC EDGES AND 8" OC IN THE FIELD		
	APPLIED PERPENDICULAR TO	EDGES AND 8" OC IN THE FIELD 12.5 GA x 1-1/2" RING OR SCREW SHANK NAILS AT 6" OC EDGES AND 8" OC IN THE FIELD		
		12.5 GA x 1-1/2" RING OR SCREW SHANK NAILS AT 6" OC EDGES AND 8" OC IN THE FIELD		
CEILING COVERING <sup>1</sup>		SHANK NAILS AT 6" OC EDGES AND 8" OC IN THE FIELD		
CEILING COVERING <sup>1</sup>				
CEILING COVERING <sup>1</sup>				
CEILING COVERING <sup>1</sup>		13 GA, 1-3/8" LONG, 19/64" HEAD; 0.098		
	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"		
	1/2" GYPSUM SHEATHING	SCREWS, TYPE W OR S- AT 4" OC		
		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		
	*SUPPORTING 2 FLOORS, ROOF,	*TOE NAIL RIM JOIST TO SILL OR TOP 8d COMMON AT 6" OC; 3"x0.131" AT 6" OC; 3"x0.13		
	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	*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"		
	SIZE: NOM 2x4 (NOM 2x6 WHEN 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" C		
	AND ROOF)	*FACE NAIL JACK STUDS/TRIMMERS SUPPORTING HEADERS WITH: 10d NAILS AT 6" OC		
	*SPECIES: DOUG-FIR, HEM-FIR,	*FACE NAIL DBL TOP PLATE: 16d COMMON AT 16" OC; 3"x0.131" AT 12" OC; 3"x0.128" AT 12" OC		
	SOUTH PINE, SPRUCE-PINE-FIR *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 HEADER FRAMING	PER PLAN	NAILS AT EACH END. *FACE NAIL DOUBLE PIECE HEADERS WITH 16d NAILS AT 16" CENTERS ALONG EACH EDGE.		
HEADERTRAIMING				
RAFTER TIES <sup>2</sup>	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		
. NOTE: ALL SHEATHING MATI	ERIALS TO BE APPLIED PERPENDICUL	ATTIC SPACE WITH (3) 10d NAILS AT EACH AR TO JOISTS AND ENDS STAGGERED.		
ESIGNED (AS IN A FULLY VAU	JLTED ROOM). SUCH SHALL BE NOTED	AS "STRUCTURAL" ON THE PLAN.		
BUILDING COMPONENT	FASTEN TO	FASTEN WITH		
	TO RIDGE/VALLEY/HIP RAFTERS	TOENAIL WITH (4) 16d		
RAFTERS	TO PLATE	ENDNAIL WITH (3) 16d TOENAIL WITH (2) 16d		
	TO TOP PLATE	TOENAIL WITH (3) 8d AT EACH END		
CEILING JOISTS		⊥ DISTS RUN PARALLEL TO RAFTERS O RAFTERS WITH (3) 10d MIN		
	TO SILL OR GIRDER	TOENAL WITH: (3) 8d COMMON; (3) 3"x0.131"; (4) 3"x0.		
FLOOR JOISTS	TO RIM JOIST	ENDNAIL WITH: (3) 16d COMMON; (4) 3"x0.131"; (4) 3"x0		
BRACED WALL PANELS PERP 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"		
MEMBERS ABOVE/BELOW:	TO FRAMING AND	SOLE PL, 16" OC WITH: (3) 16d COMMON; (4) 3"x0.131"		
PARALLEL TO FRAMING	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"		
MEMBERS ABOVE/BELOW:		AND AT EACH BLOCK: (3) 8d COMMON; 3"x0.131"		
		ULE ARE MINIMUM IRC REQUIREMENTS. SPECIFIC PROJECT		
REQUIREMENTS NOTED WITHI		RAL DRAWINGS, IF REQUIRED BY APEX ENGINEERS DESIGN		

### 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".

## 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 N1103.1.1.

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. TABLE 1 - ResCheck COMPLIANCE SOFTWARE (FILL IN APPLICABLE

<b>TABLE 1</b> - ResCheck COMPLIANCE SOFTWARE (FILL IN APPLICABLE           VALUES FROM ResCheck CALCS.)				
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 USE OF TABLE 1 A ResCheck COMPLIANCE FORM MUST BE				
SUBMITTED WITH PLANS.				
TABLE 2 - PRESCRIPTIVE ENVELOPE (MIN PRESC				
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 REATMENT 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 SCHEDULE						
MINIMUM STRUCT	COVER					
FORMED SURFACI	2"					
UNFORMED SURFACE IN CONTACT WITH THE GROUND						
WALLS AND SLABS NOT EXPOSED TO GROUND OR WEATHER						
INTERIOR BEAMS AND COLUMNS (TO TIES OF STIRRUPS) 1 1/2"						
EPOXY GROUTING APPLICATIONS						
THREADED ROD ANCHORS HILTI HIT-HY 200 A OR SIMPONS SET XP						
REINFORCING BARS HILTI HIT-HY 200 R OR SIMPONS					S SET XP	
CONCRETE USE	28 DAY STRENGTH	CEMENT TYPE	W/C RATIO	SLUMP LIMIT (in.)	% AIR ENTRAINED	
FOOTINGS/PIERS	3000 psi	N/A	0.55 (MAX)	5" (+/-1")	6% +/- 1%	
FOUNDATION WALLS	3500 psi	N/A	0.50 (MAX)	4" (+/-1")	6% +/- 1%	
INTERIOR SLABS	4000 psi	N/A	0.50 (MAX)	3" (+/-1")	3% MAX	
SUSPENDED SLABS	4000 psi	N/A	0.50 (MAX)	3" (+/-1")	3% MAX	

# 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 OTHERWISE

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" NOTE: HEAVY ROOF COVERING WILL NOT BE INSTALLED OR USED IN CENTERS WITHIN THE JOIST SPACE(S) AND THEN PROVIDE SOLID BLOCKING, THE DESIGN CALCULATIONS UNLESS IT IS SPECIFICALLY NOTED ON INSTALLED UPRIGHT, IN THE NEXT TWO JOIST SPACES. SECURE THE 2x4s TO THE THE PLANS THAT THE DESIGN IS FOR HEAVY ROOF COVERINGS. 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 1. THE FOUNDATION DESIGN SHALL BE BASED ON A MINIMUM SOIL BEARING MINIMUM 3" AND SHALL BE NAILED TOGETHER WITH A MINIMUM 10d FACE NAILS. CAPACITY OF 2000 PSF. UNLESS OTHERWISE INDICATED ON THE PLANS OR IF 11. JOISTS FRAMING INTO A WOOD GIRDER OR BEAM SHALL BE SUPPORTED BY MODIFIED BY AN ENGINEERING REPORT BASED ON ACTUAL SITE CONDITIONS. APPROVED FRAMING ANCHORS OR MINIMUM 2"x2" LEDGER STRIPS. . REFERENCE CONCRETE SCHEDULE, THIS SHEET, FOR APPLICABLE 12. FRAMING OF OPENINGS - HEADERS AND TRIMMERS SHALL BE OF SUFFICIENT FOUNDATION CONCRETE MIX DESIGNS. CROSS SECTION TO SUPPORT THE FLOOR FRAMING. TRIMMER JOISTS SHALL BE 3. FOOTINGS SHALL EXTEND BELOW THE FROST LINE; MINIMUM DEPTH 36 INCHES DOUBLED WHEN THE HEADER IS SUPPORTED MORE THAN 3'-0" FROM THE BELOW GRADE. TRIMMER JOIST BEARING. WHEN THE HEADER SPAN EXCEEDS 4'-0", THE 4. UNLESS OTHERWISE NOTED ON THE PLANS OR IF SITE CONDITIONS HEADER AND TRIMMER SHALL BE DOUBLED. REQUIRE OTHERWISE, FOOTINGS SHALL BE A MINIMUM OF 16" WIDE AND 8"

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 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. 5. SELF-CLOSING DEVICES SHALL BE INSTALLED FOR GARAGE AND/OR DWELLING

SEPARATION DOORS PER R302.5.1.

## **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 311.7.8.5

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 COMPLY WITH THE FOLLOWING 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

## FOUNDATIONS

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" TALL REQUIRE A SEPERATE ENGINEERED DESIGN. PROVIDE A 2'-0" LONG 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 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 24" DIAMETER OR 20" SQUARE SUMP PIT EXTENDING A MINIMUM 24" BELOW THE BOTTOM OF BASEMENT FLOOR

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.

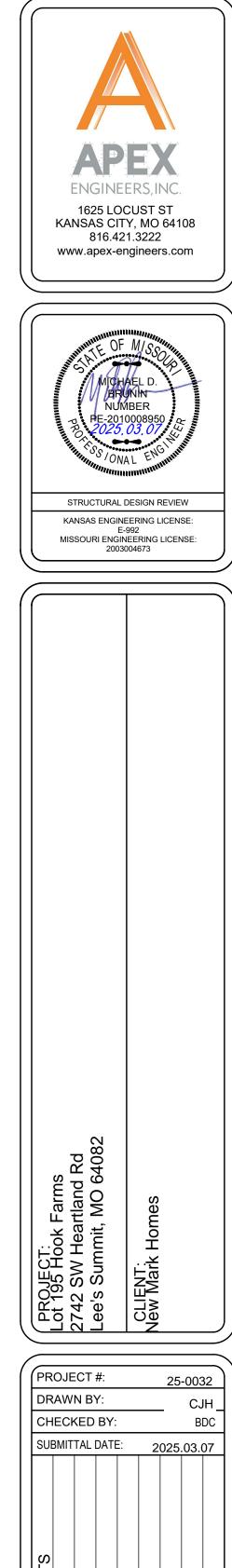
23. ANY GEOTECHNICAL IMPROVEMENT METHODS AND/OR STRUCTURAL SOLUTIONS (SUCH AS DRILLED PIERS) EMPLOYED TO ADDRESS UNACCEPTABLE SUBGRADE CONDITIONS SHALL BE SUBMITTED TO EOR AS ENGINEERED SHOP DRAWINGS FOR REVIEW AND APPROVAL.

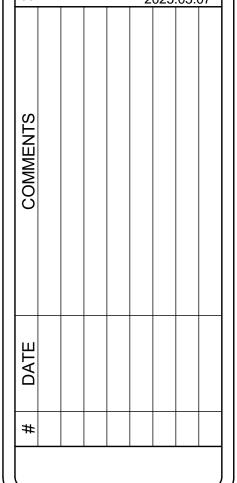
#### **EXPANSIVE SOILS DISCLAIMER:**

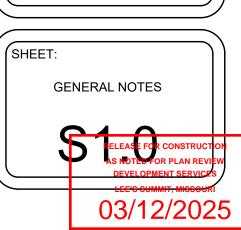
THESE PLANS HAVE BEEN PREPARED BASED ON A PRESUMPTIVE ALLOWABLE BEARING CAPACITY AS ALLOWED BY IRC CODE AND THE LOCAL ENFORCING JURISDICTION.

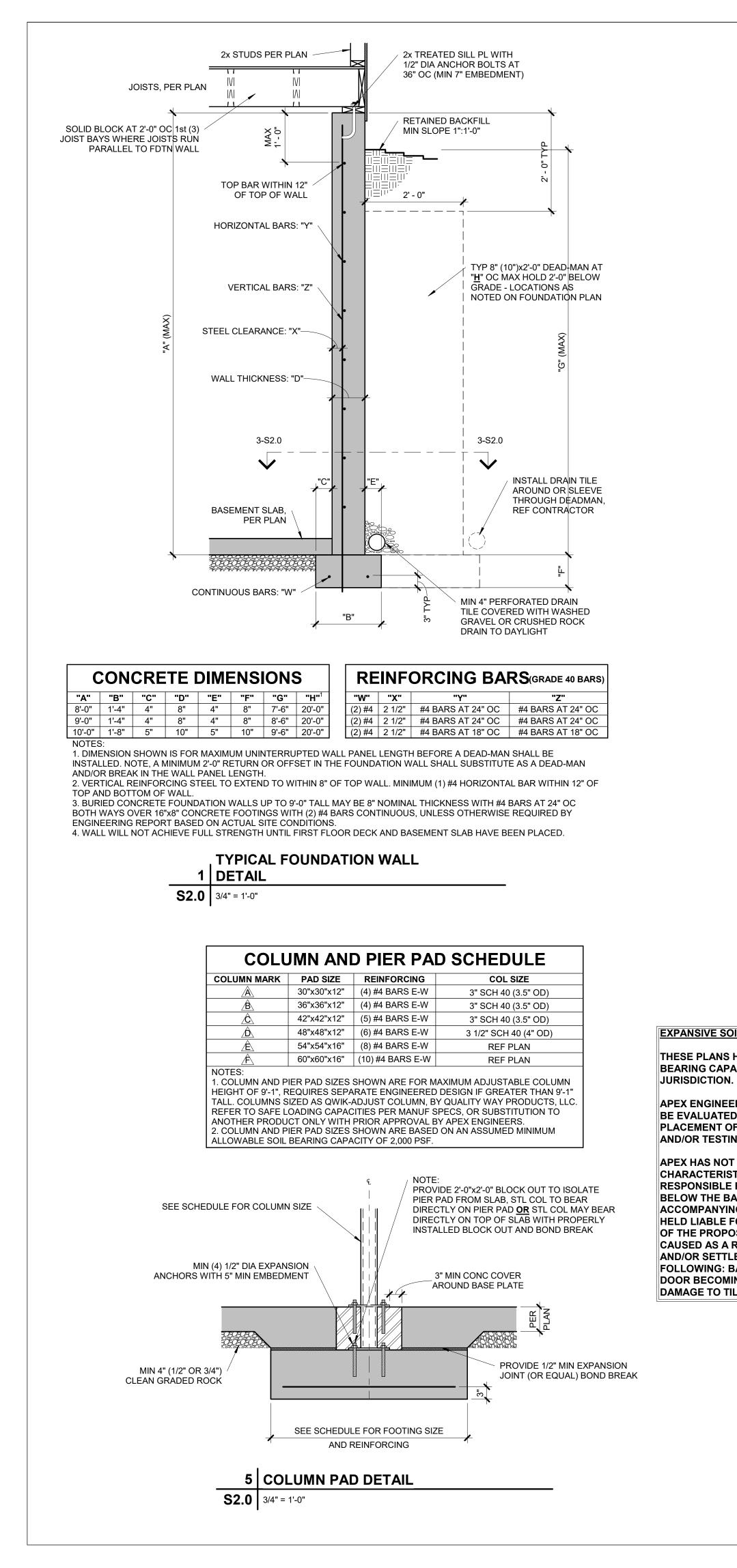
APEX ENGINEERS, INC. (APEX) RECOMMENDS THAT ALL FOOTING EXCAVATIONS BE EVALUATED BY A LICENSED GEOTECHNICAL ENGINEER PRIOR TO THE PLACEMENT OF ANY FOUNDATION ELEMENTS. GEOTECHNICAL INVESTIGATION AND/OR TESTING IS NOT A SERVICE PROVIDED OR OFFERED BY APEX.

APEX HAS NOT BEEN RETAINED TO DETERMINE THE EXPANSIVE SOIL CHARACTERISTICS OF THE SUBGRADE SOIL AND THEREFORE CANNOT BE HELD 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.









**4** FOUNDATION WALL JUMP DETAIL **S2.0** 1/2" = 1'-0"

MIN (1) 48" #4 BAR

TYPICAL JUMP AT STRAIGHT WALL PANEL

A 4

▲ `´ ▲ ▲

- - 4

CONTINUOUS FOOTING

THROUGH SOLID JUMP

· A · A · A ·

APEX HAS NOT BEEN RETAINED TO DETERMINE THE EXPANSIVE SOIL CHARACTERISTICS OF THE SUBGRADE SOIL AND THEREFORE CANNOT BE HELD **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.

PLACEMENT OF ANY FOUNDATION ELEMENTS. GEOTECHNICAL INVESTIGATION AND/OR TESTING IS NOT A SERVICE PROVIDED OR OFFERED BY APEX.

APEX ENGINEERS, INC. (APEX) RECOMMENDS THAT ALL FOOTING EXCAVATIONS BE EVALUATED BY A LICENSED GEOTECHNICAL ENGINEER PRIOR TO THE

BEARING CAPACITY AS ALLOWED BY IRC CODE AND THE LOCAL ENFORCING

**EXPANSIVE SOILS DISCLAIMER** THESE PLANS HAVE BEEN PREPARED BASED ON A PRESUMPTIVE ALLOWABLE



**3 TYPICAL DEAD-MAN SECTION** 

ACCEPTABLE BY THE GEOTECHNICAL ENGINEER

5. LAP SPLICES 24" MIN.

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

6. WALL SHALL BE BACK-FILLED WITH CLEAN, LEAN CLAY (OR BETTER) LOW VOLUME CHANGE MATERIAL. ON-SITE MATERIAL MAY BE USED IF DEEMED

7. ASSUMED 2,000 PSF BEARING (TO BE VERIFIED BY GEOTECHNICAL ENGINEER).

2' - 0"

\_\_\_\_\_

1' - 4"

\_ \_ \_ \_ \_ \_ \_ \_ \_

\_\_\_\_\_

TYP 8" (10")x2'-0" DEAD-

2'-0" BELOW GRADE

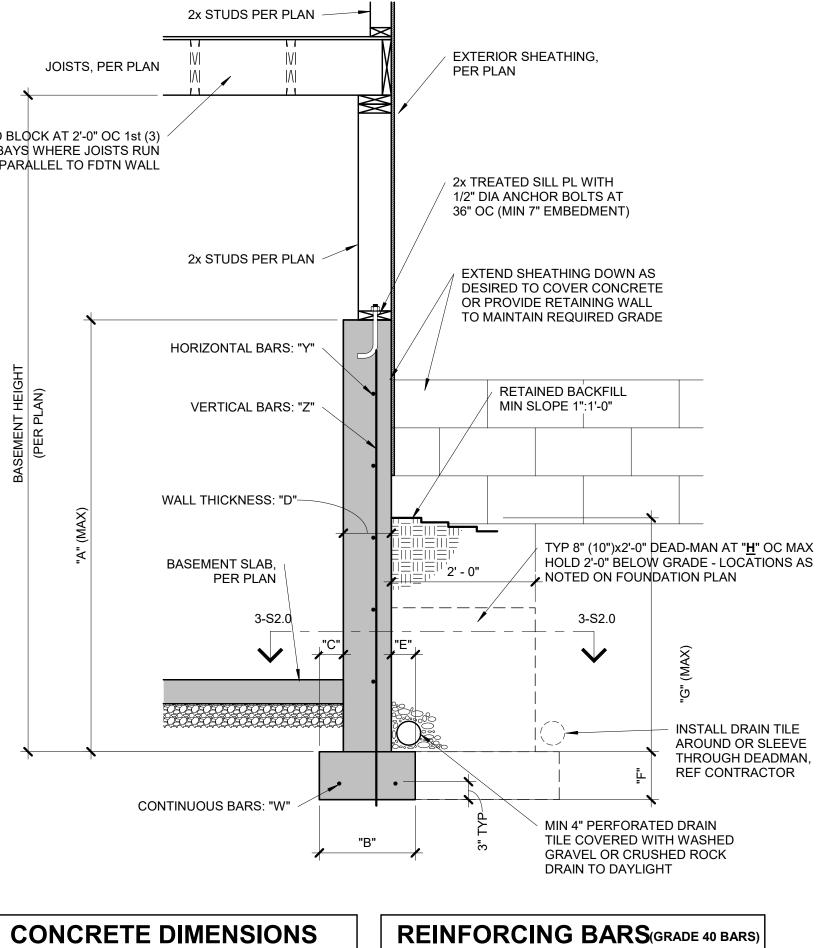
EXTEND HORIZONTAL

WALL INTO DEAD-MAN

STEEL FROM FOUNDATION

MAN AT "<u>H</u>" OC MAX HOLD

(2) #4 VERTICAL BARS



IENSIONS				<b>REINFORCING BARS</b> (GRADE 40 BARS)				
	"F"	"G"	<b>"H"</b> <sup>1</sup>		"W"	"X"	"Y"	"Z"
	8"	3'-4"	20'-0"		(2) #4	N/A	#4 BARS AT 24" OC	#4 BARS AT 24" OC
	8"	4'-4"	20'-0"		(2) #4	N/A	#4 BARS AT 24" OC	#4 BARS AT 24" OC
	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 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

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

JOISTS, PER PLAN

SOLID BLOCK AT 2'-0" OC 1st (3) JOIST BAYS WHERE JOISTS RUN

PARALLEL TO FDTN WALL

 "A"
 "B"
 "C"
 "D"
 "E'

 4'-0"
 1'-4"
 4"
 8"
 4"

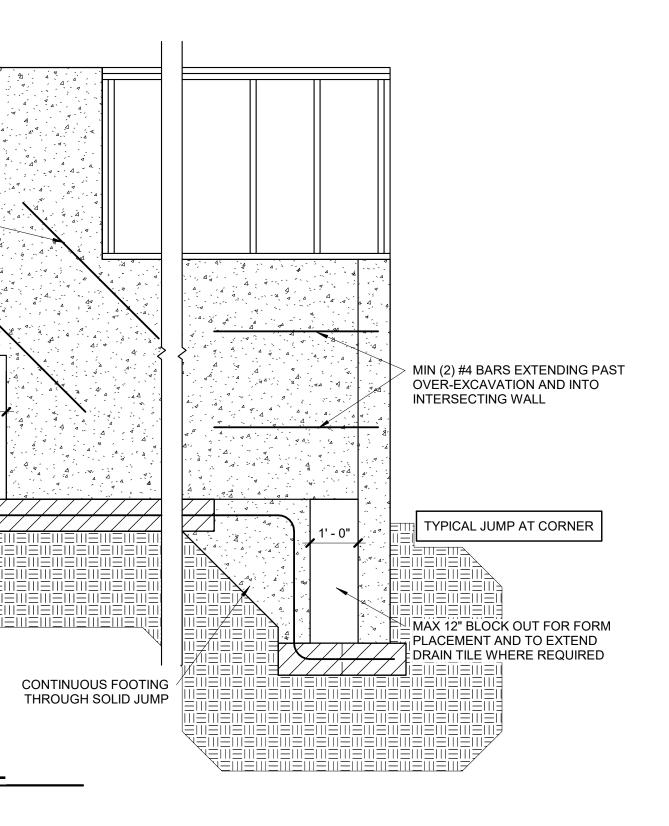
6'-0" 1'-4" 4" 8" 4"

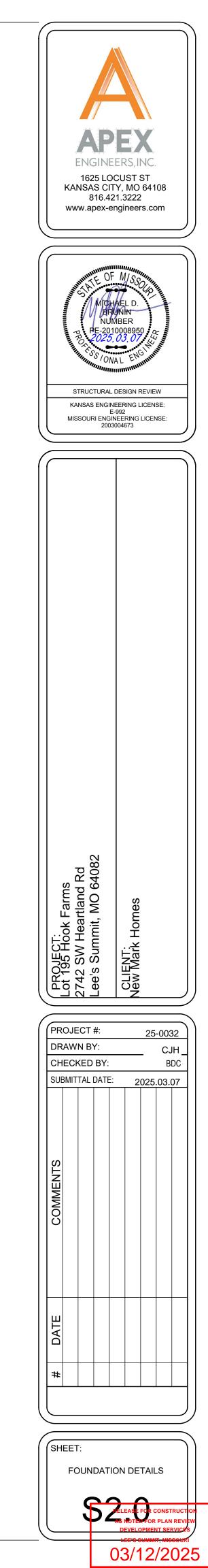
9'-0" 1'-8" 5" 8" 4"

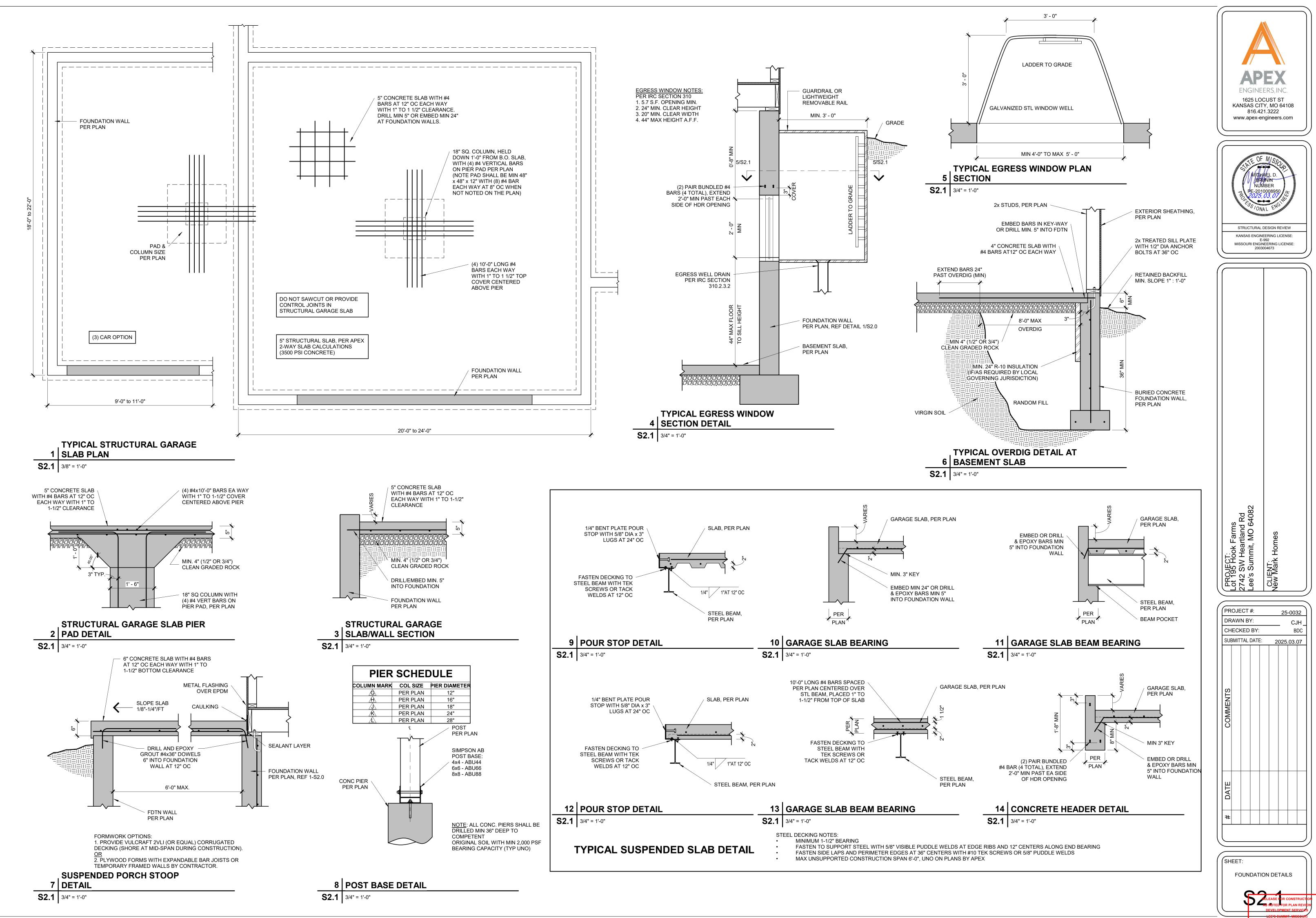
TOP AND BOTTOM OF WALL.

MIN (1) 48" #4 BAR

NOTES







03/12/2025

