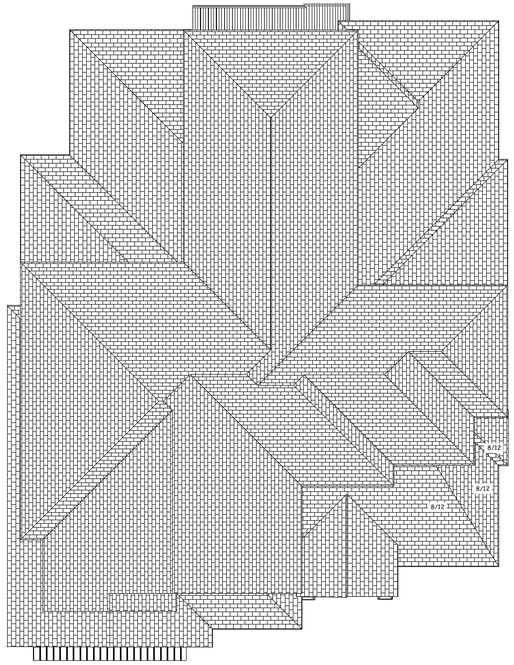
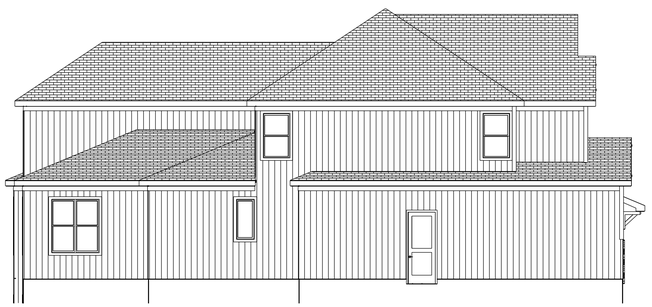


ROOF PLAN
1/8 = 1-0
ROOF PITCHES 5/12 MAIN FLOOR U.N.O.
ROOF PITCHES 8/12 SECOND FLOOR U.N.O.
RAFTERS 2 X 6 DF NO 2 @ 16" OC TYP.
HIPS AND RIDGES 2 X 8 DF NO 2 TYP.

GARAGE HILLCREST LONG
BOARD AND BEAD

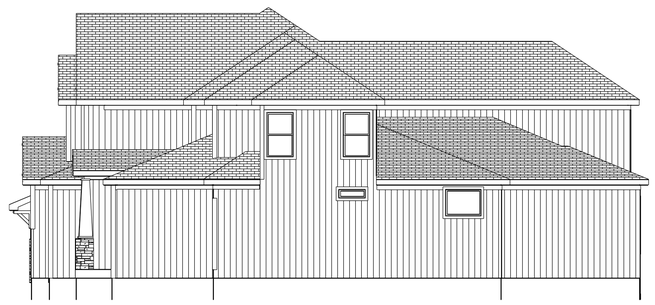
FRONT EL.
STONE, STUCCO, AND LAP



LEFT EL.
1/8 = 1-0

NOTE: ENCLOSED LOWER DECK WITH DOOR

REAR EL.
1/8 = 1-0



RIGHT EL.
1/8 = 1-0

3 SIDES LP PANEL SIDING

RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
04/29/2025 4:21:43

Digitally signed by Andrea Sessler
DN: CN=Andrea Sessler, OU=Development, OU=LS Users, DC=DOLS, DC=LOC
Date: 2025.04.29 16:22:03-05'00'

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Structural Only

David Mezger Engineering LLC
212 NE Circle Dr.
Kansas City, MO 64116

STATE OF MISSOURI
DAVID E. MEZGER
PE-2018009531
PROFESSIONAL ENGINEER

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DN: C=US, E=mezgerde@gmail.com, O=David Mezger Engineering LLC, CN=David Eugene Mezger
Date: 2025.04.28 12:46:47-05'00'

BUILD IN ACCORDANCE WITH
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RESIDENTIAL CODE AND
LOCAL CODES.

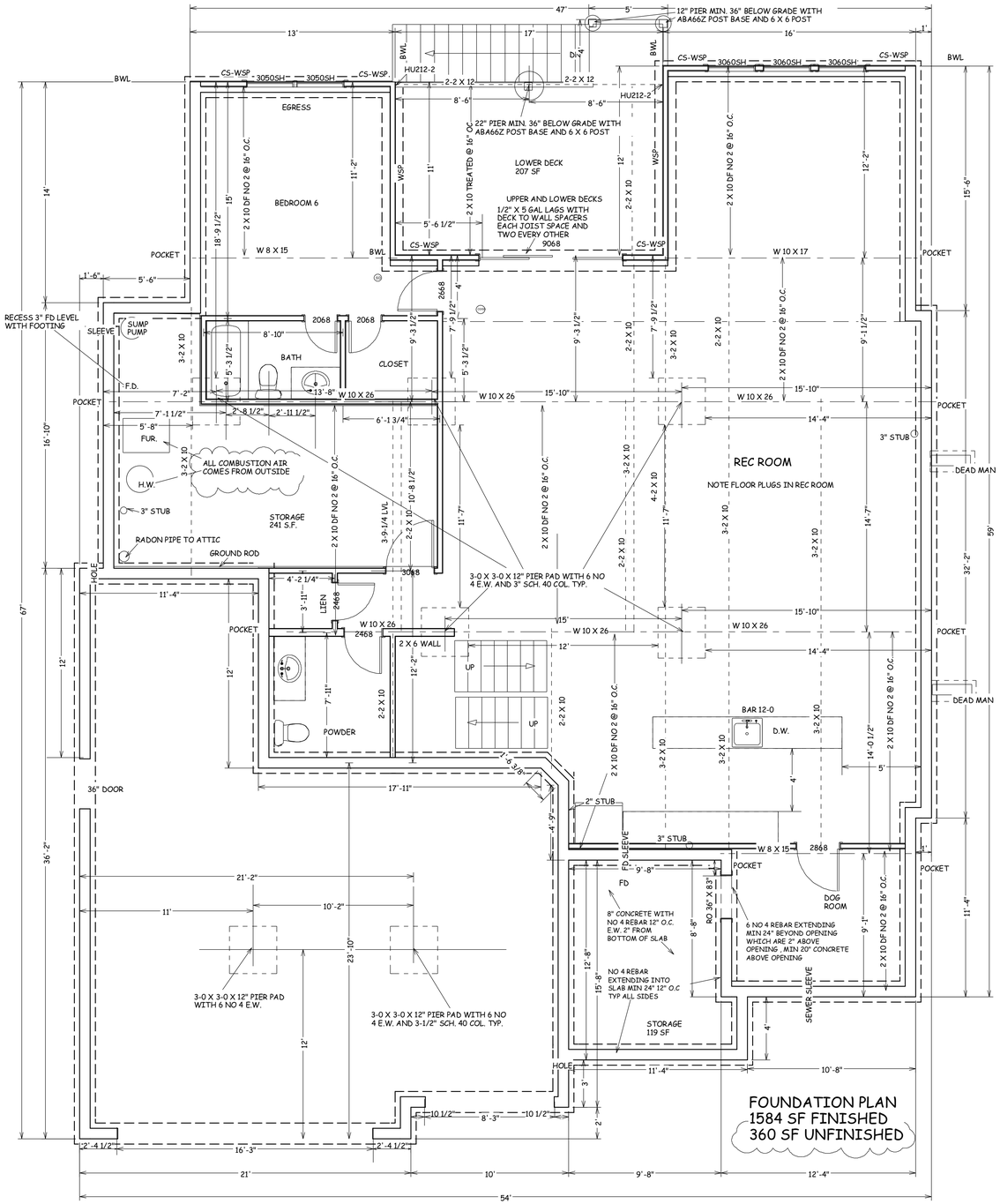
TRUMARK HOMES
LAURA
LOT 152 WOODSIDE
2090 NW O'BRIAN RD
LEE SUMMIT MO

SCALE
1/4" = 1-0

DATE
4-28-25

PLAN NO.
4415

SHEET NO.
1 OF 5



FOUNDATION PLAN
1584 SF FINISHED
360 SF UNFINISHED

Review and Approval
Structural Only

David Mezger Engineering LLC
212 NE Circle Dr.
Kansas City, MO 64116

STATE OF MISSOURI
DAVID E. MEZGER
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Date: 2025.04.28 12:46:27-05'00'
David Eugene Mezger

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TRUMARK HOMES
LAURA
LOT 152 WOODSIDE
2090 NW O'BRIAN RD
LEE SUMMIT MO

SCALE
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DATE
4-28-25

PLAN NO.
4415

SHEET NO.
2 OF 5

RELEASE FOR CONSTRUCTION
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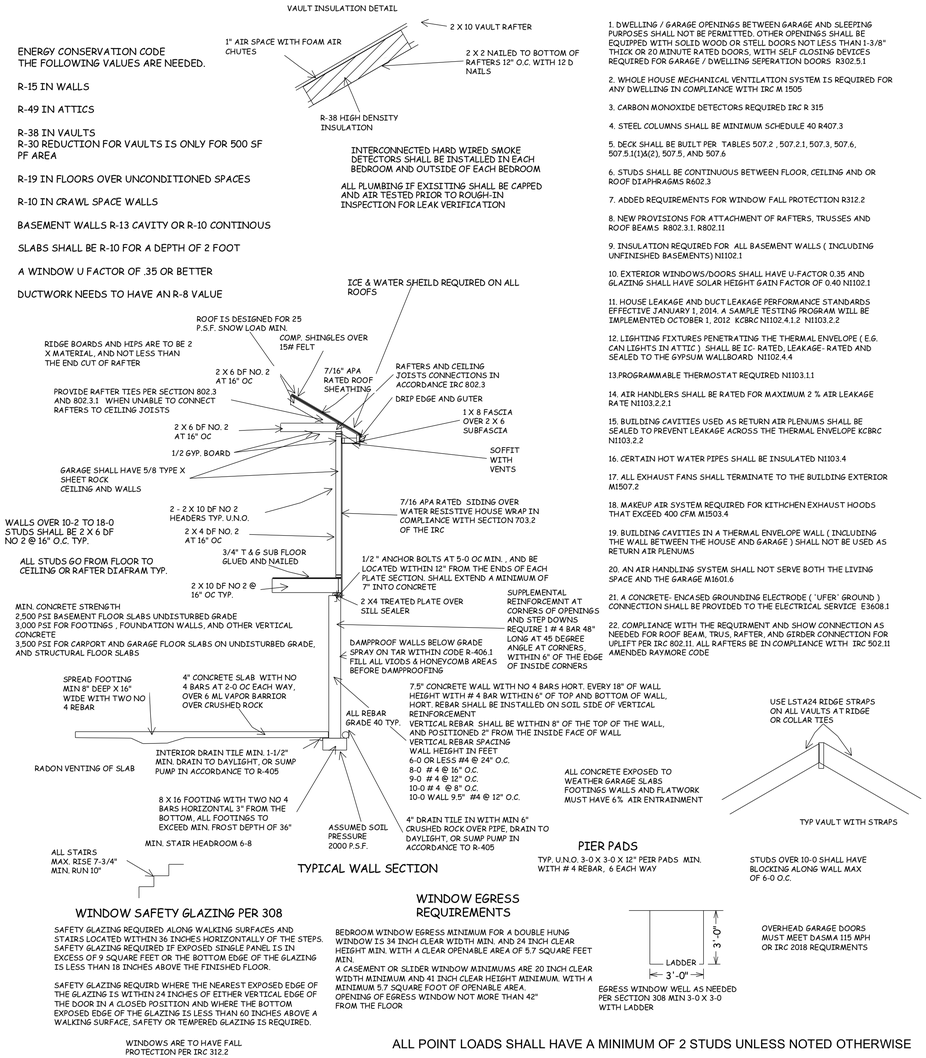


1. DWELLING / GARAGE OPENINGS BETWEEN GARAGE AND SLEEPING PURPOSES SHALL NOT BE PERMITTED. OTHER OPENINGS SHALL BE EQUIPPED WITH SOLID WOOD OR STELL DOORS NOT LESS THAN 1-3/8" THICK OR 20 MINUTE RATED DOORS, WITH SELF CLOSING DEVICES REQUIRED FOR GARAGE / DWELLING SEPERATION DOORS R302.5.1

2. WHOLE HOUSE MECHANICAL VENTILATION SYSTEM IS REQUIRED FOR ANY DWELLING IN COMPLIANCE WITH IRC M 1505

3. CARBON MONOXIDE DETECTORS REQUIRED IRC R 315

4. STEEL COLUMNS SHALL BE MINIMUM SCHEDULE 40 R407.3

5. DECK SHALL BE BUILT PER TABLES 507.2 , 507.2.1, 507.3, 507.6, 507.5.1(1)&(2), 507.5, AND 507.6

6. STUDS SHALL BE CONTINUOUS BETWEEN FLOOR, CEILING AND OR ROOF DIAPHRAGMS R602.3

7. ADDED REQUIREMENTS FOR WINDOW FALL PROTECTION R312.2

8. NEW PROVISIONS FOR ATTACHMENT OF RAFTERS, TRUSSES AND ROOF BEAMS R802.3.1, R802.11

9. INSULATION REQUIRED FOR ALL BASEMENT WALLS (INCLUDING UNFINISHED BASEMENTS) N1102.1

10. EXTERIOR WINDOWS/DOORS SHALL HAVE U-FACTOR 0.35 AND GLAZING SHALL HAVE SOLAR HEIGHT GAIN FACTOR OF 0.40 N1102.1

11. HOUSE LEAKAGE AND DUCT LEAKAGE PERFORMANCE STANDARDS EFFECTIVE JANUARY 1, 2014. A SAMPLE TESTING PROGRAM WILL BE IMPLEMENTED OCTOBER 1, 2012 KCBRC N1102.4.1.2 N1103.2.2

12. LIGHTING FIXTURES PENETRATING THE THERMAL ENVELOPE (E.G. CAN LIGHTS IN ATTIC) SHALL BE IC- RATED, LEAKAGE- RATED AND SEALED TO THE GYPSUM WALLBOARD N1102.4.4

13.PROGRAMMABLE THERMOSTAT REQUIRED N1103.1.1

14. AIR HANDLERS SHALL BE RATED FOR MAXIMUM 2 % AIR LEAKAGE RATE N1103.2.2.1

15. BUILDING CAVITIES USED AS RETURN AIR PLENUMS SHALL BE SEALED TO PREVENT LEAKAGE ACROSS THE THERMAL ENVELOPE KCBRC N1103.2.2

16. CERTAIN HOT WATER PIPES SHALL BE INSULATED N1103.4

17. ALL EXHAUST FANS SHALL TERMINATE TO THE BUILDING EXTERIOR M1507.2

18. MAKEUP AIR SYSTEM REQUIRED FOR KITHCHEN EXHAUST HOODS THAT EXCEED 400 CFM. M1503.4

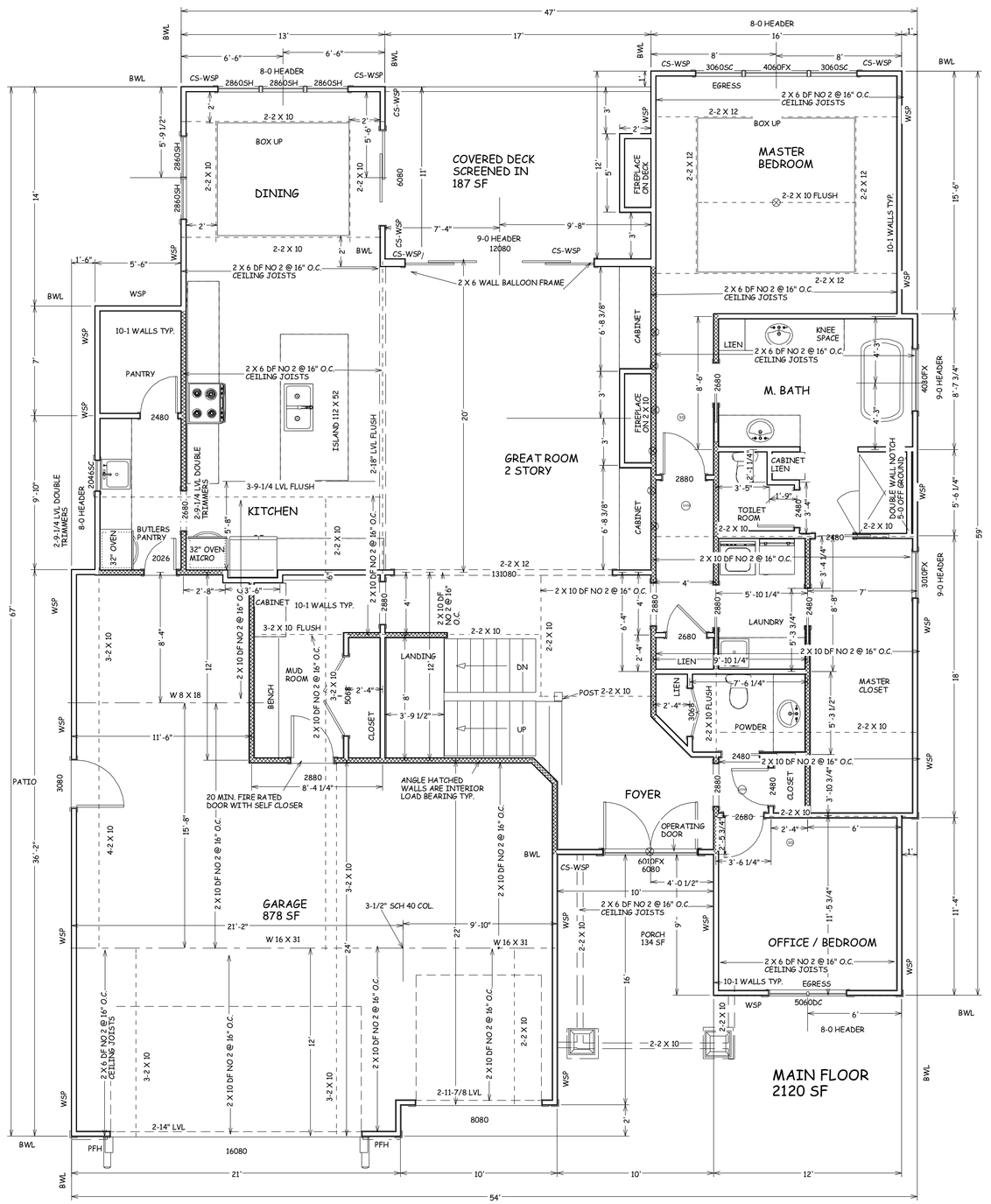
19. BUILDING CAVITIES IN A THERMAL ENVELOPE WALL (INCLUDING THE WALL BETWEEN THE HOUSE AND GARAGE) SHALL NOT BE USED AS RETURN AIR PLENUMS

20. AN AIR HANDLING SYSTEM SHALL NOT SERVE BOTH THE LIVING SPACE AND THE GARAGE M1601.6

21. A CONCRETE- ENCASED GROUNDING ELECTRODE ('UFER' GROUND) CONNECTION SHALL BE PROVIDED TO THE ELECTRICAL SERVICE E3608.1

22. COMPLIANCE WITH THE REQUIRMENT AND SHOW CONNECTION AS NEEDED FOR ROOF BEAM, TRUS, RAFTER, AND GIRDER CONNECTION FOR UPLIFT PER IRC 802.11. ALL RAFTERS BE IN COMPLIANCE WITH IRC 502.11 AMENDED RAYMORE CODE

ALL POINT LOADS SHALL HAVE A MINIMUM OF 2 STUDS UNLESS NOTED OTHERWISE



Review and Approval
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Date: 2025.04.29 12:46:11-05'00'
David Eugene Mezger

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TRUMARK HOMES
LAURA
LOT 152 WOODSIDE
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LEE SUMMIT MO

SCALE
1/4" = 1-0

DATE
4-28-25

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SHEET NO.
3 OF 5

RELEASE FOR CONSTRUCTION
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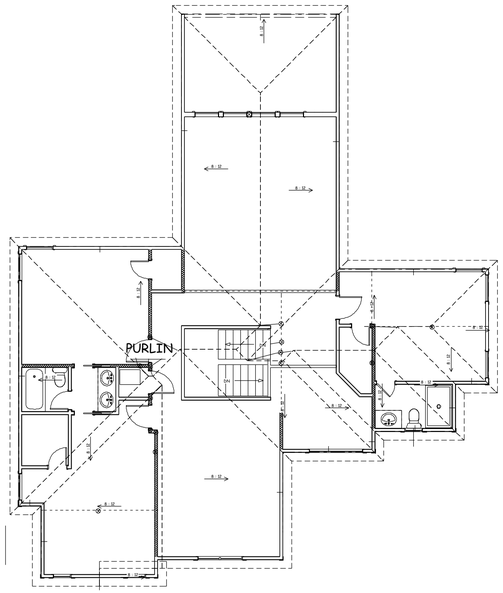
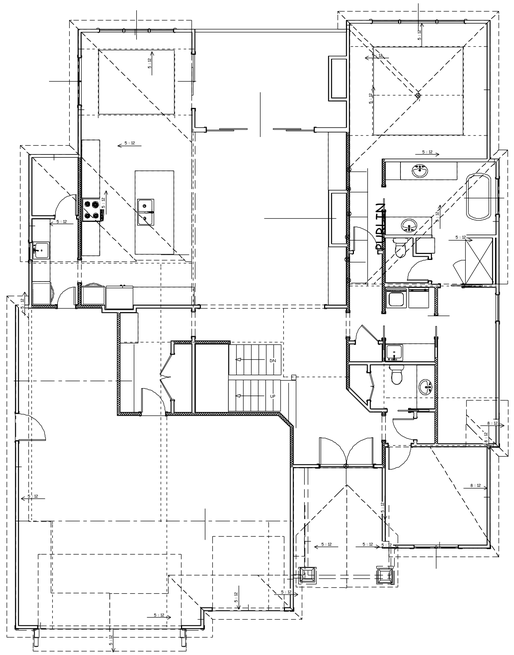
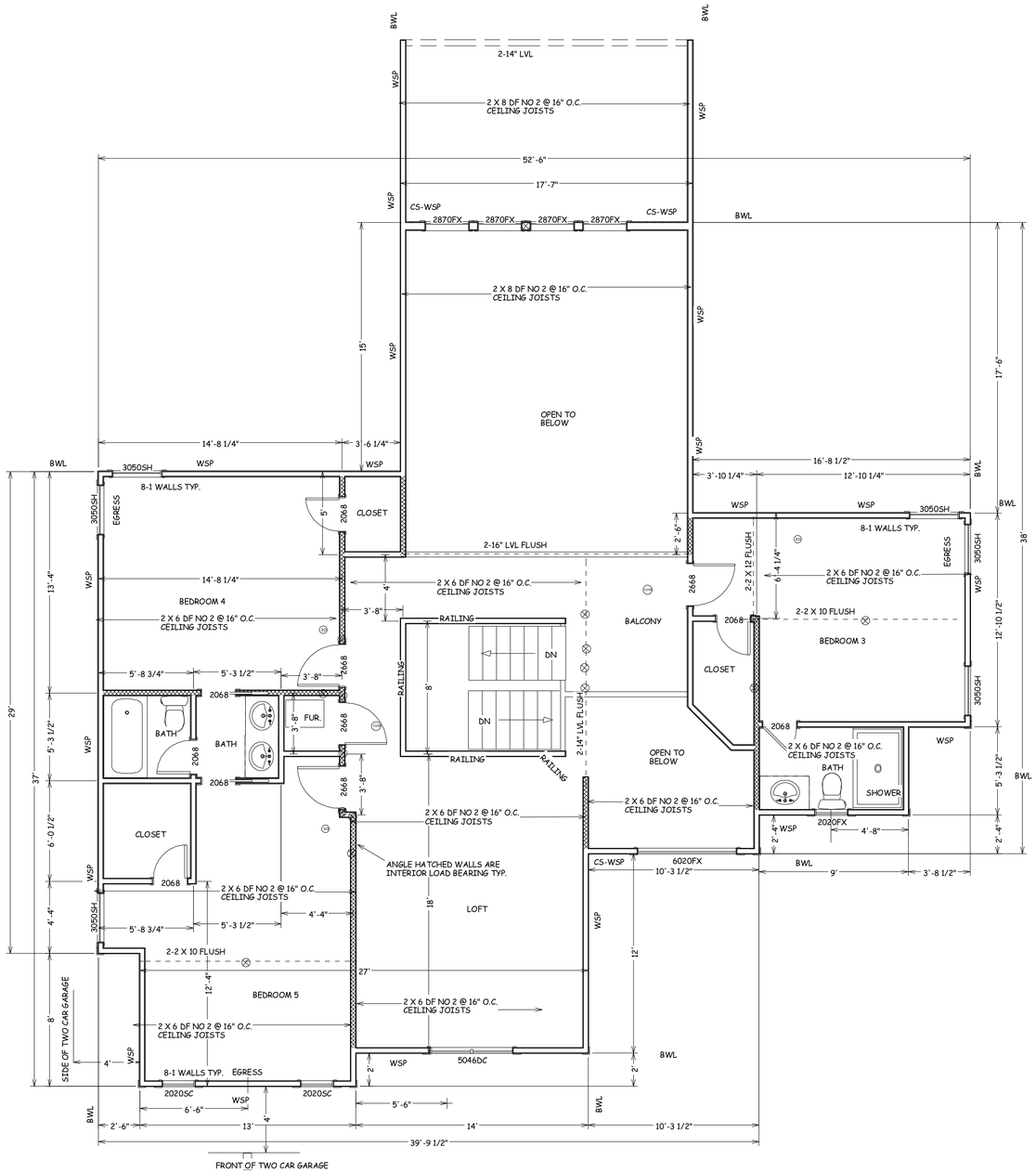


PURLIN PLAN SECOND FLOOR
1/8 = 1-0
ROOF PITCHES 8/12
RAFTERS 2 X 6 DF NO 2 @ 16" OC TYP.
HIPS AND RIDGES 2 X 8 DF NO 2 TYP.



PURLIN PLAN MAIN FLOOR
1/8 = 1-0
ROOF PITCHES 5/12
RAFTERS 2 X 6 DF NO 2 @ 16" OC TYP.
HIPS AND RIDGES 2 X 8 DF NO 2 TYP.



SECOND FLOOR
1234 SF

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Kansas City, MO 64116

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DAVID E. MEZGER
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Date: 2025.04.28 12:45:55-05'00'

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TRUMARK HOMES
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LOT 152 WOODSIDE
2090 NW O'BRIAN RD
LEE SUMMIT MO

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4 OF 5

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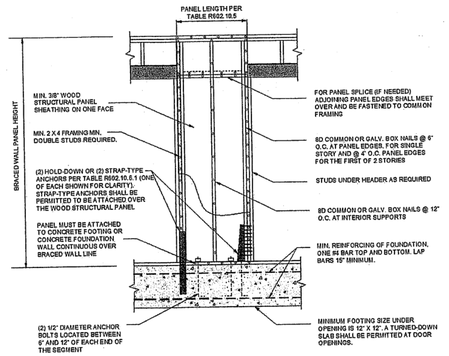
TABLE R602.10.3(1)
BRACING REQUIREMENTS BASED ON WIND SPEED

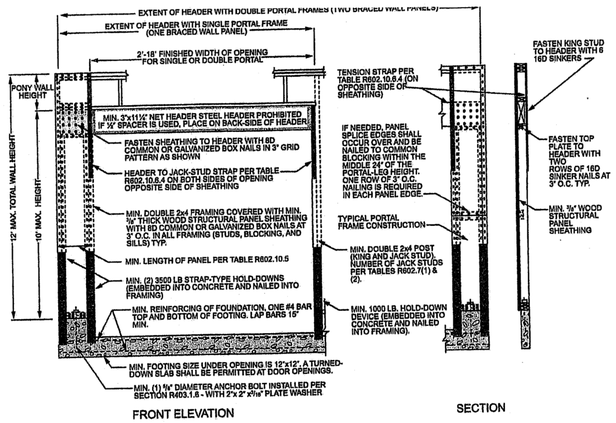
- EXPOSURE CATEGORY B
- 33-FOOT MEAN ROOF HEIGHT
- 10-FOOT WALL HEIGHT
- 2 BRACED WALL LINES

Ultimate Design Wind Speed (mph)	Story Location	Braced Wall Line Spacing[a] (feet)	MINIMUM TOTAL LENGTH (FEET) OF BRACED WALL PANELS REQUIRED ALONG EACH BRACED WALL LINE[b]			
			Method LIB[c]	Method GB	Methods DWB, WSP, SFB, PBS, PCP, HPS, BV-WSP, ABW, PFH, PFG, CS-SFB	Methods CS-WSP, CS-G, CS-PF
≤ 115		10	3.5	3.5	2.0	2.0
		20	6.5	6.5	3.5	3.5
		30	9.5	9.5	5.5	4.5
		40	12.5	12.5	7.0	6.0
		50	15.0	15.0	9.0	7.5
		60	18.0	18.0	10.5	9.0
		10	7.0	7.0	4.0	3.5
		20	12.5	12.5	7.5	6.5
		30	18.0	18.0	10.5	9.0
		40	23.5	23.5	13.5	11.5
		50	29.0	29.0	16.5	14.0
		60	34.5	34.5	20.0	17.0
		10	NP	10.0	6.0	5.0
		20	NP	18.5	11.0	9.0
		30	NP	27.0	15.5	13.0
		40	NP	35.0	20.0	17.0
		50	NP	43.0	24.5	21.0
		60	NP	51.0	29.0	25.0



25.4 mm.

FIGURE R602.10.6.1
METHOD ABW—ALTERNATE BRACED WALL PANEL



4 mm, 1 foot = 304.8 mm.

FIGURE R602.10.6.2
METHOD PFH—PORTAL FRAME WITH HOLD-DOWNS

TABLE R602.10.4
BRACING METHODS

METHODS, MATERIAL		MINIMUM THICKNESS	FIGURE	CONNECTION CRITERIA[a]	
				Fasteners	Spacing
Intermittent Bracing Methods	LIB Let-in-bracing	1 × 4 wood or approved metal straps at 45° to 60° angles for maximum 16" stud spacing		Wood: 2-8d common nails or 3-8d (2½" long x 0.113" dia.) nails	Wood: per stud and top and bottom plates
				Metal strap: per manufacturer	Metal: per manufacturer
	DWB Diagonal wood boards	¾" (1" nominal) for maximum 24" stud spacing		2-8d (2½" long × 0.113" dia.) nails or 2 - 1¾" long staples	Per stud
	WSP Wood structural panel (See Section R604)	⅜"		Exterior sheathing per Table R602.3(3)	6" edges 12" field
				Interior sheathing per Table R602.3(1) or R602.3(2)	Varies by fastener
	BV-WSP[e] Wood structural panels with stone or masonry veneer (See Section R602.10.6.5)	⅞"	See Figure R602.10.6.5	8d common (2½" × 0.131) nails	4" at panel edges 12" at intermediate supports 4" at braced wall panel end posts
	SFB Structural fiberboard sheathing	½" or ²⁵/₃₂" for maximum 16" stud spacing		1½" long x 0.12" dia. (for ½" thick sheathing) 1¾" long × 0.12" dia. (for ²⁵/₃₂" thick sheathing) galvanized roofing nails	3" edges 6" field
	GB Gypsum board	½"		Nails or screws per Table R602.3(1) for exterior locations	For all braced wall panel locations: 7" edges (including top and bottom plates) 7" field
				Nails or screws per Table R702.3.5 for interior locations	
	PBS Particleboard sheathing (See Section R605)	⅜" or ½" for maximum 16" stud spacing		For ⅜" 6d common (2" long × 0.113" dia.) nails For ½": 8d common (2½" long × 0.131" dia.) nails	3" edges 6" field
	PCP Portland cement plaster	See Section R703.7 for maximum 16" stud spacing		1½" long, 11 gage, ⅞" dia. head nails or ⅞" long, 16 gage staples	6" o.c. on all framing members
	HPS Hardboard panel siding	⅜" for maximum 16" stud spacing		0.092" dia., 0.225" dia. head nails with length to accommodate 1½" penetration into studs	4" edges 8" field
	ABW Alternate braced wall	⅜"		See Section R602.10.6.1	See Section R602.10.6.1

TABLE R602.10.4—continued
BRACING METHODS

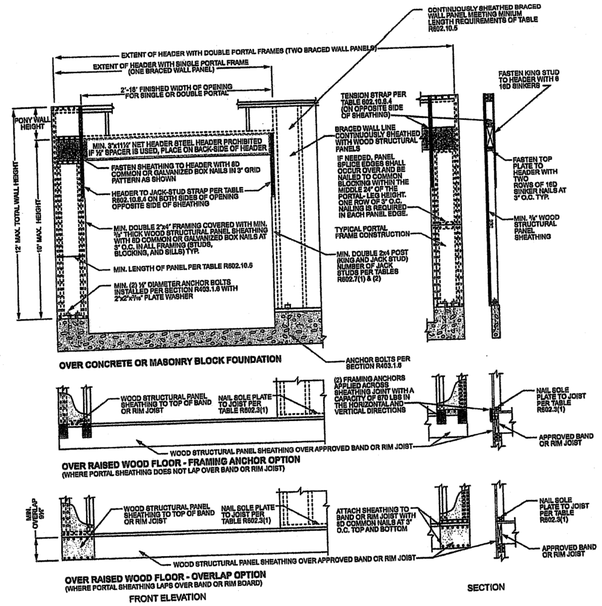
METHODS, MATERIAL		MINIMUM THICKNESS	FIGURE	CONNECTION CRITERIA[a]	
				Fasteners	Spacing
Intermittent Bracing Methods	PFH Portal frame with hold-downs	⅜"		See Section R602.10.6.2	See Section R602.10.6.2
	PFG Portal frame at garage	7/16"		See Section R602.10.6.3	See Section R602.10.6.3
Continuous Sheathing Methods	CS-WSP Continuously sheathed wood structural panel	⅜"		Exterior sheathing per Table R602.3(3)	6" edges 12" field
				Interior sheathing per Table R602.3(1) or R602.3(2)	Varies by fastener
	CS-G[b,c] Continuously sheathed wood structural panel adjacent to garage openings	⅜"		See Method CS-WSP	See Method CS-WSP
	CS-PF[c] Continuously sheathed portal frame	7/16"		See Section R602.10.6.4	See Section R602.10.6.4
	CS-SFB[d] Continuously sheathed structural fiberboard	½" or ²⁵/₃₂" for maximum 16" stud spacing		1½" long x 0.12" dia. (for ½" thick sheathing) 1¾" long x 0.12" dia. (for ²⁵/₃₂" thick sheathing) galvanized roofing nails	3" edges 6" field

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 degree = 0.0175 rad, 1 pound per square foot = 47.8 N/m², 1 mile per hour = 0.447 m/s.
a. Adhesive attachment of wall sheathing, including Method GB, shall not be permitted in Seismic Design Categories C, D_0, D_1 and D_2.
b. Applies to panels next to garage door opening where supporting gable end wall or roof load only. Shall only be used on one wall of the garage. In Seismic Design Categories D_0, D_1 and D_2 roof covering dead load shall not exceed 3 psf.
c. Garage openings adjacent to a Method CS-G panel shall be provided with a header in accordance with Table R602.7(1). A full-height clear opening shall not be permitted adjacent to a Method CS-G panel.
d. Method CS-SFB does not apply in Seismic Design Categories D_0, D_1 and D_2.
e. Method applies to detached one- and two-family dwellings in Seismic Design Categories D_0 through D_2 only.

TABLE R602.10.5
MINIMUM LENGTH OF BRACED WALL PANELS

METHOD (See Table R602.10.4)		MINIMUM LENGTH[a] (inches) Wall Height 8 feet	9 feet	10 feet	11 feet	12 feet	CONTRIBUTING LENGTH (inches)
DWB, WSP, SFB, PBS, PCP, HPS, BV-WSP		48	48	48	53	58	Actual[b]
GB		48	48	48	53	58	Double sided = Actual Single sided = 0.5 × Actual
LIB		55	62	69	NP	NP	Actual[b]
ABW	SDC A, B and C, ultimate design wind speed < 140 mph	28	32	34	38	42	48
	SDC D_0, D_1 and D_2, ultimate design wind speed < 140 mph	32	32	34	NP	NP	
CS-G		24	27	30	33	36	Actual[b]
CS-WSP, CS-SFB	Adjacent clear opening height (inches)						Actual[b]
	≤ 64	24	27	30	33	36	
	68	26	27	30	33	36	
	72	27	27	30	33	36	
	76	30	29	30	33	36	
	80	32	30	30	33	36	
	84	35	32	32	33	36	
	88	38	35	33	33	36	
	92	43	37	35	35	36	
	96	48	41	38	35	36	
	100	—	44	40	38	38	
	104	—	49	43	40	39	
	108	—	54	46	43	41	
	112	—	—	50	45	43	
	116	—	—	55	48	45	
	120	—	—	60	52	48	
	124	—	—	—	56	51	
	128	—	—	—	61	54	
	132	—	—	—	66	58	
	136	—	—	—	—	62	
	140	—	—	—	—	65	
	144	—	—	—	—	72	
METHOD (See Table R602.10.4)		Portal header height 8 feet	9 feet	10 feet	11 feet	12 feet	
PFH	Supporting roof only	16	16	16	Note c	Note c	48
	Supporting one story and roof	24	24	24	Note c	Note c	
PFG		24	27	30	Note d	Note d	1.5 × Actual[b]
CS-PF	SDC A, B and C	16	18	20	Note e	Note e	1.5 × Actual[b]
	SDC D_0, D_1 and D_2	16	18	20	Note e	Note e	Actual[b]

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 mile per hour = 0.447 m/s.
NP = Not Permitted.
a. Linear interpolation shall be permitted.
b. Use the actual length where it is greater than or equal to the minimum length.
c. Maximum header height for FPH is 10 feet in accordance with Figure R602.10.6.2, but wall height shall be permitted to be increased to 12 feet with pony wall.
d. Maximum header height for PFG is 10 feet in accordance with Figure R602.10.6.3, but wall height shall be permitted to be increased to 12 feet with pony wall.
e. Maximum header height for CS-PF is 10 feet in accordance with Figure R602.10.6.4, but wall height shall be permitted to be increased to 12 feet with pony wall.



For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

FIGURE R602.10.6.4
METHOD CS-PF—CONTINUOUSLY SHEATHED PORTAL FRAME PANEL CONSTRUCTION

BRACE WALL DETAILS
WIND SPEED 115 MPH
WIND EXPOSURE A
SEISMIC DESIGN CAEGORY A

Review and Approval
Structural Only

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212 NE Circle Dr.
Kansas City, MO 64116

STATE OF MISSOURI
DAVID E. MEZGER
PE-2018009531
PROFESSIONAL ENGINEER

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DN: C=US, E=me.rgeek@gmail.com, David Eugene Mezger On:David Mezger Engineering LLC, CN=David Eugene Mezger
Date: 2025.04.28 12:45:37 -05'00'

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TRUMARK HOMES
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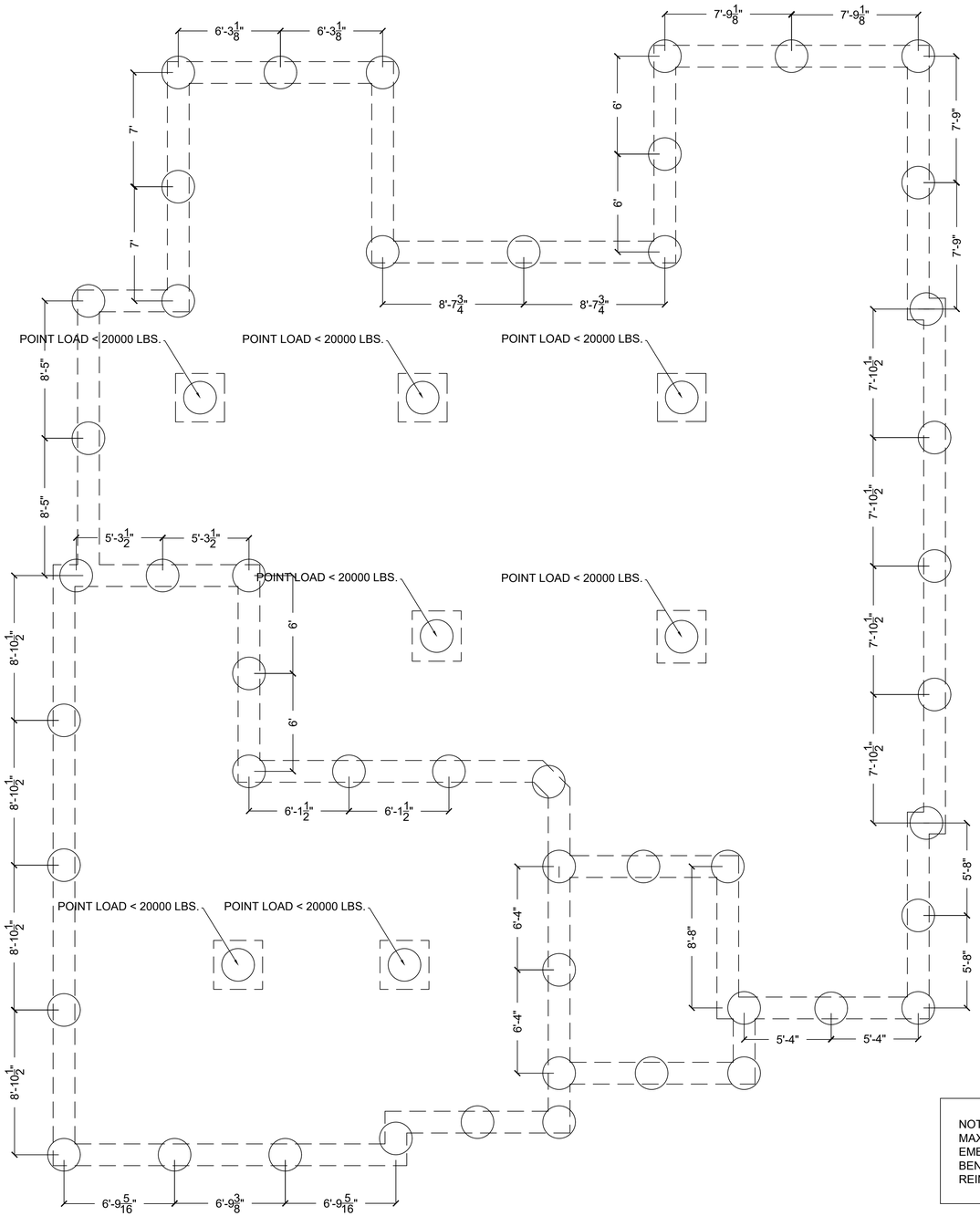

PILE CAPACITY (Q_{allow}) CALCULATIONS (USING PRESUMPTIVE LOAD BEARING VALUES IN LIEU OF SOIL TEST DATA)
FROM IRC 2018 TABLE R403.1(1), FOOTING CAPACITY MUST BE A MINIMUM OF 2333 PLF (14" WIDE X 2000 PSF).
ASSUMPTIONS:
SOIL TYPE - GC (CLAYEY GRAVEL)
FROM IBC 2018 TABLE 1802.2, BEARING PRESSURE CAPACITY AT THE SURFACE IS 2000 PSF
WEIGHT OF SOIL 100 PCF
LATERAL BEARING PRESSURE 150 PSF/FT BELOW THE SURFACE
COEFFICIENT OF FRICTION (TO CALCULATE PILE SKIN FRICTION RESISTANCE) .25
SKIN FRICTION RESISTANCE FACTOR OF SAFETY (FOS) 2.0
DESIGN PILE SHALL BE 24" (2.0') IN DIAMETER X 20' DEPTH (OR TO ROCK PRIOR TO 20')

CALCULATE END BEARING
END BEARING CAPACITY = PILE CROSS SECTIONAL AREA X SOIL BEARING CAPACITY AT DEPTH OF PILE TIP
END BEARING CAPACITY = $(PI(2/2)^2)(2000 + 20(100)) = 12566$ LBS

SKIN FRICTION BEARING CAPACITY
THE AVERAGE SKIN FRICTION CAPACITY = $\frac{1}{2}$ THE DEPTH X LATERAL BEARING PRESSURE AT THAT DEPTH X THE SURFACE AREA OF THE PILE X FRICTION COEFFICIENT ALL DIVIDED BY THE SKIN FRICTION FOS (WITH A MAXIMUM OF 15 TIMES THE LATERAL PRESSURE VALUE, SEE ABOVE,
THEREFORE USE A DEPTH OF $\frac{15}{2}$ OR 7.5')
SKIN FRICTION BEARING CAPACITY = (7.5(150) X PI(2)(20) X .25)/2 = 17671 LBS

Q_{allow} = END BEARING + SKIN FRICTION - WEIGHT OF THE PILE
WEIGHT OF PILE = $PI(2/2)^2$ X 20 X 150 (PCF) =9425 LBS
Q_{allow} = 12566 + 17671 -9425 = 20812 LBS

MAXIMUM PILE SPACING = PILE CAPACITY / CODE SPECIFIED FOOTING CAPACITY (PLF) EXCEPT WHERE POINT LOADS FROM BEAMS AND HEADERS ARE IDENTIFIED.

MAXIMUM PILE SPACING = 20812 / 2333 = 8.92' (8'-11")

PILE CONCRETE SHALL BE A MINIMUM 3000 PSI DESIGN MIX
REQUIRED AXIAL CAPACITY IS $P_u = Q_{allow}$ = 20812 LBS.
PER IBC 2018 1810.3.2.6, THE AXIAL CONCRETE COMPRESSIVE STRENGTH $P_n = .3(f'_c)(A_g = .3(3000)(452\ IN^2) = 406800$ LBS. >>P_u
BY IBC 2018 1810.3.9.2, NO AXIAL REINFORCEMENT IS REQUIRED SINCE NO BENDING MOMENT IS ASSUMED.

2018 International Building Code (IBC)

CHAPTER 18 SOILS AND FOUNDATIONS

TABLE 1806.2
PRESUMPTIVE LOAD-BEARING VALUES

CLASS OF MATERIALS	VERTICAL FOUNDATION PRESSURE (psf)	LATERAL BEARING PRESSURE (psf/ft below natural grade)	LATERAL SLIDING RESISTANCE	
			Coefficient of frictiona	Cohesion (psf) [b]
1. Crystalline bedrock	12,000	1,200	0.70	—
2. Sedimentary and foliated rock	4,000	400	0.35	—
3. Sandy gravel and gravel (GW and GP)	3,000	200	0.35	—
4. Sand, silty sand, clayey sand, silty gravel and clayey gravel (SW, SP, SM, SC, GM and GC)	2,000	150	0.25	—
5. Clay, sandy clay, silty clay, clayey silt, silt and sandy silt (CL, ML, MH and CH)	1,500	100	—	130

For SI: 1 pound per square foot = 0.0479kPa, 1 pound per square foot per foot = 0.157 kPa/m.

a. Coefficient to be multiplied by the dead load.

b. Cohesion value to be multiplied by the contact area, as limited by Section 1806.3.2 .

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CHAPTER 18 SOILS AND FOUNDATIONS

1806.3.3 Increase for depth.

The lateral bearing pressures specified in Table 1806.2 shall be permitted to be increased by the tabular value for each additional foot (305 mm) of depth to a value that is not greater than 15 times the tabular value.

FOOTING PIER PLAN WITH PIER SIZING AND DESIGN CALCULATIONS

NOTE: ALL PIERS 24" DIAMETER X 20' DEEP MAXIMUM OR TO ROCK U.N.O.
EMBED (2) #4 BARS 5' INTO TOP OF PIER AND BEND OVER 24" TO LAP ONTO FOOTING REINFORCEMENT.

NOTE: THIS DRAWING TO BE WORKED WITH PLAN #4415LA SHEET 2 OF 5 OF THE ARCHITECTURAL SET.
USE SHEET 2 FOR REFERENCE TO PLACE PIERS.
DIMENSIONS SHOWN ARE FOR VERIFICATION OF TRIBUTARY SPAN ONLY.

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913-481-3774

STATE OF MISSOURI
DAVID E. MEZGER
PE-2018009531
PROFESSIONAL ENGINEER

Digitally signed by David Eugene Mezger
DN: C=US, E=mezgerde@gmail.com, O=David Mezger Engineering LLC, CN=David Eugene Mezger
Date: 2025.04.28 12:38:04-05'00'

Engineers seal is for STRUCTURAL design and review only.

NO.	REVISION / ISSUE	DATE
0	PERMIT ISSUE	4/17/25

BUILDER / ARCHITECT

TRUMARK HOMES

PROJECT NAME / ADDRESS

LAURA
LOT 152 WOODSIDE
2090 NW O'BRIAN RD
LEE SUMMIT MO

PROJECT #: 25041

DATE: 4/17/2025

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

SHEET: S-0.1

RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
04/29/2025 4:21:43