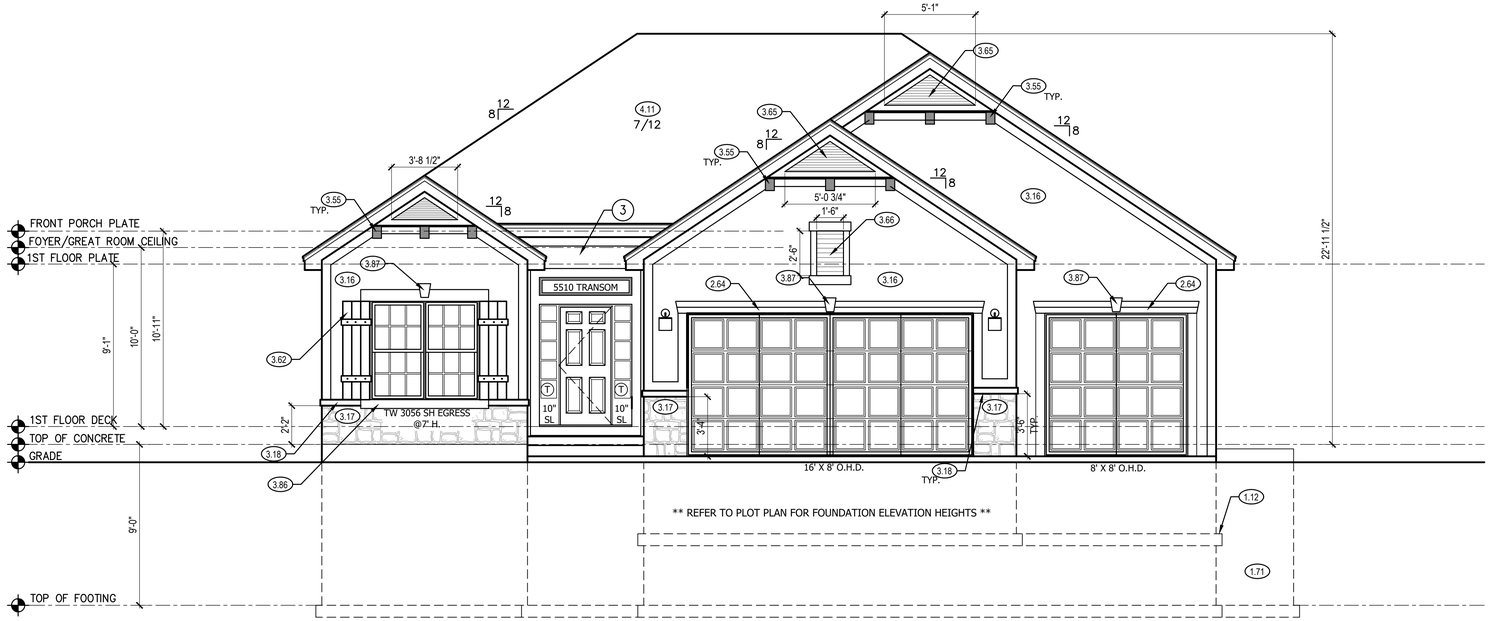


FRONT ELEVATION 2
SCALE: 1/4" = 1'-0"

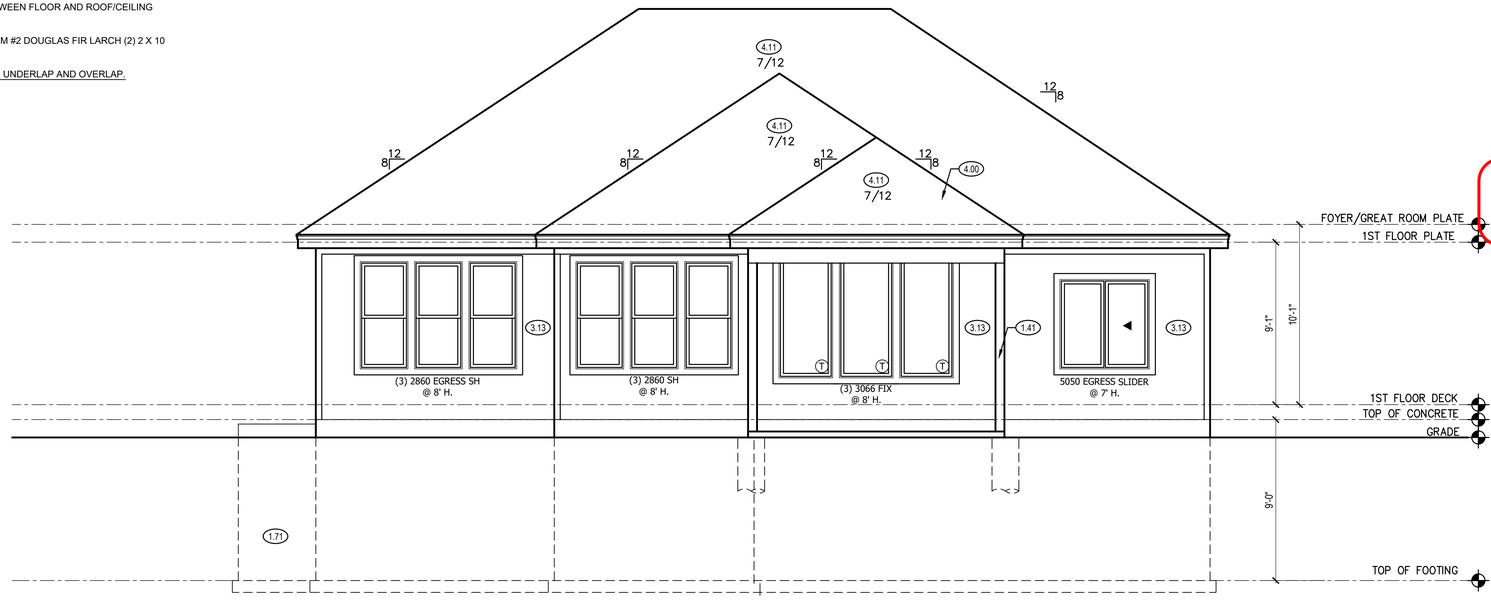
NOTE:

ALL CONSTRUCTION SHALL CONFORM TO 2018 INTERNATIONAL RESIDENTIAL CODE OR ATTACHED ENGINEER SPECIFICATIONS WHERE APPLICABLE.

ELEVATIONS:
GARAGE DOORS SHALL MEET DASMA FOR ULTIMATE DESIGN WIND SPEED OF 115 MPH REQUIREMENTS.
WALL FRAMING SHALL BE DOUGLAS FIR LARCH #2 UNLESS OTHERWISE NOTED.
IN BEARING WALLS, STUDS WHICH ARE NOT MORE THAN TEN FEET IN LENGTH SHALL BE SPACED NOT MORE THAN IS SPECIFIED BY IRC TABLE R602.3(5) FOR CORRESPONDING STUD SIZE.
WATER-RESISTIVE EXTERIOR WALL BARRIER IN WALL SECTION SHALL COMPLY WITH IRC R703.2.
WHEN APPLICABLE, CONTINUOUS STUDS BETWEEN FLOOR AND ROOF/CEILING DIAPHRAGM SHALL COMPLY WITH IRC R602.3.

ALL UNMARKED HEADERS SHALL BE A MINIMUM #2 DOUGLAS FIR LARCH (2) 2 X 10 ON LOAD BEARING WALLS.

SHIPLAP SIDING MUST BE FASTENED AT BOTH UNDERLAP AND OVERLAP.



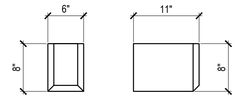
REAR ELEVATION 1
SCALE: 1/4" = 1'-0"

RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
CODES ADMINISTRATION
LEE'S SUMMIT, MISSOURI
BY _____
DATE _____

Brandon Kalwei
Digitally signed by Brandon Kalwei
DN: CN=Brandon Kalwei, OU=Development, OU=LS Users, DC=COLS, DC=LOC
Date: 2021.05.20 15:07:57-05'00'

FRONT & REAR ELEVATION NOTES

1.12 TOP OF FOOTING DEPTH DETERMINED PER SITE.
1.41 6X6 CEDAR POST
1.71 CONCRETE WINDOW WELL FOR EGRESS WITH LADDER. PROVED SLEEVE THROUGH WALL FOR FOUNDATION DRAIN. TOP OF WINDOW WELL TO BE 3" BELOW TOP OF FOUNDATION.
2.64 5/4"X8" + 1X4 LP SMART TRIM. 1 1/2" ARCH ON GARAGE DOOR TRIM UNLESS NOTED OTHERWISE ON ELEVATION.
3.13 LP SMART PANEL SIDING WITH 3/4X4 LP SMART TRIM AROUND DOORS, WINDOWS, AND CORNERS UNLESS NOTED OTHERWISE. BOTTOM OF SIDING SHALL BE A MINIMUM OF 6" ABOVE GRADE.
3.16 STUCCO, SHEATHED WITH 15/32" THICK OSB RATED 24/0 SHEATHING. EXTEND STUCCO TO WITHIN 8" OF FINISHED GRADE. 5/4X6 LP SMART TRIM AROUND WINDOWS AND DOORS UNLESS NOTED OTHERWISE.
3.17 MANUFACTURED STONE VENEER.
3.18 CAST STONE CAP
3.55 6"X8"X11" CEDAR CORBEL WITH CHAMFERED EDGES
3.62 CEDAR SHUTTERS. ALL SHUTTERS TO BE 18" WIDE USING (3) 2X6 BOARDS. LP SMART TRIM TO BE INSTALLED AROUND WINDOW PRIOR TO SHUTTER INSTALLATION.
3.65 DECORATIVE GABLE LOUVER – FUR OUT FROM FACE OF HOUSE
3.66 DECORATIVE FALSE LOUVERED VENT WITH 1X6 LP SMART BOARD.
3.86 DOUBLE TRIM WHERE ADJACENT TO STONE
3.87 FAUX KEYSTONE: LP SOFFIT BOARD. TOP: 8" BOTTOM: 5" HEIGHT: 9 1/4"
4.00 COVERING WILL HAVE 1 ROOF VENT AND 4 SOFFIT VENTS
4.11 MINIMUM ROOFING COMPOSITION– 30 YR COMPOSITE SHINGLES ON 15# FELT ON 1/2" OSB SHEATHING OR AS REQUIRED BY CODE.
4.31 BUILD CRICKET VALLEY AWAY FROM INTERSECTION FOR POSITIVE DRAINAGE.



BRACKET DETAIL 3
SCALE: 1" = 1'-0"

GENERAL NOTES

DIMENSIONAL LUMBER IS LABELED PER INDUSTRY STANDARD TERMINOLOGY. ACTUAL LUMBER SIZING IS EXPECTED TO VARY PER VENDOR.

WINDOW SIZES ARE WRITTEN IN FEET AND INCHES PER INDUSTRY STANDARDS. EX: 3050 SH = 3'-0" X 5'-0" SINGLE HUNG, 3066 FIX = 3'-0" X 6'-6" FIXED.

SHEET INDEX

FINISHED	
MAIN FLOOR	1749
FINISHED STAIRS TO LOWER LEVEL	21
TOTAL	1770
UNFINISHED	
LOWER LEVEL - UNFINISHED	1542
COVERED PATIO	168
GARAGE	692

ENGINEER	TRUSS	I-JOIST
RES	WHEELER	NA

REVISIONS

NO.	DATE	DESCRIPTION
1		
2		
3		
4		

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816-246-6700

ADDRESS:
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SHEFFIELD
TRADITIONAL
HAWTHORNE RIDGE #138

PROFESSIONAL SEAL:

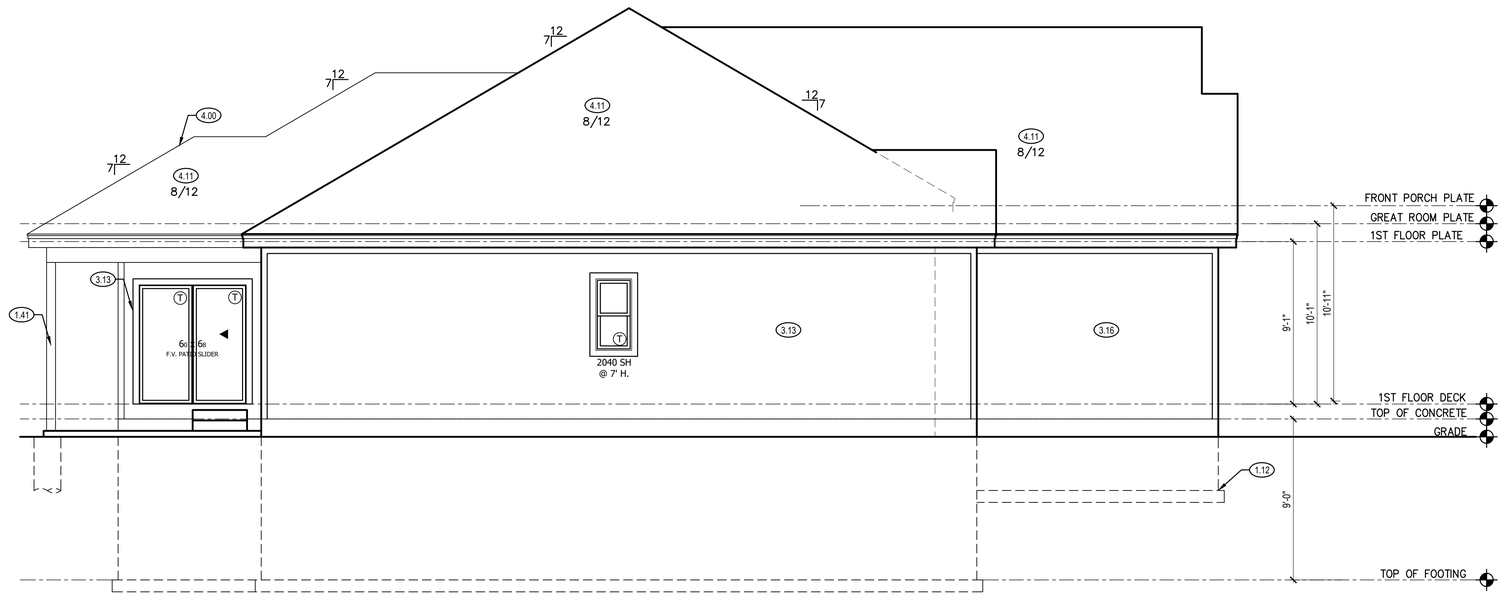
RESIDENTIAL ENGINEERING SERVICES,LLC IS RESPONSIBLE FOR STRUCTURAL SPECIFICATIONS ONLY. ARCHITECTURAL PLANS WERE PRODUCED BY OTHERS.

RESIDENTIAL ENGINEERING SERVICES, LLC
600 SW JEFFERSON SUITE 300
LEE'S SUMMIT, MO 64063
816-399-4901

DRAWN BY:
C.HOOPER

ISSUE DATE:
04.21.21

SHEET NUMBER:
A1.0



LEFT ELEVATION (2)
SCALE: 1/4" = 1'-0"

NOTE:

ALL CONSTRUCTION SHALL CONFORM TO 2018 INTERNATIONAL RESIDENTIAL CODE OR ATTACHED ENGINEER SPECIFICATIONS WHERE APPLICABLE.

ELEVATIONS:
GARAGE DOORS SHALL MEET DASMA FOR ULTIMATE DESIGN WIND SPEED OF 115 MPH REQUIREMENTS.
WALL FRAMING SHALL BE DOUGLAS FIR LARCH #2 UNLESS OTHERWISE NOTED.
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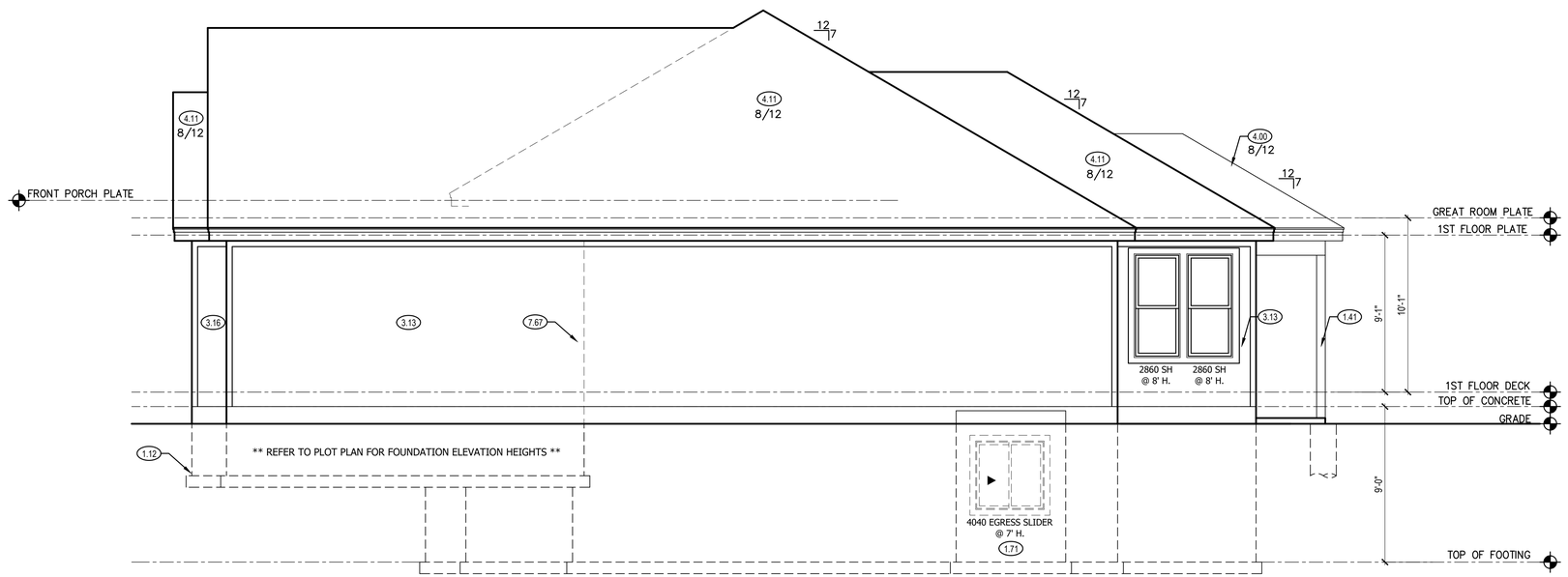
WATER-RESISTIVE EXTERIOR WALL BARRIER IN WALL SECTION SHALL COMPLY WITH IRC R703.2.
WHEN APPLICABLE, CONTINUOUS STUDS BETWEEN FLOOR AND ROOF/CEILING DIAPHRAGM SHALL COMPLY WITH IRC R602.3.

ALL UNMARKED HEADERS SHALL BE A MINIMUM #2 DOUGLAS FIR LARCH (2) 2 X 10 ON LOAD BEARING WALLS.

SHIPLAP SIDING MUST BE FASTENED AT BOTH UNDERLAP AND OVERLAP.



RIGHT ELEVATION (1)
SCALE: 1/4" = 1'-0"

FRONT & REAR ELEVATION NOTES

1.12 TOP OF FOOTING DEPTH DETERMINED PER SITE.
1.41 6X6 CEDAR POST
1.71 CONCRETE WINDOW WELL FOR EGRESS WITH LADDER. PROVED SLEEVE THROUGH WALL FOR FOUNDATION DRAIN. TOP OF WINDOW WELL TO BE 3" BELOW TOP OF FOUNDATION.
3.13 LP SMART PANEL SIDING WITH 3/4X4 LP SMART TRIM AROUND DOORS, WINDOWS, AND CORNERS UNLESS NOTED OTHERWISE. BOTTOM OF SIDING SHALL BE A MINIMUM OF 6" ABOVE GRADE.
3.16 STUCCO, SHEATHED WITH 15/32" THICK OSB RATED 24/0 SHEATHING. EXTEND STUCCO TO WITHIN 8" OF FINISHED GRADE. 5/4X6 LP SMART TRIM AROUND WINDOWS AND DOORS UNLESS NOTED OTHERWISE.
4.00 COVERING WILL HAVE 1 ROOF VENT AND 4 SOFFIT VENTS
4.11 MINIMUM ROOFING COMPOSITION– 30 YR COMPOSITE SHINGLES ON 15# FELT ON 1/2" OSB SHEATHING OR AS REQUIRED BY CODE.
7.67 BACK WALL OF GARAGE.

GENERAL NOTES

DIMENSIONAL LUMBER IS LABELED PER INDUSTRY STANDARD TERMINOLOGY. ACTUAL LUMBER SIZING IS EXPECTED TO VARY PER VENDOR.

WINDOW SIZES ARE WRITTEN IN FEET AND INCHES PER INDUSTRY STANDARDS. EX: 3050 SH = 3'-0" X 5'-0" SINGLE HUNG, 3066 FIX = 3'-0" X 6'-6" FIXED.

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816-399-4901

DRAWN BY:
C.HOOPER

ISSUE DATE:
04.21.21

SHEET NUMBER:
A2.0

RELEASED FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
CODES ADMINISTRATION
LEE'S SUMMIT, MISSOURI
BY
DATE

NOTE:

ALL CONSTRUCTION SHALL CONFORM TO 2018 INTERNATIONAL RESIDENTIAL CODE OR ATTACHED ENGINEER SPECIFICATIONS WHERE APPLICABLE.

FOUNDATION NOTES:
ALL FOOTINGS MEET OR EXCEED MINIMUM FROST DEPTH OF 36".
SOIL BEARING CAPACITY SHALL BE 1500 PSF.
COMPRESSIVE STRENGTH OF CONCRETE F'C COMPRESSIVE STRENGTH SHALL BE AS SPECIFIED IN IRC TABLE R402.2. REQUIRED AIR ENTRAINMENT SHALL BE 5-7%.
ALL FOUNDATION WALLS ENCLOSING BELOW GRADE SPACE SHALL BE DAMPPROOFED. DAMPPRROFING SHALL EXTEND FROM THE EDGE OF THE FOOTING TO THE FINISHED GRADE (R-406.1). METHOD OF DAMPPROOFING OR WATERPROOFING SHALL BE A MINIMUM 6-MIL THICK MOISTURE BARRIER OVER POROUS GRAVEL BASE UNDER BASEMENT FLOOR SLAB PER R405.2.2. LAP JOINTS SHALL BE A MINIMUM 6".
FOUNDATION WALLS SHALL BE DAMPPROOFED PER IRC SECTION R406.
FOUNDATION DRAINAGE WILL BE IN ACCORDANCE WITH WITH IRC SECTION R405.
BASEMENT EGRESS OPENINGS SHALL BE IN ACCORDANCE WITH IRC SECTION R310.1
ALL INTERIOR FOOTINGS OF LOAD BEARING WALLS AND COLUMNS SHALL BE ISOLATED FROM THE BASEMENT FLOOR SLAB.
ALL ANCHOR BOLTS SHALL NOT BE SPACED MORE THAN 6' O.C. AND BE EMBEDDED INTO THE CONCRETE A MINIMUM OF 7" .

ALL UNMARKED HEADERS SHALL BE A MINIMUM #2 DOUGLAS FIR LARCH (2) 2 X 10 ON LOAD BEARING WALLS.

BACKFILL SHALL NOT BE PLACED AGAINST THE WALL UNTIL THE WALL HAS SUFFICIENT STRENGTH OR HAS BEEN SUFFICIENTLY BRACED TO PREVENT DAMAGE BY BACKFILL.

IF BASEMENT SLAB ELEVATION IS ABOVE GRADE CONSULT ENGINEER.

GIRDER TRUSS BEARING:
MIN. STUD PACK OF (4) 2 x 4 OR (4) 2 x 6 DOUGLAS FIR LARCH #2 (DEPENDING ON WALL THICKNESS) BELOW EACH BEARING POINT OF EACH GIRDER TRUSS, UNLESS OTHERWISE NOTED. STUD PACKS SHALL BE CARRIED DOWN TO FOUNDATION OR LOAD SUPPORTING MEMBER.

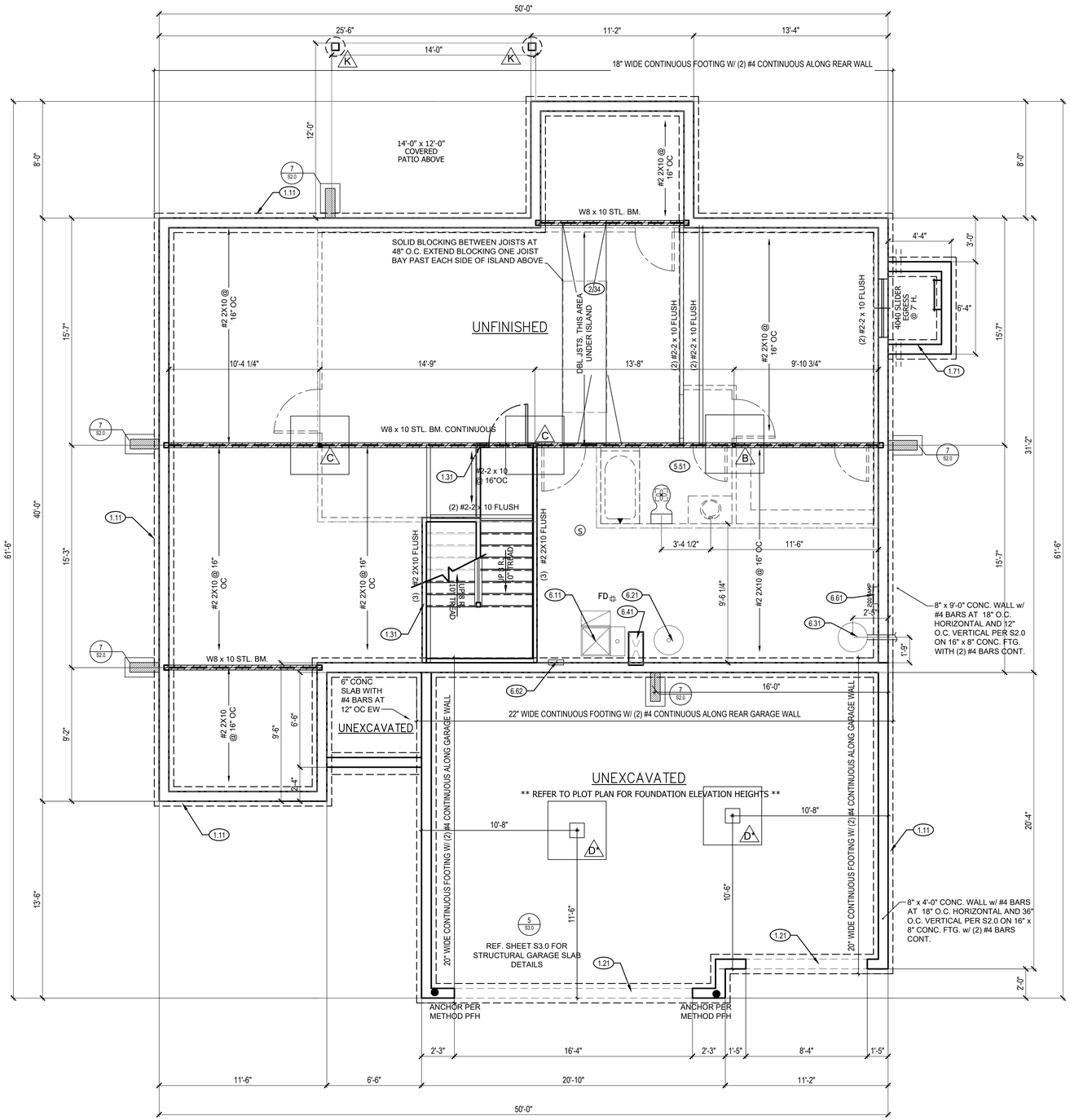
PROVIDE 2X SOLID BLOCKING SUPPORT BELOW ALL POINT LOADS CONTINUOUS TO BEARING STRUCTURE AND/OR FOUNDATION BELOW.

STEEL BEAM FLANGE WIDTH:
W8 x 10 - 3.94"

ISOLATED FOOTINGS AND COLUMN PADS				
SYM	PIER PAD SIZE	DEPTH	MINIMUM REINFORCEMENT GRADE 60 KSI STEEL	SCHEDULE 40 STEEL COLUMN, MIN FY = 35 KSI
A	30"x30"	1'-0"	(5) #4 BAR E.W.	3" DIAMETER
B	36"x36"	1'-0"	(6) #4 BAR E.W.	3" DIAMETER
C	42"x42"	1'-2"	(7) #4 BAR E.W.	3" DIAMETER
D	48"x48"	1'-4"	(8) #4 BAR E.W.	3" DIAMETER
E	54"x54"	1'-4"	(9) #4 BAR E.W.	3.5" DIAMETER
F	60"x60"	1'-6"	(10) #4 BAR E.W.	3.5" DIAMETER
ANY SIZE FOOTING WITH AN (*)				NO COLUMN NEEDED

ISOLATED FOOTINGS AND COLUMN PADS			
SYM	PIER DIAMETER	DEPTH	MINIMUM REINFORCEMENT GRADE 40 KSI STEEL
G	12"	3'-0"	(4) VERTICAL #4
H	16"	3'-0"	(4) VERTICAL #4
J	18"	3'-0"	(4) VERTICAL #4
K	24"	3'-0"	(4) VERTICAL #4
L	28"	3'-0"	(4) VERTICAL #4

COLUMN AND PAD SIZES ARE FOR A MAXIMUM COLUMN HEIGHT OF 10'. COLUMNS GREATER THAN 10' REQUIRE A SEPARATE ENGINEERED DESIGN. FOOTINGS A-F SPACING OF 6" O.C. WITH 3" CLEAR COVER.



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

FOUNDATION PLAN NOTES

1.11 CONTINUOUS CONCRETE FOOTING
1.21 RECESS TOP OF FOUNDATION WALL
1.31 2X4 STUD WALL WITH TREATED SILL PLATE
1.71 CONCRETE WINDOW WELL FOR EGRESS WITH LADDER. PROVED SLEEVE THROUGH WALL FOR FOUNDATION DRAIN. TOP OF WINDOW WELL TO BE 3" BELOW TOP OF FOUNDATION.
2.34 PROVIDE ADDITIONAL BRACING FOR ISLAND ABOVE.
5.51 DRAIN LINE ONLY FOR FUTURE USE. LOCATION TO BE MARKED WITH REBAR AND CUT FLUSH TO FLOOR FINISH.
6.11 DIRECT FURNACE. FUEL BURNING APPLIANCES SHALL BE DIRECT VENTED TO EXTERIOR FOR COMBUSTION AIR.
6.21 HOT WATER HEATER WITH THERMAL EXPANSION CONTROL DEVICE
6.31 SUMP PIT AND PUMP. PROVIDE ELECTRICAL GFCI PROTECTION. PROVIDE SLEEVE THROUGH FOOTING.
6.41 HVAC CHASE ABOVE
6.61 200 AMP ELECTRICAL PANEL. LOCATION TO BE DETERMINED ON SITE.
6.62 UFER GROUND– VERIFY LOCATION WITH PROJECT MANAGER.
7.65 LINE OF FLOOR ABOVE

GENERAL NOTES

BACK WATER VALVES REQUIRED ON ALL BASEMENT PLUMBING FIXTURES. PROVIDE MEANS OF CONTROLLING PRESSURE CAUSED BY THERMAL EXPANSION.

ALL SILLS & SLEEPERS SUPPORTED ON CONCRETE OR MASONRY SHALL BE OF DECAY-RESISTANT MATERIALS.

DIMENSIONAL LUMBER IS LABELED PER INDUSTRY STANDARD TERMINOLOGY. ACTUAL LUMBER SIZING IS EXPECTED TO VARY PER VENDOR.

ALL INTERIOR NON-LOAD BEARING, NON-BRACED, NON-CABINET WALLS ARE ALLOWED AT 24" O.C.

SMOKE AND CARBON MONOXIDE DETECTORS SHOW ON PLANS ARE TO BE CONSIDERED RECOMMENDATIONS ONLY. FINAL PLACEMENT IS TO BE DETERMINED BY MUNICIPAL REQUIREMENTS.

WINDOW SIZES ARE WRITTEN IN FEET AND INCHES PER INDUSTRY STANDARDS. EX: 3050 SH = 3'-0" X 5'-0" SINGLE HUNG, 3066 FIX = 3'-0" X 6'-6" FIXED.

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DRAWN BY:
C.HOOPER

ISSUE DATE:
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A3.0

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BRACING METHODS

EXTERIOR BRACING CS-PF PER IRC R602.10

FOR CS-PF ABOVE: WOOD STRUCTURAL PANEL SHEATHING CONTINUOUS OVER BAND JOIST OR RIM JOIST WITH MINIMUM LAP OF 9-1/4" ATTACH SHEATHING WITH MINIMUM 8D COMMON NAILS AT 3" O.C. AT TOP AND BOTTOM OF BAND/RIM JOIST.

EXTERIOR BRACING CS-WSP PER IRC R602.10

EXTERIOR BRACING WSP PER IRC R602.10 (INCLUDES PARTIAL PANELS PER IRC R602.10.5.2)

INTERIOR BRACING LIB PER IRC R602.10
MINIMUM LIB LENGTH PER 2018 IRC TABLE R602.10.5:
55" - 8' TALL WALL HEIGHT
62" - 9' TALL WALL HEIGHT
69" - 10' TALL WALL HEIGHT

EXTERIOR BRACING PFH (SEE DETAILS) PER IRC R602.10.5

INTERIOR LOAD BEARING WALL (EXTERIOR WALLS ARE ASSUMED LOAD BEARING)

NOTE:

ALL CONSTRUCTION SHALL CONFORM TO 2018 INTERNATIONAL RESIDENTIAL CODE OR ATTACHED ENGINEER SPECIFICATIONS WHERE APPLICABLE.

ALL UNMARKED HEADERS SHALL BE A MINIMUM #2 DOUGLAS FIR LARCH (2) 2 X 10 ON LOAD BEARING WALLS.

DETAILS AND NOTES:
BASEMENT EGRESS WINDOWS ARE TO COMPLY WITH IRC R310.2.
WINDOW FALL PROTECTION REQUIREMENTS TO COMPLY WITH SECTION R612.2.
STAIRS SHALL COMPLY WITH IRC R311.7. THE MAXIMUM RISER HEIGHT OF STAIRWAYS SHALL NOT EXCEED 7-3/4" AND THE TREADS SHALL PROVIDE A MINIMUM TREAD DEPTH OF 10" (IRC 2018 R311.7.5.1).
SELF CLOSING DEVICES ARE REQUIRED FOR GARAGE TO DWELLING SEPARATION DOORS.
STEEL COLUMNS WILL BE A MINIMUM OF SCHEDULE 40.

ENERGY REQUIREMENTS SHALL CONFORM TO THE IRC CHAPTER 11.
SECURITY SHALL CONFORM TO IRC R326/KCBRC.
AN ACCESSIBLE CONNECTION POINT WILL BE PROVIDED TO A 20 FOOT CONCRETE ENCASED ELECTRODE (FOOTING REBAR) FOR THE ELECTRICAL SERVICE GROUNDING ELECTRODE CONDUCTOR (UFER GROUND).
CARBON MONOXIDE DETECTORS WILL BE PROVIDED IN ACCORDANCE WITH IRC SECTION R315.
THE BUILDING THERMAL ENVELOPE IS REQUIRED TO BE SEALED(2018 IRC SECTION N1102.4.1 AND TABLE N1102.4.1.1).
DUCTS, AIR HANDLERS, FILTER BOXES AND BUILDING CAVITIES USED AS DUCTS SHALL BE SEALED (2018 IRC SECTION N1103.2.2)

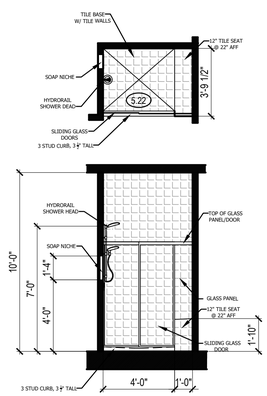
FLOOR PLANS:
LEDGERS(FLOOR AND CEILING) SHALL BE IN ACCORDANCE WITH IRC 507.
ALL CANTILIEVERS SHALL HAVE AT LEAST A 3:1 BACK SPAN.
A MINIMUM OF DOUBLE JOIST UNDER EACH BEARING WALL IS REQUIRED.

ALL WALLS UNDER 12' SHALL BE DOUGLAS FIR LARCH #2 2X4 STUDS AT 16" O.C. FULL HEIGHT CONTINUOUS (UNLESS OTHERWISE NOTED).

ALL WALLS 12' AND OVER SHALL BE DOUGLAS FIR #2 (M-12) LUMBER 2x6 STUDS AT 16" O.C. FULL HEIGHT CONTINUOUS (UNLESS OTHERWISE NOTED).

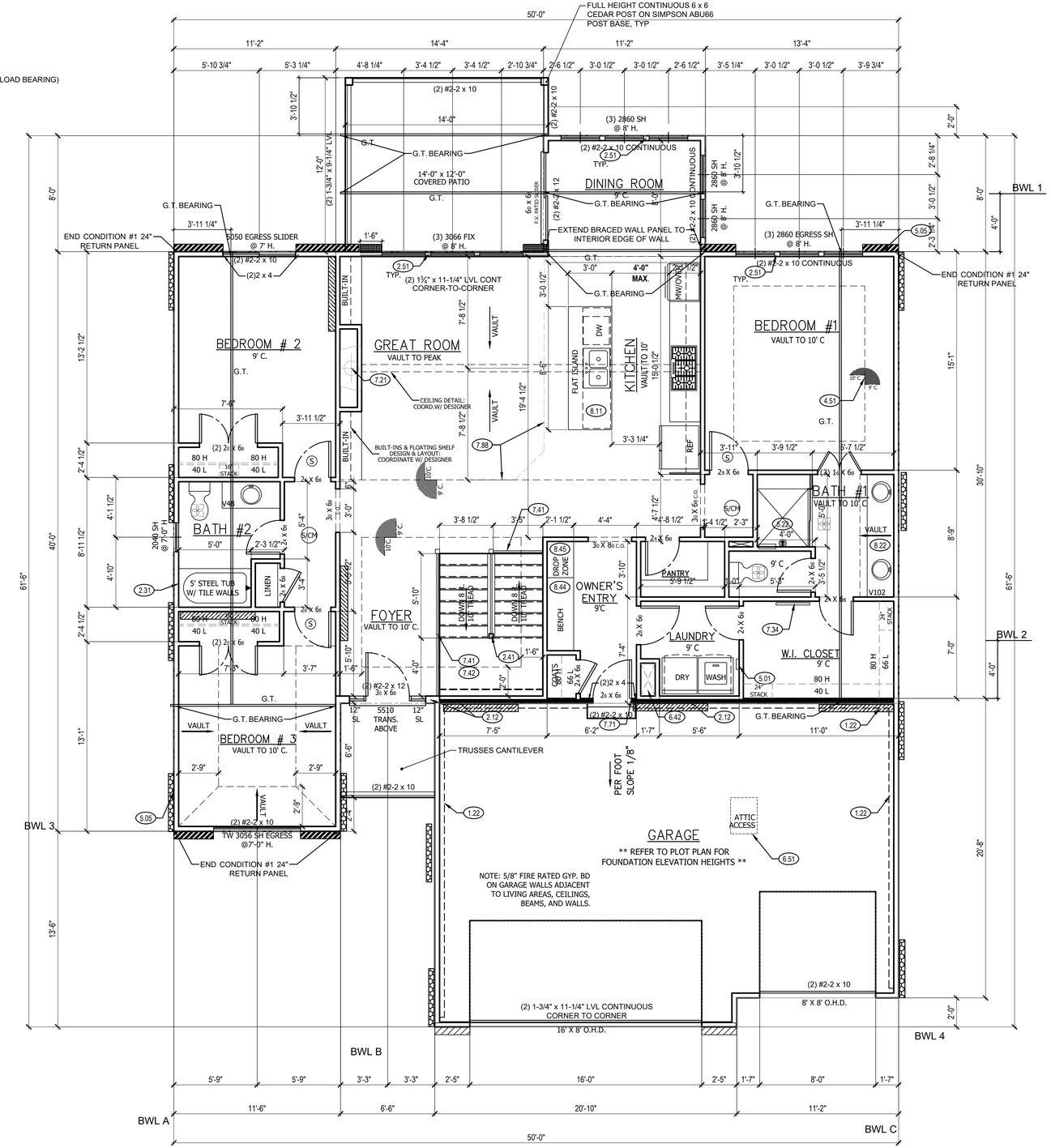
GIRDER TRUSS BEARING:
MIN. STUD PACK OF (4) 2 x 4 OR (4) 2 x 6 DOUGLAS FIR LARCH #2 (DEPENDING ON WALL THICKNESS) BELOW EACH BEARING POINT OF EACH GIRDER TRUSS, UNLESS OTHERWISE NOTED. STUD PACKS SHALL BE CARRIED DOWN TO FOUNDATION OR LOAD SUPPORTING MEMBER.

PROVIDE 2X SOLID BLOCKING SUPPORT BELOW ALL POINT LOADS CONTINUOUS TO BEARING STRUCTURE AND/OR FOUNDATION BELOW.

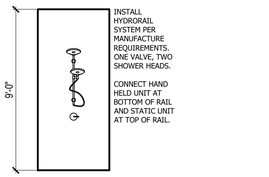


DETAIL: 5.22(TILE BASE)
SCALE: 3/4" = 1'-0"

IRC TABLE N1102.1.2 (R402.1.2) INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT (PARTIAL)										
CLIMATE ZONE	FENESTRATION U-FACTOR[b]	SKYLIGHT[b] U-FACTOR	GLAZED FENESTRATION SHGC[b,e]	CEILING R-VALUE	WOOD FRAME WALL R-VALUE	MASS WALL R-VALUE	FLOOR R-VALUE	BASEMENT[c] WALL R-VALUE	SLAB[d] R-VALUE & DEPTH	CRAWL SPACE WALL R-VALUE
4 EXCEPT MARINE	.32	.55	.40	49	20 OR 13+5	8/13	19	10/13	10, 2 FT	10/13



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



HYDRORAIL SHOWER SYSTEM 3
SCALE: NTS

MAIN FLOOR PLAN NOTES

1.22	EXPOSED TOP OF FOUNDATION WALL.
2.12	2X6 STUD WALL
2.31	SIX SIDED TUB ASSEMBLY INCLUDING THERMOPLY ON EXTERIOR WALL TO 2" ABOVE TOP OF TUB DECK OR TUB/SHOWER UNIT
2.41	CURB STAIR SYSTEM WITH OPEN HANDRAILS
2.51	3 STUDS BETWEEN WINDOW UNITS
4.51	SINGLE BOX VAULT
5.01	PLUMBING FOR WASHER ON INTERIOR WALL.
5.05	HOSE BIBB
5.22	TILE BASE WITH TILE WALLS. SEE DETAIL.
6.42	HVAC – BUMP TRUSSES AS NECESSARY FOR HVAC ACCESS.
6.51	1'-10"X3'-0" MINIMUM ATTIC ACCESS WITH 3/4" BACKER BOARD AND 2 LATCHES. BUMP TRUSSES FOR ATTIC ACCESS.
7.21	DIRECT VENT FIREPLACE. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. FIREPLACE PLATFORM DIMENSIONS 7 ¾" TALL, 37" WIDE, 16" DEEP. INSTALL INSULATION AND AIR BARRIER BEHIND PLATFORM.
7.34	FRAMED MIRROR
7.41	OPEN HANDRAILS
7.42	PROVIDE ADDITIONAL BLOCKING UNDER SUBFLOOR @ 6'–0" O.C. FOR OPEN HANDRAIL.
7.71	20 MINUTE FIRE RATED SOLID CORE WITH SELF–CLOSING HINGES
7.88	CHANGE IN FLOORING MATERIAL
8.11	24" CABINET + 12" OVERHANG FLAT ISLAND. VERIFY LOCATION WITH PERSONAL BUILDER.
8.22	CONTINUOUS FLAT VANITY
8.44	BENCH WITH COAT HOOKS
8.45	DROP ZONE/CHARGING STATION

GENERAL NOTES

WINDOWS TO COMPLY WITH IRC R312.2 FOR FALL PROTECTION.

ALL EXTERIOR WALLS, INTERIOR BEARING WALLS, AND INTERIOR BRACED WALLS ARE AT 16" O.C. UNLESS NOTED OTHERWISE.

ALL INTERIOR NON-LOAD BEARING, NON-BRACED, NON-CABINET WALLS ARE ALLOWED AT 24" O.C.

ROOF AND CEILING FRAMING ARE PRE-ENGINEERED WOOD TRUSSES UNLESS NOTED OTHERWISE.

DIMENSIONAL LUMBER IS LABELED PER INDUSTRY STANDARD TERMINOLOGY. ACTUAL LUMBER SIZING IS EXPECTED TO VARY PER VENDOR.

HVAC DUCTWORK RUNNING THROUGH THE ATTIC SPACE SHALL BE HUNG FROM ABOVE TO ALLOW COMPLETE INSULATION SURROUND.

PROVIDE BLOCKING AT ALL CEILING JUMPS FOR INSULATION.

2X6 EXTERIOR WALL OVER 12' SHALL BE DOUGLAS FIR #2.

SMOKE AND CARBON MONOXIDE DETECTORS SHOW ON PLANS ARE TO BE CONSIDERED RECOMMENDATIONS ONLY. FINAL PLACEMENT IS TO BE DETERMINED BY MUNICIPAL REQUIREMENTS.

WINDOW SIZES ARE WRITTEN IN FEET AND INCHES PER INDUSTRY STANDARDS. EX: 3050 SH = 3'-0" X 5'-0" SINGLE HUNG, 3066 FIX = 3'-0" X 6'-6" FIXED.

CPG DBA
SUMMIT HOMES
120 SE 30TH ST.
LEE'S SUMMIT, MO 64082
816-246-6700

ADDRESS:
3109 SW ARBORIDGE DR
LEE'S SUMMIT, MO

SHEFFIELD
TRADITIONAL
HAWTHORNE RIDGE #138

PROFESSIONAL SEAL:

RESIDENTIAL ENGINEERING SERVICES,LLC IS RESPONSIBLE FOR STRUCTURAL SPECIFICATIONS ONLY. ARCHITECTURAL PLANS WERE PRODUCED BY OTHERS.
RESIDENTIAL ENGINEERING SERVICES, LLC
600 SW JEFFERSON SUITE 300
LEE'S SUMMIT, MO 64063
816-399-4901

DRAWN BY:
C.HOOPER

ISSUE DATE:
04.21.21

SHEET NUMBER:
A4.0

RELEASED FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
CODES ADMINISTRATION
LEE'S SUMMIT, MISSOURI
BY
DATE

TRUSS ROOF NOTES: (BY OTHERS)

1) DESIGNED FOR LIGHT ROOF COVERING
   TOP CHORD:
   LIVE LOAD/SNOW LOAD (PSF): 25
   DEAD LOAD (PSF): 10
   BOTTOM CHORD:
   DEAD LOAD(PSF): 10
2) ALL EXTERIOR AND/OR LOAD BEARING WALL HEADERS SHALL BE MIN. (2) #2 2 x 10 UNLESS OTHERWISE NOTED.
3) CONSULT ENGINEER IF TRUSSES BEAR ON INTERIOR WALLS SHOWN AS NON-LOAD BEARING ON APPROVED PRINTS.
4) ROOF IS ENGINEERED TO COMPLY WITH IRC 802

= ROOF TRUSS FRAMING DIRECTION
"G.T." = GIRDER TRUSS LOCATION
= INTERIOR LOAD BEARING WALL

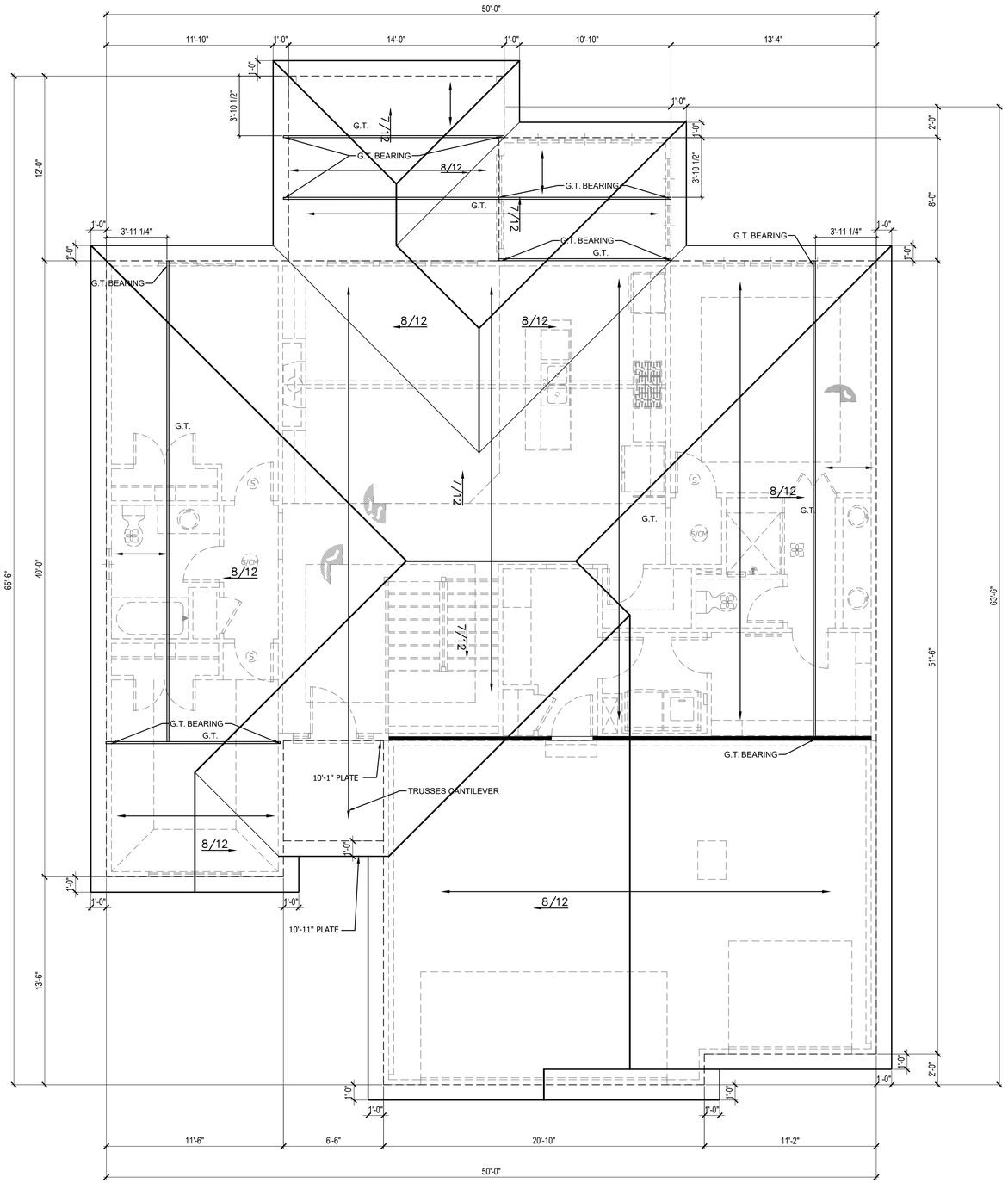
NOTE:

ALL CONSTRUCTION SHALL CONFORM TO 2018 INTERNATIONAL RESIDENTIAL CODE OR ATTACHED ENGINEER SPECIFICATIONS WHERE APPLICABLE.

ROOF:
ROOF IS DESIGNED FOR 20 PSF SNOW LOAD.
WOOD TRUSSES SHALL BE IN ACCORDANCE WITH IRC SECTION R802.10.
CEILING JOIST OR RAFTER TIE CONNECTIONS BETWEEN RAFTERS, RIDGE BEAM, REQUIRED COLLAR TIES OR RIDGE STRAPS SHALL COMPLY WITH DETAILS AND IRC SECTION R802, R802.3, R802.3.1, R802.11.

GIRDER TRUSS BEARING:
MIN. STUD PACK OF (4) 2 x 4 OR (4) 2 x 6 DOUGLAS FIR LARCH #2 (DEPENDING ON WALL THICKNESS) BELOW EACH BEARING POINT OF EACH GIRDER TRUSS, UNLESS OTHERWISE NOTED. STUD PACKS SHALL BE CARRIED DOWN TO FOUNDATION OR LOAD SUPPORTING MEMBER.

PROVIDE 2X SOLID BLOCKING SUPPORT BELOW ALL POINT LOADS CONTINUOUS TO BEARING STRUCTURE AND/OR FOUNDATION BELOW.



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

ROOF PLAN NOTES

4.00 COVERING WILL HAVE 1 ROOF VENT AND 4 SOFFIT VENTS

4.11 MINIMUM ROOFING COMPOSITION– 30 YR COMPOSITE SHINGLES ON 15# FELT ON 1/2" OSB SHEATHING OR AS REQUIRED BY CODE.

4.31 BUILD CRICKET VALLEY AWAY FROM INTERSECTION FOR POSITIVE DRAINAGE.

GENERAL NOTES

ROOF AND CEILING FRAMING ARE PRE-ENGINEERED ROOF TRUSSES.

ASPHALT SHINGLES MIN 2/12. FLASH ALL PENETRATIONS AND INTERSECTIONS.

VENT EACH ENCLOSED ATTIC SPACE. NET AREA OPENING = 1/50TH OF VENTED AREA OR 1/300TH IF 580% OF VENTING NEAR TOP.

BUILD CRICKET VALLEY AWAY FROM INTERSECTION FOR POSITIVE DRAINAGE. SEE FRAMING SPECIFICATIONS FOR DETAILS.

DIMENSIONAL LUMBER IS LABELED PER INDUSTRY STANDARD TERMINOLOGY. ACTUAL LUMBER SIZING IS EXPECTED TO VARY PER VENDOR.

HVAC DUCTWORK RUNNING THROUGH ATTIC SHALL BE HUNG FROM ABOVE TO ALLOW COMPLETE INSULATION SURROUND.

PROVIDE BLOCKING AT ALL CEILING JUMPS FOR INSULATION.

PROVIDE FOAM INSULATION AT EXTERIOR WHERE MAIN LEVEL ROOF LINE MEETS UPPER LEVEL WALLS.

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SHEFFIELD
TRADITIONAL
HAWTHORNE RIDGE #138

PROFESSIONAL SEAL:

STATE OF MISSOURI
BRADLEY HUTSOL
NUMBER PE-2010009903
PROFESSIONAL ENGINEER

RESIDENTIAL ENGINEERING SERVICES,LLC IS RESPONSIBLE FOR STRUCTURAL SPECIFICATIONS ONLY. ARCHITECTURAL PLANS WERE PRODUCED BY OTHERS.

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GENERAL NOTES

PLANS SHALL COMPLY WITH THE 2018 INTERNATIONAL RESIDENTIAL CODE (IRC) WITH AMENDMENTS AS ADOPTED BY THE APPROPRIATE GOVERNING JURISDICTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IF ANY CHANGES OR DEVIATIONS FROM THE PLAN ARE MADE DURING CONSTRUCTION. THE ENGINEER OF RECORD MAY REQUIRE REVISED DRAWING OR CALCULATIONS AT ITS DISCRETION.

IF DISCREPANCIES ARE IDENTIFIED THE MOST CONSERVATIVE SPECIFICATION SHALL APPLY.

LOADING

DEAD

LIGHT ROOF	10 PSF	
HEAVY ROOF	+10 PSF	(CONCRETE, SLATE, TILE)
ROOF + CEILING (NO STORAGE)	15 PSF	
ROOF + CEILING (STORAGE)	20 PSF	
CEILING JOISTS (STORAGE)	10 PSF	
EXTERIOR BACONIES / DECK	10 PSF	
INTERIOR FLOOR (MAIN FLOOR)	15 PSF	
INTERIOR FLOOR (UPPER FLOORS)	10 PSF	
8" THICK MASONRY WALL	80 PSF	
6" THICK MASONRY WALL	85 PSF	
EXTERIOR LIGHT FRAMED WOOD WALLS	15 PSF	
INTERIOR LIGHT FRAMED WOOD WALLS	10 PSF*	

*(INTERIOR WALLS INCLUDED IN 15 PSF DEAD LOAD)

LIVE

ROOF LIVE LOAD	15 PSF	
FLOOR LIVE LOAD	40 PSF	(HABITABLE)
GARAGE	50 PSF	
STORAGE	20 PSF	(UN-INHABITABLE)
GUARDRAIL		
CONTINUOUS LINEAR	50 PLD	
MAXIMUM POINTLOAD	200 LBS	

SNOW

GROUND SNOW LOAD	20 PSF

WIND

ULTIMATE DESIGN WIND SPEED VELOCITY	115 MPH	
EXPOSURE CATEGORY	B	

SOIL AND SITE ASSUMPTIONS:

1. FOUNDATION DESIGN ASSUME A MINIMUM SOIL BEARING PRESSURE FOR THE SITE OF 1,500 PSF. CONTRACTOR TO VISUALLY INSPECT SITE OR PROVIDE GEOTECHNICAL INVESTIGATION TO VERIFY MINIMUM ACCEPTABLE SOIL CONDITIONS SW, SP, SM, SC, GM, AND GX AS DEFINED PER IRC TABLE R301.5. THE CONTRACTOR IS RESPONSIBLE FOR ANY SOIL CONDITION THAT DOES NOT MEET THE MINIMUM REQUIREMENTS AND CONTACTING THE ENGINEER OF RECORD.
2. PROVIDE A MINIMUM SOIL COVER OF 36 INCHES MEASURED FROM THE BOTTOM OF CONCRETE ON ALL FOUNDATIONS.
3. ACCESSORY STRUCTURES WITH AN EAVE HEIGHT LESS THAN 10'-0" AND AN AREA LESS THAN 600 FT^2 MAT PROVIDE A MINIMUM SOIL COVER OF 12 INCHES MEASURED FROM THE BOTTOM OF CONCRETE.
4. SITE GRADING SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM THE STRUCTURE AT A MINIMUM OF 0.5%.
5. LATERAL SOIL PRESSURES
   ACTIVE 30 PSF
   AT-REST 60 PSF
   PASSIVE 150 PSF

FOUNDATION NOTES:

FOUNDATION ANCHORAGE (IRC 403.1.6)

SILL PLATES SHALL BE BOLTED TO THE FOUNDATION WALL WITH A MINIMUM 1/2" DIAMETER ANCHOR BOLTS EMBEDDER AT LEAST 7" INTO THE CONCRETE. BOLTS SHALL BE SPACED NO GREATER THAN 6' 0.C. THERE SHALL BE A MINIMUM OF TWO BOLTS PER PLATE SECTION, WITH A BOLT PLACED WITHIN 12" AND NOT CLOSER THAN 7 BOLT DIAMETERS, OF THE END OF EACH PLATE SECTION. A PROPERLY SIZED NUT AND WASHER SHALL BE TIGHTENED ON EACH BOLT TO THE PLATE, (NOTE: 7" EMBEDMENT + 1-1/2" SILL PLATE + 3/4" FOR NUT AND WASHER EXCEEDS A 9" LONG BOLT.)

WALL BRACING METHODS PER IRC R602 MAY REQUIRE ADDITIONAL ANCHORAGE.

CONCRETE SLABS PLACED ON FILL MATERIAL WHICH EXCEEDS 24" OF COMPACTED GRANULATED MATERIAL (SAND OR GRAVEL) OR 8" OF EARTH:
THIS MAY OCCUR AT GARAGE FLOOR FILLS, OR OVER EXCAVATED AREAS UNDER FLOOR SLABS. THE DESIGN AND INSTALLATION DETAILS IN THIS DOCUMENT (WHERE APPLICABLE BASED ON SIZE AND SPACING LIMITATIONS) MAY BE USED IN LIEU OF PROVIDING A SEPARATE DESIGN. STRUCTURAL SLABS EXCEEDING THE SPANS AND CONDITIONS OF THE APPROVED DETAILS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER.

SLABS AT MAX 4' OVER-DIG ADJACENT TO FOUNDATION WALL:
WHERE SOIL IS EXCAVATED FOR A MAXIMUM DIMENSION OF 4' HORIZONTALLY ADJACENT TO A FOUNDATION WALL, THE STANDARD OVER-DIG DETAIL MAY BE USED IN LIEU OF A COMPLETE STRUCTURAL SLAB. SEE "TYPICAL FOOTING/FOUNDATION WALL/STANDARD SLAB AT MAX 4' OVER-DIG DIAGRAM FOR DETAILS.

VAPOR RETARDER / BARRIER (IRC R506.2.3)

A 6 MIL POLYETHYLENE OR APPROVED VAPOR RETARDER WITH JOINTS LAPPED A MINIMUM OF 6" IS REQUIRED BETWEEN THE CONCRETE FLOOR SLAB AND THE BASE COURSE OR PREPARED SUBGRADE, (NOT REQUIRED FOR GARAGE SLABS OR DETACHED ACCESSORY BUILDINGS)

FOUNDATION AND LOT GRADING (IRC R401.3)

GRADES SHALL BE SLOPED AWAY FROM THE FOUNDATION A MINIMUM OF 6" IN THE FIRST 10'. ALTERNATE APPROACHES MAY BE APPROVED IF THE ALTERNATE DESIGN IS EQUIVALENT IN EFFECTIVENESS AND PERFORMANCE, AND PROVIDES FOR POSITIVE SITE DRAINAGE.

IRC R403.1.4

- THE BOTTOM OF ALL FOOTINGS SHALL EXTEND NOT LESS THAN 36" BELOW GRADE FOR FROST PROTECTION.
- FOOTINGS FOR FREESTANDING ACCESSORY STRUCTURES WITH AN AREA OF 600 SF OR LESS AND AN EAVE HEIGHT OF 10' OR LESS SHALL EXTEND BELOW GRADE A MINIMUM OF 12".

FOOTINGS:

EXTERIOR WALLS, BEARING WALLS, COLUMN AND PIERS SHALL BE SUPPORTED ON CONTINUOUS SOLID MASONRY OR CONCRETE FOOTINGS, OR APPROVED STRUCTURAL SYSTEM TO SAFELY SUPPORT THE IMPOSED LOADS AND SHALL BE SIZED AND REINFORCED IN ACCORDANCE WITH THIS STANDARD OR SHALL BE ENGINEERED DESIGN. FOOTINGS UNDER FOUNDATION WALLS SHALL BE CONTINUOUS AROUND THE STRUCTURE AND FROM ONE LEVEL TO THE NEXT. THE CONTINUOUS TRANSITIONS BETWEEN FOOTINGS AT DIFFERENT LEVELS ENCLOSING USABLE SPACE SHALL BE MADE BY APPROVED SOLID JUMPS OR SUPPORT SYSTEMS TO PROVIDE SAFE SUPPORT OF THE STRUCTURE. SEE "TYPICAL FOOTING/FOUNDATION WALLS/STANDARD SLAB AT MAXIMUM 4" OVER-DIG AND "FOOTING JUMP" DIAGRAMS FOR MORE DETAIL (PER KC, MO STANDARDS)

CONCRETE

1. ALL CONCRETE CONSTRUCTION SHOULD CONFORM TO ACI 318-11 AND THE 2018 INTERNATIONAL RESIDENTIAL CODE.
2. THE MINIMUM CONCRETE 28 DAY COMPRESSIVE STRENGTH SHALL BE AS SPECIFIED IN IRC TABLE R402.2.
3. CONCRETE MIX TO UTILIZE A MAXIMUM WATER-CEMENT MATERIALS RATIO OF 0.45 FOR ALL APPLICATIONS. ALL CONCRETE TO HAVE MAXIMUM 0.10 PERCENT WATER SOLUBLE CHLORIDE CONTENT BY WEIGHT OF CEMENT. ADMIXTURES SHALL NOT CONTAIN ANY CHLORIDES.
4. CONCRETE POURED AGAINST AN EXISTING SURGACE SHOULD BE ROUGHENED TO A MINIMUM 1/4 INCH AMPLITUDE.
5. REBAR CLEAR DISTANCE SHALL BE AS FOLLOWS:
   -CAST AGAINST AND PERMANENT CONTACT WITH GROUND 3 IN
   -EXPOSED TO WEATHER OR IN CONTACT WITH GROUND 2 IN
   - NOT EXPOSED TO WEATHER OR GROUND 1.5 IN
6. CONCRETE MIX DESIGN SHALL BE 6% (±1%) AIR-ENTRAINED FOR GARAGE SLABS, FOOTINGS, WALLS, OR FLATWORK EXPOSED TO WEATHER.
7. SHORING AND RESHORING:
   -SHORING AND SUPPORTING FORMWORK SHALL NOT BE REMOVED FROM HORIZONTAL MEMBERS BEFORE CONCRETE STRENGTH REACHES 70% OF STRENGTH DETERMINED BY CYLINDERS OR 28 DAYS.

-SHORING MAY NOT BE REMOVED SOONER THAN RECOMMENDED BY ASTM 374-04 SECTION 3.7.2.3.

MINIMUM STANDARDS:

CONCRETE SHALL BE 6% (± 1%) AIR-ENTRAINED FOR GARAGE SLABS AND FOR ALL LOCATION'S FOOTINGS, WALLS OR FLATWORK WHERE EXPOSED TO WEATHER. REBAR SHALL BE MINIMUM 60 KSI UNLESS NOTED OTHERWISE. REINFORCING BAR SHALL BE GRADE 60 MINIMUM.

CONCRETE REINFORCEMENT STEEL

1. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.
2. SMOOTH BARS OR WELDED WIRE FABRIC SHALL CONFORM TO ASTM 185.
3. ALL REBAR LAP SPLICES SHALL BE CLASS B LAP SPLICES AS SHOWN ON THE LAP SPLICE SCHEDULE.
4. DEVELOPMENT LENGTH NOTED IS EQUAL TO 80% OF THE LENGTH NOTED IN THE LAP SPLICE SCHEDULE.
5. 90% HOOK SHOWN IN DRAWINGS SHALL BE STANDARD PER ACI 318-14
   -STRAIGHT EXTENSION LENGTH = $12x\varnothing_{BAR}$
   -BEND DIAMETER = $12X\varnothing_{BAR}$
6. LAP SPLICE SCHEDULE (SEE TABLE 1.1)
7. HOOKED DOWELS:
   7.1. HOOKED DOWELS FROM FOUNDATIONS TO WALL SHALL BE PROVIDED TO MATCH VERTICAL WALL REINFORCING AND EXTENDED TO 3" CLEAR FROM BOTTOM OF FOUNDATION
   7.2. HOOKED DOWELS MATCH SLAB REINFORCING FROM SLAB TO WALLS OR SLAB TO FOUNDATION
8. PROVIDE 2 - #5 BARS AROUND PERIMETER OF ALL SUSPENDED SLABS
9. HORIZONTAL WALL REINFORCING SHALL TERMINATE AT THE END OF THE WALL WITH A STANDARD HOOK
10. TOP AND BOTTOM HORIZONTAL REINFORCING SHALL BE PLACED 1-1/2" TO 2" FROM THE TOP AND BOTTOM OF THE WALL

FOOTNOTES:

1. WALL HEIGHT IS MEASURED FROM THE TOP OF THE WALL TO THE TOP OF THE FLOOR SLAB.
2. VERTICAL REINFORCEMENT FOR CONCRETE WALLS THAT ARE NOT FULL HEIGHT AND FOR REINFORCEMENT SPACED 24" O.C. MAY BE PLACED IN THE MIDDLE OF THE WALL. OTHER WALLS SHALL HAVE VERTICAL REINFORCEMENT PLACE AS FOLLOWS:
   A. 8" WALL - MINIMUM 5" FROM THE OUTSIDE FACE.
   B. 10" WALL - MINIMUM 6-3/4" FROM THE OUTSIDE FACE.
   C. EXTEND BARS TO WITHIN 8" OF THE TOP OF THE WALL.
3. HORIZONTAL REINFORCEMENT:
   A. ONE BAR SHALL BE PLACED WITHIN 12" OF THE TOP OF THE WALL.
   B. OTHER BARS SHALL BE EQUALLY SPACED WITH SPACING NOT TO EXCEED 24" O.C.
   C. HORIZONTAL BARS SHOULD BE AS CLOSE TO THE TENSION FACE AS POSSIBLE (INTERIOR); AND BEHIND THE VERTICAL REINFORCEMENT (I.E. 2" TOWARD THE INSIDE).
   D. SUPPLEMENTAL REINFORCEMENT AT CORNERS - PLACE 1 #4 REBAR 48" LONG AT 45 DEGREE ANGLE AT CORNERS OF OPENINGS. PLACE REINFORCEMENT WITHIN 6" OF THE EDGE OF INSIDE CORNERS.
4. REINFORCEMENT SHALL BE LAPPED A MINIMUM 24" AT ENDS, SPLICES, AND AROUND CORNERS.
5. AT MASONRY LEDGES THE MINIMUM WALL THICKNESS SHALL BE 3-1/2". LEDGES SHALL NOT EXCEED A DEPTH OF MORE THAN 24" BELOW THE TOP OF THE WALL FOR WALL THICKNESS LESS THAN 4" PROVIDE #4 BARS AT MAXIMUM 24" O.C. TO WITHIN 8" OF THE TOP OF THE WALL.
6. STRAIGHT WALLS MORE THAN 5' TALL AND MORE THAN 16' LONG SHALL BE PROVIDED WITH EXTERIOR BRACED RETURN WALLS. WALL LENGTH SHALL BE MEASURED USING INSIDE THE SHORTEST DIMENSION BETWEEN INTERSECTING WALLS (SEE TYPICAL DEAD MAN SECTION).

TABLE 1.1

NORMAL WEIGHT CONCRETE
LAP SPLICE SCHEDULE, IN

BAR SIZE	TOP BARS		OTHER BARS	
	CASE 1	CASE 2	CASE 1	CASE 2
#3	28	42	22	32
#4	37	56	29	43
#5	47	70	36	54
#6	56	84	43	64

STEEL DECK - SUSPENDED SLABS

1. STEEL DECK QUALITY, FABRICATION, DELIVERY, INSTALLATION AND ATTACHMENT SHALL COMPLY WITH THE PROVISIONS OF THE STEEL DECK INSTITUTE, SDI.
2. STEEL ROOF DECK SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE ON CONSTRUCTION DRAWINGS:
   - WIDE RIB CONFIGURATION
   - 1.5" DEPTH
   - 24GA DESIGN THICKNESS
   - MAXIMUM SINGLE SPAN OF 4'-8" OR CONTINUOUS SPAN OF 5'-10"
   - GALVANIZE PER ASTM A653 OR SHOP PRIME PER ASTM A1008
   - ATTACH STEEL ROOF DECK TO SUPPORTS WITH #12 TEK AT 18" O.C.
   - ATTACH STEEL ROOF DECK SIDELAPS WITH #10 TEK OR CRIMP/BUTTON PUNCH AT 36" O.C. OR MID-SPAN, WHICHEVER IS SMALLER
3. CONTRACTOR AND/OR DECK MANUFACTURER SHALL FURNISH ALL NECESSARY DECK CLOSURE ACCESSORIES TO PROVIDE A FINISHED SURFACE FOR THE APPLICATION OF ROOF INSULATION AND ROOF COVERING.
4. STEEL FLOOR DECK SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE ON CONSTRUCTION DRAWINGS:

STEEL DECK - SUSPENDED SLABS
STEEL DECK QUALITY, FABRICATION, DELIVERY, INSTALLATION AND ATTACHMENT SHALL COMPLY WITH THE PROVISIONS OF THE STEEL DECK INSTITUTE, SDI.
CONTRACTOR AND/OR DECK MANUFACTURER SHALL FURNISH ALL NECESSARY DECK CLOSURE ACCESSORIES TO PROVIDE A FINISHED SURFACE FOR THE APPLICATION OF ROOF INSULATION AND ROOF COVERING.
STEEL FLOOR DECK SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE ON CONSTRUCTION DRAWINGS:

- 2" COMPOSITE DECK WITH 6" TOTAL SLAB THICKNESS
- 19GA DESIGN THICKNESS
- MAXIMUM SINGLE SPAN DURING CONSTRUCTION OF 8', 2 SPAN OF 10'-1", OR 3 SPAN OF 10'-5".
- MAXIMUM SPAN SHALL NOT EXCEED 12.5'.
- PROVIDE W2.1xW2.1 WELDED WIRE MESH OR #4 @ 12" O.C. EACH WAY. PROVIDE 2" REBAR COVER MEASURED FROM TOP OF THE SLAB
- GALVANIZE PER ASTM A653
- MINIMUM BEARING LENGTH AT EDGE SUPPORTS IS 2"
- MINIMUM BEARING LENGTH AT INTERIOR SUPPORTS IS 4"
- ATTACH STEEL COMPOSITE FLOOR DECK TO SUPPORTS WITH 5/8" ARC PUDDLE WELDS AT 12" O.C. MECHANICAL FASTENERS EITHER POWDER ACTUATED, PNEUMATICALLY DRIVEN, OR SCREWS MAY BE USED IN LIEU OF WELDING PROVIDED THEY ARE APPROVED.
- ATTACH STEEL ROOF DECK SIDELAPS WITH #10 TEK OR CRIMP/BUTTON PUNCH AT 36" O.C. OR MID-SPAN, WHICHEVER IS SMALLER.

CONTRACTOR AND/OR DECK MANUFACTURER SHALL FURNISH ALL NECESSARY POUR STOPS, COLUMN CLOSURES, END PLATES, AND COVER PLATES AS NEEDED.

STRUCTURAL STEEL

1. STEEL DESIGN, FABRICATION, AND ERECTION SHALL CONFORM WITH AMERICAN INSTITUTE OF STEEL CONSTRUCTION.
2. STEEL GRADE AND SPECIFICATION SHALL BE AS FOLLOWS:

HOLLOW STRUCTURAL SECTIONS:	ASTM A500 (Fy = 46 KSI)
CHANNELS, PLATES AND ANGLES:	ASTM A36 (Fy = 36 KSI)
WIDE FLANGES:	ASTM A992 (Fy = 50 KSI)
COLUMNS:	ASTM A53 GR. B (Fy= 35 KSI)
ANCHOR RODS:	ASTM F1554 (Fy = 36 KSI)

3. BOLTS SHALL CONFORM TO ASTM A307
4. WELDING SHALL CONFORM TO THE AWS CODES FOR BUILDING CONSTRUCTION. WELDING SHALL BE PERFORMED IN ACCORDANCE TO WELDING PROCEDURE SPECIFICATION (WPS) AS REQUIRED IN AWS D1.1 THE WPS VARIABLES SHALL BE WITHIN THE PARAMETERS ESTABLISHED BY THE FILLER-METAL MANUFACTURER.
5. WELDS SHALL USE E70XX ELECTRODES AND A MINIMUM OR 3/16" SIZE UNLESS NOTED OTHERWISE.
6. ALL WELDS SPECIFIED AS FIELD WELDS MAY BE SHOP WELDED AT THE CONTRACTOR'S OPTION IF ERECTION CAN STILL BE EXECUTED.

ENERGY REQUIREMENTS:

1. LIGHTING FIXTURES PENETRATING THE THERMAL ENVELOPE SHALL BE IC-RATED, LEAKAGE RATED, AND SEALED TO THE GYPSUM WALLBOARD AS REQUIRED PER IRC N1102.4.4.
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 PLENUMS.
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 IRC M1504.3.
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.

GARAGES:

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 DWELLING AND IT'S ATTIC AREAS BY A MINIMUM 5/8" GYPSUM BOARD APPLIED TO THE GARAGE SIDE WHERE A FLOOR/CEILING SPACE IS PROVIDED ABOVE.
4. THE GARAGE COLUMNS AND BEAMS SUPPORTING THE SEPARATION SHALL ALSO BE PROTECTED WITH 5/8" GYPSUM BOARD OR EQUIVALENT. WHERE HABITABLE SPACE OCCURS ABOVE THE GARAGE THE FLOOR CEILING ASSEMBLY SHALL BE PROTECTED WITH A MINIMUM PS TYPE "X" GYPSUM BOARD ON THE GARAGE CEILING.
5. 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"x0.120" NAILS AT 7" O.C. STAGGERED WITH (7) 3-1/4"x0.120" NAILS THROUGH THE JAMB INTO THE HEADER. A MINIMUM OF 2x8 HEADER FOR ATTACHMENT OF COUNTER BALANCE SYSTEM.
6. SELF CLOSING DEVICES SHALL BE INSTALLED FOR GARAGE AND/OR DWELLING SEPARATION DOORS PER R302.5.1.
7. GARAGE VEHICLE DOORS AND FRAMES SHALL BE DESIGNED AND INSTALLED TO MEET THE 90 MPH WIND LOAD REQUIREMENTS OF DASMA 108 AND ASTM E330-96 (IRC 301.2.1).

STAIRWAYS:

1. STAIRWAYS SHALL PROVIDE A MAXIMUM 7-3/4" RISE AND A MINIMUM 10" RUN.
2. PROVIDE GUARD RAILS BETWEEN 36" GUARD RAILS ON THE OPEN SIDES OF RAISED FLOORS, PORCHES AND BALCONIES; MINIMUM 34" GUARD RAILS ON THE OPEN SIDES OF STAIRWAYS LOCATED MORE THAN 30" ABOVE THE FLOOR OR GRADE BELOW.
3. GUARD RAIL ENCLOSURES SHALL HAVE INTERMEDIATE RAILS OF ORNAMENTAL PATTERNS THAT DO NOT ALLOW PASSAGE OF A SPHERE 4" IN DIAMETER.
4. 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.
5. HANDRAILS SHALL HAVE A CIRCULAR CROSS SECTION OF 1-1/4" TO 2-5/8" OR OTHER APPROVED GRASPABLE SHAPE PER IRC R311.5.6.
6. MINIMUM 6'-8" OF HEADROOM CLEARANCE IS REQUIRED IN STAIRWAYS.
7. 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 R311.2.2.

GLAZING

1. GLAZING IN HAZARDOUS LOCATIONS AS IDENTIFIED IN IRC 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 8 SF AND WHOSE BOTTOM EDGE IS LESS THAN 18" ABOVE THE FLOOR OR WALKING SURFACE WITHIN 36".
2. WINDOW FALL PROTECTION SHALL BE PROVIDED IN ACCORDANCE WITH R312.2.

EMERGENCY EGRESS AND RESCUE

1. PROVIDE ONE WINDOW FROM EACH BEDROOM THAT HAS A MINIMUM OPENABLE AREA OF 5.7 SF WITH A MINIMUM OPENABLE HEIGHT OF 24" AND WIDTH OF 21"
2. BASEMENT EGRESS TO MEET THE REQUIREMENTS OF IRC R310.
3. PROVIDE SMOKE ALARMS IN EACH SLEEPING ROOM, OUTSIDE OF EACH SLEEPING AREA AND ON EACH FLOOR INCLUDING BASEMENTS. ALARMS SHALL BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTUATION OF ONE ALARM WILL ACTIVATE ALL OF THE ALARMS IN THE DWELLING.
4. CARBON MONOXIDE DETECTORS SHALL BE INSTALLED AS REQUIRED PER R315.

FRAMING NOTES:

1. ALL LUMBER SIZES ARE DOUGLAS FIR-LARCH #2 UNLESS OTHERWISE NOTED.
2. ALL UNMARKED HEADERS SHALL BE A MINIMUM #2 DOUGLAS FIR LARCH (2) 2x10 ON LOAD BEARING WALLS.
3. ALL HEADER/BEAMS TO BEAR ON A MINIMUM OF (2) 2x4 POSTS UNLESS NOTED OTHERWISE.
4. DOUBLE JOIST UNDER INTERIOR NON-LOAD BEARING WALLS.
5. CANTILEVERS, OVER BEAMS, AND DOOR JAMBS SHALL BE BLOCKED
6. ANY WOOD MEMBERS IN CONTACT WITH CONCRETE OR MASONRY (OR THE FURRING THEY ARE ATTACHED TO) SHALL BE OF DECAY RESISTANT MATERIAL.
7. INTERIOR NON LOAD BEARING WALLS SHALL BE ISOLATED FROM THE FLOOR FRAMING ABOVE UNLESS THE INTERIOR NON LOAD BEARING WALL RESTS DIRECTLY ON A FOOTING.
8. LVL STRENGTH SHALL BE VERSA-LAM 3100 Fb UNLESS NOTED OTHERWISE.

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STATE OF MISSOURI
BRADLEY HIXON
NUMBER PE-2010009903
PROFESSIONAL ENGINEER

GENERAL NOTES

SHEET #
GN1.0

RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
CODES ADMINISTRATION
LEE'S SUMMIT, MISSOURI
BY
DATE

2018 IRC TABLE R602.3(1) (SEE IRC FOR FOOTNOTES)			
ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER	SPACING AND LOCATION
	ROOF		
1	BLOCKING BETWEEN CEILING JOISTS OR RAFTERS TO TOP PLATE	4-8D BOX (2-1/2"x0.113") OR 3-8D COMMON (2-1/2" x 0.131"); OR 3-10D BOX (3" x 0.128"); OR 3-3" x 0.131" NAILS	TOE NAIL
2	CEILING JOSTS TO TOP PLATE	4-8D BOX (2-1/2"x0.113") OR 3-8D COMMON (2-1/2" x 0.131"); OR 3-10D BOX (3" x 0.128"); OR 3-3" x 0.131" NAILS	PER JOIST, TOE NAIL
3	CEILING JOISTS NOT ATTACHED TO PARALLEL RAFTER LAPS OVER PARTITIONS	4-10D BOX (3" X 0.128"); OR 3-16D COMMON (3-1/2" X 0.162"); OR 4-3" X 0.131" NAILS	FACE NAIL
4	CEILING JOIST ATTACHED TO PARALLEL RAFTER (HEEL JOINT)	TABLE R802.5.2	FACE NAIL
5	COLLAR TIE TO RAFTER, FACE NAIL OR 1-1/4"x20 GAGE RIDGE STRAP TO RAFTER	4-10D BOX (3" X 0.128"); OR 3-10D COMMON (3" X 0.148"); OR 4-3" X 0.131" NAILS	FACE NAIL EACH RAFTER
6	RAFTER OR ROOF TRUSS TO PLATE	3-16d BOX NAILS (3-1/2"x0.135") OR 3-10d COMMON NAILS (3"x0.148"); OR 4-10D BOX (3" X .128"); OR 4-3" X 0.131" NAILS	2 TOE NAILS ON ONE SIDE AND 1 TOE NAIL ON OPPOSITE SIDE OF EACH RAFTER OR TRUSS
7	ROOF RAFTERS TO RIDGE, VALLEY OR HIP RAFTERS OR ROOF RAFTER TO MINIMUM 2" RIDGE BEAM	4-16D (3-1/2"x0.135") ; OR 3-10D COMMON (3" X 0.148"); OR 4-10D BOX (3" X 0.128"); OR 4-3" X0.131" NAILS	TOE NAIL
		3-16d BOX NAILS (3-1/2"x0.135") OR 2-16D COMMON NAILS (3-1/2"x0.162"); OR 3-10D BOX (3" X .128"); OR 3-3" X 0.131" NAILS	END NAIL
	WALL		
8	STUD TO STUD (NOT AT BRACED WALL PANELS)	16D COMMON (3-1/2" X 0.162")	24" O.C. FACE NAIL
		10d BOX (3"x0.128"); OR 3" X 0.131" NAILS	16" O.C. FACE NAIL
9	STUD TO STUD AND ABUTTING STUDS AT INTERSECTING WALL CORNERS (AT BRACED WALL PANELS)	16D BOX (3-1/2"x0.135"); OR 3" X 0.131" NAILS	12" O.C. FACE NAIL
		16D COMMON (3-1/2" X 0.162")	16" O.C. FACE NAIL
10	BUILT-UP HEADER (2" TO 2" HEADER WITH ½" SPACER)	16D COMMON (3-1/2"x0.162")	16" O.C. ALONG EACH EDGE FACE NAIL
		16D BOX (3-1/2" X 0.135)	12" ALONG EACH EDGE FACE NAIL
11	CONTINUOUS HEADER TO STUD	5-8D BOX (2-1/2" X 0.113"); OR 4-8D COMMON (2-1/2" X 0.131"); OR 4-10D BOX (3" X 0.128")	TOENAIL
12	TOP PLATE TO TOP PLATE	16D COMMON (3-1/2" X 0.162")	16" O.C. FACE NAIL
		10d BOX (3"x0.128"); OR 3" X 0.131" NAILS	12" O.C. FACE NAIL
13	DOUBLE TOP PLATE SPLICE	8-16D COMMON(3-1/2" X 0.162"); OR 12-16D BOX (3-1/2" X 0.135"); OR 12-10D BOX (3" X 0.128"); OR 12-3" X 0.131" NAILS	FACE NAIL ON EACH SIDE OF END JOINT (MINIMUM 24" LAP SPLICE LENGTH EACH SIDE OF END JOINT)
14	BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST OR BLOCKING (NOT AT BRACED WALL PANELS)	16D COMMON (3-1/2" X 0.162")	16" O.C. FACE NAIL
		16D BOX (3-1/2"x0.135"); OR 3" X 0.131" NAILS	12" O.C. FACE NAIL
15	BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST BLOCKING (AT BRACED WALL PANELS)	3-16d BOX NAILS (3-1/2"x0.135") OR 2-16D COMMON (3-1/2"x0.162"); OR 4-3" X 0.131" NAILS	3 EACH 16" O.C. FACE NAIL 2 EACH 16" O.C. FACE NAIL 4 EACH 16" O.C. FACE NAIL
16	TOP OR BOTTOM PLATE TO STUD	4-8D BOX (2-1/2"x0.113") OR 3-16D BOX (3-1/2" x 0.135"); OR 4-8D COMMON (2-1/2" X 0.131"); OR 4-10D BOX (3" x 0.128"); OR 4-3" x 0.131" NAILS	TOE NAIL
		3-16D BOX (3-1/2" x 0.135"); OR 2-16D COMMON (3-1/2" X 0.162"); OR 3-10D BOX (3" x 0.128"); OR 3-3" x 0.131" NAILS	END NAIL
17	TOP PLATES, LAPS AT CORNERS AND INTERSECTIONS	3-10D BOX (3" X 0.128"); OR 2-16D COMMON (3-1/2" X 0.162"); OR 3-3" X 0.131" NAILS	FACE NAIL
18	1" BRACE TO EACH STUD AND PLATE	3-8D BOX (2-1/2" X 0.113"); OR 2-8D COMMON (2-1/2" X 0.131"); OR 2-10D BOX (3" X 0.128"); OR 2 STAPLES 1-3/4"	FACE NAIL
19	1"x6" SHEATHING TO EACH BEARING	3-8D BOX (2-1/2" X 0.113"); OR 2-8D COMMON (2-1/2" X 0.131"); OR 2-10D BOX (3" X 0.128"); OR 2 STAPLES, 1" CROWN, 16 GA.., 1-3/4" LONG	FACE NAIL
20	1"x8" AND WIDER SHEATHING TO EACH BEARING	3-8D BOX (2-1/2" X 0.113"); OR 3-8D COMMON (2-1/2" X 0.131"); OR 3-10D BOX (3" X 0.128"); OR 3 STAPLES, 1" CROWN, 16 GA.., 1-3/4" LONG	FACE NAIL
		WIDER THAN 1" X 8" 4-8D BOX (2-1/2" X 0.113"); OR 3-8D COMMON (2-1/2" X 0.131"); OR 3-10D BOX (3" X 0.128"); OR 4 STAPLES, 1" CROWN, 16 GA.., 1-3/4" LONG	

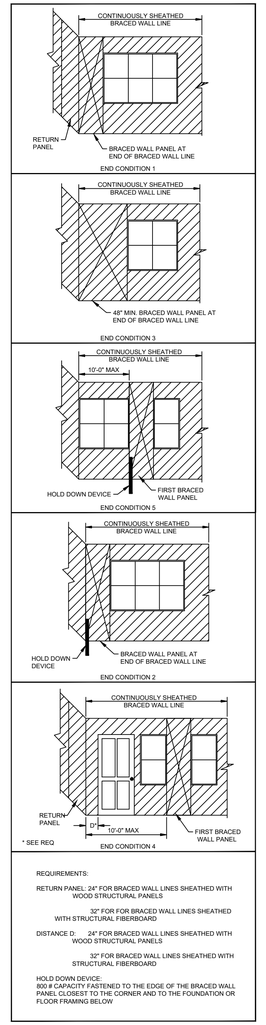
2018 IRC TABLE R602.3(1) (SEE IRC FOR FOOTNOTES)				
	FLOOR			
21	JOST TO SILL, TOP PLATE OR GIRDER	4-8D BOX (2-1/2" X 0.113"); OR 3-8D COMMON (2-1/2" X 0.131"); OR 3-10D BOX (3" X 0.128"); OR 3-3" X 0.131" NAILS	TOE NAIL	
22	RIM JOIST, BAND JOIST OR BLOCKING TO SILL OR TOP PLATE (ROOF APPLICATIONS ALSO)	8d BOX (2-1/2"x0.113")	4" O.C. TOE NAIL	
		8D COMMON (2-1/2" X 0.131"); OR 10D BOX (3" X 0.128"); OR 3" X 0.131" NAILS	6" O.C. TOE NAIL	
23	1"x6" SUBFLOOR OR LESS TO EACH JOIST	3-8D BOX (2-1/2" X 0.113"); OR 2-8D COMMON (2-1/2" X 0.131"); OR 3-10D BOX (3" X 0.128"); OR 2 STAPLES, 1" CROWN, 16 GA.., 1-3/4" LONG	FACE NAIL	
	FLOOR			
24	2" SUBFLOOR TO JOIST OR GIRDER	3-16D BOX (3-1/2" X 0.135"); OR 2-16D COMMON (3-1/2"x0.162")	BLIND AND FACE NAIL	
25	2" PLANKS (PLANK & BEAM - FLOOR & ROOF)	3-16D BOX (3-1/2" X 0.135"); OR 2-16D COMMON (3-1/2"x0.162")	AT EACH BEARING, FACE NAIL	
26	BAND OR RIM JOIST TO JOIST	3-16D COMMON (3-1/2" X 0.162"); OR 4-10 BOX (3" X 0.128"); OR 4-3" X 0.131" NAILS ; OR 4-3" X 14 GA. STAPLES, 7/16" CROWN	END NAIL	
27	BUILT-UP GIRDERS AND BEAMS, 2" LUMBER LAYERS	20D COMMON (4" X 0.192"); OR	NAIL EACH LAYER AS FOLLOWS: 32" O.C. AT TOP END AND BOTTOM AND STAGGERED.	
		10D BOX (3" X 0.128"); OR 3" X 0.131" NAILS	24" O.C. FACE NAIL AT TOP AND BOTTOM STAGGERED ON OPPOSITE SIDES	
		AND: 2-20D COMMON (4" X 0.192"); OR 3-10D BOX (3" X 0.128"); OR 3-3" X 0.131" NAILS	FACE NAIL AT ENDS AND AT EACH SPLICE	
28	LEDGER STRIP SUPPORTING JOISTS OR RAFTERS	4-16D BOX (3-1/2" X 0.135"); OR 3-16D COMMON (3-1/2" X 0.162"); OR 4-10D BOX (3" X 0.128"); OR 4-3" X 0.131" NAILS	AT EACH JOIST OR RAFTER, FACE NAIL	
29	BRIDGING OR BLOCKING TO JOIST	2-10D BOX (3" X 0.128"); OR 2-8D COMMON (2-1/2" X 0.131"; OR 2-3" X 0.131") NAILS	EACH END, TOE NAIL	
ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER	SPACING OF FASTENERS	
			EDGES (IN)	INTERMEDIATE SUPPORTS (IN)
30	3/8" - 1/2"	6d COMMON (2"x0.113") NAILS (SUBFLOOR, WALL) 8d COMMON (2-1/2"x0.131") NAIL (ROOF); OR RSRS-01 (2-38" X 0.113") NAIL (ROOF)	6	12
31	19/32"-1"	8d COMMON NAIL (2-1/2"x0.131"); OR RSRS-01 (2-3/8" X 0.113") NAIL (ROOF)	6	12
32	1-1/8" - 1-1.4"	10d COMMON (3"x0.148") NAIL OR 8D (2-1/2"x0.131") DEFORMED NAIL	6	12
	OTHER WALL SHEATHING			
33	1/2" STRUCTURAL CELLULOSIC FIBERBOARD SHEATHING	1-1/2" GALVANIZED ROOFING NAIL, 7/16" HEAD DIAMETER, OR 1-1/4" LONG 16 GA. STAPLE WITH 7/16" OR 1" CROWN	3	6
34	25/32" STRUCTURAL CELLULOSTIC FIBERBOARD SHEATHING	1-3/4" GALVANIZED ROOFING NAIL, 7/16" HEAD DIAMETER, OR 1-1/2" LONG 16 GA STAPLE WITH 7/16" OR 1" CROWN	3	6
35	1/2" GYPSUM SHEATHING	1-1/2" GALVANIZED ROOFING NAIL; STAPLE GALVANIZED, 1-1/2" LONG; 1-1/4" SCREWS, TYPE "W" OR "S"	7	7
36	5/8" GYPSUM SHEATHING	1-3/4" GALVANIZED ROOFING NAIL; STAPLE GALVANIZED, 1-5/8" LONG; 1-5/8" SCREWS, TYPE "W" OR "S"	7	7
	WOOD STRUCTURAL PANELS, COMBINATION SUBFLOOR UNDERLAYMENT TO FRAMING			
37	3/4" AND LESS	6D DEFORMED (2"x0.120") NAIL OR 8D COMMON (2-1/2"x0.131") NAIL	6	12
38	7/8" - 1"	8D COMMON (2-1/2"x0.131") NAIL OR 8D DEFORMED (2-1/2"x0.120") NAIL	6	12
39	1-1/8" - 1-1/4"	10D COMMON (3"x0.148") NAIL OR 8D DEFORMED (2-1/2"x0.120") NAIL	6	12

MINIMUM WALL STUD FRAMING NOMINAL SIZE AND GRADE	MAXIMUM PONY WALL HEIGHT (FEET)	MAXIMUM TOTAL WALL HEIGHT (FEET)	MAXIMUM OPENING WIDTH (FEET)	TENSION STRAP CAPACITY REQUIRED (POUNDS) FOR 90 MPH EXPOSURE B
2x4 NO 2 GRADE	0	10	18	1,000
	1	10	9	1,000
			16	1,000
			18	1,000
	2	10	9	1,200
			16	1,000
			18	2,025
	2	12	9	2,400
			16	1,200
			18	3,200
	4	12	9	3,200
			16	2,350
			18	DR
2x6 STUD GRADE	2	12	9	1,000
			16	2,050
			18	2,450
	4	12	9	1,500
			16	3,150
			18	3,675

MINIMUM LENGTH OF BRACED WALL PANELS TABLE R602.10.5 (PARTIAL)				
METHOD		MINIMUM LENGTH (INCHES)		
		WALL HEIGHT		
		8 FEET	9 FEET	10 FEET
PFH	SUPPORTING ROOF ONLY	16	16	16
	SUPPORTING ONE STORY AND ROOF	24	24	24
PFG		24	27	30
CS-PF		16	18	20
CS-WSP	ADJACENT CLEAR OPENING HEIGHT (INCHES)			
	LESS THAN OR EQUAL TO 64	24	27	30

BRACING METHODS TABLE R602.10.4 (PARTIAL)			
METHODS, MATERIAL	MINIMUM THICKNESS	CONNECTION CRITEIA	
		FASTENERS	SPACING
WSP - WOOD STRUCTURAL PANEL	3/8	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-WSP CONTINUOUSLY SHEATHED WOOD STRUCTURAL PANEL	3/8	EXERIOR SHEATHING PER TABLE R602.3(3)	6" EDGES, 12" FIELD
		INTERIOR SHEATHING PER TABLE R602.3(1) OR R602.3(2)	VARIES BY FASTENER
PFH - PORTAL FRAME WITH HOLD DOWNS	3/8	SEE IRC SECTION R602.10.6.2	SEE IRC SECTION R602.10.6.2
PFG - PORTAL FRAME AT GARAGE	3/8	SEE IRC SECTION R602.10.6.3	SEE IRC SECTION R602.10.6.3
LIB LET-IN-BRACING	1x4 WOOD OR APPROVED METAL STRAPS AT 45 TO 60 DEGREE ANGLES FOR MAX 16" STUD SPACING	WOOD: 2-8d COMMON NAILS OR 3-8d NAILS	WOOD: PER STUD AND TOP AND BOTTOM PLATES
		METAL STRAP: PER MANUFACTURER	METAL: PER MANUFACTURER
GB-GYPSUM BOARD	1/2	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	

ENGINEERED LUMBER MINIMUM DESIGN REQUIREMENTS			
	fb (PSI)	E (PSI)	Fv (PSI
VERSA-LAM LVL	3100	2.0x106	285
DOUGLAS FIR-LARCH #2	900	1.6x106	180



1 S1.0 END CONDITIONS FOR BRACED WALL LINES WITH CONTINUOUS SHEATHING (IRC FIGURE R602.10.7)
N.T.S.

TABLE R507.2.1 PLACEMENT OF LAG SCREWS AND BOLTS IN DECK LEDGERS AND BAND JOISTS				
MINIMUM END AND EDGE DISTANCES AND SPACING BETWEEN ROWS (INCHES)				
	TOP EDGE	BOTTOM EDGE	ENDS	ROW SPACING
LEDGER	2	1/4	2	1-5/8
BAND JOIST	3/4	2	2	1-5/8

TABLE R507/2 FASTENER SPACING FOR A SOUTHERN PINE OR HEM-FIR DECK LEDGER 2" NOMINAL SOLID SAWN SPRUCE-PINE-FIR BAND JOIST (DECK LIVE LOAD = 40PSF, DECK DEAD LOAD = 10 PSF)							
JOIST SPAN	6' AND LESS	6'1 TO 8'	8'1 TO 10'	10'1 TO 12'	12'1 TO 14'	14'1 TO 16'	16'1 TO 18'
CONNECTION DETAILS	ON CENTER SPACING OF FASTENERS						
1/2" DIAMETER LAG SCREW WITH 15/32" MAX SHEATHING	30	23	18	15	13	11	10
1/2" DIAMETER BOLT WITH 15/32" MAX SHEATHING	36	36	34	29	24	21	19
1/2" DIAMETER BOLT WITH 15/32" MAX SHEATHING AND 1/2" STACKED WASHERS	36	36	29	24	21	18	16

REQUIREMENTS FOR WOOD STRUCTURAL PANEL WALL SHEATHING USED TO RESIST WIND PRESSURES IRC TABLE 602.3(3) (PARTIAL)						
MINIMUM NAIL		MINIMUM WOOD STRUCTURAL PANEL SPAN RATING	MINIMUM NOMINAL PANEL THICKNESS (IN)	MAX WALL STUD SPACING	PANEL NAIL SPACING		ULTIMATE DESIGN WIND SPEED, V ULT (MPH)
SIZE	PENETRATION (IN)				EDGES (IN O.C.)	FIELD (IN O.C.)	B
6d COMMON	1.5	24/0	3/8	16	6	12	140
8d COMMON	1.75	24/16	7/16	16	6	12	170
				24	6	12	140

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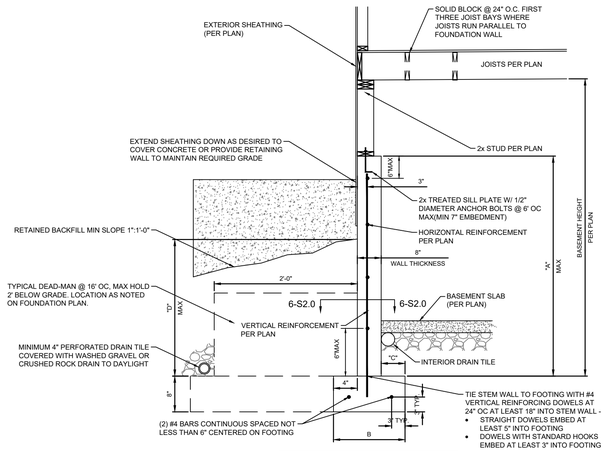
STATE OF MISSOURI
BRADLEY HIXON
NUMBER PE-2011000903
PROFESSIONAL ENGINEER

FRAMING DETAILS

SHEET #
S10

RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
CODES ADMINISTRATION
LEE'S SUMMIT, MISSOURI
BY
DATE



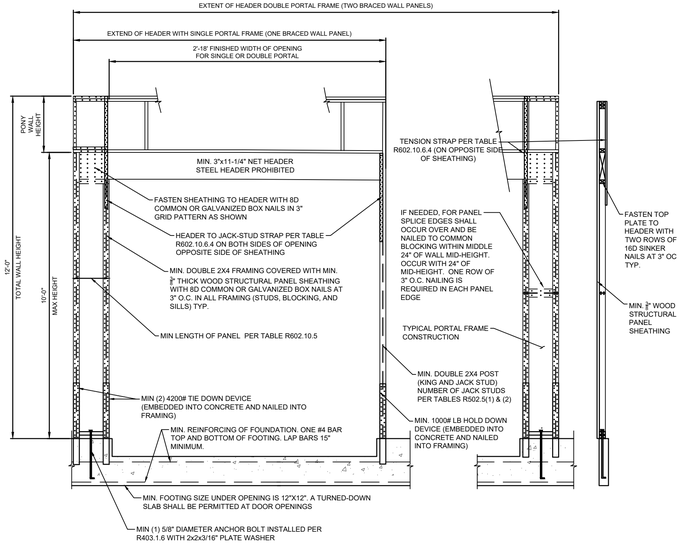
CONCRETE DIMENSIONS			
"A"	"B"	"C"	"D"
4'-0"	1'-4"	4"	3'-4"
6'-0"	1'-4"	4"	4'-4"
9'-0"	1'-8"	5"	4'-4"

DIMENSIONS SHOWN ARE FOR THE MAXIMUM UNINTERRUPTED WALL PANEL LENGTH BEFORE DEAD-MAN INSTALLATION. A MINIMUM 2' RETURN OR OFFSET IN THE FOUNDATION WALL SHALL SUBSTITUTE AS DEAD-MAN AND/OR BREAK IN THE WALL PANEL LENGTH.

VERTICAL REINFORCING STEEL TO EXTEND TO WITHIN 8" OF TOP WALL. MINIMUM (1) #4 HORIZONTAL BAR WITHIN 12" OF TOP AND BOTTOM OF WALL.

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.

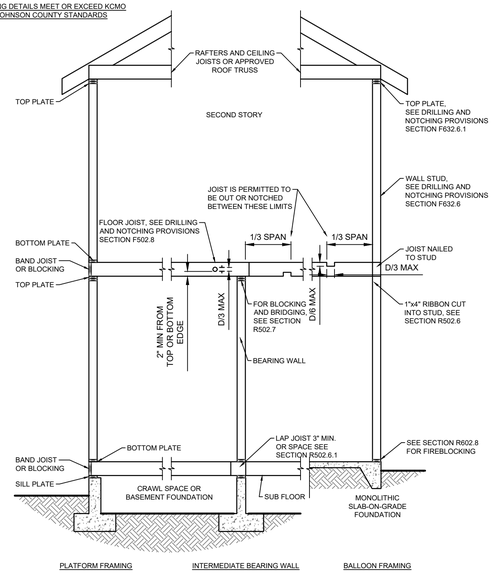
13 S2.0 TYPICAL "UNRESTRAINED" FOUNDATION WALL DETAIL
N.T.S.



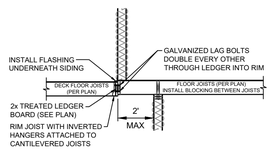
FRONT ELEVATION SECTION

12 S2.0 PORTAL FRAME WITH HOLD DOWNS (METHOD PFH) IRC FIGURE R602.10.6.2
N.T.S.

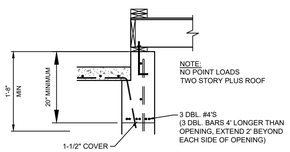
THE FOLLOWING DETAILS MEET OR EXCEED KCMO CPD-DS, AND JOHNSON COUNTY STANDARDS



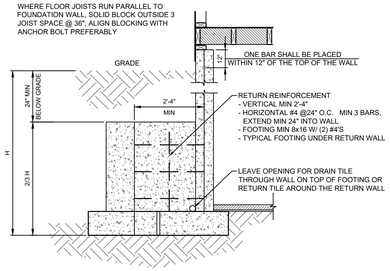
11 S2.0 TYPICAL WALL, FLOOR AND ROOF FRAMING (IRC FIGURE R602.3(1)
N.T.S.



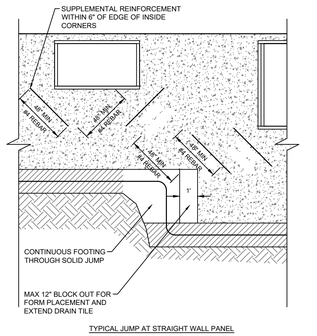
10 S2.0 TYPICAL CANTILEVER FRAMING WITH DECK ATTACHMENT
N.T.S.



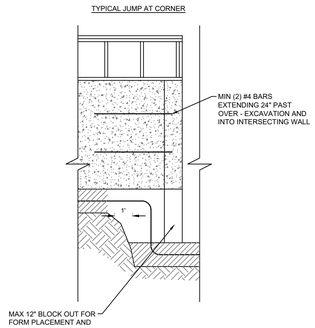
8 S2.0 6' MAXIMUM OPENING HDR.
N.T.S.



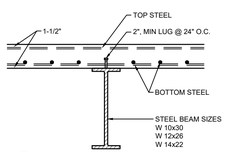
7 S2.0 TYPICAL DEAD MAN SECTION
N.T.S.



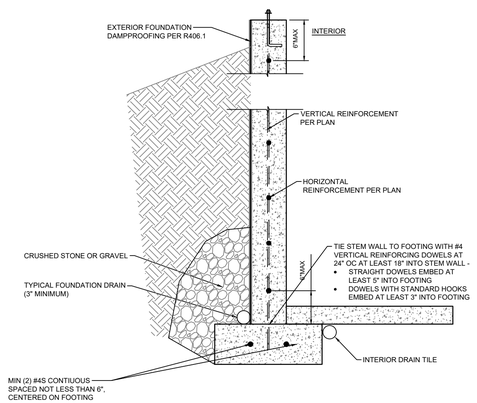
6 S2.0 FOUNDATION WALL JUMP DETAIL
N.T.S.



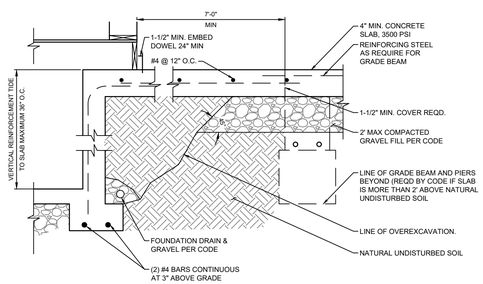
5 S2.0 FOUNDATION WALL JUMP DETAIL
N.T.S.



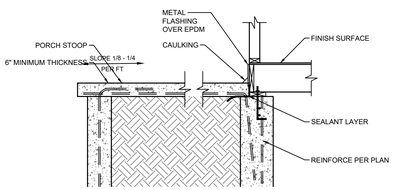
9 S2.0 SLAB OVER BEAM
N.T.S.



4 S2.0 TYPICAL WALL SECTION DETAIL
N.T.S.



3 S2.0 TYPICAL FOOTING/FOUNDATION WALL/STANDARD SLAB AT MAX 4' OVERDIG
N.T.S.

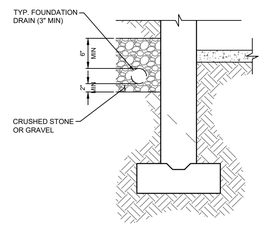


ELEVATED PORCH SLABS SPANNING 6' OR LESS IN ANY ONE DIRECTION CAN BE CONSTRUCTED AS FOLLOWS:

- MAX SPAN OF 6'
- MINIMUM THICKNESS OF 6"
- #4 BARS AT 12" O.C. EACH WAY
- MINIMUM 1-1/2" OF CONTINUOUS BEARING AT THE EDGES OF THE SLAB.

ELEVATED PORCH SLAB SPANNING GREATER THAN 6' SHALL BE TREATED AS AN ELEVATED GARAGE SLAB.

2 S2.0 STANDARD PORCH SLAB
N.T.S.



INSTALLATION OF A CONTINUOUS FOUNDATION DRAIN IS REQUIRED WHERE HABITABLE OR USABLE SPACE FOR ANY PORTION OF THE STRUCTURE IS LOCATED BELOW GRADE. THE FOUNDATION DRAIN SHALL BE AT OR BELOW THE AREA BEING PROTECTED. DRAINAGE TILE SHALL BE PLACED WITH POSITIVE OR NEUTRAL SLOPE TO MINIMIZE THE ACCUMULATION OF DEPOSITS IN THE DRAINAGE PIPE. PLACEMENT OF DRAIN TILE DIRECTLY ON TOP OF THE FOOTING IS ACCEPTABLE. (IRC R405). SEE "TYPICAL FOOTING/FOUNDATION WALL/STANDARD SLAB AT MAXIMUM 4' OVERDIG" AND "FOUNDATION DRAIN DETAIL AT RAISED SLAB" DIAGRAMS FOR DETAILS.

1 S2.0 FOUNDATION DRAIN DETAIL & RAISED SLAB
N.T.S.

RES ENGINEERING + DESIGN
RESIDENTIAL ENGINEERING SERVICES, LLC
WWW.RES-KC.COM
600 SW JEFFERSON ST SUITE 300
LEES SUMMIT, MO 64063
(816) 399-4901

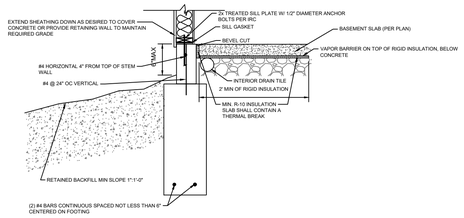
STATE OF MISSOURI
BRADLEY HUXOL
NUMBER PE-2011000903
PROFESSIONAL ENGINEER

STRUCTURAL DETAILS

SHEET # S2.0

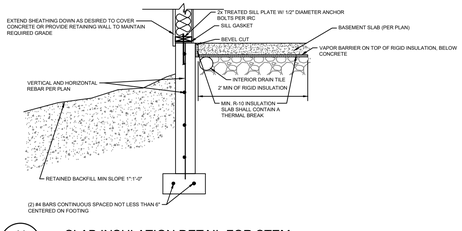
RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
CODES ADMINISTRATION
LEE'S SUMMIT, MISSOURI
BY
DATE

APPLIES TO BASEMENT SLABS WITH FLOOR SURFACE LESS THAN 12" BELOW GRADE

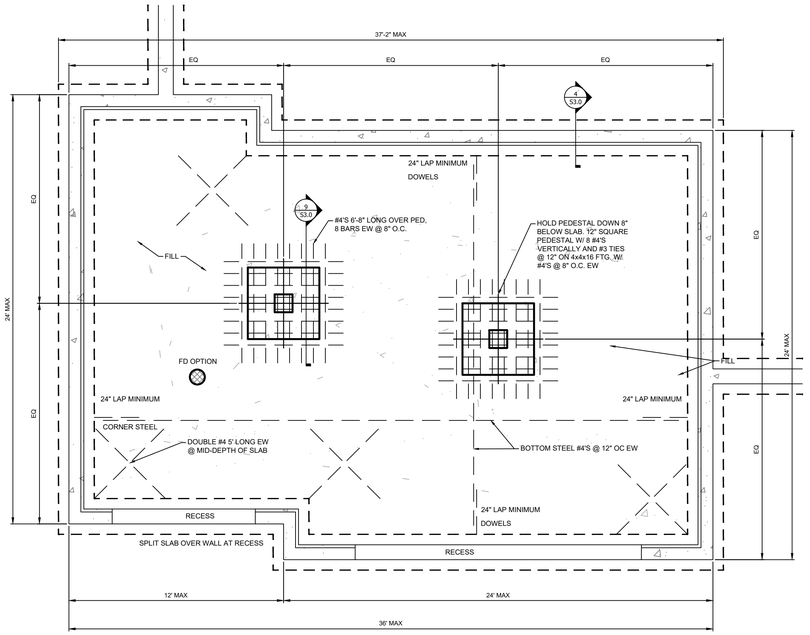


12 S3.0 SLAB INSULATION DETAIL FOR TRENCH FOOTING WITH STEM WALL
N.T.S.

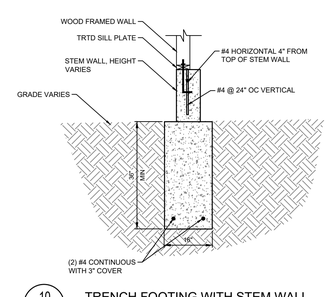
APPLIES TO BASEMENT SLABS WITH FLOOR SURFACE LESS THAN 12" BELOW GRADE



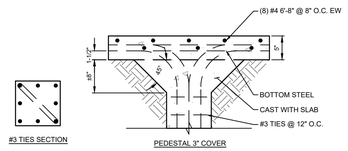
11 S3.0 SLAB INSULATION DETAIL FOR STEM WALL AND FOOTING
N.T.S.



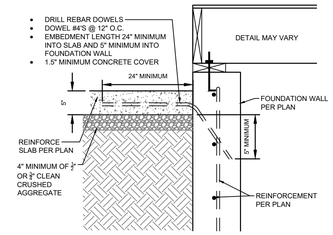
5 S3.0 GARAGE SLAB ON FILL
N.T.S.



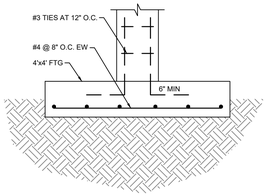
10 S3.0 TRENCH FOOTING WITH STEM WALL
N.T.S.



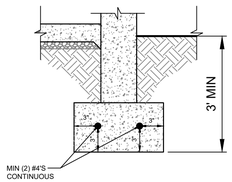
9 S3.0 SLAB AT PEDESTAL
N.T.S.



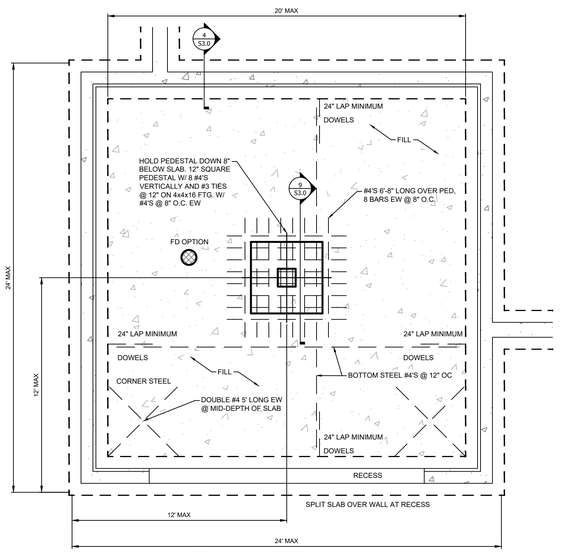
8 S3.0 ALTERNATE SLAB AT WALL
N.T.S.



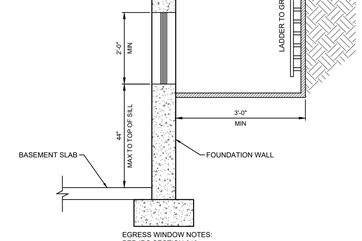
7 S3.0 PEDESTAL AT FOOTING
N.T.S.



6 S3.0 FOOTING DETAIL
N.T.S.

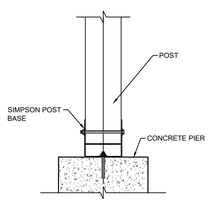


1 S3.0 GARAGE SLAB ON FILL
N.T.S.



4 S3.0 SLAB AT WALL
N.T.S.

3 S3.0 TYPICAL EGRESS WINDOW SECTION DETAIL
N.T.S.



2 S3.0 POST BASE DETAIL
N.T.S.

RESIDENTIAL ENGINEERING SERVICES, LLC
WWW.RES-KC.COM
600 SW JEFFERSON ST SUITE 300
LEES SUMMIT, MO 64063
(816) 399-4901

STATE OF MISSOURI
BRADLEY HUXOL
NUMBER PE-2011009903
PROFESSIONAL ENGINEER

FOUNDATION DETAILS

SHEET #
S3.0

RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
CODES ADMINISTRATION
LEE'S SUMMIT, MISSOURI
BY
DATE

HELIX REQUIREMENTS:

- FOUNDATION WALL SHALL NOT EXCEED 9' HEIGHT.
- DEAD MAN SHALL BE A MAXIMUM 3'8" FROM TOP OF FOUNDATION WALL ELSE HELIX NOT PERMITTED.

ALL CONCRETE SHALL BE REINFORCED WITH HELIX MICRO REBAR ALONG WITH ANY ADDITIONAL REBAR AS NOTED:

- 9.0 LB/CUBIC YARD DOSAGE OF HELIX 5-25.
- VERIFY DOSAGE AT FORM INSPECTION.
- SEE MIXING REQUIREMENTS ON THIS PAGE.
- MINIMUM 3000 PSI FOOTING COMPRESSIVE STRENGTH.
- MINIMUM 3000 PSI WALL COMPRESSIVE CONCRETE STRENGTH.
- AIR ENTRAINED BETWEEN 5-7% OF CONCRETE VOLUME.
- GRADE 60 REINFORCING STEEL UNLESS OTHERWISE NOTED.
- LAP SPLICES 24" MINIMUM.
- ASSUMED 1500 PSF BEARING (TO BE VERIFIED BY GEOTECHNICAL ENGINEER).
- 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.

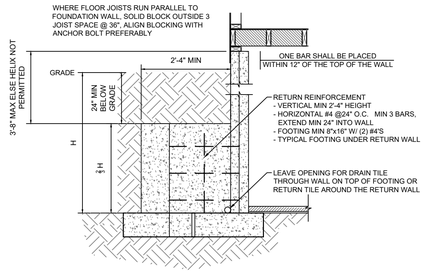
HELIX ALTERNATE DESIGN NOT VALID IF ANY ONE OF THE FOLLOWING CONDITIONS ARE MET:

- NON-UNIFORM FOOTING SUPPORT (IE. CAST IN PLACE PIERS, PUSH PILES).
- DAYLIGHT WALLS EXCEEDING 6' TALL FOR A LENGTH GREATER THAN 6'.

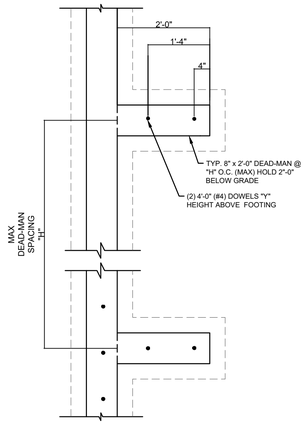
HELIX DOSING INSTRUCTIONS:

MIXING SHOULD BE DONE ACCORDANCE WITH ASTM C94 AND THE MIXING INSTRUCTIONS BELOW. THE DOSAGES OF HELIX ADDED TO THE MIX SHOULD BE NOTED ON THE BATCH DOCUMENTATION IN ACCORDANCE WITH UNIFORM EVALUATION SERVICE ER 279 SECTION 5.15. VERIFIED USING PROCEDURE IN ER 279 APPENDIX A.

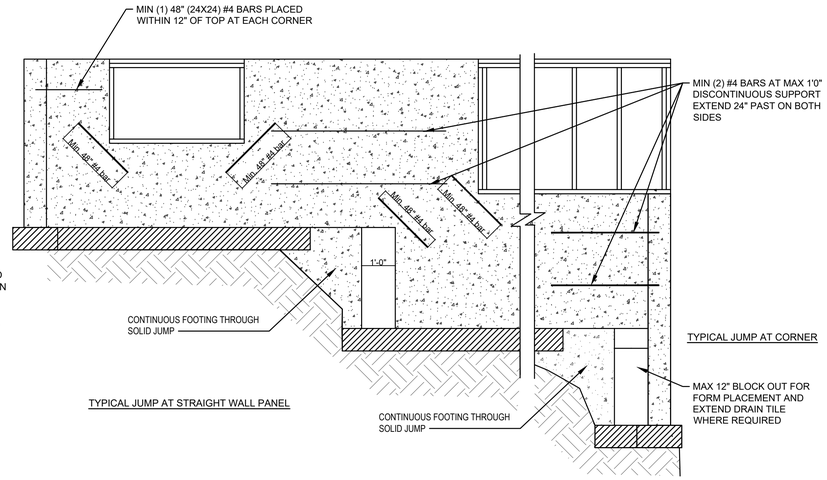
A SLUMP OF 125 MM OR 5" OR HIGHER WILL FACILITATE STRIKE OFF. A SLUMP OF LESS THAN 4" IS NOT RECOMMENDED AS THIS WILL PREVENT SURFACE SEGREGATION OF THE CEMENT AND FINES FROM THE AGGREGATE AND HELIX. SLUMP SHOULD BE MEASURED ON THE INITIAL LOAD AND ADJUSTMENTS MADE WITH A WATER REDUCER OR PLASTICIZER (NOT WATER).



1 / S3.1 TYPICAL DEAD MAN SECTION
N.T.S.

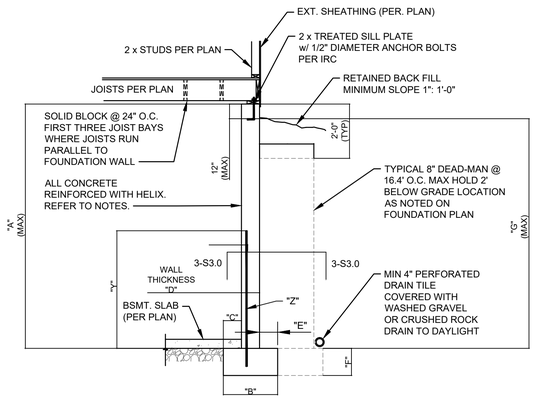


3 / S3.1 TYPICAL DEAD MAN SECTION
N.T.S.



PER KCMO CPD-DS STANDARDS

2 / S3.1 FOUNDATION WALL JUMP DETAIL
N.T.S.



CONCRETE DIMENSIONS							HEIGHT ABOVE FOOTING	REINFORCINGBARS (GRADE 60)	HELIX DOSAGE.
"A"	"B"	"C"	"D"	"E"	"F"	"G"	"Y"	"Z"	
8'-0"	1'-4"	4"	8"	4"	8"	7'-6"	2'-6"	4 BARS AT 24" O.C.	9.0 LB/CUBIC YARD
9'-0"	1'-4"	4"	8"	4"	8"	8'-6"	2'-6"	4 BARS AT 24" O.C.	9.0 LB/CUBIC YARD

DIMENSIONS SHOWN IS FOR THE MAXIMUM UNINTERRUPTED WALL PANEL LENGTH BEFORE DEAD-MAN SHALL BE INSTALLED. A MINIMUM 2' RETURN OFFSET IN THE FOUNDATION WALL SHALL SUBSTITUTE AS DEAD-MAN AND/OR BREAK IN THE WALL PANEL LENGTH.
WALL WILL NOT ACHIEVE FULL STRENGTH UNTIL FIRST FLOOR DECK AND BASEMENT SLAB HAVE BEEN PLACED.

4 / S3.1 TYPICAL FOUNDATION WALL DETAIL
N.T.S.

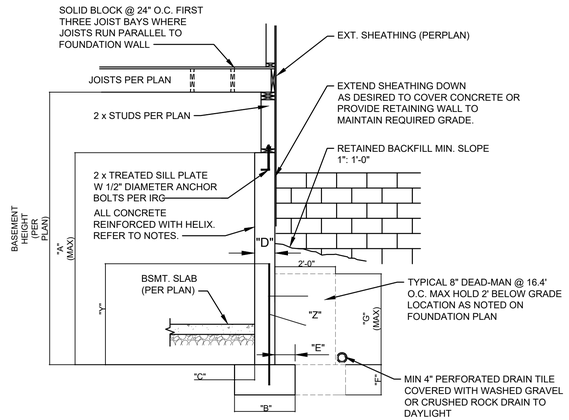
HELIX FOOTING TABLE	HELIX DOSAGE
ALL STRIP FOOTINGS AND GRADE BEAMS	9 LB/CU FT

ISOLATED FOOTINGS AND COLUMN PADS

SYM	PIER PAD SIZE	DEPTH	MINIMUM REINFORCEMENT GRADE 60 KSI STEEL	SCHEDULE 40 STEEL COLUMN, MIN FY = 35 KSI	HELIX DOSAGE
A	30"x30"	1'-0"	(5) #4 BAR E.W.	3" DIAMETER	12.5 LB/CU FT
B	36"x36"	1'-0"	(6) #4 BAR E.W.	3" DIAMETER	12.5 LB/CU FT
C	42"x42"	1'-2"	(7) #4 BAR E.W.	3" DIAMETER	12.5 LB/CU FT
D	48"x48"	1'-4"	(8) #4 BAR E.W.	3" DIAMETER	12.5 LB/CU FT
D1	48"x48"	1'-4"	(8) #4 BAR E.W.	N/A	12.5 LB/CU FT
E	54"x54"	1'-4"	(9) #4 BAR E.W.	3.5" DIAMETER	12.5 LB/CU FT
F	60"x60"	1'-6"	(10) #4 BAR E.W.	3.5" DIAMETER	12.5 LB/CU FT

SYM	PIER DIAMETER	DEPTH	MINIMUM REINFORCEMENT GRADE 60 KSI STEEL	HELIX DOSAGE
G	12"	3'-0"	(4) VERTICAL #4	12.5 LB/CU FT
H	16"	3'-0"	(4) VERTICAL #4	12.5 LB/CU FT
J	18"	3'-0"	(4) VERTICAL #4	12.5 LB/CU FT
K	24"	3'-0"	(4) VERTICAL #4	12.5 LB/CU FT
L	28"	3'-0"	(4) VERTICAL #4	12.5 LB/CU FT

COLUMN AND PAD SIZES ARE FOR A MAXIMUM COLUMN HEIGHT OF 10'. COLUMNS GREATER THAN 10' REQUIRE A SEPARATE ENGINEERED DESIGN. FOOTINGS A-F SPACING OF 6" O.C. WITH 3" CLEAR COVER.



CONCRETE DIMENSIONS							HEIGHT ABOVE FOOTING	REINFORCINGBARS (GRADE 60)	HELIX DOSAGE.
"A"	"B"	"C"	"D"	"E"	"F"	"G"	"Y"	"Z"	
4'-0"	1'-4"	4"	8"	4"	8"	3'-4"	2'-6"	4 BARS AT 24" O.C.	9.0 LB/CUBIC YARD
6'-0"	1'-4"	4"	8"	4"	8"	4'-4"	2'-6"	4 BARS AT 24" O.C.	9.0 LB/CUBIC YARD

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

5 / S3.1 TYPICAL "UNRESTRAINED" FOUNDATION WALL DETAIL
N.T.S

RES ENGINEERING + DESIGN
RESIDENTIAL ENGINEERING SERVICES, LLC
WWW.RES-KC.COM
600 SW JEFFERSON ST SUITE 300
LEES SUMMIT, MO 64063
(816) 399-4901

STATE OF MISSOURI
BRADLEY HIXON
NUMBER PE-2010009903
PROFESSIONAL ENGINEER
8/18/21

HELIX DETAILS

SHEET #
S3.1

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DATE