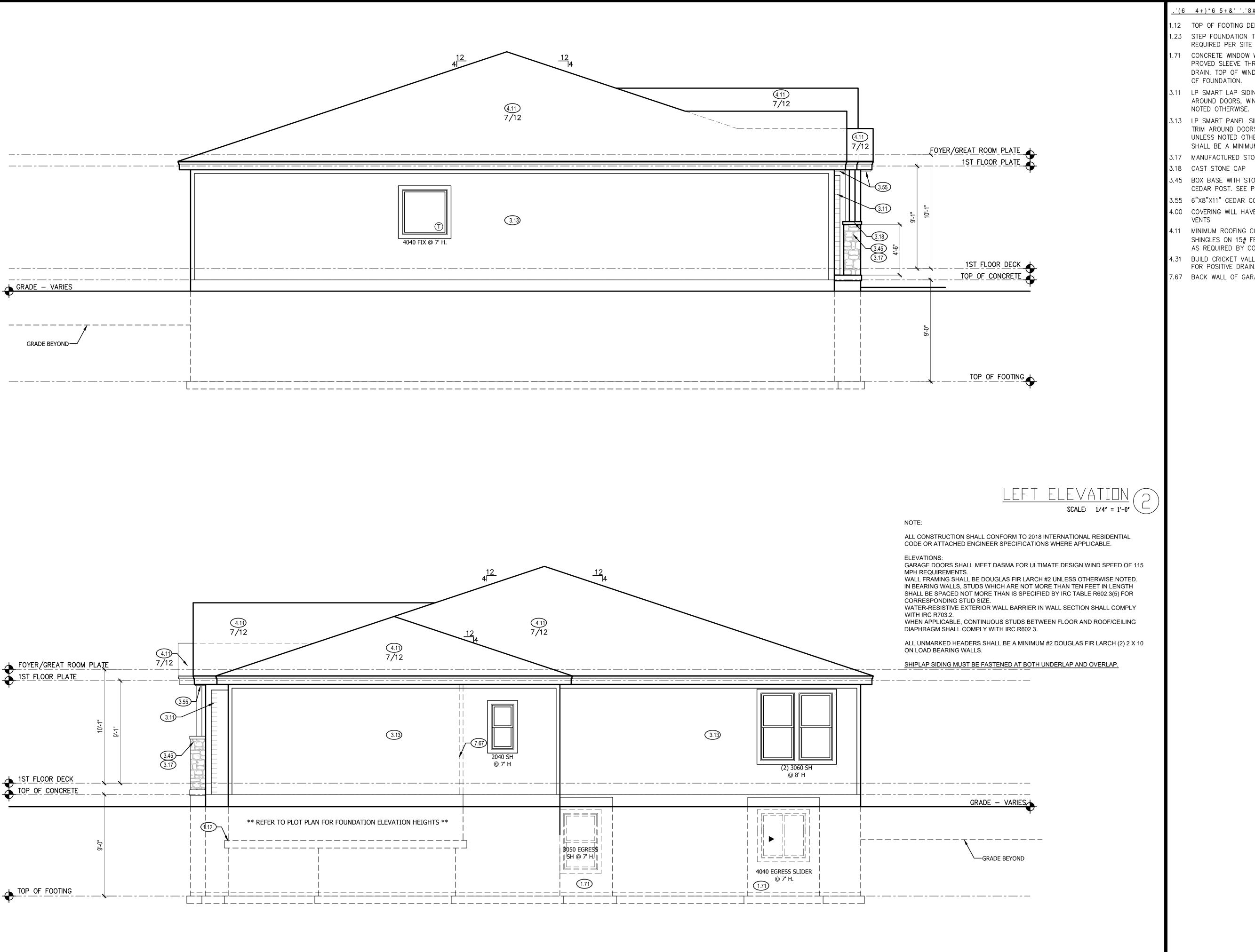


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.'(6 4+)\*6 5+&' '.'8#6+10 016'5

- 1.12 TOP OF FOOTING DEPTH DETERMINED PER SITE.
- 1.23 STEP FOUNDATION TO BELOW FROST LINE AS
- 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.
- 3.11 LP SMART LAP SIDING WITH 5/4X6 LP SMART TRIM AROUND DOORS, WINDOWS, AND CORNERS UNLESS NOTED OTHERWISE.
- 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
- 3.17 MANUFACTURED STONE VENEER.
- 3.18 CAST STONE CAP
- 3.45 BOX BASE WITH STONE VENEER TO 4'-6" AND 6X6 CEDAR POST. SEE PLAN FOR FINISHED SIZE.
- 3.55 6"X8"X11" CEDAR CORBEL WITH CHAMFERED EDGES 4.00 COVERING WILL HAVE 1 ROOF VENT AND 4 SOFFIT
- 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.
- 7.67 BACK WALL OF GARAGE.

**CPG DBA SUMMIT** 120 SE 30TH ST.

LEE'S SUMMIT, MO 64082

816-246-6700

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DRAWN BY:

ISSUE DATE: 05.12.21

SHEET NUMBER:

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.

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

<u>)'0'4#. 016'5</u>

PER VENDOR.

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

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

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

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.

EMBEDDED INTO THE CONCRETE A MINIMUM OF 7".

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.

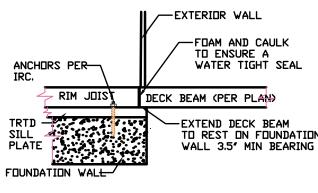
PROVIDE 2X SOLID BLOCKING SUPPORT BELOW ALL POINT LOADS CONTINUOUS TO BEARING STRUCTURE AND/OR FOUNDATION BELOW.

STEEL BEAM FLANGE WIDTH:
W8 x 10 - 3.94"
W8x13 - 4"

IS	SOLATE	D FO	OTINGS AND COLU	JMN PADS		
SYM	PIER PAD SIZE	DEPTH	MINIMUM REINFORCEMENT GRADE 60 KSI STEEL	SCHEDULE 40 STEEL COLUMN, MIN FY = 35 KSI		
A	30″×30″	1'-0"	(5) #4 BAR E.W.	3" DIAMETER		
B	36″×36″	1'-0"	(6) #4 BAR E.W.	3" DIAMETER		
<u></u>	42″×42″	1'-2"	(7) #4 BAR E.W.	3" DIAMETER		
	48″×48″	1'-4"	(8) #4 BAR E.W.	3" DIAMETER		
É	54"×54"	1'-4"	(9) #4 BAR E.W.	3.5" DIAMETER		
A	60″×60″	1'-6"	(10) #4 BAR E.W.	3.5" DIAMETER		
ANY	ANY SIZE FOOTING WITH AN (*)  NO COLUMN NEEDED					

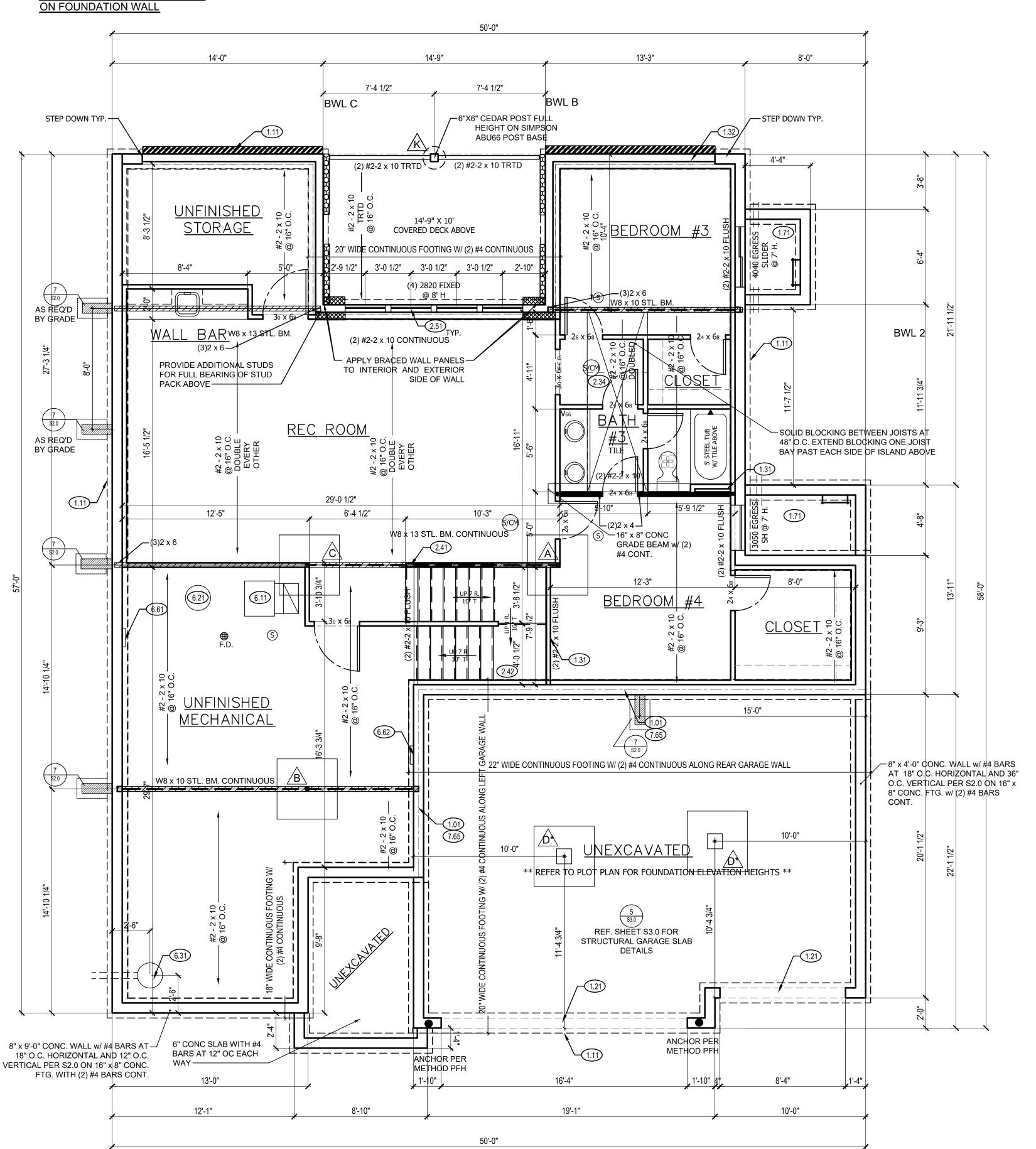
IS	DLATED	FOOT	TINGS AND COLUMN PADS
SYM	PIER DIAMETER	DEPTH	MINIMUM REINFORCEMENT GRADE 40 KSI STEEL
	12″	3′-0″	(4) VERTICAL #4
A	16″	3′-0″	(4) VERTICAL #4
$\triangle$	18″	3′-0″	(4) VERTICAL #4
K	24"	3′-0″	(4) VERTICAL #4
$\triangle$	28 <b>″</b>	3'-0"	(4) VERTICAL #4

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.



DECK BEAM SUPPORT RESTING

BWL 1



<u>(170&#6+10 2.#0 0</u>16'5

1.01 HOLD SILL PLATE BACK 4"

1.11 CONTINUOUS CONCRETE FOOTING

1.21 RECESS TOP OF FOUNDATION WALL

21 RECESS TOP OF FOUNDATION WALL

1.31 2X4 STUD WALL WITH TREATED SILL PLATE

1.32 2X6 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.

2.41 CURB STAIR SYSTEM WITH OPEN HANDRAILS

2.42 FIRE RATED SHEETROCK UNDER STAIRS

6.11 DIRECT FURNACE. FUEL BURNING APPLIANCES SHALL BE DIRECT VENTED TO EXTERIOR FOR COMBUSTION

6.21 HOT WATER HEATER WITH THERMAL EXPANSION CONTROL DEVICE

5.31 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.

SUMMIT

**CPG DBA** 

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SOMERVIEW
CRAFTSMAN
RESERVE AT STONEY CREEK #10

PROFESSIONAL SEAL

OF MISS

BRADLEY

HUXOL

NUMBER

PE-2011000903

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<u>)'0'4#. 016'5</u>

REQUIREMENTS.

FOUNDATION PLAN

CAUSED BY THERMAL EXPANSION.

BACK WATER VALVES REQUIRED ON ALL BASEMENT PLUMBING FIXTURES. PROVIDE MEANS OF CONTROLLING PRESSURE

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

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

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HUNG, 3066 FIX = 3'-0" X 6'-6" FIXED.

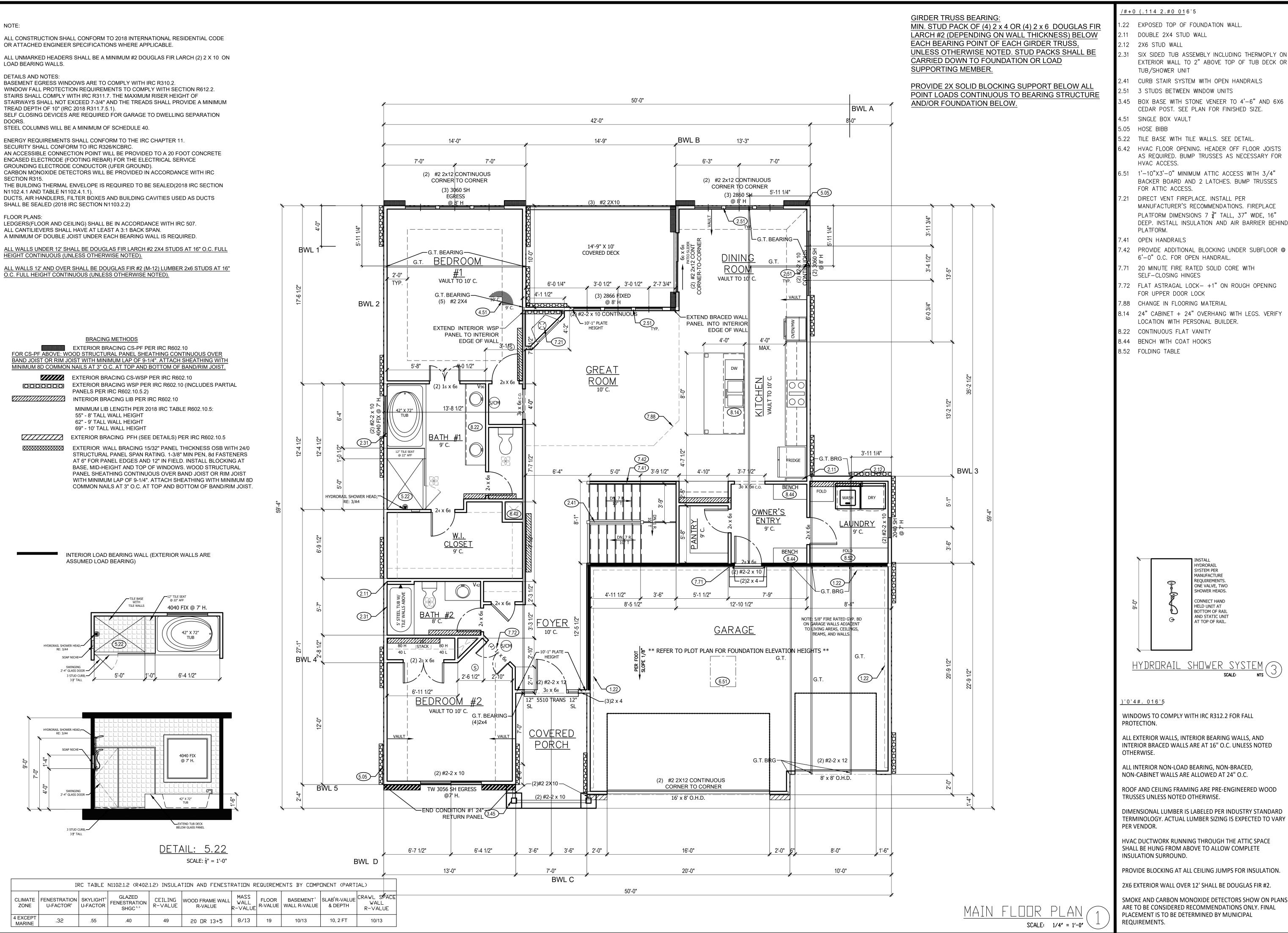
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> ISSUE DATE: 05.12.21

SHEET NUMBER:

A30

RELEASE FOR CONSTRUCTION



/#+0 (.114 2.#0 016'5

- .22 EXPOSED TOP OF FOUNDATION WALL.
- 2.11 DOUBLE 2X4 STUD WALL
- 2.31 SIX SIDED TUB ASSEMBLY INCLUDING THERMOPLY ON
- TUB/SHOWER UNIT
- 2.41 CURB STAIR SYSTEM WITH OPEN HANDRAILS 2.51 3 STUDS BETWEEN WINDOW UNITS
- 3.45 BOX BASE WITH STONE VENEER TO 4'-6" AND 6X6
- CEDAR POST. SEE PLAN FOR FINISHED SIZE.
- 5.05 HOSE BIBB
- 5.22 TILE BASE WITH TILE WALLS. SEE DETAIL.
- 6.42 HVAC FLOOR OPENING. HEADER OFF FLOOR JOISTS AS REQUIRED. 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  $\frac{3}{4}$  TALL, 37" WIDE, 16" DEEP. INSTALL INSULATION AND AIR BARRIER BEHIND
- 7.41 OPEN HANDRAILS
- 7.42 PROVIDE ADDITIONAL BLOCKING UNDER SUBFLOOR @
- 7.71 20 MINUTE FIRE RATED SOLID CORE WITH
- SELF-CLOSING HINGES 7.72 FLAT ASTRAGAL LOCK- +1" ON ROUGH OPENING
- FOR UPPER DOOR LOCK
- 8.14 24" CABINET + 24" OVERHANG WITH LEGS. VERIFY LOCATION WITH PERSONAL BUILDER.

HYDRORAIL YSTEM PER MANUFACTURE

REQUIREMENTS.

ONE VALVE, TWO SHOWER HEADS.

ONNECT HAND

HELD UNIT AT BOTTOM OF RAIL AND STATIC UNIT

AT TOP OF RAIL.

- 8.22 CONTINUOUS FLAT VANITY
- 8.44 BENCH WITH COAT HOOKS

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

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> DRAWN BY: J. ROSENBLUM

**ISSUE DATE:** 

05.12.21

SHEET NUMBER:

06/03/2021

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.

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

4) ROOF IS ENGINEERED TO COMPLY WITH IRC 802

NOTE:

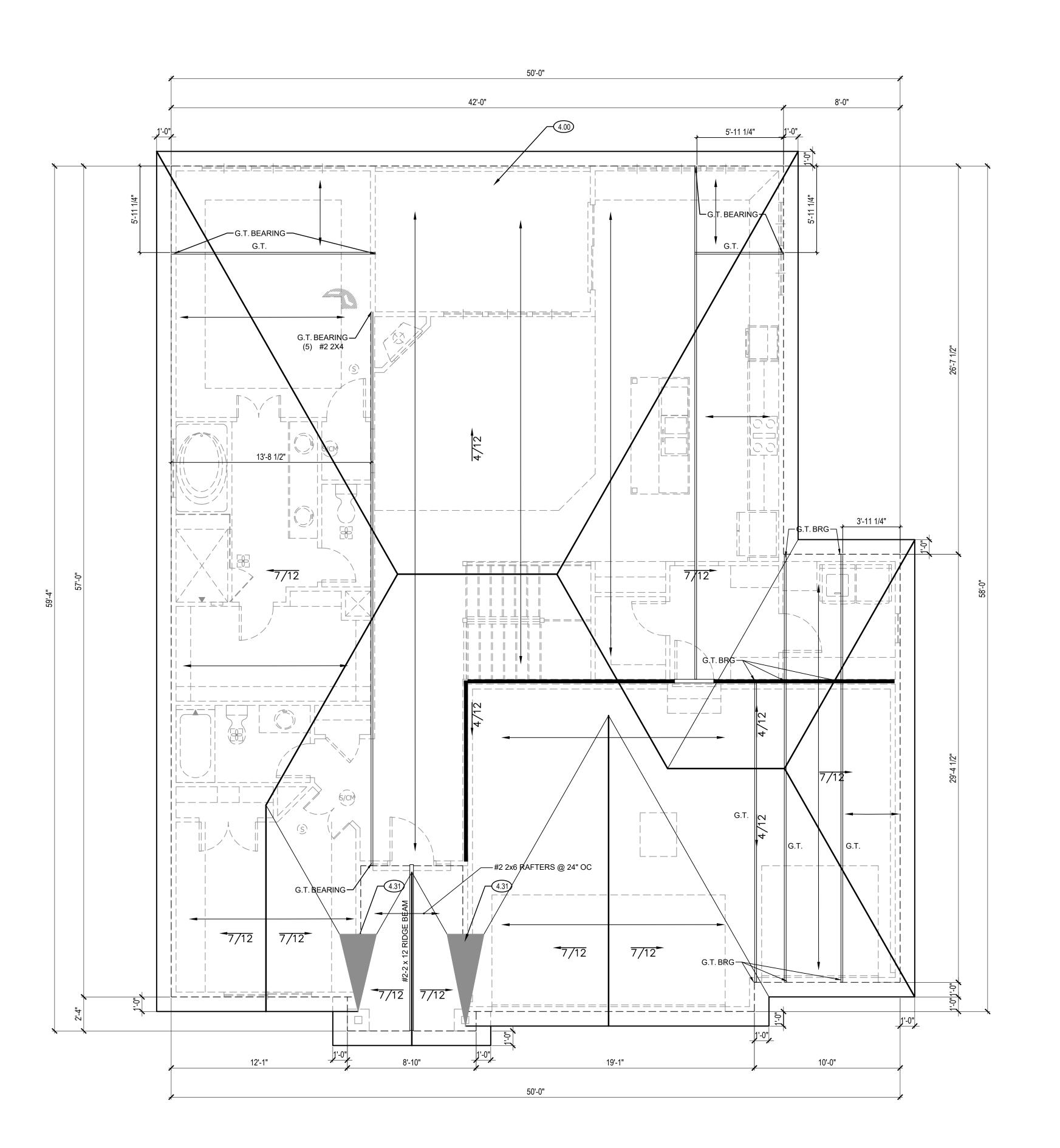
ALL CONSTRUCTION SHALL CONFORM TO 2018 INTERNATIONAL RESIDENTIAL CODE OR ATTACHED ENGINEER SPECIFICATIONS WHERE APPLICABLE.

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.



411( 2.#0 016'5

- 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.



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CRAFTSMAN
RESERVE AT STONEY CREEK #10

PROFESSIONAL SEAL:

OF MISSIONAL SEAL:

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NUMBER

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ISSUE DATE: 05.12.21

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RELEASE FOR CONS'
AS NOTED FOR PLAI

 $\frac{\text{RDF} \text{PLAN}}{\text{SCALE:} 1/4' = 1'-0'}$ 

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

ROOF AND CEILING FRAMING ARE PRE-ENGINEERED ROOF

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

BUILD CRICKET VALLEY AWAY FROM INTERSECTION FOR

POSITIVE DRAINAGE. SEE FRAMING SPECIFICATIONS FOR

DIMENSIONAL LUMBER IS LABELED PER INDUSTRY STANDARD

TERMINOLOGY. ACTUAL LUMBER SIZING IS EXPECTED TO VARY

PROVIDE BLOCKING AT ALL CEILING JUMPS FOR INSULATION.

ROOF LINE MEETS UPPER LEVEL WALLS.

PROVIDE FOAM INSULATION AT EXTERIOR WHERE MAIN LEVEL

ASPHALT SHINGLES MIN 2/12. FLASH ALL PENETRATIONS AND

<u>)'0'4#. 016'5</u>

INTERSECTIONS.

NEAR TOP.

PER VENDOR.

LEE'S SUMMIT, MISSOURI
06/03/2021

#### 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**

LIGHT ROOF HEAVY ROOF ROOF + CEILING (NO STORAGE) ROOF + CEILING (STORAGE) CEILING JOISTS (STORAGE) EXTERIOR BACONIES / DECK INTERIOR FLOOR (MAIN FLOOR) INTERIOR FLOOR (UPPER FLOORS)	10 PSF +10 PSF 15 PSF 20 PSF 10 PSF 10 PSF 15 PSF	(CONCRETE, SLATE, TILE)
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 I	NCLUDED IN	15 PSF DEAD LOAD)

### LIVE

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

# SOIL AND SITE ASSUMPTIONS:

**EXPOSURE CATEGORY** 

- 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
- PROVIDE A MINIMUM SOIL COVER OF <u>36 INCHES MEASURED FROM THE BOTTOM OF CONCRETE ON</u> ALL FOUNDATIONS.
- ACCESSORY STRUCTURES WITH AN EAVE HEIGHT LESS THAN 10'-0" AND AN AREA LESS THAN 600 FT2 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
- 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
- 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
- 2. THE MINIMUM CONCRETE 28 DAY COMPRESSIVE STRENGTH SHALL BE AS SPECIFIED IN IRC TABLE
- 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 GROUND3 IN -EXPOSED TO WEATHER OR IN CONTACT WITH GROUND - NOT EXPOSED TO WEATHER OR GROUND
- 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

-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

- REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.
- 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 =  $12x\emptyset_{BAR}$ -BEND DIAMETER =  $12XØ_{BAR}$
- 6. LAP SPLICE SCHEDULE (SEE TABLE 1.1)

# 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
- 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.
- 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
- 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	TOP I	BARS	OTHER	RBARS			
SIZE	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.
- 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
- 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

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) ASTM A36 (Fy = 36 KSI) CHANNELS, PLATES AND ANGLES: WIDE FLANGES: ASTM A992 (Fy = 50 KSI) ASTM A53 GR. B (Fy= 35 KSI) COLUMNS:
- 3. BOLTS SHALL CONFORM TO ASTM A307

ANCHOR RODS:

- 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
- 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.

- 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
- 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
- 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).

- 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.

ASTM F1554 (Fy = 36 KSI)

- 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
- 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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SHEET #

06/03/2021

TC \ 4	DESCRIPTION OF BUILDING	NILIMBED AND TYPE OF EACTENED	CDACING AND LOCATION
ITEM	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	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
7	TO MINIMUM 2" RIDGE BEAM	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") 10d BOX (3"x0.128"); OR 3" X 0.131" NAILS	24" O.C. FACE NAIL  16" O.C. FACE NAIL
9	STUD TO STUD AND ABUTTING STUDS AT INTERSECTING WALL	16D BOX (3-1/2"x0.135"); OR 3" X 0.131" NAILS	12" O.C. FACE NAIL
9	CORNERS (AT BRACED WALL PANELS)	16D COMMON (3-1/2" X 0.162")	16" O.C. FACE NAIL
BUILT-UP HEADER (2" TO 2"		16D COMMON (3-1/2"x0.162")	16" O.C. ALONG EACH EDGE FACE NAIL
10 HEADER WITH ½" SPACER)		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
14	TOT TEATE TO TOP PLATE	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)
4.4	BOTTOM PLATE TO JOIST, RIM	16D COMMON (3-1/2" X 0.162")	16" O.C. FACE NAIL
14	JOIST, BAND JOIST OR BLOCKING (NOT AT BRACED WALL PANELS)	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
10 TOP OR BOTTOM PLA		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 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	FACE NAIL

	2018 IR	RC TABLE R602.3(1) (SEE IRC FOR FOOTI	NOTES)	
		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
	DIM IOICT DAND IOICT OD	8d BOX (2-1/2"x0.113")	4" O.C. T	OE NAIL
22	RIM JOIST, BAND JOIST OR BLOCKING TO SILL OR TOP PLATE (ROOF APPLICATIONS ALSO)  8D COMMON (2-1/2" X 0.131"); OR 10D BOX (3" X 0.128"); OR 3" X 0.131" NAILS		OE 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 BEAR	ING, 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, <sup>7</sup> / <sub>16</sub> " CROWN	END	NAIL
		20D COMMON (4" X 0.192"); OR	NAIL EACH LAYER AS F TOP END AND BOTTOM	
27	BUILT-UP GIRDERS AND BEAMS, 2" LUMBER LAYERS	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	
	LOMBLIX LATERS	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	
			SPACING OF	FASTENERS
ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER	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 $\frac{7}{16}$ " 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 $\frac{7}{16}$ " 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 STRUCTURA	L PANELS, COMBINATION SUBFLOOR U	NDERLAYMENT TO FF	RAMING
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

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		ENDS	ROW SPACING
LEDGER	2	1/4	2	1-5/8
BAND JOIST	3/4	2	2	1-5/8

	METHODS,	MINIMUM	CONNECT	ION CRITEIA
	MATERIAL	THICKNESS	FASTENERS	SPACING
	WSP - WOOD		EXTERIOR SHEATHING PER TABLE R602.3(3)	6" EDGES, 12" FIELD
	STRUCTURAL PANEL	3/8	INTERIOR SHEATHING PER TABLE R602.3(1) OR R602.3(2)	VARIES BY FASTENER
	CS-WSP CONTINUOUSLY		EXERIOR SHEATHING PER TABLE R602.3(3)	6" EDGES, 12" FIELD
	SHEATHED WOOD STRUCTURAL PANEL	3/8	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	WOOD: 2-8d COMMON NAILS OR 3-8d NAILS	WOOD: PER STUD AND TOP AND BOTTOM PLATES
		DEGREE ANGLES FOR MAX 16" STUD SPACING	METAL STRAP: PER MANUFACTURER	METAL: PER MANUFACTURER
	GB-GYPSUM	4/0	NAILS OR SCREWS PER TABLE R602.3(1) FOR EXTERIOR LOCATIONS	FOR ALL BRACED WALL PANEL LOCATIONS: 7"
	BOARD	1/2	NAILS OR SCREWS PER TABLE R702.3.5	EDGES (INCLUDING TOP AND BOTTOM PLATES) 7" FIELD

FOR INTERIOR LOCATIONS

	WIDTH (FEET)	(POUNDS) FOR 90 MPH	_				
		EXPOSURE B		ENGINEERED	LUMBER MINI	MUM DESIGN REQ	UIREMENTS
	18	1,000			g (DO)	E (DOI)	F (DO)
	9	1,000			fb (PSI)	E (PSI)	Fv (PSI
	16	1,000		VERSA-LAM LVL	3100	2.0x106	285
1	18	1,000		VERTOR ENTITIES	0.00	2.07.100	200
	9	1,200		DOUGLAS FIR-LARCH #2	900	1.6x106	180
	16	1,000	L	TIN-LAIXOIT#2			
1	18	2,025					1

TENSION STRAP

2,400

1,200

3,200

3,200

2,350

DR 1,000

2,050

2,450

1,500

3,150

3,675

10 FEET

24

30

20

MAXIMUM | CAPACITY

OPENING | REQUIRED

9

16

18

9

16 18

9

16

18

9

16 18

MINIMUM LENGTH (INCHES)

WALL HEIGHT

24

27

18

8 FEET 9 FEET

MINIMUM

STUD

NOMINAL

SIZE AND

GRADE

2x4 NO 2

GRADE

2x6 STUD GRADE

METHOD

PFG

CS-PF

CS-WSP

SUPPORTING **ROOF ONLY** SUPPORTING ONE STORY

AND ROOF

ADJACENT CLEAR

OPENING

HEIGHT

(INCHES) LESS THAN OR EQUAL TO 64

MAXIMUM PONY

(FEET)

0

FRAMING | WALL HEIGHT | TOTAL WALL

MAXIMUM

HEIGHT (FEET)

10

12

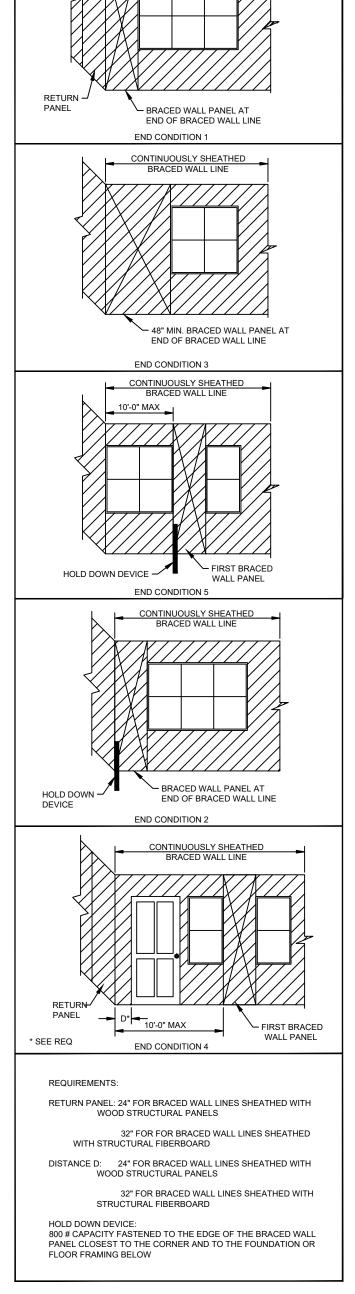
12

MINIMUM LENGTH OF BRACED WALL PANELS TABLE R602.10.5 (PARTIAL)

24

16

BRACING METHODS TABLE R602.10.4 (PARTIAL)

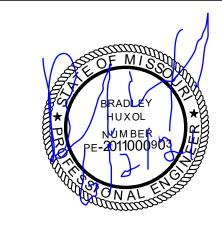


END CONDITIONS FOR BRACED WALL

S1.0 SHEATHING (IRC FIGURE R602.10.7)

LINES WITH CONTINUOUS

		EVERSTEAD ENGINEERING & DESIGN
ENTS		
		EVERSTEAD
v (DCI		www.everstead.com
v (PSI		600 SW JEFFERSON ST SUITE 300
	1 🔳	LEES SUMMIT, MO 64063



(816) 399-4901

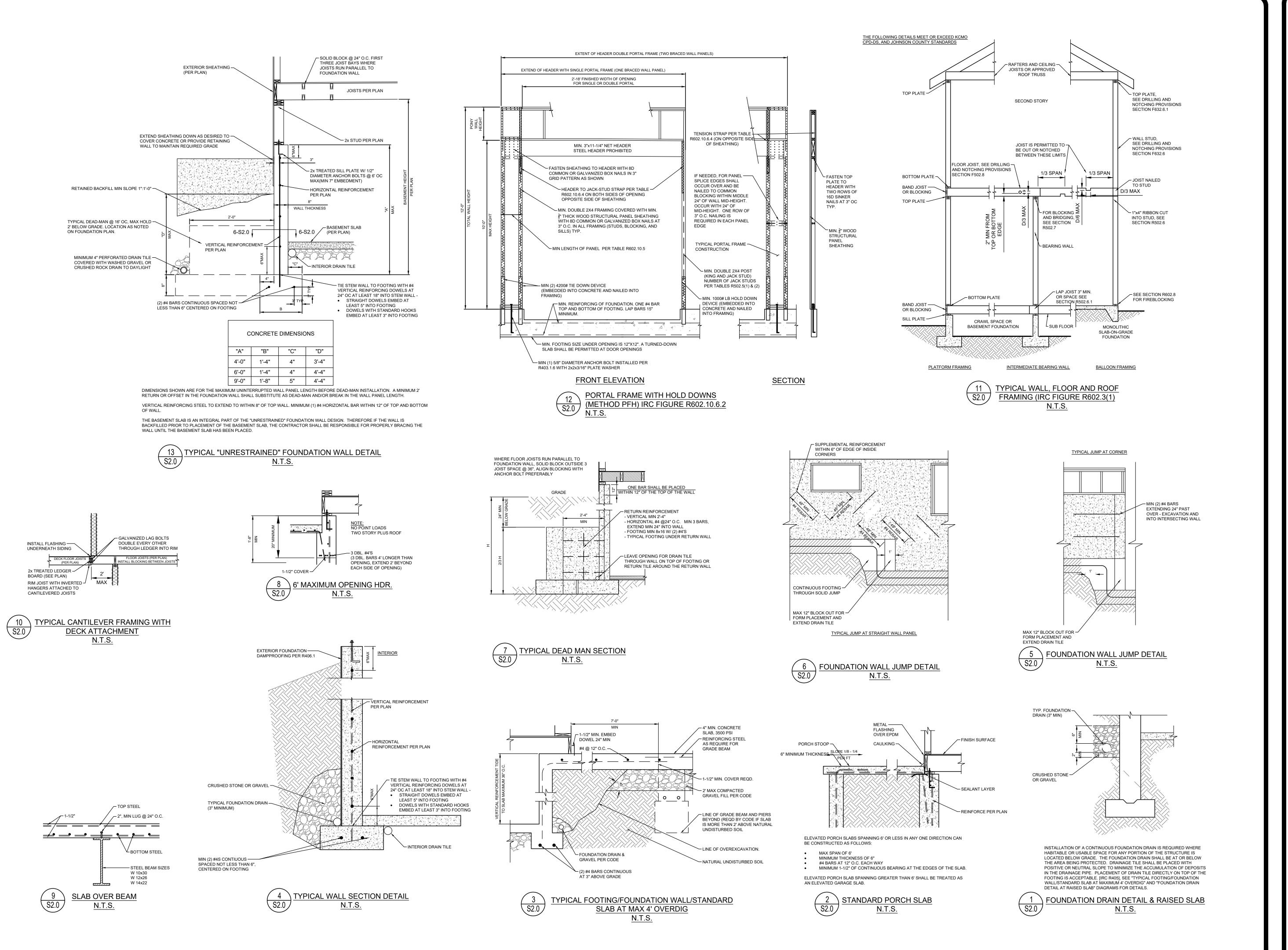
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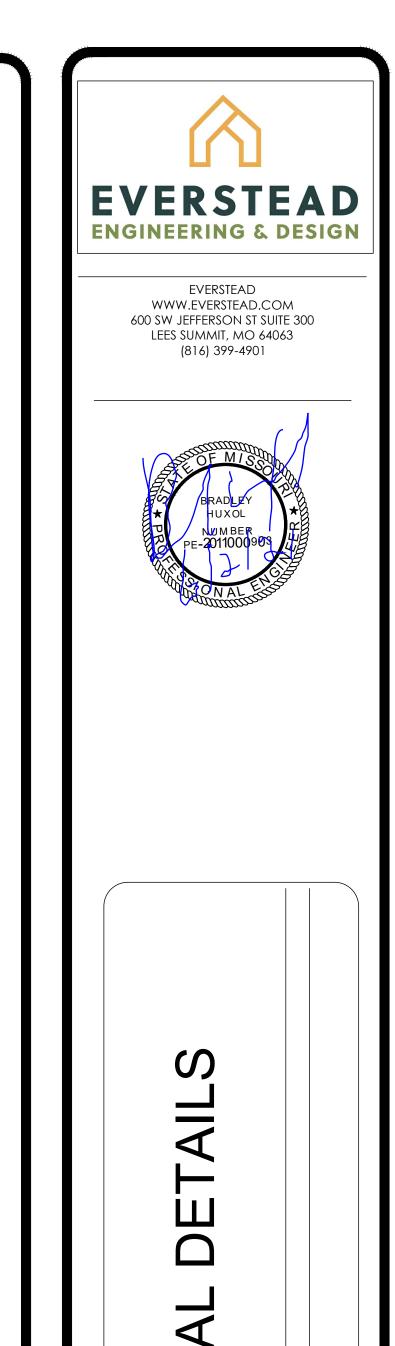
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TABLE R507/2 FASTENER SPACING FOR A SOUTHERN PINE OR HEM-FIR DECK LEDGER 2" NOMINAL SOLID SAWN SPRUCE-PINE-FIR BAND JOIST (DECK LIVE LOAD = 40PSF, DECK DEAD LOAD = 10 PSF)

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	MINIMUM NOMINAL PANEL	MAX WALL STUD	PANEL NA	IL SPACING	ULTIMATE DESIGN WIND SPEED, V ULT (MPH)		
SIZE	PENETRATION (IN)	PANEL SPAN RATING	THICKNESS (IN)	SPACING	EDGES (IN O.C.)	FIELD (IN O.C.)	В		
6d COMMON	1.5	24/0	3/8	16	6	12	140		
8d COMMON 1.75	1.75 24/16	7/16	16	6	12	170			
	24/10	7/10	24	6	12	140			





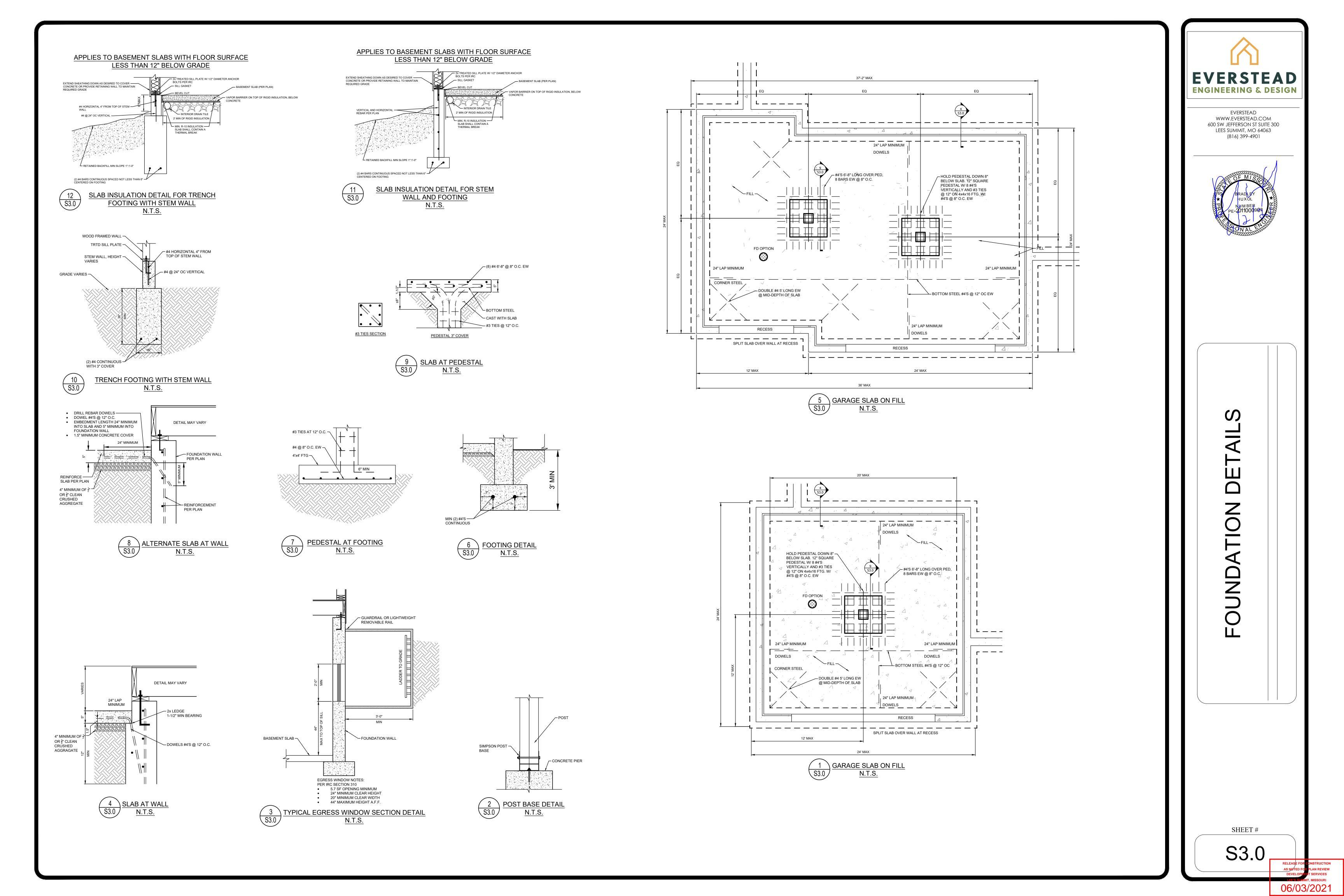
STRUCTURAL DETAII

SHEET #

52.0

DEVELOPMENT SERVICES

LEE'S SUMMIT, MISSOURI



#### **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 PEOLIDEMENTS ON THIS PAGE
- 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 SOIL BEARING.
- 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.

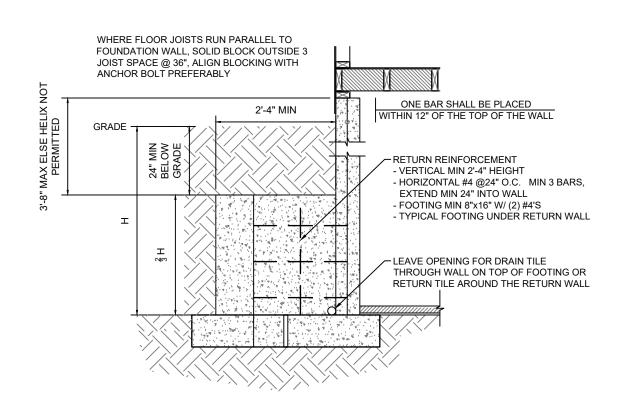
#### HELIX ALTERNATE DESIGN NOT VALID IF ANY ONE OF THE FOLLOWING CONDITIONS ARE MET:

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

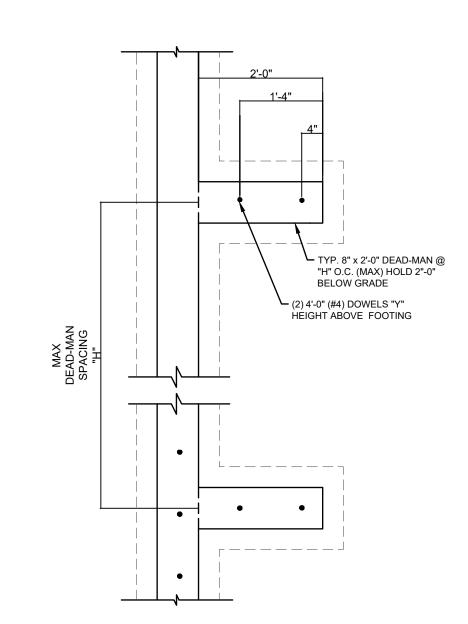
#### **HELIX DOSING INSTRUCTIONS:**

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.

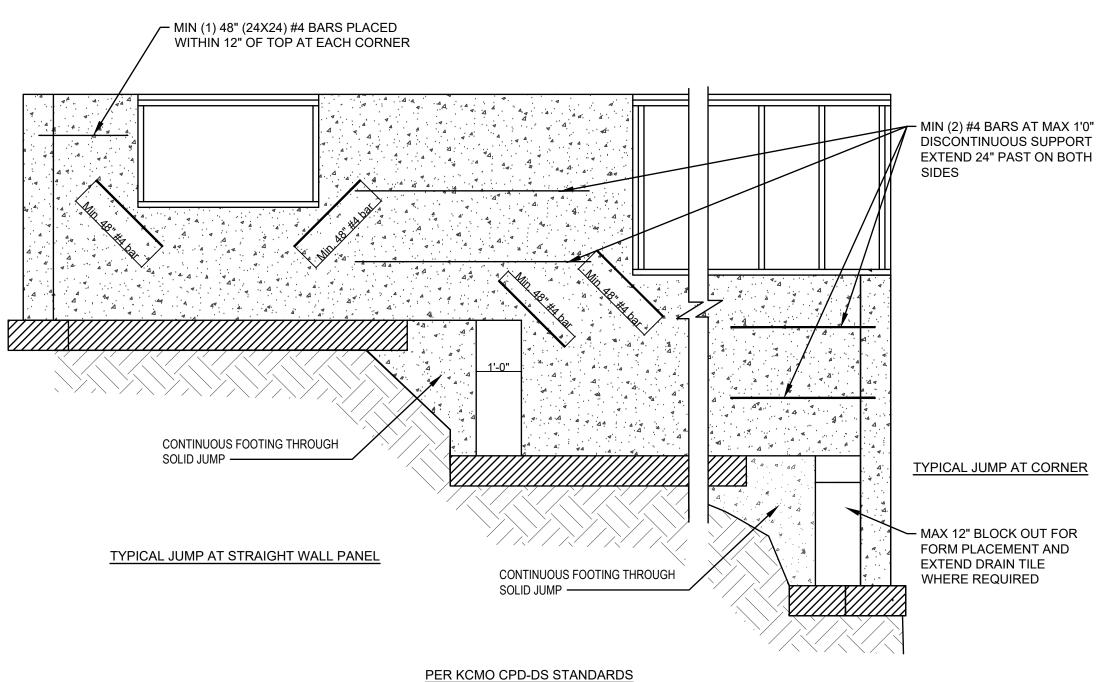
A SLUMP OF 125 MM OR 5" OR HIGHER WILL FACILITATE STRIKE OFF. A SLUMP OF LESS THAN 4" IS NOT RECOMMENDED AS THIS WILL PREVENT SURFACE SEGREGATION OF THE CEMENT AND FINES FROM THE AGGREGATE AND HELIX. SLUMP SHOULD BE MEASURED ON THE INITIAL LOAD AND ADJUSTMENTS MADE WITH A WATER REDUCER OR PLASTICIZER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



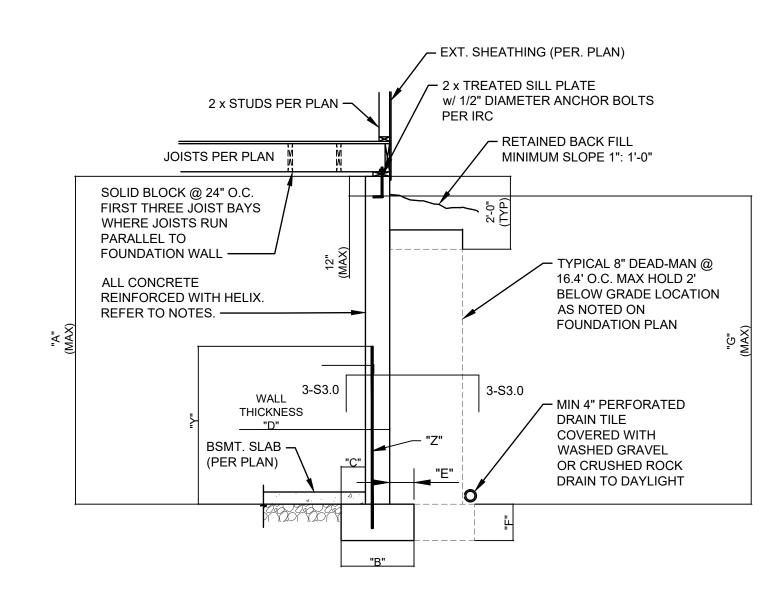




3 TYPICAL DEAD MAN SECTION N.T.S.







CONCRETE DIMENSIONS							HEIGHT ABOVE FOOTING	REINFORCINGBARS (GRADE 60)	HELIX DOSAGE.	
"A"	"B"	"C"	"D"	"E"	"F"	"G"	"Y"	"Z"	TILLIX BOOKGE.	
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	

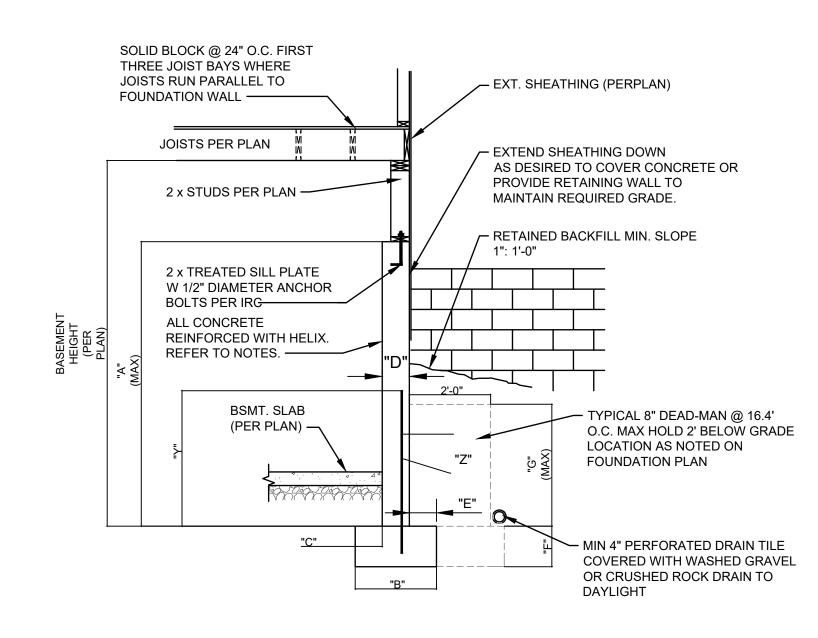
DIMENSIONS SHOWN IS FOR THE MAXIMUM UNINTERRUPTED WALL PANEL LENGTH BEFORE DEAD-MAN SHALL BE INSTALLED. A MINIMUM 2' RETURN OFFSET IN THE FOUNDATION WALL SHALL SUBSTITUTE AS DEAD-MAN AND/OR BREAK IN THE WALL PANEL LENGTH.

WALL WILL NOT ACHIEVE FULL STRENGTH UNTIL FIRST FLOOR DECK AND BASEMENT SLAB HAVE BEEN PLACED.



	HELIX DOSAGE							
Α	LL STRI	EAMS	9 LB/CU FT					
		COLUMN PAD	S					
SYM	PIER PAD SIZE	DEP	PTH	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		
<u></u>	42"x42"	1'-2	2"	(7) #4 BAR E.W.	3" DIAMETER	12.5 LB/CU FT		
$\triangle$	48"x48"	1'-4	4"	(8) #4 BAR E.W.	12.5 LB/CU FT			
	48"x48"	1'-4	4"	(8) #4 BAR E.W.	N/A	12.5 LB/CU FT		
É	54"x54"	1'-4	4"	(9) #4 BAR E.W.	3.5" DIAMETER	12.5 LB/CU FT		
F	60"x60"	1'-6	6"	(10) #4 BAR E.W.	3.5" DIAMETER	12.5 LB/CU FT		
SYM	PIER DIAMETE		DEPT	<b>U</b> I	H MINIMUM REINFORCEMENT GRADE 60 KSI STEEL			
G	12"		3'-0	" (4) VERTICAL #4 1		12.5 LB/CU FT		
H	16"		3'-0	(4) VERTICAL #4 12.		12.5 LB/CU FT		
$\sqrt{\downarrow}$	18"		3'-0	" (4) VERTICA	12.5 LB/CU FT			
K	24"		3'-0	0" (4) VERTICAL #4		12.5 LB/CU FT		
<u>\</u>	28"		3'-0	(4) VERTICAL #4 12.5 LE		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.



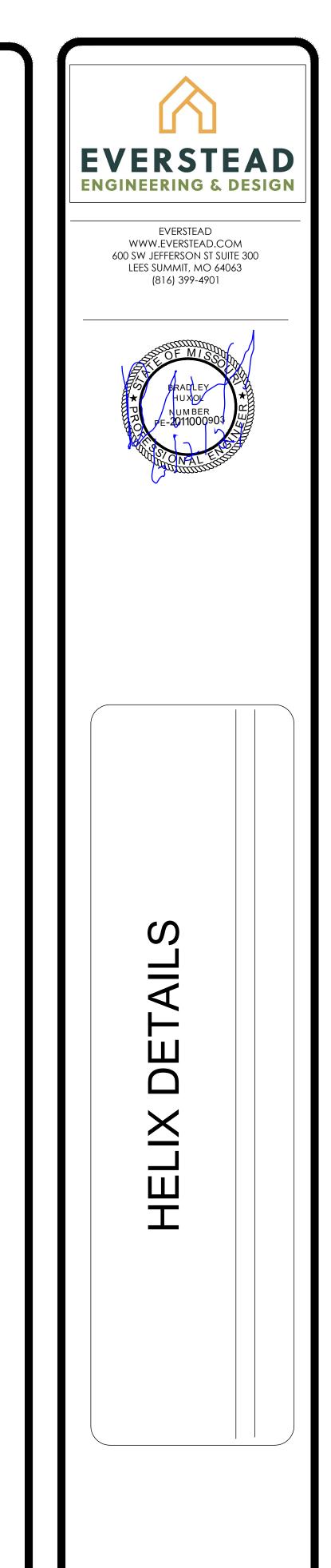
CONCRETE DIMENSIONS							HEIGHT ABOVE FOOTING	REINFORCINGBARS (GRADE 60)	HELIX DOSAGE.	
"A"	"B"	"C"	"D"	"E"	"F"	"G"	"Y"	"Z"	TIEEIX BOOKOE.	
4'-0"	1'-4"	4"	8"	4"	8"	3'-4"	2'-6"	4 BARS AT 24" O.C.	9.0 LB/CUBIC YARD	
6'-0"	1'-4"	4"	8"	4"	8"	4'-4"	2'-6"	4 BARS AT 24" O.C.	9.0 LB/CUBIC YARD	

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.



TYPICAL "UNRESTRAINED" FOUNDATION
WALL DETAIL

N.T.S



SHEET#

AS NOTED FOR PLAN REVIEW DEVELOPMENT SERVICES

HELIS SUMMIT, MISSOURI

06/03/2021