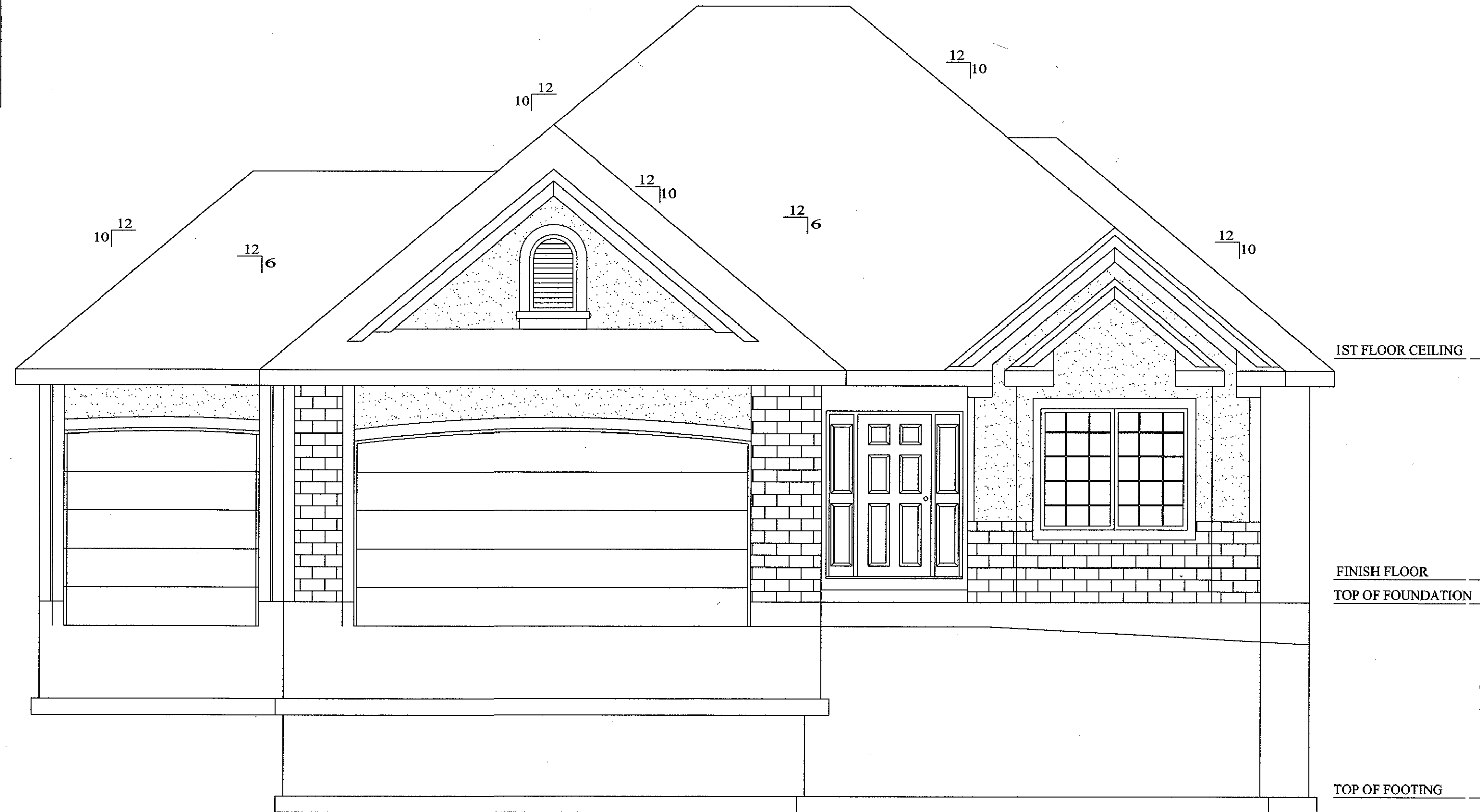


RESIDENTIAL AREA:		1791	
RESIDENTIAL, LIVING AREA		738	
RESIDENTIAL, UN-FINISHED BASEMENTS		716	
RESIDENTIAL, GARAGE		1053	
RESIDENTIAL, LIVING AREA 2			
ROOFING MATERIAL	COMP	NUMBER OF BATHROOMS	3.5
NUMBER OF BEDROOMS	4	NUMBER OF STORIES	1
NUMBER OF LIVING UNITS	1	TOTAL LIVING AREA	2844
SEWER CONNECTION FEE			

COVERED DECK 210 #'

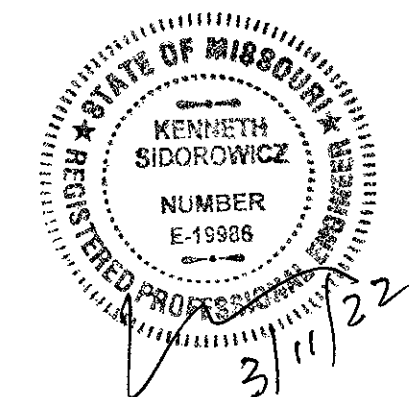


FRONT ELEVATION
SCALE: 1/4" = 1'-0"

COMP ROOF
ROOF & SOFFIT VENTS PER CODE



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



DESCRIPTION:

ELEVATIONS

MODEL:
OPT C

DATE:
8/29/20

ARCHITECT IS NOT RESPONSIBLE FOR THE STRUCTURAL ELEMENTS OF THESE PLANS. A STRUCTURAL ENGINEER MAY NEED TO VERIFY ALL STRUCTURAL ASPECTS OF THESE PRINTS BEFORE CONSTRUCTION BEGINS. FIELD CONDITIONS MAY BE DIFFERENT FROM PLAN. ALL STATE AND LOCAL CODES TAKE PRECEDENCE OVER THESE PLANS. CONTRACTOR WILL BE RESPONSIBLE FOR PLAN INTEGRITY AND CODE COMPLIANCE.

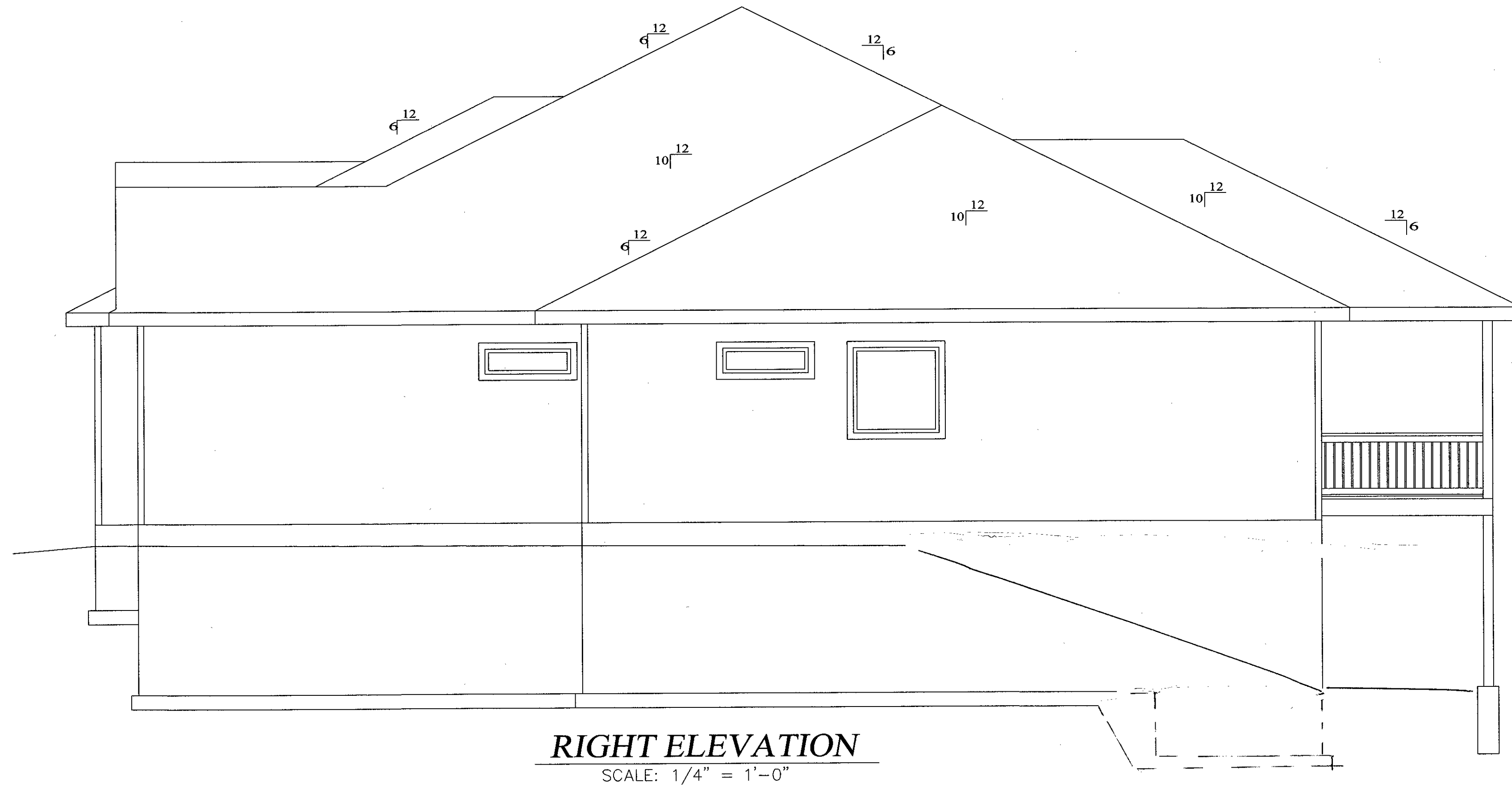
3218 SW Enoch St.
Summit View Farms
Lot 107
Lee's Summit, MO

BUILD
SET

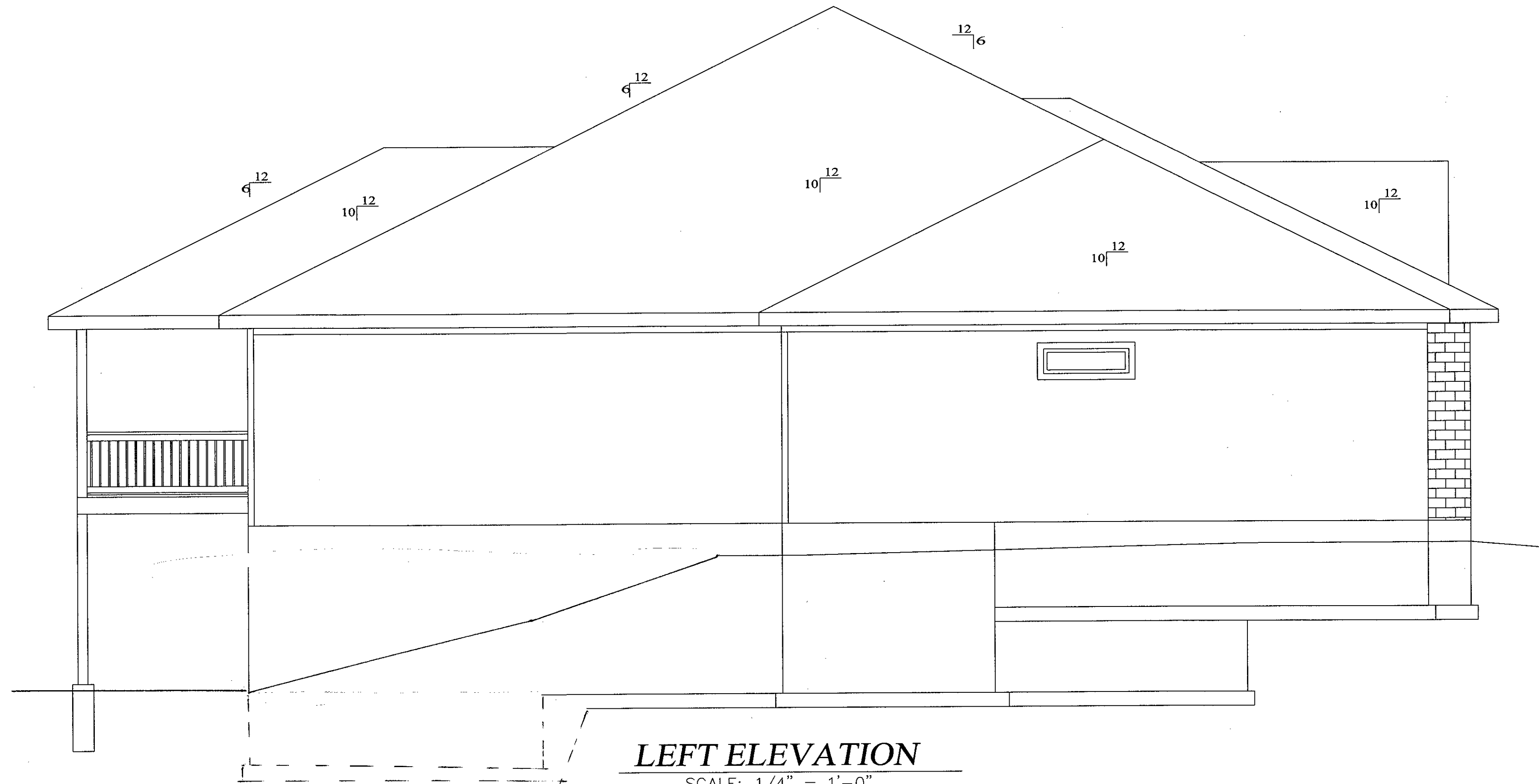
THIS DRAWING IS THE PROPERTY OF BILLY SPELLERBERG AND IS NOT TO BE REPRODUCED, MODIFIED, OR USED FOR ANY OTHER PROJECT, OR EXTENSION OF THIS PROJECT, EXCEPT BY AGREEMENT WITH THIS COMPANY.

1 of 5

SHEET NO.



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



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

DESCRIPTION:

ROOF PLAN

MODEL:

OPT C

DATE:

8/29/20

ARCHITECT IS NOT RESPONSIBLE FOR THE STRUCTURAL ELEMENTS OF THESE PLANS. A STRUCTURAL ENGINEER MAY NEED TO VERIFY ALL STRUCTURAL ASPECTS OF THESE PRINTS BEFORE CONSTRUCTION BEGINS. FIELD CONDITIONS MAY BE DIFFERENT FROM PLAN. ALL STATE AND LOCAL CODES TAKE PRECEDENCE OVER THESE PLANS. CONTRACTOR WILL BE RESPONSIBLE FOR PLAN INTEGRITY AND CODE COMPLIANCE.

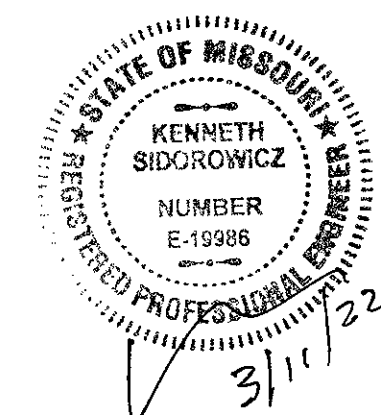
3218 SW Enoch St.
Summit View Farms
Lot 107
Lee's Summit, MO

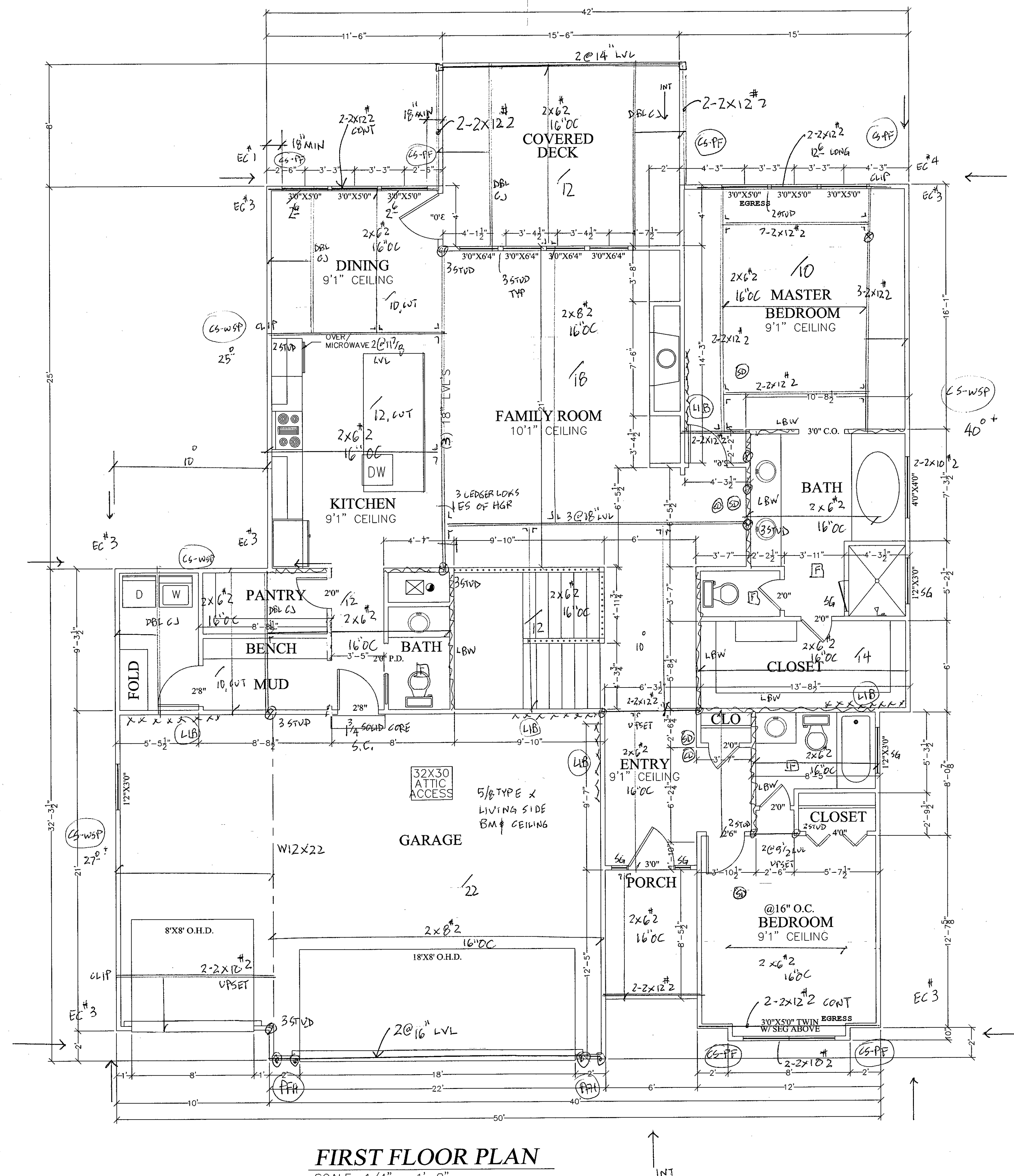
BUILD
SET

THIS DRAWING IS THE PROPERTY OF BILLY SPELLERBERG AND IS NOT TO BE REPRODUCED, MODIFIED, OR USED FOR ANY OTHER PROJECT, OR EXTENSION OF THIS PROJECT, EXCEPT BY AGREEMENT WITH THIS COMPANY.

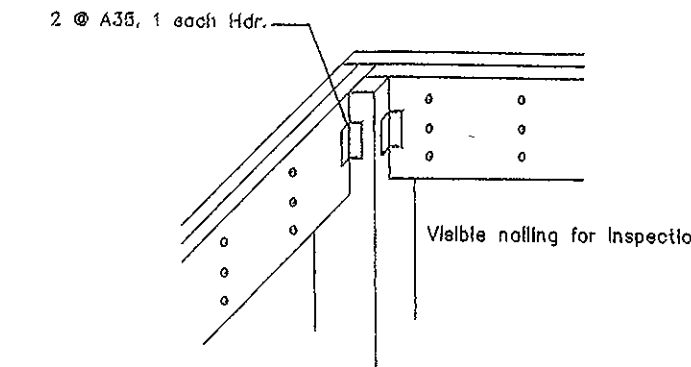
2 of 5

SHEET NO:



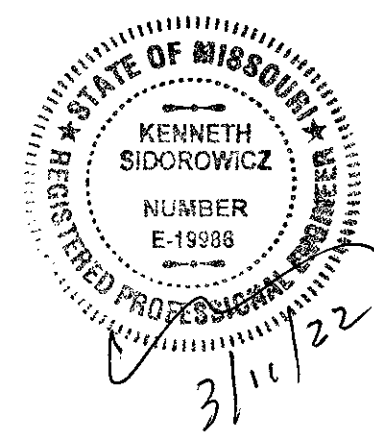


FIRST FLOOR PLAN
SCALE: 1/4" = 1'-0"



- OF/L MIN
- CS-WSP HOUSE IS SHEATHED W/ 7/8\"/>
- INT SHALL BE SIMPSON STRAP (CS16)
- HEADER LENGTHS ARE SHOWN FOR CS-PF
- SIDING LAPS RIM
- 2x4, 9' PLATE, FULL HT. STUDS
- S.C. = SELF CLOSING
- D2 GN #25 FOR WINDOWS
- CS = CONTINUOUSLY SHEATHED
- EC = END CONDITION
- SEE D2 FOR INSULATION VALUES
- EC#5, 16\"/>

VERIFY VAULTS W/ BLDR



DESCRIPTION:
FIRST FLOOR PLAN

MODEL:
OPT C

DATE:
8/29/20

ARCHITECT IS NOT RESPONSIBLE FOR THE STRUCTURAL ELEMENTS OF THESE PLANS. A STRUCTURAL ENGINEER MAY NEED TO VERIFY ALL STRUCTURAL ASPECTS OF THESE PRINTS BEFORE CONSTRUCTION BEGINS. FIELD CONDITIONS MAY BE DIFFERENT FROM PLAN. ALL STATE AND LOCAL CODES TAKE PRECEDENCE OVER THESE PLANS. CONTRACTOR WILL BE RESPONSIBLE FOR PLAN INTEGRITY AND CODE COMPLIANCE.

3218 SW Enoch St.
Summit View Farms
Lot 107
Lee's Summit, MO

BUILD
SET

THIS DRAWING IS THE PROPERTY OF BILLY SPELLERBERG AND IS NOT TO BE REPRODUCED, MODIFIED, OR USED FOR ANY OTHER PROJECT, OR EXTENSION OF THIS PROJECT, EXCEPT BY AGREEMENT WITH THIS COMPANY.

3 of 5
SHEET NO.

FOUNDATION PLAN BASEMENT FRAMING

OPT C

8 / 29 / 20

ARCHITECT IS NOT RESPONSIBLE FOR THE STRUCTURAL ELEMENTS OF THESE PLANS. A STRUCTURAL ENGINEER MAY NEED TO VERIFY ALL STRUCTURAL ASPECTS OF THESE PRINTS BEFORE CONSTRUCTION BEGINS. FIELD CONDITIONS MAY BE DIFFERENT FROM PLAN. ALL STATE AND LOCAL CODES TAKE PRECEDENCE OVER THESE PLANS. CONTRACTOR WILL BE RESPONSIBLE FOR PLAN INTEGRITY AND CODE COMPLIANCE

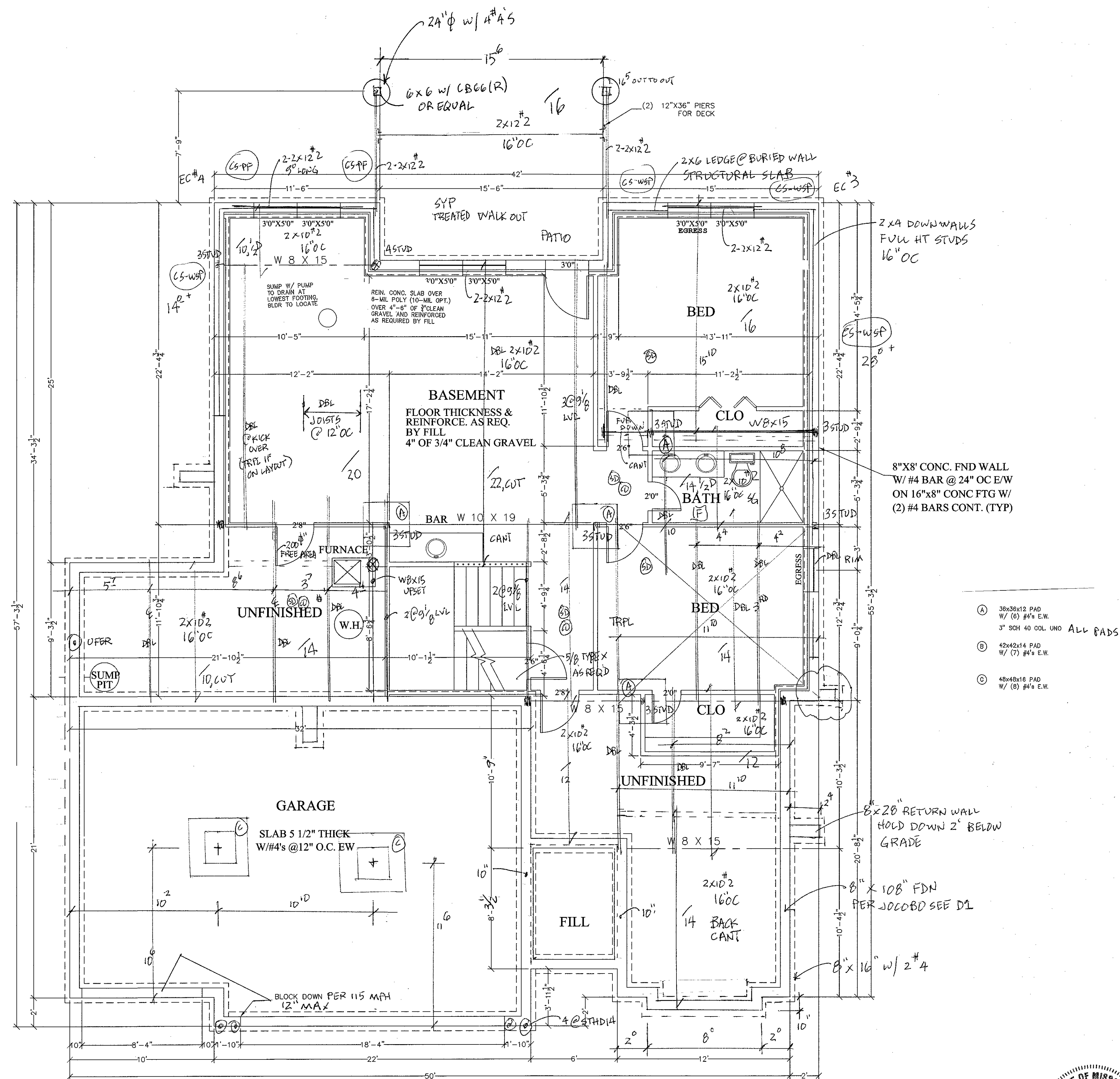
3218 S Enoch St.
Summit View Farms
Lot 107
Lee's Summit, MO

BUILD SET

THIS DRAWING IS THE PROPERTY OF BILLY SPELLERBERG AND IS NOT TO BE REPRODUCED, MODIFIED, OR USED FOR ANY OTHER PROJECT, OR EXTENSION OF THIS PROJECT, EXCEPT BY AGREEMENT WITH THIS COMPANY.

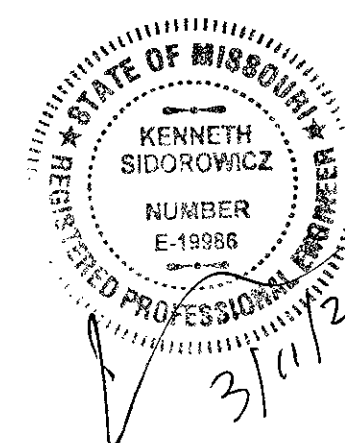
4 of 5

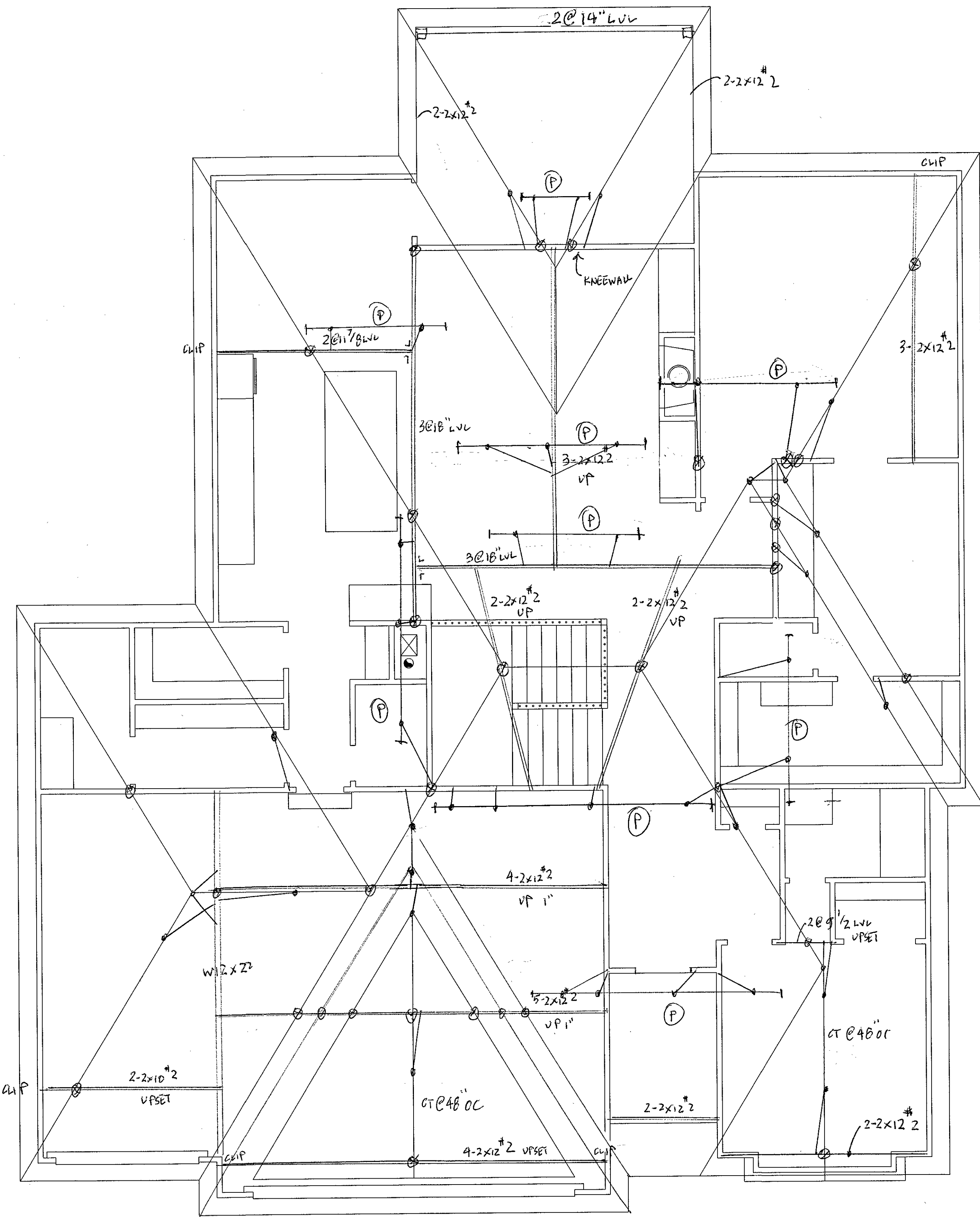
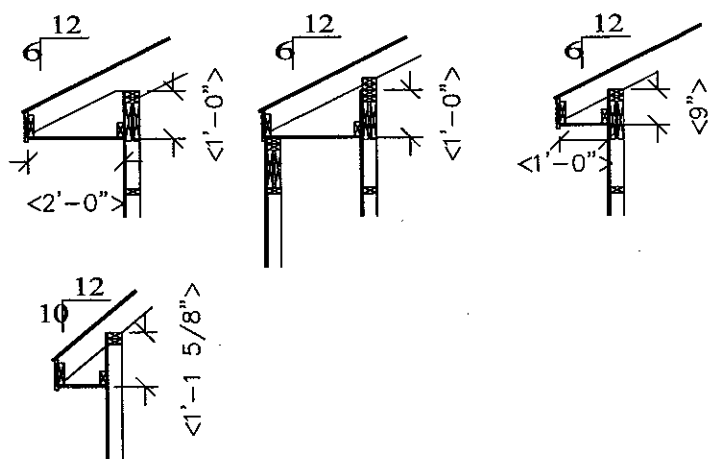
SHEET NO



FOUNDATION PLAN

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





RAFTER TIES SHALL BE PROVIDED PER 802.3.1 WHEN THE C/S ARE NOT CONNECTED TO THE RAFTERS AT THE TOP PLATE

ROOF: ASPHALT SHINGLES - 2/8 MIN. WOOD SHINGLES/SHAVES - 2/8 MIN. CONCRETE TILES - 5/8 MIN. FLASH & COUNTERFLASH ALL ROOF PENETRATIONS AND INTERSECTIONS

RAFTERS & CEILING JOISTS: COLLAR TIES AT UPPER THIRD POINT 48" OC 2" x 4 MIN. CEILING JOISTS ARE TURNED AS REQUIRED FOR RAFTER TIES

ROOF/RAFTER HANGERS AND STRAPS AS REQD. OUTSIDERS REQD. @ GABLE END SCOTTS FOR OUTSIDE ROOF W/ SCOTTS > 12"

ATTIC VENTILATION: VENT EACH ENCLOSED ATTIC SPACE. NET AREA OPENING = 1/600 OF VENTED AREA.

UNLESS NOTED: RAFTERS ARE 8" x 8" @ 24" OC, 16" x 16" @ 12" OC

PROVIDE VERTICAL LOAD SUPPORT AT THE NOTED: LEAN JOISTS FOR HPS VALLEYS, PURLINS & ROOFS. ALL HPS VALLEYS & ROOFS ARE REQD. FOR THE RAFTER DEPTH, PITCH, AND LOAD. ALL 2x8 UNO

PURLIN	COMP	TILE
2x8	1/2" x 1/2"	1/2" x 1/2"
2x8	1/2" x 1/2"	1/2" x 1/2"
2x8	1/2" x 1/2"	1/2" x 1/2"

SUPPLY LBS	COMP	TILE
1/2" x 1/2" x 4'-BRACE	1/2" x 1/2"	1/2" x 1/2"
1/2" x 1/2" x 4'-BRACE	1/2" x 1/2"	1/2" x 1/2"
1/2" x 1/2" x 4'-BRACE	1/2" x 1/2"	1/2" x 1/2"
1/2" x 1/2" x 4'-BRACE	1/2" x 1/2"	1/2" x 1/2"

HEEL JOINT CONNECTION FACTOR

H ₁ / H ₂	1/2
H ₁ / H ₂	1/3
H ₁ / H ₂	1/4
H ₁ / H ₂	1/5
H ₁ / H ₂	1/6
H ₁ / H ₂	1/7
H ₁ / H ₂	1/8

*ALL ROOF FRAMING MEMBERS ARE REQD. AS BEAMS AND BRACED TO LUMBA, BEAMS OR OTHER STRUCTURE

H₁ = HEIGHT OF CEILING JOISTS OR RAFTER TIES MEASURED VERTICALLY ABOVE TOP OF RAFTER SUPPORT WALL

H₂ = HEIGHT OF ROOF TIE MEASURED VERTICALLY ABOVE THE TOP OF THE RAFTER SUPPORT WALL

10/12 SIDES
6/12 F&B

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

DESCRIPTION:
ROOF PLAN

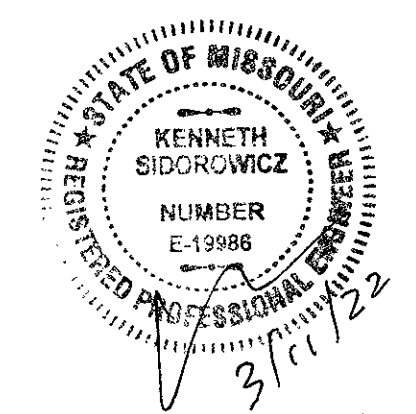
MODEL:
OPT C

DATE:
8/29/20

ARCHITECT IS NOT RESPONSIBLE FOR THE STRUCTURAL ELEMENTS OF THESE PLANS. A STRUCTURAL ENGINEER MAY NEED TO VERIFY ALL STRUCTURAL ASPECTS OF THESE PRINTS BEFORE CONSTRUCTION BEGINS. FIELD CONDITIONS MAY BE DIFFERENT FROM PLAN. ALL STATE AND LOCAL CODES ARE PRECEDENT OVER THESE PLANS. CONTRACTOR WILL BE RESPONSIBLE FOR PLAN INTEGRITY AND CODE COMPLIANCE.

3218 SW Enoch St.
Summit View Farms
Lot 107
Lee's Summit, MO

BUILD SET



THIS DRAWING IS THE PROPERTY OF BILLY SPELLERBERG AND IS NOT TO BE REPRODUCED, MODIFIED, OR USED FOR ANY OTHER PROJECT, OR EXTENSION OF THIS PROJECT, EXCEPT BY AGREEMENT WITH THIS COMPANY.

5 of 5

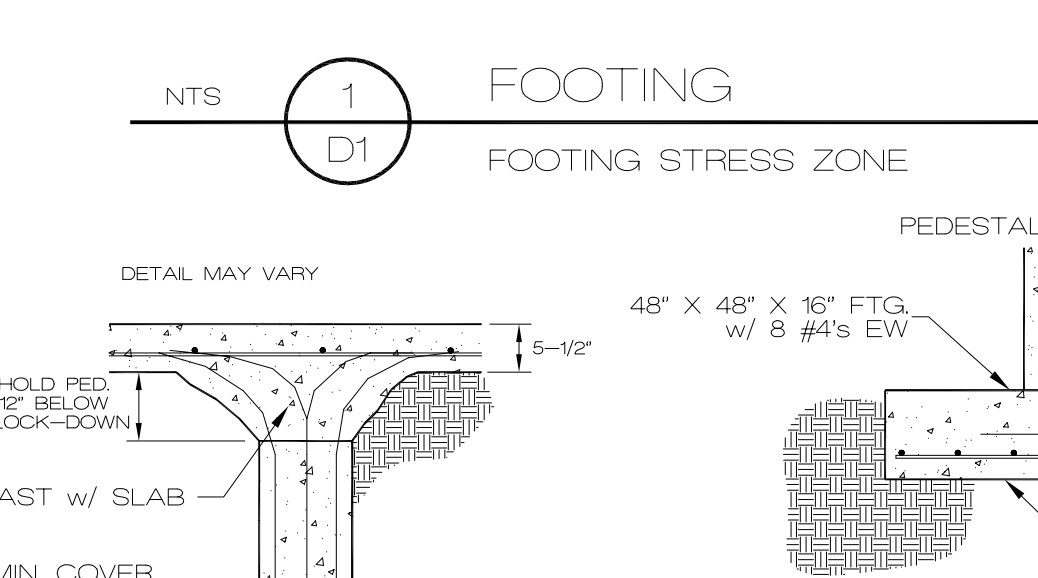
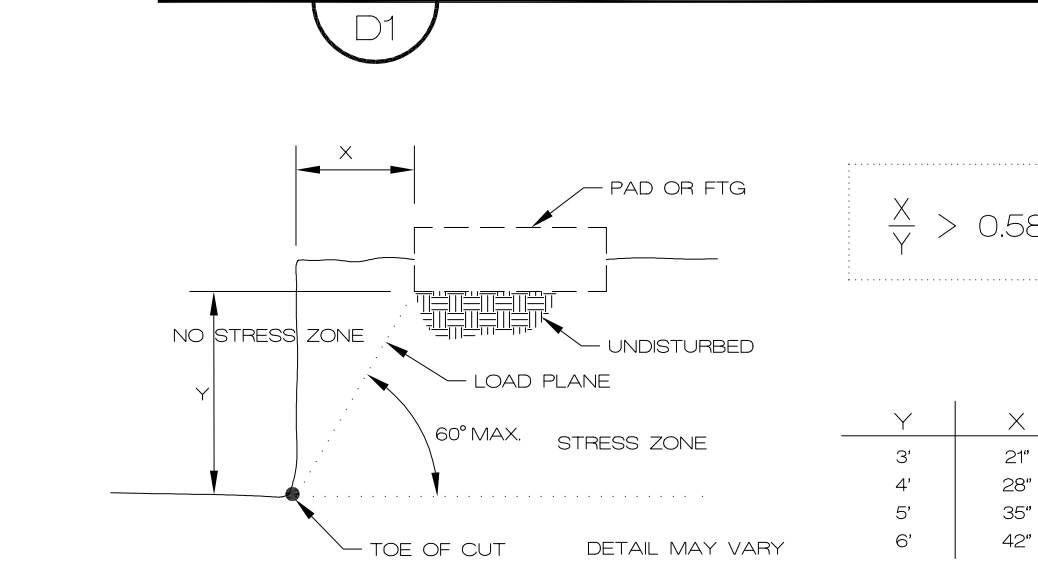
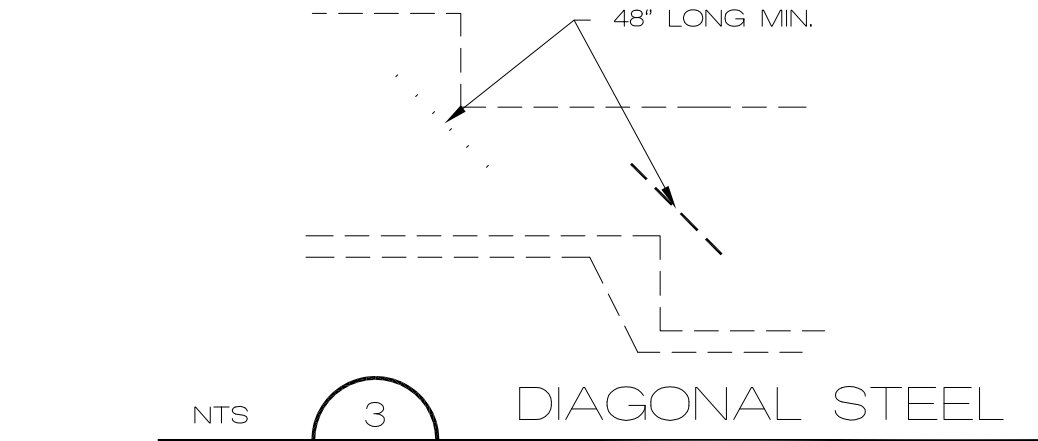
SHEET NO:

DIVISION 1 – GENERAL REQUIREMENTS

- DESIGN AND CONSTRUCTION WORK FOR THIS PROJECT SHALL CONFORM TO THE REQUIREMENTS OF THE 2018 IRC.
- FURNISH ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE THE WORK AS SHOWN OR INFERRED BY THE DRAWINGS.
- DESIGN FACTORS:
 - GROUND SNOW LOAD (INCLUDING DRIFTING SNOW) 20 PSF
 - WIND SPEED EXPOSURE B
 - SEISMIC CATEGORY (A), GROUND ACCELERATION = NA
- DESIGN LOADS (PSF, UNLESS NOTED OTHERWISE):
 - ROOF (LL/DL) SEE TABLE
 - FLOOR (LL/DL) SEE TABLE
 - CEILING (LL/DL) SEE TABLE. (0/10 TRUSSES)
- DO NOT SCALE DRAWINGS. IF DIMENSIONS ARE IN QUESTION, OBTAIN CLARIFICATION FROM A / E BEFORE CONTINUING CONSTRUCTION.
- THE CONTRACTOR SHALL EXAMINE ACTUAL JOB CONDITIONS AND BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND ELEVATIONS SHOWN ON THE PLANS. IF ERRORS, OMISSIONS, OR DISCREPANCIES ARE FOUND THEY SHALL BE REPORTED TO THE DESIGN PROFESSIONAL BEFORE PROCEEDING WITH THE WORK.
- DIMENSIONS FOR NEW CONSTRUCTION ARE TO FACE OF FINISH OR COLUMNS AND FACE OF CONCRETE, WOOD, OR MASONRY WALLS UNLESS OTHERWISE INDICATED. DIMENSIONS INDICATE NOMINAL DIMENSIONS RATHER THAN ACTUAL DIMENSIONS.
- CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL TRADES EVEN IF THE TRADE IS UNDER A SEPARATE CONTRACT.
- PROVIDE SUFFICIENT STUDS AND BLOCKING WHERE REQUIRED TO SUPPORT EQUIPMENT AND/OR MISCELLANEOUS ITEMS, IE, LOAD POINTS, TYPICAL CASEWORK, CABINETS, GRAB BARS ETC.
- PRETREAT FOUNDATION FOR TERMITES AS REQUIRED.
- GARAGE DOORS AND FRAMES SHALL BE DESIGNED AND INSTALLED TO MEET THE 115 MPH WIND LOAD RESISTANCE REQUIREMENTS OF DASHMA 108 AND ASTM E 330.
- ALL EXTERIOR DOORS, INCLUDING THE DOOR LEADING FROM THE GARAGE TO THE DWELLING UNIT, SHALL INCORPORATE THE PHYSICAL SECURITY PROVISIONS OF THE JURISDICTION IN WHICH THE CONSTRUCTION TAKES PLACE.

DIVISION 2 – EARTHWORK

- ALL PROPERTY MARKERS SHALL BE EXPOSED.
- ALL FOOTINGS ARE DESIGNED TO BEAR ON NATURAL UNDISTURBED SOIL CAPABLE OF ADEQUATELY SUSTAINING A MINIMUM BEARING PRESSURE OF 1500 PSF. IF SUITABLE UNDISTURBED BEARING CAPACITY IS NOT ENCOUNTERED AT THE ELEVATION INDICATED ON THE DRAWINGS, CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY.
- ALL TOPSOIL, ORGANIC MATERIAL, AND EXISTING STRUCTURES SHALL BE REMOVED FROM BUILDING AREA AND FROM AREAS TO BE PAVED. STOCKPILE ALL TOPSOIL FOR REUSE.
- REFERENCE THE SOILS REPORT FOR ALL FILL CONDITIONS.
- OVEREXCAVATE BUILDING AREA BELOW SLAB SUBGRADE ELEVATION AND REPLACE WITH MATERIAL PER SOILS REPORT, VERIFY.
- SITE EROSION CONTROL SHALL COMPLY WITH ALL STATE AND LOCAL ORDINANCES.
- IN-SITU SOIL CONDITIONS, SEE SOILS REPORT OR 1500 PSF BEARING & 60 PCF EQUIVALENT FLUID WEIGHT.
- SOIL CONDITIONS AT THE DEPTH OF EXCAVATION FOR THE FOOTING SHALL BE UNIFORM AND CONSISTENT. NOTIFY THE ENGINEER OF RECORD OF ANY INCONSISTENCIES.
- CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND DISPOSING OF ANY EXCESS EXCAVATION MATERIALS AND FOR OBTAINING AND SUPPLYING ADDITIONAL FILL MATERIAL AS REQUIRED.



DIVISION 3 – CONCRETE

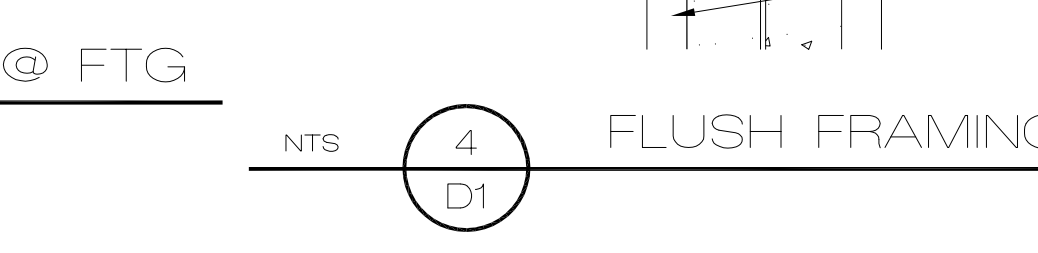
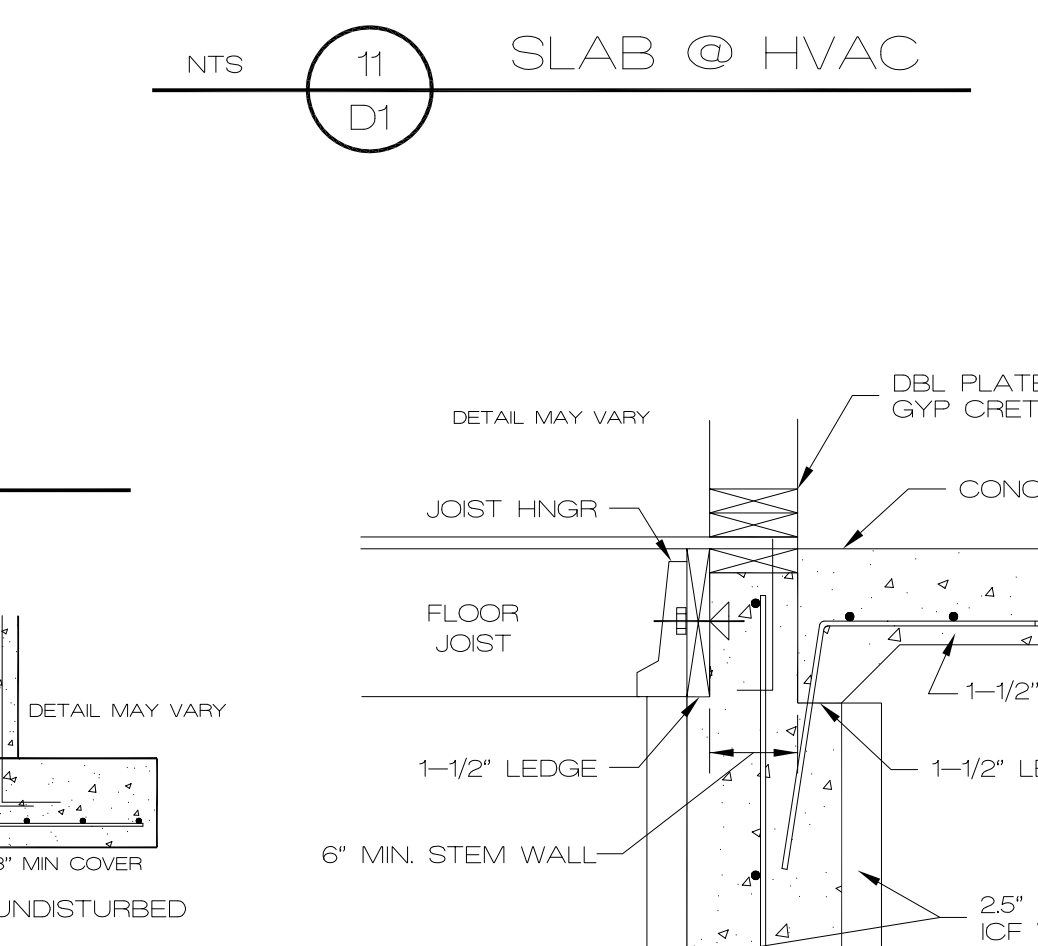
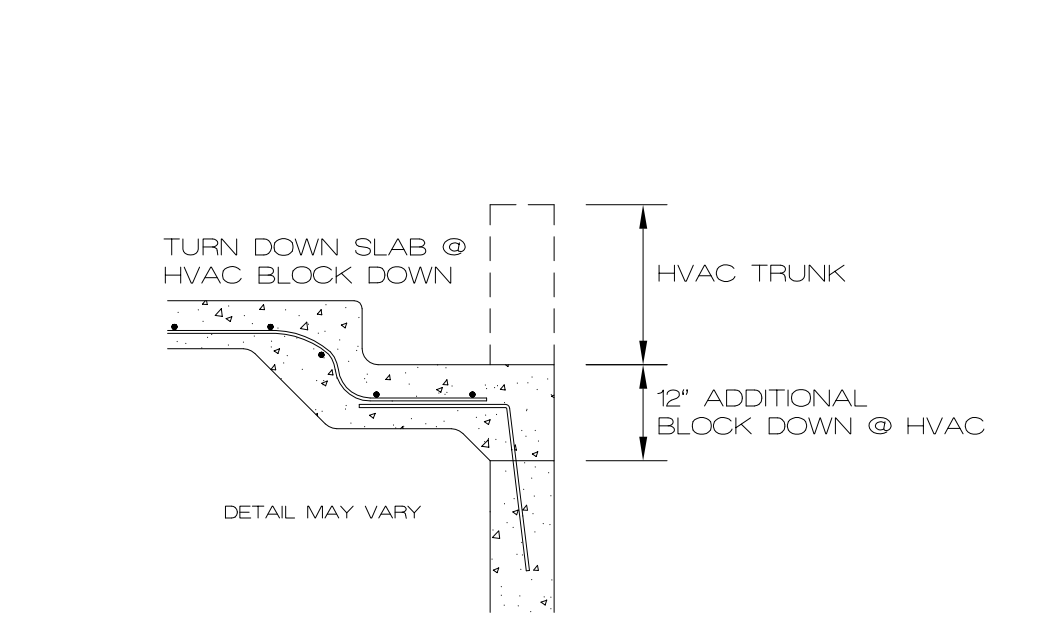
- ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF ACI 308 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE AND ACI 332 REQUIREMENTS FOR RESIDENTIAL CONCRETE CONSTRUCTION.
- CONCRETE MATERIALS SHALL COMPLY WITH:
 - CEMENT – ASTM C 150 TYPE 1
 - AGGREGATE – ASTM C 33, MAXIMUM AGGREGATE SIZE 3/4"
 - WATER – POTABLE, WATER/CEMENT RATIO 5 (MAX)
 - AIR-ENTRAINING ADMIXTURE – ASTM C 260
 - WATER-REDUCING ADMIXTURE – ASTM C 494, INCLUDING SUPERPLASTICIZERS
 - FLY ASH – ASTM C 618, CLASS C
- CONCRETE SHALL DEVELOP THE FOLLOWING MINIMUM 28 DAY DESIGN COMPRESSIVE STRENGTH (f'c):
 - FOOTINGS, WALLS, AND SLABS SEE TABLE
 - EXTERIOR SLABS AND CURBS (AIR-ENTRAINED CONCRETE) SEE TABLE

TYPE OF CONSTRUCTION	COMP. STRENGTH (f'c)
FOOTINGS, WALLS, AND SLABS	SEE TABLE
EXTERIOR SLABS AND CURBS (AIR-ENTRAINED CONCRETE)	SEE TABLE

CONCRETE PROPORTIONS SHALL BE ESTABLISHED ON THE BASIS OF FIELD EXPERIENCE AND/OR TRIAL MIXTURES IN ACCORDANCE WITH ACI 318-89 SECTIONS 5.2 AND 5.3. WHEN FLY ASH IS UTILIZED IN THE MIX, MIX SHALL CONTAIN A WATER-REDUCER. FLY ASH SHALL BE ADDED AT THE RATE OF NOT MORE THAN 100 POUNDS PER CUBIC YARD AND CEMENT SHALL BE REDUCED BY NOT MORE THAN 15 PERCENT BY WEIGHT.

- PROPORTION AND DESIGN MIXES TO RESULT IN CONCRETE SLUMP AT A POINT OF PLACEMENT OF NOT MORE THAN 4" TO 5".
- USE AIR-ENTRAINING ADMIXTURES IN EXTERIOR EXPOSED CONCRETE TO RESULT IN CONCRETE AT POINT OF PLACEMENT HAVING AIR CONTENT OF 5 TO 7 PERCENT ENTRAINED AIR.
- ALL PLUMBING AND ELECTRICAL ROUGH-INS MUST BE COMPLETE, INSPECTED AND APPROVED BEFORE REQUESTING THE SLAB INSPECTION.
- CONCRETE WORK EXECUTION:
 - MINIMUM CONCRETE COVER FOR REINFORCING SHALL BE, UNLESS NOTED OTHERWISE ON DRAWINGS:
 - CAST AGAINST AND EXPOSED TO EARTH 3"
 - EXPOSED TO EARTH OR WEATHER 2"
 - NOT EXPOSED TO EARTH OR WEATHER 1 1/2"
 - IN CORNERS OF GRADE BEAMS PROVIDE CORNER REINFORCEMENT, LAP TWO FEET EACH DIRECTION IN OUTSIDE FACE, MATCHING SIZE AND SPACING OF HORIZONTAL REINFORCEMENT.
 - PROVIDE CONTROL JOINTS IN SLABS-ON-GRADE AT NOT GREATER THAN 20 FEET ON CENTER IN EACH DIRECTION. SAW CUT CONTROL JOINTS MINIMUM 1/2 OF THE SLAB DEPTH AS SOON AFTER SLAB FINISHING AS POSSIBLE WITHOUT DISLOGGING AGGREGATE. (DO NOT SAW CUT STRUCTURAL SLABS w/o APPROVAL).
- BATCH TICKETS SHALL BE SUBMITTED TO A CONTRACTORS REPRESENTATIVE PRIOR TO OFF LOADING. ANY CONCRETE MORE THAN 45 MINUTES OUT PRIOR TO STARTING PLACEMENT SHALL BE REJECTED.
- THE MAXIMUM ADDITION OF WATER SHALL BE LIMITED TO 1 GALLON PER YARD, NOTE THAT THIS ADDITION SHALL BE USED TO CONTROL HEAT ONLY (NOT SLUMP).
- PUMPS SHALL NOT BE PRIMED IN FORMS.

- REINFORCEMENT:
 - ALL REINFORCING BARS SHALL BE A615, GR40 MIN. LAP SPLICES 18" MIN FOR #4 BAR SEE TABLE
 - WELDED WIRE FABRIC SHALL BE ASTM A185, LAP AT LEAST ONE FULL MESH AND LACE SPLICES WITH WIRE
 - REBAR SHALL BE CLEAN, AND FREE FROM RUST AND OIL PRIOR TO THE PLACEMENT OF CONCRETE. REBAR SHALL BE TIED AND SECURED AS REQUIRED TO PREVENT DISPLACEMENT IN THE FORMS.
 - TIE STEEL TO PREVENT DISPLACEMENT. HOOK AND TIE STEEL AS POSSIBLE. TIES, CHAIRS, OR OTHER PRODUCTS SHALL BE PROTECTED WHEN LOCATED NEAR EXPOSED SURFACES.
 - STEEL SHALL BE STORED ON SITE ABOVE GRADE, AND COVERED AS REQUIRED FOR PROTECTION FROM RAIN AND OTHER POSSIBLE DAMAGE.
- ADJUST FOUNDATION FOR SITE AND SOIL CONDITIONS AND VERIFY WITH EOR.



DIVISION 4 – MASONRY

- COMPRESSIVE STRENGTH OF CONCRETE MASONRY CONSTRUCTION (CMU) SHALL BE AS FOLLOWS (PSI). MASONRY STRENGTH NOT SPECIFICALLY NOTED ON PLAN SHALL BE (f'm) 1500 PSI.

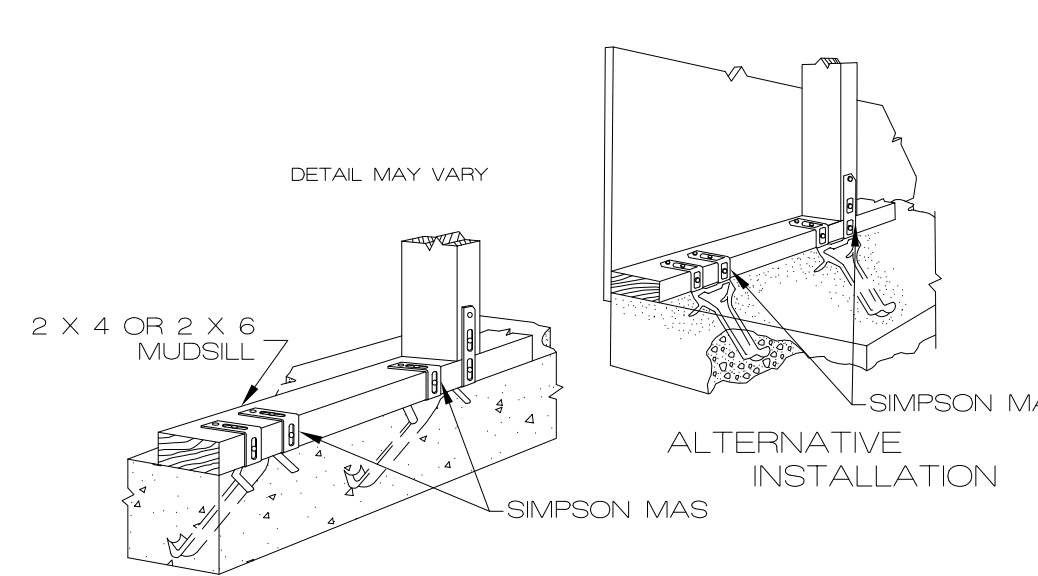
MASONRY STRENGTH (f'm DESIGN)	1500
BLOCK STRENGTH	1900
MORTAR STRENGTH	800
GROUT STRENGTH	2000
- CONCRETE BLOCK SHALL BE HOLLOW LOAD-BEARING CONCRETE CONFORMING TO ASTM C 90, TYPE N-III. ALL BLOCKS SHALL BE PLACED IN RUNNING BOND CONSTRUCTION (UNLESS OTHERWISE NOTED) WITH ALL VERTICAL CELLS IN ALIGNMENT.
- MORTAR MIX SHALL CONFORM TO THE REQUIREMENTS OF ASTM C 270, TYPE M OR S. TYPE M MORTAR SHALL BE USED WHERE MASONRY IS IN CONTACT WITH SOIL.
- GROUT SHALL CONFORM TO THE REQUIREMENTS OF ASTM C 476, USE SUFFICIENT WATER FOR GROUT TO FLOW INTO ALL JOINTS OF THE MASONRY WITHOUT SEGREGATION. ALL CELLS IN CONCRETE BLOCKS CONTAINING REINFORCING SHALL BE FILLED SOLID WITH GROUT. ALL MASONRY BELOW FINISHED FLOOR OR GRADE SHALL BE GROUTED SOLID. HOLD GROUT DOWN 1-1/2" BELOW TOP OF BLOCK AT GROUT LIFT JOINTS AND AT CONCRETE PLACED OVER MASONRY.
- MINIMUM INTEL, WHERE NOT ON PLANS, SHALL HAVE A MINIMUM OF 2 – #5s CONTINUOUS HORIZONTAL BARS IN BOTTOM OF BOND BEAM OR INTEL BLOCK AND SHALL BE GROUTED SOLID TO A MIN. DEPTH OF 24". ALL INTEL REINFORCING AND GROUT SHALL EXTEND 2' MINIMUM PAST JAMBS UNLESS NOTED OTHERWISE ON PLANS OR DETAILS.
- LAP REINFORCING 48 BAR DIAMETERS. STAGGER LAP SPLICES A MINIMUM OF ONE LAP LENGTH.
- MASONRY VENEER SHALL BE ATTACHED TO SUPPORT WALL FRAMING WITH 3/8" DIAMETER WALL TIES OR DOVETAIL-TYPE METAL TIES OF EQUIVALENT STIFFNESS EMBEDDED INTO HORIZONTAL MORTAR JOINTS. MAXIMUM VERTICAL SPACING OF TIES SHALL BE 16". MAXIMUM HORIZONTAL SPACING SHALL BE 24". TIES IN ALTERNATE COURSES SHALL BE STAGGERED. PROVIDE #9 WIRE REINFORCING IN HORIZONTAL MORTAR JOINTS AT 16" OC. ENGAGE #9 WIRE WITH WALL ANCHOR TIES. CONSTRUCTION JOINTS IN MASONRY VENEER WALLS SHALL BE LOCATED PER THE DRAWINGS.
- WATERPROOFING, DRAINAGE PLANE, AND INSTALLATION PER ADOPTED BUILDING CODE.

DIVISION 5.5 – MISC. STRUCTURAL STEEL

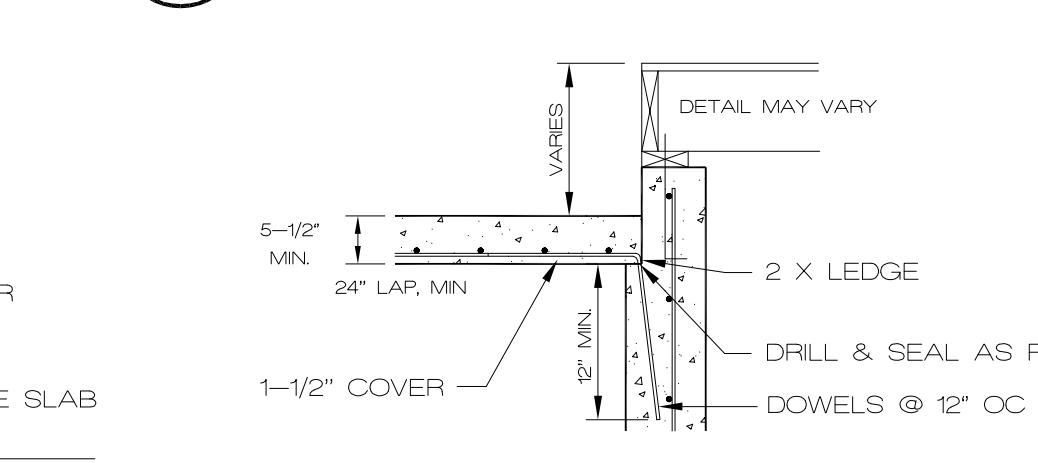
- ALL MISCELLANEOUS STRUCTURAL STEEL WORK SHALL CONFORM TO THE REQUIREMENTS OF AISC SPECIFICATIONS FOR DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS.
 - DESIGN LOADS:
 - 25 PSF SNOW LIVE LOAD
 - 10 PSF DEAD LOAD TOP CHORD (20 TILE)
 - 10 PSF DEAD LOAD BOTTOM CHORD
 - SUBMIT SHOP DRAWINGS, INCLUDING DESIGN CALCULATIONS, MATERIAL STRESSES, GRADE AND SPECIES OF WOOD, AND PLACEMENT DRAWING.
- DEFAULT HEADER SIZE NOT SPECIFIED SPANNING 8'-0" MAX SHALL BE 2 – 2 X 10 #2, WITH 2 STUD SUPPORT.
- ALL HEADERS OVER 4'-0" SHALL HAVE DOUBLE TRIMMER @ EACH SUPPORT, OR AS SPECIFIED, UNO.
- SOLID BLOCKING BETWEEN JOISTS @ 36" OC FOR JOISTS PARALLEL TO THE EXTERIOR FOUNDATION WALL, MIN. 48" OR 3 JOIST SPACES.
- ALL FLUSH FRAMING @ HEADERS OR GIRDERS SHALL BE HANGERED.
- BLOCK BETWEEN JOISTS @ SUPPORTS OR OVER BEAMS.
- RATED CONSTRUCTION FOR PROJECTIONS INTO SETBACKS AS REQ'D.
- DOUBLE JOIST BELOW PARALLEL NONBEARING WALLS ON LAYOUT, SINGLE JOIST BELOW PARALLEL STRUCTURE BELOW LOAD-BEARING WALLS AS NOTED ON PLANS.

RETURN WALLS	
WALL HT. ABOVE FLOOR	RETURN SPACING (HOLD DOWN 24" BELOW GRADE)
LESS THAN 4'	RETURN WALLS NOT REQ'D
4' TO 9'	16"-4" ON CENTER (MAX), AND WITHIN 8' OF STEP DOWN OR AS SHOWN

* RETURN WALLS ALLOW FOR BACKFILL w/o FLOOR DECK IN PLACE FOR 60 PCF EQUIVALENT FLUID WEIGHT SOIL. NO HEAVY EQUIPMENT OR SURCHARGE LOADING.



NTS (D1) OPT. MUDSILL ANCHORAGE ALTERNATIVE TO J-BOLTS

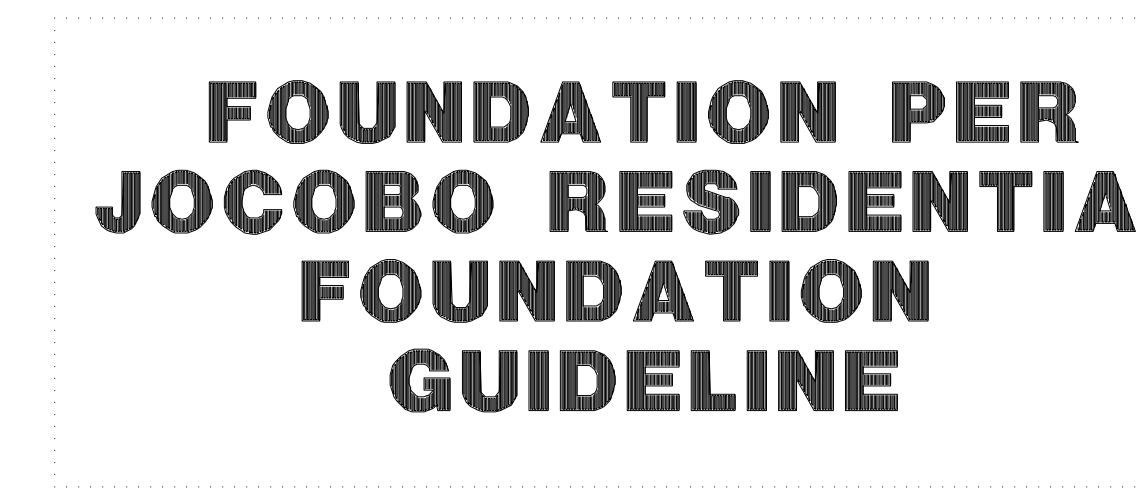
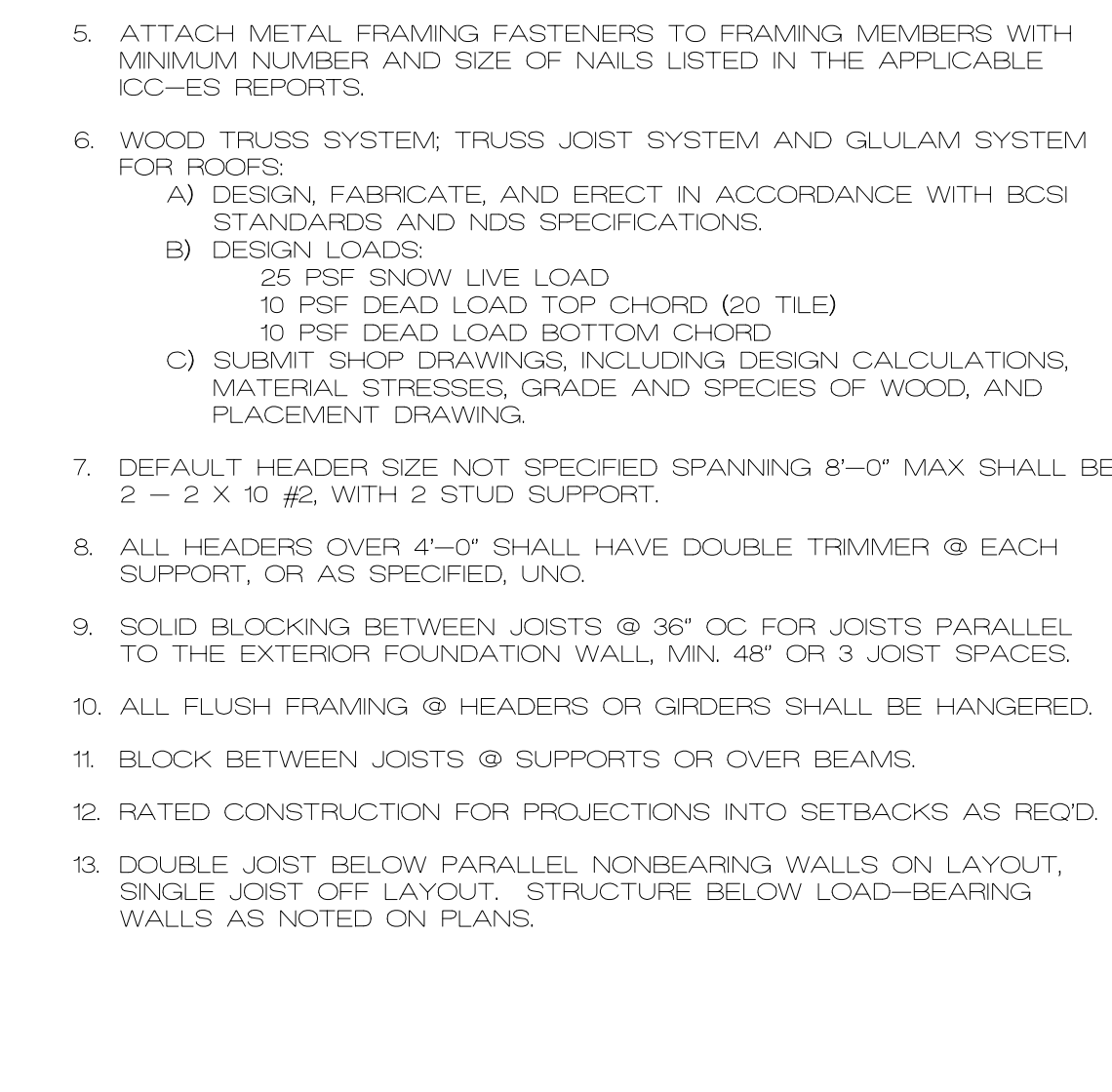


NTS (D1) SLAB @ WALL SLAB ON FILL CONCRETE OR CMU

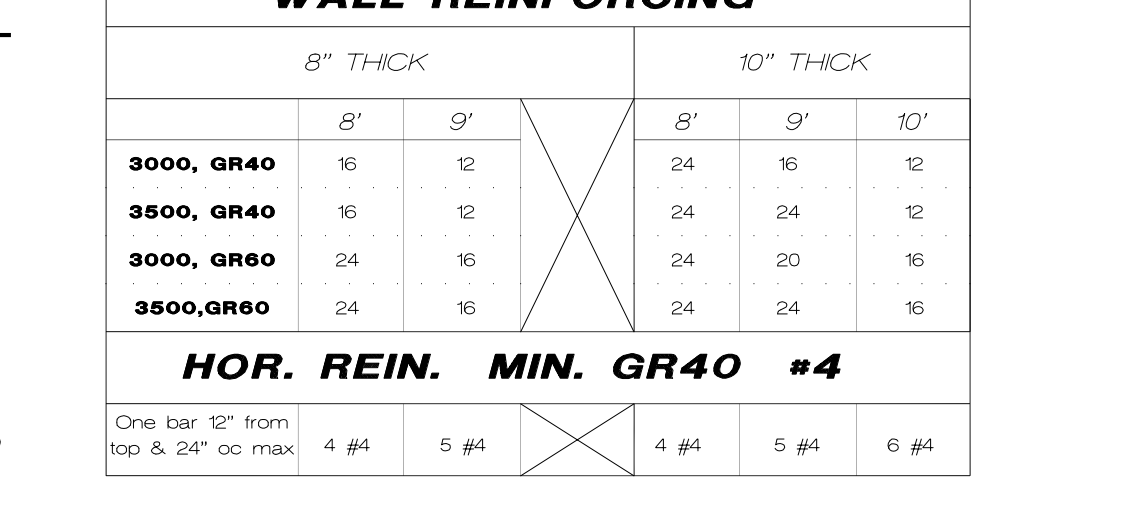
CONC STRENGTH	
FTQ	3000 PSI
WALL	3500 PSI
SLAB	3500 PSI
SUS-SLAB	7 SACK MIX

DIVISION 6 – ROUGH CARPENTRY

- ALL ROUGH CARPENTRY WORK SHALL CONFORM TO THE REQUIREMENTS OF NIPPA NATIONAL DESIGN SPECIFICATIONS OF WOOD CONSTRUCTION, TP1 DESIGN SPECIFICATIONS FOR LIGHT METAL PLATE CONNECTED WOOD TRUSSES, APA PLYWOOD DESIGN SPECIFICATIONS, DOC PS 1 PRODUCT STANDARD FOR CONSTRUCTION AND INDUSTRIAL PLYWOOD, DOC PS 55 STRUCTURAL GLUED LAMINATED TIMBER, AND APPLICABLE SECTIONS OF THE INTERNATIONAL BUILDING CODE.
- ROUGH CARPENTRY MATERIALS SHALL COMPLY WITH:
 - LUMBER – S4S, S-DRY, KD, OR S-GRN GRADE MARKED, COMPLYING WITH PS 20, GRADED UNDER WWPA OR SPIB RULES.
 - STUDS: STUD GRADE
 - HEADER: #2 DOUGLAS FIR MIN TYPICAL
 - RAFTER: #2 DOUGLAS FIR
 - PLATES: #2 DOUGLAS FIR
 - BLOCKING: #2 DOUGLAS FIR
 - METAL FRAMING FASTENERS – ASTM A 153, HOT-DIP GALVANIZED FASTENERS, EQUAL TO SIMPSON STRONG-TIE CONNECTORS COMPLYING WITH APPLICABLE ICC-ES REPORTS.
 - PLYWOOD – APA RATED SHEATHING, COMPLYING TO PS 1.
 - LVL – LAMINATED VENEER LUMBER SHALL BE GRADE 2800 F-20E AND SHALL MEET THE REQUIREMENTS OF APPLICABLE ICC-ES REPORTS.
 - GLULAM BEAMS – COMBINATION 24F-V3 IN ACCORDANCE WITH AITC A1901.
- EXTERIOR WALL AND ROOF SHEATHING SHALL BE 5/8" APA RATED SHEATHING 24/0 EXTERIOR GLUED (MIN FOR 16" OC STUD SPACING, NAIL SHEATHING TO SUPPORT MEMBERS WITH 8D COMMON NAILS AT 6" ON CENTER ALONG EDGE SUPPORTS AND 12" ON CENTER ALONG FIELD SUPPORTS UNLESS NOTED OTHERWISE. PROVIDE SOLID BLOCKING AT ALL UNSUPPORTED PANEL EDGES, 4/8 GUN NAILS.
- NOTE: ROOF SHEATHING SHALL BE 5/8" APA RATED SHEATHING FOR TILE ROOF, OR AS REQUIRED BY MANUFACTURER.
- INTERIOR SHEAR WALL SHEATHING WHERE NOTED SHALL BE 5/8" APA RATED SHEATHING 24/0 EXTERIOR GLUED (MIN FOR 16" OC STUD SPACING, NAIL SHEATHING TO SUPPORT MEMBERS WITH 8D COMMON NAILS AT 4" ON CENTER ALONG EDGE SUPPORTS AND 6" ON CENTER ALONG FIELD SUPPORTS UNLESS NOTED OTHERWISE. PROVIDE SOLID BLOCKING AT ALL UNSUPPORTED PANEL EDGES.
- ATTACH METAL FRAMING FASTENERS TO FRAMING MEMBERS WITH MINIMUM NUMBER AND SIZE OF NAILS LISTED IN THE APPLICABLE ICC-ES REPORTS.
- WOOD TRUSS SYSTEM, TRUSS JOIST SYSTEM AND GLULAM SYSTEM FOR ROOFS.
 - DESIGN, FABRICATE, AND ERECT IN ACCORDANCE WITH BCSI STANDARDS AND NDS SPECIFICATIONS.
 - DESIGN LOADS:
 - 25 PSF SNOW LIVE LOAD
 - 10 PSF DEAD LOAD TOP CHORD (20 TILE)
 - 10 PSF DEAD LOAD BOTTOM CHORD
 - SUBMIT SHOP DRAWINGS, INCLUDING DESIGN CALCULATIONS, MATERIAL STRESSES, GRADE AND SPECIES OF WOOD, AND PLACEMENT DRAWING.
- DEFAULT HEADER SIZE NOT SPECIFIED SPANNING 8'-0" MAX SHALL BE 2 – 2 X 10 #2, WITH 2 STUD SUPPORT.
- ALL HEADERS OVER 4'-0" SHALL HAVE DOUBLE TRIMMER @ EACH SUPPORT, OR AS SPECIFIED, UNO.
- SOLID BLOCKING BETWEEN JOISTS @ 36" OC FOR JOISTS PARALLEL TO THE EXTERIOR FOUNDATION WALL, MIN. 48" OR 3 JOIST SPACES.
- ALL FLUSH FRAMING @ HEADERS OR GIRDERS SHALL BE HANGERED.
- BLOCK BETWEEN JOISTS @ SUPPORTS OR OVER BEAMS.
- RATED CONSTRUCTION FOR PROJECTIONS INTO SETBACKS AS REQ'D.
- DOUBLE JOIST BELOW PARALLEL NONBEARING WALLS ON LAYOUT, SINGLE JOIST BELOW PARALLEL STRUCTURE BELOW LOAD-BEARING WALLS AS NOTED ON PLANS.



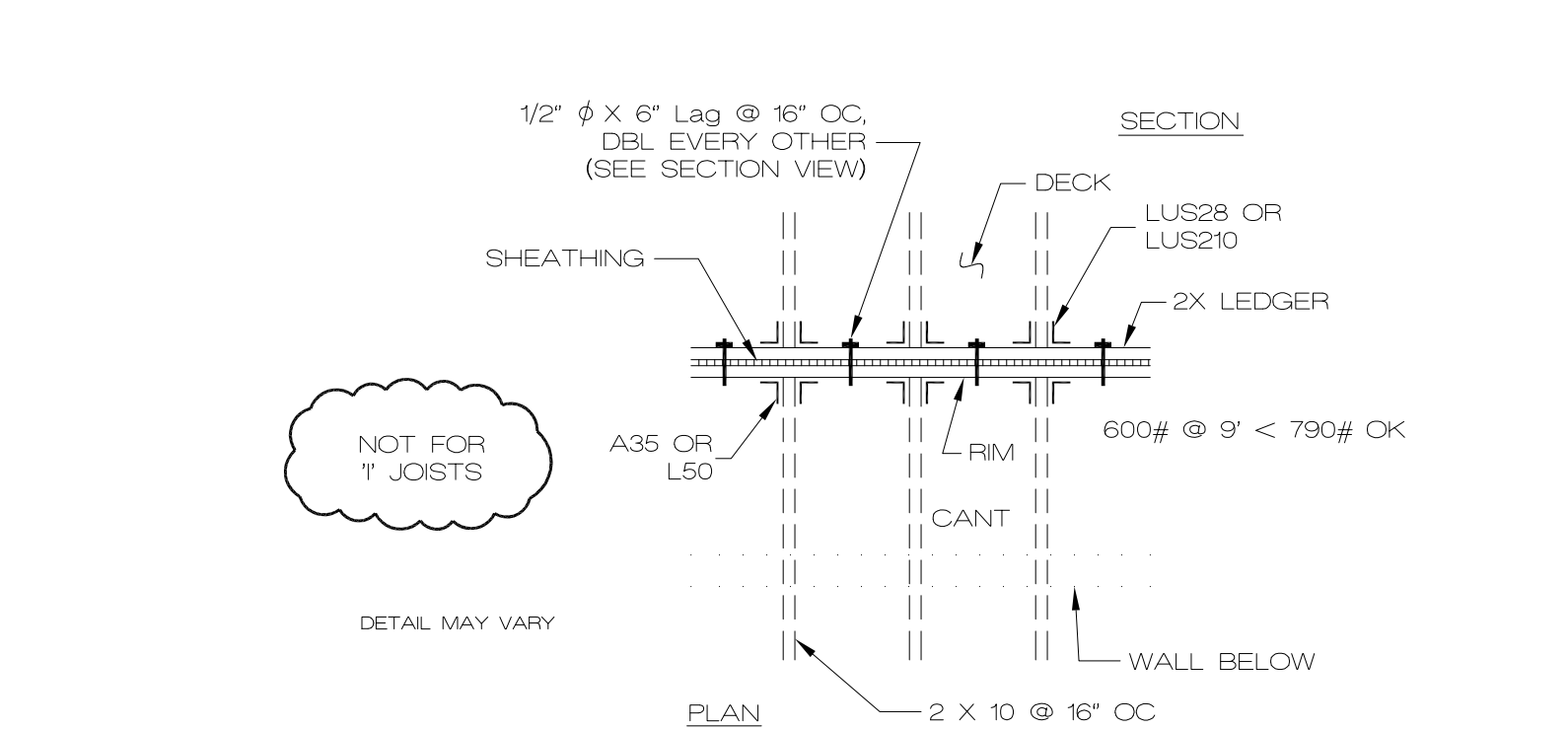
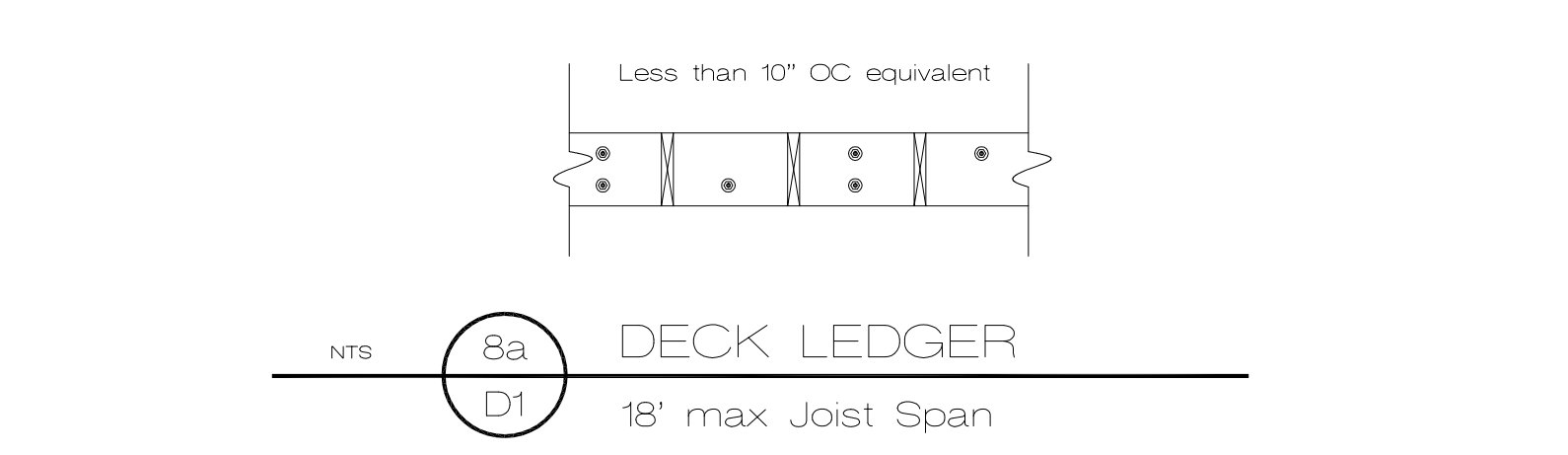
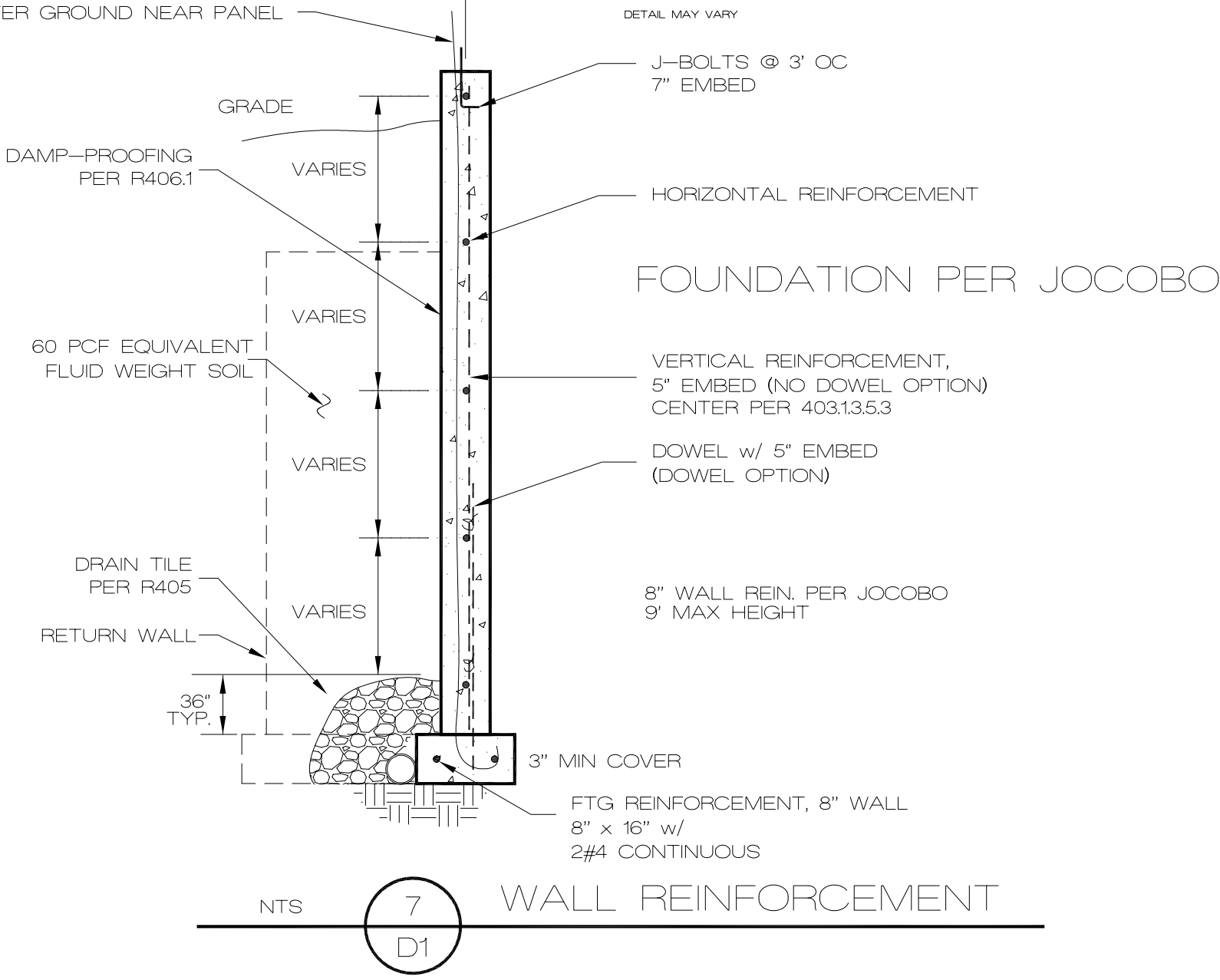
NTS (D1) 8a DECK LEDGER 18' max Joist Span



NTS (D1) 8b DECK @ CANTILEVER

STRUCT. SLAB MODULE SPACING	
SLAB TYPE	MODULE SPACING
BASEMENT	15'-6"
GARAGE	12'-6"

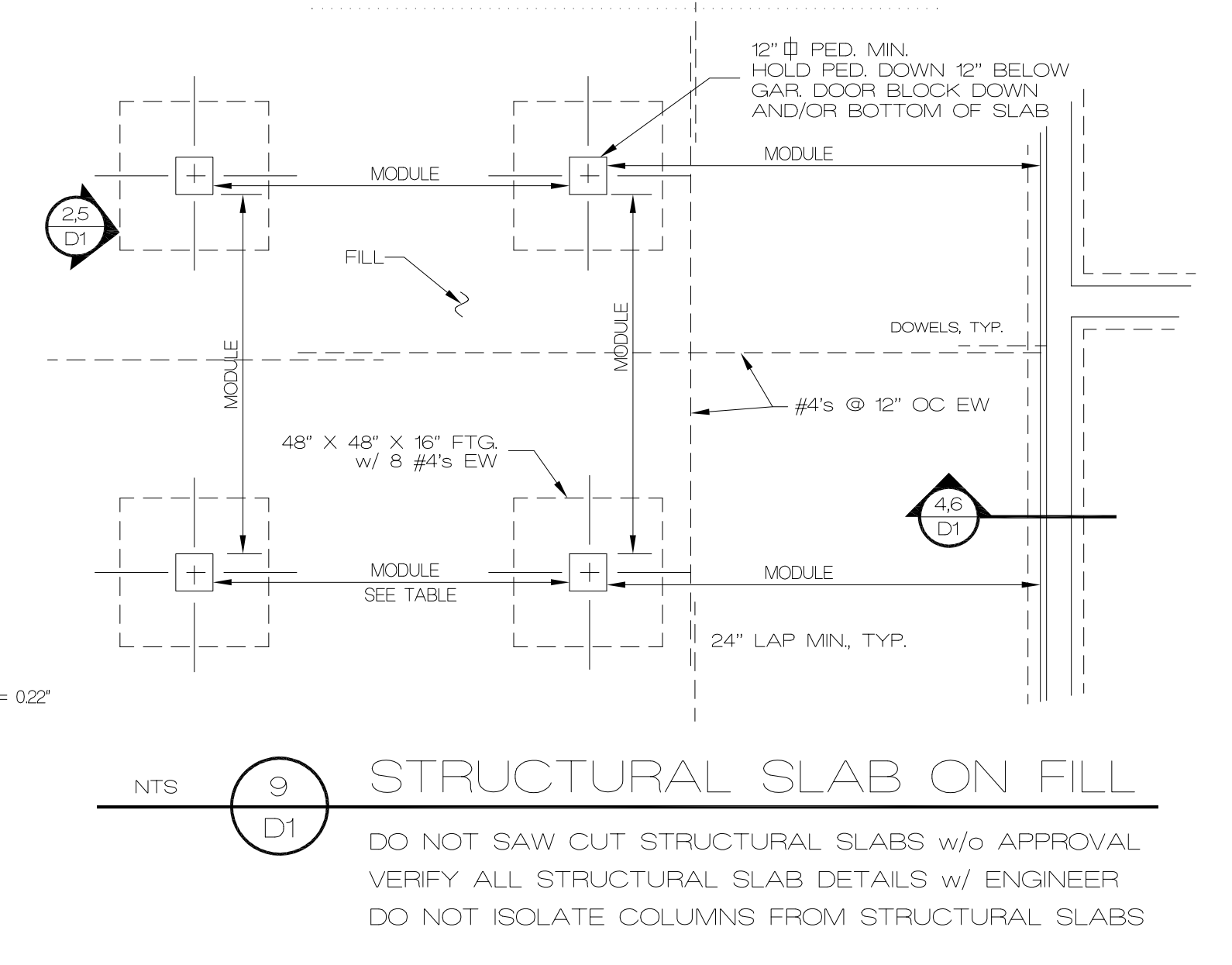
(MODULE ALSO APPLIES @ OVERDIG)



NTS (D1) 8b DECK @ CANTILEVER

STRUCT. SLAB MODULE SPACING	
SLAB TYPE	MODULE SPACING
BASEMENT	15'-6"
GARAGE	12'-6"

(MODULE ALSO APPLIES @ OVERDIG)



Ken Sidorowicz, PC

ISSUE DATE

REVISIONS

2018 DETAIL SHEET

STATE OF MISSOURI

KENNETH SIDOROWICZ

NUMBER E-19986

PROFESSIONAL ENGINEER

3/11/22

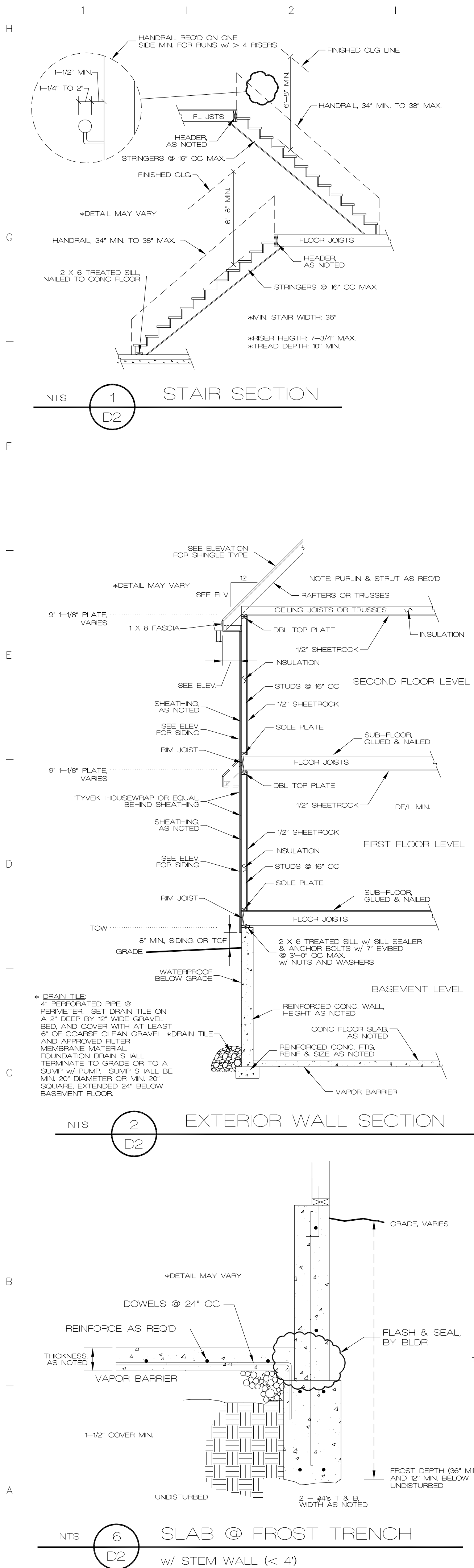
D1

RELEASE FOR CONSTRUCTION

DEVELOPMENT SERVICES

LEE'S SUMMIT, MISSOURI

04/01/2022



GENERAL NOTES:

- GLASS - GLAZING IN THE FOLLOWING LOCATIONS SHALL BE OF APPROVED SAFETY GLAZING MATERIALS: STORM DOORS, PANELS ADJACENT TO A DOOR WHERE THE NEAREST VERTICAL EDGE IS WITHIN A 24" OF THE DOOR IN A CLOSED POSITION AND WHOSE BOTTOM EDGE IS WITHIN 60" OF THE FLOOR WALLS ENCLOSURE STAIRWAYS AND LANDINGS WHERE THE GLASS IS WITHIN 60" OF THE TOP OR BOTTOM OF THE STAIR ENCLOSURE FOR SPACERS, SHOWERS AND GLASS EXCEEDING 9 SF. AND WHOSE BOTTOM EDGE IS LESS THAN 18" AFF. OR WALKING SURFACE WITHIN 36". A MINIMUM OF ONE EGRESS WINDOW SHALL BE PROVIDED IN EACH BEDROOM AND ONE FROM THE BASEMENT WITH A MINIMUM OPERABLE AREA OF 5.7 SF. MINIMUM HEIGHT OF 24 INCHES AND MINIMUM WIDTH OF 20 INCHES. THE OPERABLE PORTION SHALL NOT EXCEED 44 INCHES AFF. WATER RESISTANT WINDOW WELLS AS REQD.
- SMOKE DETECTORS - PROVIDE SMOKE ALARMS IN EACH SLEEPING ROOM OUTSIDE OF EACH SLEEPING AREA AND ON EACH FLOOR AT THE STAIRS, INCLUDING BASEMENTS. ALARMS SHALL BE INTERCONNECTED SO THE ACTUATION OF ONE ALARM WILL ACTIVATE ALL THE SMOKE DETECTOR IN THE DWELLING.
- INSULATION REQUIREMENTS - HERS COMPLIANCE REPORT OR COMPLY WITH 2018 IRC PRESCRIPTIVE REQUIREMENTS.
- ATTIC VENTILATION - THE NET FREE VENTILATION AREA SHALL BE NOT LESS THAN 1/60 OF THE AREA OF THE SPACE BEING VENTILATED. THE NET VENTILATION AREA MAY BE REDUCED TO 1/300 IF 50% TO 80% OF THE REQUIRED VENTILATION AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE SPACE TO BE VENTILATED. AT LEAST 3 FT ABOVE EAVES OR CORNICES. RAFTERS SPACES ENCLOSED BY CEILING DIRECTLY APPLIED TO UNDERSIDE OF RAFTERS SHALL BE USED TO ALLOW A MINIMUM OF 1 INCH CLEAR VENTED AIR SPACE ABOVE THE INSULATION. ATTICS WITH MAXIMUM VERTICAL CLEAR HEIGHT OF LESS THAN 30 INCHES ARE NOT REQD TO HAVE ACCESS OPENING.

THIS REQUIREMENT IS WAIVED FOR A COCOON SYSTEM MAKE-UP AIR REQD

- MAKE-UP/COMBUSTION AIR - MAKE-UP OR COMBUSTION AIR SHALL BE PROVIDED FROM OUTSIDE AS REQD FOR KIT. EXHAUST OVER 400 cfm, FURNACE OR WH THRU ROOF OR OUTSIDE WALL.
- HVAC IGNITION SOURCE - EQUIPMENT AND APPLIANCES WITH AN IGNITION SOURCE THAT ARE LOCATED IN THE GARAGE OR GARAGE CLOSET SHALL BE ELEVATED SUCH THAT THE SOURCE OF IGNITION IS NOT LESS THAN 18" ABOVE THE FLOOR OR ARE LISTED AS FLAMMABLE VAPOR RESISTANT AND FOR INSTALLATION WITHOUT ELEVATION.
- EXHAUST AIR - ALL EXHAUST FANS SHALL EXHAUST DIRECTLY TO THE BUILDING EXTERIOR.
- GARAGE FLOOR SLOPE - GARAGE FLOORS SHALL SLOPE 2% MIN. TO THE GARAGE DOORS. AN OPEN TRENCH OR AN UNTRAPPED DRAIN THAT DISCHARGES DIRECTLY TO THE TO THE EXTERIOR GRADE.
- FINISHED GRADE - THE FINISHED GRADE OF THE YARD SHALL SLOPE 6" MIN. WITHIN THE FIRST 10 FEET, THEN 2% MIN. IN ALL OTHER AREAS.
- WINDOWS - WINDOW FLASHING AND INSTALLATION MANUAL FROM MANUFACTURER SHALL BE ON SITE.
- WATER HEATER - PROVIDE MEANS OF CONTROLLING PRESSURE CAUSED BY THERMAL EXPANSION IF THE WATER SERVICE IS PROTECTED BY A PRESSURE REGULATOR.

A WATER TEMPERATURE LIMITING DEVICE IS REQUIRED ON BATHTUBS AND JACUZZIS LIMITING THE TEMPERATURE TO 120°F.

- SUMP - THE SUMP PRT SHALL BE EQUIPPED WITH A PUMP AND DEDICATED RECEPTACLE. IN UNFINISHED PORTIONS OF THE BASEMENT, RECEPTACLES SHALL HAVE GFI PROTECTION.

APPROVED SUBSTRATE (OSB) 7/16" APA RATED SHEATHING MIN. CLIPPED OR SPACED

*DETAIL MAY VARY

NTS

16

D2

3 COAT STUCCO DETAIL

144 FT² MAX. MODULE FOR CONTROL JOINT GRID

*DETAIL MAY VARY

NTS

14

D2

A-TRUSS

*DETAIL MAY VARY

NTS

15

D2

PURLIN LEG

*DETAIL MAY VARY

NTS

16

D2

CEILING FUR DOWN

*DETAIL MAY VARY

NTS

17

D2

SEPERATION FIREWALL/FLOOR SECTION

WP 3820 (Wall), FC 5517 or Equal (Floor/Ceiling)

*DETAIL MAY VARY

NTS

18

D2

STAIR SECTION

*DETAIL MAY VARY

NTS

19

D2

STAIR SECTION

*DETAIL MAY VARY

NTS

20

D2

STAIR SECTION

*DETAIL MAY VARY

NTS

21

D2

STAIR SECTION

*DETAIL MAY VARY

NTS

22

D2

STAIR SECTION

*DETAIL MAY VARY

NTS

23

D2

STAIR SECTION

*DETAIL MAY VARY

ENERGY EFFICIENCY NOTES:

- HERS COMPLIANCE PATH - THE BUILDING THERMAL ENVELOPE SHALL BE SEALED PER 2018 IRC SECTION N102.41 AND TABLE N102.4.11.
- DUCTS, AIR HANDLERS, FILTER BOXES AND BUILDING CAVITIES USED AS DUCTS SHALL BE SEALED PER 2018 IRC SECTION N103.32.
- CECILS - SHALL BE LOCATED IN THE GARAGE. AT ALL KITCHEN, COUNTER RECEPTACLES, IN BATHROOMS, AT ALL OUTDOOR RECEPTACLES AND THOSE WITHIN 6' OF SINKS, SPA AREAS, GFCI WITHIN 10' AND 25' NO RECEPTACLE WITHIN 5' AND NO SWITCH WITHIN 5' WITHIN 36" OF BATHROOM OR POWDER LAVATORY. PLUG-IN-PLANE COVERS AS REQD.
- DRYWALL - GARAGES AND ENCLOSED SPACE BELOW STAIRS SHALL HAVE 5/8" TYPE X ON CEILING, BEAM, COLUMN, AND ON COMMON WALLS WITH LIVING SPACE.
- APPLIANCES - SHALL BE DIRECT VENT. VENT TERMINALS SHALL BE LOCATED PER CODE, WITH THE BOTTOM OF VENT NOT LESS THAN 12" ABOVE FINISHED GRADE, UNO.
- DRYER SHALL HAVE 4" DIAMETER EXHAUST DUCT TO EXTERIOR WITH A MAXIMUM LENGTH OF 25 FEET.
- ALL DUCT SYSTEMS SHALL BE AIR TIGHT.
- ELEVANCE - SHALL HAVE 18" CLEARANCE ON CONTROL SIDE, AND 12" CLEARANCE ON ALL OTHER SIDES.
- LAWN IRRIGATION - THE POTABLE WATER SUPPLY SHALL BE PROTECTED BY BACKFLOW PREVENTION. ALL OUTDOOR RECEPTACLES AND WITHIN 6' OF ANY SINK, SPA AREAS, GFCI WITHIN 10' AND 25' NO RECEPTACLE WITHIN 5' AND NO SWITCH WITHIN 5'.
- PLUMBING FIXTURES - FIXTURES WITH A FLOOD LEVEL BELOW THE ELEVATION OF THE NEAR UPSTREAM PUBLIC SEWER, MAN-HOLE COVER SHALL BE PROTECTED WITH AN APPROVED BACKWATER VALVE (INCLUDING DRAINAGE DISCHARGE).
- BASINENT HOSE CONNECTIONS SHALL HAVE AN ANTI-SIPHON DEVICE INSTALLED.
- ACCESS TO PUMPS UNDER WHIRLPOOL SHALL BE 18" X 18" MIN.
- GAS PIPING - GAS PIPING SERVING A TOWNHOME SHALL NOT PASS THROUGH ADJACENT UNITS.
- ELECTRICAL FIXTURES - FIXTURES IN DAMP AND WET LOCATIONS SHALL BE LISTED AS SUITABLE FOR THAT LOCATION.
- RECEPTACLE OUTLETS SHALL BE SPACED 6' MAX. (MEASURED HORIZONTALLY ALONG FLOOR LINE) AND IN ANY WALL SPACE 2' WIDE OR GREATER.
- ALL RECEPTACLE CIRCUITS EXCEPT GFCI SHALL BE AFCI PROTECTED.
- BONDING - ALL METALLIC BOXES SHALL BE BONDED. PROVIDE BONDING TO ALL METAL PIPING, GAS, AND OTHER BUILDING SYSTEMS. PROVIDE BOND JUMPER ACROSS METALLIC HOT AND COLD WATER LINES AT THE WATER HEATER.
- BRANCH CIRCUITS - BATHROOM RECEPTACLES SHALL BE SUPPLIED BY MINIMUM OF ONE 20-AMP BRANCH CIRCUIT, SUPPLYING NO OTHER OUTLETS. PROVIDE SEPARATE 20-AMP BRANCH CIRCUIT FOR LAUNDRY. PROVIDE MINIMUM OF TWO 20-AMP SMALL APPLIANCE BRANCH CIRCUITS FOR THE KITCHEN/DINING/BREAKFAST.
- GUARD OPENINGS - OPENINGS IN REQD GUARDS SHALL NOT PERMIT THE PASSAGE OF A 4" SPHERE FROM THE WALKING SURFACE TO THE REQD GUARD HEIGHT.
- WINDOW SILLS - IN DWELLING UNITS, WHERE THE OPENING OF AN OPERABLE WINDOW IS LOCATED MORE THAN 12" INCHES ABOVE FINISHED GRADE OR SURFACE BELOW, THE LOWEST PART OF THE CLEAR OPENING OF THE WINDOW SHALL BE A MIN. OF 24 INCHES AFF. OF THE ROOM IN WHICH THE WINDOW IS LOCATED. GLAZING BETWEEN THE FLOOR AND 24 INCHES SHALL BE FIXED OR HAVE OPENINGS THROUGH WHICH A 4 INCH DIA. SPHERE CANNOT PASS.

THIS REQUIREMENT IS WAIVED FOR A COCOON SYSTEM MAKE-UP AIR REQD

- MAKE-UP/COMBUSTION AIR - MAKE-UP OR COMBUSTION AIR SHALL BE PROVIDED FROM OUTSIDE AS REQD FOR KIT. EXHAUST OVER 400 cfm, FURNACE OR WH THRU ROOF OR OUTSIDE WALL.

HVAC IGNITION SOURCE - EQUIPMENT AND APPLIANCES WITH AN IGNITION SOURCE THAT ARE LOCATED IN THE GARAGE OR GARAGE CLOSET SHALL BE ELEVATED SUCH THAT THE SOURCE OF IGNITION IS NOT LESS THAN 18" ABOVE THE FLOOR OR ARE LISTED AS FLAMMABLE VAPOR RESISTANT AND FOR INSTALLATION WITHOUT ELEVATION.

EXHAUST AIR - ALL EXHAUST FANS SHALL EXHAUST DIRECTLY TO THE BUILDING EXTERIOR.

GARAGE FLOOR SLOPE - GARAGE FLOORS SHALL SLOPE 2% MIN. TO THE GARAGE DOORS. AN OPEN TRENCH OR AN UNTRAPPED DRAIN THAT DISCHARGES DIRECTLY TO THE TO THE EXTERIOR GRADE.

FINISHED GRADE - THE FINISHED GRADE OF THE YARD SHALL SLOPE 6" MIN. WITHIN THE FIRST 10 FEET, THEN 2% MIN. IN ALL OTHER AREAS.

WINDOWS - WINDOW FLASHING AND INSTALLATION MANUAL FROM MANUFACTURER SHALL BE ON SITE.

WATER HEATER - PROVIDE MEANS OF CONTROLLING PRESSURE CAUSED BY THERMAL EXPANSION IF THE WATER SERVICE IS PROTECTED BY A PRESSURE REGULATOR.

A WATER TEMPERATURE LIMITING DEVICE IS REQUIRED ON BATHTUBS AND JACUZZIS LIMITING THE TEMPERATURE TO 120°F.

- SUMP - THE SUMP PRT SHALL BE EQUIPPED WITH A PUMP AND DEDICATED RECEPTACLE. IN UNFINISHED PORTIONS OF THE BASEMENT, RECEPTACLES SHALL HAVE GFI PROTECTION.

APPROVED SUBSTRATE (OSB) 7/16" APA RATED SHEATHING MIN. CLIPPED OR SPACED

*DETAIL MAY VARY

NTS

18

D2

CEILING FUR DOWN

*DETAIL MAY VARY

NTS

19

D2

STAIR SECTION

*DETAIL MAY VARY

NTS

20

D2

STAIR SECTION

*DETAIL MAY VARY

NTS

21

D2

STAIR SECTION

*DETAIL MAY VARY

NTS

22

D2

STAIR SECTION

*DETAIL MAY VARY

NTS

23

D2

STAIR SECTION

*DETAIL MAY VARY

NTS

24

D2

STAIR SECTION

*DETAIL MAY VARY

NTS

25

D2

STAIR SECTION

*DETAIL MAY VARY

NTS

26

D2

STAIR SECTION

*DETAIL MAY VARY

NTS

27

D2

STAIR SECTION

*DETAIL MAY VARY

NTS

28

D2

STAIR SECTION

*DETAIL MAY VARY

NTS

29

D2

STAIR SECTION

*DETAIL MAY VARY

NTS

30

D2

STAIR SECTION

*DETAIL MAY VARY

NTS

31

D2

ENERGY EFFICIENCY NOTES:

- HERS COMPLIANCE PATH - THE BUILDING THERMAL ENVELOPE SHALL BE SEALED PER 2018 IRC SECTION N102.41 AND TABLE N102.4.11.
- DUCTS, AIR HANDLERS, FILTER BOXES AND BUILDING CAVITIES USED AS DUCTS SHALL BE SEALED PER 2018 IRC SECTION N103.32.
- CECILS - SHALL BE LOCATED IN THE GARAGE. AT ALL KITCHEN, COUNTER RECEPTACLES, IN BATHROOMS, AT ALL OUTDOOR RECEPTACLES AND THOSE WITHIN 6' OF SINKS, SPA AREAS, GFCI WITHIN 10' AND 25' NO RECEPTACLE WITHIN 5' AND NO SWITCH WITHIN 5' WITHIN 36" OF BATHROOM OR POWDER LAVATORY. PLUG-IN-PLANE COVERS AS REQD.
- DRYWALL - GARAGES AND ENCLOSED SPACE BELOW STAIRS SHALL HAVE 5/8" TYPE X ON CEILING, BEAM, COLUMN, AND ON COMMON WALLS WITH LIVING SPACE.
- APPLIANCES - SHALL BE DIRECT VENT. VENT TERMINALS SHALL BE LOCATED PER CODE, WITH THE BOTTOM OF VENT NOT LESS THAN 12" ABOVE FINISHED GRADE, UNO.
- DRYER SHALL HAVE 4" DIAMETER EXHAUST DUCT TO EXTERIOR WITH A MAXIMUM LENGTH OF 25 FEET.
- ALL DUCT SYSTEMS SHALL BE AIR TIGHT.
- ELEVANCE - SHALL HAVE 18" CLEARANCE ON CONTROL SIDE, AND 12" CLEARANCE ON ALL OTHER SIDES.
- LAWN IRRIGATION - THE POTABLE WATER SUPPLY SHALL BE PROTECTED BY BACKFLOW PREVENTION. ALL OUTDOOR RECEPTACLES AND WITHIN 6' OF ANY SINK, SPA AREAS, GFCI WITHIN 10' AND 25' NO RECEPTACLE WITHIN 5' AND NO SWITCH WITHIN 5'.
- PLUMBING FIXTURES - FIXTURES WITH A FLOOD LEVEL BELOW THE ELEVATION OF THE NEAR UPSTREAM PUBLIC SEWER, MAN-HOLE COVER SHALL BE PROTECTED WITH AN APPROVED BACKWATER VALVE (INCLUDING DRAINAGE DISCHARGE).
- BASINENT HOSE CONNECTIONS SHALL HAVE AN ANTI-SIPHON DEVICE INSTALLED.
- ACCESS TO PUMPS UNDER WHIRLPOOL SHALL BE 18" X 18" MIN.
- GAS PIPING - GAS PIPING SERVING A TOWNHOME SHALL NOT PASS THROUGH ADJACENT UNITS.
- ELECTRICAL FIXTURES - FIXTURES IN DAMP AND WET LOCATIONS SHALL BE LISTED AS SUITABLE FOR THAT LOCATION.
- RECEPTACLE OUTLETS SHALL BE SPACED 6' MAX. (MEASURED HORIZONTALLY ALONG FLOOR LINE) AND IN ANY WALL SPACE 2' WIDE OR GREATER.
- ALL RECEPTACLE CIRCUITS EXCEPT GFCI SHALL BE AFCI PROTECTED.
- BONDING - ALL METALLIC BOXES SHALL BE BONDED. PROVIDE BONDING TO ALL METAL PIPING, GAS, AND OTHER BUILDING SYSTEMS. PROVIDE BOND JUMPER ACROSS METALLIC HOT AND COLD WATER LINES AT THE WATER HEATER.
- BRANCH CIRCUITS - BATHROOM RECEPTACLES SHALL BE SUPPLIED BY MINIMUM OF ONE 20-AMP BRANCH CIRCUIT, SUPPLYING NO OTHER OUTLETS. PROVIDE SEPARATE 20-AMP BRANCH CIRCUIT FOR LAUNDRY. PROVIDE MINIMUM OF TWO 20-AMP SMALL APPLIANCE BRANCH CIRCUITS FOR THE KITCHEN/DINING/BREAKFAST.
- GUARD OPENINGS - OPENINGS IN REQD GUARDS SHALL NOT PERMIT THE PASSAGE OF A 4" SPHERE FROM THE WALKING SURFACE TO THE REQD GUARD HEIGHT.
- WINDOW SILLS - IN DWELLING UNITS, WHERE THE OPENING OF AN OPERABLE WINDOW IS LOCATED MORE THAN 12" INCHES ABOVE FINISHED GRADE OR SURFACE BELOW, THE LOWEST PART OF THE CLEAR OPENING OF THE WINDOW SHALL BE A MIN. OF 24 INCHES AFF. OF THE ROOM IN WHICH THE WINDOW IS LOCATED. GLAZING BETWEEN THE FLOOR AND 24 INCHES SHALL BE FIXED OR HAVE OPENINGS THROUGH WHICH A 4 INCH DIA. SPHERE CANNOT PASS.

THIS REQUIREMENT IS WAIVED FOR A COCOON SYSTEM MAKE-UP AIR REQD

- MAKE-UP/COMBUSTION AIR - MAKE-UP OR COMBUSTION AIR SHALL BE PROVIDED FROM OUTSIDE AS REQD FOR KIT. EXHAUST OVER 400 cfm, FURNACE OR WH THRU ROOF OR OUTSIDE WALL.

HVAC IGNITION SOURCE - EQUIPMENT AND APPLIANCES WITH AN IGNITION SOURCE THAT ARE LOCATED IN THE GARAGE OR GARAGE CLOSET SHALL BE ELEVATED SUCH THAT THE SOURCE OF IGNITION IS NOT LESS THAN 18" ABOVE THE FLOOR OR ARE LISTED AS FLAMMABLE VAPOR RESISTANT AND FOR INSTALLATION WITHOUT ELEVATION.

EXHAUST AIR - ALL EXHAUST FANS SHALL EXHAUST DIRECTLY TO THE BUILDING EXTERIOR.

GARAGE FLOOR SLOPE - GARAGE FLOORS SHALL SLOPE 2% MIN. TO THE GARAGE DOORS. AN OPEN TRENCH OR AN UNTRAPPED DRAIN THAT DISCHARGES DIRECTLY TO THE TO THE EXTERIOR GRADE.

FINISHED GRADE - THE FINISHED GRADE OF THE YARD SHALL SLOPE 6" MIN. WITHIN THE FIRST 10 FEET, THEN 2% MIN. IN ALL OTHER AREAS.

WINDOWS - WINDOW FLASHING AND INSTALLATION MANUAL FROM MANUFACTURER SHALL BE ON SITE.

WATER HEATER - PROVIDE MEANS OF CONTROLLING PRESSURE CAUSED BY THERMAL EXPANSION IF THE WATER SERVICE IS PROTECTED BY A PRESSURE REGULATOR.

A WATER TEMPERATURE LIMITING DEVICE IS REQUIRED ON BATHTUBS AND JACUZZIS LIMITING THE TEMPERATURE TO 120°F.

- SUMP - THE SUMP PRT SHALL BE EQUIPPED WITH A PUMP AND DEDICATED RECEPTACLE. IN UNFINISHED PORTIONS OF THE BASEMENT, RECEPTACLES SHALL HAVE GFI PROTECTION.

APPROVED SUBSTRATE (OSB) 7/16" APA RATED SHEATHING MIN. CLIPPED OR SPACED

*DETAIL MAY VARY

NTS

18

D2

CEILING FUR DOWN

*DETAIL MAY VARY

NTS

19

D2

STAIR SECTION

*DETAIL MAY VARY

NTS

20

D2

STAIR SECTION

*DETAIL MAY VARY

NTS

21

D2

STAIR SECTION

*DETAIL MAY VARY

NTS

22

D2

STAIR SECTION

*DETAIL MAY VARY

NTS

23

D2

STAIR SECTION

*DETAIL MAY VARY

NTS

24

D2

STAIR SECTION

*DETAIL MAY VARY

NTS

25

D2

STAIR SECTION

*DETAIL MAY VARY

NTS

26

D2

STAIR SECTION

*DETAIL MAY VARY

NTS

27

D2

STAIR SECTION

*DETAIL MAY VARY

NTS

28

D2

STAIR SECTION

*DETAIL MAY VARY

NTS

29

D2

STAIR SECTION

*DETAIL MAY VARY

NTS

30

D2

STAIR SECTION

*DETAIL MAY VARY

NTS

31

D2

ENERGY EFFICIENCY NOTES:

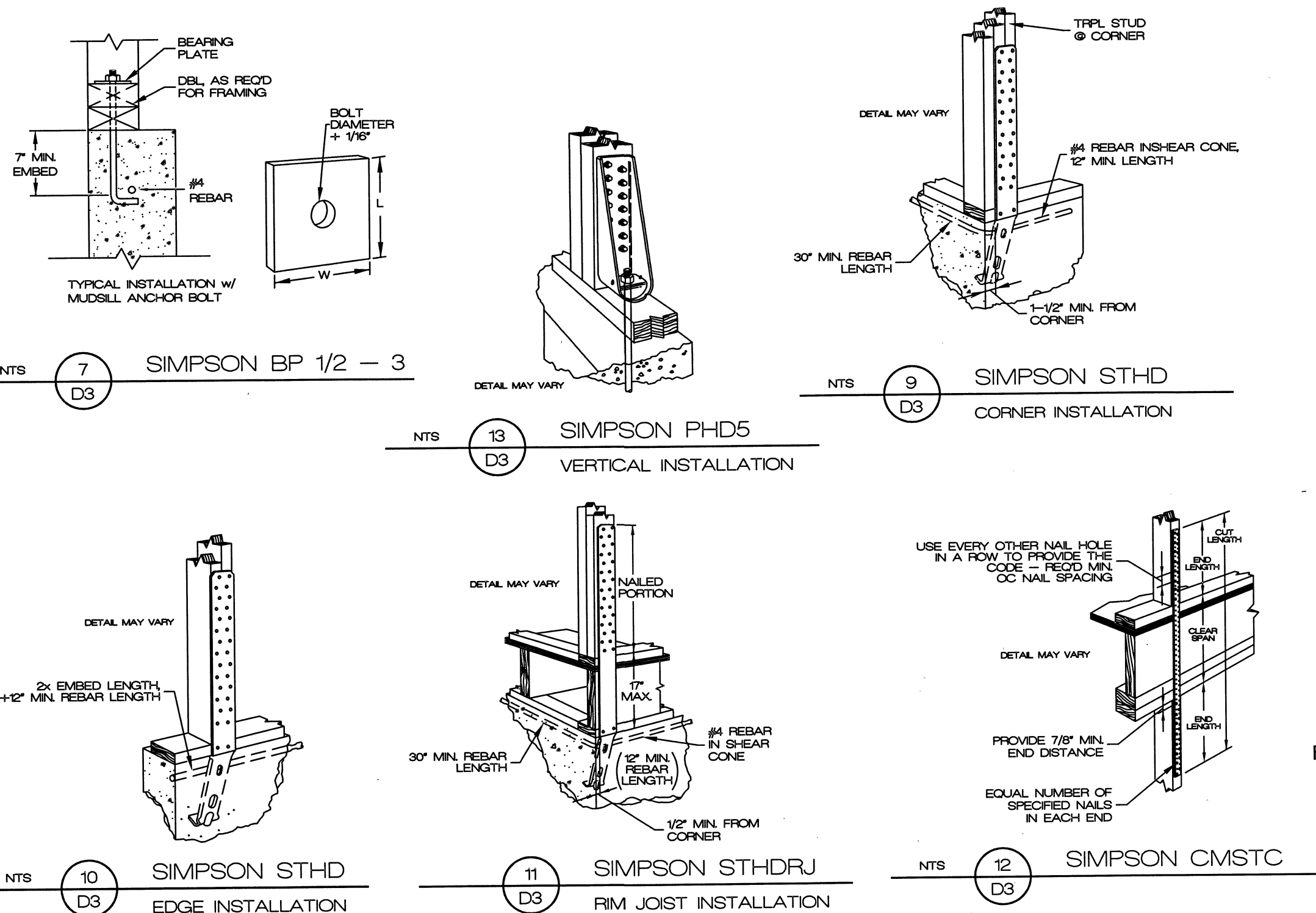
STAPLES NOT PERMITTED IN KCMO

FASTENER SCHEDULE FOR STRUCTURAL MEMBERS

Item	Description of building elements	Number & type of fastener (notes: a, b, c)	Spacing of fasteners
Roof			
1	Blocking between joists or rafters to top plate, toe nail	3-8d (2-1/2" x 0.135)	—
2	Ceiling joists to plate, toe nail	3-8d (2-1/2" x 0.135)	—
3	Ceiling joists not attached to parallel rafter, laps over partitions, face nail	3-10d	—
4	Collar tie rafter, face nail or 1-1/4" x 20 ga. ridge strap	3-10d (3" x 0.128)	—
5	Rafter to plate, toe nail, note: trusses use STC clips at NLB walls and speed holdowns	3-10d or 3-10d (3-1/2" x 0.135, 0.145)	2 toe nails side 1, 1 toe nail side 2 (note j)
6	Toe nail	4-16d (3-1/2" x 0.135)	—
7	Face nail	3-16d (3-1/2" x 0.135)	—
Wall			
7	Built-up studs-face nail	10d (3" x 0.135)	24" o.c.
8	Assembling studs at intersecting wall corners, face nail	16d (3-1/2" x 0.135)	12" o.c.
9	Built-up header, two pieces w/ 1/2" spacer	16d (3-1/2" x 0.135)	16" o.c. along each edge
10	Continued header, two pieces	16d (3-1/2" x 0.135)	16" o.c. along each edge
11	Continuous header to stud, toe nail	4-8d (3-1/2" x 0.135)	—
12	Double studs, face nail	10d (3" x 0.135)	24" o.c.
13	Double top plates, face nail	10d (3" x 0.135)	24" o.c.
14	Double top plates, min. 48" offset of end joints, face nail in lapped area	8-16d (3-1/2" x 0.135)	16" o.c.
15	Sole plate to joist or blocking, face nail	3-16d (3-1/2" x 0.135)	16" o.c.
16	Sole plate to joist or blocking at braced wall panels	3-8d (2-1/2" x 0.135) or 2-16d (3-1/2" x 0.135)	—
17	Stud to sole plate, toe nail	3-8d (2-1/2" x 0.135) or 2-16d (3-1/2" x 0.135)	—
18	Top or sole plate to stud, end nail	2-8d (2-1/2" x 0.135)	—
19	Top plates, face at corners and intersections, face nail	2-16d (3-1/2" x 0.135)	—
20	1" brace to each stud and plate, face nail	2-8d (2-1/2" x 0.135)	—
21	1" x 6" sheathing to each bearing, face nail	2 staples 1-3/4"	—
22	1" x 6" sheathing to each bearing, face nail	2-8d (2-1/2" x 0.135)	—
23	Wider than 1" x 6" sheathing to each bearing, face nail	3 staples 1-3/4"	—
Floor			
24	Joist to sill or girder, toe nail	3-8d (2-1/2" x 0.135)	—
25	1" x 6" joist to top plate, toe nail (roof applications also)	8d (2-1/2" x 0.135)	6" o.c.
26	1" x 6" joist to blocking to sill plate, toe nail	8d (2-1/2" x 0.135)	6" o.c.
27	1" x 6" subfloor or less to each joist, face nail	2-8d (2-1/2" x 0.135)	—
28	2" subfloor to joist of girder, blind and face nail	2 staples 1-3/4"	—
29	2" planks (plank & beam - floor and roof)	2-16d (3-1/2" x 0.135)	—
30	Built-up girders and beams, 2" lumber layers	10d (3" x 0.135)	—
31	Ledger strip supporting joists or rafters	3-16d (3-1/2" x 0.135)	—
Spacing of Fasteners			
Description of building materials		Description of fastener (notes: b, c, e)	Intermediate supports (inches) (notes: c, e)
Wood structural panels, subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to framing		6d common (2" x 0.135) nail (subfloor, wall) (note j)	12 (note: g)
32	3/8" to 1/2"	8d common (2-1/2" x 0.135) nail (roof)	12 (note: g)
33	1/2" to 1"	10d common (3" x 0.145) nail or 8d deformed (2-1/2" x 0.135) nail	12
34	1-1/8" to 1-1/4"	10d common (3" x 0.145) nail or 8d deformed (2-1/2" x 0.135) nail	12
Other wall sheathing (note h)			
35	1/2" structural cellulose fiberboard sheathing	1" crown staple 16 ga., 1-1/4" long	6
36	25/32" structural cellulose fiberboard sheathing	1-3/4" crown staple 16 ga., 1-1/2" long	6
37	1/2" gypsum sheathing (note d)	1-1/2" galvanized roofing nail, staple galv.	7
38	5/8" gypsum sheathing (note d)	1-1/2" long, 1-1/4" screws, Type W or S	7
Wood structural panels, combination subfloor underlayment to framing			
39	3/4" and less	6d deformed (2" x 0.135) nail or 8d common (2-1/2" x 0.135) nail	12
40	7/8" to 1"	8d common (2-1/2" x 0.135) nail or 8d deformed (2-1/2" x 0.135) nail	12
41	1-1/8" to 1-1/4"	10d common (3" x 0.145) nail or 8d deformed (2-1/2" x 0.135) nail	12

For S: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 mile per hour = 0.447 m/s, 1 psi = 6.895 kPa

- a. All nails are smooth-common, box or deformed shank except where otherwise stated. Nails used for framing and sheathing connections shall have minimum average bending yield strengths as shown: 80 ksi (551 MPa) for shank diameter of 0.052 inch (20d common nail, 90 ksi (620 MPa) for shank diameters larger than 0.042 inch but not larger than 0.077 inch, and 100 ksi (689 MPa) for shank diameters of 0.042 inch or less.
- b. Staples are 16 gauge wire and have a minimum 7/16-inch crown width.
- c. Nail shall be spaced at not more than 6 inches on center at all supports where spans are 48 inches or greater.
- d. Four-foot-by-8-foot or 4-foot-by-9-foot panels shall be applied vertically.
- e. Spacing of fasteners not included in the table shall be verified w/ ECR.
- f. For regions having basic wind speed of 100 mph or greater, 8d deformed nails shall be used for attaching plywood and wood structural panel roof sheathing to framing within minimum 48-inch distance from gable end walls, if mean roof height is more than 25 feet up to 35 feet maximum.
- g. For regions having basic wind speed of 100 mph or less, nails for attaching wood structural panel roof sheathing to gable end wall framing shall be spaced 6 inches on center. When basic wind speed is greater than 100 mph, nails for attaching panel roof sheathing to intermediate supports shall be spaced 6 inches on center for minimum 48-inch distance from ridges, eaves and gable end walls and 6 inches on center to gable end wall framing.
- h. Gypsum sheathing shall conform to ASTM C 368 and shall be installed in accordance with GA 263. Fiberboard sheathing shall conform to ASTM C 208.
- i. Spacing of fasteners on floor sheathing panel edges applies to panel edges supported by framing members and at all floor perimeter joints. Spacing of fasteners on roof sheathing panel edges applies to panel edges supported by framing members and at all roof perimeter joints. Blocking of roof or floor sheathing panel edges perpendicular to the framing members shall not be required except at intersection of adjacent roof planes. Floor and roof perimeter shall be supported by framing members or solid blocking.
- j. Where a rafter is fastened to an adjacent parallel ceiling joist in accordance with this schedule, provide two toe nails on one side of the rafter and toe nails from the ceiling joist to top plate in accordance with this schedule. The toe nail on the opposite side of the rafter shall not be required.



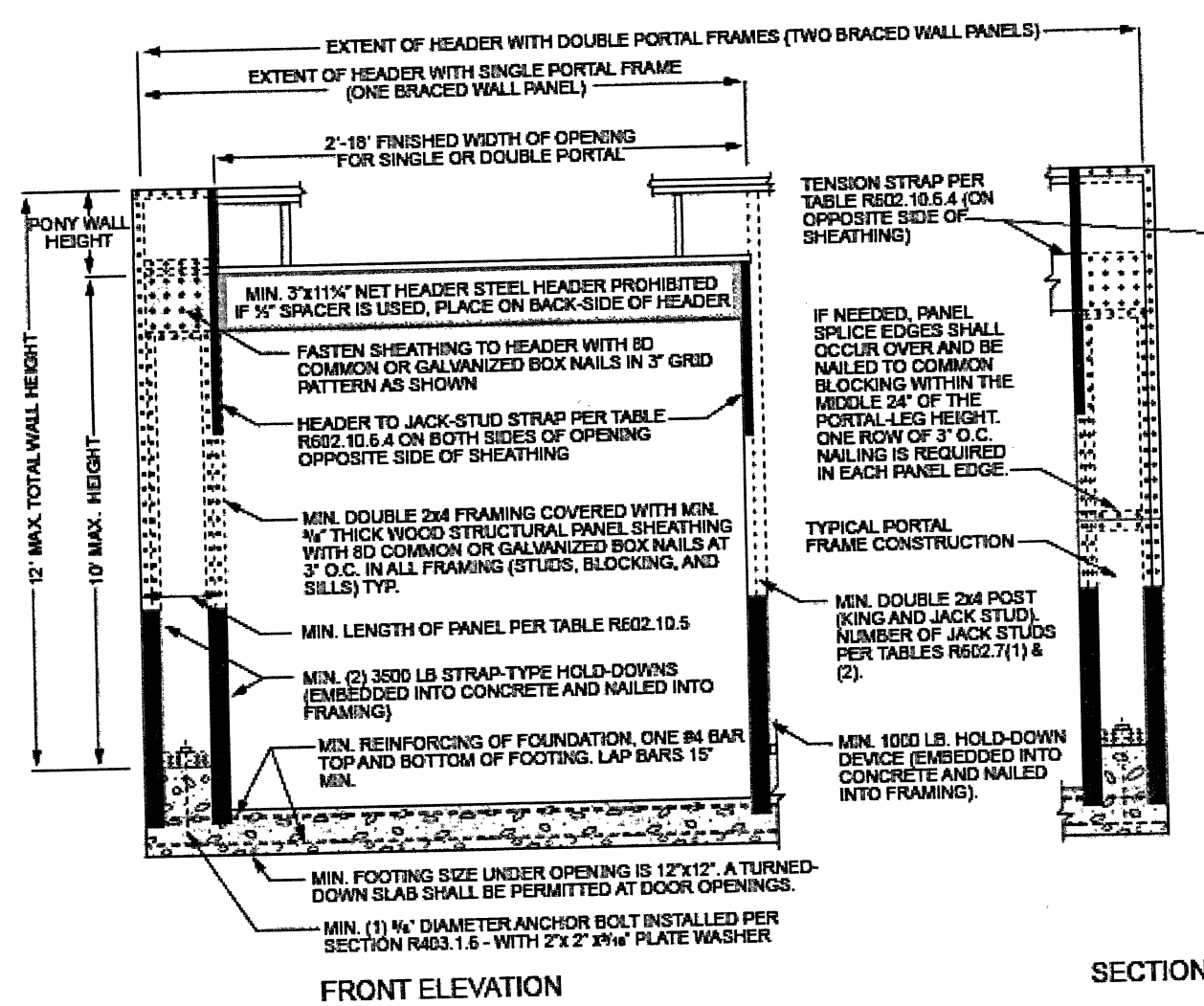
ALL METHODS	DESCRIPTION	CONSTRUCTION
1 LIB	METAL STRAP METHOD	SIMPSON CS16 STRAP NAILED TO STUDS SPACED AT 16" OC MAXIMUM. STRAPS SHALL BE INSTALLED IN 'V' OR 'X' PATTERN AT THE BRACE LOCATION AND FOR THE SPECIFIED LENGTH, ALTERNATIVE TO LET IN 1 X 4.
2 WSP/CS-WSP	SHEATHING METHOD	7/16" STRUCTURAL SHEATHING OVER STUDS SPACED 16" OC w/ 8d COMMON NAILS AT 6" OC EDGE AND 12" FIELD. HORIZONTAL JOINTS SHALL BE BLOCKED FOR ANCHORAGE.
3 PFH	GARAGE DOOR PORTAL	6 TO 1 ASPECT RATIO, HEADER LENGTH AS SPECIFIED WITH FULL PANEL SHEATHING AT UPPER CORNERS CUTOUT FOR THE OPENING. BLOCKING AT HORIZONTAL JOINTS. NOTE FULL 4" WIDTH CUTOUT PANELS REQ'D AT CORNERS. STD10 & LSTA STRAPS
4 CS-PF	PORTALS	HEADER LENGTH AS SPECIFIED EXTENDED TO NEXT LAYOUT STUD, 18" MINIMUM WIDTH. FULL PANEL SHEATHING REQ'D WITH CUTOUTS FOR OPENINGS. HORIZONTAL BLOCKING AT EDGES.

J' BOLT SPACING FOR SHEAR WALLS IS 3' OC WITH STRAPS AS NOTED.

SHEAR WALL SCHEDULE

NTS 8 D3

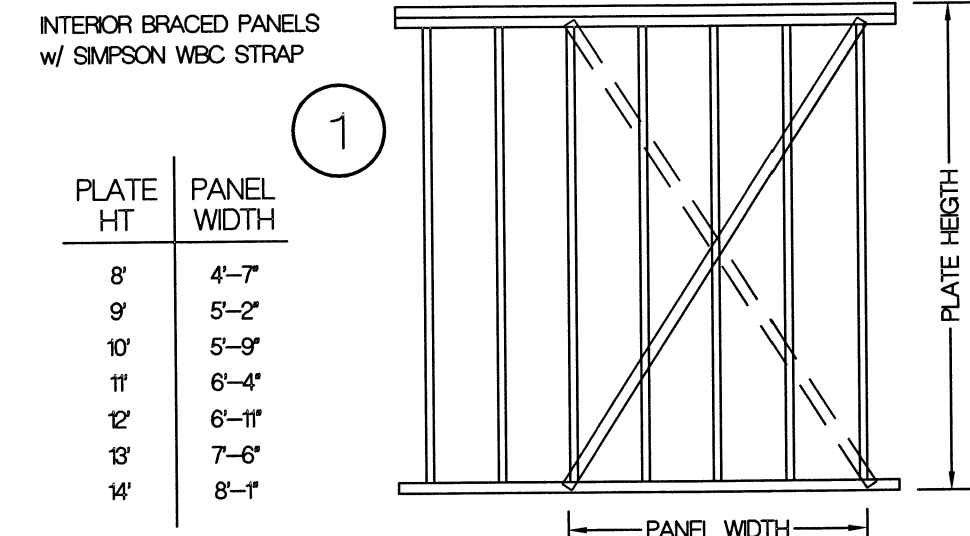
CHAPTER 6 WALL CONSTRUCTION



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

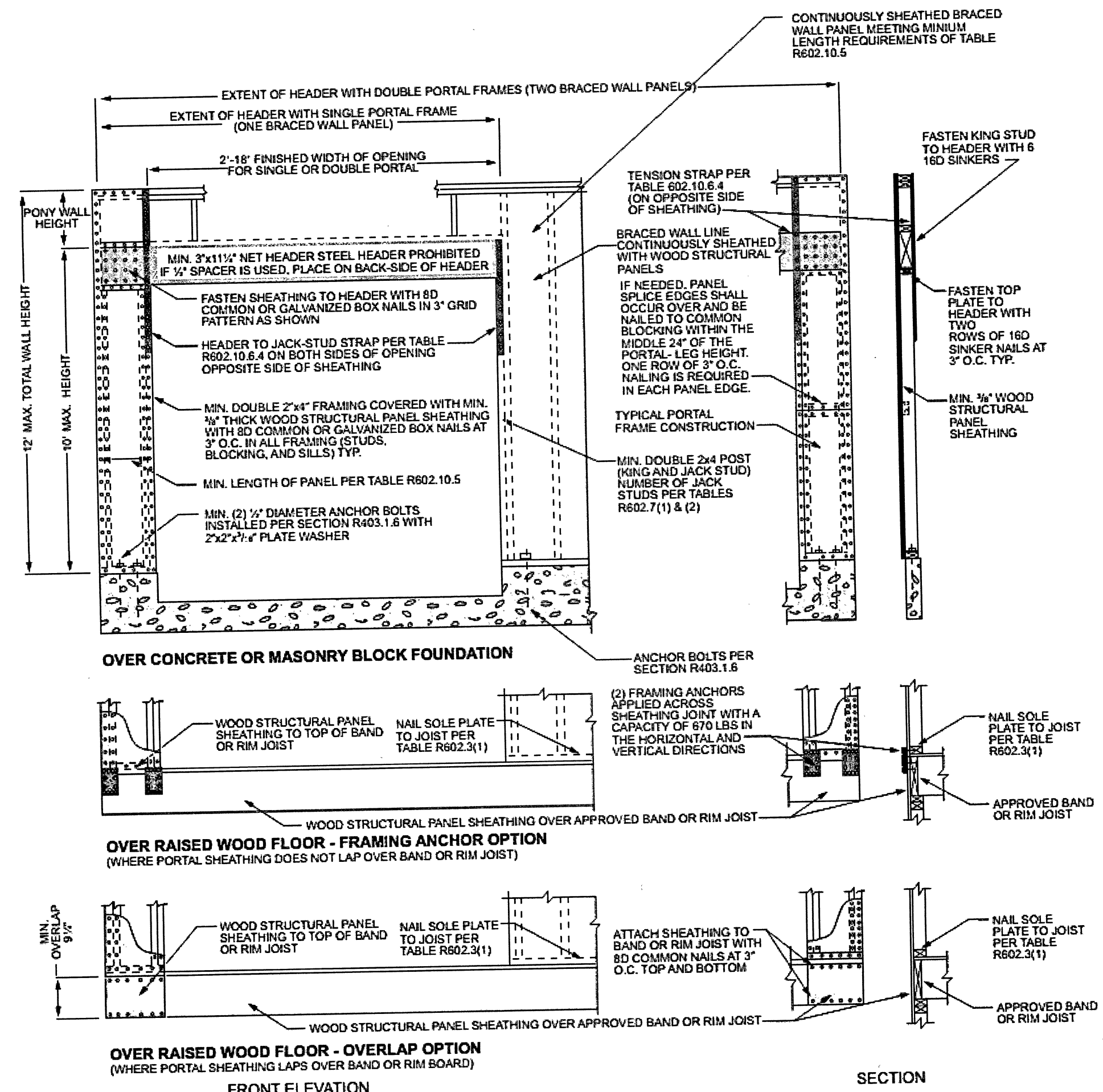
FIGURE R602.10.6.2 METHOD PFH-PORTAL FRAME WITH HOLD-DOWNS

LOAD TABLE		
LOCATION	MIN. DL (PSF)	MIN. LL (PSF)
EXTERIOR BALCONIES	10	60
DECKS	10	40
CEILING w/o STORAGE	5	10
CEILING w/ STORAGE	10	20
NON-SLEEPING ROOMS	10	40
SLEEPING ROOMS	10	30
ROOF-LIGHT COVERING	10	25
ROOF-HEAVY COVERING	20	25



INT. BRACED WALL PANEL
LIB, METAL STRAP ALT. TO LET IN 1 X 4

CHAPTER 6 WALL CONSTRUCTION



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

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

Ken Sidorowicz, PC

P.O. Box 12089, Parkville, Missouri 64152
Tel. (816) 741-0862 Fax (816) 741-0868

ISSUE DATE
REVISIONS

2018 International Residential Code
Third Printing: Sep 2019

2018 DETAIL SHEET

STATE OF MISSOURI
KENNETH SIDOROWICZ
REGISTERED PROFESSIONAL ENGINEER
NUMBER E-19986
3/11/22

D3

RELEASE FOR CONSTRUCTION
AS NOTED FOR PLAN REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
04/01/2022