13. ENERGY EFFICIENCY - CONTINUED

(PRESCRIPTIVE). INSULATION FOR HOT WATER PIPE WITH A MINIMUM THERMAL RESISTANCE, R-VALUE OF NOT LESS THAN R-3 SHALL BE APPLIED TO THE FOLLOWING: (N1103.5.3 (R403.5.3))

1. PIPING 3/4 INCH (19 MM) AND LARGER IN NOMINAL DIAMETER.
2. PIPING SERVING MORE THAN ONE DWELLING UNIT.
3. PIPING LOCATED OUTSIDE THE CONDITIONED SPACE.
4. PIPING FROM THE WATER HEATER TO A DISTRIBUTION MANIFOLD.
5. PIPING LOCATED UNDER A FLOOR SLAB.
6. BURIED PIPING.
7. SUPPLY AND RETURN PIPING IN RECIRCULATION SYSTEMS OTHER THAN DEMAND RECIRCULATION SYSTEMS.

(MANDATORY). THE BUILDING SHALL BE PROVIDED WITH VENTILATION THAT MEETS THE REQUIREMENTS OF SECTION M1507 OR OTHER APPROVED MEANS OF VENTILATION. OUTDOOR AIR INTAKES AND EXHAUSTS SHALL HAVE AUTOMATIC OR GRAVITY DAMPERS THAT CLOSE WHEN THE VENTILATION SYSTEM IS NOT OPERATING. (N1103.6 (R403.6))

FANS USED TO PROVIDE WHOLE-HOUSE MECHANICAL VENTILATION SHALL MEET THE EFFICACY REQUIREMENTS OF TABLE N1103.6.1 OF 2.8 CFM/WATT EXCEPT BATH AND UTILITY ROOM FANS OF 1.4 CFM/WATT FOR FANS <90 CFM AND HRV OR ERV FANS OF 1.2 CFM/WATT. (N1103.6.1 (R403.6.1))

EXCEPTION: WHERE THE AIR HANDLER THAT IS INTEGRAL TO TESTED AND LISTED HVAC EQUIPMENT IS USED TO PROVIDE WHOLE-HOUSE MECHANICAL VENTILATION, THEE AIR HANDLER SHALL BE POWERED BY AN ELECTRONICALLY COMMUTATED MOTOR.

(MANDATORY). HEATING AND COOLING EQUIPMENT SHALL BE SIZED IN ACCORDANCE WITH ACCA MANUAL S BASED ON BUILDING LOADS CALCULATED IN ACCORDANCE WITH ACCA MANUAL J OR OTHER APPROVED HEATING AND COOLING CALCULATION METHODOLOGIES. NEW OR REPLACEMENT HEATING AND COOLING EQUIPMENT SHALL HAVE AN EFFICIENCY RATING EQUAL TO OR GREATER THAN THE MINIMUM REQUIRED BY FEDERAL LAW FOR THE GEOGRAPHIC LOCATION WHERE THE EQUIPMENT IS INSTALLED. (N1103.7 (R403.7))

SNOW AND ICE MELTING SYSTEMS, SUPPLIED THROUGH ENERGY SERVICE TO THE BUILDING, SHALL INCLUDE AUTOMATIC CONTROLS CAPABLE OF SHUTTING OFF THE SYSTEM WHEN THE PAVEMENT TEMPERATURE IS GREATER THAN 50° F AND PRECIPITATION IS NOT FALLING AND AN AUTOMATIC OR MANUAL CONTROL THAT WILL ALLOW SHUTOFF WHEN THE OUTDOOR TEMPERATURE IS GREATER THAN 40° F (N1103.9 (R403.9))

POOLS AND PERMANENT SPAS SHALL BE IN ACORDANCE WITH SECTION N1103.10.3

(MANDATORY). NOT LESS THAN 90% OF THE PERMANENTLY INSTALLED LIGHTING FIXTURES SHALL CONTAIN ONLY HIGH EFFICACY LAMPS. (N1104.1(R404.1))

HOT WATER BOILERS SHALL HAVE AN OUTDOOR SETBACK CONTROL THAT LOWERS THE BOILER WATER TEMPERATURE BASED ON THE OUTDOOR TEMPERATURE (N1103.2 (R403.2))

AS DESIGNED THIS HOUSE WILL COMPLY WITH THE PRESCRIPTIVE PATH, SECTIONS N1102.1 THROGH N1104. IF FIELD DECISIONS OR SUBSTITUTIONS ARE MADE RESULTING IN FAILURE TO COMPLY WITH SECTIONS N1101.14-N1104 (PRESCRIPTIVE) THE HOME MUST BE EVALUATED UNDER SECTION N1105, SIMULATED PERFORMANCE ALTERNATIVE (PERFORMANCE) OR SECTION N1106 ENERGY RATING INDEX COMPLIANCE ALTERNATIVE. A COMPLIANCE REPORT ON THE PROPOSED DESIGN SHALL BE SUBMITTED WITH THE APPLICATION FOR THE BUILDING PERMIT. VERIFICATION OF COMPLIANCE WITH SECTION N1105 OR N1106 SHALL BE COMPETED BY AN APPROVED THIRD PARTY AND THE COMPLIANCE REPORT SHALL BE SUBMITTED WITH THE BUILDING PERMIT APPLICATION.

14. PLUMBING

CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIALS TO INSTALL ALL PERIMETER STORM DRAINAGE, FLOOR DRAINS, PLUMBING, RELATED FIXTURES, GAS PIPING AND RADON GAS VENT PIPING. ALL WORK SHALL COMPLY WITH IRC PART VI - FUEL GAS, CHAPTER 24 AND PART VII - PLUMBING, CHAPTERS 25 THRU 33, STATE AND LOCAL CODES AND ORDINANCES.

BOILERS & WATER HEATERS SHALL BE LOCATED PER IRC CHAPTER 20. AND SHALL BE INSTALLED IN ACCORDANCE WITH IRC CHAPTERS 25 & 28.
PLUMBING FIXTURES SHALL BE LOCATED & INSTALLED PER CHAPTER 29.
WATER SUPPLY AND DISTRIBUTION SHALL COMPLY WITH IRC CHAPTER 29.
SANITARY DRAINAGE SHALL COMPLY WITH IRC CHAPTER 30.
VENTING SHALL COMPLY WITH IRC CHAPTER 31.
FIXTURE TRAPS SHALL COMPLY WITH IRC CHAPTER 32.
DWELLING FIRE SPRINKLER SYSTEM IF REQUIRED SHALL BE INSTALLED PER CHAPTER 29 SECTION P2904

PROVIDE TRUNK AND BRANCH PLUMBING SYSTEM WITH HOT WATER RECIRCULATION LOOP ON RUNS LONGER THAN 30 FEET HORIZONTAL. RECIRCULATION LOOP TO BE PROVIDED WITH A LOW FLOW, HIGH EFFICIENCY, CONTINUOUS DUTY PUMP OR OPTIONALLY PROVIDE PARALLEL FLOW (MANIFOLD OR HOME RUN) PIPING SYSTEM USING "PEX" OR APPROVED EQUAL PIPING.

ROUTT COUNTY IS LISTED IN ZONE 2, MODERATE POTENTIAL FOR RADON PER FIGURE AF101. BELOW GRADE AND CRAWL SPACE FOUNDATIONS ARE REQUIRED TO COMPLY WITH APPENDIX F "RADON CONTROL METHODS". SEE APPENDIX F.

IN BUILDINGS WITH BASEMENTS OR SLAB-ON-GRADE CONSTRUCTION WHERE A PASSIVE SUBSLAB DEPRESSURIZATION SYSTEM IS SHOWN ON THE FOUNDATION PLAN, PROVIDE VENT PIPE PER AF103.6.1 OR AF 103.6.2. SEE FIGURE AF102 FOR DETAILS. (AF103.6)

RADON VENT PIPES SHALL BE ACCESSIBLE FOR FUTURE FAN INSTALLATION THROUGH AN ATTIC OR OTHER AREA OUTSIDE THE HABITABLE SPACE. (AF103.8)

EXPOSED OR VISIBLE INTERIOR RADON VENT PIPES SHALL BE IDENTIFIED WITH NOT LESS THAN ONE LABEL ON EACH FLOOR AND IN ACCESSIBLE ATTICS. THE LABEL SHALL READ "RADON REDUCTION SYSTEM". (AF103.9)

WHERE RADON VENT PIPE (VTR) IS PROVIDED, A LOW SONE CONTINUOUS DUTY, CUT IN FAN MAY BE REQUIRED. PROVIDE AMPLE ROOM FOR FAN INSTALLATION & POWER SOURCE PER AF103.12. COORDINATE W/ PLUMBER, MECHANICAL & ELECTRICAL CONTRACTORS.

THE USA EPA HAS SET AN ACTION LEVEL OF 4pCi/L. AT OR ABOVE THIS LEVEL OF RADON, THE EPA RECOMMENDS CORRECTIVE MEASURES TO REDUCE RADON GAS. IT IS RECOMMENDED TO TEST THE COMPLETED STRUCTURE AND PROVIDE AN ADEQUATE VENT FAN IF REQUIRED.

THE MAXIMUM WATER CONSUMPTION FLOW RATES AND QUANTITIES FOR ALL PLUMBING FIXTURES AND FIXTURE FITTINGS SHALL BE IN ACCORDANCE WITH TABLE P2903.2. HIGH EFFICIENCY TOILETS, WHEN SPECIFIED, SHALL BE DUAL FLUSH OR <1.3 GPF.

A WATER CLOSET LAVATORY OR BIDET SHALL NOT BE SET CLOSER THAN 15" FROM ITS CENTER TO ANY SIDEWALL PARTITION OR VANITY. THE CLEAR SPACE IN FRONT OF THE WATER CLOSET SHALL BE NOT LESS THAN 21" (R307.1 & P2705.1.5). PROVIDE ELONGATED BOWLS UNLESS OTHERWISE NOTED.

SHOWER COMPARTMENTS SHALL HAVE AT LEAST 900 SQUARE INCHES OF INTERIOR CROSS SECTIONAL AREA AND SHALL NOT BE LESS THAN 30" IN MINIMUM DIMENSION. (P2708) SHOWER FLOORS AND WALLS ABOVE BATHTUBS WITH INSTALLED SHOWER HEADS AND SHOWER COMPARTMENTS SHALL BE FINISHED WITH A NON-ABSORBENT SURFACE EXTENDING TO A HEIGHT OF 6'-0" MINIMUM ABOVE THE FLOOR. (R307.2)

PROVIDE CAST-N-PLACE CAST IRON FLOOR DRAINS WITH INTEGRAL SAND TRAP, PIPED @ 1% MINIMUM SLOPE TO DAYLIGHT IN THE GARAGE. DAYLIGHTED END SHALL BE SCREENED AND PROTECTED WITH ROCK RIPRAP. IF EXPANSIVE SOILS ARE PRESENT, DO NOT CONNECT FLOOR DRAIN OUTFALL TO FOUNDATION PERIMETER DRAIN UNTIL 10 FEET AWAY FROM THE FOUNDATION. (ROUTT COUNTY ONLY)

PROVIDE FLOOR DRAIN PIPED TO HOUSE SEWER IN ALL MECHANICAL ROOMS CONTAINING BOILERS. DRAIN SHALL BE LOCATED AS NOTED ON PLANS. IF USED AS AN INDIRECT DRAIN RECEPTOR FOR BOILER OR WATER HEATER RELOCATE AS CLOSE AS POSSIBLE TO BOILER OR WATER HEATER.

PROVIDE FLOOR DRAIN PIPED TO HOUSE SEWER IN ALL LAUNDRY ROOM UNLESS WASHING MACHINE IS PLACED IN A WATER TIGHT PAN COMPLYING WITH IRC SECTION P2801.6

WHERE WATER HEATERS OR HOT WATER STORAGE TANKS ARE INSTALLED IN LOCATIONS WHERE LEAKAGE WOULD CAUSE DAMAGE, THE TANK OR WATER HEATER SHALL BE INSTALLED IN A GALVANIZED STEEL PAN PER IRC P2801.6. LISTED PANS SHALL COMPLY WITH CSA LC3. THE PAN SHALL BE DRAINED BY AN INDIRECT WASTE PIPE PER IRC P2801.6.1 AND TERMINATED OVER A SUITABLY LOCATED INDIRECT WASTE RECEPTOR OR EXTENDED TO THE BUILDING EXTERIOR AND TERMINATED BETWEEN 6" AND 24" ABOVE THE ADJACENT GROUND SURFACE PER IRC P2801.6.2.

CORROSIVE LIQUIDS, SPENT ACIDS OR OTHER HARMFUL CHEMICALS THAT DESTROY OR INJURE A DRAIN, SEWER, SOIL OR WASTE PIPE, OR CREATE NOXIOUS OR TOXIC FUMES OR INTERFERE WITH SEWAGE TREATMENT PROCESSES SHALL NOT BE DISCHARGED INTO THE PLUMBING SYSTEM WITHOUT BEING THOROUGHLY DILUTED, NEUTRALIZED OR TREATED BY PASSING THROUGH AN APPROVED DILUTION OR NEUTRALIZING DEVICE. SUCH DEVICES SHALL BE AUTOMATICALLY PROVIDED WITH A SUFFICIENT SUPPLY OF DILUTING WATER OR NEUTRALIZING MEDIUM SO AS TO MAKE THE CONTENTS NONNINJURIOUS BEFORE DISCHARGE INTO THE DRAINAGE SYSTEM. THE NATURE OF THE CORROSIVE OR HARMFUL WASTE AND THE METHOD OF ITS TREATMENT OR DILUTION SHALL BE APPROVED PRIOR TO INSTALLATION. (PP3011 RCRBD AMMENDED)

PROVIDE JETTED TUB AT LOCATION SHOWN ON PLANS.

PROVIDE OPTIONAL STEAM SHOWER AT LOCATION SHOWN ON PLANS.

PROVIDE (5) FROST PROOF HOSE BIBBS AT LOCATIONS NOTED ON THE PLANS. HOSE BIBB AT STAIRWAY TO BE PLUMBED THRU THE STAIRWAY LANDING TO CONCEAL PLMBING.

PROVIDE BARBEQUE GRILL GAS SERVICE LINE WITH SHUT OFF VALVE AT LOCATION NOTED ON THE PLANS. EXACT LOCATION TBD BY OWNER.

PROVIDE 3' X 4' PRECAST FIBERGLASS SHOWER BASE FOR DOG WASH. TILE WALLS TO 3' AFF. PROVIDE HAND HELD SHOWER HEAD AND SERVCIE SINK FAUCET W/ PAIL HOOK.

PROVIDE PLUMBING AND ELECTRICAL STUBOIUTS FOR FUTURE GREEN HOUSE ON THE NORTH EAST SIDE AT LOCATION NOTED ON THE PLANS.

PROVIDE "WATER BUG" OR OTHER OWNER APPROVED LEAK DETECTOR & SHUT OFF SYSTEM.

APPLIANCES AND EQUIPMENT USED FOR HEATING WATER OR STORING HOT WATER SHALL BE PROTECTED BY A PRV AND TRV OR COMBINATION P/TRV AND SHALL NOT BE DIRECTLY CONNECTED TO THE DRAINAGE SYSTEM. THE DISCHARGE SHALL BE THROUGH AND AIR GAP TO AN INDIRECT WASTE RECEPTOR OR OTHER APPROVED MEANS

15. MECHANICAL

CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT TO INSTALL VENTILATION, HEATING AND AIR CONDITIONING EQUIPMENT; DUCTING AND ALL RELATED CONTROLS. ALL WORK SHALL COMPLY WITH IRC PART V - MECHANICAL, CHAPTERS 12 THRU 23, STATE AND LOCAL CODES AND ORDINANCES. ALL EQUIPMENT SHALL BE INSTALLED PER THE MANUFACTURER'S PRINTED INSTRUCTIONS AND LOCAL CODES AND THE REQUIREMENTS OF IRC CHAPTERS 13 & 14.

THE MECHANICAL SUBCONTRACTORS SHALL BE RESPONSIBLE FOR THE FINAL DESIGN OF THE SYSTEMS AS WELL AS THE EXECUTION OF THE WORK ACCORDING TO ACCEPTED STANDARDS OF ENGINEERING, WORKMANSHIP AND REGULATORY REQUIREMENTS. MECHANICAL CONTRACTORS TO PROVIDE ADDITIONAL DRAWINGS, SPECIFICATIONS AND ENGINEER'S CERTIFICATION AS REQUIRED BY FEDERAL, STATE, OR LOCAL LAWS AND BUILDING DEPARTMENT JURISDICTION.

HEATING AND COOLING EQUIPMENT SHALL BE SIZED IN ACCORDANCE WITH SECTION M1401.3, OF THE IRC; ACCA MANUAL J OR OTHER APPROVED METHODOLOGY. MECHANICAL CONTRACTOR SHALL PROVIDE CALCULATIONS BY DEFERRED SUBMITTAL FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION OF MECHANICAL OR HVAC EQUIPMENT. SEE ATTACHED HEAT LOSS CALCULATIONS.

EXHAUST SYSTEMS SHALL BE INSTALLED PER IRC CHAPTER 15.

DUCT SYSTEMS SERVING HEAT, COOLING AND VENTILATION EQUIPMENT SHALL BE FABRICATED & INSTALLED IN ACCORDANCE WITH THE PROVISIONS OF IRC CHAPTER 16 & ACCA MANUAL D & MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS.

SOLID FUEL BURNING APPLIANCES SHALL BE PROVIDED WITH COMBUSTION AIR IN ACCORDANCE WITH THE APPLIANCE MANUFACTURER'S INSTALLATION INSTRUCTIONS. THE REQUIREMENTS FOR COMBUSTION, VENTILATION & DILUTION AIR FOR GAS FIRED APPLIANCES SHALL BE IN ACCORDANCE WITH SECTION G2407.

FUEL BURNING APPLIANCES SHALL BE VENTED TO THE OUTDOORS IN ACCORDANCE WITH THEIR LISTING AND LABEL AND MANUFACTURER'S INSTALLATION INSTRUCTIONS AND PER IRC CHAPTER 18.

15. MECHANICAL - CONTINUED

FREE STANDING OR BUILT-IN RANGES SHALL HAVE A VERTICAL CLEARANCE ABOVE THE COOKING TOP OF NOT LESS THAN 30 INCHES. (IRC M1901.1)

BOILERS SHALL BE INSTALLED IN ACCORDANCE WITH CHAPTER 20.
WATER HEATERS SHALL BE INSTALLED IN ACCORDANCE WITH CHAPTER 20.
HYDRONIC PIPING SYSTEMS SHALL BE INSTALLED PER IRC CHAPTER 21.
SOLAR THERMAL ENERGY SYSTEMS SHALL BE DESIGNED, CONSTRUCTED AND INSTALLED PER CHAPTER 23.
GAS FIRED APPLIANCES SHALL BE VENTED IN ACCORDANCE WITH CHAPTER 24.

(MANDATORY). DUCTS SHALL BE PRESSURE TESTED TO DETERMINE AIR LEAKAGE BY ONE OF THE FOLLOWING METHODS: (N1103.3.3 (R403.3.3)) (DELETE AN REFER TO DIVISION 13?)

1. ROUGH-IN TEST: TOTAL LEAKAGE SHALL BE MEASURED WITH A PRESSURE DIFFERENTIAL OF 0.1 INCH W.G. (25 PA) ACROSS THE SYSTEM, INCLUDING THE MANUFACTURER'S AIR HANDLER ENCLOSURE IF INSTALLED AT THE TIME OF THE TEST. ALL REGISTERS SHALL BE TAPED OR OTHERWISE SEALED DURING THE TEST.
2. POSTCONSTRUCTION TEST: TOTAL LEAKAGE SHALL BE MEASURED WITH A PRESSURE DIFFERENTIAL OF 0.1 INCH W.G. (25 PA) ACROSS THE ENTIRE SYSTEM, INCLUDING THE MANUFACTURER'S AIR HANDLER ENCLOSURE. REGISTERS SHALL BE TAPED OR OTHERWISE SEALED DURING THE TEST.

EXCEPTION: A DUCT AIR LEAKAGE TEST SHALL NOT BE REQUIRED WHERE THE DUCTS AND AIR HANDLERS ARE LOCATED ENTIRELY WITHIN THE BUILDING THERMAL ENVELOPE.

A WRITTEN REPORT OF THE RESULTS OF THE TEST SHALL BE SIGNED BY THE PARTY CONDUCTING THE TEST AND PROVIDED TO THE CODE OFFICIAL.

(PRESCRIPTIVE). THE TOTAL LEAKAGE OF THE DUCTS, WHERE MEASURED IN ACCORDANCE WITH SECTION R403.3.3, SHALL BE AS FOLLOWS: N1103.3.4 (R403.3.4)

1. ROUGH-IN TEST: THE TOTAL LEAKAGE SHALL BE LESS THAN OR EQUAL TO 4 CUBIC FEET PER MINUTE (113.3 L/MIN) PER 100 SQUARE FEET (9.29 M2) OF CONDITIONED FLOOR AREA WHERE THE AIR HANDLER IS INSTALLED AT THE TIME OF THE TEST. WHERE THE AIR HANDLER IS NOT INSTALLED AT THE TIME OF THE TEST, THE TOTAL LEAKAGE SHALL BE LESS THAN OR EQUAL TO 3 CUBIC FEET PER MINUTE (85 L/MIN) PER 100 SQUARE FEET (9.29 M2) OF CONDITIONED FLOOR AREA.
2. POSTCONSTRUCTION TEST: TOTAL LEAKAGE SHALL BE LESS THAN OR EQUAL TO 4 CUBIC FEET PER MINUTE (113.3 L/MIN) PER 100 SQUARE FEET (9.29 M2) OF CONDITIONED FLOOR AREA.

THE THERMOSTAT CONTROLLING THE PRIMARY HEATING OR COOLING SYSTEM OF THE DWELLING UNIT SHALL BE CAPABLE OF CONTROLLING THE HEATING AND COOLING SYSTEM ON A DAILY SCHEDULE TO MAINTAIN DIFFERENT TEMPERATURE SET POINTS AT DIFFERENT TIMES OF THE DAY. THIS THERMOSTAT SHALL INCLUDE THE CAPABILITY TO SET BACK OR TEMPORARILY OPERATE THE SYSTEM TO MAINTAIN ZONE TEMPERATURES OF NOT LESS THAN 55°F (13°C) BUT NOT GREATER THAN 85°F (29°C). THE THERMOSTAT SHALL INITIALLY BE PROGRAMMED BY THE MANUFACTURER WITH A HEATING TEMPERATURE SET POINT OF NOT GREATER THAN70°F (21°C) AND A COOLING TEMPERATURE SET POINT OF NOT LESS THAN 78°F (26°C). (N1103.1.1 (R403.1.1))

HOT WATER BOILERS THAT SUPPLY HEAT TO THE BUILDING THROUGH ONE- OR TWO-PIPE HEATING SYSTEMS SHALL HAVE AN OUTDOOR SETBACK CONTROL THAT LOWERS THE BOILER WATER TEMPERATURE BASED ON THE OUTDOOR TEMPERATURE. (N1103.2 (R403.2))

THIS HOUSE AS PROPOSED WILL UTILIZE A RADIANT FLOOR HYDRONIC SYSTEM WITH A BOILER AND SIDE ARM WATER STORAGE TANK.

HYDRONIC TUBING WILL BE ATTACHED TO REINFORCEMENT AT ALL SLAB ON GRADE LOCATIONS OR ATTACHED TO UPPER SIDE OF FLOOR SHEATHING WHEN EMBEDDED IN 1-1/2" GYPCRETE TOPPING SLAB. (USE 2X2 SLEEPERS FOR ATTACHMENT OF HARD WOOD FLOORING). TUBING SHALL BE CROSS LINKED POLYETHYLENE WITH OXYGEN INHIBITOR SUCH AS PEX OR WIRSBRO.

RADIANT FLOOR HEATING SYSTEMS SHALL HAVE A THERMAL BARRIER IN ACCORDANCE WITH SECTIONS M2103.2.1 AND M2103.2.2..

R-5 INSULATION SHALL BE PROVIDED UNDER THE FULL SLAB AREA OF A HEATED SLAB IN ADDITION TO THE REQUIRED SLAB EDGE INSULATION VALUE INDICATED IN TABLE N1102.1.2 (R402.1.2) THE SLAB EDGE INSULATION FOR HEATED SLABS SHALL NOT BE REQUIRED TO EXTEND BELOW THE SLAB. PROVIDE ASPHALT EXPANSION JOINT MATERIAL OR SIMILAR INSULATING MATERIAL WHERE THE HEATED SLAB MEETS A FOUNDATION WALL OR OTHER CONDUCTIVE SLAB. (M2103.2.1) IT IS RECOMMENDED TO PROVIDE R-10 UNDER THE ENTIRE SLAB TO MINIMIZE GRADE CHANGES.

SUSPENDED FLOOR APPLICATIONS SHALL HAVE A MINIMUM OF R-11 INSULATION BELOW THE PIPING (M2103.2)

BOILER WILL BE LPG FUELED AND GRAVITY VENTED THROUGH THE ROOF OR DIRECT VENTED THROUGH THE WALL IN THE LOCATION SHOWN ON THE PLANS. BOILER SHALL BE 90% AFUE MINIMUM. BOILER, SIZING AND TUBING LAYOUT DIAGRAMS ARE TO BE PROVIDED BY THE SUPPLIER AND WILL BE REVIEWED BY JAKE'S DRAFTING SERVICE, INC. AT THE OWNER'S OPTION.

PROVIDE AGA APPROVED, DIRECT VENTED, LPG FUELED MODULATING BOILER AT LOCATION NOTED ON PLANS. MECHANICAL CONTRACTOR TO PROVIDE EQUIPMENT SPECIFICATIONS, MAKE-UP AND COMBUSTION AIR REQUIREMENTS. SYSTEM DESIGNED BY OTHERS.

PROVIDE AGA APPROVED, GRAVITY VENTED, ZERO CLEARANCE FIREPLACE AT LOCATION NOTED ON PLANS. PROVIDE 2-SIDED LPG FUELLED LINEAR FIREPLACE APPROVED BY OWNER. APPLIANCE TO BE RATED AS A FURNACE FOR THERMOSTATIC CONTROL.

PROVIDE COLORADO PHASE III CERTIFIED WOOD STOVE GRAVITY VENTED THROUGH THE ROOF AT THE LOCATION NOTED ON THE PLANS. APPLIANCE TO BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS AND LOCAL CODES. AS PROPOSED FLUE WILL PENETRATE EXTERIOR WALL AND RISE VERTICALLY THRU THE CHASE IN PANTRY.

EVERY CHIMNEY OR FLUE SHALL BE EQUIPPED WITH AN APPROVED SPARK ARRESTOR.

CHIMNEYS SHALL EXTEND AT LEAST 2' ABOVE THE ROOF AND NOT LESS THAN 2' ABOVE ANY PORTION OF THE BUILDING WITHIN 10 FEET.

FUEL FIRED WATER HEATERS SHALL NOT BE INSTALLED IN A ROOM USED AS A STORAGE CLOSET. WATER HEATERS INSTALLED IN A BEDROOM OR BATHROOM SHALL BE INSTALLED IN A SEALED ENCLOSURE SO THAT COMBUSTION AIR WILL NOT BE TAKEN FROM THE LIVING SPACE. INSTALLATION OF DIRECT VENT WATER HEATERS WITHIN AN ENCLOSURE IS NOT REQUIRED. (M2005.2)

WHEN THE WINTER DESIGN TEMPERATURE IS BELOW 60 F EVERY DWELLING UNIT SHALL BE PROVIDED WITH HEATING FACILITIES CAPABLE OF MAINTAINING A ROOM TEMPERATURE OF 68 DEGREES F AT A POINT 3' ABOVE THE FLOOR AND 2' FROM EXTERIOR WALLS IN ALL HABITABLE ROOMS AT THE DESIGN TEMPERATURE. (R303.10)

PROVIDE ENERGY-STAR QUALIFIED KITCHEN RANGE HOOD FAN WITH <4 SONE RATING VENTED DIRECTLY TO THE EXTERIOR.

APPLIANCES DESIGNED TO BE FIXED IN POSITION SHALL BE FASTEBNED OR ANCHORED IN AN APPROVED MANNER.. (M1307.2)

APPLIANCES SHALL NOT BE INSTALLED IN A LOCATION SUBJECT TO VEHICLE DAMAGE EXCEPT WHEN PROTECTED BY APPROVED BARRIERS. (M1307.3.1)

OPTIONALLY, PROVIDE 40 GALLON, QUICK RECOVERY LPG GAS FUELED, WATER HEATER AT LOCATION SHOWN ON PLANS DIRECT VENTED THROUGH THE WALL OR GRAVITY VENTED THRU THE ROOF. WATER HEATER SHALL BE 60% EFFICIENT (<55 GALLON) MINIMUM. WATER HEATER TO BE R-15 OR BETTER OR WRAP WATER HEATER WITH R-8 MINIMUM INSULATION BLANKET.

LIQUEFIED PETROLEUM GAS BURNING APPLIANCES SHALL NOT BE INSTALLED IN A PIT, BASEMENT OR SIMILAR LOCATION WHERE HEAVIER THAN AIR GAS MIGHT COLLECT, UNLESS THE FOLLOWING CONDITIONS ARE MET:

1. A LISTED GAS DETECTOR WITH ALARM SHALL BE INSTALLED. A LISTED SOLENOID VALVE GAS VALVE SHALL BE INSTALLED ON THE GAS LINE THAT SUPPLIES ALL PROPANE APPLIANCES LOCATED IUN THE BASEMENT OR PIT. UPON DETECTION OF GAS AN ALARM SHALL SOUND AND THE SOLENOID VALVE SHALL CLOSE..

2. THERE SHALL BE INSTALLED AN APPROVED EXHAUST SYSTEM FOR THE PURPOSE OF REMOVING UNBURNED GASES. THE EXHAUST SYSTEM SHALL BE INTERLOCKED TO THE GAS DETECTOR SO AS TO OPERATE AUTOMATICALLY IN THE EVENT OF AN ALARM. THE EXHAUST SYSTEM SHALL PROVIDE A MINIMUM OF (4) AIR CHANGES PER HOUR, AND THE EXHAUST INTAKE SHALL BE LOCATED WITHIN 6 INCHES OF THE FLOOR. (R303.7 RCRBD AMENDMENT)

EXCEPTIONS:
BASEMENTS SHALL NOT REQUIRE THE INSTALLATION OF AN EXHAUST/ALARM SYSTEM ON LIQUID PROPANE GAS APPLIANCES IF THE FOLLOWING EXCEPTIONS ARE MET.
1. THE BASEMENT MUST BE A WALK-OUT BASEMENT HAVING A MINIMUM OF ONE EXTERIOR DOOR WITH A MAXIMUM THRESHOLD HEIGHT OF 3/4" BETWEEN THE TOP OF THE FINISHED FLOOR OF THE BASEMENT AND THE TOP OF THE GRADE ON THE EXTERIOR SIDE OF THE BUILDING.
2. THE GRADE SHALL REMAIN LEVEL OR MAY SLOPE DOWNWARD FROM THE BUILDING FOR A DISTANCE OF NOT LESS THAN 10 FEET OUT FROM THE EXTERIOR DOOR/WALL AND BE A MINIMUM WIDTH OF 10 FEET WIDE THE ENTIRE DISTANCE OUT FROM THE BUILDING.

CLIMATE ZONES 3-8 ARE REQUIRED TO HAVE A WHOLE HOUSE VENTILATION SYSTEM PER M1505.4. THE SYSTEM SHALL CONSIST OF ONE OR MORE SUPPLY OR EXHAUST FANS OR A COMBINATION OF SUCH & ASSOCIATED DUCTS & CONTROLS. LOCAL EXHAUST OR SUPPLY FANS ARE PERMITTED TO SERVE SUCH A SYSTEM. OUT DOOR AIR DUCTS CONNECTED TO THE RETURN SIDE OF AN AIR HANDLER SHALL BE CONSIDERED AS PROVIDING SUPPLY VENTILATION. THE SYSTEM SHALL BE PROVIDED WITH CONTROLS THAT ENABLE MANUAL OVERRIDE. THE SYSTEM SHALL PROVIDE OUTDOOR AIR AT A CONTINUOUS RATE PER TABLE M1505.4.3(1) OR EQUATION 15-1. THE SYSTEM IS PERMITTED TO OPERATE INTERMITTENTLY WHERE THE SYSTEM HAS CONTROLLS THAT ENABLE OPERATION FOR NOT LESS THAN 25% OF EACH 4-HOUR SEGMENT AND TH E VENTILATION RATE PRESCRIBED IN TABLE M1505.4.3910 IS MULTIPLED BY THE FACTOR DETERMINED IN ACCORDANCE WITH TABLE M1505.4.3(2).

NOTE: IT IS RECOMMENDED TO NOT PROVIDE SUPPLY ONLY SYSTEM AS THEY PRESSURIZE THE HOUSE, POTENTIALLY DRIVING MOISTURE INTO WALLS. EXHAUST ONLY SYSTEMS DEPRESSURIZE THE HOUSE DRAWING POLLUTANTS ALONG W/ FRESH AIR INTO THE HOUSE. POLLUTANTS MY BE RADON & MOLD FROM CRAWLSPACES OR BASEMENTS, DUST FROM ATTIC FUMES FROM AN ATTACHED GARAGE OR FLUE GASSES FROM FIREPLACE OR GRAVITY VENTED WATER HEATER OR FURNACES.

IT IS RECOMMENDED TO PROVIDE HEAT RECOVERY VENTILATOR OR ENERGY RECOVERY VENTILATOR AT LOCATION SHOWN ON PLANS AS THEY PROVIDE A BALANCED SYSTEM. DUCT ALL BATH AND LAUNDRY ROOM FANS THROUGH THE HRV. DO NOT CONNECT RANGE HOOD OR DOWNDRAFT RANGE THROUGH HRV. HRV TO BE INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND LOCAL CODES (M1507.3)

PROVIDE 40 GALLON, QUICK RECOVERY NATURAL GAS / LPG FUELED, WATER HEATER AT LOCATION SHOWN ON PLANS GRAVITY VENTED THROUGH THE ROOF OR DIRECT VENTED THROUGH THE WALL. WATER HEATER SHALL BE 67% EFFICIENT MINIMUM. PROVIDE R-15 INSULATED TANK OR WRAP WATER HEATER WITH R8 MINIMUM INSULATION BLANKET.

DECORATIVE SHROUDS SHALL NOT BE INSTALLED AT THE TERMINATION OF VENTS EXCEPT WHERE SUCH SHROUDS ARE LISTED AND LABELED FOR USE WITH THE SPECIFIC VENTING SYSTEM AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. (M1804.2.2) OR AS APPROVED BY THE RCRBD.

PROVIDE "DRYER BOX 480' OR EQUAL RECESSED DRYER TRANSITION BOX HOSE CONNECTOR ALIGNED WITH DRYER VENT LOCATION.

THE MAXIMUM LENGTH OF DRYER EXHAUST DUCT SHALL BE 35' LESS 5' FOR EACH 90° ELBOW & 2'-6" FOR EACH 45° ELBOW.

16. ELECTRICAL

CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT TO INSTALL ALL WIRING AND RELATED FIXTURES. ALL WORK SHALL COMPLY WITH THE 2020 NEC AS ADOPTED AND AMMENDED BY THE STATE OF COLORADO. IRC PART VIII - ELECTRICAL, CHAPTERS 33 THRU 41 OF THE 2018 IRC ARE NOT USED.

THE ELECTRICAL SUBCONTRACTORS SHALL BE RESPONSIBLE FOR THE FINAL DESIGN OF THE SYSTEMS AS WELL AS THE EXECUTION OF THE WORK ACCORDING TO ACCEPTED STANDARDS OF ENGINEERING, WORKMANSHIP AND REGULATORY REQUIREMENTS. ELECTRICAL CONTRACTORS TO PROVIDE ADDITIONAL DRAWINGS, SPECIFICATIONS AND ENGINEERS CERTIFICATION AS REQUIRED BY STATE OR LOCAL LAWS AND BUILDING DEPARTMENT JURISDICTION.

PROVIDE 200 AMP PEDESTAL PER DS-4.1.2.MP AT LOCATION NOTED ON THE SITE PLAN OR PER YVEA "REDLINED" LOCATION. PROVIDE 3" SCHEDULE 80 PVC ABOVE GRADE AND SCH 40 PVC BELOW GRADE. CONDUIT TO BE BEDDED WITH 2" MINIMUM CLEAN DIRT OR SAND AND COVERED WITH 4" OF THE SAME MATERIAL. MINIMUM BURY IS 3' PROVIDE ELECTRICAL WARNING TAPE 12" ABOVE THE CONDUIT.

PROVIDE CONCRETE ENCASED ELECTRODE (UFER GROUND) PER250.50

PROVIDE 42 CIRCUIT SERVICE PANEL (OVERCURRENT DEVICE) WITH DISCONNECT, AT THE LOCATION NOTED ON PLANS. SERVICE PANELS SHALL NOT BE LOCATED IN THE VICINITY OF EASILY IGNITABLE MATERIALS, SUCH AS CLOTHES CLOSETS OR IN BATHROOMS. SERVICE CONDUCTORS AND EQUIPMENT TO BE SIZED PER NEC 240.

ALL SERVICES SUPPLYING DWELLING UNITS SHALL BE PROVIDED WITH SURGE-PROTECTIVE DEVICE (SPD), 230.67.

ALL 125 VOLT THROUGH 250 VOLT, SINGLE PHASE RECEPTACLES INSTALLED IN BATHROOMS, GARAGES, OUTDOORS, CRAWL SPACES (INCLUDING LIGHTING), UNFINISHED BASEMENTS, KITCHEN COUNTERTOP SURFACES, DISHWASHER, SUMP PUMPS AND WITHIN 6' OF LAUNDRY, UTILITY OR BAR SINKS, (EXCEPT DEDICATED USES) SHALL BE GROUND-FAULT CIRCUIT-INTERRUPTER PROTECTED FOR PERSONNEL. (210.8) RECEPTACLES IN GARAGES TO BE MOUNTED 42" MINIMUM ABOVE FINISHED FLOOR.

A MINIMUM OF (2) 20 AMP BRANCH CIRCUITS SHALL BE PROVIDED TO SERVE RECEPTACLES LOCATED IN THE KITCHEN, PANTRY, BREAKFAST AREA AND DINING AREAS. THE KITCHEN COUNTER TOP RECEPTACLES SHALL BE SERVED BY NOT LESS THAN (2) 20 AMP SMALL APPLIANCE BRANCH CIRCUITS.

A MINIMUM OF (1) 20 AMP BRANCH CIRCUIT SHALL BE PROVIDED TO SERVE RECEPTACLES LOCATED IN THE LAUNDRY AREA AND SHALL SERVE ONLY RECEPTACLE OUTLETS LOCATED IN THE LAUNDRY AREA. (E3703.3)

A MINIMUM OF (1) 20 AMP BRANCH CIRCUIT SHALL BE PROVIDED TO SERVE RECEPTACLES LOCATED IN THE BATHROOM AND SHALL SERVE ONLY RECEPTACLE OUTLETS LOCATED IN THE BATHROOM.

A MINIMUM OF (1) 20 AMP BRANCH CIRCUIT SHALL BE PROVIDED TO SERVE RECEPTACLES LOCATED IN THE GARAGE AND SHALL SERVE ONLY RECEPTACLE OUTLETS LOCATED IN THE GARAGE.

RECEPTACLES ABOVE COUNTERS IN KITCHEN AND OTHER SIMILAR AREAS SHALL BE SPACED NOT MORE THAN 4 FEET OC AND WITHIN 2 FEET OF EACH END, INCLUDING ISLANDS AND PENINSULAR. PROVIDE A MINIMUM OF (1) RECEPTACLE PER COUNTER SPACE OF 12 INCHES OR GREATER.

PROVIDE AT LEAST (1) RECEPTACLE OUTLET IN WEATHER PROOF HOUSING, ACCESSIBLE AT GRADE LEVEL AND NOT MORE THAN 6'-6" ABOVE GRADE AT THE FRONT AND AT THE BACK OF EACH DWELLING. (E3901.7)

ALL BRANCH CIRCUITS INSTALLED IN KITCHEN, FAMILY, DINING, LIVING ROOMS, PARLORS, LIBRARIES, DENS, BEDROOMS, SUNROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS, LAUNDRY AND SIMILAR ROOMS OR AREAS SHALL BE PROTECTED BY A COMBINATION TYPE ARC-FAULT CIRCUIT INTERRUPTER. (E3902.16) BATHS AND GARAGES ARE EXEMPT FROM THIS REQUIREMENT.

LUMINAIRE INSTALLED IN CLOTHES CLOSETS SHALL BE LIMITED TO SURFACE MOUNTED OR RECESSED INCANDESCENT OR LED LUMINAIRES WITH COMPLETELY ENCLOSED LIGHT SOURCES, SURFACE MOUNTED OR RECESSED FLUORESCENT LUMINAIRES AND SURFACE MOUNTED FLUORESCENT OR LED LUMINAIRES IDENTIFIED A SUITABLE FOR INSTALLATION WITHIN THE STORAGE AREA. SURFACE MOUNTED INCANDESCENT OR LED LUMINAIRES SHALL BE MOUNTED ON THE WALL ABOVE THE DOOR OR ON THE CEILING PROVIDED THERE IS A MINIMUM CLEARANCE OF 12 INCHES BETWEEN THE FIXTURE AN THE NEAREST POINT OF A STORAGE SPACE. RECESSED INCANDESCENT, LED OR FLUORESCENT LUMINAIRES SHALL BE INSTALLED IN THE WALL OR ON THE CEILING PROVIDED THERE IS A MINIMUM OF 6 INCHES BETWEEN THE FIXTURE AND THE NEAREST POINT OF A STORAGE AREA. INCANDESCENT FIXTURES WITH OPEN OR PARTIALLY ENCLOSED LAMPS, PENDANT FIXTURES AND LAMP HOLDERS ARE NOT PERMITTED.

PROVIDE (1) 20 AMP CIRCUIT FOR FUTURE USE IN THE ATTIC. TERMINATE THE CIRCUIT WITH A KEYLESS PORCELAIN FIXTURE.

PROVIDE DEDICATED 15 AMP CIRCUIT FOR REFRIGERATORS AND FREEZERS.

SEE DESIGN DRAWINGS BY OTHERS FOR ELECTRIC BASEBOARD SIZES AND LOCATIONS.

SPAS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND IRC CHAPTER 42. A DISCONNECT SHALL BE LOCATED WITHIN SIGHT OF THE EQUIPMENT, BETWEEN 5' MIN & 20' MAX FROM THE WATERS EDGE. PROVIDE 60 AMP 220 VAC SERVICE W/ DISCONNECT, LOCATION TO BE DETERMINED BY THE OWNER.

PROVIDE SWITCHED LIGHTING CIRCUIT ABOVE THE KITCHEN CABINETS.

PROVIDE 50 AMP GFIC PROTECTED CIRCUIT FOR THE MOTORHOME AT THE LOCATION NOTED ON THE PLANS.

INTERIOR STAIRWAYS SHALL BE PROVIDED WITH AN ARTIFICIAL LIGHT SOURCE TO ILLUMINATE THE LANDINGS & TREAD TO 1 FOOT CANDLE POWER. THERE SHALL BE A WALL SWITCH AT EACH FLOOR LEVEL WHEN THE STAIRWAY HAS 6 OR MORE RISERS. (R303.7)

EXTERIOR STAIRWAYS SHALL BE PROVIDED WITH AN ARTIFICIAL LIGHT SOURCE LOCATED AT THE TOP LANDING OF THE STAIRWAY (R303.8)

SMOKE ALARMS SHALL COMPLY WITH NFPA 72 AND SECTION R314 AND THE NEC.

SMOKE ALARMS SHALL BE LISTED IN ACCORDANCE WITH UL 217. COMBINATION SMOKE AND CARBON MONOXIDE ALARMS SHALL BE LISTED IN ACCORDANCE WITH UL 217 AND UL 2034. (R314.1.1)

SMOKE ALARMS SHALL BE INSTALLED IN THE FOLLOWING LOCATIONS: (R314.3)

1. IN EACH SLEEPING ROOM.
2. OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS.
3. ON EACH ADDITIONAL STORY OF THE DWELLING, INCLUDING BASEMENTS AND HABITABLE ATTICS AND NOT INCLUDING CRAWL SPACES AND UNINHABITABLE ATTICS. IN DWELLINGS OR DWELLING UNITS WITH SPLIT LEVELS AND WITHOUT AN INTERVENING DOOR BETWEEN THE ADJACENT LEVELS, A SMOKE ALARM INSTALLED ON THE UPPER LEVEL SHALL SUFFICE FOR THE ADJACENT LOWER LEVEL PROVIDED THAT THE LOWER LEVEL IS LESS THAN ONE FULL STORY BELOW THE UPPER LEVEL.
4. SMOKE ALARMS SHALL BE INSTALLED NOT LESS THAN 3 FEET (914 MM) HORIZONTALLY FROM THE DOOR OR OPENING OF A BATHROOM THAT CONTAINS A BATHTUB OR SHOWER UNLESS THIS WOULD PREVENT PLACEMENT OF A SMOKE ALARM REQUIRED BY SECTION R314.3.

SMOKE ALARMS SHALL NOT BE INSTALLED IN THE FOLLOWING LOCATIONS UNLESS THIS WOULD PREVENT PLACEMENT OF A SMOKE ALARM IN A LOCATION REQUIRED BY SECTION R314.3. (R314.3.1)

1. IONIZATION SMOKE ALARMS SHALL NOT BE INSTALLED LESS THAN 20 FEET (6096 MM) HORIZONTALLY FROM A PERMANENTLY INSTALLED COOKING APPLIANCE.
2. IONIZATION SMOKE ALARMS WITH AN ALARM-SILENCING SWITCH SHALL NOT BE INSTALLED LESS THAN 10 FEET (3048 MM) HORIZONTALLY FROM A PERMANENTLY INSTALLED COOKING APPLIANCE.
3. PHOTOELECTRIC SMOKE ALARMS SHALL NOT BE INSTALLED LESS THAN 6 FEET (1828 MM) HORIZONTALLY FROM A PERMANENTLY INSTALLED COOKING APPLIANCE.

WHERE MORE THAN ONE SMOKE ALARM IS REQUIRED TO BE INSTALLED WITHIN AN INDIVIDUAL DWELLING UNIT IN ACCORDANCE WITH SECTION R314.3, THE ALARM DEVICES SHALL BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTUATION OF ONE ALARM WILL ACTIVATE ALL OF THE ALARMS IN THE INDIVIDUAL DWELLING UNIT. PHYSICAL INTERCONNECTION OF SMOKE ALARMS SHALL NOT BE REQUIRED WHERE LISTED WIRELESS ALARMS ARE INSTALLED AND ALL ALARMS SOUND UPON ACTIVATION OF ONE ALARM. (R314.4)

COMBINATION SMOKE AND CARBON MONOXIDE ALARMS SHALL BE PERMITTED TO BE USED IN LIEU OF SMOKE ALARMS. (R314.5)

SMOKE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING WHERE SUCH WIRING IS SERVED FROM A COMMERCIAL SOURCE AND, WHERE PRIMARY POWER IS INTERRUPTED, SHALL RECEIVE POWER FROM A BATTERY. WIRING SHALL BE PERMANENT AND WITHOUT A DISCONNECTING SWITCH OTHER THAN THOSE REQUIRED FOR OVERCURRENT PROTECTION. (R314.6)

FIRE ALARM SYSTEMS SHALL BE PERMITTED TO BE USED IN LIEU OF SMOKE ALARMS AND SHALL COMPLY WITH SECTIONS R314.7.1 THROUGH R314.7.4.

CARBON MONOXIDE ALARMS SHALL COMPLY WITH SECTION R315.

CARBON MONOXIDE ALARMS IN DWELLING UNITS SHALL BE INSTALLED OUTSIDE OF EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS. WHERE A FUEL-BURNING APPLIANCE IS LOCATED WITHIN A BEDROOM OR ITS ATTACHED BATHROOM, A CARBON MONOXIDE ALARM SHALL BE INSTALLED WITHIN THE BEDROOM. (R315.3)

COMBINATION CARBON MONOXIDE AND SMOKE ALARMS SHALL BE PERMITTED TO BE USED IN LIEU OF CARBON MONOXIDE ALARMS. (R315.4)

WHERE MORE THAN ONE CARBON MONOXIDE ALARM IS REQUIRED TO BE INSTALLED WITHIN AN INDIVIDUAL DWELLING UNIT IN ACCORDANCE WITH SECTION R315.3, THE ALARM DEVICES SHALL BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTUATION OF ONE ALARM WILL ACTIVATE ALL OF THE ALARMS IN THE INDIVIDUAL DWELLING UNIT. PHYSICAL INTERCONNECTION OF SMOKE ALARMS SHALL NOT BE REQUIRED WHERE LISTED WIRELESS ALARMS ARE INSTALLED AND ALL ALARMS SOUND UPON ACTIVATION OF ONE ALARM. (R314.4)

CARBON MONOXIDE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING WHERE SUCH WIRING IS SERVED FROM A COMMERCIAL SOURCE AND, WHERE PRIMARY POWER IS INTERRUPTED, SHALL RECEIVE POWER FROM A BATTERY. WIRING SHALL BE PERMANENT AND WITHOUT A DISCONNECTING SWITCH OTHER THAN THOSE REQUIRED FOR OVERCURRENT PROTECTION. (R315.5)

CARBON MONOXIDE DETECTION SYSTEMS SHALL BE PERMITTED TO BE USED IN LIEU OF CARBON MONOXIDE ALARMS AND SHALL COMPLY WITH SECTIONS R315.6.1 THROUGH R315.6.4. (R315.6)

HOUSEHOLD CARBON MONOXIDE DETECTION SYSTEMS SHALL COMPLY WITH NFPA 720. CARBON MONOXIDE DETECTORS SHALL BE LISTED IN ACCORDANCE WITH UL 2075. (R315.6.1)

CARBON MONOXIDE DETECTORS SHALL BE INSTALLED IN THE LOCATIONS SPECIFIED IN SECTION R315.3. THESE LOCATIONS SUPERSEDE THE LOCATIONS SPECIFIED IN NFPA 720. (R315.6.2)

WHERE A HOUSEHOLD CARBON MONOXIDE DETECTION SYSTEM IS INSTALLED, IT SHALL BECOME A PERMANENT FIXTURE OF THE OCCUPANCY AND OWNED BY THE HOMEOWNER. (R315.6.3)

COMBINATION CARBON MONOXIDE AND SMOKE DETECTORS SHALL BE PERMITTED TO BE INSTALLED IN CARBON MONOXIDE DETECTION SYSTEMS IN LIEU OF CARBON MONOXIDE DETECTORS, PROVIDED THAT THEY ARE LISTED IN ACCORDANCE WITH UL 2075 AND UL 268. (R315.6.4)

EXTERIOR LIGHTING SHALL BE DOWN CAST AND SHIELDED FIXTURES LIMITED TO 5,500 LUMENS TOTAL. EXTERIOR FLOOD LIGHTS SHALL BE CONTROLLED BY PHOTO SENSOR AND MOTION DETECTOR.

PROVIDE 1"Ø MINIMUM ELECTRICAL CONDUIT FOR FUTURE PHOTOVOLTAIC PANEL INSTALLATION FROM THE ATTIC TO JUNCTION BOX NEAR THE ELECTRICAL PANEL.

OPTIONALLY PROVIDE CONNECTION FOR ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE) PER NEC 625.
LEVEL 1, 120 VOLT, 20 AMP CIRCUIT MINIMUM
LEVEL 2, 240 VOLT, 40 AMP CIRCUIT MINIMUM, 60 AMP RECOMMENDED

SPECIAL NOTICE

ANY DISCREPANCY IN DIMENSIONS AND/OR DRAWINGS AND/OR GRAPHIC REPRESENTATION AND/OR FIELD MEASUREMENTS SHALL BE BROUGHT TO THE ATTENTION OF JAKE'S DRAFTING SERVICE, INC. PRIOR TO THE COMMENCEMENT OF ANY WORK.

ANY DEVIATION FROM THESE PLANS IS EXPRESSLY FORBIDDEN WITHOUT PRIOR WRITTEN NOTIFICATION AND APPROVAL BY JAKE'S DRAFTING SERVICE, INC., AS THE DESIGNER; THE OWNER; THE ENGINEER AND THE GENERAL CONTRACTOR. THESE SPECIFICATIONS ARE GENERAL IN NATURE. SOME DIVISIONS OR SECTIONS MAY NOT BE APPLICABLE.

BUILDERS PLANS

THE CONTRACTOR WARRANTS TO JAKE'S DRAFTING SERVICE, INC. THAT HE POSSESSES THE PARTICULAR COMPETENCE AND SKILL IN CONSTRUCTION NECESSARY TO BUILD THIS PROJECT WITHOUT FULL ENGINEERING AND ARCHITECTURAL SERVICES, AND FOR THE REASON THAT THE CONTRACTOR WISHES TO RELY UPON HIS OWN COMPETENCE. THE CONTRACTOR OR OWNER HAS RESTRICTED JAKE'S DRAFTING SERVICE, INC.'S SCOPE OF PROFESSIONAL SERVICES. IN RELIANCE ON THE CONTRACTOR'S WARRANTY AND AT THE EXPRESS REQUEST OF THE CONTRACTOR OR OWNER, JAKE'S DRAFTING SERVICE, INC. HAS UNDERTAKEN A LIMITED SCOPE OF PROFESSIONAL SERVICES. THE CONSTRUCTION DOCUMENTS PROVIDED BY THE LIMITED SERVICES SHALL BE TERMED "BUILDER'S PLANS" IN RECOGNITION OF THE CONTRACTOR'S SOPHISTICATION. CONSTRUCTION WILL REQUIRE THAT THE CONTRACTOR ADAPT THE "BUILDER'S PLANS" TO THE FIELD CONDITIONS ENCOUNTERED, AND MAKE LOGICAL ADJUSTMENTS IN FIT, FORM, DIMENSION, AND QUANTITY THAT ARE TREATED ONLY GENERALLY BY THE "BUILDER'S PLANS." IN THE EVENT ADDITIONAL DETAILS OR GUIDANCE ARE NEEDED BY THE CONTRACTOR OR OWNER, FOR CONSTRUCTION OF ANY ASPECT OF THE PROJECT, HE SHALL IMMEDIATELY NOTIFY JAKE'S DRAFTING SERVICE, INC. FAILURE TO GIVE A SIMPLE NOTICE SHALL RELIEVE JAKE'S DRAFTING SERVICE, INC. OF RESPONSIBILITY FOR THE CONSEQUENCES.

DUTY OF COOPERATION

RELEASE OF THESE PLANS ANTICIPATES FURTHER COOPERATION AMONG THE OWNER, HIS CONTRACTOR, AND JAKE'S DRAFTING SERVICE, INC. ALTHOUGH JAKE'S DRAFTING SERVICE, INC. AND ITS CONSULTANTS HAVE PERFORMED THEIR SERVICES WITH DUE CARE AND DILIGENCE, THEY CANNOT GUARANTEE PERFECTION. ANY AMBIGUITY OR DISCREPANCY DISCOVERED SHALL BE REPORTED IN WRITING TO JAKE'S DRAFTING SERVICE, INC. IMMEDIATELY AND PRIOR TO THE COMMENCEMENT OF ANY WORK. FAILURE TO COOPERATE BY SIMPLE NOTICE TO JAKE'S DRAFTING SERVICE, INC. SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ALL CONSEQUENCES. CHANGES MADE FROM THE PLANS WITHOUT CONSENT OF JAKE'S DRAFTING SERVICE, INC. ARE UNAUTHORIZED, AND SHALL RELIEVE JAKE'S DRAFTING SERVICE, INC. OF RESPONSIBILITY FOR ALL CONSEQUENCES ARISING OUT OF SUCH CHANGES.

DISCLAIMER

IF JAKE'S DRAFTING SERVICE, INC., AS CLAIMANT OR A DEFENDING PARTY, IS AT ANY TIME A PARTY TO LITIGATION INVOLVING ANY CLAIM RELATED TO WORK CONTAINED IN THESE DRAWINGS, AND SHOULD CLAIMANT NOT PREVAIL SUBSTANTIALLY AGAINST DEFENDING PARTY IN SUCH LITIGATION; ALL LITIGATION EXPENSES, WITNESS FEES, COURT COSTS, AND ATTORNEY'S FEES INCURRED BY THE DEFENDING PARTY IN DEFENDING AGAINST SUCH A CLAIM, SHALL BE PAID BY THE CLAIMANT.

THE DRAWINGS, SPECIFICATIONS AND OTHER DOCUMENTS PREPARED BY JAKE'S DRAFTING SERVICE, INC., (AS THE DESIGNER,) FOR THIS PROJECT ARE "INSTRUMENTS OF SERVICE", FOR USE SOLELY WITH RESPECT TO THIS PROJECT. JAKE'S DRAFTING SERVICE, INC., (AS THE DESIGNER) SHALL BE DEEMED THE AUTHOR OF THESE DOCUMENTS AND SHALL RETAIN ALL COMMON LAW, STATUTORY AND OTHER RESERVED RIGHTS, INCLUDING THE COPYRIGHT. SUBMISSION OF THESE PLANS AND SPECIFICATIONS, IN PART OR IN WHOLE, BY THE CLIENT OR HIS AGENT FOR BUILDING PERMIT APPLICATION SHALL BE DEEMED AS EVIDENCE OF ACCEPTANCE FOR FINAL PAYMENT OF CONTRACT.

THESE PLANS ARE FOR USE ONLY BY THE CLIENT AND ONLY AT THE SITE IDENTIFIED IN THE TITLE BLOCK.

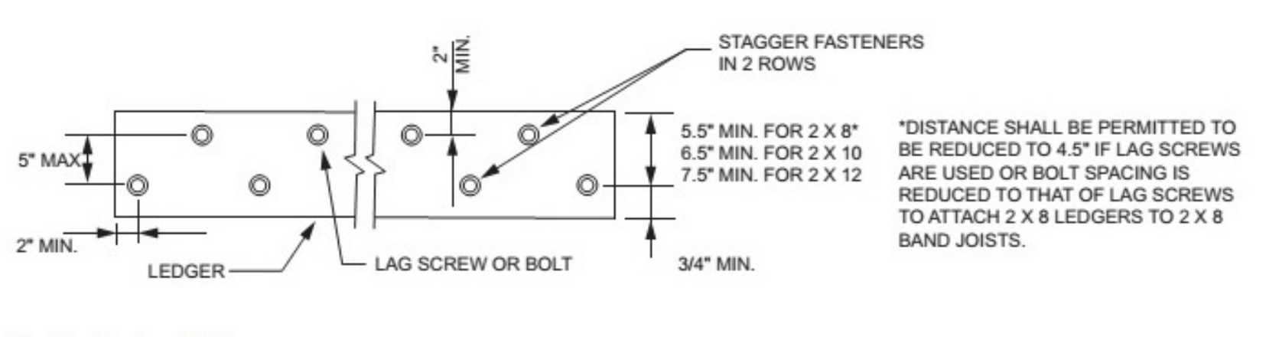
ANY DUPLICATION, REPRODUCTION OR OTHER USE NOT SPECIFICALLY PERMITTED HEREIN OF THE PLANS, IN PART OR IN WHOLE, IS STRICTLY PROHIBITED UNDER COPYRIGHT LAW.

ENGINEERED DRAWINGS

THE ENGINEERED DESIGN DRAWINGS ARE FOR STRUCTURAL ENGINEERING OF THE HOUSE AND PERMANENT FOUNDATION ONLY. DETACHED RETAINING WALLS ARE NOT PART OF THE ENGINEERED STRUCTURAL DRAWINGS AND ARE BY OTHERS. SLOPE STABILITY, EXCAVATION, SHORING, DRAINAGE, SOILS ISSUES & CONSTRUCTION METHODS ARE NOT INCLUDED AND SHOULD BE ADDRESSED BY AN ENGINEER OR SPECIALIST OF THAT FIELD OF WORK. PROJECT ENGINEERING IS EXCLUDED.

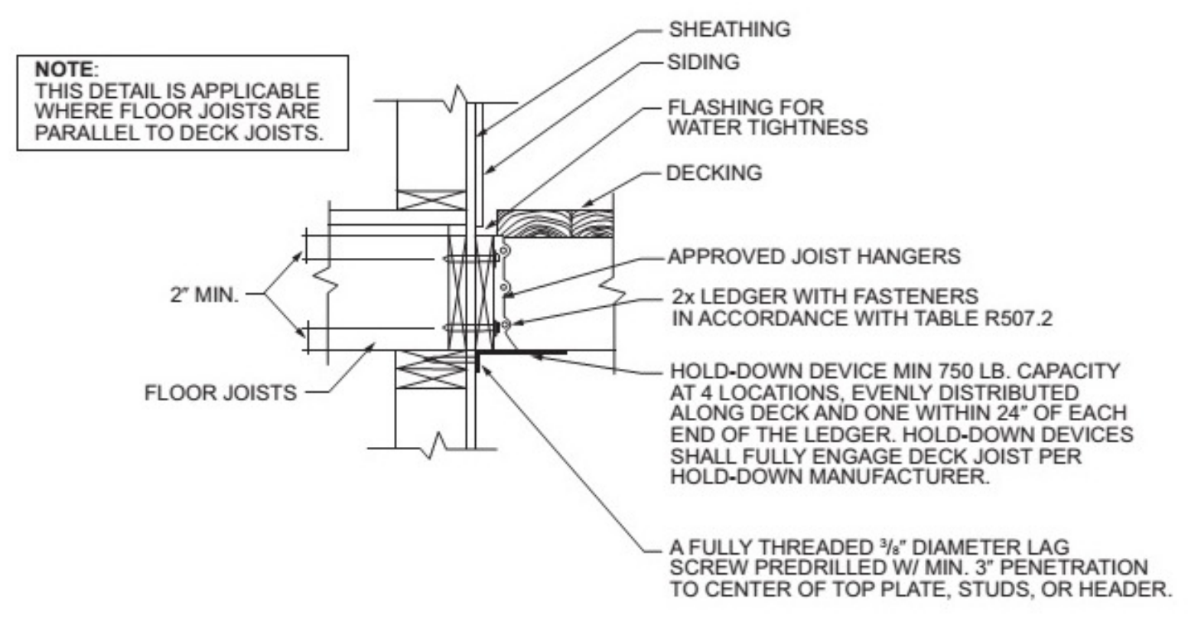
ALL SOILS ISSUES SHOULD BE BROUGHT TO THE ATTENTION OF THE SOILS ENGINEER. THE OWNER OR HIS REPRESENTATIVE ARE RESPONSIBLE FOR FOLLOWING THE SOILS REPORT, CONTACTING THE SOILS ENGINEER AND FOLLOWING THEIR RECOMMENDATIONS AND TO HAVE READ THE SOILS REPORT AND RECOGNIZE THE RISKS AND LIMITATIONS STATED THEREIN.

CONTACT THE SOILS ENGINEER AT TIME OF EXCAVATION TO VERIFY THAT ALL STRUCTURAL CONCRETE IS PLACED ON SUITABLE BEARING MATERIAL.
LEVEL 2, 240 VOLT, 40 AMP CIRCUIT MINIMUM, 60 AMP RECOMMENDED



For SI: 1 inch = 25.4 mm.

FIGURE R507.2.1(1) PLACEMENT OF LAG SCREWS AND BOLTS IN LEDGERS



For SI: 1 inch = 25.4 mm.

FIGURE R507.2.1(2) PLACEMENT OF LAG SCREWS AND BOLTS IN BAND JOISTS

TABLE N1102.4.1.1 (402.4.1.1) AIR BARRIER AND INSULATION INSTALLATION

COMPONENT	AIR BARRIER CRITERIA	INSULATION INSTALLATION CRITERIA
GENERAL REQUIREMENTS	A CONTINUOUS AIR BARRIER SHALL BE INSTALLED IN THE BUILDING ENVELOPE. THE EXTERIOR THERMAL ENVELOPE CONTAINS A CONTINUOUS AIR BARRIER. BREAKS OR JOINTS IN THE AIR BARRIER SHALL BE SEALED.	AIR-PERMEABLE INSULATION SHALL NOT BE USED AS A SEALING MATERIAL.
CEILING/ATTIC	THE AIR BARRIER IN ANY DROPPED CEILING/SOFFIT SHALL BE ALIGNED WITH THE INSULATION AND ANY GAPS IN THE AIR BARRIER SEALED. ACCESS OPENINGS, DROP DOWN STAIRS OR KNEE WALL DOORS TO UNCONDITIONED ATTIC SPACES SHALL BE SEALED.	THE INSULATION IN ANY DROPPED CEILING/SOFFIT SHALL BE ALIGNED WITH THE AIR BARRIER.
WALLS	THE JUNCTION OF THE FOUNDATION AND SILL PLATE SHALL BE SEALED. THE JUNCTION OF THE TOP PLATE AND THE TOP OF EXTERIOR WALLS SHALL BE SEALED. KNEE WALLS SHALL BE SEALED.	CAVITIES WITHIN CORNERS AND HEADERS OF FRAME WALLS SHALL BE INSULATED BY COMPLETELY FILLING THE CAVITY WITH A MATERIAL HAVING A THERMAL RESISTANCE OF R-3 PER INCH MINIMUM. EXTERIOR THERMAL ENVELOPE INSULATION FOR FRAMED WALLS SHALL BE INSTALLED IN SUBSTANTIAL CONTACT AND CONTINUOUS ALIGNMENT WITH THE AIR BARRIER.
WINDOWS, SKYLIGHTS AND DOORS	THE SPACE BETWEEN WINDOW/DOOR JAMBS AND FRAMING, AND SKYLIGHTS AND FRAMING SHALL BE SEALED.	
	RIM JOISTS SHALL INCLUDE THE AIR BARRIER.	RIM JOISTS SHALL BE INSULATED.
RIM JOISTS FLOORS (INCLUDING ABOVE GARAGE AND CANTILEVERED FLOORS)	THE AIR BARRIER SHALL BE INSTALLED AT ANY EXPOSED EDGE OF INSULATION.	FLOOR FRAMING CAVITY INSULATION SHALL BE INSTALLED TO MAINTAIN PERMANENT CONTACT WITH THE UNDERSIDE OF SUBFLOOR DECKING, ALTERNATIVELY, FLOOR FRAMING CAVITY INSULATION SHALL BE IN CONTACT WITH THE TOP SIDE OF SHEATHING, OR CONTINUOUS INSULATION INSTALLED ON THE UNDERSIDE OF FLOOR FRAMING; AND EXTENDS FROM THE BOTTOM TO THE TOP OF ALL PERIMETER FLOOR FRAMING MEMBERS.
CRAWL SPACE WALLS	EXPOSED EARTH IN UNVENTED CRAWL SPACES SHALL BE COVERED WITH A CLASS I VAPOR RETARDER WITH OVERLAPPING JOINTS TAPED.	CRAWL SPACE INSULATION, WHERE PROVIDED INSTEAD OF FLOOR INSULATION,,SHALL BE PERMANENTLY ATTACHED TO THE WALLS.
SHAFTS, PENETRATIONS	DUCT SHAFTS, UTILITY PENETRATIONS, AND FLUE SHAFTS OPENING TO EXTERIOR OR UNCONDITIONED SPACE SHALL BE SEALED.	
NARROW CAVITIES		BATTS IN NARROW CAVITIES SHALL BE CUT TO FIT, OR NARROW CAVITIES SHALL BE FILLED BY INSULATION THAT ON INSTALLATION READILY CONFORMS TO THE AVAILABLE CAVITY SPACE.
GARAGE SEPARATION	AIR SEALING SHALL BE PROVIDED BETWEEN THE GARAGE AND CONDITIONED SPACES.	
RECESSED LIGHTING	RECESSED LIGHT FIXTURES INSTALLED IN THE BUILDING THERMAL ENVELOPE SHALL BE SEALED TO THE FINISHED SURFACE..	RECESSED LIGHT FIXTURES INSTALLED IN THE BUILDING THERMAL ENVELOPE SHALL BE AIR TIGHT AND IC RATED.
PLUMBING AND WIRING		BATT INSULATION SHALL BE CUT NEATLY TO FIT AROUND WIRING AND PLUMBING IN EXTERIOR WALLS, OR INSULATION THAT ON INSTALLATION READILY CONFORMS TO AVAILABLE SPACE, SHALL EXTEND BEHIND PIPING AND WIRING.
SHOWER/TUB ON EXTERIOR WALL	THE AIR BARRIER INSTALLED AT EXTERIOR WALLS ADJACENT TO SHOWERS AND TUBS SHALL SEPARATE THEM FROM THE SHOWERS AND TUBS.	EXTERIOR WALLS ADJACENT TO SHOWERS AND TUBS SHALL BE INSULATED.
ELECTRICAL/PHONE BOX ON EXTERIOR WALLS	THE AIR BARRIER SHALL BE INSTALLED BEHIND ELECTRICAL AND COMMUNICATION BOXES OR AIR-SEALED BOXES SHALL BE INSTALLED.	
HVAC REGISTER BOOTS	HVAC SUPPY AND RETURN REGISTER BOOTS THAT PENETRATE BUILDING THERMAL ENVELOPE SHALL BE SEALED TO THE SUBFLOOR, WALL COVERING OR CEILING PENETRATED BY THE BOOT.	
CONCEALED SPRINKLERS	WHEN REQUIRED TO BE SEALED, CONCEALED FIRE SPRINKLERS SHALL ONLY BE SEALED IN A MANNER THAT IS RECOMMENDED BY THE MANUFACTURER. CAULKING OR OTHER ADHESIVE SEALANTS SHALL NOT BE USED TO FILL VOIDS BETWEEN FIRE SPRINKLER COVER PLATES AND WALLS OR CEILINGS.	

a. In addition, inspection of log walls shall be in accordance with the provisions of ICC 400.

TABLE R602.3(1) FASTENING SCHEDULE

ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER[a, b, c]	SPACING AND LOCATION
		Roof	
1	Blocking between ceiling joists or rafters to top plate	4-8d box ($2^1/_2'' \times 0.113''$) or 3-8d common ($2^1/_2'' \times 0.131''$); or 3-10d box ($3'' \times 0.128''$); or 3-3″ × 0.131″ nails	Toe nail
2	Ceiling joists to top plate	4-8d box ($2^1/_2'' \times 0.113''$); or 3-8d common ($2^1/_2'' \times 0.131''$); or 3-10d box ($3'' \times 0.128''$); or 3-3″ × 0.131″ nails	Per joist, toe nail
3	Ceiling joist not attached to parallel rafter, laps over partitions [see Sections R802.3.1, R802.3.2 and Table R802.5.1(9)]	4-10d box ($3'' \times 0.128''$); or 3-16d common ($3^1/_2'' \times 0.162''$); or 4-3″ × 0.131″ nails	Face nail
4	Ceiling joist attached to parallel rafter (heel joint) [see Sections R802.3.1 and R802.3.2 and Table R802.5.1(9)]	Table R802.5.1(9)	Face nail
5	Collar tie to rafter, face nail or $1^1/_4'' \times 20$ ga. ridge strap to rafter	4-10d box ($3'' \times 0.128''$); or 3-10d common ($3'' \times 0.148''$); or 4-3″ × 0.131″ nails	Face nail each rafter
6	Rafter or roof truss to plate	3-16d box nails ($3^1/_2'' \times 0.135''$); or 3-10d common nails ($3'' \times 0.148''$); or 4-10d box ($3'' \times 0.128''$); or 4-3″ × 0.131″ nails	2 toe nails on one side and 1 toe nail on opposite side of each rafter or truss[i]
7	Roof rafters to ridge, valley or hip rafters or roof rafter to minimum 2″ ridge beam	4-16d ($3^1/_2'' \times 0.135''$); or 3-10d common ($3^1/_2'' \times 0.148''$); or 4-10d box ($3'' \times 0.128''$); or 4-3″ × 0.131″ nails	Toe nail
		3-16d box $3^1/_2'' \times 0.135''$); or 2-16d common ($3^1/_2'' \times 0.162''$); or 3-10d box ($3'' \times 0.128''$); or 3-3″ × 0.131″ nails	End nail
		Wall	
8	Stud to stud (not at braced wall panels)	16d common ($3^1/_2'' \times 0.162''$)	24″ o.c. face nail
		10d box ($3'' \times 0.128''$); or 3″ × 0.131″ nails	16″ o.c. face nail
9	Stud to stud and abutting studs at intersecting wall corners (at braced wall panels)	16d box ($3^1/_2'' \times 0.135''$); or 3″ × 0.131″ nails	12″ o.c. face nail
		16d common ($3^1/_2'' \times 0.162''$)	16″ o.c. face nail
10	Built-up header (2″ to 2″ header with $^1/_2''$ spacer)	16d common ($3^1/_2'' \times 0.162''$)	16″ o.c. each edge face nail
		16d box ($3^1/_2'' \times 0.135''$)	12″ o.c. each edge face nail
11	Continuous header to stud	5-8d box ($2^1/_2'' \times 0.113''$); or 4-8d common ($2^1/_2'' \times 0.131''$); or 4-10d box ($3'' \times 0.128''$)	Toe nail
12	Top plate to top plate	16d common ($3^1/_2'' \times 0.162''$)	16″ o.c. face nail
		10d box ($3'' \times 0.128''$); or 3″ × 0.131″ nails	12″ o.c. face nail
13	Double top plate splice for SDCs A-D_2 with seismic braced wall line spacing < 25′	8-16d common ($3^1/_2'' \times 0.162''$); or 12-16d box ($3^1/_2'' \times 0.135''$); or 12-10d box ($3'' \times 0.128''$); or 12-3″ × 0.131″ nails	Face nail on each side of end joint (minimum 24″ lap splice length each side of end joint)
	Double top plate splice SDCs D_0, D_1, or D_2; and braced wall line spacing ≥25′	12-16d ($3^1/_2'' \times 0.135''$)	

ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER[a, b, c]	SPACING AND LOCATION
14	Bottom plate to joist, rim joist, band joist or blocking (not at braced wall panels)	16d common ($3^1/_2'' \times 0.162''$)	16″ o.c. face nail
		16d box ($3^1/_2'' \times 0.135''$); or 3″ × 0.131″ nails	12″ o.c. face nail
15	Bottom plate to joist, rim joist, band joist or blocking (at braced wall panel)	3-16d box ($3^1/_2'' \times 0.135''$); or 2-16d common ($3^1/_2'' \times 0.162''$); or 4-3″ × 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 ($2^1/_2'' \times 0.113''$); or 3-16d box ($3^1/_2'' \times 0.135''$); or 4-8d common ($2^1/_2'' \times 0.131''$); or 4-10d box ($3'' \times 0.128''$); or 4-3″ × 0.131″ nails	Toe nail
		3-16d box ($3^1/_2'' \times 0.135''$); or 2-16d common ($3^1/_2'' \times 0.162''$); or 3-10d box ($3'' \times 0.128''$); or 3-3″ × 0.131″ nails	End nail
17	Top plates, laps at corners and intersections	3-10d box ($3'' \times 0.128''$); or 2-16d common ($3^1/_2'' \times 0.162''$); or 3-3″ × 0.131″ nails	Face nail
18	1″ brace to each stud and plate	3-8d box ($2^1/_2'' \times 0.113''$); or 2-8d common ($2^1/_2'' \times 0.131''$); or 2-10d box ($3'' \times 0.128''$); or 2 staples $1^3/_4''$	Face nail
19	1″ × 6″ sheathing to each bearing	3-8d box ($2^1/_2'' \times 0.113''$); or 2-8d common ($2^1/_2'' \times 0.131''$); or 2-10d box ($3'' \times 0.128''$); or 2 staples, 1″ crown, 16 ga., $1^3/_4''$ long	Face nail
20	1″ × 8″ and wider sheathing to each bearing	3-8d box ($2^1/_2'' \times 0.113''$); or 3-8d common ($2^1/_2'' \times 0.131''$); or 3-10d box ($3'' \times 0.128''$); or 3 staples, 1″ crown, 16 ga., $1^3/_4''$ long	Face nail
		Wider than 1″ × 8″ 4-8d box ($2^1/_2'' \times 0.113''$); or 3-8d common ($2^1/_2'' \times 0.131''$); or 3-10d box ($3'' \times 0.128''$); or 4 staples, 1″ crown, 16 ga., $1^3/_4''$ long	
		Floor	
21	Joist to sill, top plate or girder	4-8d box ($2^1/_2'' \times 0.113''$); or 3-8d common ($2^1/_2'' \times 0.131''$); or 3-10d box ($3'' \times 0.128''$); or 3-3″ × 0.131″ nails	Toe nail
22	Rim joist, band joist or blocking to sill or top plate (roof applications also)	8d box ($2^1/_2'' \times 0.113''$)	4″ o.c. toe nail
		8d common ($2^1/_2'' \times 0.131''$); or 10d box ($3'' \times 0.128''$); or 3″ × 0.131″ nails	6″ o.c. toe nail
23	1″ × 6″ subfloor or less to each joist	3-8d box ($2^1/_2'' \times 0.113''$); or 2-8d common ($2^1/_2'' \times 0.131''$); or 3-10d box ($3'' \times 0.128''$); or 2 staples, 1″ crown, 16 ga., $1^3/_4''$ long	Face nail

ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER[a, b, c]	SPACING AND LOCATION
		Floor	
24	2″ subfloor to joist or girder	3-16d box ($3^1/_2'' \times 0.135''$); or 2-16d common ($3^1/_2'' \times 0.162''$)	Blind and face nail
25	2″ planks (plank & beam—floor & roof)	3-16d box ($3^1/_2'' \times 0.135''$); or 2-16d common ($3^1/_2'' \times 0.162''$)	At each bearing, face nail
26	Band or rim joist to joist	3-16d common ($3^1/_2'' \times 0.162''$) 4-10 box ($3'' \times 0.128''$), or 4-3″ × 0.131″ nails; or 4-3″ × 14 ga. staples, $^7/_{16}''$ crown	End nail
27	Built-up girders and beams, 2-inch lumber layers	20d common ($4'' \times 0.192''$); or	Nail each layer as follows: 32″ o.c. at top and bottom and staggered.
		10d box ($3'' \times 0.128''$); or 3″ × 0.131″ nails	24″ o.c. face nail at top and bottom staggered on opposite sides
		And: 2-20d common ($4'' \times 0.192''$); or 3-10d box ($3'' \times 0.128''$); or 3-3″ × 0.131″ nails	Face nail at ends and at each splice
28	Ledger strip supporting joists or rafters	4-16d box ($3^1/_2'' \times 0.135''$); or 3-16d common ($3^1/_2'' \times 0.162''$); or 4-10d box ($3'' \times 0.128''$); or 4-3″ × 0.131″ nails	At each joist or rafter, face nail
29	Bridging to joist	2-10d ($3'' \times 0.128''$)	Each end, toe nail

ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER[a, b, c]	SPACING OF FASTENERS	
			Edges (inches)[h]	Intermediate supports[c, e] (inches)
	Wood structural panels, subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to framing [see Table R602.3(3) for wood structural panel *exterior* wall sheathing to wall framing]			
30	$^3/_8'' - ^1/_2''$	6d common ($2'' \times 0.113''$) nail (subfloor, wall)[i] 8d common ($2^1/_2'' \times 0.131''$) nail (roof)	6	12[f]
31	$^{19}/_{32}'' - 1''$	8d common nail ($2^1/_2'' \times 0.131''$)	6	12[f]
32	$1^1/_8'' - 1^1/_4''$	10d common ($3'' \times 0.148''$) nail; or 8d ($2^1/_2'' \times 0.131''$) deformed nail	6	12
	Other wall sheathing[g]			
33	$^1/_2''$ structural cellulosic fiberboard sheathing	$1^1/_2''$ galvanized roofing nail, $^7/_{16}''$ head diameter, or 1″ crown staple 16 ga., $1^1/_4''$ long	3	6
34	$^{25}/_{32}''$ structural cellulosic fiberboard sheathing	$1^3/_4''$ galvanized roofing nail, $^7/_{16}''$ head diameter, or 1″ crown staple 16 ga., $1^1/_4''$ long	3	6
35	$^1/_2''$ gypsum sheathing[d]	$1^1/_2''$ galvanized roofing nail; staple galvanized, $1^1/_2''$ long; $1^1/_4''$ screws, Type W or S	7	7
36	$^5/_8''$ gypsum sheathing[d]	$1^3/_4''$ galvanized roofing nail; staple galvanized, $1^5/_8''$ long; $1^5/_8''$ screws, Type W or S	7	7
	Wood structural panels, combination subfloor underlayment to framing			
37	$^3/_4''$ and less	6d deformed ($2'' \times 0.120''$) nail; or 8d common ($2^1/_2'' \times 0.131''$) nail	6	12
38	$^7/_8'' - 1''$	8d common ($2^1/_2'' \times 0.131''$) nail; or 8d deformed ($2^1/_2'' \times 0.120''$) nail	6	12
39	$1^1/_8'' - 1^1/_4''$	10d common ($3'' \times 0.148''$) nail; or 8d deformed ($2^1/_2'' \times 0.120''$) nail	6	12

FOR SI: 1 INCH = 25.4 MM, 1 FOOT = 304.8 MM, 1 MILE PER HOUR = 0.447 M/S; 1 KSI = 6.895 MPA.

A. NAILS ARE SMOOTH-COMMON, BOX OR DEFORMED SHANKS EXCEPT WHERE OTHERWISE STATED. NAILS USED FOR FRAMING AND SHEATHING CONNECTIONS SHALL HAVE MINIMUM AVERAGE BENDING YIELD STRENGTHS AS SHOWN: 80 KSI FOR SHANK DIAMETER OF 0.192 INCH (20D COMMON NAIL), 90 KSI FOR SHANK DIAMETERS LARGER THAN 0.142 INCH BUT NOT LARGER THAN 0.177 INCH, AND 100 KSI FOR SHANK DIAMETERS OF 0.142 INCH OR LESS.
B. STAPLES ARE 16 GAGE WIRE AND HAVE A MINIMUM 7/16-INCH ON DIAMETER CROWN WIDTH.
C. NAILS 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 THIS TABLE SHALL BE BASED ON TABLE R602.3(2).
F. WHERE THE ULTIMATE DESIGN WIND SPEED IS 130 MPH OR LESS, NAILS FOR ATTACHING WOOD STRUCTURAL PANEL ROOF SHEATHING TO GABLE END WALL FRAMING SHALL BE SPACED 6 INCHES ON CENTER. WHERE THE ULTIMATE DESIGN WIND SPEED IS GREATER THAN 130 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 4 INCHES ON CENTER TO GABLE END WALL FRAMING.
G. GYPSUM SHEATHING SHALL CONFORM TO ASTM C 1396 AND SHALL BE INSTALLED IN ACCORDANCE WITH GA 253. FIBERBOARD SHEATHING SHALL CONFORM TO ASTM C 208.
H. SPACING OF FASTENERS ON FLOOR SHEATHING PANEL EDGES APPLIES TO PANEL EDGES SUPPORTED BY FRAMING MEMBERS AND REQUIRED BLOCKING AND AT FLOOR PERIMETERS ONLY. SPACING OF FASTENERS ON ROOF SHEATHING PANEL EDGES APPLIES TO PANEL EDGES SUPPORTED BY FRAMING MEMBERS AND REQUIRED BLOCKING. BLOCKING OF ROOF OR FLOOR SHEATHING PANEL EDGES PERPENDICULAR TO THE FRAMING MEMBERS NEED NOT BE PROVIDED EXCEPT AS REQUIRED BY OTHER PROVISIONS OF THIS CODE. FLOOR PERIMETER SHALL BE SUPPORTED BY FRAMING MEMBERS OR SOLID BLOCKING.
I. 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.

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"STRUCTURE ONLY"

SPECIFICATIONS FOR
MICAL HUYSER
27225 COUNTY ROAD 14
ROUTT COUNTY, COLORADO
ALBERTINI CONSTRUCTION INC. (970)879-9650

Job #	21.006
File	21006G20
Date	8JUNE21
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Checked	JMH
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