30x42 SHEET (Arch E1)

SPECIFICATIONS

GENERAL REQUIREMENTS

A. THE CONTRACT DOCUMENTS, INCLUDING, BUT NOT LIMITED TO, THE DRAWINGS, NOTES AND SPECIFICATIONS, SHALL BE IN THE ENGLISH LANGUAGE. THE CONTRACTOR AND ITS SUBCONTRACTORS SHALL BE RESPONSIBLE TO TAKE ALL ACTIONS NECESSARY (INCLUDING, BUT NOT LIMITED TO, THE USE OF INTERPRETERS) TO ENSURE THAT THEIR EMPLOYEES ARE ABLE TO READ AND UNDERSTAND THE CONTRACT DOCUMENTS, WHICH ARE DRAFTED IN THE ENGLISH LANGUAGE. THE CONTRACTOR SHALL DESIGNATE IN WRITING BEFORE STARTING WORK ON THE PROJECT, A COMPETENT, ENGLISH-SPEAKING SUPERINTENDENT CAPABLE OF READING AND THOROUGHLY UNDERSTANDING THE CONTRACT DOCUMENTS, AND THOROUGHLY EXPERIENCED IN THE TYPE OF CONSTRUCTION BEING PERFORMED.

B. DUTY OF COOPERATION: RELEASE OF THESE DOCUMENTS REQUIRES FURTHER COOPERATION AMONG THE OWNER, THEIR CONTRACTOR AND THE ARCHITECT TO ACHIEVE PROJECT SUCCESS. DESIGN AND CONSTRUCTION ARE VERY COMPLEX. ALTHOUGH THE ARCHITECT AND THEIR CONSULTANTS HAVE PERFORMED THEIR SERVICES WITH DUE CARE AND DILIGENCE, THEY CANNOT GUARANTEE PERFECTION. COMMUNICATION IN WRITTEN/ DRAWN FORM IS CHALLENGING AND IMPERFECT. ALTHOUGH EFFORT IS MADE TO DO SO, EVERY CONTINGENCY CANNOT BE ANTICIPATED. ANY AMBIGUITY, DISCREPANCY OR OMISSION DISCOVERED BY THE USE OF THESE DOCUMENTS SHALL BE REPORTED IMMEDIATELY TO THE ARCHITECT FOR CLARIFICATION. A FAILURE TO COOPERATE BY A SIMPLE NOTICE TO THE ARCHITECT SHALL RELIEVE THE ARCHITECT FROM RESPONSIBILITY FOR ALL CONSEQUENCES. CHANGES MADE FROM THE PLANS WITHOUT THE CONSENT OF THE ARCHITECT ARE UNAUTHORIZED, AND SHALL RELIEVE THE ARCHITECT OF RESPONSIBILITY FOR ALL CONSEQUENCES ARISING OUT OF SUCH CHANGES. CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS.

C. ALL WORK, INCLUDING ALL MATERIALS AND WORKMANSHIP, SHALL BE IN STRICT ACCORDANCE WITH APPLICABLE REQUIREMENTS OF THE LAWS, CODES, ORDINANCES, AND STANDARDS OF ALL LOCAL, STATE AND NATIONAL JURISDICTIONS. ALL SUBCONTRACTORS SHALL BE HELD RESPONSIBLE FOR ANY VIOLATIONS OF APPLICABLE REQUIREMENTS. FOR ANY CHANGES TO THE PROJECT DURING CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION.

D. ALL MANUFACTURED ITEMS, MATERIALS, AND EQUIPMENT SHALL BE INSTALLED, ERECTED, APPLIED, USED, CONDITIONED, ADJUSTED, AND CLEANED IN ACCORDANCE WITH THE CURRENT DIRECTIONS, INSTRUCTIONS, AND RECOMMENDATIONS OF THE MANUFACTURER AND WITH CURRENT PRINTED STANDARD SPECIFICATIONS WHICH ARE ISSUED AND RECOMMENDED BY ORGANIZED ASSOCIATIONS OF MANUFACTURERS, CRAFTS AND TRADES.

E. DO NOT SCALE DRAWINGS. REFER TO WRITTEN DIMENSIONS.

F. COORDINATION OF ALL TRADES SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

G. EACH TRADE OR CRAFT CERTIFIES THAT PRECEDING WORK IS ACCEPTABLE WHEN THAT TRADE OR CRAFT COMMENCES ITS OWN WORK ON THE PROJECT

H. WINDOW SIZES INDICATED ARE OVERALL FRAME SIZES IN INCHES. REFERENCE DOORS AND WINDOWS SECTION FOR ADDITIONAL WINDOW NOTES.

I. ?VERIFY? INTERIOR DIMENSIONS ARE TO CENTER OF WALL UNLESS OTHERWISE INDICATED.

J. EXTERIOR DIMENSIONS:
- FOR PANEL SIDING APPLIED DIRECTLY TO THE STUDS: DIMENSION IS TO OUTSIDE FACE OF STUD
- FOR STUCCO, THIN-STONE/BRICK VENEER AND LAP SIDING: DIMENSION IS TO OUTSIDE FACE OF SHEATHING
- FOR CONCRETE WALLS: DIMENSION IS TO OUTSIDE FACE OF WALL

K. INTERIOR FINISH, MATERIALS AND MILLWORK TO BE COORDINATED WITH OWNER/OWNER REPRESENTATIVE UNLESS NOTED OTHERWISE.

FOUNDATION GENERAL NOTES

CONCRETE WALLS

A. ALL FOOTINGS SHALL EXTEND BELOW A FROST LINE OF 36" WITH UNIFORM BEARING ON UNDISTURBED SOIL CAPABLE OF SUPPORTING A MIN. OF 2,000 P.S.F. OR AS DEFINED BY THE STRUCTURAL OR GEOTECHNICAL ENGINEER (RE: 2012 IRC SECTION R403).

B. COORDINATE WITH THE GEOTECHNICAL ENGINEER HIRED BY THE BUILDER TO OBSERVE SUBSURFACE CONDITIONS FOR ANY IMPACTS TO FOOTING SIZES SHOWN.

C. FOR HOMES IN THE KANSAS CITY METRO AREA, FOUNDATION DESIGN SHALL COMPLY WITH THE JOHNSON COUNTY, KS RESIDENTIAL FOUNDATION GUIDELINES UNLESS MODIFIED BY GEOTECHNICAL OR STRUCTURAL ENGINEER, IRREGARDLESS WHETHER THE PROJECT IS IN JOHNSON COUNTY OR NOT.

D. MAINTAIN SOIL MOISTURE CONTENT EQUIVALENT TO WHAT EXISTED AT THE TIME OF EXCAVATION TO MINIMIZE PROBLEMS WITH DIFFERENTIAL SETTLEMENT OR DISPLACEMENT UNLESS DIRECTED OTHERWISE BY THE GEOTECHNICAL OR STRUCTURAL ENGINEER.

E. REFER TO STRUCTURAL NOTES FOR CONCRETE STRENGTH, SLUMP REQUIREMENTS, REINFORCING SIZE, SPACING AND GRADE, ANCHOR BOLT SPACING, COVER REQUIREMENTS, ETC.

F. NARROW STEM WALLS BLOCKED OUT AT TOP OF WALL: 4" WIDE SHALL NOT EXCEED 12" HIGH AND 6" WIDE SHALL NOT EXCEED 2'-0" HIGH UNLESS NOTED OTHERWISE BY THE STRUCTURAL ENGINEER.

G. ALL OPENINGS OR PENETRATIONS THROUGH CONCRETE FOUNDATION WALLS SHALL BE BLOCKED OUT OR SLEEVED PRIOR TO POURING OF CONCRETE.

H. AN ACCESSIBLE CONNECTION POINT SHALL BE PROVIDED TO A 20 FOOT CONCRETE-ENCASED ELECTRODE (FOOTING REBAR) FOR THE ELECTRICAL SERVICE GROUNDING ELECTRODE CONDUCTOR (UFER GROUND).

I. PROVIDE WATERSTOPS BETWEEN CONCRETE POURS WHERE NEEDED TO PREVENT WATER INTRUSION.

FLATWORK

A. NON-STRUCTURAL SLABS OVER LESS THAN 24" OF FILL: 4" CONC. SLAB REINF. WITH 6x6-2.1/2.1 W.W.F. OR #4's @ 18" O.C. EACH WAY OVER 10 MIL. "STEGO" VAPOR BARRIER OVER 4" CRUSHED ROCK. PROVIDE SMOOTH STEEL TROWEL FINISH UNLESS NOTED OTHERWISE.

B. PROVIDE CONTROL JOINTS CUT IN BASEMENT SLAB UNDER ALL STEEL BEAM AND HEADER LINES. LIMIT CONTROLLED AREAS TO NOT MORE THAN 625 S.F. NOR GREATER THAN 25'-0" ON ANY SIDE.

C. PROVIDE EXPANSION JOINTS AS BOND BREAKER BETWEEN WALLS AND OTHER RESTRAINING CONSTRUCTION. ISOLATE BASEMENT COLUMNS FROM THE REST OF THE CONCRETE SLAB.

WATERPROOFING/DRAINAGE

A. WATERPROOFING SHALL BE EPRO, ECOLINE-S SPRAY APPLIED MEMBRANE, OR APPROVED EQUAL, ??(FOR MORE CHALLENGING FOUNDATIONS CONSIDER CARLISLE- SEE RUSH JOB FOR SPECIFICS)?? ON FOUNDATION WALLS AT HABITABLE ROOMS AND CRAWL SPACES BELOW FINISH GRADE. FOUNDATION WALLS OF HABITABLE ROOMS LOCATED BELOW GRADE SHALL HAVE 1 1/2" RIGID INSULATION BOARD OVER SPECIFIED WATERPROOFING FROM THE EDGE OF THE FOOTING TO 6" BELOW THE FINISH GRADE.

B. INSTALL 4" DIA. PERIMETER INTERIOR AND EXTERIOR FOOTING DRAIN LINES. DRAIN TO DAYLIGHT IF POSSIBLE, SUBMIT PROPOSED DAYLIGHT LOCATION TO ARCHITECT. DRAIN TO SUMP W/ PUMP IF DAYLIGHT IS NOT POSSIBLE. DRAIN LINES SHALL BE WRAPPED IN FILTER FABRIC AND SURROUNDED BY CLEAN CRUSHED ROCK FILL W/ FILTER FABRIC COVER.

C. CONNECT INTERIOR FOOTING DRAIN TO A PVC "T" FITTING AND VENT THROUGH ROOF AS AN UNDER-SLAB RADON VENT. IF BASEMENT SLAB IS OVER 4,000 S.F. PROVIDE ADDITIONAL DRAIN LINE TO DIVIDE AREA INTO 4,000 S.F. MAX. AREAS. REFER TO EPA PUBLICATION "BUILDING RADON OUT" FOR DETAILED RECOMMENDATONS. CAULK ALL JOINTS IN THE SLAB.

MASONRY

A. ALL EXTERIOR AND INTERIOR STONE SHALL BE SELECTED BY THE OWNER AND SHALL BE SOLID, DURABLE AND NON-SLOUGHING. VENEER TO BE LAID UP SOLID AND ANCHORED TO SHEATHING WITH METAL TIES (1 PER 4 SQ. FT.). WINDOW SILLS AND STONE CAPS SHALL BE OF STONE WITH SLOPES AND PROJECTIONS AS INDICATED. ALL JOINTS TO BE FILLED SOLID AND BRUSHED TO BE SLIGHTLY CONCAVE. SAMPLE WALL SECTION SHALL BE LAID UP ON SITE FOR OWNER AND ARCHITECT'S APPROVAL.

B. THIN STONE VENEER SHALL BE SELECTED BY THE OWNER (ARCHITECT AND APPROVED BY THE OWNER). INSTALLATION SHALL BE IN ACCORDANCE WITH THE THIN STONE MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS AND THE MASONRY VENEER MANUFACTURERS ASSOCIATION GUIDELINES.

C. THIN STONE VENEER SHALL BE INSTALLED OVER MINIMUM 1/2" THICK CEMENT PLASTER SCRATCH COAT INSTALLED WITH MINIMUM 2,5 LB/SQ. YD. CORROSION RESISTANT, PAPER BACKED, SELF-FURRING DIAMOND MESH METAL LATH COMPLYING WITH ASTM C847 AND SHALL BE FASTENED THROUGH THE SHEATHING TO THE WALL FRAMING IN ACCORDANCE WITH THE MINIMUM REQUIREMENTS FOR FRAMING IN SECTION 7.10 OF ASTM C1063 AND THE IRC. SCRATCH COAT SHALL BE INSTALLED OVER 1/4" THICK KEENE DRIWALL RAINSCREEN OVER WRB APPLIED TO OSB SHEATHING OR DIRECTLY OVER ZIP SYSTEM WALL SHEATHING, COMPLETE WITH CASING BEADS AND WEEP SCREEDS.

D. PROVIDE REGLETS, WEEP HOLES AND FLASHINGS AS INDICATED AND REQUIRED.

E. PROVIDE IN WALL AND THRU WALL FLASHINGS AS REQUIRED, NERVASTRAL SEAL-PRUF, H.D. FLASHINGS, OR EQUAL.

F. FURNISH AND INSTALL ALL STEEL ANGLE LINTELS AS INDICATED.

G. MASONRY FIREPLACES SHALL BE BUILT PER DRAWINGS AND IN STRICT ACCORDANCE WITH THE CODE. ALL FLUES SHALL BE LINED WITH CLAY FLUE TILES. MASONRY FIREPLACES SHALL BE COMPLETE WITH FIREBRICK LINED FIREBOXES, DAMPERS, GAS LOG LIGHTERS AND A REINFORCED CONCRETE HEARTH SLAB UNLESS NOTED OTHERWISE. THE REINFORCED CONCRETE HEARTH SLABS SHALL BE 10" THICK OF SIZES INDICATED ON THE DRAWINGS REINFORCED WITH #4's @ 10" O.C. EACH WAY.

H. PROVIDE "VESTAL", MODEL NO. AC, ASH CADDY IF AN ASH DUMP IS NOT PROVIDED.

I. FINAL CLEANING OF MORTAR SHALL BE COMPLETED USING FIBER BRUSHES AND MILD SOAP POWDER AND WATER SOLUTION THOROUGHLY RINSED WITH CLEAN POTABLE WATER. USE NO ACIDS.

METALS

A. PROVIDE ALL STRUCTURAL STEEL PER STRUCTURAL DRAWINGS. ALL STRUCTURAL STEEL SHALL CONFORM TO CURRENT AISC SPECIFICATIONS FOR THE DESIGN, FABRICATION, AND ERECTION OF STEEL FOR BUILDINGS. STEEL PLATES, CHANNELS AND ANGLES SHALL COMPLY ASTM A36 STANDARDS, STEEL WIDE FLANGE BEAMS SHALL COMPLY WITH ASTM A992 STANDARDS, STEEL PIPE SHALL COMPLY WITH ASTM A53 STANDARDS AND HOLLOW STRUCTURAL STEEL (HSS) SHALL COMPLY WITH ASTM A500 STANDARDS.

B. FURNISH AND INSTALL ALL STRUCTURAL STEEL BEAMS, PLATES, COLUMNS, ANGLES, BEAM CONNECTIONS, PLATES AND BOLTS AS INDICATED AND/OR REQUIRED.

C. STEEL COLUMNS SHALL BE 3 1/2" STD. STEEL PIPE (U.N.O). PROVIDE 3/8" BASE AND TOP PLATES WELDED TO COLUMNS. COLUMNS SHALL EXTEND THROUGH SLABS AND BEAR DIRECTLY ON FOOTINGS OR FOUNDATIONS.

D. ALL STEEL LINTELS REQUIRED FOR FIREPLACE CONSTRUCTION SHALL BE FURNISHED AND INSTALLED BY THE MASONRY CONTRACTOR.

E. ALL ITEMS SHALL BE FABRICATED INSOFAR AS POSSIBLE IN THE SHOP AND ERECTED PLUMB, STRAIGHT AND TRUE COMPLETE WITH BOLTS, PLATES, AND SLEEVES.

F. ALL STEEL SHALL RECEIVE ONE COAT OF GOOD RUST INHIBITIVE PRIMER IN THE SHOP AND SHALL BE TOUCHED UP IN THE FIELD AFTER ERECTION.

G. IRON WORK INCLUDING BALCONIES, GRATES AND RAILINGS SHALL BE FABRICATED OF COMPONENTS AS SHOWN WITH ALL WELDS AND JOINTS GROUND SMOOTH. FINAL DESIGNS SHALL BE COORDINATED AND SELECTED BY THE OWNER. SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW BY THE ARCHITECT.

H. FORMED METAL WALL PANELS SHALL BE ASTM A653/A653M METALLIC-COATED STEEL SHEET OR ASTM B209 ALUMINUM SHEET PANELS AS SELECTED BY THE OWNER WITH THE FOLLOWING PERFORMANCE REQUIREMENTS:
1. AIR INFILTRATION: AIR LEAKAGE OF NOT MORE THAN 0.06 CFM/SQ. FT. WHEN TESTED ACCORDING TO ASTM E283 AT THE TEST-PRESSURE DIFFERENCE OF 6.24 LBF/SQ. FT.
2. WATER PENETRATION UNDER STATIC PRESSURE: NO WATER PENETRATION WHEN TESTED ACCORDING TO ASTM E331 AT THE TEST-PRESSURE DIFFERENCE OF 6.24 LBF/SQ. FT.
3. THERMAL MOVEMENT: ALLOW FOR THERMAL MOVEMENT FROM AMBIENT AND SURFACE TEMPERATURE CHANGES BY PREVENTING BUCKLING, OPENING OF JOINTS, OVERSTRESSING OF COMPONENTS, FAILURE OF JOINT SEALANTS, FAILURE OF CONNECTIONS, AND OTHER DETRIMENTAL EFFECTS. BASE CALCULATIONS ON SURFACE TEMPERATURES OF MATERIALS DUE TO BOTH SOLAR HEAT GAIN AND NIGHTTIME-SKY HEAT LOSS.
   a. TEMPERATURE CHANGE (RANGE): 120 DEG F (67 DEG C), AMBIENT; 180 DEG F (100 DEG C), MATERIAL SURFACES.

FINISH SHALL BE AAMA 2605 FLUOROPOLYMER FINISH CONTAINING NOT LESS THAN 70 PERCENT POLYVINYLIDENE FLUORIDE (PVDF) RESIN BY WEIGHT IN BOTH COLOR COAT AND CLEAR TOPCOAT.
INSTALLATION SHALL BE IN STRICT CONFORMANCE TO MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS WITH CONCEALED FASTENERS.

CARPENTRY

A. PROVIDE FRAMING LUMBER AND MATERIAL AS SPECIFIED AND NOTED ON THE DRAWINGS.

B. SUBFLOOR SHALL BE 23/32", APA RATED ADVANTECH, EXPOSURE 1, WOOD STRUCTURAL PANELS INSTALLED PERPENDICULAR ACROSS JOISTS OVER A CONTINUOUS BEAD OF EXTERIOR ADHESIVE AND FASTENED IN ACCORDANCE W/ THE BUILDING CODE. SUBFLOORS SHALL BE SEALED W/ ONE COAT OF ROLL-ON WATER REPELLANT SEALER AT THE COMPLETION OF THAT LEVEL'S INSTALLATION & BEFORE INTERIOR WALL FRAMING IS STARTED. CONFIRM COMPATIBILITY OF SEALER WITH SUB-FLOOR TO PREVENT VOIDING WARRANTY.

C. EXTERIOR WALL SHEATHING SHALL BE MIN. 7/16", APA RATED SHEATHING, 24/16, EXPOSURE 1, WOOD STRUCTURAL PANELS. ALL EXTERIOR WALL SHEATHING SHALL BE FASTENED IN ACCORDANCE WITH THE APPLICABLE BUILDING CODE AND PER THE STRUCTURAL DRAWINGS AND SPECIFICATION.

D. ROOF SHEATHING SHALL BE PER STRUCTURAL (MIN. 7/16", APA RATED SHEATHING, 24/16, EXPOSURE 1, WOOD STRUCTURAL PANELS), INSTALLED WITH "H" CLIPS AT UNSUPPORTED JOINTS, INSTALLED PERPENDICULAR ACROSS RAFTERS AND FASTENED IN ACCORDANCE WITH THE APPLICABLE BUILDING CODE.

E. EXTERIOR TRIM WORK SHALL BE SMART TRIM (OR AS NOTED ON THE DRAWINGS) WITH S4S FINISH OF THE SIZES INDICATED ON THE DRAWINGS.

F. EXTERIOR SOFFITS SHALL BE WOOD TONGUE & GROOVE WITH EXPOSED RAFTER TAILS AS NOTED ON THE DRAWINGS.

G. ALL HEAVY TIMBER BEAMS, PURLINS, COLUMNS SHALL BE DOUGLAS FIR WITH ROUGH SAWN FINISH OF THE SIZES INDICATED.

H. EXTERIOR, TRIM-WRAPPED COLUMNS SHALL BE TREATED SOUTHERN YELLOW PINE, SIZED AS INDICATED ON THE DRAWINGS.

I. IF ROOF TRUSSES ARE USED, PROVIDE ENGINEER-SEALED SHOP DRAWINGS FOR THE ARCHITECT AND STRUCTURAL ENGINEER'S REVIEW PRIOR TO FABRICATION. THE BUILDER SHALL COORDINATE ALL REQUIRED HVAC RUNS IN THE TRUSSES.

J. CARPENTRY METHODS SHALL BE AS SPECIFIED AND NOTED ON THE DRAWINGS:

K. MUDSILLS BELOW RIM BOARDS SHALL BE 2x6. MUDSILLS BELOW WALLS MOUNTED DIRECTLY TO THE FOUNDATION WITHOUT AN INTERVENING FLOOR SHALL MATCH THE WIDTH OF THE WALL. MUDSILLS SHALL BE PRESSURE TREATED, DECAY AND TERMITE RESISTANT LUMBER IN ACCORDANCE WITH "AWPA" STANDARDS, SET OVER SILL SEALER (FULL WIDTH).

L. U.N.O. EXTERIOR STUDS SHALL BE 2x6's AT 16" O.C.. INTERIOR WALLS 10' OR LESS SHALL BE 2x4's AT 16" O.C. EXCEPT AT: BEARING WALLS, POCKET DOOR WALLS AND WHERE NEEDED TO ACCOMMODATE PLUMBING, SHALL BE 2x6's AT 16" O.C.. INTERIOR WALLS GREATER THAN 10' SHALL BE 2x6's AT 16" O.C. STUDS SHALL BE DOUG-FIR, STUD-GRADE OR BETTER, SPACED AT 16" O.C. MAX., TRIPLED AT CORNERS, DOUBLED AND SPACED AS REQUIRED FOR WINDOW AND DOOR OPENINGS WITH SINGLE SOLE PLATE AND DOUBLE TOP PLATES.

M. JOISTS SHALL BE TYPE, SIZE, SPECIES AND SPACING AS INDICATED ON THE DRAWINGS, DOUBLED AND BLOCKED APART AS PER IRC R502.4 UNDER PARALLEL BEARING PARTITIONS AND PARALLEL PARTITIONS.

N. BRIDGING FOR 2X JOISTS SHALL BE 1X4'S OR EQUAL WITH SPACING NOT TO EXCEED 8'-0" ON CENTER. BRIDGING FOR ENGINEERED, MANUFACTURED JOISTS SHALL CONFORM TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS

O. CUTTING, DRILLING & NOTCHING OF SOLID SAWN FRAMING MEMBERS SHALL CONFORM TO IRC SECTION R502.8. PENETRATIONS IN ENGINEERED WOOD FLOOR JOISTS SHALL BE ONLY AS DIRECTED BY MANUFACTURER.

P. WOOD BEAMS SHALL BE ENGINEERED WOOD OR SOLID SAWN TIMBERS AS INDICATED ON THE STRUCTURAL DRAWINGS, SET TRUE, PLUMB, AND LEVEL, CAREFULLY FITTED TO PROVIDE TIGHT JOINTS AT CONNECTIONS AND ALL POINTS OF BEAM BEARING.

Q. PROVIDE SOLID BLOCKING ((STUD WALL THICKNESS X WIDTH OF BEAM/ HEADER (OR AS DIRECTED BY STRUCTURAL ENGINEEER)) UNDER ALL STRUCTURAL BEAMS CONTINUOUS TO FOUNDATION OR STRUCTURE BELOW.

R. EXTERIOR MILLWORK SHALL BE SET TRUE, PLUMB, LEVEL AND WINDOWS INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS.

S. HEAVY TIMBER WORK SHALL BE SET PLUMB, TRUE AND LEVEL, CAREFULLY FITTED FOR TIGHT JOINTS AND SECURELY ANCHORED AND SOLID BLOCKED TO STRUCTURE.

T. EXTERIOR TRIM SHALL BE CAREFULLY FITTED AND SECURELY FASTENED IN PLACE. CAREFULLY MITER JOINTS FOR ALL EXTERIOR MOLDINGS.

U. INTERIOR MILLWORK SHALL BE SET TRUE, PLUMB AND LEVEL. MITER JOINTS REQUIRED FOR ALL CASINGS AND RUNNING TRIM, CAREFULLY FIT.

V. MILL SHALL VERIFY FIELD DIMENSIONS BEFORE COMMENCING ANY CABINETRY WORK. CABINETRY SHALL BE CAREFULLY FITTED AND SECURELY FASTENED IN PLACE PER MANUFACTURER'S AND APPLICABLE INDUSTRY STANDARDS.

W. STAIRWAYS SHALL HAVE THE NUMBER OF RISERS AND TREADS AS INDICATED ON THE DRAWINGS. RISER HEIGHT SHALL BE AS DETERMINED BY THE NUMBER OF RISERS INDICATED (7-3/4" MAX.). TREAD DEPTH SHALL BE AS NOTED ON THE PLAN (10" MIN.) FROM NOSING TO NOSING. HEAD CLEARANCE AT STAIRWELLS SHALL BE 6'-8" MIN. STAIR WIDTH SHALL BE AS INDICATED ON THE DRAWINGS AND NOT LESS THAN 36".

X. PROVIDE OWNER SELECTED HANDRAILS AND GUARDRAILS FOR ALL STAIRS. SUBMIT PRODUCT LITERATURE/ SHOP DRAWINGS FOR ARCHITECT REVIEW.

Y. PROVIDE ATTIC ACCESS AS INDICATED ON PLANS. THE R.O. SHALL NOT BE LESS THAN 32" BY 29" WITH 36" MIN. CLEARANCE ABOVE THE OPENING. WHERE MECHANICAL EQUIPMENT IS LOCATED IN THE ATTIC, PROVIDE A 36" BY 30" MIN. OPENING WITH 48" MIN. CLEARANCE ABOVE THE ACCESS OPENING. REFER TO IRC R807.1 FOR MINIMUM REQUIRED SIZES AND CLEARANCES IF RECOMMENDED SIZES CANNOT BE OBTAINED.

Z. PROVIDE FIREBLOCKING TO CUT OFF BOTH VERTICAL AND HORIZONTAL CONCEALED DRAFT OPENINGS AND TO FORM A FIRE BARRIER BETWEEN STORIES AND BETWEEN TOP STORY AND THE ROOF SPACE. REFER TO THE BUILDING FOR MORE DETAILED REQUIREMENTS AND ALLOWABLE FIREBLOCKING MATERIAL.

AA. PROVIDE DRAFTSTOPPING WHERE THERE IS USABLE SPACE BOTH ABOVE AND BELOW THE CONCEALED SPACE OF A FLOOR-CEILING ASSEMBLY SO THAT THE CONCEALED AREA DOES NOT EXCEED 1,000 S.F. (E.G. WHEN FLOOR TRUSSES ARE USED, WHEN SUSPENDED GYPSUM CEILINGS ARE INSTALLED, ETC.) REFER TO THE BUILDING CODE FOR MORE DETAILED REQUIREMENTS AND ALLOWABLE DRAFTSTOP MATERIAL.

AB. WOOD DECKS: COMPLY WITH AMERICAN WOOD COUNCIL'S DCA6 PRESCRIPTIVE RESIDENTIAL WOOD DECK CONSTRUCTION GUIDE AND REQUIREMENTS OF LOCAL A.H.J.

AC. WOOD PRESERVATIVE: COMPLY WITH AMERICAN WOOD PROTECTION ASSOCIATION STANDARD (AWPA) U1- LATEST EDITION.

THERMAL AND MOISTURE PROTECTION

A. 2018 IECC

INSULATION AND FENESTRATION REQUIREMENTS FOR CLIMATE ZONE 4
(REFER TO IECC TABLE R402.1.1 AND LOCAL AHJ FOR EXCEPTIONS AND CLARIFICATIONS)

FENESTRATION U-FACTOR: 0.35
SKYLIGHT U-FACTOR: 0.55
GLAZED FENESTRATION SHGC: 0.40
CEILING R-VALUE: 49
WOOD FRAME WALL R-VALUE: 20 FOR CAVITY INSULATION OR 13 CAVITY + 5 CONTINUOUS INSULATION
MASS WALL R-VALUE: 8 OR 13 IF MORE THAN HALF OF THE INSULATION IS ON THE INTERIOR OF THE MASS WALL.
FLOOR R-VALUE: 19
BASEMENT WALL R-VALUE: 10 CONTINUOUS INTERIOR OR EXTERIOR INSULATION OR 13 FOR INTERIOR CAVITY WALL INSULATION.
SLAB R-VALUE & DEPTH NR: 10, 2FT (R15 REQUIRED FOR HEATED SLABS)
CRAWL SPACE WALL R-VALUE: 10 CONTINUOUS INTERIOR OR EXTERIOR INSULATION OR 13 FOR INTERIOR CAVITY WALL INSULATION.

A. INSULATION FOR CAVITY SPACES IN WOOD FRAMED FLOORS, WALLS & CEILINGS BETWEEN CONDITIONED & UNCONDITIONED SPACES SHALL BE ----? CHOOSE AN OPTION BELOW OR CONTRACTOR OR OWNER OPTION:

KRAFT FACED, FIBERGLASS BATTS. LOOSE, BLOWN-IN, FIBERGLASS MAYBE USED IN HORIZONTAL APPLICATIONS IF A MOISTURE VAPOR RETARDER IS INSTALLED AT UNVENTED CAVITIES ON THE WARM-IN-WINTER SIDE OF THE INSULATION.
--or--
BLOWN-IN, LOOSE, FIBERGLASS "BATTS" IF A MOISTURE VAPOR RETARDER IS INSTALLED AT UNVENTED CAVITIES ON THE WARM-IN-WINTER SIDE OF THE INSULATION.
--or--
POLYICYNENE, SPRAY APPLIED, FOAM INSULATION IF A VAPOR RETARDANT PAINT APPROVED BY & REQUIRED BY THE INSULATION MANUFACTURER IS APPLIED AT UNVENTED CAVITIES ON THE WARM-IN-WINTER SIDE OF THE INSULATION.

B. INSULATION SHALL BE INSTALLED AT THE THICKNESS REQUIRED TO ACHIEVE THE R-VALUES LISTED ON THE TABLE ABOVE.

C. IF BATT INSULATION IS USED TO INSULATE VAULTED CEILINGS, PROVIDE BAFFLES ON THE UNDERSIDE OF THE ROOF SHEATHING TO PROVIDE CONTINUOUS AIR FLOW FROM THE EAVE TO THE RIDGE VENT.

D. INSTALL BAFFLES AT THE TRANSITION FROM EAVES AND ATTICS TO PREVENT INSULATION FROM BLOCKING THE AIR FLOW FROM THE EAVE TO THE VENTILATED ATTIC.

E. PROVIDE 1 1/2" RIGID INSULATION ON INTERIOR FACE OF FOUNDATION WALLS OR TRENCH FOOTINGS, BELOW CONCRETE FLOOR SLAB, AT WALK-OUT LOWER LEVEL AREAS.

F. IN THE BASEMENT AND AT SECOND FLOOR, INSTALL CODE REQUIRED INSULATION (R-19 MIN.) AT PERIMETER RIM JOISTS OF FLOOR ABOVE.

G. INTERIOR WALLS AROUND ALL BATHROOMS SHALL BE ACOUSTICALLY INSULATED WITH 3" MIN. MINERAL WOOL SOUND INSULATION.

H. PROVIDE 2" FOAM SOUND INSULATION WRAP AROUND ALL SOIL LINES ABOVE SLAB.

I. PROVIDE 26 ga. PREFINISHED GALVANIZED SHEET METAL, PREFINISHED BLACK IN COLOR, FLASHINGS OVER ALL WINDOWS, EXTERIOR DOORS, ROOF EAVES AND RAKES.

J. PROVIDE FLASHINGS AND COUNTERFLASHINGS AT CHIMNEYS AND OTHER VERTICAL SURFACES ABUTTING ROOFS, AS WELL AS ALL ROOF PENETRATIONS AND CRICKETS WITH 16 OUNCE COPPER.

K. GUTTERS SHALL BE 16 OZ. COPPER, SIZE AND SHAPE AS INDICATED ON DRAWINGS.

L. VALLEY FLASHINGS SHALL BE 16 OZ. COPPER WITH CENTER CRIMP.

M. DISSIMILAR METALS SHALL BE INSULATED AND SEPARATED FROM EACH OTHER TO PREVENT ELECTROLYSIS.

N. PROVIDE ATTIC INTAKE AND EXHAUST VENTING AS REQUIRED TO MEET IRC R806.

O. ---- ?EDIT: PROVIDE CONTINUOUS, EXTERNALLY BAFFLED, RIDGE VENT FOR ROOF EXHAUST.

P. PROVIDE VENT AND SHEET METAL WALL CAP AT DRYER LOCATION.

Q. ALL BATHROOMS SHALL HAVE EXHAUST FANS VENTED DIRECTLY TO THE OUTSIDE WITH THE VENTILATION RATE OF 50 CFM FOR INTERMITTENT VENTILATION AND 20 CFM FOR CONTINUOUS VENTILATION.

R. WEATHERSTRIP DOORS AS REQUIRED AND CAULK ALL JOINTS AND PENETRATIONS.

S. EXTERIOR WALLS SHALL RECEIVE ONE LAYER OF DuPONT TYVEK "STUCCO WRAP" INSTALLED PER THE MANUFACTURER'S SPECIFICATIONS.

T. PROVIDE SEALANT AT ALL JOINTS BETWEEN DISSIMILAR MATERIALS. ALL PENETRATIONS IN EXTERIOR WALLS TO BE CHINKED FULL OF INSULATION OR SEALED WITH SPRAY FOAM. SEAL EXTERIOR FACES WITH SEALANT.

U. ROOFING TO BE CONCRETE TILE. COLOR, TEXTURE AND SIZE SHALL BE SELECTED BY THE OWNER. CONTRACTOR SHALL SUBMIT PRODUCT LITERATURE WITH PRODUCT WEIGHT FOR ENGINEER REVIEW. A SAMPLE BOARD SHALL BE LAID-UP FOR ARCHITECT AND OWNER APPROVAL. ROOFING, UNDERLAYMENT, ICE AND WATER SHIELDS AND FLASHING SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

DOORS AND WINDOWS

A. DOORS BETWEEN THE GARAGE AND THE DWELLING SHALL BE A MIN. 1 3/4" SOLID CORE DOOR OR A 20-MINUTE FIRE RATED DOOR AND SHALL BE SELF-CLOSING.

B. ENTRY DOORS SHALL BE OF SIZE AND STYLE INDICATED WITH SPECIES SELECTED BY OWNER.

C. WINDOW AND PATIO DOOR DESIGNATIONS INDICATE 'ELEVATE' SERIES BY MARVIN WINDOWS AND FRENCH DOORS. MUNTIN WIDTH SHALL BE 7/8". ALL WINDOW & DOOR OPTIONS SHALL BE SELECTED BY THE OWNER. THE PRODUCT SUPPLIER SHALL IDENTIFY AND SUPPLY SAFETY GLAZING AT LOCATIONS REQUIRED BY CODE AND MEET APPLICABLE WINDOW EGRESS REQUIREMENTS. THE BUILDER SHALL PROVIDE ARCHITECT WITH WINDOW AND DOOR ORDER FOR REVIEW.

D. ALL INTERIOR DOORS SHALL BE THE SIZES INDICATED. DOOR MATERIALS, SPECIES, STYLE & FINISH SHALL BE AS SELECTED BY THE OWNER.

E. WINDOWS SHALL HAVE OPENING LIMITERS AT LOCATIONS REQUIRED BY CODE.

F. OVERHEAD DOORS SHALL MEET THE WIND LOAD REQUIRED BY CODE AND A.H.J. PROVIDE OVERHEAD DOOR LIFTS AND CONTROLS AS APPROVED BY THE OWNER. OVERHEAD DOOR PANEL SHALL BE:
- INSULATED AS SELECTED BY THE BUILDER TO ACHIEVE THE LOOK SHOWN ON THE DRAWINGS AND AS APPROVED BY OWNER.

FINISHES

A. PROVIDE 1/2" GYPSUM BOARD ON ALL INTERIOR FACES OF EXTERIOR WALLS, BOTH FACES OF INTERIOR WALLS, AND ALL CEILINGS. PROVIDE 1/2" WATER- RESISTANT GYPSUM BOARD ON WALLS AND CEILINGS OF WET ROOMS (I.E. BATHS, LAUNDRY, DRESSING, ETC.). PROVIDE 5/8", TYPE-X, GYPSUM BOARD ON GARAGE SIDE OF WALLS AND CEILINGS SEPARATING THE GARAGE FROM ALL LIVING SPACES. COVER ALL BEAMS IN THE GARAGE WITH 5/8", TYPE-X, GYPSUM BOARD. "I-JOIST" FLOOR ASSEMBLIES SHALL BE PROVIDED WITH ½" GYPSUM BOARD, ⅝" WOOD STRUCTURAL PANEL MEMBRANE OR EQUIVALENT ON THE UNDERSIDE OF JOISTS.

B. ALL CEILINGS SHALL BE FINISHED FOR PAINTING, NOT SPRAY TEXTURING.

E. HARDWOOD FLOORS OVER A CONCRETE SLAB SHALL BE PLACED ON ⅝" OSB ON DRICORE FLOOR ASSEMBLY (PER DRICORE INSTRUCTIONS). ENGINEERED HARDWOOD FLOORING IS RECOMMENDED IN THESE APPLICATIONS.
OR
¾" ADVANTECH SUB-FLOOR ON MIRADRAIN 2000.

F. THE CONTRACTOR SHALL FURNISH THE OWNER WITH SAMPLES OF ALL FINISH MATERIAL AND COLORS AS MAY BE REQUIRED FOR OWNER APPROVAL.

EQUIPMENT

A. PROVIDE AND INSTALL ALL APPLIANCES AND EQUIPMENT AS NOTED ON PLANS AND AS SELECTED BY THE OWNER IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS, CODES, AND ORDINANCES.

PLUMBING

A. REVIEW THE SURVEY TO SEE FLOW LINE OF THE SEWER AT THE STREET RELATIVE TO BASEMENT FLOOR ELEVATION TO DETERMINE WHETHER A SEWER EJECTOR PUMP WILL BE REQUIRED.

B. PROVIDE SUMP PUMP IN SUMP PIT IF FOUNDATION DRAIN LINES CANNOT BE DAYLIGHTED.

C. THE CONTRACTOR SHALL FURNISH AND INSTALL SERVICE LINE, METER AND PIT WITH A 1" TYPE "K", UNDERGROUND, WATER SERVICE LINE FROM MAIN TO HOUSE. METER SHALL BE PURCHASED BY OWNER. WATER LINE SHALL BE A MINIMUM OF 42" BELOW GRADE.

D. ---- ?CHOOSE AN OPTION BELOW? ----

----WATER DISTRIBUTION SYSTEM IN THE HOUSE SHALL BE FURNISHED AND INSTALLED COMPLETE, INCLUDING ASTM B88, TYPE "L",COPPER HOT AND COLD WATER LINES TO ALL FIXTURES WITH AIR CHAMBERS AND WASHERLESS CUT-OFF VALVES AT ALL FIXTURES. PROVIDE PRESSURE REDUCING VALVE AS REQUIRED.

---WATER DISTRIBUTION SYSTEM IN THE HOUSE SHALL BE FURNISHED AND INSTALLED COMPLETE, INCLUDING ASTM D 2846, SDR 11, CPVC TUBING FOR HOT AND COLD WATER LINES TO ALL FIXTURES WITH AIR CHAMBERS AND WASHERLESS CUT-OFF VALVES AT ALL FIXTURES. PROVIDE PRESSURE REDUCING VALVE AS REQUIRED.

----WATER DISTRIBUTION SYSTEM IN THE HOUSE SHALL BE FURNISHED AND INSTALLED COMPLETE, INCLUDING ASTM F 877, PEX TUBING FOR HOT AND COLD WATER LINES TO ALL FIXTURES WITH HOT & COLD WATER MANIFOLDS AND WASHERLESS CUT-OFF VALVES AT ALL FIXTURES. PROVIDE PRESSURE REDUCING VALVE AS REQUIRED.

E. DRAIN, WASTE AND VENT SYSTEM FOR HOUSE SHALL BE FURNISHED AND INSTALLED COMPLETE. TOILET SOIL LINES ABOVE GRADE SHALL BE CAST IRON. BRANCH SOIL LINES TO OTHER FIXTURES, VENT LINES & LINES BELOW GRADE SHALL BE ABS PIPE CONFORMING TO SCHEDULE 40 ASTM F 628 OR D 2661. FURNISH AND INSTALL CLEANOUTS AS REQUIRED TO FACILITATE CLEANING OF LINES.

F. INSTALLATION OF ALL FIXTURES SHALL BE COMPLETE AND IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS, CODES, AND ORDINANCES.

G. FURNISH AND INSTALL WASHER-LESS, CUT-OFF VALVES AT ALL PLUMBING FIXTURES.

H. FURNISH AND INSTALL WASHING MACHINE SUPPLY AND DRAINS, SPACE-SAVER, SAF-T-DRIP OR EQUAL.

I. FURNISH AND INSTALL FROSTPROOF SILLCOCKS AND COORDINATE LOCATIONS WITH THE OWNER. ALL PLUMBING SUPPLY LINES IN OUTSIDE WALLS AND/OR CRAWL SPACES SHALL RUN ON WARM SIDE OF INSULATION AND SHALL BE WRAPPED WITH PIPE INSULATION.

J. FURNISH AND INSTALL FLOOR DRAINS AS INDICATED OR REQUESTED. INTERIOR FLOOR DRAINS SHALL BE HOOKED TO THE WASTE PIPING.

K. RUN PLUMBING VENTS THROUGH ROOF PER CODE. LOCATE ON BACK SIDE OF HOUSE TO CONCEAL FROM STREET VIEW. ALL PLUMBING VENTS SHALL BE CONSOLIDATED AS MUCH AS POSSIBLE IN ORDER TO REDUCE PENETRATIONS THROUGH THE ROOF.

L. PROVIDE RECESSED ICE MAKER SHUT OFF VALVE AT ICE MAKER LOCATIONS.

M. ALL PLUMBING FIXTURES SHALL BE FURNISHED AND INSTALLED, COMPLETE WITH ALL PLUMBING SUPPLY FITTINGS AS REQUIRED, BY THE SUBCONTRACTOR AS SELECTED BY OWNER.

N. COORDINATE PASSIVE RADON VENT PIPE INSTALLATION TO UNDER-SLAB FOOTING DRAIN LINES PER FOUNDATION WATERPROOFING/ DRAINAGE NOTES AND EPA PUBLICATION "BUILDING RADON OUT".

HVAC

A. EQUIPMENT SHALL BE SIZED TO MAINTAIN AN INTERIOR TEMPERATURE OF 70 DEGREES F.D.B. AT AN EXTERIOR DESIGN TEMPERATURE OF -10 DEGREES F.D.B.; AND SHALL MAINTAIN AN INTERIOR TEMPERATURE OF 75 DEGREES F.D.B. AT AN EXTERIOR DESIGN TEMPERATURE OF 100 DEGREES F.D.B.

THE FOLLOWING GUIDELINES FORM A BASIS FOR BIDDING THE HVAC. THE HVAC CONTRACTOR SHALL DISCUSS THE SYSTEM OPTIONS AND COST/ BENEFIT OF THOSE OPTIONS WITH THE HOMEOWNER.

1.) EQUIPMENT SHALL BE: CARRIER or LENNOX OR EQUAL, "ENERGY STAR" LABELED PRODUCTS.

2.) FURNACES SHALL HAVE AN AFUE RATING OF 94% MINIMUM.

3.) AIR CONDITIONERS SHALL HAVE A SEER RATING OF 19 MINIMUM.

4.) HEAT PUMPS SHALL HAVE A HSPF/SEER RATING OF 9/16 MINIMUM.

B. SHEET METAL WORK SHALL BE FOR COMPLETE SUPPLY AND RETURN SYSTEMS INCLUDING DUCT WORK, GRILLES, REGISTERS, AND DAMPERS REQUIRED FOR UNIFORM AIR VOLUME AND DISTRIBUTION. SYSTEM SHALL BE TESTED AND BALANCED TO GIVE EVEN AIR FLOWS. ALL SUPPLY DUCTS IN THE ATTIC SHALL BE INSULATED WITH 1" THREE LB. DENSITY DUCT LINER.

C. VENTS SHALL BE CODE APPROVED AND SHALL BE FURNISHED AND INSTALLED FOR ALL EXHAUST FANS, EQUIPMENT AND APPLIANCES INCLUDING OVEN, COOKTOP AND OWNER'S CLOTHES DRYER, INCLUDING WEATHER CAP.

D. ALL VENTS AND COMBUSTION AIR DUCTS SHALL BE COMPLETE WITH WEATHER CAPS AND OR ROOF JACKS AS REQUIRED.

E. ALL HVAC SHAFTS PENETRATING THROUGH FLOOR AND CEILING FRAMING SHALL BE DRAFTSTOPPED PER LOCAL CODES.

F. ADJUSTMENTS SHALL INCLUDE TESTING AND BALANCING THE HVAC SYSTEM. EQUIPMENT SHALL BE LEVELED AND ALL RATTLES, VIBRATIONS, AND POPS SHALL BE REMOVED FROM ALL DUCTS, HOUSINGS, DAMPER CONTROLS AND EQUIPMENT.

G. CUTTING & NOTCHING OF JOISTS & STUDS TO RECEIVE PIPING AND DUCT WORK SHALL CONFORM TO IRC SECTIONS R502.8 & R602.6.?

H. PRECAST OR PREFABRICATED CONDENSER PADS SHALL BE INSTALLED LEVEL BY THE HVAC CONTRACTOR. CONTRACTOR SHALL BE RESPONSIBLE FOR RE-LEVELING ANY OUT OF LEVEL PADS AT THE END OF THE FIRST YEAR AFTER INSTALLATION.

I. MANUFACTURER'S GUARANTEES AND WARRANTIES ON ALL EQUIPMENT SHALL BE DELIVERED TO THE OWNER AND INSTRUCTIONS GIVEN ON THE OPERATION OF ALL EQUIPMENT, AT THE COMPLETION OF THE PROJECT.

J. ALL MATERIALS AND WORKMANSHIP SHALL BE IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF THE SHEET METAL CONTRACTOR'S NATIONAL ASSOCIATION, INC. AS SET FORTH IN THE CURRENT EDITION OF STANDARD PRACTICES IN SHEET METAL WORK MANUALS #1 AND #2.

K. THE MECHANICAL CONTRACTOR SHALL GUARANTEE THE PERFORMANCE OF THE INSTALLED HEATING AND COOLING EQUIPMENT. EQUIPMENT SHALL BE CAPABLE OF MAINTAINING THE SPECIFIED TEMPERATURES AND THE DUCT SYSTEM SHALL DELIVER UNIFORM, BALANCED AIR FLOWS.

P. AIR DUCTS PASSING THROUGH FIRE RESISTIVE CONSTRUCTION MUST BE 26 GAUGE SHEET METAL OR INCORPORATE A FIRE DAMPER. IF THE AIR DUCTS HAVE OPENINGS INTO THE GARAGE, A FIRE DAMPER IS REQUIRED.

Q. CONTRACTOR/ SUBCONTRACTOR SHALL SUBMIT A SKETCH LAYOUT SHOWING DUCT RUNS THAT WOULD AFFECT ANY CEILING HEIGHTS PRIOR TO FABRICATION.

ELECTRICAL

A. ELECTRICAL CONTRACTOR SHALL PROVIDE TEMPORARY SERVICE FOR CONSTRUCTION SITE AND LOAD CALCULATIONS FOR LOCAL UTILITY CO.

B. ELECTRICAL CONTRACTOR SHALL VERIFY SOURCE OF ELECTRICAL SERVICE AND PROVIDE COMPLETE UNDERGROUND SERVICE FROM ELECTRICAL SUPPLY TO METER AT HOUSE. ELECTRICAL CONTRACTOR SHALL COORDINATE ALL WORK WITH THE LOCAL UTILITY.

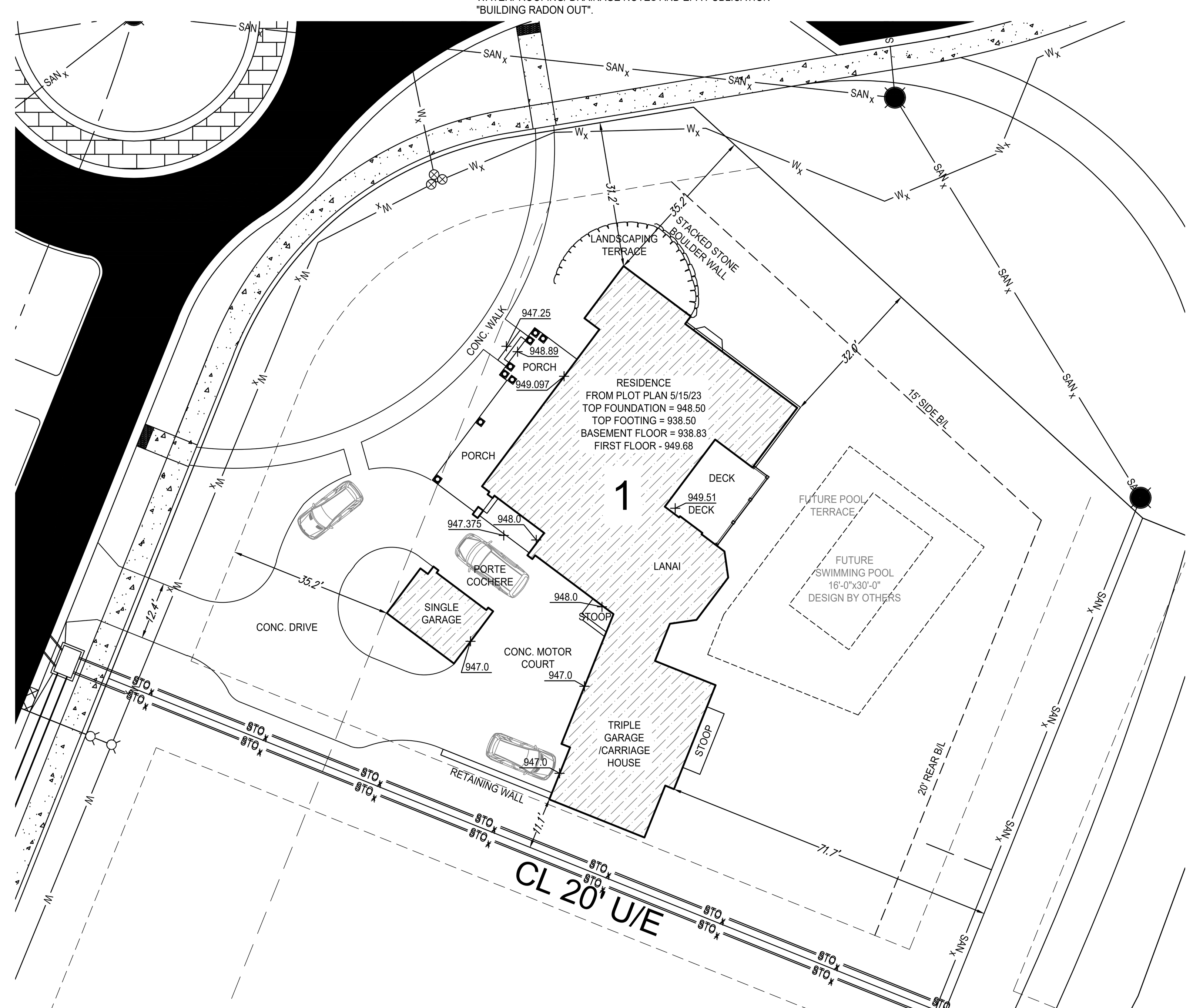
C. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL U.L. LISTED MAIN LOAD CENTERS AND CIRCUIT BREAKERS PROPERLY SIZED ACCORDING TO LOAD CALCULATIONS. BREAKERS SHALL BE PROPERLY IDENTIFIED WITH THEIR DESIGNATED USE AND LOAD CENTERS SHALL HAVE ??20% SPARE CIRCUITS.?

D. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL A COMPLETE DISTRIBUTION WIRING SYSTEM TO ALL EQUIPMENT, FIXTURES, RECEPTACLES, SWITCHES, DIMMERS AND CONTROLS. GFCI CIRCUITS SHALL BE PROVIDED AT ALL WET LOCATIONS (I.E. KITCHEN, LAUNDRY, BATHROOMS, GARAGE AND OUTDOOR RECEPTACLES.

E. ALL ELECTRICAL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH ALL LOCAL, STATE AND NATIONAL CODES AND ORDINANCES.

F. SMOKE DETECTORS SHALL MEET THE REQUIREMENTS OF NFPA 72 AND SHALL BE INTERCONNECTED, POWERED BY THE BUILDING POWER WITH A BATTERY BACKUP SYSTEM AND SHALL BE INSTALLED IN EACH SLEEPING ROOM, IMMEDIATELY OUTSIDE OF EACH SLEEPING ROOM, IN EACH MECHANICAL ROOM AND AT THE STAIRWAY(S).

G. PROVIDE OUTLET IN ATTIC NEXT TO RADON VENT PIPE FOR FUTURE RADON FAN IF NEEDED IN THE FUTURE.



ARCHITECTURAL SITE PLAN

SCALE 1" = 20'-0"

NORTH

STANDARD ABBREVIATIONS:

#	POUND OR NUMBER
&	AND
1R/1SH	ONE ROD, ONE SHELF
2R/2SH	TWO RODS, TWO SHELVES
±	PLUS OR MINUS
@	AT
A/C	AIR CONDITIONER / CONDITIONING
ABV	ABOVE
ACT	ACOUSTICAL CEILING TILE
ADA	AMERICANS WITH DISABILITY ACT
AFF	ABOVE FINISH FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
AHU	AIR HANDLING UNIT
AIA	AMERICAN INSTITUTE OF ARCHITECTS
ALT	ALTERNATE
ALUM	ALUMINUM
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ASTM	AMERICAN SOCIETY FOR TESTING MATERIALS
B/	BOTTOM OF
BD	BOARD
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM
BOT	BOTTOM
BRG	BEARING
BSMT	BASEMENT
BTWN	BETWEEN
CAB	CABINET
CANT	CANTILEVER
CCD	CONSTRUCTION CHANGE DIRECTIVE
CF	CUBIC FEET
CFM	CUBIC FEET PER MINUTE
CHAM	CHAMFER
CIP	CAST IN PLACE
CJ	CONTROL JOINT
CL	CENTER LINE
CLG	CEILING
CLO	CLOSET
CLR	CLEAR
CM	CARBON MONOXIDE DETECTOR
CMU	CONCRETE MASONRY UNIT
CO	CASED OPENING
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUE / CONTINUOUS
CONTR	CONTRACT / CONTRACTOR
CORD	COORDINATE
CORR	CORRIDOR
CRPT	CARPET
CSMT	CASEMENT
CTOP	COUNTERTOP
D	DRYER
DBL	DOUBLE
DEMO	DEMOLITION
DEPT	DEPARTMENT
D.F.	DOUGLAS FIR
DH	DOUBLE HUNG
DIA	DIAMETER
DISP	DISPOSAL
DN	DOWN
DP	DEEP
DR	DOOR
DS	DOWNSPOUT
DTL	DETAIL
DW	DISHWASHER
DWG	DRAWING
DRWR	DRAWER
EA	EACH
EIFS	EXTERIOR INSUL AND FINISH SYSTEM
EJ	EXPANSION JOINT
ELECT	ELECTRICAL
ELEV	ELEVATION
ENG	ENGINEER
ENTR	ENTRANCE
EQ	EQUAL
EQUIP	EQUIPMENT
EXCAV	EXCAVATE/-RD/-ION
EXH	EXHAUST / EXHAUST HOOD
EXIST	EXISTING
EXP	EXPOSED
EXT	EXTERIOR
F.E.	FIRE EXTINGUISHER
FD	FLOOR DRAIN
FDB	FAHRENHEIT DRY BULB
FDTN	FOUNDATION
FFE	FINISH FLOOR ELEVATION
FIN	FINISH / FINISHED
FIXT	FIXTURE
FLASH	FLASHING
FLR	FLOOR
FLRG	FLOORING
FLUOR	FLUORESCENT
FRP	FIBERGLASS REINFORCED PLASTIC PANEL
FRZR	FREEZER
FT	FOOT/FEET
FTG	FOOTING
FURN	FURNITURE
FUT	FUTURE
FV	FIELD VERIFY
G.S.F.	GROSS SQUARE FOOTAGE
GAL	GALLON/GALLONS
GALV	GALVANIZED
GB	GRAB BAR
GC	GENERAL CONTRACTOR
GEN	GENERAL
GFI	GROUND FAULT INTERRUPTER
GL	GLASS / GLAZING
GR	GRADE
GWB	GYPSUM WALL BOARD
GYP BD	GYPSUM BOARD
HDR	HEADER
HDW	HARDWARE
HDWD	HARD WOOD
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HR	HOUR
HT	HEIGHT
HVAC	HEATING, VENTILATION, AIR CONDITIONING
IBC	INTERNATIONAL BUILDING CODE
IN	INCH
INSUL	INSULATION
INT	INTERIOR
IRC	INTERNATIONAL RESIDENTIAL CODE
JAN	JANITOR
LBS	POUNDS
LCD	LIQUID CRYSTAL DISPLAY
LED	LIGHT EMITTING DIODE
LEED	LEADERSHIP IN ENVIRONMENTAL DESIGN
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LOC	LOCATION
LSL	LAMINATED STRAND LUMBER
LVL	LAMINATED VENEER LUMBER
LVR	LOUVER
LWRD	LOWERED
LN	LINE
MACH	MACHINE
MAINT	MAINTENANCE
MATL	MATERIAL
MAX	MAXIMUM
MDF	MEDIUM DENSITY FIBERBOARD
ME	MECHANICAL EQUIPMENT
MECH	MECHANICAL
MEMB	MEMBRANE
MEP	MECHANICAL, ELECTRICAL, AND PLUMBING
MFR	MANUFACTURER
MICRO	MICROWAVE
MIN	MINIMUM
MIR	MIRROR
MTL	METAL
MO	MASONRY OPENING
MTD	MOUNTED
N.A.	NOT APPLICABLE
N.S.F.	NET SQUARE FOOTAGE
NC	NON-COMBUSTIBLE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NO.	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OH	OPPOSITE HAND
OVHD	OVERHEAD
OPNG	OPENING
OPP	OPPOSITE
P.T.	POST TENSION
PER	PERIMETER
PERF	PERFORATED
PERP	PERPENDICULAR
PL	PLATE LINE
PLBG	PLUMBING
PNLG	PANELING
PR	PAIR
PROP	PROPERTY
PSL	PARALLEL STRAND LUMBER
QT	QUARRY TILE
QTB	QUARRY TILE BASE
QTY	QUANITY
R	RADIUS
RD	ROOF DRAIN
RE:	REFERENCE
REC.	RECESSED
REF	REFRIGERATOR
REINF	REINFORCE/-ED/-ING
REQ'D	REQUIRE / REQUIRED
RM	ROOM
RO	ROUGH OPENING
RD	ROUND
RUBR	RUBBER
S.M.	SHEET METAL
SCHED	SCHEDULE
SD	SMOKE DETECTOR
SECT	SECTION
SF	SQUARE FOOT/FEET
SH	SINGLE HUNG
SHLVS	SHELVES
SHTG	SHEATHING
SHWR	SHOWER
SIM	SIMILAR
SPEC	SPECIFICATIONS
SQ	SQUARE
SS	STAINLESS STEEL
ST	STREET
STD	STANDARD
STL	STEEL
STOR	STORAGE
STRUCT	STRUCTURAL / STRUCTURE
SUBFLR	SUB FLOOR
SUSP	SUSPENDED
SYS	SYSTEM
T	TOILET
T&G	TONGUE AND GROOVE
T/	TOP OF
T/SLAB	TOP OF SLAB
T/W	TOP OF WALL
TB	TOWEL BAR
TBD	TO BE DETERMINED
TEMP	TEMPORARY
THRU	THROUGH
TP	TOILET PAPER DISPENSER
TR	TOWEL RING
TR	TREAD
TUB	BATHTUB
TV	TELEVISION
TYP	TYPICAL
UC	UNDERCOUNTER
UL	UNDERWRITERS LABORATORY
UNO	UNLESS NOTED OTHERWISE
UON	UNLESS OTHERWISE NOTED
VAN	VANITY
VB	VAPOR BARRIER
VENT	VENTILATION
VER	VERIFY
VERT	VERTICAL
VOL	VOLUME
VR	VAPOR RETARDER
W	WASHER
W	WIDTH/WIDE
W/	WITH
W/C	WHEELCHAIR
W/O	WITHOUT
WC	WATERCLOSET
WD	WOOD
WH	WATER HEATER
WI	WROUGHT IRON
WIC	WALK-IN CLOSET
WDW	WINDOW
WK	WORK
WM	WALL MOUNT
WP	WATERPROOF / WATERPROOFING
WT	WEIGHT

BUILDING CODES

2018 INTERNATIONAL BUILDING CODE
2018 INTERNATIONAL PLUMBING CODE
2018 INTERNATIONAL MECHANICAL CODE
2018 INTERNATIONAL FUEL GAS CODE
2018 INTERNATIONAL RESIDENTIAL CODE
2018 INTERNATIONAL FIRE CODE
2017 NATIONAL ELECTRICAL CODE
ICC/ANSI A117.1-2009
AS ADOPTED BY THE CITY OF LEE'S SUMMIT, MISSOURI

BUILDING AREAS

FIRST FLOOR	2,307 SQ. FT.
SECOND FLOOR	1,235 SQ. FT.
WALKOUT FLOOR	1,035 SQ. FT.
CARRIAGE HOUSE	547 SQ. FT.
TOTAL LIVING AREA	5,124 SQ. FT.
GARAGES	1,019 SQ. FT.
PORTE COCHERE	316 SQ. FT.
ENTRY PORCH	411 SQ. FT.
LANAI	396 SQ. FT.

SHEET DIRECTORY

SHEET 1	NOTES & SPECIFICATIONS
SHEET 2	BASEMENT PLAN
SHEET 2a	FOUNDATION PLAN
SHEET 3	FIRST FLOOR PLAN
SHEET 4	SECOND FLOOR PLAN
SHEET 5	ROOF PLAN
SHEET 6	FRONT & LEFT SIDE ELEVATIONS
SHEET 7	REAR & RIGHT SIDE ELEVATIONS
SHEET 8	GARAGE ELEVATIONS/SECTIONS
SHEET 9	EXTERIOR ELEVATIONS/SECTIONS
S1.0	GENERAL NOTES
S1.1	FOUNDATION PLAN
S1.2	FIRST FLOOR FRAMING PLAN
S1.3	SECOND FLOOR FRAMING PLAN
S1.4	SECOND FLOOR CEILING FRAMING PLAN
S1.5	ROOF FRAMING PLAN
S2.0	FOUNDATION DETAILS
S2.1	FOUNDATION DETAILS
S3.0	FRAMING DETAILS
S3.1	FRAMING DETAILS
S3.2	FRAMING DETAILS
S4.0	GENERAL BRACED WALL DETAILS
S4.1	GENERAL BRACED WALL DETAILS

ARCHITECTURE
LANDSCAPE ARCHITECTURE
ENERGY SERVICES
NSPJ ARCHITECTS PA
3515 W. 75TH ST., SUITE 201
PRAIRIE VILLAGE, KS 66208
P. 913.831.1415
F. 913.831.1563
NSPJARCH.COM

STATE OF MISSOURI
CLINT EDD EVANS
NUMBER A-007343
ARCHITECT
8/29/23

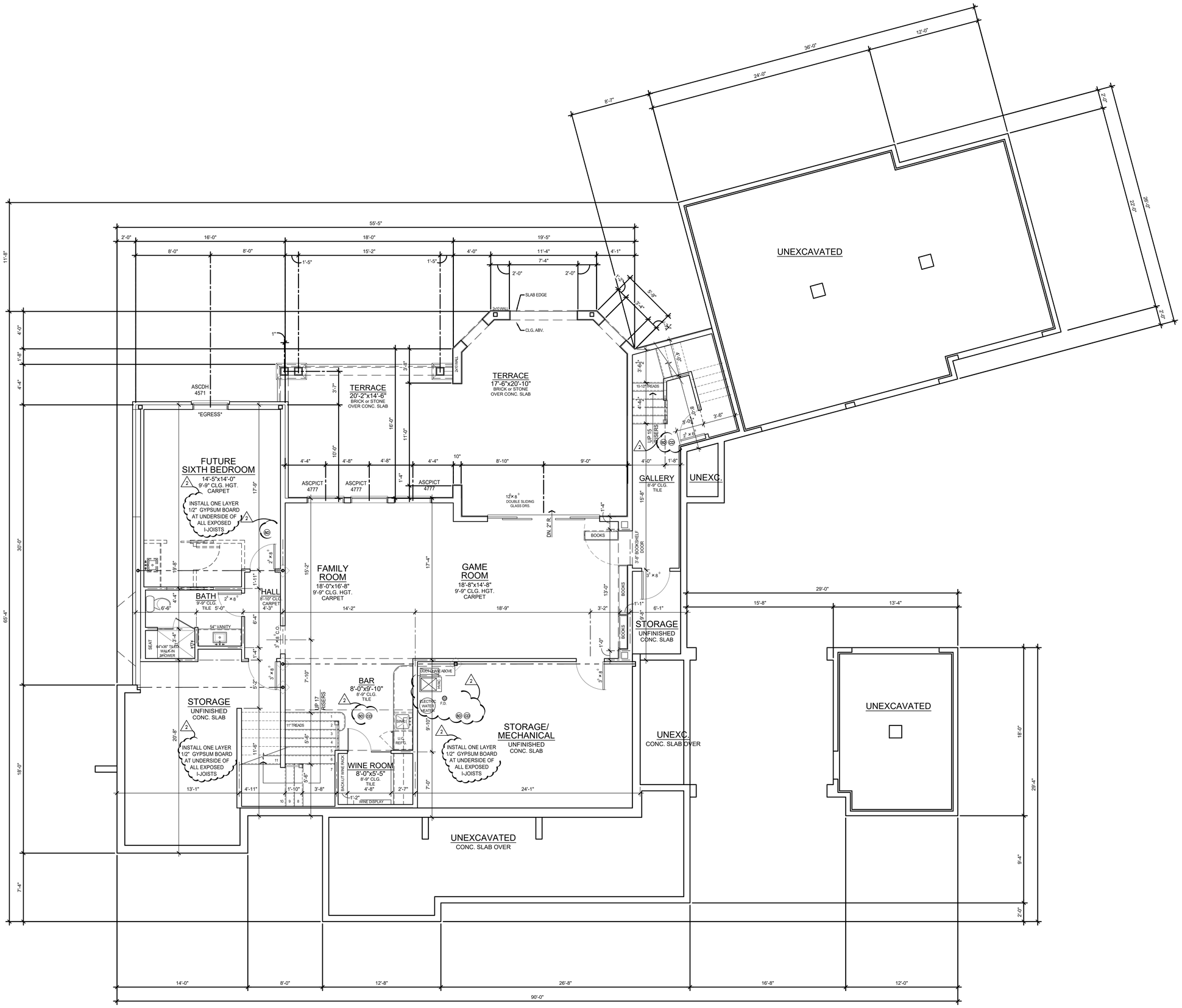
A NEW RESIDENCE FOR:
LUMBERMAN'S ROW
1201 SW CORINTHIAN LANE
LEE'S SUMMIT, MISSOURI

DRAWING RELEASE LOG
1 - 23 0824-Street Address

REVISIONS

JOB NO. 723422.01
DATE June 6, 2023
DRAWN BY TAH / CEE

1



WALKOUT FLOOR PLAN

SCALE 1/4" = 1'-0"

1,035 SQ. FT. LOWER FLOOR

NORTH

2

NSPJ ARCHITECTS, INC.
ARCHITECTURE
LANDSCAPE ARCHITECTURE
ENERGY SERVICES
3515 W. 75TH ST., SUITE 201
PRAIRIE VILLAGE, KS 66208
P. 913.831.1415
F. 913.831.1563
NSPJARCH.COM

STATE OF MISSOURI
CLINT EDD EVANS
NUMBER A-4773
REGISTERED ARCHITECT
8/30/23

A NEW RESIDENCE FOR:

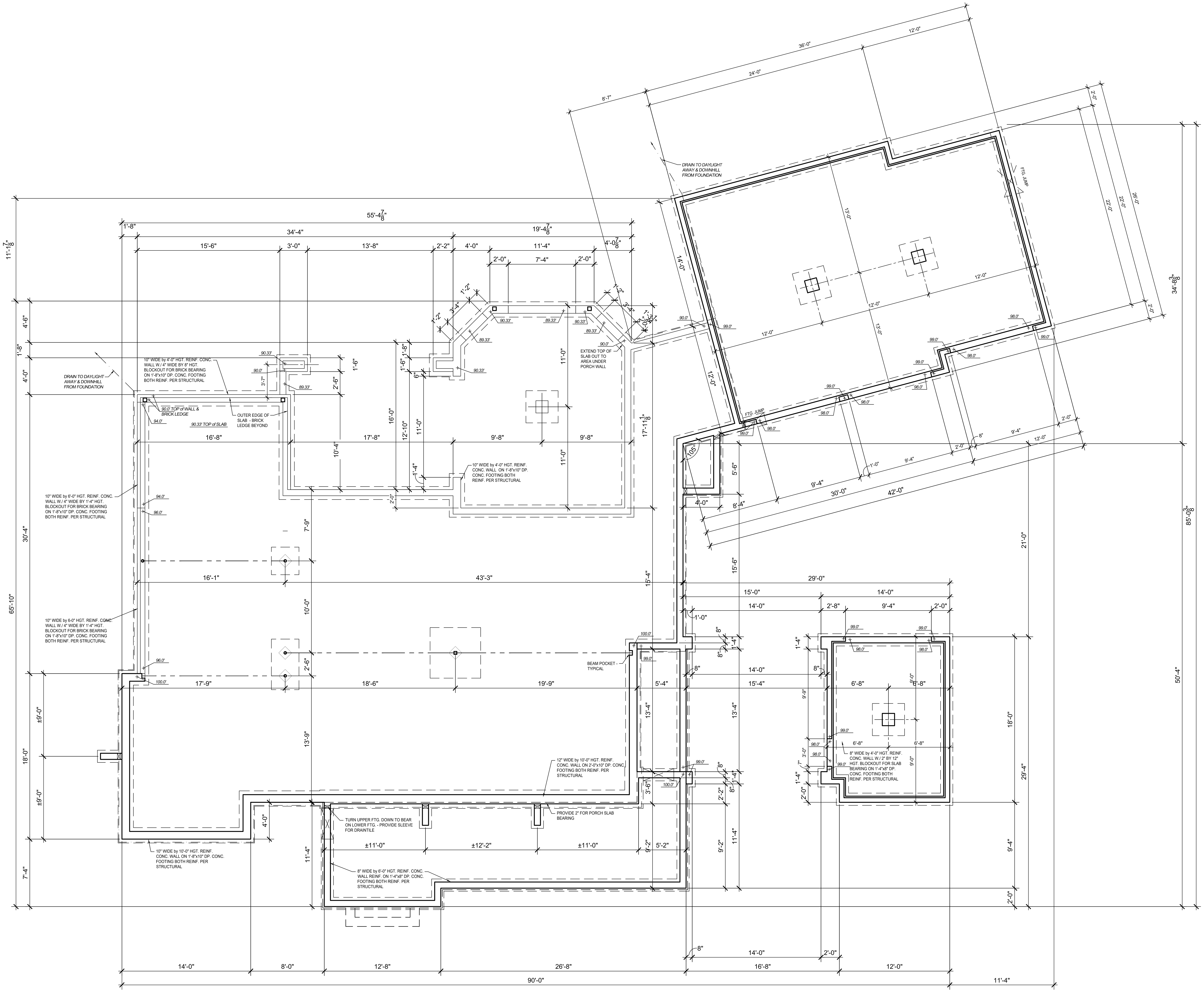
LUMBERMAN'S ROW

1201 SW CORINTHIAN LANE
LEE'S SUMMIT, MISSOURI

DRAWING RELEASE LOG
1 23 0824-Street Address
2 23 0830-City Comments

REVISIONS

JOB NO. 723422.01
DATE June 6, 2023
DRAWN BY TAH / CEE



FOUNDATION PLAN

SCALE 1/4" = 1'-0"

NSPJ ARCHITECTS
ARCHITECTURE
LANDSCAPE ARCHITECTURE
ENERGY SERVICES
3515 W. 75TH ST., SUITE 201
PRAIRIE VILLAGE, KS 66208
P. 913.831.1415
F. 913.831.1563
NSPJARCH.COM

STATE OF MISSOURI — CLINT EDD EVANS — NUMBER A-2004 — ARCHITECT — 8/30/23

A NEW RESIDENCE FOR:
LUMBERMAN'S ROW
1201 SW CORINTHIAN LANE
LEE'S SUMMIT, MISSOURI

DRAWING RELEASE LOG
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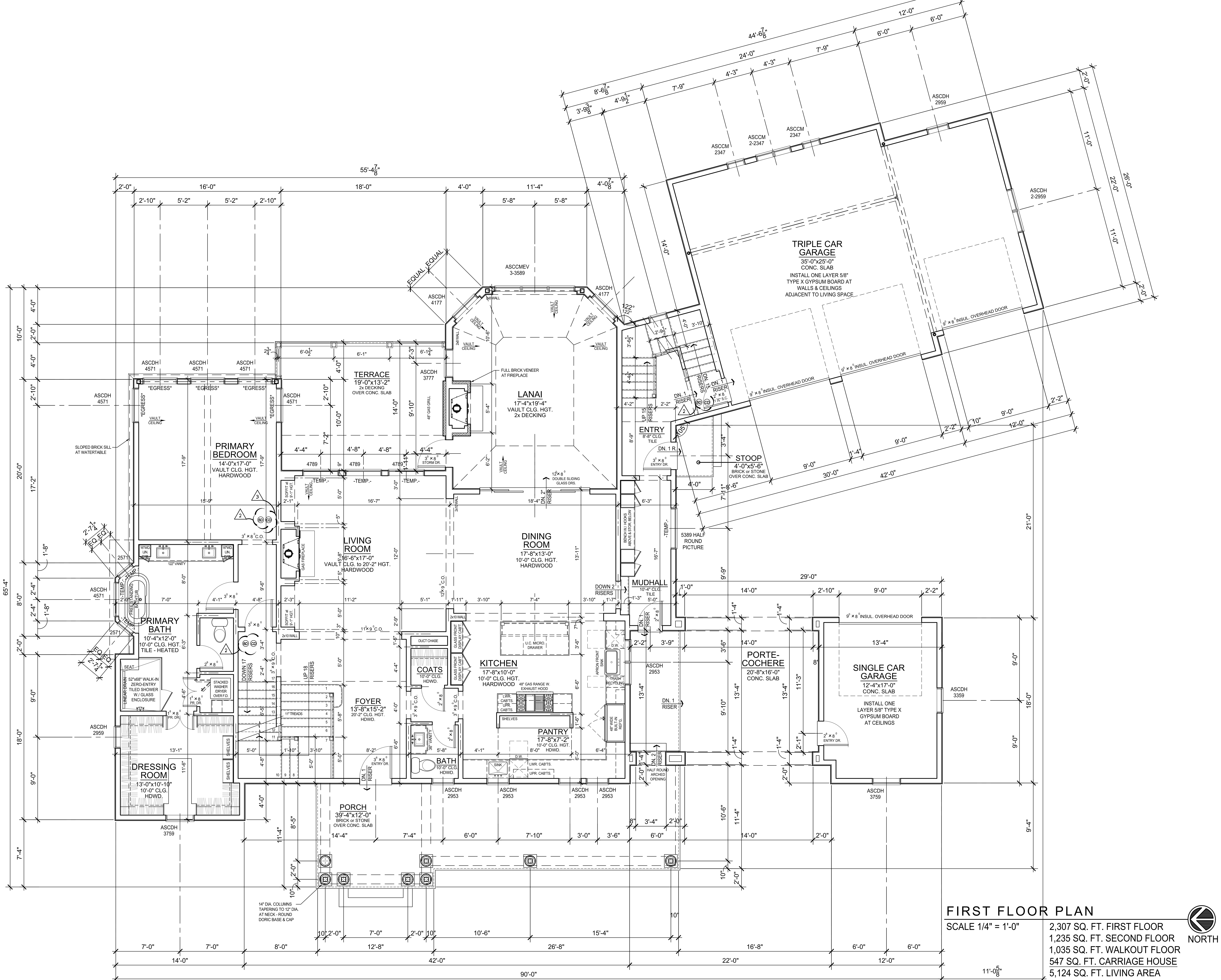

FIRST FLOOR PLAN

SCALE 1/4" = 1'-0"

2,307 SQ. FT. FIRST FLOOR
1,235 SQ. FT. SECOND FLOOR
1,035 SQ. FT. WALKOUT FLOOR
547 SQ. FT. CARRIAGE HOUSE
5,124 SQ. FT. LIVING AREA
1,019 SQ. FT. GARAGES
316 SQ. FT. PORTE COCHERE
411 SQ. FT. ENTRY PORCH
396 SQ. FT. GARDEN ROOM

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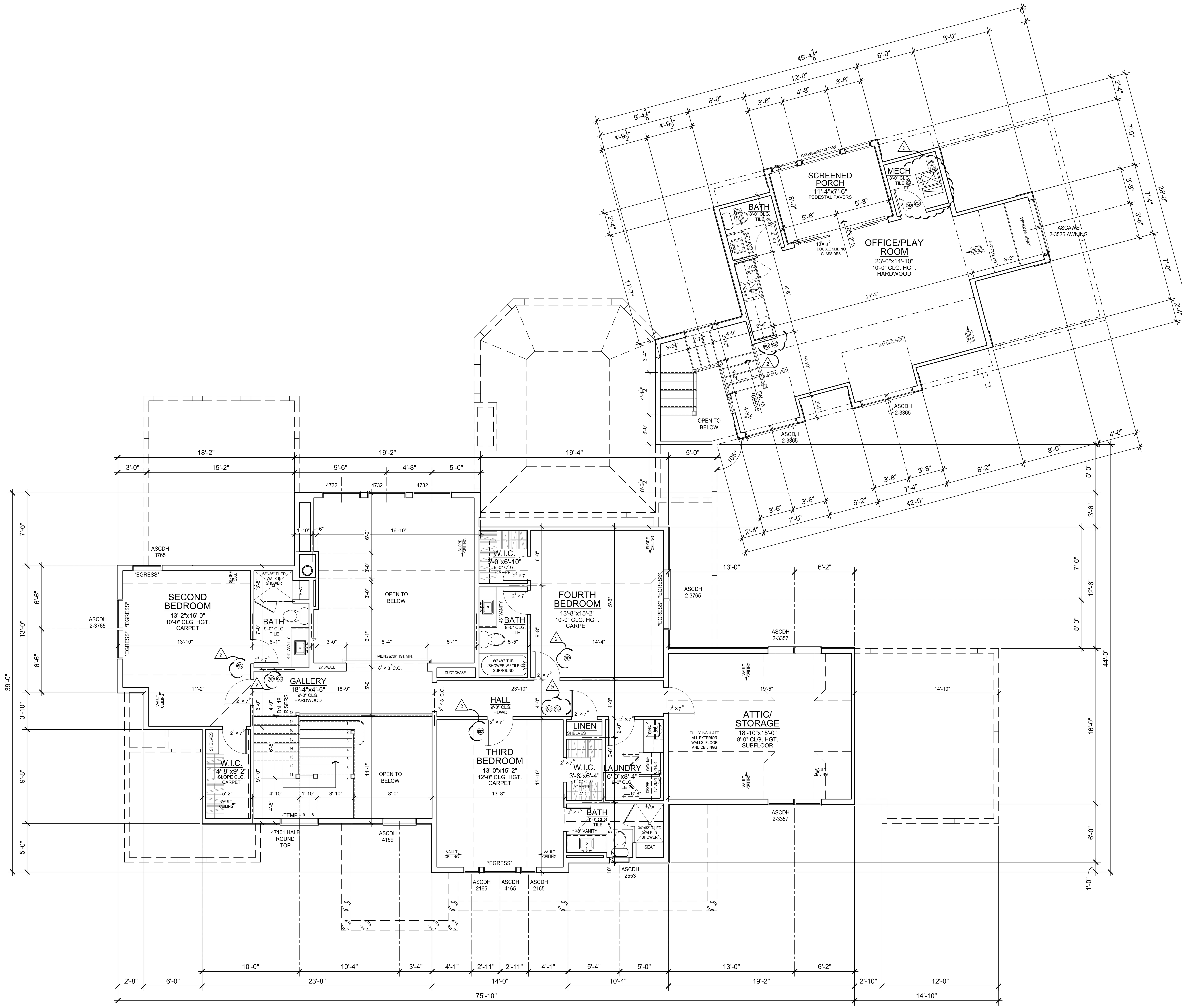
A NEW RESIDENCE FOR:
LUMBERMAN'S ROW
1201 SW CORINTHIAN LANE
LEE'S SUMMIT, MISSOURI

DRAWING RELEASE LOG
1. 23 0824-Street Address
2. 23 0830-City Comments
3. 23 0905-City Comments

REVISIONS

JOB NO. 723422.01
DATE June 6, 2023
DRAWN BY TAH / CEE



SECOND FLOOR PLAN

SCALE 1/4" = 1'-0"

1,235 SQ. FT. SECOND FLOOR
547 SQ. FT. CARRIAGE HOUSE

NORTH

NSPJ
ARCHITECTS
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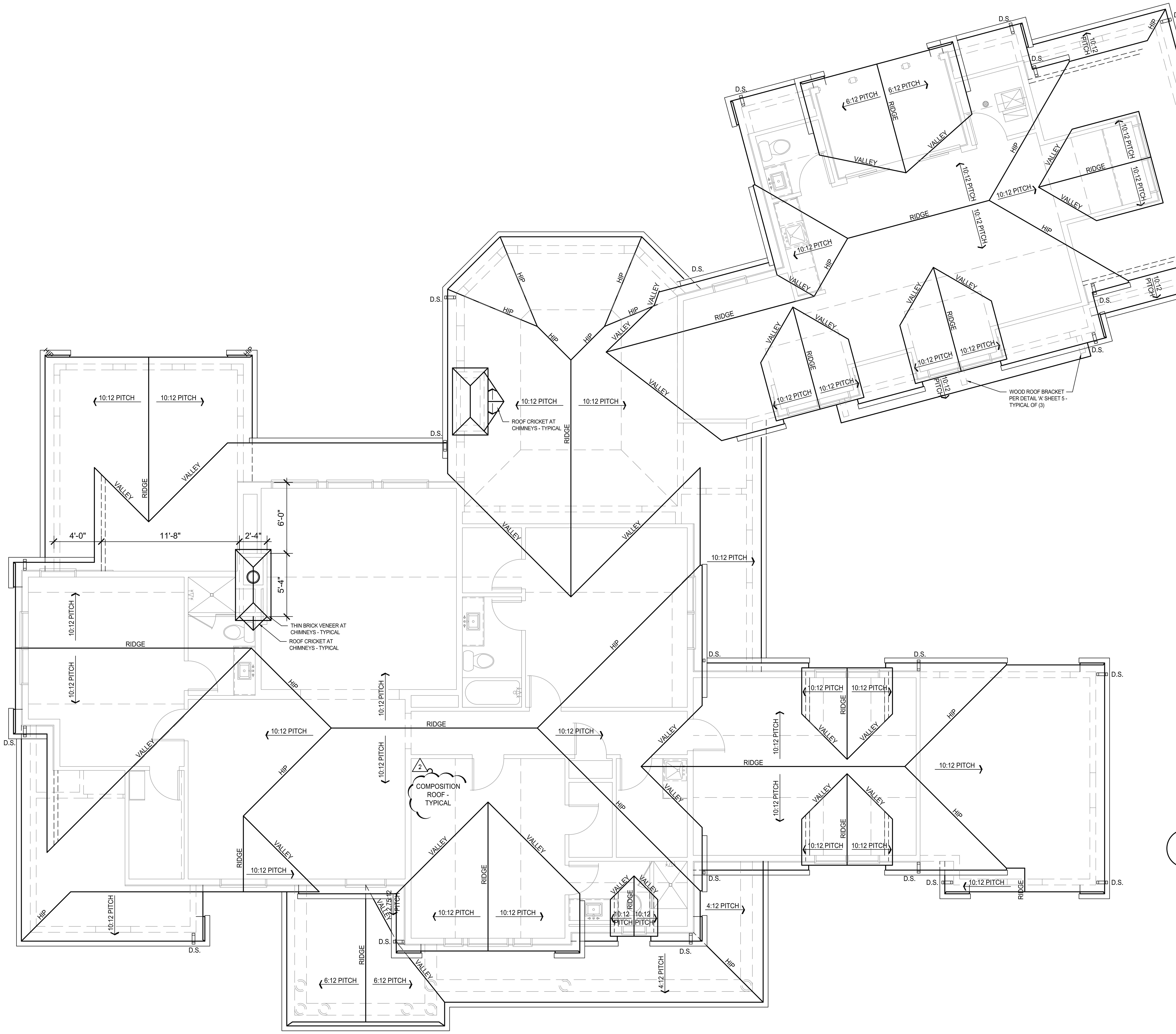
A NEW RESIDENCE FOR:
LUMBERMAN'S ROW
1201 SW CORINTHIAN LANE
LEE'S SUMMIT, MISSOURI

DRAWING RELEASE LOG
1. 23 0824-Street Address
2. 23 0830-City Comments
3. 23 0905-City Comments

REVISIONS

JOB NO. 723422.01
DATE June 6, 2023
DRAWN BY TAH / CEE

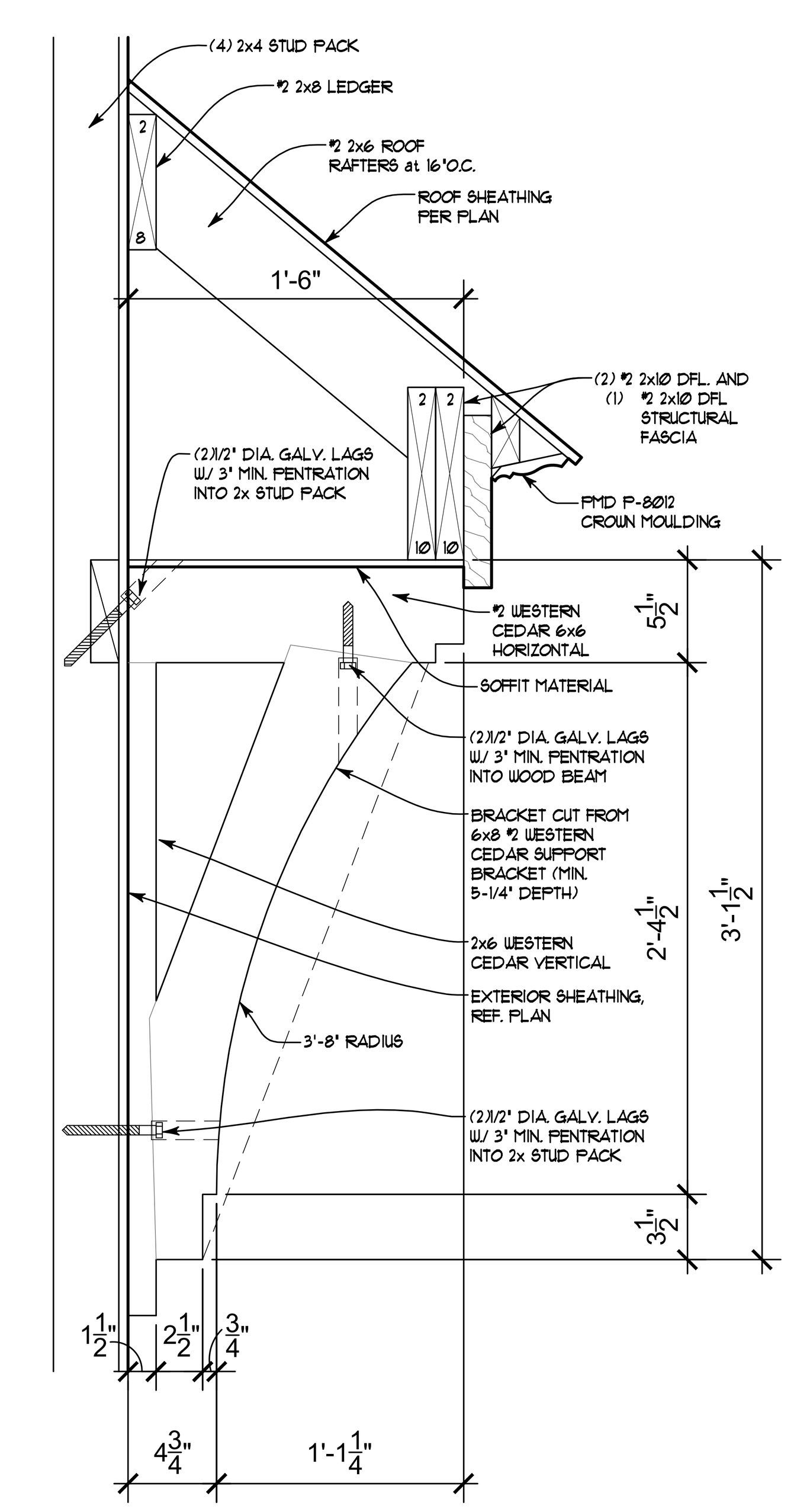
30x42 SHEET (Arch E1)



ROOF PLAN

SCALE 1/4" = 1'-0"

NORTH



A ROOF BRACKET DETAIL

SCALE 1-1/2" = 1'-0"

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CLINT EVANS — STATE OF MISSOURI — ARCHITECT — 8/30/23

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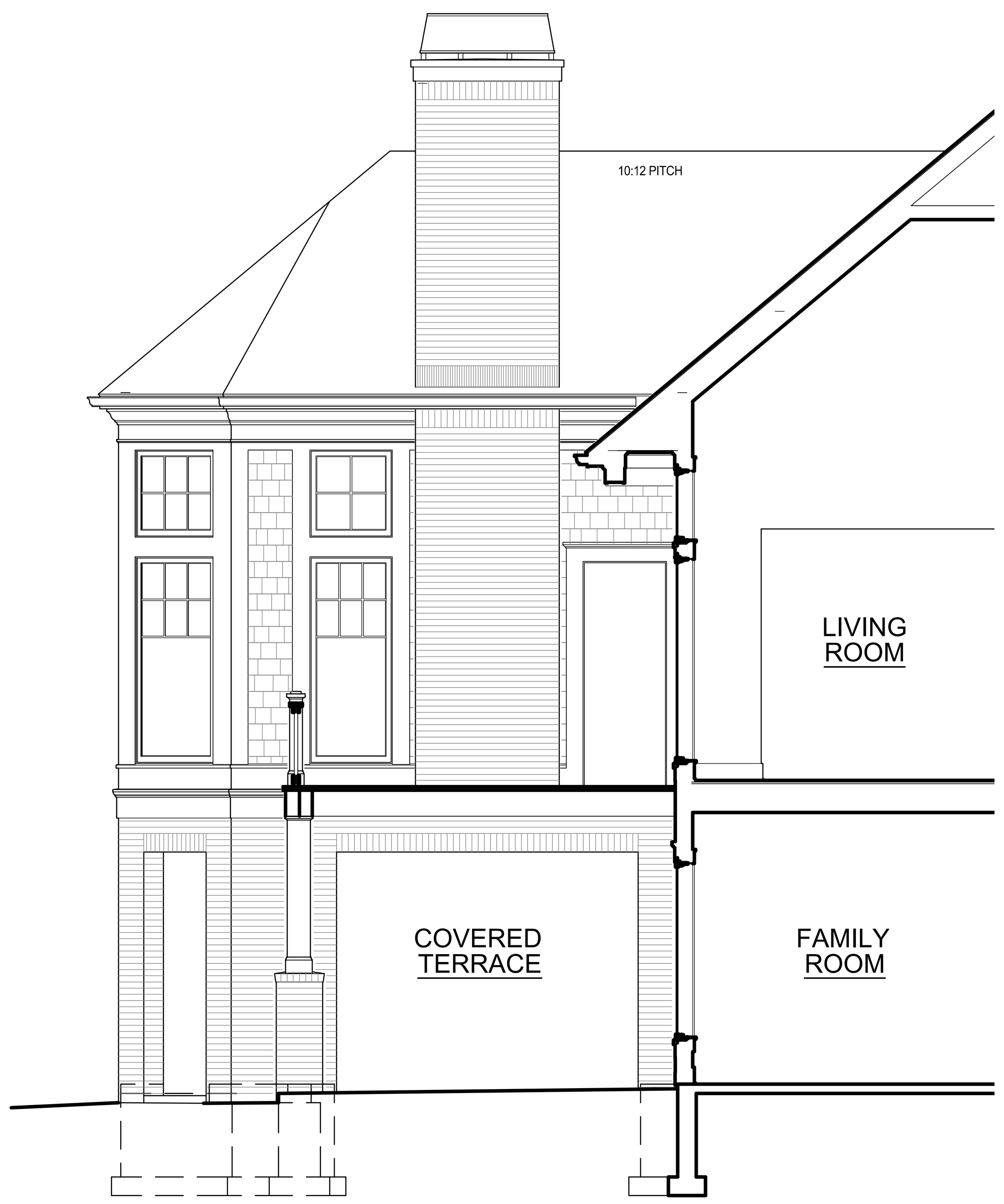
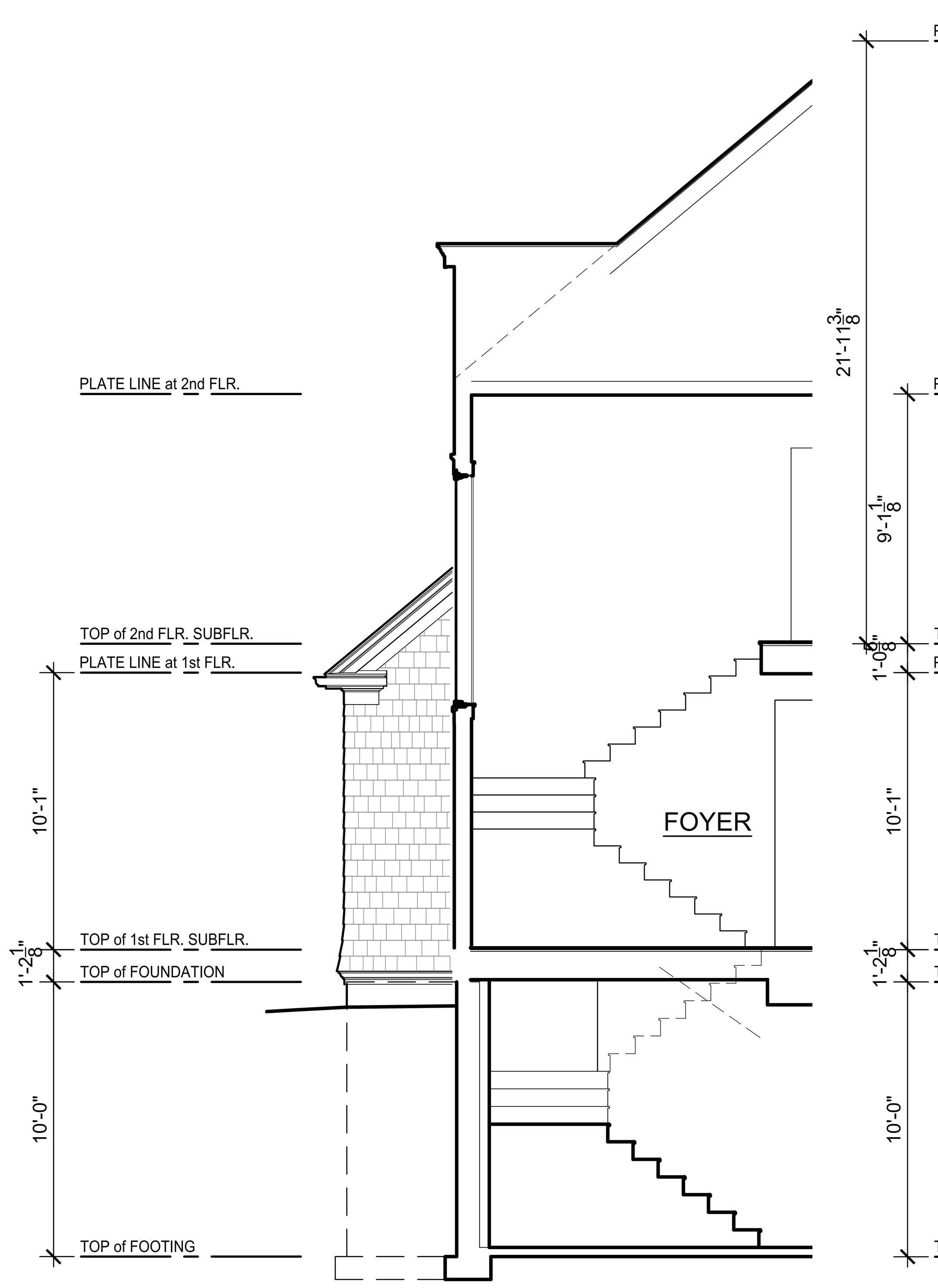


LEFT SIDE ELEVATION - DECK/LANAI VIEW

SCALE 1/4" = 1'-0"

LEFT SIDE ELEVATION

SCALE 1/4" = 1'-0"



RIGHT SIDE ELEVATION at DRESSING ROOM

SCALE 1/4" = 1'-0"

FRONT ELEVATION

SCALE 1/4" = 1'-0"

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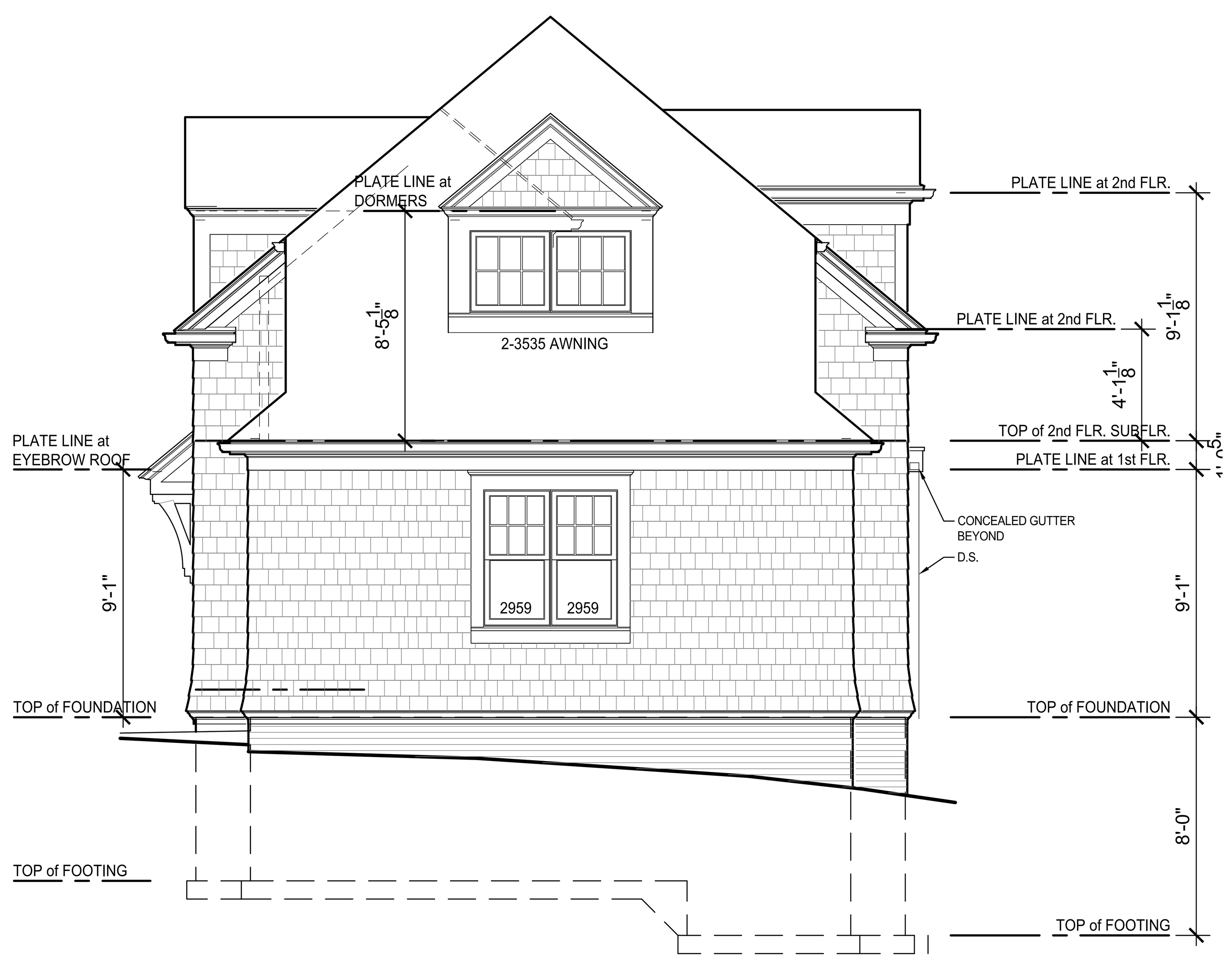

RIGHT SIDE ELEVATION - TRIPLE GARAGE

SCALE 1/4" = 1'-0"

RIGHT SIDE ELEVATION

SCALE 1/4" = 1'-0"

REAR ELEVATION

SCALE 1/4" = 1'-0"

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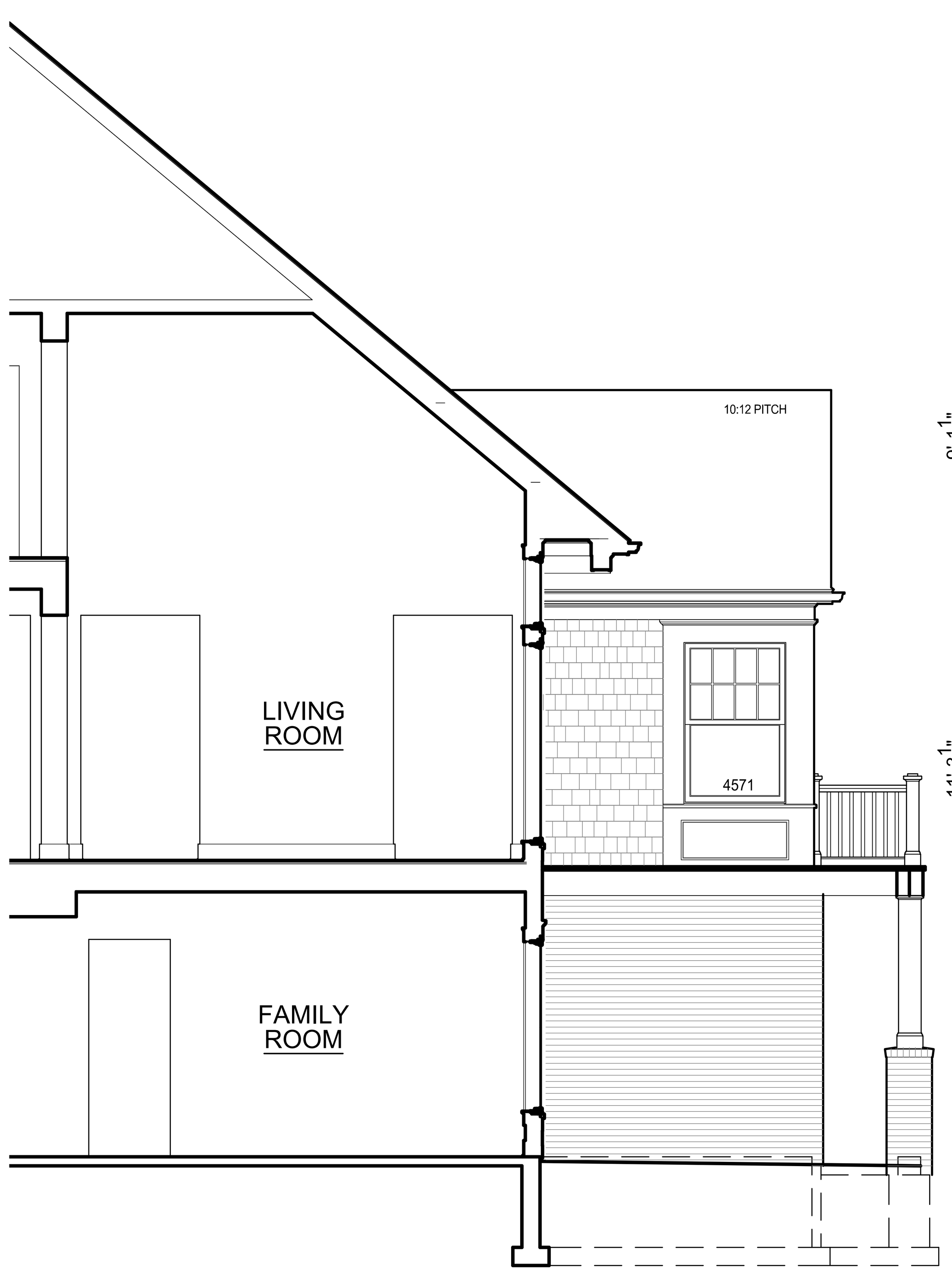
RIGHT SIDE ELEVATION/ SECTION THROUGH PORTE COCHERE

SCALE 1/4" = 1'-0"

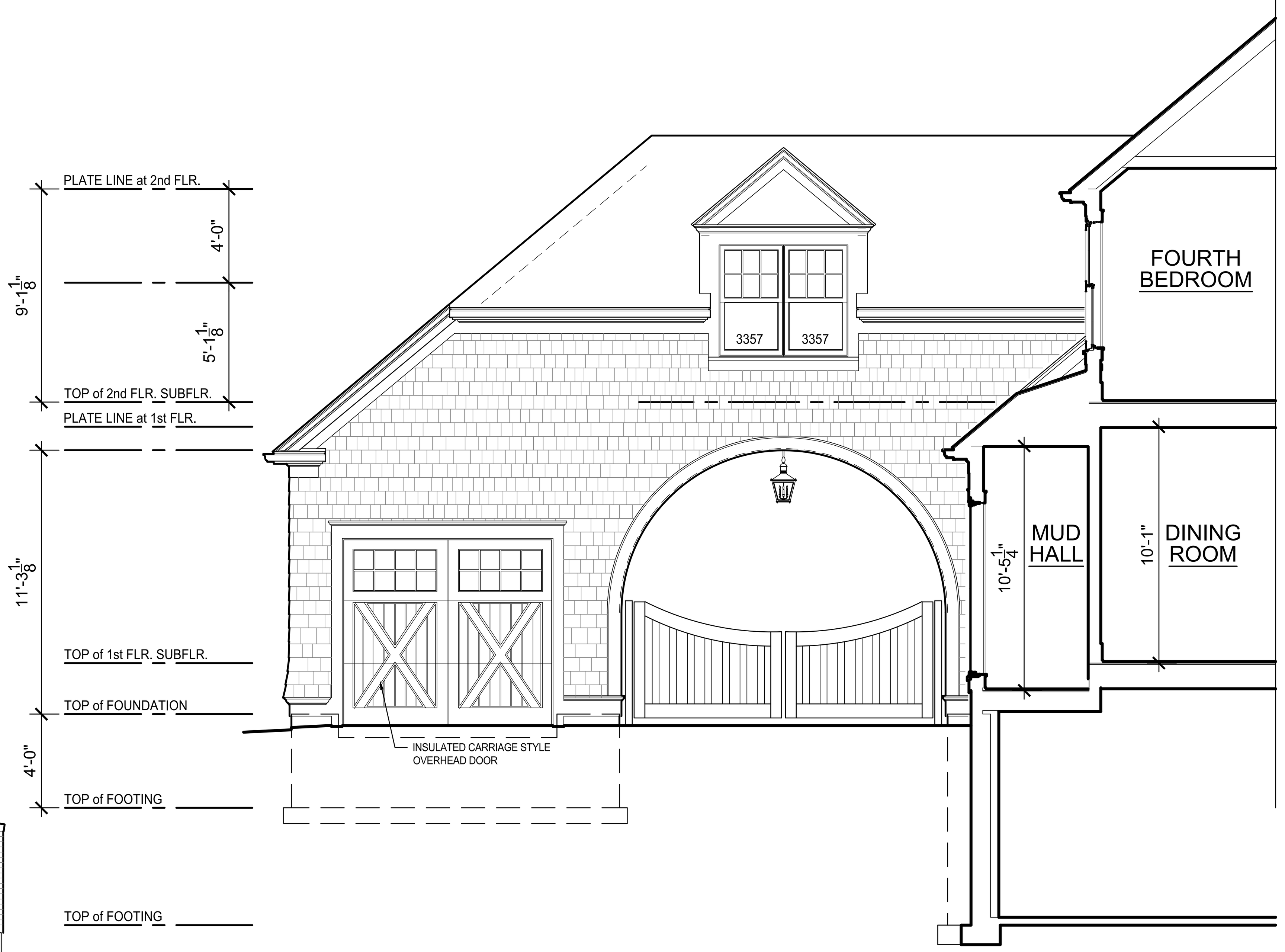
GARAGE REAR ELEVATION

SCALE 1/4" = 1'-0"



SIDE ELEVATION - PRIMARY BEDROOM

SCALE 1/4" = 1'-0"



GARAGE FRONT ELEVATION - EAST ELEVATION SINGLE GARAGE

SCALE 1/4" = 1'-0"

GARAGE FRONT ELEVATION - WEST ELEVATION THREE CAR GARAGE

SCALE 1/4" = 1'-0"

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SHEATHING AND FRAMING FASTENING SCHEDULE

BUILDING COMPONENT	MATERIAL	FASTENING
ROOF SHEATHING[1]	7/16" PLYWOOD	16 GA x 1-3/4" STAPLES AT 3" OC EDGES AND 6" OC IN FIELD
	1x4 #3 FURRING	1/2" CROWN STAPLES
FLOOR SHEATHING[1]	3/4" T&G YELLOW PINE PLYWOOD APPLIED PERPENDICULAR TO JOISTS AND ENDS STAGGERED	8d COMMON NAILS AT 6" OC EDGES AND 12" OC IN THE FIELD
		14 GA x 2" STAPLES AT 4" OC EDGES AND 8" OC IN THE FIELD
		12.5 GA x 1-1/2" RING OR SCREW SHANK NAILS AT 6" OC EDGES AND 8" OC IN THE FIELD
CEILING COVERING[1]	1/2" GYPSUM SHEATHING	7" OC NAILED / 12" OC SCREWED WITH 13 GA, 1-3/8" LONG, 19/64" HEAD; 0.098 DIA, 1-1/4" LONG, ANG.-RINGED; 5d COOLER NAIL, 0.086 DIA, 1-5/8" LONG, 15/64" HEAD; OR GYP BD NAIL, 0.086 DIA, 1-5/8" LONG, 9/32" HEAD
INTERIOR WALL COVERING[1]	1/2" GYPSUM SHEATHING	6d COMMON NAILS; 1-5/8" GALVANIZED STAPLES; 1-1/4" SCREWS, TYPE W OR S- AT 4" OC EDGES AND 8" OC IN THE FIELD
EXTERIOR WALL SHEATHING	MIN 3/8" APA RATED SHEATHING	8d COMMON NAILS AT 6" OC EDGES AND 12" OC IN THE FIELD
CONVENTIONAL WOOD FRAMED WALLS	*SUPPORTING 2 FLOORS, ROOF, AND CEILING OR LESS. *HEIGHT: 10'-0" OR LESS SIZE: NOM 2x4 (NOM 2x6 WHEN SUPPORTING 2 FLOORS, CEILING, AND ROOF) *SPECIES: DOUG-FIR, HEM-FIR, SOUTH PINE, SPRUCE-PINE-FIR *MAXIMUM SPACING 16" OC *STUDS 10' LENGTH OR LESS SHALL BE #3 STANDARD, OR STUD GRADE *STUDS OVER 10' LENGTH SHALL BE MIN #2 GRADE	*TOE NAIL RIM JOIST TO SILL OR TOP PLATE: 8d COMMON AT 6" OC; 3"x0.131" AT 6" OC; 3"x0.131" AT 6" OC *TOE NAIL STUD TO TOP AND SOLE PLATE: (4) 8d COMMON; (4) 3"x0.131" *END NAIL TOP AND SOLE PLATE TO STUD: (2) 16d COMMON; (3) 3"x0.131" *FACE NAIL BUILT-UP CORNER STUDS: 16d AT 24" OC; 3"x0.131" AT 16" *FACE NAIL BUILT-UP CORNER STUDS (AT BRACED WALL PANELS): 16d COMMON NAILS AT 16" OC; 3"x0.131" AT 12" OC *FACE NAIL JACK STUDS/TRIMMERS SUPPORTING HEADERS WITH: 10d NAILS AT 6" OC *FACE NAIL DBL TOP PLATE: 16d COMMON AT 16" OC; 3"x0.131" AT 12" OC; 3"x0.128" AT 12" OC *DBL TOP PLATES WITH MIN 48" OFFSET OF EACH. FACE NAIL LAPPED AREA WITH: (8) 16d COMMON; (12) 3"x0.131"; (12) 3"x0.128" *FACE NAIL DBL TOP PLATES AT LAPPED CORNERS AND INTERSECTIONS WITH: (2) 16d COMMON; (3) 3"x0.131"; (3) 3"x0.128" *FACE NAIL SOLE PLATE TO FRAMING SYSTEM WITH: 16d COMMON AT 16" OC; 3"x0.131" AT 12" OC *TOENAIL BRIDGING TO JOIST, EACH END: (2) 8d COMMON; (2) 3"x0.131"; (3) 3"x0.128" *FACE NAIL LEDGER STRIPS SUPPORTING JOISTS OR RAFTERS WITH: (3) 16d COMMON; (4) 3"x0.131"; (4) 3"x0.128"
CONVENTIONAL WOOD HEADER FRAMING	PER PLAN	*TOE NAIL HEADERS TO WALL STUDS WITH (4) 8d NAILS AT EACH END. *FACE NAIL DOUBLE PIECE HEADERS WITH 16d NAILS AT 16" CENTERS ALONG EACH EDGE.
RAFTER TIES[2]	MIN 2x4 MEMBERS AT EACH RAFTER	REF TABLE R802.5.2
COLLAR TIES	MIN 1x4 MEMBERS AT 48" OC	FACENAIL TO RAFTERS IN UPPER 1/3 OF ATTIC SPACE WITH (3) 10d NAILS AT EACH

1. NOTE: ALL SHEATHING MATERIALS TO BE APPLIED PERPENDICULAR TO JOISTS AND ENDS STAGGERED.
2. RAFTER TIES SHALL NOT BE REQUIRED WHEN A STRUCTURAL RIDGE HAS BEEN PROVIDED AND ADEQUATELY DESIGNED (AS IN A FULLY VAULTED ROOM). SUCH SHALL BE NOTED AS "STRUCTURAL" ON THE PLAN.

BUILDING COMPONENT	FASTEN TO	FASTEN WITH
RAFTERS	TO RIDGE/VALLEY/HIP RAFTERS	TOENAIL WITH (4) 16d ENDNAIL WITH (3) 16d
	TO PLATE	TOENAIL WITH (2) 16d
CEILING JOISTS	TO TOP PLATE	TOENAIL WITH (3) 8d AT EACH END
	WHERE CEILING JOISTS RUN PARALLEL TO RAFTERS FACENAIL TO RAFTERS WITH (3) 10d MIN	
FLOOR JOISTS	TO SILL OR GIRDER	TOENAL WITH: (3) 8d COMMON; (3) 3"x0.131"; (4) 3"x0.128"
	TO RIM JOIST	ENDNAIL WITH: (3) 16d COMMON; (4) 3"x0.131"; (4) 3"x0.128"
BRACED WALL PANELS PERP TO FRAMING MEMBERS ABOVE/BELOW:	TO FRAMING MEMBER	SOLE PL, 16" OC WITH: (3) 16d COMMON; (4) 3"x0.131" TOP PL, 6" OC WITH: 8d COMMON; 3"x0.131"
PARALLEL TO FRAMING MEMBERS ABOVE/BELOW:	TO FRAMING AND BLOCKING AT 16" OC	SOLE PL, 16" OC WITH: (3) 16d COMMON; (4) 3"x0.131" AND AT EACH BLOCK: (3) 16d COMMON; (4) 3"x0.131" TOP PL, 6" OC WITH: 8d COMMON; 3"x0.131" AND AT EACH BLOCK: (3) 8d COMMON; 3"x0.131"

NOTE: MEMBER THICKNESS AND FASTENING LISTED IN THIS SCHEDULE ARE MINIMUM IRC REQUIREMENTS. SPECIFIC PROJECT REQUIREMENTS NOTED WITHIN THE STRUCTURAL OR ARCHITECTURAL DRAWINGS, IF REQUIRED BY APEX ENGINEERS DESIGN NEEDING TO BE MORE STRINGENT, SHALL BE FOLLOWED.

GLAZING

GLAZING IN HAZARDOUS LOCATIONS AS IDENTIFIED IN IRC SECTION R308.4 SHALL BE OF APPROVED SAFETY GLAZING MATERIALS: GLASS IN STORM DOORS; INDIVIDUAL FIXED OR OPENABLE PANELS ADJACENT TO A DOOR WHERE THE NEAREST VERTICAL EDGE IS WITHIN A 24" ARCH OF THE DOOR IN A CLOSED POSITION AND WHOSE BOTTOM EDGE IS WITHIN 60" OF THE FLOOR; WALLS ENCLOSING STAIRWAYS AND LANDINGS WHERE THE GLAZING IS WITHIN 60" OF THE TOP OR BOTTOM OF THE STAIR; ENCLOSURES FOR SPAS, TUBS, SHOWERS, AND WHIRLPOOLS; GLAZING IN FIXED OR OPENABLE PANELS EXCEEDING 9 SQUARE FEET AND WHOSE BOTTOM EDGE IS LESS THAN 18" ABOVE THE FLOOR OR WALKING SURFACE WITHIN 36".

ENERGY REQUIREMENTS

1. LIGHTING FIXTURES PENETRATING THE THERMAL ENVELOPE SHALL BE IC-RATED, LEAKAGE RATED, AND SEALED TO THE GYPSUM WALLBOARD AS REQUIRED PER N1102.4.5.
2. PROGRAMMABLE THERMOSTATS SHALL BE INSTALLED AS REQUIRED PER N1103.1.1.
3. AIR HANDLERS SHALL BE RATED FOR MAXIMUM 2% AIR LEAKAGE RATE PER N1103.3.2.1.
4. BUILDING FRAMING CAVITIES SHALL NOT BE USED AS DUCTS OR PLENUMBS PER N1103.3.5
5. HOT WATER PIPES SHALL BE INSULATED AS REQUIRED PER N1103.4.
6. ALL EXHAUST FANS SHALL TERMINATE TO THE BUILDING EXTERIOR AS REQUIRED PER M1501.1.
7. MAKEUP AIR SYSTEMS SHALL BE INSTALLED FOR KITCHEN EXHAUST HOODS THAT EXCEED 400 CFM AS REQUIRED PER M1503.6.
8. AN AIR HANDLING SYSTEM SHALL NOT SERVE BOTH THE LIVING SPACE AND THE GARAGE PER M1601.6.

ENERGY CONSERVATION

THE ENERGY EFFICIENCY OF THE DWELLING SHALL COMPLY WITH THE FOLLOWING TABLE(S) (WHERE THERE ARE DISCREPANCIES BETWEEN THIS TABLE AND THE PLANS, THE MOST RESTRICTIVE SHALL APPLY). IF TABLE 1 IS NOT COMPLETED AND ACCOMPANIED BY RESCHECK CALCULATIONS, THEN TABLE 2 SHALL BE APPLIED.

TABLE 1 - ResCheck COMPLIANCE SOFTWARE (FILL IN APPLICABLE VALUES FROM ResCheck CALCS.)

BUILDING ELEMENT	MIN VALUE
WALLS - FRAMED	R-
WALLS - BASEMENT	R-
FLOORS - UNCONDITIONED SPACE	R-
FLOORS - OVER OUTSIDE AIR	R-
FLOORS - CRAWL SPACE	R-
SLAB - PERIMETER	R-
CEILING - FLAT	R-
CEILING - CATHEDRAL	R-
DOORS - GLASS	U-
DOORS - SOLID	U-
WINDOWS - OPERABLE	U-
WINDOWS - FIXED	U-
WINDOWS - OTHER	U-
FURNACE	AFUE-
AIR CONDITIONER	SEER-

NOTE: FOR USE OF TABLE 1 A ResCheck COMPLIANCE FORM MUST BE SUBMITTED WITH PLANS.

TABLE 2 -PRESCRIPTIVE ENVELOPE (MIN PRESCRIPTIVE APPROACH ACCEPTABLE FOR ANY DWELLING.)

BUILDING ELEMENT	MIN VALUE
CEILING - FLAT	R-49
CEILING - CATHEDRAL**	R-30
CEILING - CATHEDRAL	R-38
FLOORS - UNCONDITIONED SPACED	R-19
FLOORS - OVER OUTSIDE AIR	R-30
WALLS - BASEMENT	R-10 (CONT) OR R-13 (CAVITY)
CONCRETE SLAB ON GRADE	R-10 (FOR 2FT)
SKYLIGHTS	U=0.55
WALLS - EXTERIOR (2x4)	R-13 (CAVITY) + R-5 (CONT)
WALLS - EXTERIOR (2x6)	R-20
WALLS - CRAWL SPACE	R-19
GLAZING*	U<=0.32
GLAZING*	SHGF<=0.40

NOTE:
TABLE 2 PER IRC TABLE N1102.1.2
*DEFAULT U-FACTOR FOR DOUBLE PANE, ARGON FILLED LOW-E TREATMENT IS U=0.35
**LIMITED TO AREAS LESS THAN 500 SQ-FT OR 20% OF CEILING AREA.

DEFERRED SUBMITTALS

1. THE ARCHITECT OR ENGINEER OF RECORD SHALL LIST THE DEFERRED SUBMITTALS ON THE PLANS FOR REVIEW BY THE BUILDING OFFICIAL. DOCUMENTS FOR DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE ARCHITECT OR ENGINEER OF RECORD WHO SHALL REVIEW THEM AND FORWARD THEM TO THE BUILDING OFFICIAL WITH A NOTATION INDICATING THAT THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED AND FOUND TO BE IN THE GENERAL CONFORMANCE TO THE DESIGN OF THE BUILDING. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL. DEFERRED SUBMITTALS ARE DEFINED AS THOSE PORTIONS OF THE DESIGN THAT ARE NOT SUBMITTED AT THE TIME OF THE APPLICATION AND THAT ARE TO BE SUBMITTED TO THE BUILDING OFFICIAL WITH A SPECIFIED PERIOD. DEFERRAL OF ANY SUBMITTAL ITEMS SHALL HAVE THE PRIOR APPROVAL OF THE BUILDING OFFICIAL.
2. DEFERRED SUBMITTAL ITEMS (WHEN APPLICABLE):
   A. TRUSSES
   B. I-JOISTS
   C. GUARDRAILS AND HANDRAILS
   D. STEEL FABRICATED STAIRS
   E. PRE-MANUFACTURED CANOPIES AND AWNINGS
   F. PRECAST HOLLOW CORE SLABS
   G. GROUND IMPROVEMENT AND/OR STRUCTURAL FOUNDATION SOLUTIONS (SUCH AS DRILLED PIERS)

CONCRETE SCHEDULE

MINIMUM STRUCTURAL CONCRETE COVER	COVER
FORMED SURFACES EXPOSED TO GROUND OR WEATHER	2"
UNFORMED SURFACE IN CONTACT WITH THE GROUND	3"
WALLS AND SLABS NOT EXPOSED TO GROUND OR WEATHER	1"
INTERIOR BEAMS AND COLUMNS (TO TIES OF STIRRUPS)	1 1/2"

EPOXY GROUTING APPLICATIONS	
THREADED ROD ANCHORS	HILTI HIT-HY 200 A OR SIMPONS SET XP
REINFORCING BARS	HILTI HIT-HY 200 R OR SIMPONS SET XP

CONCRETE USE	28 DAY STRENGTH	CEMENT TYPE	W/C RATIO	SLUMP LIMIT (in.)	% AIR ENTRAINED
FOOTINGS/PIERS	3000 psi	N/A	0.55 (MAX)	5" (+/-1")	6% +/- 1%
FOUNDATION WALLS	3500 psi	N/A	0.50 (MAX)	4" (+/-1")	6% +/- 1%
INTERIOR SLABS	4000 psi	N/A	0.50 (MAX)	3" (+/-1")	3% MAX
SUSPENDED SLABS	4000 psi	N/A	0.50 (MAX)	3" (+/-1")	3% MAX

EMERGENCY EGRESS AND RESCUE

1. PROVIDE ONE WINDOW FROM EACH BEDROOM THAT HAS A MINIMUM OPENABLE AREA OF 5.7 SQUARE FEET WITH A MINIMUM OPENABLE HEIGHT OF 24 INCHES AND WIDTH OF 20 INCHES.
2. BASEMENT EGRESS TO MEET THE REQUIREMENTS OF IRC SECTION 310.
3. SMOKE ALARMS SHALL BE INSTALLED AS REQUIRED PER IRC 2018 SECTION R314.
4. PROVIDE SMOKE ALARMS IN EACH SLEEPING ROOM, OUTSIDE OF EACH SLEEPING AREA, ON EACH FLOOR INCLUDING BASEMENTS AND HABITABLE ATTICS, AND NOT LESS THAN 3'-0" HORIZONTALLY FROM DOOR OR OPENING OF A BATHROOM THAT CONTAINS A BATHTUB OR SHOWER. ALARMS SHALL BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTUATION OF ONE ALARM WILL ACTIVATE ALL OF THE ALARMS IN THE DWELLING.
5. CARBON MONOXIDE ALARMS SHALL BE INSTALLED AS REQUIRED PER IRC 2018 SECTION R315.
6. CARBON MONOXIDE ALARMS SHALL BE INSTALLED OUTSIDE OF EACH SEPARATE SLEEPING AREA. WHERE A FUEL-BURNING APPLIANCE IS LOCATED WITHIN A BEDROOM OR ITS ATTACHED BATHROOM, A CARBON MONOXIDE ALARM SHALL BE INSTALLED WITHIN THE BEDROOM.

FRAMING GENERAL

1. ALL LUMBER SIZES ARE FOR DOUGLAS FIR-LARCH UNLESS NOTED OTHERWISE.
2. ALL HEADERS TO BE MIN (2) #2-2x10 UNLESS NOTED OTHERWISE.
3. BLOCK CANTILEVERS, DOORJAMBS, AND OVER BEAMS.
4. ALL HEADERS TO BEAR ON A MINIMUM OF (2) 2x4 STUD POSTS UNLESS NOTED OTHERWISE.
5. INTERIOR NON-BEARING WALLS, OTHER THAN THOSE RESTING DIRECTLY ON THE FOOTING SHALL BE ISOLATED FROM THE FLOOR FRAMING ABOVE.
6. WHERE JOISTS RUN PARALLEL TO FOUNDATION WALLS, SOLID BLOCKING FOR A MINIMUM OF (2) JOIST SPACES BE PROVIDED TO A MAXIMUM OF 2'-0" CENTERS TO TRANSFER LATERAL LOADS ON THE WALL TO THE FLOOR DIAPHRAGM. THE BLOCKING SHALL BE SECURELY NAILED TO THE JOISTS AND FLOORING. NAIL JOISTS AND BLOCKING TO SILL PLATE WITH (3) 10d NAILS (IRC SECTION R602.3.(1)).
7. IF DUCTS ARE INSTALLED IN THE FIRST JOIST SPACE(S), NAIL 2x4s FLAT AT 2'-0" CENTERS WITHIN THE JOIST SPACE(S) AND THEN PROVIDE SOLID BLOCKING, INSTALLED UPRIGHT, IN THE NEXT TWO JOIST SPACES. SECURE THE 2x4s TO THE SILL PLATE WITH (4) 10d NAILS.
8. ALL SILLS AND SLEEPERS SUPPORTED ON CONCRETE OR MASONRY AND FURRING ATTACHED TO CONCRETE OR MASONRY SHALL BE OF DECAY RESISTANT MATERIALS.
9. JOISTS UNDER BEARING PARTITIONS SHALL BE DOUBLED AND COMPLY WITH IRC SECTION R502.4.
10. JOISTS FRAMING FROM OPPOSITE SIDES OVER BEARING SUPPORTS SHALL LAP A MINIMUM 3" AND SHALL BE NAILED TOGETHER WITH A MINIMUM 10d FACE NAILS.
11. JOISTS FRAMING INTO A WOOD GIRDER OR BEAM SHALL BE SUPPORTED BY APPROVED FRAMING ANCHORS OR MINIMUM 2"x2" LEDGER STRIPS.
12. FRAMING OF OPENINGS - HEADERS AND TRIMMERS SHALL BE OF SUFFICIENT CROSS SECTION TO SUPPORT THE FLOOR FRAMING. TRIMMER JOISTS SHALL BE DOUBLED WHEN THE HEADER IS SUPPORTED MORE THAN 3'-0" FROM THE TRIMMER JOIST BEARING. WHEN THE HEADER SPAN EXCEEDS 4'-0", THE HEADER AND TRIMMER SHALL BE DOUBLED.
13. JOISTS AT SUPPORTS SHALL BE SUPPORTED LATERALLY AT THE ENDS BY FULL-DEPTH SOLID BLOCKING NOT LESS THAN 2" NOMINAL THICKNESS OR BY ATTACHMENT TO A HEADER, BAND OR RIM JOIST OR TO AN ADJOINING STUD OR OTHERWISE PROVIDED WITH LATERAL SUPPORT TO PREVENT ROTATION.
14. WATER-RESISTIVE BARRIER SHALL BE PROVIDED OVER ALL EXTERIOR WALLS. ONE LAYER OF No 15 ASPHALT FELT OR ANY OTHER BARRIER THAT MEETS ASTM D226 TYPE 1 FELT. (R703.2)
15. WHERE CEILING JOISTS ARE NOT INSTALLED CONNECTED TO THE RAFTERS AT THE TOP PLATE AND/OR WHERE CEILING JOISTS ARE NOT INSTALLED PARALLEL TO THE RAFTERS, RAFTER TIES SHALL BE INSTALLED IN THE LOWER 1/3 OF THE ATTIC SPACE AND IN ACCORDANCE WITH TABLE 1-S1.0.
16. COLLAR TIES SHALL BE PROVIDED IN THE UPPER 1/3 OF THE ATTIC SPACE IN ACCORDANCE WITH TABLE 1-S1.0.

GARAGE

1. THE GARAGE FLOOR SHALL SLOPE TOWARDS THE GARAGE DOORWAYS.
2. DOORS BETWEEN THE GARAGE AND THE DWELLING - MINIMUM 1-3/8" SOLID CORE OR HONEY COMBED STEEL DOOR OR 20-MINUTE FIRE RATED.
3. THE GARAGE SHALL BE SEPARATED FROM THE RESIDENCE AND ITS ATTIC AREA BY 5/8", TYPE X GYPSUM BOARD, OR EQUIVALENT MATERIALS APPROVED FOR ONE-HOUR FIRE-RESISTIVE CONSTRUCTION, APPLIED TO GARAGE SIDE. WHERE THE SEPARATION IS A FLOOR-CEILING ASSEMBLY, THE STRUCTURE SUPPORTING THE SEPARATION SHALL ALSO BE PROTECTED BY 5/8", TYPE X GYPSUM BOARD, OR MATERIALS APPROVED FOR ONE-HOUR FIRE-RESISTIVE CONSTRUCTION OR EQUIVALENT, APPLIED TO THE GARAGE SIDE. PULL DOWN STAIRS LOCATED WITHIN GARAGE SHALL BE RATED TO BE ADEQUATELY PROTECTED WITH MATERIALS APPROVED FOR ONE-HOUR FIRE-RESISTIVE CONSTRUCTION. ATTIC ACESS PANELS LOCATED WITHIN GARAGE SHALL BE OF 5/8", TYPE X GYPSUM BOARD, OR MATERIALS FOR ONE-HOUR FIRE-RESISTIVE CONSTRUCTION.
4. GARAGE DOOR AND FRAME- THE H-FRAME FOR THE ATTACHMENT OF THE TRACK AND COUNTER BALANCE SHALL CONSIST OF THE FOLLOWING: 2x6 VERTICAL JAMBS RUNNING FROM THE FLOOR TO CEILING ATTACHED WITH 1-3/4" x 0.120" NAILS AT 7" OC STAGGERED WITH (7) 3-1/4" x 0.120" NAILS THRU THE JAMB INTO THE HEADER, MINIMUM 2x8 HEADER FOR ATTACHMENT OF COUNTER BALANCE SYSTEM.
5. SELF-CLOSING DEVICES SHALL BE INSTALLED FOR GARAGE AND/OR DWELLING SEPARATION DOORS PER R302.5.1.

STAIRWAYS

1. STAIRWAYS SHALL PROVIDE A MAXIMUM 7-3/4" RISE AND MINIMUM 10" RUN.
2. PROVIDE MINIMUM 36" GUARDRAILS ON THE OPEN SIDES OF RAISED FLOORS, PORCHES, AND BALCONIES; MINIMUM 34" GUARDRAILS ON THE OPEN SIDES OF STAIRWAYS LOCATED MORE THAN 30" ABOVE THE FLOOR OR GRADE BELOW. GUARDRAIL ENCLOSURES SHALL HAVE INTERMEDIATE RAILS OR ORNAMENTAL PATTERNS THAT DO NOT ALLOW PASSAGE OF A SPHERE 4" IN DIAMETER.
3. EACH STAIRWAY OF THREE OR MORE RISERS SHALL PROVIDE A CONTINUOUS HANDRAIL ON AT LEAST ONE SIDE BETWEEN 34" AND 38" ABOVE THE NOSING OF THE TREADS.
4. HANDRAILS SHALL HAVE A CIRCULAR CROSS SECTION OF 1-1/4" MINIMUM TO 2" MAXIMUM OR OTHER APPROVED GRASPABLE SHAPER PER IRC SECTION 311.7.8.5.
5. PROVIDE A MINIMUM 6'-8" OF HEADROOM CLEARANCE IN STAIRWAYS.
6. ENCLOSED ACCESSIBLE SPACE UNDER STAIRWAYS SHALL HAVE WALLS AND THE UNDERSIDE OF THE STAIR AND LANDING PROTECTED WITH 1/2" GYPSUM BOARD ON ENCLOSURE SIDE PER IRC SECTION 302.7.
7. SPIRAL STAIRS TO BE CONSTRUCTED PER IRC SECTION 311.7.10.1.
8. SPACE STRINGERS AT 16" OC MAX.

GENERAL

1. PLANS SHALL COMPLY WITH THE 2018 INTERNATIONAL RESIDENTIAL CODE WITH AMENDMENTS AS ADOPTED BY THE GOVERNING JURISDICTION. IF ANY CHANGES OR DEVIATIONS FROM THE PLANS ARE MADE DURING CONSTRUCTION, CONTRACTOR SHALL NOTIFY THE APPROPRIATE AUTHORITY AND ENGINEER OF RECORD, EITHER (OR BOTH) OF WHOM MAY REQUIRE REVISED DRAWINGS OR CALCULATIONS AT ITS DISCRETION.
2. REPRODUCTION, ALTERATION, OR RE-USE BY ANY METHOD OF ALL OR PORTIONS OF THESE STRUCTURAL PLANS OR VARIATIONS THEREOF WITHOUT WRITTEN PERMISSION FROM APEX ENGINEERS, INC IS STRICTLY PROHIBITED. THE DRAWINGS AND DETAILS OF THIS SHEET SET, BEING INSTRUMENTS OF SERVICE, ARE AND SHALL REMAIN THE PROPERTY OF APEX ENGINEERS, INC. AN UNSEALED VERSION, OR A VERSION VOID OF APEX ENGINEERS LOGO AND/OR TITLE BLOCK, SHALL BE CONSIDERED AN UNAUTHORIZED REPRODUCTION.
3. WHERE DISCREPENCIES EXIST BETWEEN THE STANDARD COMMENTS, NOTES FROM THE DESIGN PROFESSIONAL OR THE CODE, THE MOST RESTRICTIVE SHALL APPLY. THE DWELLING SHALL COMPLY WITH THE FOLLOWING LOAD CONDITIONS:

AREA	MIN DEAD LOAD	MIN LIVE LOAD
EXTERIOR BALCONIES	10 PSF	60 PSF
DECKS	10 PSF	40 PSF
CEILING JOISTS/ATTICS NO STORAGE - SCUTTLE ACCESS ONLY ROOF SLOPE 3:12 OR LESS	5 PSF	10 PSF
CEILING JOISTS/ATTICS WITHOUT STORAGE - SCUTTLE ACCESS ONLY ROOF SLOPE OVER 3:12 OR LESS	10 PSF	10 PSF
CEILING JOISTS/ATTICS WITH STORAGE - DOOR/PULL DOWN LADDER ACCESS	10 PSF	20 PSF
ROOMS - NON-SLEEPING	10 PSF	40 PSF
ROOMS - SLEEPING	10 PSF	30 PSF
ROOF - LIGHT ROOF COVERING	10 PSF	20 PSF
ROOF - HEAVY ROOF COVERING CONCRETE/TILE/SLATE	20 PSF	20 PSF

NOTE: HEAVY ROOF COVERING WILL NOT BE INSTALLED OR USED IN THE DESIGN CALCULATIONS UNLESS IT IS SPECIFICALLY NOTED ON THE PLANS THAT THE DESIGN IS FOR HEAVY ROOF COVERINGS.

FOUNDATIONS

1. THE FOUNDATION DESIGN SHALL BE BASED ON A MINIMUM SOIL BEARING CAPACITY OF 2000 PSF, UNLESS OTHERWISE INDICATED ON THE PLANS OR IF MODIFIED BY AN ENGINEERING REPORT BASED ON ACTUAL SITE CONDITIONS.
2. REFERENCE CONCRETE SCHEDULE, THIS SHEET, FOR APPLICABLE FOUNDATION CONCRETE MIX DESIGNS.
3. FOOTINGS SHALL EXTEND BELOW THE FROST LINE; MINIMUM DEPTH 36 INCHES BELOW GRADE.
4. UNLESS OTHERWISE NOTED ON THE PLANS OR IF SITE CONDITIONS REQUIRE OTHERWISE, FOOTINGS SHALL BE A MINIMUM OF 16" WIDE AND 8" DEEP WITH (2) #4 BARS CONTINUOUS.
5. COLUMN PADS SHALL BE A MINIMUM 30"x30"x12" WITH (4) #4 BARS EACH WAY UNLESS NOTED OTHERWISE.
6. UNLESS NOTED OTHERWISE ON THE PLANS, FOUNDATION WALLS SHALL BE MINIMUM 8" THICK x 8'-0" (OR 9'-0") TALL AND REINFORCED PER DETAIL 1-S2.0 (AND 2-S2.0 WHERE APPLICABLE). FOUNDATION WALLS GREATER THAN 10'-0" TALL REQUIRE A SEPERATE ENGINEERED DESIGN. PROVIDE A 2'-0" LONG INTERIOR OR EXTERIOR DEAD-MAN FOR ANY STRAIGHT WALL PANELS EXCEEDING 20'-0" IN LENGTH (REF 3-S2.0)
7. REINFORCEMENT SHALL BE MINIMUM GRADE 40 UNLESS NOTED OTHERWISE. REINFORCEMENT SHALL LAP A MINIMUM OF 24" AT ENDS, SPLICES, AND AROUND CORNERS
8. FOUNDATION WALLS SHALL BE BACKFILLED WITH A CLEAN LEAN CLAY (OR BETTER) LOW VOLUME CHANGE MATERIAL. ON-SITE MATERIAL MAY BE USED IF DEEMED ACCEPTABLE BY THE GEOTECHNICAL ENGINEER OF RECORD.
9. FOUNDATION WALLS WILL NOT ACHIEVE FULL STRENGTH UNTIL THE BASEMENT SLAB AND THE FIRST FLOOR DECK HAVE BEEN PROPERLY PLACED. IF BACKFILLING THE INTERIOR OF THE FOUNDATION WALL WITH GREATER THAN 8" OF EARTHEN FILL OR 24" OF GRANULAR FILL, A STRUCTURAL BASEMENT SLAB, OR ALTERNATE ENGINEERED SOLUTION (i.e. ENGINEERED FILL) WILL BE REQUIRED.
10. WHERE JUMPS OR STEPS IN ELEVATION OCCUR FOUNDATION WALLS AND FOOTINGS SHALL BE FORMED CONTINUOUS AND POURED PER DETAIL 4-S2.0.
11. CONCRETE FLOOR SLABS SHALL BE A MINIMUM 4" THICK OVER A MINIMUM 4" BASE OF 1/2" OR 3/4" CLEAN GRADED ROCK, UNLESS NOTED OTHERWISE OR IF SITE CONDITIONS REQUIRE OTHERWISE.
12. PROVIDE A MIN 6 MIL THICK POLYETHYLENE MOISTURE BARRIER OVER POURUS GRAVEL BASE UNDER BASEMENT FLOOR SLAB PER R405.2.2. LAP JOINTS MINIMUM 6" (NOT REQUIRED FOR GARAGE SLABS OR DETACHED ACCESSORY BUILDINGS).
13. FOR A STRUCTURAL REINFORCED CONCRETE FLOOR OVER A USABLE AREA, SUCH AS A GARGE FLOOR LOCATED OVER A STORAGE AREA, SUBMIT SEALED ENGINEERED DETAILS AND CALCULATIONS.
14. GARAGE SLABS AND BASEMENT OVERDIGS SUPPORTED BY FILL CONSISTING OF MORE THAN 24" OF GRANULAR FILL OR 8" OF EARTH SHALL BE REINFORCED PER DETAILS 1-S2.1 AND 6-2.1 RESPECTIVELY. WHERE THE LIMITATIONS OF DETAILS 1-S2.1 AND 6-S2.1 ARE NOT MET, A SEPARATE ENGINEERED DESIGN SHALL BE REQUIRED.
15. BASEMENT FOUNDATION SILL PLATES SHALL BE BOLTED TO THE FOUNDATION WITH A MINIMUM OF 1/2" ANCHOR BOLTS EMBEDDED AT LEAST 7" INTO THE CONCRETE AND SPACED NOT MORE THAN 3'-0" ON CENTER AND WITHIN 12" OF EACH END PIECE.
16. FOUNDATION WALLS SHALL BE DAMP-PROOFED PER IRC SECTION R406.
17. PROVIDE A MINIMUM 4" PERFORATED DRAIN AROUND USABLE SPACE BELOW GRADE OR OTHER EQUIVALENT MATERIALS PER IRC SECTION 405.1. THE PIPE SHALL BE PLACED ON A MINIMUM OF 2" OF WASHED GRAVEL OR CRUSHED ROCK AND COVERED WITH NOT LESS THAN 6". THE DRAIN SHALL DAYLIGHT TO THE EXTERIOR BELOW THE FLOOR LEVEL OR TERMINATE IN A MINIMUM 24" DIAMETER OR 20" SQUARE SUMP PIT EXTENDING A MINIMUM 24" BELOW THE BOTTOM OF BASEMENT FLOOR.
18. INTERIOR BEARING WALLS AND COLUMNS SHALL BE ISOLATED FROM THE BASEMENT FLOOR SLAB.
19. INTERIOR NON-BEARING WALLS, OTHER THAN THOSE RESTING DIRECTLY ON THE FOOTING, SHALL BE ISOLATED FROM THE FLOOR FRAMING ABOVE.
20. ALL EARTH RETAINING STRUCTURES ON THE SITE GREATER THAN 4'-0" TALL (EXCLUDING CONCRETE FOUNDATION WALLS RESTRAINED AT BOTH TOP AND BOTTOM) SHALL REQUIRE A SEPARATE ENGINEERED DESIGN (i.e. RETAINING WALLS, WING WALLS, ETC.).
21. INSULATION SHALL BE INSTALLED FOR ALL BASEMENT WALLS AS REQUIRED PER N1102.2.9.
22. A CONCRETE ENCASED GROUNDING ELECTRODE CONNECTION SHALL BE PROVIDED TO THE ELECTRICAL SERVICES PER E3608.1.
23. ANY GEOTECHNICAL IMPROVEMENT METHODS AND/OR STRUCTURAL SOLUTIONS (SUCH AS DRILLED PIERS) EMPLOYED TO ADDRESS UNACCEPTABLE SUBGRADE CONDITIONS SHALL BE SUBMITTED TO EOR AS ENGINEERED SHOP DRAWINGS FOR REVIEW AND APPROVAL.

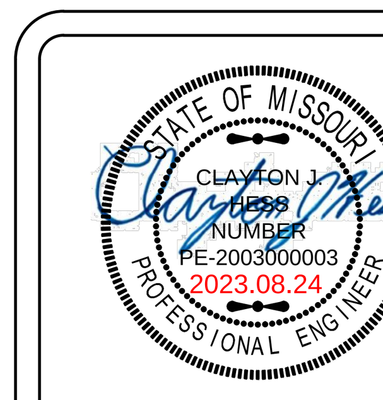
EXPANSIVE SOILS DISCLAIMER:

THESE PLANS HAVE BEEN PREPARED BASED ON A PRESUMPTIVE ALLOWABLE BEARING CAPACITY AS ALLOWED BY IRC CODE AND THE LOCAL ENFORCING JURISDICTION.

APEX ENGINEERS, INC. (APEX) RECOMMENDS THAT ALL FOOTING EXCAVATIONS BE EVALUATED BY A LICENSED GEOTECHNICAL ENGINEER PRIOR TO THE PLACEMENT OF ANY FOUNDATION ELEMENTS. GEOTECHNICAL INVESTIGATION AND/OR TESTING IS NOT A SERVICE PROVIDED OR OFFERED BY APEX.

APEX HAS NOT BEEN RETAINED TO DETERMINE THE EXPANSIVE SOIL CHARACTERISTICS OF THE SUBGRADE SOIL AND THEREFORE CANNOT BE HELD RESPONSIBLE FOR THE VOLUMETRIC CHANGES OF THE SOIL (INCLUDING BELOW THE BASEMENT SLAB). BY USE OF THESE PLANS WITHOUT AN ACCOMPANYING GEOTECHNICAL ENGINEERING REPORT, APEX SHALL NOT BE HELD LIABLE FOR ANY FUTURE MOVEMENT AND/OR DIFFERENTIAL MOVEMENT OF THE PROPOSED STRUCTURE AND THE POSSIBLE DAMAGE THAT MAY BE CAUSED AS A RESULT OF SUCH MOVEMENT. DAMAGE FROM EXPANSIVE SOILS AND/OR SETTLEMENT CAN RESULT IN AMONGST OTHER THINGS, THE FOLLOWING: BASEMENT SLAB HEAVE, SHEETROCK CRACKS, WINDOWS AND DOOR BECOMING OUT OF PLUMB AND STICKING AND/OR NOT OPENING, DAMAGE TO TILE, MOULDING, AND OTHER COSMETIC FINISHES.

APEX
ENGINEERS, INC.
1625 LOCUST ST
KANSAS CITY, MO 64108
816.421.3222
www.apex-engineers.com



STRUCTURAL DESIGN REVIEW

KANSAS ENGINEERING LICENSE: E-992
MISSOURI ENGINEERING LICENSE: 2003004673

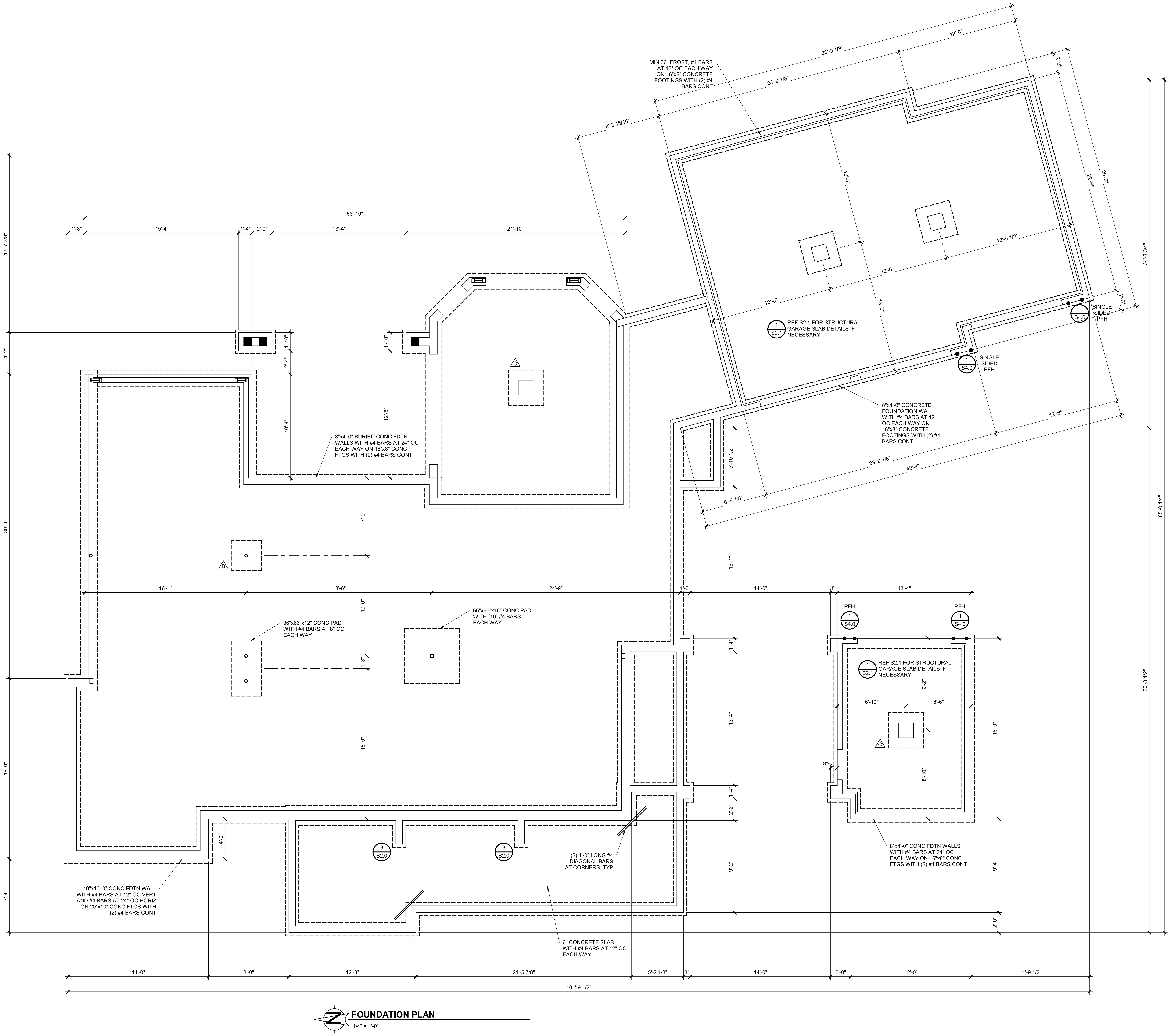
PROJECT:
Lumberman's Row
1201 SW Corinthian Lane
Lee's Summit, MO

CLIENT:
NSPJ Architects
3515 W. 75th St, Suite 201
Prairie Village, KS 66208

PROJECT #:	23-0779
DRAWN BY:	BCH
CHECKED BY:	BDC
SUBMITTAL DATE:	2023.06.06

#	DATE	COMMENTS

SHEET:
GENERAL NOTES
S1.0



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

COLUMN AND PIER PAD SCHEDULE

COLUMN MARK	PAD SIZE	REINFORCING	COLUMN SIZE
A	30"x30"x12"	(4) #4 BARS E-W	3" SCH 40 (3.5" OD)
B	36"x36"x12"	(4) #4 BARS E-W	3" SCH 40 (3.5" OD)
C	42"x42"x12"	(5) #4 BARS E-W	3" SCH 40 (3.5" OD)
D	48"x48"x12"	(6) #4 BARS E-W	3 1/2" SCH 40 (4" OD)
E	54"x54"x16"	(8) #4 BARS E-W	REF PLAN
F	60"x60"x16"	(10) #4 BARS E-W	REF PLAN

NOTES:
1. COLUMN AND PIER PAD SIZES SHOWN ARE FOR MAXIMUM ADJUSTABLE COLUMN HEIGHT OF 9'-1", REQUIRES SEPARATE ENGINEERED DESIGN IF GREATER THAN 9'-1" TALL. COLUMNS SIZED AS QUWIK-ADJUST COLUMN, BY QUALITY WAY PRODUCTS, LLC. REFER TO SAFE LOADING CAPACITIES PER MANUF SPECS, OR SUBSTITUTION TO ANOTHER PRODUCT ONLY WITH PRIOR APPROVAL BY APEX ENGINEERS.
2. COLUMN AND PIER PAD SIZES SHOWN ARE BASED ON AN ASSUMED MINIMUM ALLOWABLE SOIL BEARING CAPACITY OF 2,000 PSF.

PIER SCHEDULE

MARK	COL SIZE	PIER DIA
G	6x6	12"
H	6x6	16"
J	6x6	18"
K	6x6	24"
L	6x6	28"

NOTES:
1. ALL PIERS TO BEAR ON ORIGINAL, UNDISTURBED SOIL OF 2,000 PSF BEARING CAPACITY OR FILL COMPACTED AND TESTED TO CONFORM TO THE RECOMMENDATIONS OF A GEOTECHNICAL ENGINEER.
2. PIERS SHALL EXTEND BELOW THE FROST LINE: MIN DEPTH OF 36" BELOW GRADE.
3. POST SHALL BE TREATED OR CEDAR WITH SIMPSON ABU66 POST BASE.

DETAIL REFERENCES

- 1/S2.0 TYPICAL FOUNDATION WALL DETAIL
- 2/S2.0 TYPICAL "UNRESTRAINED" FOUNDATION WALL DETAIL
- 3/S2.0 TYPICAL DEAD MAN DETAIL
- 4/S2.0 FOUNDATION WALL JUMP DETAIL
- 5/S2.0 COLUMN PAD DETAIL
- 1/S2.1 TYPICAL STRUCTURAL GARAGE SLAB PLAN
- 2/S2.1 STRUCTURAL GARAGE SLAB PIER PAD DETAIL
- 3/S2.1 STRUCTURAL GARAGE SLAB/ WALL SECTION
- 6/S2.1 TYPICAL OVERDIG DETAIL AT BASEMENT SLAB
- 1/S4.0 ALTERNATE BRACED WALL PANEL DETAIL
- 1/S4.1 ALT APA NARROW WALL BRACING METHOD WITHOUT HOLD-DOWNS
- COLUMN AND PIER PAD SCHEDULE (SHEET S2.0)

APEX
1625 LOCUST ST.
KANSAS CITY, MISSOURI
816.421.3222

APEX ENGINEERS, INC.
1625 LOCUST ST
KANSAS CITY, MO 64108
816.421.3222
STRUCTURAL DESIGN REVIEW
KANSAS ENGINEERING LICENSE: 992
MISSOURI ENGINEERING LICENSE: 2003004673

NSPJ ARCHITECTS
ARCHITECTURE LANDSCAPE ARCHITECTURE INTERIORS ENERGY SERVICES
3515 W. 75TH ST, SUITE 201
PRAIRIE VILLAGE, KS 66208
P. 913.831.1415
F. 913.831.1563
NSPJARCH.COM

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LEE'S SUMMIT, MISSOURI

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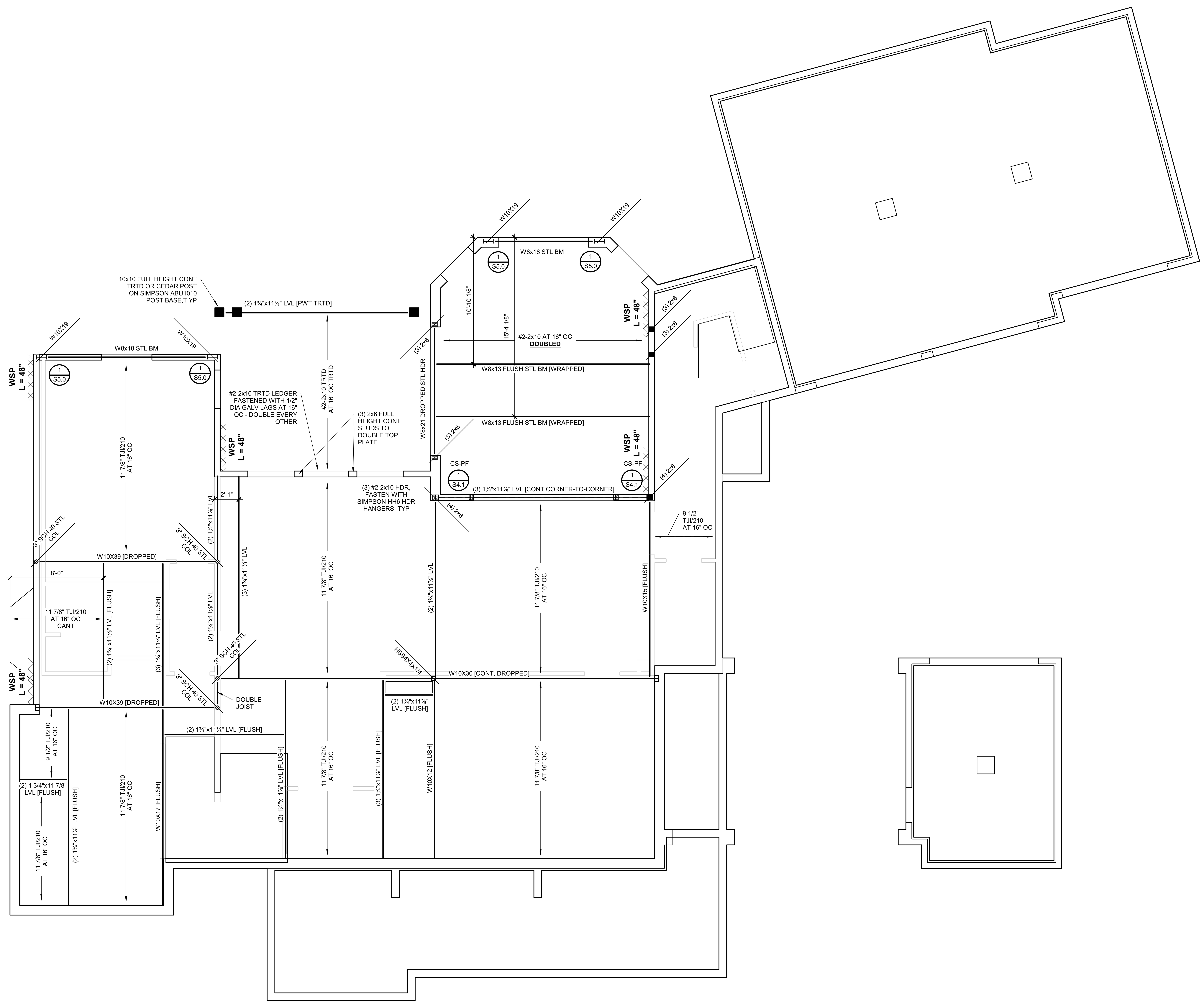

FIRST FLOOR FRAMING PLAN

1/4" = 1'-0"

BRACED WALL METHODOLOGY
CONTINUOUS EXTERIOR SHEATHING PER WSP METHOD (BELOW)
UNLESS OTHERWISE NOTED ON THE PLAN

XXXX EXTERIOR BRACED WALLS:

WSP METHOD: WOOD STRUCTURAL PANEL SHEATHING WITH A THICKNESS NOT LESS THAN 3/8" WITH MINIMUM SPAN RATING OF 24/0 FOR 16" OC STUD SPACING WITH 6d COMMON NAILS AT 6" OC EDGES AND 12" OC FIELD OR SHEATHING THICKNESS NOT LESS THAN 7/16" WITH MINIMUM SPAN RATING OF 24/16 FOR 24" OC SPACING WITH 8d COMMON NAILS AT 6" OC EDGES AND 12" OC IN FIELD.
(NOTE: FRAMING MEMBERS 16" OC MAX, UNBLOCKED, AND WITH SHEATHING APPLIED DIRECTLY TO FRAMING MEMBERS)

/ / / / INTERIOR BRACED WALLS (REF 2- S4.0):

GB METHOD: 1/2" MIN GYPSUM BOARD OVER STUDS SPACED 24" MAX FASTENED WITH No 6 - 1 1/4" TYPE 'W' OR 'S' DRYWALL SCREWS AT 7" OC EDGES AND FIELD (MIN 4'-0" SECTION FOR BOTH SIDES.)

OR

LIB METHOD: 1x4 WOOD FASTENED WITH (3) 8D COMMON NAILS OR SIMPSON / USP 16 GA TYPE WB (OR EQUAL) STL X-BRACE(S) AT 45° TO 60° ANGLES, MAXIMUM 16" OC STUD FASTENED PER MANUFACTURER'S SPECIFICATIONS.

STRUCTURAL NOTES:
- ALL UNMARKED HEADERS MIN (2) #2-2x10
- ALL HEADERS AND BEAMS MIN #2 GRADE DF/L (OR EQUIV)
- [shaded] = BEARING WALL
- XXXXXXXX =4'-0" LONG PANEL, UNO

DEFERRED JOIST SUBMITTAL:
- JOIST DESIGN SHALL BE SUBMITTED TO APEX ENGINEERS, INC. FOR REVIEW PRIOR TO CONSTRUCTION AND INSTALLATION OF JOISTS
- JOIST DESIGNER/ MANUFACTURER SHALL FOLLOW ASSUMED JOIST DIRECTIONS AS CLOSELY AS POSSIBLE TO CONFORM WITH HOUSE STRUCTURE AS A WHOLE
- IF DEVIATIONS FROM ASSUMED JOIST DESIGN ARE REQUIRED, MANUF. SHALL CONTACT APEX

NSPJ ARCHITECTS PA
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LANDSCAPE ARCHITECTURE
INTERIORS
ENERGY SERVICES
3515 W. 75TH ST., SUITE 201
PRAIRIE VILLAGE, KS 66208
P. 913.831.1415
F. 913.831.1563
NSPJARCH.COM

APEX
1625 LOCUST ST.
KANSAS CITY, MISSOURI
816.421.3222
www.apex-engineers.com

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PROFESSIONAL ENGINEER
APEX ENGINEERS, INC.
1625 LOCUST ST
KANSAS CITY, MO 64108
816.421.3222
STRUCTURAL DESIGN REVIEW
KANSAS ENGINEERING LICENSE: 992
MISSOURI ENGINEERING LICENSE: 2003004573

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BRACED WALL METHODOLOGY
CONTINUOUS EXTERIOR SHEATHING PER WSP METHOD (BELOW)
UNLESS OTHERWISE NOTED ON THE PLAN

XXXX EXTERIOR BRACED WALLS:

WSP METHOD: WOOD STRUCTURAL PANEL SHEATHING WITH A THICKNESS NOT LESS THAN 3/8" WITH MINIMUM SPAN RATING OF 24/0 FOR 16" OC STUD SPACING WITH 6d COMMON NAILS AT 6" OC EDGES AND 12" OC FIELD OR SHEATHING THICKNESS NOT LESS THAN 7/16" WITH MINIMUM SPAN RATING OF 24/16 FOR 24" OC SPACING WITH 8d COMMON NAILS AT 6" OC EDGES AND 12" OC IN FIELD.
(NOTE: FRAMING MEMBERS 16" OC MAX, UNBLOCKED, AND WITH SHEATHING APPLIED DIRECTLY TO FRAMING MEMBERS)

/ / / / INTERIOR BRACED WALLS (REF 2- S4.0):

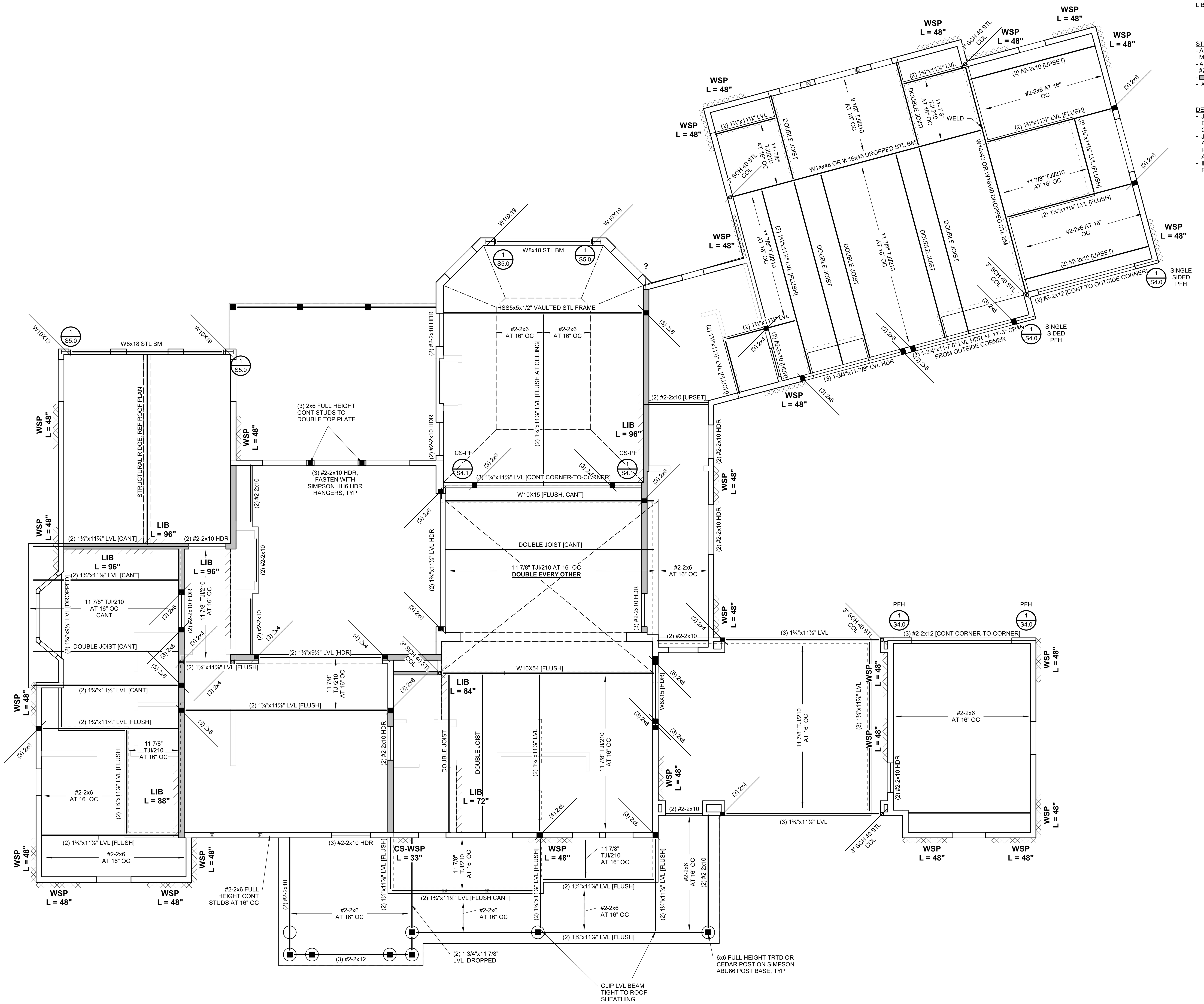
GB METHOD: 1/2" MIN GYPSUM BOARD OVER STUDS SPACED 24" MAX FASTENED WITH No 6 - 1 1/4" TYPE 'W' OR 'S' DRYWALL SCREWS AT 7" OC EDGES AND FIELD (MIN 4'-0" SECTION FOR BOTH SIDES.)

OR

LIB METHOD: 1x4 WOOD FASTENED WITH (3) 8D COMMON NAILS OR SIMPSON / USP 16 GA TYPE WB (OR EQUAL) STL X-BRACE(S) AT 45° TO 60° ANGLES, MAXIMUM 16" OC STUD FASTENED PER MANUFACTURER'S SPECIFICATIONS.

STRUCTURAL NOTES:
- ALL UNMARKED HEADERS MIN (2) #2-2x10
- ALL HEADERS AND BEAMS MIN #2 GRADE DF/L (OR EQUIV)
- [shaded] = BEARING WALL
- XXXXXXXX =4'-0" LONG PANEL, UNO

DEFERRED JOIST SUBMITTAL:
- JOIST DESIGN SHALL BE SUBMITTED TO APEX ENGINEERS, INC. FOR REVIEW PRIOR TO CONSTRUCTION AND INSTALLATION OF JOISTS
- JOIST DESIGNER/ MANUFACTURER SHALL FOLLOW ASSUMED JOIST DIRECTIONS AS CLOSELY AS POSSIBLE TO CONFORM WITH HOUSE STRUCTURE AS A WHOLE
- IF DEVIATIONS FROM ASSUMED JOIST DESIGN ARE REQUIRED, MANUF. SHALL CONTACT APEX



SECOND FLOOR FRAMING PLAN
1/4" = 1'-0"

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INTERIORS
ENERGY SERVICES
3515 W. 75TH ST., SUITE 201
PRAIRIE VILLAGE, KS 66208
P. 913.831.1415
F. 913.831.1563
NSPJARCH.COM

APEX ENGINEERS, INC.
1625 LOCUST ST.
KANSAS CITY, MISSOURI
816.421.3222
816.421.1050
www.apex-engineers.com

STATE OF MISSOURI
CLAYTON J. HESS
NUMBER PE-2003000003
2023.08.24
PROFESSIONAL ENGINEER

APEX ENGINEERS, INC.
1625 LOCUST ST
KANSAS CITY, MO 64108
816.421.3222

STRUCTURAL DESIGN REVIEW

KANSAS ENGINEERING LICENSE: 992
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ARCH E 30" x 42"

BRACED WALL METHODOLOGY
CONTINUOUS EXTERIOR SHEATHING PER WSP METHOD (BELOW)
UNLESS OTHERWISE NOTED ON THE PLAN

XXXX EXTERIOR BRACED WALLS:

WSP METHOD: WOOD STRUCTURAL PANEL SHEATHING WITH A THICKNESS NOT LESS THAN 3/8" WITH MINIMUM SPAN RATING OF 24/0 FOR 16" OC STUD SPACING WITH 6d COMMON NAILS AT 6" OC EDGES AND 12" OC FIELD OR SHEATHING THICKNESS NOT LESS THAN 7/16" WITH MINIMUM SPAN RATING OF 24/16 FOR 24" OC SPACING WITH 8d COMMON NAILS AT 6" OC EDGES AND 12" OC IN FIELD.
(NOTE: FRAMING MEMBERS 16" OC MAX, UNBLOCKED, AND WITH SHEATHING APPLIED DIRECTLY TO FRAMING MEMBERS)

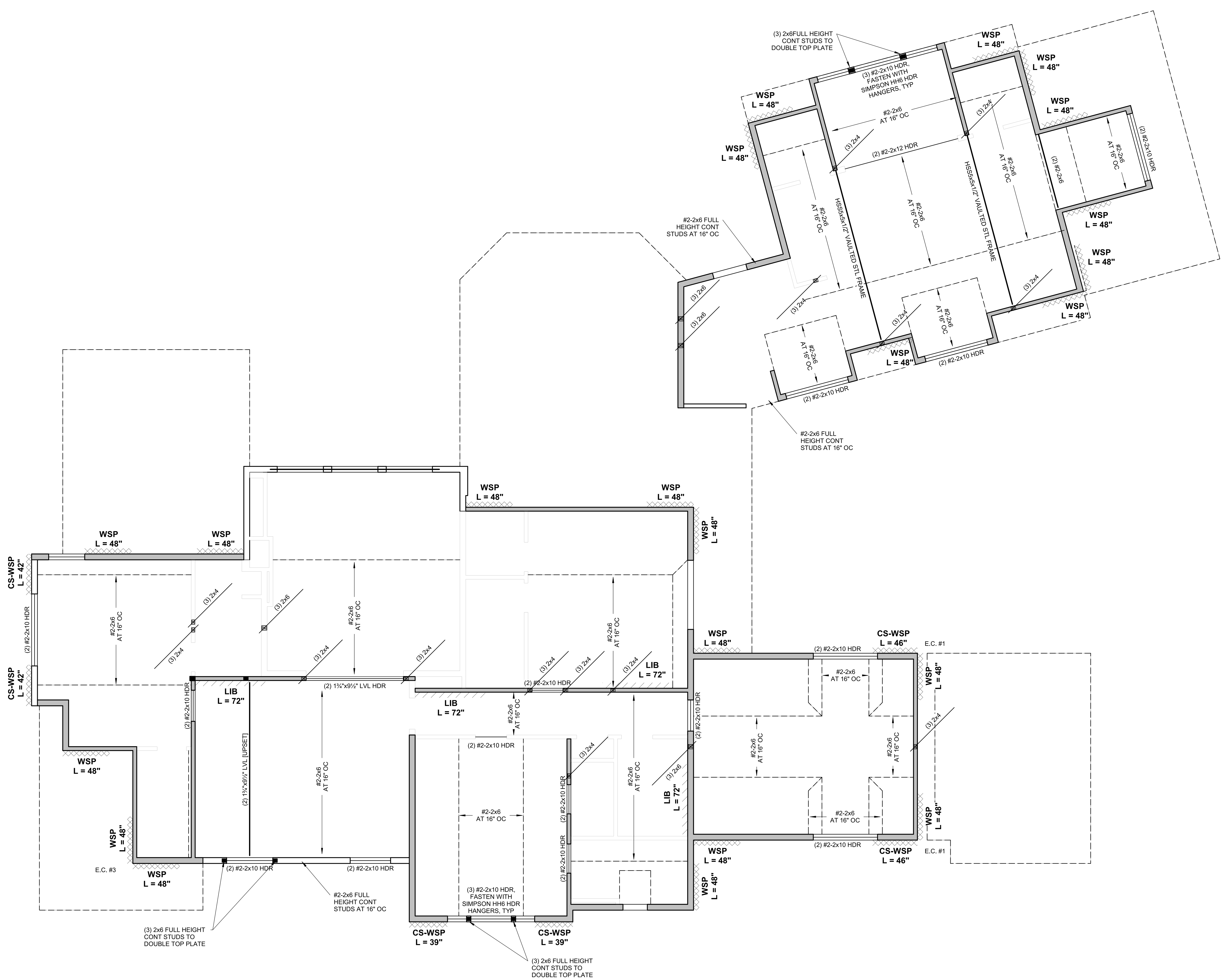
/ / / / INTERIOR BRACED WALLS (REF 2- S4.0):

GB METHOD: 1/2" MIN GYPSUM BOARD OVER STUDS SPACED 24" MAX FASTENED WITH No 6 - 1 1/4" TYPE 'W' OR 'S' DRYWALL SCREWS AT 7" OC EDGES AND FIELD (MIN 4'-0" SECTION FOR BOTH SIDES.)

OR

LIB METHOD: 1x4 WOOD FASTENED WITH (3) 8D COMMON NAILS OR SIMPSON / USP 16 GA TYPE WB (OR EQUAL) STL X-BRACE(S) AT 45° TO 60° ANGLES, MAXIMUM 16" OC STUD FASTENED PER MANUFACTURER'S SPECIFICATIONS.

STRUCTURAL NOTES:
- ALL UNMARKED HEADERS MIN (2) #2-2x10
- ALL HEADERS AND BEAMS MIN #2 GRADE DF/L (OR EQUIV)
- [shaded box] = BEARING WALL
- XXXXXXXX =4'-0" LONG PANEL, UNO



SECOND FLOOR CEILING FRAMING PLAN
1/4" = 1'-0"

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LANDSCAPE ARCHITECTURE
INTERIORS
ENERGY SERVICES
3515 W. 75TH ST., SUITE 201
PRAIRIE VILLAGE, KS 66208
P. 913.831.1415
F. 913.831.1563
NSPJARCH.COM

APEX
1625 LOCUST ST.
KANSAS CITY, MISSOURI
816.421.3222
816.421.1050
www.apex-engineers.com

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CLAYTON J. HESS
NUMBER
PE-2003000003
2023.08.24
PROFESSIONAL ENGINEER

APEX ENGINEERS, INC.
1625 LOCUST ST
KANSAS CITY, MO 64108
816.421.3222

STRUCTURAL DESIGN REVIEW

KANSAS ENGINEERING LICENSE: 992
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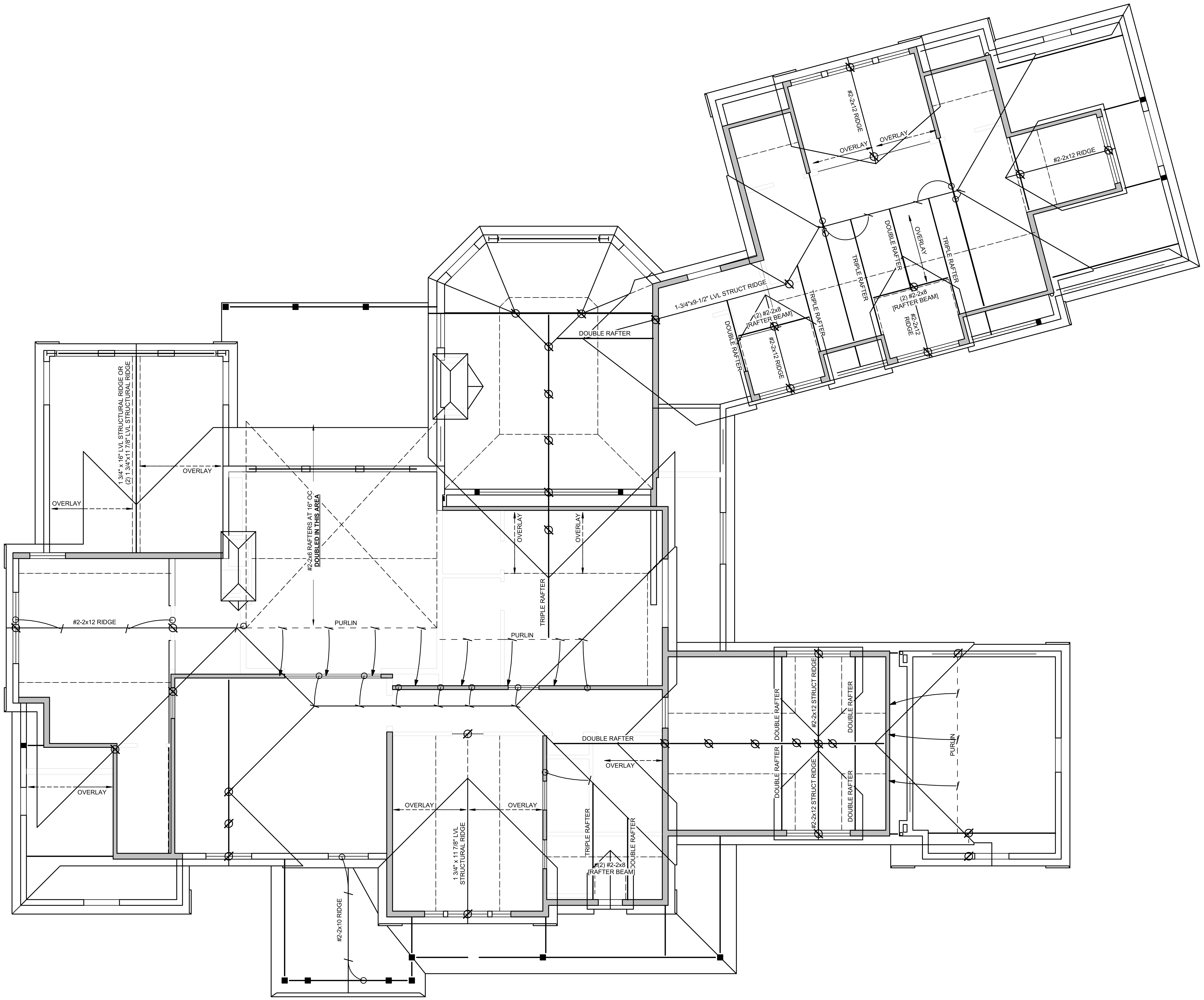


ROOF FRAMING PLAN
1/4" = 1'-0"

ROOF FRAMING NOTES

ROOF DESIGNED FOR LIGHT ROOF COVERING
30psf TOTAL LOAD [10psf DL, 20 psf LL (SL)]

ROOF SYSTEM IS DESIGNED TO MEET REQUIREMENTS OF IRC 802

*RAFTERS (HEM-FIR, DOUG-FIR, OR EQUAL):
SEE SPAN CHARTS BELOW

CODE MINIMUM

RAFTERS	SPACING	MAX HORIZONTAL CLEARSPAN
#2-2x6	AT 24" OC	11'-7"
#2-2x6	AT 16" OC	14'-2"
#2-2x8	AT 24" OC	14'-8"
#2-2x8	AT 16" OC	17'-11"
#2-2x10	AT 24" OC	17'-10"
#2-2x10	AT 16" OC	21'-11"

NOTE: CODE MINIMUM ALLOWS FOR RAFTER DEFLECTION OF L/180 TOTAL LOAD

HIGHER PERFORMANCE

RAFTERS	SPACING	MAX HORIZONTAL CLEARSPAN
#2-2x6	AT 24" OC	8'-6"
#2-2x6	AT 16" OC	9'-9"
#2-2x8	AT 24" OC	11'-3"
#2-2x8	AT 16" OC	12'-9"
#2-2x10	AT 24" OC	14'-3"
#2-2x10	AT 16" OC	16'-3"

APEX ENGINEERS, INC. RECOMMENDED
DEFLECTION = L/360 LIVE LOAD, L/240 TOTAL LOAD

*RIDGE BOARDS ARE (UNLESS OTHERWISE NOTED)
#2-2x10 UP TO 9:12 PITCH
#2-2x12 OVER 9:12 PITCH
*ALL HIPS AND VALLEYS ARE (UNLESS OTHERWISE NOTED)
#2-2x10 UP TO 9:12 PITCH
#2-2x12 OVER 9:12 PITCH
*PURLINS ARE 2x6 MIN
-PURLIN STRUTS ARE AT 4'-0" OC
-PURLIN STRUTS SHALL BE INSTALLED AT NOT LESS THAN A 45 DEGREE ANGLE WITH THE HORIZONTAL
-ALL PURLIN STRUTS SHALL HAVE A MAX UNBRACED LENGTH OF 8'-0"
-PURLIN STRUTS SHALL BE CONSTRUCTED IN A "T" CONFIGURATION AND PER THE FOLLOWING CHART:

PURLIN STRUT	MAX PURLIN STRUT LENGTH
(2) 2x4	8'-0"
(1) 2x4 AND (1) 2x6	12'-0"
(1) 2x4 AND (1) 2x8	20'-0"
(2) 2x6 AND (1) 2x8	30'-0"
CONSULT ARCH ENGR	>30'-0"

*EACH END OF STRUT SHALL BE FASTENED WITH MIN (3) 8d OR (2) 16d NAILS
*RIDGE BRACERS ARE SAME AS PURLIN BRACES-SPACING, SIZE, CONFIGURATION, AND INSTALLATION (SEE PURLIN BRACE NOTES ABOVE)
*HIP AND VALLEY BRACES ARE THE SAME AS PURLINS SIZE, CONFIGURATION, AND INSTALLATION (SEE PURLIN BRACE NOTES ABOVE)

=ROOF BRACE/ STRUT (PER CHART)
-SLASH IS TOP END OF BRACE
-CIRCLE IS BOTTOM END OF BRACE

= PURLIN STRUTS AT 48" OC (PER CHART) U.N.O.
-SLASH IS TOP END OF BRACE
-ARROW IS BEARING LOCATION

DENOTES BEARING WALL
DENOTES PURLIN
DENOTES BEARING STRUCTURE

1. **THIS IS AN ENGINEERED ROOF STRUCTURE DESIGNED FOR COMPLIANCE WITH IRC 802.3, BUILD AS SHOWN WITH NO DEVIATIONS.**
2. **ALL HIPS ARE DESIGNED TO BE CONTROLLED BY BENDING.**
3. **SHEAR AT BEARING WITH MIN 5 1/2" DEPTH DOES NOT CONTROL DESIGN. FOR VALLEYS REF 4/S3.2**

STRUCTURAL NOTES:
- ALL UNMARKED HEADERS MIN (2) #2-2x10
- ALL HEADERS AND BEAMS MIN #2 GRADE DF/L (OR EQUIV)
- = BEARING WALL
- XXXXXXXX =4'-0" LONG PANEL, UNO

NSPJ ARCHITECTS PA
ARCHITECTURE
LANDSCAPE ARCHITECTURE
INTERIORS
ENERGY SERVICES
3515 W. 75TH ST., SUITE 201
PRAIRIE VILLAGE, KS 66208
P. 913.831.1415
F. 913.831.1563
NSPJARCH.COM

APEX
1625 LOCUST ST.
KANSAS CITY, MISSOURI
816.421.3222
816.421.1050
www.apex-engineers.com

STATE OF MISSOURI
CLAYTON J. HESS
NUMBER
PE-2003000003
2023.08.24
PROFESSIONAL ENGINEER

APEX ENGINEERS, INC.
1625 LOCUST ST
KANSAS CITY, MO 64108
816.421.3222

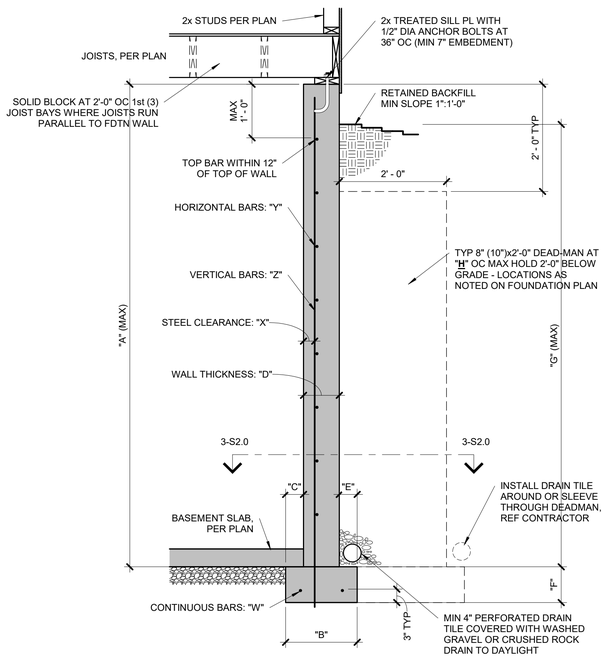
STRUCTURAL DESIGN REVIEW
KANSAS ENGINEERING LICENSE: 992
MISSOURI ENGINEERING LICENSE: 2003004673

A NEW RESIDENCE FOR:
LUMBERMAN'S ROW
1201 SW CORINTHIAN LANE
LEE'S SUMMIT, MISSOURI

DRAWING RELEASE LOG

REVISIONS:

DATE:
Issue Date
JOB NO.
723422.01
DRAWN BY:
APEX
SHEET NO.
S1.5



CONCRETE DIMENSIONS

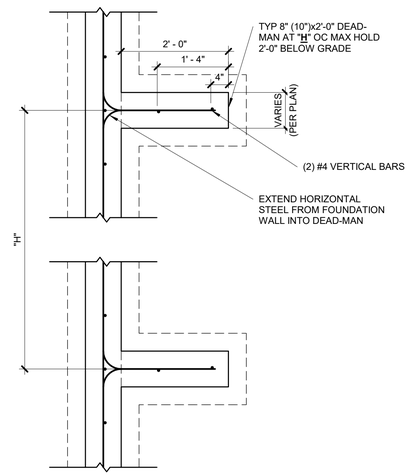
"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"[1]
8'-0"	1'-4"	4"	8"	4"	8"	7'-6"	20'-0"
9'-0"	1'-4"	4"	8"	4"	8"	8'-6"	20'-0"
10'-0"	1'-8"	5"	10"	5"	10"	9'-6"	20'-0"

REINFORCING BARS (GRADE 40 BARS)

"W"	"X"	"Y"	"Z"
(2) #4	2 1/2"	#4 BARS AT 24" OC	#4 BARS AT 24" OC
(2) #4	2 1/2"	#4 BARS AT 24" OC	#4 BARS AT 24" OC
(2) #4	2 1/2"	#4 BARS AT 18" OC	#4 BARS AT 18" OC

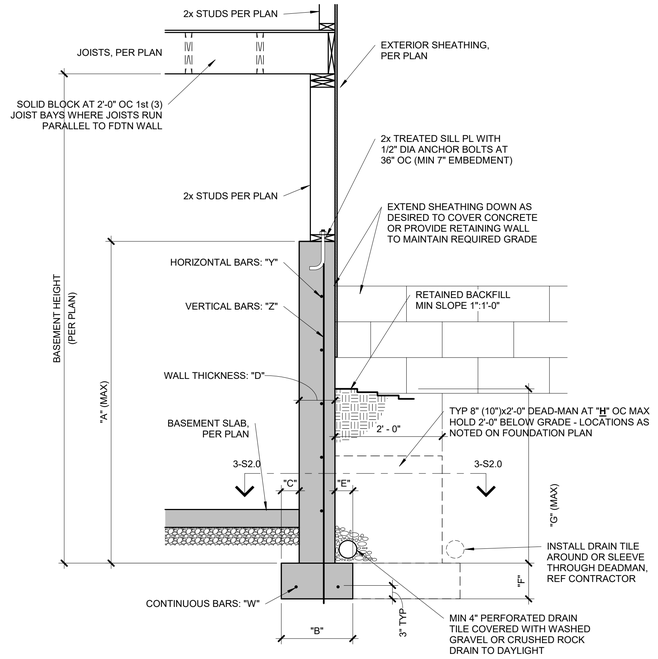
NOTES:
1. DIMENSION SHOWN IS FOR MAXIMUM UNINTERRUPTED WALL PANEL LENGTH BEFORE A DEAD-MAN SHALL BE INSTALLED. NOTE, A MINIMUM 2'-0" RETURN OR OFFSET IN THE FOUNDATION WALL SHALL SUBSTITUTE AS A DEAD-MAN AND/OR BREAK IN THE WALL PANEL LENGTH.
2. VERTICAL REINFORCING STEEL TO EXTEND TO WITHIN 8" OF TOP WALL. MINIMUM (1) #4 HORIZONTAL BAR WITHIN 12" OF TOP AND BOTTOM OF WALL.
3. BURIED CONCRETE FOUNDATION WALLS UP TO 9'-0" TALL MAY BE 8" NOMINAL THICKNESS WITH #4 BARS AT 24" OC BOTH WAYS OVER 16"x8" CONCRETE FOOTINGS WITH (2) #4 BARS CONTINUOUS, UNLESS OTHERWISE REQUIRED BY ENGINEERING REPORT BASED ON ACTUAL SITE CONDITIONS.
4. WALL WILL NOT ACHIEVE FULL STRENGTH UNTIL FIRST FLOOR DECK AND BASEMENT SLAB HAVE BEEN PLACED.

1 TYPICAL FOUNDATION WALL DETAIL
S2.0 | 3/4" = 1'-0"



NOTES:
1. MIN 3000 PSI FOOTING COMPRESSIVE CONCRETE STRENGTH.
2. MIN 3000 PSI WALL COMPRESSIVE CONCRETE STRENGTH.
3. AIR ENTRAINED BETWEEN 5% & 7% OF CONCRETE VOLUME.
4. GRADE 40 REINFORCING STEEL UNLESS OTHERWISE NOTED.
5. LAP SPLICES 24" MIN.
6. WALL SHALL BE BACK-FILLED WITH CLEAN, LEAN CLAY (OR BETTER) LOW VOLUME CHANGE MATERIAL. ON-SITE MATERIAL MAY BE USED IF DEEMED ACCEPTABLE BY THE GEOTECHNICAL ENGINEER.
7. ASSUMED 2,000 PSF BEARING (TO BE VERIFIED BY GEOTECHNICAL ENGINEER).

3 TYPICAL DEAD-MAN SECTION
S2.0 | 3/4" = 1'-0"



CONCRETE DIMENSIONS

"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"[1]
4'-0"	1'-4"	4"	8"	4"	8"	3'-4"	20'-0"
6'-0"	1'-4"	4"	8"	4"	8"	4'-4"	20'-0"
9'-0"	1'-8"	5"	8"	4"	8"	4'-4"	20'-0"

REINFORCING BARS (GRADE 40 BARS)

"W"	"X"	"Y"	"Z"
(2) #4	N/A	#4 BARS AT 24" OC	#4 BARS AT 24" OC
(2) #4	N/A	#4 BARS AT 24" OC	#4 BARS AT 24" OC
(2) #4	N/A	#4 BARS AT 24" OC	#4 BARS AT 24" OC

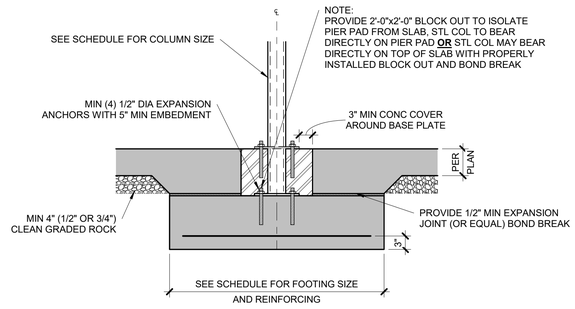
NOTES:
1. DIMENSION SHOWN IS FOR MAXIMUM UNINTERRUPTED WALL PANEL LENGTH BEFORE A DEAD-MAN SHALL BE INSTALLED. NOTE, A MINIMUM 2'-0" RETURN OR OFFSET IN THE FOUNDATION WALL SHALL SUBSTITUTE AS A DEAD-MAN AND/OR BREAK IN THE WALL PANEL LENGTH.
2. VERTICAL REINFORCING STEEL TO EXTEND TO WITHIN 8" OF TOP WALL. MINIMUM (1) #4 HORIZONTAL BAR WITHIN 12" OF TOP AND BOTTOM OF WALL.
3. THE BASEMENT SLAB IS AN INTEGRAL PART OF THE 'UNRESTRAINED' FOUNDATION WALL DESIGN THEREFORE, IF THE WALL IS BACKFILLED PRIOR TO PLACEMENT OF THE BASEMENT SLAB, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY BRACING THE WALL UNTIL THE BASEMENT SLAB HAS BEEN PLACED.

2 TYPICAL 'UNRESTRAINED' FOUNDATION WALL DETAIL
S2.0 | 3/4" = 1'-0"

COLUMN AND PIER PAD SCHEDULE

COLUMN MARK	PAD SIZE	REINFORCING	COL SIZE
A	30"x30"x12"	(4) #4 BARS E-W	3" SCH 40 (3.5" OD)
B	36"x36"x12"	(4) #4 BARS E-W	3" SCH 40 (3.5" OD)
C	42"x42"x12"	(5) #4 BARS E-W	3" SCH 40 (3.5" OD)
D	48"x48"x12"	(6) #4 BARS E-W	3 1/2" SCH 40 (4" OD)
E	54"x54"x16"	(8) #4 BARS E-W	REF PLAN
F	60"x60"x16"	(10) #4 BARS E-W	REF PLAN

NOTES:
1. COLUMN AND PIER PAD SIZES SHOWN ARE FOR MAXIMUM ADJUSTABLE COLUMN HEIGHT OF 9'-1". REQUIRES SEPARATE ENGINEERED DESIGN IF GREATER THAN 9'-1" TALL. COLUMNS SIZED AS QWIK-ADJUST COLUMN, BY QUALITY WAY PRODUCTS, LLC. REFER TO SAFE LOADING CAPACITIES PER MANUF SPECS, OR SUBSTITUTION TO ANOTHER PRODUCT ONLY WITH PRIOR APPROVAL BY APEX ENGINEERS.
2. COLUMN AND PIER PAD SIZES SHOWN ARE BASED ON AN ASSUMED MINIMUM ALLOWABLE SOIL BEARING CAPACITY OF 2,000 PSF.



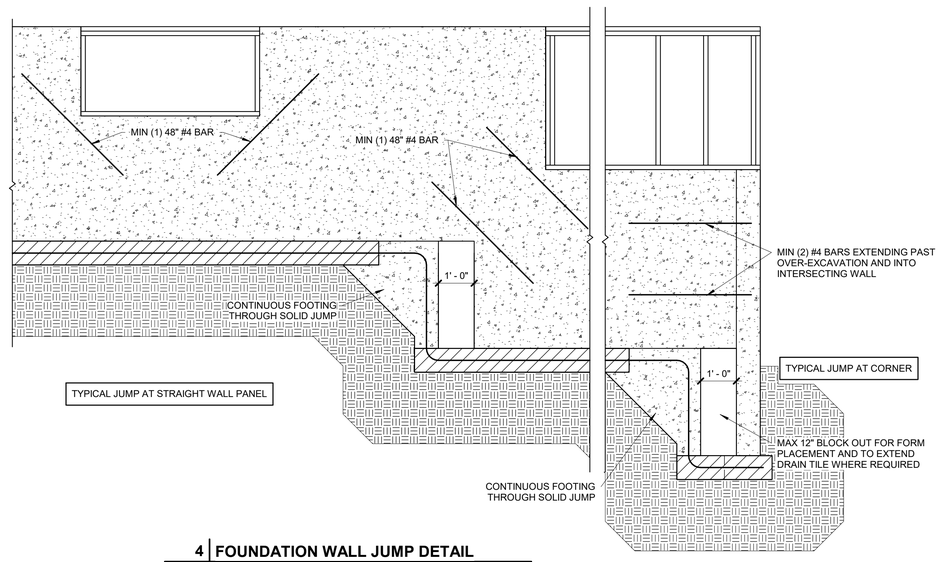
5 COLUMN PAD DETAIL
S2.0 | 3/4" = 1'-0"

EXPANSIVE SOILS DISCLAIMER:

THESE PLANS HAVE BEEN PREPARED BASED ON A PRESUMPTIVE ALLOWABLE BEARING CAPACITY AS ALLOWED BY IRC CODE AND THE LOCAL ENFORCING JURISDICTION.

APEX ENGINEERS, INC. (APEX) RECOMMENDS THAT ALL FOOTING EXCAVATIONS BE EVALUATED BY A LICENSED GEOTECHNICAL ENGINEER PRIOR TO THE PLACEMENT OF ANY FOUNDATION ELEMENTS. GEOTECHNICAL INVESTIGATION AND/OR TESTING IS NOT A SERVICE PROVIDED OR OFFERED BY APEX.

APEX HAS NOT BEEN RETAINED TO DETERMINE THE EXPANSIVE SOIL CHARACTERISTICS OF THE SUBGRADE SOIL AND THEREFORE CANNOT BE HELD RESPONSIBLE FOR THE VOLUMETRIC CHANGES OF THE SOIL (INCLUDING BELOW THE BASEMENT SLAB). BY USE OF THESE PLANS WITHOUT AN ACCOMPANYING GEOTECHNICAL ENGINEERING REPORT, APEX SHALL NOT BE HELD LIABLE FOR ANY FUTURE MOVEMENT AND/OR DIFFERENTIAL MOVEMENT OF THE PROPOSED STRUCTURE AND THE POSSIBLE DAMAGE THAT MAY BE CAUSED AS A RESULT OF SUCH MOVEMENT. DAMAGE FROM EXPANSIVE SOILS AND/OR SETTLEMENT CAN RESULT IN AMONGST OTHER THINGS, THE FOLLOWING: BASEMENT SLAB HEAVE, SHEETROCK CRACKS, WINDOWS AND DOOR BECOMING OUT OF PLUMB AND STICKING AND/OR NOT OPENING, DAMAGE TO TILE, MOULDING, AND OTHER COSMETIC FINISHES.



4 FOUNDATION WALL JUMP DETAIL
S2.0 | 1/2" = 1'-0"

APEX ENGINEERS, INC.
1625 LOCUST ST
KANSAS CITY, MO 64108
816.421.3222
www.apex-engineers.com

STATE OF MISSOURI
CLAYTON J. [illegible]
NUMBER PE-2003000003
2023.08.24
PROFESSIONAL ENGINEER

STRUCTURAL DESIGN REVIEW

KANSAS ENGINEERING LICENSE: E-992
MISSOURI ENGINEERING LICENSE: 2003004673

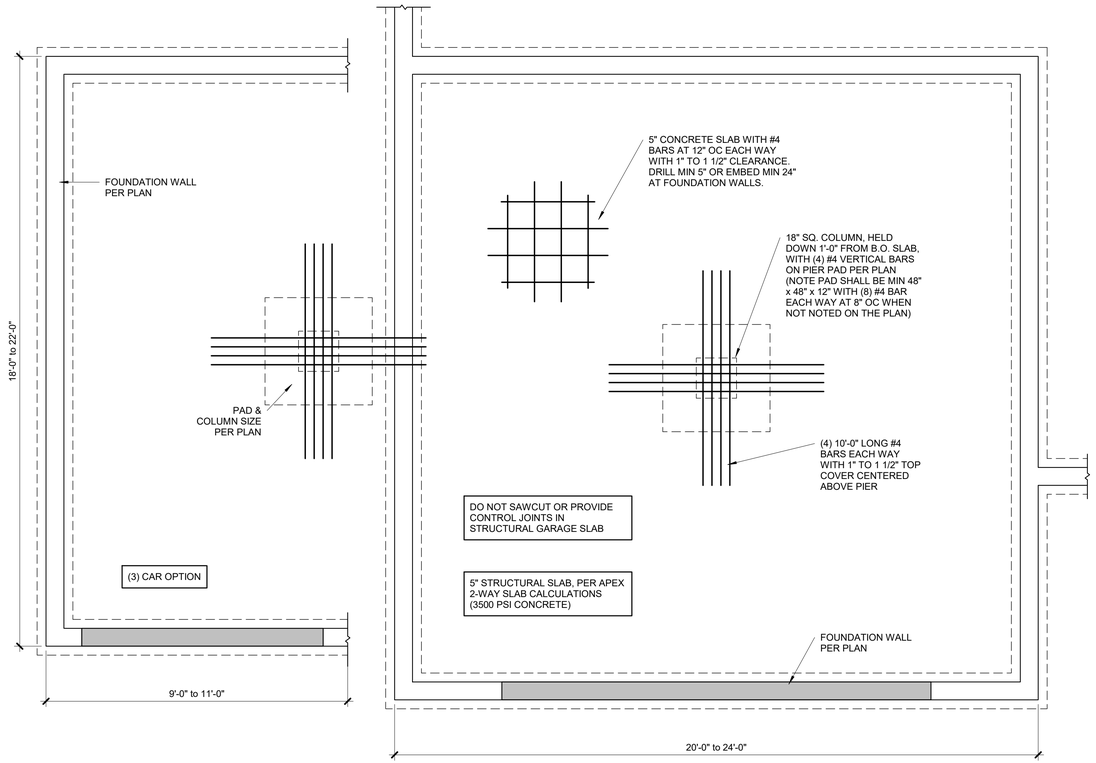
PROJECT:
Lee's Fountain's Row
1201 SW Corinthian Lane
Lee's Summit, MO

CLIENT:
NSPJ Architects
3515 W. 75th St. Suite 201
Prairie Village, KS 66208

#	DATE	COMMENTS

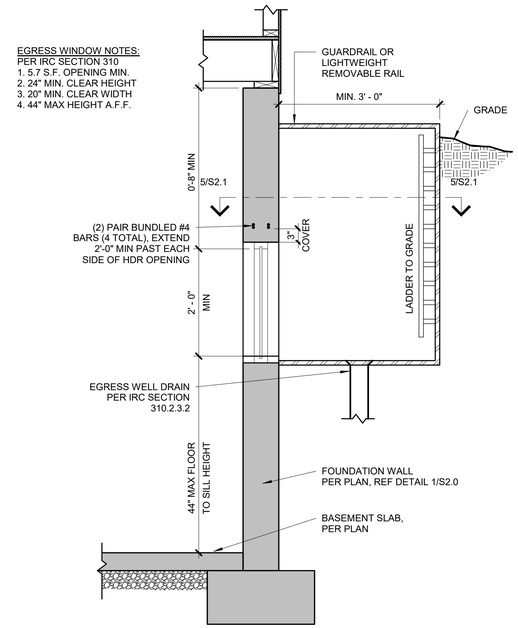
PROJECT #: 23-0779
DRAWN BY: BCH
CHECKED BY: BDC
SUBMITTAL DATE: 2023.06.06

SHEET:
FOUNDATION DETAILS
S2.0

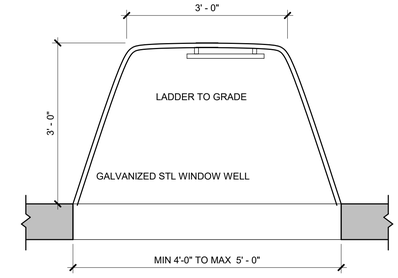


1 TYPICAL STRUCTURAL GARAGE SLAB PLAN
S2.1 | 3/8" = 1'-0"

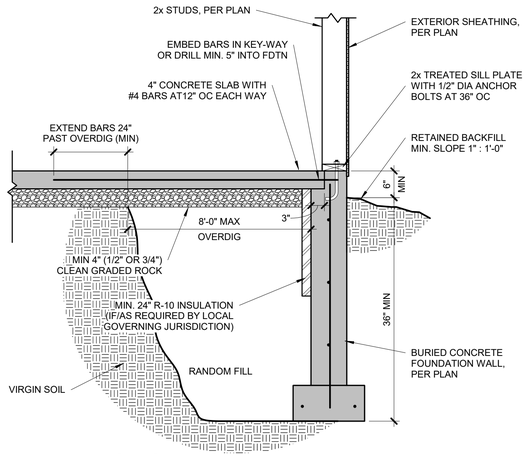
EGRESS WINDOW NOTES:
PER IRC SECTION 310
1. 5.7 S.F. OPENING MIN.
2. 24" MIN. CLEAR HEIGHT
3. 20" MIN. CLEAR WIDTH
4. 44" MAX HEIGHT A.F.F.



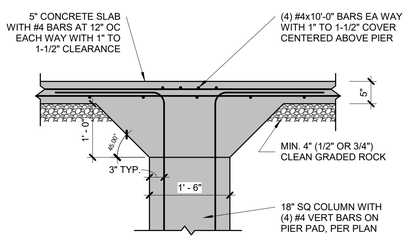
4 TYPICAL EGRESS WINDOW SECTION DETAIL
S2.1 | 3/4" = 1'-0"



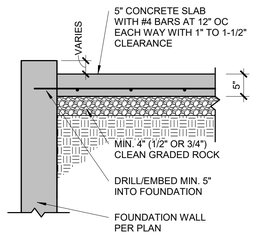
5 TYPICAL EGRESS WINDOW PLAN SECTION
S2.1 | 3/4" = 1'-0"



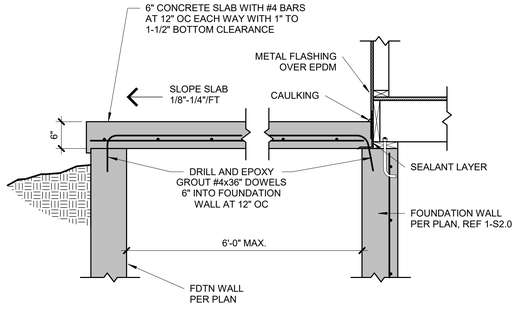
6 TYPICAL OVERDIG DETAIL AT BASEMENT SLAB
S2.1 | 3/4" = 1'-0"



2 STRUCTURAL GARAGE SLAB PIER PAD DETAIL
S2.1 | 3/4" = 1'-0"



3 STRUCTURAL GARAGE SLAB/WALL SECTION
S2.1 | 3/4" = 1'-0"

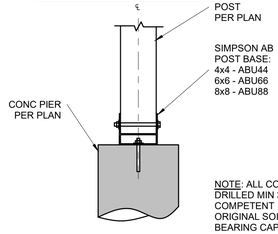


FORMWORK OPTIONS:
1. PROVIDE VULCRAFT 2VLI (OR EQUAL) CORRUGATED DECKING (SHORE AT MID-SPAN DURING CONSTRUCTION).
OR
2. PLYWOOD FORMS WITH EXPANDABLE BAR JOISTS OR TEMPORARY FRAMED WALLS BY CONTRACTOR.

7 SUSPENDED PORCH STOOP DETAIL
S2.1 | 3/4" = 1'-0"

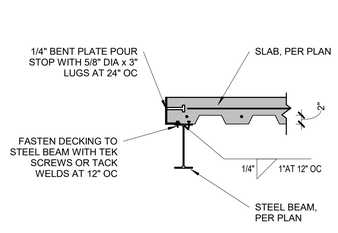
PIER SCHEDULE

COLUMN MARK	COL SIZE	PIER DIAMETER
G	PER PLAN	12"
H	PER PLAN	16"
J	PER PLAN	18"
K	PER PLAN	24"
L	PER PLAN	28"

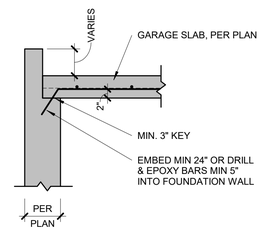


NOTE: ALL CONC. PIERS SHALL BE DRILLED MIN 36" DEEP TO COMPETENT ORIGINAL SOIL WITH MIN 2,000 PSF BEARING CAPACITY (TYP UNO)

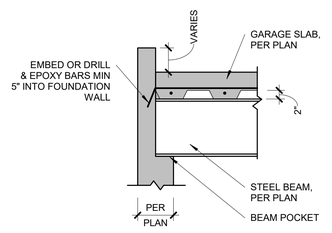
8 POST BASE DETAIL
S2.1 | 3/4" = 1'-0"



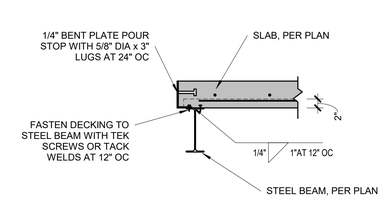
9 POUR STOP DETAIL
S2.1 | 3/4" = 1'-0"



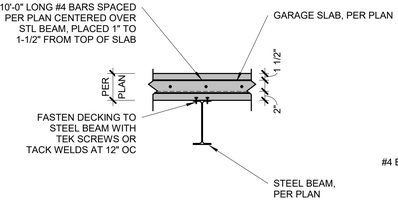
10 GARAGE SLAB BEARING
S2.1 | 3/4" = 1'-0"



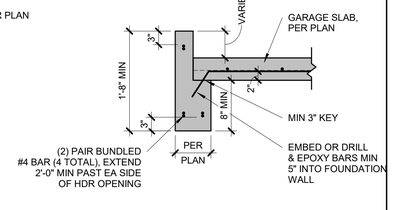
11 GARAGE SLAB BEAM BEARING
S2.1 | 3/4" = 1'-0"



12 POUR STOP DETAIL
S2.1 | 3/4" = 1'-0"



13 GARAGE SLAB BEAM BEARING
S2.1 | 3/4" = 1'-0"



14 CONCRETE HEADER DETAIL
S2.1 | 3/4" = 1'-0"

TYPICAL SUSPENDED SLAB DETAIL

STEEL DECKING NOTES:
- MINIMUM 1-1/2" BEARING
- FASTEN TO SUPPORT STEEL WITH 5/8" VISIBLE PUDDLE WELDS AT EDGE RIBS AND 12" CENTERS ALONG END BEARING
- FASTEN SIDE LAPS AND PERIMETER EDGES AT 36" CENTERS WITH #10 TEK SCREWS OR 5/8" PUDDLE WELDS
- MAX UNSUPPORTED CONSTRUCTION SPAN 6'-0", UNO ON PLANS BY APEX

APEX ENGINEERS,INC
1625 LOCUST ST
KANSAS CITY, MO 64108
816.421.3222
www.apex-engineers.com

STATE OF MISSOURI
CLAYTON J. [illegible]
NUMBER PE-2003000003
2023.08.24
PROFESSIONAL ENGINEER

STRUCTURAL DESIGN REVIEW
KANSAS ENGINEERING LICENSE: E-992
MISSOURI ENGINEERING LICENSE: 2003004673

PROJECT:
Limberlain's Row
1201 SW Corinthian Lane
Lee's Summit, MO

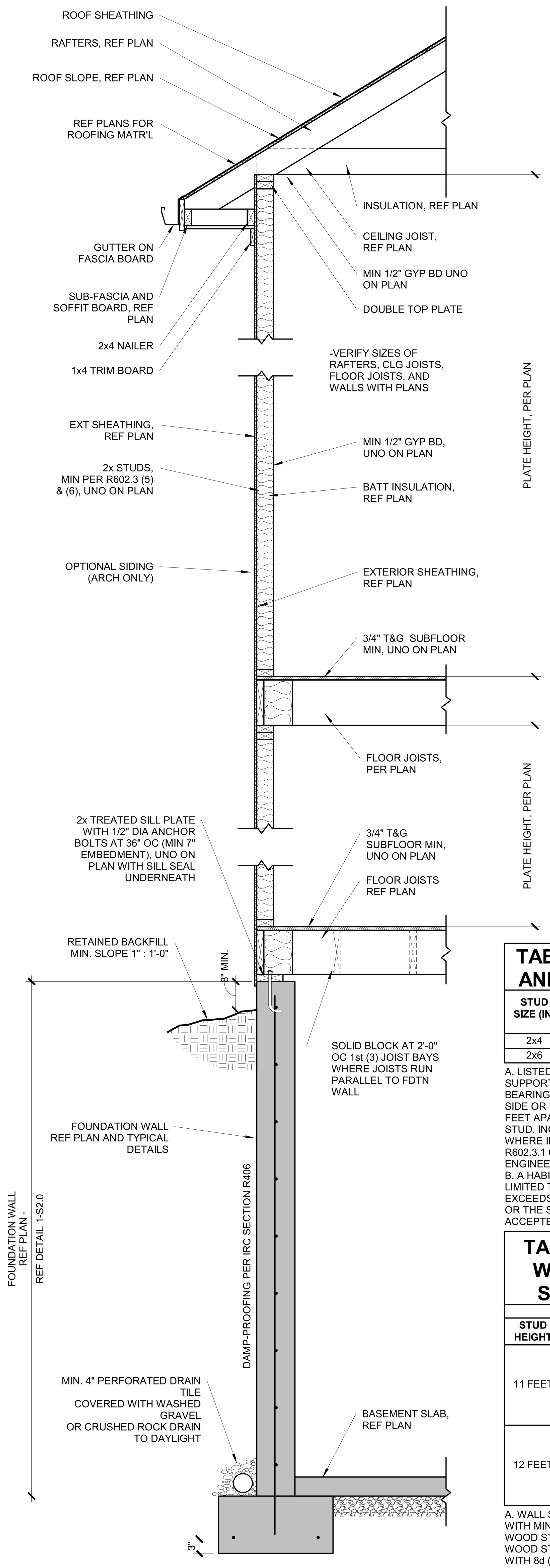
CLIENT:
NSPJ Architects
3515 W. 75th St, Suite 201
Prairie Village, KS 66208

PROJECT #:	23-0779
DRAWN BY:	BCH
CHECKED BY:	BDC
SUBMITTAL DATE:	2023.06.06

COMMENTS

#	DATE

SHEET:
FOUNDATION DETAILS
S2.1



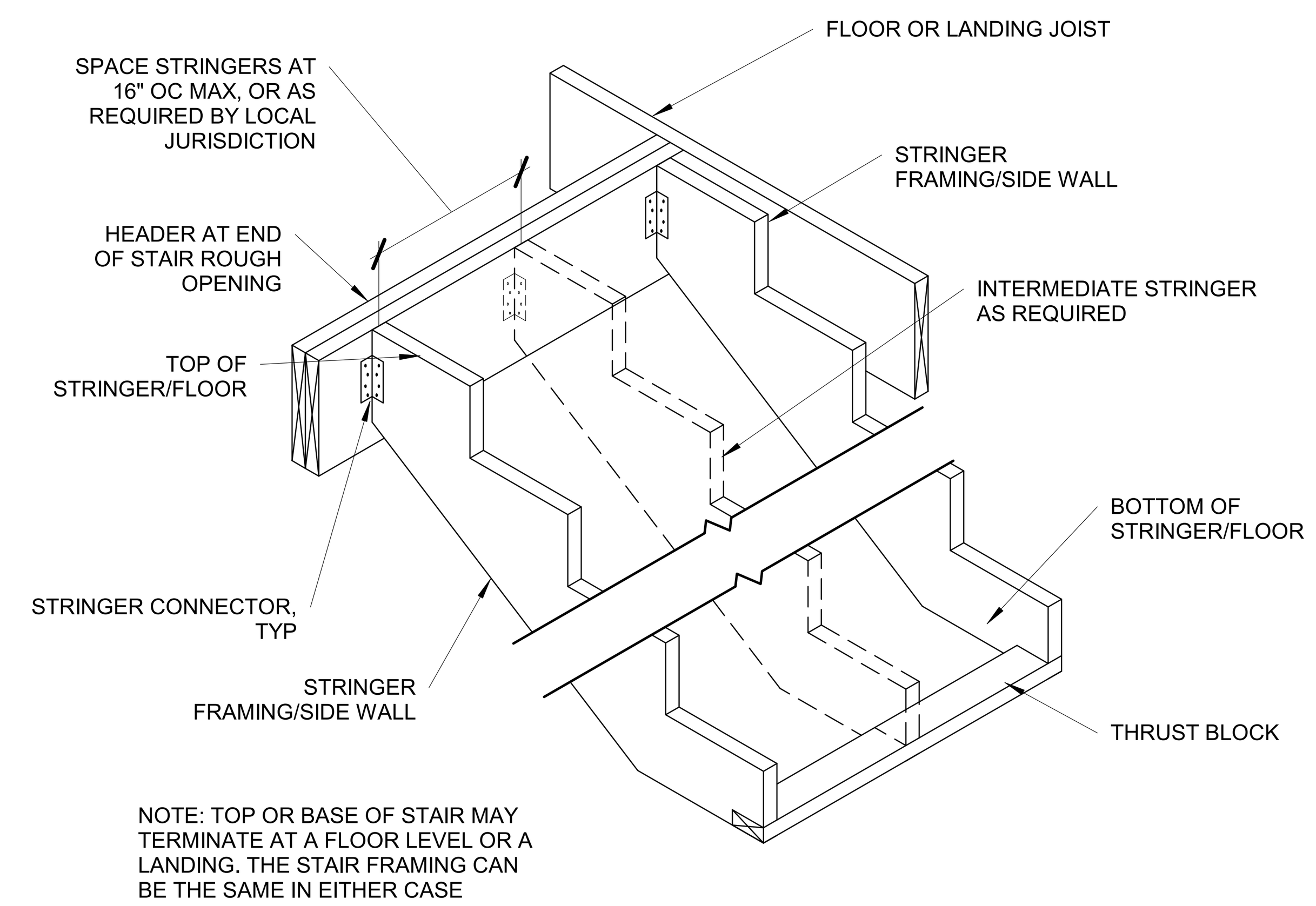
12 TYPICAL WALL CROSS-SECTION
S3.0 3/4" = 1'-0"

TABLE R602.3 (5) - SIZE, HEIGHT, AND SPACING OF WOOD STUDS[A]				
STUD SIZE (IN)	LATERALLY UNSUPPORTED STUD HEIGHT[A]	STRUCTURE SUPPORTED		
		ROOF ONLY	ROOF AND (1) FLOOR	ROOF AND (2) FLOORS
2x4	10 FEET	24" OC[B]	16" OC[B]	N/A
2x6	10 FEET	24" OC	24" OC	16" OC

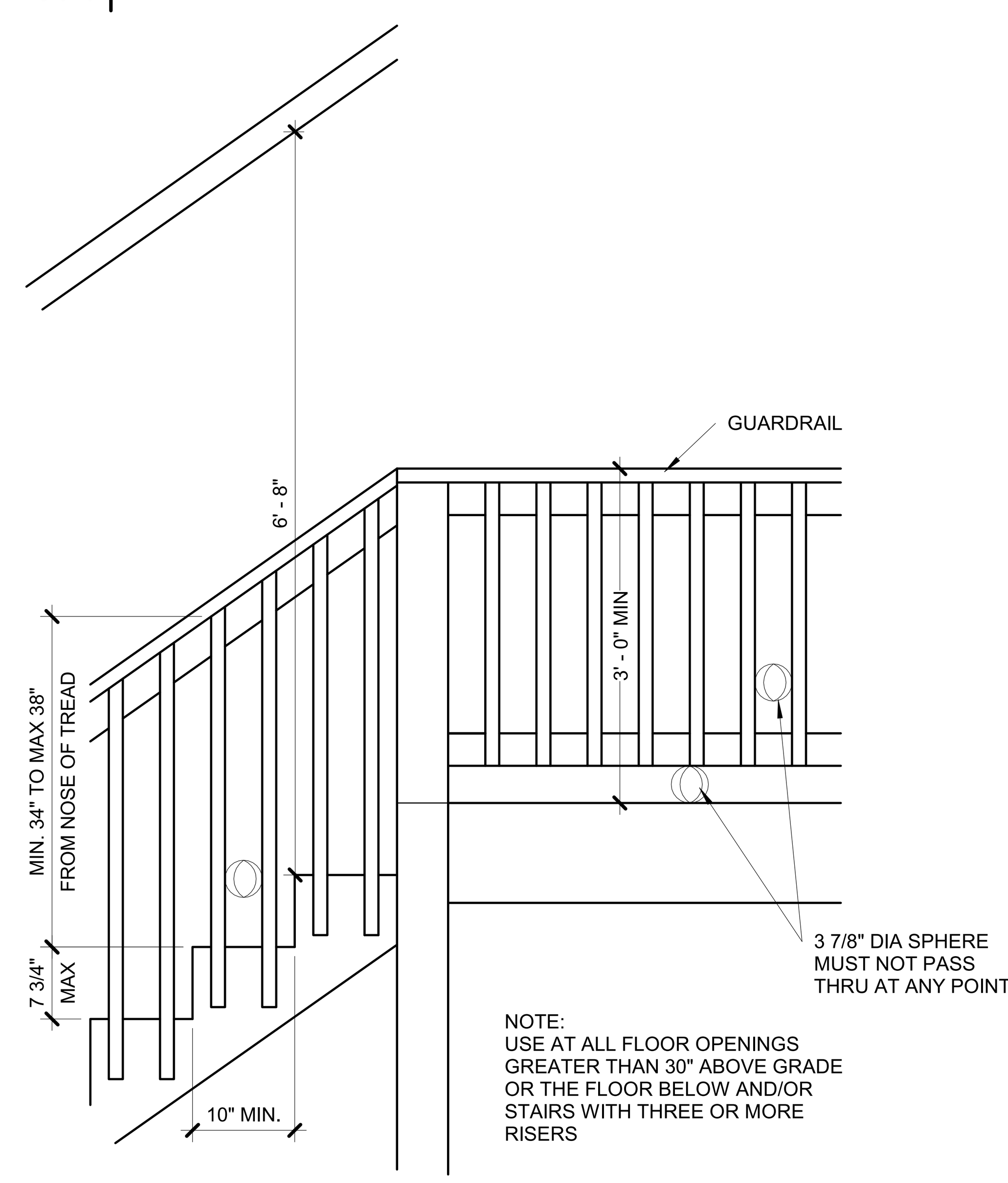
A. LISTED HEIGHTS ARE DISTANCES BETWEEN POINTS OF LATERAL SUPPORT PLACED PERPENDICULAR TO THE PLANE OF THE WALL. BEARING WALLS SHALL BE SHEATHED ON NOT LESS THAN ONE SIDE OR BRIDGING SHALL BE INSTALLED NOT GREATER THAN 4 FEET APART MEASURED VERTICALLY FROM EITHER END OF THE STUD. INCREASES IN UNSUPPORRTED HEIGHT ARE PERMITTED WHERE IN THE COMPLIANCE WITH EXCEPTION 2 OF SECTION R602.3.1 OR DESIGNED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE.
B. A HABITABLE ATTIC ASSEMBLY SUPPORTED BY 2x4 STUDS IS LIMITED TO A ROOF SPAN OF 32 FEET. WHERE THE ROOF SPAN EXCEEDS 32 FEET, THE WALL STUDS SHALL BE INCREASED TO 2x6 OR THE STUDS SHALL BE DESIGNED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE.

TABLE R602.3 (6) - ALTERNATE WOOD BEARING WALL STUD SIZE, HEIGHT AND SPACING				
ULTIMATE DESIGN WIND SPEED = 115 MPH				
STUD HEIGHT	SUPPORTING	STUD SPACING[A]	MAX ROOF/FLOOR SPAN[B]	
			12 FEET	24 FEET
11 FEET	ROOF ONLY	12 IN	2x4	2x4
		16 IN	2x4	2x4
		24 IN	2x6	2x6
	ROOF AND ONE FLOOR	12 IN	2x4	2x6
		16 IN	2x6	2x6
		24 IN	2x6	2x6
12 FEET	ROOF ONLY	12 IN	2x4	2x4
		16 IN	2x4	2x6
		24 IN	2x6	2x6
	ROOF AND ONE FLOOR	12 IN	2x4	2x6
		16 IN	2x6	2x6
		24 IN	2x6	2x6

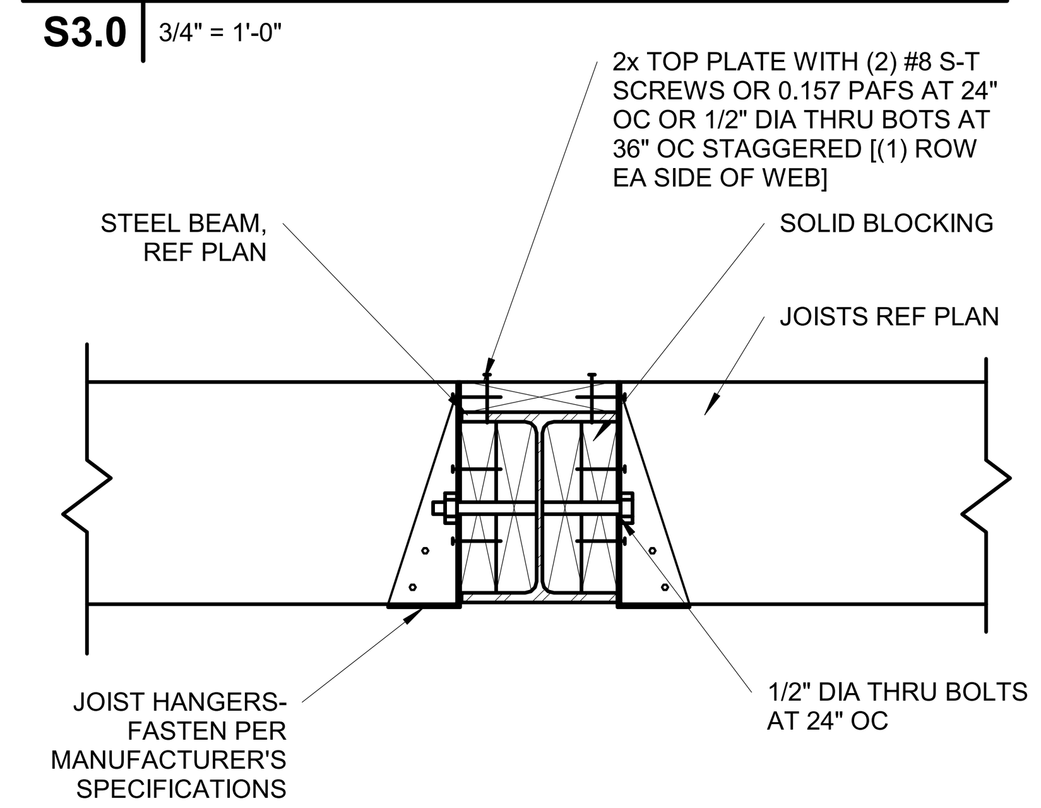
A. WALL STUDS NOT EXCEEDING 16" OC SHALL BE SHEATHED WITH MINIMUM 1/2" GYPSUM BOARD ON THE INTERIOR AND 3/8" WOOD STRUCTURAL PANEL SHEATHING ON THE EXTERIOR. WOOD STRUCTURAL PANEL SHEATHING SHALL BE ATTACHED WITH 8d (2.5" x 0.131") NAILS NOT GREATER THAN 6" OC ALONG PANEL EDGES AND 12" OC AT INTERMEDIATE SUPPORTS, AND ALL PANEL JOINTS SHALL OCCUR OVER STUDS OR BLOCKING.
B. THE MAXIMUM SPAN IS APPLICABLE TO BOTH SINGLE AND MULTIPLE SPAN ROOF AND FLOOR CONDITIONS. THE ROOF ASSEMBLY SHALL NOT CONTAIN A HABITABLE ATTIC.



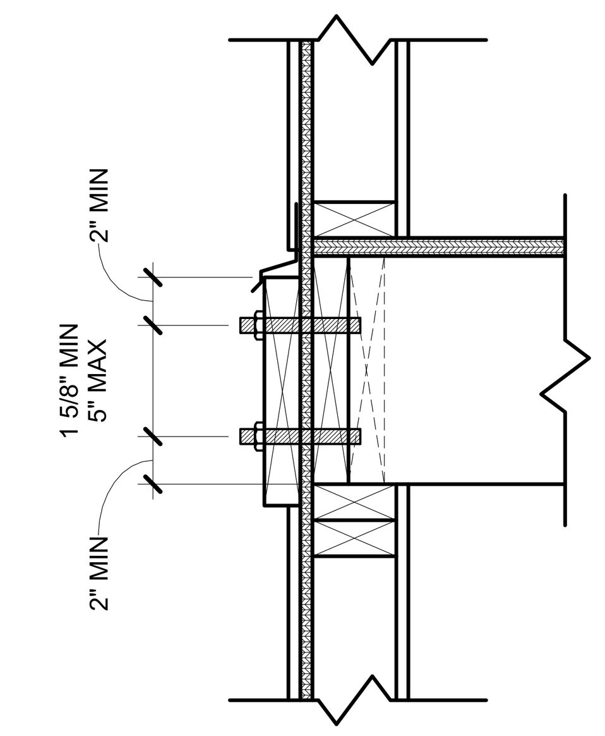
11 TYPICAL STRINGER DETAIL
S3.0 3/4" = 1'-0"



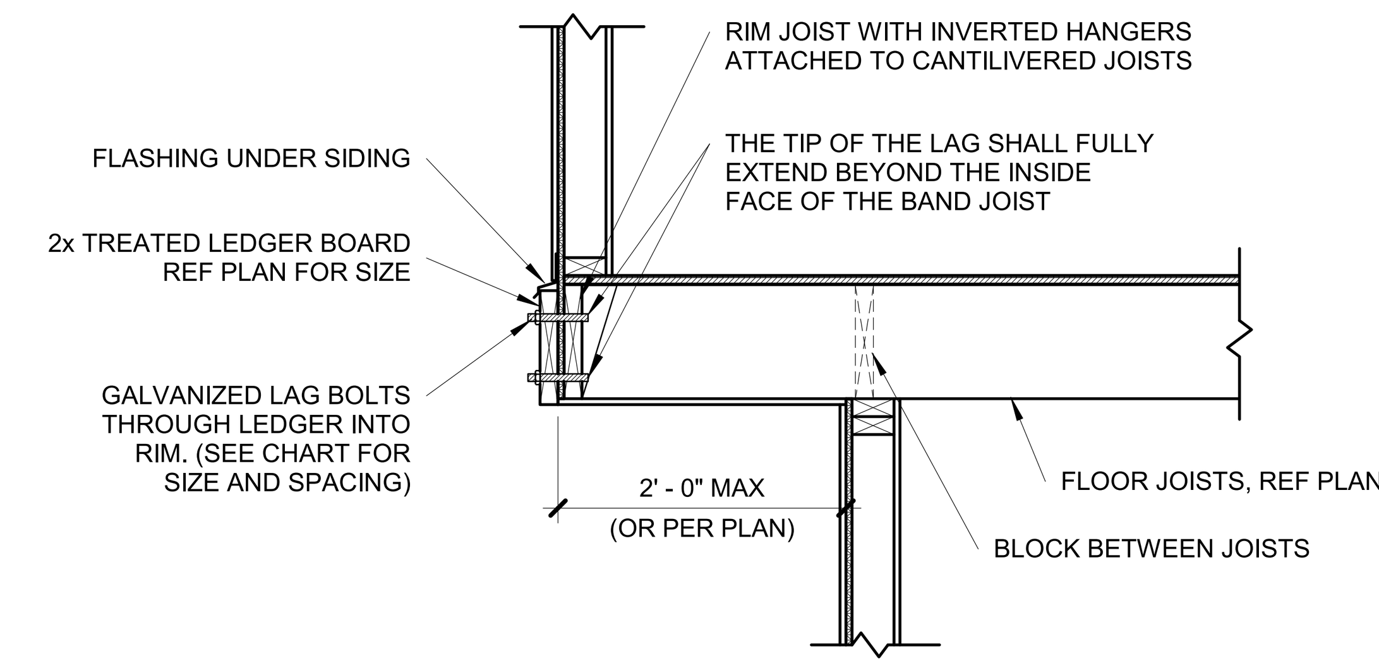
10 TYPICAL STAIR/RAIL DETAIL
S3.0 3/4" = 1'-0"



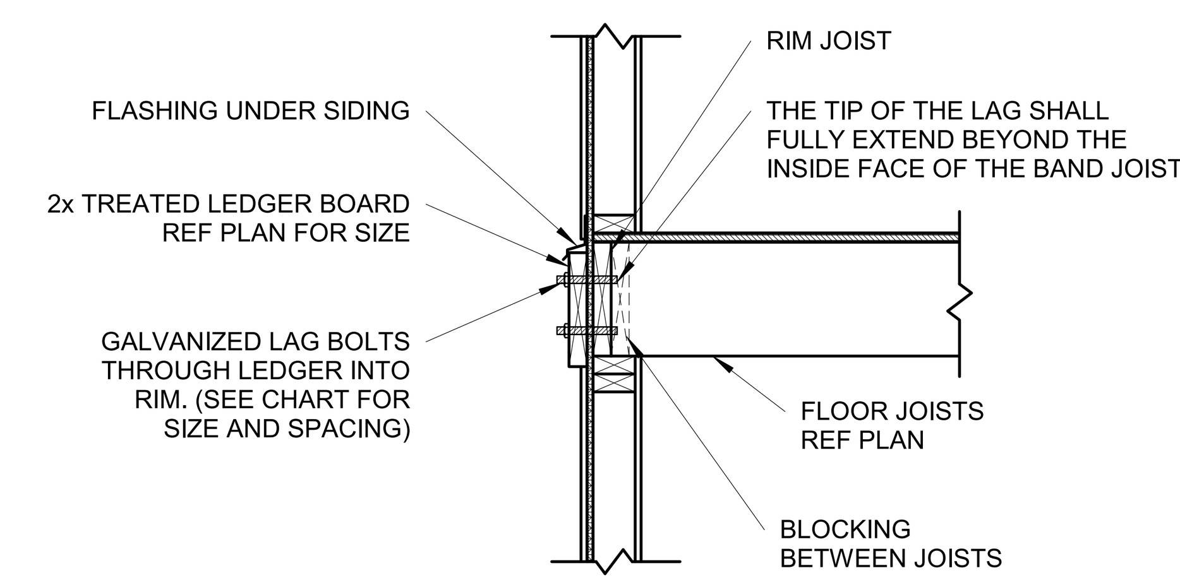
9 UPSET STEEL BEAM/JOIST CONNECTION
S3.0 1 1/2" = 1'-0"



8 LEDGER FASTENER PLACEMENT
S3.0 1 1/2" = 1'-0"



7 TYPICAL CANTILEVER FRAMING WITH DECK ATTACHMENT
S3.0 3/4" = 1'-0"

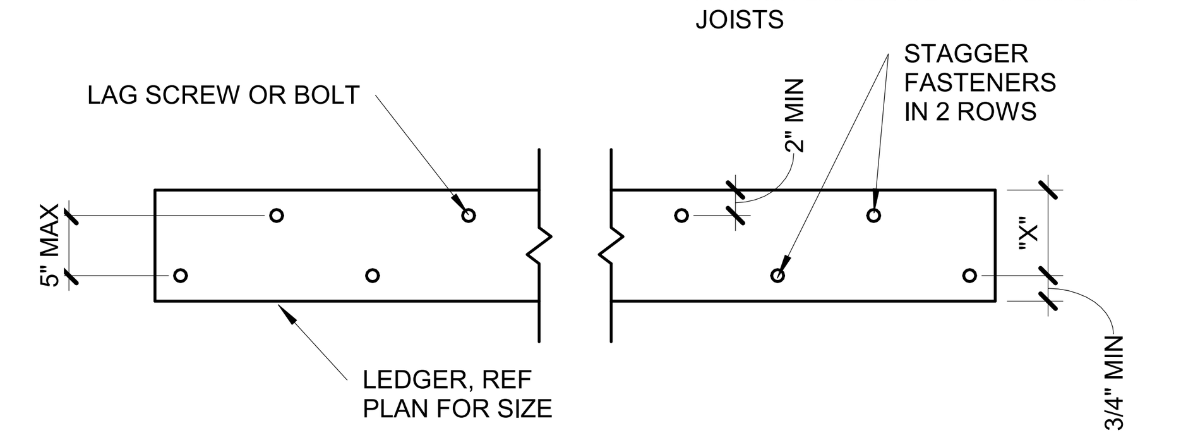


DECK LEDGER ATTACHMENT CHART		
DECK JOIST SPAN	1/2" DIA LAG SPACING	EQUIVALENT SPACING FOR 16" OC JOIST BAYS
UP TO 10'-0"	16" OC	N/A
10'-1" TO 12'-0"	15" OC	16" OC DBL EVERY OTHER
12'-1" TO 14'-0"	13" OC	16" OC DBL EVERY OTHER
14'-1" TO 16'-0"	11" OC	16" OC DBL EVERY JOIST BAY
16'-1" TO 18'-0"	10" OC	16" OC DBL EVERY JOIST BAY
NOTE: CHART IS APPLICABLE ONLY WHEN DECK IS SHOWN ON APPROVED PLAN.		

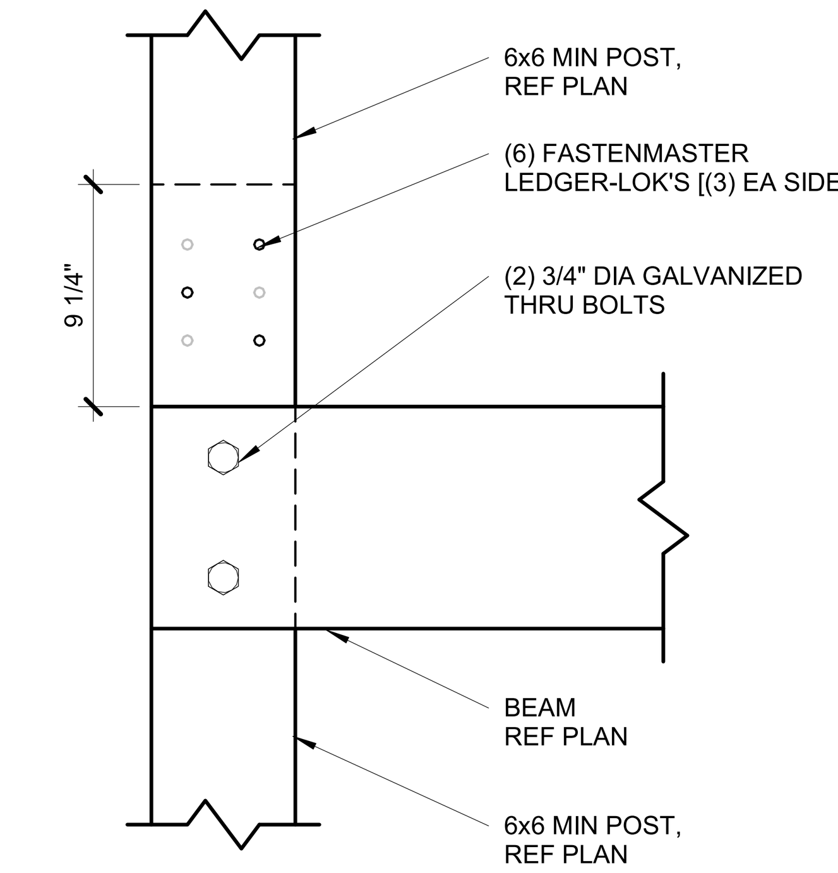
6 TYPICAL LEDGER ATTACHMENT
S3.0 3/4" = 1'-0"

BEAM SIZE	"X"
2x8*	5 1/2" MIN
2x10	6 1/2" MIN
2x12	7 1/2" MIN

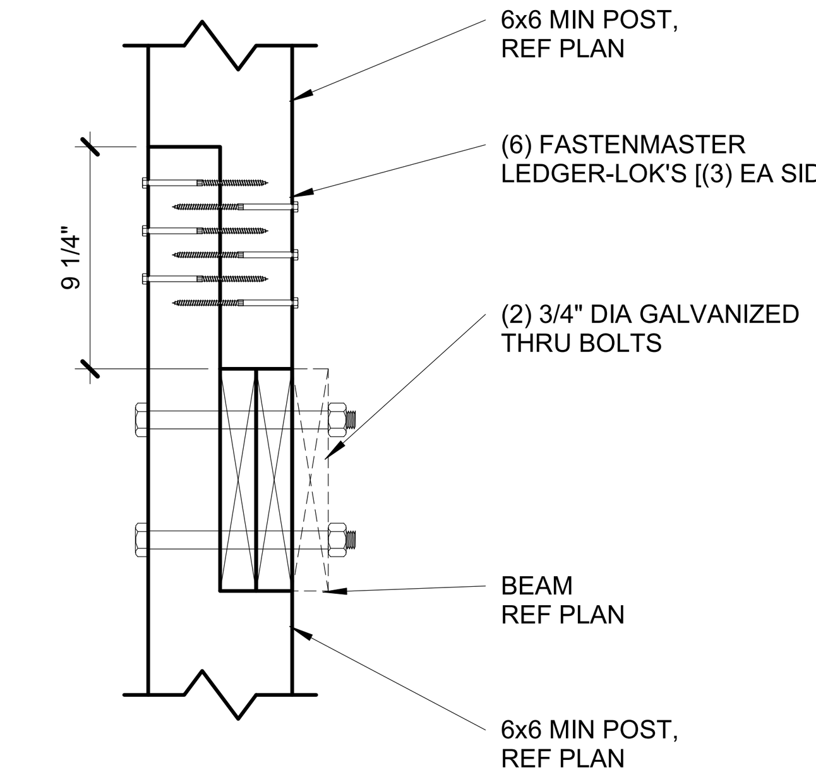
*DISTANCE SHALL BE PERMITTED TO BE REDUCED TO 4 1/2" IF LAG SCREWS ARE USED OR BOLT SPACING IS REDUCED TO THAT OF LAG SCREWS TO ATTACH 2x8 LEDGERS TO 2x8 BAND JOISTS



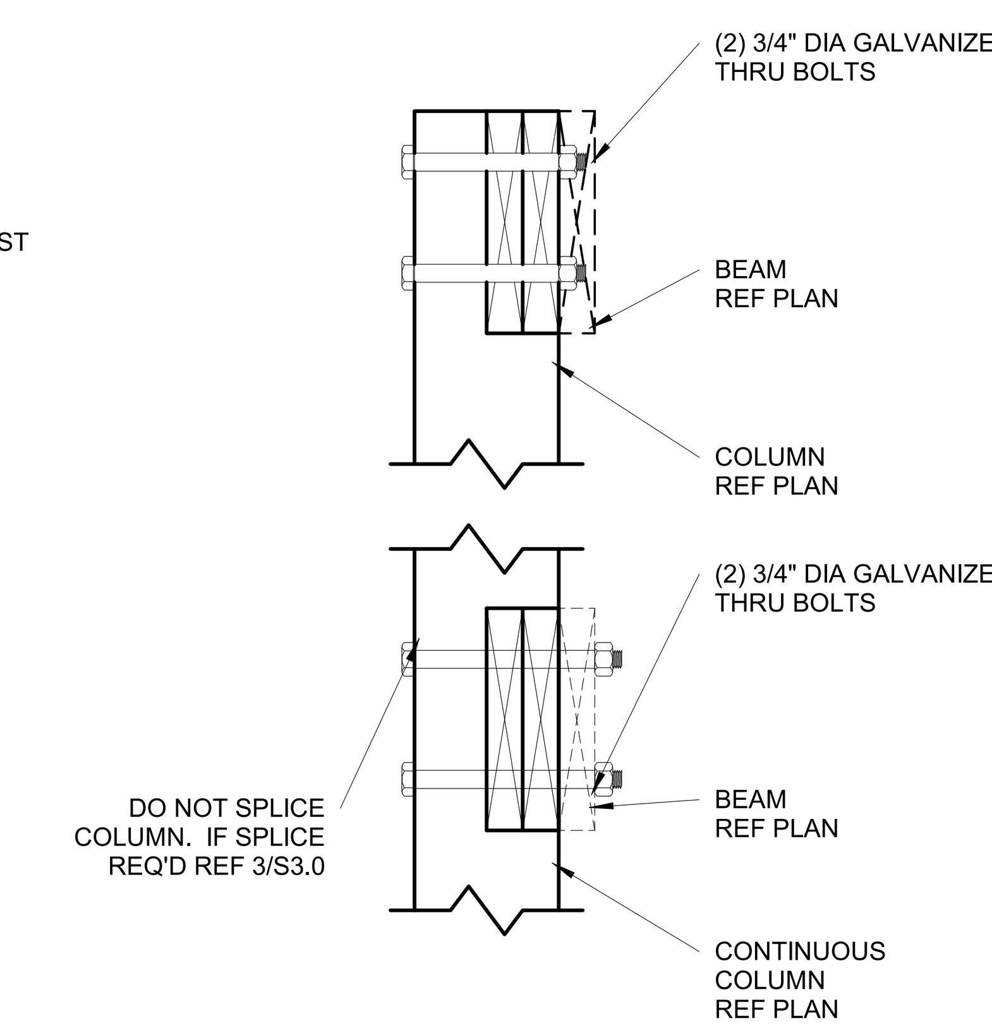
5 TYPICAL LEDGER BOLT SPACING
S3.0 3/4" = 1'-0"



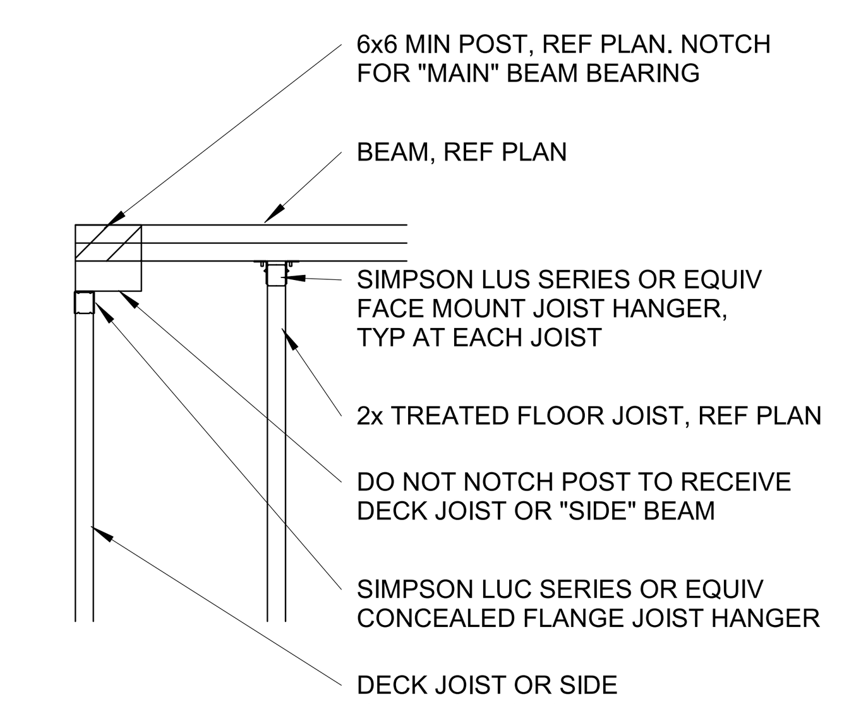
4 SPLICED DECK COLUMN CONNECTION
S3.0 1 1/2" = 1'-0"



3 SPLICED DECK COLUMN CONNECTION
S3.0 1 1/2" = 1'-0"



2 DECK BEAM/COLUMN CONNECTION
S3.0 1 1/2" = 1'-0"



1 DECK BEAM/COLUMN CORNER CONDITION
S3.0 3/4" = 1'-0"

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1625 LOCUST ST
KANSAS CITY, MO 64108
816.421.3222
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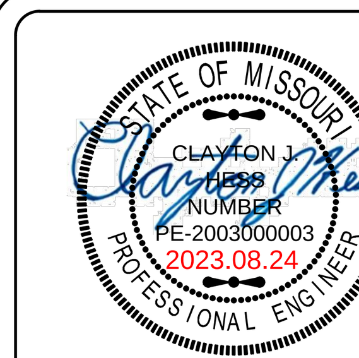


STRUCTURAL DESIGN REVIEW
KANSAS ENGINEERING LICENSE: E-992
MISSOURI ENGINEERING LICENSE: 2003004673

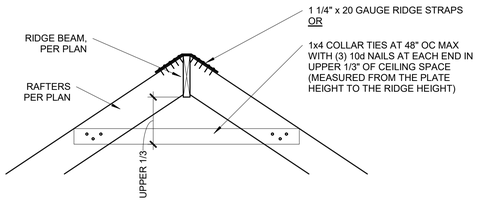
PROJECT:
Lumberman's Row
1201 SW Corinthian Lane
Lee's Summit, MO

CLIENT:
NSPJ Architects
3515 W. 75th St. Suite 201
Prairie Village, KS 66208

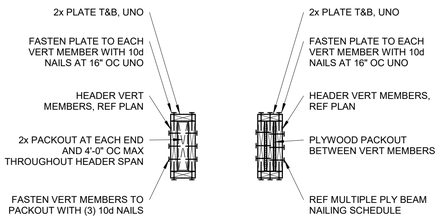
PROJECT #:	23-0779
DRAWN BY:	BCH
CHECKED BY:	BDC
SUBMITTAL DATE:	2023.06.06

#	DATE	COMMENTS

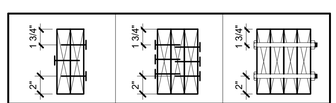
SHEET:
FRAMING DETAILS
S3.0



12 | RIDGE BEAM DETAIL
S3.1 | 3/4" = 1'-0"



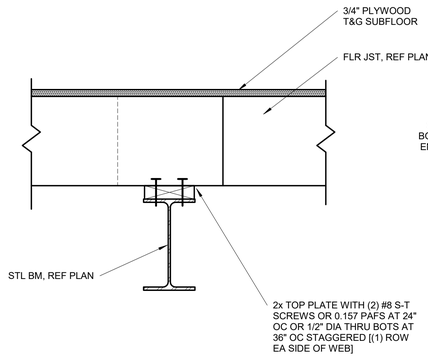
11 | TYPICAL WOOD HEADER DETAIL
S3.1 | NOT TO SCALE



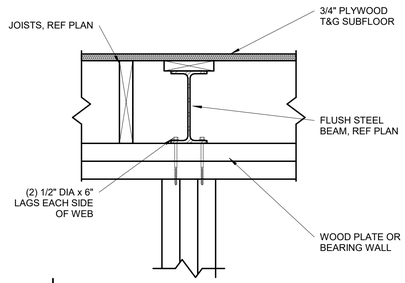
2 - PLY	3 - PLY	4 - PLY
(3) ROWS OF 16d x 3-1/2" NAILS AT 6" OC	(3) ROWS OF 16d x 3-1/2" NAILS AT 4" OC	(2) ROWS OF 1/2" DIA. A307 THRU-BOLTS AT 12" OC STAGGERED

NOTES:
1. NAILING SHOWN APPLIES UNLESS SPECIFICALLY NOTED IN DETAILS.
2. SPACE NAILS EVENLY THROUGHOUT DEPTH OF BEAM.

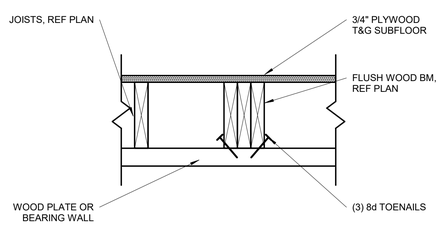
10 | MULTIPLE PLY BEAM NAILING SCHEDULE
S3.1 | NOT TO SCALE



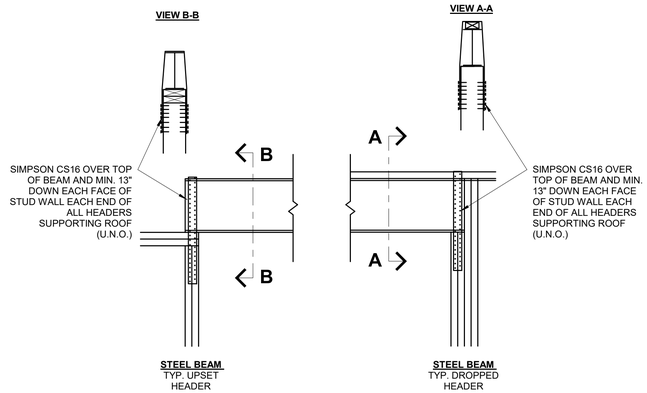
9 | WOOD PLATE TO STEEL BEAM CONNECTION
S3.1 | 1 1/2" = 1'-0"

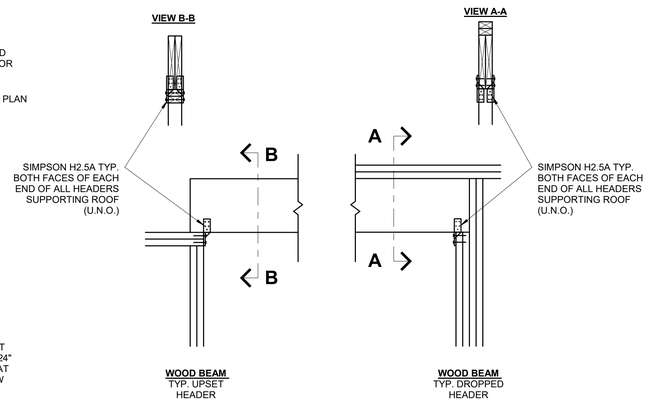


8 | FLUSH STEEL BEAM CONNECTION
S3.1 | 1 1/2" = 1'-0"

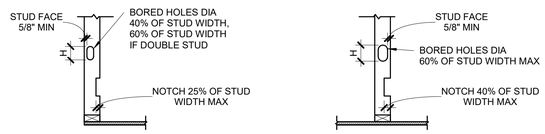


7 | FLUSH WOOD BEAM CONNECTION
S3.1 | 1 1/2" = 1'-0"

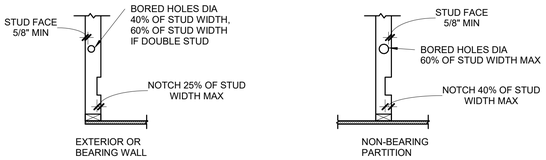




6 | ROOF SUPPORTING BEAM HOLD DOWN
S3.1 | 3/4" = 1'-0" (COMPLIANCE WITH IRC R802.11)



ALTERNATE FOR OBLONG BORED HOLES



PENETRATIONS THRU STUDS

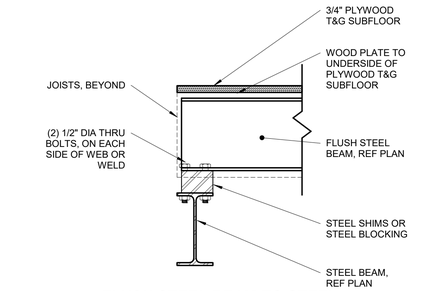
WALL SIZE	BORED HOLE SIZE		WALL NOTCH	
	STUDS LOAD BEARING OR EXTERIOR WALL		NON LOAD BEARING WALL	LOAD BEARING WALL	NON LOAD BEARING WALL
	40%	60%	60%	25%	40%
2x4	1 3/8"	-	2 1/8"	7/8"	1 3/8"
(2) 2x4	-	2 1/8"	2 1/8"	7/8"	1 3/8"
2x6	2 1/4"	-	3 15/16"	1 3/8"	2 1/4"
(2) 2x6	-	3 5/16"	3 15/16"	1 3/8"	2 1/4"
2x8	2 7/8"	-	4 3/8"	1 13/16"	2 7/8"
(2) 2x8	-	4 3/8"	4 3/8"	1 13/16"	2 7/8"

PLATES:
TOP AND BOTTOM PLATE HOLE, CUT OR NOTCH THAT IS 50% MORE OF WIDTH MUST BE REPAIRED USING 16 GA (MIN) METAL TIE THAT IS AT LEAST 1-1/2" WIDE IF WALL IS A SHEAR WALL IT MUST BE REPAIRED USING HARDY FRAME SADDLE (HFS).

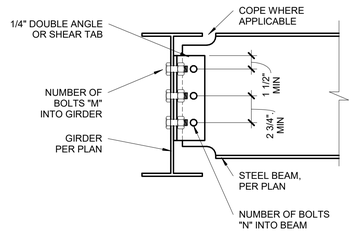
NOTE:
SEE SECTION R602.6 AND FIGURES R602.6.1 AND R602.6.2

WALL SIZE	HOLE SIZE	VERTICAL HOLE SIZE (H)
2x4	1 3/4"	D+1/2" AT Lvls 1&2
2x6	2 3/4"	D+1" AT Lvl 3
2x8	3 5/8"	D+1 1/4" AT Lvl 4
		D+1 1/2" AT Lvl 5

5 | DRILLING & NOTCHING DETAIL
S3.1 | 3/4" = 1'-0"



4 | FLUSH STEEL BEAM TO STEEL BEAM
S3.1 | 1 1/2" = 1'-0"

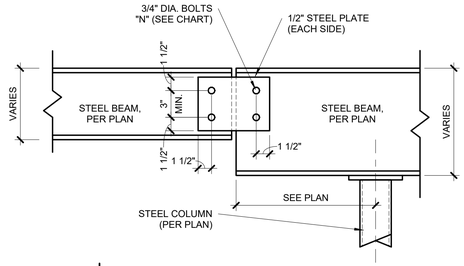


3 | BEAM TO GIRDER CONNECTION
S3.1 | 1 1/2" = 1'-0"

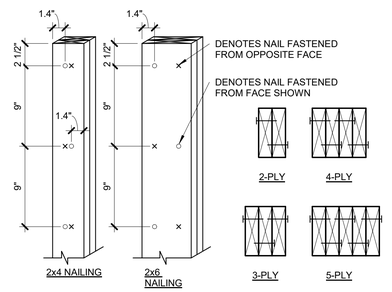
BEAM CONNECTION SCHEDULE

BEAM SIZE	# OF BOLTS "N"	# OF BOLTS "M"
W8, W10	2	4
W12, W14	3	6
W16, W18	4	8

NOTES:
1. THESE CONNECTIONS ARE TYPICAL, UNO.
2. NUMBER OF BOLTS IN UPSET BEAM CONNECTIONS DETERMINED BY SMALLER OF TWO BEAMS AT CONNECTION.
3. ALL AROUND 1/4" FILLET WELD MAY BE SUBSTITUTED FOR EITHER BOLTED CONNECTION.
4. ALL BOLTS, 3/4" DIAMETER, A325-N, UNO.



2 | BEAM SPLICE DETAIL
S3.1 | 1 1/2" = 1'-0"



NOTES:
1. EACH 2x PLY SHALL BE FASTENED WITH (1) ROW OF 10d NAILS AT 9" OC, ALTERNATING SIDE TO SIDE.
2. 1.4" MIN EDGE DISTANCE, AND STARTING 2 1/2" FROM EACH END.
3. EXTEND FULL AREA OF COLUMN AS SOLID BLOCKING THROUGH JOIST BAYS AND WALLS TO LOAD-BERAING BEAM/WALL BELOW

1 | BUILT-UP STUD COLUMN
S3.1 | 1 1/2" = 1'-0"

APEX ENGINEERS,INC.
1625 LOCUST ST
KANSAS CITY, MO 64108
816.421.3222
www.apex-engineers.com

STATE OF MISSOURI
CLAYTON J. [illegible]
NUMBER PE-2003000003
2023.08.24
PROFESSIONAL ENGINEER

STRUCTURAL DESIGN REVIEW

KANSAS ENGINEERING LICENSE: E-992
MISSOURI ENGINEERING LICENSE: 2003004673

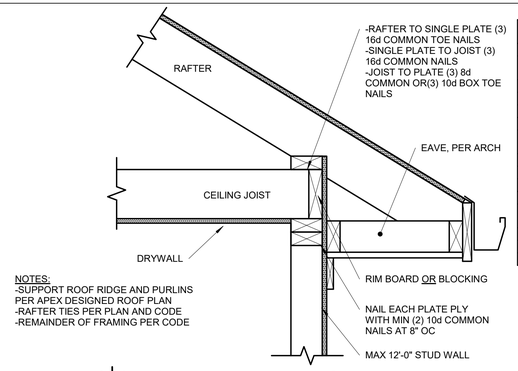
PROJECT:
LUNDEEN'S ROW
1201 SW Corinthian Lane
Lee's Summit, MO

CLIENT:
NSPJ Architects
3515 W. 75th St, Suite 201
Prairie Village, KS 66208

#	DATE	COMMENTS

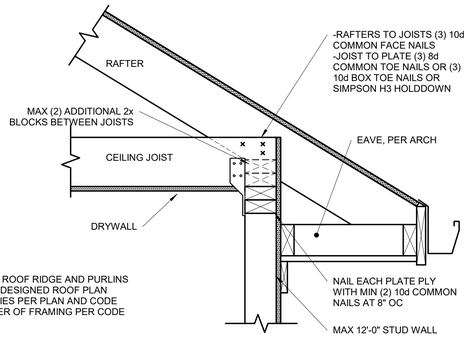
PROJECT #: 23-0779
DRAWN BY: BCH
CHECKED BY: BDC
SUBMITTAL DATE: 2023.06.06

SHEET:
FRAMING DETAILS
S3.1



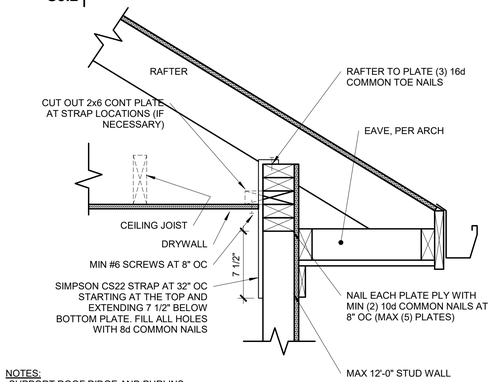
NOTES:
-SUPPORT ROOF RIDGE AND PURLINS PER APEX DESIGNED ROOF PLAN
-RAFTER TIES PER PLAN AND CODE
-REMAINDER OF FRAMING PER CODE

9 OPTIONAL RAFTER BEARING
S3.2 | 1 1/2" = 1'-0



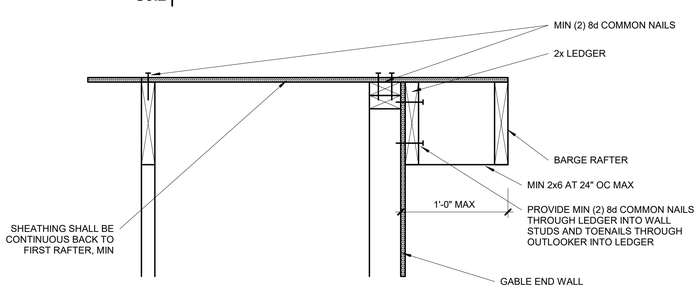
NOTES:
-SUPPORT ROOF RIDGE AND PURLINS PER APEX DESIGNED ROOF PLAN
-RAFTER TIES PER PLAN AND CODE
-REMAINDER OF FRAMING PER CODE

8 OPTIONAL RAFTER BEARING
S3.2 | 1 1/2" = 1'-0



NOTES:
-SUPPORT ROOF RIDGE AND PURLINS PER APEX DESIGNED ROOF PLAN
-RAFTER TIES PER PLAN AND CODE
-REMAINDER OF FRAMING PER CODE

7 OPTIONAL RAFTER BEARING
S3.2 | 1 1/2" = 1'-0



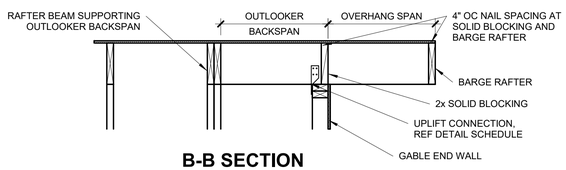
6 OPTIONAL OVERHANG 1'-0" OR LESS
S3.2 | 1 1/2" = 1'-0

UPLIFT CONNECTION SCHEDULE

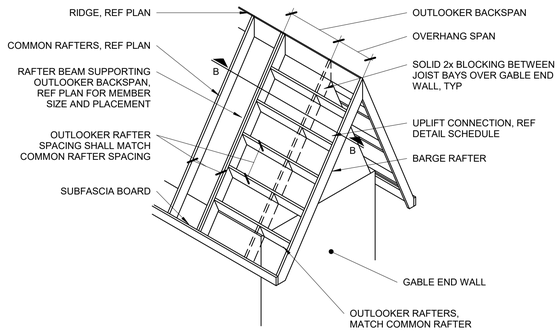
RAFTER SPACING	UPLIFT CONNECTOR	EXPOSURE B	EXPOSURE C
OVERHANG SPAN: 1'-1" TO 1'-9"			
12" OC	SIMPSON H2.5A	(1) AT 24" OC	(1) AT 24" OC
16" OC	SIMPSON H2.5A	(1) AT 32" OC	(1) AT 16" OC
24" OC	SIMPSON H2.5A	(1) AT 24" OC	(1) AT 24" OC
OVERHANG SPAN: 1'-10" TO 2'-6"			
12" OC	SIMPSON H2.5A	(1) AT 12" OC	(1) AT 12" OC
16" OC	SIMPSON H2.5A	(1) AT 16" OC	(2) AT 16" OC
24" OC	SIMPSON H2.5A	(2) AT 24" OC	(2) AT 24" OC
OVERHANG SPAN: 2'-7" TO 3'-9"			
12" OC	SIMPSON H2.5A	(2) AT 12" OC	(2) AT 12" OC
16" OC	SIMPSON H2.5A	(2) AT 16" OC	(2) AT 16" OC
24" OC	SIMPSON H2.5A	(2) AT 24" OC	N/A

OVERHANG SPAN	MIN BACKSPAN LENGTH
≤1'-0"	1'-0"
1'-1" to 2'-0"	EQUALS OVERHANG SPAN
≥2'-1"	OVERHANG SPAN x2

NOTES:
-CHART IS ONLY APPLICABLE IF NO RAFTER BEAM SHOWN ON PLAN.
-CONTACT EOR IF OVERHANG LENGTH EXCEEDS CHART OPTIONS.
-ALTERNATE, REF BARGE RAFTER DETAIL FOR OVERHANGS 1'-0" OR LESS.



B-B SECTION



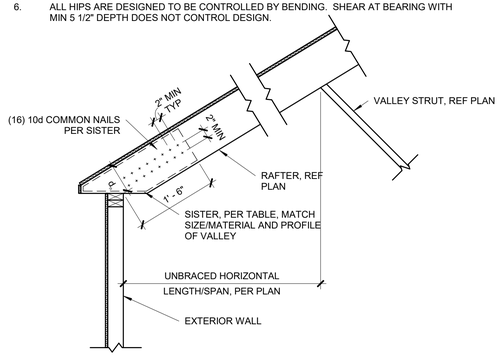
5 OUTLOOKER RAFTERS ROOF FRAMING
S3.2 | NOT TO SCALE

REQUIRED NUMBER OF SISTER PLIES

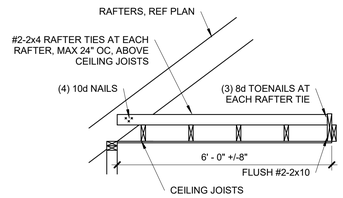
# OF SISTER PLIES	2x VALLEY RAFTER SIZE 2x6	2x8	2x10	# OF SISTER PLIES	LVL VALLEY RAFTER SIZE 2x6	2x8	2x10
LIGHT ROOF							
0	4'-8"	6'-2"	7'-11"	0	8'-8"	11'-5"	14'-7"
1	9'-5"	*	*	1	*	*	*
2	*	N/A	N/A	2	N/A	N/A	N/A
HEAVY ROOF							
0	3'-6"	4'-7"	5'-11"	0	6'-6"	8'-7"	10'-11"
1	7'-1"	9'-3"	*	1	13'-1"	*	*
2	*	*	N/A	2	*	N/A	N/A

*VALLEYS OF A LENGTH GREATER THAN THAT FOUND IN THE CELL ABOVE ARE CONTROLLED BY BENDING. APPLY THE NUMBER OF SISTER PLIES CORRESPONDING TO THIS ROW.

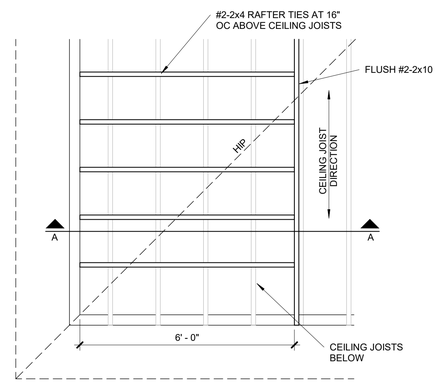
1. THIS TABLE IS INTENDED TO BE USED IN CONJUNCTION WITH THE STAMPED, ENGINEERED PLANS AS THEY ARE DRAWN BY APEX. BRACING LOCATIONS SHALL DETERMINE HORIZONTAL, UNSUPPORTED SPAN FROM VALLEY BEARING AND BE USED TO DETERMINE THE NUMBER OF SISTERS REQUIRED. BRACING LOCATIONS ARE **NOT** TO BE INFERRED USING THIS TABLE.
2. TABLE VALUES ARE BASED ON A DEPTH OF MEMBER REMAINING, d,, EQUAL TO THE DEPTH OF THE RAFTERS. IF d, IS OBSERVED TO BE LESS THAN THE DEPTH OF THE RAFTER, THE VALLEY WILL NEED TO BE EITHER REPLACED OR ANALYZED BY APEX.
3. TABLE VALUES ARE VALID FOR TAPERED CUTS ONLY, REF DETAIL 4/S3.2.
4. IF MULTI-PLY VALLEY IS SPECIFIED ON PLAN TREAT EACH ADDITIONAL PLY AS A SISTER PLY WHEN LOOKING UP MAX SPAN.
5. MAX 14'-0" HORIZONTAL RAFTER SPAN IN BOTH DIRECTIONS FROM VALLEY.
6. ALL HIPS ARE DESIGNED TO BE CONTROLLED BY BENDING. SHEAR AT BEARING WITH MIN 5 1/2" DEPTH DOES NOT CONTROL DESIGN.



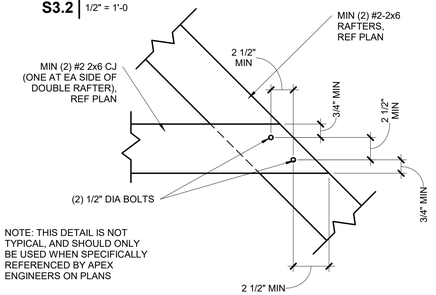
4 TAPERED VALLEY
S3.2 | 3/4" = 1'-0"



A-A SECTION

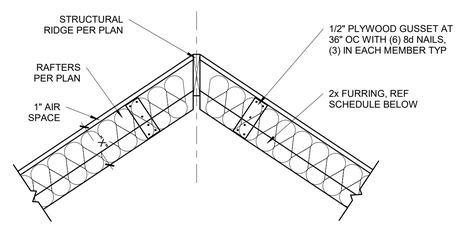


3 ROOF WITH PERP CEILING JOISTS
S3.2 | 1/2" = 1'-0



NOTE: THIS DETAIL IS NOT TYPICAL, AND SHOULD ONLY BE USED WHEN SPECIFICALLY REFERENCED BY APEX ENGINEERS ON PLANS

2 BOLTED RAFTER HIP CONNECTION
S3.2 | 1 1/2" = 1'-0"



FURR OUT SCHEDULE

RAFTER SIZE	R-30C INSULATION (X= 9 1/4")	R-38C INSULATION (X=11 1/4")
2x6	2x6	2x8
2x8	2x4	2x6
2x10	NOT REQUIRED	2x4
2x12	NOT REQUIRED	REQUIRED

NOTES:
1. ALL VAULTED RAFTERS SHALL BE #2-2x6 DF-L, MINIMUM, AT 16" OC, PER SPAN CHART, UNLESS NOTED OTHERWISE.
2. ALL VAULTS SHALL BE FURRED DOWN WITH 2x FRAMING TO THE REQUIRED DEPTH OF INSULATION, PLUS 1" AIR SPACE.
3. R-30C INSULATION = 8 1/4" THICK.
4. R-38C INSULATION = 10 1/4" THICK
5. INSULATION REQUIREMENTS MAY BE REDUCED TO R30 IF ROOF/CEILING ASSEMBLY DOES NOT ALLOW SUFFICIENT SPACE BUT IS LIMITED TO VAULTED CEILING AREAS THAT ARE LESS THAN 500 SQUARE FEET OR 20 PERCENT OF THE TOTAL INSULATED CEILING AREA, WHICHEVER IS LESS. (PER N1102.2.2)

1 VAULTED RAFTER INSULATION FURR OUT
S3.2 | 3/4" = 1'-0"

APEX ENGINEERS,INC.
1625 LOCUST ST
KANSAS CITY, MO 64108
816.421.3222
www.apex-engineers.com

STATE OF MISSOURI
CLAYTON J. [illegible]
NUMBER PE-2002000003
2023.08.24
PROFESSIONAL ENGINEER

STRUCTURAL DESIGN REVIEW
KANSAS ENGINEERING LICENSE: E-992
MISSOURI ENGINEERING LICENSE: 2003004673

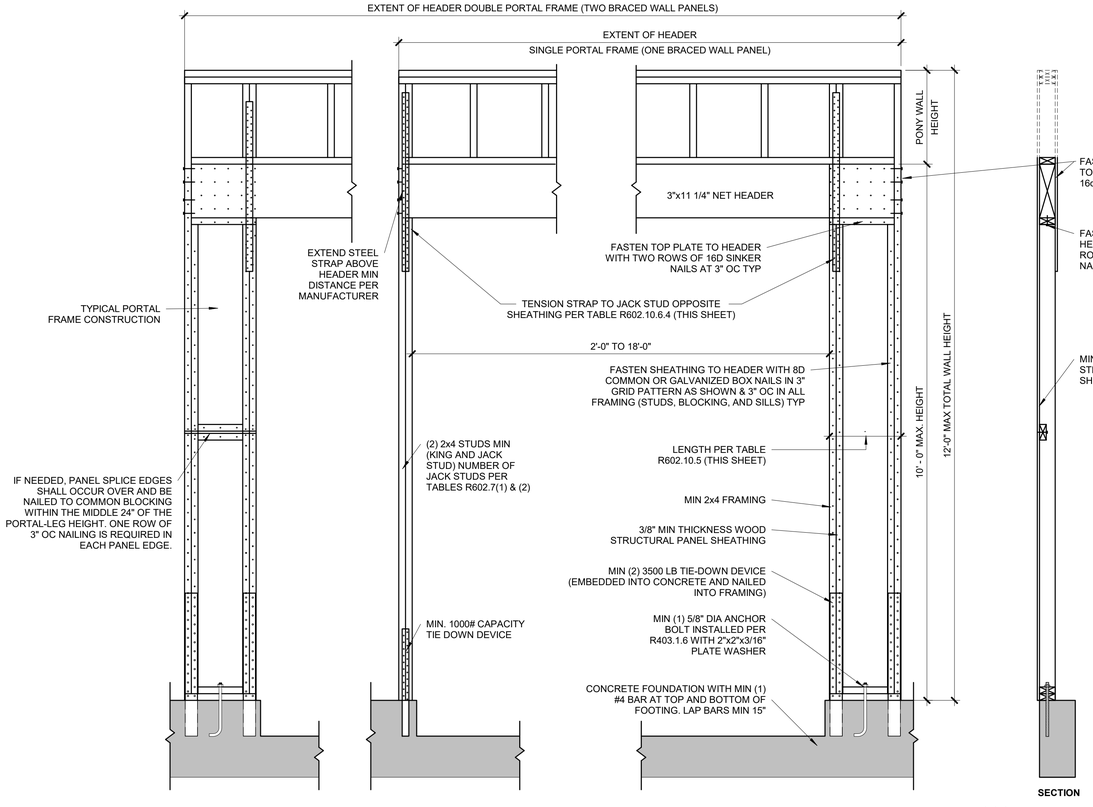
PROJECT:
Lindenbain's Row
1201 SW Corinthian Lane
Lee's Summit, MO

CLIENT:
NSPJ Architects
3515 W. 75th St, Suite 201
Prairie Village, KS 66208

#	DATE	COMMENTS

PROJECT #:	23-0779
DRAWN BY:	BCH
CHECKED BY:	BDC
SUBMITTAL DATE:	2023.06.06

SHEET:
FRAMING DETAILS
S3.2



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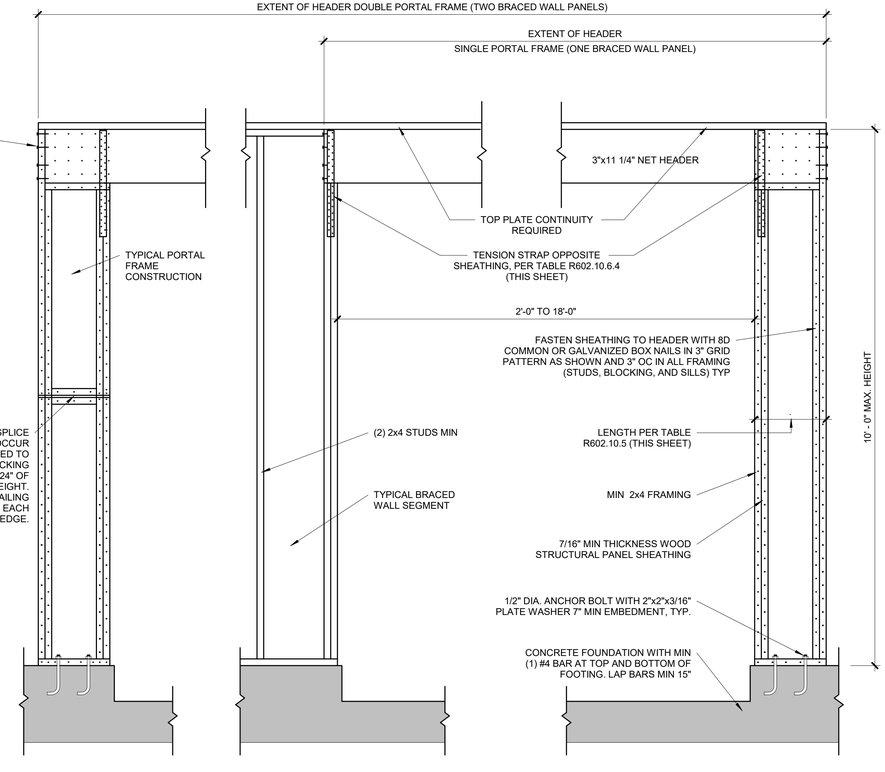
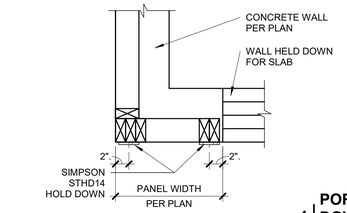
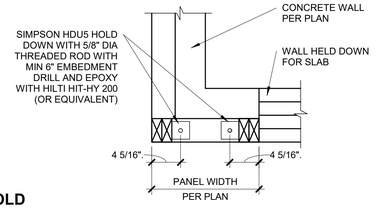




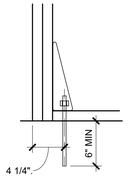
PLAN VIEW - ALTERNATE BRACED WALL PANEL

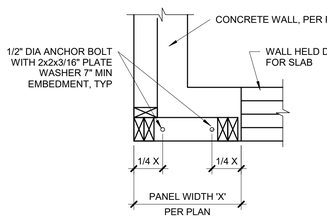
1 PORTAL FRAME WITH HOLD DOWNS (METHOD PFH)

S4.0 3/4" = 1'-0" (PER IRC R602.10.6.2)



PLAN VIEW - ALTERNATE BRACED WALL PANEL **DRILL AND EPOXY OPTION**





PLAN VIEW - APA NARROW WALL BRACING METHOD WITHOUT HOLD-DOWNS

1 PORTAL FRAME AT GARAGE DOOR WITHOUT HOLD DOWNS (METHOD PFG)

S4.0 ALT 3/4" = 1'-0" **(ALT ALLOWED AT GARAGE DOOR ONLY)** (PER IRC R602.10.6.3)

TABLE R602.10.5 (PARTIAL)

MINIMUM LENGTH OF BRACED WALL PANELS

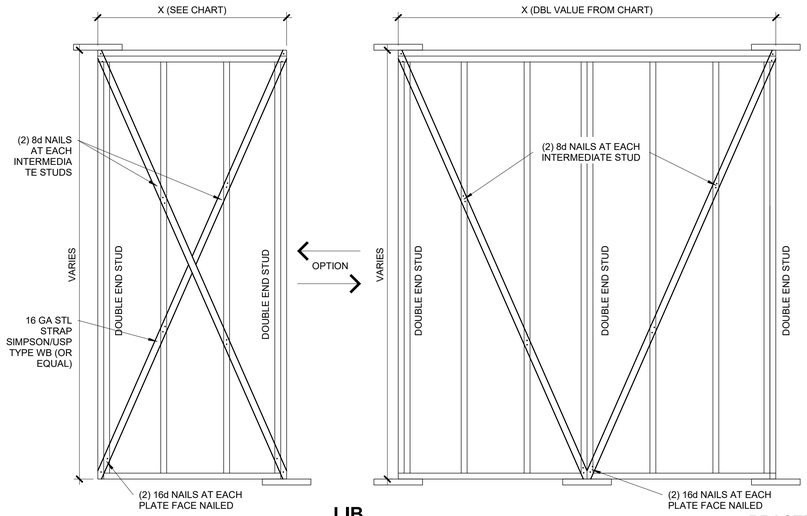
METHOD		MIN LENGTH (INCHES) WALL HEIGHT				
		8 FEET	9 FEET	10 FEET	11 FEET	12 FEET
PFH	SUPPORTING ROOF ONLY	16	16	16	16	16
PFH	ONE STORY AND ROOF	24	24	24	24	24
PFG		24	27	30	30	30

NOTE: MAX HEADER HEIGHT IS 10'-0", BUT WALL HEIGHT SHALL BE PERMITTED TO BE INCREASED TO 12'-0" WITH PONY WALL

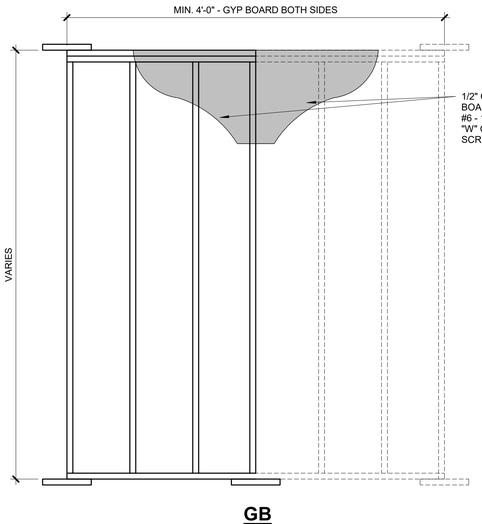
TABLE R602.10.6.4

TENSION CAPACITY STRAP TABLE

MIN WALL STUD FRAMING NOMINAL SIZE AND GRADE	MAX PONY WALL HEIGHT (FEET)	MAX TOTAL WALL HEIGHT (FEET)	MAX OPENING WIDTH (FEET)	TENSION STRAP CAPACITY REQ (LBS) 115 MPH, EXP B
2x4 #2 GRADE	0	10	18	1,000
	1	10	9	1,000
			16	1,025
			18	1,275
	2	10	9	1,000
			16	2,175
			18	2,500
	2	12	9	1,500
			16	3,375
			18	3,975
	4	12	9	2,750
			12	3,775
2x6 STUD GRADE	2	12	9	1,000
			16	2,150
			18	2,550
	4	12	9	1,750
			16	2,400
			18	3,800



LIB



GB

2 BRACED WALL PANEL-IRC METHODS LIB AND GB

S4.0 3/4" = 1'-0"

BRACED WALL PANEL SCHEDULE

WALL HEIGHT	MIN WALL LENGTH (X)	MAX WALL LENGTH (X)
8'-0"	4'-7"	8'-0"
9'-0"	5'-2"	9'-0"
10'-0"	5'-9"	10'-0"
11'-0"	NP	-
12'-0"	NP	-

NOTE: BRACED WALL PANEL LENGTHS BASED ON WALL HEIGHT FOR IRC, LIB

BRACED WALL METHODOLOGY
CONTINUOUS EXTERIOR SHEATHING (CS-WSP) PER WSP METHOD (BELOW)
UNLESS OTHERWISE NOTED ON THE PLAN

XXXX **EXTERIOR BRACED WALLS:**
WSP METHOD:
WOOD STRUCTURAL PANEL SHEATHING WITH A THICKNESS NOT LESS THAN 3/8" WITH MINIMUM SPAN RATING OF 24/0 FOR 16" OC STUD SPACING WITH 6d COMMON NAILS AT 6" OC EDGES AND 12" OC FIELD OR SHEATHING THICKNESS NOT LESS THAN 7/16" WITH MINIMUM SPAN RATING OF 24/16 FOR 24" OC SPACING WITH 8d COMMON NAILS AT 6" OC EDGES AND 12" OC IN FIELD.
(NOTE: FRAMING MEMBERS 16" OC MAX,UNBLOCKED, AND WITH SHEATHING APPLIED DIRECTLY TO FRAMING MEMBERS)

/ / / / / **INTERIOR BRACED WALLS (REF 2/S4.0):**
GB METHOD:
1/2" MIN GYPSUM BOARD OVER STUDS SPACED 24" MAX FASTENED WITH #6 - 1 1/4" TYPE 'W' OR 'S' DRYWALL SCREWS AT 7" OC EDGES AND FIELD (MIN. 4'-0" SECTION FOR BOTH SIDES.)
OR
LIB METHOD:
1x4 WOOD FASTENED WITH (3) 8d COMMON NAILS OR SIMPSON / USP 16 GA TYPE WB (OR EQUAL) STL X-BRACE(S) AT 45° TO 60° ANGLES, MAXIMUM 16" OC STUD FASTENED PER MANUFACTURER'S SPECIFICATIONS.

APEX ENGINEERS,INC.
1625 LOCUST ST
KANSAS CITY, MO 64108
816.421.3222
www.apex-engineers.com

STATE OF MISSOURI
CLAYTON J. [illegible]
NUMBER PE-2003000003
2023.08.24
PROFESSIONAL ENGINEER

STRUCTURAL DESIGN REVIEW

KANSAS ENGINEERING LICENSE: E-992
MISSOURI ENGINEERING LICENSE: 2003004673

PROJECT:
LUDEMAN's Row
1201 SW Corinthian Lane
Lee's Summit, MO

CLIENT:
NSPJ Architects
3515 W. 75th St. Suite 201
Prairie Village, KS 66208

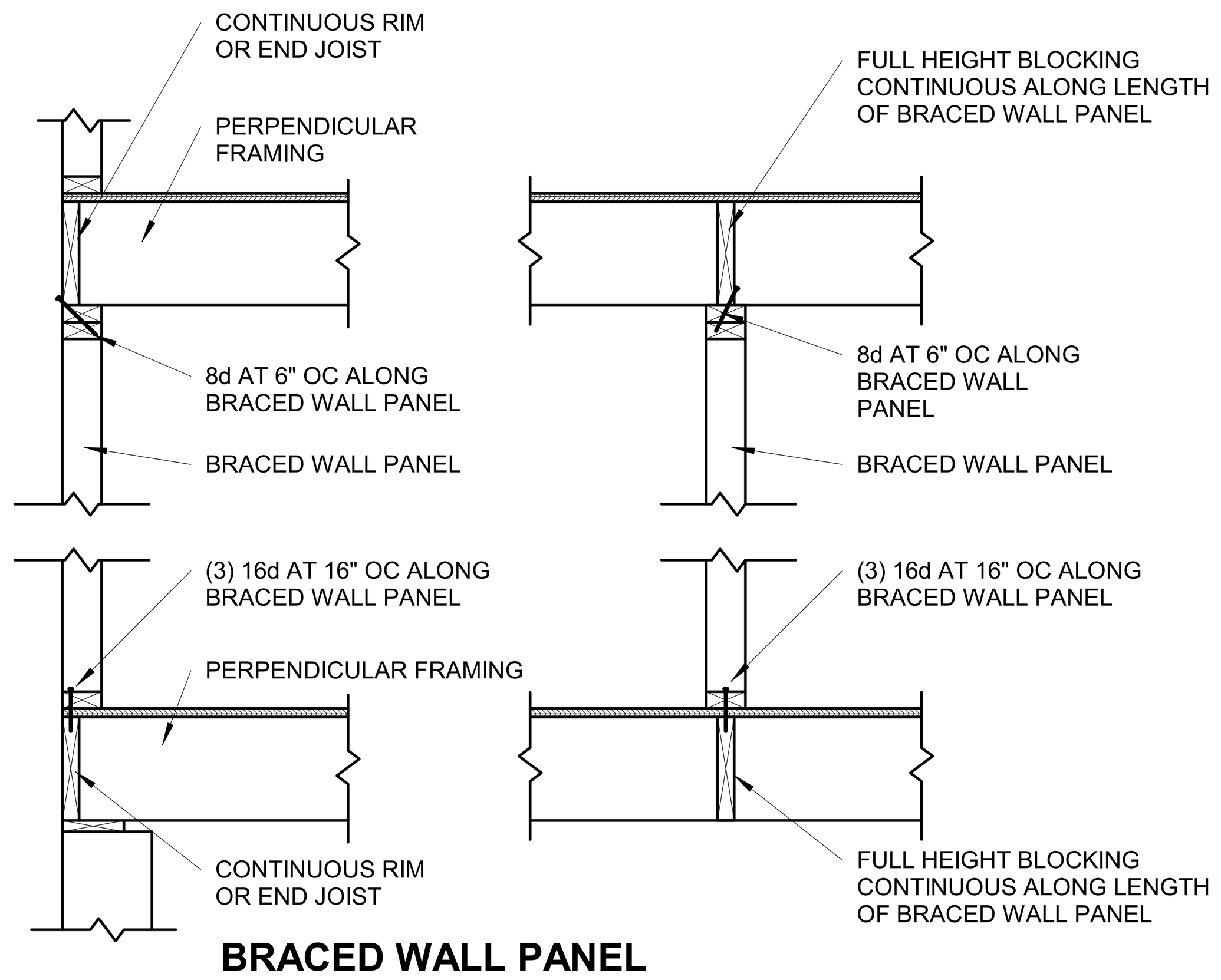
PROJECT #:	23-0779
DRAWN BY:	BCH
CHECKED BY:	BDC
SUBMITTAL DATE:	2023.06.06

COMMENTS

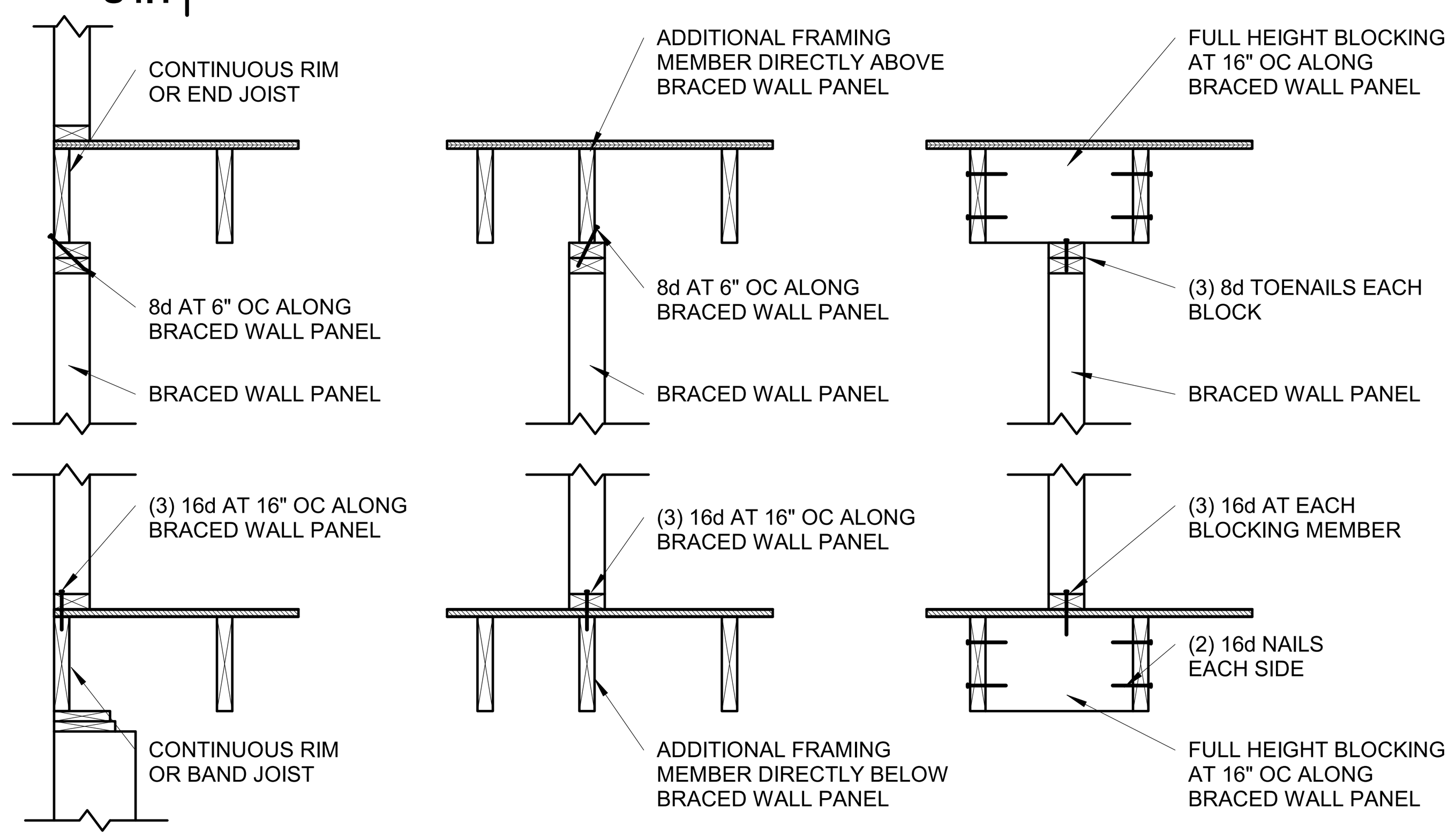
#	DATE

SHEET:
GENERAL BRACED WALL DETAILS

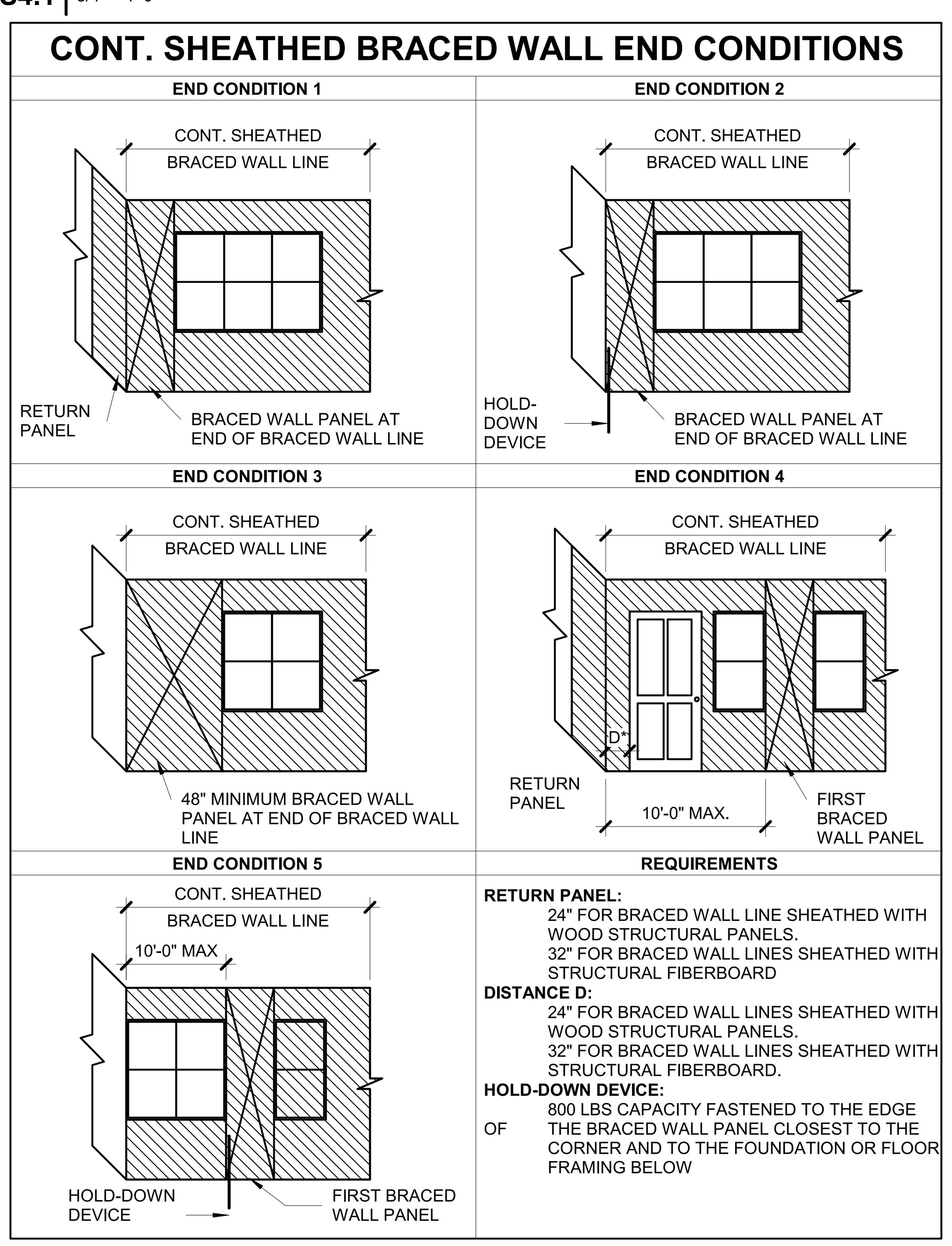
S4.0



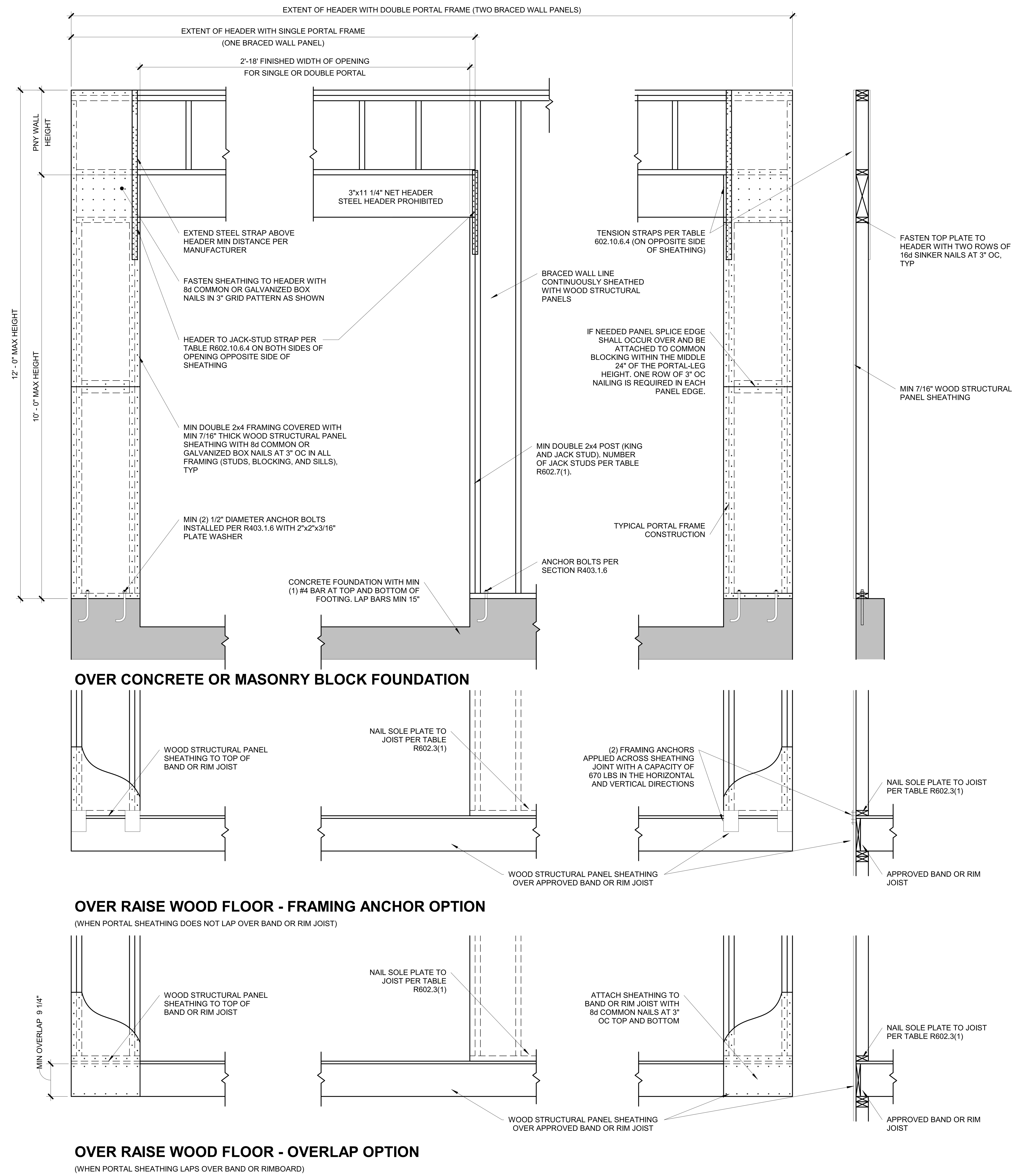
4 | BRACED WALL PANEL CONNECTION WHEN PERPENDICULAR TO FLOOR/CEILING FRAMING
S4.1 | 3/4" = 1'-0"



3 | BRACED WALL PANEL CONNECTION WHEN PARALLEL TO FLOOR/CEILING FRAMING
S4.1 | 3/4" = 1'-0"



2 | CONTINUOUS SHEATHED BRACED WALL END CONDITIONS
S4.1 | NOT TO SCALE (COMPLIANCE WITH IRC R602.10.7)



1 | BRACED WALL PANEL-IRC METHOD CS-PF CONTINUOUSLY SHEATHED PORTAL FRAME PANEL CONSTRUCTION
S4.1 | 3/4" = 1'-0" (PER IRC R602.10.6.4)

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KANSAS CITY, MO 64108
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Lumberman's Row
1201 SW Corinthian Lane
Lee's Summit, MO

CLIENT:
NSPJ Architects
3515 W. 75th St, Suite 201
Prairie Village, KS 66208

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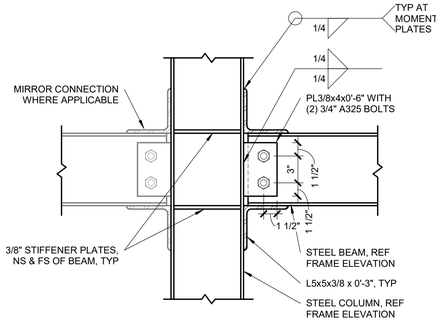
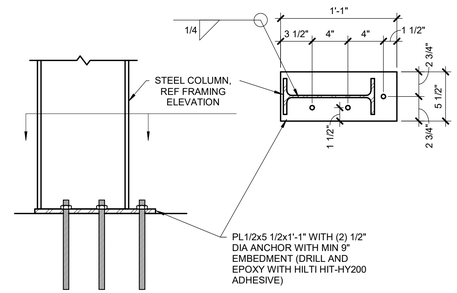
SHEET:
GENERAL BRACED WALL DETAILS
S4.1



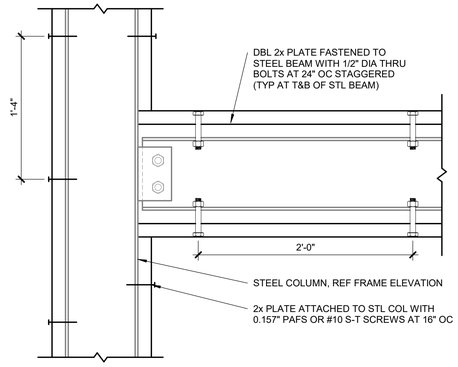
3 BEAM TO W-SHAPE COLUMN CONNECTION

S5.0 1 1/2" = 1'-0"



2 COLUMN BASE PLATE

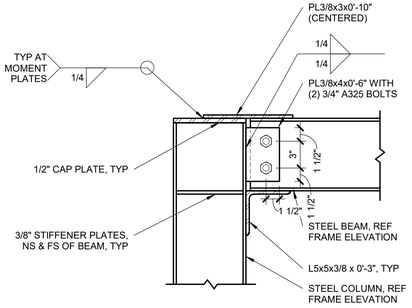
S5.0 1 1/2" = 1'-0"



5 TYP WOOD FRAMING ATTACHMENT TO STEEL FRAME

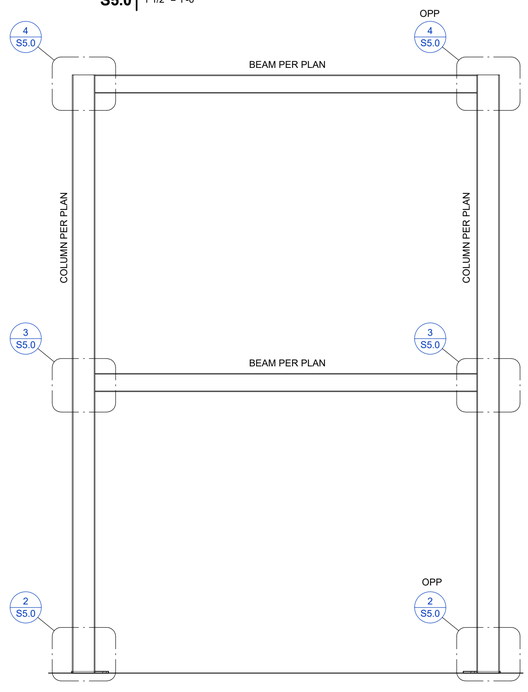
S5.0 NO SCALE

THIS DETAIL IS TYPICAL TO THE PROJECT AND MAY NOT BE CUT OR CALLED OUT ON PLANS



4 BEAM TO COLUMN MOMENT CONNECTION

S5.0 1 1/2" = 1'-0"



1 MOMENT FRAME ELEVATION

S5.0 3/8" = 1'-0"

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1625 LOCUST ST
KANSAS CITY, MO 64108
816.421.3222
www.apex-engineers.com

STATE OF MISSOURI
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NUMBER PE-2003000003
2023.08.24
PROFESSIONAL ENGINEER

STRUCTURAL DESIGN REVIEW

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MISSOURI ENGINEERING LICENSE: 2003004673

PROJECT:
A NEW RESIDENCE FOR:
1201 SW CORINTHIAN LANE
LEE'S SUMMIT, MISSOURI

CLIENT:
NSPJ Architects
3515 W. 75th St. Suite 201
Prairie Village, KS 66208

PROJECT #:	23-0779
DRAWN BY:	APEX
CHECKED BY:	JSG
SUBMITTAL DATE:	2023.08.24

#	DATE	COMMENTS

8/24/2023 4:56:21 PM

SHEET:
MOMENT FRAME DETAILS

S5.0