

DESIGN CRITERIA AND LOADS

- 1. STRUCTURE HAS BEEN DESIGNED TO COMPLY WITH: IBC 2018
- 2. OCCUPANCY RISK CATEGORY II
- 3. WIND:
 - BASIC WIND SPEED 115 MPH
 - IMPORTANCE FACTOR 1.0
 - EXPOSURE CLASS B
 - NET ROOF UPLIFT PRESSURE 15
- 4. LIVE LOADS:
 - TYPICAL ROOF 20 PSF
 - FLOOR LOAD 100 PSF
- 5. SNOW:
 - GROUND SNOW 20 PSF
 - DESIGN SNOW 20 PSF

GENERAL

- 1. NEITHER THE PROFESSIONAL ACTIVITIES OF THE ENGINEER, NOR THE PRESENCE OF THE ENGINEER OR THEIR EMPLOYEES AND SUBCONSULTANTS AT THE CONSTRUCTION SITE, SHALL RELIEVE THE CONTRACTOR AND ANY OTHER ENTITY OF THEIR OBLIGATIONS, DUTIES AND RESPONSIBILITIES INCLUDING BUT NOT LIMITED TO, CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES OR PROCEDURES NECESSARY FOR PERFORMING, SUPERINTENDING OR COORDINATING ALL PORTIONS OF THE CONSTRUCTION WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND ANY HEALTH OR SAFETY PRECAUTIONS REQUIRED BY ANY REGULATORY AGENCIES. THE ENGINEER AND THEIR PERSONNEL HAVE NO AUTHORITY TO EXERCISE ANY CONTROL OVER ANY CONSTRUCTION CONTRACTOR OR OTHER ENTITY OR THEIR EMPLOYEES IN CONNECTION WITH THEIR WORK OR ANY HEALTH OR SAFETY PRECAUTIONS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE JOBSITE SAFETY. THE ENGINEER AND THE ENGINEER'S CONSULTANTS SHALL BE MADE ADDITIONAL INSUREDS UNDER THE CONTRACTOR'S GENERAL LIABILITY INSURANCE POLICY.
- 2. ALL DRAWINGS ARE CONSIDERED TO BE A PART OF THE CONTRACT DOCUMENTS. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL DRAWINGS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT OF RECORD (AOR) PRIOR TO THE START OF CONSTRUCTION SO A CLARIFICATION CAN BE ISSUED. ANY WORK PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR ANY CODE REQUIREMENTS SHALL BE CORRECTED BY THE CONTRACTOR AT THEIR OWN EXPENSE AND AT NO EXPENSE TO THE OWNER OR AOR.
- 3. ALL DIMENSIONS AND SITE CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE JOBSITE PRIOR TO CONSTRUCTION, START OF SHOP DRAWINGS, START OF CONSTRUCTION, AND/OR FABRICATION OF MATERIALS. IF DISCREPANCIES ARE ENCOUNTERED, OR CONDITIONS DEVELOP THAT ARE NOT COVERED BY THE CONTRACT DOCUMENTS, THE AOR SHALL BE NOTIFIED FOR CLARIFICATION.
- 4. CONTRACTOR SHALL PROVIDE AND BE RESPONSIBLE FOR THE PROTECTION AND REPAIR OF ADJACENT EXISTING SURFACES AND AREAS WHICH MAY BE DAMAGED AS A RESULT OF NEW WORK.
- 5. DO NOT SCALE DRAWINGS. PRINTED DIMENSIONS HAVE PRECEDENCE OVER SCALED DRAWINGS AND LARGE-SCALE OVER SMALL-SCALE DRAWINGS. CONTRACTOR TO DETERMINE FINAL DIMENSION WITH AOR.
- 6. TYPICAL DETAILS SHALL APPLY UNLESS SPECIFICALLY DETAILED OTHERWISE. WHERE NO DETAILS ARE GIVEN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK.
- 7. THE CONTRACT DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE AND SAFETY OF WORKMEN DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING AND SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. OBSERVATION VISITS TO THE SITE BY THE AOR OR STRUCTURAL ENGINEER OF RECORD (SEOR) SHALL NOT INCLUDE INSPECTION OR APPROVAL OF THE ABOVE ITEMS AND DOES NOT IN ANY WAY RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITIES FOR THE ABOVE.
- 8. ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR MECHANICAL, ELECTRICAL AND PLUMBING WITH APPROPRIATE TRADE CONTRACTORS. OPENING SIZES AND LOCATIONS SHOWN FOR DUCTS, PIPE, INSERTS AND OTHER PENETRATIONS WHEN SHOWN ARE FOR GENERAL INFORMATION ONLY AND SHALL BE VERIFIED PRIOR TO FORMING.
- 9. NO HOLES, NOTCHES, BLOCKOUTS, ETC. ARE ALLOWED IN STRUCTURAL ELEMENTS UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE SEOR.
- 10. EACH BIDDER SHALL VISIT THE PREMISES AND BECOME FULLY ACQUAINTED WITH THE EXISTING CONDITIONS, TEMPORARY CONSTRUCTION REQUIRED, QUANTITIES AND TYPE OF EQUIPMENT, ETC. THE BID SHALL INCLUDE ALL SUMS REQUIRED TO DO THE WORK WITHIN THE EXISTING CONDITIONS.
- 11. SHOP DRAWINGS SHALL BE REVIEWED AND COORDINATED PRIOR TO SUBMITTING TO THE ENGINEER. EACH SHOP DRAWING SUBMITTED SHALL BE STAMPED INDICATING REVIEW BY THE CONSTRUCTION MANAGER/GENERAL CONTRACTOR AND REVIEW BY THE ENGINEER SHALL NOT BEGIN UNTIL THIS IS COMPLETE. WORK SHALL NOT BEGIN WITHOUT REVIEW BY THE ENGINEER OF RECORD.
- 12. SHOP DRAWINGS SHALL BE REVIEWED BY THE AOR/SEOR FOR GENERAL CONFORMANCE WITH DESIGN CONCEPTS. NOTATIONS MADE BY THE AOR/SEOR ON THE SHOP DRAWINGS DO NOT RELIEVE THE CONTRACTOR FROM COMPLYING WITH THE REQUIREMENTS OF THE DRAWINGS.

EARTHWORK

- 1. FOUNDATION DESIGN IS BASED ON AN ALLOWABLE NET SOIL BEARING PRESSURE OF 1500 psf. VERIFY AT TIME OF CONSTRUCTION.
- 2. ANTICIPATED DEPTH TO ALLOWABLE FROST DEPTH 3.5 FT (HEATED)
- 3. ALL EXCAVATIONS SHALL BE PROPERLY AND SAFELY BACKFILLED. DO NOT PLACE BACKFILL BEHIND RETAINING/BASEMENT WALLS BEFORE CONCRETE HAS ATTAINED SPECIFIED COMPRESSIVE STRENGTH. CONTRACTOR SHALL BRACE OR PROTECT ALL WALLS BACKFILLING IS NOT PERMITTED FOR FOUNDATION WALLS UNTIL SUPPORTED SLAB TOP AND BOTTOM IS IN PLACE OR THE WALL IS ADEQUATELY BRACED TO RESIST LATERAL LOADS. CONTRACTOR SHALL PROVIDE FOR DESIGN, PERMITS, AND INSTALLATION OR SHORING AND/OR SHEETING.
- 4. CONTRACTOR SHALL PROVIDE FOR DESIGN AND INSTALLATION OF ALL CRIBBING, SHEETING AND SHORING REQUIRED TO SAFELY RETAIN EARTH BANKS AS REQUIRED.
- 5. EXTREME CARE SHALL BE EXERCISED WHEN EXCAVATING OR GRADING ADJACENT TO EXISTING STRUCTURES OR IMPROVEMENTS TO NOT DAMAGE OR UNDERMINE FOUNDATIONS, WALLS, SLABS, UTILITIES, ETC.
- 6. ALL FOOTINGS SHALL BE PLACED ONTO FIRM UNDISTURBED SOIL OR CONTROLLED COMPACTED FILL. EXCAVATIONS FOR FOOTINGS SHALL BE INSPECTED AND APPROVED BY THE INSPECTION AGENCY PRIOR TO PLACING CONCRETE. CONTRACTOR SHALL NOTIFY INSPECTION AGENCY WHEN EXCAVATION IS READY FOR TESTING. INSPECTION AGENCY TO SUBMIT LETTER OF COMPLIANCE TO THE OWNER.

REINFORCING STEEL

- 1. ALL REINFORCING STEEL SHALL BE DETAILED AND PLACED IN CONFORMANCE WITH THE AMERICAN CONCRETE INSTITUTE "ACI DETAILING MANUAL" (SP-066) EXCEPT AS OTHERWISE SHOWN, NOTED OR SPECIFIED.
- 2. CONCRETE REINFORCING STEEL SHALL BE HIGH STRENGTH NEW BILLET STEEL CONFORMING TO THE FOLLOWING STANDARDS:
 - DEFORMED BARS ASTM A615, GR60 Fy = 60 KSI
 - WELDED WIRE REINFORCING ASTM A1064 Fy = 65 KSI
- 3. MINIMUM CONCRETE COVER SHALL BE PROVIDED AS FOLLOWS TO THE OUTERMOST REINFORCING BARS:
 - CAST AGAINST AND PERMANENTLY IN CONTACT WITH GROUND 3"
 - EXPOSED TO WEATHER OR IN CONTACT WITH GROUND
 - #6 BARS OR LARGER 2"
 - #5 BARS OR SMALLER 1 1/2"
 - NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND
 - SLABS, JOISTS AND WALLS WITH #14 AND #18 BARS 1 1/2"
 - SLABS, JOISTS AND WALLS WITH #11 BARS OR SMALLER 3/4"
 - BEAMS, COLUMNS, PEDESTALS AND TENSION TIES 1 1/2"
- 4. BAR SPLICES SHALL BE PROVIDED WITH 48 BAR DIA. LAP
- 5. PROVIDE ADEQUATE TIES FOR ALL REINFORCING BARS AND STIRRUPS IN CONCRETE SLABS AND BEAMS. ANCHOR BOLTS, DOWELS, REINFORCING STEEL, INSERTS, ETC., SHALL BE SECURELY TIED IN PLACE PRIOR TO POURING CONCRETE. CONCRETE BLOCKS SHALL ONLY BE USED TO SUPPORT REINFORCING OFF GRADE.
- 6. SUPPORTS FOR REINFORCEMENT SHALL HAVE CLASS 2 PROTECTION AS DEFINED IN THE CRSI MANUAL OF STANDARD PRACTICE, UNO.
- 7. ALL WELDED WIRE REINFORCING (WWR) SHALL BE LAPPED 2 PANELS AT EDGES AND ENDS.
- 8. DOWELS BETWEEN FOOTINGS AND WALLS OR COLUMNS SHALL BE THE SAME GRADE, SIZE AND SPACING OR NUMBER AS THE VERTICAL REINFORCING, RESPECTIVELY, UNO.
- 9. REINFORCING IN FOOTINGS AND GRADE BEAMS SHALL BE ACCURATELY PLACED, SPACED, SUPPORTED AND SECURED BEFORE PLACING CONCRETE.
- 10. CUTTING OF REINFORCING WHICH CONFLICTS WITH EMBEDDED OBJECTS IS NOT ACCEPTABLE EXCEPT AS DETAILED.
- 11. REINFORCING BARS SHALL BE BENT COLD, AND NO METHOD OF FABRICATION SHALL BE USED WHICH WOULD BE INJURIOUS TO THE MATERIAL. HEATING OF BARS FOR BENDING IS NOT PERMITTED.
- 12. FIELD WELDING OR BENDING OF REINFORCING IS NOT PERMITTED EXCEPT AS INDICATED ON THE DRAWINGS OR AS APPROVED BY THE STRUCTURAL ENGINEER.
- 13. SUBMIT SHOP DRAWINGS FOR FABRICATION AND PLACEMENT OF REINFORCING STEEL. INCLUDE SCHEDULES AND DIAGRAMS OF BENT BARS AND SHOW ARRANGEMENT OF REINFORCEMENT. ENGINEER'S REVIEWS WILL BE FOR COMPLIANCE WITH DESIGN REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING DIMENSIONS AND QUANTITIES.

CAST-IN-PLACE CONCRETE

- 1. ALL CONCRETE WORK SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE PUBLICATIONS: ACI 117, ACI 301, ACI 305.1, ACI 306.1, ACI 308.1, ACI 318 AND SP-066, UNO.
- 2. CONCRETE MATERIALS SHALL CONFORM TO:
 - CEMENT ASTM C150, TYPE I OR II
 - FLY ASH ASTM C618, TYPE C OR F
 - FINE AND COARSE AGGREGATE ASTM C33
 - LIGHTWEIGHT AGGREGATE ASTM C330
 - WATER POTABLE
 - AIR-ENTRAINING ADMIXTURE ASTM C260
 - WATER-REDUCING ADMIXTURE ASTM C494
- 3. CONCRETE STRENGTHS SHALL BE AS SHOWN:

INTENDED USE	28-DAY STRENGTH (PSI)	MAX W/C RATIO	A/E	SLUMP
FOOTINGS	4500	0.45	N/A	1"-4"
FOUNDATIONS	4500	0.45	5-8%	1"-4"
SLAB-ON-GRADE	4500	0.5	N/A	4"-6"
UNLESS NOTED OTHERWISE	4500	0.45	5-8%	1"-4"

- 4. GROUT SHALL BE 1:3:2 PORTLAND CEMENT TO SAND TO PEA GRAVEL WITH A MINIMUM 28-DAY STRENGTH OF 7000 PSI.
- 5. SAND BLAST ALL EXISTING CONCRETE SURFACES OLDER THAN 28 DAYS AGAINST WHICH CONCRETE IS TO BE PLACED, UNLESS DIRECTED OTHERWISE IN WRITING BY THE SEOR.
- 6. PROVIDE SLEEVES FOR PLUMBING AND ELECTRICAL PENETRATIONS THROUGH CONCRETE BEFORE PLACING. SECURE SUCH SLEEVES TO PREVENT MOVEMENT DURING PLACING OPERATIONS. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATIONS OF PENETRATIONS.
- 7. CORE DRILLING CONCRETE IS NOT PERMITTED UNLESS NOTED OTHERWISE OR APPROVED IN WRITING BY THE AOR. NOTIFY THE AOR IN ADVANCE OF CONDITIONS NOT SHOWN ON THE DRAWINGS.
- 8. CONFIRM WITH EOR THAT MATERIALS TO BE EMBEDDED ARE SUITABLE FOR EMBEDMENT IN CONCRETE.
- 9. THE OUTSIDE DIAMETER OF EMBEDDED CONDUIT OR PIPE SHALL NOT EXCEED 1/3 OF THE STRUCTURAL SLAB THICKNESS, INCLUDING AT CROSS-OVERS, AND SHALL BE PLACED BETWEEN THE TOP AND BOTTOM REINFORCING WITH A MINIMUM 3" CLEAR COVER. CONDUIT OR PIPE RUNNING PARALLEL TO EACH OTHER SHALL BE SPACED AT LEAST 8" APART AND NO MORE THAN 2 RUNS STACKED VERTICALLY IN THE SLAB. CONDUIT OR PIPE SHALL NOT BE EMBEDDED IN SLAB THICKNESSES LESS THAN 6 INCHES.
- 10. DO NOT PLACE PIPES, DUCTS, REGLETS OR CHASES IN STRUCTURAL CONCRETE WITHOUT APPROVAL OF THE SEOR.
- 11. NO ALUMINUM SHALL BE ALLOWED IN THE CONCRETE WORK UNLESS COATED TO PREVENT ALUMINUM-CONCRETE REACTION.
- 12. INTERNALLY VIBRATE ALL CAST-IN-PLACE CONCRETE EXCEPT SLABS-ON-GRADE WHICH NEED ONLY BE VIBRATED ABOVE UNDER FLOOR DUCTS AND OTHER EMBEDDED ITEMS.
- 13. CONCRETE SHALL NOT BE PERMITTED TO DROP MORE THAN 5 FEET.
- 14. CONCRETE SLABS SHALL BE CURED BY KEEPING CONTINUOUSLY WET FOR 7 DAYS. FORMS FOR CONCRETE WALLS SHALL BE LEFT IN PLACE FOR 7 DAYS OR MAY BE STRIPPED AFTER 3 DAYS AND COATED WITH AN APPROVED CURING COMPOUND.
- 15. NOTIFY THE SEOR 48 HOURS MINIMUM PRIOR TO ALL POURS.
- 16. THE DESIGN AND ENGINEERING OF FORMWORK, AS WELL AS ITS CONSTRUCTION, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. FORMS SHALL BE DESIGNED TO HAVE SUFFICIENT STRENGTH TO SAFELY WITHSTAND THE LOADS RESULTING FROM PLACEMENT AND VIBRATION OF THE CONCRETE, AND SHALL ALSO BE DESIGNED FOR SUFFICIENT RIGIDITY TO MAINTAIN SPECIFIED TOLERANCES. CONTRACTOR SHALL SUBMIT DETAILED FORMWORK SHOP DRAWINGS TO THE AOR TO BE REVIEWED FOR GENERAL COMPLIANCE WITH THE DESIGN CONCEPT ONLY.
- 17. NO CONCRETE SHALL BE PLACED ONTO OR AGAINST SUBGRADES CONTAINING FREE WATER, FROST, ICE OR SNOW.
- 18. THE CONCRETE CONTRACTOR SHALL FURNISH MIX DESIGN SHOP DRAWINGS FOR REVIEW.

WOOD

- 1. SHEATHING
 - A. SHALL CONFORM TO:
 - ROOF SHEATHING, FLAT 5/8" THICK; 24 APA SPAN RATING
 - SHEAR WALL SHEATHING 1/2" THICK; 24 APA SPAN RATING
 - B. REFER TO TYPICAL DETAILS AND WALL SCHEDULES FOR FASTENING REQUIREMENTS. WHERE NOT NOTED, PROVIDE 8d NAILS AT 6" OC ALONG ALL EDGES AND AT 12" OC AT INTERMEDIATE SUPPORTS.
 - C. ALL SHEATHING WHICH IS EXPOSED TO OUTDOOR APPLICATIONS SHALL BE EXTERIOR TYPE. SHEATHING EXPOSED TO WEATHER ONLY DURING CONSTRUCTION SHALL BE EXPOSURE 1. ALL WOOD STRUCTURAL PANELS SHALL CONFORM TO 2303.1.4 AND WHEN USED IN HORIZONTAL DIAPHRAGM AND VERTICAL SHEAR WALLS SHALL BE FIVE-PLY MINIMUM.
 - D. WHERE ORIENTED STRAND BOARD SHEATHING IS USED HORIZONTALLY, REMOVE AND REPLACE IF SHEATHING REMAINS WET FOR EXTENDED PERIODS OF TIME WHEREBY REDUCING THE STIFFNESS.
- 2. DIMENSIONAL LUMBER
 - A. FRAMING SHALL BE SPRUCE-PINE-FIR AND CONFORM TO THE FOLLOWING STRENGTHS:
 - BEARING/EXTERIOR WALL STUDS #2 OR BETTER Fc|| = 1150 PSI Fb = 875 PSI
 - JOISTS & BEAMS #2 OR BETTER Fc|| = 1150 PSI Fb = 875 PSI
 - B. COMPLY WITH ANSII/AWC NATIONAL DESIGN SPECIFICATION (NDS) FOR WOOD CONSTRUCTION.
 - C. ALL LUMBER STRESSES SHOWN ABOVE ARE FOR VISUALLY STRESS-RATED LUMBER USED AT 19% MAXIMUM MOISTURE CONTENT, SINGLE MEMBER USE. ALL LUMBER SHALL BE GRADE MARKED.
 - D. PROVIDE A MINIMUM OF 3" OF BEARING.
 - E. DOUBLE UP FLOOR JOISTS UNDER ALL PARTITIONS.
 - F. PROVIDE METAL OR 1x3 WOOD CROSS BRACING AT 8 FT ON CENTER WHEN JOIST DEPTH-TO-THICKNESS RATIO EXCEEDS 6:1.
 - G. PROVIDE 2x SOLID BLOCKING AT JOIST SUPPORTS EXCEPT WHERE THE JOIST ENDS ARE SUPPORTED BY JOIST HANGERS.
 - H. ADD JOISTS WHEN CONCENTRATED LOAD EXCEEDS 100 LBS, MAXIMUM CONCENTRATED LOAD.
 - I. OPENINGS NOT IDENTIFIED ARE TO BE TREATED AS FOLLOWS:
 - 1) WHERE OPENING FITS BETWEEN JOISTS, FRAME WITH LUMBER EQUALING THE NOMINAL DIMENSIONS OF THE EXISTING JOISTS.
 - 2) WHERE OPENING CUTS ONE JOIST, FRAME WITH LUMBER EQUALING THE NOMINAL DIMENSIONS OF THE EXISTING JOISTS. USE THIS FRAMING AS A HEADER FOR THE INTERRUPTED JOIST. FOR EACH JOIST BYPASSING THE OPENING, CUT AND SISTER A NEW JOIST. USE 1/2" LAG SCREWS AT 12" OC TO SISTER JOISTS TOGETHER. PENETRATIONS WHERE MORE THAN ONE JOIST IS CUT TO BE REVIEWED BY SEOR.
- 3. FASTENING
 - A. ALL NAILS SHALL BE COMMON WIRE NAILS. AT ALL EXPOSED NAILING TO WEATHER, (IE-DECKING & SIDING), USE HOT-DIPPED GALVANIZED NAILS. USE OF PLASTIC COATED OR CASHING NAILS IS NOT ALLOWED. NAIL DESIGNATIONS SHALL MEET THE FOLLOWING LENGTHS AND DIAMETERS:
 - 6d 2" x 0.113" 12d 3 1/4" x 0.148"
 - 8d 2 1/2" x 0.131" 16d 3 1/2" x 0.162"
 - 10d 3" x 0.148" 20d 4" x 0.192"
 - B. THE NUMBER AND SIZE OF NAILS CONNECTING WOOD MEMBERS SHALL NOT BE LESS THAN THE FOLLOWING:

CONNECTION	FASTENING
JOIST TO SILL, TOP PLATE OR GIRDER	(3) 8d TOENAILS
BRIDGING OR BLOCKING BETWEEN JOISTS OR TRUSSES NOT AT WALL TOP PLATE	(2) 8d TOENAILS, EACH END OR (2) 16d END NAILS
SILL PLATE TO JOIST, RIM JOIST OR BLOCKING	16d @ 16" OC, FACE NAIL
TOP PLATE TO 2x STUD AND STUD TO SILL PLATE	(2) 16d END NAILS
TOP PLATE TO 3x STUD AND STUD TO SILL PLATE	(3) 16d END NAILS
2x STUD TO TOP OR SILL PLATE	(4) 8d TOENAILS OR (2) 16d END NAILS
3x STUD TO SOLE PLATE	(6) 8d TOENAILS OR (3) 16d END NAILS
STUD TO STUD	16d @ 24" OC, FACE NAIL
DOUBLE TOP PLATES	16d @ 16" OC, FACE NAIL
DOUBLE TOP PLATES, LAP SPlice	(12) 16d EACH SIDE OF SPLICE
BLOCKING BETWEEN JOISTS OR RAFTERS TO TOP PLATE	(3) 8d TOENAILS
RIM JOIST TO TOP PLATE OR FRAMING BELOW	8d @ 6" OC, TOENAIL
JOIST TO RIM JOIST	(3) 16d END NAILS
TOP PLATE LAPS AT CORNERS AND INTERSECTIONS	(2) 16d, FACE NAIL
BUILT-UP HEADER	16d @ 16" OC ALONG EACH EDGE
CEILING JOIST TO TOP PLATE	(3) 8d TOENAILS
CONTINUOUS HEADER TO STUD	(4) 8d, TOENAIL
CEILING JOIST, LAPS OVER PARTITIONS	(3) 16d FACE NAILS
CEILING JOISTS TO PARALLEL RAFTERS	REFER TO TABLE 2308.7.3.1
RAFTER OR ROOF TRUSS TO PLATE	(3) 10d TOENAILS
BUILT-UP CORNER STUDS	16d @ 24" OC
BUILT-UP GIRDER AND BEAMS, 2x LUMBER LAYERS	20d FACE NAILS @ 32" OC ALONG TOP AND BOTTOM, STAGGERED OPPOSITE SIDES, AND (2) 20d AT ENDS AND AT EACH SPLICE
FLAT BLOCKING TO TRUSS AND WEB FILLER	16d @ 16" OC, FACE NAIL

- C. PILOT HOLES SHALL BE PROVIDED FOR ALL NAILS 20d AND LARGER. PILOT HOLES SHALL HAVE A DIAMETER OF APPROXIMATELY 75% OF THE NAIL SHANK DIAMETER.
- D. USE OF MACHINE NAILING IS SUBJECT TO A SATISFACTORY JOBSITE DEMONSTRATION AND THE APPROVAL OF THE AOR/SEOR. THE APPROVAL IS SUBJECT TO CONTINUED SATISFACTORY PERFORMANCE. MACHINE NAILING IS NOT ALLOWED FOR 5/16" SHEATHING. IF THE NAIL HEADS PENETRATE MORE THAN WOULD BE NORMAL FOR A HANDHELD HAMMER, OR IF MINIMUM ALLOWABLE EDGE DISTANCES ARE NOT MAINTAINED, THE PERFORMANCE WILL BE DEEMED UNSATISFACTORY AND MACHINE NAILING WILL BE DISCONTINUED.
- E. ALL BOLTED WOOD CONNECTIONS SHALL BE MADE WITH BOLTS CONFORMING TO THE REQUIREMENTS OF ANSII/ASME B18.2.6. BOLT HOLES SHALL BE 1/32" TO 1/16" LARGER THAN THE BOLT. FORCIBLE DRIVING OF BOLTS IS NOT ALLOWED. RETIGHTEN ALL BOLTS BEFORE CLOSING-IN.
- F. USE STANDARD CUT WASHERS BETWEEN THE BOLT HEADS, BOLT NUTS AND LAG SCREW HEADS AND WOOD FRAMING.
- G. ALL WOOD CONNECTIONS MADE WITH LAG SCREWS SHALL BE MADE WITH SCREWS CONFORMING TO THE REQUIREMENTS OF ANSII/ASME B18.2.6. LEAD HOLES FOR THE SHANK SHALL HAVE THE SAME DIAMETER AS THE SHANK AND THE SAME DEPTH AS THE LENGTH OF UNTHREADED SHANK. THE LEAD HOLE FOR THE THREADED PORTION SHALL HAVE A DIAMETER EQUAL TO 60-75% OF THE THREADED PORTION.
- H. METAL FRAMING CONNECTORS NOTED ON THE DRAWINGS USE SIMPSON STRONG-TIE AS BASIS OF DESIGN, UNLESS NOTED OTHERWISE. SUBSTITUTIONS OF ALTERNATE CONNECTOR MANUFACTURERS WILL BE ACCEPTABLE AS LONG AS LOAD CAPACITIES ARE MET OR EXCEEDED.
- I. WHERE THERE ARE CONNECTOR NAILING ALTERNATIVES LISTED IN THE MANUFACTURER'S CATALOG, THE NAILING PROVIDING THE HIGHEST LOAD CAPACITY SHALL BE USED.

- 4. GENERAL CONSTRUCTION REQUIREMENTS:
 - A. FRAMING PLANS INDICATE GENERAL LAYOUT AND DIMENSIONAL CONTROL ONLY. REFER TO SHOP DRAWINGS FOR ENGINEERING AND ERECTION.
 - B. SILL PLATES SHALL HAVE 1/2" SIMPSON TITEN ANCHORS @ 32" MAX. ON CENTER. UNO. EACH PIECE SHALL HAVE 2 BOLTS MINIMUM AND HAVE AN ANCHOR LOCATED 4" MINIMUM AND 12" MAXIMUM FROM THE END. PLATE WASHERS SHALL BE A MINIMUM OF 3/16" THICK x 3" . . .
 - C. WHERE MULTIPLE JOISTS OR HEADERS OCCUR, THERE SHALL BE A SHOULDER STUD FOR EACH PLY (IE - PROVIDE DOUBLE STUDS UNDER DOUBLE JOISTS).
 - D. SOLID-SAWN LUMBER BEAMS, RAFTERS AND JOISTS SHALL HAVE LATERAL SUPPORT PREVENTING ROTATION OR DISPLACEMENT AS FOLLOWS BASED UPON SPAN-TO-DEPTH RATIOS:
 - 1) 2:1, NO LATERAL SUPPORT IS REQUIRED;
 - 2) 3:1 OR 4:1, THE ENDS SHALL BE HELD IN POSITION BY FULL-DEPTH BLOCKING, BRIDGING, NAILING OR BOLTING TO OTHER FRAMING MEMBERS;
 - 3) 5:1, ONE EDGE SHALL BE HELD IN LINE FOR ITS ENTIRE LENGTH;
 - 4) 6:1, FULL-DEPTH BLOCKING, BRIDGING OR CROSS BRACING SHALL BE INSTALLED AT INTERVALS NOT EXCEEDING 8 FT UNLESS BOTH EDGES ARE HELD IN LINE;
 - 5) 7:1, BOTH EDGES SHALL BE HELD IN LINE FOR THE ENTIRE LENGTH.
 - E. ALL LUMBER, UNLESS NOTED, SHALL BE MILL SIZED AND SURFACED ON FOUR SIDES AND SHALL BE STRAIGHT STOCK, FREE FROM WARP OR CUP AND SINGLE LENGTH PIECES.
 - F. ALL ROUGH CARPENTRY SHALL PRODUCE JOINTS TRUE, TIGHT AND WELL NAILED WITH MEMBERS ASSEMBLED IN ACCORDANCE WITH THE DRAWINGS AND ALL PERTINENT BUILDING CODES. THE SHIMMING OF SILLS, JOISTS, SHORT STUDS, TRIMMERS, HEADERS OR OTHER FRAMING MEMBERS SHALL NOT BE PERMITTED. ALL WALLS AND PARTITIONS SHALL BE STRAIGHT, PLUMB AND ACCURATELY LOCATED. CAREFULLY SELECT ALL STRUCTURAL MEMBERS SO KNOTS AND OBVIOUS MINOR DEFECTS WILL NOT INTERFERE WITH MAKING SOUND CONNECTIONS.
 - G. INSTALL ALL BLOCKING AS REQUIRED TO SUPPORT ALL ITEMS OF FINISH SUCH AS BULKHEADS AND DOOR BUCKS, PROVIDE FIREBLOCKING TO CUT OFF ALL CONCEALED DRAFT OPENINGS, BOTH VERTICAL AND HORIZONTAL, BETWEEN CEILING AND FLOOR AREAS. VERIFY ALL REQUIRED BLOCKING WITH ARCHITECTURAL DRAWINGS AND LOCAL BUILDING OFFICIAL.
 - H. ALL LUMBER AND PRODUCTS SHALL BE HANDLED AND STORED TO PREVENT MARRING AND MOISTURE ABSORPTION FROM RAIN, NO DIRECT CONTACT WITH THE GROUND IS PERMITTED.
 - I. ALL LUMBER EXPOSED TO WEATHER SHALL BE TREATED WOOD.
 - J. PROTECTION AGAINST DECAY AND TERMITES:
 - 1) PLATES, SILLS AND SLEEPERS - WHEN IN DIRECT CONTACT WITH CONCRETE OR MASONRY, SHALL BE TREATED WOOD. BOTTOM OF SILLS AT EXTERIOR WALLS SHALL NOT BE LESS THAN 6" ABOVE OUTSIDE GRADE EXCEPT WHERE GRADE IS PAVED OVER FOR 18" MINIMUM WIDTH AND DRAINING AWAY FROM THE BUILDING. FOR THAT CONDITION, SILL MAY BE 2" ABOVE.
 - 2) COLUMNS AND POSTS - IN AREAS EXPOSED TO WATER SPLASH AND EXTERIOR CONDITIONS, COLUMN/POST SHALL BE SUPPORTED BY A METAL CONNECTOR AND BE TREATED UNLESS BASE IS LIFTED 2" ABOVE THE CONCRETE SLAB.
 - K. STRUCTURAL SUPPORTS OF BALCONIES, PORCHES OR SIMILAR APPURTENANCES - WHEN MEMBERS ARE EXPOSED TO THE WEATHER WITHOUT ADEQUATE ROOF PROTECTION PREVENTING WATER ACCUMULATION, THEY SHALL BE TREATED WOOD.
 - L. MOISTURE CONTENT - WHEN WOOD IS PRESSURE TREATED WITH A WATERBORNE PRESERVATIVE AND LOCATED IN ENCLOSED SPACES WHERE DRYING IN SERVICE CANNOT READILY OCCUR, SUCH WOOD SHALL BE AT A MOISTURE CONTENT OF 19% OR LESS BEFORE BEING COVERED.
 - M. UNLESS SPECIFICALLY SHOWN ON THESE PLANS, NO STRUCTURAL MEMBER SHALL BE CUT, NEVER DRILLED NOR NOTCHED, WITHOUT WRITTEN APPROVAL FROM THE SEOR.
 - N. AT NON-BEARING STUDS: A HOLE NOT GREATER THAN 40% OF THE STUD WIDTH MAY BE BORED. BORED HOLES NOT GREATER THAN 80% OF THE STUD WIDTH ARE PERMITTED WHERE EACH BORED STUD IS DOUBLED, PROVIDED NOT MORE THAN TWO SUCH SUCCESSIVE DOUBLE STUDS ARE SO BORED. IN NO CASE SHALL THE EDGE OF THE BORE HOLE BE NEARER THAN 5/8" TO THE STUD EDGE. BORE HOLES SHALL NOT BE LOCATED AT THE SAME SECTION IF CUT OR NOTCHED.
 - O. ALL FRAMING APPLICABLE STANDARDS OR GRADING RULES SPECIFIED SHALL BE SO IDENTIFIED BY THE GRADE MARK OR A CERTIFICATE OF INSPECTION BY AN APPROVED AGENCY. ALL LUMBER AND PLYWOOD REQUIRED TO BE TREATED WOOD SHALL BE IDENTIFIED BY THE QUALITY MARK OF AN APPROVED INSPECTION AGENCY WHICH MAINTAINS CONTINUED SUPERVISION, TESTING AND INSPECTION OVER THE QUALITY OF THE PRODUCT.
 - P. WALL STUD CONSTRUCTION IS DESIGNED TO BE BRACED BY THE WALL SHEATHING (WOOD STRUCTURAL PANEL OR GYPSUM BOARD). CONTRACTOR TO PROVIDE TEMPORARY BRACING, AS REQUIRED, UNTIL SHEATHING IS INSTALLED.
 - Q. STRUCTURAL HEADERS OR OTHER STRUCTURAL COMPONENTS MAY BE SUBSTITUTED UPON APPROVAL OF THE SEOR. SUPPLIER SHALL PROVIDE SEALED DESIGN CALCULATIONS FOR THE COMPONENTS. CONTRACTOR SHALL SUBMIT A COMPLETE SET OF SHOP DRAWINGS PREPARED BY THE FABRICATOR/MANUFACTURER FOR REVIEW AND APPROVAL BY THE AOR AND SEOR.



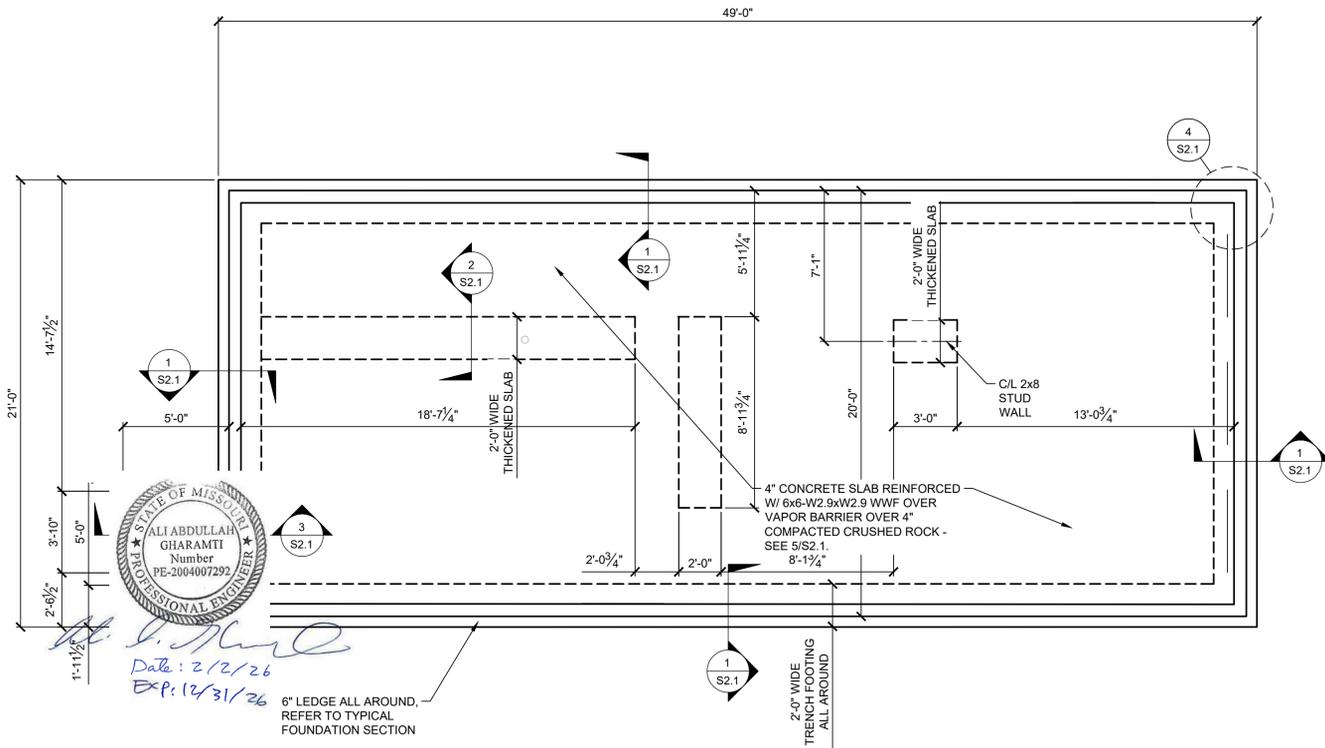
HYPER ENERGY STRUCTURAL
2060 NW LOWENSTEIN DR., LEE'S SUMMIT, MO
GENERAL NOTES

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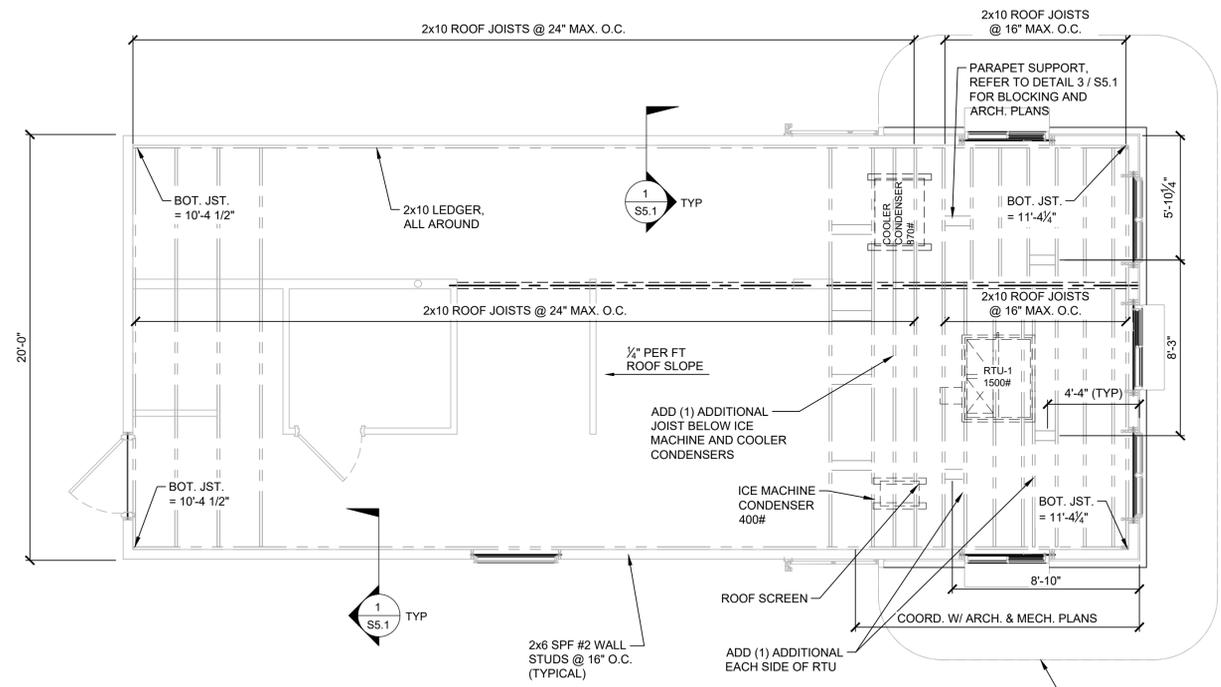


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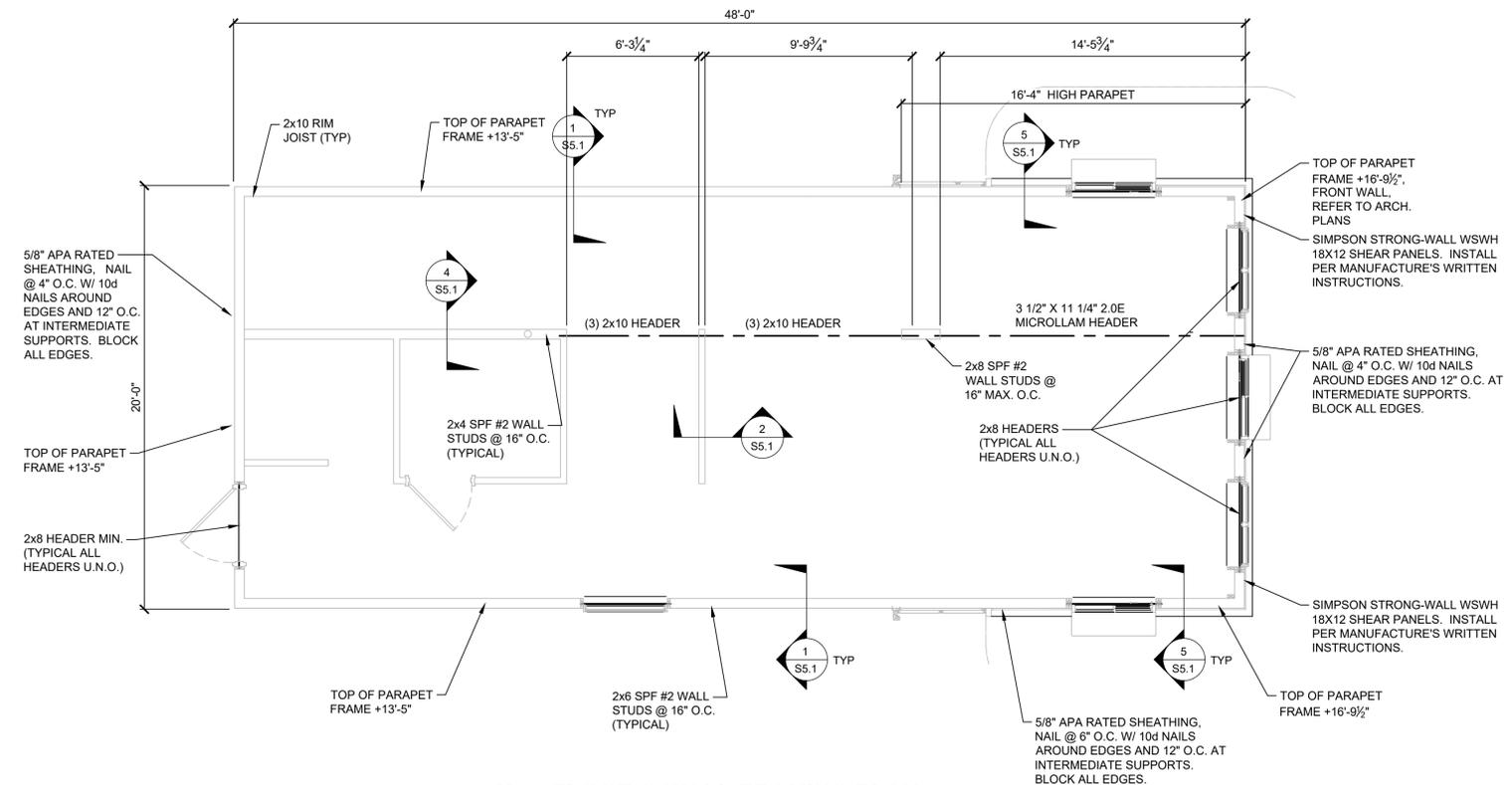
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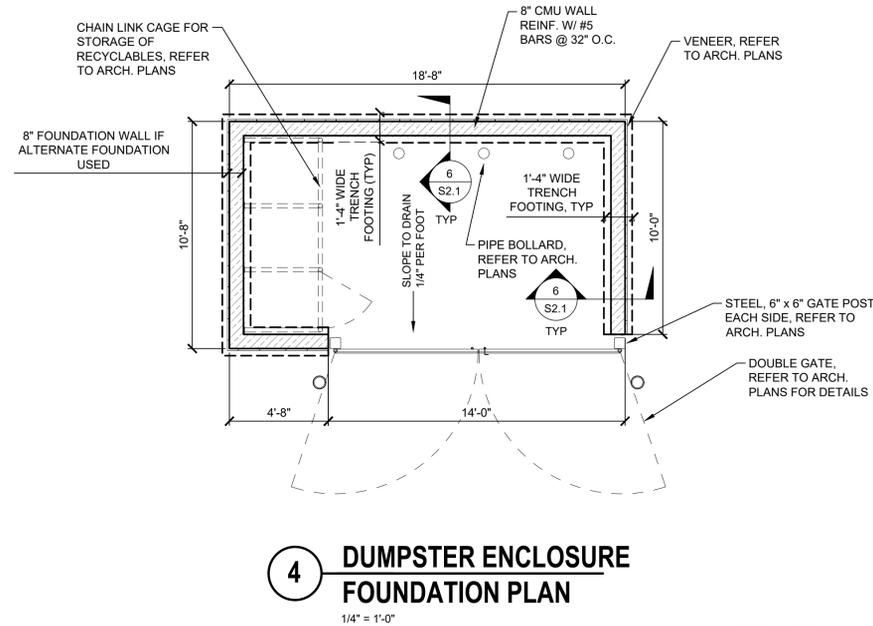
1 FOUNDATION PLAN
1/4" = 1'-0"



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



2 FLOOR & WALL FRAMING PLAN
1/4" = 1'-0"



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



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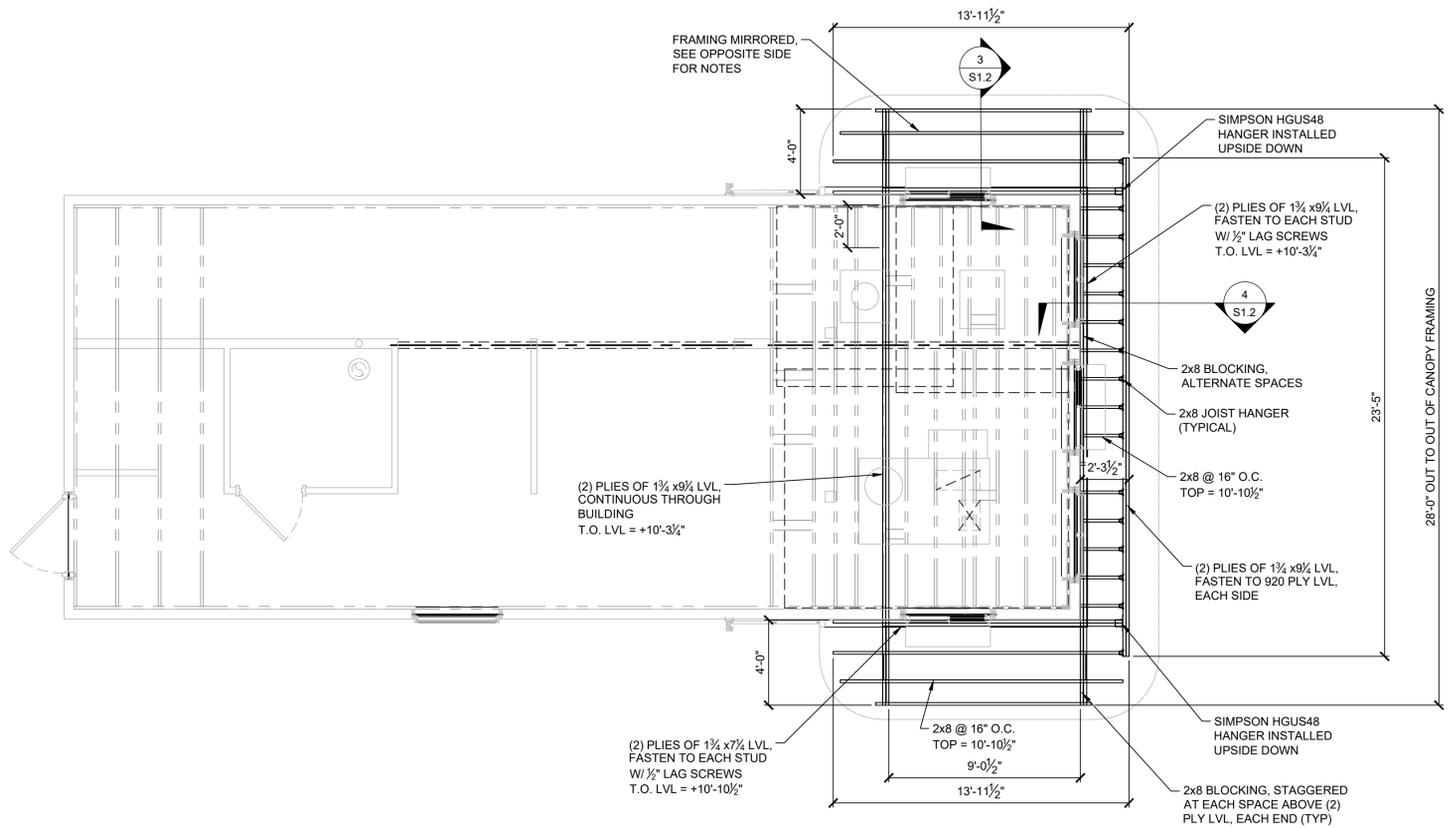
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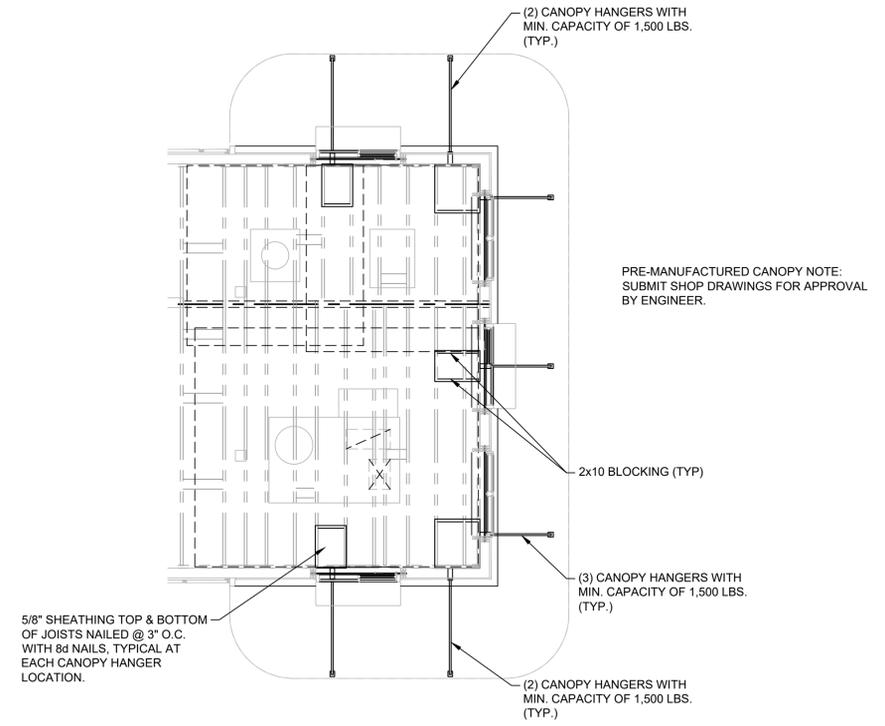
HYPER ENERGY STRUCTURAL
2060 NW LOWENSTEIN DR., LEE'S SUMMIT, MO
PLANS

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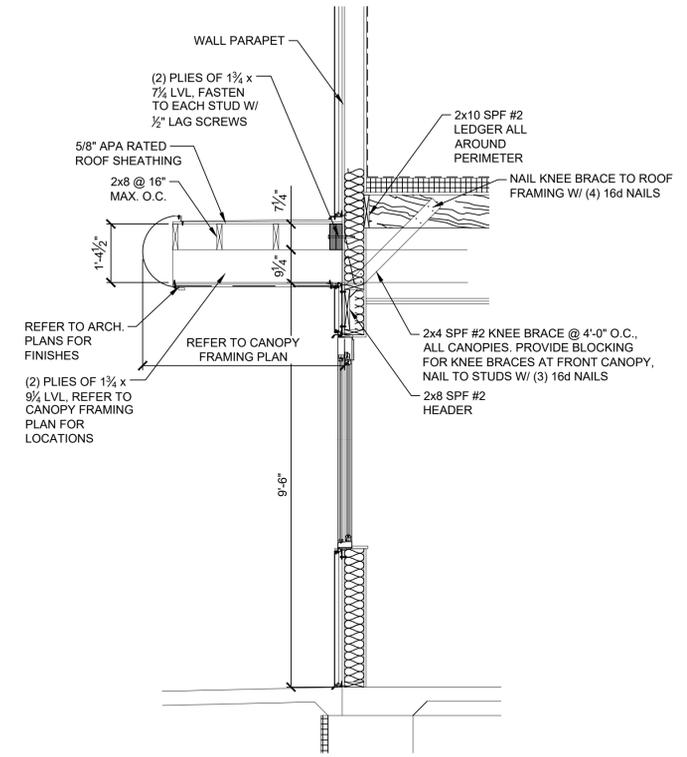
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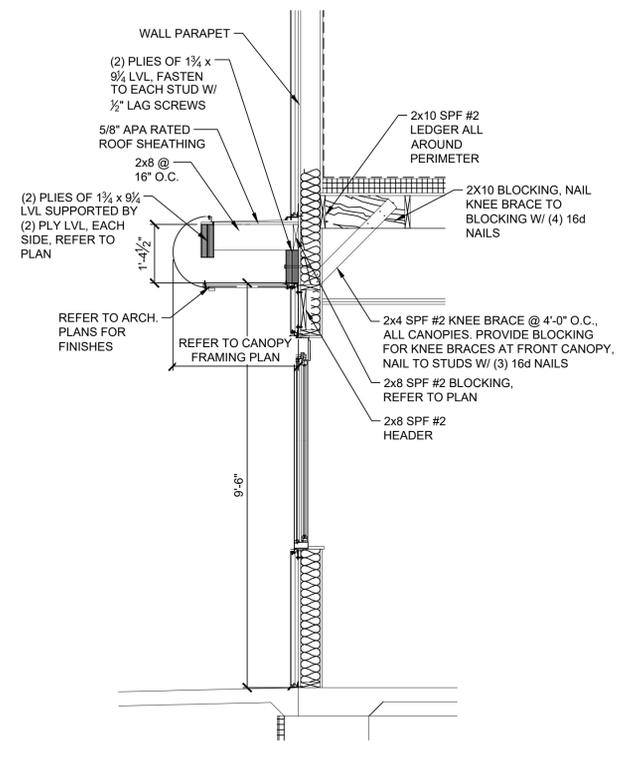
1 WOOD CANOPY FRAMING PLAN
1/4" = 1'-0"



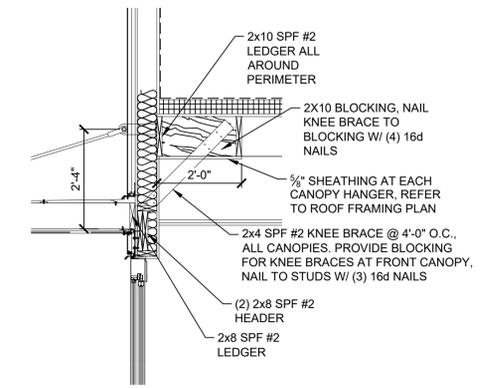
2 ALTERNATE BID: PRE-MANUFACTURED CANOPY
1/4" = 1'-0"



3 TYPICAL SIDE CANOPY SECTION
1/2" = 1'-0"



4 FRONT CANOPY SECTION
1/2" = 1'-0"



5 ALTERNATE BID: CANOPY SECTION
1/2" = 1'-0"

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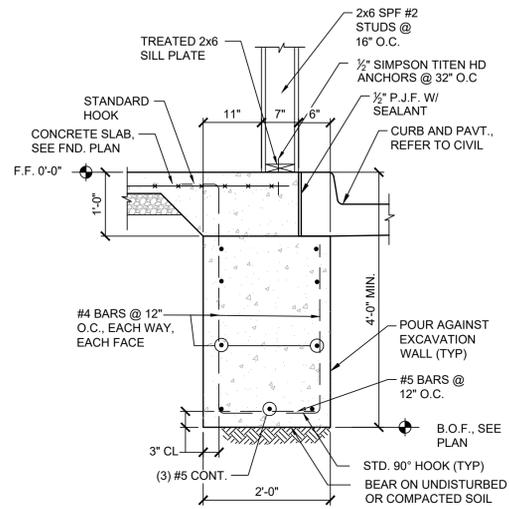
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PLANS

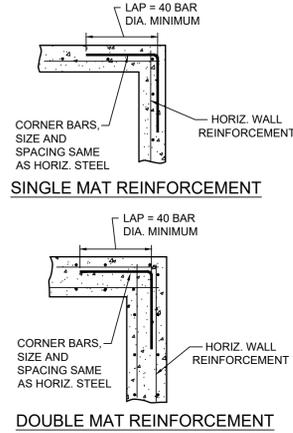
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STATE OF MISSOURI
 ALI ABDULLAH GHARAMTI
 Number PE-2004007292
 PROFESSIONAL ENGINEER
Ali A. Gharamti
 Date: 2/2/26
 Exp: 12/31/26

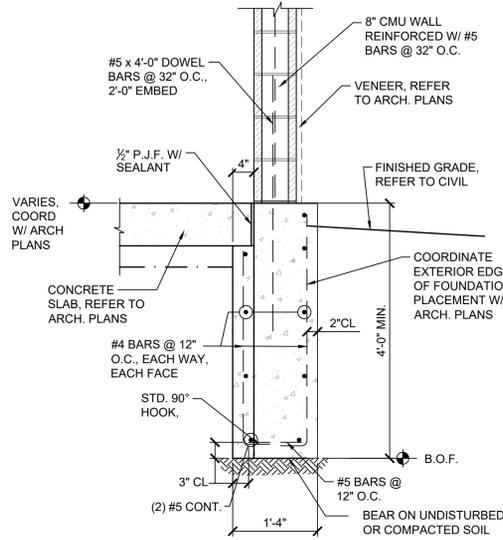
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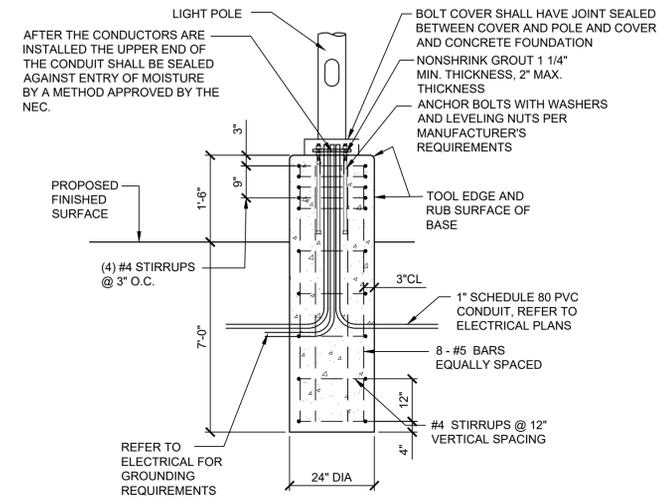
1 TYPICAL EXTERIOR FOUNDATION SECTION
3/4" = 1'-0"



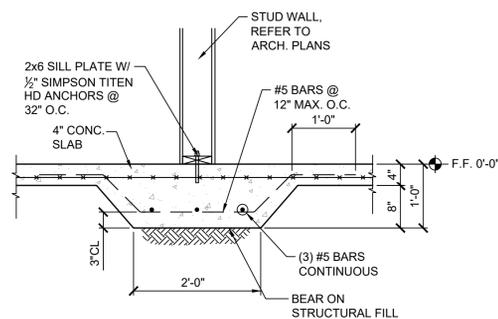
4 TYPICAL CORNER REINFORCEMENT DETAILS
NOT TO SCALE



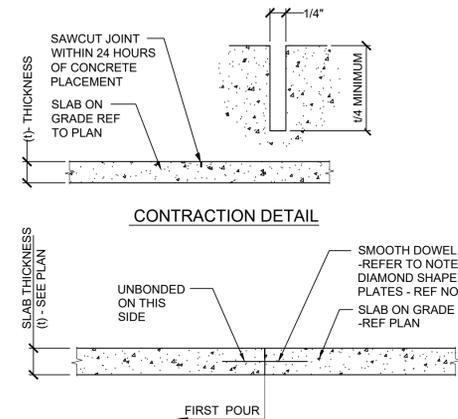
6 TYPICAL DUMPSTER FOUNDATION SECTION
3/4" = 1'-0"



7 LIGHT POLE BASE DETAIL
NOT TO SCALE



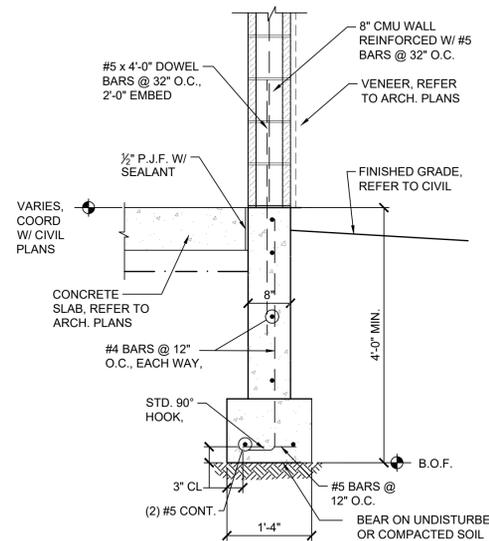
2 TYPICAL INTERIOR FOUNDATION SECTION
3/4" = 1'-0"



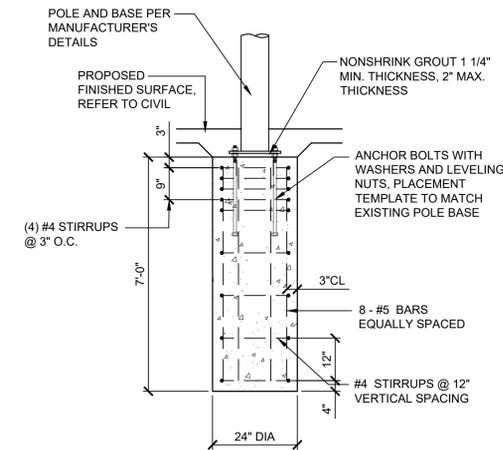
NOTES:
1. WHEN 't' IS 4" TO 6" USE 1/4"x4 1/2"x4 1/2" DIAMOND LOAD PLATES AT 18" OC.
WHEN 't' IS GREATER THAN 6" USE 3/8"x4 1/2"x4 1/2" DIAMOND LOAD PLATES AT 18" OC.

CONSTRUCTION DETAIL

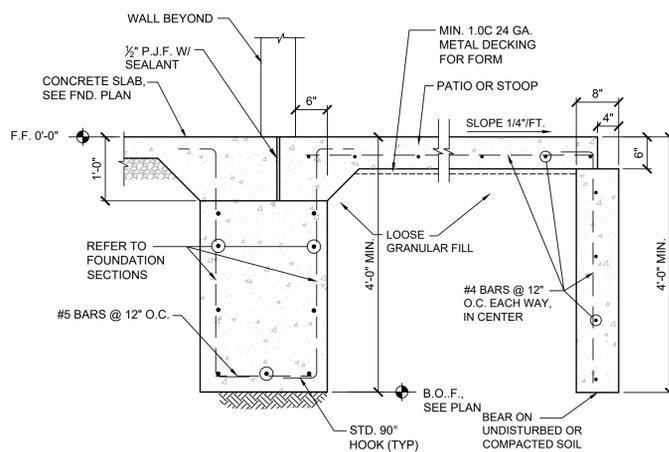
5 TYPICAL SLAB JOINT DETAILS
NOT TO SCALE



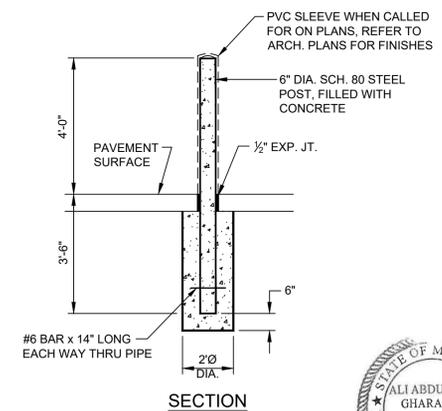
6A ALTERNATE DUMPSTER FOUNDATION SECTION
3/4" = 1'-0"



8 SHADE STRUCTURE BASE DETAIL
NOT TO SCALE



3 TYPICAL DOOR STOOP SECTION
3/4" = 1'-0"



9 PIPE BOLLARD DETAIL
NOT TO SCALE



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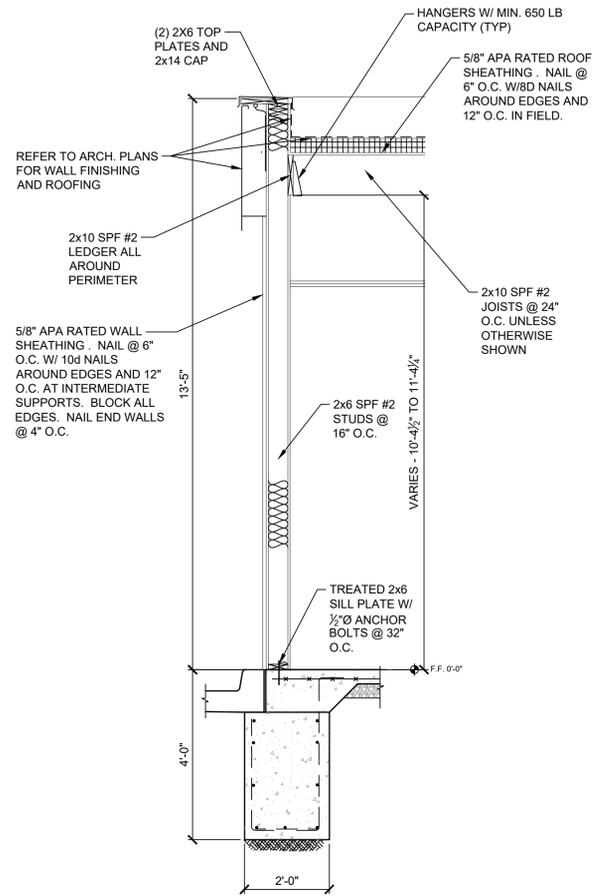


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2060 NW LOWENSTEIN DR., LEE'S SUMMIT, MO

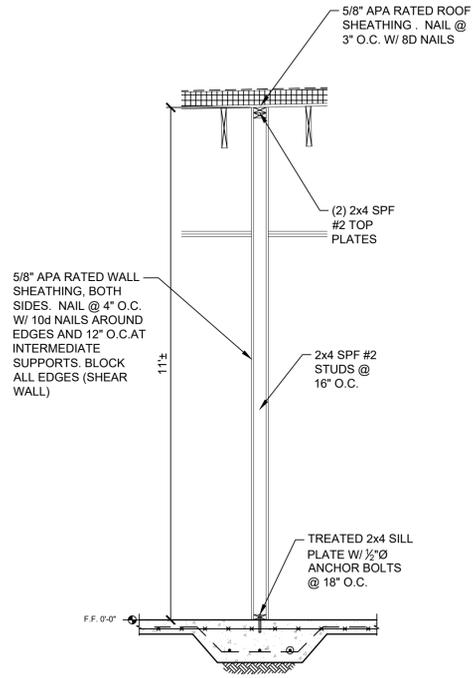
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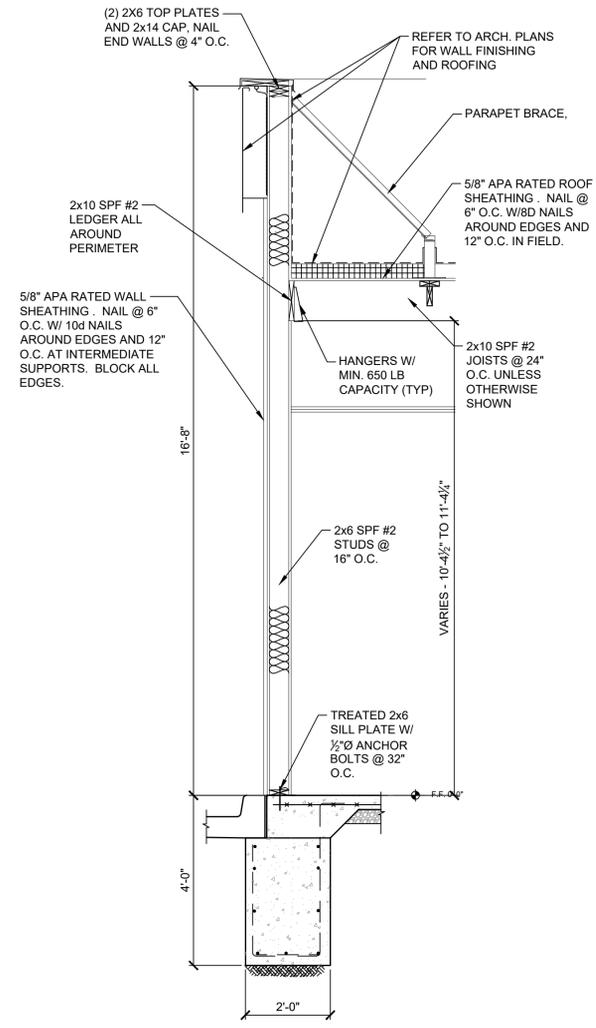
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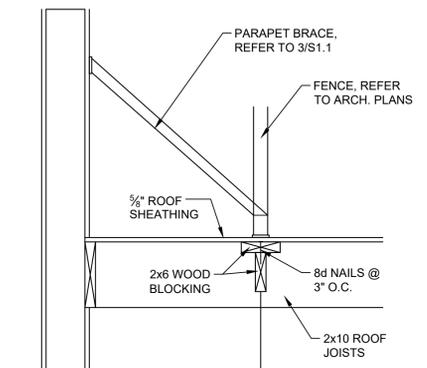
1 TYPICAL WALL SECTION
 1/2" = 1'-0"



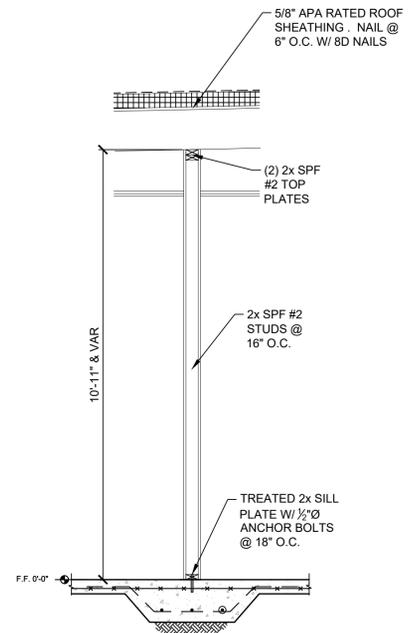
2 INTERIOR SHEAR WALL SECTION
 1/2" = 1'-0"



5 TYPICAL WALL SECTION
 1/2" = 1'-0"



3 PARAPET AND SCREEN SUPPORT BLOCKING DETAIL
 1" = 1'-0"



4 INTERIOR BEARING WALL SECTION
 1/2" = 1'-0"

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HYPER ENERGY STRUCTURAL
 2060 NW LOWENSTEIN DR., LEE'S SUMMIT, MO
FRAMING DETAILS

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 ALI ABDULLAH GHARAMTI
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 PROFESSIONAL ENGINEER
 Date: 2/2/26
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