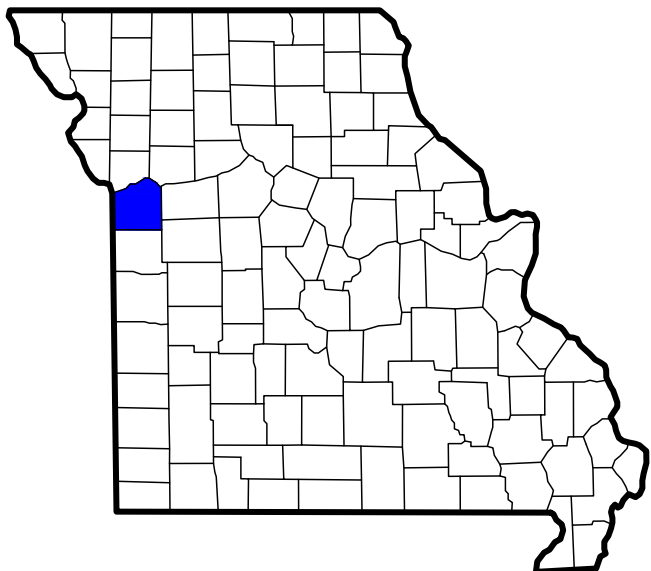




Discovery Animal Hospital

1901 NE Trails Edge Boulevard

Lee's Summit, Jackson County, Missouri



JACKSON COUNTY, MO

ZONING & CODE REVIEW

PROJECT SCOPE:
NEW CONSTRUCTION OF AN APPROXIMATELY 6,442 SF SINGLE STORY BUILDING OVER SLAB-ON-GRADE FOUNDATION LOCATED ACCOMMODATING A B-BUSINESS USE AND LOCATED WITHIN THE CITY LIMITS OF LEE'S SUMMIT, JACKSON COUNTY, MISSOURI AND SUBJECT TO ALL STATE AND LOCAL DESIGN REQUIREMENTS WITHIN.

BUILDING CODES IN EFFECT:
IBC/2018, IRC/2018, MC/2018, IFGC/2018, NEC/2017, ICC/ANSI A117.1-2009
AS AMENDED AND ADOPTED BY THE CITY OF LEE'S SUMMIT, MISSOURI

ADMINISTRATION
• DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE
JAY D. BERENDZEN, ARCHITECT
PORTER, BERENDZEN & ASSOCIATES, P.C.
305 EAST BROADWAY, SUITE A
ASHLAND, MISSOURI 65010
573.657.2022 PHONE

USE & OCCUPANCY CLASSIFICATION
• B - BUSINESS

GENERAL BUILDING HEIGHTS & AREAS
• (USE GROUP B, CONSTRUCTION TYPE VB - SPRINKLERED)

HEIGHTS
• TABULAR ALLOWABLE BUILDING HEIGHT
• B-BUSINESS USE:
• ACTUAL BUILDING HEIGHT: 3 STORES, 60 FEET
1 STORES, 23 FEET

AREA
• TABULAR ALLOWABLE BUILDING AREA PER FLOOR:
• B BUSINESS USE:
• FRONTAGE INCREASE = 75% = 9,000SF(0.75) =
• TOTAL ALLOWABLE AREA = 36,000 SF
6,750 SF
42,750 SF
• ACTUAL BUILDING AREAS: 6,442 SF NET

TYPES OF CONSTRUCTION
• TYPE VB - SPRINKLERED

OWNER:
DPLS P1 LLC

3622 Endeavor Avenue, Suite 101
Columbia, Missouri 65201
Brian P. Maenner
bpmaenner@intrinsicdevelopment.com

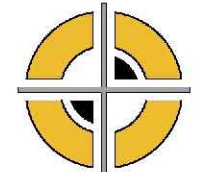
CLIENT:
INTRINSIC DEVELOPMENT

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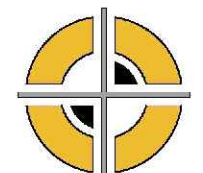
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Jeremy Patrick
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SHEET INDEX

CVR - COVER SHEET / ARCHITECTURAL CODE REVIEW

CIVIL ENGINEERING DRAWINGS UNDER SEPARATE COVER

S100 - COVER / GENERAL STRUCTURAL DATA
S200 - FOUNDATION PLAN
S210 - FOUNDATION DETAILS
S300 - ROOF FRAMING PLAN
S310 - ROOF FRAMING DETAILS

A100 - FLOOR PLAN / LIFE SAFETY
A200 - DIMENSIONAL PLAN
A300 - REFLECTED CEILING PLAN
A400 - ROOF PLAN
A500 - EXTERIOR ELEVATIONS / RENDERINGS
A501 - EXTERIOR ELEVATIONS / RENDERINGS
A600 - BUILDING SECTIONS / DETAILS
A601 - BUILDING SECTIONS / DETAILS
A602 - BUILDING SECTIONS / DETAILS
A700 - INTERIOR ELEVATIONS
A701 - INTERIOR ELEVATIONS
A702 - INTERIOR ELEVATIONS
A800 - SITE DETAILS
A900 - SCHEDULES

MEP1 - MECHANICAL ELECTRICAL PLUMBING COVER SHEET
MEP2 - SITE UTILITY / SITE LIGHTING PLAN
MEP3 - SITE LIGHTING PLAN
M101 - HVAC PLAN
M501 - HVAC DETAILS & SCHEDULES
EP101 - POWER PLAN
EL101 - LIGHTING PLAN
E501 - ELECTRICAL SCHEDULES
E601 - ELECTRICAL DETAILS
PS101 - SANITARY SEWER PLAN
PW101 - WATER & GAS PLAN
P501 - PLUMBING DETAILS & SCHEDULES

GENERAL NOTES

IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND EACH OF HIS SUBCONTRACTORS TO REVIEW THE DRAWINGS TO ASSESS THE IMPACT OF ALL WORK AFFECTING EACH TRADE. FAILURE TO REVIEW ALL CONTRACT DOCUMENTS FOR APPLICABLE ITEMS OF WORK SHALL NOT RELIEVE THE RESPONSIBLE PARTY FROM PERFORMING ALL WORK REQUIRED.

- CIVIL, STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING - NOTIFY THE DESIGN TEAM & INTRINSIC DEVELOPMENT OF ALL CONFLICTS WITHIN THE WORK.
- DRAWINGS - THESE DRAWINGS SHALL NOT BE SCALED. REFER TO DIMENSIONS INDICATED, ACTUAL SIZES OF CONSTRUCTION ITEMS, OR OTHER METHODS OF LOCATING CONSTRUCTION. WHERE NO DIMENSION OR METHOD OF DETERMINING A LOCATION IS GIVEN, VERIFY CORRECT LOCATION WITH THE DESIGN TEAM & INTRINSIC DEVELOPMENT PRIOR TO INSTALLATION.
- DIMENSIONS - DIMENSIONS ON PLANS ARE FROM FACE OF CONCRETE, MASONRY, OR FRAMING UNLESS OTHERWISE NOTED. DIMENSIONS INDICATED AS "CLEAR" SHALL BE A MINIMUM DIMENSION, (FACE TO FACE) OF FINISH MATERIALS.
- COORDINATION - GENERAL CONTRACTOR SHALL COORDINATE REQUIREMENTS OF ALL TRADES TO ALLOW FOR TIMELY INCLUSION IN THE WORK SO AS NOT TO DELAY THE WORK OR THE WORK OF ANY SUBCONTRACTOR.
- EQUIPMENT - REFER TO EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION. VERIFY ANY REQUIREMENTS FOR ROUGH-IN OR CONNECTION PRIOR TO CONSTRUCTION TO ASSURE CORRECT INSTALLATION, OPENINGS, ELECTRICAL, MECHANICAL, BLOCKING, ETC.
- DUCTS, PIPE, CONDUIT, ETC. - ALL VERTICAL AND HORIZONTAL DUCTS, PIPES, CONDUIT, ETC. (WHETHER SHOWN OR NOT) IN FINISHED ROOMS SHALL BE LOCATED WITHIN WALLS OR ABOVE FINISHED CEILINGS. ITEMS THAT CANNOT BE LOCATED WITHIN WALLS OR CEILINGS SHALL BE FURRED IN AND FINISHED TO MATCH ADJACENT SURFACES AND ANY REQUIRED WALL OR CEILING RATINGS. VERIFY ACCEPTABILITY WITH THE DESIGN TEAM & INTRINSIC DEVELOPMENT PRIOR TO ENCASEMENT.
- FIXTURES - LAVATORIES AND SINKS SHALL BE INSTALLED A MINIMUM OF 4" FROM FINISHED SIDE WALLS. FAUCETS SHALL BE INSTALLED WITH A MINIMUM OF 5" FROM THE OUTLET TO THE FLOOD RIM OF SINKS, INCLUDING THOSE EQUIPPED WITH VACUUM BREAKERS. WATER CLOSETS SHALL BE INSTALLED A MINIMUM OF 16" FROM FINISHED SIDE WALLS TO CENTERLINE OF FIXTURES.
- BLOCKING - BLOCKING OUTSIDE THE BUILDING ENVELOPE OR SUBJECT TO MOIST OR HUMID CONDITIONS SHALL BE PRESSURE TREATED AND USE CORROSION RESISTANT FASTENERS.
- ACCESS DOORS - FURNISH AND INSTALL ACCESS DOORS IN WALLS AND NON-ACCESSIBLE TYPE CEILINGS WHERE SERVICE OR ADJUSTMENT TO MECHANICAL, FIRE PROTECTION, PLUMBING, ELECTRICAL, OR OTHER EQUIPMENT IS REQUIRED. WHERE WALL OR CEILING IS REQUIRED TO BE RATED, PROVIDE ACCESS DOORS OF FIRE RATING EQUAL TO THE ASSEMBLY IN WHICH THEY OCCUR.
- EXISTING CONDITIONS - THE EXISTING CONDITIONS SHOWN ON THESE DRAWINGS ARE BASED ON INFORMATION PROVIDED TO THE DESIGN TEAM & INTRINSIC DEVELOPMENT. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS ON THE JOB SITE, AND NOTIFY THE DESIGN TEAM & INTRINSIC DEVELOPMENT OF DEVIATIONS FROM THESE DRAWINGS PRIOR TO FABRICATION AND INSTALLATION OF THE WORK.
- PRECAUTIONS - IF UNFORESEEN CONDITIONS ARE DISCOVERED WHICH COULD RESULT IN DAMAGE TO THE STRUCTURE OR INJURY TO ITS OCCUPANTS, REPORT ANY SUCH CONDITION IMMEDIATELY TO THE DESIGN TEAM & INTRINSIC DEVELOPMENT. TAKE PRECAUTIONS TO PROPERLY SUPPORT THE STRUCTURE.
- HAZARDOUS MATERIALS - CONTRACTOR SHALL IMMEDIATELY REPORT THE DISCOVERY OF ANY HAZARDOUS MATERIALS TO THE DESIGN TEAM & INTRINSIC DEVELOPMENT.
- SITE USAGE - USE OF THE SITE FOR ANY CONSTRUCTION STAGING OR OTHER OPERATIONS SHALL BE COORDINATED WITH THE DESIGN TEAM & INTRINSIC DEVELOPMENT. TAKE CARE NOT TO BLOCK OR ADVERSELY AFFECT ANY PUBLIC OR ADJACENT OWNER AREAS.
- EXIT ACCESS - MAINTAIN FREE, SAFE, AND APPROVED MEANS OF EGRESS IN AND OUT OF PROJECT LOCATION IN ACCORDANCE WITH REQUIREMENTS OF APPLICABLE REGULATORY AGENCIES.

INTERIOR FINISHES (CHAPTER 2)

TABLE 203.13 INTERIOR WALL & CEILING FINISH REQUIREMENTS, SPRINKLERED, GROUP B)
• EXIT ENCLOSURES & EXIT PASSAGEWAYS:
• CLASS B - (FLAME SPREAD 26-75, SMOKE DEVELOPED 0-450)
• CORRIDORS:
• CLASS C - (FLAME SPREAD 76-200, SMOKE DEVELOPED 0-450)
• ROOMS & ENCLOSED SPACES:
• CLASS C - (FLAME SPREAD 76-200, SMOKE DEVELOPED 0-450)

FIRE PROTECTION SYSTEM (CHAPTER 9)

- AN AUTOMATIC FIRE SPRINKLER SYSTEM IS NOT REQUIRED, HOWEVER IS PROVIDED FOR THIS BUILDING.
- A MANUAL FIRE ALARM SYSTEM IS NOT REQUIRED FOR THIS BUILDING (907.2.2)

THE GENERAL CONTRACTOR SHALL PROVIDE & INSTALL PORTABLE FIRE EXTINGUISHER(S) WITH NO MORE THAN 75 FEET OF TRAVEL DISTANCE TO FIRE EXTINGUISHERS LOCATED AS DIRECTED BY THE FIRE MARSHAL.

A KNOX BOX IS REQUIRED AT 6'-0" ABOVE SIDEWALK IN THE LOCATION AS DIRECTED BY THE FIRE MARSHAL.

MEANS OF EGRESS (CHAPTER 10)

SEE LIFE SAFETY / EGRESS PLAN ON FOLLOWING SHEET A100 FOR DETAILS & INFORMATION.

ACCESSIBILITY (CHAPTER 11)

- ACCESSIBLE ROUTES WITHIN THE SITE SHALL BE PROVIDED FROM PUBLIC TRANSPORTATION STOPS, ACCESSIBLE PARKING, ACCESSIBLE PASSENGER LOADING ZONES, AND PUBLIC STREETS OR SIDEWALKS TO THE ACCESSIBLE BUILDING ENTRANCE SERVED (SECTION 1104.1) AT LEAST 60% OF ALL PUBLIC ENTRANCES SHALL BE MADE ACCESSIBLE.
- AT LEAST 2 PERCENT, BUT NOT LESS THAN ONE, OF EACH TYPE OF PARKING SPACE PROVIDED SHALL BE AN ACCESSIBLE SPACE.
- THIS BUILDING SHALL CONFORM TO: THE AMERICAN NATIONAL STANDARD FOR ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES (ICC/ANSI A117.1-2017) AND THE LATEST EDITION OF THE AMERICANS WITH DISABILITIES ACT.

PLUMBING FIXTURES, FAUCETS, & FIXTURE FITTINGS ~ (IFC 2018)

MINIMUM NUMBER OF PLUMBING FACILITIES

OCCUPANT LOAD: 6,443 SF @ 1 OCCUPANT/50 SF = 43 OCCUPANTS

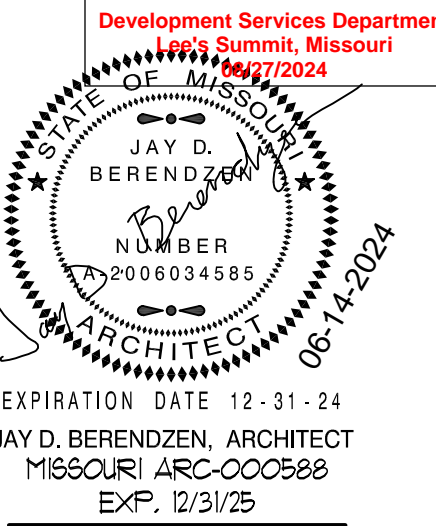
FIXTURE COUNT TO BE DESIGNED WITH A 50/50 DISTRIBUTION BETWEEN SEXES (22 MEN / 22 WOMEN)

• WATER CLOSETS: 1 WC / 25 FOR 1st 50, THEN 1 WC / 50 REMAINDER EXCEEDING 50 OCCUPANTS
• WATER CLOSETS REQUIRED: (1) MEN'S / (1) WOMEN'S
• WATER CLOSETS PROVIDED = (1) MEN'S / (1) WOMEN'S / (1) STAFF UNI-SEX

• LAVATORIES: 1 LAV / 40 FOR 1st 80, THEN 1 LAV / 80 REMAINDER EXCEEDING 80 OCCS
• LAVATORIES REQUIRED: (1) MEN'S / (1) WOMEN'S
• LAVATORIES PROVIDED = (1) MEN'S / (1) WOMEN'S / (1) STAFF UNI-SEX

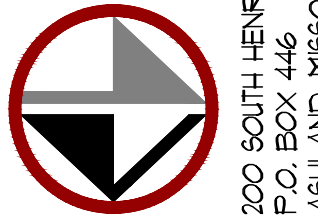
• DRINKING FOUNTAINS: 1 DF / 100 OCCUPANTS
• DRINKING FOUNTAINS REQUIRED: 1 REQUIRED
• DRINKING FOUNTAINS PROVIDED = 1 PROVIDED

• SERVICE SINKS:
• SERVICE SINKS REQUIRED = 1 REQUIRED
• SERVICE SINK PROVIDED = 2 PROVIDED



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PROJECT

Discovery Park
Discovery Animal Hospital
1901 NE Trails Edge Boulevard
Lee's Summit, Jackson County, Missouri

ISSUE

ID	DESCRIPTION	DATE
1	PERMIT	6/14/2024

PROJECT NO.
FB42417

SHEET TITLE

COVER SHEET

SHEET NUMBER

CVR

Discovery Animal Hospital

Lee's Summit, Jackson County, Missouri

GENERAL NOTES

ELEVATION DATA
SEE ARCHITECTURAL DRAWINGS OR SITE PLAN FOR FINISH FLOOR ELEVATIONS

DESIGN SPECIFICATIONS
2018 INTERNATIONAL BUILDING CODE

EARTHWORK
EARTHWORK OPERATIONS SHALL BE PERFORMED UNDER THE DIRECTION OF A PROFESSIONAL TESTING AGENCY TO ASSURE COMPLIANCE WITH THE RECOMMENDATIONS OF THE SOILS REPORT BY OWN ENGINEERING APRIL 4, 2024.

CONCRETE

CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF THE CURRENT ACI 301, SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS, ACI 318 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, ACI 305 SPECIFICATIONS FOR HOT WATER CONCRETE, AND ACI 306 SPECIFICATIONS FOR COLD WEATHER CONCRETE, WITH THE FOLLOWING ADDITIONAL REQUIREMENTS:

- CONCRETE SHALL DEVELOP THE FOLLOWING 28-DAY MINIMUM COMPRESSIVE STRENGTH:
 - FOUNDATIONS - 3,000 PSI
 - CAST-IN-PLACE WALLS - 3,500 PSI
 - FLOOR SLAB - 4,000 PSI
 - EXTERIOR SLABS, WALLS AND CURBS - 4,000 PSI
- ALL FOOTINGS SHALL BEAR ON UNDISTURBED SOIL OR ENGINEERED FILL.
- CHLORIDE- BASED ADMIXTURES ARE PROHIBITED IN ALL REINFORCED CONCRETE.
- REINFORCING STEEL SHALL CONFORM TO ASTM A615, A616, OR A617, GRADE 60.
- ALL CONTINUOUS REINFORCING STEEL THAT MEETS AT A CORNER SHALL BE TIED TOGETHER WITH A CORNER BAR THAT HAS SUFFICIENT LAP DISTANCE IN EACH DIRECTION
- CONTINUOUS REINFORCING BARS LAP LENGTH SHALL BE A MINIMUM OF 48 BAR DIAMETERS UNLESS NOTED OTHERWISE
- CONCRETE SLUMP SHALL BE A MAXIMUM OF 4" +/- 1" (ASTM C- 143) AS DELIVERED IN THE FIELD. CONTRACTOR MAY USE CHEMICAL ADMIXTURES TO ATTAIN A MAXIMUM SLUMP OF 8" FOR WORKABILITY. NO WATER MAY BE ADDED TO THE CONCRETE MIX ON SITE UNLESS WATER IS WITHHELD AT THE BATCHING FACILITY. IF WATER IS WITHHELD AT THE BATCHING FACILITY IT SHOULD BE REFLECTED ON THE LOAD TICKET. THE TOTAL AMOUNT OF WATER IN THE MIX SHALL NOT EXCEED WHAT IS NOTED ON THE APPROVED MIXED. THIS SHALL BE NOTED IN THE SPECIAL INSPECTOR'S RECORDS.
- CONCRETE EXPOSED TO WEATHER, VEHICLES, AND/OR DEICING CHEMICALS SHALL BE AIR-ENTRAINED WITH 6% (+/-) 1.5% ENTRAINED AIR BY VOLUME AT POINT OF DISCHARGE. DO NOT ALLOW AIR CONTENT OF TROWELED FINISHED FLOORS TO EXCEED 3%.
- SUBMIT CONCRETE MIX PROPORTIONS PRIOR TO START OF WORK. DO NOT BEGIN CONCRETE PRODUCTION UNTIL MIXES HAVE BEEN REVIEWED AND ARE ACCEPTABLE TO THE ENGINEER.
- READY MIX CONCRETE SHALL COMPLY WITH REQUIREMENTS OF ASTM C94.
- CONCRETE WORK EXECUTION
 - CONSTRUCT FORMS TO CORRECT SIZE, SHAPE, ALIGNMENT, ELEVATION AND POSITION; AND TO SUPPORT VERTICAL AND LATERAL LOADS.
 - POSITION, SUPPORT, AND SECURE REINFORCEMENT AGAINST DISPLACEMENT. MINIMUM CONCRETE COVER FOR REINFORCEMENT SHALL BE, UNLESS NOTED OTHERWISE ON THE DRAWINGS:
 - CAST AGAINST AND EXPOSED TO EARTH.....3 INCHES
 - EXPOSED TO EARTH OR WEATHER.....2 INCHES
 - NOT EXPOSED TO WEATHER OR IN CONTACT WITH EARTH.....1 1/2 INCHES
- PROVIDE CONTROL JOINTS IN SLABS-ON-GRADE AT NOT GREATER THAN 15 FEET ON CENTER IN EACH DIRECTION. SAW CUT CONTROL JOINTS MINIMUM 1/4 OF SLAB DEPTH, AS SOON AFTER SLAB FINISHING WITHOUT DISLODGING AGGREGATE.
- STEEL TROWEL FINISH ALL INTERIOR CONCRETE SLABS, BROOM FINISH ALL EXTERIOR CONCRETE SLABS.
- CURE ALL CONCRETE IN COMPLIANCE WITH ACI 301, USING A LIQUID TYPE MEMBRANE, NON-RESIDUAL, CURING COMPOUND COMPLYING WITH ASTM C309. ASSURE COMPATIBILITY WITH FINISH FLOOR COVERING.

STRUCTURAL STEEL

- FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE AISC SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS, THE AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES AND CURRENT OSHA STANDARDS.
- WIDE FLANGE SHAPES SHALL CONFORM TO ASTM A992. STRUCTURAL TUBES SHALL CONFORM TO ASTM A500 GRADE B. ALL OTHER STRUCTURAL STEEL SHALL CONFORM TO ASTM A36.
- BOLTS, UNLESS OTHERWISE SHOWN, SHALL CONFORM TO ASTM A325-N, SIZE AS PER PLAN.
- ANCHOR BOLTS, UNLESS OTHERWISE SHOWN, SHALL CONFORM TO ASTM F1554 GRADE 36.
- SPLICING OF STRUCTURAL STEEL IS PROHIBITED EXCEPT AS DETAILED.
- ALL STRUCTURAL AND MISCELLANEOUS STEEL ITEMS SHALL RECEIVE ONE COAT OF "IRONCLAD RETARDO RUST INHIBITIVE PAINT 163" (BENJAMIN MOORE) OR APPROVED EQUAL UNLESS OTHERWISE INDICATED IN THE SPECIFICATIONS. ALL STEEL SURFACES EMBEDDED IN CONCRETE SHALL NOT BE PAINTED. PREPARATION OF STEEL SURFACES SHALL MEET THE REQUIREMENTS OF THE STEEL STRUCTURES PAINTING COUNCIL (SSPC-SP1) AND THE REMOVAL OF GREASE AND OIL BY SOLVENT CLEANING (SSPC-SP1) AND THE REMOVAL OF MILL SCALE, RUST, WELD FLUX AND SLAG BY HAND TOOL CLEANING (SSPC-SP2). PRIMER SHALL BE APPLIED AT THE MANUFACTURER'S RECOMMENDED RATE BUT NOT LESS THAN ONE GALLON PER 400 SQ.FT. THEREBY DEPOSITING A DRY FILM THICKNESS OF NOT LESS THAN 1.5 MILS. ANY SCARRED AREAS SHALL BE TOUCHED UP WITH THE SAME PAINT AFTER ERECTION.
- ALL WELDING SHALL BE DONE BY QUALIFIED WELDERS IN ACCORDANCE WITH THE CURRENT EDITION OF THE AWS STRUCTURAL WELDING CODE. WELDING ELECTRODES SHALL BE E70XX.

POST-INSTALLED ANCHORS

- ALL POST-INSTALLED ANCHORS SHALL MEET THE REQUIREMENTS OF THE CODE-CITED EDITION OF ACI 318, APPENDIX "D", AND SHALL BE ACCEPTABLE FOR BOTH CRACKED AND UNCRACKED CONCRETE.
- EXPANSION ANCHORS HAVE BEEN DESIGNED AS HILTI KWIK BOLT TZ ANCHORS, UNLESS NOTED OTHERWISE.
- ADHESIVE ANCHORS HAVE BEEN DESIGNED TO USE HILTI HIT HY 200 ADHESIVE IN CONCRETE OR SOLID MASONRY, UNLESS NOTED OTHERWISE.
- EQUIVALENT ANCHORS MAY BE SUBMITTED FOR THE ENGINEER'S APPROVAL. SUBMITTALS ARE THE CONTRACTOR'S RESPONSIBILITY AND MUST INCLUDE EVALUATION REPORTS FROM THE INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS (ICBO).
- EMBEDMENT DEPTH IS DEFINED AS THE DISTANCE FROM THE SURFACE OF THE LOAD-BEARING BASE MATERIAL TO THE DEEPEST PART OF THE ANCHOR AFTER THE ANCHOR HAS BEEN DRIVEN INTO THE HOLE BUT NOT YET EXPANDED.
- ADHESIVE ANCHORS SHALL BE ACCEPTABLE FOR LONG-TERM LOADING. WHEN BASE MATERIAL TEMPERATURES ARE BELOW 40 DEG F, ONLY NON-EPOXY-BASED ADHESIVES SHALL BE USED.
- POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED ON THE DRAWINGS. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER PRIOR TO USING POST-INSTALLED ANCHORS FOR MISSING OR MISPLACED CAST-IN-PLANE ANCHORS. CARE SHALL BE TAKEN TO AVOID CONFLICTS WITH EXISTING REINFORCING BARS. HOLES SHALL BE DRILLED AND CLEANED PER ANCHOR MANUFACTURER'S SPECIFICATIONS.
- STAINLESS STEEL ANCHORS ARE REQUIRED AT ALL PERMANENTLY EXPOSED WEATHER CONDITIONS.

TIMBER

TIMBER WORK SHALL CONFORM TO ALL REQUIREMENTS OF THE CURRENT ANSI/AF&PA NATIONAL DESIGN SPECIFICATION (NDS) FOR WOOD CONSTRUCTION, WITH THE FOLLOWING SUPPLEMENTAL REQUIREMENTS:

- FOR COMMON MEMBER SIZES, THE SPECIES AND GRADES SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:
 - A. 2X4 SPF No.1/No.2
 - B. 2X6 SPF No.1/No.2
 - C. 2X8 DF-L No.2
 - D. 2X10 DF-L S.S.
 - E. 2X12 DF-L S.S.
- EQUIVALENT (OR BETTER) GRADES & SPECIES MAY BE SUBMITTED FOR THE ENGINEER'S APPROVAL.
- SIZES SHOWN FOR LUMBER ARE NOMINAL SIZES.
- TIMBER EXPOSED TO WEATHER OR GROUND, OR IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE-IMPREGNATED BY AN APPROVED PROCESS AND PRESERVATIVE.
- SPLICING OF JOISTS, STUDS, OR HEADERS IS PROHIBITED EXCEPT AS SHOWN.
- BOLTS SHALL CONFORM TO ASTM A307. HOLES SHALL BE DRILLED PER SECTION 11.1.2 OF THE 2005 ANSI/AF&PA NDS FOR WOOD CONSTRUCTION.
- LAG SCREWS AND WOOD SCREWS SHALL BE INSTALLED PER SECTIONS 11.1.3 AND 11.1.4, RESPECTIVELY, OF THE 2005 ANSI/AF&PA NDS FOR WOOD CONSTRUCTION.
- COMMON NAILS SHALL BE USED, UNLESS NOTED OTHERWISE. IN ADDITION, NAILS SHALL BE GALVANIZED, IF EXPOSED TO WEATHER OR MOISTURE. TOE-NAILS SHALL BE DRIVEN PER SECTION 11.1.5.4 OF THE 2005 ANSI/AF&PA NDS FOR WOOD CONSTRUCTION.
- FASTENING SHALL BE PER THE IBC MINIMUM FASTENING SCHEDULE, TABLE 2304.9.1, UNLESS NOTED OTHERWISE.
- CONNECTIONS/CONNECTORS SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.

PREFABRICATED WOOD TRUSSES

- FLOOR & ROOF TRUSSES SHALL BE DESIGNED IN ACCORDANCE WITH THE TRUSS PLATE INSTITUTE (TPI) DESIGN SPECIFICATION FOR METAL PLATE CONNECTED WOOD TRUSSES, AND THE ANSI/NF&PA NATIONAL DESIGN SPECIFICATION (NDS) FOR WOOD CONSTRUCTION.
- PROVIDE TEMPORARY AND PERMANENT BRACING ON ALL TRUSSES, AS REQUIRED TO PROVIDE MEMBER AND TRUSS STABILITY.
- FLOOR & ROOF TRUSSES SHALL BE DESIGNED AND CONSTRUCTED FOR A MAXIMUM TOTAL LOAD DEFLECTION OF L/360 AND TO SAFELY SUPPORT THE FOLLOWING LOADS:
 - A. DEAD, LIVE, SNOW, WIND, EARTHQUAKE: SEE PROJECT DESIGN DATA ON COVER SHEET.
 - B. MECHANICAL PIPE LOAD: TRUSSES SHALL BE DESIGNED FOR A CONCENTRATED LOAD OF 250 LBS HUNG ANYWHERE ALONG THE BOTTOM CHORD.
 - C. OVER-FRAMING LOAD: TRUSSES SHALL ALSO BE DESIGNED TO SUPPORT ADDITIONAL OVERBUILD FRAMING, SUCH AS THAT WHICH FORMS VALLEYS AND HIPs ON ROOFS.
 - D. DRIFTED SNOW LOAD: TRUSSES SHALL BE DESIGNED TO SUPPORT DRIFTED SNOW LOADS IN ACCORDANCE WITH THE APPROPRIATE BUILDING CODE.
 - E. IN-PLANE LATERAL LOADS: TRUSSES SHALL BE DESIGNED TO SUPPORT ANY LATERAL LOADS CARRIED AXIALLY IN THE PLANE OF THE TRUSS, AS SHOWN ON THE PLANS.
- GABLED END TRUSSES SHALL HAVE VERTICAL MEMBERS SPACED AT 16" O.C. MAXIMUM.
- SUBMITTALS SHALL INCLUDE THE FOLLOWING:
 - A. SHOP DRAWINGS PREPARED UNDER THE SUPERVISION OF, AND SIGNED AND SEALED BY, A PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS BUILT. THESE DRAWINGS SHALL INDICATE SPECIES, GRADE, AND SIZES OF LUMBER TO BE USED; PITCH, SPAN, CAMBER, CONFIGURATION, AND SPACING FOR EACH TYPE OF TRUSS REQUIRED; TYPE, SIZE, MATERIAL, FINISH, AND LOCATION OF METAL CONNECTOR PLATES; AND BEARING DETAILS. SHOW TRUSS LAYOUT AND ALL REQUIRED TEMPORARY AND PERMANENT BRACING AFFECTING THE STRUCTURAL CAPACITY OF THE TRUSSES.

PROVIDE COMPLETE ENGINEERING DESIGN CALCULATIONS THAT INCLUDE DESIGN VALUES, DESIGN ANALYSIS INDICATING LOADING, ASSUMED ALLOWABLE STRESSES, STRESS DIAGRAMs, AND CALCULATIONS, AND ANY OTHER INFORMATION NEEDED FOR REVIEW. THE CALCULATIONS SHALL HAVE BEEN SIGNED AND SEALED BY A QUALIFIED PROFESSIONAL ENGINEER WHO IS REGISTERED IN THE STATE WHERE THE PROJECT IS BUILT AND WHO IS RESPONSIBLE FOR PREPARATION OF THE CALCULATIONS.

SPECIAL INSPECTIONS

THE FOLLOWING ITEMS REQUIRE SPECIAL INSPECTION IN ACCORDANCE WITH CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE.

- CONCRETE GROUT DESIGN MIX (PERIODIC)
- PLACING OF CONCRETE AND REINFORCING STEEL (CONTINUOUS OF CONCRETE SAMPLING / PERIODIC OF REINFORCING)
- BOLTS & ANCHORS EMBEDDED IN CONCRETE (PERIODIC)
- STRUCTURAL STEEL FABRICATIONS (UNLESS AISC APPROVED) (PERIODIC)
- STRUCTURAL STEEL BOLTING & WELDING (PERIODIC)
- POST INSTALLED ANCHORS IN CONCRETE (CONTINUOUS)
- IN-SITU SOILS, EXCAVATIONS, FILLING & COMPACTION (PERIODIC)
- WOOD FRAMING:
 - h.a. SHEAR WALLS; WALL SIZE, CONFIGURATION, BLOCKING, PANEL GRADE, PANEL THICKNESS, AND FASTENING. (PERIODIC)
 - h.b. DIAPHRAGMS (FLOOR AND ROOF SHEATHING); SIZE, CONFIGURATION, BLOCKING, PANEL GRADE, PANEL THICKNESS, AND FASTENING. (PERIODIC)
 - h.c. FRAMING MEMBERS AND DETAILS (PERIODIC)
 - h.d. MATERIAL GRADE (PERIODIC)
 - h.e. CONNECTIONS; HANGERS, HOLD DOWNS, BUILT-UP COLUMNS, BUILT-UP BEAMS (PERIODIC)
 - h.f. PRE-ENGINEERED TRUSSES; FRAMING, CONNECTIONS, BRIDGING (PERIODIC)

THE CONTRACTOR SHALL REQUEST SPECIAL INSPECTION OF THE ITEMS LISTED ABOVE PRIOR TO THOSE ITEMS BECOMING INACCESSIBLE AND UNOBSERVABLE DUE TO PROGRESSION OF THE WORK.

DESIGN DATA

2018 INTERNATIONAL BUILDING CODE / ASCE 7-16

BUILDING OCCUPANCY CATEGORY II

ROOF LOAD

LIVE LOAD	20
TOP CHORD SOLAR LOAD	5
TOP CHORD DEAD LOAD	10
BOTTOM CHORD DEAD LOAD	10
TOTAL TO JOISTS	45 lbf/sq.ft

ROOF SNOW LOAD: (*UNBALANCED & DRIFTING SNOW TO BE DETERMINED IN ADDITION TO UNIFORM LOAD, WHERE APPLICABLE)

R _s =	20 lbf/sq.ft
C _s =	10
I _s =	10
C _i =	10
p =	20 lbf/sq.ft
p _s =	20 lbf/sq.ft

BASIC DESIGN WIND LOAD

Vult =	109 MPH (3-SECOND GUST)
I _w =	10
EXPOSURE	C
INTERNAL PRESSURE COEFFICIENT =	± 0.18
MAXIMUM COMPONENTS & CLADDING WIND	± 33.18 lbf/sq.ft

EARTHQUAKE DESIGN DATA

S_s = 0.100
S_h = 0.068
S_{ms} = 0.017
S_{mp} = 0.109
SITE CLASS D
SEISMIC DESIGN CATEGORY B
BASIC SEISMIC-FORCE-RESISTING SYSTEM =
LIGHT-FRAMED WALLS WITH SHEAR PANELS
R = 6.50
Ω_h = 3.00
C_d = 4.00
I_e = 10
EQUIVALENT LATERAL FORCE PROCEDURE
V = .016W

NET ALLOWABLE SOIL BEARING 2500 lbf/sq.ft**

(*PER GEOTECHNICAL REPORT BY OWN ENGINEERING DATED APRIL 4, 2024)

INDEX OF SHEETS

COVER / GENERAL STRUCTURAL DATA	S100
FOUNDATION PLAN	S200
FOUNDATION DETAILS	S210
ROOF FRAMING PLAN	S300
ROOF FRAMING DETAILS	S310

REVISIONS:

No.	Date
PERMIT SET	06/14/2024

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STRUCTURAL ENGINEER:
CROCKETT
ENGINEERING CONSULTANTS
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Crockett Engineering Consultants, LLC
Missouri Professional Engineer
#200019101

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3822 ENDOAVOR AVE STE 101
COLUMBIA, MISSOURI

Discovery Animal Hospital

1901 NE TRAIL EDGE BOULEVARD
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

DRAWING INCLUDES:

GENERAL
STRUCTURAL DATA

DESIGNED: JWV

DRAWN: TGC

PROJECT NO.: 230286

SHEET:

S100

NOTE:
ALL DIMENSIONS ARE TO EDGE OF SLAB OR
¢ COLUMNS UNLESS NOTED OTHERWISE.

FOUNDATION NOTES

- REENTRANT CORNER BARS, REFER TO TYPICAL CRACK CONTROL REINFORCING DETAIL ON S210.
- TRENCH DRAIN, REFER TO MEP FOR EXACT LOCATION & SPECIFICATIONS.

REVISIONS:

No.	Date
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DRAWING INCLUDES:

FOUNDATION
PLAN

DESIGNED: JWV

DRAWN: TGC

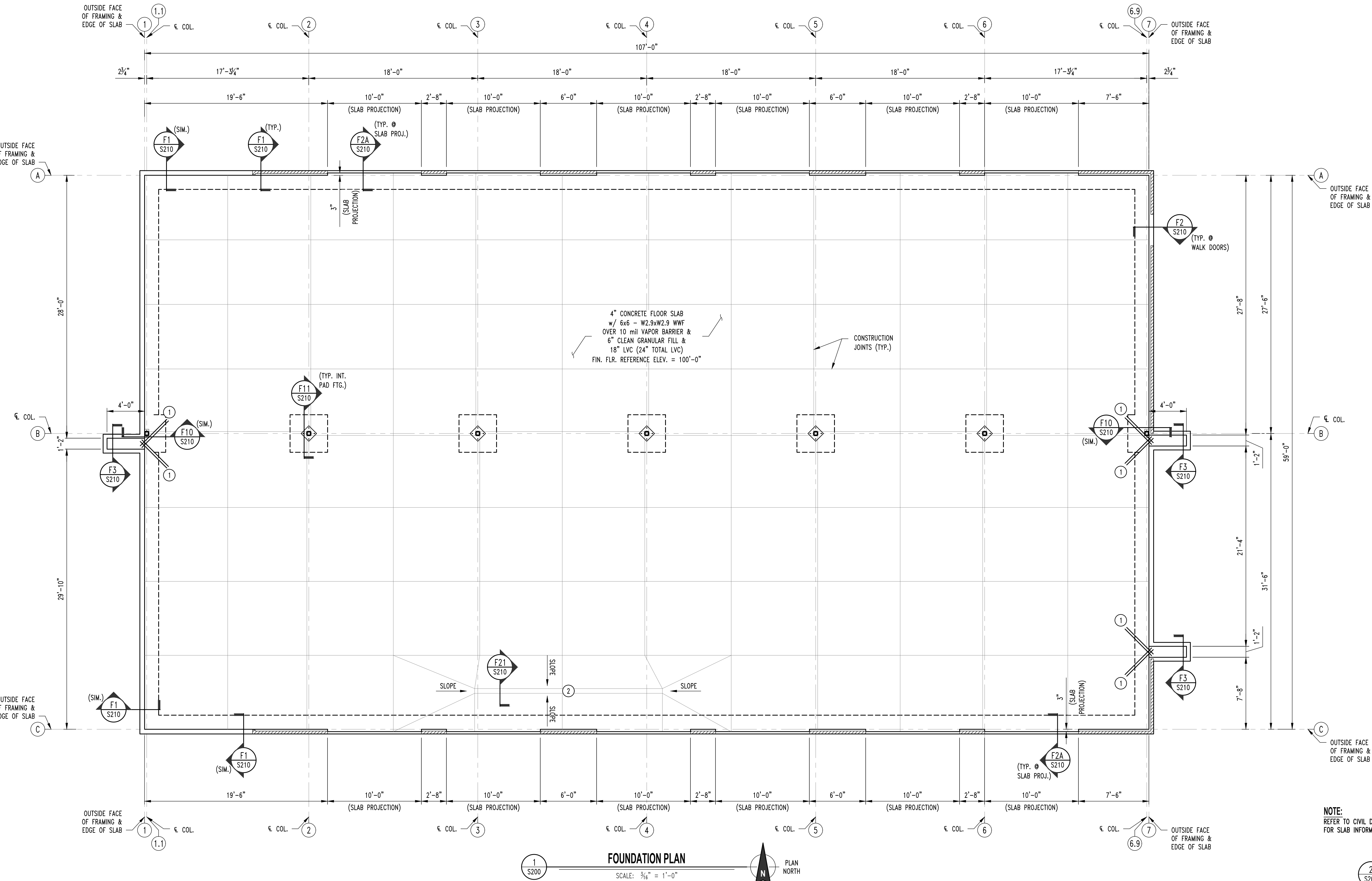
PROJECT NO.: 230286

SHEET:

S200

NOTE:

VERIFY SAW CUTS w/ OWNER PRIOR TO POURING SLAB

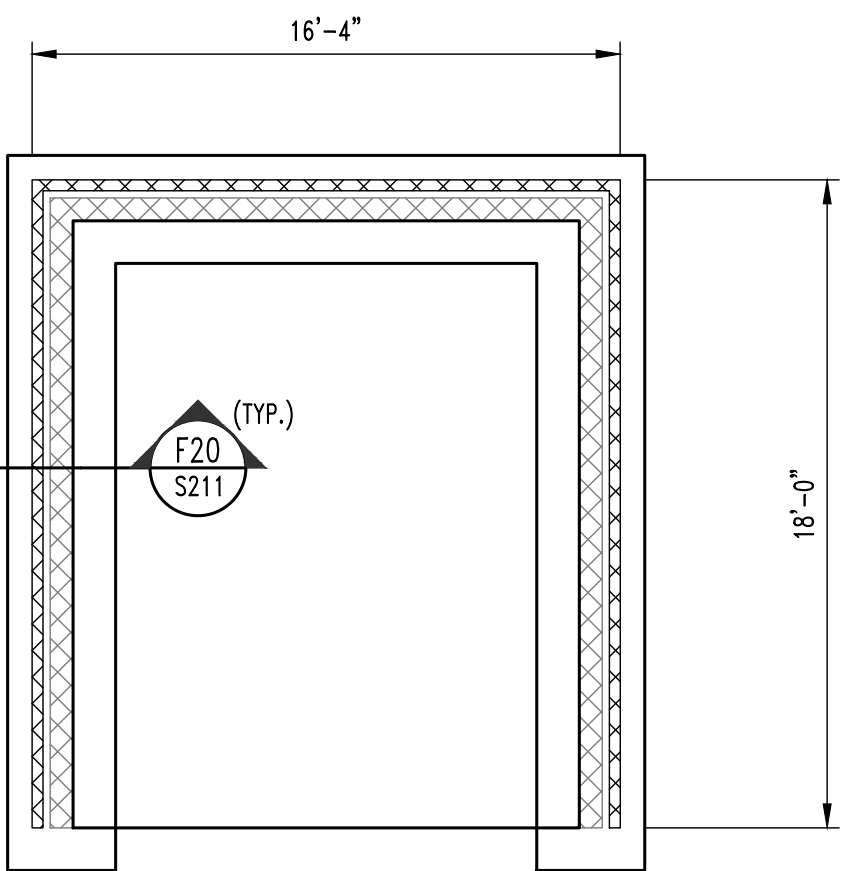


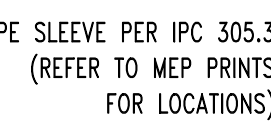
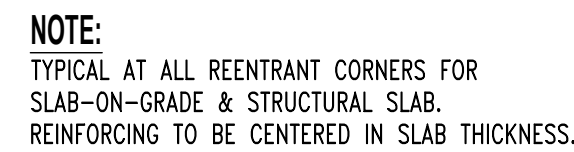
NOTE:
REFER TO CIVIL DRAWING
FOR SLAB INFORMATION.

2
S200

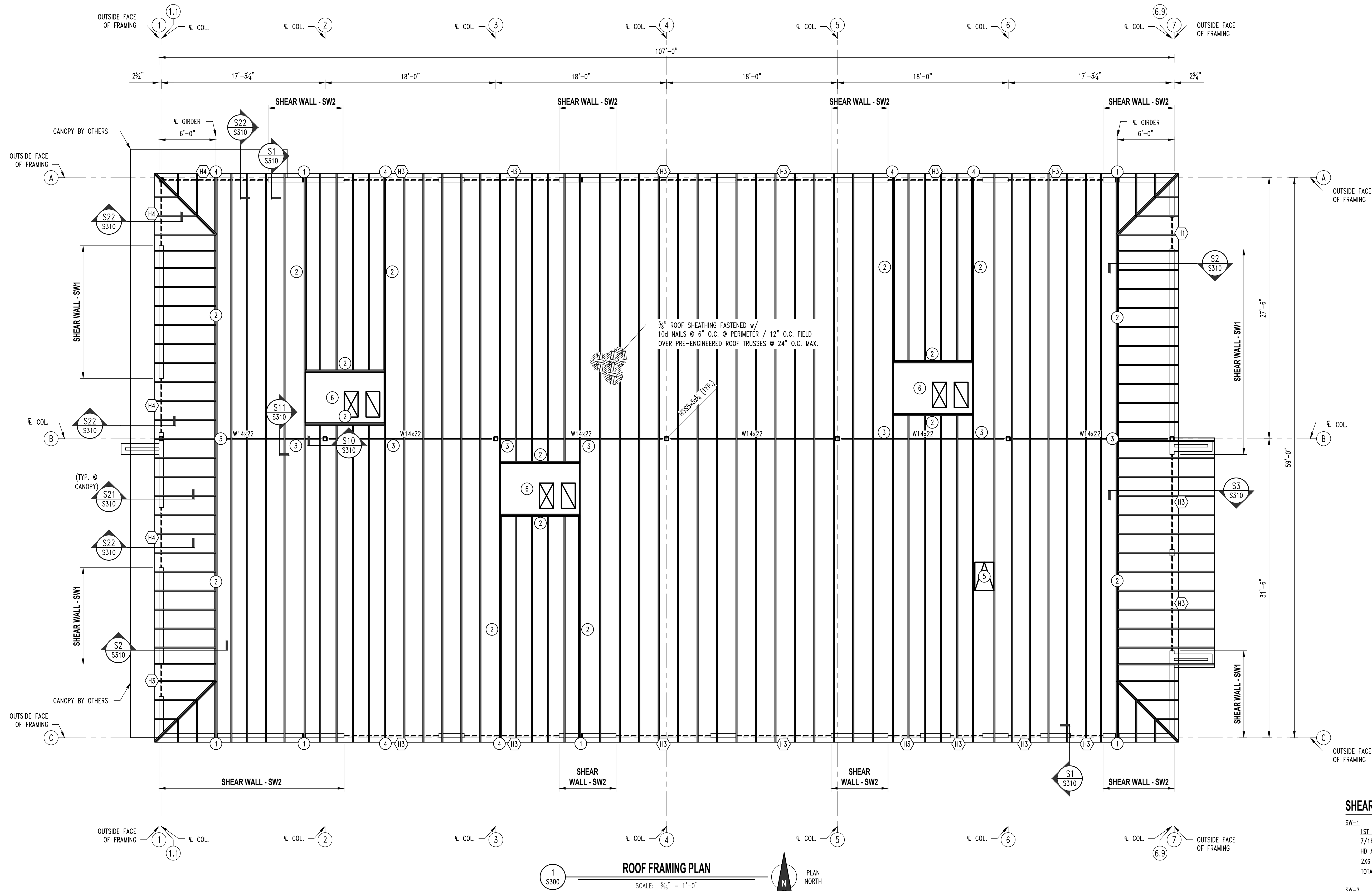
DUMPSTER ENCLOSURE FOUNDATION PLAN

SCALE: 3/16" = 1'-0"





NOTE:
ALL DIMENSIONS ARE TO OUTSIDE FACE OF FRAMING
OR ϵ COLUMNS UNLESS NOTED OTHERWISE.



ROOF FRAMING NOTES

- INSTALL 3 PLY STUD BENEATH GIRDER TRUSS FASTENED TO GIRDER w/ SIMPSON LGT3 TIEDOWN & (16) 16d SINKER NAILS IN GIRDER & STUDS & SIMPSON HIT4 HOLDDOWN @ THE BASE FASTENED w/ (18) 10d NAILS TO STUDS & $\frac{3}{8}$ " A307 THREADED ROD w/ 18" EPOXY EMBEDMENT
- GIRDER TRUSS
- SIMPSON LGT3 TIEDOWN & (16) 16d SINKER NAILS INTO SOLID BLOCKING INSTALLED IN WEB OF BEAM w/ #12 TEK SCREWS.
- REFER TO S20 ON S310 FOR GIRDER TO HEADER INFORMATION.
- ROOF HATCH (REFER TO ARCHITECTURALS)
- RTU. REFER TO MEP FOR EXACT SIZE & WEIGHT.
- COORDINATE FINAL CUT SIZES PRIOR TO TRUSS FABRICATION.

SHEAR WALL KEY

SW-1
1ST FLOOR
7/16" OSB SHEATHING FASTENED w/ 8d NAILS @ 3" O.C. @ PERIMETER & 12" O.C. @ FIELD & 5/8"x8" TITEN HD ANCHORS @ 2'-6" O.C. w/ SIMPSON HIT4TKT HOLDDOWN FASTENED w/ (26) SD #10 x 2 1/2" SCREWS TO (2) 2X6 STUDS AND A 5/8" A307 THREADED ROD w/ 6" SIMPSON SET-XP EPOXY EMBEDMENT INTO THE FOOTING (14" TOTAL EMBEDMENT) AT EACH END OF THE SHEAR WALL

SW-2
1ST FLOOR
7/16" OSB SHEATHING FASTENED w/ 8d NAILS @ 4" O.C. @ PERIMETER & 12" O.C. @ FIELD & 5/8"x8" TITEN HD ANCHORS @ 3'-0" O.C. w/ SIMPSON HIT4 HOLDDOWN FASTENED w/ (18) 10d NAILS TO (2) 2X6 STUDS AND A 5/8" A307 THREADED ROD w/ 6" SIMPSON SET-XP EPOXY EMBEDMENT INTO THE FOOTING (14" TOTAL EMBEDMENT) AT EACH END OF THE SHEAR WALL

NOTE:
IF WALL IS NOT LABELED AS A SHEAR WALL THE SHEATHING SHALL BE 7/16" OSB SHEATHING FASTENED w/ 8d NAILS @ 6" O.C. @ PERIMETER & 12" O.C. @ FIELD & 5/8"x8" TITEN HD ANCHORS @ 4'-0" O.C.

BRICK LINTEL SCHEDULE

LENGTH	MEMBER SIZE (GALVANIZED)
L \leq 4'-0"	L4x4x3/8 WITH 6" BEARING EACH END
L \leq 6'-6"	L6x4x3/8 (LLV) WITH 6" BEARING EACH END
L \leq 10'-0"	L8x4x7/16 (LLV) WITH 10" BEARING EACH END

HEADER SCHEDULE

MARK	HEADER	CRIPPLE	JAMB
"H1"	(2) Southern Pine Sel. Str. 2x6's	Southern Pine Sel. Str. 2x6	Southern Pine Sel. Str. 2x6
"H2"	(2) Doug Fir Larch Sel. Str. 2x10's	Southern Pine Sel. Str. 2x6	(2) Southern Pine Sel. Str. 2x6's
"H3"	(3) Doug Fir Larch Sel. Str. 2x10's	(2) Southern Pine Sel. Str. 2x6's	(3) Southern Pine Sel. Str. 2x6's
"H4"	(3) Microlam 2.0E 1.75x16's	(2) Southern Pine Sel. Str. 2x6's	(3) Southern Pine Sel. Str. 2x6's

REVISIONS:

No.	Date
PERMIT SET	06/14/2024

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COLUMBIA, MISSOURI

Discovery Animal Hospital
1901 NE TRAIL EDGE BOULEVARD
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

DRAWING INCLUDES:

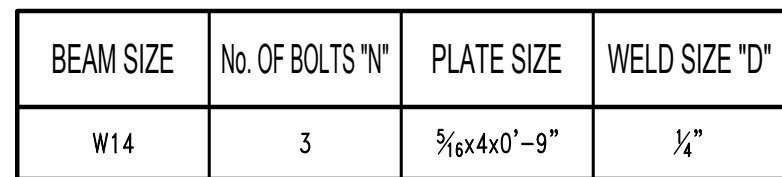
ROOF
FRAMING
PLAN

DESIGNED: JWV

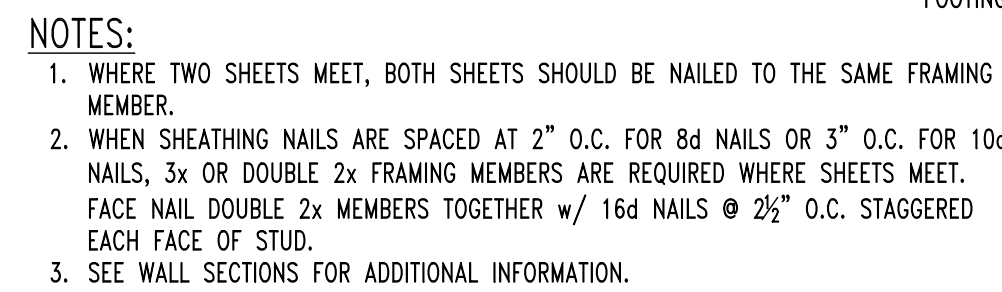
DRAWN: TGC

PROJECT NO.: 230286

SHEET:
S300



ROOF FRAMING SECTION
SCALE: 1" = 1'-0"

[illegible]

STRUCTURAL ENGINEER:

CRACKETT

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Discovery Animal Hospital

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LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

DRAWING INCLUDES:

FRAMING
DETAILS

DESIGNED: JWV

DRAWN: TGC

PROJECT NO.: 230286

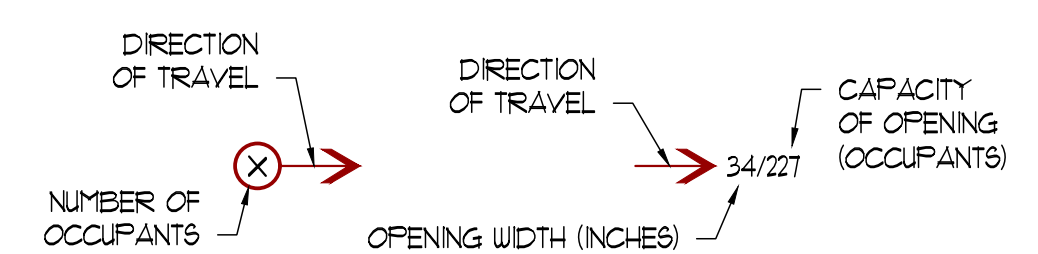
SHEET: S310

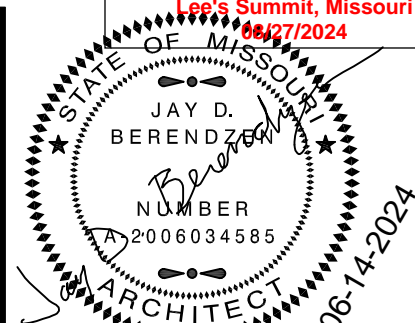
FLOOR PLAN / LIFE SAFETY & EGRESS NOTES:

CONSTRUCTION TYPE:	TYPE VB - SPRINKLERED	MINIMUM NUMBER OF EXITS REQUIRED:	2 (TRAVEL DISTANCE FACTOR)
OCCUPANCY:	BUSINESS USE OCCUPANCY	PROPOSED EXITS PROVIDED:	5
MINIMUM OCCUPANT LOAD:	43 OCCUPANTS	EXIT ACCESS TRAVEL DISTANCE:	300 FEET
CORRIDOR FIRE-RESISTANCE RATING REQUIRED:	0 HOURS (SPRINKLERED)	EGRESS WIDTH:	
MINIMUM CORRIDOR WIDTH:	44 INCHES	REQUIRED =	43 x 0.15" = 6.45"
DEAD END CORRIDORS SHALL NOT EXCEED 50 FEET		PROVIDED =	(5) 34" = 170"
		EGRESS DOORS SHALL HAVE A MINIMUM CLEAR OPENING WIDTH OF NOT LESS THAN 32"	
		EVERY EXIT DOOR SHALL BE OPERABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIFIC KNOWLEDGE OR EFFORT.	

FLOOR PLAN / LIFE SAFETY PLAN
SCALE: 1/4" = 1'-0"
PLAN NORTH

PORTABLE FIRE EXTINGUISHER: COORDINATE AND VERIFY ALL LOCATIONS WITH FIRE CODE OFFICIAL PRIOR TO INSTALLATION





EXPIRATION DATE 12-31-24
JAY D. BERENDZEN, ARCHITECT
MISSOURI ARCHITECTS BOARD
EXP. 12/31/25

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PROJECT
**Discovery Park
Discovery Animal Hospital**
1901 NE Trails Edge Boulevard
Lee's Summit, Jackson County, Missouri

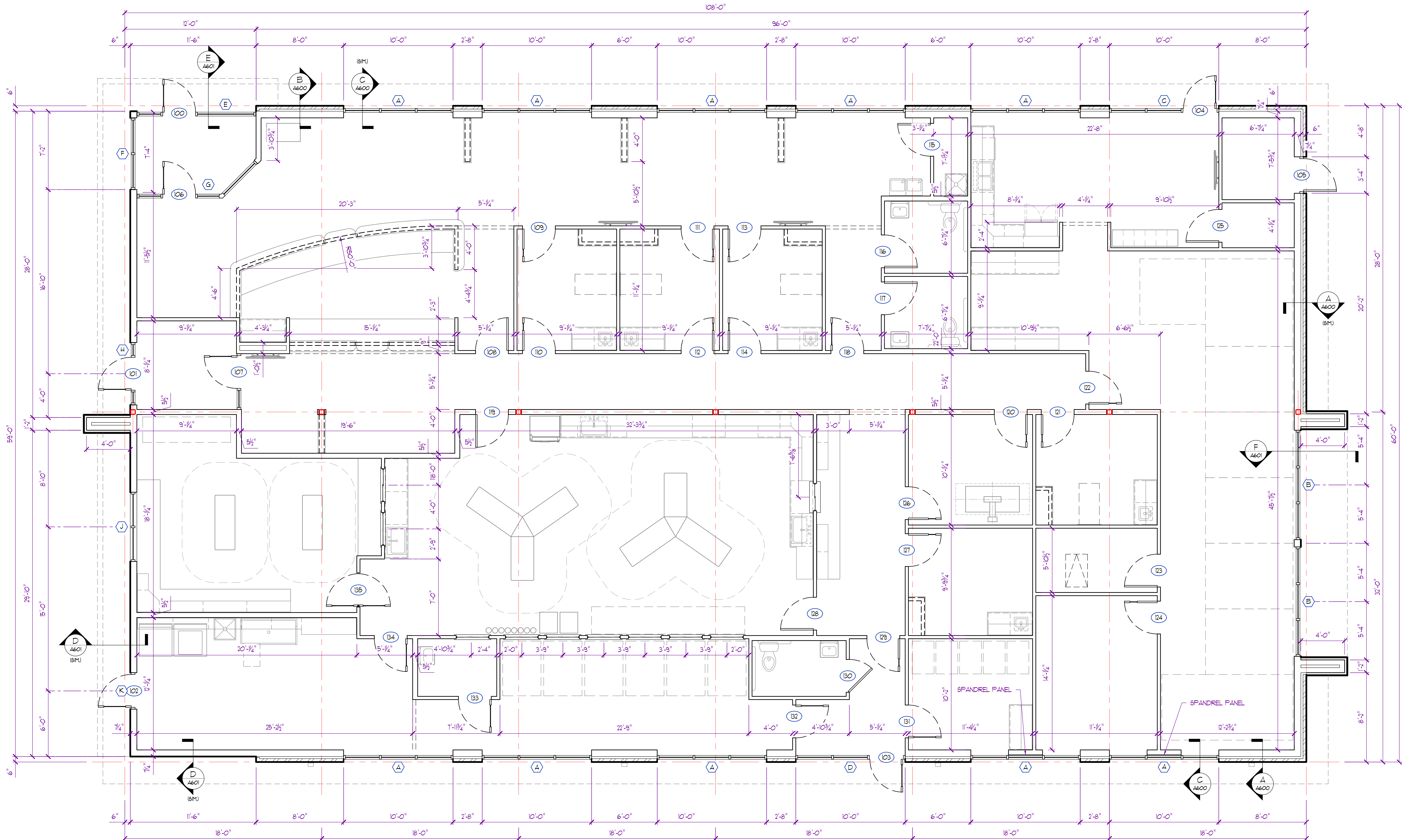
ISSUE	ID	DESCRIPTION	DATE
	1	PERMIT	6/14/2024

PROJECT NO.
FB42417
SHEET TITLE

DIMENSIONAL PLAN

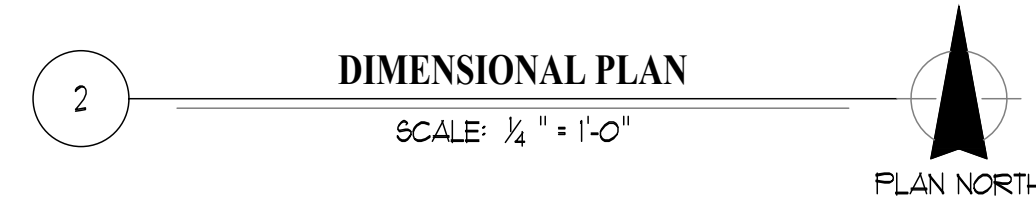
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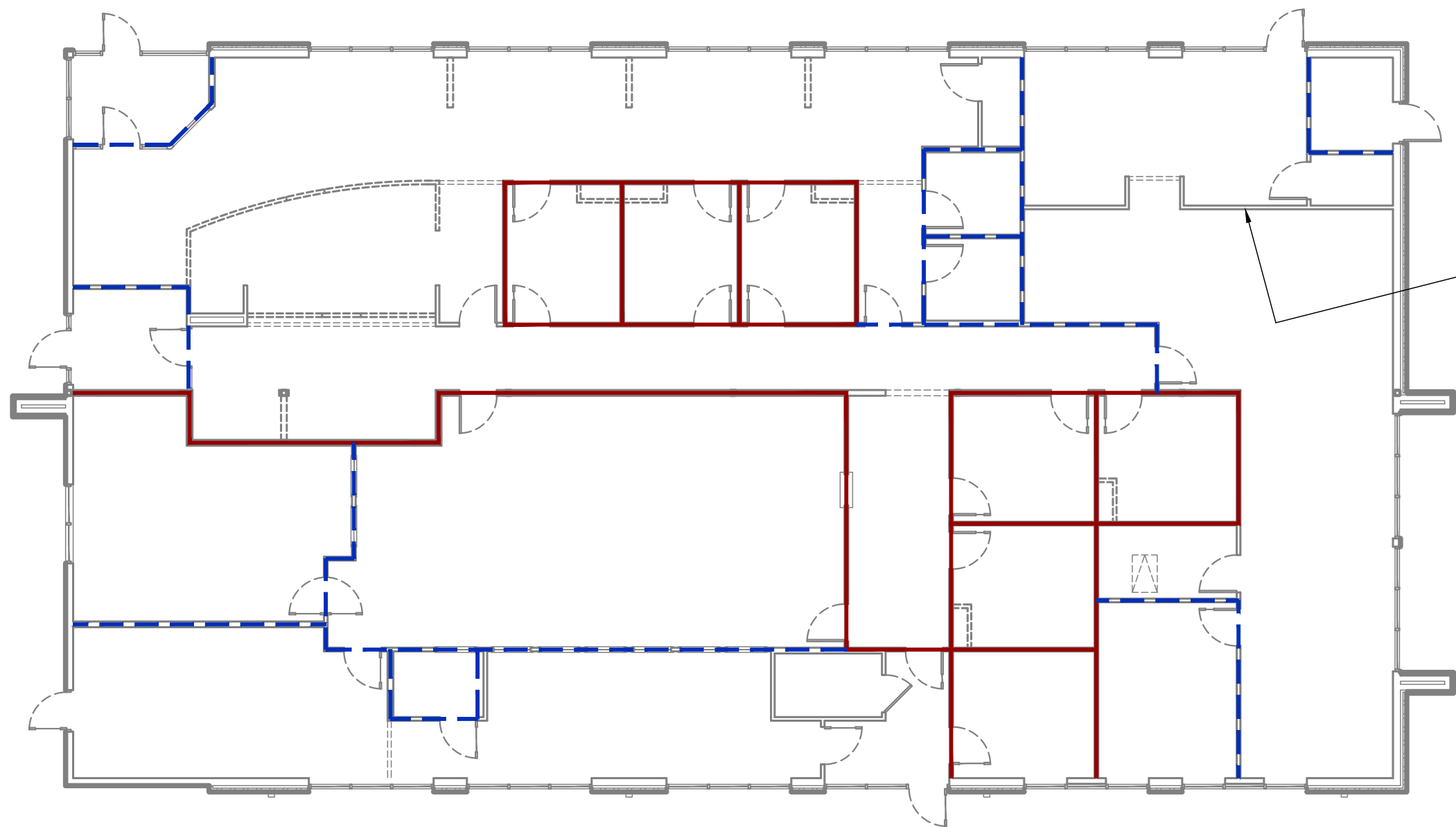
A200



FLOOR PLAN GENERAL NOTES:

- ALL WORK SHALL CONFORM TO ALL STATE, LOCAL, AND/OR ANY AUTHORITY HAVING JURISDICTION.
- ALL DIMENSIONS SHOWN ARE TO FACE OF MASONRY / STUD OR CENTERLINE OF COLUMN / BEAM UNLESS NOTED OTHERWISE.
- ALL INTERIOR WALL PARTITIONS ARE TO BE 2x4 WOOD STUD FRAMING @ 16" O.C. MAX. w/ 5/8" GYPSUM BOARD ON EACH SIDE UNLESS NOTED OTHERWISE.
- INTERIOR WALLS & GYPSUM BOARD TO EXTEND A MIN. OF 6" ABOVE FINISH CEILING. (SEE A300 FOR WALL HEIGHT DIAGRAM)
- CONTRACTOR TO PROVIDE TEMPORARY & PERMANENT BRACING AS REQUIRED. INTERIOR PARTITIONS TO HAVE DIAGONAL BRACING TO STRUCTURE @ 4'-0" O.C. WHERE APPLICABLE.
- ALL DOORS TO HAVE A MIN. OF 6" FROM HINGE JAMB TO ADJACENT WALL UNLESS NOTED OTHERWISE.
- INSTALL 4" ACOUSTICAL BATT INSULATION ON CEILING A MIN. OF 24" FROM COMMON WALLS FOR ADDITIONAL SOUND DEADENING AS NECESSARY. (COORDINATE LOCATIONS WITH OWNER / TENANT)
- ALL EQUIPMENT, APPLIANCES, & FURNITURE SHOWN FOR REFERENCE ONLY. (VERIFY & COORDINATE EQUIPMENT PRIOR TO ANY WORK)
- SEE STOREFRONT DETAILS ON SHEET A602 FOR REMAINING INFO.
- SEE ROOM FINISH SCHEDULE ON SHEET A300 FOR REMAINING INFO.





WALL HEIGHT DIAGRAM

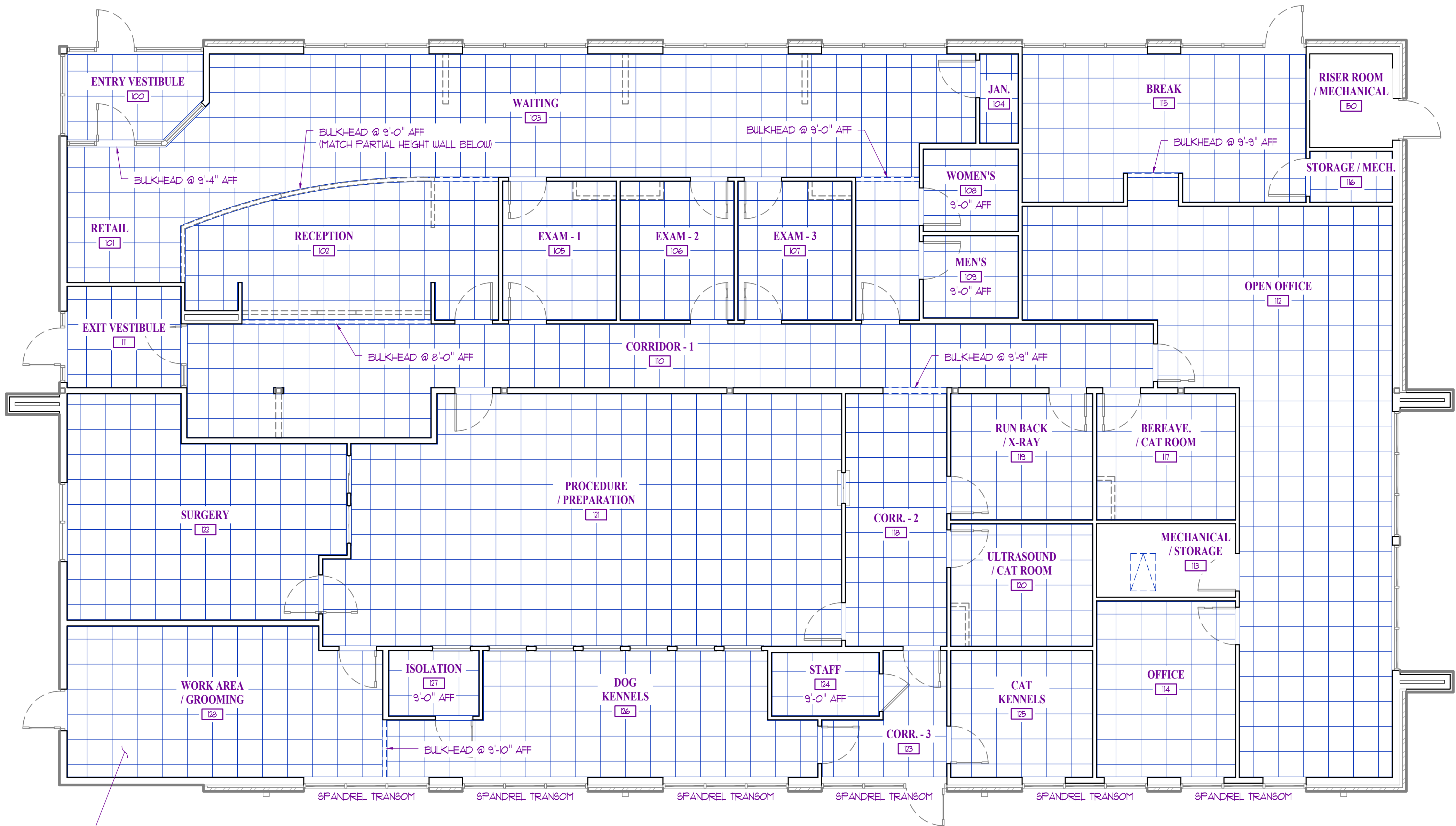
STANDARD INTERIOR WALL PARTITION:
2x WOOD STUDS w/ 5/8" GYPSUM BOARD EACH SIDE
A MINIMUM OF 6" ABOVE ADJACENT CEILING HEIGHT
(BRACE TOP OF WALL WITH 2x @ 45° TO STRUCTURE @ 4'-0" O.C. MAX.)

INDICATES FRAMING & GYPSUM BOARD TO TERMINATE
AT LONG LEG DEFLECTION TRACK BELOW ROOF LID / STRUCTURE
INSTALL SOUND BATT FULL HEIGHT OF WALL.

INDICATES FRAMING & GYPSUM BOARD TO TERMINATE
AT LONG LEG DEFLECTION TRACK BELOW ROOF LID / STRUCTURE

REFLECTED CEILING PLAN GENERAL NOTES:

1. SEE ROOM FINISH SCHEDULE ON SHEET A900 FOR ADDITIONAL INFORMATION.
2. FOR REFERENCE ONLY. TRADE CONTRACTOR TO VERIFY LOCATION OF ALL CEILING FEATURES AND CEILING MOUNTED EQUIPMENT & FIXTURES.
3. REFER TO MECHANICAL-ELECTRICAL-PLUMBING DRAWINGS FOR EXACT EQUIPMENT AND LIGHTING PLACEMENT AND SPECIFICATIONS.
4. METAL SUSPENSION SYSTEMS AND ACOUSTICAL TILE CEILING SHALL BE INSTALLED IN ACCORDANCE WITH IBC 2018.
5. GENERAL CONTRACTOR SHALL VERIFY & COORDINATE CEILING HEIGHTS WITH ALL TRADES PRIOR TO INSTALLATION. ANY ADJUSTMENTS SHALL BE COORDINATED WITH OWNER AND GENERAL CONTRACTOR.
6. CEILING TILES AND GRIDWORK TO BE CENTERED IN BOTH DIRECTIONS FOR EVERY ROOM OR SPACE UNLESS OTHERWISE DIMENSIONED.
7. LIGHTING FIXTURES AND AIR DIFFUSERS SHALL BE SUPPORTED DIRECTLY BY WIRES TO THE STRUCTURE ABOVE.
8. ALL DIMENSIONS TO THE FINISHED FACE OF WALL OR CENTERLINE OF CEILING GRID UNLESS NOTED OTHERWISE.

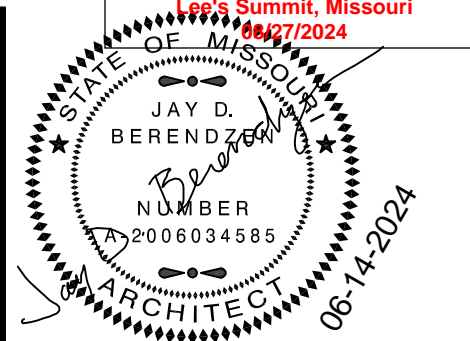


ALL CEILINGS TO BE 24" x 24" ACOUSTICAL TILE
INSTALLED AT 9'-11" AFF UNLESS NOTED OTHERWISE
(SEE FINISH SCHEDULE ON A900 FOR REMAINING INFO)

REFLECTED CEILING PLAN

SCALE: 3/8" = 1'-0"

PLAN NORTH



EXPIRATION DATE 12-31-24
JAY D. BERENDZEN, ARCHITECT
MISSOURI ARC-000586
EXP. 12/31/25

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PROJECT
Discovery Park
Discovery Animal Hospital
1901 NE Trails Edge Boulevard
Lee's Summit, Jackson County, Missouri

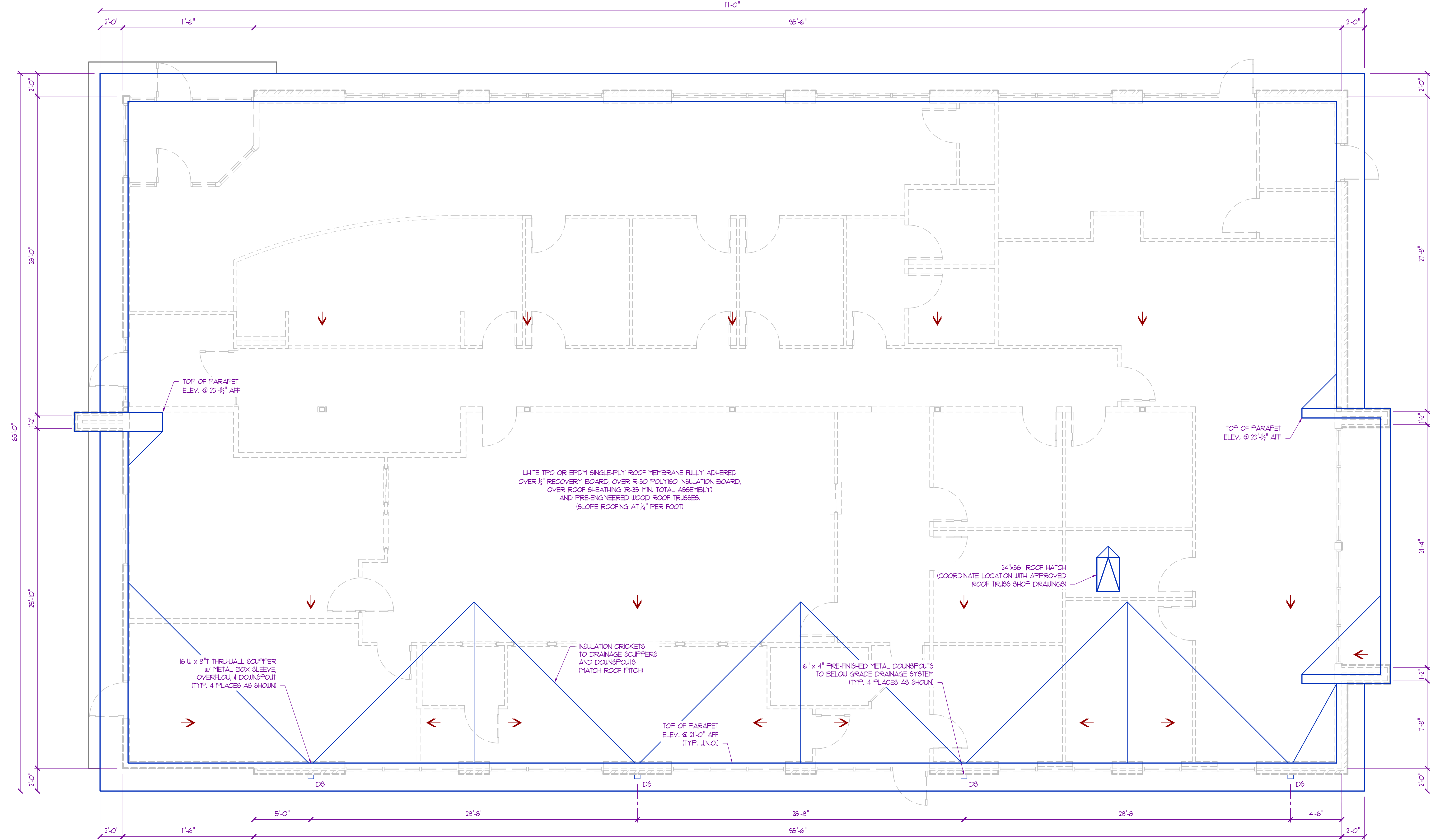
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PROJECT NO.
FB42417

SHEET TITLE

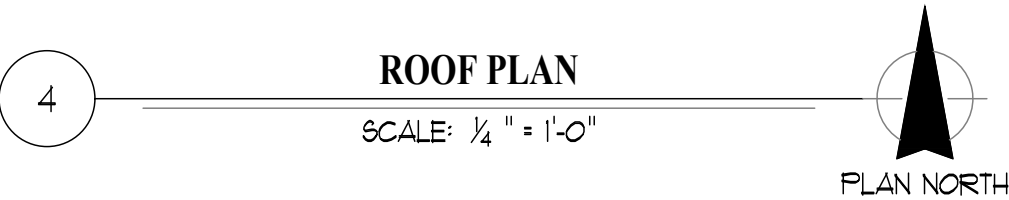
REFLECTED
CEILING PLAN

SHEET NUMBER



ROOF PLAN GENERAL NOTES:

1. VERIFY AND COORDINATE ALL BLOCKING, NAILERS, INSULATION STOPS, CRICKETS, FLASHING, ETC. FOR COMPLETE INSTALLATION OF ROOFING SYSTEM.
2. ROOFING SYSTEM TO BE WARRANTED AND WATERTIGHT.
3. VERIFY AND COORDINATE ALL ROOFTOP EQUIPMENT, CURBS, GAS LINES, PLUMBING PENETRATIONS, ETC. (2\"/>



ROOF DRAINAGE CALCULATIONS:

TOTAL ROOF DRAINAGE AREA: ± 7210 SF
PROPOSED ROOF DRAINS: (4) @ 2,300 SF MAX. DRAINAGE AREA
RAINFALL RATE: 3.5\"/>

14\"/>

RELEASED FOR
CONSTRUCTION
As Noted on Plans Review
Development Services Department
Summit, Missouri
6/14/2024

STATE OF MISSOURI
JAY D. BERENDZEN
NUMBER 2006034585
ARCHITECT
06-14-2024

EXPIRATION DATE 12-31-24
JAY D. BERENDZEN, ARCHITECT
MISSOURI ARC-000588
EXP. 12/31/25

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CONSIDERED PREPARED BY THIS
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PROJECT

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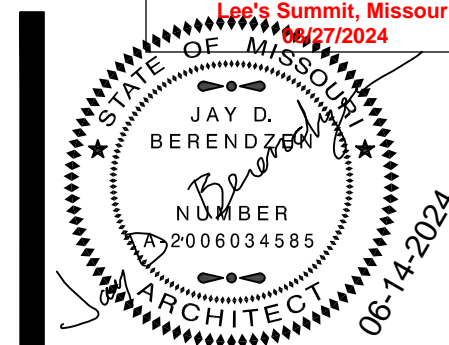
ISSUE

ID	DESCRIPTION	DATE
1	PERMIT	6/14/2024

PROJECT NO.
FBA2417


SHEET TITLE
ROOF PLAN

SHEET NUMBER
A400



EXPIRATION DATE 12-31-24
JAY D. BERENDZEN, ARCHITECT
MISSOURI ARC-000588
EXP. 12/31/25

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PROJECT _____

Discovery Park
Discovery Animal Hospital
1901 NE Trails Edge Boulevard
Lee's Summit, Jackson County, Missouri

[illegible]

PROJECT NO. FB42417

SHEET TITLE

EXTERIOR ELEVATIONS

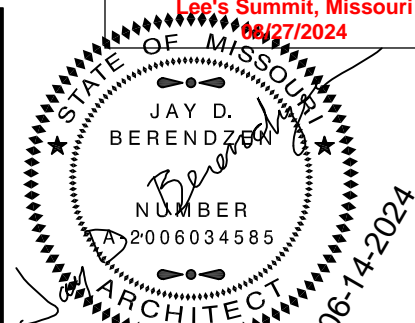
SHEET NUMBER

A500



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PROJECT

Discovery Park
Discovery Animal Hospital
1901 NE Trails Edge Boulevard
Lee's Summit, Jackson County, Missouri

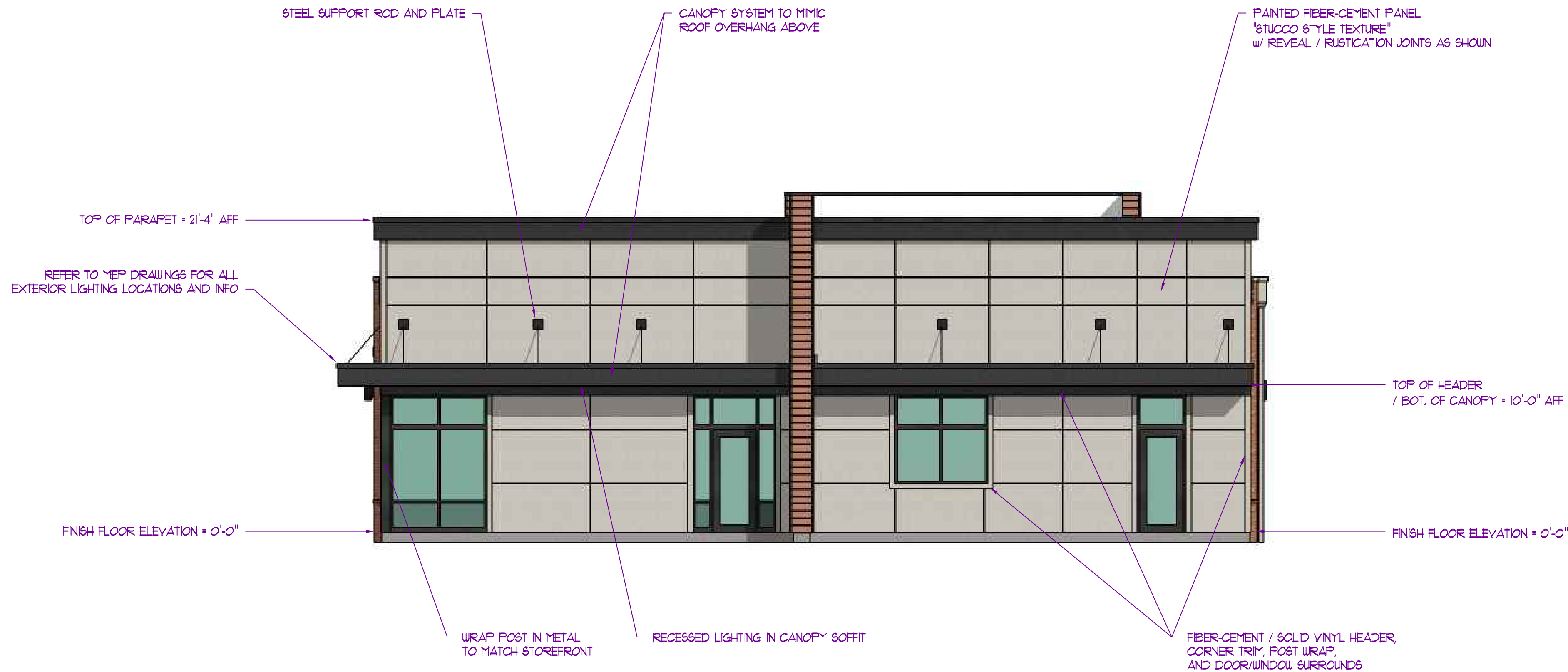
ISSUE		
ID	DESCRIPTION	DATE
1	PERMIT	6/14/2024

PROJECT NO.
FBA2417
SHEET TITLE

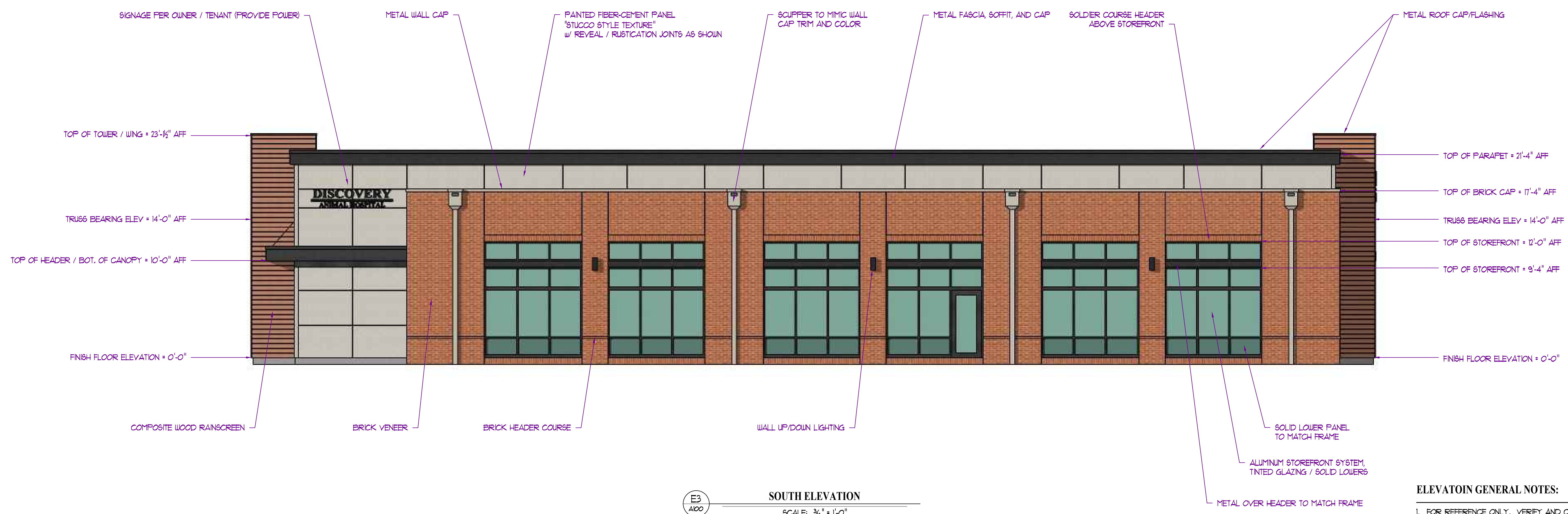
EXTERIOR
ELEVATIONS

SHEET NUMBER

A500



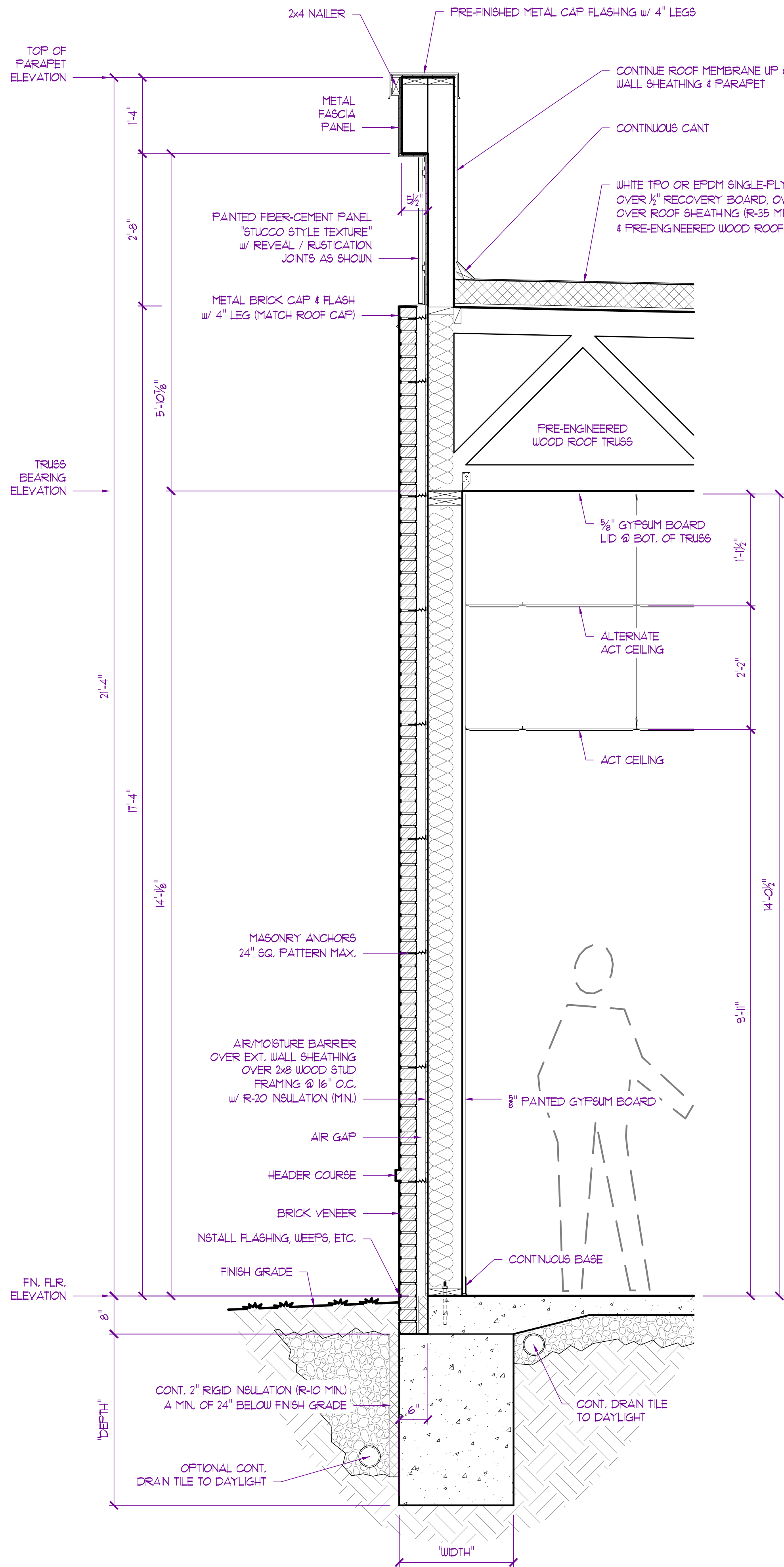
E3
A100
WEST ELEVATION
SCALE: 3/8" = 1'-0"



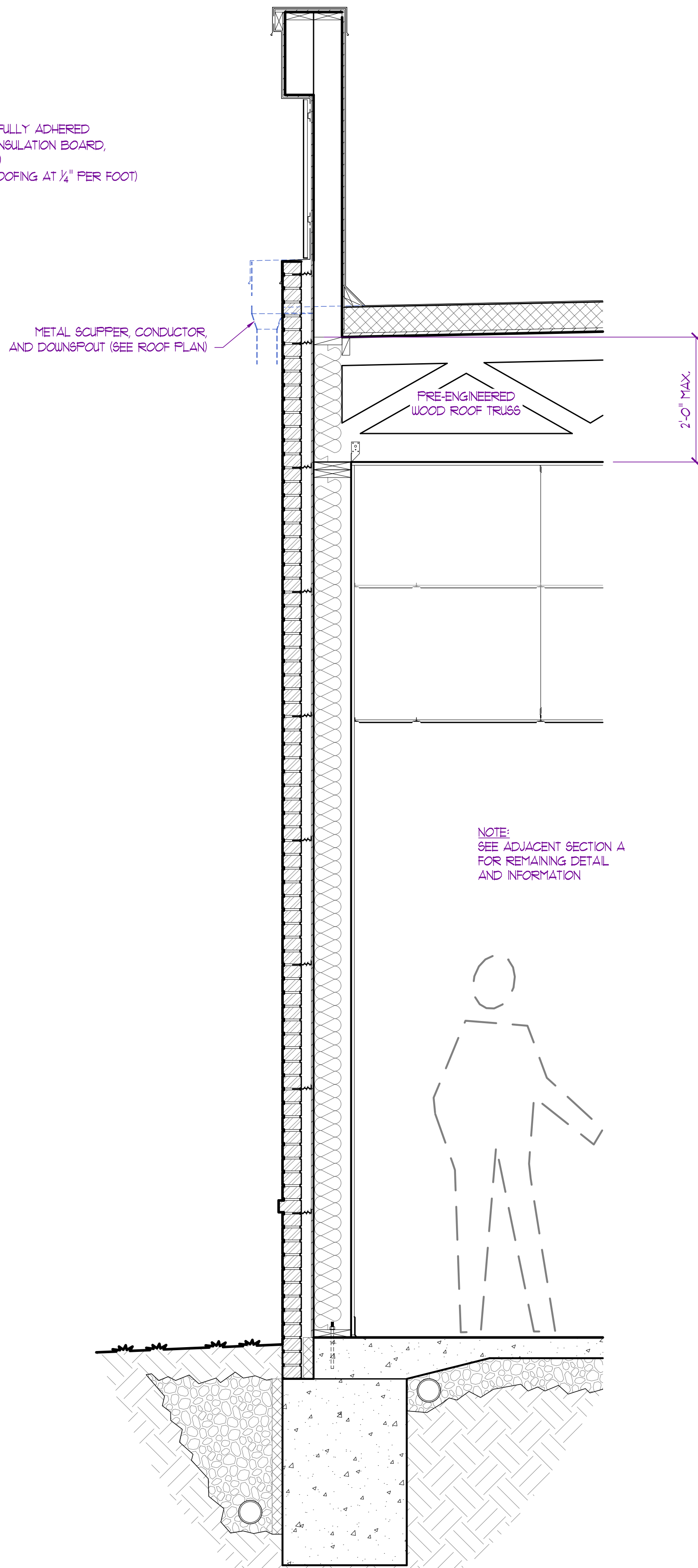
E3
A100
SOUTH ELEVATION
SCALE: 3/8" = 1'-0"

ELEVATION GENERAL NOTES:

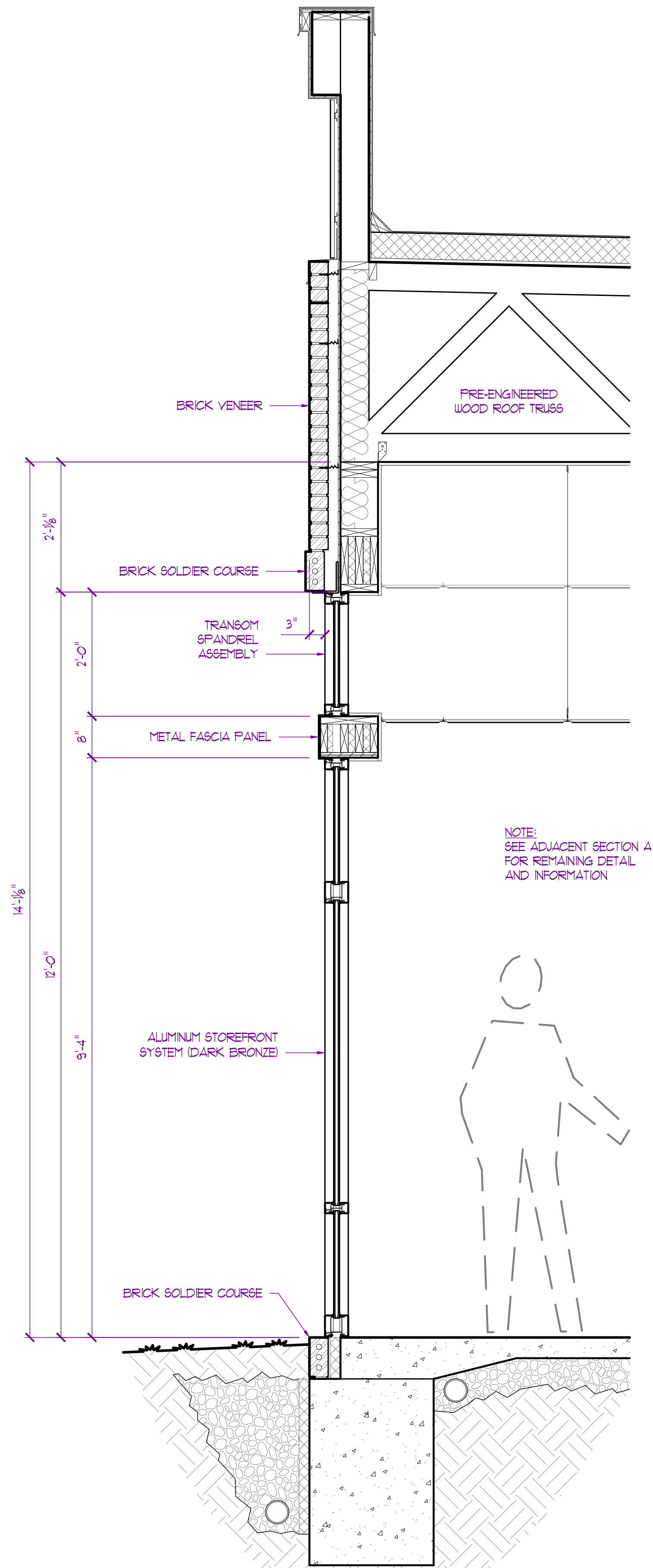
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SECTION - A
SCALE: 3/4" = 1'-0"



SECTION - B
SCALE: 3/4" = 1'-0"



SECTION - C
SCALE: 3/4" = 1'-0"

NOTE:
REFER TO STRUCTURAL DRAWINGS PREPARED BY
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AND FASTENING REQUIREMENTS.

RELEASED FOR
CONSTRUCTION
As Noted on Plans Review
Development Services Department
JAY D. BERENDZEN, ARCHITECT
MISSOURI ARC-000588
EXP. 12/31/25
08-14-2024

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PROJECT
Discovery Animal Hospital
1901 NE Trails Edge Boulevard
Lee's Summit, Jackson County, Missouri


ISSUE
ID DESCRIPTION DATE
1 PERMIT 6/14/2024

PROJECT NO.
FB42417

SHEET TITLE
SECTIONS & DETAILS

SHEET NUMBER
A600

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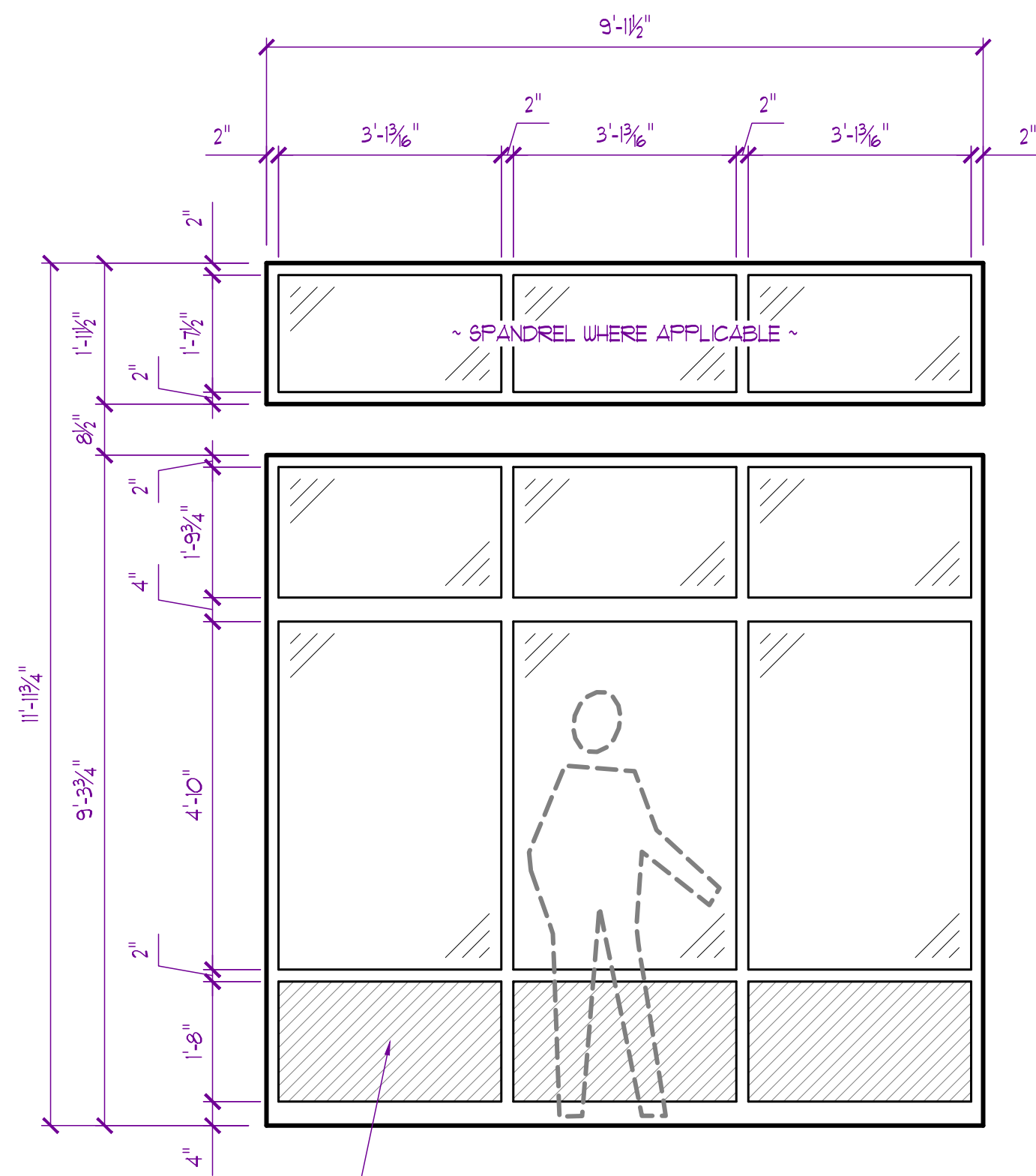
ISSUE

PROJECT NO.

SECTIONS & DETAILS

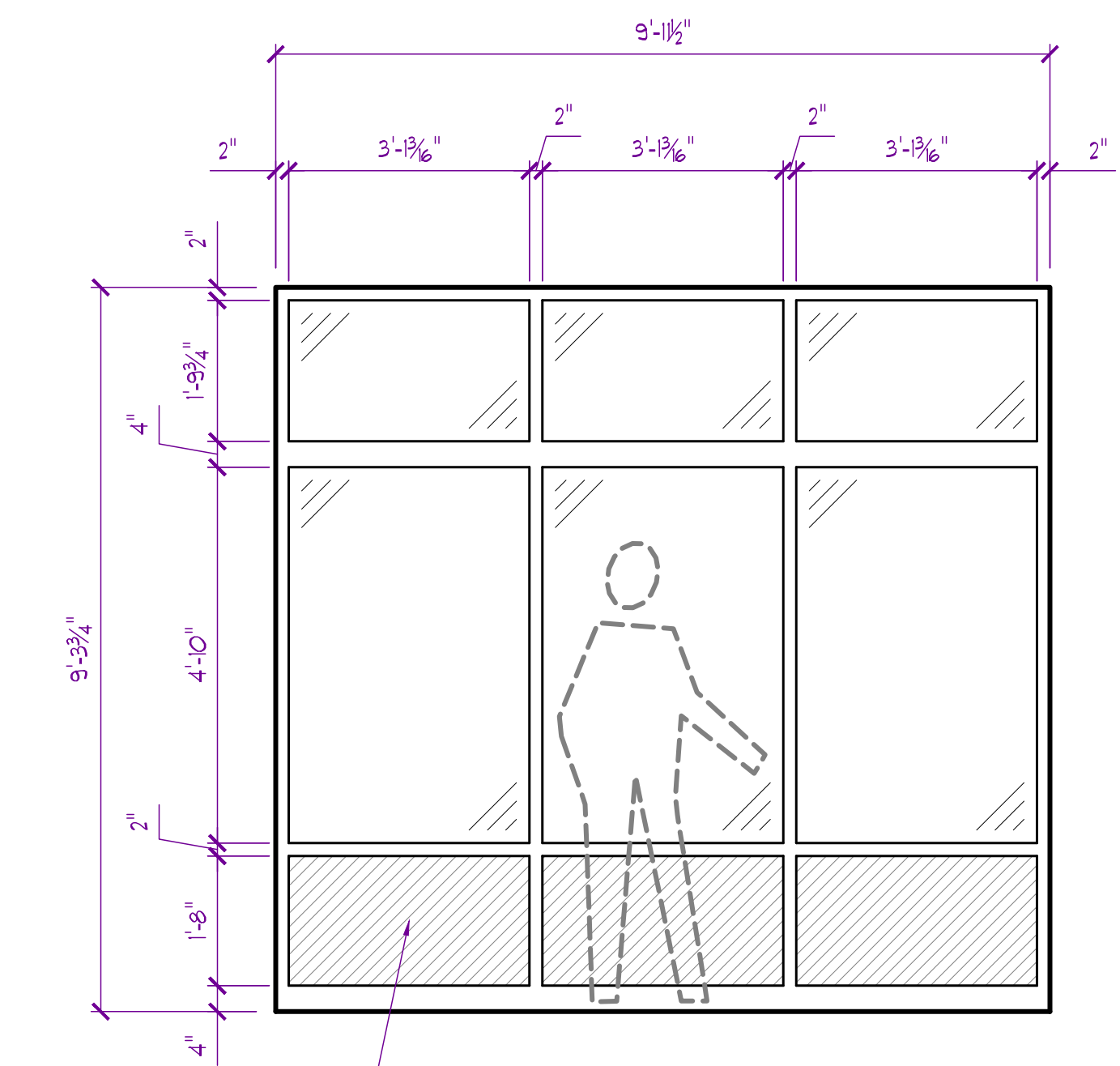
A601





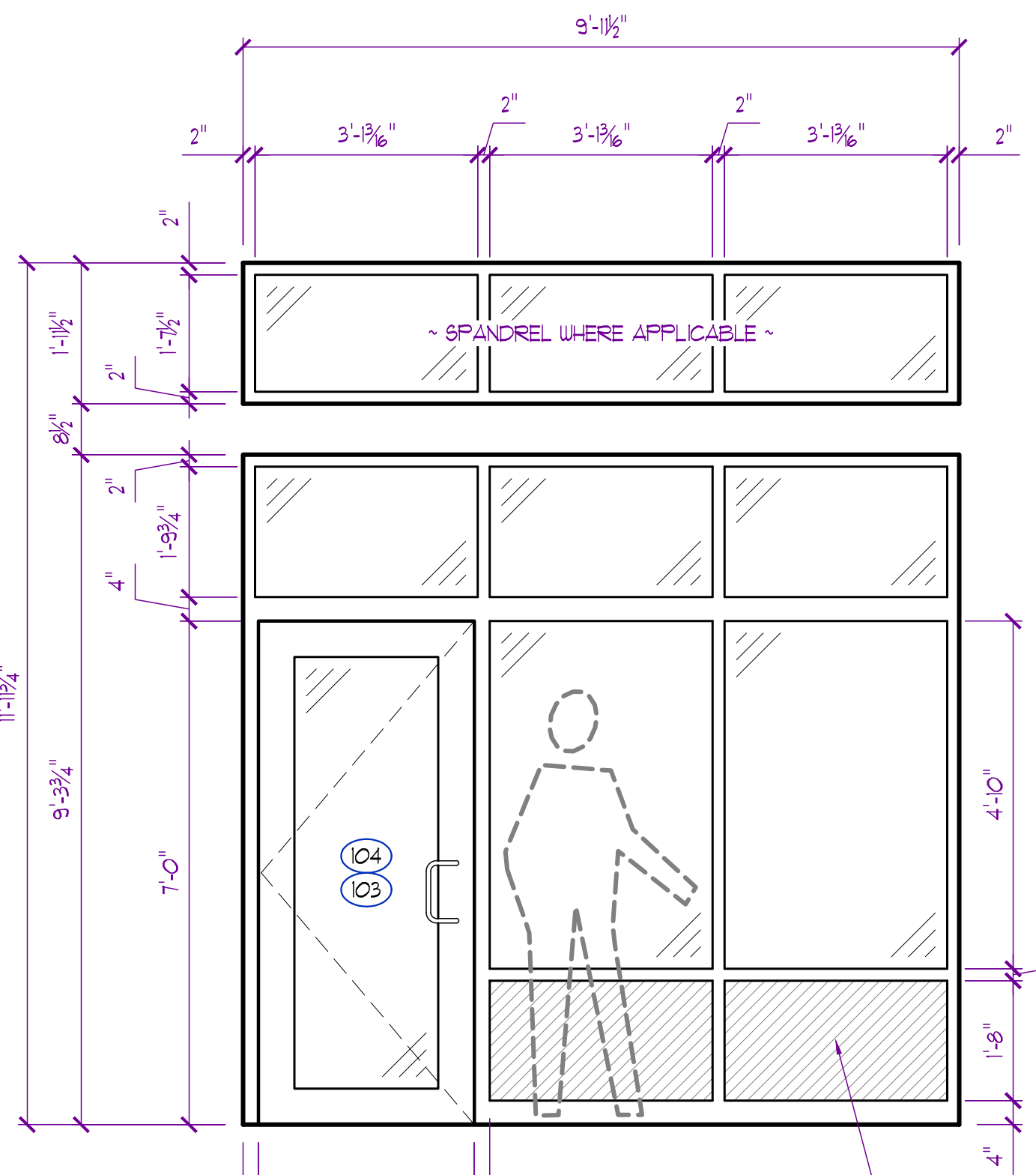
SOLID PANEL TO MATCH FRAME COLOR (TYP. INDICATED BY HATCH)

A
QUANTITY = 10



SOLID PANEL TO MATCH FRAME COLOR (TYP. INDICATED BY HATCH)

B
QUANTITY = 2

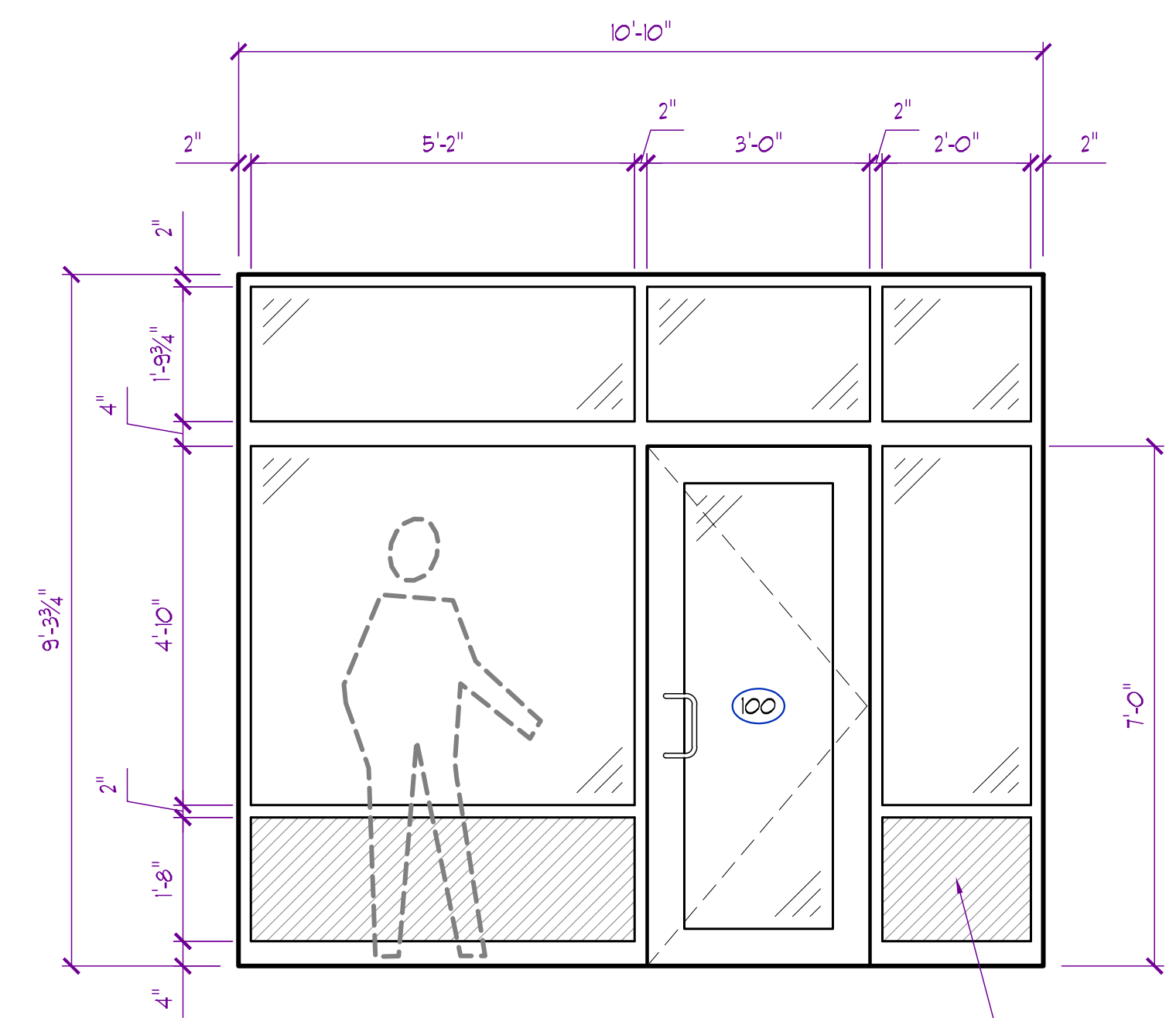


EQ. 3'-0\"

C
AS SHOWN
QUANTITY = 1

D
OPPOSITE HAND
QUANTITY = 1

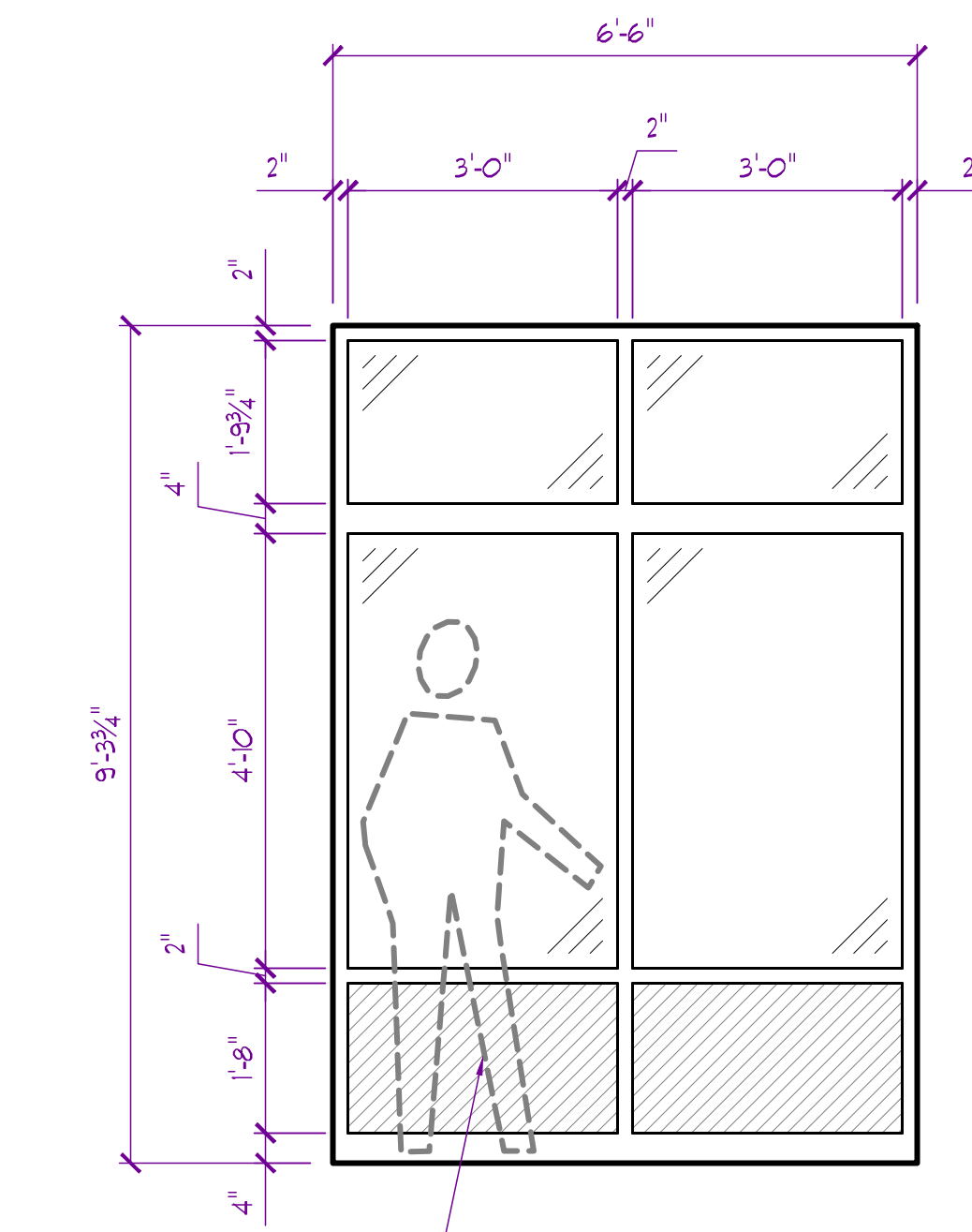
SOLID PANEL TO MATCH FRAME COLOR (TYP. INDICATED BY HATCH)



E
QUANTITY = 1

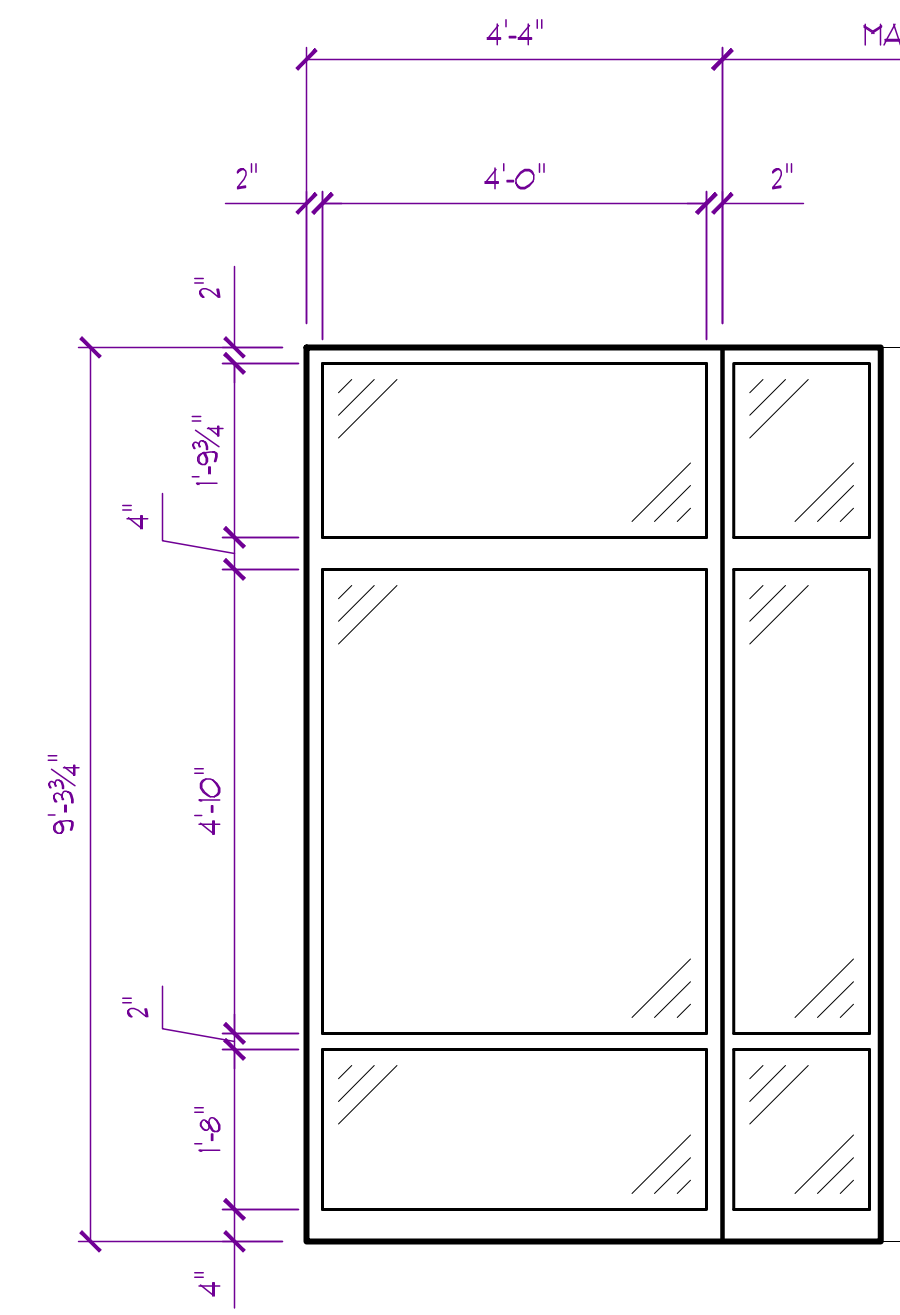
SOLID PANEL TO MATCH FRAME COLOR (TYP. INDICATED BY HATCH)

- ALUMINUM STOREFRONT NOTES:
1. ALL ASSEMBLIES SHOWN ARE FROM EXTERIOR VIEW UNLESS NOTED OTHERWISE
 2. GENERAL CONTRACTOR TO FIELD VERIFY ALL DOOR / WINDOW ROUGH OPENINGS PRIOR TO FABRICATION
 3. PROVIDE SEALANT AT JOINTS AND OPENINGS FOR WEATHER TIGHT INSTALLATION
 4. ALL STOREFRONT ASSEMBLIES TO MEET U-FACTOR VALUES AS INDICATED IN BUILDING ENVELOPE REPORT
 5. ALL STOREFRONT DOORS / WINDOWS, TRIM, ACCESSORIES, BREAK METAL, ETC. PROVIDED BY SAME MANUFACTURER
 6. ALL STOREFRONT FRAMES TO BE DARK BRONZE OR EQUAL
 7. ALL EXTERIOR GLAZING TO BE LOW E INSULATED GLASS w/ GRAY TINT (SAFETY GLASS WHERE INDICATED OR REQUIRED BY CODE)
 8. ALL INTERIOR GLAZING TO BE 1/2" SINGLE PANE FLOAT GLASS (SAFETY GLASS WHERE INDICATED OR REQUIRED BY CODE)
 9. SEE DOOR SCHEDULE ON SHEET A800 FOR REMAINING DOOR INFORMATION

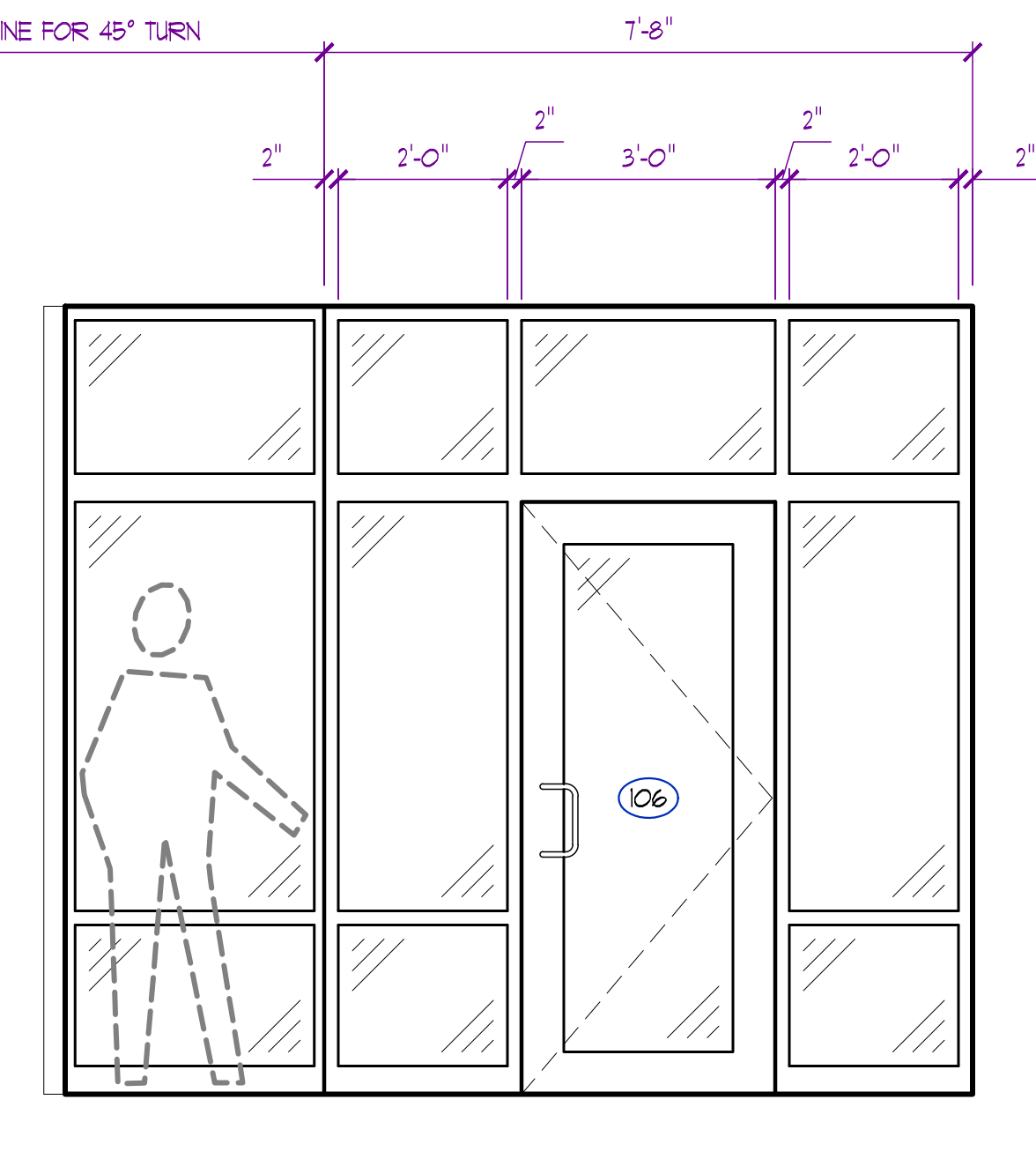


SOLID PANEL TO MATCH FRAME COLOR (TYP. INDICATED BY HATCH)

F
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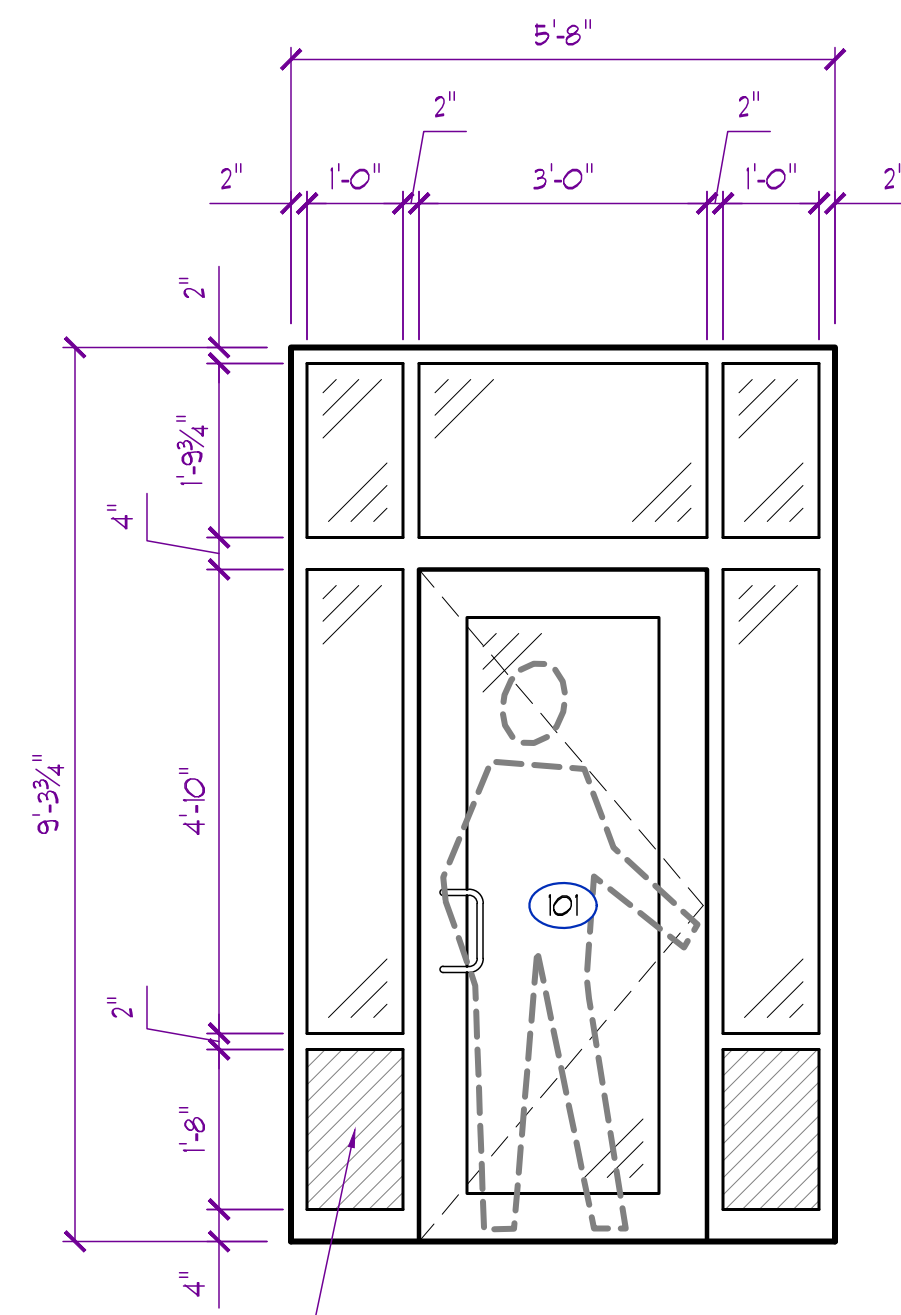


G
QUANTITY = 1



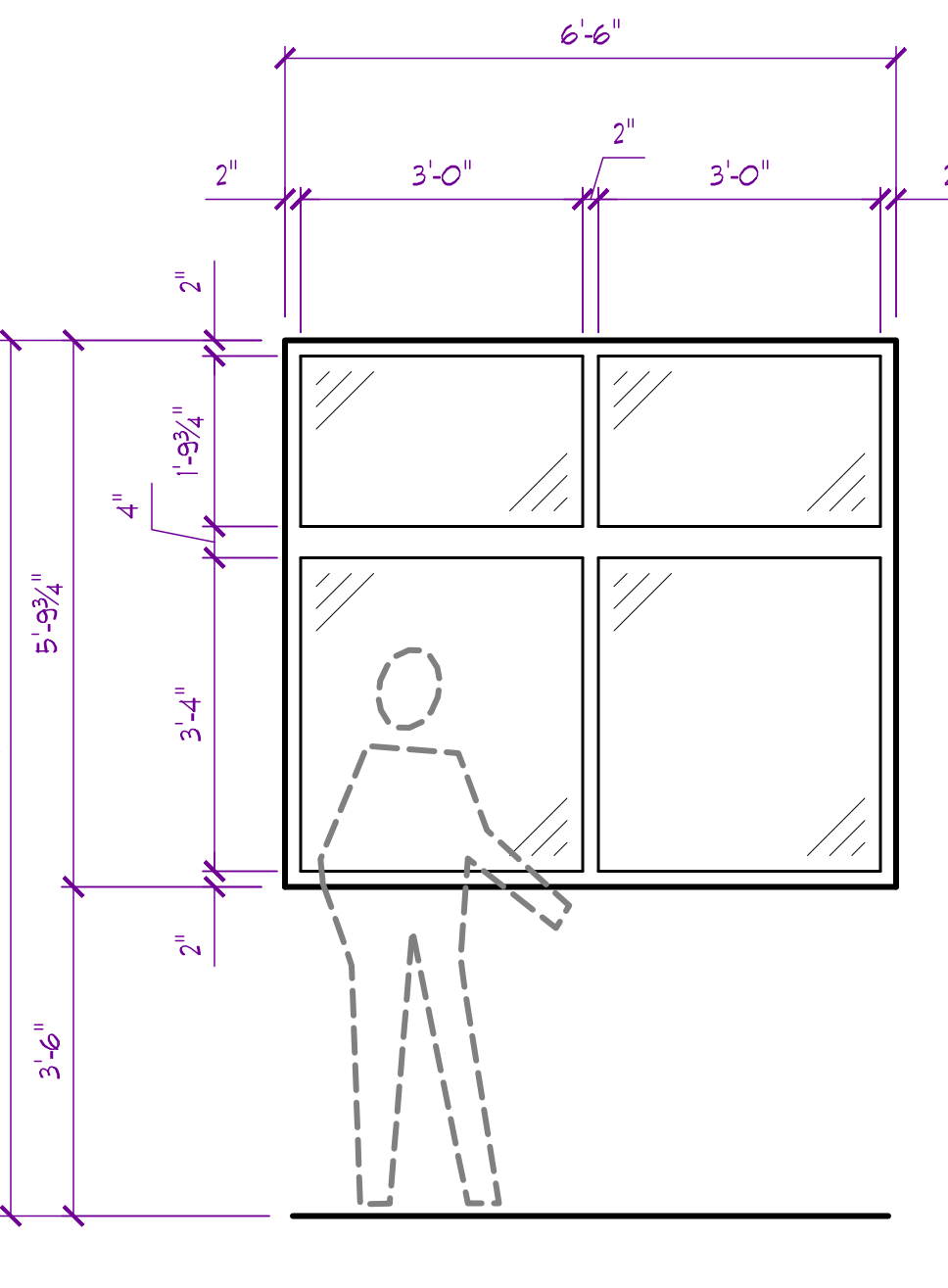
SOLID PANEL TO MATCH FRAME COLOR (TYP. INDICATED BY HATCH)

H
QUANTITY = 1

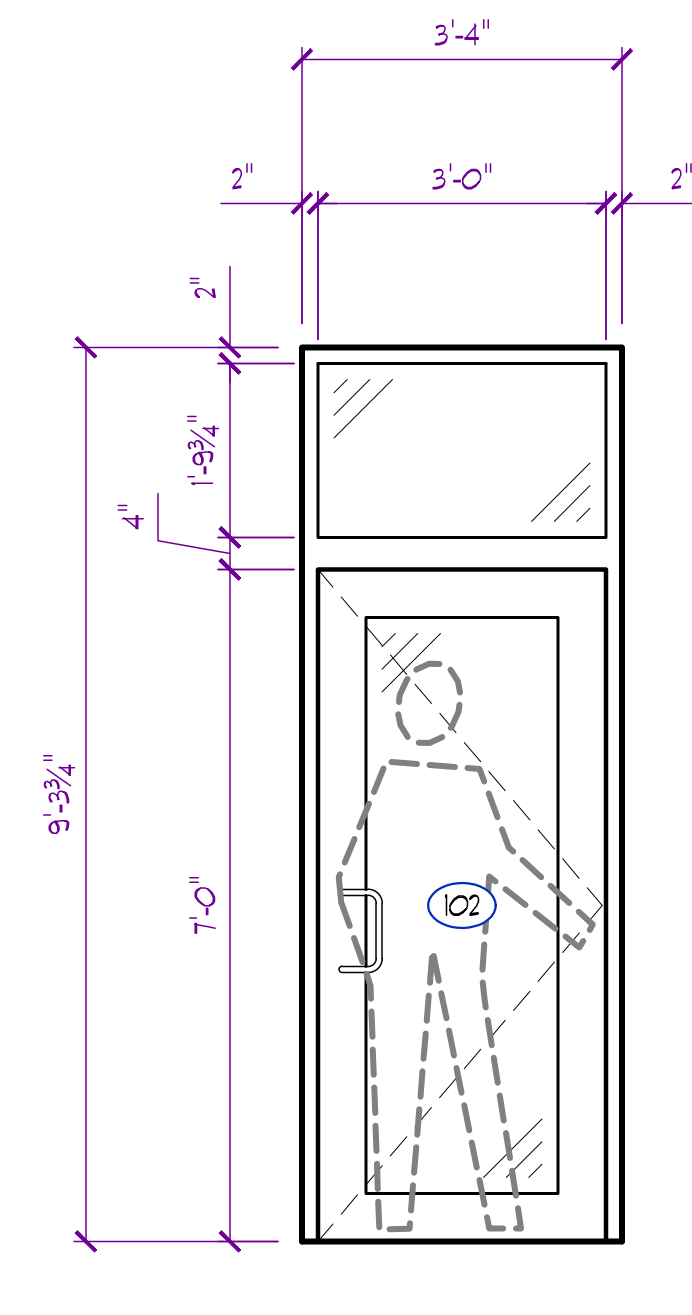


SOLID PANEL TO MATCH FRAME COLOR (TYP. INDICATED BY HATCH)

I
QUANTITY = 1



J
QUANTITY = 1



K
QUANTITY = 1

RELEASED FOR CONSTRUCTION
As Noted on Plans Review
JAY D. BERENDZEN
ARCHITECT
MISSOURI ARC-000588
EXP. 12/31/25

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Discovery Park
Discovery Animal Hospital
1901 NE Trails Edge Boulevard
Lee's Summit, Jackson County, Missouri

ISSUE
ID DESCRIPTION DATE
1 PERMIT 6/14/2024

PROJECT NO. FB42417
SHEET TITLE SECTIONS & DETAILS
SHEET NUMBER A602

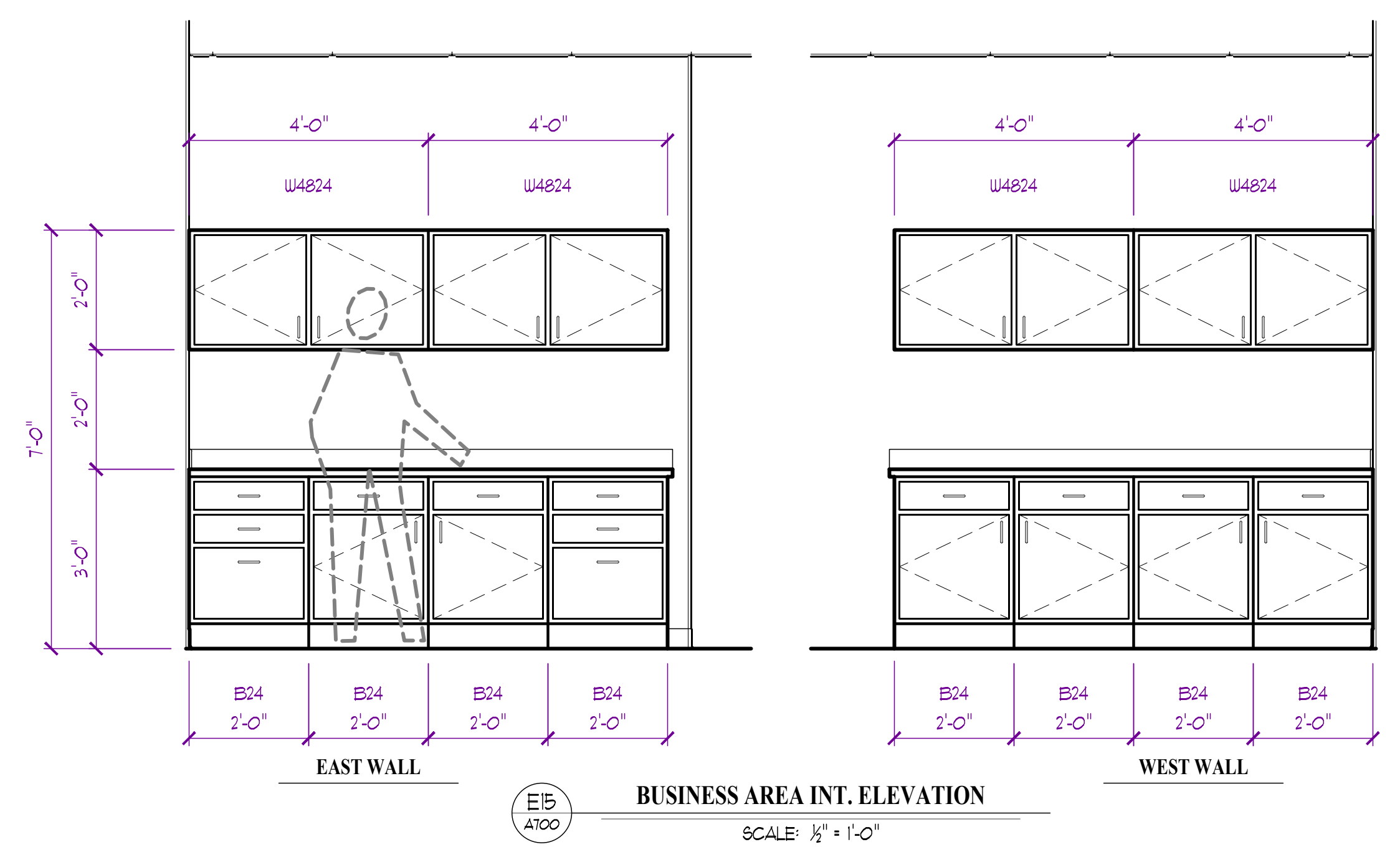
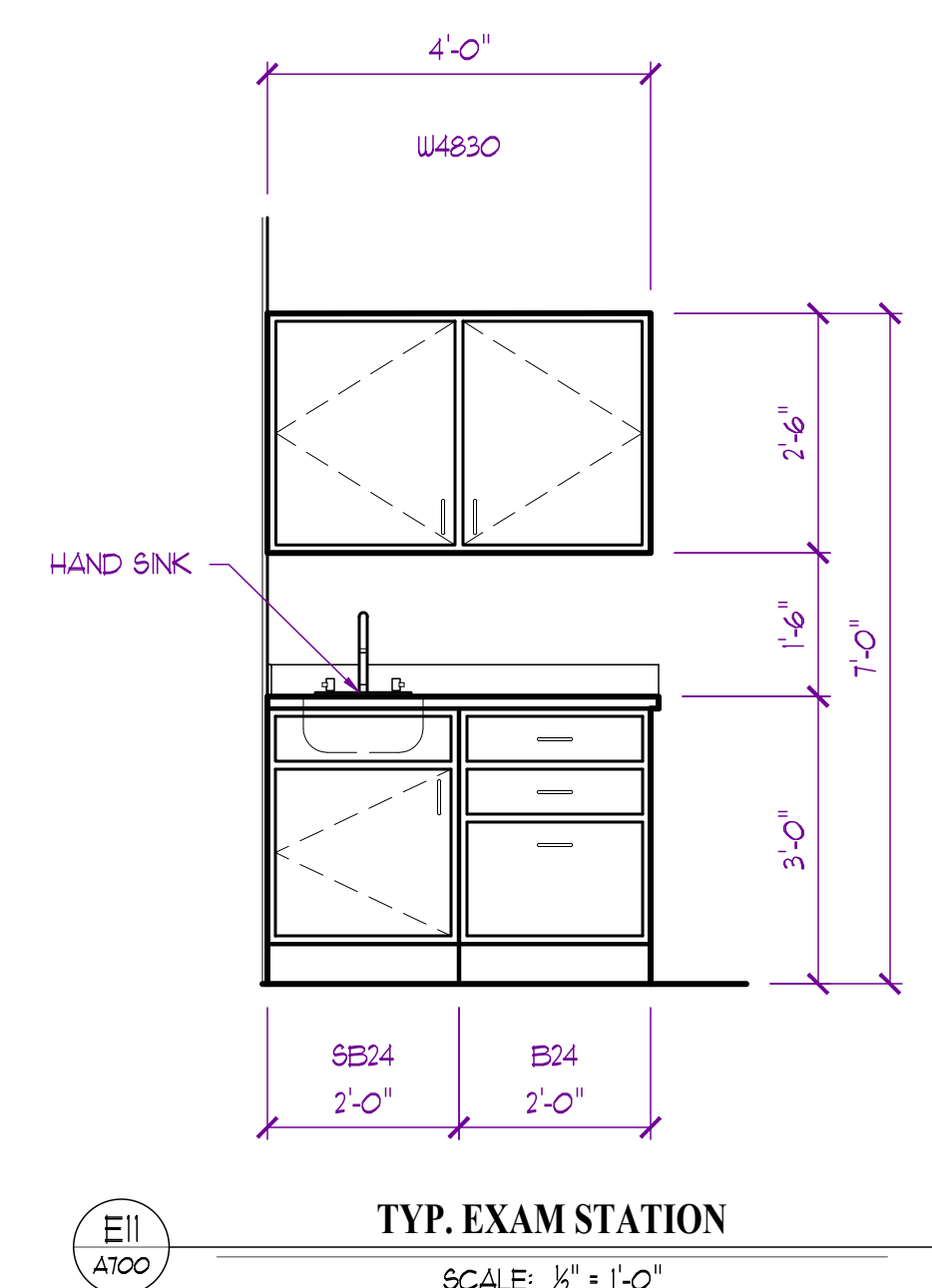
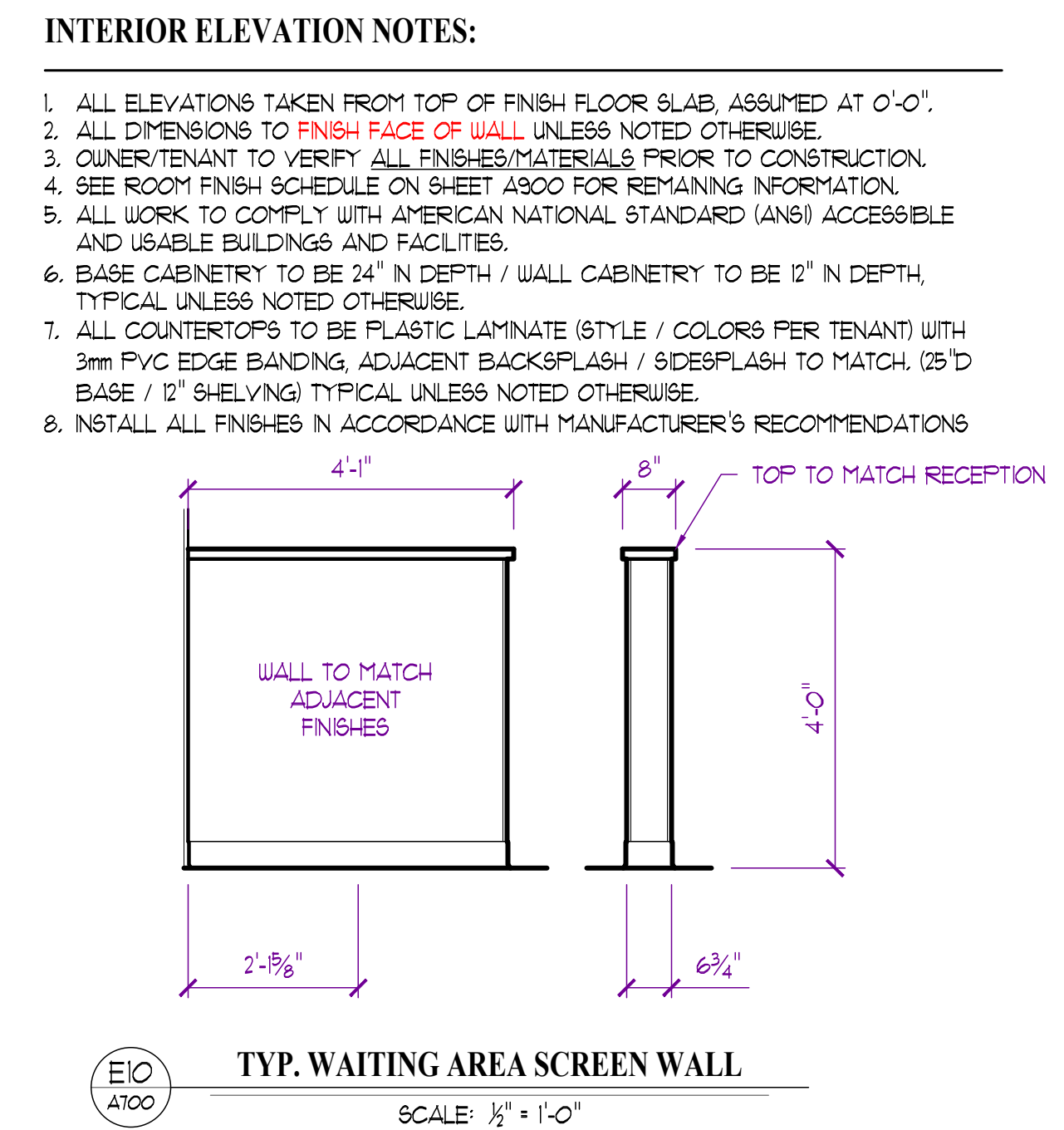
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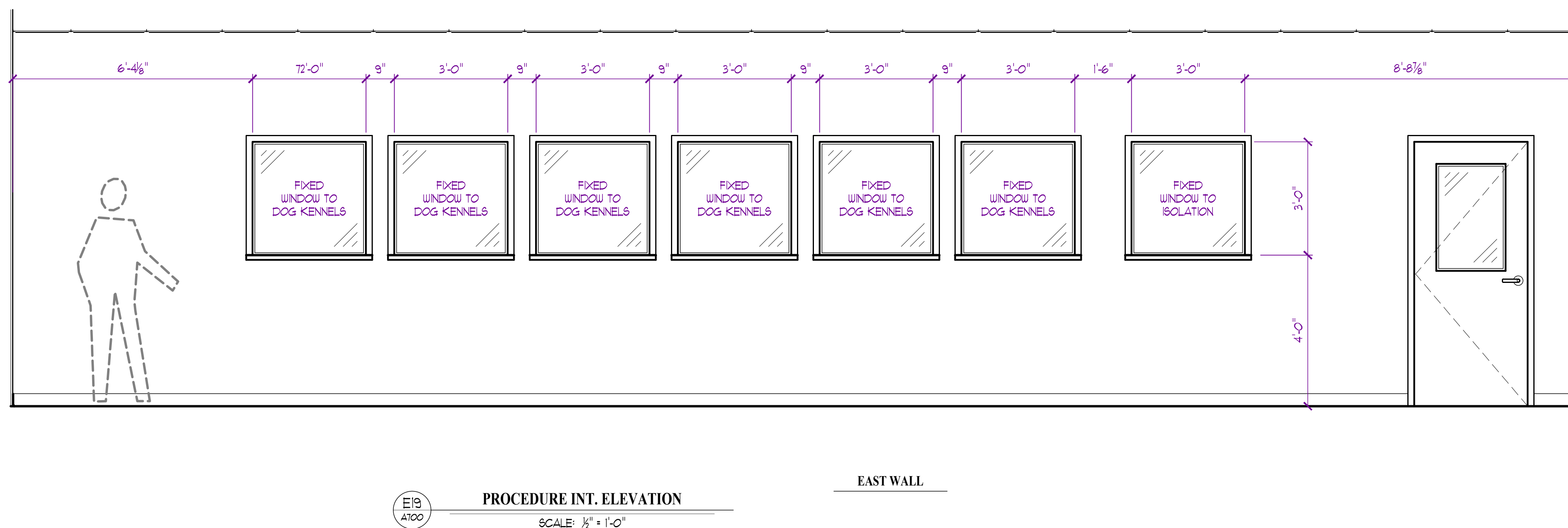
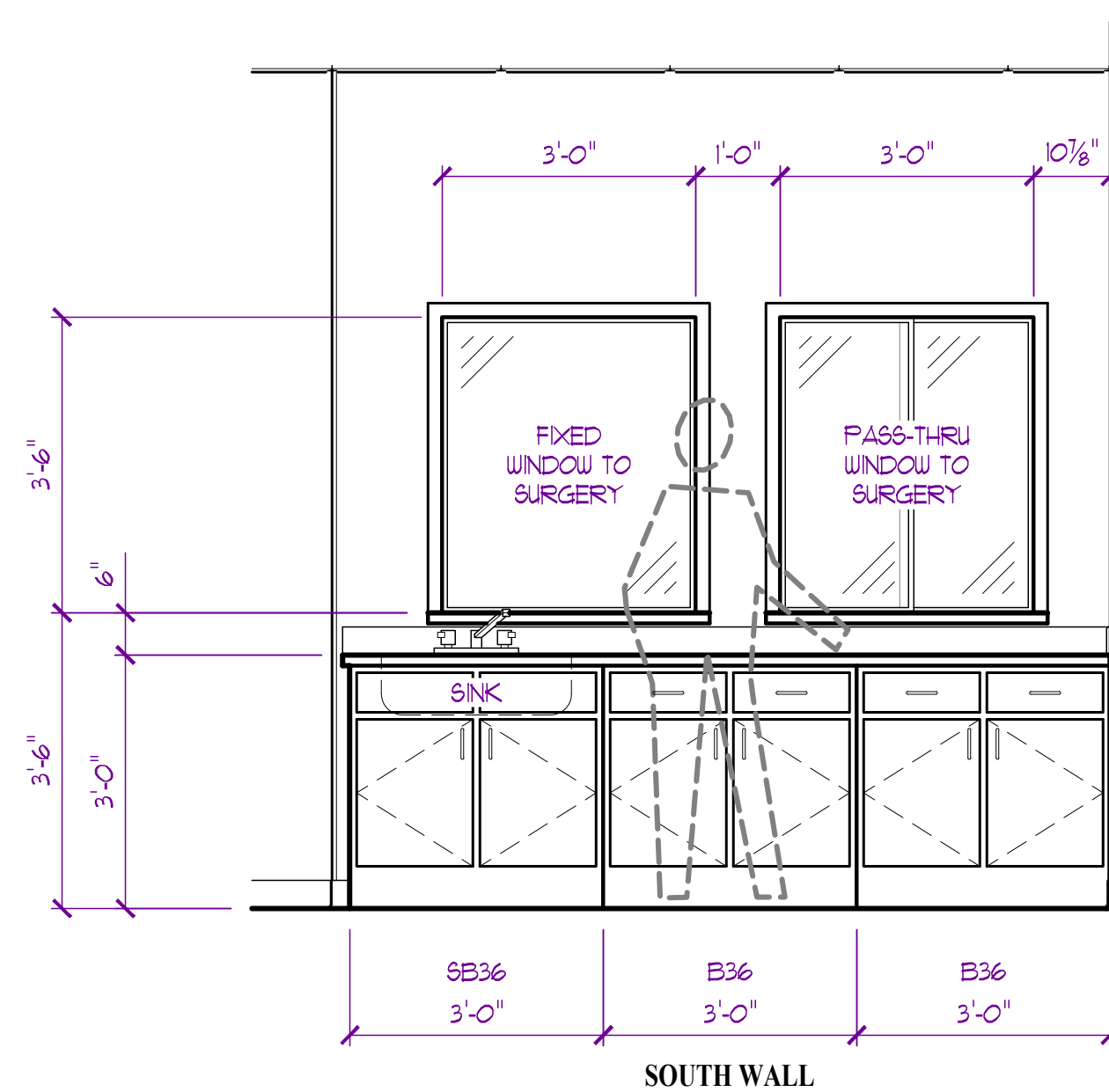
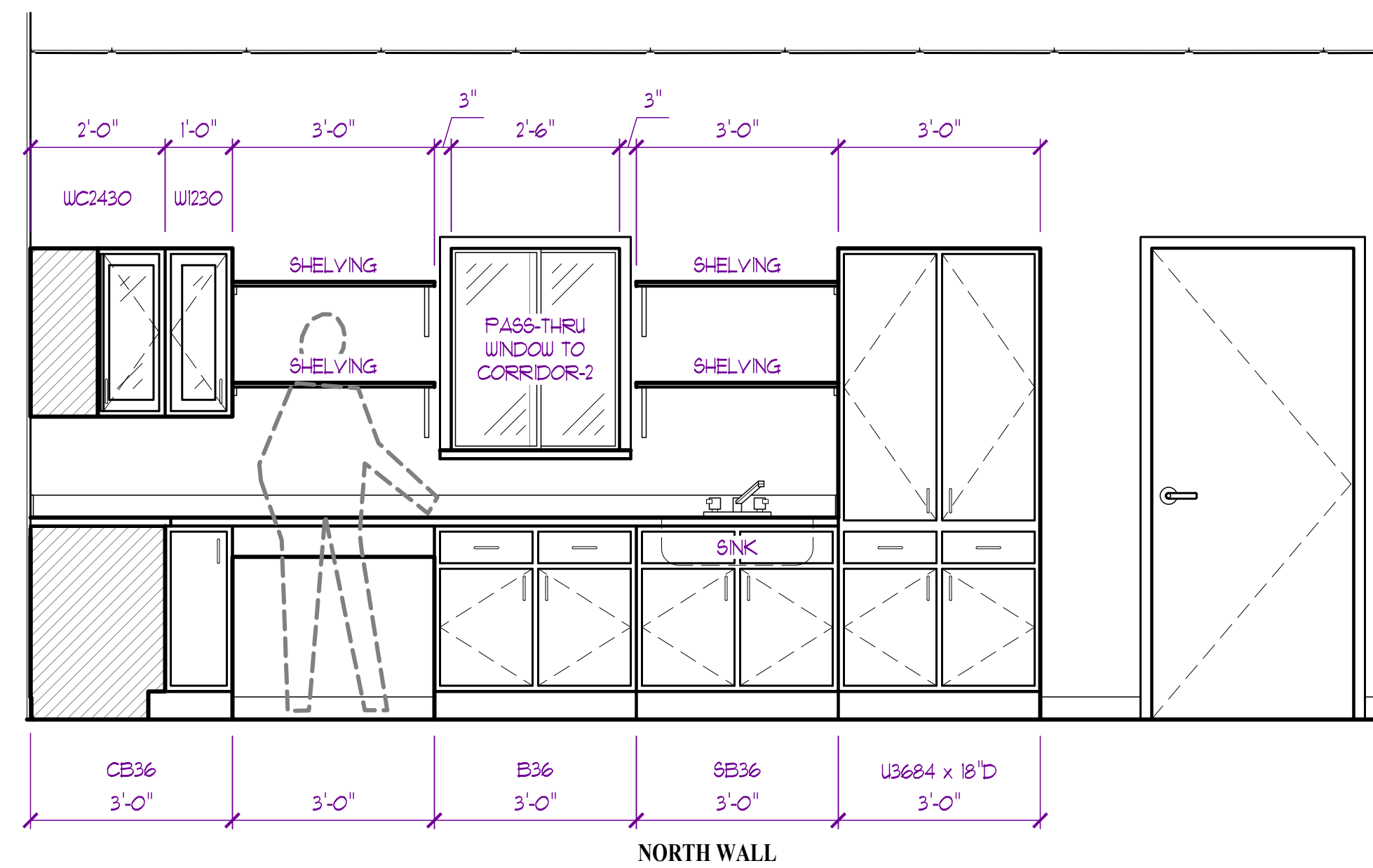
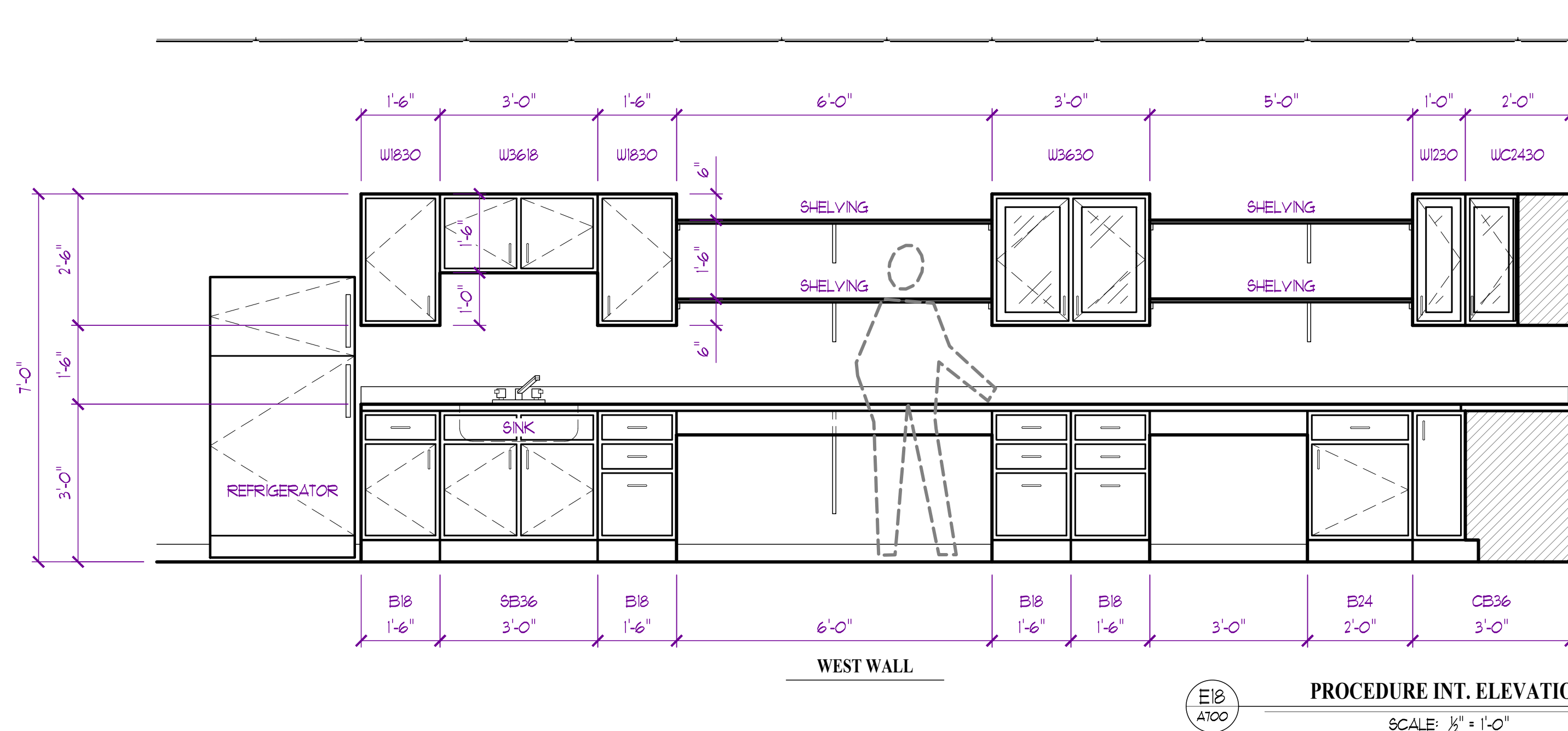
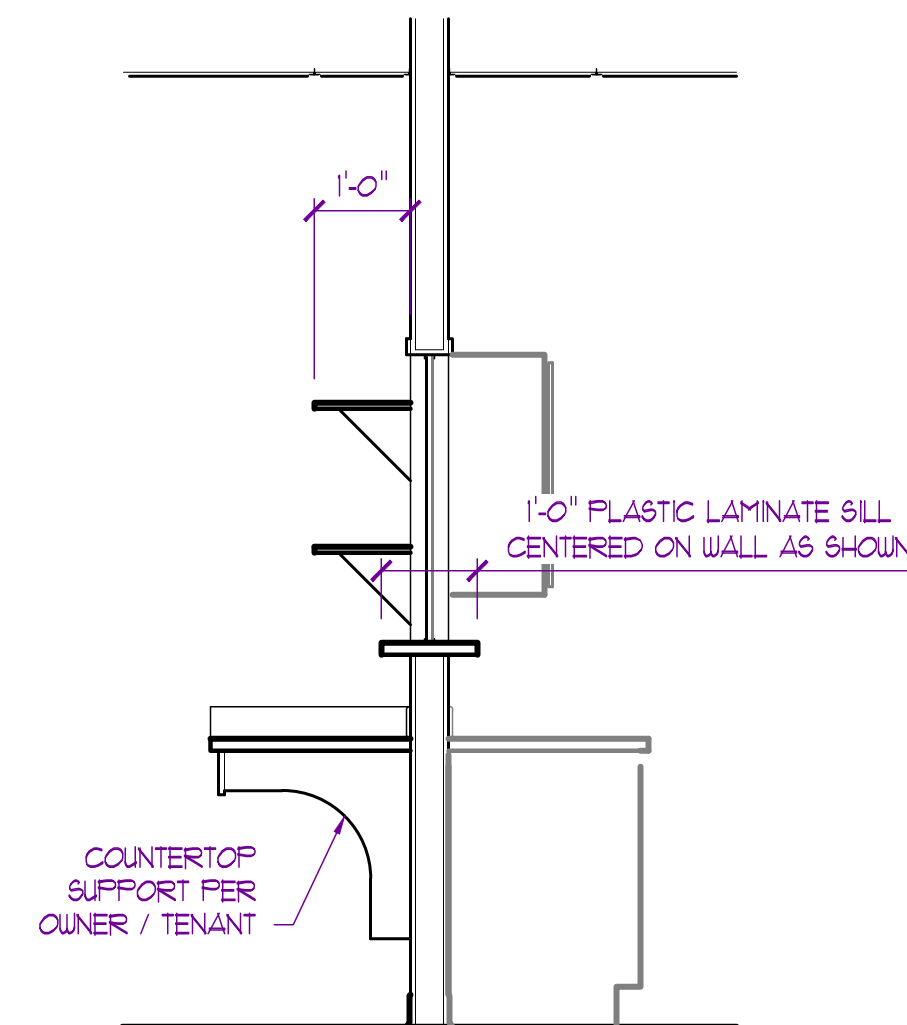
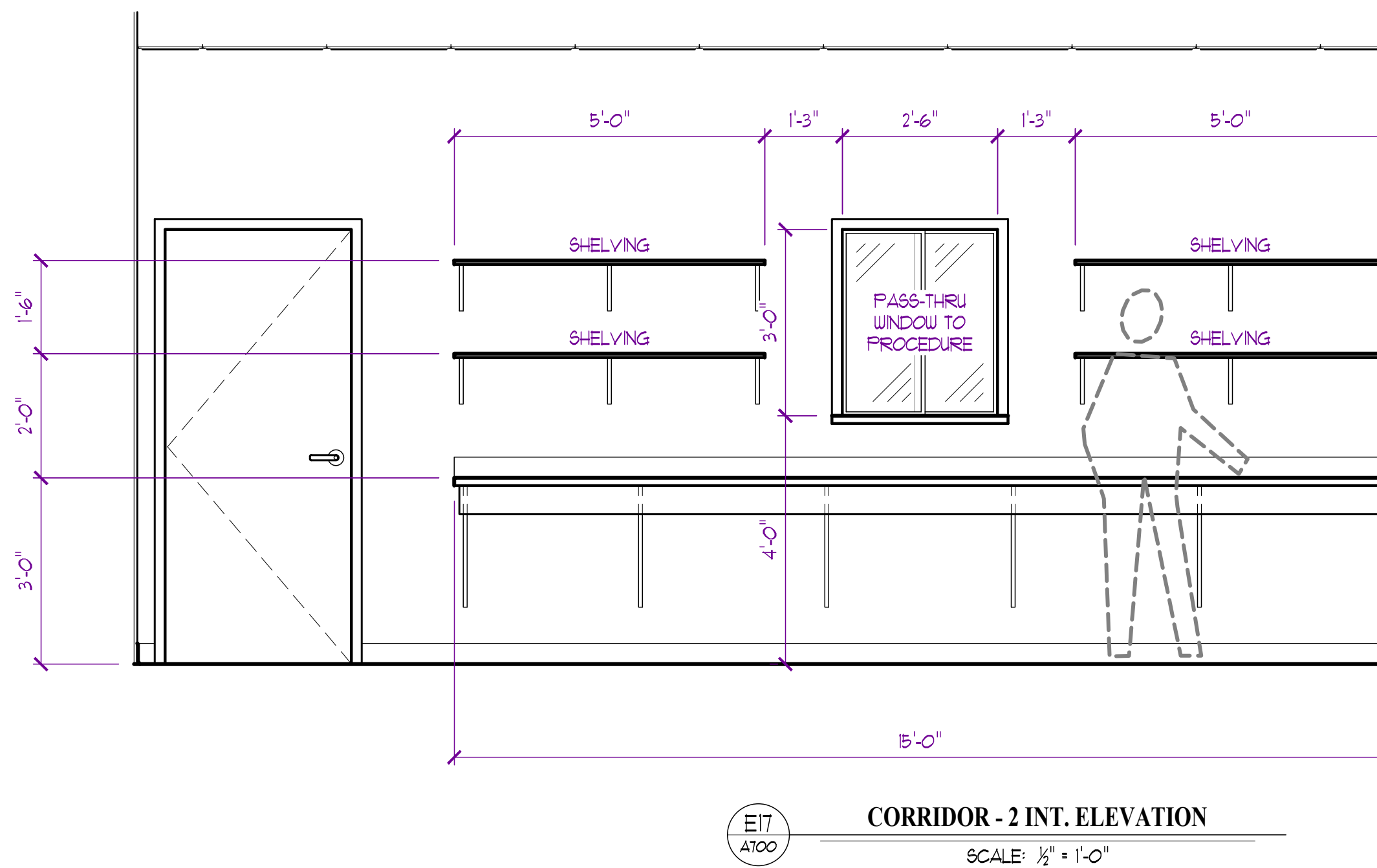
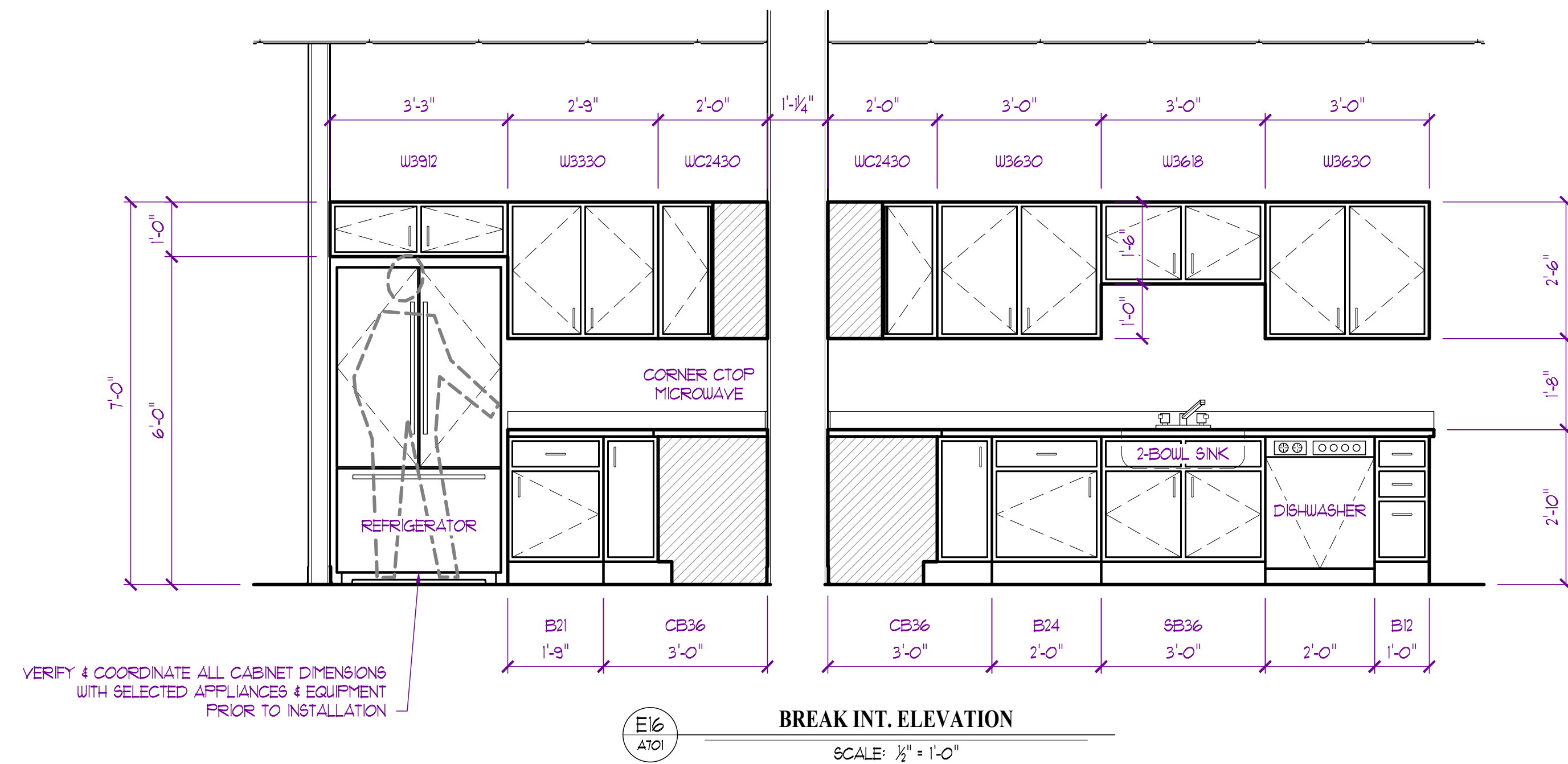


PROJECT

ISSUE		
ID	DESCRIPTION	DATE
1	PERMIT	6/14/2024

SHEET NUMBER





RELEASED FOR CONSTRUCTION
As Noted on Plans Review
Development Services Department
OF Jackson County, Missouri
06/27/2024

JAY D. BERENDZEN
ARCHITECT
NUMBER
2006034588
06-14-2024

EXPIRATION DATE 12-31-24
JAY D. BERENDZEN, ARCHITECT
MISSOURI ARC-000588
EXP. 12/31/25

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PROJECT

Discovery Park
Discovery Animal Hospital
1901 NE Trails Edge Boulevard
Lee's Summit, Jackson County, Missouri

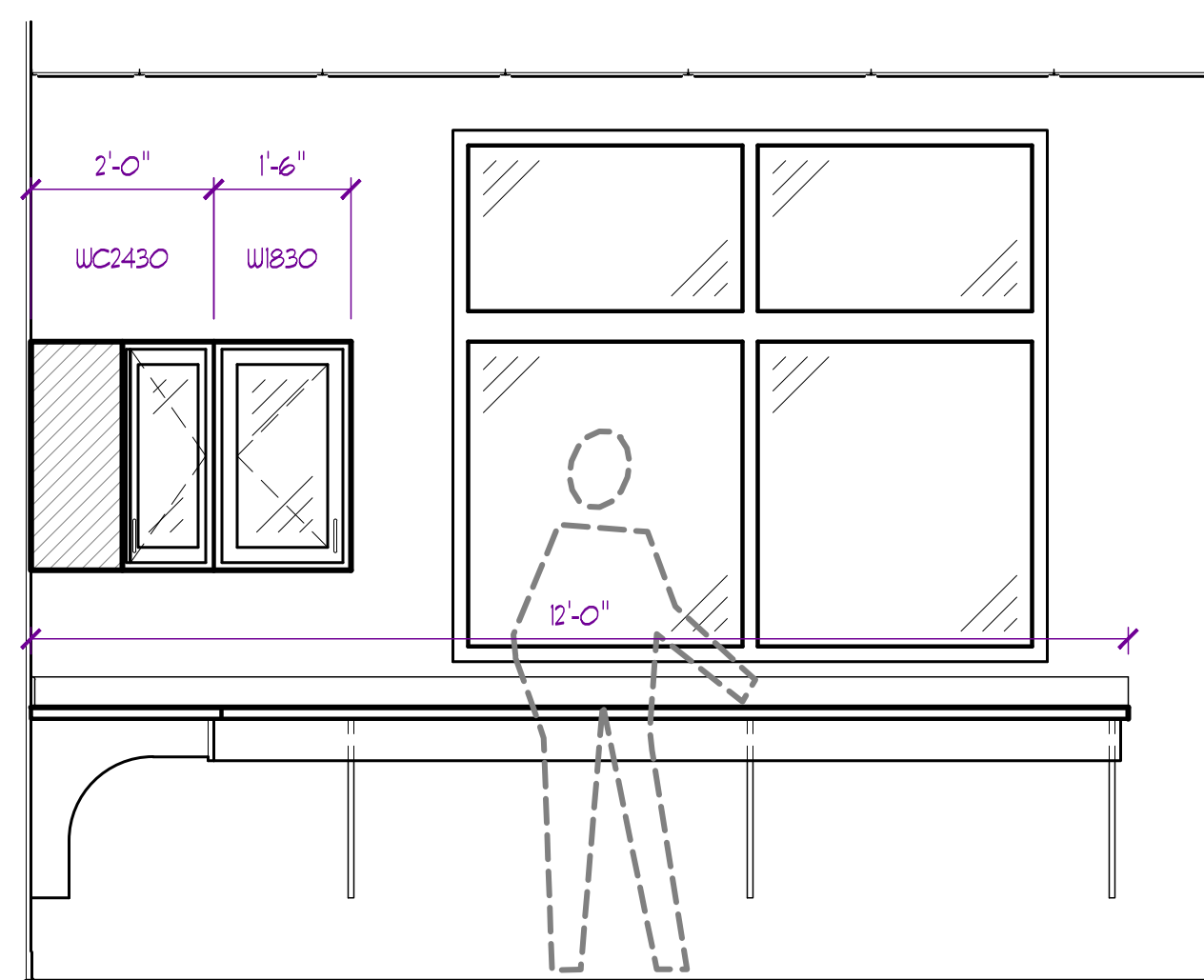
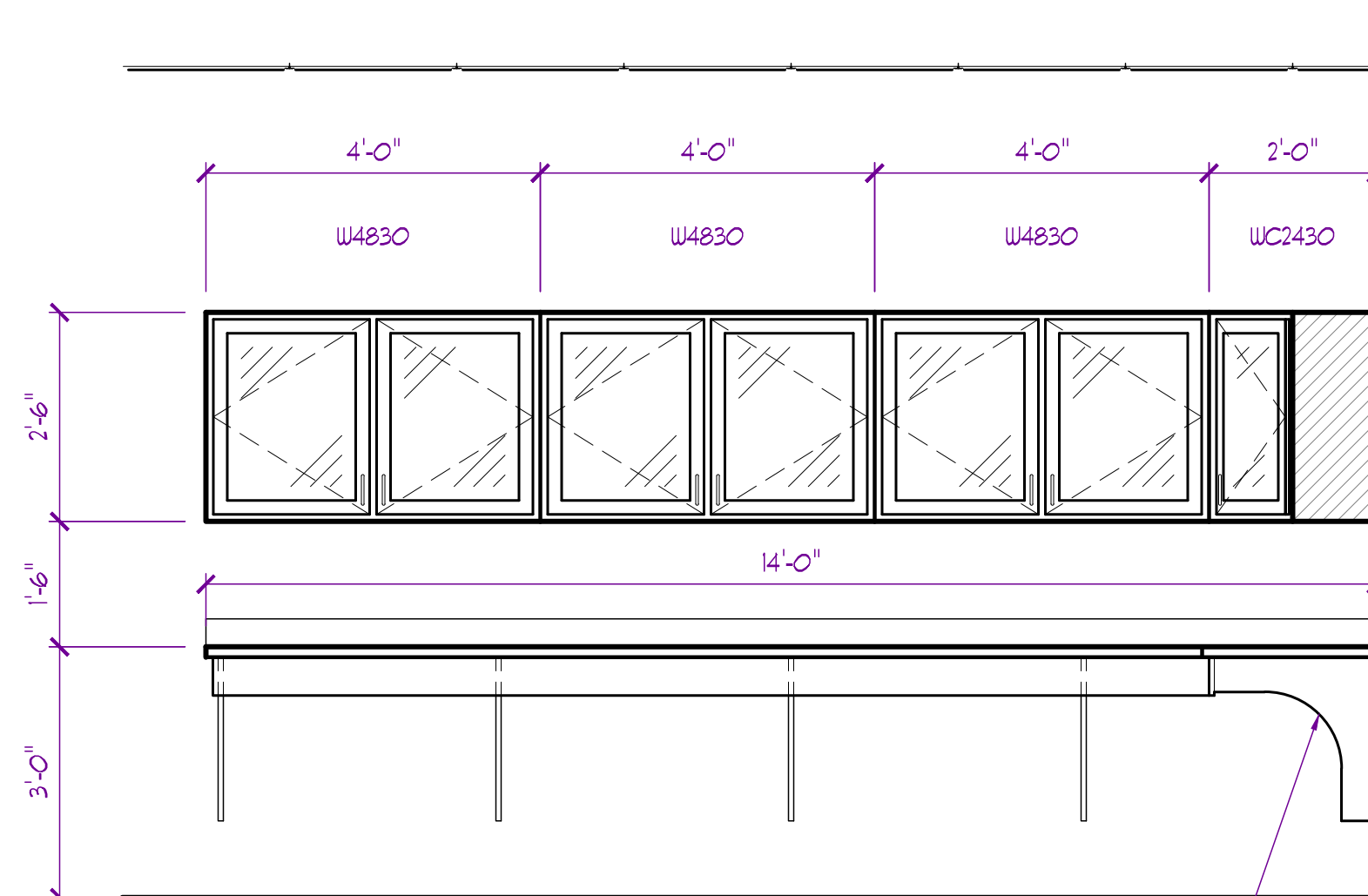
ISSUE

ID	DESCRIPTION	DATE
1	PERMIT	6/14/2024

PROJECT NO.
FB242417

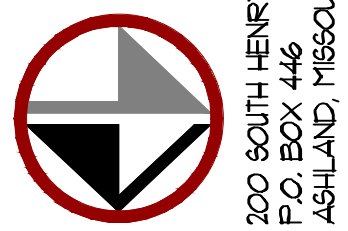
SHEET TITLE
INTERIOR ELEVATIONS

SHEET NUMBER
A701



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PROJECT

Discovery Park
Discovery Animal Hospital
1901 NE Trails Edge Boulevard
Lee's Summit, Jackson County, Missouri

199JF

D	DESCRIPTION	DATE
1	PERMIT	6/14/2024
2	REVISION - 1	8/16/2024

PROJECT NO. _____

FBA2417

SCHEDULES

SHEET NUMBER

A900

1

DOOR SCHEDULE															
No.	DOOR SIZE			DOOR			FRAME			HARDWARE					REMARKS / NOTES
	WIDTH	HEIGHT	THICKNESS	MATERIAL	FINISH	ACTION	MATERIAL	FINISH	WALL THICKNESS	HINGES	LOCKSETS	CLOSER	DOOR STOP	ACCESSORIES	
100	3'-0"	7'-0"	BM	ASF	PF	RHR	ASF	PF		BM	DB-1	CL-1			ACCESS CONTROLS
101	3'-0"	7'-0"	BM	ASF	PF	RHR	ASF	PF		BM	DB-1	CL-1			ACCESS CONTROLS
102	3'-0"	7'-0"	BM	ASF	PF	RHR	ASF	PF		BM	DB-1	CL-1			ACCESS CONTROLS
103	3'-0"	7'-0"	BM	ASF	PF	RHR	ASF	PF		BM	DB-1	CL-1			ACCESS CONTROLS
104	3'-0"	7'-0"	BM	ASF	PF	LHR	ASF	PF		BM	DB-1	CL-1			ACCESS CONTROLS
105	3'-0"	7'-0"	1 3/4"	HM-1	PT	LHR	HMF	PT	MSRY	H-2	SL-1	CL-1			
106	3'-0"	7'-0"	BM	ASF	PF	RHR	ASF	PF		BM	PL-1	CL-1			
107	3'-0"	7'-0"	BM	ASF	PF	LHR	ASF	PF		BM	PL-1	CL-1			
108	3'-0"	7'-0"	1 3/4"	WD-1	STN	LHR	HMF	PT	4.75"	H-1	PL-1	CL-1	DS-2	AC	
109	3'-0"	7'-0"	1 3/4"	WD-1	STN	RH	HMF	PT	4.75"	H-1	PL-1		DS-2	AC	NARROW LITE
110	3'-0"	7'-0"	1 3/4"	WD-1	STN	LH	HMF	PT	4.75"	H-1	PL-1		DS-2	AC	NARROW LITE
111	3'-0"	7'-0"	1 3/4"	WD-1	STN	LH	HMF	PT	4.75"	H-1	PL-1		DS-2	AC	NARROW LITE
112	3'-0"	7'-0"	1 3/4"	WD-1	STN	RH	HMF	PT	4.75"	H-1	PL-1		DS-2	AC	NARROW LITE
113	3'-0"	7'-0"	1 3/4"	WD-1	STN	RH	HMF	PT	4.75"	H-1	PL-1		DS-2	AC	NARROW LITE
114	3'-0"	7'-0"	1 3/4"	WD-1	STN	LH	HMF	PT	4.75"	H-1	PL-1		DS-2	AC	NARROW LITE
115	3'-0"	7'-0"	1 3/4"	WD-1	STN	LHR	HMF	PT	4.75"	H-1	PL-1		DS-2		
116	3'-0"	7'-0"	1 3/4"	WD-1	STN	RH	HMF	PT	4.75"	H-1	PV-1	CL-1	DS-2		
117	3'-0"	7'-0"	1 3/4"	WD-1	STN	LH	HMF	PT	4.75"	H-1	PV-1	CL-1	DS-2		
118	3'-0"	7'-0"	1 3/4"	WD-1	STN	RHR	HMF	PT	4.75"	H-1	PL-1	CL-1	DS-2	AC	HALF LITE
119	3'-0"	7'-0"	1 3/4"	WD-1	STN	RH	HMF	PT	6.75"	H-1	PL-1	CL-1	DS-2	AC	
120	3'-0"	7'-0"	1 3/4"	WD-1	STN	LH	HMF	PT	6.75"	H-1	PL-1		DS-2	AC	NARROW LITE
121	3'-0"	7'-0"	1 3/4"	WD-1	STN	RH	HMF	PT	6.75"	H-1	PL-1		DS-2	AC	NARROW LITE
122	3'-0"	7'-0"	1 3/4"	WD-1	STN	RH	HMF	PT	4.75"	H-1	PL-1	CL-1	DS-1	AC	NARROW LITE
123	3'-0"	7'-0"	1 3/4"	WD-1	STN	LH	HMF	PT	4.75"	H-1	PL-1		DS-1		
124	3'-0"	7'-0"	1 3/4"	WD-1	STN	RH	HMF	PT	4.75"	H-1	PV-1		DS-1		NARROW LITE
125	3'-0"	7'-0"	1 3/4"	WD-1	STN	RHR	HMF	PT	4.75"	H-1	PL-1		DS-1		
126	3'-0"	7'-0"	1 3/4"	WD-1	STN	RH	HMF	PT	4.75"	H-1	PL-1		DS-2		NARROW LITE
127	3'-0"	7'-0"	1 3/4"	WD-1	STN	LH	HMF	PT	4.75"	H-1	PL-1		DS-2		NARROW LITE
128	3'-0"	7'-0"	1 3/4"	WD-1	STN	LH	HMF	PT	4.75"	H-1	PL-1		DS-2	AC	
129	3'-0"	7'-0"	1 3/4"	WD-1	STN	LH	HMF	PT	4.75"	H-1	PL-1		DS-2	AC	NARROW LITE
130	3'-0"	7'-0"	1 3/4"	WD-1	STN	RH	HMF	PT	4.75"	H-1	PV-1		DS-3		
131	3'-0"	7'-0"	1 3/4"	WD-1	STN	RH	HMF	PT	4.75"	H-1	PL-1	CL-1	DS-2	AC	HALF LITE
132	3'-0"	7'-0"	1 3/4"	WD-1	STN	LH	HMF	PT	4.75"	H-1	PL-1	CL-1	DS-2	AC	HALF LITE
133	3'-0"	7'-0"	1 3/4"	HM-1	PT	RHR	HMF	PT	4.75"	H-1	PL-1	CL-1		AIR	HALF LITE
134	3'-0"	7'-0"	1 3/4"	WD-1	STN	LH	HMF	PT	4.75"	H-1	PL-1	CL-1	DS-2	AC	HALF LITE
135	3'-0"	7'-0"	BM	BM	PF	DA	HMF	PT	4.75"	BM	PPL-1	CL-2	DS-2	SD	HALF LITE
BM By Manufacturer															
DOORS:															
ASF	Aluminum Glass Storefront														
WD-1	Solid Core Wood Door														
HM-1	Insulated Hollow Metal Door														
HM-1	Hollow Metal Door														
FRAMES:															
HMF	Hollow Metal Frame Painted														
LOCKS & OPERATORS:															
PL-1	Passage Lockset														
PV-1	Office / Privacy Lockset														
DB-1	Dead Bolt														
PPL-1	Push / Pull Plates														
Keyed Deadbolt w/ Deadbait Push Paddle															
4"x16" Standard Push/Pull Plates w/ Optional Kick Plates Each Side															
HARDWARE:															
H-1	Hinge														
H-2	Hinge														
C-1	Closer														
C-2	Closer														
DS-1	Door Stop														
DS-2	Door Stop														
DS-3	Door Stop														
1 1/2" Pair Full Mortise Template Ball Bearing Standard Weight Hinges, Finish Per Owner / Tenant															
3 Pair Full Mortise Template Ball Bearing Heavy Weight Hinges, Finish Per Owner / Tenant															
Surface Closer (Finish to Match Adjacent Hardware)															
Double Action Adjustable Surgical Door Closer by Door Manufacturer															
Wall Mounted Door Stop															
Floor Mounted Door Stop															
Hinge Mounted Door Stop															
FINISHES:															
PF	Pre-Finished By Manufacturer (per Owner / Tenant)														
PT	Paint (per Owner / Tenant)														
ACCESSORIES:															
AC	Acoustic Set														
AIR	Lab Door														
SD	Surgical Door														
Acoustical Sweep & Gasketing															
Laboratory Door, Gasketing to Stop Air Transfer															
Double Action Surgical Door w/ Closer															
NOTES:															
1 Set all Thresholds in Sealant															
2 All Doors and Hardware shall meet Accessibility Standards															

Mechanical - Electrical - Plumbing Design Drawings for

Discovery Animal Hospital

1901 NE Trails Edge Avenue
Lee's Summit, Jackson County, MO 64064

GENERAL MEP SPECIFICATIONS

1.

GENERAL
- 1.1.

ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH LOCALLY ADOPTED CODES AND ORDINANCES.
- 1.2.

IT IS THE RESPONSIBILITY OF CONTRACTOR TO REVIEW AND UNDERSTAND ALL DRAWINGS AND SPECIFICATIONS IN CONTRACT DOCUMENTS. EACH CONTRACTOR IS RESPONSIBLE FOR ALL WORK ASSOCIATED WITH THEIR TRADE, REGARDLESS OF WHERE WORK IS DEPICTED IN PROJECT DRAWINGS OR SPECIFICATIONS.
- 1.3.

LAYOUT OF SYSTEMS SHOWN ON PLANS ARE APPROXIMATE AND SCHEMATIC IN NATURE. ALL SYSTEMS WILL NEED TO BE FIELD-COORDINATED. CONTRACTOR SHALL INCLUDE THIS COORDINATION IN THEIR SCOPE AND INCLUDE ALL COSTS OF MODIFYING LAYOUT AS REQUIRED IN THEIR BID. PLANS ARE NOT INTENDED TO BE SHOP DRAWINGS FROM WHICH MATERIALS CAN BE ORDERED, FABRICATED, OR INSTALLED WITHOUT ADDITIONAL FIELD MEASUREMENTS AND COORDINATION.
- 1.4.

NOT ALL SPECIFIC PIECES AND COMPONENTS OF EACH SYSTEM ARE DETAILED OR OUTLINED ON PLANS. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY PARTS AND LABOR TO PRODUCE A COMPLETE AND FULLY OPERATIONAL SYSTEM UNLESS STATED OTHERWISE ON PLANS. CONTRACTOR IS TO PROVIDE AND INCLUDE ALL EQUIPMENT AND MATERIAL NEEDED TO COMPLETE WORK ASSOCIATED WITH THEIR BID UNLESS ANY ITEMS ARE SPECIFICALLY NOTED ON PLANS AS PROVIDED BY OTHERS. ALL MATERIALS TO BE NEW, FIRST CLASS, AND INSTALLED PER MANUFACTURER'S PUBLISHED INSTRUCTIONS.
- 1.5.

WHERE CONFLICTS EXIST BETWEEN MEP PLANS AND CIVIL, ARCHITECTURAL, OR STRUCTURAL PLANS, NOTIFY MEP ENGINEER OF DISCREPANCIES FOR CLARIFICATION PRIOR TO PERFORMING ANY WORK THAT MAY CONTRADICT INFORMATION ELSEWHERE IN THE PROJECT PLANS.
- 1.6.

THESE PLANS ARE NOT TO BE SCALED. SEE ARCHITECTURAL PLANS FOR DIMENSIONS. WHERE THERE IS A CONFLICT BETWEEN ARCHITECTURAL DIMENSIONS AND MEP DIMENSIONS, ARCHITECTURAL SHALL GOVERN.
- 1.7.

CONTRACTOR IS TO INCLUDE IN THEIR SCOPE THE COST OF ALL PERMITS, INSPECTIONS, METERING, TAPS, ETC. ASSOCIATED WITH THEIR WORK.
- 1.8.

CONTRACTOR IS RESPONSIBLE FOR ALL EXCAVATION, CUTTING, CORING, PATCHING, AND BACKFILL REQUIRED TO COMPLETE THEIR WORK, UNLESS NOTED OTHERWISE ON PLANS.
- 1.9.

SPECIFIC EQUIPMENT MANUFACTURERS AND/OR MODEL NUMBERS LISTED ON PLANS ARE TO ESTABLISH A BASIS-OF-DESIGN FOR QUALITY AND PERFORMANCE. VERIFY THAT SUBSTITUTIONS WILL BE ACCEPTABLE PRIOR TO PURCHASE & INSTALLATION.
- 1.10.

NOTIFY ENGINEER OF ANY MAJOR PLAN DISCREPANCIES OR CONFLICTS PRIOR TO PROVIDING BIDS OR COMPLETING ANY WORK.
- 1.11.

SEE DISCIPLINE SHEETS FOR ADDITIONAL TRADE SPECIFIC SPECIFICATIONS.
- 1.12.

WHERE SHUTDOWN OF ANY EXISTING UTILITY OR SERVICE TO BUILDING IS REQUIRED FOR COMPLETION OF WORK, COORDINATE OUTAGE WITH OWNER AS TO NOT DISRUPT TYPICAL OPERATIONS.
2.

WORKMANSHIP
- 2.1.

SYSTEMS SHALL BE INSTALLED IN A FIRST-CLASS MANNER USING BEST ACCEPTABLE METHODS AND PRACTICES.
- 2.2.

ALL SYSTEMS SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO BUILDING ORIENTATION. COMPONENTS SHALL BE INSTALLED LEVEL AND PLUMB WITH ATTENTION GIVEN TO OVERALL AESTHETICS.
- 2.3.

CONTRACTOR IS RESPONSIBLE FOR COORDINATING EQUIPMENT LOCATIONS AND SYSTEM ROUTING WITH OTHER TRADES PRIOR TO INSTALLATION.
- 2.4.

CONTRACTOR TO GUARANTEE ALL MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE THE COMPLETED PROJECT IS RELEASED TO THE OWNER, UNLESS NOTED OTHERWISE ON PLANS.
- 2.5.

DURING INSTALLATION OF MATERIALS OR ACTIVITIES IN NEW WORK SCOPE, AVOID DAMAGING EXISTING SURFACES AND EQUIPMENT TO REMAIN. ANY DAMAGE TO EXISTING SURFACES OR EQUIPMENT SHALL BE CORRECTED AT NO COST TO OWNER.

DEFERRED SUBMITTAL NOTES

1.

FIRE ALARM SYSTEM
- 1.1.

FIRE ALARM SYSTEM COMPONENTS SHOWN (IF APPLICABLE) ARE GENERAL AND SCHEMATIC IN NATURE, SHOWN FOR APPROXIMATE ROUGH-IN LOCATIONS AND QUANTITIES ONLY. CONTRACTOR TO VERIFY EXACT DEVICE LOCATIONS AND REQUIREMENTS WITH FIRE ALARM SYSTEM DESIGNER OF RECORD PRIOR TO ROUGH-IN.
- 1.2.

FIRE ALARM CONTRACTOR SHALL PROVIDE DEFERRED SUBMITTAL PACKAGE FOR FIRE ALARM SYSTEM. SUBMITTAL SHALL INCLUDE BATTERY CALCULATIONS, VOLTAGE DROP CALCULATIONS, EQUIPMENT SPECIFICATIONS FOR DEVICES AND PANELS, ETC. DESIGN SHALL BE SEALED BY A QUALIFIED DESIGN PROFESSIONAL LICENSED BY THE STATE.
2.

FIRE SPRINKLER SYSTEM
- 2.1.

WHERE COMBINED FIRE & DOMESTIC WATER SUPPLY LINES ARE SHOWN ON PLANS, INSTALLING CONTRACTOR SHALL VERIFY WITH FIRE SPRINKLER CONTRACTOR THAT INCOMING LINE SIZE IS ADEQUATE FOR FIRE SUPPRESSION SYSTEM.
- 2.2.

FIRE SPRINKLER CONTRACTOR TO PROVIDE DEFERRED SUBMITTAL PACKAGE FOR FIRE SPRINKLER SYSTEM. SUBMITTAL SHALL INCLUDE HYDRAULIC CALCULATIONS AND SPRINKLER SYSTEM DRAWINGS SEALED BY A QUALIFIED DESIGN PROFESSIONAL LICENSED BY THE STATE.

REFERENCED CODES IN EFFECT

PROJECT HAS BEEN DESIGNED IN COMPLIANCE WITH THE FOLLOWING CODES LISTED BELOW, BUT THIS IS NOT AN EXHAUSTIVE LIST. PROJECT SHALL COMPLY WITH ALL APPLICABLE CODES, STANDARDS, AND LOCAL REQUIREMENTS.

- 2018 INTERNATIONAL MECHANICAL CODE
- 2018 INTERNATIONAL PLUMBING CODE
- 2018 INTERNATIONAL FUEL GAS CODE
- 2018 INTERNATIONAL FIRE CODE
- 2017 NATIONAL ELECTRIC CODE

FIRE RATED PENETRATION NOTES

- THIS BUILDING CONTAINS FIRE RATED ASSEMBLIES. SEE ARCHITECTURAL PLANS FOR LOCATIONS AND DETAILS.
- A UL-LISTED FIRESTOP SYSTEM SHALL BE INSTALLED AT EACH PENETRATION OF A HORIZONTAL OR VERTICAL RATED ASSEMBLY IN ACCORDANCE WITH ASTM E814 OR UL 1479.
- EACH CONTRACTOR IS RESPONSIBLE FOR PROVIDING PROTECTION FOR THEIR PENETRATIONS THRU RATED ASSEMBLIES.
- GENERAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND MAINTAINING A CATALOG OF ALL UL LISTED FIRESTOP ASSEMBLIES, AND KEEPING A PHYSICAL COPY OF DETAILS FOR EACH USED FIRESTOP ASSEMBLY ON SITE FOR REFERENCE.

SHEET INDEX

SHEET #	SHEET NAME
MEP1	MECHANICAL ELECTRICAL PLUMBING COVER SHEET
MEP2	SITE UTILITY - SITE LIGHTING PLAN
MEP3	SITE LIGHTING PLAN
M101	HVAC PLAN
M501	HVAC DETAILS & SCHEDULES
EP101	POWER PLAN
EL101	LIGHTING PLAN
E501	ELECTRICAL SCHEDULES
E601	ELECTRICAL DETAILS
PS101	SANITARY SEWER PLAN
PW101	WATER & GAS PLAN
P501	PLUMBING DETAILS & SCHEDULES

RELEASED FOR CONSTRUCTION
As Noted on Plans Review

Professional Services Department
Missouri Department of Transportation

STATE OF MISSOURI

JAMES P. WATSON

NUMBER
PE-2015017071

PROFESSIONAL ENGINEER

James Watson, P.E. June 14, 2024
PE-2015017071
MO Certificate of Authority # 2018029680

J-SQUARED
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2400 Bluff Creek Drive, Suite 101
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J2 PROJECT No:	J21209
J2 DESIGN:	ACW

ISSUE TITLE	DATE
PERMIT SET	06 / 14 / 2024

Mechanical - Electrical - Plumbing Design Drawings for

Discovery Animal Hospital

1901 NE Trails Edge Avenue
Lee's Summit, Jackson County, MO 64064

SHEET TITLE

MECHANICAL
ELECTRICAL
PLUMBING
COVER SHEET

SHEET NUMBER

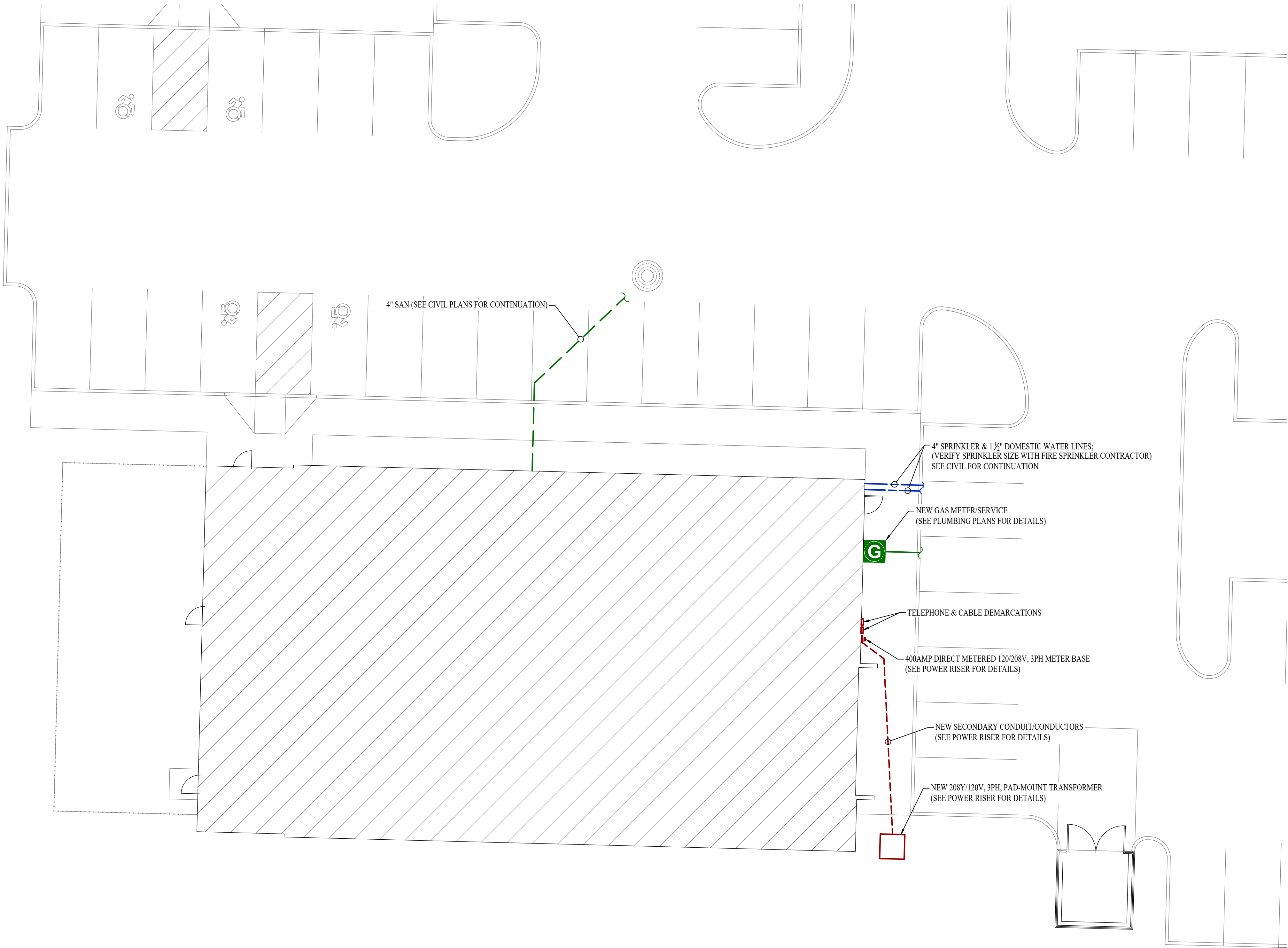
MEP1

SITE UTILITIES PLAN GENERAL NOTES:

1. REFER TO CIVIL PLANS FOR EXACT UTILITY LOCATIONS, CONNECTIONS, DETAILS, ETC.

SITE PLAN SYMBOL LEGEND

- SANITARY SEWER PIPING
- COLD WATER LINE
- Ⓜ WATER METER
- ⋈ VALVE
- ... GAS LINE
- ⓐ GAS METER
- ✕ TIE INTO EXISTING
- ELECTRIC
- PX-XX CIRCUIT TAG



SITE UTILITIES PLAN

SCALE: 1" = 10 ft

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Professional Services Department
Missouri
June 14, 2024

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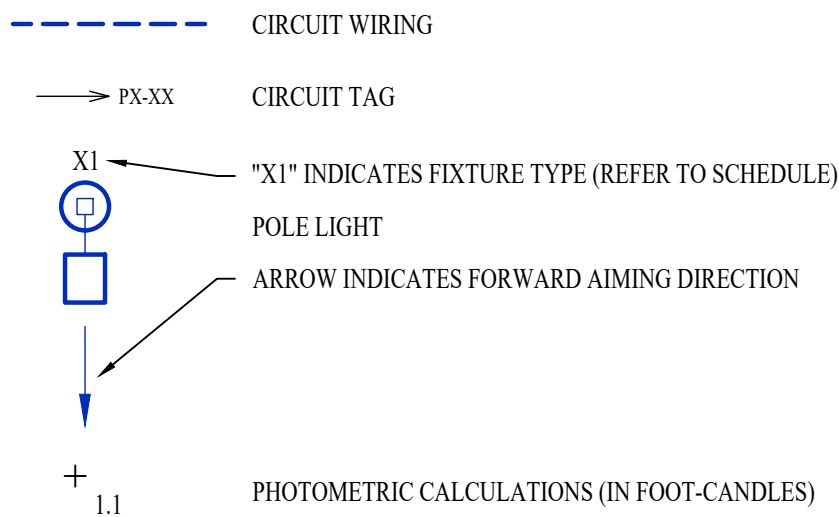
SHEET TITLE

SITE UTILITIES
PLAN

SHEET NUMBER

MEP2

SITE LIGHTING PLAN SYMBOL LEGEND



SITE LIGHTING PLAN GENERAL NOTES:

- SITE PHOTOMETRIC VALUES SHOWN HAVE BEEN CALCULATED PER SPECIFIED LIGHT FIXTURES AT INDICATED MOUNTING HEIGHTS. ANY CHANGES OR ALTERATIONS TO LIGHTING LAYOUT SHOWN WILL REQUIRE RECALCULATING SITE PHOTOMETRICS AND WILL THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR / EQUIPMENT SUPPLIER.
- PHOTOMETRIC CALCULATIONS SHOWN DO NOT INCLUDE EXISTING LIGHT FIXTURE(S), ONLY NEW POLE LIGHT FIXTURE(S) SHOWN.
- SEE SHEET EL101 FOR BUILDING MOUNTED EXTERIOR LIGHT FIXTURE CIRCUITING, LOCATIONS, AND ADDITIONAL DETAILS.

SITE LIGHTING PLAN KEY NOTES:

- ① 1" CONDUIT WITH (2) #10 CU. & (1) #10 CU. EQ. GRD.

POLE HEIGHT	"X" DEPTH
10ft - 14ft	4'-6"
15ft - 20ft	6'-0"
21ft - 25ft	7'-0"
26ft - 30ft	8'-0"

POLE MUST MEET EPA RATING FOR 80MPH WIND (ASCE 7-93) WITH SPECIFIED HEAD CONFIGURATION

PVC CONDUIT STUBBED UP ADJACENT TO HANDHOLE (NUMBER & SIZE REQUIRED)

HANDHOLE @ COVER PLATE

POLE ANCHOR BOLTS PER MANUFACTURER RECOMMENDATIONS

1/2" CHAMFER ALL EDGES

24" MIN. TO CURB / PAVING

CIRCUIT CONDUIT & CONDUCTORS TO POWER SOURCE / NEXT POLE

ATTACH COPPER EQUIPMENT GROUND CONDUCTOR TO INTERNAL LUG WELDED TO INTERIOR OF POLE

TYP. POLE BASE REINFORCING:
#3 HORIZONTAL TIES (20") AT 12" O.C.
w/ #4 VERTICAL BARS AT PERIMETER AT 6" O.C.

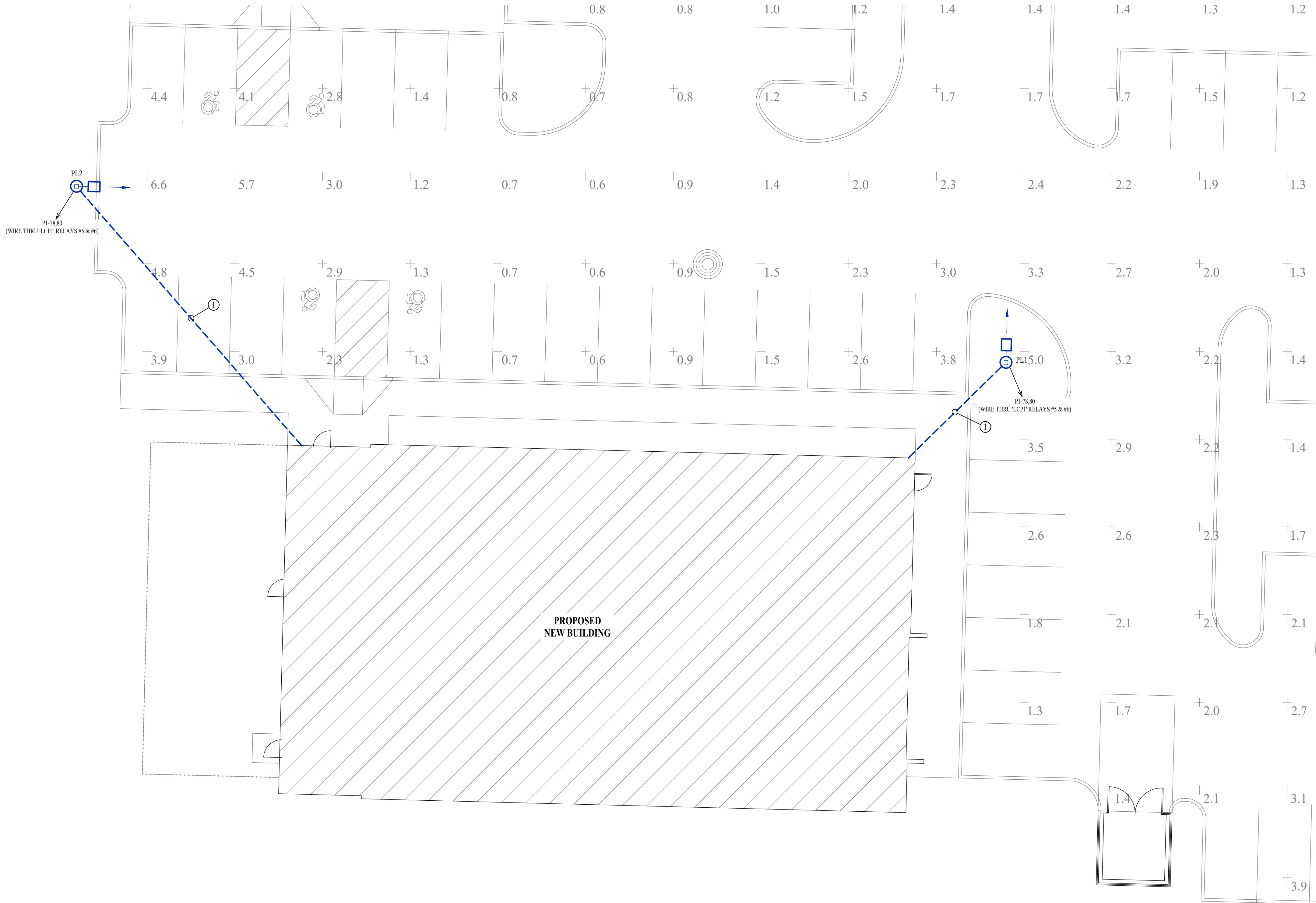
CONCRETE TO BE MIN. 3000psi

TYPICAL LIGHT POLE DETAIL - 1

SITE LIGHTING FIXTURE SCHEDULE

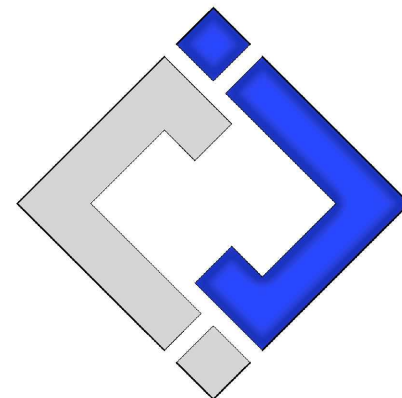
TAG	MANUFACTURER (OR EQUAL)	MODEL NUMBER (OR EQUAL)	DESCRIPTION	MOUNTING	LUMEN OUTPUT	CCT (°K)	CRI	VOLTS	WATTS	NOTES
PL1	LUMARK	PRV-XL-PA4A-740-U-5WQ	POLE LIGHT	20' POLE ON 30" BASE	35,079	4000	70	208	245	WITH #MS/DIM-L40W MOTION SENSING DIMMING
PL2	LUMARK	PRV-XL-PA4B-740-U-T4W-HSS	POLE LIGHT	20' POLE ON 30" BASE	28,286	4000	70	208	303	WITH #MS/DIM-L40W MOTION SENSING DIMMING

NOTES:
1. VERIFY LIGHT FIXTURE FINISHES WITH OWNER / ARCHITECT PRIOR TO INSTALLATION



SITE LIGHTING PLAN

SCALE: 1" = 10'



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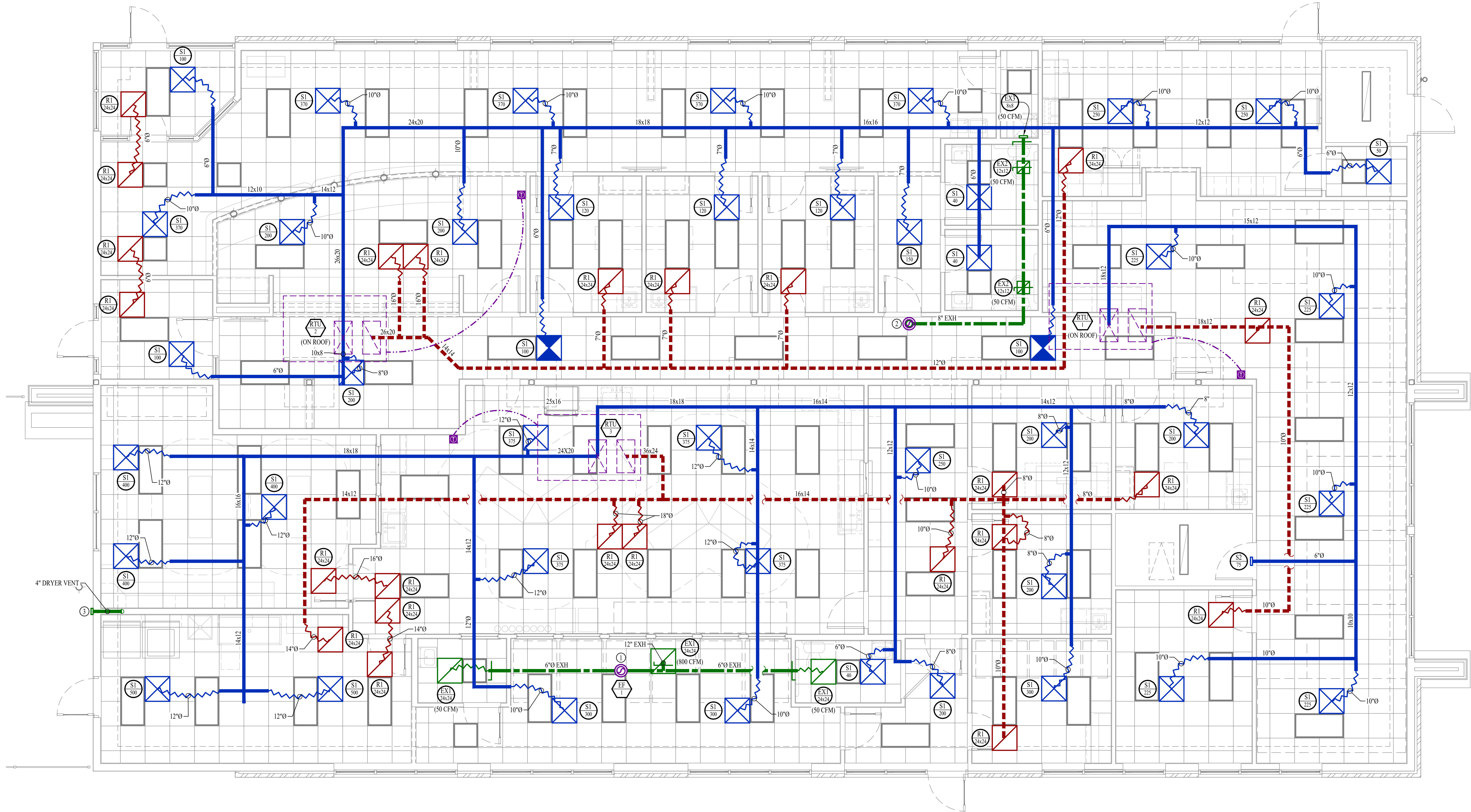
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J2 PROJECT No: J21209

J2 DESIGN: ACW

ISSUE TITLE DATE

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HVAC PLAN GENERAL NOTES:

1. SEE SHEET M501 FOR ADDITIONAL HVAC NOTES, DETAIL, AND SCHEDULES.

HVAC PLAN KEY NOTES:

- ① 12" EXHAUST UP TO EF-1 THEN UP THRU ROOF TO GOOSENECK WITH 3/8" BIRDSCREEN.
② 8" EXHAUST UP TO EF-2 THEN UP THRU ROOF TO GOOSENECK WITH 3/8" BIRDSCREEN.
③ DRYER VENT. PAINT TO MATCH BUILDING.



HVAC PLAN

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

HVAC PLAN SYMBOL LEGEND

- EQUIPMENT TYPE (REFER TO EQUIPMENT SCHEDULE)
— EQUIPMENT REFERENCE NUMBER
— DIFFUSER/GRILLE TYPE (REFER TO SCHEDULE)
— CUBIC FEET PER MINUTE (CFM) / FACE SIZE
- SUPPLY DUCTWORK
— RETURN DUCTWORK
— EXHAUST DUCTWORK
— OUTSIDE AIR DUCTWORK
— FLEX DUCT
— VENT / COMBUSTION AIR
— CONDENSATION LINE
— REFRIGERANT LINE
— TIE INTO EXISTING

- SUPPLY DIFFUSER (HATCH INDICATES "NO FLOW ZONE")
— RETURN DIFFUSER
— BALANCE DAMPER
— MOTORIZED DAMPER
— CEILING RADIATION DAMPER
— FIRE RATED DAMPER
— SMOKE DAMPER
— THERMOSTAT
— CO2 DETECTOR
— RETURN DUCT SMOKE DETECTOR
WIRED TO FAN STARTER TO SHUT UNIT(S) DOWN AND SEND ALARM SIGNAL
TO FIRE ALARM SYSTEM (IF PRESENT) OR TO REMOTE SOUNDER
LOCATED IN AN OCCUPIED SPACE (EQUAL TO SYSTEM SENSOR #D4120)
— REMOTE SOUNDER WIRED TO RETURN DUCT SMOKE DETECTOR
(EQUAL TO SYSTEM SENSOR #MHW)

Mechanical - Electrical - Plumbing Design Drawings for

Discovery Animal Hospital

1901 NE Trails Edge Avenue
Lee's Summit, Jackson County, MO 64064

SHEET TITLE

HVAC PLAN

SHEET NUMBER

M101

RELEASED FOR CONSTRUCTION
As Noted on Plans Review

James Watson, P.E.
NUMBER PE-2015017071
MO Certificate of Authority # 2018029680

June 14, 2024

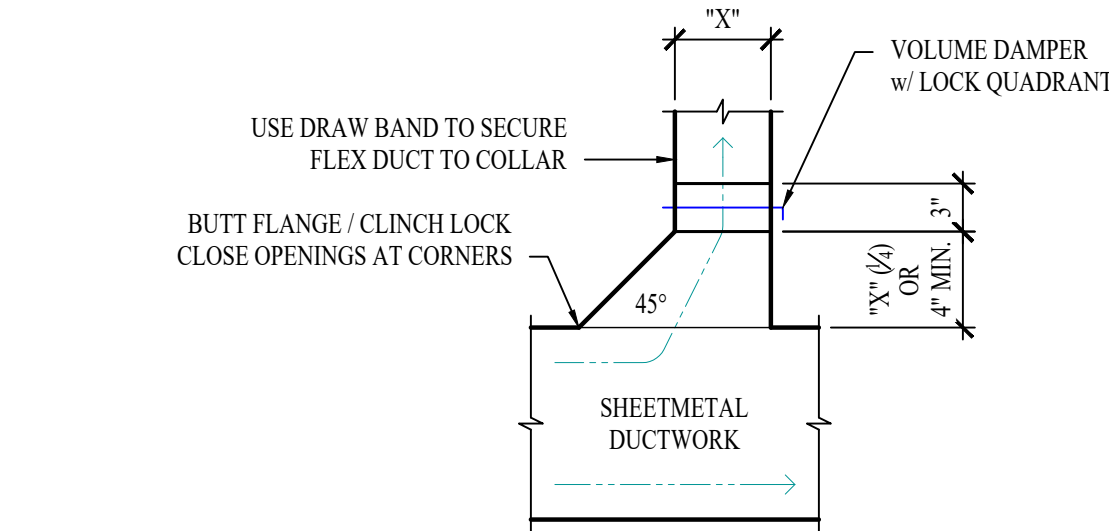
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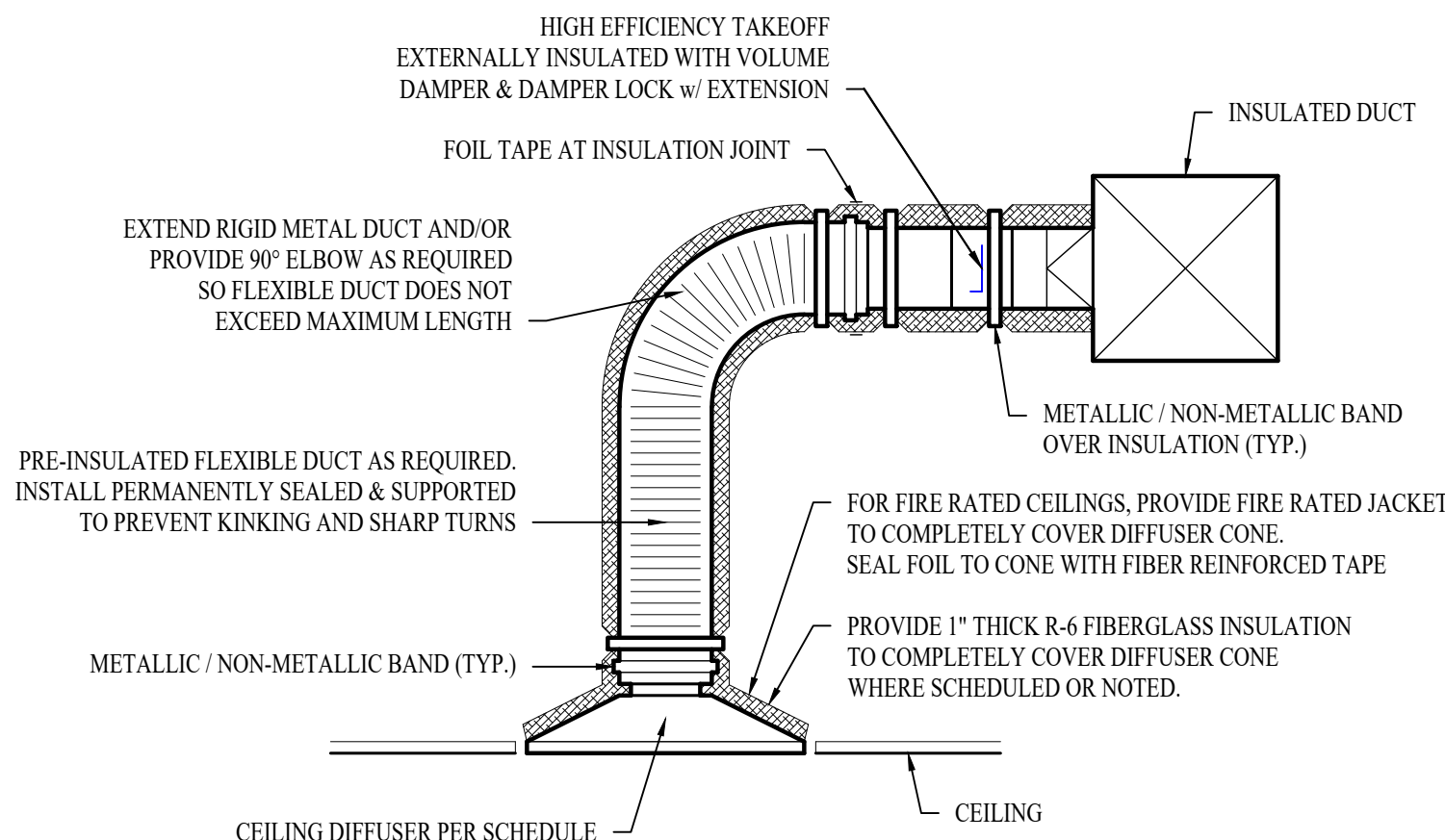
J2 PROJECT No:	J21209
J2 DESIGN:	ACW
ISSUE TITLE	DATE
PERMIT SET	06 / 14 / 2024

HVAC SPECIFICATIONS

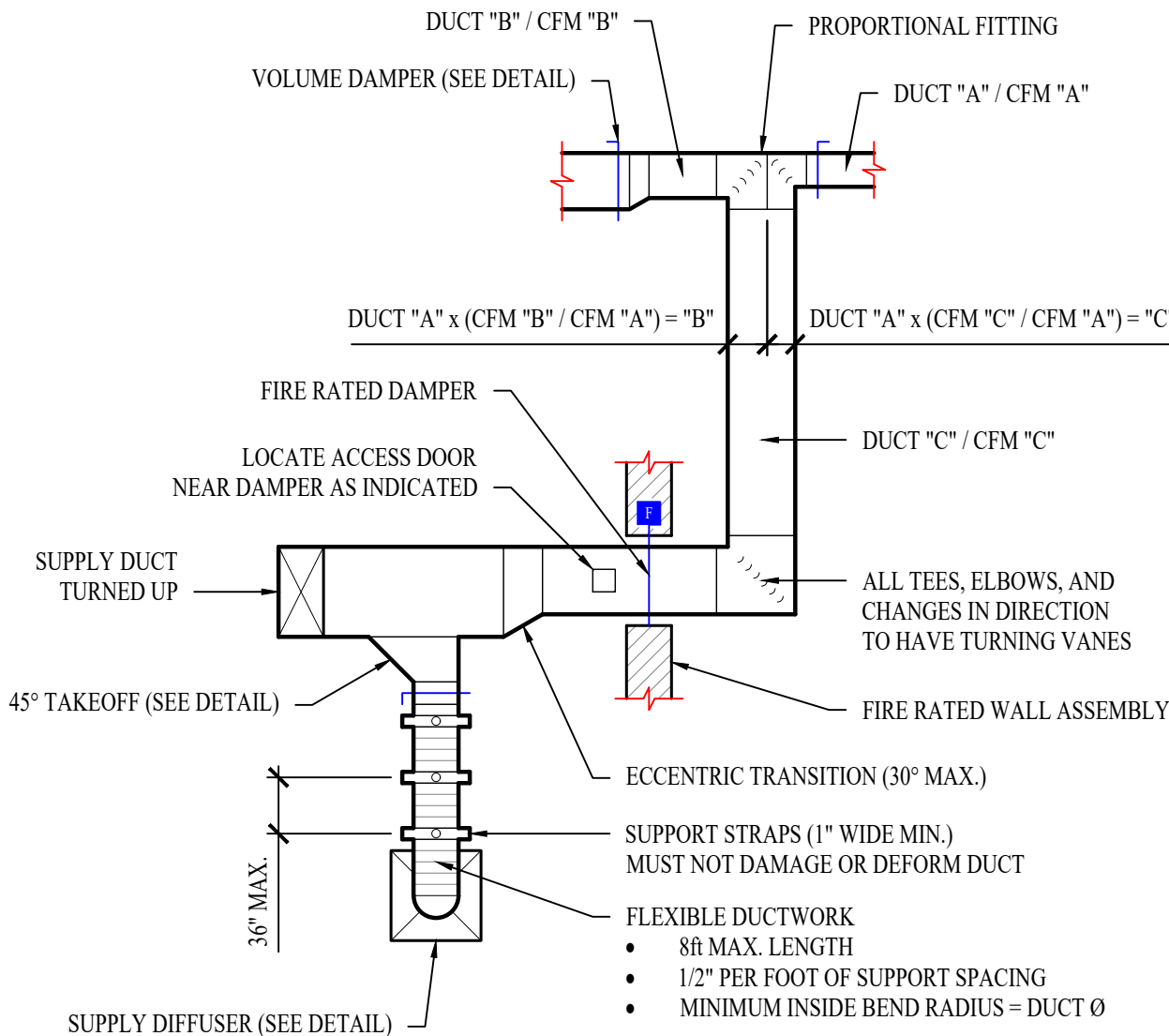
1. GENERAL
- 1.1. REFER TO GENERAL MEP SPECIFICATIONS SECTION FOR ADDITIONAL REQUIREMENTS.
2. WORKMANSHIP
- 2.1. COORDINATE WITH ALL OTHER TRADES SO THAT HVAC EQUIPMENT AND DUCT WORK DOES NOT BLOCK REQUIRED ACCESS OR CLEARANCE TO ANY EQUIPMENT, ACCESS PANELS, ELECTRICAL JUNCTION BOXES, ELECTRICAL PANELS, ETC.
- 2.2. ALL HVAC EQUIPMENT IS TO BE INSTALLED PER MANUFACTURER'S PUBLISHED RECOMMENDATIONS AND/OR INSTALLATION INSTRUCTIONS.
- 2.3. ALL EQUIPMENT TO BE INSTALLED LEVEL AND PLUMB, PARALLEL OR PERPENDICULAR TO BUILDING ORIENTATION WHERE POSSIBLE.
- 2.4. ROOFTOP MOUNTED RTU'S SHALL BE INSTALLED ON CURBS PER MANUFACTURER'S INSTRUCTIONS. CURB HEIGHT SHALL PROVIDE A MINIMUM OF 6" BETWEEN EQUIPMENT AND TOP OF ROOF IN ALL LOCATIONS.
- 2.5. GRADE MOUNTED RTUS, CONDENSING UNITS, AND HEAT PUMPS TO BE INSTALLED ON 4" REINFORCED CONCRETE PAD EXTENDING 4" BEYOND EACH EDGE OF THE EQUIPMENT, OR A MANUFACTURER APPROVED PRE-MANUFACTURED BASE.
- 2.6. APPROPRIATE ATTENTION SHALL BE GIVEN TO INDOOR AIR QUALITY THROUGHOUT CONSTRUCTION; PROTECT INSIDE OF NEW DUCTWORK & AIR-HANDLING EQUIPMENT FROM DUST, DIRT, DEBRIS, PAINT, MOISTURE, ETC. INSULATION SHALL BE REPLACED IF EXPOSED TO MOISTURE. AN INDEPENDENT, PROFESSIONAL DUCT CLEANING COMPANY SHALL CLEAN ALL NEW DUCTWORK IF EQUIPMENT WAS USED DURING CONSTRUCTION, AND EQUIPMENT/COILS SHALL ALSO BE THOROUGHLY CLEANED.
- 2.7. FIELD COORDINATE LOCATIONS OF ALL DIFFUSERS, GRILLES, REGISTERS, ETC. WITH LIGHT FIXTURE LOCATIONS AND ADJUST AS NECESSARY.
3. EQUIPMENT
- 3.1. ALL EQUIPMENT SHOWN ON MECHANICAL PLANS SHALL BE PROVIDED & INSTALLED BY MECHANICAL CONTRACTOR UNLESS NOTED OTHERWISE.
- 3.2. ALL EQUIPMENT MUST PROVIDE PERFORMANCE AS SPECIFIED ON PLANS. WHERE SPECIFIC MANUFACTURERS AND/OR MODELS ARE INDICATED ON PLANS, CONTRACTOR TO PROVIDE MODEL INDICATED OR APPROVED EQUAL. VERIFY SUBSTITUTION APPROVAL PRIOR TO PURCHASE OR INSTALLATION OF EQUIPMENT.
- 3.3. CONTRACTOR TO SUPPLY SUBMITTALS FOR ALL EQUIPMENT FOR REVIEW BY ARCHITECT AND ENGINEER. FORMAL APPROVAL SHALL BE RECEIVED BY CONTRACTOR PRIOR TO EQUIPMENT PURCHASE.
- 3.4. CONTRACTOR TO SHARE APPROVED EQUIPMENT SUBMITTALS WITH ANY PERTINENT ELECTRICAL OR PLUMBING REQUIREMENTS WITH RESPECTIVE CONTRACTORS WITHIN TWO WEEKS OF RECEIVING APPROVED SUBMITTALS FROM ARCHITECT/ENGINEER.
- 3.5. ALL EQUIPMENT SHOWN ON PLANS SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS WITH ADEQUATE ACCESS AND CLEARANCE FOR SERVICING OR REPLACEMENT.
- 3.6. ALL HORIZONTAL FURNACES WITH AC COILS SHALL BE EQUIPPED WITH CORROSION RESISTANT DRAIN PAN. DRAIN PAN TO DISCHARGE TO SANITARY WASTE VIA INDIRECT CONNECTION WITH AIR GAP. DRAIN PAN TO PROVIDE SECONDARY OVERFLOW OR FLOAT SWITCH INTERLOCKED WITH UNIT TO SHUT DOWN UNIT ON HIGH WATER SIGNAL.
- 3.7. ALL EXTERIOR REFRIGERANT COILS TO BE PROTECTED BY FACTORY EQUIPPED HAIL GUARDS.
- 3.8. REFRIGERANT PIPING TO BE ACR COPPER OR TYPE L COPPER.
- 3.9. ALL AIR HANDLING EQUIPMENT SHALL BE EQUIPPED WITH MERV-8 FILTRATION AT RETURN OPENING UNLESS OTHERWISE NOTED.
- 3.10. ALL AIR FILTERS SHALL BE SIZED FOR A MAXIMUM FACE VELOCITY OF 500FPM.
- 3.11. PROVIDE & INSTALL ALL EQUIPMENT FLUES/VENTS PER MANUFACTURER'S SPECIFICATIONS. TERMINATIONS SHALL BE AT LEAST 10' FROM ANY FRESH AIR INTAKE.
- 3.12. PROVIDE NEW AIR FILTERS IN ALL EQUIPMENT PRIOR TO TESTING & BALANCING AND BEFORE TURNING OVER SYSTEM(S) TO OWNERSHIP.
- 3.13. IF ANY EXISTING EQUIPMENT IS TO BE REUSED, CLEAN AND INSPECT EQUIPMENT PRIOR TO BEGINNING WORK. VERIFY THAT EQUIPMENT IS IN GOOD WORKING CONDITION, REPORT ANY DEFICIENCIES TO ENGINEER.
4. DUCTWORK
- 4.1. DUCTWORK TO BE GALVANIZED STEEL, SEAL CLASS B, CONSTRUCTED PER SMACNA STANDARDS.
- 4.2. DUCTWORK THICKNESS:
- 4.2.1. 26 GA. MINIMUM UP TO 16" DUCT
- 4.2.2. 24 GA. UP TO 20"
- 4.2.3. 22 GA. UP TO 24"
- 4.2.4. 20 GA. UP TO 28"
- 4.2.5. 18 GA. UP TO 36"
- 4.3. TURNING VANES SHALL BE PROVIDED AND INSTALLED AT ALL 90° BENDS AND TEES.
- 4.4. ALL DUCT DIMENSIONS LISTED ARE TO INTERIOR OF DUCT LINER UNLESS NOTED OTHERWISE ON PLANS.
- 4.5. BALANCE DAMPERS MUST BE PROVIDED TO ALLOW ADJUSTMENT AT EACH AIR TERMINAL.
- 4.5.1. WHERE BRANCH TAKEOFF IS ACCESSIBLE (ABOVE LAY-IN CEILING OR EXPOSED DUCT), BALANCE DAMPER IS TO BE INSTALLED AT TAKEOFF.
- 4.5.2. WHERE TAKEOFF IS INACCESSIBLE (IN ATTIC OR SOFFIT), BALANCE DAMPER IS TO BE LOCATED SUCH THAT IT IS ACCESSIBLE FROM FACE OF AIR DEVICE.
- 4.6. HVAC CONTRACTOR RESPONSIBLE FOR ALL DUCTWORK TRANSITIONS AND FITTINGS AS REQUIRED FOR FINAL CONNECTIONS TO HVAC EQUIPMENT.
- 4.7. UNLESS NOTED OTHERWISE ON PLANS, FLEXIBLE DUCT CONNECTIONS MAY USED FROM BRANCH DUCTS TO FINAL AIR DEVICES, BUT SHALL NOT EXCEED 8'-0" IN LENGTH. FLEXIBLE DUCT CONNECTORS MUST BE SUPPORTED PER PLAN DETAILS.
5. INSULATION
- 5.1. DUCTWORK
- 5.1.1. SEE "TYPICAL DUCT INSULATION DIAGRAM" FOR INSTALLATION SPECIFIC REQUIREMENTS.
- 5.1.2. INTERNAL DUCT LINER TO BE CLOSED CELL ELASTOMERIC.
- 5.1.3. EXTERNAL DUCT WRAP TO INCLUDE VAPOR BARRIER. EQUAL TO JOHNS MANVILLE MICROLITE® WITH FSK JACKET.
- 5.2. REFRIGERANT PIPING
- 5.2.1. SPLIT SYSTEM (SUCTION LINE ONLY) - 1" CLOSED CELL ELASTOMERIC FOAM (EQUAL TO ARMAFLEX AP®).
- 5.3. VRV/VRF SYSTEMS (BOTH SUCTION AND HOT GAS LINES) 1 1/2" EPDM (EQUAL TO AEROFLEX AEROCEL AC®) WITHIN CONDITIONED SPACES & 2" EPDM (EQUAL TO AEROFLEX AEROCEL AC®) IN UNCONDITIONED SPACES, AND WITH BANDED ALUMINUM SHIELDING IN EXTERIOR SPACES.
- 5.4. CONDENSATE PIPING
- 5.4.1. SPLIT SYSTEMS - WHERE CONDENSATE PIPING IS LOCATED IN UNCONDITIONED SPACE, INSULATE WITH 1/2" ELASTOMERIC. NO INSULATION REQUIRED WITHIN CONDITIONED SPACES.
- 5.4.2. VRV/VRF - INSULATE WITH 1/2" ELASTOMERIC.
6. TESTING AND BALANCING
- 6.1. ALL SYSTEMS MUST BE BALANCED TO WITHIN 10% OF VALUES INDICATED ON PLAN.
- 6.2. HVAC CONTRACTOR TO PROVIDE WRITTEN BALANCE REPORT INCLUDING FLOW VALUES INDICATED ON PLANS, INITIAL MEASURED FLOW VALUES, AND FINAL MEASURED VALUES.
- 6.3. THIRD PARTY CERTIFIED TEST AND BALANCE NOT REQUIRED UNLESS OTHERWISE NOTED ON PLANS OR WITHIN PROJECT MANUAL.



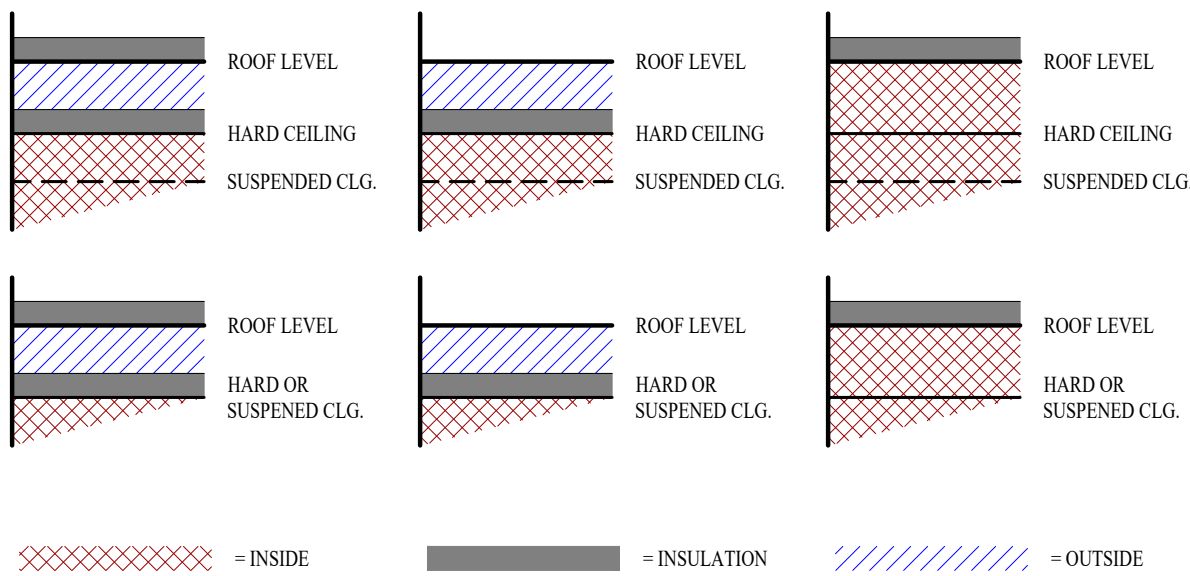
TYPICAL 45° TAKEOFF DETAIL



TYPICAL LAY-IN DIFFUSER DETAIL



TYPICAL DUCTWORK DETAIL



DUCT INSIDE THERMAL ENVELOPE INSULATION REQUIREMENTS

- RECTANGULAR
- SUPPLY = 1" LINER
 - RETURN = NONE
 - EXHAUST = 2" WRAP
 - OUTSIDE AIR = 2" WRAP

- ROUND
- SUPPLY = 1/2" WRAP
 - RETURN = NONE
 - EXHAUST = NONE
 - OUTSIDE AIR = 2" WRAP

- SPIRAL
- SUPPLY = NONE
 - RETURN = NONE
 - EXHAUST = NONE
 - OUTSIDE AIR = 2" WRAP

DUCT OUTSIDE THERMAL ENVELOPE INSULATION REQUIREMENTS

- RECTANGULAR
- SUPPLY = 1" LINER & 1/2" WRAP
 - RETURN = 1" LINER & 1/2" WRAP
 - EXHAUST = 1/2" WRAP
 - OUTSIDE AIR = NONE

- ROUND
- SUPPLY = 2" WRAP
 - RETURN = 2" WRAP
 - EXHAUST = 1/2" WRAP
 - OUTSIDE AIR = NONE

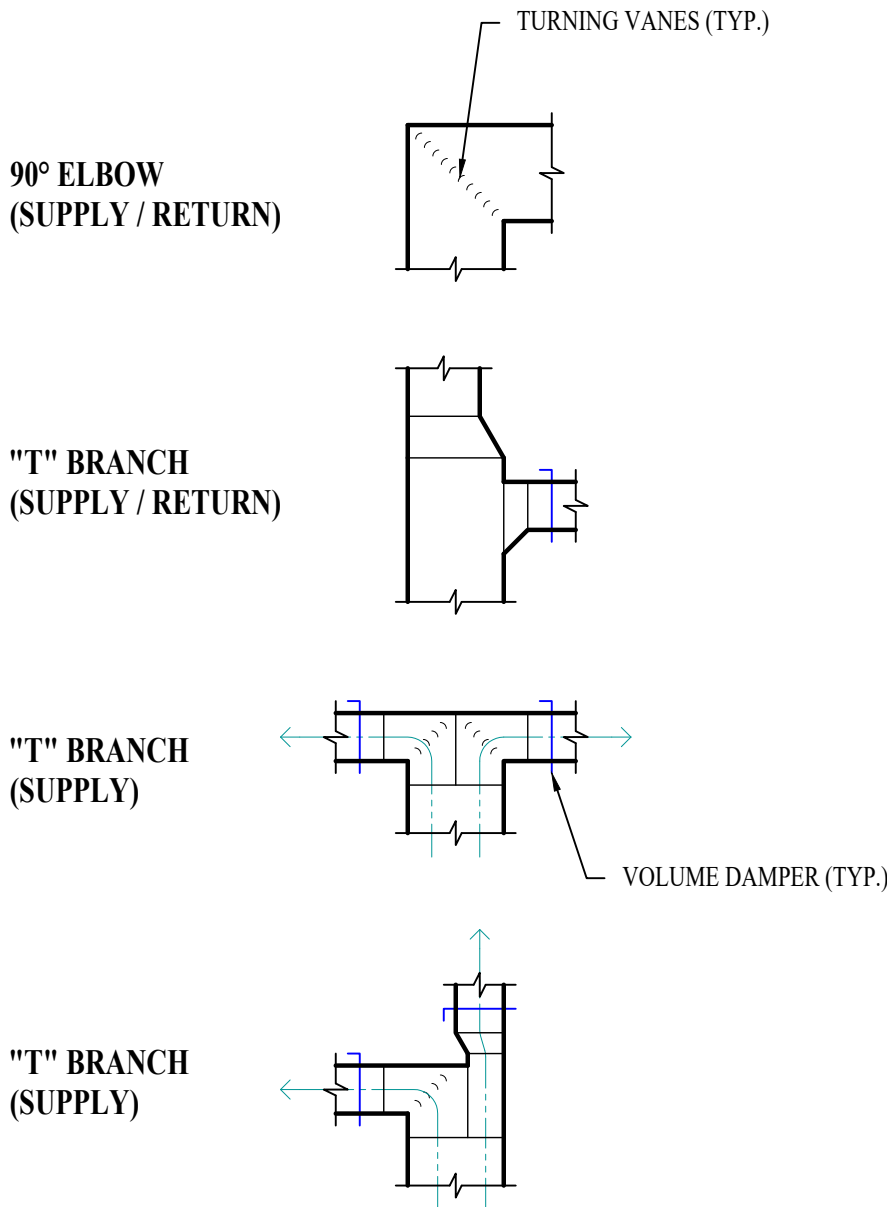
- SPIRAL
- SUPPLY = 2" WRAP
 - RETURN = 2" WRAP
 - EXHAUST = 1/2" WRAP
 - OUTSIDE AIR = NONE

TYPICAL BUILDING INTERIOR DUCT INSULATION DIAGRAM

RTU SCHEDULE											
TAG	EQUIPMENT DESCRIPTION	SIZE (TONS)	ORIENTATION	TOTAL AIRFLOW (CFM)	OA AIRFLOW MAX/MIN (CFM)	GAS HEATING		COOLING (IA: 80 DB/67 WB, OA: 95 DB)			NOTES
						INPUT (kBTU)	OUTPUT (kBTU)	SENSIBLE (kBTU)	TOTAL (kBTU)	MIN. EFFICIENCY	
RTU-1	ROOF TOP UNIT	3	DOWN FLOW	1200	165 / 165	80	64.8	29.9	37.1	15.4 SEER	1, 2, 3, 4, 5, 8, 9
RTU-2	ROOF TOP UNIT	10	DOWN FLOW	4000	290 / 290	200	160	96.8	116.3	11.2 EER/12.7 IEER	1, 2, 3, 4, 5, 6, 7, 8, 9
RTU-3	ROOF TOP UNIT	15	DOWN FLOW	6000	690 / 690	350	280	139.1	186.1	11.0 EER/12.2 IEER	1, 2, 3, 4, 5, 6, 7, 8, 9
NOTES:											
1. PROVIDE AND INSTALL 7 DAY PROGRAMABLE HONEYWELL THERMOSTAT. COORDINATE EXACT MOUNTING LOCATION WITH OWNER.											
2. WITH FACTORY HAIL GUARD.											
3. WITH FACTORY INSTALLED DISCONNECT.											
4. ECONOMIZER WITH BAROMETRIC RELIEF SIZED AT 100% OF FLOW at 1/10" WC (OR PROVIDE POWERED EXHAUST). CONTROL TO BE ADJUSTABLE FIXED POINT SET AT 65°F. ECONOMIZER TO BE IECC COMPLIANT WITH FAULT DETECTION AND NOTIFICATION.											
5. WITH POWERED WEATHERPROOF GFCI RECEPTACLE.											
6. WITH HOT GAS REHEAT/DEHUMIDIFICATION OPTION.											
7. WITH SMOKE DETECTOR IN RETURN AIR DUCT TO SHUT DOWN UNIT AND SEND SIGNAL TO BUILDING FIRE ALARM SYSTEM UPON DETECTION OF SMOKE. IF NO BUILDING FIRE ALARM SYSTEM IS PRESENT, PROVIDE ALARM DEVICE IN OCCUPIED AREA.											
8. MOTORIZED OUTSIDE AIR / ECONOMIZER SHALL BE PROGRAMMED TO OPERATE DURING OCCUPIED HOURS.											
9. WITH CURB-MOUNTED SCREENING SYSTEM EQUAL TO CURBS-PLUS NUVIEW WITH SMOOTH PANEL, PROFILE, FLAT TRIM, STANDARD COLOR DETERMINED BY ARCHITECT											

AIR DEVICE SCHEDULE						
TAG	SERVICE	MANUFACTURER (OR EQUAL)	MODEL (OR EQUAL)	SIZE	COLOR / FINISH	NOTES
S1	SUPPLY	PRICE	SPD	24x24	WHITE	
S2	SUPPLY	PRICE	520	8x8	WHITE	
R1	RETURN	PRICE	80	24x24	WHITE	
EX1	EXHAUST	PRICE	80	24x24	WHITE	
EX2	EXHAUST	PRICE	80	12x12	WHITE	
EX3	EXHAUST	PRICE	530	8x8	WHITE	
NOTES:						
1. VERIFY AIR DEVICE FINISHES WITH OWNER/ARCHITECT PRIOR TO INSTALLATION						

EF SCHEDULE							
TAG	EQUIPMENT DESCRIPTION	ORIENTATION	TOTAL AIRFLOW (CFM)	ELECTRICAL			NOTES
				VOLTS/PH	MCA	OCF	
EF-1	EXHAUST FAN	INLINE	900	120	2.2	20-1	2
EF-2	EXHAUST FAN	INLINE	150	120	0.72	20-1	1
NOTES:							
1. EQUAL TO S&P TD-125 WITH SPEED CONTROLLER							
2. EQUAL TO S&P TD-315HS WITH SPEED CONTROLLER							



TYPICAL DUCTWORK FITTINGS DETAIL

RELEASED FOR CONSTRUCTION
As Noted on Plans Review

James Watson, P.E.
June 14, 2024
PE-2015017071
MO Certificate of Authority # 2018029680

James Watson, P.E.
June 14, 2024
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J-SQUARED ENGINEERING

2400 Bluff Creek Drive, Suite 101
Columbia, Missouri 65201
573 - 234 - 4492 phone
www.j-squaredeng.com

J2 PROJECT No:	J21209
J2 DESIGN:	ACW
ISSUE TITLE DATE	
PERMIT SET	06 / 14 / 2024

Discovery Animal Hospital

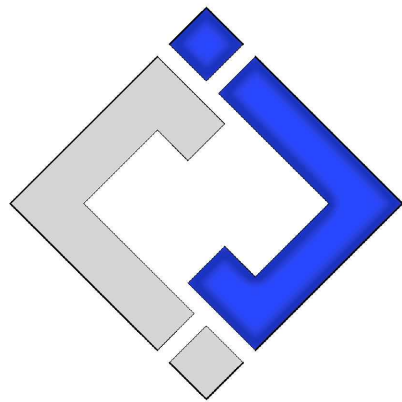
Mechanical - Electrical - Plumbing Design Drawings for

1901 NE Trails Edge Avenue
Lee's Summit, Jackson County, MO 64064

HVAC DETAILS & SCHEDULES

SHEET NUMBER

M501



**J-SQUARED
ENGINEERING**
2400 Bluff Creek Drive, Suite 101
Columbia, Missouri 65201
573 - 234 - 4492 phone
www.j-squaredeng.com

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Mechanical - Electrical - Plumbing Design Drawings for
Discovery Animal Hospital

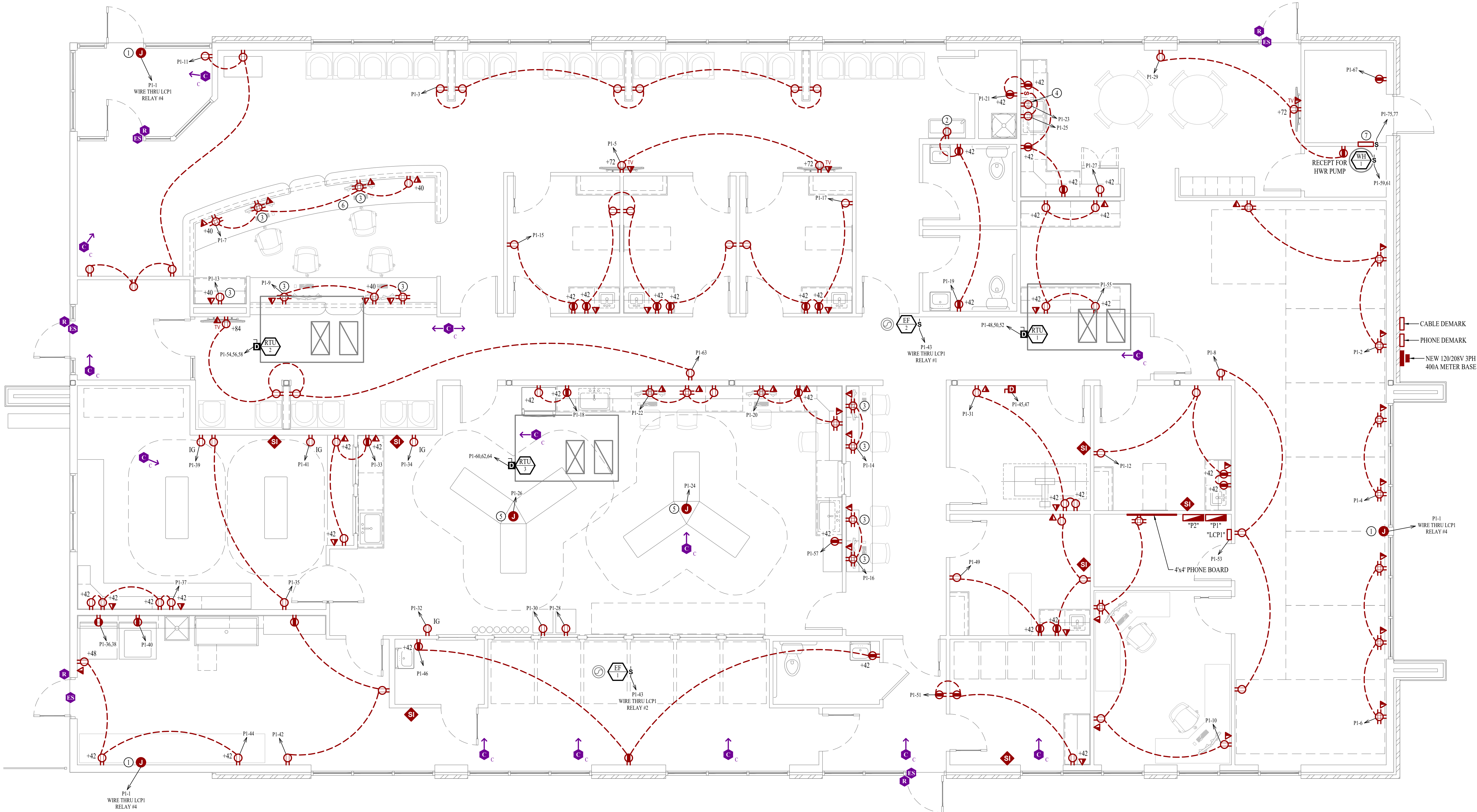
1901 NE Trails Edge Avenue
Lee's Summit, Jackson County, MO 64064

SHEET TITLE

POWER PLAN

SHEET NUMBER

EP101



POWER PLAN GENERAL NOTES:

1. SEE SHEET E501 FOR ADDITIONAL ELECTRICAL NOTES, DETAILS, & SCHEDULES.

POWER PLAN KEY NOTES:

- ① J-BOX IN INTERIOR SIDE OF WALL ABOVE CANOPY HEIGHT FOR EXTERIOR ILLUMINATED SIGNAGE. ELECTRICAL CONTRACTOR TO VERIFY EXACT HEIGHT AND LOCATION WITH OWNER/ARCHITECT PRIOR TO INSTALLATION.
- ② CIRCUIT DRINKING FOUNTAIN RECEPTACLE DOWNSTREAM OF GFCI RECEPTACLE SO THAT DRINKING FOUNTAIN RECEPTACLE IS GFCI PROTECTED.
- ③ PROVIDE 2" BLACK DESK GROMMET.
- ④ OUTLET IN BASE CABINET FOR DISHWASHER.
- ⑤ CONNECT TO TENANT SUPPLIED MED TOWER.
- ⑥ INSTALL PUSH BUTTON OVERRIDE FOR RELEASING ELECTRIC STRIKE AT FRONT DOOR. COORDINATE LOCATION WITH TENANT.
- ⑦ 208V, 1PH, 3KW BERKO WALL HEATER EQUAL TO VFK404



POWER PLAN

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

POWER PLAN SYMBOL LEGEND

- CIRCUIT WIRING
- PX-XX CIRCUIT TAG
- Ⓜ JUNCTION BOX
- XX Ⓜ +42 RECEPTACLE
- INDICATES MOUNTING HEIGHT TO BOTTOM OF BOX (STANDARD @ 18" AFF UNLESS NOTED OTHERWISE)
- "WP" = WEATHERPROOF OUTDOOR RECEPTACLE
- "AW" = ABOVE WINDOW RECEPTACLE
- "AC" = ABOVE CEILING RECEPTACLE
- "EX" = EXISTING RECEPTACLE TO REMAIN
- "IG" = ISOLATED GROUND
- GFCI DUPLEX CONVENIENCE RECEPTACLE
- 208V RECEPTACLE
- WALL MOUNT CAMERA (ARROW INDICATES VIEW DIRECTION)
- CEILING MOUNT CAMERA (ARROW INDICATES VIEW DIRECTION)
- QUADPLEX CONVENIENCE RECEPTACLE
- USB OUTLET
- DATA / PHONE JACK BOX WITH 1" CONDUIT & PULL STRING) UP TO CEILING SPACE (STANDARD @ 18" AFF UNLESS NOTED OTHERWISE)
- WIRELESS ACCESS POINT, CEILING MOUNTED
- FLOOR RECEPTACLE
- FLOOR DATA
- DISCONNECT
- STEREO & INTERCOM CONTROL. ELECTRICAL CONTRACTOR TO INSTALL WIRING, TENANT TO SUPPLY STEREO/INTERCOM SYSTEM.
- READER
- ELECTRIC STRIKE

J2 PROJECT No:	J21209
J2 DESIGN:	ACW
ISSUE TITLE	DATE
PERMIT SET	06 / 14 / 2024



LIGHTING PLAN GENERAL NOTES:

1. SEE SHEET E501 FOR ADDITIONAL ELECTRICAL NOTES, DETAILS, & SCHEDULES.

LIGHTING PLAN KEY NOTES:

① POWER FOR EXAM LIGHTING; COORDINATE EXACT LOCATION & REQUIREMENTS WITH G.C.

LIGHTING PLAN SYMBOL LEGEND

XI

EM

NL

"XI" INDICATES FIXTURE TYPE (REFER TO SCHEDULE)
LIGHTING FIXTURE
"EM" INDICATES EMERGENCY BATTERY BACKUP
"NL" INDICATES UN-SWITCHED NIGHT LIGHT

EXIT LIGHT

INDICATES REQUIRED REMOTE HEAD

EMERGENCY EGRESS LIGHT

S

X

SWITCH (WALL MOUNTED)
SWITCH TYPE:
• 3 = 3-WAY
• 4 = 4-WAY
• OP = PASSIVE INFRARED OCCUPANCY SENSOR
• DP = DUAL-TECHNOLOGY OCCUPANCY SENSOR
• VP = PASSIVE INFRARED VACANCY SENSOR
• VT = DUAL-TECHNOLOGY VACANCY SENSOR
• M = MOMENTARY SWITCH

D

X

DIMMER SWITCH (WALL MOUNTED)
SWITCH TYPE:
• SEE "SWITCH (WALL MOUNTED)" FOR TYPE DESIGNATIONS

S

X

SWITCH (CEILING MOUNTED)
SWITCH TYPE:
• SEE "SWITCH (WALL MOUNTED)" FOR TYPE DESIGNATIONS

OCCUPANCY SENSOR
• AUTO FULL-ON (OR 50% IF NOTED)
• AUTOMATICALLY TURN OFF LIGHTING AFTER 20 MINUTES WITHOUT OCCUPANT DETECTION
• WITH MANUAL OVERRIDE CONTROL (IF NOTED)

VACANCY SENSOR
• MANUAL FULL-ON
• AUTOMATICALLY TURN OFF LIGHTING AFTER 20 MINUTES WITHOUT OCCUPANT DETECTION
• WITH MANUAL OVERRIDE CONTROL (IF NOTED)

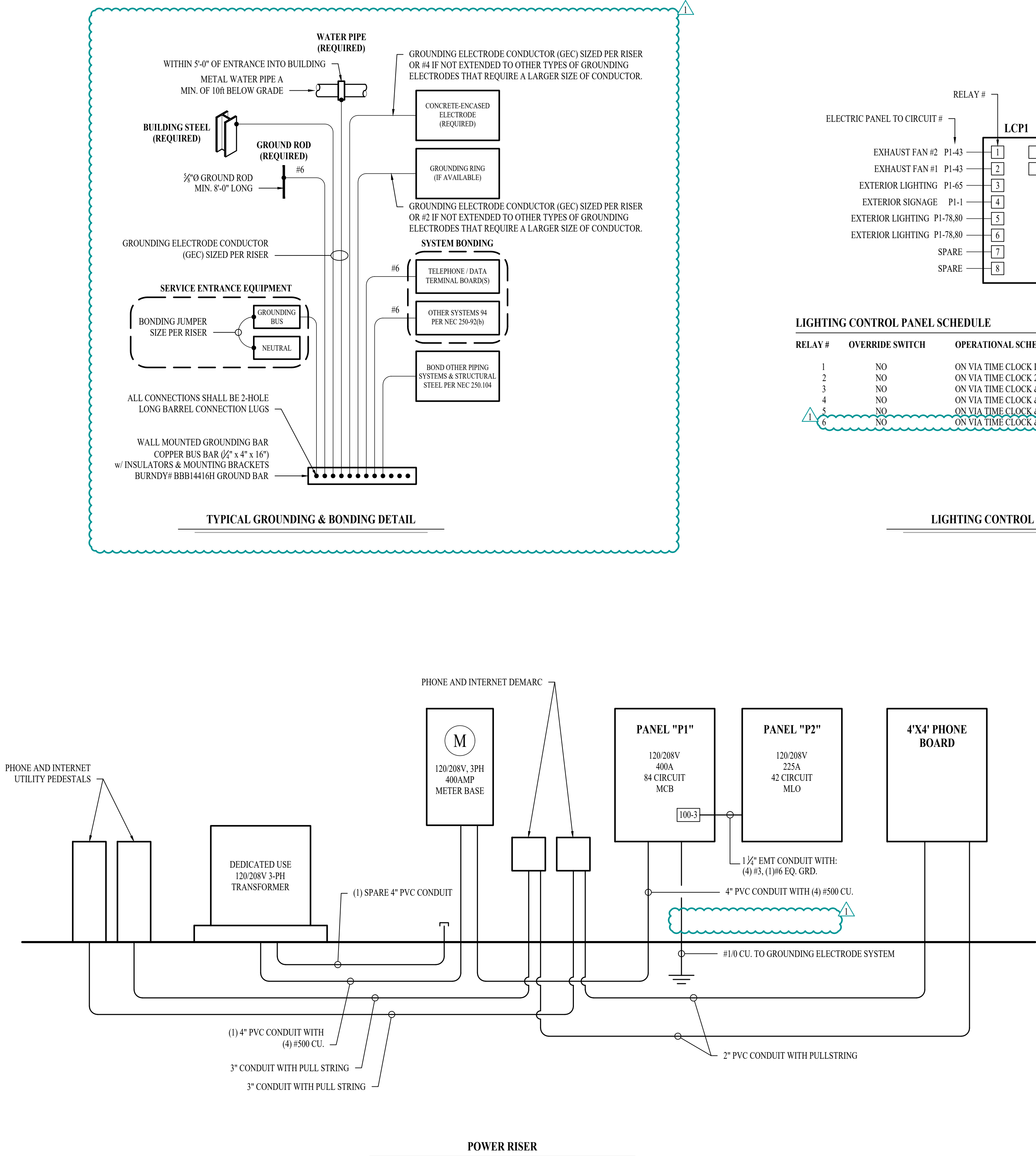
LIGHT FIXTURE SCHEDULE										
TAG	MANUFACTURER (OR EQUAL)	MODEL NUMBER (OR EQUAL)	DESCRIPTION	MOUNTING	LUMEN OUTPUT	CCT (°K)	CRI	VOLTS	WATTS	NOTES
A	METALUX	24FPSL2SCT3	2X4 LED FLAT PANEL	CEILING / GRID	6300	3500	80	120	56	WITH 14W BATTERY BACKUP WHERE INDICATED
B	METALUX	22FPSL2SCT3	2X2 LED FLAT PANEL	CEILING / GRID	3440	3500	80	120	31	
C	HALO	HLB4069FSIE	4" LED CAN	RECESSED	600	3500	80	120	12	
D	SURE LITES	APCH7R WITH APWR1	INTERIOR EXIT LIGHT WITH EXTERIOR REMOTE HEAD	CEILING	-	-	-	120	1	WITH RED LETTERS
E	SURE LITES	APC7R	INTERIOR EXIT LIGHT WITH HEADS	WALL / CHILING	-	-	-	120	1	WITH RED LETTERS
F	METALUX	4SNLED-LD5-48SL-UNV-L835LB	4" LED STRIP	SURFACE	4827	3500	80	120	35	
G	TECH LIGHTING	7000W VEX9404ZUNV	UP / DOWN SCONCE	WALL	554	4000	90	120	19	
H	HALO	SLD612940W HUNV WITH SLD61TRMWH	SURFACE MOUNT DISK	SURFACE	1000	4000	92	120	15	FIELD PAINTED
NOTES: 1. VERIFY LIGHT FIXTURE FINISHES WITH OWNER / ARCHITECT PRIOR TO INSTALLATION 2. CONTACT JUSTIN HATFIELD (573) 289-0880 (JHATFIELD@LAIWEB.NET) OR PAUL WARNER (314) 531-3500 (PWARNER@LAIWEB.NET) AT LIGHTING ASSOCIATES, INC. FOR NATIONAL ACCOUNT DETAILS. 3. CONTACT TRAVIS VOGT (417) 621-5210 (TVOGT@CED1135.COM) AT CED-PHILLIPS & COMPANY FOR NATIONAL ACCOUNT DETAILS.										

PANEL 'P2' SCHEDULE								
VOLTAGE		PANEL SIZE		MOUNTING		AIC RATING		
208Y/120V 3-PH		100A MLO		SURFACE		10,000	PHASE "A" LOAD	10
PHASE "B" LOAD							5	
PHASE "C" LOAD							5	
NEMA RATING: 1								
CIRCUIT NUMBER	DESCRIPTION	BREAKER SIZE	AMPS	PHASE	AMPS	BREAKER SIZE	DESCRIPTION	CIRCUIT NUMBER
1	EXAM LIGHTING	20-1	5	A			BLANK	2
3	EXAM LIGHTING	20-1	5	B			BLANK	4
5	EXAM LIGHTING	20-1	5	C			BLANK	6
7	EXAM LIGHTING	20-1	5	A			BLANK	8
9	SPARE	20-1		B			BLANK	10
11	SPARE	20-1		C			BLANK	12
13	SPARE	20-1		A			BLANK	14
15	SPARE	20-1		B			BLANK	16
17	SPARE	20-1		C			BLANK	18
19	SPARE	20-1		A			BLANK	20
21	SPARE	20-1		B			BLANK	22
23	SPARE	20-1		C			BLANK	24
25	SPARE	20-1		A			BLANK	26
27	SPARE	20-1		B			BLANK	28
29	SPARE	20-1		C			BLANK	30
31	SPARE	20-1		A			BLANK	32
33	SPARE	20-1		B			BLANK	34
35	SPARE	20-1		C			BLANK	36
37	SPARE	20-1		A			BLANK	38
39	SPARE	20-1		B			BLANK	40
41	SPARE	20-1		C			BLANK	42
NOTES:								
A. PANEL SHALL BE EQUAL TO SQUARE D MODEL "QO"								
B. ELECTRICIAN SHALL VERIFY BREAKER WITH EQUIPMENT PRIOR TO PURCHASE & INSTALL.								
C. AFTER COMPLETION OF WORK, ELECTRICIAN SHALL PROVIDE A TYPE WRITTEN PANEL DIRECTORY IN NEW PANEL.								

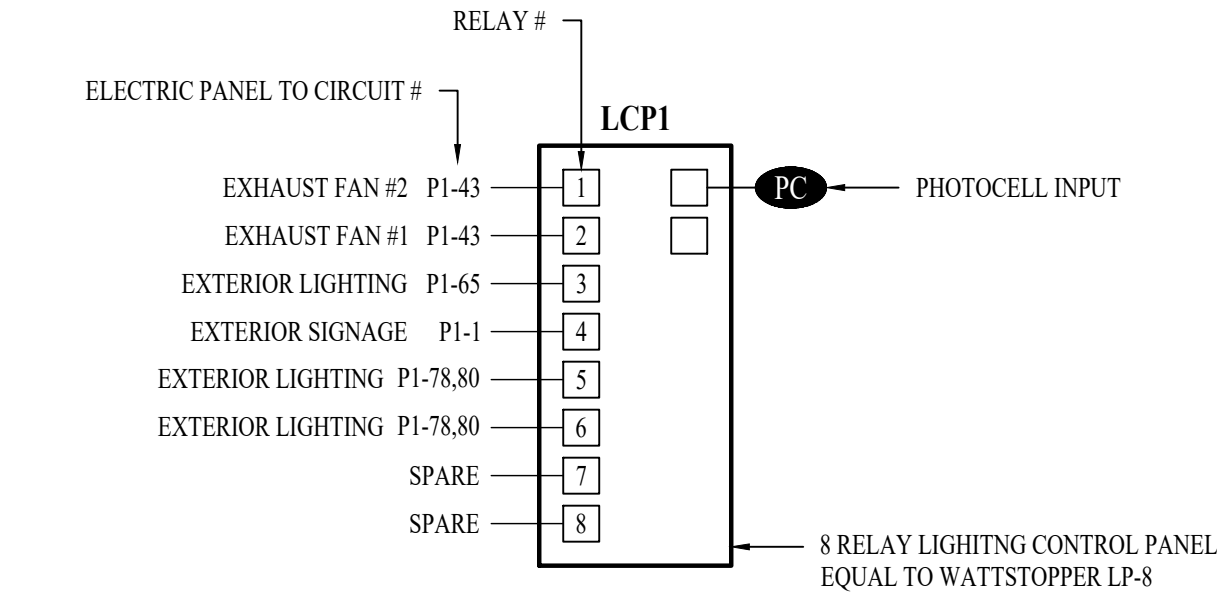
PANEL 'P1' SCHEDULE									
VOLTAGE		PANEL SIZE		MOUNTING		AIC RATING			
208Y/120V 3-PH		400A MCB		SURFACE		10,000		PHASE "A" LOAD	
312.7									
PHASE "B" LOAD									
NEMA RATING: 1								346	
								351	
CIRCUIT NUMBER	DESCRIPTION	BREAKER SIZE	AMPS	PHASE	AMPS	BREAKER SIZE	DESCRIPTION	CIRCUIT NUMBER	
1	EXTERIOR SIGNAGE	20-1	12	A	9	20-1	OPEN OFFICE OUTLETS	2	
3	WAITING AREA OUTLETS	20-1	9	B	6	20-1	OPEN OFFICE OUTLETS	4	
5	WAITING ROOM T.V.	20-1	3	C	9	20-1	OPEN OFFICE OUTLETS	6	
7	CHECK IN DESK	20-1	10.5	A	4.5	20-1	OPEN OFFICE OUTLETS	8	
9	CHECK IN DESK	20-1	7.5	B	9	20-1	OFFICE / STORAGE OUTLETS	10	
11	WAITING ROOM OUTLETS	20-1	7.5	C	6	20-1	CAT ROOM OUTLETS	12	
13	WAITING ROOM PRINTER	20-1	12	A	6	20-1	CORR-2 DESK OUTLETS	14	
15	EXAM ROOM OUTLETS	20-1	12	B	6	20-1	CORR-2 DESK OUTLETS	16	
17	EXAM ROOM OUTLETS	20-1	6	C	9	20-1	TREATMENT ROOM OUTLETS	18	
19	BATHROOM / DRINKING FOUNTAIN OUTLETS	20-1	9	A	7.5	20-1	TREATMENT ROOM OUTLETS	20	
21	BREAK ROOM OUTLETS	20-1	6	B	7.5	20-1	TREATMENT ROOM OUTLETS	22	
23	DISHWASHER	20-1	6	C	3	20-1*	MED TOWER	24	
25	GARBAGE DISPOSAL	20-1	6	A	3	20-1*	MED TOWER	26	
27	BREAK ROOM REF.	20-1	6	B	1.5	20-1	TREATMENT ROOM OUTLET	28	
29	BREAK ROOM OUTLETS	20-1	4.5	C	1.5	20-1	TREATMENT ROOM OUTLET	30	
31	X-RAY ROOM OUTLETS	20-1	4.5	A	1.5	20-1	TREATMENT ROOM OUTLET	32	
33	SURGERY ROOM OUTLETS	20-1	4.5	B	1.5	20-1	TREATMENT ROOM OUTLET	34	
35	SURGERY ROOM OUTLETS	20-1	3	C	20	30-2	DRYER	36	
37	SURGERY ROOM OUTLETS	20-1	6	A	20	-	-	38	
39	SURGERY ROOM OUTLET	20-1	1.5	B	12	20-1	WASHER	40	
41	SURGERY ROOM OUTLET	20-1	1.5	C	3	20-1	WORK AREA OUTLETS	42	
43	EXHAUST FANS	20-1	3	A	4.5	20-1	WORK AREA OUTLETS	44	
45	X-RAY EQUIPMENT	80-2	64	B	4.5	20-1	DOG KENNEL OUTLETS	46	
47	-	-	64	C	20	30-3	RTU#1	48	
49	ULTRASOUND CAT ROOM OUTLETS	20-1	7.5	A	20	-	-	50	
51	OUTLETS	20-1	4.5	B	20	-	-	52	
53	LCPI	20-1	1.5	C	49	60-3	RTU#2	54	
55	BUSINESS AREA OUTLETS	20-1	6	A	49	-	-	56	
57	TREATMENT ROOM OUTLETS	20-1	1.5	B	49	-	-	58	
59	WATER HEATER	25-2	19	C	69	90-3	RTU#3	60	
61	-	-	19	A	69	-	-	62	
63	HALLWAY OUTLETS	20-1	6	B	69	-	-	64	
65	EXTERIOR LIGHTING	20-1	2.5	C	10	20-1	LIGHTING	66	
67	MECH ROOM OUTLETS	20-1	1.5	A	10.7	20-1	LIGHTING	68	
69	PANEL "P2"	100-3	10	B	8.5	20-1	LIGHTING	70	
71	-	-	5	C	10	20-1	LIGHTING	72	
73	-	-	5	A	2	20-1	VESTIBULE LIGHTS	74	
75	WALL HEATER	25-2	16	B	3	20-1	LIGHTING	76	
77	-	-	14	C	4	20-2	POLE LIGHTS	78	
79	SPARE	20-1		A	4	-	-	80	
81	SPARE	20-1		B			OPEN	82	
83	SPARE	20-1		C			OPEN	84	
NOTES:									
A: PANEL SHALL BE EQUAL TO SQUARE D MODEL "QO"									
B: ELECTRICIAN SHALL VERIFY BREAKER WITH EQUIPMENT PRIOR TO PURCHASE & INSTALL.									
C: AFTER COMPLETION OF WORK, ELECTRICIAN SHALL PROVIDE A TYPE WRITTEN PANEL DIRECTORY IN NEW PANEL.									
D: *INDICATES GFCI BREAKER									

ELECTRICAL SPECIFICATIONS

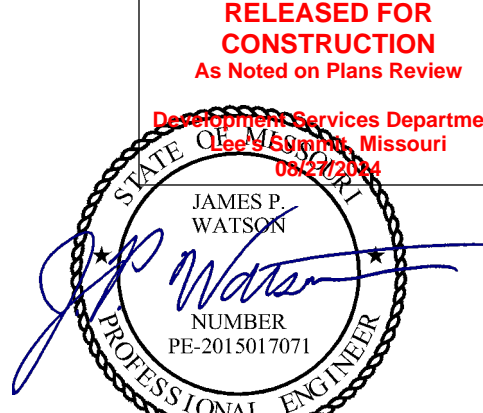
1. GENERAL
- 1.1. CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL NECESSARY PIECES AND COMPONENTS TO PROVIDE A COMPLETE AND COMPLIANT ELECTRICAL SYSTEM UNLESS OTHERWISE NOTED ON PLANS.
- 1.2. THE ENTIRE ELECTRICAL SYSTEM SHALL BE CONTINUOUSLY GROUNDED. EVERY BRANCH CONDUIT SHALL INCLUDE A GREEN GROUND CONDUCTOR SIZED PER NEC.
- 1.3. ARC-FAULT CIRCUITS SHALL BE RUN WITH A DEDICATED NEUTRAL AS REQUIRED BY MANUFACTURER.
- 1.4. PROVIDE PERMANENT ARC-FLASH LABEL AFFIXED TO EVERY DISCONNECT AND PANEL.
- 1.5. PROVIDE TYPE WRITTEN PANEL SCHEDULE FOR EACH PANEL.
2. WORKMANSHIP
- 2.1. ALL ELECTRICAL SYSTEM COMPONENTS SHALL BE INSTALLED LEVEL, PLUMB, AND PARALLEL PERPENDICULAR TO BUILDING ORIENTATION WHERE POSSIBLE.
- 2.2. ALL ELECTRICAL DEVICES AND LIGHT FIXTURES SHALL BE INSTALLED IN A SAFE, FIRST-CLASS MANNER WITH ATTENTION GIVEN TO OVERALL AESTHETICS. CARE SHOULD BE TAKEN TO ALLOW FOR FUTURE REPLACEMENT AND ACCESS FOR SERVICE.
3. MATERIALS
- 3.1. CONDUIT & CONDUCTORS
- 3.1.1. ALL CONDUCTORS SIZES INDICATED ARE COPPER UNLESS NOTED OTHERWISE ON PLANS.
- 3.1.2. ABOVE GRADE CONDUCTORS SHALL BE TYPE THHN.
- 3.1.3. BELOW GRADE CONDUCTORS SHALL BE TYPE XHHW-2.
- 3.1.4. MINIMUM CONDUCTOR SIZE SHALL BE #12 AWG UNLESS NOTED OTHERWISE. 120-VOLT, 20-AMP CIRCUITS WITH CONDUCTOR LENGTHS GREATER THAN 100' SHALL BE #10 AWG MINIMUM. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR MEASURING ACTUAL CONDUCTOR LENGTH AND INCREASING CONDUCTOR SIZE TO COMPENSATE FOR VOLTAGE DROP AS REQUIRED BY NEC.
- 3.1.5. RIGID GALVANIZED OR SCHEDULE 40 PVC CONDUIT SHALL BE USED FOR SERVICE WIRING, BELOW GRADE INSTALLATIONS, OR WHERE EXPOSED TO WEATHER.
- 3.1.6. IN APPLICATIONS OTHER THAN THOSE LISTED IN 3.1.4, EMT OR MC CABLE IS ACCEPTABLE. WHERE CONDUCTORS ARE PROTECTED FROM DAMAGE, ENCLOSED IN BUILDING MATERIALS, AND CONSTRUCTION IS OF A PERMITTED TYPE, NM CABLE MAY BE USED.
- 3.1.7. FOR CAST-IN-PLACE CONCRETE, TILT-UP WALL CONSTRUCTION, OR PRE-MANUFACTURED WALL SYSTEMS, COORDINATE EXACT LOCATIONS OF ALL DEVICES WITHIN WALLS WITH WALL SUPPLIER. CONDUIT EMBEDDED IN WALLS SHALL BE SCHEDULE 80 PVC OR LFMC, OR OTHER SYSTEM APPROVED BY WALL MANUFACTURER.
- 3.1.8. EXPOSED CONDUIT SHALL BE PAINTED TO MATCH ADJACENT SURFACES, VERIFY COLOR WITH ARCHITECT/OWNER.
- 3.2. DEVICES
- 3.2.1. CONTRACTOR TO PROVIDE J-BOXES, COVER PLATES, AND ANY ACCESSORIES REQUIRED TO PROVIDE A COMPLETE SYSTEM. SEE ARCHITECTURAL PLANS FOR DEVICE COLORS.
- 3.2.2. DUPLEX RECEPTACLES SHALL BE TAMPER RESISTANT, 20-AMP, EQUAL TO LEVITON #TBR-20.
- 3.2.3. SINGLE POLE TOGGLE WALL SWITCHES SHALL BE EQUAL TO LEVITON CS120-2.
- 3.2.4. THREE-WAY TOGGLE WALL SWITCHES SHALL BE EQUAL TO LEVITON CS320-2.
- 3.2.5. DIMMER SWITCHES SHALL BE TESTED WITH FIXTURES AND LAMPS FOR COMPATIBILITY. SEE LIGHTING PLANS FOR DETAILS.
- 3.2.6. WHERE GFCI PROTECTION IS SHOWN ON PLANS AND UNLESS OTHERWISE NOTED, PROVIDE A LISTED GFCI-PROTECTED RECEPTACLE WHERE THE RECEPTACLE IS ACCESSIBLE ON PLANS. IF THE RECEPTACLE LOCATION IS NOT ACCESSIBLE AS DEFINED BY NEC, PROVIDE GFCI PROTECTION AT CIRCUIT BREAKER.
- 3.2.7. DO NOT INSTALL OCCUPANCY/VACANCY SENSORS WITH 48" OF HVAC DIFFUSERS/GRILLES OR SIMILAR OBSTRUCTION THAT MAY AFFECT SENSOR FUNCTIONALITY. ALL SENSORS SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
- 3.2.8. ALL APPLICABLE SWITCHES, RECEPTACLES, CONTROLS, ETC. SHALL BE MOUNTED AT ADA-ACCESSIBLE HEIGHTS.
- 3.2.9. WIRING DEVICES SHOWN ON PLANS NEXT TO ONE ANOTHER SHALL UTILIZE A SINGLE COVER PLATE UNLESS NOTED OTHERWISE.
- 3.3. WIRING DEVICES SHOWN BACK-TO-BACK ON EACH SIDE OF A WALL SHALL BE OFFSET TO REDUCE SOUND TRANSMISSION.
- 3.4. EACH RECEPTACLE COVER SHALL BE NEATLY AND LEGIBLY LABELED WITH CORRESPONDING PANEL AND CIRCUIT NUMBER FOR CIRCUIT IDENTIFICATION.
4. EMERGENCY LIGHTING
- 4.1. BRANCH CIRCUIT FEEDING EMERGENCY FIXTURE(S) SHALL BE SAME BRANCH CIRCUIT AS THAT SERVING NORMAL LIGHTING IN SAME AREA AND CONNECTED AHEAD OF ANY LOCAL SWITCHES.
- 4.2. EMERGENCY LIGHTING SYSTEM SHALL PROVIDE 1FC AVERAGE AND 0.1FC MINIMUM ALONG EGRESS PATHS. ADJUST ANY EMERGENCY FIXTURES AS NECESSARY TO PROVIDE PROPER ILLUMINATION WITHOUT OBSTRUCTION FROM FURNITURE OR OBSTACLES.



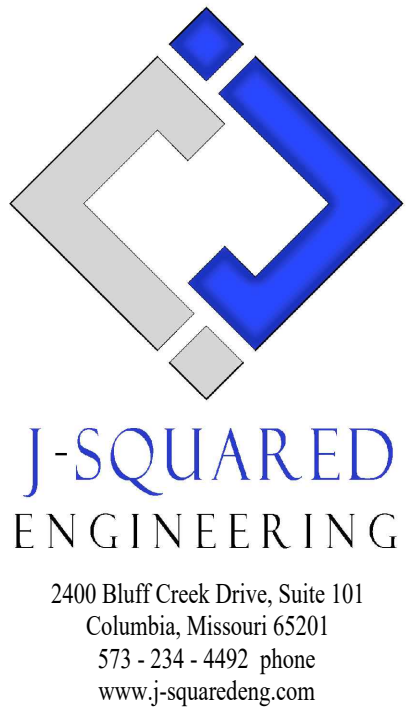
- POWER RISER NOTES:
- COORDINATE DETAILS & REQUIREMENTS OF NEW ELECTRIC SERVICE WITH EVERYG.
 - ALL NEW METERING EQUIPMENT MUST BE APPROVED BY EVERYG.
 - EACH METER MUST BE PERMANENTLY LABELED.
 - AIC-RATINGS BASED ON:
 - TRANSFORMER: 75kVA, 100% POWER FACTOR, 3.50% Z, LOCATED APPROXIMATELY WHERE SHOWN ON PLANS.
 - METER LOCATION INSTALLED APPROXIMATELY WHERE SHOWN ON PLANS.
 - ELECTRICAL PANEL LOCATION INSTALLED APPROXIMATELY WHERE SHOWN ON PLANS.
 - CONTRACTOR TO FIELD VERIFY FINAL EQUIPMENT LOCATIONS AND PERFORM ADDITIONAL AIC RATING CALCULATIONS IF NECESSARY.



LIGHTING CONTROL PANEL SCHEDULE		
RELAY #	OVERRIDE SWITCH	OPERATIONAL SCHEDULE
1	NO	ON VIA TIME CLOCK DURING OCCUPIED HOURS.
2	NO	ON VIA TIME CLOCK 24/7.
3	NO	ON VIA TIME CLOCK & PHOTOCELL DURING NIGHT HOURS.
4	NO	ON VIA TIME CLOCK & PHOTOCELL DURING NIGHT HOURS.
5	NO	ON VIA TIME CLOCK & PHOTOCELL DURING NIGHT HOURS.
6	NO	ON VIA TIME CLOCK & PHOTOCELL DURING NIGHT HOURS.

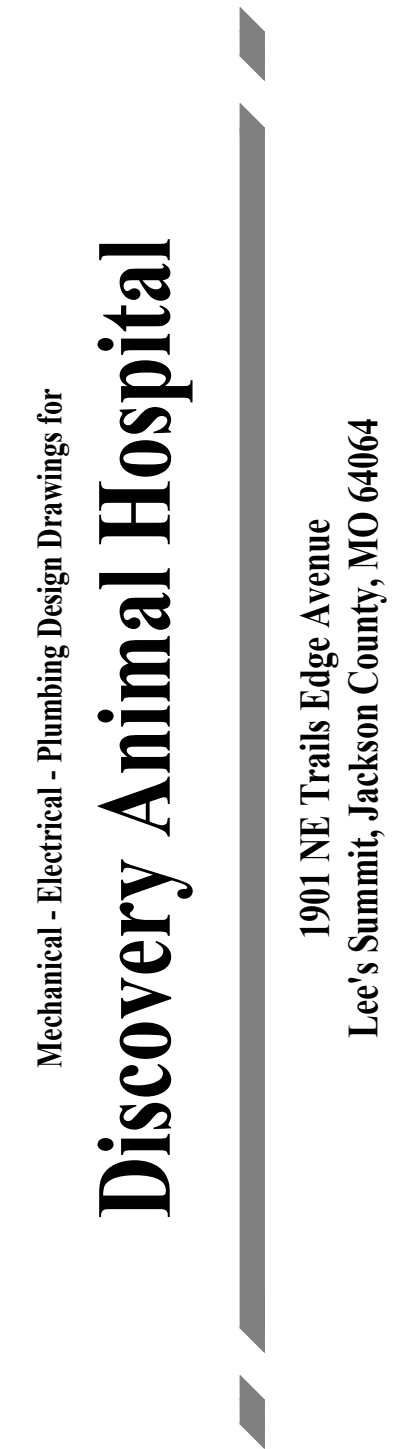


James Watson, P.E. August 16, 2024
PE-2015017071
MO Certificate of Authority # 2018029680



J2 PROJECT No:	J21209
J2 DESIGN:	ACW

ISSUE TITLE		DATE
PERMIT SET		06 / 14 /2024
REVISION #1		08 / 16 /2024

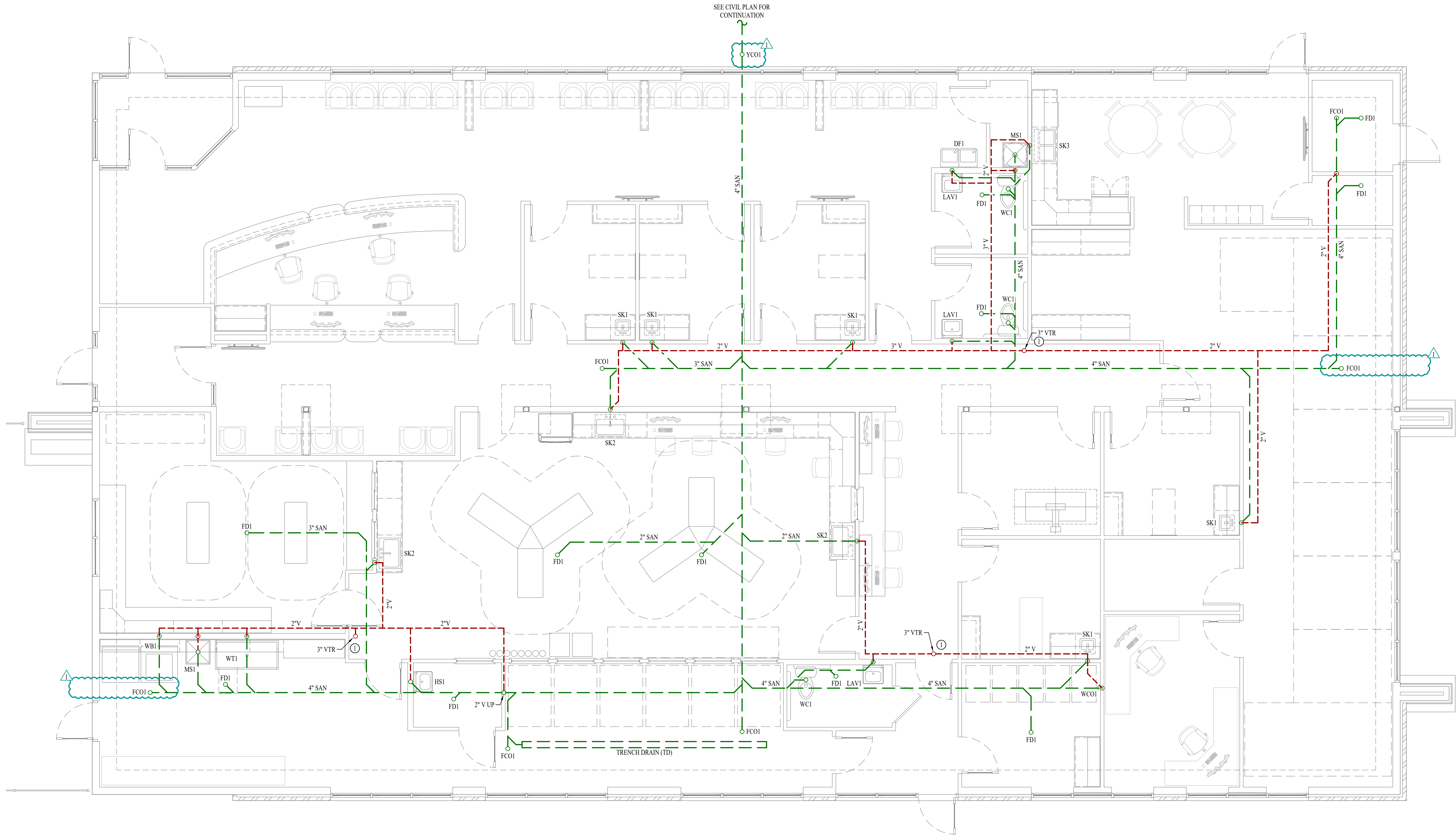


SHEET TITLE

ELECTRICAL
DETAILS

SHEET NUMBER

E601



SANITARY SEWER PLAN

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

SANITARY SEWER PLAN SYMBOL LEGEND

- SANITARY SEWER PIPING
- VENT PIPING
- PIPING TURNED DOWN / TURNED UP
- ✕ TIE INTO EXISTING

SANITARY SEWER PLAN GENERAL NOTES:

- SEE SHEET P501 FOR ADDITIONAL PLUMBING NOTES, DETAILS, & SCHEDULES.

SANITARY SEWER PLAN KEY NOTES:

- LOCATE VENT-THRU-ROOF (VTR) AT LEAST 10' FROM MECHANICAL FRESH AIR INTAKE LOCATIONS ON ROOF; COORDINATE WITH HVAC CONTRACTOR.

RELEASED FOR CONSTRUCTION
As Noted on Plans Review
Missouri Department of Transportation
James P. Watson, P.E.
August 16, 2024
PE-2015017071
MO Certificate of Authority # 2018029680

J-SQUARED ENGINEERING
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J2 PROJECT No:	J21209
J2 DESIGN:	ACW
ISSUE TITLE	DATE
PERMIT SET	06 / 14 / 2024
REVISION #1	08 / 16 / 2024

Mechanical - Electrical - Plumbing Design Drawings for

Discovery Animal Hospital

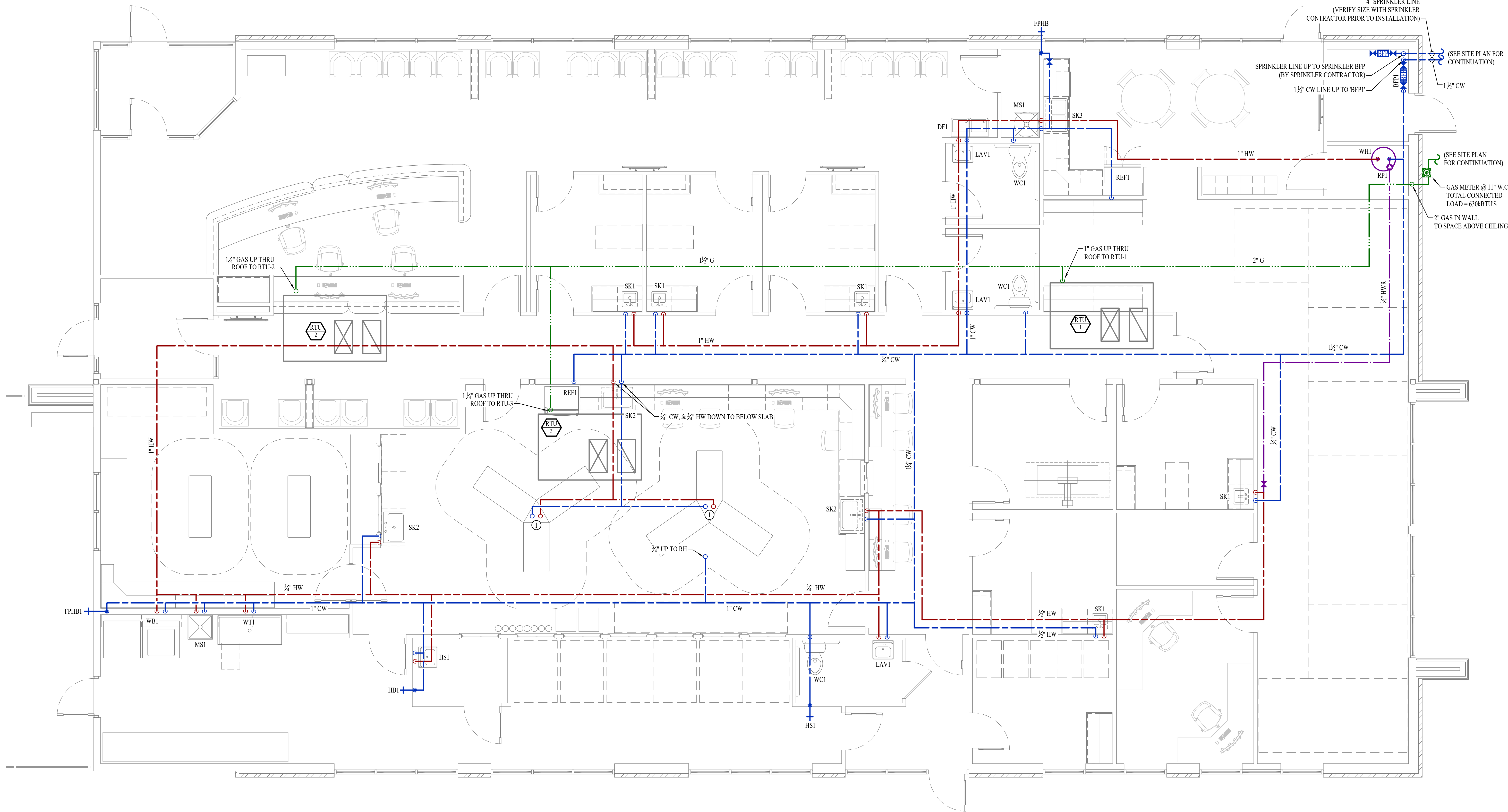
1901 NE Trails Edge Avenue
Lee's Summit, Jackson County, MO 64064

SHEET TITLE

SANITARY SEWER PLAN

SHEET NUMBER

PS101



WATER & GAS PLAN
SCALE: 1/4" = 1'-0"

WATER & GAS PLAN SYMBOL LEGEND

- COLD WATER LINE
- HOT WATER LINE
- HOT WATER RECIRCULATION LINE
- FILTERED WATER LINE
- WATER METER
- VALVE
- PUMP
- GAS LINE
- GAS METER
- PIPING TURNED DOWN / TURNED UP

WATER & GAS PLAN GENERAL NOTES:

- SEE SHEET P501 FOR ADDITIONAL PLUMBING NOTES, DETAILS, & SCHEDULES.

WATER & GAS PLAN KEY NOTES:

- ① CONNECT TO OWNER PROVIDED MED TOWER; COORDINATE EXACT LOCATION & REQUIREMENTS WITH G.C.

RELEASED FOR CONSTRUCTION
As Noted on Plans Review
Professional Services Department
Missouri
JAMES P. WATSON
NUMBER
PE-2015017071
MO Certificate of Authority # 2018029680
June 14, 2024

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J2 PROJECT No:	J21209
J2 DESIGN:	ACW
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PERMIT SET	06 / 14 / 2024

Mechanical - Electrical - Plumbing Design Drawings for
Discovery Animal Hospital
1901 NE Trails Edge Avenue
Lee's Summit, Jackson County, MO 64064

SHEET TITLE

WATER & GAS PLAN

SHEET NUMBER

PW101

PLUMBING SPECIFICATIONS

1.

GENERAL
- 1.1.

PLUMBING CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL ESCUTCHEONS, ¼ TURN STOPS, P-TRAPS, AND SUPPLY LINES TO PROVIDE A COMPLETE SYSTEM AT EACH FIXTURE INDICATED ON PLANS UNLESS NOTED OTHERWISE.
- 1.2.

ALL PLUMBING SYSTEMS SHALL BE INSTALLED LEVEL, PLUMB, AND PARALLEL/PERPENDICULAR TO BUILDING ORIENTATION WHERE POSSIBLE.
- 1.3.

COORDINATE ALL PIPING INSTALLATIONS WITH STRUCTURAL GRADE BEAMS, FOOTINGS, COLUMN PIERS, ETC. SLEEVE PIPING THRU STRUCTURAL ELEMENTS AS NECESSARY, VERIFY WITH STRUCTURAL ENGINEER.
- 1.4.

VERIFY ALL UTILITY CONNECTION POINTS WITH PROPOSED PLUMBING LAYOUTS PRIOR TO BEGINNING WORK.
- 1.5.

CLEAN ALL PLUMBING FIXTURES AND CHANGE FAUCET AERATORS AND SINK STRAINERS AT PROJECT COMPLETION PRIOR TO TURNING OVER TO OWNERSHIP.
2.

EQUIPMENT / FIXTURES
- 2.1.

ALL EQUIPMENT AND/OR FIXTURES MUST MEET OR EXCEED THE PERFORMANCE, FUNCTIONAL INTENT, AND AESTHETICS AS MODELS SPECIFIED ON PLANS, WHERE SPECIFIC MANUFACTURERS AND/OR MODELS ARE INDICATED ON PLANS OR WITHIN SCHEDULES, CONTRACTOR TO PROVIDE MODEL INDICATED OR APPROVED EQUAL. VERIFY SUBSTITUTION APPROVAL PRIOR TO PURCHASE OR INSTALLATION OF EQUIPMENT.
- 2.2.

CONTRACTOR TO SUPPLY SUBMITTALS FOR ALL EQUIPMENT FOR REVIEW BY ARCHITECT AND ENGINEER. FORMAL APPROVAL SHALL BE RECEIVED BY CONTRACTOR PRIOR TO EQUIPMENT PURCHASE.
- 2.3.

CONTRACTOR TO SHARE APPROVED EQUIPMENT SUBMITTALS WITH ANY PERTINENT ELECTRICAL REQUIREMENTS WITH ELECTRICAL CONTRACTORS WITHIN TWO WEEKS OF RECEIVING APPROVED SUBMITTALS FROM ARCHITECT/ENGINEER.
3.

SANITARY
- 3.1.

BELOW AND ABOVE GRADE WASTE AND VENT PIPING IN BUILDING TO BE SOLID CORE SCHEDULE 40 PVC LISTED FOR DWV APPLICATIONS.
- 3.2.

NO WASTE OR VENT PIPING INSTALLED BELOW GRADE SHALL BE SMALLER THAN 2".
- 3.3.

MINIMUM SLOPES FOR WASTE PIPING (UNLESS NOTED OTHERWISE ON PLANS):
- 3.3.1.

2½" OR LESS DIAMETER: ¼" PER FOOT
- 3.3.2.

3" TO 6" DIAMETER: ⅓" PER FOOT
- 3.3.3.

8" OR LARGER DIAMETER: ½" PER FOOT
- 3.4.

ACCESSIBLE FULL PIPE SIZE CLEANOUTS SHALL BE PROVIDED & INSTALLED ON BUILDING SANITARY LINES AT LOCATIONS SHOWN ON PLANS, AT INTERVALS OF NO MORE THAN 100', AT EVERY CHANGE IN DIRECTION GREATER THAN 45°, AND AT THE BASE OF EACH WASTE STACK.
- 3.5.

WASTE AND VENT PIPING IN PLENUMS SHALL BE CAST IRON, PLENUM-RATED CPVC, OR PVC WITH AN INSULATION WRAP LISTED FOR USE AS SUCH AN ASSEMBLY.
- 3.6.

ALL VENT PIPE TERMINATIONS SHALL BE LOCATED EITHER 10' HORIZONTALLY OR 3' ABOVE MECHANICAL AIR INTAKE LOCATIONS. TERMINATIONS SHALL NOT BE INSTALLED UNDER ANY OPERABLE BUILDING OPENING OR OPERABLE ADJACENT BUILDING OPENING. CONTRACTOR TO OFFSET VENT PIPING AS NECESSARY TO MEET THESE REQUIREMENTS.
4.

DOMESTIC WATER
- 4.1.

ALL DOMESTIC WATER PIPING TO BE EITHER COPPER OR PEX, SHALL CONFORM TO NSF 61 AND BE LISTED FOR USE IN POTABLE WATER SYSTEMS.
- 4.1.1.

WHERE PEX PIPING IS USED, IT SHALL BE INCREASED ONE PIPE SIZE FROM WHAT IS INDICATED ON PLANS FOR ALL PORTIONS OF DISTRIBUTION SYSTEM.
- 4.1.2.

PEX-A MAY BE INSTALLED AT SIZES INDICATED ON PLANS ONLY IF AN ENGINEERED PLAN IS SUBMITTABLE SHOWING ACCEPTABLE PRESSURE DROPS AND FLUID VELOCITIES. APPROVAL MUST BE GRANTED PRIOR TO PURCHASE AND INSTALLATION.
- 4.1.3.

COPPER WATER PIPING BELOW GRADE SHALL BE TYPE "K". BELOW GRADE JOINTS SHALL BE SILVER SOLDERED. THERE SHALL BE NO JOINTS IN WATER PIPING LOCATED BENEATH BUILDING SLAB.
- 4.1.4.

COPPER WATER PIPING ABOVE GRADE SHALL BE TYPE "L".
- 4.2.

PROVIDE WATER HAMMER ARRESTORS AT ALL QUICK-CLOSE VALVES. FIXTURES REQUIRING WATER HAMMER ARRESTORS INCLUDE BUT ARE NOT LIMITED TO FLUSH VALVES, SENSOR FAUCETS, AND WASHING MACHINE BOXES. AIR CHAMBERS SHALL NOT BE PERMITTED.
- 4.3.

ALL DOMESTIC WATER PIPING SHALL BE ROUTED WITHIN BUILDING THERMAL ENVELOPE AND WITHIN WALL CAVITIES, ABOVE FINISHED CEILINGS, OR BELOW SLAB TO REMAIN CONCEALED UNLESS OTHERWISE NOTED. NOTIFY ENGINEER OF ANY NECESSARY ADJUSTMENTS THAT REQUIRE PIPING TO BE EXPOSED.
- 4.4.

DOMESTIC WATER PIPING INSULATION
- 4.4.1.

ALL HW PIPING, WHETHER COPPER OR PEX, SHALL BE INSULATED WITH PLENUM RATED CLOSED CELL ELASTOMERIC INSULATION.
- 4.4.1.1.

FOR PIPING LESS THAN 1½", INSULATION THICKNESS TO BE 1".
- 4.4.1.2.

FOR PIPING 1½" OR GREATER, INSULATION THICKNESS SHALL BE 1½".
- 4.4.2.

CW COPPER PIPING TO INSULATED WITH ½" PLENUM RATED CLOSED CELL ELASTOMERIC INSULATION. CW PEX NEED NOT BE INSULATED UNLESS NOTED OTHERWISE ON PLANS.
5.

GAS PIPING
- 5.1.

GAS PIPING SHALL BE INSTALLED LEVEL, PLUMB, AND PARALLEL OR PERPENDICULAR TO BUILDING ORIENTATION WHERE POSSIBLE.
- 5.2.

QUARTER-TURN FULL-PORT SHUTOFF VALVES SHALL BE INCLUDED AT EACH APPLIANCE CONNECTION, AS WELL AS AN IN-LINE REGULATOR FROM DELIVERY PRESSURE TO APPLIANCE OPERATING PRESSURE IF REQUIRED. INCLUDE SEDIMENT TRAPS PER IFGC REQUIREMENTS.
- 5.1.

NATURAL GAS AND LIQUID PROPANE (LP) PIPING TO SHALL BE SCHEDULE 40 BLACK STEEL.
- 5.2.

PIPE JOINTS SHALL BE THREADED WITH CLASS 150 FITTINGS, OR WELDED. NOTIFY OWNER/GC OF ANY NECESSARY HOT-WORK ASSOCIATED WITH WELDED CONNECTIONS.
- 5.3.

WHERE PIPING IS EXPOSED ON EXTERIOR FACE OF BUILDING, PAINT TO MATCH BUILDING. PAINT YELLOW IN ALL OTHER LOCATIONS.
- 5.4.

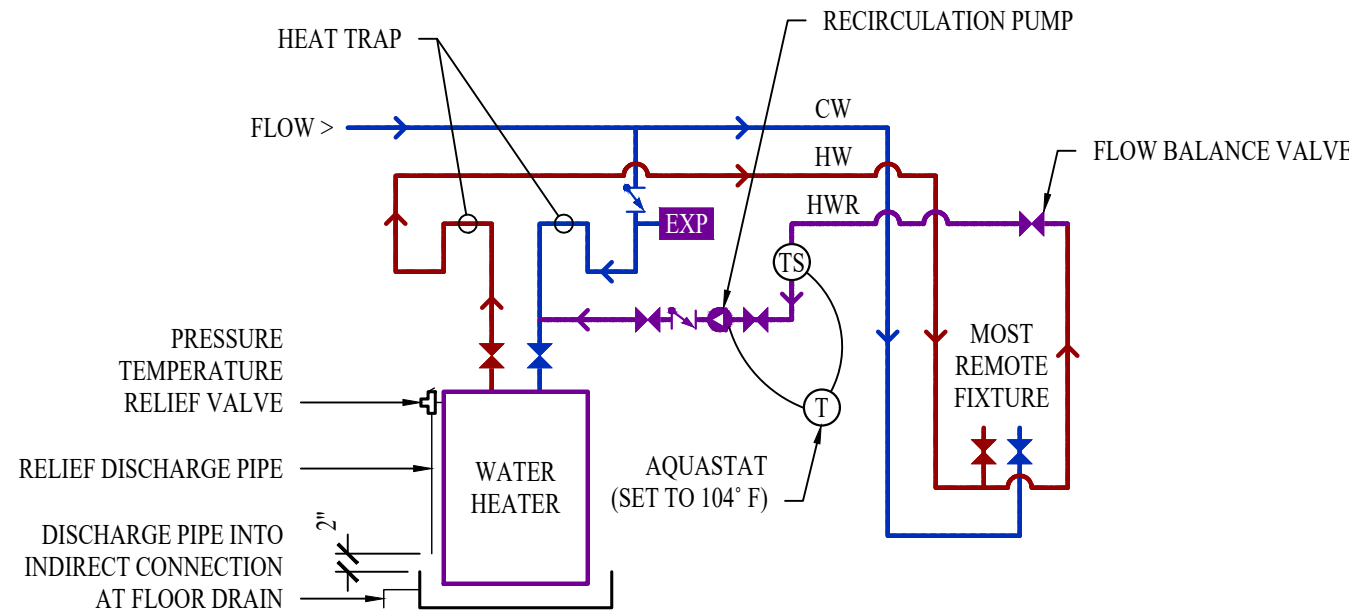
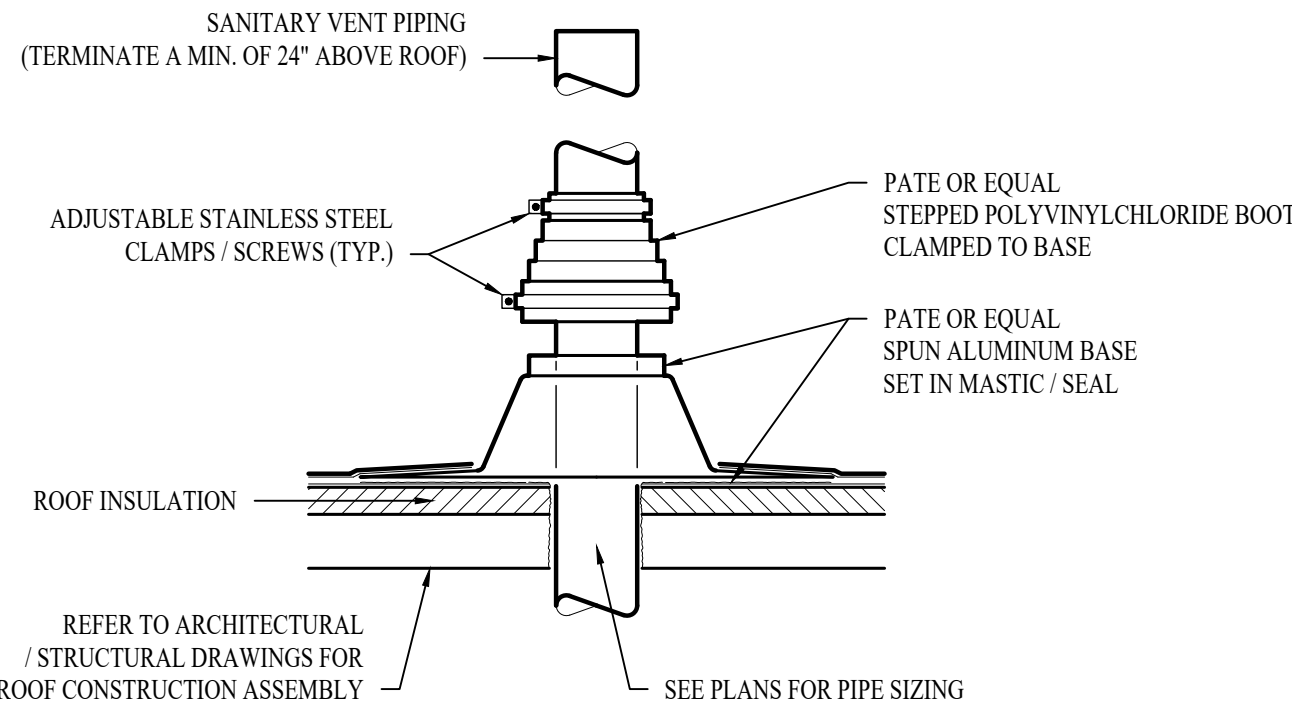
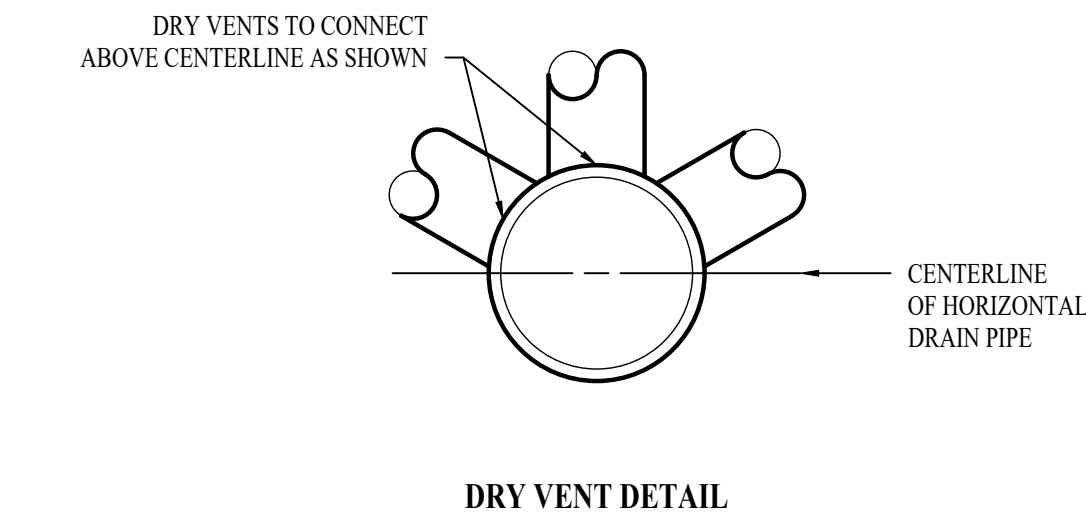
ON ROOFTOPS, INSTALL GAS PIPE WITH "ROOFTOP BLOX" PER MANUFACTURER'S INSTRUCTION.
6.

STORM DRAIN PIPING
- 6.1.

ABOVE AND BELOW GRADE STORM PIPING SHALL BE SOLID CORE SCHEDULE 40 PVC.
- 6.2.

ALL PRIMARY & SECONDARY STORM DRAIN PIPING & FITTINGS SHALL BE INSULATED WITH ½" FIBERGLASS INSULATION WITH ASI JACKET.
- 6.3.

STORM DRAIN PIPING IN PLENUMS SHALL BE CAST IRON, PLENUM-RATED CPVC, OR PVC WITH AN INSULATION WRAP LISTED FOR USE AS SUCH AN ASSEMBLY.



PLUMBING FIXTURE SCHEDULE				
TAG	DESCRIPTION	MANUFACTURER (OR EQUAL)	MODEL (OR EQUAL)	NOTES
BFP1	BACKFLOW PREVENTER	WILKINS	97SSX1.2	RPZ - 1.25"
DF1	DRINKING FOUNTAIN	ELKAY	EZST18LC	HI/LOW
EXP1	EXPANSION TANK	WATTS	PLT-5	
FCO1	FLOOR CLEANOUT	ZURN	1400	
FD1	FLOOR DRAIN	ZURN	Z415-BZ	WITH Z1072 TRAP SEAL
FPHB1	FROST PROOF HOSE BIB	WOODFORD	MODEL 67	
HB1	HOSE BIB	JR SMITH	5670-H	INTERIOR HOSE BIB WITH VACUUM BREAKER
HS1	HAND SINK	ELKAY	C181716LRSC	
LA V1	LAVATORY (WALL HUNG W/MANUAL FAUCET)	AMERICAN STANDARD	0355.012	WITH ZURN Z81104-XL FAUCET, 1/4 TURN STOPS, BRAIDED STAINLESS STEEL SUPPLIES, AND TRUBRO LAV GUARD 2
MS1	MOP SINK	FIAT	MSH2424	WITH ZURN Z848M1 FAUCET WITH WALL HOOK
REF1	REFRIGERATOR BOX	SOUX CHIEF	696-G1000	
RH1	ROOF HYDRANT	WOODFORD	SRH-MS	
RP1	RECIRCULATION PUMP	GRUNDEOS	UP10-15BUA/TLC	
SK1	SINGLE COMPARTMENT SINK (15x15x6)	ELKAY	HCR15	WITH TWO HANDLED ZURN Z871C4-XL FAUCET
SK2	SINGLE COMPARTMENT SINK (22x19x7)	ELKAY	LR2219	WITH TWO HANDLED ZURN Z871C4-XL FAUCET
SK3	DOUBLE COMPARTMENT SINK W/DISPOSAL (33x22x7)	ELKAY	CR3322	WITH TWO HANDLED ZURN Z871C4-XL FAUCET AND INSINKERATOR BADGER 1 DISPOSAL WITH POWER CORD
TD1	TRENCH DRAIN	ZURN	Z886-HPS	
WB1	WASHER BOX	OATEY	CENTRO II	
WC1	WATER CLOSET - ADA HEIGHT - TANK	AMERICAN STANDARD	215A.A.004	WITH CHURCH 7200SLBC SEAT AND COVER, STAINLESS BRAIDED SUPPLY, AND 1/4 TURN SHUT-OFF
WCO1	WALL CLEAN OUT			
WH1	WATER HEATER	A.O SMITH	DEH.50	50 GALLON, 208V, 4000W
WT1	FAUCET FOR WASH TUB	ZURN	Z842X1-XL-AF	
YCO1	YARD CLEAN OUT	ZURN	Z1400	
NOTES: 1. VERIFY NECESSARY FIXTURES MEET ADA REQUIREMENTS WITH ARCHITECT PRIOR TO INSTALLATION				

PLUMBING CONNECTION SIZING SCHEDULE					
FIXTURE		SANITARY PIPING		SUPPLY PIPING	
TYPE	TYPICAL ABBREVIATION	WASTE CONNECTION	VENT CONNECTION	COLD WATER CONNECTION	HOT WATER CONNECTION
DRINKING FOUNTAIN	DF	1-1/2"	1-1/4"	1/2"	-
FLOOR DRAIN	FD	3"	2"	-	-
HAND / HAIR SINK	HS / SK	2"	1-1/4"	1/2"	1/2"
HOSE BIBB	HB	-	-	3/4"	-
LAVATORY	LAV	1-1/2"	1-1/4"	1/2"	1/2"
MOP SINK	MS	3"	1-1/2"	1/2"	1/2"
ICE MAKER OUTLET BOX	REF	-	-	1/2"	-
SHOWER	SH	3"	1-1/2"	1/2"	1/2"
URINAL	UR	2"	1-1/4"	3/4"	-
WATER CLOSET (FLUSH TANK)	WC	3"	2"	1/2"	-
WATER CLOSET (FLUSH VALVE)	WC	3"	2"	1"	-
NOTES: 1. SIZES SHOWN ABOVE ARE TYPICAL UNLESS NOTED OTHERWISE ON PLANS					