

**DRAWINGS**

COVER

**ARCHITECTURAL**

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# MIDWEST DISTRIBUTION TI

**1220 NW MAIN STREET  
LEE'S SUMMIT, MO  
64086**

**08.29.23  
PERMIT SET**

**ARCHITECT**



**CURRAN**  
ARCHITECTURE

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Midwest Distribution TI  
Project # 230139









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**KEYED NOTES**

- EXIT, EXIT SIGN, AND EMERGENCY LIGHTING ABOVE DOOR INTERIOR WITH BATTERY BACKUP. EXTERIOR EGRESS LIGHTING ABOVE DOOR TIED TO BATTERY BACK UP.
- PROPOSED FIRE EXTINGUISHER LOCATION. VERIFY WITH FIRE MARSHAL. FINAL QUANTITY AND LOCATIONS TO BE DETERMINED WITH FINAL RACKING PLAN AND FIRE DEPARTMENT REVIEW.
- EXISTING PUMP ROOM.
- 1 HOUR RATED DEMISING WALL, CENTERED ON COLUMN LINE.

**CODE ANALYSIS**

**APPLICABLE CODES**

- BUILDING CODE  
2018 INTERNATIONAL BUILDING CODE
- PLUMBING CODE  
2017 INTERNATIONAL PLUMBING CODE
- ELECTRICAL CODE  
2017 NATIONAL ELECTRICAL CODE
- FIRE CODE  
2018 INTERNATIONAL FIRE CODE
- MECHANICAL CODE  
2014 INTERNATIONAL MECHANICAL CODE
- FUEL GAS CODE  
2018 FUEL GAS CODE
- HANDICAPPED ACCESSIBILITY CODE  
2009 ANSI A117.1  
ADA ACCESSIBILITY GUIDELINES

**OCCUPANCY (OVERALL BUILDING)**

CLASSIFICATION (302.1): S-1

**OCCUPANCY (TENANT SPACE)**

CLASSIFICATION (302.1): S-1  
ACCESSORY USES (508.2.1): B  
NON-SEPARATED USES (508.3.2): N/A  
SEPARATED USES (508.3.3): N/A

**AUTOMATIC SPRINKLER SYSTEM**

SPRINKLER SYSTEM REQUIRED (903): YES  
SPRINKLER SYSTEM PROVIDED: YES

**ALLOWABLE BUILDING HEIGHT**

TABULAR HEIGHT (503): 2 STORY

**ALLOWABLE BUILDING AREA**

TABULAR AREA (503): 17,500 SF

**BUILDING AREA INCREASE**

INCREASE FOR SPRINKLERED BUILDING (506.3): UNLIMITED  
UNLIMITED AREA (507): UNLIMITED  
FRONTAGE INCREASE (506.2): N/A  
 $I_f = (FIP - 25) \times W / 30$   
TOTAL ALLOWABLE AREA WITH INCREASES: UNLIMITED  
 $A_2 = A_1 + (A_2 \times H) + (A_2 \times L)$   
 $A_3 = \text{FILL IN}$

**ACTUAL BUILDING HEIGHT AND AREA**

BUILDING AREA: 131,615 SF  
BUILDING HEIGHT (FEET / # FLOORS): 42' / 1 FLR  
TENANT AREA: 45,438 SF

**TABULAR OCCUPANT LOAD (1004.1.2)**

WAREHOUSE/STORAGE: 41,934/500  
OFFICE: 3,504/100  
TABULAR OCCUPANTS: 120

**ACTUAL OCCUPANT LOAD (1004.1.2)**

120

**FIRE RESISTIVE REQUIREMENTS (601 AND 602)**

CONSTRUCTION TYPE: II-B  
STRUCTURAL FRAME: NR  
EXTERIOR BEARING WALLS: NR  
INTERIOR BEARING WALLS: NR  
EXTERIOR NON-BEARING WALLS: NR  
INTERIOR NON-BEARING WALLS: NR  
FLOOR CONSTRUCTION: NR  
ROOF CONSTRUCTION: NR  
SHAFTS: N/A

**FIRE RESISTANCE RATED CONSTRUCTION (704, 601, 602)**

RATED EXTERIOR WALLS: N/A  
FIRE SEPARATION DISTANCE: 60+  
UNPROTECTED OPENING AREA: N/A

**INTERIOR WALL AND CEILING FINISH REQUIREMENTS (803)**

SEE FINISH SCHEDULE FOR MATERIALS  
ALL MATERIALS ARE CLASS A RATED

**FIRE PROTECTION SYSTEMS**

STANDPIPE SYSTEM (905): YES  
PORTABLE FIRE EXTINGUISHERS (906.1): SEE PLAN  
FIRE ALARM AND DETECTION SYSTEMS (907): YES  
SMOKE CONTROL SYSTEMS (909): N/A  
SMOKE AND HEAT VENTS (910): N/A

**EGRESS**

MINIMUM WIDTH FACTOR (1005.1): 0.15"  
REQUIRED MINIMUM WIDTH FROM SPACE (1005.1): 14.4"  
MINIMUM NUMBER OF EXITS (1015): 1  
ACTUAL NUMBER OF EXITS: 4  
ACTUAL WIDTH OF EXITS: 180"  
ALLOWABLE TRAVEL DISTANCE (1016.2): 400'  
CORRIDOR CONSTRUCTION (1018.1): N/R  
MINIMUM CORRIDOR WIDTH (1018.2): 44"  
MAXIMUM DEAD END CORRIDOR (1018.4): 50'

**PLUMBING FIXTURE COUNTS**

REQUIRED FIXTURES S-1 (50 / 50 SPLIT MEN/WOMEN): 1  
MEN-42 OCCUPANTS: 1  
TOILETS: 1  
LAVATORIES: 1  
WOMEN-42 OCCUPANTS: 1  
TOILETS: 1  
LAVATORIES: 1  
SERVICE SINKS: 1  
DRINKING FOUNTAINS: 1  
REQUIRED FIXTURES B (50 / 50 SPLIT MEN/WOMEN): 1  
MEN-18 OCCUPANTS: 1  
TOILETS: 1  
LAVATORIES: 1  
WOMEN-18 OCCUPANTS: 1  
TOILETS: 1  
LAVATORIES: 1  
SERVICE SINKS: 1  
DRINKING FOUNTAINS: 1  
PROVIDED FIXTURES:  
MEN: 2  
TOILETS: 1  
URINAL: 1  
LAVATORIES: 3  
WOMEN: 3  
TOILETS: 3  
LAVATORIES: 3  
SERVICE SINKS: 1  
DRINKING FOUNTAINS: 1

**CERTIFICATION**



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**PROJECT INFORMATION**

MIDWEST DISTRIBUTION TI

1220 NW MAIN STREET  
LEE'S SUMMIT, MO 64086

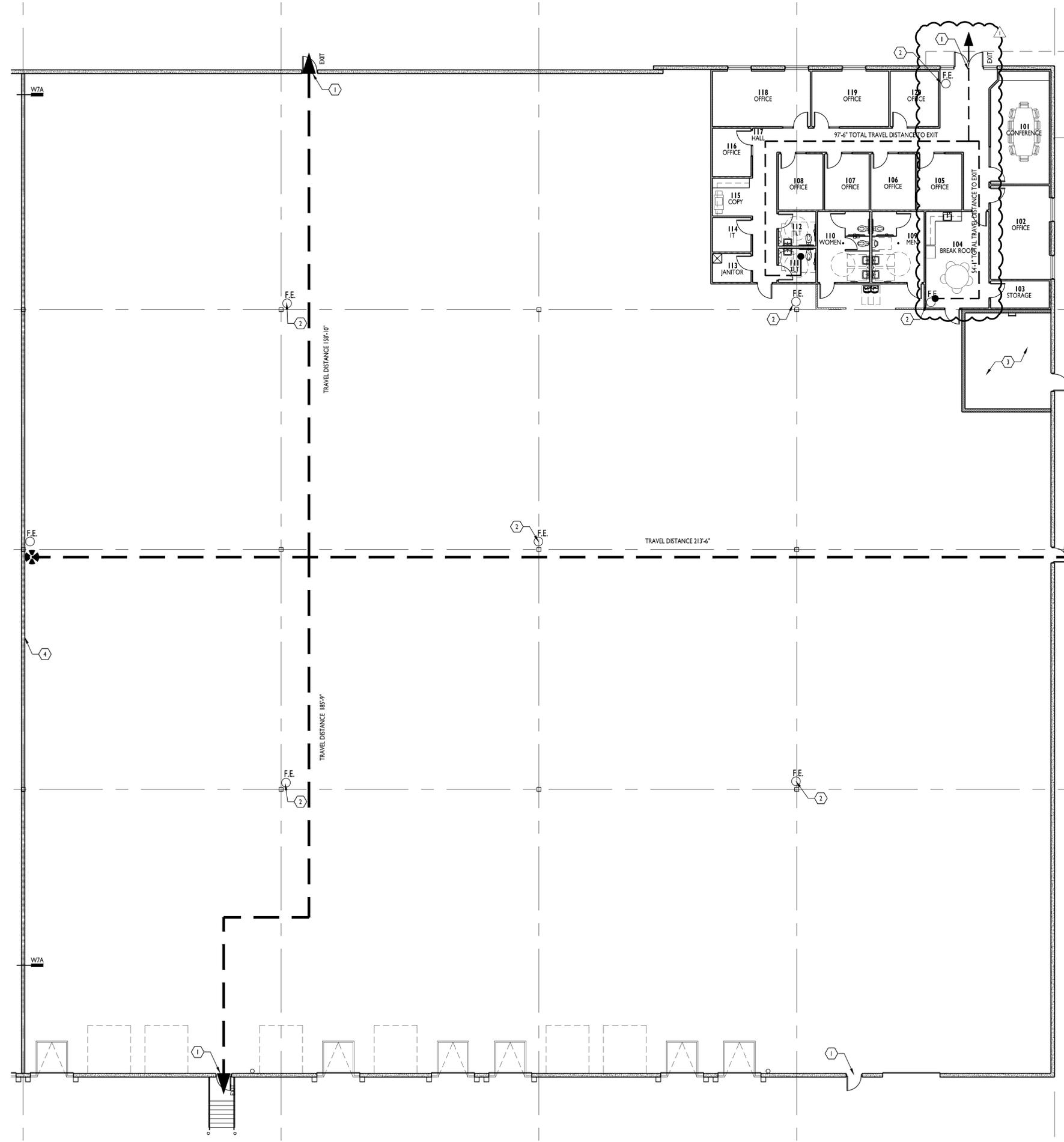
**ISSUE DATES**

PERMIT SET	08.29.23
PERMIT REVIEW COMMENT	09.11.23

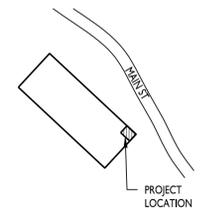
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LIFE SAFETY PLAN

**A100**



**OVERALL LIFE SAFETY PLAN**  
3/32" = 1'-0"



**KEY PLAN**









## DESIGN PARAMETERS

1. BUILDING CODE	2018 INTERNATIONAL BUILDING CODE (IBC)
OCCUPANCY CATEGORY	II
2. LIVE LOADS	
A. ROOF – NON–REDUCIBLE	20 PSF
B. SLAB–ON–GRADE	350 PSF
3. ROOF SNOW LOAD	
A. GROUND SNOW LOAD, P <sub>g</sub>	20 PSF
B. FLAT ROOF SNOW LOAD, P <sub>f</sub>	20 PSF
C. SNOW EXPOSURE FACTOR, C <sub>e</sub>	1.0
D. SNOW LOAD IMPORTANCE FACTOR, I	1.0
E. THERMAL FACTOR, C <sub>t</sub> (BUILDING)	1.0
F. SNOW DRIFT	PER REFERENCED CODE
4. WIND DESIGN DATA	
A. ULTIMATE WIND SPEED (3 SECOND GUST), V	109 MPH
B. WIND IMPORTANCE FACTOR, I	1.00
C. WIND EXPOSURE CATEGORY	C
D. INTERNAL PRESSURE COEFFICIENT, C <sub>pi</sub>	+/- 0.18
E. DESIGN WIND PRESSURE ON COMPONENTS AND CLADDING (1.0W)	
1) WALLS (500 SQUARE FEET EFFECTIVE WIND AREA)	
END ZONES	23.7 PSF
INTERIOR ZONES	23.7 PSF
2) ROOF (10 SQUARE FEET EFFECTIVE WIND AREA FOR DECK ATTACHMENT)	
CORNER ZONES	89.1 PSF
END ZONES	65.4 PSF
INTERIOR ZONE 1	49.6 PSF
INTERIOR ZONE 2	28.5 PSF
F. WIDTH OF END ZONES, α	18.9 FT
5. EARTHQUAKE DESIGN DATA	
A. SEISMIC IMPORTANCE FACTOR, I	1.0
B. MAPPED SPECTRAL RESPONSE ACCELERATION, S <sub>s</sub>	9.9 %
C. MAPPED SPECTRAL RESPONSE ACCELERATION, S <sub>1</sub>	6.8 %
D. SITE CLASS	C
E. SPECTRAL RESPONSE COEFFICIENT, S <sub>ds</sub>	0.086
F. SPECTRAL RESPONSE COEFFICIENT, S <sub>d1</sub>	0.068
G. SEISMIC DESIGN CATEGORY	B
H. STRUCTURAL SYSTEM	
1) BASIC SEISMIC FORCE–RESISTING SYSTEM TYPE	A. BEARING WALL SYSTEMS
2) VERTICAL ELEMENT TYPE	2) ORDINARY PRECAST SHEAR WALLS
3) DESIGN BASE SHEAR, LRFD	0.029 W
4) SEISMIC RESPONSE COEFFICIENT, C <sub>s</sub>	0.029
5) CONTROLLING RESPONSE MODIFICATION FACTOR, R	3
J. ANALYSIS PROCEDURE	EQUIVALENT LATERAL FORCE
6. DEAD LOAD	
A. EPDM MEMBRANE	0.3 PSF
B. RIGID INSULATION	0.7 PSF
C. ROOF DECK	2.0 PSF
D. LIGHTS, PLUMBING, & HVAC	3.0 PSF
E. SPRINKLERS	2.0 PSF
F. STEEL JOISTS	2.0 PSF
G. STEEL GIRDERS	2.0 PSF
H. TOTAL DEAD LOAD ON JOISTS	10.0 PSF
J. TOTAL DEAD LOAD ON COLUMNS	12.0 PSF

## GENERAL NOTES

- GENERAL**
- STRUCTURAL ELEMENTS ARE NON–SELF SUPPORTING AND REQUIRE INTERACTION WITH OTHER ELEMENTS FOR STABILITY AND RESISTANCE TO LATERAL FORCES. FRAMING AND WALLS SHALL BE TEMPORARILY BRACED BY THE CONTRACTOR UNTIL PERMANENT BRACING, ROOF DECKS, AND WALLS HAVE BEEN INSTALLED AND CONNECTIONS BETWEEN THESE ELEMENTS HAVE BEEN MADE.
  - THE STRUCTURAL DRAWINGS REPRESENT THE FINISHED STRUCTURE AND DO NOT INDICATE THE METHOD OF CONSTRUCTION, UNLESS NOTED OTHERWISE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND OPERATION OF CONSTRUCTION AND SAFETY PRECAUTIONS AND PROGRAMS INCIDENTAL THERETO.
  - THE SIZE AND LOCATION OF EQUIPMENT PADS AND PENETRATIONS THROUGH THE STRUCTURE FOR MECHANICAL, ELECTRICAL, AND PLUMBING WORK SHALL BE VERIFIED BY THE CONTRACTOR. PENETRATIONS SHALL BE SUBJECT TO APPROVAL BY THE STRUCTURAL ENGINEER. REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR OPENING LOCATIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS.
  - USE ONLY DIMENSIONS INDICATED ON THE DRAWINGS. DO NOT SCALE DRAWINGS OR USE ANY DIMENSIONS TAKEN FROM ELECTRONIC DRAWING FILES. CONTRACTOR SHALL COORDINATE IN–PLACE DIMENSIONS BASED ON TOLERANCES OF THE RESPECTIVE TRADES.
  - ASSUME EQUAL SPACING IF NOT INDICATED ON DRAWINGS.
  - THE GENERAL NOTES ARE AN INTEGRAL PART OF THE CONTRACT DOCUMENTS AND SHALL BE USED IN CONJUNCTION WITH THE STRUCTURAL DRAWINGS. WHERE REQUIREMENTS INDICATED ON THE STRUCTURAL DRAWINGS DIFFER FROM THE GENERAL NOTES, NOTIFY THE ARCHITECT AND THE STRUCTURAL ENGINEER.
  - THE STRUCTURAL DRAWINGS ARE NOT INTENDED TO BE AN INDEPENDENT SET OF THE CONSTRUCTION DOCUMENTS. SEE ARCHITECTURAL, MEP, CIVIL AND OTHER DRAWINGS FOR INFORMATION RELATED TO THE STRUCTURAL WORK. CONTRACTOR SHALL VERIFY COORDINATION OF THE DESIRED DETAILS PRIOR TO CONSTRUCTION AND NOTIFY THE ARCHITECT AND THE STRUCTURAL ENGINEER IF ADDITIONAL COORDINATION IS REQUIRED.
  - ARCHITECTURAL, MECHANICAL AND ELECTRICAL COMPONENTS AND SYSTEMS SHALL BE DESIGNED AND CONSTRUCTED TO RESIST SEISMIC FORCES AS DETERMINED IN CHAPTER 13 OF ASCE 7.

## STRUCTURAL STEEL

- STRUCTURAL STEEL SHALL MEET THE FOLLOWING MINIMUM YIELD STRESS (F<sub>y</sub>), UNLESS NOTED OTHERWISE:
 

	YIELD	ASTM SPECIFICATION
A. W, WT SHAPES:	50 KSI	A992
B. BARS, PLATES, CHANNELS, ANGLES:	36 KSI	A36
C. SQUARE, RECTANGULAR HSS:	50 KSI	A500, GRADE C
D. ANCHOR RODS:	36 KSI OR 55 KSI	F1554
E. ALL–THREAD RODS:	36 KSI	A36
F. HEADED STUD ANCHORS:	65 KSI TENSILE STRESS	A108, GRADES 1010–1020
- ALL STRUCTURAL STEEL SHALL ADHERE TO THE DETAILING, FABRICATION AND ERECTION REQUIREMENTS OF THE LATEST EDITIONS OF THE AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS AND THE AISC CODE OF PRACTICE.
- BOLTS FOR STEEL BEAM AND COLUMN CONNECTIONS SHALL BE 3/4–INCH DIAMETER ASTM A325–N HIGH–STRENGTH BOLTS UNLESS NOTED OTHERWISE. ALL BOLTED CONNECTIONS ARE BEARING TYPE AND SHALL BE SNUG TIGHTENED UNLESS NOTED OTHERWISE. FOR PRETENSIONED OR SLIP–CRITICAL JOINTS, THE METHOD OF INSTALLATION SHALL BE TURN–OF–NUT WITH MATCH MARKING, TWIST–OFF–TYPE TENSION CONTROL BOLT ASSEMBLIES (ASTM F1852), OR DIRECT TENSION INDICATORS (ASTM F959).
- WELDING SHALL MEET ANSI / AWS D1.1, STRUCTURAL WELDING CODE LATEST REVISION. ELECTRODES SHALL BE E70XX, LOW HYDROGEN. ALL STRUCTURAL STEEL WELDS SHALL BE PERFORMED BY A AWS CERTIFIED WELDER.
- WELDS NOT SPECIFICALLY SIZED ON THE STRUCTURAL DRAWINGS SHALL BE THE MINIMUM SIZE PER THE LATEST AWS D1.1.
- PROVIDE DOUBLE NUTS AND DOUBLE WASHERS FOR STEEL COLUMN ANCHOR BOLTS TO ALLOW FOR ADJUSTMENT IN BASE PLATE ELEVATION. PROVIDE 1 1/2 INCH NON–SHRINK GROUT UNDER BASE PLATE AFTER ERECTION. USE 2 1/2 INCHES NON–SHRINK GROUT WHEN COLUMN ANCHOR BOLTS ARE 1 1/4 INCH DIAMETER OR LARGER. NON–SHRINK GROUT SHALL BE NON–METALLIC WITH A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI AT 28 DAYS.
- SHEAR CONNECTORS SHALL BE A CARBON STEEL HEADED STUD TYPE ASTM A108 GRADES 1010 THRU 1020, AWS D1.1, TYPE B WITH ARC SHIELDS.
- ALL CONNECTIONS ON THE STRUCTURAL DRAWINGS, UNLESS NOTED OTHERWISE, SHALL BE DESIGNED AND DETAILED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED, EMPLOYED OR RETAINED BY THE STEEL FABRICATOR. THE DESIGN AND DETAILING SHALL COMPLY WITH ALL APPLICABLE CODES AND SPECIFICATION SECTIONS.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR INCLUDING THE COSTS FOR ALL MISCELLANEOUS STEEL IN THEIR BID REGARDLESS OF WHETHER THOSE ITEMS ARE INDICATED ON THE STRUCTURAL DRAWINGS. THESE COSTS SHALL INCLUDE BUT ARE NOT LIMITED TO MISCELLANEOUS STEEL ITEMS SHOWN ON ARCHITECTURAL, CIVIL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS SUCH AS SHELF ANGLES, GLAZING SUPPORTS AND LINTELS.
- LEDGER ANGLES AND LINTELS IN EXTERIOR WALL SYSTEMS SHALL BE HOT DIPPED GALVANIZED PER ASTM A123.
- ALL STRUCTURAL STEEL SHALL HAVE A COAT OF LIGHT GRAY PAINT TO PROVIDE PROTECTION AND GOOD APPEARANCE.

## STEEL JOISTS

- STEEL JOISTS SHALL BE AS INDICATED ON THE PLANS AND SHALL BE IN ACCORDANCE WITH THE LATEST SPECIFICATIONS OF THE STEEL JOIST INSTITUTE (SJI) AND MEET THE FOLLOWING:
  - JOISTS SHALL BE DESIGNED FOR THE UNIFORM LOAD CAPACITY (AS SPECIFIED IN THE SJI STANDARD LOAD TABLES) IN ADDITION TO THE CONCENTRATED LOADS SHOWN ON PLANS AND DETAILS.
  - JOISTS THAT SUPPORT CONCENTRATED LOADS SHALL HAVE THEIR CHORDS DESIGNED TO WITHSTAND ALL BENDING STRESSES, OR THE LOADS SHALL OCCUR WITHIN 3 INCHES OF JOIST PANEL POINTS, OR THE JOIST SHALL BE REINFORCED PER THE "JOIST REINFORCING DETAIL" SHOWN HEREIN. CONCENTRATED LOADS SHALL BE CENTERED ON JOISTS AND NOT ATTACHED TO THE EDGE OF CHORD ANGLES.
  - JOISTS SHALL RESIST THE NET UPLIFT PRESSURE AS INDICATED ON THE DETAILS 7 & 8/S4.1. THIS PRESSURE SHALL ACT ALONE. AN ALLOWABLE STRESS INCREASE IS NOT PERMITTED.
  - FOR ALL MEMBERS THAT REQUIRE SPECIFIC ORIENTATION, PROVIDE TAG AT ONE END AND DEFINE LOCATION OF TAGGED END ON ERECTION DRAWINGS.
  - JOIST MANUFACTURER SHALL DETERMINE THE SEAT DEPTH AND WIDTH OF BEARING AND COORDINATE THE SAME WITH THE STEEL FABRICATOR. THE FOLLOWING SEAT DEPTHS ARE ASSUMED ON THE DRAWINGS: 2 1/2 INCHES FOR K–SERIES JOISTS, 5 INCHES FOR LH SERIES JOISTS).
  - JOISTS SHALL BE FABRICATED TO PROVIDE OPENINGS FOR DUCTS AS SHOWN IN THE REQUIRED OPENING IN JOIST DETAIL.
- K–SERIES AND LH–SERIES JOISTS SHALL BE WELDED TO SUPPORTING STEEL WITH MINIMUM 1/8 INCH FILLET WELDS 2 INCHES LONG EACH SIDE OR WITH TWO 1/2 INCH DIAMETER ASTM A307 BOLTS OR THE EQUIVALENT, UNLESS NOTED OTHERWISE. WHEN NEAR OR AT A COLUMN, BOLT JOIST TO SUPPORTING STEEL IN CONFORMANCE WITH OSHA.
- JOIST BRIDGING AND ERECTION STABILITY SHALL BE PROVIDED IN ACCORDANCE WITH THE OCCUPATIONAL SAFETY AND HAZARD ADMINISTRATION (OSHA) AND THE SPECIFICATIONS OF THE STEEL JOIST INSTITUTE (SJI).
- JOIST RTU LOADS ARE PROVIDED ON THE ROOF FRAMING PLAN, REFERENCE PLANS AND DETAILS FOR LOAD LOCATIONS, VALUES AND SUPPORT FRAMING.
- JOIST MANUFACTURER SHALL DESIGN THE COMPRESSION CHORD OF ALL JOISTS SUPPORTING ROOF TOP UNITS, SKY LIGHTS, AND OTHER STRUCTURES FOR AN UNBRACED LENGTH APPLICABLE TO THE CONDITIONS AT THE PROJECT WHERE THE UNBRACED LENGTH IS GREATER THAN THE SJI MAXIMUM. (REFERENCE ARCHITECTURAL AND MECHANICAL DRAWINGS)
- DESIGN JOISTS FOR INTERNAL ROOF DRAINLINE AND FIRE SPRINKLER LINE LOCATIONS, IF REQUIRED. ADD 50 PLF FOR 8 INCH DIAMETER AND SMALLER, ADD 75 PLF FOR 10 INCH DIAMETER, ADD 102 PLF FOR 12 INCH DIAMETER, ADD 122 PLF FOR 14 INCH DIAMETER, ADD 200 PLF FOR 18 INCH DIAMETER. REFERENCE MECHANICAL DRAWINGS FOR EXACT LOCATION. CONTRACTOR SHALL OBTAIN FIRE LINE LOCATIONS AND SIZES PRIOR TO SUBMITTAL OF JOIST SHOP DRAWINGS.
- JOIST DESIGNS SHALL BE PERFORMED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED, EMPLOYED OR RETAINED BY THE JOIST MANUFACTURER.
- SHOP DRAWING SHALL BE REVIEWED BY THE ARCHITECT AND STRUCTURAL ENGINEER OF RECORD PRIOR TO JOIST FABRICATION.
- PROVIDE JOISTS CAPABLE OF WITH STANDING DESIGN LOADS INDICATED WITH LIVE LOAD DEFLECTIONS NO GREATER THAN L/240 OF THE SPAN.
- JOISTS SHALL BE CAMBERED ACCORDING TO SJI'S "SPECIFICATIONS". JOIST AND JOIST GIRDERS SHALL BE SHOP PRIMED WITH MANUFACTURER'S STANDARD SHOP PRIMER.

## STEEL DECK

- ROOF DECK
  - ROOF DECK SHALL BE GALVANIZED TYPE "B". DEPTH SHALL BE AS SHOWN ON DRAWINGS. ROOF DECK SHALL BE BOTTOM PRIMED WHITE
  - ROOF DECK IS REQUIRED TO ACT AS A DIAPHRAGM. CONNECTIONS SHALL BE IN ACCORDANCE WITH STEEL DECK INSTITUTE SPECIFICATIONS. REFER TO THE ROOF DIAPHRAGM CONNECTION DIAGRAM FOR ATTACHMENT.
  - DECKING SHALL BE CONTINUOUS OVER A MINIMUM OF (3) SPANS UNLESS NOTED OTHERWISE.
  - NO HANGING LOADS SHALL BE ATTACHED TO ROOF DECK.

## ABBREVIATIONS

A.B.	ANCHOR BOLTS	DWG.	DRAWING	KSI	KIPS PER SQUARE INCH	QTY.	QUANTITY
ACI	AMERICAN CONCRETE INSTITUTE	E.F.	EACH FACE	LBS.	POUNDS	RE.	REFER
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL	E.J.	EXPANSION JOINT	LLH	LONG LEG HORIZONTAL	REINF.	REINFORCING
A.F.F.	ABOVE FINISHED FLOOR	ELEV.	ELEVATION	LLV	LONG LEG VERTICAL	REQD.	REQUIRED
ARCH.	ARCHITECTURAL	E.O.D.	EDGE OF DECK	LONG.	LONGITUDINAL	R.O.	ROUGH OPENING
BAL.	BALANCE	E.O.S.	EDGE OF SLAB	MAX.	MAXIMUM	RTU	ROOF TOP UNIT
B.L.	BLOCK LINTEL	EQ.	EQUAL	MECH.	MECHANICAL	SCHED.	SCHEDULE
BLDG.	BUILDING	E.W.	EACH WAY	MFR.	MANUFACTURER	S.D.S.	SELF–DRILLING SCREWS
B.O.	BOTTOM OF	EXIST.	EXISTING	MIN.	MINIMUM	SIM.	SIMILAR
B.O.D.	BOTTOM OF DECK	FDN.	FOUNDATION	MISC.	MISCELLANEOUS	SPECS.	SPECIFICATIONS
BRG.	BEARING	F.F.E.	FINISHED FLOOR ELEV.	N.I.C.	NOT IN CONTRACT	STD.	STANDARD
C.J.	CONTRACTION JOINT	F.S.	FAR SIDE	NO.	NUMBER	STL.	STEEL
C.L.	CENTER LINE	FTG.	FOOTING	N.I.S.	NOT TO SCALE	T&B	TOP AND BOTTOM
CLR.	CLEAR	GA.	GAGE	N.S.	NEAR SIDE	T.O.	TOP OF
CMU	CONCRETE MASONRY UNIT	GALV.	GALVANIZED	O.C.	ON CENTER	T.O.P.	TOP OF PIER
COL.	COLUMN	G.B.	GRADE BEAM	O.D.	OUTSIDE DIAMETER	T.O.W.	TOP OF WALL
CONC.	CONCRETE	HORIZ.	HORIZONTAL	O.H.	OPPOSITE HAND	TRANS.	TRANSVERSE
CONST.	CONSTRUCTION	H.S.A.	HEADED STUD ANCHOR	P.A.F.	POWER ACTUATED FASTENER	TYP.	TYPICAL
CONT.	CONTINUOUS	IBC	INTERNATIONAL BUILDING CODE	PCF	POUNDS PER CUBIC FOOT	U.N.O.	UNLESS NOTED OTHERWISE
D.B.A.	DEFORMED BAR ANCHOR	INFO.	INFORMATION	PLF	POUNDS PER LINEAR FOOT	VERT.	VERTICAL
DIA.	DIAMETER	J.B.E.	JOIST BEARING ELEVATION	P.M.E.J.	PREMOLDED EXPANSION JOINT	W.P.	WORK POINT
		JT.	JOINT	PSF	POUNDS PER SQUARE FOOT	WT.	WEIGHT
		K	UNIT OF 1,000 POUNDS (KIP)	PSI	POUNDS PER SQUARE INCH	W.W.R.	WELDED WIRE REINFORCEMENT

## DEFERRED STRUCTURAL SUBMITTALS

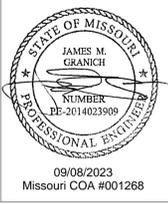
- THE FOLLOWING STRUCTURAL COMPONENTS SHALL BE DESIGNED AND SUBMITTED BY OTHERS FOR APPROVAL IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS.
  - STRUCTURAL STEEL CONNECTIONS OF FRAMING AND BRACING ELEMENTS
  - STEEL JOISTS AND JOIST GIRDERS (CONTRACTOR SHALL OBTAIN FIRE LINE LOCATIONS AND SIZES PRIOR TO SUBMITTAL OF JOIST SHOP DRAWINGS.)
  - STEEL, SELF–SUPPORTING STAIRS AND HANDRAIL FRAMING
  - TEMPORARY BRACING AND SUPPORT
  - ROOF ACCESS LADDERS AND SAFETY CAGES
  - SEISMIC ANCHORAGE AND BRACING OF MEP COMPONENTS
- DOCUMENTS FOR DEFERRED STRUCTURAL SUBMITTAL ITEMS SHALL BE DESIGNED, SEALED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED. THE DEFERRED SUBMITTAL DOCUMENTS SHALL BE SUBMITTED TO THE ARCHITECT OR ENGINEER OF RECORD WHO SHALL REVIEW THEM AND FORWARD THEM TO THE BUILDING OFFICIAL AS REQUESTED WITH A NOTATION INDICATING THAT THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED AND BEEN FOUND TO BE IN GENERAL CONFORMANCE TO THE DESIGN OF THE BUILDING. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THE DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.

## SHOP DRAWINGS

- SHOP DRAWINGS AND SUBMITTALS SHALL BE REVIEWED AND APPROVED BY THE CONTRACTOR PRIOR TO SUBMITTAL FOR THE ENGINEER'S REVIEW. THE STRUCTURAL ENGINEER'S REVIEW IS TO CHECK THE GENERAL CONFORMANCE OF THE SHOP DRAWINGS WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR ANY ALTERATIONS FROM THE CONTRACT DOCUMENTS WHICH MAY INCLUDE QUANTITIES, DIMENSIONAL ERRORS OR OTHER ERRORS AND OMISSIONS IN THE SHOP DRAWINGS.
- SHOP DRAWINGS SHALL NOT BE REPRODUCTIONS OF THE CONTRACT DOCUMENTS.
- THE FOLLOWING STRUCTURAL COMPONENTS SHALL BE SUBMITTED AS A SHOP DRAWING FOR REVIEW:
  - STRUCTURAL STEEL
  - STEEL JOISTS
  - STEEL ROOF DECK AND THEIR ATTACHMENTS.
  - ALL DEFERRED SUBMITTAL ITEMS

## SPECIAL INSPECTIONS

- THE OWNER SHALL EMPLOY ONE OR MORE SPECIAL INSPECTORS TO PROVIDE INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THE STATEMENT OF SPECIAL INSPECTIONS PER SECTION 1704 OF THE IBC. THE SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION. THESE INSPECTIONS ARE IN ADDITION TO THE INSPECTIONS SPECIFIED IN THE PROJECT SPECIFICATIONS.
- SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS DONE IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THE DISCREPANCIES ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE PRIOR TO COMPLETION OF THAT PHASE OF WORK. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED AT A POINT IN TIME AGREED UPON BY THE PERMIT APPLICANT AND THE BUILDING OFFICIAL PRIOR TO THE START OF WORK.
- THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE SPECIAL INSPECTOR REGARDING INDIVIDUAL INSPECTION FOR ITEMS LISTED ON THE STATEMENT OF SPECIAL INSPECTIONS AND AS NOTED ON THE BUILDING DEPARTMENT APPROVED PLANS. ADEQUATE NOTICE AND ACCESS TO APPROVED PLANS SHALL BE PROVIDED SO THAT THE SPECIAL INSPECTOR HAS TIME TO BECOME FAMILIAR WITH THE PROJECT.
- FABRICATORS OF STRUCTURAL LOAD–BEARING MEMBERS AND ASSEMBLIES SHALL CONFORM TO THE REQUIREMENTS OF SECTION 1704.2 OF THE IBC.
- THE FOLLOWING ITEMS REQUIRE SPECIAL INSPECTION PER SECTION 1700 OF THE REFERENCED BUILDING CODE.
  - BOLTS & ANCHORS EMBEDDED IN CONCRETE
  - PLACEMENT OF REINFORCING STEEL IN CONCRETE
  - CONCRETE MIX DESIGN
  - CONCRETE FORMWORK
  - STRUCTURAL STEEL FABRICATIONS
  - STRUCTURAL STEEL BOLTING AND WELDING
  - ON SITE STRUCTURAL FRAMING
  - INSPECTION OF ROOF DECK ATTACHMENTS
  - SHEAR WALL ATTACHMENTS AND ANCHORS
  - POST INSTALLED ANCHORS
  - ON SITE SOILS, EXCAVATIONS, FILLING AND COMPACTION
  - ERECTION OF PRECAST CONCRETE MEMBERS



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LEE'S SUMMIT, MISSOURI

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09-08-2023

## ISSUE LOG

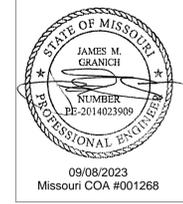
Δ #	DATE	FOR

JOB # : 2220003.04  
DWN. BY KME CHK. BY JMG

## GENERAL NOTES

SHEET NO.

SO.0



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ISSUE LOG

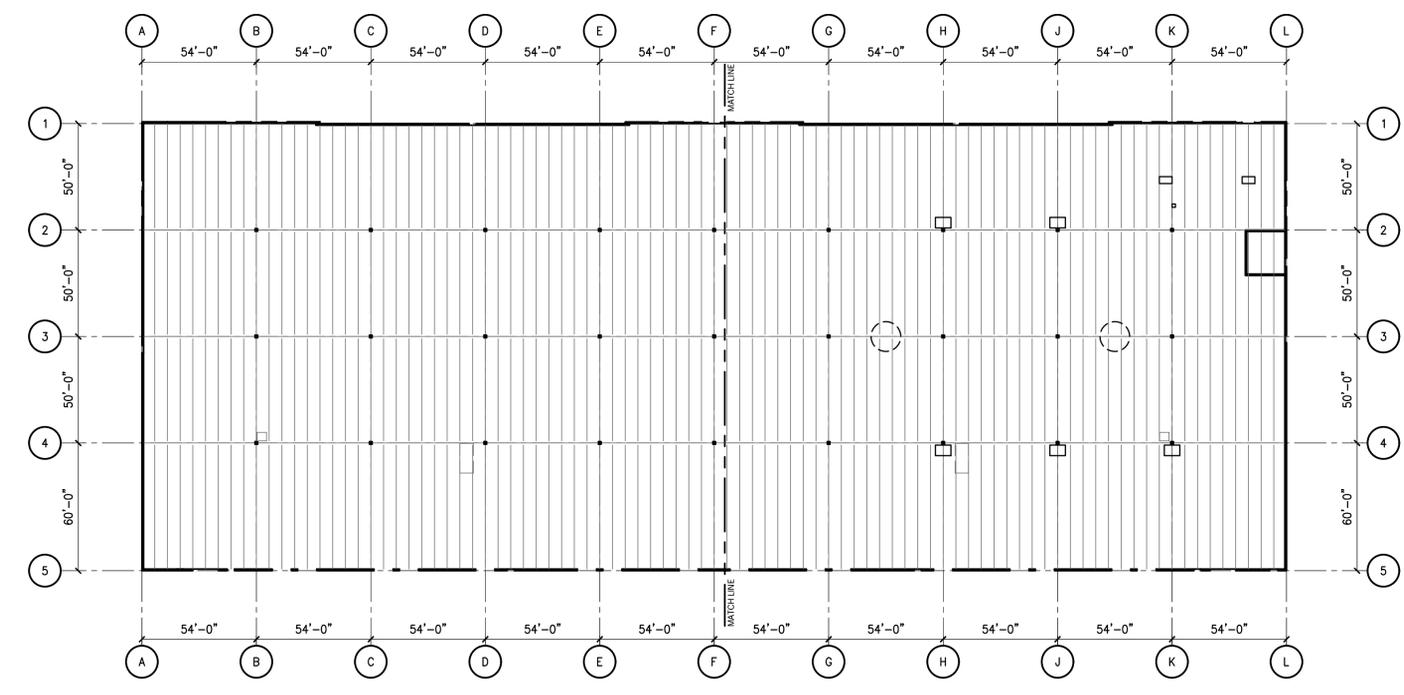
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JOB # : 2220003.04  
DWN BY KME CHK BY JMG

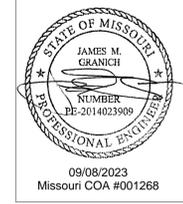
OVERALL FRAMING PLAN

SHEET NO.

S2.0



1 OVERALL FRAMING PLAN  
SCALE: 1"=40'-0"



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ENLARGED  
PARTIAL  
FRAMING PLAN

SHEET NO.  
**S2.1**

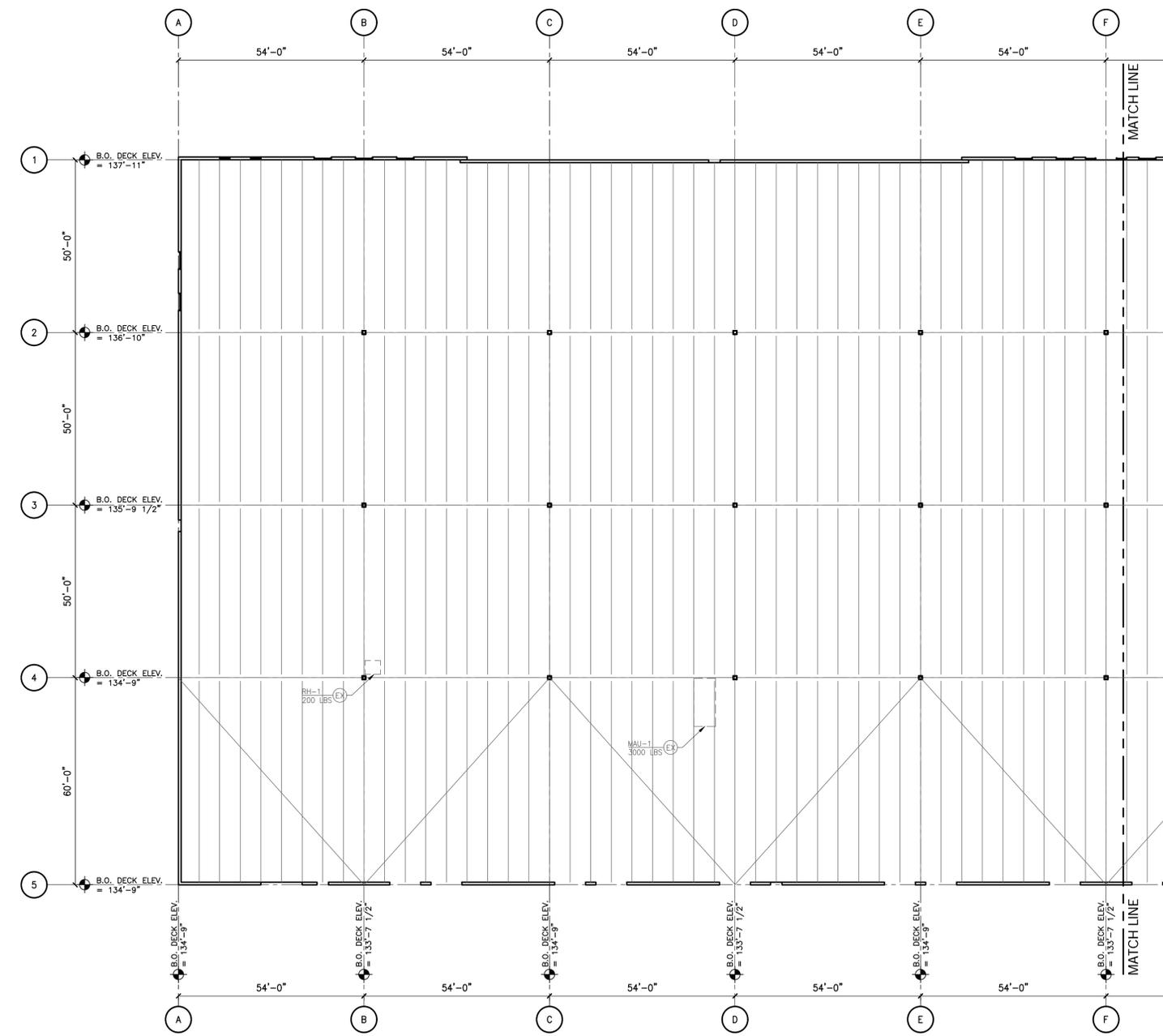
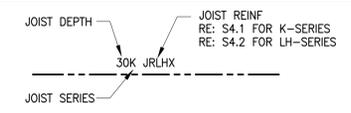
PLAN REFERENCE NOTES:

- Ⓐ ROOF TOP EQUIPMENT, RE: ARCH./MEP. PROVIDE ANGLE FRAME AND CURB RE: 1/54.0
- ⓧ EXISTING BASE BUILDING ROOF TOP EQUIPMENT

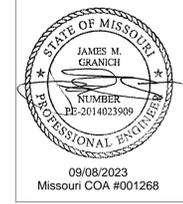
PLAN NOTES

- 1. JOISTS SHALL BE REINFORCED PRIOR TO THE PLACEMENT OF THE ROOF TOP UNITS.
- 2. CONTACT E.O.R. IF MECHANICAL EQUIPMENT LOCATIONS ARE DIFFERENT THAN SHOWN.
- 3. RE: S4. SERIES FOR ADDITIONAL REINFORCEMENT REQUIRED FOR JOISTS PRIOR TO INSTALLATION

JOIST LEGEND



1 ENLARGED PARTIAL FRAMING PLAN  
SCALE: 1"=20'-0"



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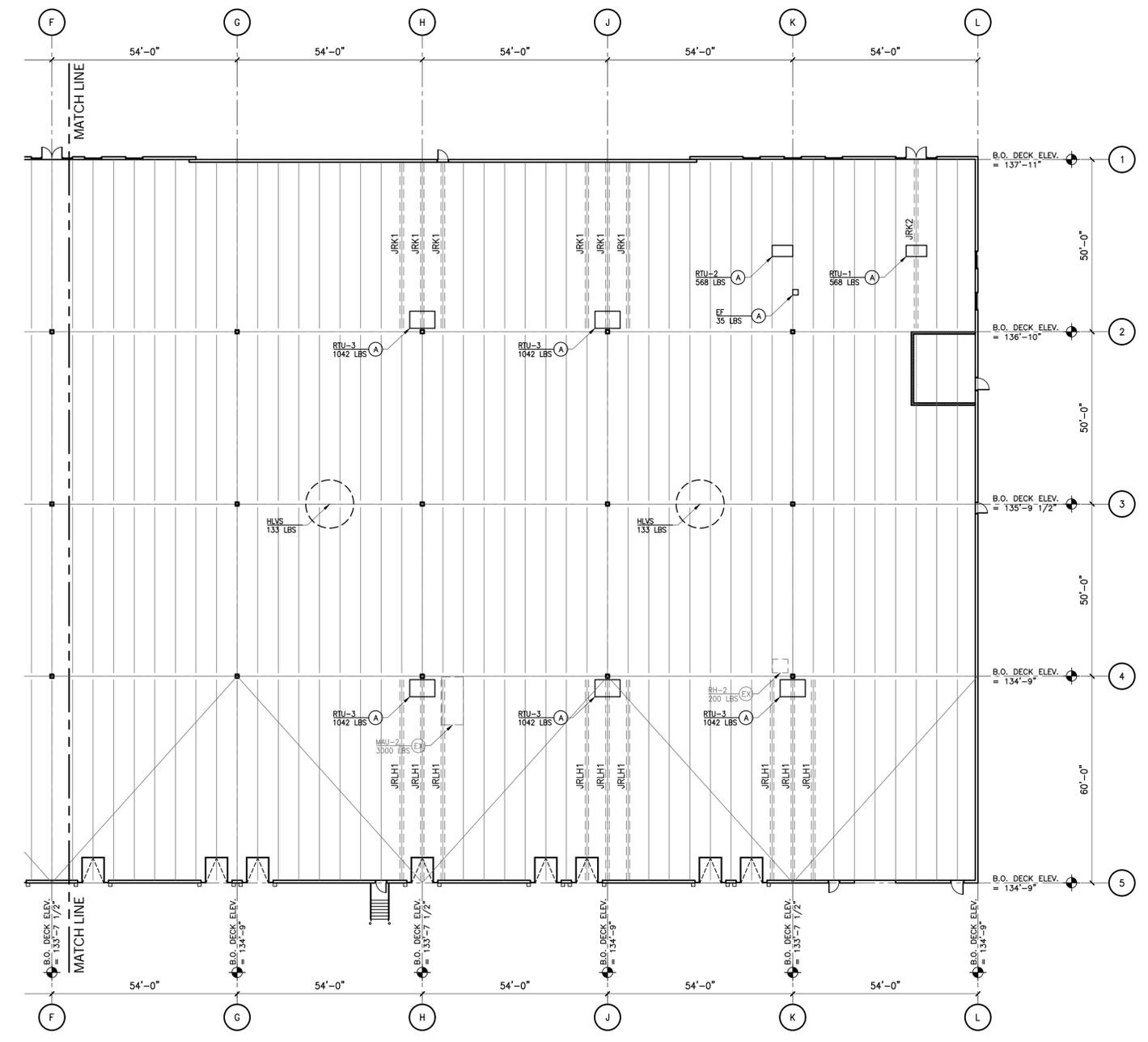
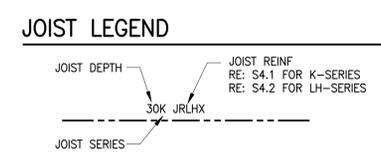
ENLARGED PARTIAL FRAMING PLAN

SHEET NO.

**S2.2**

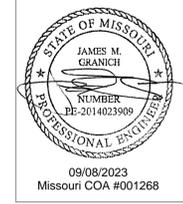
- PLAN REFERENCE NOTES:**
- Ⓐ ROOF TOP EQUIPMENT, RE: ARCH./MEP. PROVIDE ANGLE FRAME AND CURB RE: 1/4".0
  - Ⓧ EXISTING BASE BUILDING ROOF TOP EQUIPMENT

- PLAN NOTES**
1. JOISTS SHALL BE REINFORCED PRIOR TO THE PLACEMENT OF THE ROOF TOP UNITS.
  2. CONTACT E.O.R. IF MECHANICAL EQUIPMENT LOCATIONS ARE DIFFERENT THAN SHOWN.
  3. RE: S4. SERIES FOR ADDITIONAL REINFORCEMENT REQUIRED FOR JOISTS PRIOR TO INSTALLATION



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**1 ENLARGED PARTIAL FRAMING PLAN**  
SCALE: 1"=20'-0"



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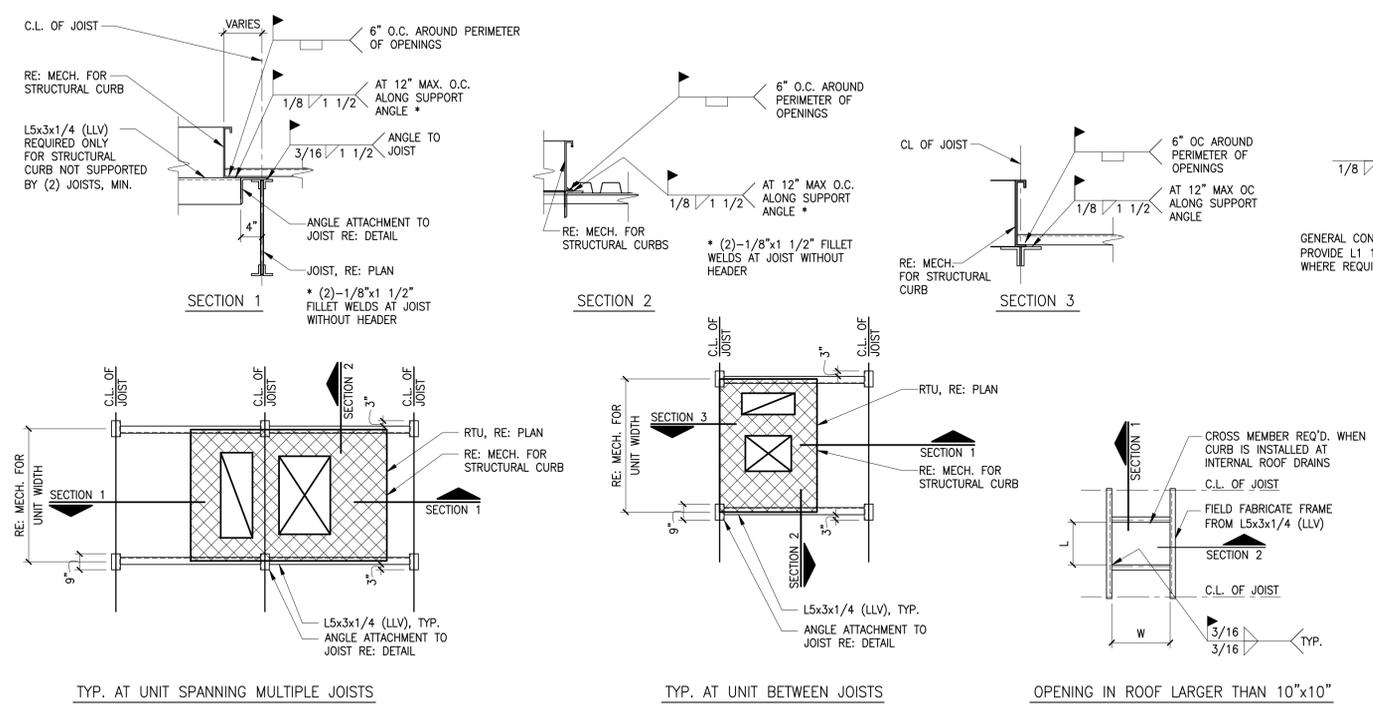
FRAMING DETAILS

SHEET NO.

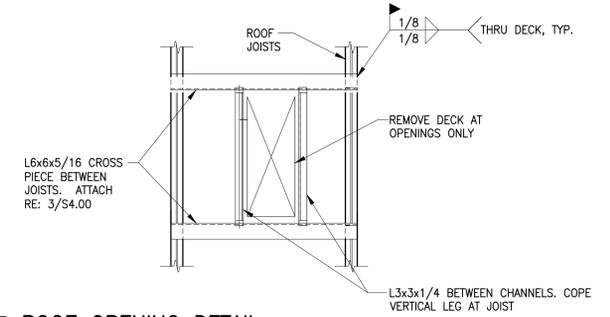
S4.0

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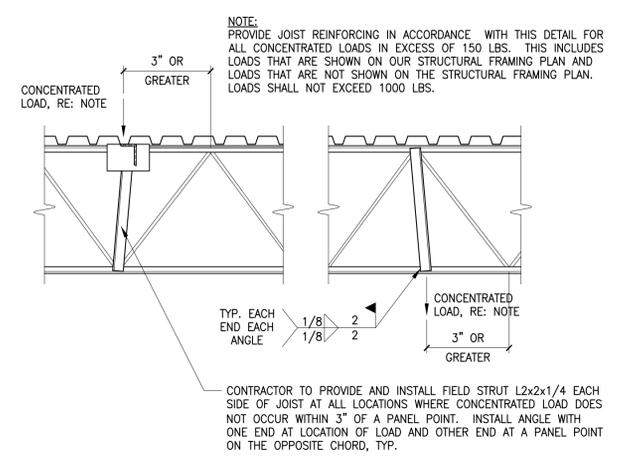
**1 MECHANICAL UNIT SUPPORT DETAIL**  
3/4" = 1'-0"



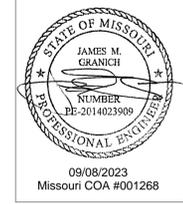
**3 ROOF OPENING DETAIL**  
3/4" = 1'-0"



**2 JOIST REINFORCING DETAIL**  
3/4" = 1'-0"



- NOTES:**
- INSTALL CURBS, HEADERS, AND FRAMES AND WELD TO SUPPORT STEEL BEFORE DECK IS PLACED.
  - DESIGN JOISTS SUPPORTING RTU'S FOR TWO POINT LOADS. THE LOCATION OF THE LOADS AND THE SPACING BETWEEN THEM VARY. RE: RTU JOIST DIAGRAM THIS DETAIL AND ROOF FRAMING PLAN FOR POINT LOADS AND LOCATIONS.
  - RTU CURBS SHALL BE STRUCTURAL, DESIGNED TO SPAN BETWEEN JOISTS AND SUPPORT EDGES OF DECK. CURBS TO BE FABRICATED WITH LEDGE ANGLES (L2x2x1/4) AT MECHANICAL OPENINGS TO SUPPORT METAL DECK INSIDE OPENING NOT USED BY SUPPLY OR RETURN DUCT WORK. HEADERS ARE NOT REQUIRED FOR STRUCTURAL CURBS EXCEPT WHEN THE CURB DOES NOT SPAN BETWEEN TWO JOISTS OR THE CURB CANTILEVERS MORE THAN TWO FEET PAST JOIST.
  - ATTACH DECK AROUND OPENING PER ROOF DIAPHRAGM CONNECTION DETAIL.
  - IF CURB IS NOT PLACED WITHIN 3" OF A JOIST PANEL POINT, RE: JOIST REINFORCING DETAIL RE: 7/S4.00.
  - GENERAL CONTRACTOR SHALL COORDINATE RTU DIMENSIONS AND FRAMING LOCATIONS WITH THE STEEL FABRICATOR, MECHANICAL, AND ERECTION SUBCONTRACTORS.
  - STEEL SUPPLIER TO FURNISH STOCK ANGLE FOR FIELD FABRICATED SUPPORT FRAMES.
  - RE: DETAIL 1 FOR CONN. OF DECK PARALLEL TO CURB (WHERE REQ'D.).
  - RE: MECH. FOR ROOF TOP UNIT ANCHORAGE TO CURBS.



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#	DATE	FOR

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K-SERIES JOIST REINFORCEMENT

SHEET NO.  
**S4.1**

## JOIST INSPECTION NOTES (REQUIRED AT ALL EXISTING JOISTS INDICATED TO BE REINFORCED)

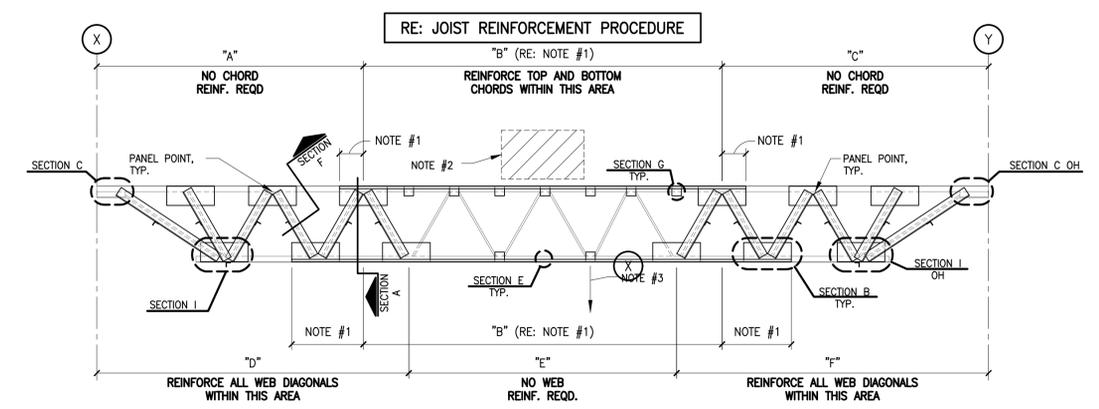
- A. EXISTING WEB MEMBER SHOP WELDS:**  
VISUAL INSPECTION ACCEPTANCE CRITERIA.....  
(INSPECTION MAY BE PERFORMED WITH PAINT IN PLACE):
1. CRACK PROHIBITION: ANY CRACK SHALL BE UNACCEPTABLE, REGARDLESS OF SIZE OR LOCATION.
  2. WELD/BASE-METAL FUSION: NO EVIDENCE OF LACK OF FUSION BETWEEN ADJACENT LAYERS OF WELD METAL AND BETWEEN WELD METAL AND BASE METAL SHALL EXIST.
  3. CRATER CROSS SECTION: UNFILLED WELD CRATERS SHALL NOT BE INCLUDED IN THE EFFECTIVE LENGTH OF THE WELD.
  4. POROSITY: THE SUM OF SURFACE (PIPING) POROSITY DIAMETERS SHALL NOT EXCEED 1/16 INCH (2 MILLIMETERS) IN ANY 1 INCH (25 MILLIMETERS) OF EFFECTIVE WELD LENGTH.
- B. REPAIR WELDS:** (REFERENCE CONTRACTOR NOTES ON JOIST MODIFICATION DETAIL FOR WELD REPAIRS TO BE INCLUDED IN THE BID)  
VISUAL INSPECTION ACCEPTANCE CRITERIA.....  
(ALL REINFORCING AND REPAIR FIELD WELDS SHALL BE VISUALLY INSPECTED AND SHALL BE ACCEPTABLE IF THE CRITERIA OUTLINED BELOW ARE SATISFIED):
1. CRACK PROHIBITION: ANY CRACK SHALL BE UNACCEPTABLE, REGARDLESS OF SIZE OR LOCATION.
  2. WELD/BASE-METAL FUSION: THOROUGH FUSION SHALL EXIST BETWEEN ADJACENT LAYERS OF WELD METAL AND BETWEEN WELD METAL AND BASE METAL.
  3. CRATER CROSS SECTION: ALL CRATERS SHALL BE FILLED TO PROVIDE THE SPECIFIED WELD SIZE, EXCEPT FOR THE ENDS OF INTERMITTENT FILLET WELDS OUTSIDE OF THEIR EFFECTIVE LENGTH.
  4. WELD PROFILES: WELD PROFILES SHALL BE IN CONFORMANCE WITH ANSI/AWS D1.1 SECTION 5.24.
  5. UNDERSIZED WELDS: THE SIZE OF A FILLET WELD IN ANY CONTINUOUS WELD MAY BE LESS THAN THE SPECIFIED NOMINAL SIZE (L) WITHOUT CORRECTION BY THE FOLLOWING AMOUNTS (U):
- | L<br>SPECIFIED NOMINAL WELD SIZE, IN. [MM] | U<br>ALLOWABLE DECREASE FROM L, IN. [MM] |
|--|--|
| < 3/16 [5]                                 | < 1/16 [2]                               |
| 1/4 [6]                                    | < 3/32 [2.5]                             |
| ≥ 5/16 [8]                                 | ≤ 1/8 [3]                                |
- IN ALL CASES, THE UNDERSIZE PORTION OF THE WELD SHALL NOT EXCEED 10% OF THE WELD LENGTH.
6. POROSITY: THE SUM OF SURFACE (PIPING) POROSITY DIAMETERS SHALL NOT EXCEED 1/16 INCH (2 MILLIMETERS) IN ANY 1 INCH (25 MILLIMETERS) OF DESIGN WELD LENGTH.

- CONTRACTOR NOTES:**
- A. RE: JOIST AND JOIST GIRDER GENERAL NOTES ON SHEET S0 AND JOIST INSPECTION NOTES ON THIS SHEET FOR REQUIRED INSPECTIONS TO BE PERFORMED PRIOR TO PROCEEDING WITH JOIST MODIFICATIONS.
  - B. ALL WELDING ON EXISTING JOISTS SHALL BE PERFORMED USING EITHER THE GMAW OR FCAW PROCESS ONLY. SMAW OR "STICK" WELDING IS NOT ALLOWED. WIRE FOR FCAW PROCESS SHALL BE E71T-8 AND WIRE FOR GMAW PROCESS SHALL BE ER70S-6 (-GS WIRE IS NOT ALLOWED). WELDS SHALL BE PERFORMED BY OPERATORS CERTIFIED FOR THE PROCESS AND POSITIONS USED. THE TESTING AGENCY'S CERTIFIED WELDING INSPECTOR SHALL BE QUALIFIED AND EXPERIENCED WITH INSPECTION OF WELDS PERFORMED BY THESE PROCESSES. PRIOR TO COMMENCEMENT OF JOIST REINFORCING, CONTRACTOR SHALL PREPARE A MOCK UP FOR INSPECTION AND APPROVAL BY THE CERTIFIED WELDING INSPECTOR BY JOINING TWO 5"x5"x1/8" PLATES WITH A 1/8" FILLET WELD AND ATTACHING A 5/8" DIA x 5" LONG ROD TO ONE PLATE WITH 2" LONG FLARE BEVEL.
  - C. IF EXISTING JOIST BRIDGING INTERFERES WITH INSTALLATION OF REINFORCING, REMOVE BRIDGING AND REPLACE IMMEDIATELY UPON COMPLETION OF REINFORCING INSTALLATION. IF BRIDGING TABS FOR BOLTED BRIDGING INTERFERE WITH INSTALLATION OF REINFORCING, REMOVE TABS AND REPLACE IMMEDIATELY UPON COMPLETION OF REINFORCING INSTALLATION. NEW CONNECTIONS SHALL MATCH EXISTING.
  - D. STEEL ERECTOR SHALL FIELD CUT REINFORCEMENT TO FIT FROM STOCK LENGTHS. WEB REINF SHALL BE INSTALLED AS ONE PIECE AND NOT SPLICED AT ANY POINT ALONG THE LENGTH. REINFORCEMENT SHALL MEET THE STRUCTURAL STEEL REQUIREMENTS IN THE GENERAL NOTES ON SHEET S0.001.
  - E. CONTRACTOR TO INCLUDE IN BID, AN ADDITIONAL 18" TOTAL LENGTH OF 3/16" FILLET WELDS AT EACH JOIST TO BE REINFORCED FOR REQUIRED REPAIRS THAT RESULT FROM THE JOIST INSPECTIONS. THESE REPAIRS MAY INCLUDE, BUT ARE NOT LIMITED TO WEB TO CHORD WELDS, BRIDGING WELDS, JOIST TO SUPPORT WELDS, OR ANY OTHER REPAIR WELDS REQUIRED BASED ON THE EXISTING JOIST INSPECTIONS.
  - F. WHERE REQUIRED AREA OF WEB REINFORCING EXTENDS THROUGH THE JOIST SEAT, AND THE JOIST SEAT BEARS WITHIN AN EXISTING WALL, REMOVE CMU AND GROUT AS REQUIRED FOR INSTALLATION OF REINFORCING. ONCE THE REINFORCING HAS BEEN INSTALLED AND INSPECTED, REPLACE/REPAIR THE CMU AND GROUT TO MATCH EXISTING CONDITION PRIOR TO REMOVAL.
  - G. REMOVE ALL PAINT AND DEBRIS FROM EXISTING JOIST AT LOCATIONS OF NEW WELDS FOR JOIST REINFORCING PRIOR TO INSTALLATION OF JOIST REINFORCING.
  - H. ALL JOIST REINFORCING SHALL BE INSTALLED AND INSPECTED BEFORE APPLYING NEW LOADS. (I.E. RTU'S, BULKHEADS, FANS AND OTHER ROOF SUPPORTED ITEMS).
  - I. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF EXISTING BUILDING ELEMENTS THAT PREVENT ACCESS TO INSTALL JOIST REINFORCING, INCLUDING SUSPENDED CEILINGS, DUCTWORK, RTU PLENUMS, LARGE PIPING, ETC.
  - J. PRIOR TO INSTALLATION OF JOIST REINFORCING, CONTRACTOR SHALL REMOVE ALL LIVE LOADS FROM JOISTS TO BE REINFORCED. THIS INCLUDES BUT IS NOT LIMITED TO PONDED WATER, ICE, SNOW (REMOVE SNOW TO EXPOSE ROOFING MATERIAL), STAGED CONSTRUCTION MATERIALS/EQUIPMENT, ETC.
  - K. PRIOR TO INSTALLATION OF JOIST REINFORCING, CONTRACTOR SHALL SURVEY EXISTING JOISTS TO BE REINFORCED FOR EXISTING DAMAGE OR REPAIRS. ANY JOIST DAMAGE FOUND SHALL BE CORRECTED BEFORE INSTALLATION OF REINFORCING. CONTACT ENGINEER OF RECORD FOR REQUIRED JOIST REPAIRS AT EXISTING DAMAGE AND/OR FOR DIRECTION REGARDING NEW REINFORCING AT EXISTING REPAIRS.

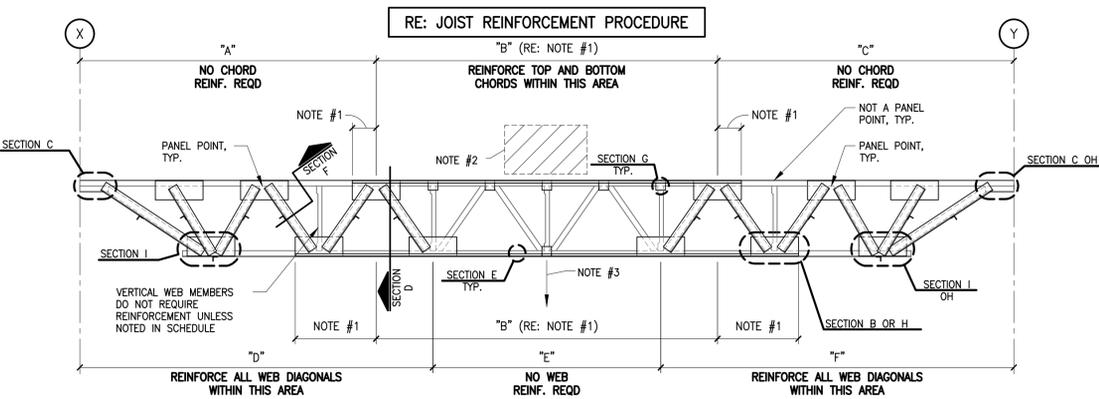
### JOIST REINFORCEMENT SCHEDULE

JOIST REINFORCEMENT DESIGNATION, RE: SHEET S2.2	CHORD REINF.	CHORD REINF.			WEB REINF.			SPAN	GRID "X"	GRID "Y"	NOTES	
		"A"	"B"	"C"	"D"	"E"	"F"					
JRK1	N/A	-	-	-	1/2" DIA. ROD OR L1x1x1/4	22'	6'	22'	50'	1	2	2,4
JRK2	5/8" DIA. ROD OR PL1/2"x1"	20'	10'	20'	3/8" DIA. ROD OR L1x1x3/16	20'	10'	20'	50'	1	2	1,2,4

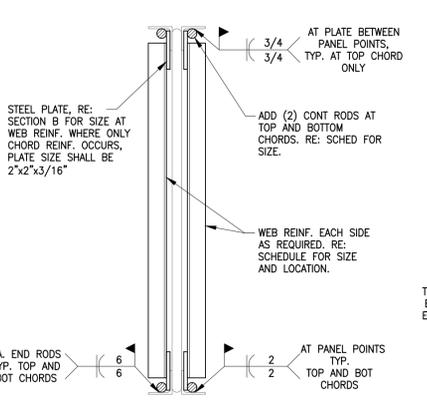
- NOTES:**
1. DIMENSION "B" IS THE MINIMUM REQUIRED LENGTH OF TOP AND BOTTOM CHORD REINFORCEMENT. FIELD VERIFY PANEL POINT LOCATIONS AND EXTEND TOP AND BOTTOM CHORD REINF. TO OUTER EDGE OF STEEL PLATE AT PANEL POINT.
  2. RE: PLATE FOR NEW EQUIPMENT, RE: 1/4"x4" FOR ADDITIONAL REINFORCEMENT. DO NOT SET EQUIPMENT UNTIL ALL REINF. IS IN PLACE AND INSPECTED.
  3. RE: ARCH FOR EXACT LOCATION OF SOFFITS AND MECH EQUIPMENT THAT WILL CAUSE CONCENTRATED LOADS IN EXCESS OF 100 LBS. RE: 2/4"x4" FOR ADDITIONAL REINFORCEMENT AT CONCENTRATED LOADS.
  4. REINFORCEMENT SHALL BE WELDED AT 12" O.C. ALONG LENGTH, RE: SECTION F



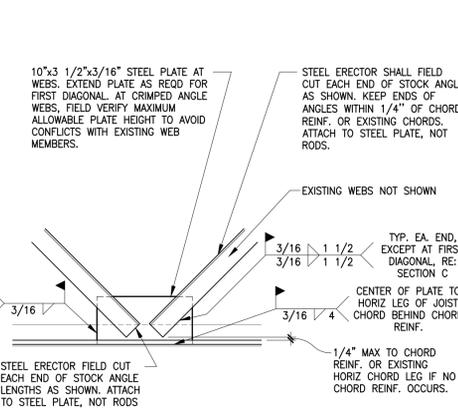
JOIST ELEVATION WITH ROD WEBS  
(NOTE: DIAGRAM IS GENERIC AND ACTUAL NUMBER OF WEBS TO BE REINFORCED IS NOT ACCURATELY SHOWN. ACTUAL NUMBER OF WEB MEMBERS TO BE REINFORCED SHALL BE DETERMINED BASED ON THE LENGTHS SHOWN IN THE JOIST REINFORCEMENT SCHEDULE)



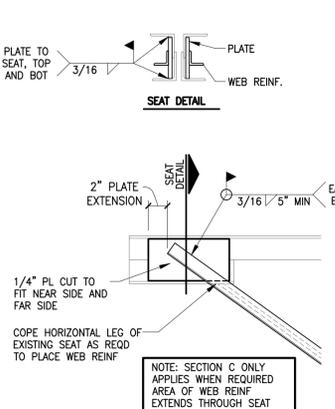
JOIST ELEVATION WITH ANGLE WEBS  
(NOTE: DIAGRAM IS GENERIC AND ACTUAL NUMBER OF WEBS TO BE REINFORCED IS NOT ACCURATELY SHOWN. ACTUAL NUMBER OF WEB MEMBERS TO BE REINFORCED SHALL BE DETERMINED BASED ON THE LENGTHS SHOWN IN THE JOIST REINFORCEMENT SCHEDULE)



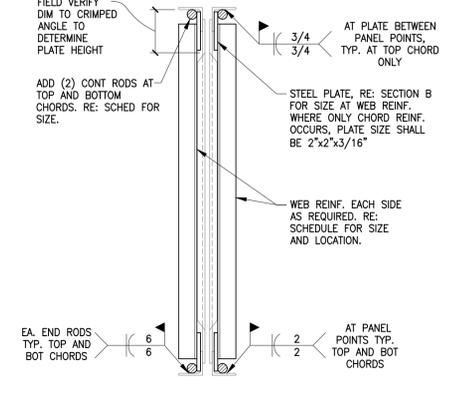
SECTION A - (K-SERIES ROD WEB)



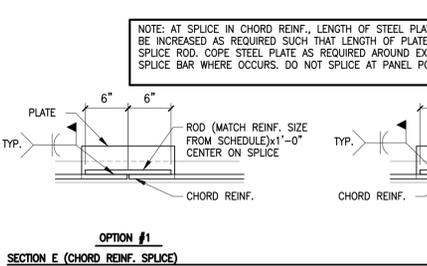
SECTION B - (K-SERIES)



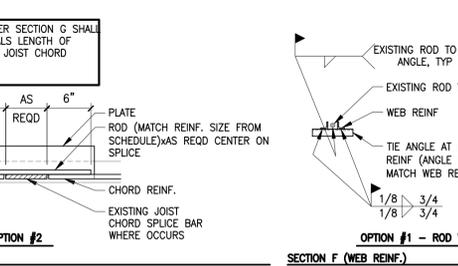
SECTION C - (K-SERIES)



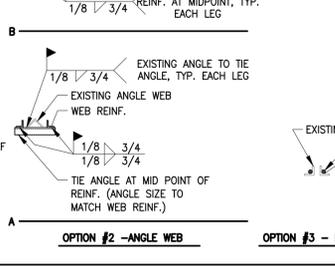
SECTION D - (K-SERIES ANGLE WEB)



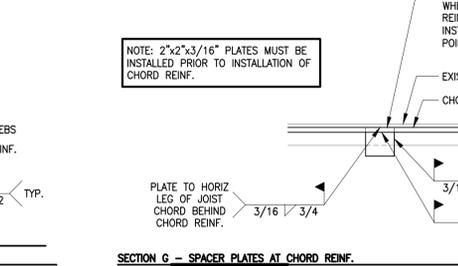
SECTION E (CHORD REINF. SPLICE)



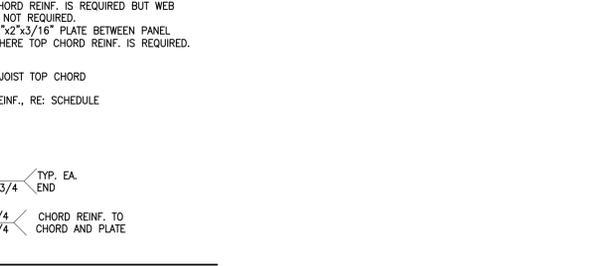
SECTION F (WEB REINF.)



SECTION G - (K-SERIES ANGLE WEB)



SECTION H - (K-SERIES ANGLE WEB)



SECTION I - (K-SERIES ANGLE WEB)

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100% SET ISSUED  
09-08-2023

ISSUE LOG

Δ#	DATE	FOR

JOB # : 2220003.04  
DWN. BY: KME CHK. BY: JMG

LH-SERIES JOIST REINFORCEMENT

SHEET NO.  
**S4.2**

### JOIST INSPECTION NOTES (REQUIRED AT ALL EXISTING JOISTS INDICATED TO BE REINFORCED)

- A. EXISTING WEB MEMBER SHOP WELDS:**  
VISUAL INSPECTION ACCEPTANCE CRITERIA.....  
(INSPECTION MAY BE PERFORMED WITH PAINT IN PLACE):
1. CRACK PROHIBITION: ANY CRACK SHALL BE UNACCEPTABLE, REGARDLESS OF SIZE OR LOCATION.
  2. WELD/BASE-METAL FUSION: NO EVIDENCE OF LACK OF FUSION BETWEEN ADJACENT LAYERS OF WELD METAL AND BETWEEN WELD METAL AND BASE METAL SHALL EXIST.
  3. CRATER CROSS SECTION: UNFILLED WELD CRATERS SHALL NOT BE INCLUDED IN THE EFFECTIVE LENGTH OF THE WELD.
  4. POROSITY: THE SUM OF SURFACE (PIPING) POROSITY DIAMETERS SHALL NOT EXCEED 1/16 INCH (2 MILLIMETERS) IN ANY 1 INCH (25 MILLIMETERS) OF EFFECTIVE WELD LENGTH.
- B. REPAIR WELDS:** (REFERENCE CONTRACTOR NOTES ON JOIST MODIFICATION DETAIL FOR WELD REPAIRS TO BE INCLUDED IN THE BID)  
VISUAL INSPECTION ACCEPTANCE CRITERIA.....  
(ALL REINFORCING AND REPAIR FIELD WELDS SHALL BE VISUALLY INSPECTED AND SHALL BE ACCEPTABLE IF THE CRITERIA OUTLINED BELOW ARE SATISFIED):
1. CRACK PROHIBITION: ANY CRACK SHALL BE UNACCEPTABLE, REGARDLESS OF SIZE OR LOCATION.
  2. WELD/BASE-METAL FUSION: THOROUGH FUSION SHALL EXIST BETWEEN ADJACENT LAYERS OF WELD METAL AND BETWEEN WELD METAL AND BASE METAL.
  3. CRATER CROSS SECTION: ALL CRATERS SHALL BE FILLED TO PROVIDE THE SPECIFIED WELD SIZE, EXCEPT FOR THE ENDS OF INTERMITTENT FILLET WELDS OUTSIDE OF THEIR EFFECTIVE LENGTH.
  4. WELD PROFILES: WELD PROFILES SHALL BE IN CONFORMANCE WITH ANSI/AWS D1.1 SECTION 5.24.
  5. UNDERSIZED WELDS: THE SIZE OF A FILLET WELD IN ANY CONTINUOUS WELD MAY BE LESS THAN THE SPECIFIED NOMINAL SIZE (L) WITHOUT CORRECTION BY THE FOLLOWING AMOUNTS (U):
- | L, SPECIFIED NOMINAL WELD SIZE, IN. [MM] | ALLOWABLE DECREASE FROM L, IN. [MM] |
|--|-------------------------------------|
| ≤ 3/16 [5]                               | ≤ 1/16 [2]                          |
| 1/4 [6]                                  | ≤ 3/32 [2.5]                        |
| ≥ 5/16 [8]                               | ≤ 1/8 [3]                           |
- IN ALL CASES, THE UNDERSIZE PORTION OF THE WELD SHALL NOT EXCEED 10% OF THE WELD LENGTH.
6. POROSITY: THE SUM OF SURFACE (PIPING) POROSITY DIAMETERS SHALL NOT EXCEED 1/16 INCH (2 MILLIMETERS) IN ANY 1 INCH (25 MILLIMETERS) OF DESIGN WELD LENGTH.

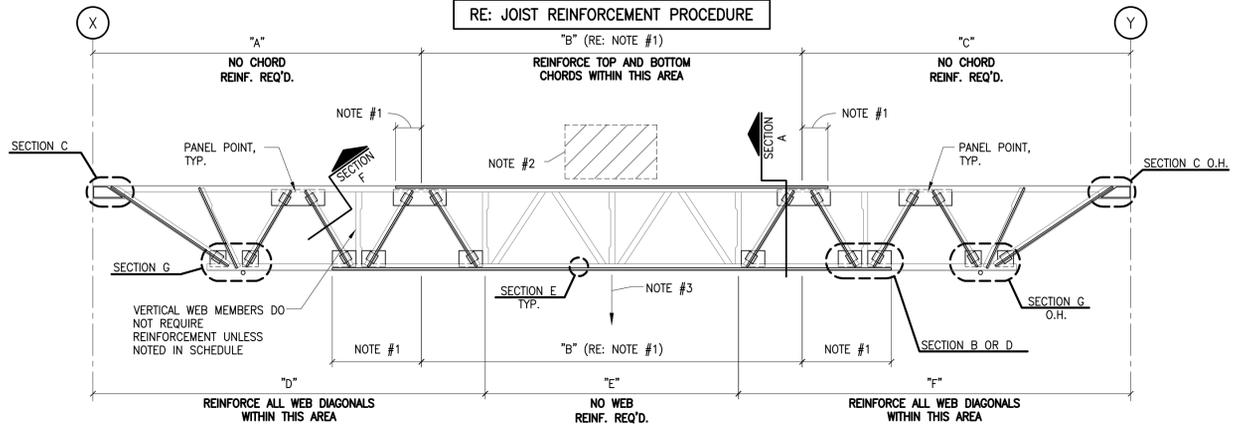
- CONTRACTOR NOTES:**
- RE: JOIST AND JOIST GIRDER GENERAL NOTES ON SHEET S0 AND JOIST INSPECTION NOTES ON THIS SHEET FOR REQUIRED INSPECTIONS TO BE PERFORMED PRIOR TO PROCEEDING WITH JOIST MODIFICATIONS.
  - ALL WELDING ON EXISTING JOISTS SHALL BE PERFORMED USING EITHER THE GMAW OR FCAW PROCESS ONLY. SMAW OR "STICK" WELDING IS NOT ALLOWED. WIRE FOR FCAW PROCESS SHALL BE E71T-8 AND WIRE FOR GMAW PROCESS SHALL BE E70S-6 (-OS WIRE IS NOT ALLOWED). WELDS SHALL BE PERFORMED BY OPERATORS CERTIFIED FOR THE PROCESS AND POSITIONS USED. THE TESTING AGENCY'S CERTIFIED WELDING INSPECTOR SHALL BE QUALIFIED AND EXPERIENCED WITH INSPECTION OF WELDS PERFORMED BY THESE PROCESSES. PRIOR TO COMMENCEMENT OF JOIST REINFORCING, CONTRACTOR SHALL PREPARE A MOCK UP FOR INSPECTION AND APPROVAL BY THE CERTIFIED WELDING INSPECTOR BY JOINING TWO 5"x5"x1/8" PLATES WITH A 1/8" FILLET WELD AND ATTACHING A 5/8" DIA x 5" LONG ROD TO ONE PLATE WITH 2" LONG FLARE BEVEL.
  - IF EXISTING JOIST BRIDGING INTERFERES WITH INSTALLATION OF REINFORCING, REMOVE BRIDGING AND REPLACE IMMEDIATELY UPON COMPLETION OF REINFORCING INSTALLATION. IF BRIDGING TABS FOR BOLTED BRIDGING INTERFERE WITH INSTALLATION OF REINFORCING, REMOVE TABS AND REPLACE IMMEDIATELY UPON COMPLETION OF REINFORCING INSTALLATION. NEW CONNECTIONS SHALL MATCH EXISTING.
  - STEEL ERECTOR SHALL FIELD CUT REINFORCEMENT TO FIT FROM STOCK LENGTHS. WEB REINF SHALL BE INSTALLED AS ONE PIECE AND NOT SPLICED AT ANY POINT ALONG THE LENGTH. REINFORCEMENT SHALL MEET THE STRUCTURAL STEEL REQUIREMENTS IN THE GENERAL NOTES ON SHEET S0.00.
  - CONTRACTOR TO INCLUDE IN BID, AN ADDITIONAL 18" TOTAL LENGTH OF 3/16" FILLET WELDS AT EACH JOIST TO BE REINFORCED FOR REQUIRED REPAIRS THAT RESULT FROM THE JOIST INSPECTIONS. THESE REPAIRS MAY INCLUDE, BUT ARE NOT LIMITED TO WEB TO CHORD WELDS, BRIDGING WELDS, JOIST TO SUPPORT WELDS, OR ANY OTHER REPAIR WELDS REQUIRED BASED ON THE EXISTING JOIST INSPECTIONS.
  - WHERE REQUIRED AREA OF WEB REINFORCING EXTENDS THROUGH THE JOIST SEAT, AND THE JOIST SEAT BEARS WITHIN AN EXISTING WALL, REMOVE CMU AND GROUT AS REQUIRED FOR INSTALLATION OF REINFORCING. ONCE THE REINFORCING HAS BEEN INSTALLED AND INSPECTED, REPLACE/REPAIR THE CMU AND GROUT TO MATCH EXISTING CONDITION PRIOR TO REMOVAL.
  - REMOVE ALL PAINT AND DEBRIS FROM EXISTING JOIST AT LOCATIONS OF NEW WELDS FOR JOIST REINFORCING PRIOR TO INSTALLATION OF JOIST REINFORCING.
  - ALL JOIST REINFORCING SHALL BE INSTALLED AND INSPECTED BEFORE APPLYING NEW LOADS. (I.E. RTU'S, BULKHEADS, FANS AND OTHER ROOF SUPPORTED ITEMS).
  - CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF EXISTING BUILDING ELEMENTS THAT PREVENT ACCESS TO INSTALL JOIST REINFORCING, INCLUDING SUSPENDED CEILINGS, DUCTWORK, RTU PLENUMS, LARGE PIPING, ETC.
  - PRIOR TO INSTALLATION OF JOIST REINFORCING, CONTRACTOR SHALL REMOVE ALL LIVE LOADS FROM JOISTS TO BE REINFORCED. THIS INCLUDES BUT IS NOT LIMITED TO PONDED WATER, ICE, SNOW (REMOVE SNOW TO EXPOSE ROOFING MATERIAL), STAGED CONSTRUCTION MATERIALS/EQUIPMENT, ETC.
  - PRIOR TO INSTALLATION OF JOIST REINFORCING, CONTRACTOR SHALL SURVEY EXISTING JOISTS TO BE REINFORCED FOR EXISTING DAMAGE OR REPAIRS. ANY JOIST DAMAGE FOUND SHALL BE CORRECTED BEFORE INSTALLATION OF REINFORCING. CONTACT ENGINEER OF RECORD FOR REQUIRED JOIST REPAIRS AT EXISTING DAMAGE AND/OR FOR DIRECTION REGARDING NEW REINFORCING AT EXISTING REPAIRS.

#### JOIST REINFORCEMENT SCHEDULE

JOIST REINFORCEMENT DESIGNATION, RE: SHEET S2.2	CHORD REINF.	CHORD REINF.			WEB REINF.	WEB REINF.			SPAN	GRID "X"	GRID "Y"	NOTES
		"A"	"B"	"C"		"D"	"E"	"F"				
JRLH1	N/A	-	-	-	1/2" DIA. ROD OR L1x1x1/4	24'	12'	24'	60'	4	5	2,4

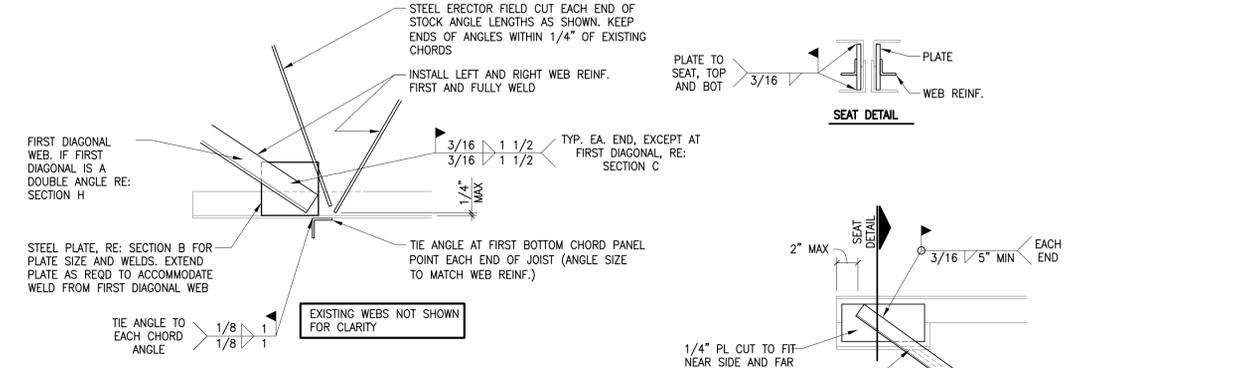
- NOTES:**
1. DIMENSION "B" IS THE MINIMUM REQUIRED LENGTH OF TOP AND BOTTOM CHORD REINFORCEMENT. FIELD VERIFY PANEL POINT LOCATIONS AND EXTEND TOP AND BOTTOM CHORD REINF. TO OUTER EDGE OF STEEL PLATE AT PANEL POINT.
  2. RE: PLAN FOR NEW EQUIPMENT, RE: 1/54.0 FOR ADDITIONAL REINFORCEMENT. DO NOT SET EQUIPMENT UNTIL ALL REINF. IS IN PLACE AND INSPECTED.
  3. RE: ARCH FOR EXACT LOCATION OF SOFFITS AND MECH EQUIPMENT THAT WILL CAUSE CONCENTRATED LOADS IN EXCESS OF 100 LBS. RE: 2/54.0 FOR ADDITIONAL REINFORCEMENT AT CONCENTRATED LOADS.
  4. REINFORCEMENT SHALL BE WELDED AT 12" O.C. ALONG LENGTH, RE: SECTION F.

#### RE: JOIST REINFORCEMENT PROCEDURE

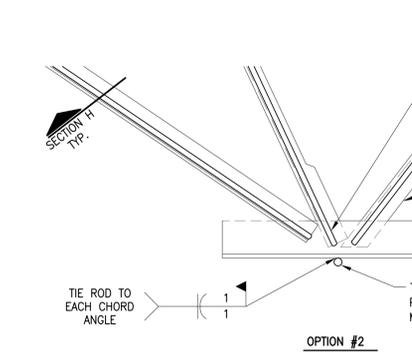


#### JOIST ELEVATION WITH ANGLE WEBS

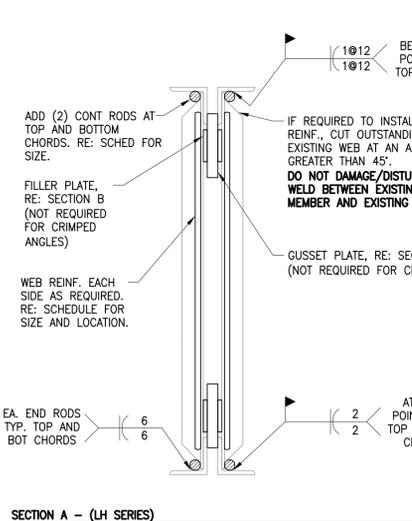
(NOTE: DIAGRAM IS GENERIC AND ACTUAL NUMBER OF WEBS TO BE REINFORCED IS NOT ACCURATELY SHOWN. ACTUAL NUMBER OF WEB MEMBERS TO BE REINFORCED SHALL BE DETERMINED BASED ON THE LENGTHS SHOWN IN THE JOIST REINFORCEMENT SCHEDULE)



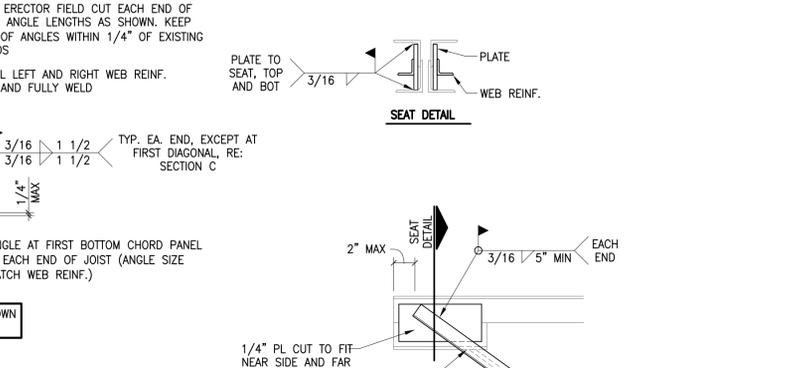
SECTION I (BOTTOM CHORD ATTACHMENT AT FIRST PANEL POINT)



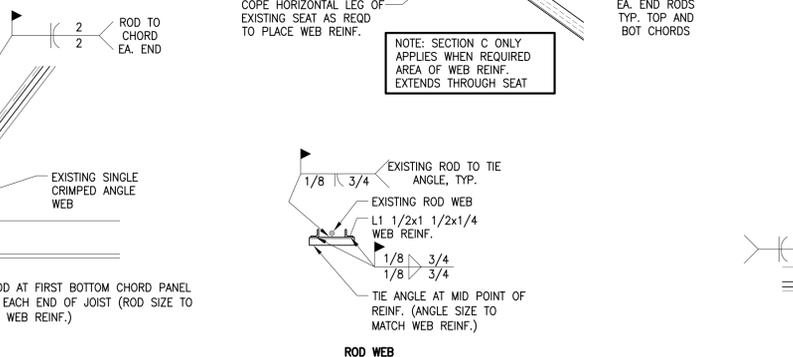
SECTION G - (BOTTOM CHORD ATTACHMENT AT FIRST PANEL POINT)



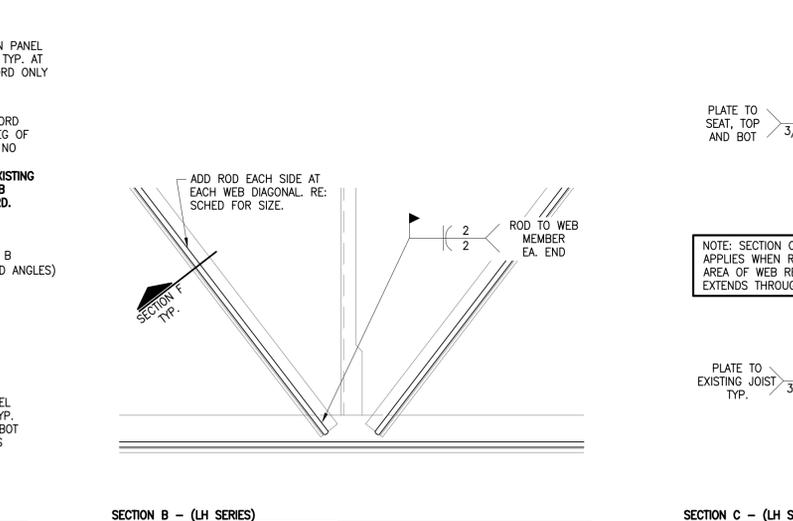
SECTION A - (LH SERIES)



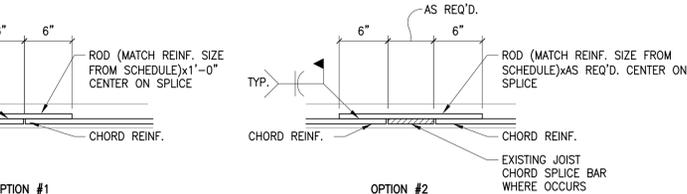
SECTION H (WEB REINF.)



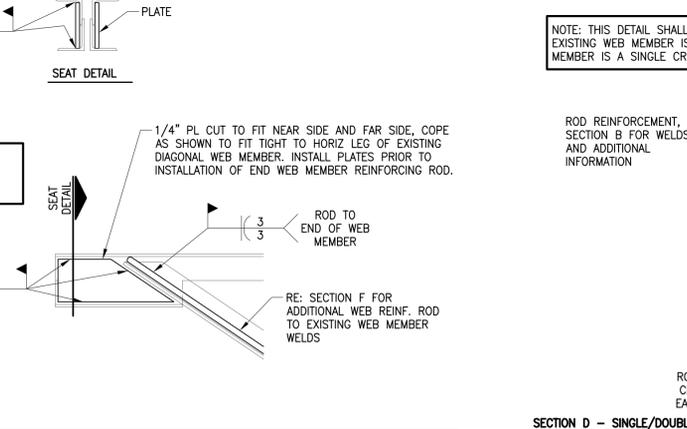
SECTION E (CHORD REINF. SPLICE)



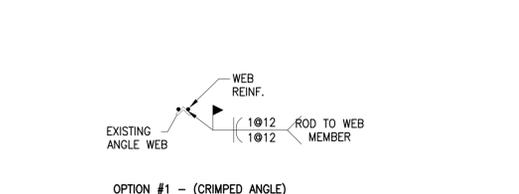
SECTION B - (LH SERIES)



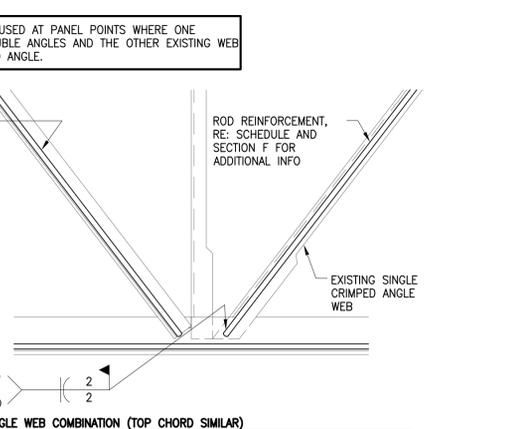
SECTION F (WEB REINF.)



SECTION C - (LH SERIES)



SECTION D - SINGLE/DOUBLE ANGLE WEB COMBINATION (TOP CHORD SIMILAR)



SECTION A - (LH SERIES)

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#### 1 JOIST REINFORCEMENT DETAIL - (LH-SERIES)

3/4" = 1'-0"

(NOTE: DIAGRAM IS GENERIC AND ACTUAL NUMBER OF WEBS TO BE REINFORCED IS NOT ACCURATELY SHOWN. ACTUAL NUMBER OF WEB MEMBERS TO BE REINFORCED SHALL BE DETERMINED BASED ON THE LENGTHS SHOWN IN THE JOIST REINFORCEMENT SCHEDULE)





920 NW Technology Dr.  
Lee's Summit, MO 64086  
Ph: 816-246-4646

RTU Schedule																		
Mark	Manufacturer	Model	Ton	Airflow CFM	Min OA CFM	Fan Stages	Cooling			Heating			Electrical			Notes		
							TOTAL MBH	Stages	EER	INPUT MBH	OUTPUT MBH	Stages	Volt	Ph	Hz		FLA	MOCPP
RTU-1	Carrier	48FCEA06A2AS	5	1995	71	1	60	1	11	110	88	2	208	3	60	36	45	1,3,4
RTU-2	Carrier	48FCEA06A2AS	5	1995	551	1	60	1	11	110	88	2	208	3	60	36	45	1,3,4
RTU-3	Carrier	48FCEM14A3A6	12.5	5000	504	2	150	1	10.2	250	205	2	460	3	60	34	45	All
RTU-4	Carrier	48FCEM14A3A6	12.5	5000	504	2	150	1	10.2	250	205	2	460	3	60	34	45	All
RTU-5	Carrier	48FCEM14A3A6	12.5	5000	504	2	150	1	10.2	250	205	2	460	3	60	34	45	All
RTU-6	Carrier	48FCEM14A3A6	12.5	5000	504	2	150	1	10.2	250	205	2	460	3	60	34	45	All
RTU-7	Carrier	48FCEM14A3A6	12.5	5000	504	2	150	1	10.2	250	205	2	460	3	60	34	45	All

Notes:

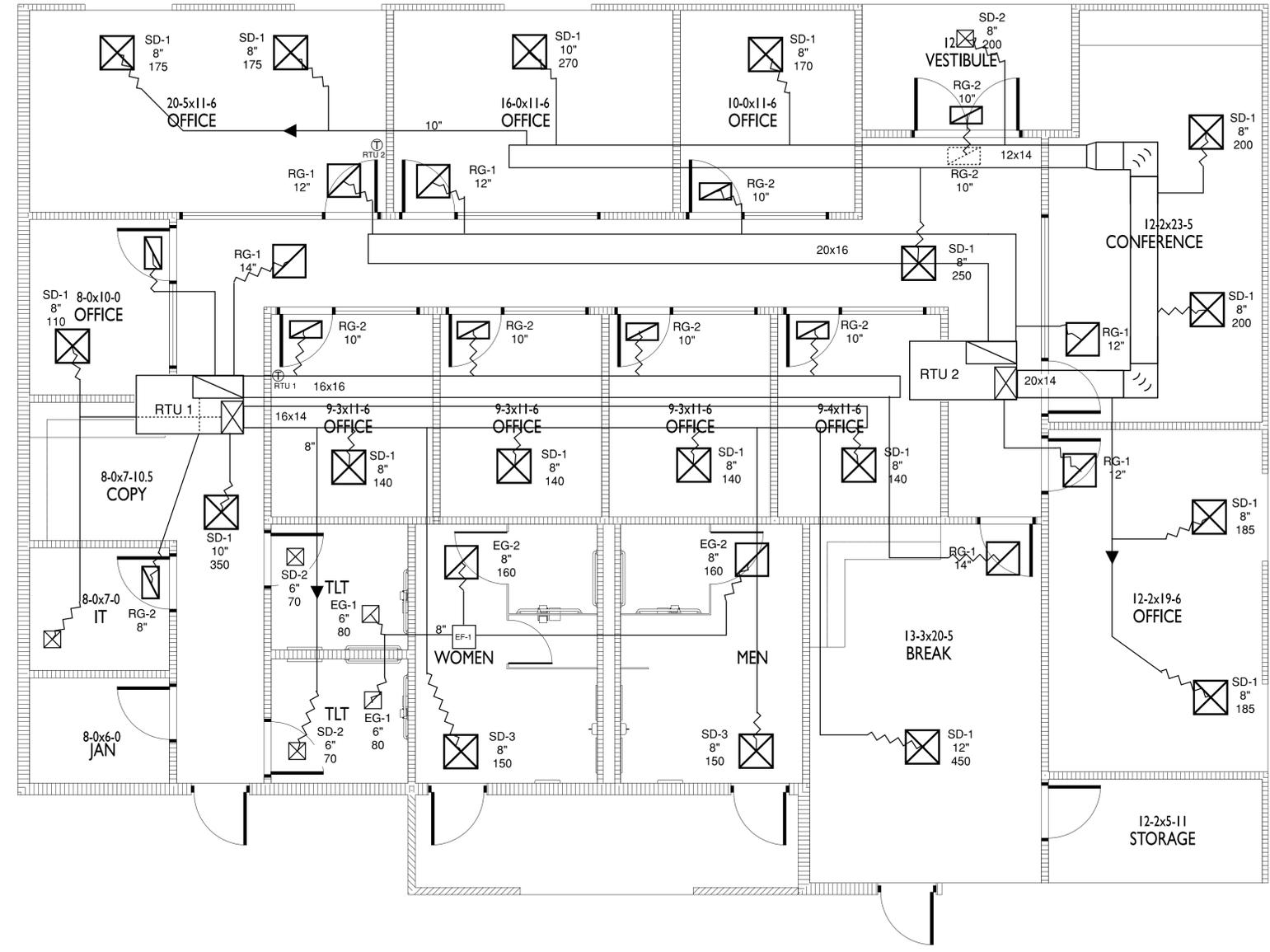
1. Provide with 14" roof curb
2. RA smoke detector to be installed on unit or in RA duct for local shutdown of unit.
3. Provide with programmable thermostat enclosed by lock box.
4. Provide with economizer with differential enthalpy control.
5. Provide diffuser DB-1 at 25' above finish floor.

Exhaust Fan Schedule									
Mark	Manufacturer	Model	Mounting	CFM	Electrical				Notes
					Volt	Ph.	Hz	MCA	
EF-1	Dayton	4YC86G	Roof	490	120	1	60	1.3	
EF-2	Dayton	7AE89	Roof	1000	120	1	60	4.2	Spark Resistant

Ventilation Schedule			
Mark	Square Feet	Exhaust CFM	Min OA CFM
RTU-1	1257 x .06 = 75	480	555
RTU-2	1400 x .06 = 84	0	84
RTU-3	8400 x .06 = 504	0	504
RTU-4	8400 x .06 = 504	0	504
RTU-5	8400 x .06 = 504	0	504
RTU-6	8400 x .06 = 504	0	504
RTU-7	8400 x .06 = 504	0	504

Diffuser Schedule						
Mark	Manufacturer	Model	Face Size	Neck Size	Mounting	Finish
SD-1	Titus	TMS	24x24	As noted	Lay-in	White
SD-2	Titus	TMS	12x12	As noted	Lay-in	White
SD-3	Titus	TMS	12x12	As noted	Drywall	White
RG-1	Titus	PAR	24x24	As noted	Lay-in	White
RG-2	Titus	PAR	24x12	As noted	Lay-in	White
EG-1	Titus	PAR	12x12	As noted	Drywall	White
EG-2	Titus	PAR	24x24	As noted	Lay-in	White
DB-1	AES	ADB 1-12-4		10x20	Duct	Mill

- General Notes**
1. All duct to be wrapped w/ 1.5" foil faced fiberglass insulation.
  2. All diffusers to have fiberglass insulation blanket installed on top.
  3. Branch take-offs to be air-tite take-offs w/ damper to be balanced to CFM shown.
  4. All new sheet metal ductwork to be fabricated and installed in accordance with SMACNA standards.
  5. All duct joints to be sealed with water soluble joint compound.
  6. Flexible duct may be used where shown with a maximum length of 5'-0".



Office Mechanical Plan  
1/4" = 1'-0"

Midwest Distribution



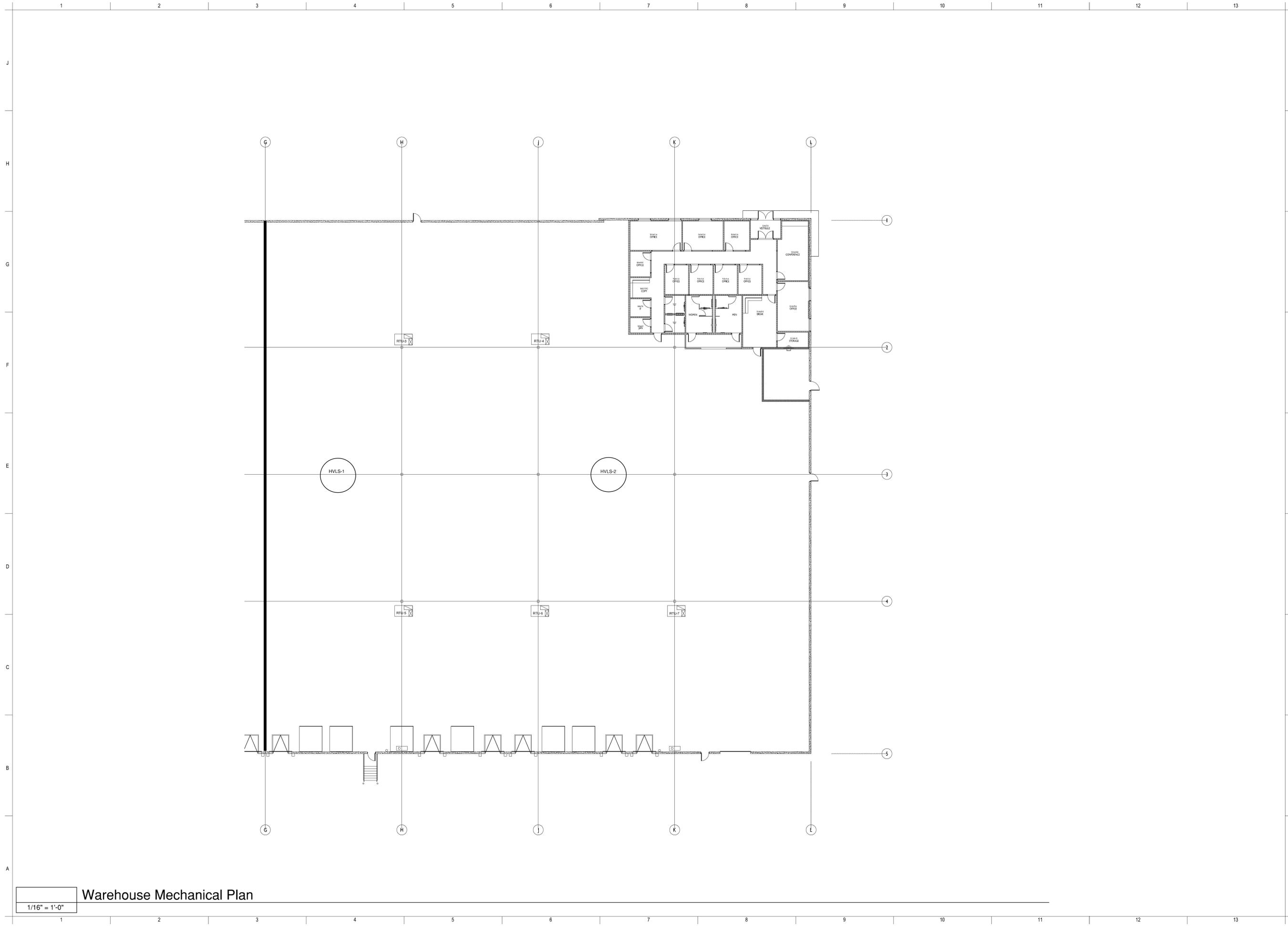
PROJECT NUMBER: 23-2755  
ISSUE DATE: 8/28/2023

REVISIONS	DATE

M1



920 NW Technology Dr.  
Lee's Summit, MO 64086  
Ph: 816-246-4646



Midwest Distribution



PROJECT NUMBER: 23-2755  
 ISSUE DATE: 8/28/2023

REVISIONS	DATE

M2

Warehouse Mechanical Plan  
1/16" = 1'-0"

1730 Walnut Street  
Kansas City, Missouri  
64108

816.221.1411  
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MIDWEST DISTRIBUTION

LEE'S SUMMIT LOGISTICS BUILDING B  
Corner of NE Tudor RD and Main Street  
Lee's Summit, MO 64086

Project Number: 23.7317.06

Date	08.24.2023
Phase	CONSTRUCTION
Issued For	PERMIT
Drawn By	JMS
P.I.C.	JON

Revision	
△	
△	

P001

### GENERAL NOTES (TYPICAL ALL SHEETS)

- A. PLUMBING CONTRACTOR IS RESPONSIBLE TO SEE THAT WORK MEETS AND IS IN ACCORDANCE WITH ALL REQUIREMENTS OF FEDERAL, STATE, AND LOCAL LAWS AND CODES AND/OR REQUIREMENTS, INCLUDING HEALTH CODES AND BUILDING OWNER.
- B. ALL EXISTING PIPING SHOWN ON DRAWINGS IS SCHEMATIC AND IS BASED ON EXISTING RECORD DRAWINGS PROVIDED BY THE OWNER AND DO NOT REFLECT EXACT EXISTING CONDITIONS. CONTRACTOR TO FIELD VERIFY EXACT DEPTH AND/OR LOCATIONS ON JOB SITE. CONTRACTOR SHALL REROUTE NEW WORK TO ACCOMMODATE EXACT LOCATIONS OF EXISTING UTILITIES, SUBROUTS AND/OR CONNECTIONS.
- C. CUTTING AND PATCHING OF FLOORS, WALLS, CEILING, ETC., REQUIRED IN STRICT ACCORDANCE WITH THE RULES AND REGULATIONS OF THE ARCHITECT'S AND/OR BUILDING OWNER REQUIREMENTS.
- D. COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO INSTALLATION TO AVOID ROUTING CONFLICTS.
- E. ANY MATERIAL REMOVED THAT OWNER DOES NOT WISH TO RETAIN SHALL BE REMOVED FROM PROJECT SITE AND DISPOSED OF BY CONTRACTOR.
- F. INSTALL ELASTOMERIC JOINT SEALER AROUND ALL PIPES PASSING THRU INTERIOR NON-RATED CONCRETE AND MASONRY WALLS, GYPSUM-BOARD PARTITIONS, AND CONCRETE FLOOR/ROOF SLABS. FOR FIRE RATED INTERIOR CONCRETE AND MASONRY WALLS, GYPSUM-BOARD PARTITIONS, AND CONCRETE FLOOR/ROOF SLABS SEAL ALL PIPES. INSTALL FIRESTOP MATERIALS IN ALL GAPS PRIOR TO SEALANT APPLICATION. INSTALL SEALER ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
- G. PLUMBING CONTRACTOR SHALL MAKE FINAL CONNECTION TO ALL EQUIPMENT BY OTHERS. VERIFY CONNECTIONS SIZES AND REQUIREMENTS.
- H. PIPING ROUTED BELOW COUNTER IN CABINETS SHALL BE ROUTED AS NOTED. NOT TO INTERFERE WITH DRAWERS, SHELVES, EQUIPMENT, ETC., AND SUPPORT FROM BACK WALL OF CABINET.
- I. PLUMBING CONTRACTOR SHALL PROVIDE PRO-SET SYSTEMS 'TRAP GUARD' IN ALL FLOOR DRAIN TRAPS WITHIN PROJECT SCOPE OF WORK.
- J. PLUMBING CONTRACTOR SHALL VERIFY WALL THICKNESS WITH ARCHITECT PRIOR TO ORDERING FREEZE PROOF WALL HYDRANTS.

### PLUMBING SYMBOLS

- EXISTING TO REMAIN
- NEW PIPING
- FLOW ARROW
- CW — COLD WATER
- HW — HOT WATER
- HWR — HOT WATER RETURN
- NG — NATURAL GAS
- V — SANITARY VENT ABOVE GROUND/FLOOR
- - - V - - - SANITARY VENT BELOW GROUND/FLOOR
- - W - - SANITARY WASTE BELOW GROUND/FLOOR
- BALANCE VALVE
- GAS SHUT-OFF COCK
- SHUT OFF VALVE
- IN-LINE PUMP
- OR ● FLOOR DRAIN OR EDMT FLOOR DRAIN
- |WH WALL HYDRANT
- WCO — WALL CLEAN OUT
- FFCO FINISHED FLOOR CLEANOUT
- ⊕ VTR SANITARY VENT THROUGH ROOF
- ⊕ DW-1 EQUIPMENT TYPE AND DESIGNATION
- PLUMBING FIXTURE DESIGNATION
- ⊕ ETR EXISTING TO REMAIN
- ⊕ CONNECT TO EXISTING

### 220 100 PLUMBING SPECIFICATIONS

- 1.0 SCOPE:
  - A. The work included under this contract consists of providing all labor, materials, tools, transportation, services, etc., necessary to complete the installation and to provide complete working systems of the Plumbing Systems, including hot and cold water, waste and vent, storm drainage, fixtures, equipment and other items described in these specifications, as illustrated in the accompanying drawings or as directed by the Architect/Engineer.
  - B. Extend piping systems as indicated on contract documents or to point of connection as follows:
    - 1. Points of connection within the existing building.
  - C. Contractor shall verify water service availability, including size and available pressure to service the building.
    - 1. The pressure provided to fixtures within the building shall not exceed that allowed by local code or shall not exceed 80 PSIG. Provide pressure regulator(s) as required to limit the maximum pressure.
- 2.0 DOMESTIC WATER SERVICE AND SYSTEMS.
  - A. Provide hot and cold water supply to each and every fixture, piece of equipment and to systems where makeup water is required.
  - B. Provide service valves for each item of equipment, at branch piping, fixture groups, individual fixtures and elsewhere as indicated or required. Provide balance valves, strainers, check valves and other valves as indicated or required by the application.
  - C. Provide a union or flanged connection between each item of equipment and its service valve. Copper to ferrous pipe connections shall have isolation coupling, flange or union.
  - D. Domestic water, interior, above ground -
    - 1. Pipe, copper tube -
      - a. 2-1/2" and Smaller - Type "L" hard temper copper, wrought or cast copper fittings, Lead free 95/5 or Eagle Hard Silivabrite or "CB" solder joints, or roll grooved mechanical joints or pressure seal joint fittings with EPDM O-ring seals.
    - 2. Provide valves where indicated on the drawings, where required by code, or required for service.
      - a. 1/4 turn Service -
        - 1) 1/2" thru 2" - Nibco 585-66-LF bronze lead free, 600 PSIG, full port, stainless steel ball and stem.
        - 2) Provide isolation valves where indicated on drawing, including at branches, terminations, each piece of equipment and elsewhere as required by code.
    - 3. Securely anchor and support piping, valves and fittings, with adequate provisions for expansion and contraction. Grade lines, free of traps, to low point at cut-off and drain valve.
    - 4. Hot and cold supply lines to have manufactured pre-charged piston type water hammer arresters sized and installed in accordance with PDI/WH 201. Install at each solenoid actuated quick closing valve location including but not limited to dishwashers, clothes washers, ice makers, electronic faucets and similar items. Sioux Chief, JR Smith or equal. Provide access panel where required.
- F. Natural Gas --
  - 1. Pipe above ground:
    - a. 2" and smaller - Schedule 40 black steel piping with threaded fittings.
  - 2. Valves & Connectors:
    - a. Shutoff Service -
      - 1) 1/2" thru 1" - Nibco GB-1A, brass body, chrome plated brass ball, PTFE seats, screwed ends, 5 PSIG per CGA, lever handle.
      - 2) 1/2" thru 2" - Nordstrom 142, iron lubricated tapered plug valve, 200 PSIG, threaded ends.
    - b. Regulator, 3/4" thru 1-1/2" - Fisher type S, spring loaded diaphragm, 1.5" WC to 2.5 PSIG discharged pressure, threaded, vented to atmosphere.
    - c. Flex Connectors, Metraflex GASCT 300 series stainless steel braided hose with carbon steel threaded ends.
  - 3. Natural gas piping in return air plenum, where permitted shall be either installed in vented fabricated enclosure, sleeved and vented; or welded or one piece.
  - 4. Paint exterior natural gas piping with corrosion inhibiting paint, color to be selected.
- G. Sanitary sewer, vent, interior --
  - 1. Pipe - Standard weight cast iron hubless with no-hub shielded mechanical joints; solid wall schedule 40 PVC, ABS with solvent cement joints; vents may be galvanized malleable iron.
  - 2. Plastic piping shall not be allowed in return air plenums.
  - 3. Floor or equipment drains shall be provided at all locations where equipment is indirect wasted. Floor drains shall be provided outside all ADA showers for roll-in applications or where there is no threshold.
  - 4. All gravity drainage shall be graded per code but not less than 1/8" per foot unless noted otherwise, except that piping sizes up thru 2-1/2" shall be sloped at 1/4" per foot. Piping sizes up thru 4" to be sloped at 1/4" per foot where possible and where required by local codes.
  - 5. Vents shall be sloped upward in direction of flow.
- H. Sanitary sewer, vent, below grade --
  - 1. Pipe - Standard weight cast iron hubless with no-hub heavy duty mechanical joint fittings; solid wall schedule 40 PVC, ABS with solvent cement joints.
  - 2. All gravity drainage shall be graded per code but not less than 1/8" per foot unless noted otherwise, except that piping sizes up thru 2-1/2" shall be sloped at 1/4" per foot. Piping sizes up thru 4" to be sloped at 1/4" per foot where possible and where required by local codes.
  - 3. Vents below grade shall be 2" minimum size and shall be sloped up in direction of flow.
- 4.0 CLEANOUTS, TEST TEES, TRAPS AND TRAP SEALS:
  - A. Provide cleanout at the base of each stack or riser, at ends of runs greater than 100', each 135 degree aggregate change of direction in horizontal piping, where indicated on the drawings or as required by code. Plugs, extra heavy cast brass, screwed. Scarfed tops in unfinished areas, carpet markets in carpet floors, tile top in tile floors, stainless steel cover in finished walls. Cleanouts shall be the same size as pipe up to 4" diameter, 4" cleanouts for larger pipe unless otherwise noted.
  - B. All traps shall be deep seal type with liquid seal not less than specified by code.
  - C. Where trap primers are not specified provide all floor and hub drains with trap seal with EPDM or silicone diaphragm, conforming to requirements of ASSE 1072 or 1017.2. Provent Proset Series SG22 or TG22, Sioux Chief series B35, Rectorseal SS series or acceptable equal.
- 5.0 SLEEVES AND SEALS, FLASHINGS, ROOF PIPE SUPPORTS AND UV PROTECTION:
  - A. Flash all pipes and vents extending through roof. Flashing details shall be in accordance with roof manufacturer's requirements.
  - B. Continuous roof piping penetrations shall be made weather tight, conform to roof manufacturer warranty.
  - C. Roof pipe supports shall be prefabricated with UV resistant rubber base, unistrut channel and pipe clamp, length and height for consistent pipe elevation to suit application. MI-Fab C6 series or acceptable equal.
  - D. Plastic piping without UV inhibitors which is exposed to UV radiation from sunlight shall be protected by coating with a UV resistant paint.
- 6.0 CROSS- CONNECTIONS AND INTERCONNECTIONS:
  - A. No plumbing device or piping shall be installed which will provide cross-connection or interconnection between a distributing supply or waste so as to make possible the backflow or back-siphonage of polluted water into the potable water supply system. Where the possibility of back-siphonage exists, water supply to the fixture shall be introduced through a suitable backflow preventer device suitable for the hazard protected. Installed backflow preventers must be approved through the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research.
    - 1. They may be an air gap, anti-syphon valve, atmospheric vacuum breaker, pressure vacuum breaker, double check, reduced pressure backflow preventer or as otherwise required by the authority having jurisdiction.
- 7.0 PLUMBING EQUIPMENT:
  - A. Water heaters, pumps, expansion tanks and other equipment shall be as scheduled or by acceptable equal by one of the following:
    - Water Heaters and Accessories:  
Water Heaters: A.O. Smith, Slate, Rheem, Bradford White  
Expansion Tanks: Watts, Amtrol, Armstrong, Elbi, Taco, Wessels.
  - B. Water Heater Installation
    - 1. Pipe water heater drains and/or pan drains to indirect waste per code and as noted or detailed. Water heater P&T relief valves shall be piped independently, indirectly wasted 6" above receptor per code and as noted or detailed.
    - 2. Install vacuum relief valve on each bottom fed storage water heater, installed above the top of the water heater on cold water inlet piping.
    - 3. Mount water heaters on concrete floor pads, suspended from structure on steel rods, on steel floor stands or wall bracket steel frames as indicated on drawings.
    - 4. Suspended heaters up to 50 gallons may be mounted utilizing prefabricated steel support platform, HoldRite SWHP series or acceptable equal.
    - 5. Where water heaters are mounted overhead, on wood floor or other location requiring containment, mount water heaters in drain pan with 1" minimum drain, HoldRite QP series, acceptable equal or field fabricated equivalent.

- 6. Water piping connections to water heaters shall be metallic, no plastic piping is permitted within 18" of a water heater connection. Stainless steel flexible connectors with union ends may be used, HoldRite or acceptable equal. Provide 18" minimum flexible corrugated copper or braided stainless steel connector hoses with compression ends for water heaters with 3/4" water connections.
- C. Provide equipment accessories including but not limited to operating controls, limit switches, oil sensors, high level controls, timers, aquastats, energy management system interface, etc. as indicated on drawings and as required for a complete operating system.
- 8.0 INSULATION:
  - A. Pipe insulation shall conform to the International Energy Conservation Code.
  - B. Insulate all cold water, hot water piping, Owens Corning or acceptable equal.
    - 1. Cold water piping insulation: 1" fiber glass sectional pipe covering with universal vapor barrier jacket.
    - 2. Hot Water piping insulation: 1" (pipe sizes up thru 1-1/4") 1-1/2" (pipe sizes 1-1/2" and above) fiber glass sectional pipe covering with universal all service jacket.
  - C. At Contractor's option, Armaceil AP Armaflex unicellular insulation or acceptable equal with 25/50 flame and smoke rating with equal thermal performance may be substituted for fiberglass products.
  - D. Seal all joints on cold water insulation to maintain vapor barrier.
  - E. Insulation shall run continuously thru hangers and supports without interruption.
  - F. Refer to plumbing fixture schedule for protective insulation of fixture drains and water piping for compliance with ADA requirements for People with Disabilities.
    - 1. Pipe coverings may be omitted where protection from injury (such as shrouds or casework) is provided by other trades.
    - 2. Provide comparable protection for accessory items such as disposers where items are exposed to contact beneath ADA designated fixtures.
- 9.0 PIPE SUPPORTS AND ROUTING:
  - A. Hangers and Supports
    - 1. Piping shall be supported in accordance with industry standards including support methods, sizes and spacing. All supports and installation shall conform to MSS SP58 and 69 and Fed Spec WW-H-171E and A-A-1192A.
    - 2. Pipe Slopes: Install hangers and supports to provide indicated or required pipe slopes to provide for drainage and venting.
    - 3. Each piping system shall be independently supported with no piping bearing on another and installed such that no weight of piping is borne by the equipment.
    - 4. Space hangers and supports within maximum piping span length indicated in MSS SP-58. Install building attachments at required locations for proper piping support.
    - 5. Hangers shall be designed to allow for expansion and contraction of pipe lines and shall be of adequate size to permit covering when required. Provide protective saddles and blocking where supporting insulated piping to prevent crushing insulation.
  - B. Routing
    - 1. Piping shall be routed as shown on drawings, parallel to building lines unless otherwise shown, coordinated with building structure and other trades. Adjust pipe routing and drop locations with necessary pipe offsets or changes in elevation to accommodate beams and other obstructions.
- 10.0 EQUIPMENT AND PIPE LABELS:
  - A. Equipment labels shall be provided for all plumbing equipment and shall be self-adhesive engraved plastic, blue with white lettering, sized, minimum 1-1/2" high, and located for viewing from ground or floor level. Label shall indicate drawing designation or unique equipment number.
  - B. Pipe labels for domestic water, waste, vent and gas piping shall be preprinted, color-coded, with 1-1/2" lettering indicating service, and showing flow direction, locate pipe labels where piping is exposed or above accessible ceilings in finished spaces; machine rooms; accessible maintenance spaces such as shafts, tunnels, and plenums; and locations as follows:
    - 1. Near each valve and control device.
    - 2. Near each branch connection, excluding short takeoffs for fixtures and terminal units. Where flow pattern is not obvious, mark each pipe at branch.
    - 3. Near major equipment items and other points of origination and termination.
    - 4. Spaced at maximum intervals of 50 feet along each run. Reduced intervals to 25 feet in areas of congested piping and equipment.
    - 5. On piping above removable acoustical ceilings, omit intermediately spaced labels.

- 11.0 MISCELLANEOUS
  - A. Indirect wastes shall discharge full size thru an air gap to a floor, equipment drain, sanitary floor sink or hub drain. The floor or equipment drain grate shall be fitted with a funnel, the sanitary floor sink shall have a partial grate or the grate shall be omitted. Drains shall be located so they are accessible and not a tripping hazard.
  - B. Provide escutcheons at all penetrations of exposed walls and ceilings. Escutcheons shall be chrome plated brass in occupied areas, prime paint finish for unoccupied areas unless otherwise noted. Escutcheons for exterior or moist areas shall be brass.
- 12.0 PROTECTION OF WORK
  - A. Protection
    - 1. Protect and cover piping and fixture waste and water openings to prevent entry of dirt and debris.
    - 2. Cover and protect fixtures and plumbing equipment to prevent damage.
- 13.0 TEST, ADJUSTMENTS AND CLEANING:
  - A. Soil, waste and vent piping testing:
    - 1. Initial Piping Water Test: Fill with water to the top of the highest point of the system extending through roof. Systems may be tested in whole or part. The system shall remain leak free under test for a minimum period of Fifteen (15) minutes.
      - a. Gravity Drain Test: Either 10' water column or at a pressure not less than 10% above that the piping will be subjected to during nominal operation
      - b. Pressure Piping Test: Either 25 PSIG or at a pressure not less than 10% above that the piping will be subjected to during nominal operation.
      - c. Where applicable, isolate new portions of the system(s) piping with test tee and Oatey Clean Seal inflatable plug prior to testing.
    - 2. Final Piping Test: The completed system(s) shall be visually inspected to determine compliance with all codes and standards. Where required by the building official, the completed system shall be smoke tested with all traps water filled and system pressured to 1" WC for a minimum period of fifteen (15) minutes.
  - B. Water and gas line testing:
    - 1. Water piping shall be purged and tested with compressed air or water at 50 PSIG above the operating pressure but not to exceed the pressure rating of piping system materials for a period of 2 hours with no measurable pressure drop.
    - 2. Natural gas lines shall be inspected and blown out with dry compressed air or nitrogen to purge of debris and tested at 1-1/2 times the operating pressure or a minimum of 25 PSIG pressure with no measurable pressure drop. All test procedures including duration of test shall be in accordance with NFPA 54 and the International Fuel Gas Code.
    - 3. Where applicable, isolate new portions of pressure piping from existing piping with valves prior to testing.

- 14.0 FIXTURE BRANCH PIPING:
  - A. Fixture branch and connection sizes shall be as shown in the plumbing fixture schedule on the drawings and not less than required by code.
  - B. Minimum waste or vent size below slab on grade shall be 2".
- 15.0 PLUMBING FIXTURES:
  - A. Refer to plumbing fixture schedule for plumbing fixtures and accessories. Include all fittings and accessories as required for a complete working system.
  - B. Where required for ADA compliance, provide lavatory and sink offset drain and tailpiece assembly.
  - C. At contractor option, flexible stainless steel braided hose, 125 PSIG rated, with non-toxic liner and compression fittings may be used in lieu of chrome plated brass riser tube. Where ADA compliance is required, provide flexible insulation wrap on braided water supplies in lieu of specified molded vinyl wrap.

END OF SECTION

1730 Walnut Street  
Kansas City, Missouri  
64108

Fender



Lankford

+ associates

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MIDWEST DISTRIBUTION

LEE'S SUMMIT LOGISTICS BUILDING B  
Corner of NE Tudor RD and Main Street  
Lee's Summit, MO 64086

Project Number: 23.7317.06  
Date: 08.24.2023  
Phase: CONSTRUCTION  
Issued For: PERMIT  
Drawn By: JMS  
P.I.C.: JON

Revision	Description
△	
△	

P002

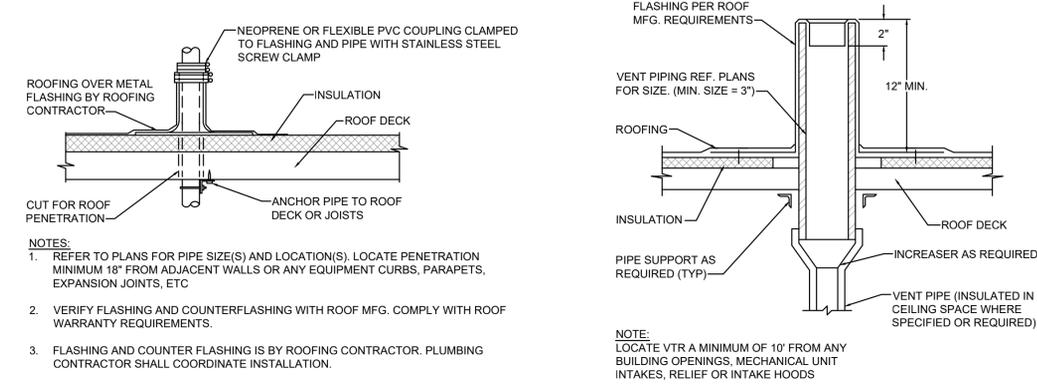
### PLUMBING FIXTURE SCHEDULE

MARK NO.	FIXTURE TYPE	MANUFACTURER	MODEL NO.	DESCRIPTION	MINIMUM CONNECTION SIZE			
					CW	HW	WASTE	VENT
WC-1	WATER CLOSET (ADA)	AMERICAN-STANDARD	3043.001 "MADERA"	FLOOR MOUNTED FLUSH VALVE, WHITE VITREOUS CHINA, HIGH EFFICIENCY, DIRECT FED SIPHON, JET ACTION, FULLY GLAZED 2" TRAP WAY, ELONGATED BOWL, WITH 1-1/2" TOP SPUD, 15" RM HEIGHT, SLOAN "G2 OPTIMA PLUS" 8111-1.6-OR (1.6 GPF) BATTERY OPERATED ELECTRONIC DIAPHRAGM FLUSH VALVE WITH MANUAL RELEASE, VACUUM BREAKER AND ANGLE STOP. ACCESSORIES: BEIMS 1055SSC WHITE OPEN FRONT SEAT LESS COVER WITH SELF SUSTAINING CHECK HINGES, BOLTS AND CAPS. NOTE: MOUNT FLUSH VALVE TO WIDE SIDE OF FIXTURE.	1"	-	4"	2"
WC-2	WATER CLOSET	AMERICAN-STANDARD	2234.001 "MADERA"	FLOOR MOUNTED FLUSH VALVE, WHITE VITREOUS CHINA, HIGH EFFICIENCY, DIRECT FED SIPHON, JET ACTION, FULLY GLAZED 2" TRAP WAY, ELONGATED BOWL, WITH 1-1/2" TOP SPUD, 15" RM HEIGHT, SLOAN "G2 OPTIMA PLUS" 8111-1.6-OR (1.6 GPF) BATTERY OPERATED ELECTRONIC DIAPHRAGM FLUSH VALVE WITH MANUAL RELEASE, VACUUM BREAKER AND ANGLE STOP. ACCESSORIES: BEIMS 1055SSC WHITE OPEN FRONT SEAT LESS COVER WITH SELF SUSTAINING CHECK HINGES, BOLTS AND CAPS.	1"	-	4"	2"
U-1	URINAL (ADA)	AMERICAN-STANDARD	6590.001 "WASHBROOK"	WHITE VITREOUS CHINA, WALL-HUNG, HIGH EFFICIENCY WASHOUT FLUSH ACTION, INTEGRAL FLUSHING RM, 3/4" TOP SPUD, 2" OUTLET, SLOAN "OPTIMA PLUS" G2 8186-1.0 (1.0 GPF) BATTERY OPERATED ELECTRONIC FLUSH VALVE WITH MANUAL RELEASE, VACUUM BREAKER AND ANGLE STOP. ACCESSORIES: J. R. SMITH URINAL SUPPORT. NOTE: MOUNT FIXTURE RM 17" ABOVE FINISHED FLOOR.	3/4"	-	2"	1-1/2"
L-1	LAVATORY (ADA)	AMERICAN-STANDARD	"LUCERNE" 0355.012 (4" CENTERS)	WALL HUNG, VITREOUS CHINA, 20" X 18", FRONT OVERFLOW, INTEGRAL BACK AMERICAN STANDARD 7075.004 "COLONY PRO" DECK MOUNTED FAUCET WITH CERAMIC OPERATING CARTRIDGE, 4" CENTERS, INTEGRAL SPOUT, AND LEVER HANDLES, LESS DRAIN, POP-UP HOLE AND ROD. ACCESSORIES: PROVIDE LEAD FREE BRONZE THERMOSTATIC MIXING VALVE WITH 0.25 GPM MINIMUM FLOW RATE, INTEGRAL CHECK VALVES, DISCHARGE SET AT 105 F, MOUNTED DOWNSTREAM OF FIXTURE STOPS, PROVIDE GRID DRAIN, 17 GA. SEMI-CAST BRASS P-TRAP WITH CLEANOUT, CHROME-PLATED RISERS WITH LOOSE KEY ANGLE STOPS AND J. R. SMITH CONCEALED ARM LAVATORY SUPPORT, PROVIDE WITH FULLY MOLDED FLEXIBLE VINYL INSULATION KIT COVER TRAP, SUPPLIES AND STOPS, TRUEBRO E-Z LAV GUARD. NOTE: MOUNT FIXTURE RM 31" ABOVE FLOOR.	1/2"	1/2"	1-1/2"	1-1/2"
S-1	SINK (ADA)	DAYTON	DCFU2416	SINGLE COMPARTMENT UNDERMOUNT SINK, 18 GA. TYPE 304 STAINLESS STEEL, 6-1/2" DEEP BOWL, AMERICAN STANDARD 7074.300 "COLONY PRO" SINGLE HOLE, DECK MOUNTED FAUCET WITH CERAMIC OPERATING CARTRIDGE, SINGLE LEVER HANDLE, AND PULL DOWN SPRAY. ACCESSORIES: STRAINER WITH 1-1/2" TALL PIECE, 1-1/2" 17 GA. SEMI-CAST BRASS P-TRAP WITH CLEANOUT, CHROME-PLATED RISERS WITH ANGLE STOPS, GARBAGE DISPOSAL, MOEN GXP33C PRO SERIES 1/3 HP WITH POWER CORD.	1/2"	1/2"	2"	1-1/2"
JS-1	JANITOR SINK	ZURN	Z1996-24	SIZE 24" X 24" X 10", COMPOSITE SERVICE SINK WITH COMPOSITE DRAIN, STAINLESS STEEL STRAINER, 3" DRAIN CONNECTION, ZURN Z843M1 WITH QUARTER TURN CERAMIC OPERATING CARTRIDGES, VACUUM BREAKER SPOUT WITH PAIL HOOK AND WALL BRACE, 3/4" MALE HOSE THREAD OUTLET, 369 LEVER HANDLES, FLANGED ADJUSTABLE SUPPLY ARM AND INTEGRAL SUPPLY STOPS AND CHECK VALVES. ACCESSORIES: EXTRUDED VINYL BUMPER GUARDS ON EXPOSED SIDES, RUBBER HOSE WITH STAINLESS STEEL WALL BRACKET.	1/2"	1/2"	3"	2"
DF-1	DRINKING FOUNTAIN (ADA)	ELKAY	EZSTL8WSLK	BI-LEVEL CABINET WITH BOTTLE FILLER, ADA BARRIER-FREE BI-LEVEL COOLER, 8.0 G.P.H. (50" F WATER WITH 50° F AIR TEMPERATURE), PUSH BAR ACTIVATION, STAINLESS STEEL COOLER TOP, HEAVY GAUGE VINYL CLAD STEEL CABINET WITH GREY FINISH, CANE APRON ON UPPER BOWL, ELECTRONIC ACTIVATED INTEGRAL BOTTLE FILLER STATION ON LOWER FOUNTAIN, 120V/1PH/60HZ. ACCESSORIES: 17 GA. SEMI-CAST BRASS P-TRAP WITH CLEANOUT, CHROME-PLATED SUPPLY AND STOP, J. R. SMITH FLOOR MOUNTED TYPE SUPPORT WITH "PRO-SET" UPRIGHTS. NOTES: MOUNT WITH SPOUT 35" ABOVE FINISH FLOOR.	1/2"	-	1-1/2"	1-1/2"
IM-1	ICE MAKER WALL BOX	QATEY	39134	RECESSED ICE MAKER WALL BOX WITH QUARTER TURN VALVE AND 1/2" INLET, ABS COVER.	1/2"	-	-	-
FD-1	FLOOR DRAIN	SILOUX CHIEF	832 SERIES	GENERAL PURPOSE PVC BODY WITH ADJUSTABLE STRAINER HEAD, ROUND NICKEL BRONZE STRAINER, AND SEEPAGE OPENINGS. OUTLET SIZE PER PLANS. NOTE: PROVIDE WITH RECTORSEAL TRAP SEAL IN OUTLET OF FLOOR DRAIN. MATCH OUTLET SIZE.	-	-	2"	1-1/2"

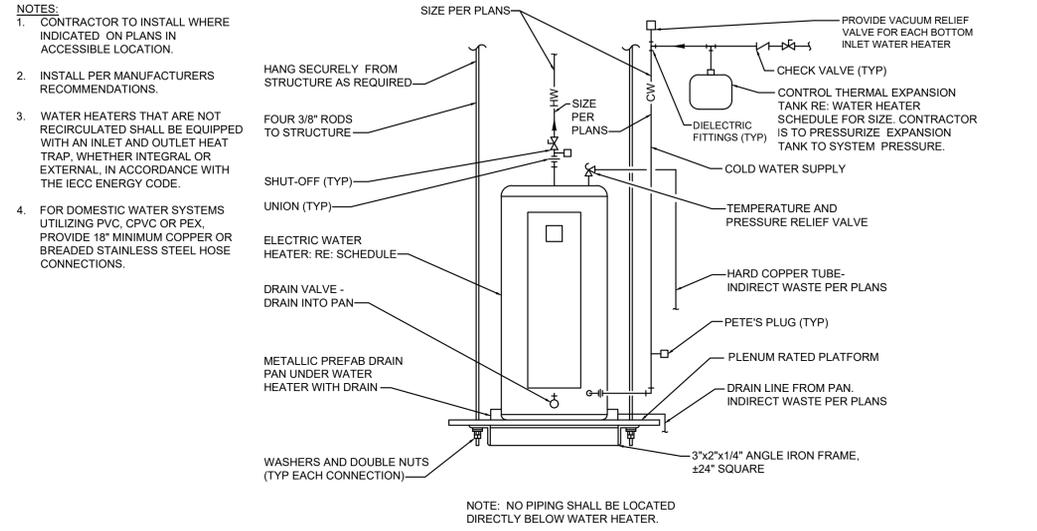
### WATER HEATER SCHEDULE (ELECTRIC)

MARK NO.	MANUFACTURER	MODEL NO.	TANK LINING	TANK CAPACITY (GAL)	RECOVERY (GPH @ 90 F)	INPUT (KW)	THERMAL EXPANSION TANK MODEL NO.	ELECTRICAL			NOTES
								VOLT	Ø	HZ	
DWH-1	RHEEM	PROE38 S2 RUB5	GLASS	38	21	4.5	PLT-5	240	1	60	1,2

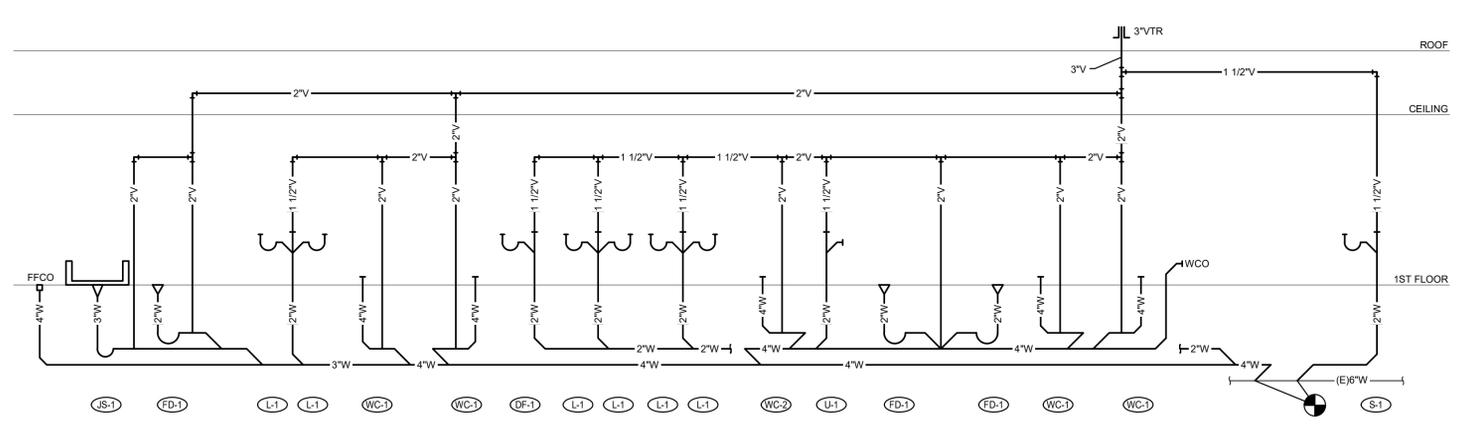
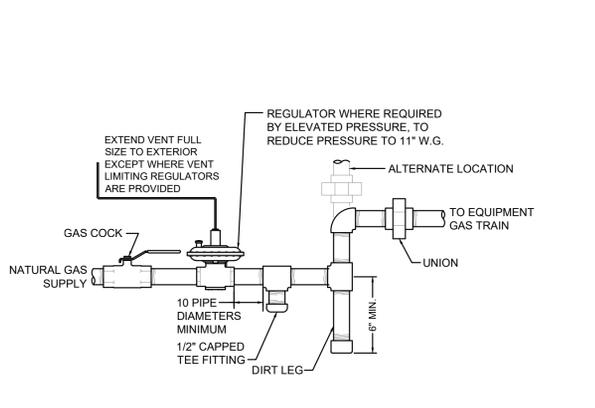
NOTES:  
1. PROVIDE WITH TEMPERATURE AND PRESSURE RELIEF VALVE AND DRAIN.  
2. PROVIDE WITH CONTROL THERMAL EXPANSION TANK, WATTS MODEL SCHEDULED WITH WATTS SCV SERVICE CHECK VALVE.  
3. COORDINATE



NOTES:  
1. REFER TO PLANS FOR PIPE SIZE(S) AND LOCATION(S). LOCATE PENETRATION MINIMUM 18" FROM ADJACENT WALLS OR ANY EQUIPMENT CURBS, PARAPETS, EXPANSION JOINTS, ETC.  
2. VERIFY FLASHING AND COUNTERFLASHING WITH ROOF MFG. COMPLY WITH ROOF WARRANTY REQUIREMENTS.  
3. FLASHING AND COUNTER FLASHING IS BY ROOFING CONTRACTOR. PLUMBING CONTRACTOR SHALL COORDINATE INSTALLATION.



NOTES:  
1. CONTRACTOR TO INSTALL WHERE INDICATED ON PLANS IN ACCESSIBLE LOCATION.  
2. INSTALL PER MANUFACTURERS RECOMMENDATIONS.  
3. WATER HEATERS THAT ARE NOT RECIRCULATED SHALL BE EQUIPPED WITH AN INLET AND OUTLET HEAT TRAP, WHETHER INTEGRAL OR EXTERNAL, IN ACCORDANCE WITH THE IECC ENERGY CODE.  
4. FOR DOMESTIC WATER SYSTEMS UTILIZING PVC, CPVC OR PEX, PROVIDE 18" MINIMUM COPPER OR BREADED STAINLESS STEEL HOSE CONNECTIONS.

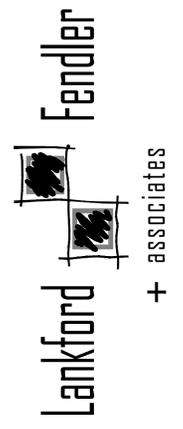


NOTES:  
1. PROVIDE WITH TEMPERATURE AND PRESSURE RELIEF VALVE AND DRAIN.  
2. PROVIDE WITH CONTROL THERMAL EXPANSION TANK, WATTS MODEL SCHEDULED WITH WATTS SCV SERVICE CHECK VALVE.  
3. COORDINATE



1730 Walnut Street  
Kansas City, Missouri  
64108

816.221.1411  
Fax: 816.221.1429

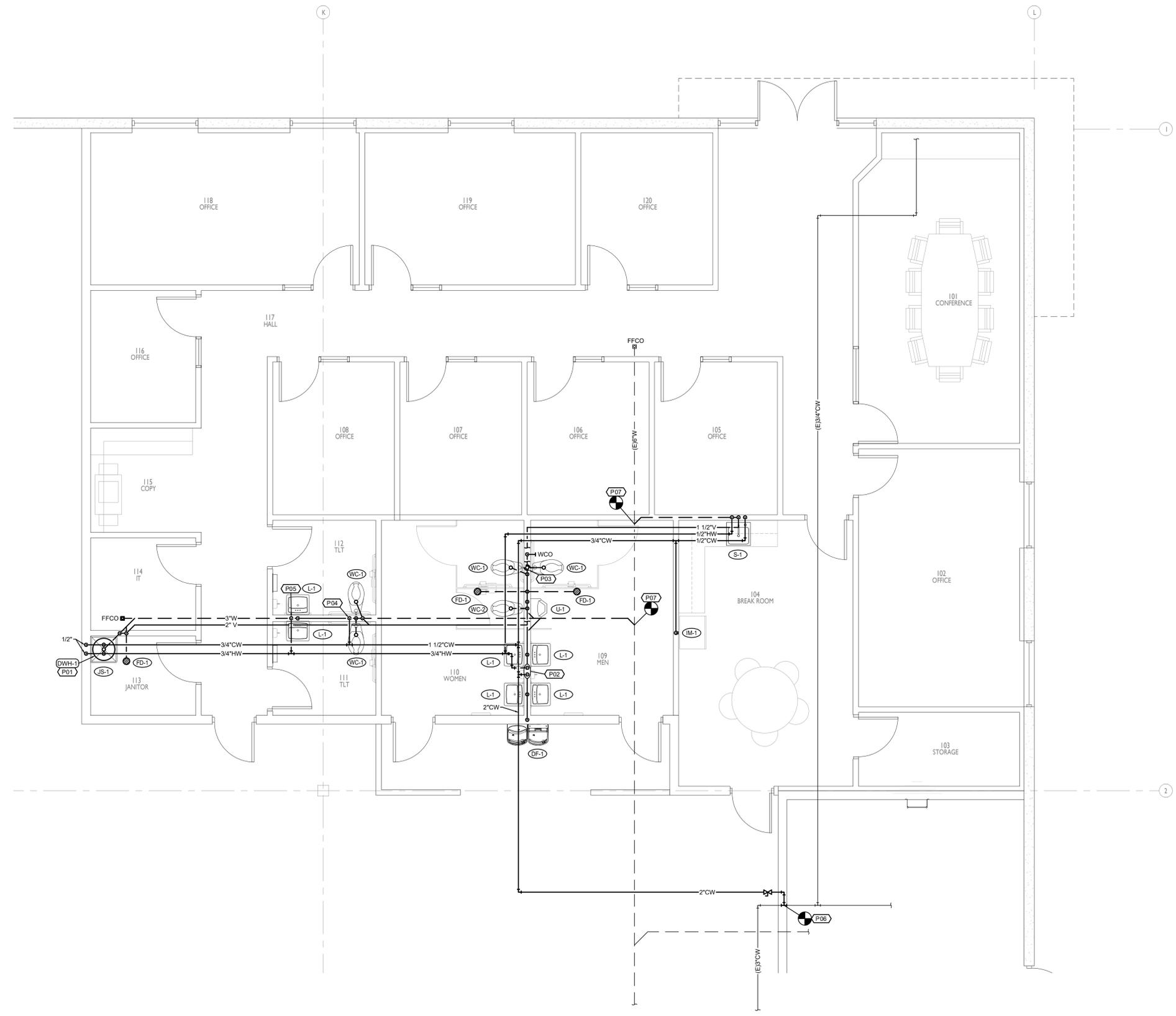


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**FLOOR PLAN NOTES**

1. NEW ELECTRIC WATER HEATER SUSPENDED FROM STRUCTURE. ROUTE WASTE FROM T&P AND DRAIN VALVE TO JANITOR'S SINK AND INDIRECT WASTE.
2. 2" COLD WATER AND 3/4" HOT WATER DOWN AND IN WALL. ROUTE FULL SIZE AND CONNECT 1" COLD WATER TO EACH WATER CLOSET, 3/4" COLD WATER TO URINAL, 1/2" COLD WATER TO DRINKING FOUNTAIN, AND 1/2" HOT AND COLD WATER TO EACH LAVATORY.
3. 2" VENT UP TO 3" VTR.
4. 1 1/2" COLD WATER DOWN AND IN WALL. CONNECT 1" COLD WATER TO EACH WATER CLOSET, AND 1/2" COLD WATER TO EACH LAVATORY.
5. 3/4" HOT WATER DOWN IN WALL. CONNECT 1/2" HOT WATER TO EACH LAVATORY.
6. CONNECT TO NEAREST EXISTING COLD WATER PIPING OF EQUAL OR GREATER SIZE. FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING PIPING PRIOR TO CONNECTION.
7. CONNECT TO NEAREST EXISTING SANITARY PIPING OF EQUAL OR GREATER SIZE BELOW SLAB. FIELD VERIFY EXACT SIZE, LOCATION, AND ELEVATION OF EXISTING PIPING PRIOR TO CONNECTION.



**PARTIAL FLOOR PLAN - PLUMBING**  
SCALE: 1/4" = 1'-0"

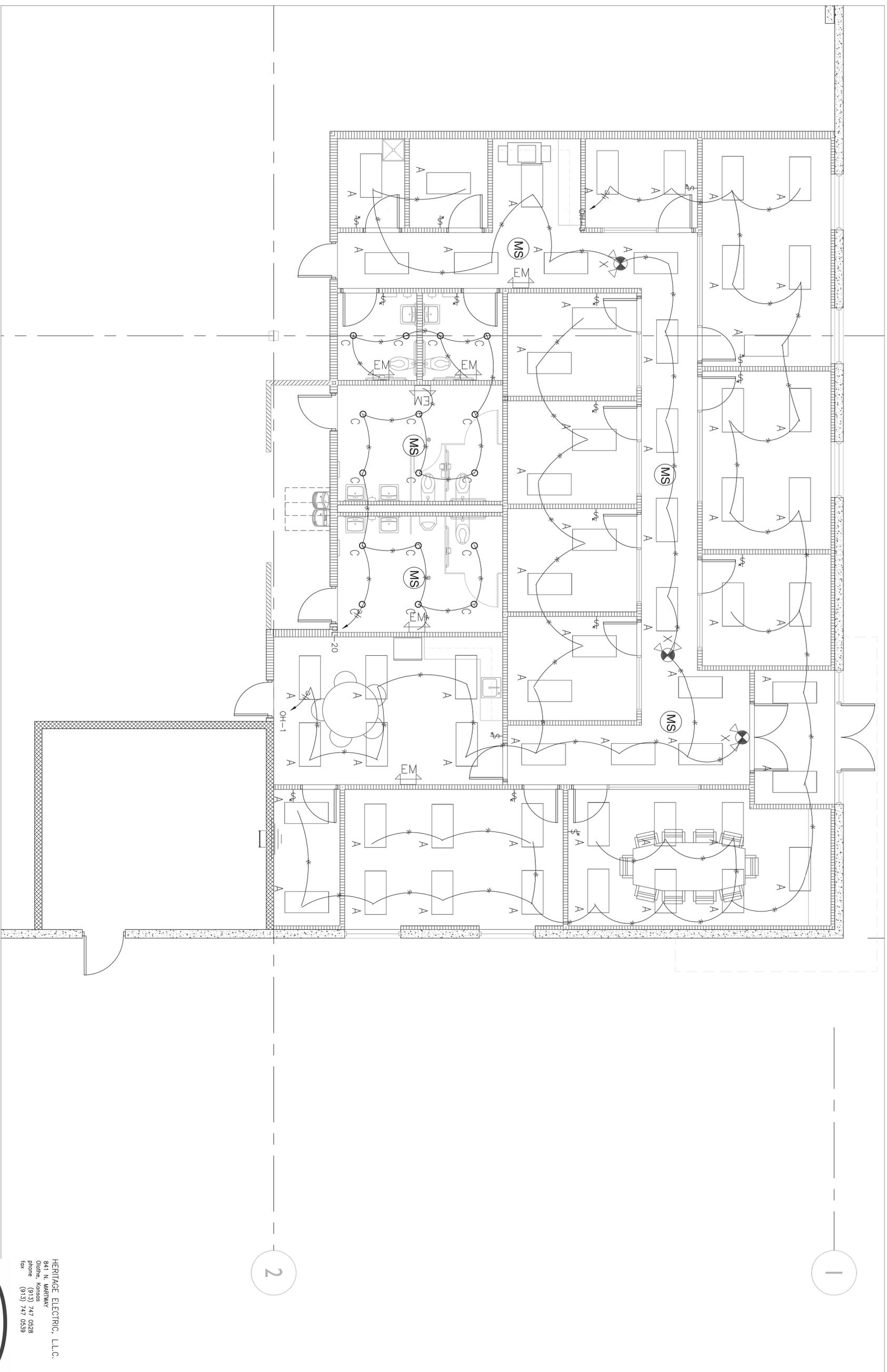
**MIDWEST DISTRIBUTION**  
**LEE'S SUMMIT LOGISTICS BUILDING B**  
Corner of NE Tudor RD and Main Street  
Lee's Summit, MO 64086

Project Number: 23.7317.06

Date	08.24.2023
Phase	CONSTRUCTION
Issued For	PERMIT
Drawn By	JMS
P.I.C.	JON

Revision	
△	
△	

**P101**



1  
1/4" = 1'

OFFICE LIGHTING PLAN

HERITAGE ELECTRIC, L.L.C.  
841 N. MARTWAY  
Ocala, Kansas 647 0528  
phone (913) 747 0528  
fax (913) 747 0528



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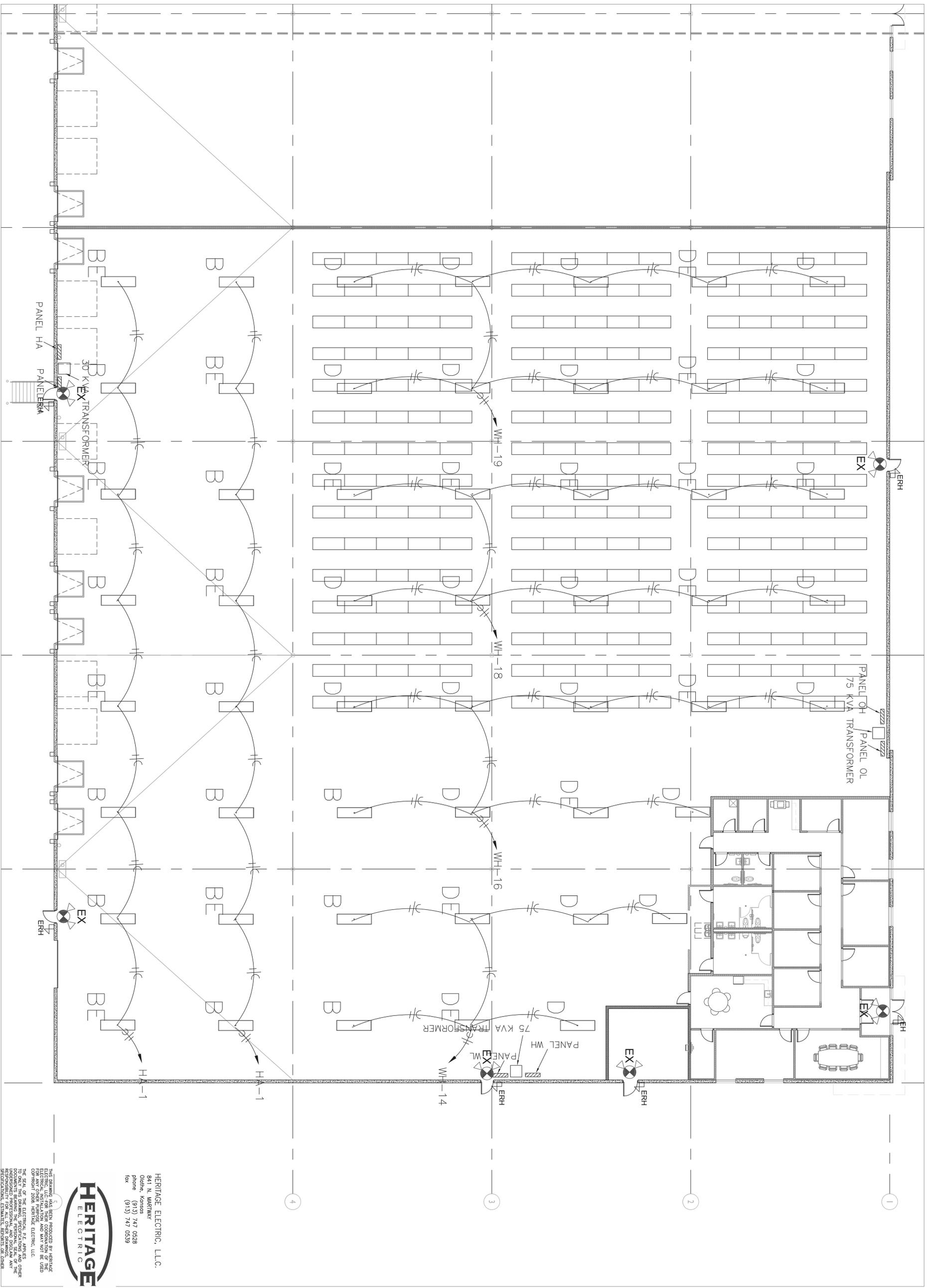
PROJECT INFORMATION  
LEES SUMMIT LOGISTICS  
BUILDING B LOT 2

X CORNER OF  
NE TUDOR RD & MAIN ST  
LEES SUMMIT, MO 64086

Professional Engineer Seal  
State of Missouri  
Professional Engineer  
E-14378  
9/22/23

ISSUE DATES (08/22/23)  
PERMIT SET  
CITY COMMENTS 09.18.23

220018  
LIGHTING PLAN  
E1.00



1 WAREHOUSE LIGHTING PLAN  
3/32" = 1'



HERITAGE ELECTRIC, LLC.  
841 N. MARTIN  
Ocala, Kansas 67470  
phone (913) 747-0528  
fax (913) 747-0538

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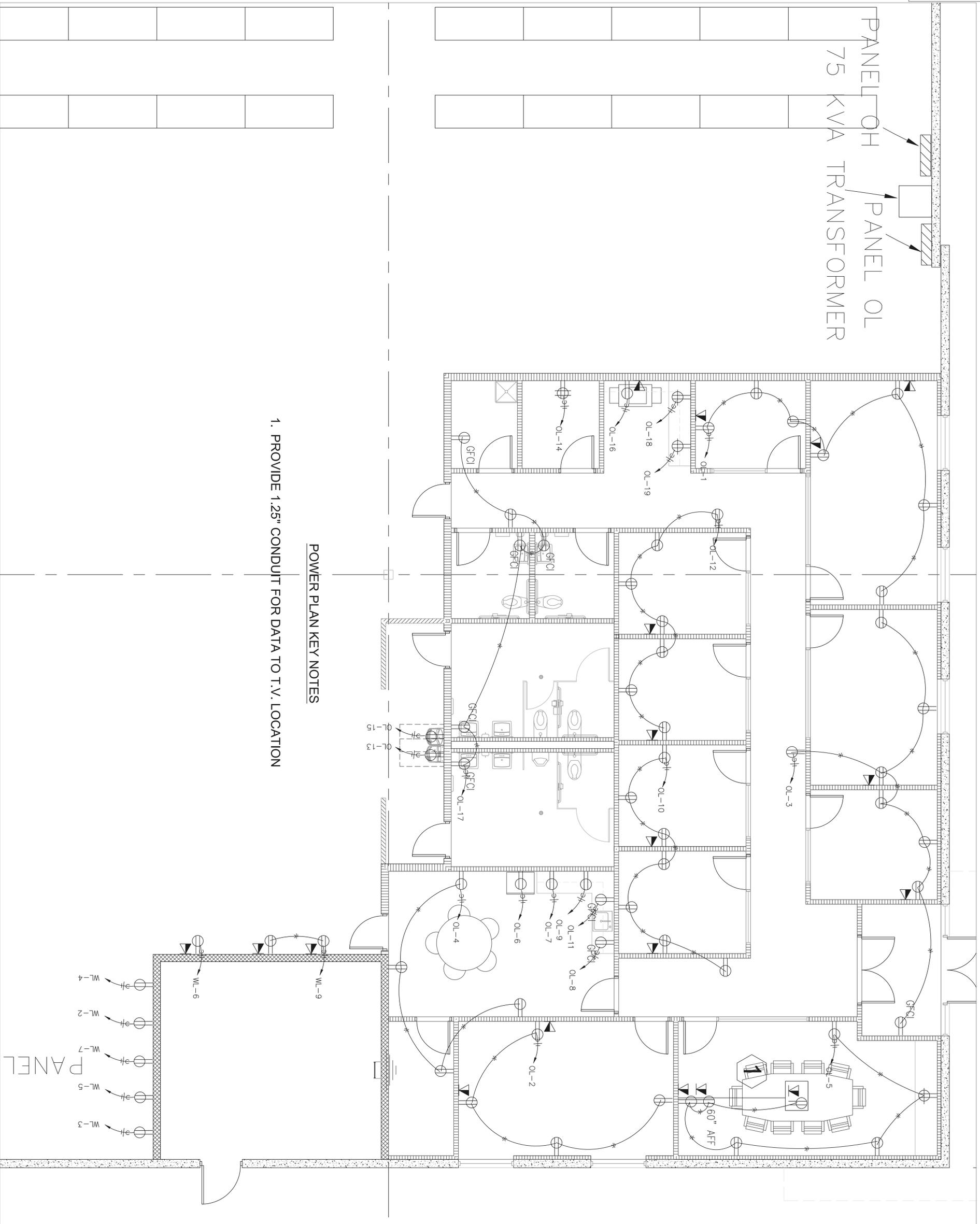
PROJECT INFORMATION  
LEES SUMMIT LOGISTICS BUILDING B LOT 2

X CORNER OF  
NE TUDOR RD & MAIN ST  
LEES SUMMIT, MO 64086

STATE OF MISSOURI  
Professional Engineer  
E-14378  
8/22/23

ISSUE DATES 08/23  
REVISIONS  
CITY COMMENTS 09.18.23

220018  
WAREHOUSE LIGHTING PLAN  
E1.10



1. PROVIDE 1.25" CONDUIT FOR DATA TO T.V. LOCATION

**POWER PLAN KEY NOTES**

PANEL  
WL-4  
WL-2  
WL-7  
WL-5  
WL-3



**GURRAN**  
ARCHITECTURE  
5719 LAWTON LOOP E. DR. #212  
INDIANAPOLIS, IN 46216  
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**PROJECT INFORMATION**  
LEES SUMMIT LOGISTICS  
BUILDING B LOT 2

X CORNER OF  
NE TUDOR RD & MAIN ST  
LEES SUMMIT, MO 64086

Professional Engineer Seal for **John W. Gable**, License No. E-14978, State of Missouri, dated 8/22/23.

**ISSUE DATES** 08/23/23  
**PERMIT SET**  
**CITY COMMENTS** 09.18.23

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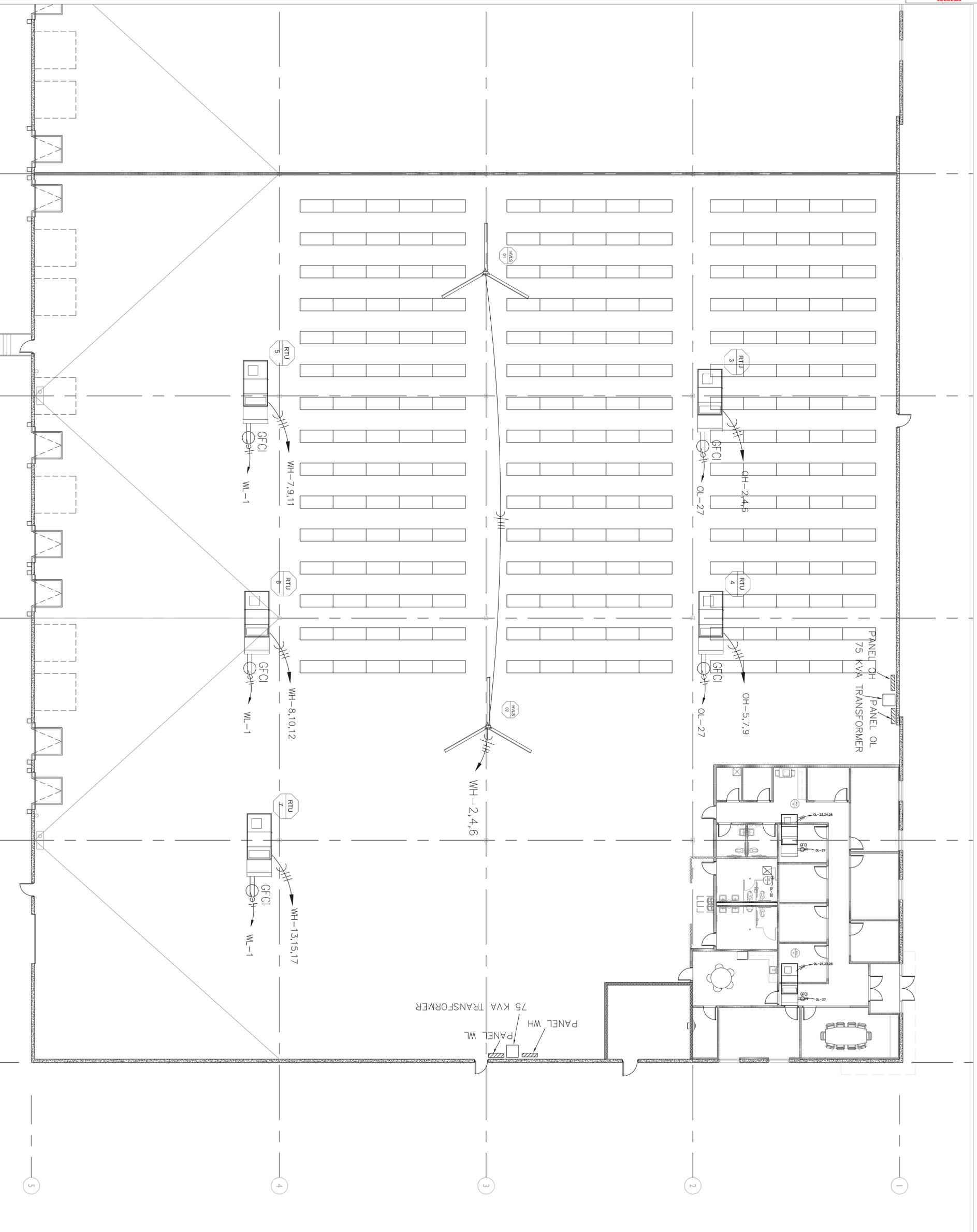


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1  
1/4" = 1'

220018  
OFFICE POWER PLAN

**E2.00**



1 HVAC POWER PLAN  
3/32" = 1'



**CURRAN**  
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PROPERTIES

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**PROJECT INFORMATION**  
LEES SUMMIT LOGISTICS  
BUILDING B LOT 2  
X CORNER OF  
NE TUDOR RD & MAIN ST  
LEES SUMMIT, MO 64086

8/22/23  
*[Signature]*  
Professional Engineer  
E14378  
STATE OF MISSOURI

HERITAGE ELECTRIC, L.L.C.  
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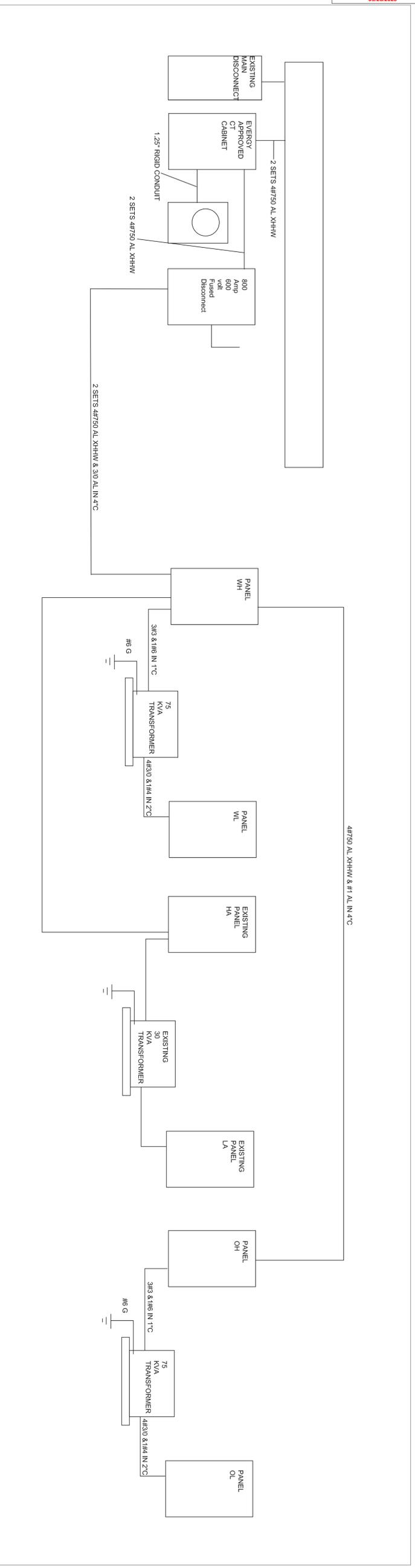


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ISSUE DATES	DESCRIPTION
08/23/23	PERMIT SET
09/18/23	CITY COMMENTS

220018  
HVAC POWER PLAN

**E3.00**



**1 RISER DIAGRAM**  
N.T.S

TYPE	MANUFACTURER	CATALOG NO	LAMPS	MOUNTING	VOLTS	REMARKS
A	HE WILLIAMS	BF-24-L/S/8CS-DIM-UNV	LED	CEILING	UNV	DR EQUAL
B	GE Lighting	ABCIX304790Q	LED	CEILING	277	EXISTING FIXTURE RELOCATE
BE	GE Lighting	ABCIX304790Q	LED	CEILING	277	EXISTING FIXTURE RELOCATE
C	HE WILLIAMS	6DR-TLL60-840-DIM-UNV DW-BF-CS-N-F1	LED	CEILING	UNV	DR EQUAL
D	HE WILLIAMS	GH-2-L300-840-FA-DIM-UNV	LED	CEILING	277	PROVIDE WITH INTEGRAL MOUNTION SENSOR
DE	HE WILLIAMS	GH-2-L300-840-FA-DIM-UNV	LED	CEILING	277	SAME AS TYPE D ONLY WITH EM BALLAST
EM	COMPASS	CUS20	LED	WALL	UNV	DR EQUAL
X1	COMPASS	CCR	LED	WALL	UNV	DR EQUAL
EX	COMPASS	CCR	LED	WALL	UNV	EXISTING
ERH	COMPASS	CUWZ-PC	LED	WALL	UNV	EXISTING

**LIGHT FIXTURE SCHEDULE**

**BRANCH CIRCUIT COPPER CONDUCTOR AND CONDUIT SIZING CHART\***

DIVERGENT PROTECTION DEVICE RATING (AMPS)	REQUIRED CONDUCTOR SIZE	EQUIPMENT CONDUCTOR SIZE	SINGLE PHASE 2 CONDUIT SIZE	SINGLE PHASE 3 CONDUIT SIZE	THREE PHASE 3 CONDUIT SIZE	THREE PHASE 4 CONDUIT SIZE
15	12 AVG	12 AVG	3/4"	3/4"	3/4"	3/4"
20	12 AVG	12 AVG	3/4"	3/4"	3/4"	3/4"
25	10 AVG	10 AVG	3/4"	3/4"	3/4"	3/4"
30	10 AVG	10 AVG	3/4"	3/4"	3/4"	3/4"
35	8 AVG	10 AVG	3/4"	3/4"	3/4"	3/4"
40	8 AVG	10 AVG	3/4"	3/4"	3/4"	3/4"
45	8 AVG	10 AVG	3/4"	3/4"	3/4"	3/4"
50	8 AVG	10 AVG	3/4"	3/4"	3/4"	1"
60	6 AVG	10 AVG	1"	1"	1"	1-1/4"
70	4 AVG	8 AVG	1"	1-1/4"	1-1/4"	1-1/4"
80	4 AVG	8 AVG	1"	1-1/4"	1-1/4"	1-1/4"
90	3 AVG	8 AVG	1"	1-1/2"	1-1/2"	1-1/4"
100	3 AVG	8 AVG	1-1/4"	1-1/2"	1-1/2"	1-1/2"

NOTES:  
 1. UNLESS OTHERWISE NOTED ON THE DRAWINGS, ALL BRANCH CIRCUITS AND FEEDERS TO BE PROVIDED WITH A NEUTRAL WIRE.  
 2. UNLESS OTHERWISE NOTED ON THE DRAWINGS, RACEWAY OR CABLE CONDUCTORS SHALL BE DERATED IN ACCORDANCE WITH THE NEC IF 4 OR MORE CONDUCTORS ARE PLACED IN A RACEWAY OR CABLE.

**ELECTRICAL GENERAL NOTES**

1. WORK INCLUDED, FURNISH ALL LABOR, MATERIAL, SERVICES AND SKILLED SUPERVISION NECESSARY FOR THE CONSTRUCTION, ERECTION, INSTALLATION CONNECTIONS, TESTING AND ADJUSTMENTS OF ALL CIRCUITS AND ELECTRICAL EQUIPMENT SPECIFIED HEREIN, OR NOTED ON THE DRAWINGS, AND ITS DELIVERY TO THE OWNER COMPLETE IN ALL RESPECTS READY FOR USE.
2. CONTRACT DRAWINGS THE CONTRACT DRAWINGS ARE SHOWN IN PART DIAGRAMATIC, INTENDED TO CONVEY THE SCOPE OF WORK, INDICATING THE GENERAL ARRANGEMENT OF EQUIPMENT, CONDUIT AND OUTLETS, VERIFY SPACES FOR THE INSTALLATION OF THE MATERIALS BASED ON ACTUAL DIMENSIONS OF EQUIPMENT FURNISHED. IF A QUESTION EXISTS AS TO THE EXACT INTENDED LOCATION OF OUTLETS OR EQUIPMENT, OBTAIN INSTRUCTIONS FROM THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH WORK.
3. MINIMUM SIZE OF CONDUIT SHALL BE 1/2" UNLESS NOTED OTHERWISE.
4. ALL WIRING FOR LIGHTING, RECEPTACLE AND POWER CIRCUITS WHERE NOT SHOWN ON DRAWINGS SHALL BE WITH #12 CONDUCTORS, NUMBER AS REQUIRED IN CONDUIT SIZED PER N.E.C. PROVIDE EQUIPMENT GROUNDING CONDUCTOR FOR ALL BRANCH CIRCUITS AND FEEDERS, HOMERUNS TO PANEL SHALL BE IN INDIVIDUAL CONDUITS, UNLESS NOTED OTHERWISE, WITH CIRCUITS AS SHOWN.
5. THE USE OF TYPE MCJ AND TYPE MC CABLE IS PERMITTED IN ALL AREAS PER NEC AND LOCAL CODE REQUIREMENTS.
6. THE USE OF ALUMINUM CONDUCTORS WITH AMPACITY EQUIVALENT TO COPPER IS PERMITTED IN ALL AREAS PER NEC REQUIREMENTS.
7. ALL JUNCTION BOXES, PULL BOXES, AND PANELBOARDS SHALL BE RIGIDLY ATTACHED TO STRUCTURE.
8. COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACE AVAILABLE, AND WITHOUT INTERFERENCES.
9. ALL CONDUIT, BOXES, ETC. SHALL BE CONCEALED OR MOUNTED FLUSH WITH CEILING OR WALL CONSTRUCTION, CONDUITS SHALL BE MOUNTED AS HIGH AS POSSIBLE. NO SURFACE MOUNTED CONDUIT, BOXES, ETC. WILL BE PERMITTED WITHOUT PERMISSION OF THE ENGINEER PRIOR TO INSTALLATION. ALL CONDUIT PENETRATIONS SHALL BE FIRE-CALULKED AS REQUIRED.

Scope:  
 Provide electrical for new TI in existing warehouse  
 All Electrical work shall be as per NEC 2017.  
 All work shall be done by qualified electricians.  
 All branch wiring shall be copper.  
 Devices shall be 20a commercial grade and color shall be by architect.

**SPECIFICATIONS**

1. CONDUIT ABOVE GRADE SHALL BE EMT UNLESS OTHERWISE NOTED.
2. CONDUIT BELOW GRADE SHALL BE RIGID PVC UNLESS OTHERWISE NOTED.
3. CONNECTIONS SHALL BE MADE USING SET SCREW CONNECTORS.
4. MC CABLE IS ACCEPTABLE FOR FINAL CONNECTIONS TO LIGHT FIXTURES PROVIDE WITH 10' WHIP ON ALL HIGHWAYS.
5. BRANCH WIRING SHALL BE #12 THIN COPPER UNLESS OTHERWISE NOTED.
6. WIRING SHALL BE AS PER CURRENT IEC/NEC/2017 GRADE RATED AT 20 AMP.
7. WIRING SHALL BE AS PER CURRENT IEC/NEC/2017 GRADE RATED AT 20 AMP.
8. INSTALLATION SHALL ADHERE TO ADA STANDARDS.
9. ALUMINUM XHHW-#2 CABLE MAY BE USED FOR FEEDERS LARGER THEN #2 OTHERWISE COPPER.
10. REFER TO KPMG STANDARDS MANUAL FOR 480 SERVICES.
11. ALL LIGHTING/EQUIPMENT IN WAREHOUSE SHALL BE MOUNTED TO PROVIDE A MIN OF 36" CLEAR HEIGHT.



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ISSUE DATES: 08/23/23  
 REVISION: CITY COMMENTS 09.18.23  
 220018  
 RISER DIAGRAM  
**E4.00**

PROJECT INFORMATION  
 LEES SUMMIT LOGISTICS BUILDING B LOT 2  
 X CORNER OF NE TUDOR RD & MAIN ST  
 LEES SUMMIT, MO 64086

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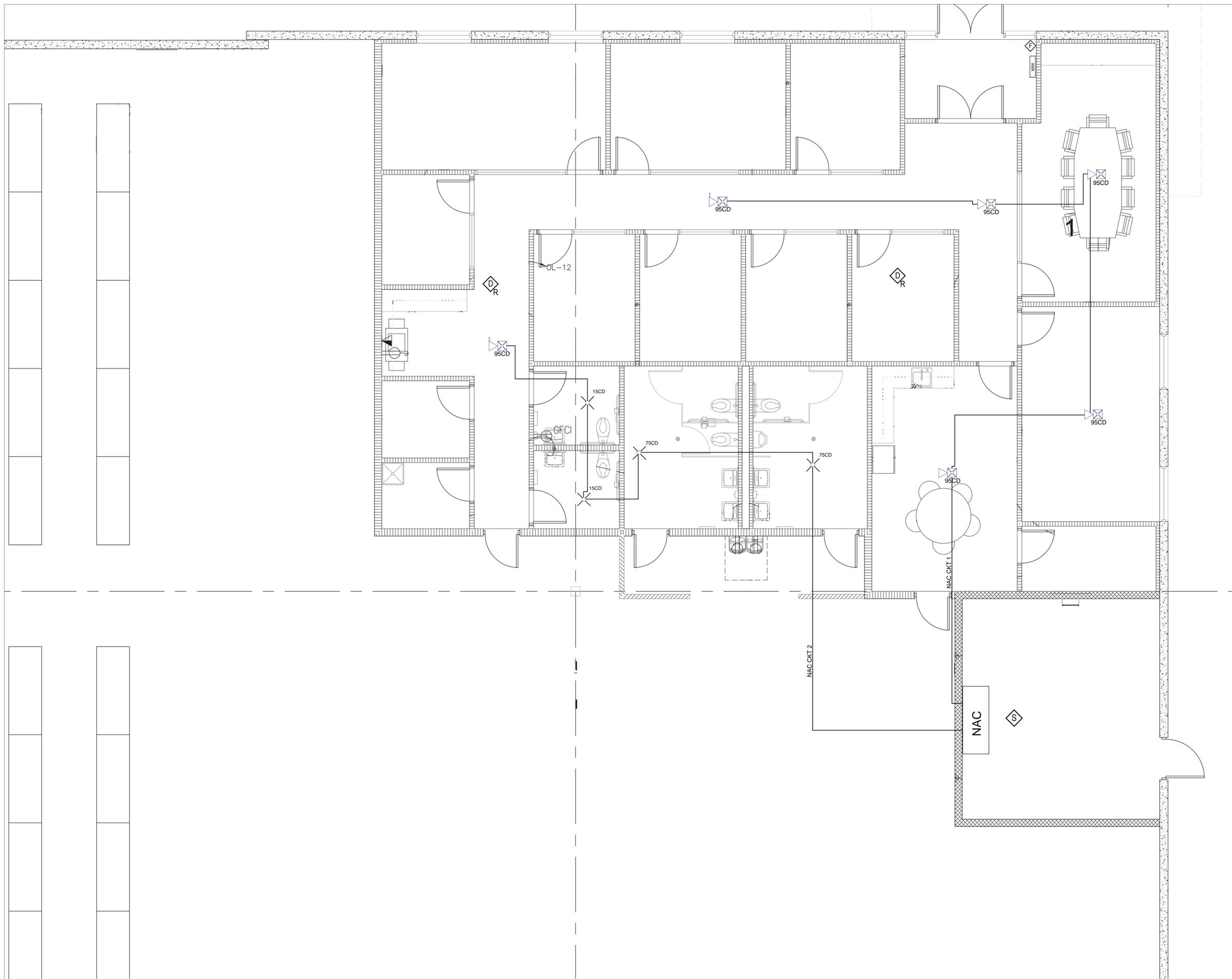
LEE'S SUMMIT LOGISTICS  
BUILDING B LOT 2  
X CORNER OF  
NE TUDOR RD & MAIN ST  
LEE'S SUMMIT, MO 64086



ISSUE DATES

PERMIT SET	08.29.23

220018  
OFFICE FIRE ALARM LAYOUT



① OFFICE FIRE ALARM LAYOUT  
1/4" = 1'



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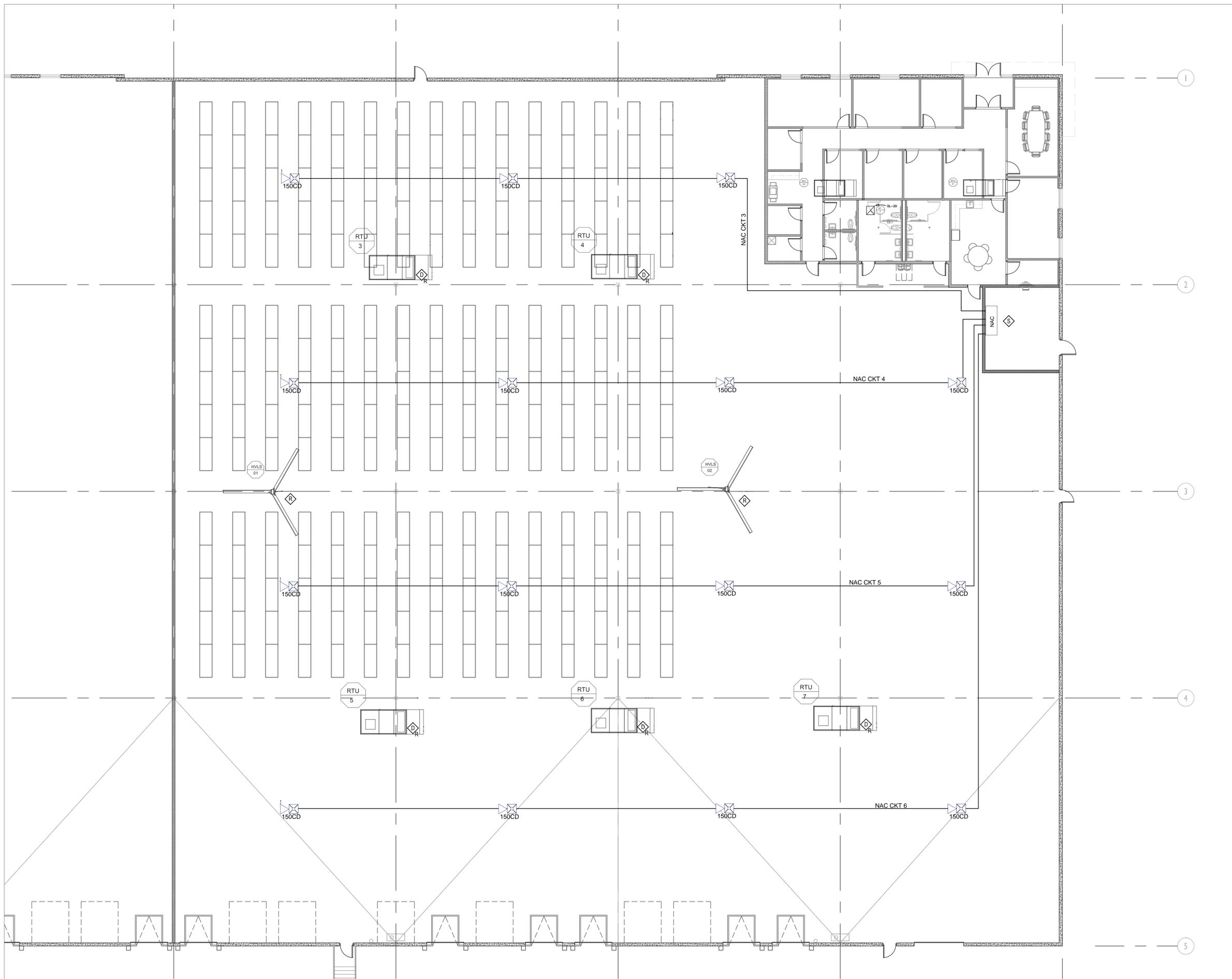
LEE'S SUMMIT LOGISTICS  
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LEE'S SUMMIT, MO 64086



ISSUE DATES

PERMIT SET	08.29.23

220018  
WAREHOUSE FIRE ALARM LAYOUT



1 WAREHOUSE FIRE ALARM LAYOUT  
3/32" = 1'