

DUCT SYMBOLS

DOUBLE LINE SYMBOL	DESCRIPTION	SINGLE LINE SYMBOL
	DUCT- FIRST NUMBER IS VISIBLE DIMENSION.	
	RADIUS ELBOW W/VANE(S) (1.5=R/D STANDARD)	
	DUCT SECTION, POSITIVE PRESSURE	
	DUCT SECTION, NEGATIVE PRESSURE	
	DUCT & AIRFLOW UP(LEFT) POSITIVE PRESSURE DUCT & AIRFLOW DN(RIGHT) POSITIVE PRESSURE	
	DUCT & AIRFLOW UP(LEFT) NEGATIVE PRESSURE DUCT & AIRFLOW DN(RIGHT) NEGATIVE PRESSURE	
	DUCT & AIRFLOW UP(LEFT) NEG./POS. PRESSURE DUCT & AIRFLOW DN(RIGHT) NEG./POS. PRESSURE	
	CHANGE OF ELEVATION=RISE (R), DROP (D)	
	DUCT W/INTERNAL LINING CLEAR INSIDE DIMENSIONS SHOWN	
	ACCESS DOOR=SIDE (L), BOTTOM (M), TOP (R)	
	FLEXIBLE CONNECTOR	
	FLEXIBLE DUCT	
	FD- FIRE DAMPER, SD-SMOKE DAMPER, FSD- FIRE/SMOKE DAMPER.	
	MANUAL VOLUME DAMPER-SPECIFIC TYPE, NO LABEL-BUTTERFLY, OBD-OPPOSED BLADED DAMPER, PBD-PARALLEL BLADE DAMPER	
	MOTORIZED DAMPER OR ZONE CONTROL DAMPER	
	BRANCH TAP-W/45 DEG. ENTRY	
	BRANCH TAP-CONICAL SPIN-IN	
	BRANCH TAP-STRAIGHT SPIN-IN	
	TRANSITION	
	EXISTING DUCTWORK TO BE DEMOLISHED	
	EXISTING DUCTWORK TO REMAIN	
	HVAC - EQUIP AS NOTED	
	AIR DEVICE, SUPPLY- CEILING CLEAR	
	AIR DEVICE TAG SPIN-IN DIMENSION AIRFLOW (CFM)	
	AIR DEVICE, RETURN- CEILING.	
	AIR DEVICE, EXHAUST- CEILING.	
	AIR DEVICE, SUPPLY- SIDEWALL.	
	AIR DEVICE, RETURN/EXHAUST- SIDEWALL.	

MECHANICAL ABBREVIATIONS

BD	BACKDRAFT DAMPER
CDS	CEILING DIFFUSER SUPPLY
CDR	CEILING DIFFUSER RETURN
CFM	CUBIC FEET OF AIR PER MINUTE
CD	CONDENSATE DRAIN PIPE
DN	DOWN
EER	ENERGY EFFICIENCY RATIO
IEER	INTEGRATED ENERGY EFFICIENCY RATIO
SEER	SEASONAL ENERGY EFFICIENCY RATIO
EG	EXHAUST GRILLE
FC	FLEXIBLE CONNECTION
REF	REFRIGERANT PIPING
VD	VOLUME DAMPER
EF	EXHAUST FAN
CU	CONDENSING UNIT
AH	AIR HANDLING UNIT
FC	FAN COIL UNIT

GENERAL MECHANICAL NOTES AND SPECIFICATIONS

GENERAL

- COORDINATE WORK AMONG ALL DISCIPLINES. IT IS NOT THE INTENT OF THESE DOCUMENTS TO DICTATE WHO MUST DO THE WORK. ALL WORK SHOWN IS THE RESPONSIBILITY OF THE (PRIME) CONTRACTOR.
- FIELD VERIFY ALL CONDITIONS AND MEASURE DIMENSIONS WITHIN THE BUILDING PRIOR TO ORDERING EQUIPMENT AND/OR PROCEEDING WITH INSTALLATION.
- ALL EQUIPMENT SHALL BE FACTORY TESTED, AND CONTRACTOR SHALL VERIFY THEIR CONDITION PRIOR TO INSTALLATION. CONTRACTOR IS RESPONSIBLE FOR EQUIPMENT DAMAGED DURING MOVING AND INSTALLATION.
- EQUIPMENT FOUND DEFECTIVE PRIOR TO FINAL ACCEPTANCE SHALL BE REPLACED AT NO COST TO OWNER.
- SUBMISSION OF BID PROPOSAL IS CONSIDERED AN ACKNOWLEDGEMENT THAT CONTRACTOR VISITED SITE, AND VERIFIED ALL EXISTING CONDITIONS, AND INCLUDED ANY MODIFICATIONS TO EXISTING AND NEW WORK REQUIRED FOR INSTALLATION OF A COMPLETE AND OPERATIONAL MECHANICAL SYSTEM.
- COORDINATE WITH OWNER AND ENGINEER FOR ANY DISRUPTION IN UTILITY SERVICES, PARTICULARLY THOSE THAT MIGHT AFFECT OTHER BUILDINGS.
- CONTRACTOR SHALL NOT PROCEED WITH ANY WORK INVOLVING A CHANGE IN PROJECT SCOPE OR COST WITHOUT FIRST HAVING OBTAINED ENGINEER'S APPROVAL IN WRITING. UNLESS ENGINEER HAS AGREED TO SUCH CHANGE PRIOR TO IT BEING DONE, AND HAS AGREED THAT AN INCREASE IN COST ASSOCIATED WITH SUCH CHANGE IS WARRANTED; CONTRACTOR WILL NOT BE REIMBURSED FOR SUCH CHANGE.
- TESTING, ADJUSTING AND BALANCING (TAB) CONTRACTOR SHALL BE RETAINED BY THE PRIME CONTRACTOR TAB SHALL NOT BE A PART OF THE MECHANICAL CONTRACT.

CODES AND ORDINANCES

- PERFORM ALL WORK PER LATEST VERSION OF INTERNATIONAL MECHANICAL CODE, AND APPLICABLE LOCAL CODES AND ORDINANCES, UNLESS DRAWINGS OR SPECIFICATIONS HAVE MORE STRINGENT REQUIREMENTS.
- CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS AND FEES ASSOCIATED WITH PROJECT, INCLUDING FEES FOR INSPECTIONS, APPLICATIONS, AND PROVISION OF NEW SERVICES.
- NOTIFY ENGINEER OF ANY ASPECTS OF DESIGN WHICH ARE THOUGHT TO BE IN NONCOMPLIANCE WITH APPLICABLE CODES.

COORDINATION

- REFER TO ARCHITECTURAL AND STRUCTURAL PLANS FOR DETAILS OF CONSTRUCTION, INCLUDING BEAMS, FLOOR AND WALL PENETRATIONS, CHASES, AND REFLECTED CEILING PLANS. VERIFY OPENING SIZES WITH EQUIPMENT FURNISHED.
- COORDINATE ALL WORK WITH OTHER TRADES; COORDINATE SCHEDULE OF WORK WITH ALL SUB-CONTRACTORS TO ACHIEVE SMOOTH FLOW OF CONSTRUCTION.
- CONTRACTOR SHALL REVIEW COMPLETE DOCUMENTS PRIOR TO SUBMITTAL OF PROPOSAL TO GAIN COMPLETE UNDERSTANDING OF PROJECT SCOPE, WORK BY OTHERS, AND MECHANICAL WORK ASSOCIATED WITH OTHER DISCIPLINES.
- ENGINEER/ ARCHITECT MUST BE GIVEN AT LEAST A TEN (10) WORKING DAY NOTICE TO PERFORM ALL TYPES OF INSPECTIONS. COORDINATE WORK SCHEDULE WITH ARCHITECT AND ENGINEER TO PLAN ACCORDINGLY FOR APPROPRIATE INSPECTIONS.
- COORDINATE LIGHT LOCATIONS WITH ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION OF AIR DEVICES. LIGHT LOCATIONS TAKE PRECEDENCE OVER AIR DEVICES.

RETURN AIR SYSTEMS

- MECHANICAL DESIGN ASSUMES A MINIMUM 1" DOOR UNDERCUTS FOR ALL DOORS AND WALL PARTITIONS WITHIN CONDITIONED SPACES.
- CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT ENGINEER IF ANY DOOR OR PARTITION IS NOT PROVIDED WITH A MINIMUM 1" UNDERCUT OR IF ANY OF THE SPECIFIED SYSTEM RETURN PATHS ARE COMPROMISED DURING CONSTRUCTION IN ANY WAY.
- AT A MINIMUM, THE CONTRACTOR SHALL PROVIDE A FIBERGLASS DUCTED TRANSFER BOOT/GRILL ABOVE CEILING FOR ANY DOOR OR PARTITION THAT IS NOT PROVIDED WITH A MINIMUM 1" UNDERCUT.
- RETURN BOOT SHALL TERMINATE IN NEW RETURN AIR DEVICES. RETURN AIR DEVICES SHALL BE WHITE ALUMINUM PERFORATED LAY-IN TYPE WITH ALL NECESSARY MOUNTING HARDWARE TO MATCH OTHER RETURN DEVICES ON SITE. PROVIDE FRAMED AIR DEVICE IF IN HARD CEILING.

METAL AND FLEXIBLE DUCTS

- DRAWINGS ARE DIAGRAMMATIC IN NATURE. FOR CLARITY SAKE, MOST DUCTOFFSETS/RISES/DROPS ARE NOT SHOWN. RECTANGULAR AND ROUND DUCTWORK SHALL BE GALVANIZED STEEL. SIZES SHOWN ARE INSIDE CLEAR DIMENSION.
- PRIOR TO CONSTRUCTION, CONTRACTOR IS REQUIRED TO COORDINATE HEIGHTS OF DUCTWORK LAYOUT WITH EXISTING STRUCTURE, OTHER TRADES, AND PROPOSED CEILING HEIGHT TO CONFIRM ADEQUATE VERTICAL SPACE FOR STACKING.
- CONSTRUCT AND LEAKAGE TEST ALL DUCTWORK BASED ON SMACNA REQUIREMENTS. COORDINATE PRESSURE CLASSES WITH EQUIPMENT SCHEDULES.
- ALL GALVANIZED SHEET METAL DUCT WORK SHALL COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS--METAL AND FLEXIBLE".
- USE 2" GLASS FIBER REINFORCED FABRIC JOINT AND SEAM TAPE. USE WATER BASED JOINT AND SEAM SEALER. USE FIRE RESISTANT SEALER FOR FILLING OPENINGS AROUND DUCT PENETRATIONS THROUGH WALLS. ACCEPTABLE PRODUCTS ARE DOW CORNING, FIRE STOP FOAM AND FIRE STO SEALER OR EQUAL.
- USE SHEET METAL SCREWS OR BLIND RIVETS COMPATIBLE WITH DUCT MATERIALS WHEN SECURING ALL DUCTWORK TO STRUCTURE.
- FLEXIBLE DUCT MAY BE USED TO CONNECT TO SUPPLY DIFFUSERS. MAXIMUM LENGTH OF FLEXIBLE DUCT LIMITED TO 5 FEET. PROVIDE FLEXMASTER TYPE 8M UL 181 CLASS 1 AIR DUCT OR EQUAL. FLEXIBLE DUCT SHALL HAVE MIN. R-6 INSULATING VALUE.
- FLEXIBLE DUCT CLAMP SHALL BE OF STAINLESS STEEL BANDS WITH CADMIUM PLATED HEXSCREW TO TIGHTEN BAND WITH WORM GEAR ACTION.
- PROVIDE TURNING VANES IN ALL SPLITS, TEES AND SWEEP 90 DEGREE ANGLE DUCT FITTINGS. MANUFACTURED TURNING VANES TO BE 1-1/2" WIDE, DOUBLE VANE, CURVED BLADES OF GALVANIZED SHEET STEEL SET 3/4" O.C. ACCEPTABLE MANUFACTURER'S ARE DUCTMATE INDUSTRIES, METALAIR, WARD INDUSTRIES OR EQUAL.
- WHERE RECTANGULAR TEE FITTINGS ARE SHOWN, PROVIDE FITTING WITH ADJUSTABLE DIVIDER SHEET AND TURNING VANES.

- WHERE RECTANGULAR MAIN AND BRANCH CONNECTIONS ARE SHOWN, PROVIDE EXTRACTOR VANES.
- PROVIDE MANUAL VOLUME CONTROL DAMPERS WHERE SHOWN ON DRAWINGS. DAMPERS TO HAVE NEOPRENE BLADE SEALS AND GALVANIZED STEEL FRAMES, TIE BARS, DAMPER AND BRACKETS. ACCEPTABLE MANUFACTURER'S ARE RUSKIN CO., NAILOR INDUSTRIES, FLEXMASTER OR EQUAL.
- ABOVE INACCESSIBLE CEILINGS AND WHERE DUCT CONFIGURATION DOES NOT ALLOW FOR INSTALLATION OF DAMPER IN DUCTWORK OR DIFFUSER, PROVIDE REMOTE MANUAL DAMPER BY YOUNG REGULATOR, (BOWDEN CABLE CONTROL SYSTEM). CONTRACTOR MAY PROVIDE OPPOSED BLADE DAMPER THAT IS INTEGRAL TO GRD WITH ENGINEER'S APPROVAL.

CITY OF LEAWOOD, KS BUILDING DEPARTMENT NOTES

ALL WORK SHALL COMPLY WITH APPLICABLE SECTIONS OF THE 2018 INTERNATIONAL BUILDING CODE, AND ALL AMENDMENTS AND RULES AND REGULATIONS OF THE DEPARTMENT OF BUILDINGS TO DATE.

- ALL HEATING AND COOLING LOADS CALCULATED PER ASHRAE/ACCA 183.
- VENTILATION FOR ALL AREA SHALL COMPLY WITH 2018 INTERNATIONAL MECHANICAL CODE CHAPTER 4.
- TESTS WILL BE CONDUCTED UNDER DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT OR OTHER PERSON HAVING NOT LESS THAN FIVE (5) YEARS OF EXPERIENCE SUPERVISING THE INSTALLATION OF SUCH MECHANICAL SYSTEMS. THE TESTS WILL SHOW COMPLIANCE WITH 2018 INTERNATIONAL ENERGY CONSERVATION CODE.
- THE LICENSED PROFESSIONAL ENGINEER, ARCHITECT OR OTHER PERSON HAVING NOT LESS THAN FIVE (5) YEARS EXPERIENCE SUPERVISING THE INSTALLATION OF SUCH MECHANICAL SYSTEMS AND CONDUCTING SUCH TESTS WILL FILE DOCUMENTATION AND REPORTS OF TESTS THAT THE SYSTEM COMPLIES WITH THE CONSTRUCTION DOCUMENTS AND APPLICABLE LAWS.
- TESTS OF MECHANICAL SYSTEMS SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING SECTIONS OF THE 2018 INTERNATIONAL MECHANICAL CODE:
 - VENTILATION SYSTEM BALANCING 2018 IMC - 403.
- THE FOLLOWING WORK ITEMS, COMPONENTS, MATERIALS, CAPACITIES, ETC. SHALL COMPLY WITH THE REFERENCED CODE OR STANDARD:
 - STANDARDS OF HEATING - 2018 IMC - 309.1
 - DUCT CONSTRUCTION AND INSTALLATION- 2018 IMC - 603
 - AIR INTAKES, EXHAUSTS AND RELIEF - 2018 IMC - 401.5
 - AIR FILTERS - 2018 IMC - 605
 - MANUAL AND AUTOMATIC FIRE AND SMOKE CONTROLS FOR AIR DISTRIBUTION SYSTEMS - 2018 IMC - 606
- MINIMUM TEMPERATURE TO BE MAINTAINED IN OCCUPIED SPACES DURING HEATING SEASON: 68 DEG. FAHRENHEIT.
- A STATEMENT SHALL BE FILED BY THE OWNER OR TENANT IN POSSESSION THAT THE VENTILATION SYSTEM WILL BE KEPT IN CONTINUOUS OPERATION AT ALL TIMES DURING THE NORMAL OCCUPANCY OF THE STRUCTURE AS REQUIRED BY 2018 IMC - 403.
- REFER TO ARCHITECTURAL DRAWINGS FOR REQUIRED FIRE-RATED WALL AND SMOKE WALL CONSTRUCTION AND LOCATION.
- THESE PLANS ARE APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.
- VENTILATION SYSTEMS SHALL BE BALANCED TO MAINTAIN THE MINIMUM VENTILATION AIRFLOW RATE AS SHOWN IN VENTILATION REQUIREMENT TABLE. THIS SYSTEM SHALL BE BALANCED BY APPROVED METHOD. CONTRACTOR TO SUBMIT THE AIR BALANCE REPORT TO INSPECTOR OF RESPECTIVE BUILDING DEPARTMENT PRIOR TO FINAL INSPECTION.

SECTION 230593 - TESTING, ADJUSTING, AND BALANCING FOR HVAC

1.1 SUMMARY

- TESTING, ADJUSTING, AND BALANCING FOR THE FOLLOWING:
 - AIR SYSTEMS: CONSTANT-VOLUME.
 - ROOF TOP UNITS.

1.2 QUALITY ASSURANCE

- THE CONTRACTOR SHALL PROCURE THE SERVICES OF A TESTING, ADJUSTING AND BALANCING (TAB) SPECIALIST WHO SPECIALIZES IN HEATING, VENTILATION AND AIR CONDITIONING SYSTEMS. THE TAB AGENT SHALL HAVE THE FOLLOWING QUALIFICATIONS: AABC, NEBB OR TABB CERTIFIED.

1.3 EXECUTION

- THE TAB SPECIALIST SHALL PERFORM FLOW MEASUREMENTS OF ALL EXISTING AIR AND HYDRONIC SYSTEMS THAT ARE TO REMAIN OR TO BE INCORPORATED INTO THE STARTING OF WORK IN THE PROJECT SCOPE. A REPORT OF THESE MEASUREMENTS, INDICATING ANY AND ALL DEFICIENCIES SHALL BE SUBMITTED FOR OWNER REVIEW.
- THE TAB SPECIALIST SHALL PERFORM FLOW MEASUREMENTS OF ALL NEW AIR AND HYDRONIC SYSTEMS AS LISTED ABOVE IN THE PROJECT SCOPE. A REPORT OF THESE MEASUREMENTS, INDICATING ANY AND ALL DEFICIENCIES SHALL BE SUBMITTED FOR OWNER REVIEW.
- THE REPORT SHALL INDICATE A SCHEMATIC DIAGRAM INDICATING LOCATIONS OF ALL EQUIPMENT TESTED AND MEASUREMENT LOCATIONS.
- PRIOR TO FINAL INSPECTION OF THE WORK, THE TAB SPECIALIST SHALL BALANCE ALL SYSTEMS AS INDICATED ABOVE TO THE REQUIREMENTS OF THE DESIGN.
- THE CONTRACTOR SHALL HAVE FURNISH AND INSTALL ALL ADDITIONAL BALANCING EQUIPMENT, PRESSURE TAPS, GAUGES AND OTHER EQUIPMENT AS REQUIRED FOR A PROPERLY BALANCED SYSTEM AT NO ADDITIONAL COST TO THE OWNER. SUCH ADDITIONAL EQUIPMENT SHALL ADHERE IN STRICT ACCORDANCE WITH THE RESPECTIVE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
- THE CONTRACTOR SHALL HAVE THE TESTING AND BALANCING SPECIALIST COORDINATE ALL WORK OF THIS SECTION WITH THE BUILDING MANAGER. BALANCING WORK SHALL NOT CONFLICT WITH OTHER WORK SO AS TO MAINTAIN COMPLETION WITHIN THE SPECIFIED TIME.
- ALL INSTRUMENTS USED FOR TAB SHALL BE MAINTAINED IN GOOD WORKING CONDITION AND ACCURATELY CALIBRATED.
- TOLERANCES: PLUS OR MINUS 5 PERCENT OF DESIGN VALUES.
- INSPECTIONS: RANDOM CHECKS BY OWNER OR ARCHITECT TO VERIFY FINAL TESTING, ADJUSTING, AND BALANCING REPORT.
- ADDITIONAL TESTS: RANDOM TESTS WITHIN 90 DAYS OF COMPLETING TAB TO VERIFY BALANCE CONDITIONS AND SEASONAL TESTS.

END OF SECTION 230593

MECHANICAL DRAWING LIST

M0.1	MECHANICAL SYMBOLS & NOTES
M0.2	MECHANICAL NOTES
M1.0	MECHANICAL DETAILS (1 OF 2)
M1.1	MECHANICAL DETAILS (2 OF 2)
M2.0	MECHANICAL SCHEDULES
M3.0	MECHANICAL FLOOR & ROOF PART PLAN

CODE COMPLIANCE

- ALL WORK AND MATERIAL SHALL BE PERFORMED AND INSTALLED IN COMPLIANCE WITH THE FOLLOWING CODES AS ADOPTED AND AMENDED BY THE INSPECTING AUTHORITY. NOTHING IN THESE DRAWINGS IS TO BE CONSTRUCTED TO PERMIT WORK NOT CONFORMING TO THESE CODES OR OTHERS APPLICABLE TO THESE PROJECT:
- 2018 INTERNATIONAL BUILDING CODE
 - 2018 INTERNATIONAL MECHANICAL CODE
 - 2018 INTERNATIONAL PLUMBING CODE
 - 2018 INTERNATIONAL ENERGY CONSERVATION CODE
 - 2017 NATIONAL ELECTRICAL CODE
 - 2018 INTERNATIONAL FUEL GAS CODE

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LEAWOOD KS

PROJECT NO	FT2501	
START DATE	03.28.2025	
DRAWN BY	NYE	
CHECKED BY	NYE	
NO.	DESCRIPTION	DATE
1	PERMIT	04.08.2025

MECHANICAL
SYMBOLS & NOTES

M0.1

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SECTION 230713 – DUCT INSULATION

1.1 QUALITY ASSURANCE

SURFACE-BURNING CHARACTERISTICS: ALL INSULATION SHALL HAVE COMPOSITE (INSULATION JACKET OR FACING AND ADHESIVE USED TO ADHERE THE FACING OR JACKET TO THE INSULATION) A FLAME-SPREAD INDEX OF 25, AND SMOKE-DEVELOPED INDEX OF 50 FOR INSULATION INSTALLED INDOOR, 75, AND SMOKE-DEVELOPED INDEX OF 150 FOR INSULATION INSTALLED OUTDOORS; ACCORDING TO ASTM E 84.

1.2 FIELD QUALITY CONTROL

A. FIELD INSPECTIONS: BY OWNER-ENGAGED AGENCY.

1.3 INDOOR DUCT AND PLENUM INSULATION SCHEDULE;

A. CONCEALED, RECTANGULAR, ROUND AND FLAT-OVAL, SUPPLY-RETURN, OUTDOOR-AND EXHAUST-AIR DUCT AND AIR PLENUM INSULATION:
B. FLEXIBLE ELASTOMERIC, MINERAL-FIBER BLANKET, MINERAL-FIBER BOARD OR POLYOLEFIN WITH MINIMUM INSTALLED THERMAL RESISTANCE AS FOLLOWS:

UNCONDITIONED SPACES: R-6
WITHIN BUILDING ENVELOPE ASSEMBLY: R-8
EXTERIOR OF BUILDING: R-8

1.4 ITEMS NOT INSULATED:

1. FIBROUS-GLASS DUCTS.
2. METAL DUCTS WITH DUCT LINER OR SUFFICIENT THICKNESS TO COMPLY WITH ENERGY CODE AND ASHRAE/IESNA 90.1.
3. FACTORY-INSULATED FLEXIBLE DUCTS.
4. FACTORY-INSULATED PLENUMS AND CASINGS.
5. FLEXIBLE CONNECTORS.
6. VIBRATION-CONTROL DEVICES.
7. FACTORY-INSULATED ACCESS PANELS AND DOORS.
8. DUCTS THAT HAVE INTERNAL ACOUSTICAL LINING.

1.5 PRODUCTS

A. THE FOLLOWING INSULATION MANUFACTURERS WILL BE ACCEPTABLE:
1. JOHNS-MANVILLE
2. OWENS-CORNING

1.6 ACOUSTICAL TREATMENT

1. WHERE SHOWN ON THE DRAWINGS, LOW PRESSURE DUCTWORK SHALL BE LINED WITH 1.5" THICK R-6 AS MANUFACTURED BY DUCTMATE, 1-1/2 POUND MINIMUM DENSITY, NEOPRENE COATED, FLEXIBLE FIBERGLASS DUCT LINER. LINING SHALL COMPLY WITH NFPA 90A AND SHALL HAVE A FLAME SPREAD CLASSIFICATION OF NOT MORE THAN 25 AND A SMOKE DEVELOPED RATING NOT MORE THAN 50. DUCT SIZES WHERE LINING IS INDICATED ON PLANS ARE MINIMUM INSIDE CLEAR DIMENSIONS REQUIRED.

END OF SECTION 230713

SECTION 233713 – DIFFUSERS, REGISTERS, AND GRILLES

1.1 PRODUCTS

A. DIFFUSERS, REGISTERS AND GRILLES SHALL BE FURNISHED AND INSTALLED FOR CAPACITIES AND IN LOCATIONS INDICATED ON DRAWINGS. ALL REGISTERS AND DIFFUSERS SHALL BE PRIME COATED STEEL OR EXTRUDED ALUMINUM FINISHED UNLESS OTHERWISE NOTED IN BAKED WHITE ENAMEL.
B. MANUFACTURERS: TITUS
1. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCT BY ONE OF THE FOLLOWING:
a. CARNES.
b. HART & COOLEY INC.
c. KRUEGER.
d. METALAIR, INC.
e. NAILOR INDUSTRIES INC.
f. RUSKIN
C. ALL DIFFUSERS SHALL HAVE CONTROLLING/EQUALIZING GRID AND OPPOSED BLADE DAMPER UNLESS OTHERWISE NOTED.
D. ALL DUCTED RETURN REGISTERS SHALL HAVE AN OPPOSED BLADE DAMPER UNLESS OTHERWISE NOTED.

END OF SECTION 233713

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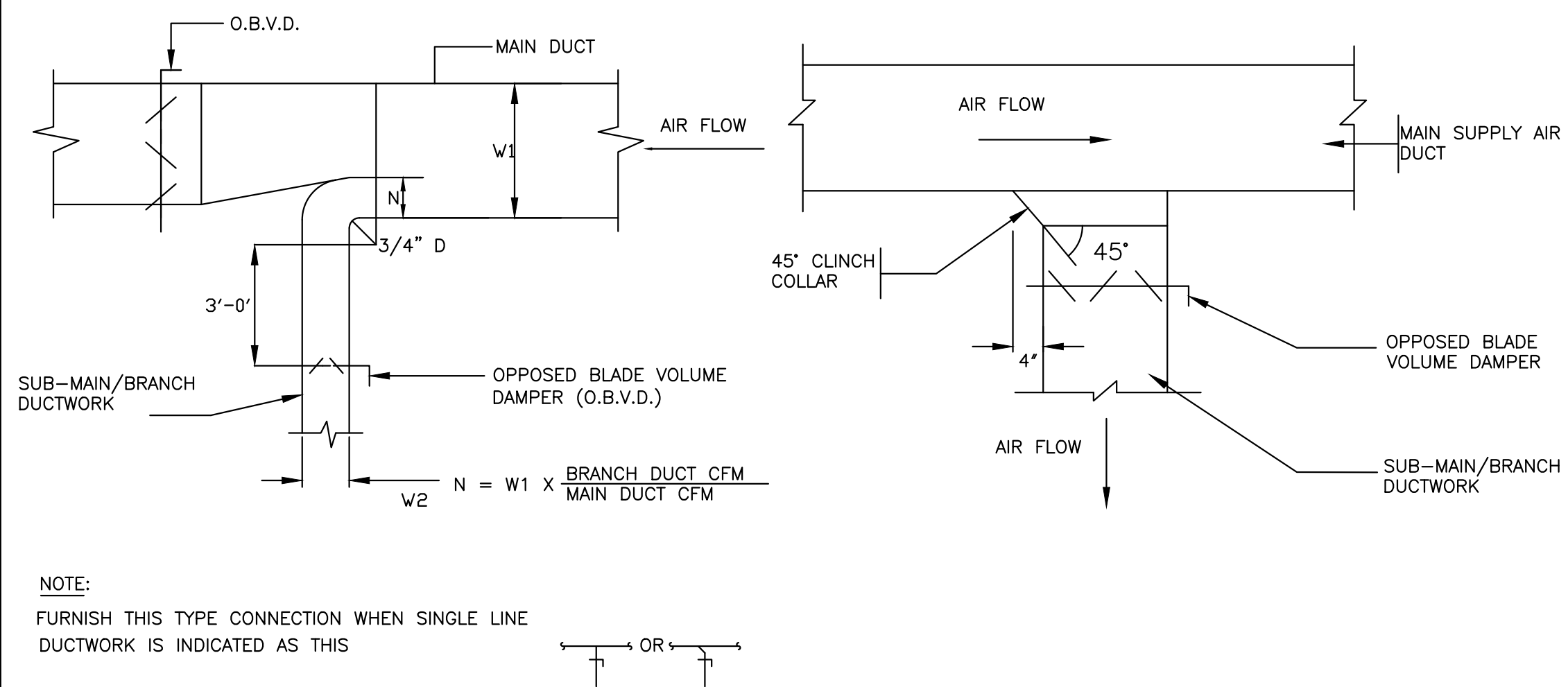
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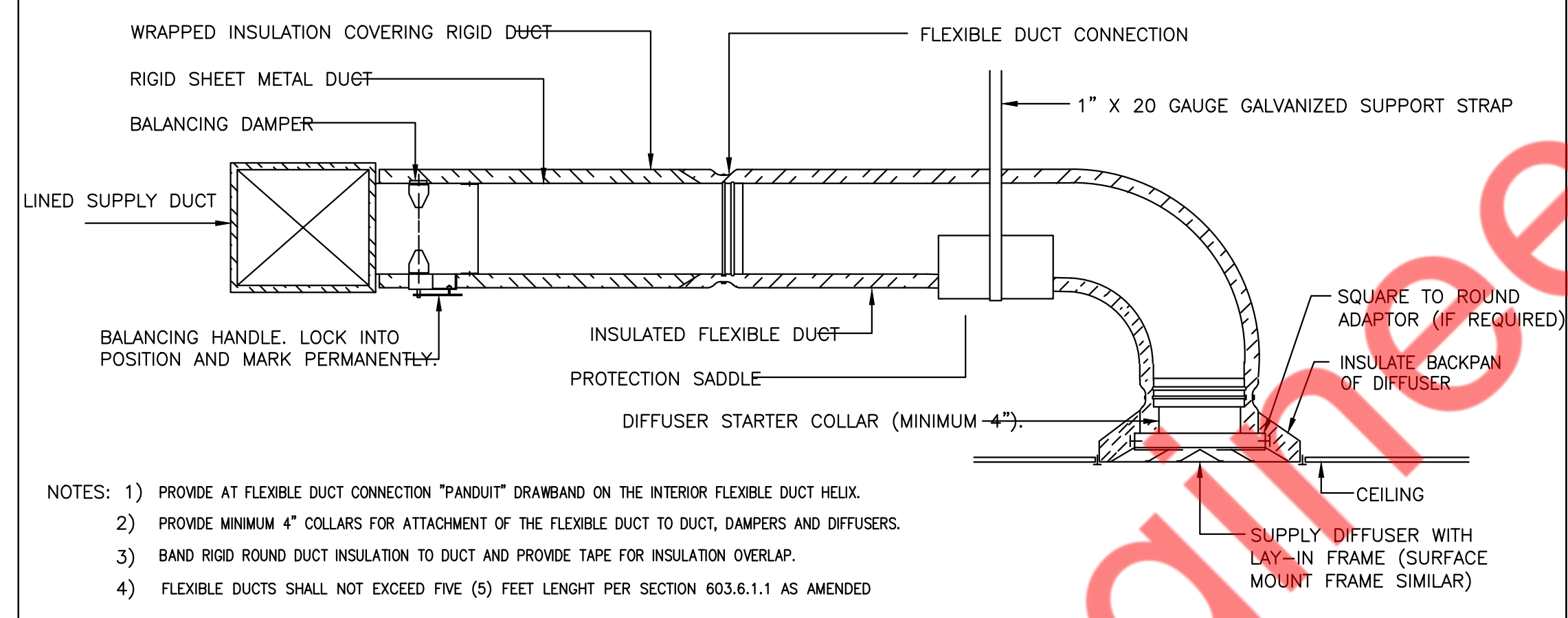
MECHANICAL
NOTES

M0.2

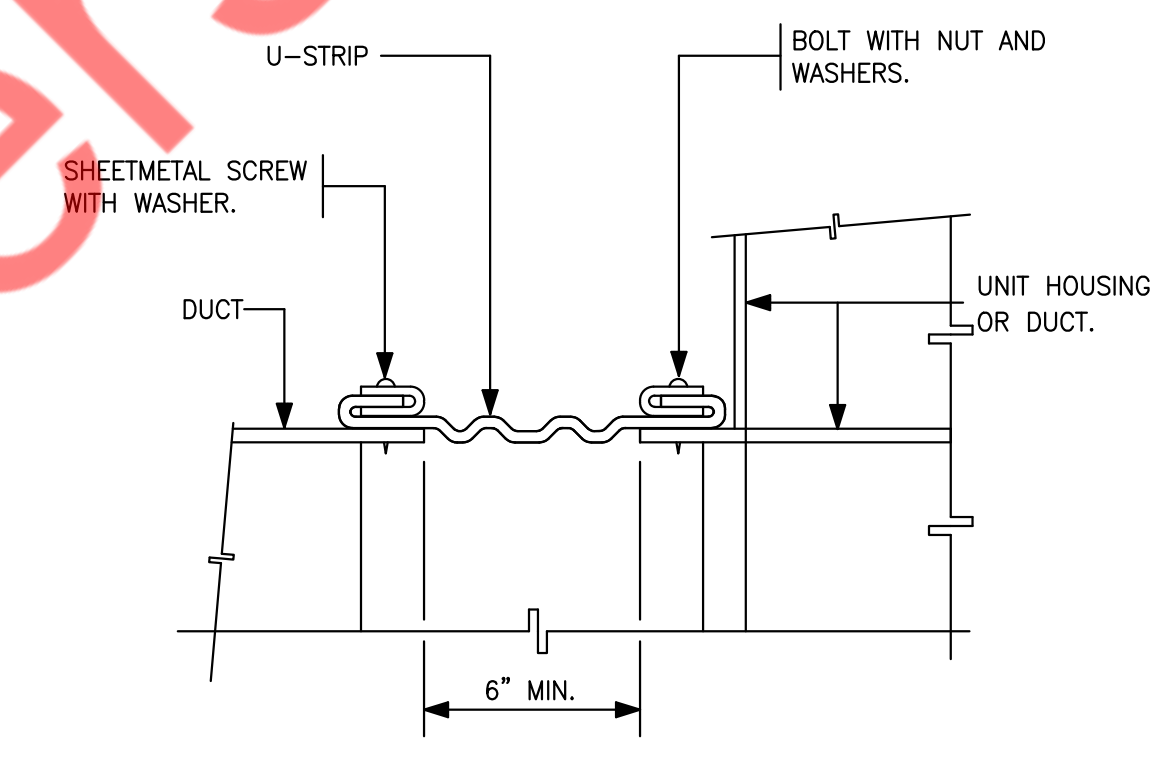
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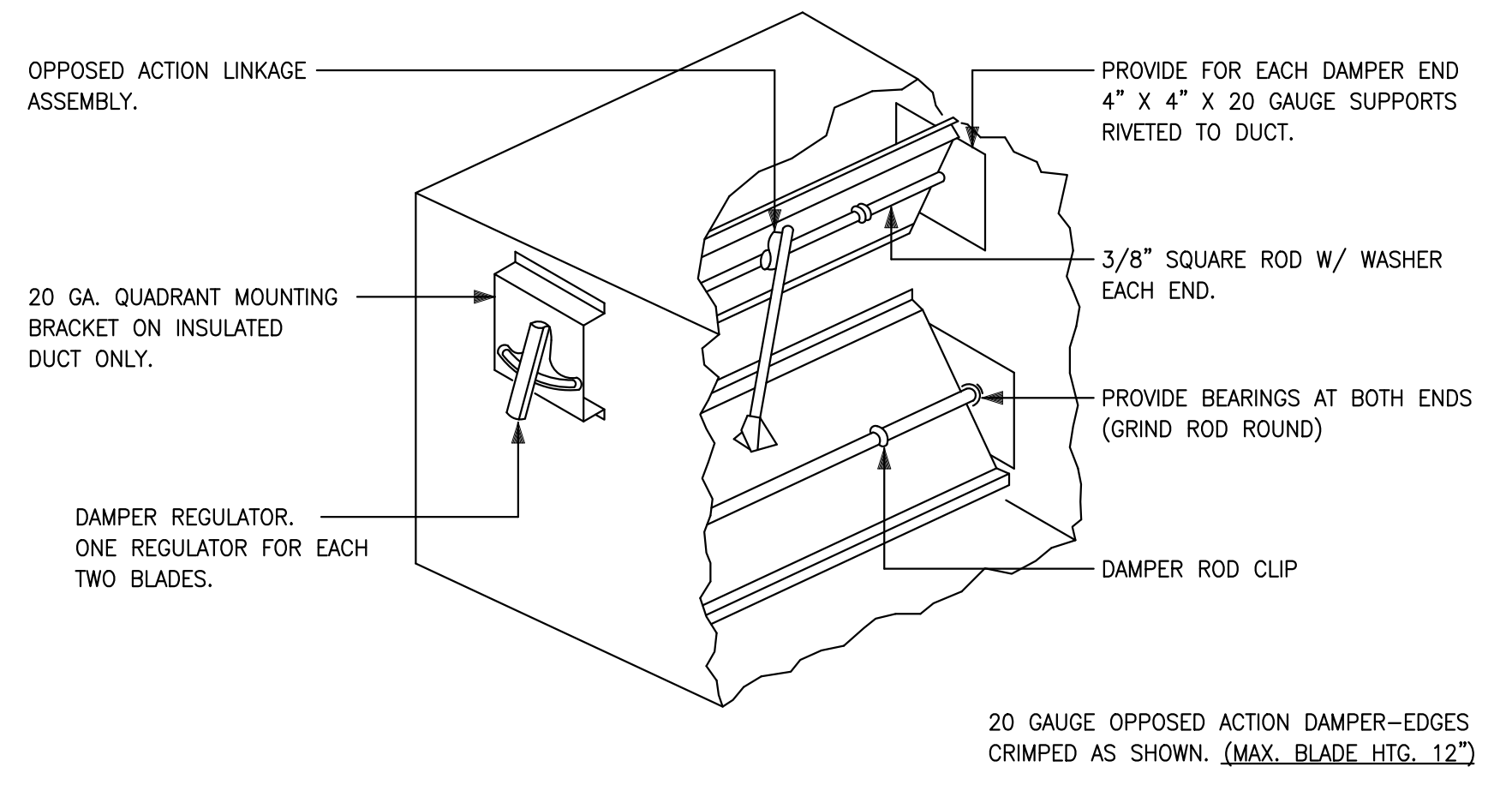
1 SUPPLY AIR DUCTWORK SUB-MAIN/BRANCH DUCT CONNECTION
M1.0 N.T.S



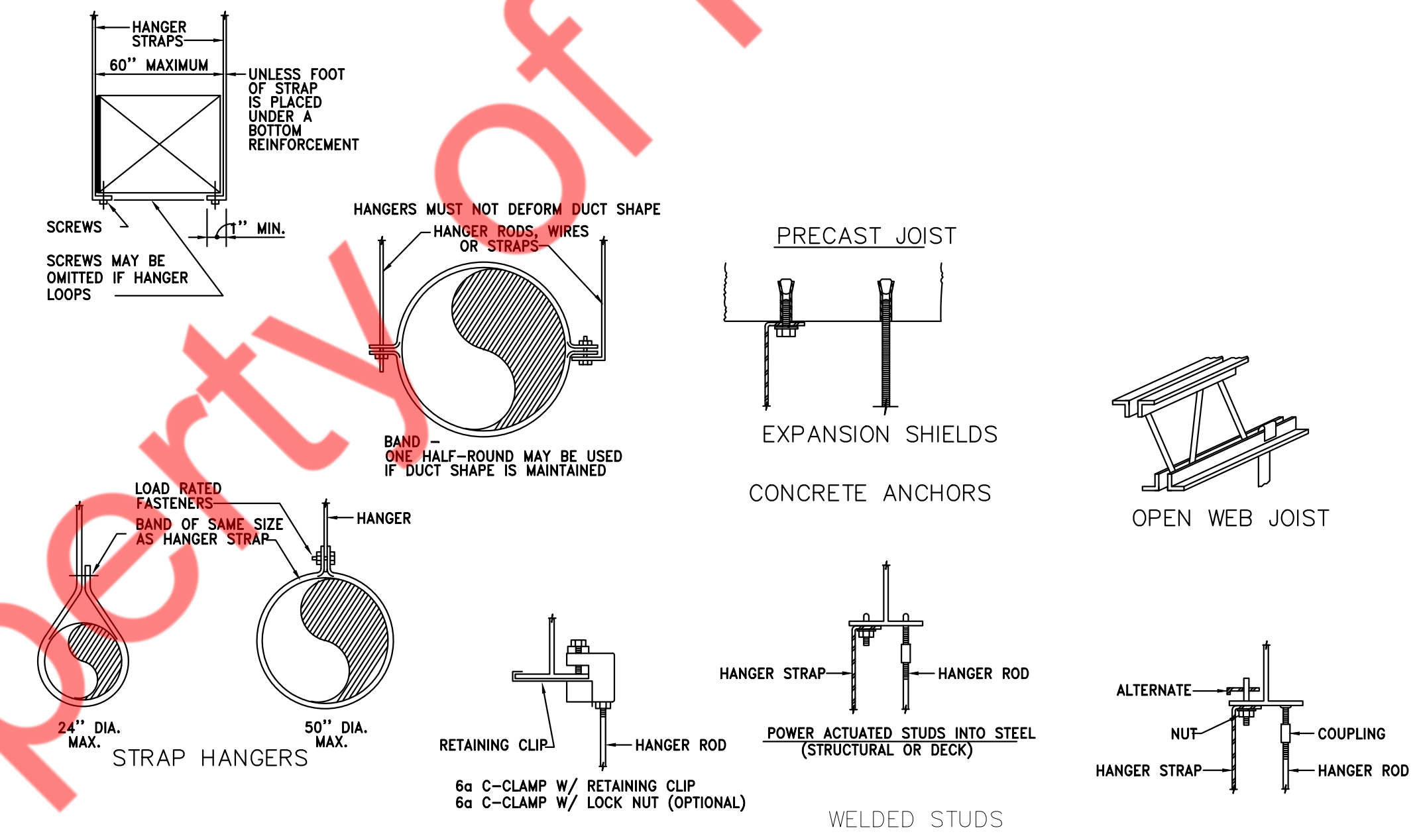
2 DIFFUSER CONNECTION DETAIL-FLEX DUCT & DUCT MOUNTED DIFFUSER DETAIL
M1.0 N.T.S



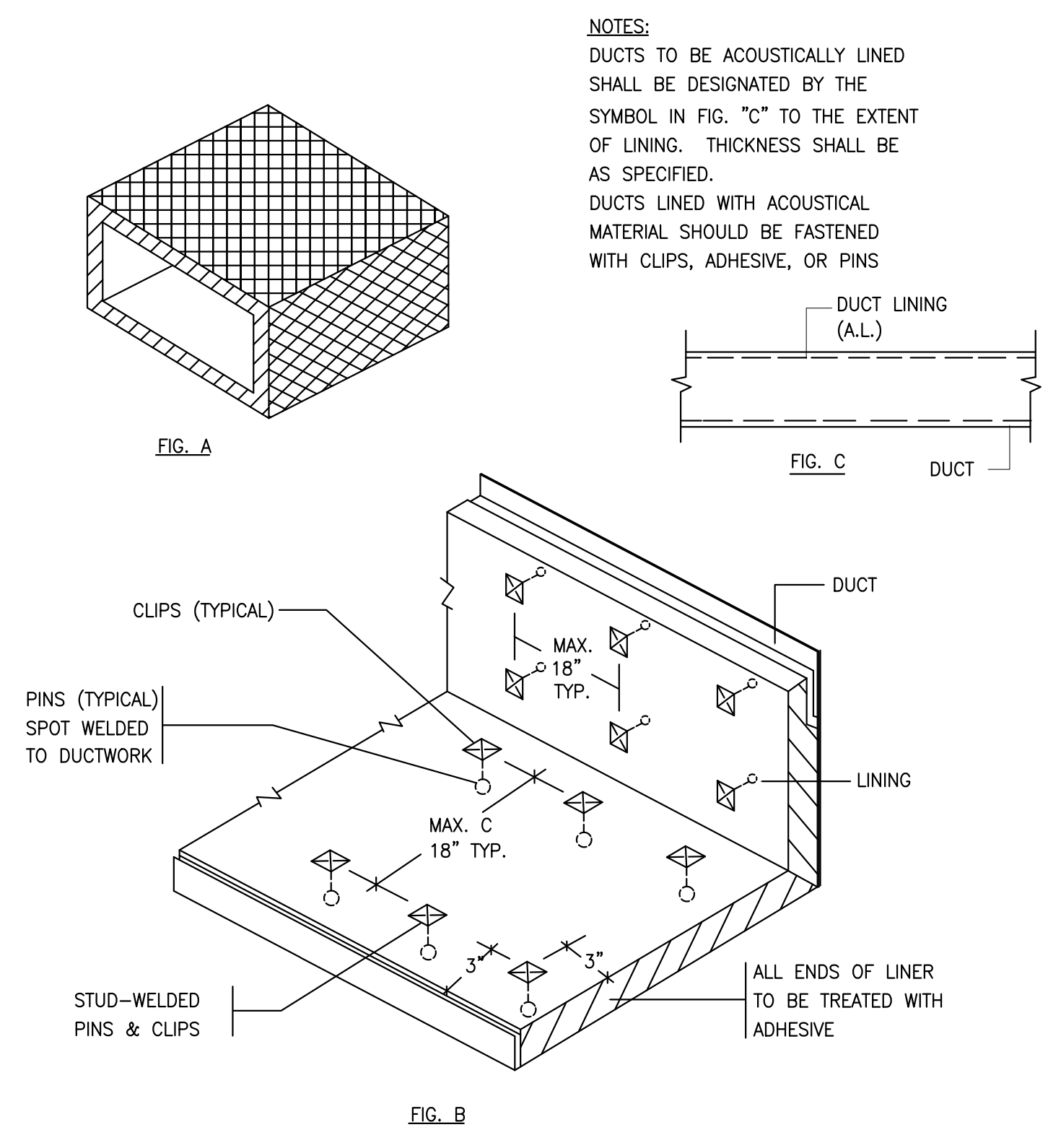
3 FLEXIBLE CONNECTION (DUCT-EQUIPMENT)
M1.0 N.T.S



4 LOW PRESSURE BALANCING DAMPER
M1.0 N.T.S



5 UPPER & LOWER ATTACHMENTS & DEVICES
M1.0 N.T.S



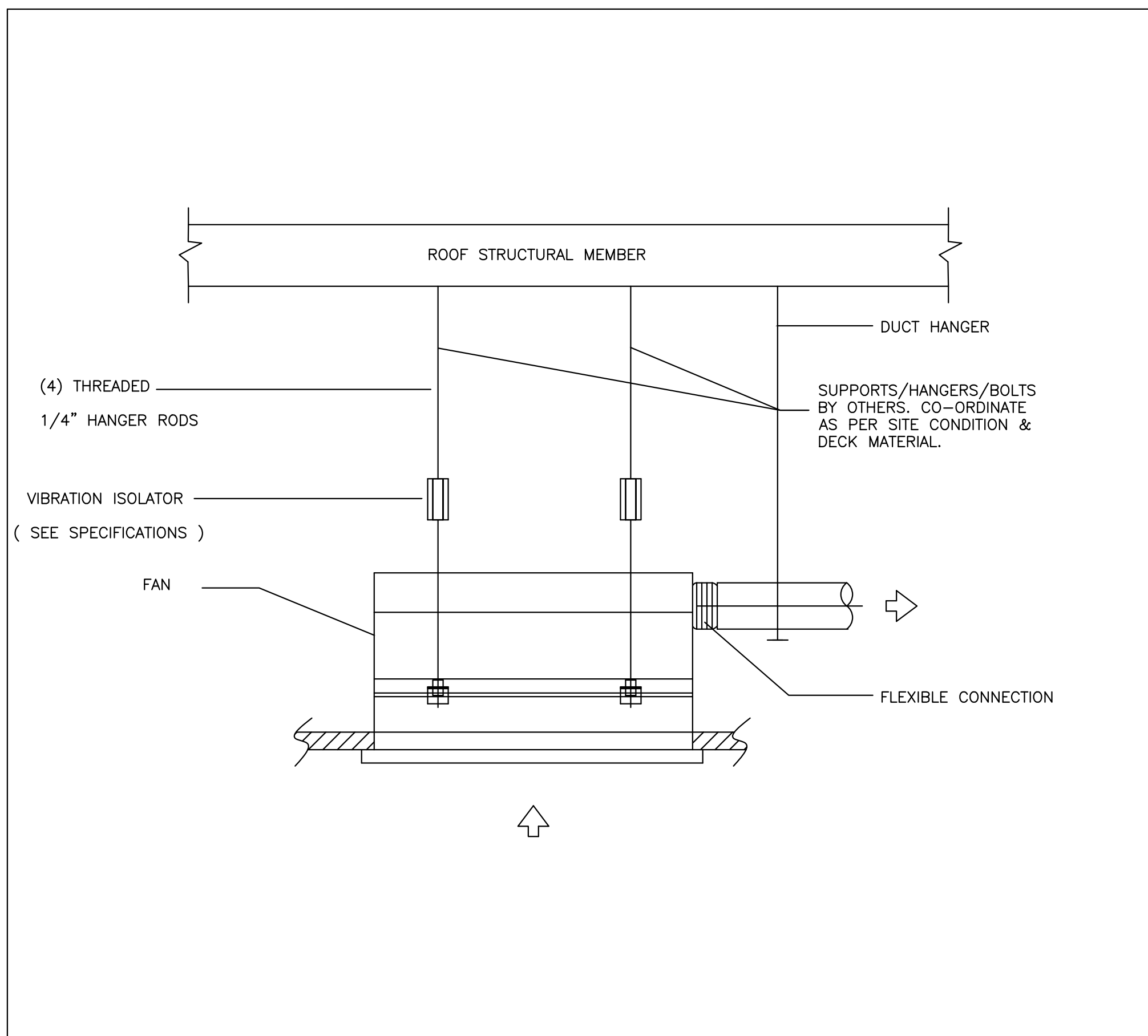
6 ACOUSTICAL TREATMENT DUCT LINING
M1.0 N.T.S

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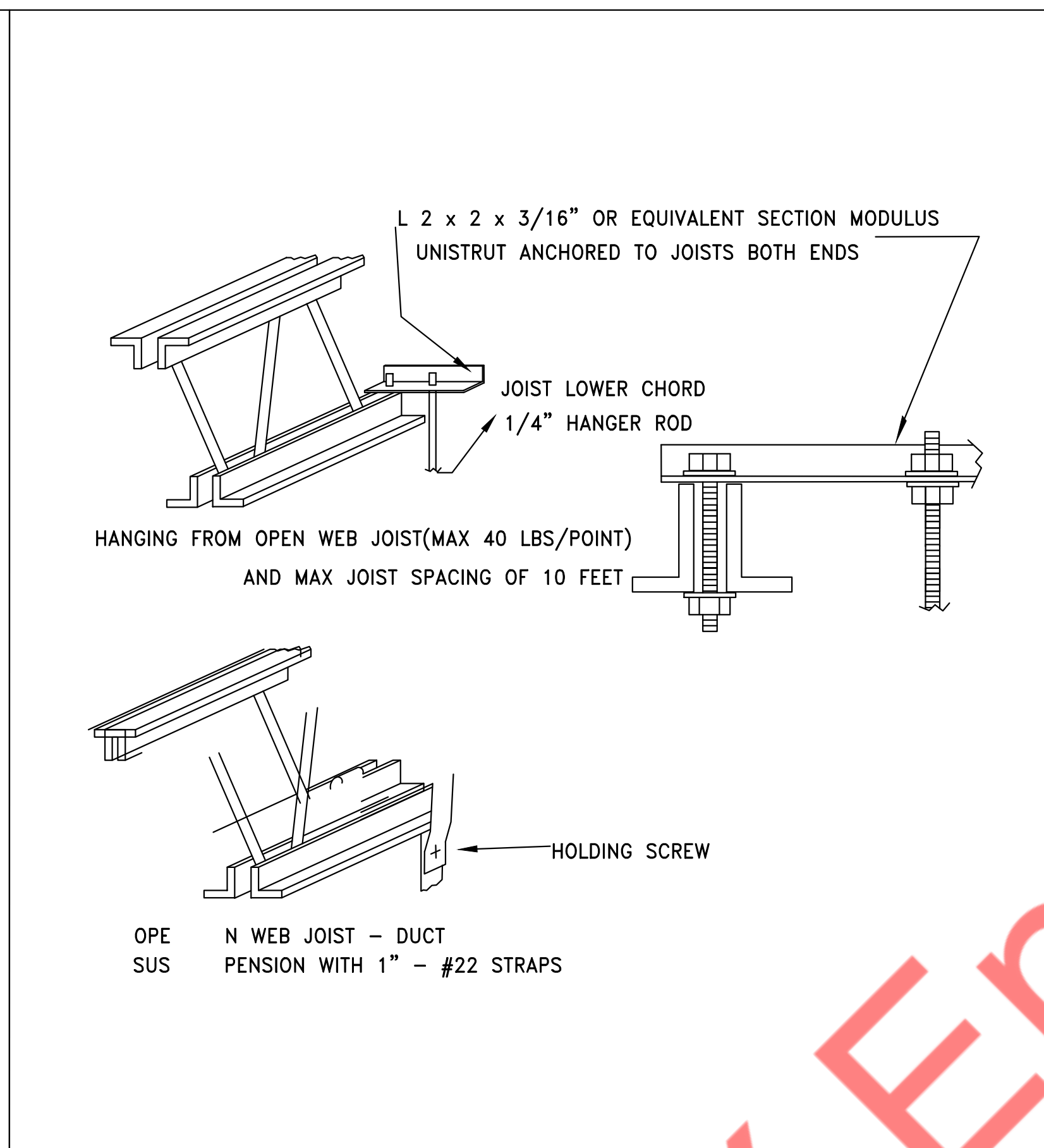
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MECHANICAL
DETAILS (1 OF 2)
M1.0
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1
M1.1
CEILING FAN HANGING SUPPORT DETAIL
N.T.S



2
M1.1
DUCT MOUNTING DETAIL
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AIR HANDLING UNIT SCHEDULE (INDOOR)																			
TAG	AREA SERVED	STATUS	CAPACITY (TON)	TOTAL COOLING CAP. (MBH)	SENSIBLE COOLING CAP. (MBH)	ELECTRIC HEATER (KW)	SUPPLY AIRFLOW (CFM)	OUTDOOR AIR (CFM)	EXTERNAL STATIC PRESSURE (IN. WC)	ELECTRICAL DATA			DIMENSIONS (WxHxD) (IN.)		REFRIGERANT PIPE SIZE (IN.)		WEIGHT (LBS.)	MODEL NO.	MODEL NO.
										VOLT/PH/HZ	MCA (A)	MOCAP (A)	LIQUID	SUCTION					
AH-1(E)	SEE PLAN	EXISTING	3.0 (V.I.F)	36.0 (V.I.F)	28.8 (V.I.F)	S.A.E.	1300 (V.I.F)	200	S.A.E.	208/3/60 (V.I.F)	S.A.E.	60.0 (V.I.F)	S.A.E.	S.A.E.	S.A.E.	S.A.E.	BRYANT (V.I.F)	FA4CNF036 (V.I.F)	
FC-1(E)	SEE PLAN	EXISTING	2.0 (V.I.F)	24.0 (V.I.F)	19.2 (V.I.F)	S.A.E.	800 (V.I.F)	140	S.A.E.	208/3/60 (V.I.F)	S.A.E.	60.0 (V.I.F)	S.A.E.	S.A.E.	S.A.E.	S.A.E.	BRYANT (V.I.F)	FA4CNF024 (V.I.F)	

SPLIT SYSTEM CONDENSING UNIT SCHEDULE (OUTDOOR)																	
TAG	LOCATION	STATUS	INDOOR UNIT SERVED	CAPACITY (TONS)	TOTAL COOLING CAP. (MBH)	SENSIBLE COOLING CAP. (MBH)	DIMENSIONS (HxWxD) (IN.)	WEIGHT (LBS)	PIPE DIA. (IN.)		ELECTRICAL DATA			EER	SEER	MANUFACTURER	MODEL
									LIQ.	GAS	VOLT/PH/HZ	MCA (A)	MOCAP (A)				
EX-CU(E)	S.A.E	EXISTING	AH-1(E)	3.0 (V.I.F)	36.0(V.I.F)	28.8 (V.I.F)	S.A.E	S.A.E	S.A.E	S.A.E	208/3/60 (V.I.F)	15.0 (V.I.F)	20.0 (V.I.F)	S.A.E	S.A.E	S.A.E	S.A.E
CU-1(E)	S.A.E	EXISTING	FC-1(E)	2.0 (V.I.F)	24.0 (V.I.F)	19.2 (V.I.F)	S.A.E	S.A.E	S.A.E	S.A.E	208/1/60 (V.I.F)	13.8 (V.I.F)	20.0 (V.I.F)	S.A.E	S.A.E	BRYANT (V.I.F)	123R (V.I.F)

MECHANICAL FAN SCHEDULE											
TAG	AREA SERVED	FLOW RATE CFM	STATIC PRESSURE EXTERNAL IN W.G.	ELECTRIC DATA			WEIGHT (LBS.)	MAXIMUM LOUDNESS (SONES)	BASIS OF DESIGN		REMARK
				SPEED RPM	INPUT WATT	V/PH/HZ			MANUFACTURER	MODEL	
EF-1(N)	SEE PLAN	70	0.3	950	16.0	115/1/60	20	1	GREENHECK (OR EQUIVALENT)	SP-A110 (OR EQUIVALENT)	1,2,3,4
EF-2(N)	SEE PLAN	70	0.3	950	16.0	115/1/60	20	1	GREENHECK (OR EQUIVALENT)	SP-A110 (OR EQUIVALENT)	1,2,3,4

AIR PURIFIER SCHEDULE												
TAG	LOCATION	TONS	AIR FLOW RATE (CFM)	ELECTRIC DATA			WEIGHT (LBS.)	DIMENSION (L X W X H) (INCHES)	BASIS OF DESIGN		REMARK	
				POWER SUPPLY (VOLTS/ HZ)	VOLTS	AMPS			WATTS	MANUFACTURER		MODEL
AP-1(N)	SEE PLAN	2.0	800	120 - 208/60	24 VAC	0.7	17.0	6.0	13.80x 6.50 x 7.40	RGF (OR EQUIVALENT)	REME HALO Zero (OR EQUIVALENT)	1,2,3,4
AP-2(N)	SEE PLAN	3.0	1300	120 - 208/60	24 VAC	0.7	17.0	6.0	13.80x 6.50 x 7.40	RGF (OR EQUIVALENT)	REME HALO Zero (OR EQUIVALENT)	1,2,3,5

AIR BALANCE					
UNIT	AREA SERVED	SUPPLY AIR	OUTSIDE AIR	RETURN AIR	EXHAUST AIR
AH-1(E)	SEE PLAN	1300 CFM	200 CFM	1100 CFM	-
FC-1(E)	SEE PLAN	800 CFM	140 CFM	660 CFM	-
EF-1 (N)	SEE PLAN	-	-	-	70 CFM
EF-2 (N)	SEE PLAN	-	-	-	70 CFM
TOTAL:		2100 CFM	340 CFM	1760 CFM	140 CFM
BUILDING PRESSURE:		200 CFM		POSITIVE	

VENTILATION CALCULATIONS AS PER 2018 IMC													
ROOM NAME	AREA (SQ.FT.)	NUMBER OF PEOPLE/1000SQ.FT AS PER 2018 IMC	NUMBER OF PEOPLE AS PER 2018 IMC	FINAL PEOPLE NO.	MIN OUTSIDE AIR AS PER 2018 IMC		REQUIRED OUTSIDE AIR (CFM)	ZONE EFFECTIVENESS Ez	PROVIDED OUTSIDE AIR (CFM)	EXHAUST AIRFLOW RATE (CFM/SQ.FT OR /FIXTURE)	PROVIDED EXHAUST (CFM)		
					CFM/PERSON	CFM/SQ.FT							
LOBBY	123	30	4	1	5	0.06	12	0.8	340	-	-		
TRANSFER SUITE 1 & 2	737	10	8	4	20	0.06	124			-	-		
TRANSFER SUITE 3	373	10	4	2	20	0.06	62			-	-		
CARDIO	187	10	2	2	20	0.06	51			-	-		
BREAK NOOK	112	5	1	1	5	0.06	12			-	70		
OFFICE	57	5	1	1	5	0.06	8			-	-		
RESTROOM	51	0	0	0	0	0.00	0			-	70	70	
TOTAL	1640	-	-	11	-	-	270			-	340	-	140

MECHANICAL AIR TERMINAL DEVICES SCHEDULE			
MANUFACTURER	TITUS	TITUS	TITUS
DESIGNATION	CDS-1	CDS-2	CDR-1
USE	SUPPLY	SUPPLY	RETURN
MODEL	TMS	MCD	355 RL
MOUNTING	CEILING	CEILING	CEILING
LOCATION	AS SHOWN	AS SHOWN	AS SHOWN
FACE SIZE	24"x24"	12"x12"	24"x24"
NECK SIZE	REFER TABLE-A	REFER TABLE-A	-
FRAME TYPE	LAY IN/FLANGED	FLANGED	LAY IN/FLANGED
ACCESSORIES	VOLUME DAMPER	VOLUME DAMPER	VOLUME DAMPER

NECK SIZE TABLE-A	
6" x 6"	0-100
8" x 8"	101-200
10" x 10"	201-400
12" x 12"	401-600

NOTES:
1. MAX. NC LEVEL 30 OR LESS.
2. COORDINATE WITH ARCHITECT FOR PAINT & FINISH.
3. PROVIDE 4-WAY AIR THROW PATTERN UNLESS NOTES OR INDICATED.
4. PROVIDE INSULATED BACKS ON ALL DIFFUSERS.
5. CABLE OPERATED DAMPERS SHALL BE PROVIDED FOR ANY DIFFUSERS/GRILLES INSTALLED IN THE HARD CEILING AREA.

NY ENGINEERS
382 NE 191st ST., SUITE
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TENANT FINISH FOR
FITNESS TOGETHER
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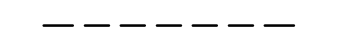
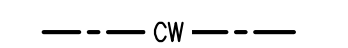
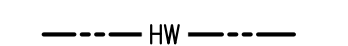

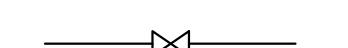






PROJECT NO FT2501

START DATE 03.28.2025

DRAWN BY NYE

CHECKED BY NYE

NO. DESCRIPTION DATE
1 PERMIT 04.08.2025

PLUMBING LEGEND	
SYMBOL	DESCRIPTION
	SAN SANITARY WASTE
	SAN SANITARY SEWER (UNDER GROUND)
	VENT PIPING
	CW COLD WATER
	HW HOT WATER
	HWR HOT WATER RETURN PIPING
	ISOLATION VALVE
	BALANCING VALVE
	FLOOR DRAIN
	PIPE DOWN
	PIPE UP
	POINT OF NEW CONNECTION
	FCO FLOOR CLEANOUT

PLUMBING DRAWING LIST	
PO.1	PLUMBING SYMBOLS & ABBREVIATIONS
PO.2	PLUMBING SPECIFICATIONS
PO.3	PLUMBING DETAILS AND SCHEDULE
P1.0	PLUMBING SANITARY, VENT AND WATER PIPING PLAN AND RISERS

CODE COMPLIANCE	
ALL WORK AND MATERIAL SHALL BE PERFORMED AND INSTALLED IN COMPLIANCE WITH THE FOLLOWING CODES AS ADOPTED AND AMENDED BY THE INSPECTING AUTHORITY. NOTHING IN THESE DRAWINGS IS TO BE CONSTRUCTED TO PERMIT WORK NOT CONFORMING TO THESE CODES OR OTHERS APPLICABLE TO THESE PROJECT.	
A.	2018 INTERNATIONAL BUILDING CODE
B.	2018 INTERNATIONAL MECHANICAL CODE
C.	2018 INTERNATIONAL PLUMBING CODE
D.	2018 INTERNATIONAL ENERGY CONSERVATION CODE
E.	2017 NATIONAL ELECTRICAL CODE
F.	2018 INTERNATIONAL FUEL GAS CODE

PLUMBING ABBREVIATIONS	
CW	COLD WATER
HW	HOT WATER
HWR	HOT WATER RETURN
SAN	SANITARY
EX.WH	EXISTING WATER HEATER
W	WASTE
LAV	LAVATORY
WC	WATER CLOSET
TYP.	TYPICAL
DN	DOWN
EX	EXISTING
FD	FLOOR DRAIN
MS	MOP SINK
RCP-1	RECIRCULATION PUMP
EX.ET	EXPANSION TANK
BS	BREAK ROOM SINK
FCO	FLOOR CLEAN OUT

PLUMBING SPECIFICATIONS:	
1. BASIC PLUMBING REQUIREMENTS, MATERIALS AND METHODS	
1.01 SCOPE	
A. PROVIDE ALL MATERIAL, TOOLS, SUPERVISION AND LABOR INCLUDING ALL MISCELLANEOUS AND INCIDENTAL ITEMS REQUIRED FOR COMPLETE AND OPERABLE PLUMBING INSTALLATIONS AS SHOWN OR DESCRIBED ON THE DRAWINGS AND IN THESE SPECIFICATIONS.	
B. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING AND NEW CONDITIONS AND MATERIALS WITHIN THE CONSTRUCTION AREA. ANY DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED TO THE OWNER'S SATISFACTION.	
C. OBTAIN ALL PERMITS, PAY ALL PERMIT FEES AND SCHEDULE ALL REQUIRED INSPECTIONS. COPIES OF ALL PERMITS AND INSPECTION CERTIFICATES SHALL BE FORWARDED TO THE OWNER FOR RECORD.	
D. THE GENERAL CONDITIONS OF THE CONTRACT AND ALL DIVISION 1 REQUIREMENTS APPLY TO THE WORK OF THIS SECTION.	
E. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING BID TO DETERMINE CONDITIONS AND THE EXTENT OF THE WORK. BY COMMENCING WORK, THE CONTRACTOR ACKNOWLEDGES HIS CONFIRMATION OF ALL CONDITIONS AS ACCEPTABLE WITH REFERENCE TO HIS CONTRACT, SCOPE OF WORK AND BID PRICE SUCH THAT NO ADDITIONAL COMPENSATION SHALL BE FORTHCOMING FOR UNFORESEEN EXISTING CONDITIONS.	
F. IN ALL AREAS SUBJECT TO FREEZING CONDITIONS, THE CONTRACTOR SHALL PROVIDE FREEZE PROTECTION FOR ALL DOMESTIC WATER PIPING INSTALLED UNDER HIS CONTRACT.	
G. ALL ELECTRICAL REQUIREMENTS SHALL BE COORDINATED WITH THE CONTRACTOR FOR ELECTRICAL WORK. THIS CONTRACTOR IS RESPONSIBLE FOR ALL LOW VOLTAGE WIRING FOR EQUIPMENT INSTALLED UNDER HIS CONTRACT. THE CONTRACTOR FOR ELECTRICAL WORK IS RESPONSIBLE FOR LINE VOLTAGE POWER WIRING ONLY.	
H. COLOR AND FINISH SELECTIONS FOR ALL MATERIALS, INCLUDING PAINTING OF PIPING, SHALL BE AS DIRECTED AND/OR APPROVED BY THE ARCHITECT.	
I. MINOR DETAILS NOT SHOWN OR SPECIFIED, BUT NECESSARY FOR THE PROPER AND ACCEPTABLE CONSTRUCTION, INSTALLATION OR OPERATION OF ANY PART OF THE WORK AS DETERMINED BY THE ENGINEER SHALL BE INCLUDED AS IF SPECIFIED OR INDICATED ON THE DRAWINGS.	
J. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIREMENTS FOR THE INSTALLATION, CONNECTION, EXTENSION OR MODIFICATION TO ALL UTILITY SERVICES WITH RESPECTIVE PROVIDERS INCLUDING PAYMENT OF ALL ASSOCIATED FEES.	
K. THE CONTRACTOR IS RESPONSIBLE FOR ALL PAINTING ASSOCIATED WITH CUTTING AND PATCHING. ALL PAINTING IN AREAS WITH COMPLETE FINISH RENOVATIONS SHALL BE PROVIDED BY THE GENERAL CONTRACTOR.	

1.02 SUBMITTALS	
A. SUBMITTAL REQUIREMENTS SHALL BE COORDINATED WITH THE ARCHITECT AND AUTHORITIES HAVING JURISDICTION. UNLESS OTHERWISE DIRECTED, CONTRACTOR SHALL PROVIDE SUBMITTALS AS LISTED BELOW.	
1. PIPE AND FITTINGS	
2. VALVES	
3. HANGERS AND SUPPORTS	
4. PLUMBING PIPING LAYOUT	
5. TESTS	
6. PLUMBING FIXTURES	
7. WATER HEATERS & ACCESSORIES	
8. FLOOR DRAINS	
9. MIXING VALVES	
10. ALL SCHEDULED PLUMBING EQUIPMENT	
11. BACK FLOW PREVENTOR	
B. SUBMITTALS FROM SUPPLIERS OR MANUFACTURERS WHICH DO NOT BEAR THE STAMP OF THE SUBMITTING CONTRACTOR INDICATING THAT THE CONTRACTOR HAS REVIEWED THE SUBMITTAL FOR CONFORMANCE WITH THE PROJECT REQUIREMENTS WILL BE RETURNED REJECTED.	
C. THE ENGINEER'S REVIEW OF SUBMITTALS IS A COURTESY WHICH DOES NOT RELIEVE THE CONTRACTOR FROM CONFORMING WITH THE CONSTRUCTION DOCUMENTS, REGARDLESS OF THE ACTION INDICATED BY THE SHOP DRAWINGS STAMP.	
D. SUBMIT PROOF OF APPROVAL AND/OR CONFIRMATION OF SATISFACTORY TEST RESULTS TO THE OWNER AND THE ARCHITECT.	
E. SUBMIT TO THE OWNER'S MAINTENANCE PERSONNEL OPERATION AND MAINTENANCE DATA FOR ALL SYSTEM COMPONENTS, SERVICING REQUIREMENTS, INSPECTION DATA, REPLACEMENT PART NUMBERS AND AVAILABILITY AND CONTACT INFORMATION FOR SERVICE/SUPPLY COMPANY.	
F. FOR ALL BELOW GRADE PIPING WHERE ACTUAL INSTALLATION DEVIATES FROM CONSTRUCTION DRAWINGS, THE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS INDICATING BELOW GRADE PIPE LOCATIONS DIMENSIONED TO NEAREST COLUMN LINES.	
G. RECORD AS-BUILT DRAWINGS SHALL BE SUPPLIED TO THE OWNER/TENANT AFTER COMPLETION OF THE WORK SHOWING ANY ALTERATIONS, ADDITIONS AND/OR DELETIONS TO THE SYSTEM(S) INSTALLED.	

1.03 SUBSTITUTIONS	
A. ALL EQUIPMENT SHALL BE PRODUCTS OF THE SPECIFIED MANUFACTURER OR MANUFACTURERS. ALL BIDS SHALL BE BASED ON THE SPECIFIED MANUFACTURER OR MANUFACTURER'S EQUIPMENT. FOR SUBSTITUTIONS OF OTHER MANUFACTURER'S EQUIPMENT TO BE CONSIDERED, THE SUBSTITUTION MUST BE INDICATED PRIOR TO BIDDING WITH THE REASON FOR THE PROPOSED SUBSTITUTION IDENTIFIED, AND THE PROPOSED CREDIT TO THE OWNER INDICATED. THE ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF ANY PROPOSED SUBSTITUTIONS.	
B. THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR COORDINATING THE WORK OF OTHER TRADES WHICH MAY BE AFFECTED BY SUBSTITUTIONS, INCLUDING ALL RELATED COSTS.	

1.04 DEFINITIONS	
A. FURNISH: TO PURCHASE, PROCURE, ACQUIRE AND DELIVER, COMPLETE WITH RELATED ACCESSORIES.	
B. INSTALL: TO ERECT, MOUNT AND CONNECT, COMPLETE WITH RELATED ACCESSORIES.	
C. PROVIDE: TO FURNISH AND INSTALL.	
D. PLUMBING CONTRACTOR, THE CONTRACTOR, THIS CONTRACTOR: THE CONTRACTOR FOR PLUMBING WORK WHICH IS SPECIFIED HEREIN AND SHOWN ON THESE DRAWINGS.	
E. REFER TO THE 2018 INTERNATIONAL PLUMBING CODE FOR ADDITIONAL DEFINITIONS.	

1.04 DRAWINGS	
A. THE DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO ILLUSTRATE THE GENERAL ARRANGEMENT AND ROUTING OF PIPING AND GENERAL LOCATIONS OF EQUIPMENT. PRECISE LOCATIONS OF EQUIPMENT, RISERS AND STACKS, AND ROUTING AND ELEVATION OF ALL PIPING SYSTEMS SHALL BE COORDINATED IN THE FIELD WITH THE ARCHITECT. ARCHITECTURAL DRAWINGS, THE WORK OF OTHER TRADES, EXISTING AND NEW BUILDING CONDITIONS AND/OR THE PREFERENCES OF THE OWNER/TENANT AS CONSTRUCTION PROCEEDS. ALL PIPING SHALL BE INSTALLED CONCEALED IN FINISHED SPACES, UNLESS NOTED OTHERWISE.	
B. PROVIDE ALL NECESSARY INCIDENTAL MATERIALS AND ACCESSORIES REQUIRED TO MAKE THE WORK COMPLETE IN ALL RESPECTS, EVEN IF NOT PARTICULARLY SHOWN OR SPECIFIED.	
C. REFER TO PLUMBING EQUIPMENT/FIXTURE SCHEDULE ON THE DRAWINGS FOR ALL FIXTURE AND EQUIPMENT SPECIFICATIONS.	
D. REFER TO FIXTURE CONNECTION SIZE SCHEDULE FOR ALL FIXTURE ROUGHING SIZE REQUIREMENTS.	
E. VERIFY ALL INDICATED CONDITIONS BEFORE STARTING WORK AND REPORT ANY DISCREPANCIES. THE DRAWINGS REFLECT CONDITIONS WHICH CAN BE REASONABLY INTERPRETED FROM THE EXISTING VISIBLE CONDITIONS OR FROM DRAWINGS AND INFORMATION FURNISHED BY THE OWNER.	
F. LOCATE ALL FIXTURES AND EQUIPMENT AS PER THE FINAL ARCHITECTURAL DRAWINGS.	

1.05 PRODUCTS	
A. SANITARY AND VENT PIPING:	
1. ABOVE GRADE/ UNDERGROUND PIPING SHALL BE CAST IRON PIPE WHICH SHOULD COMPLY WITH ASTM A 74 STANDARD/CISPI 301.	
2. SLOPE OF DRAINAGE SYSTEM SHALL BE 1/8" PER FOOT OF RUN FOR PIPE OVER 3" TO 6" (I.D.) AND 1/4" PER FOOT OF RUN FOR PIPE 2-1/2" AND SMALLER (I.D.). VENT PIPING SHALL BE PITCHED TO DRAIN.	
3. PVC OR OTHER COMBUSTIBLE PLASTIC PIPING SHALL NOT BE INSTALLED IN CEILING-PLENUM SPACES.	
4. ALL CAST IRON SOIL PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE (CISPI) AND BE LISTED BY NSF INTERNATIONAL.	
B. DOMESTIC WATER PIPING:	
1. ABOVE GRADE WATER PIPING SHALL BE TYPE 'L' HARD-DRAWN COPPER TUBE.	
2. FITTINGS IN DOMESTIC WATER PIPING SHALL BE COPPER OR COPPER ALLOY AS PER TABLE 605.5, 2018 INTERNATIONAL PLUMBING CODE.	
3. JOINTS SHALL BE MADE WITH LEAD-FREE SOLDER.	
4. THE ENTIRE DOMESTIC WATER DISTRIBUTION SYSTEM SHALL BE INSULATED INCLUDING ALL VALVES, FITTINGS, ETC.	
5. COMPLY WITH NSF 61 FOR MATERIALS FOR WATER-SERVICE PIPING AND SPECIALTIES FOR DOMESTIC WATER.	
6. ALL DOMESTIC WATER PIPING ABOVE GRADE SHALL BE INSULATED WITH FIRE-RETARDANT, FACTORY-APPLIED JACKET. PROVIDE COLD WATER PIPING WITH FACTORY-APPLIED VAPOR BARRIER. INSULATION REQUIREMENT SHOULD COMPLY WITH 2018 INTERNATIONAL ENERGY CONSERVATION CODE. REFER BELOW C404.4 TABLE FOR MINIMUM PIPE INSULATION THICKNESS.	

MINIMUM PIPE INSULATION THICKNESS							
FLUID OPERATING TEMPERATURE RANGE AND USAGE (°F)	INSULATION CONDUCTIVITY		NOMINAL PIPE OR TUBE SIZE (INCHES)				
	CONDUCTIVITY BTU IN./ (H FT2 °F)	MEAN RATING TEMPERATURE, °F	<1	1 to < 1½	1½ to < 4	4 to < 8	≥8
105-140	0.21-0.28	100	1.0	1.0	1.5	1.5	1.5
40-60	0.21-0.27	75	0.5	0.5	1.0	1.0	1.0

7. AS PER IECC 2018 EDITION, C404.6.1, HEATED WATER CIRCULATION SYSTEMS SHALL BE PROVIDED WITH CIRCULATION PUMP. CONTROLS FOR CIRCULATING HOT WATER SYSTEM PUMPS SHALL START THE PUMP BASED ON THE IDENTIFICATION OF A DEMAND FOR HOT WATER WITHIN THE OCCUPANCY. THE CONTROLS SHALL AUTOMATICALLY TURN OFF THE PUMP WHEN THE WATER IN THE CIRCULATION LOOP IS AT THE DESIRED TEMPERATURE AND WHEN THERE IS NO DEMAND FOR HOT WATER.	
8. AS PER IECC 2018 EDITION, C404.7 WATER DISTRIBUTION SYSTEM HAVING ONE OR MORE RECIRCULATION PUMPS THAT PUMP WATER FROM A HEATED-WATER SUPPLY PIPE BACK TO THE HEATED-WATER SOURCE THROUGH A COLD-WATER SUPPLY PIPE SHALL BE A DEMAND RECIRCULATION WATER SYSTEM.PUMPS SHALL HAVE CONTROLS THAT COMPLY WITH BOTH OF THE FOLLOWING:	
1. THE CONTROL SHALL START THE PUMP UPON RECEIVING A SIGNAL FROM THE ACTION OF A USER OF A FIXTURE,SENSING THE PRESENCE OF A USER OF A FIXTURE OR SENSING THE FLOW OF HOT OR TEMPERED WATER TO A FIXTURE.	
2. THE CONTROL SHALL LIMIT THE TEMPERATURE OF THE WATER ENTERING THE COLD-WATER PIPING TO 104°F(40°C).	
9. HW SYSTEM PIPING IS DESIGNED AS PER MAXIMUM ALLOWED PIPE LENGTH METHOD AS PER INTERNATIONAL ENERGY CONSERVATION CODE 2018 C404.5, THE HW PIPE LENGTH FROM THE NEAREST SOURCE OF HEATED WATER TO THE TERMINATION OF THE FIXTURE SUPPLY PIPE SHALL BE AS PER FOLLOWING TABLE.	

NOMINAL PIPE SIZE (INCHES)	MIXIMUM PIPING LENGTH (FEET)	
	PUBLIC LAV	OTHER FIXTURES
½"	2'	43'
¾"	0.5'	21'
1"	0.5'	13'
1¼"	0.5'	8'
1½"	0.5'	6'
2" OR LARGER	0.5'	4'

C. EXISTING ELECTRIC WATER HEATER	
1. TANKS SHALL BE 15 GALLONS CAPACITY AND SHALL HAVE 150 PSIG WORKING PRESSURE AND BE EQUIPPED WITH EXTRUDED HIGH DENSITY ANODE.	
2. ALL INTERNAL SURFACES OF THE HEATER(S) EXPOSED TO WATER SHALL BE GLASS-LINED WITH AN ALKALINE BORO SILICATE COMPOSITION THAT HAS BEEN FUSED-TO-STEEL BY FIRING AT A TEMPERATURE RANGE OF 1400°F TO 1600°F.	
3. ELECTRIC HEATING ELEMENTS SHALL BE MEDIUM WATT DENSITY WITH ZINC PLATED COPPER SHEATH.	
4. EACH ELEMENT SHALL BE CONTROLLED BY AN INDIVIDUALLY MOUNTED THERMOSTAT AND HIGH TEMPERATURE CUT-OFF SWITCH. ALL INTERNAL CIRCUITS SHALL BE FUSED. THE OUTER JACKET SHALL BE OF BAKED ENAMEL FINISH AND SHALL BE PROVIDED WITH FULL SIZE CONTROL COMPARTMENT FOR PERFORMANCE OF SERVICE AND MAINTENANCE THROUGH HINGED FRONT PANEL AND SHALL ENCLOSE THE TANK WITH FOAM INSULATION. ELECTRICAL JUNCTION BOX WITH HEAVY DUTY TERMINAL BLOCK SHALL BE PROVIDED. THE DRAIN VALVE SHALL BE LOCATED IN THE FRONT FOR EASE OF SERVICING.	

D. MIXING VALVES	
1. VALVE BODY SHALL BE MADE OF CAST BRASS. THE INTERNAL COMPONENTS SHALL BE MADE OF BRASS OR STAINLESS STEEL.	
2. TYPES A, C & D VALVES: VALVE SHUTS OFF IN FULL COLD POSITION AND MUST PASS THROUGH COLD RANGE BEFORE DELIVERING WARM, AND/OR HOT WATER. TEMPERATURE LIMIT SET AT 105°F MAXIMUM DELIVERY TEMPERATURE. IF ONE SUPPLY SHOULD FAIL, THE OTHER WILL AUTOMATICALLY AND INSTANTLY SHUT DOWN. DELIVERY CAPACITY IS 5GPM @ 45 PSIG DIFFERENTIAL.	
3. TYPES OF VALVES: TYPE A-- THERMOSTATICALLY OPERATED BY MEANS OF BI-METALLIC STRIP, OR EXPANSION BELLOW; TYPE B-- SINGLE HANDLE MECHANICAL MIXER, OR INDIVIDUAL HOT AND COLD CONTROL VALVES; TYPE C-- PRESSURE BALANCING SHOWER VALVE/PISTON OPERATED MIXING VALVE; TYPE D-- BALANCED PRESSURE OPERATION, WITH INTEGRAL DIAL THERMOMETER INDICATING DELIVERED WATER TEMPERATURE.	
4. EACH ELEMENT SHALL BE CONTROLLED BY AN INDIVIDUALLY MOUNTED THERMOSTAT AND HIGH TEMPERATURE CUT-OFF SWITCH. ALL INTERNAL CIRCUITS SHALL BE FUSED. THE OUTER JACKET SHALL BE OF BAKED ENAMEL FINISH AND SHALL BE PROVIDED WITH FULL SIZE CONTROL COMPARTMENT FOR PERFORMANCE OF SERVICE AND MAINTENANCE THROUGH HINGED FRONT PANEL AND SHALL ENCLOSE THE TANK WITH FOAM INSULATION. ELECTRICAL JUNCTION BOX WITH HEAVY DUTY TERMINAL BLOCK SHALL BE PROVIDED. THE DRAIN VALVE SHALL BE LOCATED IN THE FRONT FOR EASE OF SERVICING.	

E. HOT WATER RE-CIRCULATING PUMP	
1. IN-LINE PUMP: SINGLE STAGE VOLUTE TYPE PUMP SHALL BE MADE OF CAST IRON OR FORGED LEAD-FREE BRONZE IMPELLER.	
2. THE PUMP SHALL HAVE A GROUND AND POLISHED STEEL SHAFT WITH A HARDENED INTEGRAL THRUST COLLAR. THE SHAFT SHALL BE SUPPORTED BY TWO HORIZONTAL SLEEVE BEARINGS DESIGNED TO CIRCULATE OIL. THE PUMPS ARE TO BE EQUIPPED WITH A MECHANICAL SEAL WITH CARBON SEAL FACE ROTATING AGAINST CERAMIC SEAT. THE MOTOR SHALL BE NON-OVERLOADING AT ANY POINT ON PUMP CURVE.	
3. DIRECT CONNECT PUMP TO ELECTRIC MOTOR WITH FLEXIBLE COUPLING. THE MOTOR SHALL BE OF THE DRIP-PROOF, SLEEVE-BEARING, QUIET OPERATING, RUBBER-MOUNTED CONSTRUCTION. EQUIPMENT MOTOR WITH BUILT-IN THERMAL OVERLOAD PROTECTION.	
4. INSTALL IN-LINE CIRCULATING PUMPS BETWEEN PIPE FLANGES IN PIPING SYSTEMS. INSTALL OVERHEAD PIPE SUPPORTS, BOTH SIDES OF IN-LINE PUMPS, INSTALLED IN HORIZONTAL PIPING RUNS.	

F. HANGERS AND SUPPORTS:	
1. HANGERS SHALL BE STANDARD STEEL, MALLEABLE OR WROUGHT IRON, AS MANUFACTURED BY GRINNELL OR APPROVED EQUAL, SUITABLE FOR THE TYPE OF CONSTRUCTION. PIPING SHALL NOT BE HUNG FROM OTHER PIPE.	
2. SECTIONS OF INDIVIDUAL PIPE RUNS SHALL BE SUPPORTED BY CLEVIS HANGERS.	
3. ALL EQUIPMENT SHALL BE PROVIDED WITH APPROVED SUPPORTS..	
4. SUPPORTS SHALL BE PROVIDED IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF THE PIPING MANUFACTURER.	

G. VALVES:	
1. PROVIDE GATE VALVES, BUTTERFLY OR BALL VALVES FOR SHUT-OFF DUTY ON MAIN AND BRANCH SUPPLY LINES. FOR ALL PIPE RUNS 2" AND SMALLER, PROVIDE BALL FOR ALL PIPE RUNS LARGER THAN 2" AND SMALLER THAN 4", PROVIDE GATE VALVES. PIPING 4" AND LARGER, PROVIDE BUTTERFLY VALVES FOR SHUT-OFF DUTY.	
2. ALL FIXTURES WITH THE EXCEPTION O FLUSHMETER-EQUIPPED WATER CLOSETS AND URINALS SHALL HAVE STOP VALVES TO CONTROL SUPPLY TO THE FIXTURE. WHERE SUPPLIES ARE EXPOSED PROVIDE CHROME-PLATED STOPS WITH CHROME-PLATED ESCUTCHEONS ON PIPING PENETRATIONS.	
3. ALL PLUMBING FIXTURES AND EQUIPMENT TO HAVE SHUT-OFF VALVES ON SUPPLY LINES.	
4. ALL BRANCH LINES TO HAVE SHUT-OFF VALVES.	
5. ALL VALVES SHALL BE ACCESSIBLE. PROVIDE ACCESS DOORS WHERE REQUIRED FOR VALVE ACCESS.	
6. PROVIDE GLOBE VALVES FOR THROTTLING/BALANCING OF THE HOT WATER CIRCULATING SYSTEM.	

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TENANT FINISH FOR
FITNESS TOGETHER
LEAWOOD KS

PROJECT NO	FT2501	
START DATE	03.28.2025	
DRAWN BY	NYE	
CHECKED BY	NYE	
NO.	DESCRIPTION	DATE
1	PERMIT	04.08.2025

PLUMBING SYMBOLS & ABBREVIATIONS

P0.1
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H. SLEEVES AND ESCUTCHEONS:

1. SLEEVES THROUGH STRUCTURAL CONCRETE MEMBERS AND SLEEVES FOR WALLS BELOW GRADE AND FLOORS ON GRADE SHALL BE STANDARD WEIGHT GALVANIZED SCHEDULE 40 STEEL PIPE. SLEEVES THROUGH OTHER THAN STRUCTURAL COMPONENTS OF THE BUILDING SHALL BE 20 GAGE GALVANIZED SHEET METAL WITH LOCK SEAM JOINTS. USG THERMAFIBER SAFING INSULATION SHALL BE INSTALLED BETWEEN PIPE AND SLEEVE.
2. PIPE ESCUTCHEON PLATES SHALL BE INSTALLED WHERE EXPOSED PIPING PASSES THROUGH WALLS, CEILINGS, AND FLOORS AND SHALL BE MINIMUM 20 GAGE STEEL. PROVIDE CHROME PLATED ESCUTCHEON PLATES IN FINISHED AREAS.

I. DRAINAGE ACCESSORIES

1. GENERAL:
 - a. INSTALL THE WORK OF THIS SECTION IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS, UNLESS OTHERWISE SPECIFIED.
 - b. SECURE EXTERNAL COMPONENTS IN PLACE WITH VANDAL RESISTANT FASTENERS OR DEVICES WHICH CANNOT BE REMOVED WITHOUT SPECIAL TOOLS.
2. DEVICES:
 - a. CLEANOUT & CLEANOUT PLUG
 - THREADED PIPE FITTING OR CAST IRON FERRULE WITH GAS TIGHT CLEANOUT PLUG
 - PLUG SHOULD BE CAST BRASS OR BRONZE, WITH THREADED END, AND RAISED OR COUNTERSUNK HEAD.
 - LUBRICATE THREADS OF CLEANOUT PLUG WITH ANTI-SEIZE LUBRICANT BEFORE FINAL INSTALLATION.
 - b. CLEANOUT WALL PLATE
 - IT SHOULD BE ROUND, STAINLESS STEEL OR POLISHED CHROME PLATED BRONZE COVER PLATE WITH STAINLESS STEEL VANDAL RESISTANT FASTENER TO SECURE TO CLEANOUT PLUG.
 - c. CLEANOUT DECK PLATE
 - IT SHOULD BE STANDARD DUTY FLOOR CLEANOUT FITTING WITH COATED CAST IRON BODY; ROUND, POLISHED NICKEL BRONZE SCORRIATED TOP SECURED TO CLEANOUT PLUG WITH STAINLESS STEEL VANDAL RESISTANT FASTENER; THREADED HEIGHT ADJUSTMENT, CAST IRON HEAD, GAS TIGHT CLEANOUT PLUG, AND CONNECTION TO MATCH PIPING OPTION SELECTED.

J. INSTALL PIPING TO CONSERVE BUILDING SPACE. DO NOT INTERFERE WITH USE OF BUILDING SPACE AND THE WORK OF OTHER TRADES. ALL PIPING RUN IN CEILING SHALL BE INSTALLED TIGHT TO THE STRUCTURE ABOVE.

K. VERIFY EXACT LOCATIONS OF ALL EXISTING UTILITIES.

L. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS OR CONNECTED EQUIPMENT. PROVIDE PIPE ANCHORS, GUIDES AND EXPANSION JOINTS OR LOOPS IN ALL HOT WATER AND HOT WATER CIRCULATING MAIN SUPPLY PIPING AND SEGMENTS OF SUCH PIPE THAT EXCEED 30'-0" IN LENGTH.

M. IN ALL AREAS WITH FINISHED SURFACES, SYSTEM PIPING AND COMPONENTS SHALL BE CONCEALED ABOVE OR WITHIN FINISHED SURFACES.

N. INSTALL VALVES WITH STEMS UPRIGHT OR HORIZONTAL. REMOVE PROTECTIVE COATINGS PRIOR TO INSTALLATION.

O. REDUCTIONS IN PIPE SIZES SHALL BE MADE WITH ONE-PIECE REDUCING FITTINGS. BUSHINGS ARE NOT ACCEPTABLE. USE FLANGED FITTINGS AT THE BASE OF RISERS.

P. VENT PENETRATIONS THROUGH THE ROOF SHALL BE FLASHED.

Q. IF WATER PRESSURE EXCEEDS 80 PSI, A WATER PRESSURE REDUCING VALVE SHALL BE INSTALLED IN WATER PIPING AT CONNECTION TO MAIN.

R. PROVIDE DIELECTRIC FITTINGS BETWEEN DISSIMILAR METALS.

S. PIPE BACKFLOW PREVENTER DRAINS TO FLOOR DRAIN OR OTHER APPROVED INDIRECT WASTE SOURCE.

T. PROVIDE ACCESS DOORS/PANELS FOR SERVICE AND ACCESS TO ALL VALVES AND OTHER SYSTEM COMPONENTS ENCLOSED IN WALLS AND CEILINGS. ACCESS DOORS SHALL BE FURNISHED BY THIS CONTRACTOR, INSTALLED BY THE GENERAL CONTRACTOR.

U. ALL FIXTURES REQUIRING VACUUM BREAKERS SHALL BE EQUIPPED WITH INTEGRAL VACUUM BREAKERS.

V. ANY PENETRATIONS THROUGH FIRE RATED PARTITIONS, FLOORS, OR CEILINGS SHALL BE STEEL SLEEVED AND SEALED WITH 3M BRAND UL RATED FIRE BARRIER CAULK OR APPROVED EQUAL.

W. WHEN THE WATER PIPING SYSTEM IS COMPLETE, THOROUGHLY FLUSH ALL DIRT, SEDIMENT, SOLDER, ETC., OUT OF THE SYSTEM, REMOVING ALL STRAINERS, VALVE STEM SEATS, ETC., REQUIRED TO ACCOMPLISH THE FLUSHING.

X. AT ALL INDIRECT WASTE DRAINS, MAINTAIN AIR GAP AS REQUIRED BY CODE.

Y. CONNECT GAS PIPING TO ALL GAS-FIRED EQUIPMENT WITH GAS COCK, DIRT LEG AND UNION.

Z. FOR ALL GAS-FIRED EQUIPMENT, VERIFY INPUT RATING AND PRESSURE REQUIREMENTS. PROVIDE GAS PRESSURE REGULATORS VENTED TO THE BUILDING EXTERIOR ON GAS SUPPLY TO ALL EQUIPMENT REQUIRING LOWER THAN LINE GAS PRESSURE.

AA. ALL PIPING INSTALLED ON THE ROOF SHALL BE SUPPORTED BY "PILLOW BLOCK" PIPE STANDS AS MANUFACTURED BY MIRO INDUSTRIES, OR APPROVED EQUAL. WOOD PIPE SUPPORTS SHALL NOT BE ACCEPTABLE. PROVIDE TRAFFIC/WALK PADS BELOW ALL PIPE STANDS.

AB. INSTALL SLEEVES FOR ALL PIPES WHICH PASS THROUGH WALLS, FLOORS, AND CEILINGS. WHERE PIPES ARE TO BE INSULATED, THE SLEEVE SHALL BE LARGE ENOUGH TO ACCOMMODATE INSULATION. SLEEVES SHALL BE FLUSH WITH FINISHED SURFACES AT BOTH ENDS. ON FINISHED SURFACES IN EXPOSED AREAS PROVIDE ESCUTCHEONS COMPATIBLE WITH FINISH.

AC. PROVIDE WATER HAMMER ARRESTERS ON SUPPLY PIPING TO ALL FLUSHMETER VALVES AND QUICK-CLOSING VALVES.

AE. UNLESS OTHERWISE INDICATED, TRAPS SEALS AT ALL FLOOR DRAINS SHALL BE MAINTAINED BY AN APPROVED TRAP PRIMING DEVICE.

AF. MAINTAIN ALL REQUIRED AND RECOMMENDED CLEARANCES FOR ALL PLUMBING SYSTEM COMPONENTS AND EQUIPMENT.

AG. MAINTAIN MINIMUM 10'-0" CLEARANCE BETWEEN ALL PLUMBING V.T.R.S AND ALL OUTDOOR AIR INTAKES. OFFSET VENT STACKS AND STACK VENTS IF AND AS REQUIRED BELOW ROOF TO MAINTAIN SUCH CLEARANCE WHETHER OR NOT SUCH OFFSET IS INDICATED ON THE DRAWINGS. PROVIDE ALL REQUIRED SEISMIC SUPPORTS.

2. INSTALLATION

2.01 GENERAL

A. ALL WORK WHICH REQUIRES DISRUPTION OF THE ROOFING SHALL BE DONE BY A CONTRACTOR CERTIFIED BY THE ROOFING MANUFACTURER AS REQUIRED TO MAINTAIN ANY EXISTING ROOF WARRANTIES.

B. EXTERIOR INSTALLATIONS TO BE WEATHER PROOF IN ALL RESPECTS.

C. EXTERIOR MATERIALS AND EQUIPMENT SHALL BE PAINTED TO PREVENT CORROSION, COLOR PER ARCHITECT.

D. COORDINATE THE PLUMBING WORK WITH ALL OTHER AFFECTED WORK AND THE CONSTRUCTION SCHEDULE.

E. REAM PIPE AND TUBE ENDS. REMOVE BURRS. BEVEL PLAIN AND FERROUS END PIPE.

F. REMOVE SCALE AND FOREIGN MATERIAL, FROM INSIDE AND OUTSIDE, BEFORE ASSEMBLY.

G. PREPARE PIPING CONNECTIONS TO EQUIPMENT WITH FLANGES AND UNIONS.

H. COORDINATION WITH THE WORK OF OTHER TRADES IS REQUIRED. PROVIDE OFFSETS IN PIPING SYSTEMS OR MINOR DEVIATIONS TO THE INDICATED PIPE ROUTING IN ORDER TO COORDINATE THE PLUMBING WORK WITH THE WORK OF ALL OTHER TRADES AND THE GENERAL BUILDING CONDITIONS.

I. NO DOMESTIC WATER PIPING SHALL BE INSTALLED IN UNHEATED SPACES.

J. PRIOR TO DISCONNECTING AND CONNECTING NEW WORK TO EXISTING SYSTEMS, THE PLUMBING CONTRACTOR SHALL NOTIFY THE PROPERTY MANAGER AND OFFER A PROPOSED SCHEDULE OF WORK. ESB WILL AUTHORIZE CONNECTIONS AND COORDINATE NECESSARY SHUT DOWNS AND DRAIN DOWNS AS REQUIRED. SHUT DOWNS AND DRAIN DOWNS MAY BE PERFORMED BY THE PLUMBING CONTRACTOR ONLY AFTER RECEIVING ESB AUTHORIZATION, AND SHOULD BE PERFORMED UNDER SUPERVISION OF ESB PERSONNEL. THREE (3) DAYS ADVANCE NOTICE TO THE PROPERTY MANAGER IS REQUIRED.

K. THE PLUMBING CONTRACTOR IS ADVISED THAT DUE TO THE NATURE OF THE OPERATIONS AND TENANT REQUIREMENTS, CONNECTIONS TO EXISTING SYSTEMS MAY HAVE TO BE MADE AFTER REGULAR WORKING HOURS. THE PROPERTY MANAGER WILL ADVISE THE PLUMBING CONTRACTOR OF THE TIME CONSTRAINTS UPON RECEIPT AND APPROVAL OF THE PLUMBING CONTRACTOR'S REQUEST FOR SHUT DOWN AND CONNECTION TO EXISTING SYSTEMS.

L. WHEN CONNECTING TO EXISTING STACKS AND RISERS, PROVISION IS TO BE MADE FOR FUTURE CONNECTIONS BY PROVIDING CAPPED AND VALVED OUTLETS ON DOMESTIC WATER RISERS AND PLUGGED OUTLETS ON THE SANITARY AND VENT STACKS.

2.02 ABOVE GRADE

A. INSTALL PLUMBING PIPING IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES TO ENSURE THAT PIPING COMPLIES WITH REQUIREMENTS AND SERVES INTENDED PURPOSES.

B. ROUTE PIPING IN AN ORDERLY MANNER, PLUMB AND PARALLEL TO BUILDING STRUCTURE. MAINTAIN GRADIENT. SLOPE PIPING AND ARRANGE SYSTEMS TO DRAIN. IN DOMESTIC WATER SYSTEMS, PROVIDE DRAIN VALVES AT MAIN SHUT-OFF VALVES AND ALL LOW POINTS IN PIPING.

C. USE EXISTING CONNECTIONS AT MAINS WHERE AVAILABLE FOR NEW BRANCH PIPING. LOCATE ALL RISERS AND PIPING BEFORE CONSTRUCTION COMMENCES AND TAKE CARE NOT TO DAMAGE SAME. ANY DAMAGE OCCURRING TO THE EXISTING PIPING WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

2.03 INSULATION

COVER ALL HOT WATER AND HOT WATER RECIRCULATION PIPE WITH 1" THICK FOR PIPE SIZE UP TO 1½" AND 1½" THICK FOR PIPE SIZE GREATER THAN 1½". INSTALL ALL INSULATION AS PER MANUFACTURERS RECOMMENDATIONS. ALL PIPE INSULATION SHALL COMPLY WITH 2018 INTERNATIONAL ENERGY CONSERVATION CODE.

3. TESTING

A. AT THE COMPLETION OF THE PLUMBING WORK, COMPLETELY TEST THE ENTIRE INSTALLATION OF ALL SYSTEMS FOR PROPER OPERATION AND COMPLIANCE WITH APPLICABLE CODES AND LOCAL REQUIREMENTS. CORRECT ALL DEFICIENCIES FOUND.

B. TESTING OF THE INSTALLED SYSTEMS SHALL BE MADE BY THE CONTRACTOR IN THE PRESENCE OF A REPRESENTATIVE OF THE OWNER.

C. THE CONTRACTOR SHALL NOT COVER UP OR PERMANENTLY CONCEAL PIPING, DEVICES OR ANY PORTION OF NEWLY CONSTRUCTED PLUMBING SYSTEM(S) UNTIL SUCH SYSTEM, OR PORTION OF THE SYSTEM, HAS BEEN TESTED IN THE PRESENCE OF A REPRESENTATIVE OF THE OWNER AND INSPECTED BY THE LOCAL INSPECTOR AND APPROVED IN WRITING, EXCEPT PIPING PASSING THROUGH FLOORS, WALLS, PARTITIONS, OR BEAMS, FOR DISTANCES EQUAL TO THE THICKNESS OF SUCH FLOOR, WALL, PARTITION OR BEAM.

D. THIS CONTRACTOR SHALL NOTIFY THE VARIOUS DEPARTMENTS, BUREAUS AND INDIVIDUALS AT LEAST TWO WEEKS IN ADVANCE OF THE TIME THAT THE TESTS ARE TO BE CONDUCTED.

E. ALL DEFECTIVE PARTS SHALL BE REPLACED OR CORRECTED BY THIS CONTRACTOR AND AN EXTRA TEST OR TESTS SHALL BE MADE UNTIL THE OPERATION IS SATISFACTORY. ALL ARRANGEMENTS AND EXPENSES NECESSARY TO CONDUCT ALL TESTS REQUIRED BY THESE SPECIFICATIONS AND THE VARIOUS AGENCIES HAVING JURISDICTION OVER THE WORK INSTALLED UNDER THIS CONTRACT SHALL BE MADE BY THIS CONTRACTOR. NO EXTRA COMPENSATION WILL BE ALLOWED FOR THESE TESTS, THE COST THEREOF BEING INCLUDED IN THE LUMP SUM BID FOR THIS CONTRACT.

F. WHERE ANY EVIDENCE OF STOPPAGE IS FOUND IN PIPING OR EQUIPMENT, THIS CONTRACTOR SHALL DISCONNECT, CLEAN, REPAIR AND RECONNECT ALL OBSTRUCTED PIPING OR EQUIPMENT AND SHALL ALSO PAY FOR ALL NECESSARY CUTTING AND REPAIRS TO ADJOINING WORK.

G. ALL PIPING AND EQUIPMENT SHALL BE THOROUGHLY CLEANED INSIDE AND OUT, OF DIRT, CUTTINGS, OILS AND OTHER FOREIGN SUBSTANCES AND SHALL BE LEFT CLEAN.

H. ALL REQUIRED TESTS SHALL BE WITNESSED BY LOCAL AUTHORITIES AND THE OWNER'S REPRESENTATIVE.

I. ALL EQUIPMENT WILL BE FACTORY TESTED.

J. CONTRACTOR SHALL IDENTIFY TO THE OWNER'S REPRESENTATIVE ANY LEAKS OR DAMAGE THAT OCCURS AS A RESULT OF SYSTEM TESTING. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO LIMIT ANY POTENTIAL DAMAGE. CORRECTIVE ACTION REQUIRED AS A RESULT OF TESTING SHALL BE PERFORMED IMMEDIATELY AND AT THE CONTRACTOR'S EXPENSE.

L. REPORT IN WRITING TO AUTHORITIES HAVING JURISDICTION, THE ARCHITECT AND THE OWNER THE RESULTS OF ALL TESTING.

M. TESTING REQUIREMENTS

- a. TEST ALL DOMESTIC WATER PIPING HYDROSTATICALLY TO 125 PSIG.
- b. HYDROSTATIC TEST PRESSURES SHALL REMAIN CONSTANT WITH NO VARIATION FOR 120 MINUTES.
- c. TESTS SHALL BE WITNESSED BY THE BUILDING ENGINEER.
- d. THE PLUMBING CONTRACTOR WILL BE HELD RESPONSIBLE FOR ALL DAMAGE DUE TO TEST FAILURES AND LEAKAGE IN THE TEST AREA AND ADJACENT TENANT OR ESB SPACES.

N. REFILL ENTIRE POTABLE HOT AND COLD WATER SUPPLY SYSTEM WITH CHLORINE SOLUTION (HTH OLN CHEMICAL CORP.) AT A STRENGTH TO MEET STANDARDS OF THE DEPARTMENT OF HEALTH, AND FOR A PERIOD OF RETENTION AS STIPULATED.

O. THOROUGHLY FLUSH PIPING SYSTEM WITH FRESH WATER IMMEDIATELY PRIOR TO FINAL ACCEPTANCE.

4. WARRANTY

A. EQUIPMENT, MATERIALS AND WORKMANSHIP FURNISHED UNDER THIS CONTRACT SHALL BE GUARANTEED BY THE CONTRACTOR FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE WORK BY THE OWNER. THE CONTRACTOR SHALL KEEP THE WORK IN GOOD REPAIR FOR ONE YEAR AFTER THE DATE OF FINAL APPROVAL. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, PROMPTLY CORRECT AND REPAIR ANY AND ALL BREAKS, FAILURES OR WEAR DUE TO FAULTY MATERIALS, WORKMANSHIP OR EQUIPMENT. ALL SETTLEMENTS OF SURFACES THAT MAY OCCUR WITHIN THAT PERIOD SHALL ALSO BE PROMPTLY REPAIRED.

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TENANT FINISH FOR
FITNESS TOGETHER
LEAWOOD KS

PROJECT NO FT2501

START DATE 03.28.2025

DRAWN BY NYE

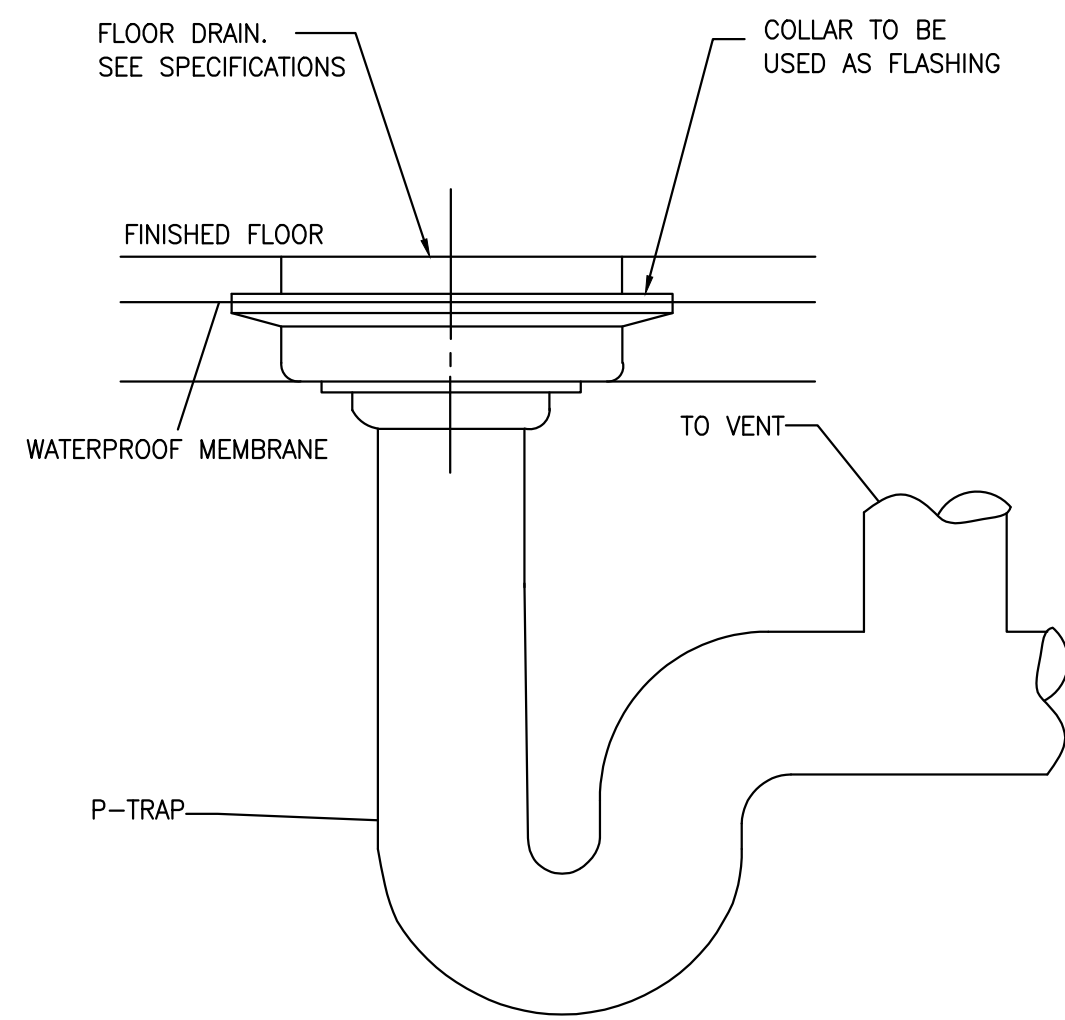
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NO.	DESCRIPTION	DATE
1	PERMIT	04.08.2025

PLUMBING SPECIFICATIONS

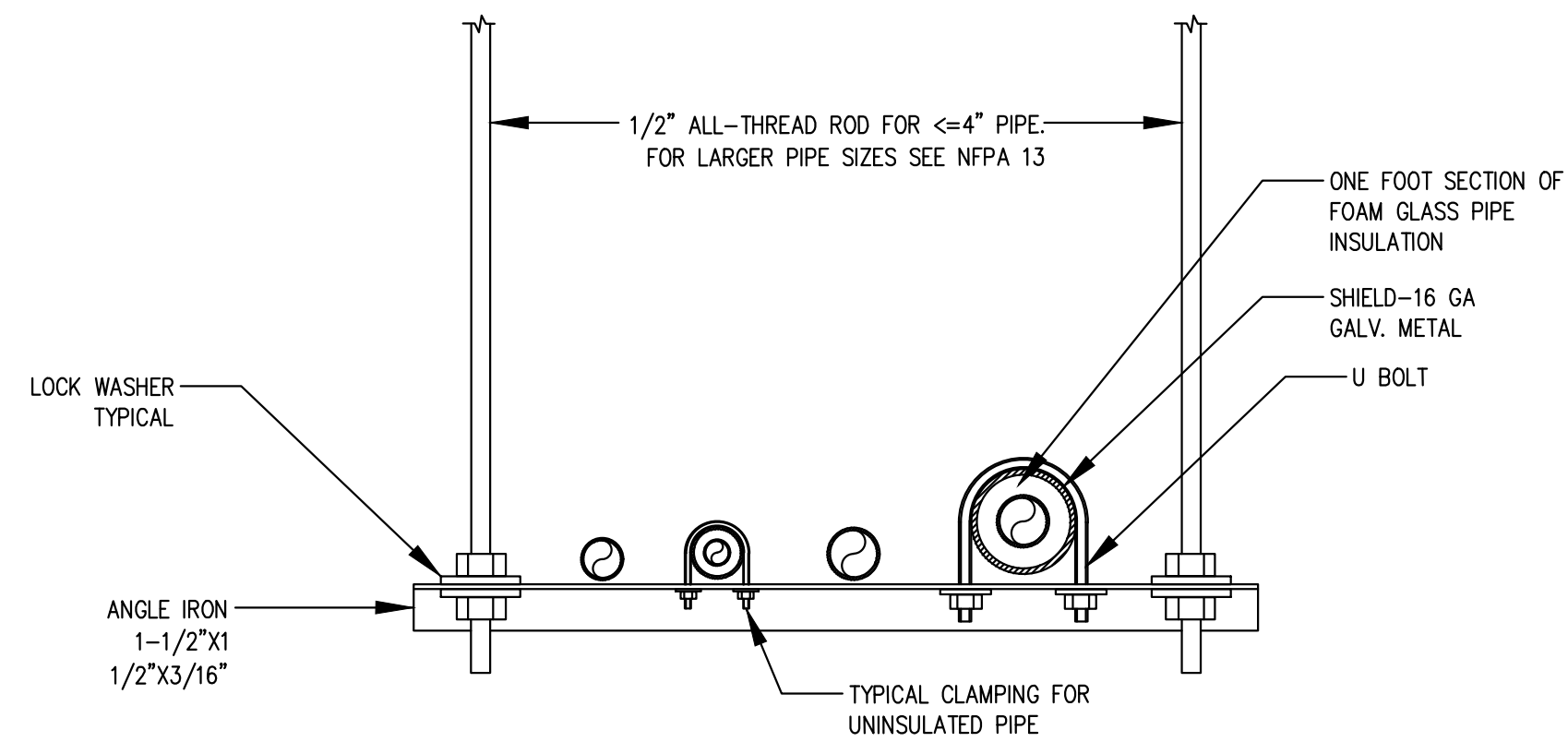
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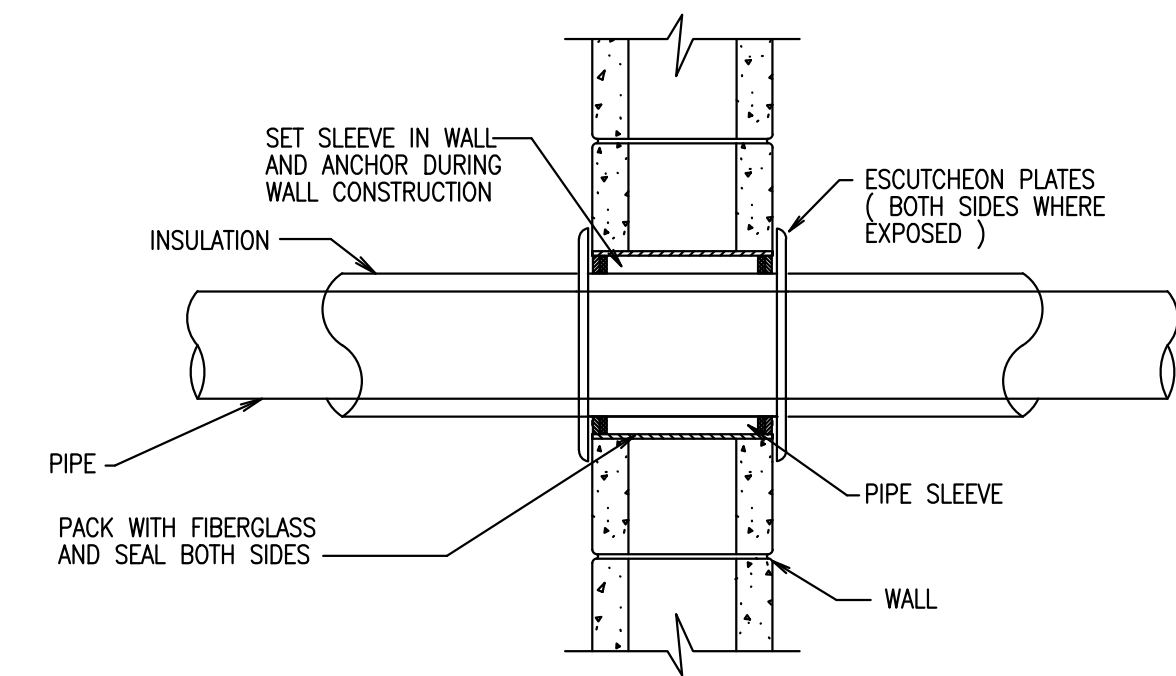
1 FLOOR DRAIN DETAILS

NTS



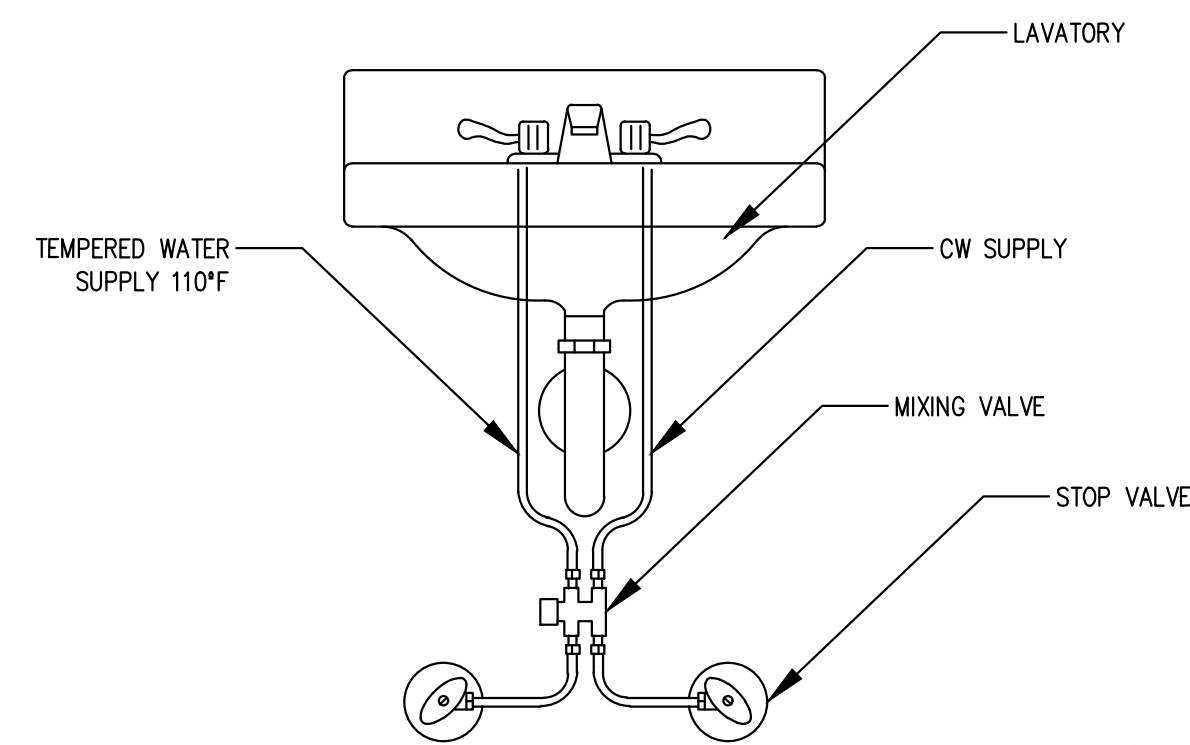
2 PIPE HANGER DETAILS

NTS



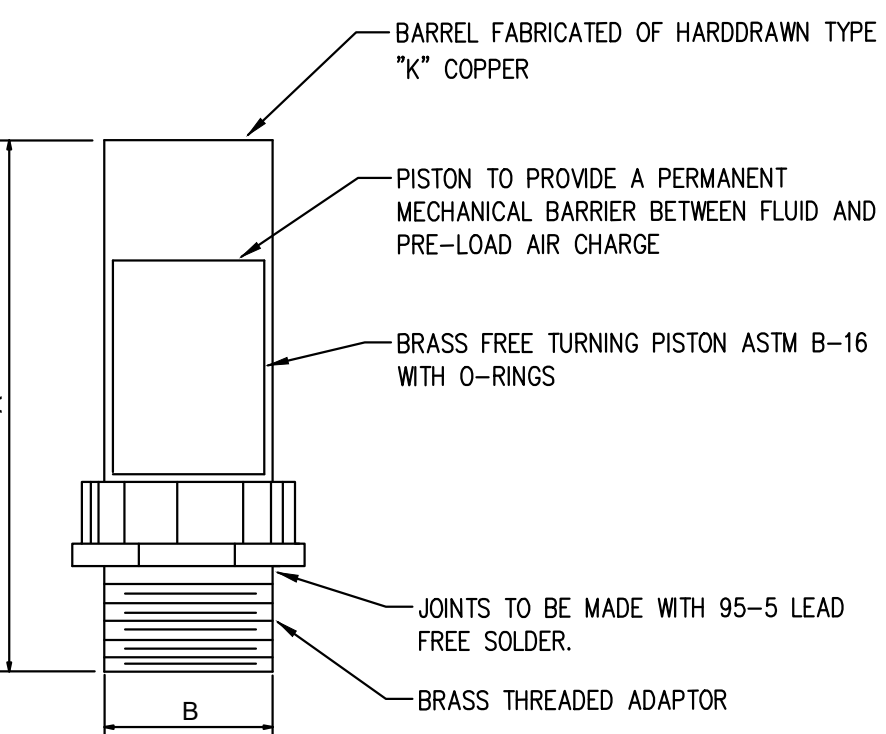
3 PIPE SLEEVE THROUGH INTERIOR WALL DETAIL

NTS



4 MXV - MIXING VALVE DETAIL

NTS

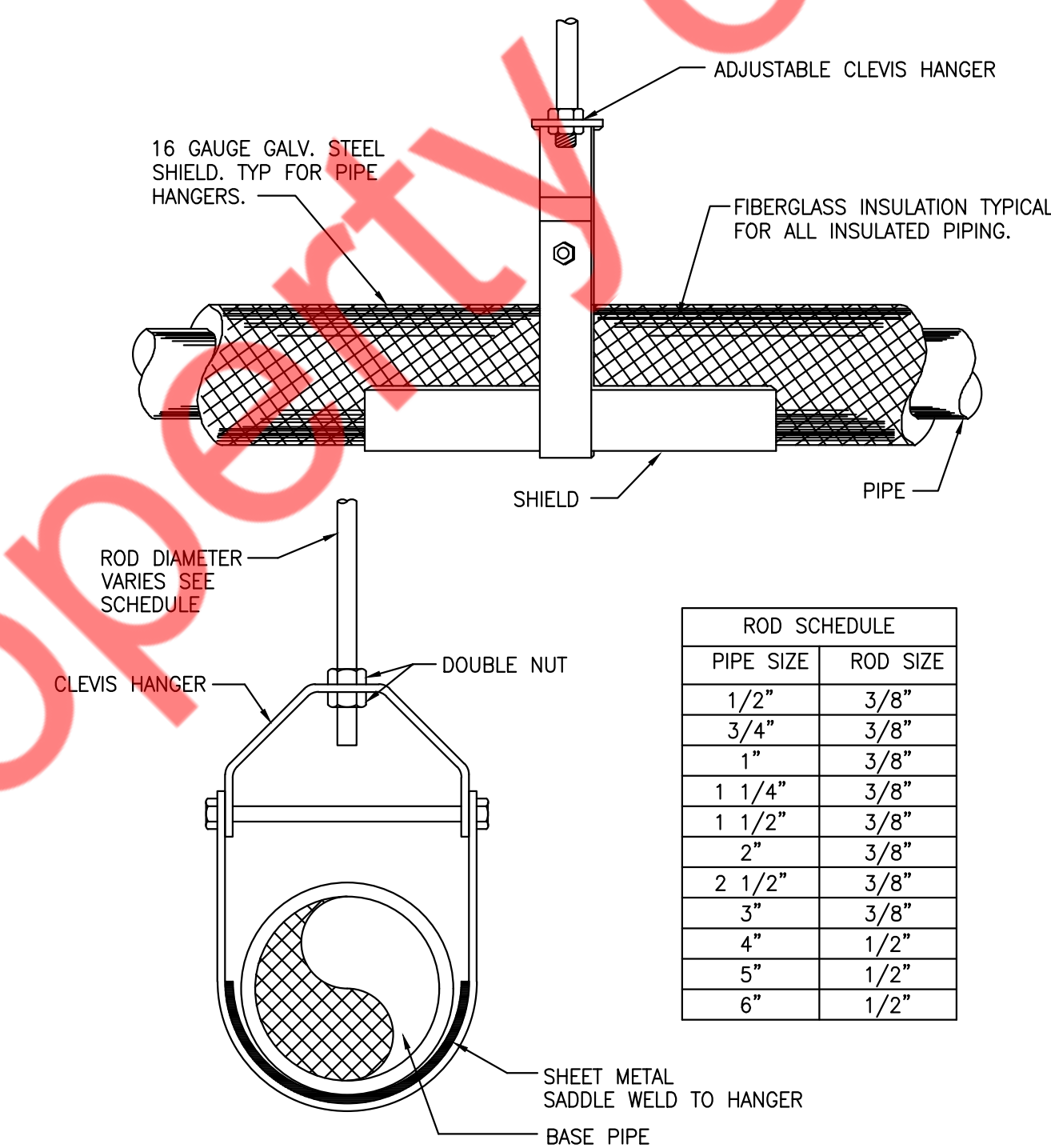


5 WATER HAMMER ARRESTOR DETAILS

NTS

PIPE SIZE	P.D.I. SYMBOL	FIXTURE UNIT RATINGS	A SIZE	B SIZE
1/2"	A	1 - 11	5"	1/2"
3/4"	B	12 - 32	5"	3/4"
1"	C	33 - 60	7"	1"
1-1/4"	D	61 - 113	7"	1-1/4"
1-1/2"	E	114 - 154	9"	1-1/2"
2"	F	155 - 330	9"	2"

NOTE: LOCATE ONE FOR EACH BANK OF FLUSHOMETER FIXTURES AT LAST FIXTURE PROVIDE A STAINLESS STEEL ACCESS DOOR FOR EACH SUFFICIENT IN SIZE TO ALLOW REPLACEMENT OF ARRESTOR AT A FUTURE DATE.

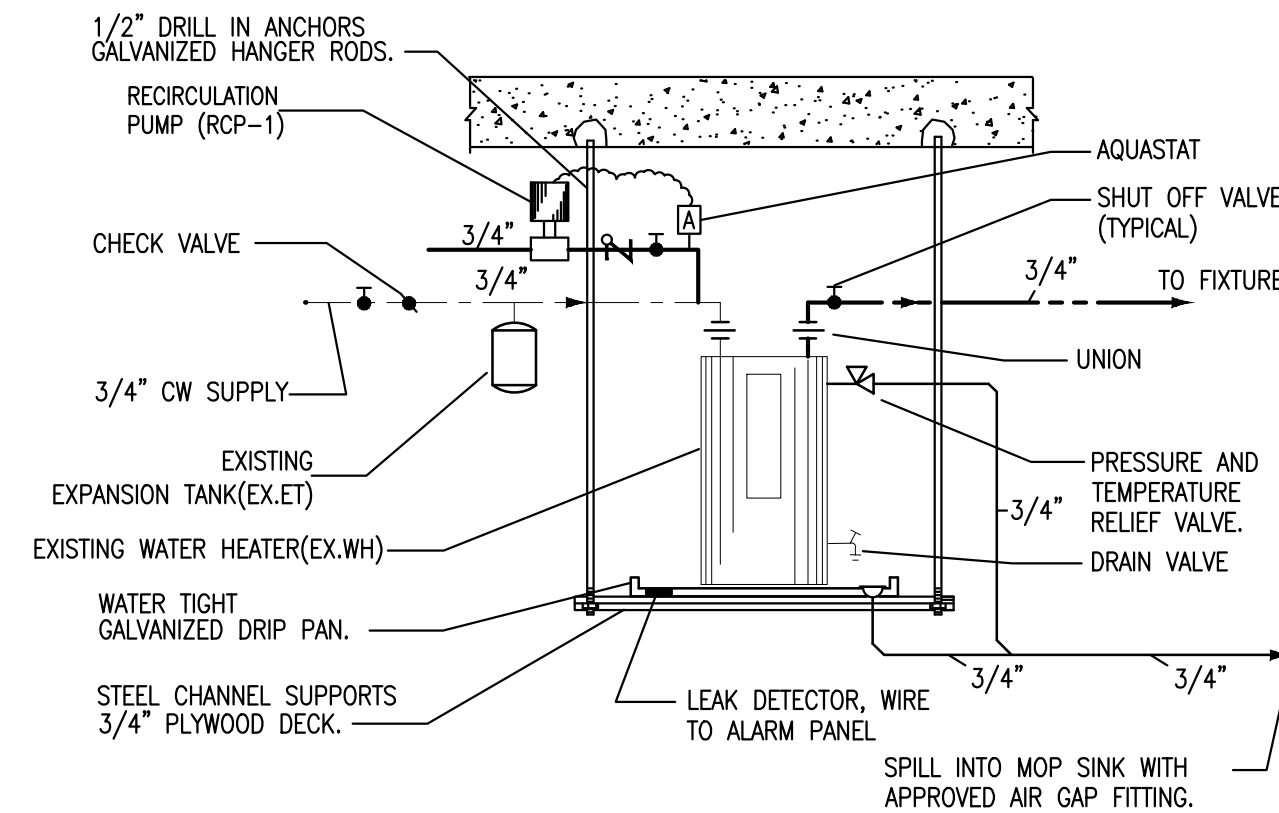


6 HANGER DETAILS

NTS

PIPE SIZE	ROD SIZE
1/2"	3/8"
3/4"	3/8"
1"	3/8"
1 1/4"	3/8"
1 1/2"	3/8"
2"	3/8"
2 1/2"	3/8"
3"	3/8"
4"	1/2"
5"	1/2"
6"	1/2"

PLUMBING FIXTURE SCHEDULE							
MARK(S)	DESCRIPTION	MANUFACTURER / MODEL NO.	CW	HW	WASTE	VENT	REMARKS
WATER HEATERS, EXPANSION TANKS, RECIRCULATION PUMPS							
EX.WH	EXISTING WATER HEATER	AO SMITH MODEL DEL-15	-	-	-	-	EXISTING TO REMAIN
EX.ET	EXISTING EXPANSION TANK	EXISTING TO REMAIN	-	-	-	-	EXISTING TO REMAIN
RCP-1	RECIRCULATION PUMP	TACO MODEL 006	3/4"	-	-	-	CARTRIDGE CIRCULATOR, BALANCE TO PROVIDE 2.5 GPM AGAINST 7 FEET OF H2O. TIME CLOCK TO CONTROL DURING OCCUPIED HOURS. PROVIDE TACO TEMPERATURE CONTROLLED AQUASTAT TO CONTROL PUMP.
TOILET							
WC	WATER CLOSET / ADA	KOHLER K-3810	3/4"	-	4"	2"	ELONGATED BOWL, 3/4"CW SUPPLY, ADA COMPLIANT
LAVATORIES							
LAV	LAVATORY, WALL MOUNTED	KOHLER SOHO K-2084	1/2"	1/2"	2"	1-1/2"	ADA COMPLIANT, SINGLE HOLE ON 4" CENTER, KOHLER JULY K-9782-4-CP FAUCET, 1/2 GPM FLOW LIMITERS, INSTALL CONBRACO MVD TEMPERATURE LIMITING DEVICE BELOW SINK.
FLOOR DRAIN							
FD	FLOOR DRAIN	JR SMITH 2005 SERIES	-	-	3"	2"	DEEP SEAL TRAP, ROUND TOP, MEDIUM DUTY GRATE. INSTALL "WATERLESS" TRAP PRIMER EQUAL TO PROSET TRAP GUARD WITH ELASTOMERIC MEMORY MATERIAL IN ALL FLOOR DRAINS. FOLLOW ALL MANUFACTURER INSTRUCTIONS FOR INSTALLATION OF THE TRAP GUARD.
SERVICE SINKS							
MS	MOP SINK	AMERICAN STANDARD MSBGTG2424100	1/2"	1/2"	3"	2"	24" x 24" FIAT MODEL 830-AA UTILITY FAUCET W/ VACUUM BREAKER AND PAIL HOOK DEEP SEAL TRAP, ACID-RESIST INTERIOR AND GRATE, CAST IRON.
SINKS							
BS	BREAK ROOM SINK	ELKAY GECR 2521	1/2"	1/2"	2"	1-1/2"	SINGLE HOLE ADA COMPLIANT, P-TRAP WITH CLEAN OUT, 25 X 21 BOWL, MOEN 7864EW OR EQUAL TOUCHLESS KITCHEN FAUCET 1/2 HP WASTE KING DISPOSAL, STAINLESS STEEL SINK.



7 WATER HEATER DETAILS

NTS

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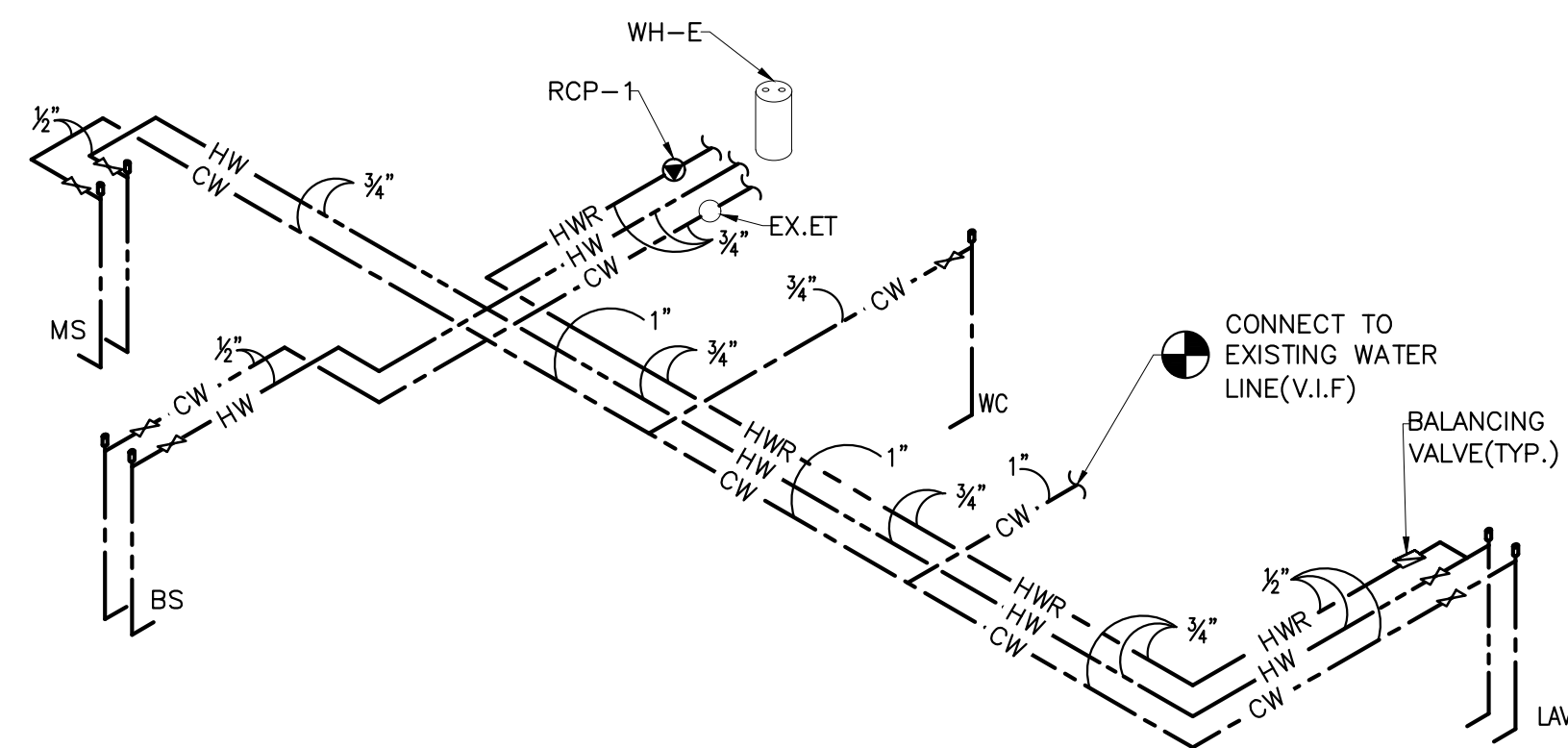
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LEAWOOD KS

PROJECT NO	FT2501	
START DATE	03.28.2025	
DRAWN BY	NYE	
CHECKED BY	NYE	
NO.	DESCRIPTION	DATE
1	PERMIT	04.08.2025

PLUMBING DETAILS
AND SCHEDULE

P0.3

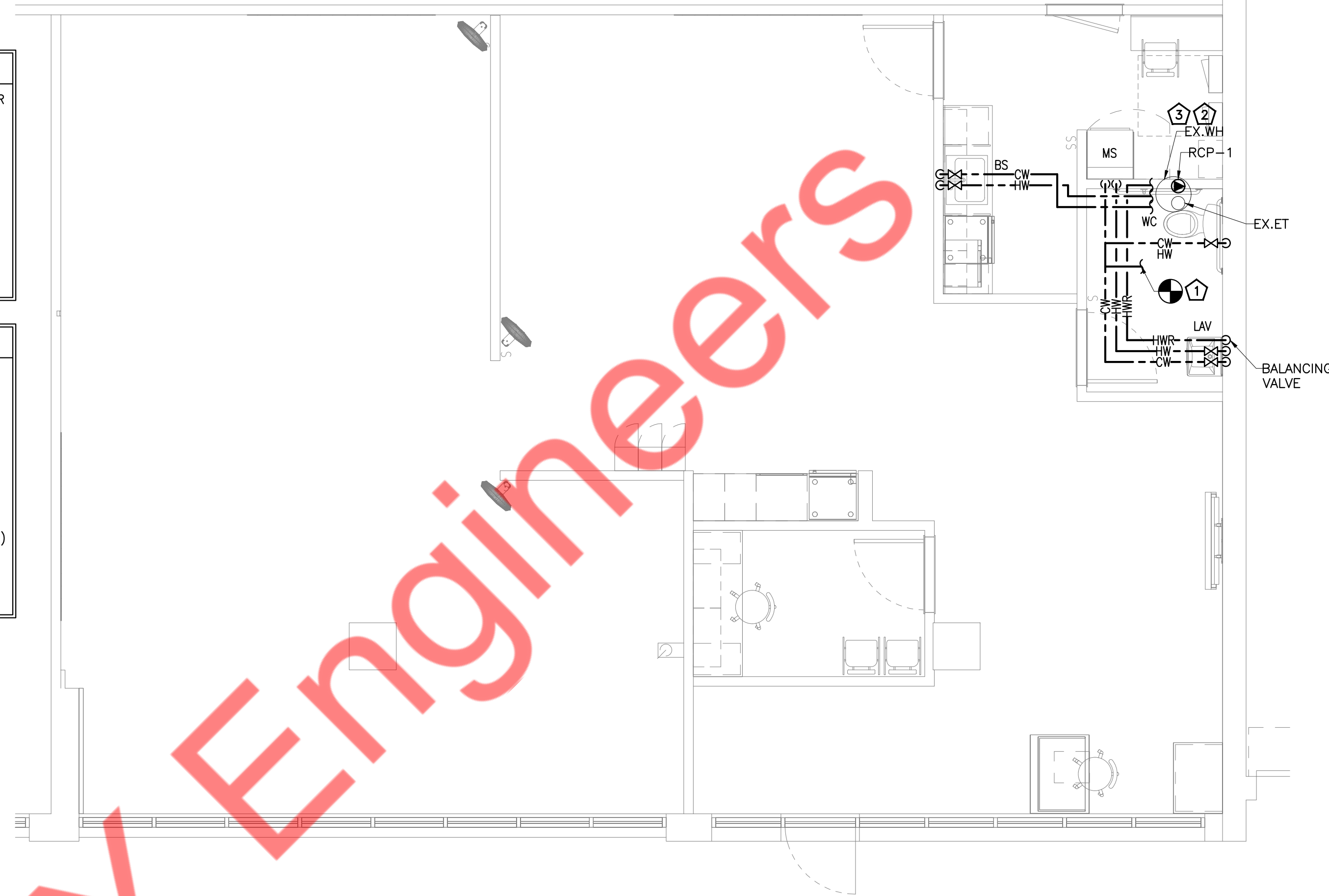
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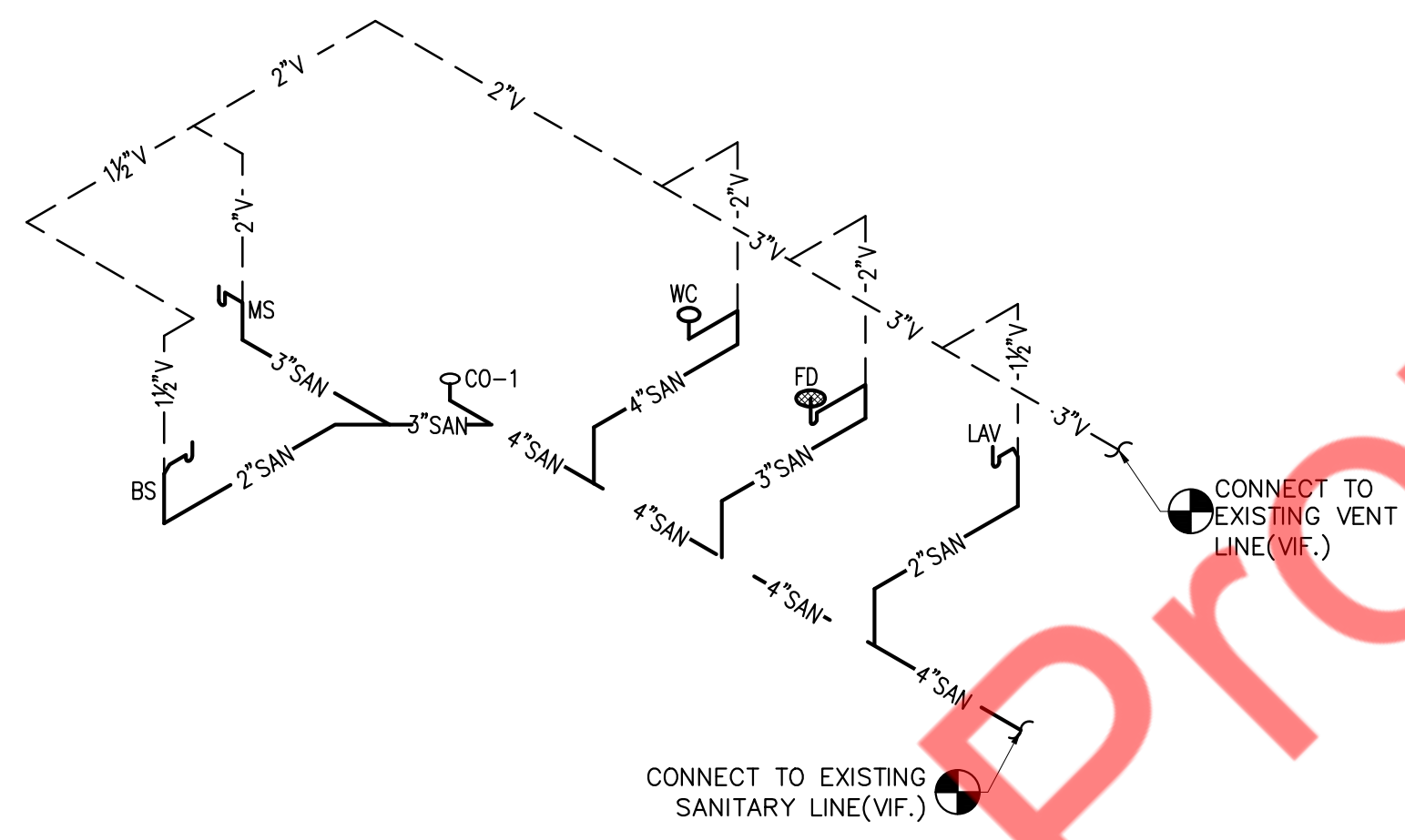
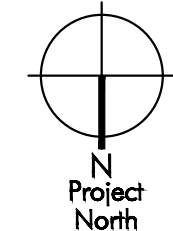
3 PLUMBING WATER RISERS
P1.0 SCALE: NTS

- GENERAL NOTES**
1. CW/HW/HWR PIPING TO BE PROVIDED WITH INSULATION AS PER 2018 INTERNATIONAL ENERGY CONSERVATION CODE (REFER SHEET P0.1).
 2. PROVIDE BRANCH PRV IF PRESSURE EXCEEDS 80 PSI.
 3. CONTRACTOR TO FIELD VERIFY FEASIBILITY OF SLAB PENETRATION AS PER STRUCTURAL REQUIREMENT.
 4. PROVIDE ACCESS PANELS FOR WATER HAMMER ARRESTOR, SHUT-OFF VALVES AS REQUIRED.
 5. REFER RISER DIAGRAM FOR WATER PIPE SIZING.

- WATER PLAN KEY NOTES**
1. CONNECT NEW 1" COLD WATER PIPING TO EXISTING COLD WATER PIPING WITH EXISTING WATER METER. CONTRACTOR TO FIELD VERIFY EXACT SIZE AND LOCATION OF THE EXISTING WATER PIPING AND WATER METER ON SITE AND MAKE NECESSARY CHANGES IF REQUIRED.
 2. EXISTING WATER HEATER (EX.HW) TO RELOCATE AS SHOWN IN PLAN WITH EXISTING EXPANSION TANK (EX.ET) AND ASSOCIATED ACCESSORIES AND FITTINGS. CONTRACTOR TO FIELD VERIFY THE CONDITION OF EXISTING WATER HEATER AND PROVIDE NECESSARY ACCESSORIES IF REQUIRED. CONTRACTOR TO PROVIDE NEW RECIRCULATION PUMP (RCP-1) AS PER SCHEDULE. CONTRACTOR NOTIFY ENGINEER IF EXISTING WATER HEATER IS NOT IN WORKING CONDITION.
 3. ROUTE WATER HEATER DRAIN TO MOP SINK.



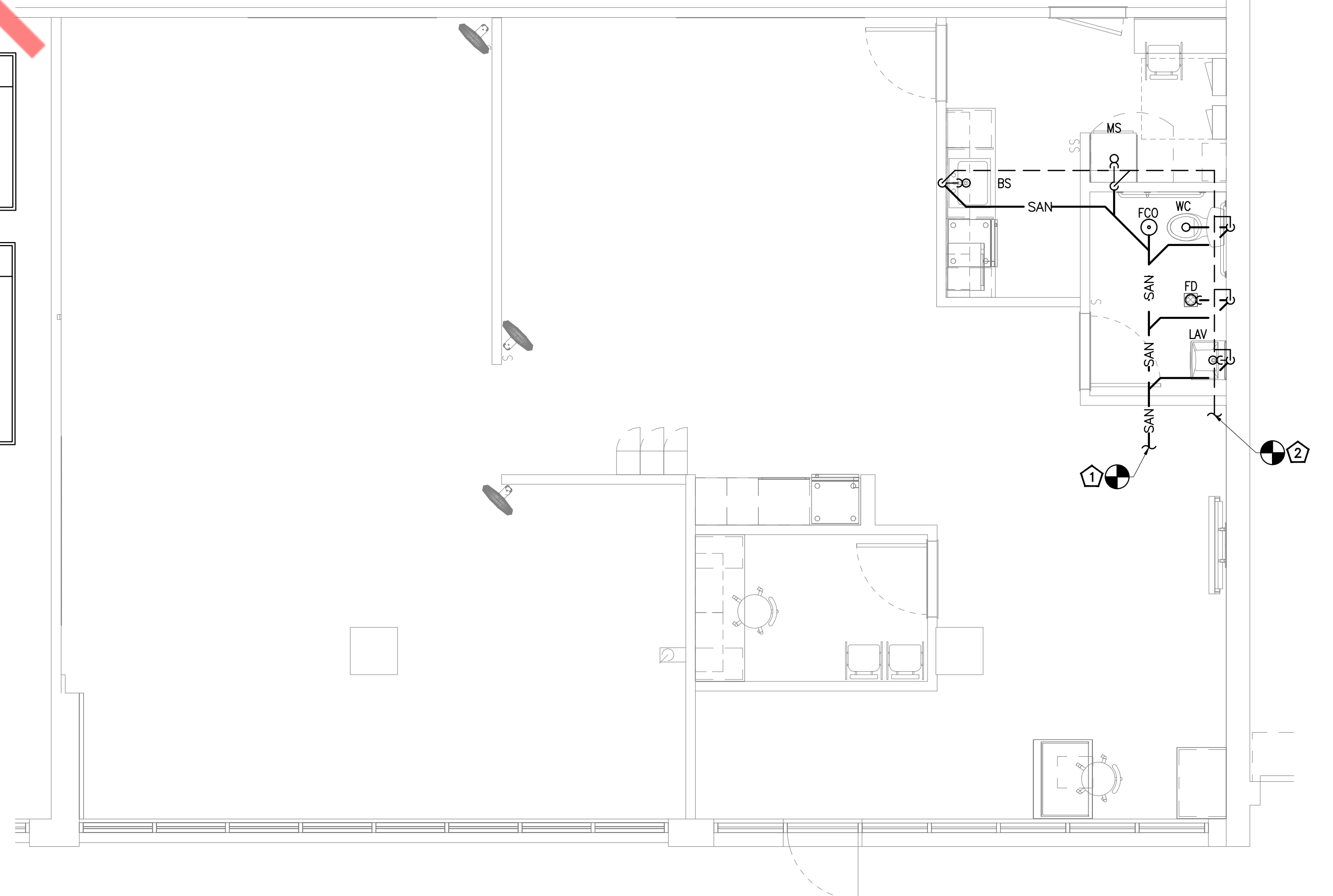
1 PLUMBING WATER PLAN
P1.0 SCALE: 1/4"=1'-0"



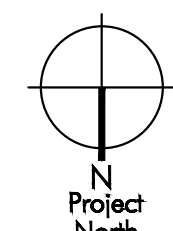
4 PLUMBING SANITARY RISERS
P1.0 SCALE: NTS

- GENERAL NOTES**
1. PROVIDE TRAP GUARD FOR ALL FLOOR DRAINS.
 2. CONTRACTOR TO FIELD VERIFY THE EXISTING SANITARY PIPING SIZE, LOCATION & INVERT ON SITE.
 3. CONTRACTOR TO FIELD VERIFY FEASIBILITY OF SLAB PENETRATION AS PER STRUCTURAL REQUIREMENT.

- WASTE AND VENT PLAN KEY NOTES**
1. CONNECT NEW 4" SANITARY LINE TO EXISTING SANITARY PIPE OF ADEQUATE SIZE IN SPACE. CONTRACTOR TO FIELD VERIFY THE SIZE, LOCATION & INVERT OF EXISTING SANITARY LINE AND MAKE NECESSARY CHANGES IF REQUIRED.
 2. CONNECT NEW 3" VENT PIPE TO EXISTING VENT PIPE OF ADEQUATE SIZE IN SPACE. CONTRACTOR TO FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING VENT PIPE ON SITE AND MAKE NECESSARY CHANGES IF REQUIRED.



2 PLUMBING SANITARY AND VENT PLAN
P1.0 SCALE: 1/4"=1'-0"



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TENANT FINISH FOR
**FITNESS TOGETHER
LEAWOOD KS**

PROJECT NO	FT2501	
START DATE	03.28.2025	
DRAWN BY	NYE	
CHECKED BY	NYE	
NO.	DESCRIPTION	DATE
1	PERMIT	04.08.2025

PLUMBING SANITARY,
VENT AND WATER PIPING
PLAN AND RISERS

P1.0
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LIGHTING	
	LED LIGHTING FIXTURE AND OUTLET BOX. HALF SHADED FIXTURE OR "EM" INDICATES FIXTURES WITH INTEGRAL BATTERY PACK FOR EMERGENCY SERVICE, U.O.N.
	LUMINAIRE TYPE : INDICATE BY LIPPERCASE LETTER SEE LIGHTING EXTURE SCHEDULE.
	CIRCUIT NUMBER : INDICATED BY NUMBER
	SWITCHING INDICATED BY LOWER CASE LETTERS.
	EM DENOTES LUMINAIRE ON EMERGENCY CIRCUIT.
	NL DENOTES FIXTURES DESIGNATED AS NIGHTLIGHT, WIRED TO 24 HOURS UNSWITCHED CIRCUIT.
	CEILING/WALL MOUNTED SELF POWERED EXIT LIGHT FIXTURE WITH DIRECTIONAL ARROWS AS INDICATED. SHADED AREA DENOTES FACE(S). ISOLITE ELITE SERIES LED EXIT SIGN

SWITCHES AND CONTROLS	
	20A WALL SWITCH
	WALL MOUNTED OCCUPANCY SWITCH
	DIMMER WALL SWITCH

WIRING SYSTEMS	
	POWER OR LIGHTING CIRCUITRY HOMERUN WITH PANELBOARD DESIGNATION, NUMBER WHERE USED INDICATES CIRCUIT NUMBER. IT SHALL CONSISTS OF 1#12 Ø, 1#12 N. & 1#12 G. IN 3/4"Ø, UNLESS OTHERWISE NOTED.
	POWER OR LIGHTING CIRCUITRY HOMERUN WITH PANELBOARD DESIGNATION, NUMBER WHERE USED INDICATES CIRCUIT NUMBER. IT SHALL CONSISTS OF 2#12 Ø, 2#12 N. & 2#12 G. IN 3/4"Ø, UNLESS OTHERWISE NOTED.
	POWER OR LIGHTING CIRCUITRY HOMERUN WITH PANELBOARD DESIGNATION, NUMBER WHERE USED INDICATES CIRCUIT NUMBER. IT SHALL CONSISTS OF 3#12 Ø, 3#12 N. & 3#12 G. IN 3/4"Ø, UNLESS OTHERWISE NOTED.

ELECTRICAL DRAWING LIST	
E0.1	ELECTRICAL SYMBOL LIST, ABBREVIATIONS
E0.2	ELECTRICAL SPECIFICATIONS (SHEET 1 OF 2)
E0.3	ELECTRICAL SPECIFICATIONS (SHEET 2 OF 2)
E1.0	ELECTRICAL LIGHTING PLAN
E2.0	ELECTRICAL FLOOR AND ROOF PART POWER PLAN
E4.0	ELECTRICAL DETAILS
E5.0	ELECTRICAL RISER DIAGRAM & PANEL SCHEDULE
E6.0	ENERGY ANALYSIS

POWER AND TELECOMMUNICATION	
	JUNCTION BOX WITH BLANK COVER PLATE.
	DUPLEX CONVENIENCE RECEPTACLE.
	GFI DUPLEX CONVENIENCE RECEPTACLE.
	DOUBLE DUPLEX RECEPTACLE - 20A-1P, 125V, NEMA 5-20R.
	DATA OUTLET - (1) PORT UNO, +18" AFF, UNO TEL / DATA OUTLET TO BE PROVIDED WITH 1" CONDUIT U.O.N. TO H.C. AND TERMINATED WITH 90 DEGREE ELBOW AND BUSHING. TEL / DATA OUTLET PLATE SHALL BE PROVIDED WITH 1 1/4" DIAMETER GROMMETED OPENING.

MOTORS AND CONTROLS	
	30A/240V NON FUSED DISCONNECT SWITCH
	60A/240V NON FUSED DISCONNECT SWITCH
	MANUAL MOTOR SWITCH
	MOTORIZED DAMPER

ANNOTATION	
	+24" INDICATES MOUNTING HEIGHT, CENTER LINE TO FINISHED FLOOR.
	KEYED NOTE REFERENCE
	DETAIL REFERENCE: DETAIL NUMBER INDICATED ON TOP; DRAWING NUMBER INDICATED ON BOTTOM

POWER DISTRIBUTION	
	DISTRIBUTION PANELBOARD, 208Y/120V-SURFACE OR FLUSH MOUNTED.

CODE COMPLIANCE	
ALL WORK AND MATERIAL SHALL BE PERFORMED AND INSTALLED IN COMPLIANCE WITH THE FOLLOWING CODES AS ADOPTED AND AMENDED BY THE INSPECTING AUTHORITY, NOTHING IN THESE DRAWINGS IS TO BE CONSTRUCTED TO PERMIT WORK NOT CONFORMING TO THESE CODES OR OTHERS APPLICABLE TO THESE PROJECT:	
A.	2018 INTERNATIONAL BUILDING CODE
B.	2018 INTERNATIONAL MECHANICAL CODE
C.	2018 INTERNATIONAL PLUMBING CODE
D.	2018 INTERNATIONAL ENERGY CONSERVATION CODE
E.	2017 NATIONAL ELECTRICAL CODE
F.	2018 INTERNATIONAL FUEL GAS CODE

ELECTRICAL ABBREVIATIONS			
A	AMPERES	EA	EACH
A/C, AC	ABOVE COUNTER	EC	EMPTY CONDUIT/ ELECTRICAL CONTRACTOR
AF	AMPERE FRAME/AMP FUSE	EF	EXHAUST FAN
AFF	ABOVE FINISHED FLOOR	EM	EMERGENCY
AS	AMP SWITCH	EMT	ELECTRICAL METALLIC TUBING
AIC	AMPS INTERRUPTING CAPACITY	EQUIP	EQUIPMENT
AT	AMP TRIP	ER	EXISTING TO BE RELOCATED
ATS	AUTOMATIC TRANSFER SWITCH	ETR	EXISTING TO REMAIN
AUTO	AUTOMATIC	EFW	ELECTRIFIED WORKSTATION FURNITURE
AWG	AMERICAN WIRE GAUGE	EWH	ELECTRIC WATER HEATER
C	CONDUIT	FA	FIRE ALARM
C/B,CB	CIRCUIT BREAKER	FBO	FURNISHED BY OTHERS, INSTALLED & WIRED BY EC
CKT	CIRCUIT	FDR	FEEDER
CLG	CEILING	FIBO	FURNISHED & INSTALLED BY OTHERS, WIRED BY EC
COMM	COMMUNICATION	FIXT	FIXTURE
CT	CURRENT TRANSFORMER	FL	FLOOR
CU	COPPER	FLUOR	FLUORESCENT
*C	DEGREE CELSIUS	G	GROUND
*F	DEGREE FAHRENHEIT	GFI	GROUND FAULT INTERRUPTER
DIA	DIAMETER	GP	GENERAL PURPOSE
DISC	DISCONNECT	HC	HUNG CEILING
DN	DOWN	HP	HORSEPOWER
DP	DISTRIBUTION PANEL	HW	HOW WATER HEATER
DWH	DOMESTIC WATER HEATER	HZ	HERTZ
DWG	DRAWING	IC	INTERRUPTING CAPACITY
JB	JUNCTION BOX	PP	POWER PANEL
KCMIL	ONE THOUSAND CIRCULAR MILS	PVC	POLYVINYL CHLORIDE
KV	KILOVOLT	PWR	POWER
KVA	KILOVOLT-AMPERES	R	REMOVE
KW	KILOWATTS	RE	RELOCATED EXISTING
LP	LIGHTING PANEL	REC	RECEPTACLE
LTG	LIGHTING	RGS	RIGID GALVANIZED STEEL
MAX	MAXIMUM	RR	REMOVE & RELOCATE
MC	MOTOR CONTROLLER	SECT	SECTION
MCB	MAIN CIRCUIT BREAKER	SPDT	SINGLE POLE DOUBLE THROW
MER	MECHANICAL EQUIPMENT ROOM	SPST	SINGLE POLE SINGLE THROW
MIN	MINIMUM	SPEC	SPECIFICATION
MLO	MAIN LUGS ONLY	SW	SWITCH
MTD	MOUNTED	SWBD	SWITCHBOARD
MTS	MANUAL TRANSFER SWITCH	SYM	SYMMETRICAL
N	NEUTRAL	SYS	SYSTEMS
NE	NEW DEVICE TO REPLACE EXISTING	TELE	TELEPHONE
NIC	NOT IN CONTRACT	TEMP	TEMPERATURE
NL	NIGHT LIGHT	TXF	TOILET EXHAUST FAN
NTS	NOT TO SCALE	TYP	TYPICAL
OC	ON CENTER	UON	UNLESS OTHERWISE NOTED
P	POLES	V	VOLT/VOLTAGE
PB	PULLBOX	VA	VOLT AMPERE
PC	PERSONAL COMPUTER	VAV	VARIABLE AIR VOLUME
Ø	PHASE	VFD	VARIABLE FREQUENCY DRIVE
PNL	PANEL	VP	VAPORPROOF
W	WATT	WP	WEATHER PROOF
W	WIRE	XFMR	TRANSFORMER
WH	WALL HEATER	ZRT	ZONE REGISTER TERMINALS
E	EXISTING	IG	ISOLATED GROUND
TR	TAMPER RESISTANCE		

GENERAL NOTES (APPLY TO ALL "E" DRAWINGS)	
1.	ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE CURRENT VERSION OF THE 2017 NATIONAL ELECTRICAL CODE, LOCAL JURISDICTION REQUIREMENTS, AND ALL GOVERNING LOCAL CODES, LAWS, AND REGULATIONS.
2.	CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS THAT MAY AFFECT THE WORK. NO ADDITIONAL COMPENSATION WILL BE CONSIDERED FOR FAILURE TO DO SO.
3.	CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, TEST REPORTS, AND CERTIFICATIONS FOR TEMPORARY AND FINAL CERTIFICATE OF OCCUPANCY.
4.	FIRE STOP ALL PENETRATIONS OF FIRE RATED CONSTRUCTION IN A CODE APPROVED MANNER IN ORDER TO MAINTAIN FIRE RATING. ALL PENETRATIONS SHALL BE SLEEVED AND SEALED WATERTIGHT.
5.	SECURE ALL SUPPORTS TO BUILDING STRUCTURE UTILIZING TOGGLE BOLTS (HOLLOW MASONRY), EXPANSION SHIELDS OR INSERTS (CONCRETE AND BRICK), MACHINE SCREWS (METAL), BEAM CLAMPS (FRAMEWORK), WOOD SCREWS (WOOD) OR PAN THRU STRAPS (METAL DECK), NAILS, RAWL PLUGS AND WOOD PLUGS ARE NOT PERMITTED. WHERE REQUIRED BY STRUCTURE, PROVIDE THRU BOLTS AND FISH PLATES. SUPPORT HORIZONTAL RUNS OF METALLIC RACEWAYS NOT MORE THAN 10 FT APART. SUPPORT RACEWAY RISERS AT EACH FLOOR LEVEL. RUN EXPOSED RACEWAYS PARALLEL WITH OR AT RIGHT ANGLES TO WALLS.
6.	LEAVE WIRES WITH SUFFICIENT SLACK TO PERMIT MAKING FINAL CONNECTIONS. RACEWAYS OVER 10 FT LONG IN WHICH WIRING IS NOT INSTALLED: FURNISH FISH WIRE.
7.	VERIFY LOCATIONS OF OUTLETS AND SWITCHES IN FINISHED ROOMS WITH ARCHITECTURAL DRAWINGS OF INTERIOR DETAILS AND FINISH. IN CENTERING OUTLETS AND LOCATING BOXES AND OUTLETS, ALLOW FOR OVERHEAD PIPES, DUCTS AND MECHANICAL EQUIPMENT, EQUIPMENT, VARIATIONS IN FIREPROOFING AND PLASTERING, WINDOW AND DOOR TRIM, PANELING, HUNG CEILINGS AND THE LIKE. CORRECT ANY INACCURACY RESULTING FROM FAILURE TO DO SO WITHOUT EXPENSE TO OWNER.
8.	CONTRACTOR SHALL PROVIDE A WARRANTY ON ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE.
9.	ALL UNUSED MATERIALS AND DEBRIS SHALL BE LEGALLY REMOVED AND DISPOSED OF AWAY FROM THE PREMISES ON A DAILY BASIS.
10.	CONTRACTOR SHALL PATCH, PAINT, AND RESTORE EXISTING SURFACES DAMAGED DURING THE COURSE OF THIS CONSTRUCTION TO PRE-EXISTING CONDITIONS OR BETTER.
11.	MINIMUM SIZE OF CONDUIT SHALL BE 3/8", AND TYPE SHALL BE ELECTRICAL METALLIC TUBING (EMT), UNLESS OTHERWISE NOTED. PROVIDE NYLON DRAG LINE AND CONDUIT CAP FOR ALL EMPTY CONDUITS.
12.	CONNECT CONDUIT TO MOTOR CONDUIT TERMINAL BOXES WITH FLEXIBLE CONDUIT (MINIMUM 18 IN. LENGTH AND 50% SLACK). DO NOT TERMINATE IN OR FASTEN RACEWAYS TO MOTOR FOUNDATION.
13.	PULL AND JUNCTION BOXES WHERE INDICATED ON THE DRAWINGS, SHALL BE CONSIDERED SHOWN AT THEIR APPROXIMATE LOCATION. THE CONTRACTOR SHALL LOCATE THEM AS FIELD CONDITIONS DICTATE. ADDITIONAL PULL AND JUNCTION BOXES NOT SHOWN ON DRAWINGS SHALL BE PROVIDED WHERE REQUIRED BY APPLICABLE CODE PROVISIONS OR WHERE CALLED FOR BY FIELD CONDITIONS. PULL AND JUNCTION BOXES SHALL BE SURFACE TYPE IN UNFINISHED AREAS AND INSTALLED CONCEALED IN FINISHED AREAS, AND ALL COVERS TO PULL & JUNCTION BOXES SHALL BE READILY ACCESSIBLE.
14.	SUPPORT PANEL, JUNCTION AND PULLBOXES INDEPENDENTLY TO BUILDING STRUCTURE WITH NO WEIGHT BEARING ON RACEWAYS.
15.	FOR EXACT LOCATION AND MOUNTING HEIGHT OF LIGHTING FIXTURES AND SWITCH/RECEPTACLE OUTLETS, REFER TO ARCHITECTURAL REFLECTED CEILING AND POWER PLANS.
16.	ALL ELECTRICAL ACCESSORIES AND EQUIPMENT INSTALLED OUTSIDE OR EXPOSED TO WEATHER SHALL HAVE NEMA 3R ENCLOSURES AND SHALL BE TIGHTLY GASKETED FOR A COMPLETE RAIN/TIGHT INSTALLATION. ALL BUILDING EXTERIOR MOUNTED RECEPTACLES SHALL BE GFCI RATED AND MOUNTED IN WEATHERPROOF ENCLOSURE.
17.	ALL ACCESS PANEL LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION.
18.	ELECTRICAL CONTRACTOR SHALL COORDINATE THE LOCATION AND INSTALLATION OF NEW WORK WITH THE GENERAL CONTRACTOR AND OTHER ASSOCIATED TRADES IN A TIMELY MANNER. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL DIMENSIONS AND CONDITIONS PRIOR TO CONSTRUCTION. REFER TO ALL GENERAL, MECHANICAL, AND ELECTRICAL, DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
19.	ALL CONDUITS AND EQUIPMENT TO BE CONCEALED IN FINISHED SPACES UNLESS OTHERWISE NOTED. CONDUITS SHALL BE ENCASED IN THE CONCRETE FLOOR SLAB.
20.	ALL EQUIPMENT AND MATERIALS INSTALLED IN PLENUM CEILINGS SHALL BE APPROVED FOR THAT APPLICATION.
21.	OUTLET BOXES AND JUNCTION BOXES ON OPPOSITE SIDES OF FIRE-RATED WALLS SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES, UNLESS FIRE-RATED BOXES OR PUTTY PADS ARE UTILIZED.
22.	COORDINATE ALL FLOOR PENETRATIONS WITH THE STRUCTURAL AND ARCHITECTURAL DRAWINGS. CONFIRM PENETRATION LOCATIONS WITH THE ENGINEER AND OWNER BEFORE INSTALLATION.
23.	COORDINATE THE MOUNTING HEIGHT AND LOCATION OF RACEWAYS, COMMUNICATIONS OUTLETS, AND RECEPTACLES WITH THE ARCHITECTURAL CASEWORK DRAWINGS AND DETAILS. COORDINATE LOCATIONS OF LIGHT FIXTURES, SWITCHES, AND RELATED DEVICES WITH THE ARCHITECTURAL DRAWINGS AND DETAILS.
24.	REFER TO ARCHITECTURAL PLANS FOR FINAL LOACTIONS OF ALL LUMINARIES AND SWITCHES, AND FOR ALL FINISHED CEILING HEIGHTS.
25.	REFER TO ARCHITECTURAL PLANS FOR FINAL LOCATIONS OF ALL ELECTRICAL DEVICES, AND FOR FINAL CEILING AND WALL HEIGHTS AND LAYOUTS.
26.	LIGHTING FIXTURES PROVIDED WITH EMERGENCY BATTERY PACKS AND INDICATED WITH SWITCH CONTROL SHALL BE WIRED WITH BATTERY CHARGING/SENSING CIRCUIT WIRED AHEAD OF SWITCH CONTROL.
27.	NUMBER(S) SHOWN AT RECEPTACLES, JUNCTION BOXES AND EQUIPMENT INDICATES CIRCUIT NUMBERS IN PANELBOARD. PROVIDE WIRE AND CONDUIT TO INTERCONNECT EQUIPMENT AND DEVICES WITH SAME CIRCUIT NUMBERS AND RUN TO PANELBOARD.

NY ENGINEERS
382 NE 191st ST, SUITE
49674
MIAMI, FL 33179

TENANT FINISH FOR
FITNESS TOGETHER
LEAWOOD KS

PROJECT NO	FT2501	
START DATE	03.28.2025	
DRAWN BY	NYE	
CHECKED BY	NYE	
NO.	DESCRIPTION	DATE
1	PERMIT	04.08.2025

ELECTRICAL SYMBOLS
LIST & ABBREVIATIONS

E0.1

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ELECTRICAL SPECIFICATIONS

1. GENERAL:
- A. THE "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION," AIA DOCUMENT A201, LATEST EDITION, AND THESE SPECIFICATIONS AS APPLICABLE ARE PART OF THIS CONTRACT.
- B. DRAWING ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CONDUIT ROUTING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF CONDUIT TO AVOID OBSTRUCTIONS. COORDINATION WITH EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES, IS REQUIRED, MAINTAIN HEADROOM AND SPACE CONDITIONS.
- C. BIDDERS, BEFORE SUBMITTING PROPOSALS, SHALL VISIT AND CAREFULLY EXAMINE THE AREA AFFECTED BY THIS WORK TO FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS AND THE DIFFICULTIES THAT WILL ATTEND THE EXECUTION OF THIS WORK. SUBMISSION OF A PROPOSAL WILL BE CONSIDERED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE, AND LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT, OR MATERIALS, REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE.
- D. DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL, EQUIPMENT AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF NEW WORK.
- E. THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS, FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR.
- F. SEAL OPENINGS THROUGH PARTITIONS, WALLS AND FLOORS WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE MATERIAL, UNLESS OTHERWISE NOTED.
- G. PROVIDE ALL NECESSARY FLASHING AND COUNTER FLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THE BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF CONDUIT AND EQUIPMENT, PROVIDE EQUIPMENT CURBS AS REQUIRED.
- H. ALL EXISTING MATERIAL, EQUIPMENT AND CONSTRUCTION DEBRIS TO BE REMOVED UNDER THIS CONTRACT SHALL BECOME THE PROPERTY OF THE CONTRACTOR WITH THE EXCEPTION OF SPECIFIC EQUIPMENT AND APPARATUS REQUESTED BY THE BUILDING REPRESENTATIVE, ARCHITECT OR AS NOTED TO BE RELOCATED ON THE DRAWINGS. REMOVED EQUIPMENT SHALL BE PROPERLY DISPOSED OF BY THIS CONTRACTOR.
- I. THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS WHEN SO DIRECTED, HOWEVER, THE CONTRACTOR SHALL INSTALL WORK DURING OVERTIME HOURS AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.
- J. UNLESS OTHERWISE SPECIFICALLY NOTED OR SPECIFIED, INCLUDE ALL CUTTING AND PATCHING OF EXISTING FLOORS, WALLS, PARTITIONS AND OTHER MATERIALS IN THE EXISTING BUILDING. THE CONTRACTOR SHALL RESTORE THESE AREAS TO ORIGINAL CONDITION.
- K. ALL MATERIAL AND EQUIPMENT SHALL BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
- L. INSURANCE: PROVIDE IN ACCORDANCE WITH OWNER/BUILDING REQUIREMENTS AND SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.
- M. THE FINAL ACCEPTANCE SHALL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, TESTED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATED OF INSPECTION AND APPROVAL.
2. GENERAL PROVISIONS FOR ELECTRICAL WORK:
- A. DEFINITIONS:
- 1) "PROVIDE": TO FURNISH, INSTALL AND CONNECT UP COMPLETE AND READY FOR SAFE AND REGULAR OPERATION THE PARTICULAR WORK REFERRED TO UNLESS SPECIFICALLY OTHERWISE NOTED.
- 2) "INSTALL": TO ERECT, MOUNT AND CONNECT COMPLETE WITH RELATED ACCESSORIES.
- 3) "FURNISH" OR "SUPPLY": TO PURCHASE, PROCURE, ACQUIRE, AND DELIVER COMPLETE WITH RELATED ACCESSORIES.
- 4) "WORK": LABOR, MATERIALS, EQUIPMENT, APPARATUS, CONTROLS, ACCESSORIES AND OTHER ITEMS REQUIRED FOR PROPER AND COMPLETE INSTALLATION.
- 5) "WIRING": RACEWAY, FITTINGS, WIRE, BOXES, AND RELATED ITEMS.
- 6) "CONCEALED": EMBEDDED IN MASONRY OR OTHER CONSTRUCTION, INSTALLED IN FURRED SPACES, WITHIN DOUBLE PARTITIONS OR HUNG CEILINGS, IN TRENCHES, IN CRAWL SPACES, OR IN ENCLOSURES.
- 7) "EXPOSED": NOT INSTALLED UNDERGROUND OR "CONCEALED" AS DEFINED ABOVE.
- 8) "SIMILAR" OR "EQUAL": EQUAL IN MATERIALS, WEIGHT, SIZE, DESIGN AND EFFICIENCY OF SPECIFIED PRODUCT.
- B. TEMPORARY LIGHT AND POWER: PROVIDE TEMPORARY LIGHT AND POWER SYSTEMS AT EARLIEST POSSIBLE DATE WITHIN THE CONSTRUCTION AREAS FOR THE REQUIREMENTS OF ALL TRADES AS HEREIN DESCRIBED. EXTEND SYSTEMS TO NEW CONSTRUCTION AS SOON AS PHYSICALLY POSSIBLE. MAINTAIN SYSTEM DURING WORKING OWNER. PROVIDE ALL REQUIRED MAINTENANCE, INCLUDING LAMPS AND SOCKETS.
- C. QUALITY ASSURANCE
- 1) QUALITY OF MATERIALS: ALL EQUIPMENT SHALL BE NEW SPECIFICATION GRADE, FREE FROM DEFECTS AND LISTED BY APPROVED TESTING AGENCY AND BEARING THEIR LABEL MATERIALS AND EQUIPMENT OF SIMILAR APPLICATION SHALL BE OF SAME MANUFACTURER, EXCEPT AS NOTED.
- 2) GUARANTEE: ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED AS DEFINED IN PARAGRAPH 2.C.
- 3) CURRENT CHARACTERISTICS:
- a. SERVICE: 120/208 VOLT, 3 PHASE, 4 WIRE, 60 HERTZ WITH GROUNDED NEUTRAL.
- b. DISTRIBUTION: 120/208 VOLT, 3 PHASE, 4 WIRE, 60 HERTZ WITH GROUNDED NEUTRAL.
- 4) HEIGHTS OF OUTLETS:
- a. FROM FINISHED FLOOR TO CENTERLINE OF OUTLETS FOR:
- RECEPTACLES AND TELEPHONES: 1 FT-6 IN.
 - WALL SWITCHES: 4 FT-0 IN.
 - WALL FIXTURES: 7 FT-0 IN.
 - MOTOR CONTROLLERS: 5 FT-0 IN.
 - CLOCKS: 7 FT 6 IN
- b. EXCEPTIONS: AT JUNCTION OF DIFFERENT WALL FINISH MATERIALS, ON MOLDING OR BREAK IN WALL SURFACE, IN VIOLATION OF CODE, OR AS NOTED OR DIRECTED.
- D. PRODUCT DELIVERY, STORAGE AND HANDLING
- 1) MOVING OF EQUIPMENT: WHERE NECESSARY, SHIP IN CARTED SECTIONS OF SIZE TO PERMIT PASSING THROUGH AVAILABLE SPACES.
- 2) ACCESSIBILITY: FOR OPERATION, MAINTENANCE AND REPAIR, MINOR DEVIATIONS SHALL BE PERMITTED. CHANGES OF MAGNITUDE OR INVOLVING EXTRA COST ARE NOT PERMISSIBLE WITHOUT REVIEW. GROUP CONCEALED ELECTRICAL EQUIPMENT REQUIRING ACCESS WITH EQUIPMENT FREELY ACCESSIBLE THROUGH ACCESS DOORS.
- E. MATERIALS
- 1) NAMEPLATES: PROVIDE BLACK LAMICOID SHEET WITH 3/4 IN. WHITE LETTERING, FASTENED WITH EPOXY CEMENT FOR EACH DISCONNECT SWITCH, CIRCUIT BREAKER, PANEL, CABINET, TRANSFORMER, ENCLOSURE, MOTOR CONTROLLER AND THE LIKE. NAMEPLATES SHALL DESCRIBE THE NAME AND NUMBER OF EACH COMPONENT.
- 2) CABLE TAGS: TAG EACH CONDUCTOR PASSING THROUGH SPLICE OR PULLBOX WITH A WHITE LINEN TAG, INDICATING POINT OF ORIGIN AND TERMINATION OF THE CIRCUIT.
- 3) INSERTS AND SUPPORTS:
- a. INSERTS: STEEL, SLOTTED TYPE, FACTORY PAINTED.
- SINGLE ROD: SIMILAR TO GRINNELL FIG. 281.
 - MULTI-ROD: SIMILAR TO FEE AND MASON SERIES 9000 WITH END CAPS AND CLOSURE STRIPS.
 - CLIP FORM NAILS FLUSH WITH INSERTS.
 - MAXIMUM LOADING 75 PERCENT OF RATING.
- b. SUPPORTS FROM BUILDING CONSTRUCTION: INSERTS, BEAM CLAMPS, STEEL FISHPLATES (IN CONCRETE FILL ONLY), CANTILEVER BRACKETS OR OTHER MEANS. SUBMIT FOR REVIEW.
- c. GROUPED LINES AND SERVICES: TRAPEZE HANGERS OF BOLTED ANGLES OR CHANNELS.
- d. WHERE BUILDING CONSTRUCTION IS INADEQUATE: PROVIDE ADDITIONAL FRAMING. SUBMIT FOR REVIEW.
- F. PAINT SHALL BE THE BEST GRADE FOR ITS PURPOSE. DELIVER IN ORIGINAL SEALED CONTAINERS AND APPLY IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. COLORS SHALL BE AS SELECTED BY ARCHITECT OR ENGINEER. UTILIZE GALVANIZED IRON PRIMER ON PANEL AND PULL BOXES, AFTER FABRICATION. UTILIZE HOT DIPPED GALVANIZED OR DIPPED IN ZINC BASED PRIMER FOR: OUTLET BOXES, JUNCTION BOXES, CONDUIT HANGERS, RODS, INSERTS AND SUPPORTS. ZINC BASED PRIMER WITH FINISH TO MATCH SURROUNDINGS SHALL BE USED FOR MARKED SURFACES OF STEEL EQUIPMENT AND RACEWAYS. A FIELD-APPLIED ZINC-BASED PRIME COAT SHALL BE UTILIZED FOR STEEL OR IRONWORK.
- G. BRUSH AND CLEAN WORK PRIOR TO CONCEALING, PAINTING AND ACCEPTANCE. PAINTED EXPOSED WORK SOILED OR DAMAGED; CLEAN AND REPAIR TO MATCH ADJOINING WORK BEFORE FINAL ACCEPTANCE. REMOVE DEBRIS FROM INSIDE AND OUTSIDE OF MATERIAL AND EQUIPMENT.
- H. FINAL LOCATIONS AND MOUNTING ORIENTATIONS OF ALL SWITCHES, RECEPTACLES AND LIGHT FIXTURES SHALL BE VERIFIED WITH ARCHITECT.
- I. ALL ACCESS DOOR LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION.
3. SCOPE OF WORK:
- A. SCOPE OF WORK SHALL CONSIST OF PROVIDING LABOR, MATERIALS, EQUIPMENT, SERVICES AND FEES NECESSARY FOR COMPLETE AND SAFE INSTALLATION IN CONFORMING WITH NATIONAL AND LOCAL CODES AND AUTHORITIES HAVING JURISDICTION, AS INDICATED ON DRAWINGS AND HEREIN SPECIFIED.
- B. ALL DRAWINGS, PLANS, DETAILS, SPECIFICATIONS AND SPECIFICATION ADDENDA ARE MADE PART OF THIS CONTRACT AND SHALL APPLY TO ALL WORK UNDER THE CONTRACT UNLESS OTHERWISE AMENDED, MODIFIED, SUPPLIED OR SPECIFIED HEREIN.
- C. THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATE OF FINAL CERTIFICATE FOR PAYMENT AND/OR FROM DATE OF ACTUAL USE OF EQUIPMENT OR OCCUPANCY OF SPACES BY OWNER INCLUDED UNDER THE VARIOUS PARTS OF THE WORK, WHICHEVER, DATE IS EARLIER, THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL ALSO PROVIDED THAT WHERE DEFECTS OCCUR, THE CONTRACTOR WILL ASSUME RESPONSIBILITY OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THE CONTRACTOR
- D. THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND SPECIFICATIONS WITH ALL DEPARTMENTS HAVING JURISDICTION, WORK AND PAY ALL FEES THEREFORE. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION AND TESTS OF ANY OR ALL PARTS OF THE WORK IF SO REQUIRED BY AUTHORITIES AND PAY ALL CHARGES FOR SAME. THE CONTRACTOR SHALL PAY ALL COSTS FOR, AND FURNISH TO THE OWNER BEFORE FINAL BILLING, ALL CERTIFICATES NECESSARY AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH ALL REGULATIONS WHERE THEY APPLY TO THIS WORK.
- E. CONTRACTOR SHALL PERFORM ALL CONTROLLED INSPECTIONS IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE. SECURE ALL REQUIRED PERMITS AND APPROVALS AND TRANSMIT SAME TO OWNER. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FEES.
- F. AREAS WITH NO ELECTRICAL WORK SHALL REMAIN AS IS. CONTRACTOR SHALL MAINTAIN CONTINUITY OF ALL ELECTRICAL SYSTEMS TO ALL AREAS NOT COVERED BY THIS RENOVATION AND SHALL PROVIDE 48 HOUR NOTICE TO LANDLORD OF ANY PLANNED POWER INTERRUPTIONS OR SIGNAL SYSTEM OUTAGES.
4. SHOP DRAWINGS
- A. PRIOR TO THE INSTALLATION OF ANY WORK AND PROCUREMENT OF EQUIPMENT, CONTRACTOR SHALL PROVIDE COMPLETE SETS OF COORDINATED SHOP DRAWINGS OF ALL NEW AND EXISTING EQUIPMENT, INDICATING CAPACITY, DIMENSIONS AND SEQUENCE OF OPERATION FOR WRITTEN APPROVAL BY THE ARCHITECT AND ENGINEER.
- B. INDICATE ON EACH SHOP DRAWINGS SUBMITTED:
- 1) PROJECT NAME AND LOCATION
- 2) NAME OF ARCHITECT AND ENGINEER
- 3) ITEM IDENTIFICATION
- 4) APPROVAL STAMP OF PRIME CONTRACTOR
- C. SUBMISSIONS:
- 1) SUBMISSIONS 11 IN. X 17 IN. OR SMALLER: IF THE SUBMISSION IS A CATALOG CUT, THEN THE CONTRACTOR SHALL SUBMIT ONE ORIGINAL AND TWO COPIES. OTHERWISE, HE SHALL SUBMIT THREE COPIES. THE ARCHITECT WILL FORWARD THE ORIGINAL AND ONE COPY (TWO COPIES WHEN NO ORIGINAL IS RECEIVED) TO THE ENGINEER. ALL CATALOG CUTS SHALL BE COMPLETE.
- 2) SUBMISSIONS LARGER THAN 11 IN. X 17 IN.: SUBMIT TWO PRINTS AND ONE PAPER SEPIA TO THE ARCHITECT. THE ARCHITECT WILL FORWARD ONE PRINT AND THE PAPER SEPIA TO THE ENGINEER.
- D. SUBMIT SHOP DRAWINGS FOR THE FOLLOWING:
- 1) SAFETY/DISCONNECT SWITCHES
- 2) FUSES
- 3) CIRCUIT BREAKERS
- 4) PANELBOARDS/LOADCENTER (INCLUDING DIMENSIONS, SCHEDULES, AND CATALOG CUTS).
- 5) RACEWAYS
- 6) WIRE AND CABLE
- 7) WALL SWITCHES
- 8) INSERTION RECEPTACLES
- 9) MOMENTARY CONTACT SWITCHES
- 10) TIME SWITCHES
- 11) LIGHTING FIXTURES.
- E. ASSIST AND PROVIDE ALL NECESSARY INFORMATION, DIAGRAMS, SKETCHES, ETC. TO THE HVAC CONTRACTOR, FOR THE PREPARATION OF COORDINATED SHOP DRAWINGS INDICATING ROUTING OF FEEDERS, CONTROL CONDUITS, RECESSED FIXTURES AND ADJACENT NEARBY PIPING AND DUCTWORK WHERE APPLICABLE, CERTIFIED BY ALL TRADES THAT COORDINATION HAS BEEN ESTABLISHED. SUBMIT FOUR (4) BOOKBOUND OPERATING AND SERVICE MANUALS WHICH SHALL INCLUDE COPIES OF ALL SHOP DRAWING. PROVIDE SHOP DRAWINGS FOR PANELS, FIXTURES, WIRING DEVICES, CONDUIT, CABLE, DISCONNECT SWITCH, RELAYS, CONTRACTORS, AND OTHER SYSTEMS AS DIRECTED BY THE ENGINEER.
5. AS-BUILT DRAWINGS AND EQUIPMENT OPERATIONAL INSTRUCTIONS
- A. UPON COMPLETION AND ACCEPTANCE OF WORK, CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS AND EQUIPMENT MANUALS AND DEMONSTRATE TO THE OWNER THE PROPER OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND APPARATUS FURNISHED UNDER THIS CONTRACT.
- B. THESE INSTRUCTIONS SHALL BE TYPED ON 8-1/2 IN. X 11 IN. PAPER AND BOUND IN THREE RING BINDERS WITH CLEAR ACETATE COVERS. CONTRACTOR SHALL GIVE THREE COPIES OF THE INSTRUCTIONS TO THE OWNER AND ONE COPY TO THE ENGINEER.
- C. THE INSTRUCTION BOOKLET SHALL BEAR THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE PROJECT, ARCHITECT AND ENGINEER.
- D. REPRODUCIBLE "AS-BUILT" DRAWINGS SHALL BE PROVIDED INDICATING THE AS INSTALLED CONDITIONS OF THE WORK. "AS-BUILT" DRAWINGS SHALL BE PROVIDED TO THE ARCHITECT AFTER COMPLETION OF THE INSTALLATION.
6. LOW-VOLTAGE DISTRIBUTION EQUIPMENT:
- A. PROVIDE COMPLETE EQUIPMENT INCLUDING: SWITCHES, FUSES, CIRCUIT BREAKERS, PANELS AND TRANSFORMERS.
- B. ALL EQUIPMENT SHALL CONFORM TO NEMA, ANSI AND IEEE STANDARDS.
- C. DISCONNECT SWITCHES SHALL BE FUSED OR NONFUSED AS NOTED. VOLTAGE SHALL BE AS REQUIRED. SWITCHES SHALL BE HEAVY DUTY, EXCEPT AS NOTED, AND HORSEPOWER RATED FOR MOTOR LOADS. TOGGLE TYPE SWITCHES SHALL BE NONFUSED, LOAD BREAK, HAVING MAXIMUM RATINGS OF 20 AMP AT 600 VOLTS AND 30 AMP AT 240 VOLTS. TWO-POLE SWITCHES SHALL BE SIMILAR TO HART AND HEGEMAN NO. 6808F. THREE-POLE SWITCHES SHALL BE SIMILAR TO HART AND HEGEMAN NO. 7810F. KNIFE-BLADE TYPE SWITCHES SHALL BE LOAD BREAK, QUICK-MAKE- QUICK-BREAK, UL CLASS R UP TO 600 AMP. MAXIMUM RATING EXCEPT AS NOTED SHALL BE 800 AMP. ARC QUENCHERS SHALL BE PROVIDED. SWITCHES SHALL BE SIMILAR TO GENERAL ELECTRIC OMR. ALL SWITCH ENCLOSURES SHALL BE DEAD FRONT, NEMA TYPE 1, EXCEPT AS NOTED.
7. FUSES:
- A. CIRCUITS 0 TO 600 AMPERES SHALL BE PROTECTED BY FUSES SIMILAR TO CURRENT LIMITING BUSSMAN LOW-PEAK DUAL-ELEMENT TIME-DELAY LPN-RK (AMP)SP (250V) /LPS-RK (AMP)SP (600V) OR LPJ (AMP)SP (600V) (UL CLASS RK1 OR CLASS J), AND BE LISTED BY UL WITH AN INTERRUPTING RATING OF 300,000 AMPERES RMS SYMMETRICAL.
- B. MOTOR CIRCUITS - ALL INDIVIDUAL MOTOR CIRCUITS WITH FULL LOAD AMPERE RATINGS (FLA) OF 480 AMPERES OR LESS SHALL BE PROTECTED BY FUSES SIMILAR TO CURRENT LIMITING BUSSMANN LOW-PEAK DUAL-ELEMENT TIME-DELAY LPN-RK (AMP)SP (250V) /LPS-RK (AMP)SP (600V) OR LPJ (AMP)SP (600V) (UL CLASS RK1 OR CLASS J), AND BE LISTED BY UL WITH AN INTERRUPTING RATING OF 300,000 AMPERES RMS SYMMETRICAL.
- C. ALL FUSES SHALL BE PROVIDED BY SAME MANUFACTURER.
- D. PROVIDE 1 SPACE MATCHING FUSE FOR EACH SET OF 3.
- E. CIRCUIT BREAKERS: MOLDED CASE BREAKERS SHALL BE THERMAL-MAGNETIC, QUICK-MAKE-QUICK-BREAK, BOLT-ON TYPE, MANUALLY OPERATED WITH INSULATED TRIP-FREE HANDLE. MULTI-POLE TYPE BREAKERS SHALL CONTAIN INTERNAL TRIP BAR. TERMINALS SHALL BE SUITABLE FOR COPPER OR ALUMINUM CABLE. FURNISH AUXILIARY DEVICES WHERE REQUIRED FOR SHUNT-TRIPPING. OPEN AND CLOSE MOTOR OPERATOR AND ALARM INDICATION. ENCLOSURES SHALL BE DEAD FRONT, NEMA TYPE 1, EXCEPT AS NOTED. FRAMES, IC AND INTERCHANGEABLE TRIPS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED:
- 1) 120 VOLTS, 100-AMP FRAME: 10,000 AMPS, 1 POLE.
- 2) 120/240 VOLTS, 225-AMP FRAME: 22,000 AMPS MINIMUM
8. DISTRIBUTION PANELBOARDS, SWITCH AND FUSE:
- H. THREE PHASE, 3 OR 4 WIRE WITH COPPER BUS BARS. ALL THROUGH BUS SHALL BE INSULATED.
- I. NEMA CLASS 1 CONSTRUCTION TO ACCOMMODATE FUSIBLE, INDIVIDUALLY ENCLOSED SWITCHES, FRONT REMOVABLE, SWITCH AND DOOR INTERLOCKS. COVERS TO BE PAD-LOCKABLE.
- J. PANELBOARD SHALL BE CONSTRUCTED OF CODE-GAUGE STEEL, GRAY FINISH OVER RUST INHIBITOR, FOR SURFACE MOUNTING. BOX AND PANEL FRAME SHALL BE FLANGED AND REINFORCED FOR RIGID SUPPORT OF INTERIOR AND ACCURATE ALIGNMENT OF INTERIOR WITH FRONT. TRIMS TO BE FASTENED TO BACK BOX WITH SCREWS.
- K. ALL BRANCH SWITCHES SHALL HAVE INDIVIDUAL ENGRAVED LAMICOID NAMEPLATES (BLACK WITH WHITE CORE).
- L. DISTRIBUTION PANELBOARD CONSTRUCTION MINIMUM SHORT CIRCUIT RATING 25,000 AMPERES, REMS SYMMETRICAL FOR ALL 120/208V APPLICATIONS. APPLICATIONS.
- M. DISCONNECTS
- 1) DISCONNECT SWITCHES SHALL CONFORM TO NEMA AND UL STANDARDS, AND SHALL BE HORSEPOWER RATED.
- 2) SWITCHING MECHANISM SHALL BE QUICK-MAKE, QUICK-BREAK, SINGLE THROW WITH EXTERNAL OPERATING HANDLE MECHANICALLY INTERLOCKED WITH ENCLOSURE COVER TO PROVIDE ACCESS TO INTERIOR WHEN DISCONNECT IS IN OFF POSITION ONLY. PROVIDE MEANS TO LOCK OPERATING HANDLE IN THE OPEN AND CLOSED POSITION. DESIGNATE ON THE ENCLOSURE THE OPEN AND CLOSED POSITION OF THE OPERATING HANDLE.
- 3) SWITCHES SHALL BE OF THE DOUBLE STATIONARY CONTACT TYPE.
- 4) SWITCHES SHALL BE EQUIPPED WITH REJECTION TYPE FUSE HOLDERS, FUSIBLE AS SHOWN ON THE DRAWINGS; PROVIDE COMPLETE WITH FUSES AS SCHEDULED.
- G. INSTALLATION
- 1) DISTRIBUTION PANELBOARD SHALL BE MOUNTED TO STRUCTURAL STEEL CHANNEL (KINDORF) WHICH SHALL BE BOLTED TO THE WALL USING EXPANSION ANCHORS FOR LARGE PANELS.
- H. IDENTIFICATION
- 1) PROVIDE NAMEPLATE AT EACH SWITCH IDENTIFYING THE LOAD SERVED.
- 2) NAMEPLATES SHALL BE MOUNTED ON THE FRONT COVER SECURED WITH SELF-TAPPING SCREWS OR NUTS AND BOLTS. NAMEPLATES SHALL BE LAMINATED PHENOLIC, BLACK WITH A MINIMUM OF 1/4" HIGH WHITE LETTERING.
- I. DISTRIBUTION AND SUB-DISTRIBUTION PANELBOARDS SHALL BE A MINIMUM OF 30" WIDE AND 10" DEEP.
- J. POWER PANELBOARDS SHALL BE SIMILAR TO GENERAL ELECTRIC TYPE "OMR", AS MANUFACTURED BY ATLAS SWITCH COMPANY, ELECTRIC SWITCHBOARD COMPANY OR APPROVED EQUAL.
- K. PANELBOARD SHALL HAVE MAIN CIRCUIT BREAKER OR MAIN LUGS AS INDICATED ON THE DRAWINGS. QUANTITY, POLES AND TRIP RATINGS OF BRANCH CIRCUIT BREAKERS TO BE AS INDICATED ON DRAWINGS.
- L. PANELBOARD SHALL HAVE ENGRAVED WHITE CORE, BLACK LAMACOID NAMEPLATE SCREWED ONTO PANE TRIM WITH DESIGNATION LISTED (PANELBOARD NAME, VOLTAGE, RATING OR MAINS IN AMPS).
- B. MATERIALS
- 1) RACEWAYS:
- a. RIGID STEEL CONDUIT: FULL-WEIGHT PIPE, GALVANIZED, THREADED.
- b. ELECTROMETALLIC TUBING (EMT): THIN WALL PIPE, GALVANIZED, THREADLESS.
- c. FLEXIBLE STEEL CONDUIT: CONTINUOUS SINGLE STRIP, GALVANIZED.
- d. WIREWAYS: WIRE SHALL BE AS NOTED, MINIMUM NO. 16 GAUGE STEEL WITH GROUND CONTINUITY. FINISH SHALL BE BAKED ENAMEL. COVERS SHALL BE SCREW-ON.
- e. SURFACE METAL RACEWAY: SIZE AS NOTED. BASE 0.04 IN., COVER 0.25 IN. MATERIAL SHALL BE STEEL. FINISH SHALL BE BAKED ENAMEL. COVERS SHALL BE SCREW-ON.
- 2) FITTINGS AND ACCESSORIES:
- a. RIGID STEEL: NONSPLIT, THREADED, STEEL OR MALLEABLE IRON. ZINC DIE CAST NOT PERMITTED.
- b. ELECTROMETALLIC TUBING: COMPRESSION TYPE, GALVANIZED RIGID STEEL ELBOWS, 2 IN. OR LARGER.
- c. FLEXIBLE METALLIC CONDUIT: ANGLE WEDGE TYPE WITH INSULATED THROAT.
- d. BUSHINGS: METALLIC INSULATED TYPE.

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49674
MIAMI, FL 33179

TENANT FINISH FOR
FITNESS TOGETHER
LEAWOOD KS

PROJECT NO	FT2501	
START DATE	03.28.2025	
DRAWN BY	NYE	
CHECKED BY	NYE	
NO.	DESCRIPTION	DATE
1	PERMIT	04.08.2025

ELECTRICAL SPECIFICATION
(SHEET 1 OF 2)

E0.2

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ELECTRICAL SPECIFICATIONS (CONT.)

3) BOXES:

o. OUTLET BOXES: EXCEPT AS OTHERWISE REQUIRED BY CONSTRUCTION, DEVICES OR WIRING, BOXES SHALL BE STAMPED STEEL, 4 IN. SQUARE OR OCTAGON FOR FIXTURES. BOXES ABOVE CEILING SHALL BE 1-1/2 IN. DEEP. BOXES IN CEILING OR SLAB SHALL BE 3 IN. DEEP. BOXES IN WALL FOR FIXTURES SHALL BE 2-3/4 IN. DEEP. BOXES IN WALL FOR RECEPTACLES AND SWITCHES SHALL BE 1-1/2 IN. DEEP. FURNISH WITH RAISED COVERS AND FIXTURE STUDS WHERE REQUIRED. WITHOUT FIXTURE OR DEVICE: FURNISH BLANK COVER. OFFSET BACK-TO-BACK OUTLETS WITH MINIMUM 6 IN. SEPARATION.

b. JUNCTION AND PULL BOXES: GALVANIZED SHEET STEEL WITH SCREW-ON COVERS, EXCEPT AS NOTED. FURNISH WITH INSULATED SUPPORTS FOR CABLES. LOCATIONS SHALL BE AS NOTED OR REQUIRED AND ACCESSIBLE. PROVIDE BARRIERS IN NEW AND RENOVATED BOXES BETWEEN 120/208 VOLT AND 265/460 VOLT WIRING AND BETWEEN EMERGENCY AND NORMAL WIRING. FLOOR BOXES SHALL BE SUITABLE FOR CONDUIT AND DEVICES NOTED. RAISED OUTLETS SHALL BE HUBBELL #B2414 SERIES WITH ABOVE FLOOR FITTING. TELEPHONE: BUSHED HOLE. POWER: DUPLEX RECEPTACLE OR OTHER AS NOTED. INCREASE SIZE TO SUIT AS NECESSARY. FLUSH OUTLETS SHALL BE HUBBELL #B2414 SERIES WITH FLUSH FLOOR FITTING FOR TELEPHONE AND FLUSH DUAL PLAP COVER WITH DUPLEX RECEPTACLE FOR POWER AS NOTED. INCREASE SIZE TO SUIT AS NECESSARY.

c. PROVIDE RACEWAYS ONLY AS HEREIN SPECIFIED, EXCEPT AS NOTED. RACEWAYS SHALL BE RUN CONCEALED, EXCEPT AS NOTED.

PROVIDE RACEWAY SUPPORT UTILIZING CEILING TRAPEZE, STRAP HANGERS, OR WALL BRACKETS. PROVIDE U-BOLTS AT EACH FLOOR LEVEL OF RISER RACEWAYS AND CONNECTED TO ACCEPTABLE SUPPORTS. PROVIDE RISER CLAMPS AT EACH FLOOR LEVEL OF RISER RACEWAYS AND RESTING ON SLAB. FOR THROUGH-THE-FLOOR SYSTEMS, UTILIZE AN ASSEMBLY SIMILAR TO HUBBELL FIRE RATED POKE-THROUGH-FLOOR BOX SYSTEM. FOR ABOVE FLOOR FITTINGS TELEPHONE SHALL BE BUSHED HOLE AND POWER SHALL BE DUPLEX RECEPTACLE OR OTHER AS NOTED. PROVIDE SEPARATION BARRIER BETWEEN POWER AND TELEPHONE COMPARTMENTS. PROVIDE JUNCTION BOX ON UNDERSIDE OF FLOOR. PACK FITTING TO RESTORE FIRE RATING OF FLOOR.

SECURE ALL RACEWAYS TO SUPPORTS WITH PIPE STRAPS OR U-BOLTS. SPACING OF SUPPORTS SHALL BE A MINIMUM OF 10 FT ON CENTER FOR METALLIC RACEWAY AND AS REQUIRED FOR NONMETALLIC RACEWAY. SPACING SHALL BE 5 FT ON CENTER FOR WIREWAYS AND PER CODE AND AS NOTED FOR OTHERS. MOUNT SUPPORTS TO STRUCTURE MASONRY WITH TOGGLE BOLTS ON HOLLOW MASONRY, EXPANSION SHIELDS OR INSERTS IN CONCRETE AND BRICK, MACHINE SCREWS ON METAL, BEAM CLAMPS ON FRAMEWORK, WOOD SCREWS ON WOOD, AND PAN THROUGH STRAPS IN METAL DECK, NAILS, RAWL PLUGS OR WOOD PLUGS SHALL NOT BE PERMITTED. WHERE REQUIRED BY STRUCTURE, FURNISH THROUGH BOLTS AND FISHPATES.

EXPOSED RACEWAYS SHALL BE RUN PARALLEL WITH OR AT RIGHT ANGLES TO WALLS. PROVIDE CLEARANCE WITH WATER, STEAM OR OTHER PIPING (MINIMUM 3 IN. SEPARATION FROM STEAM AND HOT WATER PIPES, EXCEPT 1 IN. FROM PIPE COVER AT CROSSINGS AND 18 IN. FOR PARALLEL RUNS). FOR HUNG CEILING OUTLETS, RUN IN HUNG CEILING AND CONNECT TO CEILING SUPPORT CHANNELS. IN MASONRY AND POURED CONCRETE, RUN VERTICALLY ONLY.

MAINTAIN GROUNDING CONTINUITY OF INTERRUPTED METALLIC RACEWAYS WITH GROUND CONDUCTOR, AND IN FLEXIBLE CONDUIT FOR FEEDERS AND MOTOR TERMINAL CONNECTIONS.

EMPTY RACEWAYS OVER 10 FT LONG: PROVIDE FISH OR PULL WIRE, GALVANIZED OR NYLON ROPE.

RIGID STEEL CONDUIT SHALL BE PERMITTED FOR FEEDERS AND BRANCH CIRCUITS. PAINT MALE THREADS OF FIELD-THREADED CONDUIT WITH GRAPHITE-BASE PIPE COMPOUND AND BUTT CONDUIT ENDS. TOUCH UP MARRED SURFACES AND FIELD-CUT THREADS, CRC-COLD GALVANIZED. EMT SHALL BE PERMITTED FOR BRANCH CIRCUITS ONLY, IN DRY LOCATIONS. DRY WALLS, HUNG CEILINGS, HOLLOW BLOCK WALLS AND FURRED SPACES. EMT SHALL NOT BE PERMITTED IN RAISED FLOORS. FLEXIBLE STEEL CONDUIT SHALL BE UTILIZED FOR SHORT CONNECTIONS WHERE RIGID CONDUIT IS IMPRACTICAL. FROM OUTLET BOX TO RECESSED LIGHTING FIXTURE: PROVIDE MINIMUM 4 FT AND MAXIMUM 6 FT LENGTHS. FOR FINAL CONNECTION TO MOTOR TERMINAL BOX, TRANSFORMER AND OTHER VIBRATING EQUIPMENT: PROVIDE WITH POLYVINYL SHEATHING AND GROUND CONDUCTOR. MINIMUM LENGTH: 18 IN. WITH SLACK. CONNECT GROUND CONDUCTOR TO ENCLOSURE OR RACEWAY AT EACH END. FOR EXPANSION JOINT CROSSINGS, CROSS AT RIGHT ANGLES AND ANCHOR ENDS.

CUT CONDUIT ENDS SQUARE. REAM SMOOTH. PAINT MALE THREADS OF FIELD THREADED RACEWAYS WITH GRAPHITE BASE PIPE COMPOUND. DRAW UP TIGHT WITH RACEWAY COUPLING.

ALL COUPLINGS SHALL BE COMPRESSION TYPE. NO SET SCREW FITTINGS.

EXPANSION FITTINGS SHALL BE INSTALLED AT RIGHT ANGLES WITH CLIP JOINT CENTERED IN EXPANSION JOINT. PROVIDE A LENGTH OF RUN IN ACCORDANCE MANUFACTURER'S RECOMMENDATIONS. PRESET FITTINGS SHALL ALLOW FOR TEMPERATURE VARIATION.

RACEWAYS PASSING THROUGH FIRE-RATED CONSTRUCTION: SEAL OPENING WITH FIRE SEALANT.

d. PROVIDE CABLE SUPPORTS IN ACCORDANCE WITH NATIONAL ELECTRIC CODE ARTICLE 300.19. CABLE SUPPORTS SHALL UTILIZE A ONE-PIECE PLUG WITH POZI-GRIP WEDGING PLUG AS MANUFACTURED BY OZ-GEDNEY. TYPE SF SHALL BE USED FOR ARMORED CABLE.

INSTALL CABLE SUPPORTS AT THE TOP OF A VERTICAL RISE AND PROVIDE INTERMEDIATE ADDITIONAL SUPPORTS AS REQUIRED TO LIMIT SUPPORTED CONDUCTOR LENGTHS TO NOT GREATER THAN THOSE SPECIFIED IN TABLE 300.19(A).

a. ERECT WALL AND SWITCH OUTLETS IN ADVANCE OF FURRING AND FIREPROOFING. OUTLET BOXES SHALL BE SET SQUARE AND TRUE WITH BUILDING FINISH. SECURE TO BUILDING STRUCTURE BY ADJUSTABLE STRAP IRON OR GROUT IN WITH MASONRY. VERIFY OUTLET LOCATIONS IN FINISHED SPACES WITH ARCHITECTURAL DRAWINGS OF INTERIOR DETAILS AND FINISHES. PROVIDE BARRIERS BETWEEN SWITCHES CONNECTED TO DIFFERENT PHASES FOR VOLTAGES EXCEEDING 150 VOLTS TO GROUND.

d. PANEL, JUNCTION AND PULL BOXES SHALL BE LOCATED CLEAR OF OTHER TRADES. CONCEAL JUNCTION AND PULL BOXES IN FINISHED SPACES. WHERE NECESSARY, REROUTE RACEWAYS OR MAKE OTHER ARRANGEMENTS FOR CONCEALMENT. BOXES SHALL BE ACCESSIBLE. SUPPORT BOXES FROM BUILDING STRUCTURE, INDEPENDENT OF CONDUIT. PROVIDE FLOOR-TO-CEILING CHANNELS FOR MOUNTING ON DRYWALL AND LIGHTWEIGHT CONSTRUCTION. OUTLET BOXES FOR FIXTURES RECESSED IN HUNG CEILINGS SHALL BE ACCESSIBLE THROUGH OPENING CREATED BY REMOVAL OF FIXTURE. SECURE TO BLACK IRON SUPPORT. MOTOR TERMINAL BOXES: COORDINATE WITH MOTOR BRANCH CIRCUIT CONDUIT AND WIRING; ADD BOX VOLUME WHERE REQUIRED.

e. FIRE SEALANTS: PROVIDE FOR RACEWAYS AND WIRE PASSING THROUGH FLOOR SLOTS, SLEEVES OR OPENINGS IN FIRE-PARTITIONS ROOMS.

f. PERFORM CONTINUITY TESTS OF RESISTANCE OF FEEDER CONDUITS FROM SERVICE TO POINT OF FINAL DISTRIBUTION USING CONDUCTOR RETURN. MAXIMUM RESISTANCE SHALL BE 25 OHMS.

9. WIRE AND CABLE:

a. PROVIDE WIRE AND CABLE COMPLETE WITH ACCESSORIES. SIZE REFERENCE SHALL BE AWG EXCEPT AS NOTED.

b. CONDUCTORS SHALL BE COPPER, ASTM STANDARD SOLID (NO. 10 AND SMALLER) OR STRANDED (NO. 8 AND LARGER). GENERAL USE CABLING SHALL BE NO. 12 MINIMUM. AT 120 VOLTS AND OVER 100 FT CIRCUIT LENGTH PROVIDE NO. 10 MINIMUM. AT 265 VOLTS AND OVER 200 FT CIRCUIT LENGTH PROVIDE NO. 10 MINIMUM.

c. CONTROL AND ALARM CABLING, EXCEPT AS NOTED, SHALL BE NO. 14 MINIMUM. AT 120 VOLTS AND OVER 200 FT CIRCUIT LENGTH PROVIDE NO. 12 MINIMUM. OTHER VOLTAGES AND PHASES: ADJUST CABLE SIZING AS REQUIRED TO MAINTAIN VOLTAGE DROP. INCREASE RACEWAY SIZES FOR LARGER WIRE AS REQUIRED.

d. INSULATION SHALL BE RUBBER AND THERMOPLASTIC MEETING ASTM AND IPCEA STANDARDS. TYPE THW OR THWN SHALL BE UTILIZED FOR FEEDERS AND BRANCH CIRCUITS EXCEPT AS NOTED. TYPE SFF-2 SHALL BE UTILIZED FOR BRANCH CIRCUITS LOCATED IN WIRING CHANNELS OF CONTINUOUS FLUORESCENT FIXTURES AND IN AMBIENT TEMPERATURES OVER 90 DEG C. FOR UNGROUNDED ISOLATED BRANCH CIRCUITS PROVIDE CROSS-LINKED POLYETHYLENE INSULATION (TYPE XHHW).

e. ARMORED CABLE (BX) SHALL BE UTILIZED FOR BRANCH CIRCUITS IN DRY HOLLOW LOCATIONS, HUNG CEILINGS, AND BLOCK WALLS. WHEN USED IN LIEU OF WIRING IN CONDUIT, STATE IN PROPOSAL THAT PRICE IS BASED UPON THE USE OF HOSPITAL GRADE 'BX'.

f. COLOR CODING SHALL BE AS FOLLOWS:

- 120/208 VOLT SYSTEM:
- BLACK FOR A PHASE
- RED FOR B PHASE
- BLUE FOR C PHASE

1) NEUTRAL WIRE SHALL UTILIZE WHITE OUTER COVERING THROUGHOUT. EQUIPMENT GROUND WIRE SHALL UTILIZE GREEN OUTER COVERING THROUGHOUT.

WHERE COLOR-CODED CABLE IS NOT AVAILABLE, CERTIFY IN WRITING AND REQUEST PERMISSION TO OVERLAP CONDUCTORS WITH 6 IN. OF COLOR TAPING IN ACCESSIBLE LOCATIONS.

g. PROVIDE FLAMEPROOF LINEN OR FIBER TAGS IN ACCESSIBLE LOCATIONS. FOR FEEDERS INDICATE FEEDER NUMBER, SIZE, PHASE AND POINTS OF ORIGIN AND TERMINATIONS. FOR CONTROL AND ALARM WIRING INDICATE TYPE (CONTROL OR ALARM), SIZE OF WIRE, AND POINTS OF ORIGIN AND TERMINATIONS.

h. TERMINATIONS, SPLICES AND TAPS UNDER 600 VOLTS: COPPER CONDUCTORS NO. 10 AND SMALLER SHALL UTILIZE COMPRESSION-TYPE OF TWIST-ON SPRING-LOADED CONNECTORS AND CLEAR NYLON-INSULATED COVERING. COPPER CONDUCTORS NO. 8 AND LARGER SHALL UTILIZE MECHANICAL BOLTED PRESSURE OR HYDRAULIC COMPRESSION TYPE USING MANUFACTURER'S RECOMMENDED TOOLING. CABLE LUGS AND CONNECTORS SHALL UTILIZE COMPRESSION TYPE OF SAME METAL AS CONDUCTOR. PROVIDE TO MATCH CABLE, WITH MARKING INDICATING SIZE AND TYPE. COPPER LUG CONNECTIONS TO BUS BARS: USE ANTISIZE COMPOUND ON TANG.

i. NOT MORE THAN 3 LIGHTING OR CONVENIENCE OUTLET CIRCUITS SHALL BE INSTALLED IN ONE CONDUIT UNLESS OTHERWISE INDICATED. PULL NO THERMOPLASTIC WIRES AT TEMPERATURES LOWER THAN 32 DEG F. PROVIDE SEPARATE RACEWAYS FOR CONDUCTORS OF 120/208 AND 265/460 VOLT SYSTEMS EXCEPT 460 VOLT MOTOR BRANCH CIRCUIT WIRING AND RELATED 120 VOLT CONTROL WIRING. THERMOPLASTIC WIRES SHALL NOT BE INSTALLED IN COMPUTER AREA RAISED FLOORS.

j. LEAVE WIRES WITH SUFFICIENT SLACK TO PERMIT MAKING FINAL CONNECTIONS.

k. PERFORM CONTINUITY AND INSULATION TESTS. MEGGER TEST 100 PERCENT OF FEEDERS, 10 PERCENT OF BRANCH CIRCUITS AND ALL MOTOR BRANCH CIRCUITS OVER 25 HP.

PERFORM TESTS PRIOR TO CONNECTING EQUIPMENT AND IN PRESENCE OF AUTHORIZED REPRESENTATIVES. SUBMIT WRITTEN REPORT OF RESULTS. CORRECT OR REPLACE CABLE TESTING BELOW MANUFACTURER'S STANDARDS.

11. WIRING DEVICES:

a. WIRING DEVICES SHALL BE SPECIFICATION GRADE UNLESS OTHERWISE SPECIFIED. ALL DEVICES SHALL BE FLUSH MOUNTED, UNLESS OTHERWISE NOTED. PROVIDE COMPLETE MATERIAL AND ACCESSORIES AS NOTED.

b. LOCAL WALL SWITCHES SHALL BE ROCKER TYPE, QUIET OPERATING, RATED 20 AMP, 120/208 VOLT, AC. SIMILAR TO LEVITON DECORA SERIES A5621 (SINGLE POLE), A5623 (3-WAY) AND A5624 (4-WAY).

c. STRAIGHT BLADE RECEPTACLES SHALL BE COMMERCIAL SPECIFICATION GRADE DUPLEX CONVENIENCE 125 VOLTS, 2 POLE, 3 WIRE, U GROUND SLOT, DECORA SERIES BY LEVITON. GROUNDED, EXCEPT AS NOTED.

- 1) SINGLE GANG, RECESSED, DUPLEX RECEPTACLE: TAMPER RESISTANT, 2-POLE, 3-WIRE GROUNDING, 15A, 125V, NEMA 5-20R; LEVITON 689 SERIES (COLOR AS SPECIFIED BY ARCHITECT).
- 2) USB CHARGER/ DUPLEX TAMPER-RESISTANT RECEPTACLE: TAMPER RESISTANT.

e. DEVICE PLATES: SEE ARCHITECT FOR TYPE. FOR RECEPTACLES WITH OTHER THAN 120 VOLT, INSCRIBED VOLTAGE AVAILABLE.

f. COLORS: COORDINATE COLORS WITH ARCHITECT.

g. MOUNTING ORIENTATION OF RECEPTACLES (HORIZONTAL OR VERTICAL): COORDINATE WITH ARCHITECT.

12. LIGHTING FIXTURES:

a. FIXTURES TO BE AS SPECIFIED BY ARCHITECT AND SHALL BE COMPLETELY FACTORY ASSEMBLED, WIRED AND EQUIPPED WITH ALL NECESSARY SOCKETS, BALLASTS, SUPPORTING HARDWARE AND ACCESSORIES. REFER TO DRAWINGS FOR INDIVIDUAL FIXTURE DESCRIPTIONS.

b. FIXTURE CATALOG NUMBERS USED TO ILLUSTRATE EQUIPMENT TYPE DO NOT NECESSARILY DENOTE REQUIRED MOUNTING EQUIPMENT OR ACCESSORIES. PROVIDE ACCESSORIES TO SUIT.

c. BALLAST: CLASS P, HIGH POWER FACTOR, LOWEST AVAILABLE NEMA RATED NOISE LEVEL, E11 AND CBM APPROVED. ENERGY SAVING TYPE. TRIGGER START FOR 24-INCH LAMPS AND RAPID START FOR 48-INCH TWO LAMP BALLASTS; NO THREE LAMP BALLASTS. BALLASTS SHALL BE ADVANCE MAGNETEK, UNIVERSAL OR EQUAL.

d. LED DRIVERS SHALL BE ELECTRONIC TYPE, LABELED AS COMPLIANT WITH RADIO FREQUENCY INTERFERENCE (RFI) REQUIREMENTS OF FCC TITLE 47, PART 15 AND COMPLY WITH NEMA SSL 1 "ELECTRONIC DRIVERS FOR LED DEVICES, ARRAYS OR SYSTEMS". LED DRIVERS SHALL HAVE A SOUND RATING OF "A", HAVE A MINIMUM EFFICIENCY OF 85% AND BE RATED FOR A THD OF LESS THAN 20% AT ALL INPUT VOLTAGES.

e. DIMMABLE LED DRIVERS SHALL BE CAPABLE OF DIMMING WITHOUT LED STROBING OR FLICKER ACROSS THEIR FULL DIMMING RANGE. PROVIDE TYPE OF LED DRIVER AS PER LIGHTING FIXTURE SCHEDULE. DIMMABLE LED DRIVERS SHALL BE 0-10V WHERE NOT INDICATED.

f. CONTINUOUS ROW, TWO LAMP STRIP FIXTURES SHALL BE STAGGERED TYPE.

g. EXIT SIGNS SHALL BE PRECISION DIE-CAST ALUMINUM HOUSING WITH LASER-FORMED ACRYLIC LEGEND. EXIT SIGNS SHALL COMPLY WITH UL 924 AND BE MEA APPROVED FOR USE AC POWERED WITH PREMIUM LONG-LIFE NICKEL CADMIUM BATTERY WITH STANDARD UL LISTED 3-HOUR RUN TIME. PROVIDE WITH INTEGRAL AUTOMATIC CHARGER IN A SELF CONTAINED POWER PACK. LED INDICATOR WITH PUSH TO TEST SWITCH.

13. TELEPHONE CONDUIT SYSTEM:

a. PROVIDE COMPLETE SYSTEM OF: RACEWAYS AND ACCESSORIES, OUTLET BOXES, SLEEVES AND FISHWIRES.

b. EQUIPMENT SHALL CONFORM TO REQUIREMENTS OF TELEPHONE COMPANY.

c. OUTLETS SHALL BE:

- 1) WALL: 4 IN. SQUARE WITH BUSHED COVER PLATE.

d. PROVIDE FISHWIRES, IN RACEWAYS OVER 10 FT LONG.

e. CONDUIT SHALL BE 3/4 IN. MINIMUM. FURNISH EMPTY CONDUIT FROM OUTLET BOX TO BUSHED END THRU WALL 6" BELOW THE PLASTER CEILING.

f. FACE RACEWAYS IN ROOMS SHALL HUBBELL HBL500, HBL750 OR HBL2000 SERIES OR AS ACCEPTABLE.

14. GROUNDING AND BONDING:

a. PROVIDE GROUNDING SYSTEM IN ACCORDANCE WITH (2017) NATIONAL ELECTRICAL CODE), AND THESE SPECIFICATIONS. THE WIRING SYSTEM SHALL BE INSTALLED AS REQUIRED TO PROVIDE A CONTINUOUSLY GROUNDED SYSTEM. WHERE FLEXIBLE CONDUIT IS USED FOR PART OF A CONDUIT RUN, EXCEPT LIGHTING BRANCH CIRCUITS, AN INSULATED GROUNDING CONDUCTOR SHALL BE PROVIDED IN THE CONDUIT AND CONNECTED TO GROUNDING BUSHINGS AT EACH END OF THE RUN.

b. USE EXOTHERMIC WELDING PROCESS FOR INACCESSIBLE CONNECTIONS.

c. EXTEND EXISTING SYSTEM GROUND TO INCLUDE ALL THE ELECTRICAL EQUIPMENT IN THE SCOPE OF WORK.

d. WHERE FLEXIBLE METALLIC CONDUIT IS USED AN INTERNAL BONDING CONDUCTOR SHALL BE INSTALLED.

e. IN ADDITION, FURNISH A SEPARATE INSULATED GREEN EQUIPMENT GROUND CONDUCTOR WHERE INDICATED ON DRAWINGS AND FOR THE FOLLOWING BRANCH CIRCUITS:

- 1) CIRCUITS SERVING ANY WALL BOX DIMMER.
- 2) CIRCUITS SERVING ANY ISOLATED GROUND RECEPTACLES. TERMINATE GROUND DIRECTLY AT AN EQUIPMENT GROUNDING CONDUCTOR TERMINAL OF THE SOURCE AT THE SOURCE, OR AS OTHERWISE NOTED ON DRAWINGS.

3) CIRCUITS SERVING ANY DUPLEX OR SIMPLEX COMPUTER RECEPTACLES

4) ANY CIRCUIT SERVED VIA AN ISOLATION TRANSFORMER OR COMPUTER POWER DISTRIBUTION UNIT.

15. PANELBOARDS:

a. PANELBOARDS SHALL BE OF THE DEAD FRONT TYPE MANUFACTURED IN CODE GAUGE AND SIZE BOXES FOR MOUNTING AS INDICATED ON PLANS COMPLETE WITH TRIM, DOORS AND LOCKS. ALL LOCKS SHALL BE KEYED ALIKE.

b. CIRCUIT BREAKERS SHALL BE OF THE BOLT-ON THERMAL MAGNETIC MOLDED CASE TYPE, AND SHALL HAVE THE TRIP RATINGS AND NUMBER OF POLES SHOWN IN SCHEDULES ON THE CONTRACT DRAWINGS. FOR BLANK (SPACE) COMPARTMENTS, PROVIDE FULL RATED BUS. MINIMUM GUTTER SPACES SHALL BE 5-3/4". SIDES, TOP AND BOTTOM, INCREASE FOR THROUGH FEEDERS. PROVIDE 25% COPPER GROUND BUS AND 100% COPPER NEUTRAL BUS AND INCREASE NEUTRAL BUS INDICATED.

c. LOCKING TABS SHALL BE PROVIDED ON ALL CIRCUIT BREAKERS SERVING EMERGENCY LIGHTING, FIRE ALARM SYSTEM, SECURITY SYSTEMS AND OTHER EMERGENCY OR CRITICAL EQUIPMENT AND AS NOTED ON THE CONTRACT DRAWINGS. A TOTAL OF 5 SPARE LOCKING TABS SHALL BE FURNISHED TO THE OWNER.

d. BUSES SHALL BE HARD DRAWN COPPER OF 98 PERCENT CONDUCTIVITY AND SHALL HAVE CROSS SECTIONAL AREAS LARGE ENOUGH TO LIMIT THE TEMPERATURE RISE, WHEN CARRYING FULL LOAD, TO 35 DEGREES C. ABOVE AN AMBIENT INSIDE THE ENCLOSURE OF 55 DEGREES C. AS DEFINED IN IEEE STANDARD RULES. MAIN BUS CAPACITY SHALL BE AS SHOWN ON THE CONTRACT DRAWINGS.

e. ENCLOSURES SHALL BE SURFACE OR FLUSH AS INDICATED. TRIMS SHALL BE SECURED TO PANEL WITH MACHINE SCREWS. COVERS SHALL BE HINGED DOOR-IN-DOOR CONSTRUCTION WITH CYLINDER LOCKS AND CATCHES. LOCKS MUST BE COMPATIBLE WITH BUILDING STANDARD KEY SYSTEM AND WHEN NONE EXISTS, THEY SHALL BE SIMILAR TO A YALE NO. 911 KEY.

f. DISTRIBUTION AND SUB-DISTRIBUTION PANELBOARD SHALL BE A MINIMUM OF 30" WIDE AND 10" DEEP.

g. ALL STANDARD PANELBOARDS SHALL BE A MINIMUM OF 20" WIDE AND 5 3/4" DEEP.

h. FURNISH ALL PANELBOARDS WITH FEED-THRU LUGS UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

i. ALL NEW PANELBOARDS SHALL BE PROVIDED WITH AN ENGRAVED WHITE CORE LAMACOID NAMEPLATE, WITH 3/4 IN. WHITE LETTERING ON A BLACK BACKGROUND, WITH DESIGNATION LISTED (PANELBOARD NAME), FASTENED WITH EPOXY CEMENT OR OVAL HEAD CHROME PLATED MACHINE SCREWS.

j. THE CIRCUIT DIRECTORY SHALL BE TYPEWRITTEN AND PROVIDED INSIDE EACH PANEL DOOR TO INDICATE EQUIPMENT AND/OR AREA SERVED. DIRECTORY HOLDER SHALL BE METAL FRAME WITH CLEAR PLASTIC, TRANSPARENT COVER. THE TYPEWRITTEN LIST INDICATING CIRCUIT NUMBERS, OUTLETS SUPPLIED AND THEIR LOCATIONS SHALL BE PROVIDED.

k. TIE-BARS SHALL NOT BE USED TO CREATE MULTI-POLE CIRCUITS. MAXIMUM 42 CIRCUITS ALLOWED.

l. ONLY ONE WIRE SHALL BE INSTALLED UNDER EACH CIRCUIT BREAKER LUG.

m. SHORT CIRCUIT RATING OF PANELBOARDS SHALL NOT BE LESS THAN AS INDICATED ON THE CONTRACT DRAWINGS OR SPECIFIED HEREIN. WHERE NOT INDICATED OR SPECIFIED THE MINIMUM SHORT CIRCUIT RATING SHALL BE EQUAL TO THE INTERRUPTING CAPACITY OF THE LOWEST RATED CIRCUIT BREAKER IN THE PANELBOARD, BUT IN NO CASE LESS THAN 10,000 AMPERES R.M.S. SYMMETRICAL FOR 208Y/120 VOLT SYSTEM. SERIES RATED PANELBOARDS SHALL BE USED TO ACHIEVE REQUIRED SHORT CIRCUIT RATINGS.

n. FOR ALL EXISTING PANELBOARDS, CONTRACTOR SHALL PROVIDE NEW CIRCUIT BREAKERS TO REPLACE EXISTING AS REQUIRED AS INDICATED ON DRAWINGS.

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PROJECT NO	FT2501	
START DATE	03.28.2025	
DRAWN BY	NYE	
CHECKED BY	NYE	
NO.	DESCRIPTION	DATE
1	PERMIT	04.08.2025

ELECTRICAL SPECIFICATION
(SHEET 2 OF 2)

E0.3

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ELECTRICAL LIGHTING PLAN GENERAL NOTES:

A. CONTRACTOR ADVISED TO UPDATE THE EMERGENCY LIGHT FIXTURES LOCATIONS/QUANTITY PER SITE REQUIREMENT UP ON FINAL INSPECTION OR PER LOCAL AHJ REQUIREMENT. ONE FOOT CANDLE OF EMERGENCY ILLUMINATION SHALL BE PROVIDED ALONG ALL EGRESS PATHWAYS AND EMERGENCY SIGN SHALL BE INSTALLED AT ALL INTERSECTIONS, EXIT CORRIDORS, PATHWAYS AND EXIT EGRESS OPENINGS IN ACCORDANCE WITH THE IBC 1008.3.1 MEANS OF EGRESS ILLUMINATION. THE EMERGENCY POWER SYSTEM SHALL PROVIDE POWER FOR A DURATION OF 90MINUTES AND SHALL CONSIST OF STORAGE BATTERIES.

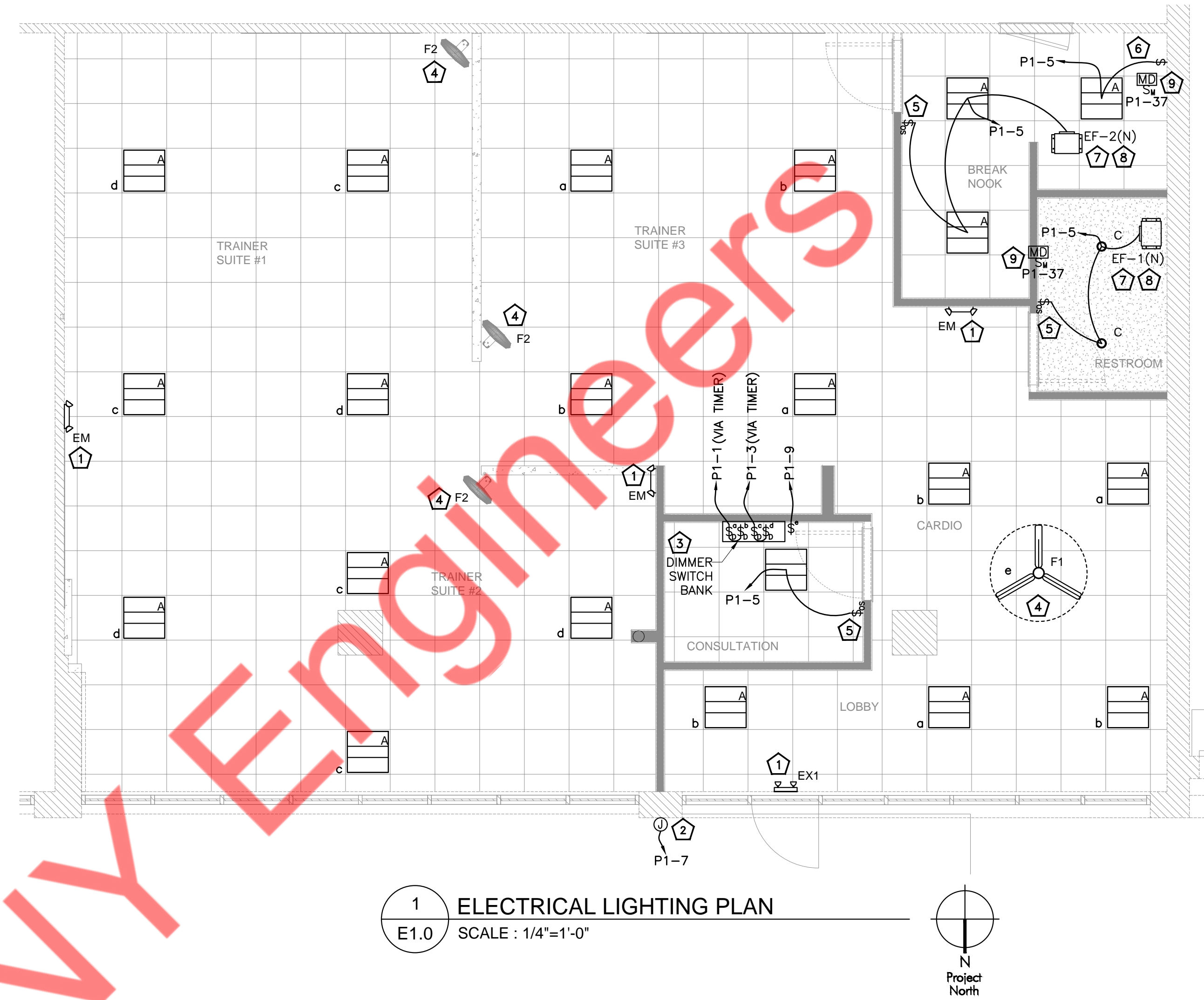
ELECTRICAL LIGHTING PLAN KEY NOTES:

1. CONNECT ALL EMERGENCY EGRESS FIXTURES TO THE NEAREST LIGHTING BRANCH CIRCUIT AHEAD OF ALL SWITCHING AND CONTROLS PER LOCAL CODES.
2. E.C. SHALL PROVIDE JUNCTION BOX FOR THE EXTERIOR SIGNAGE. INSTALL THE JUNCTION BOX WITHIN THE BUILDING. E.C. TO COORDINATE WITH THE SIGN VENDOR ON THE QUANTITY AND LOCATION OF THE REQUIRED JUNCTION BOXES. THE CONTRACTOR SHALL PROPERLY SIZE THE JUNCTION BOX BASED ON THE QUANTITY OF CONNECTIONS REQUIRED. VERIFY LOCATION WITH ARCHITECTURAL DRAWINGS AND SIGN VENDOR PRIOR TO INSTALLING. ALL SIGNS SHALL BE CONTROLLED VIA TIME CLOCK.
3. E.C. SHALL COORDINATE EXACT LOCATION OF TIMER/ DIMMER (COOPER-EATON SF10P- OR EQUAL RATED FOR CONNECTED LOAD TYPE AND WATTAGE) SWITCH BANK WITH OWNER/ ARCHITECT.
4. E.C. SHALL COORDINATE WITH VENDOR/ MANUFACTURER FOR SWITCHING, CONTROL REQUIREMENT OF FANS AND PROVIDE ACCORDINGLY. REFER TO E2.0 FOR CIRCUIT AND ELECTRICAL OUTLET REQUIREMENT. BASE BID ACCORDINGLY.
5. WALL MOUNTED OCCUPANCY SENSOR. PROVIDE DUAL TECHNOLOGY COOPER GREENGATE ONW-D-1001-MV OR EQUAL SPECIFICATION WALL MOUNTED OCCUPANCY SENSOR. BASE BID ACCORDINGLY.
6. LIGHTING NEAR ELECTRICAL PANELS SHALL NOT BE CONTROLLED BY ANY AUTOMATIC MEANS AND SHALL BE COMPILED AS PER NEC 110.26(D).
7. E.C. SHALL COORDINATE FOR EXACT LOCATION OF MECHANICAL EQUIPMENTS WITH MECHANICAL DRAWINGS.
8. INTERCONNECT EXHAUST FAN EF-1(N) AND EF-2(N) WITH LIGHTS IN SAME ROOM. E.C. SHALL COORDINATE WITH MECHANICAL DRAWINGS FOR EXACT FAN CONTROLS. BASE BID ACCORDINGLY.
9. INTERCONNECT MOTORIZED DAMPER TO THE RESPECTIVE AIR HANDLING UNITS. E.C. SHALL COORDINATE WITH MECHANICAL DRAWINGS FOR EXACT FAN CONTROLS. BASE BID ACCORDINGLY.

Fixture Type	Description	Manufacturer & CAT. Number	Lamp Type	Lamp Wattage	Voltage	Mounting information	Dimmer Type
A	2 X 2 TROFFER	HALCO 81780	LED	12W	120V-277V	RECESSED	0-10V DIMMING
C	RECESSED CAN	LITHONIA LBR4 AL02 SWW1 AR LSS MWD MVOLT UGZ WL/LBR4PFW	LED	14W	120V-277V	RECESSED	0-10V DIMMING
F1	CEILING FAN	BY OWNER	NA	NA	120	VERIFY WITH ARCHITECT	
F2	WALL FAN	RE: ARCH	NA	NA	120	VERIFY WITH ARCHITECT	
EM	EM 2 HEAD	LITHONIA EUC2 M6/ EU2LM12	LED	1W	120V-277V	WALL	
EX1	EXIT/ EM 2 HEAD	LITHONIA ECRG SQ M6	LED	3.5W	120V-277V	WALL	

NOTES:(NOTES APPLY TO ALL FIXTURES WHERE APPLICABLE)

- A. EMERGENCY FIXTURES – ALL FIXTURES INDICATED AS EMERGENCY SHALL BE PROVIDED WITH A 90-MINUTE BATTERY PACK AND ALL FLUORESCENT FIXTURES.
- B. VERIFY VOLTAGES – THE E.C. SHALL VERIFY VOLTAGES ON DRAWINGS PRIOR TO ORDERING OR ANY WORK, THE ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES IN THE VOLTAGE OF THE CIRCUITING ON THE DRAWINGS AND THE LUMINAIRE SCHEDULE PRIOR TO ANY PURCHASE OR WORK.
- C. VERIFY LAMPING – THE E.C. SHALL VERIFY LAMPING WITH THE MANUFACTURER PRIOR TO ORDERING AND NOTIFY THE ENGINEER OF ANY LAMPING DISCREPANCIES.
- D. PROVIDE A COMPLETE INSTALLATION – THE E.C. SHALL PROVIDE ALL LABOR AND MATERIAL TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM PER THE DESIGN INTENT AS DICTATED BY THE SWITCHING TYPE AND LOCATION (INCLUDING DIMMER SWITCHES AND COMPATIBLE BALLASTS OR TRANSFORMERS), CEILING TYPE AND LOCATION, CIRCUITING, VOLTAGES, AND LAMPING TYPES.
- E. DUAL LEVEL SWITCHING – FOR FIXTURES WITH MORE THAN ONE SWITCH DESIGNATION SHOWN ON PLANS PROVIDE FIXTURES WITH ADDITIONAL BALLASTS FOR DUAL LEVEL LIGHT CONTROL BY SEPARATE SWITCHING OF INBOARD AND OUTBOARD LAMPS AS REQUIRED TO CONFORM TO IECC REQUIREMENTS.



1 ELECTRICAL LIGHTING PLAN
E1.0 SCALE : 1/4"=1'-0"

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PROJECT NO	FT2501
START DATE	03.28.2025
DRAWN BY	NYE
CHECKED BY	NYE
NO. DESCRIPTION DATE	
1 PERMIT	04.08.2025

ELECTRICAL LIGHTING PLAN

E1.0

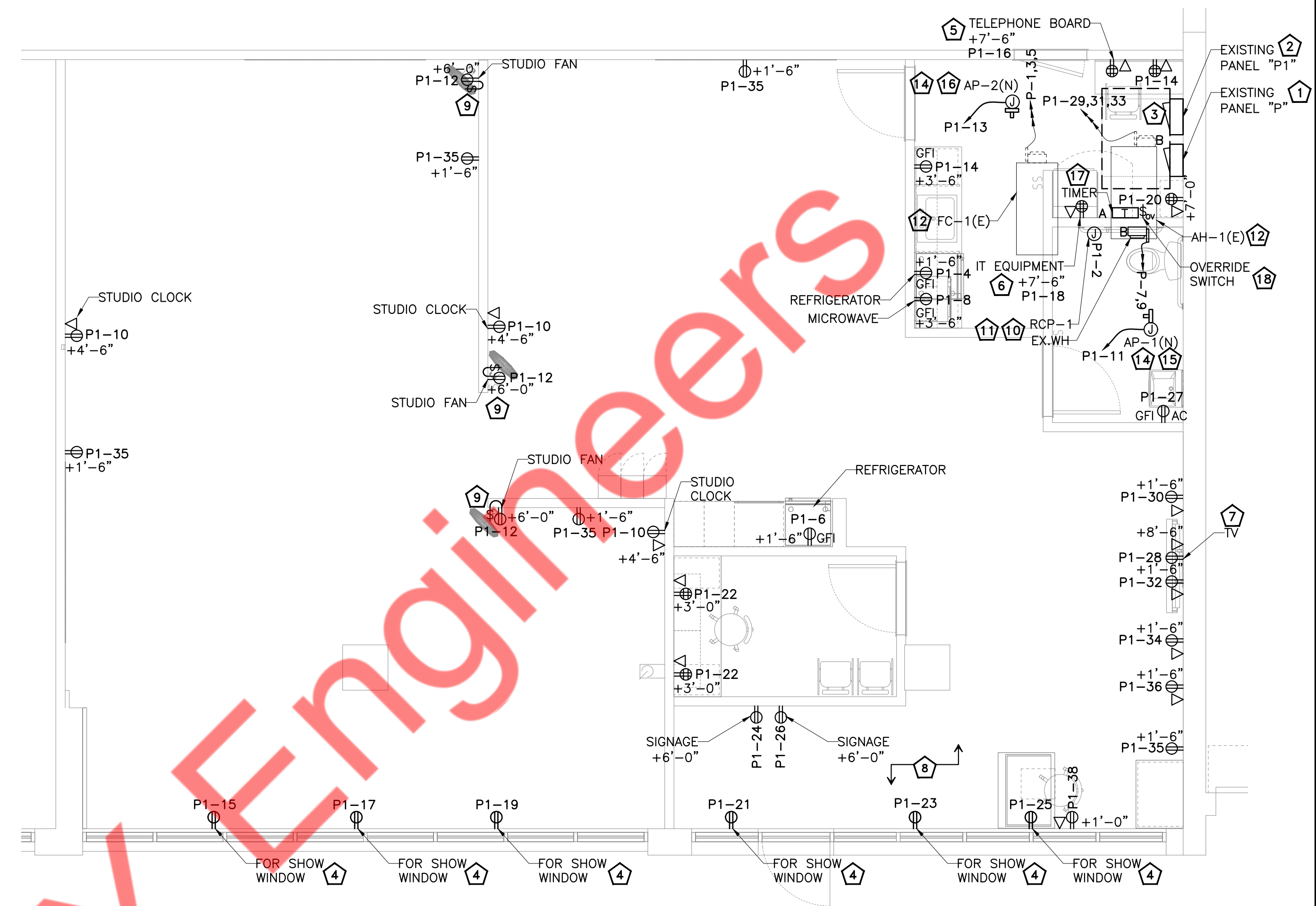
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ELECTRICAL FLOOR POWER PLAN KEY NOTES:

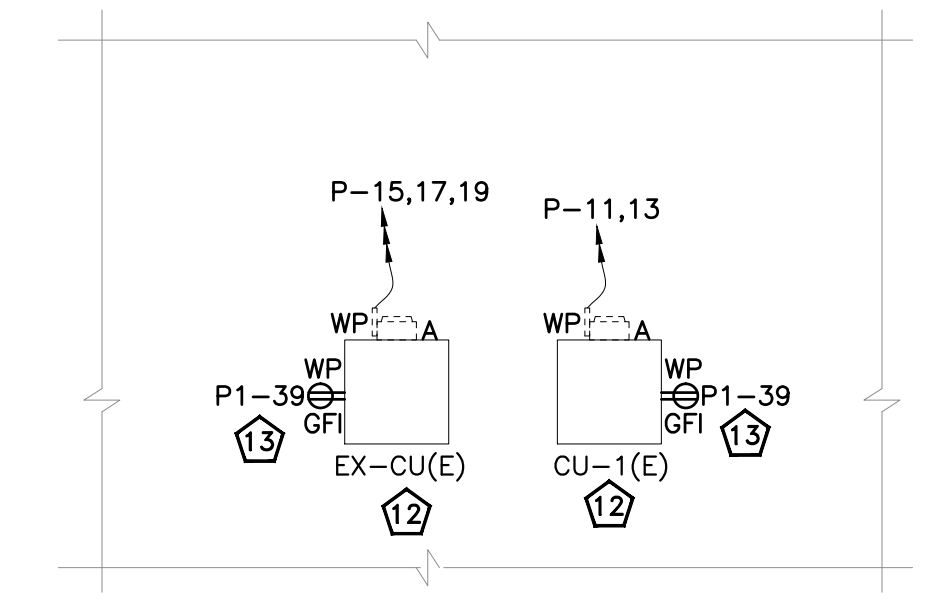
- 1 EXISTING 400A(M.L.O), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "P" SHALL REMAIN. E.C SHALL FIELD VERIFY THE EXACT SIZE, LOCATION & OPERABLE CONDITION OF THE PANEL AND REPLACE IF FOUND INOPERABLE. BASE BID ACCORDINGLY.
- 2 EXISTING 225A(M.L.O), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "P1" SHALL REMAIN. E.C SHALL FIELD VERIFY THE EXACT SIZE, LOCATION & OPERABLE CONDITION OF THE PANEL AND REPLACE IF FOUND INOPERABLE. BASE BID ACCORDINGLY.
- 3 E.C SHALL VERIFY/PERFORM THE INSTALLATION OF ELECTRICAL PANELS IN COMPLIANCE WITH NEC ARTICLE 110.26(A) AND (B). E.C. SHALL FIELD VERIFY THAT THE PANELS ARE UNOBSTRUCTED AND THE AREA WHERE THE PANELS ARE PLACED SHALL NOT BE USED AS A STORAGE SPACE.
- 4 PROVIDE RECEPTACLE FOR SHOW WINDOW IN CEILING OR WALL WITHIN 18" MAX ABOVE STORE FRONT AS PER N.E.C 210.62 VERIFY EXACT LOCATION WITH ARCHITECT/ OWNER.
- 5 TELEPHONE BOARD LOCATION (TTB) - THE E.C. SHALL PROVIDE AND INSTALL 3/4"x24"x48" PLYWOOD BACKBOARD, INSTALL TIGHT TO CEILING AND PAINT TO MATCH WALL. PROVIDE 1" C WITH PULL STRING BACK TO THE BUILDING TELEPHONE/ DATA SERVICE ENTRANCE. PROVIDE DEDICATED NEMA 5-20R RECEPTACLE +84" AFF ON TTB AND CIRCUIT AS SHOWN. FIELD VERIFY LOCATION, MOUNTING HEIGHT AND ORIENTATION AND ADDITIONAL REQUIREMENTS WITH TENANT PRIOR TO BID OR ANY WORK.
- 6 IT EQUIPMENT - PROVIDE DEDICATED CIRCUIT WITH DEDICATED GROUND AND NEUTRAL CONDUCTOR. FIELD VERIFY FINAL LOCATION, MOUNTING HEIGHT, ELECTRICAL REQUIREMENTS WITH EQUIPMENT PROVIDER PRIOR TO ROUGH-IN.
- 7 TV/ MONITOR - PROVIDE POWER AND DATA/ CAT6 JACKS AS REQUIRED AND PROVIDE RACEWAY OR J-HOOKS TO VIDEO SOURCE. FIELD VERIFY REQUIREMENTS WITH TENANT AND TV PROVIDER. FIELD VERIFY FINAL LOCATION, MOUNTING HEIGHT WITH ARCHITECT PRIOR TO ANY ROUGH-IN.
- 8 ALL 15/20A RECEPTACLES IN THE LOBBY, RECEPTION & HALLWAY SHALL BE TAMPER RESISTANCE AS PER NEC 406.12(5).
- 9 PROVIDE SWITCHING AS INDICATED. E.C SHALL COORDINATE WITH ARCHITECT/ OWNER FOR EXACT MOUNTING HEIGHT, LOCATION FOR STUDIO WALL FAN "F2" SWITCHES. BASE BID ACCORDINGLY.
- 10 RELOCATED EXISTING WATER HEATER ALONG WITH ITS ELECTRICAL FIXTURES. E.C SHALL RE-CIRCUIT THE WATER HEATER TO THE EXISTING PANEL "P" AS SHOWN IN PLAN. E.C SHALL VERIFY THE OPERABLE CONDITION OF EXISTING ELECTRICAL FIXTURE OF WATER HEATER AND PROVIDE NEW IF FOUND INOPERABLE. BASE BID ACCORDINGLY.
- 11 E.C SHALL COORDINATE WITH THE PLUMBING CONTRACTOR FOR THE EXACT LOCATION AND POWER REQUIREMENT OF RCP-1 IN FIELD. PROVIDE CIRCUIT AND CONTROL AS REQUIRED. BASE BID ACCORDINGLY.
- 12 EXISTING MECHANICAL EQUIPMENTS ALONG WITH ITS ELECTRICAL FIXTURES AND CONNECTIONS SHALL REMAIN CONNECTED TO EXISTING RESPECTIVE ELECTRICAL PANEL. E.C SHALL VERIFY THE OPERABLE CONDITION OF ALL THE ELECTRICAL CONNECTION AND EXISTING ELECTRICAL FIXTURE IN FIELD AND REPLACE IF FOUND INOPERABLE. REPORT TO ENGINEER FOR ANY DISCREPANCY BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.
- 13 PROVIDE NEW SERVICE OUTLETS AS SHOWN IN PLANS. BASE BID ACCORDINGLY.
- 14 E.C SHALL COORDINATE WITH EQUIPMENT VENDOR/ MANUFACTURER FOR EXACT POWER REQUIREMENT, LOCATION, CONTROLS AND WIRING FOR AP-1(N) AND AP-2(N). REPORT TO ENGINEER FOR ANY DISCREPANCY BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.
- 15 INTERCONNECT AIR PURIFIER AP-1(N) WITH AH-1(E). E.C SHALL COORDINATE WITH MECHANICAL DRAWINGS FOR EXACT CONTROLS. BASE BID ACCORDINGLY.
- 16 INTERCONNECT AIR PURIFIER AP-2(N) WITH FC-1(E). E.C SHALL COORDINATE WITH MECHANICAL DRAWINGS FOR EXACT CONTROLS. BASE BID ACCORDINGLY.
- 17 E.C SHALL COORDINATE WITH OWNER/ ARCHITECT FOR EXACT LOCATION OF THE INTERMATIC ET9081SCR ELECTRONIC TIMER IN FIELD. BASE BID ACCORDINGLY.
- 18 E.C SHALL PROVIDE OVERRIDE SWITCH. E.C SHALL COORDINATE THE EXACT LOCATION WITH ARCHITECT/ OWNER. BASE BID ACCORDINGLY.

ELECTRICAL FLOOR POWER PLAN GENERAL NOTES:

- A. FIELD VERIFY FINAL LOCATION OF ALL EQUIPMENT WITH PROVIDER PRIOR TO ROUGH-IN. ALL RECEPTACLES IN BATHROOMS, KITCHENS, ROOFTOPS, OUTDOORS, AND WITHIN 6FT. OF A SINK SHALL BE GFCI (OR SERVED BY A GFI CIRCUIT BREAKER) PER NEC 210.8(B). THE E.C. SHALL PROVIDE GFCI OUTLETS (OR CIRCUIT BREAKERS) IN ALL LOCATIONS REQUIRED BY THE NEC.
- B. PROVIDE PHOTOCELL ON/TIMECLOCK OFF CONTROLS. PROVIDE ALL COMPONENTS REQUIRED FOR A COMPLETE INSTALLATION.
- C. NUMBERS NEXT TO DEVICES REFER TO CIRCUIT DESIGNATION IN UNIT PANEL UNLESS NOTED.
- D. ALL TELE/ DATA LOCATIONS SHALL INCLUDE 4" SQUARE J-BOX AND 3/4" CONDUIT TO CEILING SPACE.
- E. ALL TELEPHONE/DATA CABLE IS TO BE PLENUM RATED WIRE OR SHALL BE INSTALLED IN CONDUIT ABOVE CEILING OR IN WALLS.
- F. PROVIDE ALL DEMOLITION WORK AS REQUIRED TO ACCOMMODATE THE NEW WORK AS INDICATED ON THE ELECTRICAL PLANS. FIELD VERIFY EXISTING CONDITIONS. PROVIDE ANY ADDITIONAL WORK NECESSARY AS REQUIRED TO PRESERVE EXISTING DEVICES AND BRANCH CIRCUIT COMPONENTS TO REMAIN. REFER TO THE ARCHITECTURAL PLANS FOR DEMOLITION SCOPE OF WORK AND VISIT THE SITE PRIOR TO BID TO DETERMINE THE ELECTRICAL SCOPE OF WORK REQUIRED.
- G. THIS DESIGN IS DIAGRAMMATICAL. REFER TO MANUFACTURER'S RECOMMENDATIONS AND INSTALLATION MANUALS FOR SPECIFIC LOCATIONS AND INSTALLATION DETAILS. REFER TO ARCHITECTURAL DRAWINGS FOR ANY DIMENSIONS.
- H. ALL REUSED MATERIALS OR EQUIPMENT SHALL BE IN GOOD CONDITION AND THE SYSTEM SHALL BE IN COMPLIANCE WITH ALL APPLICABLE CODES AND IN GOOD WORKING ORDER AT THE COMPLETION OF THE PROJECT.



1 ELECTRICAL FLOOR POWER PLAN
E2.0 SCALE : 1/4"=1'-0"



2 ELECTRICAL ROOF PART POWER PLAN
E2.0 SCALE : 1/4"=1'-0"

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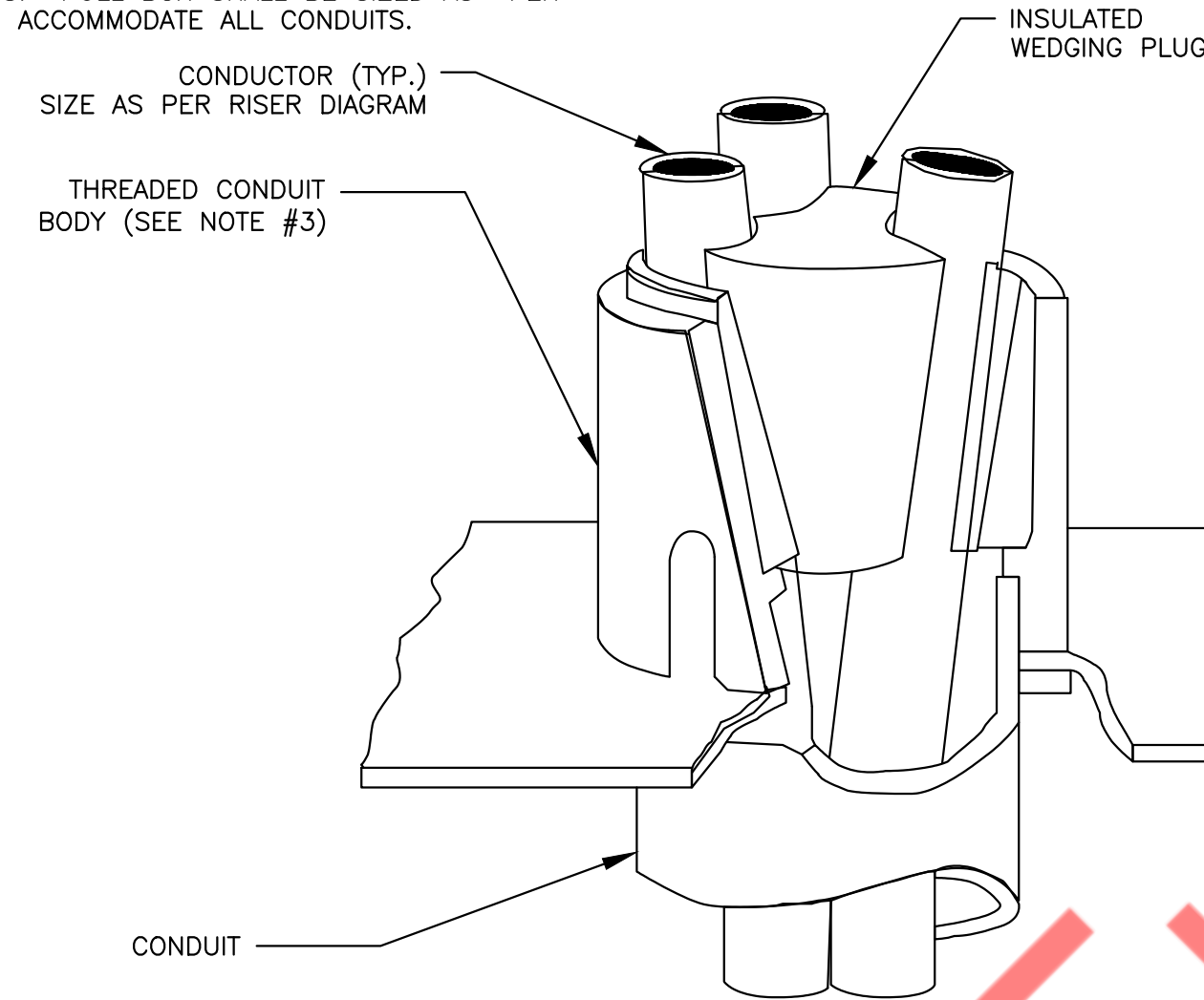
PROJECT NO	FT2501	
START DATE	03.28.2025	
DRAWN BY	NYE	
CHECKED BY	NYE	
NO.	DESCRIPTION	DATE
1	PERMIT	04.08.2025

ELECTRICAL FLOOR AND ROOF PART POWER PLAN

E2.0
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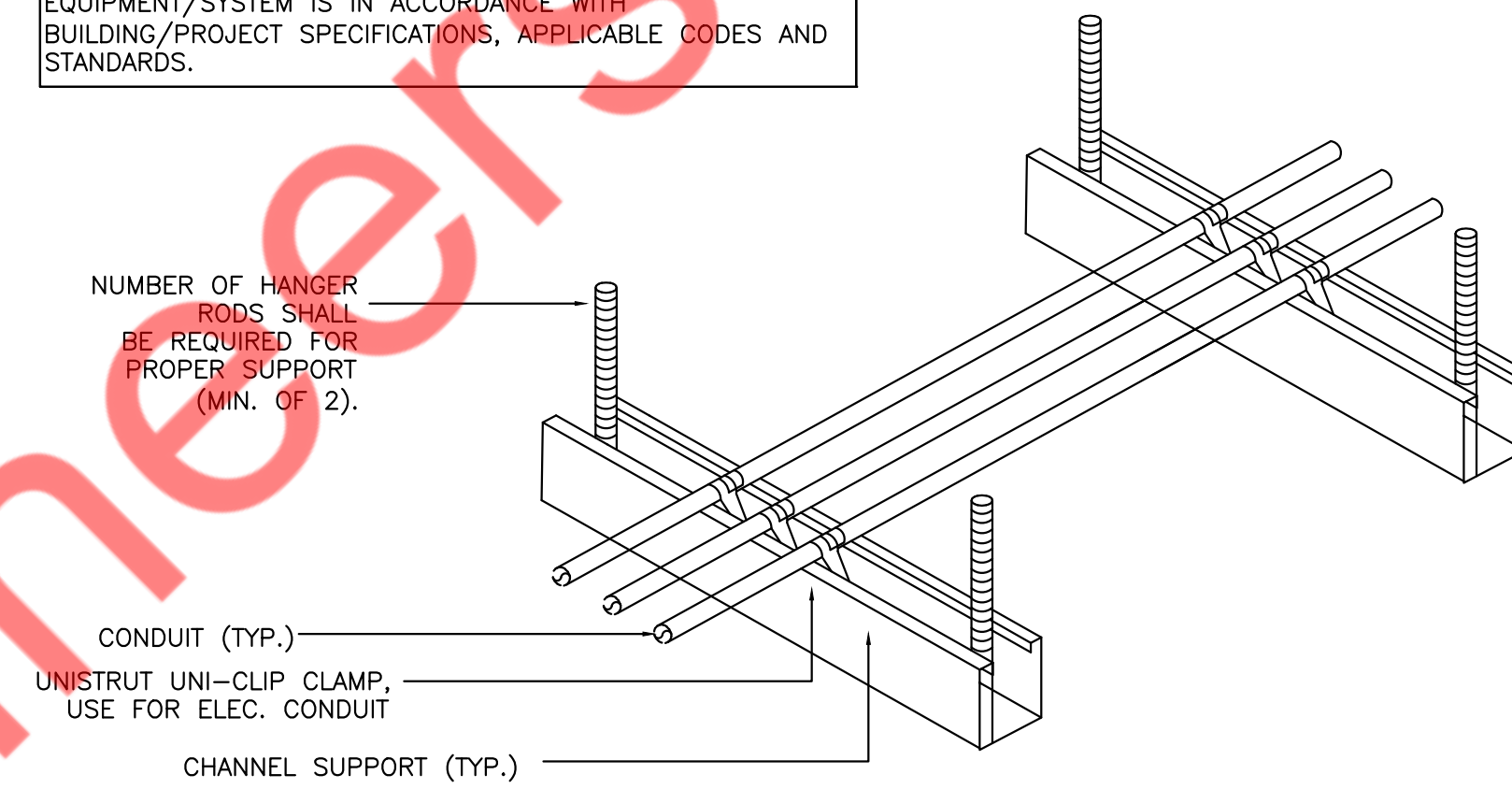
NOTES:

- ALL CONDUCTORS IN VERTICAL RACEWAYS SHALL BE SUPPORTED IN ACCORDANCE WITH ARTICLE 300.19 OF NEC. CABLE SUPPORTS SHALL BE LOCATED AT THE INTERVALS REQUIRED BY THE NEC.
- CABLE SUPPORT SYSTEM SHALL BE AS MANUFACTURED BY O-Z GEDNEY WITH pOZI-GRIP "S"-STYLE WEDGING PLUG OR APPROVED EQUAL.
- FOR THREADLESS CONDUIT (RIGID, IMC OR EMT), ATTACH CONDUIT BODY TO MALE THREADS OF A SET SCREW OR COMPRESSION CONNECT, AS PERMITTED BY SPECIFICATIONS.
- PROVIDE PULL BOX AT EACH LOCATION OF CABLE SUPPORTS. PULL BOX SHALL BE SIZED AS PER CODE TO ACCOMMODATE ALL CONDUITS.



4 VERTICAL CABLE SUPPORT DETAIL
E4.0 N.T.S.

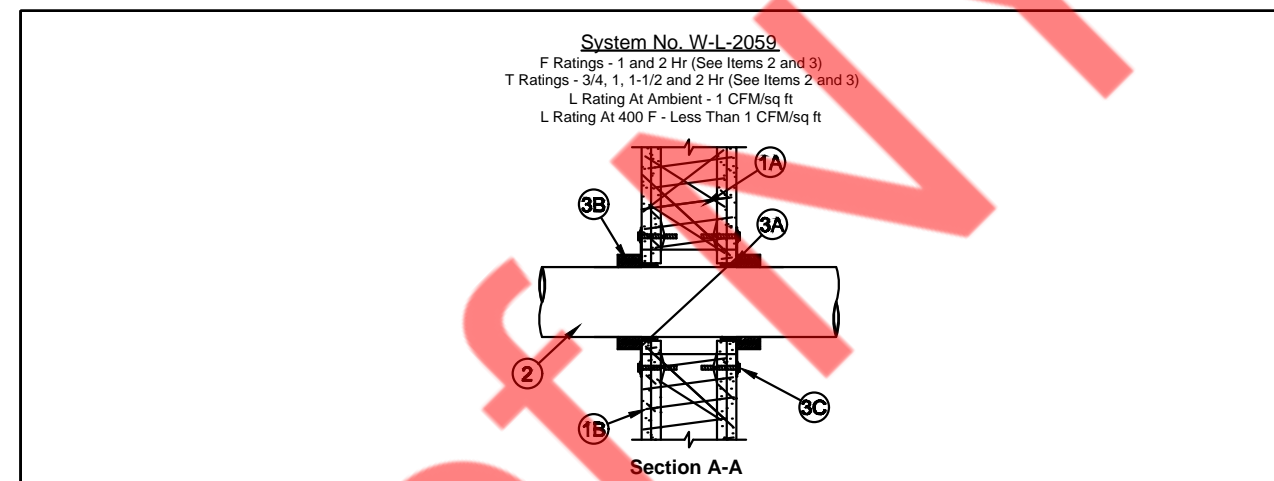
NOTE:
THIS INFORMATION MAY NOT CONTAIN ALL DETAILS REQUIRED FOR CONSTRUCTION. APPROPRIATE MODIFICATION MAY BE REQUIRED TO ENSURE SUITABILITY OF THESE DRAWINGS FOR THE SPECIFIC APPLICATION. IT IS THE USER'S RESPONSIBILITY TO ENSURE INSTALLATION OF THE EQUIPMENT/SYSTEM IS IN ACCORDANCE WITH BUILDING/PROJECT SPECIFICATIONS, APPLICABLE CODES AND STANDARDS.



NOTES:

- ALL CONDUIT MAY BE COMBINED ON SAME SUPPORT CHANNEL WHERE PRACTICAL.
- SUPPORT CHANNEL LENGTH SHALL NOT BE DETERMINED UNTIL ALL PIPING, CONDUIT, ETC. TO BE SUPPORTED IS COORDINATED.
- SUPPORT CHANNEL SPACING SHALL BE NO MORE THAN 10'-0".
- UNISTRUT AND CONDUIT INSTALLATION MAY BE REVERSED.

2 CONDUIT SUPPORT DETAIL
E4.0 N.T.S.



- Wall Assembly - The 1 or 2 hr fire rated gypsum board/wall assembly shall be composed of the materials and in the manner described in the individual U300, U400 and V400 Series Wall and Partition Details in the UL Fire Resistance Directory and shall include the following construction features:
A. Studs - Wall framing may consist of steel stud studs or steel channel studs. Wood studs to consist of nominal 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Studs must be min 2-1/2 in. (64 mm) wide (top and bottom) max 24 in. (610 mm) OC.
B. Gypsum Board - 5/8 in. (16 mm) thick, 48 (1219 mm) wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300, U400 or V400 Series Detail in the UL Fire Resistance Directory. Max. diam of opening is 14 in. (357 mm).
C. Through-Penetrations - One nonmetallic pipe or conduit shall be centered within the firestop system. The annular space shall be max 1/4 in. (6 mm). Pipe or conduit to be rigidly supported on both sides of the wall assembly. The following types and sizes of nonmetallic pipes or conduits may be used:
A. Polyvinyl Chloride (PVC) Pipe - Nom 4 in. (102 mm) diam for use in closed (process or supply) or vented (drain, waste or vent) piping systems. When Schedule 80 PVC pipe is used, the F and T Ratings are 1 hr. When Schedule 80 PVC pipe is used in closed (process or supply) piping systems, the F and T Ratings are equal to the assembly rating of the wall in which it is installed.
B. Rigid Nonmetallic Conduit - Nom 4 in. (102 mm) diam for use in closed (process or supply) piping systems.
C. Ductile Polyethylene Conduit (DPEC) Pipe - Nom 4 in. (102 mm) diam for use in closed (process or supply) piping systems.
D. Polyethylene Conduit (PE) Pipe - Nom 4 in. (102 mm) diam for use in closed (process or supply) or vented (drain, waste or vent) piping systems.
E. Fire Retardant Polyethylene (FRPE) Pipe - Nom 4 in. (102 mm) diam for use in closed (process or supply) or vented (drain, waste or vent) piping systems.
F. Polyethylene Fluoride (PEF) Pipe - Nom 4 in. (102 mm) diam for use in closed (process or supply) or vented (drain, waste or vent) piping systems.
G. Fiberglass Reinforced Pipe (FRP) Pipe - Nom 4 in. (102 mm) diam for use in closed (process or supply) or vented (drain, waste or vent) piping systems. When FRP pipe is used, T Rating is 3/4 hr.
H. High Density Polyethylene (HDPE) Pipe - Nom 4 in. (102 mm) diam for use in closed (process or supply) piping systems.
- Firestop System - The firestop system shall consist of the following:
A. Fill, Void or Cavity Sealant - Sealant - Fill material forced into annular space to maximum extent. Caulk shall be installed flush with both surfaces of wall assembly.
B. SPECIFIED TECHNOLOGIES INC. - SpecSeal 100, 101, 102, 120 or 129 Sealant, SpecSeal LCI Sealant, Penel 300 Sealant or SpecSeal Series SL300 Sealant
C. Fill, Void or Cavity Material - Wrap Strip - Nom 1/8 or 3/16 in. (3.2 or 4.8 mm) thick incompressible material faced on both sides with plastic film, supplied in 1-1/2 in. (38 mm) wide strips. The length of wrap strips are individually wrapped around the through-penetrant with ends butted and held in place with masking tape. Butted ends in successive layers shall be aligned.

Fire Rating of Wall	Max. Diam of Through Penetrant	No. of Wrap Strip Layers	F Rating Hr	T Rating Hr
1	1-1/2 (38)	1	1	1
2	1-1/2 (38)	1	2	1-1/2
1	2 (51)	1	1	1
2	2 (51)	1	2	1-1/2
1	3 (76)	2	1	1
2	3 (76)	2	2	2
1	4 (102)	3	1	1
2	4 (102)	3	2	2

Except as noted in item 2, the F and T Rating of the firestop system is dependent upon the fire rating of wall, diam of through penetrant and the number of wrap strips as tabulated below.

SPECIFIED TECHNOLOGIES INC. - SpecSeal BLU Wrap Strip, SpecSeal BLU Wrap Strip or SpecSeal RED Wrap Strip

C. Steel Collar - Collar fabricated from coils of precast 0.016 in. (0.4 mm) thick (30 MS) galv steel sheet available from wrap strip manufacturer. Collar shall be min 1-1/2 in. (38 mm) wide with 1 in. (25 mm) wide by 2 in. (51 mm) long anchor tabs for anchoring to the concrete floor or wall. Retainer side, 3/4 in. (19 mm) wide tapering down to 1/4 in. (6 mm) wide and located opposite the anchor tabs, are folded 90 degree toward pipe surface to maintain the annular space around the pipe and to retain the wrap strips. Steel collar wrapped around wrap strips and pipe with a 1 in. (25 mm) wide overlap along its perimeter joint and secured together by means of a min 1/4 in. (6 mm) wide by 1/2 in. (13 mm) thick stainless steel hose clamp installed at mid-depth of the steel collar. As an alternate to the steel hose clamp, the steel collar may be secured together by means of three No. 14, 1/8 in. (6 mm) long steel sheet metal screws when more than one layer of wrap strip is used.

Wrap strip/protrusion assembly is slid along the through-penetrant until about the surface of the wall. Collar secured to wall by 1/8 in. (3.2 mm) diam by 1-3/4 in. (44 mm) long steel moly bolts in conjunction with 1/4 in. (25 mm) diam steel leader washers. The number of moly bolts used is dependent upon the nom diam of the through penetrant. They must be located, symmetrically, are required for nom 1-1/2 in. (38 mm) and 2 in. (51 mm) diam through penetrants. Three moly bolts, symmetrically located, are required for nom 2-1/2 in. (64 mm) and 3 in. (76 mm) diam through penetrants. Four moly bolts, symmetrically located, are required for nom 3-1/2 in. (89 mm) and 4 in. (102 mm) diam through penetrants. Steel collars are installed on each side of wall.

D. Firestop Device - (Optional, Not Shown) - An alternate to item 3C, galv steel collar fitted with an incompressible material sized to fit the specific diam of the through penetrant. Device shall be installed around through-penetrant in accordance with accompanying installation instructions. Device installation instructions shall be secured to each surface of wall assembly by means of 1/8 in. (3.2 mm) diam by 1-3/4 in. (44 mm) long steel moly bolts in conjunction with 1/4 in. (25 mm) diam steel leader washers.

SPECIFIED TECHNOLOGIES INC. - SpecSeal Firestop Collar, SpecSeal LCI Collar or SpecSeal SSC Collar. When SpecSeal LCI Collar or SpecSeal SSC Collar are used, the max annular space shall be 1/4 in. (6 mm) for max 2-1/2 in. (64 mm) diam pipe and shall be max 1/4 in. (6 mm) for pipe larger than 2-1/2 in. (64 mm) diam.

*Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

Specified Technologies Inc. 210 Evans Way, Somerville, NJ 08876
Created or Revised November 27, 2012
080890-1180 | 800828-8000 | FAX 908221-8413 | E-Mail: techsupport@stipromo.com | Website: www.stipromo.com

3 FIRE STOP DETAIL
E4.0 N.T.S.

1 DETAIL TYPICAL ROUGH-IN REQUIREMENTS
E4.0 N.T.S.

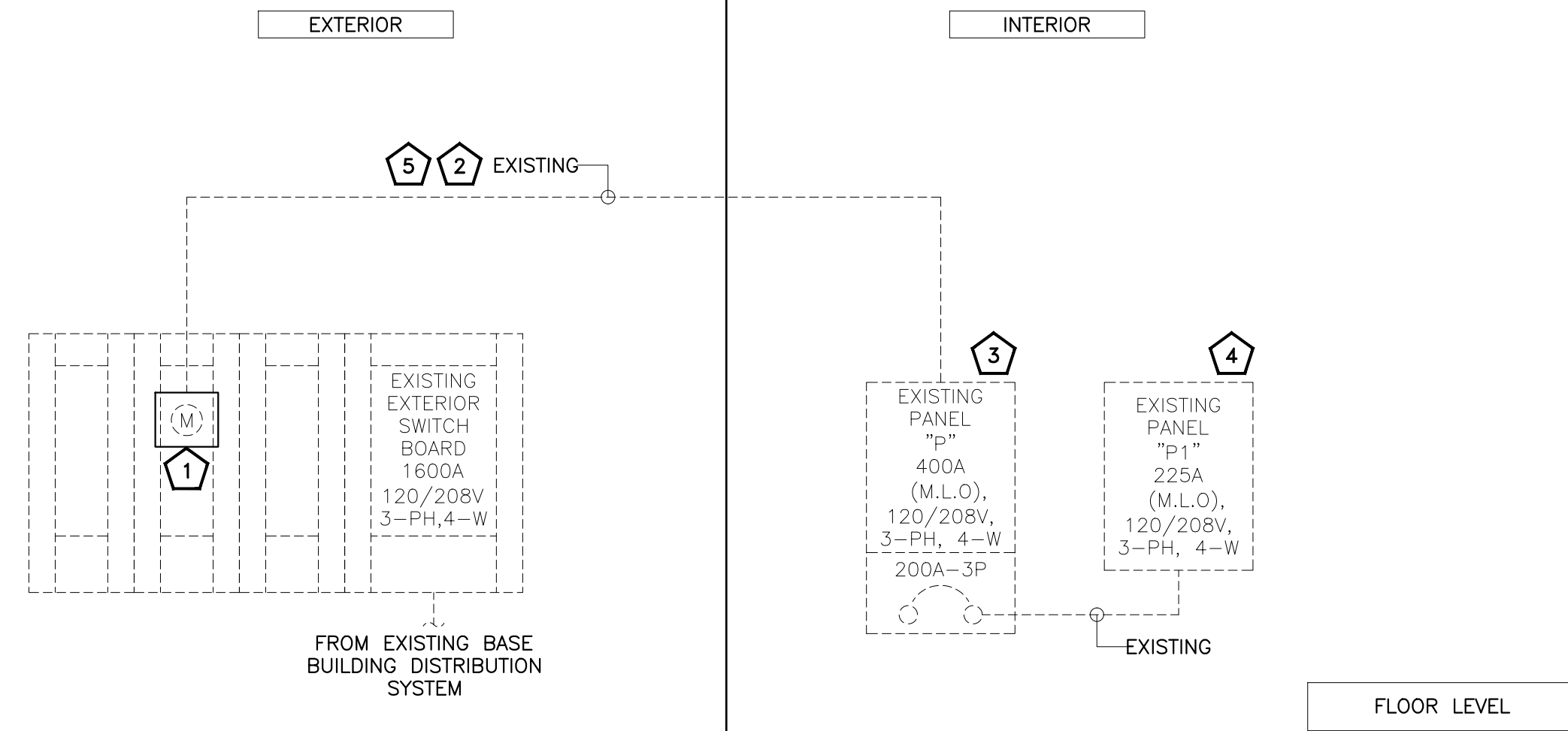
NY ENGINEERS
382 NE 191st ST, SUITE
49674
MIAMI, FL 33179

TENANT FINISH FOR
FITNESS TOGETHER
LEAWOOD KS

PROJECT NO	FT2501	
START DATE	03.28.2025	
DRAWN BY	NYE	
CHECKED BY	NYE	
NO.	DESCRIPTION	DATE
1	PERMIT	04.08.2025

ELECTRICAL DETAILS

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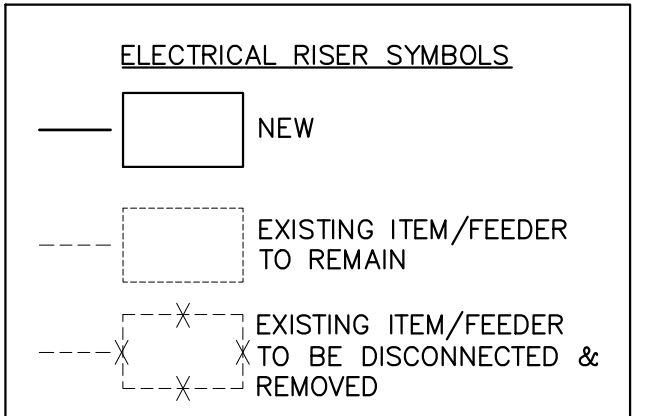


PANEL SCHEDULE:--

PANEL: P (E)										MOUNTING: SURFACE					
208Y/120		VOLTS		3		PHASE		4		WIRE		PANEL LOCATION: IT CLOSET			
MAIN CB:		NA		MLO:		400A		BUS:		EXISTING		MIN.		FED FROM: EXISTING METER AND BREAKER SWITCH	
NOTE: L: LIGHTING, H: HVAC LOAD, M: MOTOR LOAD, R: RECEPTACLES, O: OTHER/MISC. (TYPICAL)															
CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA)			MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.	
						A	B	C							
1			H	5.70		5.70						SPACE		2	
3	60-3P	FC-1 (E) 1	H	5.70		5.70						SPACE		4	
5			H	5.70			5.70					SPACE		6	
7			O	2.25	2#10, #10G, 3/4"	2.25								8	
9	30-2P	EX.WH	O	2.25			2.25						100-4P	10	
11			H	1.44				1.44						12	
13	20-2P	CU-1 (E) 1	H	1.44	EXISTING	1.44								14	
15			H	1.80			1.80							16	
17	20/3P	EX-CU (E) 1	H	1.80	EXISTING		1.80						60-2P	18	
19			H	1.80				1.80						20	
21	80/2P	SPARE					0.00							20	
23							0.00							22	
25							0.00							24	
27							0.00							26	
29							0.00		0.00					28	
31							0.00		0.00					30	
33							0.00		0.00					32	
35							0.00		0.00					34	
37							0.00		0.00					36	
39							0.00		0.00					38	
41							0.00		0.00					40	
							13.35							42	
SUB FEED	NA	NA					13.35							200-3P	
							13.35							42	
							13.35							42	
TOTAL CONNECTED LOAD (KVA)						24.54	23.10	13.35				EXISTING PANEL "P1" 1			

ELECTRICAL RISER DIAGRAM GENERAL NOTES:

- ABOVE RISER DIAGRAM IS FOR REFERENCE PURPOSES ONLY. E.C. SHALL VERIFY EXACT POWER DISTRIBUTION IN FIELD AND INFORM ENGINEER ON RECORD FOR ANY DISCREPANCY.
- E.C. SHALL VERIFY INCOMING SERVICE AMPERAGE, WIRE SIZING AND DISTRIBUTION.
- E.C. SHALL COORDINATE FAULT CURRENT (Isc) RATING WITH UTILITY COMPANY AND AHJ PRIOR TO COMMENCING ANY WORK.
- E.C. SHALL VERIFY OPERABLE CONDITIONS OF EXISTING DEVICES IN FIELD. REPLACE/ RECTIFY IF FOUND INOPERABLE. BASE BID ACCORDINGLY.
- EXISTING ELECTRICAL DISTRIBUTION TO BE MAINTAINED AND UTILIZED TO SERVE PROJECT SPACE. POWER RISER DIAGRAM INDICATED FOR REFERENCE PURPOSES ONLY.
- E.C. SHALL COORDINATE WITH OWNER/ LANDLORD/ BASE BUILDING FOR THE EXACT SCOPE OF WORK/ LIABILITIES.



ELECTRICAL RISER DIAGRAM KEY NOTES:

- EXISTING 400A, 120/208V, 3-PHASE, 4-WIRE ELECTRICAL METER AND BREAKER SWITCH SHALL REMAIN. E.C. SHALL COORDINATE WITH BASE BUILDING/ LANDLORD/ OWNER FOR EXACT RATING, LOCATION OF ELECTRICAL METER & BREAKER SWITCH IN FIELD. E.C. TO FIELD VERIFY OPERABLE CONDITION OF METER & BREAKER SWITCH AND PROVIDE NEW IF FOUND INOPERABLE. REPORT TO ENGINEER ON RECORD FOR ANY DISCREPANCY PRIOR TO ROUGH-IN. BASE BID ACCORDINGLY.
- EXISTING INCOMING FEEDERS TO REMAIN. E.C. SHALL VERIFY THE OPERABLE CONDITION OF FEEDER IN FIELD AND PROVIDE NEW IF FOUND INOPERABLE. REPORT TO ENGINEER ON RECORD FOR ANY DISCREPANCY PRIOR TO ROUGH-IN. BASE BID ACCORDINGLY.
- EXISTING 400A(M.L.O), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "P" TO REMAIN AND REUSED. E.C. SHALL FIELD VERIFY THE EXACT SIZE, LOCATION & OPERABLE CONDITION OF THE EXISTING ELECTRICAL PANEL "P" AND REPLACE IF FOUND INOPERABLE. REPORT TO ENGINEER ON RECORD FOR ANY DISCREPANCY PRIOR TO ROUGH-IN. BASE BID ACCORDINGLY.
- EXISTING 225A(M.L.O), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "P1" TO REMAIN AND REUSED. E.C. SHALL FIELD VERIFY THE EXACT SIZE, LOCATION & OPERABLE CONDITION OF THE EXISTING ELECTRICAL PANEL "P1" AND REPLACE IF FOUND INOPERABLE. REPORT TO ENGINEER ON RECORD FOR ANY DISCREPANCY PRIOR TO ROUGH-IN. BASE BID ACCORDINGLY.
- E.C. SHALL FIELD VERIFY THE DISTANCE OF ELECTRICAL METER AND ELECTRICAL PANEL LOCATED IN THE PROJECT SPACE. INFORM ENGINEER BEFORE COMMENCING ANY WORK TO CHECK ON THE VOLTAGE DROP TO MAINTAIN 5%. REPORT TO ENGINEER ON RECORD FOR ANY DISCREPANCY PRIOR TO ROUGH-IN. BASE BID ACCORDINGLY.

ELECTRICAL PANEL SCHEDULE GENERAL NOTES:

- ALL THE CIRCUITING SHOWN FOR THE EXISTING PANEL "P" AND PANEL "P1" ARE FOR REFERENCE PURPOSE ONLY. E.C. SHALL VERIFY CIRCUITING & BREAKER SIZE OF THE EXISTING DEVICES IN FIELD AND INFORM ENGINEER FOR DISCREPANCIES.
- ELECTRICAL CONTRACTOR TO VERIFY THE EXACT PANEL SIZES AND INCOMING FEEDER SIZE.
- E.C. SHALL VERIFY THE EXISTING EQUIPMENT LOAD & RATING IN FIELD AND ACCORDINGLY CONSIDER THE ELECTRICAL LOAD IN PANEL SCHEDULE.
- E.C. SHALL PROVIDE NEW BREAKER IN PLACE OF EXISTING CIRCUIT BREAKER WHEREVER NECESSARY TO BE IN LINE WITH THE PANEL SCHEDULE. CHECK COMPATIBILITY OF NEWLY ADDED BREAKER WITH THE EXISTING PANEL BEFORE PURCHASING. BASE BID ACCORDINGLY.

ELECTRICAL PANEL SCHEDULE KEY NOTES:

- E.C. SHALL FIELD VERIFY THAT EXISTING BREAKER CIRCUIT FEEDING EXISTING FEEDER/ EQUIPMENT IN FIELD REPLACE IF FOUND INOPERABLE. CHANGE NAME/ CIRCUIT AS PER FIELD CONDITION. BASE BID ACCORDINGLY.

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MIAMI, FL 33179

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LEAWOOD KS

PROJECT NO	FT2501	
START DATE	03.28.2025	
DRAWN BY	NYE	
CHECKED BY	NYE	
NO.	DESCRIPTION	DATE
1	PERMIT	04.08.2025

ELECTRICAL RISER DIAGRAM
& PANEL SCHEDULE

E5.0
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COMcheck Software Version COMcheckWeb
Interior Lighting Compliance Certificate

Project Information

Energy Code: 2018 IECC
 Project Title: FITNESS TOGETHER
 Project Type: Alteration

Construction Site: _____ Owner/Agent: _____ Designer/Contractor: _____

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft ²)	C Allowed Watts / ft ²	D Allowed Watts
1-Gymnasium	1803	0.68	1226
Total Allowed Watts =			1226

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Watt. (C X D)	E
Gymnasium (1803 sq.ft.) LED: A: Other:	1	21	12	252
LED: C: Other:	1	2	14	28
Total Proposed Watts =				280

Interior Lighting PASSES

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

MICHAEL TOBIAS
 Name - Title _____ Signature _____ 03/28/25
 Date _____



Project Title: FITNESS TOGETHER Report date: 03/28/25
 Page 1 of 5

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.3, C405.2.3.1, C405.2.3.2, C405.2.3.3, C405.2.3.4, C405.2.3.5, C405.2.3.6, C405.2.3.7, C405.2.3.8, C405.2.3.9, C405.2.3.10, C405.2.3.11, C405.2.3.12, C405.2.3.13, C405.2.3.14, C405.2.3.15, C405.2.3.16, C405.2.3.17, C405.2.3.18, C405.2.3.19, C405.2.3.20, C405.2.3.21, C405.2.3.22, C405.2.3.23, C405.2.3.24, C405.2.3.25, C405.2.3.26, C405.2.3.27, C405.2.3.28, C405.2.3.29, C405.2.3.30, C405.2.3.31, C405.2.3.32, C405.2.3.33, C405.2.3.34, C405.2.3.35, C405.2.3.36, C405.2.3.37, C405.2.3.38, C405.2.3.39, C405.2.3.40, C405.2.3.41, C405.2.3.42, C405.2.3.43, C405.2.3.44, C405.2.3.45, C405.2.3.46, C405.2.3.47, C405.2.3.48, C405.2.3.49, C405.2.3.50, C405.2.3.51, C405.2.3.52, C405.2.3.53, C405.2.3.54, C405.2.3.55, C405.2.3.56, C405.2.3.57, C405.2.3.58, C405.2.3.59, C405.2.3.60, C405.2.3.61, C405.2.3.62, C405.2.3.63, C405.2.3.64, C405.2.3.65, C405.2.3.66, C405.2.3.67, C405.2.3.68, C405.2.3.69, C405.2.3.70, C405.2.3.71, C405.2.3.72, C405.2.3.73, C405.2.3.74, C405.2.3.75, C405.2.3.76, C405.2.3.77, C405.2.3.78, C405.2.3.79, C405.2.3.80, C405.2.3.81, C405.2.3.82, C405.2.3.83, C405.2.3.84, C405.2.3.85, C405.2.3.86, C405.2.3.87, C405.2.3.88, C405.2.3.89, C405.2.3.90, C405.2.3.91, C405.2.3.92, C405.2.3.93, C405.2.3.94, C405.2.3.95, C405.2.3.96, C405.2.3.97, C405.2.3.98, C405.2.3.99, C405.2.3.100	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.	
C405.2.4 [EL27] ¹	Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.3 [EL6] ¹	Exit signs do not exceed 5 watts per face.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.6 [EL26] ²	Low-voltage dry-type distribution electric transformers meet the minimum efficiency requirements of Table C405.6.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
C405.7 [EL27] ¹	Electric motors meet the minimum efficiency requirements of Tables C405.7(1) through C405.7(4). Efficiency verified through certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist).	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.8.2, C405.8.2.1 [EL28] ¹	Escalators and moving walks comply with ASME A17.1/CSA B44 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
C405.9 [EL29] ²	Total voltage drop across the combination of feeders and branch circuits <= 5%.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: FITNESS TOGETHER Report date: 03/28/25
 Page 4 of 5

COMcheck Software Version COMcheckWeb
Inspection Checklist

Energy Code: 2018 IECC
 Requirements: 100.0% were addressed directly in the COMcheck software
 Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR4] ¹	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: FITNESS TOGETHER Report date: 03/28/25
 Page 2 of 5

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C303.3, C408.2.5, C408.2.5.2 [F17] ³	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.4.1 [F18] ¹	Interior installed lamp and fixture lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Interior Lighting fixture schedule for values.
C408.1.1 [F157] ¹	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building equipment and systems are intended to be installed, maintained, and operated.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C408.2.5.1 [F16] ¹	Furnished as-built drawings for electric power systems within 90 days of system acceptance.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C408.3 [F133] ¹	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: FITNESS TOGETHER Report date: 03/28/25
 Page 5 of 5

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.2, C405.2.2.1 [EL22] ²	Spaces required to have light-reduction controls have a manual control that allows the occupant to reduce the connected lighting load in a reasonably uniform illumination pattern >= 50 percent.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.2.1, C405.2.1.1 [EL18] ¹	Occupancy sensors installed in classrooms/lecture/training rooms, conference/meeting/multipurpose rooms, copy/print rooms, lounges/breakrooms, enclosed offices, open plan office areas, restrooms, storage rooms, locker rooms, warehouse storage areas, and other spaces <= 300 sqft that are enclosed by floor-to-ceiling height partitions. Reference section language C405.2.1.2 for control function in warehouses and section C405.2.1.3 for open plan office spaces.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.2.1, C405.2.1.2 [EL19] ¹	Occupancy sensors control function in warehouses: In warehouses, the lighting in aislesways and open areas is controlled with occupant sensors that automatically reduce lighting power by 50% or more when the areas are unoccupied. The occupant sensors control lighting in each aisleway independently and do not control lighting beyond the aisleway being controlled by the sensor.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
C405.2.1, C405.2.1.3 [EL20] ¹	Occupant sensor control function in open plan office areas: Occupant sensor controls in open office spaces >= 300 sq ft. have controls 1) configured so that general lighting can be controlled separately in control zones with floor areas <= 600 sq.ft. within the space, 2) automatically turn off general lighting in all control zones within 20 minutes after all occupants have left the space, 3) are configured so that general lighting power in each control zone is reduced by >= 80% of the full zone general lighting power within 20 minutes of all occupants leaving that control zone, and 4) are configured such that any daylight responsive control will activate space general lighting or control zone general lighting only when occupancy for the same area is detected.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
C405.2.2, C405.2.2.1, C405.2.2.2, C405.2.2.3 [EL21] ²	Each area not served by occupancy sensors (per C405.2.1) have time-switch controls and functions detailed in sections C405.2.2.1 and C405.2.2.2.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: FITNESS TOGETHER Report date: 03/28/25
 Page 3 of 5

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 49674
 MIAMI, FL 33179

TENANT FINISH FOR
FITNESS TOGETHER
LEAWOOD KS

PROJECT NO FT2501
 START DATE 03.28.2025
 DRAWN BY NYE
 CHECKED BY NYE
 NO. DESCRIPTION DATE
 1 PERMIT 04.08.2025

ENERGY ANALYSIS

E6.0

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