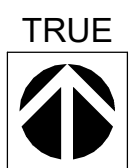
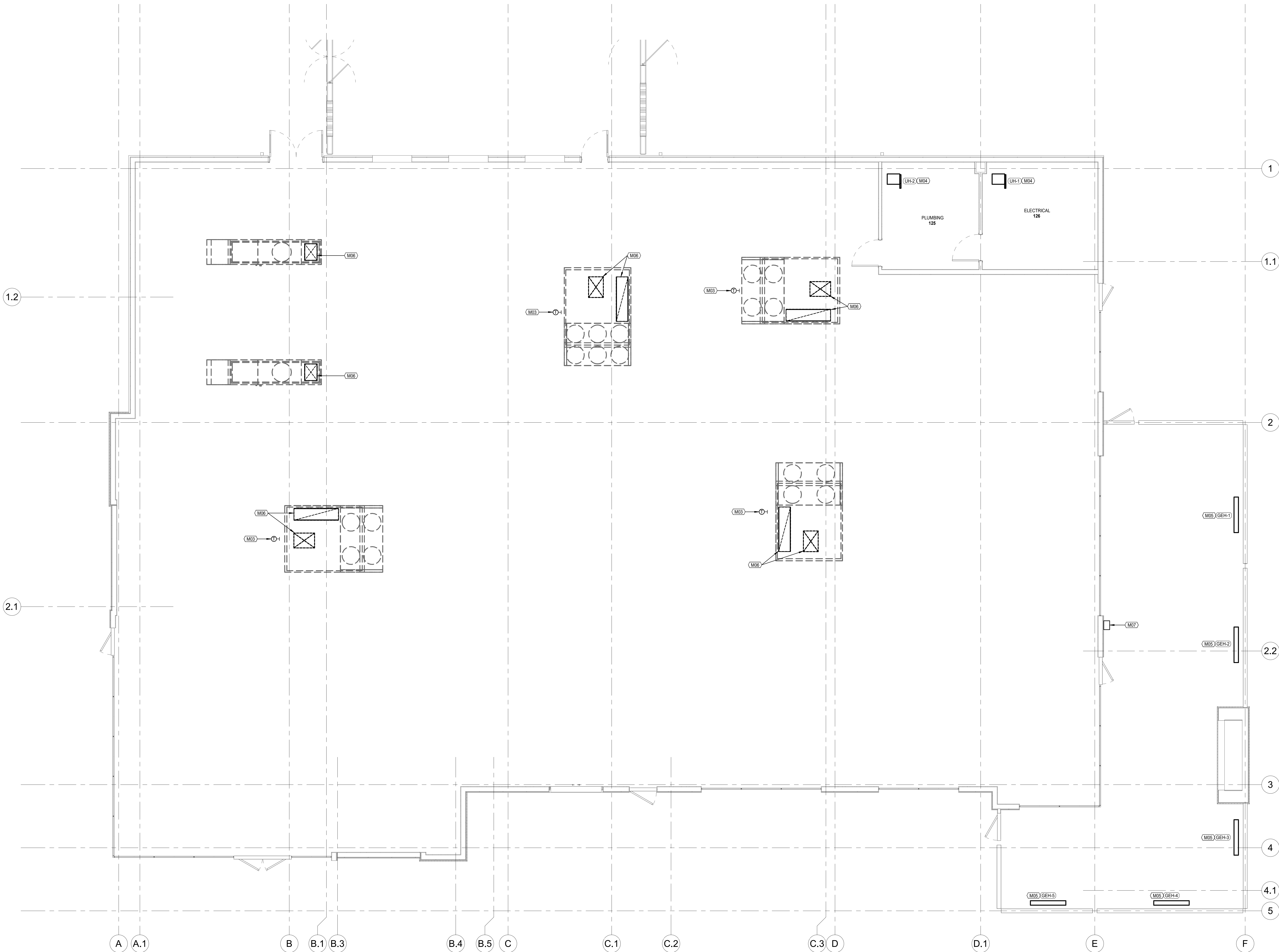


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FLOOR PLAN - MECHANICAL

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

FLOOR PLAN NOTES

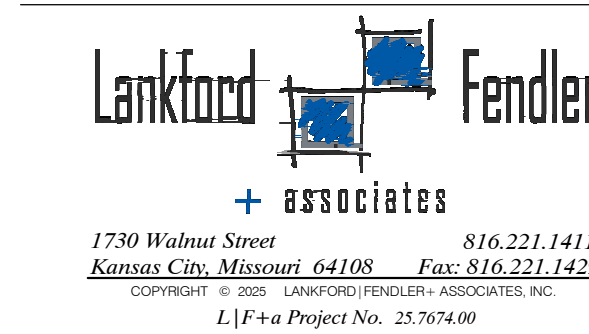
- M03 PROVIDE TEMPORARY THERMOSTAT FOR UNIT STARTUP. HANG THERMOSTAT IN SPACE AT 48" ABOVE FINISHED FLOOR. PROVIDE WITH 100' LONG COIL OF CONTROL WIRE FOR FUTURE PERMANENT THERMOSTAT INSTALLATION.
- M04 PROVIDE UNIT HEATER. MOUNT TO WALL AT 8'-0" ABOVE FINISHED FLOOR.
- M05 PROVIDE GAS-FIRED RADIANT HEATER. SUSPEND FROM CEILING ABOVE USING BRACKETS. FURNISH WITH HEATER. MOUNT WITH HEAT SHIELD 18" BELOW CEILING. MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES TO COMBUSTIBLES.
- M06 EXTEND DUCTS FROM ROOFTOP UNIT ABOVE. FULL SIZE OF UNIT CONNECTION. DOWN 18" BELOW ROOF DECK AND TERMINATE OPEN.
- M07 INSTALL MASTER CONTROLLER AND SWITCH. FURNISHED WITH RADIANT HEATERS. MOUNT SWITCH AT 48" ABOVE FINISHED FLOOR. COORDINATE EXACT LOCATION WITH OWNER.

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CONSULTANT



CLIENT

PROJECT TITLE

Q39 (SHELL)
LEE'S SUMMIT, MO
OLDHAM VILLAGE

PROJECT NUMBER	62910099
PROJECT MANAGER	AVM
DRAWN BY	EDG
CHECKED BY	

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2				
3				
4				
5				

SHEET NAME

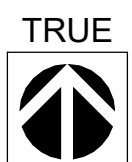
FLOOR PLAN - MECHANICAL

SHEET NUMBER

M100

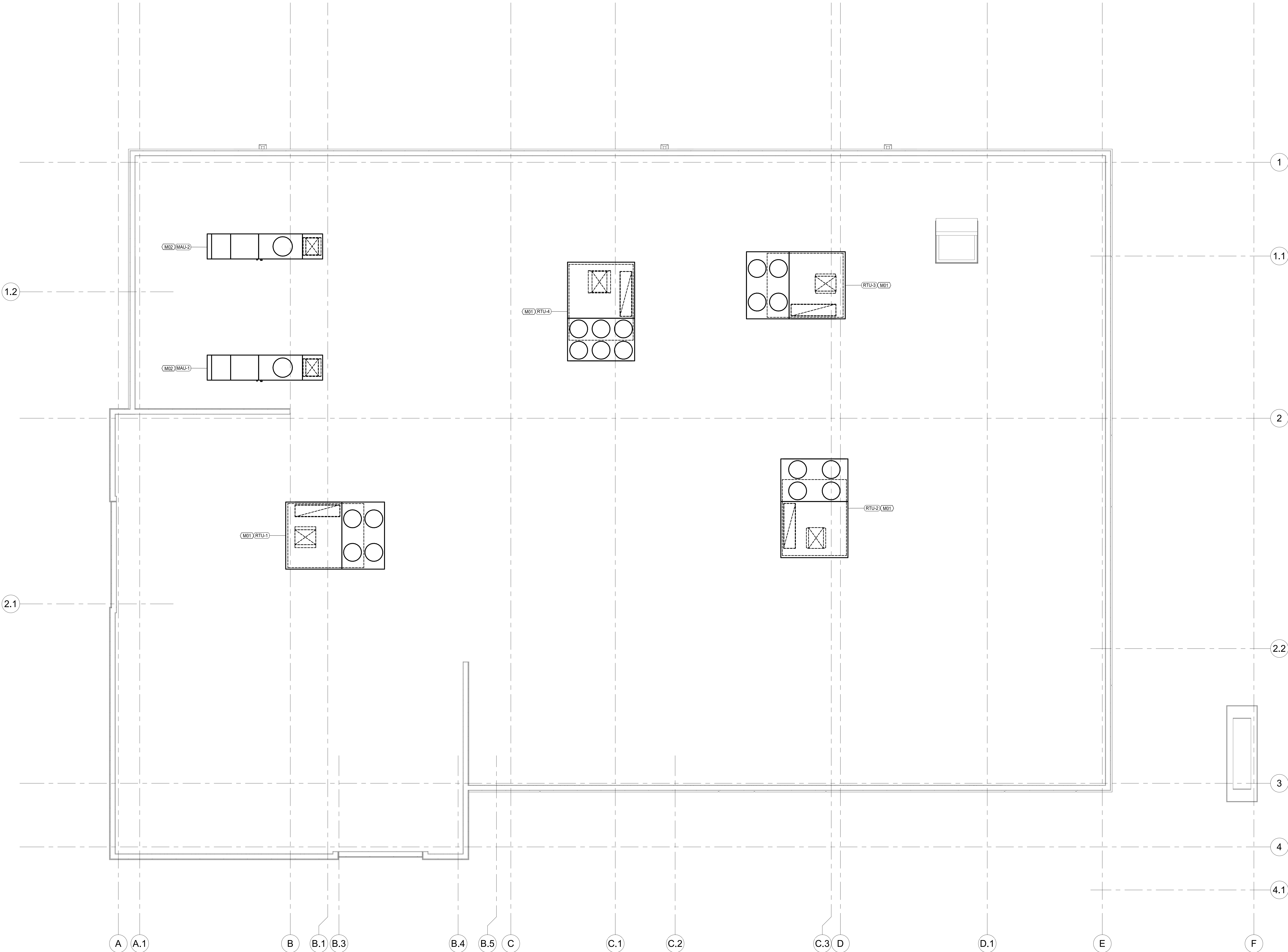
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ROOF PLAN - MECHANICAL

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



FLOOR PLAN NOTES

- M01 PROVIDE ROOFTOP UNIT AND ROOF CURB. INSTALL UNIT ON CURB PER THE MANUFACTURER'S REQUIREMENTS. PROVIDE FLEXIBLE DUCT CONNECTIONS AND CONDENSATE TRAP PER DETAIL.
- M02 PROVIDE MAKE-UP AIR UNIT AND ROOF CURB. INSTALL UNIT ON CURB PER THE MANUFACTURER'S REQUIREMENTS. PROVIDE FLEXIBLE DUCT CONNECTIONS AND CONDENSATE TRAP PER DETAIL.

ARCHITECT OF RECORD



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OLDHAM VILLAGE

PROJECT NUMBER			62910099
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ROOF PLAN - MECHANICAL

SHEET NUMBER

M200



MECHANICAL CONTRACTOR IS RESPONSIBLE TO SEE THAT WORK MEETS AND IS IN ACCORDANCE WITH ALL REQUIREMENTS OF FEDERAL, STATE, AND LOCAL LAWS AND CODES AND ANY ORDINANCES, INCLUDING HEALTH, SAFETY, AND ENVIRONMENTAL.

6. CUTTING AND PATCHING OF FLOORING, WALLS, CEILING, ETC., REQUIRED IN STRICT ACCORDANCE WITH THE RULES AND REGULATIONS OF THE ARCHITECT AND/OR BUILDING CODE REQUIREMENTS.

7. COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO INSTALLATION TO AVOID ROUTING CONFLICTS.

8. MECHANICAL CONTRACTOR SHALL PROVIDE NEW FILTERS ON ALL R/A HANDLING EQUIPMENT PRIOR TO BALANCING. PROVIDE TEMPORARY FILTERS ON RETURN AIR OPENINGS DURING CONSTRUCTION.

9. INSTALL ELASTOMERIC JOINT STRIPS AROUND ALL DUCTS, PIPES, ETC. PASSING THRU INTERIOR NON-PAINTED CONCRETE AND MASONRY WALLS. GYPSUM-BASED PARTITIONS, AND CONCRETE AND MASONRY WALLS. FOR FIRE RATED INTERIOR CONCRETE AND MASONRY WALLS. GYPSUM-BASED PARTITIONS, AND CONCRETE FLOOR/SLAB SEALS. SEAL ALL DUCTS, PIPES, ETC. WITH ELASTOMERIC JOINT STRIPS. INTERFERE WITH THE CONTRACTOR'S INSTALLATION. INSTALL SEALER ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

10. UPON REQUEST FOR ELECTRONIC FILES, CONTRACTOR SHALL FILL OUT, SIGN, AND RETURN ELECTRONIC MEDIA RELEASE FORM FROM ENGINEER AND PROVIDE PAYMENT FOR FEES AND COSTS OF THE RELEASE. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETED RELEASE FORM AND PAYMENT. ELECTRONIC FILES WILL BE RELEASED.

11. ALL CABLE TIES FOR LOW VOLTAGE SYSTEMS LOCATED IN PLenums UTILIZED FOR AIR MOVEMENT THAT ARE NOT INSTALLED IN CONDUIT SHALL BE 2500 POUND AND SMOKE RATED. HELLERMAN TYPED 17592C2, OR EQUIVALENT.

12. THERMOSTAT COVERS SHALL BE WHITE IN COLOR UNLESS OTHERWISE NOTED.

13. CONTRACTOR SHALL BE INSTALLED AND CALIBRATED PRIOR TO TEST AND BALANCE.

CONTRACTOR TO PROVIDE FIRESTOPPING AT ALL FIRE RATED ASSEMBLIES MEETING THE MANUFACTURER'S FIRESTOPPING U.L. LISTED DETAILS AND INSTRUCTIONS PER LOCAL CODES AND JURISDICTIONS. CONTRACTOR IS RESPONSIBLE FOR COORDINATING LOCATIONS WITH ARCHITECTURAL FIRE RATINGS ON PLANS OR AS REQUIRED.

	NEW DUCTWORK
	SUPPLY DUCT
	RETURN DUCT
	SUPPLY DIFFUSER
	RETURN GRILLE
	SUPPLY DUCT DOWN
	SUPPLY DUCT UP
	RETURN DUCT DOWN
	RETURN DUCT UP
	THERMOSTAT
	EQUIPMENT TYPE AND DESIGNATION
	EXHAUST DIFFUSER OR GRILLE TYPE MARK AND CFM
	CFM
	CONNECT TO EXISTING

Q39 (SHELL)
LEE'S SUMMIT, MO
OLDHAM VILLAGE

PART 3 - EXECUTION

3.1 POWER SYSTEM DATA

- A. Obtain all data necessary for conduct of the study.
- B. Gather and tabulate the required input data to support the study. Record data on a Record Document copy of one-line diagram. Comply with recommendations in IEEE 591 as to the amount of detail that is required to be acquired in the field. Field data gathering shall be under direct supervision and control of the engineer in charge of performing the study, who shall be by the engineer or its representative who holds NETA ETT-Certified Technician Level II or NICET Electrical Power Testing Level III certification.
- 3.2 SHORT-CIRCUIT STUDY
- A. Perform study following the general study procedures contained in IEEE 399.
- B. Calculate short-circuit currents according to IEEE 551.
- C. Base study on device characteristics supplied by device manufacturer.
- D. Extent of electrical power system to be studied is indicated on Drawings.
- E. Begin short-circuit current analysis at the service, extending down to system overcurrent protective devices to where fault current is 10 kA or less.
- F. Study electrical distribution system from normal and alternate power sources throughout electrical distribution system for Project. Study all cases of system-switching configurations and alternate operations that could result in maximum fault conditions.
- G. Include the ac fault-current decay from induction motors, synchronous motors, and asynchronous generators and apply to low- and medium-voltage, three-phase ac systems. Also account for the fault-current dc decrement to address asymmetrical requirements of interrupting equipment.
- H. Calculate short-circuit momentary and interrupting duties for a three-phase bolted fault and a single line-to-ground fault at each equipment indicated on one-line diagram.
- I. Include in the report identification of any protective device applied outside its capacity.

3.3 COORDINATION STUDY

- A. Comply with IEEE 242 for calculating short-circuit currents and determining coordination time intervals.
- B. Comply with IEEE 399 for general study procedures.
- C. Base study on device characteristics supplied by device manufacturer.
- D. Extent of electrical power system to be studied is indicated on Drawings.
- E. Begin analysis at the service, extending down to system overcurrent protective devices where fault current is 10 kA or less.
- F. Study electrical distribution system from normal and alternate power sources throughout electrical distribution system for Project. Study all cases of system-switching configurations and alternate operations that could result in maximum fault conditions.
- G. Transformer Primary Overcurrent Protective Devices:
- H. Motor Protection: Select protection for low-voltage motors according to IEEE 242 and NFPA 70.
- I. Conductor Protection: Protect cables against damage from fault currents according to ICEA P-33-382, ICEA P-45-482, and protection recommendations in IEEE 242. Demonstrate that equipment withstands the maximum short-circuit current for a time equivalent to the tripping time of the primary relay protection or total clearing time of the fuse. To determine temperatures that damage insulation, use curves from cable manufacturers or from listed standards indicating conductor size and short-circuit current.
- J. Generator Protection: Select protection according to manufacturer's written instructions and to IEEE 242.
- K. Include the ac fault-current decay from induction motors, synchronous motors, and asynchronous generators and apply to low- and medium-voltage, three-phase ac systems. Also account for fault-current dc decrement, to address asymmetrical requirements of interrupting equipment.
- L. Calculate short-circuit momentary and interrupting duties for a three-phase bolted fault and a single line-to-ground fault at each equipment indicated on one-line diagram.
- M. Protective Device Evaluation: Evaluate equipment and protective devices and compare to short-circuit ratings; Adequacy of equipment bus bars to withstand short-circuit stresses; Any application of series-rated devices shall be rechecked, complying with requirements in NFPA 70; Include in the report identification of any protective device applied outside its capacity.

3.4 ARC-FLASH HAZARD ANALYSIS

- A. Comply with NFPA 70E and its Annex D for hazard analysis study.
- B. Preparatory Studies: Perform the Short-Circuit and Protective Device Coordination studies prior to starting the Arc-Flash Hazard Analysis.
- C. Calculate maximum and minimum contributions of fault-current size.
- D. Calculate the arc-flash protection boundary and incident energy at locations in electrical distribution system where personnel could perform work on energized parts.
- E. Calculate the limited, restricted, and prohibited approach boundaries for each location.
- F. Incident energy calculations shall consider the accumulation of energy over time when performing arc-flash calculations on buses with multiple sources. Iterative calculations shall take into account the changing current contributions, as the sources are interrupted or decremented with time.
- G. Arc-flash energy shall generally be reported for the maximum of line or load side of a circuit breaker.
- H. Base arc-flash calculations on actual overcurrent protective device clearing time. Cap maximum clearing time at two seconds based on IEEE 1584, Section B.1.2.

3.5 FIELD ADJUSTING

- A. Adjust relay and protective device settings according to recommended settings provided by the coordination study.
- B. Make minor modifications to equipment as required to accomplish compliance with short-circuit and protective device coordination studies.
- C. Testing and adjusting shall be by a full-time employee of the Field Adjusting Agency, who holds NETA ETT-Certified Technician Level II or NICET Electrical Power Testing Level III certification. Perform each visual and mechanical inspection and electrical test stated in NETA ATS. Certify compliance with test parameters. Perform NETA tests and inspections for all adjustable overcurrent protective devices.

3.6 ARC FLASH LABELING

- A. Apply arc-flash label on the front cover and on side or rear covers with accessible live parts and hinged doors or removable plates for each equipment included in the study. Base arc-flash label data on highest values calculated at each location.
- B. Each piece of equipment listed below shall have an arc-flash label applied to it: Motor-control center; Low-voltage switchboard; Switchgear; Low voltage transformers; Panelboards; Safety switches; Control panel; Automatic Transfer Switch; Generator.
- C. Note on record Drawings the location of equipment where the personnel could be exposed to arc-flash hazard during their work. Indicate arc-flash energy. Indicate protection level required.

3.7 APPLICATION OF WARNING LABELS

- A. Install arc-flash warning labels under the direct supervision and control of Power System Analysis Specialist.

3.8 DEMONSTRATION

- A. Engage Power Systems Analysis Specialist to train Owner's maintenance personnel.
- B. Acquaint personnel in fundamentals of operating the power system in normal and emergency modes.
- C. Hand-out and explain the coordination study objectives, study descriptions, purpose, basis, and scope. Include case descriptions, definition of terms, and guide for interpreting time-current coordination curves.
- D. For Owner's maintenance staff certified as NETA ETT-Certified Technicians Level II or NICET Electrical Power Testing Level III Technicians, teach how to adjust, operate, and maintain overcurrent protective device settings.
- E. Inform of the potential arc-flash hazards associated with working on energized equipment and the significance of arc-flash warning labels.

END OF SECTION

ARCHITECT OF RECORD



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PROJECT TITLE

Q39 (SHELL)
LEE'S SUMMIT, MO
OLDHAM VILLAGE

PROJECT NUMBER

62910099

PROJECT MANAGER

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ISSUES AND REVISIONS

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1	REVISION	ORIGINAL ISSUE

SHEET NAME

SPECIFICATIONS

SHEET NUMBER

MEP102

ROOFTOP UNIT SCHEDULE

MARK NO.	MANUFACTURER	MODEL	AIRFLOW CFM	O.A. CFM	EXT. S.P. (IN W.G.)	FAN HP	DRIVE TYPE	RPM	COOLING										HEATING-GAS										NOTES	ELECTRICAL									
									AMB. (°F)	EDB (°F)	EWB (°F)	LDB (°F)	LWB (°F)	TOTAL MBH	SENS. MBH	STAGES	EER OR SEER	INPUT MBH	OUTPUT MBH	STAGES	VOLT	PHASE	HZ	FLA	MCA	MOCP	DISCONNECT	CIRCUIT TO PANEL		BRANCH CIRCUIT TAG / SIZE	NOTES								
RTU-1	LENNOX	LGM180USM	6000	1800	0.8	5	BELT	868	95	80	67	58.2	56.9	161.8	132.7	3	12 EER	360	292	2	1-8	480	3	60	35.8	37	40	INTEGRAL	HDP	3/4" C. (4) #8, (1) #10 G.	-								
RTU-2	LENNOX	LGM156USM	5000	1500	0.8	3	BELT	786	95	80	67	57	56.3	159.9	116.8	3	12 EER	260	211	2	1-8	480	3	60	30.7	31	35	INTEGRAL	HDP	3/4" C. (4) #8, (1) #10 G.	-								
RTU-3	LENNOX	LGM156USM	5000	1500	0.8	3	BELT	786	95	80	67	57	56.3	159.9	116.8	3	12 EER	260	211	2	1-8	480	3	60	30.7	31	35	INTEGRAL	HDP	3/4" C. (4) #8, (1) #10 G.	-								
RTU-4	LENNOX	LGM240USM	8000	2400	0.8	7.5	BELT	1015	95	80	67	57.9	56.6	249	179.3	4	12 EER	360	292	2	1-8	480	3	60	47.9	50	60	INTEGRAL	HDP	3/4" C. (4) #4, (1) #10 G.	-								
NOTES: 1. PROVIDE WITH WALL MOUNTED 24/7 PROGRAMMABLE THERMOSTAT WITH HUMIDITY CONTROL AND REMOTE TEMPERATURE/HUMIDITY SENSOR, COTTONWOOD FILTERS SUCH AS AIR SOLUTION COMPANY MEDIUM DUTY COMMERCIAL GRADE FILTERS, HINGED ACCESS PANELS, DISCONNECT SWITCH, CONDENSATE DRAIN TRAP, AND DRAIN PAN OVERFLOW SWITCH TO SHUT DOWN UNIT IF DRAIN BECOMES CLOGGED. 2. PROVIDE WITH HOT GAS REHEAT. 3. PROVIDE WITH ECONOMIZER WITH DIFFERENTIAL ENTHALPY CONTROL. INCLUDE WITH BAROMETRIC RELIEF DAMPER UNLESS NOT REQUIRED FOR UNITS EQUIPPED WITH POWERED EXHAUST. 4. PROVIDE WITH POWERED EXHAUST. 5. PROVIDE WITH MULTI-SPEED SUPPLY FAN TO VARY FAN SPEED WITH COMPRESSOR STAGING ON UNITS WITH 2 STAGES OF COOLING. ADJUST OUTSIDE AIR DAMPER MINIMUM POSITION FOR HIGH AND LOW FAN SPEEDS. 6. PROVIDE WITH UNIT MOUNTED GFCI OUTLET WITH WEATHERPROOF COVER. OUTLET TO BE FIELD POWERED/WIRED FROM BUILDING POWER 7. PROVIDE WITH ROOF CURB OF HEIGHT REQUIRED TO HAVE THE TOP OF THE CURB A MINIMUM OF 8" ABOVE THE TOP OF THE ROOF SURFACE, OR MINIMUM CURB HEIGHT OF 18", WHICHEVER IS GREATER. 8. UNIT TO BE CONFIGURED FOR DOWNFLOW DISCHARGE.																														NOTES: A.									

MAKE-UP AIR SUPPLY PACKAGE SCHEDULE

MARK NO.	MANUFACTURER	MODEL	AIRFLOW CFM	EXT. S.P. (IN W.G.)	FAN HP	RPM	COOLING						HEATING-GAS			NOTES	ELECTRICAL											
							AMB. (°F)	EDB (°F)	EWB (°F)	LDB (°F)	LWB (°F)	TOTAL MBH	SENS. MBH	STAGES	INPUT MBH		OUTPUT MBH	STAGES	VOLT	PHASE	HZ	FLA	MCA	MOCP	DISCONNECT	CIRCUIT TO PANEL	BRANCH CIRCUIT TAG / SIZE	NOTES
MAU-1	ACCUREX	XDGX-P116-H12-MF-10	4400	0.5	3	2008	100	99.1	80	72.9	72.9	127.7	113.3	1	335.2	308.4	VARIABLE	1.2	480	3	60	20.2	25.2	40	INTEGRAL	HDP	3/4" C. (4) #8, (1) #10 G.	-
MAU-2	ACCUREX	XDGX-P116-H12-MF-10	4400	0.5	3	2008	100	99.1	80	72.9	72.9	127.7	113.3	1	335.2	308.4	VARIABLE	1.2	480	3	60	20.2	25.2	40	INTEGRAL	HDP	3/4" C. (4) #8, (1) #10 G.	-
NOTES: 1. PROVIDE WITH DISCONNECT SWITCH. 2. PROVIDE WITH ROOF CURB OF HEIGHT REQUIRED TO HAVE THE TOP OF THE CURB A MINIMUM OF 8" ABOVE THE TOP OF THE ROOF SURFACE, OR MINIMUM CURB HEIGHT OF 18", WHICHEVER IS GREATER.																			NOTES: A.									

RADIANT HEATER SCHEDULE

MARK	MANUFACTURER	MODEL	HEATING (NATURAL GAS)		CLEARANCE TO COMBUSTIBLES			NOTES	ELECTRICAL																			
			INPUT (MBH)	ENDS (IN.)	ABOVE (IN.)	BELOW (IN.)	VOLT		PHASE	HZ	FLA	MCA	MOCP	DISCONNECT	CIRCUIT TO PANEL	BRANCH CIRCUIT TAG / SIZE	NOTES											
GEH-1	SUNSTAR	SGL50-N7	50	14	17	48	1.2,3	120	1	60	0.4	1	15	20A/1P TOGGLE	P1	2 #12, #12G, 3/4"	-											
GEH-2	SUNSTAR	SGL50-N7	50	14	17	48	1.2,3	120	1	60	0.4	1	15	20A/1P TOGGLE	P1	2 #12, #12G, 3/4"	-											
GEH-3	SUNSTAR	SGL50-N7	50	14	17	48	1.2,3	120	1	60	0.4	1	15	20A/1P TOGGLE	P1	2 #12, #12G, 3/4"	-											
GEH-4	SUNSTAR	SGL50-N7	50	14	17	48	1.2,3	120	1	60	0.4	1	15	20A/1P TOGGLE	P1	2 #12, #12G, 3/4"	-											
GEH-5	SUNSTAR	SGL50-N7	50	14	17	48	1.2,3	120	1	60	0.4	1	15	20A/1P TOGGLE	P1	2 #12, #12G, 3/4"	-											
NOTES: 1. PROVIDE WITH MANUFACTURER'S MASTER CONTROLLER WITH 60 MINUTE TIMER AND ILLUMINATED 3 POSITION FLUSH-MOUNT SWITCH. 2. PROVIDE WITH HEAT SHIELD FOR REDUCED CLEARANCE REQUIREMENTS. 3. PROVIDE WALL / CEILING TELESCOPIC ADJUSTABLE MOUNTING BRACKET KIT.																			NOTES: A.									

UNIT HEATER SCHEDULE

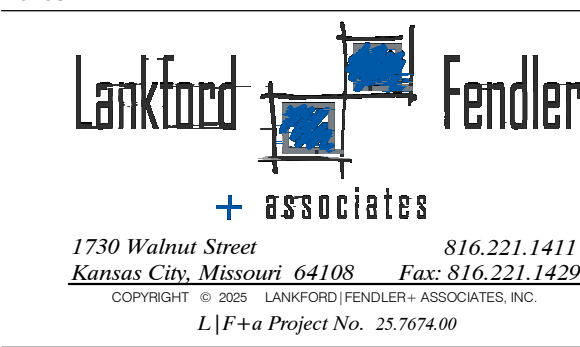
MARK NO.	MANUFACTURER	MODEL	TYPE	AIR/FLW (CFM)	HEATING (ELEC.)		NOTES	ELECTRICAL									
					OUTPUT (MBH)	INPUT (KW)		VOLT	PHASE	HZ	FLA	MCA	MOCP	DISCONNECT	CIRCUIT TO PANEL	BRANCH CIRCUIT TAG / SIZE	NOTES
UH-1	BERKO	HUHAAS27	HORIZONTAL	350	17	5	1.2,3	277	1	60	18.0	22.6	25	INTEGRAL	L	3/4" C. (4) #10, (1) #10 G.	-
UH-2	BERKO	HUHAAS27	HORIZONTAL	350	17	5	1.2,3	277	1	60	18.0	22.6	25	INTEGRAL	L	3/4" C. (4) #10, (1) #10 G.	-
NOTES: 1. PROVIDE WITH DISCONNECT SWITCH. 2. PROVIDE WITH INTEGRAL THERMOSTAT. 3. PROVIDE WITH WALL HANGING KIT.								NOTES: A.									
*HEATING KW IS NET CAPACITY AT VOLTAGE AND PHASE INDICATED.																	

ARCHITECT OF RECORD



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Lankford + Fendler + associates ARCHITECTS, INC.
L1114a Project No. 2370400

CLIENT

PROJECT TITLE

Q39 (SHELL)
LEE'S SUMMIT, MO
OLDHAM VILLAGE

PROJECT NUMBER

62910099

PROJECT MANAGER

AVM

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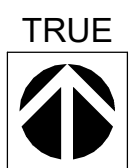
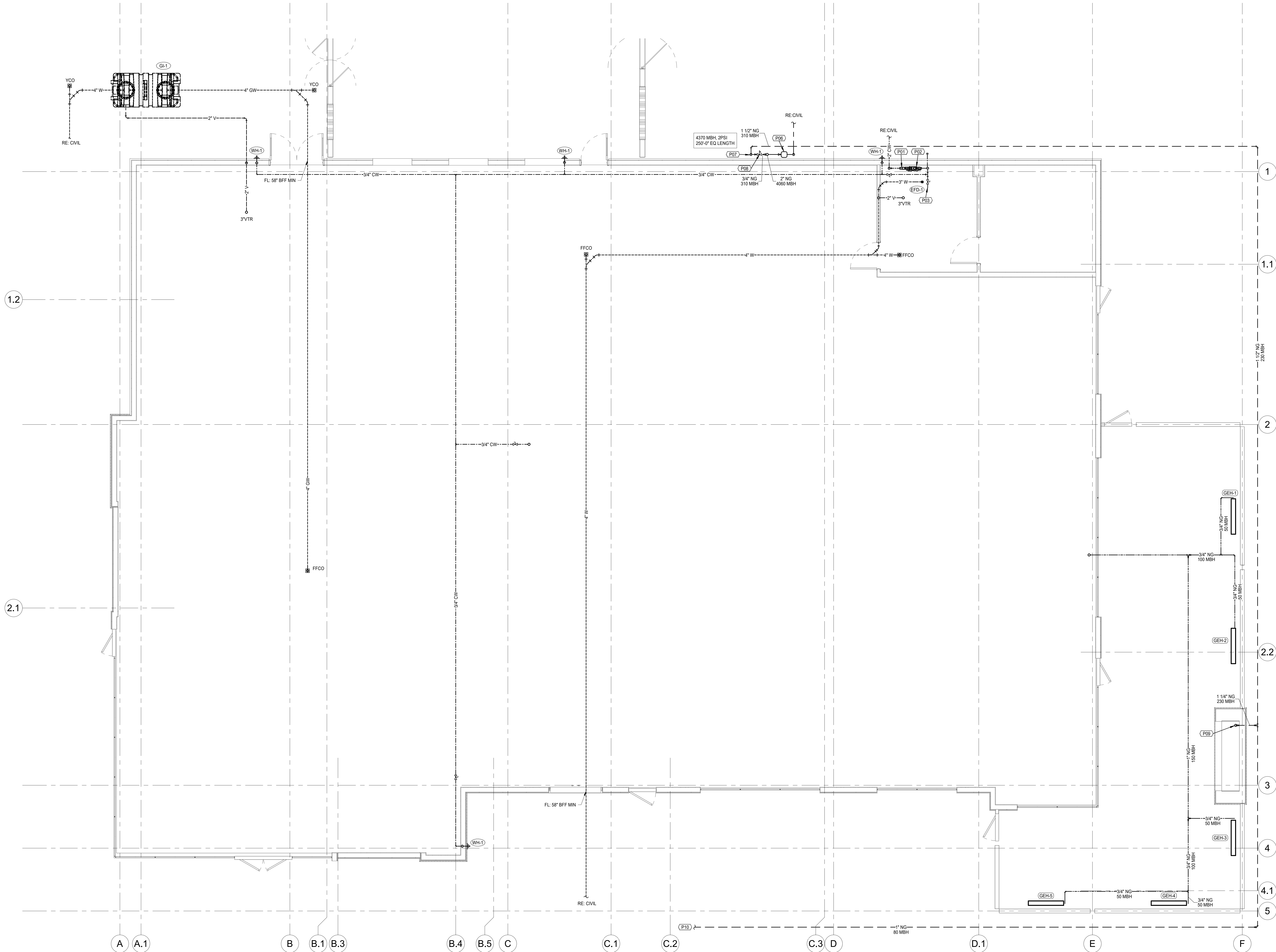
SHEET NAME

MEP SCHEDULES

SHEET NUMBER

MEP103

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

FLOOR PLAN NOTES

- P01 PROVIDE NEW 2" RPZ BACKFLOW PREVENTER, WATTS LF009 OR EQUAL. ROUTE WASTE FROM AIR-GAP FITTING TO FLOOR DRAIN AND INDIRECT WASTE.
- P02 PROVIDE NEW 1" DOUBLE CHECK BFP, WATTS LF007 OR EQUAL. VALVE AND CAP FOR FUTURE CONNECTION TO IRRIGATION SYSTEM.
- P03 VALVE AND CAP 2" COLD WATER FOR FUTURE CONNECTION.
- P06 NEW GAS METER BY UTILITY. PROVIDE ALL FITTINGS AND ACCESSORIES REQUIRED FOR COMPLETE INSTALLATION CONNECTION PER UTILITY STANDARDS. COORDINATE FINAL GAS LOAD WITH UTILITY PRIOR TO CONSTRUCTION.
- P07 ROUTE GAS PIPING DOWN BELOW GRADE.
- P08 PROVIDE INLINE PRESSURE REGULATOR - INLET: 27PSI, OUTLET: 87WIC.
- P09 CONNECT TO FIREPLACE WITH GAS COOK, DIRT LEG, AND UNION AND/OR APPLIANCE CONNECTOR IN ACCESSIBLE LOCATION. PROVIDE ELECTRONIC SOLENOID VALVE INTERLOCKED WITH EMERGENCY STOP BUTTON. RE ELECTRICAL SHEETS FOR LOCATION.
- P10 ROUTE GAS PIPING OVER BELOW GRADE AND CONNECT TO FIRE TABLE WITH GAS COOK, DIRT LEG, AND UNION AND/OR APPLIANCE CONNECTOR IN ACCESSIBLE LOCATION.

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L.F. is a Project No. 23767400

CLIENT

PROJECT TITLE

Q39 (SHELL)
LEE'S SUMMIT, MO
OLDHAM VILLAGE

PROJECT NUMBER			62910099
PROJECT MANAGER	DRAWN BY	CHECKED BY	
Approver	Author		
PROFESSIONAL SEAL			



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SHEET NAME

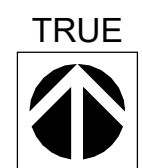
FLOOR PLAN - PLUMBING

SHEET NUMBER

P100

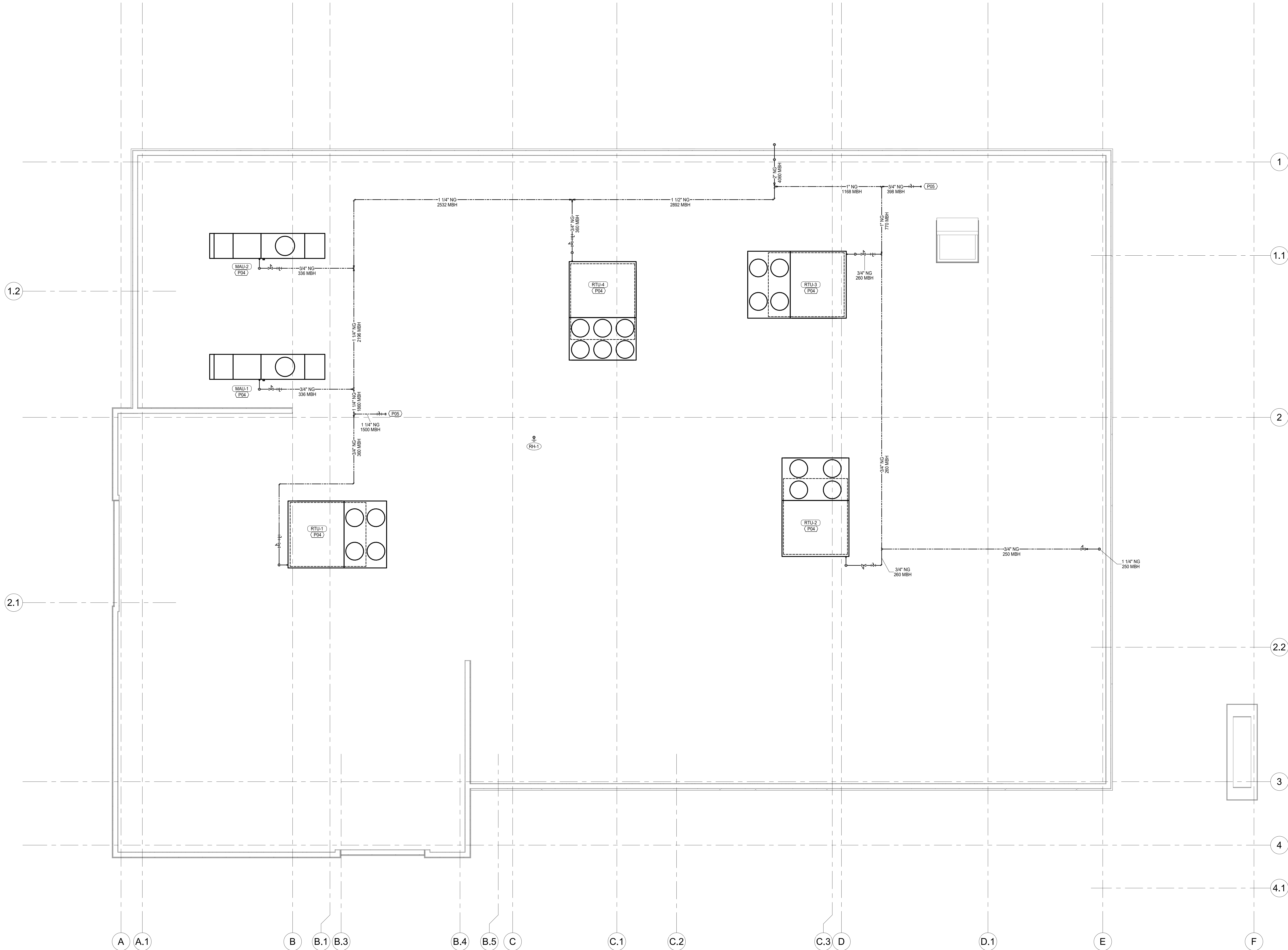
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ROOF PLAN - PLUMBING

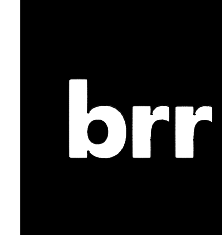
SCALE: 1/4" = 1'-0"



FLOOR PLAN NOTES

- P04 CONNECT TO MECHANICAL EQUIPMENT WITH GAS COOK, DIRT LEG, AND UNION. PROVIDE PRESSURE REGULATOR INLET, PPS, OUTLET, 1/4\"/>
- P05 VALVE AND CAP NATURAL GAS PIPING ON ROOF FOR FUTURE CONNECTION TO EQUIPMENT.

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PROJECT MANAGER			CHECKED BY
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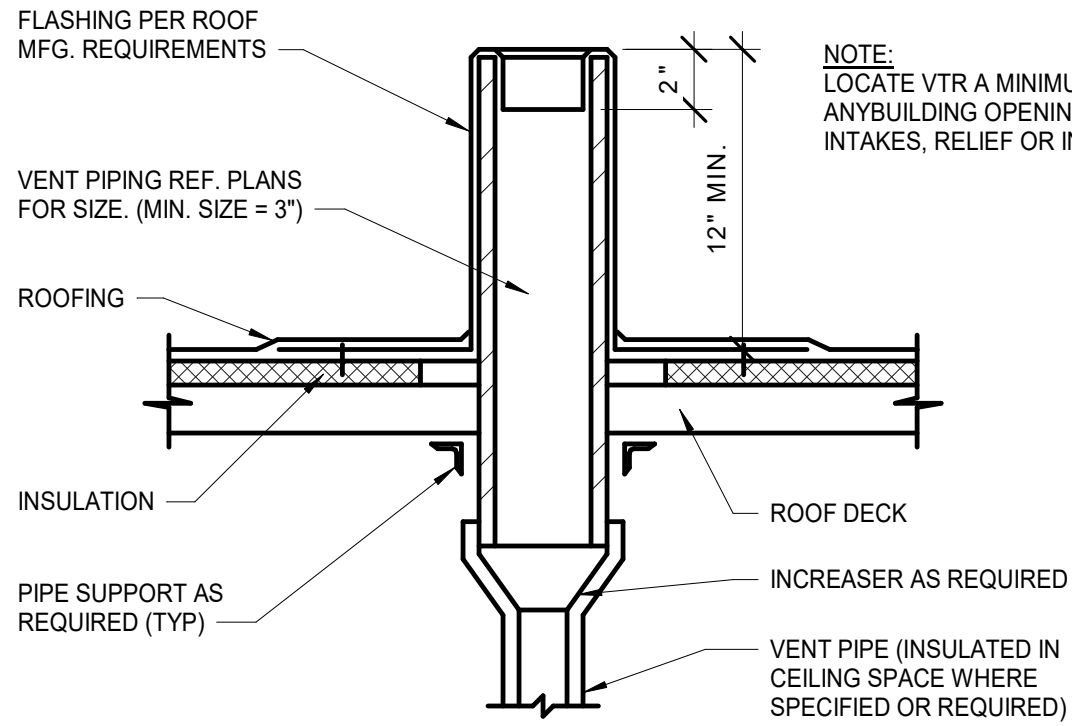
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ROOF PLAN - PLUMBING

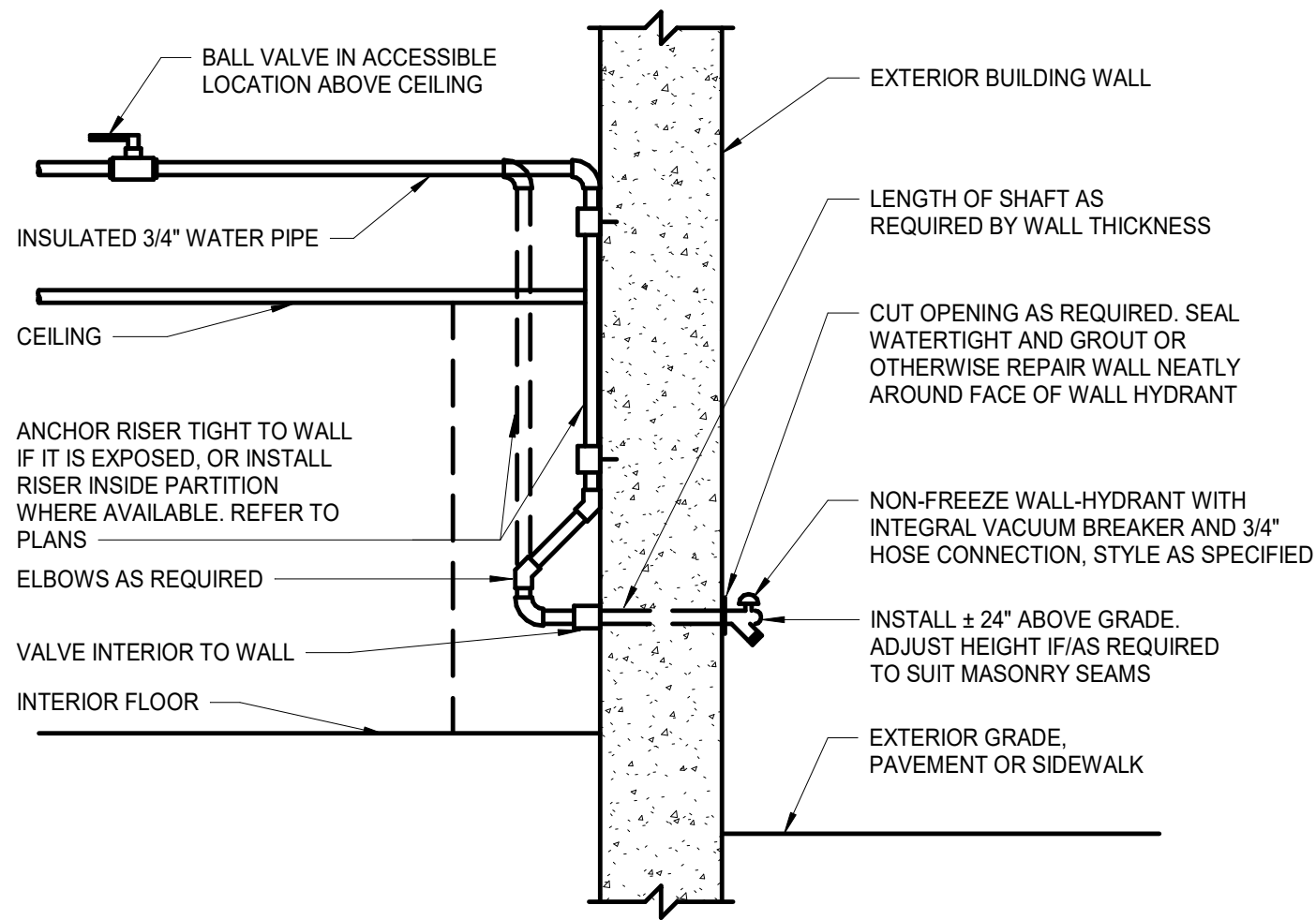
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P200

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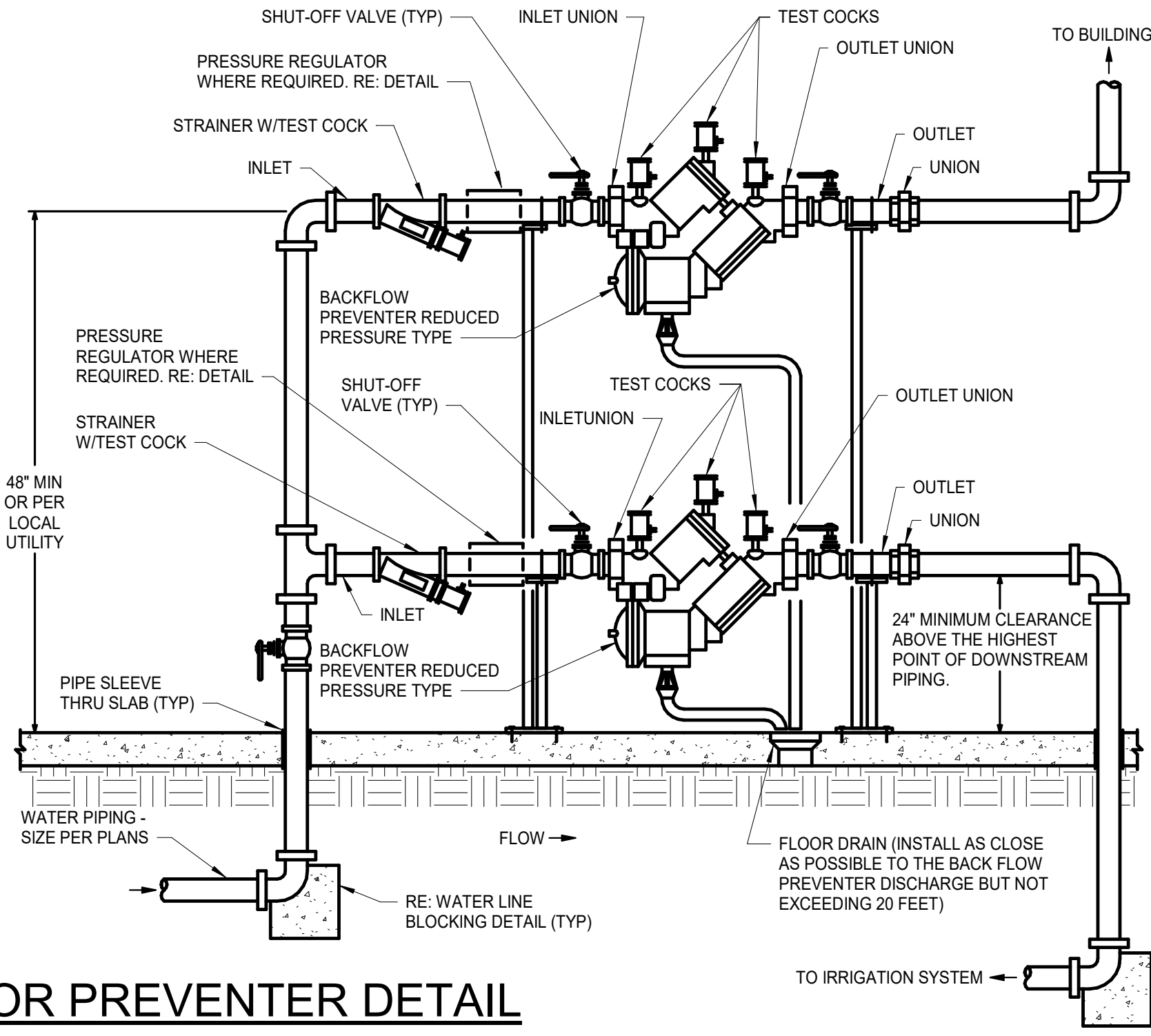
VENT THRU ROOF DETAIL
NOT TO SCALE



NON-FREEZE WALL HYDRANT DETAIL
NOT TO SCALE

- NOTES:
1. PROVIDE PRESSURE REGULATOR, SET TO 75 PSI WHERE SOURCE PRESSURE EXCEEDS 80 PSI. INSTALL DOWNSTREAM OF BACKFLOW PREVENTER OUTLET. RE: DETAIL.
 2. ARRANGEMENT SHOWN IS SCHEMATIC. MODIFY TO SUIT CONDITIONS. INSTALL SO BFP CAN BE SERVICED AND TESTED IN ACCORDANCE W/ ALL RULES & REGULATIONS OF LOCAL AUTHORITIES.
 3. ROUTE DRAIN AS INDICATED ON PLANS.
 4. SUPPORT AS REQUIRED FROM SLAB.

INTERIOR BACKFLOR PREVENTER DETAIL
NOT TO SCALE



PLUMBING FIXTURE SCHEDULE								
MARK NO.	FIXTURE TYPE	MANUFACTURER	MODEL NO.	DESCRIPTION	MINIMUM CONNECTION SIZE			
					CW	HW	WASTE	VENT
EFD-1	EQUIPMENT FLOOR DRAIN	J.R. SMITH	2210Y	MEDIUM CAPACITY, MEDIUM DUTY DUCT CAST IRON BODY, SEDIMENT BUCKET AND GRATE, NO HUB OUTLET. PROVIDE WITH 6" X 4" OVAL FUNNEL, WHERE DRAIN RECEIVES INDIRECT WASTE AND TRAP PRIMER CONNECTION.	-	-	3"	2"
WH-1	WALL HYDRANT	WOODFORD	67	EXPOSED, FREEZELESS WALL HYDRANT, CHROME PLATED BRASS, 3/4" INLET AND HOSE CONNECTION, INTEGRAL ASSE DOUBLE CHECK BACKFLOW PREVENTER, LOOSE KEY, STEM LENGTH AS REQUIRED.	3/4"	-	-	-
RH-1	ROOF HYDRANT	WOODFORD	SRH-MS	DRAINABLE, FREEZELESS BRASS ROOF HYDRANT, 3/4" INLET AND 3/4" HOSE CONNECTION, ASSE DOUBLE CHECK BACKFLOW PREVENTER, DIVERTER, AUTOMATIC DRAINING, PAIL HOOK, LEVER ACTUATOR WITH GALVANIZED STEEL ROD AND ONE PIECE PLUNGER, CAST IRON MOUNTING SUPPORT AND UNDER DECK FLANGE WITH WEATHER PROOF BOOT ASSEMBLY.	3/4"	-	-	-

GREASE INTERCEPTOR SCHEDULE

MARK NO.	MANUFACTURER	MODEL NO.	MATERIAL	INSTALLATION	LIQUID CAPACITY (GAL)	GREASE CAPACITY (LBS)	FLOW RATE (GPM)	INLET/ OUTLET SIZE	COVER TYPE	MAX OPERATING TEMP (°F)	NOTES
GI-1	SCHIER	GB-500	ENGINEERED POLYETHYLENE	BELOW GRADE	510	3.048	100	4"	GAS/WATER TIGHT	140	1,2,3
NOTES:											
1. PROVIDE WITH EXTENSION OR RISERS AS REQUIRED TO MEET GRADE/SLAB.											
2. PROVIDE HIGH-WATER ANCHOR KIT WHERE INTERCEPTOR IS INSTALLED IN AREA SUSCEPTIBLE TO HIGH WATER TABLE.											
3. VENT INTERCEPTOR PER AHJ REQUIREMENTS AND MANUFACTURER'S RECOMMENDATIONS.											

NATURAL GAS SCHEDULE

TAG	FIXTURE	CONNECTED LOAD (MBH)
MECHANICAL EQUIPMENT		
RTU-1	ROOF TOP UNIT	360
RTU-2	ROOF TOP UNIT	260
RTU-3	ROOF TOP UNIT	260
RTU-4	ROOF TOP UNIT	360
MAU-1	MAKEUP AIR UNIT	336
MAU-2	MAKEUP AIR UNIT	336
GEH-1	RADIANT HEATER	50
GEH-2	RADIANT HEATER	50
GEH-3	RADIANT HEATER	50
GEH-4	RADIANT HEATER	50
GEH-5	RADIANT HEATER	50
MECHANICAL EQUIPMENT TOTAL:		2162
PLUMBING EQUIPMENT		
-	(FUTURE) WATER HEATER	199
-	(FUTURE) WATER HEATER	199
PLUMBING EQUIPMENT TOTAL:		398
KITCHEN EQUIPMENT		
-	FUTURE	1500
KITCHEN EQUIPMENT TOTAL:		1500
MISC EQUIPMENT		
-	FIRE TABLE	80
-	FIREPLACE	230
MISC EQUIPMENT TOTAL:		310
TOTAL GAS LOAD		4370
NOTES:		
INTERIOR GAS PIPING SIZED PER TABLE 402.4(5) WITH A TOTAL DEVELOPED LENGTH OF 150'-0" AND A SERVICE PRESSURE OF 2 PSI.		
SET PRESSURE REGULATORS TO 8" W.C. OR AS REQUIRED BY EQMT MANUFACTURER.		

GENERAL NOTES (TYPICAL ALL SHEETS)

- A. PLUMBING CONTRACTOR IS RESPONSIBLE TO SEE THAT WORK MEETS AND IS IN ACCORDANCE WITH ALL REQUIREMENTS OF FEDERAL, STATE, AND LOCAL LAWS AND CODES AND/OR REQUIREMENTS, INCLUDING HEALTH CODES AND BUILDING OWNER.
- B. COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO INSTALLATION TO AVOID ROUTING CONFLICTS.
- C. INSTALL ELASTOMERIC JOINT SEALER AROUND ALL PIPES PASSING THRU INTERIOR NON- RATED CONCRETE AND MASONRY WALLS, GYPSUM/BOARD PARTITIONS, AND CONCRETE FLOOR/ROOF SLABS. FOR FIRE RATED INTERIOR CONCRETE AND MASONRY WALLS, GYPSUM/BOARD PARTITIONS, AND CONCRETE FLOOR/ROOF SLABS SEAL ALL PIPES. INSTALL FIRESTOP MATERIALS IN ALL GAPS PRIOR TO SEALANT APPLICATION. INSTALL SEALER ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
- D. PLUMBING CONTRACTOR SHALL MAKE FINAL CONNECTION TO ALL EQUIPMENT BY OTHERS. VERIFY CONNECTIONS SIZES AND REQUIREMENTS.
- E. PLUMBING CONTRACTOR SHALL PROVIDE PRO-SET SYSTEMS TRAP GUARD IN ALL FLOOR DRAIN TRAPS WITHIN PROJECT SCOPE OF WORK.
- F. PLUMBING CONTRACTOR SHALL VERIFY WALL THICKNESS WITH ARCHITECT PRIOR TO ORDERING FREEZE PROOF WALL HYDRANTS.
- G. UPON REQUEST FOR ELECTRONIC FILES, CONTRACTOR SHALL FILL OUT, SIGN AND RETURN ELECTRONIC MEDIA RELEASE FORM FROM ENGINEER AND PROVIDE PAYMENT FOR FEES STIPULATED ON ELECTRONIC MEDIA RELEASE FORM. UPON RECEIPT OF COMPLETED RELEASE FORM AND PAYMENT, ELECTRONIC FILES WILL BE RELEASED.
- H. ALL CABLE TIES FOR LOW VOLTAGE SYSTEMS LOCATED IN PLenums UTILIZED FOR AIR MOVEMENT THAT ARE NOT INSTALLED IN CONDUIT SHALL BE 2550 FLAME AND SMOKE RATED, HELLERMANN TYTON T50 ROLLER OR EQUIVALENT.

FIRE STOPPING REQUIREMENTS

CONTRACTOR TO PROVIDE FIRESTOPPING AT ALL FIRE RATED ASSEMBLIES MEETING THE MANUFACTURER'S FIRESTOPPING U.L. LISTED DETAILS AND INSTRUCTIONS PER LOCAL CODES AND JURISDICTIONS. CONTRACTOR IS RESPONSIBLE FOR COORDINATING LOCATIONS WITH ARCHITECTURAL FIRE RATINGS ON PLANS OR AS REQUIRED.

PLUMBING SYMBOLS

- EXISTING TO REMAIN
- NEW PIPING
- CW - COLD WATER
- NG - NATURAL GAS
- V - SANITARY VENT ABOVE GRD.FLOOR ABOVE
- V - SANITARY VENT BELOW GROUND
- W - SANITARY WASTE BELOW GROUND
- GW - GREASE WASTE ABOVE GRD.FLOOR ABOVE
- GW - GREASE WASTE BELOW GROUND
- GAS SHUT-OFF COCK
- SHUT-OFF VALVE
- PRESSURE REGULATOR
- FLOOR DRAIN
- PIPE DROP/ PIPE RISE
- BOTTOM OUTLET TEE
- TOP OUTLET TEE
- WALL HYDRANT
- WALL CLEANOUT
- FINISHED FLOOR CLEANOUT
- VENT THROUGH ROOF
- EQUIPMENT TYPE AND DESIGNATION
- PLUMBING FIXTURE TYPE AND DESIGNATION

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LEE'S SUMMIT, MO
OLDHAM VILLAGE

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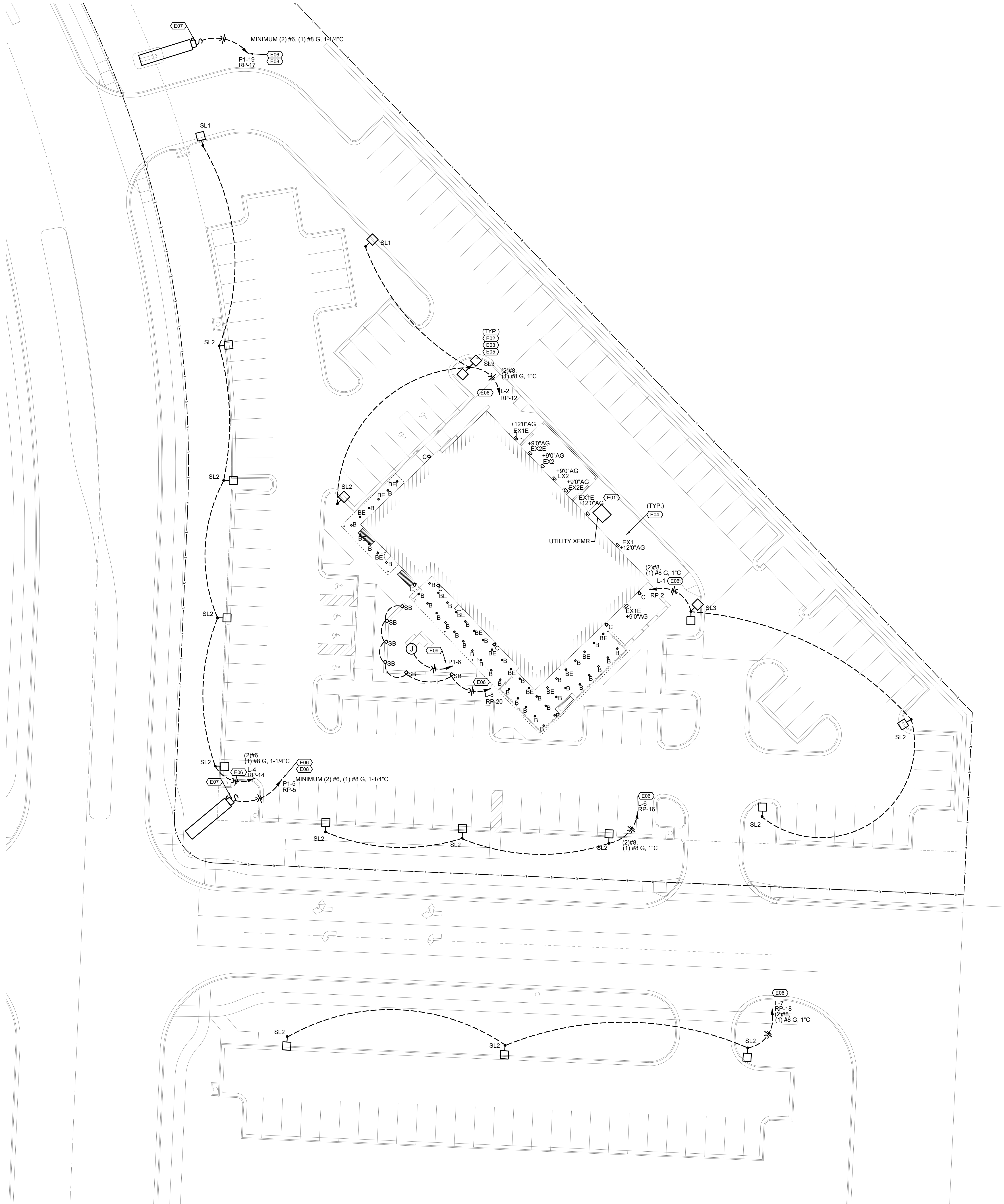
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SHEET NAME

PLUMBING
SCHEDULES, GEN.
NOTES, & SYMBOLS

SHEET NUMBER

P300



SITE PLAN-ELECTRICAL
SCALE: 1" = 20'-0"



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LANKFORD + FENDLER + ASSOCIATES, CONSULTING ENGINEERS, INC.
CORPORATE 2024 Project No. 22-574.01
CEN No. 20000103

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SITE PLAN NOTES

1. REFERENCE RISER DIAGRAM FOR ADDITIONAL INFORMATION.
2. REFERENCE MANUFACTURER SPECIFICATIONS PRIOR TO INSTALLATION OF POLE MOUNTED LIGHT FIXTURE. REFERENCE LIGHT POLE BASE ON SHEET E003. CONFIRM FINISH COLOR WITH OWNER PRIOR TO ORDERING.
3. LIGHT FIXTURES SHALL BE INSTALLED IN GENERAL LOCATION SHOWN. COORDINATE WITH OTHER TRADES PRIOR TO INSTALL.
4. REFERENCE SHEET E200 FOR CIRCUITING OF BUILDING MOUNTED FIXTURES.
5. REFERENCE LIGHT FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION.
6. ROUTE HOMERUN THROUGH LIGHTING CONTROL RELAY PANEL AS INDICATED. REFER TO SCHEDULES FOR ADDITIONAL INFORMATION.
7. PROVIDE NEMA 3R TOGGLE DISCONNECT SWITCH FOR MONUMENT SIGN. VERIFY EXACT LOCATION AND POWER REQUIREMENTS WITH SIGNAGE VENDOR PRIOR TO INSTALL.
8. VERIFY MONUMENT SIGN POWER REQUIREMENTS WITH OWNER PRIOR TO ROUGH-IN. CALCULATE PROPER CONDUCTOR SIZE REQUIRED TAKING VOLTAGE DROP INTO CONSIDERATION.
9. PROVIDE POWER CONNECTION TO FIRE PIT. PROVIDE EPO AND CONTROL WIRING AS REQUIRED.

ARCHITECT OF RECORD



CONSULTANT



CLIENT

PROJECT TITLE

Q39 (SHELL)
LEE'S SUMMIT, MO
OLDHAM VILLAGE

PROJECT NUMBER			62910099
PROJECT MANAGER	DRAWN BY	CHECKED BY	
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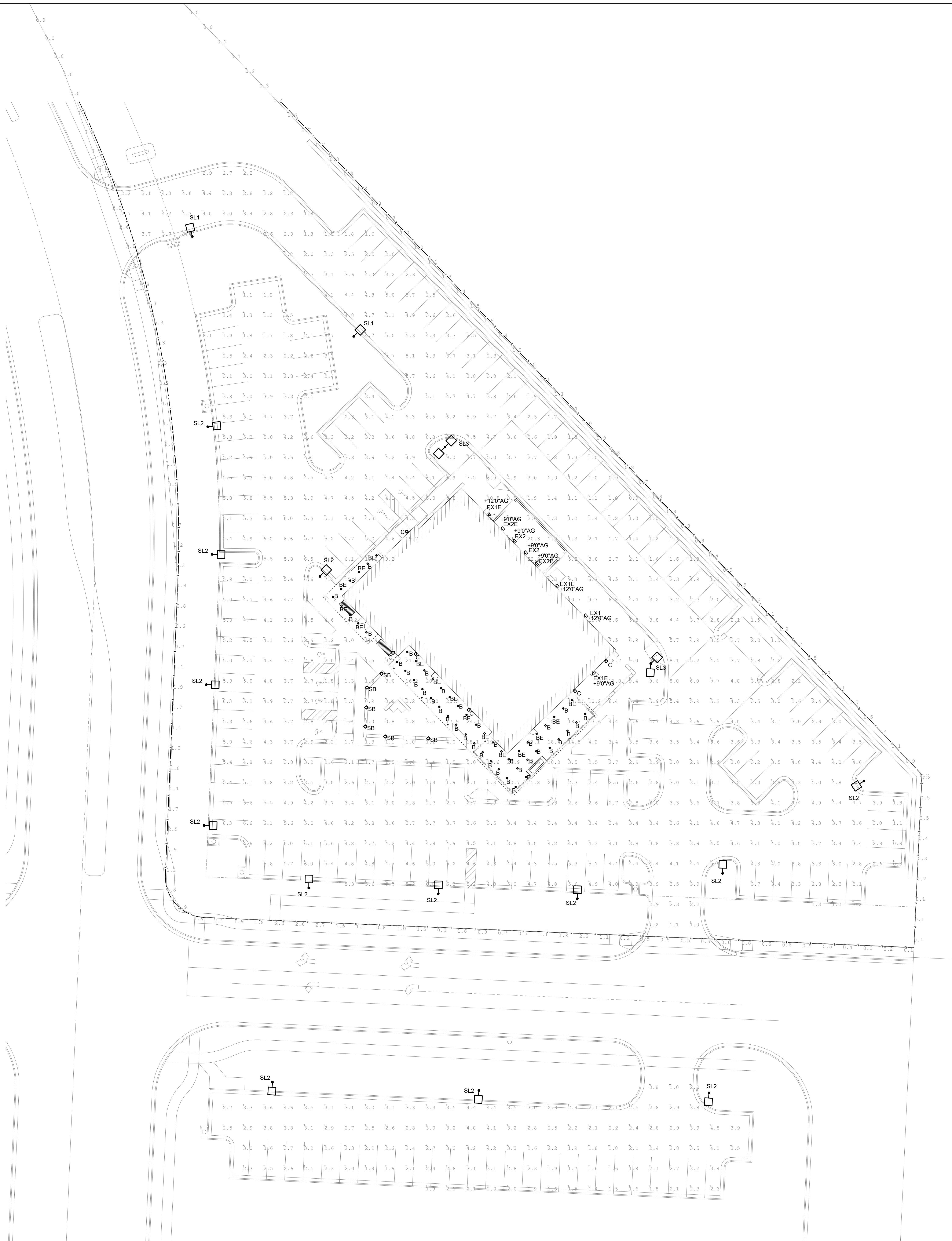
NUMBER	DATE	DESCRIPTION
1	05/01/2025	30% DEVELOPMENT

SHEET NAME

SITE PLAN - ELECTRICAL

SHEET NUMBER

E001



SITE PLAN NOTES

1. PHOTOMETRICS ARE CALCULATED REFERENCEING IES FILES FROM SPECIFIED LIGHT FIXTURES. LIGHT FIXTURE ALTERNATES OR CHANGES TO MOUNTING HEIGHTS MAY DIFFER IN PHOTOMETRIC SUMMARY AND SHALL BE CALCULATED AS REQUIRED.

CALCULATION SUMMARY						
	CALC TYPE	UNITS	AVG	MAX	MIN	AVG/MIN
MAIN PARKING LOT	ILLUMINANCE	FOOTCANDLES	3.83	9.3	0.8	4.79
SOUTH PARKING LOT	ILLUMINANCE	FOOTCANDLES	2.78	4.8	1.4	1.89
PROPERTY LINE - MAIN PROPERTY	ILLUMINANCE	FOOTCANDLES	0.86	3.0	0.0	---
PROPERTY LINE - SOUTH PARKING	ILLUMINANCE	FOOTCANDLES	1.12	2.3	0.1	11.50

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CLIENT: LEE'S SUMMIT, MO - PROJECT

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LEE'S SUMMIT, MO
OLDHAM VILLAGE

PROJECT NUMBER	62910099
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APPROVER	AUTHOR
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**SITE PLAN -
PHOTOMETRIC**

SHEET NUMBER

E002

Q39 (SHELL)
LEE'S SUMMIT, MO
OLDHAM VILLAGE

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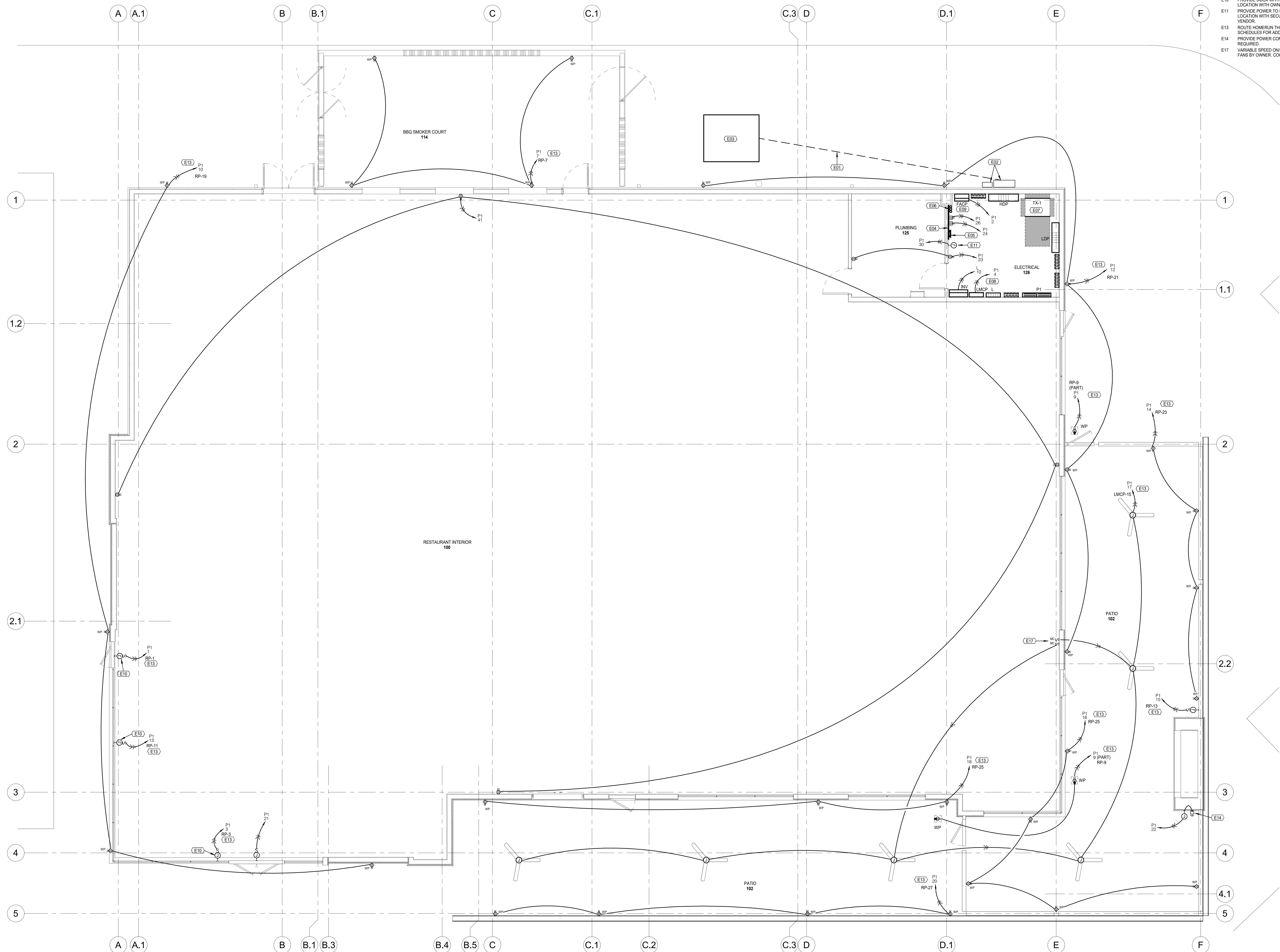
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[illegible]

SHEET NAME

SHEET NUMBER

E100



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TRUE
 FLOOR PLAN - POWER
SCALE: 1/4" = 1'-0"

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E FLOOR PLAN NOTES

E13 ROUTE HOMERUN THROUGH LIGHTING CONTROL RELAY PANEL AS INDICATED. REFER TO SCHEDULES FOR ADDITIONAL INFORMATION.

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CHECKED BY:

PROFESSIONAL SEAL



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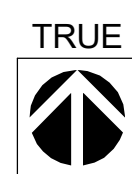
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**FLOOR PLAN -
LIGHTING**

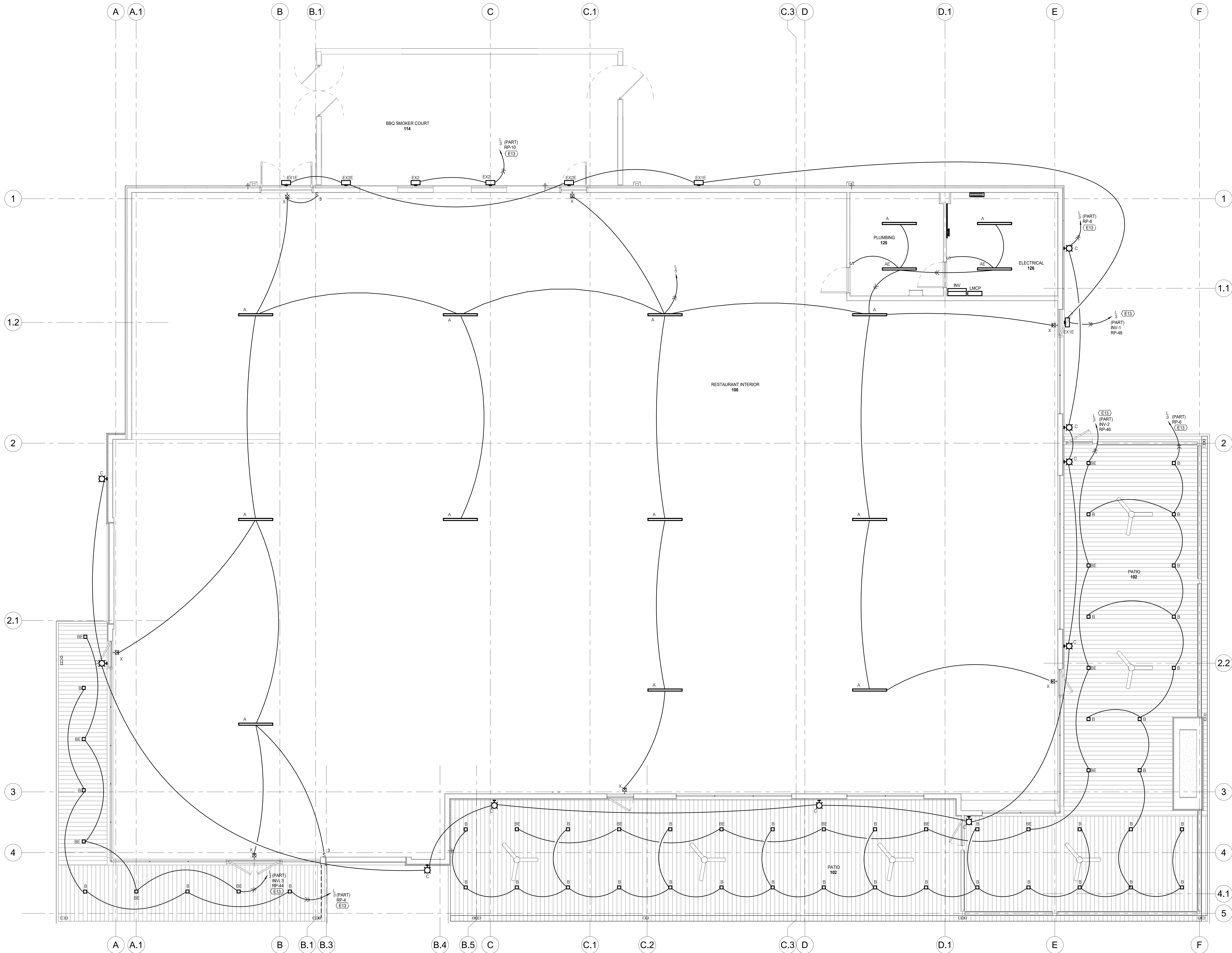
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E200

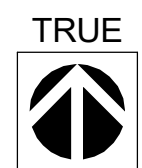
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FLOOR PLAN - LIGHTING
SCALE: 1/4" = 1'-0"



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FLOOR PLAN - SYSTEMS

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



FLOOR PLAN NOTES

- E12 PROVIDE WEATHERPROOF HORNSTROBE DEVICE ABOVE SIAMESE FIRE DEPARTMENT CONNECTION.
- E15 PROVIDE FIRE ALARM RELAY AND CONNECTIONS TO FIRE SPRINKLER FLOW AND TAMPER SWITCHES AS REQUIRED. COORDINATE QUANTITY AND LOCATIONS WITH FIRE SPRINKLER CONTRACTOR.

ARCHITECT OF RECORD



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CHECKED BY

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Author

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ISSUES AND REVISIONS

NUMBER	DATE	REVISION	ORIGINAL ISSUE	DESCRIPTION

SHEET NAME

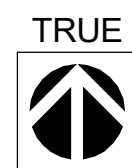
FLOOR PLAN - SYSTEMS

SHEET NUMBER

E300

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ROOF PLAN - ELECTRICAL

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

FLOOR PLAN NOTES

E16 PROVIDE DUCT DETECTORS IN SUPPLY AND RETURN DUCTS OF ROOFTOP HVAC EQUIPMENT. CONNECT TO FIRE ALARM SYSTEM AND PROVIDE CONTROL WIRING AS REQUIRED FOR EQUIPMENT SHUTDOWN.

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CONSULTANT



CLIENT

PROJECT TITLE

Q39 (SHELL)
LEE'S SUMMIT, MO
OLDHAM VILLAGE

PROJECT NUMBER			62910099
PROJECT MANAGER	DRAWN BY	CHECKED BY	
Approver	Author		
PROFESSIONAL SEAL			



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ISSUES AND REVISIONS			
NUMBER	DATE	REVISION	DESCRIPTION
1	2	3	4

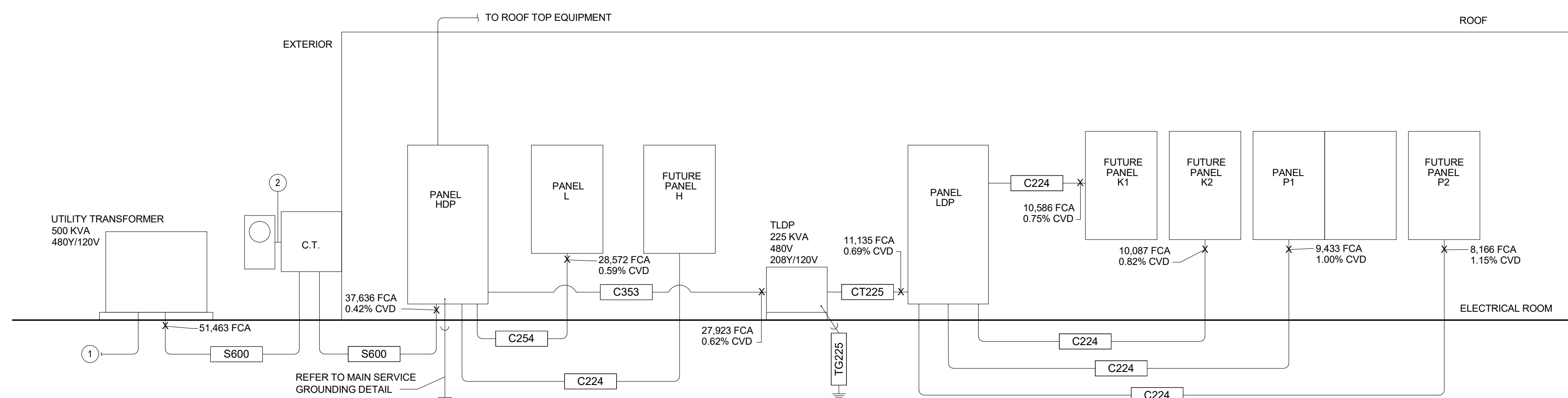
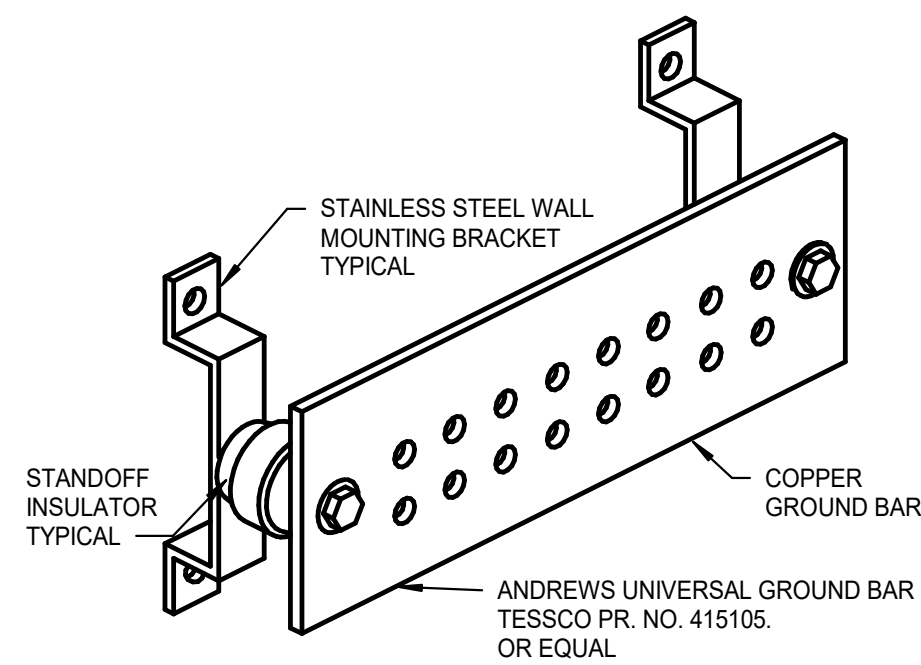
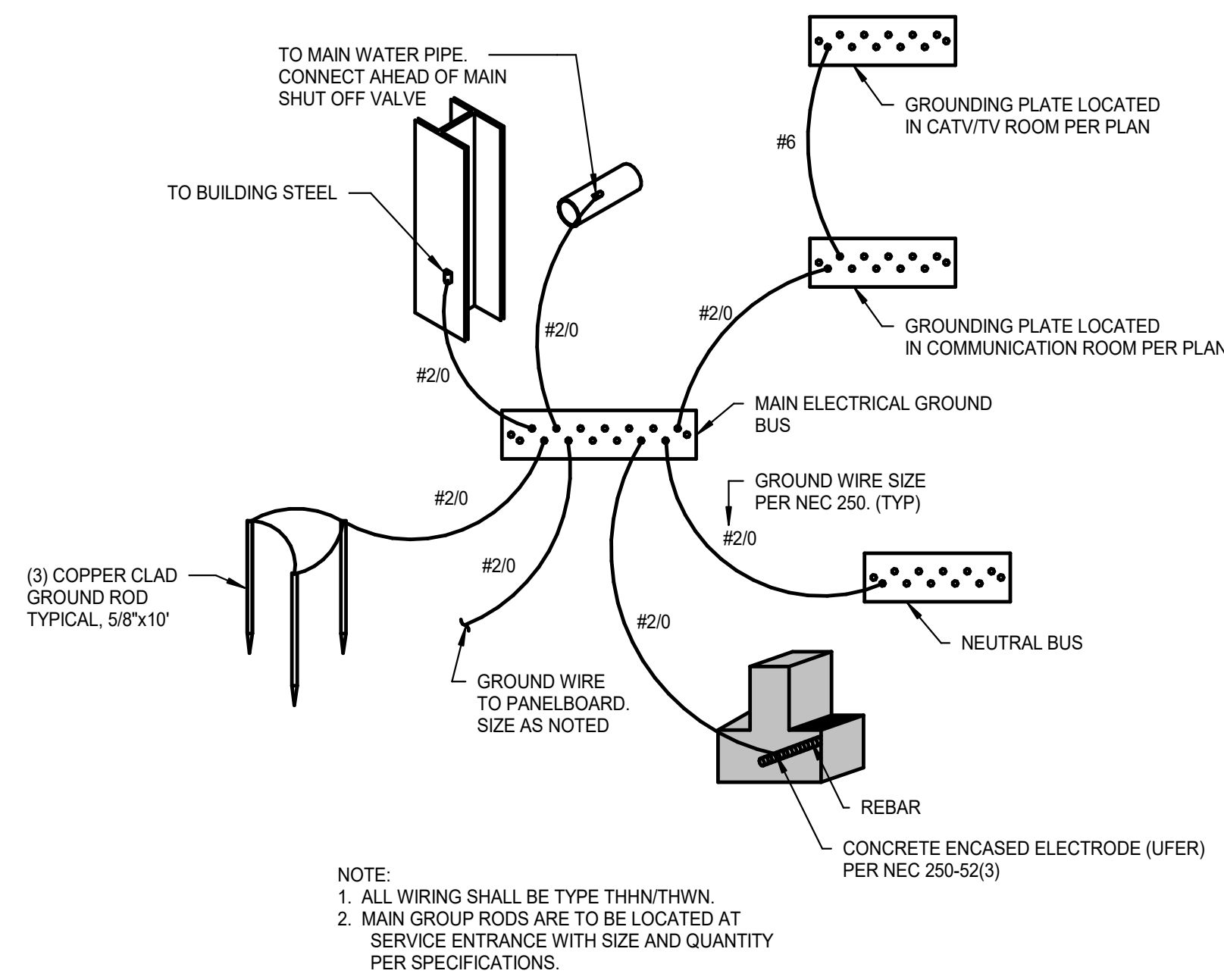
SHEET NAME

ROOF PLAN - ELECTRICAL

SHEET NUMBER

E400

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FEEDER SCHEDULE - COPPER												
3-WIRE W/ GROUND							4-WIRE W/ GROUND					
CIRCUIT AMPS	TAG NAME	NUMBER SETS	PHASE / NEUTRAL CONDUCTORS	EQUIPMENT GROUND	CONDUIT SIZE	NEC SIZE EMPIRICALS	TAG NAME	NUMBER SETS	PHASE / NEUTRAL CONDUCTORS	EQUIPMENT GROUND	CONDUIT SIZE	NEC SIZE EMPIRICALS
225	C223	1	3 #400	#4	2"	2 1/2"	C224	1	4 #400	#4	2 1/2"	2 5/8" x 2 1/2"
250	C253	1	3 #620	#3	2 1/2"	2 5/8" x 2 1/2"	C254	1	4 #620	#3	2 1/2"	2 5/8" x 2 1/2"
300	C303	1	3 #620	#3	3"	2 5/8" x 3"	C304	1	4 #620	#3	3"	3" x 3" x 3"
TRANSFORMER SECONDARY FEEDERS												
700	CT225	3	4 #620	#20	3"	2 1/2" x 2 1/2"						
SERVICE ENTRANCE CONDUCTORS												
600	S600	2	4 #300	-	4"	2 5/8" x 3"						
MISC FEEDER DESCRIPTIONS												
10225	1	N/A		#20	0.75"	0.75" x 0.75" x 0.75"	TRANSFORMER GROUND					

NOTES:

1. SIZE BRANCH FEEDER AND CIRCUITS ACCORDING TO THE CIRCUIT BREAKER / FUSE SIZE AND THIS SCHEDULE. TAG NAME MAY BE USED AS AN ADDITIONAL REFERENCE.
2. REEFS TO THE SPECIFICATIONS AND GENERAL NOTES FOR MINIMUM CONDUIT SIZE REQUIREMENTS. MINIMUM SIZE REQUIRED MAY BE LARGER THAN SHOWN IN THIS SCHEDULE.
3. CONDUCTOR SIZES ARE BASED UPON TYPE THHN/THWN CONDUCTORS WITH EMT OR SCHEDULE 40 PVC CONDUIT.
4. VEHICLES TO BE TOWED BY TRAILER AS REQUIRED FOR OTHER TYPES OF CONDUIT.
5. CONDUCTOR SIZES ARE BASED UPON 100 FEET OR LESS IN LENGTH. IF ONE WAY FEEDER IS OVER 100 FEET, INCREASE FEEDER SIZES AS REQUIRED FOR VOLTAGE DROP.
6. APPLY AMBIENT TEMPERATURE CORRECTION FACTORS AS REQUIRED BY THE NEC AND MODIFY FEEDER SIZES ACCORDINGLY.
7. APPLY DERATING FACTORS FOR MORE THAN 3 CURRENT CARRYING CONDUCTORS IN A RACEWAY AS REQUIRED BY THE NEC AND MODIFY FEEDER SIZES ACCORDINGLY.

ELECTRICAL RISER DIAGRAM NOTE

UTILITY TRANSFORMER DESIGN CRITERIA: 500 KVA, PAD MOUNT
UTILITY TRANSFORMER SECONDARY VOLTAGE: 480Y/277V, 3-PHASE, 4-WIRE
UTILITY TRANSFORMER IMPEDANCE: 1.30% Z.

MAXIMUM AVAILABLE FAULT CURRENT AT UTILITY TRANSFORMER SECONDARY IS
51,463 AMPS. FAULT CURRENT WAS OBTAINED BASED ON THE MAXIMUM LET
THROUGH CURRENT OF A TRANSFORMER WITH THE ABOVE CRITERIA.

- ⊗ RISER NOTES

1. PROVIDE 4" CONDUIT(S) FOR UTILITY PRIMARY AS REQUIRED BY THE UTILITY COMPANY. PRIMARY CONDUCTORS PROVIDED BY UTILITY. COORDINATE EXACT ROUTING WITH CIVIL AND UTILITY COMPANY.
2. 1-1/4" CONDUIT.

PANELBOARD HDP											
BUS AMPS: 600A				SCCR: 49k A				FULLY RATED		TYPE: DISTRIBUTION PANELBOARD	
MAIN SIZE: TYPE: 600A				NEMA TYPE: 1				MANUFACTURER: SQUARE D		SQUARE D	
VOLT/PHASE: 480Y/277V, 3PH, 4W				MOUNTING: SURFACE				MFG MODEL: LINE		OPTIONS: SER SPD	
SECTION: 1											
CKT #	CIRCUIT DESCRIPTION	CB AMPS	P	LOAD VA	A	B	C	LOAD VA	P	CB AMPS	CIRCUIT DESCRIPTION
1		350	3	6,360	15,281			6,360	3	40	RTU-1
3	PANEL LDP		3	5,360				5,360	3	40	RTU-1
5	VIA 225VIA TRANSFORMER T&I			5,705		15,281	15,281	5,705			
7				7,072	15,578			7,072			
9	PANEL L	200	3	3,239		11,746		3,239	3	35	RTU-2
11				6,011				6,011			
13	SPACE ONLY	400	3	0	8,507			8,507	3	35	RTU-3
15				0				8,507			
17				0		8,507		8,507	3	35	RTU-4
19	SPACE ONLY	250	3	0	13,275			13,275	3	40	MAU-1
21				0		13,275		13,275			
23	SPACE ONLY	250	3	0	5,598			5,598	3	40	MAU-2
25				0		5,598		5,598			
27	SPACE ONLY	250	3	0	5,598			5,598	3	40	MAU-2
29				0		5,598		5,598			
31	SPACE ONLY	250	3	0	0			0	3	60	SPD
33				0				0			
35	SPACE ONLY	250	3	0	0			0	3	60	SPD
37				0				0			
39	SPACE ONLY	250	3	0	0			0	3	60	SPD
41				0				0			
PER PHASE CONNECTED - VA 64,838 60,005 63,122											
PER PHASE CONNECTED - AMPS 324 217 228											
TOTAL CONNECTED - VA 187,865											
TOTAL CONNECTED - AMPS 98											
TOTAL DEMAND - VA 193,083											
TOTAL DEMAND - AMPS 233											
NOTES: SER = SERVICE ENTRANCE RATED HACR = HACR RATED SPD = SURGE PROTECTIVE DEVICE											
*REFER TO THE BRANCH CIRCUIT COPPER CONDUCTOR AND CONDUIT SIZING CHART FOR SIZING BRANCH CIRCUITS OF 100A OR LESS											

PANELBOARD LDP											
BUS AMPS: 800A MAIN SIZE: TYPE: 700A VOLT/PHASE: 208Y/120V, 3PH, 4W				SCCR: 22k A NEMA TYPE: 1 MOUNTING: SURFACE				FULLY RATED TYPE: BRANCH CIRCUIT PANELBOARD MANUFACTURER: SQUARE D MFG MODEL: LINE			
SECTION: 1				LOCATION: ELECTRICAL							
CKT #	CIRCUIT DESCRIPTION	CB AMPS	P	LOAD VA	A	B	C	LOAD VA	P	CB AMPS	CIRCUIT DESCRIPTION
1		200	3	6,360	6,360			6,360	3	200	
3	PANEL P1			5,360		5,360		5,360			PANEL K1
7				5,705			5,705				
9	PANEL P2	200	3	0	0			0	3	200	PANEL K2
11				0			0				
13				0	0			0			
15	SPACE ONLY	225	3	0	0		0	0	3	225	SPACE ONLY
17				0	0			0			
19				0	0			0			
21	SPACE ONLY	225	3	0	0		0	0	3	225	SPACE ONLY
23				0	0			0			
25				0	0			0			
27	SPACE ONLY	225	3	0	0		0	0	3	225	SPACE ONLY
29				0	0			0			
31				0	0			0			
33	SPACE ONLY	225	3	0	0		0	0	3	225	SPACE ONLY
35				0	0			0			
37				0	0			0			
39	SPACE ONLY	225	3	0	0		0	0	3	225	SPACE ONLY
41				0	0			0			
				PER PHASE CONNECTED - VA 6,360 5,360 5,705				TOTAL CONNECTED - VA 17,425			
				PER PHASE CONNECTED - AMPS 33 45 48				TOTAL CONNECTED - AMPS 48			
								TOTAL DEMAND - VA 19,600			
								TOTAL DEMAND - AMPS 34			
NOTES:											
REFER TO THE BRANCH CIRCUIT COPPER CONDUCTOR AND CONDUIT SIZING CHART FOR SIZING BRANCH CIRCUITS OF 100A OR LESS											

PANELBOARD L												
BUS AMPS: 250A			SCCR: 42k A			FULLY RATED			TYPE: BRANCH CIRCUIT PANELBOARD			
MAIN SIZE: TYPE: MLO			NEMA TYPE: 1			MANUFACTURER: SQUARE D			SQUARE D			
VOLT/PHASE: 480Y/277V, 3PH, 4W			MOUNTING: SURFACE			MFG MODEL: NP			OPTIONS: SER SPD			
SECTION: 1												
CKT #	CIRCUIT DESCRIPTION	CB AMPS	P	LOAD VA	A	B	C	LOAD VA	P	CB AMPS	CIRCUIT DESCRIPTION	
1	LTG- SITE POLES	20	1	688		1,376		688	1	20	LTG- SITE POLES	
3	LTG- (SARKE) CANOPY / SCONCES	30	1	1,429		2,859		880	1	20	LTG- SITE POLES	
5	LTG- RT-TRON / TRAMP	20	1	465		930		1,011	1	20	LTG- SITE POLES	
7	LTG- SITE POLES	20	1	516		688		160	1	20	LTG- SITE BOLLARDS	
9	RELAY PANEL "RPH"	25	1	5,000		5,000		750	1	20	LTG- INTERFER	
11	UNL2	25	1	5,000		5,000		0				
13	SPACE ONLY	20	1	0		0		0				
15	SPACE ONLY	20	1	0		0		0				
17	SPACE ONLY	20	1	0		0		0				
19	SPACE ONLY	20	1	0		0		0				
21	SPACE ONLY	20	1	0		0		0				
23	SPACE ONLY	20	1	0		0		0				
25	SPACE ONLY	20	1	0		0		0				
27	SPACE ONLY	20	1	0		0		0				
29	SPACE ONLY	20	1	0		0		0				
31	SPACE ONLY	20	1	0		0		0				
33	SPACE ONLY	20	1	0		0		0				
35	SPACE ONLY	20	1	0		0		0				
37	SPACE ONLY	20	1	0		0		0				
39	SPACE ONLY	20	1	0		0		0				
41	SPACE ONLY	20	1	0		0		0				
			PER PHASE CONNECTED - VA			7,072	3,239	6,011	TOTAL CONNECTED - VA			16,322
			PER PHASE CONNECTED - AMPS			26	12	22	TOTAL CONNECTED - AMPS			20
									TOTAL DEMAND - VA			20,365
									TOTAL DEMAND - AMPS			24
NOTES: RPH = CONTROL LIGHTING CIRCUIT WITH RELAY PANEL AS INDICATED												
SPD = SURGE PROTECTIVE DEVICE												
*REFER TO THE BRANCH CIRCUIT COPPER CONDUCTOR AND CONDUIT SIZING CHART FOR SIZING BRANCH CIRCUITS OF 100A OR LESS												

RELAY PANEL: RP											
			LOCATION: ELEC						MANUFACTURER: WATTSOPPER MODEL: LMCP		
#	SOURCE	LOAD DESCRIPTION	CONTROL SCHEDULE	LOAD TYPE	DIMMING	VOLTAGE	P	P	VOLTAGE	DIMMING	LOAD TYPE
	PLAN	CKT									SCHEDULE
1	P1-1	PWR- WEST DOOR SIGN	a	NORMAL	NO	120	1	1	277	0-10V	NORMAL
3	P1-3	PWR- S. MAIN ENTRANCE SIGN	a	NORMAL	NO	120	1	1	277	0-10V	NORMAL
5	P1-5	PWR- MONUMENT SIGN SOUTH	a	NORMAL	NO	120	1	1	277	0-10V	NORMAL
7	P1-7	RCPT- SHOWER CONV.	a	NORMAL	NO	120	1	1	277	0-10V	NORMAL
9	P1-9	RCPT- EXTERIOR CAFE LIGHTS	c	NORMAL	NO	120	1	1	277	0-10V	NORMAL
11	P1-11	PWR- WEST WALL SIGN	a	NORMAL	NO	120	1	1	277	0-10V	NORMAL
13	P1-13	PWR- FIRE PLACES SIGN	a	NORMAL	NO	120	1	1	277	0-10V	NORMAL
15	P1-17	RCPT- PATIO FANS	a	NORMAL	NO	120	1	1	277	0-10V	NORMAL
17	P1-19	PWR- MONUMENT SIGN NORTH	a	NORMAL	NO	120	1	1	277	0-10V	NORMAL
19	P1-10	RCPT- FRONT BUILDING CONV.	a	NORMAL	NO	120	1	1	277	NO	NORMAL
21	P1-12	RCPT- NE BLDG CONV.	a	NORMAL	NO	120	1	1	277	NO	NORMAL
23	P1-14	RCPT- PATIO CONV. 1	a	NORMAL	NO	120	1	1	277	NO	NORMAL
25	P1-16	RCPT- PATIO CONV. 2	e	NORMAL	NO	120	1	1	277	NO	NORMAL
27	P1-18	RCPT- PATIO CONV. 3	e	NORMAL	NO	120	1	1	277	NO	NORMAL
29	P1-20	RCPT- PATIO CONV. 4	e	NORMAL	NO	120	1	1	277	NO	NORMAL
31	SPARE	SPARE	a	NORMAL	NO	120	1	1	277	NO	NORMAL
33	SPARE	SPARE	a	NORMAL	NO	120	1	1	277	NO	NORMAL
35	SPARE	SPARE	a	NORMAL	NO	120	1	1	277	NO	NORMAL
37	SPARE	SPARE	a	NORMAL	NO	120	1	1	277	NO	NORMAL
39	SPARE	SPARE	a	NORMAL	NO	120	1	1	277	NO	NORMAL
41	SPARE	SPARE	a	NORMAL	NO	120	1	1	277	NO	NORMAL
43	SPARE	SPARE	a	NORMAL	NO	120	1	1	277	0-10V	EMERGENCY
45	SPARE	SPARE	a	NORMAL	NO	120	1	1	277	0-10V	EMERGENCY
47	SPARE	SPARE	a	NORMAL	NO	120	1	1	277	0-10V	EMERGENCY

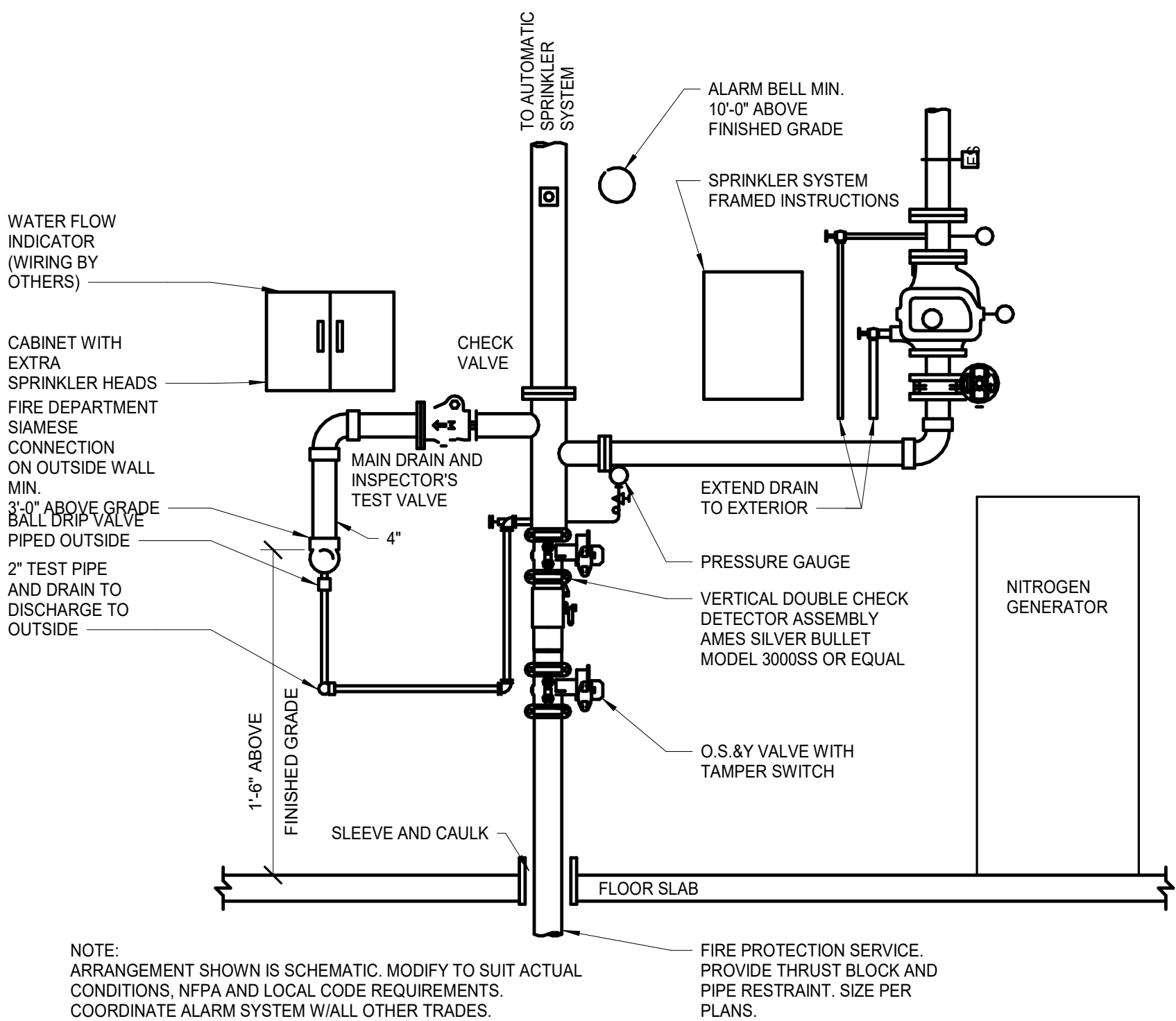
GENERAL: GRAPHIC DISPLAY WITH BACKLIGHT, BUTTON INTERFACE. USE INTERFACE, TIME OF DAY CLOCK AND ASTRONOMICAL CLOCK, BUILT-IN NETWORK INTERFACE. PROGRAMMABLE SCENE, PRE-SET RELAY OR CUSTOMIZABLE ON/OFF SCHEDULES, LOCAL OR NETWORK PROGRAMMING, LOCAL MANUAL ON/OFF OVERRIDE WITH POSITION INDICATOR. PHYSICALLY SEPARATED LOW VOLTAGE COMPONENT. DIMMING OPERATIONS AS INDICATED. IS, IS-LO, LIMITED EMERGENCY CONTROL, BYPASS, CONTACT, EMERGENCY GENERATOR SIGNALS "ON". FIRE ALARM SYSTEM CONTACTS TO FORCE LIGHTING CONTROL SYSTEM INTO EMERGENCY LIGHTING MODE.

NOTES: VB = PROVIDE VOLTAGE BARRIER BETWEEN NORMAL AND EMERGENCY POWER CIRCUITS
PC = LOAD CONTROLLED VIA PROTOCOL
TC = LOAD CONTROLLED VIA TIMECLOCK

CONTROL SCHEDULE: a EXTERIOR - SIGNAGE
b EXTERIOR - SITE LIGHTING
c EXTERIOR - CAFE LIGHTS
d EXTERIOR - PATIO FANS
e EXTERIOR - CONV.
f EXTERIOR - CANOPY PATIO
g EXTERIOR - CANOPY PATIO
h EXTERIOR - SIGNAGES
i EXTERIOR - WALL PLACS

TOPC: TOPIC PROGRAM CIRCUIT SUCH THAT FUTUREDS TURN TO 30% OR TURN OFF 1 HOUR AFTER BUSINESS CLOSURE. CONFIRM WITH OWNER.
TOPC: PROGRAM CIRCUIT SUCH THAT FUTUREDS TURN OFF 1 HOUR AFTER BUSINESS CLOSURE.
TO
TOPC: PROGRAM CIRCUIT SUCH THAT FUTUREDS TURN TO 30% 1 HOUR AFTER BUSINESS CLOSURE.
TOPC: PROGRAM CIRCUIT SUCH THAT FUTUREDS TURN TO 30% 1 HOUR AFTER BUSINESS CLOSURE.
TOPC: PROGRAM CIRCUIT SUCH THAT FUTUREDS TURN OFF 1 HOUR AFTER BUSINESS CLOSURE.
TOPC: PROGRAM CIRCUIT SUCH THAT FUTUREDS TURN TO 30% 1 HOUR AFTER BUSINESS CLOSURE.

* CONTROL SCHEDULES ARE FOR REFERENCE ONLY. CONFIRM CONTROL PROGRAMS FOR EACH RELAY WITH OWNER PRIOR TO PROGRAMMING. EMERGENCY LIGHTING CONTROLS SHALL BE PROGRAMMED PER EOC 2016 AS REQUIRED.



FIRE PROTECTION SERVICE DETAIL
NOT TO SCALE

FIRE PROTECTION DESIGN CRITERIA

- A. PROVIDED A WET TYPE SPRINKLER SYSTEM THROUGHOUT BUILDING IN COMPLIANCE WITH THE RULES AND REGULATIONS OF APPLICABLE FEDERAL, STATE AND LOCAL LAWS, CODES AND ORDINANCES. THE OWNER'S INSURANCE COMPANY AND NFPA 13.
- B. FURNISH ALL MATERIALS, LABOR, TOOLS, TRANSPORTATION, INCIDENTALS AND APPURTENANCES TO COMPLETE IN EVERY DETAIL AND LEAVE IN WORKING ORDER ALL ITEMS OF WORK REQUIRED FOR STRICT COMPLIANCE WITH CODES AND STANDARDS.
- C. PROVIDE SCHEDULE 40 FOR 2" AND SMALLER WITH THREADED ENDS AND SCHEDULE 10 FOR 1-1/2" AND LARGER WITH ROLL-GROOVED ENDS AND GROOVED JOINTS. ALL PIPING IN AREAS WITH CEILINGS SHALL BE RUN CONCEALED WITH NO EXCEPTIONS UNLESS COORDINATED WITH ARCHITECT AND ENGINEER. PIPE SIZES SHOWN ON PLANS FOR INFORMATION ONLY. VERIFY BY HYDRAULIC CALCULATIONS.
- D. ALL SPRINKLERS IN LAY-IN CEILINGS ARE TO BE CENTERED ±1/2" IN 2X2 PORTION OF TILE. ALL SPRINKLERS IN ON-BOARD CEILINGS ARE TO BE CENTERED ±1/2" WITH LIGHT FIXTURES AND ALIGNED WITH ALL OTHER DEVICES IN CEILING IN BOTH DIRECTIONS. COORDINATE WITH ARCHITECT.
- E. FIRE PROTECTION CONTRACTOR SHALL PREPARE DETAILED AND COORDINATED SHOP DRAWINGS SO AS TO AVOID CONFLICTS IN THE FIELD. CONTRACTOR SHALL COORDINATE WITH REFLECTED CEILING PLAN, DUCTWORK LAYOUT AND LIGHTING LAYOUT. ALL COORDINATION SHALL TAKE PLACE PRIOR TO INSTALLATION.

- F. CONTRACTOR SHALL FILE ALL DRAWINGS, PAY ALL FEES AND OBTAIN PERMITS AND CERTIFICATES OF INSPECTIONS RELATIVE TO THIS WORK.
- G. CONTRACTOR SHALL OBTAIN CURRENT FIRE HYDRANT FLOW TEST DATA AND USE FOR SYSTEM HYDRAULIC CALCULATIONS. USE DATA TO DESIGN SYSTEMS ACCORDINGLY BASED ON AVERAGE NUMBERS PLUS 10% SAFETY.
- H. PREPARE AND SUBMIT SHOP DRAWINGS, PRODUCT DATA AND HYDRAULIC CALCULATIONS AS REQUIRED. ALL INFORMATION SHOWN ON FIRE PROTECTION DRAWINGS SHALL BE INCLUDED ON THE SHOP DRAWINGS.
- I. CONTRACTOR TO BE RESPONSIBLE FOR MAKING FINAL COORDINATION WITH STRUCTURE AND ALL OTHER TRADES PRIOR TO SUBMITTING SHOP DRAWINGS. ALL ELEVATIONS OF PIPE MUST BE SHOWN ON SHOP DRAWINGS.
- J. ALL SPRINKLERS AND PIPING SHALL BE PROTECTED FROM FREEZING. USE DRY SIDEWALL SPRINKLERS OR DRY PIPE SYSTEM FOR VESTIBULES, ALCOVES, TRASH ENCLOSURES, CANOPIES, AND PORCHES.
- K. NFPA 13 - 2016 ED - 7.1.5 A SINGLE AIR VENT WITH A CONNECTION SHALL BE PROVIDED ON EACH WET PIPE SYSTEM. THE AIR VENT SHALL BE LOCATED NEAR A HIGH POINT IN THE SYSTEM TO ALLOW AIR TO BE REMOVED FROM THAT PORTION OF THE SYSTEM BY ONE OF THE FOLLOWING METHODS: MANUAL VALVE, MINIMUM 12" (304MM) SIZE, OR AUTOMATIC AIR VENT.
- L. PROVIDE AUXILIARY DRAINS AS REQUIRED BY NFPA 13. COORDINATE LOCATIONS WITH OWNER. AUXILIARY DRAINS MUST BE SHOWN ON SHOP DRAWINGS.

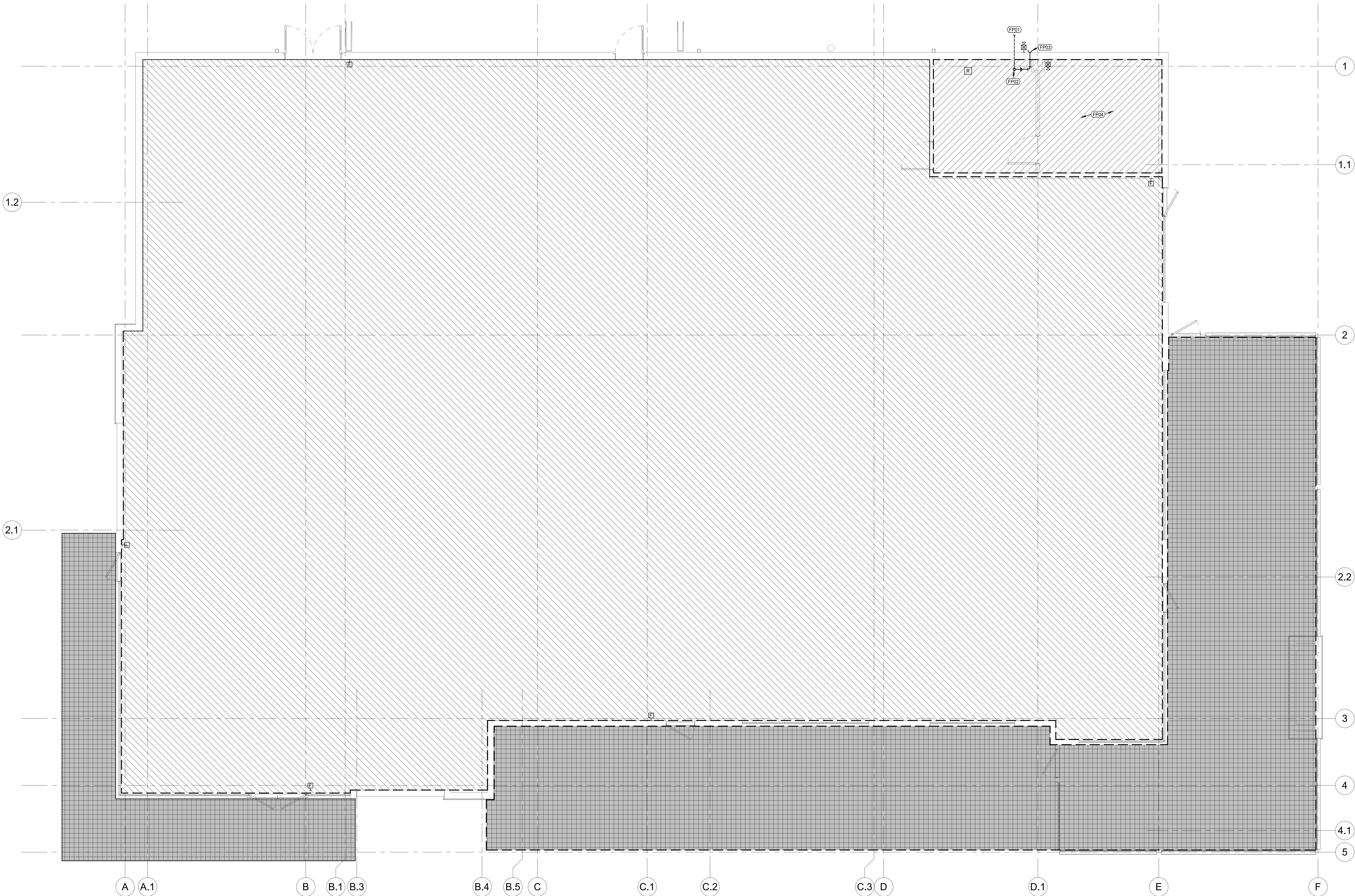
- M. PROVIDE AUXILIARY DRAINS AS REQUIRED BY NFPA 13. COORDINATE LOCATIONS WITH OWNER. AUXILIARY DRAINS MUST BE SHOWN ON SHOP DRAWINGS.
- N. SPRINKLER SYSTEM SHALL BE TESTED AND DRAINED PER NFPA STANDARDS AND LOCAL AND STATE AUTHORITY HAVING JURISDICTION. COMPLETED CONTRACTOR MATERIAL TEST CERTIFICATES SHALL BE FORWARDED TO OWNER.
- O. FIRE SPRINKLER CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH FIRE ALARM PANEL AND SUPERVISION OF NEW SPRINKLER TAMPERS AND FLOW SWITCHES.
- P. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- Q. SPRINKLER HEAD PLACEMENT SHALL BE OUT OF THE SWING AREA OF DOORS TO AVOID CONFLICT WITH TAIL DOORS.

FIRE PROTECTION LEGEND

- PROVIDE PROPER COVERAGE PER FPA 13 AND LOCAL AUTHORITIES. REFER TO REFLECTED CEILING PLANS FOR COORDINATION WITH LIGHTS, DIFFUSERS, EXIT SIGNS, ETC.
- LIGHT HAZARD - PROVIDE PROPER COVERAGE PER NFPA 13 (0.1 GPM PER 1500 SF) PLUS 100 GPM HOSE STREAM ALLOWANCE.
- ORDINARY HAZARD GROUP 1 - PROVIDE PROPER COVERAGE PER NFPA 13 (0.15 GPM PER 1500 SF) PLUS 250 GPM HOSE STREAM ALLOWANCE.
- ORDINARY HAZARD GROUP 2 - PROVIDE PROPER COVERAGE PER NFPA 13 (0.2 GPM PER 1500 SF) PLUS 250 GPM HOSE STREAM ALLOWANCE.
- ORDINARY HAZARD GROUP 3 - PROVIDE DRY PENDENT SPRINKLERS FOR ALL WALK-IN COOLERS AND FREEZERS.
- PROVIDE DRY PENDENT CONCEALER-TYPE SPRINKLERS FROM DRY PIPE SYSTEM WITH NITROGEN GENERATOR, DRY SIDEWALL SPRINKLERS, OR UL LISTED ANTI-FREEZE SYSTEM TO PROTECT BENEATH NON-COMBUSTIBLE CANOPY IN ACCORDANCE WITH NFPA 13.

FLOOR PLAN NOTES

- FP01 6" UNDERGROUND FIRE LINE TO BUILDING. CONNECT FIVE FEET FROM BUILDING EXTERIOR WALL. SLEEVE EXTERIOR WALL AND PROVIDE THRUST PROTECTION PER NFPA 13.
- FP02 6" SPRINKLER RISER, 6" DOUBLE DETECTOR CHECK BACKFLOW PREVENTER, FLOW AND TAMPER SWITCHES, 2 INCH MAIN DRAIN EXTENDED TO OUTSIDE.
- FP03 SIAMSESE FIRE DEPARTMENT CONNECTION. PROVIDE HORN/STROBE ABOVE.
- FP04 DO NOT RUN SPRINKLER PIPING OVER ELECTRICAL EQUIPMENT. MAINTAIN 3' CLEARANCE IN FRONT OF PANELS.



FLOOR PLAN - FIRE PROTECTION
SCALE: 1/4" = 1'-0"

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E: If you Project No. 23-7674-00

CLIENT

PROJECT TITLE

Q39 (SHELL)
LEE'S SUMMIT, MO
OLDHAM VILLAGE

PROJECT NUMBER			62910099
PROJECT MANAGER	DRAWN BY	CHECKED BY	
Approver	Author		
PROFESSIONAL SEAL			



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