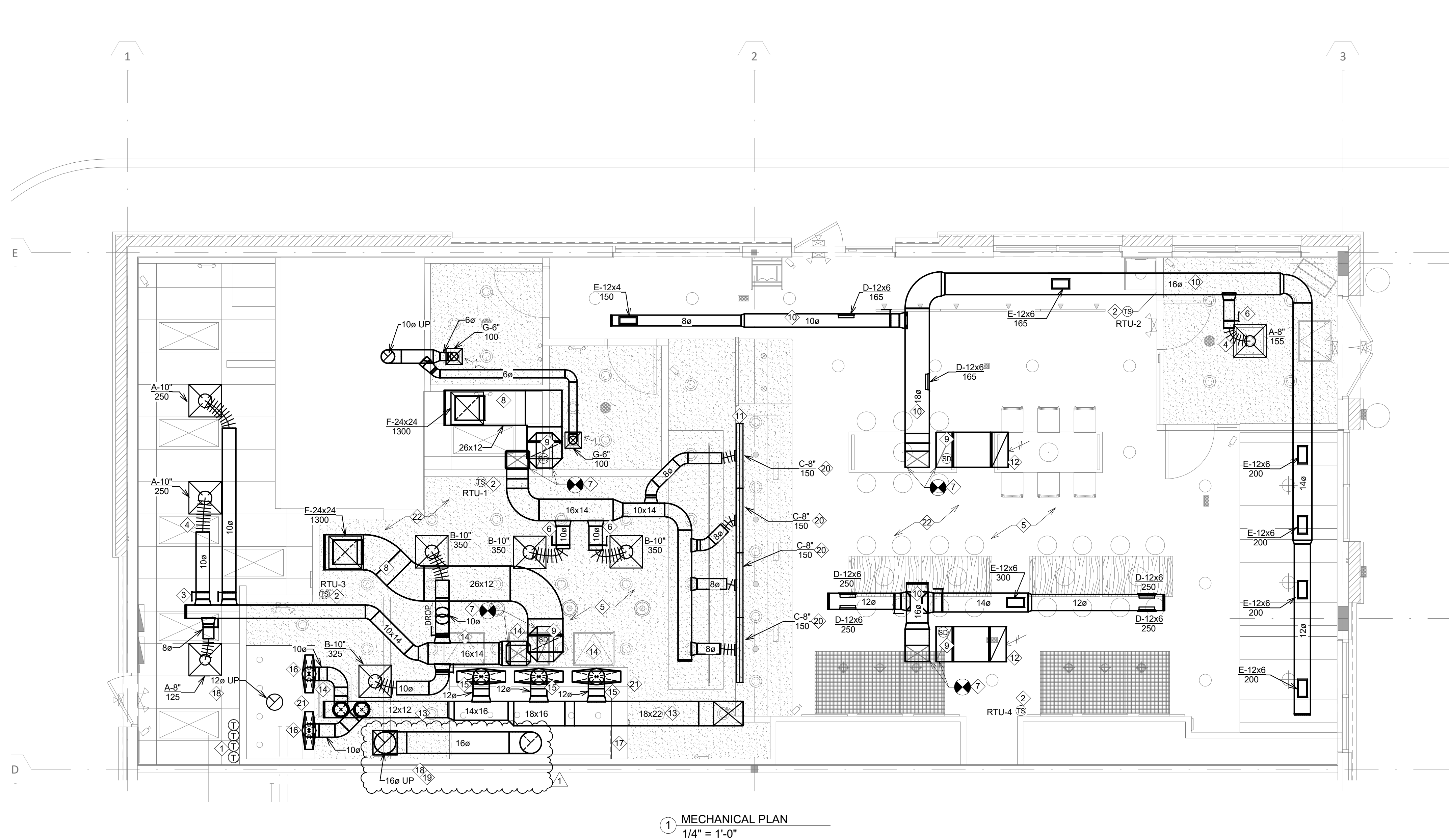


MECHANICAL SYMBOLS LEGEND			
DUCTWORK			
	SUPPLY AIR		RETURN DUCT UP, NEGATIVE PRESSURE
	RETURN AIR		EXHAUST DUCT UP, NEGATIVE PRESSURE
	EXHAUST AIR		SUPPLY DUCT DN, POSITIVE PRESSURE
	STANDARD BRANCH, NO SPLITTER - SUPPLY FLOW TO RIGHT - RETURN/EXHAUST FLOW TO LEFT		RETURN DUCT DN, NEGATIVE PRESSURE
	BELLMOUTH WITH BALANCING DAMPER		EXHAUST DUCT DN, NEGATIVE PRESSURE
	FLEXIBLE DUCT		SUPPLY DIFFUSER/REGISTER BLANKOFF INDICATED
	TURNING VANES		RETURN GRILLE/REGISTER
	FLEXIBLE CONNECTION		EXHAUST GRILLE/REGISTER
	MANUAL VOLUME DAMPER		LINEAR DIFFUSER
	MOTORIZED DAMPER		CONCENTRIC DUCT TRANSITION
	FIRE DAMPER & ACCESS PANEL		ECCENTRIC DUCT TRANSITION
	SMOKE DAMPER & ACCESS PANEL		RECTANGULAR-TO-ROUND DUCT TRANSITION
	COMBINATION FIRE/SMOKE DAMPER & ACCESS PANEL		DUCT OFFSETS
	SUPPLY GRILLE OR REGISTER		DUCT OUTLINE
	RETURN OR EXHAUST GRILLE OR REGISTER	CONTROLS	
	SUPPLY DUCT UP, POSITIVE PRESSURE		TAMPERPROOF THERMOSTAT
ANNOTATION			ROOM PRESSURE MONITOR
	QUANTITY TYPE SIZE CFM		AQUA STAT
	GRILLE, REGISTER, & DIFFUSER IDENTIFICATION		THERMOSTAT W/GUARD
	HYDRONIC FINED TUBE RADIATION & RADIANT PANEL IDENTIFICATION		CARBON MONOXIDE SENSOR
	ELECTRIC BASEBOARD RADIATION IDENTIFICATION		HUMIDISTAT OR R.H. SENSOR
	DETAIL NUMBER SHEET NUMBER		REFRIGERANT SENSOR
	SECTION NUMBER SHEET NUMBER		SMOKE DETECTOR
	EQUIP DESIGNATION EQUIP NUMBER		SPACE TEMPERATURE SENSOR
	POINT OF CONNECTION, NEW TO EXISTING		STATIC PRESSURE SENSOR
	POINT OF DISCONNECTION		THERMOSTAT
			CARBON DIOXIDE SENSOR



KEY NOTES:	
1	PROVIDE NEW HONEYWELL COMMERCIAL VISION PRO 8000 MODEL #TB8220 TOUCHSCREEN 7-DAY PROGRAMMABLE THERMOSTAT WITH CONTROL FOR UP TO 2 STAGES OF HEATING, 2 STAGES OF COOLING. VERIFY COMPATIBILITY WITH LANDLORD PROVIDED HVAC UNITS PRIOR TO INSTALLATION. INSTALL ON WALL ABOVE MANAGERS DESK & WIRE TO EQUIPMENT PER MANUFACTURERS INSTALLATION INSTRUCTIONS. PROGRAM THERMOSTAT SET POINTS. COORDINATE SETTINGS WITH TENANT REQUIREMENTS AND LOCATION WITH DETAIL 6/A600. LABEL T-STAT BY UNIT SERVED.
2	PROVIDE REMOTE TEMPERATURE SENSOR COMPATIBLE WITH THERMOSTAT. MOUNT AT 60" A.F.F. COORDINATE REQUIREMENTS AND VERIFY COMPATIBILITY WITH HONEYWELL THERMOSTATS. PROVIDE INSULATED BACKER IF INSTALLED ON EXTERIOR WALL. LABEL SENSOR BY UNIT SERVED.
3	INSTALL TAKE OFF IN SUPPLY AIR DUCTWORK. PROVIDE MANUAL VOLUME DAMPER. (TYPICAL FOR ALL)
4	FLEX DUCT 4'-0" MAX. LENGTH. (TYPICAL) SEE DETAIL 2/M200.
5	FURNISH AND INSTALL ALL NEW DUCTWORK IN ACCORDANCE WITH SMACNA & AISC STANDARDS. HOLD ALL NEW DUCTWORK AS HIGH AS POSSIBLE/PRACTICAL. MOUNT TIGHT TO BOTTOM OF STRUCTURE UNLESS OTHERWISE NOTED. PROVIDE TRANSITIONS AS REQUIRED. DUCT DIMENSIONS ARE CLEAR INTERNAL AIR PATH DIMENSIONS. SUPPORT FROM STRUCTURE. COORDINATE WITH LIGHTING AND ARCHITECTURAL ELEMENTS TO AVOID CONFLICT. VERIFY ALL CONDITIONS PRIOR TO BID.
6	VOLUME DAMPER TO BE ACCESSIBLE THROUGH TRM PLASTER FRAME. COORDINATE LOCATION IN FIELD.
7	CONNECT NEW DUCT TO EXISTING DUCT DROP WITH TRANSITION - DO NOT "HARD TAP" DROPS FROM UNIT. VERIFY EXISTING DROP SIZE IN FIELD.
8	RETURN AIR GRILLE CONNECTION SHALL BE GALV. SHEET DUCT. FLEX DUCT IS NOT ACCEPTABLE (TYPICAL).
9	DUCT SMOKE DETECTOR FURNISHED AND INSTALLED BY LANDLORD FIRE ALARM CONTRACTOR IN RETURN MAIN DUCT AND REMOTE TEST STATION WITH VISIBLE AND AUDIBLE ALARM, AND TIED INTO CENTRAL ALARM SYSTEM IF REQUIRED. SMOKE DETECTOR SHALL SHUT DOWN HVAC UNIT UPON DETECTION OF SMOKE. COORDINATE FINAL LOCATION OF REMOTE TEST STATION WITH AHJ.
10	SPIRAL DUCTWORK SHALL BE LINED PER SPECIFICATION, AND HAVE A BRIGHT GALVANIZED FINISH. COORDINATE WITH ARCHITECTURAL PLANS.

KEY NOTES:	
11	LINEAR DIFFUSERS TO BE ALIGNED TO APPEAR AS A CONTINUOUS DIFFUSER. SEE ARCHITECTURAL SHEETS FOR EXACT LOCATION. ADJUST DIFFUSER THROW BEHIND THE SERVICE COUNTER. COORDINATE WITH TENANT PROJECT MANAGER.
12	EXTEND RETURN AIR DUCT AND PROVIDE ELBOW TURNED UP (TOWARDS DECK). COVER OPENING WITH 1/2" X 1/2" WIRE MESH. LINE RETURN AIR DUCT WITH 1" ACOUSTIC INSULATION.
13	DUCTWORK TO BE ROUTED AS HIGH AS POSSIBLE. UP BETWEEN JOISTS, X-BRACING, AND OR JOIST WEBS WHERE FEASIBLE. COORDINATE ROUTING IN FIELD.
14	PROVIDE ACCESS PANELS IN HARD LID CEILING FOR SERVICE ACCESS TO IRIS DAMPERS, BALANCE DAMPERS, HOOD, AND/OR GREASE DUCT CLEANOUTS. VERIFY EXACT SIZE REQUIREMENTS AND LOCATION WITH ARCHITECTURAL. COORDINATE WITH LIGHTING.
15	EXTEND 12" DIA. AIR DUCT TO PLENUM SUPPLY HOOD WITH TRANSITION. INSTALL 12" DIA. CONTINENTAL FAN MANUFACTURING IRIS DAMPER MODEL IR-12 (NO EXCEPTIONS) WITH AIRFLOW MEASUREMENT TAPS AND NEOPRENE GASKET. HVAC CONTRACTOR SHALL INSTALL REDUCER/INCREASER AT IRIS DAMPER FOR CONNECTION TO DUCTWORK. BALANCE TO 633 CFM EACH.
16	EXTEND 10" DIA. AIR DUCT TO PLENUM SUPPLY HOOD WITH TRANSITION. INSTALL 10" DIA. CONTINENTAL FAN MANUFACTURING IRIS DAMPER MODEL IR-10 (NO EXCEPTIONS) WITH AIRFLOW MEASUREMENT TAPS AND NEOPRENE GASKET. HVAC CONTRACTOR SHALL INSTALL REDUCER/INCREASER AT IRIS DAMPER FOR CONNECTION TO DUCTWORK. BALANCE TO 380 CFM EACH.
17	HOOD CONTROL PANEL AND FIRE SUPPRESSION SYSTEM TO BE FURNISHED AS PART OF HOOD PACKAGE BY OTHERS AND INSTALLED BY MECHANICAL CONTRACTOR. SEE HOOD DRAWINGS FOR ADDITIONAL INFORMATION.
18	NEW PREFABRICATED STAINLESS STEEL DUCT COMPLYING WITH UL-1978, FURNISHED BY OTHERS AS PART OF HOOD PACKAGE AND INSTALLED BY MECHANICAL CONTRACTOR. ROUTE NEW DUCT UP TO NEW EXHAUST FAN ON ROOF. VERIFY EXACT LOCATION AND ROUTING IN FIELD. SEE HOOD PLANS FOR ADDITIONAL INFORMATION. COORDINATE ADDITIONAL DUCT SECTIONS AND FITTING WITH HOOD SUPPLIER PRIOR TO START OF WORK.
19	PYROSCAT DUCT WRAP XL (OR EQUAL) FURNISHED BY OTHERS AS PART OF HOOD PACKAGE AND INSTALLED BY MECHANICAL CONTRACTOR. INSTALLED PER MANUFACTURERS INSTRUCTIONS TO COMPLY WITH ASTM E2336. SEE DETAILS 3/M200 AND 4/M200. COORDINATE QUANTITY OF WRAP WITH HOOD SUPPLIER PRIOR TO START OF WORK.

KEY NOTES:	
20	PROVIDE YOUNG REGULATOR 270-275 CABLE CONTROL DAMPER FOR LINEAR SLOT DIFFUSERS. SEE DETAIL ON 1/M200 FOR ADDITIONAL INFORMATION.
21	HOOD AND MAKE-UP AIR PLENUM FURNISHED BY OTHERS. - INSTALLED BY MECHANICAL CONTRACTOR. REFER TO THE HOOD MANUFACTURER'S DRAWINGS FOR ADDITIONAL INFORMATION.
22	INSULATE ALL DUCTWORK PER SPECIFICATION - SEE SHEET M300.
ALL FLEX DUCT MUST BE INSTALLED PER THE ADC (AIR DIFFUSION COUNCIL) INSTALLATION STANDARDS (MOST CURRENT EDITION), INCLUDING A BEND RADIUS OF ONE DUCT DIAMETER OR GREATER, PROPERLY SEALED AND SECURED WITH 2 INCH BEADED COLLARS, PROPERLY SUPPORTED AND FULLY EXTENDED DUCT. FAN CALCULATIONS FOR THIS PROJECT WERE SIZED FOR 4 FOOT MAXIMUM FLEX DUCT INSTALLED PER THE ADC INSTALLATION STANDARDS. FLEX DUCT SHOWN ON PLANS IS FOR SCHEMATIC PURPOSES ONLY AND SHALL IN NO INSTANCE EXCEED 4 FOOT.	

GENERAL NOTES:	
A. INSTALL VOLUME DAMPER IN DUCT TAKE-OFF TO EACH DIFFUSER, GRILLE, AND REGISTER.	M. ALL EQUIPMENT, INSTALLATIONS, AND MATERIAL SHALL COMPLY WITH ALL APPLICABLE LOCAL CODES AND LANDLORD CRITERIA.
B. ALL DUCT DIMENSIONS ARE CLEAR INSIDE DIMENSIONS. CONTRACTOR MAY, AT THEIR OPTION, REPLACE RECTANGULAR DUCTWORK SHOWN WITH ROUND, SPIRAL DUCT OF EQUIVALENT CAPACITY.	N. REMOVE ALL UNUSED PIPING, DUCTWORK, AND ACCESSORIES - DO NOT ABANDON.
C. IN GENERAL, ALL PIPING AND DUCTWORK SHALL BE RUN CONCEALED IN SUSPENDED CEILING SPACES AND IN SHAFTS PROVIDED UNLESS NOTED OR INDICATED OTHERWISE.	O. VERIFY LOCATION OF ANY PENETRATION THRU ROOF WITH LANDLORD. ALL ROOF PENETRATIONS, PATCHING, AND FLASHING SHALL BE BY LANDLORD'S ROOFING CONTRACTOR AT MECHANICAL CONTRACTOR EXPENSE.
D. VERIFY ALL DUCT CONNECTION SIZES TO FANS, COILS, AND EXISTING DUCTWORK.	P. PRIOR TO OCCUPANCY OF THE PREMISES, GENERAL CONTRACTOR IS REQUIRED TO PROVIDE AN AIR BALANCE REPORT. AN APPROVED, INDEPENDENT, CERTIFIED AIR-BALANCE COMPANY MUST PERFORM THE TEST REPORT. PROVIDE COPY TO TENANT AND ARCHITECT.
E. COOPERATE WITH THE OTHER TRADES TO ELIMINATE ANY CONFLICTS BETWEEN PIPING, DUCTWORK, STRUCTURAL, ELECTRICAL WORK, ETC.	Q. PRIOR TO BID, THE CONTRACTOR SHALL REVIEW THE MECHANICAL, ELECTRICAL AND KITCHEN EQUIPMENT DRAWINGS. THE CONTRACTOR SHALL INCLUDE IN HIS BID ALL RELEVANT WORK IN THE ENTIRE SET OF DOCUMENTS AND REPORT ALL DISCREPANCIES BETWEEN THESE DRAWINGS TO THE ENGINEER PRIOR TO BIDDING FOR CLARIFICATION. IF DISCREPANCIES REMAIN UNRESOLVED DUE TO A SHORT TIME FRAME, THE CONTRACTOR SHALL INCLUDE THE MOST WORK AND THE HIGHER COSTS IN THE BID. SOLUTIONS TO UNREPORTED DISCREPANCIES WILL BE DETERMINED BY THE ARCHITECT/ENGINEER, WITH NO ADDITIONAL COMPENSATION DUE TO THE CONTRACTOR.
F. DIFFUSER, REGISTER, AND SPRINKLER HEAD LOCATIONS SHALL BE COORDINATED WITH LIGHT FIXTURE LOCATIONS AND SHALL BE IN ACCORDANCE WITH CEILING PATTERNS AS SHOWN ON ARCHITECTURAL REFLECTED CEILING PLANS.	R. HVAC CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE ROUTING OF DUCTWORK WITH WATER, VENT, WASTE & STORM PIPING STRUCTURE, CEILING ELEVATION, ELECTRICAL SWITCHGEAR AND PANEL BOARDS, LIGHTS, SPRINKLER PIPING, STRUCTURE, AND ALL OTHER TRADES. PLANS MAY NOT INDICATE ALL OFFSETS.
G. ALL SQUARE DIFFUSERS SHALL HAVE THE AIR VOLUME EQUALLY IN FOUR DIRECTIONS UNLESS INDICATED OTHERWISE.	S. SEAL DUCT SEALER PER SMACNA REQUIREMENTS AS INDICATED IN SPECIFICATIONS.
H. MECHANICAL CONTRACTOR TO VERIFY RATINGS OF ALL WALLS WITH ARCHITECTURAL DRAWINGS. SEAL PIPE PENETRATIONS TO MATCH THE WALL RATINGS. PROVIDE ALL SUPPLY AND RETURN DUCTS PASSING THROUGH FIRE RATED WALLS WITH APPROVED FIRE DAMPERS.	T. CONTRACTOR TO VERIFY THAT ALL EQUIPMENT TO REMAIN IS SECURED TO STRUCTURE PER MANUFACTURERS INSTRUCTIONS.
I. RUNOUTS TO DIFFUSERS SHALL BE THE SAME SIZE AS THE DIFFUSERS NECK SIZE.	U. PROVIDE STAINLESS STEEL ESCUTCHEON THROUGH WALL AND CEILING PENETRATIONS.
J. TENANTS CONTRACTORS SHALL VERIFY WITH HVAC PLAN TO COORDINATE THE REQUIREMENT OF PLENUM RATED FIXTURES, PIPING, WIRING, ETC. FAILURE TO DO SO COULD RESULT IN THE REMOVAL AND REPLACEMENT OF THESE ITEMS AT NO ADDITIONAL COST TO THE TENANT - NO PVC PIPING ALLOWED IN PLENUM.	
K. CONTRACTOR SHALL STENCIL TENANT NAME AND SPACE NUMBER ON UNIT.	
L. THE TENANTS MECHANICAL CONTRACTOR SHALL GO TO THE SITE AND VERIFY THE SIZE, DESIGN, SUPPORT AND LOCATION FOR ALL EXISTING AND FUTURE MECHANICAL EQUIPMENT AND UTILITY TAPS PRIOR TO ANY EQUIPMENT ORDERING, WORK, DUCTWORK FABRICATION ETC. NOTIFY THE TENANTS PROJECT MANAGER OR PROJECT ENGINEER IMMEDIATELY WITH ANY DISCREPANCIES. FAILURE TO DO SO COULD RESULT IN EQUIPMENT AND/OR MATERIALS REPLACEMENT AT NO ADDITIONAL EXPENSE TO THE TENANT.	

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NUMBER PE-2008020968

PROFESSIONAL ENGINEER

PROJECT:

BIBIBOP

asian grill

STREETS OF WEST PRYOR

2050 NW LOWENSTEIN DR.
SUITE E
LEE'S SUMMIT, MO 64081

BIBIBOP

asian grill

STREETS OF WEST PRYOR

2050 NW LOWENSTEIN DR.
SUITE E
LEE'S SUMMIT, MO 64081

BIBIBOP STORE NO.: B0057
BIBIBOP PO NO.: TBD

PROJECT NO.:	0421995-101
DRAWN BY:	TAB
CHECKED BY:	GMS
ISSUES AND REVISIONS:	
PERMIT ISSUE	01.25.2021
REVISION 1	02.10.2021

SHEET TITLE:
MECHANICAL PLAN

M100

CONSULTANT:



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PROJECT:



BIBIBOP
asian grill

STREETS OF
WEST PRYOR
2050 NW LOWENSTEIN DR.
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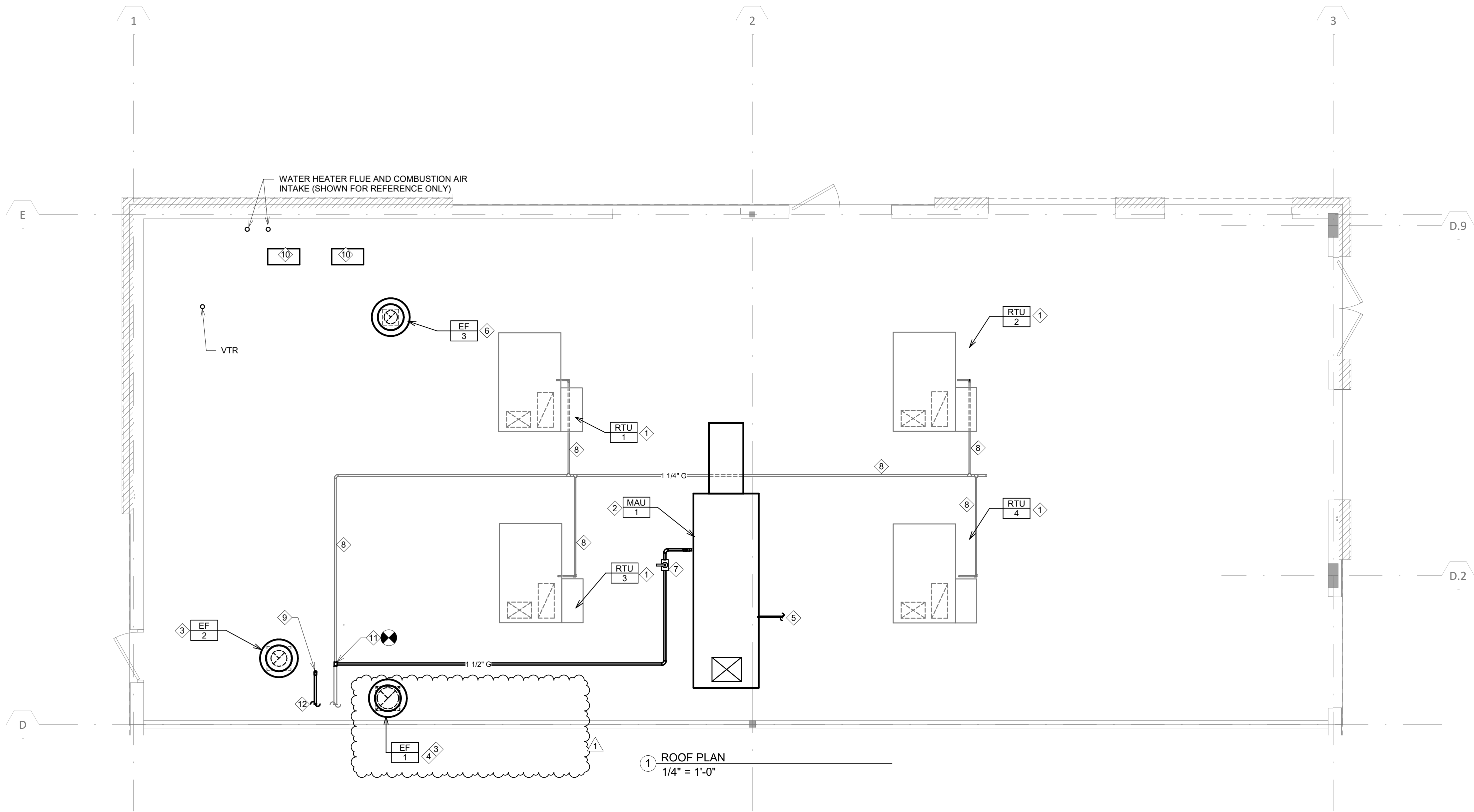
ISSUES AND REVISIONS:

PERMIT ISSUE 01.25.2021

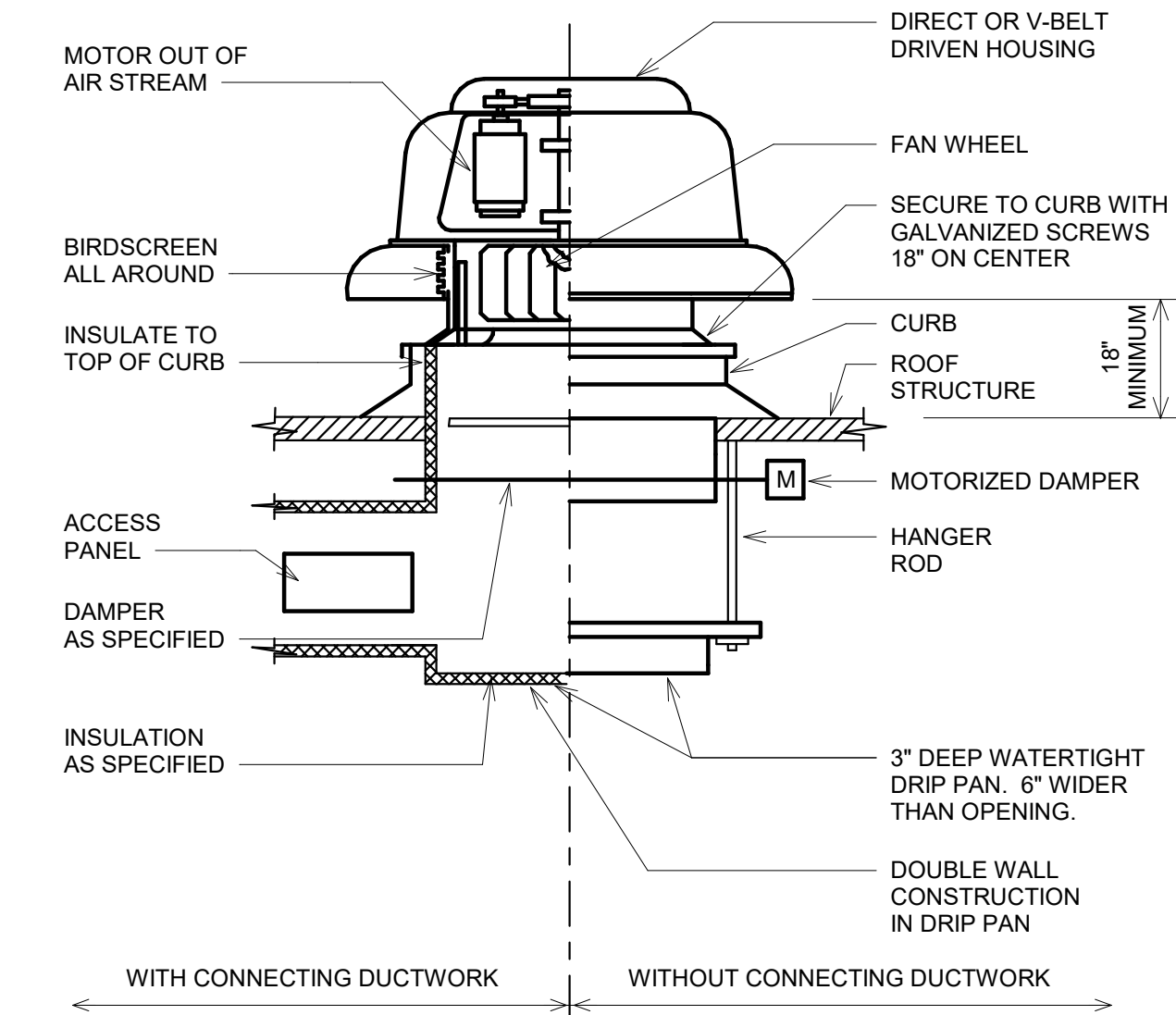
REVISION 1 02.10.2021

SHEET TITLE:
**MECHANICAL ROOF
PLAN**

M110



2 KITCHEN PRV EXHAUST FAN DETAIL
NO SCALE



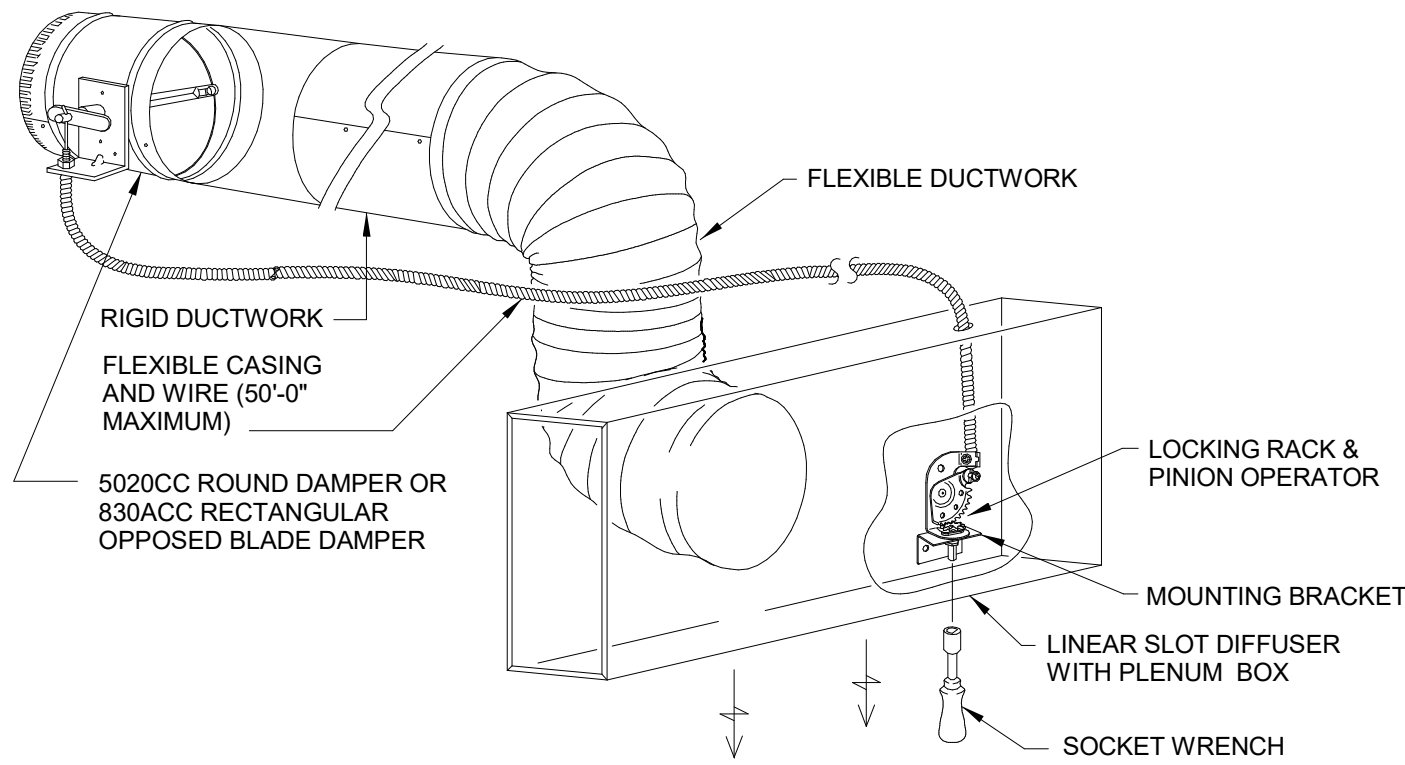
3 POWER ROOF VENTILATOR DETAIL
NO SCALE

OUTSIDE AIR CALCULATION			
OUTSIDE AIR CALCULATION BASED ON THE 2015 IMC			
AREA #1 - SEATING AREA	NET SQ. FOOTAGE:	870	
0.18 CFM/SQFT. X 870 SQ. FT. =		157	
7.5 CFM / PERSON X 42 PEOPLE =		315	
	VENTILATION:	472 CFM	
AREA #2 - UTILITY/PREP AREA	NET SQ. FOOTAGE:	115	
0.06 CFM/SQFT. X 115 SQ. FT. =		7	
7.5 CFM / PERSON X 2 PEOPLE =		15	
	VENTILATION:	22 CFM	
AREA #3 - OFFICE	NET SQ. FOOTAGE:	60	
0.06 CFM/SQFT. X 60 SQ. FT. =		4	
5.0 CFM / PERSON X 1 PERSON =		5	
	VENTILATION:	9 CFM	
AREA #4 - HALLWAY	NET SQ. FOOTAGE:	175	
0.06 CFM/SQFT. X 175 SQ. FT. =		11	
	VENTILATION:	11 CFM	
AREA #5 - SCULLERY/STORAGE	NET SQ. FOOTAGE:	375	
0.12 CFM/SQFT. X 375 SQ. FT. =		45	
7.5 CFM / PERSON X 2 PERSON =		15	
	VENTILATION:	60 CFM	
VENTILATION SUBTOTAL:		594 CFM	
VENTILATION EFFECTIVENESS:		0.8	
MINIMUM VENTILATION REQUIRED:		743 CFM	
MINIMUM VENTILATION SUPPLIED:		920 CFM	
AREA #6 - KITCHEN (MIN. EXHAUST)	NET SQ. FOOTAGE:	465	
0.7 CFM/SQFT. EXHAUST X 465 SQ. FT. =	EXHAUST:	326 CFM	
MINIMUM EXHAUST REQUIRED:		326 CFM	
MINIMUM EXHAUST SUPPLIED:		2300 CFM	

AIR BALANCE SCHEDULE						
TAG	OUTSIDE AIR (CFM)	RETURN AIR (CFM)	SUPPLY AIR (CFM)	EXHAUST AIR (CFM)	SPACE PRESSURE	NOTES
EF-1				-2300	-2300	1
EF-2				-950	-950	1
EF-3				-200	-200	1
MAU-1	+2660				+2660	1
RTU-1	+150	1150	1300		+150	1
RTU-2	+350	1250	1600		+350	1
RTU-3	+150	1150	1300		+150	1
RTU-4	+270	1030	1300		+270	1
				TOTAL	+130	
NOTES:						
1. GENERAL CONTRACTOR SHALL CONTRACT A SEPARATE TEST AND BALANCE CONTRACTOR FOR FINAL SETUP OF ALL SYSTEMS, THEIR OPERATION, AND BALANCING.						

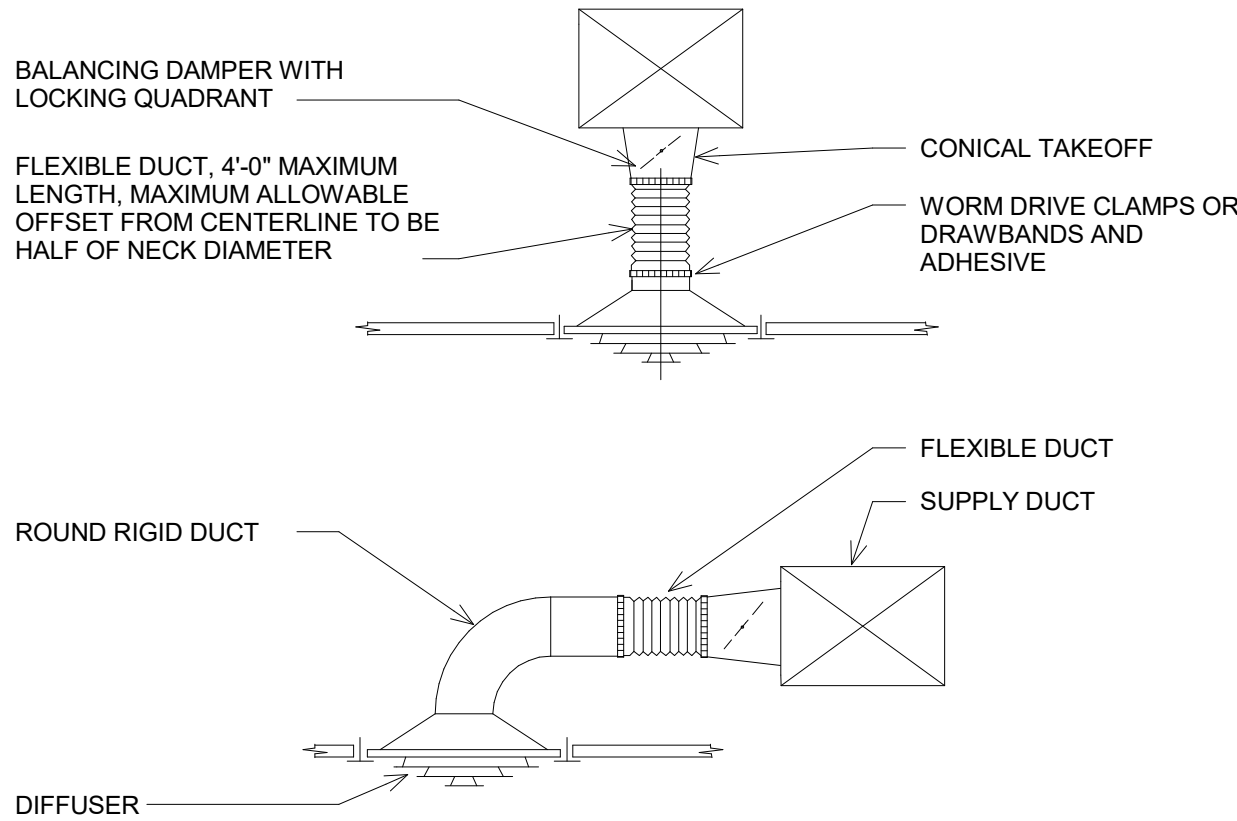
KEY NOTES:

- RTU PROVIDED BY LANDLORD FOR TENANT USE. VERIFY LOCATION AND ORIENTATION IN FIELD PRIOR TO START OF WORK.
- NEW MAKE-UP AIR UNIT AND CURB FURNISHED BY OTHERS AS PART OF HOOD PACKAGE AND INSTALLED BY MECHANICAL CONTRACTOR. SEE HOOD PLANS FOR ADDITIONAL INFORMATION. ROOF WORK TO BE COMPLETED BY LANDLORD APPROVED ROOFING CONTRACTOR.
- NEW EXHAUST FAN AND CURB FURNISHED BY OTHERS AS PART OF HOOD PACKAGE AND INSTALLED BY MECHANICAL CONTRACTOR. VERIFY EXACT LOCATION IN FIELD. LOCATION ON DRAWINGS IS APPROXIMATE ONLY. SEE HOOD PLANS FOR ADDITIONAL INFORMATION. MAINTAIN MIN. DISTANCE OF 10'-0" FROM ALL FRESH AIR INTAKES. SEE DETAIL 2/M110.
- PROVIDE APPROVED ROOF PROTECTION MEMBRANE AT GREASE EXHAUST FAN. FURNISHED AND INSTALLED BY LANDLORD APPROVED ROOFING CONTRACTOR AT TENANT CONTRACTOR EXPENSE. COORDINATE WITH LANDLORD FIELD REPRESENTATIVE.
- NEW 1" CONDENSATE PIPE W/ MIN. 3" DEEP P-TRAP TO SPLASHBLOCK ON ROOF.
- NEW EXHAUST FAN AND CURB PROVIDED BY MECHANICAL CONTRACTOR. SEE DETAIL 3/M110. MAINTAIN MIN. DISTANCE OF 10'-0" FROM ALL FRESH AIR INTAKES. COORDINATE EXACT LOCATION IN FIELD.
- PROVIDE NEW BALL VALVE, DIRT LEG, AND UNION AT UNIT.
- EXISTING GAS PIPING ON ROOF TO REMAIN.
- GAS PIPE DN THRU ROOF. SEE 1/P110 FOR GAS PIPING WITHIN SPACE.
- CONDENSERS FOR WALK-IN COOLER (BY OTHERS) SHOWN FOR REFERENCE. SEE P110 FOR ADDITIONAL INFORMATION.
- CONNECT NEW 1-1/2" GAS PIPING TO EXISTING 2" GAS PIPING ON ROOF. VERIFY EXACT LOCATION AND ROUTING IN FIELD.
- EXTEND NEW 1-1/2" GAS PIPING TO EXISTING GAS METER BANK AND CONNECT IMMEDIATELY DOWNSTREAM OF METER. VERIFY PIPE ROUTING AND METER LOCATION IN FIELD.



NOTES:

- THE 270-275 BOWDEN CABLE CONTROL SYSTEM IS DESIGNED FOR USE WITH EXTERNALLY CONTROLLED ROUND OR RECTANGULAR DAMPERS, AND CAN BE MOUNTED IN A WIDE VARIETY OF LOCATIONS INCLUDING CEILING JOISTS, LAY-IN CEILINGS, BEHIND GRILLES, ON OR INSIDE OTHER VARIOUS TYPES OF DIFFUSERS, ETC.
- CABLE SHALL CONSIST OF BOWDEN CABLE 0.054" STAINLESS STEEL CONTROL WIRE ENCAPSULATED IN 1/16" FLEXIBLE GALVANIZED SPIRAL WIRE SHEATH.
- LOCKING RACK AND PINION GEAR DRIVE SHALL BE CONSTRUCTED OF 14 GAUGE STEEL AND SHALL BE USED TO CONVERT ROTARY MOTION INTO PUSH-PULL MOTION.
- CONTROL SHAFT SHALL BE "D"-STYLE FLATTENED 1/4" DIAMETER WITH 265° ROTATION PROVIDING 1-1/2" LINEAR TRAVEL CAPABILITY.



NOTE:

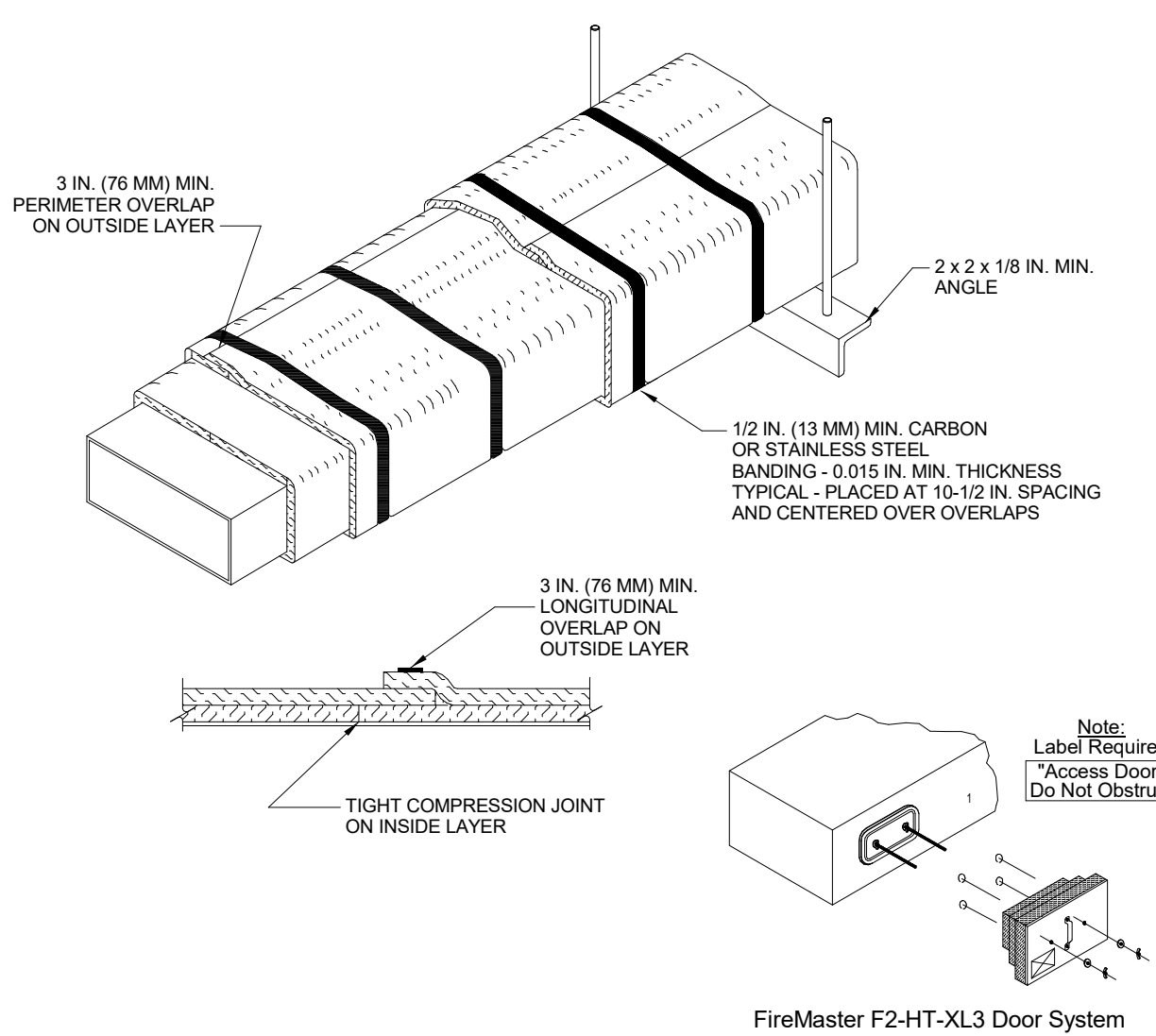
- TOP DETAIL IS TO BE FOLLOWED WHEN CENTERLINE OF DIFFUSER IS UNDER THE DUCT ENOUGH TO PERMIT A BOTTOM TAKEOFF WITH A FLEXIBLE DUCT OFFSET OF LESS THAN HALF THE NECK DIAMETER. BOTTOM DETAIL TO BE USED IN ALL OTHER CASES

1 YOUNG REGULATOR
270-275 BOWDEN CABLE CONTROL SYSTEM
NO SCALE

2 CEILING DIFFUSER RUNOUT DETAIL
NO SCALE

REFER TO HOOD SHEETS
FOR HOOD INFORMATION

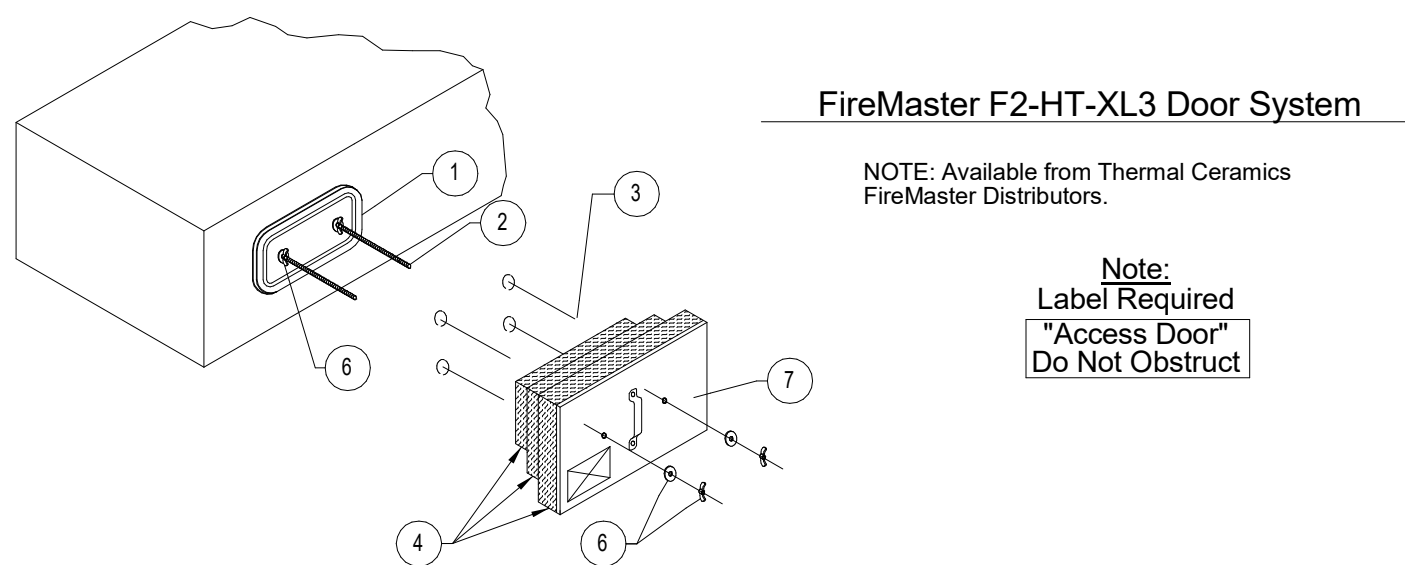
- THERMAL CERAMICS FIREMASTER FASTWRAP XL OR PYROSCAT XL HAS BEEN TESTED IN ACCORDANCE WITH ASTM E2536 TO PROVIDE ZERO CLEARANCE TO COMBUSTIBLES AND MEETS THE REQUIREMENTS FOR ONE OR TWO HOUR ENCLOSURES. THROUGH PENETRATIONS FIRESTOP SYSTEMS ARE TESTED IN ACCORDANCE WITH EITHER ASTM E 814 OR UL 1479. ICC-ES APPROVAL PER REPORT ESR 2213 OR ESR 2832. UNDERWRITER'S LABORATORIES (UL) LISTINGS SHOW COMPLIANCE TO UL 1479 FOR THROUGH PENETRATION FIRESTOP SYSTEMS.
- COMPLIANT TO THE FOLLOWING CODES:
NFPA 96
CURRENT INTERNATIONAL MECHANICAL CODES
CURRENT UNIFORM MECHANICAL CODE.
- INSULATION APPLIED IN TWO LAYERS WITH TIGHT COMPRESSION JOINT ON INSIDE LAYER AND 3 INCH MINIMUM OVERLAPS ON BOTH PERIMETER AND LONGITUDINAL OVERLAPS ON OUTSIDE LAYER.
- GREASE EXHAUST DUCT RUNS FROM THE HOOD EXHAUST CONNECTION UP TO THE EXHAUST FAN ON THE ROOF WITH MINIMAL TURNS OR BENDS AND MAINTAINING MINIMUM 1/4 UNIT VERTICAL RISE PER 12 UNITS HORIZONTAL RUN. NFPA 96 COMPLIANT ACCESS DOORS LOCATED AS REQUIRED BY CODE.
- THERMAL CERAMICS DUCT ENCLOSURE SYSTEM SHALL BE SPECIFIED IN ICC-ES BUILDING CODE REPORTS ESR 2213 OR ESR 2832.
- ROOF MOUNTED EXHAUST FAN IS MOUNTED ON A HINGED BASE WHICH ALLOWS ACCESS TO THE DUCT FROM THE ROOF.
- SUPPORT HANGER SYSTEMS DO NOT NEED TO BE WRAPPED PROVIDED THE HANGER RODS ARE AT LEAST A MINIMUM OF 3/8 IN. DIAMETER. USE MINIMUM 2 X 2 X 1/8 IN. STEEL ANGLE OR SMACNA EQUIVALENT SUPPORT SYSTEM.
- THERMAL CERAMICS DUCT WRAP SHALL BE INSTALLED ON THE DUCT FROM THE HOOD CONNECTION TO THE CONNECTION TO THE FAN.
- THERMAL CERAMICS DUCT WRAP SHALL BE INSTALLED ON THE DUCT FROM THE HOOD CONNECTION TO THE CONNECTION TO THE FAN.



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3 GREASE DUCT WRAP DETAIL
NO SCALE

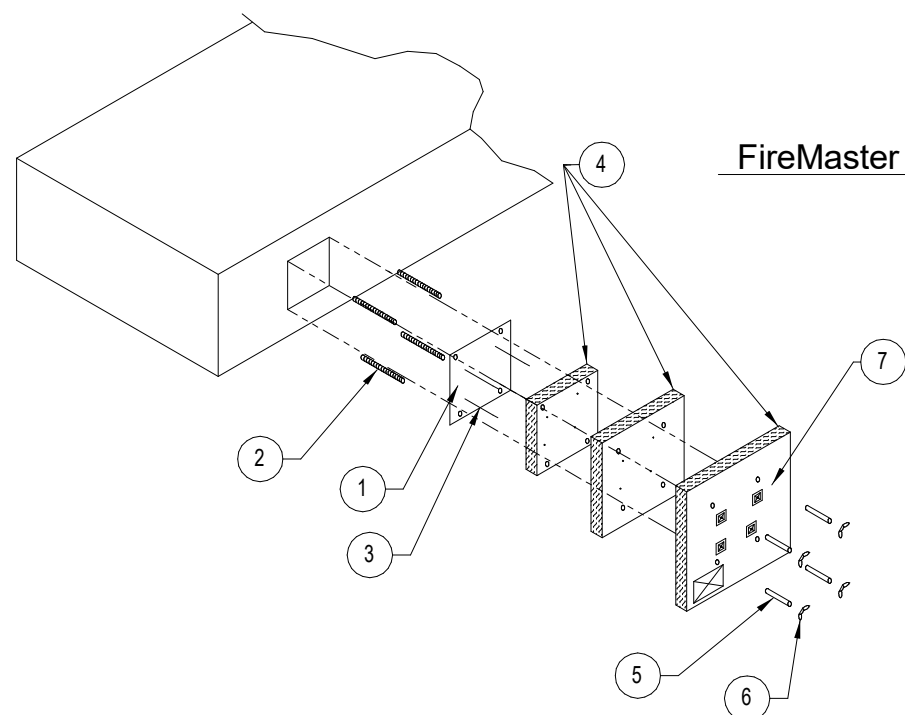
Thermal Ceramics
FireMaster®FastWrap®XL
Access Door Systems
Commercial Kitchen Grease Duct Enclosure System



FireMaster F2-HT-XL3 Door System

NOTE: Available from Thermal Ceramics
FireMaster Distributors.

Note:
Label Required
"Access Door"
Do Not Obstruct



FireMaster Field Fabricated Door System

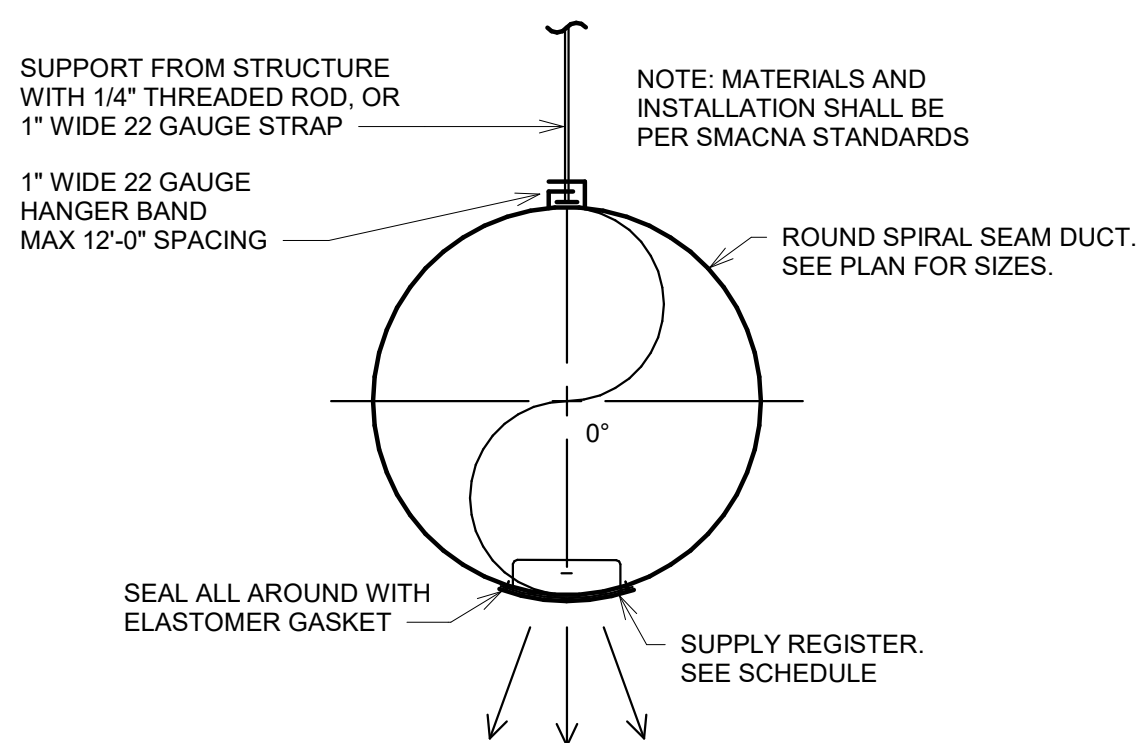
Note:
Label Required
"Access Door"
Do Not Obstruct

LEGEND	
1	DuctMate F2-HT Access Door or 16 Gage Field Fabricated Access Door.
2	All Thread Rods.
3	Installation Pins with Speed Clips.
4	Three Layers of FireMaster FastWrap XL Blanket with Minimum 1" Overlaps and All Edges Sealed with Aluminum Tape.
5	Spool Pieces for Threaded Rods
6	Wing Nuts and Washers
7	Outer Cover Plate Labeled "ACCESS DOOR - DO NOT OBSTRUCT"

The integrity of the duct wrap insulation product is limited to the quality of the installation.

4 GREASE DUCT ACCESS DOOR DETAIL
NO SCALE

5 SPIRAL DUCT DIFFUSER METHOD 1
NO SCALE



6 SPIRAL DUCT DIFFUSER DETAIL METHOD 2
NO SCALE

GRILLES, REGISTERS, AND DIFFUSERS SCHEDULE

DIFF. TAG	APPLICATION	MOUNTING TYPE	DESCRIPTION	FINISH	ACCESSORIES	MANUFACTURER	MODEL NUMBER	MECHANICAL NOTES
A	SUPPLY	LAY-IN	24" x 24"	WHITE	OBD	TITUS	TMS	1, 3
B	SUPPLY	LAY-IN	24" x 24"	WHITE	OBD	TITUS	PAR	2, 3
C	SUPPLY	SURFACE	4'-0" LONG	WHITE	MPI-SP PLENUM	TITUS	ML-38	4
D	SUPPLY	DUCT	SEE PLANS	CLEAR ANODIZED	OBD	TITUS	S300FS	5
E	SUPPLY	DUCT	SEE PLANS	CLEAR ANODIZED	OBD	TITUS	S300FS	6
F	RETURN	LAY-IN	24" X 24"	WHITE		TITUS	50F	7
G	EXHAUST	SURFACE	12" x 12"	WHITE	OBD	TITUS	350RL	8

MECHANICAL NOTES:

- SUPPLY AIR DIFFUSER WITH OPPOSED BLADE DAMPER.
- PERFORATED DIFFUSER WITHOUT PATTERN CONTROLLER FOR MINIMUM THROW.
- PROVIDE TRIM PLASTER FRAME IF INSTALLED IN GYP. CEILING.
- LINEAR SLOT DIFFUSER WITH (4) 3/4" SLOTS - PROVIDE MPI-SP INSULATED PLENUM BOX. COORDINATE FRAME TYPE WITH GC AND ARCHITECT.
- SPIRAL DUCT MOUNTED, DOUBLE DEFLECTION SUPPLY REGISTER WITH INTEGRAL AIR SCOOP. INSTALL PER METHOD 1 - SEE DETAIL 5/M200.
- SPIRAL DUCT MOUNTED, DOUBLE DEFLECTION SUPPLY REGISTER WITH INTEGRAL AIR SCOOP. INSTALL PER METHOD 2 - SEE DETAIL 6/M200.
- 1/2" X 1/2" EGGRATE GRILLE.
- 35° DEFLECTION GRILLE.

FAN SCHEDULE

EQUIPMENT TAG	TYPE	CFM	ESP (IN.W.C.)	HP	RPM	TIP SPEED	DRIVE TYPE	ELEC.	MANUFACTURER	MODEL NUMBER	MECHANICAL NOTES
EF 1	UPBLAST	2300	0.5	2.0	1058	-	DIRECT	SEE ELEC	CAPTIVE AIRE	DU180HFA	1, 4
EF 2	UPBLAST	950	0.5	0.5	1348	-	DIRECT	SEE ELEC	CAPTIVE AIRE	DU50HFA	1, 4
EF 3	DOWNBLAST	200	0.5	0.1	1522	-	DIRECT	SEE ELEC	GREENHECK	G-080-VG	2, 3, 5

MECHANICAL NOTES:

- FANS FURNISHED WITH HOOD PACKAGE BY OTHERS - INSTALLED BY MECHANICAL CONTRACTOR. SEE HOOD DRAWINGS FOR ADDITIONAL INFORMATION.
- FURNISHED AND INSTALLED BY CONTRACTOR.
- PROVIDE WITH MOTORIZED BACKDRAFT DAMPER - DAMPER MAY BE FACTORY FURNISHED, OR INSTALLED SEPARATELY BY CONTRACTOR.
- SEE DETAIL 2/M110.
- SEE DETAIL 3/M110.

MAKE UP AIR UNIT SCHEDULE

EQUIPMENT TAG	SYSTEM	FAN			HEATING		COOLING		CONDENSER QUANTITY & NOMINAL TONS	ELECTRICAL DATA	MANUFACTURER	MODEL NUMBER	MECHANICAL NOTES
		CAPACITY (CFM)	S.P. INCHES W.G.	HP	GAS INPUT (MBH)	GAS OUTPUT (MBH)	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)					
MAU 1	GREASE HOOD	2660	0.5	3.0	205	189	50.1	32.8	1 X 5-TON	SEE ELEC	CAPTIVE AIRE	A2-D.500-20D-MPU	1, 2

MECHANICAL NOTES:

- FURNISHED BY OTHERS - INSTALLED BY M.C. SEE HOOD DRAWINGS FOR MORE INFORMATION.
- UNIT FURNISHED WITH INDOOR DIRECT FIRED HEATING, FAN, FILTER, AND EVAPORATOR COIL SECTIONS, AND OUTDOOR CONDENSING UNITS TO BE INSTALLED ON ROOF. SEE HOOD DRAWINGS FOR MORE INFORMATION.

ROOFTOP UNIT SCHEDULE

EQUIPMENT TAG	DISCHARGE	TON	ESP	CFM	OA CFM	DB (F)	WB (F)	AMBIENT	TOTAL	SENSIBLE	EER	INPUT (MBH)	OUTPUT	AFUE %	ELECTRICAL DATA	MANUFACTURER	MODEL NUMBER	MECHANICAL NOTES
RTU 1	VERTICAL	4.0	0.75	1300	150	78.5	67.8	100	EXISTING	EXISTING	EXISTING	110	88	EXISTING	SEE ELEC	CARRIER	48FCEA05B2M5	1, 2
RTU 2	VERTICAL	5.0	1.00	1600	350	80.4	67.7	100	EXISTING	EXISTING	EXISTING	110	88	EXISTING	SEE ELEC	CARRIER	48FCEA06B3M5	1, 2
RTU 3	VERTICAL	4.0	0.75	1300	150	78.5	67.8	100	EXISTING	EXISTING	EXISTING	110	88	EXISTING	SEE ELEC	CARRIER	48FCEA05B2M5	1, 2
RTU 4	VERTICAL	4.0	0.75	1300	270	80.4	67.7	100	EXISTING	EXISTING	EXISTING	110	88	EXISTING	SEE ELEC	CARRIER	48FCEA05B2M5	1, 2

MECHANICAL NOTES:

- UNIT FURNISHED AND INSTALLED BY LANDLORD FOR TENANT USE.
- TENANT CONTRACTOR TO BALANCE UNIT TO AIRFLOW INDICATED.

finn daniels
ARCHITECTS

2145 Ford Parkway, Suite 301
Saint Paul, Minnesota 55116
651.690.5525
www.finn-daniels.com

CONSULTANT:



DUNHAM
50 South Sixth Street / Suite 1100
Minneapolis, Minnesota 55402-1540
phone: 612.465.7550 fax: 612.465.7551
web: dunhameng.com
MISSOURI STATE CERTIFICATE OF AUTHORITY #001661
mechanical + electrical consulting engineering

SEAL/SIGNATURE:



PROJECT:



BIBIBOP
asian grill

STREETS OF
WEST PRYOR

2050 NW LOWENSTEIN DR.
SUITE E

LEE'S SUMMIT, MO 64081

BIBIBOP STORE NO.: B0057

BIBIBOP PO NO.: TBD

PROJECT NO.: 0421995-101

DRAWN BY: TAB

CHECKED BY: GMS

ISSUES AND REVISIONS:

PERMIT ISSUE 01.25.2021

REVISION 1 02.10.2021

SHEET TITLE:

MECHANICAL
SCHEDULES AND
DETAILS

M200

1. THE DRAWINGS OF PIPING AND DUCTWORK SYSTEMS SHALL BE INSTALLED SUBSTANTIALLY AS SHOWN ON THE PLANS. THE EXACT POSITION OF EACH AND EVERY PIPE, DUCT, OFFSET AND TRANSITION CANNOT BE GIVEN BY SCALING THE DRAWINGS BUT SHALL IN EVERY CASE BE PLACED SO AS TO AVOID INTERFERENCE WITH OTHER WORK. ALL NECESSARY CHANGES IN THE LOCATION OF PIPE OR DUCTWORK FOR ITS PROPER INSTALLATION AND TO AVOID CONFLICT WITH OTHER TRADES SHALL BE DONE BY THE CONTRACTOR AT NO ADDITIONAL CHARGE.

SPRINKLER HEADS:

- 3.1. ALL SPRINKLER HEADS SHALL BE NEW U.L. F.M. LISTED AND APPROVED AUTOMATIC SPRAY TYPE AS MANUFACTURED BY GRINNELL, RELIABLE, STAR, OR VIKING.
- ALL SPRINKLER HEADS SHALL BE QUICK RESPONSE RATED FOR ORDINARY TEMPERATURE UNLESS INDICATED OTHERWISE ON DRAWINGS OR REQUIRED BY LOCAL CODES.
- 3.2. VERIFY HEAD TYPES AND COLORS WITH TENANT AND SUBMIT WITH SPRINKLER DRAWINGS FOR PERMIT.
- 3.3. LOCATIONS OF ALL HEADS SHOULD BE APPROVED BY TENANT AND THE LOCAL FIRE PROTECTION OFFICIAL BEFORE INSTALLATION.

B. ACT LAYING CEILING - SEMI-RECESSED WITH WHITE ESCUTCHEONS AND WHITE HEADS.

- 3.1. GYP BOARD HARD LID CEILING - FULLY RECESSED CONCEALED HEADS PAINT COVER PLATES TO MATCH ADJACENT GYP BOARD.
- 3.2. OPEN CEILING - ROUGH BRONZE UPRIGHT HEAD.

E. PIPING:

- 1.1. SCHEDULE 40, BLACK STEEL PIPE, ASTM A-53 FOR FERROUS PIPING, WELDED AND SEAMLESS, ANSI B-36-10/70 FOR WROUGHT STEEL PIPE.
- 1.2. CAST IRON OR MALLEABLE IRON SCREWED FITTINGS FOR PIPES 2 INCHES AND SMALLER. SCREWED OR CAST IRON FLANGED JOINTS FOR PIPES LARGER THAN 2 INCHES.
- 1.3. GALVANIZED OR BLACK MALLEABLE IRON WITH BRASS SEAT SCREWED UNIONS FOR PIPES 2 INCHES AND SMALLER.
- 1.4. VICTAULT TYPE COUPLINGS ARE ACCEPTABLE, WHEN APPROVED BY CODE AND THE LANDLORD.
- 1.5. HANGERS SHALL COMPLY WITH LANDLORD AND CODE REQUIREMENTS.

F. SPRINKLER SPACING SHALL NOT EXCEED 13'00". FT. IN "SALES/DIPOING" AREAS AND 100 SQ. FT. IN "BACK OF HOUSE" AREAS, COMPLY WITH LANDLORD'S DESIGN CRITERIA. PIPE SIZING SHALL BE BASED ON NFPA ORDINARY HAZARD.

G. ALL SPRINKLER LINES SHALL BE INSTALLED CONCEALED, AVOIDING INTERFERENCE WITH OTHER TRADES. WHERE POSSIBLE, REWORK THE EXISTING SPRINKLER SYSTEM TO MEET THE NEW REQUIREMENTS OF THIS DESIGN AND INCLUDE ALL COSTS TO RAISE OR RELOCATE EXISTING PIPING TO OBTAIN CEILING HEIGHTS SHOWN ON DRAWINGS. IN NEW CONSTRUCTION THE LANDLORD MAY PROVIDE ONLY A STUB-IN TO THE SPACE. THE CONTRACTOR SHALL CONNECT AND EXTEND NEW PIPING AS REQUIRED. VERIFY ALL REQUIREMENTS PRIOR TO BID.

I. PROVIDE AND INSTALL A VALVED TEST CONNECTION IN AN ACCESSIBLE LOCATION FOR THE SPRINKLER SYSTEM AS REQUIRED OR REQUESTED BY THE MALL, LOCAL INSPECTOR, OR TENANT'S INSURANCE CARRIER.

J. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE CAUSED BY LEAKS IN ANY OF THE EQUIPMENT INSTALLED BY THEM. ALL REPAIRS OR REPLACEMENT OF DAMAGES SHALL BE AT THIS CONTRACTOR'S EXPENSE.

K. PROPERLY COMPLETED AND SIGNED "SPRINKLER CONTRACTOR'S MATERIAL AND TEST CERTIFICATES" SHALL BE FURNISHED TO THE LANDLORD, AND AUTHORITIES HAVING JURISDICTION.

PRIOR TO BID, THE CONTRACTOR SHALL REVIEW THE MECHANICAL, ELECTRICAL AND KITCHEN EQUIPMENT DRAWINGS. THE CONTRACTOR SHALL INCLUDE IN HIS BID ALL RELEVANT WORK IN THE ENTIRE SET OF DOCUMENTS AND REPORT ALL DISCREPANCIES BETWEEN THESE DRAWINGS TO THE ENGINEER PRIOR TO BIDDING FOR CLARIFICATION. IF DISCREPANCIES REMAIN UNRESOLVED DUE TO A SHORT TIME FRAME, THE CONTRACTOR SHALL INCLUDE THE MOST WORK AND THE HIGHER COSTS IN THE BID. SOLUTIONS TO UNREPORTED DISCREPANCIES WILL BE DETERMINED BY THE ARCHITECT/ENGINEER, WITH NO ADDITIONAL COMPENSATION DUE TO THE CONTRACTOR.

PROJECT:



BIBIBOP
asian grill

STREETS OF
WEST PRYOR
2050 NW LOWENSTEIN DR.
SUITE E

LEE'S SUMMIT, MO 64081

BIBIBOP STORE NO.: B0057

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DRAWN BY: _____ TAB

CHECKED BY: _____ GMS

ISSUES AND REVISIONS:

PERMIT ISSUE 01.25.2021

SHEET TITLE:





MECHANICAL SPECIFICATIONS

M300

<p>FOR QUESTIONS, CALL THE: OHIO REGIONAL OFFICE 806 MORRISON ROAD, CAHANNA, OH 43230 PHONE: (614) 946-6946 FAX: (614) 927-5925</p>			
CUSTOMER APPROVAL TO MANUFACTURE:			
Approved as Noted		<input type="checkbox"/>	
Approved with NO Exception Taken		<input type="checkbox"/>	
Revise and Resubmit		<input type="checkbox"/>	
SIGNATURE _____			
Your Title: _____		Date: _____	

HANGING ANGLE LOCATIONS			
HOOD STYLE	DIM FROM REAR	DIM FROM FRONT (2"±)	DIM FROM FRONT (30")
CANOPY ND2	4.166"	2.246"	2.246"
ND2-PSP-F	4.166"	2.246"	2.246"
BACKSHELF BD-2	4.166"	2.246"	-
VHB/VHB-G	36"x36"	42"x42"	48"x48"
FRONT/BACK BY SIZE	2.246"	2.246"	2.246"

CALCULATIONS UTILIZED	
EXHAUST CFM=LENGTH OF HOOD X CFM/LINFT. (LOAD) SUPPLY CFM=EXHAUST CFM X PERCENTAGE REQUIRED CFM	
TOTAL DUCT AREA=144 X	FTMCM
DUCT LENGTH=	TOTAL DUCT AREA
DUCT DEPTH	
* CAPTIVE AIR DUCT CONNECTION SIZE IS CALCULATED USING AN EXHAUST VELOCITY OF 1500 FPM AND A SUFFY VELOCITY OF 300-600 FPM	

BUILDING CODES	
CAPTIVE-AIRE HOODS ARE BUILT IN COMPLIANCE WITH:	
 # 305484-001 # 305484-002	 STANDARD 710 
 NRTL ACCREDITANCE VEHF NFPA No. 96	
Listed under ETL File number 3054804-001002	

CLEARANCE TO COMBUSTIBLES	
CAPTIVE-AIRE HOODS HAVE OPTIONAL CLEARANCE	
REDUCTION SYSTEMS AVAILABLE AS FOLLOWS:	
MATERIAL	CLEARANCE REDUCTION SYSTEM
NON-COMBUSTIBLE	NONE REQUIRED
LIMITED-COMBUSTIBLE	3" UNINSULATED STANDOFF
COMBUSTIBLE	1" INSULATED STANDOFF

GENERAL NOTES	
INSTALLATION	
<ol style="list-style-type: none"> ALL ELECTRICAL "FIELD" CONNECTIONS AND RELATED INTERSECTIONS BY ELECTRICAL CONTRACTORS. ALL PLUMBING "FIELD" CONNECTIONS AND RELATED INTERSECTIONS BY PLUMBING CONTRACTORS. HANGING BRACKETS LOCATED AND WELDED AS SHOWN ON PLANS. ALL OTHER HANGER MATERIALS PROVIDED BY INSTALLING CONTRACTORS. ALL CONNECTIONS FROM CAPTIVE-AIRE DUCT PER MECHANICAL CONTRACTOR'S PLANS. COOKING EQUIPMENT TO SHUTOFF IN EVENT OF FIRE. EXHAUST FANS TO TURN ON IN EVENT OF FIRE. ALL LIGHTS FIXTURE SHOWN INSTALLED BY CAPTIVE-AIRE ARE FACTORY PROVIDED. INTERCONNECTIONS BETWEEN HOODS AND TO SWITCHES BY ELECTRICAL CONTRACTORS. LAUGH FOR LIGHTS TO BE INSTALLED BY INSTALLING CONTRACTORS. SEISMIC RESTRAINTS ARE RESPONSIBILITY OF INSTALLING CONTRACTOR. INSTALLING CONTRACTORS ASSUME ALL RELATED RESPONSIBILITY FOR VERIFICATION OF DIMENSIONAL DATA CONTAINED ON THESE DOCUMENTS FOR ACCURACY, INTEGRATION, AND ADMINISTRATION OF CODE REQUIREMENTS IN EFFECT PRIOR TO ANY RELEASE FOR PRODUCTION OF EQUIPMENT SHOWN. 	
BALANCE	
<ol style="list-style-type: none"> KITCHEN HOODS MUST BE BALANCED WITH KITCHEN. KITCHEN MUST BE NEGATIVE WITH RESPECT TO DINING AREA. RESTAURANT SHALL BE POSITIVE WITH RESPECT TO AMBIENT PRESSURE. 	
ADDITIONAL	
<ol style="list-style-type: none"> WRITTEN HOOD DIMENSIONS HAVE PRECEDENCE OVER SCALE. SIGNED AND "APPROVED" COPIES OF THIS DOCUMENT MUST BE MAINTAINED ON SITE PRIOR TO COMMENCEMENT OF FABRICATION. 	

HOOD INFORMATION - JOB#4664448

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM RISER(S)								TOTAL SUPPLY CFM	HOOD CONSTRUCTION	HOOD CONFIG		SWITCHES	
										WIDTH	LENG	HEIGHT	DIA	CFM	VEL	SP	END TO END			ROW	QUANTITY	LOCATION	
1		5430 ND-2-PSP-F	CAPTIVEAIRE	10' 0"	600 DEG	I	HEAVY	230	2300			4'	16"	2300	1647	-0.770'	1900	430 SS WHERE EXPOSED	ALONE	ALONE			
2		4230 VHB-G-PSP-F-ND	CAPTIVEAIRE	7' 0"	700 DEG	II	N/A	136	950			4'	12"	950	1210	-0.106'	760	430 SS 100%	ALONE	ALONE	1 FAN 1 LIGHT	FRONT RIGHT FACE	

HOOD INFORMATION		
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HOOD NO	TAG	FILTER(S)				EFFICIENCY @ 7 MICRONS	QTY	LIGHT(S)		WIRE GUARD	LOCATION	SIZE	UTILITY CABINET(S)				FIRE SYSTEM PIPING	HOOD HANGING WEIGHT
		TYPE	QTY	HEIGHT	LENGTH			TYPE	TYPE				FIRE SYSTEM	SIZE	ELECTRICAL MODEL #	SWITCHES QUANTITY		
1		CAPTRATE SOLD FILTER	7	20"	16"	85% SEE FILTER SPEC	5	RECESSED	NO		LEFT	12"x54"x30"	CES ELECTRIC WET CHEMICAL	4.0/4.0	DCV-1111	1 LIGHT 1 FAN	YES	340 LBS
2							4	RECESSED	NO								NO	340 LBS

HOOD OPTIONS		
HOOD		

HOOD NO	TAG	OPTION				
1		FIELD WRAPPER 18.00" HIGH		FRONT, LEFT, RIGHT.		
		BACKSPLASH 128.00" HIGH X 190.00" LONG		430 SS VERTICAL.		
		RIGHT QUARTER END PANEL	23"	TOP WIDTH,	0"	BOTTOM WIDTH, 23" HIGH 430 SS.
		LEFT QUARTER END PANEL	23"	TOP WIDTH,	0"	BOTTOM WIDTH, 23" HIGH 430 SS.
2		RISER SENSOR INSTALL 3IN DBL.				
		FIELD WRAPPER 18.00" HIGH		FRONT, RIGHT.		
		RIGHT QUARTER END PANEL	23"	TOP WIDTH,	0"	BOTTOM WIDTH, 23" HIGH 430 SS.

PERFORATED SUPPLY PLENUM(S)

HOOD NO	TAG	POS	LENGTH	WIDTH	HEIGHT	TYPE	RISER(S)			
							WIDTH	LENG	DIA	CFM
1	Front	132"	14'	6'	MUA	8"	36"		633	0.179"
					MUA	8"	36"		633	0.179"
					MUA	8"	36"		633	0.179"
2	Front	84"	9'	6'	MUA	6"	28"		380	0.118"
					MUA	6"	28"		380	0.118"

SPECIFICATION: CAPTRATE® GREASE-STOP® SOLID FILTER

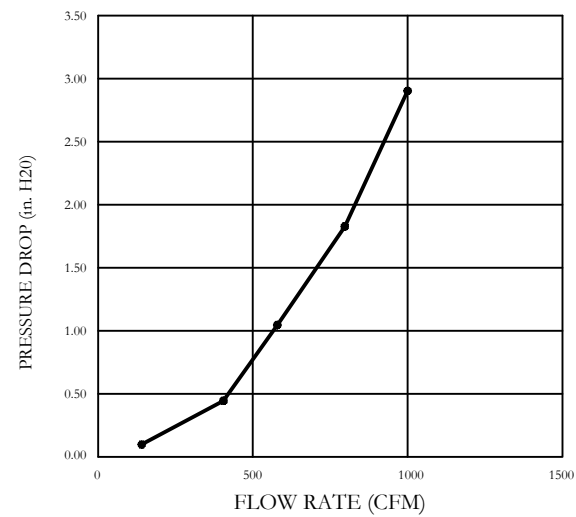
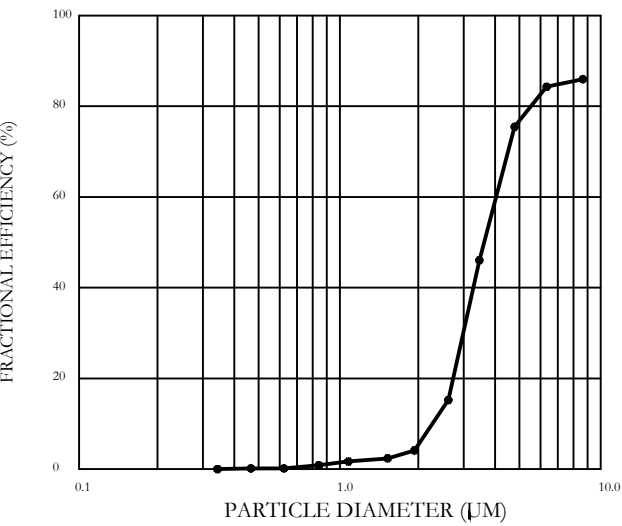
THE CAPTRATE GREASE-STOP SOLID FILTER IS A SINGLE-STAGE FILTER FEATURING A UNIQUE S-Baffle DESIGN IN CONJUNCTION WITH A SLOTTED REAR Baffle DESIGN, TO DELIVER EXCEPTIONAL FILTRATION EFFICIENCY.

FILTER IS STAINLESS STEEL CONSTRUCTION, AND SIZED TO FIT INTO STANDARD 2-INCH DEEP HOOD CHANNEL(S).

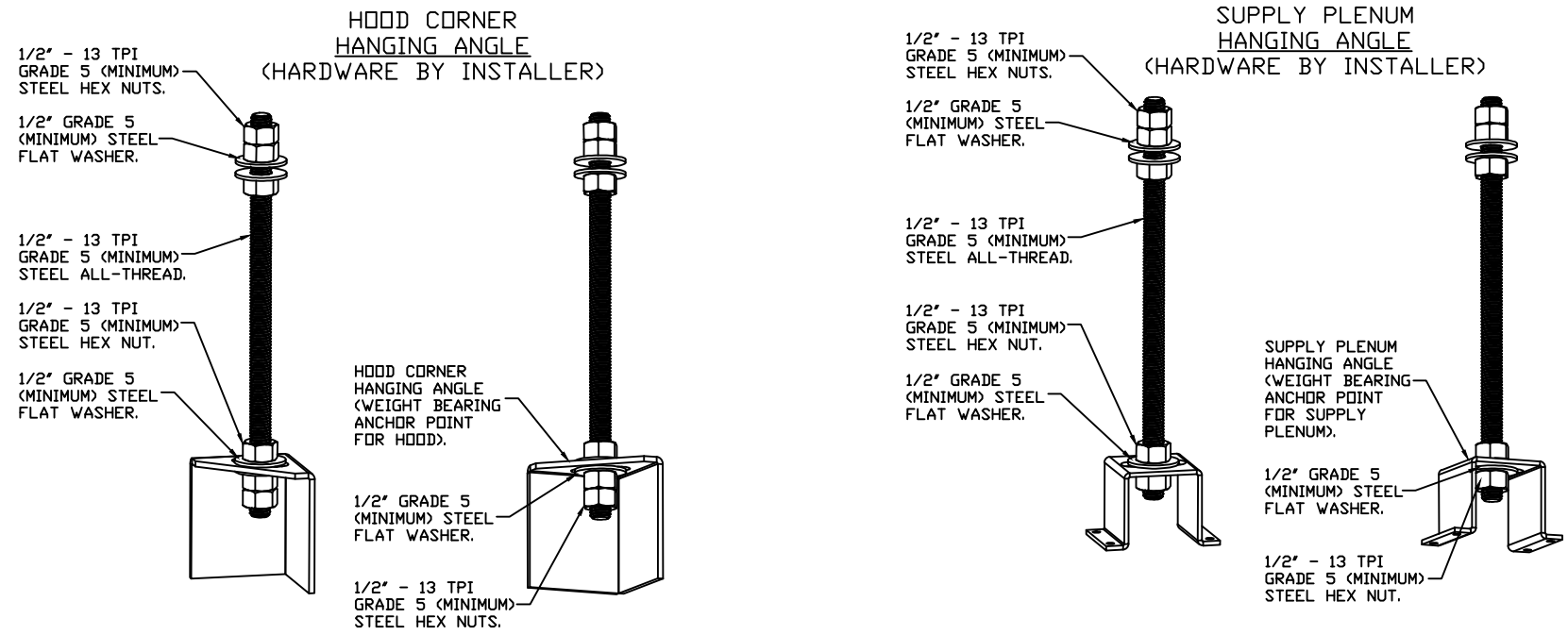
UNITS SHALL INCLUDE STAINLESS STEEL HANDLES AND A FASTENING DEVICE TO SECURE THE TWO COMPONENTS WHEN ASSEMBLED.

GREASE EXTRACTION EFFICIENCY PERFORMANCE SHALL REMOVE AT LEAST 75% OF GREASE PARTICLES FIVE MICRONS IN SIZE, AND 85% GREASE PARTICLES SEVEN MICRONS IN SIZE AND LARGER, WITH A CORRESPONDING PRESSURE DROP NOT TO EXCEED 1.0 INCHES OF WATER GAUGE.

THE CAPTRATE GREASE-STOP SOLD WAS TESTED TO ASTM STANDARD ASTM F2519-05.
MANUFACTURER APPROVED FOR USE IN SOLID FUEL APPLICATIONS AS A SPARK ARRESTER.



CAPTRATE FILTERS ARE BUILT IN COMPLIANCE WITH:
 NFPA #96.
 NSF STANDARD #2.
 UL STANDARD #1046.
 INT. MECH. CODE (IMC).
 ILC-S649.



ASSEMBLY INSTRUCTIONS

HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD. SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION BENEATH HOOD HANGING ANGLES AND ABOVE CEILING ANCHORS. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.

ASSEMBLY INSTRUCTIONS

HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD. SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION ABOVE CEILING ANCHORS. SINGLE HEX NUT BENEATH HANGING ANGLE IS ACCEPTABLE FOR PSP HANGING ANGLES. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.

SYSTEM DESIGN VERIFICATION (SDV)

IF ORDERED, CAS SERVICE WILL PERFORM A SYSTEM DESIGN VERIFICATION (SDV) ONCE ALL EQUIPMENT HAS HAD A COMPLETE START UP PER THE OPERATION AND INSTALLATION MANUAL. TYPICALLY, THE SDV WILL BE PERFORMED AFTER ALL INSPECTIONS ARE COMPLETE.




ANY FIELD RELATED DISCREPANCIES THAT ARE DISCOVERED DURING THE SDV WILL BE BROUGHT TO THE ATTENTION OF THE GENERAL CONTRACTOR AND CORRESPONDING TRADES ON SITE. THESE ISSUES WILL BE DOCUMENTED AND FORWARDED TO THE APPROPRIATE SALES OFFICE. IF CAS SERVICE HAS TO RESOLVE A DISCREPANCY THAT IS A FIELD ISSUE, THE GENERAL CONTRACTOR WILL BE NOTIFIED AND BILLED FOR THE WORK. SHOULD A RETURN TRIP BE REQUIRED DUE TO ANY FIELD RELATED DISCREPANCY THAT CANNOT BE RESOLVED DURING THE SDV, THERE WILL BE ADDITIONAL TRIP CHARGES.

DURING THE SDV, CAS SERVICE WILL ADDRESS ANY DISCREPANCY THAT IS THE FAULT OF THE MANUFACTURER. SHOULD A RETURN TRIP BE REQUIRED, THE GENERAL CONTRACTOR AND APPROPRIATE SALES OFFICE WILL BE NOTIFIED. THERE WILL BE NO ADDITIONAL CHARGES FOR MANUFACTURER DISCREPANCIES.

PATENT NUMBERS

AC-PSP (UNITED STATES) - US PATENT 7963830 B2.
AC-PSP WALL (CANADA) - CA PATENT 2820509.
AC-PSP ISLAND (CANADA) - CA PATENT 2520330.

REVISIONS	
DESCRIPTION	DATE:
△	
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△	
△	
△	



CAPTIVE

Northern Ohio Office

806 Morrison Rd. Gahanna, OH 43230 PHONE: FAX: (919) 227-6925 EMAIL: reg52@captiveware.com

www.captiveware.com

Bilibop - Streets of West Pryor

2050 NW Lowenstein Dr,

Lee's Summit, MO, 64081

DATE: 2/9/2021

DWG.#:
4664448

DRAWN BY: MAP-52

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

MASTER DRAWING

SHEET NO.

1

finn daniels ARCHITECTS 2145 Ford Parkway, Suite 301 Saint Paul, Minnesota 55116 651.690.5525 www.finn-daniels.com	
CONSULTANT:	
SEAL/SIGNATURE:	
INCLUDED FOR REFERENCE ONLY - INFORMATION HAS BEEN USED TO DESIGN DUCTWORK SERVING EQUIPMENT FURNISHED BY CAPTIVE AIRE	
PROJECT:	
 BIBIBOP asian grill STREETS OF WEST PRYOR 2050 NW LOWENSTEIN DR. SUITE E LEE'S SUMMIT, MO 64081 BIBIBOP STORE NO.: B0057 BIBIBOP P.O.: TBD	
PROJECT NO.:	0421995-101
DRAWN BY: _____	
CHECKED BY: _____	
ISSUES AND REVISIONS:	
PERMIT ISSUE	01.25.2021
REVISION 1	02.10.2021
SHEET TITLE: HOOD PLANS H101	

FOR QUESTIONS, CALL THE:
OHIO REGIONAL OFFICE
806 MORRISON ROAD, GAHANNA, OH 43230
PHONE: (603) 245-8945
FAX: (919) 227-5925

CUSTOMER APPROVAL TO MANUFACTURE:

Approved as Noted☐

Approved with NO Exception Taken☐

Revise and Resubmit☐

SIGNATURE: _____


Your Title: _____ Date: _____

HANGING ANGLE LOCATIONS			
HOOD STYLE	DIM FROM REAR	DIM FROM FRONT (24"H)	DIM FROM FRONT (30"H)
CANOPY ND2	4.166"	2.246"	2.246"
ND2-PSP-F	4.166"	2.246"	2.246"
BACKSHELF BD-2	4.166"	2.246"	-
VHB/VHB-G	36"x36"	42"x42"	48"x48"
FRONT/BACK DIMS BY SIZE	2.246"	2.246"	2.246"

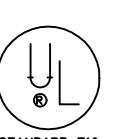
CALCULATIONS UTILIZED	
EXHAUST CFM=LENGTH OF HOOD X CFM/INCH, (LOAD)	
SUPPLY CFM=EXHAUST CFM X PERCENTAGE REQUIRED	
TOTAL DUCT AREA=144 X _____	CFM
_____	FPM(*)
DUCT LENGTH= _____	TOTAL DUCT AREA
_____	DUCT DEPTH

BUILDING CODES


CAPTIVE-AIRE HOODS ARE BUILT IN COMPLIANCE WITH:



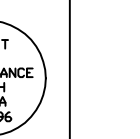
ETL
FACTORY
#3054804-001
#3054804-002
Listed under ETL File number 3054804-001/002



UL
STANDARD 710



Intertek



BUL 1
ACCORDANCE WITH NFPA 96

CLEARANCE TO COMBUSTIBLES	
CAPTIVE-AIRE HOODS HAVE OPTIONAL CLEARANCE REDUCTION SYSTEMS AVAILABLE AS FOLLOWS:	
MATERIAL	CLEARANCE REDUCTION SYSTEM
NON-COMBUSTIBLE	NONE REQUIRED
LIMITED-COMBUSTIBLE	3" UNINSULATED STANDOFF
COMBUSTIBLE	1" INSULATED STANDOFF

GENERAL NOTES

INSTALLATION

1. ALL ELECTRICAL "FIELD" CONNECTIONS AND RELATED INTERCONNECTIONS BY ELECTRICAL CONTRACTORS.

2. ALL PLUMBING "FIELD" CONNECTIONS AND RELATED INTERCONNECTIONS BY PLUMBING CONTRACTORS.

3. HANGING BRACKETS LOCATED AND WELDED AS SHOWN ON PLANS. ALL OTHER HANGER MATERIALS PROVIDED BY INSTALLING CONTRACTORS.

4. ALL CONNECTIONS FROM CAPTIVE-AIRE DUCT PER MECHANICAL CONTRACTOR'S PLANS.

5. COOKING EQUIPMENT TO SHUTOFF IN EVENT OF FIRE.

6. EXHAUST FANS TO TURN ON IN EVENT OF FIRE.

7. ALL LIGHTS FIXTURE SHOWN INSTALLED BY CAPTIVE-AIRE ARE FACTORY PREWIRED. INTERCONNECTIONS BETWEEN HOODS AND TO SWITCHES BY ELECTRICAL CONTRACTORS.

8. LAMPS FOR LIGHT FIXTURES BY INSTALLING CONTRACTORS.

9. SEISMIC RESTRAINTS ARE RESPONSIBILITY OF INSTALLING CONTRACTOR.

10. INSTALLING CONTRACTORS ASSUME ALL RELATED RESPONSIBILITY FOR VERIFICATION OF DIMENSIONAL DATA CONTAINED ON THESE DOCUMENTS FOR ACCURACY, INTEGRATION, AND ADMINISTRATION OF CODE REQUIREMENTS IN EFFECT PRIOR TO ANY RELEASE FOR PRODUCTION OF EQUIPMENT SHOWN.

BALANCE

11. KITCHEN HOODS MUST BE BALANCED WITH KITCHEN.

12. KITCHEN SHALL BE NEGATIVE WITH RESPECT TO DINING AREA.

13. RESTAURANT SHALL BE POSITIVE WITH RESPECT TO AMBIENT PRESSURE.

ADDITIONAL

14. WRITTEN HOOD DIMENSIONS HAVE PRECEDENCE OVER SCALE.

15. SIGNED AND "APPROVED" COPIES OF THIS DOCUMENT MUST BE RECEIVED BY THE FACTORY PRIOR TO COMMENCEMENT OF FABRICATION.

SECTION VIEW - MODEL 5430ND-2-PSP-F
HOOD - #1

PLAN VIEW - HOOD #1
10' 0.00" LONG 5430ND-2-PSP-F

TOUCH-SCREEN
USER INTERFACE

ND-2 Series with PSP Accessory Specification

The model ND-2 with PSP Accessory is a compensating canopy hood rated for all types of cooking equipment. The hood shall have the size, shape and performance specified on drawings.

Construction shall be type 430 stainless steel, with a #3 or #4 polish where exposed. The manufacturer, ETL and NSF shall determine the individual component construction. Construction shall be dependent on the structural application to minimize distortion and other defects. All seams, joints and penetrations of the hood enclosure to the lower outermost perimeter that directs and captures grease-laden vapor and exhaust gases shall have a liquid-tight continuous external weld in accordance with NFPA 96. The hood shall be wall type with a minimum of four connections for hanger rods. Connectors shall have 9/16" holes pre-punched in 1 1/2" x 1 1/2" angle iron at the factory to allow for hanger rod connection by others.

The hood shall be furnished with UL classified filters, supplied in size and quantity as required by ventilator. The filters shall extend the full length of the hood and the filler panels shall not be more than 6" in width.

The hood manufacturer shall supply complete computer generated submittal drawings including hood sections view(s) and hood plan view(s). These drawings must be available to the engineer, architect and owner for their use in construction, operation and maintenance.

Exhaust duct collar to be 4" high with 1" flange. Duct sizes, CFM and static pressure requirements shall be as shown on drawings. Static pressure requirements shall be precise and accurate; air velocity and volume information shall be accurate within 1-ft increments along the length of the ventilator.

UL incandescent light fixtures and globes shall be installed and pre-wired to a junction box. The light fixtures shall be installed with a maximum of 4" spacing on center and allow up to a 100 watt standard light bulb.

The hood shall have:


- A double wall insulated front to eliminate condensation and increase rigidity. The insulation shall have a flexural modulus of 475 EI, meet UL 181 requirements and be in accordance with NFPA 90A and 90B.
- An integral front baffle to direct grease laden vapors toward the exhaust filter bank.
- A built-in wiring chase provided for outlets and electrical controls on the hood face and shall not penetrate the capture area or require an external chase way.
- Removable grease cup for easy cleaning.

The hood shall be ETL Listed as "Exhaust Hood Without Exhaust Damper", NSF Listed and built in accordance with NFPA 96.

The hood shall be listed for 450°F cooking surfaces at 150 CFM/Ft, 600°F cooking surfaces at 200 CFM/Ft, and 700°F cooking surfaces at 250 CFM/Ft. The hood shall be ETL Listed as "Exhaust Hood Without Exhaust Damper".

REVISIONS

DESCRIPTION	DATE:
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Δ	
Δ	



CAPTIVE-AIRE

Northern Ohio Office

806 Morrison Rd, Gahanna, OH, 43230 PHONE: FAX: (919) 227-5925 EMAIL: reg52@captiveaire.com

Bibibop - Streets Of West Pryor

2050 NW Lowenstein Dr,

Lee's Summit, MO, 64081

DATE: 2/9/2021

DWG.#: 4664448

DRAWN BY: MAP-52

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

MASTER DRAWING

SHEET NO. 2

finn daniels

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www.finn-daniels.com

CONSULTANT:

SEAL/SIGNATURE:

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ONLY - INFORMATION HAS
BEEN USED TO DESIGN
DUCTWORK SERVING
EQUIPMENT FURNISHED BY
CAPTIVE AIRE

PROJECT:



BIBIBOP

asian grill

STREETS OF WEST PRYOR

2050 NW LOWENSTEIN DR.
SUITE E
LEE'S SUMMIT, MO 64081

BIBIBOP STORE NO.: B0057
BIBIBOP P.O.: TBD

PROJECT NO.: 0421995-101

DRAWN BY:

CHECKED BY:

ISSUES AND REVISIONS:

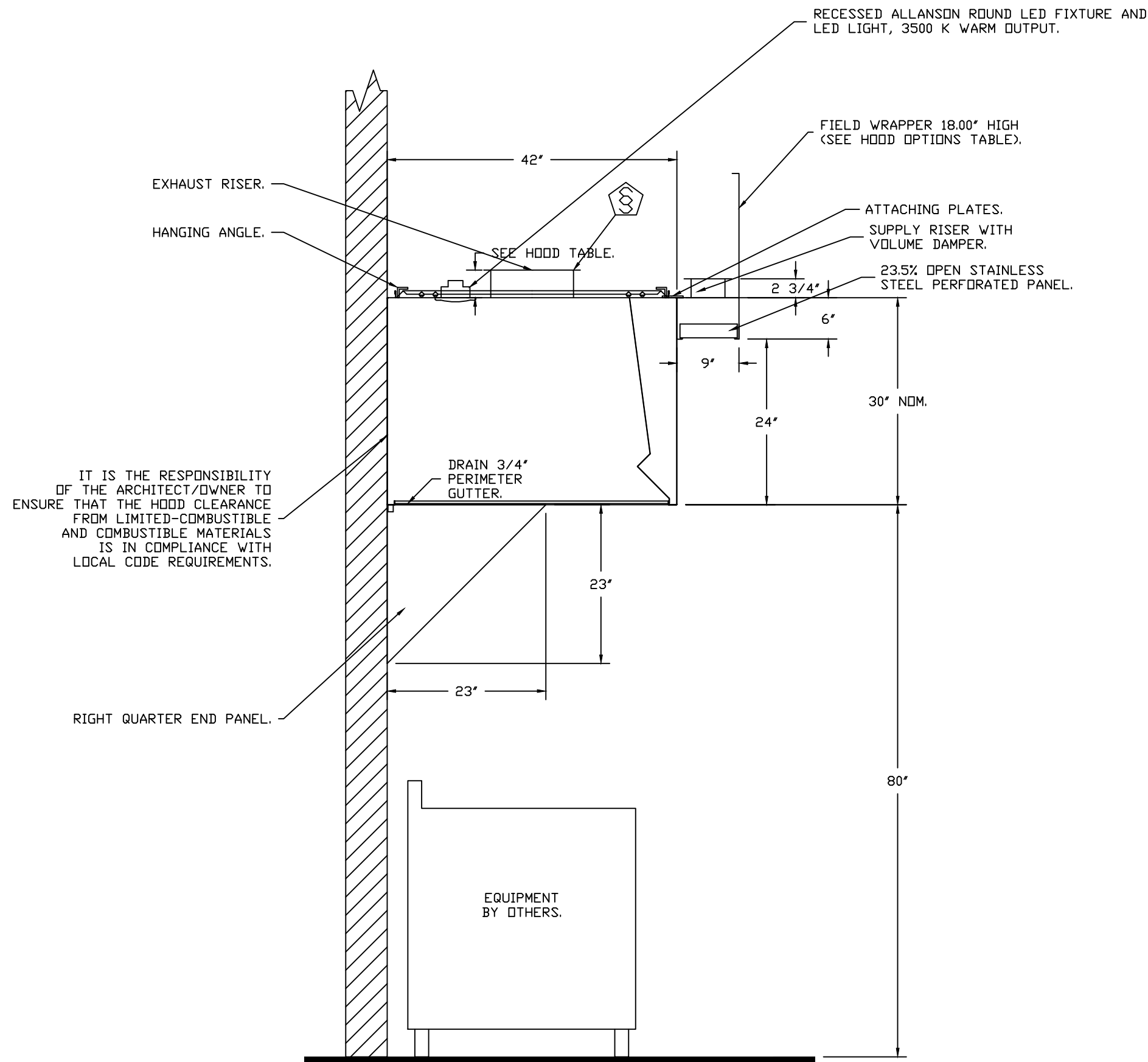
PERMIT ISSUE 01.25.2021

REVISION 1 02.10.2021

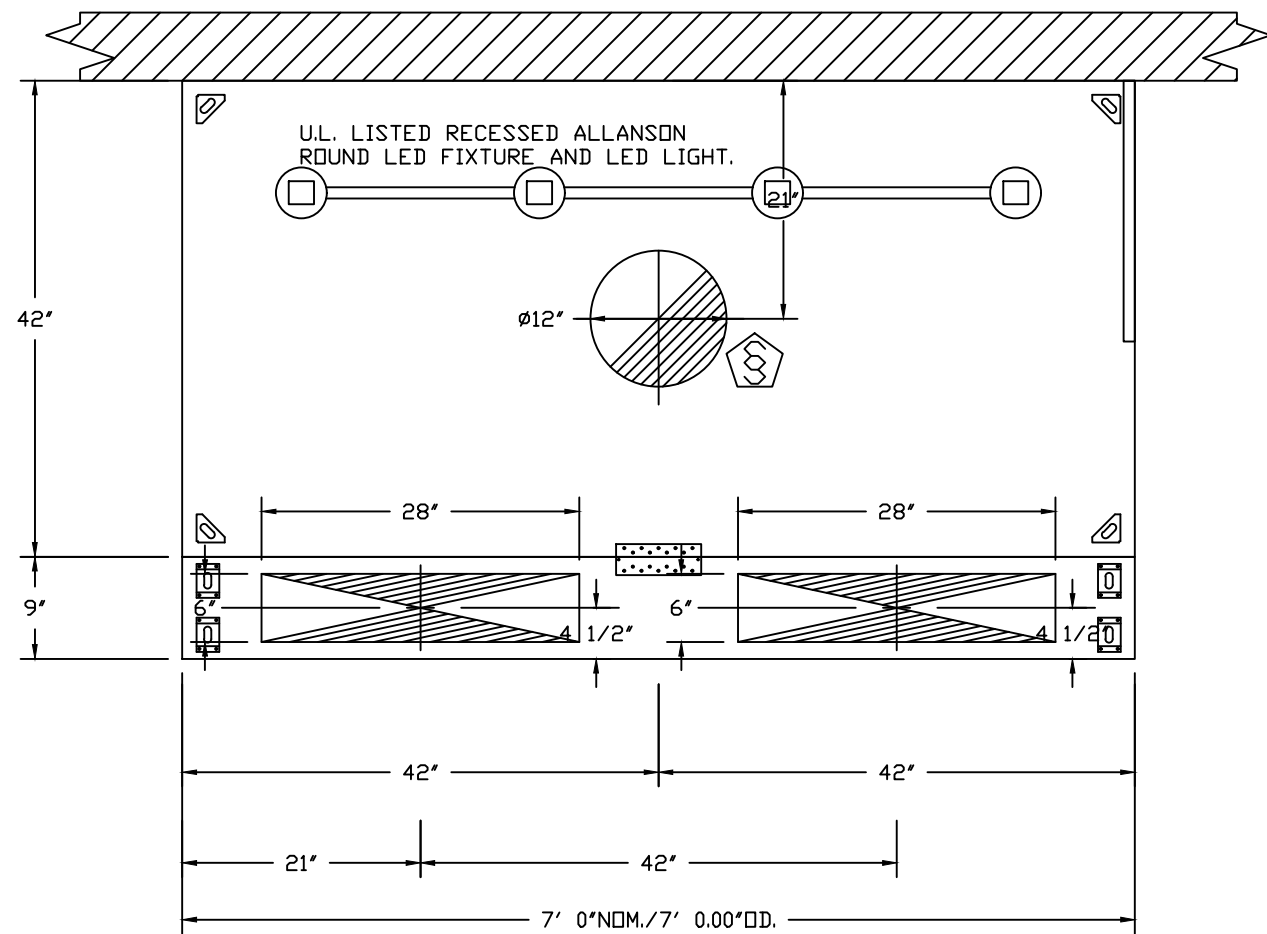
SHEET TITLE:
HOOD
PLANS

H102

FOR REFERENCE ONLY



SECTION VIEW - MODEL 4230VHB-G-PSP-F-ND
HOOD - #2



PLAN VIEW - HOOD #2
7' 0.00" LONG 4230VHB-G-PSP-F-ND

VERIFY CEILING HEIGHT
/ "
Height required to verify that the hood
will fit and to size the enclosure panels

VHB-G Series Specification

The VHB-G series heat/condensate hood is a single wall vent hood used in non-grease applications for the removal of heat, vapor etc. Hood shall have the size, shape and performance specified on the drawings.

Construction shall be type 304 stainless steel with a #3 or #4 polish where exposed. Hood shall have a full perimeter gutter with a 1/2" OD Bolt thread drain connection. Hood shall be wall or island type with fully welded 10 gauge corner hanging angles. Corner hanging angles have a .625 x 1.500 slot pre-punched at the factory, allowing hanging rods to be used for quick and safe installations. Hanging rod and connection is provided by and installed by others.

The hood manufacturer shall supply complete submittal drawings including hood section views(s) and hood plan view(s). These drawings must be made available to the engineer, architect and owner for their use in construction, operation and maintenance.

Exhaust duct collar to be 4' high with 1' flanges. Duct sizes, CFM and static pressure requirements shall be as shown on the drawings. Hood shall be ETL Sanitation listed.

REVISIONS

DESCRIPTION	DATE:
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Δ	
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806 Morrison Rd, Gahanna, OH, 43230 PHONE: FAX: (619) 227-5926 EMAIL: reg62@captiveaire.com

Bibikop - Streets Of West Pryor

2050 NW Lowenstein Dr,

Lee's Summit, MO, 64081

DATE: 2/9/2021

DWG.#: 4664448

DRAWN BY: MAP-52

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

MASTER DRAWING

SHEET NO. 3

finn daniels

A R C H I T E C T S

2145 Ford Parkway, Suite 301
Saint Paul, Minnesota 55116
651.690.5525
www.finn-daniels.com

CONSULTANT:

SEAL/SIGNATURE:

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PROJECT:

BIBIBOP

asian grill

STREETS OF WEST PRYOR

2050 NW LOWENSTEIN DR.
SUITE E
LEE'S SUMMIT, MO 64081

BIBIBOP STORE NO.: B0057
BIBIBOP P.O.: TBD

PROJECT NO.: 0421995-101

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ISSUES AND REVISIONS:

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REVISION 1 02.10.2021

SHEET TITLE: HOOD PLANS

H103

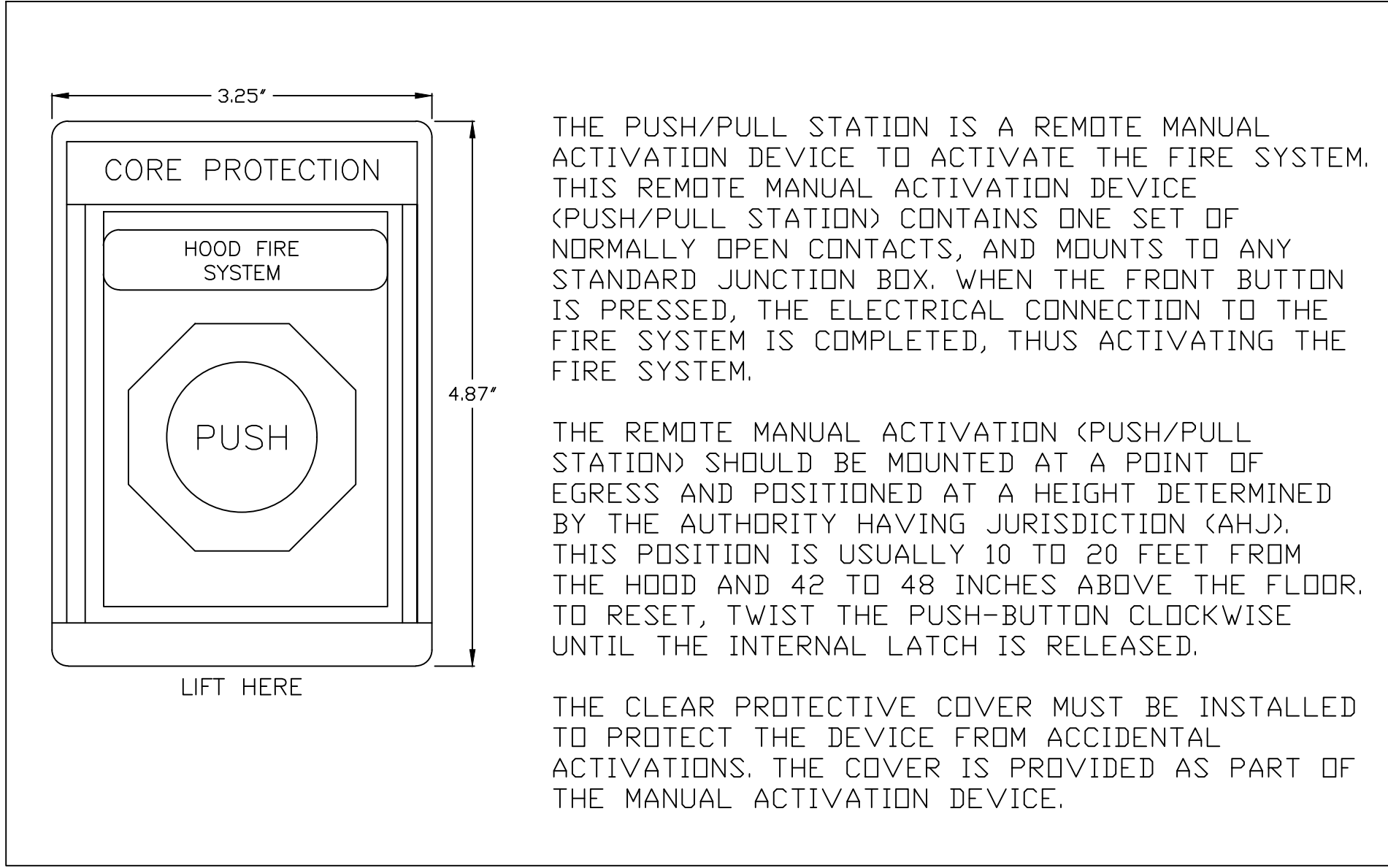
FIRE SYSTEM INFORMATION – JOB#4664448

FIRE SYSTEM NO	TAG	TYPE	SIZE	FLOW POINTS	INSTALLATION	
					SYSTEM	LOCATION ON HOOD
1		CAS ELECTRIC WET CHEMICAL	4.0/4.0	12	FIRE CABINET LEFT	LEFT, HOOD 1

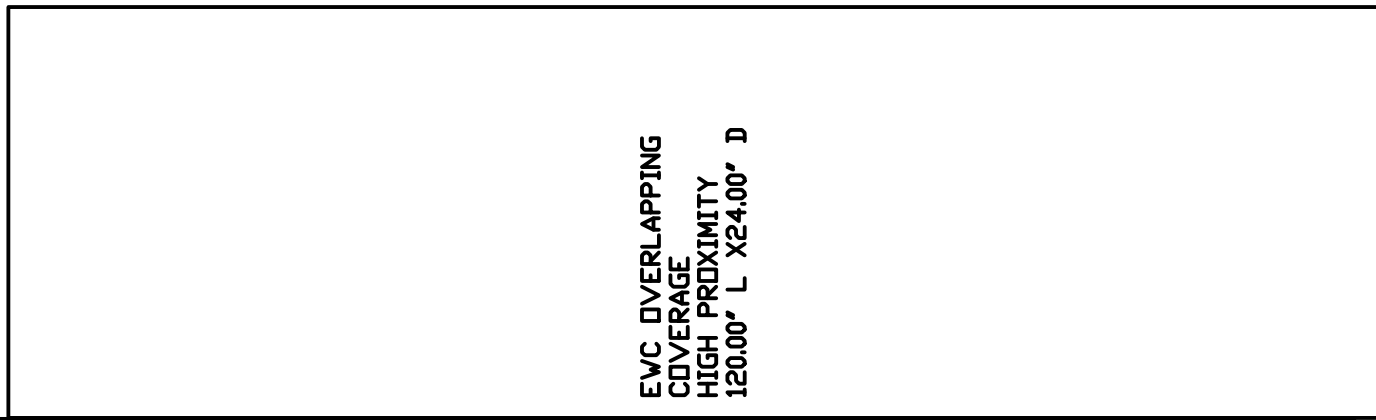
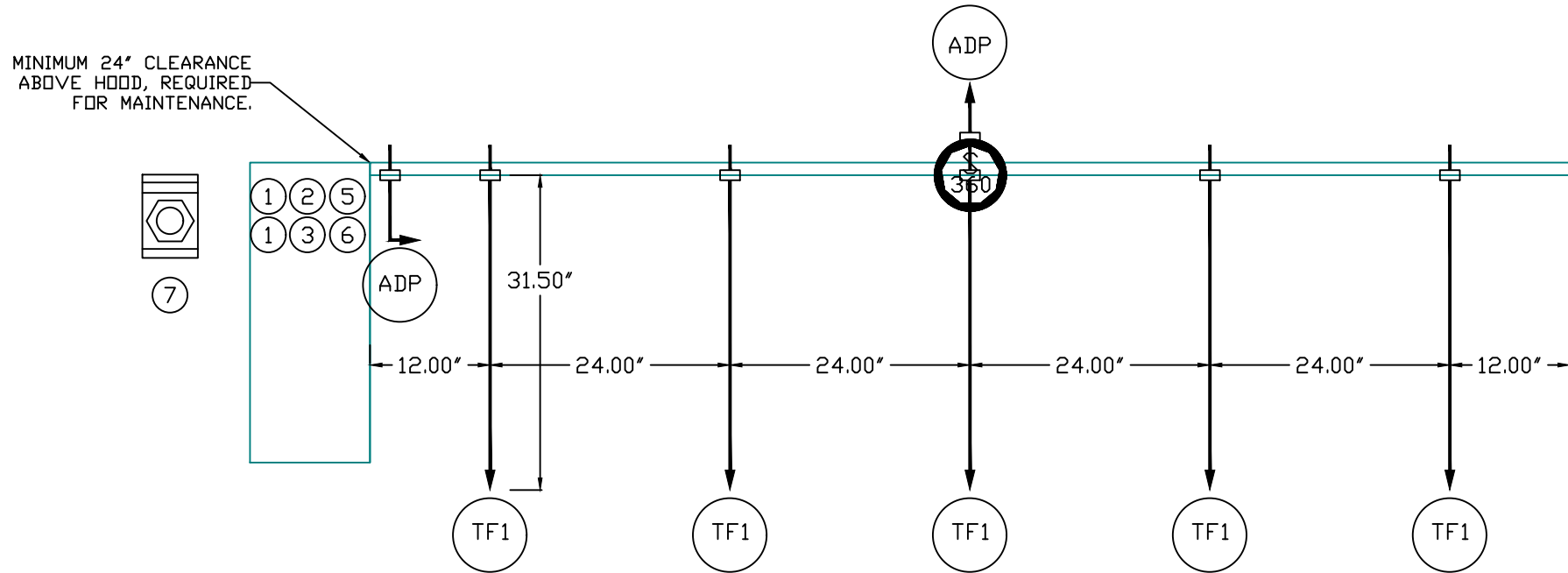
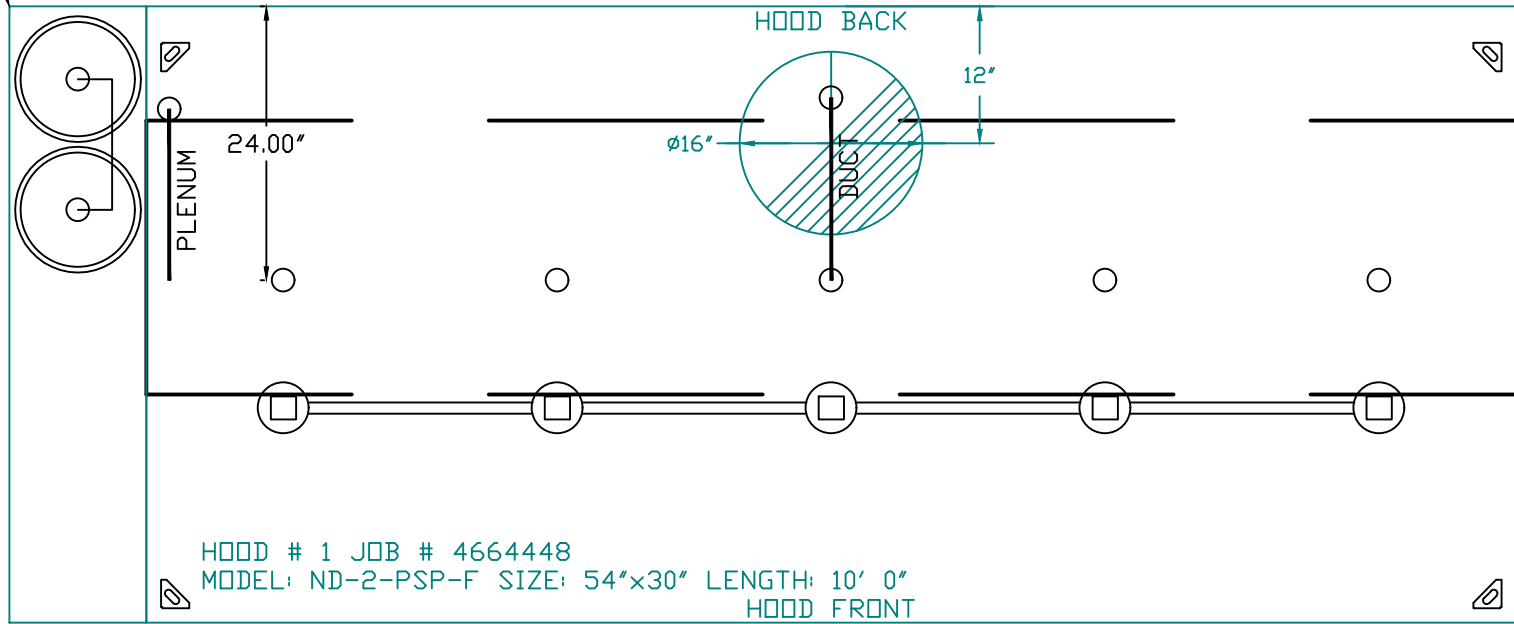
GAS VALVE(S)

FIRE SYSTEM NO	TAG	TYPE	SIZE	SUPPLIED BY
1		SC ELECTRICAL	2.000	CAPTIVEAIRE SYSTEMS

ELECTRIC WET CHEMICAL PULL STATION DETAIL



- SYSTEM REQUIRES A MINIMUM OF 7 FT. BETWEEN TANK AND NEAREST APPLIANCE. NOZZLE FOR MOST APPLIANCES. SEE MANUAL FOR DETAILS.



GAS VALVES AND STRAINERS																	
GAS VALVE SIZING							GAS VALVE DIMENSIONS						INSTALLATION	PART NUMBERS			
TYPE	SIZE	VOLTAGE	MIN. INLET PRESSURE	MAX. INLET PRESSURE	FLOW AT 1 IN.W.C. DROP NATURAL GAS	FLOW AT 1 IN.W.C. DROP PROPANE	DIM "A"	DIM "B"	DIM "C"	DIM "D"	DIM "F"	DIM "G"	MOUNTING ORIENTATION	GAS VALVE PART NUMBER	STRAINER PART NUMBER	GAS VALVE/STRAINER KIT	
GAS VALVE FOR FS#1→	ELECTRICAL	2"	120 VAC	0 PSI (0 IN.W.C.)	5 PSI (138 IN.W.C.)	2,940,500 BTU/HR	1,908,048 BTU/HR	7-5/8"	6-3/8"	7-1/4"	7-13-16"	15-5/8"	13-15/16"	HORIZONTAL/VERTICAL	8214280	4417K68	(SC)EGVA2

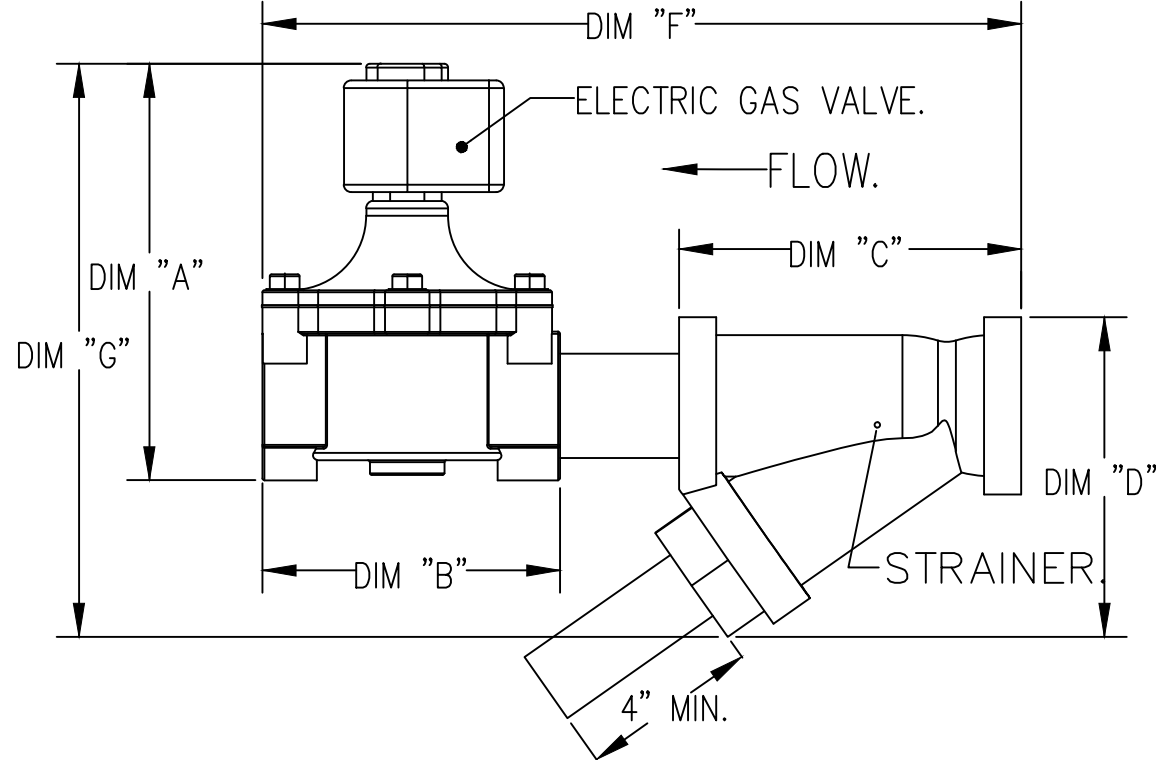
GAS VALVE FOR FS#1

ALL GAS VALVES/STRAINERS

PROPER CLEARANCE MUST BE PROVIDED IN ORDER TO SERVICE THE STRAINERS A MINIMUM OF 4" CLEARANCE DISTANCE MUST BE PROVIDED AT THE BASE OF THE STRAINER CUSTOMER MUST VERIFY BTU CONSUMPTION AS WELL AS PRESSURE RATING SPECIFIC GRAVITY OF NATURAL GAS = 0.64, SPECIFIC GRAVITY OF LP = 1.52.

CALCULATIONS

TO CALCULATE GAS FLOW FOR OTHER THAN 1 IN.W.C. PRESSURE DROP NEW BTU/HR = (BTU/HR AT 1 IN.W.C. PRESSURE DROP) X NEW PRESSURE DROP^{0.85} TO CALCULATE GAS FLOW FOR OTHER THAN 0.64 SPECIFIC GRAVITY NEW BTU/HR = (BTU/HR AT 0.64) X (0.64 / NEW SPECIFIC GRAVITY)^{0.85}.



VERIFY GAS VALVE SIZE

-- 1.0" -- 1.25" -- 1.5"
-- 2.0" -- 3.0"

NOTES

- FIELD PIPE DROPS AS SHOWN
- SLEEVING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY CAS.
- RELOCATE NOZZLES IF FLOW PATTERN IS BLOCKED BY SHELVING, SALAMANDERS, ETC.
- MAXIMUM 9 ELBOWS IN SUPPLY LINE.
- MINIMUM 72 INCHES OF AGENT LINE FROM TANK TO FIRST NOZZLE COVERING A RANGE, FRYER, OR WOK TO REFLECT GENERAL PIPING REQUIREMENTS.
- IF APPLICABLE, PRE-PIPED CHARBROILER DROPS ARE SHIPPED LOOSE.
- FACTORY PIPING EXTENDS A MAXIMUM OF 6" ABOVE THE TOP OF THE HOOD.
- APPLIANCE DIMENSIONS LISTED REPRESENT THE COOKING SURFACE SIZE, NOT THE OVERALL APPLIANCE SIZE.

JOB #: 4664448.
JOB NAME: BIBIBOP - STREETS OF WEST PRYOR.

SYSTEM SIZE: TANK-SP-2 TOTAL FP REQUIRED: 12.
HOOD # 1 10' 0.00" LONG x 54" WIDE x 30" HIGH.
RISER # 1 SIZE: 0" x 0".

NOTES

- FIELD PIPE DROPS AS SHOWN
- PIPING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY CAS.
- RELOCATE NOZZLES IF FLOW PATTERN IS BLOCKED BY SHELVING, SALAMANDERS, ETC.
- OVERLAPPING COVERAGE SHALL NOT BE USED ON ANY APPLIANCE WITH AN OBSTRUCTION.
- IF APPLICABLE, EXTENDED PRE-PIPED DROPS ARE SHIPPED LOOSE.
- FACTORY PIPING EXTENDS A MAXIMUM OF 6" ABOVE THE TOP OF THE HOOD.

- APPLIANCE DIMENSIONS LISTED REPRESENT THE COOKING SURFACE SIZE, NOT THE OVERALL APPLIANCE SIZE.

- THIS FIRE SYSTEM COMPLIES WITH U.L. 300 REQUIREMENTS.

- MINIMUM 24" CLEARANCE ABOVE HOOD, REQUIRED FOR MAINTENANCE.

- FOR THE FIRST SET OF NOZZLES NEAREST THE TANK, PIPE TO THE END OF THE NOZZLE RUN THEN RETURN THE PIPE TO THE NEAREST NOZZLES TO TANK.

JOB #: 4664448.
JOB NAME: BIBIBOP - STREETS OF WEST PRYOR.

SYSTEM SIZE: TANK-SP-2 TOTAL FP REQUIRED: 12.
HOOD # 1 10' 0.00" LONG x 54" WIDE x 30" HIGH.
RISER # 1 SIZE: 16" DIA.

- HEAVY-DUTY APPLIANCES (RATED 600°F) WILL REQUIRE AN ADDITIONAL DOWNSTREAM FIRESTAT IN THE EVENT THAT THE DUCTWORK CONTAINS ANY HORIZONTAL RUNS OVER 25 FT IN LENGTH.
- MEDIUM TO LIGHT-DUTY APPLIANCES (RATED 450°F) WILL NOT REQUIRE ANY ADDITIONAL DOWNSTREAM DETECTION.

LEGEND – FIRE CABINET CAS-EWC SYSTEM

- 1 4 GALLON TANK.
- 2 PRIMARY ACTUATOR RELEASE.
- 3 SECONDARY ACTUATOR RELEASE.
- 4 PRESSURE SUPERVISION SWITCH.
- 5 PRIMARY HOSE ASSEMBLY.
- 6 SECONDARY HOSE ASSEMBLY.
- 7 REMOTE MANUAL ACTUATION DEVICE.
- TF1 NOZZLE ASSEMBLY (TF1).
- ADP NOZZLE ASSEMBLY (ADP).
- R NOZZLE ASSEMBLY (R).
- S SWIVEL ADAPTER.

REVISIONS	
DESCRIPTION	DATE:



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Bibibop - Streets Of West Pryor
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DRAWN BY:
MAP-52

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

MASTER DRAWING

SHEET NO.
4

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PROJECT:



BIBIBOP
asian grill
STREETS OF
WEST PRYOR

2050 NW LOWENSTEIN DR.
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ISSUES AND REVISIONS:

PERMIT ISSUE 01.25.2021

REVISION 1 02.10.2021

SHEET TITLE:

HOOD
PLANS

H104

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CAS ELECTRIC WET CHEMICAL PROTECTION ELECTRICAL DETAIL

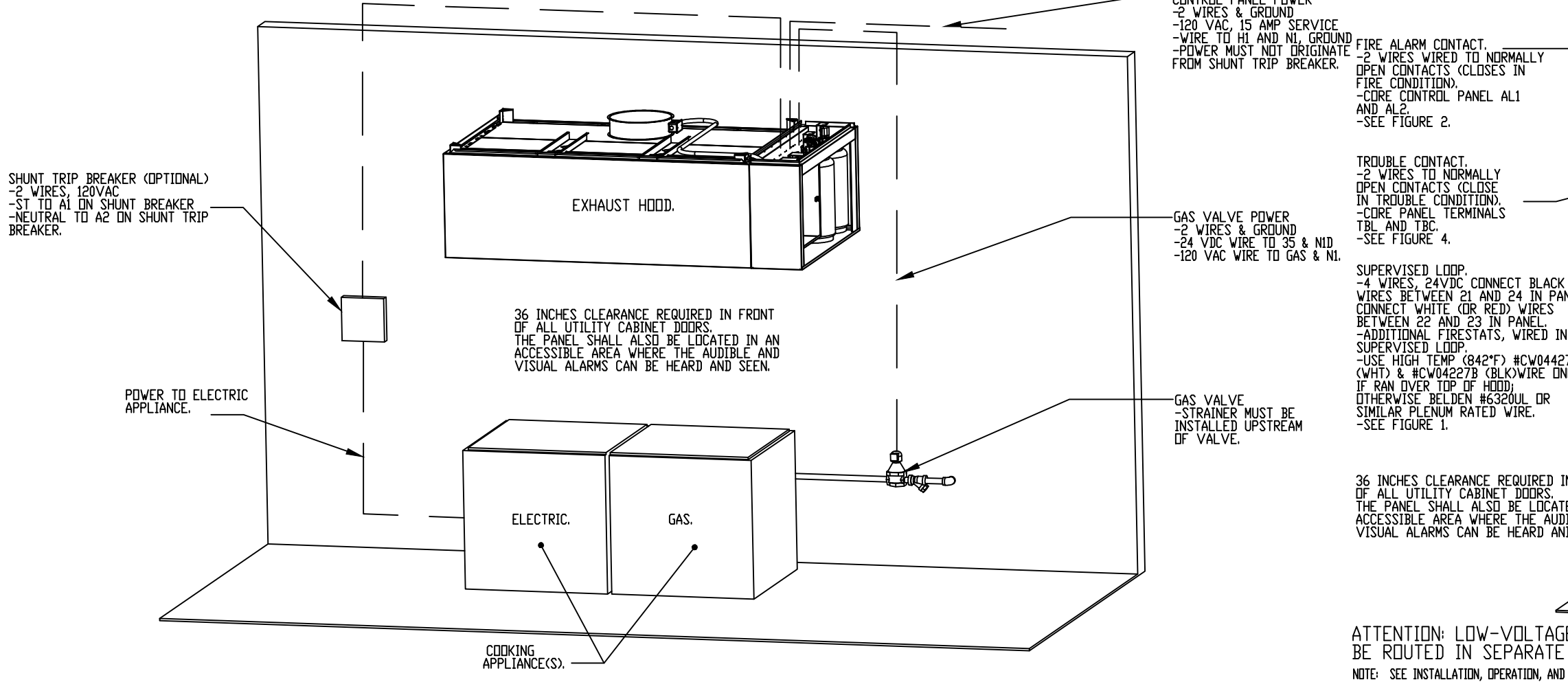
ELECTRICIAN:
1. WIRE MAIN CONTROL PANEL PER INCLUDED SCHEMATIC.
2. WIRE ALL FANS PER INCLUDED SCHEMATIC.
3. WIRE SHUNT TRIP BREAKER (OPTIONAL).
4. WIRE UPS APPLIANCE KILL SWITCH, IF EQUIPPED (OPTIONAL).
5. WIRE GAS VALVE.

ELECTRICAL CONTRACTOR REQUIREMENT					
ITEM	CONNECTION IN PANEL	CONNECTION IN DEVICE	VOLTAGE	AMPERAGE	COMMENTS
SHUNT TRIP BREAKER (OPTIONAL)	ST & NI	BREAKER COIL ON L AND	120 VAC	< 4 AMPS	ST TO A1 ON SHUNT BREAKER COIL, AND NEUTRAL TO A2 ON SHUNT TRIP BREAKER COIL.
CONTROL PANEL POWER	HI & NI + GROUND	CIRCUIT BREAKER	120 VAC	15 AMPS	CONTROL PANEL POWER MUST NOT BE RUN THROUGH SHUNT TRIP BREAKER.
UPS APPLIANCE KILL SWITCH (OPTIONAL)	KTS & NI	KTS & NI	120 VAC	< 4 AMPS	KILL SWITCH TERMINALS MUST BE IN SERIES WITH OTHER KILL SWITCHES.
REMOTE 120VAC ANSUL AUTOMAN (OPTIONAL)	AU1, AU2	SOLENOID	120 VAC	< 6 AMPS	120V TO AU1, AU2 TO ANSUL ELECTRIC AUTOMAN, ANSUL SOLENOID TO NEUTRAL.
GAS VALVE	GS & NI (UP 24 VDC) GS & NI (UP 120 VAC)	RED/RED/GREEN	24 VDC OR 120 VAC	< 1.0 AMPS	IF 24 VDC - 2 WIRES & GROUND, NID TO RED, 3S TO RED AND GREEN TO GROUND. IF 120 VAC - 2 WIRES & GROUND, NID TO RED, NI TO RED, AND GREEN TO GROUND.

CAS ELECTRIC WET CHEMICAL PROTECTION LOW-VOLTAGE DETAIL

ALARM CONTRACTOR:
1. WIRE MANUAL ACTUATION DEVICE(S), REMOTE FIRESTAT(S), CORE INTERLOCK(S), FIRE SENSOR(S) AND FIRE ALARM CONTACTS.
2. COMPLETE FINAL WIRING OF SYSTEM.
3. VERIFY FINAL FIRE SYSTEM TEST.

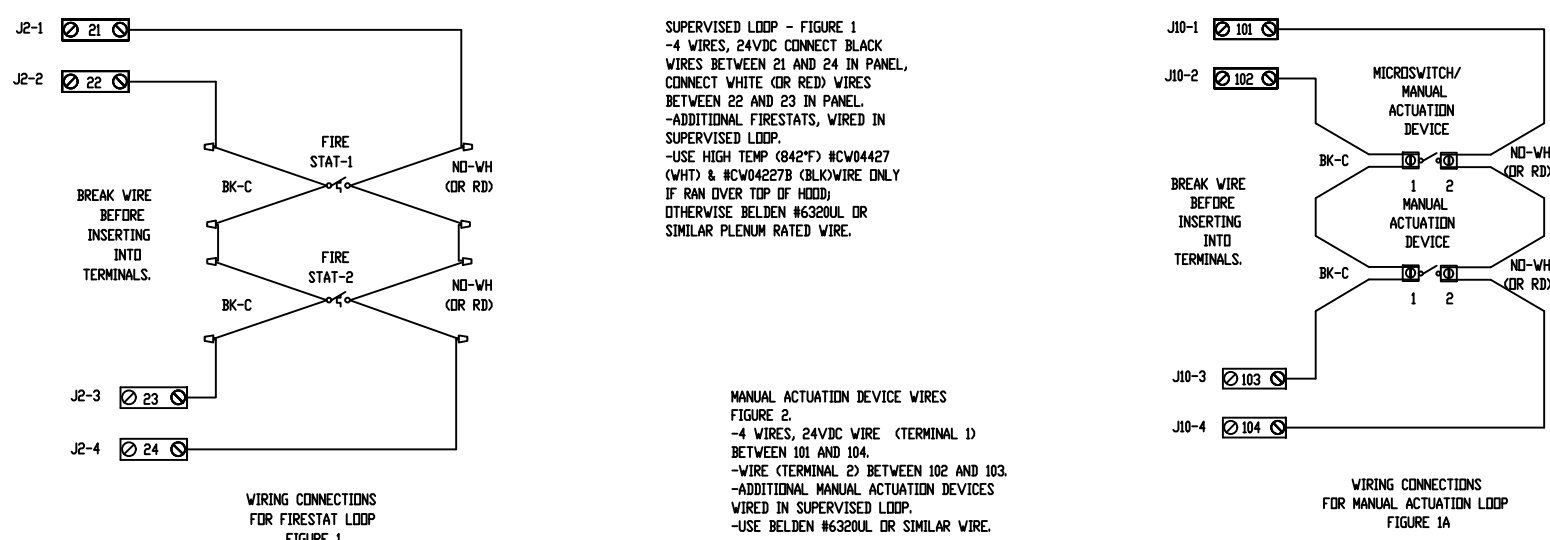
ALARM CONTRACTOR REQUIREMENT					
ITEM	CONNECTION IN PANEL	CONNECTION ON DEVICE	VOLTAGE	AMPERAGE	COMMENTS
MANUAL ACTUATION DEVICE(S)	101 AND 104 102 AND 103	1 & 2	24 VDC	< 1.0 AMPS	WIRE MANUAL ACTUATION DEVICE TERMINAL 1 BETWEEN CORE PANEL TERMINALS 102 AND 103. WIRE MANUAL ACTUATION DEVICE TERMINAL 2 BETWEEN CORE PANEL TERMINALS 101 AND 104. JUMPER 101 TO 104 AND USE TO USE IF NO MANUAL ACTUATION DEVICE IS INSTALLED.
MANUAL ACTUATION DEVICE COVER	N/A	N/A	N/A	N/A	MANUAL ACTUATION DEVICE COVER MUST BE INSTALLED IF SURFACE MOUNTED. USE COVER EXTENSION ST-425018.
REMOTE FIRESTAT SENSOR(S)	21 AND 24 22 AND 23	BLACK AND WHITE	24 VDC	< 1.0 AMPS	WIRE FIRE SENSOR WHITE WIRES BETWEEN HOOD CORE PANEL TERMINALS 22 AND 23. WIRE FIRE SENSOR BLACK WIRE BETWEEN HOOD CORE PANEL TERMINALS 21 AND 24. HIGH TEMP (GMCT) BELOW427 (QW1) & BEW427B (GLOWING) OR SIMILAR ONLY IF RAN OVER TOP OF HOOD. OTHERWISE BELDEN B630UL OR SIMILAR PLENUM RATED WIRE. SEE FIGURE 1. FIRE ALARM RELAY CONTACTS FOR BUILDING FIRE ALARM LOCATED IN THE CORE ELECTRICAL CONTROL PANEL.
FIRE ALARM CONTACT	AL1, AL2	VARIES	50V MAX (AC/DC)	UP TO 1 AMP	
CORE INTERLOCK(S)	ILA, ILB, ILC	ILA, ILB, ILC	RS-485 COMMUNICATIONS SIGNAL		CORE SYSTEM (1) ILA, TO CORE SYSTEM (2) ILA, CORE SYSTEM (3) ILB, TO CORE SYSTEM (2) ILB, CORE SYSTEM (4) ILC, TO CORE SYSTEM (2) ILC. USE BELDEN 88760 OR SIMILAR WIRE.
TROUBLE CONTACT	TBC, TBL, TDK	VARIES	MAX 120 VAC	UP TO 6 AMPS	WIRE TO TBL & TBC NORMALLY OPEN CONTACT, CLOSSES IN TROUBLE CONDITION.
CORE COMMUNICATIONS CABLE	RJ-45 Jack	INTERNET CONNECTION	SIGNAL	<1.0 AMPS	TYPICAL CONNECTION CAT5 CABLE TO LOCAL AREA NETWORK VIA ETHERNET SWITCH OR WIRELESS ROUTER WITH VALID INTERNET CONNECTION.



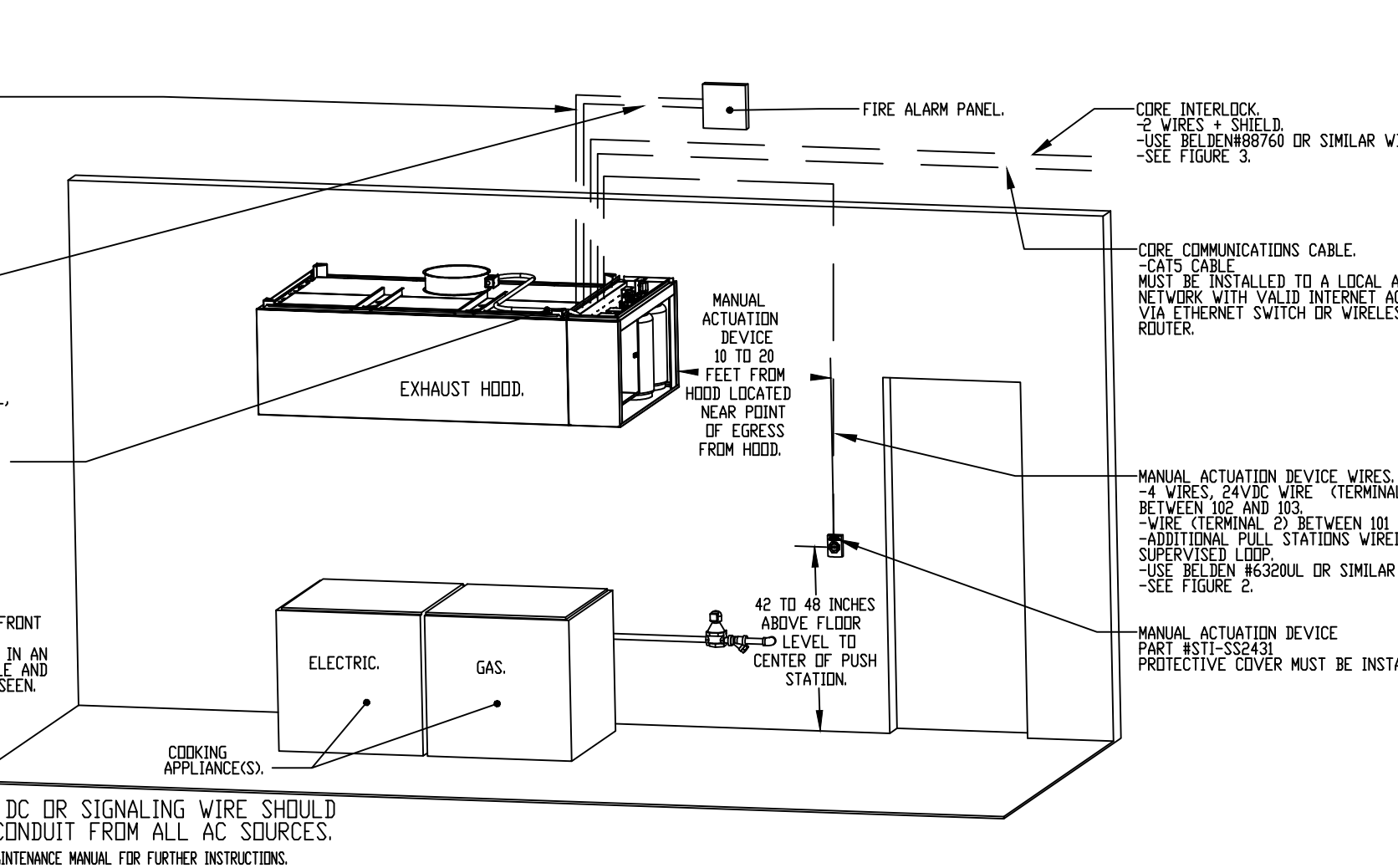
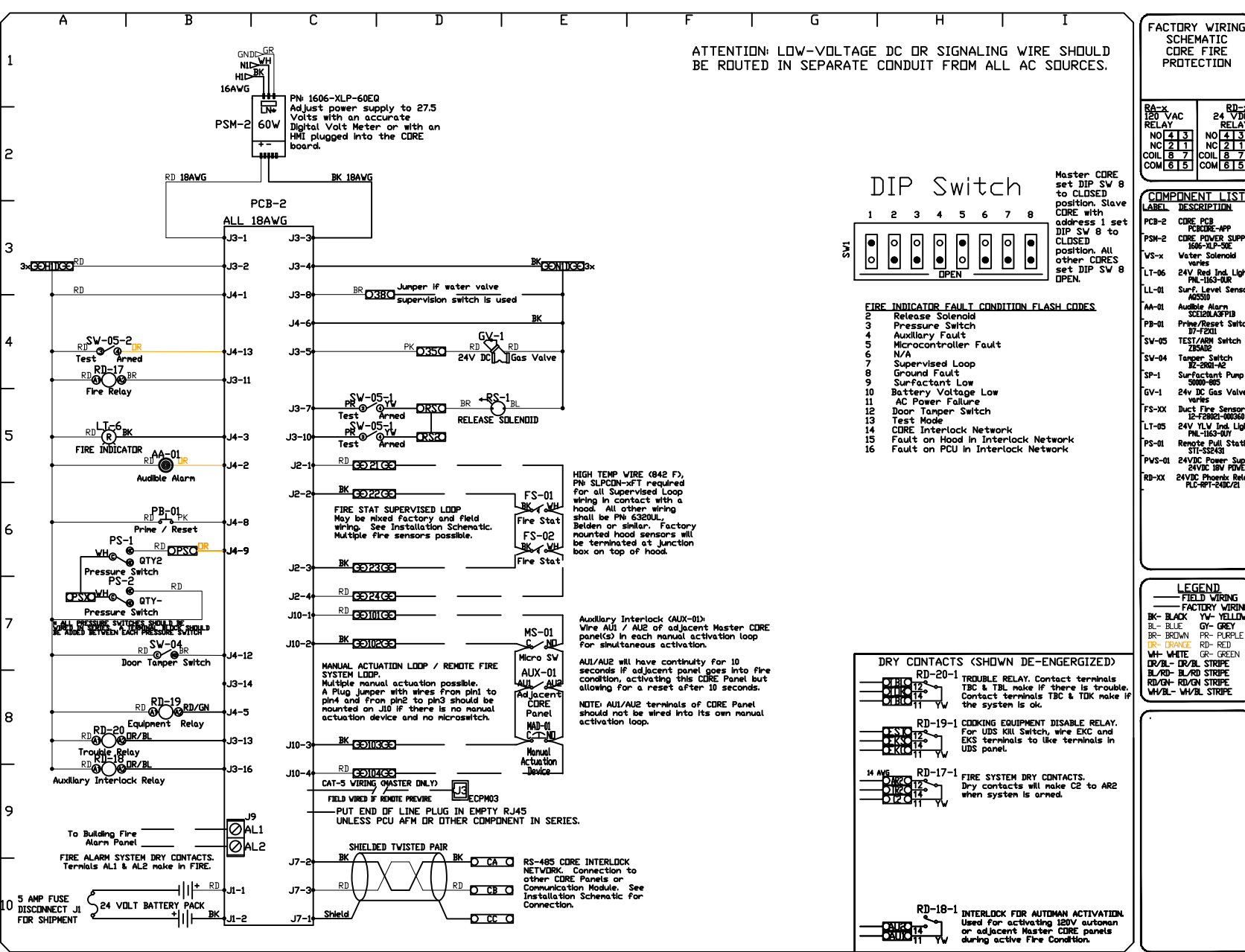
NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS.

CAS ELECTRIC WET CHEMICAL PROTECTION LOW-VOLTAGE FIGURES

ATTENTION: LOW-VOLTAGE DC OR SIGNALING WIRE SHOULD BE ROUTED IN SEPARATE CONDUIT FROM ALL AC SOURCES.



NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS.



NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS.

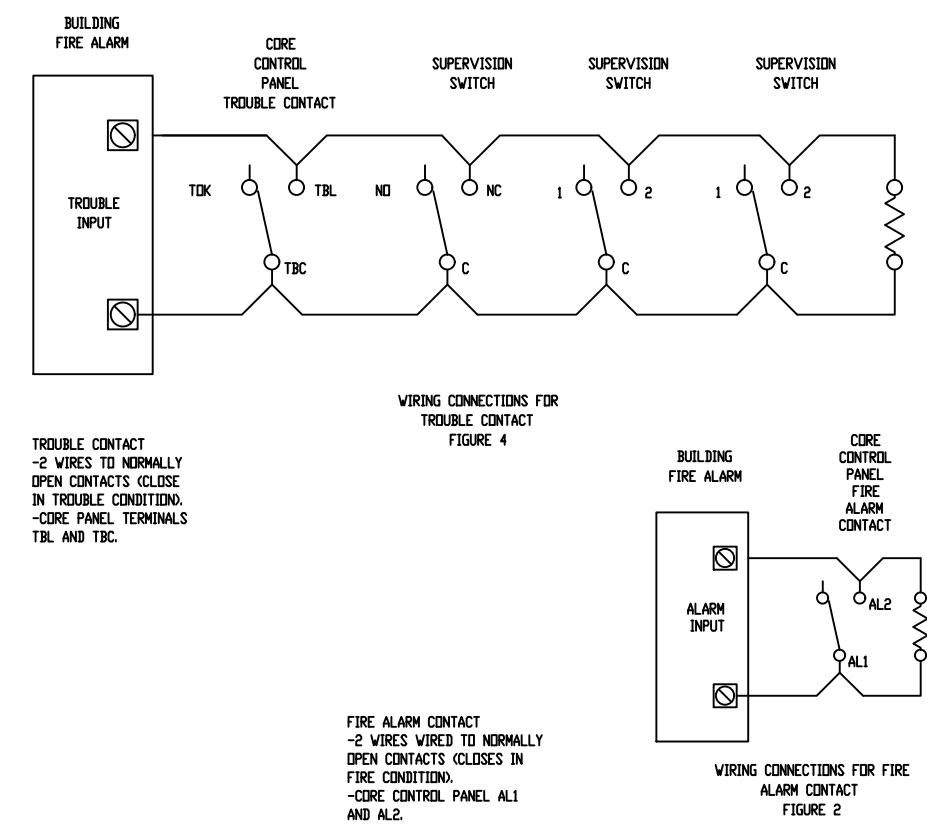
CORE ELECTRIC WET CHEMICAL PROTECTION FIRE SYSTEM

CORE ELECTRIC WET CHEMICAL (EWC) PROTECTION FIRE SYSTEMS CAN BE INSTALLED FOR HOOD FIRE PROTECTION, AS WELL AS POLLUTION CONTROL UNIT FIRE PROTECTION. IN THE EVENT OF A FIRE, OR ON MANUAL ACTUATION CORE EWC PROTECTION IS ACTIVATED.

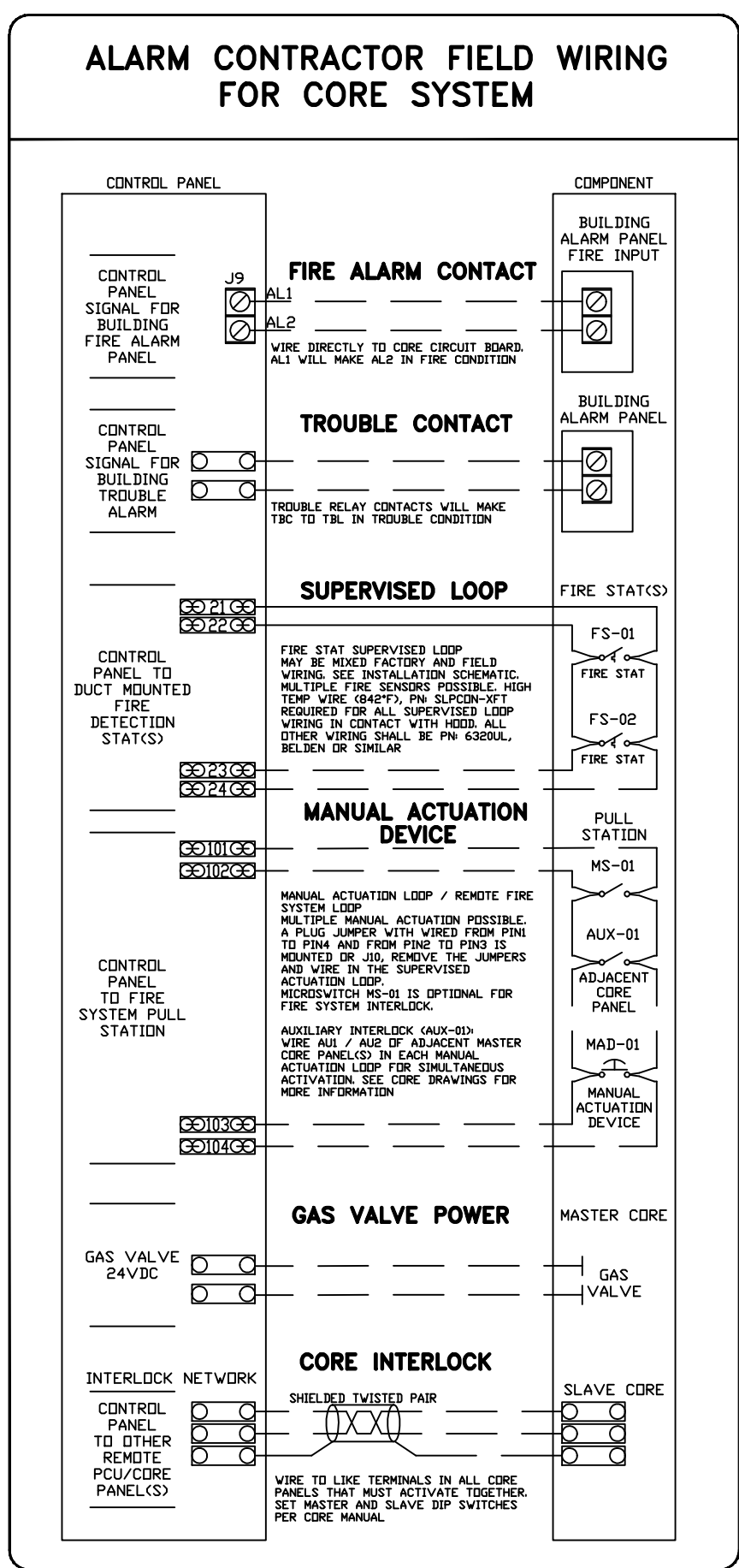
IF THE INSTALLED FIRESTAT IN THE AIRSTREAM SENSES A TEMPERATURE HOTTER THEN IT'S INTERNAL SET POINT OR IF THE MANUAL ACTUATION DEVICE IS PUSHED THE FIRE SYSTEM IS ACTIVATED. IN KITCHEN HOODS AN ELECTRIC SOLENOID IS ENERGIZED ALLOWING THE FLOW OF WET CHEMICAL AGENT TO THE HOOD DUCT, PLENUM, AND APPLIANCES THROUGH THE FIRE SYSTEM DISTRIBUTION PIPING. IN A POLLUTION CONTROL UNIT, THIS ELECTRONIC SIGNAL ENERGIZES A SOLENOID ALLOWING THE FLOW OF WET CHEMICAL AGENT INTO THE INDIVIDUALLY PIPED MODULES.

ONCE THE FIRE SYSTEM IS ACTIVATED, A "FIRE SYSTEM ACTIVATED" LIGHT IS ILLUMINATED ON THE CORE CONTROL PANEL, AND AN AUDIBLE ALARM SOUNDS. FOR KITCHEN HOOD PROTECTION ALL GAS AND ELECTRIC APPLIANCES UNDER THE HOOD MUST BE ELECTRICALLY INTERLOCKED TO SHUT OFF. THIS IS ACHIEVED VIA A GAS VALVE RELAY AND/OR A SHUNT TRIP BREAKER. THE BATTERY BACKUP WILL MONITOR THE FIRE SYSTEM CIRCUIT FOR ONE DAY AND BE ABLE TO OPERATE THE FIRE SYSTEM CIRCUIT FOR A MINIMUM OF 30 MINUTES. ONCE POWER IS RESTORED, THE BATTERY WILL AUTOMATICALLY RECHARGE.

THE FIRE SYSTEM IS ELECTRICALLY OPERATED AND THUS REQUIRES A BATTERY BACKUP SYSTEM. IN THE EVENT OF A LOSS OF ELECTRICAL POWER, ALL GAS AND ELECTRIC APPLIANCES UNDER THE HOOD MUST BE ELECTRICALLY INTERLOCKED TO SHUT OFF. THIS IS ACHIEVED VIA A GAS VALVE RELAY AND/OR A SHUNT TRIP BREAKER. THE BATTERY BACKUP WILL MONITOR THE FIRE SYSTEM CIRCUIT FOR ONE DAY AND BE ABLE TO OPERATE THE FIRE SYSTEM CIRCUIT FOR A MINIMUM OF 30 MINUTES. ONCE POWER IS RESTORED, THE BATTERY WILL AUTOMATICALLY RECHARGE.



NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS.



Bibibop - Streets Of West Pryor
2050 NW Lowenstein Dr.,
Lee's Summit, MO, 64081

DATE: 2/9/2021	REVISION 1	02.10.2021
DWG.#: 4664448		
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SCALE: 1/2" = 1'-0"		
MASTER DRAWING		

SHEET NO. 5	HOOD PLANS
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PROJECT:

BIBIBOP
asian grill
STREETS OF
WEST PRYOR

2050 NW LOWENSTEIN DR.
SUITE E
LEE'S SUMMIT, MO 64081

BIBIBOP STORE NO.: B0057
BIBIBOP P.O.: TBD

PROJECT NO.: 0421995-101

DRAWN BY:

CHECKED BY:

ISSUES AND REVISIONS:

PERMIT ISSUE 01.25.2021

REVISION 1 02.10.2021

SHEET TITLE:
HOOD PLANS

H105

EXHAUST FAN INFORMATION - JOB#4664448

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR ENCL	HP	BHP	Ø	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS)	SDNES
1	EF-1	1	DUI80HFA	CAPTIVEAIRE	2300	1.125	1058	ODP,PREMIUM	2.000	0.8990	3	208	6.1	531 FPM	189	12.3
3	EF-2	1	DU50HFA	CAPTIVEAIRE	950	0.500	1348	ODP	0.500	0.2690	1	115	8.4	361 FPM	104	12.9

CONDENSER DETAILS

FAN UNIT NO	TAG	FAN UNIT MODEL #	CONDENSER NO	TONNAGE	VOLTAGE	PHASE	FREQUENCY	MCA	RLA	MAX FUSE SIZE	MIN WIRE SIZE	SEER
2	MUA-1	A2-D.500-20D-MPU	1	5	208-230	3 PHASE	60 HZ	21.4 AMPS	17.4 AMPS	30 AMPS	10 AWG	14

MUA FAN INFORMATION - JOB#4664448

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	BLOWER	HOUSING	MIN CFM	DESIGN CFM	ESP	RPM	MOTOR ENCL	HP	BHP	Ø	VOLT	FLA	MCA	MOCF	WEIGHT (LBS)	SDNES
2	MUA-1	1	A2-D.500-20D-MPU	20MF-2-MOD	A2-D.500	2000	2660	0.500	1388	ODP,PREMIUM	3.000	1.3580	3	208	9.5	11.9A	20A	1411	12.8

COILS - JOB#4664448

FAN UNIT NO	TAG	COIL TYPE	DESIGN CFM	COOLING											HEATING										
				ENTERING DB TEMP	ENTERING WB TEMP	LEAVING DB TEMP	LEAVING WB TEMP	ENTERING FLUID TEMP	LEAVING FLUID TEMP	FLUID FLOW RATE	PERCENT GLYCOL	TOTAL CAPACITY	SENSIBLE CAPACITY	LATENT CAPACITY	ENTERING DB TEMP	LEAVING DB TEMP	ENTERING FLUID TEMP	LEAVING FLUID TEMP	FLUID FLOW RATE	PERCENT GLYCOL	STEAM PRESSURE	TOTAL CAPACITY	SENSIBLE CAPACITY		
2	MUA-1	DX	2660	93.0°F	76.0°F	70.7°F	70.0°F	---	---	---	---	60.0 MBH	60.0 MBH	0.0 MBH	---	---	---	---	---	---	---	---	---		

GAS FIRED MAKE-UP AIR UNIT(S)

FAN UNIT NO	TAG	INPUT BTUs	OUTPUT BTUs	TEMP RISE	REQUIRED INPUT GAS PRESSURE	GAS TYPE	BURNER EFFICIENCY(%)
2	MUA-1	205871	189401	70°F	7 IN. W.C. - 14 IN. W.C.	NATURAL	92

FAN OPTIONS

FAN UNIT NO	TAG	QTY	DESCRIPTION
1	EF-1	1	GREASE BOX.
		1	FAN BASE CERAMIC SEAL - INSTALLED AT PLANT - FOR GREASE DUCTS.
		1	UPBLAST FAN WHEEL ACCESS PORT.
		1	24" TALL STRAIGHT WIND BAND EXTENSION 18/20 (SHIPS LOOSE).
2	MUA-1	1	AC INTERLOCK RELAY - 24VAC COIL.
		1	MOTORIZED BACKDRAFT DAMPER FOR A2-D HOUSING. MEETS AMCA CLASS 1A RATING.
		1	LOW FIRE START.
		1	INLET PRESSURE GAUGE, 0-35".
		1	MANIFOLD PRESSURE GAUGE, -5 TO 15" W.C.
		1	EXTENDED POWER DROP.
		1	COOLING THERMOSTAT AND RELAY (NOT REQ FOR EVAP).
		1	5 TON SINGLE CIRCUIT MODULAR PACKAGED AC COOLING OPTION FOR SIZE 2 DF/EH MUA (1000 TO 2750 CFM), 208V/230V, 3 PHASE. COOLING THERMOSTAT OR PROGRAMMABLE STAT REQUIRED FOR PROPER OPERATION.
		1	DOWNTURN PLENUM FOR SIZE 2 DX COIL MODULE.
		1	SEPARATE 120V WIRING PACKAGE (REQUIRED AND USED ONLY FOR DCV OR PREWIRE WITH VFD) - THREE PHASE ONLY.
3	EF-2	1	SIZE 2 DIRECT FIRED HEATER LOW CFM PROFILE PACKAGE. USED ON HEATERS UNDER 2500 CFM.
		1	36" TALL STRAIGHT WIND BAND EXTENSION 13 (SHIPS LOOSE).
		1	I 15-BDD DAMPER.
		1	SCR-13 BIRD SCREEN.

FAN ACCESSORIES

FAN UNIT NO	TAG	EXHAUST			SUPPLY			
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT
1	EF-1	YES						
2	MUA-1						YES	
3	EF-2		YES					

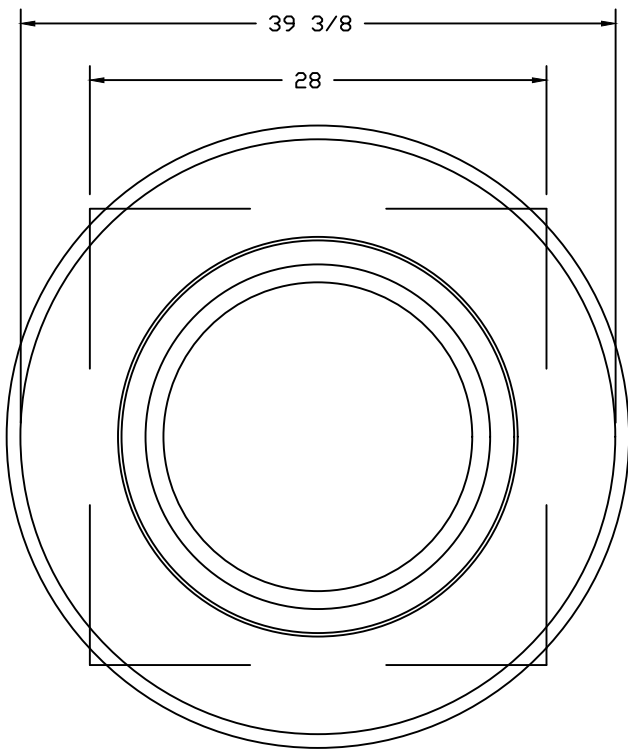
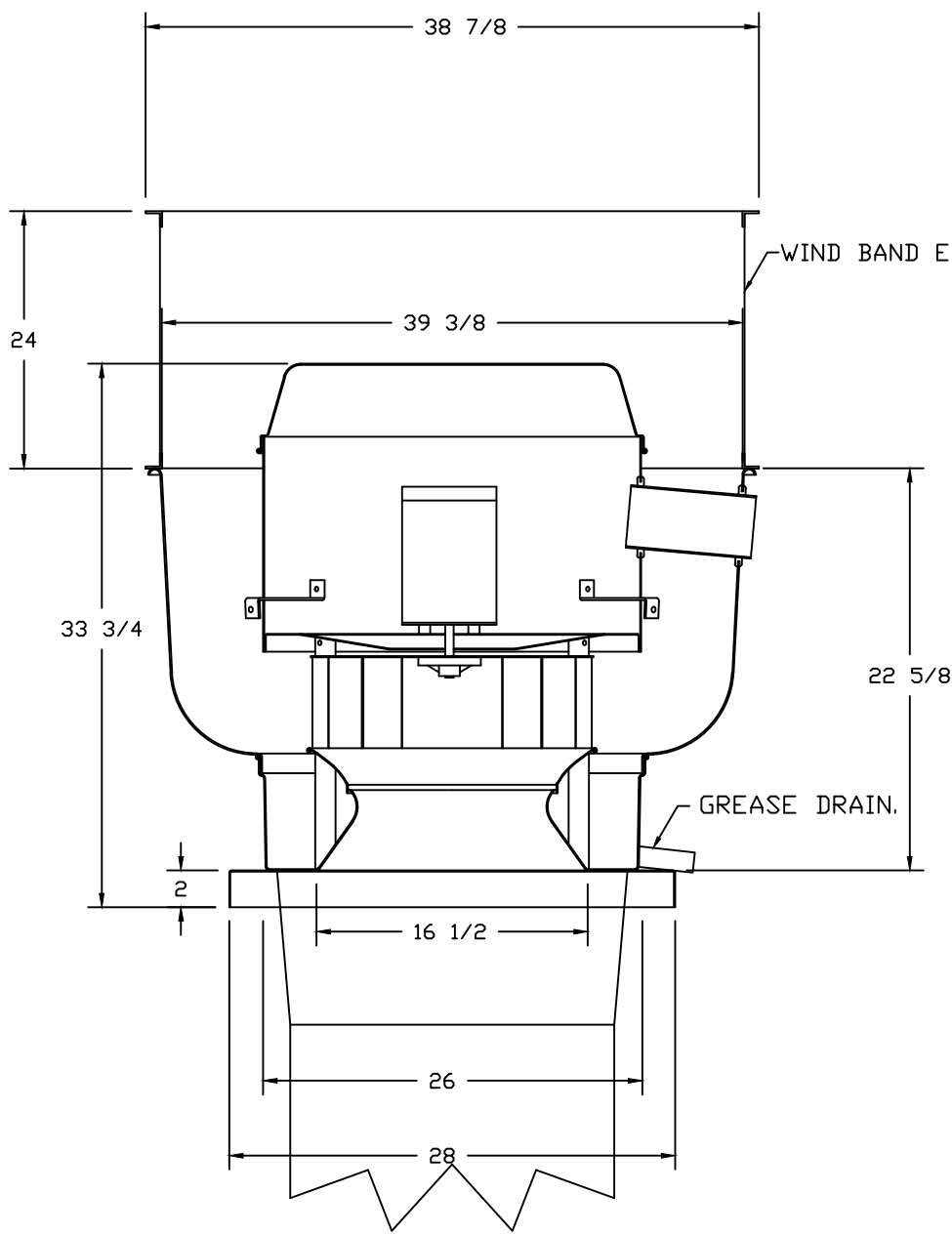
CURB ASSEMBLIES

NO	DN FAN	TAG	WEIGHT	ITEM	SIZE
1	# 1	EF-1	38 LBS	CURB	26.500"W X 26.500"L X 24.000"H VENTED HINGED.
2	# 2	MUA-1	107 LBS	CURB	31.000"W X 79.000"L X 20.000"H RIGHT INSULATED.
	# 2			RAIL	6.000"W X 31.000"L X 20.000"HRIGHT.
3	# 3	EF-2	31 LBS	CURB	19.500"W X 19.500"L X 20.000"H HINGED.

VERIFY ELECTRIC REQUIREMENTS
-----PHASE-----VOLT
Verify Electric Requirements to Ensure That
Fan Motors and Electric Packages are Coordinated

VERIFY PITCH CURB
----- : -----
Curb Pitch Required in order to
manufacture the curb to specification.

FAN #1 DUI80HFA - EXHAUST FAN (EF-1)



TOP VIEW

FEATURES:

- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL705 AND UL762 AND ULC-S645
- VARIABLE SPEED CONTROL.
- INTERNAL WIRING.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- HIGH HEAT OPERATION 300°F (149°C).
- GREASE CLASSIFICATION TESTING.
- NEMA 3R SAFETY DISCONNECT SWITCH.

NORMAL TEMPERATURE TEST

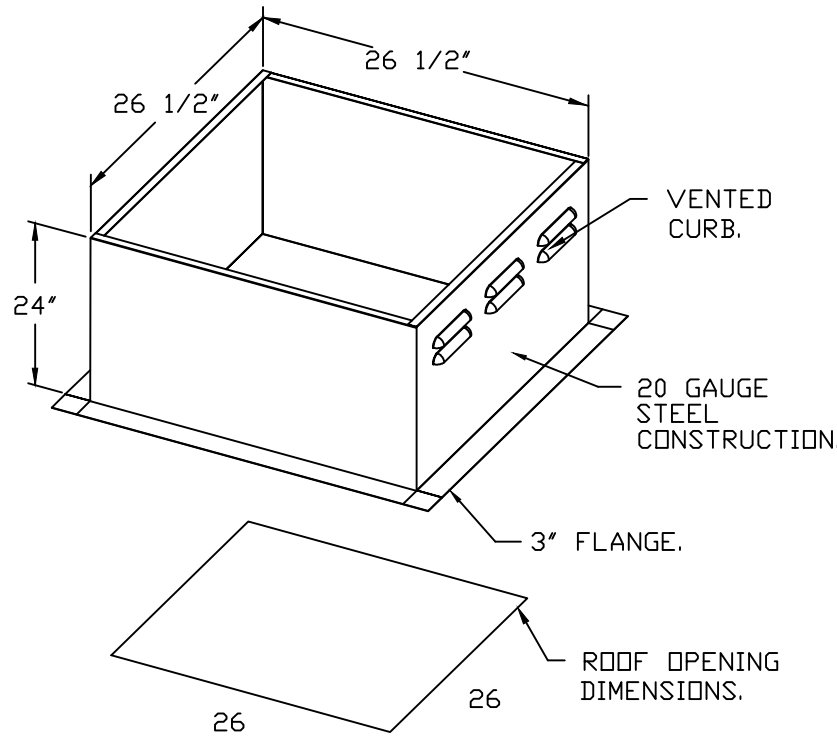
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

ABNORMAL FLARE-UP TEST

EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING BURNING GREASE VAPORS AT 600°F (316°C) FOR A PERIOD OF 15 MINUTES WITHOUT THE FAN BECOMING DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNSAFE CONDITION.

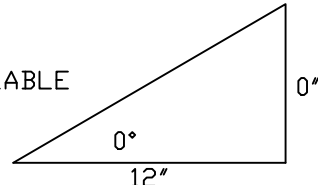
OPTIONS

GREASE BOX.
FAN BASE CERAMIC SEAL - INSTALLED AT PLANT - FOR GREASE DUCTS.
UPBLAST FAN WHEEL ACCESS PORT.
24" TALL STRAIGHT WIND BAND EXTENSION 18/20 (SHIPS LOOSE).



PITCHED CURBS ARE AVAILABLE FOR PITCHED ROOFS.

SPECIFY PITCH:
EXAMPLE: 7/12 PITCH = 30° SLOPE.



REVISIONS

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CAPTIVE
Northern Ohio Office
806 Morrison Rd., Gahanna, OH, 43230 PHONE: FAX: (919) 227-5925 EMAIL: reg52@captiveaire.com

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asian grill
STREETS OF
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REVISION 1 02.10.2021

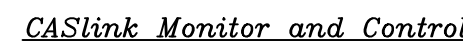
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**HOOD
PLANS**

H106

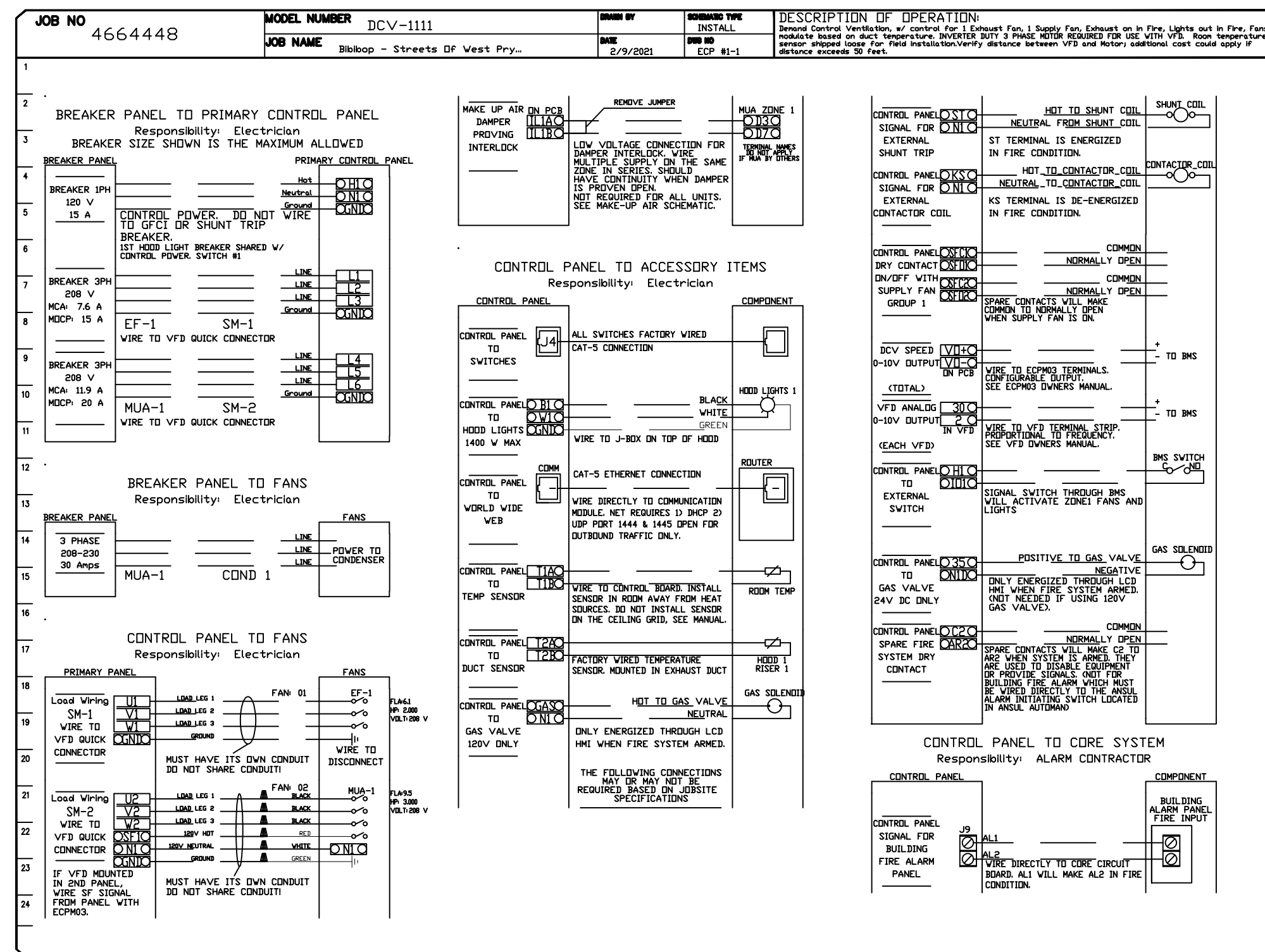
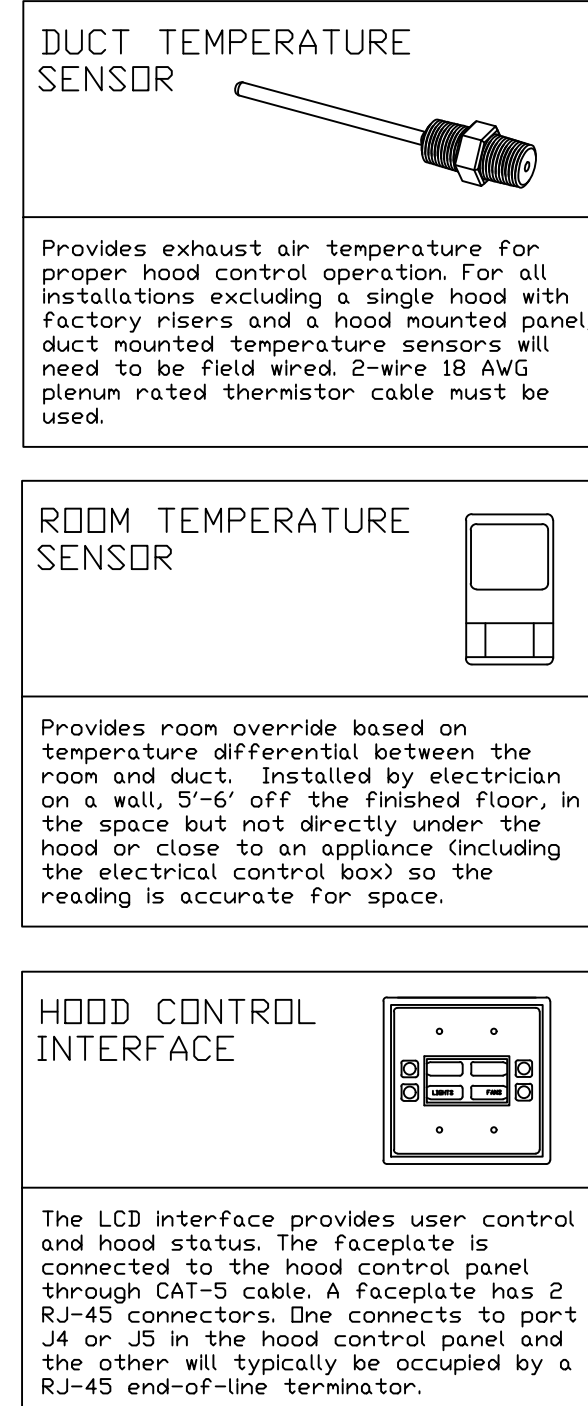
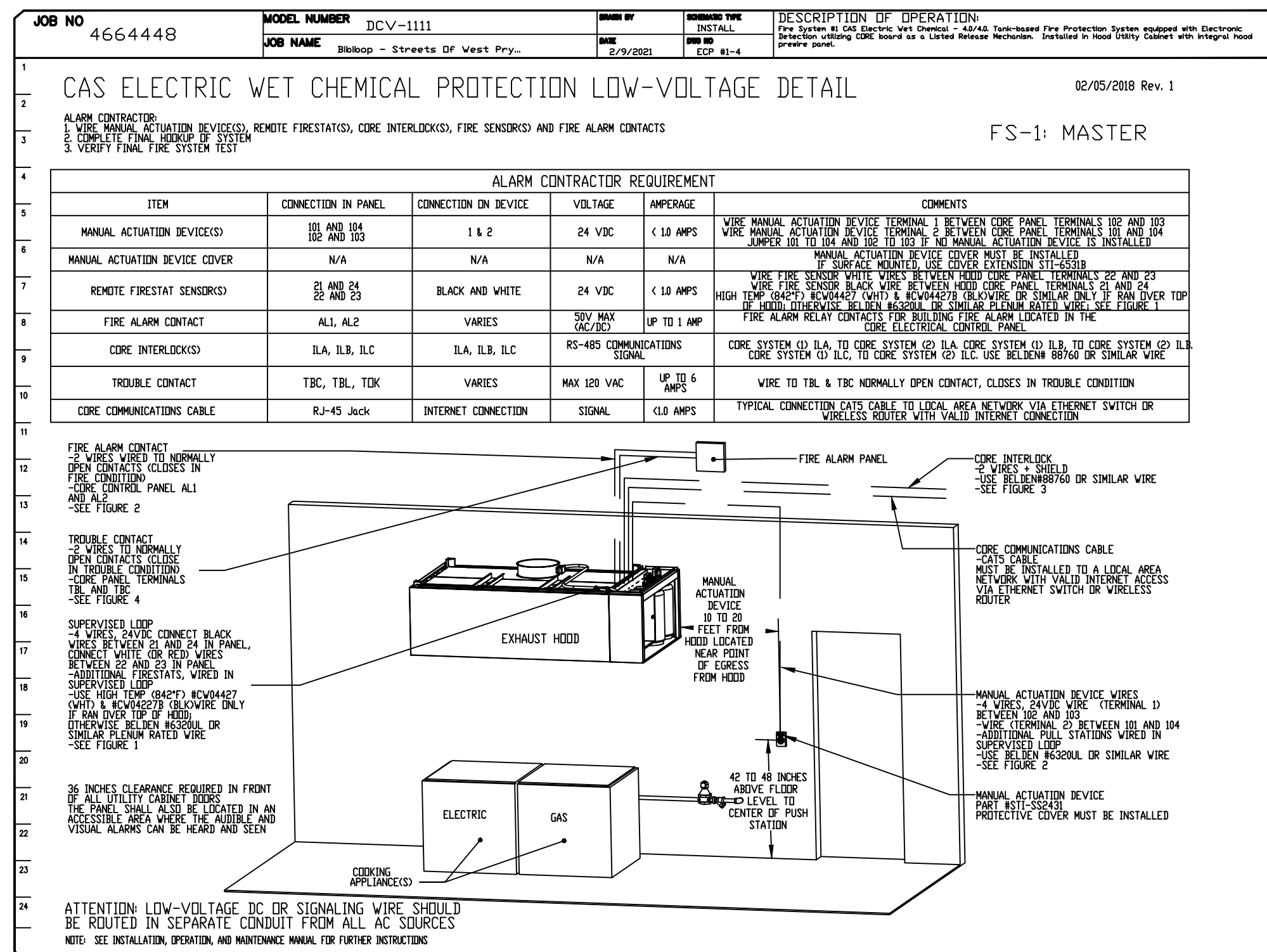
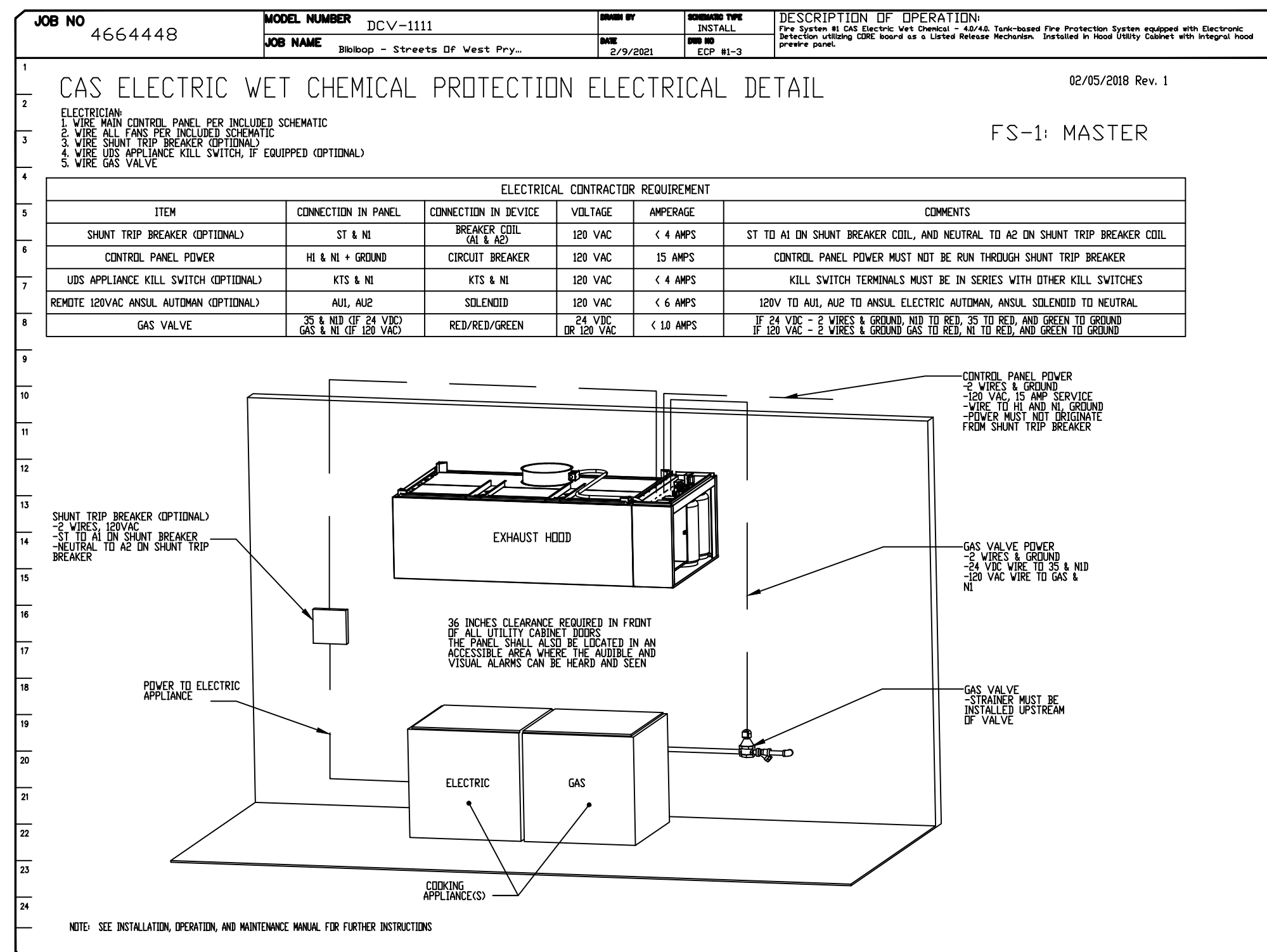
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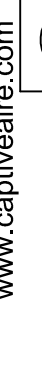
NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED					
				LOCATION	QUANTITY		FAN TAG	TYPE	ø	HP	VOLTS	FLA
1		DCV-1111	UTILITY CABINET LEFT	03 - UTILITY CABINET LEFT	1 LIGHT	SMART CONTROLS DCV	EF-1	EXHAUST	3	2,000	208	6.1
				HOOD # 1	1 FAN		MUA-1	SUPPLY	3	3,000	208	9.5
2	Switches			02 - FACE MOUNT RIGHT SIDE OF HOOD	1 LIGHT							
				HOOD # 2	1 FAN							



- Hood control panel to support communications to cloud-based Building Management System.
- Hood Control Panel to allow cloud-based Building Management System to monitor real time parameters outlined as MONITOR in the points list.
- Hood Control Panel to allow cloud-based Building Management System to control parameters outlined as CONTROL in the points list.
- Hood Control Panel to allow cloud-based Building Management System to implement SYSTEM ECONOMIZER control strategies for fully integrated Building Management.

RCV Packages	Function	SC Packages	Function
Room Temperature	MONITOR	Room Temperature(s)	MONITOR
Dust Temperature(s)	MONITOR	Dust Temperature(s)	MONITOR
MUA Discharge Temperature	MONITOR	MUA Discharge Temperature	MONITOR
Hatches RTU Discharge Temperature	MONITOR	Hatches RTU Discharge Temperature	MONITOR
Fan Speed	MONITOR	Controller Faults	MONITOR
Fan Amperage	MONITOR	Fan Faults	MONITOR
Fan Power	MONITOR	Fan Status	MONITOR
YPD Faults	MONITOR	PCU Faults	MONITOR
Controller Faults	MONITOR	PCU Filter Clog Percentages	MONITOR
Fan Faults	MONITOR	Fire Condition	MONITOR
Fan Status	MONITOR	CORE Fire System	MONITOR
PCU Faults	MONITOR	Building Pressures	MONITOR
PCU Filter Clog Percentages	MONITOR	Fans Button(s)	MONITOR & CONTROL
Fire Condition	MONITOR	Lights Button(s)	MONITOR & CONTROL
CORE Fire System	MONITOR	Flush Button	MONITOR & CONTROL
Building Pressures	MONITOR		
Prep Time Button	MONITOR & CONTROL		
Fans Button	MONITOR & CONTROL		
Lights Button	MONITOR & CONTROL		
Flush Button	MONITOR & CONTROL		

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BIBIBOP

asian grill
STREETS OF
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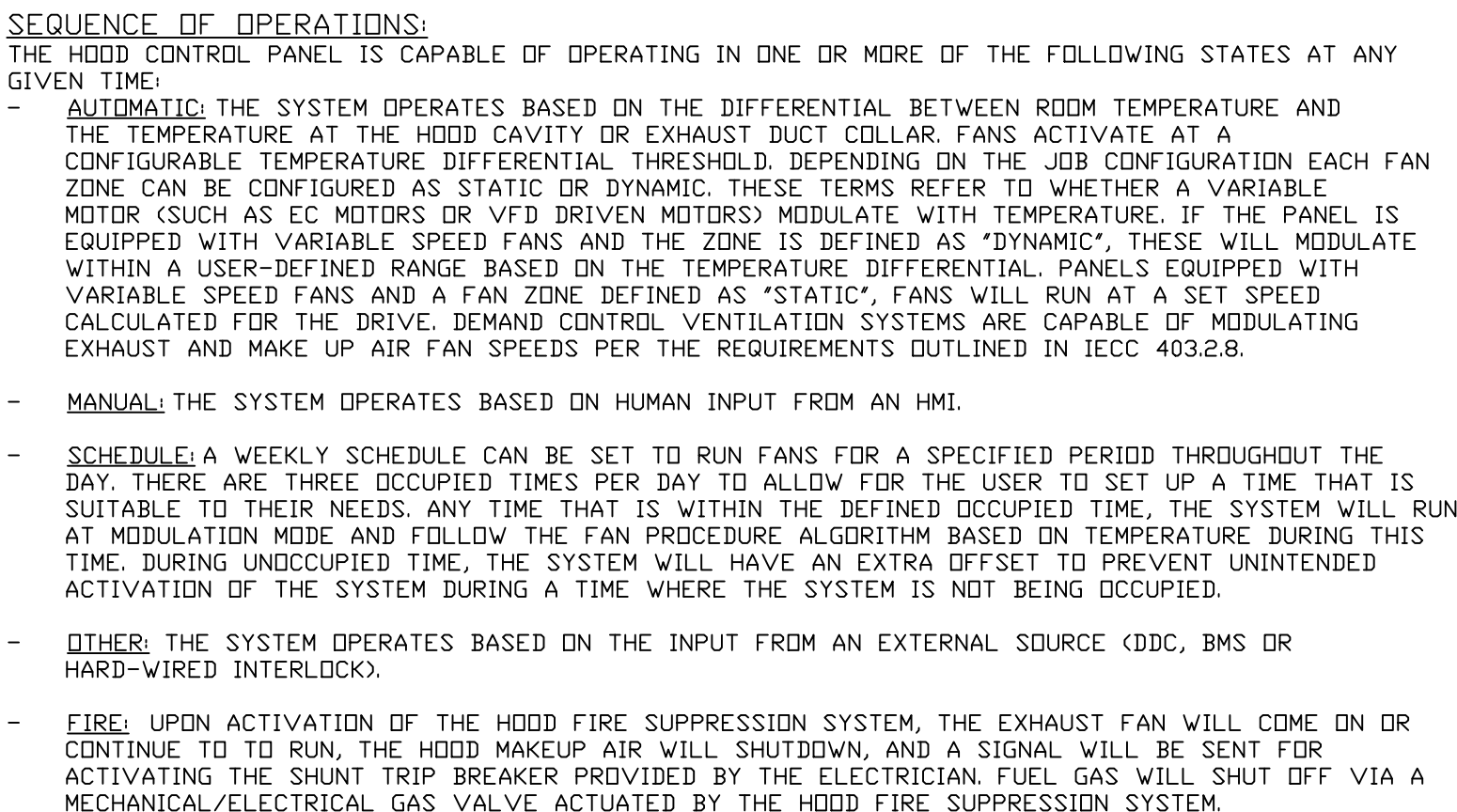
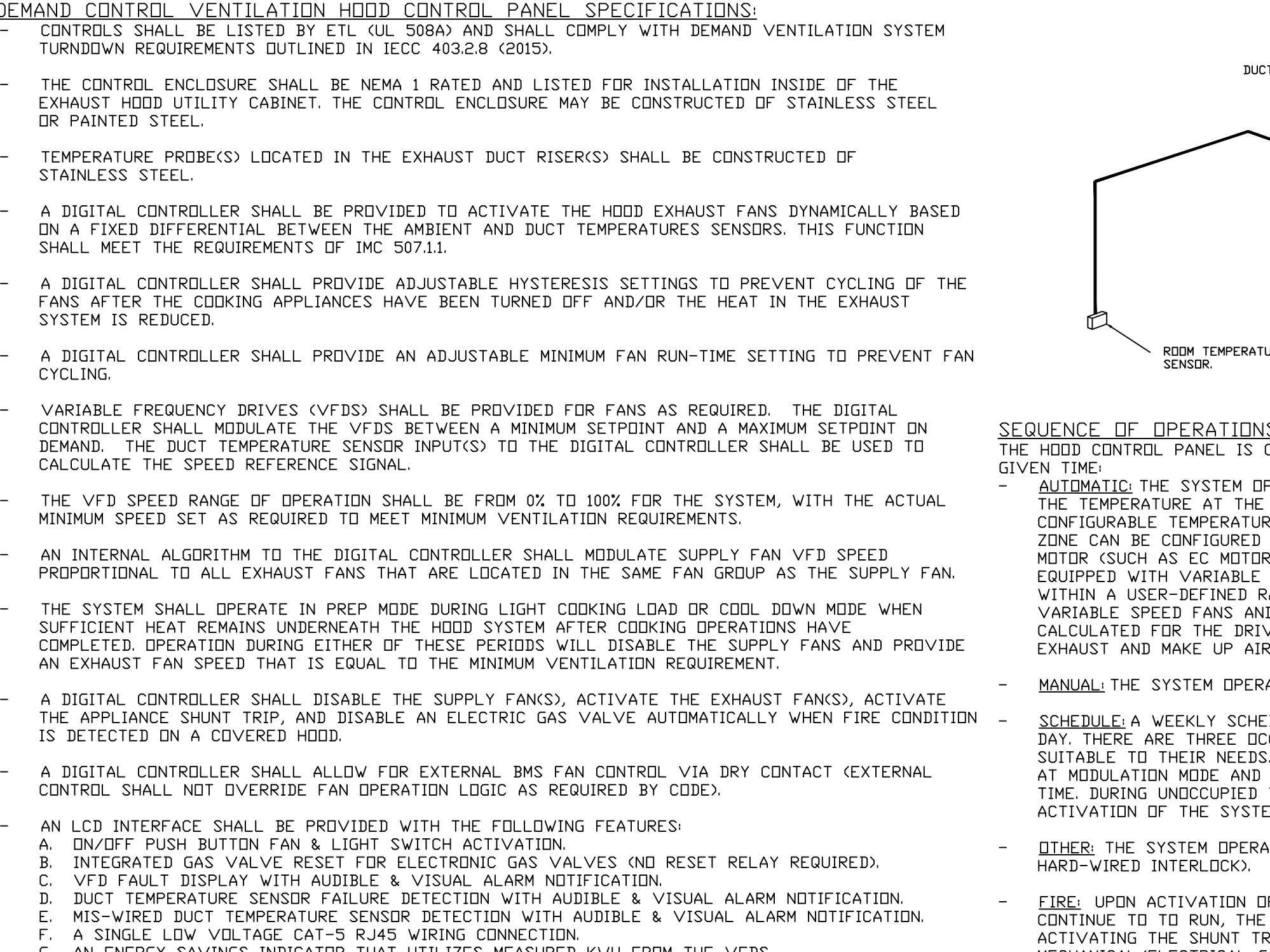
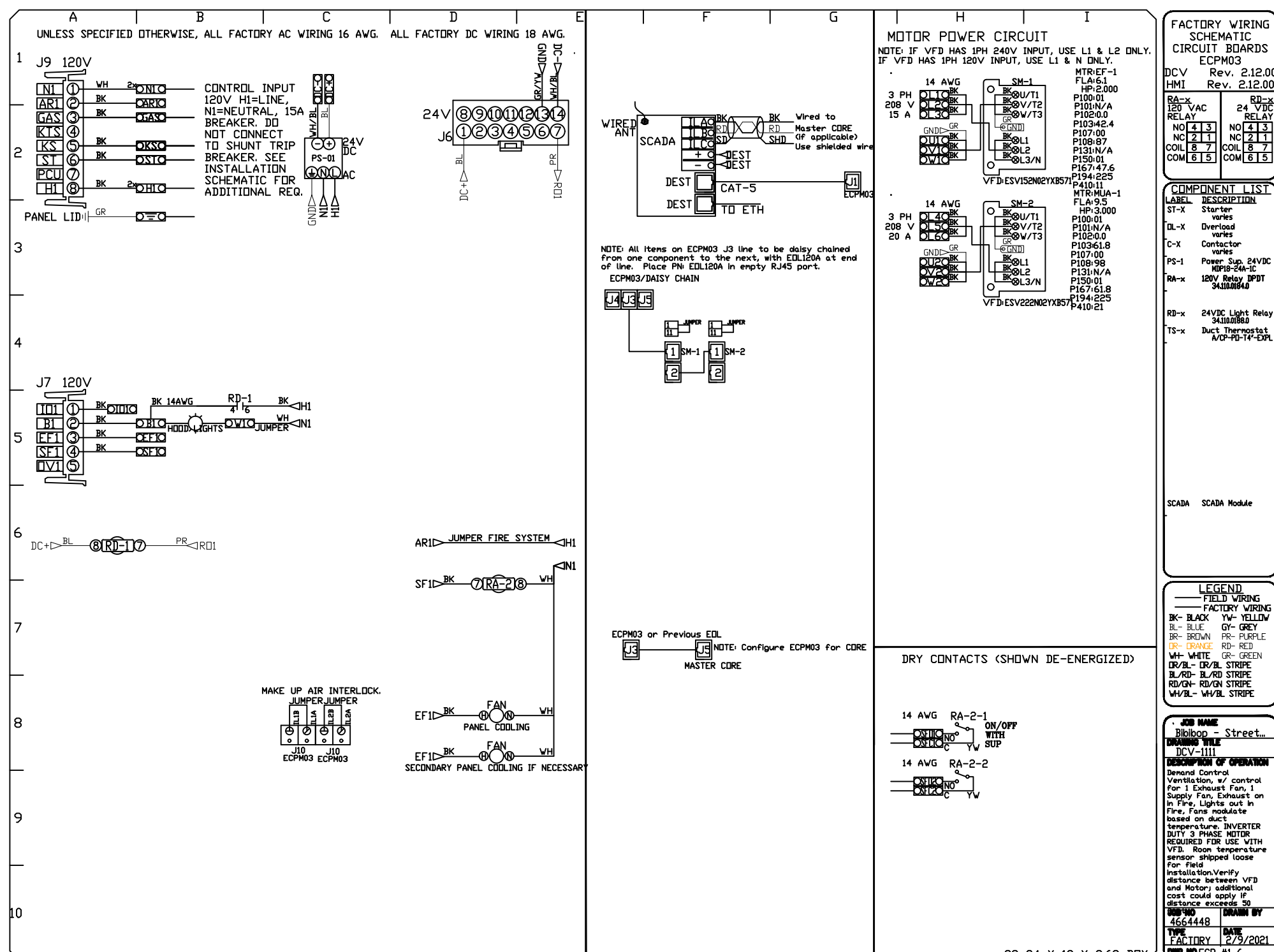
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REVISION 1 02.10.2021

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DUCTWORK #1 PARTS – JOB#4664448

TAG	PART #	CFM	SP	WEIGHT	VELOCITY	QTY	DESCRIPTION
P1	DW1690ASY	2300	-0.1418	13.00	1647.25	1	SINGLE WALL DUCT 90 DEGREE ELBOW, 16" DUCT, ASSEMBLY.
P2	DW1604CID	2300	-0.001	2.79	1647.25	1	SINGLE WALL DUCT OFF SET COLLAR – 16" DIAMETER DUCT – 1/4" PITCH.
P3	DW1647LT	2300	-0.0169	24.89	1647.25	1	SINGLE WALL DUCT 16" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P4	DW1648AJDKIT	2300	-0.0091	30.39	1647.25	1	SINGLE WALL DUCT ADJUSTABLE, 16" DIAMETER, 47.5" LONG, FLANGE AT ONE END WITH A 16" ADJUSTABLE COLLAR – STAINLESS STEEL.
P5	DW16SUBRASY			3.18		1	DUCT SUPPORT BRACKET KIT, 16" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. – 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P6	DW16SUBRASY			3.18		1	DUCT SUPPORT BRACKET KIT, 16" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. – 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P7	DW1604CID	2300	-0.001	2.79	1647.25	1	SINGLE WALL DUCT OFF SET COLLAR – 16" DIAMETER DUCT – 1/4" PITCH.
P8 ASSEMBLED W/P9	DW16TEASY	2300	-0.1134	19.23	1647.25	1	SINGLE WALL DUCT TEE, 16" DUCT, ASSEMBLY.
P9 ASSEMBLED W/P8 D=S	DW1617ADIASY			16.57		1	DUCT ACCESS DOOR – INSULATED – USED WITH 16" DUCT – GREASE DAM INCLUDED – ASSEMBLY.
P10	DW161150LT	2300	-0.0039	6.14	1647.25	1	SINGLE WALL DUCT 16" DIAMETER, 11.50" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P11	DW1618AJDKIT	2300	-0.0031	13.19	1647.25	1	SINGLE WALL DUCT ADJUSTABLE, 16" DIAMETER, 17.5" LONG, FLANGE AT ONE END WITH A 16" ADJUSTABLE COLLAR – STAINLESS STEEL.
P12	DW16VESU18			22.80		1	DUCT VERTICAL SUPPORT KIT, 16" DUCT, 18" CLEARANCE TO COMBUSTIBLES. PARTS ARE ZINC COATED. HARDWARE KIT #3 USED ON DWXXVESU & DWXXVESU18.
P13 ASSEMBLED W/P14	DW1629LT	2300	-0.01	15.68	1647.25	1	SINGLE WALL DUCT 16" DIAMETER, 29" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P14 ASSEMBLED W/P13 SYSTEM AT P14	DW2616TP	2300		11.62	1647.25	1	DUCT TO CURB TRANSITION, 26-1/2" CURB TO 16" DUCT, 16 GA ALUMINIZED. USED ON BDU18.
	3M-2000PLUS			0.80		3	DUCT – 3M FIRE BARRIER 2000 PLUS SILICONE – USED AS SEALANT TO SEAL DUCT JOINTS.
	834680600587XL			52.00		7	DUCT – DUCT INSULATION FOR ZERO CLEARANCE TO COMBUSTIBLES – 300" X 24" X 1-1/2" ROLL. PYROSCAT WRAP.
	BANDING.5			5.00		2	DUCT – FIRE BARRIER WRAP STAINLESS STEEL BANDING .5" WIDTH – 200 FT PER ROLL.
	DW16CLASY			1.18		10	DUCT "V" CLAMP WITH NEW DESIGN 14 GA BRACKETS, 16" DUCT, ASSEMBLY.
	SEAL.50-50			0.50		2	DUCT – FIRE BARRIER WRAP STAINLESS STEEL BANDING SEAL .5" WIDTH. QUANTITY OF 50.
	TAPEALUM			0.25		2	DUCT – FIRE BARRIER WRAP ALUMINUM FOIL TAPE – 3" X 150" ROLL.
TOTAL WEIGHT				575.15			

SINGLE WALL FACTORY BUILT DUCTWORK

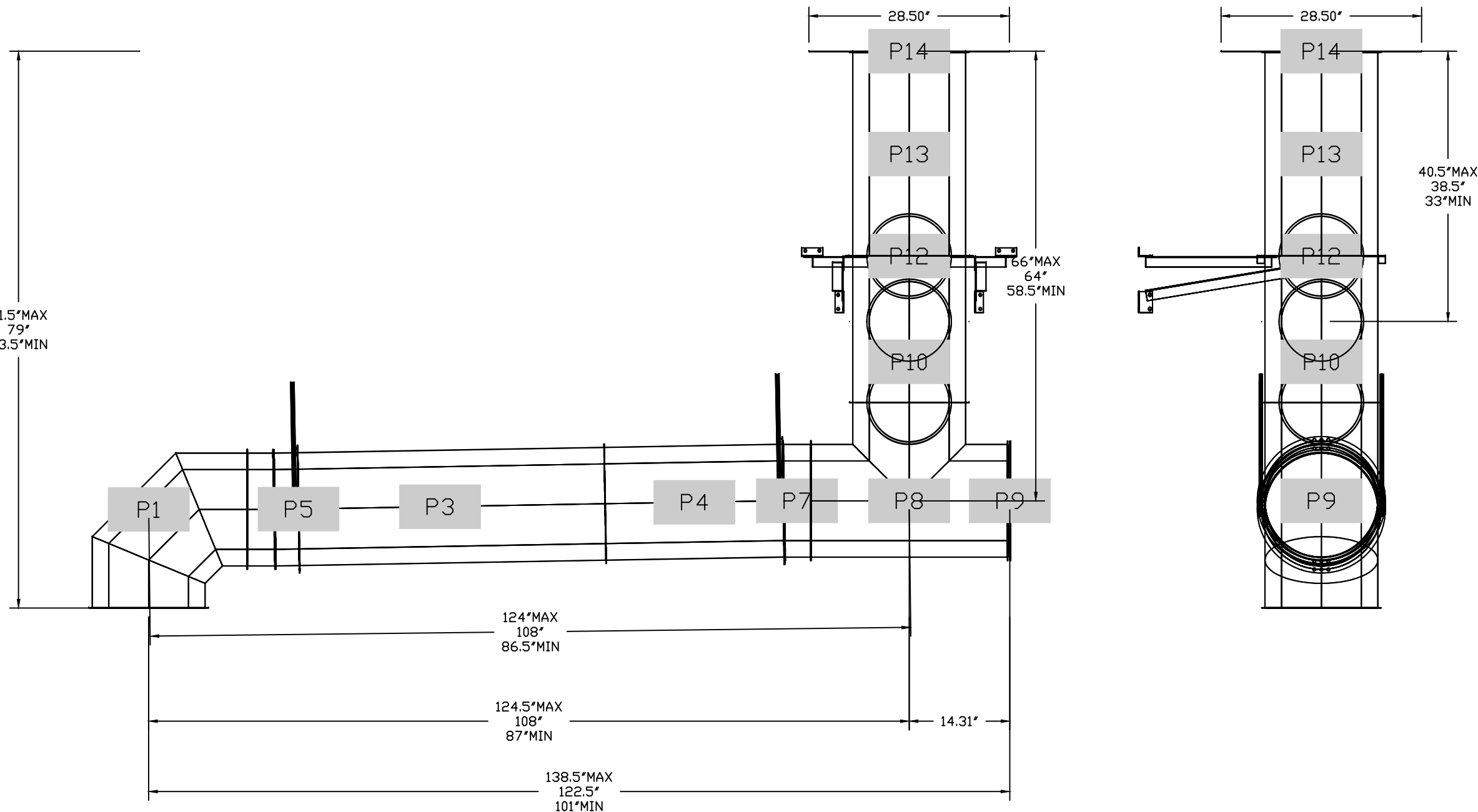
- ALL DUCTWORK IS REQUIRED TO BE INSTALLED WITH THE MAXIMUM SUPPORT SPACING LISTED BELOW.
- FOR A COMPLETE LIST OF APPROVED SUPPORT METHODS, SEE THE INSTALLATION AND OPERATION MANUAL.
- DUCTWORK SHALL SLOPE NOT LESS THAN 1/16" PER LINEAR FOOT TOWARDS THE HOOD OR AN APPROVED GREASE COLLECTION RESERVOIR.
- WHERE HORIZONTAL DUCTS EXCEED 75 FEET IN LENGTH, THE SLOPE SHALL NOT BE LESS THAN 3/16" PER LINEAR FOOT.

DUCT DIAMETER	HORIZONTAL SUPPORT (FT)	VERTICAL WALL SUPPORT (FT)	VERTICAL CURB SUPPORT (FT)
5"	10'	10'	24'
6"	10'	10'	24'
7"	10'	10'	24'
8"	10'	10'	24'
10"	10'	10'	24'
12"	10'	10'	24'
14"	10'	10'	24'
16"	10'	10'	24'
18"	10'	10'	24'
20"	10'	10'	24'
22"	10'	10'	24'
24"	10'	10'	24'
26"	10'	10'	24'
28"	10'	10'	24'
30"	10'	10'	24'
32"	10'	10'	24'
34"	10'	10'	24'
36"	10'	10'	24'

DO NOT LEAK TEST USING SMOKE BOMBS CONTAINING CHLORINES/CHLORIDES. CONSULT WITH CAPTIVEAIRE FOR PROPER LEAK TESTING METHODS.

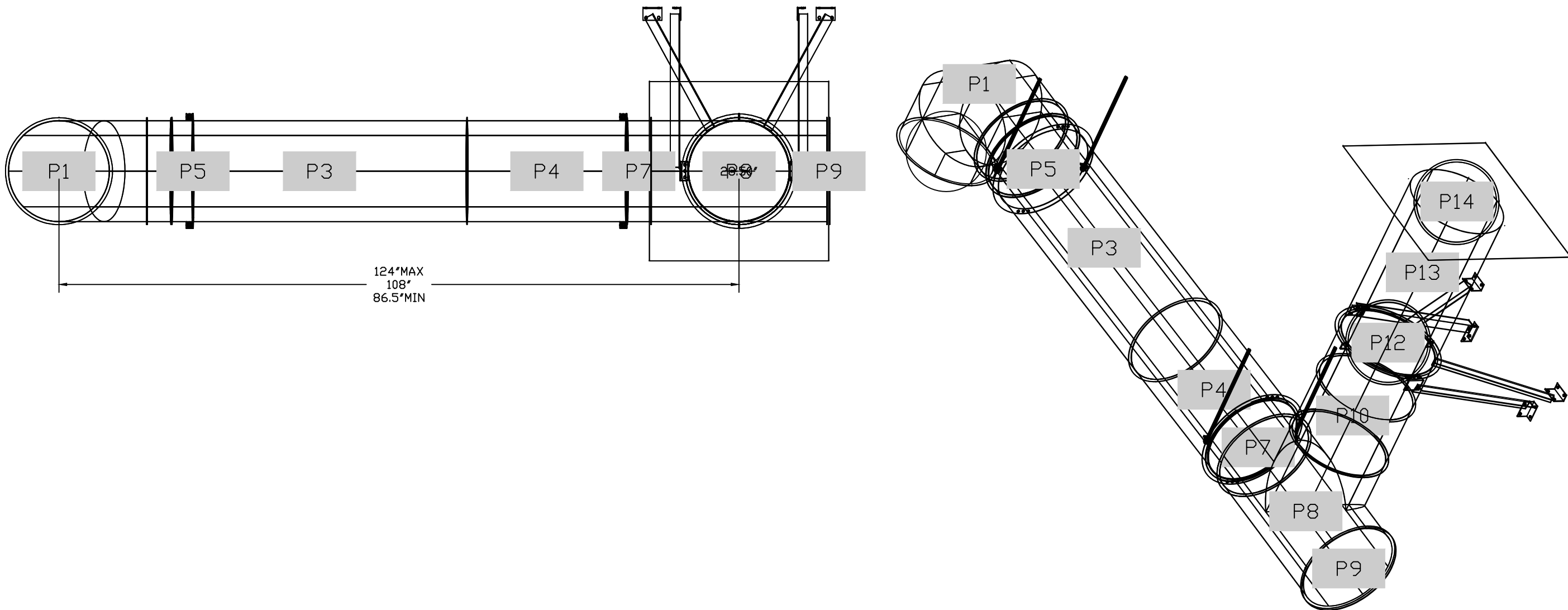
DUCTWORK #1 FRONT VIEW

DUCTWORK #1 SIDE VIEW



DUCTWORK #1 TOP VIEW

DUCTWORK #1 SE VIEW



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DESCRIPTION	DATE

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2050 NW Lowenstein Dr,
Lee’s Summit, MO, 64081

DATE: 2/9/2021
DWG.#: 4664448
DRAWN BY: MAP-52
SCALE: 3/4" = 1'-0"
MASTER DRAWING

SHEET NO. 10

CONSULTANT:

SEAL/SIGNATURE:

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DUCTWORK SERVING
EQUIPMENT FURNISHED BY
CAPTIVE AIRE

PROJECT:

asian grill
STREETS OF
WEST PRYOR

2050 NW LOWENSTEIN DR.
SUITE E
LEE'S SUMMIT, MO 64081

BIBIBOP STORE NO.: B0057
BIBIBOP P.O.: TBD

PROJECT NO.: 0421995-101

DRAWN BY:

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ISSUES AND REVISIONS:

PERMIT ISSUE 01.25.2021

REVISION 1 02.10.2021

SHEET TITLE:

HOOD
PLANS

H110

FOR REFERENCE ONLY

DUCTWORK #2 PARTS – JOB#4664448

TAG	PART #	CFM	SP	WEIGHT	VELOCITY	QTY	DESCRIPTION
P1	DW1229LT	950	-0.0074	11.69	1209.58	1	SINGLE WALL DUCT 12" DIAMETER, 29' LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P2	DW1248AJDKIT	950	-0.0056	22.74	1209.58	1	SINGLE WALL DUCT ADJUSTABLE, 12" DIAMETER, 47.5' LONG, FLANGE AT ONE END WITH A 12" ADJUSTABLE COLLAR – STAINLESS STEEL.
P3	DW12VESU18			19.78		1	DUCT VERTICAL SUPPORT KIT, 12" DUCT, 18" CLEARANCE TO COMBUSTIBLES. PARTS ARE ZINC COATED. HARDWARE KIT #3 USED ON DWXXVESU & DWXXVESU18.
P4 ASSEMBLED W/P5	DW1229LT	950	-0.007	11.69	1209.58	1	SINGLE WALL DUCT 12" DIAMETER, 29' LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P5 ASSEMBLED W/P4 SYSTEM AT P5	DW1912TP	950		6.27	1209.58	1	DUCT TO CURB TRANSITION, 19-1/2" CURB TO 12" DUCT, 16 GA ALUMINIZED STEEL. USED ON BDU11, DU25, 30 & 33.
	3M-2000PLUS		-0.126	0.00		1	DUCT – 3M FIRE BARRIER 2000 PLUS SILICONE – USED AS SEALANT TO SEAL DUCT JOINTS.
	DW12CLASY			0.94		3	DUCT "V" CLAMP WITH NEW DESIGN 14 GA BRACKETS, 12" DUCT, ASSEMBLY.
TOTAL WEIGHT				75.79			

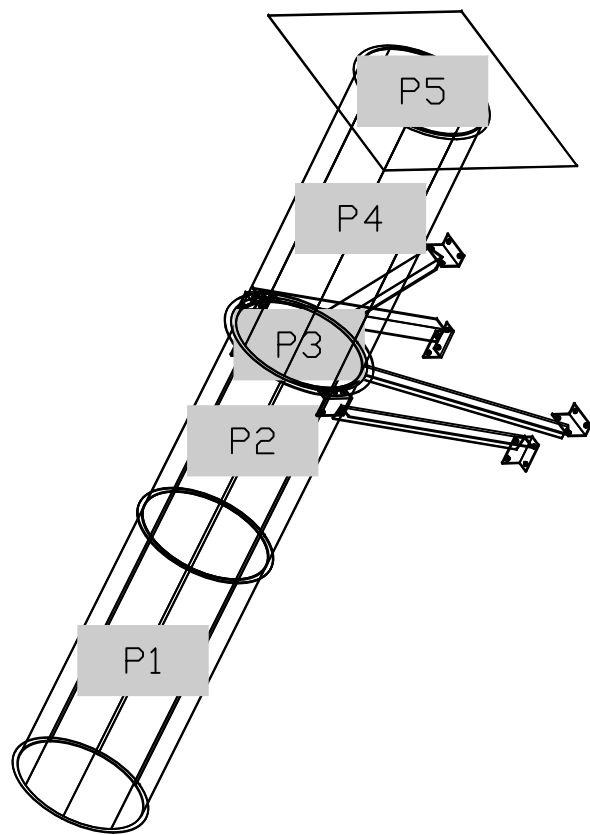
SINGLE WALL FACTORY BUILT DUCTWORK

- ALL DUCTWORK IS REQUIRED TO BE INSTALLED WITH THE MAXIMUM SUPPORT SPACING LISTED BELOW.
- FOR A COMPLETE LIST OF APPROVED SUPPORT METHODS, SEE THE INSTALLATION AND OPERATION MANUAL.
- DUCTWORK SHALL SLOPE NOT LESS THAN 1/16" PER LINEAR FOOT TOWARDS THE HOOD OR AN APPROVED GREASE COLLECTION RESERVOIR.
- WHERE HORIZONTAL DUCTS EXCEED 75 FEET IN LENGTH, THE SLOPE SHALL NOT BE LESS THAN 3/16" PER LINEAR FOOT.

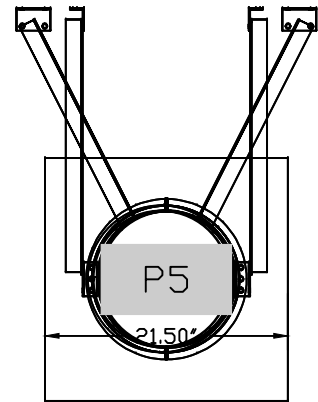
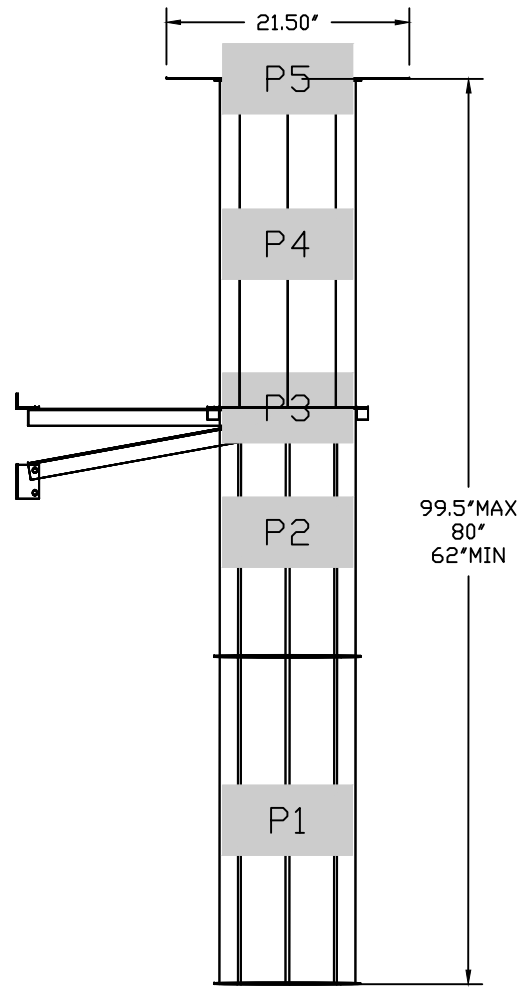
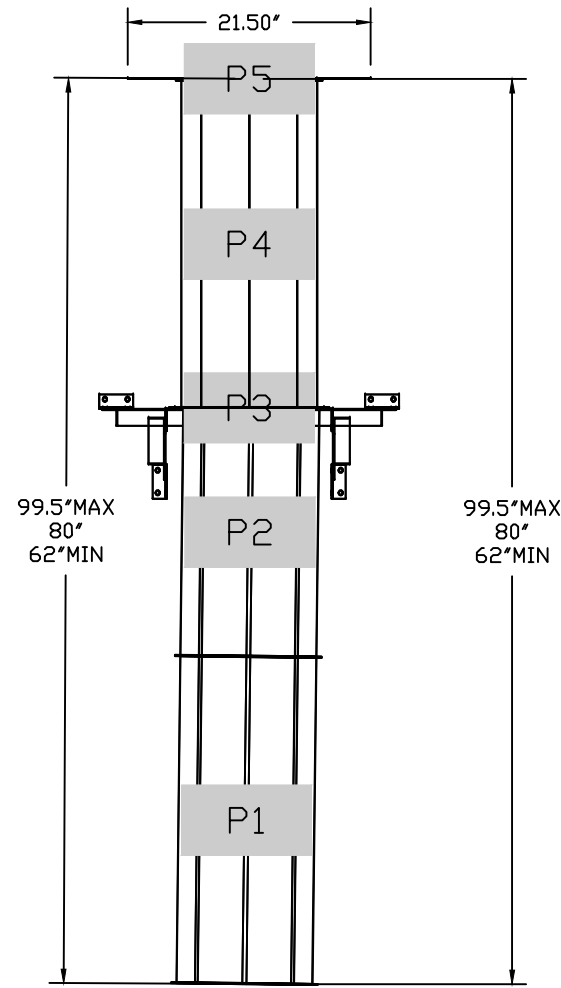
DUCT DIAMETER	HORIZONTAL SUPPORT (FT)	VERTICAL WALL SUPPORT (FT)	VERTICAL CURB SUPPORT (FT)
5'	10'	10'	24'
6'	10'	10'	24'
7'	10'	10'	24'
8'	10'	10'	24'
10'	10'	10'	24'
12'	10'	10'	24'
14'	10'	10'	24'
16'	10'	10'	24'
18'	10'	10'	24'
20'	10'	10'	24'
22'	10'	10'	24'
24'	10'	10'	24'
26'	10'	10'	24'
28'	10'	10'	24'
30'	10'	10'	24'
32'	10'	10'	24'
34'	10'	10'	24'
36'	10'	10'	24'

DO NOT LEAK TEST USING SMOKE BOMBS CONTAINING CHLORINES/CHLORIDES. CONSULT WITH CAPTIVEAIRE FOR PROPER LEAK TESTING METHODS.

DUCTWORK #2 SE VIEW



DUCTWORK #2 FRONT VIEW DUCTWORK #2 SIDE VIEW DUCTWORK #2 TOP VIEW



REVISIONS	
DESCRIPTION	DATE:



Bibibop - Streets Of West Pryor
2050 NW Lowenstein Dr.,
Lee's Summit, MO, 64081

DATE: 2/9/2021

DWG.#:
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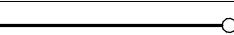
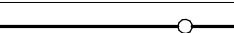
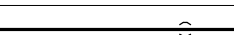











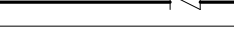
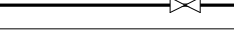
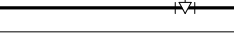


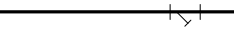



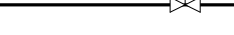


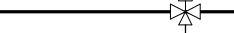



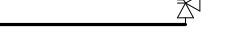

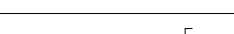

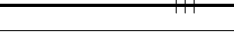
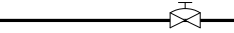


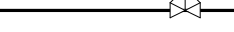




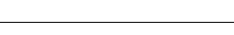




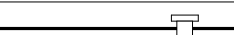






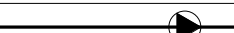
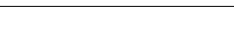

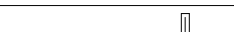


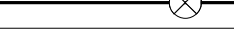




REVISION 1 02.10.2021

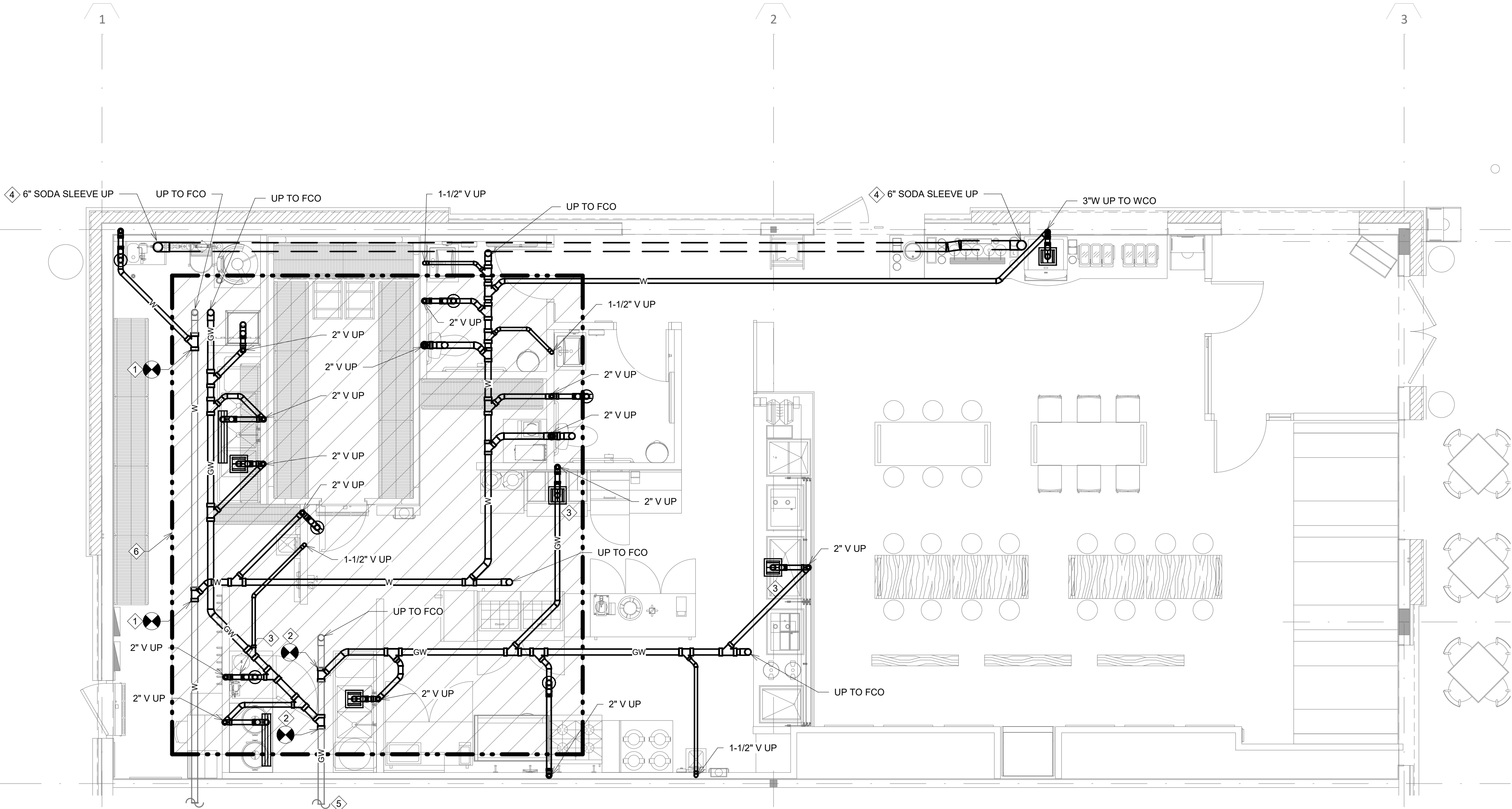
SHEET TITLE:

HOOD
PLANS

H111

FOR REFERENCE ONLY

PLUMBING SYMBOLS LEGEND			
PLUMBING		PLUMBING /PIPING	
— AV ———	ACID VENT BELOW GRADE		ELBOW DOWN
— AV ———	ACID VENT ABOVE GRADE		PIPE CAP
— AW ———	ACID WASTE BELOW GRADE		ELBOW UP
— AW ———	ACID WASTE ABOVE GRADE		TEE, OUTLET UP
— DI ———	DEIONIZED WATER		TEE, OUTLET DOWN
— CW ———	DOMESTIC COLD WATER		CONNECTION, BOTTOM
— FW ———	FILTERED WATER		CONNECTION, TOP
— FW-X ———	FILTERED WATER - SCALE REDUCED		ECCENTRIC REDUCER
— GW ———	GREASE WASTE		CONCENTRIC REDUCER
— HW ———	DOMESTIC HOT WATER		FLEXIBLE CONNECTION
— 140 ———	DOMESTIC HOT WATER (TEMP. INDICATED)		EXPANSION JOINT
— RHW ———	DOMESTIC RECIRC. HOT WATER		PIPE ANCHOR
— HARD ———	HARD COLD WATER		ALIGNMENT GUIDE
— NPCW ———	NON-POTABLE COLD WATER		CHECK VALVE
— NPHW ———	NON-POTABLE HOT WATER		SHUTOFF VALVE
— OSD ———	OVERFLOW STORM DRAIN BELOW GRADE		PLUG VALVE
— OSD ———	OVERFLOW STORM DRAIN ABOVE GRADE		COMBINATION BALANCE VALVE AND FLOW METER
— RO ———	REVERSE OSMOSIS WATER		STRAINER
— V ———	SANITARY VENT BELOW GRADE		STRAINER W/BLOWDOWN CAP AND VALVE
— V ———	SANITARY VENT ABOVE GRADE		PRESSURE REDUCING VALVE (SETTING AS NOTED, PSI)
— W ———	SANITARY WASTE		AUTOMATIC CONTROL VALVE, 2-WAY
— SS ———	SANITARY SEWER		AUTOMATIC CONTROL VALVE, 3-WAY
— SDT ———	SOIL DRAINAGE TILE		AUTOMATIC AIR VENT
— SOFT ———	SOFTENED COLD WATER		MANUAL AIR VENT
— SHW ———	SOFTENED HOT WATER		PRESSURE RELIEF/SAFETY VALVES(SETTING AS NOTED, PSI)
— TW ———	TEMPERED WATER		DRAIN VALVE
— SD ———	STORM DRAIN BELOW GRADE		BALL VALVE
— SD ———	STORM DRAIN ABOVE GRADE		BUTTERFLY VALVE
— WW ———	WELL WATER		DIAPHRAGM
— ———	EXISTING PLUMBING TO REMAIN		GLOBE ANGLE VALVE
-----	EXISTING PLUMBING TO BE REMOVED		O. S. & Y. VALVE
MECHANICAL PIPING			REDUCED PRESSURE ZONE BACK FLOW PREVENTER
— BF ———	BOILER FEED		SOLENOID VALVE
— CWS ———	CHILLED WATER SUPPLY		FLOW LIMITING VALVE
— CWR ———	CHILLED WATER RETURN		REFRIGERANT SIGHT GLASS
— 10#A ———	COMPRESSED AIR (PSI INDICATED)		GLOBE VALVE
— CD ———	CONDENSATE DRAIN		GAS PRESSURE REGULATOR VALVE
— CS ———	CONDENSER WATER SUPPLY		BACKWATER VALVE
— CR ———	CONDENSER WATER RETURN		REFRIGERANT DRYER
— FOS ———	FUEL OIL SUPPLY		FLOW DIRECTION
— FOR ———	FUEL OIL RETURN		FLOW DIRECTION W/PITCH
— FOV ———	FUEL OIL VENT		DUPLEX STRAINER
— FOF ———	FUEL OIL FILL		PIPE UNION
— GS ———	GLYCOL SUPPLY		PIPE FLANGE
— GR ———	GLYCOL RETURN		PUMP
— HRS ———	HEAT RECOVERY SUPPLY		PRESSURE GAUGE W/PIGTAIL & PETCOCK
— HRR ———	HEAT RECOVERY RETURN		THERMOMETER
— HWS ———	HEATING WATER SUPPLY		PRESSURE/TEMPERATURE TEST PORT
— HWR ———	HEATING WATER RETURN		STEAM TRAP (TYPE INDICATED)
— LV ———	LABORATORY VACUUM		FLOW MEASURING STATION (FLOW INDICATED)
— LA ———	LABORATORY AIR		FLOW SWITCH
— LPG ———	LIQUIFIED PETROLEUM GAS		PRESSURE SWITCH
— 2#G ———	NATURAL GAS (PSI INDICATED)		SHOCK ABSORBER
— PV ———	PLANT VACUUM		GAS COCK VALVE
— PC ———	PUMPED CONDENSATE		ELBOW
— RADS ———	RADIATION WATER SUPPLY		TEE
— RADR ———	RADIATION WATER RETURN		FLOOR DRAIN
— RL ———	REFRIGERANT LIQUID		FLOOR SINK
— RS ———	REFRIGERANT SUCTION		WALL HYDRANT
— RHG ———	REFRIGERANT HOT GAS BYPASS		HOSE BIBB
— RHS ———	REHEAT WATER SUPPLY		CLEANOUT
— RHR ———	REHEAT WATER RETURN		WALL CLEANOUT
— RRS ———	REMOTE RADIATOR SUPPLY		ROOF DRAIN
— RRR ———	REMOTE RADIATOR RETURN		DRAIN ABOVE
— SHWS ———	SECONDARY HEATING WATER SUPPLY		CATCH BASIN
— SHWR ———	SECONDARY HEATING WATER RETURN		MANHOLE
— SMS ———	SNOW MELT SUPPLY		POINT OF CONNECTION, NEW TO EXISTING
— SMR ———	SNOW MELT RETURN		POINT OF DISCONNECTION
— 10#STM ———	STEAM SUPPLY (PSI INDICATED)		
— 10#R ———	STEAM RETURN (PSI INDICATED)		
— ———	EXISTING PIPING TO REMAIN		
-----	EXISTING PIPING TO BE REMOVED		



1 UNDERFLOOR PLUMBING PLAN
1/4" = 1'-0"

GENERAL NOTES:

- A. SEE SHEETS P101 AND P110 FOR PIPING CONTINUATION AND P110 FOR GENERAL NOTES.
- B. COORDINATE LOCATIONS OF FLOOR PENETRATIONS WITH SHEET A110.

KEY NOTES:

- 1 EXTEND SANITARY PIPING AND CONNECT TO EXISTING SANITARY PIPING BELOW FLOOR. EXISTING WASTE PIPING LOCATION(S), INVERT, AND FLOW DIRECTION TO BE VERIFIED IN FIELD PRIOR TO START OF WORK.
- 2 EXTEND GREASE WASTE PIPING AND CONNECT TO EXISTING GREASE WASTE PIPING BELOW FLOOR. EXISTING PIPING LOCATION(S), INVERT, AND FLOW DIRECTION TO BE VERIFIED IN FIELD PRIOR TO START OF WORK.
- 3 WASTE LINE 15' DOWNSTREAM OF FIXTURE INDICATED SHALL BE CAST IRON FOR HIGH TEMPERATURE WASTE DISCHARGE. REPLACE EXISTING WASTE PIPING AS REQUIRED TO ACHIEVE DISTANCE NECESSARY.
- 4 PROVIDE 6" PVC PIPE SLEEVE FOR SODA SYSTEM. SLEEVE SHALL BE SEALED WATER TIGHT. SEE DETAIL 5/P210. COORDINATE EXACT LOCATION WITH KITCHEN EQUIPMENT PLANS AND ARCHITECTURAL PLANS. ALL ELBOWS SHALL BE LONG SWEEP.
- 5 EXISTING GREASE WASTE PIPING TO LANDLORD PROVIDED GREASE INTERCEPTOR.
- 6 AREA INDICATED IS EXISTING SLAB LEAVE-OUT. SHOWN FOR REFERENCE ONLY.

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SEAL/SIGNATURE:



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BIBIBOP
asian grill

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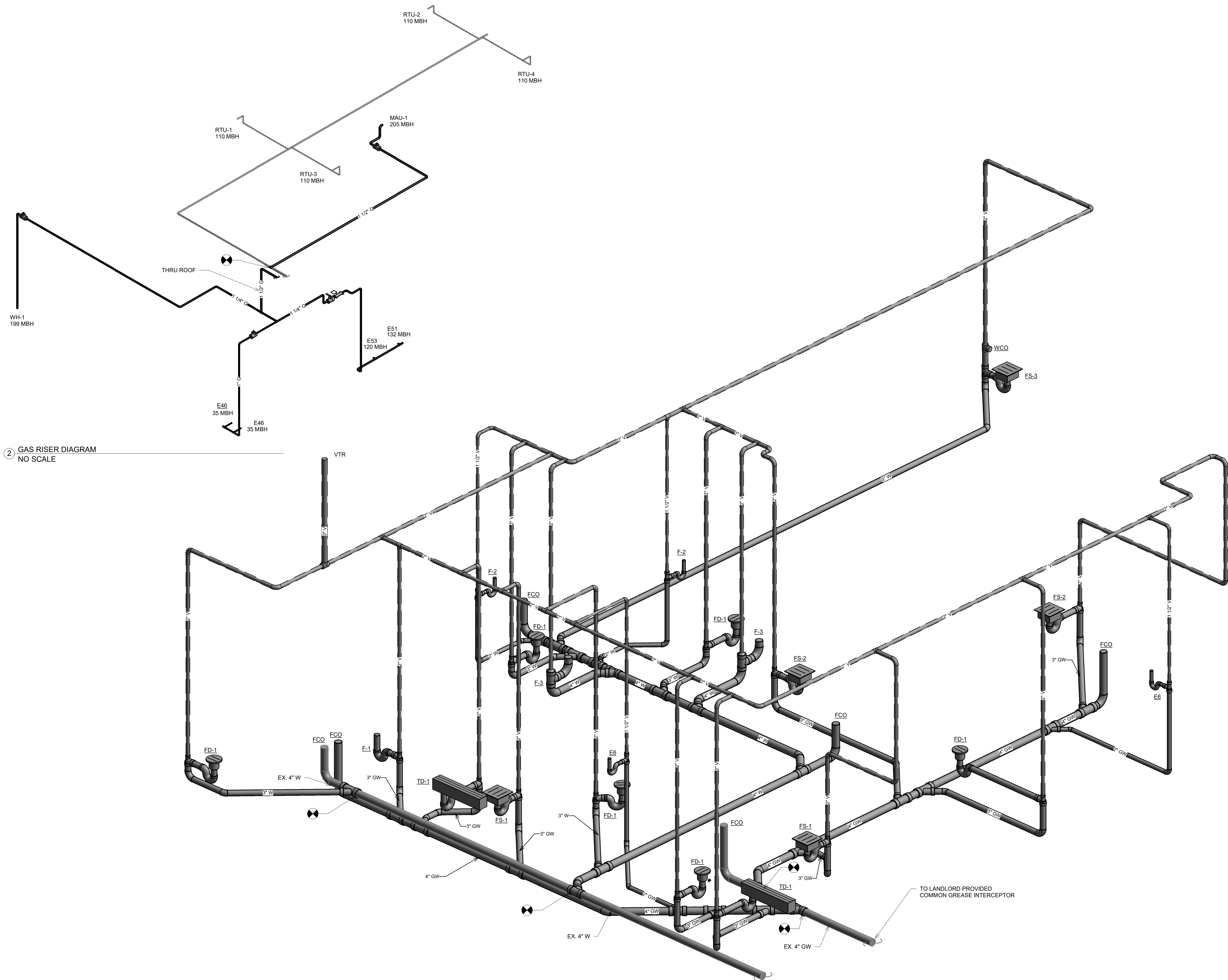
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SHEET TITLE:
UNDERFLOOR PLUMBING
PLAN

P100



② GAS RISER DIAGRAM
NO SCALE

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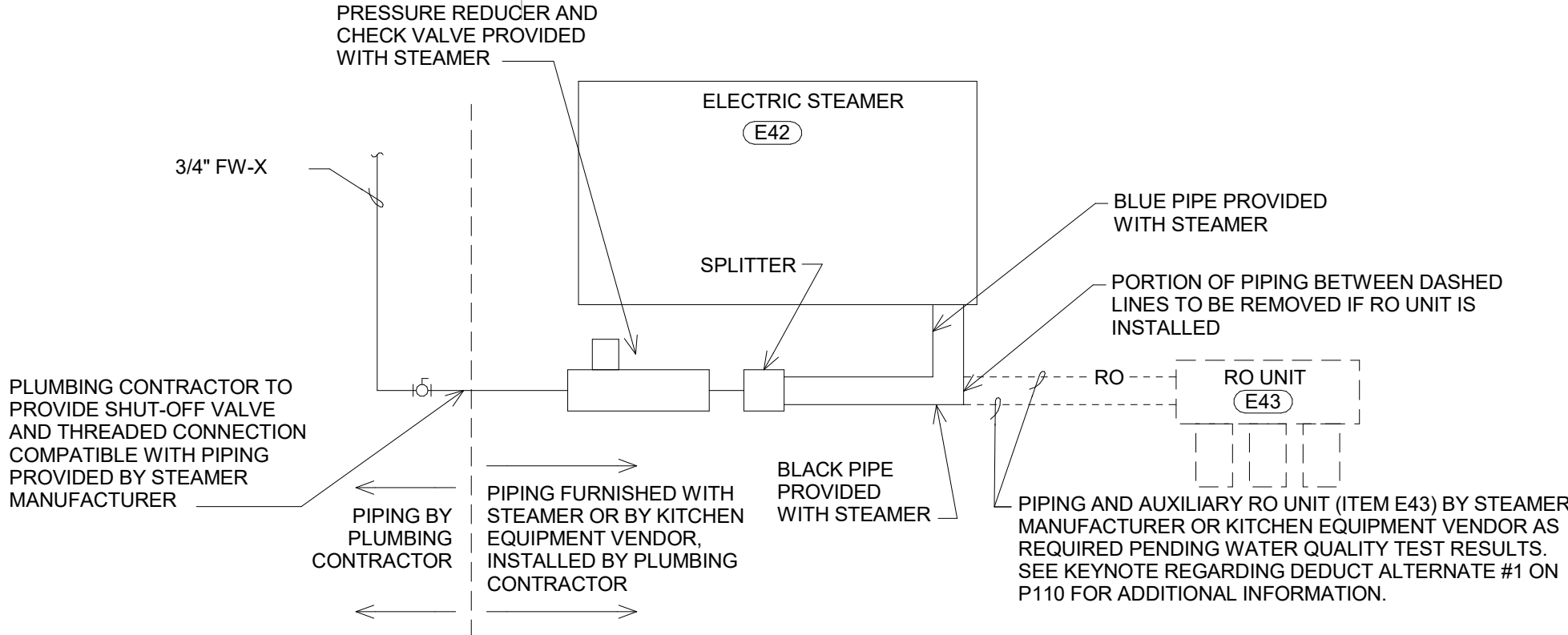
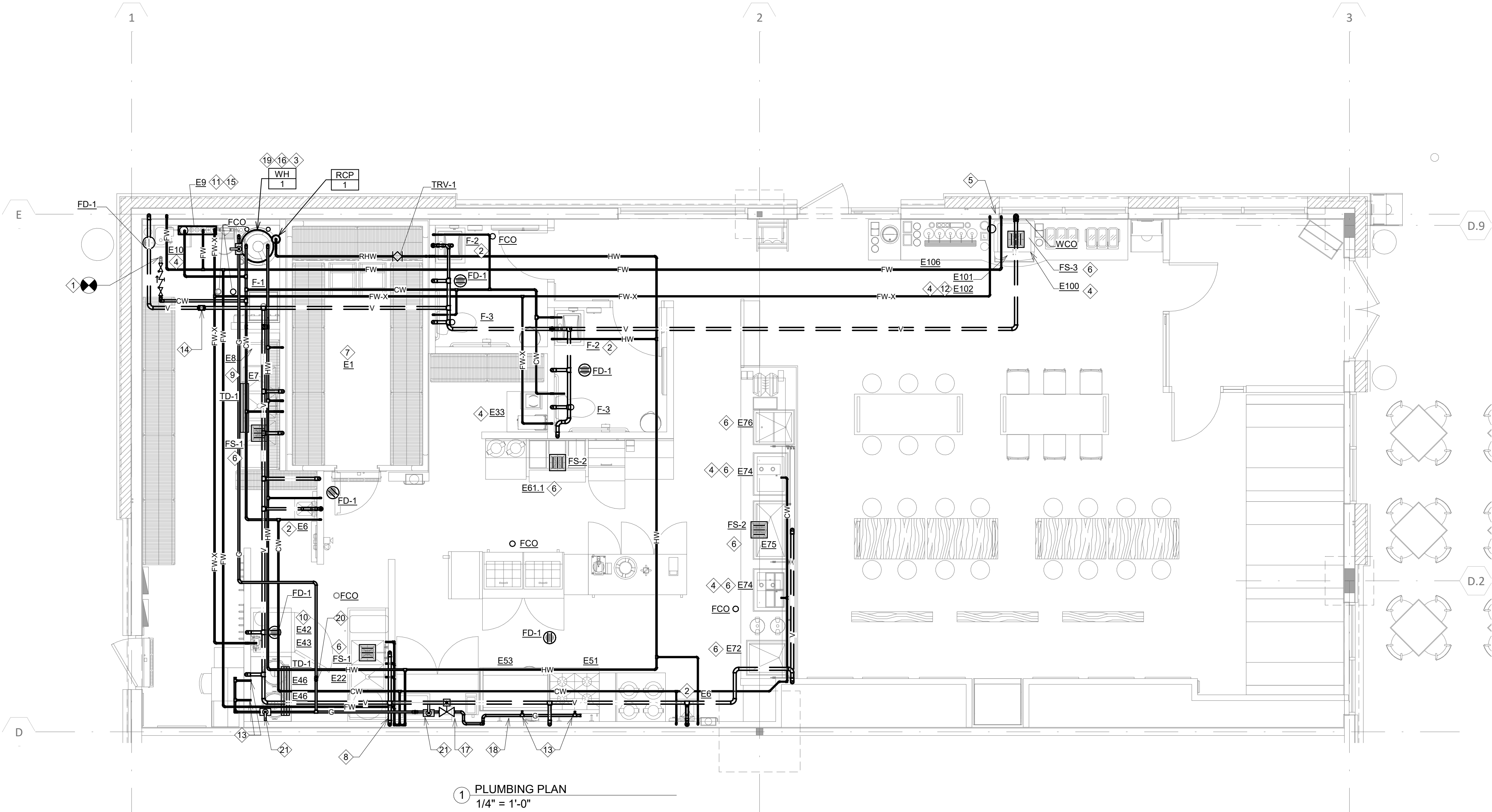
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SHEET TITLE:
**WASTE, VENT, & GAS
RISER DIAGRAMS**

P101

GENERAL NOTES:

- A. THE WORK SHALL BE EXECUTED IN STRICT CONFORMITY WITH BASE BUILDING SPECIFICATION AND WITH THE LATEST EDITION OF THE PREVAILING STATE PLUMBING AND BUILDING CODES AND ALL LOCAL REGULATIONS THAT MAY APPLY. IN CASE OF CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND A GOVERNING CODE OR ORDINANCE, THE MORE STRINGENT STANDARD SHALL APPLY.
- B. CONTRACTOR IS RESPONSIBLE FOR HAVING A THOROUGH KNOWLEDGE OF ALL DRAWINGS, SPECIFICATIONS AND EXISTING CONDITIONS FOR BIDDING PURPOSES. FAILURE TO ACQUAINT THEMSELVES WITH THIS KNOWLEDGE DOES NOT RELIEVE THE RESPONSIBILITY OF PERFORMING THEIR WORK.
- C. NOT ALL EXISTING EQUIPMENT, PIPING, DUCTWORK, ETC. IS SHOWN ON THE PLANS. ALL EXISTING EQUIPMENT AND PIPING SHOWN DOES NOT REFLECT ALL OFFSETS, LENGTHS AND LOCATIONS. CONTRACTOR SHALL FIELD VERIFY ALL EQUIPMENT AND PIPING TO BE REMOVED AND/OR CONNECTED TO PRIOR TO BID.
- D. FIELD VERIFY LOCATIONS AND QUANTITY OF ALL EXISTING EQUIPMENT, FIXTURES, DUCTWORK AND PIPING NECESSARY TO COMPLETE SCOPE OF WORK.
- E. CONCRETE CUTS SHALL BE STRAIGHT AND CLEAN. REPLACE SLAB WITH CONCRETE FLUSH AND SMOOTH WITH ADJACENT.
- F. WASTE & VENT PIPING BELOW GRADE AND THRU FLOOR SHALL BE 2" MINIMUM.
- G. FIELD VERIFY SIZE, LOCATION & INVERT ELEVATION OF EXISTING SANITARY SEWER.
- H. PITCH ALL UNDERFLOOR SANITARY WASTE PIPING 4" AND GREATER AT 1/8" PER FOOT. ALL OTHER BELOW GRADE PIPING SLOPED AT 1/4" PER FOOT.
- I. CLEANOUTS MUST BE INSTALLED WHERE SHOWN ON PLANS AND ADDITIONAL CLEANOUTS WHERE REQUIRED BY CODE.
- J. WASTE AND VENT PIPING IN PLENUM CEILING SPACES TO BE CAST IRON NO HUB. SEE SPECIFICATIONS.
- K. COORDINATE ROUTING OF WATER, VENT, WASTE AND STORM PIPING WITH STRUCTURE, CEILING ELEVATION, ELECTRICAL SWITCHGEAR, DUCTWORK, LIGHTS, SPRINKLER PIPING AND ALL OTHER TRADES.
- L. COORDINATE KITCHEN ROUGH-IN REQUIREMENTS WITH KITCHEN EQUIPMENT DRAWINGS AND SCHEDULES.
- M. ALL HUB DRAINS AND INDIRECT DRAINS SHALL BE MOUNTED IN EXPOSED READILY ACCESSIBLE LOCATIONS. COORDINATE FINAL DRAIN LOCATIONS WITH KITCHEN EQUIPMENT.
- N. MATERIAL EXPOSED WITHIN RETURN AIR PLENUM CEILINGS SHALL COMPLY WITH IMC SECTION 602.2.
- O. PLUMBING SUBCONTRACTOR SHALL BE RESPONSIBLE FOR TESTED & RATED FIRE STOP SYSTEMS FOR ALL THRU-PENETRATION OF WALLS, FLOORS & ROOF ASSEMBLIES RESULTING FROM PIPING & OTHER WORK UNDER HIS CONTRACT. REFER TO FIRE-STOPPING SPEC SECTION FOR REQUIREMENTS.
- P. PLUMBING CONTRACTOR SHALL ENSURE THAT ALL EQUIPMENT AND PIPING NOT BEING USED IS FULLY REMOVED AND NOT ABANDONED. COORDINATE REQUIREMENTS WITH THE GENERAL CONTRACTOR AND LANDLORD. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION. VERIFY SCOPE OF WORK WITH THE GENERAL CONTRACTOR PRIOR TO BID AND INCLUDE ALL COSTS IN BID AS DIRECTED BY THE GENERAL CONTRACTOR.
- Q. ALL INSTALLATIONS, EQUIPMENT AND MATERIAL SHALL COMPLY WITH ALL APPLICABLE LANDLORD REQUIREMENTS.
- R. PRIOR TO BID, THE CONTRACTOR SHALL REVIEW THE MECHANICAL, ELECTRICAL AND KITCHEN EQUIPMENT DRAWINGS. THE CONTRACTOR SHALL INCLUDE IN HIS BID ALL RELEVANT WORK IN THE ENTIRE SET OF DOCUMENTS AND REPORT ALL DISCREPANCIES BETWEEN THESE DRAWINGS TO THE ENGINEER PRIOR TO BIDDING FOR CLARIFICATION. IF DISCREPANCIES REMAIN UNRESOLVED DUE TO A SHORT TIME FRAME, THE CONTRACTOR SHALL INCLUDE THE MOST WORK AND THE HIGHER COSTS IN THE BID. SOLUTIONS TO UNREPORTED DISCREPANCIES WILL BE DETERMINED BY THE ARCHITECT/ENGINEER, WITH NO ADDITIONAL COMPENSATION DUE TO THE CONTRACTOR.
- S. INSULATE ALL HOT, COLD, RECIRCULATION, AND INTERIOR CONDENSATE PIPING. SEE PLUMBING SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- T. CONTRACTOR IS RESPONSIBLE FOR SCOPING AND RECORDING THE SANITARY MAIN FROM LEASE LINE TO LEASE LINE PRIOR TO AND AFTER ALL SANITARY TIE-INS ARE COMPLETED. CONTRACTOR SHALL PROVIDE LANDLORD WITH COPIES OF BOTH RECORDINGS ONCE TIE-INS ARE COMPLETED.
- U. PROVIDE STAINLESS STEEL ESCUTCHEON FOR ALL PIPE PENETRATIONS AT WALLS AND CEILINGS.



NOTE:
THIS DETAIL IS SCHEMATIC IN NATURE AND FOR REFERENCE ONLY. MANUFACTURER INSTALLATION REQUIREMENTS ARE SUBJECT TO CHANGE. THEREFORE PRIOR TO INSTALLATION, CONTRACTOR SHALL REVIEW CURRENT MANUFACTURER INSTALLATION INSTRUCTIONS AND ADJUST AS REQUIRED FOR COMPLIANCE WITH INSTRUCTIONS AND ALL APPLICABLE CODE REQUIREMENTS. COORDINATE WITH BIBIBOP REPRESENTATIVE ANY DISCREPANCIES OR CHANGES.

GAS PIPING GENERAL NOTES

- A. ALL EXPOSED PIPING SHALL BE PAINTED WITH A RUST INHIBITING PAINT.
- B. GAS TEST PRESSURE SHALL BE MEASURED WITH A CERTIFIED CALIBRATED (DIAPHRAGM) GAUGE OR MERCURY GAUGE (MANOMETER). SPRING GAUGES SHALL NOT BE USED.
- C. ALL GAS PIPING SHALL BE TESTED AT A PRESSURE OF 10 PSIG OR MINIMUM SIX INCHES (6") OF MERCURY.
- D. PROVIDE ADDITIONAL GAS PRESSURE REGULATORS AT EQUIPMENT CONNECTIONS AS REQUIRED. VERIFY WITH EQUIPMENT MANUFACTURER.
- E. SEE MECHANICAL SHEET FOR ADDITIONAL GAS PIPING INFORMATION, AND SHEET P300 FOR GAS PIPING SPECIFICATIONS.

GAS LOAD CALCULATIONS

FIXTURE	LOAD (CFH)	NOTES
WH-1	199	1
MAU-1	205	1
RICE COOKER (ITEM E46) 35 MBH X 2 =	70	1
GRIDDLE (ITEM E53)	120	1
RANGE (ITEM E51)	132	1
RTU-1	110	1
RTU-2	110	1
RTU-3	110	1
RTU-4	110	1
TOTAL	1166	

NOTES:

1. PIPING SIZED PER TABLE 402.4(2) OF THE 2018 INTERNATIONAL FUEL AND GAS CODE BASED ON 125 FT OF EQUIVALENT PIPE LENGTH AT 0.5" WC. NOTIFY PROJECT MANAGER IMMEDIATELY WITH ANY DISCREPANCIES.

KEY NOTES:

1. CONNECT NEW 1-1/2" CW TO EXISTING CW SERVICE. ADJUST PIPING AND RELOCATED EXISTING BACKFLOW PREVENTER AS REQUIRED TO NEAREST WALL TO AVOID CONFLICTS WITH NEW SHELVING. COORDINATE ROUTING IN FIELD.
2. 1/2" CW AND 1/2" HW TO HAND SINK/LAVATORY. PROVIDE WATTS MODEL LFUSG-B (OR APPROVED EQUAL) THERMOSTATIC MIXING VALVE IN ACCESSIBLE LOCATION. VALVE SHALL HAVE ASSE 1070 LISTING AND BE SET TO MAX. 110°F. SEE DETAIL ON 2/P210.
3. NEW WATER HEATER TO BE INSTALLED ON CONTRACTOR PROVIDED 3" HOUSEKEEPING PAD ON FLOOR. VERIFY EXACT LOCATION IN FIELD.
4. PROVIDE BACKFLOW DEVICE WITH ASSE 1022 LISTING OR SIMILAR AS REQUIRED BY AHJ. EXTEND DRAIN FROM BACKFLOW DEVICE TO NEAREST DRAIN.
5. PROVIDE POWDER COATED OUTLET BOX WITH 1/2" 1/4-TURN BALL VALVE. COORDINATE WITH KITCHEN EQUIPMENT SUPPLIER.
6. ROUTE THE KITCHEN EQUIPMENT INDIRECT WASTE PIPE TO THE NEAREST FLOOR SINK/FLOOR DRAIN. VERIFY EQUIPMENT INDIRECT WASTE SIZE WITH THE EQUIPMENT PROVIDER. TERMINATE INDIRECT WASTE PIPING WITH CODE APPROVED AIR GAP.
7. EXTEND CONDENSATE PIPING FROM EVAPORATOR AND TERMINATE AT FLOOR DRAIN WITH AIR GAP. ROUTE PIPING ALONG INTERIOR OF COOLER AND SEAL ALL PENETRATIONS. SEE DETAIL ON 9/P210.
8. CW, HW, FW, AND VENT PIPING ROUTED HORIZONTALLY IN IN PARTIAL HEIGHT WALL TO FULL HEIGHT WALL, THEN UP ABOVE CEILING AND CONTINUE AS INDICATED. SEE RISER DIAGRAMS.
9. EXTEND 3/4" HW AND CW PIPING TO 3-COMP SINK AS INDICATED, AND INDIRECT WASTE PIPING PER DETAIL 7/P210.
10. 3/4" FW-X DOWN WALL WITH VALVE FOR STEAMER CONNECTION. SEE DETAIL 2/P110 FOR REFERENCE DETAIL SHOWING PIPING SCHEMATIC FOR STEAMER. GENERAL CONTRACTOR TO COORDINATE WITH KITCHEN EQUIPMENT VENDOR TO SUBMIT FILTERED WATER SAMPLE TO STEAMER VENDOR TO DETERMINE IF AUXILIARY RO SYSTEM IS NECESSARY. IF RO SYSTEM IS REQUIRED, ALL RO PIPING AND FITTINGS TO BE APPROVED MATERIAL. PROVIDE DEDUCT ALTERNATE #1 IF AUXILIARY RO SYSTEM IS NOT REQUIRED.
11. WATER FILTER SYSTEM. SEE DETAIL 1/P210. COORDINATE INSTALLATION WITH MANUFACTURER AND KITCHEN EQUIPMENT CONTRACTOR.

KEY NOTES:

12. INLINE ICE MACHINE WATER FILTER UPSTREAM OF BACKFLOW PREVENTER. FILTER REQUIRES POWER CONNECTION. COORDINATE OUTLET LOCATION WITH ELECTRICAL CONTRACTOR.
13. SEE DETAIL 3/P210 FOR FLEXIBLE HOSE AND QUICK DISCONNECT AT KITCHEN EQUIPMENT INDICATED.
14. EXTEND 3" VENT THRU ROOF. ENSURE MIN. CODE REQUIRED DISTANCE OF 10'-0" FROM ALL FRESH AIR INTAKES.
15. BEFORE WATER FILTER (ITEM E9) HAS BEEN INSTALLED, CONTRACTOR SHALL VERIFY INLET PRESSURE OF CW. IF PRESSURE IS AT OR BELOW 40 PSI, CONTRACTOR SHALL PROVIDE LITTLE GIANT MODEL INLINE 400 BOOSTER PUMP, WITH EXPANSION TANK, CHECK VALVES, BALL VALVES, ETC. PER MANUFACTURER INSTALLATION INSTRUCTIONS UPSTREAM OF WATER FILTER. PROVIDE PRV AS REQUIRED, AND SET TO ACHIEVE 35 PSI AT FURTHEST FW OR FW-X OUTLET. NOTIFY PROJECT MANAGER AND ARCHITECT WITH ANY DISCREPANCIES. THIS WORK SHALL BE ADD ALTERNATE #2.
16. PROVIDE BALL VALVE, DIRT LEG, UNION AND PRESSURE REGULATOR (AS REQUIRED) FOR WATER HEATER GAS CONNECTION.
17. INSTALL GAS SOLENOID SHUT-OFF VALVE FURNISHED BY KITCHEN EQUIPMENT CONTRACTOR WITH MANUAL RESET BELOW THE CEILING IN AN ACCESSIBLE LOCATION. COORDINATE WITH BIBIBOP CONSTRUCTION MANAGER AND LOCAL AHJ.
18. EXTEND GAS SUPPLY BEHIND COOK LINE WALL. GAS PIPING TO RUN ALONG BACK SIDE OF COOK LINE WALL @ 14" A.F.F. EXTEND TO EQUIPMENT AS INDICATED.
19. EXTEND 4" PVC COMBUSTION AIR INTAKE AND FLUE PIPING UP THRU ROOF AND TERMINATE WITH MANUFACTURER APPROVED CONCENTRIC FITTING. MAINTAIN MIN. DISTANCE OF 10'-0" FROM ALL FRESH AIR INTAKES AND INSTALL PER MANUFACTURER INSTRUCTIONS.
20. NEW GAS PIPING UP THRU ROOF. SEE M110 FOR CONTINUATION, AND DETAIL 8/P210.
21. FURNISH AND INSTALL SHUTOFF VALVE IN GAS LINE TO EQUIPMENT LOCATED BELOW HOOD. VALVE TO BE LOCATED IN ACCESSIBLE LOCATION.

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SEAL/SIGNATURE:



PROJECT:

BIBIBOP
asian grill

STREETS OF
WEST PRYOR
2050 NW LOWENSTEIN DR.
SUITE E
LEE'S SUMMIT, MO 64081

BIBIBOP STORE NO.: B0057
BIBIBOP PO NO.: TBD

PROJECT NO.: 0421995-101

DRAWN BY: TAB

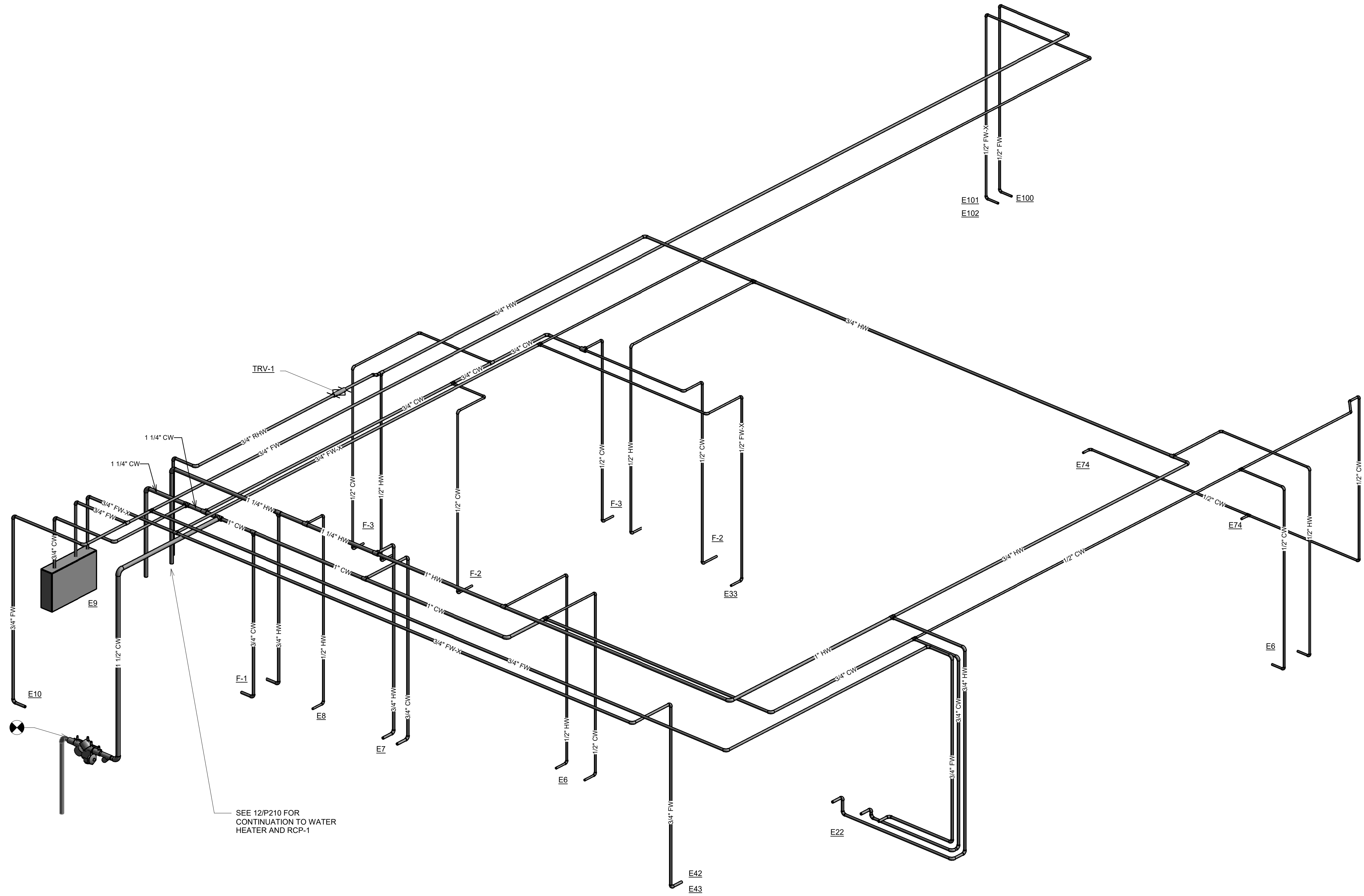
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ISSUES AND REVISIONS:

PERMIT ISSUE 01.25.2021

SHEET TITLE:
PLUMBING PLAN

P110



1 DOMESTIC WATER RISER DIAGRAM
NO SCALE

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ISSUES AND REVISIONS:

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SHEET TITLE:
PLUMBING SCHEDULES

P200

KITCHEN EQUIPMENT SCHEDULE (FURNISHED BY OTHERS, INSTALLED BY CONTRACTOR)

EQUIPMENT TAG	DESCRIPTION	CONNECTION SIZE									GAS (IN)	GAS (MBH)	MECHANICAL NOTES
		CW (IN)	HW (IN)	FW (IN)	FW-X (IN)	RO (IN)	INDIRECT WASTE (IN)	DIRECT WASTE (IN)	VENT (IN)				
E1	WALK-IN COOLER						3/4						1, 5
E6	HAND SINK W/ EYEWASH	1/2	1/2					1-1/2	1-1/2				2
E7	3-COMP. SINK	3/4	3/4				2						1, 6
E8	FUTURE DISHWASHER		1/2				1						1
E9	WATER FILTER SYSTEM	3/4		3/4	3/4								1, 7
E10	BAG-IN-BOX BEVERAGE STORAGE			3/4									3
E22	2-COMP. PREP SINK	3/4	3/4	3/4			2						1, 4
E33	TEA MAKER				1/2								3
E42	ELECTRIC STEAMER					3/4	1-1/2						1
E43	RO SYSTEM AND STORAGE TANK				3/4	3/4	1/2						1, 3
E46	RICE COOKER									3/4	35		8
E51	GAS RANGE									3/4	132		8
E53	GAS GRIDDLE									3/4	120		8
E61.1	HOT FOOD TABLE						1						1
E72	DROP-IN COLD WELL						1						1
E74	DROP-IN HOT WELL	1/2					1						1
E75	DROP-IN COLD WELL						1						1
E76	DROP-IN COLD PAN						1						1
E100	ICE & BEVERAGE DISPENSER			1/2			3/4						1, 3
E101	ICE MAKER				1/2		3/4						1, 3
E102	ANTIMICROBIAL ICE PROTECTION				1/2								
E106	DRAIN TRAY						3/4						1

- MECHANICAL NOTES:
- INDIRECT WASTE TO FLOOR SINK/FLOOR DRAIN - TERMINATE WITH AIR GAP.
 - ADD EYEWASH ATTACHMENT, FURNISHED BY KITCHEN EQUIPMENT VENDOR, INSTALLED BY CONTRACTOR.
 - PROVIDE ASSE 1022 BACKFLOW PREVENTER, OR AS REQUIRED BY LOCAL AHJ.
 - HW & CW TO LEFT FAUCET, FCW TO RIGHT FAUCET
 - SEE COOLER SHOP DRAWINGS AND DETAIL 9/P210
 - SEE DETAIL 7/P210
 - SEE DETAIL 1/P210
 - SEE DETAIL 3/P210

WATER HEATER SCHEDULE - GAS

EQUIPMENT TAG	WATER		GAS INPUT (MBH)	EFFICIENCY (%)	ELECTRICAL DATA	MANUFACTURER	MODEL NUMBER	MECHANICAL NOTES
	STORAGE CAPACITY (GAL)	RECOVERY RATE (GPH)						
WH 1	100	235	199	97	SEE ELEC.	AO SMITH	BTH-199A	1

- MECHANICAL NOTES:
- EQUAL BY BRADFORD WHITE, PVI, OR RHEEM ARE ACCEPTABLE.

DOMESTIC WATER PUMP SCHEDULE

EQUIPMENT TAG	APPLICATION	TYPE	GPM	DISCHARGE HEAD (FT)	RPM	BHP	SUCTION SIZE (IN)	DISCHARGE SIZE (IN)	MANUFACTURER	MODEL NUMBER	MECHANICAL NOTES
RCP 1	HOT WATER RECIRCULATION	INLINE		7	2800	1/40	1/2	1/2	BELL & GOSSETT	NBF-8S/LW	1,2,3,4

- MECHANICAL NOTES:
- LEAD-FREE BRONZE BODY
 - PROVIDE WITH AQUASTAT CONTROL AND TIME CLOCK
 - EQUAL BY TACO OR GRUNDFOS ARE ACCEPTABLE
 - SEE DETAIL 12/P210.

PLUMBING FIXTURE SCHEDULE

FIXTURE TAG	FIXTURE DESCRIPTION	FIXTURE	FAUCET	WASTE (IN)	VENT (IN)	CW (IN)	HW (IN)	MECHANICAL NOTES
F-1	SERVICE SINK	FIAT MODEL: MSB-2424	CHICAGO FAUCET MODEL: 540-LD897SGCCP	3	1-1/2	3/4	3/4	MOLDED STONE RESIN MOP SERVICE BASIN WITH 10" HIGH WALLS COMPLETE WITH STAINLESS STEEL STRAINER AND DRAIN FOR CAULKED CONNECTION WALL. MOUNTED FAUCET WITH CHECK VALVES TO PREVENT CROSSOVER BETWEEN HOT AND COLD. VACUUM BREAKER, SPOUT WITH 3/4" HOSE THREADS, INTEGRAL STOP ARMS, CHROME FINISH, AND WALL BRACE. COORDINATE MOUNTING HEIGHT WITH ARCHITECT. SEE DETAIL ON 6/P210.
F-2	LAVATORY	AMERICAN STANDARD MODEL 0643.001 "STUDIO"	AMERICAN STANDARD MODEL 2590.101 "STUDIO"	2	1-1/2	1/2	1/2	WHITE, RECTANGULAR, CERAMIC LAVATORY. BOWL OVERALL SIZE: 18"Wx12"Lx4.5"D, SINGLE CENTER HOLE, FRONT OVERFLOW. PROVIDE CHROME P-TRAP W/ CO PLUG & CLOSED CELL PVC INSULATED WASTE & SUPPLY PIPING COVERS W/ HINGED ACCESS
F-3	WATER CLOSET	AMERICAN STANDARD CHAMPION 4 MODEL: 2002.014/2002.804 5906.110	N/A	3	2	1/2		WHITE VITREOUS CHINA FLOOR SET FLUSH TANK ADA WATER CLOSET WITH ELONGATED BOWL, 16 GALLONS PER FLUSH, 3/8" ANGLE STOP & SOLID PLASTIC WHITE EXTRA HEAVY DUTY TOILET SEAT - AMERICAN STANDARD #5905.110 OR EQUAL. SIDE TRIP LEVER SHALL BE LOCATED ON THE OPEN SIDE OF THE TOILET AWAY FROM THE WALL OR OTHER OBSTRUCTION. SIDE TRIP LEVER SHALL BE LOCATED ON THE OPEN SIDE OF THE TOILET AWAY FROM THE WALL IN COMPLIANCE WITH ADA STANDARDS. (MODEL #2002.014 FOR LEFT SIDE TRIP LEVER; #2002.804 FOR RIGHT SIDE). CAULK FIXTURE TO FLOOR WITH CLEAR SILICONE.
FCO TRV-1	FLOOR CLEANOUT THERMOSTATIC RECIRCULATION VALVE	SIoux CHIEF MODEL:834-4DNR THERM-OMEGA-TECH, INC MODEL: CS-3/4-120	N/A N/A	4			3/4	FULLY ADJUSTABLE ROUND CLEANOUT WITH POLISHED CAST NICKEL RING & COVER INSTALL PER MANUFACTURER RECOMMENDATIONS
WCO	WALL CLEANOUT	SIoux CHIEF MODEL:873	N/A	AS SHOWN				ROUND STAINLESS STEEL WALL ACCESS COVER WITH SCREW AND BRASS PLUG.
WHA	WATER HAMMER ARRESTOR	WILKINS MODEL:1250	N/A			AS REQUIRED		WATER HAMMER ARRESTORS PROVIDED AS DETERMINED BY SITE CONDITIONS

FLOOR DRAIN SCHEDULE

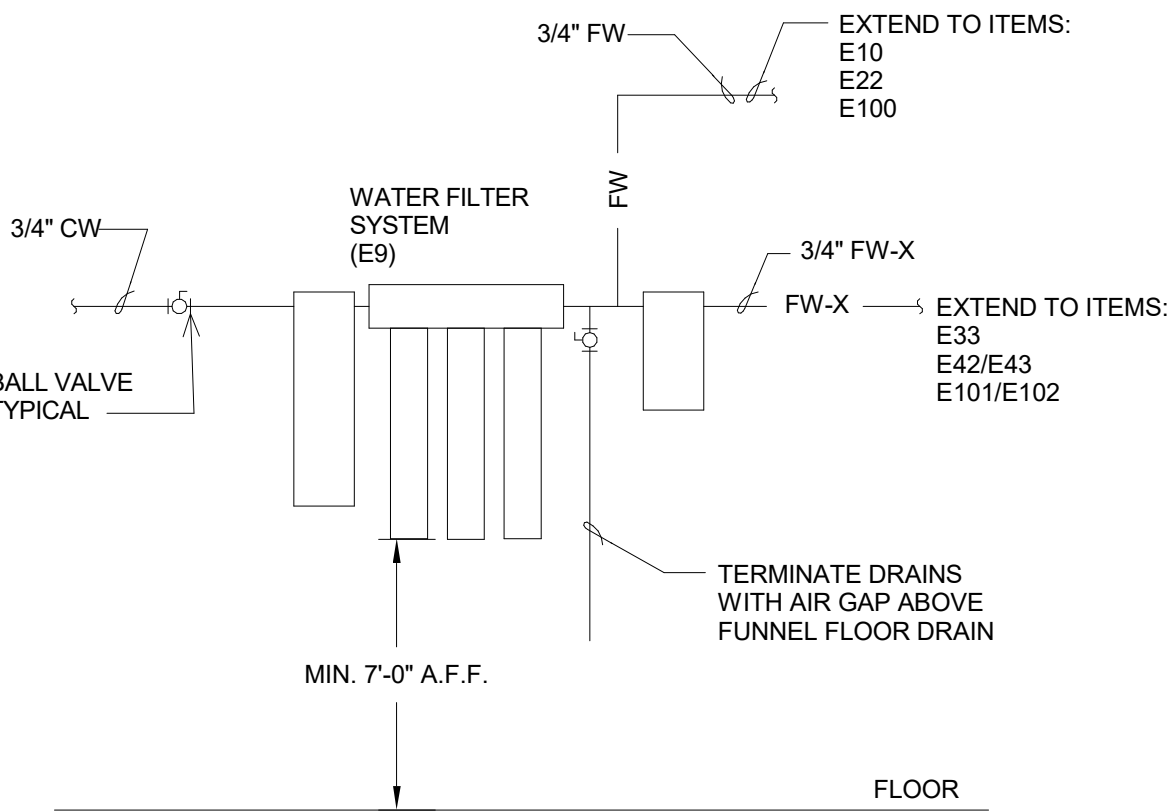
EQUIPMENT TAG	SIZE (IN)	MANUFACTURER	MODEL NUMBER	MECHANICAL NOTES
FD-1	AS SHOWN	SIoux CHIEF	832-3DNR	FULLY ADJUSTABLE ROUND FLOOR DRAIN WITH POLISHED CAST NICKEL STRAINER. MEETS ANSI/ASME FLOOR DRAIN STANDARD A112.6.3-2001

FLOOR SINK SCHEDULE

EQUIPMENT TAG	SIZE (IN)	MANUFACTURER	MODEL NUMBER	MECHANICAL NOTES
FS-1	AS SHOWN	SIoux CHIEF	861-XPDW2	FLOOR SINK WITH PVC BODY, PROVIDE WITH DOME STRAINER, STAINLESS STEEL DEBRIS SCREEN, AND 1/2 OPEN PVC GRATE. SEE DETAIL 10/P210
FS-2	AS SHOWN	SIoux CHIEF	861-2XX2WD	CAST IRON FLOOR SINK WITH ACID RESISTANT PORCELAIN ENAMEL COATING (ARE), PROVIDE WITH DOME STRAINER, STAINLESS STEEL DEBRIS SCREEN, AND 1/2 OPEN CAST IRON GRATE WITH ARE COATING. SEE DETAIL 10/P210
FS-3	AS SHOWN	SIoux CHIEF	861-XPNDW2	FLOOR SINK WITH PVC BODY, PROVIDE WITH DOME STRAINER, STAINLESS STEEL DEBRIS SCREEN, AND NICKEL BRONZE RING WITH FULL NICKEL BRONZE GATE. SEE DETAIL 10/P210

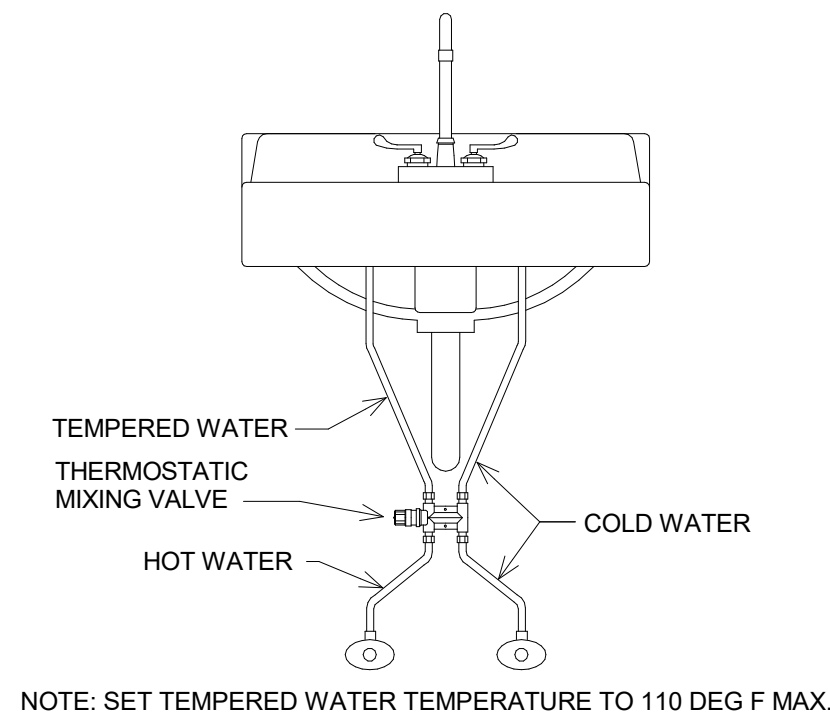
TRENCH DRAIN SCHEDULE

EQUIPMENT TAG	DRAIN BODY		GRATE		LENGTH (FT)	MANUFACTURER	MODEL NUMBER	MECHANICAL NOTES
	MATERIAL	WIDTH (IN)	OUTLET (IN)	MATERIAL	WIDTH (IN)			
TD-1	CAST IRON	6	AS SHOWN	DUCTILE IRON	6	3	MIFAB	6" WIDE TRENCH DRAIN SYSTEM. 4" BOTTOM OUTLET COMBINE EXTENSION AS REQUIRED TO ACHIEVE 36" LENGTH. SEE DETAIL 10/P210 FOR SIMILAR INSTALLATION. EQUAL BY ALTERNATE MANUFACTURER MAY BE ACCEPTABLE WITH PRIOR APPROVAL.



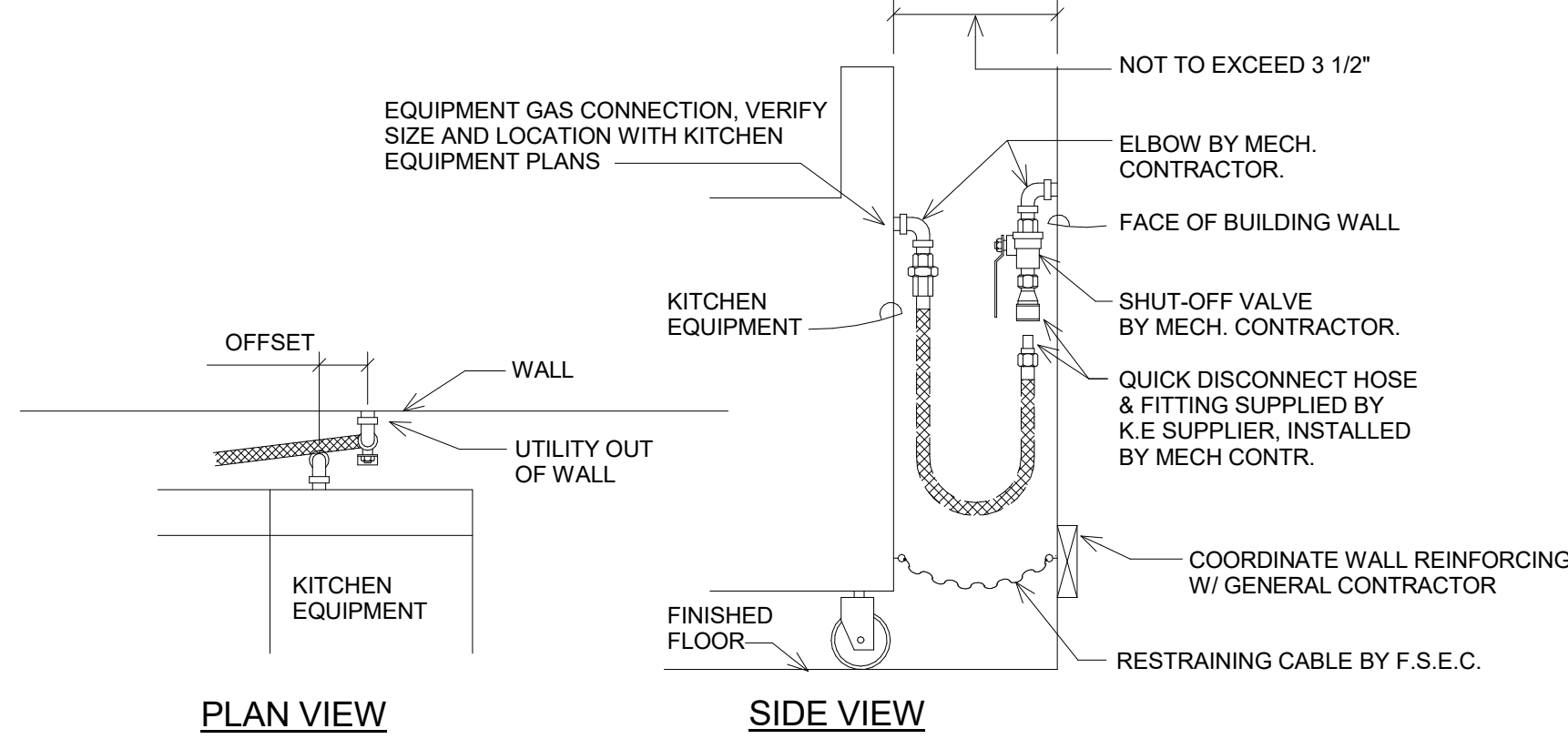
NOTE:
SCHEMATIC BASED ON MANUFACTURER INSTALLATION DETAIL. COORDINATE
INSTALLATION WITH MANUFACTURER AND KITCHEN EQUIPMENT VENDOR.

1 FILTERED WATER SCHEMATIC
NO SCALE



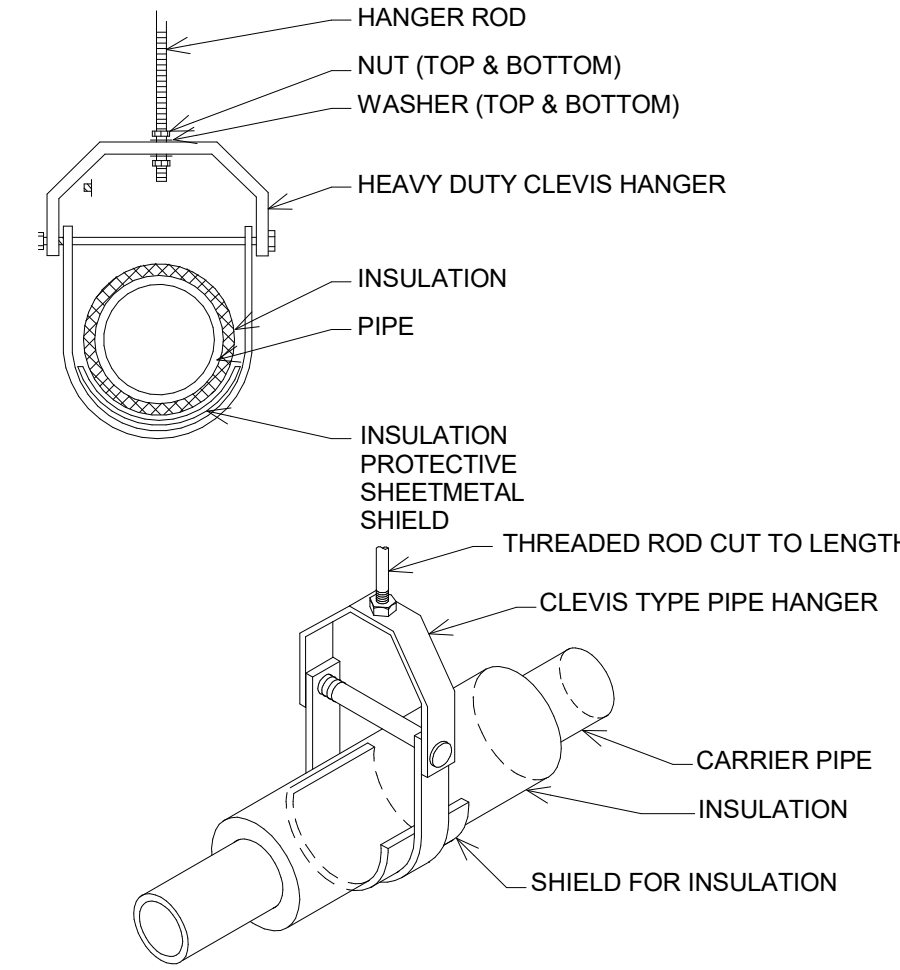
NOTE: SET TEMPERED WATER TEMPERATURE TO 110 DEG F MAX.

2 THERMOSTATIC MIXING VALVE DETAIL
NOT TO SCALE

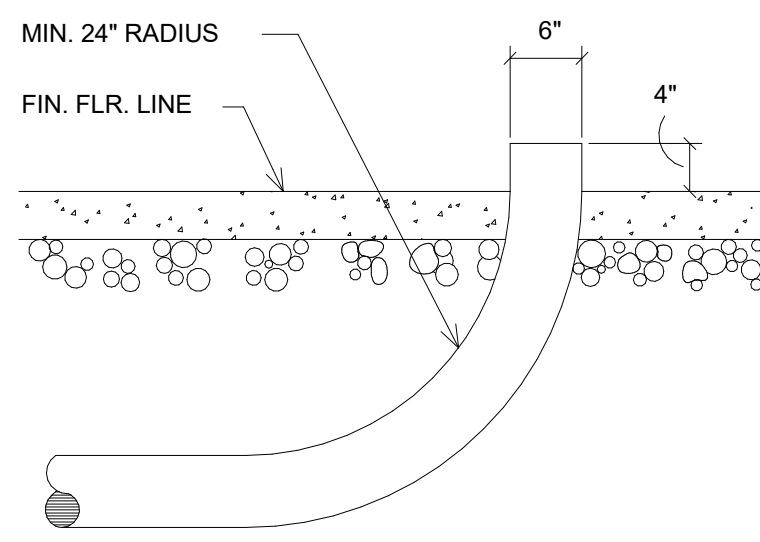


NOTE: IF UTILITY INLET IS NOT AT HEIGHT SHOWN,
MECHANICAL CONTRACTOR TO PROVIDE PIPING WITH
ELBOWS TO RAISE INLET.

3 GAS PIPING DETAIL
AT KITCHEN EQUIPMENT
NO SCALE

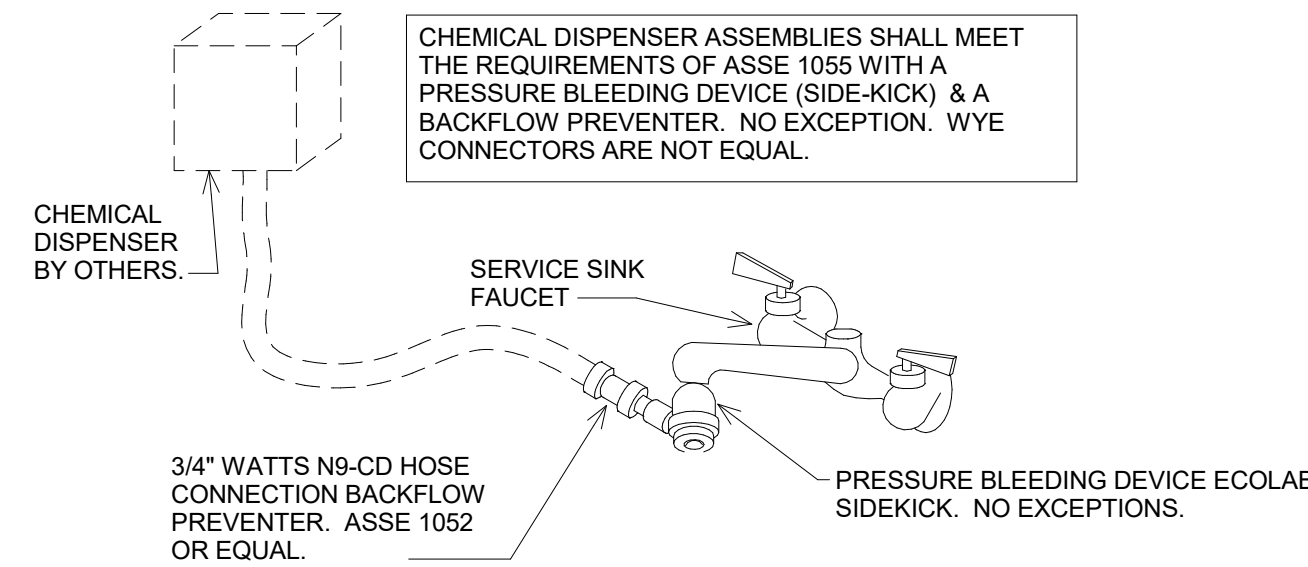


4 PIPE HANGER DETAIL
NO SCALE

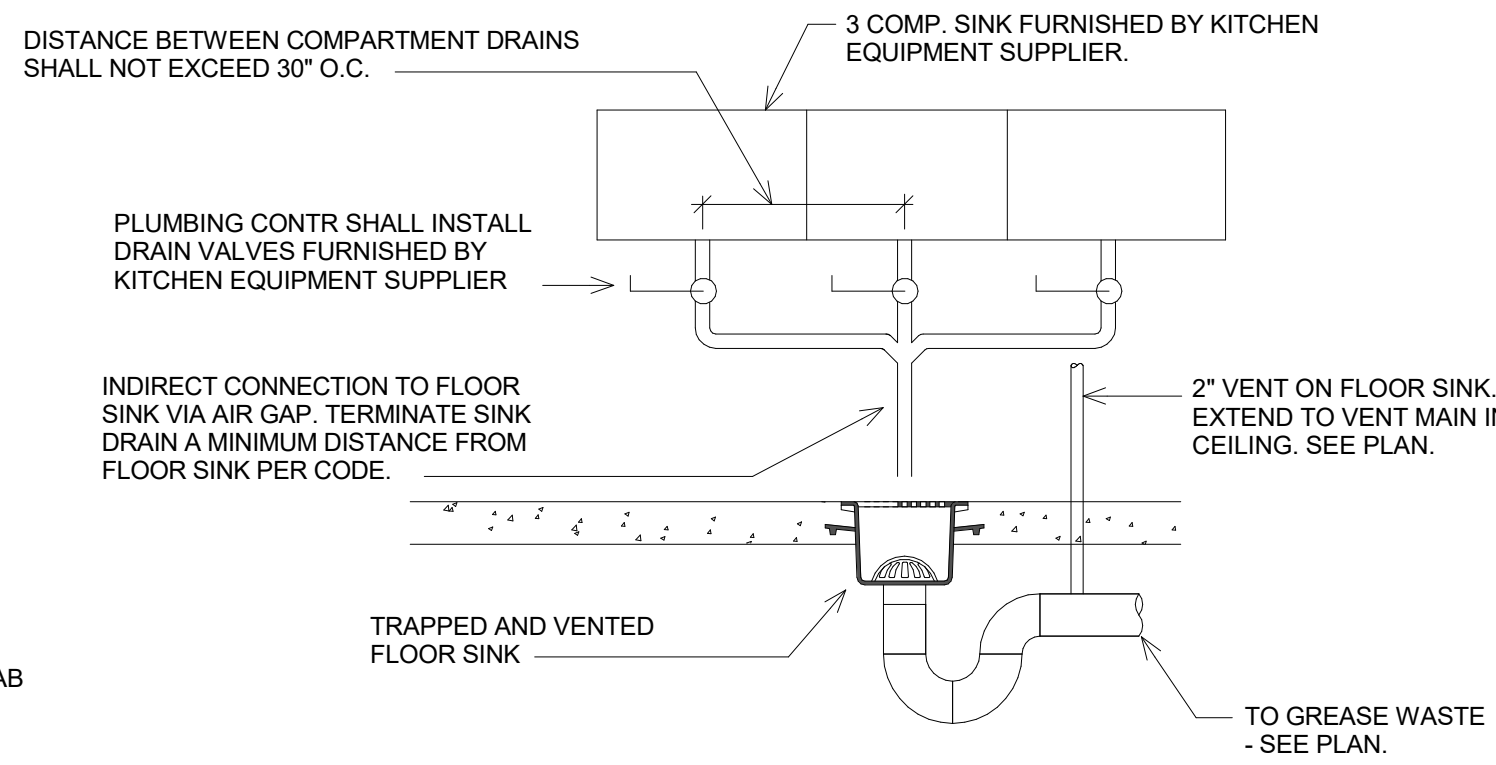


- CONDUIT TO BE WATER TIGHT PVC AND MUST HAVE A SMOOTH INTERIOR WITH A MINIMUM INSIDE DIAMETER OF 6".
- SLEEVE TO HAVE LEAK-TIGHT JOINTS AND MUST HAVE ONLY ONE (1) 24" RADIUS SWEEP BEND AT EACH END.
- EXPOSED ENDS OF CONDUIT TO BE STUBBED-UP A MINIMUM OF 4" ABOVE FINISHED FLOOR, CAPPED AND SEALED AT BOTH ENDS DURING CONSTRUCTION.
- AFTER DRINK LINES ARE INSTALLED (BY OTHER), OPEN ENDS ARE TO BE FILLED AND SEALED WATERTIGHT APPROXIMATELY 2" TO 4" AT EACH END.
- AFTER GAS PIPING IS INSTALLED IN SLEEVE BOTH ENDS SHALL NOT BE SEALED.

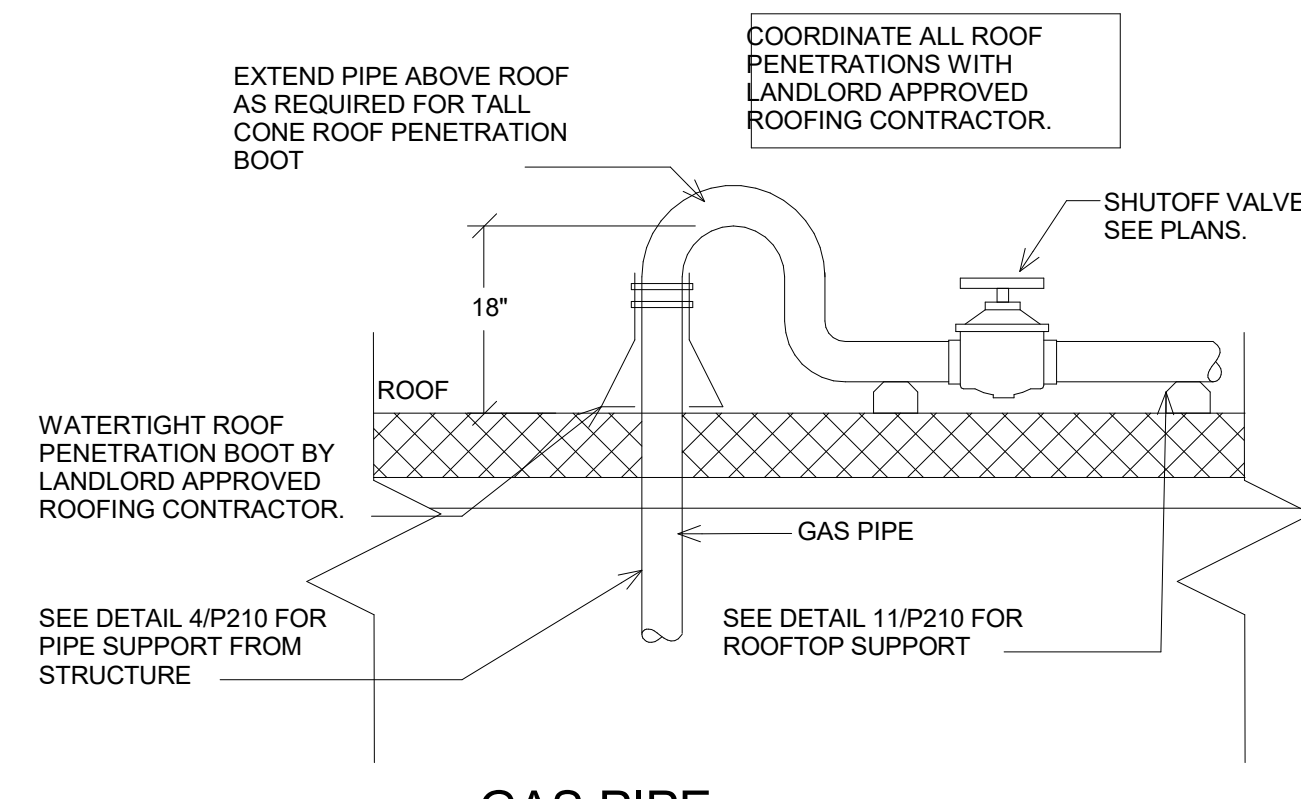
5 PVC SLEEVE DETAIL
NO SCALE



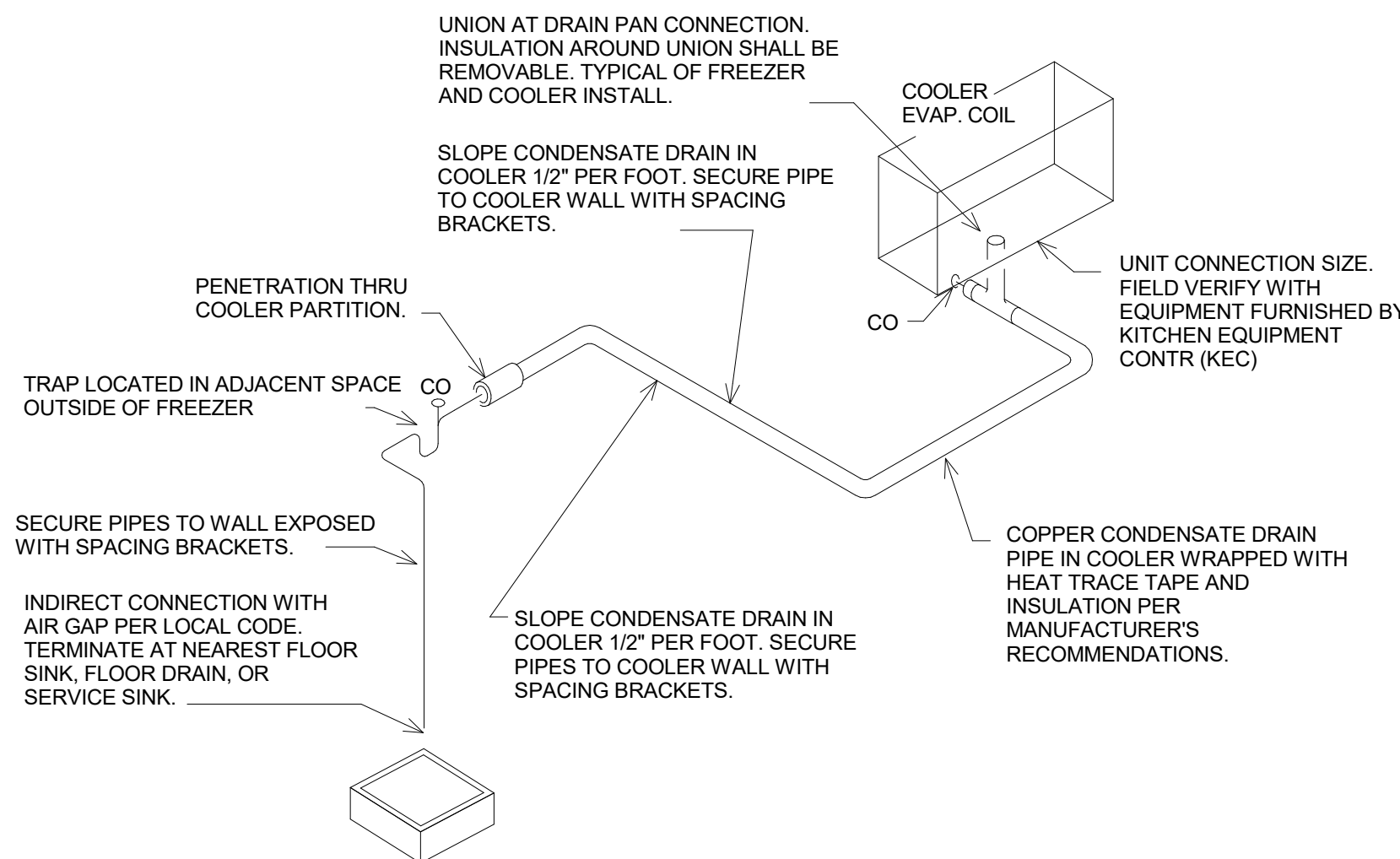
6 CHEMICAL DISPENSER VACUUM BREAKER DETAIL
NO SCALE



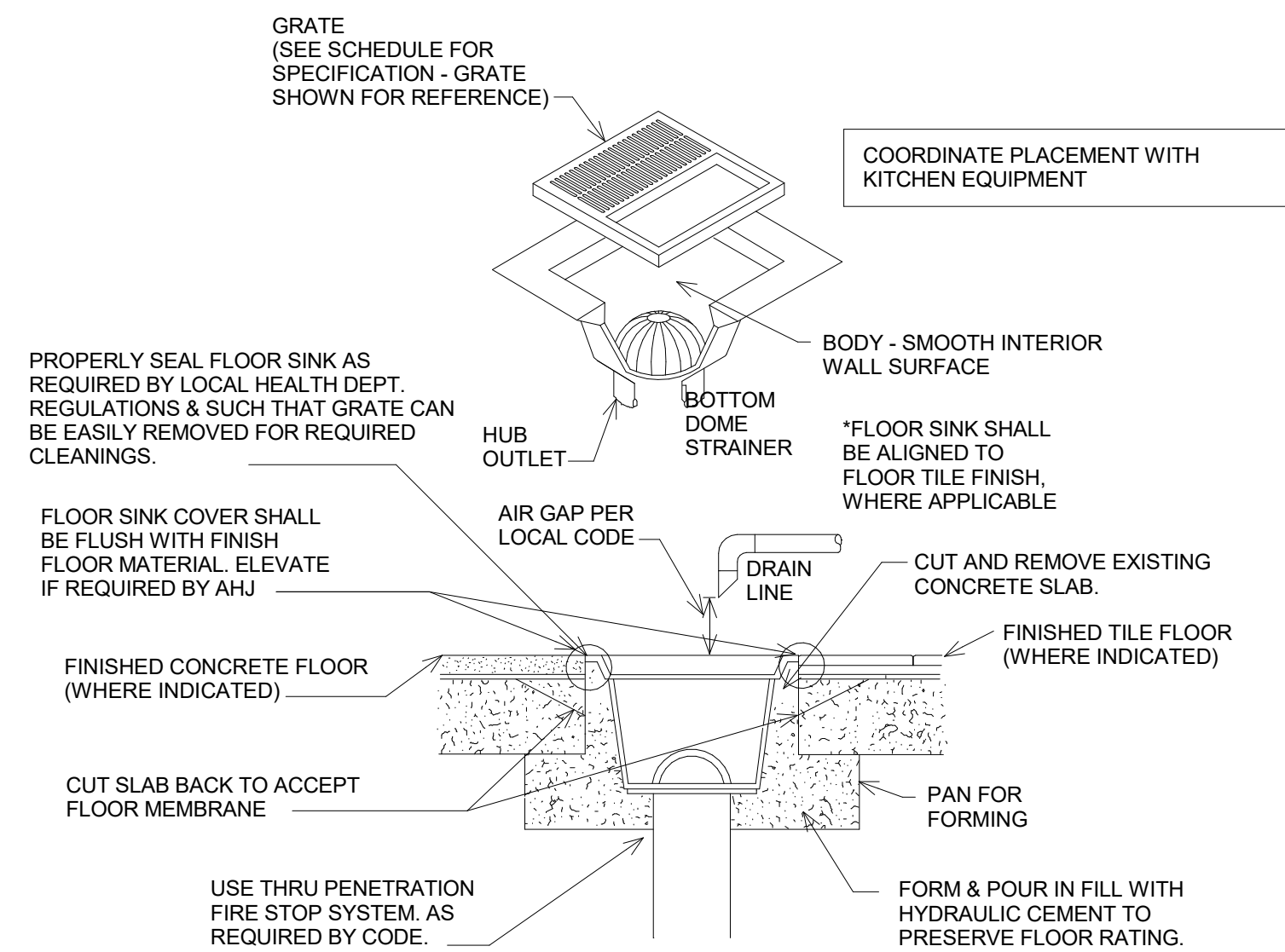
7 3-COMP SINK DETAIL
NO SCALE



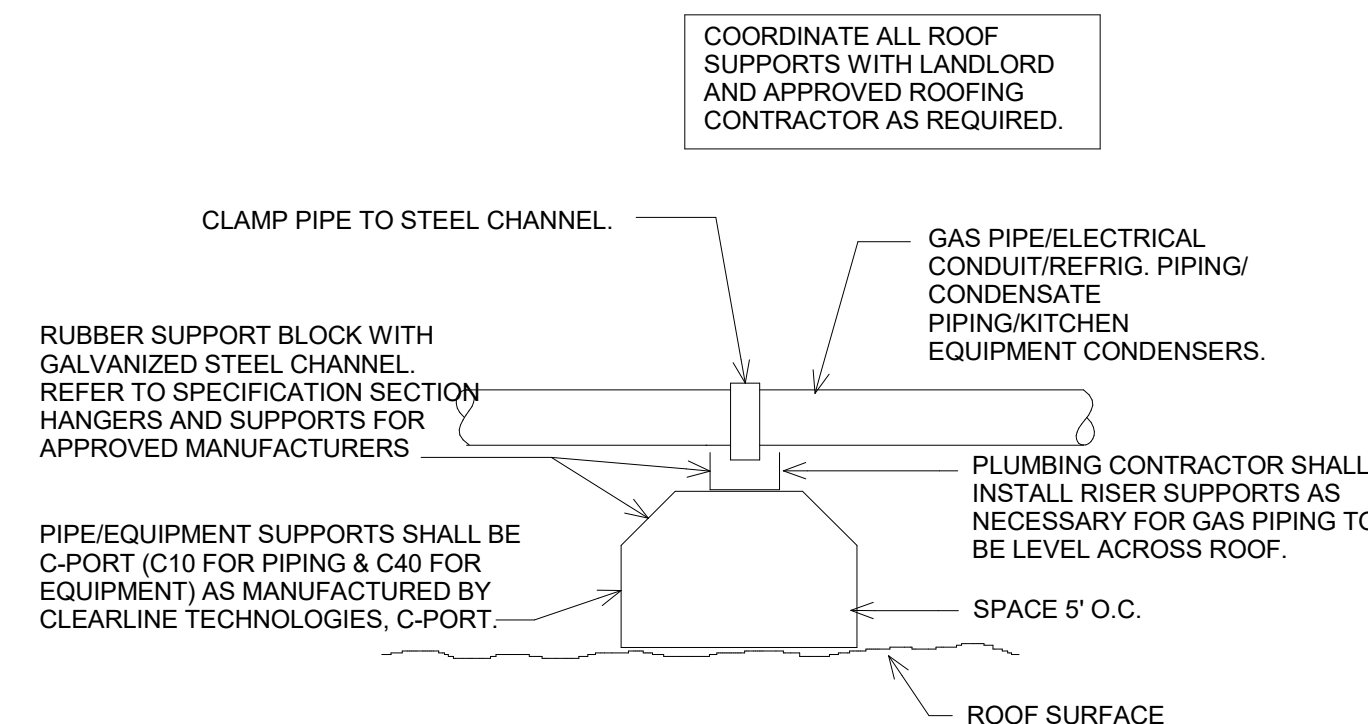
8 GAS PIPE
PENETRATION THRU ROOF
NO SCALE



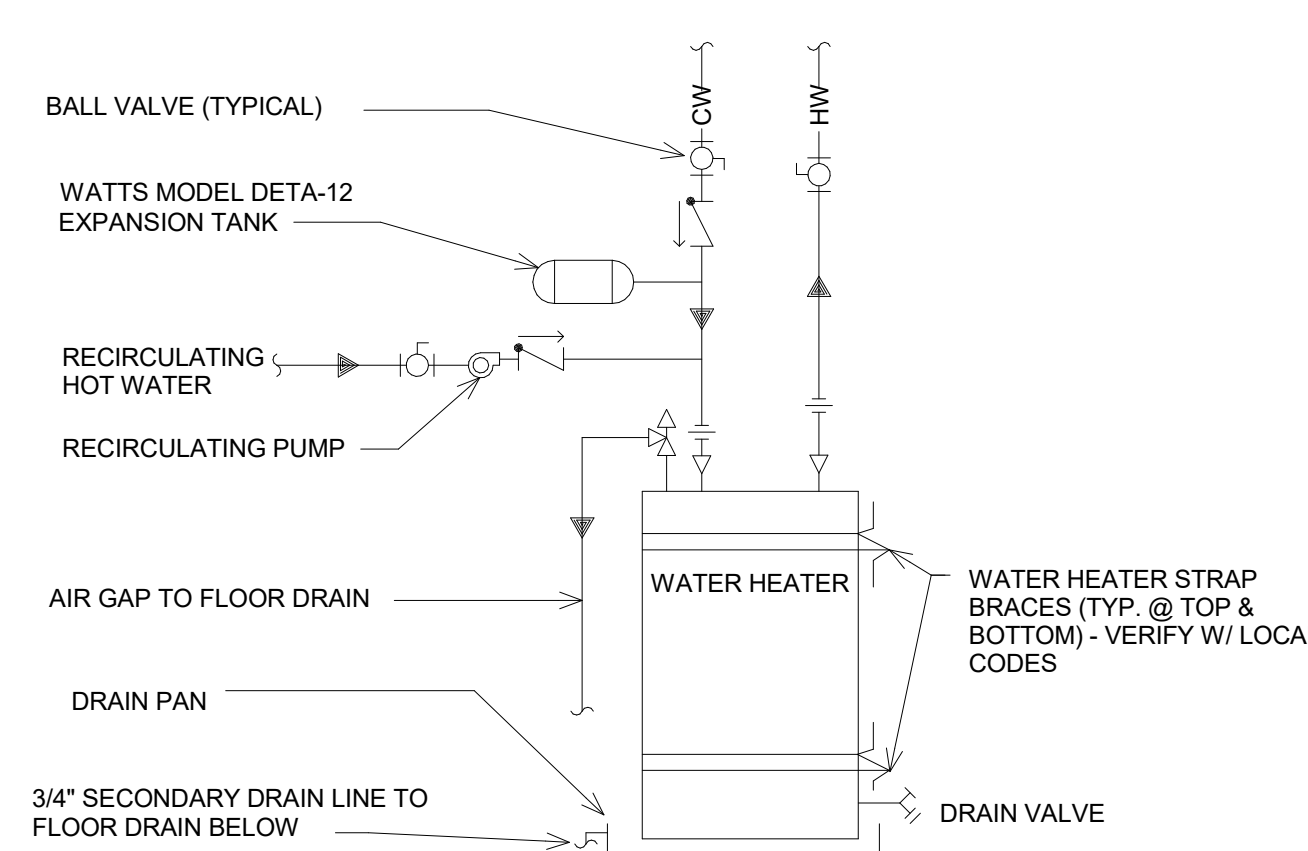
9 EVAPORATOR CONDENSATE DRAIN DETAIL
NO SCALE



10 FLOOR SINK DETAIL
NO SCALE



11 ROOF PIPE/EQUIPMENT
SUPPORT DETAIL
NO SCALE



12 WATER HEATER WITH
RECIRCULATING PUMP PIPING DETAIL
N.T.S.

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ISSUES AND REVISIONS:

PERMIT ISSUE 01.25.2021

SHEET TITLE:
PLUMBING DETAILS

P210

DIVISION 15000 - MECHANICAL

SECTION 15001 - BASIC MECHANICAL REQUIREMENTS

A. GENERAL CONDITIONS

1. THE DRAWINGS AND GENERAL CONDITIONS, INCLUDING SUPPLEMENTARY GENERAL CONDITIONS SHALL APPLY TO ALL WORK IN DIVISION 15000.
2. THE CONTRACTOR FOR THIS DIVISION SHALL REVIEW THE DRAWINGS AND ACCOMPANYING SPECIFICATIONS, EXAMINE THE SITE, CHECK AS TO THE MEANS OF MAKING CONNECTIONS TO SERVICES, AND SHALL BECOME FAMILIAR WITH ALL THE EXISTING CONDITIONS AND LIMITATIONS BEFORE SUBMITTING A PROPOSAL. ANY APPARENT VARIANCES OF THE PLAN OR SPECIFICATION FROM THE EXISTING CONDITIONS AT THE SITE SHALL BE CALLED TO THE ATTENTION OF THE ENGINEER DURING THE BID PERIOD SO THAT CLARIFICATION CAN BE MADE BY ADDENDUM. ITEMS KNOWN TO BE INCONSISTENT WITH THE BID DOCUMENTURE LISTED AND QUALIFIED ON THE CONTRACTORS BID FORM. NO EXTRAS WILL BE ALLOWED BECAUSE OF THE CONTRACTORS MISUNDERSTANDING AS TO THE AMOUNT OF WORK INVOLVED OR HIS LACK OF KNOWLEDGE OF ANY SITE CONDITIONS WHICH MAY AFFECT HIS WORK.
3. COORDINATION OF SCHEDULING FOR COMPLETION AND ALL INSPECTIONS OF THEIR WORK AND WORK OF SUBCONTRACTORS IS THE RESPONSIBILITY OF THIS CONTRACTOR.
4. BEFORE SUBMITTING A PROPOSAL ON THE WORK CONTEMPLATED ON THESE DRAWINGS AND ACCOMPANYING SPECIFICATIONS, EACH BIDDER SHALL EXAMINE THE SITE, CHECK AS TO THE MEANS OF MAKING CONNECTIONS TO SERVICES, AND SHALL BECOME FAMILIAR WITH ALL THE EXISTING CONDITIONS AND LIMITATIONS. MECHANICAL EQUIPMENT AND SYSTEMS SHOWN AS EXISTING ON THE PLANS HAVE BEEN BASED ON EXISTING DRAWINGS. NO EXTRAS WILL BE ALLOWED BECAUSE OF THE CONTRACTOR'S MISUNDERSTANDING AS TO THE AMOUNT OF WORK INVOLVED OR HIS LACK OF KNOWLEDGE OF ANY SITE CONDITIONS WHICH MAY AFFECT HIS WORK. ANY APPARENT VARIANCE OF THE PLAN OR SPECIFICATION FROM EXISTING CONDITIONS AT THE SITE SHALL BE CALLED TO THE ATTENTION OF THE ENGINEER DURING THE BID PERIOD SO CLARIFICATION CAN BE MADE BY ADDENDUM.

SECTION 15002 - GENERAL REQUIREMENTS

1. WORK TO BE ACCOMPLISHED ON THESE DRAWINGS AND SPECIFICATIONS INCLUDES FURNISHING ALL LABOR, MATERIAL, EQUIPMENT AND SERVICES FOR THE COMPLETION OF ALL MECHANICAL WORK. ALL MECHANICAL WORK UNLESS NOTED TO BE SPECIFICALLY BY THE LANDLORD IS THE RESPONSIBILITY OF THIS CONTRACTOR.
2. THIS CONTRACTOR AND THEIR SUB CONTRACTORS SHALL WORK CLOSELY WITH THE TENANT PROJECT MANAGER FOR COORDINATION OF TRADES AND COMPLETION OF THE PROJECT.
3. PLANS AND SPECIFICATIONS ARE COMPLEMENTARY AND WHAT IS CALLED FOR IN EITHER ONE SHALL BE AS BINDING AS IF CALLED FOR IN BOTH. ANY ITEM OR LABOR THAT IS NECESSARY TO COMPLETE THE WORK AND IS TYPICALLY INCLUDED IN SIMILAR WORK SCOPE SHALL BE FURNISHED AND INSTALLED AS PART OF THE CONTRACT WHETHER OR NOT IT IS SHOWN ON THE PLANS OR IN THE SPECIFICATIONS.
4. WHEN THE INCLUDED DRAWINGS AND/OR SPECIFICATIONS CALL OF ITEMS WHICH EXCEED THE LANDLORDS TENANT CRITERIA OR EXCEED CODE, IT'S THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL THE MORE STRINGENT REQUIREMENTS NOTED ON THE PLANS AND/OR SPECIFICATIONS. IF THE PLANS AND SPECIFICATIONS HAVE DISCREPANCIES BETWEEN THEM, THE CONTRACTOR SHALL ASSUME IN THEIR BID THAT THE MORE STRINGENT ITEM IS REQUIRED AT NO ADDITIONAL COST.
5. ALL PIPING, DUCTWORK AND EQUIPMENT SHALL BE FURNISHED AND INSTALLED TO PRESENT A NEAT AND CLEAN APPEARANCE USING GOOD CONSTRUCTION PRACTICES. EQUIPMENT SHALL BE INSTALLED FOR PROPER ACCESS TO OPERATE, SERVICE AND MAINTAIN THE EQUIPMENT WITHOUT HAVING TO MOVE OTHER EQUIPMENT FOR ACCESS. ANY MECHANICAL EQUIPMENT (OR EXISTING EQUIPMENT TO REMAIN) THAT REQUIRES ACCESS PANELS SHALL HAVE THOSE PANELS FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
6. UNLESS SPECIFICALLY NOTED ON THE PLANS/SPECIFICATIONS ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND BEST QUALITY TO CONFORM TO THE REQUIREMENTS OF THE LANDLORDS TENANT CRITERIA, LOCAL AND STATE CODES GOVERNING THE WORK INVOLVED AND BE MADE BY NATIONALLY RECOGNIZED MANUFACTURES WITH UL LISTINGS AND LABELS.

SECTION 15003 - CODES

1. ALL WORK SHALL BE INSTALLED IN CONFORMITY OF THE LANDLORDS TENANT CRITERIA, AND APPLICABLE LOCAL CODES AND ORDINANCES AND STATE STATUTES. ALL REQUIREMENTS OF THE CURRENT PLUMBING CODES, HEATING AND VENTILATION CODES, HEALTH AND SAFETY CODES, NFPA CODES AND ENERGY CODES MUST BE MET. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INQUIRE INTO AND COMPLY WITH ALL LOCAL ORDINANCES AND INCLUDE ANY ADDITIONAL ITEMS NOT NOTED IN THE PLANS/SPECIFICATIONS IN THEIR BID. ANY CHANGES TO THE MECHANICAL SYSTEM AS REQUIRED BY LOCAL, STATE OR TENANT CRITERIA THAT ARE NOT QUALIFIED ON THE CONTRACTORS BID FORM ARE ASSUMED TO BE INCLUDED IN THE ORIGINAL BID AND ADDITIONAL COSTS WILL NOT BE DUE TO COMPLETE THOSE ITEMS AFTER THE CONTRACT IS ISSUED.

SECTION 15004 - LICENSES, PERMITS, INSPECTIONS & FEES

1. THIS CONTRACTOR IS RESPONSIBLE FOR ALL FEES, CHARGES AND OBLIGATIONS FOR OBTAINING PERMITS AND INSPECTIONS FOR PLUMBING, HEATING AND VENTILATION AND FIRE EXTINGUISHING WORK.
2. ALL CERTIFICATES OF INSPECTION AND FINAL INSPECTIONS SHALL BE TURNED OVER TO THE TENANT'S PROJECT MANAGER AT THE COMPLETION OF THE PROJECT.

SECTION 15005 - TRADE NAMES, MANUFACTURERS AND SHOP DRAWINGS

1. IN ANY CASE WHERE A SPECIFIC NAME OF EQUIPMENT OR MATERIAL IS MENTIONED ON THE DRAWINGS OR SPECIFICATIONS THE EXACT EQUIPMENT SHALL BE USED FOR THE BASE BID. EQUIPMENT OF EQUAL GRADE AND QUALITY WILL BE SUBJECT TO PRIOR APPROVAL BY THE TENANT'S PROJECT MANAGER AND THE ENGINEER IN WRITING THRU THE SHOP DRAWING SUBMITTAL PROCESS. ANY EQUIPMENT INSTALLED WITHOUT WRITTEN APPROVAL WILL BE CHANGED OUT TO THE SPECIFIED EQUIPMENT AT THE CONTRACTORS EXPENSE.
2. MECHANICAL CONTRACTOR SHALL SUBMIT 3 COPIES OF SHOP DRAWINGS TO THE TENANT'S PROJECT MANAGER FOR APPROVAL. IF APPROVED, COPIES WILL BE STAMPED "NO EXCEPTIONS" OR "APPROVED AS NOTED" AND WILL BE RETURNED TO THE CONTRACTOR. IF NOTATIONS AND MARKS INDICATE THAT REVISED INFORMATION IS REQUIRED, THEN CORRECTED INFORMATION SHALL BE SUBMITTED.

SECTION 15006 - GUARANTEE

1. THIS CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR AND DEFECTS WHICH MAY DEVELOP IN ANY PART OF THE SYSTEMS CAUSED BY FAULTY WORKMANSHIP, MATERIAL OR EQUIPMENT, AND AGREES TO REPLACE ANY SUCH FAULTY WORKMANSHIP, MATERIAL OR EQUIPMENT DURING A PERIOD OF 12 MONTHS FROM THE DATE OF FINAL ACCEPTANCE WITHOUT ANY COST TO THE OWNER. ANY EXTENDED WARRANTIES (LONGER THAN 12 MONTHS) FOR EQUIPMENT WILL BE NOTED ON THE SCHEDULES, PLANS OR SPECIFICATIONS.
2. EACH PIECE OF EQUIPMENT FURNISHED BY THE CONTRACTOR SHALL HAVE A 12 MONTH WARRANTY FOR MATERIAL AND LABOR AT STARTS UPON THE DATE OF FINAL ACCEPTANCE AS DESIGNATED BY THE TENANT'S PROJECT MANAGER. ALL COSTS FOR THE WARRANTY (MATERIAL AND LABOR) SHALL BE INCLUDED IN THE ORIGINAL BID.

SECTION 15007 - RECORD DRAWINGS

1. THIS CONTRACTOR SHALL MAINTAIN AT THE JOB SITE A SET OF DRAWINGS TO BE USED SPECIFICALLY FOR RECORDING CHANGES FROM THE CONTRACT DOCUMENTS. THE INFORMATION SUCH AS VALVES, DUCT AND PIPE DEVIATIONS SHOULD BE DIMENSIONED FROM EASILY RECOGNIZABLE REFERENCE POINTS INDICATING BOTH HORIZONTAL AND VERTICAL DISTANCES.
2. THE CONTRACTOR SHALL SUBMIT A FINAL SIGNED SET OF AS-BUILT DRAWINGS TO THE TENANT'S PROJECT MANAGER AT THE COMPLETION OF THE PROJECT.
3. THE CONTRACTOR SHALL SUBMIT TO THE TENANT'S PROJECT MANAGER AT THE END OF THE PROJECT (2) COMPLETE HARD BOUND SET OF CATALOG DATA, MANUFACTURER LITERATURE, DETAIL MANUALS COVERING THE OPERATION AND MAINTENANCE OF ALL EQUIPMENT SPECIFIED.

SECTION 15008 - DISCREPANCIES IN DOCUMENTS

1. THE DRAWINGS OF PIPING AND DUCTWORK SYSTEMS SHALL BE INSTALLED SUBSTANTIALLY AS SHOWN ON THE PLANS. THE EXACT POSITION OF EACH AND EVERY PIPE, DUCT, OFFSET AND TRANSITION CANNOT BE GIVEN BY SCALING THE DRAWINGS BUT SHALL IN EVERY CASE BE PLACED SO AS TO AVOID INTERFERENCE WITH OTHER WORK. ALL NECESSARY CHANGES IN THE LOCATION OF PIPE OR DUCTWORK FOR ITS PROPER INSTALLATION AND TO AVOID CONFLICT WITH OTHER TRADES SHALL BE DONE BY THE CONTRACTOR AT NO ADDITIONAL CHARGE.

SECTION 15009 DEMOLITION

1. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF THE DEMOLITION OF EXISTING WORK AND THE DEMOLITION PROVIDED BY THE GENERAL CONTRACTOR. COORDINATE WITH THE GENERAL CONTRACTOR ANY EXISTING EQUIPMENT REQUIRED TO BE LEFT INTACT.
2. EACH CONTRACTOR SHALL VERIFY SCOPE OF WORK WITH THE GENERAL CONTRACTOR FOR THE REMOVAL OF ALL EXISTING FIRE PROTECTION, PLUMBING FIXTURES, PIPING, HVAC UNITS, REFRIGERANT RECAPTURE, EXHAUST FANS, ETC. AND ASSOCIATED ROOF CURBS NOT BEING REUSED ON THIS PROJECT, UNLESS SPECIFICALLY NOTED OTHERWISE.
3. CONTRACTOR MUST VERIFY WITH THE LANDLORD ALL PRESUMED ABANDONED EQUIPMENT, PIPES, DUCTWORK, AND EQUIPMENT PRIOR TO REMOVAL. ROOF CURBS SHALL BE REMOVED AND THE ROOF PATCHED. ALL EXTRANEOUS ITEMS IN THE SPACE OR ON THE ROOF NOT APPLICABLE TO THE NEW WORK MUST BE REMOVED AND ROOF/WALL/FLOOR PATCHED/REPAIRED TO MATCH EXISTING STRUCTURE.
4. EXISTING ABANDONED PIPES, DUCTS, OR EQUIPMENT IN THE FLOOR, EMBEDDED IN CONCRETE, OR OTHERWISE INACCESSIBLE ARE TO BE CUT OFF AND SEALED BELOW OR WITHIN FLOOR OR WALL LEVEL WHEN THEY ARE NOT TO BE REUSED IN THIS PROJECT.
5. IF REQUIRED BY LANDLORD OR CODES, ABANDONED PIPING AND/OR DUCTWORK MUST BE REMOVED TO POINT OF ORIGIN. CONFIRM THE EXTENT OF DEMOLITION WITH THE GENERAL CONTRACTOR AND TENANT PRIOR TO BID AND INCLUDE IN BID PROPOSAL AS DIRECTED BY THE GENERAL CONTRACTOR AND TENANT.

SECTION 15010 - CUTTING AND PATCHING

1. THIS CONTRACTOR SHALL PROVIDE ALL CUTTING AND PATCHING REQUIRED FOR THE INSTALLATION OF HIS EQUIPMENT IN THE BUILDING WALLS, PARTITIONS, FLOORS, CEILINGS, ETC., UNLESS OTHERWISE NOTED. ALL CUTTING AND PATCHING SHALL BE SUBJECT TO THE DIRECTION OF THE LANDLORD, ARCHITECT OR ENGINEER.
2. THIS CONTRACTOR SHALL NOT ENDANGER THE STABILITY OF THE STRUCTURE BY CUTTING, DIGGING OR OTHERWISE ALTERING THE STRUCTURE AND SHALL NOT AT ANY TIME CUT OR ALTER WORK OF ANY OTHER CONTRACTOR.
3. PATCHING OF WALLS, FLOORS AND ROOF SHALL BE OF SAME MATERIAL AND WORKMANSHIP OF THE SURROUNDING MATERIAL WITH FINISHED SURFACE APPEARING THE SAME AS THE SURROUNDING AREAS. ALL PATCHING SHALL BE PERFORMED BY WORKMEN SKILLED IN THAT PARTICULAR TRADE.
4. DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR IN A SUITABLE MANNER ACCEPTABLE TO THE LANDLORD AND TENANT'S PROJECT MANAGERS.

SECTION 15011 - SLEEVES

1. THIS CONTRACTOR SHALL INSTALL SLEEVES IN CONNECTION WITH ALL PIPES PASSING THROUGH ALL WALLS, PARTITIONS AND FLOORS. SLEEVES SHALL EXTEND THROUGH FULL THICKNESS OF WALLS AND FLOORS AND SHALL BE CUT FLUSH WITH THE FINISHED SURFACES. SLEEVES IN SLABS SHALL BE CUT 2" ABOVE THE FLOOR SURFACE.
2. ALL SLEEVES SHALL BE 22 GAUGE GALVANIZED STEEL MINIMUM FINISHED WITH A SMOOTH EDGE AND PROPERLY SUPPORTED.
3. CORE DRILLING FLOORS AND WALLS MUST BE COORDINATED WITH THE LANDLORD AND THE TENANT'S PROJECT MANAGER.
4. THIS CONTRACTOR SHALL FURNISH AND INSTALL FIRE STOPPING AT ALL PENETRATIONS THRU RATED FLOORS TO MAINTAIN THE FIRE RATING. 3M FIRE BARRIER SYSTEMS, FLAME SAFE FIRE RETARDANT SYSTEMS, DOW CORNING, SPECS SEAL OR EQUAL. THE CONTRACTOR MUST PRESENT UL LISTING DATA SHEETS TO THE TENANT'S PROJECT MANAGER AND LANDLORD TO SHOW THAT THE PENETRATIONS MAINTAIN THE FIRE RATING.

SECTION 15012 - HANGERS

1. FURNISH AND INSTALL BRACKETS, BRACES OR REINFORCING ANGLES AS REQUIRED FOR ALL PARTITIONS NOT SUFFICIENT IN THEMSELVES TO SUPPORT PLUMBING FIXTURES OR OTHER EQUIPMENT.
2. PIPING SHALL BE SUSPENDED FROM CONSTRUCTION ABOVE WITH ANGLE IRON, CLAMPS, UNISTRUT, OR HANGER RODS. NO PIPING SHALL BE HUNG FROM OTHER PIPING EXISTING OR NEW.
3. ALL PIPES WHICH ARE SPECIFIED TO BE INSULATED SHALL HAVE PREFABRICATED INSULATED METAL SADDLES SIZED FOR THE INSULATION THICKNESS AND CONTINUOUS INSULATION THROUGH THE HANGER. ALL DISSIMILAR METALS MUST BE SEPARATED WITH DIELECTRIC MATERIAL.

DIVISION 15400 - PLUMBING

SECTION 15401 - SUMMARY OF WORK

- A. THIS CONTRACTOR SHALL FURNISH, INSTALL AND TEST ALL NECESSARY MATERIAL FOR A COMPLETE OPERATING PLUMBING SYSTEM. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE LOCATION OF THE EXISTING WATER, VENT AND DRAIN LINES TO MAKE CONNECTIONS IN ORDER TO COMPLETE THE WORK AS SHOWN ON THE PLANS. ALL MATERIAL SHALL BE NEW AND SHALL BE INSTALLED FOR PROPER ACCESS FOR SERVINGS. ANY ACCESS PANELS NECESSARY FOR SERVING EQUIPMENT SHALL BE FURNISHED AND INSTALLED BY THIS CONTRACTOR.

SECTION 15402 MATERIALS

- A. THE PLUMBING FIXTURE SCHEDULE IS SHOWN ON PLANS. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO THE MANUFACTURES INSTALLATION INSTRUCTIONS.
- B. SANITARY WASTE AND VENT PIPING
 1. CAST IRON PIPE (BELOW GRADE): ASTM A74 SERVICE WEIGHT, FITTINGS: CAST IRON, JOINTS: HUB-AND-SPIGOT, COMPRESSION TYPE WITH NEOPRENE GASKETS OR LEAD AND OAKUM. CAST IRON PIPING SHALL BE USED FOR THE FIRST 15' OF ANY RECEPTOR RECEIVING HIGH TEMPERATURE WASTE.
 2. CAST IRON PIPE (ABOVE GRADE): CISPI 301, HUBLESS FITTINGS: CAST IRON, JOINTS: NEOPRENE GASKET AND STAINLESS STEEL CLAMP AND SHIELD ASSEMBLIES.
 3. ABS PIPE: ASTM D2661, FITTINGS: ABS, JOINTS: SOLVENT WELD. ABS PIPING NOT ALLOWED IN RETURN AIR PLENUM OR WITHIN 15' DOWNSTREAM OF RECEPTOR RECEIVING HIGH TEMPERATURE WASTE.
 4. PVC PIPE: ASTM D2665, FITTINGS: PVC, JOINTS: SOLVENT WELD WITH SOLVENT CEMENT. PVC PIPING NOT ALLOWED IN RETURN AIR PLENUM OR WITHIN 15' DOWNSTREAM OF RECEPTOR RECEIVING HIGH TEMPERATURE WASTE
 5. COPPER TUBE (ABOVE GRADE): ASTM B88 TYPE "L", HARD TEMPER ONLY. EXCEPT THESE MATERIALS SHALL NOT BE USED TO RECEIVE THE WASTES FROM URINALS NOR WASTES FROM WATER CLOSETS IN BATTERY, FITTINGS: CAST BRONZE, OR WROUGHT COPPER, JOINTS: SOLDER, GRADE 50B.
 6. VENT PIPING ABOVE FLOOR 2" OR SMALLER MAY BE GALVANIZED STEEL.
 7. INSULATE ALL HORIZONTAL RUNS OF PIPING LOCATED IN CEILING SPACES OF TENANTS IN SPACES BELOW, WHEN APPLICABLE. INSULATION TO BE AS SPECIFIED FOR WATER PIPING.
 8. INTERIOR CONDENSATE PIPING SHALL BE TYPE "L" HARD DRAWN COPPER TUBE WITH 95-5 TIN-ANTIMONY SOLDERED JOINTS AND WROUGHT COPPER FITTINGS WITH DIELECTRIC SEPARATION BETWEEN DISSIMILAR METALS. INSULATE INTERIOR CONDENSATE PIPING WITH 1" INSULATION WRAP AND ASJ COVERING. EXTERIOR CONDENSATE PIPING MAY BE SCHEDULE 40 PVC PIPING WITH SOLVENT WELDED FITTINGS IF APPROVED FOR USE BY THE LANDLORD.
- C. POTABLE WATER PIPING
 1. ALL UNDERSLAB DOMESTIC WATER PIPING SHALL BE PEX. IF NOT ALLOWED BY LOCAL JURISDICTION, PROVIDE TYPE "K" COPPER PIPING WITH MINIMAL JOINTS.
 2. ALL ABOVE GRADE PIPING SHALL BE TYPE "L" HARD DRAWN COPPER TUBE WITH SWEAT JOINTS. ALL PIPING CONNECTIONS WITH DISSIMILAR METALS SHALL HAVE DI-ELECTRIC CONNECTIONS.
 3. CPVC: ASTM D 2846; ASTM F 441; ASTM F 442; CSA B137.6
 - 3.1. CPVC FITTINGS: ASTM F 437; ASTM F 438; ASTM F 439; CSA B137.6
 4. PEX: PEX-a TUBING WITH ASTM F 877 OR CSA B137.5 LISTING.
 - 4.1. PEX FITTINGS: FITTINGS SHALL BE OF SAME MANUFACTURER AS PIPING AND LISTED.
 5. INSULATE ALL HOT WATER AND INTERIOR CONDENSATE PIPING WITH 1" THICK (K=0.23 @ 75 F) PIPE INSULATION. INSULATION TO BE AN ALL SERVICE JACKET TO MEET LOCAL CODES AND UL FLAME SPREAD AND SMOKE DEVELOPED RATINGS. OWENS-CORNING OR EQUAL.
 6. TRUEBRO MODEL 102W WHITE INSULATION KIT SHALL BE INSTALLED ON ALL TRAPS AND SUPPLY LINES BELOW LAVATORIES TO MEET ADA.
 7. SIOUX CHIEF 650 SERIES ALL STAINLESS STEEL, OR J.R. SMITH HYDROTROLS SHOCK ABSORBERS SHALL BE INSTALLED IN BOTH HOT AND COLD LINES OF PIPING SYSTEM TO PREVENT NOISE AND DAMAGE DUE TO WATER SHOCK ABSORBERS SHALL BE INSTALLED ACCORDING TO THE MANUFACTURES INSTALLATION INSTRUCTIONS.
 8. THE CONTRACTOR SHALL PROVIDE BALL VALVES IN THE SUPPLY PIPING TO EVERY FIXTURE FOR SERVICING. CONTRACTOR SHALL FURNISH AND INSTALL ACCESS PANELS WHERE NECESSARY FOR PROPER SERVICING.
 9. MAXIMUM PIPE SUPPORT SPACING OF 5 FEET. CONTRACTOR SHALL PROVIDE NECESSARY SEISMIC BRACING WHERE REQUIRED BY LANDLORD CRITERIA, CODE AND LOCAL AUTHORITIES.
 10. THE CONTRACTOR SHALL STERILIZE NEW AND EXISTING WATER SYSTEM AS REQUIRED BY LOCAL CODES. CONTRACTOR SHALL INSTALL ANY ADDITIONAL SERVICE VALVES NEEDED IN ORDER TO ISOLATE SYSTEM FOR STERILIZING THE WATER SYSTEM.
 11. CONTRACTOR SHALL PROVIDE CHROME PLATED ESCUTCHEONS AT ALL EXPOSED PIPE PENETRATIONS IN FINISHED SPACES.
 12. FLOOR DRAINS WITH DEEP SEAL TRAPS REQUIRED. INSTALL TRAP PRIMERS IN ALL FLOOR DRAINS. LOCATE CLEAN-OUTS IN WALLS AND FLOORS AS REQUIRED TO MEET LOCAL CODES.
 13. CONTRACTOR SHALL PERFORM ALL PIPING PRESSURE/LEAK TESTS BE AS REQUIRED BY LOCAL CODES. ALL ROOF FLASHING SHALL BE SEALED WATERTIGHT AND PERFORMED IN ACCORDANCE TO THE LANDLORD'S CRITERIA.
 14. ANY ROOF WORK MUST BE DONE BY THE LANDLORD'S APPROVED ROOFING CONTRACTOR IN ORDER TO MAINTAIN THE ROOF WARRANTY. ALL COSTS FOR ROOF WORK MUST BE INCLUDED IN THE BID.
 15. CONTRACTOR SHALL FURNISH AND INSTALL WATER METER AND REMOTE READER PER LANDLORD'S CRITERIA OR AS REQUIRED BY LOCAL UTILITIES REQUIREMENTS.

E. GAS PIPING

1. FURNISH AND INSTALL A FUNCTIONAL GAS PIPING SYSTEM WITH NECESSARY VALVES, FITTINGS, UNIONS, DIRT LEGS, REGULATORS, METERS, ETC. REFER TO PLANS FOR EXACT REQUIREMENTS.
2. GAS PIPE SHALL BE SCHEDULE 40 BLACK STEEL WITH MALLEABLE THREADED FITTINGS FOR 2" AND SMALLER, AND WITH WELDED JOINTS FOR 2-1/2" AND LARGER.
3. PROVIDE A SHUT-OFF VALVE, 6" DIRT LEG, AND UNION AT EACH EQUIPMENT CONNECTION.
4. PROVIDE LANDLORD APPROVED PIPING SUPPORTS EVERY 5 FEET OR AS REQUIRED BY LANDLORD OR LOCAL AUTHORITY HAVING JURISDICTION, WHICHEVER IS MORE STRINGENT.
5. PAINT AND PRIME ALL EXPOSED GAS PIPING ON ROOF & EXTERIOR OF BUILDING WITH RUST-INHIBITING PAINT. COORDINATE COLOR REQUIREMENTS WITH LANDLORD.
6. TESTING AND PURGING OF GAS PIPING SHALL BE DONE PER THE REQUIREMENTS OF THE LOCAL GAS COMPANY, LOCAL CODES, AND APPLICABLE NFPA 54 CODES.
7. CONTACT AND COORDINATE GAS SERVICE AND METER REQUIREMENTS WITH THE LOCAL GAS COMPANY AND THE MALL'S OPERATIONS MANAGER PRIOR TO BID. INCLUDE INSTALLATION OF VALVES, FITTINGS, UNIONS, DIRT LEGS, REGULATORS, METERS, ETC. COSTS IN BID.

PRIOR TO BID, THE CONTRACTOR SHALL REVIEW THE MECHANICAL, ELECTRICAL AND KITCHEN EQUIPMENT DRAWINGS. THE CONTRACTOR SHALL INCLUDE IN HIS BID ALL RELEVANT WORK IN THE ENTIRE SET OF DOCUMENTS AND REPORT ALL DISCREPANCIES BETWEEN THESE DRAWINGS TO THE ENGINEER PRIOR TO BIDDING FOR CLARIFICATION. IF DISCREPANCIES REMAIN UNRESOLVED DUE TO A SHORT TIME FRAME, THE CONTRACTOR SHALL INCLUDE THE MOST WORK AND THE HIGHER COSTS IN THE BID. SOLUTIONS TO UNREPORTED DISCREPANCIES WILL BE DETERMINED BY THE ARCHITECT/ENGINEER, WITH NO ADDITIONAL COMPENSATION DUE TO THE CONTRACTOR.

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PROJECT:



BIBIBOP
asian grill

STREETS OF
WEST PRYOR

2050 NW LOWENSTEIN DR.
SUITE E

LEE'S SUMMIT, MO 64081

BIBIBOP STORE NO.:	B0057
BIBIBOP PO NO.:	TBD

PROJECT NO.: 0421995-101

DRAWN BY: TAB

CHECKED BY: GMS

ISSUES AND REVISIONS:

PERMIT ISSUE 01.25.2021

SHEET TITLE:

PLUMBING
SPECIFICATIONS

P300

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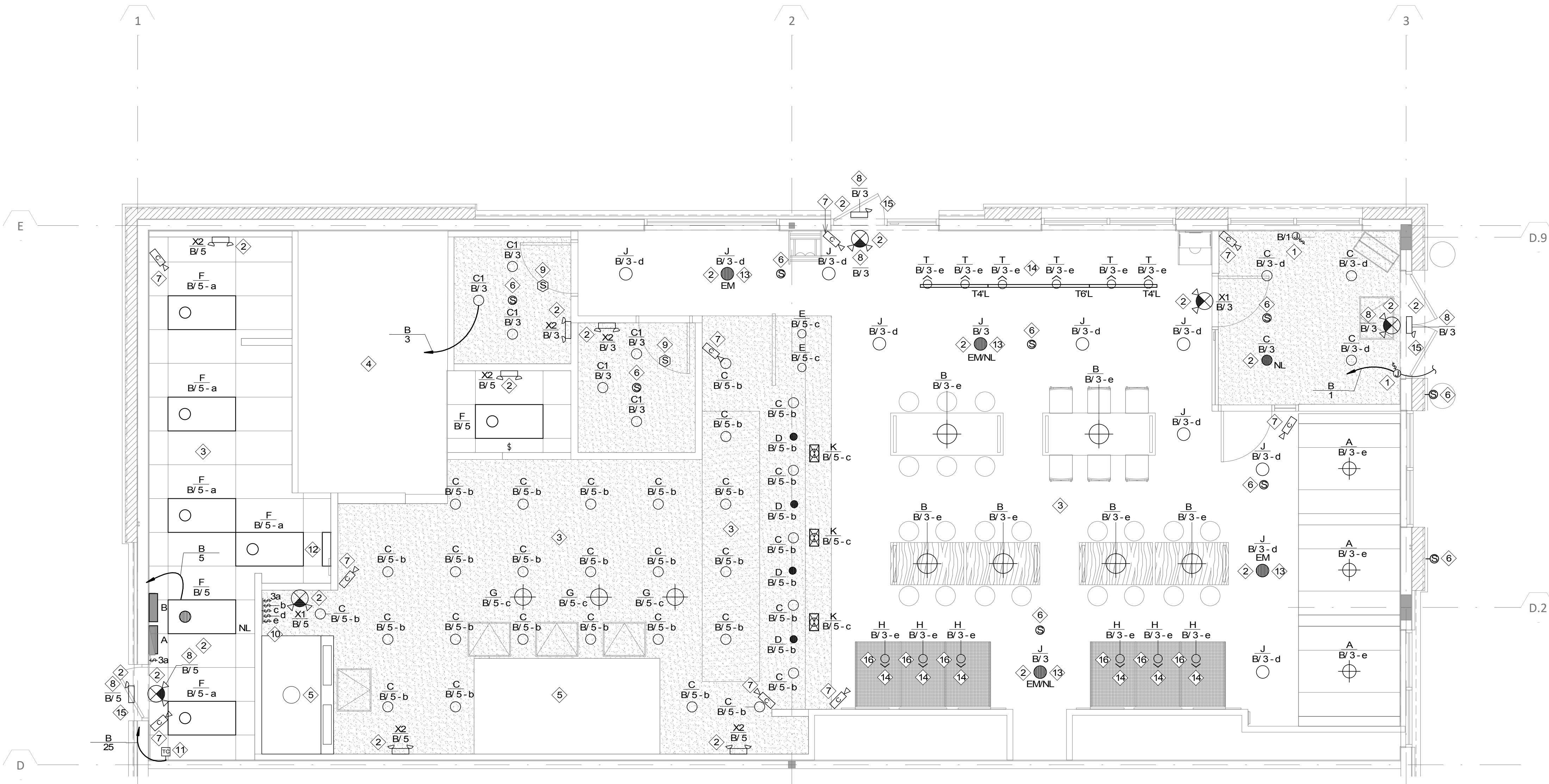
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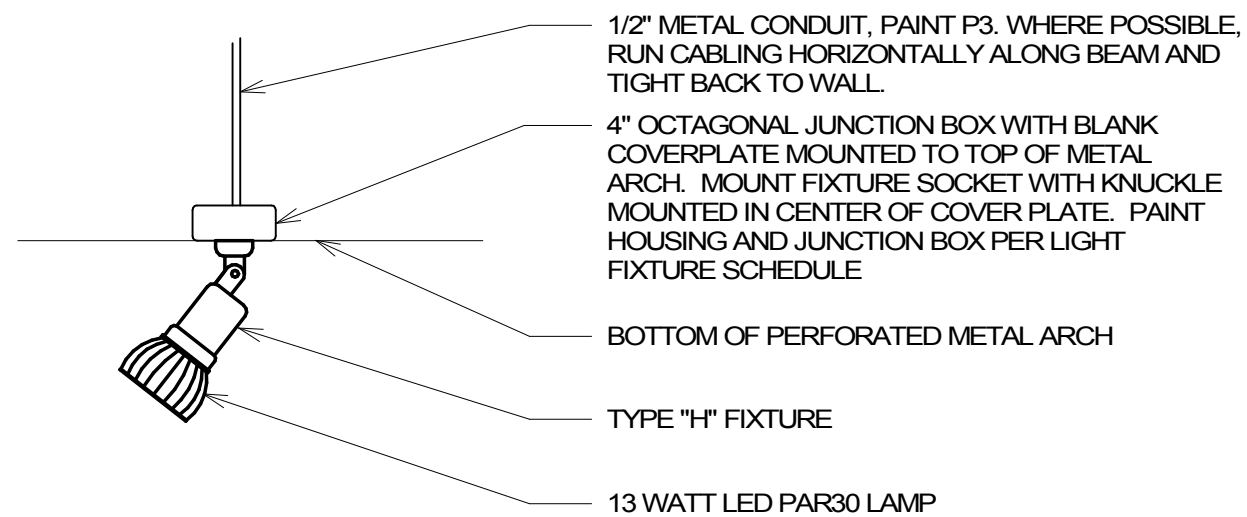
SHEET TITLE:

LIGHTING PLAN

E100



1 ELECTRICAL LIGHTING PLAN
1/4" = 1'-0"

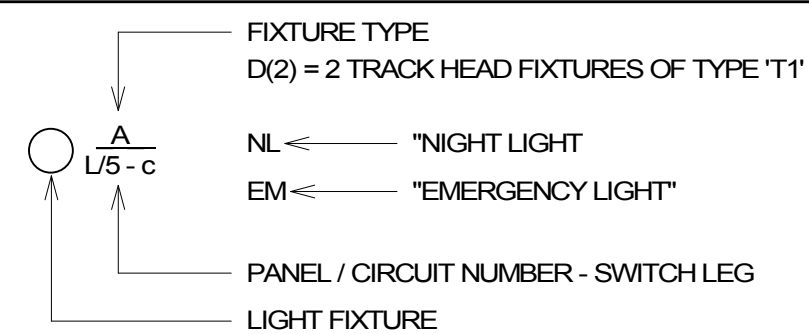


2 TYPE "H" FIXTURE MOUNTING DETAIL
NO SCALE

GENERAL NOTES:

- 120 VOLT BRANCH CIRCUITS IN EXCESS OF 75' SHALL HAVE CONDUCTOR SIZE INCREASED A MINIMUM OF 1 CONDUCTOR SIZE. INSTALLING CONTRACTOR SHALL DETERMINE ACTUAL CONDUCTOR SIZE TO BE INSTALLED TO ADHERE TO VOLTAGE DROP REQUIREMENTS.
- LINEAR FLUORESCENT LUMINAIRES SHALL BE INSTALLED TO MEET THE REQUIREMENTS OF NEC REGARDING LOCAL DISCONNECTING MEANS.
- PROVIDE STAINLESS STEEL COVER RINGS AT ALL THRU WALL AND CEILING PENETRATIONS.
- G.C. SHALL BE RESPONSIBLE FOR FUNCTIONAL TESTING OF THE LIGHTING CONTROL SYSTEMS TO ENSURE PROPER CALIBRATION, ADJUSTMENT, AND OPERATION PER SECTION C408.3 OF THE 2012 INTERNATIONAL ENERGY CONSERVATION CODE.

KEY



KEY NOTES:

- ELECTRICAL CONTRACTOR TO PROVIDE JUNCTION BOX WITH TOGGLE DISCONNECT SWITCH WITH IN 5 FEET OF SIGN IN ACCESSIBLE CONCEALED SPACE. SIGN FURNISHED AND INSTALLED BY SIGN CONTRACTOR. FINAL CONNECTION OF SIGN BY ELECTRICAL CONTRACTOR. SEE ARCHITECTURAL PLANS FOR SIGN LOCATION TO DETERMINE CONDUIT AND ROUTING. ALL OUTLETS, BOXES, CONDUIT, ETC. SHALL BE CONCEALED FROM VIEW. COORDINATE EXACT LOCATION WITH TENANT PRIOR TO ROUGH-IN. SIGN CONTROLLED VIA INTEGRAL PHOTOCELL.
- CONNECT EXIT/EMERGENCY AND NIGHT LIGHTS TO LOCAL LIGHTING CIRCUIT AHEAD OF ANY SWITCHING.
- REFER TO REFLECTED CEILING PLAN ON SHEET A240 FOR EXACT LOCATION AND MOUNTING HEIGHTS OF ALL LIGHTING FIXTURES WITHIN THE ENTIRE TENANT SPACE.
- SEE SHEET E110 FOR EQUIPMENT NUMBERS AND KITCHEN EQUIPMENT ELECTRICAL CONNECTION SCHEDULE ON SHEET E210 FOR INFORMATION ON CONNECTION OF WALK-IN COOLER LIGHTING SUPPLIED WITH COOLER.
- SEE SHEET E110 FOR EQUIPMENT NUMBERS AND KITCHEN EQUIPMENT ELECTRICAL CONNECTION SCHEDULE ON SHEET E210 FOR INFORMATION ON CONNECTION OF HOOD LIGHTING SUPPLIED WITH HOOD ALONG WITH HOOD DRAWINGS.
- PROVIDE JUNCTION BOX AND RACEWAY FOR SPEAKERS (BY OTHERS) BACK TO TERMINAL EQUIPMENT AT MANAGER'S DESK. COORDINATE EXACT REQUIREMENTS WITH G.C.
- PROVIDE JUNCTION BOX AND 2" CONDUIT FOR SECURITY CAMERAS (BY OTHERS) BACK TO TERMINAL EQUIPMENT AT MANAGER'S DESK. COORDINATE EXACT REQUIREMENTS WITH G.C. INSTALLER TO VERIFY LINE OF SIGHT IS SUFFICIENT AND REPORT ANY ISSUES TO BIBIBOP REPRESENTATIVE.

KEY NOTES:

- EXISTING EMERGENCY LIGHT FIXTURE TO REMAIN. COORDINATE LOCATION WITH BALANCE OF CONSTRUCTION DOCUMENTS AND CIRCUIT AS SCHEDULED.
- PROVIDE LUTRON LOS SERIES DUAL TECH CEILING MOUNTED OCCUPANCY SENSOR.
- SWITCH BANK LOCATION. PROVIDE SWITCHES AS REQUIRED PER ENERGY CODE REQUIREMENTS AND LABEL EACH SWITCH WITH LIGHTS THAT THEY CONTROL (DINING, KITCHEN OR B.O.H.) & PANEL CIRCUIT ASSOCIATED WITH. COORDINATE EXACT LOCATION WITH FINAL EQUIPMENT PLAN PRIOR TO ROUGH-IN.
- PROVIDE TORK OR EQUAL 4 CHANNEL ASTRONOMIC DIGITAL TIME CLOCK WITH 0-2 HOUR SPRING WOUND OVERRIDE FOR CONTROL OF INTERIOR LIGHTING AND SIGNAGE WITH A 4 POLE CONTACTOR.
- PROVIDE LIGHTING INVERTER ISOLITE IMI 125 MODEL NO. IMI-12-LC-V1-TB FOR EMERGENCY LIGHTING. COORDINATE EXACT LOCATION PRIOR TO ROUGH-IN.
- THIS LIGHT SHALL BE CONNECTED TO THE EMERGENCY LIGHTING INVERTER AHEAD OF ALL SWITCH CONTROLS.
- ALL FIXTURE HEADS TO BE REPOSITIONED BY CONTRACTOR AFTER CASEWORK IS INSTALLED. VERIFY FINAL LOCATION WITH TENANT'S REP.
- VERIFY IF THERE IS ADEQUATE EXISTING EXTERIOR GENERAL LIGHTING. PROVIDE NEW AS REQUIRED. COORDINATE FIXTURE TYPE WITH TENANT AND LANDLORD IF REQUIRED.
- MOUNT JUNCTION BOX FOR FIXTURE TYPE 'H' TO TOP OF METAL MESH ARCH SO FIXTURE CAN BE MOUNTED FLUSH TO UNDERSIDE OF METAL MESH ARCH. SEE DETAIL 2/E100 FOR ADDITIONAL INFORMATION.

IF YOU HAVE ANY QUESTIONS REGARDING THE ELECTRICAL PLANS, PLEASE CALL THE ELECTRICAL DESIGNER.

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CHECKED BY: RM

ISSUES AND REVISIONS:

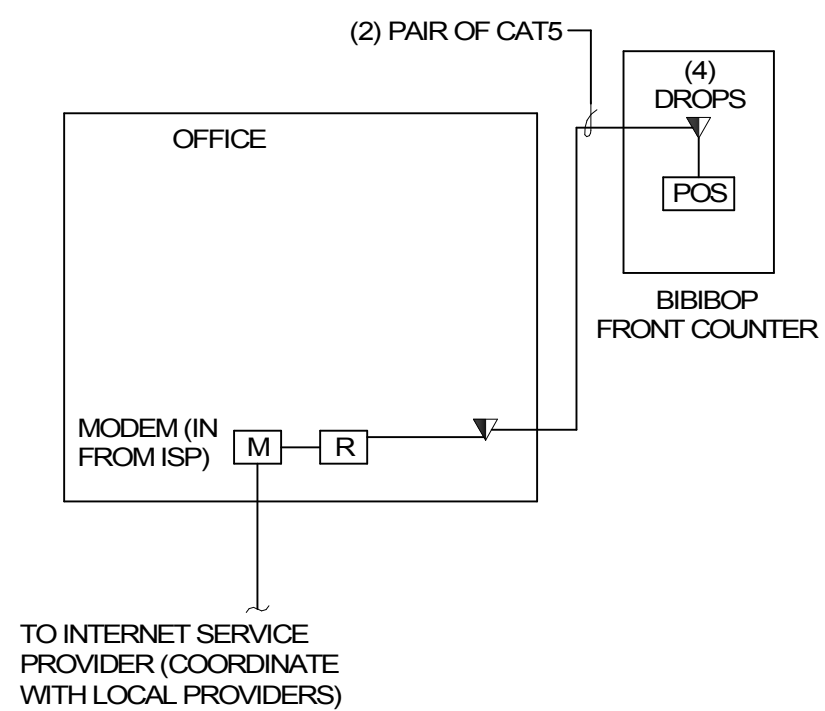
PERMIT ISSUE 01.25.2021

SHEET TITLE:
POWER PLAN

E110

LEGEND

MODEM [M]
ROUTER [R]
CAT 5E [V]
CAT 5E DROP W/DATA OUTLET [V]



4 POS DETAIL
NO SCALE

A/A1 = DOUBLE GANG BOX FOR RJ6 CABLES (SECURITY CAMERAS)

B/B1 = CAT 5 WITH FEMALE OUTLET (7) TO POS WITH FEMALE OUTLET

C/C1 = CAT 5 WITH FEMALE OUTLET (1) TO POS PRINTER

D/D1 = DOUBLE DUPLEX OUTLET

E = DUPLEX OUTLET

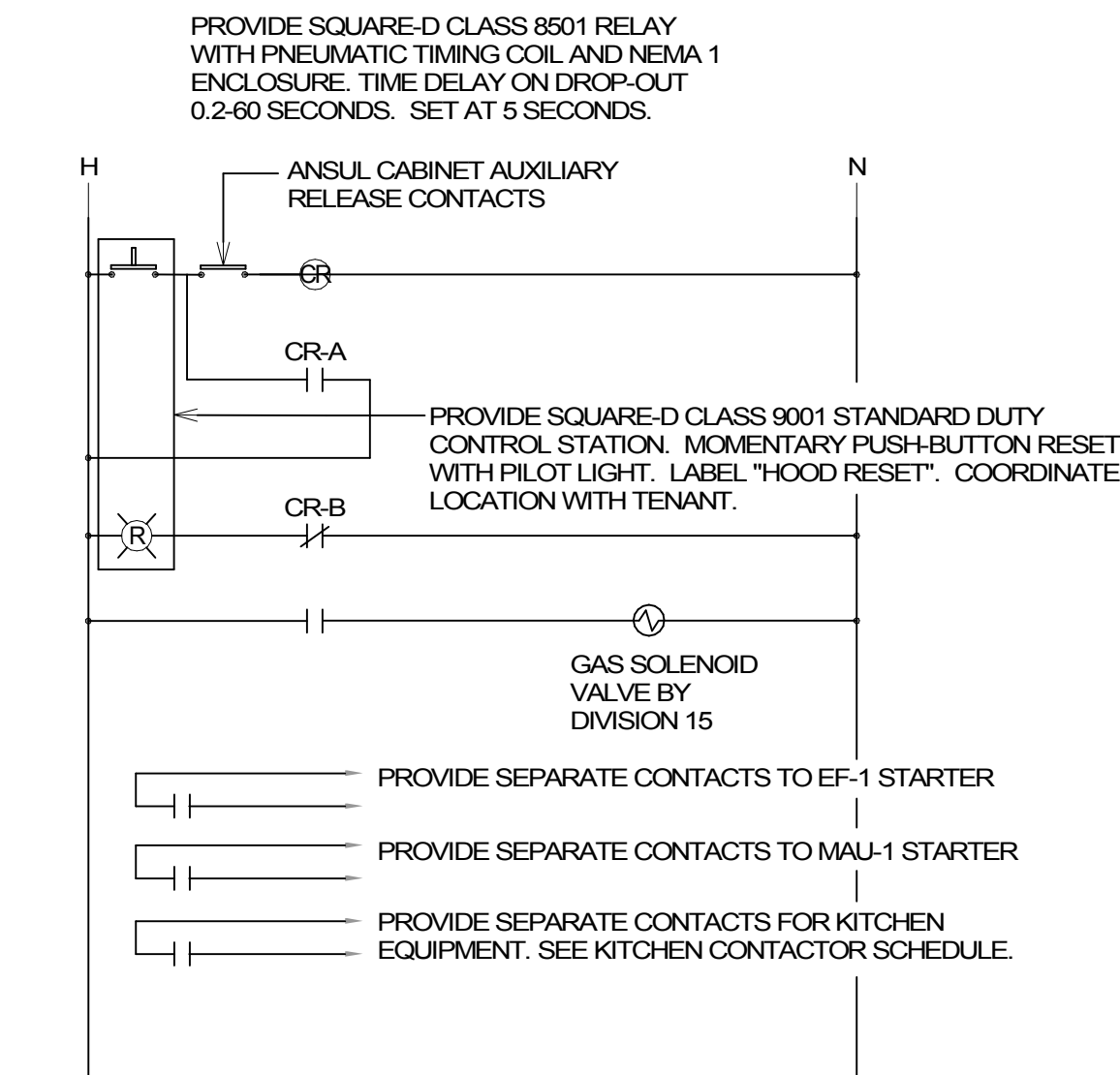
F = MUSIC SPEAKER 4 ZONE CONTROL - (3) SINGLE GANG JUNCTION BOXES FOR TOILET, VESTIBULE, AND EXTERIOR CONTROL AND (1) DOUBLE GANG JUNCTION BOX FOR DINING CONTROL

G = QUAD USB OUTLET

H = CONVENIENCE OUTLET

NOTE: ELECTRICAL CONTRACTOR TO BE RESPONSIBLE FOR PULLING AND TERMINATING DATA LINES FROM FRONT LINE CASEWORK BACK TO MANAGER'S DESK. SEE DETAIL 6/A600 FOR ADDITIONAL INFORMATION.

2 OFFICE ELEVATION
NO SCALE



3 HOOD EQUIP. CONTACTOR WIRING DIAGRAM (HOOD #1)
NO SCALE

1 ELECTRICAL POWER PLAN
1/4" = 1'-0"

KITCHEN CONTACTOR SCHEDULE

CONTACTOR NUMBER	# OF POLES	LOCATION	CONTACTOR TYPE	DESCRIPTION	PANEL	CIRCUIT	VOLTS	CONTROL	NOTES
C1	6 POLES 30 AMP	HOOD #1	208 VOLT ELECTRICALLY HELD	KITCHEN EQUIPMENT E51, E52, E53 & E56	B	18, 20, 22, 24	208	HOOD FIRE SUPPRESSION SYSTEM	1

CONTACTOR SCHEDULE GENERAL NOTES:

- PROVIDE NEMA 1 ENCLOSURE AND MOUNT ABOVE PANELBOARDS IN ACCESSIBLE CEILING.
- REFER TO KITCHEN EQUIPMENT ELECTRICAL CONNECTION SCHEDULE NOTE 1 FOR SEQUENCE OF OPERATION.

CONTACTOR SCHEDULE KEY NOTES:

- PROVIDE CONDUIT, WIRE AND CONNECT INTERFACE WITH FIRE PROTECTION DEVICES AT HOOD #1 (TERMINALS KS & N1 SEE SHEET H108) AS DESCRIBED IN KITCHEN EQUIPMENT ELECTRICAL CONNECTION SCHEDULE.

GENERAL NOTES:

- 120 VOLT BRANCH CIRCUITS IN EXCESS OF 75' SHALL HAVE CONDUCTOR SIZE INCREASED A MINIMUM OF 1 CONDUCTOR SIZE. INSTALLING CONTRACTOR SHALL DETERMINE ACTUAL CONDUCTOR SIZE TO BE INSTALLED TO ADHERE TO VOLTAGE DROP REQUIREMENTS.
- ELECTRICAL DEVICES AND COVER PLATES SHALL BE WHITE UNLESS AS OTHERWISE DIRECTED BELOW:
 - AT STAINLESS STEEL PANELS & WITHIN CONDIMENT STATION CASEWORK: GRAY DEVICES W/ STAINLESS STEEL COVER PLATES.
 - AT FRP & PAINTED SURFACES: WHITE DEVICES W/ WHITE COVER PLATES
 - AT WHITE KITCHEN TILE: WHITE DEVICES W/ PREFINISHED WHITE METAL COVER PLATE.
 - AT BLACK WALL PLANK TILE: BLACK DEVICES W/ BLACK COVER PLATES
- ALL RECEPTACLES SHALL BE INSTALLED WITH THE GROUND DOWN.
- PROVIDE STAINLESS STEEL COVER RINGS AT ALL THRU WALL AND CEILING PENETRATIONS.
- ALL RECEPTACLES SHALL BE LABELED WITH ASSOCIATED PANEL CIRCUIT.

GENERAL NOTES

- THIS DETAIL APPLIES TO KITCHEN HOOD #1 AND CONTACTOR C1.
- FLOW SWITCH & SOLENOID VALVE PROVIDED BY PLUMBING CONTRACTOR AND WIRED & CONNECTED BY ELECTRICAL CONTRACTOR.
- PROVIDE CONTROL TRANSFORMER WITH 120V SECONDARY SIZED AS REQUIRED.
- MOUNT RELAY ON HOOD ABOVE CEILING.
- MOUNT CONTACTORS ABOVE THE CEILING ABOVE THE KITCHEN PANELBOARD.

KEY NOTES:

- PROVIDE "TYPED" PANEL DIRECTORY PER SPECIFICATIONS, DRAWINGS, AND LOADS BEING SERVED. MAINTAIN CODE REQUIRED CLEARANCE AT PANELS.
- ELECTRICAL CONTRACTOR TO PROVIDE EMPTY CONDUIT BACK TO PHONE BOARD AND JUNCTION BOX FOR DATA AND PHONE LINES. VERIFY EXACT LOCATIONS WITH TENANT PRIOR TO INSTALLATION. COORDINATE DATA/POWER RECEPTACLES MOUNTING REQUIREMENTS WITH THE CASEWORK INSTALLER/SUPPLIER PRIOR TO ROUGH-IN. SEE ARCHITECTURAL ELEVATION & 4/E110.
- 2' X 4' X 3/4" TELEPHONE BOARD WITH DEDICATED DOUBLE DUPLEX RECEPTACLE AND CIRCUIT WITH ISOLATED GROUND. VERIFY SYSTEM GROUNDING AND ALL OTHER REQUIREMENTS WITH LOCAL TELEPHONE COMPANY. EXTEND 1" CONDUIT WITH PULL-WIRE FROM SERVICE ENTRANCE AT DEMISING WALL TO TELEPHONE BOARD. FIELD VERIFY EXACT LOCATION.
- HOOD HORN/STROBE PROVIDED BY EXHAUST HOOD VENDOR. ELECTRICAL CONTRACTOR TO LOCATE AND INSTALL HOOD HORN/STROBE PER AHJ.
- MECHANICAL EQUIPMENT. REFER TO MOTOR SCHEDULE, SHEET E210 FOR FURTHER INFORMATION. RTU-1, RTU-2, RTU-3, RTU-4, MAU-1, MAU/CU-1, EF-1, EF-2, & EF-3 ARE LOCATED ON THE ROOF. COORDINATE FINAL PLACEMENT PRIOR TO ROUGH-IN.
- PROVIDE 250V CONTACTORS FOR SHUTDOWN OF KITCHEN EQUIPMENT LOCATED UNDER THE HOODS. SEE KITCHEN EQUIPMENT ELECTRICAL CONNECTION SCHEDULE, NOTE 1. LOCATE CONTACTOR ABOVE ACCESSIBLE CEILING PANELS. SEE DETAIL 3/E110 FOR KITCHEN CONTACTOR SCHEDULE.
- PROVIDE MOMENTARY PUSH-BUTTON RESET WITH PILOT LIGHT FOR HOOD EQUIPMENT CONTACTOR RESET. PROVIDE STAINLESS STEEL ENGRAVED COVER PLATE. LABEL COVER PLATE "HOOD RESET". VERIFY EXACT PUSH-BUTTON MOUNTING LOCATION WITH LOCAL FIRE MARSHAL. SEE DETAIL 3/E110 FOR HOOD EQUIPMENT CONTACTOR WIRING DIAGRAM AND CONTACTOR SCHEDULE.
- INSTALL FIRE SUPPRESSION PULL STATION (FURNISHED BY KITCHEN EQUIPMENT VENDOR) AND CONNECT TO HOOD FIRE SUPPRESSION SYSTEM, KITCHEN CONTACTOR AND GAS SOLENOID VALVES. CONNECT SUCH THAT KITCHEN EQUIPMENT AND GAS SOLENOID VALVE SHUT DOWN UNDER ALARM CONDITIONS.

KEY NOTES:

- PROVIDE CONNECTIONS TO HOOD FIRE SUPPRESSION SYSTEM. CONNECTIONS SHALL INCLUDE 120V POWER FOR CONTROLS AND OPERATION AND FIRE ALARM SIGNALING FOR INTERLOCK WITH BUILDING'S FIRE ALARM CONTROL PANEL IF REQUIRED. SEE HOOD DRAWINGS FOR ADDITIONAL INFORMATION.
- PROVIDE CONNECTION TO WATER HEATER AND RECIRCULATION PUMP. SEE EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION.
- PROVIDE POWER TO LOW VOLTAGE WIRELESS SERVICE DOOR BUZZER SYSTEM. SYSTEM SHALL INCLUDE TRANSFORMER, PUSHBUTTON AND (1) BUZZER NEAR OFFICE DESK.
- VERIFY EXISTING FACTORY INSTALLED DUCT SMOKE DETECTOR IS PRESENT. PROVIDE FINAL CONNECTIONS TO CIRCUIT AS INDICATED WITH KEYED REMOTE TEST SWITCH (K) WITH AUDIBLE AND VISUAL INDICATORS AT MANAGER'S DESK. COORDINATE WITH LANDLORD & DETAIL 6/A600. COORDINATE WITH MECHANICAL CONTRACTOR. ALL FIRE ALARM WORK SHALL BE COMPLETED BY LANDLORD'S CONTRACTOR AT TENANT'S EXPENSE IF REQUIRED. PROVIDE NEW DUCT SMOKE DETECTOR AS REQUIRED.
- PROVIDE SHOW WINDOW RECEPTACLES ABOVE WINDOW AND LOCATE PER NEC IF NOT ALREADY EXISTING. RECEPTACLES CANNOT BE LOCATED MORE THAN 18" ABOVE THE TOP OF THE WINDOW (NEC 210.62). SEE GENERAL NOTES, THIS SHEET, FOR COLOR.
- PROVIDE USB RECEPTACLE: COOPER #1TR756 20A TAMPER RESISTANT. VERIFY COLOR & MOUNTING HEIGHT WITH TENANT REPRESENTATIVE.
- VERIFY EXACT LOCATION OUTLETS CAN BE MOUNTED IN THIS WALL. OUTLETS SHALL BE MOUNTED BETWEEN REMOVABLE CASEWORK WALL PANELS, VERIFY.
- ALL RECEPTACLES AT COOK LINE WALL TO BE 24" A.F.F. U.N.O.
- KITCHEN HOOD CONTROL PANEL. MAKE CONNECTIONS TO EXHAUST FANS, MAKE-UP AIR UNIT, MAKE UP AIR CONDENSER(S), HOOD LIGHTS, FIRE SUPPRESSION SYSTEMS, LOW VOLTAGE CONNECTIONS, CONTROLS, ETC., INCLUDING DAMPER SWITCH AND HEAT SENSOR. SEE SHEET H108 FOR ALL REQUIRED FIELD WIRED CONNECTIONS. WITH CAPTIVE/ARE DRAWINGS.

KEY NOTES:

- MAKE 120V CONNECTION TO GAS SOLENOID VALVE (FURNISHED BY PLUMBING CONTRACTOR). SEE KITCHEN EQUIPMENT ELECTRICAL CONNECTION SCHEDULE NOTE 1 AND DETAIL 3/E110 HOOD EQUIPMENT CONTACTOR WIRING DIAGRAM.
- ROUTE ELECTRICAL CONDUITS SERVING FRONT LINE WALL FROM ADJACENT FULL HEIGHT WALL. WITH CONDUITS ROUTED HORIZONTALLY AND INTO LOW PARTIAL HEIGHT WALL. COORDINATE ROUTING WITH OTHER TRADES TO AVOID ANY CONFLICTS.
- PROVIDE (1) JUNCTION BOX FOR MAIN POWER FEED IN KNEE WALL AND (1) SWITCH FOR SNEEZE GUARD. LED LIGHTS AT OPERATOR SIDE OF COUNTER. THE SWITCH IS FOR "ON/OFF" CONTROL OF THE LED LIGHTS. THE K.E.C. WILL PROVIDE THE LED LIGHTS AND DRIVER(S), AND THE E.C. SHALL INSTALL. SEE EQUIPMENT SCHEDULE AND KITCHEN EQUIPMENT VENDOR WIRING DIAGRAM FOR ADDITIONAL INFORMATION.
- E.C. TO PROVIDE POWER OVERHEAD TO THIS AREA. RUN CONDUITS AS CLOSE TO STRUCTURE ABOVE WHILE TRYING TO CONCEAL FROM PUBLIC VIEW. RUN VERTICAL CONDUIT CONCEALED WITHIN ADJACENT WALL.
- PROVIDE WIREMOLD DOGHOUSE STYLE SURFACE MOUNTED FLOOR BOX WITH QUAD RECEPTACLE. MODEL NO. 5251 AND WIREMOLD 800CLOX FLOOR BOX WITH 825SPCK CONVERSION KIT. MOUNT TO SERVICE CURB. SEE ARCHITECTURAL PLANS FOR CURB DETAIL.
- JUNCTION BOXES FOR EQUIPMENT AT THE CONDIMENT STATION SHALL BE MOUNTED WITHIN THE CASEWORK CUPBOARD. COORDINATE WITH CASEWORK VENDOR PRIOR TO ROUGH-IN.
- PROVIDE 120V CONNECTION FROM HOOD CONTROL PANEL (CCT A-33) TO HEATER IN MAU-1. SEE HOOD DRAWING H108 FOR ADDITIONAL INFORMATION.
- INTERWIRE INSECT FAN MICROSWITCH WITH WALK-IN DOOR SO THAT WHEN WALK-IN DOOR IS OPENED THE INSECT FAN TURNS ON. COORDINATE WITH EQUIPMENT VENDOR PRIOR TO ROUGH-IN.

NOTES & TAGS			LIGHTING	
	ELEC EQUIP CONNECTION TAG - SEE EQUIP SCHEDULE CO=CONVENIENCE OUTLET			PENDANT LIGHT FIXTURE
	KEYNOTE			ROUND DOWNLIGHT, RECESSED OR SURFACE MOUNT
	CIRCUIT HOME RUN - L INDICATES PANEL - NUMBERS INDICATE CIRCUITS			TROFFER TYPE LIGHT FIXTURE, SIZE AS INDICATED - CEILING MOUNT
	CONDUCTOR COUNT - UNLESS NOTED OTHERWISE / SHORT HASH INDICATES 1#12 LINE / LONG HASH INDICATES 1#12 NEUTRAL / HASH W/DOT INDICATES 1#12 GROUND			CEILING WALL WASH FIXTURE OR TRACK HEAD
	JUNCTION BOX - WALL/CEILING MOUNT			EXIT LIGHT, FILLED QUADRANT INDICATES FACES - WALL/CEILING MOUNT
POWER			FIRE ALARM/DATA	
	BRANCH CIRCUIT PANEL	VERIFY		MANUAL PULL STATION - WALL MOUNT @48"
	TRANSFORMER	VERIFY		SMOKE DETECTOR (P=PHOTOELEC, I=IONIZATION)
	MOTOR OR MOTOR CONNECTION	VERIFY		DUCT MOUNTED PHOTOELECTRIC DETECTOR
	DISCONNECT SWITCH	VERIFY		FLOW SWITCH
	SIMPLEX RECEPTACLE	18"		TAMPER SWITCH
	DUPLEX RECEPTACLE	18"		STROBE (# = CANDELA)
	ENTIRE DUPLEX RECEPTACLE TO BE SWITCHED	18"		HORN
	LOWER HALF OF DUPLEX RECEPTACLE TO BE SWITCHED	18"		HORN/STROBE
	QUADPLEX RECEPTACLE	18"		DATA OUTLET - WALL MOUNT
	DUPLEX RECEPTACLE - CEILING MOUNT			PHONE/DATA OUTLET - WALL MOUNT
	GFI RECEPTACLE, DUPLEX/QUADPLEX - WALL MOUNT			PHONE OUTLET - WALL MOUNT
	CLOCK RECEPTACLE			TV SYSTEM OUTLET
	SPECIAL PURPOSE RECEPTACLE	18"		BUZZER - WALL/CEILING MOUNT
	SPECIAL PURPOSE RECEPTACLE - CEILING		ABBREVIATIONS	
	FLOOR BOX - DEVICES AS INDICATED		AFF	ABOVE FINISHED FLOOR
	POWER POLE - DEVICES AS INDICATED		AFG	ABOVE FINISHED GRADE
	MULTIOUTLET ASSEMBLY - DEVICES AS INDICATED		AHU	AUTHORITY HAVING JURISDICTION
			CO	CONVENIENCE (GENERAL) OUTLET
			GFI/GFCI	GROUND FAULT INTERRUPTER
			GND	GROUND
			IG	ISOLATED GROUND
			TYP	TYPICAL
			UC	UNDER COUNTER
			UNO	UNLESS NOTED OTHERWISE
			WP	WEATHERPROOF
SWITCHES AND CONTROLS				
	SINGLE POLE TOGGLE SWITCH	46"		
	THREE WAY TOGGLE SWITCH	46"		
	TOGGLE SWITCH - "g" INDICATES SWITCHING	46"		
	PILOT LIGHT TOGGLE SWITCH	46"		
	ILLUMINATED TOGGLE - TOGGLE SWITCH	46"		
	KEYED SWITCH	46"		
	MOMENTARY CONTACT TOGGLE SWITCH	46"		
	TIMER SWITCH	46"		
	DIMMER SWITCH (# = WATTAGE)	46"		
	OCCUPANCY SENSOR - WALL/CLG MOUNT			
	OCCUPANCY SENSOR WALL SWITCH	46"		
	VACANCY SENSOR - WALL/CLG MOUNT			
	VACANCY SENSOR WALL SWITCH	46"		
	PHOTO ELECTRIC CELL			
	TIME CLOCK			
	CONTACTOR			
	LOW VOLTAGE TRANSFORMER			
	ELECTRIC THERMOSTAT			
	PUSHBUTTON STATION - BUTTONS AS INDICATED			

ELECTRICAL EQUIPMENT SCHEDULE

EQUIPMENT TAG	DESCRIPTION	VOLTAGE	PHASE	PANEL	CIRCUIT NUMBER	CONDUIT AND FEEDER SIZE	CONNECTION TYPE	MOUTING HEIGHT	NOTES
E1	WALK-IN COOLER LIGHTING	120 V	1	A	42	3/4"C. 2#12 & 1#12 GND	DIRECT	DFA	
E1.1	WALK-IN COOLER EVAP.	120 V	1	A	30	3/4"C. 2#12 & 1#12 GND	DIRECT	DFA	
E1.1	WALK-IN COOLER COMP.	208 V	1	A	22,24	3/4"C. 2#8 & 1#10 GND	60A/2P NF DS. SW.	ON ROOF	
E1.1	WALK-IN COOLER COMP. (REDUNDANT SYS.)	208 V	1	A	26,28	3/4"C. 2#8 & 1#10 GND	60A/2P NF DS. SW.	ON ROOF	
E1.1	WALK-IN COOLER EVAP. (REDUNDANT SYS.)	120 V	1	A	32	3/4"C. 2#12 & 1#12 GND	DIRECT	DFA	
E8	FUTURE UNDERCOUNTER DISHWASHER	120 V	1	B	23	3/4"C. 2#12 & 1#12 GND	5-15R	18"	
E9	WATER FILTRATION SYSTEM	120 V	1	B	47	3/4"C. 2#12 & 1#12 GND	5-20R	72"	
E10	BAG-IN-BOX	120 V	1	A	10	3/4"C. 2#12 & 1#12 GND	5-20R	VERIFY	
E15	INSECT FAN	120 V	1	A	31	3/4"C. 2#12 & 1#12 GND	DIRECT	ABOVE DOOR	4
E15	INSECT FAN	120 V	1	A	44	3/4"C. 2#12 & 1#12 GND	DIRECT	ABOVE DOOR	4
E23.1	WORKTOP REFRIGERATOR - 72"	120 V	1	B	38	3/4"C. 2#12 & 1#12 GND	5-20R	FLOOR BOX	
E24	WORKTOP FREEZER - 60"	120 V	1	B	13	3/4"C. 2#12 & 1#12 GND	5-20R	24"	
E27	SALAD DRYER	120 V	1	B	38	3/4"C. 2#12 & 1#12 GND	5-20R	FLOOR BOX	
E28	VEGETABLE CUTTER	120 V	1	B	40	3/4"C. 2#12 & 1#12 GND	5-20R	FLOOR BOX	
E32	INDUCTION HOT TOP	120 V	1	B	28	3/4"C. 2#12 & 1#12 GND	5-20R	18"	
E33	TEA MAKER	120 V	1	B	30	3/4"C. 2#12 & 1#12 GND	5-20R	18"	
E35	REFRIGERATED PREP TABLE - 60"	120 V	1	B	42	3/4"C. 2#12 & 1#12 GND	5-20R	FLOOR BOX	
E40	EXHAUST HOOD CONTROLS & LTG	120 V	1	B	37	3/4"C. 2#12 & 1#12 GND	DIRECT	AT HOOD	
E42	ELECTRIC STEAMER	208 V	3	B	41,43,45	3/4"C. 3#10 & 1#10 GND	15-30R	VERIFY	2
E43	REVERSE OSMOSIS FILTER	120 V	1	B	47	3/4"C. 2#12 & 1#12 GND	5-20R	18"	
E46	GAS RICE COOKER	120 V	1	B	51	3/4"C. 2#12 & 1#12 GND	5-20R	18"	
E46	GAS RICE COOKER	120 V	1	B	49	3/4"C. 2#12 & 1#12 GND	5-20R	18"	
E50	EXHAUST HOOD CONTROLS & LTG	120 V	1	A	35	3/4"C. 2#12 & 1#12 GND	DIRECT	AT HOOD	
E51	GAS RANGE	120 V	1	B	18	3/4"C. 2#12 & 1#12 GND	5-20R	24"	1
E52	COOK STAND REFRIGERATOR	120 V	1	B	20	3/4"C. 2#12 & 1#12 GND	5-20R	24"	1
E53	GAS GRIDDLE	120 V	1	B	22	3/4"C. 2#12 & 1#12 GND	5-20R	24"	1
E56	KNIFE SANITIZER	120 V	1	B	24	3/4"C. 2#12 & 1#12 GND	5-20R	24"	1
E57	RICE WARMER (COOK LINE)	120 V	1	B	32	3/4"C. 2#12 & 1#12 GND	5-20R	24"	
E57	RICE WARMER (COOK LINE)	120 V	1	B	34	3/4"C. 2#12 & 1#12 GND	5-20R	24"	
E57	RICE WARMER	120 V	1	B	15	3/4"C. 2#12 & 1#12 GND	5-20R	18"	
E58	COUNTERTOP WARMER	120 V	1	B	26	3/4"C. 2#12 & 1#12 GND	5-20R	24"	
E60	REFRIGERATED PREP TABLE	120 V	1	B	17	3/4"C. 2#12 & 1#12 GND	5-20R	18"	
E61.1	HOT FOOD TABLE	208 V	1	B	19,21	3/4"C. 2#12 & 1#12 GND	5-15R	18"	
E70	SNEEZE GUARD EQUIPMENT	120 V	1	B	2	3/4"C. 2#12 & 1#12 GND	DIRECT	18"	
E71	POS	120 V	1	B	31	3/4"C. 2#12 & 1#12 GND	5-20R	18"	3
E72	DROP-IN COLD WELL	120 V	1	B	4	3/4"C. 2#12 & 1#12 GND	5-20R	18"	
E73	RICE WARMER	120 V	1	B	6	3/4"C. 2#12 & 1#12 GND	5-20R	18"	
E74	DROP-IN HOT WELL	208 V	1	A	38,40	3/4"C. 2#12 & 1#12 GND	6-20R	18"	
E74	DROP-IN HOT WELL	208 V	1	A	34,36	3/4"C. 2#12 & 1#12 GND	6-20R	18"	
E75	DROP-IN COLD WELL	120 V	1	B	8	3/4"C. 2#12 & 1#12 GND	5-20R	18"	
E77	VERTICAL MERCHANDISER	208 V	1	A	46,48	3/4"C. 2#12 & 1#12 GND	6-20R	18"	
E100	ICE & BEVERAGE DISPENSER	120 V	1	A	10	3/4"C. 2#12 & 1#12 GND	5-20R	IN CASEWORK	
E101	ICE MAKER	120 V	1	A	2	3/4"C. 2#12 & 1#12 GND	5-20R	IN CASEWORK	2
E102	ANTIMICROBIAL ICE PROTECTION	120 V	1	A	4	3/4"C. 2#12 & 1#12 GND	5-20R	IN CASEWORK	
E103	BEVERAGE DISPENSER	120 V	1	A	8	3/4"C. 2#12 & 1#12 GND	5-20R	IN CASEWORK	
E103	BEVERAGE DISPENSER	120 V	1	A	6	3/4"C. 2#12 & 1#12 GND	5-20R	IN CASEWORK	
E111	SOUP MERCHANDISER	120 V	1	A	12	3/4"C. 2#12 & 1#12 GND	5-20R	IN CASEWORK	
WH-1	WATER HEATER	120 V	1	B	7	3/4"C. 2#12 & 1#12 GND	DIRECT	VERIFY	

GENERAL NOTES:

- A. SEE EQUIPMENT PLAN ON ARCHITECTURAL SHEET A230 FOR EQUIPMENT LOCATIONS. ADDITIONAL EQUIPMENT INFORMATION PROVIDED IN 2020 MASTER SPEC BOOK.
B. ALL 120V 15A OR 20A RECEPTACLES, 208V SINGLE PHASE RECEPTACLES UNDER 50A, AND 208V 3 PHASE RECEPTACLES UNDER 100A, IN KITCHEN AREAS SHALL BE GFCI PROTECTED AT THE CIRCUIT BREAKER.

NOTES:

1. KITCHEN EQUIPMENT LOCATED UNDER THE HOOD SHALL SHUT DOWN UPON ACTIVATION OF FIRE PROTECTION SYSTEM AND GAS SOLENOID MANUAL PULL STATION. PROVIDE POWER CONTACTOR LOCATED ABOVE CEILING AND INTERCONNECT TO HOOD FIRE PROTECTION SYSTEMS. PROVIDE WIRING THROUGH CONTACTOR TO KITCHEN EQUIPMENT. REFER TO CAPTIVEAIRE HOOD DRAWINGS AND KITCHEN CONTACTOR SCHEDULE FOR ADDITIONAL INFORMATION.
2. E.C. SHALL PROVIDE CORD AND PLUG.
3. E.C. TO PROVIDE DATA TO OFFICE. VERIFY REQUIREMENTS WITH TENANT.
4. ELECTRICAL CONTRACTOR TO INSTALL SWITCH FOR INSECT FAN PROVIDED BY THE KITCHEN EQUIPMENT VENDOR.

MOTOR SCHEDULE

ELECTRICAL

EQUIPMENT TAG	Description	HP/LOAD	VOLTAGE	PHASE	DISCONNECT AT MOTOR AMPS/TYPE	PANEL	CIRCUIT NUMBER	CONDUIT/FEEDER SIZE	ELECTRICAL NOTES
EF 1	EXHAUST FAN	1.5 HP	208 V	3	30A/3P NON-FUSED	A	37,39,41	3/4"C. 3#12 & 1#12 GND	3
EF 2	EXHAUST FAN	.5 HP	120 V	1	MOTOR RATED SW.	B	39	3/4"C. 2#12 & 1#12 GND	3
EF 3	EXHAUST FAN	1/10 HP	120 V	1	MOTOR RATED SW.	B	3	3/4"C. 2#12 & 1#12 GND	2
MAU 1	MAKEUP AIR UNIT	3 HP	208 V	3	30A/3P NON-FUSED	A	43,45,47	3/4"C. 3#12 & 1#12 GND	3
MAU/CU 1	MAKEUP AIR CONDENSING UNIT	21.4 MCA	208 V	3	30A/3P NON-FUSED	A	49,51,53	3/4"C. 3#10 & 1#10 GND	3
RTU 1	EXISTING ROOF TOP UNIT	26 MCA	208 V	3	EXISTING	A	1,3,5	3/4"C. 3#10 & 1#10 GND	1,4,5,6
RTU 2	EXISTING ROOF TOP UNIT	28 MCA	208 V	3	EXISTING	A	7,9,11	3/4"C. 3#8 & 1#10 GND	1,4,5,6
RTU 3	EXISTING ROOF TOP UNIT	26 MCA	208 V	3	EXISTING	A	13,15,17	3/4"C. 3#10 & 1#10 GND	1,4,5,6
RTU 4	EXISTING ROOF TOP UNIT	26 MCA	208 V	3	EXISTING	A	19,21,23	3/4"C. 3#10 & 1#10 GND	1,4,5,6

GENERAL NOTES:

- A. DIVISION 16 CONTRACTOR TO PROVIDE RECEPTACLES AND DISCONNECT SWITCHES AS CALLED FOR IN THE SCHEDULE ABOVE UNLESS NOTED OTHERWISE.
B. VERIFY ALL EQUIPMENT RATINGS AND REQUIREMENTS WITH APPROVED SHOP DRAWINGS/TENANT SUPPLIER PRIOR TO ROUGH IN.
C. ALL EQUIPMENT AND MOTORS TO BE CONNECTED BY DIVISION 16 CONTRACTOR UNLESS STATED OTHERWISE.

ELECTRICAL NOTES:

1. VERIFY NAMEPLATE DATA AS IT MAY BE DIFFERENT THAN ACTUAL EQUIPMENT PROVIDED.
2. CONTROL VIA TIME CLOCK TO OPERATE DURING OCCUPIED HOURS. COORDINATE WITH MECHANICAL CONTRACTOR.
3. SEE HOOD DRAWINGS FOR MORE INFORMATION AND ALL REQUIRED ELECTRICAL CONNECTIONS.
4. PROVIDE CONNECTION TO THERMOSTAT FOR CONTROL. SEE MECHANICAL SHEETS FOR LOCATIONS AND COORDINATE WITH M.C. PRIOR TO ROUGH-IN.
5. ROOF TOP UNIT IS EXISTING. PROVIDE CONNECTIONS AS INDICATED.
6. VERIFY THAT EXISTING ROOF TOP UNITS HAVE BEEN PROVIDED WITH WEATHERPROOF DISCONNECT SWITCH AND WEATHERPROOF GFI RECEPTACLE. PROVIDE NEW AS REQUIRED.

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mechanical + electrical consulting engineering

SEAL/SIGNATURE:



PROJECT:



BIBIBOP asian grill

STREETS OF WEST PRYOR

2050 NW LOWENSTEIN DR.
SUITE E
LEE'S SUMMIT, MO 64081

BIBIBOP STORE NO.: B0057
BIBIBOP PO NO.: TBD

PROJECT NO.: 0421995-101

DRAWN BY: CM

CHECKED BY: RM

ISSUES AND REVISIONS:

PERMIT ISSUE 01.25.2021

SHEET TITLE:
ELECTRICAL SCHEDULES
& SYMBOLS

E210

SECTION 16 0500 – COMMON WORK RESULTS FOR ELECTRICAL

- 1.1 SUMMARY
- A. Section Includes:
- Common electrical installation requirements.
- 1.2 COMMON REQUIREMENTS FOR ELECTRICAL INSTALLATION
- A. Comply with NECA 1.
- B. Measure indicated mounting heights to bottom of unit for suspended items and to center of unit for wall-mounting items.
- C. Headroom Maintenance: If mounting heights or other location criteria are not indicated, orange and install components and equipment to provide maximum possible headroom consistent with these requirements.
- D. Equipment: Install to facilitate service, maintenance, and repair or replacement of components of both electrical equipment and other nearby installations. Connect in such a way as to facilitate future disconnecting with minimum interference with other items in the vicinity.
- E. Right of Way: Give to piping systems installed at a required slope.
- F. Contractor shall provide rough-in for and connect to the following equipment furnished by others. Equipment will be provided by other contractors or owner. Secure rough-in information, connection requirements, and templates from equipment supplier. Verify all equipment voltage and power requirements:
- Plumbing and HVAC equipment.
 - Electric motors.
- 1.3 FIRE–STOPPING
- A. Apply fire-stopping to penetrations of fire-rated floor and wall assemblies for electrical installations to restore original fire-resistance rating of assembly. Fire-stopping materials and installation requirements are specified in Division 07 Section "Penetration Fire-stopping."
- 1.4 SEISMIC REQUIREMENTS
- C. Provide bracing and supports to meet code required seismic ratings.

SECTION 16 0519 – LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

- 1.1 SUMMARY
- A. This Section includes the following:
- Building wires and cables rated 600 V and less.
 - Connectors, splices, and terminations rated 600 V and less.
- 1.2 QUALITY ASSURANCE
- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.
- 1.3 CONDUCTORS AND CABLES
- A. Copper and Aluminum Conductors: Comply with NEMA WC 70.
- B. Conductor Insulation: Comply with NEMA WC 70 for Types THHN–THWN and XHHW.
- C. Multi-conductor Cable: Comply with NEMA WC 70 for metal-clad cable, Type MC with ground wire.
- 1.4 CONDUCTOR MATERIAL APPLICATIONS
- A. Feeders: Copper for feeders smaller than No. 3 AWG; copper or aluminum for feeders No. 3 AWG and larger. Solid for No. 12 AWG and smaller; stranded for No. 10 AWG and larger.
- B. Branch Circuits: Copper. Solid for No. 12 AWG and smaller; stranded for No. 10 AWG and larger.
- 1.5 CONDUCTOR INSULATION AND MULTI-CONDUCTOR CABLE APPLICATIONS AND WIRING METHODS
- A. Service Entrances: Type THHN–THWN, single conductors in raceway or Type XHHW, single conductors in raceway.
- B. Exposed Feeders: Type THHN–THWN, single conductors in raceway.
- C. Feeders Concealed in Ceilings, Walls, Partitions, and Crawlspace: Type THHN–THWN, single conductors in raceway.
- D. Feeders Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN–THWN, single conductors in raceway.
- E. Exposed Branch Circuits, including in Crawlspace: Type THHN–THWN, single conductors in raceway.
- F. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Type THHN–THWN, single conductors in raceway or Metal-clad cable, Type MC.
- G. Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN–THWN, single conductors in raceway.
- 1.6 INSTALLATION OF CONDUCTORS AND CABLES
- A. Conceal cables in finished walls, ceilings, and floors, unless otherwise indicated.
- B. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.

SECTION 16 0526 – GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

- 1.1 SUMMARY
- A. This Section includes methods and materials for grounding systems and equipment.
- 1.2 QUALITY ASSURANCE
- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with UL 467 for grounding and bonding materials and equipment.
- 1.3 APPLICATIONS
- A. Conductors: Install solid conductor for No. 12 AWG and smaller, and stranded conductors for No. 10 AWG and larger, unless otherwise indicated.
- 1.4 EQUIPMENT GROUNDING
- A. Install insulated equipment grounding conductors with the following items, in addition to those required by NFPA 70:
- Feeders and branch circuits.
 - Lighting circuits.
 - Receptacle circuits.
 - Single-phase motor and appliance branch circuits.
 - Three-phase motor and appliance branch circuits.

SECTION 16 0532 – HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

- 1.1 SUMMARY
- A. Section includes:
- Hangers and supports for electrical equipment and systems.
 - Construction requirements for concrete bases.
- 1.2 PERFORMANCE REQUIREMENTS
- A. Design supports for multiple raceways capable of supporting combined weight of supported systems and its contents.
- B. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.
- 1.3 QUALITY ASSURANCE
- A. Comply with NFPA 70.

SECTION 16 0533 – RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

- 1.1 SUMMARY
- A. This Section includes raceways, fittings, boxes, enclosures, and cabinets for electrical wiring.
- 1.2 QUALITY ASSURANCE
- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.

- 1.3 METAL CONDUIT AND TUBING
- A. Rigid Steel Conduit: ANSI C80.1.
- B. IMC: ANSI C80.6.
- C. EMT: ANSI C80.3.
- D. FMC: Zinc-coated steel.
- E. LFMC: Flexible steel conduit with PVC jacket.
- F. Fittings for Conduit (Including all Types and Flexible and Liquidtight), EMT, and Cable: NEMA FB 1, listed for type and size raceway with which used, and for application and environment in which installed.
1. Conduit Fittings for Hazardous (Classified) Locations: Comply with UL 886.
2. Fittings for EMT: Steel, set-screw, or compression type.
- 1.4 NONMETALLIC CONDUIT AND TUBING
- A. ENT: NEMA TC 13.
- B. RNC: NEMA TC 2, Type EPC–40–PVC, unless otherwise indicated.
- C. LFNC: UL 1660.
- D. Fittings for ENT and RNC: NEMA TC 3; match to conduit or tubing type and material.
- E. Fittings for LFNC: UL 514B.
- 1.5 BOXES, ENCLOSURES, AND CABINETS
- A. Sheet Metal Outlet and Device Boxes: NEMA OS 1.
- B. Cast-Metal Outlet and Device Boxes: NEMA FB 1, aluminum, Type FD, with gasketed cover.
- C. Nonmetallic Outlet and Device Boxes: NEMA OS 2.
- 1.6 RACEWAY APPLICATION
- A. Outdoors: Apply raceway products as specified below, unless otherwise indicated:
- Exposed Conduit: Rigid steel conduit or RNC, Type EPC–40–PVC.
 - Concealed Conduit, Aboveground: Rigid steel conduit or RNC, Type EPC–40–PVC.
 - Underground Conduit: RNC, Type EPC–40–PVC, direct buried.
 - Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.
 - Boxes and Enclosures, Aboveground: NEMA 250, Type 3R.
 - Comply with the following indoor applications, unless otherwise indicated:
- Exposed, Not Subject to Physical Damage: EMT.
 - Exposed and Subject to Severe Physical Damage: Rigid steel conduit.
 - Concealed in Ceilings and Interior Walls and Partitions: EMT.
 - Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC, except use LFMC in damp or wet locations.
 - Damp or Wet Locations: Rigid steel conduit.
 - Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 4, nonmetallic in damp or wet locations.

SECTION 16 0553 – IDENTIFICATION FOR ELECTRICAL SYSTEMS

- 1.1 SUMMARY
- A. Section Includes:
- Identification for raceways.
 - Identification of power and control cables.
 - Identification for conductors.
 - Identification identification labels.
 - Miscellaneous identification products.
- 1.2 EQUIPMENT IDENTIFICATION LABELS
- A. Self-Adhesive, Engraved, Laminated Acrylic or Melamine Label: Adhesive backed, with white letters on a dark-gray background. Minimum letter height shall be 3/8 inch.
- 1.3 IDENTIFICATION SCHEDULE
- A. Accessible Raceway and Metal-Clad Cables, 600 V or Less, for Service, Feeder, and Branch Circuits More Than 30 A, and 120 V to ground: Install labels at 30-foot maximum intervals.
- B. Power-Circuit Conductor Identification, 600 V or Less: For conductors in vaults, pull and junction boxes, manholes, and handholes, use color-coding conduct tape to identify the phase.
1. Color-Coding for Phase Identification, 600 V or Less: Use colors listed below for ungrounded conductors.
- Color shall be factory applied or field applied for sizes larger than No. 8 AWG, if authorities having jurisdiction permit.
- B. Colors for 208/120-V Circuits: B. Colors for 480/277-V Circuits:
- | | |
|--------------------|---------------------|
| 1) Phase A: Black. | 1)Phase A: Brown. |
| 2) Phase B: Red. | 2)Phase B: Orange. |
| 3) Phase C: Blue. | 3) Phase C: Yellow. |
| 4) Neutral: White. | 4) Neutral: Gray. |
- C. Equipment Identification Labels: On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and the Operation and Maintenance Manual. Apply labels to disconnect switches and protection equipment, control or master units, control panels, control stations, terminal cabinets, and racks of each system. Systems include power, lighting, control, communication, signal, monitoring, and alarm systems unless equipment is provided with its own identification.

- 1.2 EQUIPMENT IDENTIFICATION LABELS
- A. Self-Adhesive, Engraved, Laminated Acrylic or Melamine Label: Adhesive backed, with white letters on a dark-gray background. Minimum letter height shall be 3/8 inch.
- 1.3 IDENTIFICATION SCHEDULE
- A. Accessible Raceway and Metal-Clad Cables, 600 V or Less, for Service, Feeder, and Branch Circuits More Than 30 A, and 120 V to ground: Install labels at 30-foot maximum intervals.
- B. Power-Circuit Conductor Identification, 600 V or Less: For conductors in vaults, pull and junction boxes, manholes, and handholes, use color-coding conduct tape to identify the phase.
1. Color-Coding for Phase Identification, 600 V or Less: Use colors listed below for ungrounded conductors.
- Color shall be factory applied or field applied for sizes larger than No. 8 AWG, if authorities having jurisdiction permit.
- B. Colors for 208/120-V Circuits: B. Colors for 480/277-V Circuits:
- | | |
|--------------------|---------------------|
| 1) Phase A: Black. | 1)Phase A: Brown. |
| 2) Phase B: Red. | 2)Phase B: Orange. |
| 3) Phase C: Blue. | 3) Phase C: Yellow. |
| 4) Neutral: White. | 4) Neutral: Gray. |
- C. Equipment Identification Labels: On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and the Operation and Maintenance Manual. Apply labels to disconnect switches and protection equipment, control or master units, control panels, control stations, terminal cabinets, and racks of each system. Systems include power, lighting, control, communication, signal, monitoring, and alarm systems unless equipment is provided with its own identification.

SECTION 16 2416 – PANELBOARDS

- 1.1 SUMMARY
- A. Section includes lighting and appliance branch-circuit panelboards.
- 1.2 QUALITY ASSURANCE
- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- 1.3 GENERAL REQUIREMENTS FOR PANELBOARDS
- A. Enclosures: Flush- and surface-mounted cabinets.
1. Rated for environmental conditions at installed location.
- a. Indoor Dry and Clean Locations: NEMA 250, Type 1.
- b. Outdoor Locations: NEMA 250, Type 3R.
2. Front: Secured to box with concealed trim clamps. For surface-mounted fronts, match box dimensions; for flush-mounted fronts, overlap box.
3. Directory Card: Inside panelboard door, mounted in transparent card holder.
- B. Phase, Neutral, and Ground Buses: Tin-plated aluminum.
- C. Panelboard Short-Circuit Current Ratings: Fully rated to interrupt symmetrical short-circuit current available at terminals.
- 1.4 LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS
- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- Eaton Electrical Inc.; Cutler-Hammer Business Unit.
 - General Electric Company; GE Consumer & Industrial – Electrical Distribution.
 - Siemens Energy & Automation, Inc.
 - Square D; a brand of Schneider Electric.
- B. Panelboards: NEMA PB 1, lighting and appliance branch-circuit type.
- C. Mains: Circuit breaker.
- D. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units. Where multi-wire branch circuits are utilized provide multi-pole circuit breakers or manufacturer provided handle ties.
- E. Doors: Concealed hinges; secured with flush latch with tumblers lock; keyed alike.
- F. Service entrance rated.

1.5 DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- Eaton Electrical Inc.; Cutler-Hammer Business Unit.
 - General Electric Company; GE Consumer & Industrial – Electrical Distribution.
 - Siemens Energy & Automation, Inc.
 - Square D; a brand of Schneider Electric.
- B. Molded-Case Circuit Breaker (MCCB): Comply with UL 489, with interrupting capacity to meet available fault currents.
- Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads, and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.
 - GFCI Circuit Breakers: Single- and two-pole configurations with Class A ground-fault protection (6-mA trip).
 - Ground-Fault Equipment Protection (GFEF) Circuit Breakers: Class B ground-fault protection (30-mA trip).
- 1.6 INSTALLATION
- A. Install filler plates in unused spaces.
- B. Comply with NECA 1.
- 1.7 IDENTIFICATION
- A. Create a directory to indicate installed circuit loads and incorporating Owner's final room designations. Obtain approval before installing. Use a computer or typewriter to create directory; handwritten directories are not acceptable.
- B. Panelboard Nameplates: Label each panelboard with a nameplate complying with requirements for identification specified in Division 26 Section "Identification for Electrical Systems."

SECTION 16 2726 – WIRING DEVICES

- 1.1 SUMMARY
- A. This Section includes the following:
- Receptacles, receptacles with integral GFCI, and associated device plates.
 - Snap switches and wall-box dimmers.
 - Wall-switch occupancy sensors.
- 1.2 MANUFACTURERS
- A. Manufacturers' Names: Shortened versions (shown in parentheses) of the following manufacturers' names are used in other Part 2 articles:
- Cooper Wiring Devices; a division of Cooper Industries, Inc. (Cooper).
 - Hubbell Incorporated; Wiring Device-Kellems (Hubbell).
 - Leviton Mfg. Company Inc. (Leviton).
 - Pass & Seymour/Legrand; Wiring Devices & Accessories (Pass & Seymour).
 - Lutron Electronics.
- 1.3 STRAIGHT BLADE RECEPTABLES
- A. Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6 configuration 5–20R, and UL 498.
- 1.4 GFCI RECEPTABLES
- A. General Description: Straight blade, feed-through type. Comply with NEMA WD 1, NEMA WD 6, UL 498, and UL 943, Class A, and include indicator light that is lighted when device is tripped.
- B. Duplex GFCI Convenience Receptacles, 125 V, 20 A:
- A. Comply with NEMA WD 1 and UL 20.
- B. Switches, 120/277 V, 20 A:
- 1.6 WALL-BOX DIMMERS
- A. Dimmer Switches: Modular, full-wave, solid-state units with integral, quiet on-off switches, with audible frequency and EM/RFI suppression filters.
- B. Control: Continuously adjustable slider; with single-pole or three-way switches. Comply with UL 1472.
- C. Incandescent Lamp Dimmers: 120 V; control shall follow square-law dimming curve. On-off switch positions shall bypass dimmer module.
- 600W unless noted otherwise on plans ; dimmers shall require no de-rating when ganged with other devices.
 - Dimmer used for electronic low voltage transformers shall be rated for electronic low voltage.
- D. Fluorescent Lamp Dimmer Switches: Modular; compatible with dimmer ballasts; trim potentiometer to adjust low-end dimming; dimmer-ballast combination capable of consistent dimming with low end not greater than 20 percent of full brightness.

- 1.7 OCCUPANCY SENSORS
- A. Wall-Switch Sensors
- Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
- Sensor Switch WSD–PDT–V.
 - Hubbell LHMTS1
 - Watt Stopper DW–100
 - Leviton OSSMT–MD
 - Equals
2. Description: Dual-technology type (PIR and Ultrasonic/Phonic), 120/277 V, adjustable time delay up to 20 minutes, 180-degree field of view, with a minimum coverage area of 400 sq. ft..
- 1.8 WALL PLATES
- A. Single and combination types to match corresponding wiring devices.
- Plate-Securing Screws: Metal with head color to match plate finish.
 - Material for Finished Spaces: Smooth, high-impact thermoplastic.
 - Material for Unfinished Spaces: Galvanized steel.
 - Material for Lamp Locations: Cast aluminum with spring-loaded lift cover, and listed and labeled for use in "wet locations." Paintable.
- B. Wet-Location, Weatherproof Cover Plates: NEMA 250, complying with type 3R weather-resistant , die-cast aluminum with lockable cover. Paintable.
- 1.9 FINISHES
- A. Color: Wiring device catalog numbers in Section Text do not designate device color.
- Wiring Devices and coverplates: As directed by the Architect, unless otherwise indicated or required by NFPA 70 or device listing. Architect reserves the right to request multiple device finishes.
- 1.10 INSTALLATION
- A. Comply with NECA 1, including the mounting heights listed in that standard, unless otherwise noted. See drawings.
- B. Conductors:
- The length of free conductors at outlets for devices shall meet provisions of NFPA 70, Article 300, without pigtail.
2. Existing Conductors:
- Cut back and pigtail, or replace all damaged conductors.
 - Pigtailng existing conductors is permitted provided the outlet box is large enough.
- D. Receptacle Orientation:
- Install ground pin of vertically mounted receptacles down, and on horizontally mounted receptacles to the right.
- E. Receptacles Connections:
- Provide pigtails in each receptacle box. Do not use feed through lugs on receptacles.
- F. Dimmers:
- Install dimmers within terms of their listing.
 - Install unshared neutral conductors on line and load side of dimmers according to manufacturers' device listing conditions in the written instructions.

SECTION 16 2816 – ENCLOSED SWITCHES

- 1.1 SUMMARY
- A. Section Includes:
- Fusible switches.
 - Non-fusible switches.
 - Enclosures.
- 1.2 QUALITY ASSURANCE
- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- 1.3 MANUFACTURERS
- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- Eaton Electrical Inc.; Cutler-Hammer Business Unit.
 - General Electric Company; GE Consumer & Industrial – Electrical Distribution.
 - Siemens Energy & Automation, Inc.
 - Square D; a brand of Schneider Electric.
- 1.4 FUSIBLE SWITCHES
- A. Type GD, General Duty, Single Throw, 240–V ac, 800 A and Smaller: UL 98 and NEMA KS 1, horsepower rated, with cartridge fuse interiors to accommodate indicated fuses, lockable handle with capability to accept two padlocks, and interlocked with cover in closed position.
- 1.5 NON-FUSIBLE SWITCHES
- A. Type GD, General Duty, Single Throw, 600 A and Smaller: UL 98 and NEMA KS 1, horsepower rated, lockable handle with capability to accept two padlocks, and interlocked with cover in closed position.
- 1.6 ENCLOSURES
- A. Enclosed Switches: NEMA AB 1, NEMA KS 1, NEMA 250, and UL 50, to comply with environmental conditions at installed location.
- Indoor, Dry and Clean Locations: NEMA 250, Type 1.
 - Outdoor Locations: NEMA 250, Type 3R.
- 1.7 IDENTIFICATION
- A. Label each enclosure with engraved metal or laminated-plastic nameplate.

SECTION 16 5100 – LIGHTING

- 1.1 SUMMARY
- A. Section Includes:
- Interior lighting fixtures, lamps, and ballasts.
 - Emergency lighting units.
 - Exit signs.
 - Lighting fixture supports.
- 1.2 QUALITY ASSURANCE
- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- 1.3 EXTRA MATERIAL
- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
- Lamps: 1 for every 10 of each type and rating installed unless noted otherwise. Furnish at least one of each type. Provide 1 for every 1 of each 12V lamp.
 - Plastic Diffusers and Lenses: 1 for every 100 of each type and rating installed. Furnish at least one of each type.
 - Ballasts: 1 for every 30 of each type and rating installed. Furnish at least one of each type.
 - Globes and Guards: 1 for every 20 of each type and rating installed. Furnish at least one of each type.
- 1.4 MANUFACTURERS
- A. Products: Subject to compliance with requirements, provide one of the products identified on Drawings.
- 1.5 GENERAL REQUIREMENTS FOR LIGHTING FIXTURES AND COMPONENTS
- A. Recessed Fixtures: Comply with NEMA LE 4 for ceiling compatibility for recessed fixtures.
- B. Incandescent Fixtures: Comply with UL 1598.
- C. Fluorescent Fixtures: Comply with UL 1598.
- D. HID Fixtures: Comply with UL 1598. Metal Parts: Free of burrs and sharp corners and edges.
- E. Sheet Metal Components: Steel unless otherwise indicated. Form and support to prevent warping and sagging.
- F. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position.
- G. Diffusers and Globes:
- Acrylic Lighting Diffusers: 100 percent virgin acrylic plastic. High resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
 - Lens Thickness: At least 0.125 inch minimum unless otherwise indicated.
 - UV stabilized.
 - Glass: Annealed crystal glass unless otherwise indicated.
- 1.6 BALLASTS FOR LINEAR FLUORESCENT LAMPS
- A. General Requirements for Electronic Ballasts:
- Comply with UL 935 and with ANSI C82.11.
 - Designed for type and quantity of lamps served.
 - Ballasts shall be designed for full light output unless another BF, dimmer, or bi-level control is indicated.
 - Sound Rating: Class A.
 - Total Harmonic Distortion Rating: Less than 20 percent.
 - Transient Voltage Protection: IEEE C62.41.1 and IEEE C62.41.2, Category A or better.
 - Operating Frequency: 42 kHz or higher.
 - Lamp Current Crest Factor: 1.7 or less.
 - BF: 0.88 or higher unless otherwise indicated.
 - Power Factor: 0.95 or higher.
 - Ballasts for Low-Temperature Environments:
- Temperatures 0 Deg F and Higher: Electronic type rated for 0 deg F starting and operating temperature with indicated lamp types.
- 1.7 BALLASTS FOR HID LAMPS
- A. Electronic Ballast for Metal-Halide Lamps: Include the following features unless otherwise indicated:
- Minimum Starting Temperature: Minus 20 deg F for single-lamp ballasts.
 - Rated Ambient Operating Temperature: 130 deg F.
 - Lamp end-of-life detection and shutdown circuit.
 - Sound Rating: Class A.
 - Total Harmonic Distortion Rating: Less than 20 percent.
 - Transient Voltage Protection: IEEE C62.41.1 and IEEE C62.41.2, Category A or better.
 - Lamp Current Crest Factor: 1.5 or less.
 - Power Factor: 0.90 or higher.
 - Interference: Comply with 47 CFR 18, Ch. 1, Subpart C, for limitations on electromagnetic and radio-frequency interference for non-consumer equipment.
 - Protection: Class P thermal cutoff.

1.8 EXIT SIGNS

- A. General Requirements for Exit Signs: Comply with UL 924; for sign colors, visibility, luminance, and lettering size, comply with authorities having jurisdiction.
- B. Internally Lighted Signs:
- Lamps for AC Operation: LEDs, 50,000 hours minimum rated lamp life.
2. Self-Powered Exit Signs (Battery Type): Integral automatic charger in a self-contained power pack.
- Battery: Sealed, maintenance-free, nickel-cadmium type.
 - Charger: Fully automatic, solid-state type with sealed transfer relay.
 - Operation: Relay automatically energizes lamp from battery when circuit voltage drops to 80 percent of nominal voltage or below. When normal voltage is restored, relay disconnects lamps from battery, and battery is automatically recharged and floated on charger.
 - Test Push Button: Push-to-test type, in unit housing, simulates loss of normal power and demonstrates unit operability.
 - LED Indicator Light: Indicates normal power on. Normal glow indicates trickle charge; bright glow indicates charging at end of discharge cycle.
- 1.9 EMERGENCY LIGHTING UNITS
- A. General Requirements for Emergency Lighting Units: Self-contained units complying with UL 924.
- Battery: Sealed, maintenance-free, lead-acid type.
 - Charger: Fully automatic, solid-state type with sealed transfer relay.
 - Operation: Relay automatically turns lamp on when power-supply circuit voltage drops to 80 percent of nominal voltage or below. Lamp automatically disconnects from battery when voltage approaches deep-discharge level. When normal voltage is restored, relay disconnects lamps from battery, and battery is automatically recharged and floated on charger.
 - Test Push Button: Push-to-test type, in unit housing, simulates loss of normal power and demonstrates unit operability.
 - LED Indicator Light: Indicates normal power on. Normal glow indicates trickle charge; bright glow indicates charging at end of discharge cycle.
 - Wire Guard: Heavy-chrome-plated wire guard protects lamp heads or fixtures.
- 1.10 FLUORESCENT LAMPS
- A. T8 rapid-start lamps, 2950 initial lumens (minimum), CRI 85 (minimum), color temperature 3500 K, and average rated life 30,000 hours unless otherwise indicated.
- 1.11 HID LAMPS
- A. Ceramic, Pulse-Start, Metal-Halide Lamps: Minimum CRI 80, and color temperature 4000 K.

GENERAL NOTES

- PRIOR TO BID, THE CONTRACTOR SHALL REVIEW THE MECHANICAL, ELECTRICAL AND OTHER EQUIPMENT DRAWINGS. THE CONTRACTOR SHALL INCLUDE IN HIS BID ALL RELEVANT WORK IN THE ENTIRE SET OF DOCUMENTS AND REPORT ALL DISCREPANCIES BETWEEN THESE DRAWINGS TO THE ENGINEER PRIOR TO BIDDING FOR CLARIFICATION. IF DISCREPANCIES REMAIN UNRESOLVED BY A SHORT TIME FRAME, THE CONTRACTOR SHALL INCLUDE THE MOST WORK AND THE HIGHER COSTS IN THE BID. SOLUTIONS TO UNREPORTED DISCREPANCIES WILL BE DETERMINED BY THE ARCHITECT/ENGINEER, WITH NO ADDITIONAL COMPENSATION DUE TO THE CONTRACTOR.
- REFER TO ARCHITECTURAL ELEVATIONS AND REFLECTED CEILING PLAN FOR EXACT LOCATION OF LIGHTING FIXTURES AND DEVICES.
- LETTER THUS: "A"– INDICATES TYPE OF LIGHTING FIXTURES. REFER TO LIGHTING FIXTURE TYPES AS NOTED ON THE LIGHTING FIXTURE SCHEDULE.
- VERIFY LOCATION OF ALL FLOOR OUTLETS WITH ARCHITECT PRIOR TO ROUGH-IN. EXISTING CONCRETE FLOOR TO BE CUT AND TRENCHED AS REQUIRED.
- DATA TELEPHONE AND TELEVISION CONDUIT SHALL BE MINIMUM 3/4" INCH UNLESS OTHERWISE NOTED ON DRAWINGS.
- DO NOT SCALE DRAWINGS. VERIFY DIMENSIONS IN FIELD PRIOR TO COMMENCEMENT OF WORK.
- FINAL CONNECTIONS TO EQUIPMENT SHALL BE PER MANUFACTURER'S APPROVED WIRING DIAGRAMS, DETAILS, AND INSTRUCTIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE MATERIALS AND EQUIPMENT COMPATIBLE WITH EQUIPMENT ACTUALLY SUPPLIED.
- ALL EMPTY RACEWAY SYSTEMS SHALL HAVE A PULLWIRE OR EQUAL AND SHALL BE IDENTIFIED AT ALL JUNCTION, FILL, AND TERMINATION POINTS, USING PERMANENT METALLIC TAGS. TAGS SHALL INDICATE INTENDED USE OF CONDUIT, ORIGINATOR AND TERMINATION POINTS OF EACH INDIVIDUAL CONDUIT.
- IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO ESTABLISH A STANDARD OF QUALITY. THE ENGINEER RESERVES THE RIGHT TO APPROVE METHODS AND MATERIALS NOT REFLECTED HEREIN.
- CONTRACTOR SHALL REVIEW ARCHITECTURAL, STRUCTURAL, AND MECHANICAL DRAWINGS AND SHALL PROVIDE SWITCHES, RECEPTABLES, TELEPHONE OUTLETS, EQUIPMENT CONNECTIONS, ETC., AND ASSOCIATED CIRCUITING IN NEW AND REMODELED AREAS, EVEN IF SUCH AREAS ARE NOT SHOWN ON ELECTRICAL DRAWINGS. LAYOUTS, FIXTURE TYPES, QUANTITIES, AND SPACING SHALL BE IN ACCORDANCE WITH SIMILAR AREAS ON THIS PROJECT. CONTRACTOR SHALL INCLUDE COSTS FOR THE ABOVE IN HIS BID.
- WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER TO THE SATISFACTION OF THE OWNER.
- WORK, MATERIALS AND EQUIPMENT SHALL CONFORM TO THE LATEST EDITIONS OF LOCAL, STATE OF MISSOURI, AND NATIONAL CODES AND ORDINANCES.
- PROVIDE PERMITS AND INSPECTIONS REQUIRED.
- GUARANTEE THE INSTALLATION AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP WHICH MAY OCCUR UNDER NORMAL USAGE FOR A PERIOD OF ONE YEAR AFTER TENANT'S ACCEPTANCE. DEFECTS SHALL BE PROMPTLY REMEDIED WITHOUT COST TO THE TENANT.
- VERIFY THAT EXACT LOCATION OF EQUIPMENT TO BE FURNISHED BY OTHERS PRIOR TO ROUGH-IN.
- SYSTEMS SHALL BE TESTED FOR PROPER OPERATION. IF TESTS SHOW THAT WORK IS DEFECTIVE, CONTRACTOR SHALL MAKE CORRECTIONS NECESSARY AT NO COST TO TENANT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING EQUIPMENT WHICH IS DAMAGED DUE TO INCORRECT FIELD WIRING OR FACTORY WIRING IN EQUIPMENT PROVIDED BY THIS CONTRACTOR.
- SYSTEMS SHALL BE COMPLETE, OPERABLE, AND READY FOR CONTINUOUS OPERATION. LIGHTS, SWITCHES, RECEPTABLES, MOTORS, ETC. SHALL BE CONNECTED AND OPERABLE.
- ALL WIRING SHALL BE INSTALLED IN LISTED METALLIC RACEWAYS. RACEWAYS IN SLAB-ON-GRADE OR BELOW GRADE SHALL BE SCHEDULE 40 PVC. TRANSITIONS FROM BELOW TO ABOVE GRADE SHALL BE WITH RIGID STEEL ELBOWS WITH PVC JACKET OR PROVIDED EQUAL PROTECTION. ENT FITTINGS SHALL BE MALLEABLE IRON OR STEEL. CONNECTORS SHALL BE INSULATED THROU TYPE.
- FINAL CONNECTIONS TO MOTORS, TRANSFORMERS, AND OTHER VIBRATING EQUIPMENT SHALL BE WITH LIQUID-TIGHT FLEX METAL CONDUIT AND FITTINGS. DO NOT SECURE CONDUITS, DISCONNECTS, OR DEVICES TO ELECTRIC OR MECHANICAL EQUIPMENT.
- ALL ELECTRICAL SYSTEMS COMPONENTS SHALL BE LISTED OR LABELED BY UL OR OTHER RECOGNIZED TESTING FACILITY.
- ELECTRICAL CONTRACTOR SHALL PROPERLY BALANCE ALL BRANCH CIRCUITS BETWEEN ALL PHASES OF THE SYSTEM, REGARDLESS OF CIRCUITING INDICATED.
- ELECTRICAL CONTRACTOR SHALL OBTAIN A COPY OF LANDLORD'S DESIGN CRITERIA, THAT GUIDE SUPERSEDES DRAWINGS AND SPECIFICATION (I.E. MANUFACTURER, ETC.).
- MULTI-PHASE LOADS SHALL BE PROTECTED BY MULTI-POLE CIRCUIT BREAKERS HAVING COMMON TRIP AND SINGLE HANDLE. HANDLE TIES AND TROUGH CLIPS OR PINS ARE UNACCEPTABLE.
- MULTI-WIRE BRANCH CIRCUITS SHALL REQUIRE A MULTI-POLE BREAKER AS A MEANS TO SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS AT THE POINT WHERE THE BRANCH CIRCUIT ORIGINATES PER NEC 210.4(B).
- ALL CONDUCTORS SHALL BE COPPER, TYPE 75 DEGREES C, MINIMUM SIZE #12.
- CONTRACTOR SHALL COORDINATE ALL ELECTRICAL WORK WITH OTHER TRADES AND ARCHITECTURAL DRAWINGS TO ELIMINATE CONFLICTS.
- CONTRACTOR SHALL MAKE ARRANGEMENTS WITH LOCAL POWER COMPANY FOR THE INSTALLATION OF NEW ELECTRICAL SERVICE AND METER. INSTALL NEW SERVICE DISTRIBUTION EQUIPMENT AS SPECIFIED ON ELECTRICAL DRAWINGS.
- CONTRACTOR IS RESPONSIBLE TO SECURE AND PAY FOR ALL PERMITS. CONTRACTOR SHALL COMPLY WITH ALL STATE, LOCAL, AND NATIONAL CODES (NEC). CONTRACTOR SHALL SCHEDULE INSPECTIONS SO JOB PROGRESS IS NOT DELAYED.
- PRIOR TO CONSTRUCTION START CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND OPERATION MANUAL FOR ALL EQUIPMENT AND ACCESSORIES FOR OWNER APPROVAL.
- PROVIDE FLEXIBLE CONDUIT FOR ALL VIBRATING EQUIPMENT. PROVIDE FLEXIBLE CONDUIT FOR LIGHT FIXTURE CONNECTIONS.
- ELECTRICAL EQUIPMENT EXPOSED TO WEATHER CONDITIONS SHALL BE WEATHERPROOF TYPE. CONDUIT EXPOSED TO WEATHER CONDITIONS OR IN CONTACT WITH CONCRETE SHALL BE POLYVINYL CHLORIDE (PVC) OR GALVANIZED HEAVY WALL STEEL (GRC).
- CONTRACTOR SHALL SUBMIT AS BUILT DRAWINGS TO THE TENANT IF INSTALLATION VARIES FROM CONTRACT DRAWINGS.
- DEMOLITION
- PROVIDE ALL ELECTRICAL DEMOLITION WORK IN AREAS REQUIRED TO FACILITATE NEW WORK. PROVIDE DISCONNECT AND REMOVAL OF ALL ELECTRICAL EQUIPMENT, LIGHT FIXTURES, DEVICES, PANELBOARDS, CONDUIT, UNUSED CONDUIT, WIRE, CABLE, J-BOXES, RECEPTABLES, SWITCHES, LIGHTS, FIRE ALARM DEVICES, ETC., COMPLETE WITH ASSOCIATED CIRCUITING TO SOURCE. WHERE IT IS NOT FEASIBLE TO REMOVE THE ABOVE, OUTLET SHALL BE ABANDONED, WIRE REMOVED, AND BLANK COVER PLATES PROVIDED. ANY EXISTING CABLING/WIRING THAT REMAINS SHALL BE PULLED TIGHT TO WALLS OR STRUCTURE AND SECURED. NO ALLOWANCE WILL BE MADE FOR THE CONTRACTOR'S FAILURE TO FAMILIARIZE HIMSELF WITH EXISTING BUILDING CONDITIONS AND THE AMOUNT OF WORK REQUIRED TO COMPLETE THE NEW ELECTRICAL WORK AS SHOWN ON THE DRAWINGS. TURN OVER TO OWNER ALL EQUIPMENT THAT THEY DESIRE TO RETAIN. ALL OTHER EQUIPMENT SHALL BE DISPOSED OF BY THE ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR RESPONSIBLE FOR DISPOSAL OF FLUORESCENT LAMPS IN COMPLIANCE WITH ALL CURRENT ENVIRONMENTAL PROTECTION REGULATIONS.
- REMODELING
- CIRCUIT NUMBERS SHOWN ON THESE DRAWINGS SHALL NOT NECESSARILY CORRESPOND TO ACTUAL CIRCUIT BREAKER NUMBERS. CONTRACTOR SHALL CORRECT TO EXISTING CIRCUIT BREAKERS ABANDONED BY DEMOLITION/REMODELING.
- WHERE AN ELECTRICAL SYSTEM IN THE SPACE IS CALLED OUT TO BE CONNECTED WITH AN EXISTING SYSTEM THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF THE POINT OF CONNECTION AS WELL AS THE MEANS OF CONNECTION WITH THE EXISTING SYSTEM. CONTRACTOR SHALL PROVIDE ALL NEW HARDWARE COMPONENTS REQUIRED TO INTEGRATE THE NEW DEVICES/COMPONENTS INTO THE EXISTING HEADEND OR SYSTEM CONTROL PANEL. CONTRACTOR SHALL PROVIDE ALL SYSTEM SOFTWARE UPGRADES REQUIRED TO INCORPORATE NEW COMPONENTS INTO EXISTING SYSTEM.
- WHEREVER THE INSTALLATION OF ELECTRICAL EQUIPMENT CONFLICTS WITH EXISTING CONDITIONS NOT MENTIONED IN THE PLANS OR THE SPECIFICATIONS, THE CONTRACTOR SHALL DETERMINE A SATISFACTORY ALTERNATIVE MEANS OF INSTALLATION AND OBTAIN APPROVAL FROM THE ENGINEER BEFORE ACTUAL EQUIPMENT INSTALLATION.
- CONTRACTOR SHALL BE RESPONSIBLE TO FIELD VERIFY EXISTING EQUIPMENT OR CIRCUITS THAT ARE REMAINING TO BE RECONNECTED TO NEW OR EXISTING SWITCHBOARDS/PANELBOARDS. PROVIDE SWITCHES, RECEPTABLES, CONDUIT, WIRE, ETC. AS REQUIRED TO RESTORE CONTINUITY OF CIRCUIT(S).
- LIGHTING
- RECESSED LIGHT FIXTURES INSTALLED IN GYP BOARD OR PLASTER CEILINGS SHALL HAVE PLASTER FRAMES INSTALLED PRIOR TO CEILING MATERIAL.
- VERIFY TYPE OF CEILING CONSTRUCTION FOR PROPER MOUNTING OF ALL RECESSED LIGHT FIXTURES. INSTALLATION OF LIGHT FIXTURES SHALL COMPLY WITH ALL INTERNATIONAL BUILDING CODE REQUIREMENTS.
- RECESSED LIGHTING FIXTURES INSTALLED INTO METAL SUSPENDED CEILING SYSTEMS FOR LAY-IN TILES AND PANELS SHALL BE INSTALLED AND SUPPORTED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE ASTM D635 AND D636.
- FIXTURES INSTALLED IN LIGHT-DUTY CEILING SYSTEMS SHALL HAVE SEPARATE SUPPORTING MEMBERS. FIXTURES INSTALLED IN INTERMEDIATE-DUTY AND HEAVY-DUTY CEILING SYSTEMS SHALL HAVE SEPARATE SUPPORTING MEMBERS WHEN THE WEIGHT OF THE FIXTURES EXCEEDS THE DEFLECTION AND ROTATION REQUIREMENTS OF ASTM D636 2.7.2.3 & 4.
- REFER TO REFLECTED CEILING PLAN FOR EXACT LOCATION AND MOUNTING HEIGHTS OF ALL LIGHTING FIXTURES WITHIN THE ENTIRE TENANT SPACE.
- ELECTRICAL CONTRACTOR SHALL MAKE FINAL ADJUSTMENTS OF ADJUSTABLE DOWNLIGHTS ALONG WITH OWNER REPRESENTATIVE.
- EMERGENCY FIXTURES AND EXIT LIGHTS SHALL BE FED VIA UNWITNESSED HOT CIRCUIT.
- FIRE ALARM
- FIRE ALARM SYSTEM TO BE DESIGN BUILT BY CONTRACTOR AS REQUIRED AND SHALL USE THE LANDLORD'S LICENSED FIRE ALARM CONTRACTOR AT TENANT'S EXPENSE. DUNHAM ASSOCIATES IS NOT THE ENGINEER OF RECORD FOR ANY FIRE ALARM RELATED WORK.
- BOXES FOR TELEPHONE, TV, DATA, WIRING DEVICES, ETC. SHALL BE MINIMUM TWO GANG WITH SINGLE GANG MUD RING.
- SOUND SYSTEM. CONTRACTOR SHALL PROVIDE ALL CONDUIT, J-BOXES, AND WIRING FOR SOUND SYSTEM SPEAKERS TO AMPLIFIER LOCATION. CONDUIT SHALL BE A MINIMUM OF 3/4" UNLESS NOTED. OWNER TO FURNISH MUD-RINGS FOR SPEAKERS FOR CONTRACTOR TO INSTALL. COORDINATE WITH TENANT.
- SECURITY SYSTEM. CONTRACTOR SHALL PROVIDE ALL CONDUIT, AND J-BOXES (MINIMUM TWO-GANG) FOR A COMPLETE RACEWAY SYSTEM. CONDUIT SHALL BE A MINIMUM OF 3/4" UNLESS NOTED. SECURITY SYSTEM CONTRACTOR SHALL INSTALL SECURITY PANELS, CAMERAS, WIRE, SECURITY DEVICES, ETC.

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