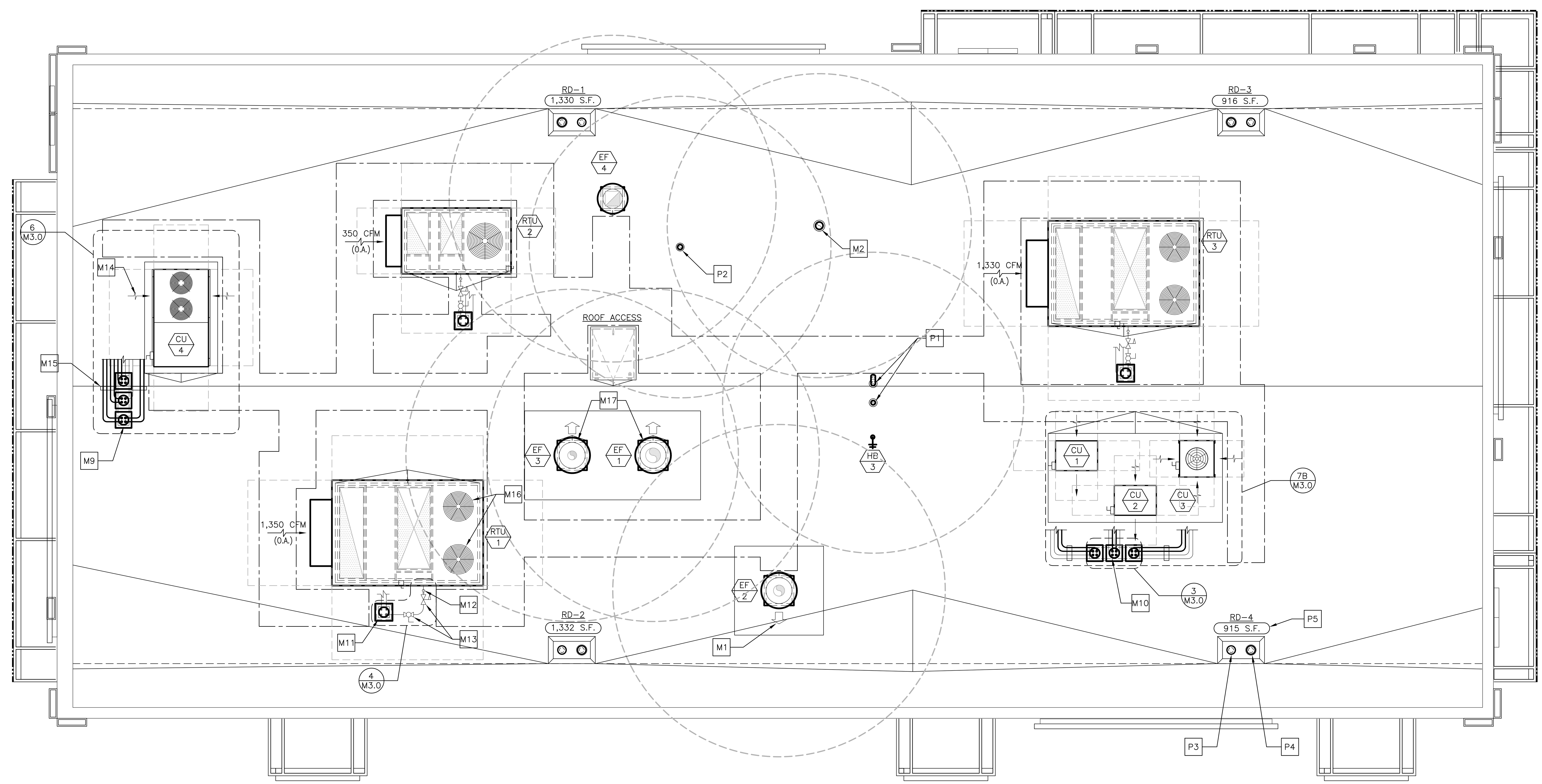


1 M1.0 ROOF PLAN
1/4"=1'–0"

DRAWING NOTES

1. ROOFTOP EQUIPMENT LOCATIONS SHOWN ARE GENERAL. ACTUAL LOCATIONS SHALL BE COORDINATED WITH THE STRUCTURAL DRAWINGS.
2. ROOF OPENINGS FOR ROOFTOP UNITS AND EXHAUST FANS SHALL BE COORDINATED WITH THE MANUFACTURER.
3. ROOF OPENINGS FOR PIPE PORTALS SHALL ONLY BE LARGE ENOUGH TO ALLOW PIPE AND CONDUIT PENETRATIONS. PIPE PORTAL CURB SHALL BE FILLED WITH AS MUCH BATT INSULATION AS POSSIBLE.
4. PRIOR TO INSTALLING THE TOP OF THE EQUIPMENT PLATFORM, INSIDE OF THE PLATFORM SHALL BE INSULATED WITH AS MUCH BATT INSULATION AS POSSIBLE.

KEYED NOTES

- M1 ARROW INDICATES DIRECTION OF EXHAUST FAN HINGE SWING (TYP.)
- M2 6"ø ALUMINUM EXHAUST DUCT FROM EXHAUST FAN (EF–5). PROVIDE PORTALS PLUS PLASTI–FLASH WITH C–126 CAP (OR EQUAL) FOR ROOF PENETRATION. TERMINATE DUCT A MIN. OF 24" ABOVE FINISHED ROOF WITH GOOSENECK.
- M3 NOT USED
- M4 NOT USED
- M5 NOT USED
- M6 NOT USED
- M7 NOT USED
- M8 NOT USED
- M9 ROOF PIPE PORTAL FOR MAC UNIT
- M10 ROOF PIPE PORTAL FOR CONDENSING UNITS
- M11 ROOF PIPE PORTAL FOR ROOFTOP UNITS (TYP. 3 PLACES)
- M12 GAS PIPING FROM ROOF PORTAL TO ROOFTOP UNIT SHALL BE COATED WITH A CORROSION RESISTANT PAINT (SEE GAS PIPING NOTES)
- M13 GAS PRESSURE REGULATOR AND SHUT–OFF VALVE (TYP.)
- M14 ARROW INDICATES DIRECTION OF AIRFLOW FOR CONDENSING OR ROOFTOP UNIT AIR INTAKE (TYP.)
- M15 REFRIGERANT PIPING SUPPORT AS REQUIRED. PROVIDE ROOFTOP BLOX MODEL RTB–01 (OR EQUAL) AND ALL NECESSARY ACCESSORIES FOR PROPER PIPE AND CONDUIT SUPPORT. PROVIDE GALVANIZED PIPE SHIELD TO PROTECT INSULATION AT ALL SUPPORTS.
- M16 PROVIDE HAIL GUARD FOR RTU–1 PROTECTING CONDENSER COIL FROM GREASE.
- M17 EXHAUST FANS WITH WINDBAND EXTENSION AND/OR RAISED CURBS TO PREVENT DIRECT GREASE BLOW ONTO CONDENSER COIL OF UNIT RTU–1.
- P1 COMBUSTION AIR INTAKE AND EXHAUST VENT FOR SEALED COMBUSTION WATER HEATER (SEE PLUMBING DRAWINGS). PROVIDE PORTALS PLUS PLASTIFLASH WITH C–126 CAP (OR EQUAL) FOR ROOF PENETRATION.
- P2 PLUMBING VENT THROUGH ROOF (SEE PLUMBING DRAWINGS). PROVIDE PORTALS PLUS PLASTI–FLASH WITH C–126 CAP (OR EQUAL) FOR ROOF PENETRATION.
- P3 PRIMARY ROOF DRAIN WITH DOME STRAINER (SEE PLUMBING DRAWINGS)
- P4 OVERFLOW ROOF DRAIN WITH DOME STRAINER (SEE PLUMBING DRAWINGS)
- P5 AREA OF ROOF SERVED BY ROOF DRAIN (TYP.)

PIPE PORTAL SCHEDULE

MANUFACTURER	CURB DIMENSIONS	CURB TYPE	CAP TYPE (QTY)	SERVES
RPS	12"x12"x11"H	RC–2A	N18 (1)	RTU–1 THROUGH RTU–3
RPS	43"x12"x13"H	RC–2A	N18 (3)	CU–1 THROUGH CU–4

SEQUENCE OF OPERATION

THERMOSTAT SETTINGS			
		SETPOINTS	
MODE	FAN	COOLING	HEATING
OCCUPIED	ON	75°F	70°F
UNOCCUPIED	AUTO	90°F	55°F
HUMIDITY			
HUMIDITY SETPOINT (FOR DEHUMIDIFICATION UNITS ONLY)			60%

RTU–1, RTU–2 & RTU–3:

1. OCCUPIED MODE SHALL BEGIN AS FOLLOWS:
   - RTU–1: 1.5 HOURS BEFORE OPEN
   - RTU–2: 1 HOUR BEFORE OPEN
   - RTU–3: 30 MINUTES BEFORE OPEN
2. ROOFTOP UNIT FAN SHALL RUN CONTINUOUSLY DURING OCCUPIED MODE
3. ECONOMIZER SHALL BE OPEN DURING OCCUPIED MODE (OUTDOOR AIR THROUGH ROOFTOP UNITS SERVES AS MAKE–UP AIR FOR THE KITCHEN EXHAUST SYSTEM) – REFER TO E3.2 FOR HOOD/FAN INTERLOCK DETAILS.
4. UNOCCUPIED MODE SHALL BEGIN ONE (1) HOUR AFTER STORE CLOSES
5. DURING UNOCCUPIED MODE, ECONOMIZER IS CLOSED AND HEATING, COOLING AND FAN OPERATE IN AUTO MODE (ON DEMAND)

REV	DATE	DESCRIPTION	BY

DAVID MICAH LEIFFER
NUMBER PE-2013019214
STATE OF MISSOURI
PROFESSIONAL ENGINEER
11-07-2022

PREPARED BY:
CORE STATES GROUP

PREPARED FOR:
McDonald's USA, LLC

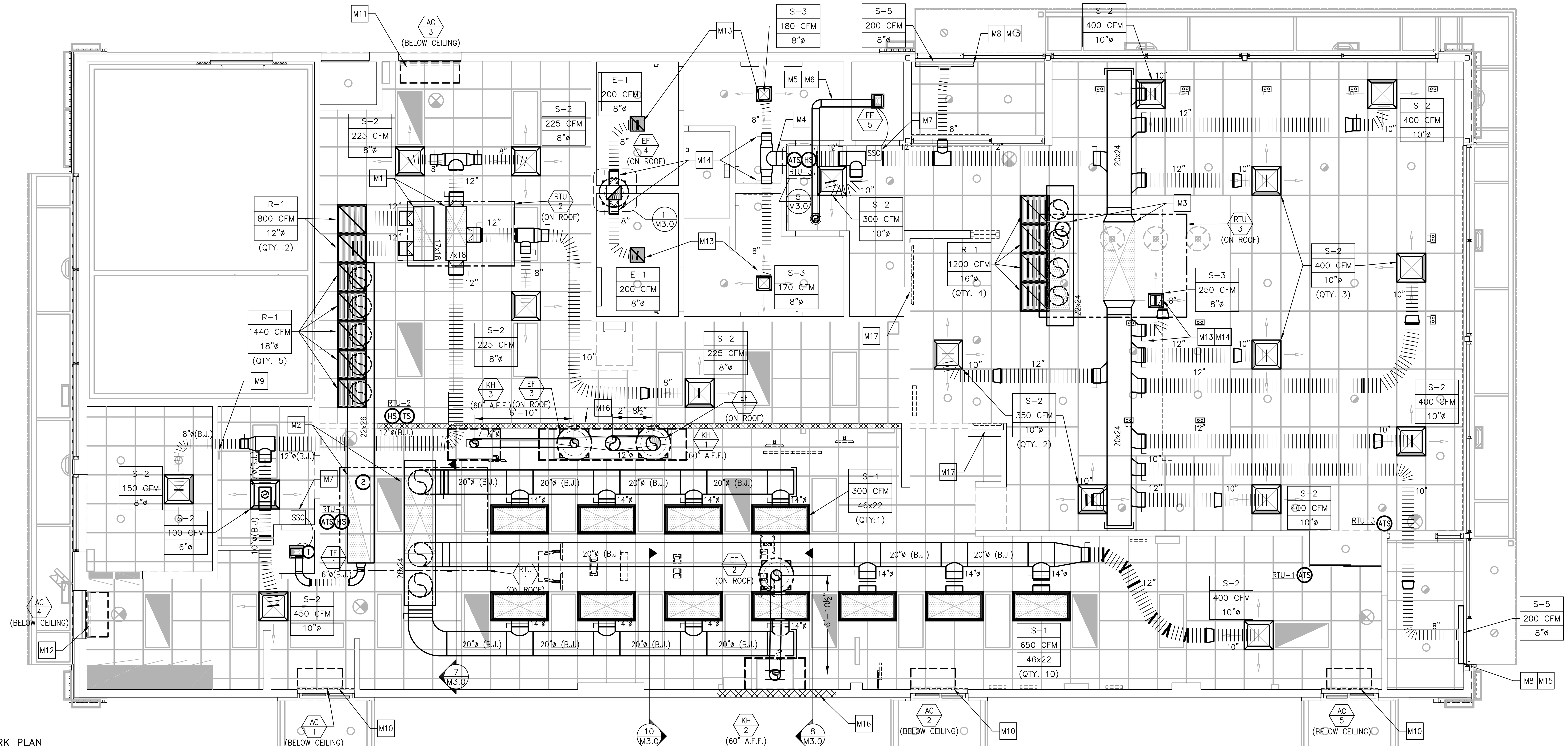
DRAWN BY TP
STD ISSUE DATE 2022_10
REVIEWED BY DAVID M LEIFFER
DATE ISSUED 10 04 2022

TITLE
2022 STANDARD BUILDING – BB20
4597–WOOD/WOOD

DESCRIPTION
WOOD BEARING WALLS W/HARDIE BOARD SIDING
WOOD ROOF TRUSS FRAMING
E.I.F.S./BATTEN/HARDIE BOARD SIDING EXTERIOR FINISH

SITE ID 024–1290
SITE ADDRESS 3720 W Sunshine Springfield, MO

SHEET NO.
024–1290.00.0
M1.0
ROOF PLAN



1 / M1.2 DUCTWORK PLAN
1/4"=1'-0"

DRAWING NOTES

1. ALL DUCTWORK SHALL BE RUN BETWEEN OR THROUGH THE JOISTS UNLESS NOTED OTHERWISE. DUCTWORK DESIGNATED WITH (B.J.) SHALL BE RUN BELOW THE JOISTS.
2. DUCT SIZES SHOWN ARE INTERNAL FREE AREA DIMENSIONS UNLESS NOTED OTHERWISE.
3. ALL SHEET METAL DUCTWORK SHALL BE EXTERNALLY INSULATED. INSULATION IS NOT SHOWN FOR CLARITY. SEE MECHANICAL NOTES FOR INSULATION REQUIREMENTS.
4. CARBON STEEL KITCHEN EXHAUST DUCTWORK SHALL BE EXTERNALLY INSULATED. INSULATION NOT SHOWN FOR CLARITY. SEE MECHANICAL NOTES AND DETAILS FOR INSULATION REQUIREMENTS.
5. RETURN AIRFLOW VOLUME SHOWN ON PLAN IS FOR DUCTWORK SIZING PURPOSES WHEN THE UNIT IS IN RECIRCULATION (UNOCCUPIED) MODE.
6. DIFFUSERS IN DINING ROOM ARE SPECIFIC TO THE DECOR PLAN SHOWN. DIFFERENT CEILING LAYOUTS MAY REQUIRE A DIFFERENT DIFFUSER TYPES, QUANTITIES, LOCATIONS AND FINISHES/COLORS.

KEYED NOTES

- M1 17x33 SUPPLY AND 17x33 RETURN DUCT DROPS FROM ROOFTOP UNIT (RTU–2)
- M2 26x63 SUPPLY AND 19x73 RETURN DUCT DROPS FROM ROOFTOP UNIT (RTU–1)
- M3 26x63 SUPPLY AND 19x73 RETURN DUCT DROPS FROM ROOFTOP UNIT (RTU–3)
- M4 PROVIDE SHEET METAL DUCT AT ALL DRAFTSTOP WALL PENETRATIONS (TYP.) (WHERE REQUIRED BY CODE.)
- M5 6"ø ALUMINUM DUCT FROM EXHAUST FAN UP THROUGH ROOF
- M6 EXTERNALLY INSULATE EXHAUST DUCT FROM FAN TO ROOF PENETRATION
- M7 STEADY STATE SPEED CONTROLLER FOR CEILING MOUNTED EXHAUST FAN. STEADY STATE SPEED CONTROLLER SHALL BE INSTALLED OVER SUSPENDED CEILING FOR ACCESS. DO NOT INSTALL OVER AREAS WITH DRYWALL CEILINGS.
- M8 SET DIFFUSER (S–5) FOR VERTICAL AIR THROW PATTERN (TYP.)
- M9 BUILDING AUTOMATION SYSTEM LOCATION. SEE LIGHTING CONTROL DETAILS ON SHEET E4.1.
- M10 MOUNT AIR CURTAIN TIGHT TO CEILING
- M11 MOUNT AIR CURTAIN WITH BOTTOM OF UNIT AT TOP OF DOOR FRAME
- M12 MOUNT AIR CURTAIN WITH BOTTOM OF UNIT ABOVE DOOR FRAME AND TOP OF SWITCHGEAR TO MEET 3'–0" MINIMUM SWITCHGEAR'S CLEARANCE REQUIREMENT
- M13 FOR DIFFUSERS INSTALLED IN DRYWALL CEILINGS, VOLUME DAMPER IS INTEGRAL TO DIFFUSER AND ADJUSTABLE AT FACE OF DIFFUSER (SEE NOTE 18 UNDER "VENTILATION SYSTEMS" ON DRAWING M4.0 AND AIR DEVICE SCHEDULE ON DRAWING M4.1)
- M14 FOR DIFFUSERS INSTALLED IN DRYWALL CEILINGS, INSTALL HIGH–EFFICIENCY TAKE–OFFS WITH VOLUME DAMPER IN FULL–OPEN POSITION TO FACILITATE BALANCING AT FACE OF DIFFUSER.
- M15 GENERAL CONTRACTOR SHALL PROVIDE ADDITIONAL T–BAR FRAME TO PROPERLY LOCATE DIFFUSER AS SHOWN. AIR STREAM FROM DIFFUSER SHALL COVER ENTIRE DOOR OPENING.
- M16 NONCOMBUSTIBLE WALL CONSTRUCTION BEHIND TYPE I KITCHEN HOODS. REFER TO SHEET A1.0 FOR MORE INFORMATION.
- M17 CONTRACTOR TO PROVIDE LOUVERED RETURN AIR BEHIND EACH MENU BOARD.

2018 IMC SECTION 403.3 - VENTILATION SCHEDULE

UNIT	AREA SERVED	AREA FT² (Az)	CFM/PERSON (Rp)	CFM/FT² (Ra)	PEOPLE OR PEOPLE/1000 FT² (Pz)	UNCORRECTED REQUIRED O/A CFM (Vbz)	Ez*	Ev**	REQUIRED O/A CFM (Vot)***	ACTUAL O/A CFM	REQUIRED EXHAUST CFM	ACTUAL EXHAUST CFM
RTU-1	PRESENTER	347	5	0.06	4	42	0.8	0.98				
	KITCHEN	721	7.5	0.18	18	-	0.8					
						306			313	1350		
RTU-2	SUPPORT	600	0	0.12	0	72	0.8	0.84	-	-		
	MANAGER'S OFFICE	59	5	0.06	1	9	0.8		-	-		
	CREW ROOM	99	5	0.06	5	31	0.8		-	-		
	ORDER	140	5	0.06	7	43	0.8		-	-		
						154			184	350		
RTU-3	DINING	1264	7.5	0.18	88	891	0.8	0.89	-	-		
	VESTIBULE 1	53	0	0.06	0	3	0.8		-	-		
	VESTIBULE 2	48	0	0.06	0	3	0.8		-	-		
	WOMEN'S	136	0	0.06	0	8	0.8		-	-		
	MEN'S	122	0	0.06	0	7	0.8		-	-		
						913			1025	1330		
EF-1, 2 & 3	KITCHEN	721	-	0.7	-	-	-	-	-	-	505	2405
EF-4	WOMEN'S	136	-	-	-	-	-	-	-	-	100	200
	MEN'S	122	-	-	-	-	-		-	-	100	200
											200	400

* Zone Air Distribution Effectiveness Based on ASHRAE 62.1 Table 6.2 for Ceiling Supply of Warm Air 15° F or More Above Space Temperature and Ceiling Return (IMC Table 403.3.1.2)
** Ventilation System Efficiency Based on ASHRAE 62.1 Table 6.3 and Section 6.2.5 (IMC Section 403.3.2.3 MZ)
*** Corrected Required O/A Intake Required for System Calculated Based on ASHRAE 62.1 Section 6.2 (IMC Section 403.3)

AIR BALANCE SCHEDULE

UNIT	SUPPLY AIR	RETURN AIR	OUTDOOR AIR	EXHAUST AIR	PRESSURE
RTU-1	7200	5850	1350		1350
RTU-2	1600	1250	350		350
RTU-3	4800	3470	1330		1330
EF-1				1350	-1350
EF-2				575	-575
EF-3				480	-480
EF-4				400	-400
EF-5				75	-75
TOTALS	13600	10570	3030	2880	150

NOTES:
1. BALANCING TOLERANCES ARE AS FOLLOWS:
   HOODS: 0% TO +10%
   OUTDOOR AIR: 0% TO +10%
   SUPPLY AND RETURN AIR DIFFUSERS: –10% TO +10%
   TOILET EXHAUST AIR: –10% TO +10%
2. BALANCE ROOFTOP UNIT SUPPLY AND RETURN AIR PRIOR TO TURNING ON EXHAUST FANS.
3. EXHAUST HOODS SHALL BE BALANCED WITH A 4" VANE ANEMOMETER.
4. RTU BLOWER TO RUN CONTINUOUSLY DURING OCCUPIED HOURS. REFER TO SEQUENCE OF OPERATIONS ON M1.0 AND E3.2 FOR HOOD/FAN INTERLOCK DETAILS.

HEATING SCHEDULE

EQUIPMENT	INPUT (kW)	OUTPUT (BTU/HR)	REQUIRED HEAT (BTU/HR)
ROOFTOP UNIT (RTU-1)	250,000	202,500	124,223
ROOFTOP UNIT (RTU-2)	60,000	48,000	43,469
ROOFTOP UNIT (RTU-3)	250,000	202,500	167,946
TOTALS	560,000	453,000	335,638

REV DATE DESCRIPTION BY

STATE OF MISSOURI
DAVID MICAH LEIFFER
NUMBER PE-2013019218
PROFESSIONAL ENGINEER
11-07-2022

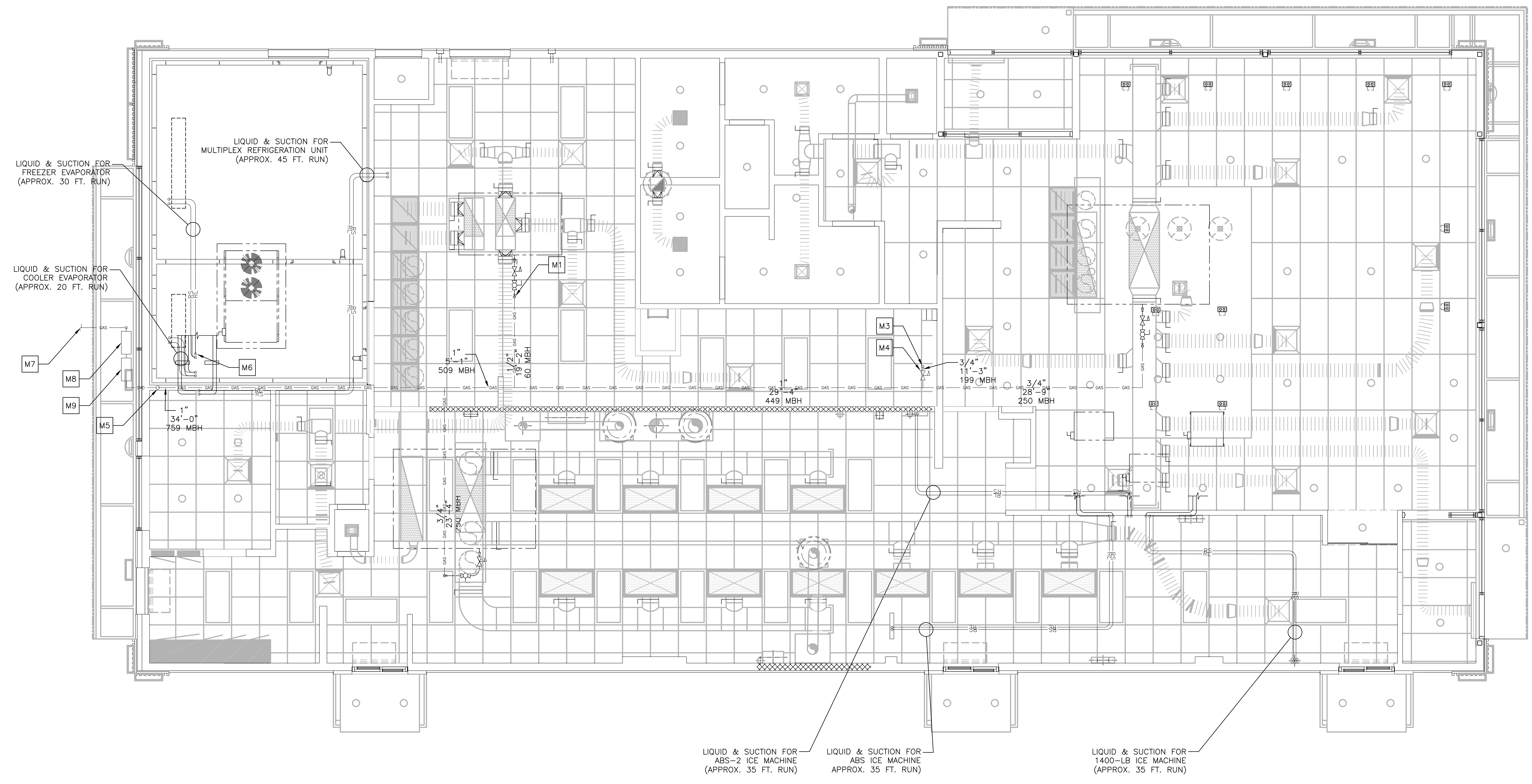
PREPARED BY: CORE STATES GROUP

PREPARED FOR: McDonald's USA, LLC

DRAWN BY TP
STD ISSUE DATE 2022_10
REVIEWED BY DAVID M LEIFFER
DATE ISSUED 10 04 2022

TITLE 2022 STANDARD BUILDING – BB20 4597–WOOD/WOOD
DESCRIPTION WOOD BEARING WALLS W/HARDIE BOARD SIDING WOOD ROOF TRUSS FRAMING E.I.F.S./BATTEN/HARDIE BOARD SIDING EXTERIOR FINISH
SITE ID 024–1290
SITE ADDRESS 3720 W Sunshine Springfield, MO

SHEET NO. 024–1290.00.0
M1.2
DUCTWORK PLAN



1 / M1.4 MECHANICAL PIPING PLAN
1/4"=1'-0"

DRAWING NOTES

1. GAS PIPING LENGTHS ARE APPROXIMATE AND ARE SHOWN FOR SIZING PURPOSES ONLY.
2. REFRIGERANT PIPE SIZES SHALL BE PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.

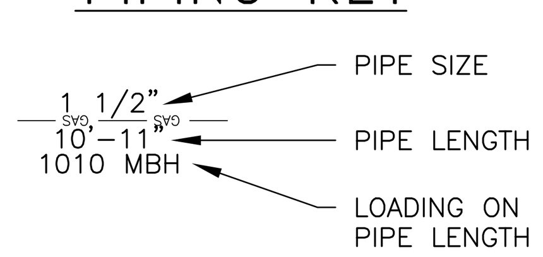
KEYED NOTES

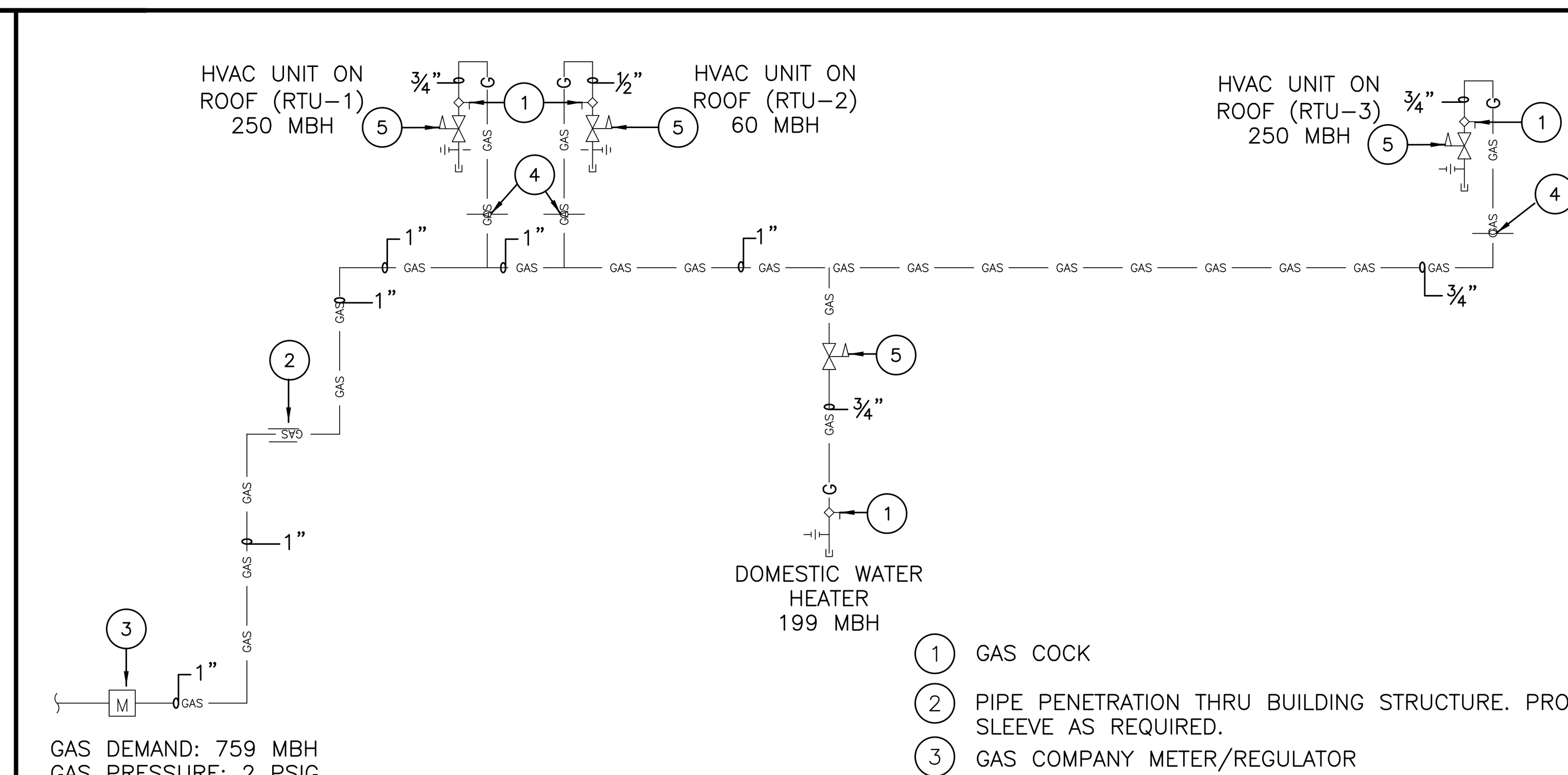
- M1 GAS PIPE UP THROUGH ROOF TO RTU (TYP. 3 PLACES)
- M2 NOT USED
- M3 GAS PIPE DOWN TO WATER HEATER – APPROX. 10 FT. DROP
- M4 SIZE REGULATOR PROPERLY FOR APPLICATION – SET GAS PRESSURE REGULATOR OUTLET PRESSURE TO 10" W.C. AND PROVIDE VENT THROUGH ROOF AS REQUIRED
- M5 GAS PIPE UP IN WALL – APPROX. 10 FT. RISE
- M6 REFRIGERANT LIQUID AND SUCTION LINES UP THROUGH ROOF TO CONDENSING UNITS (TYP. 6 PLACES – SEE DETAIL 3 ON DRAWING M3.0)
- M7 INCOMING SERVICE LINE – SEE GAS PIPING NOTES ON DRAWING M4.0
- M8 INCOMING SERVICE REGULATOR SET TO 2 PSIG
- M9 INCOMING SERVICE METER – SEE GAS LOAD SCHEDULE FOR SIZING

GAS LOAD SCHEDULE

EQUIPMENT	INPUT (BTU/HR)	GAS FLOW (1,000 BTU/CF) (CF/HR)
ROOFTOP UNIT (RTU-1)	250,000	250
ROOFTOP UNIT (RTU-2)	60,000	60
ROOFTOP UNIT (RTU-3)	250,000	250
WATER HEATER (WH-1)	199,000	199
TOTAL	**759,000**	**759**

PIPING KEY





1. GAS COCK
2. PIPE PENETRATION THRU BUILDING STRUCTURE. PROVIDE PIPE SLEEVE AS REQUIRED.
3. GAS COMPANY METER/REGULATOR
4. GAS PIPING UP THRU THE ROOF. COORDINATE PIPE ROOF PENETRATION WITH AC UNIT LOCATION IN THE FIELD.
5. GAS REGULATOR

GAS RISER DIAGRAM

NOT TO SCALE

REV	DATE	DESCRIPTION	BY

DAVID MICAH LEIFFER, NUMBER PE-2013019214, STATE OF MISSOURI, PROFESSIONAL ENGINEER
11-07-2022

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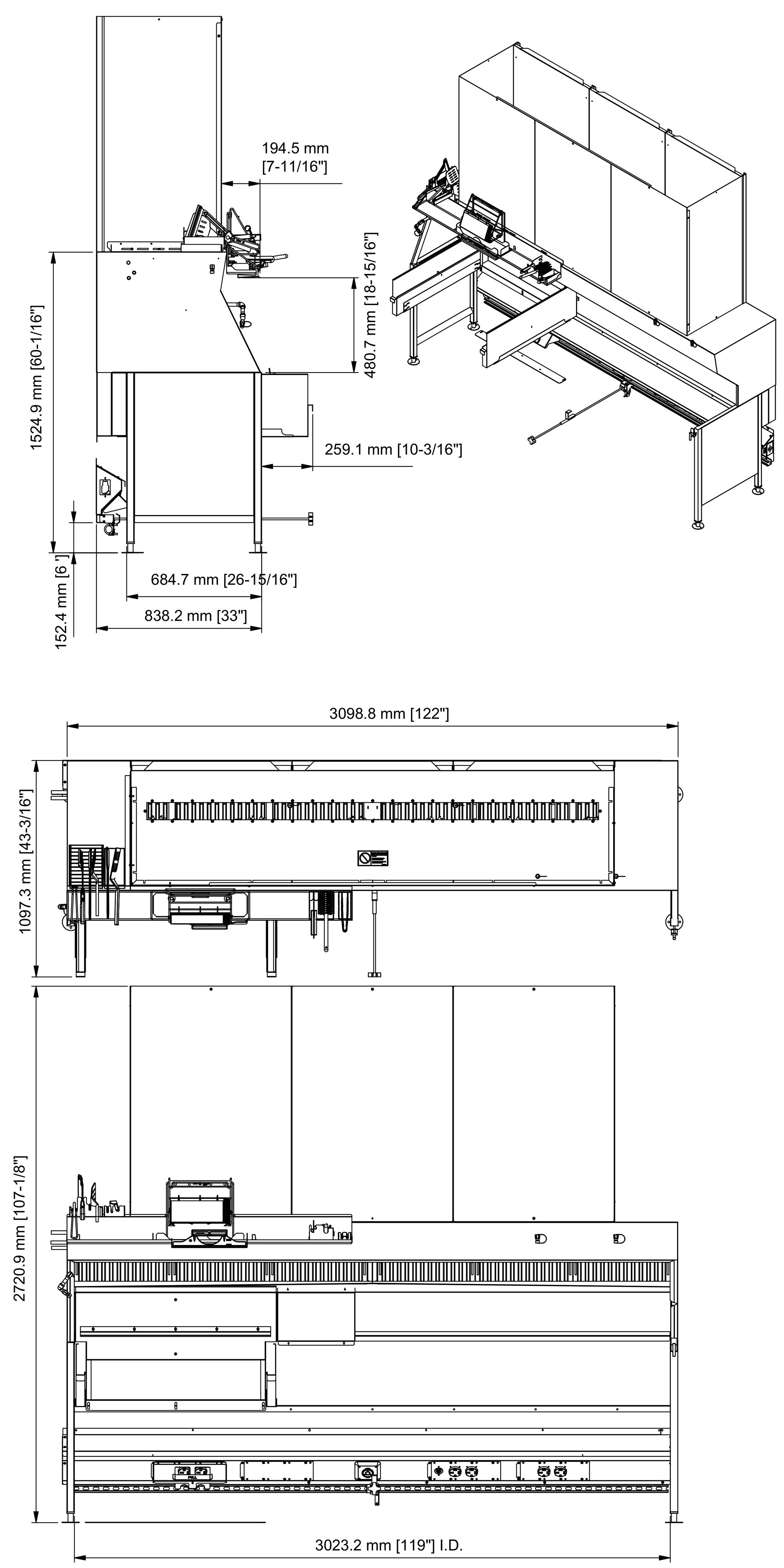
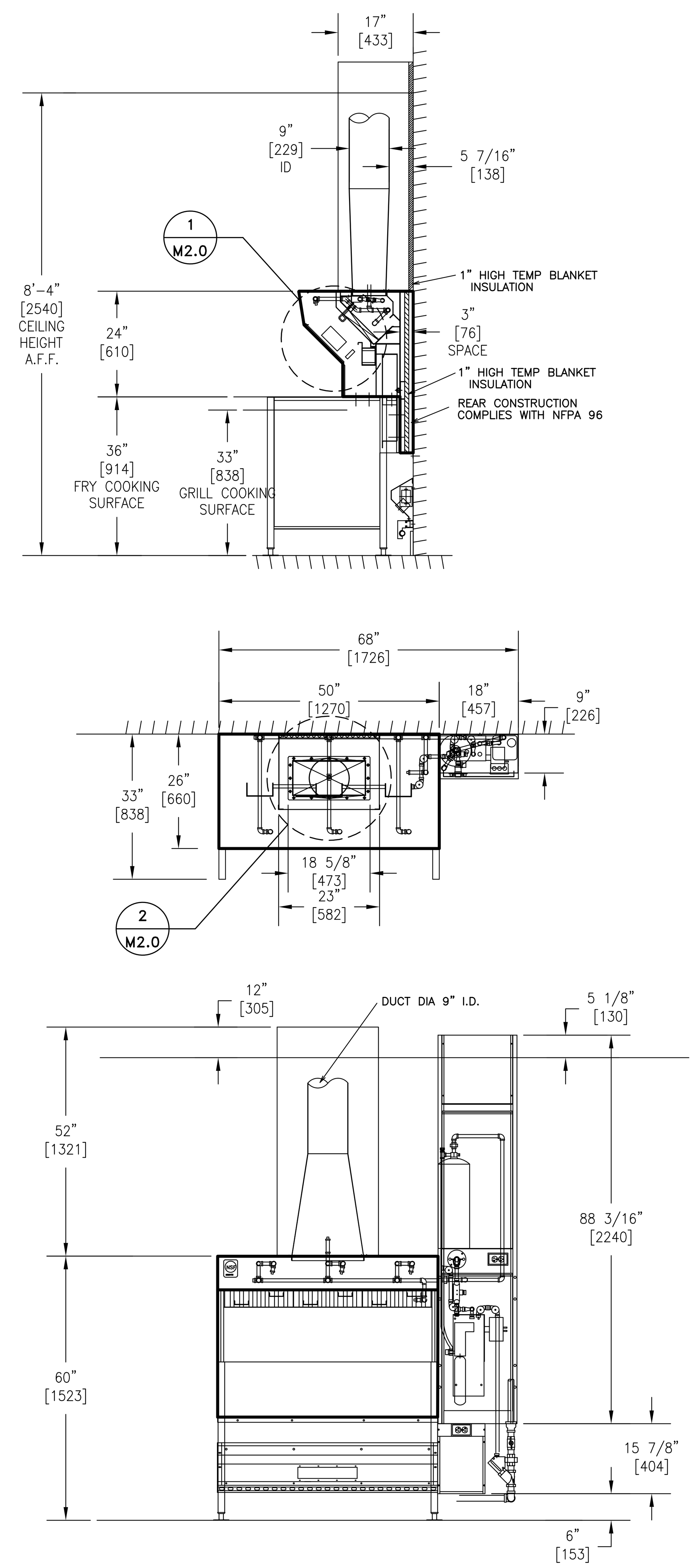
PREPARED FOR: McDonald's USA, LLC

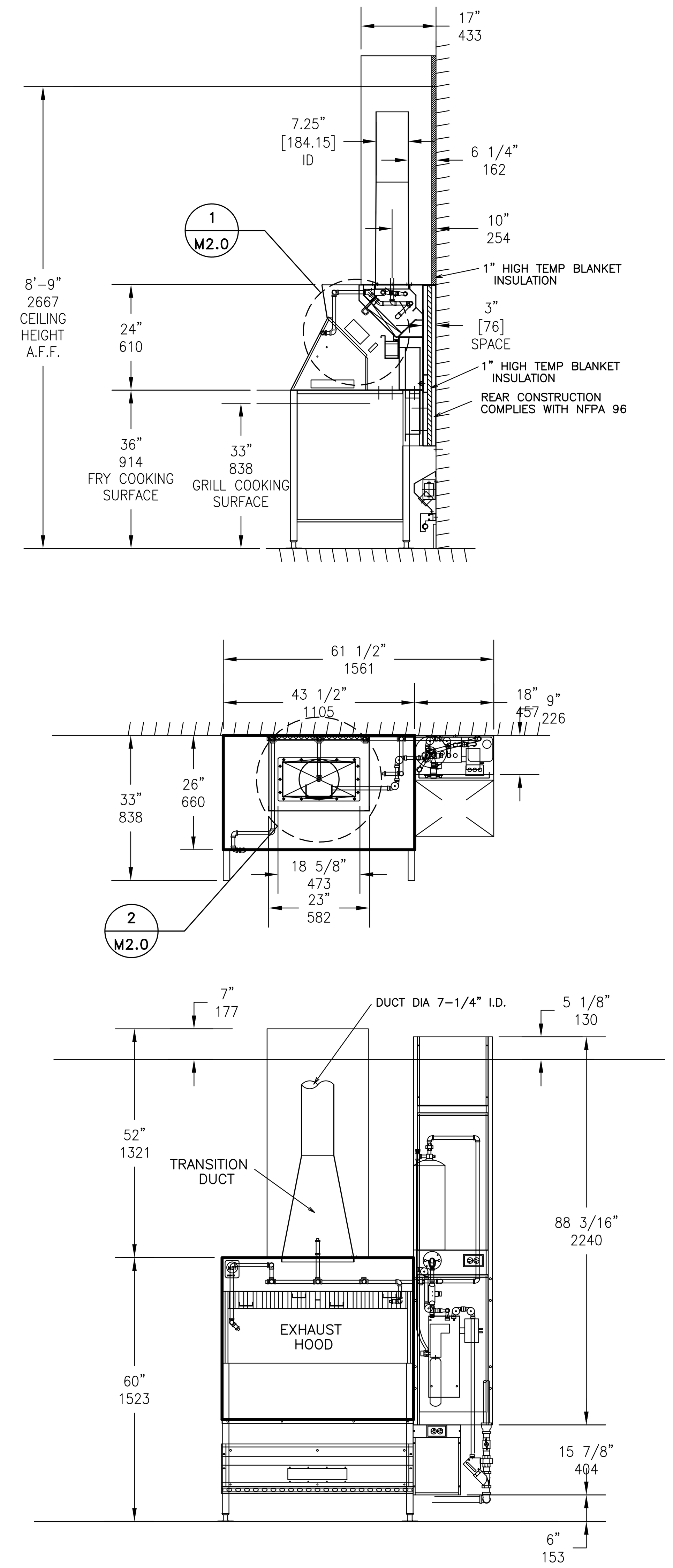
DRAWN BY	TP
STD ISSUE DATE	2022_10
REVIEWED BY	DAVID M LEIFFER
DATE ISSUED	10 04 2022
TITLE	2022 STANDARD BUILDING – BB20 4597–WOOD/WOOD
DESCRIPTION	WOOD BEARING WALLS W/HARDIE BOARD SIDING WOOD ROOF TRUSS FRAMING E.I.F.S./BATTEN/HARDIE BOARD SIDING EXTERIOR FINISH
SITE ID	024–1290
SITE ADDRESS	3720 W Sunshine Springfield, MO
SHEET NO.	024–1290.00.0 M1.4 MECH. PIPING PLAN



KITCHEN EXHAUST HOOD
TAG: KH-1 (SEE KITCHEN EXHAUST HOOD SCHEDULE)
SCALE: ½"=1'-0"



KITCHEN EXHAUST HOOD
TAG: KH-2 (SEE KITCHEN EXHAUST HOOD SCHEDULE)
SCALE: ½"=1'-0"



KITCHEN EXHAUST HOOD
TAG: KH-3 (SEE KITCHEN EXHAUST HOOD SCHEDULE)
SCALE: ½"=1'-0"

McDONALD'S CORPORATION
OAK BROOK, ILLINOIS 60521

EQUIP. ID. EXHAUST HOOD: UH SERIES
MANUF. ID. [redacted] SERIAL # [redacted]
MANUF. EQUIP. ID. [redacted] MFG DATE [redacted]

LENGTH OF HOOD	MINIMUM DESIGN EXHAUST AIRFLOW, CFM/ft (CUM/m) OF HOOD LENGTH W/DUCT	MINIMUM DESIGN EXHAUST AIRFLOW, CFM/ft (CUM/m) OF HOOD LENGTH W/ESP
26" (66)	128 (12)	128 (12)
34.5" (88)	143 (13.3)	137 (12.8)
35-122" (89-310)	166 (15.5)	151 (14.0)
133.75" (339.7)	132 (12.3)	132 (12.3)

FOR USE OVER COMMERCIAL GAS OR ELECTRIC COOKING EQUIPMENT UP TO 400°F (204 [EXCEPT UPPER PLATEN OF 2-SIDED COOKER MAY BE UP TO 425°F (218°C)].

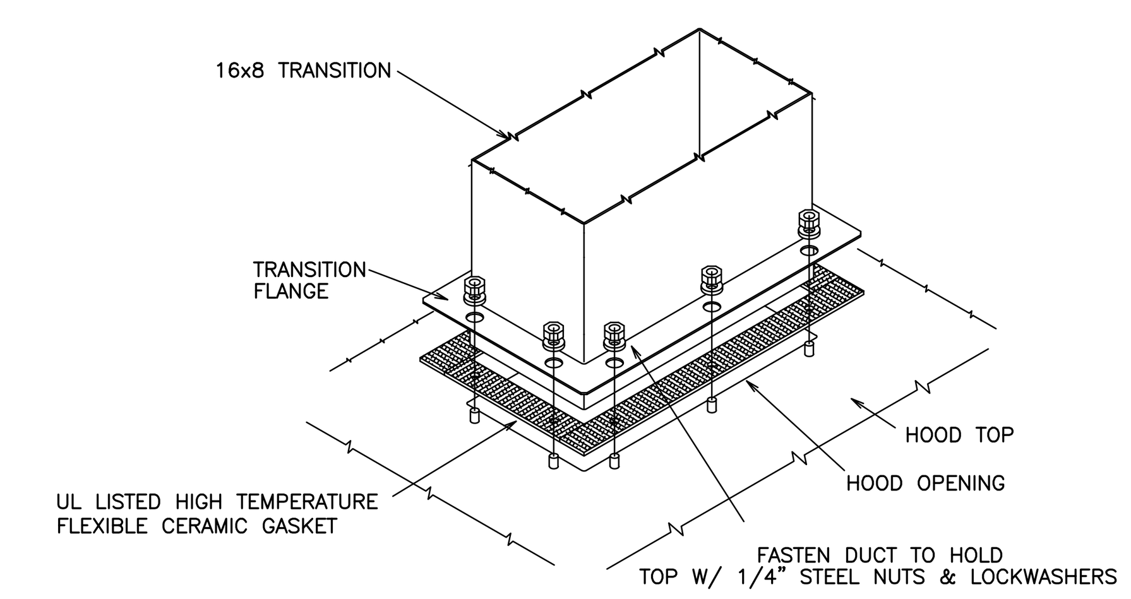
-22"(558.8mm) MAXIMUM CLEARANCE FROM COOKING SURFACE TO FRONT LOWER EDGE OF HOOD
-16"(406.4mm) MINIMUM CLEARANCE FROM COOKING SURFACE TO FRONT LOWER EDGE OF HOOD
-2 1/4"(57.15mm) MINIMUM SIDE HOOD OVERHANG FROM EDGE OF COOKING SURFACE
-16 1/4"(412.75mm) MAXIMUM FRONT HOOD SETBACK FROM EDGE OF COOKING SURFACE

-THESE HOODS ARE LISTED FOR DIRECT REAR MOUNTING ON A COMBUSTIBLE SURFACE
-HOODS MAY BE INSTALLED WITH DUCTS OR ESP DIRECTLY ON TOP OF HOOD ASSEMBLY
-WHEN A GRILL IS OPERATED UNDER THE HOOD, AN EXTENSION SIDE PANEL (REMOVABLE OR INTEGRAL) MUST BE MOUNTED AT WHICHEVER END(S) OF HOOD IS ADJACENT TO THE GRILL(S)
-FILTERS SHALL ONLY BE REPLACED WITH FILTERS TESTED TO UL 1046 STANDARDS.
-FOR USE w/GARLAND MODEL MEWE GRILL OR FOR USE w/TAYLOR MODEL C842 GRILL
-ONLY THE REMOVABLE SIDESKIRTS WILL BE INDIVIDUALLY MARKED AS FOLLOWS: UH SERIES/GRILL/RH or LH
-THESE HOODS ARE LISTED FOR COMPLIANCE WITH ICBO, BOCA, AND SBCCI PER NER-320
-THESE HOODS MUST BE INSTALLED PER NFPA-96

Intertek
4001095

EXHAUST HOOD WITHOUT EXHAUST DAMPERS (COA #5535)

DETAIL 1/M2.0
UL LABEL
SCALE: NONE



DETAIL 2/M2.0
HOOD CONNECTION
SCALE: NONE

DRAWING NOTES

1. 16 GA. STAINLESS STEEL MATERIAL USED FOR HOOD CONSTRUCTION
2. FILTER BAFFLE:
   UL FILE R14372, VOL. 1, SEC. 1
   UL CONTROL NUMBER 5L65
   MEA-446-92-M
3. EXHAUST HOOD:
   UL FILE MH12755, VOL. 4
   UL CONTROL NUMBER 78L1
4. UTILITY CHASE AND RACEWAY:
   UL FILE E163328, VOL.1, SEC.3
5. HIGH TEMP GASKET:
   UL FILE MH12755, VOL. 2, SEC. 1, ILL. 9
6. HOOD CONSTRUCTION COMPLIES WITH NSF STANDARD 2
7. HOOD PERFORMANCE TESTED IN ACCORDANCE WITH UL 710
8. UL 300 AND NFPA 17A COMPLIANT R-102 WET CHEMICAL SYSTEM INCLUDED WITH HOOD INSTALLATION
9. ANSUL CONNECTIONS AND STARTUP BY APPROVED ANSUL REPRESENTATIVE
10. REFER E3.2 FOR HOOD/FAN INTERLOCK DETAILS
11. CAPTURE JET PLENUMS ARE TO BE ATTACHED WHEN CALLED OUT PER KITCHEN SCHEDULE.

REV | DATE | DESCRIPTION | BY

DAVID MICAH LEIFFER
11-07-2022

PREPARED BY: CORE STATES GROUP
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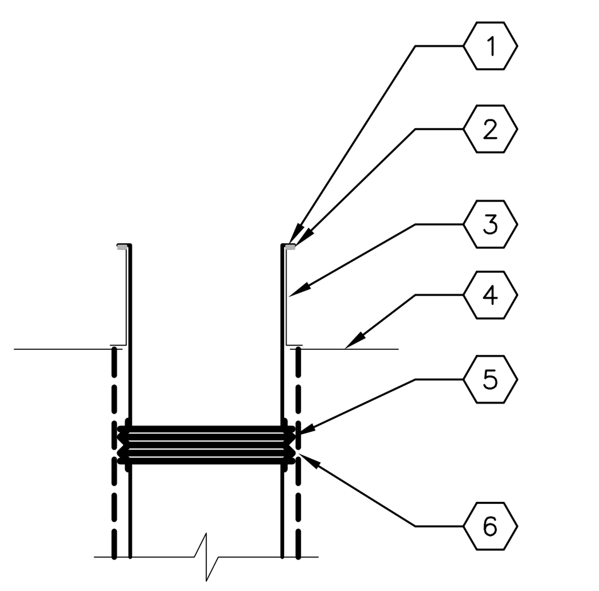
PREPARED FOR: McDonald's USA, LLC

DRAWN BY: TP
STD ISSUE DATE: 2022_10
REVIEWED BY: DAVID M LEIFFER
DATE ISSUED: 10 04 2022

TITLE: 2022 STANDARD BUILDING – BB20 4597–WOOD/WOOD
DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD SIDING; WOOD ROOF TRUSS FRAMING; E.I.F.S./BATTEN/HARDIE BOARD SIDING EXTERIOR FINISH
SITE ID: 024–1290
SITE ADDRESS: 3720 W Sunshine, Springfield, MO

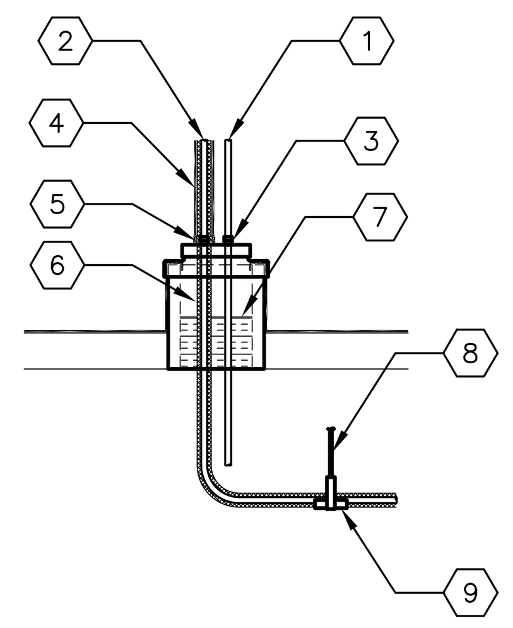
SHEET NO. 024–1290.00.0
M2.0
EXHAUST HOODS



KEYED NOTES:
1. SHEET METAL DUCT DROP (SUPPLY, RETURN OR EXHAUST)
2. FOAM GASKET BETWEEN DUCT AND CURB
3. ROOF CURB
4. ROOF LINE
5. 6" FACE–TO–FACE CANVAS FLEXIBLE CONNECTION
6. 2" EXTERIOR INSULATION (SUPPLY AND RETURN)

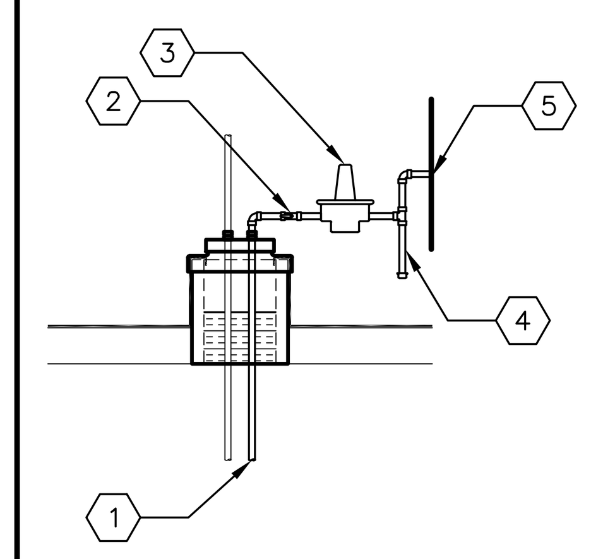
DETAIL 1 / M3.0
DUCT DROP INSTALLATION
SCALE: NONE

DETAIL 2 / M3.0
NOT USED



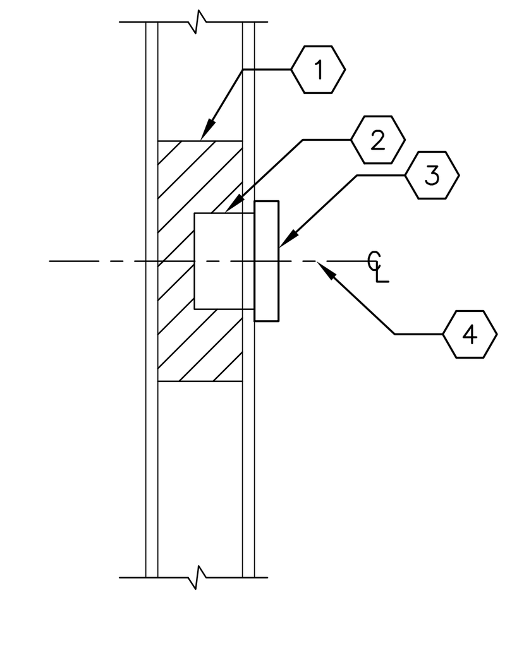
KEYED NOTES:
1. REFRIGERANT LIQUID LINE
2. REFRIGERANT SUCTION LINE WITH 1" THICK EXTERNAL FOAM INSULATION (ARMAFLEX BY ARMACELL OR EQUAL)
3. STAINLESS STEEL CLAMP
4. APPLY WEATHERPROOFING OVER FOAM INSULATION (ALUMAGUARD BY POLYGUARD OR EQUAL)
5. WRAP FOAM INSULATION OVER PIPE PORTAL NIPPLE AND STAINLESS STEEL CLAMP
6. RESTART FOAM INSULATION IMMEDIATELY AFTER PIPE PORTAL PENETRATION
7. INSULATE BOTTOM OF ROOF PORTAL CURB (MIN. R–19)
8. PIPE HANGER
9. LIGHT GAUGE GALVANIZED STEEL PROTECTIVE SHIELD

DETAIL 3 / M3.0
REFRIGERANT PIPE INSTALLATION
SCALE: NONE



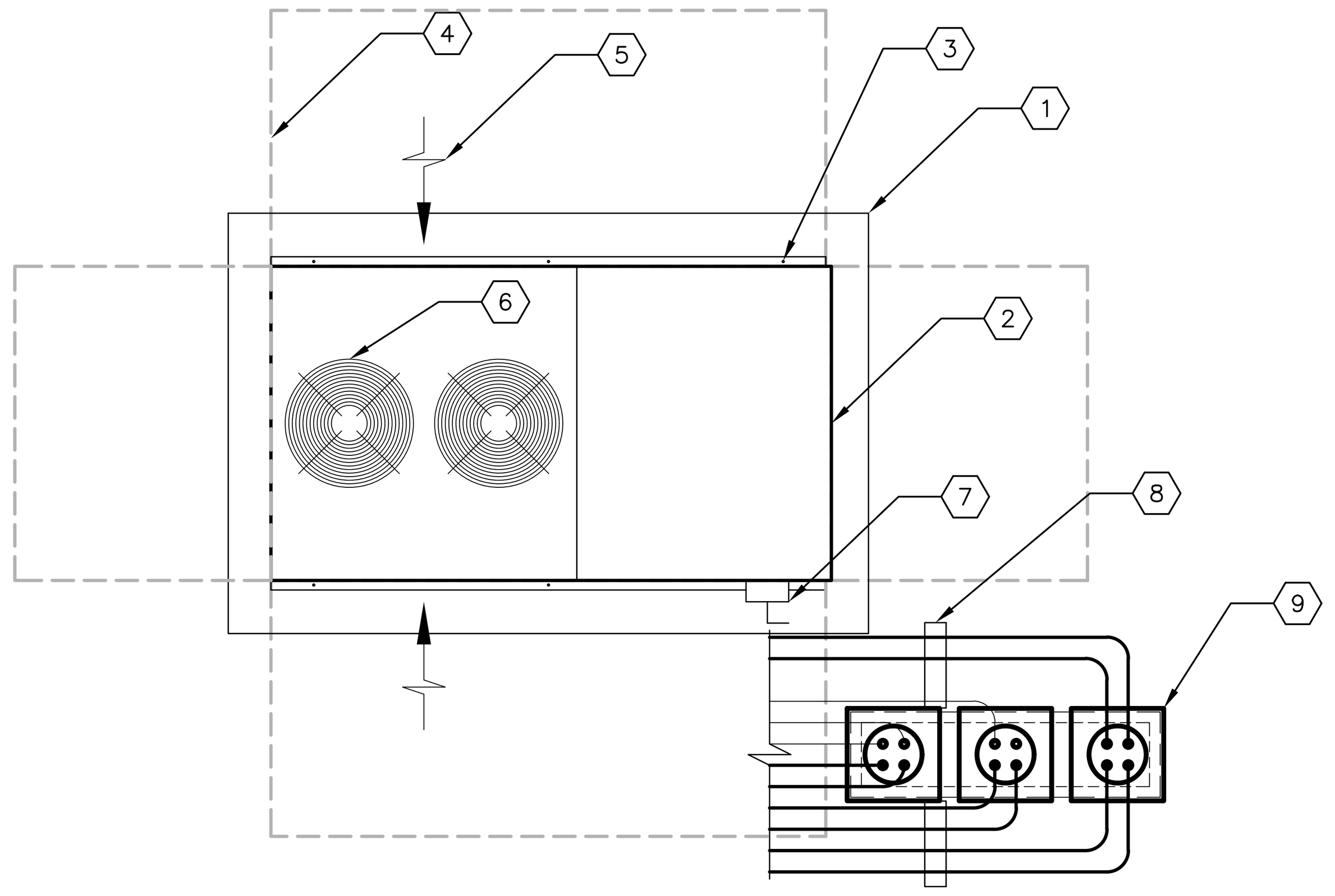
KEYED NOTES:
1. GAS PIPING
2. SHUT–OFF VALVE
3. PRESSURE REGULATOR (PROPERLY SIZED FOR APPLICATION)
4. DIRT LEG
5. ROOFTOP UNIT ENTRY

DETAIL 4 / M3.0
GAS PIPE INSTALLATION
SCALE: NONE



KEYED NOTES:
1. PROVIDE BATT INSULATION FOR TEMPERATURE SENSORS INSTALLED IN HOLLOW CAVITY WALLS
2. 2x4 ELECTRICAL BOX
3. SENSOR (TEMPERATURE, HUMIDITY OR CO2)
4. MOUNT SENSOR(S) BETWEEN 4'–0" TO 4'–6" A.F.F.

DETAIL 5 / M3.0
REMOTE SENSOR INSTALLATION
SCALE: NONE

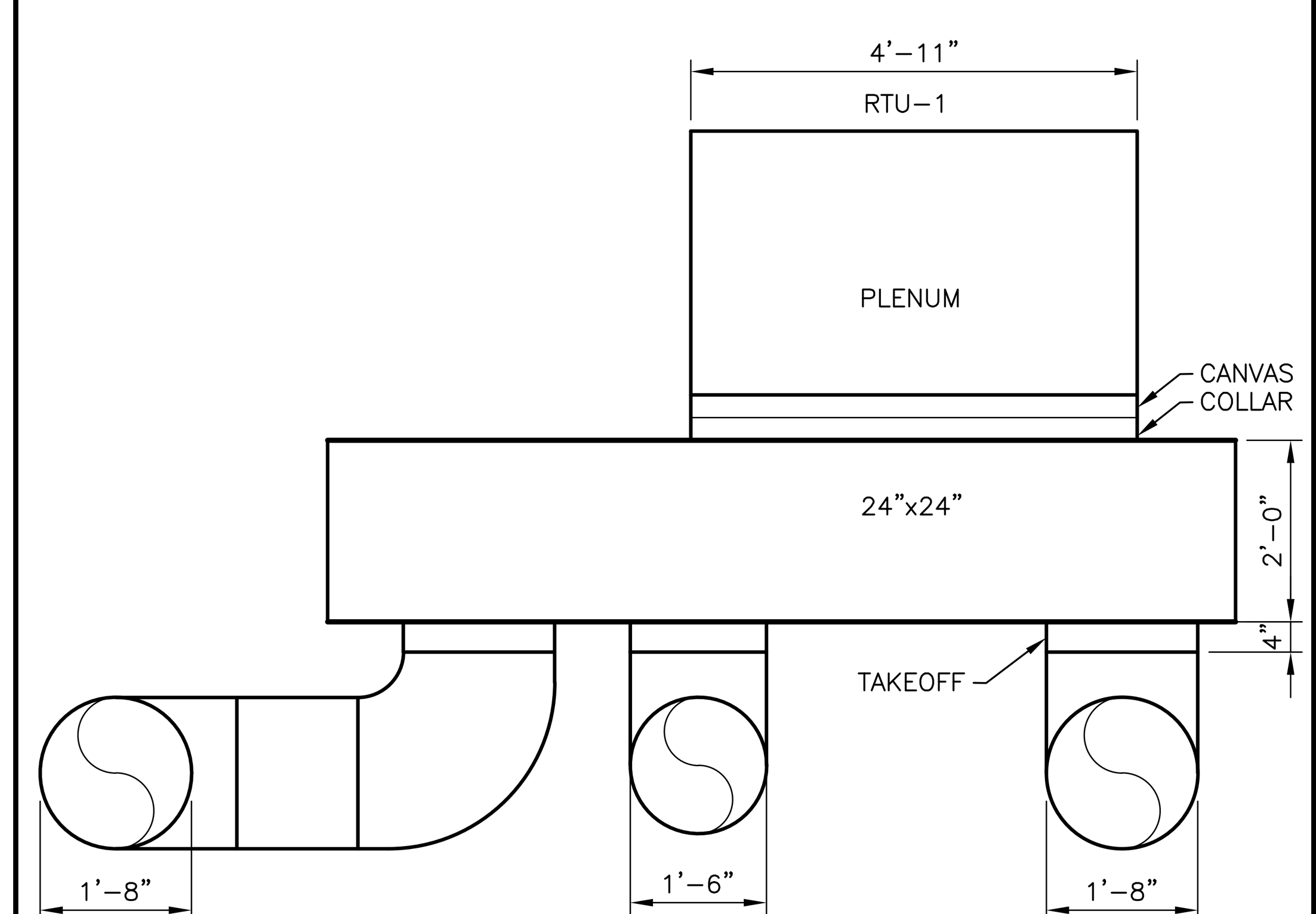


KEYED NOTES:
1. 90"x60"x14"H EQUIPMENT PLATFORM MANUFACTURED BY RPS OR EQUAL
2. 6'–6¾"x3'–8¼"x2'–9⅞"H CONDENSING UNIT
3. FASTEN CONDENSING UNIT TO TOP OF PLATFORM AND SEAL FASTENER PENETRATIONS WITH UV RESISTANT SEALANT
4. OUTLINE OF SERVICE CLEARANCE EXTENDING 3'–0" FROM CONDENSING UNIT ON ALL SIDES
5. CONDENSER AIR INTAKE (BOTH SIDES)
6. CONDENSER FAN OUTLETS ON TOP OF UNIT
7. DISCONNECT SWITCH FURNISHED WITH UNIT
8. PROVIDE PIPE SUPPORT AS REQUIRED (TREATED LUMBER IS NOT ACCEPTABLE)
9. MULTIPLE PIPE PORTAL MANUFACTURED BY RPS OR EQUAL

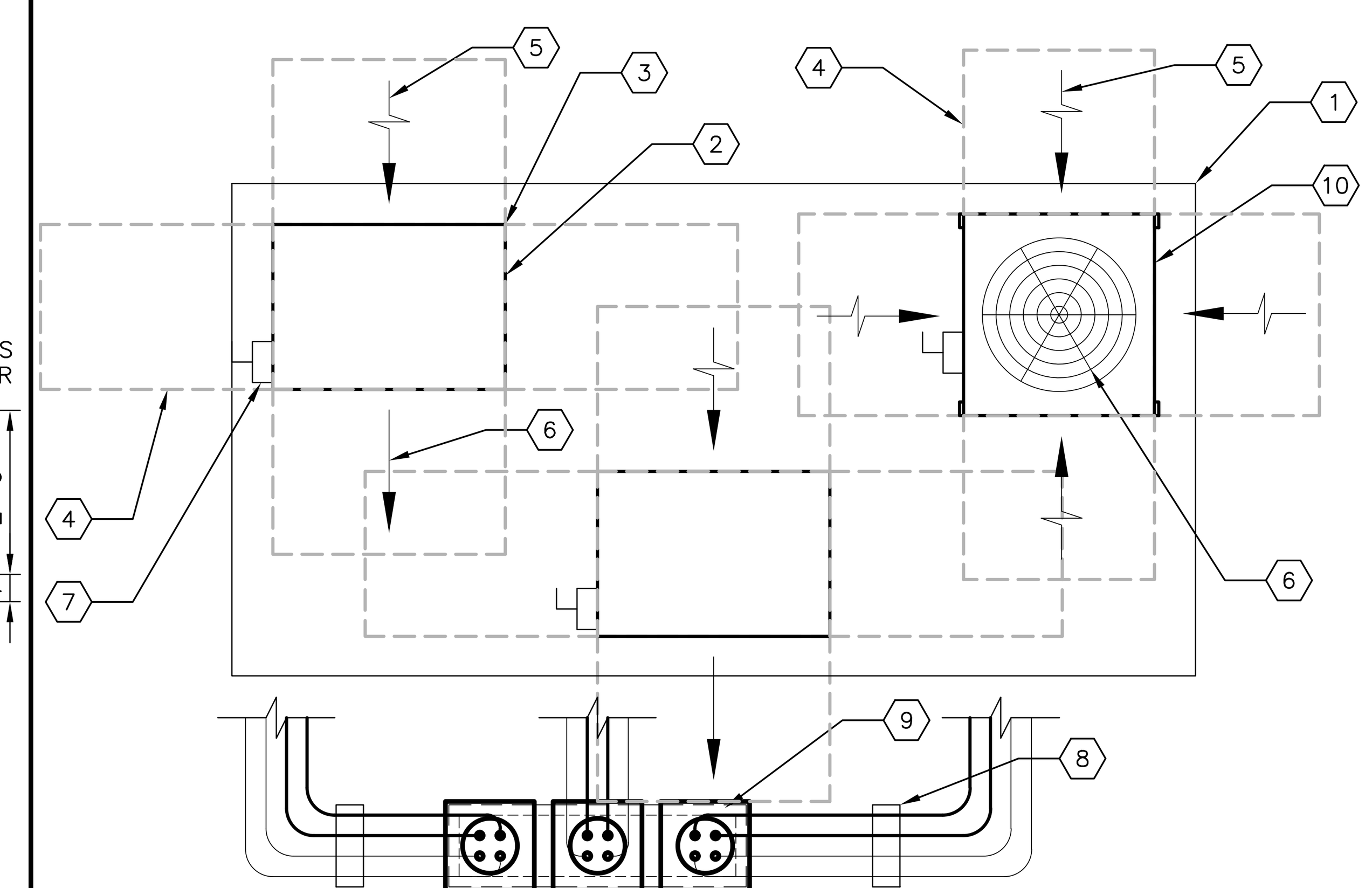
CONDUIT SIZES:
(1) ¾" TO EVAPORATORS
(1) ¾" WITH TWO (2) 8 CONDUCTOR LV CLASS II CABLES TO THE EVAPORATORS
(1) ¾" TO ICE MACHINE

REFRIGERANT PIPING SIZES:
SEE MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR RECOMMENDED REFRIGERANT PIPE SIZING

DETAIL 6 / M3.0
BOHN MAC 8X UNIT (CU–4)
SCALE: ½"=1'–0"



DETAIL 7 / M3.0
VIEW TOWARDS REAR OF KITCHEN AT DUCT DROPS
SCALE: ½"=1'–0"

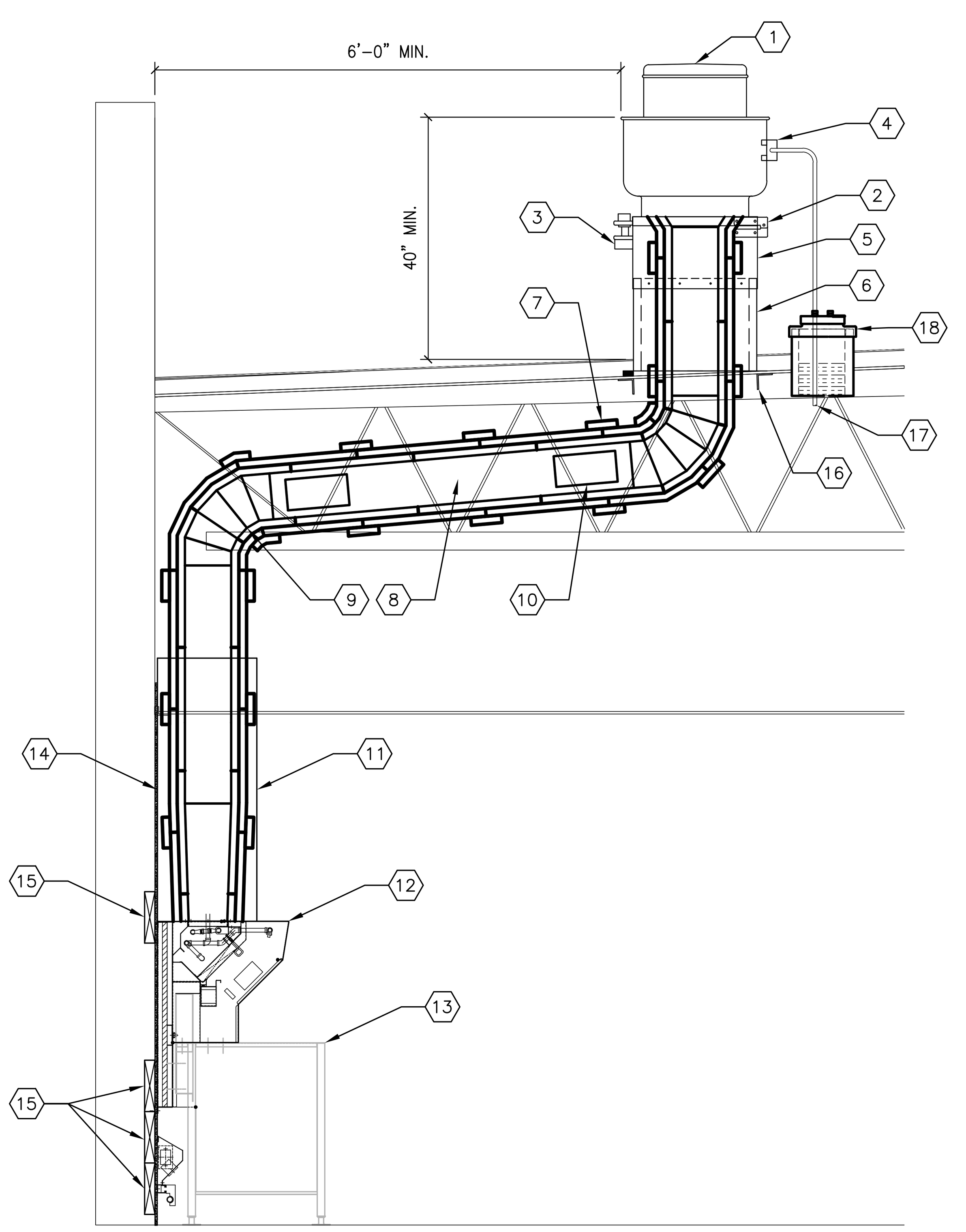


KEYED NOTES:
1. 141"x72"x14"H EQUIPMENT PLATFORM MANUFACTURED BY RPS OR EQUAL
2. 34"x24⅛"x25¾"H CONDENSING UNIT
3. FASTEN CONDENSING UNIT TO TOP OF PLATFORM AND SEAL FASTENER PENETRATIONS WITH UV RESISTANT SEALANT
4. OUTLINE OF SERVICE CLEARANCE EXTENDING FROM CONDENSING UNIT ON ALL SIDES
5. CONDENSER AIR INTAKE
6. CONDENSER FAN OUTLET
7. DISCONNECT SWITCH PROVIDED BY ELECTRICAL CONTRACTOR
8. PROVIDE PIPE SUPPORT AS NECESSARY (TREATED LUMBER IS NOT ACCEPTABLE)
9. MULTIPLE PIPE PORTAL MANUFACTURED BY RPS OR EQUAL
10. 29½"x28"x38"H CONDENSING UNIT

CONDUIT SIZES: (PER CONDENSING UNIT)
(1) ¾" POWER
(1) ¾" CONTROL

REFRIGERANT PIPING SIZES:
(PER CONDENSING UNIT)
ICE MACHINE – ½" LIQUID, ¾" SUCTION
(CU–3 CONDENSING UNIT)
ICE MACHINE – ⅜" LIQUID, ½" SUCTION

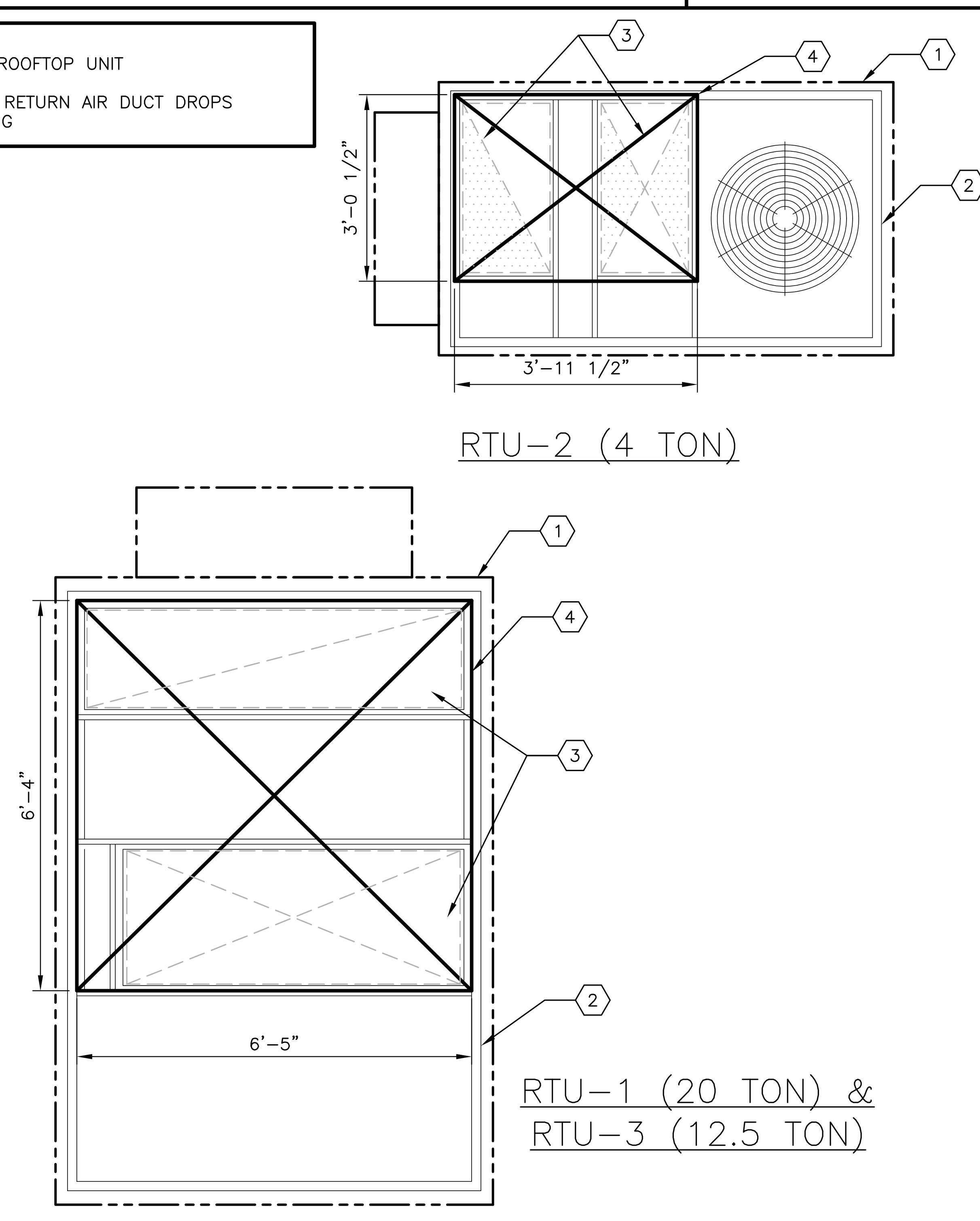
DETAIL 7B / M3.0
REMOTE CONDENSER UNIT (CU–1, CU–2 & CU–3)
SCALE: ½"=1'–0"



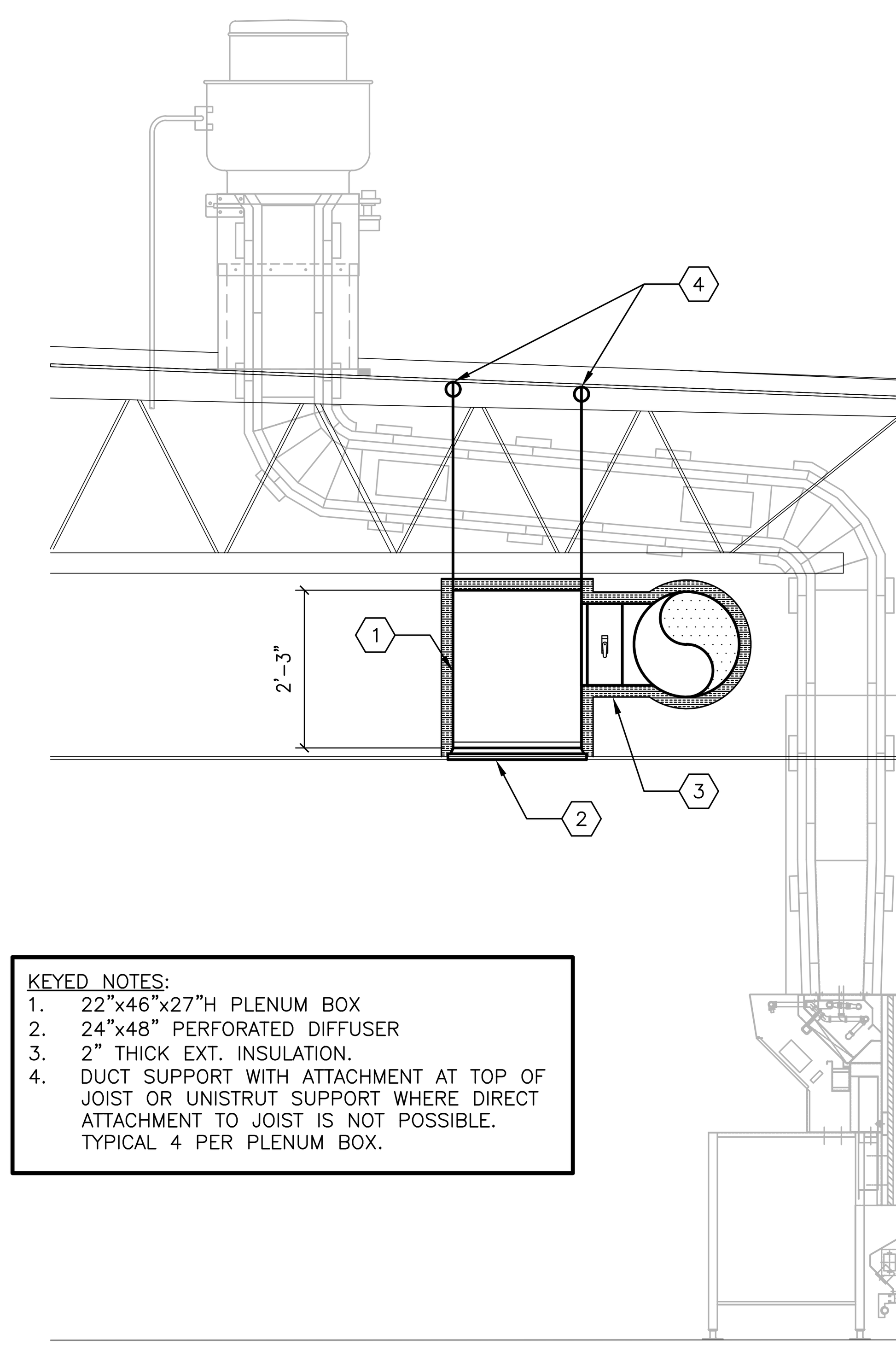
KEYED NOTES:
1. UPBLAST EXHAUST FAN (SEE EXHAUST FAN SCHEDULE)
2. HINGED CURB CAP FOR CLEANING ACCESS (FURNISHED WITH FAN)
3. GREASE TRAP (FURNISHED WITH FAN)
4. NEMA 3R DISCONNECT SWITCH (FURNISHED WITH FAN)
5. 12" HIGH CURB EXTENSION (FURNISHED WITH FAN)
6. 18" HIGH CURB (FURNISHED WITH FAN)
7. TWO (2) LAYERS OF 1½" THICK DUCT WRAP TO MEET ASTM E2336 INSTALLED PER MANUFACTURER'S INSTRUCTIONS (SEE MECHANICAL NOTES FOR INSULATION SPECIFICATION)
8. 16 GAUGE BLACK IRON (CARBON STEEL) OR 18 GAUGE STAINLESS STEEL DUCTWORK WELDED LIQUID–TIGHT
9. 5–GORE BLACK IRON (CARBON STEEL) RADIUS ELBOW
10. 12"x6" ACCESS DOOR AT ALL CHANGES IN DIRECTION
11. STAINLESS STEEL FASCIA PANEL TO PROTECT DUCTWORK AND INSULATION
12. BACKSHELF TYPE EXHAUST HOOD (SEE KITCHEN EXHAUST HOOD SCHEDULE)
13. COOKING APPLIANCE (SEE KITCHEN DRAWINGS)
14. REAR WALL CONSTRUCTION SHALL CONSIST OF CERAMIC TILE OR MIN. 22 GAUGE STAINLESS STEEL OVER ⅝" TYPE X GYPSUM BOARD OR ½" CEMENT BOARD FROM FLOOR TO CEILING AND EXTENDING 24" TO EACH SIDE OF THE HOOD INSTALLED ON NON–COMBUSTIBLE WALL (REFER TO SHEET A1.0 FOR MORE INFORMATION.
15. 2x10 LIGHT GAUGE STEEL FOR SUPPORT BLOCKING FOR HOOD AND RACEWAY (COORDINATE INSTALLATION WITH HOOD INSTALLER)
16. STRUCTURAL FRAMING FOR ROOF OPENING (SEE STRUCTURAL DRAWINGS)
17. TRANSITION TO FLEXIBLE CONDUIT UNDER ROOF PENETRATION WHERE ALLOWED BY CODE.
18. ROOF PIPE PORTAL, RPS–N18(1) RC–2A 12x12x11H.

SECTION 8 / M3.0
KITCHEN EXHAUST HOOD INSTALLATION
SCALE: ½"=1'–0"

KEYED NOTES:
1. OUTLINE OF ROOFTOP UNIT
2. ROOF CURB
3. SUPPLY AND RETURN AIR DUCT DROPS
4. ROOF OPENING



DETAIL 9 / M3.0
ROOF OPENINGS
SCALE: ½"=1'–0"



KEYED NOTES:
1. 22"x46"x27"H PLENUM BOX
2. 24"x48" PERFORATED DIFFUSER
3. 2" THICK EXT. INSULATION.
4. DUCT SUPPORT WITH ATTACHMENT AT TOP OF JOIST OR UNISTRUT SUPPORT WHERE DIRECT ATTACHMENT TO JOIST IS NOT POSSIBLE. TYPICAL 4 PER PLENUM BOX.

SECTION 10 / M3.0
SUPPLY (S–1) PLENUM INSTALLATION
SCALE: ½"=1'–0"

REV	DATE	DESCRIPTION	BY

STATE OF MISSOURI
DAVID MICAH LEIFFER
NUMBER PE-2013011214
PROFESSIONAL ENGINEER
11-07-2022

PREPARED BY:
CORE STATES GROUP
212 SE 34th. Street, Suite 2
Bentonville, AR 72712
479.877.3465
www.core-states.com

PREPARED FOR:
McDonald's USA, LLC

DRAWN BY: TP
STD ISSUE DATE: 2022_10
REVIEWED BY: DAVID M LEIFFER
DATE ISSUED: 10 04 2022

TITLE: 2022 STANDARD BUILDING – BB20 4597–WOOD/WOOD
DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD SIDING; WOOD ROOF TRUSS FRAMING; E.I.F.S./BATTEN/HARDIE BOARD SIDING EXTERIOR FINISH
SITE ID: 024–1290
SITE ADDRESS: 3720 W Sunshine, Springfield, MO

SHEET NO. 024–1290.00.0
M3.0
DETAILS

MECHANICAL NOTES

GENERAL:
1. ALL WORK PERFORMED SHALL BE IN ACCORDANCE WITH ALL LOCAL CODES AND ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION.
2. ALL DIMENSIONS, CLEARANCES AND TOLERANCES SHALL BE VERIFIED PRIOR TO INSTALLATION.
3. ALL MATERIALS, FIXTURES AND EQUIPMENT USED SHALL BE IN ACCORDANCE WITH McDONALD'S SPECIFICATIONS. SPECIFICATIONS ARE CONTAINED WITHIN THESE DRAWINGS AND THE McDONALD'S PROJECT MANUAL. ANY CONTRACTOR IN NEED OF A COPY OF THE McDONALD'S PROJECT MANUAL SHALL CONTACT THE McDONALD'S AREA CONSTRUCTION MANAGER. ANY VARIANCE FROM THE McDONALD'S SPECIFICATIONS SHALL BE REVIEWED AND APPROVED BY THE ENGINEER-OF-RECORD.
4. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH ITS LISTING AND/OR THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
5. SEE COORDINATION SCHEDULE FOR ADDITIONAL SCOPE OF WORK.
6. PRIOR TO BUILDING TURNOVER, A COMPLETE START-UP, TEST, ADJUST AND BALANCE SHALL BE PERFORMED ON ALL MECHANICAL SYSTEMS. THIS WORK SHALL BE PERFORMED BY A CERTIFIED TEST AND BALANCE CONTRACTOR. A CERTIFIED TEST AND BALANCE CONTRACTOR CAN BE FOUND BY VISITING:
   HTTP://WWW.AABCHQ.COM/DIRECTORY
   HTTP://WWW.NEBB.ORG/DIRECTORY.HTM
   HTTP://WWW.TABBCERTIFIED.ORG/SITE/CONTENT/CONTRACTORS/SEARCH
7. UPON COMPLETION OF THE PUNCHLIST, THE MECHANICAL CONTRACTOR AND TEST AND BALANCE CONTRACTOR SHALL SUBMIT REDLINED OR AS-BUILT DRAWINGS ALONG WITH THE TEST AND BALANCE REPORT AND ALL EQUIPMENT OPERATION AND MAINTENANCE MANUALS TO THE McDONALD'S AREA CONSTRUCTION MANAGER. A MINIMUM OF TWO (2) COPIES SHALL BE PROVIDED, ONE (1) FOR REGIONAL RECORDS AND ONE (1) FOR THE RESTAURANT.
8. ALL PENETRATIONS OF FIRE-RATED WALLS SHALL BE FIRESTOPPED WITH AN APPROVED AND LISTED FIRESTOPPING SYSTEM.

VENTILATION SYSTEMS:
1. ALL SHEET METAL DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH LOCAL CODES AND SMACNA STANDARDS.
2. ALL DUCTWORK DIMENSIONS ARE INTERNAL FREE AREA DIMENSIONS AND SIZED FOR 0.1" W.C. PER 100 FT. OF DUCT.
3. ALL SHEET METAL DUCTWORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA TABLES FOR 2" W.C. AND SHALL BE SUPPORTED WITH AN APPROVED HANGER AT INTERVALS NOT EXCEEDING 10 FT.
4. ALL DUCT DROPS INTO THE BUILDING SHALL BE INSTALLED WITH FLEXIBLE CONNECTIONS TO ISOLATE THE DUCTWORK SYSTEM FROM NOISE AND VIBRATION. FLEXIBLE CONNECTIONS SHALL BE TESTED IN ACCORDANCE WITH UL 181 AND LISTED AS CLASS 0 OR CLASS 1.
5. ALL DUCT DROPS INTO THE BUILDING SHALL BE OFFSET AS NECESSARY TO ALLOW FOR THE CLEAR INSTALLATION OF THE EXTERNAL DUCTWORK INSULATION.
6. ALL DUCTWORK BRANCHES SHALL BE SUPPLIED WITH A VOLUME DAMPER FOR BALANCING. VOLUME DAMPER SHALL HAVE A 2" OFFSET TO ACCOMMODATE EXTERNAL INSULATION.
7. TAKE-OFFS FROM RECTANGULAR TO ROUND DUCT SHALL BE DUCTMATE STRAIGHT-SIDED OR CENTER HIGH-EFFICIENCY TAKE-OFFS WITH A 2" DAMPER STAND-OFF TO ACCOMMODATE FOR EXTERNAL INSULATION.
8. ALL DUCTWORK JOINTS, LONGITUDINAL AND TRANSVERSE SEAMS SHALL BE SEALED WITH WELDS, GASKETS, MASTICS (ADHESIVES), TAPES, ETC. ALL SEALANT MATERIALS SHALL BE LISTED IN ACCORDANCE WITH UL 181A OR 181B.
9. ALL SUPPLY AND RETURN SHEET METAL DUCTWORK LOCATED WITHIN THE CEILING SPACE SHALL BE EXTERNALLY INSULATED. INSULATION SHALL BE 2" THICK MICROLITE XG-100 BY JOHNS MANVILLE OR EQUAL.
10. ALL SUPPLY AND RETURN SHEET METAL DUCTWORK LOCATED OUTSIDE OF THE BUILDING SHALL BE INTERNALLY LINED WITH A 1" THICK FIBERGLASS (MIN. R-4.2) AND EXTERNALLY INSULATED WITH A 2" THICK RIGID POLYSTYRENE, POLYURETHANE OR POLYISOCYANURATE BOARD (MIN. R-8 FOR CLIMATE ZONES 1 THROUGH 4), OR A 3" THICK (MIN R-12 FOR CLIMATE ZONES 5 THROUGH 8). INTERNAL FIBERGLASS INSULATION SHALL BE LINATEX BY JOHNS MANVILLE OR EQUAL. EXTERNAL RIGID BOARD INSULATION SHALL BE THERMAPINK BY OWENS CORNING OR EQUAL.
11. ALL EXPOSED SPIRAL DUCTWORK SHALL BE INTERNALLY INSULATED TO PREVENT CONDENSATION (MIN. R-4.3). INTERNAL INSULATION SHALL BE 1" THICK SPIRACOUSTIC PLUS BY JOHNS MANVILLE OR EQUAL.
12. ALL DUCTWORK PENETRATIONS THROUGH FIRE-RATED WALLS, BARRIERS OR PARTITIONS SHALL BE PROTECTED WITH A FIRE DAMPER. THE PERIMETER OF THE FIRE DAMPER SHALL BE FIRESTOPPED WITH AN APPROVED AND LISTED FIRESTOPPING MATERIAL.
13. ALL EXTERIOR SHEET METAL DUCTWORK SHALL BE EXTERNALLY WRAPPED WITH AN APPROVED WEATHERPROOFING MATERIAL TO PROTECT AGAINST WATER PENETRATION AND CORROSION. SIDES AND TOP OF EXTERNAL WEATHERPROOFING SHALL BE ALUMAGUARD 60 MIL UV BARRIER BY POLYGUARD OR EQUAL. BOTTOM OF EXTERNAL WEATHERPROOFING SHALL BE VAPORGUARD 5 MIL MEMBRANE BY POLYGUARD OR EQUAL.
14. ALL FLEXIBLE DUCTWORK, METALLIC AND NONMETALLIC, SHALL CONFORM TO THE FOLLOWING:
   A. 2" THICK INSULATION (R-6.0)
   B. INTEGRAL VAPOR BARRIER
   C. LISTED AND LABELED UL 181, CLASS 0 OR CLASS 1
   D. INSTALLED IN ACCORDANCE WITH:
      i. SMACNA STANDARDS,
      ii. AIR DIFFUSION COUNCIL INSTALLATION GUIDELINES, AND/OR
      iii. MANUFACTURER'S INSTALLATION INSTRUCTIONS
15. FLEXIBLE DUCTWORK SHALL NOT PENETRATE WALLS. SHEET METAL DUCTWORK IS REQUIRED AT ALL FIRE-RATED AND DRAFTSTOP WALL PENETRATIONS.
16. ALL COVERINGS, LININGS AND ADHESIVES (TAPES, ETC.) SHALL HAVE A FLAME-SPREAD INDEX NOT GREATER THAN 25 AND A SMOKE-DEVELOPED INDEX NOT GREATER THAN 50.
17. DUCT-MOUNTED SMOKE DETECTORS SHALL BE INSTALLED IN SYSTEMS WITH DESIGN CAPACITY GREATER THAN 2,000 CFM. SEE MECHANICAL DRAWINGS FOR LOCATIONS OF SMOKE DETECTORS. DUCT-MOUNTED SMOKE DETECTORS ARE NOT REQUIRED WHEN THE BUILDING IS PROTECTED THROUGHOUT BY AREA SMOKE DETECTORS CONNECTED TO A FIRE ALARM SYSTEM WHERE THE FIRE ALARM SYSTEM IS DESIGNED TO SHUT DOWN THE ROOFTOP UNITS.
18. ALL SUPPLY AIR DIFFUSERS SHALL BE INSULATED TO PREVENT CONDENSATION.
19. ALL AIR DEVICES LOCATED IN DRYWALL CEILINGS SHALL BE SUPPLIED WITH AN INTEGRAL VOLUME DAMPER ACCESSIBLE FROM THE AIR DEVICE FACE TO FACILITATE BALANCING.
20. ALL OUTDOOR AIR INTAKES SHALL BE LOCATED A MINIMUM OF 10 FT. HORIZONTALLY FROM ANY SOURCE OF CONTAMINATION SUCH AS EXHAUST FANS, PLUMBING VENTS, WATER HEATER FLUES, ETC. WHERE A CONTAMINANT SOURCE IS LOCATED WITHIN 10 FT. OF AN INTAKE, THE INTAKE OPENING SHALL BE LOCATED A MINIMUM OF 2 FT. BELOW THE CONTAMINANT SOURCE.
21. ALL ROOFTOP CONDENSING UNITS THAT DISCHARGE HORIZONTALLY SHALL BE ORIENTED SUCH THAT THE DISCHARGE DOES NOT BLOW IN THE DIRECTION OF AN OUTDOOR AIR INTAKE.

COMMERCIAL KITCHEN EXHAUST SYSTEMS:
1. ALL METAL DUCTWORK USED FOR THE CONVEYANCE OF GREASE-LADEN AIR SHALL BE CONSTRUCTED OF MINIMUM 18 GAUGE STAINLESS STEEL OR 16 GAUGE CARBON STEEL (BLACK IRON).
2. ALL GREASE EXHAUST DUCTWORK JOINTS SHALL BE EITHER TELESCOPING OR BELL TYPE. BUTT-WELDED JOINTS ARE PROHIBITED.
3. ALL GREASE EXHAUST DUCTWORK SEAMS AND JOINTS SHALL BE CONTINUOUSLY WELDED WATER-TIGHT ON THE EXTERNAL SURFACE OF THE DUCT SYSTEM. ALL WELDING SHALL BE PERFORMED BY A CERTIFIED WELDER.
4. ALL GREASE EXHAUST DUCTWORK SHALL BE EXTERNALLY INSULATED WITH A ASTM E2336 LISTED AND LABELED GREASE DUCT ENCLOSURE SYSTEM. INSULATION SHALL BE INSTALLED IN ACCORDANCE WITH ITS LISTING AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
5. ACCESS PANELS SHALL BE PROVIDED AT ALL CHANGES IN DIRECTION OF THE GREASE EXHAUST DUCTWORK SYSTEM. ACCESS PANELS SHALL BE INSTALLED IN ACCORDANCE WITH THE INSULATION MANUFACTURER'S INSTALLATION INSTRUCTIONS AND SHALL BE LABELED AS FOLLOWS: "ACCESS PANEL – DO NOT OBSTRUCT".
6. ALL HORIZONTAL GREASE EXHAUST DUCTWORK SHALL BE INSTALLED WITH A MINIMUM ¼" PER FOOT SLOPE AND SHALL BE PITCHED BACK TOWARD THE HOOD.
7. UPBLAST KITCHEN EXHAUST FANS SHALL BE LOCATED A MINIMUM OF 6 FT. FROM ANY PARAPET WALL OR ADJACENT STRUCTURE AND SHALL TERMINATE A MINIMUM OF 40 INCHES ABOVE THE FINISHED ROOFING MATERIAL.

REFRIGERANT PIPING:
1. ALL REFRIGERATION WORK SHALL BE PERFORMED BY A CERTIFIED REFRIGERATION CONTRACTOR.
2. ALL REFRIGERANT PIPING SHALL BE SEAMLESS COPPER TUBING OF TYPE L IN ACCORDANCE WITH ASTM B 88 AND ALL JOINTS SHALL BE SOLDERED.
3. ALL REFRIGERANT SUCTION LINES SHALL BE INSULATED WITH A MINIMUM 1" FOAM PIPE INSULATION. PIPE INSULATION INSTALLED OUTDOORS SHALL BE PROTECTED WITH AN APPROVED WEATHERPROOFING MATERIAL.
4. ALL SUSPENDED REFRIGERANT PIPING SHALL BE SUPPORTED AS FOLLOWS:

MATERIAL	MAX. HORIZ. SPACING	MAX. VERT. SPACING
COPPER TUBING ≤1¼"	6 FT.	10 FT.
COPPER TUBING ≥1½"	10 FT.	10 FT.

5. ALL REFRIGERANT PIPING SHALL BE SIZED PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
6. PRE-CHARGED LINESETS ARE NOT PERMITTED AS LINES WILL MOST LIKELY NEED TO BE CUT TO FIT THE APPLICATION AND REFRIGERANT WILL NEED TO BE RECLAIMED.
7. ALL PIPE INSULATION SHALL BE PROTECTED FROM DAMAGE FROM PIPE HANGERS. PROTECTION SHALL BE LIGHT GAUGE GALVANIZED STEEL OR EQUAL.
8. ALL REFRIGERANT PIPING SYSTEMS SHALL BE PRESSURE TESTED FOR LEAKS PRIOR TO START-UP. ALL LEAKS SHALL BE REMEDIED PRIOR TO BUILDING TURNOVER.

CO2 DETECTION EQUIPMENT:
1. THE CO2 DETECTOR SHALL BE HARD-WIRED TO PREVENT TAMPERING AND SHALL BE INSTALLED AT 12" A.F.F. WITHIN A 5 FT. RADIUS OF THE CO2 STORAGE TANKS.
2. ONE (1) AUDIBLE AND ONE (1) VISUAL ALARM SHALL BE INSTALLED A MINIMUM OF 7 FT. A.F.F., IN PLAIN SIGHT IN THE SAME ROOM AS THE CO2 STORAGE TANKS.
3. ONE (1) AUDIBLE AND ONE (1) VISUAL ALARM SHALL BE INSTALLED A MINIMUM OF 7 FT. A.F.F., AT THE BACK OF THE KITCHEN AND IN PLAIN SIGHT FROM THE MAIN SIDE OF THE PREP LINE.
4. THE CO2 EXTERIOR STROBE SHALL BE INSTALLED AS SHOWN ON SHEET A2.0, (DETAIL 2) AND ON SHEET E1.1. THE INSIDE AUDIBLE AND VISUAL ALARM SHALL BE INSTALLED INSIDE THE CO2 CLOSET, AND IN THE SUPPORT/BACK-OF-THE HOUSE LOCATION AS SHOWN ON SHEETS E1.1 AND E3.0.

NATURAL GAS SYSTEMS (IF APPLICABLE):
1. ALL GAS PIPING, WATER HEATER VENTS, INTAKES AND FLUES SHALL CONFORM TO THE CURRENT VERSION OF NFPA 54, NATIONAL FUEL GAS CODE, AND ANY LOCAL CODE REQUIREMENTS.
2. THE NATURAL GAS MAIN PIPE SIZING IS BASED ON THE FOLLOWING:
   A. MINIMUM SUPPLY PRESSURE AT THE METER OF 2 PSIG
   B. 1 PSIG PRESSURE DROP FROM METER TO FARTHEST APPLIANCE
   C. 1,000 BTU PER CU. FT. OF NATURAL GAS
3. GAS PIPING RUN-OUTS TO EQUIPMENT ARE SIZED BASED ON THE FOLLOWING:
   A. SUPPLY PRESSURE AT THE REGULATOR OF 10" W.C. (⅓ PSIG)
   B. 0.5" W.C. PRESSURE DROP FROM REGULATOR TO FARTHEST APPLIANCE
   C. 1,000 BTU PER CU. FT. OF NATURAL GAS
4. ALL NATURAL GAS PIPE SHALL BE SCHEDULE 40 CARBON STEEL PIPE WITH MALLEABLE IRON FITTINGS AND SHALL BE COMPLY TO ONE OF THE FOLLOWING STANDARDS: ASME B36.10, 10M; ASTM A 53; OR ASTM A 106.
5. NATURAL GAS PRESSURE REGULATORS SHALL BE MAXITROL 325 SERIES OR EQUAL.
6. ALL SUSPENDED STEEL PIPING SHALL BE SUPPORTED AS FOLLOWS:

SIZE	MAX. HORIZ. SPACING	MAX. VERT. SPACING
½"	6 FT.	6 FT.
¾" TO 1"	8 FT.	8 FT.
≥1¼"	10 FT.	10 FT.

7. GAS PIPING SHALL NOT PENETRATE ANY FIRE-RATED CHASE OR SHAFT, DUCTWORK OR PLENUM.
8. ALL NATURAL GAS PIPING INSTALLED OUTDOORS SHALL BE COATED WITH A CORROSION RESISTANT PAINT. PAINT COLOR SHALL BE ORANGE OR YELLOW.
9. ALL INTAKE AND VENT PIPING FOR SEALED-COMBUSTION WATER HEATERS SHALL BE PVC OR ABS, SHALL BE SIZED AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND SHALL BE INSTALLED BY THE PLUMBING CONTRACTOR.
10. ALL WATER HEATER VENTS SHALL BE LOCATED A MINIMUM OF 10 FT. HORIZONTALLY FROM ANY OUTDOOR AIR INTAKE. WHERE A WATER HEATER VENT IS LOCATED WITHIN 10 FT. OF AN INTAKE, THE FLUE OR VENT SHALL TERMINATE A MINIMUM OF 2 FT. ABOVE THE INTAKE.
11. UPON COMPLETION OF INSTALLATION, THE GAS PIPING SYSTEM SHALL BE PURGED OF DELETERIOUS MATERIAL AND SHALL BE PRESSURE TESTED. PRESSURE TESTING SHALL BE PERFORMED WITH THE EQUIPMENT SHUT-OFF VALVES IN THE CLOSED POSITION TO PROTECT EQUIPMENT FROM DAMAGE DUE TO EXCESSIVE PRESSURE.
12. AFTER THE PRESSURE TEST HAS BEEN COMPLETED AND ANY LEAKS REMEDIED, THE INSTALLING CONTRACTOR SHALL MEASURE AND VERIFY THE FOLLOWING GAS PRESSURES WHILE EQUIPMENT IS IN OPERATION:
   A. GRILL – 6" W.C. NATURAL, 14" W.C. L.P.
   B. FRYER – 6" W.C. NATURAL, 14" W.C. L.P.
   C. WATER HEATER – 6" W.C. NATURAL, 14" W.C. L.P.
   D. HVAC UNIT – 6" W.C. NATURAL, 14" W.C. L.P.
13. IF THE MINIMUM PRESSURES ARE NOT MET, THIS SHALL BE IMMEDIATELY REPORTED TO THE McDONALD'S AREA CONSTRUCTION MANAGER.

CONDENSATE PIPING:
1. CONDENSATE PIPING SHALL BE GALVANIZED STEEL, COPPER OR PVC.
2. PVC PIPE SHALL BE PAINTED WITH WATER BASED LATEX PAINTING TO RESIST DEGRADATION FROM ULTRAVIOLET EXPOSURE.
3. PIPE SUPPORTS SHALL BE RPS MODEL PMP-2 OR EQUAL. QUANTITY AS REQUIRED DEPENDANT UPON PIPING MATERIAL.
4. PIPING SHALL BE SUPPORTED AS FOLLOWS:

MATERIAL	MAX. HORIZ. SPACING	MAX. VERT. SPACING
COPPER PIPE	12 FT.	10 FT.
GALVANIZED STEEL	12 FT.	15 FT.
PVC	4 FT.	15 FT.

5. CONDENSATE PIPING SHALL SLOPE A MINIMUM OF ⅛" PER FOOT.
6. CONDENSATE PIPING SHALL BE SIZED BASED ON THE FOLLOWING:

TOTAL TONS SERVED BY PIPE	MINIMUM PIPE SIZE
<20 TONS	¾"
>20 TONS, <40 TONS	1"
>40 TONS, <125 TONS	1½"

LEGEND

TS	TEMPERATURE SENSOR
ATS	AVERAGING TEMPERATURE SENSOR
CO2	CO2 SENSOR FOR ROOFTOP UNIT DEMAND CONTROL VENTILATION
HS	HUMIDITY SENSOR
T	THERMOSTAT
2	SMOKE DETECTOR
KH 2	EQUIPMENT TAG
R-1 / 1750 CFM / 18"ø	DIFFUSER INFORMATION LINE 1: TAG LINE 2: AIRFLOW LINE 3: NECK SIZE
	SUPPLY AIR DUCT (VERTICAL)
	RETURN OR EXHAUST AIR DUCT (VERTICAL)
	ROUND DUCT (VERTICAL)
SSC	STEADY-STATE SPEED CONTROLLER
	PLAQUE DIFFUSER (SHADED AREA DESIGNATES BLANK-OFF PANEL LOCATION)
	LINEAR SLOT DIFFUSER
	LOUVERED FACE DIFFUSER
	CEILING-MOUNTED EXHAUST FAN
	SPIN-IN COLLAR WITH VOLUME DAMPER
	VOLUME DAMPER
	FLEXIBLE DUCTWORK
	PERFORATED FACE DIFFUSER
	SHEET METAL TEE WITH CAP

ABBREVIATIONS

ACM	AREA CONSTRUCTION MANAGER
B.J.	BELOW JOISTS
BSI	BEVERAGE SYSTEM INSTALLER
DCV	DEMAND CONTROL VENTILATION
E.A.	EXHAUST AIR
EC	ELECTRICAL CONTRACTOR
FAC	FIRE ALARM CONTRACTOR
FOB	FLAT ON BOTTOM
FOT	FLAT ON TOP
FPC	FIRE PROTECTION CONTRACTOR
GC	GENERAL CONTRACTOR
I.D.	INSIDE DIMENSION
KEI	KITCHEN EQUIPMENT INSTALLER
KES	KITCHEN EQUIPMENT SUPPLIER
M.A. (S)	MIXED AIR – SUMMER
M.A. (W)	MIXED AIR – WINTER
MC	MECHANICAL CONTRACTOR
O.A.	OUTDOOR AIR
O.D.	OUTSIDE DIMENSION
O/O	OWNER/OPERATOR
PC	PLUMBING CONTRACTOR
R.A.	RETURN AIR
RC	REFRIGERATION CONTRACTOR
S.A.	SUPPLY AIR
S.P.	STATIC PRESSURE
MC	TEST AND BALANCE CONTRACTOR

REV	DATE	DESCRIPTION	BY

STATE OF MISSOURI
DAVID MICAH LEIFFER
NUMBER PE-2013011214
PROFESSIONAL ENGINEER
11-07-2022

PREPARED BY:
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DRAWN BY: TP
STD ISSUE DATE: 2022_10
REVIEWED BY: DAVID M LEIFFER
DATE ISSUED: 10 04 2022

TITLE: 2022 STANDARD BUILDING – BB20 4597–WOOD/WOOD
DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD SIDING
WOOD ROOF TRUSS FRAMING
E.I.F.S./BATTEN/HARDIE BOARD SIDING EXTERIOR FINISH
SITE ID: 024–1290
SITE ADDRESS: 3720 W Sunshine Springfield, MO

SHEET NO. 024–1290.00.0
M4.0
GENERAL NOTES

COORDINATION SCHEDULE

GENERAL REQUIREMENTS	FURNISH	INSTALL	FINAL CONNECTION	NOTES
MECHANICAL PERMIT	MC			1–3
HOT WORK (WELDING) PERMIT (IF APPLICABLE)	KES			1–3
REFRIGERATION PERMIT (IF APPLICABLE)	MC			1–3
PLUMBING PERMIT	PC			1–3
ELECTRICAL PERMIT	EC			1–3
FIRE SPRINKLER PERMIT (IF APPLICABLE)	FPC			1–3
FIRE ALARM PERMIT (IF APPLICABLE)	FAC			1–3
CONTRACTOR COORDINATION REQUIREMENTS				
HEATING & AIR–CONDITIONING				
ROOFTOP UNITS, INTAKE AND RELIEF	MCD CP	MC		1–5, 17, 22
ROOF CURBS	MCD CP	MC		1–3, 20, 22
GAS PIPING AND GAS PIPE KIT	PC	PC	PC	1–3, 14, 22–23
CONTROLS WIRING	MC	EC	EC	1–3, 19, 22, 24
POWER WIRING	EC	EC	EC	1–3, 19, 22, 24
CONDENSATE TRAP	MC	PC		1–3, 22–23
CONDENSATE PIPING (IF APPLICABLE)	PC	PC		1–3, 22–23
DUCT–MOUNTED SMOKE DETECTOR	MC	MC	EC	1–3, 22, 24
GENERAL EXHAUST SYSTEMS				
EXHAUST FANS	MCD CP	MC		1–3, 17, 22
ROOF CURBS	MCD CP	MC		1–3, 22
CONTROLS (WHERE APPLICABLE)	MC	EC	EC	1–3, 22, 24
POWER WIRING	EC	EC	EC	1–3, 22, 24
TEMPERATURE CONTROLS				
BUILDING AUTOMATION SYSTEM	MCD CP	MC	EC	1–3, 22, 24
REMOTE SENSORS (RH AND/OR TEMPERATURE)	MC	MC	EC	1–3, 22, 24
CONTROLS WIRING (WHERE APPLICABLE)	MC	EC	EC	1–3, 22, 24
POWER WIRING	EC	EC	EC	1–3, 22, 24
DUCTWORK AND ACCESSORIES				
GALVANIZED SHEET METAL DUCTWORK	MC	MC		1–3, 22
EXTERNAL INSULATION	MC	MC		1–3, 22
INTERNAL INSULATION (IF APPLICABLE)	MC	MC		1–3, 22
WEATHERPROOFING (IF APPLICABLE)	MC	MC		1–3, 22
SPIN–IN COLLARS	MC	MC		1–3, 22
FLEXIBLE DUCTWORK	MC	MC		1–3, 22
VOLUME/BALANCING DAMPERS	MC	MC		1–3, 22
FIRE DAMPERS (IF APPLICABLE)	MC	MC		1–3, 22
FIRESTOPPING (IF APPLICABLE)	MC	MC		1–3, 22
AIR DEVICES AND ACCESSORIES	MC	MC	MC	1–3, 7, 22, 28
PLUMBING SYSTEMS				
WATER HEATERS	MCD CP	PC	PC	1–3, 11–12, 23
HOT AND COLD WATER PIPE	PC	PC	PC	1–3, 23
VENTS AND INTAKES	PC	PC	PC	1–3, 23
THERMOSTATIC MIXING VALVE	PC	PC	PC	1–3, 23
POWER AND CONTROL WIRING	EC	EC	EC	1–3, 23–24
KITCHEN EXHAUST SYSTEMS				
McDONALD'S BACKSHELF EXHAUST HOODS	KES	KEI		1–3, 6, 22, 27
CANOPY EXHAUST HOODS (IF APPLICABLE)	KES	KEI		1–3, 6, 22, 27
BLACK IRON DUCTWORK	KES	KEI		1–3, 6, 22
STAINLESS STEEL DUCTWORK (IF APPLICABLE)	KES	KEI		1–3, 6, 22
ALUMINUM DUCTWORK (IF APPLICABLE)	KES	KEI		1–3, 6, 22
UL LISTED DUCT WRAP	MC	MC		1–3, 6, 22
FIRE–RATED DUCT ENCLOSURE (IF APPLICABLE)	GC	GC		1–3, 6, 20, 22
EXHAUST FANS	MCD CP	MC		1–3, 6, 17, 22
ROOF CURBS	MCD CP	MC		1–3, 6, 20, 22
CURB EXTENSIONS	MC	MC		1–3, 6, 22
CONTROLS (WHERE APPLICABLE)	EC	EC	EC	1–3, 6, 22, 24
POWER WIRING	EC	EC	EC	1–3, 6, 22, 24
FIRE SUPPRESSION SYSTEM	KES	KES	KES	1–3, 16, 22, 27
KITCHEN EQUIPMENT				
COOLER/FREEZER	KES	GC		1–3, 27
EVAPORATOR COILS	KES	MC		1–3, 27
CONDENSATE PIPING	PC	PC	PC	1–3, 23, 27
REMOTE CONDENSING UNIT (MAC)	KES	MC		1–3, 22, 27
ROOF CURBS	MC	MC		1–3, 22
REFRIGERANT PIPING	KES	MC	MC	1–3, 22, 27
POWER WIRING	EC	EC	EC	1–3, 22, 24, 27
CONTROL WIRING	EC	EC	EC	1–3, 24, 27
PIPE PORTALS	MC	MC		1–3, 22
ICE MACHINES	KES	KEI		1–3, 27
WATER SUPPLY PIPING	KES	KEI	BSI	1–3, 27
REMOTE CONDENSING UNITS	KES	MC		1–3, 22, 27
ROOF CURBS	MC	MC		1–3, 22, 27
REFRIGERANT PIPING	KES	MC	MC	1–3, 22, 27
POWER WIRING	EC	EC	EC	1–3, 22, 24, 27
CONTROL WIRING	KES	EC	EC	1–3, 24, 27
PIPE PORTALS	MC	MC		1–3, 22
GRILLS	KES	KES		1–3, 27
GAS PIPING (IF APPLICABLE)	PC	PC	PC	1–3, 23, 27
POWER WIRING	EC	EC	EC	1–3, 24, 27
CONTROL CABLE (6' CLAMSHELL ONLY)	MC	EC	EC	1–3, 23, 24, 27
FRYERS	KES	KES		1–3, 27
GAS PIPING (IF APPLICABLE)	PC	PC	PC	1–3, 23, 27
POWER WIRING	EC	EC	EC	1–3, 24, 27
3–COMPARTMENT SINK	KES	KES		1–3, 12, 27
FAUCETS AND PRE–RINSE SPRAYER	KES	KES		1–3, 27
WATER SUPPLY PIPING	PC	PC	PC	1–3, 23, 27
SANITARY DRAIN PIPING	PC	PC	PC	1–3, 23, 27
HAND SINKS	MCD CP	PC		1–3, 23, 27
FAUCET	MCD CP	PC		1–3, 23, 27
WATER SUPPLY PIPING	PC	PC	PC	1–3, 23, 27
SANITARY DRAIN PIPING	PC	PC	PC	1–3, 23, 27
VEGETABLE SINK	KES	KES		1–3, 23, 27
FAUCET	KES	KES		1–3, 23, 27
WATER SUPPLY PIPING	PC	PC	PC	1–3, 23, 27
SANITARY DRAIN PIPING	PC	PC	PC	1–3, 23, 27
WASHING MACHINE	KES	KES		1–3, 23, 27
WATER SUPPLY PIPING	PC	PC	PC	1–3, 23, 27
SANITARY DRAIN PIPING	PC	PC	PC	1–3, 23, 27
WARE WASHER	KES	KES		1–3, 23, 27
WATER SUPPLY PIPING	PC	PC	PC	1–3, 23, 27
SANITARY DRAIN PIPING	PC	PC	PC	1–3, 23, 27
MISCELLANEOUS ITEMS				
FIRE SPINKLER SYSTEMS	FPC	FPC	FPC	1–3, 15, 25
HVAC EQUIPMENT START–UP	MC			1–3, 22
TEST, ADJUST AND BALANCE HVAC SYSTEMS	TAB			1–3, 22
DOOR GRILLES (IF APPLICABLE)	MC	GC		1–3, 20, 22
ROOF/WALL OPENINGS	GC			1–3, 20–24
APPLIANCE BACKFLOW PREVENTION	KES/BSI	PC	PC	1–3, 23, 27
CO2 DETECTION SYSTEM	KES/BSI	EC/BSI	EC/BSI	1–3, 22, 27

NOTES:
1. THIS SCHEDULE IS INTENDED AS A GUIDE FOR THE WORK TO BE PERFORMED. ALL WORK SHALL BE COORDINATED BETWEEN THE McDONALD'S AREA CONSTRUCTION MANAGER AND ALL GC AND O/O SUBCONTRACTORS.
2. ONE (1) COPY OF THE DECOR PACKAGE DRAWINGS SHALL BE SUPPLIED TO THE GENERAL CONTRACTOR AND EACH OF THE SUBCONTRACTORS. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND THE SUBCONTRACTORS TO INSURE THAT THEY HAVE RECEIVED THE DECOR PACKAGE DRAWINGS.
3. FOR ANY WORK NOT CLARIFIED IN THIS SCHEDULE OR IN THE NOTES AND SPECIFICATIONS, PLEASE CONSULT THE McDONALD'S CONSTRUCTION MANAGER FOR SCOPE OF WORK.
4. ALL ROOFTOP UNIT EQUIPMENT SUPPLIED BY THE MECHANICAL CONTRACTOR AND THE KITCHEN EQUIPMENT SUPPLIER SHALL BE ON SITE AT THE SAME TIME FOR A SINGLE CRANE LIFT. EQUIPMENT SITE ARRIVAL DATE SHALL BE COORDINATED BETWEEN THE CONSTRUCTION MANAGER, MECHANICAL CONTRACTOR AND KITCHEN EQUIPMENT SUPPLIER.
5. ALL ROOFTOP UNITS INSTALLED IN McDONALD'S RESTAURANTS SHALL BE HIGH EFFICIENCY EQUIPMENT. THE INSTALLATION OF STANDARD EFFICIENCY ROOFTOP UNITS IS PROHIBITED.
6. ALL KITCHEN EQUIPMENT REQUIRING EXHAUST SHALL BE INSTALLED IN ACCORDANCE WITH THESE PLANS. ANY VARIATION FROM THESE PLANS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER AND THE ENGINEER–OF–RECORD.
7. WHERE GYPSUM BOARD CEILINGS ARE INSTALLED, THE MECHANICAL CONTRACTOR SHALL SUPPLY DRYWALL MOUNTING FRAMES FOR LAY–IN TYPE DIFFUSERS.
8. ALL WORK SHOWN ON P1.6 DRAWING(S) SHALL BE COMPLETED BY THE BEVERAGE SYSTEM INSTALLER (OR K.E.S.) UNLESS OTHERWISE NOTED IN THE PLUMBING DRAWINGS.
9. ALL WORK ON P1.0 & P1.2 DRAWING(S) SHALL BE BY THE PLUMBING CONTRACTOR.
10. THE BEVERAGE SYSTEM INSTALLER FURNISHES, RUNS AND CONNECTS ALL FLEXIBLE WATER AND SYRUP LINES FOR ALL AFFECTED EQUIPMENT INCLUDING THE FOLLOWING:
    A. HOT CHOCOLATE
    B. COFFEE BREWER
    C. ICE MACHINE
    D. O.J.
    E. SODA TOWERS
11. ALL WATER HEATERS INSTALLED IN McDONALD'S RESTAURANTS SHALL BE HIGH EFFICIENCY SEALED–COMBUSTION WATER HEATERS. THE INSTALLATION OF STANDARD EFFICIENCY GRAVITY–VENTED WATER HEATERS IS PROHIBITED.
12. THE CONSTRUCTION MANAGER, PLUMBING CONTRACTOR AND KITCHEN EQUIPMENT SUPPLIER SHALL COORDINATE WHICH SOILED DISHWASHER (3–COMPARTMENT SINK) IS BEING INSTALLED IN THE RESTAURANT.
13. ALL GAS PIPING FOR COOKING EQUIPMENT SHALL TERMINATE IN THE CEILING PRIOR TO THE INSTALLATION OF THE PIPING CHASE. UPON INSTALLATION OF THE CHASE, THE GAS PIPING SHALL THEN BE CONTINUED IN THE CHASE FOR FINAL CONNECTION TO THE APPLIANCE.
14. ALL GAS PIPING FOR ROOFTOP EQUIPMENT SHALL BE BROUGHT UP THROUGH THE BASE OF THE UNIT TO MINIMIZE ROOF PENETRATIONS. WHERE THIS IS NOT POSSIBLE, THE PLUMBING CONTRACTOR SHALL PROVIDE THE NECESSARY PIPE PORTALS ON ROOF.
15. ALL FIRE PROTECTION DRAWINGS CONTAINED WITHIN THIS SET ARE STRICTLY FOR REFERENCE ONLY. FIRE SPRINKLER DRAWINGS SHALL BE DESIGNED AND PERMITTED BY A FIRE PROTECTION CONTRACTOR.
16. ALL R–102 WET CHEMICAL FIRE SUPPRESSION SYSTEMS FOR TYPE I HOODS SHALL BE DESIGNED AND INSTALLED BY A LOCAL ANSUL AGENT. THE USE OF DRY CHEMICAL SYSTEMS IS PROHIBITED. THE LOCAL ANSUL AGENT CONTRACT IS HANDLED THROUGH THE KITCHEN EQUIPMENT SUPPLIER.
17. ALL ROOFTOP UNITS AND EXHAUST FANS ARE SUPPLIED WITH A FACTORY–INSTALLED DISCONNECT SWITCH.
18. ELECTRICAL CONTRACTOR SHALL PROVIDE DISCONNECT SWITCHES FOR REMOTE CONDENSING UNITS.
19. ALL ELECTRICAL CONDUITS FOR ROOFTOP EQUIPMENT SHALL BE BROUGHT UP THROUGH THE BASE OF THE UNIT TO MINIMIZE ROOF PENETRATIONS. WHERE THIS IS NOT POSSIBLE, THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE NECESSARY PIPE PORTALS ON ROOF.
20. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
21. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
22. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.
23. SEE PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
24. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
25. SEE FIRE PROTECTION DRAWINGS FOR ADDITIONAL INFORMATION.
26. SEE FIRE ALARM DRAWINGS FOR ADDITIONAL INFORMATION.
27. SEE KITCHEN DRAWINGS FOR ADDITIONAL INFORMATION.
28. SEE DECOR DRAWINGS FOR ADDITIONAL INFORMATION.

AIR DEVICE SCHEDULE

TAG	MANUFACTURER	MODEL	BORDER	SIZE	COLOR	ACCESSORIES	NOTES
S–1	TITUS / PRICE	PDR / PDDRE	LAY–IN	48x24	WHITE	7	1,2
S–2	TITUS / PRICE	OMNI / SPD	LAY–IN	24x24	VARIES	4,6,7	1,6,7
S–3	TITUS / PRICE	OMNI / SPD	LAY–IN	12x12	VARIES	1,2,7	1,3,6
S–5	TITUS / PRICE	TBDI–80 / TBDI4	LAY–IN	48" (1)¾" SLOT	VARIES	7	1,5,6
R–1	TITUS / PRICE	23RL / 60L	LAY–IN	24x24	VARIES	3,7	1,6
E–1	TITUS / PRICE	23RL / 60L	LAY–IN	12x12	WHITE	1,7	1

ACCESSORIES:
1. COMBINATION DAMPER AND EQUALIZING GRID
2. PLASTER FRAME FOR DRYWALL CEILING INSTALLATION
3. SQUARE–TO–ROUND COLLAR CONNECTION
4. BACKPAN INSULATION
5. OPPOSED BLADE DAMPER
6. BLANK–OFF PANEL AS SHOWN ON DUCTWORK PLAN
7. PLASTER FRAME MAY BE NECESSARY – COORDINATE WITH DECOR DRAWINGS
8. 1" FILTER MEDIA

NOTES:
1. SEE PLAN FOR NECK SIZES
2. FABRICATE 46"x22"x27"H PLENUM WITH 14"ø SIDE INLET (SEE DETAIL 10 ON DRAWING M3.0)
3. PROVIDE 1" FIBERGLASS INSULATION FOR DIFFUSER BACKPAN
4. NOT USED
5. GENERAL CONTRACTOR SHALL PROVIDE ADDITIONAL 4 FT. T–BAR FOR DIFFUSER FRAMING
6. AIR DEVICE FINISH WILL VARY:
   * KITCHEN, STORAGE, RESTROOMS – WHITE
   * DINING ROOM, VESTIBULES – WHITE, BLACK OR PAINTABLE/PRIME COAT (COORDINATE FINAL COLOR WITH DECOR PLANS).
7. ADDITIONAL ACCESSORIES AND/OR ALTERNATE DIFFUSERS MAY BE REQUIRED. REFER TO DECOR DRAWINGS TO VERIFY.

AIR CURTAIN SCHEDULE

TAG	MANUFACTURER	MODEL	SERVES	AIRFLOW	ELEC	ACCESS.	NOTES
AC-1	POWERED AIRE	MP 1–30E	CASH BOOTH	VARIABLE	MCA: 40.5A MOCP: 60A 1/5 HP	2,3,5,6	1,2
AC-2	POWERED AIRE	MP 1–30E	PRESENTER'S BOOTH	VARIABLE	MCA: 40.5A MOCP: 60A 1/5 HP	2,3,5,6	1,2
AC-3	POWERED AIRE	RBT 1–48	STORAGE ENTRANCE	2,559 CFM	MCA: 10 MOCP: 20 ¾ HP	1–4	1,2
AC-4	POWERED AIRE	RBT 1–36	REAR ENTRANCE	2,541 CFM	MCA: 10 MOCP: 20 ¾ HP	1–4	1,2
AC-5	POWERED AIRE	MP 1–30	FORWARD PRESENTER'S BOOTH	VARIABLE	MCA: 5.5 MOCP: 10 1/5 HP	2–4	1,2

ACCESSORIES:
1. NSF LISTING
2. DOOR SWITCH (AC–1,2,3: MAGNETIC; AC–4: ROLLER/PLUNGER)
3. DELAY TIMER
4. 120V/ 1ø /60HZ
5. UNIT MOUNTED VARIABLE SPEED SWITCH
6. 208V/ 1ø /60HZ

NOTES:
1. SET DELAY TIMER TO 30 SECONDS
2. MAINTAIN 7" CLEARANCE FOR MOTOR ACCESS ON SIDE OF AIR CURTAIN.

KITCHEN HOOD SCHEDULE

GENERAL					AIRFLOW		FILTERS	
TAG	SERVED BY	MANUFACTURER	MODEL	NOTES	CFM	CFM/LF	QTY/SIZE	FPM
KH-1	EXHAUST FAN (EF–1)	FRANKE / H&K	UH–122	1–4	1350	166	(5)10x20	263
KH-2	EXHAUST FAN (EF–2)	FRANKE / H&K	UH–50	1–4	575	173	(3)10x16	255
KH-3	EXHAUST FAN (EF–3)	FRANKE / H&K	UH–43	1–4	480	166	(2)10x20	255

NOTES:
1. HOODS SHALL BE PROVIDED BY THE KES (SEE COORDINATION SCHEDULE)
2. SEE HOOD DRAWINGS FOR CONSTRUCTION DETAILS AND UL INFORMATION
3. REFER TO E3.2 FOR HOOD/FAN INTERLOCK DETAILS
4. CAPTURE JET PLENUMS TO BE INSTALLED ON HOOD, REFER TO K2.1 KITCHEN SCHEDULE.

CONTROLS

SYMBOL	DESCRIPTION	MANUFACTURER	MODEL
T	24V THERMOSTAT (ROOFTOP UNITS)	–	–
T	120V THERMOSTAT (COMPUTER CLOSET)	HONEYWELL	T651A3018
TS	REMOTE TEMPERATURE SENSOR	–	–
ATS	REMOTE AVERAGING TEMPERATURE SENSOR	–	–
HS	REMOTE HUMIDITY SENSOR	–	–
	BULK CO2 DETECTION SYSTEM	LOGICO2	–

NOTES:
1. FOR TSTAT, TS, HS AND ATS INFORMATION, REFER TO E4.1
2. TO ORDER HONEYWELL EQUIPMENT CALL (800)575–4841
3. SEE KITCHEN DRAWINGS FOR BULK CO2 DETECTION LOCATIONS

FAN SCHEDULE

GENERAL						DESIGN				ELECTRICAL				
TAG	MANUFACTURER	MODEL	SERVES	ACCESSORIES	NOTES	CFM	S.P.	BHP	FRPM	VOLTS	Ø	Hz	HP	FLA AMPS
EF-1	ACCUREX	XCUE–14010VG124MCD	KITCHEN HOOD (KH–1)	1–5,13,14	1,2,6	1350	1.75	0.61	1725	115 TO 10VDC ECM	1	60	1	11.5
EF-2	ACCUREX	XCUE–14010VG124MCD	KITCHEN HOOD (KH–2)	1–5,14	1,2,6	575	1.75	0.19	1725	115 TO 10VDC ECM	1	60	1	11.5
EF-3	ACCUREX	XCUE–14010VG124MCD	KITCHEN HOOD (KH–3)	1–5,13,14	1,2,6	480	1.75	0.19	1725	115 TO 10VDC ECM	1	60	1	11.5
EF-4	ACCUREX	XRED–099–VG4X–QD	DINING RESTROOMS	6–8,14	1,2,5	400	0.50	0.07	1126	115 TO 10VDC ECM	1	60	¼	2.5
EF-5	ACCUREX	XCR–A90	DINING ROOM JANITOR'S CLOSET	9–12	1–3,5	75	0.20	–	900	115	1	60	–	0.52
TF-1	ACCUREX	XCR–A125	COMPUTER CLOSET	9–12	1–4	100	0.20	–	1100	115	1	60	–	0.79

ACCESSORIES:
1. 2–POLE NEMA 3R DISCONNECT SWITCH FACTORY–WIRED AND MOUNTED TO FAN
2. UL 762 LISTED AND LABELED
3. ROOF CURB MODEL GPF–24–G30 WITH 1" INSULATION
4. CURB EXTENSION INTEGRAL TO MCD FAN PACKAGE
5. HINGED CURB CAP KIT WITH CABLES
6. 120VAC BACKDRAFT DAMPER
7. ROOF CURB MODEL GPI–19–G14 WITH 1" INSULATION AND DAMPER TRAY
8. NEMA 1 DISCONNECT SWITCH
9. EXTERNAL STEADY–STATE SPEED CONTROLLER
10. ROUND DUCT CONNECTOR
11. TWO (2) 10W COMPACT LED LAMPS
12. PRISMATIC LENS
13. WINDBAND EXTENSION ON FAN OUTLET
14. VARIGREEN 10VDC ELECTRONICALLY COMMUTATED MOTOR

NOTES:
1. NO SUBSTITUTIONS PERMITTED
2. TO ORDER ACCUREX EQUIPMENT CALL (888)325–6629 OR E–MAIL: MCD@ACCUREX.COM
3. ELECTRICAL CONTRACTOR SHALL PROVIDE DOOR SWITCH FOR LIGHT CONTROL
4. MECHANICAL CONTRACTOR SHALL FURNISH LINE VOLTAGE THERMOSTAT FOR FAN CONTROL. ELECTRICAL CONTRACTOR SHALL INSTALL THERMOSTAT.
5. CONNECT TO TIMECLOCK FOR FAN SHUT–OFF DURING UNOCCUPIED HOURS
6. REFER TO E3.2 FOR HOOD/FAN INTERLOCK DETAILS

ROOFTOP UNIT SCHEDULE

TAG	MFR.	MODEL	SERVES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	WEIGHT (LBS)
RTU-1	TRANE	YSJ 240 E 3SB L	KITCHEN	X		X	X			X		X	O	X	X				X	X		X	X	X	2,654
RTU-2	TRANE	YHC 047 E 3 ** L	SUPPORT	X		X	X			X	X	X	O	X	X				O			X	X	X	877
RTU-3	TRANE	YSJ 150 E 3SB H	DINING ROOM	X		X	X			X	X	X	O	X	X				O	X		X	X	X	2,393

(Columns 1–21 = ACCESSORIES; X = Required, O = Optional)

TAG	AIRFLOW S.A.	E.S.P.	R.A.	O.A.	M.A.(S)	M.A.(W)	COOLING(MBH) TOTAL	SENS	LAT	HEATING (Gas) INPUT (MBH)	OUTPUT (MBH)	STAGES	CONN	ARI RATING SEER	EER	IEER	MOTOR HP	RPM	ELECTRICAL V	Ph	Hz	MCA	MOCP
RTU-1	7,200	1.40	5,850	1,350	78.8	56.6	258.3	208.4	50.0	250,000	202,500	2	1/2"	-	9.8	13	5.00	854	208	3	60	108	125
RTU-2	1,600	0.80	1,250	350	79.4	54.7	53.4	40.7	12.7	60,000	48,000	1	1/2"	17.5	-	-	1.00	1,061	208	3	60	30	40
RTU-3	4,800	0.80	3,470	1,330	80.6	51.1	159.7	124.5	35.2	250,000	202,500	2	1/2"	-	10.8	14	3.00	759	208	3	60	64	90

ACCESSORIES:
1. Diff. Enthalpy Economizer
2. Motorized O.A. Damper (Hawaii Only)
3. Barometric Relief
4. 2" Pleated Filters
5. Pwr. Exh. (PlayPlace ≥ 12.5 tons only)
6. CO_2 Sensor for DCV (PlayPlace only)
7. Humidity Control
8. Supply Air Tempering
9. Temperature Sensor
10. Combined Temp/Humidity Sensor. See Note 5
11. Disconnect Switch
12. Field Wired 120V Convenience Outlet
13. Stainless Steel Heat Exchanger (M.A. < 45°F)
14. Condenser Coil Protective Coating (within 15 miles of salt water)
15. Evaporator Coil Protective Coating (within 5 miles of salt water)
16. Hail Guards
17. Return Air Smoke Detector
18. Supply Air Smoke Detector
19. 14" High Roof Curb
20. Condensate Drain with P-Trap
21. Float Switch Kit

NOTES:
1. NO SUBSTITUTIONS PERMITTED
2. TO ORDER TRANE EQUIPMENT, CALL (630) 400-4285.
3. SOME ELECTRIC-ELECTRIC ROOFTOP UNITS DO NOT COME WITH A FACTORY-INSTALLED DISCONNECT SWITCH. PLEASE COORDINATE WITH FACTORY WHEN ORDERING.
4. MECHANICAL CONTRACTOR SHALL INSTALL SECONDARY ENTHALPY SENSOR IN RETURN AIR DUCT DROP & WIRE TO UNIT PER MANUFACTURES INSTRUCTIONS.

REV | DATE | DESCRIPTION | BY

STATE OF MISSOURI
DAVID MICAH LEIFFER
NUMBER PE-2013011214
PROFESSIONAL ENGINEER
11-07-2022

PREPARED BY:
CORE STATES GROUP
212 SE 34th Street, Suite 2
Bentonville, AR 72712
479.877.3465
www.core-states.com

PREPARED FOR:
McDonald's USA, LLC

DRAWN BY: TP
STD ISSUE DATE: 2022_10
REVIEWED BY: DAVID M LEIFFER
DATE ISSUED: 10 04 2022

TITLE: 2022 STANDARD BUILDING – BB20
4597–WOOD/WOOD
DESCRIPTION:
WOOD BEARING WALLS W/HARDIE BOARD SIDING
WOOD ROOF TRUSS FRAMING
E.I.F.S./BATTEN/HARDIE BOARD SIDING EXTERIOR FINISH
SITE ID: 024–1290
SITE ADDRESS: 3720 W Sunshine, Springfield, MO

024–1290.00.0
SHEET NO. M4.1
SCHEDULES