

GAS PIPING NOTES

- MINIMUM GAS PIPING SIZE SHALL BE 3/4".
- GAS PIPING SHALL BE INSTALLED TO THE REQUIREMENTS OF THE 2014 FLORIDA BUILDING CODE (5TH EDITION) - FUEL GAS AND NFPA STANDARD NO. 54. ALL INSIDE PIPING TO BE SUPPORTED BY CLEVIS HANGERS WITH GALVANIZED ROD A MAXIMUM OF 8" ON CENTER.
- GAS PIPING SHALL BE TESTED IN ACCORDANCE WITH THE PROCEDURES DESCRIBED IN NFPA NO 54. ANY OTHER TEST AS REQUIRED BY THE LOCAL GAS INSPECTION DEPARTMENT OR GAS COMPANY SHALL ALSO BE PERFORMED.
- PAINT ALL GAS PIPING WITH TWO COATS OF YELLOW ENAMEL AND STENCIL "2PSI GAS" ON PIPE AT 5'-0" CENTERS.
- GAS VALVES SHALL BE MIN. 125 PSI RATED, NON-LUBRICATED PLUG TYPE WITH BRONZE BODY AND BRONZE PLUG.
- PROVIDE UNIONS, FLANGES OR COUPLINGS AT CONNECTION TO ALL VALVES AND EQUIPMENT. DO NOT USE DIRECT WELDED OR THREADED CONNECTIONS TO VALVES, EQUIPMENT OR OTHER APPARATUS.
- PROVIDE NON-CONDUCTING DIELECTRIC UNIONS WHENEVER CONNECTING DISSIMILAR METALS.
- GAS PIPING ROUTED ON ROOF SHALL HAVE PIPE SUPPORTS PROVIDED IN ACCORDANCE WITH THE 2017 FLORIDA BUILDING CODE (FUEL GAS) SECTION #415.1
- GAS PIPING BELOW GRADE - ALL PRESSURES: SOFT ANNEALED SEAMLESS COPPER TUBING, TYPE 'L' WITH NO JOINTS BELOW GRADE (ASTM B 88).
- GAS PIPING AND JOINTS ABOVE GRADE - MEDIUM PRESSURE: HARD DRAWN SEAMLESS COPPER TUBING, TYPE 'L' (ASTM B 88) WITH 95-5 SILVER SOLDERED JOINTS (ASTM B 32) OR SCH. 40 STEEL PIPE ASTM A-53 OR A-106.
- GAS PIPING AND JOINTS ABOVE GRADE - LOW PRESSURE: SERVICE WEIGHT SCHEDULE 40 BLACK STEEL (ASTM A 53) WITH BLACK MALLEABLE SCREW FITTINGS FOR ALL SIZES 2" & SMALLER. STEEL WELDED FITTINGS FOR ALL SIZES 2 1/2" AND HIGHER.
- THE CONTRACTOR SHALL PROVIDE AND INSTALL GAS COOKS BEFORE EACH PIECE OF EQUIPMENT CONNECTED TO THE GAS PIPING SYSTEM. LUBRICATED TYPE WILL BE USED ON ALL GAS COOKS OVER 2".
- PROVIDE 2PSI-7"WC GAS PRESSURE REGULATORS FOR EACH GAS EQUIPMENT.
- SUPPORT GAS PIPING ON BLOCKS EQUAL TO "QUICK-BLOCK, A BETTER IDEA, INC." NO WOOD SUPPORTS ALLOWED.

UNCONFINED SPACE CALCULATION - CHAPTER 2, SECTION 202
COMBUSTION AIR FROM THE SAME ROOM OR SPACE-CHAPTER 7, SECTION 702.2
(2014 FLORIDA BUILDING CODE, 5TH EDITION - FUEL GAS)

UNITS	GAS EQUIP. IN SPACE		UNCONFINED SPACE REQUIRED =(50 CU.FT./1,000 BTUH)(TOTAL BTUH) (CU.FT)	SPACE PROVIDED		
	QTY	BTUH INPUT		AREA (SQ.FT)	HEIGHT (FT)	VOLUME (CU. FT)
INFRARED HEATER	3	120,000	180,000	9,000		
WATER HEATER	1	100,000	100,000	5,000		
TOTAL			14,000			
TOTAL BUILDING GAS DEMAND (MBH)				113,332	> 14,000	SPACE VOLUME PROVIDED > MINIMUM UNCONFINED SPACE REQUIRED.

GAS EQUIPMENT LOAD

SYMBOL	DESCRIPTION	QTY	INPUT CAPACITY (MBH)	
			EACH	SUB TOTAL
RTU-1	ROOFTOP UNIT	1	120	120
RTU-2	ROOFTOP UNIT	1	150	150
RTU-3	ROOFTOP UNIT	1	150	150
RTU-4	ROOFTOP UNIT	1	120	120
RTU-5	ROOFTOP UNIT	1	120	120
IRH-1,2,3	RADIANT HEATER	3	60	180
WH-1	GAS-FIRED WATER HEATER	1	100	100
TOTAL BUILDING GAS DEMAND (MBH)			940	

GAS PIPE SIZING
2014 FLORIDA BUILDING CODE, 5TH EDITION (FUEL GAS)
(2 PSI) TABLE 402.4.3

- TOTAL GAS INPUT: 940 MBH
- INLET PRESSURE: 2.0 PSI
- PRESSURE DROP: 1.0 PSI
- LENGTH: 273 LN/FT
- FITTINGS FACTOR: 20%
- TOTAL EQUIVALENT LENGTH: 328 LN/FT
- NATURAL GAS, SCHEDULE 40 METALLIC PIPE

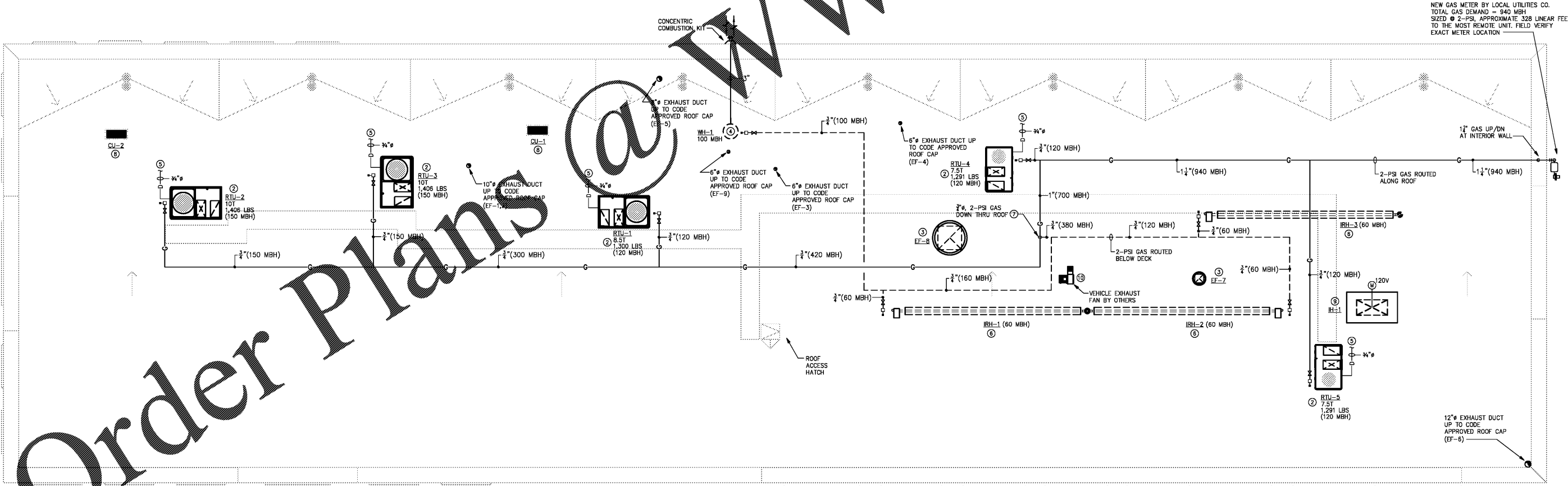
PIPE SIZE (INCHES)	CAPACITY (MBH)
3/4	528
1	945
1-1/4	1,940
1-1/2	2,910
2	5,600
2-1/2	8,920
3	15,800
4	32,200

NOTES THIS SHEET

- SEE SHEET M-001 & 002 FOR GENERAL MECHANICAL NOTES, SCHEDULES AND SPECIFICATIONS. SEE SHEET M-003 FOR DETAILS.
- ROOFTOP UNIT MOUNTED ON ROOF CURB AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. FIELD VERIFY EXACT INSTALLATION LOCATION & COORDINATE WITH STRUCTURAL. SEE SCHEDULE ON SHEET M-002 FOR EQUIPMENT INFORMATION.
- EXHAUST FAN ON ROOF. FIELD VERIFY EXACT INSTALLATION LOCATION PRIOR TO ROUGHING-IN.
- GAS-FIRE WATER HEATER (WH-1) LOCATED ON PLATFORM BELOW DECK. REFERENCE PLUMBING DRAWINGS FOR EXACT LOCATION. PLUMBING CONTRACTOR TO PROVIDE 3" SIDE-WALL CONCENTRIC COMBUSTION KIT. COMBUSTION KIT TO BE INSTALLED BY MECHANICAL CONTRACTOR. INSTALL PER MANUFACTURER'S REQUIREMENTS.
- MECHANICAL CONTRACTOR SHALL ROUTE CONDENSATE DRAIN TO NEAREST ROOF DRAIN.
- GAS FIRED RADIANT TUBE HEATER, IRH-# LOCATED BELOW CEILING IN SHOP.
- GAS PIPING TURN DOWN TO GAS EQUIPMENT BELOW ROOF. PROVIDE PROPER PENETRATION/FLASHING AT ROOF PENETRATION. FIELD VERIFY EXACT LOCATION.
- CONDENSING UNIT MOUNTED ON SUPPORT RAILS AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE HURRICANE WIND BRACING AS REQUIRED PER JURISDICTIONAL CODE. FIELD VERIFY EXACT INSTALLATION LOCATION & COORDINATE WITH STRUCTURAL. SEE SCHEDULE ON SHEET M-002 FOR EQUIPMENT INFORMATION.
- INTAKE HOOD (EH-1) LOCATED ON ROOF AS MAKE-UP AIR FOR EF-8. PROVIDE WITH 120V MOTORIZED ACTUATOR INTERLOCKED WITH EF-8 TO OPEN HOOD UPON ENERGIZING OF EXHAUST FAN. COORDINATE EXACT LOCATION OF INTAKE HOOD WITH OWNER AND STRUCTURAL PRIOR TO ROUGHING-IN.
- VEHICLE EXHAUST SYSTEM EXHAUST FAN LOCATED ON ROOF. VEHICLE EXHAUST FAN AND EXHAUST SYSTEM PROVIDED AND INSTALLED BY OTHERS. ALL ITEMS PERTAINING TO THE VEHICLE EXHAUST SYSTEM SHOWN THIS PLAN ARE FOR REFERENCE ONLY.



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1 ROOF PLAN - MECHANICAL
SCALE: 1/8" = 1'-0"

This item has been digitally signed and sealed by M. Andrew Adams, PE on 05-22-2024 using a Digit Signature.



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ISSUANCE

REVISIONS

NO.	DATE	DESCRIPTION

FILE NUMBER: 18030
PROJECT MANAGER: DRH
DRAWN BY: MMS
CHECKED BY: MMS

ROOF PLAN - MECHANICAL
M-201