

GENERAL NOTES AND SPECIFICATIONS:

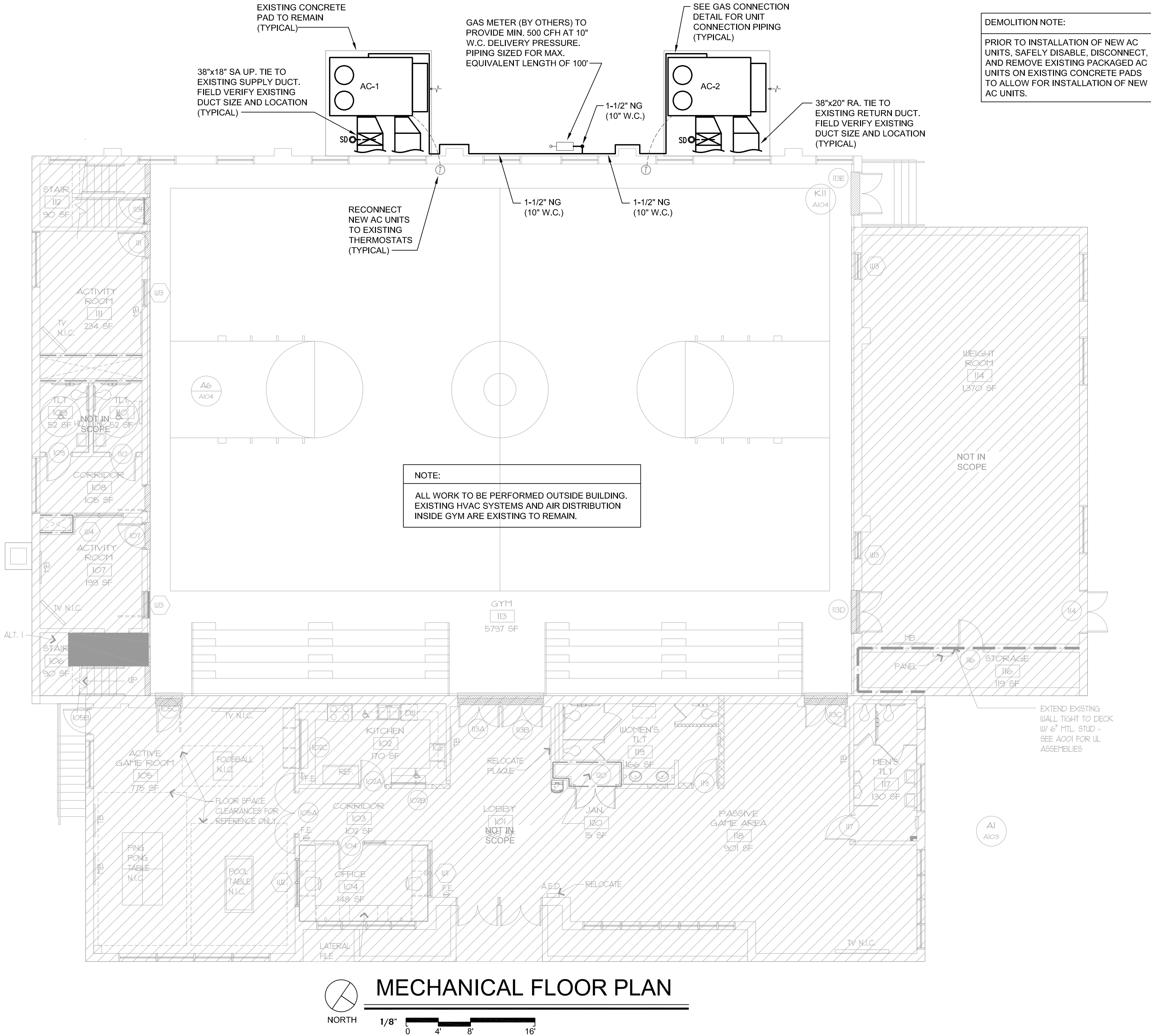
- ALL SUPPLY AND DUCTS TO BE CONSTRUCTED OF GALVANIZED SHEET METAL TO LATEST SMACNA GUIDELINES AS INDICATED BELOW. ALL DUCT DIMENSIONS ARE INSIDE CLEAR UNLESS OTHERWISE NOTED. ALL SEAMS AND JOINTS SHALL BE SEALED WITH OUTDOOR RATED (UV-RESISTANT) DUCT SEAL EQUAL TO HARDCAST SURE-GRIP 404.
 - LOW PRESSURE SUPPLY: +2" W.G., SEAL CLASS A
 - RETURN: +/2"W.G., SEAL CLASS A
- LOW PRESSURE SUPPLY AND RETURN DUCT EXPOSED TO WEATHER (OUTDOORS) - ALL DUCT EXPOSED TO WEATHER SHALL BE INTERNALLY LINED WITH 2" THICK (MIN. R-8) FIBERGLASS DUCT LINER EQUAL TO LINACOUSTIC RC. ALL SEAMS AND JOINTS SHALL BE SEALED WITH OUTDOOR RATED (UV-RESISTANT) DUCT SEAL EQUAL TO HARDCAST SURE-GRIP 404.
- ALL DUCT LOCATED OUTDOORS SHALL BE INSTALLED AS TO PROMOTE WATER DRAINAGE FROM TOP OF DUCT.
- MAINTAIN 10'-0" CLEAR FROM ALL OUTSIDE AIR INTAKES TO PLUMBING VENTS AND EXHAUST FANS.
- NATURAL GAS PIPING SHALL BE ATSM A-56, GRADE B, ERW OR ATSM A106, GRADE B, SEAMLESS SCHEDULE 40 BLACK STEEL PIPE. PIPING 2" AND SMALLER SHALL UTILIZE THREADED CONNECTIONS WITH CLASS 150, A.G.A. APPROVED, FULL PORT BALL VALVES.
- ALL CONDENSATE DRAIN LINES SHALL BE UNINSULATED SCH. 40 PVC. SLOPE CONDENSATE DRAINS IN THE DIRECTION OF FLOW MINIMUM 1/8" PER FOOT.
- FIRE STOP ALL RATED WALL PENETRATIONS PER FIRE-STOP MANUFACTURER'S INSTRUCTIONS AND UL DETAILS. ALL PIPING THROUGH FIRE RATED WALLS TO BE SEALED WITH FIRE RESISTIVE MATERIAL IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AN UL DETAILS.
- DO NOT ROUTE DUCTWORK OR PIPING ABOVE ELECTRICAL PANELS OR IN CODE REQUIRED CLEARANCE SPACES. COORDINATE ALL ROUTING WITH EXISTING CONDITIONS.
- PROVIDE CLEARANCES TO ALL EQUIPMENT AS REQUIRED BY MANUFACTURERS' INSTALLATION AND OPERATION REQUIREMENTS AND/OR BY CODE.
- PERFORM TEST AND BALANCE OF MECHANICAL SYSTEMS ACCORDING TO PLANS AND SPECIFICATIONS IN STRICT ACCORDANCE WITH THE NATIONAL BALANCING COUNCIL (NBC) PRACTICAL STANDARDS, FORMS AND PROCEDURES.

SEQUENCE OF OPERATIONS:

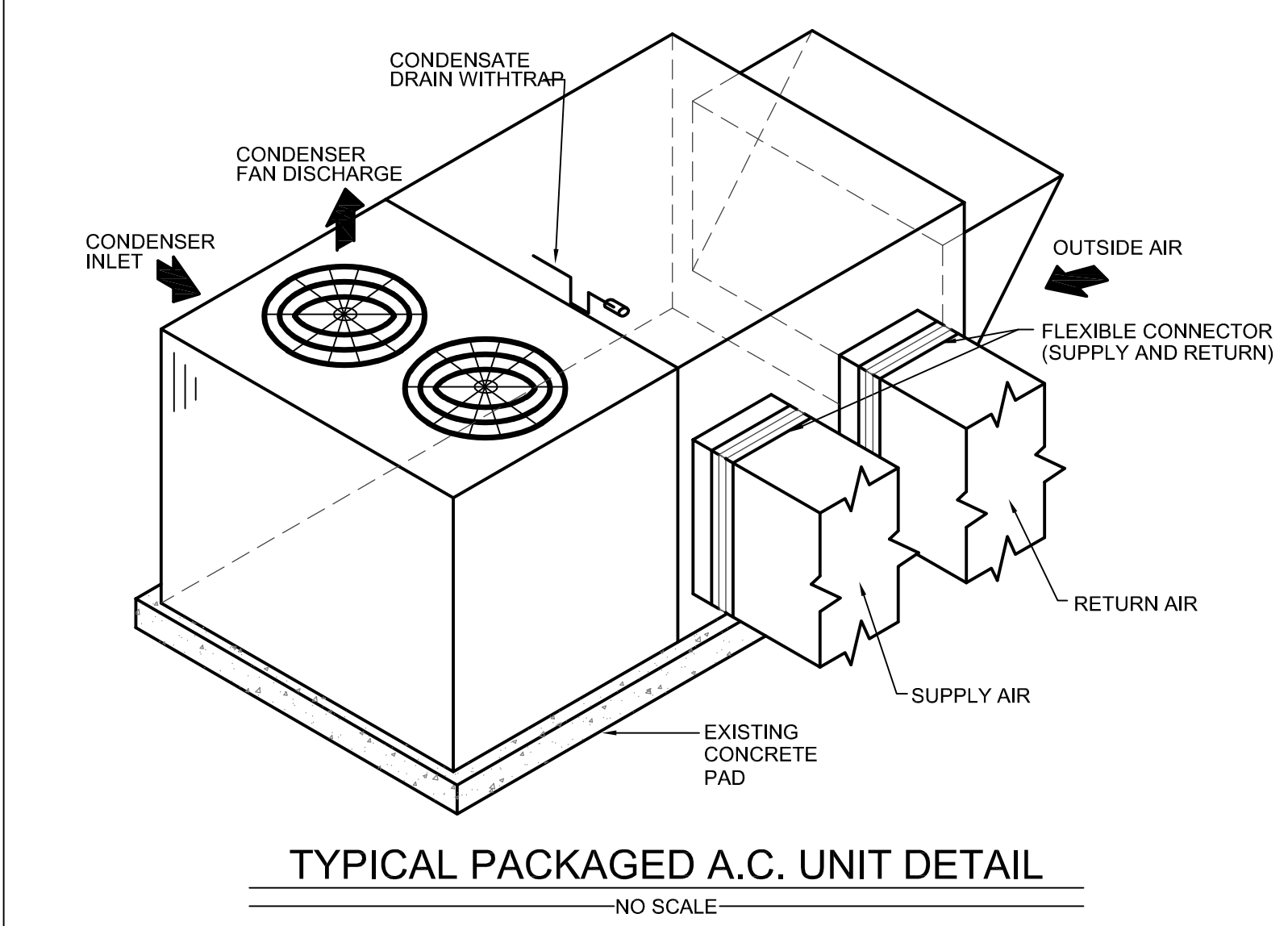
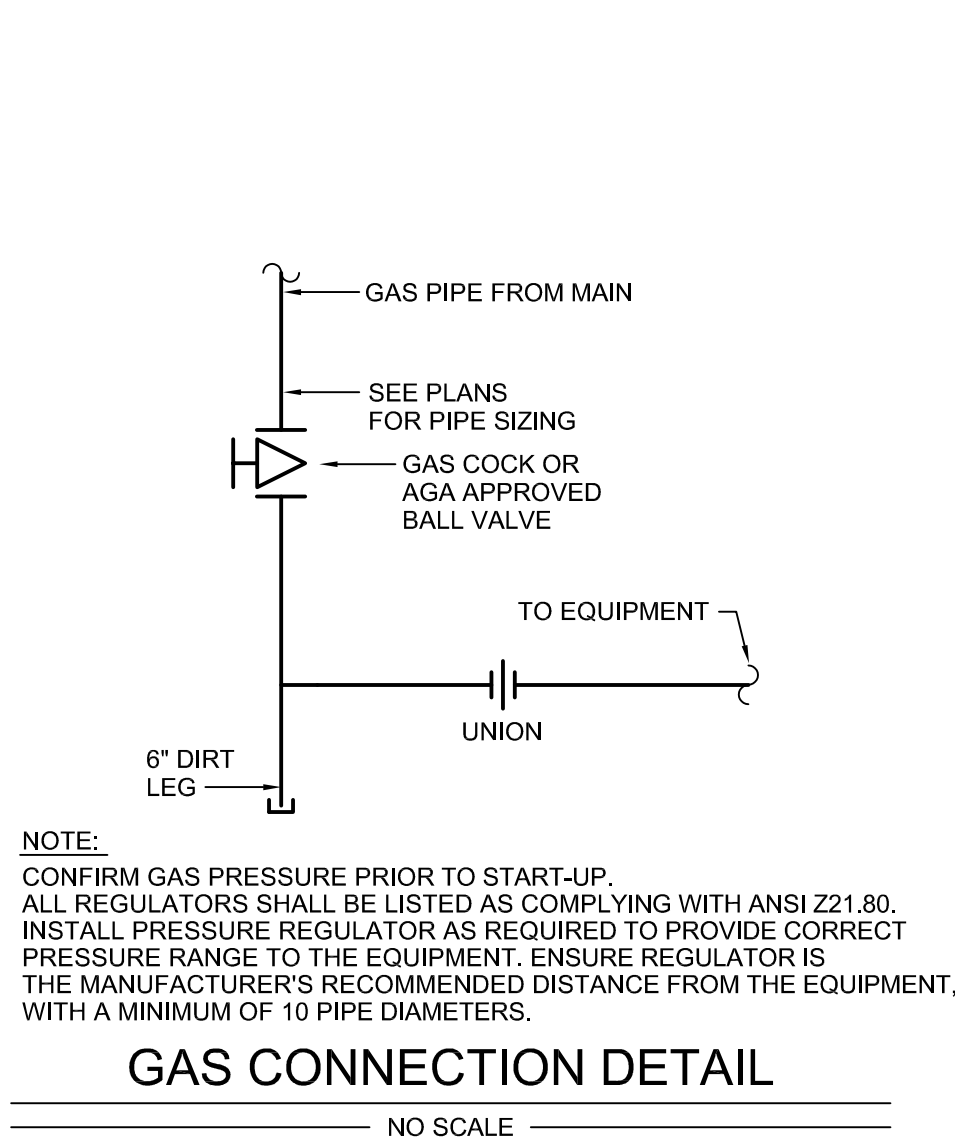
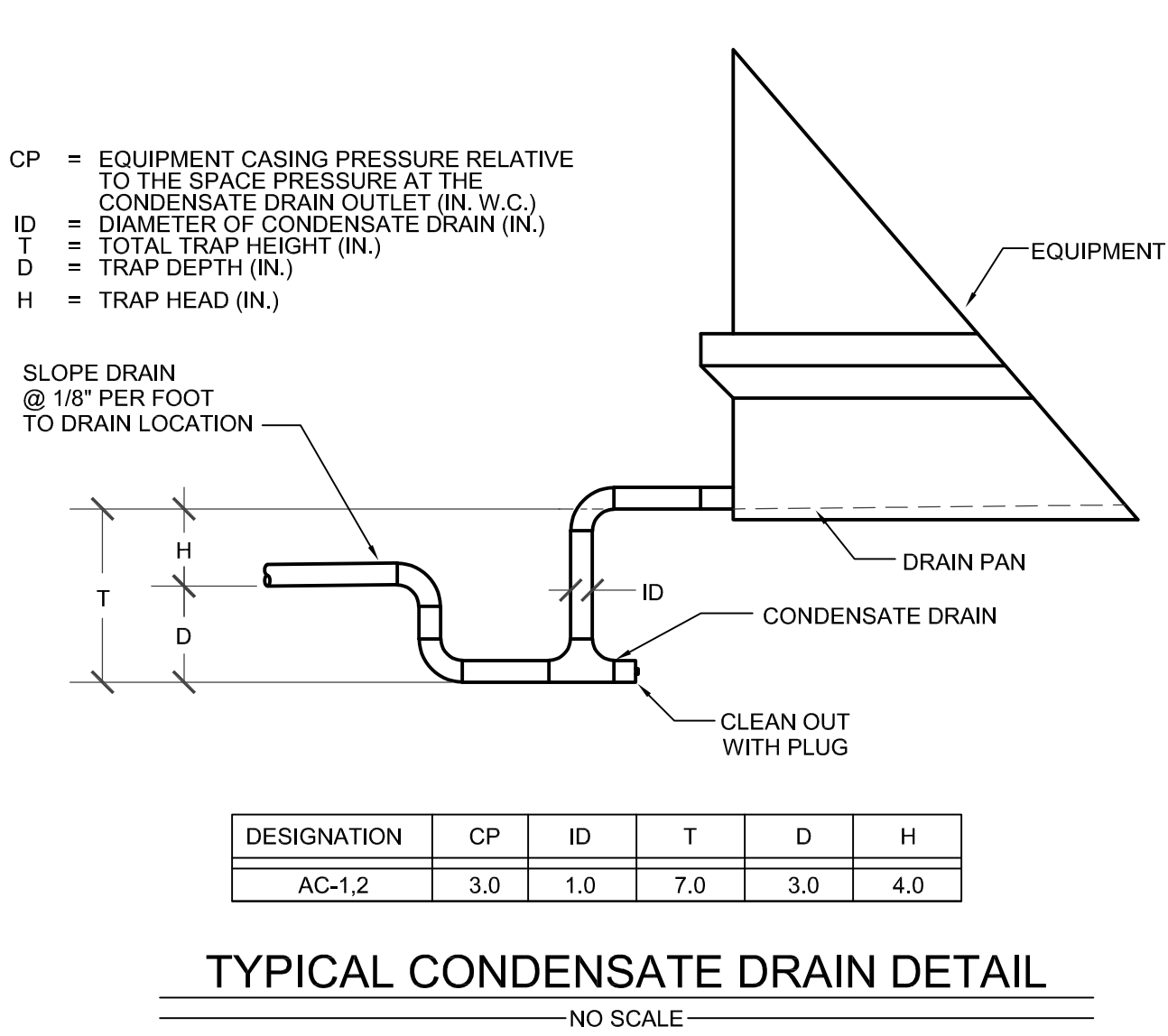
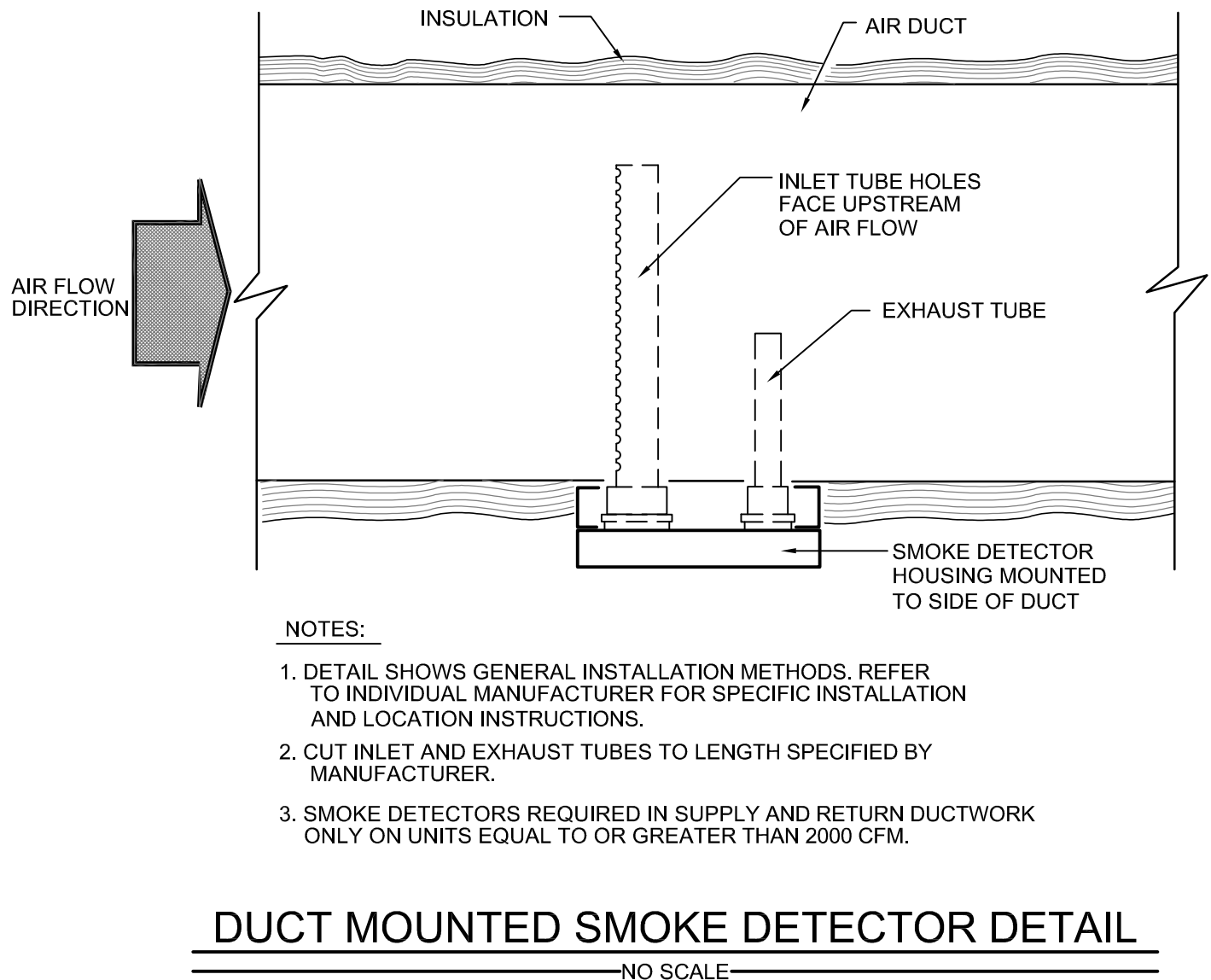
- AC-1.2**
- AC UNITS (RTUS) SHALL BE CONTROLLED VIA FACTORY-PROVIDED ZONE MOUNTED PROGRAMMABLE THERMOSTAT/HUMIDISTAT AND UTILIZE FACTORY-PROVIDED STAND-ALONE CONTROLLERS WITH NATIVE CONTROL LOGIC TO FACILITATE THE FOLLOWING SEQUENCES:
 - OCCUPIED PERIODS: DURING OCCUPIED PERIODS (SCHEDULE AS DEFINED BY BUILDING OCCUPANT) RTU FANS SHALL BE ENABLED TO RUN CONTINUOUSLY AT A CONSTANT AIRFLOW AND MOTORIZED OA DAMPERS (IF EQUIPPED) SHALL BE MAINTAINED IN THE OPEN POSITION TO SUPPLY SCHEDULED OUTSIDE AIRFLOW CFM. RTU SHALL CYCLE COOLING AND HEATING STAGES AS REQUIRED TO MAINTAIN OCCUPIED ZONE TEMPERATURE SETPOINTS OF 75°F (ADJ.) COOLING AND 70°F (ADJ.) HEATING.
 - UNOCCUPIED PERIODS: DURING UNOCCUPIED PERIODS (SCHEDULE AS DEFINED BY BUILDING OCCUPANT) RTU FANS SHALL BE CYCLED WITH A CALL FOR COOLING/HEATING AND MOTORIZED OA DAMPERS (IF EQUIPPED) SHALL BE MAINTAINED IN THE 100% CLOSED POSITION. RTU SHALL CYCLE COOLING AND HEATING STAGES AS REQUIRED TO MAINTAIN UNOCCUPIED (SET-BACK) ZONE TEMPERATURE SETPOINTS OF 80°F (ADJ.) COOLING, 60° (ADJ.) HEATING.
 - ECONOMIZER OPERATION: IF, AT ANY POINT DURING OPERATION, THERE IS A CALL FOR COOLING FOR RTU-1 OR RTU-2 WHEN THE OUTDOOR AMBIENT TEMPERATURE REACHES 55°F, THE UNIT SHALL UTILIZE AN ECONOMIZER CYCLE FOR AS THE FIRST STAGE OF COOLING. DURING THE ECONOMIZER CYCLE THE UNIT SHALL MODULATE OUTDOOR AND RETURN AIR DAMPERS TO UTILIZE THE LOW TEMPERATURE OUTDOOR AIR TO MEET THE COOLING DEMAND FOR THE SPACE. THE ECONOMIZER CYCLE SHALL TERMINATE IF THE OUTDOOR AMBIENT TEMPERATURE RISES ABOVE 55°F OR IF THE COOLING DEMAND IS SATISFIED.
 - FIRE-ALARM SHUTDOWN: RTU SHALL SHUT DOWN AND SUPPLY FANS SHALL BE DISABLED ON ACTIVATION OF THE FACILITY FIRE-ALARM SYSTEM OR DUCT-MOUNTED SMOKE DETECTORS

PACKAGE UNIT WITH GAS HEAT SCHEDULE

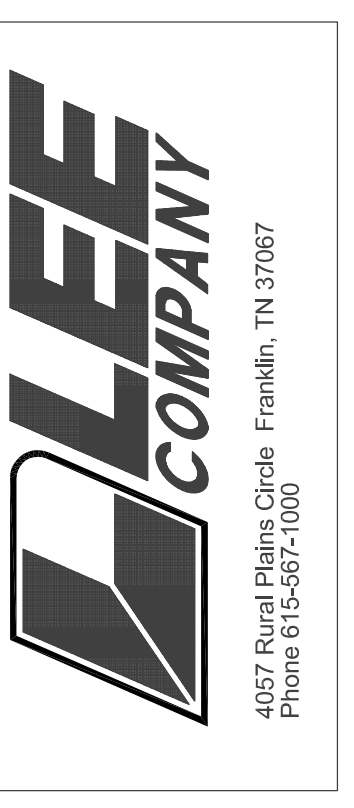
ACCESSORIES:	① DB ECONOMIZER WITH BAROMETRIC RELIEF
	② MERV 8 THROWAWAY FILTERS
	③ FACTORY DISCONNECT
	④ EXISTING THERMOSTATS TO REMAIN
	⑤ BACNET
	⑥ HORIZONTAL CONFIGURATION
	⑦ SMOKE DETECTORS IN SUPPLY DUCT
DESIGNATION	AC-1.2
MANUFACTURER	TRANE
MODEL NO.	YSK180A3S0L
NOMINAL TONNAGE	15.0
SERVICE	GYM
SUPPLY CFM	6000
OA CFM MIN. / MAX.	1200 / 6000
ESP (IN. H2O)	1.0
SUPPLY FAN BHP / HP	1.7 / 3.0
DX COOLING	
REFRIGERANT TYPE	R-454B
TOTAL CAPACITY (MBH)	186.8
SENSIBLE CAPACITY (MBH)	144.8
EADB / EAWB (°F)	80.0 / 67.0
COIL LADB / LAWB (°F)	57.6 / 56.9
OADB / OAWB (°F)	95.0 / 78.0
HEATING TYPE	LOW GAS HEAT
INPUT MBH	250.0
OUTPUT MBH	202.5
EAT / LAT (°F)	56.4 / 87.3
ELECTRICAL VOLTAGE	208-230 / 3 / 60
MCA / MOCP (AMPS)	79 / 110
WEIGHT	2100
ACCESSORIES	① THRU ⑦
REMARKS	- CONTRACTOR TO PROVIDE DUCT MOUNTED SMOKE DETECTORS IN EACH SUPPLY DUCT TO SHUTDOWN UNIT UPON SMOKE DETECTION. - EACH UNIT SHALL BE CONNECTED TO BUILDING FIRE ALARM SYSTEM TO SHUTDOWN UPON ACTIVATION OF BUILDING FIRE ALARM



PROJECT: CAL JOHNSON REC CENTER AC UNIT REPLACEMENTS						
OUTSIDE AIR CALCULATIONS PER 2018 IMC SECTION 403						
	OCCUPANT DENSITY (#/1000SF)	FLOOR AREA (SF)	# OF PEOPLE	OA CFM/PERSON	OA CFM/SF	REQUIRED MIN. OA CFM
OCCUPANCY CLASSIFICATION						
GYM (PLAY AREA)	7	4900	34	20	0.18	1562
SPECTATOR AREAS	150	700	105	7.5	0.06	829.5
						2391.5 TOTAL OA CFM
OA CFM PER UNIT	1200 CFM					
TOTAL FAN CFM PER UNIT	6000 CFM					
OA PERCENTAGE	20.0% OA					



DATE	
REV.	



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PACKAGE UNIT REPLACEMENTS AT
CAL JOHNSON REC CENTER
507 S HALL OF FAME DR
KNOXVILLE, TN 37915

CONSTRUCTION DOCUMENTS
DRAWN BY: DC
CHECKED BY: JN
MECHANICAL PLAN

DRAWING DATE: 03/27/2025
JOB NUMBER: #01007407
ENGINEERING NUMBER: E-2025-055

M1.1