

Z:\MYSTIC HARBOR\ V\PA\DEPARTMENT'S\MEP\MODELS - DRAWINGS\M-100.DWG

General Plan Symbols			HVAC Symbols			Mechanical Piping Symbols		
	Plan Revision Number			Sq. Duct Size (Width x Height)			Nominal Pipe Size	
	Detail Number on Sheet			Oval Duct Size (Width / Height)			Above Ground Piping	
	Sheet Number Where Detail is Placed			Round Duct Size (Diameter)			Below Ground Piping	
	Keynote Symbol			Round Duct Size (Diameter)			Pipe Slope (When Applicable)	
	Continuation Symbol			Existing Duct To Remain			Existing Pipe To Remain	
	Point Where New Connects To Existing			Duct To Be Demolished			Pipe To Be Demolished	
	Room Name / Number			Supply Air			Chilled-Water Return	
	Area Being Demolished			Ventilation Air			Chilled-Water Supply	
	Area Not In Contract			Outdoor Air			Condensate Drain	
				Return Air			Condenser-Water Return	
				Transfer Air			Condenser-Water Supply	
				Building Relief Air			Geothermal-Water Return	
				General Exhaust Air			Geothermal-Water Supply	
				Kitchen Exhaust Air			Hot-Water Return	
				Laboratory Hood			Hot-Water Supply	
				Env. Tobacco Smoke			Natural Gas	
				Flue Gas Vent			Liquid Propane	
				Combustion Air			Refrigerant Liquid	
				Rect. Supply Duct Rise / Drop			Refrigerant Gas	
				Round Supply Duct Rise / Drop			Refrigerant Discharge	
				Rect. Return Duct Rise / Drop			Steam Supply	
				Round Return Duct Rise / Drop			Steam Condensate Return	
				Rect. Exhaust Duct Rise / Drop			Pipe Rise / Drop	
				Round Exhaust Duct Rise / Drop		Valve Types		
				Square Ceiling Diffuser			Ball Valve	
				Round Ceiling Diffuser			Balancing Valve	
				Sidewall Supply Grille			Butterfly Valve	
				Linear Diffuser			Check Valve	
				Sidewall Return Grille			Alternate Check Valve	
				Ceiling Return			Circuit Setter	
				Mechanical Equipment			Gate Valve	
				Damper Types			Globe Valve	
				Equipment By Others			Locked Shield Valve	
				Manual Damper			Pressure Reducing Valve	
				Motorized Damper			Quick Opening Valve	
				Backdraft Damper			Fluid Strainer	
				Smoke Damper			Elec. Control Valve	
				Fire Damper			3-Way Elec. Valve	
				Comb. Fire / Smoke Damper			Emergency Gas Shutoff	
							Plug Valve	
							Gas Shutoff Cock	
							Gas Regulator	
						Mechanical Devices		
							Fan Controller	
							Temperature Sensor	
							Temp/ Humidity Sensor	
							Temp/ CO2 Sensor	
							Thermostat	
							Humidistat	
							Humidity Sensor	
							Carbon Dioxide Detector	
							Carbon Monoxide Detector	
							Hydrogen Gas Detector	
							Hazardous Gas Detector	
							Nitrogen Dioxide Detector	
							Oxygen Gas Detector	
							U.N.O. Opposite blade modulating damper with spring returns as required (0-10 volt control operation) typical. Match damper size to duct size. Provide control transformers as necessary for operation. Coordinate work with electrical contractor.	
							U.N.O. Opposite blade low leakage two stage damper (Greenheck VCD-40) with spring return as required typical. Match damper size to duct size. Provide control transformers as necessary for operation. Coordinate work with electrical contractor.	
							CO2 sensor with measuring 0-2000 PPM CO2 range. PPM range for output shall be adjustable in order to allow for damper close to open modulation based on different PPM range. Verify CO2 sensor control signal with electrical contractor. CO2 sensors and controls provided shall allow OA flow rate control as shown in plans.	

PROJECT REQUIREMENTS	
A	Remove all unused piping, ductwork and accessories.
B	The mechanical contractor shall be responsible for field verifying, prior to final bid, all existing conditions for plumbing and mechanical systems within tenant space and within close proximity of tenant space.
C	The mechanical contractor shall perform service and repair on the existing equipment and its accessories as follows: clean all coils, replace the filters and belts, inspect, repair, or replace the economizers, drives and fan bearings, motors, control components, valves and any other item necessary for a complete and proper operating system. This contractor shall also visit the site, prior to final bidding, and verify all existing site conditions. Provide all material and components as needed to bring the units to full compliance of the landlord's criteria and local authority having jurisdiction.
D	Where floor drains occur within the limits of construction, prevent construction debris from entering drain body by sealing drain opening prior to start of work. Unseal drains at completion of construction.
E	Coordinate installation of piping, ductwork, conduit, lights, cable tray, structure, and equipment to prevent conflicts.
F	The contractor shall be familiar with all the conditions both existing and those illustrated by these documents as well as those which can be reasonably anticipated including, but not limited to architectural, electrical, ventilation, plumbing, and other systems involved on this project.
G	Final product shall be a complete and functioning system, and shall conform to all requirements of applicable federal, state, and local codes, including but not limited to the international building code and international mechanical code.
H	Locate equipment requiring access 2'-0" maximum above ceiling.
I	All work shall be done in accordance with the current edition of all applicable codes, including the 2019 California Building Code, California Code of Regulations, title 24, and local codes as applied by the authority having jurisdiction.
J	All roof mounted equipment shall be a minimum 10'-0" from edge of roof.
K	Locate ductwork, piping and mechanical equipment away from the space above electrical panels. Transformers and other electrical equipment.
L	Penetrations of rated assemblies shall be fire stopped. Fire stopping shall be an approved material as prescribed in CSFM Standard 43-1 and shall be U.L. listed.
M	Provide sleeves and/or openings to run pipes and ducts through foundations, floors, walls, and roof.
N	Maintain clear access to service equipment and other accessories requiring service, visual inspection or hand operation. Where indicated or required, provide access panels of the type selected to suit materials in which installed.
O	Adjust piping and ductwork sizes to properly connect to mechanical equipment.
P	Refer to HVAC series drawings for gas and A.C. condensate drain piping.
Q	Pipe sizes shown shall be continued in the direction of flow until another size is shown.
R	For details, equipment connections, and pipe sizes not shown on the segments, refer to details, schedules, and specifications.
S	Install all equipment in accordance with the respective manufacturer's written installation instructions, at a level of quality and workmanship consistent with the specifications.
T	Locations of piping, ductwork and equipment as indicated on the drawing, are approximate and subject to minor adjustments in the field. Work shall be coordinated with all other trades to avoid interference in the field.
U	Installed exposed piping and ductwork as high as practical in rooms without ceilings.
V	The contractor's work schedule shall be submitted to and approved by the owner.
W	Prior to starting work, submit shop drawings for all mechanical equipment, plumbing fixtures, and diffusers.
X	Contractor shall obtain and pay for all necessary permit and shall arrange for all inspections as required.
Y	Provide one year warranty for all workmanship and materials after the date of final acceptance.

MECHANICAL GENERAL NOTES	
1	All works shall meet the 2021 International Mechanical Code, 2021 International Building Code, 2021 International Plumbing Code, 2017 NFPA 70: National Electrical Code and 2018 International Energy Conservation Code.
2	Refer to HVAC drawings for thermostat, humidity and temperature sensor locations.
3	Condensate drains shall be supplied for all cooling equipment. Contractor shall ensure proper installation and drainage as required by Federal, State, and Local Codes.
4	All supply, return, and exhaust ductwork shall be rated for pressure class of 2" W.G. unless noted otherwise.
5	Coordinate the exact location of all ceiling diffusers, registers, and grilles with new and existing lighting.
6	Provide diffusers and registers with 4-way blow pattern unless otherwise noted.
7	This contractor shall be required to replace filters on HVAC equipment after all dust producing construction has been completed and prior to the final punch.
8	Install, support, and brace all HVAC ductwork and accessories per "HVAC duct construction standards" by Smacna, Ansi/Smacna 006-2006.
9	Maintain minimum separation between outside air intakes or other openings into the building and other elements as required and as follows:
10	Plumbing vents and exhaust outlets: 10'-0" separation.
11	Environmental air outlets and domestic dryer vents: 3'-0" separation
12	Insulate all supply and return air ductwork as required by the energy code.
13	Unless noted otherwise, contractor to furnish materials and labor for hook-up of mechanical systems to equipment furnished by owner or others. Verify the exact location of the hook-up prior to the installation of systems connected to equipment being supplied by others.
14	Unless noted otherwise all rigid ductwork (round and rectangular) shall be constructed of galvanized sheet metal. Sheet metal gauge shall be in accordance with Smacna guidelines and shall follow good construction practices. All joints and seams shall be made airtight with sealant where required.
15	All piping and pipe connections to be sealed and inspected for leaks prior to project finish.
16	Contractor shall perform commissioning of HVAC systems and its operation.

FIRESTOPPING	
1	All penetrations through fire rated walls associated with the installation shall be sleeved and fire-stopped using a UL approved method. UL approved method shall meet or exceed fire rating of structure being penetrated. Reference architectural, mechanical and electrical drawings for penetration details.
2	All opening through fire rated walls, floors, and/or roofs for ductwork, piping, conduit, etc., shall be fire sealed with a calcium silicate, silicone "RVTI" foam, "3M" fire rated sealants, Intiti firestop systems, or approved equal to maintain the intended fire rating and associated UL rating as recommended by the architect and/or sealant manufacturer.
3	All fire stopping sealants shall be Thixotropic so as not to slump or sag and shall be trowel able. Fire stopping sealants shall be intumescent and shall be free of asbestos, halogens, and volatile solvents.
4	Fire stopping materials shall be classified in the underwriters laboratories (UL) IRE resistance directory.

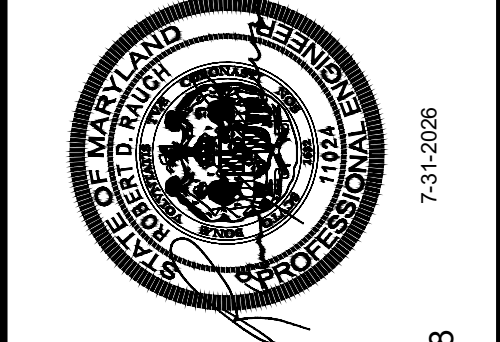
CUTTING, PATCHING AND DRILLING	
1	Neatly saw cut all rectangular openings.
2	Neatly saw cut floors and patch floor to match existing, including floor covering.
3	Do not cut any structural components without architect's written approval, including, But not limited to roof joists, columns, floor joists, beams, girders, structural floor slabs, rebar, etc.
4	Patch, and finish to match adjacent areas that have been cut, damaged or modified as a result of the installation of the mechanical systems, firestop all penetrations of fire rated construction. The mechanical contractor shall provide information regarding openings in walls, floors, etc.
5	The mechanical contractor shall coordinate work with the general contractor prior to construction. The mechanical contractor shall provide information regarding openings in walls, floors, etc.
6	All openings required for this branch of work shall be accomplished in time to be incorporated in, and be compatible with, the construction program; otherwise this contractor shall be responsible and pay for all changes made necessary for his failure to do so. Pipe holes in floors and walls shall be core drilled if not sleeved during construction.

MECHANICAL DRAWING INDEX

SHEET NO.	DWG TITLE
M-001	ABBREVIATIONS, SYMBOLS & NOTES
M-100	MECHANICAL LAYOUT
M-400	MECHANICAL DETAILS
M-500	MECHANICAL SCHEDULES

ABBREVIATIONS, SYMBOLS & NOTES	
MYSTIC HARBOR - WTP HVAC	
BERLIN, MARYLAND	

RAUCH	
Engineering Survey Architecture Environmental	
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Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.	
License No. 11024	Expiration Date: July 24, 2028

REVISIONS	
REV. #	DESCRIPTION



DATE	7/31/2026
SCALE	AS SHOWN
DRAWN BY:	EEV
DESIGNED BY:	HJH
APPROVED BY:	
SHEET NO.: M-001	

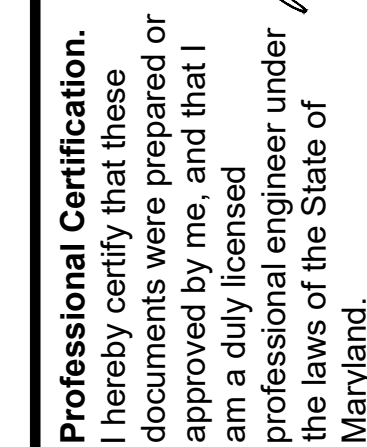


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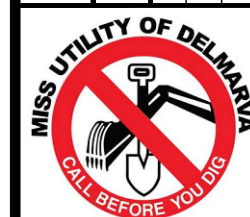
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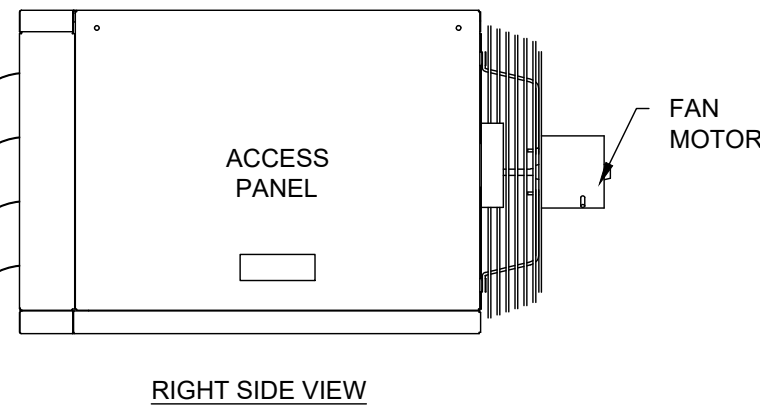
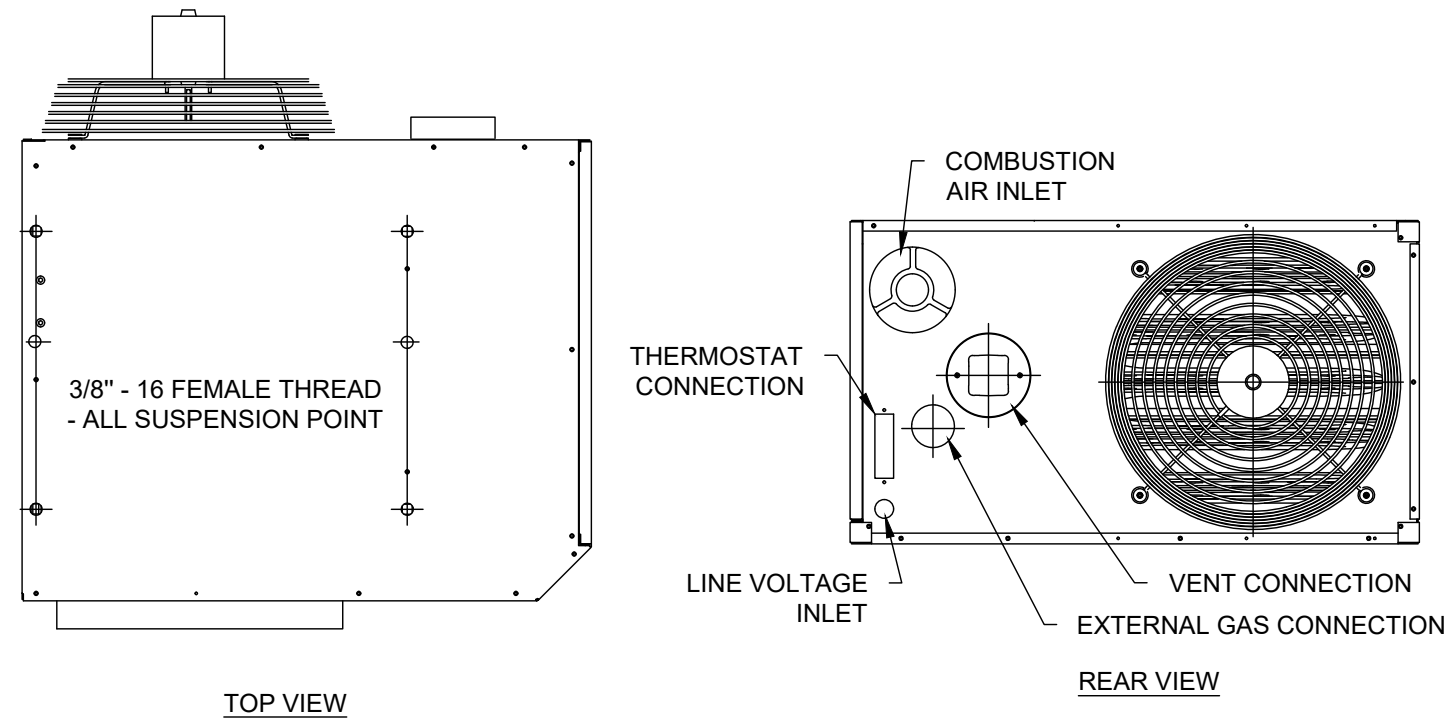
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DATE:	7/31/2026
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DESIGNED BY:	HJH
APPROVED BY:	

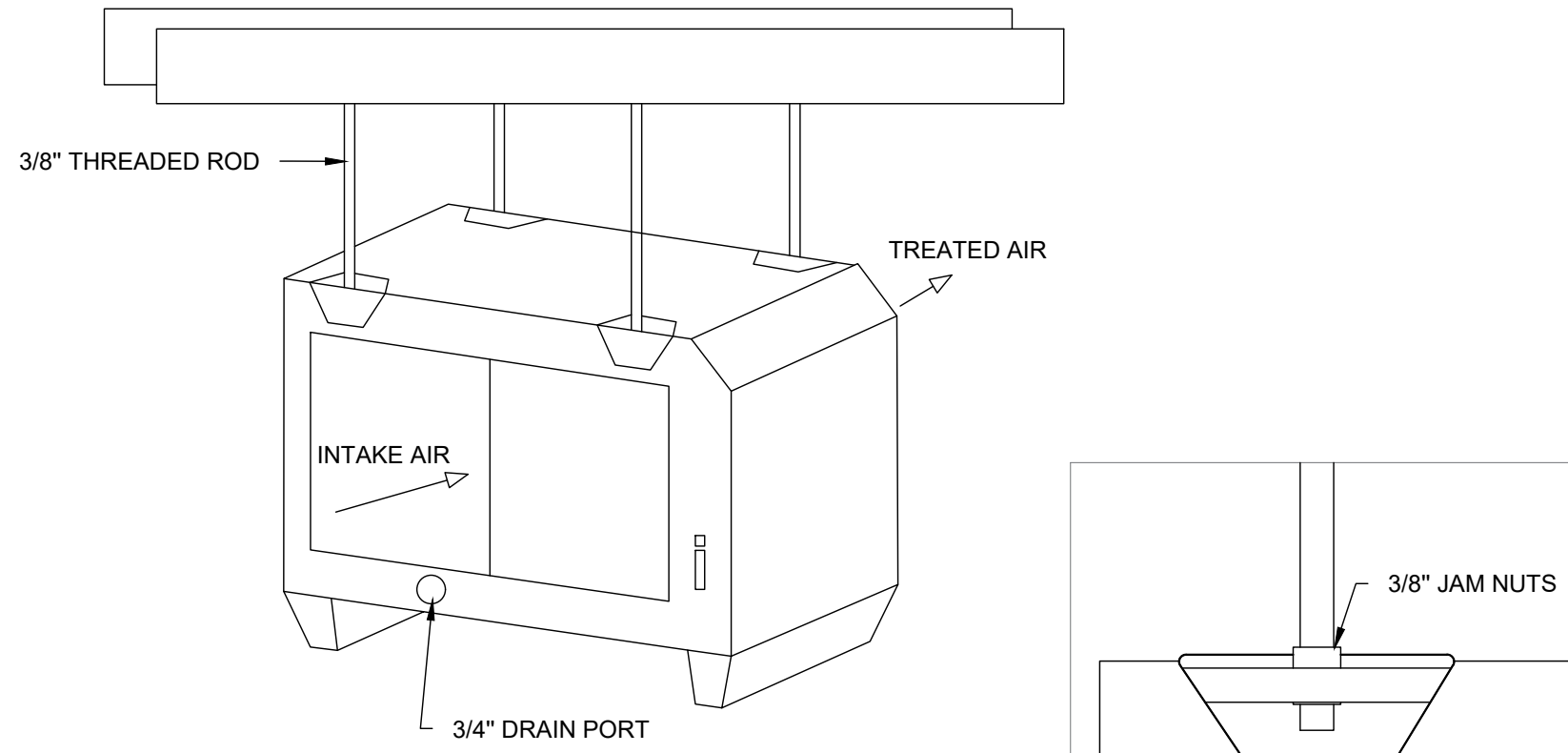
SHEET NO.: **M-100**

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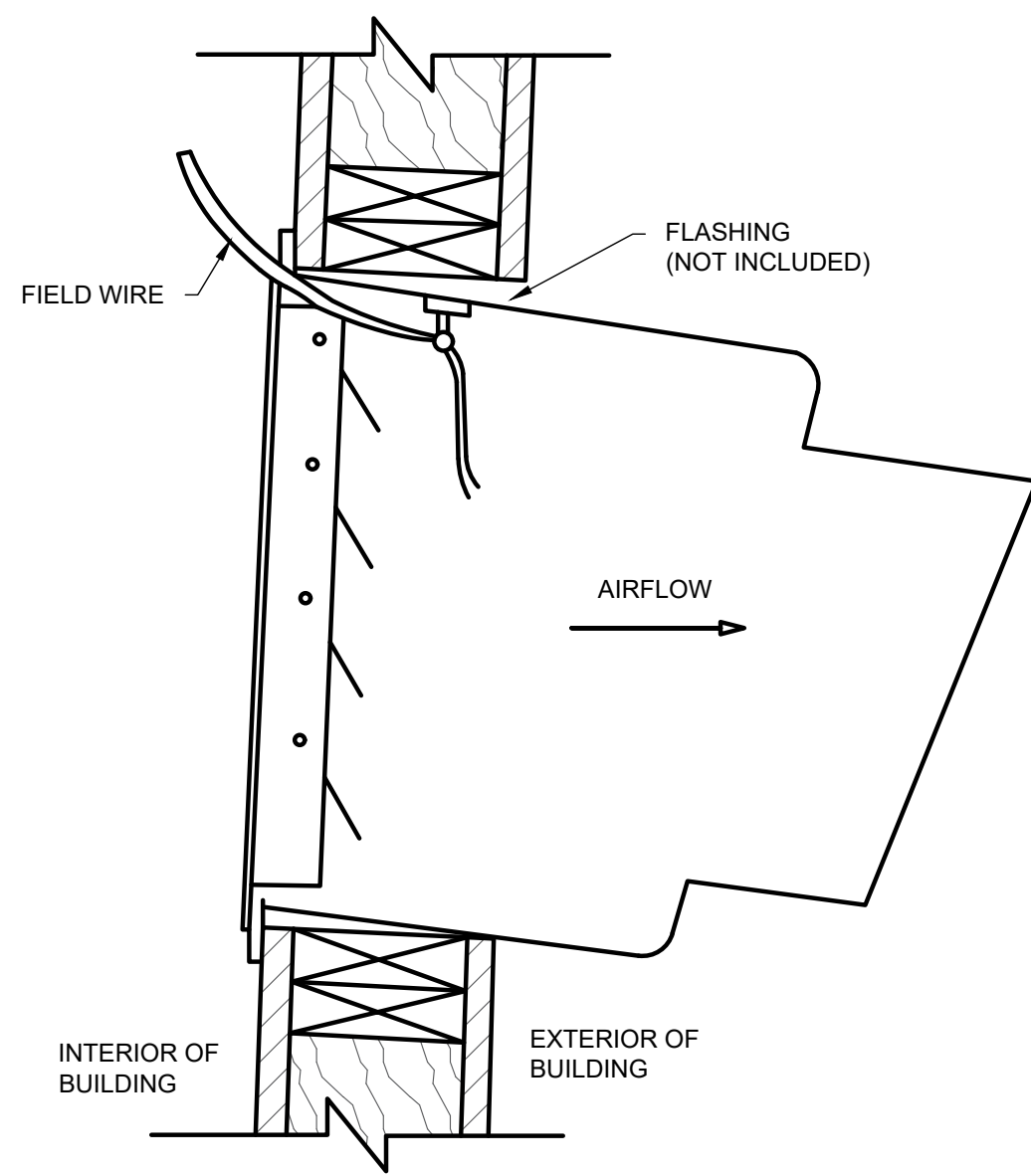
1 UNIT HEATER DETAIL

NTS



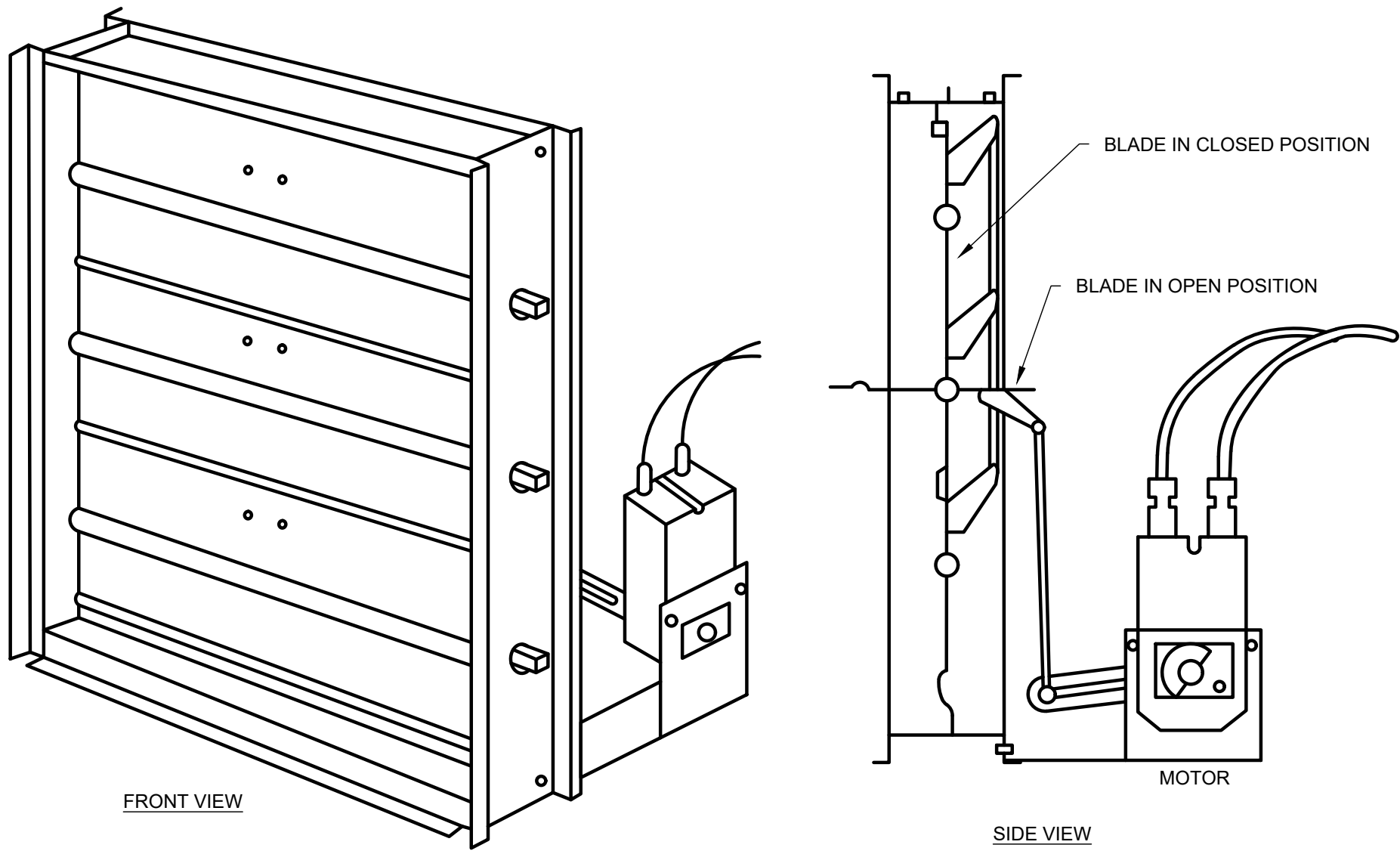
2 DEHUMIDIFIER DETAIL (QUEST 506)

NTS



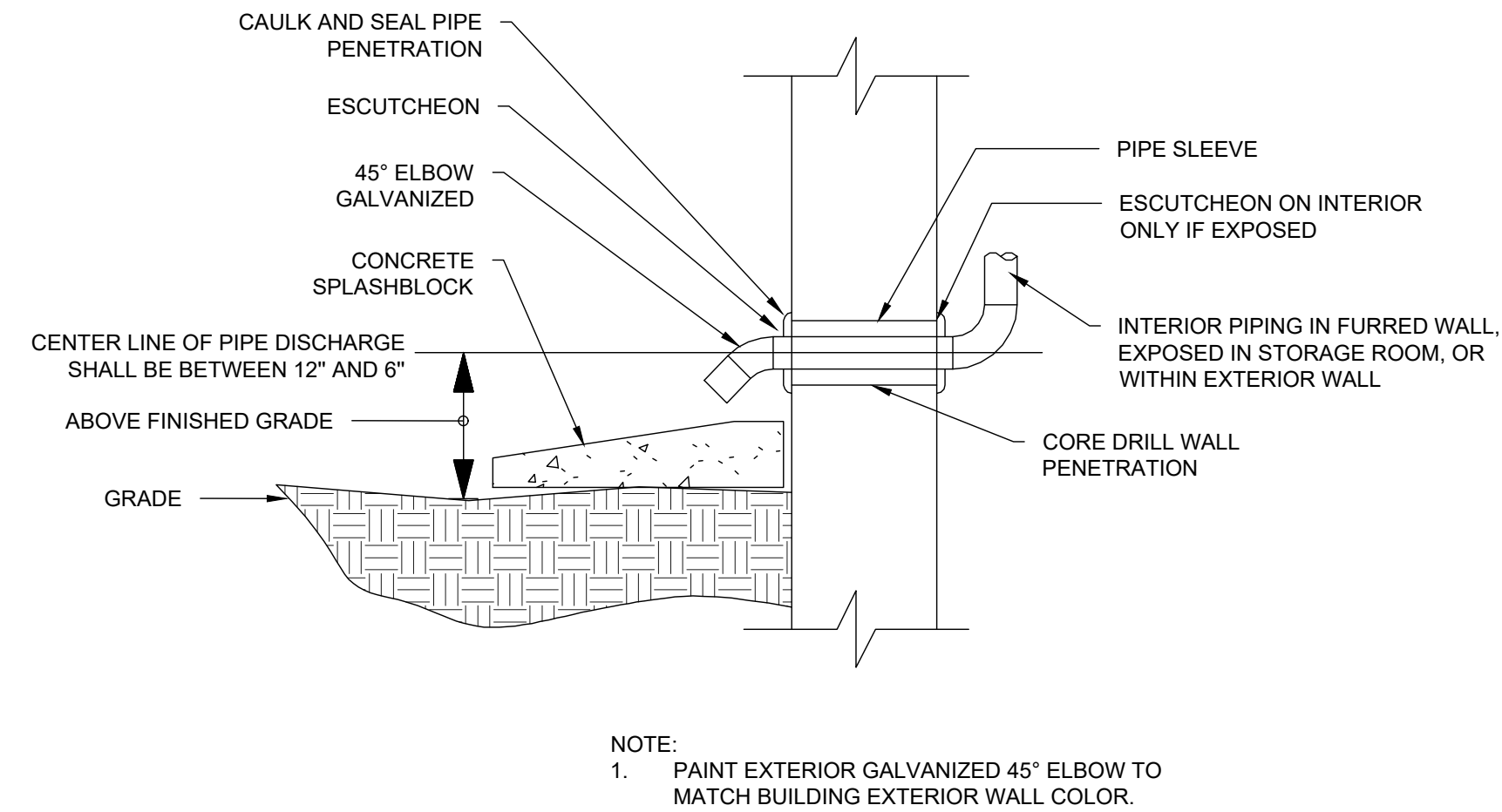
3 POLY EXHAUST FAN DETAIL

NTS



4 LOUVER W/ MOTORIZED DAMPER DETAIL

NTS



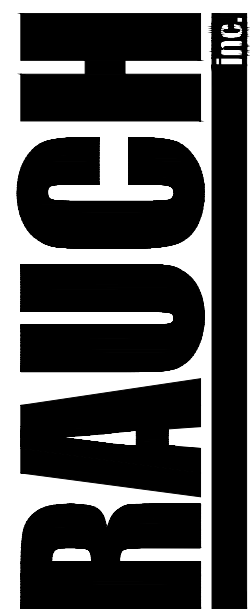
5 A/C CONDENSATE DRAIN DISCHARGE DETAIL

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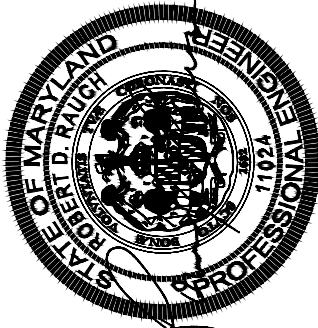
MECHANICAL DETAILS

MYSTIC HARBOR - WTP HVAC

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DESIGNED BY: HJH
APPROVED BY:

SHEET NO.:
M-400

EXHAUST FAN SCHEDULE																
TAG	QTY	FAN UNIT MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR ENCL	HP	BHP	ELECTRICAL DATA			DISCHARGE VELOCITY	WEIGHT (LBS)	SONES	NOTES
										WATTS	PHASE	VOLTAGE				
EF-1	1	VFP20PC-GS	J & D MANUFACTURING	4411	0.10	1700	IP66	1/3	-	460	1	208/230	-	73	-	FAN CONTROLLER (JD26 PLUS - J&D MANUFACTURING).

VENTILATION NOTES:

- THE CFM SHOWN ABOVE IS THE MAXIMUM FAN CAPACITY. THE FAN WILL BE CONTROLLED TO REDUCE THE FAN CFM TO 1760 CFM CONTINUOUS WHEN THE SPACE IS UNOCCUPIED AND 3520 CFM WHEN THE DOOR CONTACT SWITCH IS MADE. THIS WILL ACHIEVE ENOUGH AIR CHANGES TO SATISFY CODE REQUIREMENTS FOR THE CHEMICAL STORAGE WITHIN THE SPACE.

AIR HANDLING UNIT SCHEDULE												
TAG	QTY	BASIS OF DESIGN		DESCRIPTION	CAPACITY (PINTS/DAY)	FLOWRATE (CFM)	WEIGHT (LBS)	ELECTRICAL DATA				NOTES
		MANUFACTURER	MODEL NUMBER					VOLTAGE	WATTAGE	MCA (AMPS)	MOCp (AMPS)	
DH-1	4	QUEST	QUEST 506	HIGH CAPACITY DEHUMIDIFIER SERIES	500	1150	275	208/230	2700	19	30	ONBOARD DIGITAL CONTROLS W/ LOW VOLTAGE TERMINAL BLOCK

LOUVER / VENT SCHEDULE									
TAG	QTY	BASIS OF DESIGN		MAX. CFM	ESP	FREE AREA VELOCITY	WEIGHT (LBS)	DESCRIPTION	OR EQUAL YES OR NO
		MANUFACTURER	MODEL OR SERIES						
L-1	1	GREENHECK	ESD-635-36x40	5000	0.12	880	39	36x40 DRAINABLE BLADE LOUVER W/ CONTROL DAMPER (VCO-43 - GREENHECK) & FAN CONTROLLER (JD26 PLUS - J&D MANUFACTURING).	NO

VENTILATION SCHEDULES

Project Name	Mystic Harbour WTP	Supply Air	1753
Date	4/29/2026	Outdoor Air	180
Unit Tag			

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q			
Room #	Description	Area (sqft) (Az)	Area Outdoor Air Rate (Ra)	Outdoor Air (RaAz)	Occupancy Load (People/1000 sqft)	Occupancy (C X F)/1000 (Pz)	Occupant Outdoor Air Rate (Rp)	Occupant Outdoor Air (RpAz)	Breathing Zone Outdoor Air (Vbz = RpPz + RaAz)	Zone Air Distribution Effectiveness (Ez)	Zone Outdoor Air (Voz = Vbz/Ez)	Ceiling Height	Air Change Required	Supply Air Design (Vpz)	Outdoor Air Fraction (Zp = Voz/Vpz)	Exhaust Air Design	Code References	Min Air Change (ASHRAE Only)	Min Outdoor Air Change (ASHRAE Only)
	TANK SPACE	1252	0.06	75	10	13	5	65	141	0.8	177	14	6	1753	0.10		Tank space w/ ceiling		
Totals		1252		75		13		65	141		177			1753		0			

MECHANICAL SCHEDULES

MYSTIC HARBOR - WTP HVAC

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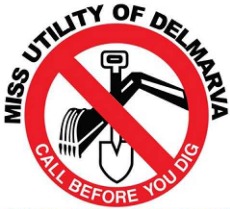


7-31-2026

Professional Certification.
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.

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Expiration Date: July 24 2028

REVISIONS

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SCALE:	AS SHOWN
DRAWN BY:	EEY
DESIGNED BY:	HJH
APPROVED BY:	

SHEET NO.: **M-500**

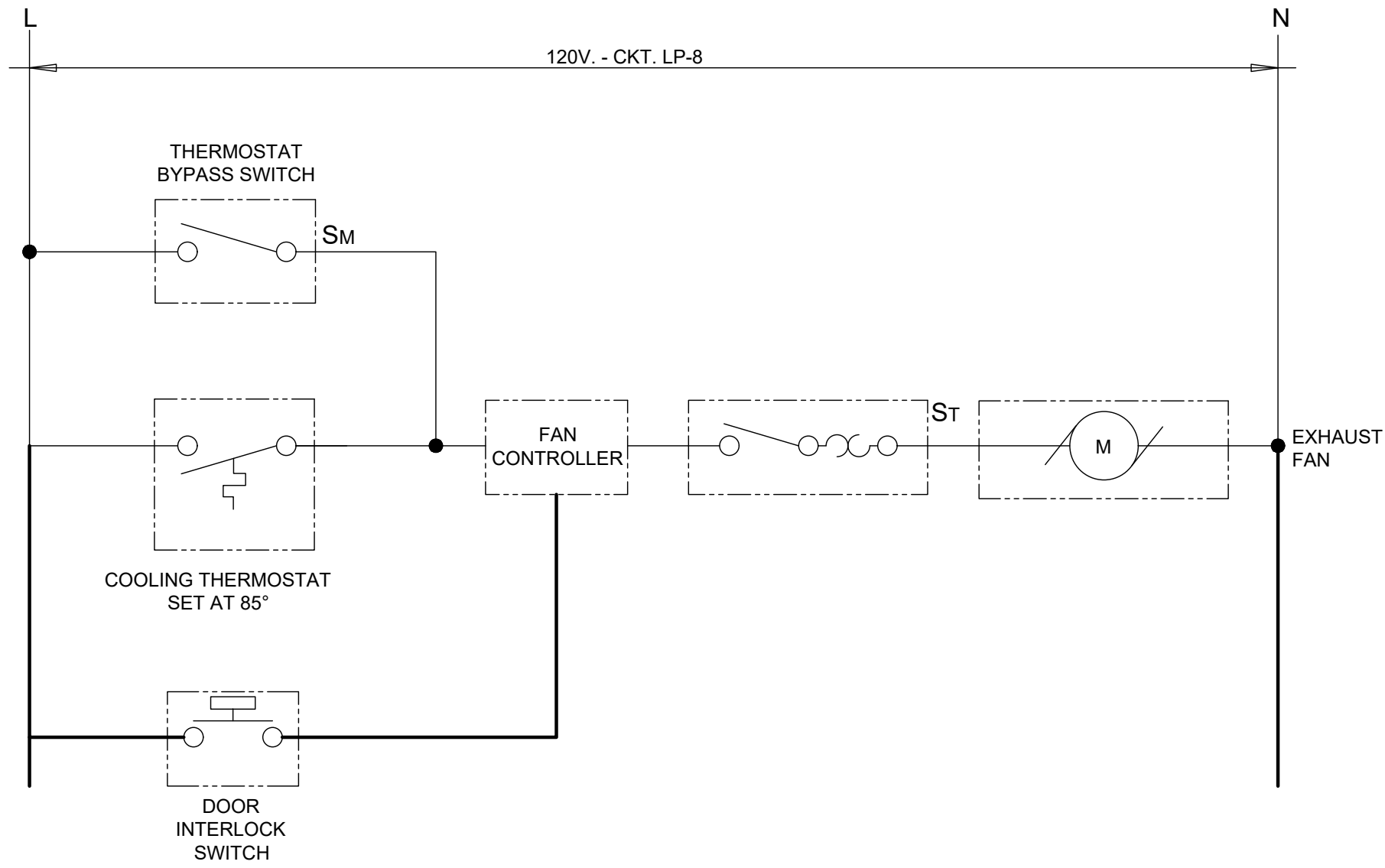
Electrical Abbreviations			
1P A, Amp AC ACLG ADO AF AFF AFG AFI AHU AL ALT AMP AMPL ANNUN APPROX AQ-STAT ARCH AS AT ATS AUTO AUX AV AWG BATT BD BLDG BMS C CAB CAT CATV CB CCTV CKT CLG COMB CMPR CONN CONST CONT CONTR CONV CP CRT CT CTR CU DCP DEPT DET DIA DISC DIST DN DPR DS DT DWG EC ELEC ELEV ELU EM EMS EMT EP EQUIP EWC EXIST EXH EXP FA FABP FACP FCU FIXT FLR FLUOR FU FUDS GA GAL GALV GC GEN GFI GFP GND GRS GYP BO HDA HORIZ HP HPF HT HTG HTR HV HVAC IC IG IMC INCAND IR IW J-BOX KV KVA KVAR KW KWH LOC LT LTG LTNG LV MAX MAG.S MIC MC	1 Pole (2P, 3P, 4P, ETC.) Ampere Above Counter Above Ceiling Automatic Door Opener Amp Frame Above Finished Floor Above Finished Grade Arc Fault Circuit Interrupter Air Handling Unit Aluminum Alternate Ampere Amplifier Annunciator Approximately Aquastat Architect, Architectural Amp Switch Amp Trip Automatic Transfer Switch Automatic Auxiliary Audio Visual American Wire Gauge Battery Board Building Building Management System Conduit Cabinet Catalog Cable Television Circuit Breaker Closed Circuit Television Circuit Ceiling Combination Compressor Connection Construction Continuation Or Continuous Contractor Converter Circulating Pump Cathode-Ray Tube Current Transformer Center Copper Domestic Water Circulating Pump Department Detail Diameter Disconnect RTU Down Dampener Safety Disconnect Switch Double Throw Drawing Electrical Contractor Electric, Electrical Elevator Emergency Lighting Unit Energy Management System Electrical Metallic Tubing Electric Pneumatic Equipment Electric Water Cooler Existing Exhaust Explosion Proof Fire Alarm Fire Alarm Booster Power Supply Panel Fire Alarm Control Panel Fan Coil Unit Fixture Floor Fluorescent Fuse Fused Safety Disconnect Switch Gauge Gallon Galvanized General Contractor Generator Ground Fault Circuit Interrupter Ground Fault Protector Ground Galvanized Rigid Steel (Conduit) Gypsum Board Hands-Off Automatic Switch Horizontal Horsepower High Power Factor Height Heating Heater High Voltage Heating, Ventilating And Air Conditioning Interrupting Capacity Isolated Ground Intermediate Metal Conduit Incandescent Infrared Interlock With Junction Box Kilovolt Kilovolt-Ampere Kilovolt-Ampere Reactive Kilowatt Kilowatt Hour Locate Or Location Light Lighting Lightning Low Voltage Maximum Magnetic Starter Momentary Contact Mechanical Contractor	MCB MCC MDC MDP MFR MFS MH MIC MIN MISC MLO MMS MOA MSP MSBD MSS MT MT-C MTS MTR N.C. NEC NEMA NFDSS NIC NL NO NPF NTS OC OH OL PA PB PE PED PF PH PIV PNL PP PR PRJ PRV PT PVC PWR QUAN RCPT REQD RM RSC RTU SC SEC SHT SIM SLD SN SPEC SPKR SPP SPR SS SSW SIS STA STD SURF SW SWBD SYM SYS TEL TERM TL TR T-STAT TTC TV TVTC TYP UC UE UG UH UT UV V VA VDT VERT VFD VOL W WI WG WH W/O WP XFR XFR	Main Circuit Breaker Motor Control Center Main Distribution Center Main Distribution Panel Manufacturer Main Fused Disconnect Switch Manhole Microphone Minimum Miscellaneous Main Lugs Only Manual Motor Starter Multioilet Assembly Motor Starter Panelboard Main Switchboard Motor Starter Switch Mount Empty Conduit Manual Transfer Switch Motor, Motorized Normally Closed National Electrical Code National Electrical Manufacturer's Association Non-Fused Safety Disconnect Switch Not In Contact Night Light Normally Open Normal Power Factor Not To Scale On Center Overhead Overloads Public Address Pull Box Or Pushbutton Pneumatic Electric Pedestal Power Factor Phase Post Indicating Valve Panel Power Pole Pair Primary Projection Power Roof Ventilator Potential Transformer Polyvinyl Chloride (Conduit) Power Quantity Receptacle Required Room Rigid Steel Conduit Roof Top Unit Surface Conduit Secondary Sheet Similar Single-Line Diagram Solid Neutral Specification Speaker Spare Single-Point Power Surface Raceway Stainless Steel Selector Switch Stop/Start Pushbuttons Standard Surface Mounted Switch Switchboard Symmetrical System Telephone Terminal Twist Lock Tampere Resistant Thermostat Telephone Terminal Cabinet Television Television Terminal Cabinet Typical Under Counter Underground Electrical Underground Unit Heater Underground Telephone Utility Ultraiolet Volt Volt-Amperes Video Display Terminal Vertical Variable Frequency Drive Volume Watt With Wire Guard Water Heater Without Weatherproof Transformer Transfer

Electrical Symbol Legend			
Lighting Symbols			
	Lighting Fixtures, Typical, Rectangular		
	Diagonal line indicates lensed.		
	Outer dots indicate suspended.		
	Lighting Fixtures, Typical, Round		
	(Various Symbols)		
	Strip Fixture		
	Directional Light, Track Light, Flood Light		
	Linear Light, Tape Light		
	Emergency Lighting Unit, Ceiling-Mounted, Integral Battery		
	Emergency Lighting Unit, Ceiling-Mounted, Remote Battery		
	Emergency Lighting Unit, Wall-Mounted, Integral Battery		
	Emergency Lighting Unit, Wall-Mounted, Remote Battery		
	Exit Light, Ceiling-Mounted.		
	Shading and arrows indicate faces and directional chevrons		
	Exit Light, Wall-Mounted.		
	Shading and arrows indicate faces and directional chevrons.		
	Exit/ELU Combo		
	Pole/Area Lights		
	Post-Top Area Light		
	Bollard Light		
	Diagonal hatch indicates light on a critical circuit.		
	Solid hatch indicates light on an emergency or life safety circuit.		
	Single-Pole Switch		
	Two-Pole Switch		
	Three-Pole Switch		
	Switch Modifiers:		
	3: 3-Way		
	4: 4-Way		
	K: Keypad		
	D: Dimming		
	T: Timer		
	OS: Occupancy Sensor		
	VS: Vacancy Sensor		
	AC: Above-Counter		
	LV: Low-Voltage		
	M: Motor-Rated		
	Lighting Contactor		
	Lighting Control Panel		
	Explosion Sensor		
	Daylight Harvesting Sensor		
	Ceiling Fan Controller		
Lighting Tags			
	A1a		
	Top Value: Fixture Type ID (Underlined)		
	Bottom Value, Lowercase Letter: Switch ID		
	Bottom Value, Number(s): Circuit Number		
	Bottom Value, Uppercase Letter(s): Panel ID		
	Typical		
	Under Counter		
	Underground Electrical		
	Underground		
	Unit Heater		
	Underground Telephone		
	Utility		
	Ultraiolet		
	Volt		
	Volt-Amperes		
	Video Display Terminal		
	Vertical		
	Variable Frequency Drive		
	Volume		
	Watt		
	With		
	Wire Guard		
	Water Heater		
	Without		
	Weatherproof		
	Transformer		
	Transfer		
Grounding and Lightning Protection Symbols			
	Ground Rod		
	Ground Rod with Test Well		
	Static Ground Receptacle		
	Lightning Protection Air Terminal		
	Lightning Protection Conductor Splice		
Power Symbols			
	Half shading indicates split (typically switched)		
	Outside shading indicates emergency circuit		
	Center shading indicates isolated ground		
	Single-Pole Switch		
	Two-Pole Switch		
	Three-Pole Switch		
	Switch Modifiers:		
	K: Keypad		
	T: Timer		
	AC: Above-Counter		
	M: Motor-Rated		
	Multioilet Assembly		
	Filled squares indicate 120V outlet		
	Open squares indicate with USB		
	Cord Reel, Device Varies		
	Drop Cord, Device Varies		
	Junction Box		
	Floor Box, see schedule for type		
	Emergency Power Off		
	Door Opener Push Plate		
	Power Meter		
	Safety Switch, Fused		
	Safety Switch, Unfused		
	Motor Starter		
	Combination Starter/Disconnect		
	Contactor		
Power Device and Equipment Tags			
	C1a		
	Electrical Device Tags: Uppercase letter(s) indicates Panel ID and circuit number. Lowercase letter indicates designation of controlling switch (where applicable).		
	Equipment Tags: Equipment ID is indicated by an underline tag adjacent to the equipment. See the equipment connection schedule for description, electrical requirements, and panel and circuit number. Symbols/graphic appearance of equipment varies.		
	Wiring		
	Solid, arced lines connecting equipment, devices, or fixtures indicate unswitched power circuiting. Wires are only intended to indicate to what circuit devices are connected. Actual connections, circuit routing, installation, junction boxes, etc. shall be field-determined by the contractor.		
	Dashed, arced lines connecting equipment, devices, or fixtures indicate switched power.		
	Home run to branch circuit (panelboard). The equipment, name and circuit number(s) are indicated, separated by a hyphen. Home runs are only intended to indicate panel and circuit number. Actual homerun location shall be field-determined by the contractor.		
Power Distribution Equipment			
	SB1(S)		
	MDPA		
	HP-A(B)		
	LP-A(C)		
	Hatched fill indicates distribution panel or switchboard.		
	Solid fill indicates branch panel or load center.		
	Dashed box indicates code-required clearance (width and depth).		
	Door indicates front of recessed panel.		
	Panelboards are assigned abbreviated indicator (or Panel ID) for use with circuit numbers. Panel ID is listed within the panel schedule and in the panel abbreviation schedule.		
	Equipment is tagged with Panel Name and with Panel ID in parentheses. Panel ID is intended as a design documentation aid only. Do not include Panel ID in field-applied circuit directories or labels.		
	Devices and fixtures are tagged with Panel ID and circuit number. For example, a device tagged with "A1" indicates the device is circuited to panel designated "A", circuit number 1. The panel schedule circuit number contains both the panel abbreviation and the circuit number.		
	Transformer: Typically transformer names begin with or contain the letter "T". See Single-Line Diagram for description and requirements.		
Telecom Symbols			
	Wall		
	Ceiling		
	Floor		
	Data Outlet		
	Telephone Outlet		
	Data/Telephone Outlet		
	Outlet Modifiers:		
	##": Height AFF OC		
	AC: Above Counter		
	Wireless Access Point		
	TV Outlet		
Nurse Call Symbols			
	Nurse Call Corridor Light		
	Number of lights as indicated		
	Nurse Call Device		
	B: Code Blue		
	D: Duty Station		
	E: Emergency		
	P: Patient Call		
	S: Staff		
	Nurse Call Control Unit		
	NCAP: Nurse Call Annunciator Panel		
	NCHS: Nurse Call Host Controller		
	NCPA: Nurse Call Power Supply		
	NCTO: Nurse Call Terminal Cabinet		
	NCUPS: Uninterruptable Power Supply		
Security Symbols			
	Security Camera		
	PTZ: Pan/Tilt/Zoom		
	Card Reader		
	Card Reader with Keypad		
	Closed Circuit TV Outlet		
	Door Contact		
	Electric Strike		
	Intercom		
	Magnetic Lock		
	Request to Exit Button		
	Request to Exit Sensor		
	Motion Detector		
	Security Control Unit		
	SCP: Security Control Panel		
	SPS: Security Power Supply Unit		
Construction Phasing (Typical All Symbols and Equipment)			
	Existing to Remain		
	Existing to Be Demolished		
	New		
	Existing to Be Demolished		
Miscellaneous			
	Area Not in Contract		
	Keynote		
	Callout:		
	Top Value: Detail Number on Sheet		
	Bottom Value: Sheet Number on Sheet		
	Room		
	Room Name and Number		
Fire Alarm Symbols			
	Manual Pull Station		
	Horn, Wall		
	Horn, Ceiling		
	Strobe, Wall, Candela as indicated		
	Strobe, Ceiling, Candela as indicated		
	Horn/Strobe, Wall, Candela as indicated		
	Horn/Strobe, Ceiling, Candela as indicated		
	Remote Indicator w/ Test Switch, Wall		
	Remote Indicate w/ Test Switch, Ceiling		
	Smoke Detector		
	Heat Detector		
	Carbon Monoxide Detector		
	Beam Detector T: Transmitter R: Receiver		
	Combination Detector (Up to Three)		
	Duct Smoke Detector		
	Smoke Damper		
	Door Holder		
	Door Closer		
	Fire Service Phone		
	Addressible Module		
	AIM: Addressible Input Module		
	AOM: Addressible Output Control Module		
	AIO: Addressible Input/Output Module		
	Fire Alarm Control Unit		
	EVAC: Voice Evacuation Control Panel		
	FAA: Fire Alarm Annunciator		
	FACP: Fire Alarm Control Panel		
	FATC: Fire Alarm Terminal Cabinet		
	NACP: Notification Appliance Circuit Panel		
	FAMN: Fire Alarm Mass Notification Control Panel		
	Supervisory or Interface Device		
	PIV: Post Indicator Valve Supervisory		
	PS: Pressure Switch		
	R: Non-Addressible Relay		
	VS: Valve Supervisory Switch		
	WF: Water Flow Switch		
Site Lighting			
	Square D company class 8903LXG1200-V02-C-R6, (12) pole 30 amp mechanically held contactor w/ 120V coil, has switch with 2 wire interface, Nema 1 enclosure. Wire for photo eye "ON" and "OFF"		
	CONTRACTOR		

ELECTRICAL GENERAL NOTES	
1	All work shall meet the 2021 international building code, 2017 NFPA 70, National Electrical Code and 2018 International Energy Conservation Code.
2	Low voltage cables or conductors operating at less than 50 volts shall be in metal raceway where installed within walls or inaccessible spaces. Low voltage cables may be run in cable tray where noted. Low voltage cables may be run in cable support hooks above accessible ceilings where noted. Low voltage cable shall be plenum rated in plenum spaces.
3	Conductors operating at 50 volts or greater shall be in raceway. Raceway within the structure above the floor slab shall be metal. Raceway below the floor slab and underground raceway outside the structure shall be PVC.
4	Low voltage cables or conductors operating at less than 50 volts shall be in metal raceway. Low voltage cables may be run in cable tray where noted. Low voltage cable shall be plenum rated in plenum spaces.
5	Coordinate locations of devices with architectural elevations and details. Architectural elevations and details take precedence over locations shown on electrical drawings.
6	Provide cable or conduit and wire as required to achieve circuiting shown. Size conductors per NEC ampacity and wire fill criteria. Provide dedicated neutral and ground conductors for circuiting, unless noted otherwise. Increase branch circuit and/or feeder conductors including equipment grounding conductors proportionally for no more than 3% voltage drop on branch circuits and 2% on feeders per energy code.
7	It is the responsibility of this contractor to coordinate installation of electrical systems and those requiring electrical connections to maintain NEC required clearances, included but not limited to areas above accessible ceilings.
8	Coordinate with other trades for proper installation of equipment. Consult the drawings of other trades or crafts to avoid electrical conflicts with equipment, etc. Conflicts shall be resolved prior to rough-in and no additional cost to the owner.
9	Leave the site clean and ready for occupancy. Remove dirt, debris, empty cartons, tools, conduit and wire scraps, and miscellaneous spare equipment and materials used in this division of the work during construction. Components shall be free of dust, grit, and foreign materials and left as new before final acceptance of work.
10	The symbols and abbreviations shown on this sheet may or may not be used in this set of drawings.
11	Perform work to comply with the standard practices for good workmanship published by National Electrical Contractors Association (NECA). Comply with the latest enforced edition of the National Electrical Code (NEC), local codes, amendments, and ordinances.
12	Field coordinate final mechanical and equipment locations along with connection requirements and conduit wiring prior to rough-in. Adjust corresponding circuit breaker ratings and branch circuiting accordingly.
13	Electrical work shall be performed under the supervision of a licensed master electrician. Procure permits and licenses and pay fees associated with this work.
14	Materials furnished for this project shall be new, commercial grade, free of defects, and listed by a nationally recognized testing laboratory unless noted otherwise.
15	Provide complete operation & maintenance manual including approved submittal drawings, warranty information for product supplied, and manufacturers operation and maintenance instructions.
16	The contractor is responsible for making final wiring terminations to pre-installed receptacles in office furniture. Contractor is responsible for wiring and installing voice/data devices in office furniture. Coordinate placement of devices with furniture lay-out.
17	Security system to be provided under separate contract. It is responsibility of this contractor to provide conduit provisions, back boxes, rough-ins, sleeves and power to head end equipment for exact requirements prior to start of work.
18	Conduit and wire shall not be installed below floor slab unless indicated on plan by dashed conduit.
19	Contractor shall be responsible for wiring electrical items shown on drawings except for items listed in note "R" below.
20	TV outlets, volume controls, nurse call dome lights, nurse call devices, telephone outlets, data outlets, and fire alarm devices shall consist of a black box with conduit stubbed above the accessible ceiling, see sub up detail. Verify size of black box required with device to be installed. Locate back boxes 6" from adjacent power receptacle intended for computer use.
21	Furnish and install conduit from back boxes for the following devices into the accessible ceiling space in the corridor, unless noted otherwise: 12" TV outlets 1/2" Volume controls 1/2" Door security devices (card readers, door strikes, etc.) 1/2" Nurse call dome lights 3/4" Nurse call devices 3/4" Telephone outlets 3/4" Information outlets 3/4" Fire alarm devices
22	Electrical contractor shall verify and coordinate conduit runs, circuiting and wiring as required to provide complete electrical installations. All the wiring to be UL approved.
23	Electrical contractor shall provide correct ampereage for all equipment indicated on the plan.
24	All work must comply with local codes and ordinances.
25	Where outlets are shown back to back, install on studs and insulate between.
26	All outlet plugs shall be GFCI protected.
27	Power for special lighting elements in cabinetry to be coordinated with designer, electrician and cabinet maker.
28	Bathroom receptacle outlets shall be supplied by at least one 20 amp branch circuit, such circuits shall have no other outlets.
29	Any base building work letter, tenant specifications, or architectural general conditions shall govern all products and the execution of work.
30	Electrical plans are diagrammatic only; refer to architectural drawings for exact locations, dimensions, and method of mounting for lighting fixtures, fire alarm devices, ceiling devices, receptacles, switches, exit signs, telephone, and data outlets.
31	Electrical contractor shall refer to mechanical, plumbing, and other discipline drawings for location of plumbing, and other discipline drawings for location of plumbing, and other discipline equipment, electrical contractor shall coordinate and verify voltage/plasma indicated on electrical drawings with plumbing, and other discipline equipment to be provided prior to installing electrical service. Should a discrepancy be noted, the contractor shall be responsible to be supplied and what is indicated on the drawings, contractor shall obtain written directions from engineer before proceeding with work.
32	A dedicated circuit is required for dishwasher, disposal and microwave if built in.
33	At least 2-20 amp dedicated small appliance circuits for the outlets serving the countertops are required at kitchen.
34	Bathroom exhaust fans shall be energy star compliant and be ducted to terminate outside the building, unless functioning as a component of a whole house ventilation system.
35	Light fixtures to be centered on ceilings unless noted otherwise.
36	Recessed fixtures in insulated ceiling; fixture recessed into insulated ceiling shall be approved for zero clearance insulation type (CIC) by UL or other testing/laboratories recognized by the International Conference of Building Officials, and shall include a label certifying air tight (AT) or similar designation to show air leakage less than 2.0 cfm at 75 pascals (or 1.57 lbs/sq. ft.) when tested in accordance with ASTM E283, and shall be sealed with a gasket or caulk between the housing and the ceiling.
37	Where switches are shown adjacent to each other they shall be engaged and covered by a single switch plate.
38	Electrical contractor shall coordinate with mechanical, plumbing, fire protection, and other discipline contractors on any required control circuits including "line" and "load" voltage power requirements. The electrical contractor will be responsible for providing any necessary "line" or "load" voltage wiring and conduit not provided under the other discipline scope
39	All existing lighting to remain.

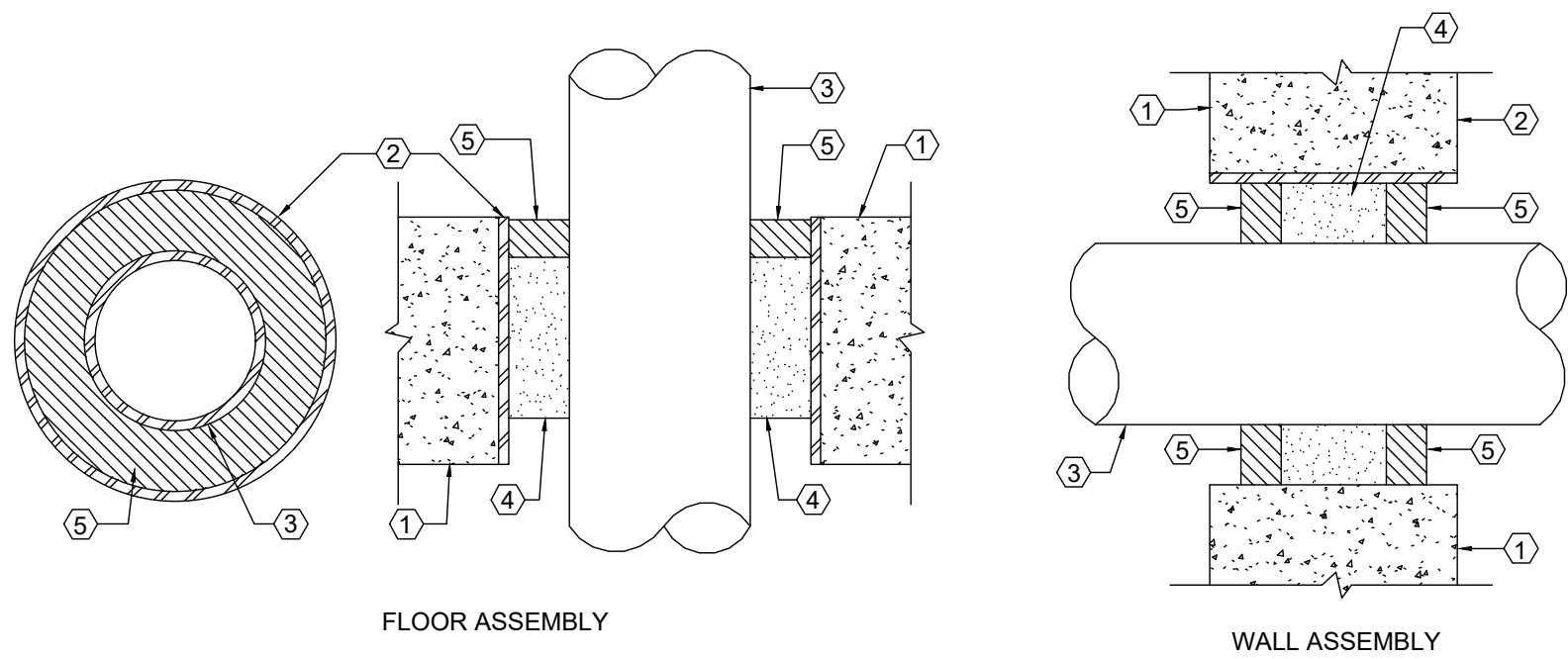


Z:\MYSTIC HARBOR\ V\PA-DEPARTMENTS\MEP\MODELS - DRAWINGS\E-100.DWG



1 THERMOSTAT EXHAUST DETAIL

NTS

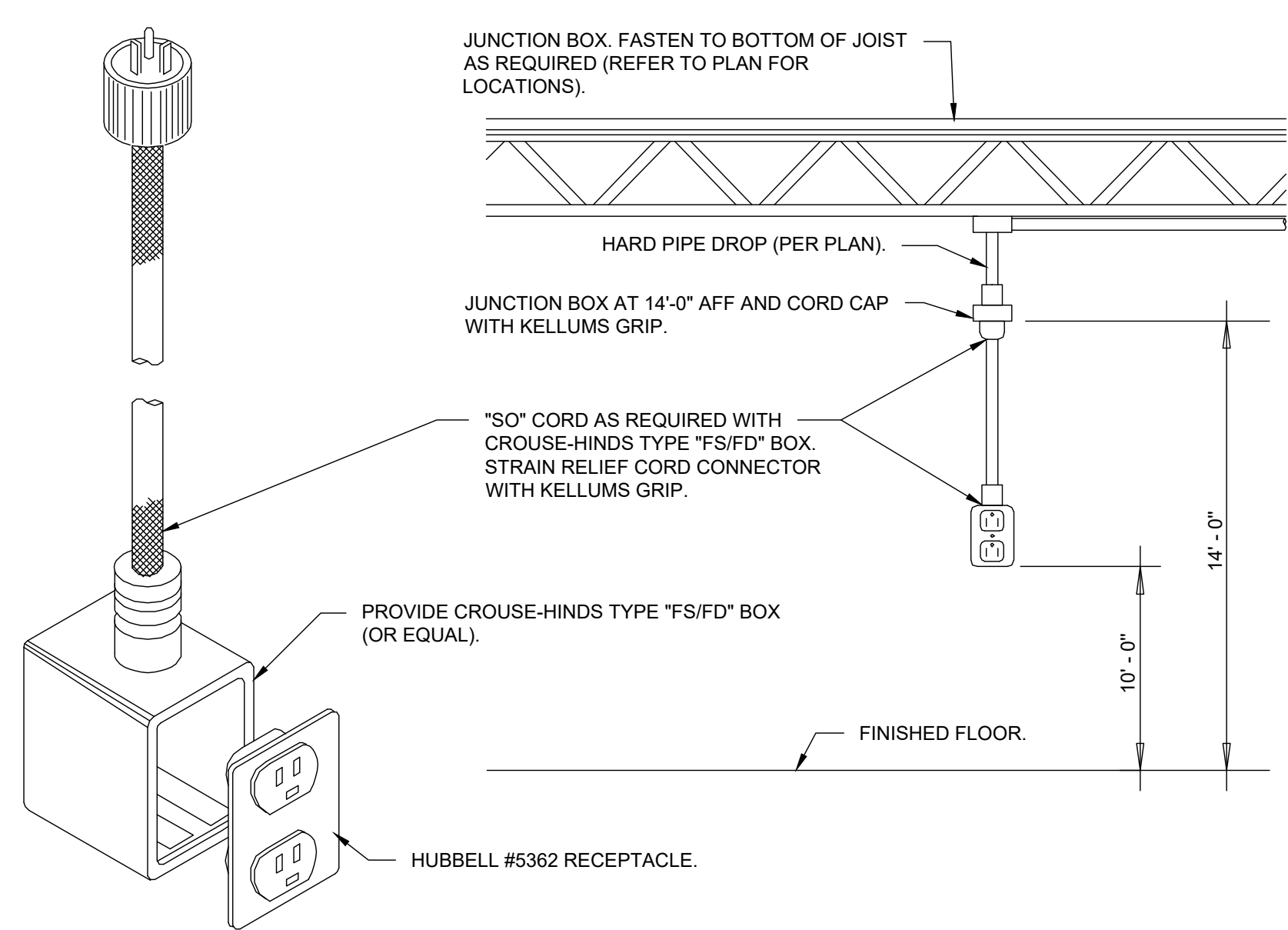


- CODED NOTES:
1. FLOOR OR WALL ASSEMBLY MINIMUM 5" THICK NORMAL WEIGHT CONCRETE FLOOR OR WALL OR MINIMUM 7-5/8" THICK MASONRY WALL HAVING A MINIMUM 2 HOUR FIRE RESISTIVE RATING WITH A NOMINAL 6" DIAMETER OPENING.
 2. STEEL PIPE SLEEVE (OPTIONAL) NOMINAL 6" DIAMETER SCHEDULE 40 OR HEAVIER STEEL PIPE SLEEVE, (2 TRADE SIZES LARGER THAN CONDUIT).
 3. STEEL OR EMT CONDUIT NOMINAL 4" DIAMETER RIGID CONDUIT CENTERED IN THE THROUGH OPENING.
 4. FORMING MATERIAL MINERAL WOOL, MINIMUM DENSITY OF 4.4 PCF FIRMLY PACKED WITHIN THE OPENING TO A NOMINAL THICKNESS OF 3" FOR FLOORS. FOR WALLS, THE MINERAL WOOL SHALL BE CENTERED IN THE OPENING.
 5. FILL, VOID OR CAVITY MATERIAL" - FILL MATERIAL THAT IS TROWELED INTO THE OPENING TO A MINIMUM THICKNESS OF 1/2" INSTALLED ON BOTH SURFACES OF THE OPENING.

NOTE:
BEARING THE "UL 1429" CLASSIFICATION MARKING

2 FIRE STOP DETAIL WALL OR FLOOR

NTS



3 CORD CROP RECEPTACLE DETAIL

NTS

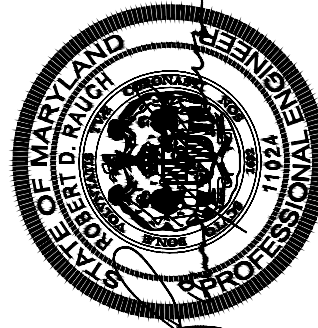
ELECTRICAL DETAILS

MYSTIC HARBOR - WTP HVAC

BERLIN, MARYLAND

RAUCH
Engineering | Survey | Architecture | Environmental

Main Office: 106 N Harrison St - Easton, MD 21601
Web: www.rauch-inc.com | Email: design@rauch.com
Phone: 410 770 8081 | Fax: 410 770 3867



Professional Certification.
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.

License No. 11024
Expiration Date: July 24, 2028

REVISIONS

REV. #	DATE	DESCRIPTION



DATE: 5/22/2026
SCALE: AS SHOWN
DRAWN BY: EJE
DESIGNED BY: HJH
APPROVED BY:

SHEET NO.:
E-400

PANEL P-1														
VOLTAGE (L-N):				120				ENCLOSURE TYPE: -----						
VOLTAGE (L-L):				240				MOUNTING: SURFACE						
PHASES, WIRES:				3 ϕ 4 W				AIC RATING (A): 0						
MINIMUM BUS CAPACITY (A):				200 A				NOTES: -----						
MAIN O.C. DEVICE (A):				200 A										
CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (VA)						POLE	TRIP AMPS	DESCRIPTION	CKT NO	
				A		B		C						
1	PROCESS EQUIPMENT	20	1	456	0					1	20	PROCESS EQUIPMENT	2	
3	PROCESS EQUIPMENT	20	1				0	0		1	20	PROCESS EQUIPMENT	4	
5	PROCESS EQUIPMENT	20	1					0	0	1	20	PROCESS EQUIPMENT	6	
7	PROCESS EQUIPMENT	20	1	0	0					1	20	FLOW METER CHART RECORD	8	
9	PROCESS EQUIPMENT	20	1				0	0		1	20	PROCESS EQUIPMENT	10	
11	PROCESS EQUIPMENT	20	1					0	0	1	20	PROCESS EQUIPMENT	12	
13	HEAT	20	1	0	0					1	20	PROCESS EQUIPMENT	14	
15	LIGHTS	20	1				0	0		1	20	PROCESS EQUIPMENT	16	
17	PROCESS EQUIPMENT	20	1					0	0	2	20	PROCESS EQUIPMENT	18,20	
19	OFFICE AND PUMPS	20	1	0	0					2	20	PROCESS EQUIPMENT	18,20	
21	PROCESS EQUIPMENT	20	1				0	0		2	20	PROCESS EQUIPMENT	22,24	
23	PROCESS EQUIPMENT	20	1						0	0	2	20	PROCESS EQUIPMENT	22,24
25	PROCESS EQUIPMENT	20	1	0	0					1	20	PROCESS EQUIPMENT	26	
27	PROCESS EQUIPMENT	20	1				0	0		1	20	PROCESS EQUIPMENT	28	
29	TOWER LIGHT	20	1					0	1188	2	30	DH-1	30,32	
31,33	DH-1	30	2	1188	1188					2	30	DH-1	30,32	
31,33	DH-1	30	2			1188	840			2	30	EF-1	34,36	
35,37	DH-1	30	2					1188	840	2	30	EF-1	34,36	
35,37	DH-1	30	2	1188	1188					2	30	DH-1	38,40	
39	SPARE	20	1				0	1188		2	30	DH-1	38,40	
41	SPARE	20	1					0	0	1	20	SPARE	42	
CONNECTED LOAD PHASE TOTALS (VA)														
				5208			3216			3216				
				CONNECTED LOAD		DEMAND FACTOR		DEMAND LOAD (KVA)		DEMAND LOAD		10.0 KVA		
Equipment				(KVA)		1.00		0.0		73.2 KVA		SPARE CAPACITY		
Heating				0.5		1.00		0.5		176.0 AMPS		SPARE CAPACITY		
Cooling				9.5		1.00		9.5		PHASE BALANCE		88 %		
								A TO B		62 %				
								B TO C		100 %				
								C TO A		62 %				
TOTAL:				10.0				10.0						
LOAD (AMPS):				24.0				24.0						

PANEL.

ELECTRICAL SCHEDULES

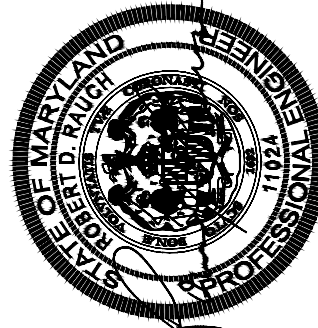
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REVISIONS

DESCRIPTION

REV. #

DATE



DATE: 5/22/2026
SCALE: AS SHOWN
DRAWN BY: EEY
DESIGNED BY: HJH
APPROVED BY:

SHEET NO.:
E-500