



**ST. JOHNS
RIVER
STATE COLLEGE**

COOLING TOWER REPLACEMENT ORANGE PARK CAMPUS

ST. JOHNS RIVER STATE COLLEGE
ORANGE PARK, FLORIDA 32065

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GENERAL NOTES

GENERAL:

- ALL WORK AND IMPROVEMENTS ARE CONFINED TO THE AREAS INDICATED IN THESE DRAWINGS. ALL WORK WILL BE INSTALLED BY A LICENSED CONTRACTOR AND THE APPROPRIATE LICENSED SUBCONTRACTORS IN STRICT ACCORDANCE WITH ALL GOVERNING CODES.
- ALL WORK IS TO BE EXECUTED UNDER DIRECT SUPERVISION OF A CERTIFIED GENERAL CONTRACTOR. THE GENERAL CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS, DIMENSIONS, AND COORDINATE ALL OPENINGS AND INSERTS WITH THE APPROPRIATE SUBCONTRACTORS. HANGING DEVICES SHALL BE INSTALLED SO AS NOT TO OVERLOAD THE ASSEMBLY OR ANY OTHER STRUCTURAL COMPONENTS. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO ENSURE THE SAFETY OF THE BUILDING, ITS COMPONENTS, AND ALL PRESENT ON THE SITE.

DIMENSIONS: ALL DIMENSIONS AND ELEVATIONS SHOWN ON THE DRAWINGS SHALL BE VERIFIED BY THE CONTRACTOR TO INSURE THE PROPER INTERFACING WITH EXISTING CONDITIONS. IF ANY CONFLICT OCCURS BETWEEN ANY PART OF THESE DOCUMENTS THE CONTRACTOR IS TO NOTIFY THE ARCHITECT IMMEDIATELY. IF THE ARCHITECT IS NOT AFFORDED THE OPPORTUNITY TO CLARIFY OR MODIFY ANY CONFLICTS, THE CONTRACTOR ASSUMES RESPONSIBILITY FOR RESOLVING ANY PROBLEMS WHICH MAY HAVE DEVELOPED.

RESPONSIBILITY: IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO INSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES BUT IS NOT LIMITED TO THE ADDITION OF WHATEVER TEMPORARY BRACING, GUTS, OR THE DOWNS THAT MAY BE NECESSARY. SUCH MATERIAL SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER COMPLETION OF THE PROJECT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE MEANS AND METHODS REQUIRED TO ACHIEVE THE INTENT OF THESE DRAWINGS.

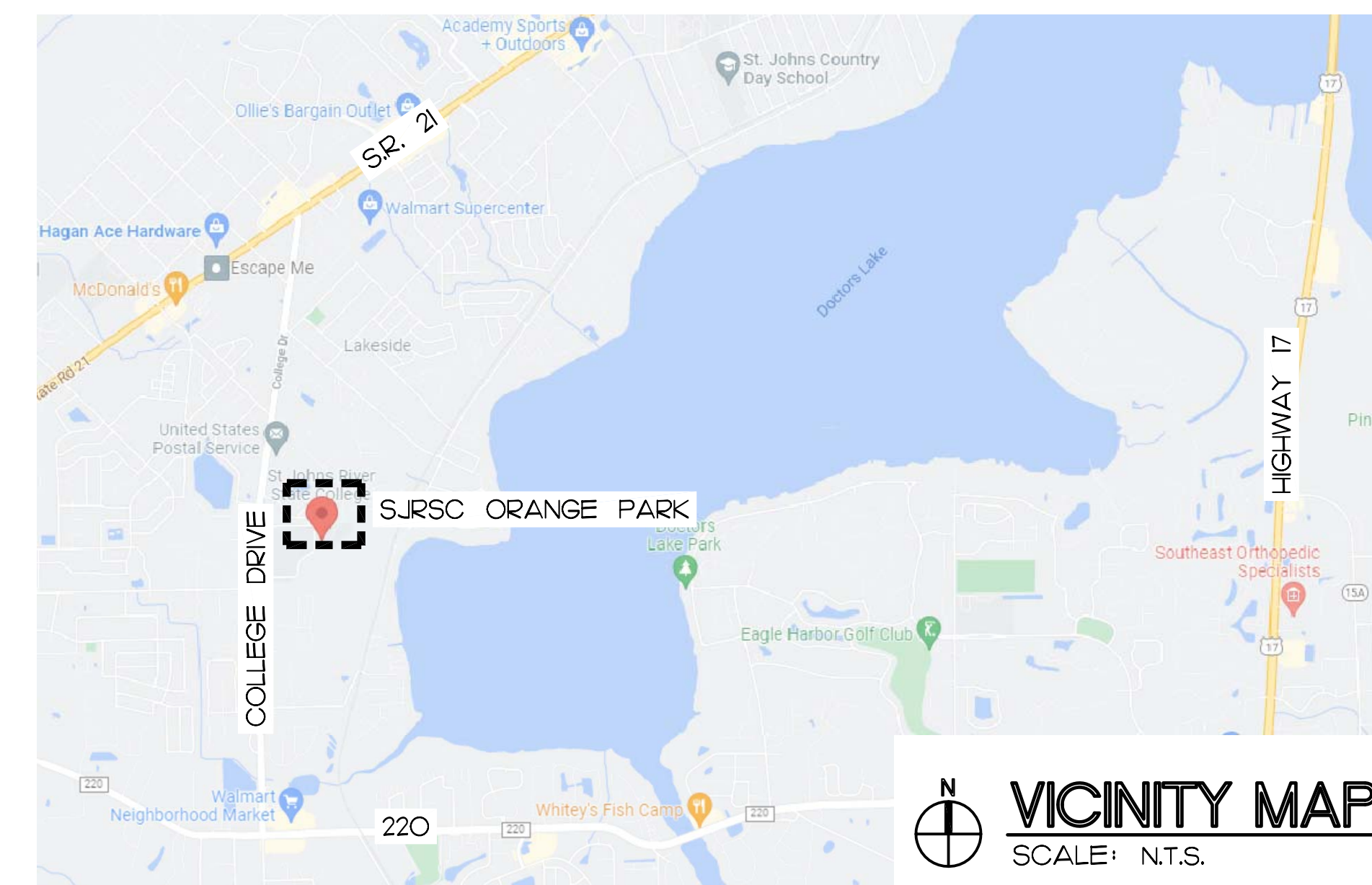
CONFLICTS: WHERE CONFLICTS OCCUR BETWEEN THE SPECIFICATIONS, REFERENCED CODES, NOTES AND WORKING DRAWINGS, THE MOST STRINGENT REQUIREMENTS SHALL APPLY. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO NOTIFY THE ARCHITECT IMMEDIATELY OF ANY CONFLICTS FOR DIRECTION.

COORDINATION: GENERAL CONTRACTOR SHALL COORDINATE ALL OPENINGS AND INSERTS WITH THE APPROPRIATE SUBCONTRACTORS ACCORDING TO THE PLANS. SEE SHOP DRAWINGS FOR ALL SUPPORTING STRUCTURES AND INSERTS REQUIRED BY THE VARIOUS BUILDING SYSTEMS. ALL SUPPORT STRUCTURES AND HANGING DEVICES SHALL BE INSTALLED SO AS NOT TO OVERLOAD THE STRUCTURE OR ANY STRUCTURAL COMPONENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE STRUCTURE AND ITS OCCUPANTS.

SUBMITTALS: THE REVIEW OF VARIOUS SUBMITTALS BY THE VARIOUS SUBCONTRACTORS AND PRE-ENGINEERED SYSTEMS ENGINEER OF RECORD WILL BE TO VERIFY THAT THE SUBMITTALS HAVE BEEN FURNISHED AND PREPARED BY A QUALIFIED PERSON, THAT THE PREPARER HAS UNDERSTOOD THE INTENT OF THE DESIGN AND THE CONSTRUCTION DOCUMENTS. NO DETAILED REVIEW WILL BE MADE BY THE ARCHITECT AND ENGINEER. THE GENERAL CONTRACTOR SHALL CHECK AND STAMP THE SHOP DRAWINGS INDICATING THAT A THOROUGH REVIEW WAS CONDUCTED AND STAMPED FOR CONFORMANCE PRIOR TO FORWARDING THEM TO THE ARCHITECT. THE ARCHITECT / ENGINEER WILL REVIEW THE SHOP DRAWING SUBMITTAL ONCE AND IF FOUND NOT TO BE IN CONFORMANCE, THE SUBMITTAL WILL BE REJECTED. ADDITIONAL REVIEWS CAN BE PERFORMED FOR THE COST BURDEN DIRECTLY RELATED TO THE ADDITIONAL REVIEW. FOR COLOR SELECTION, THE CONTRACTOR IS TO SUBMIT ALL COLOR RELATED PRODUCTS AT ONE TIME TO INSURE CONTINUITY IN THE OVERALL COLOR SCHEME USED.

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VICINITY MAP
SCALE: N.T.S.

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COVER SHEET

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COOLING TOWER REPLACEMENT OPC
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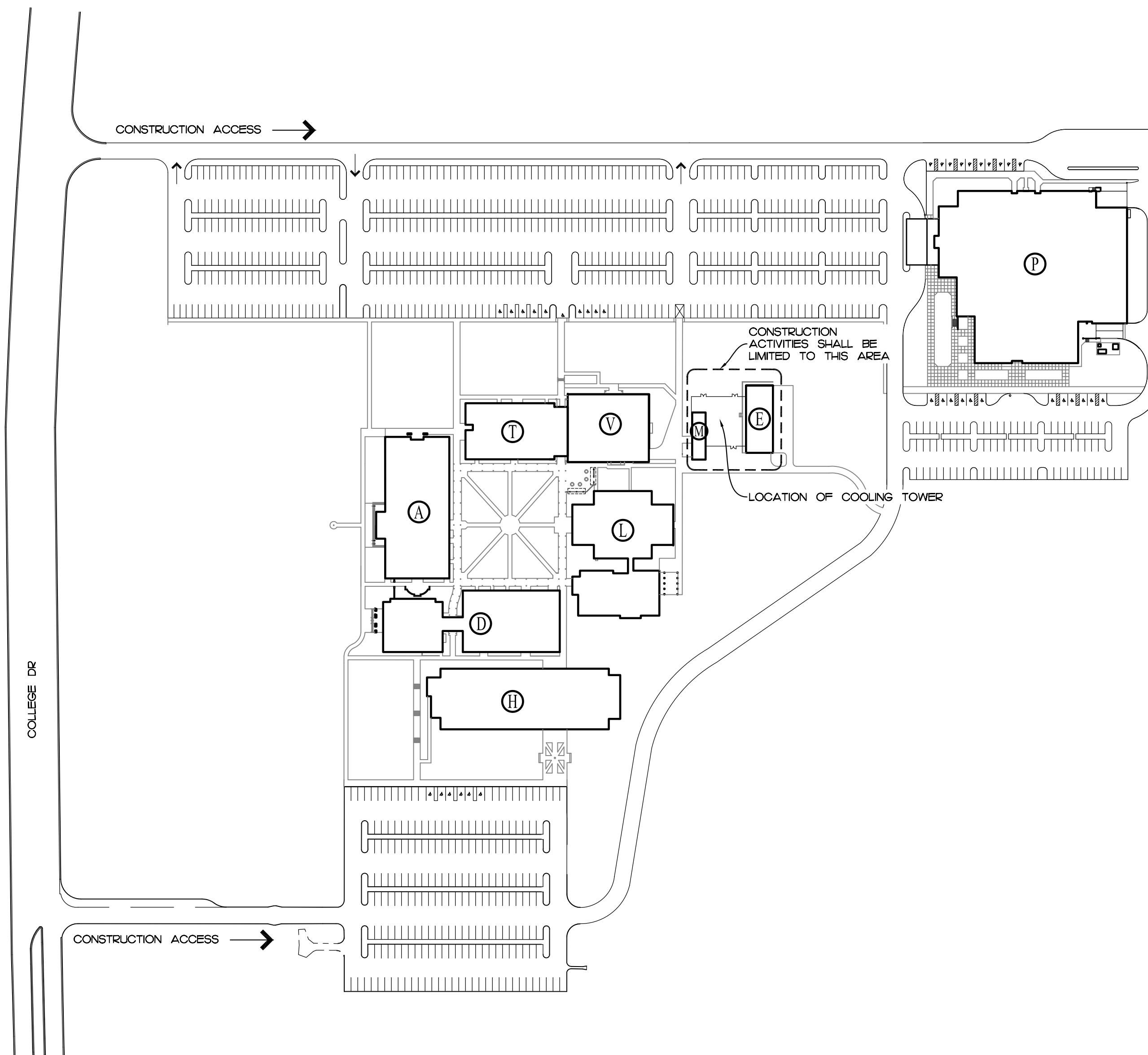
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STATEMENT OF COMPLIANCE:
To the best of my knowledge, this set of DRAWINGS is complete and complies with the State Requirements for Educational Facilities.
Current Addition.

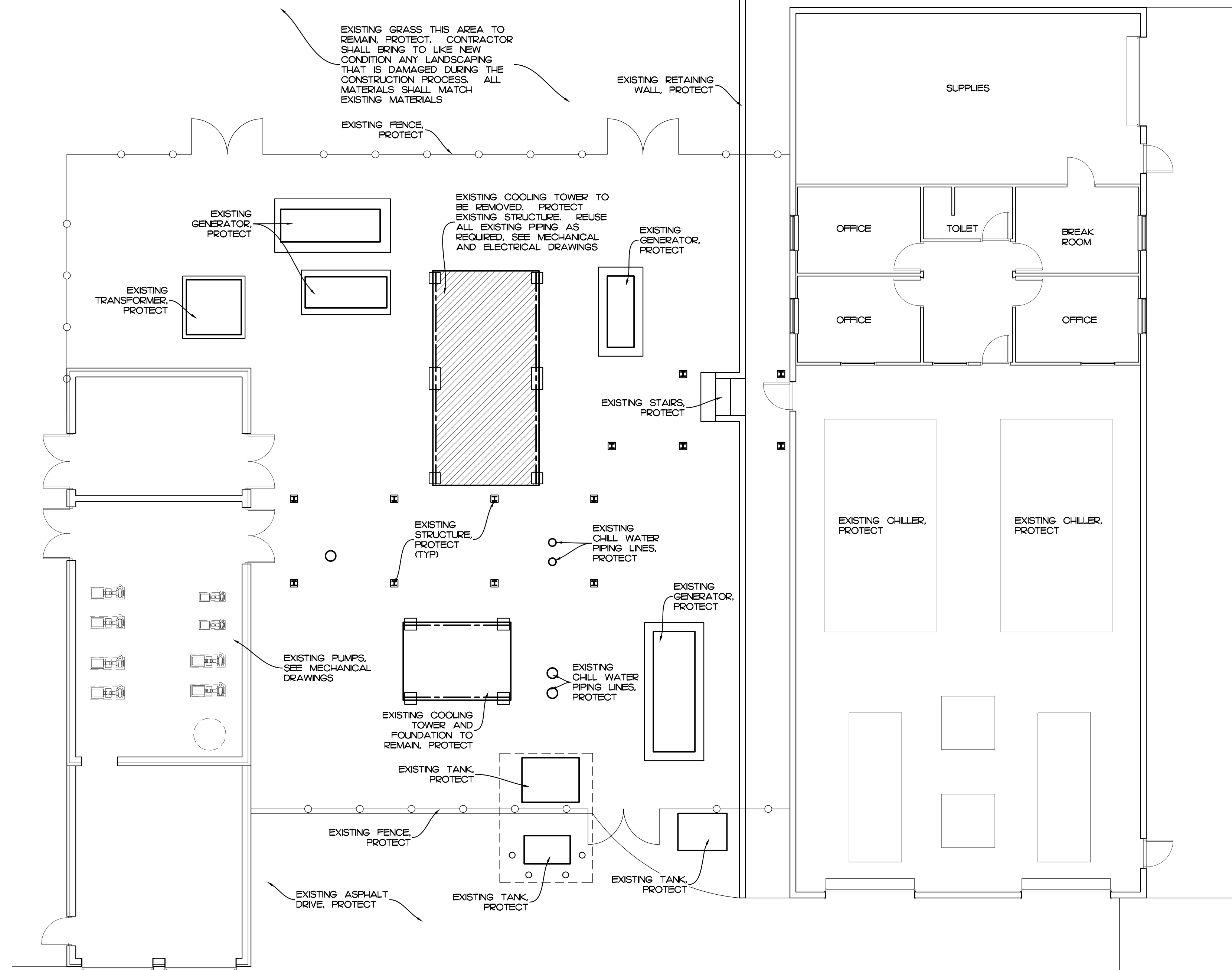
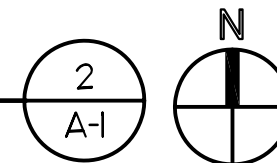
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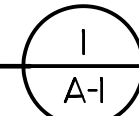
ESJRSC ORANGE PARK SITE PLAN

SCALE: 1/8" = 1'-0"



EQUIPMENT YARD PLAN

SCALE: 1/8" = 1'-0"



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SITE MAP AND
 OVERALL FLOOR
 PLAN

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ELECTRICAL SYMBOL LEGEND

BASIC MATERIALS		BASIC MATERIALS CONT.	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	S ₁ SINGLE POLE SWITCH (SUBSCRIPT INDICATES ITEM CONTROLLED)		BRANCH CIRCUIT PANELBOARD, UNDER 250 VOLTS, SURFACE MOUNTED
	S ₃ THREE-WAY SWITCH		BRANCH CIRCUIT PANELBOARD, UNDER 250 VOLTS, FLUSH MOUNTED
	S ₄ FOUR-WAY SWITCH		BRANCH CIRCUIT PANELBOARD, OVER 250 VOLTS, SURFACE MOUNTED
	S _{WP} SINGLE POLE SWITCH WITH WEATHERPROOF COVER		BRANCH CIRCUIT PANELBOARD, OVER 250 VOLTS, FLUSH MOUNTED
	S _{WPL} SINGLE POLE SWITCH WITH WEATHERPROOF-LOCKING COVER		BRANCH CIRCUIT CONDUIT CONCEALED ABOVE CEILING OR IN WALL. CONDUIT SHALL INCLUDE PHASE, NEUTRAL AND GROUND CONDUCTORS AS REQUIRED FOR CIRCUITS (UNLESS OTHERWISE NOTED).
	S _{1L} SINGLE POLE SWITCH WITH SECURITY LOCKING KEY		GROUND ROD 3/4" x 20'
	S _{1V} LOW VOLTAGE SWITCH FOR OVERRIDE ON		CONDUIT TURNING UP
	S _F FAN SWITCH		CONDUIT TURNING DOWN
	S _M MANUAL MOTOR STARTER WITH OVERLOAD HEATERS		CONDUIT STUB
	S _{MP} MANUAL MOTOR STARTER WITH OVERLOAD HEATERS AND PILOT LIGHT		CONDUIT CONTINUED
	R DUPLEX RECEPTACLE		DISCRETE CONTROL CABLES
	RFB FLOOR OUTLET BOX AND DUPLEX RECEPTACLE WITH APPROPRIATE FLANGE		ANALOG CONTROL CABLES
	RFBV FLOOR OUTLET BOX WITH DUPLEX RECEPTACLE AND ONE COMBINATION W/ VOICEDATA OUTLET		LIGHTNING PROTECTION CU CABLE GROUND LOOP
	RFBV2 FLOOR OUTLET BOX WITH TWO DUPLEX RECEPTACLES AND ONE COMBINATION W/ VOICEDATA OUTLET		
	RMA DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER		
	RMT DUPLEX RECEPTACLE WITH TOP HALF SWITCHED		
	RWP GFI RECEPTACLE. WP DENOTES UL LISTED AS WEATHERPROOF IN USE AND UL LISTED WEATHER RESISTANT. MOUNTED AT 48" AFF.		
	RMA GFI RECEPTACLE MOUNTED ABOVE COUNTER		
	R2 TWO DUPLEX RECEPTACLES WITH COMMON COVER		
	R2 TWO DUPLEX RECEPTACLES WITH COMMON COVER MOUNTED ABOVE COUNTER		
	IG ISOLATED GROUND DUPLEX RECEPTACLE (ORANGE DEVICE)		
	R DUPLEX RECEPTACLE		
	NOTE: TICK MARKS SHOWN ON ANY DEVICE REPRESENTS RECEPTACLE CONNECTED TO THE EMERGENCY CIRCUIT (RED DEVICE) TYPICAL FOR ANY DEVICE IN LEGEND		
	R SPECIAL PURPOSE RECEPTACLE. RATING AS NOTED		
	LTC LIGHTING CONTROL TIME CLOCK		
	P PHOTOCCELL, MOUNTED ON ROOF FACING NORTH		
	GND GROUND BAR		
	J JUNCTION BOX		
	JW JUNCTION BOX- WALL MOUNTED		
	SPD SURGE PROTECTION DEVICE		
	ST SHUNT-TRIP BUTTON - FLUSH MOUNTED UNLESS OTHERWISE NOTED NEMA 3R FOR EXTERIOR LOCATIONS		
	M MAGNETIC MOTOR STARTER OR CONTACTOR SIZE AS NOTED		
	M MOTOR CONNECTION. NUMBER DENOTES HORSEPOWER		
	VFD VARIABLE FREQUENCY DRIVE		
	DDC DIRECT DIGITAL CONTROL PANEL		
	T TRANSFORMER		
	ATS AUTOMATIC TRANSFER SWITCH		
	30AR NF NON-FUSED DISCONNECT SWITCH. SIZE AS NOTED NF DENOTES NON-FUSED		
	30AR 20AF FUSED DISCONNECT AR DENOTES AMP RATING OF SWITCH AF DENOTES AMP FUSE SIZE. * DENOTES SIZE PER MANUFACTURER RECOMMENDATIONS.		
	MCP COMBINATION MAGNETIC MOTOR STARTER, SIZE & # OF POLES		
	MCP ENCLOSURE NEMA RATING.		
	MCP NEMA STARTER SIZE		

NOTE: SOME SYMBOLS SHOWN ON THIS LEGEND MAY NOT PERTAIN TO THIS PROJECT.

GENERAL NOTES:

- ALL WORK AND EQUIPMENT UNDER DIVISION 26 AND 27 SHALL BE IN STRICT COMPLIANCE WITH THE CODES, STANDARDS AND PRACTICES LISTED HEREIN, AND THEIR RESPECTIVE DATES ARE FURNISHED AS THE MINIMUM LATEST REQUIREMENTS.
 - STATE OF FLORIDA
 - LIFE SAFETY CODE - NFPA 101
 - UNDERWRITERS LABORATORIES, INC. PUBLICATIONS
 - NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
 - AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
 - NATIONAL ELECTRICAL CODE - NFPA 70
 - INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)
 - NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)
 - REQUIREMENTS OF LOCAL POWER COMPANY.
 - 2020 FLORIDA BUILDING CODE
 - THE AMERICANS WITH DISABILITIES ACT (ADA)
 - FLORIDA ACCESSIBILITY CODE.
- REFER TO THE MECHANICAL FOR RELATED INFORMATION AND ADDITIONAL INSTALLATION REQUIREMENTS.
- REFER TO MECHANICAL DRAWINGS AND SPECIFICATIONS FOR THE REQUIREMENTS ASSOCIATED WITH WIRING AND CONNECTION OF INTERLOCKING AND CONTROLS OF MECHANICAL UNITS AND THERMOSTAT LOCATIONS.
- WHEN INCREASED CONDUCTOR SIZES ARE SHOWN ON THE PLANS, THE LARGER CONDUCTOR SIZE SHALL BE USED THROUGHOUT THE LENGTH OF THE CIRCUIT, INCLUDING NEUTRAL AND GROUND.
- EACH BRANCH CIRCUIT RACEWAY SHALL HAVE A FULL SIZE EQUIPMENT GROUND CONDUCTOR. WHERE ISOLATED GROUND CIRCUITS ARE SHOWN ON THE PLANS, PROVIDE AN ISOLATED GROUND CONDUCTOR THROUGHOUT THE LENGTH OF THE CIRCUIT IN ADDITION TO THE PHASE, NEUTRAL AND EQUIPMENT GROUND CONDUCTORS.
- ALL BRANCH CIRCUIT HOMERUNS SHALL BE ROUTED IN 34°C. MINIMUM.
- EQUIPMENT SHALL BE OF MATERIALS SUITABLE FOR AND RATED FOR THE ENVIRONMENT IN WHICH THEY ARE TO BE INSTALLED, WITH APPROPRIATE NEMA ENCLOSURE RATING.
- ALL BRANCH CIRCUIT CONDUITS SHALL CONTAIN A MINIMUM OF (2) #12HWG INSULATED COPPER CONDUCTORS, PLUS A MINIMUM OF (1) #12AWG GROUND WIRE UNLESS OTHERWISE NOTED. ALL BRANCH CIRCUITS AND FEEDERS SHALL HAVE INDIVIDUAL NEUTRAL CONDUCTORS.
- LOCATIONS OF EQUIPMENT SPECIFIED BY OTHER TRADES OR PROVIDED BY OWNER ARE APPROXIMATE. COORDINATE EXACT LOCATIONS IN FIELD PRIOR TO ROUGHING IN AND ROUTING CONDUIT.
- CONTRACTOR SHALL UPSIZE FEEDER AND BRANCH CIRCUIT WIRE SIZE AS REQUIRED TO COMPENSATE VOLTAGE DROP FROM LENGTHENING OF CIRCUITS DUE TO FIELD ROUTING. FINAL INSTALLATION SHALL MEET FLORIDA BUILDING CODE REQUIREMENT OF: MAXIMUM BRANCH CIRCUIT VOLTAGE DROP OF .3%.
- REFER TO VOLTAGE DROP CHART BELOW FOR CONDUCTOR SIZES FOR BRANCH CIRCUITS

120 VOLT CIRCUIT LENGTH	MIN. CONDUCTOR SIZE FOR VOLTAGE DROP
0 - 70'	#12 AWG
71' - 115'	#10 AWG
116' - 180'	#8 AWG

18" AND ABOVE TO BE SUBMITTED BY EC AND APPROVED BY ENGINEER.

277 VOLT CIRCUIT LENGTH	MIN. CONDUCTOR SIZE FOR VOLTAGE DROP
0 - 140'	#12 AWG
141' - 220'	#10 AWG
221' - 350'	#8 AWG

35" AND ABOVE TO BE SUBMITTED BY EC AND APPROVED BY ENGINEER.
- PROVIDE HACR RATED CIRCUIT BREAKERS FOR ALL HVAC EQUIPMENT.
- CONTRACTOR SHALL PROVIDE WITHIN 30 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE RECORD DRAWINGS OF THE ACTUAL INSTALLATION INCLUDING: SINGLE LINE DIAGRAM OF THE BUILDING ELECTRICAL DISTRIBUTION SYSTEM AND FLOOR PLANS INDICATING LOCATION AND AREA SERVED FOR ALL DISTRIBUTION.
- SEAL ALL CONDUIT PENETRATIONS THAT PASS THROUGH EXTERIOR BUILDING WALLS.



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ELECTRICAL
LEGEND, NOTES,
DIAGRAM

ST. JOHNS RIVER STATE COLLEGE
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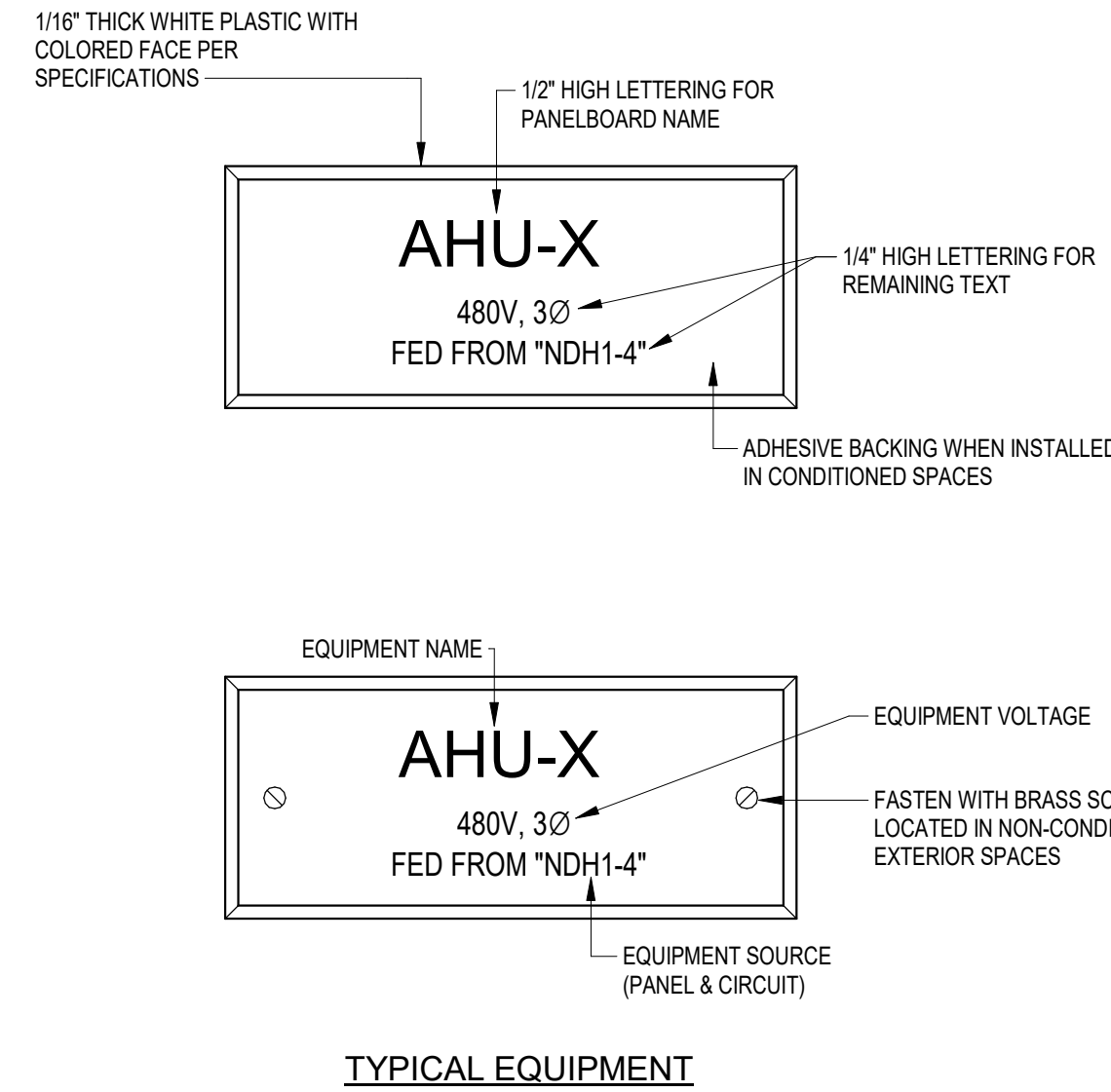
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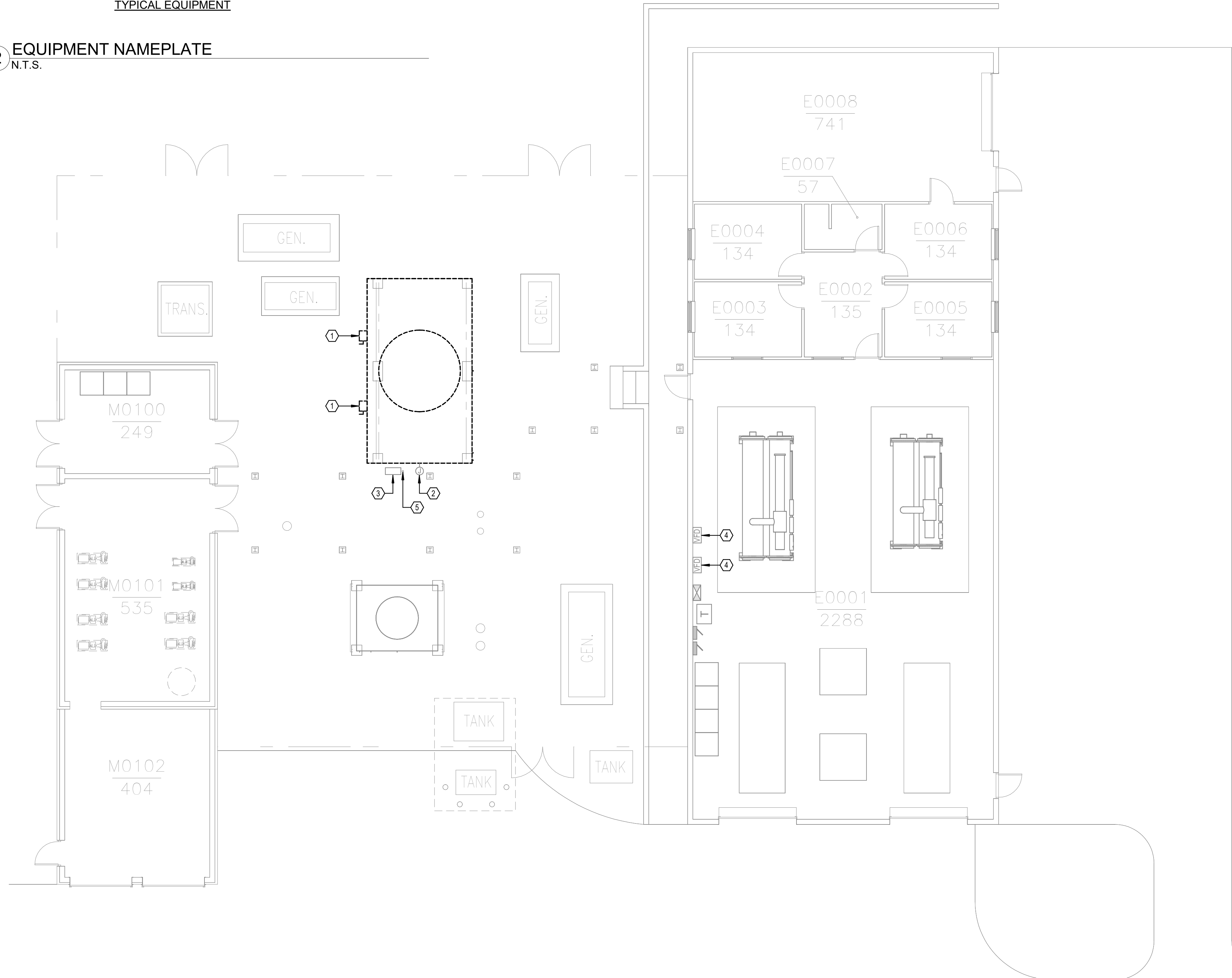
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- KEYED NOTES:**
- 1 REMOVE EXISTING DISCONNECTS. REMOVE ASSOCIATED CONDUIT AND CONDUCTORS TO EXISTING TO REMAIN JUNCTION BOX.
 - 2 EXISTING CONTROLS CIRCUIT TO BE DISCONNECTED. CIRCUIT SHALL REMAIN.
 - 3 EXISTING JUNCTION BOX TO REMAIN.
 - 4 EXISTING VFDS SHALL REMAIN AND BE USED TO CONTROL NEW TOWER FANS. CONDUIT/CONDUCTORS ARE EXISTING TO REMAIN.
 - 5 EXISTING CONDUIT FOR BASIN HEATER CIRCUIT SHALL REMAIN.

2 EQUIPMENT NAMEPLATE
N.T.S.



1 ELECTRICAL DEMOLITION PLAN
1/8" = 1'-0"

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ELECTRICAL DEMOLITION PLAN

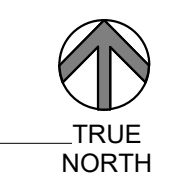
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ELECTRICAL NEW WORK PLAN

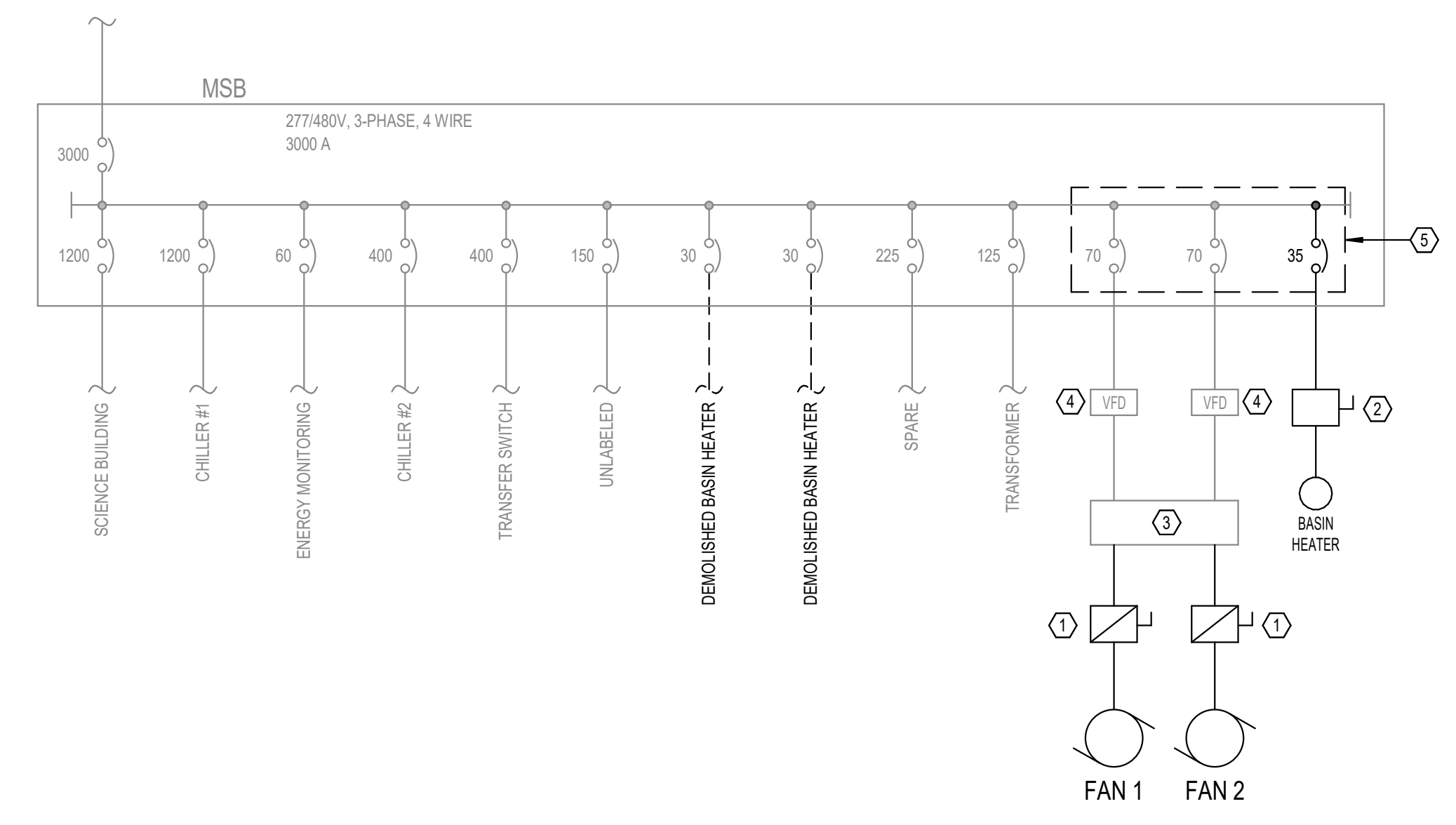
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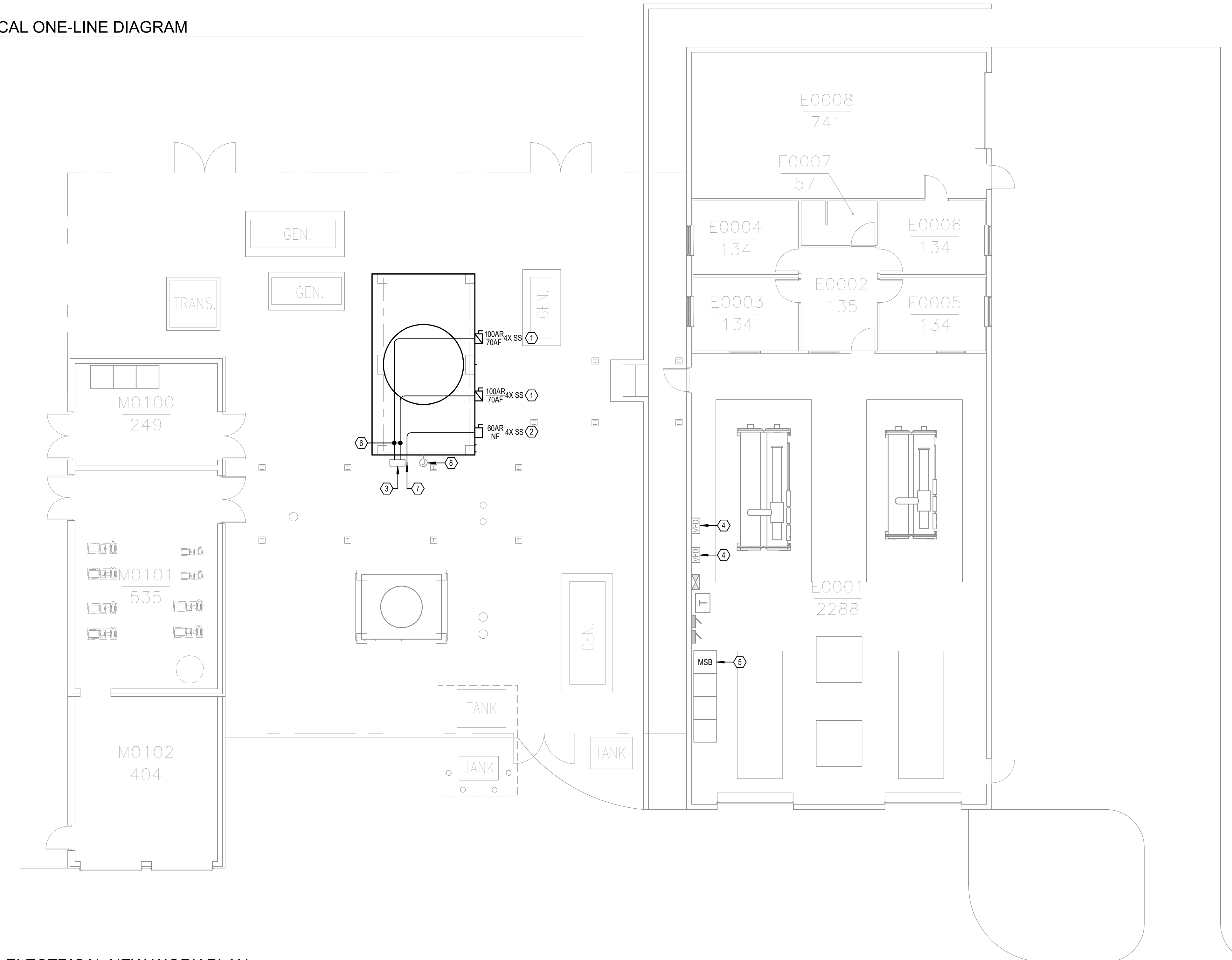
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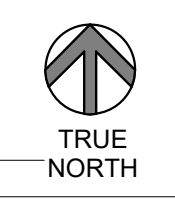


- KEYED NOTES:**
- COORDINATE NEW DISCONNECT LOCATION WITH MOTOR LOCATION. PROVIDE 3# 1/8 GND IN 1-1/4" FROM MOTOR TO DISCONNECT TO EXISTING JUNCTION BOX.
 - PROVIDE 3# 1/8 GND IN 3/4" FROM SWITCHBOARD TO DISCONNECT AND DISCONNECT TO HEATER.
 - EXISTING JUNCTION BOX. TERMINATE NEW CONDUITS AT BOX AND SPLICE CONDUCTORS TO EXISTING COOLING TOWER FAN CONDUCTORS. UTILIZE "POLARIS" INSULATED TYPE SPLICES. REPLACE JUNCTION BOX AS REQUIRED IF NOT PROPERLY SIZED FOR SPLICES PER NEC.
 - REPROGRAM EXISTING "B.A.C." 30HP VFDs FOR CONTROL OF NEW 25HP MOTORS.
 - UTILIZE EXISTING 70A/3P BREAKERS AT MSB FOR COOLING TOWER FANS. PROVIDE NEW 35A/3P BREAKER FOR NEW BASIN HEATERS.
 - ROUTE CONDUITS BENEATH TOWER.
 - UTILIZE EXISTING CONDUIT BETWEEN COOLING TOWER LOCATION AND SWITCHBOARD.
 - EXISTING CONTROL CIRCUIT SHALL REMAIN AND BE REWORKED TO NEW 120V CONTROLS AT TOWER AS REQUIRED.

2 ELECTRICAL ONE-LINE DIAGRAM
 N.T.S.



1 ELECTRICAL NEW WORK PLAN
 1/8" = 1'-0"



HVAC SYMBOL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	-EXHAUST DUCT UP THROUGH SLAB W/FAN ON ROOF ABOVE		-FIRE DAMPER (WITH ACCESS PANEL)		-TERMINAL UNIT, VARIABLE/CONSTANT AIR VOLUME
	-EXHAUST FAN ON ROOF W/DUCT DOWN THROUGH ROOF		-FIRE & SMOKE DAMPER (WITH ACCESS PANEL)		-TERMINAL UNIT, VARIABLE/CONSTANT AIR VOLUME WITH ELECTRIC HEAT
	-OUTSIDE AIR DUCT UP THROUGH SLAB W/FAN ON ROOF ABOVE		-EXISTING FIRE DAMPER TO REMAIN		-TERMINAL UNIT, VARIABLE/CONSTANT AIR VOLUME, FAN POWERED
	-OUTSIDE AIR FAN ON ROOF W/DUCT DOWN THROUGH ROOF		-EXISTING FIRE & SMOKE DAMPER TO REMAIN		-TERMINAL UNIT, VARIABLE/CONSTANT AIR VOLUME, FAN POWERED
	-CEILING DIFFUSER, ROUND NECK (CEILING DIFFUSERS ARE 4-WAY THRU UNO)		-SOUND ATTENUATOR		-TERMINAL UNIT, VARIABLE/CONSTANT AIR VOLUME, FAN POWERED, WITH ELECTRIC HEAT
	-ROUND DIFFUSER		-MOTOR OPERATED CONTROL DAMPER (MOD)		-ELECTRIC DUCT HEATER (W/PANEL CLEARANCE)
	-CEILING RETURN		-AIR FLOW MEASURING STATION		-HYDRONIC REHEAT COIL
	-CEILING EXHAUST		-MANUAL BALANCING DAMPER		-IN-LINE CENTRIFUGAL FAN
	-CEILING DIFFUSER, RECTANGULAR OR SQUARE NECK (CEILING DIFFUSERS ARE 4-WAY THRU UNO)		-DOOR GRILLE		-PACKAGED TERMINAL AIR CONDITIONER (PTAC)
	-SUPPLY REGISTER OR GRILLE (VERTICAL MOUNT, SIDEWALL)		-UNDERCUT DOOR		-CHANGE OF ELEVATION
	-RETURN/EXHAUST REGISTER OR GRILLE (VERTICAL MOUNT, SIDEWALL)		-ACCESS DOORS, VERTICAL OR HORIZONTAL		-FLEXIBLE DUCT
	-REVISION REFERENCE		-STAINLESS STEEL DUCTWORK		-TRANSITION, CONCENTRIC
	-DETAIL REFERENCE: TOP - DETAIL#; BOTTOM - DRAWING# SHOWN ON		-FLEXIBLE CONNECTION		-TRANSITION, ECCENTRIC
	-THERMOSTAT/TEMPERATURE SENSOR		-FLAT OVAL DUCT		-TRANSITION, SQUARE TO ROUND
	-HUMIDISTAT/HUMIDITY SENSOR		-NEW DUCTWORK, FIRST DIMENSION IS SIDE SHOWN		-SQUARE THROAT ELBOW W/TURNING VANES
	-DUCT SMOKE DETECTOR		-EXISTING DUCTWORK TO REMAIN		-RADIUS ELBOW
	-CONNECT TO EXISTING		-EXISTING DUCTWORK TO BE REMOVED		-RECTANGULAR/ROUND BRANCH TAKE-OFF OR ROUND/ROUND BRANCH TAKE-OFF
	-DEMOLISH TO POINT INDICATED		-DUCT ELBOW, POSITIVE PRESSURE (SUPPLY)		-SQUARE THROAT TEE
	-MOTORIZED CONTROL DAMPER		-DUCT ELBOW, EXHAUST		-RADIUS TEE
	-TEMPERATURE SENSOR		-DUCT ELBOW, NEGATIVE PRESSURE, RETURN		-RECTANGLE-TO-ROUND TAKE-OFF
	-PRESSURE SENSOR		-DUCT ELBOW UP THROUGH ROOF OR SLAB ABOVE		-STANDARD BRANCH TAKE-OFF
	-BACKDRAFT DAMPER		-RECTANGULAR DUCT SECTION UP, NEGATIVE PRESSURE, RETURN		-SPIN-IN TAKE-OFF
	-NEUTRAL RELATIVE PRESSURE		-RECTANGULAR DUCT SECTION UP, EXHAUST		
	-POSITIVE RELATIVE PRESSURE		-ROUND DUCT SECTION UP		
	-NEGATIVE RELATIVE PRESSURE		-FLAT OVAL DUCT SECTION UP		
	-SHEET NOTE CALLOUT				
	-SHEET NOTE CALLOUT				
	-SHEET NOTE CALLOUT				
	-CEILING MOUNTED ACCESS DOOR				

HVAC ABBREVIATIONS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
AFD	-ADJUSTABLE FREQUENCY DRIVE	MOC	-MAXIMUM OVER CURRENT PROTECTION
AFF	-ABOVE FINISHED FLOOR	MCA	-MINIMUM CIRCUIT AMPS
AFR	-ABOVE FINISHED ROOF	MOD	-MOTOR OPERATED CONTROL DAMPER (MOD)
AHU	-AIR HANDLING UNIT	NC	-NORMALLY CLOSED
AP	-ACCESS PANEL	NO	-NORMALLY OPEN
BOP	-BOTTOM OF PIPE	NTS	-NOT TO SCALE
BHP	-BRAKE HORSEPOWER	OA	-OUTSIDE AIR
BTU	-BRITISH THERMAL UNIT	OAL	-OUTSIDE AIR LOUVER
CL	-CENTER LINE	PRV	-PRESSURE REDUCING VALVE
¢	-CFM (CUBIC FEET PER MINUTE)	PRS	-PRESSURE REDUCING STATION
CD	-CEILING DIFFUSER	PSI	-POUNDS PER SQUARE INCH
CT	-CEILING TOWER	PSIG	-PSI GAUGE
CV	-CONSTANT AIR VOLUME	PTAC	-PACKAGED TERMINAL AIR CONDITIONER
CFM	-CUBIC FEET PER MINUTE	PVC	-POLYVINYL CHLORIDE PIPE
CU	-CONDENSING UNIT	RA	-RETURN AIR
DDC	-DIRECT DIGITAL CONTROLS	RHC	-REHEAT COIL
DN	-DOWN	RHP	-ROOFTOP HEAT PUMP
EAT	-ENTERING AIR TEMPERATURE	RPM	-REVOLUTIONS PER MINUTE
ESP	-EXTERNAL STATIC PRESSURE	RS/L	-REFRIGERANT SUCTION & LIQUID LINES
EWH	-ENTERING WATER TEMPERATURE	RTU	-ROOFTOP AIR HANDLING UNIT
FD	-FIRE DAMPER	SA	-SUPPLY AIR
FF	-FINAL FILTERS	SP	-STATIC PRESSURE
FLA	-FULL LOAD AMPS	TSP	-TOTAL STATIC PRESSURE
FPM	-FEET PER MINUTE	UNO	-UNLESS NOTED OTHERWISE
GPM	-GALLONS PER MINUTE	VI/PH	-VOLTS/PHASE
KW	-KILOWATT	VAV	-VARIABLE AIR VOLUME
LAT	-LEAVING AIR TEMPERATURE	VFD	-VARIABLE FREQUENCY DRIVE
LWT	-LEAVING WATER TEMPERATURE	ΔP	-CHANGE IN PRESSURE
LD	-LINEAR DIFFUSER	ΔT	-CHANGE IN TEMPERATURE
MBH	-THOUSAND BTUs PER HOUR		

GENERAL NOTES

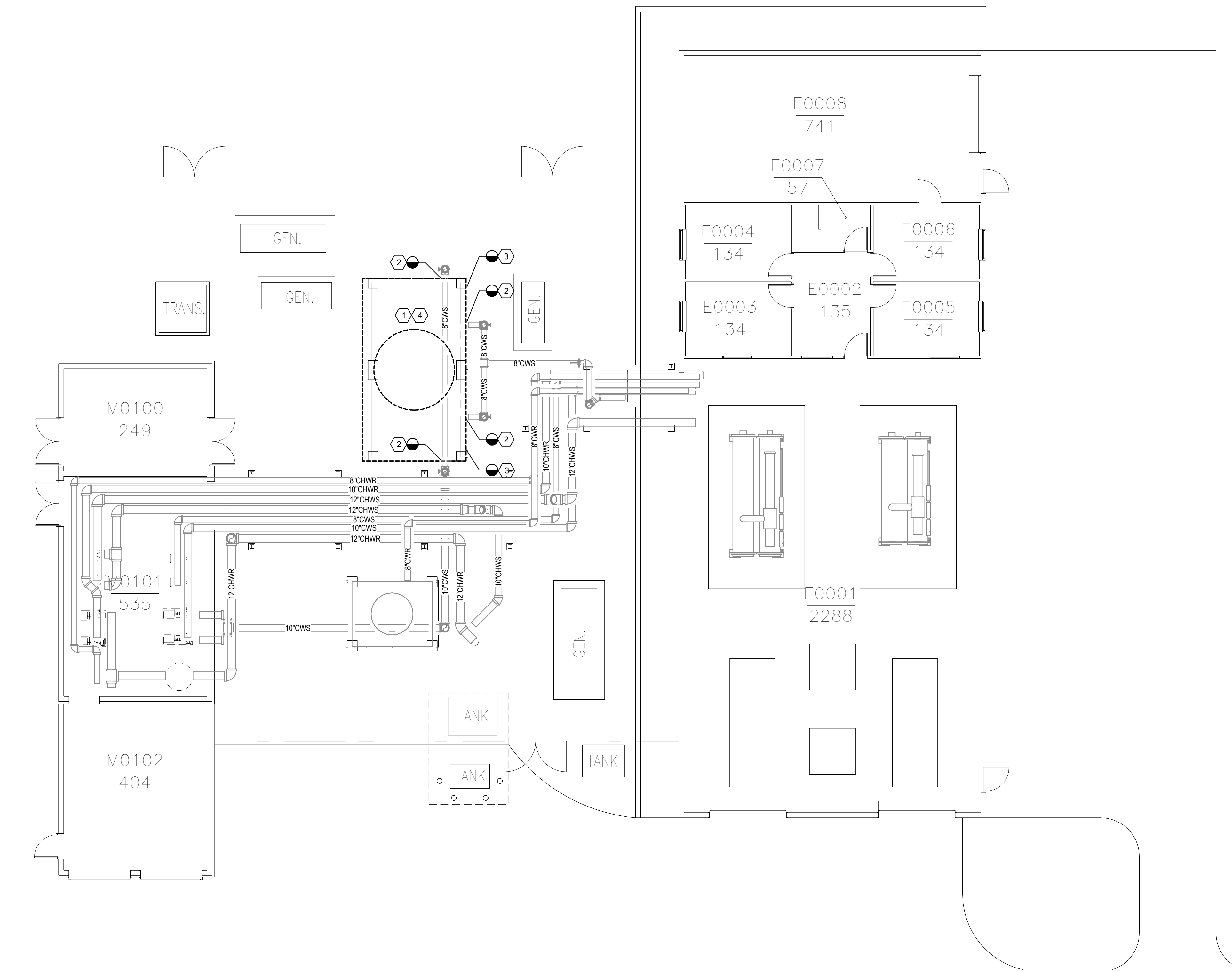
- CONNECTION TO EQUIPMENT SHALL BE VERIFIED WITH MANUFACTURER'S CERTIFIED DRAWINGS. TRANSITIONS TO ALL EQUIPMENT SHALL BE VERIFIED AND PROVIDED FOR EQUIPMENT FURNISHED.
- DIMENSIONS SHALL BE FIELD-VERIFIED AND COORDINATED PRIOR TO PROCUREMENT OR FABRICATION. COORDINATE THE WORK WITH OTHER TRADES INVOLVED. FIELD MODIFICATIONS SUCH AS OFFSETS IN PIPING OR DUCTWORK (INCLUDING DIVIDED DUCTWORK) NEEDED DUE TO OBSTRUCTIONS OR INTERFERENCES SHALL BE PROVIDED AT NO ADDITIONAL COST. FOR PROJECTS INVOLVING RENOVATION, COORDINATE NEW WORK WITH EXISTING ELEMENTS SUCH AS THE BUILDING STRUCTURE AND ARCHITECTURAL FEATURES, SPRINKLER PIPING, LIGHTS, PLUMBING, AND ELECTRICAL CONDUIT.
- ALL EQUIPMENT, PIPE, ETC., SHALL BE SUPPORTED AS DETAILED AND/OR SPECIFIED. PROVIDE ADDITIONAL SUPPORTS AS REQUIRED TO PROVIDE A VIBRATION-FREE, RIGID INSTALLATION. REFER TO TYPICAL DETAILS FOR PIPING AND INSTALLATION OF EQUIPMENT.
- ALL PIPING IS SHOWN SCHEMATICALLY. PROVIDE ALL TRANSITIONS, TURNING VANES, ELBOWS, FITTINGS, ETC., TO ALLOW SMOOTH FLOWS. INTERRUPTIONS TO EXISTING SERVICES SHALL BE SCHEDULED FOR TIMES OTHER THAN NORMAL OPERATING HOURS (SUCH AS NIGHTS AND WEEKENDS). SUCH INTERRUPTIONS TO SERVICES SHALL NOT BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF THE OWNER'S REPRESENTATIVE AND PROPER COORDINATION WITH OTHER TRADES. PRE-WORK SHALL BE PERFORMED TO MAKE THE SHUTDOWN PERIOD AS BRIEF AS POSSIBLE.
- ALL EQUIPMENT, PIPING, ETC., TO BE REMOVED SHALL REMAIN PROPERTY OF THE OWNER OR DISPOSED OF LEGALLY, AS DIRECTED BY OWNER.
- MAINTAIN CLEARANCE OF A MINIMUM OF 6" BETWEEN DUCTWORK, PIPING, EQUIPMENT, ETC., AND ALL FIRE RATED AND FIRE/SMOKE RATED PARTITIONS. TO ALLOW FOR INSPECTIONS OF RATED WALLS.
- UNLESS OTHERWISE NOTED, ALL EQUIPMENT AND VALVE DRAINS SHALL BE INDEPENDENTLY PIPED FULL SIZE TO THE NEAREST PLUMBING DRAIN. SLEEVE AND SEAL ALL PIPING PENETRATIONS THROUGH BUILDING PARTITIONS.

HVAC PIPING SYMBOL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	-CONDENSER WATER SUPPLY		-FLOW DIRECTION		-P-TRAP
	-CONDENSER WATER RETURN		-GATE VALVE		-MANUAL VENT
	-CHILLED WATER SUPPLY		-BALL VALVE		-PRESSURE GAUGE
	-CHILLED WATER RETURN		-CALIBRATING BALANCING VALVE		-FLOW METER
	-CONDENSATE		-BUTTERFLY VALVE		-WATER METER
	-CONDENSATE RETURN		-GAS COCK		-IN-LINE PUMP
	-PUMPED CONDENSATE		-UNION		-IN-LINE PUMP
	-HOT WATER RETURN		-STRAINER		-CAP
	-HOT WATER SUPPLY		-CONTROL VALVE		-CONNECTION, BOTTOM
	-HIGH PRESSURE STEAM SUPPLY		-SOLENOID VALVE		-CONNECTION, TOP
	-MEDIUM PRESSURE STEAM SUPPLY		-PSI REG.		-COUPLING
	-LOW PRESSURE STEAM SUPPLY		-CHECK VALVE		-ELBOW, 90°
	-HIGH PRESSURE STEAM RETURN		-FLOW SWITCH		-ELBOW, 45°
	-MEDIUM PRESSURE STEAM RETURN		-SLOPE DIRECTION (DOWN)		-ELBOW, TURNED DOWN
	-LOW PRESSURE STEAM RETURN		-FLEX CONNECTION		-ELBOW, TURNED UP
	-REFRIGERANT LIQUID		-O.S.&Y. GATE VALVE		-TEE, OUTLET DOWN
	-REFRIGERANT SUCTION		-STEAM TRAP		-TEE, OUTLET UP
			-THREE-WAY CONTROL VALVE		-45° PIPE RISE (R) / DROP (D)
			-THERMOMETER		-PIPE ANCHORS
			-TWO-WAY CHECK VALVE		-CONCENTRIC REDUCER
			-RELIEF VALVE		-ECCENTRIC REDUCER
			-VALVE ON RISER		

HVAC EQUIPMENT TAGS

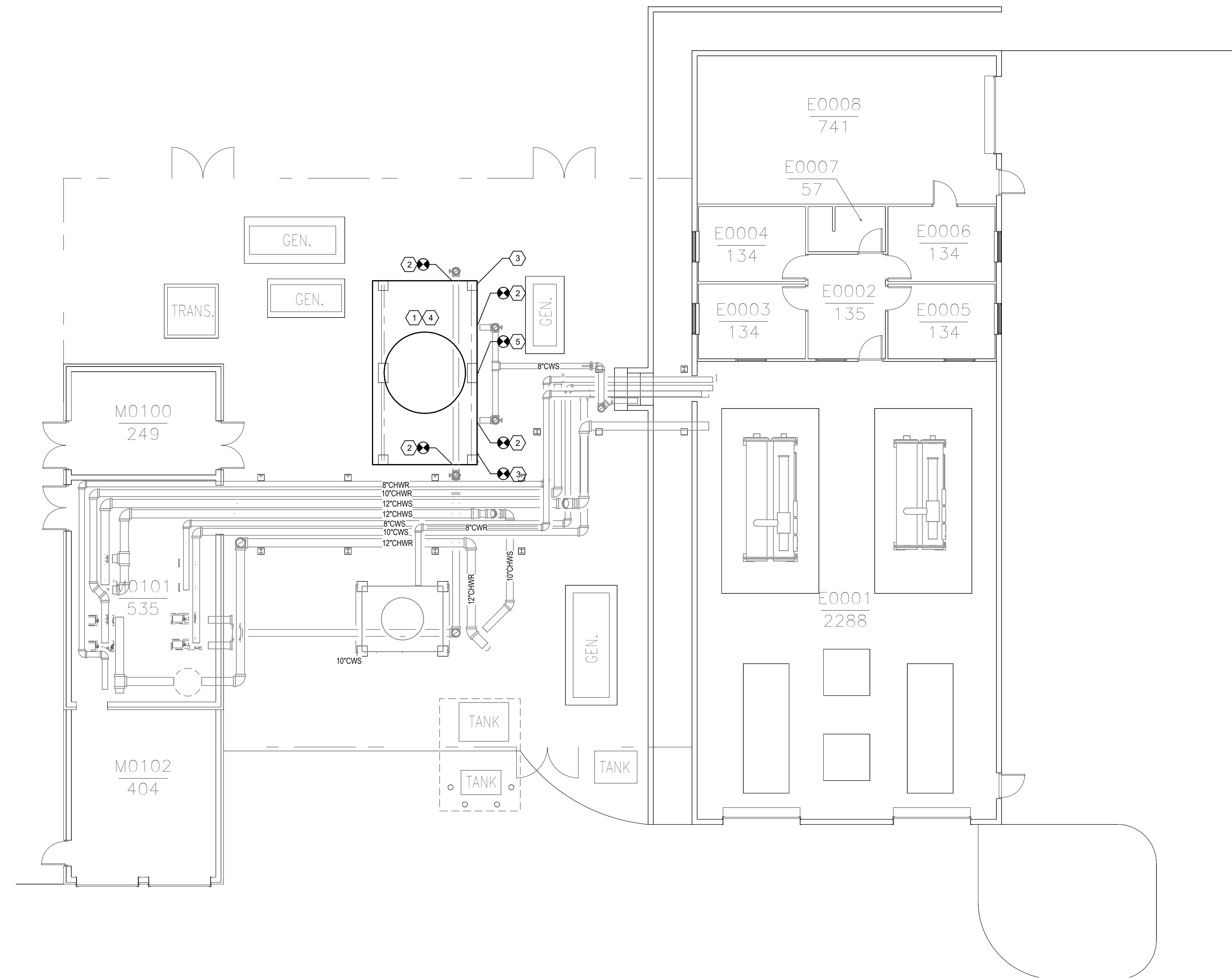
	-TAG		-AIR DISTRIBUTION DEVICE
	-EQUIPMENT IDENTIFIER		-MECHANICAL EQUIPMENT



1 MECHANICAL DEMOLITION PLAN
1/8" = 1'-0"

KEYED NOTES:

- 1 EXISTING 700 TON COOLING TOWER TO BE DEMOLISHED. ALL EXISTING PIPING, CONTROLS WIRING, AND OTHER APPURTENANCES TO BE RETAINED AND PROTECTED FOR REUSE.
- 2 DEMOLISH EXISTING CONDENSER WATER PIPING BACK TO ISOLATION VALVE AS REQUIRED FOR DEMOLITION OF COOLING TOWER. PROTECT VALVE AND PREPARE FOR INSTALLATION OF NEW PIPING TO CONNECT TO NEW TOWER.
- 3 POINT OF MAKE-UP WATER SYSTEM TO EXISTING TOWER. RELOCATE CONNECTION POINT TO NEW CONNECTION POINT AS SHOWN ON M-200. RETAIN ALL EXISTING COMPONENTS FOR REUSE AS FEASIBLE.
- 4 EXISTING STRUCTURAL SUPPORTS TO BE RETAINED. NEW SUPPORT STEEL SHALL BE PROVIDED AS NECESSARY TO ACCOMMODATE NEW TOWER FOOTPRINT.



1 MECHANICAL NEW WORK PLAN
1/8" = 1'-0"

KEYED NOTES:

- 1 PROVIDE NEW 700 TON COOLING TOWER IN PLACE OF EXISTING UNIT. ALL EXISTING PIPING, CONTROLS WIRING, AND OTHER APPURTENANCES TO BE RETAINED AND PROTECTED FOR REUSE.
- 2 PROVIDE NEW CONDENSER WATER PIPING BACK TO ISOLATION VALVE AS REQUIRED FOR CONNECTION OF NEW COOLING TOWER.
- 3 POINT OF MAKE-UP WATER SYSTEM TO EXISTING TOWER. CONNECT EXISTING SYSTEM INTO NEW TOWER AS PER MANUFACTURER REQUIREMENTS.
- 4 EXISTING COOLING TOWER IS SUPPORTED BY STRUCTURAL STEEL ON CONCRETE COLUMNS. EXISTING STRUCTURAL SUPPORTS TO BE RETAINED. COORDINATE ATTACHMENT WITH MANUFACTURER'S INSTRUCTIONS.
- 5 NEW POINT OF MAKE-UP WATER SYSTEM TO NEW TOWER. RELOCATE ALL COMPONENTS OF SYSTEM TO NEW LOCATION.

COOLING TOWER																								
MARK	MANUFACTURER	MODEL NO.	TYPE	REJECTION CAP	CONDENSER WATER				QTY	FAN			COOLING TOWER		SUMMER AMBIENT WBT	UNIT WEIGHT	ELECTRICAL					REMARKS		
					FLOW GPM	EWT	LWT	PD		DRIVE TYPE	QTY	POWER	VFD	APPROACH			RANGE	FLA	MCA	MOCV	VOLTS		PH	
CT-1	EVAPCO	AT 212-3L24	INDUCED DRAFT	700.0 ton	2100 GPM	95 °F	85 °F	2.60 psi	2	SUPER LOW SOUND	BELT	2	25.0 hp	Yes	5 °F	10 °F	80 °F	30180.00 lbf	60 A	0 A	0 A	480 V	3	CT-1 IS A REPLACEMENT FOR THE EXISTING 700 TON COOLING TOWER TO BE DEMOLISHED
DCT1	EXISTING	EXISTING	INDUCED DRAFT	700.0 ton	2100 GPM	95 °F	85 °F	0.00 psi	2	STANDARD		2	0.0 hp	Yes	5 °F	10 °F	80 °F	0.00 lbf	0 A	0 A	0 A	0 V	0	

NOTE:

- DCT1 IS EXISTING 700 TON COOLING TOWER TO BE DEMOLISHED.
- CT-1 IS NEW 700 TON COOLING TOWER TO REPLACE DCT1.
- EXISTING CHILLED WATER AND CONDENSER WATER PUMPS TO BE RE-USED
- INTEGRATE NEW 700 TON COOLING TOWER CT-1 INTO EXISTING BUILDING CONTROLS SYSTEM. REVIEW EXISTING CONTROL DEVICES FOR SUITABILITY FOR REUSE. REPLACE AS REQUIRED TO INTEGRATE.
- ALL EXISTING PIPING TO BE REUSED. PROVIDE NEW PIPE AS REQUIRED TO CONNECTION EXISTING SYSTEMS INCLUDING CONDENSER WATER AND MAKE UP WATER TO NEW COOLING TOWER.
- COORDINATE FOOTPRINT OF TOWER WITH EXISTING STRUCTURAL SUPPORTS.
- PROVIDE WITH STAINLESS STEEL FAN SHAFT, STAINLESS STEEL 316 BASIN, AND 304 UPPER.

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THINK. LISTEN. CREATE.

REVISION	BY



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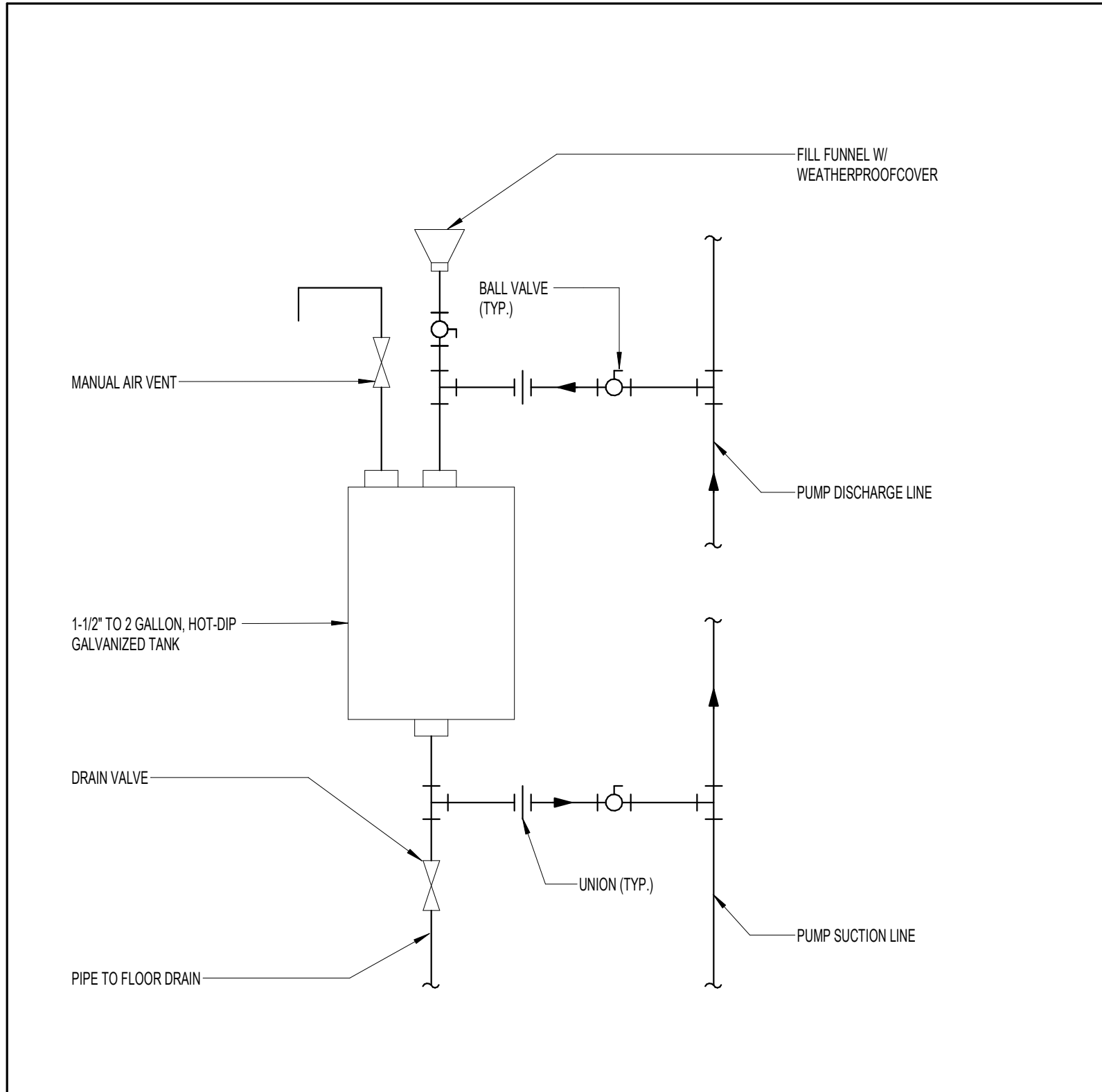
MECHANICAL SCHEDULES

ST. JOHNS RIVER STATE COLLEGE COOLING TOWER REPLACEMENT OPC
 ORANGE PARK, FL 32065

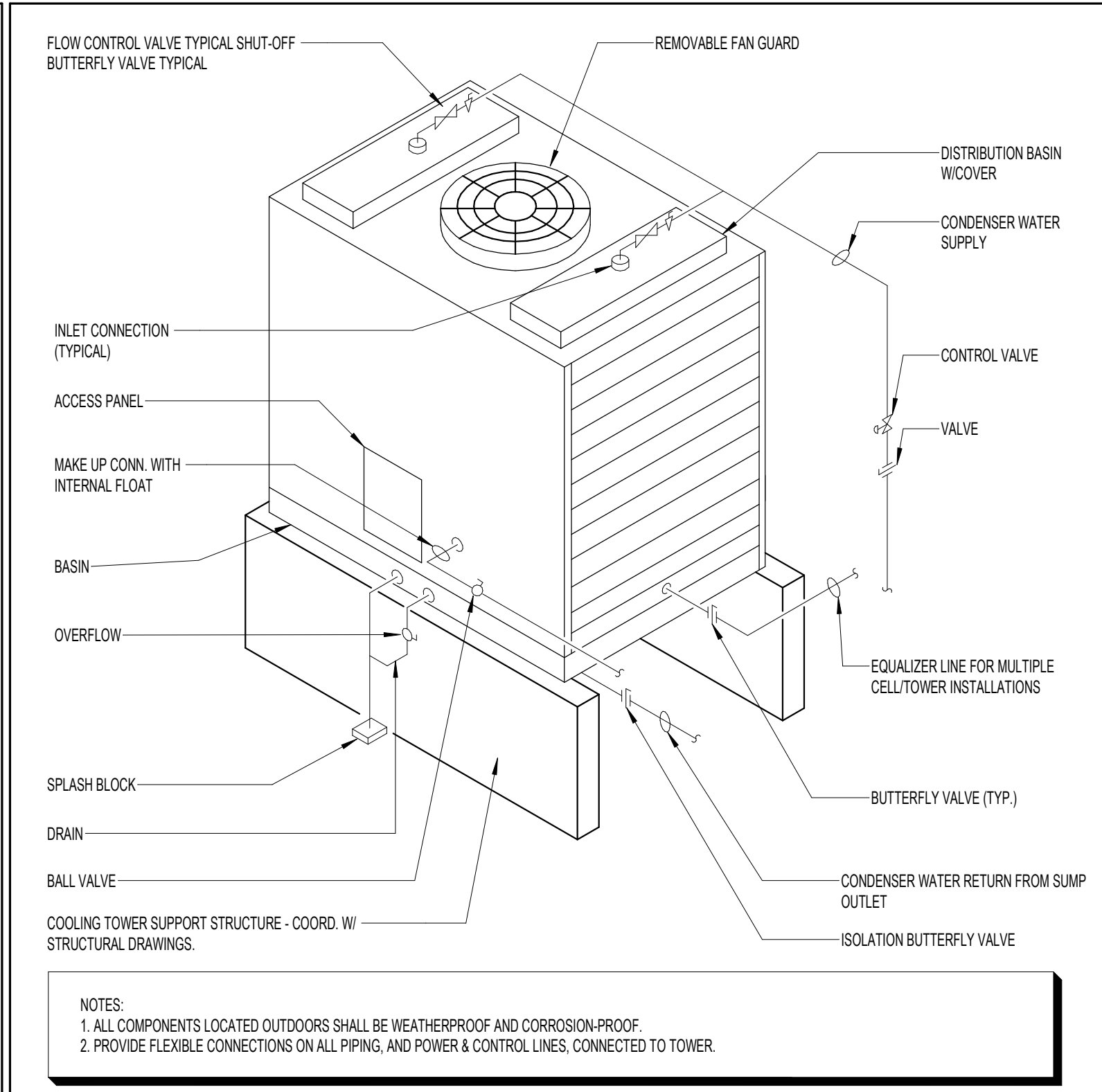
Seal/Signature:

Date: 2/1/22
 Scale: 12" = 1'-0"
 Drawn: MEA
 Job: 015W07A
 Sheet:

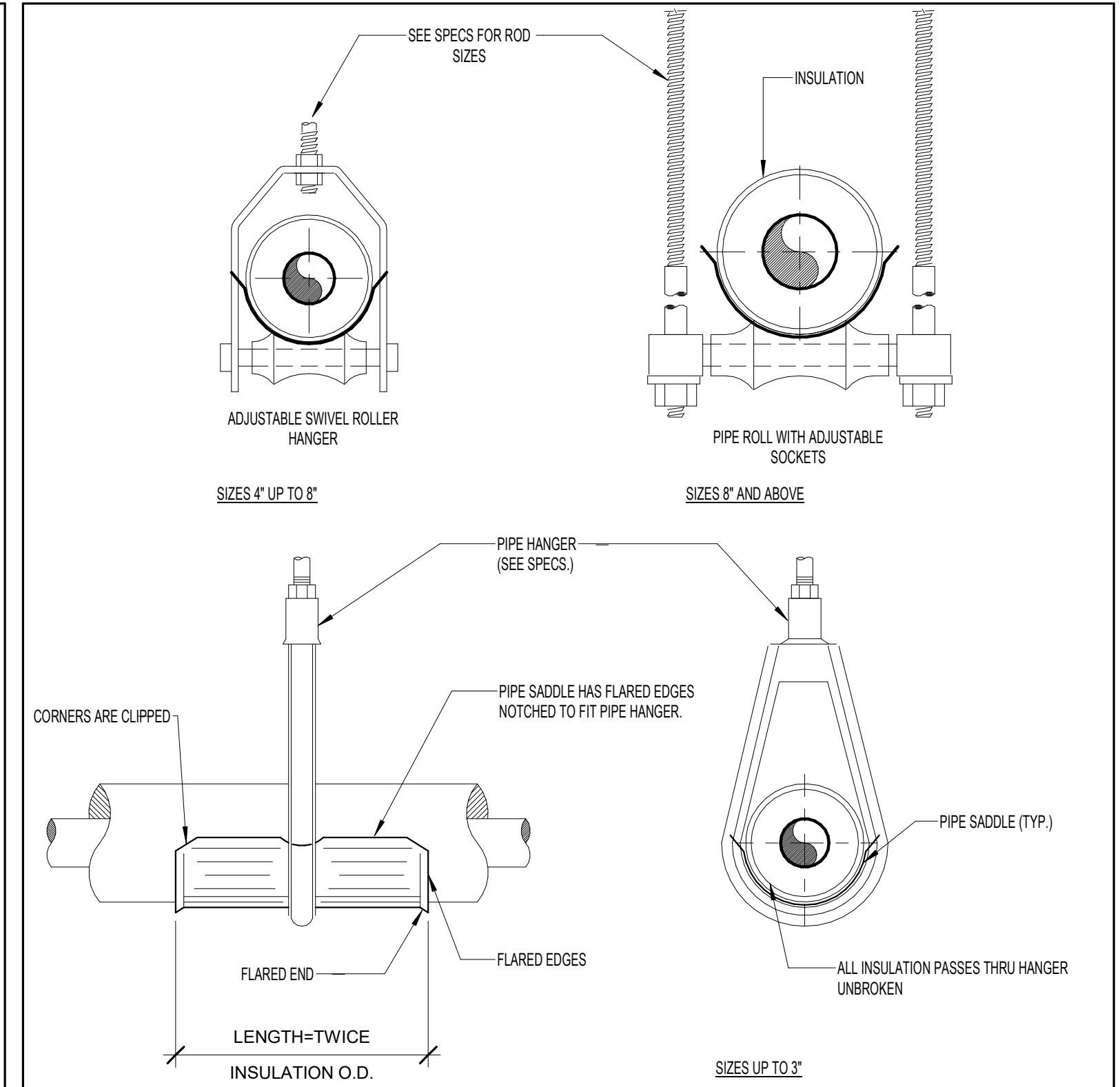
M300



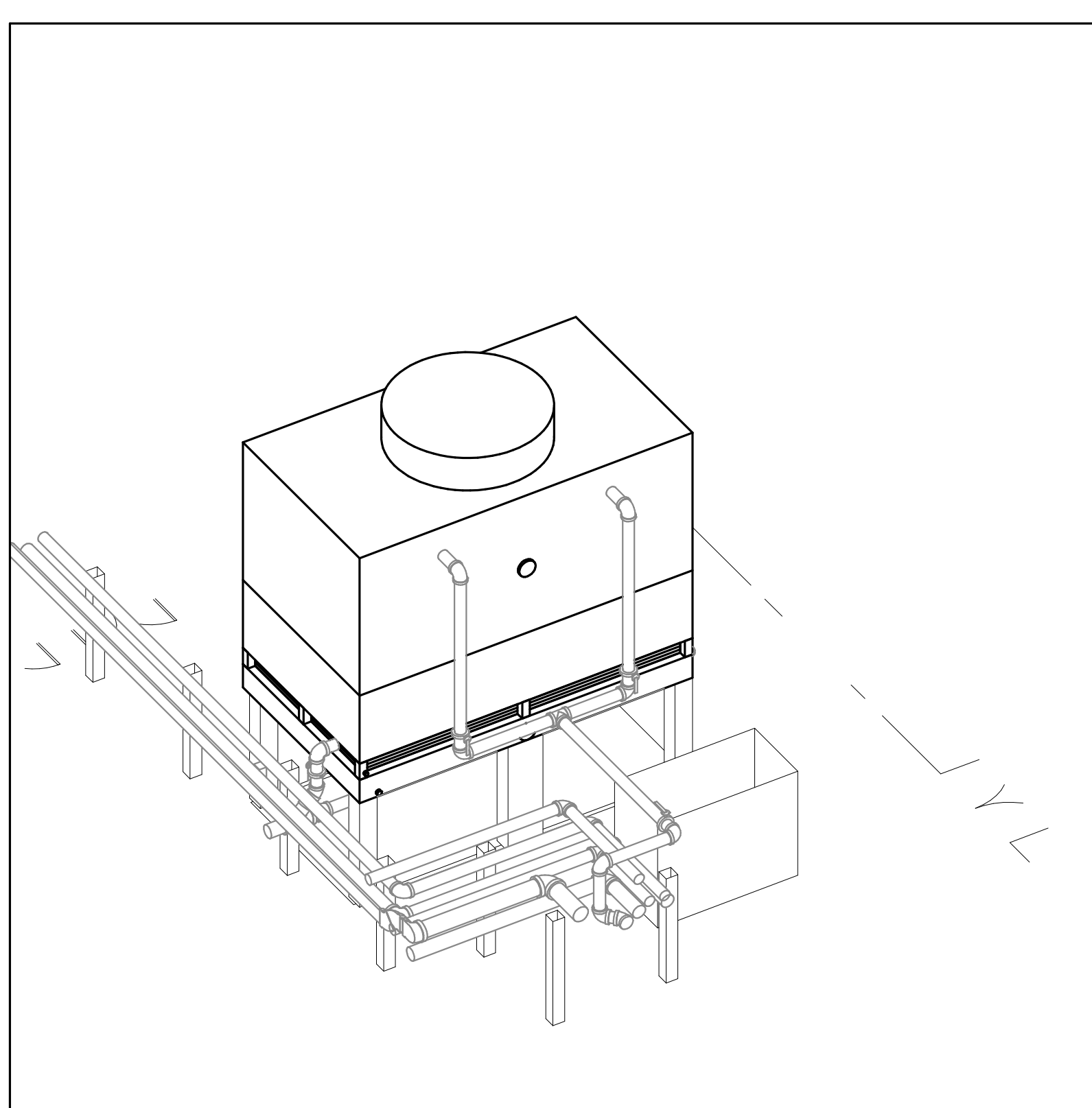
CHEMICAL SHOT FEEDER
 No Scale **1**



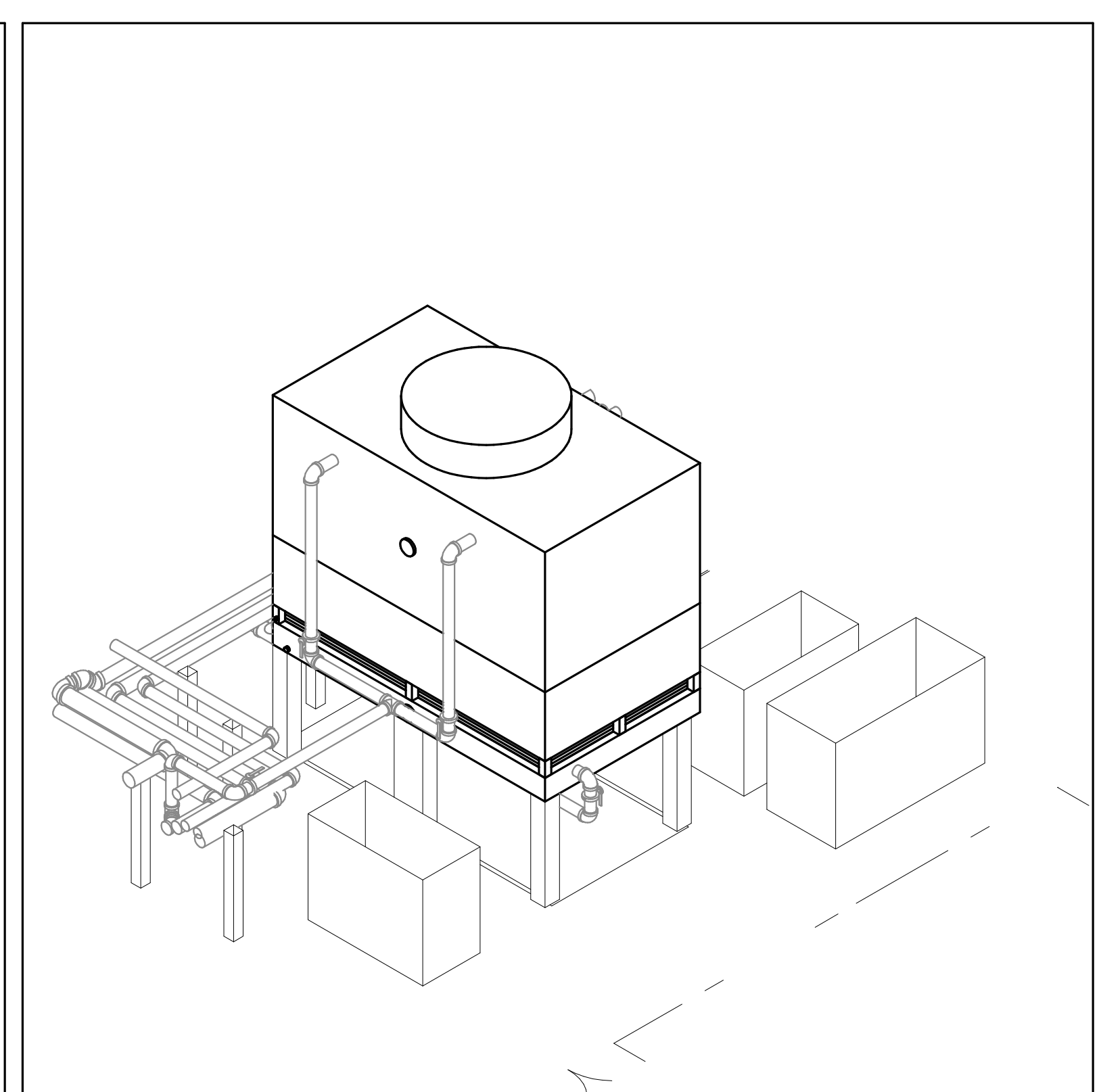
COOLING TOWER (COUNTERFLOW TYPE) PIPING
 No Scale **2**



INSULATED PIPE HANGER
 No Scale **4**



ISOMETRIC NEW COOLING TOWER
 No Scale **7**



ISOMETRIC NEW COOLING TOWER 2
 No Scale **8**