MECHANICAL SYMBOL LEGEND

GENERAL SYMBOLS

- EQUIPMENT IDENTITY (SEE EQUIPMENT ABBREVIATION LIST AND SCHEDULES)
- EQUIPMENT NUMBER
- SYSTEM NUMBER (IF APPLICABLE)
- INDICATES DETAIL, PLAN, SECTION, AND/OR DIAGRAM(APPLIES ONLY WHERE INDICATED ON DRAWINGS)
- INDICATES DRAWING ON WHICH DETAIL APPEARS
- INDICATES TYPICAL DETAIL (APPLIES TO ALL CONTRACT DRAWINGS)
- INDICATES DRAWING ON WHICH DETAIL APPEARS
- INDICATES SECTION NUMBER
- INDICATES ON WHICH DRAWING SECTION APPEARS
- INDICATES REVISION & NUMBER
- CONNECT NEW TO EXISTING
- DEMOLISH TO THIS POINT
- KEYED NOTE NUMBER
- INSERTION TYPE FLOW METER
- UNDERCUT DOOR
- DOOR LOUVER (FREE AREA REQUIRED INDICATED IN SQUARE FEET)
- SUPPLY AIR
- RETURN AIR
- EXHAUST AIR
- FIRE DAMPER W/ ACCESS DOOR
- SMOKE DAMPER W/ ACCESS DOOR
- SMOKE DETECTOR
- THERMOSTAT

DUCT SYMBOLS

DOUBLE LINE		SINGLE LINE
	EXISTING EQUIPMENT OR DUCTWORK TO BE REMOVED.	
	EXISTING DUCTWORK TO REMAIN	
	NEW DUCTWORK	
VD	MANUAL VOLUME DAMPER (MVD) MOTOR OPERATED DAMPER (MOD)	VD
AD	ACCESS DOOR	AD
AD	RADIUS ELBOW (R=1.5)	
	ELBOW W/ TURNING VANES	
	REC. BRANCH DUCT TAKE-OFF W/ VD	
	ROUND BRANCH DUCT TAKE-OFF W/ VD	
D R	RISE OR DROP DIRECTION OF AIR FLOW	D R
	FLEXIBLE CONNECTION (FXC)	
A CFM	DIFFUSER	A CFM
A CFM	SUPPLY AIR GRILLE (G) OR SUPPLY AIR REGISTER (R)	A CFM

PIPING SYMBOLS

- PIPE RISING UP
- PIPE DROPPING DOWN
- DIRECTION OF FLOW
- GATE VALVE
- BUTTERFLY VALVE
- BALL VALVE
- CHECK VALVE
- AUTOMATIC CONTROL VALVE
- AUTOMATIC CONTROL VALVE (3-WAY)
- PRESSURE REDUCING VALVE (PSI)
- STRAINER
- F.S. FLOW SWITCH
- THERMOMETER
- PRESSURE GAUGE
- PIPE WELL

MECHANICAL ABBREVIATIONS LEGEND

AFF	ABOVE FINISHED FLOOR	DN	DOWN	HPS	HIGH PRESSURE STEAM	PVC	POLYVINYL CHLORIDE
AFG	ABOVE FINISHED GRADE	DO	DIGITAL OUTPUT	HWS	HOT WATER RETURN	RA	RETURN AIR
AFR	ABOVE FINISHED ROOF	DWG	DRAWING	IAQ	INDOOR AIR QUALITY	RH	RELATIVE HUMIDITY
AHU	AIR HANDLING UNIT	DP	DIFFERENTIAL PRESSURE	IN	INCH	RPM	REVOLUTIONS PER MINUTE
AI	ANALOG INPUT	EA	EXHAUST AIR	KW	KILOWATT	RS/L	REFRIGERANT SUCTION/LIQUID
AO	ANALOG OUTPUT	EER	ENERGY EFFICIENCY RATION	LAT	LEAVING AIR TEMPERATURE	RTU	ROOFTOP PACKAGED UNIT
AUTO	AUTOMATIC	EF	EXHAUST FAN	LBS	POUNDS	SA	SUPPLY AIR
BOD	BOTTOM OF DUCT	EAT	ENTERING AIR TEMPERATURE	LPS	LOW PRESSURE STEAM	SF	SQUARE FEET
BOP	BOTTOM OF PIPE	ESP	EXTERNAL STATIC PRESSURE	LPR	LOW PRESSURE RETURN	SS	START/STOP SIGNAL
BHP	BRAKE HORSE POWER	EWT	ENTERING WATER TEMPERATURE	LWT	LEAVING WATER TEMPERATURE	S.S.	STAINLESS STEEL
BTU	BRITISH THERMAL UNIT	ERV	ENERGY RECOVERY VENTILATOR	M	MOTORIZED	SP	STATIC PRESSURE
BTUH	BRITISH THERMAL UNIT PER HOUR	FC	FAIL CLOSED	MBH	THOUSAND BTUH	T	TEMPERATURE
C	COMMON	FC	FAN COIL (EXISTING)	MCA	MINIMUM CIRCUIT AMPACITY	V-PH	VOLTAGE-PHASE
CD	CONDENSATE	FCU	FAN COIL UNIT	MOCP	MAXIMUM OVER CURRENT PROTECTIONS	TD	TIME DELAY
CFM	CUBIC FEET PER MINUTE	FD	FIRE DAMPER	NC	NORMALLY CLOSED	TS	TEMPERATURE SENSOR
CH	CHILLLER	FF	FLOW FEEDBACK/STATUS SIGNAL	NO	NORMALLY OPEN	TSP	TOTAL STATIC PRESSURE
CHWS	CHILLED WATER SUPPLY	FLA	FULL LOAD AMPS	NTS	NOT TO SCALE	UH	UNIT HEATER
CHWR	CHILLED WATER RETURN	FO	FAIL OPEN	OBD	OPPOSED BLADE DAMPER	UNO	UNLESS OTHERWISE NOTED
CO2	CARBON DIOXIDE	FPM	FEET PER MINUTE	OA	OUTDOOR AIR	VD	VOLUME DAMPER
COP	COEFFICIENT OF PERFORMANCE	FT	FEET	P	PRESSURE	VFD	VARIABLE FREQUENCY DRIVE
CU	CONDENSING UNIT	GPM	GALLONS PER MINUTE	PF	PROPORTIONAL, LINEARIZED FEEDBACK, 4-20mA SIGNAL	V/PH	VOLTS/PHASE
DAC	DEHUMIDIFICATION AHU	H	HUMIDITY	PRV	PRESSURE REDUCING VALVE	WB	WET BULB
DB	DRY BULB	HS	HUMIDISTAT	PRS	PRESSURE REDUCING STATION	WG	WATER GAUGE
DCU	DEHUMIDIFICATION CU	HP	HEAT PUMP	PSI	POUNDS PER SQUARE INCH	WR	CHILLED WATER RESET 4-20 mA SIGNAL
DDC	DIRECT DIGITAL CONTROL	HP	HORSEPOWER			W/	WITH
DEGF	DEGREE FARENHEIT	HWS	HOT WATER SUPPLY			W/O	WITHOUT
DI	DIGITAL INPUT						

MECHANICAL SPECIFICATIONS

1. GENERAL

   PROVIDE MATERIALS, EQUIPMENT, ACCESSORIES, INCIDENTALS, ARTICLES, ITEMS, OPERATIONS, INCLUDING LABOR, NECESSARY FOR COMPLETION OF WORK INDICATED AND/OR CALLED FOR ON THESE DRAWINGS. SUBMIT SHOP DRAWINGS AND PRODUCT DATA ON ALL EQUIPMENT, PIPE, DUCTWORK, AND INSULATION. PROVIDE A COPY OF BOUND CLOSE-OUT DOCUMENTS TO THE ENGINEER FOR APPROVAL. PROVIDE TWO BOUND COPIES OF CLOSE OUT DOCUMENTS TO THE OWNER'S REPRESENTATIVE AFTER APPROVAL. CLOSE OUT DOCUMENTS SHALL INCLUDE COMPLETE I.O.M.'S FOR EACH PIECE OF EQUIPMENT, A COPY OF THE SEQUENCE OF OPERATIONS AS PROGRAMMED, A FULL-SIZE SET OF AS-BUILT PLANS AND FACTORY AUTHORIZED SERVICE START-UP FORMS FOR EACH PIECE OF EQUIPMENT INDICATING PROPER OPERATION ACROSS THE SEQUENCE.

2. REGULATORY REQUIREMENTS

   ALL WORK SHALL BE PER FBC MECHANICAL, NEC, NFPA, UL, STATE, LOCAL INSPECTORS AND OTHER APPLICABLE CODES.

3. COORDINATION

   INSTALLATION OF ALL WORK SHALL BE COORDINATED WITH OTHER TRADES AND WITH EXISTING CONDITIONS. CONTRACTOR SHALL VISIT THE SITE AND VERIFY SIZES, CAPACITY, PERFORMANCE, AND LOCATION OF ALL EXISTING WORK. AS THIS IS A PHASED PROJECT AND THE TOWER YARD IS VERY CONGESTED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR VISITING THE SITE AND PREPARING DETAILED PIPING SYSTEM SHOP DRAWINGS TO DETERMINE THE ACTUAL ROUTING OF ALL NEW PIPING AND AS COORDINATED WITH THE EXISTING CONDITIONS. ALL VALVES AND CONTROL DEVICES SHALL BE ACCESSIBLE FOR MAINTENANCE AND SHALL BE IDENTIFIED ACCORDINGLY.

4. GUARANTEES

   THE CONTRACTOR SHALL PROVIDE A ONE YEAR WRITTEN GUARANTEE FOR ALL MATERIALS AND LABOR FROM THE DATE OF SUBSTANTIAL COMPLETION. GUARANTEE SHALL COVER ALL LABOR AND MATERIALS TO REPLACE DEFECTIVE MATERIALS AND TO ENSURE PROPER OPERATION OF ALL SYSTEMS.

5. INSTALLATION

   ALL EQUIPMENT AND MATERIAL SHALL BE INSTALLED PER THEIR RESPECTIVE MANUFACTURER'S WRITTEN INSTRUCTIONS AND THE 2020 VERSION OF THE FLORIDA BUILDING CODE. PROVIDE ADEQUATE CLEARANCE FOR ALL EQUIPMENT AND MATERIAL FOR REGULAR MAINTENANCE, REMOVAL AND AIR FLOW. CPM VENDOR SHALL PROVIDE ALL CONTROLS, INCLUDING SENSORS, ACTUATORS, CONTROL POWER TRANSFORMERS, WIRING, PROGRAMMING, ETC., TO OPERATE ALL EQUIPMENT UTILIZED FOR THIS PROJECT. BALANCE FLOW RATES AS REQUIRED TO ACHIEVE MANUFACTURER'S STATED PERFORMANCE AND AS INDICATED IN THESE CONSTRUCTION DOCUMENTS.

6. PIPING

   ALL NEW CHILLED AND CONDENSER WATER PIPING SHALL BE SCHEDULE 40 ERW STEEL IN COMPLIANCE WITH ASTM A53. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE PREVAILING CODES AND RELEVANT STANDARDS IN EFFECT AT THE TIME OF THE CONSTRUCTION. PROVIDE PIPE HANGERS AND STANDS SPACED NO GREATER THAN THE MAXIMUM ALLOWABLE SPACING AS OUTLINED IN FBC 2020. PROVIDE CLEVIS HANGERS OR PIPE STANDS WITH INSULATION SHIELDS FOR ALL NEW CHILLED WATER PIPING. ANY SHUT-DOWNS OF THE EXISTING SYSTEMS SHALL BE COORDINATED WITH THE OWNER A MINIMUM OF 2 WEEKS AHEAD OF COMMENCING WORK. ALL VALVES SHALL BE HIGH PERFORMANCE BUTTERFLY VALVES WITH STAINLESS STEEL STEM, DISCS AND RTFE OR SIMILAR RESILIENT SEATS. VALVES SHALL BE FULL LINE SIZE AND SHALL BE AS PROVIDED BY BRAY, DEZURIK, NIBCO, CRANE, OR EQUAL. BALL VALVES OF SIMILAR QUALITY MAY BE USED AT EQUIPMENT CONNECTIONS. MAKE-UP WATER AND DRAIN PIPING SHALL BE SCHEDULE 40 PVC WITH EQUIVALENT BALL VALVES AND SUPPORTS. SUPPORT SPACING SHALL BE A MAXIMUM OF 4' PER FBC. ALL PIPE STANDS AND SUPPORTS ARE TO BE CONSTRUCTED OF GALVANIZED STEEL OR SHALL BE CARBON STEEL PAINTED WITH A CORROSION RESISTANT FINISH.

GENERAL NOTES

1. CONTRACTOR SHALL INSTALL MECHANICAL EQUIPMENT IN ACCORDANCE WITH ALL STATE AND LOCAL CODES. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRANSITIONS, FITTINGS, ELBOWS, DUCTWORK, PIPING, SUPPORTS, ETC. NECESSARY FOR A PROPER INSTALLATION AND OPERATION OF NEW HVAC SYSTEM.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF INSTALLATION AND DEMOLITION WORK WITH OTHER TRADES TO AVOID CONFLICTS. ALL EQUIPMENT SCHEDULED FOR DEMOLITION SHALL BE PRESENTED TO OWNER FOR THE FIRST RIGHT OF REFUSAL. SHOULD THE OWNER REFUSE, ALL EQUIPMENT SHALL BE DISPOSED OF IN A PROPER MANNER.
3. CONTRACTOR SHALL COORDINATE EXACT LOCATIONS OF NEW MECHANICAL EQUIPMENT WITH LIGHT LOCATIONS, TILE LOCATIONS, EXISTING EQUIPMENT, AND BUILDING STRUCTURE. REFER TO ARCHITECTS REFLECTED CEILING PLAN LAYOUT. EXISTING EQUIPMENT, LOCATIONS, AND DATA ARE BASED ON EXISTING DRAWING DATA.
4. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS OF ALL EXISTING EQUIPMENT PRIOR TO THE COMMENCEMENT OF CONSTRUCTION OR DEMOLITION.
5. WHERE CONFLICTS EXIST BETWEEN THE INFORMATION INCLUDED IN THESE DRAWINGS OR BETWEEN INFORMATION PROVIDED IN THESE DRAWINGS AND THE ACTUAL FIELD CONDITIONS OR BETWEEN THESE DRAWINGS AND OTHER TRADES, THE MORE STRINGENT AND/OR HIGHEST COST REQUIREMENTS SHALL APPLY. SHOULD THE CONTRACTOR REQUIRE FURTHER CLARIFICATION, AN RFI SHALL BE SUBMITTED FOR CLARIFICATION. WHERE CONFLICTS DO EXIST, THE PROJECT ENGINEER OF RECORD SHALL HAVE THE SOLE DISCRETION AND RIGHT TO PROVIDE INTERPRETATION OF INTENT OF THE CONTRACT DOCUMENTS AS REQUIRED AND THIS INTERPRETATION SHALL SERVE TO DIRECT THE CONTRACTOR IN ACCORDANCE WITH THE IMPLIED INTENT OF THE CONSTRUCTION DOCUMENTS WITHOUT ADDITIONAL COST TO THE PROJECT.

CONSTRUCTION SEQUENCE

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING A CONSTRUCTION SEQUENCE THAT ALLOWS FOR THE INSTALLATION OF THE NEW CHILLER PLANT MODULES AND COOLING TOWERS WHILE THE EXISTING PLANT REMAINS IN OPERATION. THE FOLLOWING REPRESENTS ONE PATH ALLOWING THE EXISTING PLANT TO REMAIN IN OPERATION WHILE THE NEW PLANT IS CONSTRUCTED. THIS IS ONLY A SUGGESTION AND THE ACTUAL SEQUENCE IS TO BE COORDINATED WITH THE OWNER AND THE CPM VENDOR.

1. POUR THE NEW CHILLER PAD WITH NO DRIVEWAY.
2. SET THE NEW CHILLER PLANT MODULES.
3. REMOVE THE TWO COOLING TOWERS CLOSEST TO THE NEW CHILLER PLANT MODULES.
4. PREPARE TOWER SUPPORT STRUCTURE FOR NEW COOLING TOWERS AND POUR SLAB FOR CONDENSER WATER PUMPS AND FILTRATION UNITS.
5. SET TWO THE NEW COOLING TOWERS ON THE NEW TOWER SUPPORT STRUCTURE.
6. SET THE NEW CONDENSER WATER PUMPS AND FILTRATION UNITS BETWEEN THE NEW COOLING TOWERS AND THE CHILLER PLANT MODULES.
7. CONNECT THE TWO NEW COOLING TOWERS AND NEW PUMPS TO BOTH CHILLER MODULES.
8. PROVIDE PIPING CONNECTIONS WITH SACRIFICIAL VALVES AT THE EXISTING CHILLED WATER PIPE AT THE EXTERIOR OF THE EXISTING CHILLER BUILDING. THIS WILL ALLOW THE EXISTING CHILLER PLANT TO OPERATE AND WHEN THE NEW MODULE IS OPERATIONAL WE WILL NEED TO CHANGE OVER THE VALVES TO ALLOW ONE OF THE NEW CHILLER MODULES TO COOL THE BUILDINGS.
9. ONCE THE NEW PLANT IS OPERATIONAL, REMOVE THE REMAINING TWO EXISTING COOLING TOWERS.
10. CONSTRUCT TOWER SUPPORTS FOR THE ADDITIONAL NEW TOWERS.
11. SET THE SECOND SET OF NEW TOWERS ON THE NEW NEW STRUCTURE AND TO SET THE TOWER FILTRATION UNITS IN THE SPACE NOW UTILIZED FOR THE EXISTING CONDENSER WATER PUMPS.
12. COMMISSION AND T&B THE NEW PLANT.

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CHILLER PLANT UPGRADES - PHASE I
TAMPA, FLORIDA

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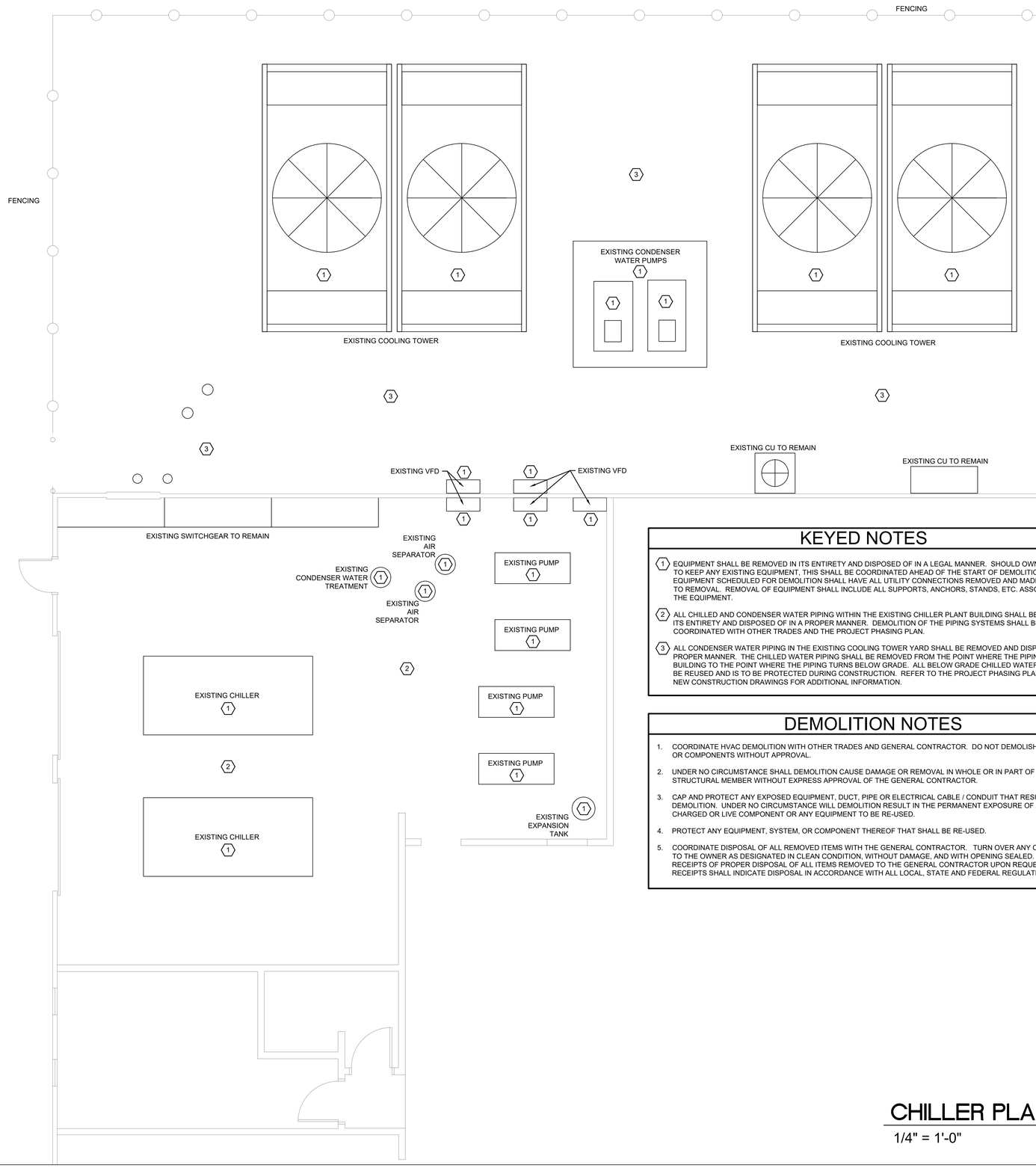
LEGEND AND NOTES - MECHANICAL

DRAWING NO.

M0.1



KEYED NOTES

1. EQUIPMENT SHALL BE REMOVED IN ITS ENTIRETY AND DISPOSED OF IN A LEGAL MANNER. SHOULD OWNER CHOOSE TO KEEP ANY EXISTING EQUIPMENT, THIS SHALL BE COORDINATED AHEAD OF THE START OF DEMOLITION. ALL EQUIPMENT SCHEDULED FOR DEMOLITION SHALL HAVE ALL UTILITY CONNECTIONS REMOVED AND MADE SAFE PRIOR TO REMOVAL. REMOVAL OF EQUIPMENT SHALL INCLUDE ALL SUPPORTS, ANCHORS, STANDS, ETC. ASSOCIATED WITH THE EQUIPMENT.
2. ALL CHILLED AND CONDENSER WATER PIPING WITHIN THE EXISTING CHILLER PLANT BUILDING SHALL BE REMOVED IN ITS ENTIRETY AND DISPOSED OF IN A PROPER MANNER. DEMOLITION OF THE PIPING SYSTEMS SHALL BE COORDINATED WITH OTHER TRADES AND THE PROJECT PHASING PLAN.
3. ALL CONDENSER WATER PIPING IN THE EXISTING COOLING TOWER YARD SHALL BE REMOVED AND DISPOSED OF IN A PROPER MANNER. THE CHILLED WATER PIPING SHALL BE REMOVED FROM THE POINT WHERE THE PIPING EXITS THE BUILDING TO THE POINT WHERE THE PIPING TURNS BELOW GRADE. ALL BELOW GRADE CHILLED WATER PIPING IS TO BE REUSED AND IS TO BE PROTECTED DURING CONSTRUCTION. REFER TO THE PROJECT PHASING PLAN AND THE NEW CONSTRUCTION DRAWINGS FOR ADDITIONAL INFORMATION.

DEMOLITION NOTES

1. COORDINATE HVAC DEMOLITION WITH OTHER TRADES AND GENERAL CONTRACTOR. DO NOT DEMOLISH EQUIPMENT OR COMPONENTS WITHOUT APPROVAL.
2. UNDER NO CIRCUMSTANCE SHALL DEMOLITION CAUSE DAMAGE OR REMOVAL IN WHOLE OR IN PART OF ANY STRUCTURAL MEMBER WITHOUT EXPRESS APPROVAL OF THE GENERAL CONTRACTOR.
3. CAP AND PROTECT ANY EXPOSED EQUIPMENT, DUCT, PIPE OR ELECTRICAL CABLE / CONDUIT THAT RESULTS FROM DEMOLITION. UNDER NO CIRCUMSTANCE WILL DEMOLITION RESULT IN THE PERMANENT EXPOSURE OF ANY CHARGED OR LIVE COMPONENT OR ANY EQUIPMENT TO BE RE-USED.
4. PROTECT ANY EQUIPMENT, SYSTEM, OR COMPONENT THEREOF THAT SHALL BE RE-USED.
5. COORDINATE DISPOSAL OF ALL REMOVED ITEMS WITH THE GENERAL CONTRACTOR. TURN OVER ANY COMPONENTS TO THE OWNER AS DESIGNATED IN CLEAN CONDITION, WITHOUT DAMAGE, AND WITH OPENING SEALED. FURNISH RECEIPTS OF PROPER DISPOSAL OF ALL ITEMS REMOVED TO THE GENERAL CONTRACTOR UPON REQUEST. RECEIPTS SHALL INDICATE DISPOSAL IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

CHILLER PLANT FLOOR PLAN - DEMOLITION

1/4" = 1'-0"

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CHILLER PLANT FLOOR PLAN - DEMOLITTION

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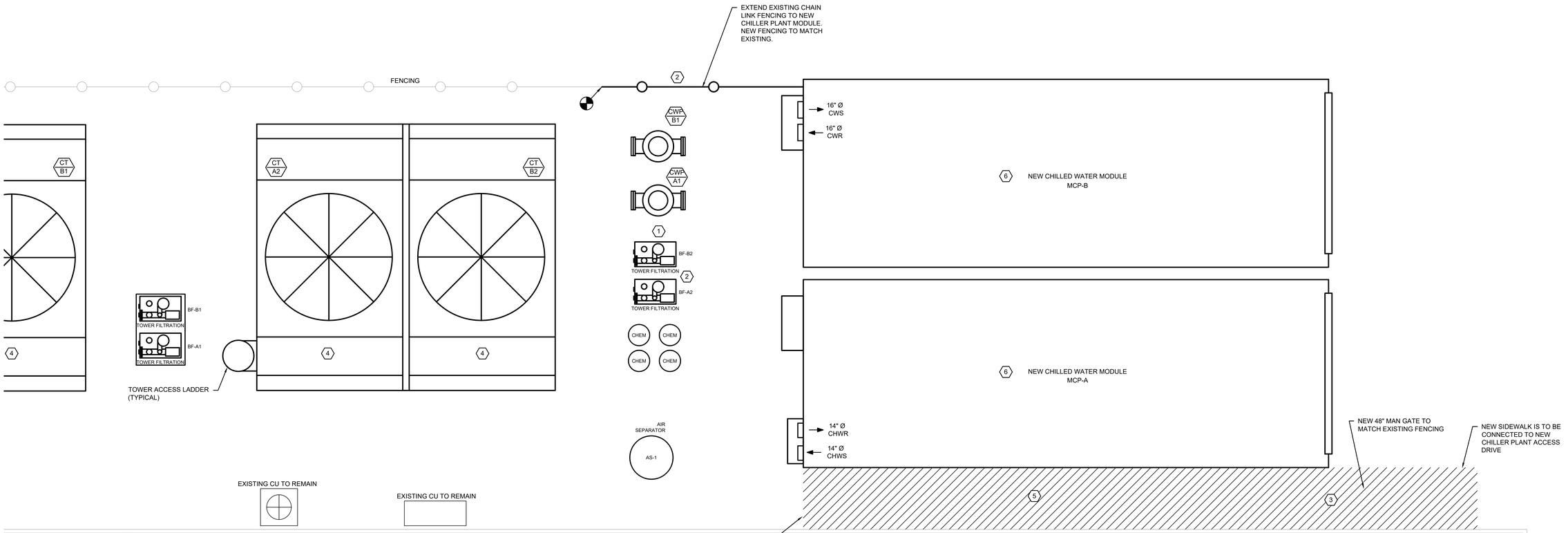

KEYED NOTES

1. NEW CONCRETE HOUSEKEEPING PAD FOR SUPPORT OF INLINE CONDENSER WATER PUMPS AND WATER TREATMENT SYSTEMS. EACH PUMP SHALL BE RACK MOUNTED AND ALL EQUIPMENT SHALL BE SECURED TO THE HOUSEKEEPING PAD TO MEET FBC 2020 WINDLOADING REQUIREMENTS. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
2. EXISTING FENCE SHALL BE EXTENDED TO FULLY ENCLOSE THE COOLING TOWER YARD. NEW FENCING SHALL MATCH EXISTING IN TYPE, MATERIAL, HEIGHT AND CONFIGURATION.
3. PROVIDE AND INSTALL A NEW 4' GATE TO SECURE THE OPENING BETWEEN THE NEW CHILLER MODULE AND THE EXISTING MAINTENANCE BUILDING. NEW GATE SHALL BE HINGED, SHALL INCLUDE A LATCH AND SHALL BE DESIGNED TO ACCOMMODATE A PAD LOCK FOR SECUREMENT. GATE MATERIALS AND HEIGHT SHALL MATCH EXISTING.
4. EACH NEW COOLING TOWER SHALL RECEIVE NEW CONCRETE SUPPORT PIERS WITH FOUNDATIONS AND STRUCTURAL SUPPORT STEEL FOR SUPPORT OF TOWER. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION. TOWERS SHALL BE ATTACHED TO SUPPORTING STEEL PER THE MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS AND AS REQUIRED TO MEET THE WINDLOADING REQUIREMENTS OF FBC 2020.
5. PROVIDE AND INSTALL A NEW SIDEWALK BETWEEN THE NEW CHILLER MODULE AND THE EXISTING MAINTENANCE BUILDING. THE SIDEWALK SHALL SPAN THE ENTIRE WIDTH OF THE SPACE AND SHALL TERMINATE AT THE END OF THE CHILLER MODULE. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION. SIDEWALK SHALL EXTEND BEYOND THE END OF THE BUILDING AND SHALL TIE-IN TO THE NEW CHILLER PLANT ACCESS DRIVE.
6. EACH NEW CHILLER MODULE SHALL BE MOUNTED ON A STRUCTURAL CONCRETE PAD. MODULES SHALL BE WELDED TO EMBEDS PLACED IN THE FORM PRIOR TO POURING THE SLAB. CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF THE EMBED PLATES WITH THE CHILLER MODULE VENDOR'S SHOP DRAWINGS PRIOR TO INSTALLATION. REFER TO BOTH THE CHILLER MODULE VENDOR'S SHOP DRAWINGS AND THE PROJECT STRUCTURAL DRAWINGS FOR MORE INFORMATION.

CHILLER PLANT FLOOR PLAN - GENERAL ARRANGEMENT

1/4" = 1'-0"

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CHILLER PLANT FLOOR PLAN - GENERAL ARRANGEMENT

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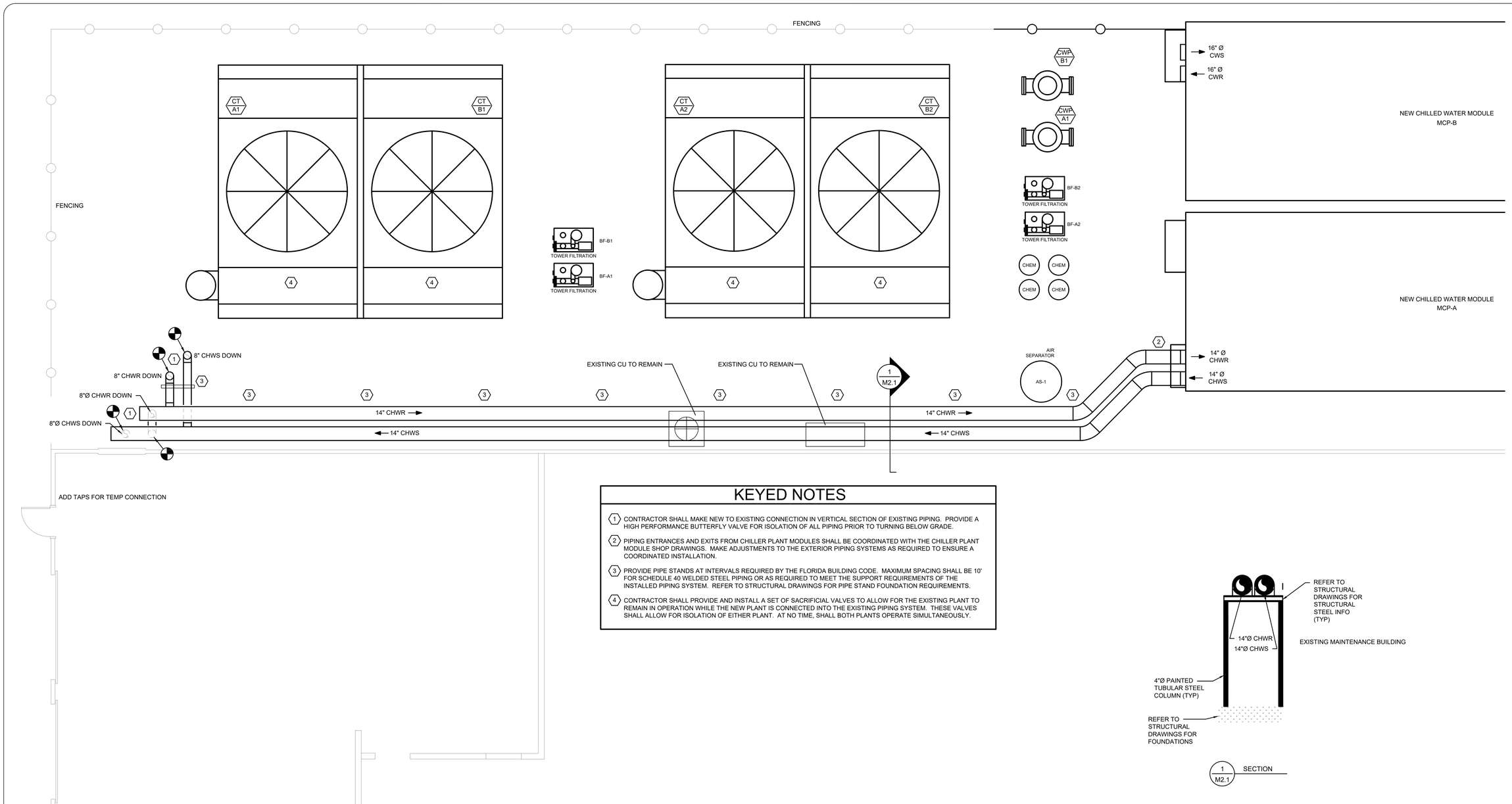

KEYED NOTES

1. CONTRACTOR SHALL MAKE NEW TO EXISTING CONNECTION IN VERTICAL SECTION OF EXISTING PIPING. PROVIDE A HIGH PERFORMANCE BUTTERFLY VALVE FOR ISOLATION OF ALL PIPING PRIOR TO TURNING BELOW GRADE.
2. PIPING ENTRANCES AND EXITS FROM CHILLER PLANT MODULES SHALL BE COORDINATED WITH THE CHILLER PLANT MODULE SHOP DRAWINGS. MAKE ADJUSTMENTS TO THE EXTERIOR PIPING SYSTEMS AS REQUIRED TO ENSURE A COORDINATED INSTALLATION.
3. PROVIDE PIPE STANDS AT INTERVALS REQUIRED BY THE FLORIDA BUILDING CODE. MAXIMUM SPACING SHALL BE 10' FOR SCHEDULE 40 WELDED STEEL PIPING OR AS REQUIRED TO MEET THE SUPPORT REQUIREMENTS OF THE INSTALLED PIPING SYSTEM. REFER TO STRUCTURAL DRAWINGS FOR PIPE STAND FOUNDATION REQUIREMENTS.
4. CONTRACTOR SHALL PROVIDE AND INSTALL A SET OF SACRIFICIAL VALVES TO ALLOW FOR THE EXISTING PLANT TO REMAIN IN OPERATION WHILE THE NEW PLANT IS CONNECTED INTO THE EXISTING PIPING SYSTEM. THESE VALVES SHALL ALLOW FOR ISOLATION OF EITHER PLANT. AT NO TIME, SHALL BOTH PLANTS OPERATE SIMULTANEOUSLY.

CHILLER PLANT FLOOR PLAN - CHILLED WATER

1/4" = 1'-0"

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CHILLER PLANT FLOOR PLAN - CHILLED WATER

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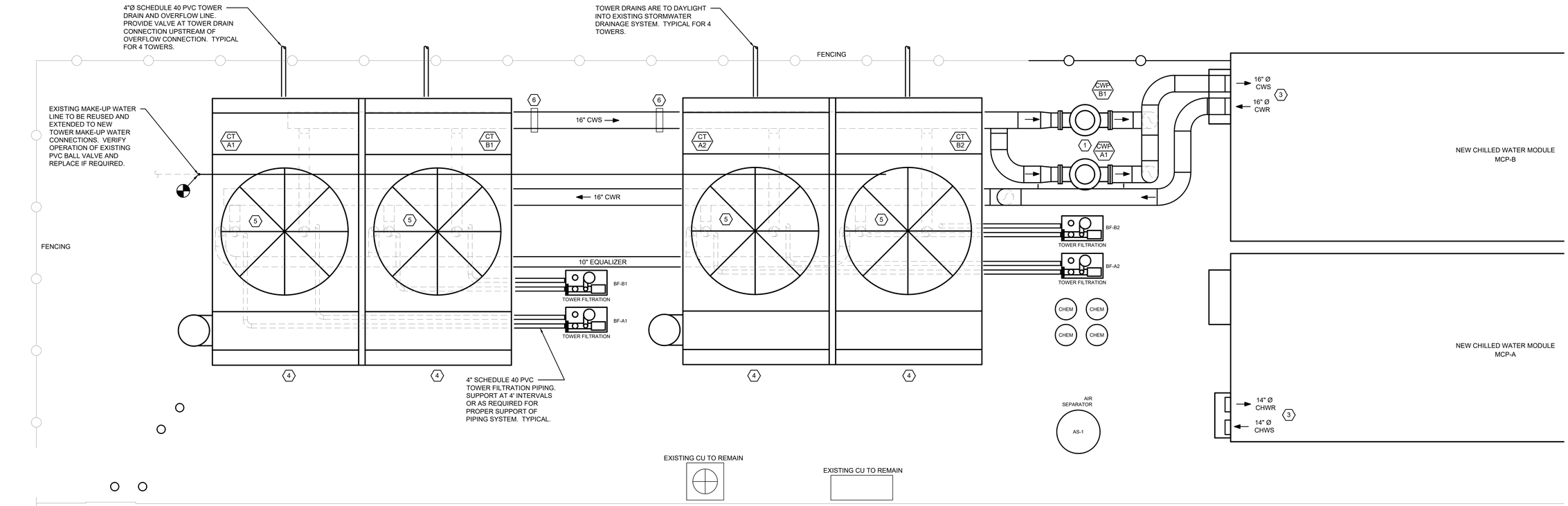

KEYED NOTES

1. NEW CONDENSER WATER PUMPS ARE TO BE PROVIDED WITH THE CHILLER PLANT MODULE AND ARE TO BE INSTALLED BY MECHANICAL CONTRACTOR. THE INSTALLATION IS TO BE A COMPLETE, TURN-KEY INSTALLATION. CONTRACTOR SHALL PROVIDE AND INSTALL ALL VALVES, PIPING, STRAINERS, PADS, SUPPORTS, ANCHORS, ETC. AS REQUIRED FOR A COMPLETE, CODE COMPLIANT INSTALLATION. REFER TO STRUCTURAL DRAWINGS FOR PAD INFORMATION.
2. COOLING TOWER WATER FILTRATION SYSTEMS SHALL BE INSTALLED IN THIS APPROXIMATE LOCATION. COORDINATE EXACT LOCATION WITH COOLING TOWER PUMPS AND PIPING. PROVIDE ALL VALVING AND PIPING AS REQUIRED FOR A TURN-KEY INSTALLATION PER THE MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS.
3. PIPING ENTRANCES AND EXITS FROM CHILLER PLANT MODULES SHALL BE COORDINATED WITH THE CHILLER PLANT MODULE SHOP DRAWINGS. MAKE ADJUSTMENTS TO THE EXTERIOR PIPING SYSTEMS AS REQUIRED TO ENSURE A COORDINATED INSTALLATION.
4. NEW COOLING TOWERS SHALL BE PROVIDED BY THE CHILLER PLANT MODULE VENDOR AND SHALL BE INSTALLED BY THE MECHANICAL CONTRACTOR. PROVIDE AND INSTALL ALL COMPONENTS AS REQUIRED FOR A COMPLETE, CODE COMPLIANT, TURN-KEY INSTALLATION. COORDINATE TOWER SUPPORT PIERS AND STRUCTURAL FRAMING WITH PROJECT STRUCTURAL ENGINEER PRIOR TO INSTALLATION.
5. ALL PIPING UNDER THE TOWER BASINS SHALL BE COORDINATED IN THE FIELD AS REQUIRED TO MATCH THE COOLING TOWER SHOP DRAWING INLETS AND OUTLETS. REFER TO THE FLOW DIAGRAMS AND DETAILS IN THIS DRAWING PACKAGE FOR VALVE AND PIPING SYSTEM COMPONENTS.
6. PROVIDE PIPE STANDS AT INTERVALS REQUIRED BY THE FLORIDA BUILDING CODE. MAXIMUM SPACING SHALL BE 10' FOR SCHEDULE 40 WELDED STEEL PIPING OR AS REQUIRED TO MEET THE SUPPORT REQUIREMENTS OF THE INSTALLED PIPING SYSTEM. REFER TO STRUCTURAL DRAWINGS FOR PIPE STAND FOUNDATION REQUIREMENTS.

CHILLER PLANT FLOOR PLAN - CONDENSER WATER

1/4" = 1'-0"

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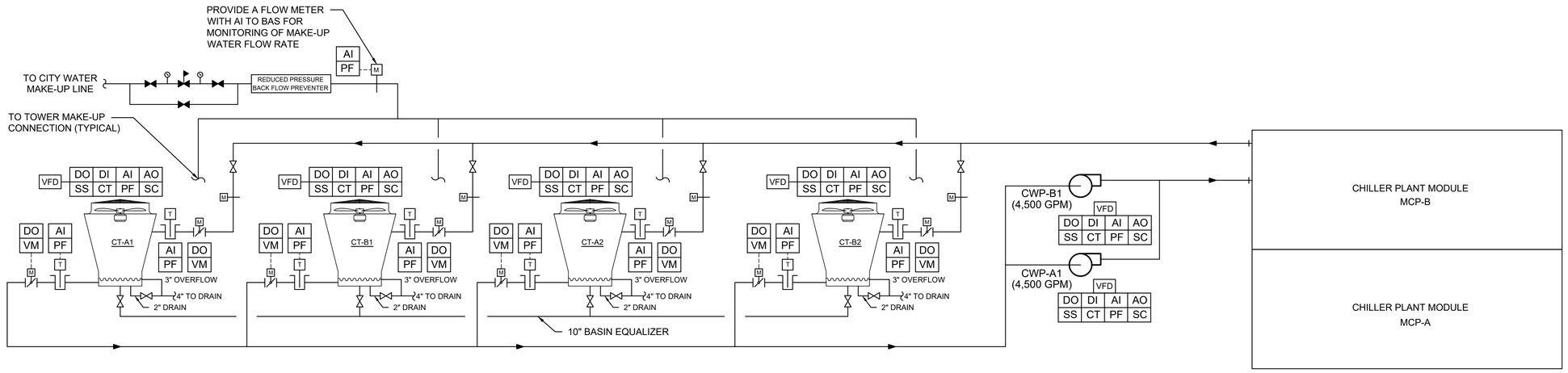
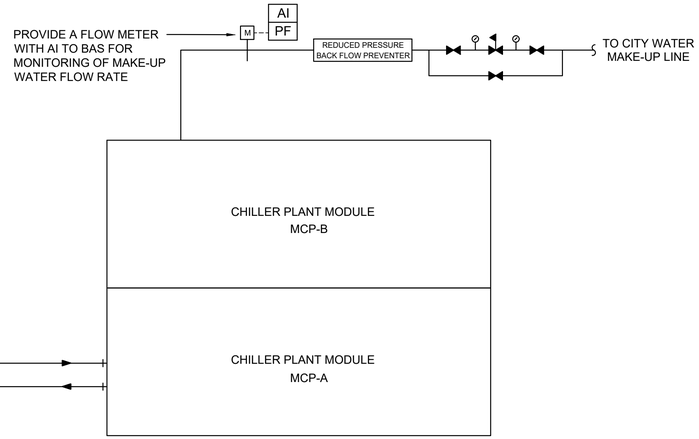


CONDENSER WATER FLOW DIAGRAM

NO SCALE



CHILLED WATER FLOW DIAGRAM

NO SCALE

genesis engineering group, llc.
2601 Cattlemen Rd.
Sarasota, FL 34232
project #23-127-FL
genesis
coa - 29304
www.geneng.net

SEAL:

FLORIDA STATE FAIRGROUNDS
CHILLER PLANT UPGRADES - PHASE I
TAMPA, FLORIDA

NO.	REVISION	DATE

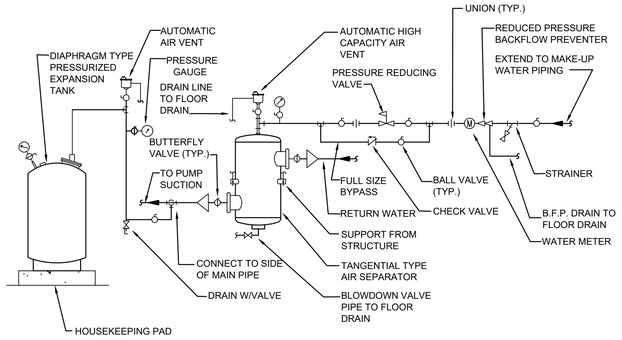
DATE:	09-29-2023
JOB NUMBER:	23-127-FL
FILE NAME:	100% CONSTRUCTION DOCUMENTS
DRAWN BY:	ETH
CHECKED BY:	RMH

DRAWING TITLE:

FLOW DIAGRAMS - MECHANICAL

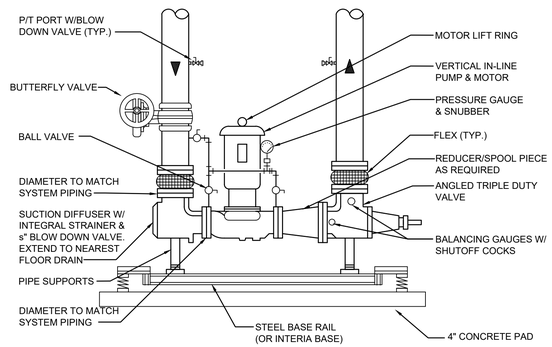
DRAWING NO.

M3.1



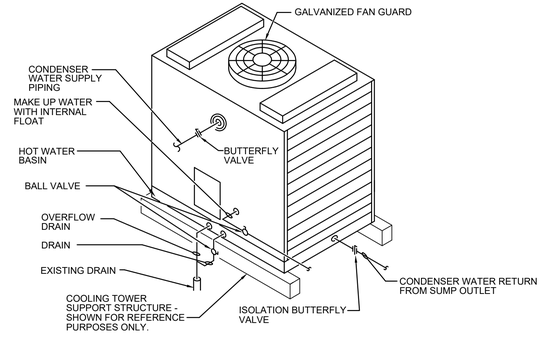
AIR SEPARATOR/ELIMIN. + EXPANSION TANK PIPING

No Scale



VERTICAL IN-LINE PUMP FLOOR MOUNTED TYPE

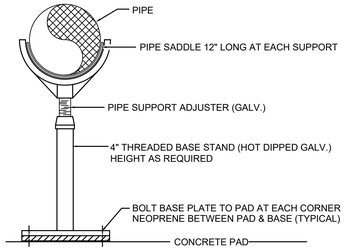
No Scale



NOTE: TOWER CONFIGURATION SHOWN FOR ILLUSTRATION PURPOSES ONLY. REFER TO FLOOR PLAN FOR EXACT PIPING CONFIGURATION AND TOWER LAYOUT.

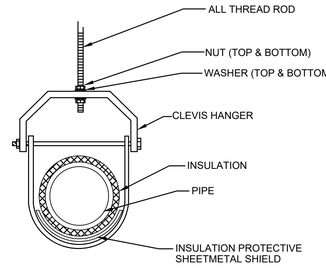
TYPICAL COOLING TOWER PIPING DETAIL

NO SCALE



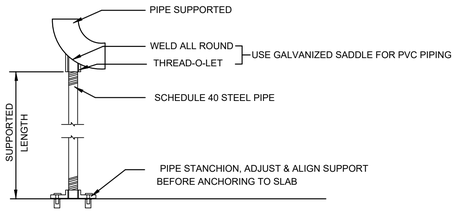
TYPICAL PIPE STAND DETAIL

NO SCALE



TYPICAL CLEVIS HANGER DETAIL

NO SCALE

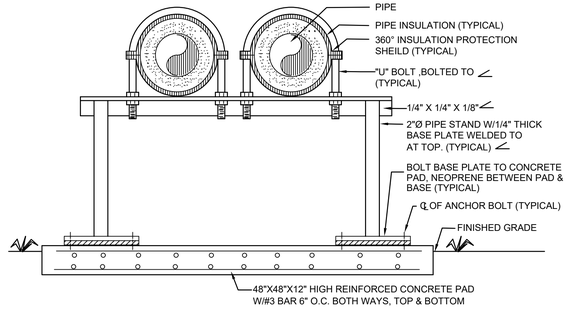


STANCHION SCHEDULE

PIPE SUPPORT \ SUPPORTED LENGTH	1'-0" TO 3'-0"	3'-0" TO 6'-0"
4"Ø & BELOW	1"Ø	2"Ø
5"Ø & ABOVE	2"Ø	4"Ø

TYPICAL PIPE SUPPORT DETAIL

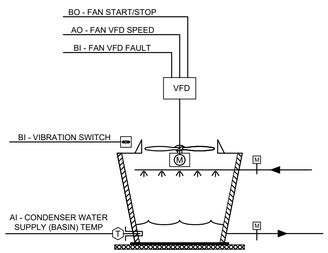
NO SCALE



NOTE:
1. ALL MATERIALS SHALL BE GALVANIZED
2. "U" BOLTS & NUTS SHALL BE ZINC PLATED CARBON STEEL
3. ANCHOR BOLTS SHALL BE ZINC PLATED HEX HEAD LAG SCREWS

TYPICAL PIPE SUPPORT DETAIL

NO SCALE



TYPICAL TOWER CONTROLS DETAIL

NO SCALE

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2601 Cattlemen Rd.
Sarasota, FL 34232
project #23-127-FL
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www.genesg.net

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M4.1