



DEPARTMENT OF VETERANS AFFAIRS MEDICAL CENTER
ALEXANDRIA, LOUISIANA

PROJECT NO. 11106
CHILLED WATER MODIFICATIONS

INDEX OF DRAWINGS

SHEET NO.	DWG NO.	DESCRIPTION
1	T-1	TITLE SHEET
2	M-0	MECHANICAL LEGEND
3	M-1	COOLING TOWER AND CHILLER DEMOLITION PLAN - MECHANICAL
4	M-2	NEW COOLING TOWER AND CHILLER PLAN - MECHANICAL
5	M-3	MECHANICAL SCHEDULES AND DIAGRAMS
6	M-4	MECHANICAL FLOW DIAGRAM
7	M-5	MECHANICAL DETAILS
8	E-1	COOLING TOWER AND CHILLER DEMOLITION PLAN - ELECTRICAL
9	E-2	NEW COOLING TOWER AND CHILLER PLAN - ELECTRICAL

STATE MAP

AREA MAP

KEY PLAN

LEGEND OF MAIN BUILDINGS

- 1 ADMINISTRATION
- 2 GENERAL MEDICAL
- 3 ADMIN./CLINICAL
- 4 DIETETICS
- 5 ADMINISTRATION
- 6 N.H.C.U. #2
- 7 MEDICAL/SURGICAL
- 8 CANTEN/RECREATION
- 9 PSYCHIATRIC
- 15 FIRE DEPARTMENT/GROUNDS
- 16 LAUNDRY
- 45 NHCU #1
- 46 CHAPEL
- 142 DENTAL

VA ALEXANDRIA, LA

Revisions

SYMBOL	NAME	Date

ASSOCIATED DESIGN GROUP, INC.

Lafayette, Louisiana (337) 234-5710

PROJECT No. 11106

STAMP

Drawing Title

TITLE SHEET

Project Title

VA HOSPITAL CENTRAL
PLANT MODIFICATIONS

Date

01-31-12

Project No.

000-00-000

Building Number

147

Checked

LWB

Drawn

MAA

Location

ALEXANDRIA, LOUISIANA

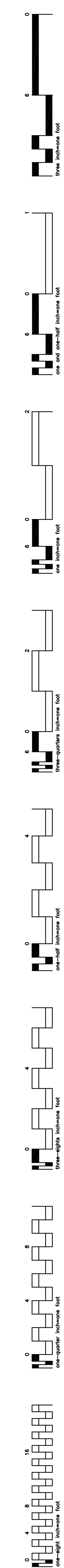
DRAWING NO.

147-T-1

Dwg.

1 of 9

Veterans
Administration



ABBREVIATIONS

A/E	ARCHITECT / ENGINEER	DB	DECIBELS	H&CW	HOT & COLD WATER	MA	MIXED AIR	RH	RELATIVE HUMIDITY	TAB	TESTING, ADJUSTING, BALANCE
ACU	AIR CONDITIONING UNIT	Db	DRY-BULB TEMPERATURE	HB	HOSE BIBB	MAT	MIXED AIR TEMPERATURE	RLA	RUN LOAD AMPERE	TD	TEMPERATURE DIFFERENCE
AD	ACCESS DOOR	DDC	DIRECT DIGITAL CONTROLS	HC	HEATING COIL	MAX	MAXIMUM	RPM	REVOLUTIONS PER MINUTE	TP	TRAP
AFF	ABOVE FINISHED FLOOR	DEG	DEGREE	HD	HEAD	MBH	1000 BTUH	RV	RELIEF VALVE	TSP	TOTAL STATIC PRESSURE
AHU	AIR-HANDLING UNIT	DF	DIFFUSER	HP	HORSEPOWER	MCA	MINIMUM BRANCH CIRCUIT AMPACITY			TSTAT	THERMOSTAT
AMP	AMPERE	DPS	DIFFERENTIAL PRESSURE SENSOR	HW	HOT WATER	MER	MECHANICAL EQUIPMENT ROOM	SAT	SUPPLY AIR TEMPERATURE	UH	UNIT HEATER
AP	ACCESS PANEL			HZ	HERTZ	MH	MANHOLE	SCFM	STANDARD CUBIC FEET PER MINUTE		
APD	AIR PRESSURE DROP	EA	EXHAUST AIR			MHP	MOTOR HORSEPOWER	SEN	SENSIBLE HEAT	V	VALVE
ARI	AIR CONDITIONING AND REFRIGERATION INSTITUTE	EAT	ENTERING AIR TEMPERATURE	I/O	INPUT/OUTPUT	MIN	MINIMUM	SF	SUPPLY FAN	VFD	VARIABLE FREQUENCY DRIVE
AS	AIR SEPARATOR	ECC	ENGINEERING CONTROL CENTER	IAQ	INDOOR AIR QUALITY	MVD	MANUAL VOLUME DAMPER	SI	SQUARE INCHES	VI	VIBRATION ISOLATOR
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS	EER	ENERGY EFFICIENCY RATIO	ICF	IN-LINE CENTRIFUGAL FAN			SP	STATIC PRESSURE	VSD	VARIABLE SPEED DRIVE
		EF	EXHAUST FAN	IN	INCHES	NA	NOT APPLICABLE	SQ FT	SQUARE FOOT (FEET)		
BD	BUTTERFLY DAMPER	EG	EXHAUST GRILLE	IN WC	INCH WATER COLUMN	NC	NOISE CRITERIA			W	WATTS
BDD	BACKDRAFT DAMPER	ENT	ENTERING	IS	INSECT SCREEN	NC	NORMALLY CLOSED			Wb	WET-BULB (TEMPERATURE)
BFP	BACKFLOW PREVENTER	ESP	EXTERNAL STATIC PRESSURE			NO	NORMALLY OPEN			WFMD	WATER FLOW MEASURING DEVICE
BHP	BRAKE HORSEPOWER	ET	EXPANSION TANK			NOM	NOMINAL			WPD	WATER SIDE PRESSURE DROP
BTU	BRITISH THERMAL UNIT	EWT	ENTERING WATER TEMPERATURE			NTS	NOT TO SCALE			YR	YEAR
BTUH	BRITISH THERMAL UNIT PER HOUR	EX.	EXISTING								
		GAL	GALLONS			OA	OUTSIDE AIR				
C	CENTIGRADE (CELCIUS)	GPM	GALLONS PER MINUTE			OAI	OUTSIDE AIR INTAKE				
CCD	COOLING COIL CONDENSATE DRAIN										
CD	CEILING DIFFUSER										
CENT	CENTRIFUGAL	F	FAHRENHEIT	LAT	LEAVING AIR TEMPERATURE	P	PUMP				
CFM	CUBIC FEET PER MINUTE	F&T	FLOAT AND THERMOSTATIC	LBS/HR	POUNDS PER HOUR	PD	PRESSURE DROP				
CG	CEILING GRILLE	F/SDPR	COMBINATION FIRE SMOKE DAMPER	LF	LINEAR FOOT (FEET)	PF	PRE-FILTER				
CHP	CHILLED WATER PUMP	FC	FLEXIBLE CONNECTION	LSD	LINEAR SLOT DIFFUSER	PG	PRESSURE GAGE				
CHW	CHILLER WATER	FD	FLOOR DRAIN	LVG	LEAVING	PRV	PRESSURE REGULATING VALVE				
CHR	CHILLED WATER RETURN	FD	FIRE DAMPER	LVR	LOUVER	PSI	POUNDS PER SQUARE INCH				
CHS	CHILLED WATER SUPPLY	FF	FINAL FILTER	LWT	LEAVING WATER TEMPERATURE	PSV	PRESSURE SAFETY VALVE				
CO	CLEAN OUT	FPM	FEET PER MINUTE								
CO2	CARBON DIOXIDE	FT	FEET								
CP	CONDENSATE PUMP	FV	FACE VELOCITY								
CR	CEILING REGISTER										
CU	CONDENSING UNIT										
CV	CONSTANT VOLUME										
CW	COLD WATER (POTABLE)										
CWCC	CHILLED WATER COOLING COIL										

VALVE SYMBOLS

	GATE VALVE - THREADED/FLANGED
	GLOBE VALVE - THREADED/FLANGED
	CHECK VALVE
	WYE STRAINER (WITH BALL VALVE & HOSE CONNECTION)
	FLEXIBLE CONNECTION
	BUTTERFLY VALVE
	BALL VALVE
	MODULATING CONTROL VALVE
	MODULATING CONTROL BUTTERFLY VALVE
	THREE-WAY MODULATING CONTROL VALVE
	PRESSURE REGULATING VALVE
	PRESSURE SAFETY VALVE
	AUTOMATIC BALANCING CONTROL VALVE
	WATER BALANCE DEVICE
	CIRCUIT SETTER VALVE
	CONTROL VALVE (CV) - FLOAT-OPERATED
	PRESSURE REDUCING VALVE (PRV)
	FLOW METER

PIPING SYMBOLS

	HWS	HOT WATER HEATING SUPPLY
	HWR	HOT WATER HEATING RETURN
	CHS	CHILLED WATER SUPPLY
	CHR	CHILLED WATER RETURN
	D	DRAIN LINE
	V	VENT LINE
	S	STEAM LINE
	CR	CONDENSATE RETURN LINE
	CWTT	CONDENSER WATER TO TOWER
	CWFT	CONDENSER WATER FROM TOWER

GENERAL SYMBOLS

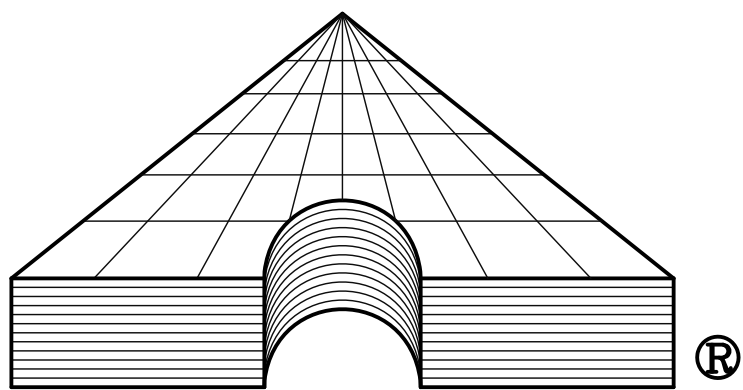
	DIRECTION OF FLOW
	ANCHOR
	REDUCER OR INCREASER
	ECCENTRIC REDUCER
	PIPE (TOP, BOTTOM, SIDE)
	CONNECTION, 45° OR 90°
	CAPPED OUTLET
	RISE OR DROP IN PIPE
	UNION
	PIPE UP
	PIPE DOWN
	POINT OF CONNECTION BETWEEN NEW AND EXISTING WORK
	INVERTED BUCKET TRAP SET INCLUDING PIPING ACCESSORIES
	FLOAT & THERMOSTATIC TRAP SET INCLUDING PIPING ACCESSORIES
	THERMOSTATIC TRAP SET INCLUDING PIPING ACCESSORIES
	THERMOMETER
	PRESSURE GAGE
	TEST PLUG (PRESSURE/TEMPERATURE)
	AUTOMATIC AIR VENT
	MANUAL AIR VENT
	POINT OF CONNECTION BETWEEN NEW AND EXISTING WORK
	THERMOSTAT

CONTROLS SYMBOLS

	HVAC CONTROL PANEL
	ADJUSTABLE SPEED DRIVE
	INTEGRATE CONTROL POINT ON REMOTE GRAPHICS WORKSTATION AT ENERGY CONTROL CENTER
	TEMPERATURE CONTROLLER. SEE SEQUENCE OF OPERATION
	PRESSURE CONTROLLER. SEE SEQUENCE OF OPERATION
	SPEED CONTROLLER. SEE SEQUENCE OF OPERATION
	FLOW CONTROLLER. SEE SEQUENCE OF OPERATION
	ROOM THERMOSTAT
	TEMPERATURE TRANSMITTER
	TEMPERATURE TRANSMITTER, AVERAGING ELEMENT
	PRESSURE TRANSMITTER
	STATIC PRESSURE SENSOR
	FLOW TRANSMITTER
	SMOKE DETECTOR
	DIFFERENTIAL PRESSURE SWITCH
	HAND SWITCH (HAND-OFF-AUTO SWITCH)
	MOTOR STARTER
	ELECTRIC OPERATED CONTROL DAMPER/OR VALVE
	PRESSURE SWITCH HIGH
	PRESSURE SWITCH LOW
	LOCAL TEMPERATURE CONTROL PANEL

Revisions

SYMBOL	NAME	Date



Associated Design Group, Inc.

Lafayette, Louisiana (337) 234-5710

PROJECT No. 11106

STAMP



Drawing Title

MECHANICAL
LEGEND

Approved:

Approved:

Project Title

VA HOSPITAL CENTRAL
PLANT MODIFICATIONS

Building Number

147

Checked

LWB

Drawn

MAA

Location

ALEXANDRIA, LOUISIANA

Date

01-31-12

Project No.

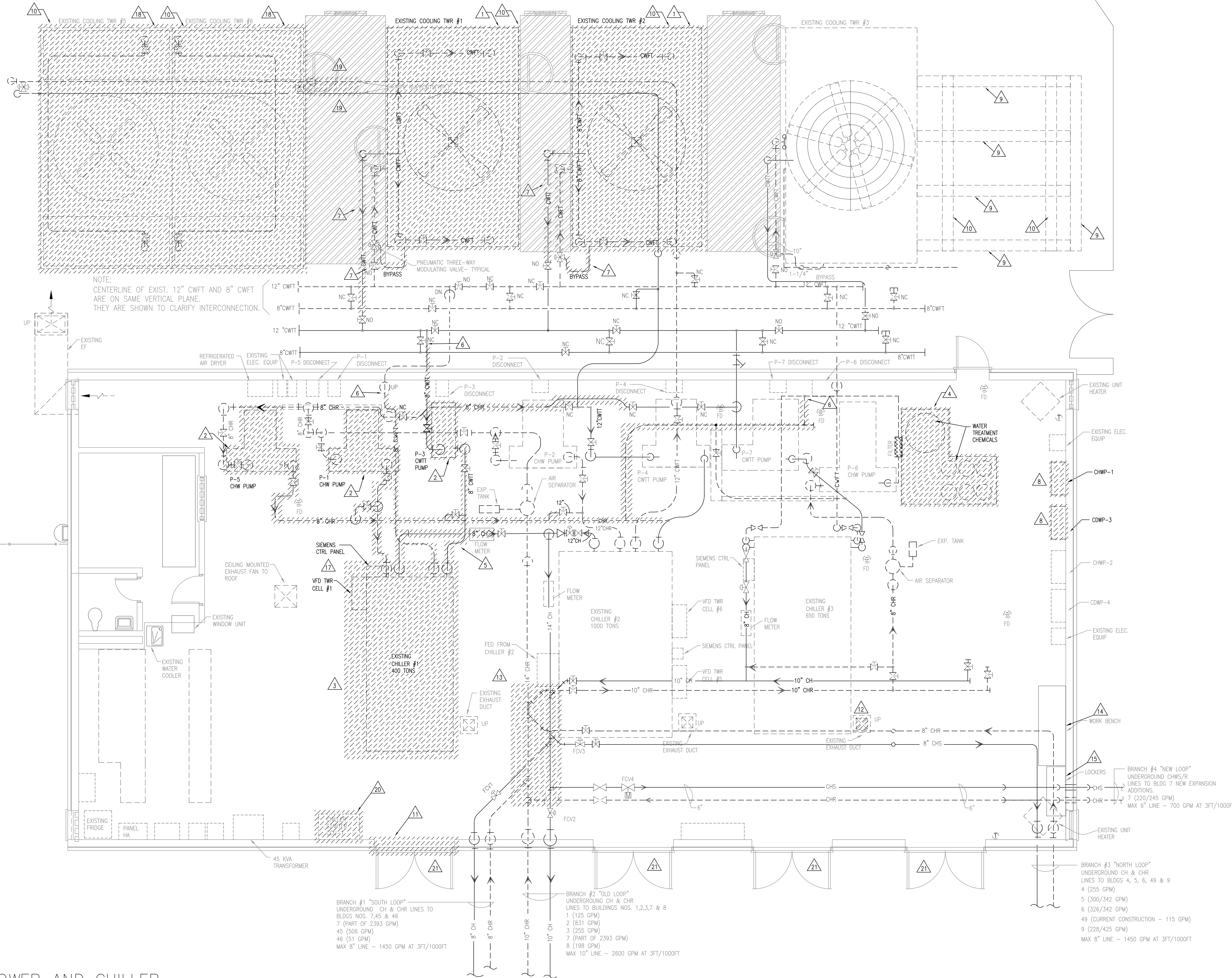
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DRAWING NO.

147-M-0

Dwg. 2 of 9

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- MECHANICAL KEYNOTES:**
- 1 REMOVE EXISTING COOLING TOWER SHOWN HATCHED.
 - 2 REMOVE EXISTING PUMP SHOWN HATCHED. (BASE BID)
 - 3 REMOVE EXISTING CHILLER SHOWN HATCHED. (BASE BID)
 - 4 REMOVE EXISTING CHEMICAL TREATMENT SYSTEM SHOWN HATCHED. (BID ADDITIVE #1)
 - 5 REMOVE EXISTING PIPING SHOWN HATCHED. (BASE BID)
 - 6 CAP EXISTING LINE IN THIS VICINITY. (BASE BID)
 - 7 REMOVE EXISTING PIPING SHOWN HATCHED.
 - 8 REFER TO ELECTRICAL PLANS FOR VFD REMOVAL. TURN VFD OVER TO OWNER.
 - 9 EXISTING CONCRETE SUPPORT BEAMS TO REMAIN.
 - 10 MODIFY EXISTING I BEAMS AS REQUIRED FOR NEW STRUCTURAL SUPPORT.
 - 11 REMOVE EXISTING DOOR AND AND CUT WALL AS REQUIRED TO INSTALL NEW CHILLER. VERIFY EXTEND OF WALL TO BE CUT WITH ACTUAL EQUIPMENT SELECTED/APPROVED. RELOCATE ALL DEVICES AS REQUIRED. PATCH WALL AND RE-INSTALL DOOR AS REQUIRED.
 - 12 REMOVE EXISTING EXHAUST DUCTWORK TO APPROXIMATELY 7" ABOVE FINISHED FLOOR. REDROUTE DUCTWORK AND RE-INSTALL GRILLE AT FLOOR LEVEL AS SHOWN ON SHEET M-2.
 - 13 REMOVE PIPING AND INSTALL NEW LARGER PPING AS SHOWN ON SHEET M-2.
 - 14 REMOVE EXISTING WORK BENCH AND TURN OVER TO OWNER.
 - 15 REMOVE EXISTING LOCKERS AND TURN OVER TO OWNER.
 - 16 EXISTING FLOW METER TO BE REMOVED AND USED AS PART OF CHILLER #4 IF ALTERNATE IS ACCEPTED.
 - 17 RELOCATE CONTROL PANEL AND VFD AS REQUIRED TO INSTALL NEW CHILLER.
 - 18 BID ADDITIVE #2: REMOVE EXISTING COOLING TOWERS #5 & #6 SHOWN HATCHED.
 - 19 BID ADDITIVE #2: REMOVE PIPE AS REQUIRED AND EXTEND TO NEW COOLING TOWER.
 - 20 REMOVE EXISTING CHILLER #1 STARTER IN THIS VICINITY.
 - 21 CONTRACTOR SHALL CLEAN AND PAINT EXISTING DOOR.

NOTE: THERE MAY BE OTHER PROJECTS IN THIS BUILDING AND THROUGHOUT THE CAMPUS AT THE TIME OF CONSTRUCTION. SOME WORK MAY NEED TO BE COORDINATED WITH OTHER CONTRACTORS.

NOTE: CONTRACTOR SHALL PROVIDE FENCE AROUND CONSTRUCTION AREA. REFER TO SPECIFICATIONS.

NOTE: CONTRACTOR SHALL SUBMIT PHASING PLAN TO MINIMIZE DOWN TIME OF CHILLERS.

NOTE: CONTRACTOR SHALL PROVIDE A 600 TON TEMPORARY CHILLER AT ANY TIME ANY EXISTING CHILLER IS UNABLE TO SUPPLY THE CAMPUS.

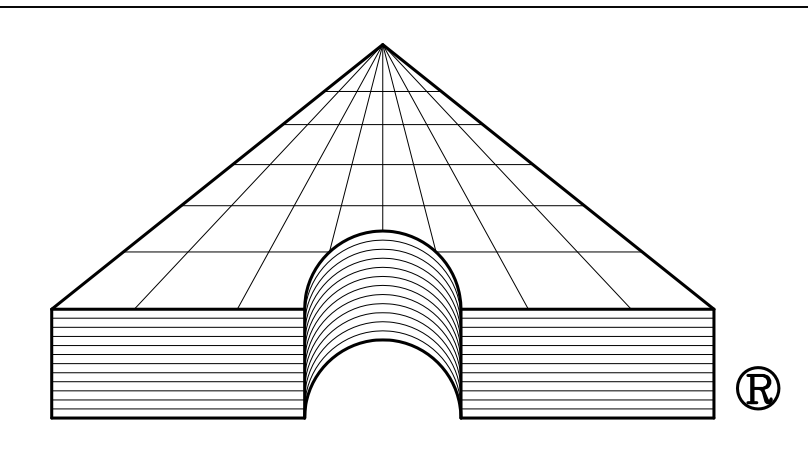
NOTE: BID ADDITIVE #3: CONTRACTOR SHALL PROVIDE AND CONNECT A 600 TON TEMPORARY CHILLER FOR 6 MONTHS DURING THE CONSTRUCTION PERIOD.

NOTE: CONTRACTOR SHALL PROVIDE 1/4" LAYOUT OF NEW EQUIPMENT TO BE INSTALLED PRIOR TO ANY WORK.

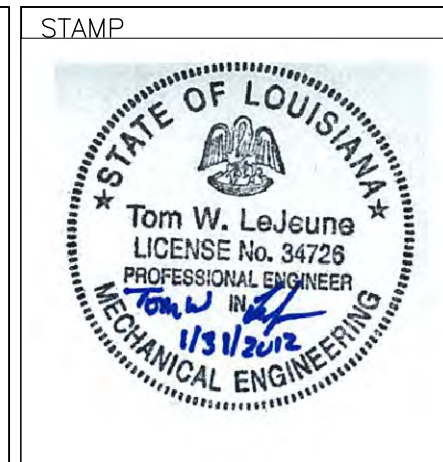
NOTE: CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDE ACCURATE AND ACCEPTABLE AS BUILT DRAWINGS.

COOLING TOWER AND CHILLER
DEMOLITION PLAN – MECHANICAL
SCALE : 1/4" = 1' - 0"

Revisions		
SYMBOL	NAME	Date



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PROJECT No. 11106

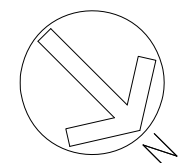


Drawing Title COOLING TOWER AND CHILLER DEMOLITION PLAN MECHANICAL	
Approved:	
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Project Title VA HOSPITAL CENTRAL PLANT MODIFICATIONS	
Building Number 147	Checked LWB
Location ALEXANDRIA, LOUISIANA	

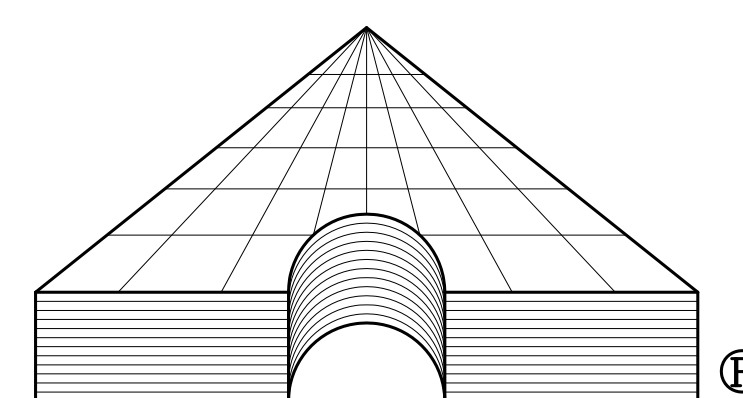
Date 01-31-12
Project No. 000-00-000
Drawing No. 147-M-1
Dwg. 2 of 9

Veterans
Administration



SCALE : 1/4" = 1' - 0"

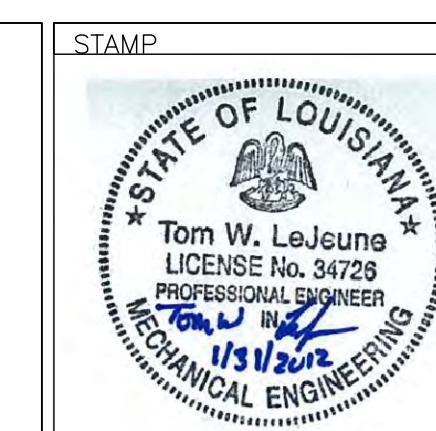
Revisions		
SYMBOL	NAME	Date



ASSOCIATED DESIGN GROUP, INC.

Lafayette, Louisiana (337) 234-5710

PROJECT No. 11106



Drawing Title CENTRAL PLANT LAYOUT	Project Title VA HOSPITAL CENTRAL PLANT MODIFICATIONS			Date 01-31-12	Veterans Administration
				Project No. 000-00-000	
Approved:	Building Number 147	Checked LWB	Drawn MAA	DRAWING NO. 147-M-2 Dwg. 3 of 9	
Approved:	Location ALEXANDRIA, LOUISIANA				

**Veterans
Administration**

MECHANICAL KEYNOTES:

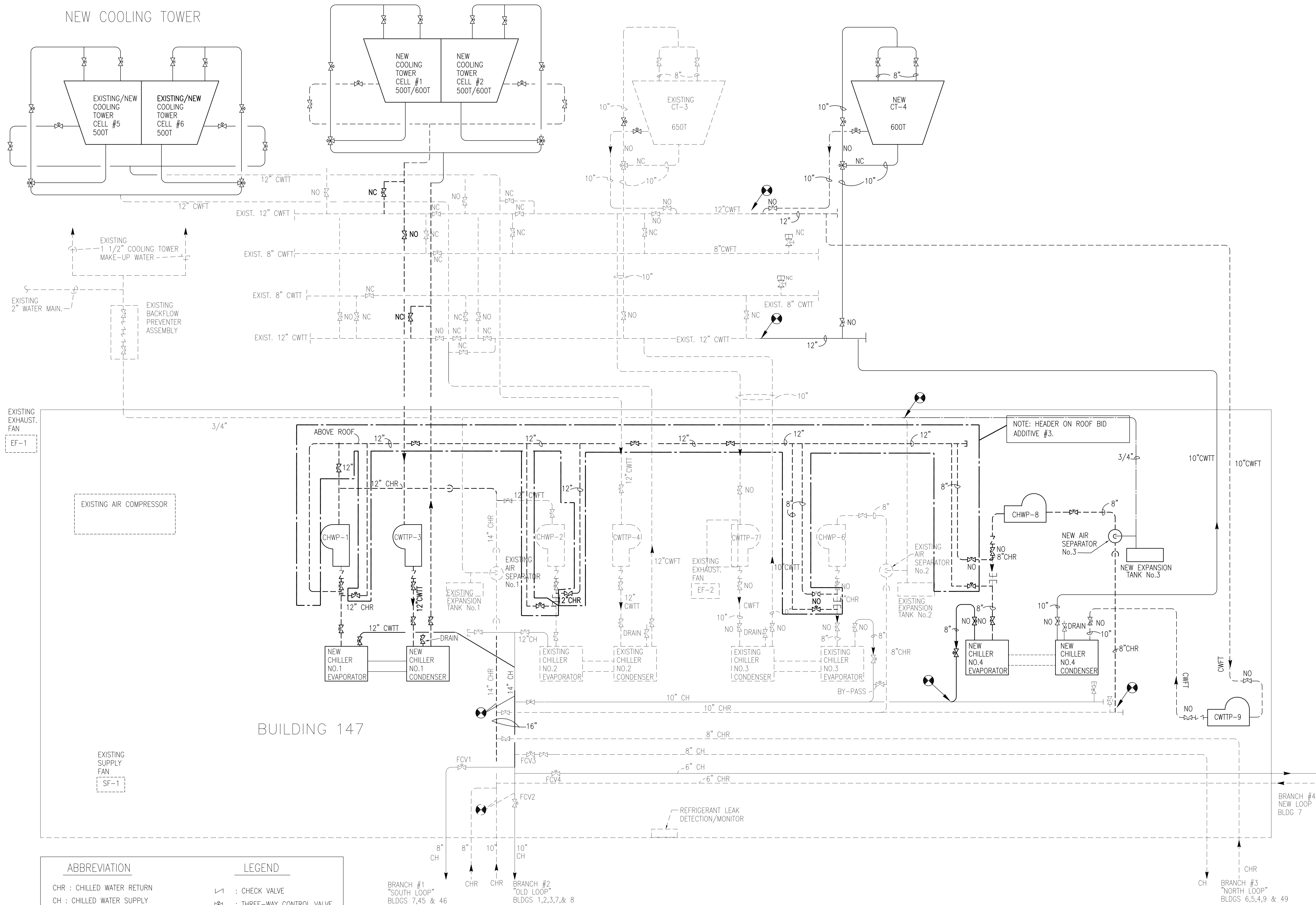
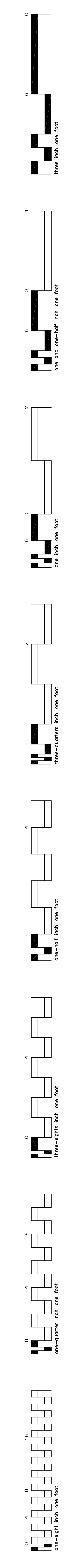
- (1) INSTALL NEW CHILLER #1 IN THIS VICINITY. INCREASE PAD SIZE AS REQUIRED. EXISTING PAD IS APPROXIMATELY 7'10" X 15'10". VERIFY EXACT REQUIREMENTS IN FIELD PRIOR TO BIDDING.
- (2) INSTALL NEW CHILLED WATER PUMP P-1 IN THIS VICINITY.
- (3) INSTALL NEW CONDENSER WATER PUMP P-3 IN THIS VICINITY.
- (4) CONNECT TO EXISTING PIPING IN THIS VICINITY.
- (5) INSTALL NEW STAINLESS STEEL COOLING TOWER IN THIS VICINITY. MODIFY EXISTING STRUCTURE AS REQUIRED FOR NEW COOLING TOWER.
- (6) INSTALL NEW CHILLER IN THIS VICINITY. INSTALL NEW 6" HIGH CONCRETE PAD 6" AROUND PERIMETER OF NEW CHILLER.
- (7) INSTALL NEW CHILLED WATER PUMP P-8 IN THIS VICINITY.
- (8) INSTALL NEW CONDENSER WATER PUMP P-9 IN THIS VICINITY.
- (9) REFER TO ELECTRICAL PLANS FOR NEW VFD INSTALLATION LOCATIONS AND SPECIFICATIONS.
- (10) INSTALL NEW STAINLESS STEEL TOWER COOLING TOWER IN THIS VICINITY. MODIFY EXISTING STRUCTURE AS REQUIRED FOR NEW COOLING TOWER.
- (11) PROVIDE NEW NON-CHEMICAL WATER TREATMENT FOR ENTIRE CONDENSER WATER SYSTEM. (BID ADDITIVE #1)
- (12) RELOCATE CHEMICAL TREATMENT SYSTEM TO THIS VICINITY (BID ADDITIVE #1). EXTEND ALL LINES AS REQUIRED. MAINTAIN 3'-6" FROM ELECTRICAL EQUIPMENT.
- (13) INSTALL NEW DOLPHIN NON CHEMICAL WATER TREATMENT SYSTEM IN THIS VICINITY.(BID ADDITIVE #1)
- (14) INSTALL NEW EXPANSION TANK IN THIS VICINITY.
- (15) INSTALL NEW AIR SEPARATOR IN THIS VICINITY.
- (16) PROVIDE NEW STRUCTURE SUPPORT FOR NEW TOWER. EXTEND/PROVIDE NEW PLATFORM AS REQUIRED FOR NEW TOWER ACCESS. PROVIDE STAMPED STRUCTURAL PLANS DURING SHOP DRAWINGS FOR REVIEW. AT CONTRACTOR'S OPTION, REUSE EXISTING BEAMS IN LIEU OF NEW.
- (17) PROVIDE PIPE SUPPORTS IN THIS VICINITY (TYPICAL) TO SUPPORT NEW PIPING AS REQUIRED.
- (18) VERIFY CHILLER SIZE WITH EXISTING DOOR. REMOVE COMPONENTS AS NECESSARY TO PASS CHILLER THROUGH DOOR. COORDINATE EXACT REQUIREMENTS IN FIELD PRIOR TO BIDDING.
- (19) PROTECT FENCE, REPLACE ANY DAMAGED FENCE LIKE NEW.
- (20) RELOCATE EXISTING DUCTWORK DROP TO THIS VICINITY.
- (21) INSTALL NEW FLOW METER IN THIS VICINITY. MATCH EXISTING TYPE.
- (22) INSTALL RELOCATED FLOW METER IN THIS VICINITY. FLOW METER REMOVED FROM SHEET
- (23) INSTALL 14" NEW MODULATING CHILLED WATER BYPASS VALVE IN THIS VICINITY.
- (24) BID ADDITIVE #1: INSTALL NEW MODULATING VALVES IN EXISTING CONDENSER WATER PIPING.
- (25) REPLACE EXISTING CONTROL VALVE.
- (26) RISE UP THROUGH ROOF AND CONNECT TO NEW CHILLED WATER HEADER ON ROOF. PROVIDE PIPE SUPPORTS EVERY 5 FEET ON ROOF FOR NEW 16" HEADER LINE.
- (27) CAP EXISTING CONNECTION BETWEEN CHILLED WATER PUMP AND CHILLER TO ALLOW WATER TO FLOW THROUGH HEADER.
- (28) INSTALL NEW CONTROL VALVE IN THIS VICINITY.
- (29) BID ADDITIVE #2: REPLACE EXISTING COOLING TOWERS 5 AND 6 WITH NEW STAINLESS STEEL COOLING TOWERS.
- (30) BID ADDITIVE #1: INSTALL FLOW METER ON CONDENSER WATER LINE.
- (31) BID ADDITIVE #1: INSTALL NEW MODULATING VALVE ON CONDENSER WATER LINE.
- (32) INSTALL COOLING TOWER CONDENSER WATER BY PASS VALVE AND PIPE TO BASIN.
- (33) BID ADDITIVE #1: PROVIDE A 12" EQUALIZATION PIPE AND CONNECT TO ALL TOWERS. CONTRACTOR MAY HAVE TO ADJUST BASIN HEIGHT OF EXISTING TOWERS TO REMAIN TO MATCH NEW TOWER BASIN HEIGHT. PIPE MAY BE ROUTED UNDER COOLING TOWERS. PROVIDE PIPE SUPPORTS AS REQUIRED.
- (34) EXTEND REFRIGERANT MONITOR SYSTEM FOR THE NEW CHILLER IN THIS VICINITY. PROVIDE ANY UPGRADES REQUIRED FOR A COMPLETE AN OPERATIONAL SYSTEM. EXTEND REFRIGERANT RELIEF LINES THROUGH ROOF.
- (35) EXTEND 2" MAKE UP WATER LINE TO NEW COOLING TOWER. PROVIDE INSULATION AND HEAT TAPE FOR MAKE UP WATER LINE.
- (36) BYPASS CONTROL VALVE SHALL BE SHUT. PLANT SHALL USE NEW BY PASS LINE INSTALLED IN MAIN COMMON HEADER.

NOTE: CONTRACTOR SHALL PROVIDE 1/4" LAYOUT OF NEW EQUIPMENT TO BE INSTALLED PRIOR TO ANY WORK.

NOTE: CONTRACTOR SHALL MAKE PROVISIONS WITH TEMPORARY CONNECTIONS TO RUN EXISTING CHILLERS TO EACH LOOP WITH MAIN HEADER IS BEING ENLARGED.

NOTE: EXISTING WATER
TREATMENT PROVIDER IS TMB
(THORNTON - MUSSO -
BELLEMIN) (800) 762-9104

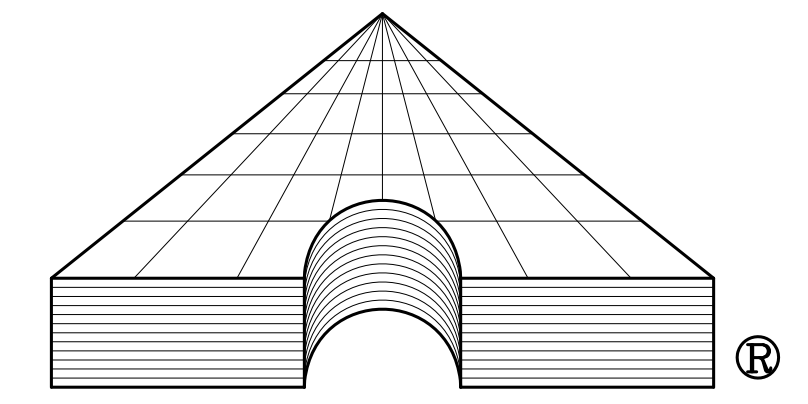
NOTE: CONTRACTOR SHALL BE RESPONSIBLE FOR CHEMICAL TREATMENT FOR ENTIRE PLANT FOR (1) ONE FULL YEAR AFTER SUBSTANTIAL COMPLETION.



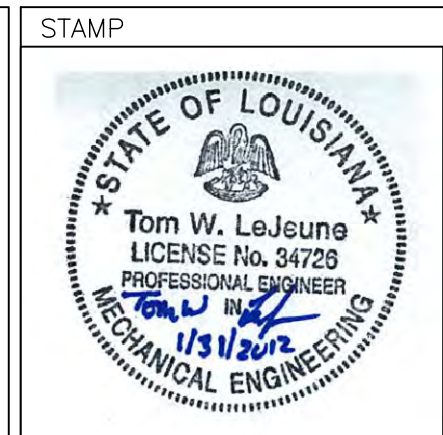
ABBREVIATION		LEGEND	
CHR	: CHILLED WATER RETURN	✓	: CHECK VALVE
CH	: CHILLED WATER SUPPLY	3-WAY	: THREE-WAY CONTROL VALVE
CT	: COOLING TOWER	CV	: CONTROL VALVE
CWFT	: CONDENSER WATER RETURN	✂	: BUTTERFLY VALVE
CWTT	: CONDENSER WATER SUPPLY	---	: EXISTING
EF	: EXHAUST FAN		
NC	: NORMALLY CLOSED		
NO	: NORMALLY OPEN		

FLOW DIAGRAM
N.T.S.

Revisions		
SYMBOL	NAME	Date



ASSOCIATED DESIGN GROUP, INC.
Lafayette, Louisiana (337) 234-5710
PROJECT No. 11106



Drawing Title CENTRAL PLANT FLOW DIAGRAM	
Approved:	
Approved:	

Project Title VA HOSPITAL CENTRAL PLANT MODIFICATIONS	
Building Number 147	Checked LWB
Location ALEXANDRIA, LOUISIANA	

Date 01-31-12
Project No. 000-00-000
Drawing No. 147-M-3
Dwg. 5 of 9

Veterans
Administration

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WATER COOLED CHILLER SCHEDULE

UNIT NO.	LOCATION	MIN. TONS	NPLV	MAX. KW PER TON (W)	COMPRESSOR MOTOR			EVAPORATOR			CONDENSER			REMARKS		
					HP (KW) INPUT	PHASE VOLT	GPM	ENT. WATER TEMP. °F	LVG. WATER TEMP. °F	MAX. P.D.	GPM	ENT. WATER TEMP. °F	LVG. WATER TEMP. °F		MAX. P.D.	
1	BLDG. 147					3-480	2400	54.0	44.0			3000	97	87		
				.595	387						31.3				37.2	YORK YK MAXE, MCQUAY WSC OR APPROVED EQUIVALENT

* CHILLER SHALL HAVE VFD

HVAC PUMP SCHEDULE

PUMP NO.	LOCATION	SYSTEM	FLUID	GPM	PUMP HEAD FT (M)	TEMP. °F	SP. GR.	% EFF.	TYPE	NOM. HP	PHASE VOLT	RPM	REMARKS
147-P1*	BLDG. 147	CHILLED WATER	WATER	2400	155	44	1.0	85	DOUBLE SUCTION	125	3-480	1750	TACO MODEL TA2038 OR APPROVED EQUAL
147-P3**	BLDG. 147	COND. WATER	WATER	3000	85	87	1.0	86	DOUBLE SUCTION	75	3-480	1750	TACO MODEL TA2530 OR APPROVED EQUAL
147-P8*	BLDG. 147	CHILLED WATER	WATER	2400	155	44	1.0	85	DOUBLE SUCTION	125	3-480	1750	TACO MODEL TA2038 OR APPROVED EQUAL (BALANCE PUMP TO 1440 GPM)
147-P9**	BLDG. 147	COND. WATER	WATER	3000	85	87	1.0	86	DOUBLE SUCTION	75	3-480	1750	TACO MODEL TA1538 OR APPROVED EQUAL (BALANCE PUMP TO 1800 GPM)

* CHILLED WATER PUMP SHALL BE A HORIZONTAL SPLIT CASE DOUBLE SUCTION.
**CONDENSER WATER PUMP SHALL BE A DOUBLE SUCTION TOP DISCHARGE TO MATCH EXISTING.

COOLING TOWER SCHEDULE

UNIT NO.	LOCATION	NO. CELLS	GPM EACH CELL	MAX. P.D. FT. (M)	TEMPERATURES °F (°C)	FAN MOTOR RPM	NOM. HP	PHASE VOLT	REMARKS
147-CT1,2	BLDG 147	2	1950**	10	AIR WB 80 WATER IN 97 WATER OUT 87	1750	2Ø40	3-480	
147-CT4	BLDG 147	1	3000*	10	AIR WB 80 WATER IN 97 WATER OUT 87	1750	75	3-480	BAC, EVAPCO OR APPROVED EQUIVALENT

COOLING TOWER SHALL HAVE A BYPASS TO SUMP CONNECTION, 1/2" COLD WATER MAKE UP CONNECTION, 2" DRAIN, 3" OVERFLOW, VIBRATION SWITCHES, CONTROL PANEL, LADDER, PLATFORM, MAINTENANCE PLATFORM, ETC.

COOLING TOWER SHALL HAVE TWO (2) 12 KW BASIN HEATER ELEMENTS.

* SHALL BE BALANCED TO 1800 GPM.

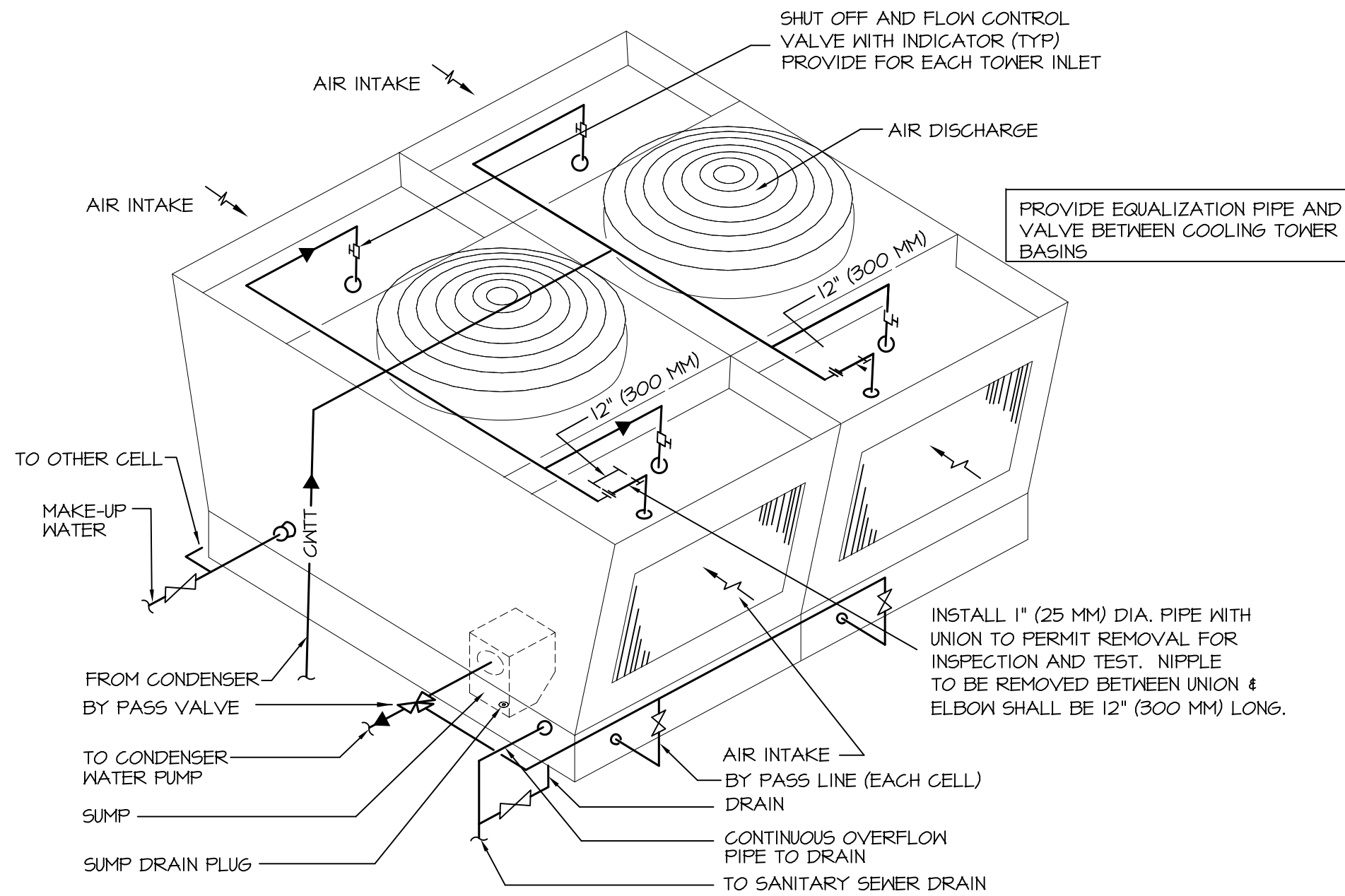
** SHALL BE BALANCED TO 1500 GPM EACH.

CONTROL VALVE SCHEDULE

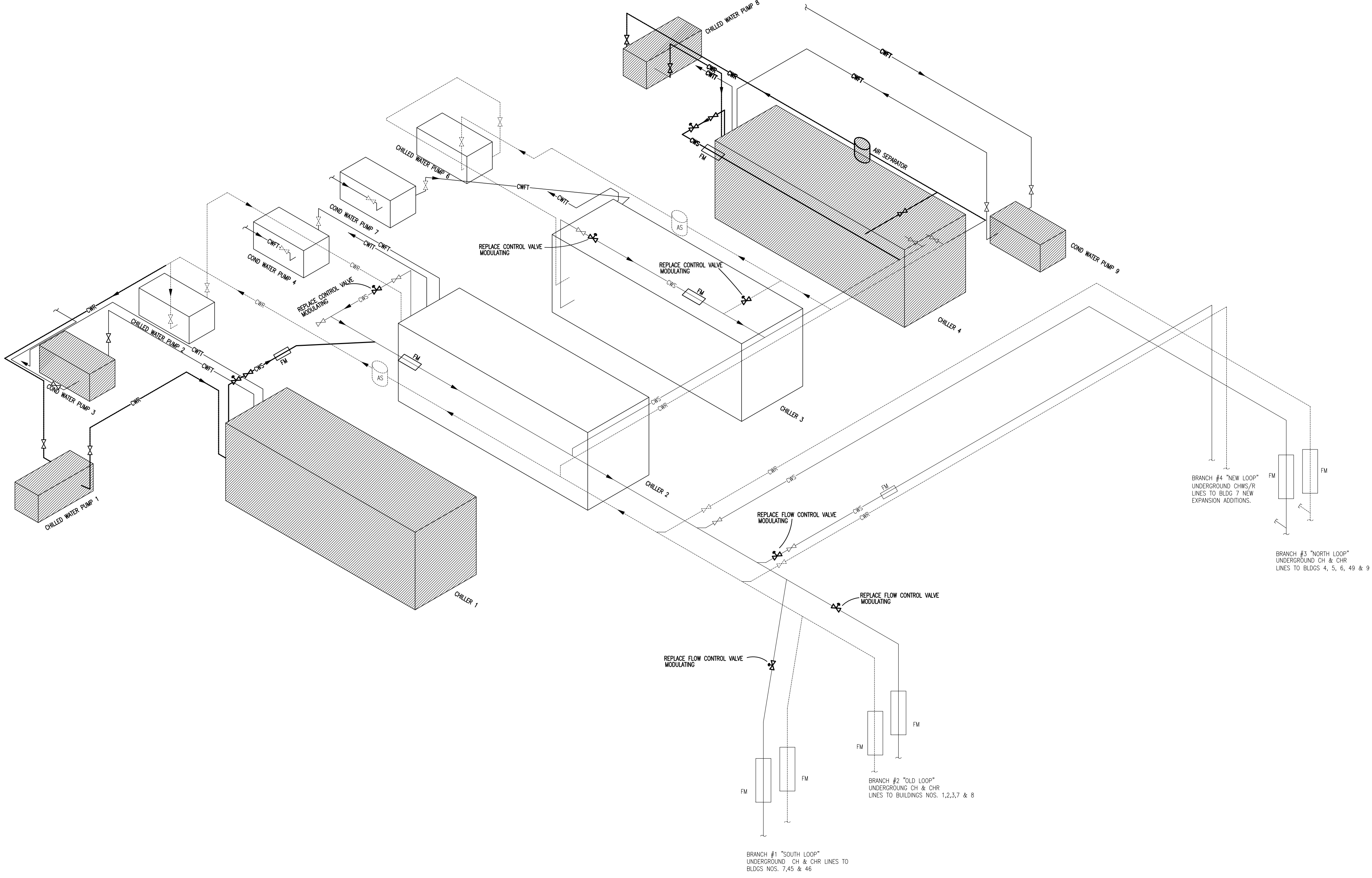
UNIT NO.	SERVICE	SIZE	CAPACITY GPM	OPERATING GPM	ELEC. SERVICE	REMARKS
MV-CT1R	COOLING TOWER 1 RETURN	10"	1950	1500	120/1/60	MODULATING , BID ADDITIVE #1
MV-CT1S	COOLING TOWER 1 SUPPLY	10"	1950	1500	120/1/60	MODULATING , BID ADDITIVE #1
MV-CT2R	COOLING TOWER 2 RETURN	10"	1950	1500	120/1/60	MODULATING , BID ADDITIVE #1
MV-CT2S	COOLING TOWER 2 SUPPLY	10"	1950	1500	120/1/60	MODULATING , BID ADDITIVE #1
MV-CT3R	COOLING TOWER 3 RETURN	10"	2100	1950	120/1/60	MODULATING , BID ADDITIVE #1
MV-CT3S	COOLING TOWER 3 SUPPLY	10"	2100	1950	120/1/60	MODULATING , BID ADDITIVE #1
MV-CT4R	COOLING TOWER 4 RETURN	12"	3000	1800	120/1/60	MODULATING , BID ADDITIVE #1
MV-CT4S	COOLING TOWER 4 SUPPLY	12"	3000	1800	120/1/60	MODULATING , BID ADDITIVE #1
MV-CT5R	COOLING TOWER 5 RETURN	10"	1950	1500	120/1/60	MODULATING , BID ADDITIVE #1
MV-CT5S	COOLING TOWER 5 SUPPLY	10"	1950	1500	120/1/60	MODULATING , BID ADDITIVE #1
MV-CT6R	COOLING TOWER 6 RETURN	10"	1950	1500	120/1/60	MODULATING , BID ADDITIVE #1
MV-CT6S	COOLING TOWER 6 SUPPLY	10"	1950	1500	120/1/60	MODULATING , BID ADDITIVE #1
MV-CH-1	CHILLER #1	12"	2400	2400	120/1/60	MODULATING , BID ADDITIVE #1
MV-CH-2	CHILLER #2	12"	2400	2400	120/1/60	MODULATING , BID ADDITIVE #1
MV-CH-3	CHILLER #3	8"	1560	1560	120/1/60	MODULATING , BID ADDITIVE #1
MV-CH-4	CHILLER #3	10"	1440	1440	120/1/60	MODULATING , BID ADDITIVE #1
MV-CWBP-1	DECOUPLER	14"	--	--	120/1/60	MODULATING , BASE BID
CT-1-BP	COOLING TOWER 1 BY PASS	10"	1950	1500	*	BASE BID
CT-2-BP	COOLING TOWER 1 BY PASS	10"	1950	1500	*	BASE BID
CT-4-BP	COOLING TOWER 1 BY PASS	10"	1950	1500	*	BASE BID
CT-5-BP	COOLING TOWER 1 BY PASS	10"	1950	1500	*	BID ADDITIVE #2
CT-6-BP	COOLING TOWER 1 BY PASS	10"	1950	1500	*	BID ADDITIVE #2

COORDINATE REQUIREMENTS WITH CONTROLS CONTRACTOR.

MECHANICAL SCHEDULES N.T.S.



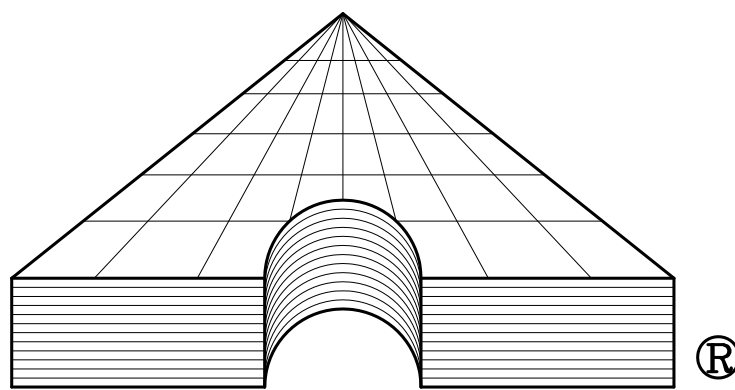
TYPICAL PIPING CONNECTIONS TO DUAL CELL COOLING TOWER



PIPING SCHEMATIC N.T.S.

Revisions

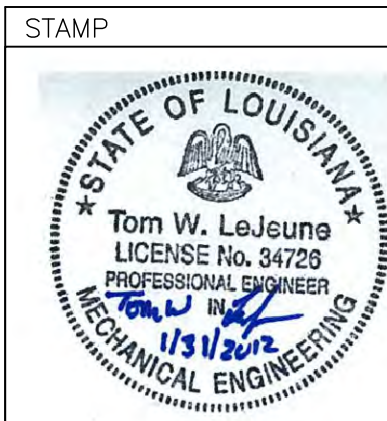
SYMBOL	NAME	Date



Associated Design Group, Inc.

Lafayette, Louisiana (337) 234-5710

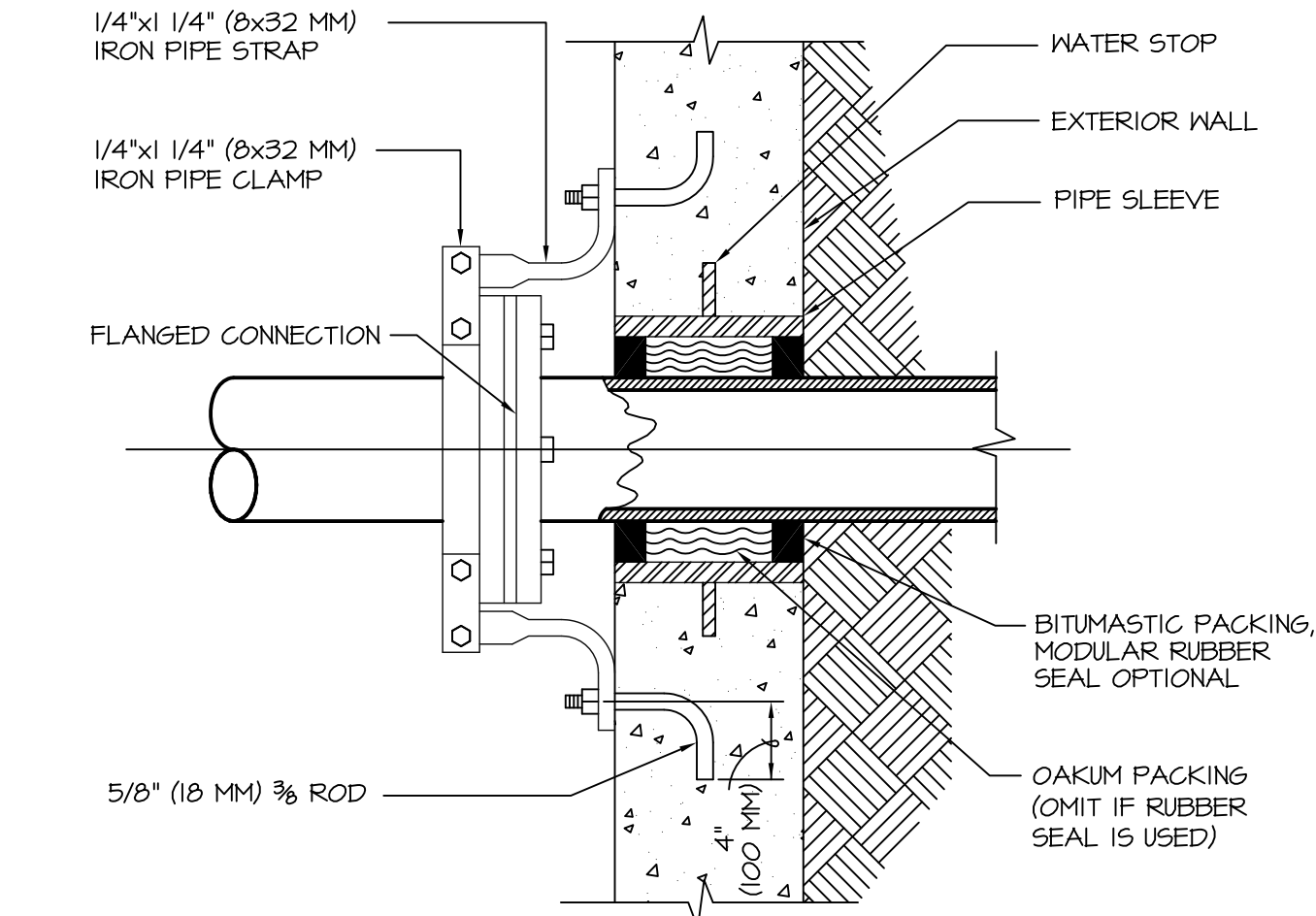
PROJECT No. 11106



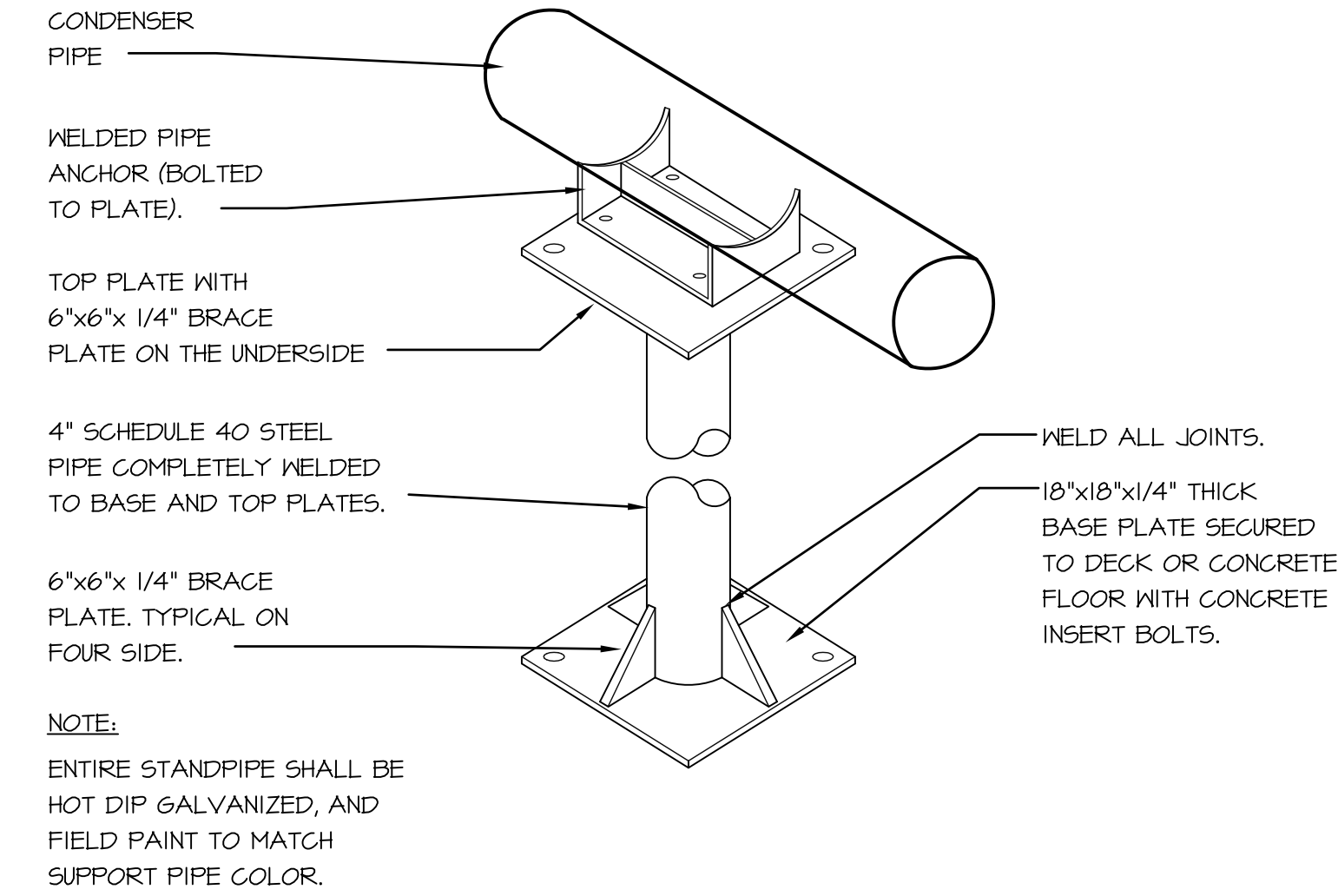
Drawing Title MECHANICAL SCHEDULES	Project Title VA HOSPITAL CENTRAL PLANT MODIFICATIONS	Date 01-31-12
Approved:	Building Number 147	Checked LWB
Approved:	Location ALEXANDRIA, LOUISIANA	Drawn MAA
		DRAWING NO. 147-M-4
		Dwg. 5 of 9

Veterans Administration

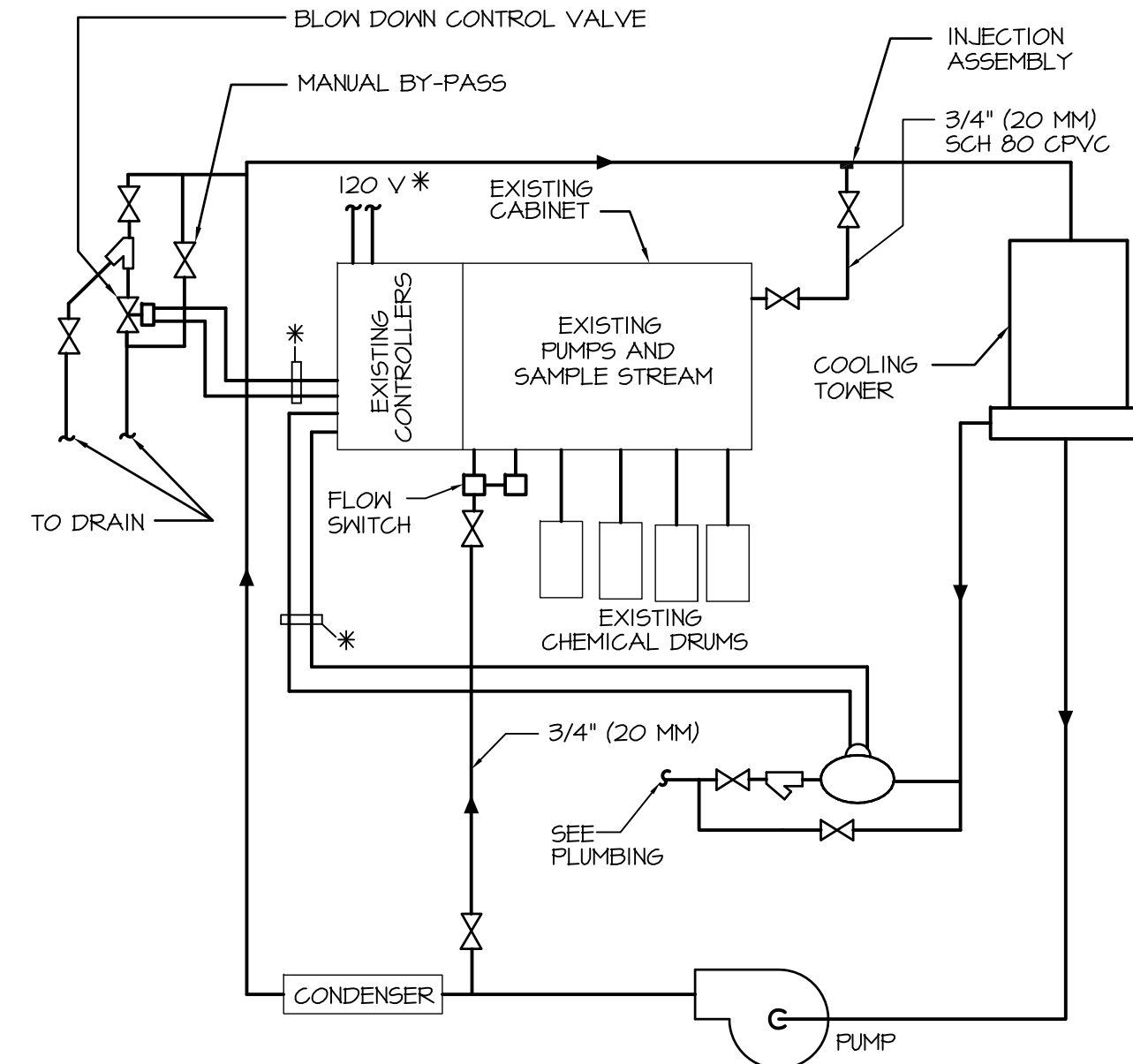
1 ANCHOR FOR CONDENSER WATER PIPES



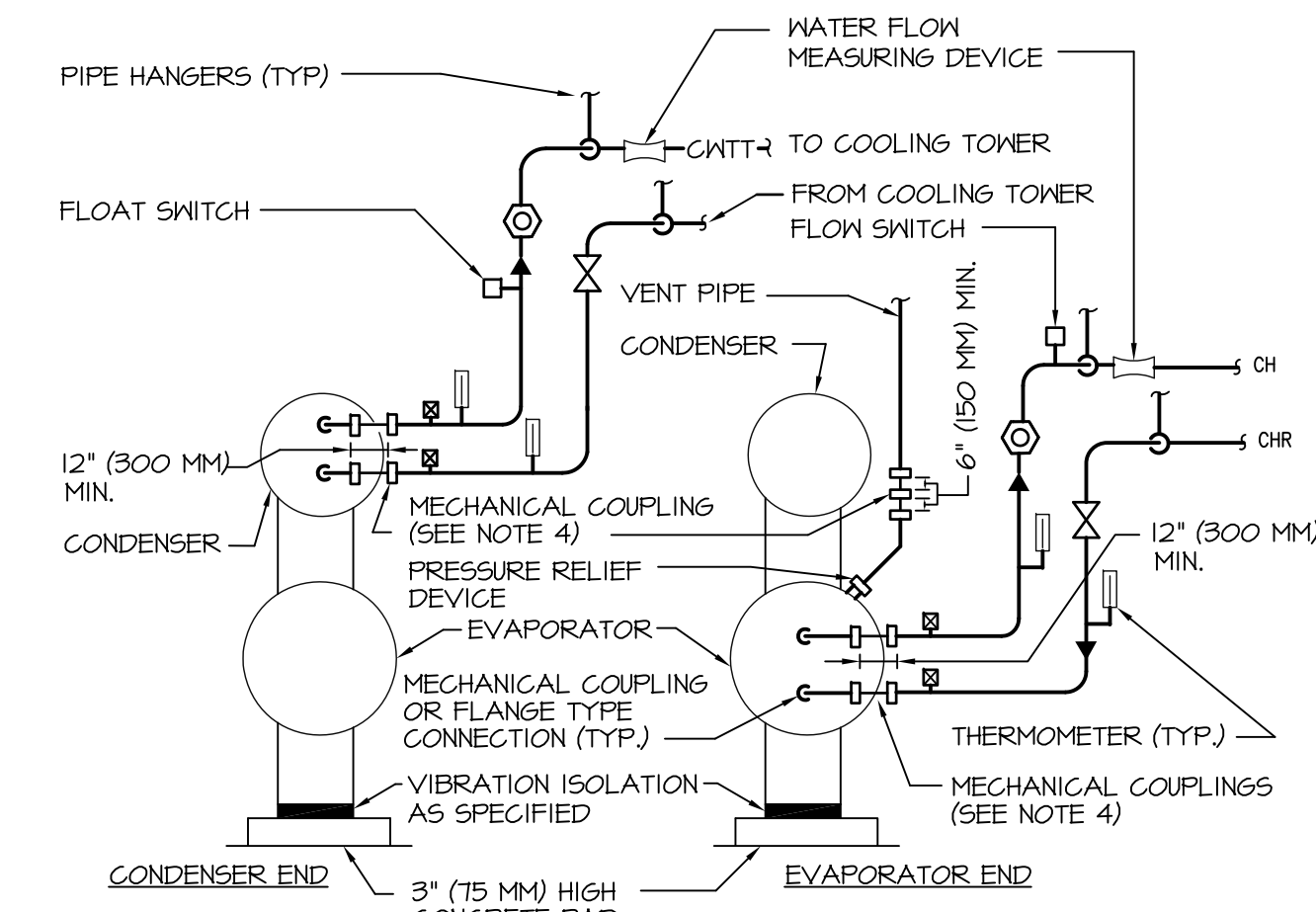
2 TOWER PIPE SUPPORT DETAIL



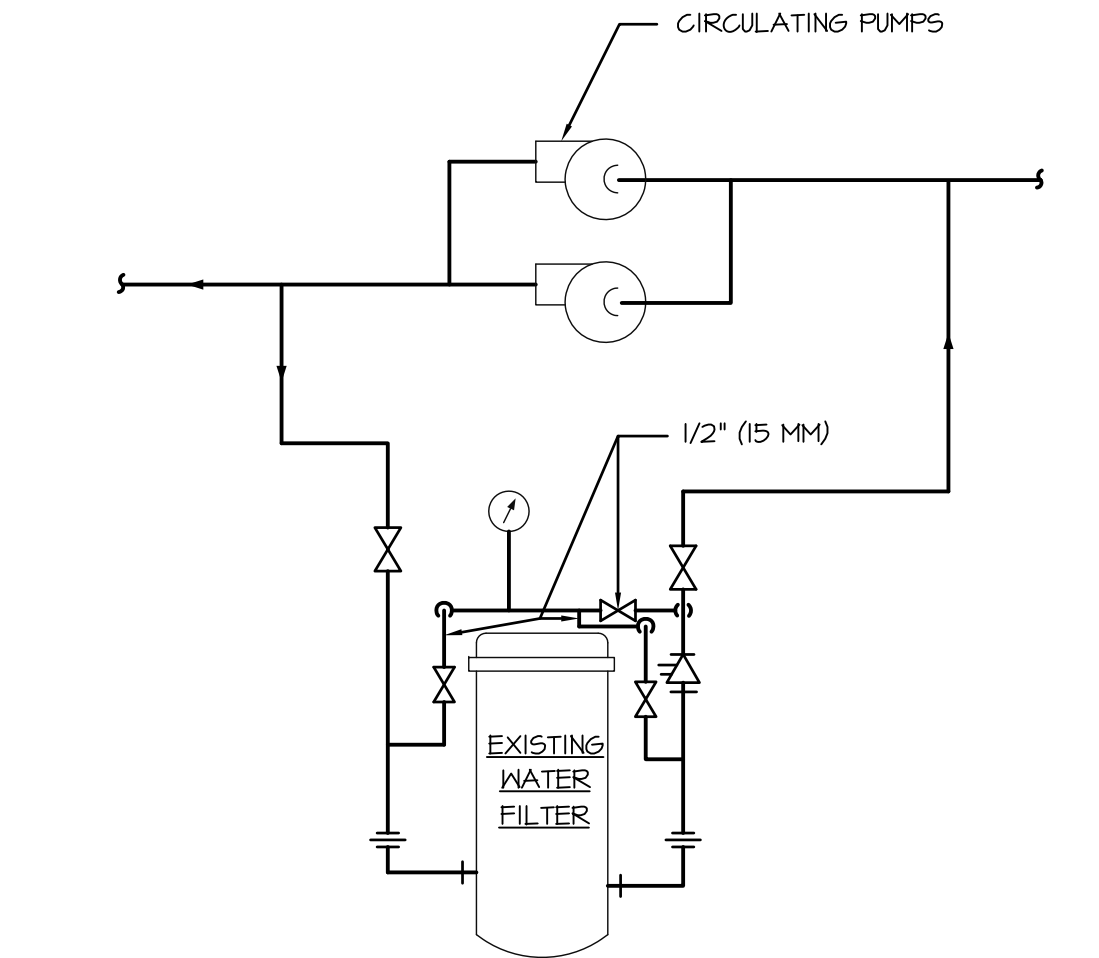
3 TYPICAL COOLING TOWER WATER TREATMENT SYSTEM (OPEN SYSTEM)



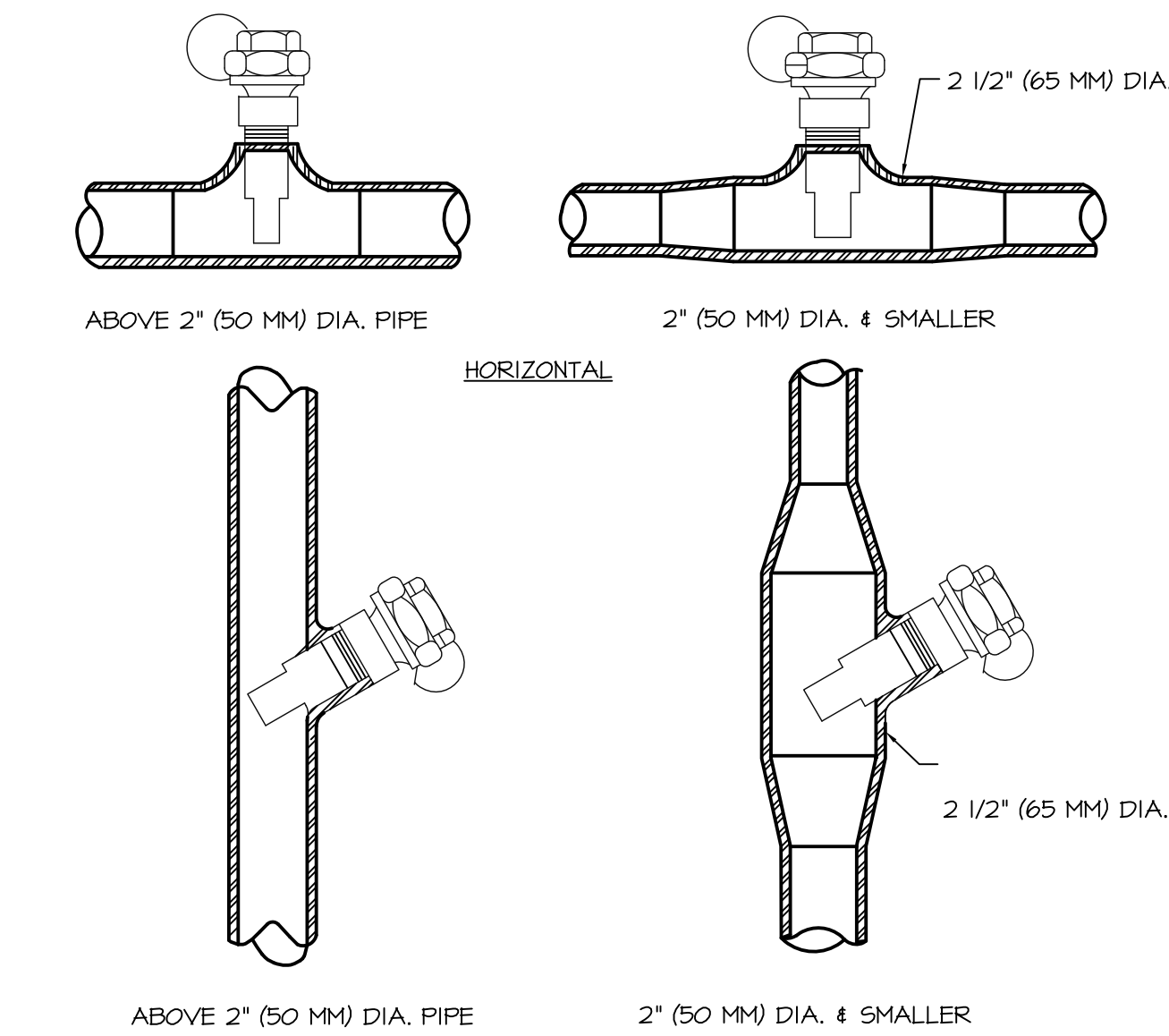
4 TYPICAL PIPING CONNECTIONS TO WATER COOLED ELECTRIC CHILLER



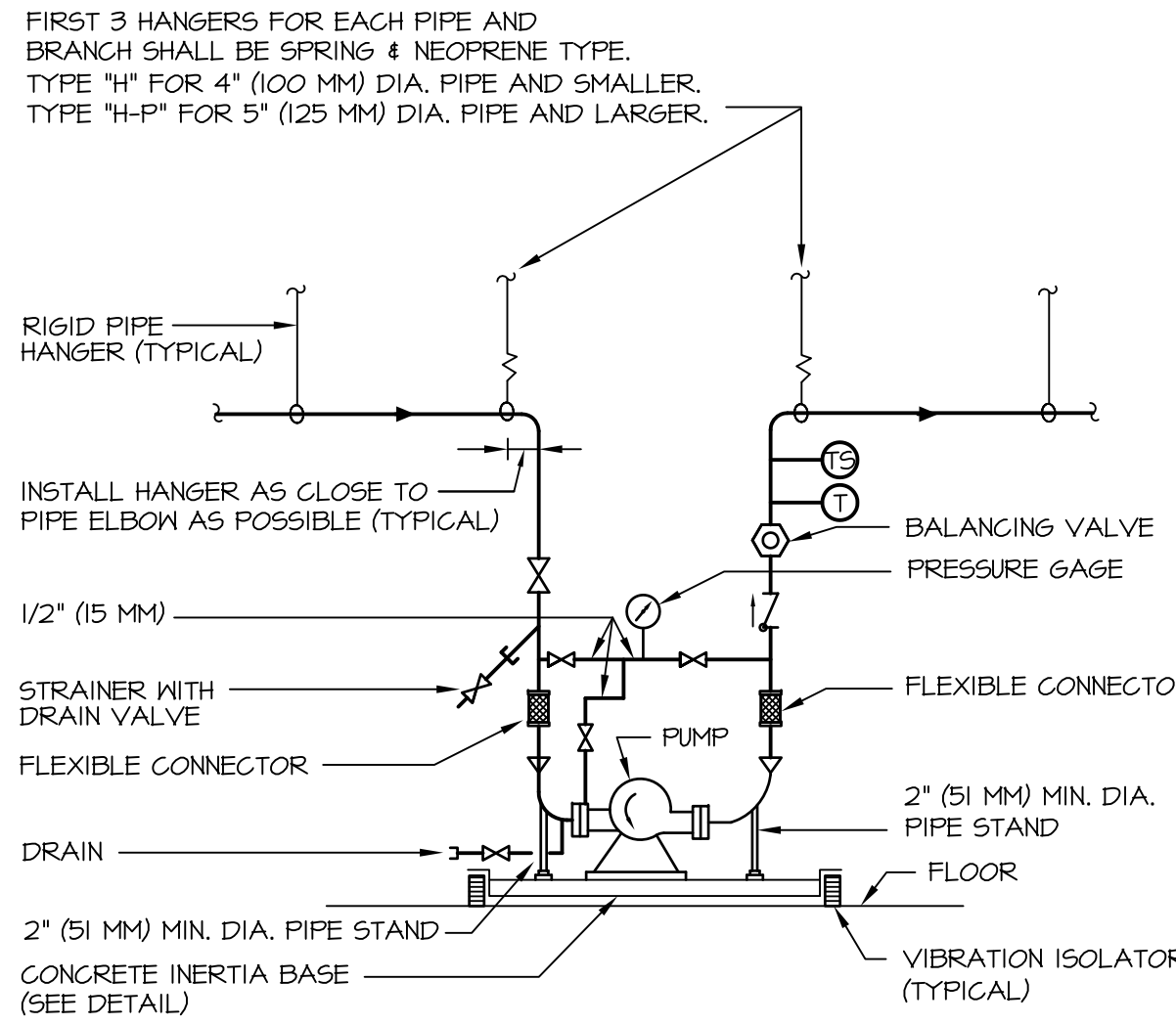
5 TYPICAL PIPING CONNECTIONS TO WATER FILTERS FOR CHILLED WATER SYSTEMS



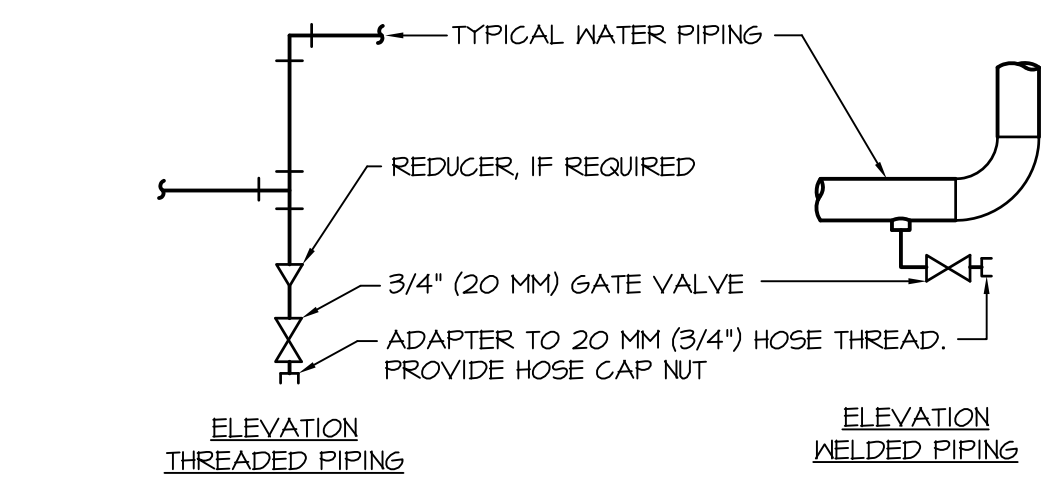
6 INSTALLATION OF THERMOMETER WELLS



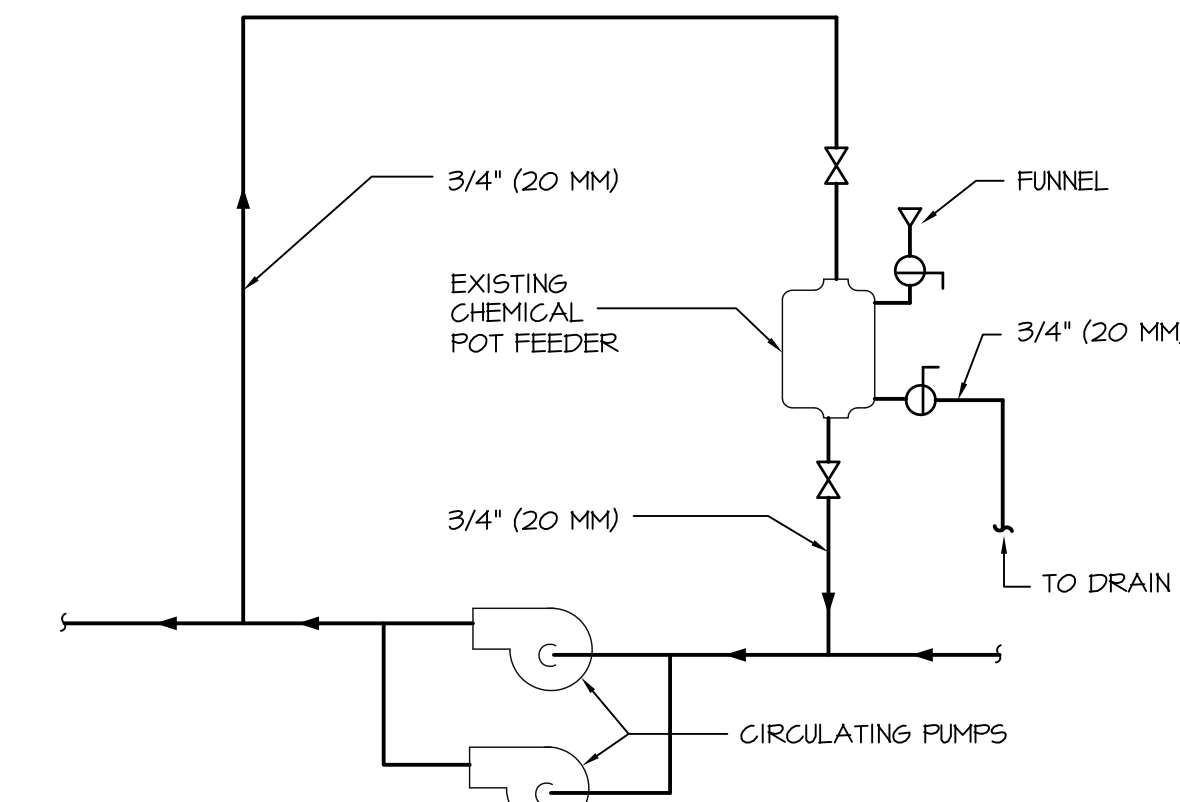
7 TYPICAL PIPING CONNECTIONS TO FLOOR MOUNTED DOUBLE SUCTION WATER PUMPS



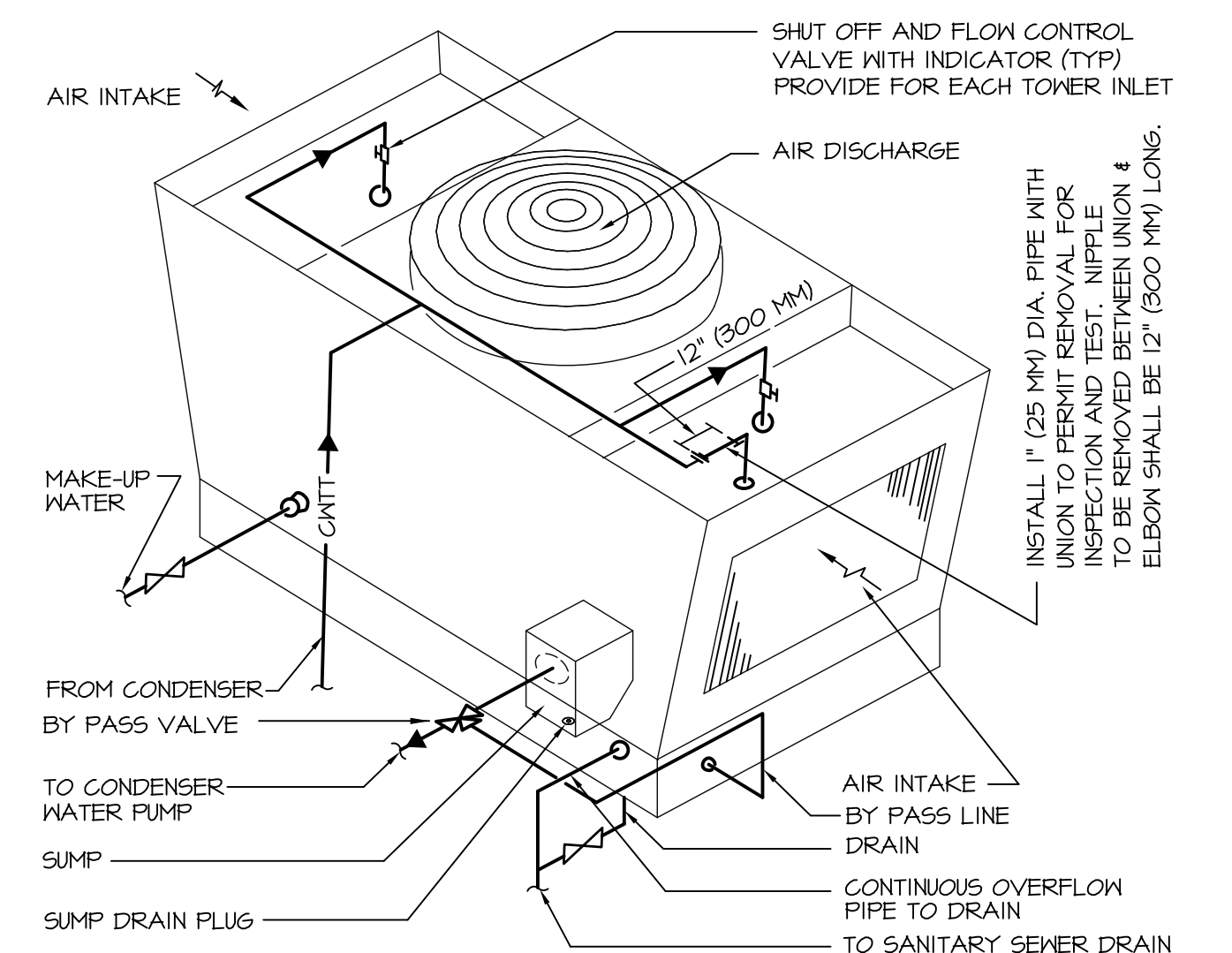
8 TYPICAL CHILLED AND HOT WATER PIPING DRAIN VALVE CONNECTIONS



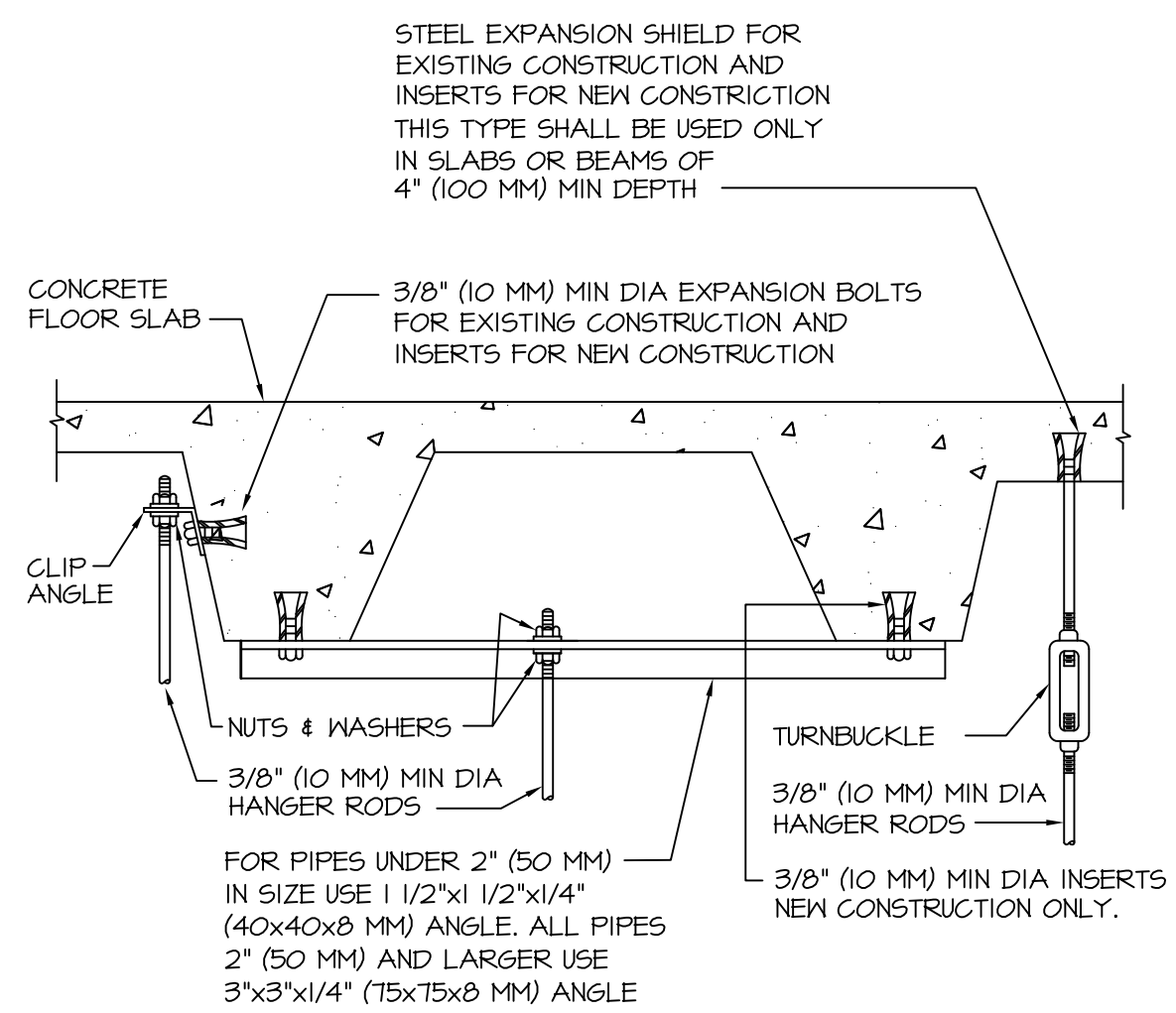
9 TYPICAL CHILLED AND HEATING HOT WATER TREATMENT FOR CLOSED SYSTEMS



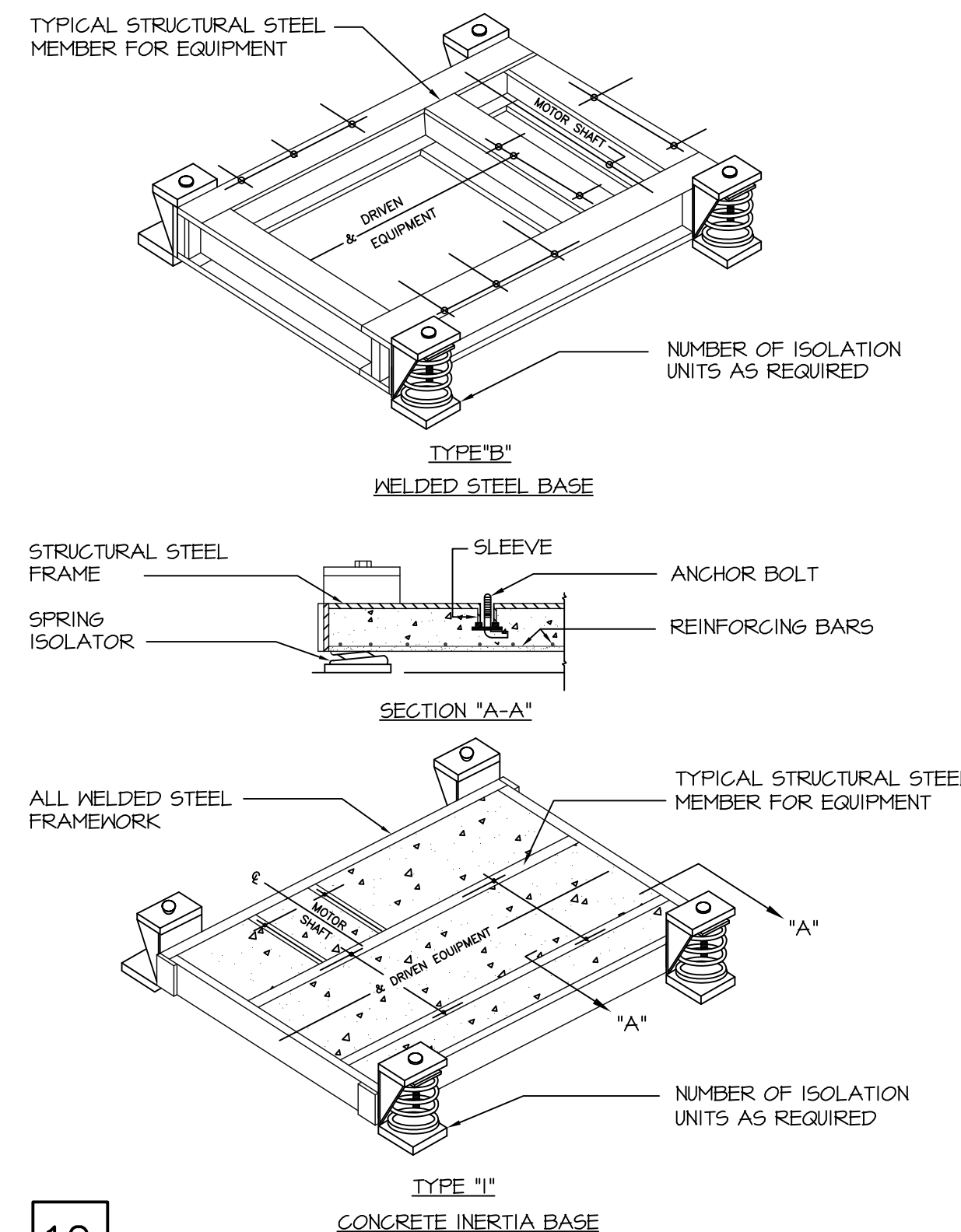
10 TYPICAL PIPING CONNECTIONS TO SINGLE CELL COOLING TOWER



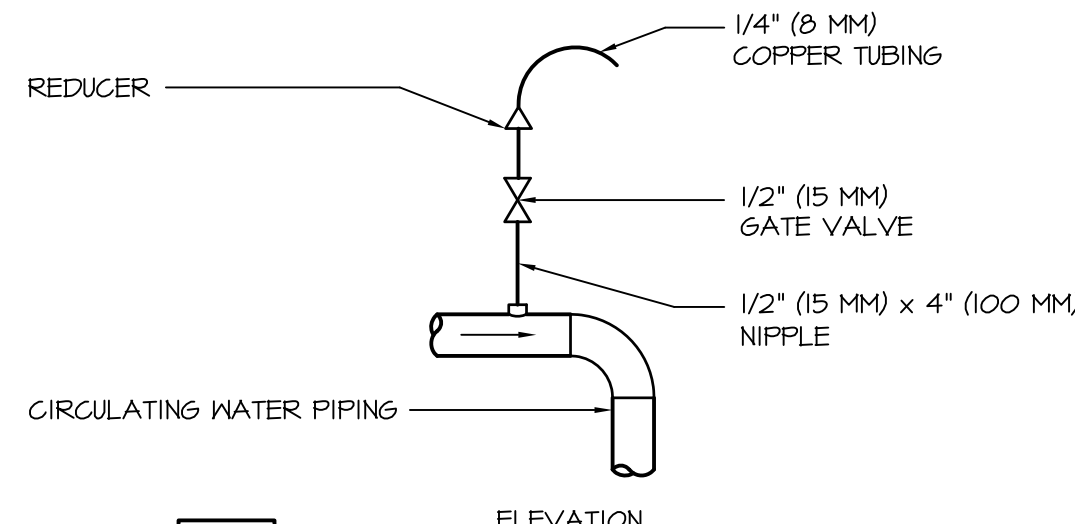
11 TYPICAL METHOD OF SECURING HANGER RODS IN CONCRETE SLABS AND BEAMS.



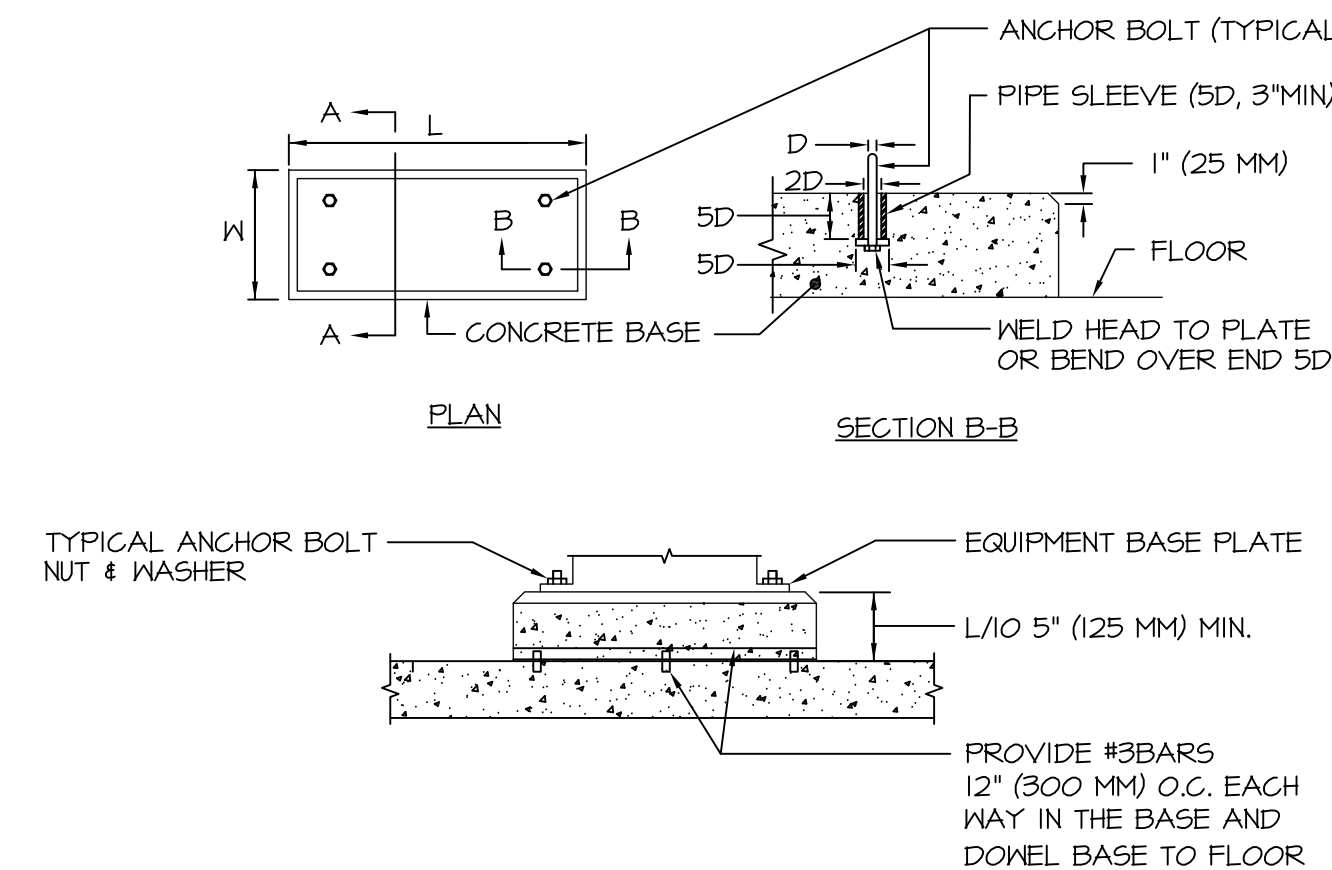
12 VIBRATION ISOLATION BASES



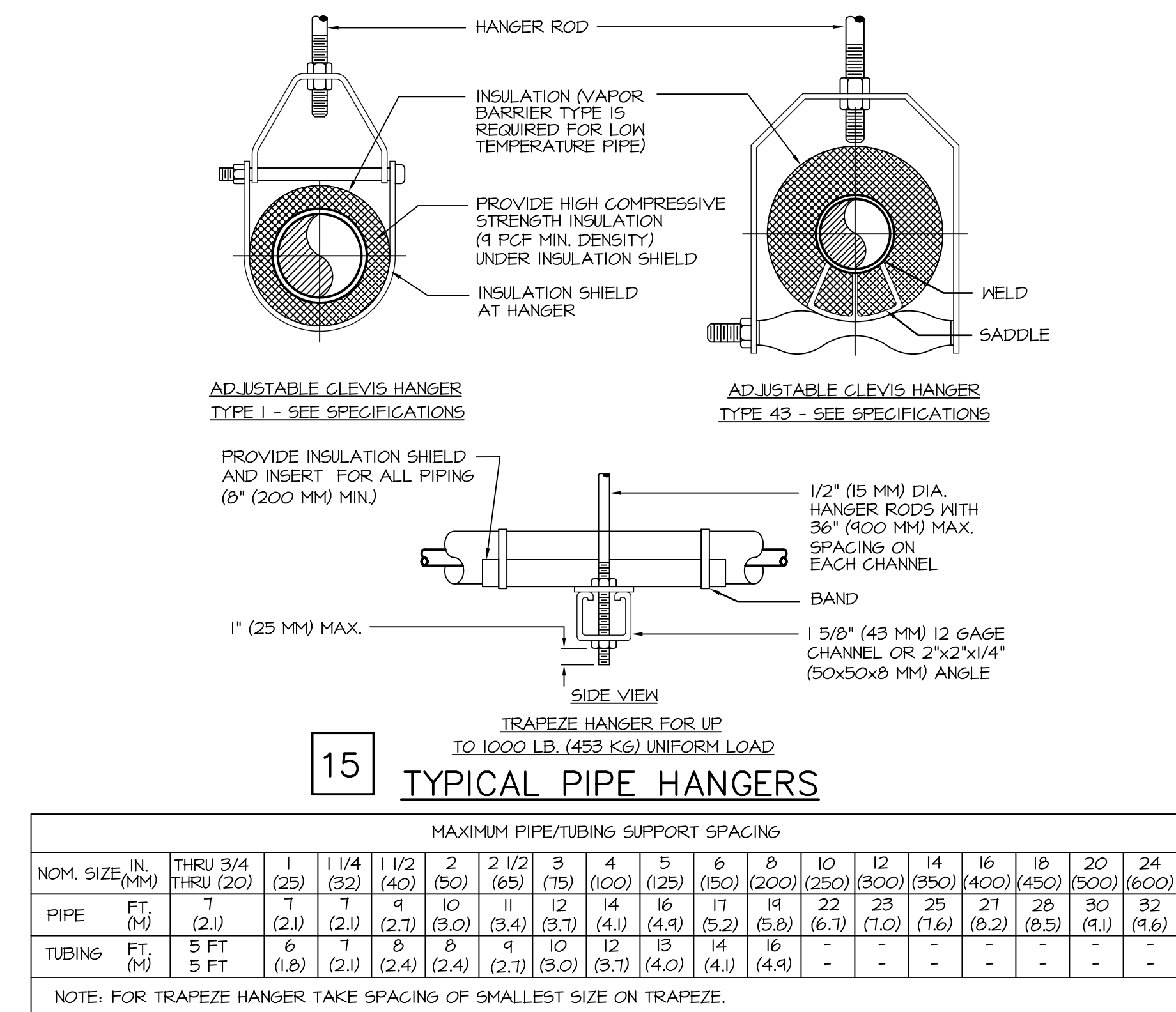
13 TYPICAL AIR VENT



14 CONCRETE EQUIPMENT BASES

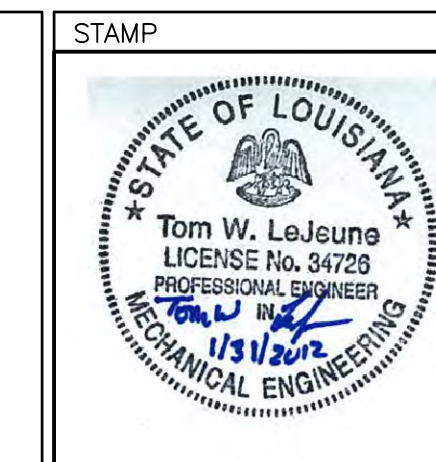


15 TYPICAL PIPE HANGERS



NOTES:
1. L AND W DIMENSIONS SHALL BE 6 IN. (150 MM) GREATER THAN THE EQUIPMENT BASE PLATE.

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PROJECT No. 11106

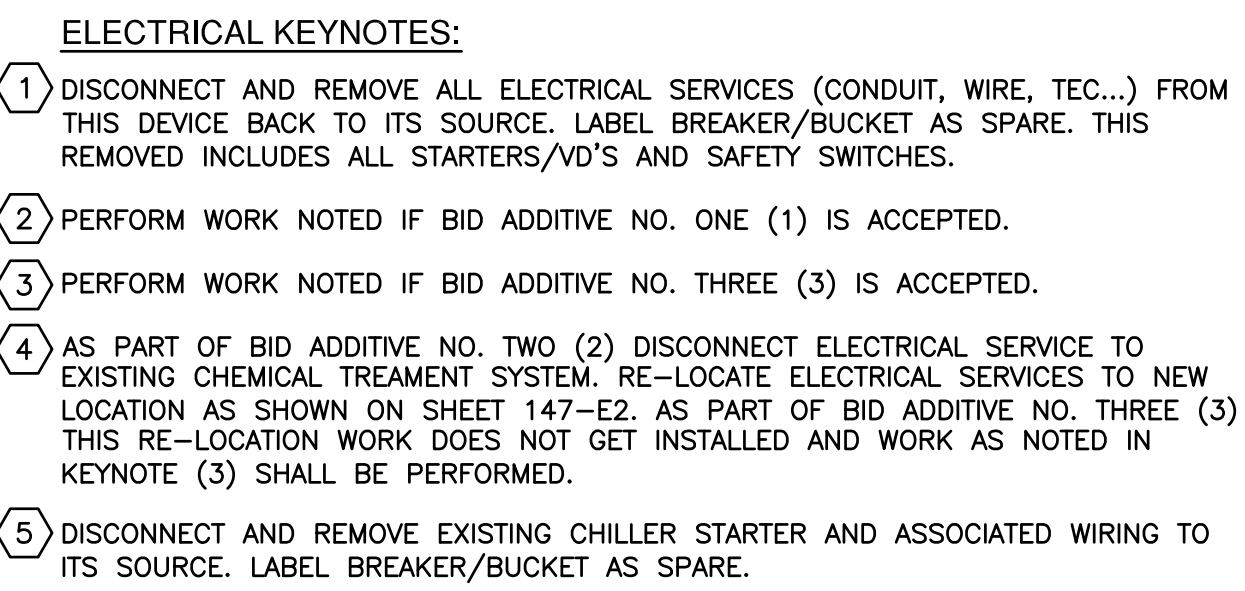


Stamp	Drawing Title
	MECHANICAL DETAILS
Approved:	
Approved:	

Project Title	VA HOSPITAL CENTRAL PLANT MODIFICATIONS
Building Number	147
Location	ALEXANDRIA, LOUISIANA

Date	01-31-12
Project No.	000-00-000
Drawing No.	147-M-5
Dwg.	7 of 9

Veterans Administration



SCALE : 1/4" = 1' - 0" REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS

STAMP

STATE OF LOUISIANA

DAVID B. STELLY

License No. 26070

1/30/12

PROFESSIONAL ENGINEER

Veterans Administration

- ELECTRICAL GENERAL NOTES:
- A. ALL PENETRATIONS TO EXTERIOR WALLS SHALL BE MADE USING CORE-DRILL. SEAL PENETRATION USING GROUT.
- B. CONTRACTORS SHALL PROVIDE GENERATOR, FUEL, AND ALL CONNECTIONS TO EXISTING PLANT EQUIPMENT DURING OUTAGE TO INSTALL NEW SWITCHBOARD. THIS INCLUDES TEMPORARY DISTRIBUTION PANEL AND TEMPORARY WIRING TO THE EXISTING MCC, EQUIPMENT AND PANELS FED FROM THE EXISTING MAIN SWITCHBOARD. GENERATOR SHALL BE RATED 2.5MW. FUEL SUPPLY SHALL BE SUFFICIENT FOR OUTAGE TIME.

ELECTRICAL KEYNOTES:

1. WORK ASSOCIATED WITH THE REPLACEMENT OF THESE COOLING TOWERS SHALL BE PERFORMED AS PART OF BID ADDITIVE NO. ONE (1)
2. WORK ASSOCIATED WITH THIS PROVISION AND INSTALLATION OF NEW CHILLER NO. FOUR (4), COOLING TOWER NO. FOUR (4), PUMP 147-P-8, PUMP 147-P-9, AND THE RELOCATION OF EXISTING CHEMICAL TREATMENT SYSTEM SHALL BE PERFORMED AS PART OF BID ADDITIVE NO. TWO (2).
3. WORK ASSOCIATED WITH THIS PROVISION AND INSTALLATION OF THE CHEMICAL-LESS WATER TREATMENT SYSTEM SHALL INCLUDE THE DELETION OF THE RELOCATION OF THE EXISTING CHEMICAL TREATMENT SYSTEM AND SHALL BE PROVIDED AND INSTALLED AS PART OF BID ADDITIVE NO. THREE (3)
4. NEW LOCATION OF EXISTING CHEMICAL TREATMENT SYSTEM. EXTEND EXISTING CIRCUITRY TO THIS LOCATION AND RE-CONNECT ELECTRICAL SERVICE. THIS WORK SHALL BE PERFORMED ONLY AS PART OF BID ADDITIVE NO. TWO (2).
5. PERFORM WORK ASSOCIATED WITH THIS DEVICE AS PART OF BID ADDITIVE NO. THREE (3).
6. PROVIDE AND INSTALL A NEW 30A, 2-POLE, 600V, HEAVY DUTY, NEMA 1, FUSED SAFETY SWITCH FUSED AT EQUIPMENT MANUFACTURER'S RECOMMENDATIONS. CONTINUE CIRCUITRY TO DEVICE AND TERMINATE.
7. PROVIDE AND INSTALL A NEW 30A, 2-POLE, 600V, HEAVY DUTY, NEMA 3R, FUSED SAFETY SWITCH FUSED AT EQUIPMENT MANUFACTURER'S RECOMMENDATIONS. CONTINUE CIRCUITRY TO DEVICE AND TERMINATE.
8. PROVIDE AND INSTALL ONE (1) HOFFMAN (OR APPROVED EQUIVALENT) FIBERGLASS ULTRX SERIES NEMA 4X 40"x32" SOLID DOOR, 3-POINT LATCH ENCLOSURE. CUSTOMIZED BOX TO HAVE REMOVABLE BOTTOM FLOOR COMPLETE WITH RUBBER BUSHING AROUND OPENING OF INCOMING CONDUCTORS FROM A GENERATOR AND INTO PERMANENTLY INSTALLED CONDUCTORS INSTALLED TO GENERATOR FEED MAIN BREAKER IN MSWBD.

PANEL DESCRIPTION: MSWBD										NEMA 3R/GASKETED SERVICE ENTRANCE AND DOUBLE SECTION										MOUNTING: FREE STANDING A.I.C.: 65,000 500QA MCB.note.3										VOLT: 277/480 PHASE: 3 WIRE: 4									
SERVING	CKT #	BKR AMP.	WIRE	GND	COND.	PHASE A	PHASE B	PHASE C		COND.	GND	WIRE	BKR AMP.	CKT #	SERVING																								
NEW CHILLER #4 (600ton)	1	1200	3-4" 4-600 MCM							1-1/2"	6	1/0	150	2	NEW COOLING TWR 1-2																								
	3		w/ 3/0 gnd											4																									
	5													6																									
PUMP #8 (125hp)	7	250	3/0 4	2-1/2"						2"	6	1/0	150	8	NEW COOLING TWR 4																								
	9													10																									
	11													12																									
PUMP #9 (75hp)	13	150	1/0 6	1-1/2"						2"	4	4/0	225	14	NEW PUMP 1 (125hp)																								
	15													16																									
	17													18																									
NEW PUMP #3 (75hp)	19	150	1/0 6	1-1/2"						4-4" 4	4-600MCM	1600	20	NEW CHILLER #1																									
	21										w 4/0 gnd			22																									
	23													24																									
EXISTING MDP	25	3000	8-4" 4-600 MCM							3/4"	12	12	20	26	WATER TREATMENT #3																								
	27		w/ 3/0 gnd											28																									
	29									1-1/2"	8	3	100	30	147-CT5																								
WATER TREATMENT #1	31	20	12	12	3/4"									32																									
	33													34																									
WATER TREATMENT #2	35	20	12	12	3/4"					1-1/2"	8	3	100	36	147-CT6																								
	37													38																									
	39													40																									
WATER TREATMENT #4	41	20	12	12	3/4"					1"	10	8	45	42	XFMR 'CTV'																								
	43													44																									
TEMP. EMER. CHILLER	45	1000	3 Sets	3	3-1/2"									46																									
	47		#400											48																									
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DEMAND LOAD:										TOTAL LOAD										4030.4 KVA																			
NOTE:										1. PROVISIONS MADE FOR THE TWO CHILLER CIRCUITS TO ALLOW THEIR BREAKERS TO BE LOADED IN HOT POSITION.										4850 AMPS																			
										2. PROVIDE AND INSTALL ALL BREAKERS IN THIS SWITCHBOARD AS SCHEDULED AS PART OF THE BASE BID.																													
										3. PROVIDE CHARGING MAIN 5000 AMPERE BREAKER AT OPPOSITE END OF SWITCHBOARD FOR GENERATOR TIE-IN AND XING-KEY INTERLOCK WITH MAIN UTILITY BREAKER TO ALLOW ONLY ONE OF THE TWO BREAKERS CLOSED AT ANY ONE TIME.																													