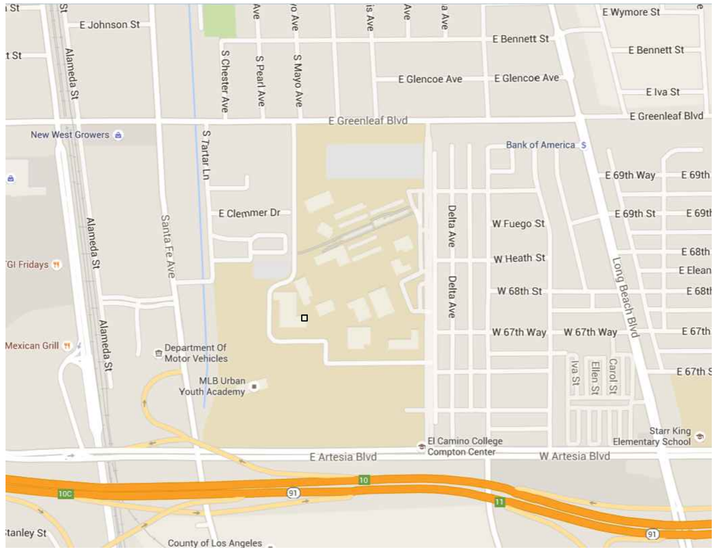
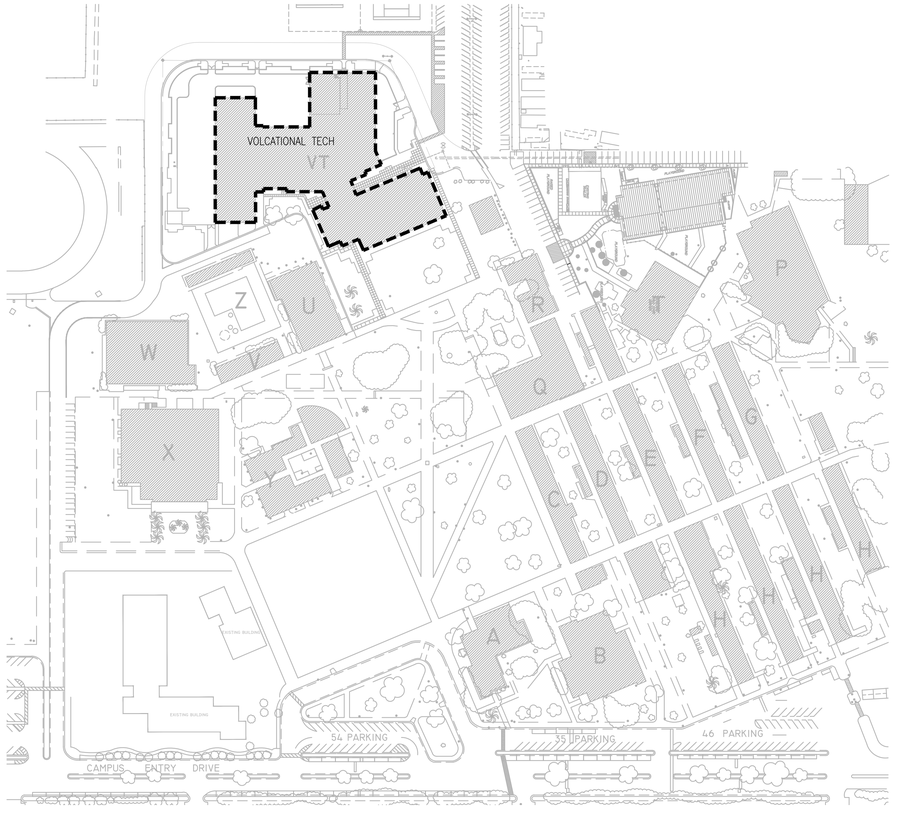
BOILER REPLACEMENT
VOCATIONAL TECH BLDG
COMPTON COMMUNITY COLLEGE DISTRICT
1111 E. ARTESIA BLVD., COMPTON, CA 90221

VICINITY MAP



SITE LOCATION



INDEX OF DRAWINGS

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DATE	MARK	REVISION
	1	
	2	

DATE	ISSUED FOR
FEB. 2016	ISSUED FOR BID

PROJECT NO. : 15442

DRAWN BY:	CHECKED BY:
dHA+CALPEC	KC/AI

DATE : 2016-02-16

TITLE:
TITLE, VICINITY MAP, SITE LOCATION, INDEX OF DRAWINGS & CONSULTANTS

SHEET NO.
T-0.1

SHEET OF

GENERAL NOTES

A. GENERAL:

1. SCOPE OF THE PROJECT INCLUDES WORK SHOWN ON THE DRAWINGS AND IN THE SPECIFICATIONS.
2. WORK SHOWN ON THE DRAWINGS IS INCLUSIVE, WHETHER SHOWN AT EACH LOCATION OR NOT, AS LONG AS IT IS SHOWN IN ONE LOCATION ON THE DRAWINGS OR IN THE SPECIFICATIONS WORK SHALL BE PROVIDED.
3. THE CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED WORK. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS AND METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES.
4. THESE DRAWINGS ARE DIAGRAMMATIC. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY OF COORDINATION WITH VARIOUS TRADES AND INCLUDE TURNS, BENDS, ADDITIONAL LENGTHS OF DUCTS, PIPING AND ELEVATION CHANGES, AND TRANSITIONS WITHOUT ADDITIONAL COST TO THE OWNER.
5. THE CONTRACTOR MUST EXAMINE CONSTRAINTS AND THE AVAILABLE SPACE AT THE JOB SITE THAT MAY REQUIRE CUSTOM FABRICATION OR DISASSEMBLY AND RE-ASSEMBLY OF CERTAIN EQUIPMENT.
6. PROTECT MATERIALS INCLUDING PIPES FROM DUST AND DEBRIS AND KEEP OPEN END OF PIPES COVERED UNTIL READY FOR INSTALLATION OF NEXT SEGMENT OF WORK.
7. WORK DAMAGED OR CUT INTO DURING CONSTRUCTION SHALL BE PATCHED, REPAIRED, PAINTED AND FINISHED TO MATCH EXISTING ADJACENT SURFACES IN TEXTURE, COLOR, AND FINISH.
8. CONTRACTOR TO SUBMIT SHOP DRAWINGS AND EQUIPMENT CUTS FOR REVIEW PRIOR TO INSTALLATION OF WORK.
9. AT THE COMPLETION OF THE WORK, THE CONTRACTOR SHALL DELIVER TO THE OWNER AND ARCHITECT COMPLETE AS-BUILT DRAWINGS SHOWING WORK AS ACTUALLY INSTALLED.
10. MECHANICAL EQUIPMENT, MATERIALS, AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE 2013 CALIFORNIA BUILDING CODE, CALIFORNIA MECHANICAL CODE, CALIFORNIA ENERGY CODE, CALIFORNIA PLUMBING CODE AND CALIFORNIA FIRE CODE.
11. INSULATION SHALL COMPLY WITH THE REQUIREMENTS OF CALIFORNIA ENERGY CODE AND PROJECT SPECIFICATIONS, WHICHEVER IS MORE STRINGENT.
12. WORK TO BE INSTALLED OUTDOORS; INCLUDING, BUT NOT LIMITED TO; EQUIPMENT, PIPING, CONTROL DEVICES, AND VARIABLE FREQUENCY DRIVES SHALL BE COMPLETELY WEATHERPROOFED.
13. EQUIPMENT SUPPORT SHALL BE COMPATIBLE WITH ROOFING SYSTEM. FLASH AND COUNTERFLASH WEATHER EXPOSED ROOF OPENINGS. REFER TO ARCHITECTURAL DRAWINGS FOR REQUIRED FLASHING DETAILS.
14. CONDITIONS THAT, IN THE CONTRACTOR'S OPINION, PREVENT THE EXECUTION OF THE WORK AS INTENDED SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT IN THE FORM OF AN RFI BEFORE BEGINNING THE WORK IN QUESTION.
15. WORK PERFORMED UNDER THIS CONTRACT IS SUBJECT TO INSPECTION BY THE BUILDING OWNER, ARCHITECT, AND ENGINEER FOR CONFORMITY WITH EXISTING BUILDING SYSTEMS, QUALITY OF PRODUCTS AND INSTALLATION. CONTRACTOR SHALL NOT PERFORM WORK THAT MAY ADVERSELY AFFECT THE EXISTING BUILDING SYSTEMS OPERATION, EITHER DUE TO IMPROPER INSTALLATION, INADEQUATE COORDINATION OR POOR WORKMANSHIP. WORK INSPECTED AND FOUND UNACCEPTABLE BY THE OWNER, ARCHITECT SHALL BE PROMPTLY REPLACED OR CORRECTED AT NO ADDITIONAL COST.
16. FIELD OBSERVATION AND SUPPORT SERVICES PERFORMED BY THE ENGINEER PRIOR TO, DURING, OR AFTER CONSTRUCTION ARE FOR THE PURPOSE OF ACHIEVING QUALITY CONTROL AND SHALL NOT BE CONSTRUED AS SUPERVISION OF CONSTRUCTION.
17. PIPING PENETRATING SLAB TO SLAB PARTITIONS SHALL BE SEALED AIRTIGHT. A RESILIENT CAULKING AND PACKING SHALL BE USED. SEAL OPENINGS AROUND DUCTWORK AND PIPING PENETRATING FIRE RESISTIVE RATED WALLS AND FLOORS TO MAINTAIN RATING INTEGRITY.
18. PROVIDE ACCESS DOORS/PANELS REQUIRED FOR SERVICING LISTED ITEMS SUCH AS VALVES, AND DEVICES REQUIRING ACCESS WHETHER OR NOT SUCH ACCESS IS SHOWN ON DRAWINGS. COORDINATE EXACT LOCATION OF CEILING, WALL, OR FLOOR ACCESS PANELS WITH ARCHITECTURAL DRAWINGS.
19. IN THE EVENT THE CONTRACTOR ENCOUNTERS ASBESTOS OR ASBESTOS RELATED MATERIALS DURING PERFORMANCE OF WORK. WORK WITHIN THE AFFECTED AREA SHALL IMMEDIATELY STOP AND THE CONTRACTOR SHALL NOTIFY THE OWNER. WORK WITHIN THE AFFECTED AREA SHALL NOT COMMENCE UNTIL ASBESTOS IS ABATED AND OWNER HAS GIVEN WRITTEN PERMISSION TO RESUME.

B. EQUIPMENT:

1. A MAINTENANCE LABEL SHALL BE AFFIXED TO MECHANICAL EQUIPMENT AND A MAINTENANCE MANUAL SHALL BE PROVIDED FOR THE OWNER'S USE.
2. INSTALL EQUIPMENT IN ACCESSIBLE LOCATION AND PROVIDE ADEQUATE SERVICE CLEARANCE FOR NORMAL MAINTENANCE WITHOUT REQUIRING REMOVAL OF MECHANICAL, ARCHITECTURAL, ELECTRICAL OR STRUCTURAL ELEMENTS.
3. FOR EQUIPMENT LOCATED ABOVE CEILING, INSTALL SUCH EQUIPMENT CLOSE ENOUGH TO THE CEILING ELEVATION TO FACILITATE READY ACCESS FOR MAINTENANCE AND SERVICING.
4. MAINTAIN A MINIMUM OF 42-INCH CLEAR IN FRONT OF VARIABLE FREQUENCY DRIVES.
5. VERIFY ELECTRICAL CHARACTERISTICS WITH ELECTRICAL DRAWINGS PRIOR TO BID, MATERIAL PURCHASE, AND INSTALLATION.

D. PIPING:

1. PROVIDE HOSE END DRAIN VALVE ON PIPE STRAINERS.
2. LOCATE VALVES IN EASILY ACCESSIBLE LOCATIONS.
3. PROVIDE ISOLATING VALVES AND UNIONS ON PIPING ADJACENT TO CONTROL VALVES OR EQUIPMENT. LOCATE VALVES SO THE EQUIPMENT CAN BE REMOVED WITHOUT DISMANTLING BRANCH LINES.
4. BALANCING, FLOW, CONTROL AND AUTOMATIC FLOW LIMITERS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDED UPSTREAM AND DOWNSTREAM STRAIGHT PIPE LENGTHS.
5. PROVIDE BALANCING VALVES WITH READOUT PORTS IN HYDRONIC PIPING CONNECTING TO PIPE RISERS AT EACH FLOOR. LOCATE VALVES NEAR (BUT NOT INSIDE) THE SHAFT ENCLOSURE.
6. INSTALL DRAIN VALVES AT LOW POINTS OF PIPING SYSTEM TO ENABLE COMPLETE DRAINAGE. PROVIDE AIR VENT AT EACH HIGH POINT IN THE PIPING SYSTEM.
7. SLOPE HYDRONIC PIPING FOR PROPER DRAINAGE AND ELIMINATION OF AIR.
8. PROVIDE CONDENSATE DRAIN PIPING WITH DRAINAGE FITTINGS FOR COOLING COILS AND ROUTE TO THE NEAREST APPROVED RECEPTOR.
9. SIZE REFRIGERANT PIPING PER MANUFACTURER'S REQUIREMENTS. PROVIDE NECESSARY RISER TRAPS AS REQUIRED TO ENSURE PROPER RETURN OF REFRIGERANT.
10. REFER TO SPECIFICATION SECTION 15500-2.1.I FOR PIPING INSULATION.

G. REMODEL:

1. DEMOLISHED MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR WHEN THE OWNER DOES NOT WANT THEM WHO SHALL BE RESPONSIBLE FOR PROMPT DAILY REMOVAL FROM THE SITE. REMOVE DEBRIS FROM THE SITE RESULTING FROM THE WORK AT THE CONCLUSION OF DAILY CONSTRUCTION. REMOVE TEMPORARY CONSTRUCTION FROM THE SITE. THE AREA OF THE SITE SHALL BE LEFT BROOM CLEAN. IF NOT, UPON NOTIFICATION, OWNER WILL PERFORM NECESSARY CLEAN-UP WORK AND BACK CHARGE THE CONTRACTOR FOR THE EXPENSE THUS INCURRED.
2. MODIFICATIONS AND ADDITIONS TO THE HVAC SYSTEM AS INDICATED ON THE CONTRACT DRAWINGS ARE BASED UPON THE BEST AVAILABLE RECORDS AND SHALL BE CONSIDERED APPROXIMATE AND INCOMPLETE. BEFORE WORK IS STARTED, VERIFY AND COORDINATE ELEVATIONS, SIZES, AND POINTS OF CONNECTION FOR EXISTING HVAC SYSTEMS. DISCREPANCIES BETWEEN FIELD DATA AND DRAWINGS AND SPECIFICATIONS SHALL BE REPORTED TO THE ARCHITECT. DO NOT PROCEED WITH INSTALLATION IN AREA OF DISCREPANCIES UNTIL RESOLVED.
3. THE WORK TO BE PERFORMED UNDER THIS CONTRACT MUST MATCH THE EXISTING SYSTEM, EQUIPMENT, PRODUCT, AND INSTALLATION QUALITY, UNLESS OTHERWISE INDICATED IN THE CONTRACT DOCUMENTS.
4. EXERCISE CAUTION DURING PHASES OF THE WORK TO LOCATE, IDENTIFY AND PROTECT EXISTING DUCTWORK AND PIPING THAT ARE TO REMAIN. MAINTAIN SERVICES TO EXISTING OCCUPIED AREAS OR PROVIDE TEMPORARY SERVICES AS REQUIRED.
5. WORK SCHEDULE SHALL BE BASED UPON MINIMIZING DISRUPTIONS TO EXISTING BUILDING OPERATION.
6. CONTRACTOR SHALL PROVIDE DUST BARRIERS AS REQUIRED TO PREVENT CONTAMINATION OF THE EXISTING BUILDING FROM DUST AND DEBRIS. STATIC FREE DUST BARRIERS FORMED WITH PLASTIC SHEETS SHALL BE PROVIDED (USING FACILE OR GRIFFOLYN WITH FIRE RATING) WITH THE APPROVAL OF THE CONSTRUCTION MANAGER.
7. REMOVE DISCONNECTED OR ABANDONED PORTIONS OF EXISTING PIPING AS NECESSARY TO ALLOW FOR NEW CONSTRUCTION.

HVAC ABBREVIATIONS

ABBREV.	DESCRIPTION	ABBREV.	DESCRIPTION
A, AMPS	AMPERES	LVG	LEAVING
ABV	ABOVE	MA	MIXED AIR
AD	ACCESS DOOR	MAX	MAXIMUM
AFF	ABOVE FINISHED FLOOR	MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
AFG	ABOVE FINISHED GRADE		
AHU	AIR HANDLING UNIT	MCA	MINIMUM CIRCUIT AMPACITY
AMB	AMBIENT	MCC	MOTOR CONTROL CENTER
AP	ACCESS PANEL	MFGR	MANUFACTURER
ARCH	ARCHITECTURAL	MIN	MINIMUM
AUTO	AUTOMATIC	MOCP	MAXIMUM OVERCURRENT PROTECTION
BEL	BELOW		
BFG	BELOW FINISHED GRADE	MPH	MILES PER HOUR
BHP	BRAKE HORSEPOWER	NC	NOISE CRITERIA
BTUH	BRITISH THERMAL UNITS PER HOUR	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
CAP	CAPACITY		
CB	CIRCUIT BREAKER	NIC	NOT IN CONTRACT
CFM	CUBIC FEET PER MINUTE	OBD	OPPOSED BLADE DAMPER
CLG	CEILING	OC	ON CENTER
COMP	COMPRESSOR	OFCI	OWNER FURNISHED AND CONTRACTOR INSTALLED
COND	CONDITION		
CONDR	CONDENSER	OPNG	OPENING
COP	COEFFICIENT OF PERFORMANCE	OP, OPER	OPERATING
		OV	OUTLET VELOCITY
CU	CONDENSING UNIT	PERF	PERFORATED
CV	CONSTANT VOLUME	PD	PRESSURE DROP
dB	DECIBEL	PH	PHASE
DB	DRY BULB TEMPERATURE	PR, PRESS	PRESSURE
DDC	DIRECT DIGITAL CONTROL	PSI	POUND PER SQUARE INCH
DEFL	DEFLECTION	QTY	QUANTITY
DEMO	DEMOLITION	REFR	REFRIGERANT
DL	DOOR LOUVER	RH	RELATIVE HUMIDITY
DN	DOWN	RLA	RATED LOAD AMPERES
DPSW	DIFFERENTIAL PRESSURE SWITCH	RPM	REVOLUTIONS PER MINUTE
		SC	SENSIBLE CAPACITY
DS	DUCT SILENCER	SD	SMOKE DETECTOR
DSW	DISCONNECT SWITCH	SEER	SEASONAL ENERGY EFFICIENCY RATIO
DWGS	DRAWINGS		
EX, EXIST	EXISTING	SF, SQ FT	SQUARE FEET
EA	EACH	SG	SUPPLY GRILLE
EER	ENERGY EFFICIENCY RATIO	SHT	SHEET
EF	EXHAUST FAN	SO	SCREENED OPENING
EFF	EFFICIENCY	SP	STATIC PRESSURE
ELECT	ELECTRICAL	SPEC(S)	SPECIFICATIONS
ELEV	ELEVATION	SS	STAINLESS STEEL
ENCL	ENCLOSURE	ST	STEAM TRAP
ENT	ENTERING	SW	SWITCH
ESP	EXTERNAL STATIC PRESSURE	T	TANK
EVAP	EVAPORATOR, EVAPORATIVE	TA	TRANSFER AIR
°F	DEGREES FAHRENHEIT	TC	TOTAL CAPACITY
FD	FLOOR DRAIN	TDH	TOTAL DYNAMIC HEAD
FLA	FULL LOAD AMPS	TE	TOP ELEVATION
FLEX	FLEXIBLE	TEMP	TEMPERATURE
FPI	FINS PER INCH	TSP	TOTAL STATIC PRESSURE
FPM	FEET PER MINUTE	TYP	TYPICAL
FS	FLOOR SINK	UC	UNDER CUT
FT	FOOT	UG	UNDERGROUND
FV	FACE VELOCITY	UL	UNDERWRITER'S LABORATORY
GAL	GALLON	UON	UNLESS OTHERWISE NOTED
GPM	GALLONS PER MINUTE	UTR	UP THRU ROOF
H	HEIGHT	V	VOLTS
HC	HEATING COIL	VAV	VARIABLE AIR VOLUME
HP	HORSEPOWER	VEL	VELOCITY
HR	HOUR	VFD	VARIABLE FREQUENCY DRIVE
HTG	HEATING	VTR	VENT THRU ROOF
HVAC	HEATING, VENTILATING AND AIR CONDITIONING	W	WIDTH
		W/	WITH
HZ	HERTZ	WB	WET BULB TEMPERATURE
IN	INCH	WG	WATER GAUGE
KW	KILOWATT	WMS	WIRE MESH SCREEN
L	LENGTH	W/O	WITHOUT
LBS	POUNDS	WP	WEATHER PROOF
LD	LINEAR DIFFUSER	WT	WEIGHT
LRA	LOCKED ROTOR AMPERES	WTR	WATER

SEISMIC BRACING NOTES

MEP COMPONENT ANCHORAGE NOTE

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAIL IS INDICATED, THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2013 CBC, SECTIONS 1616A.1.18 THROUGH 1616A.1.26 AND ASCE 7-10 CHAPTER 6 AND 30.

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES AS ELECTRICITY, GAS OR WATER.
3. MOVABLE EQUIPMENT WHICH IS STATIONED IN ONE PLACE FOR MORE THAN 8 HOURS AND HEAVIER THAN 400 POUNDS ARE REQUIRED TO BE ANCHORED WITH TEMPORARY ATTACHMENTS.

THE ATTACHMENT OF THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT NEED NOT BE DETAILED ON THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT.

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD AND THE DSA DISTRICT STRUCTURAL ENGINEER. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-10 SECTION 13.3 AS DEFINED IN ASCE 7-10 SECTION 13.6.8, 13.6.7, 13.6.5.6, AND 2013 CBC, SECTIONS 1616A.1.23, 1616A.1.24, 1616A1.25 AND 1616A.1.26.

THE BRACING AND ATTACHMENTS TO THE STRUCTURE SHALL BE DETAILED ON THE APPROVED DRAWINGS OR THEY SHALL COMPLY WITH ONE OF THE OSHPD PRE-APPROVALS (OPM#) AS MODIFIED TO SATISFY ANCHORAGE REQUIREMENTS OF ACI 318, APPENDIX D. MASON INDUSTRIES OPM-0043-13.

COPIES OF THE MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF HANGING AND BRACING OF THE PIPE, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS.

THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

HVAC WATERSIDE LEGEND

SYMBOL	ABBREV.	DESCRIPTION
HS	HS	HEATING HOT WATER SUPPLY PIPING
HR	HR	HEATING HOT WATER RETURN PIPING
CHS	CHS	CONDENSER WATER SUPPLY PIPING
CHR	CHR	CONDENSER WATER SUPPLY PIPING
CD	CD	CONDENSATE DRAIN PIPING

SYMBOL DOUBLE	SYMBOL SINGLE	DESCRIPTION
		PIPE ELBOW DOWN OR AWAY FROM VIEWER
		PIPE ELBOW UP OR TOWARD VIEWER
		CHECK VALVE
		BUTTERFLY VALVE
M (SECTION) M (PLAN)		CONTROL VALVE
		FLEXIBLE PIPING CONNECTION
SECTION PLAN		STRAINER

SYMBOL	ABBREV.	DESCRIPTION
		ANCHOR
	AV	AUTOMATIC AIR VENT
		BALL VALVE
	CBV	CALIBRATED BALANCE VALVE
DPS		DIFFERENTIAL PRESSURE SENSOR
	EJ	EXPANSION JOINT
		FLANGE
FS	FS	FLOOR SINK (REFER TO PLUMBING DRAWINGS)
		FLOW IN DIRECTION OF ARROW
FMD		FLOW MEASURING DEVICE
FSW	FSW	FLOW SWITCH
		GATE VALVE
	MV	MANUAL AIR VENT
		PIPE GUIDE
		PIPE SUPPORT
PT		PRESSURE AND TEMPERATURE TEST PORT
P	PG	PRESSURE GAUGE
		PUMP
		CONCENTRIC REDUCER
T		TEMPERATURE SENSOR IN PIPING
T		THERMOMETER IN PIPING
		UNION
BT	BT	BUCKET TYPE STEAM TRAP
FT	F&T	FLOAT AND THERMOSTATIC STEAM TRAP
TD	TD	THERMODYNAMIC STEAM TRAP

HVAC NOTATION LEGEND

SYMBOL	ABBREV.	DESCRIPTION
T	STAT	THERMOSTAT
S	SW	SWITCH
	POC	POINT OF CONNECTION
	POD	POINT OF DISCONNECT OR DEMOLITION
1		SHEET KEY NOTES DEMOLITION
1		SHEET KEY NOTES NEW WORK
ø	DIA	DIAMETER
	(E)	EXISTING PIPE
		EXISTING PIPE OR EQUIPMENT TO BE REMOVED
	(E)	EXISTING EQUIPMENT

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REGISTERED PROFESSIONAL ENGINEER KEVIN S. CHEN M-31154 EXP. 12/31/17 MECHANICAL STATE OF CALIFORNIA

COMPTON Community College District

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TITLE:
HVAC LEGEND, ABBREVIATIONS, GENERAL AND SEISMIC BRACING NOTES

SHEET NO.
M-0.1

SHEET OF

HEATING HOT WATER BOILER SCHEDULE

SYMBOL	MANUFACTURER AND MODEL NUMBER	LOCATION AND DRAWING REFERENCE	SERVICE	TYPE	FUEL DRAWING REFERENCE	CAPACITY		EFFICIENCY (%)	WATER				RELIEF VALVE SETTING (PSIG)	ELECTRICAL CHARACTERISTICS								MOUNTING DETAIL	OPERATING WEIGHT (LB)	REMARKS
						INPUT (MBH)	OUTPUT (MBH)		LEAVING (°F)	ENTERING (°F)	FLOW (GPM)	PRESSURE DROP (FT)		BLOWER				CONTROLS						
														HP	VOLTS	PHASE	HERTZ	FLA	VOLTS	PHASE	HERTZ			
B-1 B-2	PATTERSON-KELLEY N2000MFD	BOILER ROOM M-2.1	HEATING HOT WATER SYSTEM	INDOOR LOW NOx	GAS M.200	1,990	1,699	85	170	150	170	4	125	1	208	1	60	12	208	1	60	2/M-0.2	1,000	

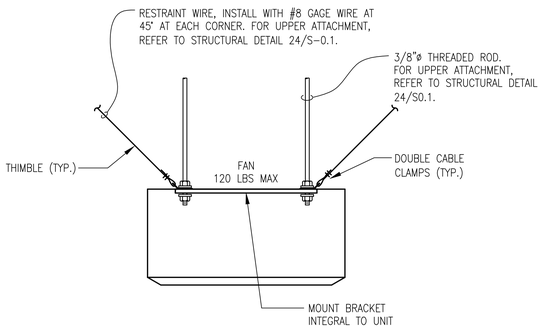
NOTES: 1. 125 PSIG RATING, RELIEF VALVE SET AT MIN. 125 PSIG, 25 TO 100% MODULATING BURNER CONTROL, REMOTE MODULATING CONTROL, MULTIMOD SET POINT CONTROL.
2. PIPE CONDENSATION DRAIN FROM EXHAUST FLUE TO NEAREST INDIRECT WASTE RECEPTOR, SEE FLOW DIAGRAM M-3.1.
3. PROVIDE PRIMARY BOILER PUMPS (HWP-1) BY BOILER MANUFACTURER.
4. PROVIDE FLOW SWITCH FOR BOILER BY BOILER MANUFACTURER.

PUMP SCHEDULE

SYMBOL	MANUFACTURER AND MODEL NUMBER	LOCATION AND DRAWING REFERENCE	SERVICE	TYPE	CAPACITY (GPM)	TOTAL DYNAMIC HEAD (FT)	IMPELLER DIAMETER (IN)	BHP	NPSHR	EFF (%)	MOTOR				ELECTRICAL DATA			MOUNTING DETAIL	OPERATING WEIGHT (LB)	REMARKS
											TYPE	RPM	VFD	HP	VOLTS	PHASE	HERTZ			
HWP-1 HWP-2	WEINMAN 2507	BOILER M-2.1	HEATING HOT WATER PRIMARY	CENTRIFUGAL BASE MOUNTED	130	20	–	–	–	–	TEFC	1750	–	1.5	208	3	60	3/M-0.2	200	PUMP FURNISHED BY BOILER MANUFACTURER & WITH DISCONNECT SWITCH.

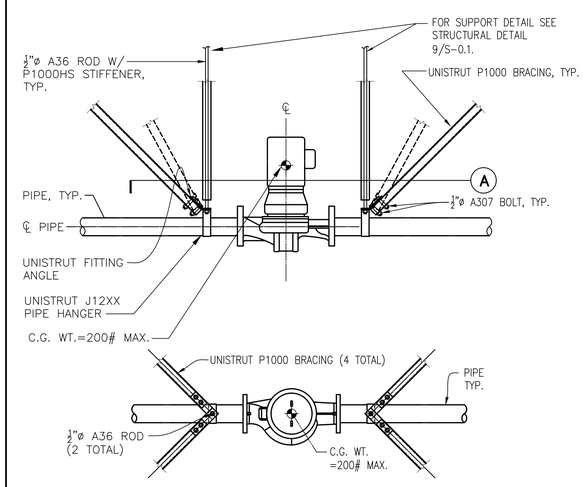
COMBUSTION AIR FAN SCHEDULE

SYMBOL	MANUFACTURER AND MODEL NUMBER	LOCATION AND DRAWING REFERENCE	SERVICE	TYPE	CAPACITY (CFM)	SP (IN.)	ELECTRICAL CHARACTERISTICS				MOUNTING DETAIL	OPERATING WEIGHT (LB)	REMARKS
							HP	VOLTS	PHASE	HERTZ			
CF-1	TJERNLUND PAI-7	BOILER M-2.1	BOILERS	IN-FORCER POWERED	1,100	0.5	1	208	1	60	– –	100	PROVIDE FAN PROVING SWITCH, 24V CONTROL CIRCUITS & RELAY, HIGH LIMIT SWITCH AND ROOF INTAKE HOOD. INTERLOCK WITH B-1 AND B-2.



NOTE: SEE DETAILS 24/S-0.1 FOR ADDITIONAL DETAILS.

COMBUSTION AIR FAN MOUNTING DETAIL — N.T.S. 5

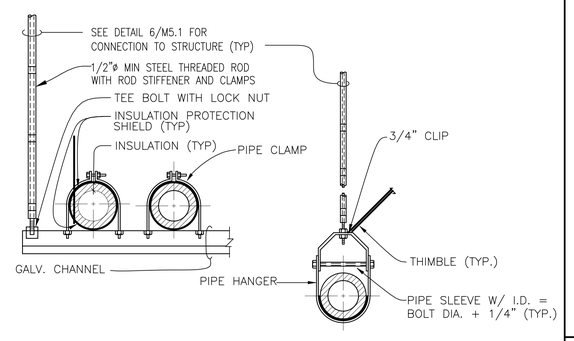


PLAN VIEW A

NOTE: SEE 9/S-1 FOR ADDITIONAL DETAILS

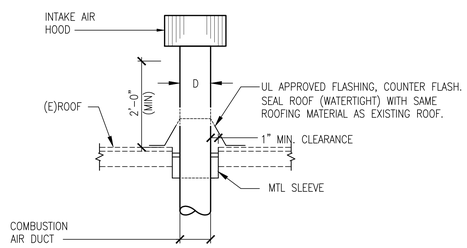
HWP-1 SUPPORT DETAIL — N.T.S. 3

NOTE: SEE DETAILS 19/S-0.1 FOR ADDITIONAL DETAILS.



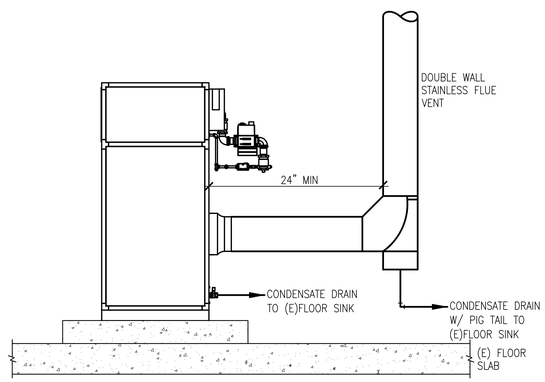
MULTIPLE PIPES — SINGLE PIPE

PIPING SUPPORT DETAIL — N.T.S. 1

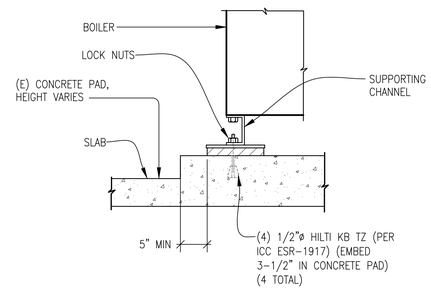


NOTE:
FOR DUCT OPENING AT ROOF, REFER TO STRUCTURAL DRAWING 25/S-0.1 DETAIL TO REINFORCE (E)DECK.

COMBUSTION AIR DUCT THRU ROOF — N.T.S. 6



BOILER FLUE VENT DETAIL — N.T.S. 4



NOTE: SEE 17/S-0.1 FOR ADDITIONAL DETAILS

BOILER MOUNTING DETAIL — N.T.S. 2

- — N.T.S. 7

- — N.T.S. 8

15442
dHA + CALPEC
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SUITE NO. 100
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REGISTERED PROFESSIONAL ENGINEER KEVIN S. CHEUNG M-31154 Exp. 12/31/17 MECHANICAL STATE OF CALIFORNIA

COMPTON Community College District

BOILER REPLACEMENT
VOCATIONAL TECH BLDG
COMPTON COMMUNITY COLLEGE DISTRICT
1111 E. ARTESIA BLVD., COMPTON, CA 90221

DATE	MARK	REVISION
	1	
	2	

DATE	ISSUED FOR
FEB. 2016	ISSUED FOR BID

PROJECT NO. : 15442

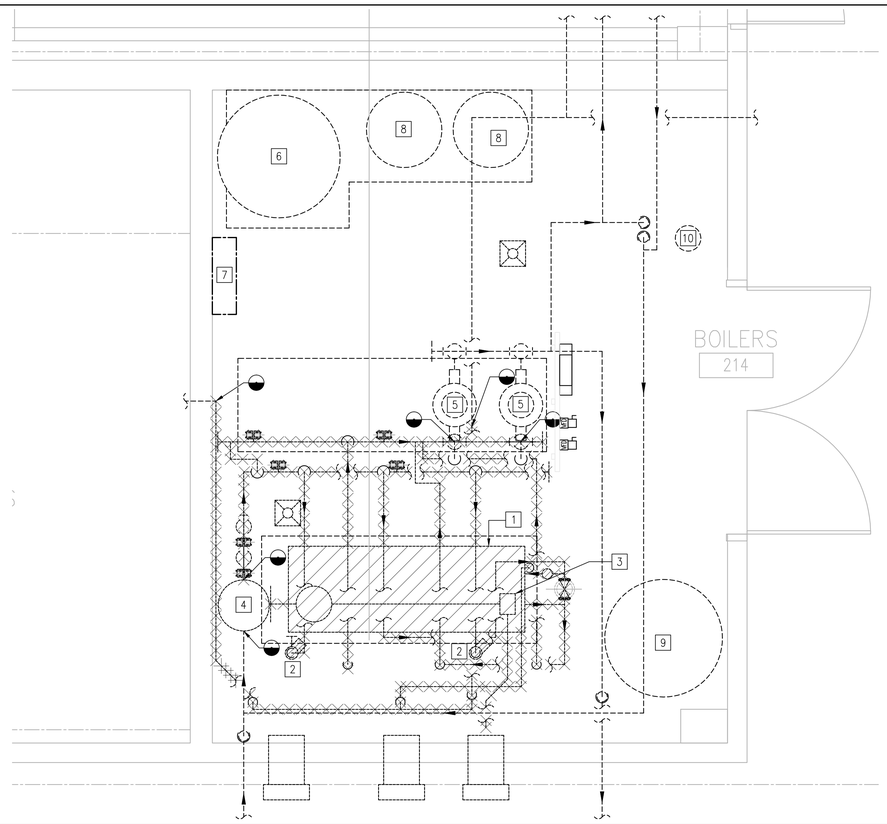
DRAWN BY:	CHECKED BY:
dHA+CALPEC	KC/AI

DATE : 2016-02-16

TITLE:
HVAC EQUIPMENT SCHEDULES & DETAILS

SHEET NO.
M-0.2

SHEET OF

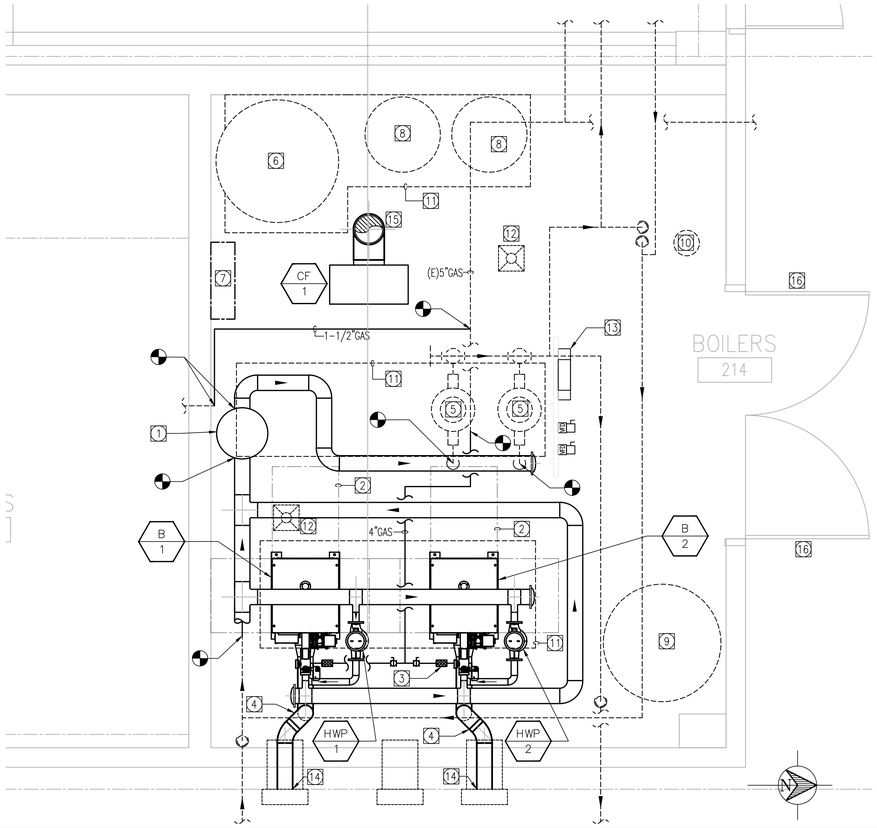


SHEET KEY NOTES

1. REMOVE (E) HEATING HOT WATER BOILER, PUMP, ASSOCIATED HEATING HOT WATER PIPING, GAS PIPING AND ACCESSORIES.
2. REMOVE (E) HEATING HOT WATER PUMP, ASSOCIATED HEATING HOT WATER PIPING AND ACCESSORIES.
3. REMOVE (E) FLUE VENT, ASSOCIATED FAN AND ACCESSORIES.
4. RELOCATE (E)AIR SEPARATOR AND DISCONNECT & RECONNECT (E)MAKE-UP WATER PIPING TO THE TANK AT NEW LOCATION.
5. (E)HEATING HOT WATER DISTRIBUTION PUMP TO REMAIN.
6. (E)EXPANSION TANK FOR HEATING HOT WATER SYSTEM TO REMAIN.
7. (E)MAKE-UP WATER AND BACKFLOW STATION TO REMAIN.
8. (E)WATER HEATER TO REMAIN.
9. (E)HOT WATER STORAGE TAN TO REMAIN.
10. (E)CHEMICAL POT FEEDER FOR HEATING HOT WATER SYSTEM TO REMAIN.

EXACT SIZE, ELEVATION, & LOCATION OF EXISTING SHALL BE FIELD VERIFIED.

MECHANICAL DEMO PLAN — 1/2"=1'-0" — 1



SHEET KEY NOTES

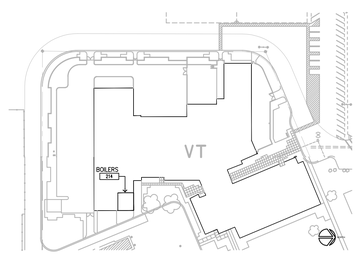
1. RELOCATE (E)AIR SEPARATOR AND RECONNECT TO (E)MAKE-UP WATER PIPING. (E)AIR SEPARATOR SHALL BE RE-INSULATED. REFER TO STRUCTURAL DRAWINGS 22/S-0.1 FOR SUPPORTING DETAIL.
2. EQUIPMENT CLEARANCE (TYP.)
3. 1-1/2" NATURAL GAS FLEXIBLE CONNECTOR (TYP.)
4. 6" DOUBLE WALL STAINLESS FLUE VENT TO (E) 14" WALL FLUE VENT OPENING W/ MESH SCREEN WALL CAP.
5. (E)HEATING HOT WATER DISTRIBUTION PUMP TO REMAIN. CONTRACTOR SHALL TEST THE PUMP PRIOR TO START UP OF HEATING HOT WATER SYSTEM AND REPORT TO THE COLLEGE IMMEDIATELY ANY PUMP OPERATIONAL PROBLEM.
6. (E)EXPANSION TANK FOR HEATING HOT WATER SYSTEM TO REMAIN.
7. (E)MAKE-UP WATER AND BACKFLOW STATION TO REMAIN.
8. (E)WATER HEATER TO REMAIN.
9. (E)HOT WATER STORAGE TAN TO REMAIN.
10. (E)CHEMICAL POT FEEDER FOR HEATING HOT WATER SYSTEM TO REMAIN.
11. (E)3-1/2" HIGH CONCRETE PAD.
12. (E)FLOOR SINK.
13. (E)DDC CONTROL PANEL BELOW (E)ELECTRICAL PANEL. PROVIDE NEW HEATING HOT WATER BOILER SYSTEM CONTROL BASED ON CONTROL DIAGRAM AND SEQUENCE OF OPERATION ON DRAWING M.3-1 WITH NEW 24V TRANSFORMER AND PROVIDE LOW VOLTAGE POWER SOURCES TO NEW DDC DEVICES FROM HERE.
14. SEAL AND FIRE CAULKING THE CAP BETWEEN THE FLUE VENT AND EXISTING WALL OPENING.
15. 12ø COMBUSTION AIR FROM ROOF WITH ROOF INTAKE HOOD. SEAL THE ROOF OPENING (WATER TIGHT) WITH NEW ROOFING MATERIAL AS EXISTING ROOF. EXTEND ANY VENT PIPE HORIZONTALLY, 10'-0" AWAY FROM COMBUSTION AIR INTAKE.
16. (E)24X48 DOOR LOUVER

EXACT SIZE, ELEVATION, & LOCATION OF EXISTING SHALL BE FIELD VERIFIED.

GENERAL NOTES

1. (E)HEATING HOT WATER PIPING SHALL BE RE-INSULATED AT THE BOILER ROOM.
2. ENTIRE HEATING HOT WATER DISTRIBUTION SYSTEM (NEW & EXISTING) SHALL BE FLUSH OUT AND CHEMICAL TREATED DURING PRE-SYSTEM START UP.

MECHANICAL PLAN — 1/2"=1'-0" — 2



KEY PLAN — N.T.S.

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BOILER REPLACEMENT
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DATE	MARK	REVISION
	1	
	2	
DATE	ISSUED FOR	
FEB. 2016	ISSUED FOR BID	

PROJECT NO. : 15442

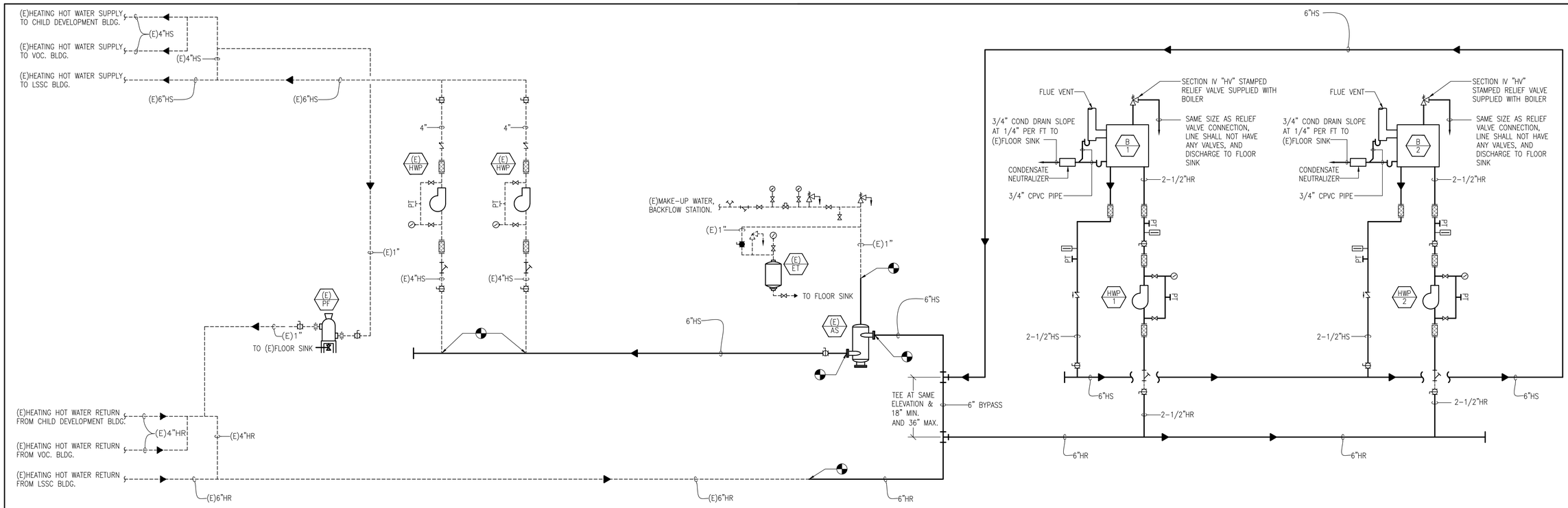
DRAWN BY:	CHECKED BY:
dHA+CALPEC	KC/AI

DATE : 2016-02-16

TITLE:
BOILER ROOM
MECHANICAL PLANS

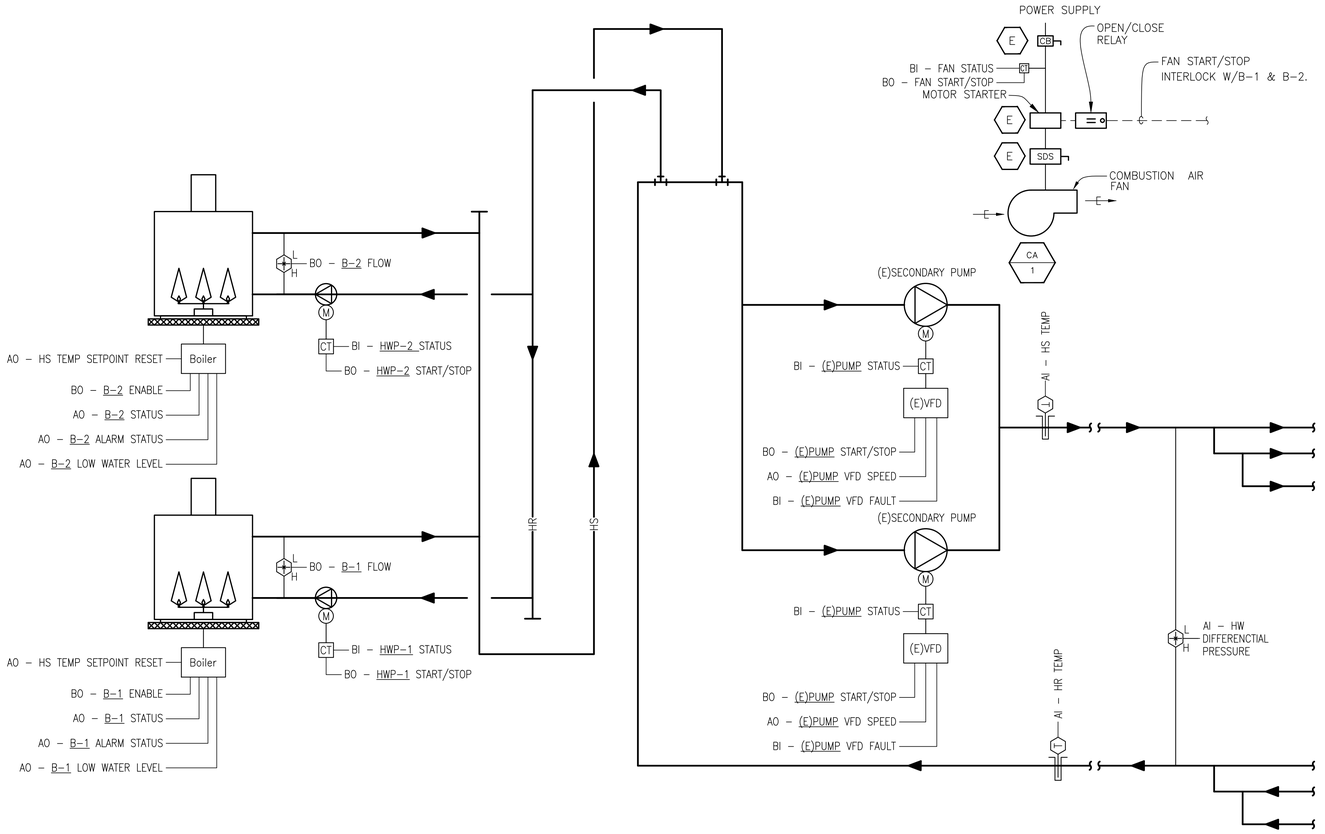
SHEET NO.
M-2.1

SHEET OF



HEATING HOT WATER FLOW DIAGRAM

N.T.S. 1



HEATING HOT WATER CONTROL DIAGRAM

N.T.S. 2

SEQUENCE OF OPERATION

1. BOILER SYSTEM

   A. THE BOILER SHALL BE ENABLED TO RUN WHENEVER IT IS COMMANDED TO BE ENABLED BY THE BOILER MANAGER PROGRAM. THE BOILER SHALL RUN SUBJECT TO ITS OWN INTERNAL SAFETIES AND CONTROLS.

   B. BOILER SHALL BE PROVIDED WITH CONTACT FOR DDC CONTROL CONNECTION.

   C. BOILER SAFETIES: THE FOLLOWING SAFETIES SHALL BE MONITORED:

      1) BOILER ALARM.

      2) LOW WATER LEVEL.

   D. HEATING HOT WATER DIFFERENTIAL PRESSURE CONTROL:

      1) THE CONTROLLER SHALL MEASURE THE HOT WATER DIFFERENTIAL PRESSURE AND MODULATE THE TWO SECONDARY HOT WATER PUMP VFDS (VF) SHALL BE SET AT MAXIMUM SPEED TO DELIVER 170GPM) IN SEQUENCE TO MAINTAIN ITS HEATING HOT WATER DIFFERENTIAL PRESSURE SETPOINT. THE FOLLOWING SETPOINTS ARE RECOMMENDED VALUES. SETPOINTS SHALL BE FIELD ADJUSTED DURING THE COMMISSIONING PERIOD TO MEET THE REQUIREMENTS OF ACTUAL FIELD CONDITIONS.

      2) THE CONTROLLER SHALL MODULATE SECONDARY HOT WATER PUMP SPEEDS TO MAINTAIN A HOT WATER DIFFERENTIAL PRESSURE OF 12 PSI. THE VFDS MINIMUM SPEED SHALL NOT DROP BELOW 20%.

      3) ON DROPPING HOT WATER DIFFERENTIAL PRESSURE, THE VFDS SHALL STAGE ON AND RUN TO MAINTAIN SETPOINT AS FOLLOWS:
         A) THE CONTROLLER SHALL MODULATE THE LEAD VFD TO MAINTAIN SETPOINT.
         B) IF THE LEAD VFD SPEED IS GREATER THAN A SETPOINT OF 90%, THE LAG VFD SHALL STAGE ON.
         C) THE LAG VFD SHALL RAMP UP TO MATCH THE LEAD VFD SPEED AND THEN RUN IN UNISON WITH THE LEAD VFD TO MAINTAIN SETPOINT.

      4) ON RISING HOT WATER DIFFERENTIAL PRESSURE, THE VFDS SHALL STAGE OFF AS FOLLOWS:
         A) IF THE VFDS SPEEDS DROPS BACK TO 60% BELOW SETPOINT, THE LAG VFD SHALL STAGE OFF.
         B) THE LEAD VFD SHALL CONTINUE TO RUN TO MAINTAIN SETPOINT.

   E. PRIMARY CIRCULATION PUMP: THE CIRCULATION PUMP SHALL RUN ANYTIME THE BOILER IS CALLED TO RUN AND SHALL HAVE A USER DEFINABLE DELAY ON STOP.

   F. BOILER ENABLE: THE BOILER SHALL BE ENABLED WHEN THE BOILER SYSTEM IS COMMANDED ON. THE BOILER SHALL BE ENABLED AFTER PUMP STATUS IS PROVEN ON AND ENABLE COMBUSTION AIR FAN. IT SHALL RUN SUBJECT TO ITS OWN INTERNAL SAFETIES AND CONTROLS.

   G. HEATING HOT WATER SUPPLY TEMPERATURE SETPOINT RESET:

      5) THE HEATING HOT WATER SUPPLY TEMPERATURE SETPOINT SHALL RESET USING A TRIM AND RESPOND ALGORITHM BASED ON HEATING REQUIREMENTS.

   H. PRIMARY HEATING HOT WATER TEMPERATURE MONITORING: THE FOLLOWING TEMPERATURES SHALL BE MONITORED:

      1) PRIMARY HEATING HOT WATER SUPPLY.

      2) PRIMARY HOT WATER RETURN.

   I. ALARMS SHALL BE PROVIDED AS FOLLOWS:
      1) HEATING HOT WATER PUMP HWP-1 & HWP-2
         A) FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
         B) RUNNING IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
         C) RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT.
         D) VFD FAULT.
      2) HIGH HEATING HOT WATER DIFFERENTIAL PRESSURE: IF 25% GREATER THAN SETPOINT.
      3) LOW HEATING HOT WATER DIFFERENTIAL PRESSURE: IF 25% LESS THAN SETPOINT.
      4) CIRCULATION PUMP FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
      5) CIRCULATION PUMP RUNNING IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
      6) BOILER FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
      7) BOILER RUNNING IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
      8) HIGH PRIMARY HS TEMP: IF GREATER THAN 200'F.
      9) LOW PRIMARY HS TEMP: IF LESS THAN 100'F.

2. HEATING HOT WATER LOOP SECONDARY PUMPS (EXISTING PUMPS):

   A. HEATING HOT WATER PUMP RUN CONDITIONS:

      4) THE HEATING HOT WATER PUMPS SHALL BE ENABLED WHENEVER:
         A) A DEFINABLE NUMBER OF HOT WATER COILS NEED HEATING.
         B) AND OUTSIDE AIR TEMPERATURE IS LESS THAN 54'F.
         C) A BOILER IS ENABLE.

      2) THE PUMPS SHALL RUN FOR FREEZE PROTECTION ANYTIME OUTSIDE AIR TEMPERATURE IS LESS THAN 38'F.

      3) TO PREVENT SHORT CYCLING, THE PUMP SHALL RUN FOR A MINIMUM TIME AND BE OFF FOR A MINIMUM TIME (BOTH USER ADJUSTABLE).

   B. HEATING HOT WATER PUMP LEAD/LAG OR STAGE OPERATION

      1) THE TWO VARIABLE SPEED HEATING HOT WATER PUMPS SHALL OPERATE IN A LEAD/LAG OR STAGE FASHION DEPENDING HOW MANY BOILERS ARE REQUIRED TO BE ENABLE .
         A) THE LEAD PUMP SHALL RUN FIRST.
         B) ON FAILURE OF THE LEAD PUMP, THE LAG PUMP SHALL RUN AND THE LEAD PUMP SHALL TURN OFF.
         C) ON DECREASING HOT WATER DIFFERENTIAL PRESSURE, THE LAG PUMP SHALL STAGE ON AND RUN IN UNISON WITH THE LEAD PUMP TO MAINTAIN HOT WATER DIFFERENTIAL PRESSURE SETPOINT.

      2) THE DESIGNATED STAGING ORDER (USER DEFINABLE) OF THE PUMPS SHALL ROTATE ON ONE OF THE FOLLOWING CONDITIONS (USER SELECTABLE):
         A) MANUALLY THROUGH A SOFTWARE SWITCH
         B) IF PUMP RUNTIME (ADJ.) IS EXCEEDED
         C) DAILY, WEEKLY AND MONTHLY

CONTROL LEGEND

SYMBOL	ABBREV.	INDENTIFICATION
———		LOW VOLTAGE WIRING AND CONDUIT IS PROVIDED AND INSTALLED UNDER DIVISION 15.
		PUMP
STARTER		MAGNETIC STARTER
VFD	VFD	VARIABLE FREQUENCY DRIVE
CSW	CSW	CURRENT SWITCH
DSW	DSW	DISCONNECT SWITCH
		2-WAY CONTROL VALVE
T		TEMPERATURE SENSOR WITH PIPE WELL INSERTION
H L		DIFFERENTIAL PRESSURE SENSOR IN DUCT
H L		DIFFERENTIAL PRESSURE SENSOR IN PIPING OR ACROSS FILTER
F		FLOW METER IN PIPING
FSW		FLOW SWITCH IN PIPING

CONTROLS NOTES

1. VERIFY ELECTRICAL CHARACTERISTICS WITH ELECTRICAL PLANS PRIOR TO BID AND MATERIAL PURCHASE.
2. CONTROL DIAGRAM IS FUNCTIONAL, SINGLE LINE DIAGRAM. CONTROL CONTRACTOR SHALL SUBMIT DETAILED WIRING DIAGRAM FOR APPROVAL. PRIOR TO PURCHASE OR INSTALLATION.
3. CONTROL CONTRACTOR SHALL FURNISH AND INSTALL LOW VOLTAGE CONTROL WIRING AND CONDUIT FOR LOW VOLTAGE CONTROL WIRING.
4. CONTROL CONTRACTOR SHALL ATTAIN IP ADDRESS FROM COLLEGE IT DEPARTMENT.
5. CONTROL PANELS AND UNITARY CONTROLLERS SHALL BE PROVIDED, INSTALLED AND POWERED BY THE CONTROL CONTRACTOR. POWER REQUIREMENTS SHALL BE COORDINATED WITH THE ELECTRICAL CONTRACTOR.
6. PROVIDE "ALERTON" INTERFACE CONTROLLER FOR ALL NEW EQUIPMENT TO COMMUNICATE THE EXISTING CAMPUS WIDE "ALERTON" BUILDING MANAGEMENT SYSTEM.
7. "ALERTON" CONTRACTOR, CLIMATEC, LLC." FOR THE PROJECT:
   TYNER KINCADE
   OFFICE: (949) 433-3098
   E-MAIL: TKINCADE@CLIMATEC.COM

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PROJECT NO. : 15442

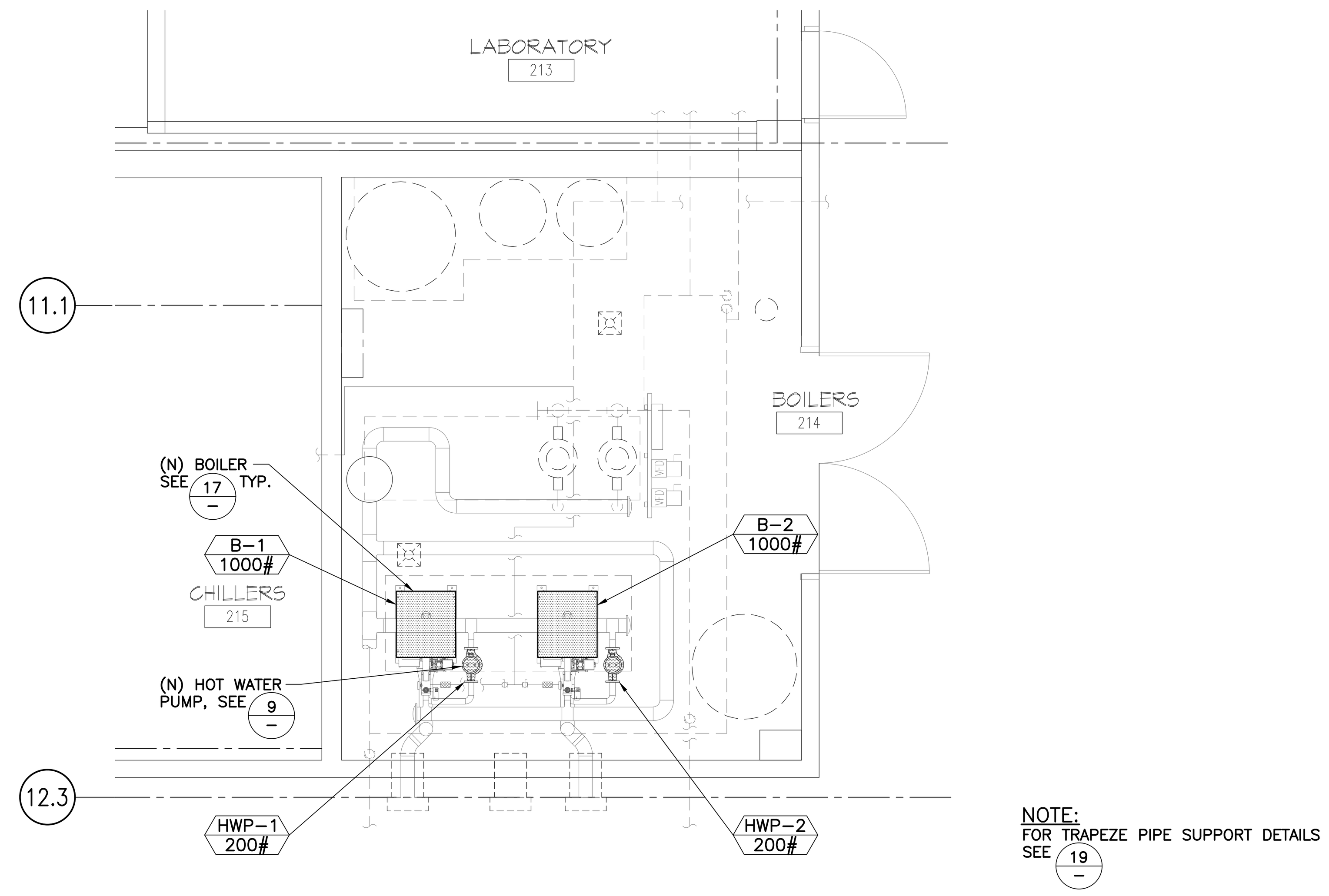
DRAWN BY: dHA+CALPEC
CHECKED BY: KC/AI

DATE : 2016-02-16

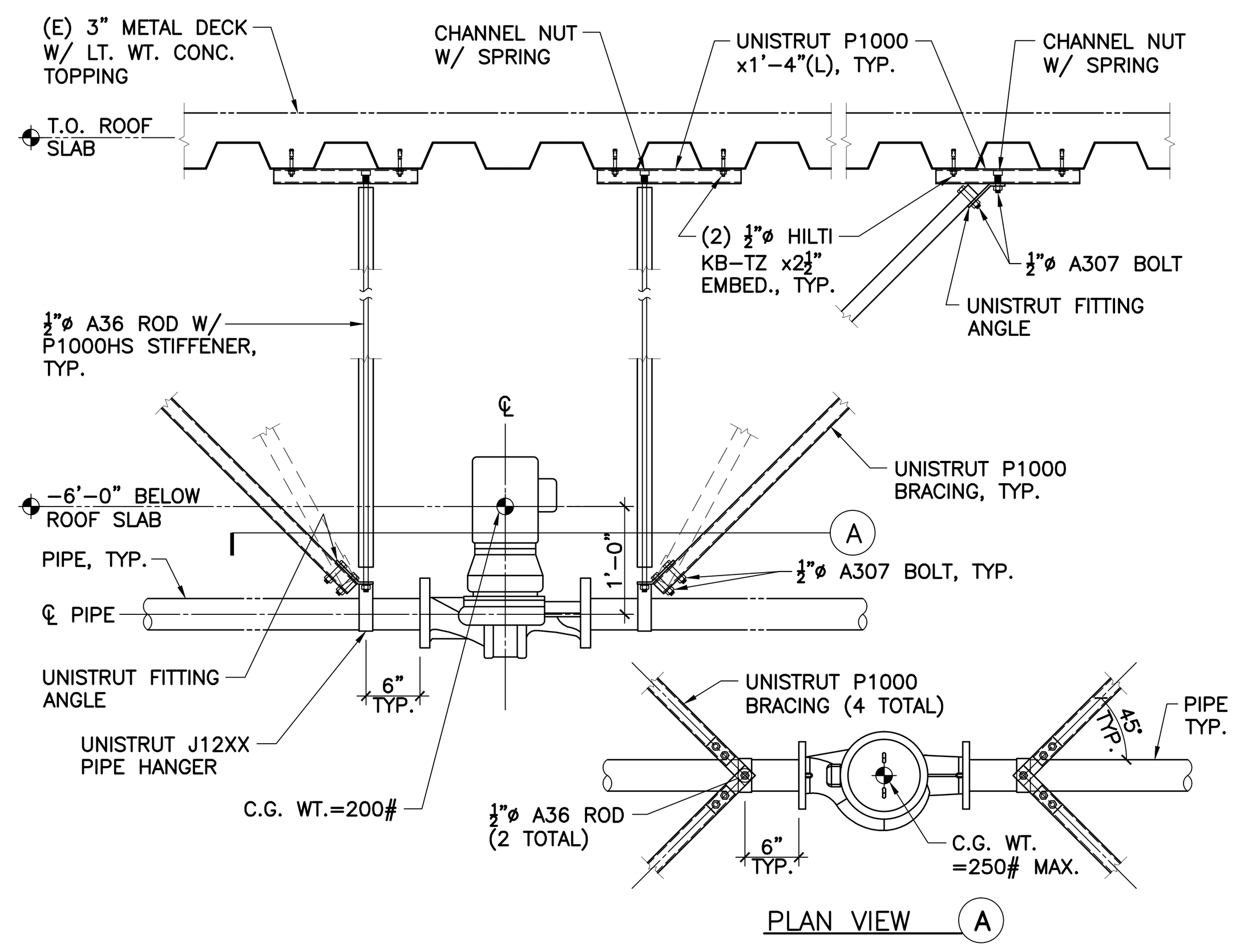
TITLE:
HEATING HOT WATER FLOW DIAGRAM AND CONTROL DIAGRAM

SHEET NO.
M-3.1

SHEET OF



(E) FLOOR PLAN WITH NEW EQUIPMENT | ¼" | 7



PUMP HWP-1 HANGING ANCHORAGE DETAIL | ¾" | 9

GENERAL NOTES:

1. VERIFY ALL DIMENSIONS AND CONDITIONS AT THE SITE.
2. COORDINATE STRUCTURAL DETAILS AND DIMENSIONS WITH RELATED REQUIREMENTS ON OTHER DRAWINGS.
3. THE ARCHITECT WILL INTERPRET THE INTENT OF THE DOCUMENTS IN CASE OF POSSIBLE CONFLICT OR DISCREPANCY BETWEEN STRUCTURAL & OTHER DISCIPLINES.
4. DETAILS NOTED AS "TYPICAL" OR "TYP" APPLY IN ALL CASES WHETHER OR NOT SPECIFICALLY REFERENCED.
5. WORKMANSHIP & MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF CALIFORNIA BUILDING CODE, 2013 EDITION.
6. STRUCTURAL PLANS INDICATE ONLY THE APPROXIMATE LOCATION OF MECHANICAL, ELECTRICAL AND OTHER EQUIPMENT, AS WELL AS RELATED AUXILIARY FRAMING NECESSARY TO SUPPORT SUCH GEAR. THE FINAL POSITIONING OF THESE ITEMS IS DEPENDENT UPON THE EQUIPMENT SELECTED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WORK BETWEEN SUBCONTRACTORS AND CRAFTS IN THIS REGARD, AND PROVIDING NECESSARY DIMENSIONS IN A TIMELY MANNER TO ALL PARTIES AND DETAILERS INVOLVED.
7. ALL EXPOSED STEEL AND FASTENERS SHOULD BE HOT-DIPPED GALVANIZED.

MATERIAL REQUIREMENTS:

CONCRETE:	NORMAL WEIGHT, F'C = 3500 PSI PROVIDE 1" MAX. AGGREGATE CONCRETE MIX. USE OF PEA GRAVEL CONCRETE MIX IS NOT PERMITTED.
REINFORCING STEEL:	ASTM A615 GRADE 60
MISCELLANEOUS STEEL: LIGHT GAGE STEEL:	ASTM A 36 ASTM A 570 GRADE 33 FOR 18 GAGE AND LIGHTER GRADE 50 FOR 16 GAGE AND HEAVIER
BOLTS AND NUTS:	ASTM A 307
CONCRETE EXPANSION TYPE ANCHORS:	HILTI KB-TZ AS MFD. BY HILTI FASTENING SYSTEMS, INC. (ICBO REPORT NO. ESR-1917)

TESTING AND INSPECTION REQUIREMENTS:

EXPANSION ANCHOR BOLTS: (HILTI KB-TZ, ESR1917)

1. ANCHOR DIAMETER REFERS TO THE THREAD SIZE.
2. APPLY PROOF LOAD TESTS TO ANCHORS WITHOUT REMOVING THE NUT. IF NUT REMOVAL IS REQUIRED, REMOVE THE NUT AND INSTALL A THREAD COUPLER TO THE SAME TORQUE AS THE ORIGINAL NUT USING A TORQUE WRENCH AND APPLY THE LOAD.
3. REACTION LOADS FROM TEST FIXTURES MAY BE APPLIED IN CLOSE PROXIMITY TO THE ANCHOR BEING TESTED PROVIDED THE ANCHOR IS NOT RESTRAINED FROM WITHDRAWING BY THE FIXTURES.
4. TEST AT LEAST 50% OF THE INSTALLED ANCHORS PER SECTION 1923.3.5.
5. TEST EQUIPMENT, INCLUDING TORQUE WRENCHES, IS TO BE CALIBRATED BY AN APPROVED TESTING LABORATORY IN ACCORDANCE WITH STANDARD RECOGNIZED PROCEDURES.
6. ACCEPTANCE CRITERIA:
   A. HYDRAULIC RAM METHOD:
      THE ANCHOR SHALL HAVE NO OBSERVABLE MOVEMENT AT THE APPLICABLE TEST LOAD. A PRACTICAL WAY TO DETECT OBSERVABLE MOVEMENT IS THAT THE WASHER UNDER THE NUT BECOMES LOOSE.
   B. TORQUE WRENCH METHOD:
      THE APPLICABLE TEST TORQUE FOR WEDGE OR SLEEVE TYPE ANCHORS MUST BE REACHED WITHIN THE FOLLOWING LIMITS: ½ (ONE HALF) TURN OF THE NUT; ¼ (ONE QUARTER) TURN OF THE NUT FOR ⅜" SLEEVE ANCHOR ONLY.
   C. IN ANY ANCHOR FAILS TESTING, ALL ANCHORS OF THE SAME CATEGORY NOT PREVIOUSLY TESTED SHALL BE TESTED UNTIL 20 CONSECUTIVE ANCHORS PASS THE TEST REQUIREMENTS. THE INITIAL TESTING FREQUENCY SHALL THEN BE RESUMED.

TYPE OF MATERIALS	TYPE OF TEST	BOLT DIAMETER			
		⅜"	½"	⅝"	¾"
HARD ROCK OR LT. WT. CONCRETE	DIRECT PULL-TENSION, LBS	1200	1900	2800	3800
	TORQUE WRENCH-TORQUE,FT. LBS.	25	40	60	110

7. TESTING SHOULD OCCUR 24 HOURS MINIMUM AFTER INSTALLATION OF THE SUBJECT ANCHORS.
8. ALL TESTS SHALL BE PERFORMED IN THE PRESENCE OF THE INSPECTOR OF RECORD.

INSTALLATION OF POST INSTALLED ANCHORS:

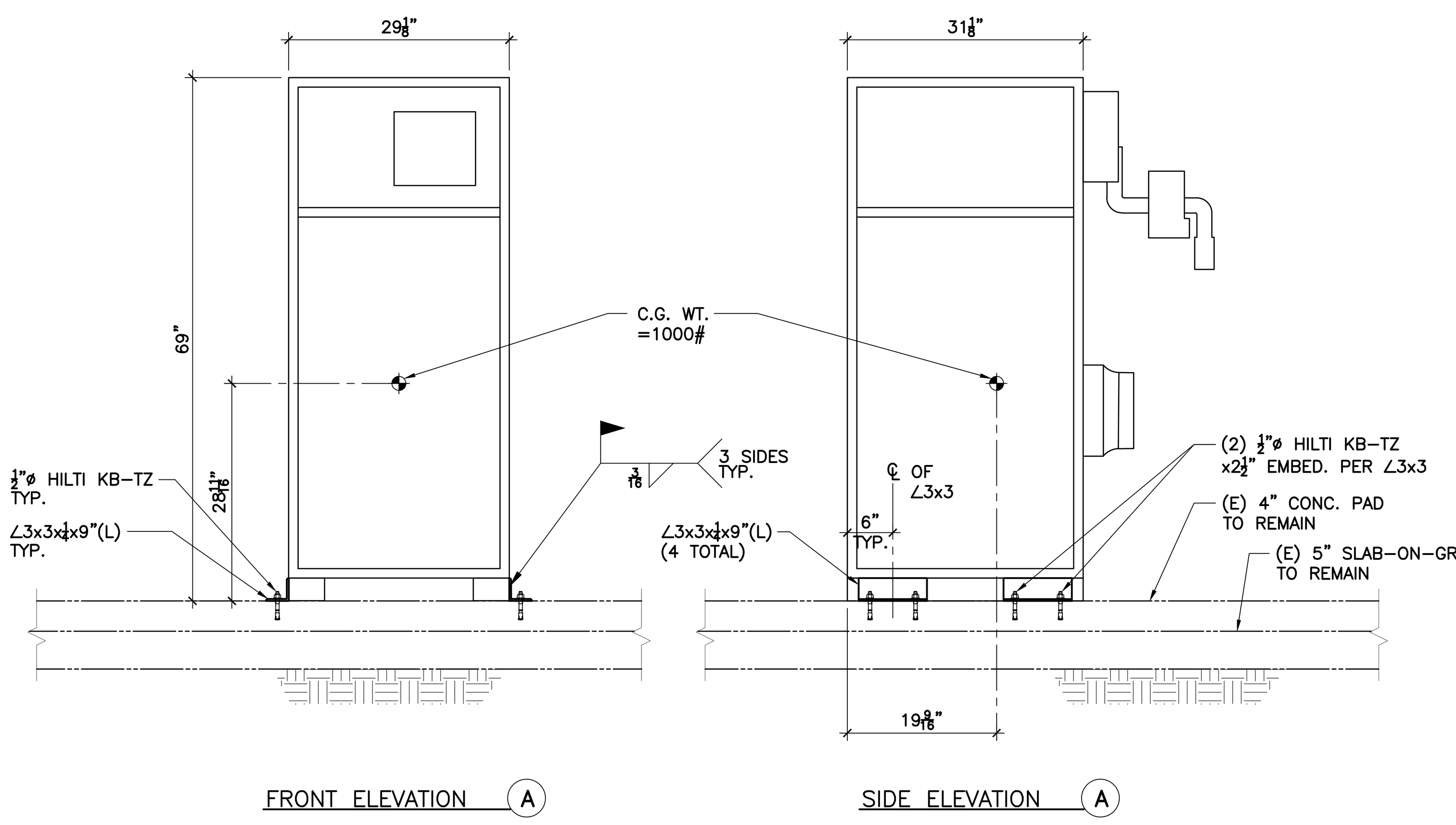
WHEN INSTALLING DRILLED-IN ANCHORS AND/OR POWDER DRIVEN PINS IN EXISTING NON-PRESTRESSED REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. MAINTAIN A MINIMUM CLEARANCE OF ONE INCH BETWEEN THE REINFORCEMENT AND THE DRILLED-IN ANCHOR AND/OR PIN.

LATERAL LOADS:

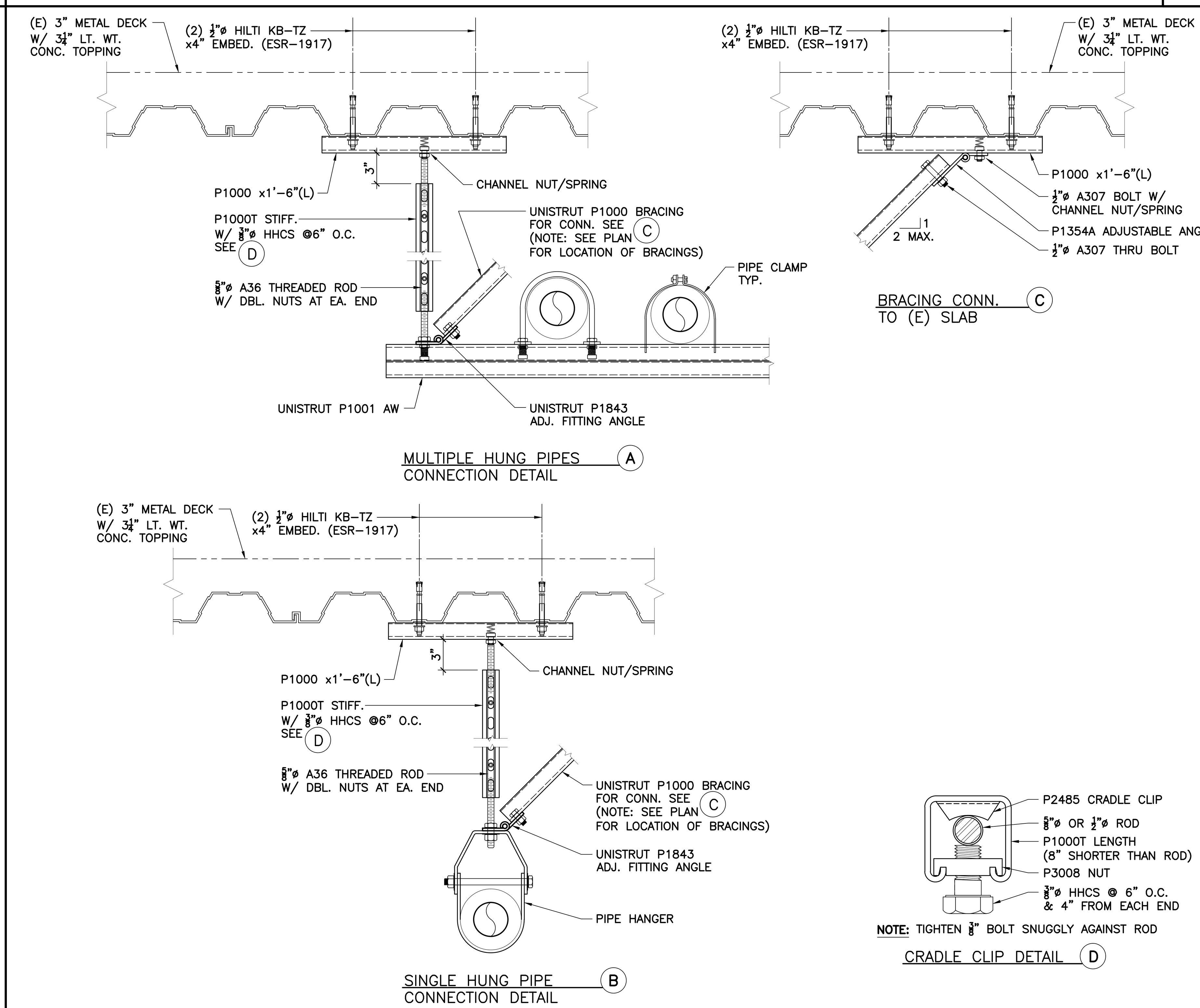
SEISMIC: Fa = 1 , Fv = 1.5
S_{DS} = 1.170g , S_{DI} = 0.676g
I = 1.0

DRAWINGS AND SPECIFICATIONS DO NOT INCLUDE NECESSARY COMPONENTS OR PROCEDURES FOR CONSTRUCTION SAFETY.

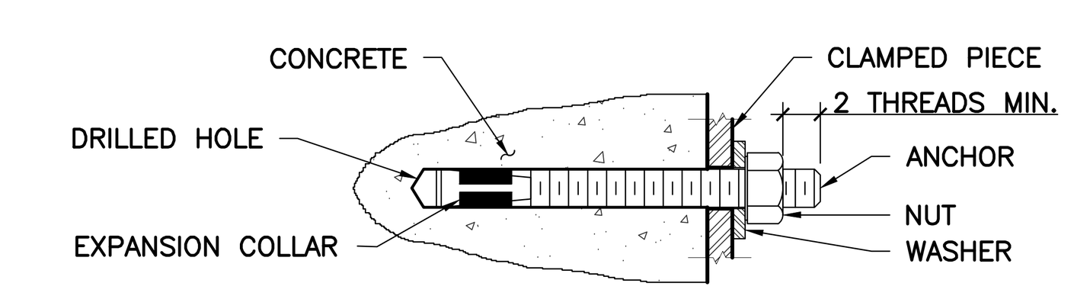
GENERAL NOTES AND MATERIAL REQUIREMENTS | 15



BOILER B-1 ANCHORAGE DETAIL | ¾" | 17



SINGLE & MULTIPLE HUNG PIPE CONNECTION DETAILS | 1½" | 19

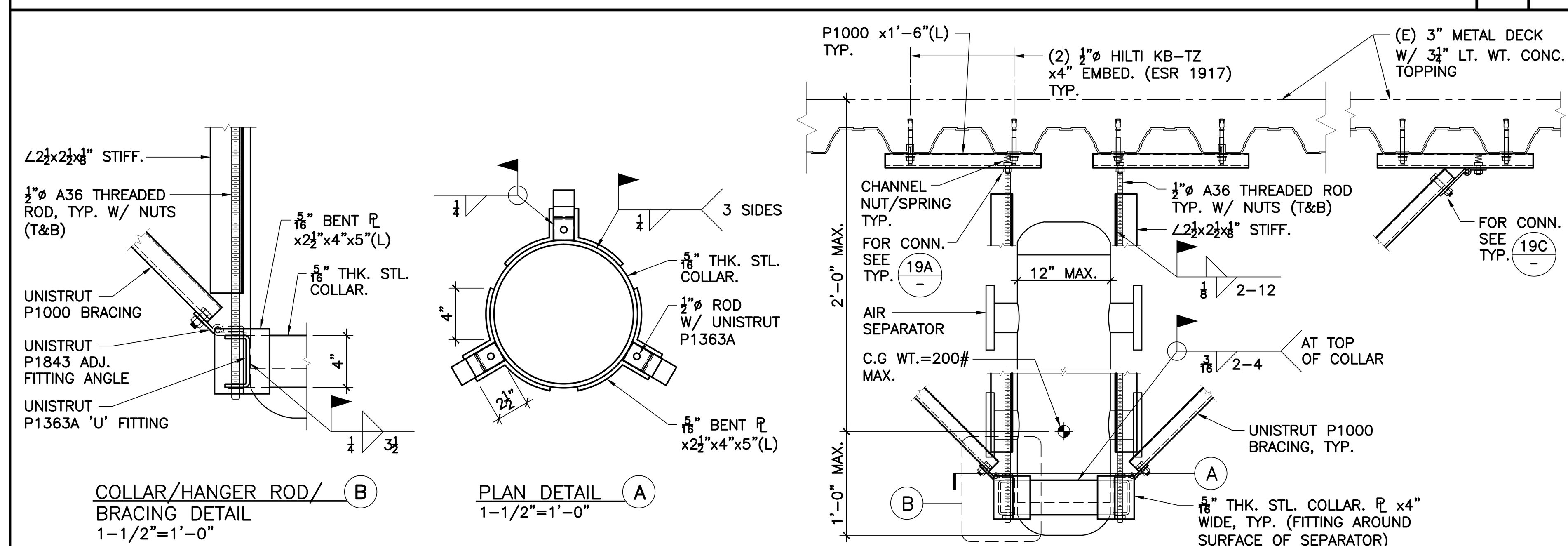


ANCHOR DIA.	MIN. EMBEDMENT	MIN. INSTALLATION TORQUE
⅜"ø	2"	25 FT-LBS.
½"ø	2"	40 FT-LBS.
⅝"ø	3⅛"	60 FT-LBS.
¾"ø	3¾"	110 FT-LBS.

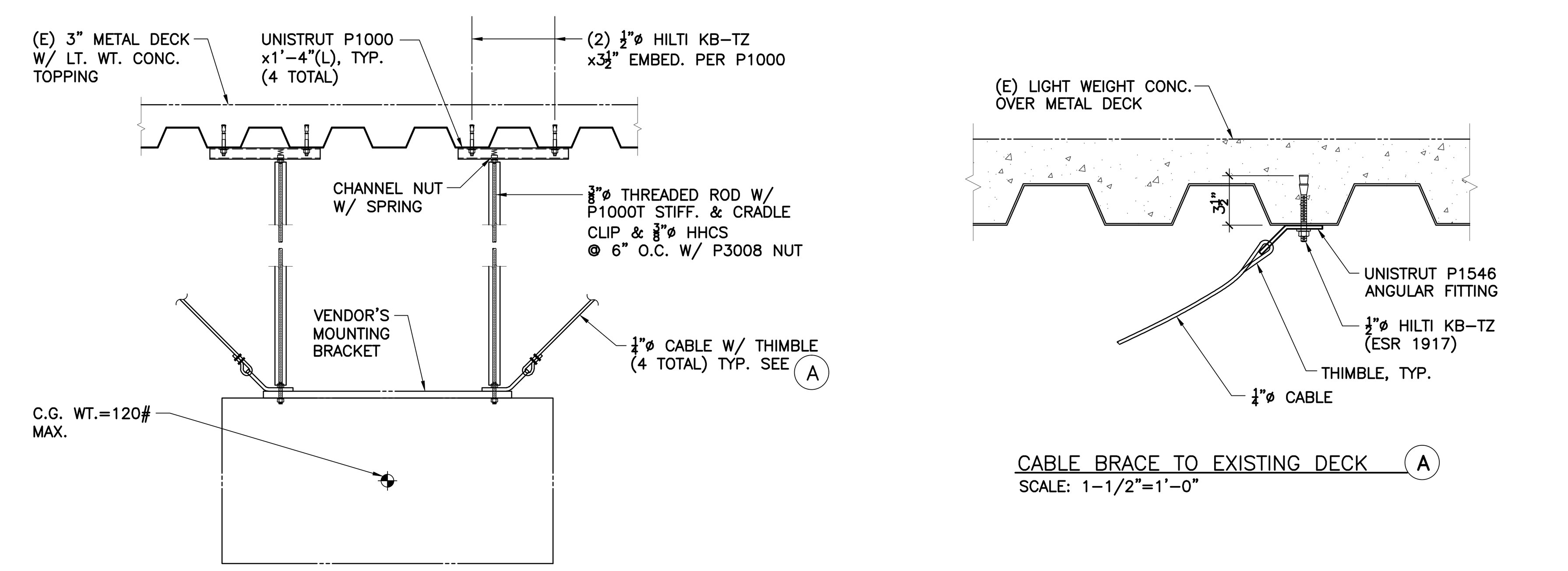
EQUIVALENT ANCHORS:

- **KWIK BOLT TZ:** BY HILTI, INC., TULSA, OKLAHOMA ICC ESR-1917

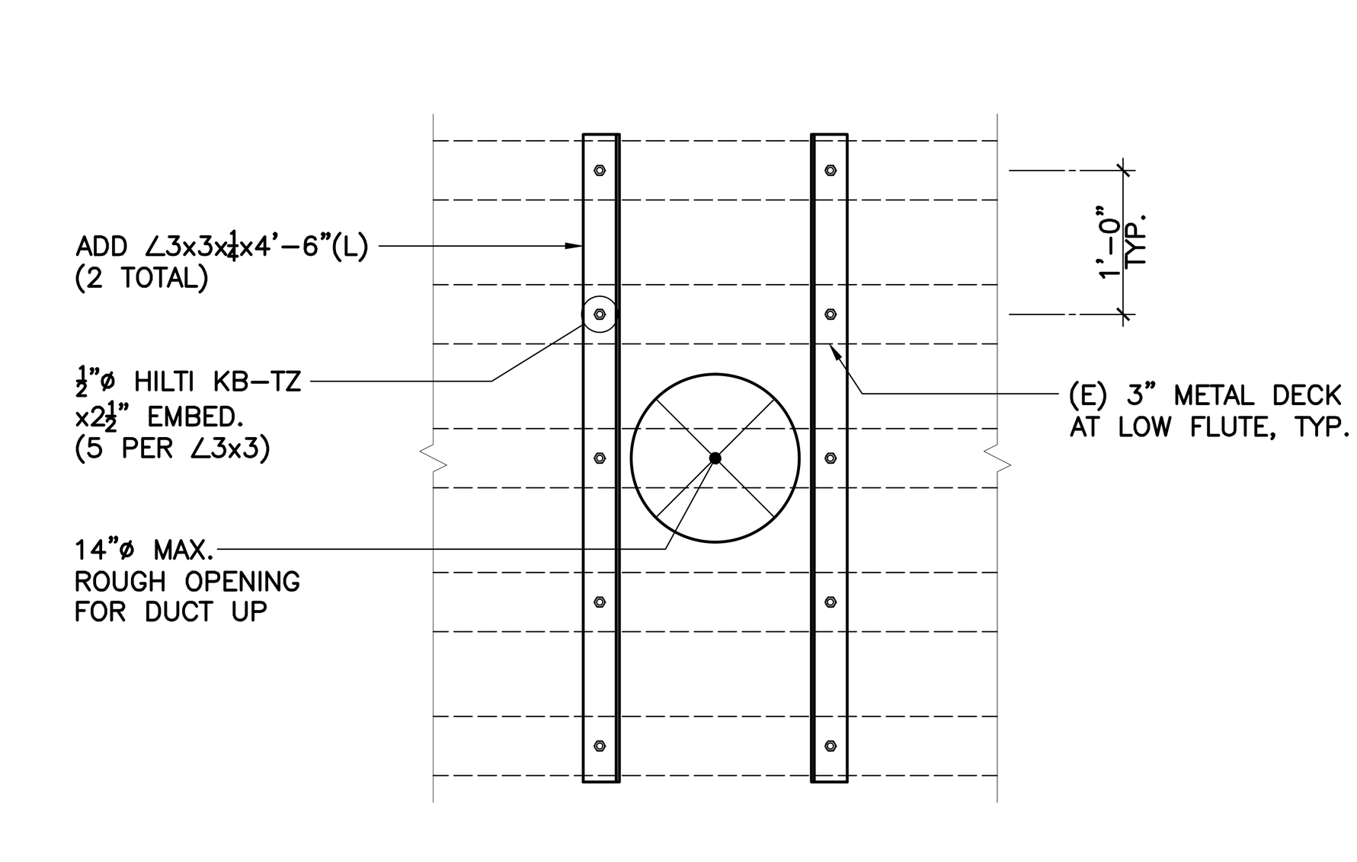
DRILLED ANCHOR DETAIL | N.T.S. | 20



AIR SEPARATOR ANCHORAGE DETAIL | 1" | 22



CF (AIR FAN) ANCHORAGE DETAIL | ¾" | 24



(E) DECK WITH L3x3 REINFORCING ANGLES DETAIL | ¾" | 25

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STAMP:

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DATE	MARK	REVISION
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DATE	ISSUED FOR
FEB. 2016	ISSUED FOR BID

PROJECT NO. : 15442

DRAWN BY:	CHECKED BY:
KC	TJW

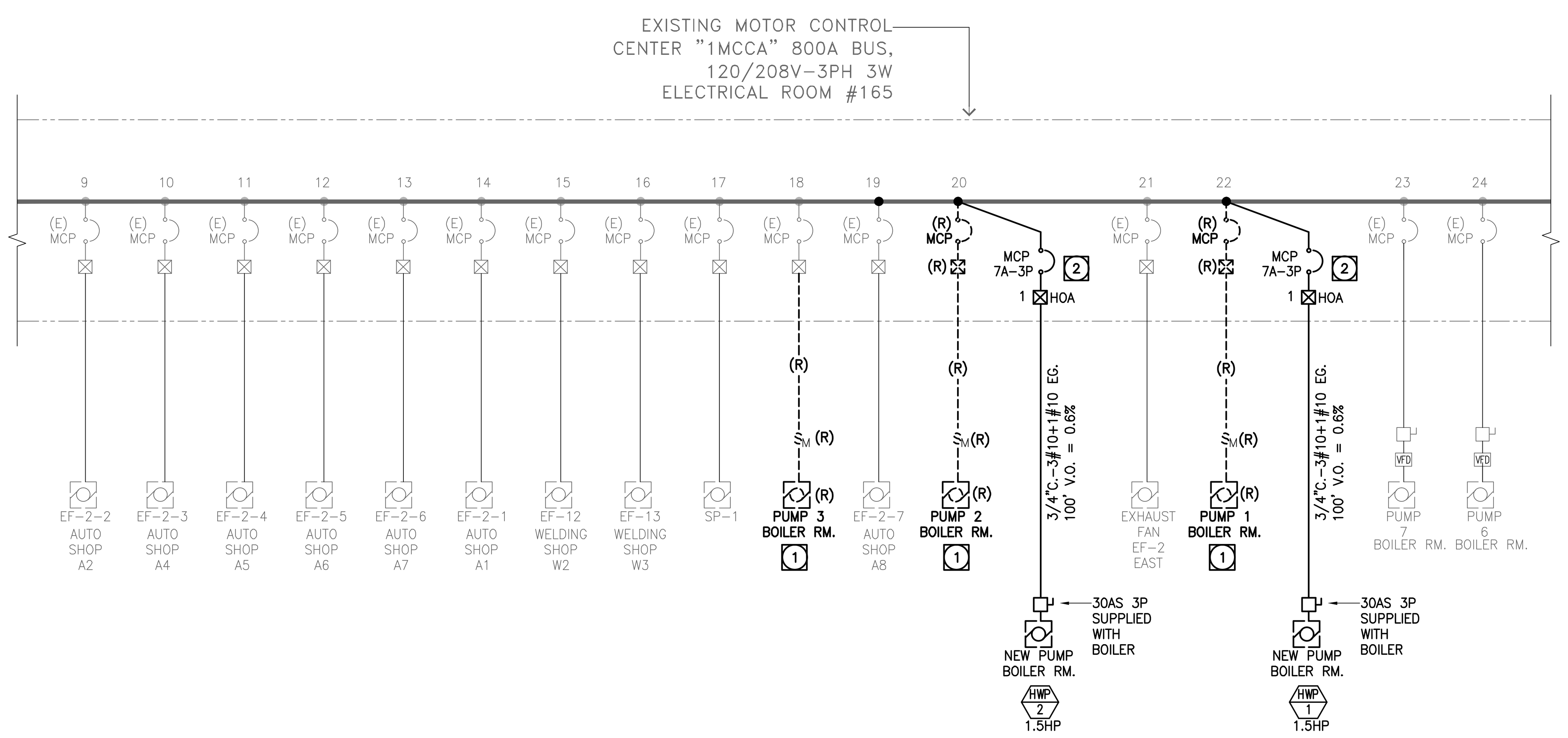
DATE : 2016-02-16

TITLE:
GENERAL NOTES, PARTIAL FLOOR PLAN AND DETAILS

SHEET NO.
S-0.1

SHEET 1 OF 1

SINGLE LINE DIAGRAM & PANEL SCHEDULES



REFERENCE NOTES

1. REMOVE PUMP AND ASSOCIATED SWITCH, CONDUIT AND WIRE.
2. FURNISH AND INSTALL NEW MOTOR CIRCUIT PROTECTOR AND HOA SWITCH IN EXISTING SPACE FOR NEW HOT WATER PUMP. COORDINATE WITH CONTROL CONTRACTOR FOR DDC CONTROL CONNECTION REQUIREMENT.

SHEET NOTES:

1. SCREENED ITEMS DENOTES EXISTING EQUIPMENT TO REMAIN IN PLACE U.O.N.
2. BOLD DASHED ITEMS DENOTES DEMO WORK.
3. BOLD ITEMS DENOTES NEW WORK.

PANEL : (E) B	PHASE : 1	WIRE : 3	MOUNTING : SURFACE
VOLTAGE : 208 / 120	LOCATION : BOILER RM.		DISTANCE : FT
BUS AMPERE : 100 AMP	FED FROM : PANEL "1LDP"		POLES : 12
MAIN C/B : 100 AMP	MAIN TYPE : AUTO C/B		SPARE CAP 0 %

CK NO	DESCRIPTION		LTG	REC	MTR	HTG	MIS	CIRCUIT BREAKER	CIRCUIT KVA A	CIRCUIT KVA B	CK NO
1	BOILER 1	*			1			20 / 2	1.25		1
2	EXHAUST FAN				1			20 / 1	0.00		2
3	W/ CKT #1	*						------ / ---		1.25	3
4	DDC CONTROL PANEL						1	15 / 1		0.10	4
5	BOILER 2	*			1			20 / 2	1.25		5
6	CF-1	*			1			15 / 2	0.32		6
7	W/ CKT #5	*						------ / ---		1.25	7
8	W/ CKT #6	*						------ / ---		0.32	8
9	CF-1 CONTROL CKT.	*					1	20 / 1	0.10		9
10	SPACE							------ / 1	0.00		10
11	SPACE							------ / 1		0.00	11
12	SPACE							------ / 1		0.00	12

CONN LOAD = 5.84 KVA	TOTAL BY PHASE (KVA) =	2.92	2.92
MIN FDR = 19 AMP	MIN C/E 12 AMP	LGST MTR = 12 AMP	SPARE: KVA
LCL(LTG+HTG) = 0.00 KVA	25% LCL = 0.00 KVA	CONN LOAD + 25% LCL	0.00 KVA

* PROVIDE NEW CIRCUIT BREAKER FOR NEW BOILERS B-1 & B-2, STYLE, RATING TO MATCH EXISTING.

SHEET LIST

Sheet Number	Sheet Title
E-0.1	ELECTRICAL LEGEND & GENERAL NOTES & SINGLE LINE & PANEL SCHEDULE
E-2.1	BOILER ROOM ELECTRICAL PLANS

ABBREVIATIONS

A AMPERES.
A/C AIR CONDITIONING.
AFF ABOVE FINISHED FLOOR.
AFG ABOVE FINISHED GRADE.
AIC AMPERES INTERRUPTING CAPACITY
AL ALUMINUM
ARCH ARCHITECTURAL
ATS AUTOMATIC TRANSFER SWITCH

BKBD BACKBOARD.

C CONDUIT WITH WIRES.
CATV CABLE TELEVISION
C/B CIRCUIT BREAKER.
CKT CIRCUIT.
CLG CEILING.
CO CONDUIT ONLY WITH PULL WIRE.
CU COPPER

DE DUAL ELEMENT FUSES.
DISC DISCONNECT.
DIST DISTRIBUTION.
DWG DRAWING.

EA EACH.
EG EQUIPMENT/GREEN GROUND
EC ELECTRICAL CONTRACTOR
ELEC ELECTRICAL.
EM EMERGENCY
EMT ELECTRICAL METALLIC
EQUIP EQUIPMENT.
EXIST EXISTING.

F FUSE.
FA FIRE ALARM
FBO FURNISH BY OTHERS
FIXT FIXTURE.
FLUOR FLUORESCENT.

GC GENERAL CONTRACTOR
GFI GROUND FAULT INTERRUPTER.
GND GROUND.

HOA HAND-OFF-AUTOMATIC.
HP HORSEPOWER.

Isc SHORT CIRCUIT CURRENT
IC INTERCOM.

J JUNCTION.

LCL LONG CONTINUOUS LOAD.
LTG LIGHTING.

MAX MAXIMUM.
MIN MINIMUM.
MTG MOUNTING.

NF NON-FUSED.
NIC NOT IN CONTRACT.
NL NIGHT LIGHT.
NTS NOT TO SCALE.

P POLE.
PA PUBLIC ADDRESS.
PB PULL BOX.
PC PHOTO CELL
PH PHASE
PNL PANEL.
PWR POWER.

RECEPT RECEPTACLE
REQ'D REQUIRED.
RM ROOM

SC SEPARATE CIRCUIT
SHT SHEET.
SPST SINGLE POLE, SINGLE THROW.

SURF SURFACE.
SW SWITCH.
SWGR SWITCHGEAR

TC TIME CLOCK.
TERM TERMINAL.
TEL TELEPHONE
TV TELEVISION.
TYP TYPICAL.

UG UNDERGROUND.
UGPS UNDERGROUND PULL SECTION
UON UNLESS OTHERWISE NOTED.

V VOLTS.

W/ WITH.
WCR WITHSTAND AND CLOSING RATING
WP WEATHERPROOF.

XFRM TRANSFORMER

4/S JUNCTION BOX 4" SQUARE.
5/S JUNCTION BOX 4-11/16".

SYMBOL LIST

GENERAL:

DUPLEX CONVENIENCE OUTLET 20 AMPS, 110VOLTS +15" ABOVE FINISH FLOOR UNLESS OTHERWISE NOTED.

GFI DUPLEX RECEPTACLE 20AMP, 120 VOLT, 42"A.F.F. (IF MOUNTED ADJACENT TO SINK ABOVE COUNTER), U.O.N.

PHOTOELECTRIC TYPE DUCT DETECTOR WITH RELAY BASE

VFD — VARIABLE FREQUENCY DRIVE.

JUNCTION BOX.

FLUSH/SURFACE MOUNTED LIGHTING AND/OR RECEPTACLE PANELBOARD.

150A 3P — CIRCUIT BREAKER, MOLDED CASE, 3 POLE, 150 AMP TRIP.

TRANSFORMER WITH SECONDARY GROUND.

MOTOR CONNECTION.

"1" — MAGNETIC MOTOR STARTER. NEMA SIZE AS INDICATED.

"1" 30A — COMBINATION MAGNETIC MOTOR STARTER AND DISCONNECT SWITCH, SIZE AS INDICATED.

S_a^3 SINGLE POLE TOGGLE SWITCH, +42" A.F.F., U.O.N.. SUBSCRIPTS INDICATE THE FOLLOWING:

- a – OUTLETS CONTROLLED.
- 2 – TWO POLE.
- 3 – THREE WAY.
- 4 – FOUR WAY.
- K – KEYED.
- P – PILOT LIGHT.
- M – MANUAL MOTOR STARTER SWITCH WITH THERMAL OVERLOAD PROTECTION.
- D – DIMMER.
- R – REMOTE CONTROL, MOMENTARY CONTACT.
- F – FLY FAN DOOR SWITCH.
- T – COUNTDOWN TIMER SWITCH.

SINGLE LINE DIAGRAM:

150A 3P — CIRCUIT BREAKER, MOLDED CASE, 3 POLE, 150 AMP TRIP.

70A 100A 3P — SWITCH AND FUSE, 3 POLE, 100 AMP WITH (3) 70 AMP FUSES.

METERING AND CURRENT/POTENTAIL TRANSFORMER AS REQUIRED.

GROUND FAULT SENSOR.

SHUNT TRIP.

TRANSFORMER WITH SECONDARY GROUND.

1LA — PANEL, SWITCHBOARD, TRANSFORMER, OR TERMINAL CABINET DESIGNATION.

DEMO REFERENCE NOTE #1.

NEW REFERENCE NOTE #1.

CONDUIT CONCEALED IN CEILING OR IN WALLS.

CONDUIT EXPOSED

CONDUIT BELOW FLOOR OR UNDERGROUND

CONDUIT TURNING UP.

CONDUIT TURNING DOWN.

CONDUIT SYSTEM WITH INSULATED GROUND CONDUCTOR.

3/4"C.- 1 #11.
3/4"C.- 3 #11.
3/4"C.- 4 #11.
3/4"C.- 5 #11.
1"C.- 6 #11.
1"C.- 7 #11.

#6 — CONDUCTORS OTHER THAN #11 AWG AS INDICATED (3 #6 AWG) CONDUIT SIZE AS PER N.E.C.

1LA-1&3&5 — HOMERUN TO PANEL "1LA". CIRCUITS 1,3,5. (3-POLE CIRCUIT BREAKER)

1LA-1,4,6 — HOMERUN TO PANEL "1LA", CIRCUITS 1,4,6 WITH COMMON NEUTRAL.

CONDUIT STUB WITH CAP (WITH POLY-PROPYLENE PULL WIRE).

1LA-1-3-5 — HOMERUM TO PANEL "1LA". CIRCUIT 1, 3, 5 WITH SEPARATE NEUTRAL FOR EACH CIRCUIT.

GENERAL NOTES

1. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE 2013 CALIFORNIA ELECTRICAL CODE, 2011 NATIONAL ELECTRIC CODE AND ALL APPLICABLE LOCAL CODES AND REGULATIONS.
2. MINIMUM SIZE OF CONDUIT SHALL BE 3/4", MINIMUM SIZE OF CONDUCTOR SHALL BE #12 AWG UNLESS OTHERWISE NOTED.
3. ALL PANELS, SWITCHES, ETC. SHALL HAVE SUFFICIENT GUTTER SPACE AND LUGS TO ACCOMMODATE CONDUCTORS SHOWN.
4. WHERE WIRE SIZES ARE INDICATED ON PLANS, FOR INDIVIDUAL CIRCUITS, THE WIRE SIZE INDICATED SHALL APPLY TO THE COMPLETE CIRCUIT, UNLESS OTHERWISE NOTED.
5. ALL JUNCTION BOXES AND PULL BOXES SHALL BE OF CODE GAUGE AND OF THE REQUIRED SIZE TO ACCOMMODATE NUMBER OF CONDUCTORS SHOWN.
6. ALL PULL BOXES IN FINISHED AREAS SHALL HAVE FACTORY APPLIED PRIME COAT OF PAINT.
7. ELECTRICAL CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL EQUIPMENT REQUIRING ELECTRICAL CONNECTION PRIOR TO ANY WORK.
8. ALL PANELBOARDS SHALL HAVE LOCKING DOORS AND BE KEYED ALIKE UNLESS OTHERWISE NOTED.
9. ELECTRICAL CONTRACTOR SHALL EXTEND WIRING FROM ALL JUNCTION BOXES, RECEPTACLES, SWITCHES, ETC. AND MAKE FINAL CONNECTION AS REQUIRED TO ALL BUILDING EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS.
10. ALL MOUNTING HEIGHTS SHOWN ARE TO CENTER LINE OF OUTLET OR DEVICE AND SHALL APPLY UNLESS INDICATED OTHERWISE.
11. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED. FOLLOW DRAWINGS IN LAYING OUT WORK AND CHECK DRAWINGS OR OTHER TRADES RELATING TO WORK TO VERIFY SPACE IN WHICH WORK WILL BE INSTALLED. MAINTAIN HEADROOM AND SPACE CONDITIONS AT ALL TIMES.
12. LOCATION OF LOCAL WALL SWITCHES ARE SUBJECT TO MODIFICATIONS. AT OR NEAR DOORS, INSTALL SWITCHES ON SIDE OPPOSITE TO DOOR HINGE. VERIFY FINAL HINGE LOCATION IN FIELD PRIOR TO ANY WORK.
13. EXPOSED RACEWAYS (WHEN INDICATED ON DRAWINGS) SHALL BE RUN PARALLEL WITH OR AT RIGHT ANGLES TO WALLS.
14. FURNISH APPROVED EXPANSION FITTINGS WHERE RACEWAY CROSSES BUILDING EXPANSION JOINTS.
15. FURNISH FISH WIRE IN EACH RACEWAY RUN OVER 10 IN LENGTH, IN WHICH PERMANENT WIRING IS NOT INSTALLED.
16. NOT MORE THAN THREE LIGHTING OR CONVENIENCE OUTLET CIRCUITS ARE PERMITTED IN ONE CONDUIT, UNLESS OTHERWISE INDICATED.
17. PROVIDE PULL BOXES WHEREVER NECESSARY TO FACILITATE PULLING OF CONDUCTORS. COORDINATE LOCATIONS OF BOXES WITH OTHER TRADES TO AVOID CONFLICT.
18. SUPPORT PANELBOARDS, JUNCTION AND PULL BOXES INDEPENDENTLY TO BUILDING STRUCTURE WITH NO WEIGHT BEARING ON RACEWAYS.
19. ALL EXTERIOR ELECTRICAL DEVICES AND EQUIPMENT SHALL BE WEATHERPROOF TYPE.
20. WHERE MOUNTING HEIGHTS OR DIMENSIONS OF DEVICE LOCATIONS ARE SHOWN, CONTRACTOR SHALL CONFIRM SUCH DIMENSIONS WITH ARCHITECTURAL DRAWINGS. WHERE CONFLICT IN DIMENSIONS OCCUR BETWEEN DRAWINGS, OR WHERE NO DIMENSIONS OR MOUNTING HEIGHTS ARE INDICATED ON EITHER SET OF DRAWINGS, CONTRACTOR SHALL VERIFY THESE ITEMS WITH ARCHITECT IN FIELD PRIOR TO ROUGH-IN.
21. ALL CONDUIT PENETRATIONS THROUGH FIRE RATED WALLS AND FLOORS SHALL BE PROTECTED BY MATERIALS TESTED IN ACCORDANCE WITH UL1479/ASTM E- 814. INSTALLATION SHALL FOLLOW MANUFACTURER'S INSTRUCTIONS AND MAINTAIN THE FIRE RATING OF WALLS AND/OR FLOORS AFFECTED. PROVIDE HILTI C5140 FIRESTOP SEALANT, CSFM LISTING NO. 4060-1100:100, OR EQUIVALENT STATE FIRE MARSHAL APPROVED AND LISTED MATERIAL.
22. ANCHORAGE OF ALL EQUIPMENT TO BE INSTALLED, AS A PART OF THIS PROJECT SHALL BE DETAILED ON THE STRUCTURAL PLANS, EXCEPT FOR THIS FOLLOWING:
    A. EQUIPMENT WEIGHING LESS THAN 400 POUNDS SUPPORTED DIRECTLY ON THE FLOOR OR ROOF.
    B. FURNITURE (NON FIXED AND MOVABLE AS EXEMPTED BY THE CBC 1007 APPENDIX CHAPTER 1 SECTION 105.1)
    C. TEMPORARY OR MOVABLE EQUIPMENT (NON FIXED AND MOVABLE AS EXEMPTED BY THE CBC 1007 APPENDIX CHAPTER 1 SECTION 105.1)
    D. EQUIPMENT WEIGHING LESS THAN 10 POUNDS SUPPORTED BY VIBRATION ISOLATORS.
    E. EQUIPMENT WEIGHING LESS THAN 10 POUNDS SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

    PERMANENT EQUIPMENT IN ITEMS A, D, AND E MUST BE SUPPORTED AND ANCHORED TO RESIST THE FORCES PRESCRIBED BY CHAPTER 13 OF ASCE 7 AS MODIFIED BY THE CBC 1007 SECTIONS 1613A/1614A AND THE ANCHORAGE SHALL BE APPROVED BY THE APPROPRIATE DESIGN PROFESSIONAL OF RECORD AND OSHPD AS A PART OF FIELD REVIEWS/OBSERVATIONS. THE INSPECTOR OF RECORD SHALL ASSURE THAT THE ABOVE REQUIREMENTS ARE ENFORCED.
23. CONTRACTOR SHALL PROVIDE SERVICES FOR AN INTERNATIONAL SEISMIC APPLICATION TECHNOLOGY (ISAT) REPRESENTATIVE TO PREPARE SHOP DRAWINGS FOR OSHPD REVIEW AND APPROVAL OF THE FOLLOWING:
    A. SEISMIC RESTRAINTS SYSTEM FOR ELECTRICAL RACEWAY AND BACK BOXES NOTED ON THE ELECTRICAL DRAWINGS IN ACCORDANCE WITH APPLICABLE CODES.
24. THE INTENT OF THE DRAWINGS AND SPECIFICATIONS SHALL BE TO RECONSTRUCT THE AREA OF WORK TO COMPLY WITH APPLICABLE CALIFORNIA BUILDING STANDARD CODE, TITLE 14, CALIFORNIA CODE OF REGULATIONS. SHOULD ANY CONDITION DEVELOP NOT COVERED BY THE APPROVED PLANS OR SPECIFICATIONS IN THE AREA OF WORK NOT IN COMPLIANCE WITH APPLICABLE TITLE 14, CALIFORNIA CODE OF REGULATIONS.

DEMOLITION & ALTERATION NOTES

1. CONTRACTOR SHALL VISIT THE SITE AND MAKE HIMSELF THOROUGHLY FAMILIAR WITH THE EXISTING CONDITIONS.
2. ALL WORK SHALL BE PERFORMED TO CHANGE THE EXISTING ELECTRICAL INSTALLATION AS INDICATED OR AS REQUIRED TO PERFORM THE NEW WORK, IN ACCORDANCE WITH ARCHITECTURAL DEMOLITION PLAN.
3. REMOVE ALL LIGHT FIXTURES, SWITCHES, SPEAKERS, TELEPHONE OUTLETS, RECEPTACLES, MISCELLANEOUS CONDUIT, WIRE, ETC. THAT INTERFERES WITH NEW CONSTRUCTION. EXTEND ANY INTERRUPTED CIRCUITS. PROVIDE BLANK COVER PLATES AS REQUIRED IN FINISHED AREAS, COVER PLATES SHALL MATCH THE WALL SURFACE.
4. INFORMATION GIVEN ON THE DRAWINGS ABOUT EXISTING INSTALLATIONS HAS BEEN OBTAINED FROM THE BEST SOURCES AVAILABLE BUT CANNOT BE GUARANTEED ACCURATE IN ALL RESPECTS. VERIFY ALL SUCH INFORMATION BEFORE PROCEEDING WITH ANY NEW WORK THAT MAY BE AFFECTED. INCLUDE AS A PART OF THE CONTRACT ALL WORK REQUIRED TO PRODUCE THE INDICATED RESULT.
5. EXCEPT AS MAY BE SPECIFICALLY INDICATED OTHERWISE, ALL ELECTRICAL MATERIALS AND EQUIPMENT REMOVED FROM THE EXISTING INSTALLATION IN THE COURSE OF PERFORMING THE INDICATED WORK AND NOT INDICATED TO BE REUSED SHALL BE TREATED AS FOLLOWS:
    A. ALL CONDUITS, CONDUCTORS, OUTLET BOXES AND FITTINGS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.
    B. ALL OTHER REMOVED ITEMS (PANELS, TRANSFORMERS, DISCONNECT SWITCHES, LIGHT FIXTURES, AND OTHER ELECTRICAL EQUIPMENT) SHALL BE TURNED OVER TO THE OWNER AND DISPOSED OF BY THE CONTRACTOR AS DIRECTED BY THE OWNER.
6. CLEAN ALL REMOVED ITEMS THAT ARE TO BE REUSED, EQUIPMENT THAT IS INDICATED TO BE REUSED SHALL BE PROTECTED DURING CONSTRUCTION, CLEANED AND TESTED BEFORE RE-INSTALLATION IN A NEW PERMANENT LOCATION.
7. UNLESS NOTED OTHERWISE ON THE DRAWINGS, ALL EXISTING WIRING, CONDUITS, JUNCTION BOXES AND OTHER ELECTRICAL DEVICES IN AREAS WHERE NEW WORK OCCURS, SHALL BE REMOVED EXCEPT WHEN SUCH DEVICES ARE REQUIRED TO MAINTAIN SERVICES TO OTHER AREAS. IN SUCH CASES, CONTRACTOR SHALL RELOCATE THESE DEVICES WHERE REQUIRED TO ACCOMMODATE NEW WORK. CONTRACTOR REMOVE ANY OF THE EXISTING ITEMS WHEN SUCH ITEMS ARE CONCEALED AND DO NOT INTERFERE WITH THE NEW WORK OF ALL TRADES.
8. NUMBER OF CONDUCTORS SHOWN ON EXISTING CONDUITS REPRESENT THOSE REQUIRED TO PERFORM THE WORK. WHEN NUMBER OF EXISTING IS INADEQUATE, CONTRACTOR SHALL PROVIDE ADDITIONAL WIRES AND ALL NECESSARY WORK AND ACCESSORIES REQUIRED TO CONFORM TO THE NUMBER OF CONDUCTORS SHOWN ON THE DRAWINGS. ALL EXTRA EXISTING WIRES SHALL BE TAPED, COILED AND TAGGED AS "NOT-USED" AT BOTH ENDS IN JUNCTION BOXES. CONTRACTOR SHALL EXAMINE AND REPLACE ALL EXISTING WIRES IN BAD CONDITION WITH EQUIVALENT NEW ONES.
9. CONTRACTOR TO COORDINATE WITH UTILITY POWER COMPANY FOR ANY TEMPORARY SHUT-DOWN AND/OR TO PROVIDE TEMPORARY POWER AS REQUIRED DURING DEMOLITION AND CONSTRUCTION PHASE OF WORKS.

MISCELLANEOUS:

(E) WHEN SHOWN ADJACENT TO LIGHTING FIXTURE, OUTLETS, PANELS, IN CONDUIT RUNS, ETC., DENOTES EXISTING TO REMAIN.

(ER) WHEN SHOWN ADJACENT TO LIGHTING FIXTURE, OUTLETS, PANELS, IN CONDUIT RUNS, ETC., DENOTES EXISTING TO BE DISCONNECTED AND RELOCATED.

(RE) WHEN SHOWN ADJACENT TO ELECTRICAL EQUIPMENT DENOTES NEW LOCATION OF RELOCATED EQUIPMENT.

(R) WHEN SHOWN ADJACENT TO ELECTRICAL EQUIPMENT DENOTES DISCONNECT AND REMOVE EQUIPMENT WITH ASSOCIATED CONDUIT AND WIRING U.O.N.

EC5DPH — FEEDER CALLOUT. REFER TO SIGNLE LINE DIAGRAM FOR FEEDER SIZE.

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PROJECT NO. : 15442

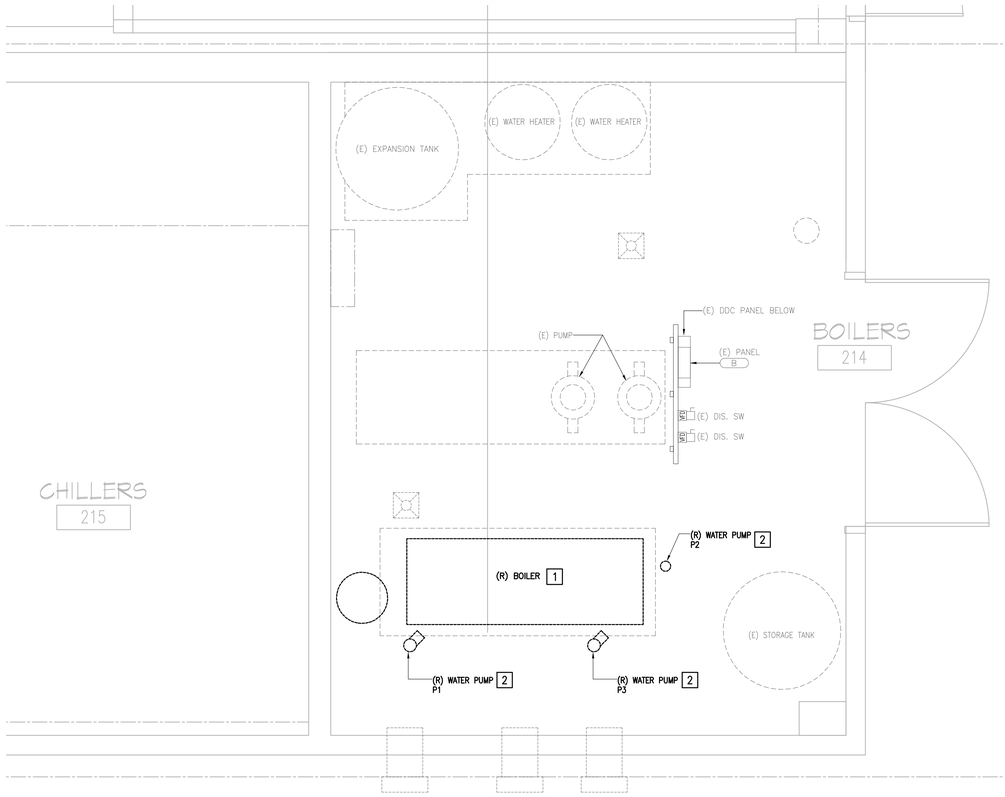
DRAWN BY: dHA+CALPEC | CHECKED BY: KC/AI

DATE : 2016-02-16

TITLE: ELECTRICAL LEGEND, GENERAL NOTES, SINGLE LINE DIAGRAM & SCHEDULE

SHEET NO. E-0.1

SHEET OF

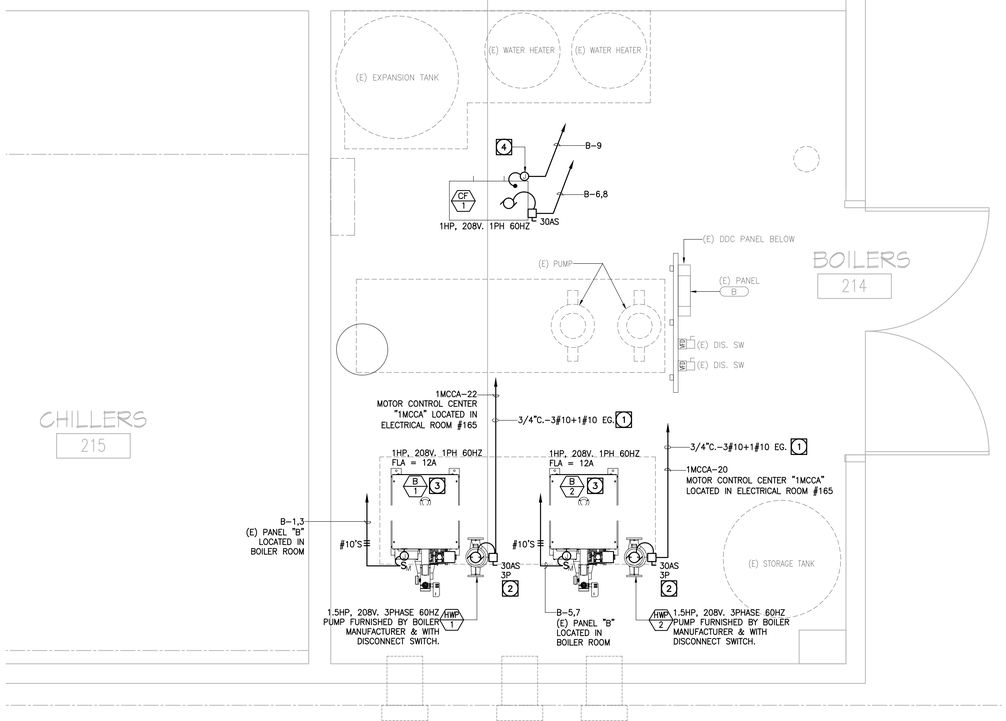


BOILER ROOM ELECTRICAL DEMO PLAN

1/2" = 1'-0" | 1

REFERENCE NOTES

1. DISCONNECT AND REMOVE POWER CONNECTIONS FOR THE REMOVED BOILER.
2. DISCONNECT AND REMOVE POWER CONNECTIONS FOR THE REMOVED PUMPS. REMOVE ASSOCIATED SWITCH, CONDUIT, WIRE BACK TO MOTOR CONTROL CENTER "1MCCA".

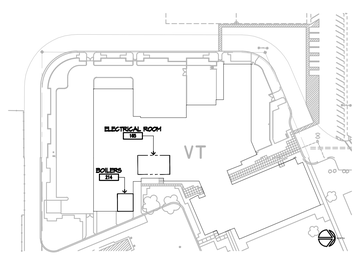


BOILER ROOM ELECTRICAL PLAN

1/2" = 1'-0" | 2

REFERENCE NOTES

1. REFER TO SINGLE LINE DIAGRAM FOR REQUIREMENTS.
2. DISCONNECT SWITCH & PUMP PROVIDED BY BOILER MANUFACTURER.
3. COORDINATE WITH CONTROL CONTRACTOR FOR DDC CONTROL CONNECTION REQUIREMENT.
4. PROVIDE/INSTALL 24VOLT CONTROL RELAY TO ACTIVATE MOTOR. RELAY (P/N 950-1016) CAN BE OBTAINED THRU EQUIPMENT MANUFACTURER.



KEY PLAN | N.T.S.

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BOILER ROOM
ELECTRICAL PLANS

SHEET NO.
E-2.1

SHEET OF