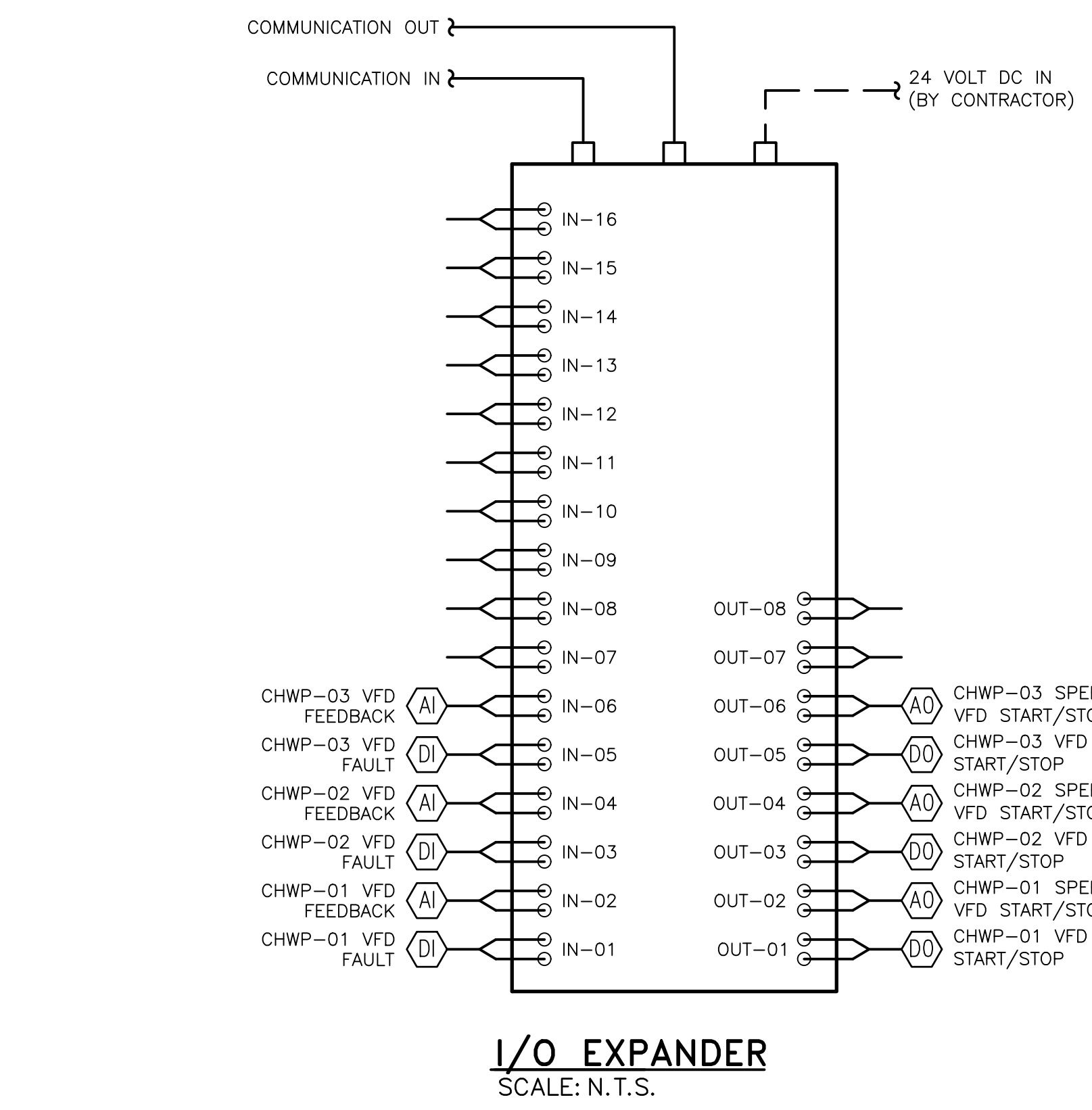
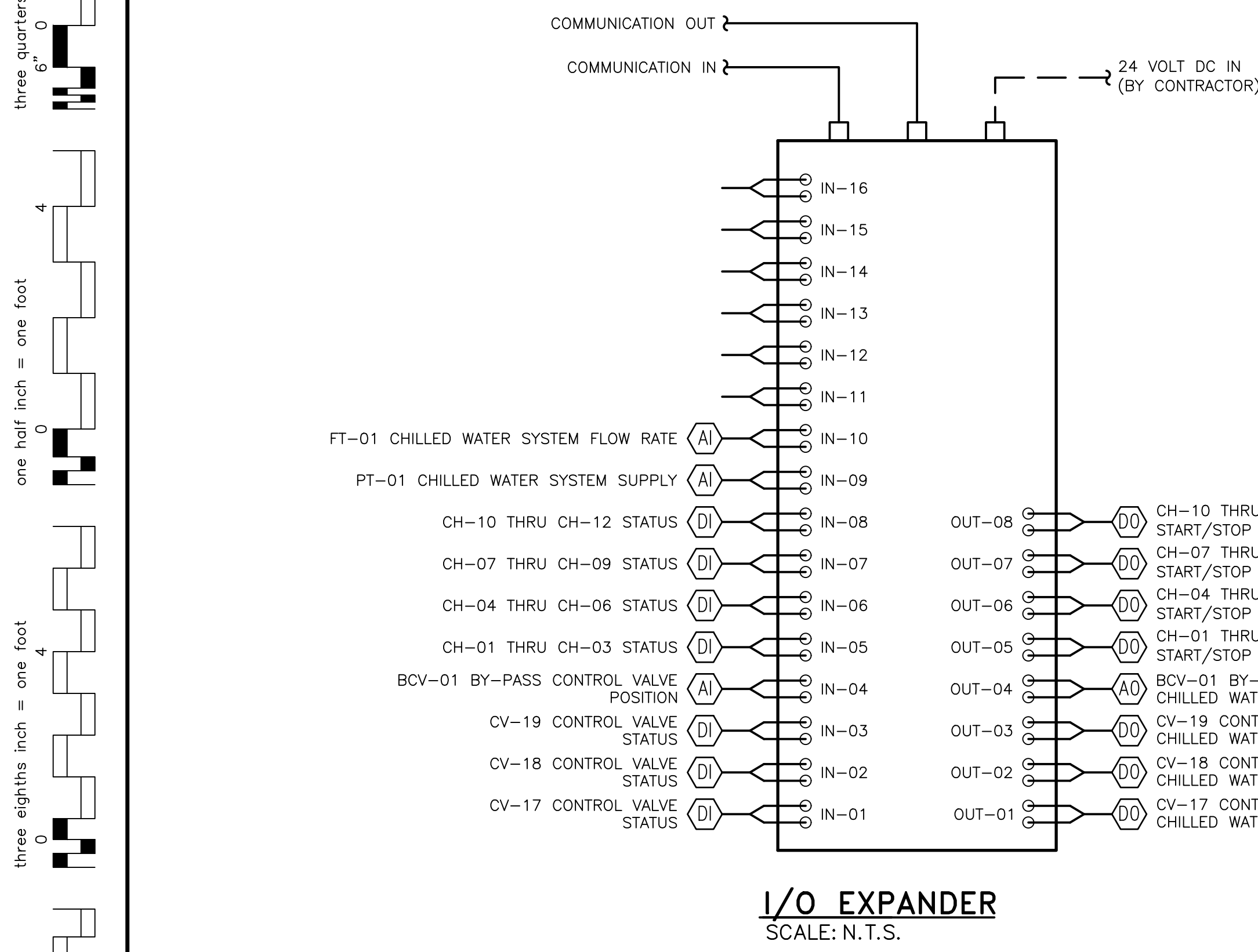
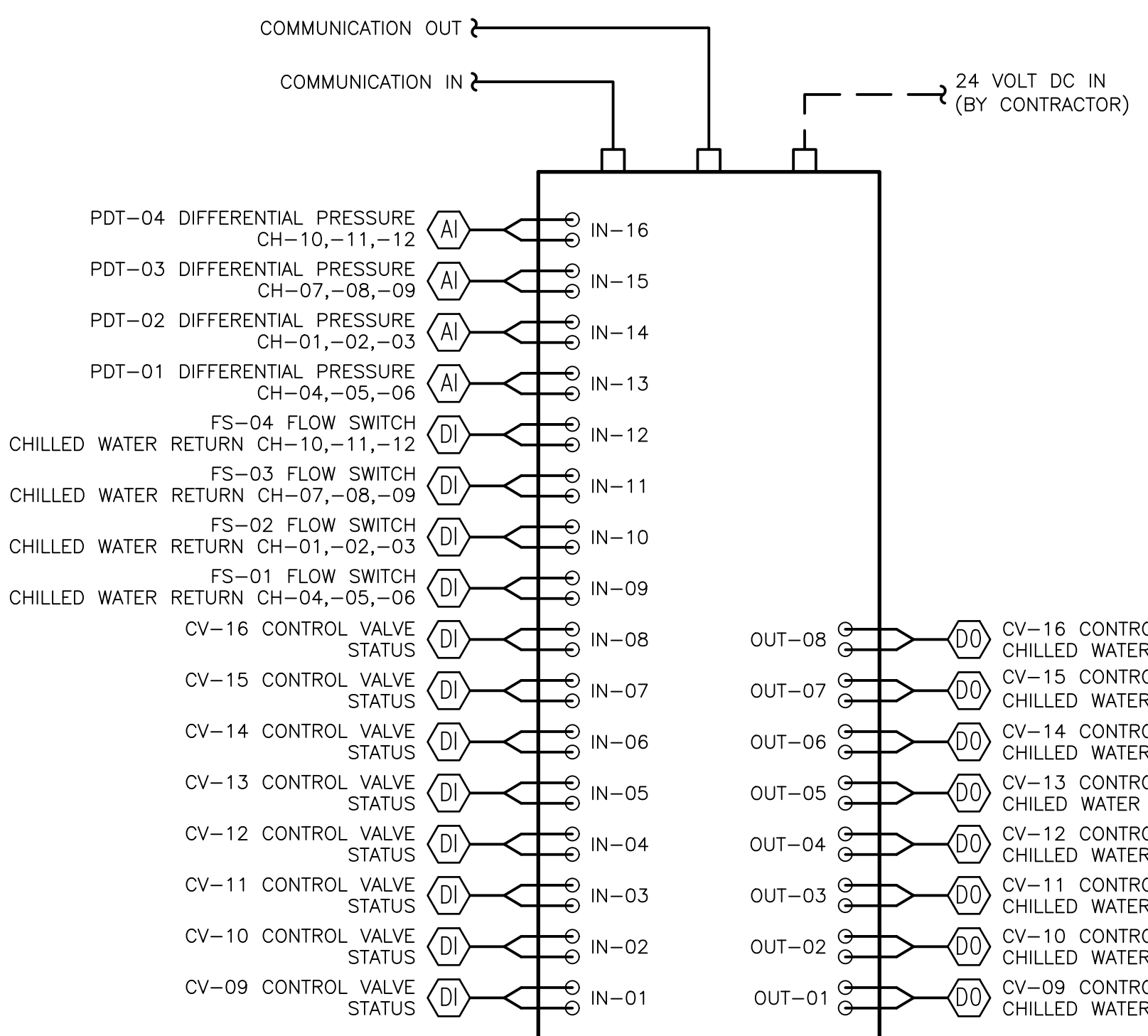
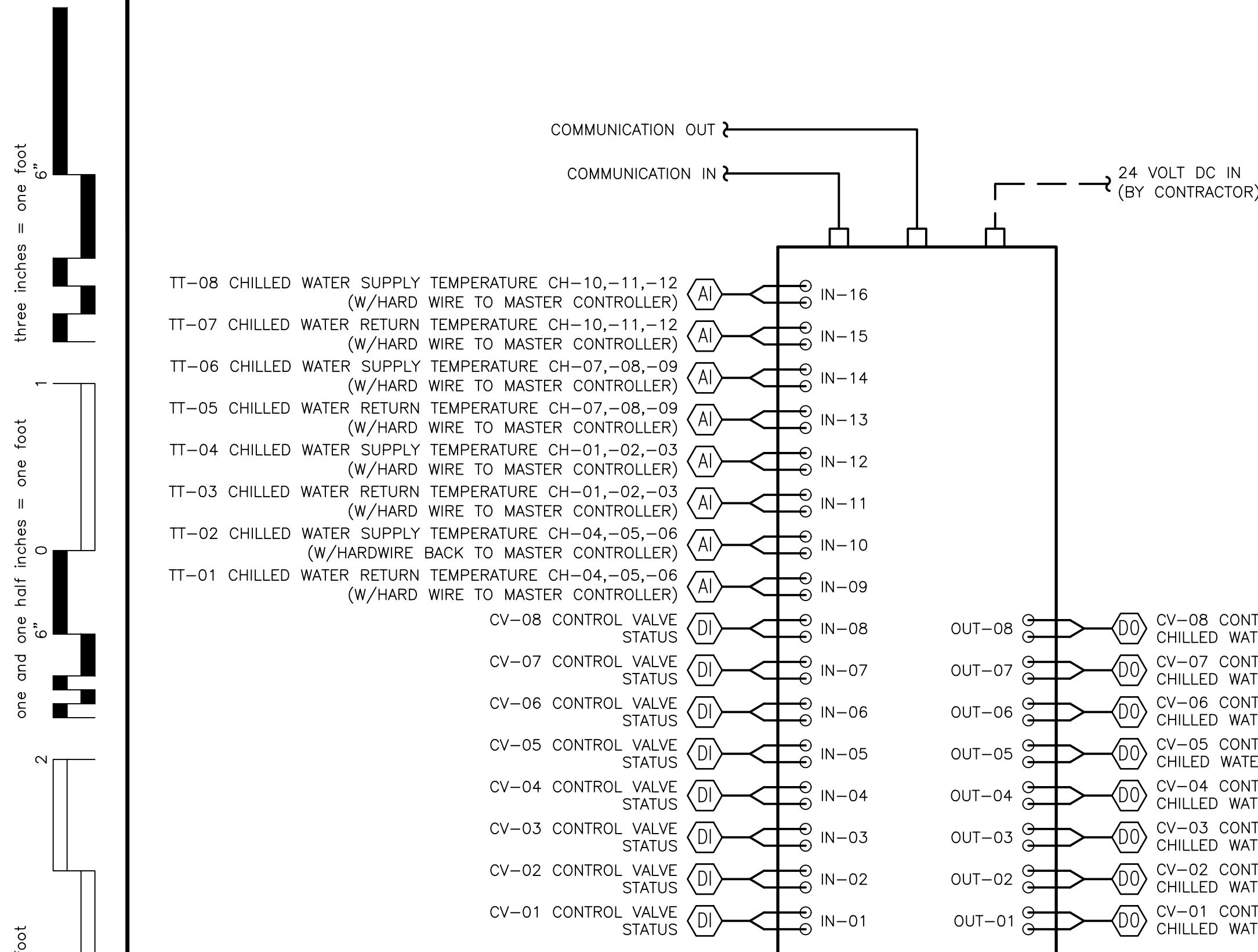


GENERAL NOTES:

- ALL TAG NUMBERS ARE PRECEDED WITH THE BUILDING NUMBER 101- U.N.O. EXAMPLE 101-CV-01 FOR A CONTROL VALVE IN BUILDING 101.
- CONTROLS CONTRACTOR TO SUPPLY ALL NECESSARY DEVICE, CONTROLLERS, CONTROL PANELS AND EQUIPMENT NECESSARY FOR A FUNCTIONING CONTROL SYSTEM.
- CONTROLS TO TIE INTO THE EXISTING SIEMENS APOGEE SYSTEM. CONTRACTOR TO VERIFY ALL NEW HARDWARE AND SOFTWARE ARE COMPATIBLE WITH THE CURRENT EXISTING BUILDING AUTOMATION SYSTEM.
- THE NEW CONTROLS WILL TIE INTO THE EXISTING ECC LOCATED IN THE BASEMENT OF BUILDING 100.

SEQUENCE OF OPERATION:

- AIR COOLED CHILLERS 01 THRU 12**
 - THE CHILLERS ARE ENABLED BY A SIGNAL FROM THE BMS CONTROLLER. UPON A CALL FOR COOLING THE BMS CONTROLLER WILL SEND A START SIGNAL TO THE CHILLER CONTROL MODULE. THE CHILLER CONTROL MODULE FOR CHILLERS -01 THRU -06 WILL FUNCTION AS ONE CHILLER. THE CHILLER CONTROL MODULE FOR CHILLERS -07 THRU -12 WILL FUNCTION AS A SEPARATE CHILLER. THE CHILLERS WILL OPERATE ON A LEAD/LAG BASIS.
 - WHEN CHILLERS -01 THRU -06 ARE SIGNALLED TO OPERATE CONTROL VALVE -18 AND -19 SHALL BE OPENED.
 - WHEN CHILLERS -07 THRU -12 ARE SIGNALLED TO OPERATE CONTROL VALVES -16 AND -17 SHALL BE OPENED.
 - THE CHILLER CONTROL MODULE WILL OPEN THE MINIMUM NUMBER OF VALVES TO MAINTAIN A MINIMUM FLOW OF 177 GPM PER BANK OF CHILLERS (I.E. CHILLERS -01 THRU -03)
 - THE CHILLER CONTROL MODULE WILL START THE CHILLER COMPRESSOR WITH THE LEAST AMOUNT OF RUN HOURS ON IT.
 - WHEN THE OPERATING CHILLERS REACH 95% OF THEIR FULL LOAD THE SECOND CHILLER MODULE WILL BE COMMANDED TO START.
 - WHEN THE CHILLERS REDUCE TO 40% OF THEIR FULL LOAD ONE CHILLER WILL BE COMMANDED TO STOP.
- CONTROL POINTS**
 - STARTUP/SHUTDOWN
 - ENTERING AND LEAVING CHILLED WATER TEMPERATURE
 - LEAD/LAG
- MONITOR POINTS**
 - DATE AND TIME
 - OUTDOOR AIR TEMPERATURE
 - OPERATING AND ALARM STATUS
 - ENTERING AND LEAVING CHILLED WATER TEMPERATURE
 - OPERATING SET-POINTS TEMPERATURE AND PRESSURE
 - REFRIGERANT TEMPERATURE AND PRESSURE
 - OPERATING HOURS
 - NUMBER OF STARTS
 - CURRENT LIMIT SET-POINTS
 - MAXIMUM MOTOR AMPERAGE (PERCENT)
- ALARM POINTS**
 - LOSS OF CHILLED WATER FLOW
 - LOW CHILLED WATER TEMPERATURE
 - COMPRESSOR MOTOR CURRENT OVERLOAD
 - STARTER FAULT
 - HIGH OR LOW OIL PRESSURE
- CHILLED WATER PUMPS 01 THRU 03**
 - BMS WILL START THE LEAD PUMP WHEN THERE IS A CALL FOR COOLING AND THE CHILLERS ARE STARTED. THE PUMPS SHALL OPERATE FOR 30 SECONDS PRIOR TO STARTING THE CHILLERS.
 - THE LEAD PUMP SHALL BE ALTERNATED WEEKLY AND SHALL OPERATE ON A LEAD/LAG BASIS WITH BACKUP.
 - THE MINIMUM FLOW FOR THE CHWP'S IS 200 GPM.
 - WHEN THE LEAD PUMP IS AT 90% OF ITS DESIGN FLOW THE LAG PUMP SHALL BE STARTED AND BOTH PUMPS RAMPED UP ACCORDINGLY TO MAINTAIN SYSTEM PRESSURE AND FLOW.
 - WHEN THE PUMP ARE RAMPED DOWN TO 35% THE LAG PUMP SHALL BE STOPPED.
 - THE PUMP SPEED SHALL BE VARIED TO MAINTAIN A SUPPLY SET PRESSURE OF 58 PSIG (FIELD ADJUSTABLE) AT 101-PT-01.
 - BMS SHALL MONITOR KW OF PUMP VFD THROUGH PROTOCOL INTERFACE.
- CONTROL POINTS**
 - START/STOP
 - LEAD/LAG
 - 101-PT-01 PRESSURE
- BY-PASS CONTROL VALVE**
 - BY-PASS CONTROL VALVE 101-BCV-01 SHALL MODULATE TO MAINTAIN A MINIMUM FLOW RATE THRU THE CHILLERS OF 354 GPM WHEN SIX MODULES ARE IN OPERATION. IF THE SYSTEM FLOW IS GRATER THAN 354 GPM THE VALVE SHALL REMAIN CLOSED. VALVE SHALL HAVE LESS THAN A 30 SECOND STROKE TIME.
 - BY-PASS CONTROL VALVE 101-BCV-01 SHALL MODULATE TO MAINTAIN A MINIMUM FLOW RATE THRU THE CHILLERS OF 708 GPM WHEN TWELVE MODULES ARE IN OPERATION. IF THE SYSTEM FLOW IS GRATER THAN 354 GPM THE VALVE SHALL REMAIN CLOSED. VALVE SHALL HAVE LESS THAN A 30 SECOND STROKE TIME.
- CONTROL VALVE OPERATION USING BUILDING 101 CHILLED WATER SYSTEM**
 - VALVES CV-01,-02,-03,-04,-05,-06,-09,-10,-11 AND -12 ARE TO REMAIN OPENED.
 - VALVES CV-07,-08,-13,-14 AND -15 TO ARE TO REMAIN CLOSED.
- SYSTEM OPERATION WHEN SUPPLYING BUILDING 100**
 - VALVES CV-07,-08,-15 AND -16 TO BE OPENED.
 - VALVES CV-09,-10,-11 AND -12 TO BE OPENED.
 - VALVES CV-05 AND -06 CAN BE CLOSED TO SHED LOAD FROM BUILDING 101.
 - VALVES CV-01,-02,-03 AND -04 CAN BE CLOSED TO SHED LOAD FROM BUILDING 101.
 - CHILLED WATER PUMPS AND CHILLERS TO OPERATE AS NORMAL.
- SYSTEM OPERATION WHEN BUILDING 100 SUPPLYING COOLING TO 101**
 - CONTROL VALVES CV-07,-08,-11 AND -13 TO BE OPENED.
 - CONTROL VALVES CV-05,-06,-01,-02,-03,-04,-11 AND 12 TO BE OPENED.
- ADDITIONAL POINTS TO BE MONITORED AND ALARMED AT THE BMS AS DEPICTED BY PRESSURE TRANSMITTERS (PT-#), TEMPERATURE TRANSMITTERS (TT-#), DIFFERENTIAL PRESSURE TRANSMITTERS (DPT-#), ETC.**
- SYSTEM SELECTION**
 - THE FOLLOWING SHALL BE FIELD SELECTABLE AT THE BMS.
 - BUILDING 101 CHILLED WATER SYSTEM NORMAL OPERATION (SUPPLYING BUILDING 101).
 - BUILDING 100 CHILLED WATER SYSTEM SUPPLYING BUILDING 101.
 - BUILDING 101 SUPPLYING CHILLED WATER TO BUILDING 100.
 - THE FOLLOWING LOAD SHEDDING SHALL BE SELECTABLE AT THE BMS.
 - AHU-01 AND -02.
 - CONTROL VALVES CV-03 AND -04 TO BE CLOSED.
 - AHU-03 AND -04.
 - CONTROL VALVES CV-01 AND -02 TO BE CLOSED.
 - AHU-05, -06 AND -07.
 - CONTROL VALVES CV-05 AND -06 TO BE CLOSE



CONSTRUCTION DOCUMENTS NOT FOR CONSTRUCTION

100% CONSTRUCTION DOCUMENTS (15-349)	10/04/16
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CONCEPTUAL DESIGN REVIEW (15-218)	03/03/16
CONCEPTUAL DESIGN REVIEW (15-167)	01/18/16
Revisions:	Date

CONSULTANTS:	KEY PLAN	STAMP	ARCHITECT/ENGINEERS:

MECHANICAL B101/B100 CHILLED WATER FLOW CONTROLS	Project Title VA PALO ALTO UPGRADE CHILLED WATER SYSTEM FOR BUILDING 100 AND 101	Project Number 640-15-159
Approved: Project Director	Location PALO ALTO, CA	Building Number B100, B101
Date 10/4/2016	Checked L. RIOS	Drawn J. ROTHWEIN
		Drawing Number M-602

Office of Facilities Management

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Project Title VA PALO ALTO UPGRADE CHILLED WATER SYSTEM FOR BUILDING 100 AND 101	Project Number 640-15-159
Building Number B100, B101	Drawing Number M-602

Office of Facilities Management

MECHANICAL B101/B100 CHILLED WATER FLOW CONTROLS	Project Title VA PALO ALTO UPGRADE CHILLED WATER SYSTEM FOR BUILDING 100 AND 101	Project Number 640-15-159
Approved: Project Director	Location PALO ALTO, CA	Building Number B100, B101
Date 10/4/2016	Checked L. RIOS	Drawn J. ROTHWEIN
		Drawing Number M-602

(N) AIR COOLED CHILLER SCHEDULE

EQUIPMENT TAG	MANUFACTURER AND MODEL NUMBER	LOCATION	SYSTEM CAPACITY (TONS)	MODULE CAPACITY (TONS)	EVAPORATOR				AMBIENT AIR		COMPRESSORS			CONDENSOR FANS			ELECTRICAL PER 3 MODULE ROW			KW/TON	IPLV	REFRIGERANT TYPE	HEADER SIZE	OPERATING WEIGHT (LBS.) / MODULE ROW	REMARKS			
					SYSTEM GPM	EWT *F	LWT *F	WPD FT. WG.	MIN. MODULE GPM	MAX. MODULE GPM	EAT(DB *F)	QTY.	RLA	LRA	QTY.	HP	FLA	V/#/HZ	MCA AMP							MCOIP AMP		
101-CH-01	101-CH-02	101-CH-03	MULTISTACK ASP060X	101 ROOF	180	60	361	54	42	8.3	-	-	95	2 PER MODULE	47.0	-	4 PER MODULE	2	5.2	480/3/60	357	450	1.207	0.727	R410A	8"	4,610 / MODULE 13,830 / TOTAL	1,2,6,7,8,9,10,11
101-CH-04	101-CH-05	101-CH-06	MULTISTACK ASP060X	101 ROOF	180	60	361	54	42	8.3	-	-	95	2 PER MODULE	47.0	-	4 PER MODULE	2	5.2	480/3/60	357	450	1.207	0.727	R410A	8"	4,610 / MODULE 13,830 / TOTAL	1,3,6,7,8,9,10,11
101-CH-07	101-CH-08	101-CH-09	MULTISTACK ASP060X	101 ROOF	180	60	361	54	42	8.3	-	-	95	2 PER MODULE	47.0	-	4 PER MODULE	2	5.2	480/3/60	357	450	1.207	0.727	R410A	8"	4,610 / MODULE 13,830 / TOTAL	1,4,6,7,8,9,10,11
101-CH-10	101-CH-11	101-CH-12	MULTISTACK ASP060X	101 ROOF	180	60	361	54	42	8.3	-	-	95	2 PER MODULE	47.0	-	4 PER MODULE	2	5.2	480/3/60	357	450	1.207	0.727	R410A	8"	4,610 / MODULE 13,830 / TOTAL	1,5,6,7,8,9,10,11

REMARKS
 1. INDIVIDUAL UNIT POWER CONNECTION.
 2. CHILLER MODULE 101-CH-06 TO BE THE MASTER CHILLER MODULE WITH MODULES 101-CH-01, -02, -03, -04 AND -05 AS THE SLAVE MODULES.
 3. N/A.
 4. CHILLER MODULE 101-CH-09 TO BE THE MASTER CHILLER MODULE WITH MODULES 101-CH-07, -08, -10, -11, AND -12 AS THE SLAVE MODULES.
 5. N/A.
 6. COPPER TUBE/ALUMINUM FIN.
 7. HERESITE COIL COATING OR EQUIVALENT.
 8. GALVANIZED STEEL GROOVED FITTINGS.
 9. BRONZ-GLOW COATING ON ALL LOWER COMPONENTS OR EQUIVALENT.
 10. PROVIDE 120V CONVENIENCE OUTLET FOR EACH SET OF THREE MODULES OF CHILLERS.
 11. PROVIDE WITH MOUNTING RAIL.

(N) CHILLED WATER PUMP SCHEDULE

EQUIPMENT TAG	MANUFACTURER AND MODEL NUMBER	SIZE	LOCATION	MINIMUM EFFICIENCY (%)	WATER FLOW (GPM)	TOTAL PUMP HEAD (FT. WG.)	MOTOR CHARACTERISTICS				SERVICE	OPERATING WEIGHT (LBS.)	REMARKS
							MIN. H.P.	BHP	SPEED (RPM)	V/#/Hz			
101-CHP-01	B&G VSX-VSC	4x6x10-1/2A	101 ROOF	80	765	104.5	30	25.2	1780	460/3/60	CHILLED WATER	1,480	1,2,3,4
101-CHP-02	B&G VSX-VSC	4x6x10-1/2A	101 ROOF	80	765	104.5	30	25.2	1780	460/3/60	CHILLED WATER	1,480	1,2,3,4
101-CHP-03	B&G VSX-VSC	4x6x10-1/2A	101 ROOF	80	765	104.5	30	25.2	1780	460/3/60	CHILLED WATER	1,480	1,2,3,4

REMARKS
 1. MECHANICAL CONTRACTOR TO PROVIDE VFD.
 2. PREMIUM EFFICIENCY TEFC INVERTER RATED MOTOR WITH ISOLATED BEARING GROUND SHAFT.
 3. RIGHT HAND ROTATION.
 4. WITH SPACER COUPLER.

(N) EXPANSION TANK SCHEDULE

EQUIPMENT TAG	MANUFACTURER AND MODEL NUMBER	LOCATION	SERVICE	SIZE GALLONS	ACCEPTANCE VOLUME GALLONS	CONNECTION SIZE	DIMENSIONS	OPERATING WEIGHT (LBS.)	REMARKS
101-ET-01	B&G B-200	101 ROOF	CHILLED WATER	53	53	1" NPT	24"x36"x1"	629	1,2,3

REMARKS
 1. VERTICAL TANK
 2. DIAPHRAGM TYPE
 3. WITH SEISMIC RESTRAINTS.

(N) SIDE STREAM FILTER SCHEDULE

EQUIPMENT TAG	MANUFACTURER AND MODEL NUMBER	LOCATION	SERVICE	CAPACITY GPM	CONNECTION SIZE	EFFICIENCY	OPERATING WEIGHT (LBS.)	REMARKS
101-SF-01	LAKOS eHTX-0040-V	101 ROOF	CHILLED WATER	72	1 1/2"	99% DOWN TO 25 MICRONS, 2.6 SG	257	1

REMARKS
 1. WITH PURGE VALVE, ELECTRIC BALL VALVE.

(N) AIR SEPARATOR SCHEDULE

EQUIPMENT TAG	MANUFACTURER AND MODEL NUMBER	LOCATION	SERVICE	CAPACITY GALLONS	CONNECTION INCH	OPERATING WEIGHT (LBS.)	REMARKS
101-AS-01	B&G RL-8F	101 ROOF	CHILLED WATER	1,910	8" FLANGED	1,171	-

REMARKS
 1. -

(N) CHEMICAL POT FEEDER SCHEDULE

EQUIPMENT TAG	MANUFACTURER AND MODEL NUMBER	LOCATION	SERVICE	CAPACITY GALLONS	OPERATING WEIGHT (LBS.)	REMARKS
101-CF-01	GRISWOLD WATER SYSTEMS DB-12	101 ROOF	CHILLED WATER	12	154	1

REMARKS
 1. WITH FILL FUNNEL AND VALVE.

CONTROL VALVE SCHEDULE

EQUIPMENT TAG	MANUFACTURER MODEL NO.	LOCATION	SERVICE	TYPE	SIZE	GPM	CV	CONTROL	REMARKS
(N) CV-01	BELIMO F615HD+SY3-110	BLDG 101 FOURTH FLOOR	CHILLED WATER	2-WAY BVF	6"	-	1579	ON-OFF	WITH 2 POSITION FEEDBACK FOR FLANGED CONNECTIONS 110V ACTUATOR, NEMA4X
(N) CV-02	BELIMO F615HD+SY3-110	BLDG 101 FOURTH FLOOR	CHILLED WATER	2-WAY BVF	6"	-	1579	ON-OFF	WITH 2 POSITION FEEDBACK FOR FLANGED CONNECTIONS 110V ACTUATOR, NEMA4X
(N) CV-03	BELIMO F615HD+SY3-110	BLDG 101 FOURTH FLOOR	CHILLED WATER	2-WAY BVF	6"	-	1579	ON-OFF	WITH 2 POSITION FEEDBACK FOR FLANGED CONNECTIONS 110V ACTUATOR, NEMA4X
(N) CV-04	BELIMO F615HD+SY3-110	BLDG 101 FOURTH FLOOR	CHILLED WATER	2-WAY BVF	6"	-	1579	ON-OFF	WITH 2 POSITION FEEDBACK FOR FLANGED CONNECTIONS 110V ACTUATOR, NEMA4X
(N) CV-05	BELIMO F615HD+SY3-110	BLDG 101 FIRST FLOOR	CHILLED WATER	2-WAY BVF	6"	-	1579	ON-OFF	WITH 2 POSITION FEEDBACK FOR FLANGED CONNECTIONS 110V ACTUATOR, NEMA4X
(N) CV-06	BELIMO F615HD+SY3-110	BLDG 101 FIRST FLOOR	CHILLED WATER	2-WAY BVF	6"	-	1579	ON-OFF	WITH 2 POSITION FEEDBACK FOR FLANGED CONNECTIONS 110V ACTUATOR, NEMA4X
(N) CV-07	BELIMO F620HDU+SY3-110	BLDG 101 FIRST FLOOR	CHILLED WATER	2-WAY BVF	8"	-	3163	ON-OFF	WITH 2 POSITION FEEDBACK FOR FLANGED CONNECTIONS 110V ACTUATOR, NEMA4X
(N) CV-08	BELIMO F620HDU+SY3-110	BLDG 101 FIRST FLOOR	CHILLED WATER	2-WAY BVF	8"	-	3163	ON-OFF	WITH 2 POSITION FEEDBACK FOR FLANGED CONNECTIONS 110V ACTUATOR, NEMA4X
(N) CV-09	BELIMO F620HDU+SY3-110	BLDG 101 FIRST FLOOR	CHILLED WATER	2-WAY BVF	8"	-	3163	ON-OFF	WITH 2 POSITION FEEDBACK FOR FLANGED CONNECTIONS 110V ACTUATOR, NEMA4X
(N) CV-10	BELIMO F620HDU+SY3-110	BLDG 101 FIRST FLOOR	CHILLED WATER	2-WAY BVF	8"	-	3163	ON-OFF	WITH 2 POSITION FEEDBACK FOR FLANGED CONNECTIONS 110V ACTUATOR, NEMA4X
(N) CV-11	BELIMO F620HDU+SY3-110	BLDG 101 FIRST FLOOR	CHILLED WATER	2-WAY BVF	8"	-	3163	ON-OFF	WITH 2 POSITION FEEDBACK FOR FLANGED CONNECTIONS 110V ACTUATOR, NEMA4X
(N) CV-12	BELIMO F620HDU+SY3-110	BLDG 101 FIRST FLOOR	CHILLED WATER	2-WAY BVF	8"	-	3163	ON-OFF	WITH 2 POSITION FEEDBACK FOR FLANGED CONNECTIONS 110V ACTUATOR, NEMA4X
(N) CV-13	BELIMO F620HDU+SY3-110	BLDG 100 BASEMENT	CHILLED WATER	2-WAY BVF	8"	-	3163	ON-OFF	WITH 2 POSITION FEEDBACK FOR FLANGED CONNECTIONS 110V ACTUATOR, NEMA4X
(N) CV-14	BELIMO F620HDU+SY3-110	BLDG 100 BASEMENT	CHILLED WATER	2-WAY BVF	8"	-	3163	ON-OFF	WITH 2 POSITION FEEDBACK FOR FLANGED CONNECTIONS 110V ACTUATOR, NEMA4X
(N) CV-15	BELIMO F620HDU+SY3-110	BLDG 100 BASEMENT	CHILLED WATER	2-WAY BVF	8"	-	3163	ON-OFF	WITH 2 POSITION FEEDBACK FOR FLANGED CONNECTIONS 110V ACTUATOR, NEMA4X
(N) CV-16	BELIMO F620HDU+SY3-110	BLDG 101 ROOF	CHILLED WATER	2-WAY BVF	8"	-	3163	ON-OFF	WITH 2 POSITION FEEDBACK FOR FLANGED CONNECTIONS 110V ACTUATOR, NEMA4X
(N) CV-17	BELIMO F620HDU+SY3-110	BLDG 101 ROOF	CHILLED WATER	2-WAY BVF	8"	-	3163	ON-OFF	WITH 2 POSITION FEEDBACK FOR FLANGED CONNECTIONS 110V ACTUATOR, NEMA4X
(N) CV-18	BELIMO F620HDU+SY3-110	BLDG 101 ROOF	CHILLED WATER	2-WAY BVF	8"	-	3163	ON-OFF	WITH 2 POSITION FEEDBACK FOR FLANGED CONNECTIONS 110V ACTUATOR, NEMA4X
(N) CV-19	BELIMO F620HDU+SY3-110	BLDG 101 ROOF	CHILLED WATER	2-WAY BVF	8"	-	3163	ON-OFF	WITH 2 POSITION FEEDBACK FOR FLANGED CONNECTIONS 110V ACTUATOR, NEMA4X
(N) BCV-01	SIEMENS FLOWRITE 294-06617	BLDG 101 FIRST FLOOR	CHILLED WATER	EQUAL PERCENTAGE CONTROL VALVE	4"	708	160	MODULATING	FAST ACTING <30 SECONDS, 24VAC, 15W, WITH POSITION FEEDBACK, STAINLESS STEEL TRIM

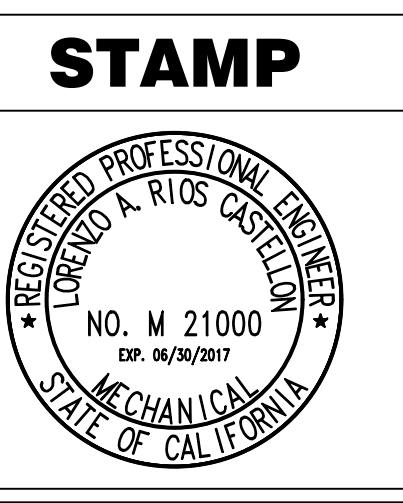
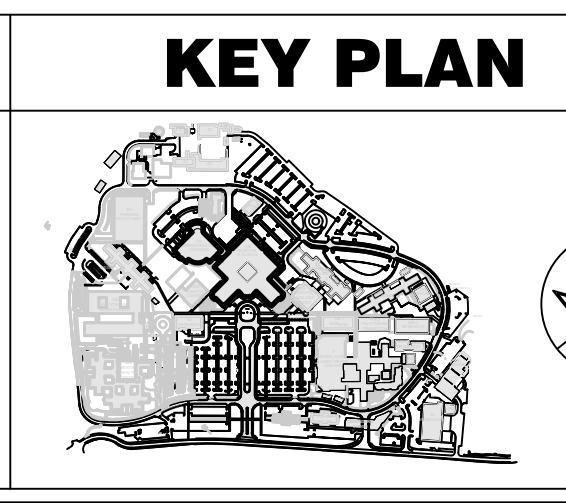
GENERAL NOTES:

- ALL NEW EQUIPMENT SUPPLIED BY THE CONTRACTOR SHALL BE WARRANTED FOR A MINIMUM OF ONE YEAR.
- ALL PROGRAMMING AND AUTOMATION WORK DONE BY THE CONTRACTOR SHALL BE WARRANTED FOR A MINIMUM OF 2 YEARS.
- DURING START-UP AND WARRANTY PERIOD CONTRACTOR SHALL HAVE TECHNICIANS ON-SITE TO PROVIDE WARRANTY SERVICE WITHIN 2 HOURS OF BEING NOTIFIED BY THE VA.
- ALL DRAWING ARE BASED ON THE SCHEDULED EQUIPMENT SHOWN. THE CONTRACTOR IS RESPONSIBLE FOR UPDATING ANY DRAWINGS AND SITE CONDITIONS WHEN USING EQUIPMENT THAT IS DIFFERENT THAN THE SCHEDULED EQUIPMENT.
- ALL EQUIPMENT MUST MEET THE MINIMUM EFFICIENCIES SHOWN.
- CONTRACTOR TO PROVIDE ALL CONTROL AND REPORTING HARDWARE AND SOFTWARE CONVERSIONS FOR EQUIPMENT, AUTOMATED VALVES, SENSORS AND TRANSMITTERS INSTALLED AS PART OF THIS PROJECT. THEY MUST BE COMPATIBLE WITH THE EXISTING METASYS SYSTEM AT THE SFVA SITE. SFVA WILL NOT UPGRADE OR DOWNGRADE THE EXISTING METASYS SYSTEM. CONTRACTOR SHALL PROVIDE ALL TROUBLE SHOOTING REQUIRED TO MAKE THE SYSTEM WORK INCLUDING ALL NEW HARDWARE, SOFTWARE AND PROGRAMMING THAT MAY CAUSE THE SYSTEM TO CRASH.
- FOR COMMISSIONING OF NEW EQUIPMENT THE CONTRACTOR SHALL PROVIDE ALL NEEDED PERSONNEL TO PERFORM ALL THE START UP, FILLING AND VENTING THAT WILL BE REQUIRED TO COMPLETE THE COMMISSIONING OF THE SYSTEM. VA PERSONNEL WILL BE ATTENDING ONLY TO PROVIDE GUIDANCE TO CONTRACTOR PERSONNEL. VA PERSONNEL WILL NOT PERFORM ANY OF THE COMMISSIONING DUTIES.

CONSTRUCTION DOCUMENTS - NOT FOR CONSTRUCTION

100% CONSTRUCTION DOCUMENTS (15-349)	10/04/16
DESIGN DEVELOPMENT (DD) SUBMISSION (65%)	08/05/16
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CONCEPTUAL DESIGN REVIEW (15-218)	03/03/16
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Revisions:	Date

CONSULTANTS:



ARCHITECT/ENGINEERS:

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PO# 15-308-57

Drawing Title
MECHANICAL SCHEDULES

Approved: Project Director

Project Title
VA PALO ALTO UPGRADE CHILLED WATER SYSTEM FOR BUILDING 100 AND 101

Location
PALO ALTO, CA

Date
10/4/2016

Checked
L. RIOS

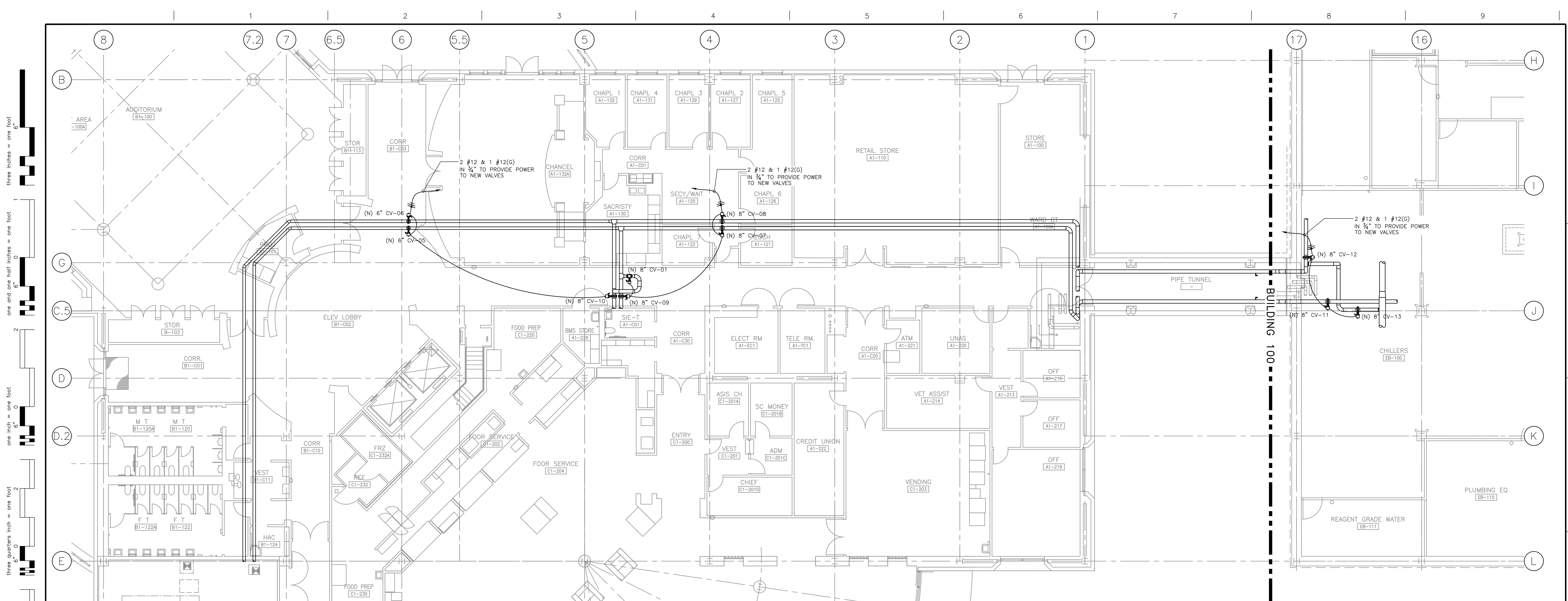
Drawn
J. ROTHWEIN

Project Number
640-15-159

Building Number
B100, B101

Drawing Number
M-701





B101 & B100 1ST FLOOR PLAN
 SCALE: 1/8" = 1'-0"

three inches = one foot
 one and one half inches = one foot
 one inch = one foot
 three quarters inch = one foot
 one half inch = one foot
 one eighth inch = one foot
 one quarter inch = one foot
 one eighth inch = one foot

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KEY PLAN

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 POW 15-308-57

Drawing Title	ELECTRICAL B100 + B101 CHILLED WATER PIPING FIRST FLOOR POWER PLAN
Approved: Project Director	

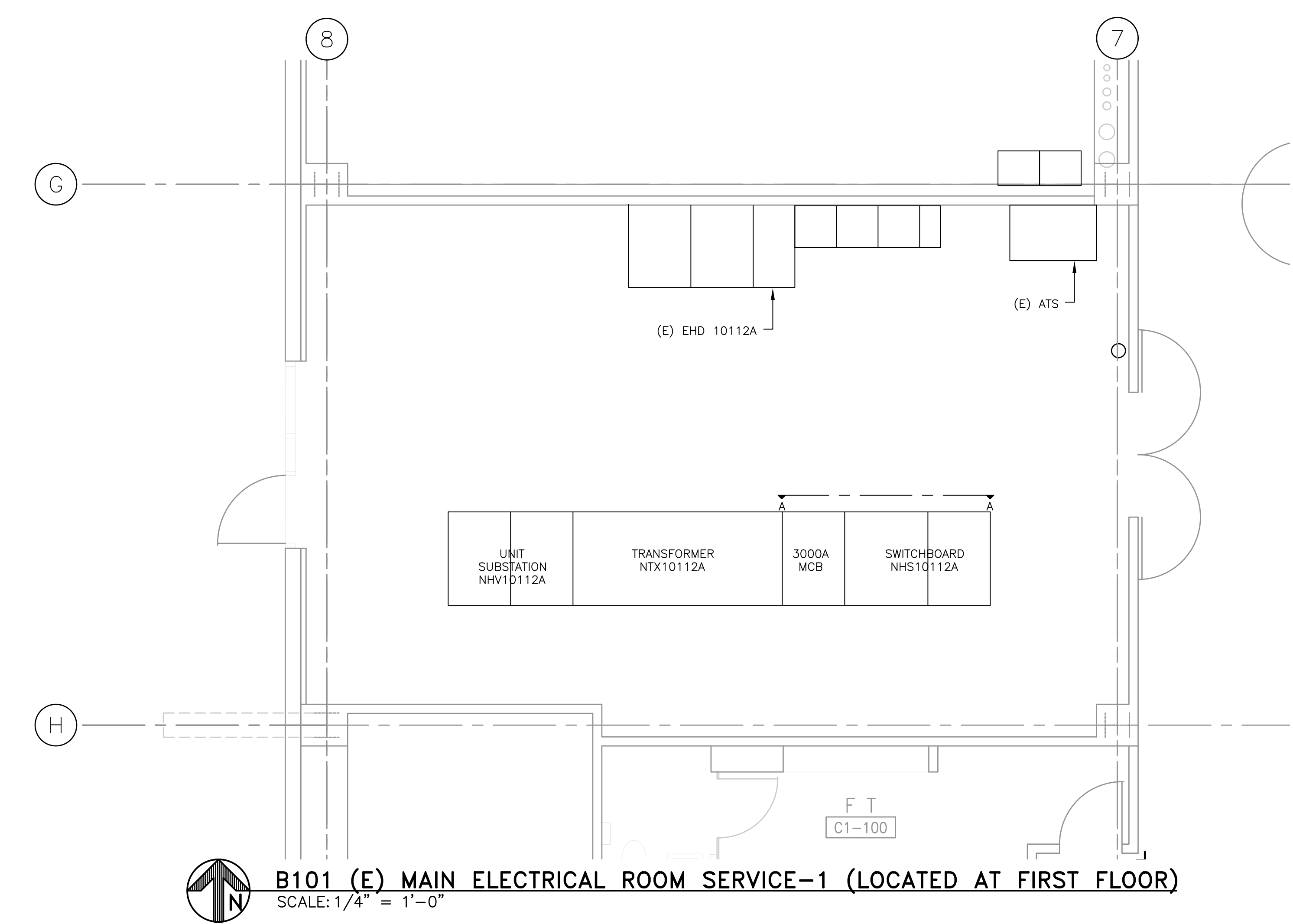
Project Title	VA PALO ALTO UPGRADE CHILLED WATER SYSTEM FOR BUILDING 100 AND 101
Location	PALO ALTO, CA
Date	10/4/2016
Checked	L. RIOS
Drawn	R. ROTHWEIN

Project Number	640-15-159
Building Number	B100, B101
Drawing Number	E-101

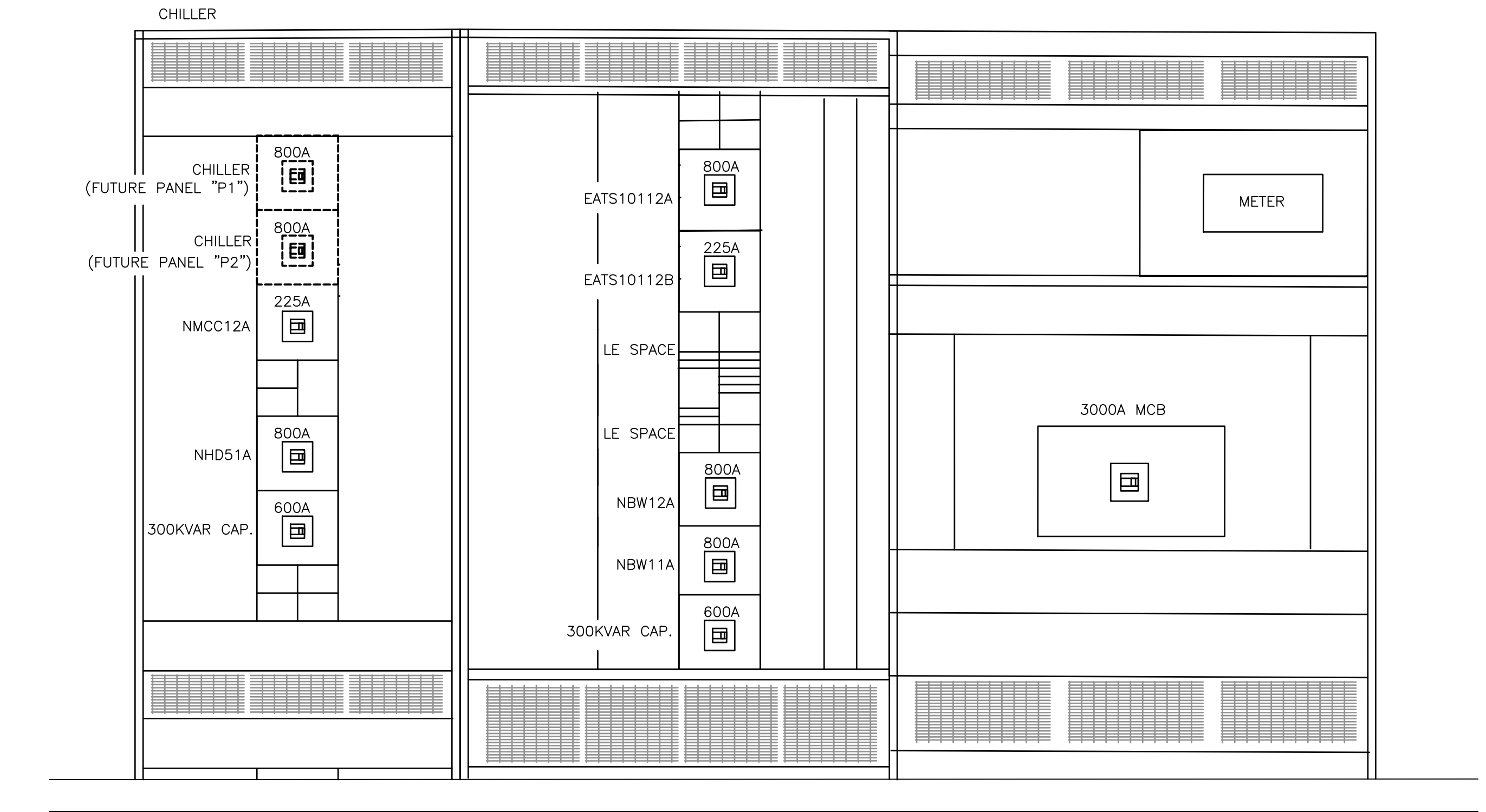
Office of Facilities Management

Department of Veterans Affairs

three inches = one foot
 one and one half inches = one foot
 one inch = one foot
 one inch = one foot
 three quarters inch = one foot
 one half inch = one foot
 one half inch = one foot
 three eighths inch = one foot
 one quarter inch = one foot
 one eighth inch = one foot
 one eighth inch = one foot



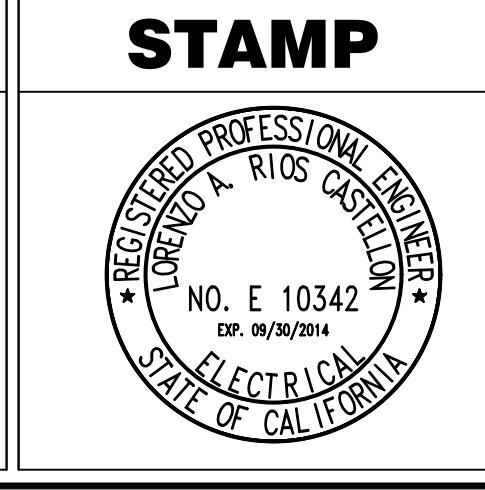
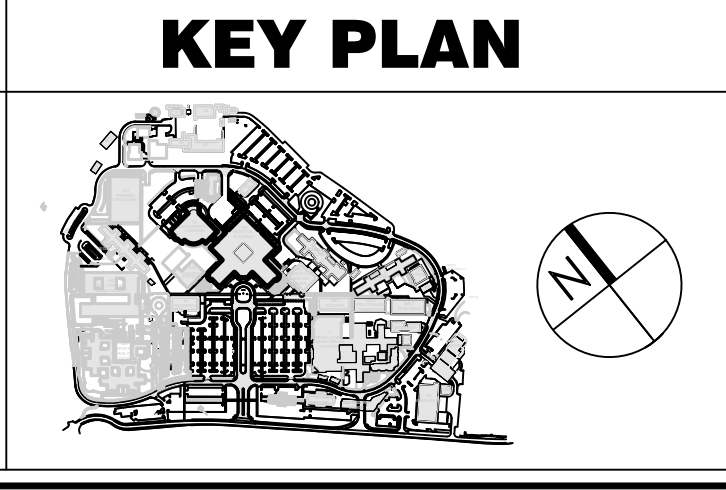
B101 (E) MAIN ELECTRICAL ROOM SERVICE-1 (LOCATED AT FIRST FLOOR)
 SCALE: 1/4" = 1'-0"



CONSTRUCTION DOCUMENTS NOT FOR CONSTRUCTION

100% CONSTRUCTION DOCUMENTS (15-349)	10/04/16
DESIGN DEVELOPMENT (DD) SUBMISSION (65%)	08/05/16
65% DESIGN DEVELOPMENT (15-274)	05/20/16
CONCEPTUAL DESIGN REVIEW (15-218)	03/03/16
CONCEPTUAL DESIGN REVIEW (15-167)	01/18/16
Revisions:	Date

CONSULTANTS:



ARCHITECT/ENGINEERS:

998 PARK AVENUE SAN JOSE CALIFORNIA 95126
 P: (408) 297-1881 F: (408) 294-3186 www.adcengineers.com
 PO# 15-308-57

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Drawing Title
**ELECTRICAL
 B101 MAIN ELECTRICAL ROOM
 SERVICE 1**

Approved: Project Director

Project Title
**VA PALO ALTO
 UPGRADE CHILLED WATER SYSTEM
 FOR BUILDING 100 AND 101**

Location
PALO ALTO, CA

Date
10/4/2016

Checked
L. RIOS

Drawn
R. ROTHWEIN

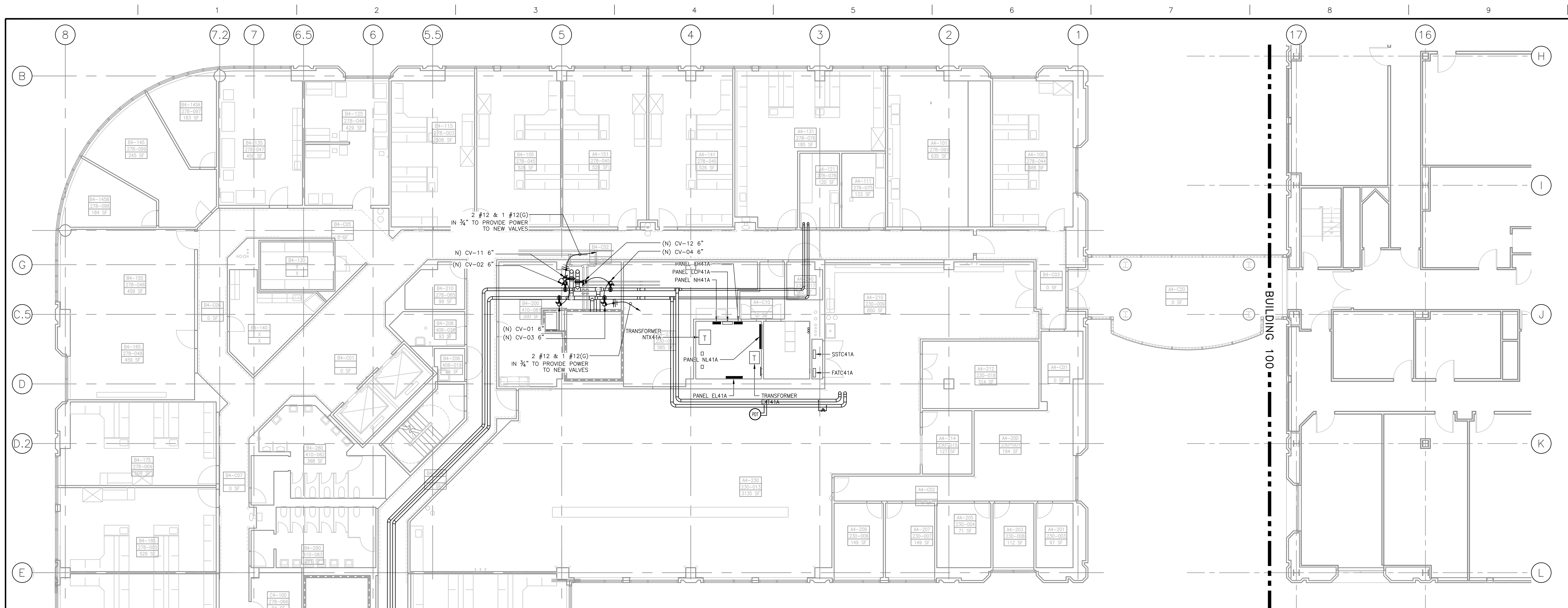
Project Number
640-15-159

Building Number
B100, B101

Drawing Number
E-102

**Office of
 Facilities
 Management**

Department of
 Veterans Affairs



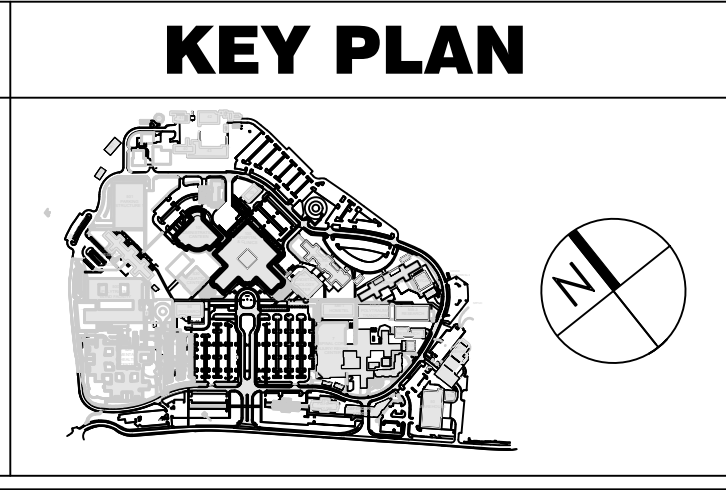
B101 & B100 FOURTH FLOOR PLAN
SCALE: 1/8"

three inches = one foot
one and one half inches = one foot
one inch = one foot
three quarters inch = one foot
one half inch = one foot
three eighths inch = one foot
one quarter inch = one foot
one eighth inch = one foot
one sixteenth inch = one foot

CONSTRUCTION DOCUMENTS NOT FOR CONSTRUCTION

100% CONSTRUCTION DOCUMENTS (15-349)	10/04/16
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65% DESIGN DEVELOPMENT (15-274)	05/20/16
CONCEPTUAL DESIGN REVIEW (15-218)	03/03/16
CONCEPTUAL DESIGN REVIEW (15-167)	01/18/16
Revisions:	Date

CONSULTANTS:



STAMP

ARCHITECT/ENGINEERS:

ADVANCE DESIGN CONSULTANTS, INC.
988 PARK AVENUE SAN JOSE CALIFORNIA 95128
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PO# 15-308-57

Drawing Title
**ELECTRICAL
B101 + B100 CHILLED WATER PIPING
FOURTH FLOOR POWER PLAN**

Approved: Project Director

Project Title
**VA PALO ALTO
UPGRADE CHILLED WATER SYSTEM
FOR BUILDING 100 AND 101**

Location
PALO ALTO, CA

Date
10/4/2016

Checked
L. RIOS

Drawn
R. ROTHWEIN

Project Number
640-15-159

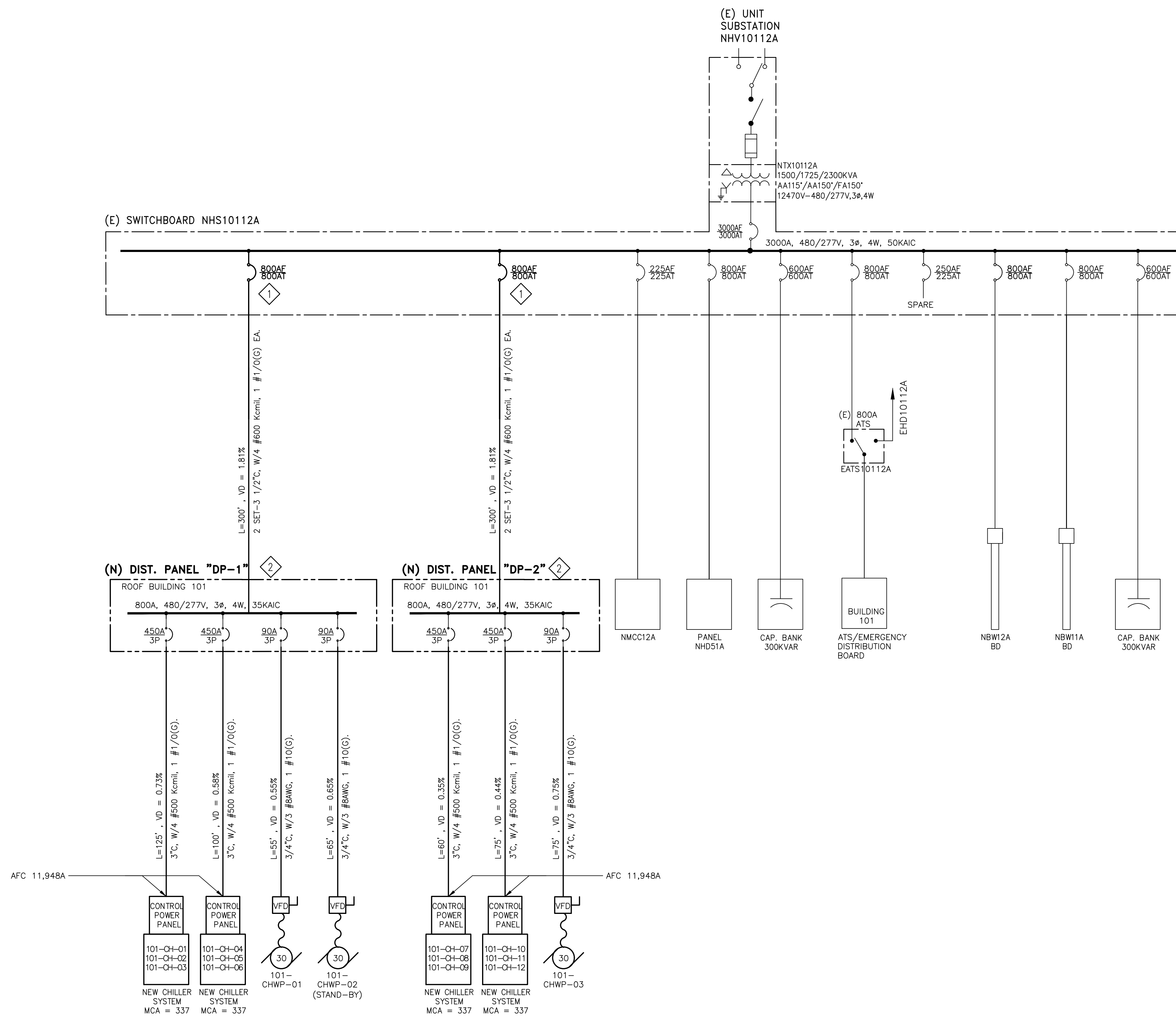
Building Number
B100, B101

Drawing Number
E-104

**Office of
Facilities
Management**

Department of
Veterans Affairs

three eighths inch = one foot
 one quarter inch = one foot
 one eighth inch = one foot
 three eighths inch = one foot
 one half inch = one foot
 three quarters inch = one foot
 one inch = one foot
 one and one half inches = one foot
 two inches = one foot
 three inches = one foot



NORMAL POWER NEW B101 ONE LINE DIAGRAM
 SCALE: N.T.S.

SHEET NOTES

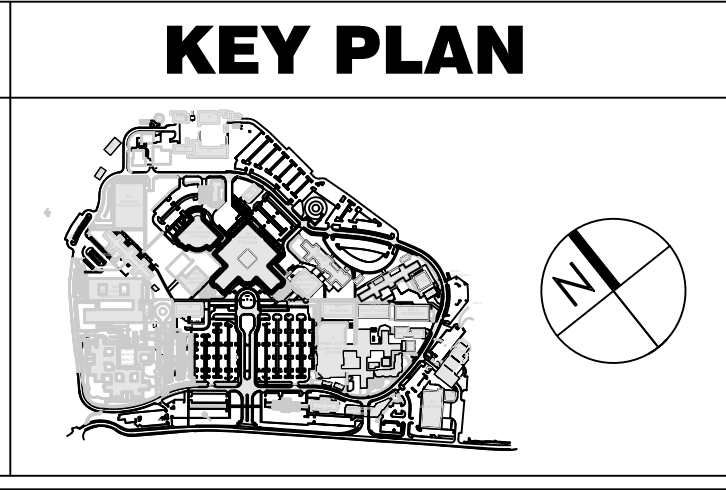
- 1 CONTRACTOR SHALL PROVIDE AND INSTALL TWO NEW SQUARE D ELECTRONIC TRIP CIRCUIT BREAKER 800A, 480V, 3 POLE CAT # MEL 36800LSG SENSOR FRAME IN SPACE OF EXISTING SWITCHGEAR "NHS10112A" TO PROVIDE POWER TO NEW 800A, 480/277V, 3PHASE, 4 WIRE DISTRIBUTION PANEL "DP-1 AND DP-2".
- 2 CONTRACTOR SHALL PROVIDE AND INSTALL TWO NEW 800A, 480/277V, 3 PHASE, 4 WIRE, 35KA, DISTRIBUTION PANEL. NEW DISTRIBUTION PANEL SHALL BE SURFACE MOUNTED, ALL BUS BARS SHALL BE COPPER, FRONT COVER PLATE SHALL BE HINGED.
- 3 CONTRACTOR SHALL LABEL ALL DISTRIBUTION PANELBOARDS AND PANELS WITH WARNING "POTENTIAL ELECTRICAL ARC FLASH HAZARDS PRESENT."

SWITCHBOARD NHS10112A [3000A, 480/277V, 3Φ, 4W + (GND)]													
PANEL MONITORED	CB RATING (AMPS)	RATING (KVA)	NEW LOAD (AMPS)	NEW LOAD (KVA)	PHASE "A" (AMPS)	PHASE "B" (AMPS)	PHASE "C" (AMPS)	MAX. DEMAND (KVA)			EXISTING MAX. DEMAND (KVA) @ 0.8 DF IN	MAX. DEMAND (KVA) @ 125%	TOTAL MAX. DEMAND (KVA) (% LOAD)
					MAX.	MAX	MAX	PHASE A	PHASE B	PHASE C			
"NHS10112A"	3000	2494.08			534.00	521.00	522.00	147.92	144.32	144.59	349.46	436.83	
NEW LOAD			1380.8	1147.94									
TOTAL	3000	2494.08											63.54

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Revisions:	Date
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 POW 15-308-57

Drawing Title
**ELECTRICAL
 NEW NORMAL AND EMERGENCY POWER
 ONE-LINE DIAGRAMS**

Approved: Project Director

Project Title
**VA PALO ALTO
 UPGRADE CHILLED WATER SYSTEM
 FOR BUILDING 100 AND 101**

Location
PALO ALTO, CA

Date
10/4/2016

Checked
L. RIOS

Drawn
R. ROTHWEIN

Project Number
640-15-159

Building Number
B100, B101

Drawing Number
E-601

**Office of
 Facilities
 Management**

Department of
 Veterans Affairs