



ADDENDUM NO. #4

DATE: 1/20/25

PROJECT: Cold Box Additions at Multiple
School Sites

JOB NO.: 24020
DSA File No.: 20-30
DSA App. No.: 02-122313
thru 02-122316

OWNER: Madera Unified School District
1205 S. Madera Ave.
Madera, CA 93637

ENGINEER: Lawrence Engineering Group
Attention: Ryan Carlson
4910 E. Clinton Way, Suite 101
Fresno, CA 93727
T. (559) 431-0101

It will be the responsibility of the General Contractor to submit the information contained in this addendum to all its subcontractors and suppliers. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

The following additions, deletions, and revisions to the Sheets and Project Manual are hereby made and do become a part of these Contract Documents.

Changes to Sheets:

1. **PARKWOOD:**

- a. **REPLACE Sheet E1.03** - Partial Single Diagram, Panel Schedule & Weight & Dimension Schedule with the attached Sheet E1.03.
 - i. Revisions to the Evaporator and Condenser breaker size and load on the panel schedule.
 - ii. Revisions to the voltage drop calculations.
- b. **REPLACE Sheet E2.02** - Partial Electrical Site Plan with the attached Sheet E2.02.
 - i. Revisions to the Evaporator and Condenser breaker identification.

2. **CHAVEZ:**

- a. **REPLACE Sheet E1.03** - Partial Single Diagram, Panel Schedule & Weight & Dimension Schedule with the attached Sheet E1.03.
 - i. Revisions to the Evaporator and Condenser breaker size on the panel schedule.

3. **NISHIMOTO:**

- a. **REPLACE Sheet E1.03** - Partial Single Diagram, Panel Schedule & Weight & Dimension Schedule with the attached Sheet E1.03.
 - i. Revisions to the Evaporator and Condenser breaker size on the panel schedule.

4. **PERSHING:**

- a. **REPLACE Sheet E1.03** - Partial Single Diagram, Panel Schedule & Weight & Dimension Schedule with the attached Sheet E1.03.
 - i. Revisions to the Evaporator and Condenser breaker size on the panel schedule.



DATE: 01-20-2025

PARKWOOD ELEMENTARY SCHOOL
COLD BOX ADDITION
1150 EAST PECAN AVENUE
MADERA, CA 93637

REVISIONS	DATE	DESCRIPTION
1	12-06-24	COORDINATION
2	12-06-24	COORDINATION
3		
4		
5		

LAWRENCE
ENGINEERING GROUP
Fresno, CA 93727
(559) 431-1342
FAX (559) 431-1342

TITLE:
SINGLE LINE DIAGRAM, PANEL
SCHEDULE, AND WEIGHT &
DIMENSION SCHEDULE

SHEET:
E1.03
PROJECT

VOLTAGE: 208/120V, 3Ø, 4W					(N) PANEL 'WF'		BREAKER AIC: 35,000					
BUS: 150A							MOUNTING: SURFACE					
MAIN BREAKER: 150A/3P					ENCLOSURE: NEMA 3R							
CIR #	BKR	LOAD (VA)			DESCRIPTION	DESCRIPTION	LOAD (VA)			BKR	CIR #	
		PHASE A	PHASE B	PHASE C			PHASE C	PHASE B	PHASE A			
1	15A/1P	100			FRZR ALRM & LMS	SPARE	2			0	15A/1P	2
3	20A/1P		0		SPARE	FREEZER EVAP. E-1	2	1643		0	20A/2P	4
5	2			0				1643				6
7	25A/2P	0			SPARE	SPARE				0	20A/1P	8
9			0	2	SPARE	RECEPTACLE		180				10
11	40A/2P			3245	FREEZER CONDENSING UNIT, CU-1	SPARE	0					12
13		3245							0			14
15			0		SPACE	SPACE		0				16
17	↓			0	↓	↓		0			↓	18
19	↓	0			↓	↓				0	↓	20
21	↓		0		↓	↓		0			↓	22
23	↓			0	↓	↓	0				↓	24
25	↓	0			↓	↓					↓	26
27			0		↓	↓					↓	28
29	↓			0	↓	↓					↓	30
TOTAL Ø LOADS (VA):					PHASE A = 3345	PHASE B = 1823	PHASE C = 4888					
TOTAL Ø LOADS (A):					PHASE A = 28	PHASE B = 15	PHASE C = 41					
TOTAL LOAD:					10056 VA	28 A						

MECHANICAL EQUIPMENT SCHEDULE

DESIG.	DESCRIPTION	FLA/MCA/HP/W	STARTER/FUSES	VOLT	PHASE	MAX. OCPD SIZE	CON-DUIT SIZE	CONDUCTOR #	SIZE	GND.
CU-1	CONDENSING UNIT	34.2 MCA	FUSE/DISC	208	1	NOTE 2	1"	2	#6	NOTE 3
E-1	EVAPORATOR UNIT	15.8 FLA	FUSE/DISC	208	1	NOTE 2	1"	2	#10	NOTE 3

- NOTES:
- * - THERMAL RATED SWITCH FOR FRACTIONAL HORSEPOWER MOTORS.
 - REFER TO THE PANEL SCHEDULE AND SINGLE LINE DIAGRAM FOR THE CIRCUIT BREAKER AND CONDUIT SIZES, IF NOT INDICATED WITHIN THE SCHEDULE.
 - GROUNDING CONDUCTOR SIZE TO MATCH CONDUCTOR SIZE.

- GENERAL NOTES:
- COORDINATE LOCATIONS AND POWER REQUIREMENT FOR MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR.
 - PROVIDE FUSED SWITCH DISCONNECT PER NAME PLATE RATING OF MECHANICAL UNITS FOR OVERLOAD PROTECTION.

(E) DRY TRANSFORMER SCHEDULE

XFMR	PRIMARY	SECONDARY	kVA
(E) TL1A	480V	208/120V, 3Ø, 4W	75
(E) TL2A			150
(E) TL3A			75
(E) TL3C			
(E) TL4A			
(E) TL4B			
(E) TL5A			
(E) TL5B			
(E) TL5C			

FEEDER SCHEDULE

70	1-1/4" C. - (3) #4 & (1) #8 GND.
150	2" C. - (4) #1/0 & (1) #6 GND.

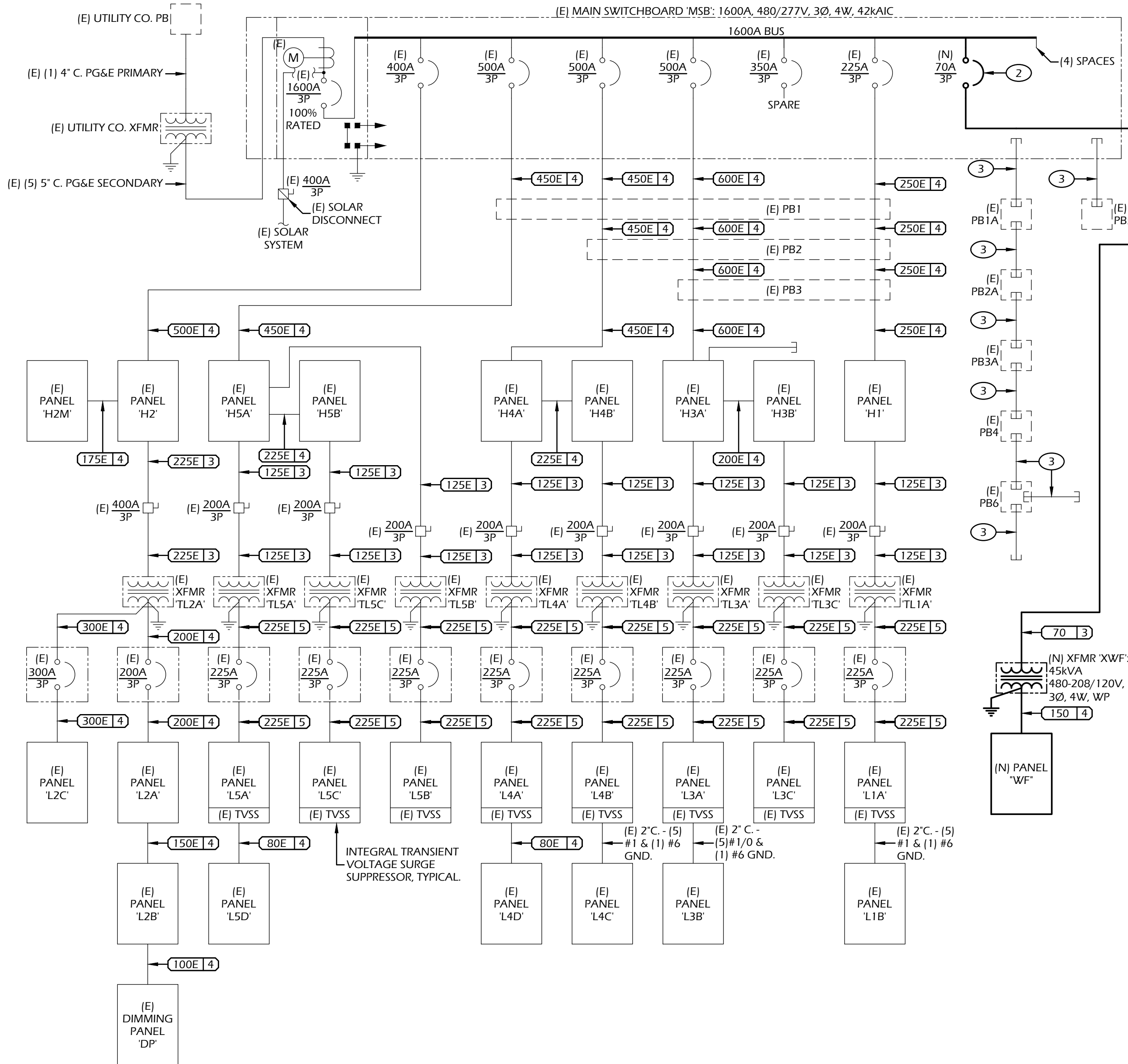
EXISTING FEEDER SCHEDULE

125E 3	1-1/2" C. - (3) #1 & (1) #6 GND.
225E 3	2-1/2" C. - (3) #4/0 & (1) #4 GND.
80E 4	1-1/4" C. - (4) #4 & (1) #8 GND.
100E 4	1-1/2" C. - (4) #2 & (1) #8 GND.
150E 4	2" C. - (4) #1/0 & (1) #6 GND.
175E 4	2" C. - (4) #2/0 & (1) #6 GND.
200E 4	2-1/2" C. - (4) #3/0 & (1) #6 GND.
225E 4	2-1/2" C. - (4) #4/0 & (1) #4 GND.
250E 4	3" C. - (4) #250KCMIL & (1) #2 GND.
300E 4	3" C. - (4) #350KCMIL & (1) #4 GND.
450E 4	[2] [3" C. - (4) #250KCMIL & (1) #2 GND.]
600E 4	[2] [2-1/2" C. - (4) #3/0 & (1) #2 GND.]
600E 4	[2] [3-1/2" C. - (4) #350KCMIL & (1) #1/0 GND.]
225E 5	3" C. - (5) #4/0 & (1) #4 GND.

SINGLE LINE DIAGRAM



NOT TO SCALE



VOLTAGE DROP CALCULATIONS

Panel or Device	Distance	Material	Current	Voltage	Phase	Parallel Runs	Wire Size	For segment		Total to Device	
								V _{DS}	%V _{DS}	V _{DT}	%V _{DT}
(N) XFMR 'XWF'	84.0	Copper	56.000	480	3		#4	2.5151	0.52%	2.8464	0.59%
(N) PNL 'WF'	56.0	Copper	120.000	208	3		#1/0	1.4215	0.68%	1.4215	0.68%
WF-1	28.0	Copper	8.000	120	1		#12	0.8850	0.74%	2.3065	1.92%
WF-4,6	41.0	Copper	23.300	208	1		#10	1.4928	0.72%	2.9144	1.40%
WF-11,13	57.0	Copper	31.200	208	1		#6	1.7479	0.84%	3.1694	1.52%
WF-10	57.0	Copper	8.000	120	1		#12	1.8017	1.50%	3.2232	2.69%

TRANSFORMER WEIGHT & DIMENSIONS SCHEDULE

NAME	kVA	WEIGHT(LB)	W	D	H	LOCATION	MANUFACTURER
XFMR 'XWF'	45 kVA	369	25.5"	25.93"	29.32"	ONSITE	SQUARE D OR EQUAL

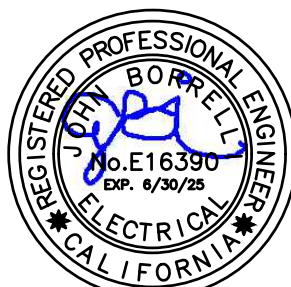
ELECTRICAL DISTRIBUTION WEIGHT & DIMENSIONS SCHEDULE

NAME	CB	WEIGHT(Lb)	W	D	H	MOUNTING	MANUFACTURER
PANEL 'WF'	150A	254	20"	6.5"	62"	SURFACE	SQARE D OR EQUAL

SHEET NOTES

- NOT USED.
- PROVIDE AND INSTALL ALL MOUNTING HARDWARE FOR A FULLY FUNCTIONAL SYSTEM.
- EXISTING SPARE CONDUITS, SEE ELECTRICAL SITE PLAN.

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BAI Project #24107

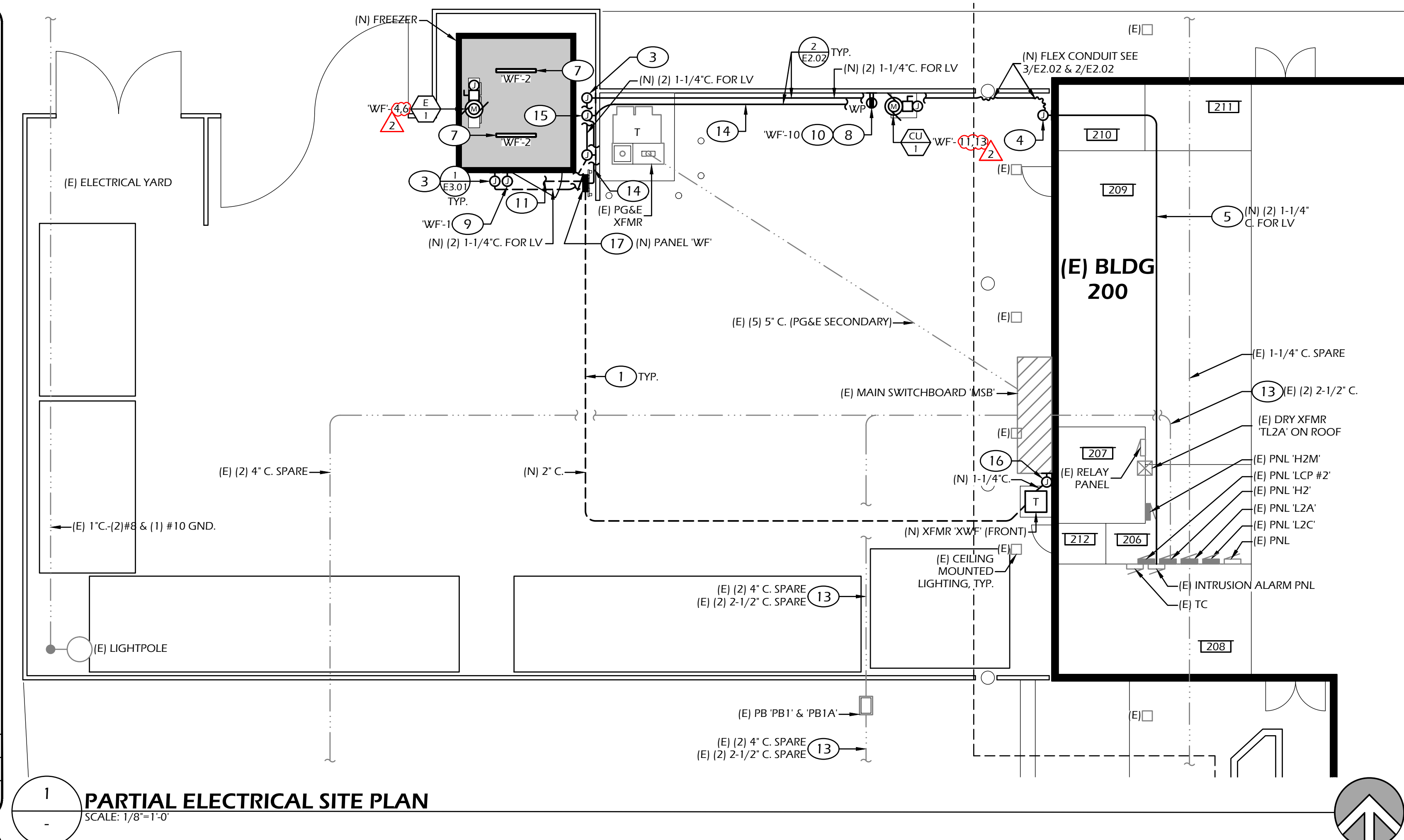
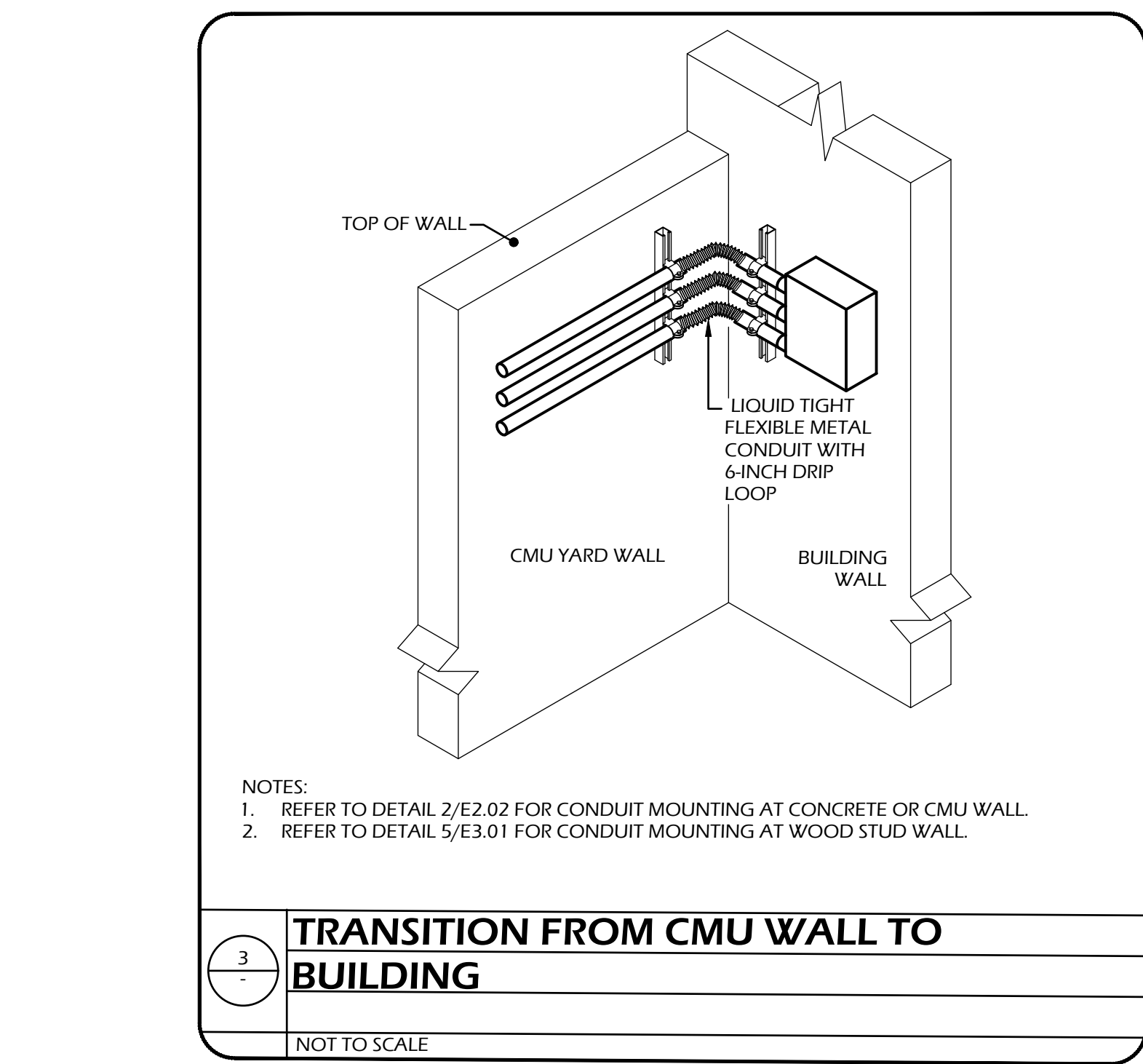
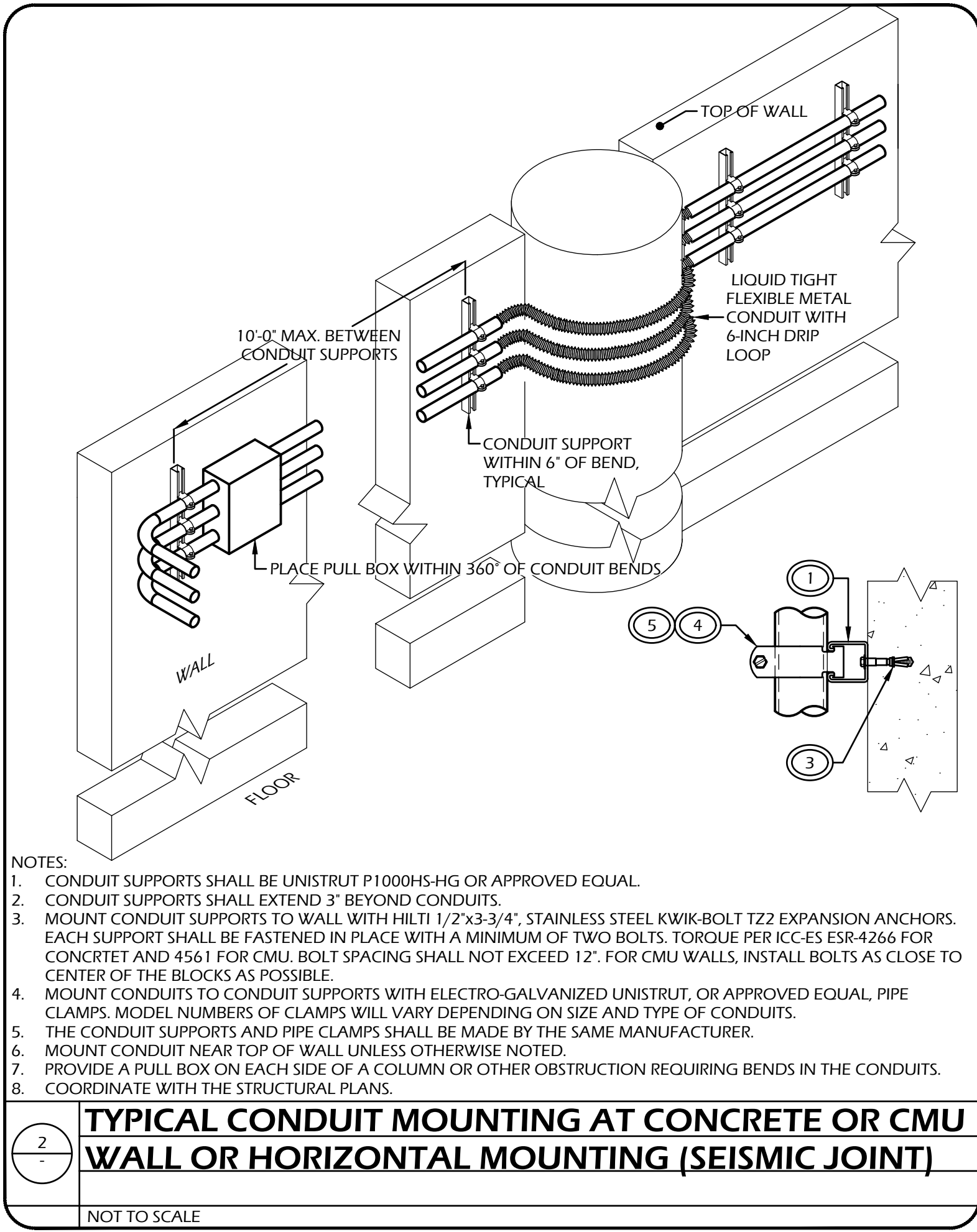


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SCAN ME

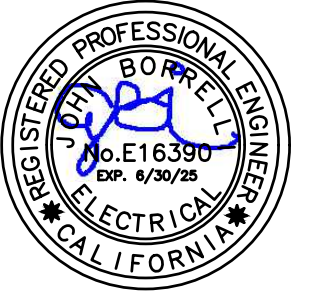


ROOM SCHEDULE			
###	ROOM NAME	###	ROOM NAME
206	STORAGE	210	TOILET
207	PANTRY	211	OFFICE
208	CUSTODIAN	212	WATER HEATER
209	SERVING KITCHEN		

- ### SHEET NOTES
- SAW-CUT CONCRETE AS APPLICABLE ALONG CONDUIT ROUTE AND HAUL AWAY DEBRIS. PATCH AND REPAIR TO MATCH THE EXISTING SURFACE AFTER INSTALLATION OF CONDUITS.
 - NOT USED.
 - PROVIDE AND INSTALL A 6x6x4-INCH NEMA 3R J-BOX, MOUNTED UP HIGH. TERMINATE THE SPARE COMMUNICATIONS CONDUITS AT J-BOX. CORE DRILL AND PENETRATE THROUGH CMU WALL AND ROUTE CONDUITS.
 - PROVIDE AND INSTALL A 6x6x4-INCH NEMA 3R J-BOX, MOUNTED UP HIGH ABOVE THE INTERIOR CEILING LEVEL. PROVIDE (2) 1-1/4-INCH CONDUIT, NIPPLE THROUGH WALL TO THE ATTIC FOR FUTURE COMMUNICATION CABLES.
 - ROUTE CONDUIT IN ACCESSIBLE CEILING SPACE.
 - NOT USED.
 - LIGHT FIXTURE SHALL BE MASTER-BILT 48-INCH FIXTURE P/N #157752. FIXTURE SHALL HAVE OPTIONAL CEILING MOUNT AND MOUNTED ON CEILING OF FREEZER/COOLER.
 - MOUNT RECEPTACLE ON WALL.
 - PROVIDE AND INSTALL A 1-1/4-INCH CONDUIT BACK TO PANEL CIRCUIT INDICATED. MAKE CONNECTIONS TO THE NL708 HIGH/LOW ALARM AND LIGHTING MANAGEMENT SYSTEM. MAKE ALL LIGHTING CONNECTIONS WITH 3/4-INCH LIQUID TIGHT CONDUITS TO THE LIGHT AND SWITCHES. COORDINATE WITH WALK-IN FREEZER CONTRACTOR FOR EXACT LOCATION.
 - PROVIDE AND INSTALL (3) #12 AWG CONDUCTORS WITHIN A 1-INCH CONDUIT BACK TO PANEL CIRCUIT INDICATED AND MAKE ALL CONNECTIONS.
 - REFER TO MECHANICAL EQUIPMENT SCHEDULE FOR EVAPORATOR UNIT CONDUIT SIZE. REFER TO SHEET NOTE 9 FOR THE FREEZER ALARM & LIGHT MANAGEMENT SYSTEM CONDUIT SIZE MAKE ALL CONNECTIONS.
 - NOT USED.
 - EXISTING CONDUITS AND FEEDERS PER THE ELECTRICAL SINGLE LINE DIAGRAM.
 - REFER TO MECHANICAL EQUIPMENT SCHEDULE FOR CONDENSING UNIT CONDUIT SIZE AND REFER TO SHEET NOTE 10 FOR RECEPTACLE CONDUIT SIZE. MAKE ALL CONNECTIONS.
 - PROVIDE AND INSTALL 10x10x6-INCH NEMA 3R JUNCTION BOX. CORE DRILL AND PENETRATE THROUGH CMU WALL AND ROUTE CONDUITS.
 - PROVIDE AND INSTALL A NEMA 3R 12X12X10 (HxWxD)-INCH JUNCTION BOX AND MOUNT IT TO THE SIDE OF THE EXISTING SWITCHBOARD AND NIPPLE THROUGH WITH (1) 1-1/4-INCH CONDUIT CHASE NIPPLE.
 - CENTER OF PANEL POST SHALL BE 10 INCHES AWAY FROM EXISTING CMU CONCRETE FOOTING.

- ### GENERAL NOTES
- ALL CONDUIT PENETRATIONS SHALL BE SEALED WITH APPROVED SEALANT TO PREVENT MOISTURE PENETRATION WITHIN THE FREEZER AND COOLER.
 - ALL PANELS SHALL BE LOCKABLE.
 - COORDINATE WITH THE REFRIGERATION CONTRACTOR. PART NUMBERS WITHIN THIS PLAN ARE PER THE BUILT OF MATERIAL FOR THE WALK-IN BOXES. COORDINATE WITH THE REFRIGERATION CONTRACTOR FOR EQUIPMENT PURCHASE.
 - REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION OF THE MECHANICAL UNITS.

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APPROVALS:
APPLICATION #
02-122315



DATE: 01-20-2025

**PARKWOOD ELEMENTARY SCHOOL
COLD BOX ADDITION**
1150 EAST PECAN AVENUE
MADERA, CA 93637

REVISIONS	DATE	DESCRIPTION
1	12-06-24	COORDINATION
2	12-06-24	COORDINATION
3		
4		
5		

**LAWRENCE
ENGINEERING GROUP**
Fresno, CA 93727
(559) 431-1342
(559) 431-0101

TITLE:
PARTIAL ELECTRICAL SITE
PLAN

SHEET:
E2.02
PROJECT:



DATE: 01-20-2025

CESAR CHAVEZ ELEMENTARY SCHOOL
COLD BOX ADDITION
2600 E. PECAN AVE.
MADERA, CA 93637

REVISIONS	COORDINATION
12-06-24	COORDINATION
01-08-25	COORDINATION

LAWRENCE
ENGINEERING GROUP
Fresno, CA 93720
(559) 431-1342
4910 E. Clinton Way, Suite 101
(559) 431-0101

TITLE:
PARTIAL SINGLE DIAGRAM-
PANEL SCHEDULE AND
WEIGHT & DIMENSION SCHEDULE

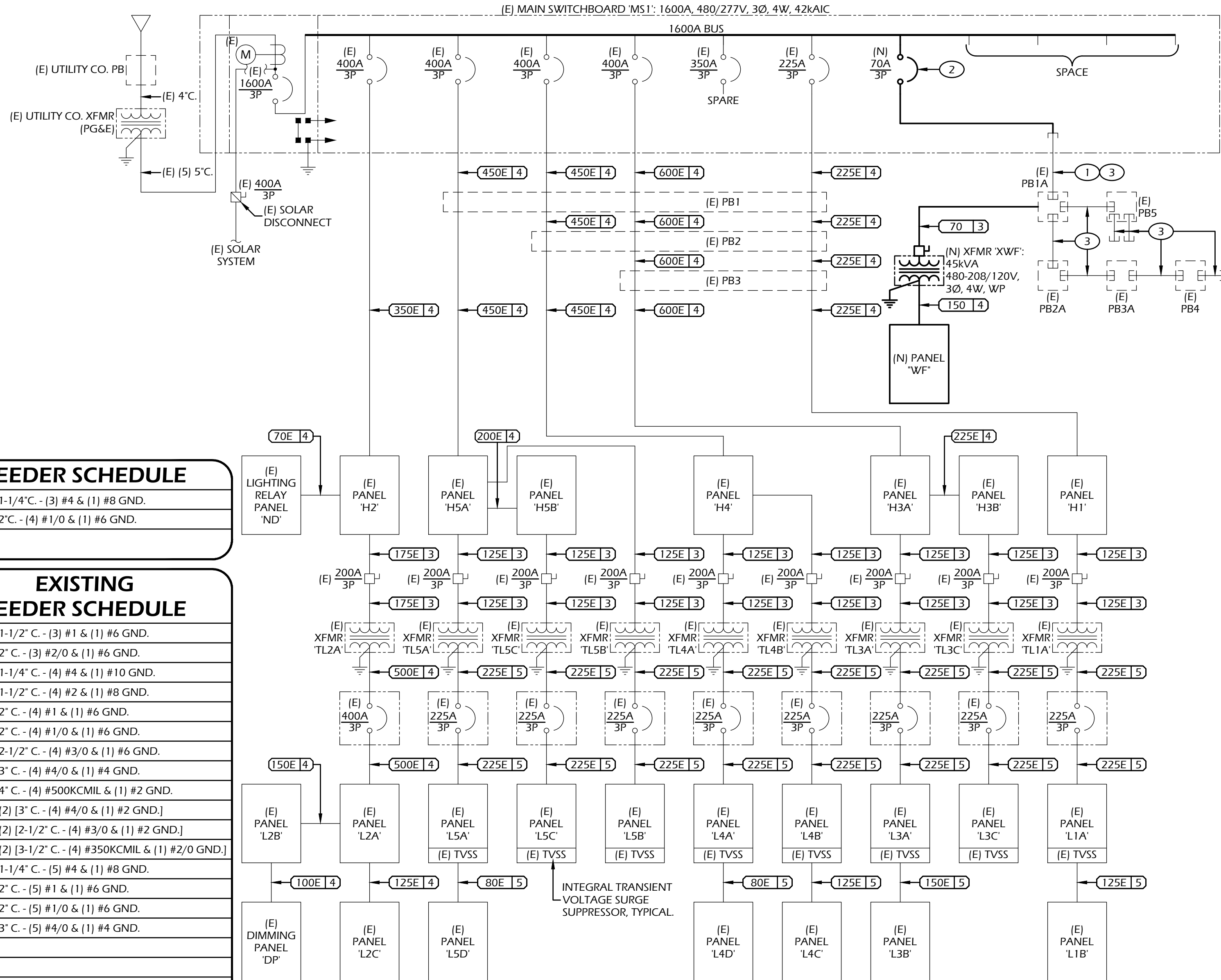
SHEET:

E1.03

PROJECT 24020

SHEET NOTES

- UTILIZE ONE OF THE 2-1/2-INCH SPARE CONDUITS GOING FROM THE EXISTING PULL BOX TO THE EXISTING MSB 'MS1' TO ROUTE THE CONDUCTOR INDICATED PER THE FEEDER SCHEDULE FOR THE NEW TRANSFORMER 'XWF'.
- PROVIDE AND INSTALL ALL MOUNTING HARDWARE FOR A FULLY FUNCTIONAL SYSTEM.
- EXISTING SPARE CONDUITS, SEE ELECTRICAL SITE PLAN.



FEEDER SCHEDULE

TO	FROM	FEEDER
70	3	1-1/4" C. - (3) #4 & (1) #8 GND.
150	4	2" C. - (4) #1/0 & (1) #6 GND.

EXISTING FEEDER SCHEDULE

TO	FROM	FEEDER
125E	3	1-1/2" C. - (3) #1 & (1) #6 GND.
175E	3	2" C. - (3) #2/0 & (1) #6 GND.
70E	4	1-1/4" C. - (4) #4 & (1) #10 GND.
100E	4	1-1/2" C. - (4) #2 & (1) #8 GND.
125E	4	2" C. - (4) #1 & (1) #6 GND.
150E	4	2" C. - (4) #1/0 & (1) #6 GND.
200E	4	2-1/2" C. - (4) #3/0 & (1) #6 GND.
225E	4	3" C. - (4) #4/0 & (1) #4 GND.
350E	4	4" C. - (4) #500KCMIL & (1) #2 GND.
450E	4	[2] [3" C. - (4) #4/0 & (1) #2 GND.]
500E	4	[2] [2-1/2" C. - (4) #3/0 & (1) #2 GND.]
600E	4	[2] [3-1/2" C. - (4) #350KCMIL & (1) #2/0 GND.]
80E	5	1-1/4" C. - (5) #4 & (1) #8 GND.
125E	5	2" C. - (5) #1 & (1) #6 GND.
150E	5	2" C. - (5) #1/0 & (1) #6 GND.
225E	5	3" C. - (5) #4/0 & (1) #4 GND.

SINGLE LINE DIAGRAM

NOT TO SCALE

VOLTAGE DROP CALCULATIONS

Panel or Device	Distance	Material	Current	Voltage	Phase	Parallel Runs	Wire Size	For segment	Total to Device
								V _{DS}	%V _{DS}
(N) XFM 'XWF'	59.0	Copper	56.000	480	3		#4	1.7665	0.37%
(N) PNL 'WF'	12.0	Copper	120.000	208	3		#1/0	0.3046	0.15%
WF-1	102.0	Copper	8.000	120	1		#10	2.0282	1.69%
WF-3	37.0	Copper	7.200	120	1		#12	1.0525	0.88%
WF-7,9	20.0	Copper	23.300	208	1		#8	0.7282	0.35%
WF-11,13	130.0	Copper	31.200	208	1		#6	3.9865	1.92%
WF-2	22.0	Copper	8.000	120	1		#12	0.6954	0.58%
WF-4,6	102.0	Copper	18.800	208	1		#10	4.7663	2.29%
WF-10	130.0	Copper	8.000	120	1		#10	2.5850	2.15%

TRANSFORMER

WEIGHT & DIMENSIONS SCHEDULE

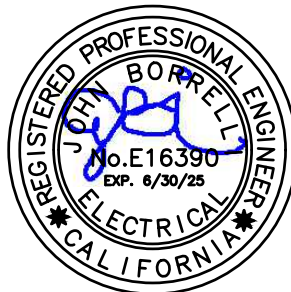
NAME	kVA	WEIGHT(Lb)	W	D	H	LOCATION	MANUFACTURER
XFM 'XWF'	45 kVA	369	25.5"	25.93"	29.32"	ONSITE	SQUARE D OR EQUAL

ELECTRICAL DISTRIBUTION

WEIGHT & DIMENSIONS SCHEDULE

NAME	CB	WEIGHT(Lb)	W	D	H	MOUNTING	MANUFACTURER
PANEL 'WF'	150A	254	20"	6.5"	62"	SURFACE	SQUARE D OR EQUAL

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SCAN ME

MECHANICAL EQUIPMENT SCHEDULE

DESIG.	DESCRIPTION	FLA/MCA/HP/W	STARTER/FUSES	VOLT	PHASE	MAX. OCPD SIZE	CONDUIT SIZE	CONDUCTOR # SIZE	GND.
CU-1	CONDENSING UNIT	34.2 MCA	FUSE/DISC.	208	1	NOTE 2	1"	2 #6	NOTE 3
CU-2	EVAPORATOR UNIT	17.3 MCA						#8	
E-1	EVAPORATOR UNIT	15.8 FLA						#10	
E-2	EVAPORATOR UNIT	2.4 FLA						#12	

NOTES:

- * = THERMAL RATED SWITCH FOR FRACTIONAL HORSEPOWER MOTORS.
- REFER TO THE PANEL SCHEDULE AND SINGLE LINE DIAGRAM FOR THE CIRCUIT BREAKER AND CONDUIT SIZES, IF NOT INDICATED WITHIN THE SCHEDULE.
- GROUNDING CONDUCTOR SIZE TO MATCH CONDUCTOR SIZE.

GENERAL NOTES:

- COORDINATE LOCATIONS AND POWER REQUIREMENT FOR MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR.
- PROVIDE FUSED SWITCH DISCONNECT PER NAME PLATE RATING OF MECHANICAL UNITS FOR OVERLOAD PROTECTION.

VOLTAGE: 208/120V, 3Ø, 4W BUS: 150A MAIN BREAKER: 150A/3P (N) PANEL 'WF' BREAKER AIC: 35,000 MOUNTING: SURFACE ENCLOSURE: NEMA 3R									
CIR #	BKR	PHASE	LOAD (VA)	DESCRIPTION	DESCRIPTION	LOAD (VA)	PHASE	BKR	CIR #
1	15A/1P	A	100	FRZR ALRM & LMS	COOLER ALRM & LMS	100	A	15A/1P	2
3	20A/1P	B	864	COOLER EVAP. E-2	FREEZER EVAP. E-1	1643	B	20A/2P	4
5		C	0	SPARE	SPARE	0	C	20A/1P	6
7	25A/2P	A	2423	COOLER CONDENSING UNIT, CU-2	RECEPTACLE	180	A	20A/1P	8
9		B	2423				B		10
11	40A/2P	C	3245	FREEZER CONDENSING UNIT, CU-1	SPARE	0	C		12
13									14
15									16
17									18
19									20
21									22
23									24
25									26
27									28
29									30
TOTAL Ø LOADS (VA):		PHASE A = 5868		PHASE B = 5110		PHASE C = 4888			
TOTAL Ø LOADS (A):		PHASE A = 49		PHASE B = 43		PHASE C = 41			
TOTAL LOAD:		15866 VA		44 A					

(E) DRY TRANSFORMER SCHEDULE

XFMR	PRIMARY	SECONDARY	kVA
(E) TL1A	480V	208/120V, 3Ø, 4W	75
(E) TL2A			112.5
(E) TL3A			75
(E) TL4A			45
(E) TL5A			75
(E) TL5C			

MECHANICAL EQUIPMENT SCHEDULE

DESIG.	DESCRIPTION	FLA/MCA/HP/W	STARTER/FUSES	VOLT	PHASE	MAX. OCPD SIZE	CONDUIT SIZE	CONDUCTOR # SIZE	GND.
CU-1	CONDENSING UNIT	34.2 MCA	FUSE/DISC.	208	1	NOTE 2	1"	2 #6	NOTE 3
CU-2	↓	17.3 MCA	↓	↓	↓	↓	↓	↓	↓
E-1	EVAPORATOR UNIT	15.8 FLA	↓	↓	↓	↓	↓	↓ #10	↓
E-2	↓	2.4 FLA	↓	↓	↓	↓	↓	↓ #12	↓

NOTES:

1. * = THERMAL RATED SWITCH FOR FRACTIONAL HORSEPOWER MOTORS.

2. REFER TO THE PANEL SCHEDULE AND SINGLE LINE DIAGRAM FOR THE CIRCUIT BREAKER AND CONDUIT SIZES, IF NOT INDICATED WITHIN THE SCHEDULE.

3. GROUNDING CONDUCTOR SIZE TO MATCH CONDUCTOR SIZE.

GENERAL NOTES:

1. COORDINATE LOCATIONS AND POWER REQUIREMENT FOR MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR.

2. PROVIDE FUSED SWITCH/DISCONNECT PER NAME PLATE RATING OF MECHANICAL UNITS FOR OVERLOAD PROTECTION.

VOLTAGE: 208/120V, 3Ø, 4W
BUS: 150A
MAIN BREAKER: 150A/3P

(N) PANEL 'WF'

BREAKER AIC: 35,000
MOUNTING: SURFACE
ENCLOSURE: NEMA 3R

CIR #	BKR	PHASE A	PHASE B	PHASE C	DESCRIPTION	DESCRIPTION	LOAD (VA)	PHASE C	PHASE B	PHASE A	BKR	CIR #
1	15A/1P	100			FRZR. ALRM & LMS	COOLER ALRM & LMS				100	15A/1P	2
3	20A/1P		864		COOLER EVAP. E-2	FREEZER EVAP. E-1			1643		20A/2P	4
5	↓	↓	↓	0	SPARE						↓	6
7	25A/2P	2423			COOLER CONDENSING UNIT, CU-2	SPARE				0	20A/1P	8
9	↓	↓	↓	2423		RECEPTACLE				180	↓	10
11	40A/2P			3245	FREEZER CONDENSING UNIT, CU-1	SPARE			0		↓	12
13	↓	↓	↓	↓	↓	↓			0		↓	14
15	↓	↓	↓	0	SPACE	SPACE			0		↓	16
17	↓	↓	↓	↓	↓	↓			0		↓	18
19	↓	↓	↓	0	↓	↓			0		↓	20
21	↓	↓	↓	0	↓	↓			0		↓	22
23	↓	↓	↓	0	↓	↓			0		↓	24
25	↓	↓	↓	0	↓	↓					↓	26
27	↓	↓	↓	0	↓	↓					↓	28
29	↓	↓	↓	0	↓	↓					↓	30
TOTAL Ø LOADS (VA):		PHASE A = 5868		PHASE B = 5110		PHASE C = 4888						
TOTAL Ø LOADS (A):		PHASE A = 49		PHASE B = 43		PHASE C = 41						
TOTAL LOAD:		15866 VA		44 A								

ELECTRICAL DISTRIBUTION WEIGHT & DIMENSIONS SCHEDULE

NAME	CB	WEIGHT(Lb)	W	D	H	MOUNTING	MANUFACTURER
PANEL 'WF'	150A	254	20"	6.5"	62"	SURFACE	SQUARE D OR EQUAL

TRANSFORMER WEIGHT & DIMENSIONS SCHEDULE

NAME	KVA	WEIGHT(Lb)	W	D	H	LOCATION	MANUFACTURER
XFMR 'XWF'	45 kVA	369	25.5"	25.93"	29.32"	ONSITE	SQUARE D OR EQUAL

VOLTAGE DROP CALCULATIONS

Panel or Device	Distance	Material	Current	Voltage	Phase	Parallel Runs	Wire Size	For segment V _{DS}	%V _{DS}	Total to Device V _{DT}	%V _{DT}
(N) XFMR 'XWF'	68.0	Copper	56,000	480	3	1	#4	2.0360	0.42%	3.7728	0.79%
(N) PNL 'WF'	12.0	Copper	120,000	208	3	1	#1/0	0.3046	0.15%	0.3046	0.15%
WF-1	52.0	Copper	8,000	120	1	1	#12	1.6436	1.37%	1.9482	1.62%
WF-3	37.0	Copper	7,200	120	1	1	#12	1.0525	0.88%	1.3572	1.13%
WF-7.9	77.0	Copper	23,300	208	1	1	#8	2.8036	1.35%	3.1082	1.49%
WF-11,13	77.0	Copper	31,200	208	1	1	#6	2.3612	1.14%	2.6658	1.28%
WF-2	37.0	Copper	8,000	120	1	1	#12	1.1695	0.97%	1.4741	1.23%
WF-6	52.0	Copper	18,800	208	1	1	#10	2.4299	1.17%	2.7345	1.31%
WF-10	77.0	Copper	8,000	120	1	1	#12	2.4338	2.03%	2.7384	2.28%

(E) DRY TRANSFORMER SCHEDULE

(E) XFMR	PRIMARY	SECONDARY	KVA
(E) TL1A	480V	208/120V	75
(E) TL2A			45
(E) TL2B			112.5
(E) TL3A			150
(E) TL4A			150
(E) TL5A			112.5
(E) TL6A			75
(E) TL6A			112.5
(E) TL6A			75
(E) TL6A			225

NEW FEEDER SCHEDULE

70 3	1-1/4" C. - (4) #4 & (1) #10 GND.
150 14	2" C. - (4) #1/0 & (1) #6 GND.

EXISTING FEEDER SCHEDULE

125E 3	1-1/2" C. - (3) #1 & (1) #6 GND.
125E 5	2" C. - (5) #1 & (1) #6 GND.
150E 5	2" C. - (5) #1/0 & (1) #6 GND.
225E 5	3" C. - (5) #4/0 & (1) #4 GND.

SINGLE LINE DIAGRAM

NOT TO SCALE

SHEET NOTES

1. UTILIZE ONE OF THE 3-INCH SPARE CONDUITS GOING FROM THE EXISTING PULLBOX TO THE EXISTING MAIN SWITCHBOARD 'MS2' TO ROUTE THE CONDUCTOR INDICATED PER THE FEEDER SCHEDULE FOR THE NEW TRANSFORMER 'XWF.'

2. PROVIDE AND INSTALL ALL MOUNTING HARDWARE FOR A FULLY FUNCTIONAL SYSTEM.

3. EXISTING SPARE CONDUITS, SEE ELECTRICAL SITE PLAN.

SCAN ME

Borrelli & Associates, Inc.

Consulting Electrical Engineers

2032 N. Gateway Boulevard

Fresno, CA 93727

Phone: 559-233-4138

http://www.borrelliengineering.com/

ca-bai@borrelliengineering.com

BAI Project #24109

REGISTERED PROFESSIONAL ENGINEER

STATE OF CALIFORNIA

NO. E16390

EXP. 4/30/25

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APPROVALS:

APPLICATION #

02-122314

REGISTERED PROFESSIONAL ENGINEER

STATE OF CALIFORNIA

NO. 614245

Exp. 6-30-24

DATE: 01-20-2025

NISHIMOTO ELEMENTARY SCHOOL

COLD BOX ADDITION

26460 MARTIN ST.

MADERA, CA 93638

REVISIONS

12-06-24	COORDINATION
01-08-25	COORDINATION

LAWRENCE

ENGINEERING GROUP

Fresno, CA 93727

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TITLE:

PARTIAL SINGLE DIAGRAM

PANEL SCHEDULE, WEIGHT AND DIMENSION SCHEDULE

SHEET:

E1.03

PROJECT 24020

G:\Educational\MaderaUSD\NishimotoES\2024-Coldbox\24109E1-3.dwg, E1.03-PARTIAL SINGLE LINE DIAGRAM PANEL MECHANICAL WEIGHT AND DIMENSIONS SCHEDULES, 1/8/2025 2:31:35 PM, wj2032, AutoCAD PDF (High Quality Print).pc3

VOLTAGE: 208/120V, 3Ø, 4W									
BUS: 150A									
MAIN BREAKER: 150A/3P									
(N) PANEL 'WF'									
BREAKER AIC: 35,000									
MOUNTING: SURFACE									
ENCLOSURE: NEMA 3R									
CIR #	BKR	LOAD (VA)			DESCRIPTION	DESCRIPTION	LOAD (VA)		
		PHASE A	PHASE B	PHASE C			PHASE C	PHASE B	PHASE A
CIR #	BKR	LOAD (VA)			DESCRIPTION	DESCRIPTION	LOAD (VA)		
		PHASE A	PHASE B	PHASE C			PHASE C	PHASE B	PHASE A
1	15A/1P	100			FRZR ALRM & LMS	COOLER ALRM & LMS		100	15A/1P
3	20A/1P		864		COOLER EVAP. E-2	COOLER EVAP. E-2	1643		20A/2P
5	↓			0	SPARE	FREEZER EVAP. E-1			20A/2P
7	25A/2P	2423			COOLER CONDENSING UNIT, CU-2	SPARE		0	20A/1P
9	↓		2423		RECEPTACLE	SPARE		180	↓
11	40A/2P			3245	FREEZER CONDENSING UNIT, CU-1	SPARE	0		↓
13	↓	3245			↓	↓	0		↓
15	↓	0			SPACE	SPACE	0		↓
17	↓		0		↓	↓	0		↓
19	↓	0			↓	↓	0		↓
21	↓		0		↓	↓	0		↓
23	↓			0	↓	↓	0		↓
25	↓	0			↓	↓			↓
27	↓			0	↓	↓			↓
29	↓			0	↓	↓			↓
TOTAL Ø LOADS (VA):		PHASE A = 5868		PHASE B = 5110		PHASE C = 4888			
TOTAL Ø LOADS (A):		PHASE A = 49		PHASE B = 43		PHASE C = 41			
TOTAL LOAD:		15866 VA		44 A					

MECHANICAL EQUIPMENT SCHEDULE

DESIG.	DESCRIPTION	FLA/MCA/HP/W	STARTER/FUSES	VOLT	PHASE	MAX. OCPD SIZE	CONDUIT SIZE	CONDUCTOR #	SIZE	GND.
CU-1	CONDENSING UNIT	34.2 MCA	FUSE/DISC.	208	1	NOTE 2	1"	2	#6	NOTE 3
CU-2	EVAPORATOR UNIT	17.3 MCA							#8	
E-1	EVAPORATOR UNIT	15.8 FLA							#10	
E-2		2.4 FLA		120					#12	

- NOTES:
- * = THERMAL RATED SWITCH FOR FRACTIONAL HORSEPOWER MOTORS.
 - REFER TO THE PANEL SCHEDULE AND SINGLE LINE DIAGRAM FOR THE CIRCUIT BREAKER AND CONDUIT SIZES, IF NOT INDICATED WITHIN THE SCHEDULE.
 - GROUNDING CONDUCTOR SIZE TO MATCH CONDUCTOR SIZE.

- GENERAL NOTES:
- COORDINATE LOCATIONS AND POWER REQUIREMENT FOR MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR.
 - PROVIDE FUSED SWITCH DISCONNECT PER NAME PLATE RATING OF MECHANICAL UNITS FOR OVERLOAD PROTECTION.

(E) DRY TRANSFORMER SCHEDULE

XFMR	PRIMARY	SECONDARY	KVA
(E) TL1A	480V	208/120V, 3Ø, 4W	75
(E) TL2A			150
(E) TL3A			75
(E) TL3C			
(E) TL4A			
(E) TL4B			
(E) TL5A			
(E) TL5B			
(E) TL5C			

TRANSFORMER WEIGHT & DIMENSIONS SCHEDULE

NAME	kVA	WEIGHT(Lb)	W	D	H	LOCATION	MANUFACTURER
XFMR 'XWF'	45 kVA	369	25.5"	25.93"	29.32"	ONSITE	SQUARE D OR EQUAL

ELECTRICAL DISTRIBUTION WEIGHT & DIMENSIONS SCHEDULE

NAME	CB	WEIGHT(Lb)	W	D	H	MOUNTING	MANUFACTURER
PANEL 'WF'	150A	254	20"	6.5"	62"	SURFACE	SQUARE D OR EQUAL

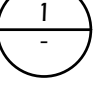
FEEDER SCHEDULE

(70) [3]	1-1/4" C. - (3) #4 & (1) #8 GND.
(150) [4]	2" C. - (4) #1/0 & (1) #6 GND.

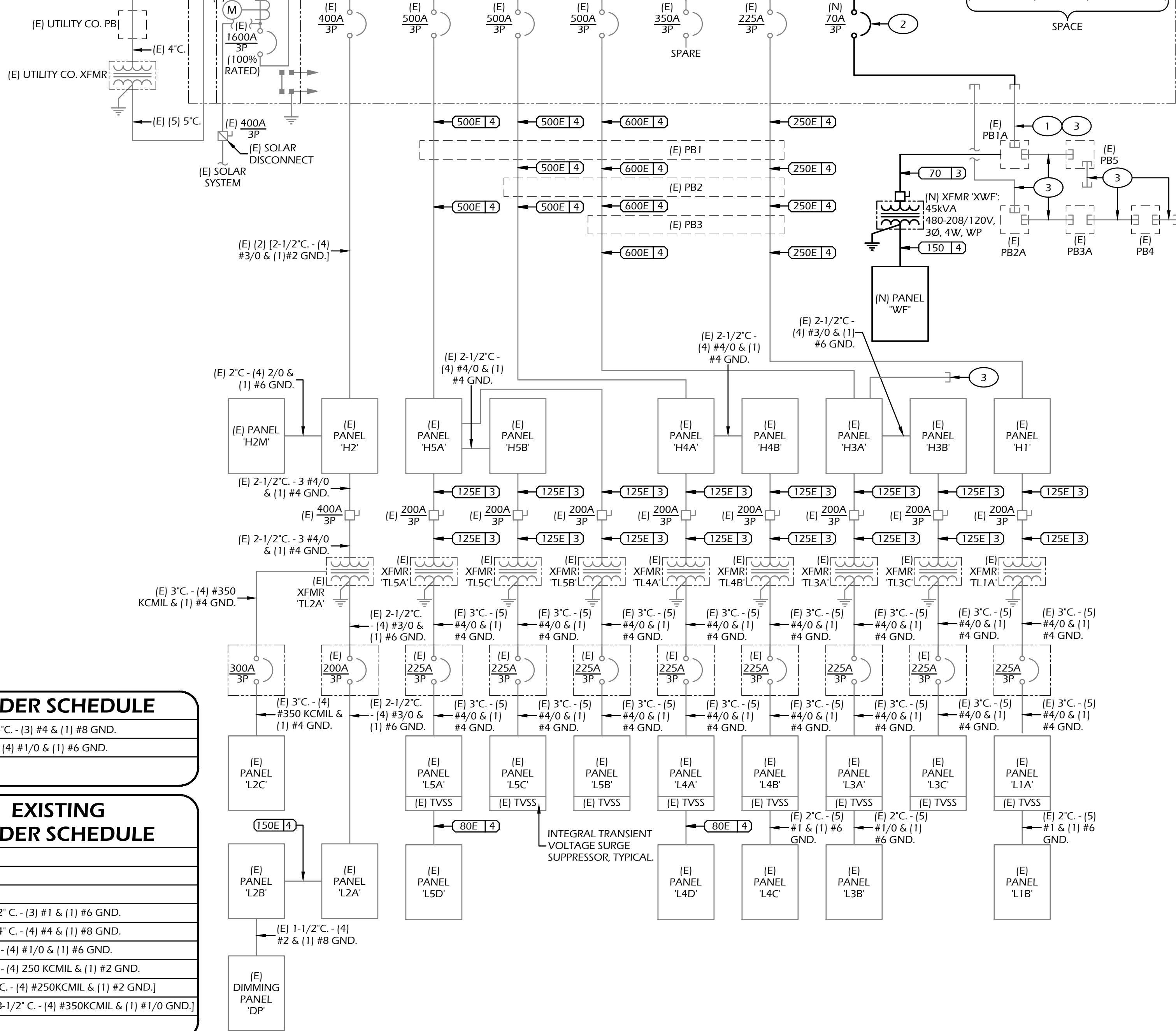
EXISTING FEEDER SCHEDULE

(125E) [3]	1-1/2" C. - (3) #1 & (1) #6 GND.
(80E) [4]	1-1/4" C. - (4) #4 & (1) #8 GND.
(150E) [4]	2" C. - (4) #1/0 & (1) #6 GND.
(250E) [4]	3" C. - (4) 250 KCMIL & (1) #2 GND.
(500E) [4]	2[3" C. - (4) #250KCMIL & (1) #2 GND.]
(600E) [4]	(2) [3-1/2" C. - (4) #350KCMIL & (1) #1/0 GND.]

SINGLE LINE DIAGRAM



NOT TO SCALE



SHEET NOTES (#)

- UTILIZE ONE OF THE 2-1/2-INCH SPARE CONDUITS GOING FROM THE EXISTING PULLBOX TO THE (E) MSB 'MS1' TO ROUTE THE CONDUCTOR INDICATED PER THE FEEDER SCHEDULE FOR THE NEW TRANSFORMER 'XWF'.
- PROVIDE AND INSTALL ALL MOUNTING HARDWARE FOR A FULLY FUNCTIONAL SYSTEM.
- EXISTING SPARE CONDUITS, SEE ELECTRICAL SITE PLAN.

APPROVALS:
APPLICATION #



DATE: 01-20-2025

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TITLE:
SINGLE LINE DIAGRAM
PANEL SCHEDULE, WEIGHT AND
DIMENSION SCHEDULE

SHEET:

E1.03

PROJECT