CONDUIT #	CONDUIT SIZE	CIRCUIT(S)	ORIGIN	DESTINATION	THROUGH SECTION CUTS
48	3	80ELECMCC0002-1A,1B,1C,1D 80ELECMCC0002-2A,2B,2C,2D 80ELECMCC0002-3A, 3B,3C,3D	ELECTRICAL BUILDING	TREATMENT AREA (BNR,MBR & RO FEED TANKS)	7
49	3	80ELECMCC0002-4A, 4B,4C,4D,4E 80ELECMCC0002-5A,5B,5C,5D,5E 80ELECMCC0002-6A,6B,6C,6D	ELECTRICAL BUILDING	TREATMENT AREA (BNR,MBR & RO FEED TANKS)	7
50	2	50ELECMCC0001-20	RO/UV BUILDING	PRODUCT WATER AREA (OUTFALL PUMPS AND IPR PUMPS)	33,19,20
51	2	80CTRLLCP0001-29	HEADWORKS AREA	ELECTRICAL BUILDING	7
52	2	80ELECMCC0002-6	ELECTRICAL BUILDING	TREATMENT AREA (BNR,MBR & RO FEED TANKS)	7
53	2	80ELECMCC0001-18	ELECTRICAL BUILDING	RESIDUAL AREA (SLUDGE HOLDING TANKS AND SAFE SETTLE TANK)	25,2,3,26
54	2	50ELECMCC0001-11	RO/UV BUILDING	MAINTENANCE BUILDING	33,11,9,18
55	2	50ELECMCC0001-1	RO/UV BUILDING	PRODUCT WATER AREA (OUTFALL PUMPS AND IPR PUMPS)	33,19,20
56	2	50ELECMCC0001-2	RO/UV BUILDING	PRODUCT WATER AREA (OUTFALL PUMPS AND IPR PUMPS)	33,19,20
57	2	50ELECMCC0001-6	RO/UV BUILDING	PRODUCT WATER AREA (OUTFALL PUMPS AND IPR PUMPS)	33,19,20
58	3	50ELECMCC0001-4	RO/UV BUILDING	OPERATIONS BUILDING	33,11,10,13,24,16,41
59	2	50ELECMCC0001-21	RO/UV BUILDING	PRODUCT WATER AREA (OUTFALL PUMPS AND IPR PUMPS)	33,19,20
60	2	50ELECMCC0001-22	RO/UV BUILDING	PRODUCT WATER AREA (OUTFALL PUMPS AND IPR PUMPS)	33,19,20
61	3	50ELECPP0002- 3	RO/UV BUILDING	CHEMICAL FACILITY	34,33,12
62	3	LIGHTING TO PLANT ENTRANCE SIGN	OPERATIONS BUILDING	PLANT ENTRANCE SIGN	41,31,38
63	2	80ELECPP0001-1	ELECTRICAL BUILDING	EMERGENCY GENERATOR	25,1
64	2	51CRTLLCP0001-38,39,40 64TWLCP0001-1	RO/UV BUILDING	PRODUCT WATER AREA (OUTFALL PUMPS AND IPR PUMPS)	33,19,20
65	2	80ELECGEN0001-1	ELECTRICAL BUILDING	EMERGENCY GENERATOR	25,1
66	2	80ELECGEN0001-1	ELECTRICAL BUILDING	EMERGENCY GENERATOR	25,1
67	2	80ELECGEN0001-1	ELECTRICAL BUILDING	EMERGENCY GENERATOR	25,1
68	3	50ELECMCC0001-14 50ELECPP0002 - 7	RO/UV BUILDING	PRODUCT WATER AREA (CALCITE CONTACTORS)	33,19,21
69	2	50ELECMCC0001-19	RO/UV BUILDING	CHEMICAL FACILITY	34,33,12
70	2	50ELECMCC0001-23	RO/UV BUILDING	PRODUCT WATER AREA (OUTFALL PUMPS AND IPR PUMPS)	33,19,20
71	2	50ELECMCC0001-5	RO/UV BUILDING	SANITARY LIFT STATION	33,11,10,13,17,28
72	3	80ELECMCC0001-17A,17B,17C, 18A,18B,18C	ELECTRICAL BUILDING	RESIDUAL AREA (SLUDGE HOLDING TANKS AND SAFE SETTLE TANK)	25,2,3,26
73	3	50ELECMCC0001-1A,1B, 1C, 2A,2B,2C, 6A,6B, 6C	RO/UV BUILDING	PRODUCT WATER AREA (OUTFALL PUMPS AND IPR PUMPS)	33,19,20
74	3	50ELECMCC0001- 20A,20B,20C, 21A,21B,21C	RO/UV BUILDING	PRODUCT WATER AREA (OUTFALL PUMPS AND IPR PUMPS)	33,19,20
75	2	50ELECPP0002-10	RO/UV BUILDING	VEHICLE EQUIPMENT STORAGE	33,11,10,15
76	3	80ELECPP0001-8,9,12,14,16	ELECTRICAL BUILDING	RESIDUAL AREA (DEWATERING AREA)	25,2,3,4,8
77	3	80ELECPP0002-11, 12	ELECTRICAL BUILDING	RESIDUAL AREA (DEWATERING AREA)	25,2,3,4,8
78	2	80CTRLLCP0001-24	ELECTRICAL BUILDING	EMERGENCY GENERATOR	25,1
79	2	96ELECPP0001-11	MAINTENANCE BUILDING	STORMWATER PUMP STATION	27
80	2	95ELECPP0002-39	OPERATIONS BUILDING	STORAGE BUILDING (DECHLORINATION ANALYZER PANEL AND COMPOSITE SAMPLER)	41,16,24,17,29
81	3	80ELECPP0002-17, 18, 19, 20, 21	ELECTRICAL BUILDING	RESIDUAL AREA (SAFE FILTER AREA)	25,2,3,4,5,30
82	3	80ELECPP0002- 6, 8, 9, 10	ELECTRICAL BUILDING	HEADWORKS AREA	7
83	3	80ELECPP0004- 14, 18, 21	ELECTRICAL BUILDING	TREATMENT AREA (BNR,MBR & RO FEED TANKS)	7
84	3	90ELECRIO0002-1	OPERATIONS BUILDING	BACKFLOW PREVENTER WITH TAMPER SWITCH	41,31,37
85	2	31CTRLCP0001-89	TREATMENT AREA (BNR,MBR & RO FEED TANKS)	RESIDUAL AREA (DEWATERING AREA)	30, 8
86	3	51CRTLLCP0001-1,2,3,4,5,6,7	RO/UV BUILDING	PRODUCT WATER AREA (CALCITE CONTACTORS)	33,19,21
87	3	51CRTLLCP0001-8,11 62TWLCP0001-1	RO/UV BUILDING	PRODUCT WATER AREA (STORAGE TANKS)	33,19,22
88	3	51CRTLLCP0001-24,25,26	RO/UV BUILDING	PRODUCT WATER AREA (OUTFALL PUMPS AND IPR PUMPS)	33,19,20
89	3	50ELECMCC0001- 22A,22B,22C, 23A,23B,23C	RO/UV BUILDING	PRODUCT WATER AREA (OUTFALL PUMPS AND IPR PUMPS)	33,19,20
90	3	51CRTLLCP0001-41,42,43,44,45	RO/UV BUILDING	STORAGE BUILDING (DECHLORINATION ANALYZER PANEL AND COMPOSITE SAMPLER)	33,11,10,13,17,29
91	2	51CRTLLCP0001-55	RO/UV BUILDING	SANITARY LIFT STATION	33,11,10,13,17,28
92	2	72CRTLLCP0001-21	RESIDUAL AREA (DEWATERING AREA)	RESIDUAL AREA (SAFE FILTER AREA)	30,5,8
93	2	LIGHTING CABLE TO FLAGPOLE	OPERATIONS BUILDING	FLAGPOLE	41,31
94	2	80ELECMCC0001-16	ELECTRICAL BUILDING	RESIDUAL AREA (DEWATERING AREA)	25,2,3,4,8
95	2	80ELECMCC0001-9	ELECTRICAL BUILDING	RESIDUAL AREA (SLUDGE HOLDING TANKS AND SAFE SETTLE TANK)	25,2,3,26
96	2	95ELECPP0002-37	OPERATIONS BUILDING	MOTOR OPERATED SECURED PLANT AREA ACCESS GATE	41,16,24,17,28
97	2	90ELECLCP0001-78	CHEMICAL FACILITY	CHEMICAL LEAK DETECTION HANDHOLE NEAR CHEMICAL FACILITY	35
98	2	90ELECLCP0001-79	CHEMICAL FACILITY	CHEMICAL LEAK DETECTION HANDHOLE NEAR DECHLORINATION STATION	34,36
99	2	50ELECMCC0001-4	RO/UV BUILDING	OPERATIONS BUILDING	33,11,10,13,24,16,41
100	2	LIGHTING CABLE TO MONUMENT SIGN	OPERATIONS BUILDING	MONUMENT SIGN	41,31,38,39
101	2	95ELECPP0002-43	OPERATIONS BUILDING	PW FLOW METER	41,31,40
102	2	TELEPHONE CABLE	OPERATIONS BUILDING	MONUMENT SIGN	41,31,38,39

DUCT BANK SCHEDULE

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. SEE DRAWING 10-E-100 FOR ELECTRICAL SITE PLAN.
3. SEE DRAWING 10-E-601 FOR DUCT BANK SCHEDULE.
4. SEE DRAWING 10-E-603 FOR DUCT BANK SECTIONS.

NO.	BY	CHK	APP
0	JSL	MAS	MJK

REVISIONS AND RECORD OF USE

DATE	
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
MARK J. KLEVEER
No. E 17745
ELECTRICAL
STATE OF CALIFORNIA

BLACK & VEATCH
JOINT VENTURE
FILANC
BLACK & VEATCH

MJK
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

SITE - OVERALL
ELECTRICAL
DUCT BANK SCHEDULE

DESIGNED: JSL
DETAILED: SBC
CHECKED: MAS
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
400530

10-E-602
SHEET
361 OF 412

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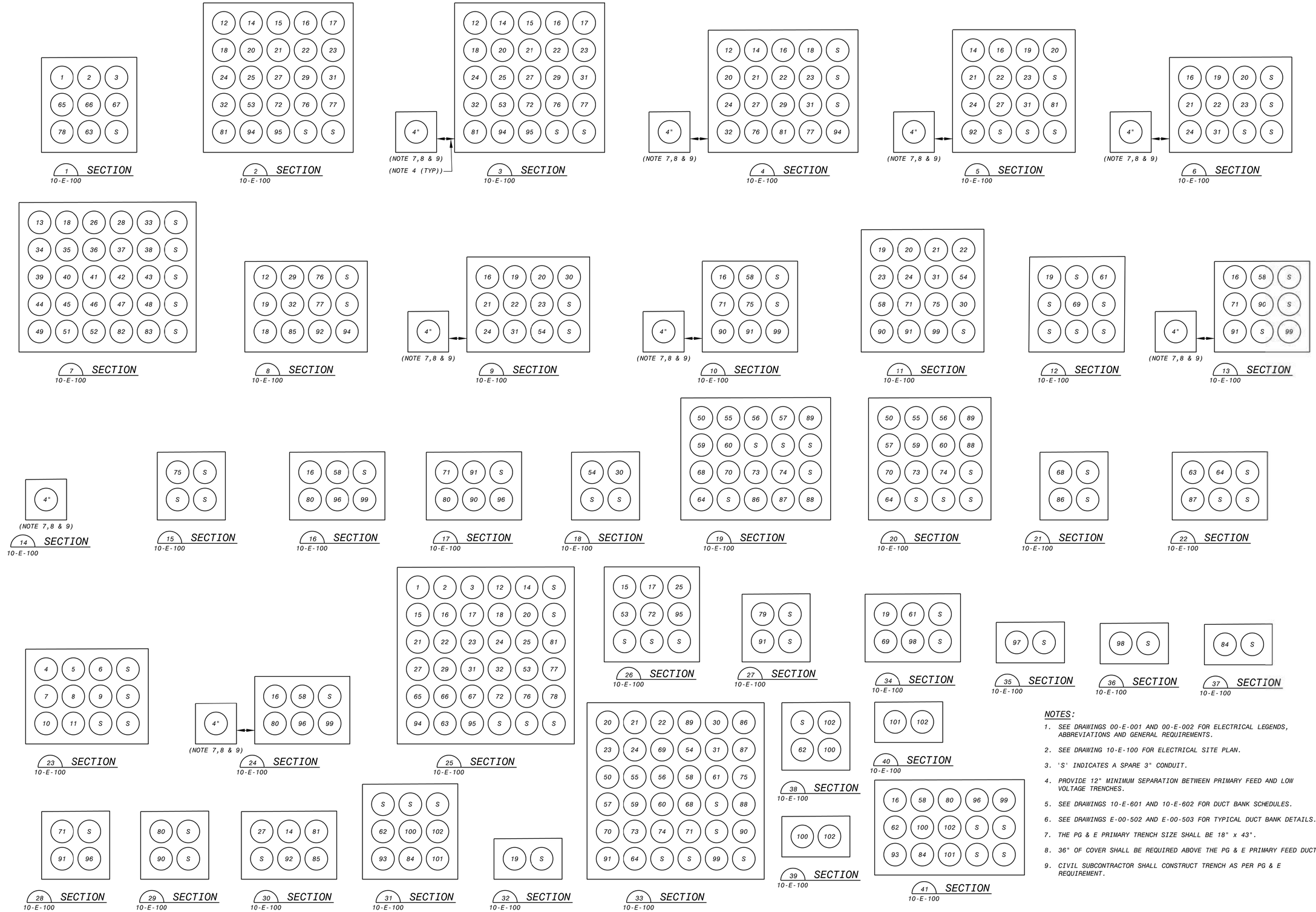

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND GENERAL REQUIREMENTS.
2. SEE DRAWING 10-E-100 FOR ELECTRICAL SITE PLAN.
3. 'S' INDICATES A SPARE 3" CONDUIT.
4. PROVIDE 12" MINIMUM SEPARATION BETWEEN PRIMARY FEED AND LOW VOLTAGE TRENCHES.
5. SEE DRAWINGS 10-E-601 AND 10-E-602 FOR DUCT BANK SCHEDULES.
6. SEE DRAWINGS E-00-502 AND E-00-503 FOR TYPICAL DUCT BANK DETAILS.
7. THE PG & E PRIMARY TRENCH SIZE SHALL BE 18" x 43".
8. 36" OF COVER SHALL BE REQUIRED ABOVE THE PG & E PRIMARY FEED DUCT.
9. CIVIL SUBCONTRACTOR SHALL CONSTRUCT TRENCH AS PER PG & E REQUIREMENT.

DATE	REVISIONS AND RECORD OF USE	NO.	BY	CHK	APP
5/19/2020	ISSUED FOR CONSTRUCTION	0	JSL	MAS	MJK

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVETER No. E 17748 ELECTRICAL STATE OF CALIFORNIA

BLACK & VEATCH

JOINT VENTURE

FILANC

BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

SITE - OVERALL
ELECTRICAL
DUCT BANK SECTIONS

DESIGNED: JSL
DETAILED: SBC
CHECKED: MAS
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
400530

10-E-603
SHEET
362 OF 412

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			PANELBOARD: 15-ELEC-PP-0001		BUS: COPPER				MAINS: 3P-100A MAIN BREAKE			
PHASE			SERVICE: 120/208V, 3PH, 4W		RATING: 100A				LOCATION: VEHICLE	PHASE		
"A"	"B"	"C"	MOUNTING: SURFACE						EQUIPMENT STORAGE AREA	"A"	"B"	"C"
V.A.	V.A.	V.A.	LOAD	P	BKR	CKT #		BKR	P LOAD	V.A.	V.A.	V.A.
500			DUPLEX RECEPTCLE NO. 1	1	20	1	2	20	1 DUPLEX RECEPTCLE NO. 5	500		
	500		DUPLEX RECEPTCLE NO. 2	1	20	3	4	20	1 DUPLEX RECEPTCLE NO. 6		500	
		500	DUPLEX RECEPTCLE NO. 3	1	20	5	6	20	1 DUPLEX RECEPTCLE NO. 7			500
500			DUPLEX RECEPTCLE NO. 4	1	20	7	8	20	1 SPARE	0		
	0		SPARE	1	20	9	10	20	1 SPARE		0	
		0	SPARE	1	20	11	12	20	1 SPARE			0
0			SPARE	1	20	13	14	20	1 SPARE	0		
	0		SPARE	1	20	15	16	20	1 SPARE		0	
		0	SPARE	1	20	17	18	20	1 SPARE			0
1000			TOTAL "A"			1500			TOTAL "A"	500		
	500		TOTAL "B"			1000			TOTAL "B"		500	
		500	TOTAL "C"			1000			TOTAL "C"			500
			TOTAL			3500						

15-ELEC-PP-0001
POWER PANELS SCHEDULE

VEHICLE EQUIPMENT STORAGE

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. PROVIDE MINIMUM #12, #12G CABLE AND 3/4" CONDUIT FOR 20A CIRCUIT.

NO.	BY	CHK	APP
0	JSL	MAS	MJK

REVISIONS AND RECORD OF USE

DATE	
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
MARK J. KLEVETER
No. E 17748
ELECTRICAL
STATE OF CALIFORNIA

BLACK & VEATCH
JOINT VENTURE
FILANC
BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

VEHICLE EQUIPMENT STORAGE
ELECTRICAL
POWER PANELS SCHEDULE

DESIGNED: JSL
DETAILED: SBC
CHECKED: MAS
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
400530

15-E-601
SHEET
363 OF 412

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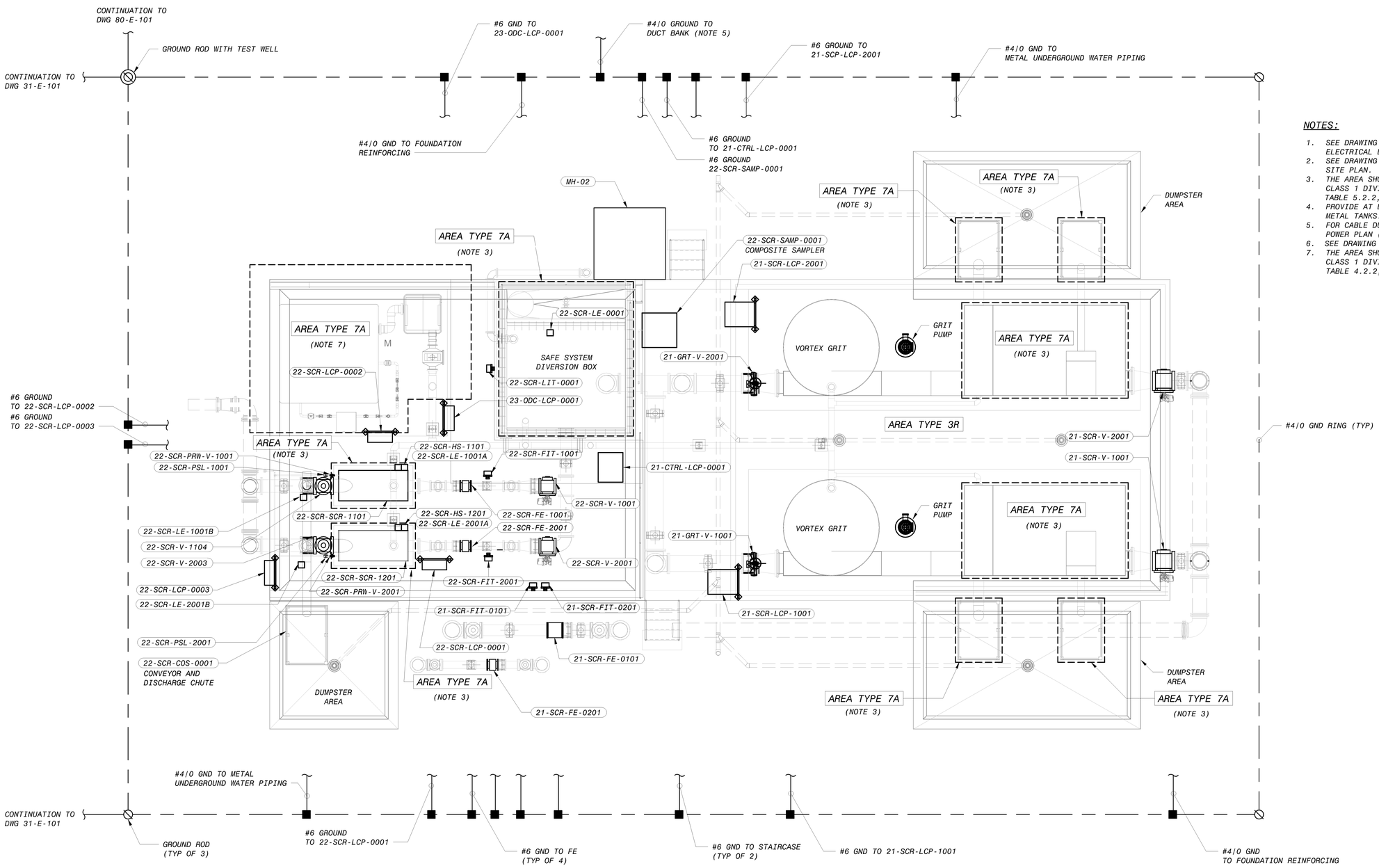

HEADWORKS AREA POWER AND GROUNDING PLAN

3/16" = 1'-0"

NOTES:

1. SEE DRAWING 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND NOTES.
2. SEE DRAWING 10-E-100 FOR OVERALL ELECTRICAL SITE PLAN.
3. THE AREA SHOWN BY DASH BOUNDARY IS CLASSIFIED CLASS 1 DIVISION 1 AS PER NFPA 820, TABLE 5.2.2,1a,2a AND TABLE 6.2.2,2a.
4. PROVIDE AT LEAST TWO #4/0 GROUND TO EACH OF THE METAL TANKS.
5. FOR CABLE DUCT BANK ENTRY REFER TO SITE OVERALL POWER PLAN (10-E-100).
6. SEE DRAWING 10-E-603 FOR DUCT BANK SECTION.
7. THE AREA SHOWN BY DASH BOUNDARY IS CLASSIFIED CLASS 1 DIVISION 2 AS PER NFPA 820, TABLE 4.2.2,20,d,e.

6" 4' 2' 0' 5' 10'

3/16" = 1'-0"

NO.	BY	CHK	APP
0	JSL	TJZ	MJK

DATE	REVISIONS AND RECORD OF USE
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVEJER No. E 17749 CIVIL STATE OF CALIFORNIA

BLACK & VEATCH

JOINT VENTURE

FILANC

CITY OF MORRO BAY
MORRO BAY WATER RECLAMATION FACILITY (WRF)

HEADWORKS AREA ELECTRICAL POWER AND GROUNDING PLAN

DESIGNED: JSL
DETAILED: SBC
CHECKED: TJZ
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO. 400530

21-E-101

SHEET 364 OF 412

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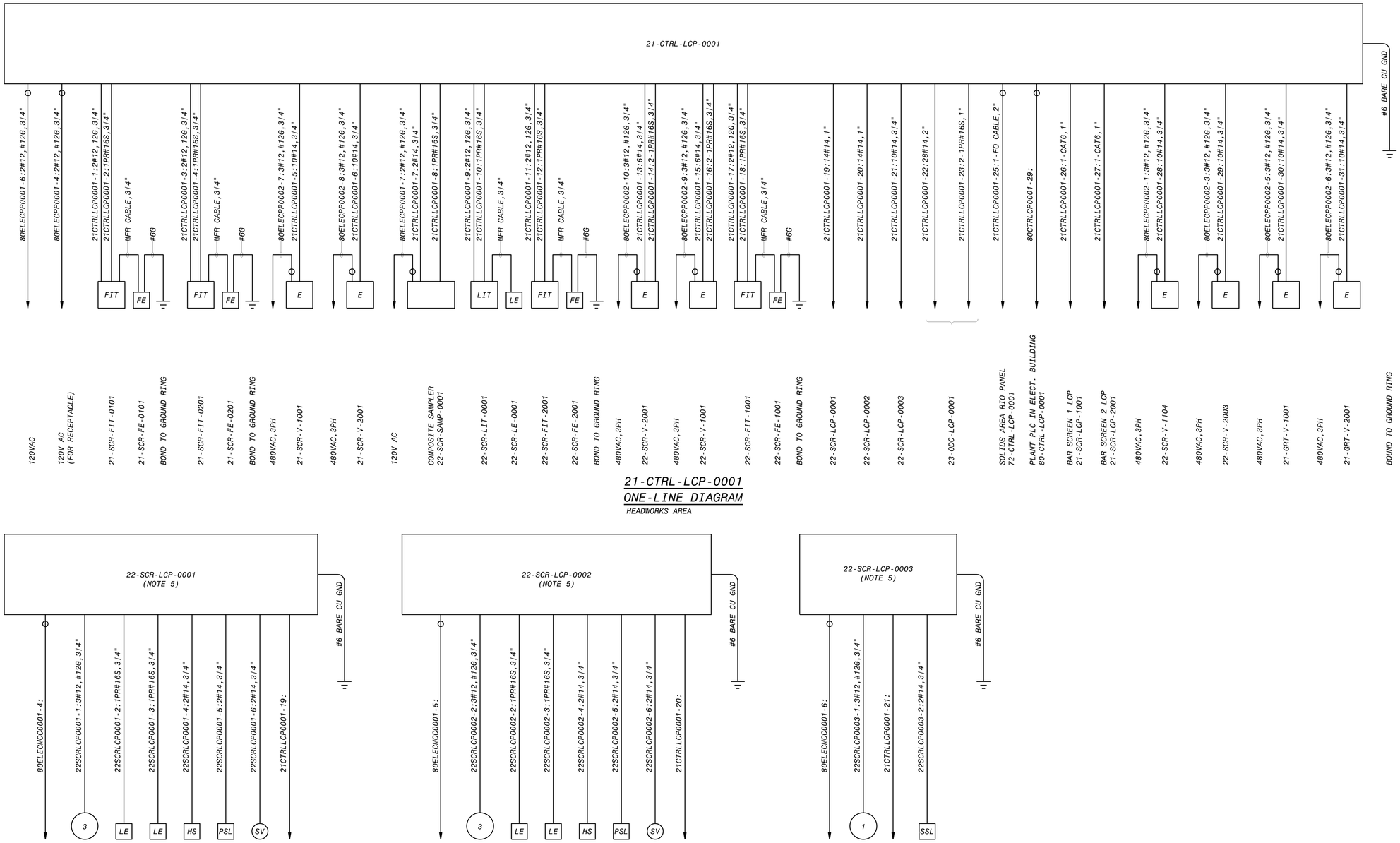
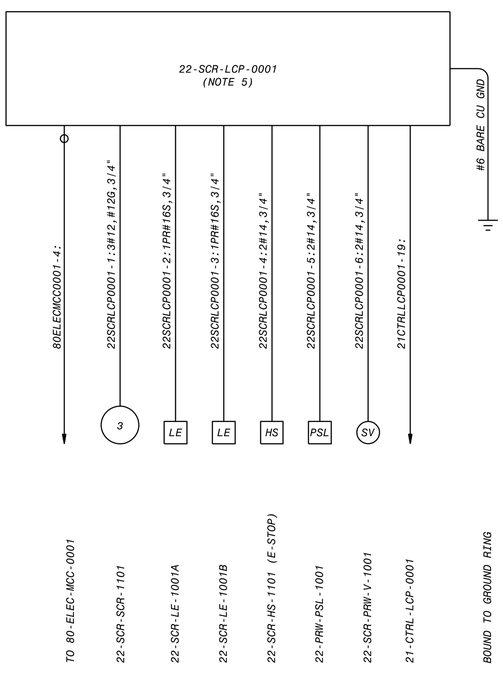
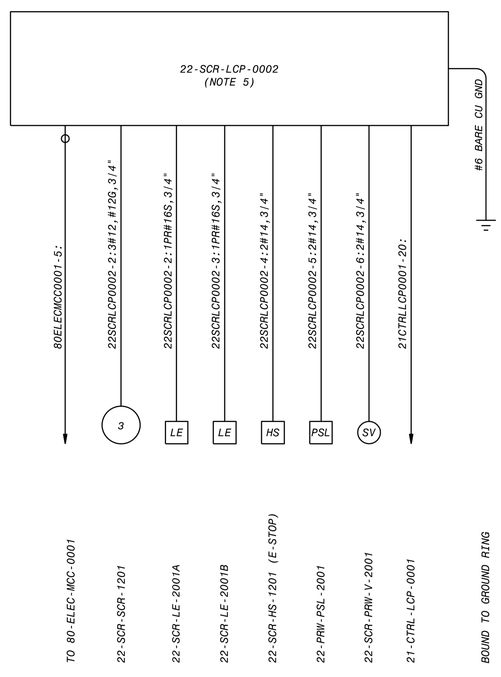


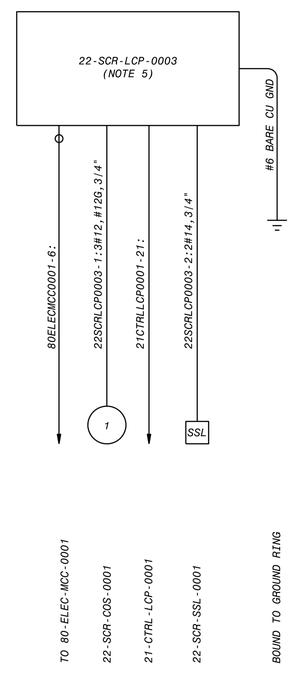
21-CTRL-LCP-0001
ONE-LINE DIAGRAM
HEADWORKS AREA



22-SCR-LCP-0001
ONE-LINE DIAGRAM
HEADWORKS AREA



22-SCR-LCP-0002
ONE-LINE DIAGRAM
HEADWORKS AREA



22-SCR-LCP-0003
ONE-LINE DIAGRAM
HEADWORKS AREA

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. SEE DRAWING 00-I-701 FOR FIBRE OPTIC CABLE REQUIREMENTS.
3. ALL CIRCUITS SHOWN ON THIS DRAWING WITHOUT THE DUCT SYMBOL SHALL BE FIELD ROUTED BY ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO DETERMINE IF THE CONDUITS SHALL BE BELOW GROUND OR ABOVE GROUND.
4. 24V DC POWER CIRCUIT, 24V DC DIGITAL CIRCUITS AND 24V DC ANALOG CIRCUITS MAY BE COMBINED INTO THE SAME CONDUIT AS LONG AS THE CONDUIT FILL MEETS THE NEC REQUIREMENTS.
5. SEE VENDOR DRAWINGS FOR ADDITIONAL FIELD WIRING.

DATE	ISSUED FOR CONSTRUCTION	0	JSL	TJZ	MJK
5/19/2020	REVISIONS AND RECORD OF USE	NO.	BY	CHK	APP

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVEIER No. E 17748 CIVIL STATE OF CALIFORNIA

BLACK & VEATCH
JOINT VENTURE
FILANC
BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

HEADWORKS AREA
ELECTRICAL
21-CTRL-LCP-0001 ONE-LINE DIAGRAM

DESIGNED: JSL
DETAILED: SBC
CHECKED: TJZ
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO. 400530

21-E-711
SHEET 365 OF 412

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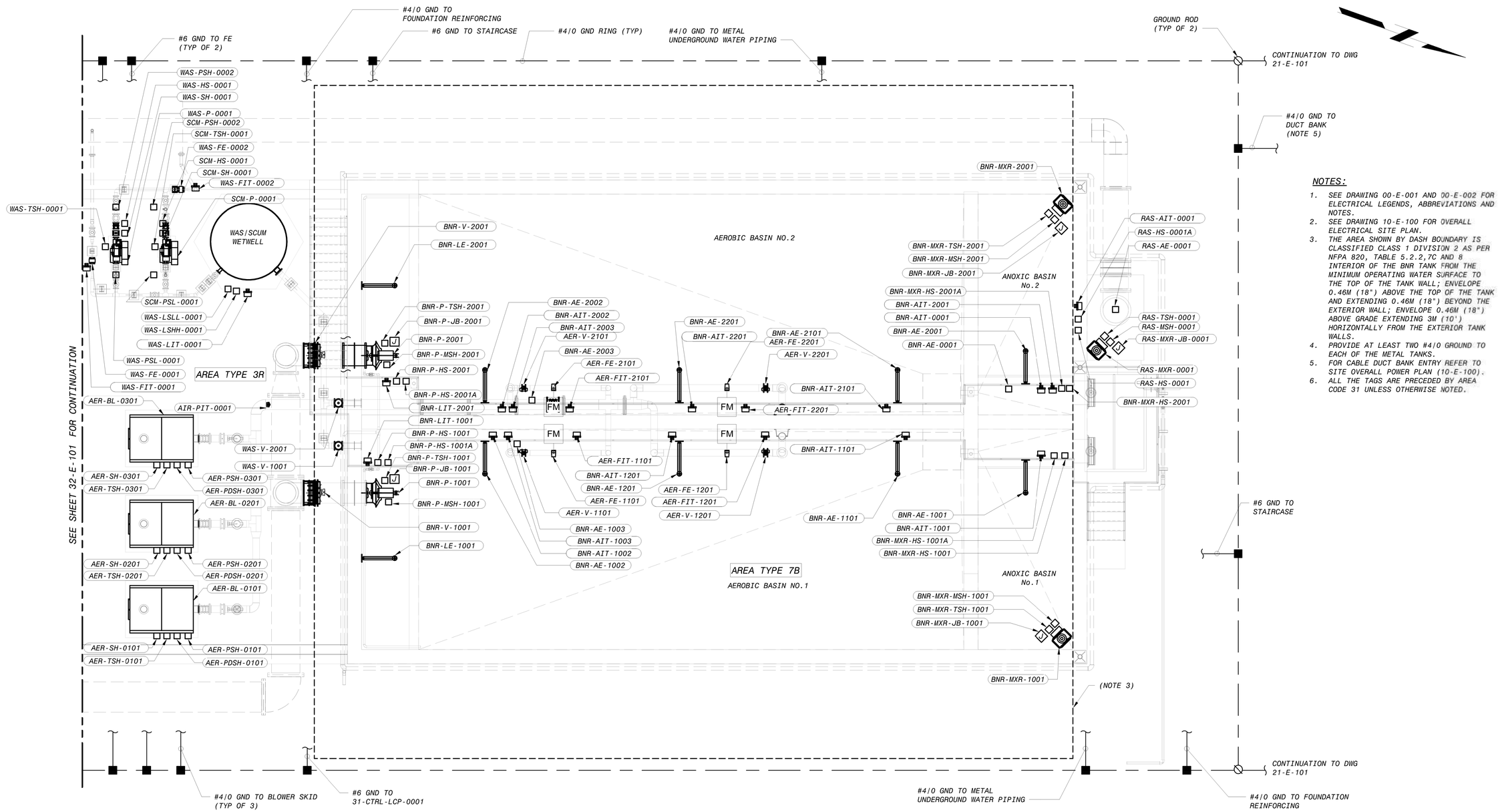

NOTES:

1. SEE DRAWING 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND NOTES.
2. SEE DRAWING 10-E-100 FOR OVERALL ELECTRICAL SITE PLAN.
3. THE AREA SHOWN BY DASH BOUNDARY IS CLASSIFIED CLASS 1 DIVISION 2 AS PER NFPA 820, TABLE 5.2.2,7C AND 8 INTERIOR OF THE BNR TANK FROM THE MINIMUM OPERATING WATER SURFACE TO THE TOP OF THE TANK WALL; ENVELOPE 0.46M (18") ABOVE THE TOP OF THE TANK AND EXTENDING 0.46M (18") BEYOND THE EXTERIOR WALL; ENVELOPE 0.46M (18") ABOVE GRADE EXTENDING 3M (10') HORIZONTALLY FROM THE EXTERIOR TANK WALLS.
4. PROVIDE AT LEAST TWO #4/0 GROUND TO EACH OF THE METAL TANKS.
5. FOR CABLE DUCT BANK ENTRY REFER TO SITE OVERALL POWER PLAN (10-E-100).
6. ALL THE TAGS ARE PRECEDED BY AREA CODE 31 UNLESS OTHERWISE NOTED.

TREATMENT AREA - BNR BASIN POWER AND GROUNDING PLAN

3/16" = 1'-0"

6" 4' 2' 0' 5' 10'

3/16" = 1'-0"

NO.	BY	CHK	APP	REVISIONS AND RECORD OF USE	DATE
0	JSL	TJZ	MJK	ISSUED FOR CONSTRUCTION	5/19/2020

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVEPE No. E 17996 ELECTRICAL STATE OF CALIFORNIA

BLACK & VEATCH

JOINT VENTURE

FILANC

BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WATER
RECLAMATION FACILITY (WRF)

TREATMENT AREA - BNR BASIN
ELECTRICAL
POWER AND GROUNDING PLAN

DESIGNED: JSL
DETAILED: SBC
CHECKED: TJZ
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
400530

31-E-101

SHEET
366 OF 412

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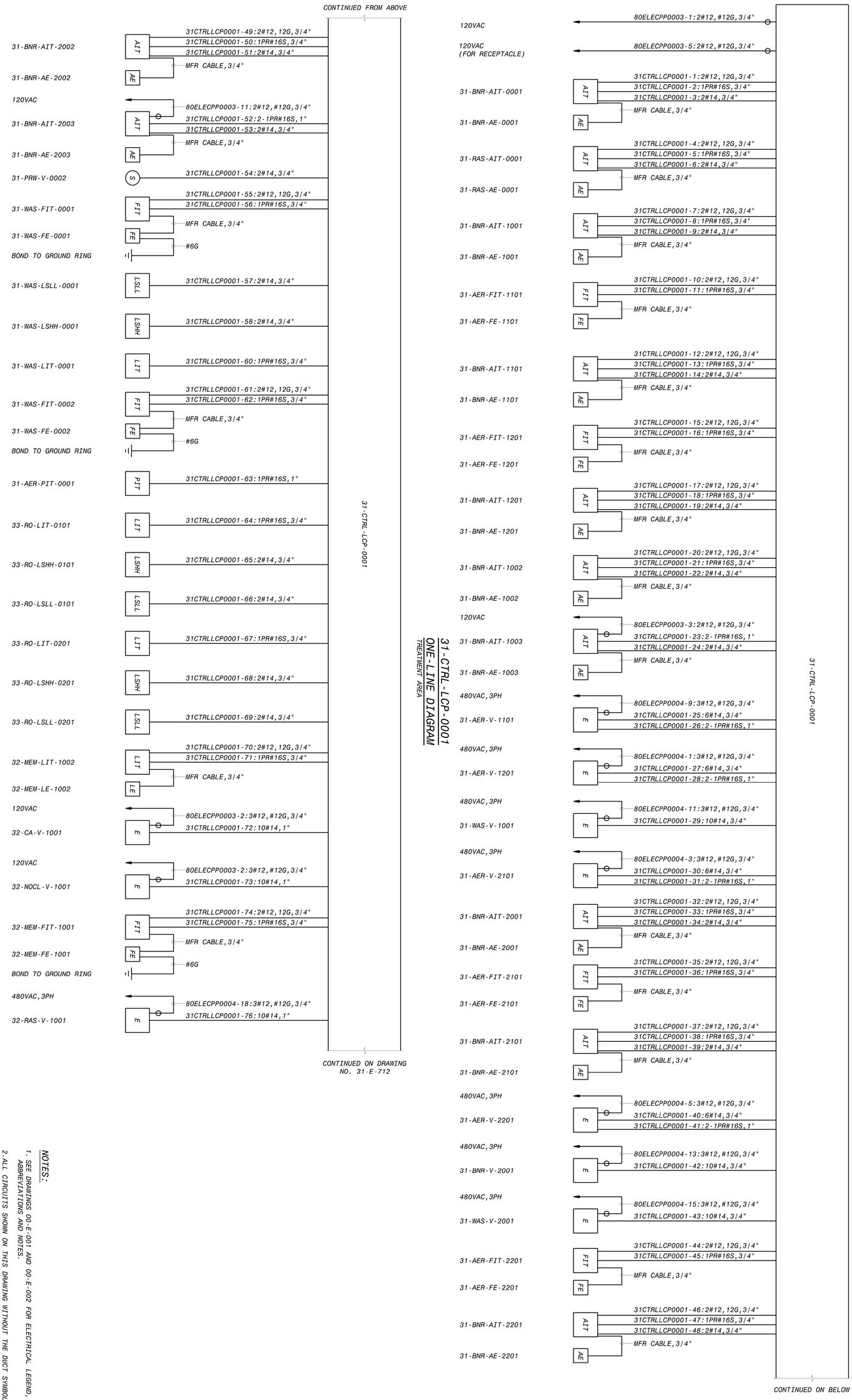


NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. ALL CIRCUITS SHOWN ON THIS DRAWING WITHOUT THE DUCT SYMBOL SHALL BE FIELD ROUTED BY ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO DETERMINE IF THE CONDUITS SHALL BE BELOW GROUND OR ABOVE GROUND.
3. 24V DC POWER CIRCUIT, 24V DC DIGITAL CIRCUITS AND 24V DC ANALOG CIRCUITS MAY BE COMBINED INTO THE SAME CONDUIT AS LONG AS THE CONDUIT FILL MEETS THE NEC REQUIREMENTS.

DESIGNED: JSL
DETAILED: SBC
CHECKED: TJZ
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT FULL SCALE

PROJECT NO. 400530

31-E-711
SHEET 367 OF 412

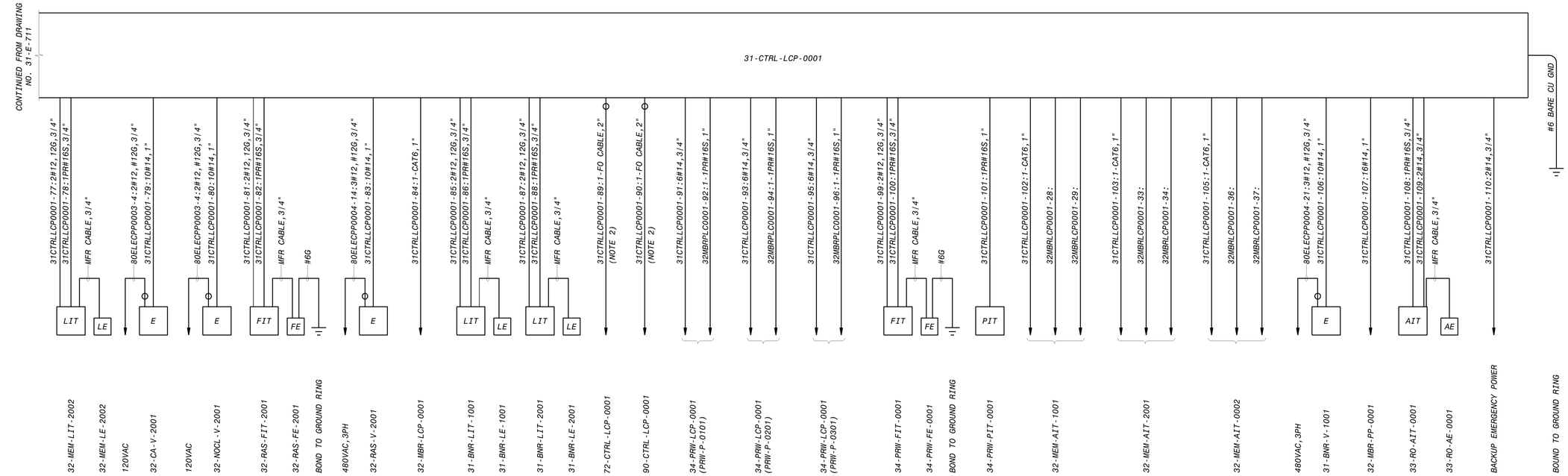
CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

TREATMENT AREA
ELECTRICAL
31-CTRL-LCP-0001 ONE-LINE DIAGRAM

BLACK & VEATCH
JOINT VENTURE
FILANC
BLACK & VEATCH

REGISTERED PROFESSIONAL ENGINEER
MARK J. KLEYSTER
No. E 17242
STATE OF CALIFORNIA

DATE	REVISIONS AND RECORD OF USE	NO.	BY	CHK	APP
5/19/2020	ISSUED FOR CONSTRUCTION	0	JSL	TJZ	MJK



31-CTRL-LCP-0001
ONE-LINE DIAGRAM
TREATMENT AREA

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. SEE DRAWING 00-I-701 FOR FIBRE OPTIC CABLE REQUIREMENT.
3. ALL CIRCUITS SHOWN ON THIS DRAWING WITHOUT THE DUCT SYMBOL SHALL BE FIELD ROUTED BY ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO DETERMINE IF THE CONDUITS SHALL BE BELOW GROUND OR ABOVE GROUND.
4. 24V DC POWER CIRCUIT, 24V DC DIGITAL CIRCUITS AND 24V DC ANALOG CIRCUITS MAY BE COMBINED INTO THE SAME CONDUIT AS LONG AS THE CONDUIT FILL MEETS THE NEC REQUIREMENTS.

DATE	REVISIONS AND RECORD OF USE	NO.	BY	CHK	APP
5/19/2020	ISSUED FOR CONSTRUCTION	0	JSL	TJZ	MJK

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVEIZER No. E 17749 ELECTRICAL STATE OF CALIFORNIA

BLACK & VEATCH
JOINT VENTURE
FILANC
BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

TREATMENT AREA
ELECTRICAL
31-CTRL-LCP-0001 ONE-LINE DIAGRAM

DESIGNED: JSL
DETAILED: SBC
CHECKED: TJZ
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
400530

31-E-712
SHEET
368 OF 412

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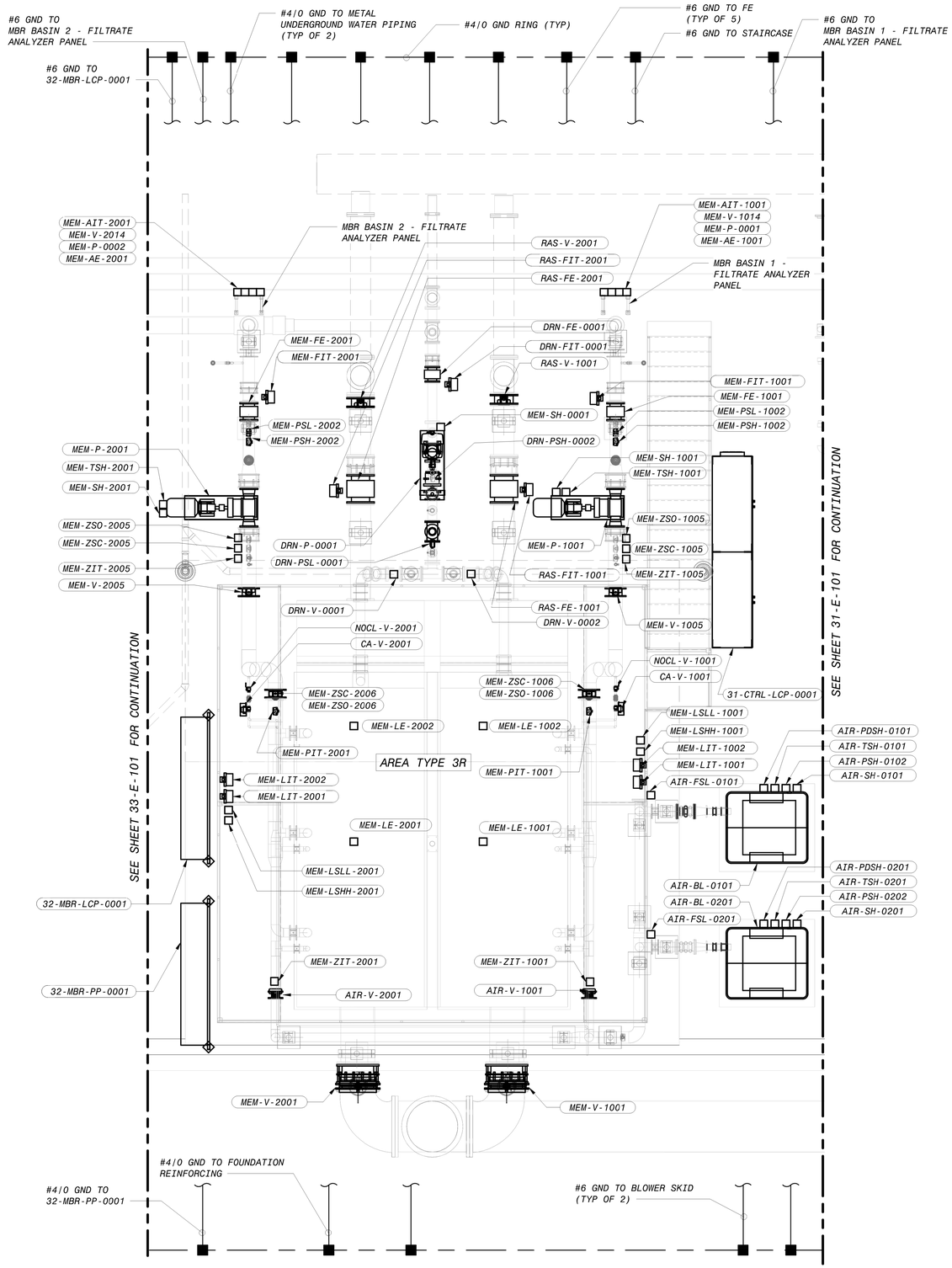

TREATMENT AREA - MBR SYSTEM POWER AND GROUNDING PLAN

1/4" = 1'-0"

NOTES:

1. SEE DRAWING 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND NOTES.
2. SEE DRAWING 10-E-100 FOR OVERALL ELECTRICAL SITE PLAN.
3. PROVIDE AT LEAST TWO #4/0 GROUND TO EACH OF THE METAL TANKS.
4. FOR CABLE DUCT BANK ENTRY REFER TO SITE OVERALL POWER PLAN (10-E-100).
5. ALL THE TAGS ARE PRECEDED BY AREA CODE 32 UNLESS OTHERWISE NOTED.

4' 2' 0' 4' 8'

1/4" = 1'-0"

NO.	BY	CHK	APP
0	JSL	TJZ	MJK

DATE	REVISIONS AND RECORD OF USE
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVEJER No. E 17748 CERTIFICATE OF CALIFORNIA

BLACK & VEATCH

JOINT VENTURE

FILANC

BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WATER
RECLAMATION FACILITY (WRF)

TREATMENT AREA - MBR SYSTEM
ELECTRICAL
POWER AND GROUNDING PLAN

DESIGNED: JSL
DETAILED: SBC
CHECKED: TJZ
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
400530

32-E-101

SHEET
369 OF 412

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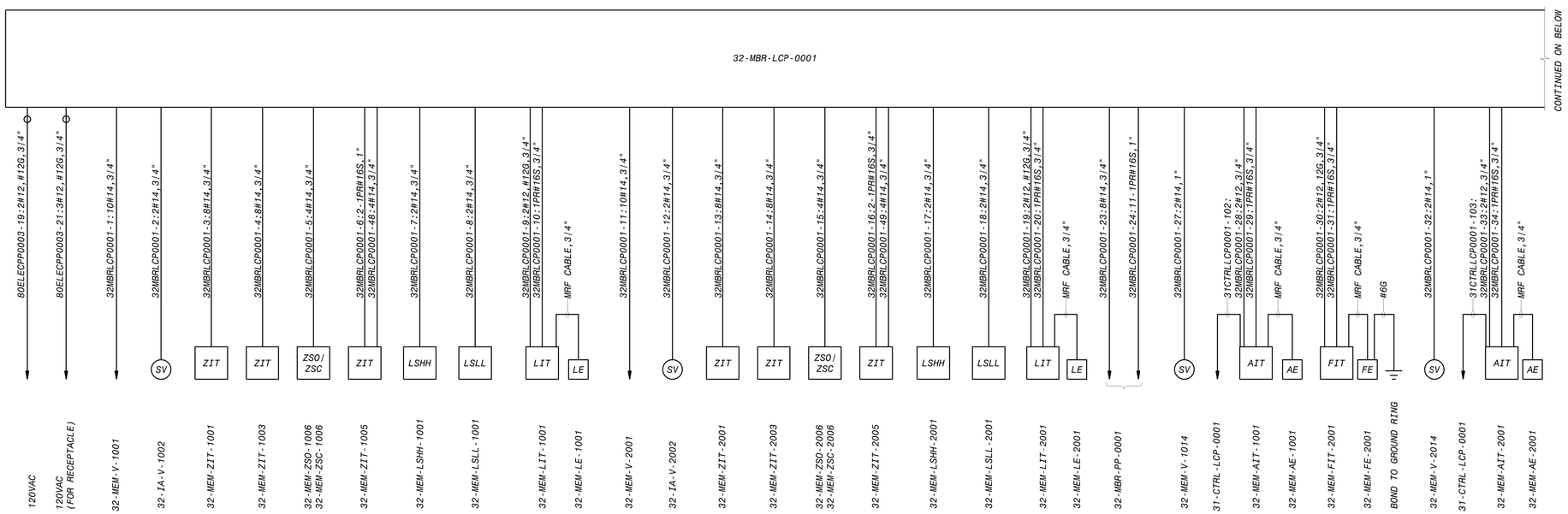
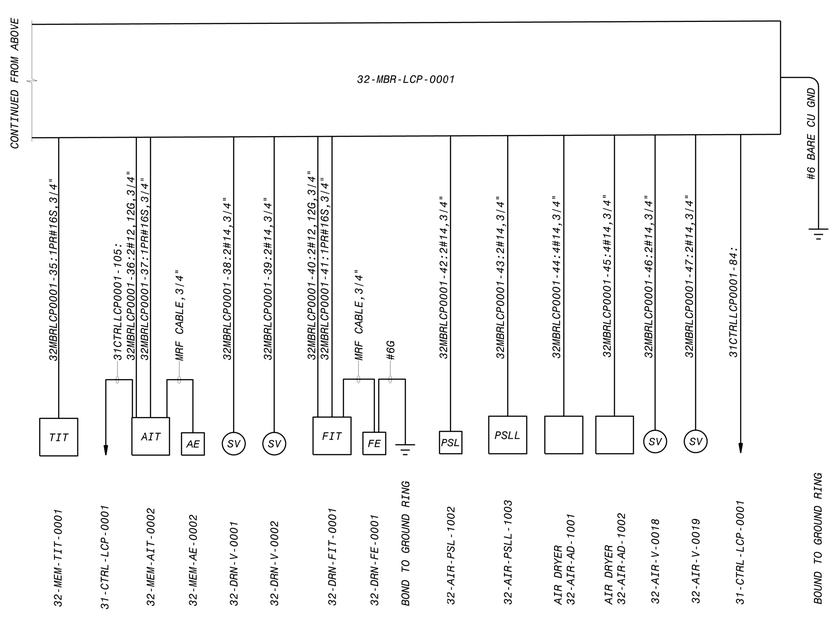


32-MBR-LCP-0001
ONE-LINE DIAGRAM
TREATMENT AREA



32-MBR-LCP-0001
ONE-LINE DIAGRAM
TREATMENT AREA

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. ALL CIRCUITS SHOWN ON THIS DRAWING WITHOUT THE DUCT SYMBOL SHALL BE FIELD ROUTED BY ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO DETERMINE IF THE CONDUITS SHALL BE BELOW GROUND OR ABOVE GROUND.
3. POWER SUPPLY TO SHALL BE DERIVED FROM 32-MBR-PP-0001.
4. 24V DC POWER CIRCUIT, 24V DC DIGITAL CIRCUITS AND 24V DC ANALOG CIRCUITS MAY BE COMBINED INTO THE SAME CONDUIT AS LONG AS THE CONDUIT FILL MEETS THE NEC REQUIREMENTS.

DATE	REVISIONS AND RECORD OF USE	NO.	BY	CHK	APP
5/19/2020	ISSUED FOR CONSTRUCTION	0	JSL	TJZ	MJK

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVEZER No. E 17748 CIVIL STATE OF CALIFORNIA

BLACK & VEATCH
JOINT VENTURE
FILANC
BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

TREATMENT AREA
ELECTRICAL
32-MBR-LCP-0001 ONE-LINE DIAGRAM

DESIGNED: JSL
DETAILED: SBC
CHECKED: TJZ
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO. 400530

32-E-711
SHEET 370 OF 412

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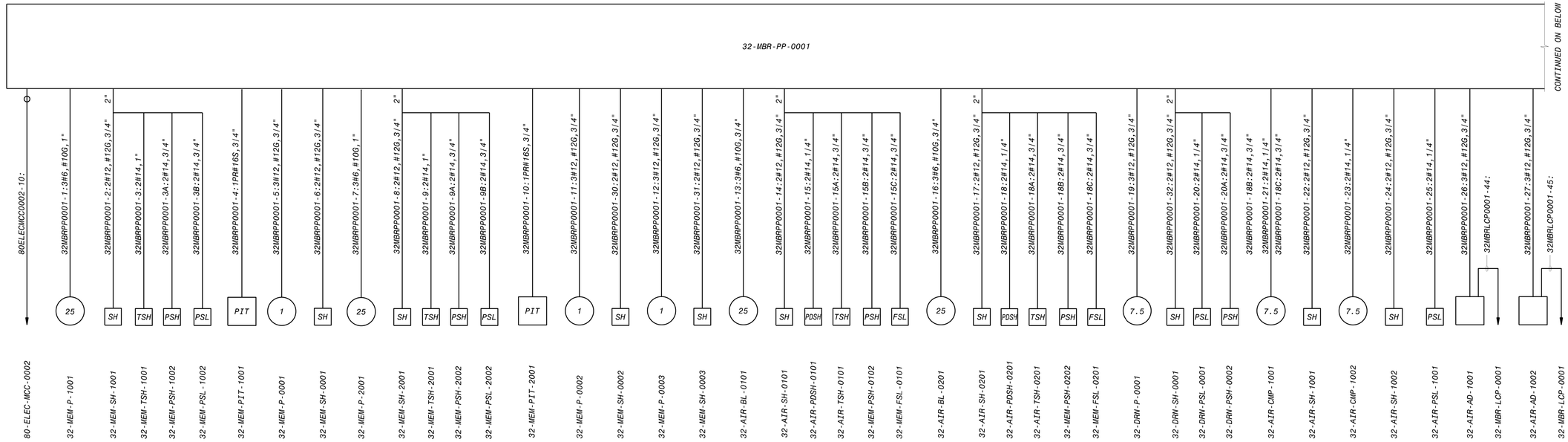
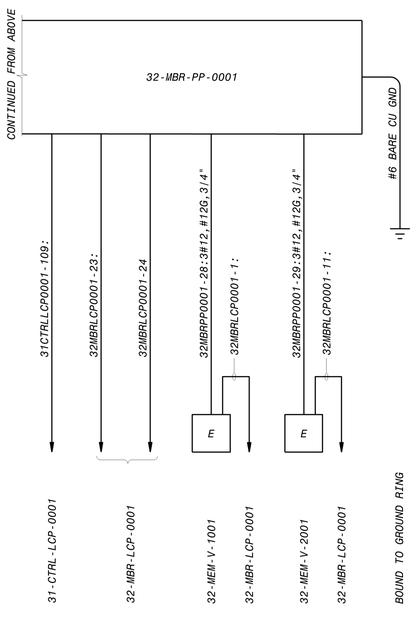


32-MBR-PP-0001
ONE-LINE DIAGRAM
TREATMENT AREA



32-MBR-PP-0001
ONE-LINE DIAGRAM
TREATMENT AREA

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. SEE DRAWING 00-I-701 FOR FIBRE OPTIC CABLE REQUIREMENT.
3. ALL CIRCUITS SHOWN ON THIS DRAWING WITHOUT THE DUCT SYMBOL SHALL BE FIELD ROUTED BY ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO DETERMINE IF THE CONDUITS SHALL BE BELOW GROUND OR ABOVE GROUND.
4. 24V DC POWER CIRCUIT, 24V DC DIGITAL CIRCUITS AND 24V DC ANALOG CIRCUITS MAY BE COMBINED INTO THE SAME CONDUIT AS LONG AS THE CONDUIT FILL MEETS THE NEC REQUIREMENTS.

DATE	REVISIONS AND RECORD OF USE	NO.	BY	CHK	APP
5/19/2020	ISSUED FOR CONSTRUCTION	0	JSL	TJZ	MJK

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVEIER No. E 17748 ELECTRICAL STATE OF CALIFORNIA

BLACK & VEATCH
JOINT VENTURE
FILANC
BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

TREATMENT AREA
ELECTRICAL
32-MBR-PP-0001 ONE-LINE DIAGRAM

DESIGNED: JSL
DETAILED: SBC
CHECKED: TJZ
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
400530

32-E-712
SHEET
371 OF 412

F09000A
D400530
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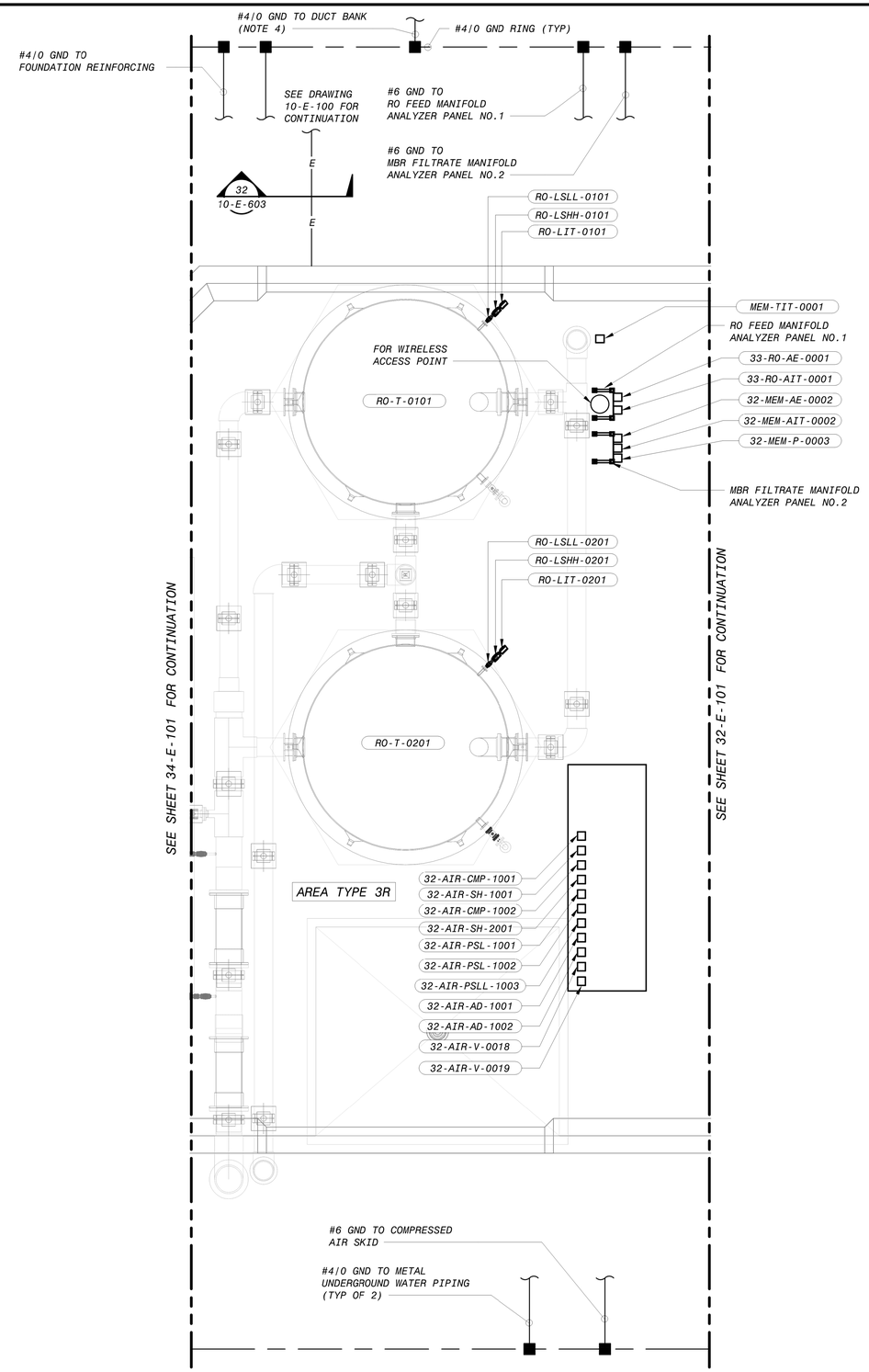

TREATMENT AREA - RO FEED TANKS POWER AND GROUNDING PLAN

1/4" = 1'-0"

NOTES:

1. SEE DRAWING 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND NOTES.
2. SEE DRAWING 10-E-100 FOR OVERALL ELECTRICAL SITE PLAN.
3. PROVIDE AT LEAST TWO #4/0 GROUND TO EACH OF THE METAL TANKS.
4. FOR CABLE DUCT BANK ENTRY REFER TO SITE OVERALL POWER PLAN (10-E-100).
5. ALL THE TAGS ARE PRECEDED BY AREA CODE 33 UNLESS OTHERWISE NOTED.
6. SEE DRAWING 10-E-603 FOR DUCT BANK SECTION.

4' 2' 0' 4' 8'

1/4" = 1'-0"

NO.	BY	CHK	APP
0	JSL	TJZ	MJK

DATE	REVISIONS AND RECORD OF USE
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVEJER No. E 17748 ELECTRICAL STATE OF CALIFORNIA

BLACK & VEATCH

JOINT VENTURE

FILANC

BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WATER
RECLAMATION FACILITY (WRF)

TREATMENT AREA - RO FEED TANKS
ELECTRICAL
POWER AND GROUNDING PLAN

DESIGNED: JSL
DETAILED: SBC
CHECKED: TJZ
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
400530

33-E-101

SHEET
372 OF 412

PLOTTED: 20-05-2020 17:48:41
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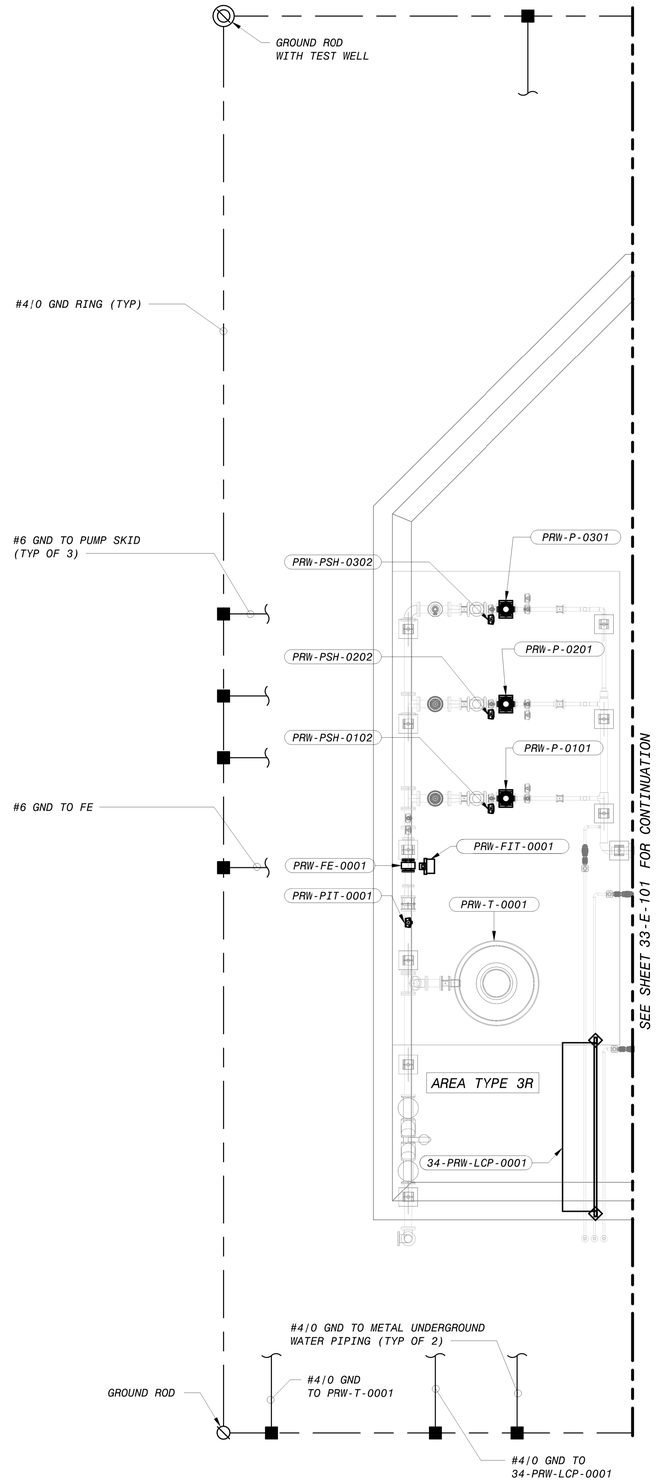

TREATMENT AREA - RECYCLED WATER PUMPS POWER AND GROUNDING PLAN

1/4" = 1'-0"

NOTES:

1. SEE DRAWING 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND NOTES.
2. SEE DRAWING 10-E-100 FOR OVERALL ELECTRICAL SITE PLAN.
3. PROVIDE AT LEAST TWO #4/0 GROUND TO EACH OF THE METAL TANKS.
4. FOR CABLE DUCT BANK ENTRY REFER TO SITE OVERALL POWER PLAN (10-E-100).
5. ALL THE TAGS ARE PRECEDED BY AREA CODE 34 UNLESS OTHERWISE NOTED.

4' 2' 0' 4' 8'

1/4" = 1'-0"

NO.	BY	CHK	APP
0	JSL	TJZ	MJK

DATE	REVISIONS AND RECORD OF USE
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
MARK J. KLEVEIER
No. E 17749
ELECTRICAL
STATE OF CALIFORNIA

BLACK & VEATCH

JOINT VENTURE

FILANC

BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WATER
RECLAMATION FACILITY (WRF)

TRAETMENT AREA - RECYCLED WATER PUMPS
ELECTRICAL
POWER AND GROUNDING PLAN

DESIGNED: JSL
DETAILED: SBC
CHECKED: TJZ
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
400530

34-E-101

SHEET
373 OF 412

PLOTTED: 20-05-2020 17:48:43
D400530

			PANELBOARD: 50-ELEC-PP-0001		BUS: COPPER				MAINS: 3P-250A MAIN BREAKER				
PHASE			SERVICE: 120/208V, 3PH, 4W		RATING: 250A				LOCATION: RO ELECTRICAL ROOM		PHASE		
"A"	"B"	"C"	MOUNTING: SURFACE								"A"	"B"	"C"
V.A.	V.A.	V.A.	LOAD	P	BKR	CKT #		BKR	P	LOAD	V.A.	V.A.	V.A.
2000			51-CTRL-LCP-0001	1	30	1	2	20	1	51-RO-TCP-0001	500		
	500		51-RO-P-0001 - RO SAMPLE PUMP LCP	1	20	3	4	20	1	51-RO-LCP-0101		250	
		250	51-RO-LCP-0201	1	20	5	6	20	1	51-RO-LCP-0301			250
500			50-PLUM-GWH-0001	1	20	7	8	30	1	SPARE	0		
	500		52-UV-LCP-0001	1	20	9	10	20	1	UV REACTOR INFLUENT ANALYZER PANEL		500	
		500	64-TW-LCP-0001	1	20	11	12	20	1	SPARE			0
0			SPARE	1	20	13	14	20	1	SPARE	0		
	100		52-UV-AIT-0001	1	20	15	16	20	1	UV REACTOR EFFLUENT ANALYZER PANEL		500	
		0	SPARE	1	20	17	18	20	1	51-RO-LCP-0001			2000
0			SPARE	1	20	19	20	20	1	SPARE	0		
	0		SPARE	1	20	21	22	20	1	SPARE		0	
		0	SPARE	1	20	23	24	20	1	SPARE			0
1036			50-HVAC-GUH-0001, 50-HVAC-GUH-0002	1	20	25	26	20	1	OPERATOR HMI	500		
	1036		50-HVAC-GUH-0003, 50-HVAC-GUH-0004	1	20	27	28	20	1	IPR PRODUCT WATER ANALYZER PANEL		500	
		500	RO FEED ANALYZER PANEL	1	20	29	30	20	1	51-CTRL-LCP-0001 (RECEPTACLE)			500
0			SPARE	1	20	31	32	20	1	SPARE	0		
	250		50-PLUM-TP-0001	1	20	33	34	20	1	SPARE		0	
		0	SPARE	1	20	35	36	20	1	RO FLUSH PUMPS LCP (51-RO-LCP-0002)			250
250			RO CIP PUMPS LCP (51-RO-LCP-0003)	1	20	37	38	20	2	50-HVAC-EUH-0001	259		
	100		51-CIP-FSH-0001	1	20	39	40	20	-			259	
		500	51-RO-LCP-0001 (RECEPTACLE)	1	20	41	42	20	1	62-TW-LCP-0001			500
3786			TOTAL "A"			5045				TOTAL "A"	1259		
	2486		TOTAL "B"			4495				TOTAL "B"		2009	
		1750	TOTAL "C"			5250				TOTAL "C"			3500
			TOTAL			14790							

50-ELEC-PP-0001
POWER PANEL SCHEDULE
RO/UV BUILDING

			PANELBOARD: 50-ELEC-PP-0002		BUS: COPPER				MAINS: 3P-100A MAIN BREAKER				
PHASE			SERVICE: 480V 3PH, 3W		RATING: 100A				LOCATION: RO ELECTRICAL ROOM		PHASE		
"A"	"B"	"C"	MOUNTING: SURFACE								"A"	"B"	"C"
V.A.	V.A.	V.A.	LOAD	P	BKR	CKT #		BKR	P	LOAD	V.A.	V.A.	V.A.
345	345	345	51-RO-V-0012	3	20	1	2	20	3	SPARE	0	0	0
5000	5000	5000	90-ELEC-LT-0001 (15KVA,480-208Y/120V,3PH,60HZ,-2.5% TAP) (FEEDING 90-ELEC-PP-0001) (NOTE 4)	3	40	3	4	20	3	50-HVAC-EF-0001	259	259	259
0	0	0	SPARE	3	20	5	6	20	3	50-HVAC-EF-0002	259	259	259
345	345	345	61-CAL-V-0001	3	20	7	8	30	3	50-HVAC-PHP-0001	4157	4157	4157
0	0	0	SPARE	3	20	9	10	20	3	15-ELEC-LT-0001 (5KVA,480-208Y/120V,3PH,60HZ,-2.5% TAP) (FEEDING 15-ELEC-PP-0001) (NOTE 3 & 4)	1667	1667	1667
345	345	345	51-CIP-V-0103	3	20	11	12	20	3	51-RO-V-0013	345	345	345
0	0	0	SPARE	3	20	13	14	20	3	52-UV-V-0012	345	345	345
0	0	0	SPARE	3	20	15	16	20	3	52-UV-V-0013	345	345	345
0	0	0	SPARE	3	20	17	18	20	3	52-ROP-V-0005	345	345	345
0	0	0	SPARE	3	20	19	20	20	3	SPARE	0	0	0
0	0	0	SPARE	3	20	21	22	20	3	SPARE	0	0	0
0	0	0	SPARE	3	20	23	24	20	3	SPARE	0	0	0
0	0	0	SPARE	3	30	25	26	20	3	SPARE	0	0	0
0	0	0	SPARE	3	30	27	28	20	3	SPARE	0	0	0
6035			TOTAL "A"			13757				TOTAL "A"	7722		
	6035		TOTAL "B"			13757				TOTAL "B"		7722	
		6035	TOTAL "C"			13757				TOTAL "C"			7722
			TOTAL			41271							

50-ELEC-PP-0002
POWER PANEL SCHEDULE
RO/UV BUILDING

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. PROVIDE MINIMUM #12, #12G CABLE AND 3/4" CONDUIT FOR 20A CIRCUIT; MINIMUM #8, #10G CABLE, AND 3/4" CONDUIT FOR 30A CIRCUIT AND MINIMUM #6,#10G CABLE AND 1" CONDUIT FOR 40A CIRCUIT.
3. PROVIDE MINIMUM #8,#10G CABLE AND 3/4" CONDUIT FOR THIS CIRCUIT.
4. THE TAP OF TRANSFORMER IS ADJUSTED TO ACCOUNT FOR VOLTAGE DROP.

NO.	BY	CHK	APP	REVISIONS AND RECORD OF USE
0	JSL	MAS	MJK	ISSUED FOR CONSTRUCTION
DATE				5/19/2020

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVELER No. E 17745 ELECTRICAL STATE OF CALIFORNIA

BLACK & VEATCH JOINT VENTURE

FILANC BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

RO/UV BUILDING
ELECTRICAL
POWER PANEL SCHEDULES

DESIGNED: JSL
DETAILED: SBC
CHECKED: MAS
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO. 400530

50-E-601
SHEET 374 OF 412

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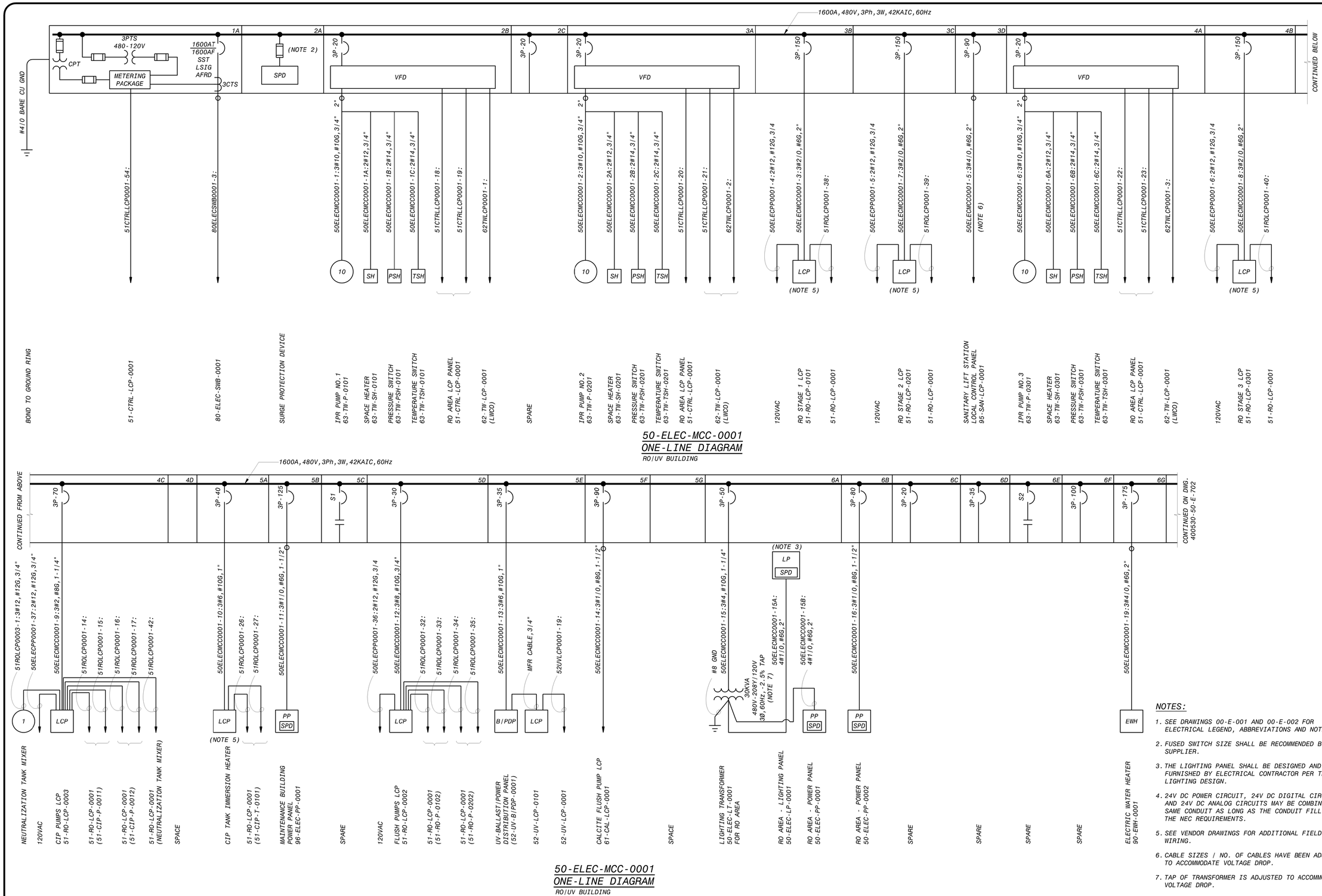

50-ELEC-MCC-0001 ONE-LINE DIAGRAM

RO/UV BUILDING

50-ELEC-MCC-0001 ONE-LINE DIAGRAM

RO/UV BUILDING

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. FUSED SWITCH SIZE SHALL BE RECOMMENDED BY MCC SUPPLIER.
3. THE LIGHTING PANEL SHALL BE DESIGNED AND FURNISHED BY ELECTRICAL CONTRACTOR PER THEIR LIGHTING DESIGN.
4. 24V DC POWER CIRCUIT, 24V DC DIGITAL CIRCUITS AND 24V DC ANALOG CIRCUITS MAY BE COMBINED INTO SAME CONDUIT AS LONG AS THE CONDUIT FILL MEETS THE NEC REQUIREMENTS.
5. SEE VENDOR DRAWINGS FOR ADDITIONAL FIELD WIRING.
6. CABLE SIZES | NO. OF CABLES HAVE BEEN ADJUSTED TO ACCOMMODATE VOLTAGE DROP.
7. TAP OF TRANSFORMER IS ADJUSTED TO ACCOMMODATE VOLTAGE DROP.

NO.	BY	CHK	APP
0	JSL	MAS	MJK

REVISIONS AND RECORD OF USE

DATE	
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVEER No. E 17748 ELECTRICAL STATE OF CALIFORNIA

BLACK & VEATCH

JOINT VENTURE

FILANC

BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

RO/UV BUILDING
ELECTRICAL
50-ELEC-MCC-0001 ONE-LINE DIAGRAM

DESIGNED: JSL
DETAILED: SBC
CHECKED: MAS
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO. 400530

50-E-701

SHEET 375 OF 412

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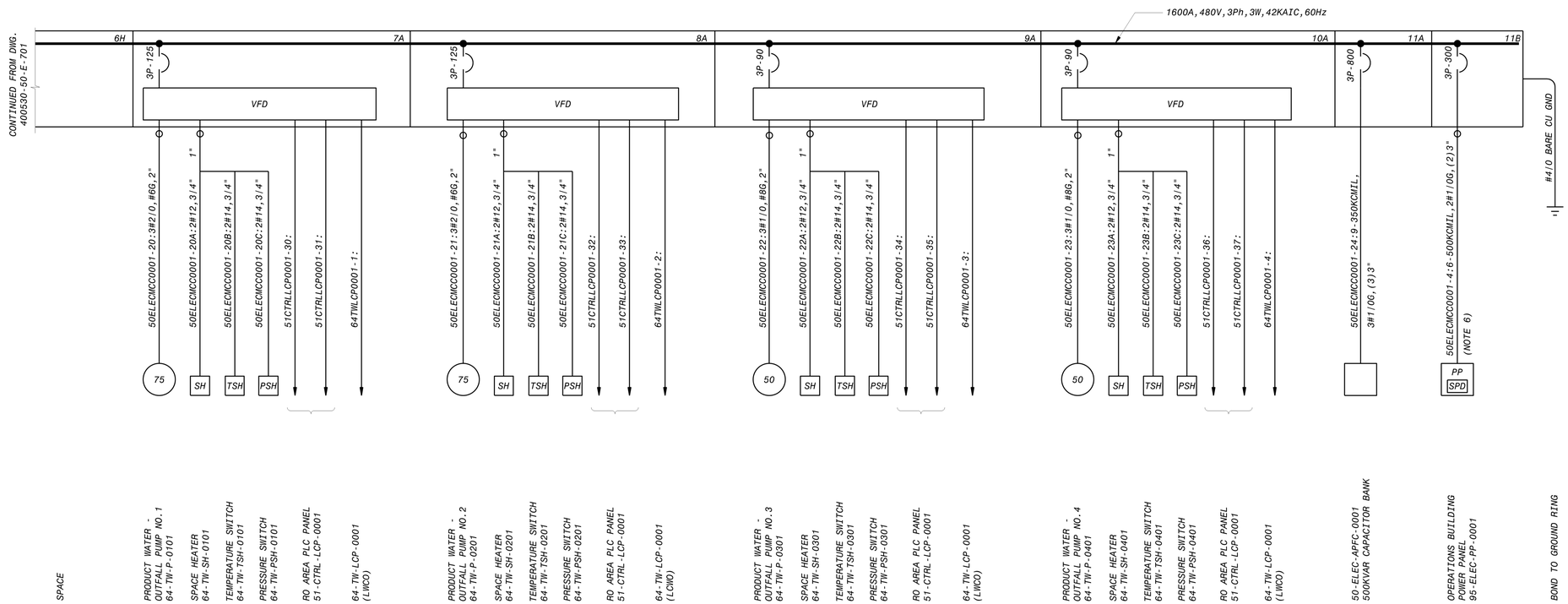
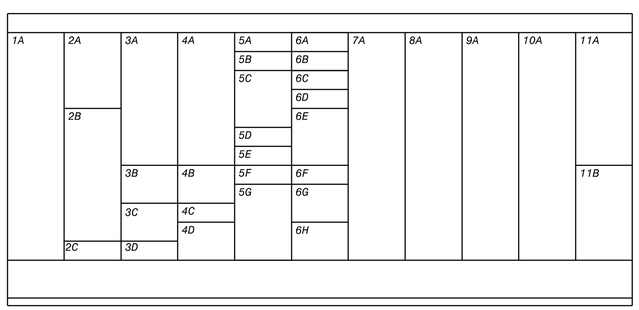


50-ELEC-MCC-0001
ONE-LINE DIAGRAM
RO/UV BUILDING



50-ELEC-MCC-0001
FRONT ELEVATION
RO/UV BUILDING

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. FUSED SWITCH SIZE SHALL BE RECOMMENDED BY MCC SUPPLIER.
3. THE LIGHTING PANEL SHALL BE DESIGNED AND FURNISHED BY ELECTRICAL CONTRACTOR PER THEIR LIGHTING DESIGN.
4. 24V DC POWER CIRCUIT, 24V DC DIGITAL CIRCUITS AND 24V DC ANALOG CIRCUITS MAY BE COMBINED INTO SAME CONDUIT AS LONG AS THE CONDUIT FILL MEETS THE NEC REQUIREMENTS.
5. SEE VENDOR DRAWINGS FOR ADDITIONAL FIELD WIRING.
6. CABLE SIZES / NO. OF CABLES HAVE BEEN ADJUSTED TO ACCOMMODATE VOLTAGE DROP.
7. TAP OF TRANSFORMER IS ADJUSTED TO ACCOMMODATE VOLTAGE DROP.

NO.	BY	CHK	APP	DATE	REVISIONS AND RECORD OF USE
0	JSL	MAS	MJK	5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVETER No. E 17748 ELECTRICAL STATE OF CALIFORNIA

BLACK & VEATCH JOINT VENTURE
FILANC BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

RO/UV BUILDING
ELECTRICAL
50-ELEC-MCC-0001 ONE-LINE DIAGRAM

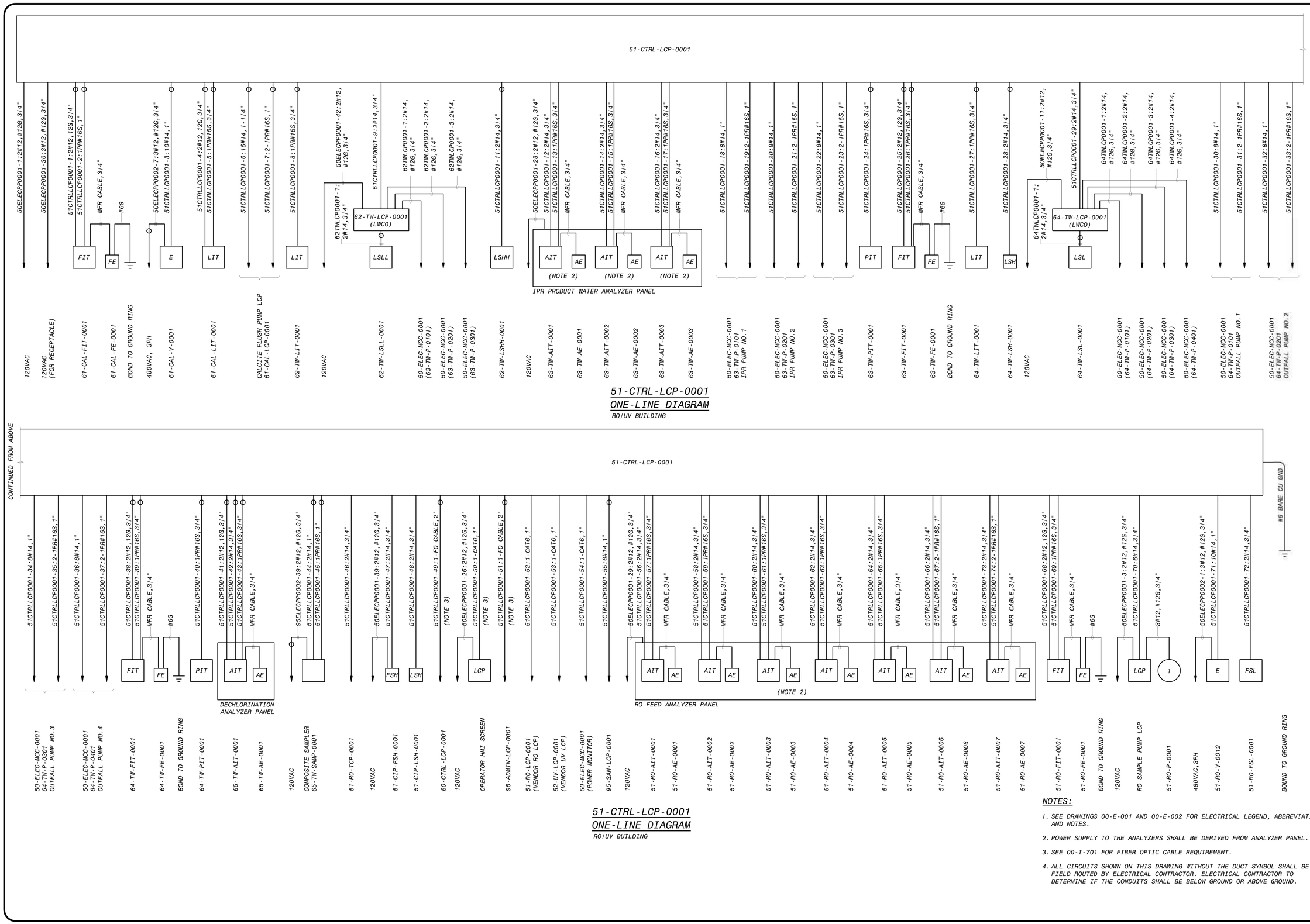
DESIGNED: JSL
DETAILED: SBC
CHECKED: MAS
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO. 400530

50-E-702
SHEET 376 OF 412

FD9000A
0400530
PLOTTED: 5/20/2020 5:25 AM FILE: C:\PWBatchPDF\Process\400530 - Morro Bay WRF\400530-50-E-702.dwg



51-CTRL-LCP-0001
ONE-LINE DIAGRAM
RO/UV BUILDING

51-CTRL-LCP-0001
ONE-LINE DIAGRAM
RO/UV BUILDING

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. POWER SUPPLY TO THE ANALYZERS SHALL BE DERIVED FROM ANALYZER PANEL.
3. SEE 00-I-701 FOR FIBER OPTIC CABLE REQUIREMENT.
4. ALL CIRCUITS SHOWN ON THIS DRAWING WITHOUT THE DUCT SYMBOL SHALL BE FIELD ROUTED BY ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO DETERMINE IF THE CONDUITS SHALL BE BELOW GROUND OR ABOVE GROUND.

NO.	BY	CHK	APP
0	JSL	MAS	MJK

REVISIONS AND RECORD OF USE

DATE	
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVEIER No. E 17748 ELECTRICAL STATE OF CALIFORNIA

BLACK & VEATCH
JOINT VENTURE
FILANC
BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

RO/UV BUILDING
ELECTRICAL
51-CTR-LCP-0001 ONE-LINE DIAGRAM

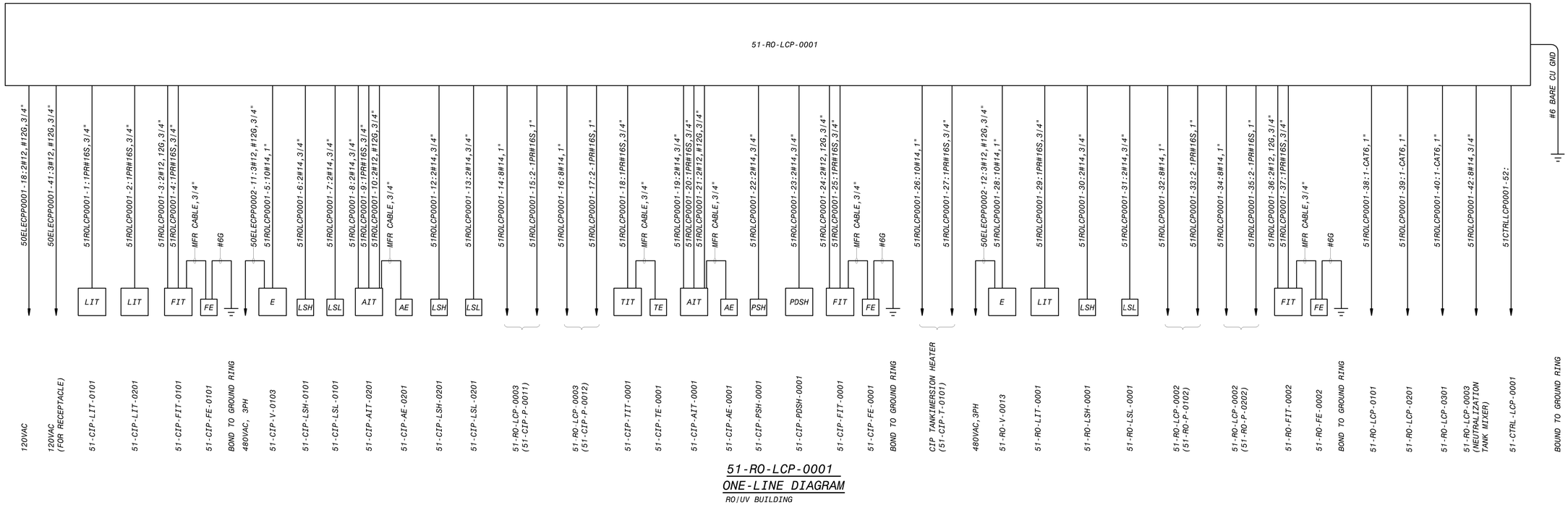
DESIGNED: JSL
DETAILED: SBC
CHECKED: MAS
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

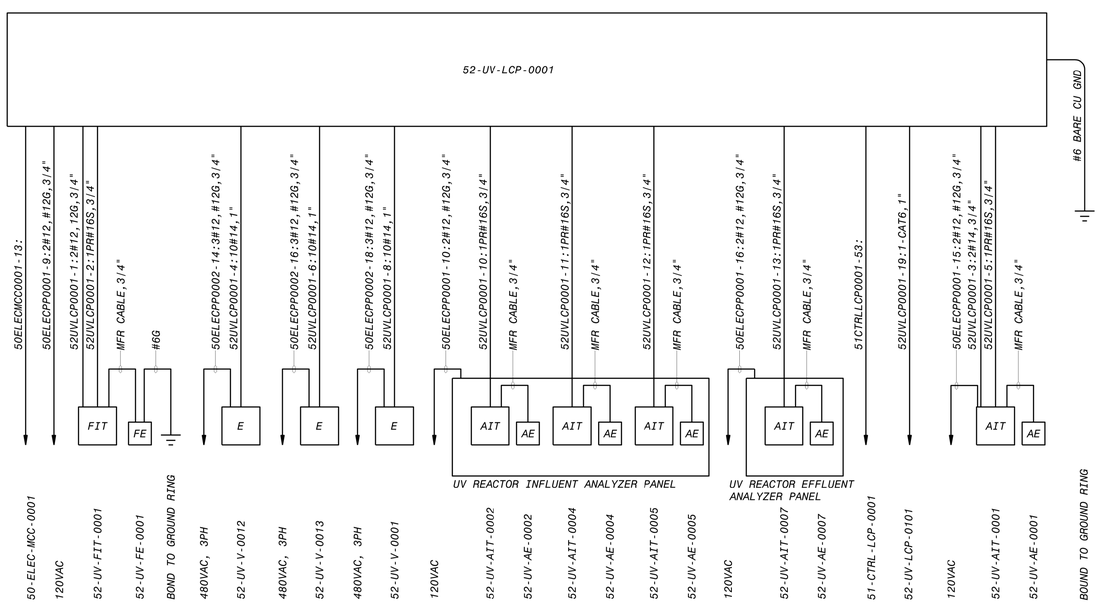
PROJECT NO. 400530

50-E-711
SHEET 377 OF 412

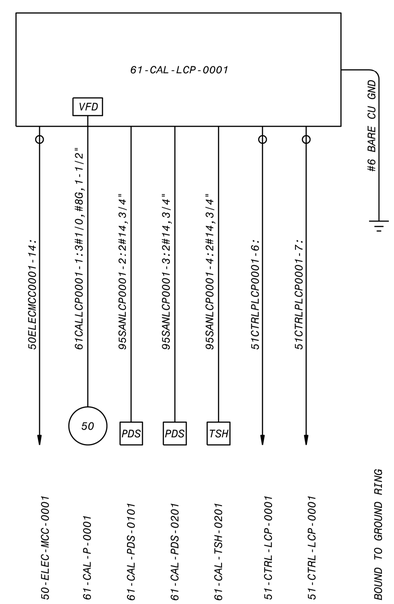
F09000A
D400530
PLOTTED: 5/20/2020 5:25 AM FILE: C:\PWBatchPDF\Process\400530 - Morro Bay WRF\400530-50-E-711.dwg



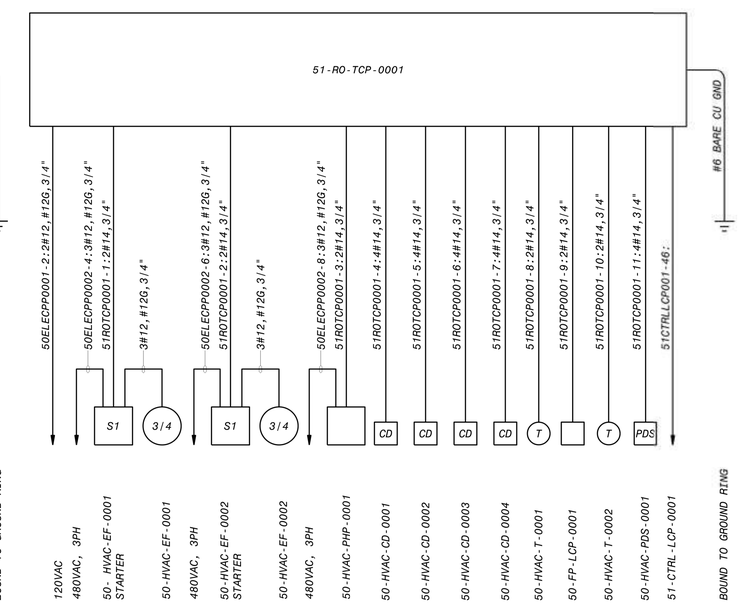
51-RO-LCP-0001
ONE-LINE DIAGRAM
RO/UV BUILDING



52-UV-LCP-0001
ONE-LINE DIAGRAM
RO/UV BUILDING



61-CAL-LCP-0001
ONE-LINE DIAGRAM
RO/UV BUILDING



51-RO-TCP-0001
ONE-LINE DIAGRAM
RO/UV BUILDING

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. ALL CIRCUITS SHOWN ON THIS DRAWING WITHOUT THE DUCT SYMBOL SHALL BE FIELD ROUTED BY ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO DETERMINE IF THE CONDUITS SHALL BE BELOW GROUND OR ABOVE GROUND.
3. 24V DC POWER CIRCUIT, 24V DC DIGITAL CIRCUITS AND 24V DC ANALOG CIRCUITS MAY BE COMBINED INTO THE SAME CONDUIT AS LONG AS THE CONDUIT FILL MEETS THE NEC REQUIREMENTS.

NO.	BY	CHK	APP
0	JSL	MAS	MJK

DATE	REVISIONS AND RECORD OF USE
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVEITER No. E 17748 ELECTRICAL STATE OF CALIFORNIA

BLACK & VEATCH
JOINT VENTURE
FILANC
BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

RO/UV BUILDING
ELECTRICAL - 51-RO-LCP-0001 AND MISCELLANEOUS ONE-LINE DIAGRAMS

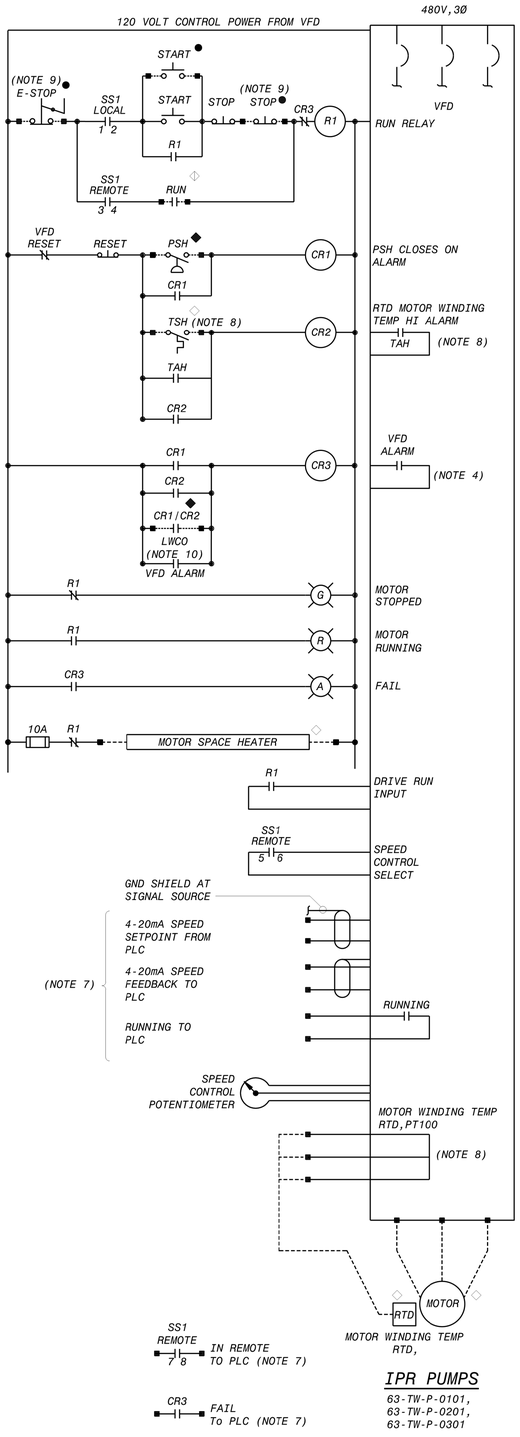
DESIGNED: JSL
DETAILED: SBC
CHECKED: MAS
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO. 400530

50-E-712
SHEET 378 OF 412

F09000A
D400530
PLOTTED: 5/20/2020 5:26 AM FILE: C:\PWBatchPDF\Process\400530 - Morro Bay WRF\400530-50-E-712.dwg



IPR PUMPS

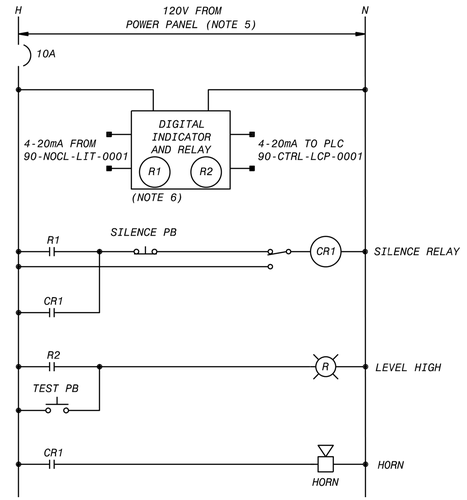
63-TW-P-0101,
63-TW-P-0201,
63-TW-P-0301

OUTFALL PUMPS

64-TW-P-0101,
64-TW-P-0201,
64-TW-P-0301,
64-TW-P-0401

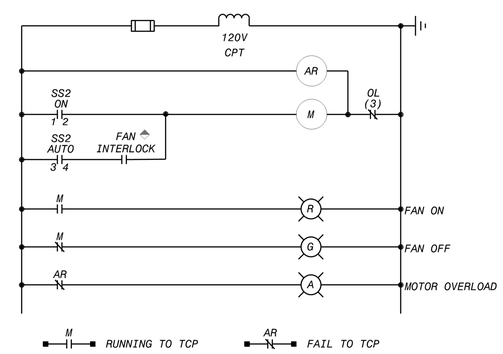
BACKWASH FLUSH PUMP

61-CAL-P-0001
(61-CAL-LCP-0001)



SODIUM HYPOCHLORITE UNLOADING PANEL

(SIMILAR FOR SODIUM HYDROXIDE UNLOADING PANEL)

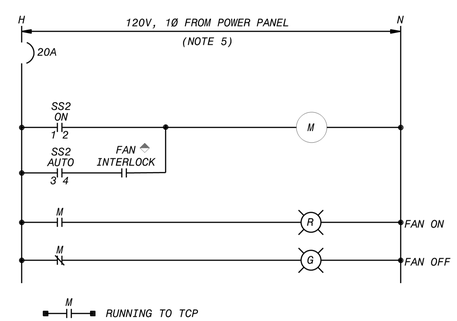


EXHAUST FANS

50-HVAC-EF-0001,
50-HVAC-EF-0002,
96-HVAC-EF-0003,
96-HVAC-EF-0004

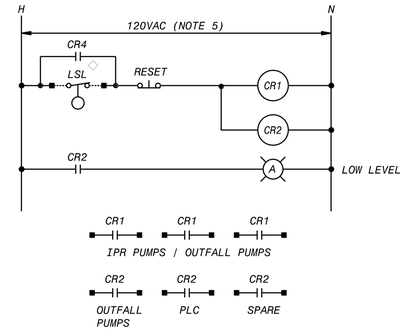
DUCT FAN

95-HVAC-DF-0001,
96-HVAC-DF-0001



EXHAUST FANS

96-HVAC-DF-0002,
96-HVAC-DF-0003



LWCO

62-TW-LCP-0001
64-TW-LCP-0001

SS1 SWITCH DEVELOPMENT

CONTACTS	POSITION		
	LOCAL	OFF	REMOTE
1-2	X		
3-4			X
5-6			X
7-8			X

SS2 SWITCH DEVELOPMENT

CONTACTS	POSITION		
	ON	OFF	AUTO
1-2	X		
3-4			X

LEGEND:

- AT VALVE
- AT DRIVEN EQUIPMENT
- AT PLC/RIO PANEL
- REMOTE FROM STARTER AND DRIVEN EQUIPMENT
- AT CONTROL STATION
- AT DRIVE
- AT TCP

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. DEVICES SHOWN IN SCHEMATICS WITHOUT A SYMBOL ARE LOCATED AT THE MOTOR STARTER OR CONTROLLER.
3. PROVIDE ONE N.O AND N.C SPARE INTERLOCKS WITH EACH MOTOR STARTER.
4. ALL ALARM INPUTS SHALL STOP THE PUMP IN ALL CONTROL MODES.
5. REFER TO PANEL SCHEDULES FOR CIRCUIT NUMBER.
6. R1 SHALL BE A PROGRAMMABLE HIGH LEVEL ALARM RELAY WITH MOMENTARY CONTACT AND R2 SHALL BE A PROGRAMMABLE HIGH LEVEL ALARM RELAY WITH MAINTAINED CONTACT.
7. REFER TO P&ID'S FOR PLC TAGS.
8. IF THE MOTOR COMES WITH WINDING RTD THEN USE THE VFD HIGH TEMPERATURE CONTACT FOR THE CR2 RELAY IN LIEU OF THE TSH. VFD SHALL BE PROVIDED WITH MOTOR WINDING RTD INPUT OR THERMOSTAT INTERLOCKS AS PER THE MOTOR SHOP DRAWINGS SUBMITTAL.
9. THE SCHEMATIC SHOWN IS TYPICAL. REFER TO P&IDs OR OTHER ELECTRICAL DRAWINGS FOR E-STOP/START/STOP REQUIREMENTS. IF NO ESTOP AND LOCAL STOP ARE PROVIDED, PROVIDE A JUMPER FOR THE INPUT.
10. TRIP FROM LWCO IS NOT APPLICABLE FOR BACKWASH FLUSH PUMP.

NO.	BY	CHK	APP
0	JSL	MAS	MJK

REVISIONS AND RECORD OF USE

DATE	
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
MARK J. KLEVETER
No. E 17748
ELECTRICAL
STATE OF CALIFORNIA

BLACK & VEATCH
JOINT VENTURE
BLACK & VEATCH
FILANC

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

RO/UV BUILDING
ELECTRICAL
SCHEMATIC

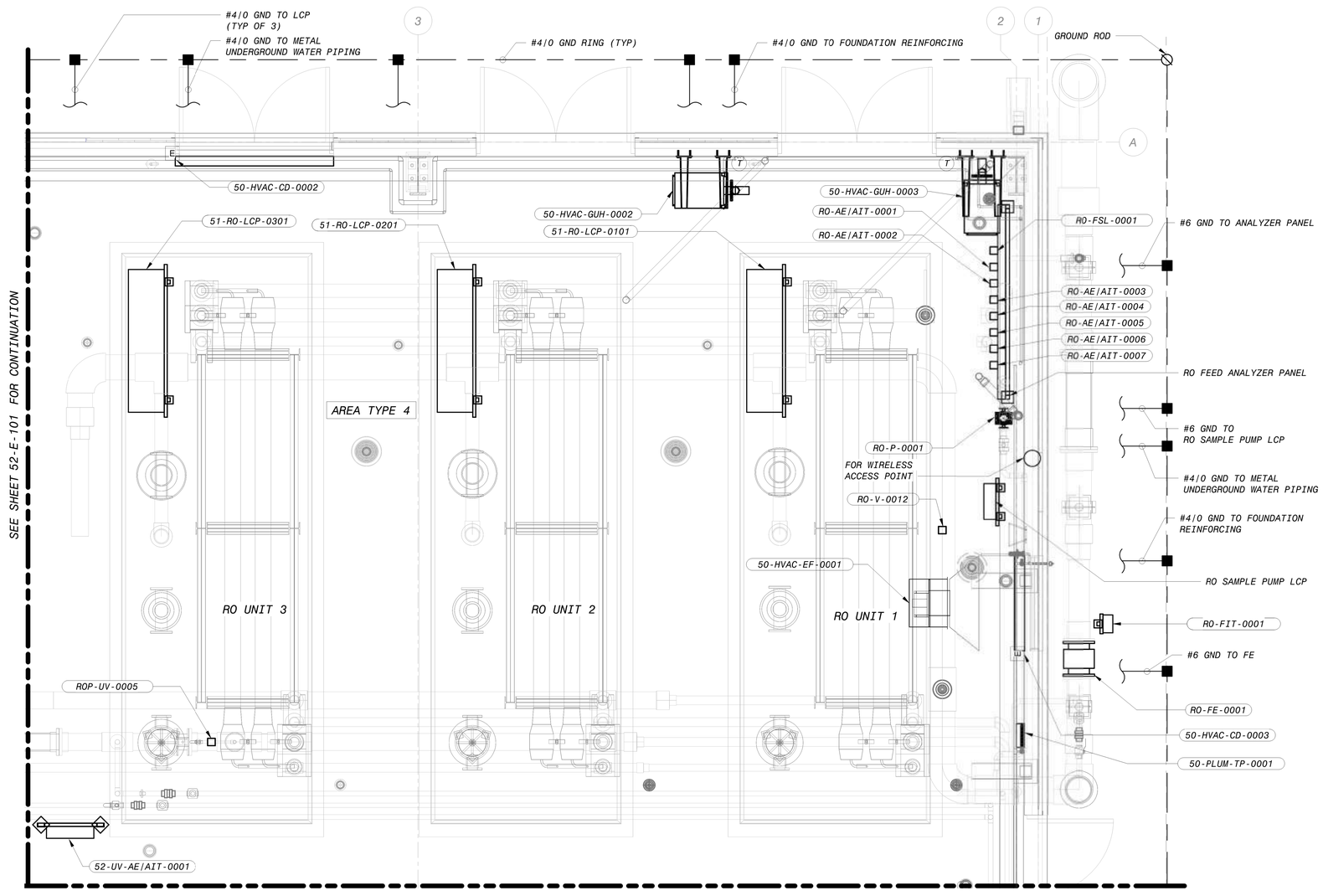
DESIGNED: JSL
DETAILED: SBC
CHECKED: MAS
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
400530

50-E-721
SHEET
379 OF 412

FD9000A
D400530
PLOTTED: 5/20/2020 5:26 AM FILE: C:\PWBatchPDF\Process\400530 - Morro Bay WRF\400530-50-E-721.dwg



RO/UV BUILDING - RO SYSTEM POWER AND GROUNDING PLAN

3/8" = 1'-0"

NOTES:

1. SEE DRAWING 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND NOTES.
2. SEE DRAWING 10-E-100 FOR OVERALL ELECTRICAL SITE PLAN.
3. ALL THE TAGS ARE PRECEDED BY AREA CODE 51 UNLESS OTHERWISE NOTED.

12" 0' 1' 2' 3' 4' 5' 6' 7'

3/8" = 1'-0"

NO.	BY	CHK	APP
0	JSL	MAS	MJK

DATE	REVISIONS AND RECORD OF USE
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVEJER No. E 17748 ELECTRICAL STATE OF CALIFORNIA

BLACK & VEATCH

JOINT VENTURE

FILANC

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

RO/UV BUILDING - RO SYSTEM
ELECTRICAL
POWER AND GROUNDING PLAN

DESIGNED: JSL
DETAILED: SBC
CHECKED: MAS
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1

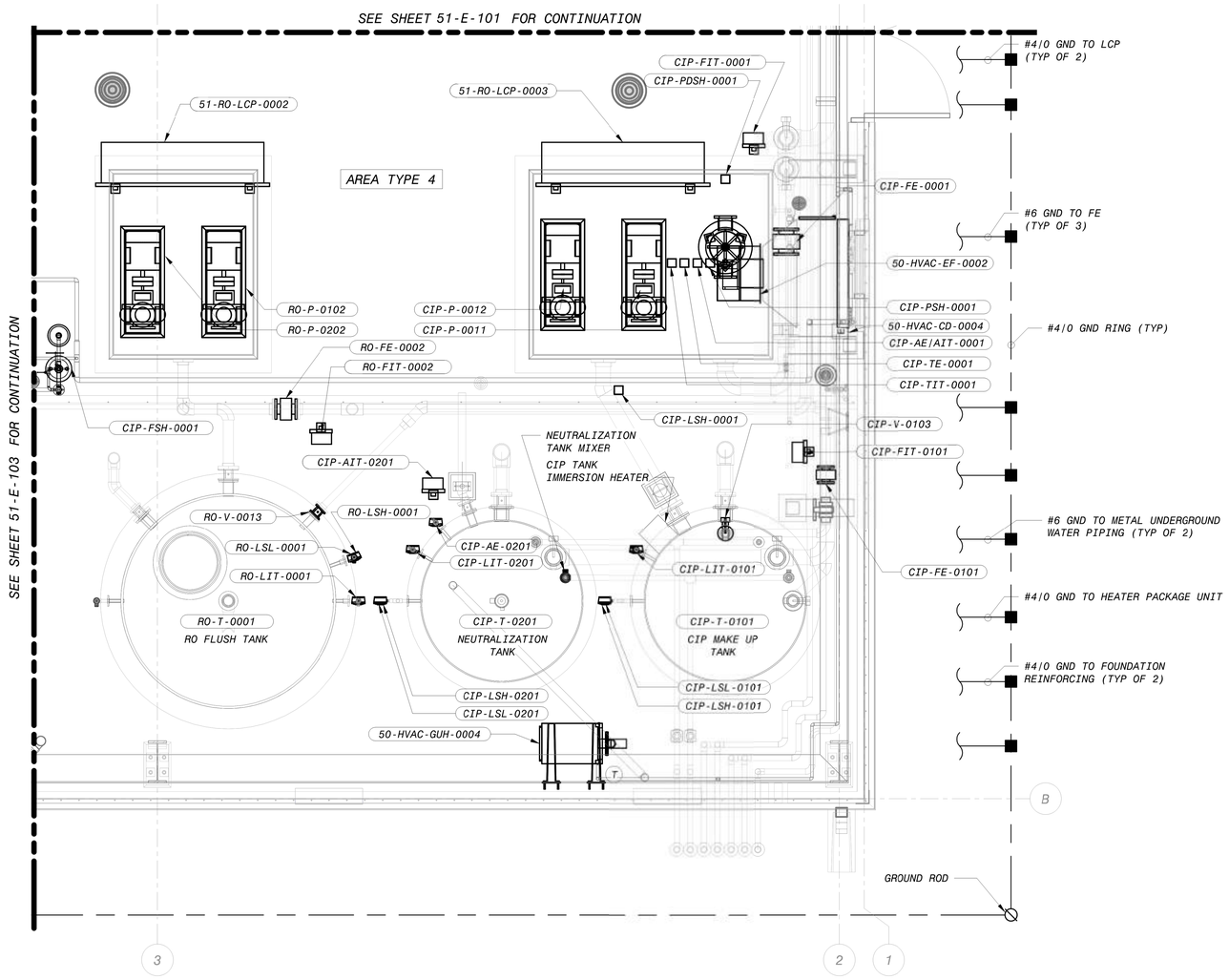
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
400530

51-E-101

SHEET
380 OF 412

PLOTTED: 20-05-2020 17:52:36
D400530



RO/UV BUILDING - RO CIP & FLUSH SYSTEMS POWER & GROUNDING PLAN

3/8" = 1'-0"

NOTES:

1. SEE DRAWING 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND NOTES.
2. SEE DRAWING 10-E-100 FOR OVERALL ELECTRICAL SITE PLAN.
3. PROVIDE AT LEAST TWO #4/0 GROUND TO EACH OF THE METAL TANKS.
4. ALL THE TAGS ARE PRECEDED BY AREA CODE 51 UNLESS OTHERWISE NOTED.

12" 0' 1' 2' 3' 4' 5' 6' 7'

3/8" = 1'-0"

NO.	BY	CHK	APP
0	JSL	MAS	MJK

DATE	REVISIONS AND RECORD OF USE
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVEJER No. E 17749 CIVIL STATE OF CALIFORNIA

BLACK & VEATCH

JOINT VENTURE

FILANC

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

RO/UV BUILDING - RO CIP & FLUSH SYSTEMS
ELECTRICAL
POWER AND GROUNDING PLAN

DESIGNED: JSL
DETAILED: SBC
CHECKED: MAS
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1

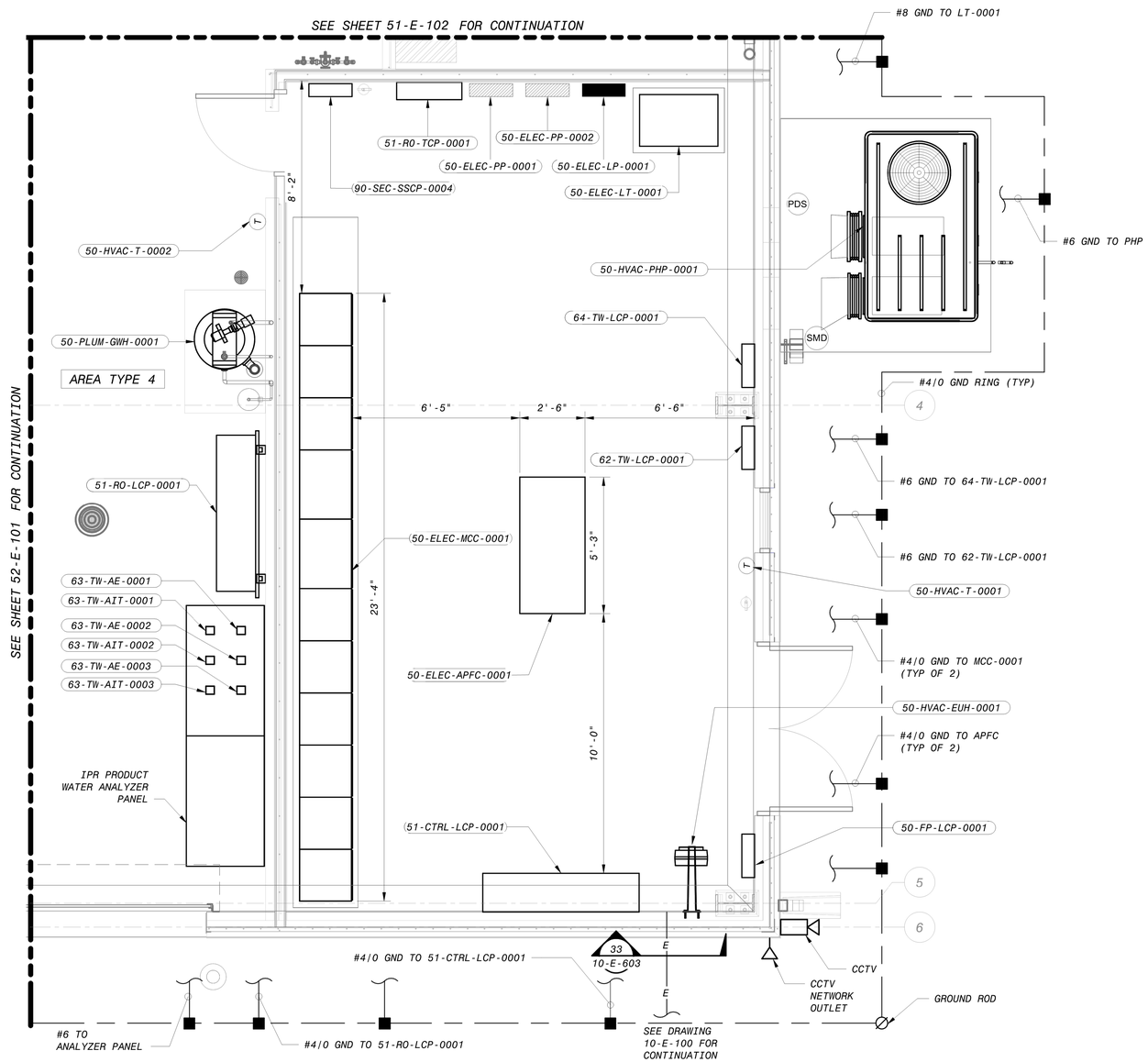
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
400530

51-E-102

SHEET
381 OF 412

PLOTTED: 20-05-2020 17:52:39
D400530



RO ELECTRICAL ROOM POWER AND GROUNDING PLAN

3/8" = 1'-0"

NOTES:

1. SEE DRAWING 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND NOTES.
2. SEE DRAWING 10-E-100 FOR OVERALL ELECTRICAL SITE PLAN.
3. SEE DRAWING 10-E-603 FOR DUCT BANK SECTION.

12" 0' 1' 2' 3' 4' 5' 6' 7'

3/8" = 1'-0"

NO.	BY	CHK	APP
0	JSL	MAS	MJK

DATE	REVISIONS AND RECORD OF USE
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVEJER No. E 17749 ELECTRICAL STATE OF CALIFORNIA

BLACK & VEATCH

JOINT VENTURE

FILANC

BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

RO/UV BUILDING - ELECTRICAL ROOM
ELECTRICAL
POWER AND GROUNDING PLAN

DESIGNED: JSL
DETAILED: SBC
CHECKED: MAS
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1

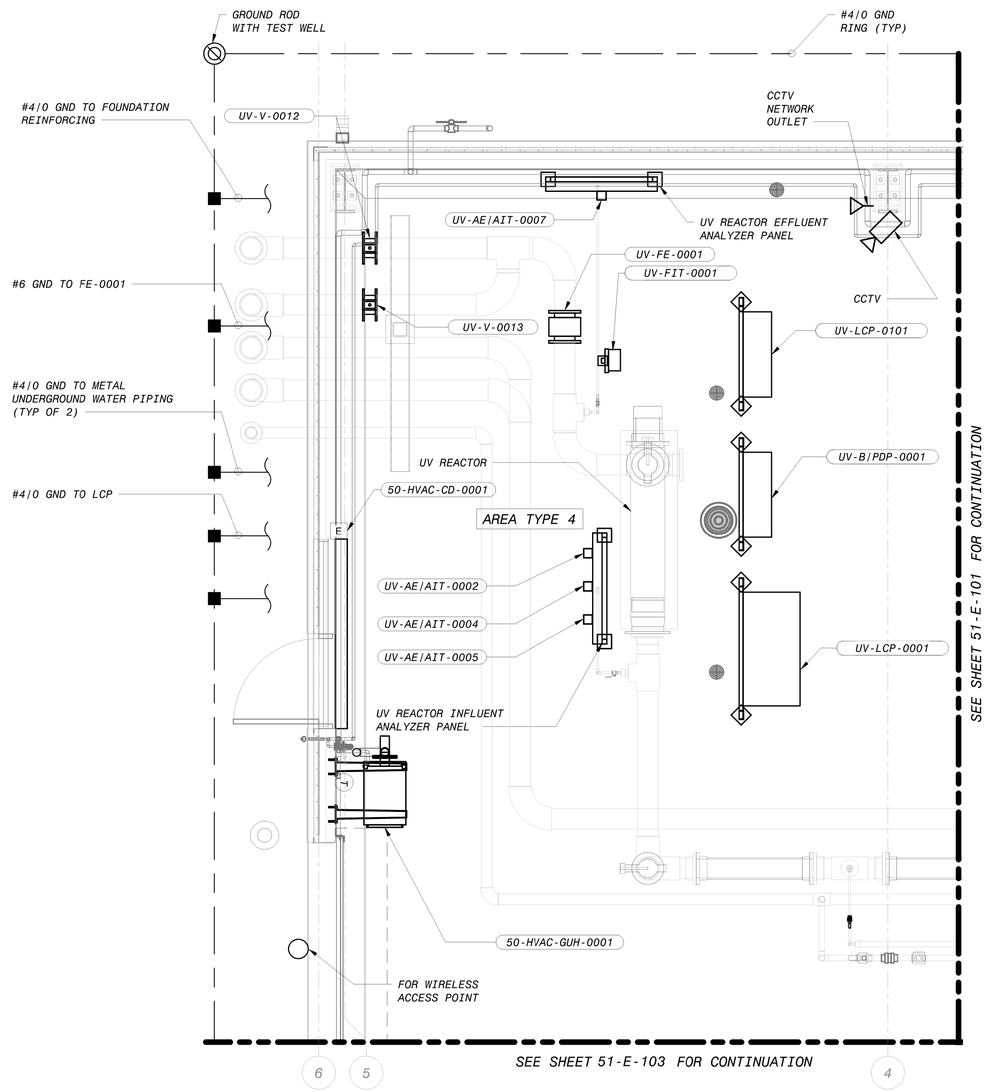
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
400530

51-E-103

SHEET
382 OF 412

PLOTTED: 20-05-2020 17:52:43
D400530



RO/UV BUILDING - UV SYSTEM - REACTOR SYSTEM PLAN

3/8" = 1'-0"

NOTES:

1. SEE DRAWING 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND NOTES.
2. SEE DRAWING 10-E-100 FOR OVERALL ELECTRICAL SITE PLAN.
3. ALL THE TAGS ARE PRECEDED BY AREA CODE 52 UNLESS OTHERWISE NOTED.

12" 0' 1' 2' 3' 4' 5' 6' 7'

3/8" = 1'-0"

NO.	BY	CHK	APP
0	JSL	MAS	MJK

DATE	REVISIONS AND RECORD OF USE
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVEJER No. E 17748 CIVIL STATE OF CALIFORNIA

BLACK & VEATCH

JOINT VENTURE

FILANC

BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

RO/UV BUILDING - UV SYSTEM
ELECTRICAL
POWER AND GROUNDING PLAN

DESIGNED: JSL
DETAILED: SBC
CHECKED: MAS
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

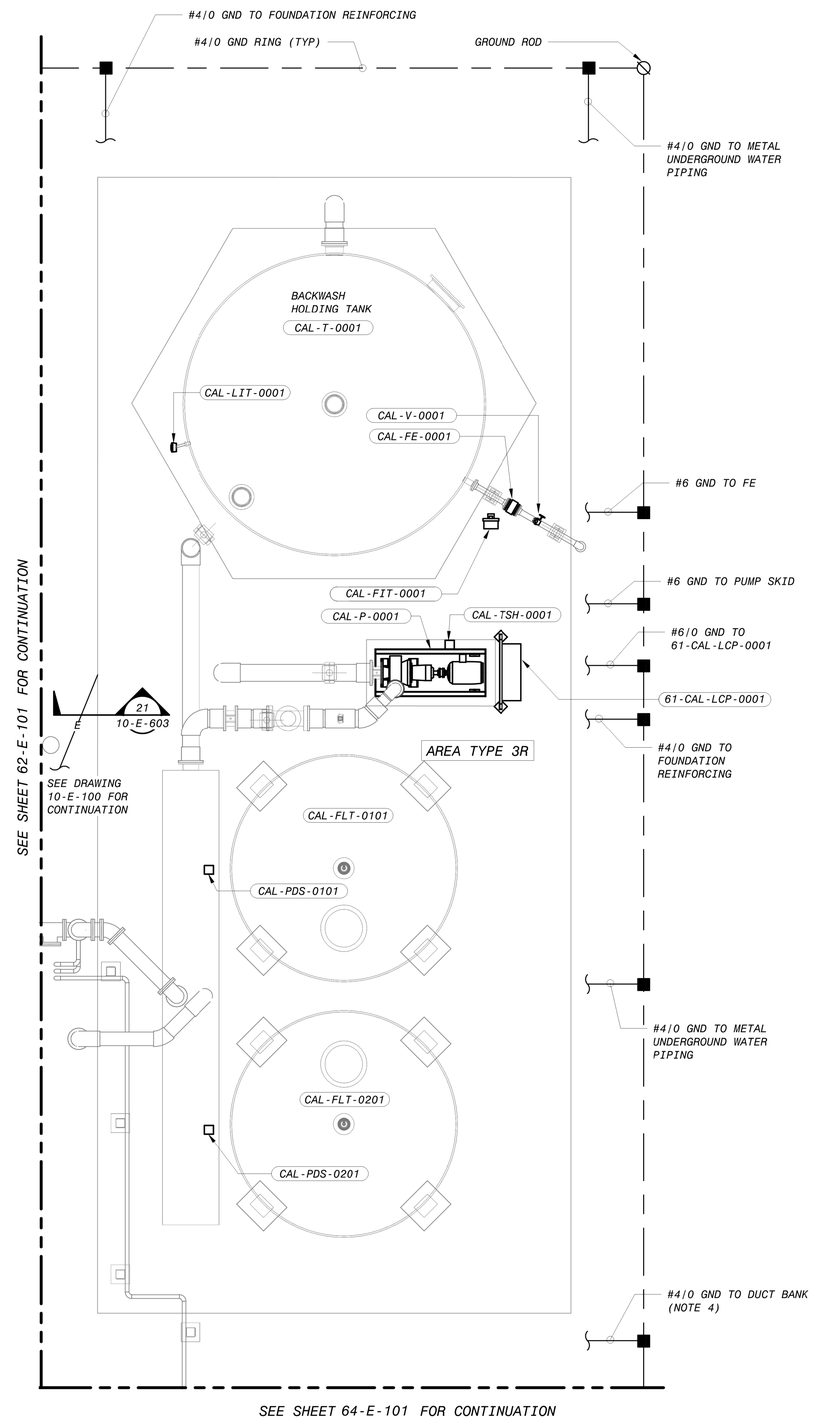
PROJECT NO. 400530

52-E-101

SHEET 383 OF 412

PLOTTED: 20-05-2020 20:50:54

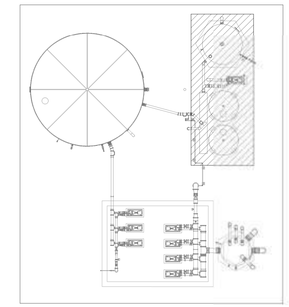
D400530



PRODUCT WATER AREA - CALCITE CONTACTOR POWER AND GROUNDING PLAN

1/4" = 1'-0"

KEY PLAN



NOTES:

1. SEE DRAWING 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND NOTES.
2. SEE DRAWING 10-E-100 FOR OVERALL ELECTRICAL SITE PLAN.
3. PROVIDE AT LEAST TWO #4/0 GROUND TO THE METAL TANK.
4. FOR CABLE DUCT BANK ENTRY REFER TO SITE OVERALL POWER PLAN (10-E-100).
5. ALL THE TAGS ARE PRECEDED BY AREA CODE 61 UNLESS OTHERWISE NOTED.
6. SEE DRAWING 10-E-603 FOR DUCT BANK SECTION.

4' 2' 0' 4' 8'

1/4" = 1'-0"

NO.	BY	CHK	APP
0	JSL	MAS	MJK

DATE	REVISIONS AND RECORD OF USE
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVEIER No. E 17749 ELECTRICAL STATE OF CALIFORNIA

BLACK & VEATCH

JOINT VENTURE

FILANC

BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WATER
RECLAMATION FACILITY (WRF)

PRODUCT WATER AREA - CALCITE CONTACTOR
ELECTRICAL
POWER AND GROUNDING PLAN

DESIGNED: JSL
DETAILED: SBC
CHECKED: MAS
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1

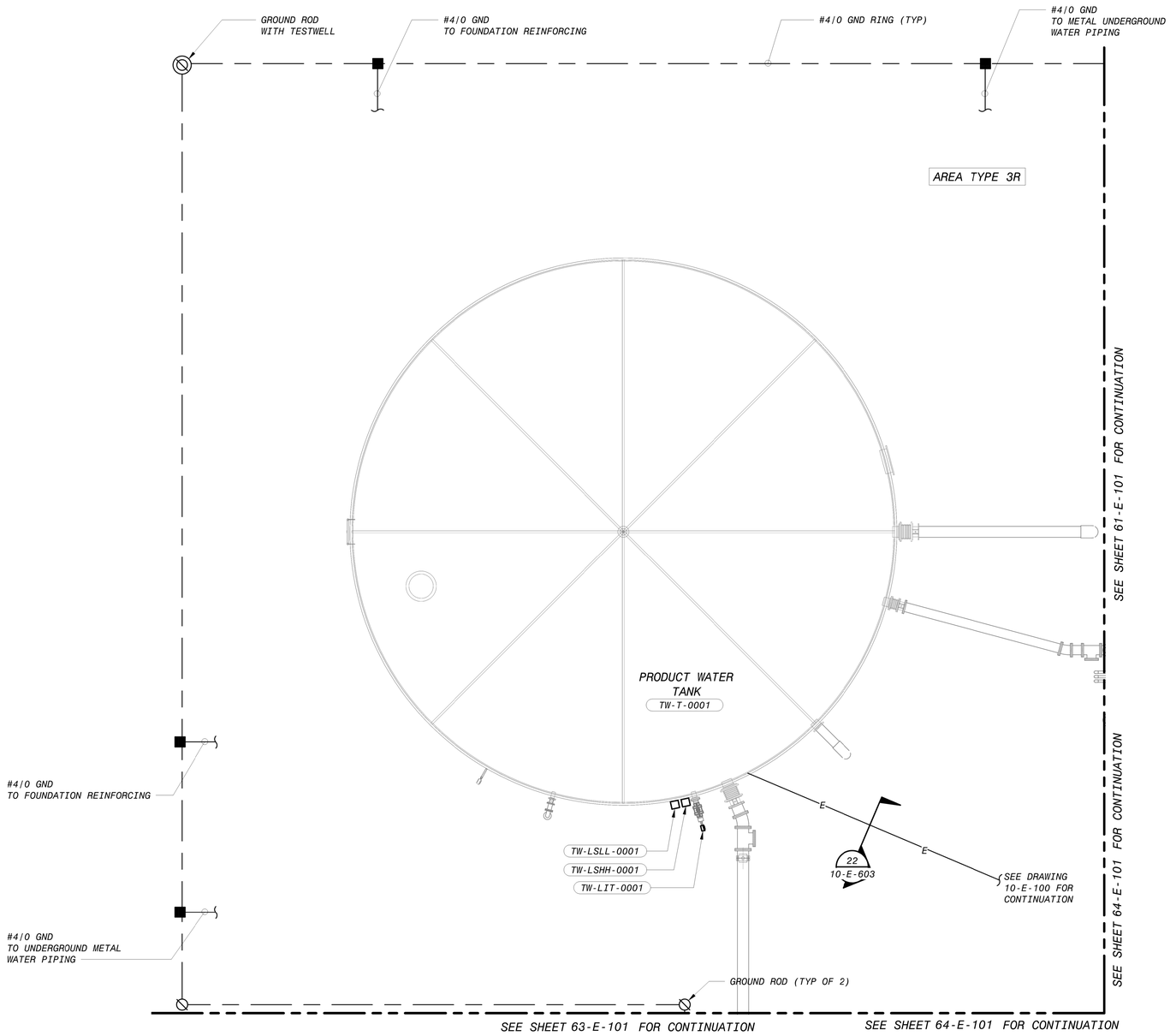
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
400530

61-E-101

SHEET
384 OF 412

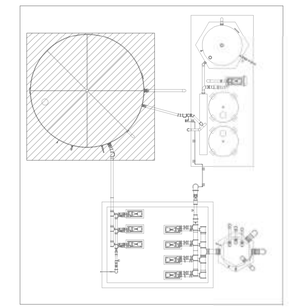
PLOTTED: 20-05-2020 17:58:59
D400530



PRODUCT WATER AREA - PRODUCT WATER STORAGE TANK POWER AND GROUNDING PLAN

3/16" = 1'-0"

KEY PLAN



NOTES:

1. SEE DRAWING 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND NOTES.
2. SEE DRAWING 10-E-100 FOR OVERALL ELECTRICAL SITE PLAN.
3. PROVIDE AT LEAST TWO #4/0 GROUND TO THE METAL TANK.
4. FOR CABLE DUCT BANK ENTRY REFER TO SITE OVERALL POWER PLAN (10-E-100).
5. ALL THE TAGS ARE PRECEDED BY AREA CODE 62 UNLESS OTHERWISE NOTED.

6" 4' 2' 0' 5' 10'

3/16" = 1'-0"

NO.	BY	CHK	APP
0	JSL	MAS	MJK

DATE	REVISIONS AND RECORD OF USE
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
MARK J. KLEVEJER
No. E 17749
ELECTRICAL
STATE OF CALIFORNIA

BLACK & VEATCH

JOINT VENTURE

FILANC

BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WATER
RECLAMATION FACILITY (WRF)

PRODUCT WATER AREA
PRODUCT WATER STORAGE TANK - ELECTRICAL
POWER AND GROUNDING PLAN

DESIGNED: JSL
DETAILED: SBC
CHECKED: MAS
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1

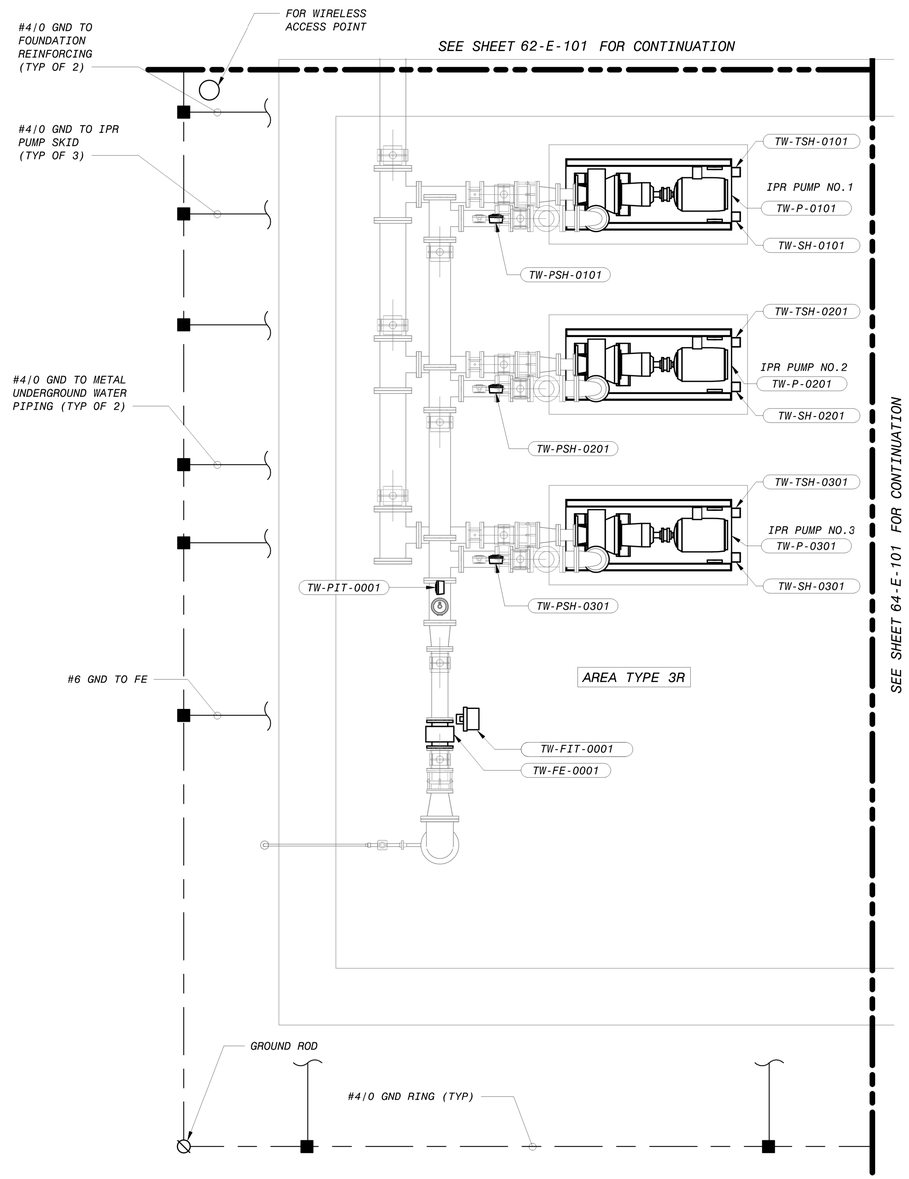
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
400530

62-E-101

SHEET
385 OF 412

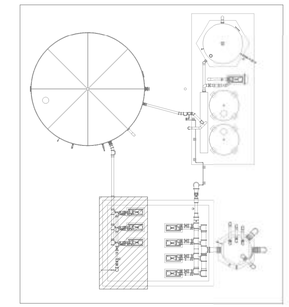
PLOTTED: 20-05-2020 17:59:04
D400530



PRODUCT WATER AREA - IPR PRODUCT WATER PUMP STATION POWER AND GROUNDING PLAN

3/8" = 1'-0"

KEY PLAN



NOTES:

1. SEE DRAWING 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND NOTES.
2. SEE DRAWING 10-E-100 FOR OVERALL ELECTRICAL SITE PLAN.
3. PROVIDE AT LEAST TWO #4/0 GROUND TO THE METAL TANK.
4. ALL THE TAGS ARE PRECEDED BY AREA CODE 63 UNLESS OTHERWISE NOTED.

12" 0' 1' 2' 3' 4' 5 6' 7'

3/8" = 1'-0"

NO.	BY	CHK	APP
0	JSL	MAS	MJK

DATE	REVISIONS AND RECORD OF USE
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVETER No. E 17749 ELECTRICAL STATE OF CALIFORNIA

BLACK & VEATCH

JOINT VENTURE

FILANC

BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WATER
RECLAMATION FACILITY (WRF)

PRODUCT WATER AREA
IPR PRODUCT WATER PUMP STATION - ELECTRICAL
POWER AND GROUNDING PLAN

DESIGNED: JSL
DETAILED: SBC
CHECKED: MAS
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1

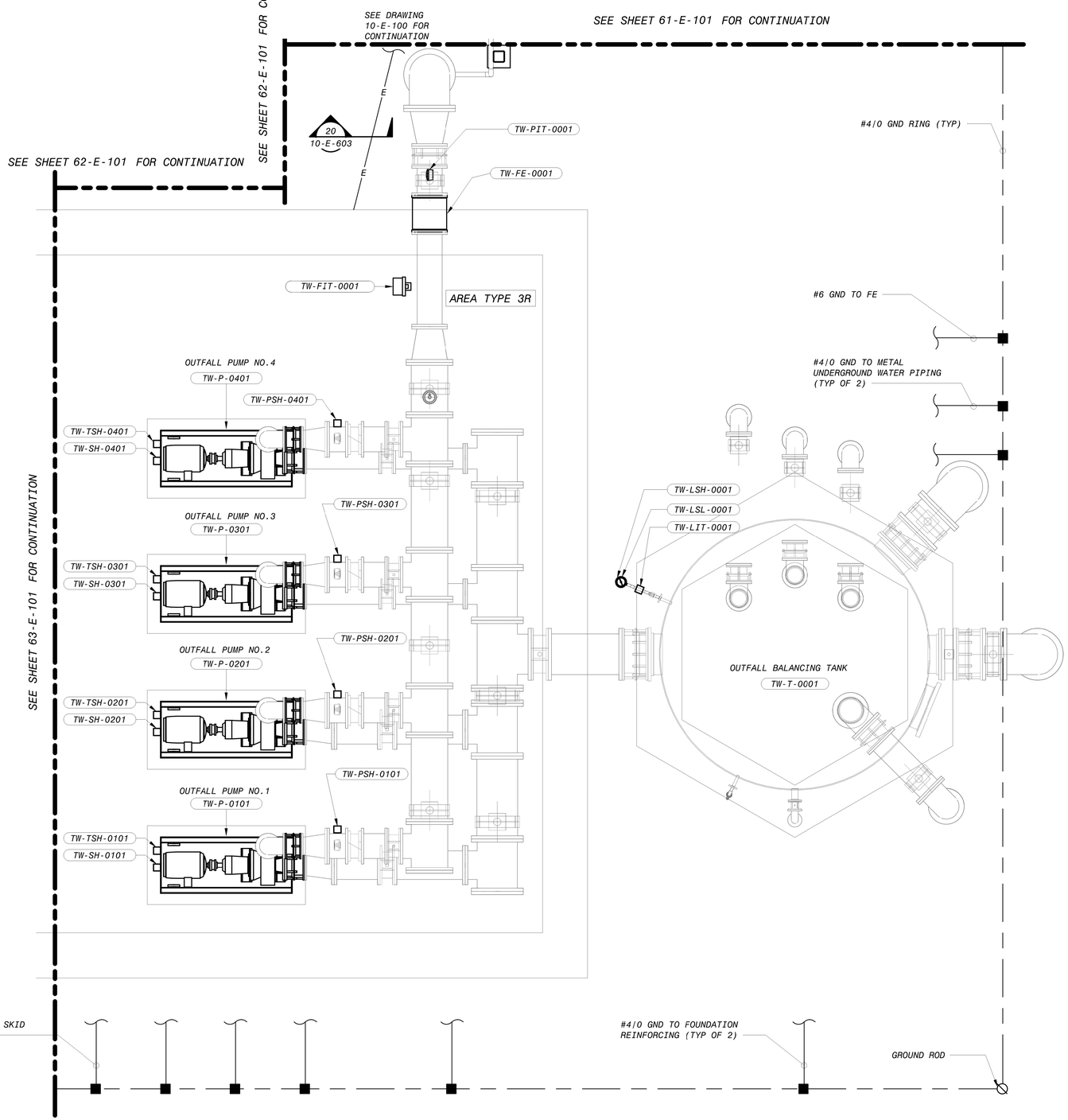
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
400530

63-E-101

SHEET
386 OF 412

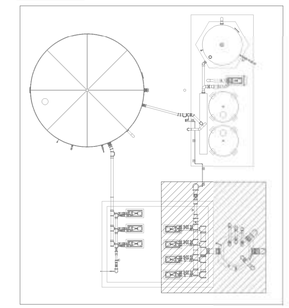
PLOTTED: 20-05-2020 17:59:08
D400530



PRODUCT WATER AREA - OUTFALL PUMP STATION POWER AND GROUNDING PLAN

3/8" = 1'-0"

KEY PLAN



NOTES:

1. SEE DRAWING 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND NOTES.
2. SEE DRAWING 10-E-100 FOR OVERALL ELECTRICAL SITE PLAN.
3. PROVIDE AT LEAST TWO #4/0 GROUND TO THE METAL TANK.
4. FOR CABLE DUCT BANK ENTRY REFER TO SITE OVERALL POWER PLAN (10-E-100).
5. ALL THE TAGS ARE PRECEDED BY AREA CODE 64 UNLESS OTHERWISE NOTED.
6. SEE DRAWING 10-E-603 FOR DUCT BANK SECTION.

12" 0' 1' 2' 3' 4' 5' 6' 7'

3/8" = 1'-0"

DATE	REVISIONS AND RECORD OF USE	NO.	BY	CHK	APP
5/19/2020	ISSUED FOR CONSTRUCTION	0	JSL	MAS	MJK

BLACK & VEATCH

JOINT VENTURE

FILANC

BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WATER
RECLAMATION FACILITY (WRF)

PRODUCT WATER AREA - OUTFALL PUMP STATION
ELECTRICAL
POWER AND GROUNDING PLAN

DESIGNED: JSL
DETAILED: SBC
CHECKED: MAS
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

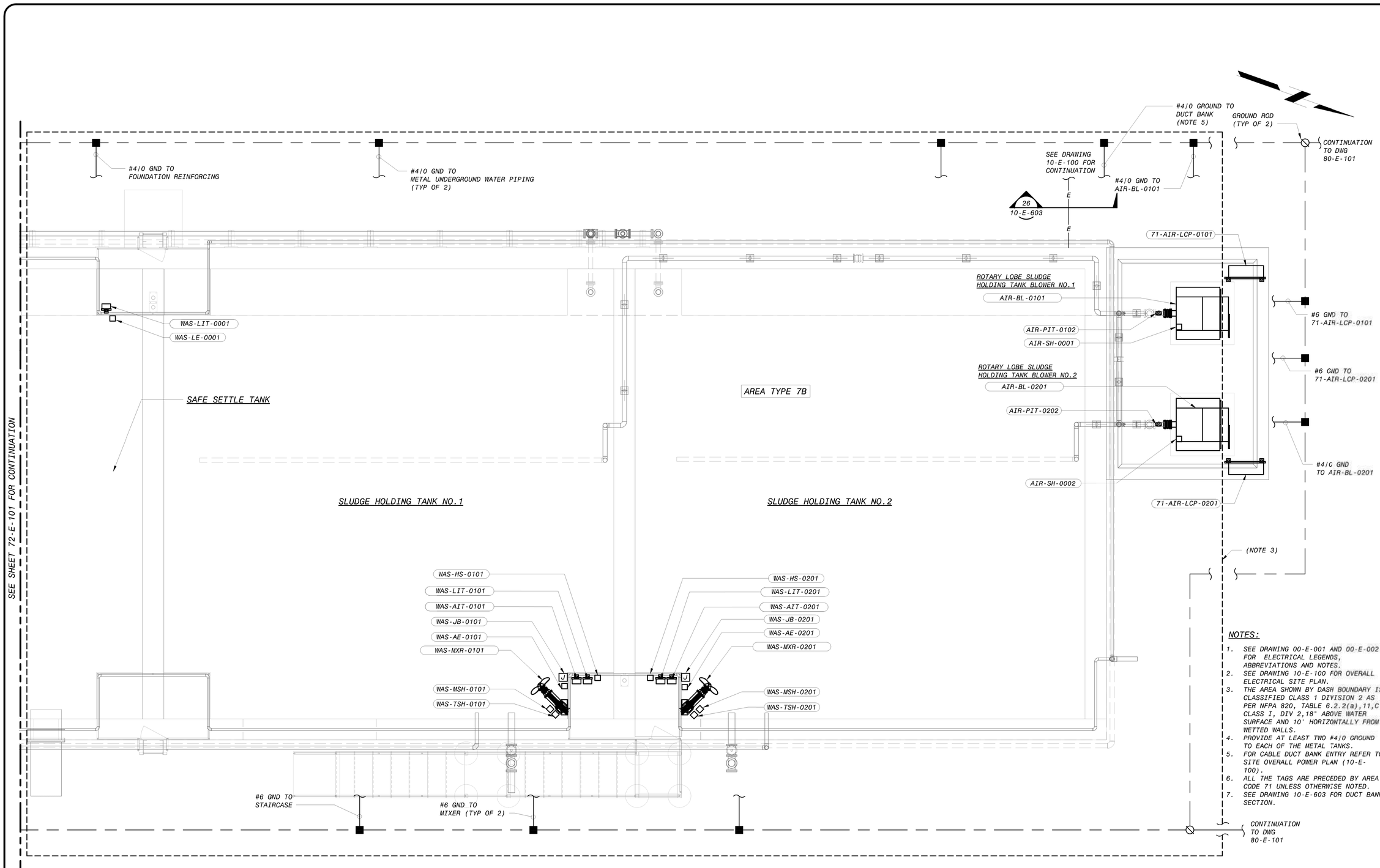
PROJECT NO.
400530

64-E-101

SHEET
387 OF 412

PLOTTED: 20-05-2020 17:59:10

D400530



NOTES:

1. SEE DRAWING 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND NOTES.
2. SEE DRAWING 10-E-100 FOR OVERALL ELECTRICAL SITE PLAN.
3. THE AREA SHOWN BY DASH BOUNDARY IS CLASSIFIED CLASS 1 DIVISION 2 AS PER NFPA 820, TABLE 6.2.2(a),11,C CLASS I, DIV 2,18" ABOVE WATER SURFACE AND 10' HORIZONTALLY FROM WETTED WALLS.
4. PROVIDE AT LEAST TWO #4/0 GROUND TO EACH OF THE METAL TANKS.
5. FOR CABLE DUCT BANK ENTRY REFER TO SITE OVERALL POWER PLAN (10-E-100).
6. ALL THE TAGS ARE PRECEDED BY AREA CODE 71 UNLESS OTHERWISE NOTED.
7. SEE DRAWING 10-E-603 FOR DUCT BANK SECTION.

RESIDUALS AREA - SLUDGE HOLDING TANKS & SAFE SETTLE TANK AREA POWER AND GROUNDING PLAN

1/4" = 1'-0"

4' 2' 0' 4' 8'

1/4" = 1'-0"

NO.	BY	CHK	APP
0	JSL	TJZ	MJK

DATE	REVISIONS AND RECORD OF USE
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVEJER No. E 17749 ELECTRICAL STATE OF CALIFORNIA

BLACK & VEATCH

JOINT VENTURE

FILANC

BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

RESIDUALS AREA - SLUDGE HOLDING TANKS AND SAFE SETTLE TANK AREA
ELECTRICAL - POWER AND GROUNDING PLAN

DESIGNED: JSL
DETAILED: SBC
CHECKED: TJZ
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

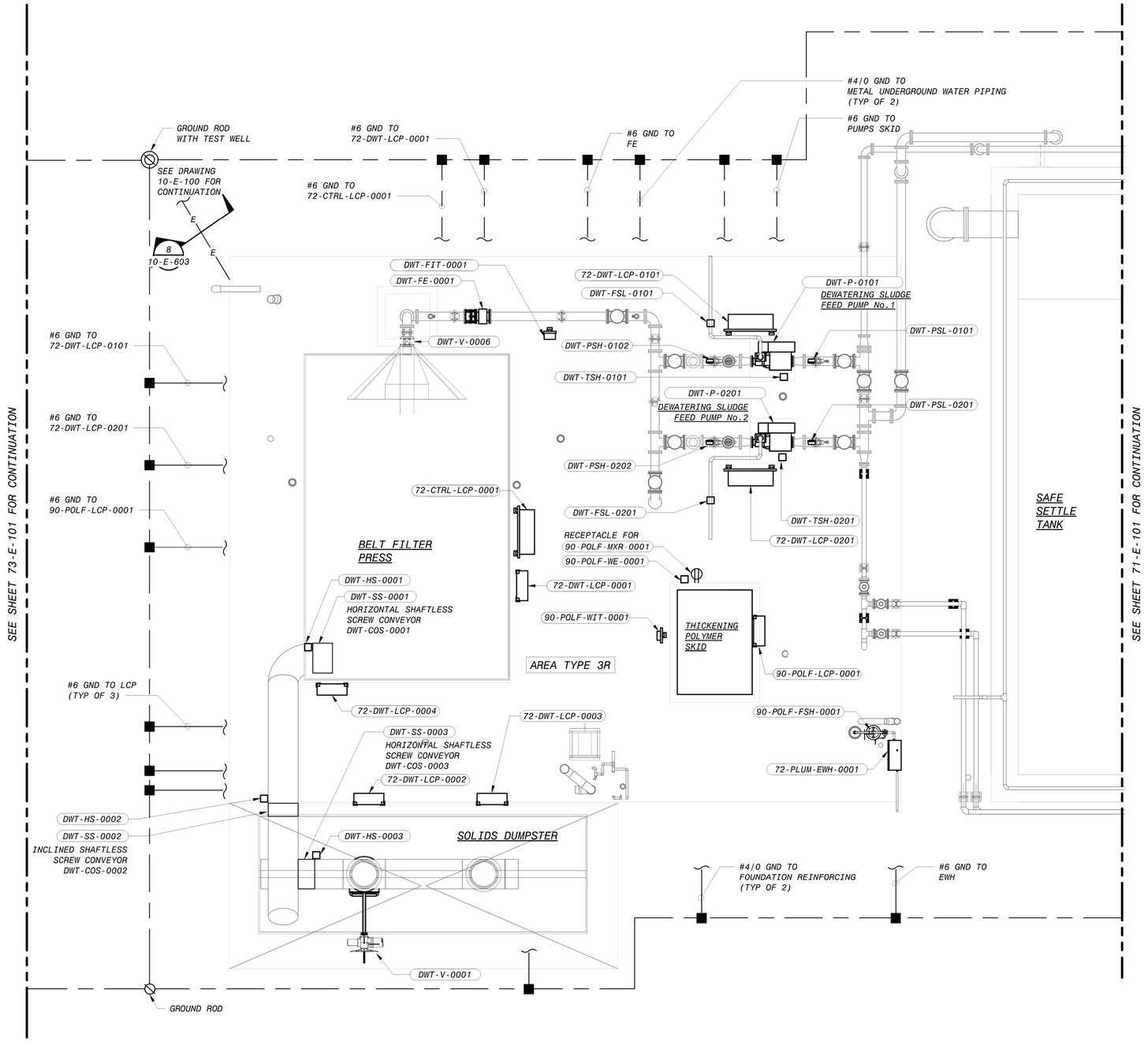
PROJECT NO. 400530

71-E-101

SHEET 388 OF 412

PLOTTED: 20-05-2020 18:01:31

D400530



RESIDUALS AREA - DEWATERING FACILITY POWER AND GROUNDING PLAN

1/4" = 1'-0"

NOTES:

1. SEE DRAWING 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND NOTES.
2. SEE DRAWING 10-E-100 FOR OVERALL ELECTRICAL SITE PLAN.
3. PROVIDE AT LEAST TWO #4/0 GROUND TO EACH OF THE METAL TANKS.
4. FOR CABLE DUCT BANK ENTRY REFER TO SITE OVERALL POWER PLAN (10-E-100).
5. ALL THE TAGS ARE PRECEDED BY AREA CODE 72 UNLESS OTHERWISE NOTED.
6. SEE DRAWING 10-E-603 FOR DUCT BANK SECTION.

4' 2' 0' 4' 8'

1/4" = 1'-0"

NO.	BY	CHK	APP
0	JSL	TJZ	MJK

DATE	REVISIONS AND RECORD OF USE
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVEJER No. E 17749 CIVIL STATE OF CALIFORNIA

BLACK & VEATCH

JOINT VENTURE

FILANC

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

RESIDUALS AREA - DEWATERING FACILITY
ELECTRICAL
POWER AND GROUNDING PLAN

DESIGNED: JSL
DETAILED: SBC
CHECKED: TJZ
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

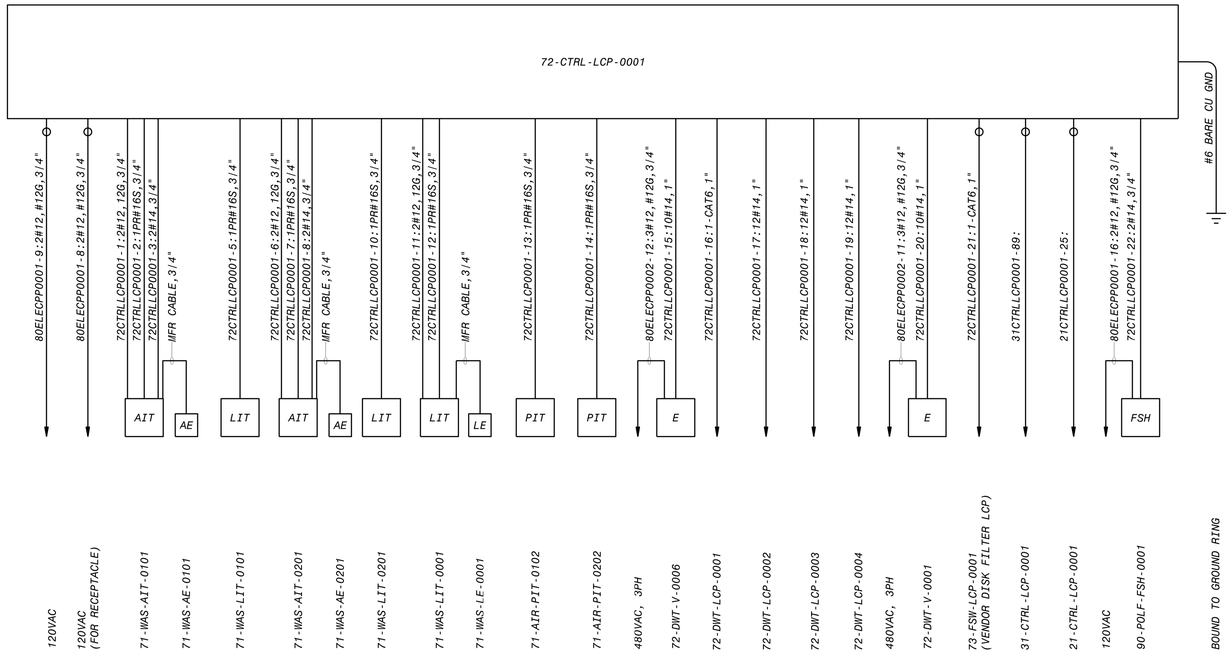
PROJECT NO. 400530

72-E-101

SHEET 389 OF 412

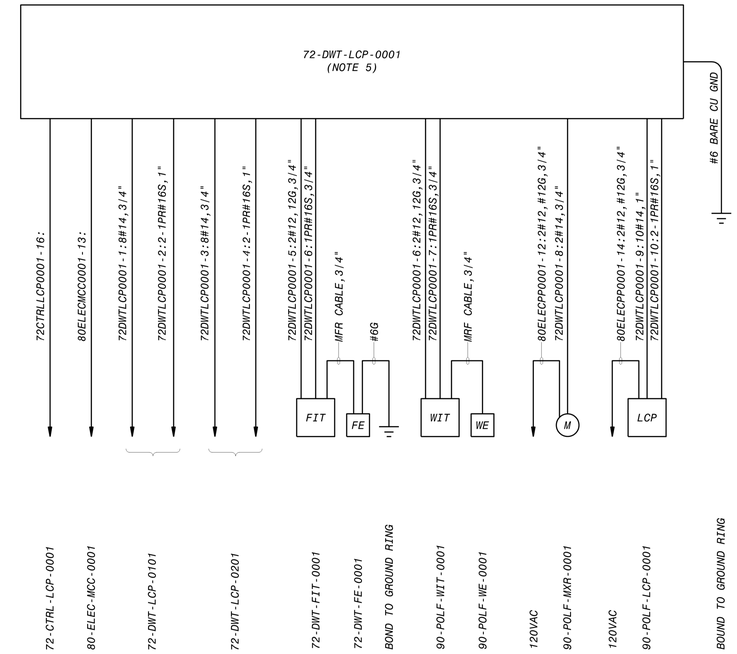
PLOTTED: 20-05-2020 18:01:35

D400530



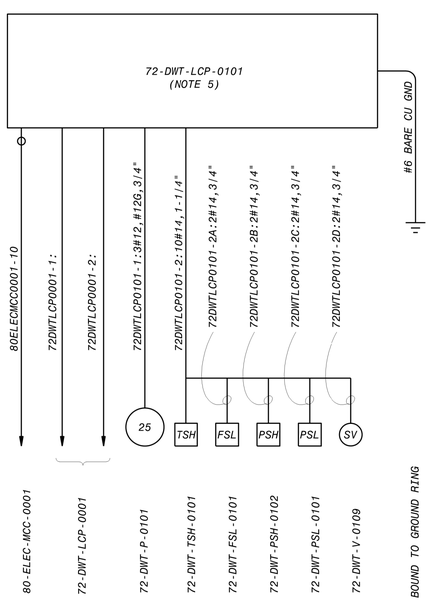
72-CTRL-LCP-0001 ONE-LINE DIAGRAM

RESIDUALS AREA



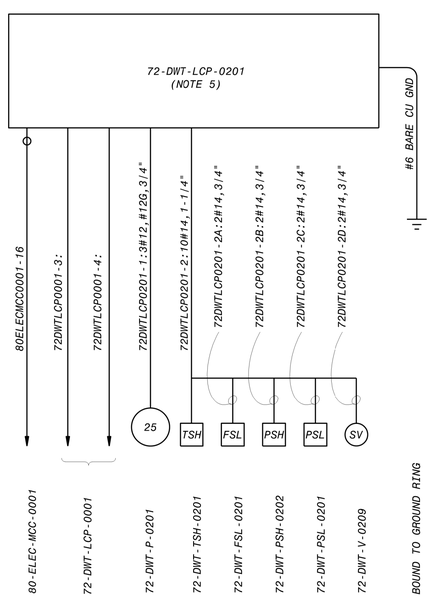
72-DWT-LCP-0001 ONE-LINE DIAGRAM

RESIDUALS AREA



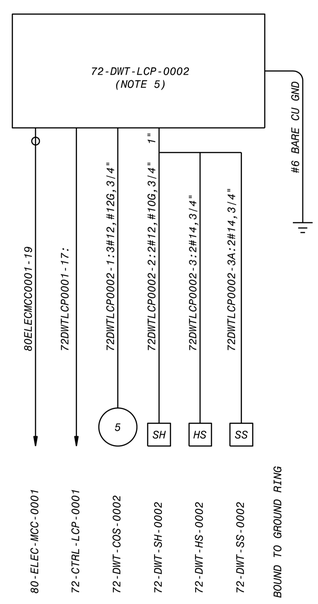
72-DWT-LCP-0101 ONE-LINE DIAGRAM

RESIDUALS AREA



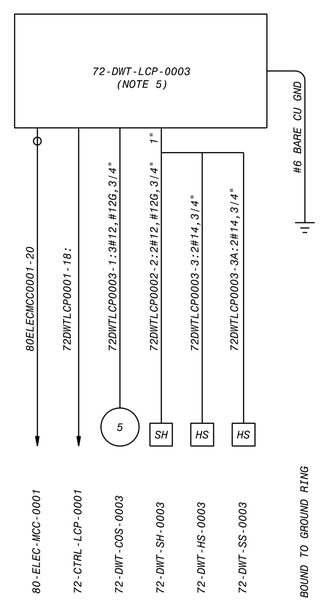
72-DWT-LCP-0201 ONE-LINE DIAGRAM

RESIDUALS AREA



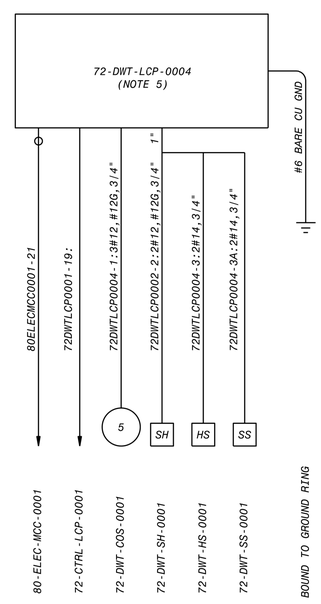
72-DWT-LCP-0002 ONE-LINE DIAGRAM

RESIDUALS AREA



72-DWT-LCP-0003 ONE-LINE DIAGRAM

RESIDUALS AREA



72-DWT-LCP-0004 ONE-LINE DIAGRAM

RESIDUALS AREA

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. SEE DRAWING 00-I-701 FOR FIBRE OPTIC CABLE REQUIREMENT.
3. ALL CIRCUITS SHOWN ON THIS DRAWING WITHOUT THE DUCT SYMBOL SHALL BE FIELD ROUTED BY ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO DETERMINE IF THE CONDUITS SHALL BE BELOW GROUND OR ABOVE GROUND.
4. 24V DC POWER CIRCUIT, 24V DC DIGITAL CIRCUITS AND 24V DC ANALOG CIRCUITS MAY BE COMBINED INTO THE SAME CONDUIT AS LONG AS THE CONDUIT FILL MEETS THE NEC REQUIREMENTS.
5. SEE VENDOR DRAWINGS FOR ADDITIONAL FIELD WIRING.

NO.	BY	CHK	APP
0	JSL	TJZ	MJK

REVISIONS AND RECORD OF USE

DATE	
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVEIER No. E 17758 ELECTRICAL STATE OF CALIFORNIA

BLACK & VEATCH

JOINT VENTURE

FILANC

BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

RESIDUALS AREA
ELECTRICAL
72-CTRL-LCP-0001 ONE-LINE DIAGRAM

DESIGNED: JSL
DETAILED: SBC
CHECKED: TJZ
APPROVED: MJK
DATE: 5/19/2020

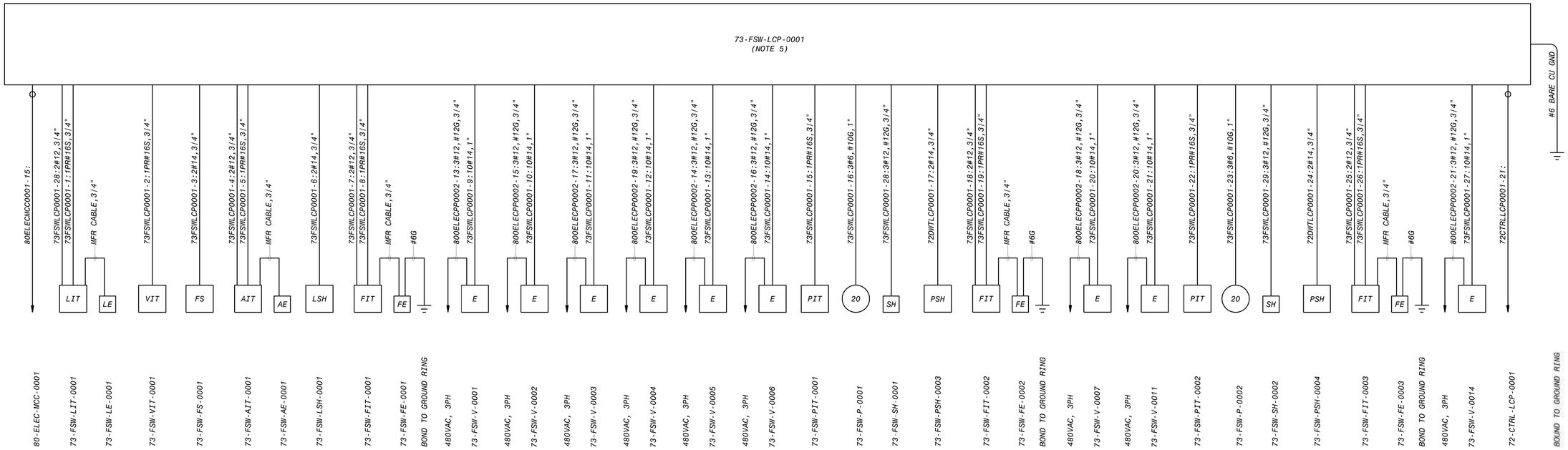
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO. 400530

72-E-701

SHEET 390 OF 412

F09000A
D400530
PLOTTED: 5/20/2020 5:26 AM FILE: C:\PWBatchPDF\Process\400530 - Morro Bay WRF\400530-72-E-701.dwg



73-FSW-LCP-0001
ONE-LINE DIAGRAM
RESIDUALS AREA

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. SEE DRAWING 00-I-701 FOR FIBRE OPTIC CABLE REQUIREMENT.
3. ALL CIRCUITS SHOWN ON THIS DRAWING WITHOUT THE DUCT SYMBOL SHALL BE FIELD ROUTED BY ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO DETERMINE IF THE CONDUITS SHALL BE BELOW GROUND OR ABOVE GROUND.
4. 24V DC POWER CIRCUIT, 24V DC DIGITAL CIPCUITS AND 24V DC ANALOG CIRCUITS MAY BE COMBINED INTO THE SAME CONDUIT AS LONG AS THE CONDUIT FILL MEETS THE NEC REQUIREMENTS.
5. SEE VENDOR DRAWINGS FOR ADDITIONAL FIELD WIRING.

NO.	BY	CHK	APP
0	JSL	TJZ	MJK

REVISIONS AND RECORD OF USE

DATE	
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVEIZER No. E 17748 ELECTRICAL STATE OF CALIFORNIA

BLACK & VEATCH
JOINT VENTURE
FILANC
BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

RESIDUALS AREA
ELECTRICAL
73-FSW-LCP-0001 ONE-LINE DIAGRAM

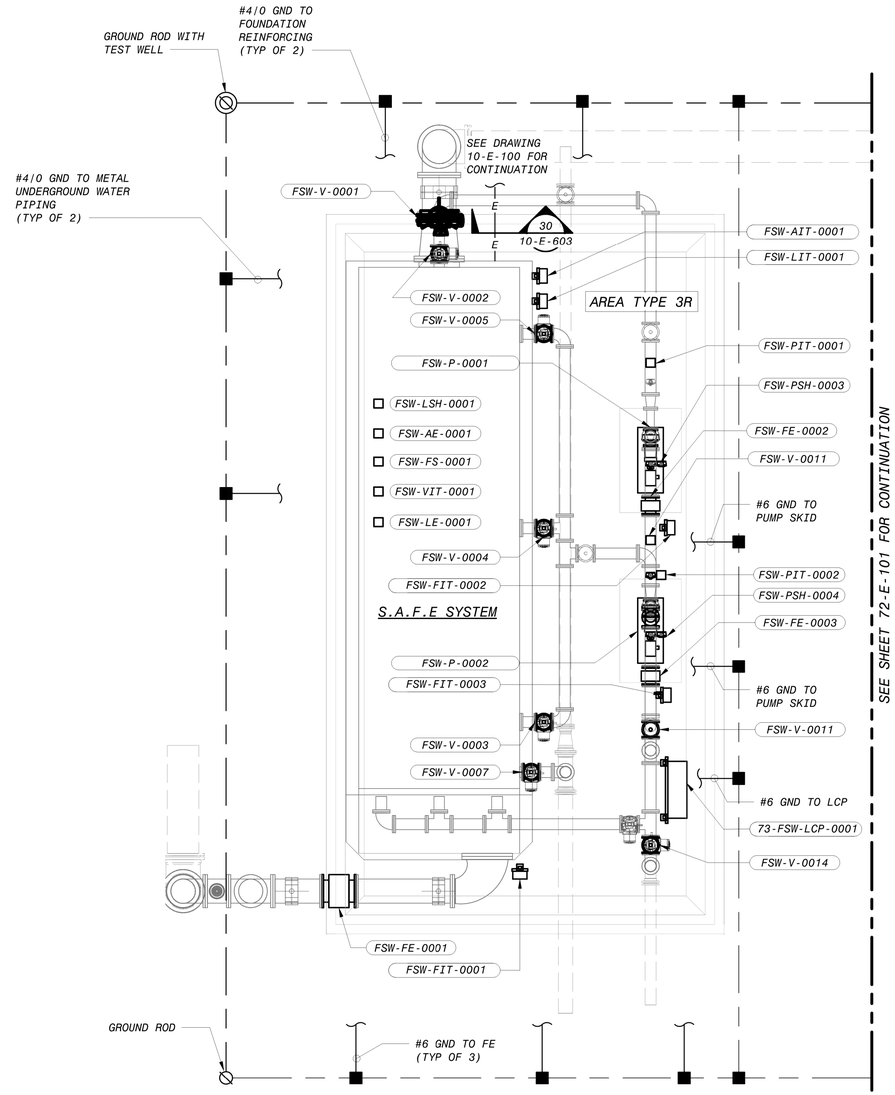
DESIGNED: JSL
DETAILED: SBC
CHECKED: TJZ
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
400530

72-E-702
SHEET
391 OF 412

FD9000A
D400530
PLOTTED: 5/20/2020 5:27 AM FILE: C:\PWBatchPDF\Process\400530 - Morro Bay WRF\400530-72-E-702.dwg



RESIDUALS AREA - SAFE FILTER POWER AND GROUNDING PLAN

1/4" = 1'-0"

NOTES:

1. SEE DRAWING 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND NOTES.
2. SEE DRAWING 10-E-100 FOR OVERALL ELECTRICAL SITE PLAN.
3. PROVIDE AT LEAST TWO #4/0 GROUND TO EACH OF THE METAL TANKS.
4. FOR CABLE DUCT BANK ENTRY REFER TO SITE OVERALL POWER PLAN (10-E-100).
5. ALL THE TAGS ARE PRECEDED BY AREA CODE 73 UNLESS OTHERWISE NOTED.
6. SEE DRAWING 10-E-603 FOR DUCT BANK SECTION.

4' 2' 0' 4' 8'

1/4" = 1'-0"

NO.	BY	CHK	APP
0	JSL	TJZ	MJK

DATE	REVISIONS AND RECORD OF USE
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVEJER No. E 17749 ELECTRICAL STATE OF CALIFORNIA

BLACK & VEATCH

JOINT VENTURE

FILANC

BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

RESIDUALS AREA - SAFE FILTER SYSTEM
ELECTRICAL
POWER AND GROUNDING PLAN

DESIGNED: JSL
DETAILED: SBC
CHECKED: TJZ
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1

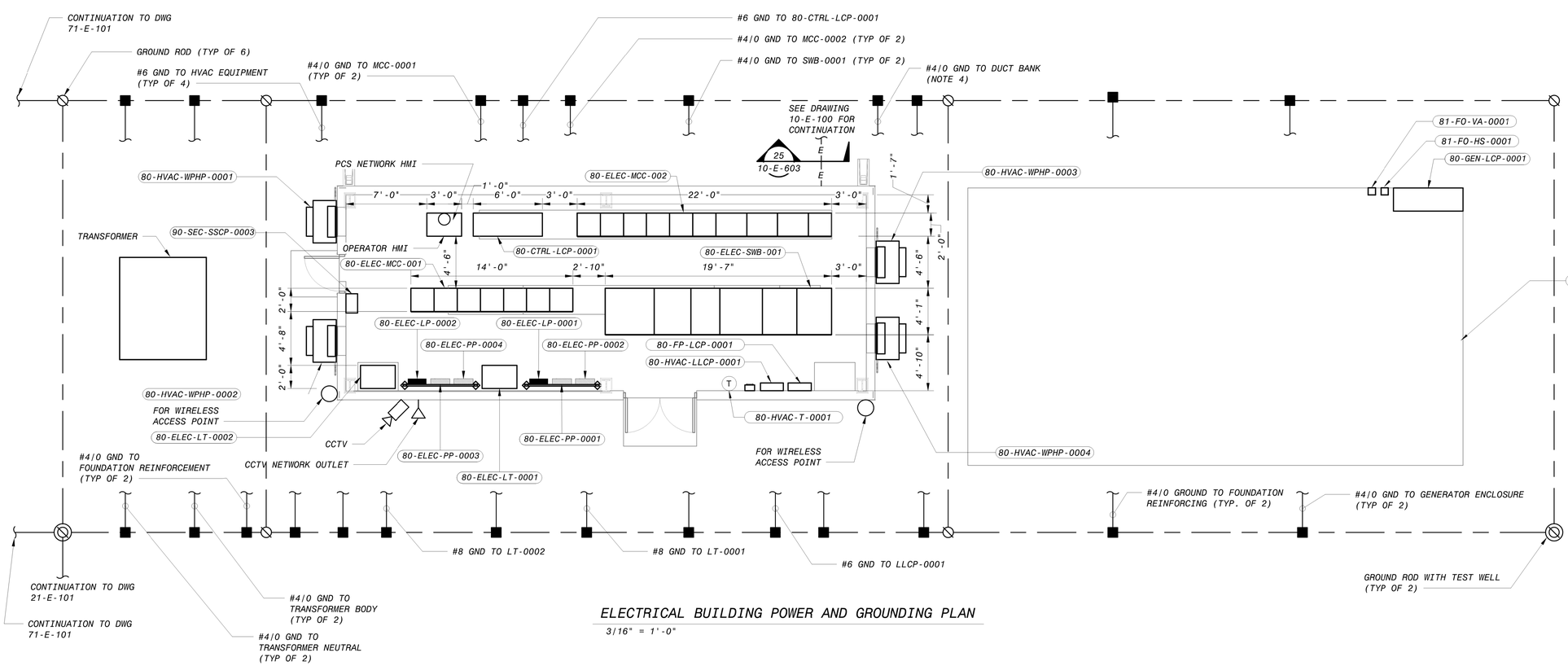
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
400530

73-E-101

SHEET
392 OF 412

PLOTTED: 20-05-2020 18:01:38
D400530



ELECTRICAL BUILDING POWER AND GROUNDING PLAN

3/16" = 1'-0"

NOTES:

1. SEE DRAWING 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND NOTES.
2. SEE DRAWING 10-E-100 FOR OVERALL ELECTRICAL SITE PLAN.
3. GROUNDING OF UTILITY EQUIPMENT SHALL BE IN LINE WITH UTILITY REQUIREMENTS.
4. FOR CABLE DUCT BANK ENTRY REFER TO SITE OVERALL POWER PLAN (10-E-100).
5. SEE DRAWING 10-E-603 FOR DUCT BANK SECTION.

6" 4' 2' 0' 5' 10'

3/16" = 1'-0"

NO.	BY	CHK	APP
0	JSL	TJZ	MJK

DATE	REVISIONS AND RECORD OF USE
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVEJER No. E 17748 CERTIFICATE OF CALIFORNIA

BLACK & VEATCH

JOINT VENTURE

FILANC

BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

ELECTRICAL BUILDING
ELECRICAL
POWER AND GROUNDING PLAN

DESIGNED: JSL
DETAILED: SBC
CHECKED: TJZ
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
400530

80-E-101

SHEET
393 OF 412

PLOTTED: 20-05-2020 18:03:45
D400530

			PANELBOARD: 80-ELEC-PP-0001		BUS: COPPER				MAINS: 3P-250 MAIN BREAKER				
PHASE			SERVICE: 120/208V, 3PH, 4W		RATING: 250A				LOCATION: ELECTRICAL BUILDING		PHASE		
"A"	"B"	"C"	MOUNTING: SURFACE								"A"	"B"	"C"
V.A.	V.A.	V.A.	LOAD	P	BKR	CKT #		BKR	P	LOAD	V.A.	V.A.	V.A.
5000			GENERATOR CONTROL PANEL (80-GEN-LCP-0001)	1	60	1	2	20	1	OPERATOR HMI SCREEN	500		
	2000		80-CTRL-LCP-0001	1	30	3	4	20	1	21-CTRL-LCP-0001 (RECEPTACLE)		500	
		500	80-CTRL-LCP-0001 (RECEPTACLE)	1	20	5	6	30	1	21-CTRL-LCP-0001			2000
500			22-SCR-SAMP-0001	1	20	7	8	20	1	72-CTRL-LCP-0001 (RECEPTACLE)	500		
	2000		72-CTRL-LCP-0001,	1	30	9	10	20	1	SPARE		0	
		1000	80-HVAC-LLCP-0001	1	20	11	12	20	1	90-POLF-MXR-0001			500
0			SPARE	1	20	13	14	20	1	90-POLF-LCP-0001	250		
	0		SPARE	1	20	15	16	20	1	90-POLF-FSH-0006		100	
		0	SPARE	1	20	17	18	20	1	SPARE			0
0			SPARE	1	20	19	20	20	1	SPARE	0		
	0		SPARE	1	20	21	22	20	1	SPARE		0	
		0	SPARE	1	20	23	24	20	1	SPARE			0
0			SPARE	1	20	25	26	20	1	SPARE	0		
	0		SPARE	1	20	27	28	20	1	SPARE		0	
		0	SPARE	1	20	29	30	20	1	SPARE			0
0			SPARE	1	20	31	32	20	1	SPARE	0		
	0		SPARE	1	20	33	34	20	1	SPARE		0	
		0	SPARE	1	20	35	36	20	1	SPARE			0
0			SPARE	1	20	37	38	20	1	SPARE	0		
	0		SPARE	1	20	39	40	20	1	SPARE		0	
		0	SPARE	1	20	41	42	20	1	SPARE			0
5500			TOTAL "A"			6750				TOTAL "A"	1250		
	4000		TOTAL "B"			4600				TOTAL "B"		600	
		1500	TOTAL "C"			4000				TOTAL "C"			2500
			TOTAL			15350							

80-ELEC-PP-0001
POWER PANELS SCHEDULE
ELECTRICAL BUILDING

			PANELBOARD: 80-ELEC-PP-0002		BUS: COPPER				MAINS: 3P-100A MAIN BREAKER				
PHASE			SERVICE: 480V 3PH, 3W		RATING: 100A				LOCATION: ELECTRICAL BUILDING		PHASE		
"A"	"B"	"C"	MOUNTING: SURFACE								"A"	"B"	"C"
V.A.	V.A.	V.A.	LOAD	P	BKR	CKT #		BKR	P	LOAD	V.A.	V.A.	V.A.
345	345	345	22-SCR-V-1104	3	20	1	2	20	3	80-HVAC-WPHP-0001	3880	3880	3880
345	345	345	22-SCR-V-2003	3	20	3	4	20	3	80-HVAC-WPHP-0002	3880	3880	3880
345	345	345	21-GRT-V-1001	3	20	5	6	20	3	21-GRT-V-2001	345	345	345
345	345	345	21-SCR-V-1001	3	20	7	8	20	3	21-SCR-V-2001	345	345	345
345	345	345	22-SCR-V-1001	3	20	9	10	20	3	22-SCR-V-2001	345	345	345
345	345	345	72-DWT-V-0001	3	20	11	12	20	3	72-DWT-V-0006	345	345	345
345	345	345	73-FSW-V-0001	3	20	13	14	20	3	73-FSW-V-0005	345	345	345
345	345	345	73-FSW-V-0002	3	20	15	16	20	3	73-FSW-V-0006	345	345	345
345	345	345	73-FSW-V-0003	3	20	17	18	20	3	73-FSW-V-0007	345	345	345
345	345	345	73-FSW-V-0004	3	20	19	20	20	3	73-FSW-V-0011	345	345	345
345	345	345	73-FSW-V-0014	3	20	21	22	20	3	SPARE	0	0	0
0	0	0	SPARE	3	20	23	24	30	3	SPARE	0	0	0
0	0	0	SPARE	3	30	25	26	30	3	SPARE	0	0	0
0	0	0	SPARE	3	30	27	28	20	3	SPARE	0	0	0
3796			TOTAL "A"			14317				TOTAL "A"	10520		
	3796		TOTAL "B"			14317				TOTAL "B"		10520	
		3796	TOTAL "C"			14317				TOTAL "C"			10520
			TOTAL			42950							

80-ELEC-PP-0002
POWER PANELS SCHEDULE
ELECTRICAL BUILDING

			PANELBOARD: 80-ELEC-PP-0003		BUS: COPPER				MAINS: 3P-250A MAIN BREAKER				
PHASE			SERVICE: 120/208V, 3PH, 4W		RATING: 250A				LOCATION: ELECTRICAL BUILDING		PHASE		
"A"	"B"	"C"	MOUNTING: SURFACE								"A"	"B"	"C"
V.A.	V.A.	V.A.	LOAD	P	BKR	CKT #		BKR	P	LOAD	V.A.	V.A.	V.A.
2000			31-CTRL-LCP-0001,	1	30	1	2	20	1	32-CA-V-1001,32-NOCL-V-1001,	2072		
	100		31-BNR-AIT-1003	1	20	3	4	20	1	32-CA-V-2001, 32-NOCL-V-2001,		2072	
		500	31-CTRL-LCP-0001 (RECEPTACLE)	1	20	5	6	20	1	SPARE			0
0			SPARE	1	20	7	8	20	1	SPARE	0		
	0		SPARE	1	20	9	10	20	1	SPARE		0	
		100	31-BNR-AIT-2003	1	20	11	12	20	1	SPARE			0
0			SPARE	1	20	13	14	20	1	SPARE	0		
	0		SPARE	1	20	15	16	20	1	SPARE		0	
		0	SPARE	1	20	17	18	20	1	SPARE			0
2000			32-MBR-LCP-0001,	1	30	19	20	20	1	SPARE	0		
	500		32-MBR-LCP-0001 (RECEPTACLE)	1	20	21	22	20	1	SPARE		0	
		0	SPARE	1	20	23	24	20	1	SPARE			0
0			SPARE	1	20	25	26	20	1	SPARE	0		
	0		SPARE	1	20	27	28	20	1	SPARE		0	
		0	SPARE	1	20	29	30	20	1	SPARE			0
0			SPARE	1	20	31	32	20	1	SPARE	0		
	0		SPARE	1	20	33	34	20	1	SPARE		0	
		0	SPARE	1	20	35	36	20	1	SPARE			0
0			SPARE	1	20	37	38	20	1	SPARE	0		
	0		SPARE	1	20	39	40	20	1	SPARE		0	
		0	SPARE	1	20	41	42	20	1	SPARE			0
4000			TOTAL "A"			6072				TOTAL "A"	2072		
	600		TOTAL "B"			2672				TOTAL "B"		2072	
		600	TOTAL "C"			600				TOTAL "C"			0
			TOTAL			9344							

80-ELEC-PP-0003
POWER PANELS SCHEDULE
ELECTRICAL BUILDING

			PANELBOARD: 80-ELEC-PP-0004		BUS: COPPER				MAINS: 3P-100A MAIN BREAKER				
PHASE			SERVICE: 480V 3PH, 3W		RATING: 100A				LOCATION: ELECTRICAL BUILDING		PHASE		
"A"	"B"	"C"	MOUNTING: SURFACE								"A"	"B"	"C"
V.A.	V.A.	V.A.	LOAD	P	BKR	CKT #		BKR	P	LOAD	V.A.	V.A.	V.A.
345	345	345	31-AER-V-1201	3	20	1	2	20	3	80-HVAC-WPHP-0003	3880	3880	3880
345	345	345	31-AER-V-2101	3	20	3	4	20	3	80-HVAC-WPHP-0004	3880	3880	3880
345	345	345	31-AER-V-2201,	3	20	5	6	20	3	SPARE	0	0	0
0	0	0	SPARE	3	20	7	8	20	3	SPARE	0	0	0
345	345	345	31-AER-V-1101	3	20	9	10	20	3	SPARE	0	0	0
345	345	345	31-WAS-V-1001	3	20	11	12	20	3	SPARE	0	0	0
345	345	345	31-BNR-V-2001,	3	20	13	14	20	3	32-RAS-V-2001	345	345	345
345	345	345	31-WAS-V-2001	3	20	15	16	20	3	SPARE	0	0	0
0	0	0	SPARE	3	20	17	18	20	3	32-RAS-V-1001	345	345	345
0	0	0	SPARE	3	20	19	20	20	3	SPARE	0	0	0
345	345	345	31-BNR-V-1001	3	20	21	22	20	3	SPARE	0	0	0
0	0	0	SPARE	3	20	23	24	30	3	SPARE	0	0	0
0	0	0	SPARE	3	30	25	26	30	3	SPARE	0	0	0
0	0	0	SPARE	3	30	27	28	20	3	SPARE	0	0	0
2763			TOTAL "A"			11214				TOTAL "A"	8451		
	2763		TOTAL "B"			11214				TOTAL "B"		8451	
		2763	TOTAL "C"			11214				TOTAL "C"			8451
			TOTAL			33641							

80-ELEC-PP-0004
POWER PANELS SCHEDULE
ELECTRICAL BUILDING

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. PROVIDE MINIMUM #12, #12G CABLE AND 3/4" CONDUIT FOR 20A CIRCUIT; MINIMUM #8, #10G CABLE AND 3/4" CONDUIT FOR 30A CIRCUIT; MINIMUM #2, #10G CABLE AND 1-1/4" CONDUIT FOR 60A CIRCUIT.

NO.	BY	CHK	APP
0	JSL	TJZ	MJK

REVISIONS AND RECORD OF USE

DATE	
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVELTER No. E 17745 ELECTRICAL STATE OF CALIFORNIA

BLACK & VEATCH JOINT VENTURE

FILANC BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

ELECTRICAL BUILDING
ELECTRICAL
POWER PANELS SCHEDULE

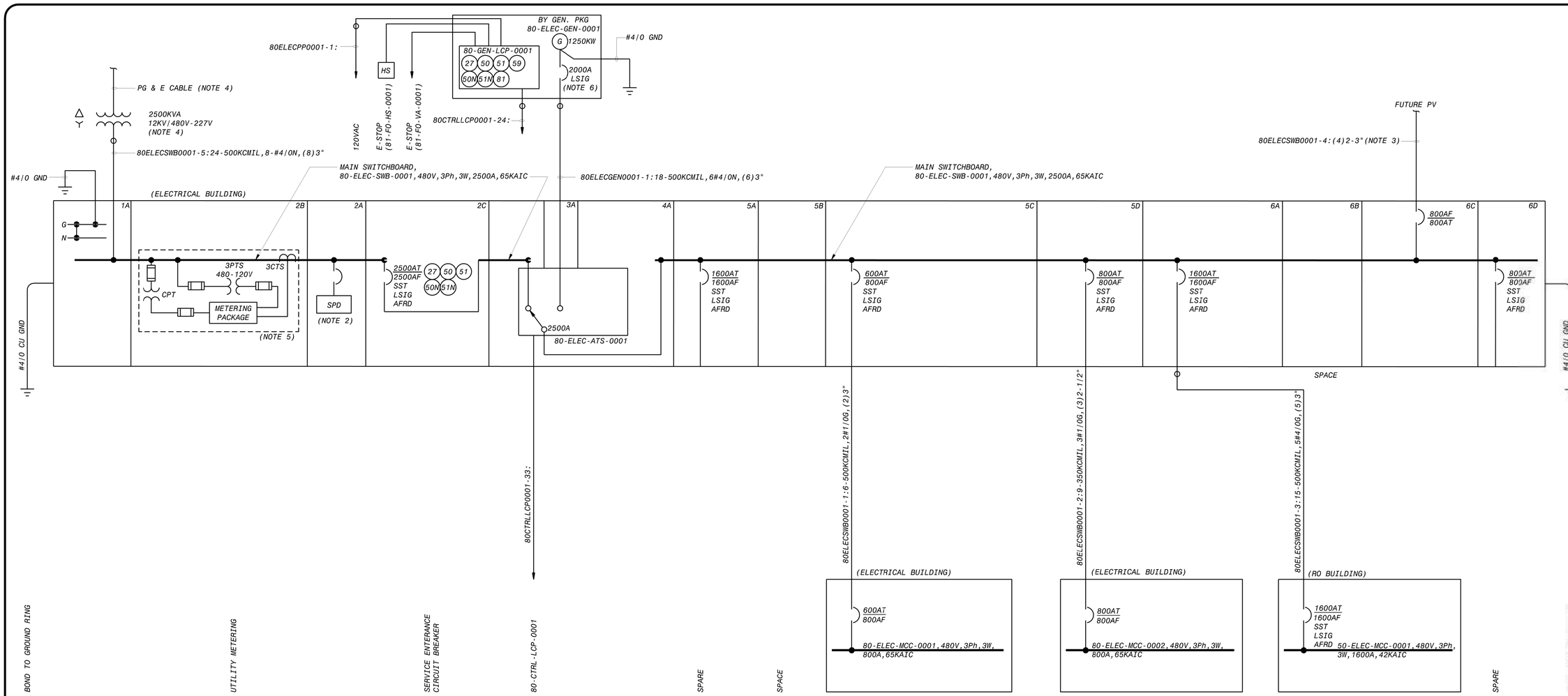
DESIGNED: JSL
DETAILED: SBC
CHECKED: TJZ
APPROVED: MJK
DATE: 5/19/2020

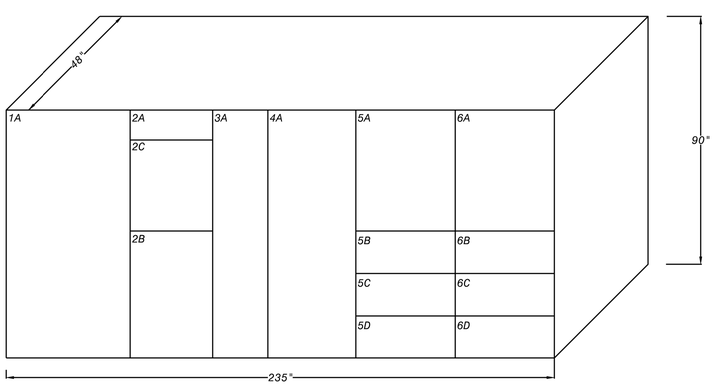
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO. 400530

80-E-601
SHEET 394 OF 412

FD9000A
D400530
PLOTTED: 5/20/2020 5:27 AM FILE: C:\PWBatchPDF\Process\400530 - Morro Bay WRF\400530-80-E-601.dwg





80-ELEC-SWB-0001
FRONT ELEVATION
ELECTRICAL BUILDING

80-ELEC-SWB-0001
ONE-LINE DIAGRAM
ELECTRICAL BUILDING

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. CIRCUIT BREAKER SIZE SHALL BE RECOMMENDED BY SWITCHBOARD SUPPLIER.
3. PROVIDE EMPTY CONDUIT WITH PULL STRINGS UP TO THE NEAREST MANHOLE TO FACILITATE CONNECTON OF POWER AND CONTROL CIRCUITS IN THE FUTURE.
4. THE UTILITY TRANSFORMER AND PG&E PRIMARY CABLES ARE FURNISHED AND INSTALLED BY PG&E.
5. PG&E METER AND CTs ARE FURNISHED BY PG&E AND INSTALLED BY ELECTRICAL INSTALLER.
6. NECESSARY GENERATOR PROTECTION RELAYS SHALL BE PROVIDED BY GENERATOR SUBCONTRACTOR.

NO.	BY	CHK	APP
0	JSL	TJZ	MJK

REVISIONS AND RECORD OF USE

DATE	
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVEIZER No. E 17745 ELECTRICAL STATE OF CALIFORNIA

BLACK & VEATCH JOINT VENTURE
FILANC
BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

ELECTRICAL BUILDING
ELECTRICAL
80-ELEC-SWB-0001 ONE-LINE DIAGRAM

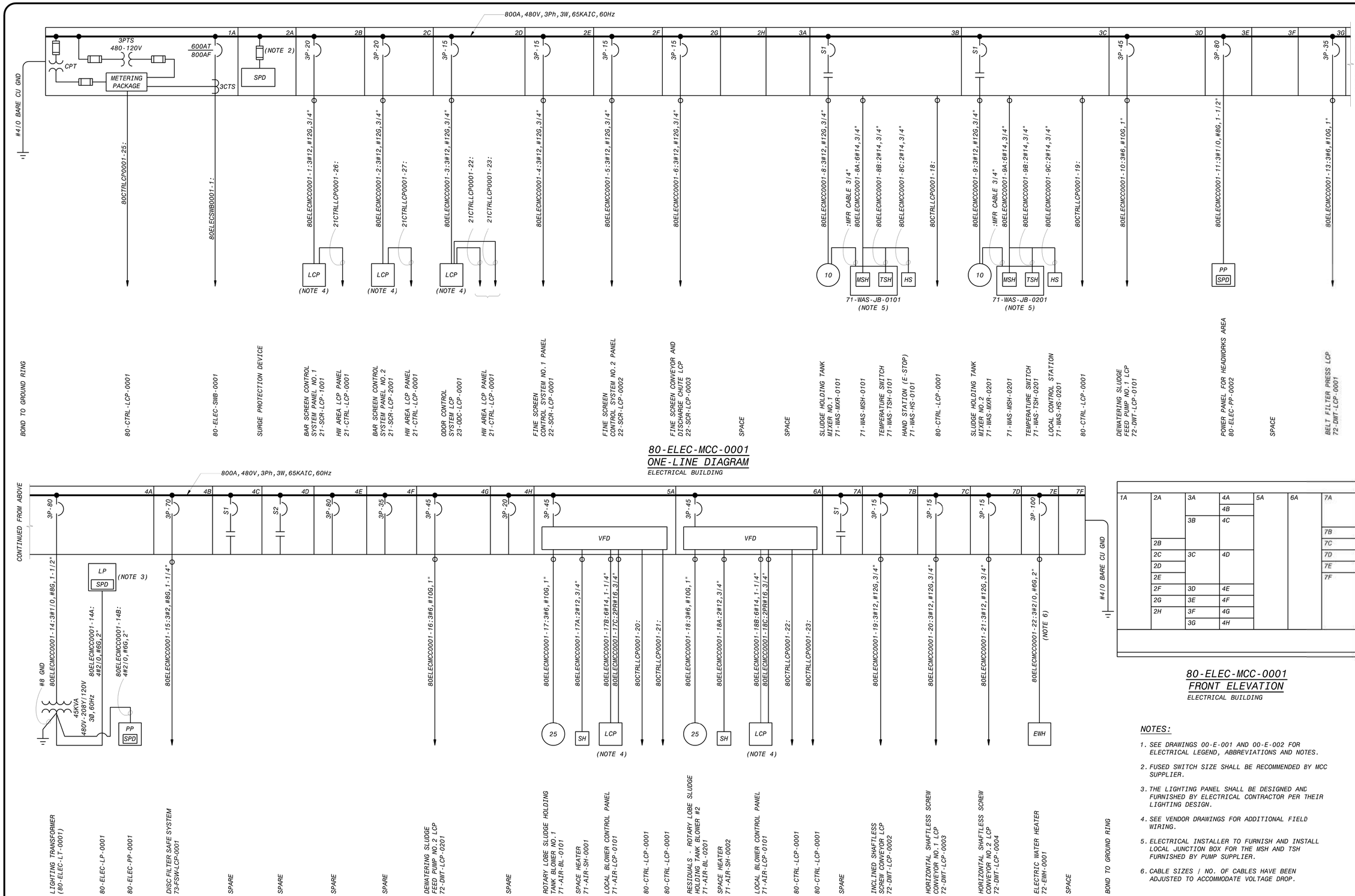
DESIGNED: JSL
DETAILED: SBC
CHECKED: TJZ
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
400530

80-E-701
SHEET
395 OF 412

FD9000A
0400530
PLOTTED: 5/20/2020 5:27 AM FILE: C:\PWBatchPDF\Process\400530 - Morro Bay WRF\400530-80-E-701.dwg



80-ELEC-MCC-0001
ONE-LINE DIAGRAM
ELECTRICAL BUILDING

80-ELEC-MCC-0001
ONE-LINE DIAGRAM
ELECTRICAL BUILDING

80-ELEC-MCC-0001
FRONT ELEVATION
ELECTRICAL BUILDING

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. FUSED SWITCH SIZE SHALL BE RECOMMENDED BY MCC SUPPLIER.
3. THE LIGHTING PANEL SHALL BE DESIGNED AND FURNISHED BY ELECTRICAL CONTRACTOR PER THEIR LIGHTING DESIGN.
4. SEE VENDOR DRAWINGS FOR ADDITIONAL FIELD WIRING.
5. ELECTRICAL INSTALLER TO FURNISH AND INSTALL LOCAL JUNCTION BOX FOR THE MSH AND TSH FURNISHED BY PUMP SUPPLIER.
6. CABLE SIZES / NO. OF CABLES HAVE BEEN ADJUSTED TO ACCOMMODATE VOLTAGE DROP.

DATE	REVISIONS AND RECORD OF USE	NO.	BY	CHK	APP
5/19/2020	ISSUED FOR CONSTRUCTION	0	JSL	TJZ	MJK

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVETER No. E 17748 CIVIL STATE OF CALIFORNIA

BLACK & VEATCH
JOINT VENTURE
FILANC
BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

ELECTRICAL BUILDING
ELECTRICAL
80-ELEC-MCC-0001 ONE-LINE DIAGRAM

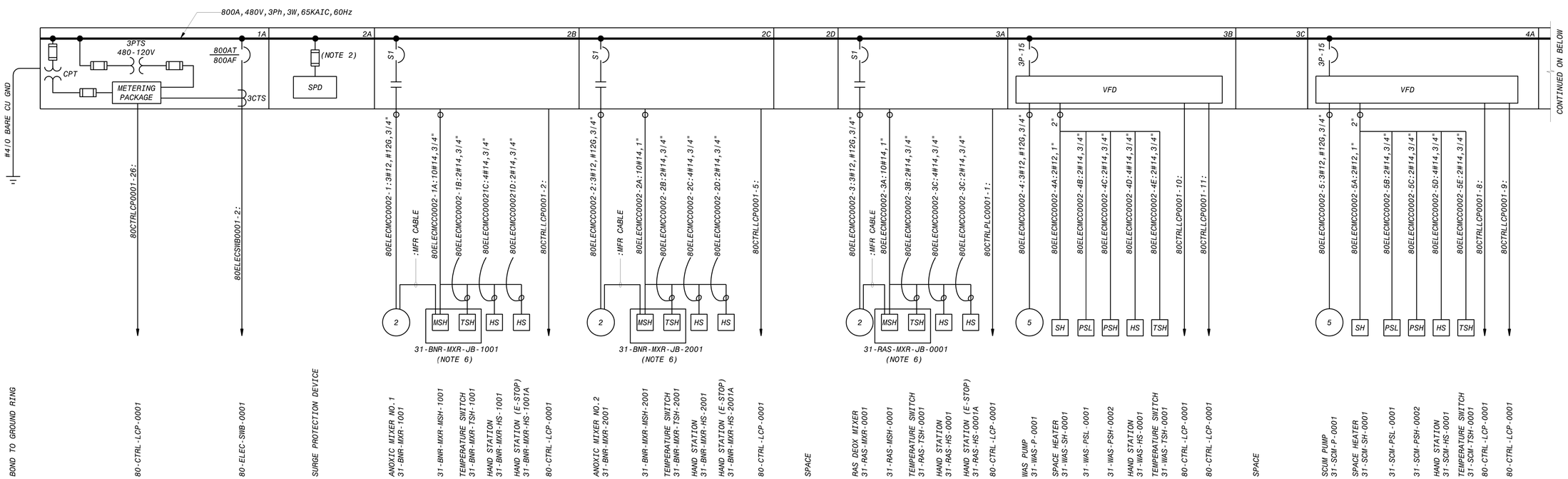
DESIGNED: JSL
DETAILED: SBC
CHECKED: TJZ
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

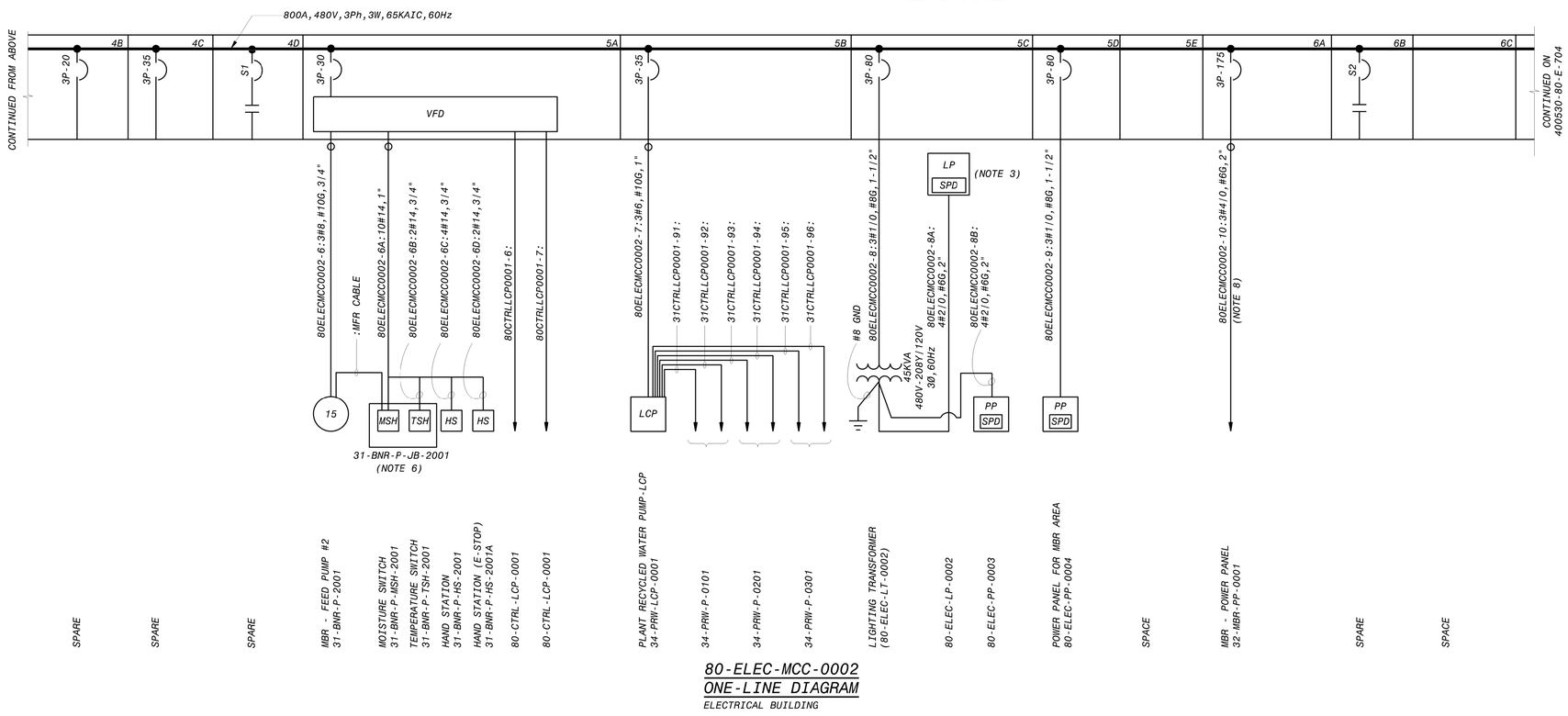
PROJECT NO.
400530

80-E-702
SHEET
396 OF 412

FD9000A
D400530
PLOTTED: 5/20/2020 5:28 AM FILE: C:\PWBatchPDF\Process\400530 - Morro Bay WRF\400530-80-E-702.dwg



80-ELEC-MCC-0002
ONE-LINE DIAGRAM
ELECTRICAL BUILDING



80-ELEC-MCC-0002
ONE-LINE DIAGRAM
ELECTRICAL BUILDING

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. FUSED SWITCH SIZE SHALL BE RECOMMENDED BY MCC SUPPLIER.
3. THE LIGHTING PANEL SHALL BE DESIGNED AND FURNISHED BY ELECTRICAL CONTRACTOR PER THEIR LIGHTING DESIGN.
4. 24V DC POWER CIRCUIT, 24V DC DIGITAL CIRCUITS AND 24V DC ANALOG CIRCUITS MAY BE COMBINED INTO SAME CONDUIT AS LONG AS THE CONDUIT FILL MEETS THE NEC REQUIREMENTS.
5. SEE VENDOR DRAWINGS FOR ADDITIONAL FIELD WIRING.
6. ELECTRICAL INSTALLER SHALL FURNISH AND INSTALL A LOCAL JUNCTION BOX FOR THE MSH AND TSH FURNISHED BY THE MIXER SUPPLIER.
7. VFD's SHALL BE PROVIDED WITH MOTOR WINDING RTD INPUT OR THERMOSTAT INTERLOCKS AS PER THE MOTOR SHOP DRAWING SUBMITTAL.
6. CABLE SIZES / NO. OF CABLES HAVE BEEN ADJUSTED TO ACCOMMODATE VOLTAGE DROP.

DATE	REVISIONS AND RECORD OF USE	NO.	BY	CHK	APP
5/19/2020	ISSUED FOR CONSTRUCTION	0	JSL	TJZ	MJK

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVEIZER No. E 17745 ELECTRICAL STATE OF CALIFORNIA

BLACK & VEATCH

JOINT VENTURE

FILANC

BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

ELECTRICAL BUILDING
ELECTRICAL
80-ELEC-MCC-0002 ONE-LINE DIAGRAM

DESIGNED: JSL
DETAILED: SBC
CHECKED: TJZ
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
400530

80-E-703
SHEET
397 OF 412

FD9000A
D400530
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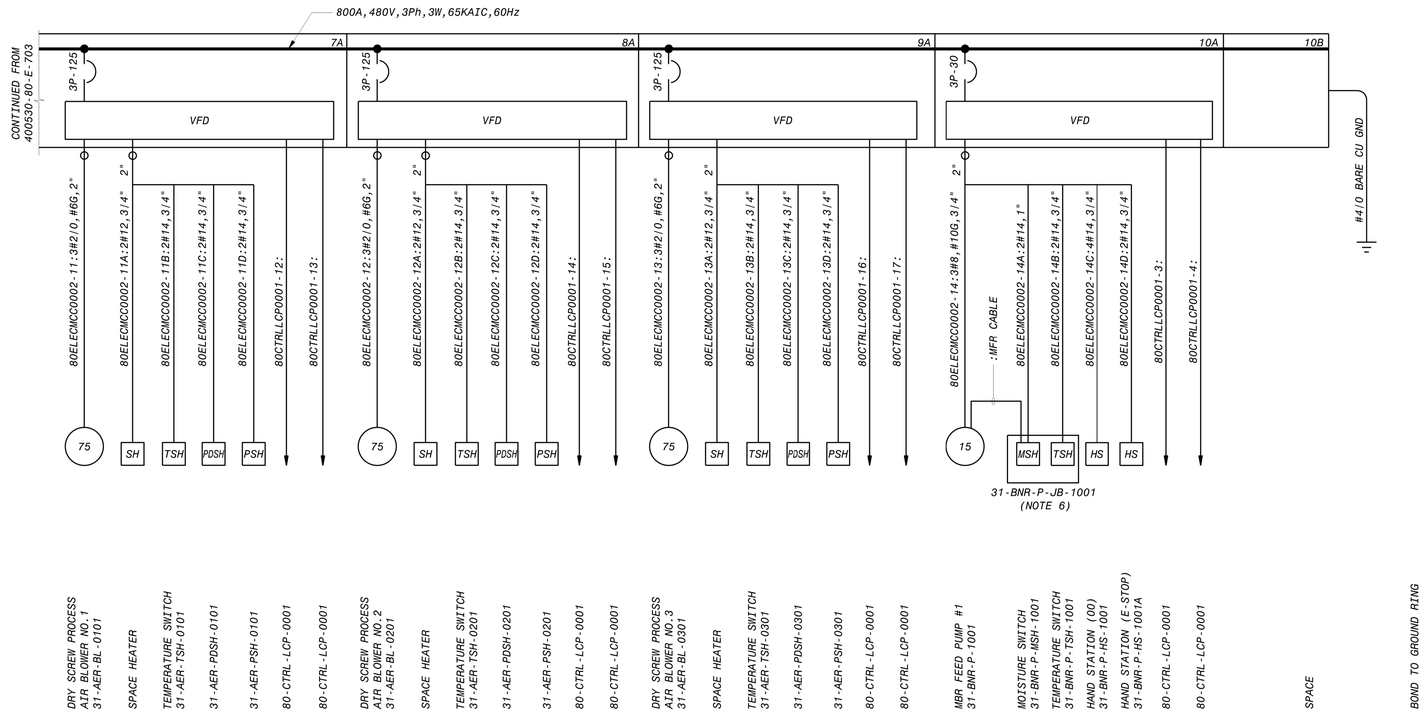
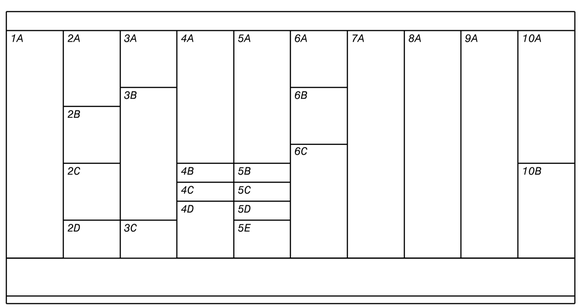


80-ELEC-MCC-0002
ONE-LINE DIAGRAM

ELECTRICAL BUILDING



80-ELEC-MCC-0002
FRONT ELEVATION

ELECTRICAL BUILDING

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. FUSED SWITCH SIZE SHALL BE RECOMMENDED BY MCC SUPPLIER.
3. THE LIGHTING PANEL SHALL BE DESIGNED AND FURNISHED BY ELECTRICAL CONTRACTOR PER THEIR LIGHTING DESIGN.
4. 24V DC POWER CIRCUIT, 24V DC DIGITAL CIRCUITS AND 24V DC ANALOG CIRCUITS MAY BE COMBINED INTO SAME CONDUIT AS LONG AS THE CONDUIT FILL MEETS THE NEC REQUIREMENTS.
5. SEE VENDOR DRAWINGS FOR ADDITIONAL FIELD WIRING.
6. ELECTRICAL INSTALLER SHALL FURNISH AND INSTALL A LOCAL JUNCTION BOX FOR THE MSH AND TSH FURNISHED BY THE MIXER SUPPLIER.
7. VFD's SHALL BE PROVIDED WITH MOTOR WINDING RTD INPUT OR THERMOSTAT INTERLOCKS AS PER THE MOTOR SHOP DRAWING SUBMITTAL.
8. CABLE SIZES | NO. OF CABLES HAVE BEEN ADJUSTED TO ACCOMMODATE VOLTAGE DROP.

DATE	REVISIONS AND RECORD OF USE	NO.	BY	CHK	APP
5/19/2020	ISSUED FOR CONSTRUCTION	0	JSL	TJZ	MJK

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVETER No. E 17748 ELECTRICAL STATE OF CALIFORNIA

BLACK & VEATCH JOINT VENTURE — FILANC — BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

ELECTRICAL BUILDING
ELECTRICAL
80-ELEC-MCC-0002 ONE-LINE DIAGRAM

DESIGNED: JSL
DETAILED: SBC
CHECKED: TJZ
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO. 400530

80-E-704
SHEET 398 OF 412

FD9000A
0400530
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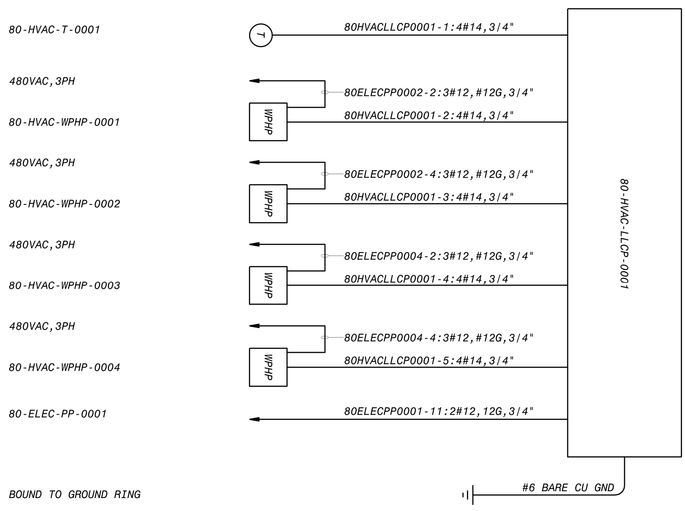
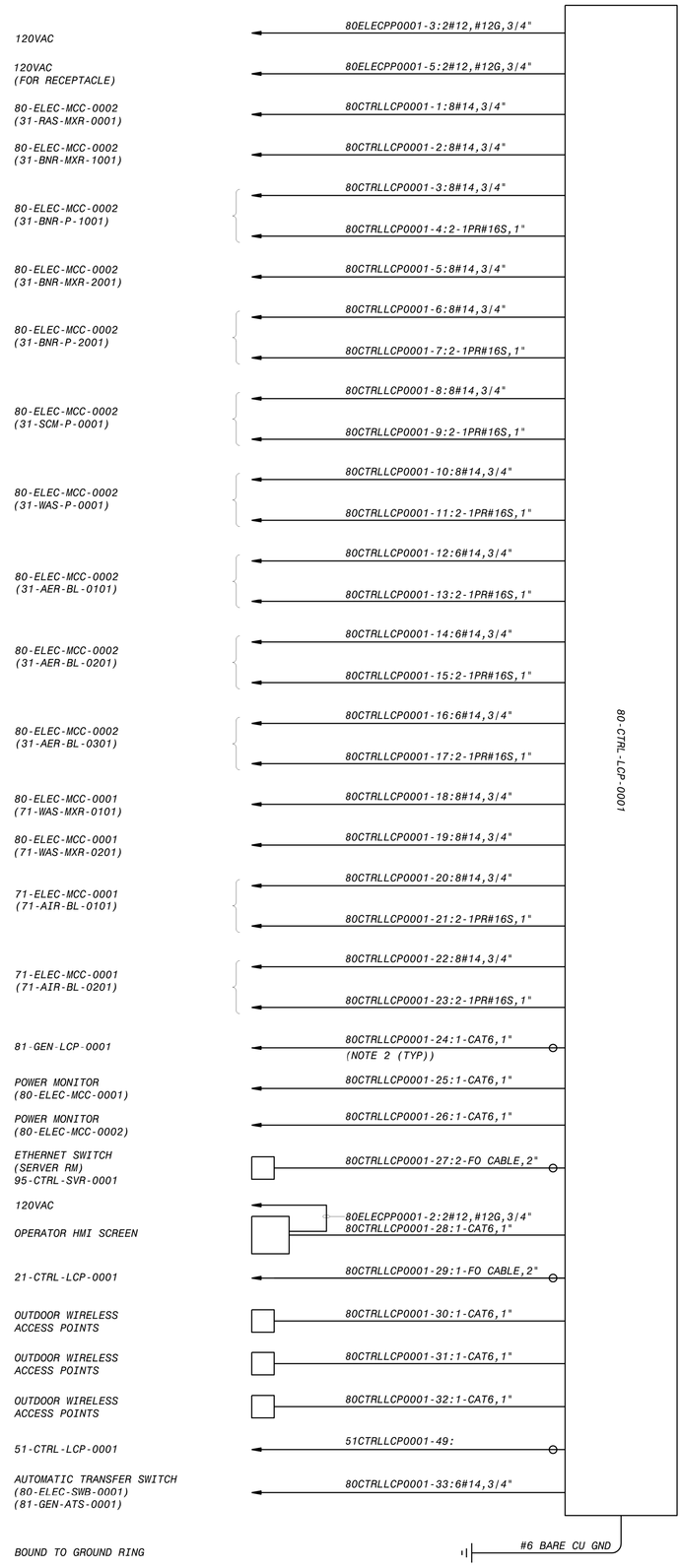


80-HVAC-LLCP-0001
ONE-LINE DIAGRAM
ELECTRICAL BUILDING



80-CTRL-LCP-0001
ONE-LINE DIAGRAM
ELECTRICAL BUILDING

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. SEE DRAWING 00-I-701 FOR FIBRE OPTIC CABLE REQUIREMENT.
3. ALL CIRCUITS SHOWN ON THIS DRAWING WITHOUT THE DUCT SYMBOL SHALL BE FIELD ROUTED BY ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO DETERMINE IF THE CONDUITS SHALL BE BELOW GROUND OR ABOVE GROUND.

DESIGNED: JSL
DETAILED: SBC
CHECKED: TJZ
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

PROJECT NO. 400530

80-E-711
SHEET 399 OF 412

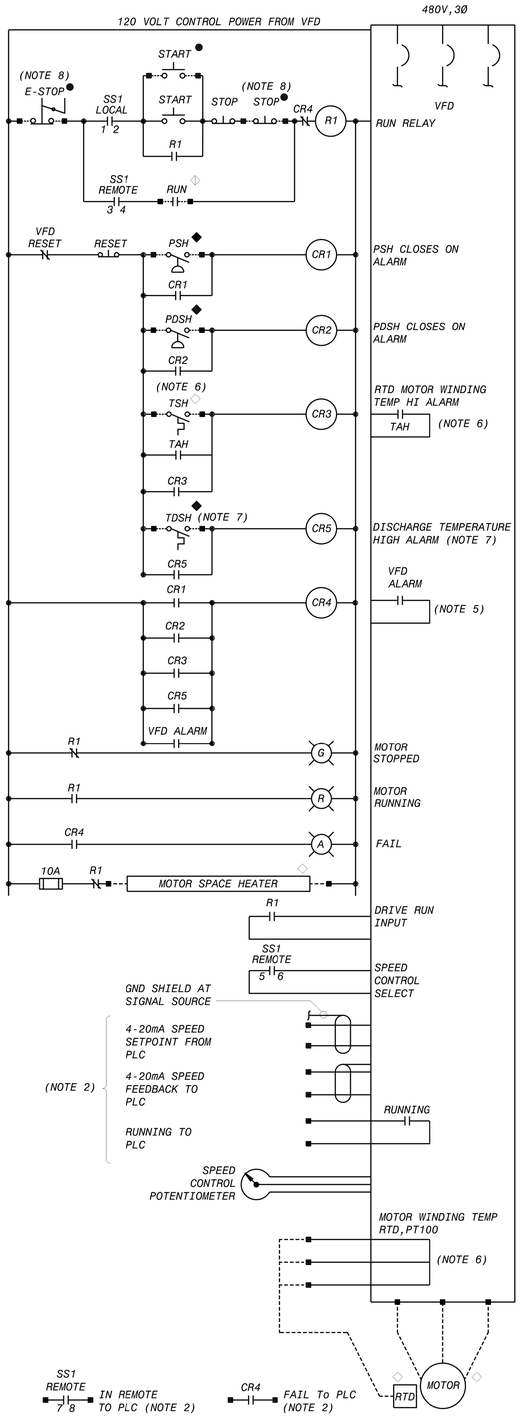
CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

ELECTRICAL BUILDING
ELECTRICAL 80-CTRL-LCP-0001
AND MISCELLANEOUS ONE-LINE DIAGRAM

BLACK & VEATCH
JOINT VENTURE
FILANC
BLACK & VEATCH

REGISTERED PROFESSIONAL ENGINEER
MARK J. KLYCZYNER
No. E 17294
ELECTRICAL
STATE OF CALIFORNIA

DATE	REVISIONS AND RECORD OF USE	NO.	BY	CHK	APP
5/19/2020	ISSUED FOR CONSTRUCTION	0	JSL	TJZ	MJK

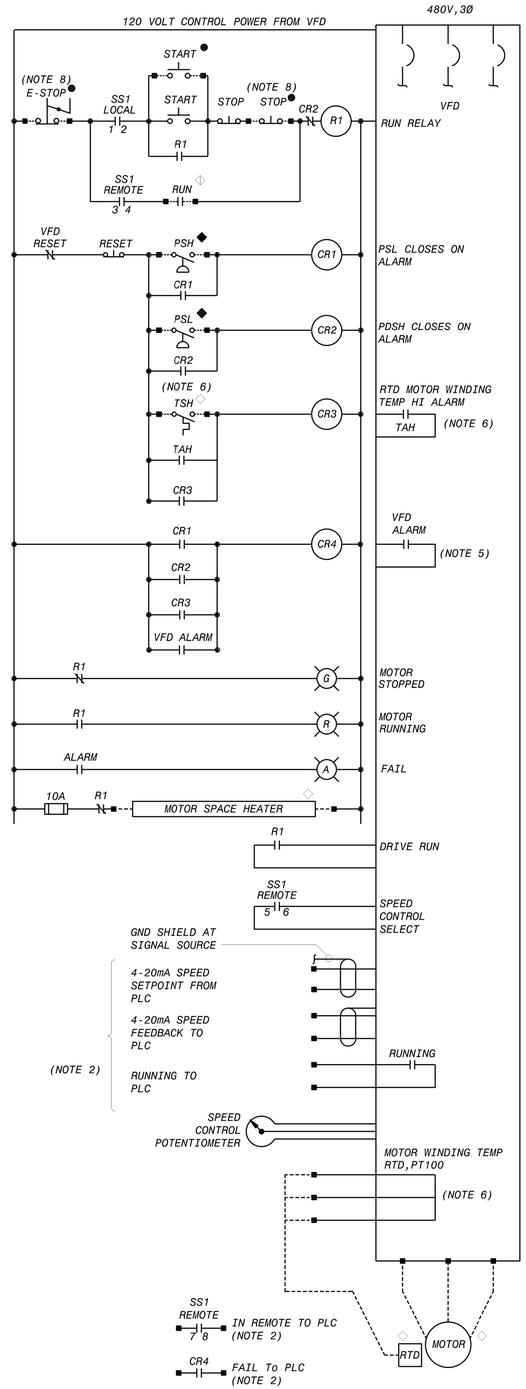


DRY-SCREW PROCESS AIR BLOWERS

31-AER-BL-0101,
31-AER-BL-0201,
31-AER-BL-0301

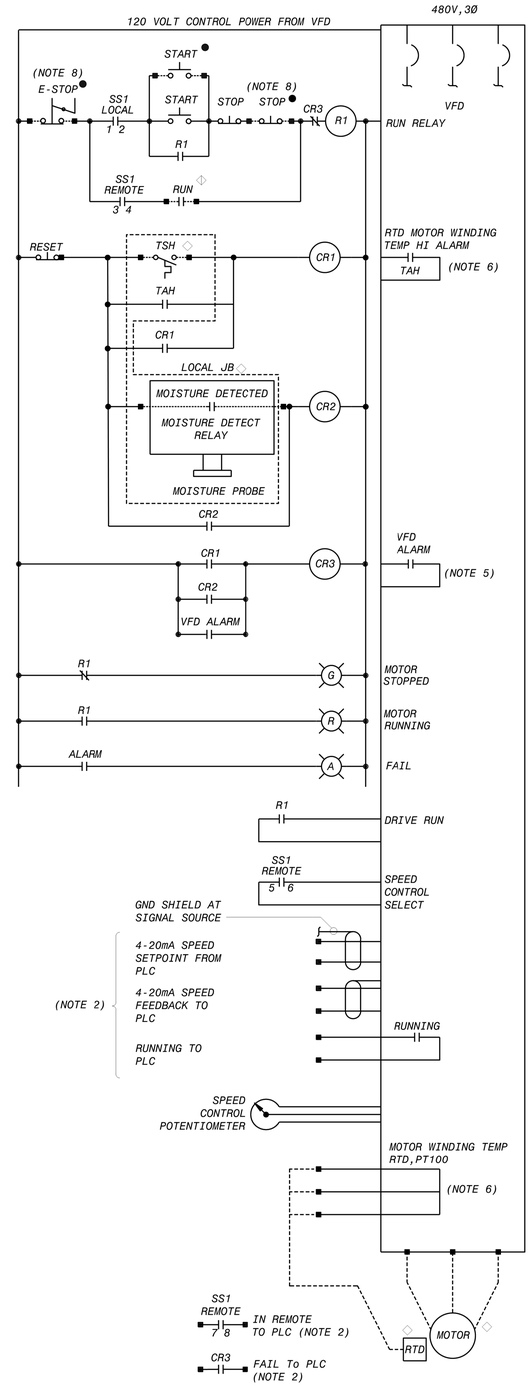
ROTARY LOBE SLUDGE HOLDING TANK BLOWERS

71-AIR-BL-0101,
71-AIR-BL-0201



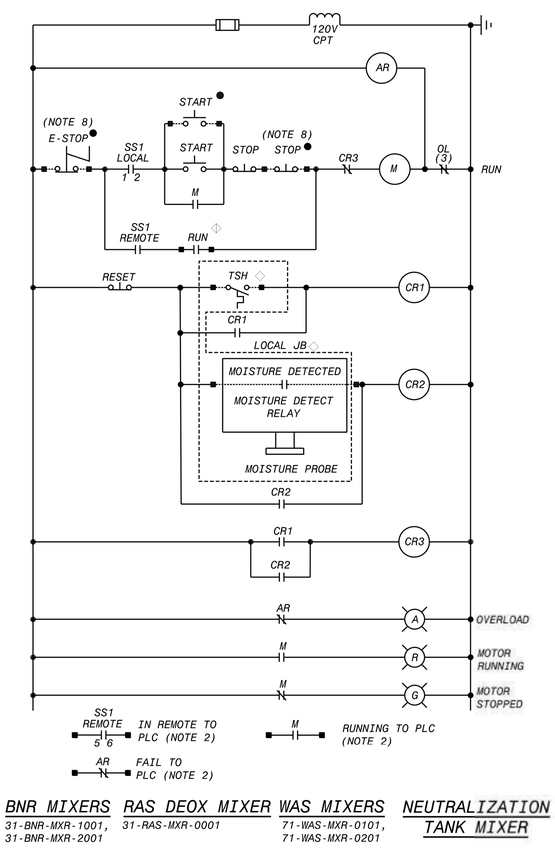
SCUM PUMP, WAS PUMP

31-SCM-P-0001,
31-WAS-P-0001



MBR FEED PUMPS

31-BNR-P-1001,
31-BNR-P-2001



BNR MIXERS

31-BNR-MXR-1001,
31-BNR-MXR-2001

RAS DEOX MIXER

31-RAS-MXR-0001

WAS MIXERS

71-WAS-MXR-0101,
71-WAS-MXR-0201

NEUTRALIZATION TANK MIXER

SS1 SWITCH DEVELOPMENT

CONTACTS	POSITION		
	LOCAL	OFF	REMOTE
1-2	X		
3-4			X
5-6			X
7-8			X

LEGENDS:

- AT VALVE
- AT DRIVEN EQUIPMENT
- AT PLC/RIO PANEL
- REMOTE FROM STARTER AND DRIVEN EQUIPMENT
- AT CONTROL STATION
- AT DRIVE
- AT TCP

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. REFER TO P&ID'S FOR PLC TAGS.
3. DEVICES SHOWN IN SCHEMATICS WITHOUT A SYMBOL ARE LOCATED AT THE MOTOR STARTER OR CONTROLLER.
4. PROVIDE ONE N.O AND N.C SPARE INTERLOCKS WITH EACH MOTOR STARTER.
5. ALL ALARM INPUTS SHALL STOP THE PUMP IN ALL CONTROL MODES.
6. IF THE MOTOR COMES WITH WINDING RTD THEN USE THE VFD HIGH TEMPERATURE CONTACT FOR THE CR2 RELAY IN LIEU OF THE TSH. VFD SHALL BE PROVIDED WITH MOTOR WINDING RTD INPUT OR THERMOSTAT INTERLOCKS AS PER THE MOTOR SHOP DRAWINGS SUBMITTAL.
7. TDSH CIRCUIT IS ONLY APPLICABLE FOR ROTARY LOBE SLUDGE HOLDING TANK BLOWERS.
8. THE SCHEMATIC SHOWN IS TYPICAL. REFER TO P&IDs OR OTHER ELECTRICAL DRAWINGS FOR E-STOP/START/STOP REQUIREMENTS. IF NO ESTOP AND LOCAL STOP ARE PROVIDED, PROVIDE A JUMPER FOR THE INPUT.

NO.	BY	CHK	APD
0	JSL	TJZ	MJK

REVISIONS AND RECORD OF USE

DATE	
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVEIZER No. E 17748 ELECTRICAL STATE OF CALIFORNIA

BLACK & VEATCH
JOINT VENTURE
FILANC
BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

ELECTRICAL BUILDING
ELECTRICAL
SCHEMATIC

DESIGNED: JSL
DETAILED: SBC
CHECKED: TJZ
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
400530

80-E-721
SHEET
400 OF 412

FD9000A
0400530
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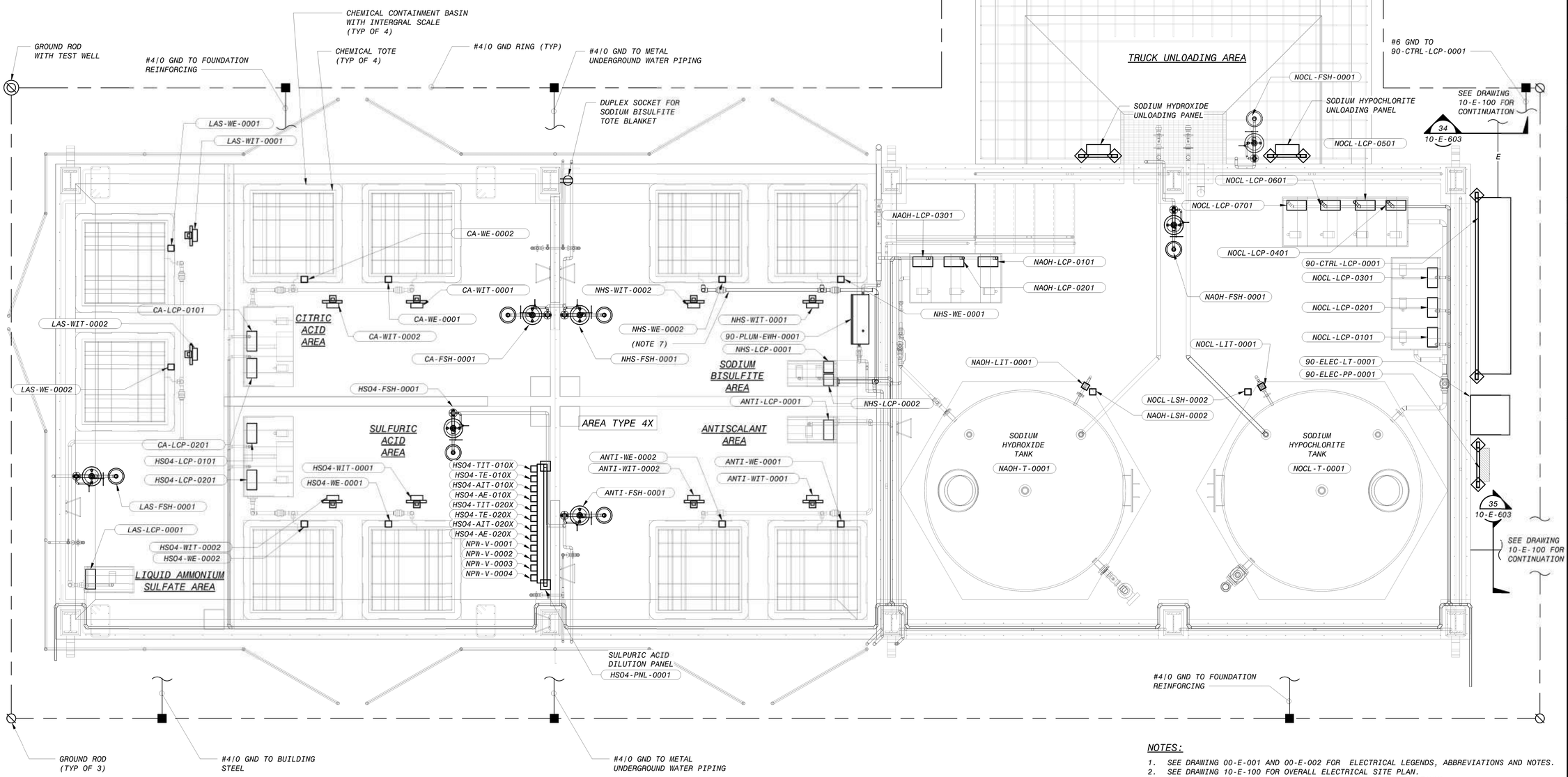

CHEMICAL FACILITY POWER AND GROUNDING PLAN

3/8" = 1'-0"

NOTES:

1. SEE DRAWING 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND NOTES.
2. SEE DRAWING 10-E-100 FOR OVERALL ELECTRICAL SITE PLAN.
3. PROVIDE AT LEAST TWO #4/0 GROUND TO EACH OF THE METAL TANKS.
4. FOR CABLE DUCT BANK ENTRY REFER TO SITE OVERALL POWER PLAN (10-E-100).
5. ALL THE TAGS ARE PRECEDED BY AREA CODE 90 UNLESS OTHERWISE NOTED.
6. SEE DRAWING 10-E-603 FOR DUCT BANK SECTION.
7. THIS ABOVE GRADE SODIUM BISULFITE CPVC PIPE, VALVE AND APPUTERNANCES SHALL BE HEAT TRACED.

12" 0' 1' 2' 3' 4' 5' 6' 7'

3/8" = 1'-0"

NO.	BY	CHK	APP	REVISIONS AND RECORD OF USE	DATE
0	JSL	MAS	MJK	ISSUED FOR CONSTRUCTION	5/19/2020

BLACK & VEATCH JOINT VENTURE

FILANC

BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WATER RECLAMATION FACILITY (WRF)

CHEMICAL FACILITY ELECTRICAL POWER AND GROUNDING PLAN

DESIGNED: JSL
DETAILED: SBC
CHECKED: MAS
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO. 400530

90-E-101

SHEET 401 OF 412

FLOTTED: 20-05-2020 18:05:27

D400530

			PANELBOARD: 90-ELEC-PP-0001		BUS: COPPER				MAINS: 3P-125A MAIN BREAKER				
PHASE			SERVICE: 120/208V, 3PH, 4W		RATING: 125A				LOCATION: CHECMICAL FACILITY		PHASE		
"A"	"B"	"C"	MOUNTING: SURFACE								"A"	"B"	"C"
V.A.	V.A.	V.A.	LOAD	P	BKR	CKT #		BKR	P	LOAD	V.A.	V.A.	V.A.
0			SPARE	1	30	1	2	20	1	SPARE	0		
	0		SPARE	1	20	3	4	20	1	SPARE		0	
		3200	DUPLEX SOCKET FOR SODIUM BISULFITE TOTE BLANKET	1	20	5	6	20	1	SPARE			0
0			SPARE	1	20	7	8	30	1	SPARE	0		
	0		SPARE	1	20	9	10	20	1	SODIUM HYPOCHLORITE UNLOADING PANEL		500	
		0	SPARE	1	20	11	12	20	1	SODIUM HYPDROXIDE UNLOADING PANEL			500
2000			90-CTRL-LCP-0001	1	30	13	14	20	1	90-NOCL-LCP-0101, 90-NOCL-LCP-0201	500		
	500		90-NOCL-LCP-0301,90-NOCL-LCP-0401	1	20	15	16	20	1	90-NOCL-LCP-0501, 90-NOCL-LCP-0601		500	
		250	90-NOCL-LCP-0701	1	20	17	18	20	1	90-NAOH-LCP-0101, 90-NAOH-LCP-0201			500
350			90-NAOH-LCP-0301,90-NAOH-FSH-0001	1	20	19	20	20	1	90-NHS-LCP-0001, 90-NHS-FSH-0001	350		
	350		90-ANTI-LCP-0001,90-ANTI-FSH-0001	1	20	21	22	20	1	90-CA-LCP-0101, 90-CA-LCP-0201, 90-CA-FSH-0001		600	
		600	90-HSO4-LCP-0101, 90-HSO4-LCP-0201, 90-HSO4-FSH-0001	1	20	23	24	20	1	90-LAS-LCP-0001,90-LAS-FSH-0001			350
0			SPARE	1	20	25	26	20	1	90-NHS-LCP-0002	250		
	0		SPARE	1	20	27	28	20	1	SPARE		0	
		0	SPARE	1	20	29	30	20	1	SPARE			0
500			90-CTRL-LCP-0001(RECEPTACLE)	1	20	31	32	20	1	90-NOCL-FSH-0001	100		
	0		SPARE	1	20	33	34	20	1	90-NPW-V-0001, 90-NPW-V-0002		1036	
		1036	90-NPW-V-0003, 90-NPW-V-0004	1	20	35	36	20	1	SPARE			0
0			SPARE	1	20	37	38	20	1	SPARE	0		
	0		SPARE	1	20	39	40	20	1	SPARE		0	
		0	SPARE	1	20	41	42	20	1	SPARE			0
2850			TOTAL "A"			4050				TOTAL "A"	1200		
	850		TOTAL "B"			3486				TOTAL "B"		2636	
		5086	TOTAL "C"			6436				TOTAL "C"			1350
			TOTAL			13972							

90-ELEC-PP-0001
POWER PANELS SCHEDULE

CHEMICAL FACILITY

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. PROVIDE MINIMUM #12, #12G CABLE AND 3/4" CONDUIT FOR 20A CIRCUIT; MINIMUM #8, #10G CABLE AND 3/4" CONDUIT FOR 30A CIRCUIT.

NO.	BY	CHK	APP
0	JSL	MAS	MJK

REVISIONS AND RECORD OF USE

DATE	
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVEIZER No. E 17748 ELECTRICAL STATE OF CALIFORNIA

BLACK & VEATCH JOINT VENTURE

FILANC BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

CHEMICAL FACILITY
ELECTRICAL
POWER PANELS SCHEDULE

DESIGNED: JSL
DETAILED: SBC
CHECKED: MAS
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO. 400530

90-E-601
SHEET
402 OF 412

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0400530
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CONTINUED FROM ABOVE

Device	Tag	Cable / Conductors
90-CA-WIT-0001	WIT	90CTRLLCP0001-41:2#12,#12G,3/4"
		90CTRLLCP0001-42:1PR#16S,3/4"
90-CA-WE-0001	WE	MRF CABLE,3/4"
90-CA-WIT-0002	WIT	90CTRLLCP0001-43:2#12,#12G,3/4"
		90CTRLLCP0001-44:1PR#16S,3/4"
90-CA-WE-0002	WE	MRF CABLE,3/4"
90-CA-LCP-0101	LCP	120VAC
		90ELECPP0001-22:2#12,#12G,3/4"
		90CTRLLCP0001-45:12#14,1"
		90CTRLLCP0001-46:2-1PR#16S,1"
90-CA-LCP-0201	LCP	120VAC
		90ELECPP0001-22:2#12,#12G,3/4"
		90CTRLLCP0001-47:12#14,1"
		90CTRLLCP0001-48:2-1PR#16S,1"
90-CA-FSH-0001	FSH	120VAC
		90ELECPP0001-22:2#12,#12G,3/4"
		90CTRLLCP0001-49:2#14,3/4"
90-HSO4-WIT-0001	WIT	90CTRLLCP0001-50:2#12,#12G,3/4"
		90CTRLLCP0001-51:1PR#16S,3/4"
90-HSO4-WE-0001	WE	MRF CABLE,3/4"
90-HSO4-WIT-0002	WIT	90CTRLLCP0001-52:2#12,#12G,3/4"
		90CTRLLCP0001-53:1PR#16S,3/4"
90-HSO4-WE-0002	WE	MRF CABLE,3/4"
90-NPW-V-0001	E	120VAC
		90ELECPP0001-34:2#12,#12G,3/4"
		90CTRLLCP0001-54:10#14,1"
90-NPW-V-0002	E	120VAC
		90ELECPP0001-34:2#12,#12G,3/4"
		90CTRLLCP0001-55:10#14,1"
90-NPW-V-0003	E	120VAC
		90ELECPP0001-35:2#12,#12G,3/4"
		90CTRLLCP0001-56:10#14,1"
90-NPW-V-0004	E	120VAC
		90ELECPP0001-35:2#12,#12G,3/4"
		90CTRLLCP0001-57:10#14,1"
90-HSO4-TIT-010X	TIT	90CTRLLCP0001-59:1PR#16S,3/4"
90-HSO4-TE-010X	TE	MRF CABLE,3/4"
90-HSO4-AIT-010X	AIT	90CTRLLCP0001-60:2#12,#12G,3/4"
		90CTRLLCP0001-61:1PR#16S,3/4"
90-HSO4-AE-010X	AE	MRF CABLE,3/4"
90-HSO4-TIT-020X	TIT	90CTRLLCP0001-63:1PR#16S,3/4"
90-HSO4-TE-020X	TE	MRF CABLE,3/4"
90-HSO4-AIT-020X	AIT	90CTRLLCP0001-64:2#12,#12G,3/4"
		90CTRLLCP0001-65:1PR#16S,3/4"
90-HSO4-AE-020X	AE	MRF CABLE,3/4"
90-HSO4-LCP-0101	LCP	120VAC
		90ELECPP0001-23:2#12,#12G,3/4"
		90CTRLLCP0001-66:14#14,1"
		90CTRLLCP0001-67:4-1PR#16S,1"
90-HSO4-LCP-0201	LCP	120VAC
		90ELECPP0001-23:2#12,#12G,3/4"
		90CTRLLCP0001-68:14#14,1"
		90CTRLLCP0001-69:4-1PR#16S,1"
90-HSO4-FSH-0001	FSH	120VAC
		90ELECPP0001-23:2#12,#12G,3/4"
		90CTRLLCP0001-70:2#14,3/4"
96-ADMIN-LCP-0001	LCP	120VAC
		96ELECPP0002-8:2#12,#12G,3/4"
		90CTRLLCP0001-78:1-FO CABLE,2"
51-CTRL-LCP-0001		51CTRLLCP0001-51:
31-CTRL-LCP-0001		31CTRLLCP0001-90:
90-LAS-WIT-0001	WIT	90CTRLLCP0001-71:2#12,#12G,3/4"
		90CTRLLCP0001-72:1PR#16S,3/4"
90-LAS-WE-0001	WE	MRF CABLE,3/4"
90-LAS-WIT-0002	WIT	90CTRLLCP0001-73:2#12,#12G,3/4"
		90CTRLLCP0001-74:1PR#16S,3/4"
90-LAS-WE-0002	WE	MRF CABLE,3/4"
90-LAS-LCP-0001	LCP	120VAC
		90ELECPP0001-24:2#12,#12G,3/4"
		90CTRLLCP0001-75:12#14,1"
		90CTRLLCP0001-76:2-1PR#16S,1"
90-LAS-FSH-0001	FSH	120VAC
		90ELECPP0001-24:2#12,#12G,3/4"
		90CTRLLCP0001-77:2#14,3/4"
90-CHEM-LSH-0001	LSH	90CTRLLCP0001-78:2#14,3/4"
90-CHEM-LSH-0002	LSH	90CTRLLCP0001-79:2#14,3/4"

90-CTRL-LCP-0001

BOND TO GROUND RING

#6 BARE CU GND

90-CTRL-LCP-0001 ONE-LINE DIAGRAM
CHEMICAL FACILITY

Device	Tag	Cable / Conductors
		120VAC
		90ELECPP0001-13:2#12,#12G,3/4"
		120VAC (FOR RECEPTACLE)
		90ELECPP0001-31:2#12,#12G,3/4"
90-NOCL-LIT-0001	LIT	120VAC
		SODIUM HYPOCHLORITE UNLOADING PANEL
		90ELECPP0001-10:2#12,#12G,3/4"
		90CTRLLCP0001-1:1PR#16S,3/4"
		90CTRLLCP0001-1A:1PR#16S,3/4"
90-NOCL-LSH-0002	LSH	90CTRLLCP0001-2:2#14,3/4"
90-NOCL-LCP-0101	LCP	120VAC
		90ELECPP0001-14:2#12,#12G,3/4"
		90CTRLLCP0001-3:12#14,1"
		90CTRLLCP0001-4:2-1PR#16S,1"
90-NOCL-LCP-0201	LCP	120VAC
		90ELECPP0001-14:2#12,#12G,3/4"
		90CTRLLCP0001-5:12#14,1"
		90CTRLLCP0001-6:2-1PR#16S,1"
90-NOCL-LCP-0301	LCP	120VAC
		90ELECPP0001-15:2#12,#12G,3/4"
		90CTRLLCP0001-7:12#14,1"
		90CTRLLCP0001-8:2-1PR#16S,1"
90-NOCL-FSH-0001	FSH	120VAC
		90ELECPP0001-32:2#12,#12G,3/4"
		90CTRLLCP0001-9:2#14,3/4"
90-NOCL-LCP-0401	LCP	120VAC
		90ELECPP0001-15:2#12,#12G,3/4"
		90CTRLLCP0001-10:12#14,1"
		90CTRLLCP0001-11:2-1PR#16S,1"
90-NOCL-LCP-0501	LCP	120VAC
		90ELECPP0001-16:2#12,#12G,3/4"
		90CTRLLCP0001-12:12#14,1"
		90CTRLLCP0001-13:2-1PR#16S,1"
90-NOCL-LCP-0601	LCP	120VAC
		90ELECPP0001-16:2#12,#12G,3/4"
		90CTRLLCP0001-14:12#14,1"
		90CTRLLCP0001-15:2-1PR#16S,1"
90-NOCL-LCP-0701	LCP	120VAC
		90ELECPP0001-17:2#12,#12G,3/4"
		90CTRLLCP0001-16:12#14,1"
		90CTRLLCP0001-17:2-1PR#16S,1"
90-NAOH-LIT-0001	LIT	120VAC
		SODIUM HYDROXIDE UNLOADING PANEL
		90ELECPP0001-12:2#12,#12G,3/4"
		90CTRLLCP0001-18:1PR#16S,3/4"
		90CTRLLCP0001-18A:1PR#16S,3/4"
90-NAOH-LSH-0002	LSH	90CTRLLCP0001-19:2#14,3/4"
90-NAOH-LCP-0101	LCP	120VAC
		90ELECPP0001-18:2#12,#12G,3/4"
		90CTRLLCP0001-20:12#14,1"
		90CTRLLCP0001-21:2-1PR#16S,1"
90-NAOH-LCP-0201	LCP	120VAC
		90ELECPP0001-18:2#12,#12G,3/4"
		90CTRLLCP0001-22:12#14,1"
		90CTRLLCP0001-23:2-1PR#16S,1"
90-NAOH-LCP-0301	LCP	120VAC
		90ELECPP0001-19:2#12,#12G,3/4"
		90CTRLLCP0001-24:12#14,1"
		90CTRLLCP0001-25:2-1PR#16S,1"
90-NAOH-FSH-0001	FSH	120VAC
		90ELECPP0001-19:2#12,#12G,3/4"
		90CTRLLCP0001-26:2#14,3/4"
90-NHS-WIT-0001	WIT	90CTRLLCP0001-27:2#12,#12G,3/4"
		90CTRLLCP0001-28:1PR#16S,3/4"
90-NHS-WE-0001	WE	MRF CABLE,3/4"
90-NHS-WIT-0002	WIT	90CTRLLCP0001-29:2#12,#12G,3/4"
		90CTRLLCP0001-30:1PR#16S,3/4"
90-NHS-WE-0002	WE	MRF CABLE,3/4"
90-NHS-LCP-0001	LCP	120VAC
		90ELECPP0001-20:2#12,#12G,3/4"
		90CTRLLCP0001-31:12#14,1"
		90CTRLLCP0001-32:2-1PR#16S,1"
90-NHS-FSH-0001	FSH	120VAC
		90ELECPP0001-20:2#12,#12G,3/4"
		90CTRLLCP0001-33:2#14,3/4"
90-ANTI-WIT-0001	WIT	90CTRLLCP0001-34:2#12,#12G,3/4"
		90CTRLLCP0001-35:1PR#16S,3/4"
90-ANTI-WE-0001	WE	MRF CABLE,3/4"
90-ANTI-WIT-0002	WIT	90CTRLLCP0001-36:2#12,#12G,3/4"
		90CTRLLCP0001-37:1PR#16S,3/4"
90-ANTI-WE-0002	WE	MRF CABLE,3/4"
90-ANTI-LCP-0001	LCP	120VAC
		90ELECPP0001-21:2#12,#12G,3/4"
		90CTRLLCP0001-38:12#14,1"
		90CTRLLCP0001-39:2-1PR#16S,1"
90-ANTI-FSH-0001	FSH	120VAC
		90ELECPP0001-21:2#12,#12G,3/4"
		90CTRLLCP0001-40:2#14,3/4"
90-NHS-LCP-0002	LCP	120VAC
		90ELECPP0001-26:2#12,#12G,3/4"
		90CTRLLCP0001-80:12#14,1"
		90CTRLLCP0001-81:2-1PR#16S,1"

90-CTRL-LCP-0001

CONTINUED ON BELOW

90-CTRL-LCP-0001 ONE-LINE DIAGRAM
CHEMICAL FACILITY

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. SEE DRAWING 00-I-701 FOR FIBER OPTIC CABLE REQUIREMENTS.
3. ALL CIRCUITS SHOWN ON THIS DRAWING WITHOUT THE DUCT SYMBOL SHALL BE FIELD ROUTED BY ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO DETERMINE IF THE CONDUITS SHALL BE BELOW GROUND OR ABOVE GROUND.
4. 24V DC POWER CIRCUIT, 24V DC DIGITAL CIRCUITS AND 24V DC ANALOG CIRCUITS MAY BE COMBINED INTO THE SAME CONDUIT AS LONG AS THE CONDUIT FILL MEETS THE NEC REQUIREMENTS.

DESIGNED: JSL
DETAILED: SBC
CHECKED: MAS
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT FULL SCALE

PROJECT NO. 400530

90-E-711
SHEET 403 OF 412

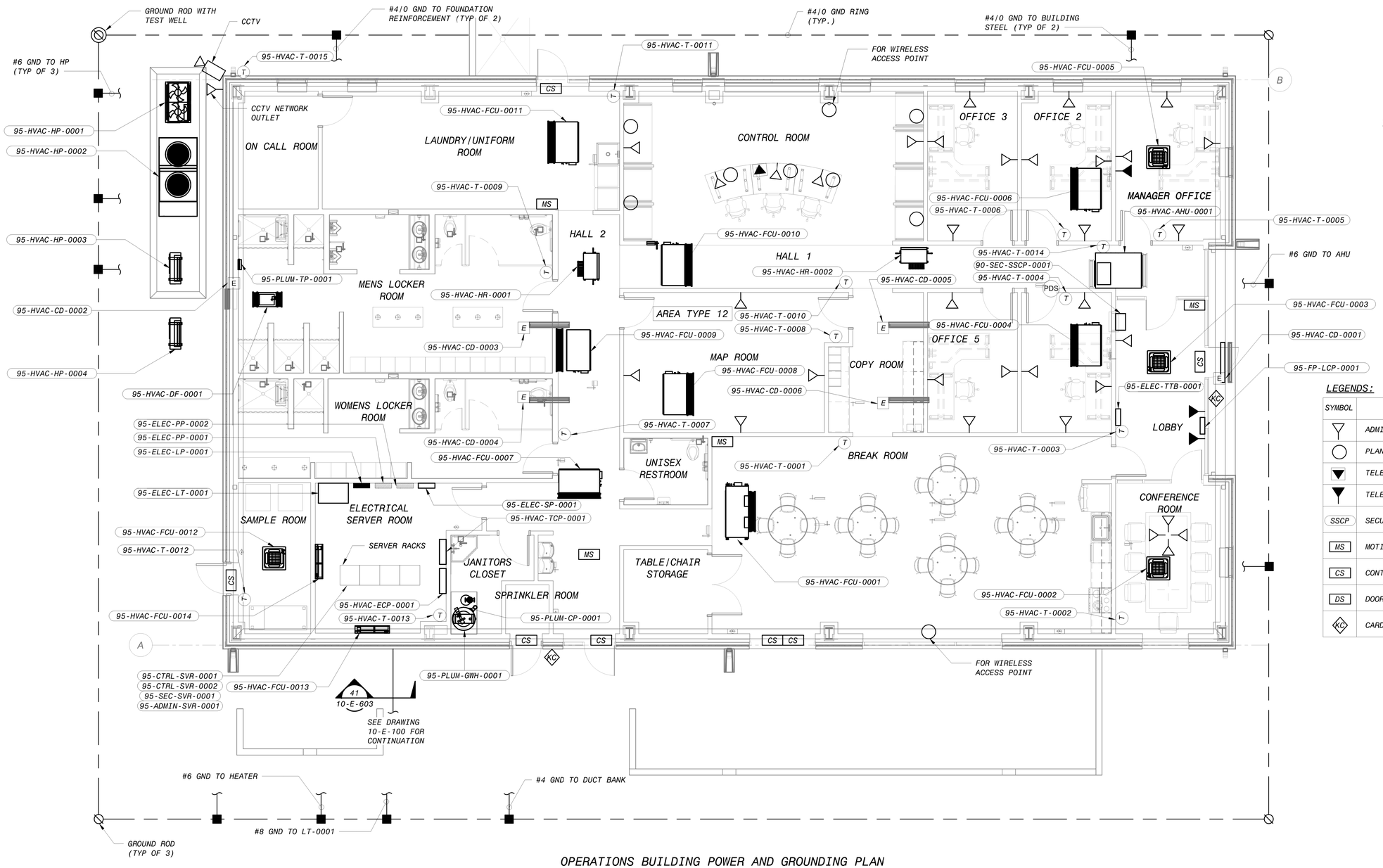
CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

CHEMICAL FACILITY
ELECTRICAL
90-CTRL-LCP-0001 ONE-LINE DIAGRAM

BLACK & VEATCH
JOINT VENTURE
FILANC
BLACK & VEATCH

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEYER No. E 17294 ELECTRICAL STATE OF CALIFORNIA

DATE	REVISIONS AND RECORD OF USE	NO.	BY	CHK	APP
5/19/2020	ISSUED FOR CONSTRUCTION	0	JSL	MAS	MJK



OPERATIONS BUILDING POWER AND GROUNDING PLAN

3/16" = 1'-0"

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND NOTES.
2. SEE DRAWING 10-E-100 FOR OVERALL ELECTRICAL SITE PLAN.
3. FOR CABLE DUCT ENTRY REFER TO SITE OVERALL POWER PLAN (10-E-100).
4. SEE DRAWING 10-E-603 FOR DUCT BANK SECTION.

LEGENDS:

SYMBOL	DESCRIPTION
	ADMINISTRATIVE NETWORK OUTLET
	PLANT CONTROL SYSTEM (PCS) NETWORK OUTLET
	TELEPHONE FLOOR OUTLET
	TELEPHONE OUTLET
SSCP	SECURITY SYSTEM CONTROL PANEL
MS	MOTION SENSOR
CS	CONTACT SWITCH (DOOR)
DS	DOOR SWITCH
KC	CARD READER

6" 4' 2' 0' 5' 10'

3/16" = 1'-0"

NO.	BY	CHK	APP
0	JSL	MAS	MJK

DATE	REVISIONS AND RECORD OF USE
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVEJER No. E 17748 CERTIFICATE OF CALIFORNIA

BLACK & VEATCH

JOINT VENTURE

FILANC

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

OPERATIONS BUILDING
ELECTRICAL
POWER AND GROUNDING PLAN

DESIGNED: JSL
DETAILED: SBC
CHECKED: MAS
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO. 400530

95-E-101

SHEET 404 OF 412

PLOTTED: 20-05-2020 18:08:21

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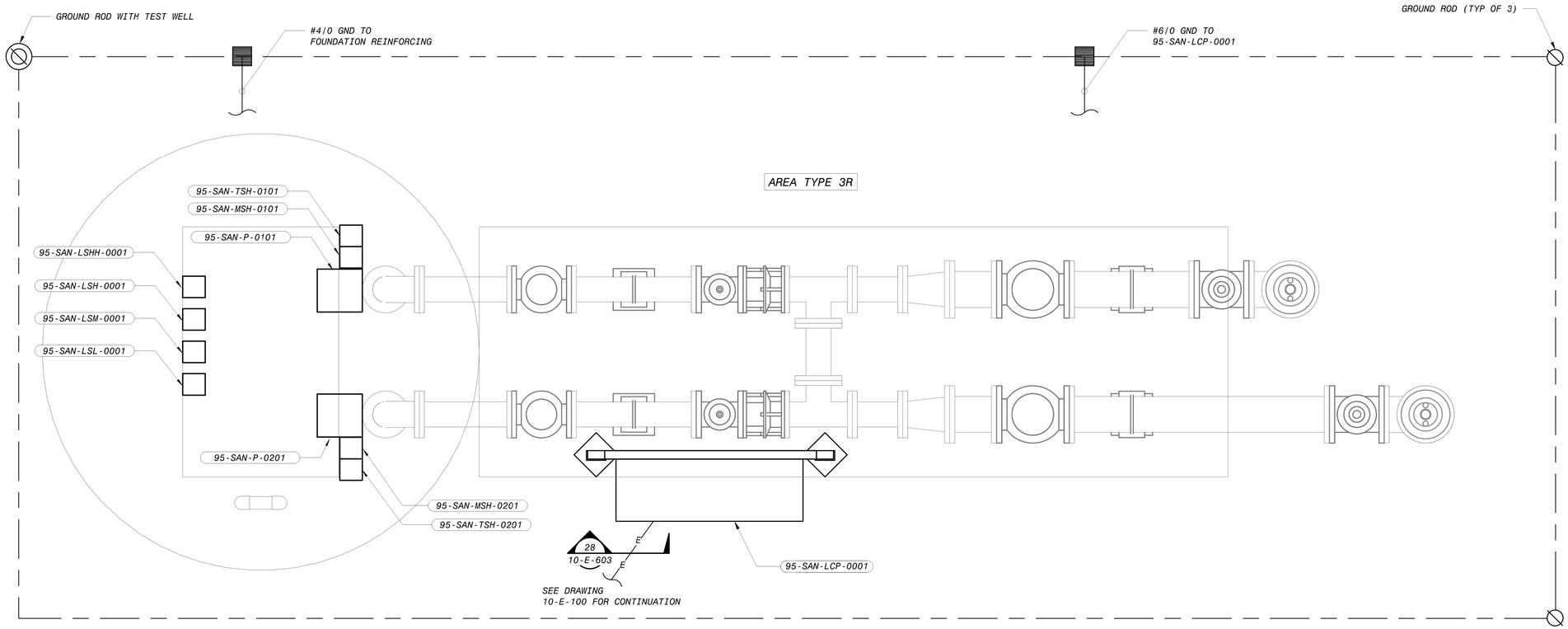

SANITARY LIFT STATION POWER AND GROUNDING PLAN

1" = 1'-0"

NOTES:

1. SEE DRAWING 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND NOTES.
2. SEE DRAWING 10-E-100 FOR OVERALL ELECTRICAL SITE PLAN.
3. PROVIDE AT LEAST TWO #4/0 GROUND TO THE METAL TANK.
4. FOR CABLE DUCT BANK ENTRY REFER TO SITE OVERALL POWER PLAN (10-E-100).
5. ALL THE TAGS ARE PRECEDED BY AREA CODE 95 UNLESS OTHERWISE NOTED.
6. SEE DRAWING 10-E-603 FOR DUCT BANK SECTION.

12" 9" 6" 3" 0' 1' 12"

1" = 1'-0"

NO.	BY	CHK	APP
0	JSL	MAS	MJK

DATE	REVISIONS AND RECORD OF USE
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVEJER No. E 17748 ELECTRICAL STATE OF CALIFORNIA

BLACK & VEATCH

JOINT VENTURE

FILANC

BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WATER
RECLAMATION FACILITY (WRF)

SANITARY LIFT STATION
ELECTRICAL
POWER AND GROUNDING PLAN

DESIGNED: JSL
DETAILED: SBC
CHECKED: MAS
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
400530

95-E-102

SHEET
405 OF 412

PLOTTED: 20-05-2020 18:20:43
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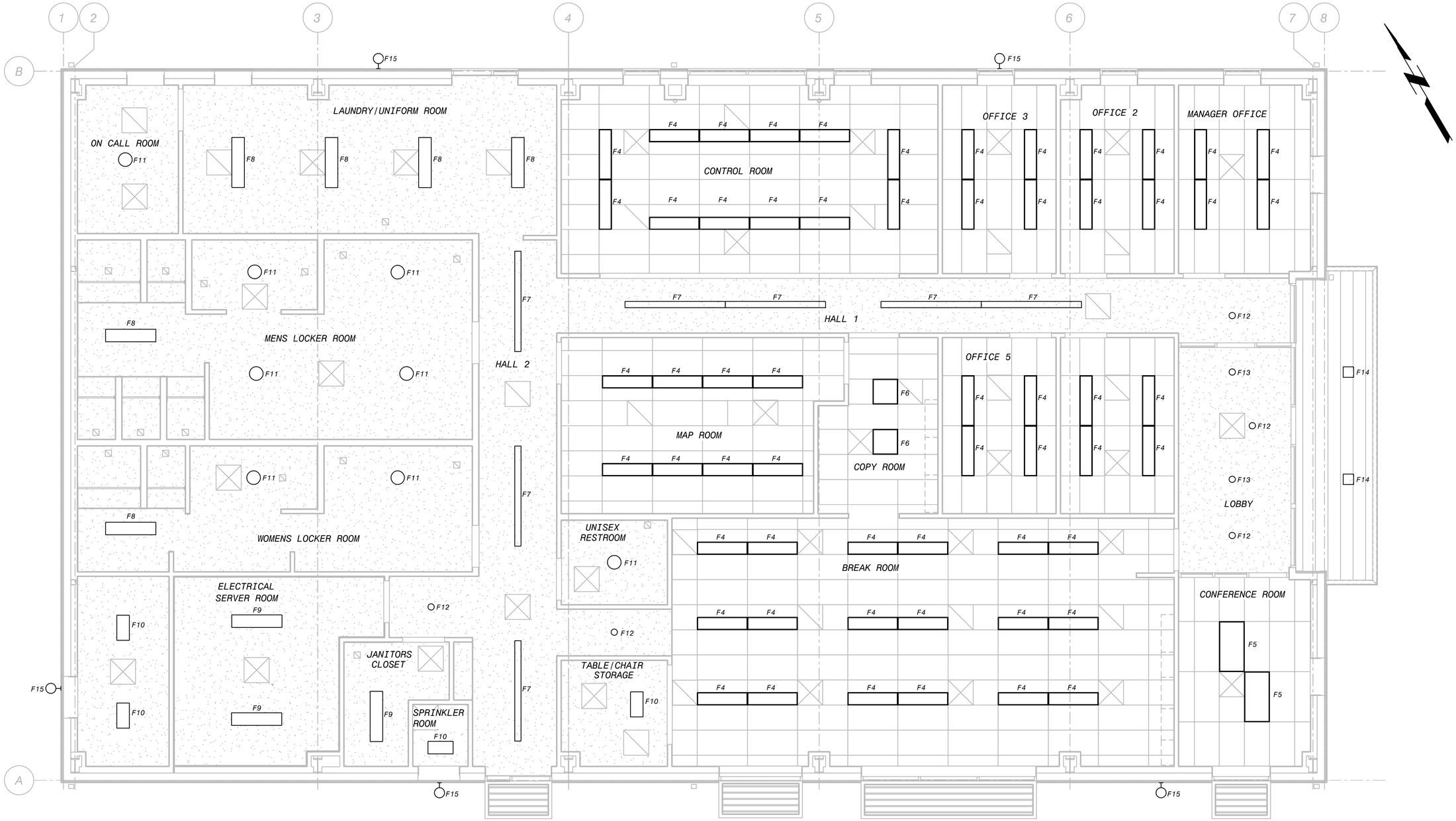


OPERATIONS BUILDING LIGHTING PLAN

1/4"=1'-0"

LIGHTING FIXTURE SCHEDULE

FIXTURE	DESCRIPTION
F4	1' X 4' RECESSED DIRECT / INDIRECT LED TROFFER.
F5	2' X 4' RECESSED DIRECT / INDIRECT LED TROFFER.
F6	2' X 2' RECESSED DIRECT / INDIRECT LED TROFFER.
F7	8' LONG DIRECT / INDIRECT LED SURFACE STRIP LIGHT.
F8	1' X 4' SURFCAE LED WRAPAROUND FIXTURE.
F9	1' X 4' SURFACE LED UTILITY FIXTURE.
F10	1' X 2' SURFACE LED UTILITY FIXTURE.
F11	13" DIA. SURFACE LED SLIM ROUND FIXTURE.
F12	6" DIA. RECESSED LED WIDE ANGLE DOWNLIGHT FIXTURE.
F13	6" DIA. RECESSED LED ADJUSTABLE SPOT FIXTURE.
F14	10" X 10" SURFACE LED WET LOCATION FIXTURE.
F15	WALL SURFACE LED WALL PACK FIXTURE.
F23	13W LED POLE-TOP FLAG LIGHT

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. LIGHT FIXTURE SWITCHING SHALL COMPLY WITH CALIFORNIA TITLE 24, PART 6 MANDATORY LIGHTING CONTROLS, INCLUDING OCCUPANCY / VACANCY SENSOR SHUTOFF CONTROLS, AREA CONTROLS, AUTOMATIC DAYLIGHT CONTROLS, AND MULTI-LEVEL CONTROLS.

4' 2' 0 4' 8'
1/4"=1'-0"

NO.	BY	CHK	APP
0	JSL	MAS	MJK

DATE	REVISIONS AND RECORD OF USE
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVEJER No. E 17745 ELECTRICAL STATE OF CALIFORNIA

BLACK & VEATCH JOINT VENTURE
FILANC
BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

OPERATIONS BUILDING
ELECTRICAL
LIGHTING PLAN

DESIGNED: JSL
DETAILED: SBC
CHECKED: MAS
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
400530

95-E-111
SHEET
406 OF 412

F09000A
D400530
PLOTTED: 5/20/2020 5:30 AM FILE: C:\PWBatchPDF\Process\400530 - Morro Bay WRF\400530-95-E-111.dwg

			PANELBOARD: 95-ELEC-PP-0001		BUS: COPPER			MAINS: 3P-300A MAIN BREAKER				
PHASE			SERVICE: 480V 3PH, 3W		RATING: 300A			LOCATION: OPERATIONS BUILDING		PHASE		
"A"	"B"	"C"	MOUNTING: SURFACE							"A"	"B"	"C"
V.A.	V.A.	V.A.	LOAD	P	BKR	CKT #	BKR	P	LOAD	V.A.	V.A.	V.A.
11640	11640	11640	95-HVAC-HP-0001	3	60	1	2	60	3	95-HVAC-HP-0002	12194	11640	11640
12471	12471	12471	95-HVAC-AHU-0001	3	60	3	4	20	3	95-HVAC-DF-0001	259	259	259
0	0	0	SPARE	3	20	5	6	20	3	SPARE	0	0	0
15000	15000	15000	95-ELEC-LT-0001 (45KVA,480-208Y/120V,3PH,60HZ,-2.5% TAP) (FEEDING 95-ELEC-PP-0002 AND 95-ELEC-LP-0001) (NOTE 2)	3	80	7	8	20	3	SPARE	0	0	0
333	333	333	MOTOR OPERATED SECURED PLANT AREA ACCESS GATE	3	20	9	10	20	3	SPARE	0	0	0
0	0	0	SPARE	3	20	11	12	20	3	SPARE	0	0	0
0	0	0	SPARE	3	20	13	14	20	3	SPARE	0	0	0
0	0	0	SPARE	3	20	15	16	20	3	SPARE	0	0	0
0	0	0	SPARE	3	20	17	18	20	3	SPARE	0	0	0
0	0	0	SPARE	3	20	19	20	60	3	SPARE	0	0	0
0	0	0	SPARE	3	20	21	22	60	3	SPARE	0	0	0
0	0	0	SPARE	3	20	23	24	30	3	SPARE	0	0	0
0	0	0	SPARE	3	30	25	26	30	3	SPARE	0	0	0
0	0	0	SPARE	3	30	27	28	20	3	SPARE	0	0	0
39444			TOTAL "A"			51897				TOTAL "A"	12453		
	39444		TOTAL "B"			51343				TOTAL "B"		11899	
		39444	TOTAL "C"			51343				TOTAL "C"			11899
			TOTAL			154583							

95-ELEC-PP-0001
POWER PANELS SCHEDULE
OPERATIONS BUILDING

			PANELBOARD: 95-ELEC-PP-0002		BUS: COPPER			MAINS: 3P-400 MAIN BREAKER				
PHASE			SERVICE: 120/208V, 3PH, 4W		RATING: 400A			LOCATION: OPERATIONS BUILDING		PHASE		
"A"	"B"	"C"	MOUNTING: SURFACE							"A"	"B"	"C"
V.A.	V.A.	V.A.	LOAD	P	BKR	CKT #	BKR	P	LOAD	V.A.	V.A.	V.A.
466			95-HVAC-FCU-0002	2	20	1	2	20	2	95-HVAC-FCU-0001	466		
	466			-	-	3	4	-	-			466	
		466	95-HVAC-FCU-0004	2	20	5	6	20	2	95-HVAC-FCU-0003			466
466				-	-	7	8	-	-		466		
	466		95-HVAC-FCU-0006	2	20	9	10	20	2	95-HVAC-FCU-0005		466	
		466		-	-	11	12	-	-				466
466			95-HVAC-FCU-0007	2	20	13	14	20	1	HAND DRYER NO.1, HAND DRYER NO.2	1000		
	466			-	-	15	16	20	1	95-PLUM-TP-0001		250	
		233	95-HVAC-HR-0001	2	20	17	18	20	2	95-HVAC-FCU-0008			466
233				-	-	19	20	-	-		466		
	233		95-HVAC-HR-0002	2	20	21	22	30	2	95-HVAC-HP-0004		2600	
		233		-	-	23	24	-	-				2600
466			95-HVAC-FCU-0009	2	20	25	26	20	2	95-HVAC-FCU-0010	466		
	466			-	-	27	28	-	-			466	
		466	95-HVAC-FCU-0011	2	20	29	30	20	2	95-HVAC-FCU-0012			466
466				-	-	31	32	-	-		466		
	466		95-HVAC-FCU-0013	2	20	33	34	20	2	95-HVAC-FCU-0014		466	
		466		-	-	35	36	-	-				466
500			MOTOR OPERATED SECURED PLANT AREA ACCESS GATE	1	20	37	38	30	2	95-HVAC-HP-0003	2600		
	500		COMPOSITE SAMPLER (65-TW-SAMP-0001)	1	20	39	40	-	-			2600	
		1000	95-PLUM-GWH-0001, 95-PLUM-CP-0001	1	20	41	42	20	1	95-HVAC-TCP-0001			500
200			PW FLOW METER	1	20	43	44	20	1	95-HVAC-ECP-0001	500		
	0		SPARE	1	20	45	46	20	1	SPARE		0	
		0	SPARE	1	20	47	48	20	1	SPARE			0
3064			TOTAL "A"			8996				TOTAL "A"	5931		
	3064		TOTAL "B"			10379				TOTAL "B"		7315	
		3331	TOTAL "C"			8763				TOTAL "C"			5431
			TOTAL			28138							

95-ELEC-PP-0002
POWER PANELS SCHEDULE
OPERATIONS BUILDING

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. TAP OF TRANSFORMER IS ADJUSTED TO ACCOMODATE VOLTAGE DROP.
3. PROVIDE MINIMUM #12, #12G CABLE AND 3/4" CONDUIT FOR 20A CIRCUIT; MINIMUM #8, #10G CABLE AND 3/4" CONDUIT FOR 30A CIRCUIT; MINIMUM #2, #10G CABLE AND 1-1/4" CONDUIT FOR 60A CIRCUIT; MINIMUM #1/0, #8G CABLE AND 1-1/2" CONDUIT FOR 80A CIRCUIT.
4. THE SINGLE PHASE LIGHTING PANEL SHALL BE RATED FOR 200A OR LESS.

NO.	BY	CHK	APD
0	JSL	MAS	MJK

REVISIONS AND RECORD OF USE

DATE	
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
MARK J. KLEVELTER
No. E 17745
ELECTRICAL
STATE OF CALIFORNIA

BLACK & VEATCH
JOINT VENTURE
FILANC
BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

OPERATIONS BUILDING
ELECTRICAL
POWER PANELS SCHEDULE

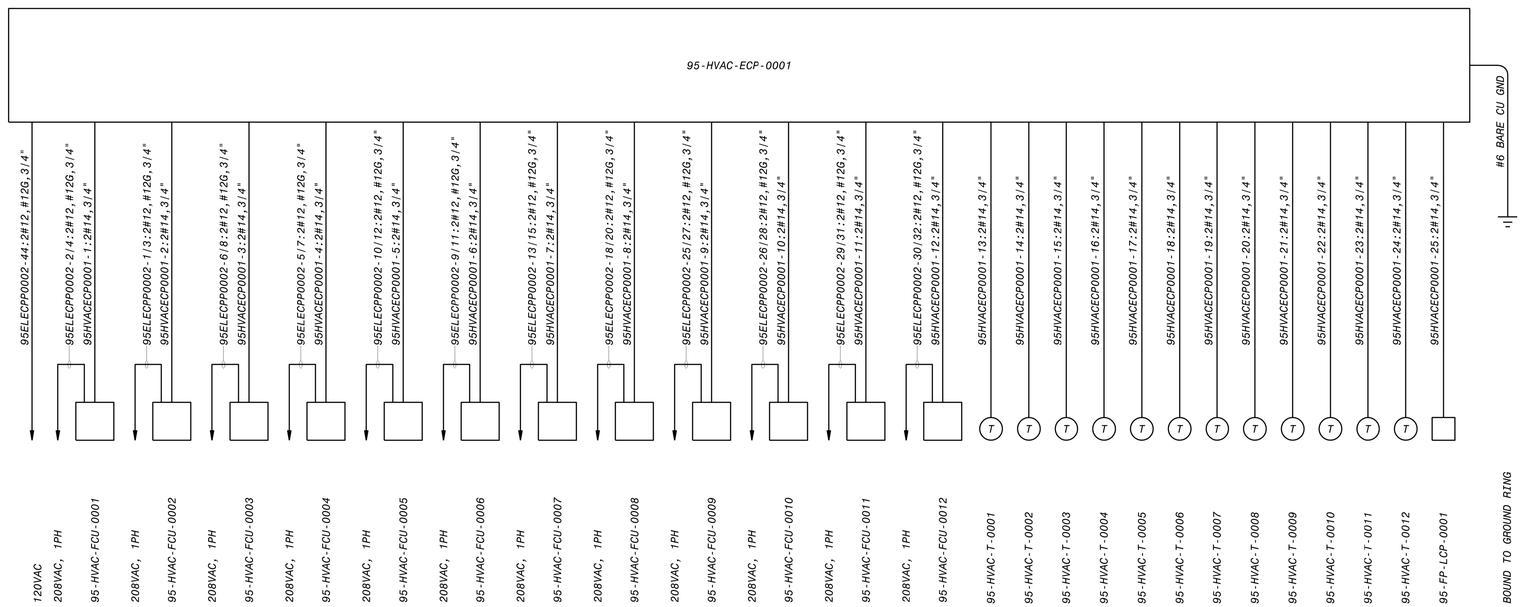
DESIGNED: JSL
DETAILED: SBC
CHECKED: MAS
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

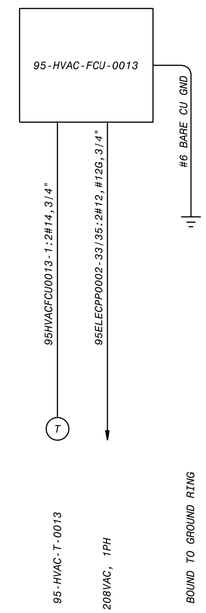
PROJECT NO.
400530

95-E-601
SHEET
407 OF 412

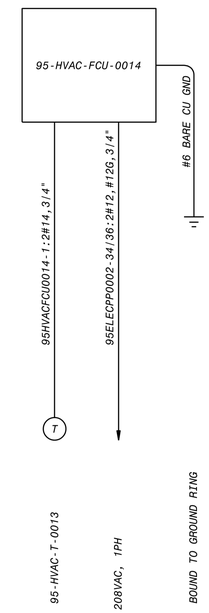
FD9000A
0400530
PLOTTED: 5/20/2020 10:37 AM FILE: C:\PWBatchPDF\Process\400530 - Morro Bay WRF\400530-95-E-601.dwg



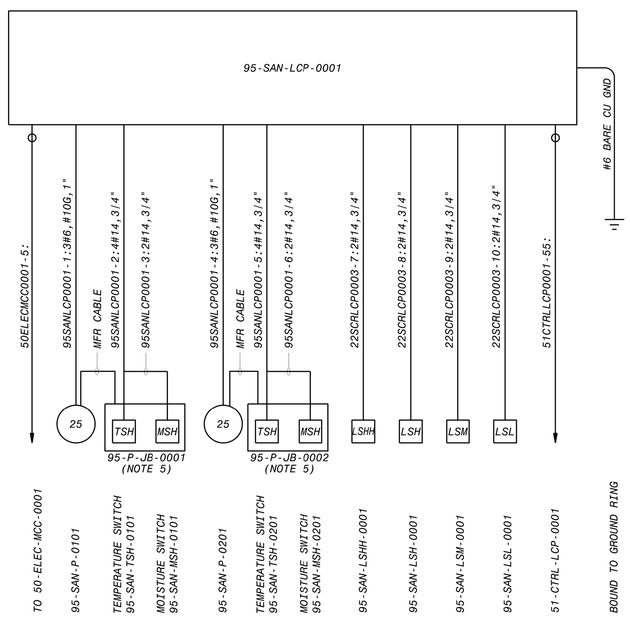
95-HVAC-ECP-0001
ONE-LINE DIAGRAM
OPERATIONS BUILDING



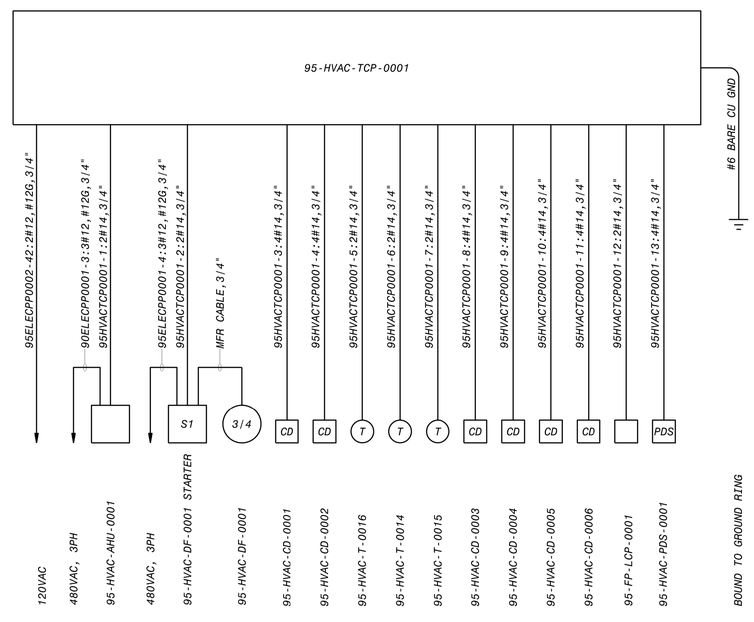
95-HVAC-FCU-0013
ONE-LINE DIAGRAM
OPERATIONS BUILDING



95-HVAC-FCU-0014
ONE-LINE DIAGRAM
OPERATIONS BUILDING



95-SAN-LCP-0001
ONE-LINE DIAGRAM
SANITARY LIFT STATION



95-HVAC-TCP-0001
ONE-LINE DIAGRAM
OPERATIONS BUILDING

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. ALL CIRCUITS SHOWN ON THIS DRAWING WITHOUT THE DUCT SYMBOL SHALL BE FIELD ROUTED BY ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO DETERMINE IF THE CONDUITS SHALL BE BELOW GROUND OR ABOVE GROUND.
3. 24V DC POWER CIRCUIT, 24V DC DIGITAL CIRCUITS AND 24V DC ANALOG CIRCUITS MAY BE COMBINED INTO THE SAME CONDUIT AS LONG AS THE CONDUIT FILL MEETS THE NEC REQUIREMENTS.
4. THE MINICAS RELAY FOR THE SUBMERSIBLE PUMPS SHALL BE PROVIDED BY THE PUMP SUPPLIER.
5. ELECTRICAL INSTALLER TO FURNISH AND INSTALL LOCAL JUNCTION BOX FOR THE MSH AND TSH FURNISHED BY PUMP SUPPLIER.

NO.	BY	CHK	APP
0	JSL	MAS	MJK

REVISIONS AND RECORD OF USE

DATE	
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
MARK J. KLEVEITER
No. E 17748
ELECTRICAL
STATE OF CALIFORNIA

BLACK & VEATCH
JOINT VENTURE
FILANC
BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

OPERATIONS BUILDING
ELECTRICAL
MISCELLANEOUS ONE-LINE DIAGRAM

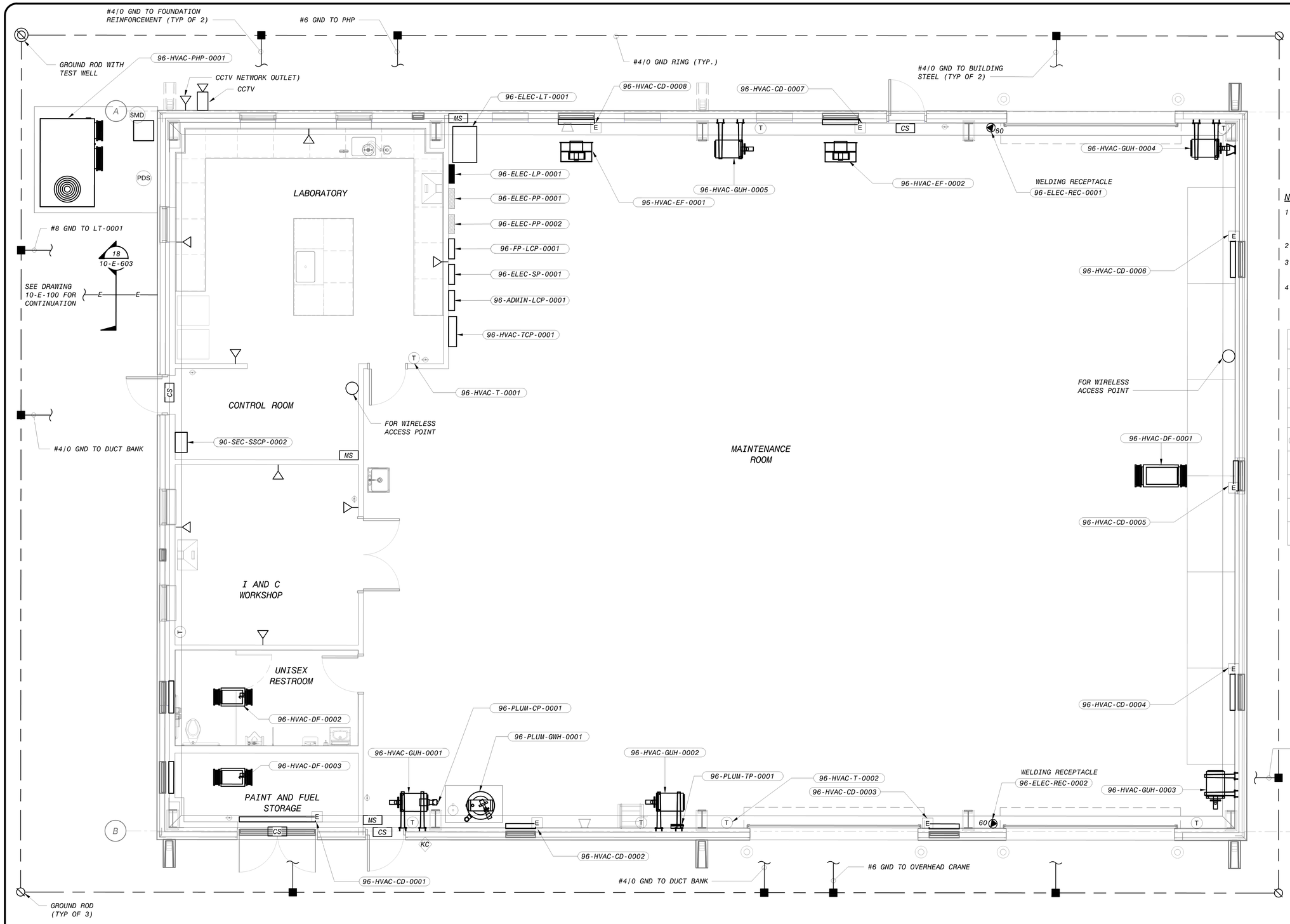
DESIGNED: JSL
DETAILED: SBC
CHECKED: MAS
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
400530

95-E-711
SHEET
408 OF 412

F09000A
D400530
PLOTTED: 5/20/2020 5:30 AM FILE: C:\PWBatchPDF\Process\400530 - Morro Bay WRF\400530-95-E-711.dwg



MAINTENANCE BUILDING POWER AND GROUNDING PLAN

1/4" = 1'-0"

4' 2' 0' 4' 8'

1/4" = 1'-0"

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGENDS, ABBREVIATIONS AND NOTES.
2. SEE DRAWING 10-E-100 FOR OVERALL ELECTRICAL SITE PLAN.
3. FOR CABLE DUCT ENTRY REFER TO SITE OVERALL POWER PLAN (10-E-100).
4. SEE DRAWING 10-E-603 FOR DUCT BANK SECTION.

LEGENDS:

SYMBOL	DESCRIPTION
	ADMINISTRATIVE NETWORK OUTLET
	PLANT CONTROL SYSTEM (PCS) NETWORK OUTLET
	TELEPHONE FLOOR OUTLET
	TELEPHONE OUTLET
SSCP	SECURITY SYSTEM CONTROL PANEL
MS	MOTION SENSOR
CS	CONTACT SWITCH (DOOR)
DS	DOOR SWITCH
KC	CARD READER

NO.	BY	CHK	APP
0	JSL	MAS	MJK

REVISIONS AND RECORD OF USE

DATE: 5/19/2020 ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEYCZEK No. E-17346 ELECTRICAL STATE OF CALIFORNIA

BLACK & VEATCH JOINT VENTURE

BLACK & VEATCH

FILANC

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILTY (WRF)

MAINTENANCE BUILDING
ELECTRICAL
POWER AND GROUNDING PLAN

DESIGNED: JSL
DETAILED: SBC
CHECKED: MAS
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

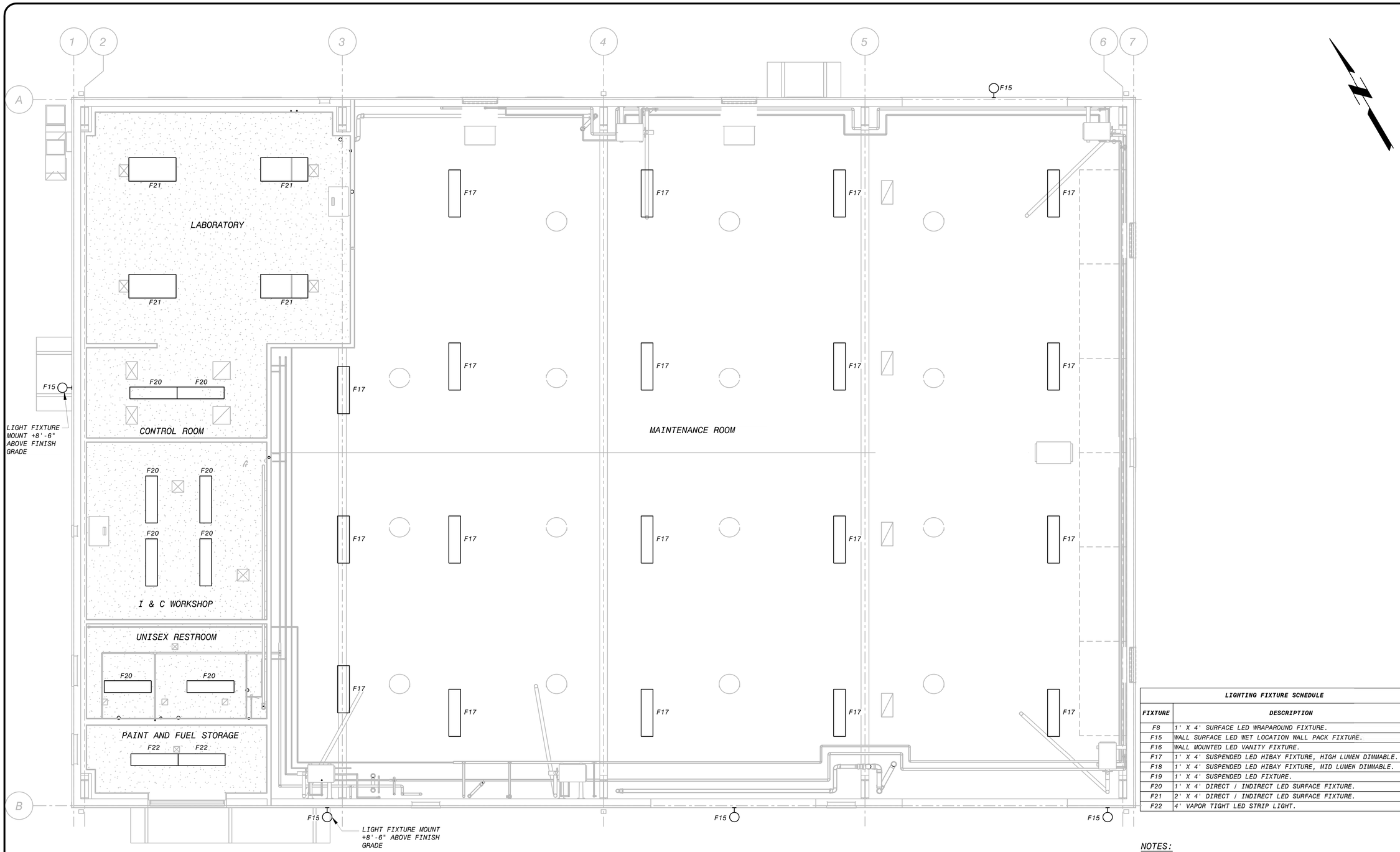
PROJECT NO.
400530

96-E-101

SHEET
409 OF 412

PLOTTED: 20-05-2020 18:22:17

D400530



MAINTENANCE BUILDING LIGHTING PLAN

1/4"=1'-0"

LIGHTING FIXTURE SCHEDULE	
FIXTURE	**DESCRIPTION**
F8	1' X 4' SURFACE LED WRAPAROUND FIXTURE.
F15	WALL SURFACE LED WET LOCATION WALL PACK FIXTURE.
F16	WALL MOUNTED LED VANITY FIXTURE.
F17	1' X 4' SUSPENDED LED HIBAY FIXTURE, HIGH LUMEN DIMMABLE.
F18	1' X 4' SUSPENDED LED HIBAY FIXTURE, MID LUMEN DIMMABLE.
F19	1' X 4' SUSPENDED LED FIXTURE.
F20	1' X 4' DIRECT / INDIRECT LED SURFACE FIXTURE.
F21	2' X 4' DIRECT / INDIRECT LED SURFACE FIXTURE.
F22	4' VAPOR TIGHT LED STRIP LIGHT.

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. LIGHT FIXTURE SWITCHING SHALL COMPLY WITH CALIFORNIA TITLE 24, PART 6 MANDATORY LIGHTING CONTROLS, INCLUDING OCCUPANCY / VACANCY SENSOR SHUTOFF CONTROLS, AREA CONTROLS, AUTOMATIC DAYLIGHT CONTROLS, AND MULTI-LEVEL CONTROLS.

4' 2' 0 4' 8'

1/4"=1'-0"

NO.	BY	CHK	APP
0	JSL	MAS	MJK

DATE	REVISIONS AND RECORD OF USE
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
MARK J. KLEVEER
No. E 17748
ELECTRICAL
STATE OF CALIFORNIA

BLACK & VEATCH
JOINT VENTURE
FILANC
BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

MAINTENANCE BUILDING
ELECTRICAL
LIGHTING PLAN

DESIGNED: JSL
DETAILED: SBC
CHECKED: MAS
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
400530

96-E-111
SHEET
410 OF 412

F09000A
D400530
PLOTTED: 5/20/2020 5:31 AM FILE: C:\PWBatchPDF\Process\400530 - Morro Bay WRF\400530-96-E-111.dwg

			PANELBOARD: 96-ELEC-PP-0001		BUS: COPPER				MAINS: 3P-150A MAIN BREAKER				
PHASE			SERVICE: 480V 3PH, 3W		RATING: 150A				LOCATION: MAINTENANCE BUILDING		PHASE		
"A"	"B"	"C"	MOUNTING: SURFACE								"A"	"B"	"C"
V.A.	V.A.	V.A.	LOAD	P	BKR	CKT #		BKR	P	LOAD	V.A.	V.A.	V.A.
4157	4157	4157	96-HVAC-PHP-0001	3	20	1	2	20	3	96-HVAC-DF-0001	518	518	518
3454	3454	0	WELDING SOCKET # 1	2	20	3	4	20	2	WELDING SOCKET # 2	0	3454	3454
0	0	0	SPARE	3	20	5	6	20	3	SPARE	0	0	0
1727	1727	1727	CRANE	3	20	7	8	20	3	96-HVAC-EF-0001	345	345	345
10000	10000	10000	96-ELEC-LT-0001 (30KVA,480-208Y/120V,3PH,60HZ,-2.5% TAP)(FEEDING 96-ELEC-PP-0002 AND 96-ELEC-LP-0001) (NOTE 2)	3	50	9	10	20	3	96-HVAC-EF-0002	345	345	345
2328	2328	2328	95-STW-P-0101	3	20	11	12	20	3	SPARE	0	0	0
0	0	0	SPARE	3	20	13	14	20	3	SPARE	0	0	0
0	0	0	SPARE	3	20	15	16	20	3	SPARE	0	0	0
0	0	0	SPARE	3	20	17	18	20	3	SPARE	0	0	0
0	0	0	SPARE	3	20	19	20	60	3	SPARE	0	0	0
0	0	0	SPARE	3	20	21	22	60	3	SPARE	0	0	0
0	0	0	SPARE	3	20	23	24	30	3	SPARE	0	0	0
0	0	0	SPARE	3	30	25	26	30	3	SPARE	0	0	0
0	0	0	SPARE	3	30	27	28	20	3	SPARE	0	0	0
21666			TOTAL "A"			22875				TOTAL "A"	1209		
	21666		TOTAL "B"			26328				TOTAL "B"		4663	
		18212	TOTAL "C"			22875				TOTAL "C"			4663
			TOTAL			72077							

96-ELEC-PP-0001
POWER PANELS SCHEDULE
MAINTENANCE BUILDING

			PANELBOARD: 96-ELEC-PP-0002		BUS: COPPER				MAINS: 3P-100A MAIN BREAKER				
PHASE			SERVICE: 120/208V, 3PH, 4W		RATING: 100A				LOCATION: MAINTENANCE BUILDING		PHASE		
"A"	"B"	"C"	MOUNTING: SURFACE								"A"	"B"	"C"
V.A.	V.A.	V.A.	LOAD	P	BKR	CKT #		BKR	P	LOAD	V.A.	V.A.	V.A.
518			96-HVAC-GUH-0001	1	20	1	2	20	1	96-HVAC-DF-0002	518		
	518		96-HVAC-GUH-0002	1	20	3	4	20	1	96-HVAC-DF-0003		518	
		518	96-HVAC-GUH-0003	1	20	5	6	20	1	96-PLUM-GWH-0001			500
518			96-HVAC-GUH-0004	1	20	7	8	20	1	96-ADMIN-LCP-0001	250		
	518		96-HVAC-GUH-0005	1	20	9	10	20	1	96-PLUM-CP-0001		500	
		500	96-HVAC-TCP-0001	1	20	11	12	20	1	96-PLUM-TP-0001			250
0			SPARE	1	20	13	14	20	1	HAND DRYER NO.1	500		
	0		SPARE	1	20	15	16	20	1	SPARE		0	
		0	SPARE	1	20	17	18	20	1	SPARE			0
0			SPARE	1	20	19	20	20	1	SPARE	0		
	0		SPARE	1	20	21	22	20	1	SPARE		0	
		0	SPARE	1	20	23	24	20	1	SPARE			0
0			SPARE	1	20	25	26	20	1	SPARE	0		
	0		SPARE	1	20	27	28	20	1	SPARE		0	
		0	SPARE	1	20	29	30	20	1	SPARE			0
0			SPARE	1	20	31	32	20	1	SPARE	0		
	0		SPARE	1	20	33	34	20	1	SPARE		0	
		0	SPARE	1	20	35	36	20	1	SPARE			0
0			SPARE	1	20	37	38	20	1	SPARE	0		
	0		SPARE	1	30	39	40	30	1	SPARE		0	
		0	SPARE	1	30	41	42	30	1	SPARE			0
1036			TOTAL "A"			2304				TOTAL "A"	1268		
	1036		TOTAL "B"			2054				TOTAL "B"		1018	
		1018	TOTAL "C"			1768				TOTAL "C"			750
			TOTAL			6126							

96-ELEC-PP-0002
POWER PANELS SCHEDULE
MAINTENANCE BUILDING

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. TAP OF TRANSFORMER IS ADJUSTED TO ACCOMODATE VOLTAGE DROP.
3. PROVIDE MINIMUM #12, #12G CABLE AND 3/4" CONDUIT FOR 20A CIRCUIT; MINIMUM #8, #10G CABLE AND 3/4" CONDUIT FOR 30A CIRCUIT. MINIMUM #4, #10G CABLE AND 1-1/4" CONDUIT FOR 50A CIRCUIT.
4. THE SINGLE PHASE LIGHTING PANEL SHALL BE RATED FOR 200A OR LESS.

NO.	BY	CHK	APP
0	JSL	MAS	MJK

REVISIONS AND RECORD OF USE

DATE	
5/19/2020	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER MARK J. KLEVELER No. E 17748 ELECTRICAL STATE OF CALIFORNIA

BLACK & VEATCH JOINT VENTURE

FILANC BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

MAINTENANCE BUILDING
ELECTRICAL
POWER PANELS SCHEDULE

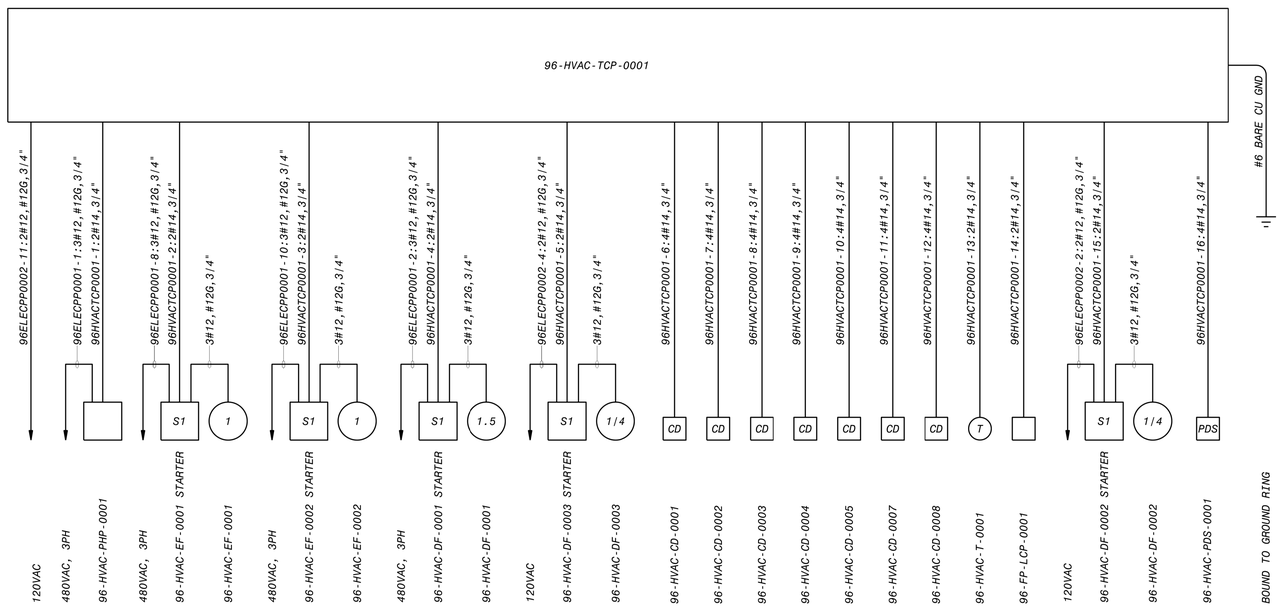
DESIGNED: JSL
DETAILED: SBC
CHECKED: MAS
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
400530

96-E-601
SHEET
411 OF 412

FD9000A
0400530
PLOTTED: 5/20/2020 9:19 AM FILE: C:\PWBatchPDF\Process\400530 - Morro Bay WRF\400530-96-E-601.dwg



96-HVAC-TCP-0001
ONE-LINE DIAGRAM
MAINTENANCE BUILDING

NOTES:

1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. ALL CIRCUITS SHOWN ON THIS DRAWING WITHOUT THE DUCT SYMBOL SHALL BE FIELD ROUTED BY ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO DETERMINE IF THE CONDUITS SHALL BE BELOW GROUND OR ABOVE GROUND.
3. 24V DC POWER CIRCUIT, 24V DC DIGITAL CIRCUITS AND 24V DC ANALOG CIRCUITS MAY BE COMBINED INTO THE SAME CONDUIT AS LONG AS THE CONDUIT FILL MEETS THE NEC REQUIREMENTS.

DATE	REVISIONS AND RECORD OF USE	NO.	BY	CHK	APP
5/19/2020	ISSUED FOR CONSTRUCTION	0	JSL	MAS	MJK

REGISTERED PROFESSIONAL ENGINEER
MARK J. KLEVETER
No. E 17748
ELECTRICAL
STATE OF CALIFORNIA

BLACK & VEATCH
JOINT VENTURE
FILANC
BLACK & VEATCH

CITY OF MORRO BAY
MORRO BAY WRF
RECLAMATION FACILITY (WRF)

MAINTENANCE BUILDING
ELECTRICAL
MISCELLANEOUS ONE-LINE DIAGRAM

DESIGNED: JSL
DETAILED: SBC
CHECKED: MAS
APPROVED: MJK
DATE: 5/19/2020

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
400530

96-E-711
SHEET
412 OF 412

FD9000A
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