





NORTHEAST PERSPECTIVE

SOUTHWEST PERSPECTIVE



STATE OF CALIFORNIA ENVELOPE COMPONENT APPROACH CERTIFICATE OF COMPUTANCE

Envelope Component Approach Franciskame - Morro Bay Water Reclamation Facility Maintenance Suiding CAL FORMA EVERDY COMMISSION NRCC-ENV-01-E Page 1 of 5

Wearing and March 24, 2020

A. GEP	REAL INFORMATION										
91	Project Unitations	. 55	is south Bay Bu	alexand		05	Ç.,	mpliance N	Aethod:	Component Unconditioned (file	e Affidavn)
32	EA Citry and Z p Cor	ie: M	orro Bay 93442			07	Bulldl	ng Frena O	rientacion		East
<u>9</u> 9	Climate Zone:			5		גס	Pha	se al Cons	Inuclion	Additions	
34	Total Condulened Flag	e Area 1,1	17fi 5 F.			99	BJ	ilding Och	gansy.	 Norres dentral High Rise Resident Hotel/Motel Guest 	іа : Ноолт
95	Building Type		Schools (Publ Skylight Area	k, Selicols) for Large End	Beloc Ala losed Space	alale Public Sch > Susu ft ^a (Ifi	nool Buikili checked, r	ng 🔲 C clude the	worldworred S NRCC ENV DA	paces 🛛 🔲 Upicondita 1 E with submittal)	uned Soikes
B. EN'	VELOPE DETAILS - FRA	MED									
01	02	03	- 04	05	06	97	٥	Ĥ	- 69 -	16	· 11 ·
Tag/I	0 Assembly Type	Frame Materia	Frame A Depth	Frame Specing	Cavity R-value	Continuous Insulation R-value	Apper Refer Fable	AALXIO evine Dell	Proposed U-Factor	Required U Factor from Tables 140.3-8. C. or D	Field Inspection Comments
ROOF	03 Roat	Metal	8-	60.	33	NA	4.2.7	F15	0.034	0.04 L	
ROOF	100A Soul	Metal	8"	60"	24	NA	4.2.7	F15	0.042	0.041	
WALL	os waii	Metal	15.75*	24.	21	NA	4.3.3	A26	D.C45	0.06 L	
WALL	06 Wall	Metal	14"	26"	21	NA	د.د.۵	A.26	C.C48	0.051	
PART	io wali	Metal	4 875*	74*	13	NA	43.3	A25	0.038	0.061	wall between conditioned and tempered spaces
Ċ. EN		-FRAME	D .								
01	92	03	3 04		95 .	06	03	7	-08	09	00

CA Building Energy Efficiency Scandards - 2016 Nonresidemial Compliance

Francistame - Morro Bay Water Reglamation Facility Maintenance Soliding

STATE OF CALIFORNIA ENVELOPE COMPONENT APPROACH

CAL FORMULE VERDY COMMISSION

Page 4 of 5 Wear Separat March 24, 2020

January 2016

H. ENVELOPE MANDATORY MEASURES

CEC NRCC ENV IN F (Revised Child

CERTIFICATE OF COMPUTANCE

Envelope Component Approach

ndicate location on building plans of Mandatory Envelope Measures Note Block:

INSTRUCTIONS TO APPLICANT ENVELOPE COMPLIANCE & WORKSHEETS (sheek box if worksheet are included)

For detailed instructions on the use of this one all Energy Efficiency Standards compliance documents, please refer to the Energy Commission website.

NKCC ENV UILE Certificate of Compliance. Required on plans for all submittels.

🔲 VRCC-ENV-04-E Use when minimum skylight recurrements for large enclosed spaces are required in climate zones 2 through 15. Optional on plans

OFO MROO FMV IN F (Revised On 6) CERTIFICATE OF COMPLIANCE

Envelope Component Approac Morro Bay Water Repl

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E. ROOF	IN	IG PI	RO	Ю	CT :	5 (I
01			D2	2		

- An aged solar reflectance less · High-rise residential buildings Reflectance and thermal emista - High-rise residential and Hote amitiance requirements The roof area covered by build and thermal emittance require CA Building Energy Efficiency Star

STATE OF CALIFORNIA ENVELOPE COMPONE OFO MRCO FRV 31 F (Reveendame)

CERTIFICATE OF COMPUTANCE Envelope Component Approac Morro Bay Water Repl

AESPONSIBLE PERSON'S DECLAR cerbity the following under pen-The unformation provided 2. Tame igit a coder Division

epishees, calculations, plans and specifications submeted to the enforcement agency for approval with this building permit application.

5 I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permitions and made available to the emotionement egency to all applicable inspections. Condensional that a completed signed using of this Certificate of Longol ance is required to be included with the documentation for builder provides to the

building owner at occupancy Parpoer bie Darigher Manner (Unice: Frager

Conserve Fraver Sergie Architects

97) Dece Street i tavisunista Sari Luis Obispo, CA 93401

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CA Building Energy Efficiency Scandards - 2016 Nonresidemial Compliance

January 2016

CA Building Energy Efficiency Scandards 2015 Nonresidemial Compliance

STATE OF CALIFORNIA ENVELOPE COMPONENT APPROACH

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Envelope	Component Ap	рргоаст							Der Staar			Page 2 of 5
•	Монго Вау Wa	ter Restamation	n Facility Maine	enance Building						"Maich 24, 2020		
Tagy10	Assentity T	Аз Гуре М	isombly T latenals I	Interior hickness Insti Inches) R-V	for Core – (lation alu e	Continuous Insulation R-Velue	Apsen Refer Table	dik 144 rente Cel	Proposed U-Factor	Required U Factor Tables 340 3-8, C	from . or 0	Field Inspection Comments
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D. ENVEL	LOPE DETAILS	- MASS	_			_						
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Tag/I[I	Mass Type	Density (16/6°)	M ₆ 55 Thickness {inches]	Foreing Strip Thickness {inchest	Juterion Insulation R-Value	Exterior Insulation R-Value	Appen Nefe Table	PALIND: Pance Cell	Proposed U-Cector	Required U-Fact from Tables 140.: C, or D	0) 1 B,	Field Inspection Comments
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Mass Brad	1											
23 lb/fr ² sr Greate	r Roo ² Pritch	CRAC Produ ID Numbe	n(1 er <mark>Produ</mark> c	Aged Se t Type _ Reflecta	nce ¹ Ther	rmal S Jance ₋ (Opr	;Ri ²) Ilenal) _, R	Aged Solar Reflectance	Theorea Emittan:	l SRu se (Opbonal)		Comments
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- An aged (High-rise lefter tare High-rise amittance	solar reflectanc residential bui e and therma residential and regularments	e less (han 0 Idings and Ho emittance res I Hotels/Mote	63 is allowed j tels and Mote juinements e S with Meep-	provided the musi Is with tow-sloped sloped roads in Cli	nom rool/(roofs in Clin nale Zones	e ling (1474) mate Zones 1 1 and 16 are	or in TABLE Litrough 8, resempt fru	146 3 is no , 12, and 16 um aged So	t exceeded are exempt lar Reflectan	ed from ages Solar Ke and Themia		
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Envelope	Component Ap	pproach							Res Dave	-		Page 5 of 5
•	Монго Вау Wa	ter Reclamation	n Facility Mainw	enance Building						" March 24, 2020		
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	¹¹ San Luis Obisp	o, CA 93401				1910	605 544-61	51				
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Poperable Serginal Service Bruce Fraser

Deta Separati March 14, 2010

CA Architect #C9787

Plicina 805 544-G161

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CECANROO-ENGADI-E (Second 196 CERTIFICATE OF COMPLIANCE

Envelope Component Approach

F deal Helm Morro Bay Water Reclamation Facility Maintenance Building

 To apply Diguid Field Applied Loatings, the coating must be applied across the entire roof surface and meet the recommended by the roatings manufacturer and meet mininum performance requirements listed in §300 S(i]4 🔲 Numini -- Pigmented Aphali Roof Coaling 🔲 Lement-Based Roof Coaling 🔲 Úther 👘 1. Check the bax if the aged Solar Reflectance was not available in the Casel Raof Council's Rated Product Directory, menuse to esteplated aged solar reflectance value. Where Planay is the initial Solar Stylectance found in the directory and 8 is rither 0.65 Inter Field-Applied Looking.

2. Exception the SM holes by using the SM-Worksheer and entry the counting wave in the NV rational above paragraphic program. F. AIR BARRIER

01	02	00	. 04
Name	A e Barner Material Type	Air Barrier Assembly Type	Whole Building Air Leatage Testin

G. FENES	STRATION PROPOSED AREA	S AND EFFR	TENCIES								
51	62	- 66 - 66	- 04	Π5	- 06	07	ПЯ	сп	10	11	12
						Proj	a ised				
Tag/ID	Fenestration Type	Surface Area	Orientatiun	⊭ ol Panes	Max U-Factor	Max (R)SHGC	Min VT	usbel	Overhang	Condition Status	Comments
WIN 34	projected aluminum window	21.0	North	2	-),4g	0.22	0.9Z	NERC	פר	new	
WIN 05	projected aluminum window	35.5	Weke	2	0.4R	033	9.32	NEDC.	na	néw	
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CA Building Energy Efficiency Standards (2016 Nonceldendal Compliance)

January 2018

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CALIFORMA ENERGY COMA SSION NRCC-CNV-01-E	
Page 3 of S	
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2	Commen	ts

January 2016







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20 11:00:46 TED: 5/19/20 PLOT

GENERAL SHEET NOTES			5/19/2019 ISSUED FOR CONSTRUCTION 0 BDF BDF EVB DATE REVISIONS AND RECORD OF USE NO. BY CHK APP
SHEET KEYNOTES	HAND THE OWNER	9787	ATECT * EINE
	FRASER SEIPLE Architects	JOINT VENTURE	FILANC BLACK&VEATCH
	CITY OF MORRO BAY MORRO BAY WATER	MECLAWALLUN FACILITY (WAF) MAINTENANCE BUILDING	ARCHITECTURAL CLERESTORY PLAN
6" 4' 2' 0' 5' 10' 3/16" = 1' - 0"	DESIGNED: B DETAILED: A CHECKED: - APPROVED: B DATE: 5 0 IF THIS MEASURE 1" NOT TO PRO 4 96 -	DF NH DF 19/2020 1/2 5 BAR DOI 1/2 5 BAR DOI 0 FULL S 0 F	1 ES NOT RAWING IS CALE 0. 0. 0 103 103



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GENERAL SHEET NOTES			5/19/2019 ISSUED FOR CONSTRUCTION DATE REVISIONS AND RECORD OF USE NO. BY CHK APP
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	CITY OF MORRO BAY MORRO BAY WATER	RECLAMATION FACILITY (WRF)	MAINTENANCE BUILDING ARCHITECTURAL ROOF PLAN
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20 11:00:50 TTED: 5/19/202 PLOT

GENERAL SHEET NOTES	12019 ISSUED FOR CONSTRUCTION 0 BDF BDF EVB VTE REVISIONS AND RECORD OF USE NO. BY CHK APP
SHEET KEYNOTES 1. EXPOSED INSULATION LINER AT ROOF ABOVE 2. PAINTED GYPSUM CEILING 3. PRE-ENGINEERED FRAME (TYP) 4. NOT USED 5. RIDGE LINE ABOVE 6. SKYLIGHT ADOVE (TYD)	C.9787
 SKYLIGHT ABOVE (TYP) SURFACE LIGHT FIXTURE SUSPENDED LIGHT FIXTURE (TYP) FUME HOOD EXHAUST DUCT EXHAUST AIR DUCT ABOVE METAL WALK DOOR CANOPY (TYP) 24"x 24" HINGED METAL ACCESS PANEL 24"x 24" 1 HOUR FIRE RATED HINCHED METAL ACCESS PANEL 	JOINT VENTURE FILANC BLACK&VEATCH
	CITY OF MORRO BAY MORRO BAY WATER MORRO BAY WATER LAMATION FACILITY (WRF) MAINTENANCE BUILDING ARCHITECTURAL REFLECTED CEILING PLAN
CEILING PLAN LEGEND LIGHT FIXTURES O D D D D D D D D D D D D D D D D D D	DESIGNED: BDF DETAILED: ANH CHECKED: -
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EAST ELEVATION 3/16" = 1'-0"

GENERAL SHEET NOTES			0 BDF BDF EVB	NO. BY CHK AFF
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			5/19/2019	DAIE
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	FRASER SEIPLE ARCHITECTS	JOINT VENTURE	FIL ANC RLACK&VEATCH	
	CITY OF MORRO BAY MORRO BAY WATER	RECLAMAIIUN FACILIIY (WAF)	MAINTENANCE BUILDING ARCHITECTURAL FIFVATTONS	
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GENERAL SHEET NOTES	GE	D AR	5/19/2019 ISSUED FOR CONSTRUCTION 0 BDF BDF EVB DATE REVISIONS AND RECORD OF USE NO. BY CHK APP
SHEET KEYNOTES	FRASER SEIPLE ARCHITECTS	JOINT VENTURE	FILANC BLACK & VEATCH
	CITY OF MORRO BAY MORRO BAY WATER	HECLAMAIION FACILIIY (WHF)	INTERMEDIATE FLOOR PLAN
6" 4' 2' 0' 5' 10' 3/16" = 1' - 0"	DESIGNED: E DETAILED: A CHECKED: - APPROVED: E DATE: 5 0 IF THI MEASURE 1 NOT 1 PRO 4 96 - 312	BDF ANH BDF 5/19/202 1/2 1/2 S BAR DC THEN L 0053 0053 SHEET 2 OF 4	0 DES NOT DRAWING IS SCALE NO. 0 401 412

GENERAL SHEET NOTES	CENSE	ARC	5/19/2019 ISSUED FOR CONSTRUCTION DATE REVISIONS AND RECORD OF USE NO. BY CHK APP
 1" THICK LAB TOP - 30" DEEP (TYP) REFRIGERATORS (NIC) 1" THICK LAB TOP AT ISLAND 30-1/2"x18-1/2"x11-1/2"D STAINLESS STEEL UNDERMOUNT SINK 23-1/2"x18-1/2"x7-1/2"D STAINLESS STEEL UNDERMOUNT SINK COUNTERTOP EYEWASH STAINLESS STEEL EXHAUST HOOD 	FRASER SEIPLE ABCHITECTS	JOINT VENTURE	FILANC BLACK & VEATCH
	CITY OF MORRO BAY MORRO BAY WATER	MECLAWALLUN FACILITY (WAF)	ARCHITECTURAL ENLARGED LABORITORY PLAN AND ELEVATIONS
$\frac{12'6'0'1'2'3'4'5'}{1/2"=1'-0"}$	DESIGNED: B DETAILED: A CHECKED: - APPROVED: B DATE: 5 0 IF THIS MEASURE 1" NOT TO PRO 4 96 - 313	DF NH DF (19/2020 1/2 3 BAR DO 7 THEN D 0 FULL S 0 JECT N 0053 0 OF 4 SHEET 5 OF 4	1 ES NOT RAWING IS SCALE 0. 0 402

GENERAL SHEET NOTES			F EVB K APP
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			ISSUED FOR CONSTRUCTION REVISIONS AND RECORD OF USE
			5/19/2019 DATE
SHEET KEYNOTES 1. LAMINATE BASE CABINET 2. 1" THICK LAB TOP - 30" DEEP 3. 6" LAB TOP BACKSPLASH 4. OPEN CORNER STORAGE 5. 6" TOE KICK WITH RESILIENT BASE 6. DEEDLOCEDATORS (MID)	ALLS * LICE	9787	ATTECT * WIND
6. REFRIGERATORS (NIC) 7. STAINLESS STEEL EXHAUST HOOD 8. 24"H X 72"W STAINLESS STEEL WALL PANEL 9. COUNTERTOP EYEWASH	FRASER SEIPLE Architects	T VENTURE	BLACK & VEATCH
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	CITY OF MORRO BAY MORRO BAY WATER	MAINTENANCE BUILDING	ARCHITECTURAL ENLARGED LABORITORY ELEVATIONS
$12^{'}6^{'}0^{'}1^{'}2^{'}3^{'}4^{'}5^{'}$ $1/2^{"}=1^{'}-0^{"}$	DESIGNED: BI DETAILED: AI CHECKED: - APPROVED: BI DATE: 5 0 IF THIS MEASURE 1" NOT TO PRO 4 96-	DF NH DF (19/2020 1/2 BAR DOE THEN DF D FULL S DJECT NO 00530 A - 4	1 IS NOT EAWING IS CALE D. D. D. D. D. D. D. D. D. D. D. D. D.
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96-A-40	5	1/2"	=	1'-0"	

		ACCESSORY SCHEDULE	
QTY	TYPE	DESCRIPTION	MOUNT
1	A	FIXED TILT MIRROR, WITH SHELF, XX by XX inches	
1	В	SOAP DISPENSER	
1	С	36" GRAB BAR	
1	D	42" GRAB BAR	
1	E	TOILET TISSUE DISPENSER	
1	F	TOWEL DISPENSER	
1	G	WASTE RECEPTACLE, 18 GALLON, RECESSED	
1	Н	NAPKIN DISPOSAL, 1.5 GALLONS, SURFACE-MOUNTED	
1	U	RESTROOM PARTITIONS, URINAL SCREEN	
1	W	SURFACE MOUNTED SEAT COVER DISPENSER	
1	X	ELECTRIC HAND DRYER	

										ROOM	FINISH	SCHEI	DULE									
			FLO	OR						V	VALLS								CEILING			
ROOM						NORTH			EAST			SOUTH				WEST					-	
No.	RO	OM NAME	MATERIAL	FINISH	MATERI	AL FINISH	BASE	MATERIAL	FINISH	BASE	MATERIA	FINIS	SH BA	ASE	MATERIAL	. FINISH	BASE	MATERIAL	FINISH	HEIGHT	Г	REMARKS
MAINTENANC	E BUIL	LDING	<u> </u>	<u></u>	GWR	DT	PR	EXP/CB	FE	NO	EXP/CB	EE		NO	EXP/CR	EE	NO	EYD	FE	17'-0"		
96-102 UNI	SEX RE	ESTROOM	CO	CSPS	CT/GW	B PT	CC	CT/GWB	PT	CC	CT/GWB	PT	(CC	CT/GWB	PT	CC	GWB	PT	9'-0"		
96-103 I A	ND C V	WORKSHOP	C0	CSPS	GWB	PT	RB	GWB	PT	RB	GWB	PT	ŀ	RB	GWB	PT	RB	GWB	PT	9'-0"		
96-104 LAB 96-105 CON	ITROL F	ROOM	C0	CSPS	GWB	PT PT	RB RB	GWB	PT PT	RB	GWB	PT PT	/	RB	GWB	PT	RB RB	GWB	PT PT	9'-0"	+	
96-106 PAI	NT AND	D FUEL STORAGE	CO	CSPS	GWB	PT	RB	GWB	PT	RB	GWB	PT	ŀ	RB	GWB	PT	RB	GWB	PT	9'-0"		
								DO	OR SCH	EDULI	E											
DOOR	n۵	OR SIZE					DOOR							FF	RAME							
No.							Doon		TYPE													
(D)	W	IDTH HEIGHT	MATERIAL	HEA	D	JAMB		SILL	(D)	HARD	VARE RATI	VG MATE	RIAL	. HEA	D JAMB	DEPTH		REMAR	RKS			
MAINTENANC	E BUIL	LDING '-0" 7'-0"	FRP	30/00-A	-001 (31 AND 33/00-	A-001	40/00-A-00	1 B	14	1 -	F	RP	2"	2"	5 3/4"						
96-101B	14	4'-0" 14'-0"	RS	41 SIM/00	-A-001 4	41 AND 42/00-	A-001	-	-	-	-		rs IS			0"						
96-101C	14	4'-0" 14'-0" 1'-0" 14'-0"	RS BS	41 SIM/00	-A-001 4	41 AND 42/00- 41 AND 42/00-	A-001	-	-	-	-		2S 2S			0"						
96-101E	3	'-0" 7'-0"	FRP	30/00-A	-001 3	31 AND 33/00-	A-001	40/00-A-00	1 B	14	4 <u>-</u>	F	RP	2"	2"	5 3/4"						
96-102A	3	'-0" 7'-0"	HM	-		-		-	A	8	-		HM HM	2"	2"	5 3/4"						
96-104A	<u> </u>	'-0" 7'-0"	HM	-		-		-	B	4	-		IM IM	2"	2"	5 3/4"						
96-105A	3	'-0" 7'-0"	FRP	30/00-A	-001	31 AND 33/00-	A-001	40/00-A-00	1 B	14	1 - 3	F	RP PD	2"	2"	5 3/4"						
90-700A 7	<u>36-106A PR 3'-2" 7'-0" FRP 30/00-A-001 31 AND 33/00-A-001 40/00-A-001 A/A 16 - FRP 0" 0" 5 3/4" SEE FRAME TYPE A</u>																					
							511 0					ULL								_		
	PE S) W	UPENING	T MATERTAL	HE	AD	JAMR	M		SUI		GLASS	7	OP F	IFV			COMMEN	TS				
MAINTENANC	E BUIL	LDING				07 IIIID			OILL		GE/ (00	'					COMMEN	10		_		
1 A	6	5'-8" 8'-8"	FRP	40 SIM/0	00-A-001	33 SIM/00-A-	001	-	-	SEE	LOUVER 96-	106A	115.6	57' 8	SEE DOOR 9	6-106A				_		
								WINDO	W SCHE	DULE										_		
TYP	PE	OPENING		1				WINDOW														
QTY (W	') W	IDTH HEIGH	T MATERIAL	. HE.	AD	JAMB	M	ULLION	SILL		GLASS	1	OP E	LEV			COMMEN	TS		_		
5 G	3	3'-0" <u>3'-0</u> "	ALUM	50/00-	-A-001	51/00-A-00)1	- 53	/00-A-001		1" INSULATE)	119.0	00'	FIXED					_		
1 J	2	2'-0" 2'-0" 3'-0" 3'-6"	ALUM	50/00-	-A-001	51/00-A-00)1	- 53	/00-A-001		1" INSULATE		114.1	17' 17'	PROJECTED					_		
			ALOM	00700		/FR SCHEI	<u>יי</u> ה	02	100 1 001		INGOLATE		114.1		THOOLOTED							
					LOOV		JOLL							_								
	OP	PENING			LOUVER	2																
No. (L)	NIDTH	HEIGHT T	YPE HEA		JAMB	SILL	TOP	ELEV		RE	MARKS											
MAINTENANC	E BUIL	LDING																				
96-101A 96-101B	<u>1'-0"</u> 3'-0"	<u> </u>	LUM 30/00-A LUM 30/00-A	A-002 31/0 A-002 31/0	00-A-002	33/00-A-002 33/00-A-002	119. 119.	. 00 '						-								
96-101C	3'-0"	3'-0" A	LUM 30/00-A	A-002 31/0	00-A-002	33/00-A-002	119.	. 00 '														
96-101D 96-101E	3'-0" 2'-6"	3'-0" A	LUM 30/00-A LUM 30/00-A	A-002 31/0 A-002 31/0	00-A-002	33/00-A-002 33/00-A-002	119. 127.	. 00 '						_								
96-101F	3'-0"	3'-0" A	LUM 30/00-A	A-002 31/0	00-A-002	33/00-A-002	119	.00'														
96-101G 96-101H	2'-6"	2'-6" A	LUM 30/00-A	A-002 31/0 A-002 31/0	0-A-002	33/00-A-002 33/00-A-002	120. 120	17'						-								
96-101J	2'-8"	2'-8" A	LUM 30/00-A	A-002 31/0	00-A-002	33/00-A-002	121.	67'														
96-101K	2'-8" 1'-0"	2'-8" A	LUM 30/00-A	A-002 31/0	0-A-002	33/00-A-002	121.	67'						_								
96-106A		1'-4" A	LUM -		-	-	115.	50' SEE I	FRAME TYPE	ΞA												

GENE	RAL ABBREVIATIONS							VALVE LI	EGEND		PIPING LEGEN	ID	GENEI	
<u>A</u>		<u>E</u>		<u>I</u>		<u>R</u>		N	PLAN	<u>SECTION</u>		PIPIN	IG ABOVE FLOOR OR GRADE	1. THIS IS
A AC AD	ALARM, COMPRESSED AIR OUTLET AIR COMPRESSOR	EA EA EEW	ELECTRIC EACH EMERGENCY EVE WASH	ID I IN I	NIARE INSIDE DIAMETER	RD	ROOF DRAIN	/v	₽C>	đ	ANGLE VALVE		IG BELOW FLOOR OR GRADE	PROJECT
AFD AFF	ADJUSTABLE FREQUENCY DRIVE	EFF	EFFICIENCY ELEVATION	INV I	NVERT	<u>S</u>			പ്രാലപ		BACKFLOW PREVENTER W/ STRAINER (2" AND SMALLER)	o====o PIPE	TURNING UP	2. ALL MECH
ALUM AD	ALUMINUM ACCESS DANEL	EP EOUTP	ELLVATION EXPLOSION PROOF EQUIDMENT	<u>J</u> ./s	IANITOR'S SINK	SF SH	SQUARE FEET, SUPPLY FA	AN	- ۲۰۱۰ – ۲۰۱۱		BACKFLOW PREVENTER		TURNING DOWN	201
APPROX	ADDESS TANEL APPROXIMATE	ES ES ES/FFW	ENERGENCY SHOWER	<u>K</u>	ANTION 6 STAK	SIM	SIMILAR							201
AUTO	AUTOMATIC AVERAGE	ES/LLW	EYEWASH EYEWASH EYEANSTON TANK	KS K	AITCHEN SINK	SSK	STAINEESS STELL SERVICE SINK				BACKWATER VALVE			201
AVS	AUTOMATIC VALVE STATION	EWC	ELECTRIC WATER COOLER	<u>L</u>		STD SV	STANDARD	F VALVE	- Ba	-œ	BALL VALVE	PIPE FITTING	GS LEGEND	3. FOR ROOF
<u>B</u> BE	RI TND FLANGE	EWT	ENTERING WATER	LAV L	AVATORY	-	SUPPLY VALVE, SOLENOID	D VALVE		— —		m		
BFF BFP	BELOW FINISH FLOOR BACKFLOW PREVENTER	EXIST F	EXISTING	LI L LS L	.EVEL INDICATOR .ABORATORY SINK. LEV	<u>I</u> EL SWITCH TD	TRENCH DRAIN		—0	Ŭ	BUTTERFLY VALVE		BLIND FLANGE	5 "SCREEN
BLDG BOT	BUILDING BOTTOM	<u>F</u> F	DEGREES FAHRENHEIT	LWT L	EAVING WATER TEMPER	ATURE TP TS	TRAP PRIMER TAMPER SWITCH			函	CHECK VALVE	В	CAP	
BTUH	BRITISH THERMAL UNITS PER HOUR	FCO FD	FLOOR CLEANOUT FLOOR DRAIN	<u>M</u> MAU M	IAKEUP AIR UNIT	TYP	TYPICAL		n	Т	GATE VALVE	Þ	REDUCER	INFORMAT AND FIFI
BU BV	BELL-UP BALL VALVE	FDB	DEGREES FAHRENHEIT DRY BULB	MAX M MCA M	MAXIMUM MINIMUM CIRCUIT AMPS	<u>U</u> UR	URINAL		М			_	hebooen	SHALL BI
<u>C</u>		FLEX FM	FLEXIBLE FLOW METER	MFR M MIN M	IANUFACTURER IINIMUM	17			\Box	ů.	GLOBE VALVE		SLEEVE	CONSTRUC
C CENTR	CHANNEL CENTRIFUGAL	FPM FR	FEET PER MINUTE FUNNEL RECEPTOR	MOD M MS M	IODULATING IOP SINK	$\frac{V}{V}$	VERTICAL			-20-	PLUG VALVE		TEST PLUG	6. ALL PIPE SHALL BE
CF C/L	CABINET FAN CENTERLINE	FS FSW	FLOOR SINK, FLOW SWITCH FILTER SURFACE WASH	′ <u>N</u>		VAC VB	VACUUM OUTLET VACUUM BREAKER							RESIST RESISTAI
CO CONC	CLEANOUT CONCRETE	FT C	FEET	NC N NO N	IORMALLY CLOSED IORMALLY OPEN, NUMBE	VCD R VF	VOLUME CONTROL DAMPER VANEAXIAL FAN		Ø		PRESSURE REDUCING VALVE		UNION	TYPES OI LOCATIO
CONN CONT	CONNECTION CONTINUATION	<u>G</u>	GAS OUTLET	NPSHR N R	IET POSITIVE SUCTION REQUIRED	HEAD VP VSP	VACUUM PUMP VERTICAL COLUMN SUMP F	PUMP		₽	THREE WAY VALVE	D	P - TRAP	7. METAL RO
CP CS	CIRCULATING PUMP CONTROL STATION	GA GAL V	GAUGE GALVANIZED	NT N	EUTRALIZATION TANK	VTR	VENT THRU ROOF			ш		- A -	VTP	SUPPORT
CV CWW	CHECK VALVE, CONTROL VALVE CLEAR WATER WASTE	GCO GD	GRADE CLEANOUT GARBAGE DISPOSER	<u>0</u> 0D 0	DUTSIDE DIAMETER	<u>W</u>						Ψ	VID	8. ALL HANG INDICATE
<u>D</u>		GIH GPM	GAS INFRARED HEATER GALLONS PER MINUTE	ORD O	VERFLOW ROOF DRAIN	W WBP	WIDE FLANGE, WIDTH WATER BOOSTER PUMP		PIPING A	ACCESS	ORIES LEGEND	PLUMBING LE	GEND	REQUIREI
D DEH	DIRECT DRIVE DEHUMIDIFIER	GUH GV	GAS UNIT HEATER GATE VALVE	<u>r</u> PD P	PRESSURE DROP (FEET	WC OF WATER) WCO	WATER CLOSET, WATER CC WALL CLEANOUT	OLUMN						9. ALL EQU INTERFE
DF DIA	DRINKING FOUNTAIN DIAMETER	GW GWH	GLASS WASHER GAS WATER HEATER	PAC P U	PACKAGED AIR CONDITI INIT	ONING WG WH	WATER GAUGE WALL HYDRANT		HHXXdXH	FLE	XIBLE CONNECTION	♦⊂	BELL-UP DRAIN OR FUNNEL	CONDUIT INTENDEL
DN DSN	DOWN DOWNSPOUT NOZZLE	<u>H</u>		PDI P I	PLUMBING AND DRAINAG NSTITUTE	E WHA WM	WATER HAMMER ARRESTOR WALL MOUNTED		⊫≣≊ HF	HOS	E FAUCET W/O VACUUM BREAKER		CLEANOUT (FLOOR)	10. ALL PIPI
		Н	HAND OPERATOR, HEIGHT, HORIZONTAL	PDS P PL P	PRESSURE DIFFERENTIA PLATE	L SWITCH WST WT	WATER STORAGE TANK WEIGHT		nite.			<i>⊗</i>		8'-0" AL OR INVER
		HE HF	HEAT EXCHANGER, HELIUM HOSE FAUCET	POS P PPM P	POSITION PARTS PER MILLION				HFVB	HUS	E FAUCEI W/ VACUUM BREAKER		CLEANOUT (PIPE)	11. PIPING 1
		HO HOA	HAND-OFF HAND-OFF-AUTO	PRS P PRV P	PRESSURE REDUCING ST. PRESSURE REDUCING VA	ATION LVE			©0⊫⊫4 HV	HOS	E VALVE W/ HOSE NIPPLE		BLENDING VALVE	MINIMUM
		HP HR	HORSEPOWER HOUR, HOSE REEL	PS P PSI P	PRESSURE SWITCH POUNDS PER SQUARE IN	СН			PRS	PRE	SSURE REDUCING STATION	ф	DOWNSPOUT NOZZLE	12. ALL HOSI FLOOR UI
		HUM HV	HUMIDIFIER HOSE VALVE	PSIA P A	OUNDS PER SQUARE IN	CH			 7	PRF	SSURE RELITEE VALVE			GRADE UI
		HWB HZ	HEATING WATER BOILER HERTZ	PSIG P	OUNDS PER SQUARE IN	CH GAUGE			\ 25				EMERGENCY SHOWER / EYEWASH	13. ALL HOSE OTHERWIS
									∇_{τ}	PRE	SSURE TEMPERATURE RELIEF VALVE	\bigcirc	FLOOR DRAIN	OTHERWIS
									Q 🖽	QUI	CK COUPLING			14. ALL HOSE LINES W
SYST	EM ABBREVIATIONS					SCHEMATI	C FITTINGS		── ₽ ₩H	WAL	L HYDRANT W/ VACUUM BREAKER		HOSE RACK	REQUIRED OUTLETS
<u>WATER</u>	COLD WATER (NON BOTABLE)	WAS	TE CHEMICAL DESISTANT	SPECI	IAL COMPRESSED ATR		BLIND FLANGE			MET	ER		HOSE REEL	THAN 1/2
CW, PW	COLD WATER (NON-FOTABLE) COLD WATER (POTABLE)	CRW	CHEMICAL RESISTANT CHEMICAL RESISTANT	WASTE ACET	ACETYLENE		CAP		ı د	WYE	STRAINER			LETTERS
DW F	DISTILLED WATER	D D	INDIRECT DRAIN	H	HYDROGEN	——Þ	REDUCER					0	ROOF DRAIN	15. ALL REL
' HWC NPHW	HOT WATER CIRCULATING (POTA	ABLE) SAN ST	SANITARY DRAIN	ME	METHANE NITROGEN		SLEEVE			WYE	STRAINER W/ BLOWOFF	[]#0	SHOWER	16. SEISMIC
HW PFW	HOT WATER (POTABLE) PLANT FEELVENT WATER	V	VENT	NO OX	NITROUS OXIDE OXYGEN	T	TP TEST PLUG		Ģ	VAC	CUUM BREAKER		SPLASH BLOCK	AND LOCA
SW TNPW	SOFTENED WATER TEMPERED NON-POTABLE WATER	<u>FUE</u> NG	<u>L GAS</u> NATURAL GAS	VAC	VACUUM		UNION							INSTALL/
TW	TEMPERED OR BLENDED WATER	PG	PROPANE GAS			\neg	P - TRAP						WATER HAMMER ARRESTOR W/ PDI SIZE DESIGNATION	CALIFORI
							VENT THROUGH ROOF (VTR)							17. INSULAT
SCHE	MATIC VALVES		PLUMBING SCHEMA	TICS	SCHEMATICS	S SPECALTI	ES				SCHEMATICS	CONTROLS AND	INSTRUMENTATION	18. PLUMBING
						AUTOMATIC VAL				/	♦ AIR-GAP FITTING	(FS) FLOW	N SWITCH	OUTSIDE
4	RACKEI OW PREVENTED		RECEPTOR W/ TR	AP		BASKET STRATN	ER 92	PRF <u>S</u> SUKE	_ NELIEF VALV E/TFMPFRATHRE	E RFITEF	Y BELL-UP DRAIN OR		E ACTIVATOR/ISOLATOR	IS. PIPING S ADJUSTEL
-101~	W/STRAINER (2" AND SMALLER)		CO CLEANOUT (FLOC	DR)	<u>د</u> ۸۸ـــــــــــ	COMBINATION P	UMP DISCHARGE	VALVE			FUNNEL RECEPTOR	(LS) LEVE	EL SWITCH	20. ALL MATE
	BACKFLOW PREVENTER		CLEANOUT (PIPE	E)		VALVE	Q '	QUICK CO	OUPLING		۲ FLOOR CLEANOUT	P PRES	SSURE GAUGE W/ SHUTOEE VALVE	PLENUMS
	H BACKWATER VALVE		- HW D- BLENDING VALVE		+~+	FLEXIBLE CONN	ECTION Q	ROTAMETE	ER		FLOOR DRAIN	Ф 	Some anode wy shorory valve	
() BALL VALVE			LE OR SHOWE		FLOW CONTROL		SIGHT FL	LOW INDICATOR	2	۲ FLOOR DRAIN W/ FUNNEL	S SOLE	NOID OPERATOR	
ı`	► BUTTERFLY VALVE			verieyewash		FLOW SENSOR M		SUCTION	DIFFUSER (SC	CHEMATIC)		THEF	RMOMETER - DIAL TYPE	
r	CHECK VALVE		C D TOAD		+ HF	HUSE FAUCET		IKAP PRI				Щ тнер	RMOMETER - STEM TYPE	
⊳	GATE VALVE				—— ^{∐†} <i>HF</i>	HOSE VALVE W		WALL HYDI	JKANI W/ VACU	IUM BREAKE	<i>сл</i>		IUM GAUGE W/ SHUTOFF VALVE	
	GLOBE VALVE					AIR VENT	S	WEIEN WYF STDA	AINER			Υ Υ		
	⊽I PLUG VALVE		HA WATER HAMMER A	ARRESTOR W/	PRS	PRESSURE REDU	CING STATION	WYE STRA	AINER W/ BIOM	<i>I</i> OFF				
	PRESSURE REDUCING V	ALVE	Y PDI SIZE DESIG	GNATION			に	VACUUM B	BREAKER					
	THREE WAY VALVE						Ļ							

GENE	RAL ABBREVIATIONS								VALVE	LEGEND		PIPING LEGE	VD	GEN
A		E		I		R			PI AN	SECTION			IG ABOVE FLOOR OR GRADE	
A	ALARM, COMPRESSED AIR OUTLE		ELECTRIC	I I	NTAKE	RCS	REMOTE CONTROL S	STATION	#C>	<u>020710//</u>	ANGLE VALVE			1. THIS SOME
AD AFD	ACCESS DOOR, AIR DRYER	EEW	EMERGENCY EYE WASH	IN I INV I	NGIDE DIAMETER NCHES NVFRT	REQD	REQUIRED		പ്രാലം		BACKFLOW PREVENTER W/ STRAINER			
AFF ALUM	ABOVE FINISH FLOOR ALUMINUM	EL EP	ELEVATION EXPLOSION PROOF	<u>J</u>		<u>S</u> SF	SQUARE FEET. SUP	PPLY FAN		म म	(Z AND SMALLER)		TURNING UP	APPLI
AP APPROX	ACCESS PANEL APPROXIMATE	EQUIP ES	EQUIPMENT EMERGENCY SHOWER	JS J	ANITOR'S SINK	SH SIM	SHEET, SHOWER SIMILAR				BACKFLOW PREVENTER	¢ा ∳ PIPE	TURNING DOWN	2
AR AUTO	AIR RECEIVER AUTOMATIC	ES/EEW	EMERGENCY SHOWER AND EYEWASH	<u>К</u> кs к	ITCHEN SINK	SS SSK	STAINLESS STEEL SERVICE SINK				BACKWATER VALVE			2
AVG AVS	AVERAGE AUTOMATIC VALVE STATION	ET EWC	EXPANSION TANK ELECTRIC WATER COOLER	KW K	(ILOWATT	SSP STD	SUBMERSIBLE SUMP STANDARD	PUMP				PIPE FITTIN	GS LEGEND	3. FOR R
<u>B</u>		EWH EWT	ELECTRIC WATER HEATER ENTERING WATER	LAV L	AVATORY	SV	SERVICE VALVE, S SUPPLY VALVE, SO	SHUTOFF VALVE, DLENOID VALVE		D	BALL VALVE			ARCHI
BF BFF	BLIND FLANGE BELOW FINISH FLOOR	EXIST	TEMPERATURE EXISTING	LBS P LI L	OUNDS EVEL INDICATOR	<u></u>			— 0		BUTTERFLY VALVE	⊞	BLIND FLANGE	4. SEE A
BFP BLDG	BACKFLOW PREVENTER BUILDING	<u>F</u>		LS L LWT L	ABORATORY SINK, LEVEL EAVING WATER TEMPERATU	SWITCH TD URE TP	TRENCH DRAIN TRAP PRIMER			园		я	CAP	5. "SCRE REFER
BOT BTUH	BOTTOM BRITISH THERMAL UNITS	F FCO	DEGREES FAHRENHEIT FLOOR CLEANOUT	<u>M</u>		TS TYP	TAMPER SWITCH TYPICAL		M		CHECK VALVE	_		EQUIP INFOR
BU	PER HOUR BELL-UP	FD FDB	FLOOR DRAIN DEGREES FAHRENHEIT DRY	MAU M MAX M	IAKEUP AIR UNIT IAXIMUM	<u>U</u>			D	<u>ط</u>	GATE VALVE	Ð	REDUCER	AND F. SHALL
BV C	BALL VALVE	FLEX	BULB FLEXIBLE	MCA M MFR M	INIMUM CIRCUIT AMPS IANUFACTURER	UR	URINAL		D		GLOBE VALVE		SLEEVE	LOCAT CONST
<u>с</u>	CHANNEL	FM FPM	FLOW METER FEET PER MINUTE	MIN M MOD M	INIMUM IODULATING	<u>V</u>								6. ALL P
CENTR CF	CENTRIFUGAL CABINET FAN	FR FS	FUNNEL RECEPTOR FLOOR SINK, FLOW SWITCH	ms m N	IOP SINK	V VAC	VERTICAL VACUUM OUTLET			10	PLUG VALVE		TEST PLUG	SHALL RESIS
C7L C0	CENTERLINE CLEANOUT	FSW FT	FILTER SURFACE WASH FEET	NC N	ORMALLY CLOSED	VB VCD	VACUUM BREAKER VOLUME CONTROL D	DAMPER	Ø	P	PRESSURE REDUCING VALVE	⊞	UNION	RESIS TYPES
CONC	CONCRETE CONNECTION	<u>G</u>		NO N NPSHR N	DRMALLY OPEN, NUMBER NET POSITIVE SUCTION HE	EAD VP	VANEAXIAL FAN VACUUM PUMP			Ļ		⊟⊕	P - TRAP	LOCAT
CP CS	CIRCULATING PUMP CONTROL STATION	GA GALV	GAUGE GAU VANTZED	NT N	EUTRALIZATION TANK	vsp VTR	VENT THRU ROOF	JUMF FUMF		Ţ	THE WAT VALVE			7. METAL SUPPOI
CV CWW	CHECK VALVE, CONTROL VALVE	GCO	GAEVANIZED GRADE CLEANOUT GAEBAGE DISPOSER	<u>0</u>	NITSIDE DIAMETER	W						- ₽-	VTR	8. ALL H
<u>D</u>		GIH GPM	GAS INFRARED HEATER GALLONS PER MINUTE	ORD O	VERFLOW ROOF DRAIN	W WBP	WIDE FLANGE, WID WATER BOOSTER PU)TH IMP	PIPING	ACCESS	SORIES LEGEND	PLUMBING LE	GEND	REQUI
D DEH	DIRECT DRIVE DEHUMIDIFIER	GUH GV	GAS UNIT HEATER GATE VALVE	<u>Р</u> PD P	RESSURE DROP (FEET OF	WC WATER) WCO	WATER CLOSET, WA WALL CLEANOUT	TER COLUMN						9. ALL E
DF DIA	DRINKING FOUNTAIN DIAMETER	GW GWH	GLASS WASHER GAS WATER HEATER	PAC P U	ACKAGED AIR CONDITION	ING WG WH	WATER GAUGE WALL HYDRANT		HHXXdXH	FL	EXIBLE CONNECTION	\$	BELL-UP DRAIN OR FUNNEL	CONDU. INTEN
DN DSN	DOWN DOWNSPOUT NOZZLE	<u>H</u>		PDI P I	LUMBING AND DRAINAGE	WHA WM	WATER HAMMER ARR WALL MOUNTED	RESTOR	16450 _{HF}	НО	SE FAUCET W/O VACUUM BREAKER		CLEANOUT (FLOOR)	10. ALL P.
		Н	HAND OPERATOR, HEIGHT, HORIZONTAL	PDS P PL P	RESSURE DIFFERENTIAL S PLATE	SWITCH WST WT	WATER STORAGE TA WEIGHT	NK					OLLANGOT (TEOON)	8'-0" OR IN
		HE HF	HEAT EXCHANGER, HELIUM HOSE FAUCET	POS P PPM P	OSITION PARTS PER MILLION				⊮ege⊃ HFV	В НО	SE FAUCEI W/ VACUUM BREAKER		CLEANOUT (PIPE)	11. PIPIN
		HO HOA	HAND-OFF HAND-OFF-AUTO	PRS P PRV P	RESSURE REDUCING STATS RESSURE REDUCING VALVE	I ON E			©⊒⊫⊫(HV	НО	SE VALVE W/ HOSE NIPPLE	<u>\$</u>	BLENDING VALVE	MINIM
		пР HR HUM	HOUR, HOSE REEL	PS P PSI P	POUNDS PER SQUARE INCH				PRS	PR	ESSURE REDUCING STATION	ф	DOWNSPOUT NOZZLE	12. ALL H
		HV HWB	HOSE VALVE HEATING WATER BOILER	PSIG P	BSOLUTE POUNDS PER SQUARE INCH	GAUGE			Ţ	PR	ESSURE RELIEF VALVE			
		ΗZ	HERTZ						- رآ	PR	ESSURE / TEMPERATURE RELIEF VALVE		EMERGENCY SHOWER / EYEWASH	OTHER OTHER
										0.11		\circ	FLOOR DRAIN	14. ALL H
							<i></i>			QU	ICK COOPLING		HOSE RACK	LINES REQUI
5751	EM ABBREVIATIONS					SCHEMATIC	FITTINGS			WA	LL HYDRANT W/ VACUUM BREAKER			OUTLE TRIAN
<u>WATER</u> NPW	COLD WATER (NON-POTABLE)	<u>WAS</u> CRV	CHEMICAL RESISTANT	<u>SPEC1</u> VENT A	COMPRESSED AIR				<u></u>	ME	TER		HOSE REEL	THAN LOCAT
CW, PW DE	COLD WATER (POTABLE) DEIONIZED WATER	CRN CWN	CHEMICAL RESISTANT CLEAR WATER WASTE	WASTE ACET AR	ACE I YLENE ARGON	. <u> </u>] CAP		ı ک	WY	'E STRAINER			LETTE
DW F	FIRE PROTECTION WATER	D PD	INDIRECT DRAIN SUMP PUMP DISCHARGE	HE ME	HYDROGEN HELIUM METUANE		REDUCER			WY	'E STRAINER W/ BLOWOFF		ROOF DRAIN	15. ALL RI
NPHW WW	HOT WATER CIRCULATING (POT) HOT WATER (NON-POTABLE)	ABLE) SAN ST	SANITARY DRAIN STORM DRAIN	N N	NITROGEN		SLEEVE		с с			€ nd	SHOWER	ACCES
PEW SW	PLANT EFFLUENT WATER	v EUE		OX VAC	OXYGEN VACUUM				Ļ Ļ	VA	COUM BREAKER		SPLASH BLOCK	AND LO SUPPOI
TNPW TW	TEMPERED NON-POTABLE WATER TEMPERED OR BLENDED WATER	NG PG	NATURAL GAS PROPANE GAS	V/10	v) 1000m	ر ا ر.	P - TRAP					ļ	WATER HAMMER ARRESTOR W/	SHALL
							VENT THROUGH						PDI SIZE DESIGNATION	17. INSUL
<u> </u>			ľ		I		ROOF (VTR)							IN TH
SCHE	MATIC VALVES		PLUMBING SCHEMA	TICS	SCHEMATICS	SPECALTIE	ES				SCHEMATICS	CONTROLS AND	INSTRUMENTATION	18. PLUMB OUTSI
2	ANGLE VALVE		CC	OR FUNNEL	A	UTOMATIC VALVE	E STATION	PRESS	SURE RELIEF VA	LVE	<pre></pre>	FS FLO	V SWITCH	19. PIPIN
			FCO CLEANOUT (FLOO	DR)	S B	ASKET STRAINE		PRESS	SURE/TEMPERATU	IRE RELIEF	Y BELL-UP DRAIN OR FUNNEL RECEPTOR	GAU	GE ACTIVATOR/ISOLATOR	ADJUS
	(2" AND SMALLER))	C	OMBINATION PUN ALVE	MP DISCHARGE	QUICH	- < COUPLING		۲ FLOOR CLEANOUT	LS LEV	EL SWITCH	20. ALL M PLENU
	BACKFLOW PREVENTER		- HW - CW ↓>- BLENDING VALVE	Ē	t∕\t F	LEXIBLE CONNEC	CTION (ROTAN	IETER		FLOOR DRAIN	P PRE	SSURE GAUGE W/ SHUTOFF VALVE	PLENU
	H BACKWATER VALVE		⊲ DOWNSPOUT NOZZ	LE OR SHOWE	FR F	LOW CONTROL VA	ALVE (a	sight	T FLOW INDICAT	OR	🖗 FLOOR DRAIN W/ FUNNEL	s sol	ENOID OPERATOR	
) BALL VALVE		Contraction Contraction Contraction	VER/EYEWASH		LOW SENSOR MET		SUCT	ION DIFFUSER (SCHEMATIC)		C	RMOMETER - DIAL TYPE	
	BUTTERFLY VALVE		S FLOOR DRAIN		+ HF H	OSE FAUCET	T	TP TRAP	PRIMER			П тне	RMOMETER - STEM TYPE	
	GATE VALVE		OC P-TRAP			OSE FAUCET W/	VACUUM BREAKER ——	-O+ _{WH} WALL	HYDRANT W/ VA	CUUM BREAK	KER		JUM GAUGE W/ SHIITOFF VALVE	
	GLOBE VALVE		ROOF DRAIN			OSE VALVE W/ H	HOSE NIPPLE	M) METEF	?			ф Ф		
T	71 PLUG VALVE		SPLASHBLOCK		→ → A	IR VENT	20 20 20	A WYES	STRAINER					
	PRESSURE REDUCING V	/ALVE	∏A WATER HAMMER A PDI SIZE DESIG	ARRESTOR W/ ANATION	PRS P	RESSURE REDUCI	ING STATION H	איני איז איז איז איז איז איז איז איז איז אי	STRAINER W/ BL	.OWOFF				
	THREE WAY VALVE						L	ក្នុ VACUL	JM BREAKER					

	GENE	RAI ARREVIATIONS								VALVE						GEN
	GLWL	AL ADDREVIATIONS								VALVL	LLGLW	<i>D</i>		FIFING LLGLI		GLN
	\underline{A}	ALARM COMPRESSED ATR OUTLE	<u>E</u>	ELECTRIC	$\frac{I}{\tau}$	τντακε		<u>R</u> BCS	REMOTE CONTROL STATION	<u>PLAN</u>	<u>SECTIO</u>	<u>ON</u>		PIPII	NG ABOVE FLOOR OR GRADE	1. THIS
	AC AD	AIR COMPRESSOR	EA FFW	EACH EMERGENCY FYF WASH	ID IN	INSIDE DIAMETER		RD REOD	ROOF DRAIN REQUIRED	₩ ₽	막	Ar	NGLE VALVE	$\equiv \equiv \exists PIPII$	NG BELOW FLOOR OR GRADE	PROJE
	AFD AFF	ADJUSTABLE FREQUENCY DRIVE	EFF	EFFICIENCY ELEVATION	INV I	INVERT		<u>S</u>	HEQUINED	പ്രാലം		BA (2	ACKFLOW PREVENTER W/ STRAINER 2" AND SMALLER)	o===∞ PIPE	TURNING UP	2. ALL M
	ALUM	ALUMINUM ACCESS DANEL	EP EOUTP	EXPLOSION PROOF	<u>J</u>	INNTTOD'S STNK		SF SH	SQUARE FEET, SUPPLY FAN	P~¶P		Бв	ACKFLOW PREVENTER		TURNING DOWN	APPLI 2
	APPROX	APPROXIMATE	ESIEEW	ENERGENCY SHOWER	K	DANITON S SINK		SIM	SINELT, SNOWER SIMILAR	<u>↓</u>	┙┍╍┉┍╸ ┺	-			TORNING DOWN	2
	AR AUTO	AIR RECEIVER AUTOMATIC	ES/EEW	EYEWASH	KS F	KITCHEN SINK		SSK	STAINLESS STEEL SERVICE SINK		Ð	BA	ACKWATER VALVE			2 2
	AVG AVS	AVERAGE AUTOMATIC VALVE STATION	E I EWC	EXPANSION TANK ELECTRIC WATER COOLER	KW P	KILOWATT		SSP STD	SUBMERSIBLE SUMP PUMP STANDARD					PIPE FITTIN	GS LEGEND	3. FOR R
	<u>B</u>		EWH EWT	ELECIRIC WATER HEATER ENTERING WATER	<u> </u>	LAVATORY		SV	SERVICE VALVE, SHUTOFF VAL SUPPLY VALVE, SOLENOID VAL	.VE, can .VE	U.	BA	ALL VALVE			ARCHI
The state of t	BF BFF	BLIND FLANGE BELOW FINISH FLOOR	EXIST	TEMPERATURE EXISTING	LBS F LI L	POUNDS LEVEL INDICATOR		<u>T</u>			8	BL	UTTERFLY VALVE	⊞	BLIND FLANGE	4. SEE A
	BFP BLDG	BACKFLOW PREVENTER BUILDING	<u>F</u>		LS L LWT L	LABORATORY SINK, LE\ LEAVING WATER TEMPEF	/EL SWITCH RATURE	TD TP	TRENCH DRAIN TRAP PRIMER		瓦	01		В	CAP	5. "SCRE REFER
a. S.	BOT BTUH	BOTTOM BRITISH THERMAL UNITS	F FCO	DEGREES FAHRENHEIT FLOOR CLEANOUT	<u>M</u>			TS TYP	TAMPER SWITCH TYPICAL			Cr	HECK VALVE			EQUIP INFOR
Dir. Dir. <thdir.< th=""> Dir. Dir. <thd< td=""><td>BU</td><td>PER HOUR BELL-UP</td><td>FD FDB</td><td>FLOOR DRAIN DEGREES FAHRENHEIT DRY</td><td>MAU M MAX M</td><td>MAKEUP AIR UNIT MAXIMUM</td><td></td><td><u>U</u></td><td></td><td>a</td><td><u></u> В</td><td>GA</td><td>ATE VALVE</td><td>B</td><td>REDUCER</td><td>AND F. SHALL</td></thd<></thdir.<>	BU	PER HOUR BELL-UP	FD FDB	FLOOR DRAIN DEGREES FAHRENHEIT DRY	MAU M MAX M	MAKEUP AIR UNIT MAXIMUM		<u>U</u>		a	<u></u> В	GA	ATE VALVE	B	REDUCER	AND F. SHALL
2 max max <td>BV</td> <td>BALL VALVE</td> <td>FLEX</td> <td>BULB FLEXIBLE</td> <td>MCA M MFR M</td> <td>MINIMUM CIRCUIT AMPS MANUFACTURER</td> <td>6</td> <td>UR</td> <td>URINAL</td> <td></td> <td></td> <td>GI</td> <td>I ORE VALVE</td> <td></td> <td>SLEEVE</td> <td>LOCAT</td>	BV	BALL VALVE	FLEX	BULB FLEXIBLE	MCA M MFR M	MINIMUM CIRCUIT AMPS MANUFACTURER	6	UR	URINAL			GI	I ORE VALVE		SLEEVE	LOCAT
All All <td><u>C</u></td> <td>CHANNEI</td> <td>FM FPM</td> <td>FLOW METER FEFT PER MINUTE</td> <td>MIN N MOD N</td> <td>MINIMUM MODULATING</td> <td></td> <td><u>V</u></td> <td></td> <td></td> <td></td> <td>GL</td> <td></td> <td> TP</td> <td></td> <td></td>	<u>C</u>	CHANNEI	FM FPM	FLOW METER FEFT PER MINUTE	MIN N MOD N	MINIMUM MODULATING		<u>V</u>				GL		 TP		
	CENTR CE	CENTRIFUGAL CARINET FAN	FR FS	FUNNEL RECEPTOR	MS N	MOP SINK		V VAC	VERTICAL VACUUM OUTLET		<u> </u>	PL	LUG VALVE		TEST PLUG	SHALL
The matrix G Comparison G Comparison Compar	C/L C0	CENTERLINE CLEANOUT	FSW FT	FILTER SURFACE WASH	<u>N</u>	NORMALLY CLOSED		VB VCD	VACUUM BREAKER	a	ß			⊞	UNION	RESIS
All Michael Martines Biological Michael	CONC	CONCRETE	G		NO I	NORMALLY OPEN, NUMBE	R I HEAD	VF	VANEAXIAL FAN		Ŭ	PF	RESSURE REDUCING VALVE			LOCAT
	CONT	CONTINUATION CONTINUATION	G	GAS OUTLET		REQUIRED	I NEAD	VF VSP VTD	VERTICAL COLUMN SUMP PUMP		r fr	Tŀ	HREE WAY VALVE	₽	P - TRAP	7. METAL
	CP CS	CONTROL STATION	GAL V	GAUGE GALVANIZED	0 0	VEUTRALIZATION TANK		VIN	VENT THRU ROOF					- @ -	VTR	SUPPO
	CWW	CLEAR WATER WASTE	GCO GD	GRADE CLEANOUT GARBAGE DISPOSER	OD (OUTSIDE DIAMETER		<u>W</u>						' 		8. ALL H. INDIC.
	<u>D</u>		GIH GPM	GAS INFRARED HEATER GALLONS PER MINUTE	0RD (P	JVERFLOW ROOF DRAIN		w WBP	WIDE FLANGE, WIDTH WATER BOOSTER PUMP	PIPING	ACCES	SSOR	RIES LEGEND	PLUMBING LE	GEND	REQUI
	D DEH	DIRECT DRIVE DEHUMIDIFIER	GUH GV	GAS UNIT HEATER GATE VALVE	PD F	PRESSURE DROP (FEET	OF WATER)	WC WCO	WATER CLOSET, WATER COLUMI WALL CLEANOUT	/						9. ALL E
Chi All and the control of the second s	DF DIA	DRINKING FOUNTAIN DIAMETER	GW GWH	GLASS WASHER GAS WATER HEATER	PAC F	PACKAGED AIR CONDITI UNIT	ONING	WG WH	WATER GAUGE WALL HYDRANT	HHXXXXXXXX	I	FLEXIB	BLE CONNECTION	∳ ⊑⊟	BELL-UP DRAIN OR FUNNEL RECEPTOR W/ TRAP	CONDU. INTEN
	DN DSN	DOWN DOWNSPOUT NOZZLE	<u>H</u>		PDI F	PLUMBING AND DRAINAO INSTITUTE	ìΕ	WHA WM	WATER HAMMER ARRESTOR WALL MOUNTED	Be∰aro HF	ŀ	HOSE F	FAUCET W/O VACUUM BREAKER		CLEANOUT (FLOOR)	10. ALL P.
			Н	HAND OPERATOR, HEIGHT, HORIZONTAL	PDS F PL F	PRESSURE DIFFERENTIA PLATE	AL SWITCH	WST WT	WATER STORAGE TANK WEIGHT							8'-0" OR IN
			HE HF	HEAT EXCHANGER, HELIUM HOSE FAUCET	POS F PPM F	POSITION PARTS PER MILLION				₩ ₽₽₽ HF\	VB H	HOSE F,	FAUCET W/ VACUUM BREAKER		CLEANOUT (PIPE)	11. PIPIN
			HO HOA	HAND-OFF HAND-OFF-AUTO	PRS F PRV F	PRESSURE REDUCING ST PRESSURE REDUCING VA	TATION ALVE				ŀ	HOSE V,	/ALVE W/ HOSE NIPPLE		BLENDING VALVE	MINIM
			HP HR	HORSEPOWER HOUR, HOSE REEL	PS F PSI F	PRESSURE SWITCH POUNDS PER SQUARE IN	ICH			PBS	ļ	PRESSU	IRE REDUCING STATION	Г t o	DOWNSPOUT NOZZI F	12. ALL H FLOOR
			HUM HV	HUMIDIFIER HOSE VALVE	PSIA F	POUNDS PER SQUARE IN ABSOLUTE	ICH			<u>, , , , , , , , , , , , , , , , , , , </u>	,	THEODO	The hebooing of Arion	+	DOWNSPOOT NOZZEL	GRADE
			HWB HZ	HEATING WATER BOILER HERTZ	PSIG H	POUNDS PER SQUARE IN	ICH GAUGE				ŀ	PRESSU	JRE RELIEF VALVE		EMERGENCY SHOWER / EYEWASH	13. ALL H OTHER
SYSTEM ABBREVIATIONS SCHEMATIC FITTINGS D3 DUCK CONFUS Machine Machine Machine										\Box_{τ}	ŀ	PRESSU	JRE / TEMPERATURE RELIEF VALVE			OTHER
SYSTEM ABBREVIATIONS SCHEMATIC FITTINGS Image: status of statu										Q 🖽	C	QUICK	COUPLING		FLOOR DRAIN	14. ALL H
	SYS7	EM ABBREVIATIONS					SCHEMA	TIC	FITTINGS		4 V	WALL H	YDRANT W/ VACUUM BREAKER		HOSE RACK	REQUI
Normalized Cold Birth (NOR-FORMELT) Normalized Normalized Cold Birth (NOR-FORMELT) Normalized Cold Birth (NOR-FORMELT) Normalized	WATER		WAS	TE	SPEC	TAL					Λ	METER			HOSE REEL	TRIAN
	NPW CW. PV	COLD WATER (NON-POTABLE) COLD WATER (POTABLE)	CRV CRW	CHEMICAL RESISTANT	VENT A WASTE ACET	COMPRESSED AIR					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				HOOL HELL	LOCAT
Image: Applie information with the information of the information with the information of the information with the information withe information with the information with the information w	DE DW	DEIONIZED WATER	CWW	CLEAR WATER WASTE	AR H	ARGON		1			V	WYE ST	TRAINER	0	ROOF DRAIN	
Image work state (monorthanke) Vest Nitrogen output	F HWC	FIRE PROTECTION WATER	PD ARIE) SAN	SUMP PUMP DISCHARGE	E HE ME	HELIUM METHANE					l	WYE ST	TRAINER W/ BLOWOFF			16 SETSM
Image: Direct (SM) Baller Control	NPHW HW	HOT WATER (NON-POTABLE)	ST	STORM DRAIN	N NO	NITROGEN		 <i>TP</i>		с с	,	VACUUM		_]æø	SHOWER	ACCES
With With With With With With With With	PEW	PLANT EFFLUENT WATER	v		OX VAC	OXYGEN				L L		VACUUM	1 DREAKER		SPLASH BLOCK	AND LO SUPPOI
Interface Distribution Distrestrestin and and and and and andis and and and and a	SW TNPW TW	TEMPERED NON-POTABLE WATER	<u>FUE</u> NG	NATURAL GAS	VAC	VACOOM			$P_{-}TR\Delta P$					۵	WATER HAMMER ARRESTOR W/	SHALL
Image	ĨŴ	TEMPERED OR BLENDED WATER	PG	PRUPANE das											PDI SIZE DESIGNATION	CALIF
SCHEMATIC VALVESPLUMBING SCHEMATICSSCHEMATICSSCHEMATICSCONTROLS AND INSTRUMENTATION19 u_{00157} \overline{g}^{1} NIGL VALVE \overline{g}^{1} NIGL VALVE \overline{g}^{1} AUTOMATIC VALVE STATION \overline{g}^{1} PRESSURE RELIEF VALVE \overline{g}^{1} <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>JL</th> <th>ROOF (VTR)</th> <th></th> <th></th> <th>i</th> <th></th> <th></th> <th></th> <th>17. INSULA IN TH</th>								JL	ROOF (VTR)			i				17. INSULA IN TH
\overline{k} ANGLE VALVE \overline{k} PRESSURE RELIEF VALVE \overline{k}	SCHE	EMATIC VALVES		PLUMBING SCHEMA	A <i>tic</i> s	SCHEMATIC	S SPECA	LTIES					SCHEMATICS	CONTROLS AND	INSTRUMENTATION	18. PLUMB OUTSI
MALCEPION NPREVENTER MALCEPION NPREVENTER <td< th=""><th></th><th>ANGLE VALVE</th><th></th><th>CC BELL-UP DRAIN</th><th>OR FUNNEL</th><th></th><th>AUTOMATIC</th><th>VALVE</th><th>STATION F PI</th><th>RESSURE RELIEF V</th><th>ALVE</th><th></th><th>AIR-GAP FITTING</th><th>FS FLO</th><th>V SWITCH</th><th>19. PIPIN</th></td<>		ANGLE VALVE		CC BELL-UP DRAIN	OR FUNNEL		AUTOMATIC	VALVE	STATION F PI	RESSURE RELIEF V	ALVE		AIR-GAP FITTING	FS FLO	V SWITCH	19. PIPIN
-Original lenging -O		BACKFLOW PREVENTER		FCO		S	BASKET ST	RAINER		RESSURE / TEMPERATU	URE RELIE	ĒF	Y BELL-UP DRAIN OR	GAUG	GE ACTIVATOR/ISOLATOR	ADJUS
BackFilew Preventer Image: Cleandor (rife) Value Image: Cleandor (rife) Value Image: Cleandor (rife) Value Image: Cleandor (rife) Pressure gauge w/ shutoff value Pressure gauge w/ shutoff value Image: Cleandor (rife) Image: Cleandor (rife) <td< td=""><td></td><td>√NO⊢ W/STRAINER (2" AND SMALLER)</td><td></td><td>\sim^{CO}</td><td></td><td><u> </u></td><td>COMBINATI</td><td>ON PUMP</td><td>DISCHARGE V</td><td>AL VE</td><td></td><td></td><td>FUNNEL RECEPTOR</td><td>LS LEVI</td><td>EL SWITCH</td><td>20. ALL M PLENU</td></td<>		√NO⊢ W/STRAINER (2" AND SMALLER)		\sim^{CO}		<u> </u>	COMBINATI	ON PUMP	DISCHARGE V	AL VE			FUNNEL RECEPTOR	LS LEVI	EL SWITCH	20. ALL M PLENU
Image: Solution of the second sec		BACKFLOW PREVENTER		$-HW \rightarrow CLEANOUT (PIPE)$	=)		VALVE			JICK COUPLING				P PRES	SSURE GAUGE W/ SHUTOFF VALVE	PLENU
□ Ball Valve □ Downsport Nozzle on shower □	r	BACKWATER VALVE					FLEXIBLE	CONNECT.	ION Q R	DTAMETER				Ф		
Image: Butterfly Valve Image: Check Valve Image	() — BALL VALVE			NED / EVENAOU		FLOW CONT	HUL VAL	ve (2) S.	IGHI FLOW INDICA	IUR		T FLOON DRAIN W/ FUNNEL	S SOLI	ENOID OPERATOR	
Image: CHECK VALVE Image: C	 i	ע ווויש BUTTERFLY VALVE			werieyewash		FLOW SENS	UK METEI	к 🔄 Si	JCIION DIFFUSER	(SCHEMATI	1C)		THEI	RMOMETER - DIAL TYPE	
GATE VALVE Image: comparison of the co	r	CHECK VALVE				+ HF	HUSE FAUC	E1		KAP PRIMER				Щ тнен	RMOMETER - STEM TYPE	
Image: Globe valve Image:		GATE VALVE		$\bigcirc P - TRAP$			HUSE FAUC	EIW/V/		ALL HYDRANT W/ V	ACUUM BRE	EAKER		VACI	JUM GAUGE W/ SHUTOFF VALVE	
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Image: Pressure reducing valve Image	+`	→ PLUG VALVE					AIK VENI			TE SIKAINEK						
THREE WAY VALVE		PRESSURE REDUCING V	/ALVE	Π ² PDI SIZE DESIG	GNATION		THESSUME I		мыллим _Н і М	ACIIIM DELVED						
		THREE WAY VALVE							۷» لې	ΝΟΟΟΙΝΙ ΟΠΕΑΝΕΚ						

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			RWC
ERAL PLUMBING NOTES			YBM AEC BY CHK
IS GENERAL LEGEND AND ABBREVIATION SHEET FOR THE PLUMBING DRAWINGS. TTEMS CONTAINED ON THIS SHEET MAY NOT BE USED ON THIS SPECIFIC			0 MO.
,,, ECHANICAL PLUMBING WORK SHALL BE IN ACCORDANCE WITH THE FOLLOWING CABLE CODES: 016 CALIFORNIA BUILDING CODE 016 CALIFORNIA FIRE PROTECTION CODE 015 CALIFORNIA FUEL GAS CODE 016 CALIFORNIA PLUMBING BUILDING CODE 016 CALIFORNIA ENERGY CODE			ND RECORD OF USE
DOFTOP EQUIPMENT CURBS, FLUES, AND FLASHING DETAILS, SEE TECTURAL DRAWINGS.			RUCTION
RCHITECTURAL AND STRUCTURAL DRAWINGS FOR ALL EQUIPMENT BASE DETAILS.			CONST
ENED" DELINEATION DENOTES EXISTING AND NEW FACILITIES AND IS FOR ENCE ONLY. "LIGHT" LINE DELINEATION DENOTES EXISTING MECHANICAL MENT AND SYSTEMS. EXISTING FACILITY AND MECHANICAL SYSTEMS MATION WAS TAKEN FROM PREVIOUS DRAWINGS, CONSTRUCTION RECORDS, DATA, TELD SURVEY INFORMATION. ACTUAL LOCATION, ARRANGEMENT, AND DIMENSIONS BE FIELD VERIFIED AND WORK INSTALLED TO MEET ACTUAL CONDITIONS AND TONS ENCOUNTERED. "BOLD" (DARK) DELINEATION IS NEW WORK TO BE RUCTED UNDER THIS CONTRACT.			5/19/2020 ISSUED FOR DATE
TPE PENETRATIONS THROUGH FIRE RESISTANCE RATED ASSEMBLIES BE PROVIDED WITH FIRESTOP SYSTEMS, EQUIPMENT AND ACCESSORIES TO THE PASSAGE OF FIRE, SMOKE AND OTHER GASES. THE ORIGINAL FIRE FANCE RATING OF THE ASSEMBLY PENETRATED SHALL BE MAINTAINED FOR ALL OF PENETRATIONS. SEE ARCHITECTURAL DRAWINGS FOR RATED ASSEMBLY TONS.	t to the second	OFESSIC W. CA W. M3620	
ROOF DECKING OR BOTTOM CHORD OF BAR JOISTS SHALL NOT BE USED FOR THE RT OF EQUIPMENT OR PIPING.	S. M.	CHANIC OF CAL	AL N FOR 5/19/2020
ANGERS, BRACKETS, OR BRACES FOR EQUIPMENT AND PIPING ARE NOT ATED ON THE DRAWINGS. REFER TO THE SPECIFICATIONS FOR SUPPORT REMENTS NOT SHOWN ON THE PLANS.	н	0.01	EATCH
QUIPMENT AND PIPING FINAL LOCATIONS SHALL BE COORDINATED TO AVOID FERENCES WITH STRUCTURE, OTHER PIPING, EQUIPMENT, DUCTWORK, AND TT. UNLESS SPECIFICALLY DIMENSIONED, THE PIPE ROUTING SHOWN IS DED TO INDICATE GENERAL LOCATION ONLY.	VEATO	ITUR	ILACK & VE
PING SHALL BE ROUTED AS HIGH AS POSSIBLE WITH A MINIMUM HEIGHT OF ABOVE THE WALKING SURFACE UNLESS OTHERWISE INDICATED BY A CENTERLINE /ERT ELEVATION.	CK &	VEN	2
G INSTALLED ABOVE SUSPENDED CEILINGS SHALL BE INSTALLED TO ALLOW A JM 8'-0" INCH CLEARANCE BETWEEN THE CEILING AND PIPING.	BLA	LΖ	Č)
DSE FAUCETS AND HOSE VALVES SHALL BE INSTALLED 3'-0" ABOVE FINISHED UNLESS OTHERWISE NOTED. WALL HYDRANTS SHALL BE INSTALLED 2'-0" ABOVE UNLESS OTHERWISE NOTED.		IOL	ILAN
DSE FAUCETS AND WALL HYDRANTS SHALL BE NOMINAL 3/4" PIPE SIZE UNLESS VISE NOTED. ALL HOSE VALVES SHALL BE 1 1/2" NOMINAL PIPE SIZE UNLESS VISE NOTED.			Ē
OSE FAUCETS, WALL HYDRANTS, AND OTHER OUTLETS ON NON-POTABLE WATER WHICH COULD BE USED FOR DRINKING OR DOMESTIC USE SHALL BE POSTED AS RED BY THE APPLICABLE CODES. IN ABSENCE OF A CODE REQUIREMENT, THE TS SHALL BE POSTED WITH A TAG IN THE SHAPE OF A 4" EQUILATERAL GLE BEARING THE LEGEND "DANGER: UNSAFE WATER" IN LETTERS NOT LESS 1/2" IN HEIGHT. THIS TAG SHALL BE SECURELY ATTACHED IN A VISIBLE TON DIRECTLY ABOVE OUTLET. THE TAG SHALL BE PAINTED ORANGE AND THE RS BLACK.	3AY	(WHF)	JERAL NOTES
ELIEF VALVES SHALL BE PIPED TO FLOOR OR BELL-UP DRAINS.		$\mathbf{\dot{\mathbf{x}}}$	GEN
C RESTRAINTS/BRACING SHALL BE PROVIDED FOR ALL EQUIPMENT, PIPING AND SORIES IN ACCORDANCE WITH THE LATEST SMACNA SEISMIC RESTRAINT MANUAL OCAL BUILDING CODES. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SEISMIC ATS AND ADDITIONAL/MISCELLANEOUS STEEL REQUIRED FOR PROPER LATION OF SUPPORTS. SUPPORTS AND SEISMIC RESTRAINTS DESIGN SUBMITTALS BEAR THE STAMP AND SIGNATURE OF AN ENGINEER LICENSED IN STATE OF ORNIA.	PE MORR(RO BAY W	IN FACILI	PLUMBING ATIONS AND
ATION SHALL BE PROVIDED FOR EQUIPMENT AND PIPING SYSTEMS AS INDICATED E SPECIFICATIONS.	Y C WOR		IEVI,
ING VENTS OUTLETS SHALL BE LOCATED A MINIMUM OF 10' AWAY FROM ANY DE AIR INLET.			ABBF
G SIZES TO EQUIPMENT AND EQUIPMENT SUPPORTS SHALL BE VERIFIED AND TED TO MATCH ACTUAL EQUIPMENT FURNISHED.	C		, d
ATERIALS, FITTINGS, COVERS, AND EQUIPMENT INSTALLED IN RETURN AIR NS SHALL BE NONCOMBUSTIBLE AND UL LISTED FOR USE IN RETURN AIR NS.	C	Σ	L EGEN
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	BACKFLOW PREVENTER SCHEDULE									
		BODY SIZE	MAXIMUM FLOW	MAXIMUM PD						
UNIT NUMBER	SERVICE	(IN)	(GPM)	(PSI)	MANUFACTURER / MODEL	NOTES				
16-PLUM-BFP-0001	WATER AND COLLECTION SUPPLIES STORAGE SHED	1.0	60	13	WATTS/FEBCO LF860/1 LF860-QT RP					
50-PLUM-BFP-0001	RO & UV BUILDING	1.0	60	13	WATTS/FEBCO LF860/1 LF860-QT RP					
90-PLUM-BFP-0001	CHEMICAL BUILDING	1.5	120	13	WATTS/FEBCO LF860/1 1/2 LF860-QT RP					
95-PLUM-BFP-0001	OPERATIONS BUILDING	1.0	60	13	WATTS/FEBCO LF860/1 LF860-QT RP					
96-PLUM-BFP-0001	MAINTENANCE BUILDING	2.0	120	13	WATTS/FEBCO LF860/2 LF860-QT RP					

PIPING ACCESSORIES SCHEDULE											
UNIT NUMBER	DESCRIPTION	MANUFACTURER / MODEL	NOTES								
50-PLUM-MV-0001	THERMOSTATIC MIXING VALVE, 1 GPM MINIMUM FLOW, 25 GPM FLOW AT 20 PSI MAXIMUM DIFFERENTIAL PRESSURE, INITIAL SETPOINT 85 F.	HAWS 9201E									
96-PLUM-MV-0001	THERMOSTATIC MIXING VALVE, 1 GPM MINIMUM FLOW, 5 GPM FLOW AT 5 PSI MAXIMUM DIFFERENTIAL PRESSURE, INITIAL SETPOINT 85 F.	HAWS 9201EFE									
FCO-1	HEAVY DUTY FLOOR CLEANOUT, SECURED ROUND ADJUSTABLE NICKEL BRONZE TOP.	SMITH 4111 SERIES									
FD - 1	MEDIUM DUTY CAST IRON FLOOR DRAIN, ADJUSTABLE TOP, LOOSE SET CAST IRON GRATE.	SMITH 2310 SERIES									
FD-8	HEAVY DUTY CAST IRON FLOOR DRAIN, 12" DIAMETER TRACTOR GRATE.	SMITH 2141 SERIES									
FR-1	MEDIUM DUTY CAST IRON FUNNEL RECEPTOR, WATERSTOP FLANGE, THREADED OR NO HUB CONNECTION.	SMITH 3800 SERIES									
FS-1	CAST IRON FLOOR SINK, 8" DIAMETER TOP, DOME BOTTOM STRAINER.	SMITH 3030 SERIES									
MV - 1	THERMOSTATIC MIXING VALVE, 1/2" BODY, 0.5 GPM MINIMUM FLOW, 7.5 GPM FLOW AT 20 PSI MAXIMUM DIFFERENTIAL PRESSURE, INITIAL SETPOINT 110 F.	SYMMONS MAXLINE 5-225-CK									

	PLUMBING EQUIPMENT SCHEDULE		
UNIT NUMBER	DESCRIPTION	MANUFACTURER	NOTES
50-PLUM-ET-0001	EXPANSION TANK, PIPELINE MOUNTED, 14 GALLON, PRECHARGE TO 80 PSIG.	AMTROL THERM-X-TROL ST-C SERIES	
50-PLUM-GWH-0001	NATURAL GAS FIRED WATER HEATER, COMMERCIAL GRADE, 100 GALLONS STORAGE, 178 GPH RECOVERY AT 100 F RISE, 150 MBTUH INPUT, 120 VOLT, 1 PHASE, 60 HZ, 6-10 IN WC GAS SUPPLY PRESSURE. INITIAL SETPOINT 120 F.	AO SMITH BTH-150	1
50-PLUM-TP-0001	ELECTRONIC TRAP PRIMING MANIFOLD, SURFACE MOUNTED, 3/4" NPT INLET, 1/2" TUBE CONNECTIONS, 120 VOLT, 1 PHASE, 60 HZ. SERVE FLOOR DRAIN IN RO/UV ROOM (22 CONNECTION)	PRECISION PLUMBING PRODUCTS, INC. PRIME-TIME PT-22	
72-PLUM-EWH-0001	INSTANTANEOUS ELECTRIC WATER HEATER, NEMA 4X ENCLOSURE, WITH MOUNTING LEGS, 63 KW, 480 VOLT, 3 PHASE, 60 HZ. INITIAL SETPOINT 85 F.	KELTECH SNA SERIES	2
90-PLUM-EWH-0001	ELECTRIC WATER HEATER, TANKLESS WITH MOUNTING LEGS, 108 KW,480 VOLT, 3 PHASE, 60 HZ. OUTDOOR UNIT SHALL BE PROVIDED WITH FREEZE PROTECTION PACKAGE.	KELTECH SNA SERIES	2
95-PLUM-CP-0001	IN-LINE HOT WATER CIRCULATING PUMP, 1 GPM, 7 FEET HEAD, 120 VOLT, 1 PHASE, 60 HZ.	BELL & GOSSETT NBF-22	
95-PLUM-ET-0001	EXPANSION TANK, PIPELINE MOUNTED, 14 GALLON, PRECHARGE TO 80 PSIG.	AMTROL THERM-X-TROL ST-C SERIES	
95-PLUM-GWH-0001	NATURAL GAS FIRED WATER HEATER, COMMERCIAL GRADE, 119 GALLONS STORAGE, 349 GPH RECOVERY AT 100 F RISE, 300 MBTUH INPUT, 120 VOLT, 1 PHASE, 60 HZ, 6-10 IN WC GAS SUPPLY PRESSURE. INITIAL SETPOINT 120 F.	AO SMITH BTH-300	1
95-PLUM-TP-0001	ELECTRONIC TRAP PRIMING MANIFOLD, SURFACE MOUNTED, 3/4" NPT INLET, 1/2" TUBE CONNECTIONS, 120 VOLT, 1 PHASE, 60 HZ. SERVE FLOOR DRAIN IN MENS LOCKER ROOM (12 CONNECTION)	PRECISION PLUMBING PRODUCTS, INC. PRIME-TIME PT-12	
96-PLUM-CP-0001	IN-LINE HOT WATER CIRCULATING PUMP, 1 GPM, 7 FEET HEAD, 120 VOLT, 1 PHASE, 60 HZ.	BELL & GOSSETT NBF-22	
96-PLUM-ET-0001	EXPANSION TANK, PIPELINE MOUNTED, 8 GALLON, PRECHARGE TO 80 PSIG.	AMTROL THERM-X-TROL ST-C SERIES	
96-PLUM-GWH-0001	NATURAL GAS FIRED WATER HEATER, COMMERCIAL GRADE, 100 GALLONS STORAGE, 178 GPH RECOVERY AT 100 F RISE, 150 MBTUH INPUT, 120 VOLT, 1 PHASE, 60 HZ, 6-10 IN WC GAS SUPPLY PRESSURE. INITIAL SETPOINT 120 F.	AO SMITH BTH-150	1
96-PLUM-OL-0001	OIL INTERCEPTOR, MULTI-STAGE BASIN TYPE, 200 GALLONS, 2 STAGE, 4" INLET AND OUTLET, 3" VENT.	PROCEPTOR	3
96-PLUM-TP-0001	ELECTRONIC TRAP PRIMING MANIFOLD, SURFACE MOUNTED, 3/4" NPT INLET, 1/2" TUBE CONNECTIONS, 120 VOLT, 1 PHASE, 60 HZ. SERVE FLOOR DRAIN IN MAINTENANCE ROOM (12 CONNECTION)	PRECISION PLUMBING PRODUCTS, INC. PRIME-TIME PT-12	
HR - 1	HOSE REEL WITH 1 1/2" SWIVEL WATER SUPPLY AND 100 FEET TYPE 1 HOSE.	HANNAY 3528-25-26	

				GENE	RAL	SHE	ET I	NOTES		\square				C RWC K APP
			<u>P</u> A	LUMBII CCESS(IG EQU DRIES:	IPMENT NONE	SCHE	DULE:		┫				YBM AE BY CH
			N 1	OTES: . PRI	OVIDE NCENTF	CONDEN	SATE . T KIT	ACID NEUTRA	LIZATION AND					0 NO.
			2 3	. ANS . PRI TR	SI Z35 DVIDE AFFIC	8.1 CO EXTENS RATED	MPLIA IONS COVER	NT. FOR ACCESS	TO GRADE, WITH					F USE
			P A N	LUMBII CCESSC OTES:	I<u>G</u>FIX DRIES:	<u>TURE So</u> NONE	<u>CHEDU</u>	<u>LE:</u>						D RECORD O
			1 2 3 4	. FI) . TEI . LO(. SC)	KTURE MPEREL CAL AN ALD PF	AND IN WATER D REMO OTECTI	STALL SUPP TE AL ON BL	ATION SHALL PLY. ARM SYSTEM. EED VALVE.	BE ADA COMPLIANT.					JED FOR CONSTRUCTION REVISIONS AN
														5/19/2020 ISSU DATE
												W. C	ANTRE	
	PLUMBING	i FIXTURE SCHEDULE				OANTTA				4	tane/	No. M36	207	₩ ₩
I ABFI	DESCRIPTION	MANUFACTURER / MODEL	и НОТ	COL	WAS	SANITA TE VE		NOTES				ECHAN	ICAL RY	
WC - 1	WATER CLOSET, FLOOR MOUNT, FLUSH VALVE, 1.28 GALLON/FLUSH MAX.	AMERICAN STANDARD 3517A.101 RIGHT HEIGHT ELONGATED BOWL		1"	4		2"			\vdash			5/	/19/2020 5
UR - 1	URINAL, WALL MOUNT, FLUSH VALVE, 0.5 GALLON/FLUSH MAX.	AMERICAN STANDARD 6590.005 WASHBROOK FLOWISE		3/4	' 2'	1 1	/2"				E E	RE		\$VEAT
L - 1	LAVATORY, COUNTERTOP 20"x17", OVAL, 4" CENTER, WITH 0.5 GPM AERATED FAUCET AND GRID DRAIN.	LAV: AMERICAN STANDARD 0476.028 AQUALYN FAUCET: AMERICAN STANDARD 7385.003 RELIANT 3	1/2"	1/2	" 1 1	2" 1 1	/2"	1			& VEA	NTU		BLACK
L-2	LAVATORY, WALL HUNG 21"x18", WITH [1.5] [0.5] GPM AERATED FAUCET AND POP-UP DRAIN.	LAV: AMERICAN STANDARD 0355.012 LUCERNE FAUCET: AMERICAN STANDARD 7385.000 RELIANT 3	1/2"	1/2	" 1 1	2" 1 1	/2"	1			SLACK	IT VE	2000 St 20	2
MS - 1	MOP SINK, 24"x24", 12" DEEP, FLOOR MOUNTED, THREE SPLASH PANELS.	SINK: STERN-WILLIAMS HL-1810-BP3 FAUCET: AMERICAN STANDARD 8354.112	1/2"	1/2	' 3'	2						010		ANC
MS-2	MOP SINK, 24"x24", 12" DEEP, FLOOR MOUNTED, THREE SPLASH PANELS.	SINK: STERN-WILLIAMS HL-1810-BP3			3'	2				L	r		8	FIL
EWC-1	ELECTRIC WATER COOLER, WALL MOUNTED, 8 GPH, 120 VOLT, 1 PHASE, 60 HZ.	ELKAY EZS8		1/2	1 1	2" 1	1/2"	1		\vdash		┶┯		
S-1	SAMPLE SINK, 24"x24", FREE STANDING, 14" DEEP, 14 GAUGE STAINLESS STEEL, 2" DRAIN, 24" RIGHT & LEFT DRAIN BOARD, STAINLESS STEEL LEGS.	SINK: ELKAY WNSF8124 DRAIN: ELKAY LK25 RT			2"	2								
S-2	KITCHEN SINK, 21"x33", DOUBLE BOWL, 7 1/2" DEEP, 20 GAUGE STAINLESS STEEL, THREE HOLE PUNCHED, SINGLE LEVER FAUCET.	SINK: ELKAY ELV2219CS FAUCET: AMERICAN STANDARD 4175.500 COLONY SOFT	1/2"	1/2'	1 1/	2" 1 1	/2"				•	WRF)		
S-5	SAMPLE SINK, 24"x24", FREE STANDING, 14" DEEP, 14 GAUGE STAINLESS STEEL, 2" DRAIN, STAINLESS STEEL LEGS.	SINK: ELKAY WNSF8124 DRAIN: ELKAY LK25 RT			2"	2				BA	j L) 2		
SS - 1	SERVICE SINK, 24"x20", WALL MOUNTED,CAST IRON,SINGLE BOWL,BLANK BACK,WALL MOUNTED FAUCET FOR EXPOSED OVERHEAD SUPPLIES	SINK: AMERICAN STANDARD 7695.000 AKRON FAUCET: CHICAGO FAUCET 835	1/2"	1/2"	3	1 1	/2"			RRO	Y WR		NG	Ē
LS-1	LAB SINK, 30"x18", SINGLE BOWL, UNDERMOUNT, STAINLESS STEEL, OPEN GRID STRAINER. DECK MOUNTED FAUCET, 8" CENTERSET, WRISTBLADE HANDLES, 6" GOOSENECK WITH VACUUM BREAKER, SERRATED LABORATORY NOZZLE	SINK: ELKAY PLAUH281612 FAUCET: CHICAGO FAUCETS LWM2-A13-E	1/2"	1/2	' 1 1,	2" 1 1	/2"			F MO	RO BA	N FAC	PLUMBII	SCHEDUI
LS-2	LAB SINK, 23"x18", SINGLE BOWL, UNDERMOUNT, STAINLESS STEEL, OPEN GRID STRAINER. DECK MOUNTED FAUCET, 8" CENTERSET, WRISTBLADE HANDLES, 6" GOOSENECK WITH VACUUM BREAKER, SERRATED LABORATORY NOZZLE	SINK: ELKAY ELUH2115 FAUCET: CHICAGO FAUCETS LWM2-A13-E	1/2"	1/2	11,	2" 1 1	/2"			<u>τΥ</u> 0	MORF	MATIO		
EEW-1	EMERGENCY EYE/FACE WASH, FROST-PROOF TO 30 F, COUNTER TOP RIGHT MOUNTED, 1/2" IPS SUPPLY.	HAWS 7611		1/2'				2,3		CI)	CLA		
ES/EEW-1	EMERGENCY SHOWER/EYE/FACE WASH COMBINATION, PEDESTAL MOUNTED, 1 1/4" IPS SUPPLY.	HAWS 8300-8309		1 1/4	"			2,3,4				RE		
ES/EEW-2	EMERGENCY SHOWER/EYE/FACE WASH COMBINATION, FROST-PROOF TO -30 F, PEDESTAL MOUNTED, 1 1/4" IPS SUPPLY, 120 VOLT. WITH FREEZE PROTECTION BLEED VALVE AND SCALD PROTECTION BLEED VALVE.	HAWS 8317 CTFP		1 1/4	"	- -		2,3,4						
										DESIO DETA CHEC	GNED: (ILED: (KED:	VAP YBM AEC		
										APPR DATE	OVED:	RWC 5/19/20	020	

0 1/2 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE PROJECT NO. 400530

00-P-601

SHEET 320 OF 412

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PL

				0 YBM RWC AEC NO. BY CHK APP
	GENERAL SHEET NOTES			SUED FOR CONSTRUCTION REVISIONS AND RECORD OF USE
	SHEET BEGINS WITH 95-PLUM.			5/19/2020 IS: DATE
		t Single	No. M36	5/04 CAN 207 1CAL P 5/19/2020
		BLACK & VEATCH	JINT VENTURE	
┢	SHEET KEYNOTES	Ľ)(FILA
	 2" SAN PIPE CAPPED AT 12" AFF FOR WASHING MACHINE. 1/2" HW AND CW VALVED AND CAPPED FOR WASHING MACHINE. 1/2" TRAP PRIMER PIPING TO FD, FS AND FR LOCATED IN ROOM 95-106, 95-108, 95-109, 95-111, 95-112 AND 95-122 FROM TRAP PRIMING PANEL LOCATED IN ROOM 95-111. 	CITY OF MORRO BAY MORRO BAY WRF	HECLAMAIION FACILIIY (WHF)	OPERATIONS BUILDING PLUMBING ENLARGED OPERATING FLOOR PLAN - WEST
	$\frac{4' \ 2' \ 0' \ 4' \ 8'}{1/4" = 1' - 0"}$	DESIGNED: V DETAILED: V CHECKED: A APPROVED: F DATE: 5 0 IF THIS MEASURE 1 NOT T PRO 4	/AP /BM AEC RWC 5/19/2 1/2 1/2 1/2 S BAR " THEN CO FUL DJECT 2005	020 2 1 DOES NOT V DRAWING IS L SCALE NO. 530

PM

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: 5/19/:

PLOT

3:03:59 PM : 5/19/20 PLOT

- 3" V UP TO 3" VTR

ΡM 3:04:02 : 5/19/20 PLOT

TED: 5/19/2020 3:20:31 |

3:42:23

SYSTEM ABBREVIATIONS	HVAC LEGEND)			N
CWR CHILLED WHATER RETURN CWS CHILLED WATER SUPPLY C CONDENSATE DRAIN CDWR CONDENSER WATER RETURN CDWS CONDENSER WATER SUPPLY HWR HEATING WATER SUPPLY HWS HEATING WATER SUPPLY LPC LOW PRESSURE CONDENSATE LPS LOW PRESSURE STEAM (<15 PSIG) R REFRIGERANT	$ \begin{array}{c} $	DIFFUSER FOR FLEXIBLE DUCT RETURN DIFFUSER DUCTWORK DIMENSIONS, THE FIRST DIMENSION IS THE SIDE SEEN OR SIDE THE LEADER LINE TOUCHES. SEE GENERAL MECHANICAL NOTES. FLEXIBLE CONNECTION FLEXIBLE DUCTWORK INCLINED RISE (UP) OR DROP (DN) IN RESPECT TO DIRECTION OF AIRFLOW NEGATIVE PRESSURE DUCT POSITIVE PRESSURE DUCT REGISTER, GRILLE OR DIFFUSER	A A AC ACCU AD AF AFD AFF AFM AHU ALUM AP APPROX AS ATU AUTO AVG B B BDD BF BFF BFF	ALARM AIR COMPRESSOR AIR COOLED CONDENSING UNIT ACCESS DOOR AIR FLOW, AIRFOIL ADJUSTABLE FREQUENCY DRIVE ABOVE FINISH FLOOR AIR FLOW MONITOR AIR FLOW MONITOR AIR HANDLING UNIT ALUMINUM ACCESS PANEL APPROXIMATE AIR SEPARATOR AIR TERMINAL UNIT AUTOMATIC AVERAGE BELT DRIVE, BLOW THROUGH BACKDRAFT DAMPER BLIND FLANGE BELOW FINISH FLOOR BACKFLOW PREVENTER	F FBD FC FCU FDB FEF FLEX FM FR FRP FS FSD FT FUR FWB GA GALV
		ROUND OR FLEXIBLE DUCT TAKEOFF VOLUME CONTROL DAMPER ROUND TO SQUARE TRANSITION TURNING VANES LOUVER	BH BI BLDG BLR BOD BOT BTUH BU BV	BASEBOARD HEATER BACKWARD INCLINED, BUILT-IN THERMOSTAT BOTTOM LEVEL BUILDING BLOWER BOTTOM OF DUCT ELEVATION BOTTOM BRITISH THERMAL UNITS PER HOUR BELL-UP BALL VALVE	GIH GPM GUH GV <u>H</u> H
	AIR INLET 8	OUTLET IDENTIFICATIONS	<u>C</u>		HCH HE HO
	24"x10" - 10" SR - 1 - 760	— SIZE-LENGTH BY WIDTH (INCHES) — FLEXIBLE DUCT DIAMETER (INCHES, IF USED)	C CB CBD CC CD CDWP CENTR	CHANNEL, CONVECTOR, COOLING, COOLING (MAKE ON RISE) CENTRIFUGAL BLOWER COUNTERBALANCE BACKDRAFT DAMPER COOLING COIL CONTROL DAMPER CONDENSER WATER PUMP CENTRIFUGAL	HOA HP HR HUH HUM HWB HWP HZ
		 CFM THRU DEVICE DEVICE DESIGNATION DEVICE GROUP: R-REGISTER, G-GRILLE, D-DIFFUSER 	CF CFM CH C/L CO CONC CONN CONT	CABINET FAN CUBIC FEET PER MINUTE CONVECTION HEATER CENTERLINE CLEANOUT CONCRETE CONNECTION CONTINUATION	<u>I</u> ID IN INV
		— DEVICE TYPE: S-SUPPLY, E-EXHAUST, R-RETURN, T-TRANSFER	CS CT CU CV	CONTROL STATION COOLING TOWER CONDENSING UNIT CHECK VALVE, CONTROL VALVE	<u>K</u> KW
	CONTROLS &	INSTRUMENTATION LEGEND	CWP	CHILLED WATER PUMP	<u>L</u> L
	CS CS $CDG \Rightarrow$ E_E E_M	CONTROL STATION DRAFT GAUGE ELECTRIC OPERATOR (EXPLOSION PROOF) ELECTRIC OPERATOR (MODULATING)	D D DB DDC DEH DF DIA DM DN DN DX	DIRECT DRIVE, DRAW-THRU DRY BULB DIRECT DIGITAL CONTROL DEHUMIDIFIER DUCT FAN DIAMETER DUCT MOUNTED DOWN DIRECT EXPANSION	LAT LBS LD LI LS LWT LLCF <u>M</u>
	E EVS 1 (FS) E EVS 1 (FS) (C) (C)	ELECTRIC OPERATOR (2 POSITION) EMERGENCY VENTILATION SWITCH W/ NUMBER FLOW SWITCH GAUGE ACTIVATOR/ISOLATOR SUPPLY AIR DIFFUSER RETURN AIR DIFFUSER	E E EA EAT EC ECH ECP EDH EF	ELECTRIC, ELECTRIC OPERATOR, EXHAUST EACH, EXHAUST AIR ENTERING AIR TEMPERATURE ECONOMIZER, EVAPORATIVE COOLER ELECTRIC CABINET HEATER EQUIPMENT CONTROL PANEL ELECTRIC DUCT HEATER EXHAUST FAN	MAO MAX MCA MFR MOCP MIN MOD <u>N</u> NC
	$(H)_{1}$ (LS) $(PDS)_{1}$ (P) (P) (P) (P)	LEVEL SWITCH PRESSURE DIFFERENTIAL SWITCH W/ NUMBER PRESSURE GAUGE W/ SHUTOFF VALVE	EFF EGS EIH EL EP EQUIP ES ESP ET	EFFICIENCY EMERGENCY GAS SCRUBBER ELECTRIC INFRARED HEATER ELEVATION EXPLOSION PROOF EQUIPMENT EMERGENCY SWITCH EXTERNAL STATIC PRESSURE EXPANSION TANK	NO NPSH OA OD
	PS SMD ₁ S ()	PRESSURE SWITCH SMOKE DETECTOR W/ NUMBER SOLENOID OPERATOR THERMOMETER - DIAL TYPE	EUH EV EVS EWT EXIST	ELECTRIC UNIT HEATER EXHAUST VALVE EMERGENCY VENTILATION SWITCH ENTERING WATER TEMPERATURE EXISTING	<u>Р</u> PD PAC PAH
	$ \begin{array}{c} $	THERMOMETER - STEM TYPE VOLUME CONTROL DAMPER TEMPERATURE SENSOR WITH NUMBER THERMOSTAT WITH NUMBER			PDS PF PHP PL POS PPM PROF
l	V Ç	VACUUM GAUGE W/ SHUTOFF VALVE			

5/19/

MECHANICAL ABBREVIATIONS

F	DEGREES FAHRENHEIT
FBD	FACE AND BYPASS DAMPER
FC	FORWARD CURVE, FAN COIL
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FDB	DEGREES FAHRENHEIT DRY BULB
FEF	FUME EXHAUST FAN
FLEX	FLEXIBLE
FM	FLOW METER
FR	FEET PER MINUTE
FRP	FUNNEL RECEPTOR
FR	FIBERGLASS REINFORCED PLASTIC
FRP	PIPE
FS	FLOW SWITCH
FSD	COMBINATION FIRE/SMOKE DAMPER
FT	FEET, FIN TUBE HEATER
FUR	FURNACE
FWB	DEGREES FAHRENHEIT WET BULB
G GA GAL V GIH GPM GUH GV	GAUGE GALVANIZED GAS INFRARED HEATER GALLONS PER MINUTE GAS UNIT HEATER GATE VALVE
<u>Н</u> H HC HCH HC HO HOA HP HR HUH HUH HWB HWP HZ	HAND OPERATOR, HEATING, HEATING (MAKE ON FALL), HEIGHT, HORIZONTAL, HUMIDISTAT HEATING COIL HEATING WATER CABINET HEATER HEAT EXCHANGER HAND-OFF HAND-OFF-AUTO HEAT PUMP, HORSEPOWER HEAT RECOVERY UNIT HEATING WATER UNIT HEATER HUMIDIFIER HEATING WATER BOILER HEATING WATER PUMP HERTZ
<u>I</u>	INTAKE
ID	INSIDE DIAMETER
IN	INCHES
INV	INVERT
<u>К</u> КW	KILOWATT
L	LINED DUCT, LOUVER
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LD	COMBINATION LOUVER/DAMPER
LI	LEVEL INDICATOR
LS	LEVEL SWITCH
LWT	LEAVING WATER TEMPERATURE
LLCP	LEAD/LAG CONTROL PANEL
MAU	MAKEUP AIR UNIT
MAX	MAXIMUM
MCA	MINIMUM CIRCUIT AMPS
ME	MIST ELIMINATOR
MFR	MANUFACTURER
MOCP	MAXIMUM OVERCURRENT PROTECTION
MIN	MINIMUM
MOD	MODULATING
<u>N</u>	NORMALLY CLOSED
NC	NORMALLY OPEN, NUMBER
NO	NET POSITIVE SUCTION HEAD
NPSHR	REQUIRED
<u>О</u> ОА ОД	OUTSIDE AIR OUTSIDE DIAMETER
P PD PAC PAH PDS PF PHP PL	PNEUMATIC PRESSURE DROP (INCHES OF WATER FOR AIR, FEET OF WATER FOR FLUIDS) PACKAGED AIR CONDITIONING UNIT PACKAGED AIR HANDLING UNIT PRESSURE DIFFERENTIAL SWITCH PROPELLER FAN PACKAGED HEAT PUMP PLATE

		GENERA	L HV
PRS PRV PS PSI PSIA PSIG PTAC	PRESSURE REDUCING STATION POWER ROOF VENTILATOR, PRESSURE REDUCING VALVE PRESSURE SWITCH POUNDS PER SQUARE INCH POUNDS PER SQUARE INCH ABSOLUTE POUNDS PER SQUARE INCH GAUGE PACKAGED TERMINAL AIR	1. THIS I CONTAI 2. ALL ME CODES 20 20 20 20	S GENE NED ON CHANIC 016 CAL 016 CAL 016 CAL
RA RA RAC RCS REQD	REACTIVATION AIR, RETURN AIR ROOM AIR CONDITIONER REMOTE CONTROL STATION REQUIRED	3. FOR RO DRAWIN 4. SEE AF 5. "SCREE ONLY. EXISTI	DOFTOP I IGS. RCHITEC ENED" DI "LIGHT ING FAC
RH RSF SA SCD SCFM	RELATIVE HUMIDITY, ROOF HOOD ROOF SUPPLY FAN SUPPLY AIR SMOKE CONTROL DAMPER STANDARD CUBIC FEET PER MINUTE	6. ALL MA SHALL 7. ALL P	CON, ARI CON, ARI ET ACTU DRK TO I ATERIALS BE NON
SD SF SH SIM SMD SP SPS	SUPPLY DIFFUSER SQUARE FEET, SUPPLY FAN SHEET SIMILAR SMOKE DETECTOR STATIC PRESSURE (INCHES OF WATER) STATIC PRESSURE SENSOR	9. ALL HA	ROOF DI ROOF DI ROOF DI TOF E ANGERS,
SS STD SV <u>T</u> T TCP	STAINLESS STEEL STANDARD SERVICE VALVE, SHUTOFF VALVE, SOLENOID VALVE THERMOSTAT TEMPERATURE CONTROL PANEL	10. OUTSID PLUMBI 11. ALL EG INTERF UNLESS INTENL	E AIR I ING VEN UIPMENT ERENCES S SPECI DED TO
TE TL TS TYP V	TEMPERATURE ELEMENT TOP LEVEL TIP SPEED TYPICAL	12. ALL PI OF 8'- BOTTOM 13. DUCTWC PRESSU SHALL	PING AN 0" ABO 1 OF DU PRK SHAL IRES IN HAVE A
VAC VANE VAV VCD VF W	VACUUM OUTLET VANEAXIAL VARIABLE AIR VOLUME VOLUME CONTROL DAMPER VANEAXIAL FAN WIDE FLANGE. WIDTH	14. DUCT S METAL 15. MINIMU SPECIF DESIGN GOVERN THE DF	SIZES IN SIZES / M INSUL ICATION ATION. I. THE N RAWINGS
WB WC WF WG WH WM WPHP	WET BULB WATER CHILLER WATER COLUMN WALL FAN WATER GAUGE WALL HEATER WALL MOUNTED WALL MOUNTED PACKAGED HEAT PUMP	L,L1 - L15 - L2 - 2 16. DUCT C SHALL 17. THE LC	1 INC 1.5 IN 2 INCH CONNECT BE VER
ws i wT wV <u>Z</u> ZD	WATER STORAGE TANK WEIGHT WATER CONTROL VALVE ZONE DAMPER	18. ROOFTC SERVIC 19. CONTRO INDICA 20. SEISMI	ERE WI PEQUIF CE FOR I DAMPE ATED. TC RESTF
		ACCESS LOCAL AND AL SUPPOF SIGNAT 21. INSULA IN THE	SORIES BUILDI DDITION, RTS AND FURE OF TION SH

									Al	IR HAN	DLING	UNIT	SCHEL	DULE											
						IND	OOR	POW	/ER			NG					μελττή	2			ETLI				
UNIT NUMBER 95-HVAC-AHU-0001 S	LOCATION 95-OPERATION BUILDIN	MANUFACTURE G AAON	ER MODEL	ESPAIRFLOW(IN(CFM)WC)14801	ORIENTATIO HORIZONTAL	FA MO1 N H.	AN TOR IP DRIVE 1 DIRECT	VOLTS I 480	PHASE (F	EAT DB) (FW 32 72.	CAPA CAPA B) SENS 6 43	ACITY (E SIBLE 7 600 9	BTUH) TOTAL 93900	EAT (FDB) TY 31 ELEC	/PE CAPA /PE (k TRIC 2	ACITY (W) 28 HEA	TYPE (PACITY BTUH) 22300 HOT G	TYPE GAS REHEAT	CAPACI (BTUH 27000	TY TY D PLEATED	THICKNESS (IN) 2	S VIBRATION ISOLATION INTERNAL	APPROX WEIGHT (LBS) 873	NOTES
									CONDEN	VSING	UNIT/	HEAT F	PUMP S	CHEDULE											
								COOLII	NG						POWER	SUPPLY	MINIMUM	ARI							
UNIT NUMBER	LOCATION	MAN	NUFACTURER	MODEL	CAI (1	PACITY BTUH)	MINUMUN CAPACIT	Y SI	UCTION T MINIMUM	<u>EMPERAT</u>	<u>URE (F</u> AXIMUM) – H CAF	HEATING PACITY	OUTPUT (BTUH)/KW	VOLTS	PHASE	CIRCUIT AMPACITY	MINIMUM EFFICIENCY	MATCHEL	D WITH	INDOOR UNI	T AI	PPROX WEIGHT	· (LBS)	NOTES
95-HVAC-HP-0001	95-OPERATION BU	ILDING	LG	HR_MULTI	V 5 24	40000	1		45 45		50		20409	8/22.1	480	3	41.4	22.5	95-HVA	C-FCU-O	001 TO 001	2	312		1,2,3,4
95-HVAC-HP-0002 95-HVAC-HP-0003	95-OPERATION BU	ILDING	LG	MULTI V	S 3	8000 8000	1		45		50		34408	3/3.7	208	1	25	17	95	-HVAC-A -HVAC-F	CU-0013		873		1,3
95-HVAC-HP-0004	95-OPERATION BU	ILDING	LG	MULTI V	S 3	8000	1		45		50		34408	3/3.7	208	1	25	17	95 -	HVAC-FO	CU- 0014		873		1,3
										FAN C	OIL UI	NIT SC	CHEDUL	E		_									
									AIRFLOW		ם	EAT	LAT	COOLING (B	CAPACITY TUH)	HEA	TING CAPAC (BTUH)	ITY	POWER	?		PIPING (CONNECTION (IN)	
UNIT NUMBER	4054.05.0	LOCATIC		K 0000	MODEL		TYPE		(CFM)	(IN WC	;) (FDB) (FWB)	(<i>FDB</i>)	SENSIBLE	TOTAL	ТОТА	AL HEAT	ING DB VOLTS	S PHASE	Hz I	RLA	LIQUID	(JAS	NOTES
95-HVAC-FCU-0001 95-HVAC-FCU-0002	AREA 95 OF AREA 95 OPER	PERATION BUILD	DING - BREAN IG - CONFERE	K ROOM ENCE ROOM	ARNU543M3 ARNU183TC	A4 [D4	DUCT_HIGH_ST CASSETTE 4	TATIC WAY	1482 396		79.8 85.8	3 69.6 3 69.6	62.3 60.8	28100 10700	32300	4440	00 00	72 208 72 208	1	60 60	2.5 0.2	3/8 1/4		}/4 1/2	1,2
95-HVAC-FCU-0003	AREA 9	5 OPERATION E	BUILDING-LOE	BY	ARNU183TN	A4	CASSETTE_4	WAY	565		83.7	7 69.6	65.1	11400	11700	1880	00	72 208	1	60	0.6	3/8	Ę	5/8	1
95-HVAC-FCU-0004 95-HVAC-FCU-0005	AREA 95 OPERA AREA 95 OPER	RATION BUILDING	NG - MANAGEI	R OFFICE	ARNU123BF	A4 L D4	CASSETTE_4	WAY	230		82.0	5 69.6	66.3	6300	6500	1060	0	72 208 72 208	1	60	0.2	1/4		1/2	1
95-HVAC-FCU-0006	AREA 95 OPL	ERATION BUILD.	ING - OFFIC	E 2 & 3	ARNU123M2	A4 [DUCT_HIGH_S	ATIC	512		66.5	5 69.6	66.5	6700	7100	1450	00	72 208	1	60	2.3	1/4	-	1/2	1,2
95-HVAC-FCU-0007 95-HVAC-FCU-0008	AREA 95 OPERATIO	ON BUILDING -	MAP ROOM AN	ND COPY ROOM ND COPY ROOM	ARNU183M2 ARNU153M2	A4 L A4 L	DUCT_HIGH_S DUCT_HIGH_S	ATIC ATIC	512		84.0	2 69.6	64.8	8500	8900	1450	00	72 208 72 208	1	60	2.3	1/4		1/2	1,2
95-HVAC-FCU-0009	AREA 95 OPERATIO	ON BUILDING -	MAP ROOM A	ND COPY ROOM	ARNU283M2	A4 [DUCT_HIGH_S	ATIC	845		86.1	1 69.6	66.7	17500	17500	3080	00	72 208	1	60	2.3	1/4		1/2	1,2
95-HVAC-FCU-0011	AREA 95 OPERATIO	N BUILDING - I	LAUNDRY AND	ON CALL ROOM	ARNU303M2 1 ARNU183M2	A4 [A4 [DUCT_HIGH_S	ATIC ATIC	672		86.5	5 69.6	69.3	12500	12800	2250	00 00	72 208 72 208	1	60	2.3	1/4		1/2	1,2
95-HVAC-FCU-0012	AREA 95 OPER	RATION BUILDI	NG - SAMPLE	STORAGE	ARNU093TR	D4	CASSETTE_4	WAY	283		86.8	3 69.6	70.6	5000	5000	970	0	72 208 72 208	1	60	0.2	1/4		5/8	1
95-HVAC-FCU-0014	AREA 95 OPERATIO	ON BUILDING -	ELECTRICAL	/SERVER ROOM	ARNU363SV	A4 A4	WALL_MOUN	ED	671		91.5	5 69.6	54.9	26500	26500	1660		72 208	1	60	0.8	3/8	ł.	5/8	1,3
	1				-						FAN SO	CHEDUL	.E		<u> </u>						A T A		i		1
														WER SUPPLY	Y MINI	MUM WHEE	EL WHEE	L	F1	LIER DA	ATA IICKNESS	VIBRAT	ION APP	ROX WEIGHT	
UNIT NUMBER		LOCATION			FAN 7	YPE	AIRFLOW	(CFM)	ESP	(IN WC)	M	OTOR HP	VOLT	S PHASE	DIAN	NETER (IN	I) TYP	DRIVE	TYPE		(IN)	ISOLAT	ION	(LBS)	NOTES
50-HVAC-EF-0002	AR	REA 50 RO/UV E	BUILDING		PF		540	0	0).375		3/4	480	3		24	/ 	BELT				INTERN	IAL	145	2
95-HVAC-DF-0001	AREA 95-OPERAT	ION - MENS AND	D WOMENS LO	CKER ROOM	DF		146	0		0.75		3/4	480	3		10	<u>с</u>	BELT				SPRING H	ANGER	145	1,2
96-HVAC-DF-0002	AREA 96 MAINT	INTENACE BUILI	DING UNISEX	ROOM	DF		200	0)	0).125		1/4	120	1		7	О Р	DIRECT				INTERN	IAL	145	1,2
96-HVAC-DF-0003	AREA 96 MAINTE	NACE PAINT AN	ID FUEL STOR	RAGE ROOM	DF		10	0	0).125		1/4	120	1		7	P	DIRECT				INTERN	IAL	145	1,2
96-HVAC-EF-0002	AREA	96 MAINTENAC	E BUILDING		PF		600	0	0).625		1	480	3		30	P	BELT				INTERN	IAL	101	1,2
	1								i	HE	ATER	SCHED	ULE												1
UNIT NUMBER		LOCATIO	N		TYP	E	UNIT O	RIENTA	TION	AIR F	LOW (CI	FM)	AIR P) (IN WC)	OUTPU (BTUH)	UT CAPAC	TTY KW) WA	TER FLOW (GP	M) WATER	PD (FT) MOTOR HI	POWER S	SUPPLY APP PHASE	ROX WEIGHT (LBS)	NOTES
50-HVAC-EUH-0001	AREA 50 RC	D/UV BUILDING	-ELECTRICAL	ROOM	EUH	HD	HOR	IZONTA	L		410					2	2.6				1/40	208	1	32	2,3
50-HVAC-GUH-0001 50-HVAC-GUH-0002	AF	REA 50 RO/UV E REA 50 RO/UV E	BUILDING BUILDING		GUI	+ +	HOR	IZONTAI IZONTAI	L L		550 550				37350 37350		-		· · · ·		1/20	120	1	<u> 100 </u>	2,4
50-HVAC-GUH-0003	AF	REA 50 RO/UV L	BUILDING		GU	1	HOR	IZONTA	L		550				37350		-				1/20	120	1	100	2,4
50-HVAC-GUH-0004 96-HVAC-GUH-0001	AF ARFA	REA 50 RO/UV E 96 MAINTENAC	BUILDING CF BUTIDING		GU	<u> </u> 	HOR	IZONTAI IZONTAI	L		550 550				37350	-	-		· · · · ·	 	1/20	120	1	<u> 100 </u>	2,4
96-HVAC-GUH-0002	AREA	96 MAINTENAC	E BUILDING		GU	1	HOR	IZONTA	L		550				37350						1/20	120	1	100	2,4
96-HVAC-GUH-0003 96-HVAC-GUH-0004	AREA AREA	96 MAINTENAC	E BUILDING		GU	<u> </u> 	HOR	IZONTA IZONTA	L		550 550			 	37350	-			· · · ·	 	1/20	120	1	<u> 100 </u>	2,4
96 - HVAC - GUH - 0005	AREA	96 MAINTENAC	E BUILDING		GU	1	HOR	IZONTA	L		550				37350	-					1/20	120	1	100	2,4
							PA	CKAGE	D AIR	CONDIT	IONIN	IG UNI	T/HEA	t pump s	CHEDULE										
			II	VDOOR FAN	POWER	SUPPLY	-			COOLING				HE	ATING		_	457		FILTE	R DATA	ECONC	MIZER DATA		
	1 0047701		AIRFLOW (IN MOTOR		DUADE	MINIMUM CIRCUIT	EA7		(BTUH)		MIN CAPACIT	Y		CAPACITY	HEAT	DISCHAR	E MINIMUM	OA		THICKNESS	T)/DE		WEIGHT	NOTEO
				VG) HP [75 4	PELT 400	PHASE	AMPACITY	<u>(FUB) (</u>	<u>+wв) SEI</u> 	VSTRFE	TEOOO	STAGES	EAT	I YPE AUXILIARY	(<i>BIUH</i>)	STAGES			, <u>Y (CFM)</u>		(1N)	POWER		AL	NUTES
о нило жене соот	SO-ELECTRICAL ROOM	I KANE	2000 0	275 410		3	15	09.1	/	2100			72	AUXILIARY	23700					LEATED	2	EXTIAUSI	UKY BULB	1218	
<u>80-нуас-wphp-0001</u>	BU-ELECIRICAL ROOM	BARD	1000 0.	3/5 1/2		3	14	<u>89.2</u>	3		38400	1		AUXILIARY	40400	1	HURIZONT	4L 10	100 P	LEAIED	2				1,2,3,4
80-HVAC-WPHP-0002	80-ELECTRICAL ROOM	BARD	1000 0.	375 1/2	BELT 480	3	14	89.2	3	6100	38400	1	72	ELECTRIC AUXILIARY	40400	1	HORIZONT	4L 10	100 P	LEATED	2			750	1,2,3,4
80-HVAC-WPHP-0003	80-ELECTRICAL ROOM	BARD	1000 0.	375 1/2	BELT 480	3	14	89.2	3	6100 3	38400	1	72	ELECTRIC AUXILIARY	40400	1	HORIZONT	<u>4L 10</u>	100 P	LEATED	2			750	1,2,3,4
80-HVAC-WPHP-0004	80-ELECTRICAL ROOM	BARD	1000 0.	375 1/2	BELT 480	3	14	89.2	3	6100	38400	1	72	ELECTRIC	40400	1	HORIZONT	AL 10	100 P	LEATED	2			750	1,2,3,4
96 - HVAC - PHP - 0001	CONTROL ROOM AND I & C WORKSHOP	TRANE	3150 1.	375 1	BELT 480	3	15	85.3	6	5600	79700	1	72	AUXILIARY ELECTRIC	39800	1	HORIZONT	AL 11	400 P.	LEATED	2	POWER EXHAUST	DIFFERENTIA DRY BULB	AL 1185	1
			AIR DEVI	CE SCHEDUL	E												HEAT I	PUMP BRANC	H SELECT	OR BO	XES SCHE	DULE			

 SYMBOL
 MANUFACTURER
 MODEL
 FRAME/BORDER
 MODULE SIZE
 MATERIAL
 FINISH 24"x24" ALUMINUM BAKED WHITE ENAMEL SD - 1 TITUS PAS-AA SURFACE MOUNT ALUMINUM BAKED WHITE ENAMEL OPPOSED BLADE SR - 1 TITUS 272FS SURFACE MOUNT - - -24"x24" RD - 1 TITUS PAR-AA SURFACE MOUNT ALUMINUM BAKED WHITE ENAMEL RG - 1 - - -TITUS 50F SURFACE MOUNT ALUMINUM BAKED WHITE ENAMEL ALUMINUM BAKED WHITE ENAMEL OPPOSED BLADE 1 ER - 1 TITUS 3FL SURFACE MOUNT - - -

				HEAT PUMP BRA	ANCH SELECTO	OR BOXES SCH	EDULE		
DAMPER TYPE NOTES	NOTEO						PO	WER	
	NUTES	LOCATION	UNIT NUMBER	MODEL	QUANTITY	VOLTS	PHASE	Hz	RLA
	1	95-HVAC-HP-0001	95-HVAC-HR-0001	PRHR083A	1	208	1	60	0.2
OPPOSED BLADE	1	95-HVAC-HP-0002	95-HVAC-HR-0002	PRHR083A	1	208	1	60	0.2
	1								
	1								

denervie oneen noteo			JA RWC HK APP
SEE DRAWINGS 00-H-001 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.			BY CH
SCHEDULE LEGEND:			0 NO.
AIR HANDLING UNIT SCHEDULE:			
ACCESSORIES: NONE			SE
CAPACITY NOTE: CAPACITIES LISTED IN PARENTHESES ARE IN UNITS OF "KW". CAPACITIES LISTED WITHOUT PARENTHESES ARE IN UNITS OF "BTUH".			CORD OF U
 VOTES: 1. UNIT IS SUBJECT TO CORROSION FROM A HYDROGEN SULFIDE LADEN ATMOSPHERE. ALL AIRSTREAM COMPONENTS AND EXPOSED HEAT TRANSFER COMPONENTS SHALL BE GIVEN A PROTECTIVE SPECIAL COATING OF HERESITE OR APPROVED EQUAL. CONTROLS PANELS, WIRING CONNECTIONS AND OTHER SENSITIVE ELECTRONICS SHALL HAVE A CONFORMAL COATING APPLIED. 2. VARIABLE REFRIGERANT FLOW. 3. AHU SHALL BE INTEGRATED INTO THE VRF CONTROLLER. 4. MODULATING HOT GAS REHEAT. 			ED FOR CONSTRUCTION REVISIONS AND RE
CONDENSING UNIT/HEAT PUMP SCHEDULE:			ISSI 0
ACCESSORIES: NONE			19/202 DATE
DUIDOOR COIL ENIERING AIR TEMPERATURE: COOLING — 100° F AMBIENT / 5° F MIN HEATING — 31° F (HEAT PUMP)	LI PRO	FESSION W. CAN	2
 NOTES: 1. UNIT IS SUBJECT TO CORROSION FROM A HYDROGEN SULFIDE LADEN ATMOSPHERE. ALL AIRSTREAM COMPONENTS AND EXPOSED HEAT TRANSFER COMPONENTS SHALL BE GIVEN A PROTECTIVE SPECIAL COATING OF HERESITE OR APPROVED EQUAL. CONTROLS PANELS, WIRING CONNECTIONS AND OTHER SENSITIVE ELECTRONICS SHALL HAVE A CONFORMAL COATING APPLIED. 2. VARIABLE REFRIGERANT FLOW. 	+ SS ALE O	. M36207 <i>HANICA</i> F CALIF	0 ^R 5/19/2020 ≖
3. MANUFACTURER'S OPTIONAL HAIL GUARD. 4. LEAD COMPRESSOR SHALL BE MODULATING.	ъ	Ш	VEATC
ACCESSORIES: NONE	EA'		NCK &
NOTES: 1. MANUFACTURER USED AS THE BASIS OF DESIGN IS L.G. 2. DUCTABLE FAN COIL UNIT TO BE SELECTED HIGH STATIC PRESSURE WITH FILTER BOX ACCESSORY. 3. PROVIDE WITH MANUFACTURER'S OPTIONAL CONDENSATE PUMP.	ACK & V	VEN1	118 2
FAN SCHEDULE:	BL	z	Ċ
ACCESSORIES: NONE	2	ō	AN
FAN TYPE NOTES:WHEEL TYPE NOTES:DF - DUCT FANA - AXIALPF - PROPELLER FANC - CENTRIFUGALCF - CEILING FANP - PROPELLER			FIL.
NOTES: 1. UNIT SURFACES SUBJECT TO CORROSION FROM A LABORATORY ATMOSPHERE SHALL BE GIVEN A PROTECTIVE COATING. 2. MANUFACTURER USED AS THE BASIS OF DESIGN IS GREENHECK.			
H <u>EATER SCHEDULE:</u> ACCESSORIES: NONE	Y WRF)		
TYPE NOTES: EUHHD - HEAVY-DUTY ELECTRIC UNIT HEATER GUH - GAS UNIT HEATER	D BA RF TY	-	
NOTES: 1. ELECTRIC DUCT HEATER ELEMENT TYPE A) FINNED TUBE B) OPEN COIL. 2. PROVIDED WITH WALL MOUNTED THERMOSTAT. 3. MANUFACTURER USED AS THE BASIS OF DESIGN IS	MORR BAY W		HVAC HEDULES
CHROMALOX LVH.		:	5
CHROMALOX LVH. 4. MANUFACTURER USED AS THE BASIS OF DESIGN IS STERLING GG. PACKAGED AIR CONDITIONING UNIT/HEAT PUMP SCHEDULE: ACCESSORIES: NONE			Š
CHROMALOX LVH. 4. MANUFACTURER USED AS THE BASIS OF DESIGN IS STERLING GG. PACKAGED AIR CONDITIONING UNIT/HEAT PUMP SCHEDULE: ACCESSORIES: NONE CAPACITY NOTE: CAPACITIES LISTED IN PARENTHESES ARE IN UNITS OF "KW". CAPACITIES LISTED WITHOUT PARENTHESES ARE IN UNITS OF "BTUH".	CITY OF MORRO		õ
CHROMALOX LVH. 4. MANUFACTURER USED AS THE BASIS OF DESIGN IS STERLING GG. PACKAGED AIR CONDITIONING UNIT/HEAT PUMP SCHEDULE: ACCESSORIES: NONE CAPACITY NOTE: CAPACITIES LISTED IN PARENTHESES ARE IN UNITS OF "KW". CAPACITIES LISTED WITHOUT PARENTHESES ARE IN UNITS OF "BTUH". DUTDOOR COIL ENTERING AIR TEMPERATURE: COOLING - 98°F DESIGN/ 0°F MIN HEATING - 31°F DESIGN (HEAT PUMP)	CITY OF MORRO RFCLAMATTON		Ň
 CHROMALOX LVH. MANUFACTURER USED AS THE BASIS OF DESIGN IS STERLING GG. PACKAGED AIR CONDITIONING UNIT/HEAT PUMP SCHEDULE: ACCESSORIES: NONE CAPACITY NOTE: CAPACITIES LISTED IN PARENTHESES ARE IN UNITS OF "KW". CAPACITIES LISTED WITHOUT PARENTHESES ARE IN UNITS OF "BTUH". DUTDOOR COIL ENTERING AIR TEMPERATURE: COOLING - 98°F DESIGN/ 0°F MIN YEATING - 31°F DESIGN (HEAT PUMP) NOTES: UNIT IS SUBJECT TO CORROSION FROM A HYDROGEN SULFIDE LADEN ATMOSPHERE. ALL AIRSTREAM COMPONENTS AND EXPOSED HEAT TRANSFER COMPONENTS SHALL BE GIVEN A PROTECTIVE SPECIAL COATING OF HERESITE OR APPROVED EQUAL. CONTROLS PANELS, WIRING CONNECTIONS AND OTHER SENSITIVE ELECTRONICS SHALL HAVE A CONFORMAL COATING APPLIED. 	DESIGNED: SAU DESIGNED: SAU DETAILED: RKS CHECKED: LD/ APPROVED: RWA		
 CHROMALOX LVH. 4. MANUFACTURER USED AS THE BASIS OF DESIGN IS STERLING GG. PACKAGED AIR CONDITIONING UNIT/HEAT PUMP SCHEDULE: ACCESSORIES: NONE CAPACITY NOTE: CAPACITIES LISTED IN PARENTHESES ARE IN UNITS OF "KW". CAPACITIES LISTED WITHOUT PARENTHESES ARE IN UNITS OF "BTUH". CUTDOOR COIL ENTERING AIR TEMPERATURE: COOLING - 98°F DESIGN/ 0°F MIN YEATING - 31°F DESIGN (HEAT PUMP) NOTES: 1. UNIT IS SUBJECT TO CORROSION FROM A HYDROGEN SULFIDE LADEN ATMOSPHERE. ALL AIRSTREAM COMPONENTS AND EXPOSED HEAT TRANSFER COMPONENTS SHALL BE GIVEN A PROTECTIVE SPECIAL COATING OF HERESITE OR APPROVED EQUAL. CONTROLS PANELS, WIRING CONNECTIONS AND OTHER SENSITIVE ELECTRONICS SHALL HAVE A CONFORMAL COATING APPLIED. 2. SUPPLY AND RETURN GRILLES TO BE PROVIDED BY EQUIPMENT MANUFACTURER. 3. HOT GAS REHEAT. 4. PROVIDEL EADLY AGE CONTROL DANEL 	DESIGNED: SAU DESIGNED: SAU DETAILED: RKS CHECKED: LDJ APPROVED: RKK DATE: 5/	M S A C 19/2020 1/2 BAR DOE	
 CHROMALOX LVH. MANUFACTURER USED AS THE BASIS OF DESIGN IS STERLING GG. PACKAGED AIR CONDITIONING UNIT/HEAT PUMP SCHEDULE: ACCESSORIES: NONE CAPACITY NOTE: CAPACITIES LISTED IN PARENTHESES ARE IN UNITS OF "KW". CAPACITIES LISTED WITHOUT PARENTHESES ARE IN UNITS OF "BTUH". DUTDOOR COIL ENTERING AIR TEMPERATURE: COOLING - 98°F DESIGN/ 0°F MIN YEATING - 31°F DESIGN (HEAT PUMP) NOTES: UNIT IS SUBJECT TO CORROSION FROM A HYDROGEN SULFIDE LADEN ATMOSPHERE. ALL AIRSTREAM COMPONENTS AND EXPOSED HEAT TRANSFER COMPONENTS SHALL BE GIVEN A PROTECTIVE SPECIAL COATING OF HERESITE OR APPROVED EQUAL. CONTROLS PANELS, WIRING CONNECTIONS AND OTHER SENSITIVE ELECTRONICS SHALL HAVE A CONFORMAL COATING APPLIED. SUPPLY AND RETURN GRILLES TO BE PROVIDED BY EQUIPMENT MANUFACTURER. HOT GAS REHEAT. PROVIDE LEAD/LAG CONTROL PANEL. 	DESIGNED: SAU DESIGNED: SAU DETAILED: RKS CHECKED: LDD APPROVED: RKK DATE: 5/ 0 IF THIS MEASURE 1" NOT TO PROJ	M S A C 19/2020 1/2 BAR DOE THEN DR FULL SC VECT NC	T T T T T T T T T T T T T T
 CHROMALOX LVH. MANUFACTURER USED AS THE BASIS OF DESIGN IS STERLING GG. PACKAGED AIR CONDITIONING UNIT/HEAT PUMP SCHEDULE: ACCESSORIES: NONE CAPACITY NOTE: CAPACITIES LISTED IN PARENTHESES ARE IN UNITS OF "KW". CAPACITIES LISTED WITHOUT PARENTHESES ARE IN UNITS OF "BTUH". CUTDOOR COIL ENTERING AIR TEMPERATURE: COOLING - 98°F DESIGN/ 0°F MIN HEATING - 31°F DESIGN (HEAT PUMP) NOTES: UNIT IS SUBJECT TO CORROSION FROM A HYDROGEN SULFIDE LADEN ATMOSPHERE. ALL AIRSTREAM COMPONENTS AND EXPOSED HEAT TRANSFER COMPONENTS SHALL BE GIVEN A PROTECTIVE SPECIAL COATING OF HERESITE OR APPROVED EQUAL. CONTROLS PANELS, WIRING CONNECTIONS AND OTHER SENSITIVE ELECTRONICS SHALL HAVE A CONFORMAL COATING APPLIED. SUPPLY AND RETURN GRILLES TO BE PROVIDED BY EQUIPMENT MANUFACTURER. HOT GAS REHEAT. PROVIDE LEAD/LAG CONTROL PANEL. AIR DEVICE SCHEDULE: ACCESSORIES: NONE NOTES: EQUIPMENT SCHEDULE MODEL NUMBERS BASED ON TITUS. 	DESIGNED: SAU DESIGNED: SAU DETAILED: RKS CHECKED: LDJ APPROVED: RKK DATE: 5/ 0 IF THIS MEASURE 1" NOT TO PROJ 40 0	M S A C 19/2020 1/2 BAR DOE THEN DR FULL SC VECT NC 00530 H - F	\tilde{S}

HVAC SEQUENCE OF OPERATIONS:

1. GENERAL SYSTEM OPERATIONS.

1.1. TEMPERATURE CONTROL PANEL(S). TEMPERATURE CONTROL PANELS (TCP) AND EQUIPMENT CONTROL PANEL(S) IDENTIFIED IN THE SEQUENCE OF OPERATION SHALL BE PROVIDED WITH THE INDICATING LIGHTS, RUNNING LIGHTS, ALARM LIGHTS, AUDIBLE ALARMS, TIMERS, AND SELECTOR SWITCHES FOR CONTROL AND STATUS INDICATION OF THE EQUIPMENT SERVED. RUNNING LIGHTS SHALL BE PROVIDED TO INDICATE BOTH ENERGIZED AND DE-ENERGIZED STATUS FOR THE EQUIPMENT AND SHALL POSITIVELY INDICATE EQUIPMENT STATUS FROM THE MOTOR STARTER OR CURRENT SENSOR. SWITCH POSITION SHALL NOT BE USED FOR LIGHT ILLUMINATION. INDICATING AND RUNNING LIGHTS SHALL BE LOCATED DIRECTLY ABOVE EACH RESPECTIVE SELECTOR SWITCH WITH LIGHT COLORS AS FOLLOWS:

RED	-	<i>DE-ENERGIZE</i>
GREEN	-	ENERGIZED
AMBER	-	ALARM
WHITE	-	STATUS

INDICATING LIGHTS AND SELECTOR SWITCHES SHALL BE LOCATED ON THE FACE OF THE TEMPERATURE CONTROL PANEL OR EQUIPMENT CONTROL PANEL SERVING THE RESPECTIVE EQUIPMENT. IN ADDITION TO THE LIGHTS, TIMERS, AND SELECTOR SWITCHES DESCRIBED IN THE SEQUENCE OF OPERATION FOR THE INDIVIDUAL EQUIPMENT, EACH CONTROL PANEL SHALL BE PROVIDED WITH THE FOLLOWING:

"CONTROL POWER ON"
"INDICATING LIGHT TEST"
ALARM SILENCE
"ALARM RESET"

STATUS LIGHT PUSHBUTTON PUSHBUTTON PUSHBUTTON (WHERE APPLICABLE)

TEMPERATURE CONTROL PANELS AND EQUIPMENT CONTROL PANELS SPECIFIED TO BE PROVIDED WITH ALARM CONDITION INDICATING LIGHTS SHALL BE PROVIDED WITH AN ELECTRICALLY ISOLATED CONTACT TO PROVIDE REMOTE INDICATION OF THE ALARM TO THE PLANT CONTROL SYSTEM (PCS). EACH EQUIPMENT CONTROL PANEL SHALL BE PROVIDED WITH A MINIMUM OF ONE ALARM OUTPUT POINT TO THE PCS AND ADDITIONAL POINTS AS INDICATED BELOW.

TEMPERATURE AND EQUIPMENT CONTROL PANELS SHALL BE PROVIDED WITH PHENOLIC NAMEPLATES FOR EACH CONTROL SWITCH INDICATING SWITCH TYPE, EQUIPMENT CONTROLLED, ROOM OR AREA SERVED, AND SWITCH AUTOMATIC POSITION EQUIPMENT INTERLOCK.

1.2. SYSTEM INTERLOCKS AND ALARMS

ALL EQUIPMENT INTERLOCKING DEVICES AS DESCRIBED HEREIN SHALL BE PROVIDED WITHIN THE RESPECTIVE TEMPERATURE/EQUIPMENT CONTROL PANEL (TCP/ECP).

1.2.1. SMOKE DETECTION SYSTEMS

1.2.1.1. SMOKE DETECTION (DUCT MOUNTED DETECTORS). SMOKE DETECTORS SHALL BE LOCATED IN THE DUCT OF EQUIPMENT LISTED BELOW. IN THE EVENT SMOKE IS DETECTED BY A DETECTOR, A SMOKE DETECTED SIGNAL SHALL BE TRANSMITTED TO THE REMOTE TEST STATION AND FIRE ALARM PANEL OR PLANT CONTROL SYSTEM (PCS) AND TCP/ECP WHEN A FIRE ALARM PANEL IS NOT PRESENT. A "SMOKE DETECTED" ALARM LIGHT ON THE RESPECTIVE REMOTE TEST STATION SHALL BE ILLUMINATED. WHERE A TCP/ECP IS PRESENT, THE REMOTE TEST STATION SHALL BE MOUNTED ON OR ADJACENT TO THE TEMPERATURE CONTROL PANEL. THE RESPECTIVE EQUIPMENT AND ANY INTERLOCKED EQUIPMENT SHALL BE DE-ENERGIZED AND OUTSIDE AIR DAMPERS ASSOCIATED WITH THE DE-ENERGIZED EQUIPMENT SHALL CLOSE.

IN THE EVENT A SMOKE DETECTOR MALFUNCTIONS, A MALFUNCTION SIGNAL SHALL BE TRANSMITTED TO THE REMOTE TEST STATION OR FIRE ALARM PANEL, ILLUMINATING A "SMOKE DETECTOR MALFUNCTION" INDICATING LIGHT.

SMOKE DETECTOR
50-HVAC-SMD-0001
96-HVAC-SMD-0001

DE-ENERGIZED EQUIPMENT 50-HVAC-PHP-0001 96-HVAC-PHP-0001

1.2.1.2. HIGH FILTER PRESSURE LOSS. A HIGH LIMIT PRESSURE DIFFERENTIAL FLOW SWITCH SHALL BE LOCATED ACROSS THE FILTER BANK OF THE EQUIPMENT INDICATED BELOW. IN THE EVENT THE PRESSURE DIFFERENTIAL ACROSS THE FILTER EXCEEDS THE PRESET VALUE, A "HIGH FILTER PRESSURE LOSS" ALARM LIGHT ON THE FACE OF THE RESPECTIVE TEMPERATURE CONTROL PANEL OR THERMOSTAT (WHERE FURNISHED WITH LIGHTS) SHALL BE ILLUMINATED.

PRESSURE SWITCH	CONTROL PANEL
50-HVAC-PDS-0001	50-HVAC-TCP-0001
95-HVAC-PDS-0001	95 - HVAC - TCP - 0001
96-HVAC-PDS-0001	96-HVAC-TCP-0001
	PRESSURE SWITCH 50-HVAC-PDS-0001 95-HVAC-PDS-0001 96-HVAC-PDS-0001

2. HEATING SYSTEMS.

2.1. UNIT HEATERS. UNIT HEATERS SHALL BE CONTROLLED BY THEIR RESPECTIVE THERMOSTATS, LOCATED ADJACENT TO THE HEATERS ON THE DRAWINGS.

3. VENTILATING/EXHAUST SYSTEMS.

3.1.1. "ON-OFF-AUTO" EQUIPMENT CONTROL. EQUIPMENT INDICATED FOR "ON-OFF-AUTO" CONTROL SHALL EACH BE CONTROLLED BY AN INDIVIDUAL "ON-OFF-AUTO" FAN SELECTOR SWITCH. THE SWITCH LOCATION SHALL BE AS INDICATED BELOW. WHEN THE SWITCH IS PLACED IN THE "AUTO" POSITION, THE FAN SHALL BE INTERLOCKED AND CONTROLLED BY THE FAN INTERLOCK. WHEN THE SWITCH IS PLACED IN THE "ON" POSITION, THE FAN SHALL BE ENERGIZED. BEFORE A FAN CAN OPERATE, THE CONTROL DAMPER(S) SHALL BE PROVEN OPEN. WHEN THE FAN IS DE-ENERGIZED, THE CONTROL DAMPER(S) SHALL RETURN TO THE NORMALLY CLOSED POSITION UNLESS OTHERWISE INDICATED.

EQUIPMENT	SWITCH	FAN	CONTROL
	LOCATION	INTERLOCK	DAMPER(S)
50-HVAC-EF-0001	50-HVAC-TCP-0001	50-HVAC-T-0002	50 - HVAC -
			CD-0001,0002,
			0003,0004
50-HVAC-EF-0002	50 - HVAC - TCP - 0001	50-HVAC-T-0002	50-HVAC-
			CD-0001,0002,
			0003,0004
95 - HVAC - DF - 0001	95 - HVAC - TCP - 0001	95-HVAC-T-0014	95-HVAC-
			CD-0002

3.1.2. "ON-OFF" EQUIPMENT CONTROL. EQUIPMENT INDICATED FOR "ON-OFF" CONTROL SHALL EACH BE CONTROLLED BY AN INDIVIDUAL "ON-OFF" FAN SELECTOR SWITCH. THE SWITCH LOCATION SHALL BE AS INDICATED BELOW. WHEN THE SWITCH IS PLACED IN THE "ON" POSITION, THE RESPECTIVE EQUIPMENT FAN SHALL BE ENERGIZED. BEFORE THE FAN CAN OPERATE, THE CONTROL DAMPER'S WHEN THE SWITCH IS PLACED IN THE "ON" POSITION, THE FAN SHALL BE ENERGIZED. BEFORE A FAN CAN OPERATE, THE CONTROL DAMPER(S) SHALL BE PROVEN OPEN. WHEN THE FAN IS DE-ENERGIZED, THE CONTROL DAMPER(S) SHALL RETURN TO THE NORMALLY CLOSED POSITION UNLESS OTHERWISE INDICATED.

EQUIPMENT	SWITCH
96-HVAC-EF-0001	26 - HVAC - TCP - 000
96-HVAC-EF-0002	96 - HVAC - TCP - 000
96-HVAC-DF-0001	96 - HVAC - TCP - 000
96 - HVAC - DF - 0002 96 - HVAC - DF - 0003	96 - HVAC - TCP - 000 96 - HVAC - TCP - 000

3.1.3. THERMOSTATIC CONTROL. EQUIPMENT INDICATED FOR THERMOSTATIC CONTROL SHALL BE CONTROLLED BY SN INDIVIDUAL THERMOSTAT. WHEN THE THERMOSTAT REGISTERS WITHIN THE ACCEPTABLE TEMPERATURE RANGE, FROM 55 F TO 75 F (ADJUSTABLE), THE DAMPERS SHALL OPEN. WHEN THE TEMPERATURE IS ABOVE OR BELOW THE ACCEPTABLE TEMPERATURE RANGE, THE DAMPERS SHALL CLOSE.

THERMOSTAT	DAMPE
95-HVAC-T-0015	95-HV
	CD-00

4. AIR CONDITIONING SYSTEMS.

4.1. PACKAGED SYSTEMS. PACKAGED SYSTEMS SHALL BE CONTROLLED BY THEIR RESPECTIVE THERMOSTAT. HEAT PUMPS SHALL HAVE AN "HEAT-OFF-COOL" (PROGRAMMABLE) SYSTEM SWITCH. HEAT PUMPS SHALL ALSO HAVE AN "EMERGENCY HEAT" SYSTEM SWITCH POSITION TO ENERGIZE THE HEATING AND DE-ENERGIZE THE COMPRESSORS. AN "AUTO-ON" FAN SWITCH SHALL BE LOCATED ON THE THERMOSTAT SUB-BASE.

EQUIPMENT	7
50-HVAC-PHP-0001	50-HV
96 - HVAC - PHP - 0001	96-HV

4.1.1. MIXED AIR/ECONOMIZER. THE SYSTEM SHALL BE IN THE ECONOMIZER MODE WHEN THE SYSTEM IS IN THE OCCUPIED MODE, COOLING IS REQUIRED, AND THE OUTSIDE AIR IS SUITABLE FOR COOLING. OUTSIDE AIR IS SUITABLE FOR COOLING WHEN THE OUTSIDE AIR TEMPERATURE IS BELOW THE CHANGEOVER TEMPERATURE ON SYSTEMS EQUIPPED WITH DRY BULB TEMPERATURE CONTROL, OR BELOW THE CHANGEOVER ENTHALPY ON SYSTEMS EQUIPPED WITH ENTHALPY CONTROL, OR WHEN THE OUTSIDE AIR ENTHALPY IS LESS THAN THE RETURN AIR ENTHALPY ON SYSTEMS EQUIPPED WITH DIFFERENTIAL ENTHALPY CONTROL. IN THIS MODE, THE OUTSIDE AIR CONTROLS SHALL MODULATE THE OUTSIDE AIR, RETURN AIR, AND RELIEF AIR DAMPERS TO SATISFY THE MIXED AIR THERMOSTAT/SENSOR SETPOINT. THE COOLING CONTROLS SHALL BE LOCKED OUT. THE HEATING CONTROLS SHALL BE LOCKED OUT EXCEPT FOR ZONE CONTROLS ASSOCIATED WITH VARIABLE VOLUME SYSTEMS.

 EQUIPMENT
 THERMOSTAT

 50-HVAC-PHP-0001
 50-HVAC-T-0001

 96-HVAC-PHP-0001
 96-HVAC-T-0001

4.1.2. THE PACKAGED AIR CONDITIONING UNITS INDICATED BELOW SHALL BE PROVIDED WITH A LEAD/ LAG TYPE CONTROL SYSTEM. THE UNITS SHALL BE CONTROLLED BY LEAD/ LAG CONTROL PANEL (LLCP). THE LLCP SHALL BE PROGRAMMED AS DESCRIBED HEREIN. THE LLCP SHALL CONTROL AUTOMATIC CHANGEOVER OF OPERATION OF EACH SYSTEM, THE CHANGEOVER SHALL BE FIELD PROGRAMMABLE IN A RANGE OF 1 TO 7 DAYS OR IT SHALL ALLOW NO AUTOMATIC CHANGEOVER TO OCCUR. IF THE LEAD OPERATING SYSTEM IS UNABLE TO MAINTAIN SPACE TEMPERATURE, THE LLCP SHALL ENERGIZE THE LAG UNIT TO ASSIST IN COOLING THE SPACE. THE LLCP SHALL BE FIELD PROGRAMMABLE FOR ANY SPACE TEMPERATURE. THE INITIAL SETPOINT SHALL BE 90 F. THE LLCP SHALL BE COMPATIBLE WITH EACH UNITS BUILT IN CONTROLS AND SHALL BE CAPABLE OF CONTROLLING ANY PRE-EXISTING FUNCTIONS INCLUDING, BUT NOT LIMITED TO, MIXED AIR ECONOMIZER, HOT GAS REHEAT, ETC.

EQUIPMENT	THERMOSTAT
80-HVAC-WPHP-0001,	80 - HVAC - T - 000
0002,0003,0004	

4.1.3. CANOPY HOOD EXHAUST FANS SHALL BE CONTROLLED BY AN ON-OFF SWITCH. WHEN THE FAN SWITCH IS PLACED IN THE ON POSITION, THE FAN SHALL BE ENERGIZED. WHEN THE FAN SWITCH IS PLACED IN OFF POSITION, THE FAN SHALL BE DEENERGIZED.

4.2. VARIABLE REFRIGERANT FLOW (VRF) SYSTEMS. THE VRF SYSTEM FOR THE BUILDING WILL BE CONTROLLED BY THE MANUFACTURER'S DIGITAL VRF CONTROLLER INTERFACE (ECP-0001) JACE 8000 OR EQUIVALENT. ALL VRF EQUIPMENT AND THERMOSTATS WILL CONNECT TO AND COMMUNICATE WITH THE VRF CONTROLLER. FAN COIL UNITS (FCU) SHALL EACH BE CONTROLLED BY A ROOM THERMOSTAT/CONTROLLER. THE THERMOSTAT CONTROLLER SHALL ENERGIZE THE UNIT TO PROVIDE HEATING OR COOLING AND COMMUNICATE DEMAND TO THE VRF CONTROLLER.

OPERATION OF THE SYSTEM SHALL PERMIT EITHER INDIVIDUAL COOLING OR HEATING OF EACH INDOOR UNIT SIMULTANEOUSLY. ALL INDOOR UNITS SHALL BE CAPABLE OF BEING IN HEATING MODE SIMULTANEOUSLY. ALL INDOOR UNITS SHALL BE CAPABLE OF BEING IN COOLING MODE SIMULTANEOUSLY.

OUTDOOR CONDENSING UNITS SHALL BE ENERGIZED AS REQUIRED BY THE VRF SYSTEM TO MAINTAIN SPACE TEMPERATURE SETPOINTS. BRANCH SELECTORS SHALL DIVERT THE FLOW OF REFRIGERANT AS REQUIRED BY THE VRF SYSTEM TO MAINTAIN SPACE TEMPERATURE SET POINTS.

CONTROL DAMPER(S)

001 96-HVAC-CD-0002,0003,0004,

- 0005,0006,0007,0008 01 96-HVAC-CD-0002,0003,0004,
- 0005,0006,0007,0008 01 96-HVAC-CD-0002,0003,0004, 0005,0006,0007,0008
- 001 ---001 96-HVAC-CD-0001

DAMPERS 95-HVAC-CD-0003, CD-0004,CD-0005,CD-0006

THERMOSTAT 50-HVAC-T-0001 96-HVAC-T-0001

> 1 1

GAS REHEAT, ETC. LEAD/LAG CONTROL PANEL 01 80-HVAC-LLCP-0001

EQUIPMENT	THERMOSTAT
95-HVAC-FCU-0001	95 - HVAC - T - 0001
95-HVAC-FCU-0002	95-HVAC-T-0002
95-HVAC-FCU-0003	95 - HVAC - T - 0003
95 - HVAC - FCU - 0004	95-HVAC-T-0004
95 - HVAC - FCU - 0005	95 - HVAC - T - 0005
95-HVAC-FCU-0006	95 - HVAC - T - 0006
95-HVAC-FCU-0007	95-HVAC-T-0007
95 - HVAC - FCU - 0008	95 - HVAC - T - 0008
95 - HVAC - FCU - 0009	95 - HVAC - T - 0009
95-HVAC-FCU-0010	95-HVAC-T-0010
95-HVAC-FCU-0011	95-HVAC-T-0011
95-HVAC-FCU-0012	95-HVAC-T-0012

4.2.1. OCCUPANCY MODE DETERMINATION

FOR ROOMS SPECIFIED TO HAVE OCCUPANCY CONTROL BASED ON DATE AND TIME, AN OWNER PROVIDED, TIME-OF-DAY SCHEDULE (ADJUSTABLE THROUGH THE BUILDING AUTOMATION SYSTEM (BAS) GRAPHICAL USER INTERFACE) SHALL BE USED TO SET THE OCCUPANCY MODE (OCCUPIED OR UNOCCUPIED) OF THE RESPECTIVE INDOOR UNIT(S) (IDU). THE ABILITY TO CREATE SPECIAL EVENTS AND HOLIDAYS SHALL BE AVAILABLE THROUGH THE VRF CONTROLLER GRAPHICAL USER INTERFACE.

FOR ROOMS SPECIFIED TO HAVE OCCUPANCY CONTROL BASED ON AN OCCUPANCY SENSOR OF A REMOTE CONTROLLER OR SOME OTHER FORM OF REMOTE OCCUPANCY DETERMINATION, A REMOTE CONTROLLER OCCUPANCY SENSOR OR A HARDWIRED INPUT SHALL BE USED TO SET THE OCCUPANCY MODE (OCCUPIED OR UNOCCUPIED) OF THE RESPECTIVE FCU(S).

WHEN THE FCU IS IN THE UNOCCUPIED MODE, AN OVERRIDE AT THE REMOTE CONTROLLER SHALL PLACE THE FCU INTO THE OCCUPIED MODE FOR A CERTAIN AMOUNT OF TIME (ADJUSTABLE THROUGH THE REMOTE CONTROLLER SETTINGS) AND TAKE PRIORITY OVER ALL OTHER OCCUPANCY MODE COMMANDS. THE STATUS OF OVERRIDE(M) SHALL BE TRACKED BY THE VRF CONTROLLER AND TOTALIZED PER FCU TO GENERATE AN AFTER-HOURS USAGE REPORT.

4.2.2. OCCUPIED MODE OF OPERATION

THE VRF CONTROLLER SHALL COMMAND THE FCU OPERATION TO ON. THE VRF CONTROLLER SHALL MANAGE THE ABILITY OF THE REMOTE CONTROLLER TO ADJUST THE FCU OPERATION COMMAND PER THE OWNER'S SPECIFICATIONS.

THE VRF CONTROLLER SHALL COMMAND THE FCU MODE TO AUTO. PER ITS INTERNAL CONTROLS, THE FCU SHALL DETERMINE WHETHER TO BE IN AUTOHEAT OR AUTOCOOL BASED ON ROOM TEMPERATURE AND TEMPERATURE SET POINTS. THE VRF CONTROLLER SHALL MANAGE THE ABILITY OF THE REMOTE CONTROLLER TO ADJUST THE FCU MODE COMMAND PER THE OWNER'S SPECIFICATIONS. IF THE FCU MODE IS COMMANDED TO HEAT OR COOL AT THE REMOTE CONTROLLER, IT SHALL OPERATE ON ITS INTERNAL CONTROLS TO MAINTAIN ROOM TEMPERATURE AT EITHER THE OCCUPIED HEATING TEMPERATURE SET POINT OR OCCUPIED COOLING TEMPERATURE SET POINT.

THE VRF CONTROLLER SHALL SET THE FCU OCCUPIED HEATING TEMPERATURE SET POINT TO 65 °F AND THE OCCUPIED COOLING TEMPERATURE SET POINT TO 75 ° F (ADJUSTABLE THROUGH THE VRF CONTROLLER GRAPHICAL USER INTERFACE). THE VRF CONTROLLER SHALL MANAGE THE ABILITY OF THE REMOTE CONTROLLER TO ADJUST THE OCCUPIED HEATING TEMPERATURE SET POINT AND OCCUPIED COOLING TEMPERATURE SET POINT WITHIN THE UPPER/LOWER HEATING/COOLING TEMPERATURE SET POINT RANGE LIMITS (ADJUSTABLE THROUGH THE VRF CONTROLLER GRAPHICAL USER INTERFACE)

THE VRF CONTROLLER SHALL MANAGE THE ABILITY OF THE REMOTE CONTROLLER TO PERMIT/PROHIBIT SET POINT ADJUSTMENTS PER THE OWNER'S SPECIFICATIONS.

PER ITS INTERNAL CONTROLS, FCU SHALL MAINTAIN ROOM TEMPERATURE BETWEEN THE OCCUPIED HEATING TEMPERATURE SET POINT AND OCCUPIED COOLING TEMPERATURE SET POINT.

4.2.3. UNOCCUPIED MODE OF OPERATION

THE VRF CONTROLLER SHALL COMMAND THE FCU OPERATION TO ON. PER ITS INTERNAL CONTROLS, THE ABILITY OF THE REMOTE CONTROLLER TO ADJUST THE FCU OPERATION COMMAND SHALL BE PROHIBITED.

THE VRF CONTROLLER SHALL COMMAND THE FCU MODE TO AUTO. PER ITS INTERNAL CONTROLS, THE FCU SHALL DETERMINE WHETHER TO BE IN AUTOHEAT OR AUTOCOOL BASED ON ROOM TEMPERATURE AND UNOCCUPIED TEMPERATURE SET POINTS. PER ITS INTERNAL CONTROLS, THE ABILITY OF THE REMOTE CONTROLLER TO ADJUST THE IDU MODE COMMAND SHALL BE PROHIBITED.

THE VRF CONTROLLER SHALL SET THE FCU UNOCCUPIED HEATING TEMPERATURE SET POINT TO 60 °F AND THE UNOCCUPIED COOLING TEMPERATURE SET POINT TO 80 °F (ADJUSTABLE THROUGH THE VRF CONTROLLER GRAPHICAL USER INTERFACE). PER ITS INTERNAL CONTROLS, THE ABILITY OF THE REMOTE CONTROLLER TO ADJUST THE IDU UNOCCUPIED TEMPERATURE SET POINTS SHALL BE PROHIBITED.

PER ITS INTERNAL CONTROLS, THE FCU SHALL MAINTAIN ROOM TEMPERATURE BETWEEN THE UNOCCUPIED HEATING TEMPERATURE SET POINT AND UNOCCUPIED COOLING TEMPERATURE SET POINT.

4.2.4. ERRORS AND ALARMS

IN THE EVENT OF AN EQUIPMENT ERROR, AN ALARM POINT SHALL BE TOGGLED TO ACTIVE AND AN EQUIPMENT ERROR CODE SHALL BE GENERATED. THE FOLLOWING ALARM POINTS GENERATED BY THE EQUIPMENT SHALL HAVE ALARM EXTENSIONS AND GENERATE AND ROUTE ALARMS PER THE OWNERS REQUIREMENTS:

- ERROR CODE (M). THIS SHALL BE ROUTED THROUGH AN ENUMERATED BLOCK THAT TRANSLATES THE CODE INTO AN ENGLISH ALARM DESCRIPTION.
 FILTER SIGN (M)
- 3. UNIT IN ALARM (M)

4.3. 100% OUTDOOR AIR HANDLING UNIT. OPERATE AS A SYSTEM TO PROVIDE TEMPERED 100% OUTSIDE AIR TO THE OPERATION BUILDING AREAS. AIR HANDLING UNIT AND ITS ASSOCIATED HEAT PUMP UNIT PAH-95-0001/HP-95-0001 SHALL BE CONTROLLED BY ITS RESPECTIVE THERMOSTAT LOCATED IN THE DISCHARGE AIR DUCT. SYSTEM OPERATION SHALL BE CONTROLLED BY AN "OFF-HEAT-AUTO-COOL" (AUTOMATIC CHANGEOVER, PROGRAMMABLE) SYSTEM SWITCH AND AN "AUTO-ON" FAN SWITCH LOCATED ON THE SWITCH LOCATED ON THE FACE TEMPERATURE CONTROL PANEL 95-TCP-001. HEAT PUMPS SHALL ALSO HAVE AN "EMERGENCY HEAT" SYSTEM SWITCH POSITION TO ENERGIZE THE HEATING AND DE-ENERGIZE THE COMPRESSORS. WHEN THE SYSTEM SWITCH IS PLACED IN THE "AUTO" POSITION. THE SYSTEM WILL OPERATE TO MAINTAIN THE LEAVING AIR TEMPERATURE SETPOINT AS SENSED BY THE THERMOSTAT. WHEN THE SYSTEM SWITCH IS PLACED IN THE "COOL" POSITION, COOLING WILL BE ENABLED AND HEATING LOCKED OUT, WHEN PLACED IN THE "HEAT" POSITION, HEATING IS ENABLED AND COOLING IS LOCKED OUT. WHEN THE FAN SWITCH IS PLACED IN THE "AUTO" POSITION. THE RESPECTIVE EQUIPMENT FAN SHALL BE ENERGIZED WHEN THE VRF SYSTEM IS IN OCCUPIED MODE, AND IT SHALL BE DE-ENERGIZED WHEN THE VRF SYSTEM IS IN THE UNOCCUPIED MODE.. WHEN THE FAN SWITCH IS PLACED IN THE "ON" POSITION THE FAN SHALL BE ENERGIZED. BEFORE THE FAN CAN OPERATE, THE CONTROL DAMPER(S) SHALL BE PROVEN OPEN. WHEN THE FAN IS DE-ENERGIZED, THE CONTROL DAMPER(S) SHALL CLOSE.

EQUIPMENT THERMOSTAT

95-HVAC-AHU-0001 95-HVAC-T-0

4.4. DUCTLESS SPLIT SYSTEMS. DUCTLESS SPLIT SYSTEMS SHALL BE CONTROLLED BY ROOM THERMOSTATS PROVIDED WITH THE UNITS WITH AUTOMATIC SWITCHOVER BETWEEN HEATING AND COOLING. THE UNITS SHALL BE MATCHED AS FOLLOWS:

EQUIPMENT	SWITCH
95-HVAC-FCU-0013	THERMO
95-HVAC-FCU-0014	THERMO

5. THERMOSTAT SETPOINTS

5.1. THERMOSTAT SETPOINTS SHALL BE AS INDICATED BELOW, UNLESS THE SETPOINT HAS BEEN DESCRIBED PREVIOUSLY IN THIS SEQUENCE OF OPERATIONS.

HEATERS VENTILATING EQUIPMENT AIR CONDITIONED AREAS

014	CONTROL DAMPER(S) 95-HVAC- CD-0001	CONTROL PANEL 95 - HVAC - TCP - 0001
	0001	107-0001

CH LOCATIONTHERMOSTATMOSTAT95-HVAC-T-0013MOSTAT95-HVAC-T-0013

- 54 F - 90 F

- 75 F

STATE OF CALIFORNIA HVAC DRY & WET SYSTEM REQUIREMENTS CEC-NRCC-MCH-02-E (Revised 01/16)

Project Name: CITY OF MORRO BAY WRF RECLAMATION FACILITY (WRF)

A. Equipment Tags and System Description¹- Dry Systems

T-24 Sections

110.1 or 110.2(a)

110.1 or 110.2(a)

110.2(b), 110.2(c)

120.1(c)5, 120.2(e)3

110.2(d)

110.2(f)

120.1(b)

120.2(e)

120.2(f)

120.2(g)

120.2(h)

120.2(i)

120.4

140.4(a & b)

140.4(c)

140.4(d)

140.4(e)

140.4(f)

140.4(g)

140.4(I)

120.1(c)4

CERTIFICATE OF COMPLIANCE

MANDATORY MEASURES

Heating Equipment Efficiency³

Cooling Equipment Efficiency³

Furnace Standby Loss Control

Demand Control Ventilation⁵

Shutoff and Reset Controls'

PRESCRIPTIVE MEASURES

Supply Fan Pressure Control

Heat and Cool Air Supply Reset

Duct Leakage Sealing and Testing.¹⁰

Electric Resistance Heating⁹

Simultaneous Heat/Cool[®]

Occupant Sensor Ventilation Control⁶

Automatic Demand Shed Controls

Outdoor Air and Exhaust Damper Control

Equipment is sized in conformance with

Low Leakage AHUs

Ventilation⁴

Isolation Zones

Economizer FDD

Duct Insulation

140.4 (a & b)

Economizer

Notes:

HVAC or Heat Pump Thermostats

HVAC Dry System Requirements

	2
OMMISSION	
NRCC-MCH-02-E	2

(Page 1 of 3)

N/A

00-H-601

N/A

N/A

N/A

100 CFM

N/A

N/A

00-H-601

N/A

N/A

N/A

N/A

23 30 13 -3-3.06

💿 Yes 🔘 No

N/A

N/A

YES

N/A

N/A

N/A

CALIFORNIA ENERGY COMMISSION

Date Prepared: 12/31/2019

HP-0002/AHU-0001 HP-FCU-0001 TO 0012 HP-FCU-0013, 0014

N/A

00-H-601

N/A

N/A

N/A

N/A

N/A

N/A

00-H-601

N/A

N/A

N/A

N/A

23 30 13 -3-3.06

💽 Yes 🔘 No

N/A

N/A

YES

N/A

N/A

N/A

1. Provide equipment tags (e.g. AHU 1 to 10) and system description (e.g. Single Duct VAV reheat) as appropriate. Multiple units

2. Provide references to plans (i.e. Drawing Sheet Numbers) and/or specifications (including Section name/number and relevant

3. The referenced plans and specifications must include all of the following information: equipment tag, equipment nominal

capacity, Title 24 minimum efficiency requirements, and actual rated equipment efficiencies. Where multiple efficiency

requirements are applicable (e.g. full- and part-load) include all. Where appliance standards apply (110.1), identify where

4. Identify where the ventilation requirements are documented for each central HVAC system. Include references to both central

paragraphs) where each requirement is specified. Enter "N/A" if the requirement is not applicable to this system.

Reference to the Requirements in the Contract Documents²

N/A

00-H-601

N/A

N/A

N/A

0.27 CFM/SF

N/A

N/A

00-H-601

N/A

N/A

N/A

N/A

23 30 13 -3-3.06

💽 Yes 🔘 No

N/A

N/A

YES

N/A

N/A

N/A

CEC-NRCC-MCH-02-E (Revised 01/16) CERTIFICATE OF COMPLIANCE HVAC Dry & Wet System Requirements oject Name: CITY OF MORRO BAY WRF RECLAMATION FACILITY (WRF)

B. Equipment MANDATORY N Heating Hot Wat **Cooling Chilled** a Equipment Effici Open and Closed conductivity or t Open and Closed Maximum Achie Concentration (Open and Closed Flow Meter with Open and Closed **Overflow Alarm** Open and Closed Efficient Drift Eli Pipe Insulation PRESCRIPTIVE N Cooling Tower F **Cooling Tower I** Centrifugal Fan (Air-Cooled Chille Variable Flow Sy Chiller and Boile CHW and HHW

Notes
1. /
- 10

unit schedules and sequences of operation. If one or more spaces is naturally ventilated identify where this is documented in the plans and specifications. Multiple zone central air systems must also provide a MCH-03-E compliance document. 5. If one or more spaces has demand controlled ventilation identify where it is specified including the sensor specifications and the sequence of operation. 6. If one or more space has occupant sensor ventilation control identify where it is specified including the sensor specifications and the sequence of operation

with common requirements can be grouped together.

equipment is required to be listed per Title 20 1601 et seq.

7. If the system is DDC identify the sequences for the system start/stop, setback (if required) and setup (if required). For all systems identify the specification for the thermostats and time clocks (if applicable).

8. Identify where the heating, cooling and deadband airflows are scheduled for this system. Include a reference to the specification of the zone controls. Provide a MCH-03-E compliance document.

9. Enter N/A if there is no electric heating. If the system has electric heating indicate which exception to 140.4(g) applies. 10. If duct leakage sealing and testing is required, a MCH-04-A compliance document must be submitted.

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance

January 2016

6:39:50

STATE OF CALIFORNIA HVAC DRY & WET SYSTEM REQUIREMENTS

Date Prepared: 12/31/2019

(Page 2 of 3)

B. Equipment Tags and System Descripti	on¹- Wet Systems 🛛 📓	N/A	N/A	N/A
MANDATORY MEASURES T-24 Sections		Reference to the Requirements in the Contract Documents		ontract Documents ²
Heating Hot Water Equipment Efficiency ³	110.1			
Cooling Chilled and Condenser Water Equipment Efficiency ³	110.1, 140.4(i)			
Open and Closed Circuit Cooling Towers conductivity or flow-based controls	110.2(e) 1			
Open and Closed Circuit Cooling Towers Maximum Achievable Cycles of Concentration (LSI) ⁶	110.2(e) 2			
Open and Closed Circuit Cooling Towers Flow Meter with analog output	110.2(e) 3			
Open and Closed Circuit Cooling Towers Overflow Alarm	110.2(e) 4			
Open and Closed Circuit Cooling Towers Efficient Drift Eliminators	110.2(e) 5			
Pipe Insulation	120.3			
PRESCRIPTIVE MEASURES	22			
Cooling Tower Fan Controls	140.4(h)2, 140.4(h)5	🔘 Yes 🔘 No	🔘 Yes 🔘 No	🔘 Yes 🔘 No
Cooling Tower Flow Controls	140.4(h)3			
Centrifugal Fan Cooling Towers ⁴	140.4(h)4			
Air-Cooled Chiller Limitation ⁵	140.4(j)			
Variable Flow System Design	140.4(k)			
Chiller and Boiler Isolation	140.4(k)			
CHW and HHW Reset Controls	140.4(k)			
WLHP Isolation Valves	140.4(k)			
VSD on CHW, CW & WLHP Pumps >5HP	140.4(k)			
DP Sensor Location	140.4(k)			

Provide equipment tags (e.g. CH 1 to 3) or system description (e.g. CHW loop) as appropriate. Multiple units with common requirements can be grouped together.

2. Provide references to plans (i.e. Drawing Sheet Numbers) and/or specifications (including Section name/number and relevant paragraphs) where each requirement is specified. Enter "N/A" if the requirement is not applicable to this system. The referenced plans and specifications must include all of the following information: equipment tag, equipment nominal capacity, Title 24 minimum efficiency requirements, and actual rated equipment efficiencies. Where multiple efficiency requirements are applicable (e.g. full- and part-load) include all. For chillers operating at non-standard efficiencies provide the Kadj values. For chillers also note whether the efficiencies are Path A or Path B.

4. Identify if cooling towers have propeller fans. If towers use centrifugal fans document which exception is used. 5. If air-cooled chillers are used, document which exceptions have been used to comply with 140.4(j) and the total installed design

capacity of the air-cooled chillers in the chilled water plant.

. Identify the existence of a completed MCH-06-E when open or closed circuit cooling towers are specified to be installed, otherwise enter "N/A".

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance

January 2016

STATE OF CALIFORNIA HVAC SYSTEM REQUIREMENTS

(CEC-NRCC-MCH-02-E (Revised 01/16)
	CERTIFICATE OF COMPLIANCE
	HVAC Wet System Requirements
	Project Name: CITY OF MORRO BAY WRF RECLAMATION FACILITY (W

1.	I certify	/ that this Certificate of Compliance documentation
Doci	umentation	Author Name: Randy W Cantrell
Com	^{pany:} Blac	k & Veatch
Add	^{ess:} 8400	Ward Parkway
City/	State/Zip:	Kansas City / MO / 64114
RE	SPONSIB	LE PERSON'S DECLARATION STATEMENT
I ce	ertify the	following under penalty of perjury, under the laws of
1.	The inf	ormation provided on this Certificate of Compliance
2.	l am el	igible under Division 3 of the Business and Professio
	identif	ied on this Certificate of Compliance (responsible de

3.	The energy features and performance specifications, mate
	design identified on this Certificate of Compliance conform
	Regulations.

4.	The building design features or system design features ide
	provided on other applicable compliance documents, worl
	agency for approval with this building permit application.
5.	I will ensure that a completed signed copy of this Certificat
100000-000	

building, and mad	e available to the enforcement agency f
Certificate of Com	pliance is required to be included with t
Responsible Designer Name:	Randy W Cantrell

Company	Black & Veatch	
---------	----------------	--

dress:	8400 Ward Parkway	
	0400 Walu Palkway	

		 A P P A P P A P P A P P
E OF CALIFORNIA AC SYSTEM REQUIREMENTS NRCC-MCH-02-E (Revised 01/16)	CALIFORNIA ENERGY C	VISIONS AND RECORD OF USE
TIFICATE OF COMPLIANCE AC Wet System Requirements		NRCC-MCH-02-E (Page 3 of 3)
Name CITY OF MORRO BAY WRF RECLAMATION FACILITY (W	/RF) Date Prepared: 12/31/2019	SSUED
JMENTATION AUTHOR'S DECLARATION STATEMENT I certify that this Certificate of Compliance documentation	is accurate and complete.	
Randy W Cantrell	Signature Date: 5 140 2000	DATE
s: 8400 Ward Parkway	CEA/ HERS Certification Identification (If applicable):	
ate/Zip: Kansas City / MO / 64114	^{Phone:} (913) 458 - 2000	CONTRACTOR NAME
ONSIBLE PERSON'S DECLARATION STATEMENT		I Sand W. Conte
design identified on this Certificate of Compliance conform Regulations. The building design features or system design features ide provided on other applicable compliance documents, work agency for approval with this building permit application. I will ensure that a completed signed copy of this Certificat building, and made available to the enforcement second for	n to the requirements of Title 24, Part 1 and Part 6 of the California ntified on this Certificate of Compliance are consistent with the in ksheets, calculations, plans and specifications submitted to the en te of Compliance shall be made available with the building permit(a Code of formation forcement s) issued for the copy of this
Certificate of Compliance is required to be included with the signer Name:	he documentation the builder provides to the building owner at or Responsible Designer Signature:	
andy W Cantrell	Date Signed: 5/19/2020	
s: 8400 Ward Parkway	License: M36207	
ilding Energy Efficiency Standards - 2016 Nonresidential Cor	mpliance	CITY OF MORDO BAY MORRO BAY WRF MORRO BAY WRF MORRO BAY WRF MORTION FACILITY (WRF) HVAC TITLE 24 - COMPLIANCE FORM

ST/	ATE OF CALIFORNIA
H	VAC DRY & WET SYSTEM REQUIREMENTS
CE	C-NRCC-MCH-02-E (Revised 01/16)

CERTIFICATE OF COMPLIANCE

HVAC Dry System Requirements oject Name: CITY OF MORRO BAY WRF RECLAMATION FACILITY (WRF) Date Prepared: 12/31/2019

A. Equipment Tags and System Description	on ¹ - Dry Systems 🛛 🗧	50-HVAC-PHP-0001	96-HVAC-PHP-0001	80-HVAC-WPHP-0001
MANDATORY MEASURES	T-24 Sections	Reference to the R	equirements in the Co	ontract Documents ²
Heating Equipment Efficiency ³	110.1 or 110.2(a)	N/A	N/A	N/A
Cooling Equipment Efficiency ³	110.1 or 110.2(a)	00-H-601	00-H-601	00-H-601
HVAC or Heat Pump Thermostats	110.2(b), 110.2(c)	N/A	N/A	N/A
Furnace Standby Loss Control	110.2(d)	N/A	N/A	N/A
Low Leakage AHUs	110.2(f)	N/A	N/A	N/A
Ventilation ⁴	120.1(b)	0.17 CFM/SF	0.51 CFM/SF	N/A
Demand Control Ventilation ⁵	120.1(c)4	N/A	N/A	N/A
Occupant Sensor Ventilation Control ⁶	120.1(c)5, 120.2(e)3	N/A	N/A	N/A
Shutoff and Reset Controls ⁷	120.2(e)	00-H-601	00-H-601	00-H-601
Outdoor Air and Exhaust Damper Control	120.2(f)	N/A	N/A	N/A
Isolation Zones	120.2(g)	N/A	N/A	N/A
Automatic Demand Shed Controls	120.2(h)	N/A	N/A	N/A
Economizer FDD	120.2(i)	N/A	N/A	N/A
Duct Insulation	120.4	23 30 13 -3-3.06	23 30 13 -3-3.06	23 30 13 -3-3.06
PRESCRIPTIVE MEASURES			425	
Equipment is sized in conformance with 140.4 (a & b)	140.4(a & b)	⊙ Yes ○ No	Yes No	💿 Yes 🔘 No
Supply Fan Pressure Control	140.4(c)	N/A	N/A	N/A
Simultaneous Heat/Cool ⁸	140.4(d)	N/A	N/A	N/A
Economizer	140.4(e)	YES	YES	N/A
Heat and Cool Air Supply Reset	140.4(f)	N/A	N/A	N/A
Electric Resistance Heating ⁹	140.4(g)	N/A	N/A	N/A
Duct Leakage Sealing and Testing. ¹⁰	140.4(I)	N/A	N/A	N/A

CALIFORNIA ENERGY COMMISSION

NRCC-MCH-02-E

(Page 1 of 3)

Notes:

- 1. Provide equipment tags (e.g. AHU 1 to 10) and system description (e.g. Single Duct VAV reheat) as appropriate. Multiple units with common requirements can be grouped together.
- Provide references to plans (i.e. Drawing Sheet Numbers) and/or specifications (including Section name/number and relevant paragraphs) where each requirement is specified. Enter "N/A" if the requirement is not applicable to this system.
- 3. The referenced plans and specifications must include all of the following information: equipment tag, equipment nominal capacity, Title 24 minimum efficiency requirements, and actual rated equipment efficiencies. Where multiple efficiency requirements are applicable (e.g. full- and part-load) include all. Where appliance standards apply (110.1), identify where equipment is required to be listed per Title 20 1601 et seq.
- 4. Identify where the ventilation requirements are documented for each central HVAC system. Include references to both central unit schedules and sequences of operation. If one or more spaces is naturally ventilated identify where this is documented in the plans and specifications. Multiple zone central air systems must also provide a MCH-03-E compliance document. 5. If one or more spaces has demand controlled ventilation identify where it is specified including the sensor specifications and the
- sequence of operation. 6. If one or more space has occupant sensor ventilation control identify where it is specified including the sensor specifications and
- the sequence of operation 7. If the system is DDC identify the sequences for the system start/stop, setback (if required) and setup (if required).
- For all systems identify the specification for the thermostats and time clocks (if applicable).
- 8. Identify where the heating, cooling and deadband airflows are scheduled for this system. Include a reference to the specification of the zone controls. Provide a MCH-03-E compliance document.
- 9. Enter N/A if there is no electric heating. If the system has electric heating indicate which exception to 140.4(g) applies. 10. If duct leakage sealing and testing is required, a MCH-04-A compliance document must be submitted.

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance

January 2016

Project Name B. Equipn MANDAT Heating H Cooling Cl Equipmer Open and conductiv Open and Maximun Concentr Open and Flow Met Open and Overflow Open and Efficient D Pipe Insul PRESCRIP Cooling T Cooling To Centrifuga Air-Cooled Variable I Chiller and CHW and WLHP Iso VSD on CH **DP Sensor** Notes:

6:39:50

STATE OF CALIFORNIA **HVAC DRY & WET SYSTEM REQUIREMENTS**

CEC-NRCC-MCH-02-E (Revised 01/16)	CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE	NRCC-MCH-02-E
HVAC Dry & Wet System Requirements	(Page 2 of 3
Project Name: CITY OF MORRO BAY WRF RECLAMATION FACILITY (WRF)	Date Prepared: 12/31/2019

nent Tags and System Descripti	on1- Wet Systems 🛛 😰	N/A	N/A	N/A
ORY MEASURES	T-24 Sections	Reference to the Re	equirements in the Co	ontract Documents ²
lot Water Equipment Efficiency ³	110.1	A.F.		
hilled and Condenser Water nt Efficiency ³	110.1, 140.4(i)			
l Closed Circuit Cooling Towers vity or flow-based controls	110.2(e) 1			
l Closed Circuit Cooling Towers n Achievable Cycles of ation (LSI) ⁶	110.2(e) 2			
l Closed Circuit Cooling Towers er with analog output	110.2(e) 3			
l Closed Circuit Cooling Towers Alarm	110.2(e) 4			
l Closed Circuit Cooling Towers Drift Eliminators	110.2(e) 5			
lation	120.3			
TIVE MEASURES	12	-		
ower Fan Controls	140.4(h)2, 140.4(h)5	🔘 Yes 🔘 No	🔘 Yes 🔘 No	🔘 Yes 🔘 No
ower Flow Controls	140.4(h)3			
al Fan Cooling Towers ⁴	140.4(h)4			
d Chiller Limitation ⁵	140.4(j)			
low System Design	140.4(k)			
d Boiler Isolation	140.4(k)			
HHW Reset Controls	140.4(k)			
lation Valves	140.4(k)			
HW, CW & WLHP Pumps >5HP	140.4(k)			
rlocation	140 4(k)	6		

1. Provide equipment tags (e.g. CH 1 to 3) or system description (e.g. CHW loop) as appropriate. Multiple units with common requirements can be grouped together.

2. Provide references to plans (i.e. Drawing Sheet Numbers) and/or specifications (including Section name/number and relevant paragraphs) where each requirement is specified. Enter "N/A" if the requirement is not applicable to this system. 3. The referenced plans and specifications must include all of the following information: equipment tag, equipment nominal capacity, Title 24 minimum efficiency requirements, and actual rated equipment efficiencies. Where multiple efficiency requirements are applicable (e.g. full- and part-load) include all. For chillers operating at non-standard efficiencies provide

the Kadj values. For chillers also note whether the efficiencies are Path A or Path B. 4. Identify if cooling towers have propeller fans. If towers use centrifugal fans document which exception is used.

5. If air-cooled chillers are used, document which exceptions have been used to comply with 140.4(j) and the total installed design capacity of the air-cooled chillers in the chilled water plant.

6. Identify the existence of a completed MCH-06-E when open or closed circuit cooling towers are specified to be installed, otherwise enter "N/A".

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance

January 2016

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance

HVAC SYSTEM REQUIREMENTS CEC-NRCC-MCH-02-E (Revised 01/16) CERTIFICATE OF COMPLIANCE HVAC Wet System Requirements sject Name: CITY OF MORRO BAY WRF RECLAMATION DOCUMENTATION AUTHOR'S DECLARATION STATE I certify that this Certificate of Compliance doc cumentation Author Name: Randy W Cantrell mpany: Black & Veatch 8400 Ward Parkway City/State/Zip: Kansas City / MO / 64114 **RESPONSIBLE PERSON'S DECLARATION STATEMENT** certify the following under penalty of perjury, under the laws of the State of California: The information provided on this Certificate of Compliance is true and correct. identified on this Certificate of Compliance (responsible designer). Regulations. agency for approval with this building permit application. Responsible Designer Name: Randy W Cantrell Black & Veatch

STATE OF CALIFORNIA

8400 Ward Parkway

ty/State/Zip: Kansas City, MO 64114

		NRCC-MCH-02-E
		(Page 3 of 3)
ACILITY (WRF)		Date Prepared: 12/31/2019
VENT		?
mentation is ac	curate and complete.	
	Documentation Author	Signature: Could Call
	Signature Date: 5/19/	2020
	CEA/ HERS Certification	Identification (if applicable):
	Phone: (913) 458 - 2	000

I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design

The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of

The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement

I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy. Responsible Designer Signature

forme first could
Date Signed: 5/19/2020
License: M36207
Phone: 913-458-3172

SHEET 338 OF 412

January 2016

HVAC Dry System Requirements (Page 1 of homen turner CITY OF MORRO BAY WRF RECLAMATION FACILITY (WRF) Paint Programment 12/31/2019 A. Equipment Tags and System Description ¹ - Dry Systems BO-HVAC-WPHP-0002 80-HVAC-WPHP-0003 80-HVAC-WPHP-003 80-HVAC-W					NRCC-MCH-02-E		
Description* Description* Description* Description* A. Equipment Tags and System Description*- Dry Systems B 0HVAC-WPHP-0002 80HVAC-WPHP-0003 80HVAC-WPHP-003 80HVAC-WPHP-0004-H01 80HVAC-WPHP-001 80HVAC-	VAC Dry System Requirements				(Page 1 of 3)		
L Equipment Tags and System Description ¹⁻ Dry Systems Equipment Tags and System Description ¹⁻ Dry Systems T-24 Sections Reference to the Requirements in the Contract Document leating Equipment Efficiency ³ 110.1 or 110.2(a) N/A N/A N/A N/A 110.2(b) N/A N/A N/A N/A 110.2(c) N/A N/A N/A N/A 20.1(b) N/A N/A N/A N/A 20.1(c) (10.2(c) N/A N/A N/A N/A 110.2(c) N/A N/A N/A N/A 120.1(c) N/A N/A N/A N/A 120.1(c) N/A N/A N/A N/A 120.1(c) (10.2(c) N/A N/A N/A N/A 120.2(c) 0-0+601 0-0+601 0-0+601 120.2(f) N/A N/A N/A N/A 120.2(f) N/A N/A N/A N/A 120.2(g) N/A N/A N/A N/A 120.2(g) N/A N/A N/A N/A 120.2(g) N/A N/A N/A N/A 120.2(g) N/A N/A N/A 120.2(g) N/A N/A N/A 120.2(g) N/A N/A N/A 120.4(d) N/A N/A N/A 120.4(d) N/A N/A N/A 120.4(d) N/A N/A N/A 140.4(d) N/A N/A N/A 140.4(d) N/A N/A N/A 140.4(g) N/A N/A N/A 140.4(oject Name: CITY OF MORRO BAY WRF RECLAMATION	FACILITY (WRF)		Date Prepared: 12/31/2019			
L. Equipment Tags and System Description*- Dry Systems BOHVAC-WHP-0002 BOHVAC-WHP-0003		1					
MANDATORY MEASURESImage 24 SectionsReference to the Requirements in the Contract DocumentLeading Equipment Efficiency ³ 110.1 or 110.2(a)N/AN/AN/ACooling Equipment Efficiency ³ 110.2 (c)N/AN/AN/ALinace Standby Loss Control110.2 (c)N/AN/AN/ALinace Standby Loss Control110.2 (c)N/AN/AN/ALinace Standby Loss Control110.2 (c)N/AN/AN/ALow Leakage AHUS110.2 (c)N/AN/AN/ADemand Control Ventilation ⁵ 120.1 (c)LN/AN/AN/ADemand Control Ventilation ⁵ 120.1 (c)LN/AN/AN/ADecupant Sensor Ventilation Control ⁶ 120.2 (e)00-H-60100-H-601Jutdoor Air and Exhaust Damper Control120.2 (f)N/AN/AN/ASolation Zones120.2 (j)N/AN/AN/ALutomatic Demand Shed Controls120.2 (j)N/AN/AN/ALoconomizer FDD120.2 (j)N/AN/AN/ALoconomizer FDD120.4 (c)N/AN/AN/ALictric Resistrance Heating ⁶ 140.4 (c)N/AN/AN/ALictric Resistrance Heating ⁶ 140.4 (g)N/AN/AN/ALictric Res	. Equipment Tags and System Description	on*- Dry Systems 🛛 👔	80-HVAC-WPHP-000	2 80-HVAC-WPHP-0003	80-HVAC-WPHP-0004		
Heating Equipment Efficiency ² 110.1 or 110.2(a) N/A N/A N/A N/A Cooling Equipment Efficiency ² 110.1 or 110.2(a) 00-H-601 00-H-601 00-H-601 HVAC or Heat Pump Thermostats 110.2(c) N/A N/A N/A N/A Variance Standby Loss Control 110.2(c) N/A N/A N/A N/A Journace Standby Loss Control 110.2(c) N/A N/A N/A N/A Journace Standby Loss Control 110.2(c) N/A N/A N/A N/A Journace Standby Loss Control 110.2(c) N/A N/A N/A N/A Cocupant Sensor Ventilation Control ⁵ 120.1(c), 120.2(c) N/A N/A N/A Solutofn Zones 120.2(c), 120.2(c) 00-H-601 00-H-601 00-H-601 Outrdonalic Demand Shed Controls 120.2(g) N/A N/A N/A Soluton Zones 120.2(g) N/A N/A N/A Potout Insulation 120.2(g) N/A N/A N/A Simultaneous Heat/Cool ⁶ 140.4(a & b) © Yes< No		T-24 Sections	Reference to the	Requirements in the C	ontract Documents		
Cooling equipment in the rule in the plane110.10.1010.10.1000-Heol00-Heol00-HeolLow Leakage AHUs110.2(c)N/AN/AN/ALow Leakage AHUs110.2(c)N/AN/AN/AVentilation ⁶ 120.1(c)N/AN/AN/ADemand Control Ventilation ⁶ 120.1(c)N/AN/AN/ADecupant Sensor Ventilation Control ⁶ 120.1(c)N/AN/AN/AOccupant Sensor Ventilation Control ⁶ 120.2(c)N/AN/AN/ANutomatic Demand Shed Controls120.2(c)N/AN/AN/AIzol.2(c)N/AN/AN/AN/AStation Zones120.2(c)N/AN/AN/ADuct Insulation120.2(c)N/AN/AN/ADuct Insulation120.2(c)N/AN/AN/ADuct Insulation120.2(c)N/AN/AN/ADuct Insulation120.2(c)N/AN/AN/ASimultaneous Heat/Cool ⁶ 140.4(c)N/AN/AN/ASimultaneous Heat/Cool ⁶ 140.4(c)N/AN/AN/ADuct Leakage Sealing and Testing. ¹⁰ 140.4(c)N/AN/AN/ANotes:1140.4(c)N/AN/AN/A1Provide equipment tags (e.g. AHU 1 to 10) and system description (e.g. Single Duct VAV reheat) as appropriate. Multiple units with common requirements can be grouped together.2Provide references to plans (i.e. Drawing Sheet Numbers) and/or specifications (including Section name/nu	leating Equipment Efficiency	110.1 or 110.2(a)	N/A	N/A	N/A		
The test of the trunce strandby Loss ControlThe test of the trunce strandby Loss ControlLow Leakage AHUs110.2(f)N/AN/AN/AN/AN/ALow Leakage AHUs120.1(c)N/AN/AN/AN/ADecupant Sensor Ventilation Controls120.1(c)120.2(e)00H-60100H-601Solutoff and Reset Controls120.2(f)N/AN/AN/AN/ASolution Zones120.2(g)N/AN/AN/AN/AAutomatic Demand Shed Controls120.2(f)N/AN/AN/AN/ADuct Insulation120.2(g)N/AN/AN/AN/ADuct Insulation120.2(g)N/AN/AN/AN/ADuct Insulation120.2(i)N/AN/AN/AN/ADuct Insulation120.2(i)N/AN/AN/AN/ASupply Fan Pressure Control140.4(a & b)© Yes< No	IVAC or Heat Pump Thermostats	110.2(b) 110.2(d)	N/A	N/A	N/A		
Low Leakage AHUs $110.2(f)$ N/A N/A N/A N/A N/A $N/$	urnace Standby Loss Control	110.2(d)	N/A	N/A N/A	N/A		
Ventilation ⁴ 120.1(c)4 N/A N/A N/A Demand Control Ventilation 5 120.1(c)4 N/A N/A N/A Docupant Sensor Ventilation Control ⁶ 120.1(c), 120.2(e)3 N/A N/A N/A Shutoff and Reset Controls ⁷ 120.2(e) 00-H-601 00-H-601 00-H-601 00-H-601 Solation Zones 120.2(e) 0.1-H-601 00-H-601 00-H-601 00-H-601 Solation Zones 120.2(g) N/A N/A N/A Automatic Demand Shed Controls 120.2(g) N/A N/A N/A Economizer FDD 120.2(h) N/A N/A N/A Duct Insulation 120.4 23 30 13-3-3.06 23 30 13 -3-3.06 23 30 13 -3-3.06 Supply Fan Pressure Control 140.4(a & b) Ital.4(c) N/A N/A N/A Simultaneous Heat/Cool ⁸ 140.4(g) N/A N/A N/A N/A Economizer 140.4(g) N/A N/A N/A N/A Heat and Cool Air Supply Reset 140.4(g) N/A N/A N/A Electric Resistance Heati	ow Leakage AHUs	110.2(f)	N/A	N/A	N/A		
Demand Control Ventilation 5 120.1(c)4N/AN/AN/AOccupant Sensor Ventilation Control 6 120.1(c)5, 120.2(e)3N/AN/AN/ADutdoor Air and Exhaust Damper Control120.2(e)00++60100++60100++601Dutdoor Air and Exhaust Damper Control120.2(f)N/AN/AN/ASolation Zones120.2(g)N/AN/AN/AAutomatic Demand Shed Controls120.2(h)N/AN/AN/AEconomizer FDD120.2(i)N/AN/AN/ADuct Insulation120.423 30 13 -3-3.0623 30 13 -3-3.0623 30 13 -3-3.06PRESCIPTIVE MEASURESEquipment is sized in conformance with140.4(a & b) \bigcirc YesNo \bigcirc YesNoSupply Fan Pressure Control140.4(c)N/AN/AN/ASimultaneous Heat/Cool ⁸ 140.4(e)N/AN/AN/ABeta and Cool Air Supply Reset140.4(f)YESYESYESElectric Resistance Heating ⁹ 140.4(g)N/AN/AN/ADuct Leakage Sealing and Testing. ¹⁰ 140.4(g)N/AN/AN/ANotes:.Provide equipment tags (e.g. AHU 1 to 10) and system description (e.g. Single Duct VAV reheat) as appropriate. Multiple units with common requirements can be grouped togetherProvide references to plans (i.e. Drawing Sheet Numbers) and/or specifications (including Section name/number and relevant paragraphs) where each requirement is specified. Enter "I/A" if the requirement is and applicable to this system <td>'entilation⁴</td> <td>120.1(b)</td> <td>N/A</td> <td>N/A</td> <td>N/A</td>	'entilation ⁴	120.1(b)	N/A	N/A	N/A		
Occupant Sensor Ventilation Controls120.1(c)5, 120.2(e)3N/A <th <="" colspan="2" td=""><td>emand Control Ventilation⁵</td><td>120.1(c)4</td><td>N/A</td><td>N/A</td><td>N/A</td></th>	<td>emand Control Ventilation⁵</td> <td>120.1(c)4</td> <td>N/A</td> <td>N/A</td> <td>N/A</td>		emand Control Ventilation ⁵	120.1(c)4	N/A	N/A	N/A
Shutoff and Reset Controls 120.2(e) 00-H-601 00	Control	120.1(c)5, 120.2(e)3	N/A	N/A	N/A		
JULGON AIF and Exhaust Damper Control 120.2(1) N/A N/A N/A Solation Zones 120.2(g) N/A N/A N/A Automatic Demand Shed Controls 120.2(g) N/A N/A N/A Solation Zones 120.2(g) N/A N/A N/A Automatic Demand Shed Controls 120.2(g) N/A N/A N/A Sconomizer FDD 120.2(i) N/A N/A N/A PRESCRIPTIVE MEASURES 120.4 23 30 13 -3-3.06 23 30 13 -3-3.06 23 30 13 -3-3.06 Supply Fan Pressure Control 140.4(a & b) Itel (a & b) Simultaneous Heat/Cool ⁸ 140.4(c) N/A N/A N/A N/A Economizer 140.4(g) N/A N/A N/A N/A Hata Al Cool Air Supply Reset 140.4(g) N/A N/A N/A Electric Resistance Heating ⁹ 140.4(g) N/A N/A N/A Duct Leakage Sealing and Testing. ¹⁰ 140.4(g) N/A N/A N/A Duct Leakage Sealing and Tes	hutoff and Reset Controls'	120.2(e)	00-H-601	00-H-601	00-H-601		
L2D2(g) N/A N/A N/A Automatic Demand Shed Controls L2D2(g) N/A N/A N/A Economizer FDD L2D2(g) N/A N/A N/A N/A Duct Insulation L2D2(g) N/A N/A N/A N/A PRESCRIPTIVE MEASURES Equipment is sized in conformance with 140.4 (a & b) L2D.2 (i) N/A N/A N/A Supply Fan Pressure Control 140.4 (a & b) Ito.4 (c) N/A N/A N/A Simultaneous Heat/Cool ⁸ 140.4 (a) N/A N/A N/A N/A Heat and Cool Air Supply Reset 140.4 (g) N/A N/A N/A Electric Resistance Heating ⁹ 140.4 (g) N/A N/A N/A Duct Leakage Sealing and Testing. ¹⁰ 140.4 (g) N/A N/A N/A 1. Provide equipment tags (e.g. AHU 1 to 10) and system description (e.g. Single Duct VAV reheat) as appropriate. Multiple units with common requirements can be grouped together. N/A N/A 2. Provide equipment tags (e.g. AHU 1 to 10) and system description (e.g. Single Duct VAV reheat) as appropriate. Multiple units with common requirements can be grouped together. N/A	solation Zones	120.2(f)	N/A	N/A	N/A		
Economizer FDD 120.2(i) N/A N/A N/A Duct Insulation 120.2(i) N/A N/A N/A PRESCRIPTIVE MEASURES Equipment is sized in conformance with 140.4(a & b) Image: State St	sutomatic Demand Shed Controls	120.2(g)	N/A	N/A N/A	N/A		
Duct Insulation 120.4 23 30 13 -3-3.06 23 30 13 -3-3.06 23 30 13 -3-3.06 23 30 13 -3-3.06 PRESCRIPTIVE MEASURES Equipment is sized in conformance with 140.4 (a & b) Image: State	conomizer FDD	120.2(i)	N/A	N/A	N/A		
PRESCRIPTIVE MEASURES Equipment is sized in conformance with 140.4 (a & b) Supply Fan Pressure Control Simultaneous Heat/Cool ⁸ Economizer Heat and Cool Air Supply Reset Electric Resistance Heating ⁹ Duct Leakage Sealing and Testing. ¹⁰ Notet 1. Provide equipment tags (e.g. AHU 1 to 10) and system description (e.g. Single Duct VAV reheat) as appropriate. Multiple units with common requirements can be grouped together. Provide references to plans (i.e. Drawing Sheet Numbers) and/or specifications (including Section name/number and relevant paragraphs) where each requirement is specified. Enter "N/A" if the requirement is an appropriate. Multiple units capacity, Title 24 minimum efficiency requirements, and actual rated equipment efficiencies. Where multiple efficiency requirements are applicable (e.g. full- and part-load) include all. Where appliance standards apply (110.1), identify where equipment is required to be listed per Title 20 1601 et seq. 4. Identify where the ventilation requirements are documented for each central HVAC system. Include references to both centra unit schedules and specifications. Multiple zone central air systems must also provide a MCH-03-E compliance document. 5. If one or more spaces has demand controlled ventilation identify where it is specified including the sensor specifications and the sequence of operation.	ouct Insulation	120.4	23 30 13 -3-3.06	23 30 13 -3-3.06	23 30 13 -3-3.06		
Equipment is sized in conformance with 140.4 (a & b) 140.4(a & b) Yes No Yes No Yes No Supply Fan Pressure Control 140.4(a & b) Yes No Yes No Yes No Simultaneous Heat/Cool ⁸ 140.4(a & b) N/A N/A N/A N/A Economizer 140.4(a) N/A N/A N/A N/A Heat and Cool Air Supply Reset 140.4(f) YES YES YES Electric Resistance Heating ⁹ 140.4(g) N/A N/A N/A Duct Leakage Sealing and Testing. ¹⁰ 140.4(g) N/A N/A N/A Notes: 1 140.4(l) N/A N/A N/A 1. Provide equipment tags (e.g. AHU 1 to 10) and system description (e.g. Single Duct VAV reheat) as appropriate. Multiple units with common requirements can be grouped together. 2 2. Provide references to plans (i.e. Drawing Sheet Numbers) and/or specifications (including Section name/number and relevant paragraphs) where each requirement is specified. Enter "N/A" if the requirement is not applicable to this system. 3. The referenced plans and specifications must include all of the following information: equipment nominal capacity, Title 24 minimum efficiency	RESCRIPTIVE MEASURES						
Supply Fan Pressure Control 140.4(c) N/A N/A N/A Simultaneous Heat/Cool ⁸ 140.4(c) N/A N/A N/A Economizer 140.4(d) N/A N/A N/A Heat and Cool Air Supply Reset 140.4(f) YES YES YES Electric Resistance Heating ⁹ 140.4(g) N/A N/A N/A Duct Leakage Sealing and Testing. ¹⁰ 140.4(g) N/A N/A N/A Notes: 140.4(l) N/A N/A N/A N/A 1. Provide equipment tags (e.g. AHU 1 to 10) and system description (e.g. Single Duct VAV reheat) as appropriate. Multiple units with common requirements can be grouped together. N/A N/A 2. Provide references to plans (i.e. Drawing Sheet Numbers) and/or specifications (including Section name/number and relevant paragraphs) where each requirement is specified. Enter "N/A" if the requirement is not applicable to this system. 3. The referenced plans and specifications must include all of the following information: equipment tag, equipment nominal capacity, Title 24 minimum efficiency requirements, and actual rated equipment efficiencies. Where multiple efficiency requirements are applicable (e.g. full- and part-load) include all. Where appliance standards apply (110.1), identify where equipment is required to be listed per Title 20 1601 et seq. 4. Identify where the ventilation	quipment is sized in conformance with 40.4 (a & b)	140.4(a & b)	• Yes • No	💽 Yes 🔘 No	⊙ Yes ○ No		
Simultaneous Heat/Cool ⁹ 140.4(d) N/A N/A N/A Economizer 140.4(d) N/A N/A N/A Heat and Cool Air Supply Reset 140.4(e) N/A N/A N/A Electric Resistance Heating ⁹ 140.4(g) N/A N/A N/A Duct Leakage Sealing and Testing. ¹⁰ 140.4(g) N/A N/A N/A Notes: 140.4(l) N/A N/A N/A 1. Provide equipment tags (e.g. AHU 1 to 10) and system description (e.g. Single Duct VAV reheat) as appropriate. Multiple units with common requirements can be grouped together. 2. 2. Provide references to plans (i.e. Drawing Sheet Numbers) and/or specifications (including Section name/number and relevant paragraphs) where each requirement is specified. Enter "N/A" if the requirement is not applicable to this system. 3. The referenced plans and specifications must include all of the following information: equipment tag, equipment nominal capacity, Title 24 minimum efficiency requirements, and actual rated equipment efficiencies. Where multiple efficiency requirements are applicable (e.g. full- and part-load) include all. Where appliance standards apply (110.1), identify where equipment is required to be listed per Title 20 1601 et seq. 4. Identify where the ventilation requirements are documented for each central HVAC system. Include references to both central unit schedules and sequences	upply Fan Pressure Control	140.4(c)	N/A	N/A	N/A		
Lectonomizer 140.4(e) N/A N/A N/A Heat and Cool Air Supply Reset 140.4(e) N/A N/A N/A Electric Resistance Heating ⁹ 140.4(g) N/A N/A N/A Duct Leakage Sealing and Testing. ¹⁰ 140.4(g) N/A N/A N/A Notes: 140.4(g) N/A N/A N/A 1. Provide equipment tags (e.g. AHU 1 to 10) and system description (e.g. Single Duct VAV reheat) as appropriate. Multiple units with common requirements can be grouped together. 2. 2. Provide references to plans (i.e. Drawing Sheet Numbers) and/or specifications (including Section name/number and relevant paragraphs) where each requirement is specified. Enter "N/A" if the requirement is not applicable to this system. 3. The referenced plans and specifications must include all of the following information: equipment tag, equipment nominal capacity, Title 24 minimum efficiency requirements, and actual rated equipment efficiencies. Where multiple efficiency requirements are applicable (e.g. full- and part-load) include all. Where appliance standards apply (110.1), identify where equipment is required to be listed per Title 20 1601 et seq. 4. Identify where the ventilation requirements are documented for each central HVAC system. Include references to both central unit schedules and sequences of operation. If one or more spaces is naturally ventilated identify where this is document. 5. If one or more space has demand controlled ventilation identify wher	imultaneous Heat/Cool°	140.4(d)	N/A	N/A	N/A		
 140.4(1) 143.1(1) 144.1(1) 144	conomizer	140.4(e)	N/A VES	N/A VES	N/A VES		
 Duct Leakage Sealing and Testing.¹⁰ 100.4(1) N/A N/A<!--</td--><td>leat and Cool Air Supply Reset</td><td>140.4(1) 140.4(g)</td><td>N/A</td><td>YES N/A</td><td>N/A</td>	leat and Cool Air Supply Reset	140.4(1) 140.4(g)	N/A	YES N/A	N/A		
 Provide equipment tags (e.g. AHU 1 to 10) and system description (e.g. Single Duct VAV reheat) as appropriate. Multiple units with common requirements can be grouped together. Provide references to plans (i.e. Drawing Sheet Numbers) and/or specifications (including Section name/number and relevant paragraphs) where each requirement is specified. Enter "N/A" if the requirement is not applicable to this system. The referenced plans and specifications must include all of the following information: equipment tag, equipment nominal capacity, Title 24 minimum efficiency requirements, and actual rated equipment efficiencies. Where multiple efficiency requirements are applicable (e.g. full- and part-load) include all. Where appliance standards apply (110.1), identify where equipment is required to be listed per Title 20 1601 et seq. Identify where the ventilation requirements are documented for each central HVAC system. Include references to both central unit schedules and sequences of operation. If one or more spaces is naturally ventilated identify where this is documented in the plans and specifications. Multiple zone central air systems must also provide a MCH-03-E compliance document. If one or more spaces has demand controlled ventilation identify where it is specified including the sensor specifications and t sequence of operation. If one or more space has occupant sensor ventilation control identify where it is specified including the sensor specifications and the sequence of operation. 	ouct Leakage Sealing and Testing. ¹⁰	140.4(1)	N/A	N/A	N/A		
 If the system is DDC identify the sequences for the system start/stop, setback (if required) and setup (if required). For all systems identify the specification for the thermostats and time clocks (if applicable). Identify where the heating, cooling and deadband airflows are scheduled for this system. Include a reference to the specification of the zone controls. Provide a MCH-03-E compliance document. Enter N/A if there is no electric heating. If the system has electric heating indicate which exception to 140.4(g) applies. 	 paragraphs) where each requirement is s The referenced plans and specifications is capacity, Title 24 minimum efficiency requirements are applicable (e.g. full- and equipment is required to be listed per Tit Identify where the ventilation requirement unit schedules and sequences of operation the plans and specifications. Multiple zo If one or more spaces has demand contrasterion 	specified. Enter "N/A" if t must include all of the for quirements, and actual ro d part-load) include all. le 20 1601 et seq. nts are documented for e on. If one or more spaces ne central air systems m olled ventilation identify or ventilation control iden	the requirement is n llowing information ated equipment effic Where appliance sto each central HVAC s is naturally ventilat ust also provide a M where it is specified ntify where it is speci	ot applicable to this system equipment tag, equipment tag, equipment tag, equipment tag, equipment tag, equipment indards apply (110.1), system. Include referent ted identify where this ICH-03-E compliance do I including the sensor sp ified including the sensor splied including the sensor sp ified including the sensor sp	item. ment nominal e efficiency identify where ces to both central is documented in ocument. pecifications and the or specifications and		
10. If duct leakage sealing and testing is required, a MCH-04-A compliance document must be submitted.	 If one or more space has occupant senso the sequence of operation If the system is DDC identify the sequenc For all systems identify the specification Identify where the heating, cooling and a specification of the zone controls. Provid Enter N/A if there is no electric heating. 	tes for the system start/s for the thermostats and deadband airflows are sc le a MCH-03-E complianc If the system has electric	time clocks (if applic heduled for this syst e document. heatina indicate wh	em. Include a reference nich exception to 140.4	e to the a) applies.		

6:39:50 5/19/20

CA Building

STATE OF CALIFORNIA HVAC DRY & WET SYSTEM REQUIREMENTS

CEC-NRCC-MCH-02-E (Revised 01/16)

Notes:

CERTIFICATE OF COMPLIANCE HVAC Dry & Wet System Requirements

Project Name: CITY OF MORRO BAY WRF RECLAMATION FACILITY (WRF)

CALIFORNIA ENERGY COMMISSION NRCC-MCH-02-E (Page 2 of 3)

Date Prepared: 12/31/2019

B. Equipment Tags and System Descripti	on¹- Wet Systems 🛛 🔞	N/A	N/A	N/A		
MANDATORY MEASURES	T-24 Sections	Reference to the Requirements in the Contract Document				
Heating Hot Water Equipment Efficiency ³	110.1					
Cooling Chilled and Condenser Water Equipment Efficiency ³	110.1, 140.4(i)					
Open and Closed Circuit Cooling Towers conductivity or flow-based controls	110.2(e) 1					
Open and Closed Circuit Cooling Towers Maximum Achievable Cycles of Concentration (LSI) ⁶	110.2(e) 2					
Open and Closed Circuit Cooling Towers Flow Meter with analog output	110.2(e) 3					
Open and Closed Circuit Cooling Towers Overflow Alarm	110.2(e) 4					
Open and Closed Circuit Cooling Towers Efficient Drift Eliminators	110.2(e) 5					
Pipe Insulation	120.3					
PRESCRIPTIVE MEASURES	22					
Cooling Tower Fan Controls	140.4(h)2, 140.4(h)5	🔘 Yes 🔘 No	🔘 Yes 🔘 No	🔘 Yes 🔘 No		
Cooling Tower Flow Controls	140.4(h)3					
Centrifugal Fan Cooling Towers ⁴	140.4(h)4					
Air-Cooled Chiller Limitation ⁵	140.4(j)					
Variable Flow System Design	140.4(k)					
Chiller and Boiler Isolation	140.4(k)					
CHW and HHW Reset Controls	140.4(k)					
WLHP Isolation Valves	140.4(k)					
VSD on CHW, CW & WLHP Pumps >5HP	140.4(k)					
DP Sensor Location	140.4(k)	2				

STATE OF CALIFORNIA HVAC SYSTEM REQUIREMENTS

CEC-NRCC-MCH-02-E (Revised 01/16) CERTIFICATE OF COMPLIANCE HVAC Wet System Requirements roject Name: CITY OF MORRO BAY WRF RECLAMATION FACILI

DOCUMENT	ATION AUTHOR'S DECLARATION STATEMENT
1. I certify	that this Certificate of Compliance document
Documentation /	Author Name: Randy W Cantrell
Company: Black	k & Veatch
Address: 8400	Ward Parkway
City/State/Zip:	Kansas City / MO / 64114
RESPONSIBL	E PERSON'S DECLARATION STATEMENT
I certify the f 1. The info 2. I am eligidentifie 3. The energy 4. The building agency 5. I will energy building Certific:	following under penalty of perjury, under the prmation provided on this Certificate of Comp gible under Division 3 of the Business and Pro ed on this Certificate of Compliance (responsil argy features and performance specifications, dentified on this Certificate of Compliance co ions. Iding design features or system design features of on other applicable compliance documents, for approval with this building permit applicat sure that a completed signed copy of this Cer g, and made available to the enforcement age ate of Compliance is required to be included y
Responsible Des	igner Name: Randy W Cantrell
Company : Bla	ck & Veatch
Address: 840	00 Ward Parkway
City/State/Zip:	(ansas City, MO 64114

1. Provide equipment tags (e.g. CH 1 to 3) or system description (e.g. CHW loop) as appropriate. Multiple units with common requirements can be grouped together.

2. Provide references to plans (i.e. Drawing Sheet Numbers) and/or specifications (including Section name/number and relevant paragraphs) where each requirement is specified. Enter "N/A" if the requirement is not applicable to this system. 3. The referenced plans and specifications must include all of the following information: equipment tag, equipment nominal capacity, Title 24 minimum efficiency requirements, and actual rated equipment efficiencies. Where multiple efficiency requirements are applicable (e.g. full- and part-load) include all. For chillers operating at non-standard efficiencies provide

the Kadj values. For chillers also note whether the efficiencies are Path A or Path B. 4. Identify if cooling towers have propeller fans. If towers use centrifugal fans document which exception is used.

5. If air-cooled chillers are used, document which exceptions have been used to comply with 140.4(j) and the total installed design capacity of the air-cooled chillers in the chilled water plant.

6. Identify the existence of a completed MCH-06-E when open or closed circuit cooling towers are specified to be installed, otherwise enter "N/A".

ng Energy Efficiency Standards - 2016 Nonresidential Co	mpliance
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January 2016

CA Building Energy Efficiency Standards - 2016 Nonresidentia

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		CALIFORNIA ENER	GY COMMISSION			OR CONSTRUCTION	REVISIONS AND RECORD OF USE
ON FACILITY (WRF)	D	Date Prepared: 12/31/2019	(Page 3 of 3)			ISSUED F	
TEMENT ocumentation is accura	te and complete.	01.24	8			19/2020	DATE
	Signature Date: 5/19/2020	flored to Loold			PROFESSIO	21 21	_
	CEA/ HERS Certification Identification	on (if applicable):			W. CA		
ENT nder the laws of the Sta of Compliance is true a and Professions Code	te of California: nd correct. to accept responsibility for the	e building design or sys	22 tem design	× con	No. M3620	7 AL R X 15 0	2020
responsible designer). 'ications, materials, con liance conform to the re	nponents, and manufactured equirements of Title 24, Part 1	devices for the building 1 and Part 6 of the Calif	design or system ornia Code of	_		5/19/2	5 5
n features identified or cuments, worksheets, o t application. f this Certificate of Com nent agency for all appl	this Certificate of Complianc alculations, plans and specific pliance shall be made availab licable inspections. I understa	e are consistent with th cations submitted to th le with the building per nd that a completed sig	e information e enforcement mit(s) issued for the med copy of this	VEATCH	ITURE		LACK&VEAI
cluded with the docum	Responsible Designer Signature:	to the building owner	at occupancy.	Kø	E N	6	
	Date Signed: 5/19/2020			AC	>		-
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residential Compliance			January 2016	CITY OF MORRO BAY MORRO BAY WRF	RECLAMATION FACILITY (WRF)	HVAC TITLE 24 - COMPLIANCE FORM	
residential Compliance			January 2016	CITY OF MORRO BAY MORRO BAY WRF GHECKED: Abbuored	RECLAMATION FACILITY (WRF)	TITLE 24 - COMPLIANCE FORM	
residential Compliance			January 2016	CITY OF MORRO BAY MORRO BAY WRF DATE:	BECLAMATION FACILITY (WRF) : SWW : UDA : LDA : LDA : LDA : LDA : LDA : LDA : LDA : 1/2	TITLE 24 - COMPLIANCE FORM	

PROJECT NO.

400530

00-H-605

SHEET 339 OF 412

5/19/

5/19/ 2

6:45:13 PM

PLOTTED: 5/19/2020 6:47:13 PM

5/19

2

ENLARGED PLAN - EAST - EL 87.00' 1/4" = 1'-0"

52:34 5/19

OPERATING FLOOR PLAN - EL 107.00'

3/16" = 1'-0"

FIRE SUPPRESSION SYSTEM SCHEMATIC NO SCALE

MA 2:16:19

: 5/19/2 2

FIRE SUPPRESSION SYSTEM PLAN

1/8" = 1'-0"

42 2:26 5/19/

SCHEMATIC OF FIRE SUPPRESSION SYSTEM

NO SCALE

ONE-LINE DIAGRAM LEGEND	SCHEMATIC SYMBOLS		BREAKER DETAILS	PROTECTION/RELAY DEVICE NUMBERS	MAS MJK CHK APP
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	 WIRE CONNECTION POINT EXTERNAL CONNECTION POINT ⊢ NORMALLY OPEN CONTACT Դ NORMALLY CLOSED CONTACT STARTER, CONTACTOR OR RELAY COIL □ 0 NORMALLY OPEN PUSH BUTTON □ 0 NORMALLY CLOSED PUSH BUTTON □ 10 MAINTAINED PUSH BUTTON ↓ NORMALLY CLOSED GEARED LIMIT SWITCH ↓ ↓ 	\mathcal{T}_V VACUUM SWITCH (CLOSING ON INCREASING VACUUM) \mathcal{T}_V VACUUM SWITCH (OPENING ON INCREASING VACUUM) \mathcal{T}_V TEMPERATURE SWITCH (CLOSING ON RISING TEMPERATURE) \mathcal{T} TEMPERATURE SWITCH 	$\begin{array}{c} \overbrace{f}{f} \\ \overbrace{f} \\ \overbrace{f}{f} \\ \overbrace{f}{f} \\ \overbrace{f}{f} \\ \overbrace{f} \\ \overbrace{f} \\ F} \\ \overbrace{f} \\ \overbrace{f} \\$	 25 - SYNCHRONIZING OR SYNCHRONISM-CHECK DEVICE 27 - UNDERVOLTAGE RELAY 32 - DIRECTIONAL POWER RELAY 37 - UNDERCURRENT OR UNDERPOWER RELAY 46 - REV. PHASE OR PHASE-BAL. CURRENT RELAY 47 - PHASE SEQ. OR PHASE BAL. VOLTAGE RELAY 49 - MACHINE OR TRANSFORMER THERMAL RELAY 50 - INSTANTANEOUS OVERCURRENT 51 - AC TIME OVERCURRENT RELAY 52 - AC CIRCUIT BREAKER 59 - OVERVOLTAGE RELAY 63 - PRESSURE SWITCH 64 - GROUND DETECTOR RELAY 67 - AC DIRECTIONAL OVERCURRENT RELAY 71 - LIQUID OR GAS LEVEL RELAY 83 - AUTOMATIC SELECTIVE CONTROL OR TRANSFER RELAY 83 - AUTOMATIC SELECTIVE RELAY 87 - DIFFERENTIAL PROTECTIVE RELAY 	REVISIONS AND RECORD OF USE 0 3V
ONE-LINE SHOWING POWER AND CONTROL TO A PACKAGE UNIT, AS FOR EXAMPLE A STEAM GENERATOR OR AN AIR HANDLING UNIT, SHALL IMPLY THAT ANY AND ALL ASSOCIATED EQUIPMENT SHALL ALSO BE INSTALLED AND WIRED AS REQUIRED BY THE EQUIPMENT FURNISHED. Image: Im	$ \begin{array}{c} & & \\ & & $	 N™ ON TIME DELAY CONTACT (NORMALLY CLOSED, WHEN THE COIL IS ENERGIZED THE CONTACT WILL OPEN AFTER A TIME DELAY) OFF TIME DELAY CONTACT (NORMALLY OPEN, WHEN THE COIL IS DE-ENERGIZED THE CONTACT WILL OPEN AFTER A TIME DELAY) OFF TIME DELAY CONTACT (NORMALLY CLOSED, WHEN THE COIL IS DE-ENERGIZED THE CONTACT WILL CLOSE AFTER A TIME DELAY) OF TORQUE SWITCH (NORMALLY OPEN) TORQUE SWITCH (NORMALLY CLOSED) LIMIT SWITCH (NORMALLY OPEN) LIMIT SWITCH (NORMALLY OPEN, HELD CLOSED) LIMIT SWITCH (NORMALLY CLOSED) LIMIT SWITCH (NORMALLY CLOSED) LIMIT SWITCH (NORMALLY CLOSED) LIMIT SWITCH (NORMALLY CLOSED) DIFFERENTIAL PRESSURE SWITCH (NORMALLY OPEN, CLOSING ON INCREASING DIFF.) 	DETAIL C Image: Structure of the structure	CONTROL SCHEMATIC LEGEND PS FIRE ALARM PULL STATION FS FIRE ALARM PULL STATION F FIRE ALARM HORN/STROBE LIGHT F FIRE ALARM BEACON S FIRE ALARM STROBE LIGHT SD FIRE ALARM SYSTEM SMOKE DETECTOR HT FIRE ALARM SYSTEM SMOKE DETECTOR SFS FIRE ALARM SYSTEM SPRINKLER FLOW SWITCH STS FIRE ALARM SYSTEM SPRINKLER TAMPER SWITCH SPS FIRE ALARM SYSTEM SPRINKLER PRESSURE SWITCH FROP FIRE ALARM CONTROL PANEL FACP FIRE ALARM ANNUNCIATOR PANEL EAAP FIRE ALARM TEMINAL CABINET	BLACK & VEATCH JOINT VENTURE AMC 3 BLACK & VEATCH JOINT VENTURE AME 3 BLACK & VEATCH DOINT VENTURE AME 3 BLACK & VEATCH DOINT VENTURE AME 3 BLACK & VEATCH DOINT VENTURE AME 3 BLACK & VEATCH
FUSE AND DISCONNECT SWITCH Image: Size i combination magnetic motor Starter, reversing or 2 speed Image: Size i combination reduced Image: Size i combination reduced <td>\mathcal{V}_{P}PRESSURE SWITCH (CLOSING ON RISING PRESSURE)\mathcal{V}_{P}PRESSURE SWITCH (OPENING ON RISING PRESSURE)SWITCH & OUTLET SYMBOLSSWITCH & OUTLET SYMBOLSSSINGLE POLE SWITCH S2S2TWO POLE SWITCH CONTROLLING LIGHTS WITH "A" DESIGNATIONS4FOUR-WAY SWITCH CONTROLLING CONTACTOR C1\mathcal{O}DUPLEX RECEPTACLE 120 VOLT$\mathcal{O}$$\mathcal{O}$DUPLEX RECEPTACLE$\mathcal{O}$SIMPLEX RECEPTACLE$\mathcal{O}$</td> <td>DIFFERENTIAL PRESSURE SWITCH (NORMALLY CLOSED, OPENING ON INCREASING DIFF.) MISCELLANEOUS SYMBOLS Image: Image:</td> <td>PLP1-3 RECEPTACLE POWERED FROM LIGHTING PANEL LP1, CIRCUIT 3 LALESTING FAILURE POWERED FROM LIGHTING FAILURE POWERED FROM LIGHTING FAILURE, CIRCUIT 2 (NON-SWITCHED) LPA-4 LIGHTING FAILURE POWERED FROM LIGHTING FAILURE, CIRCUIT 4, VIA SWITCH A F UNDERGROUND CONCRETE ENCASED ELECTRICAL DUCT BANK UNDERGROUND CONCRETE ENCASED ELECTRICAL BANK ROUTED BENEATH SLAB-ON-GRADE GROUND CONDUCTOR UNE UNDERGROUND CONDUCTOR UNDERGROUND ELECTRIC OH OH OVERHEAD CIRCUIT</td> <td>Image: Structure FIRE ALARM SYSTEM DUCT SMOKE DETECTOR Image: Structure FIRE ALARM SYSTEM POST INDICATOR VALVE SWITCH Image: Structure PHOTO ELECTRIC BEAM TRANSMITTER (SECURITY SYSTEM). ARROW INDICATES DIRECTION OF BEAM. Image: Structure PHOTO ELECTRIC BEAM RECEIVER. (SECURITY SYSTEM). ARROW INDICATES DIRECTION OF BEAM. Image: Structure Image: Structure Image: Structure MOTION SENSOR Image: Structure Image: Structure Image:</td> <td>DESIGNED: JSL DESIGNED: JSL DETAILED: SBC CHECKED: MAL DETAILED: SBC CHECKED: MAL 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 00 - E - 001 SHEET</td>	\mathcal{V}_{P} PRESSURE SWITCH (CLOSING ON RISING PRESSURE) \mathcal{V}_{P} PRESSURE SWITCH (OPENING ON RISING PRESSURE)SWITCH & OUTLET SYMBOLSSWITCH & OUTLET SYMBOLSSSINGLE POLE SWITCH S2S2TWO POLE SWITCH CONTROLLING LIGHTS WITH "A" DESIGNATIONS4FOUR-WAY SWITCH CONTROLLING CONTACTOR C1 \mathcal{O} DUPLEX RECEPTACLE 120 VOLT \mathcal{O} \mathcal{O} DUPLEX RECEPTACLE \mathcal{O} SIMPLEX RECEPTACLE \mathcal{O}	DIFFERENTIAL PRESSURE SWITCH (NORMALLY CLOSED, OPENING ON INCREASING DIFF.) MISCELLANEOUS SYMBOLS Image:	PLP1-3 RECEPTACLE POWERED FROM LIGHTING PANEL LP1, CIRCUIT 3 LALESTING FAILURE POWERED FROM LIGHTING FAILURE POWERED FROM LIGHTING FAILURE, CIRCUIT 2 (NON-SWITCHED) LPA-4 LIGHTING FAILURE POWERED FROM LIGHTING FAILURE, CIRCUIT 4, VIA SWITCH A F UNDERGROUND CONCRETE ENCASED ELECTRICAL DUCT BANK UNDERGROUND CONCRETE ENCASED ELECTRICAL BANK ROUTED BENEATH SLAB-ON-GRADE GROUND CONDUCTOR UNE UNDERGROUND CONDUCTOR UNDERGROUND ELECTRIC OH OH OVERHEAD CIRCUIT	Image: Structure FIRE ALARM SYSTEM DUCT SMOKE DETECTOR Image: Structure FIRE ALARM SYSTEM POST INDICATOR VALVE SWITCH Image: Structure PHOTO ELECTRIC BEAM TRANSMITTER (SECURITY SYSTEM). ARROW INDICATES DIRECTION OF BEAM. Image: Structure PHOTO ELECTRIC BEAM RECEIVER. (SECURITY SYSTEM). ARROW INDICATES DIRECTION OF BEAM. Image: Structure Image: Structure Image: Structure MOTION SENSOR Image: Structure Image: Structure Image:	DESIGNED: JSL DESIGNED: JSL DETAILED: SBC CHECKED: MAL DETAILED: SBC CHECKED: MAL 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 00 - E - 001 SHEET

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ELECTRICAL GENERAL NOTES

- 1. SOLID LINES (______) INDICATE NEW WORK OR EQUIPMENT.
- 2. SCREENED LINES (______) INDICATE EXISTING WORK OR EQUIPMENT.
- 3. DASHED LINES (-----) INDICATE FUTURE WORK OR EQUIPMENT.
- 4. REFER TO INDIVIDUAL DISCIPLINE CONTRACT DRAWINGS FOR ADDITIONAL ABBREVIATIONS, DETAILS, AND GENERAL DESIGN NOTES.
- 5. LEGEND SHEETS ARE GENERAL. SOME SYMBOLS AND ABBREVIATIONS MAY NOT BE UTILIZED ON THIS SPECIFIC PROJECT.
- 6. INFORMATION RELATED TO CIRCUIT IDENTIFICATION, WIRE & CONDUIT SIZES, AND ROUTING, IS ON THE FOLLOWING DRAWING TYPES.
 - A. ONE-LINE DIAGRAMS SHOW CIRCUIT IDENTIFICATION, WIRE QUANTITY AND SIZES, AND CONDUIT SIZE WITHIN STRUCTURES. ONE-LINE DIAGRAMS ALSO INDICATE ORIGIN AND DESTINATION OF CIRCUITS, AND IDENTIFY CIRCUITS ROUTED UNDERGROUND.
 - B. FOR CIRCUITS WITHOUT UNDERGROUND PORTIONS, BUILDING FLOOR PLANS SHOW LOCATION OF EQUIPMENT FOR DETERMINING CIRCUIT LENGTH WITHIN THE STRUCTURE. FOR CIRCUITS WITH UNDERGROUND PORTIONS, ANTICIPATED PENETRATION OF UNDERGROUND CONDUITS ARE SHOWN ON STRUCTURE PLANS FOR DETERMINING THE LENGTH OF THE IN-STRUCTURE PORTIONS OF CIRCUITS. BUILDING FLOOR PLANS MAY ALSO SHOW HOME RUNS FOR LIGHTING, RECEPTACLE, AND OTHER MISCELLANEOUS EQUIPMENT CIRCUITS.
 - C. SITE PLANS INDICATE THE GENERAL ROUTING OF UNDERGROUND CONDUITS AND DUCT BANKS. CIRCUITS ROUTED IN UNDERGROUND CONDUITS OR DUCT BANKS ARE INDICATED IN DUCT BANK SECTIONS REFERENCED ON THE SITE PLAN.

INTENDED FOR OUTDOOR USE, PROVIDES A DEGREE OF PROTECTION AGAINST FALLING RAIN AND ICE

FORMATION. MEETS ROD ENTRY, RAIN, EXTERNAL ICING AND RUST RESISTANCE DESIGN TESTS.

INDOOR WET LOCATIONS SUCH AS VAULTS, HOSEDOWN AREAS, BASEMENTS, ETC. MINIMUM NEMA

CLASS I, DIVISION 1 AREA AS DEFINED BY NEC. ALL EQUIPMENT AND CONDUIT SYSTEMS SHALL

CLASS I, DIVISION 2, GROUP C AND D (METHANE, GASOLINE) AS DEFINED BY NEC. EQUIPMENT

INDOOR, DRY, DIRTY AREA. REQUIRES MINIMUM NEMA TYPE 12 GASKETED ENCLOSURES FOR ALL

80 PVC RIGID NON-METALLIC CONDUIT WITH PVC FITTINGS, BOXES AND ACCESSORIES.

TYPE 4 ENCLOSURE FOR EQUIPMENT AND GASKETED FITTINGS IN A CONDUIT SYSTEM.

CORROSIVE CHEMICAL FEED AND STORAGE ROOMS. CONDUIT SYSTEM SHALL BE EXPOSED SCHEDULE

D. DUCT BANK SECTIONS AND SCHEDULES IDENTIFY CONDUIT SIZE, CONDUIT MATERIAL, ARRANGEMENT OF THE UNDERGROUND CONDUITS, AND CIRCUITS ROUTED IN EACH UNDERGROUND CONDUIT.

AREA DESIGNATIONS

THE SPECIAL AREA DESIGNATION BOXES, AS DEFINED BELOW, ARE LOCATED ON THE PLAN DRAWINGS TO DEFINE ELECTRICAL INSTALLATION REQUIREMENTS. DESIGNATION BOXES ARE LOCATED WITHIN ROOM OR BELOW ROOM NUMBER. ALL INDOOR AREAS NOT INDICATED OTHERWISE ARE AREA TYPE 1 AND MINIMUM NEMA TYPE 1 ENCLOSURES.

BE RATED FOR USE IN THIS AREA.

NEMA3RNEMA4XNEMA4NEMA7ANEMA7B

NEMA 12

GENERAL REQUIREMENTS

- 1. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ROUTING ALL CONDUITS NOT SHOWN ON THE PLANS. THIS SHALL INCLUDE ALL CONDUITS SHOWN ON THE ONE-LINES AND HOME-RUNS SHOWN ON THE PLAN DRAWINGS. CONDUITS SHALL BE ROUTED AS DEFINED IN THE SPECIFICATION. CONDUITS SHALL BE PROVIDED BETWEEN THE CABLE TRAYS AND THE EQUIPMENT.
- 2. SPARE WIRES SHALL BE TAPED AND COILED AND LABELED TO INDICATE WHERE OTHER END OF SPARE WIRE IS LOCATED.

AND CONDUITS SYSTEMS SHALL BE RATED FOR USE IN THIS AREA.

EQUIPMENT AND GASKETED FITTINGS IN CONDUIT SYSTEMS.

- 3. IF EQUIPMENT SUPPLIED BY MANUFACTURER HAS A LARGER LOAD THAN VALUE SHOWN, THE SUBCONTRACTOR SHALL ENLARGE THE CABLE CONDUIT AND ELECTRICAL EQUIPMENT, AS REQUIRED, TO ACCOMMODATE THE HIGHER VALUE.
- 4. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING PROPERLY SIZED STARTER OVERLOADS FOR EQUIPMENT FURNISHED.
- 5. LIGHTING AND RECEPTACLE CIRCUITS DESIGNATED ON THE FLOOR PLANS ARE NOT SHOWN ON THE ONE-LINES. CONDUCTORS FOR LIGHTING, RECEPTACLES, AND MISCELLANEOUS 120VAC CIRCUITS SHALL BE MINIMUM NO. 12AWG. CONDUIT FOR LIGHTING, RECEPTACLES, AND MISCELLANEOUS 120VAC CIRCUITS SHALL BE MINIMUM 3/4".
- 6. IN AREAS WHERE THERE ARE OVERHEAD BRIDGE CRANES, HOISTS, ETC. NO CONDUITS SHALL BE RUN OVERHEAD THAT WILL INTERFERE WITH THE OPERATION OF THE EQUIPMENT.
- 7. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH OTHER SUBCONTRACTORS AND WITH THE EQUIPMENT FOR THE FINAL DUCKBANK CONDUIT STUBUP LOCATIONS.

ELECTR	ICAL ABBREVIATIONS		
A		<u>I</u>	
Δ	AMBER AMPERE ALARM	<u> </u>	ΤΝΡΙΙΤ / ΟΙΙΤΡΙΙΤ
AC	ALTERNATING CURRENT	I I	INSTANTANEOUS
ACB	AIR CIRCUIT BREAKER	IJB	INTERCOM JUNCTION BOX
ACR AF	ACCESS CARD READER AMPERE FRAME	J	
AFD	ADJUSTABLE FREQUENCY DRIVE	<u> </u>	
AFRD	ARC-FLASH REDUCTION DEVICE	J,JB	JUNCTION BOX
AM	ANNUNCIATOR	K	
AR	ALARM RELAY		
AS	AMMETER SWITCH, AMPERE SENSOR	KAIC	THOUSAND AMPERES INTERRUPTING CURRENT
ATS	AUTOMATIC TRANSFER SWITCH	KCMIL	THOUSAND CIRCULAR MIL
AUX	AUXILIARY	KO	KEY OPERATED
AWG	AMERICAN WIRE GAUGE	KVA	KILOVOLT AMPERE
В		KVAR	KILOVAR
<u>—</u> В	BUS	KW KWH	KILOWATI KILOWATT HOUR
BC	BATTERY CHARGER	1	
BKR	BREAKER	<u>L</u>	
BT	BEARING TEMPERATURE	L	LOW, LEVEL, LONG-TIME
C		LA	LIGHTNING ARRESTER
<u>C</u>		LC	LIGHTING CONTACTOR
С	CLOSE, COUNTER, CONTACTOR, CONTROL,	LCP	LOCAL CONTROL PANEL
CAP	CCTV CAMERA	LCS	LOCAL CONTROL STATION
CB	CIRCUIT BREAKER	LOR	LOCAL - OFF - REMOTE
<i>CB</i> " <i>A</i> "	CIRCUIT BREAKER AUXILIARY CONTACT	LOS	LOCK OUT STOP
CB"B"	(OPEN WHEN BREAKER IS OPEN) CIRCUIT BREAKER AUXILIARY CONTACT	LF LS	LIGHTING PANEL LIMIT OR LEVEL SWITCH
	(CLOSED WHEN BREAKER IS OPEN)	LTG	LIGHTING
CD CHH	CONTROL DAMPER	L VHH I VMH	LOW VOLTAGE HANDHOLE
CI	CELL INTERLOCK	LWCO	LOW WATER CUTOFF
CKT	CIRCUIT		
CL2 CMH	CHLORINE CONTROL MANHOLE	М	
COS	CABLE OPERATED SWITCH		MACNETIC MOTOR STARTER
CP	CONTROL PANEL	M MA	MAGNETIC MOTOR STARTER MILLIAMPERE
CPT	CUNTROL POWER TRANSFORMER CURRENT OF CONTROL RELAY, CARD READER	МСВ	MAIN CIRCUIT BREAKER
CS	CONTROL STATION	MCC MCL II	MOTOR CONTROL CENTER MOTOB CONTROL LINEUP
CT CTC	CYCLE TIMER OR CURRENT TRANSFORMER	MD	MOISTURE DETECTOR, MOTION DETECTOR
СТМ	CYCLE TIMER MONITOR	MDL	MAGNETIC DOOR LOCK
2/C 4"C	2 CONDUCTOR	МЕЛ	MANUFACTOREN MANHOLE, MOUNTING HEIGHT
40	4 CONDO17	MOV	MOTOR OPERATED VALVE
<u>D</u>		MPR MS	MOTOR PROTECTION RELAY MANUAL MOTOR STARTER
DC	DIRECT CURRENT, DOOR CONTACT	MSH	MOISTURE SWITCH HIGH
DI	DOOR INTERLOCK	MTS	MANUAL TRANSFER SWITCH
DM	DAMPER MOTOR, DEMAND METER, DIMMER SWITCH	MVA	MILLIVOLT, MEDIUM VOLTAGE MEGAVOLT AMPERE
DPDT	DOUBLE POLE DOUBLE THROW	MVHH	MEDIUM VOLTAGE HANDHOLE
DPST DPB	DOUBLE POLE SINGLE THROW	Ν/	
DPS	DIFFERENTIAL PRESSURE SWITCH	<u>/v</u>	
DS	DISCONNECT SWITCH, DOOR SWITCH,	N	NEUTRAL
DVLS	DISCHARGE VALVE LIMIT SWITCH	NGR NGT	NEUTRAL GROUNDING RESISTOR NEUTRAL GROUNDING TRANSFORMER
F		NC	NORMALLY CLOSED
<u>L</u>		NO	NORMALLY OPEN, NUMBER
E	ELECTRIC OPERATOR FOR CONTROL DAMPER	0	
FC	OR VALVE EMPTY CONDUIT	_	0054
EDS	ELECTRICAL DOOR STRIKE	0 OL	OPEN OVERLOAD
EG	ENGINE GENERATOR	OOA	ON-OFF-AUTO
EUC	ELEVATION, EMERGENCY LIGHT	OOR O/U	ON - OFF - REMOTE
EMH	ELECTRICAL MANHOLE	-	,
ER ES	ELECTRODE RELAY END SWITCH. REQUEST TO EXIT SENSOR	<u>P</u>	
E-STOP	EMERGENCY STOP	Р	PRIMARY, POWER, POLE
ETM FX	ELAPSED TIME METER EXISTING	PCS	PLANT CONTROL SYSTEM
EXP	EXPLOSION PROOF	PF	POWER FACTOR
		PFCC	POWER FACTOR CORRECTION CAPACITOR
		PH PL	PHASE PTLOT LIGHT
<u>F</u>		PLC	PROGRAMMABLE LOGIC CONTROLLER
F	FORWARD, FIFID	PP PR	POWER PANEL
FO	FIBER OPTIC	PRS	PROXIMITY SWITCH
FPR	FEEDER PROTECTION RELAY	PS	PRESSURE SWITCH
10		PT	POIENIIAL IRANSFORMER, PROGRAM IIMER
<u>G</u>		\underline{Q}	
G	GREEN. GROUND. GENERATOR.		NOT USED
	GROUND FAULT	-	
GAC GD	GRANULAR ACTIVE CARBON GROUND DETECTOR	<u> </u>	
GEN	GENERATOR	R	RED, RAISE, RELAY, REVERSE
GFI	GROUND FAULT INTERRUPTOR	RECP	RECEPTACLE
GPR	GENERATOR PROTECTION RELAY	RH	REMOTE HANDSET
GND	GROUND	RT	REPEATING TIMER
#8G	#8 GROUND WIRE	K I D RTII	RESISIANCE LEMPERATURE DETECTOR REMOTE TERMINAL LINIT
Н		RVSS	REDUCED VOLTAGE SOLID STATE STARTER
<u> </u>	HIGH HIMTOTSTAT	ROSS	RO SYSTEM SUPPLIER
n HH	HANDHOLE		
НМТ	HIGH MOTOR TEMPERATURE		
HOA HOP	HAND - OFF - AUTO HAND - OFF - REMOTE		
HP	HORSEPOWER		
HS	HAND STATION		
HWCO HZ	HERTZ (CYCLE)		

					SL MAS MJI	IY CHK AP
<u>S</u>					ر ب	NO. E
S SA SCADA	SHORT-TIME, SHIELDED, STARTER SURGE ARRESTER, SPEAKER AMPLIFIER SUPERVISORY CONTROL AND					
SA SCADA SF6 SH SN SO SPD SPDT SPST SSS SSM SSS SST SUPV SV SWB, SWBD SWG, SWGR T T TACH TB TC TD TEMP TM TQ TR TSH TTB U	SURGE ARRESTER, SPEAKER AMPLIFIER SUPERVISORY CONTROL AND DATA ACQUISITION SULFUR HEXAFLOURIDE SPACE HEATER SOLID NEUTRAL SOLENOID OILER SINGLE POLE SURGE PROTECTION DEVICE SINGLE POLE SINGLE THROW SINGLE POLE SINGLE THROW SELECTOR SWITCH, START/STOP SOLID-STATE METERING SOLID STATE STARTER SOLID STATE TRIP SUPERVISORY CONTROL SOLENOID VALVE SWITCHBOARD SWITCHGEAR THERMOSTAT, TIMER, TOTALIZER, TRANSFORMER TACHOMETER TERMINAL BLOCK TIMER CLUTCH TIME DELAY RELAY TEMPERATURE TIMER MOTOR TORQUE TIMER RELAY, TRIAD TEMPERATURE SWITCH HIGH TELEPHONE TERMINAL BOARD	I REDISTER	ROFES J. K	SILLE CONTRACTOR	5/19/2020 ISSUED FOR CONSTRUCTION	DATE REVISIONS AND RECORD OF USE
UG UPS UTS V	UNDERGROUND UNINTERRUPTIBLE POWER SUPPLY UP TO SPEED	Н				EATCH
V VA VAR VFD VI VLS VM VPI VS	VOLTS, VOLTAGE RESTRAINED VOLT AMPERE VARMETER VARIABLE FREQUENCY DRIVE VACUUM INTERRUPTER VALVE LIMIT SWITCH VOLTMETER VALVE POSITION INDICATOR VOLTMETER SWITCH	LACK & VEAT	T VFNTUR			ELACK & V
<u>W</u> w wH WM	WHITE, WATTS WATTHOUR METER WATT METER	∎ ₽				LANC
WP WPI WS	WEATHERPROOF WEATHERPROOF IN-USE WALL STATION				i	L
X X XFMR XP	AUXILIARY RELAY TRANSFORMER EXPLOSION PROOF	3			c	0
Y Y	YELLOW	7	WR			
Ζ		B			-	
Z ZS ZSS	AUXILIARY RELAY, IMPEDANCE POSITION SWITCH ZERO SPEED SWITCH	RO WRF			AL	ENERA
1-1PR#16S 3-7/C#14	ONE, SINGLE PAIR, TWISTED SHIELDED #16 CABLE THREE, SINGLE, SEVEN CONDUCTOR #14	MOF	FAC.	ENERAL		AND G
1-1TR#16S	ONE, TRIAD, TWISTED SHIELDED #16 CABLE	CITY OF MORRO	RECLAMATION			ABBREVIAIIUN
		DESIGNED: DETAILED: CHECKED: APPROVED:	JSL SBC MAS MJK			
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MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE PROJECT NO. 400530

00-E-002

SHEET 352 OF 412

CITY OF MORPO BAY MORPO BAY WF MORPO BAY WF MORPO BAY WF MORPO BAY WF MORPO BAY WF JOINT VENTURE Image: Construction of the decision of use RECLAMATION FACILITY (WF) JOINT VENTURE Image: Construction of the decision of use RECLAMATION DETAILS FILANC Image: Construction of the decision of use
CITY OF MORDO BAY MORDO BAY WRF MORDO BAY WRF JOINT VENTURE MORDO BAY WRF MORDO BAY WRF JOINT VENTURE RECLAMATION FACILITY (WRF) JOINT VENTURE MORDO BAY JOINT VENTURE SENERAL ELECTRICAL INSTALLATION DETAILS MORDO BAY JOINT VENTURE
CITY OF MORDO BAY WIF MORRO BAY WIF RECLAMATION FACILITY (WIF) JOINT VENTURE GENERAL ELECTRICAL INSTALLATION DETAILS FILANC JOINT VENTURE
CITY OF MORRO BAY BAY MORRO BAY WRF MORRO BAN WRF MORRO BIACK&VEATCH INSTALLATION DETAILS MILANC FILANC BLANC
CITY OF MORRO BAY MORRO BAY WRF MORRO BAY WRF GENERAL
CITY OF MORRO BAY MORRO BAY WRF RECLAMATION FACILITY (WRF) GENERAL
CITY OF MORRO BAY MORRO BAY WRF MORRO BAY WRF BAY WRF MORRO BAY WRF MORRO BAY WRF BAY WRF MORRO BAY WRF BAY WRF BAY WRF MORRO BAY WRF BAY WRF MORRO BAY WRF

<u>NOTES:</u> 1. SEE DRAWINGS 00-E-001 AND 00-E-002 FO ELECTRICAL LEGEND, ABBREVIATIONS AND

				MUK MUK	CHK APF
AL DRAWINGS NSTALLTION REQUIREMENTS	NOTE			0 ASL	VO. BY
STEEL	1. SEE DRAWINGS 00-E-001 AND 00-E-002 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.				-
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RED STEEL				TRUCTIO	' SNOIS
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= 12"x18" GRAVEL DRAIN	6"				
<u>SECTION</u>	ΤΛΤΙ	DESIGNED: J DETAILED: S CHECKED: M	BC IAS		
PULL DUX DE	TAIL	APPROVED: M DATE: 5	IJK 19 2020		
		0 IF THIS	1/2 BAR DOE	1 S NOT	7.0
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FD9000A D400530 PLOTTE

LEGENDS:

\Leftrightarrow at value

- \oplus at plc/rio panel
- REMOTE FROM STARTER AND DRIVEN EQUIPMENT
- AT CONTROL STATION
- ① 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. REFER TO PANEL SCHEDULES FOR CIRCUIT NUMBER.
- 4. THESE ARE TYPICAL SCHEMATICS FOR ACTUATED/OPEN/CLOSE VALVES. REFER TO P&IDs AND ELECTRICAL DRAWINGS FOR VALVE TAGS.

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FD9000A D400530 D1 OTTEF

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FD9000A D400530 PLOTTED

V	FOOT CANDLE	FIXTURE TYPE			LIGHTING FIXTURE SCHE
	30	F1, F1E, F3, F3E, EXIT	FIXTURE	LAMP	DESCRIPTION
	35 35	F1, F1E, F3, F3E F1, F1E, F3, F3E, EXIT F1, F1E, F3, F3E, EXIT	F1	LED 53 WATT	53 WATTS SUSPENDED MOUNTED LED FIXTURE
	30	F2, F2E, F3, F3E, EXIT NOTE 2		LED	53 WATTS SUSPENDED MOUNTED LED FIXTURE
	50	, , , , , , , , , , , , , , , , , , ,		5955 LUMENS 4000K	EMERGENCY BATTERY
	70 75		F2	53 WATT 5955 LUMENS 4000K	53 WATTS SUSPENDED MOUNTED VAPOR TIGHT
S	15 75		F2E	LED 53 WATT	53 WATTS SUSPENDED MOUNTED VAPOR TIGHT WITH EMERGENCY BATTERY
	35		F3	LED 25 WATT	25 WATT LED FIXTURE 3201 LUMENS 4000K
V	FOOT CANDLE	FIXTURE TYPE		3201 LUMENS 4000K LED	MOUNTED
	5	F3, F3E F1, F1E	F3E	25 WATT 3201 LUMENS 4000K	MOUNTED WITH EMERGENCY BATTERY
	30 5	F1, F1E F1, F1E	P1	52 WATT 5862 LUMENS 4000K	52 WATTS, POLE MOUNTED LED FIXTURE, OUT PHOTO CELL CONTROLLED
NS	5	P1, P2, P3	P2	LED 52 WATT	52 WATTS, STANCHION MOUNTED LED FIXTURE
EA	5 5		-	5862 LUMENS 4000K LED	140 WATT LED ELOOD LIGHT BOLE MOUNTED
	5	P1, P2, P3	P3	140 WATT 19677 LUMENS 4000K	USE, PHOTO CELL CONTROLLED
ER PUMPS	5	-	EXIT	LED LAMPS FURNISHED	INDUSTRIAL EMERGENCY EXIT SIGN, NI-CAD
REA TORAGE TANK	5 5				
UMPS STATION	5	P1, P2, P3			
MPS N SYSTEM	5 5		-		
KS & SAFE SETTLE TANK AREA	5 5	P1, P2, P3			
	5	P1 P2 P3	-		VACTO
	5	P1, P2, P3	-		STATI
	5		-		
	1				EMERGENCY GENERATOR -
	5 0.5			/ /	'
	5		-	///////////////////////////////////////	ELECTRICAL
	5		-	/	INCOMING UT:
	<u>1</u> 5		-	j	SLUDGE
	1]		HOLDING TANKS
				j	
					S.A.F.E. SETTLE TANK
					DEWATERING AREA
				NORTH STORMWATER DETENTION BASIN	ST EFFE
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				DRAINAGE	FILTER
_				CATCH BASIN	
	CALCITE	BORS AREA)		EE EE
		EE EE	7		
	D	PRODUCT	E	PARKING	
l E		WATER STORAGE		MAINTENANC	
WASH RA	ACK	TANK EE	(A1)	BUILDING	
VEHIC					
A2 EQUIPM STORA	AGE A) (B1)			A7	
	4)				Plt
					TCE
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P/L IPR AND C	DUTFALL	A5	Ţ		
		I BALANCTNG	0		
PARKING CANOPY	CE TANK -	L DALANUING		PIL	TCE
(NOTE 4)			CHI	EMICAL FACILITY	STORMWATER CONTROL PUMP STATION
		Ton		100	
		'UE			

ELECTRICAL LIGHTING PLAN

1"=60

CONDUIT #	CONDUIT SIZE	CIRCUIT(S)	ORIGIN	DESTINATION	THROUGH SECTION CUTS
1	3	80ELECGEN0001-1	ELECTRICAL BUILDING	EMERGENCY GENERATOR	25,1
2	3	80ELECGEN0001 - 1	ELECTRICAL BUILDING	EMERGENCY GENERATOR	25,1
3	3	80ELECGEN0001 - 1	ELECTRICAL BUILDING	EMERGENCY GENERATOR	25,1
4	3	80ELECSWB0001-5	ELECTRICAL BUILDING	INCOMING UTILITY TRANSFORMER PAD	23
5	3	80ELECSWB0001-5	ELECTRICAL BUILDING	INCOMING UTILITY TRANSFORMER PAD	23
6	3	80ELECSWB0001-5	ELECTRICAL BUILDING	INCOMING UTILITY TRANSFORMER PAD	23
7	3	80ELECSWB0001-5	ELECTRICAL BUILDING	INCOMING UTILITY TRANSFORMER PAD	23
8	3	80ELECSWB0001-5	ELECTRICAL BUILDING	INCOMING UTILITY TRANSFORMER PAD	23
9	3	80ELECSWB0001-5	ELECTRICAL BUILDING	INCOMING UTILITY TRANSFORMER PAD	23
10	3	80ELECSWB0001-5	ELECTRICAL BUILDING	INCOMING UTILITY TRANSFORMER PAD	23
11	3	80ELECSWB0001-5	ELECTRICAL BUILDING	INCOMING UTILITY TRANSFORMER PAD	23
12	2	80ELECMCC0001-10	ELECTRICAL BUILDING	RESIDUAL AREA (DEWATERING AREA)	25,2,3,4,8
13	3	80ELECMCC0002-11A,11B,11C,11D 80ELECMCC0002-12A,12B,12C,12D	ELECTRICAL BUILDING	TREATMENT AREA (BNR,MBR & RO FEED TANKS)	7
14	3	80ELECPP0002-13, 14, 15, 16	ELECTRICAL BUILDING	RESIDUAL AREA (SAFE FILTER AREA)	25,2,3,4,5,30
15	2	80ELECMCC0001-8	ELECTRICAL BUILDING	RESIDUAL AREA (SLUDGE HOLDING TANKS AND SAFE SETTLE TANK)	25,2,3,26
16	2	80CTRLLCP0001-27	ELECTRICAL BUILDING	OPERATIONS BUILDING	25,2,3,4,5,6,9,10,13,24,16, 41
17	3	80ELECMCC0001-8A,8B,8C, 9A,9B,9C	ELECTRICAL BUILDING	RESIDUAL AREA (SLUDGE HOLDING TANKS AND SAFE SETTLE TANK)	25,2,3,26
18	2	21CTRLRI00001-25	RESIDUAL AREA (DEWATERING AREA)	HEADWORKS AREA	8,4,3,2,25,7
19	2	31CTRLCP0001-90	TREATMENT AREA (BNR,MBR & RO FEED TANKS)	CHEMICAL FACILITY	34,12,11,9,6,5,8
20	3	80ELECSWB0001-3	ELECTRICAL BUILDING	RO/UV BUILDING	33,11,9,6,5,4,3,2,25
21	3	80ELECSWB0001-3	ELECTRICAL BUILDING	RO/UV BUILDING	33,11,9,6,5,4,3,2,25
22	3	80ELECSWB0001-3	ELECTRICAL BUILDING	RO/UV BUILDING	33,11,9,6,5,4,3,2,25
23	3	80ELECSWB0001-3	ELECTRICAL BUILDING	RO/UV BUILDING	33,11,9,6,5,4,3,2,25
24	3	80ELECSWB0001-3	ELECTRICAL BUILDING	RO/UV BUILDING	33,11,9,6,5,4,3,2,25
25	2	80ELECMCC0001-17	ELECTRICAL BUILDING	RESIDUAL AREA (SLUDGE HOLDING TANKS AND SAFE SETTLE TANK)	25,2,3,26
26	2	80ELECMCC0002-10	ELECTRICAL BUILDING	TREATMENT AREA (BNR,MBR & RO FEED TANKS)	7
27	2	80ELECMCC0001-15	ELECTRICAL BUILDING	RESIDUAL AREA (SAFE FILTER AREA)	25,2,3,4,5,30
28	3	80ELECMCC0002-13A,13B,13C,13D 80ELECMCC0002-14A,14B,14C,14D	ELECTRICAL BUILDING	TREATMENT AREA (BNR,MBR & RO FEED TANKS)	7
29	2	80ELECMCC0001-22	ELECTRICAL BUILDING	RESIDUAL AREA (DEWATERING AREA)	25,2,3,4,8
30	2	51CTRLLCP0001-51	RO/UV BUILDING	MAINTENANCE BUILDING	33,11,9,18
31	2	51CTRLLCP0001-49	RO/UV BUILDING	ELECTRICAL BUILDING	33,11,9,6,5,4,3,2,25
32	3	80ELECMCC0001-13, 19,20,21	ELECTRICAL BUILDING	RESIDUAL AREA	25,2,3,4,8
33	3	80ELECMCC0001-1 2.3		HEADWORKS AREA	7
	0	80ELECMCC0002-1.			, ,
34	3	80ELECMCC0002-2, 80ELECMCC0002-3	ELECTRICAL BUILDING	(BNR,MBR & RO FEED TANKS)	7
35	3	80ELECMCC0002-4, 80ELECMCC0002-5	ELECTRICAL BUILDING	TREATMENT AREA (BNR,MBR & RO FEED TANKS)	7
36	2	80ELECMCC0002-11	ELECTRICAL BUILDING	TREATMENT AREA (BNR,MBR & RO FEED TANKS)	7
37	2	80ELECMCC0002-12	ELECTRICAL BUILDING	TREATMENT AREA (BNR,MBR & RO FEED TANKS)	7
38	2	80ELECMCC0002-13	ELECTRICAL BUILDING	TREATMENT AREA (BNR,MBR & RO FEED TANKS)	7
39	2	80ELECMCC0002-14,	ELECTRICAL BUILDING	TREATMENT AREA (BNR,MBR & RO FEED TANKS)	7
40	2	80ELECMCC0002-7,	ELECTRICAL BUILDING	TREATMENT AREA (BNR,MBR & RO FEED TANKS)	7
41	2	80ELECPP0001-4,6,7	ELECTRICAL BUILDING	HEADWORKS AREA	7
42	3	80ELECPP0002- 1, 3, 5, 7	ELECTRICAL BUILDING	HEADWORKS AREA	7
43	3	80ELECMCC0001-4, 5,6	ELECTRICAL BUILDING	HEADWORKS AREA	7
44	3	80ELECPP0003-1, 2, 3, 5,	ELECTRICAL BUILDING	TREATMENT AREA (BNR,MBR & RO FEED TANKS)	7
45	3	80ELECPP0003-4, 11, 19, 21	ELECTRICAL BUILDING	TREATMENT AREA (BNR,MBR & RO FEED TANKS)	7
46	3	80ELECPP0004- 1, 3, 5, 9	ELECTRICAL BUILDING	TREATMENT AREA (BNR,MBR & RO FEED TANKS)	7
47	3	80ELECPP0004- 11, 13, 15	ELECTRICAL BUILDING	TREATMENT AREA (BNR,MBR & RO FEED TANKS)	7
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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-602 FOR DUCT BANK SCHEDULE.
- 4. SEE DRAWING 10-E-603 FOR DUCT BANK SECTIONS.