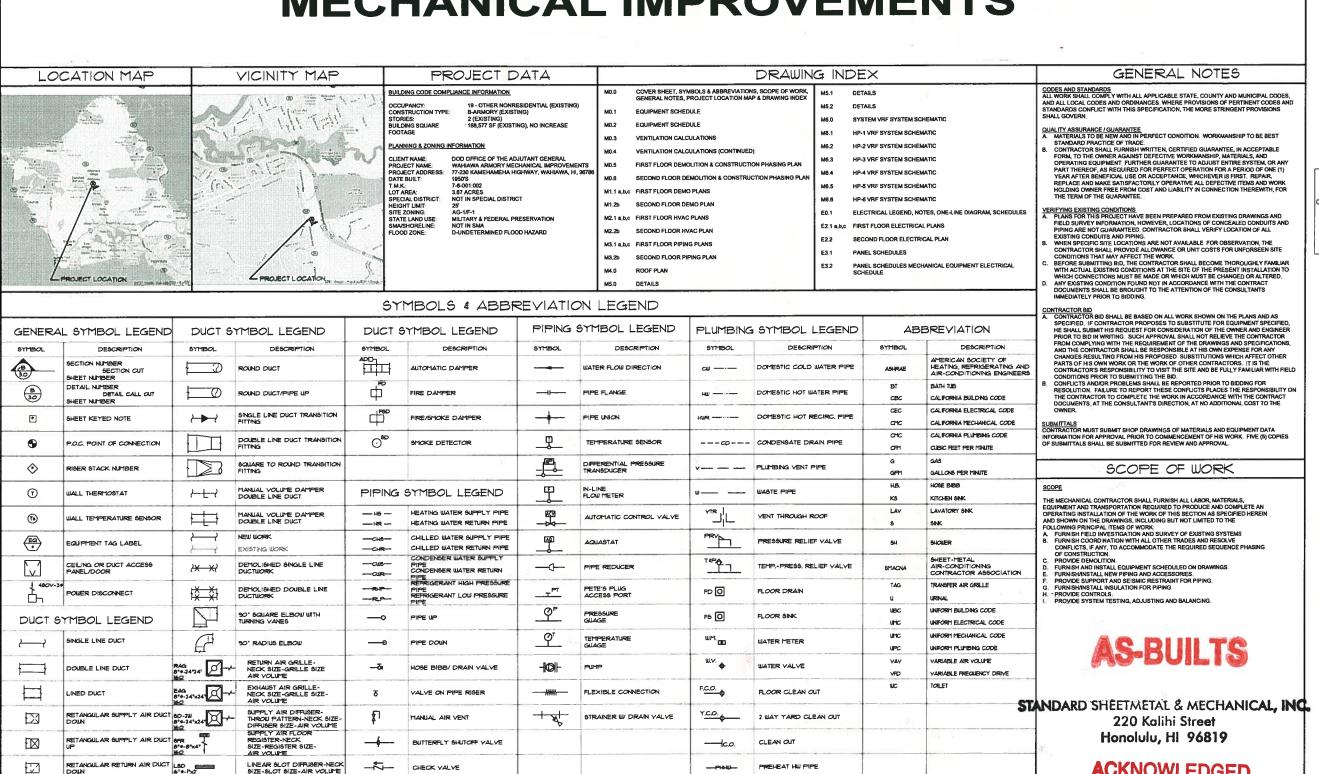
WAHIAWA ARMORY 77-230 KAMEHAMEHA HIGHWAY, HI, 96786 **MECHANICAL IMPROVEMENTS**



PREHEAT HW PIPE

SOLAR COLLECTOR SUPPLY

SOLAR COLLECTOR RETURN

4

CHECK VALVE

GATE VALVE

RETANGULAR RETURN AIR DUCT

SHILL WARREN

FLEXIBLE DUCT

FLEX DUCT CONNECTOR



Building solutions. Engineering for life. 707 Richards Street, Suite 635 Honokulu, HI 96813



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY SUPERVISION (SUPERVISION OF SURVEYORS OF THE STATE OF HAWAII.)

04/30/14

SIGNATURE EXPIRATION DATE OF THE LICENSE

WAHIAWA ARMORY **MECHANICAL IMPROVEMENTS**

77-230 KAMEHAMEHA HIGHWAY WAHIAWA, HI, 96786 T.M.K.: 7-6-001:002

DEPARTMENT OF **DEFENSE** OFFICE OF THE ADJUTANT GENERAL

3949 DIAMOND HEAD RD.

ISSL	ΙE		
	1009	6 CD	07-27-201
	50%	CD	06-15-201
Mark	Desc	ription	Date
DAT	E	11-14-2011	
PRO	JECT NO.	10-2597.01	
CAD	DWG FILE		
DRA	WN BY	AC	
CHE	CKED BY	JH/EM	
			MC 2610
	8 COPYRIGHT ALL	WAN BUILLY & DEPOS, I	TWO. MO 14

COVER SHEET GENERAL NOTES. INDEX

SCALE: NOTED ON DRAWINGS

M0.0

ROLAND SUZUKI

ACKNOWLEDGED

4/9/4

					VRE SY	STEN	1 FAN C	:OII	UN	IIT S	CHI	EDL	JLE							
TAG LABEL	DESCRIPTION	QTY.	MANUFACTURER	AREAS SERVED	COOL.	ING.	HEATH	NG		FAN	CFM	,	POWER	MP6	WEIGHT (IDs)	DIMENSIONS	SIZE HIGH LOW	CONN	REMARKS	
/FC\	INDOOR FAN COIL UNIT	15	4 MODEL NUMBER MITSUBISHI PLET-POSNOMU-E	126/127, 134, 151, 163, 162(4) 212(4), 216(2), 208(2)	8.0	OOS 022	MBH 9.0	0.05		0.015	350	-	208-60HZ-16	- 15	45	8-3/16(H) x22-1/16(W) x22-1/16(D)	1/4" //2"	1-1/4" (OD)	W/DELUXE MA REMOTE CONTROLLER PAR- FL32MA (WALL MOUNTED THERMOSTAT)	
8A/	(4-WAY CEILING RECESSED)	14	MITSUBISHI PLEY-PIZNOMU-E	122, 125, 130, 128, 129(2), 146, 152, 204, 222(4), 217	12.0	0.06 028	13.5	0.06	28	0.020	390	0.35	208-60HZ-14	- 15	45	8-3/16(H) x22-7/16(W) x22-7/16(D)	1/4" //2"	1-1/4" (OD)	W/DELUXE MA REMOTE CONTROLLER PAR- FL32MA (WALL MOUNTED THERMOSTAT)	WITH MULTI-PUNCTIONAL CASEMENT, FILTER AND SHUTTER PLATES FOR 4-WAY TO 2-WAY CONVERSION.
FC FC	(4-WAY CEILING RECESSED) INDOOR FAN COIL UNIT (4-WAY CEILING RECESSED)	1	MITSUBISHI PLEY-PIBNOMU-E	109, 105(2), 118, 218, 147(2)	15.0	0.06 028	11.0	0.06	28 1	0.020	390	0.35	208-60HZ-16	- 15	45	8-3/16(H) x22-7/16(W) x22-7/16(D)	1/4" //2"	1-1/4" (OD)	W/DELUXE MA REMOTE CONTROLLER PAR- FL32MA (WALL MOUNTED THERMOSTAT)	
(FC)	INDOOR FAN COIL UNIT (4-WAY CEILING RECESSED)	-	MITSUBISHI PLFY-PIZNBMU-E	-	12.0	0.03 02	13.5	0.02	0,14	0.050	494	028	208-60HZ-19	-		IO-3/I6(H) x33-3/32(W) x33-3/32(D)	1/4"	1-1/4° (OD)	W/DELUXE MA REMOTE CONTROLLER PAR- FL32MA (WALL MOUNTED THERMOSTAT)	
12B/ FC 15B/	INDOOR FAN COIL UNIT (4-WAY CEILING RECESSED)	1	MITSUBISHI PLFY-PISNBMU-E	202, 220(4), 221(2)	15.0	0.04 029	О.П.	0.03	0.22	0.050	565	036	208-60HZ-1#	- 15	60	10-3/8(H) x37-7/16(W) x37-7/16(D)	1/4" //2"	1-1/4" (OD)	W/DELUXE MA REMOTE CONTROLLER PAR- FL32MA (WALL MOUNTED THERMOSTAT)	_
FC VSB	INDOOR FAN COIL UNIT	3	MITSUBISHI PLFY-PIANBMU-E	203(2), 119	18.0	0.05 03	20.0	0.04	29	0.050	636	0.45	208-60HZ-14	- 15	70	10-3/16(H) x37-7/16(W) x37-7/16(D)	1/4" //2"	ו-1/4" (סבס)	W/DELUXE MA REMOTE CONTROLLER PAR- FL32MA (WALL MOUNTED THERMOSTAT)	WITH MULTI-FUNCTIONAL CASEMENT, FILTER
FC Q4B	INDOOR FAN COIL UNIT (4-WAY CEILING RECESSED)	1	MIT9UBISHI PLFY-P24NBMU-E	103	24.0	0.06 0.4	27.0	0.05	36	0.050	106	0.54	208-60HZ-16	15	10	10-3/16(H) x37-7/16(W) x37-7/16(D)	3/8* 5/8	1-1/4" (O.D.)	W/DELUXE MA REMOTE CONTROLLER PAR- FL32MA (WALL MOUNTED THERMOSTAT)	AND SHUTTER PLATES FOR 4-WAY TO 2-WAY CONVERSION.
FC \$OB	INDOOR FAN COIL UNIT (4-WAY CEILING RECESSED)		MITSUBISHI PLFY-P30NBMU-E		30.0	0.01 05	34.0	0.06	0.43	0.050	דוד	0.64	208-60HZ-16	15	70	10-3/16(H) x3T-7/16(W) x3T-7/16(D)	3/8"	1-1/4" (CD)	(WALL MOUNTED THERMOSTAT)	
FC 36B	INDOOR FAN COIL UNIT (4-WAY CEILING RECESSED)	4	MITSUBISHI PLFY-P36NBMU-E	219(4)	36.0	0.16 1.0	40.0	0.15	00 1	0.120	1059	1.34	208-60HZ-19	- 15	70	11-3/4(H) x37-7/16(U) x37-7/16(D)	5/8	1-1/4" (OD)	(WALL MOUNTED THERMOSTAT)	FLANGE FOR VENTILATION AIR INTAKE
FC	INDOOR FAN COIL UNIT (I-WAY CEILING RECESSED)	22	MITSUBISHI PMFY-POGNBMU-E	161, 160, 149, 145, 144, 153, 165, 209, 210, 211, 213, 214, 106, 107, 142(2), 201(2), 120, 121, 131, 132	6.0	0.04 02	6.10	0.04	020	0.028	301	025	208-60HZ-1	15	35	9-1/16(H) x31-31/32(W) x15-9/16(D)	1/4"	1-1/32 (OD.	(WALL MOUNTED THERMOSTAT)	_
FC 8C	INDOOR FAN COIL UNIT (1-WAY CEILING RECESSED)	1	MITSUBISHI PMFY-POSNBMU-E	215	8.0	0.04 02	9.0	0.04	20 1	0.028	328	025	208-60HZ-1	15	40	9-1/16(H) x31-31/32(W) x15-9/16(D)	1/4"	(OD)	(WALL MOUNTED THERMOSTAT)	
FC 12C	INDOOR FAN COIL UNIT (1-WAY CEILING RECESSED)	-	MITSUBISHI PMFY-PIZNBMU-E	-	12.0	0.04 02	135	0.04	0.21	0.028	328	026	208-60HZ-1	15	40	9-1/16(H) x31-31/32(W) x15-9/16(D)	1/4"	1-1/32' (OD.)	(WALL MOUNTED THERMOSTAT)	_
FC V5C	INDOOR FAN COIL UNIT (1-WAY CEILING RECESSED)	1.	MITSUBISHI PMFY-PISNBMU-E	-	15.0	0.05 02	6 17.0	0.05	0.26	0.028	378	0.33	208-60HZ-1	15	40	9-1/16(H) x31-31/32(W) x15-9/16(D)	1/4"	1-1/32' (OD.	(WALL MOUNTED THERMOSTAT)	
FC	INDOOR FAN COIL UNIT (CEILING CONCEALED)	-	MITSUBISHI PEFY-POGNMAU-E	-	6.0	0.06 03	6 6,7	0.04	0.45	0.085	300	1.05	208-60HZ-1	15	55	9-1/8(H) x21-9/16(W) x28-1/8(D)	1/4"	1-1/4" (OD.	W/SIMPLE MA CONTROLLER PAC-YTSICRB	

ESTIMATED REFRIGERANT CHARGE WEIGHT BASED ON PIPING LAYOUT ON DRAWINGS. CONTRACTOR TO VERIFY AND PROVIDE ACTUAL CHARGE WEIGHT IN FIELD

					VR	FS	YS	TE	MI	HE/	AT	PU	JMI	ΡU	NIT	S	CHI	EDl	JLE							
					co	OLING				HEA:	TING		CON	DENSER	FAN	co	1P'R	1	ELECTRICAL D	DATA	REFRIGER.		UNIT EKGHT	DIMENSIONS	SIZE	remarks
TAG LABEL	DESCRIPTION	LOCATION	MANUFACTURER 4 MODEL NUMBER	AREA SERVED	TOTAL NOMINAL	KW	AMP	SEER	NOM. MBH	KW	AMP I	ISPF (aty.	(EACH)	CFM	QTY.	KW EACH	MCA	POWER	MOCP	WGT.	T(LB6)			5/8"	INVERTED-DRIVEN SCROLL HERMETIC
(HP)	OUTDOOR HEAT PUMP UNIT	OUTDOOR	MITSUBISHI PUHY-PI92TSJMU-A-BS		192.0	15.63	48.2	- '	-	-	-	-	-		-		·	•	-	-	R4IOA	118		- 65(H)x36(W)	1-1/8"	COMPRESSOR, OUTDOOR HEAT PUMP UNIT
-	CONSIST OF (2) MODULES OF MITSUBISHI PUHY-P12 4 PUHY-P120	-	(-PT2TJMU-A-B9)	ZONE I	-	-	-	-	-	_	-			O.92 O.92	6,180	1/1	5.1 8.1		208-60HZ-3¢				629	к3O(D) 65(H)x69(Ш) к3O(D)		-
(HP)	OUTDOOR HEAT PUMP UNIT	OUTDOOR		ZONE 2	144.0	12.48	38.3	-	-	-	-	-	-	.92	12,010	ı	95	59	208-60HZ-3¢	90	R4IOA		629	65(H)x 69(W)x 30(D)		INVERTED-DRIVEN SCROLL HERMETIC COMPRESSOR, OUTDOOR HEAT PUMP UNIT
					-	-			-	-	-	-	1/			$\overline{/}$										
HP 3	OUTDOOR HEAT PUMP UNIT	OUTDOOR	MITSUBISHI PUHY-PIGSTSJMU-A-BS		168.0	13.62	42.0	-	-	-	-	-	-	-	-	-	·		-	-	R4IOA	95	-	-	1-1/8*	INVERTED-DRIVEN SCROLL HERMETIC COMPRESSOR, OUTDOOR HEAT PUMP UNIT
3/	CONSIST OF (2) MODULES MITSUBISHI		-P12TJMU-A-B5)	ZONE 3	-	-	-	-	-	-	-	-	1/1	0.92	1,050 1,050	1/	5.1	1 /	208-60HZ-36	+ /		4	4/	65(H)x36(W) x3O(D) 65(H)x48(W) x3O(D)	-	
HP	PUHY-P12 4 PUHY-P96 OUTDOOR HEAT PUMP UNIT	OUTDOOR			192.0	15.63	48.2	-	-	-	-	-	-	-	-	-	-		-	-	R410A	Te	-	-	5/8"	INVERTED-DRIVEN SCROLL HERMETIC COMPRESSOR, OUTDOOR HEAT PUMP UNIT
-	CONSIST OF (2) MODULES MITSUBISHI	-	(-P12TJMU-A-B6)	ZONE 4	-	-	-	-	-	-	-	-	1/1	O.92	6,180	1/	5.1	25	208-60HZ-31	30		4	629	65(H)x36(W. x3O(D) 65(H)x69(W. x3O(D)	-	
(HP)	OUTDOOR HEAT PUMP UNIT	OUTDOOR	MITCHEIGH		168.0	13.62	42.0	-	-	-	-	-	-	-	-	-	-	-	-	-	R4IOA	15	-	-	5/8"	NVERTED-DRIVEN SCROLL HERMETIC COMPRESSOR, OUTDOOR HEAT PUMP UNIT
- \5/	CONSIST OF (2) MODULES MITSUBISHI	-	(-P121JMU-A-B5)	ZONE 5	-	-		-	-	-	-	-	1/1	O.92	7,050 7,050	1/	5.1	1 /	208-60HZ-3	4 /			141/	65(H)x36(W x3O(D) 65(H)x48(W x3O(D)	-	-
(HP)	PUHY-P12 4 PUHY-P96 OUTDOOR HEAT PUMP UNIT	OUTDOOR	MITGUESIGUI	ZONE 6	144.0	12,48	38.3	-	-	-	-	-	1	0.92	12,010	ı	9.5	59	208-60HZ-3	90	R4IOA	58	629	65(H)x 69(U)x 30(D)	1/2"	INVERTED-DRIVEN SCROLL HERMETIC COMPRESSOR, OUTDOOR HEAT PUMP UNIT
0							1																			



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WAHIAWA ARMORY MECHANICAL **IMPROVEMENTS**

77-230 KAMEHAMEHA HIGHWAY WAHIAWA, HI, 96786 T.M.K.: 7-6-001:002

DEPARTMENT OF DEFENSE OFFICE OF THE ADJUTANT GENERAL

3949 DIAMOND HEAD RD. Honolulu, HI 96816

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	1009	CD	07-27-2012
	50%	CD	06-15-2012
Mark	Desc	ription	Data
DAT	E	11-14-2011	
PRO	JECT NO.	10-2597.01	
ÇAD	DWG FILE	2597.01_M0	1.dwg
DRA	WN BY	AC	
CHE	CKED BY	JH/EM	
	O COPYRIGHT ALL	WA BUICK & BERS,	NC. 2010
SHE	ET TITLE		
VR	F SYST	EM	

EQUIPMENT SCHEDULE

SCALE: NOTED ON DRAWINGS

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			Eľ	NERGY R	ECO'							CHE	DULE			
			MANUFACTURER	AREAS SERVED	DESIGN	CPM		TEMP/ENTH, RECOVERY EFF.	DUCT DIA		ELE	CTRICAL I	DATA	DIMENSIONS	WEIGHT	CO2 DEMAND CONTROL
TAG LABEL	DESCRIPTION	LOCATION	4 MODEL NUMBER		CPM	(3 SPEED.	E.B.P.	EFF.	(INCHES	CURRENT	FLA	MOCP	POWER	Di IENOIONO	(ibs)	VENTILATION
ERV	ENERGY RECOVERY VENTILATION FAN	RM 203	MITSUBISHI LGH-F600RX3-E	202, 203, 204	495	450 675 750	024	13%/51%	ю	UNDER 1.0 A	2.9	15	208V-60HZ-1#	15-11/16(H) ×48-7/16(W) ×45-13/16(D)	159	ERY FAN OPERATION INTERLOCKED WITH FC/702, 203 OR 204 TO START AT LOW SPEED FOR MINIMUM 05A FLOW, FAN SPEED TO STAGE UP AS REQUIRED TO MAINTAIN ROOM AIR CO2 AT BELOW 1000 PPM
ÉRV 2A	ENERGY RECOVERY VENTILATION FAN	RM 208	MITSUBISHI LGH-F300RX3-E	208	200	180 300 380	0.10	76%/53%	8	UNDER 25 A	13	15	208V-60HZ-1#	12-1/2(H) x4O(W) x34-15/16(D)	73	ERY FAN OPERATION INTERLOCKED WITH FC/208 TO START AT LOW SPEED FOR MINIMUM OSA FLOW, FAN SPEED TO STAGE UP AS REQUIRED TO MAINTAIN ROOM AIR CO2 AT BELOW 1000 PPM
ERV 2B	ENERGY RECOVERY VENTILATION FAN	FGM 212	MITSUBISHI LGH-F300RX3-E	212	160	180 300 380	0.10	11%/55%	В	UNDER 2.5 A	1.3	15	208Y-60HZ-1#	12-1/2(H) x4O(W) x34-15/16(D)	73	ERY FAN OPERATION INTERLOCKED WITH FC/2/2 TO START AT LOW SPEED FOR MINIMUM 054 FLOW, FAN SPEED TO STAGE UP AS REQUIRED TO MAINTAIN ROOM AIR CO2 AT BELOW 1000 PFM
ERV 4A	ENERGY RECOVERY VENTILATION FAN	RM 219	MITSUBISHI LGH-FI2OORX3-E	219	1000	800 1200 1400	0.43	13%/50%	14	UNDER 14.0 A	5.7	B	208V-60HZ-1#	31-1/2(H) x48-7/16(W) x65-7/16(D)	395	ERY FAN OPERATION INTERLOCKED WITH FC/19 TO START AT LOW SPEED FOR MINIMUM OBA FLOW, FAN SPEED TO STAGE UP AS REQUIRED TO MAINTAIN ROOM AIR CO2 AT BELOW 1000 PPM
ERV 5A	ENERGY RECOVERY VENTILATION FAN	RM 220	MITSUBISHI LGH-F600RX3-E	220, 221	650	450 615 150	0.48	69%/44%	ю	UNDER 1.0 A	2.9	ΙĐ	208V-60HZ-19	15-11/16(H) x48-7/16(W) x45-13/16(D)	159	ERY, FAN OPERATION, INTERLOCKED WITH FC/2/O OR 221 TO START AT LOW SPEED FOR MINIMUM OSA FLOW, FAN SPEED TO STAGE UP AS REQUIRED TO MAINTAIN ROOM AIR CO2 AT BELOW 1000 PPM
ERV 5B	ENERGY RECOVERY VENTILATION FAN	RM 222	MITSUBISHI LGH-F470RX3-E	222	450	380 410 600	0.96	10%/45%	ю	UNDER 5.0 A	2.5	15	208Y-60HZ-1#	15-11/16(H) x39-1/2(W) x45-13/16(D)	143	ERV FAN OPERATION INTERLOCKED WITH FC/222 TO START AT LOW SPEED FOR MINIMAM OSA FLOW, FAN SPEED TO STAGE UP A REGUIRED TO MAINTAIN ROOM AIR CO2 AT BELOW 1000 PPM

				0	UIS	IDE 1	AIR	SUP	PLY FA	IN SC	HEL	ULE				
			MANUFACTURER	AREAS SERVED			MAY Pa	NLET			ELECT	RICAL DA	ΓA		WEIGHT	REMARKS
AG LABEL	DESCRIPTION	LOCATION	MODEL NUMBER	(ROOM *)	CFM	E.S.P.	(INCHES)	DUCT DIA (INCHES)	FAN RFM	MOTOR	FLA (A)	WATTS	Į.	POWER	(lbe)	PETIMINO
SF IA	INLINE CENTRIFUGAL FAN TO PROVIDE OUTSIDE AIR VENTILATION	RM 104	FANTECH FR-140	105, 106, 101	l15	0.4°wg		6"	2850	2850	053	61	-	120V-60HZ-1#		WITH SOLID STATE SPEED CONTROL FAN OPERATION INTERLOCKED WITH PC/105A OR PC/105B
																-
SF 3A	INLINE CENTRIFUGAL FAN TO PROVIDE OUTSIDE AIR VENTILATION	P\$M 117	FANTECH FR-200	118, 119, 120, 121,	345	02"wg	-	8"	2750	2150	IJI	122	-	120V-60HZ-1#	-	WITH SOLID STATE SPEED CONTROL FAN OPERATION INTERLOCKED WITH FC/1/8 OR FC/1/9
SF 3B	INLINE CENTRIFUGAL FAN TO PROVIDE OUTSIDE AIR VENTILATION	RM 133	FANTECH FR-250	122, 125, 128, 129, 130, 131, 132, 134	620	02*wg	-	10*	2850	2850	2.40	241	-	120V-60HZ-1#	-	WITH SOLID STATE SPEED CONTROL FAN OPERATION INTERLOCKED WITH FC/128, FC/130 OR FC/129
SF 6A	INLINE CENTRIFICIAL FAN TO PROVIDE OUTSIDE AIR VENTILATION	RM 141	FANTECH FR-225	142, 144, 145, 146, 147	445	02*wg	-	8"	3100	3100	1.35	137	-	120V-60HZ-1#	-	WITH SOLID STATE SPEED CONTROL FAN OPERATION INTERLOCKED WITH FC/141 OR FC/142
SF 6B	INLINE CENTRIFICAL FAN TO PROVIDE OUTSIDE AIR VENTILATION	RM 156	FANTECH FR-125	151, 152, 153	130	02*wg	-	5"	2950	2950	0.18	18	-	120V-60HZ-1#	-	WITH SOLID STATE SPEED CONTROL FAN OPERATION INTERLOCKED WITH FC/IB1 OR FC/IB2
SF 6C	INLINE CENTRIFICAL FAN TO PROVIDE OUTSIDE AIR VENTILATION	RM 156	FANTECH FR-150	160, 161, 162, 163	255	02"wg	-	6*	2750	2750	0.6T	71	-	120V-60HZ-16	-	WITH SOLID STATE SPEED CONTROL FAN OPERATION INTERLOCKED WITH FC/162 OR FC/163



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WAHIAWA ARMORY MECHANICAL IMPROVEMENTS

77-230 KAMEHAMEHA HIGHWAY WAHIAWA, HI, 96786 T.M.K.: 7-6-001:002

DEPARTMENT OF DEFENSE OFFICE OF THE ADJUTANT GENERAL

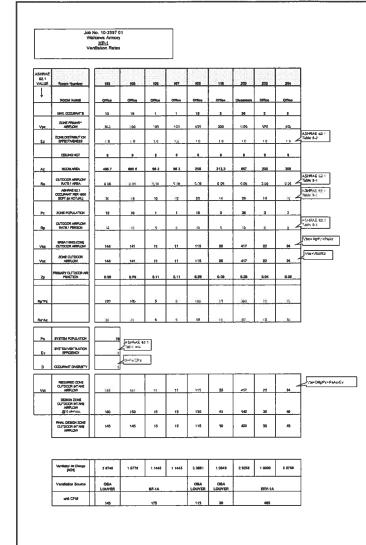
3949 DIAMOND HEAD RD. Honolulu, HI 96816

ISSL	Æ	~	
			-
	1005	6 CD	07-27-2013
	50%	CD	06-15-201
Mark	Desc	ription	Date
DAT	E	11-14-2011	
PRO	JECT NO.	10-2597.01	
CAD	DWG FILE	2597.01_M0	.1.dwg
DRA	WN BY	AC	
CHE	CKED BY	JH/EM	
		NA BLICK & BERS.	NC. 2010
SHE	ET TITLE		

SCALE: NOTED ON DRAWINGS

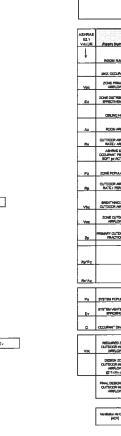
EQUIPMENT SCHEDULE

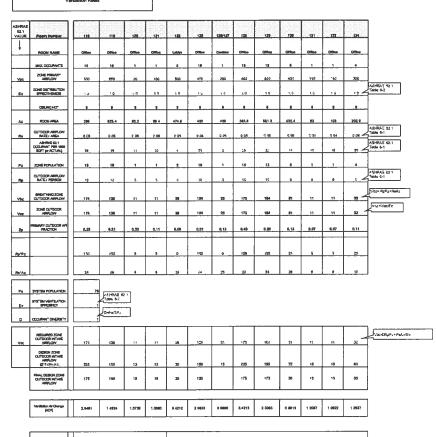
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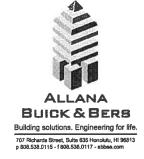


		WHEN PERSON	'											
SHRAK 62 1 VALUE	Room Herber	201 (100)	201 G>G		209	219		212	213	214	216	217	210	
Ţ.	ROOM HANKE	Corddor Student	Contdor	Office	Office	Office	Office	Office	Office	Ottlon	Office	Chromium	Cleannon	
	MAX COOLPANTS		,	18	1	,	,	18	,	ι	١,	4	4	
Vpz	ZONE PREMITY MOUNTAIN	400	250	800	200	20%	235	+000	200	200	100	496	500	
Ez	ZONE OSTRUCTION EPISCIMBISS	0.9	10	10	10	10	10	10	1.0	19	t b	l y	1.5	ASHPAE 6Z.1 Tesse 5-2
	CERTING HOL		,			,				,		-		
Ał	RCCOM AREA	417	169	842.1	568 B		99	1003 3	111	98	230.1	307.6	307.4	
Ra	OUTDOOR AMPLOW HATE! ANSA	SM	0.66	0.06	s 06	b in	2.01	0.06	0.56	t: 046	t.66	6,06	000 -	ASHPAE CZ 1 TEEST S-I
	ASHRAE 02.1 COCUPANT FIRE 1008 SOFT ST ACTUAL)	- 2	4	25	9	10	tp	16	34	10	4	13	.3 _	ASHRAE 02 1 Tabro 8-1
Pz	ZONE POPULATION		,	15		_,_	1	10	1		1	4	4	
Rp	DUTDOOR ARPLOW BATE! PERSON			He	6	5	,	10	6		. 6	10	10	ASHRAE 82 1 Tuble 9-1
Vbs	BREATHONG 2234E CUTDOOR ARPASAW		10	180	14	11	11	105	11	n	19	54	,, _	Tober PoPz-Kanz
Vog	ZONE OUTDOOR ARPLOW	8	10	189	14	11	11	160	51	11	18	58	, -	Volen Vole : E :
4	PREMARY OUTDOOR AIR RACTION	0.08	8.09	0.24	0.07	0.06	0.05	0.13	0.00	9.05	0.06	0.15	0.12	
_														
Par Px			- 6	191	4	4	1.	101	_ 5		3	63	-80	
Re*Az		- 20	0.600	27	- 20	6	4	60	8	6	t.a	ıe	13	
Pa Ev	SYSTEM POPULATION SYSTEM VANITILATION SPROGNOY DOCUMENT DIVERSITY	41	AGHRAE 8 Table 9-7	<u></u>										
			,		Γ	Γ		1						
Val	RESILIRED ZONE CLITDICER INTANS ARPLOW	75	14	1/4	14	10	10	146	14	19	10	53	24 -	
	DESIGN ZONE CUTDOOR NITAME ANNUAL \$11 of TICL	- 14	ind:	235	318.5	115-12	15	150	15	ıs	15	60	95	
	FRIAL DESIGN ZONE CUTDOOR IN FAIS A RELOW	n	10	800	15	11	15	163	20	20	213	60	so	
	Vertilation At Overage (ACH)	0.3907	0.2945	2.0746	B 6720	1,8101	1.0161	1.0632	1.3460	1.3468	0 5780	1 3004	1.3012	
							-							
	Ventiletion Source			ERV-2A		OSA LOUVI	EA	URV-28			OSA LOUVE	A		

Job No. 10-2597.01 Websews Armory HP-2 Verification Rates









WAHIAWA ARMORY MECHANICAL IMPROVEMENTS

77-230 KAMEHAMEHA HIGHWAY WAHIAWA, HI, 96786 T.M.K.: 7-6-001:002

DEPARTMENT OF DEFENSE OFFICE OF THE ADJUTANT GENERAL

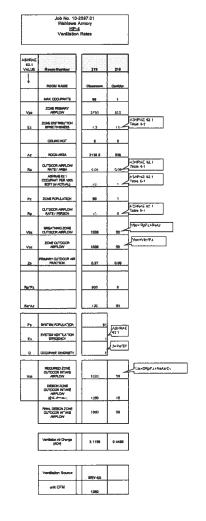
3949 DIAMOND HEAD RD. Honolulu, HI 96816

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	50%	CD	06-15-2012
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PRO	JECT NO.	10-2597.01	
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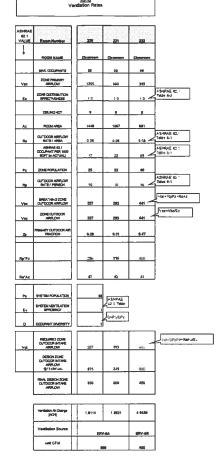
SCALE: NOTED ON DRAWINGS

CALCULATIONS

M_{0.3}



P1/2010 Projects/10-2597.01 Wolfman Armony - Nachanical Improvements/05-CX/Cranings/Working Set/2597.01_HG.Ldwg



Job No. 10-2597.01 Washings Armory

	Ve	HP-5 retation Rates			
ASHRAE 62.1 VALUE	Room Humber	220	21		
1	POOM HAME	Classroom	Chammon	Chimnen	J
	MAX CXXX/PANTS	20	23	44	Į
Vpz	ZONE FRIMARY ARRICOM	1200	360	315	
Ea	ZONE DISTRIBUTION INTECTMENTS	1.9	10		ASHPAE AT.: THE 642
	CELINGHOT	<u> </u>			
Az	ROOM AREA	1448	1067	881	
Ra	OUTDOOR ARRILOW RATE / AREA	0.06	a pt	0.04	ASHRAE 62.* Yatan 6-1
	ASSEME 63.1 COCLAMIT PER 1999 SEPT IN ACTUAL)	17	. 22	n 4	ASHRAE 62 :
PE	ZONE POPULATION	. 25	. 23	.40	
Re	CUTDOOR ARRICH BATE / PERSON	10	10	10 4	ASHRUE 67 - Table 6-1
					vbe « RpPz «Ra∧z
Vbz	BREATHAG ZONE OUTDOOR ARPLOW	307	283	41	Y-12-4/b2/E2
Veq	ARRIDH	337	293	441	
29	PRIMARY CLITICOTE ARE FRACTION	0.20	9.31	0.47	}
Rg*Pz		<u> :25c</u>	216	.400	
Ra'Az		87	£	41	j
Pa	SYSTEM POPULATION SYSTEM VEHTLATION SPECIALORY		ASHPAE UZ 1 THREE		
D D	DODUMNIT DIVERSITY		C+P-12P-1]	
Vat	REQUIRES ZONE DUTDOOR INTAKE ARRLOW	237	2110	66)	Login DiPigit to Read Life .
	DESIGN ZONE DUTDOOR INTING MIRLOW \$15 chruc.	875	3.15	400	
	RIMAL DESIGN ZONE CL/TDCCR INT/ME ARRLOW	830	300	480	
		-			- 1
	Verdator At Charge (ACH)	1.0114	1 8821	4.0530	
	Ventilelian Source	EX	V-8A	ERY-68]
	unit CFM				

	W	o No. 10-2597. Vehiews Armor <u>HP-6</u> centitation Rate	У														
SHRAE 62.1 VALUE	Room Harrison	142	(1) (1) (1) (1)	145	148	347	143	151	HI HI	163	100	WIT		163	105	169	
1	ROOM KANS	Office	Office	Office	Office	QHice	Office	Office	Office	Office	Office	Office	Office	Office	Office	Office	
	MAX COLUMNITS	16	1	,	,	29	,		,	,	1		18			1	
Vpz	ZONE PRIMARY ARVILOW	260	100	100	306	ESO	100	300	400	200	191	120	800	200	200	ace	
£2	ZONE DISTRIBUTION EPPECTMENTES	1.0	1.9	10	.13	16	10	10	: 6	16	19	. 0	16	15	19	1.0	A3HPAE 62 1 Tesse 6-2
	CISUNO HGT							,			4]
Az	RCCM APRISA	401	98	117	205	822	82	294	315	180	100	109	404	195	160	207	
Ra	OUTDOOR ARPILOW RATE / AREA	0.06	-1.08	g te	3.05	2-3	206	-2.518	2.00	0.06	1.66	9.00	0.96	Ø.56	12.08	100	A SHPAE 52 1 Table 6-1
	ASHRAE 62.1 OCCUPANT PER 1000 SOFT (or ACTUAL)	20	10	,	24	y_	3)	27		, Na		\$1	3F	21		, ~	ASIPAE C21 Table 6-1
Pz	ZONE POPULATION	10	ſ	,	5	20	1		2	1	_ ,	4	13		t	1	
Ro	CUITDOOR MRFLOW RATE / PERSON	10				16	5			ı		6	16				ASSMAR 62 1 Tabre 9-1
Vbz	BREATHBIGZONE CUTDOCK ARPLOW	124	11	12	27	257	11		29	31	15	27	174	,	13	17	Uben PpPz+ResA:
Vog	ZONE OUTDOOR	124	11	12	27	257			23	n.	15	27	174	12	18	17	hor-warus
Zb.	PRIMARY CLITOCOR AIR.	8.41	0,11	0.12	0.12	0.37	0.11	0.33	9.87	0.06	8.15	0.27	0.29	0.10	8.07	0.00]
Re*Pt		190			25	350		80	10			30	190	50	5	8	ļ
Ra*Az		24	,	,		37	٠.	1.8	16		10	,	24	15	19	12	
Pg Ev	SYSTEM POPULATION SYSTEM VEHITLATION STRONGER CCCUPANT DIVERSITY	71	ASHERAELE Tracke (+1) C=P+LEF :	71]					,		•				,		1
Vos	RESUMED ZONE OUTDOOR SETAND ARPLON	124	LE	13	эт	237	¥t	14	15	15	15	37	17.1	32	15	17	LIVA-DRIPZ-PAZ I
	DESIGN ZONE OUTDOOR BITAME ARPADOW P\$17 cbtf coc.	150	15	15	75	100	5	120	13	13	15		225	80	13	15	
	FINAL DÉSICH ZONE CUTDOUR INTANE ARPLEM	129	15	15	a0	200	15	100	15	19	15	20	175	23	12	250	
	Verdidor Ar Charge SACH	2,3379	1 1364	0 9615	1,4834	3,8146	1,0870	2.2676	0 39571	1,1290	g 7031	2.0842	3,2486	1,3462	0.6250	0.7248]





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WAHIAWA ARMORY MECHANICAL **IMPROVEMENTS**

77-230 KAMEHAMEHA HIGHWAY WAHIAWA, HI, 96786 T.M.K.: 7-6-001:002

DEPARTMENT OF DEFENSE OFFICE OF THE ADJUTANT GENERAL

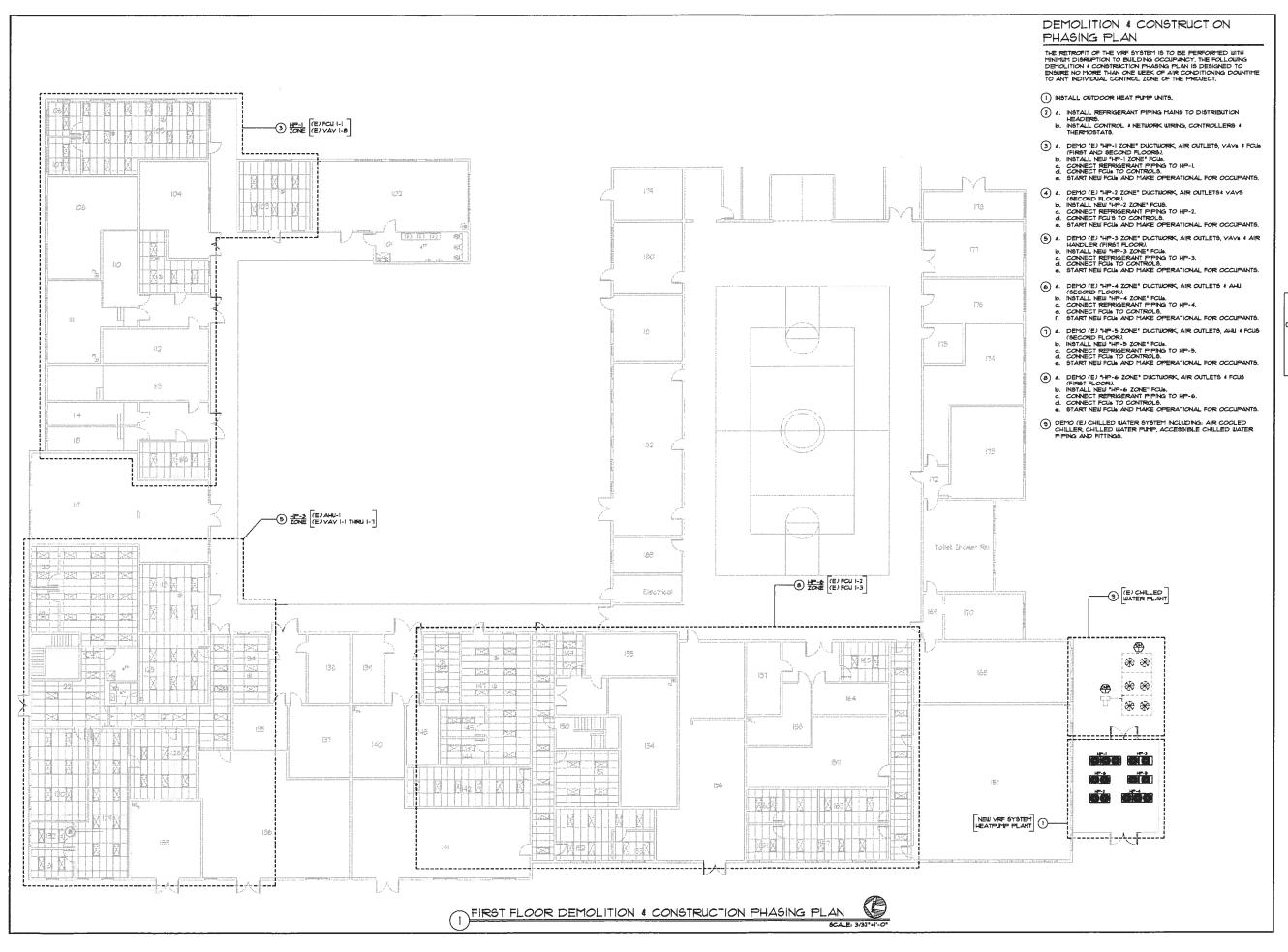
3949 DIAMOND HEAD RD. Honolulu, HI 96816

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Mark	Desc	ription	Date
DAT	E	11-14-2011	
PRO	JECT NO.	10-2597.01	
CAD DWG FILE		2597.01_M0.1.dwg	
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VENTILATION CALCULATIONS (CONTINUED)

SCALE: NOTED ON DRAWINGS

M_{0.4}





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104/30/14

SIGNATURE EXPIRATION DATE OF THE LICENSE

WAHIAWA ARMORY MECHANICAL IMPROVEMENTS

77-230 KAMEHAMEHA HIGHWAY WAHIAWA, HI, 96786 T.M.K.: 7-6-001:002

DEPARTMENT OF DEFENSE OFFICE OF THE ADJUTANT GENERAL

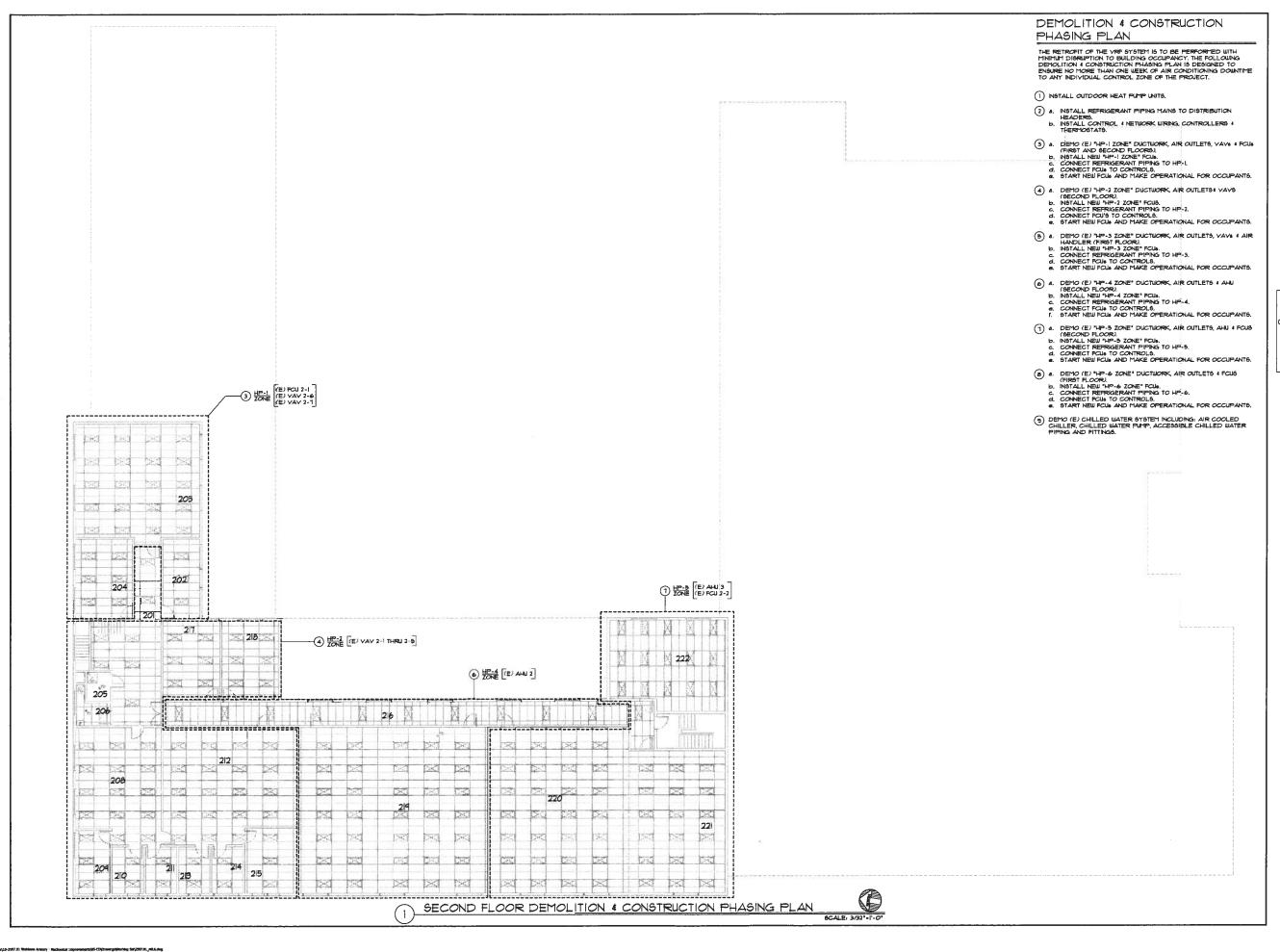
3949 DIAMOND HEAD RD. Honolulu, HI 96816

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FIRST FLOOR DEMOLITION & CONSTRUCTION PHASING PLAN SCALE: NOTED ON DRAWINGS

SHEET TITLE

M_{0.5}





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104/30/14

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WAHIAWA ARMORY MECHANICAL IMPROVEMENTS

77-230 KAMEHAMEHA HIGHWAY WAHIAWA, HI, 96786 T.M.K.: 7-6-001:002

DEPARTMENT OF DEFENSE OFFICE OF THE ADJUTANT GENERAL

3949 DIAMOND HEAD RD. Honolulu, HI 96816

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PHASING PLAN
SCALE: NOTED ON DRAWINGS

M_{0.6}

SHEET

DEMOLITION & CONSTRUCTION

DEMOLITION TO BE CONDUCTED IN PHASES AS DETAILED IN PHASING PLAN, SEE SHEETS MO.5 4 MO.5

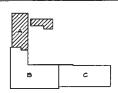
GENERAL SHEET NOTES

- A. DEMOLISH (E) HVAC SYSTEM COMPONENTS AS SHOUN, INCLUDING CHILLER, AIR HANDLING UNITS, FAN COIL UNITS AND ASSOCIATED DICTURORS, SUPPLY, AIR & RETURN AIR OUTLIES, CHILLED BUATER PIPING RITTING, VALVES, CONDENSATE DRAIN PIPING AND ASSOCIATED SUPPORTS.
- B. (E) VENTILATION FANS 4 DUCTUORK TO REMAIN.
- C. DUCTUORK 4 PIPING IN EXTERIOR CORRIDOR CEILING SPACE TO REMAIN.
- D. PATCH AND SEAL ALL WALL PENETRATIONS & OPENINGS CREATED BY DUCT AND PIPE REMOVAL.
- E. REPLACE DAMAGED OR MISSING CEILING TILES WHERE CEILING OUTLETS ARE REMOVED OR IN THE COURSE OF THE WORK.
- F. DISPOSAL OF ALL DEMOLISHED EQUIPMENT AND MATERIAL IS THE THE RESPONSIBILITY OF CONTRACTOR, SOLID WASTE REPORT MUST BE SUBMITTED.

SHEET LEGEND & KEY NOTES

1		(E) DUCTUORK TO REMAIN IN PLACE
2		REMOVE (E) DUCTWORK, INSULATION & SUPPORTS
3	\longleftarrow	(E) PIPING TO REMAIN
4	}}	REMOVE (E) PIPING, INSULATION 4 SUPPORTS
•	*	REMOVE (E) CEILING SUPPLY AIR DIFFUSE
6	\boxtimes	REMOVE (E) CEILING RETURN AIR GRILLE
1	a	REMOVE (E) WALL REGISTER OR GRILLE
8		DISCONNECT & REMOVE (E) FAN COIL UNIT AND ASSOCIATED SUPPORTS
9	 ===	CAP (E) DUCTILIORIC TO REMAIN IN PLACE
Ø		CAP (E) PIPING TO REMAIN IN PLACE

KEY PLAN



SCALE: 1/8" = 1'-0"



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104/30/14
SIGNATURE EMPIRATION DATE OF THE LICENSE

WAHIAWA ARMORY MECHANICAL **IMPROVEMENTS**

77-230 KAMEHAMEHA HIGHWAY WAHIAWA, HI, 96786 T.M.K.: 7-6-001:002

DEPARTMENT OF **DEFENSE** OFFICE OF THE ADJUTANT GENERAL

3949 DIAMOND HEAD RD. Honolulu, HI 96816

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SECTION A -FIRST FLOOR DEMO PLAN

SCALE: NOTED ON DRAWINGS

SHEET

M1.1A

SECTION A - FIRST FLOOR DEMO PLAN

6

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3

3

DEMOLITION TO BE CONDUCTED IN PHASES AS DETAILED IN PHASING PLAN, SEE SHEETS MOS & MOS.

[2]

116 EXIST. COURTYARD -3 CAP PIPING AND DUCTWORK FOR PHASING -FIRE DAMPER 119 1-8/ \I-7/ **4**/3 VAV 1-4 -14 CHW PIPING 8 1" CDR UP TO 2ND FLA CEILING SPACE, 1" COR DN.TD SERVICE SINK IN BOOM 123 1-6/ 9x9 CD 300 CFM 1 TYP. 2 - CHVS & CHWR PIPING ABOVE CELLING (1YP.) - FOR SUPPORT DETAIL SEE - 12X12 BAR.550 CFM **B** 12/8 -5 9x9 CO.275 CFM -12/8 VAX 9X9 CD -300 CFM HAR BXRL-140 CFM 13 r 44 13 DUCT ABANDONED 6 <u>~</u>2 IN PLACE PER 3/6/14 145 EMALL 12X12 CD 350 CFM DEHUMIDIFIED 16X6 SAF (TYP. 2)-1 PP 200 CFH "200 CFH B (5) EXIST. DUCT TO RETMAIN 12 32/20 DET 3 32/14 Ban -6 16/16 UP TO 2ND FLR. CEIL'O 1.4/品 12X12 BAR 127 2-26/14 7 **B**/

12/8 DN.(TYP.2)

Lains chure

`@^

8 AH 2

BANK

1400 PFK

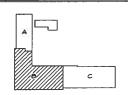
GENERAL SHEET NOTES

- A. DEMOLISH (E) HVAC SYSTEM COMPONENTS AS SHOWN, INCLUDING CHILLER, AIR HANDLING WHITS, FAN COIL WHITS AND ASSOCIATED DUCTUONS, SUPPLY, AIR & RETURN AIR OUTLETS, CHILLED WATER PIPING RITTING, VALVES, CONDENSATE DRAIN PIPING AND ASSOCIATED SUPPORTS.
- B. (E) VENTILATION FANS 4 DUCTUORK TO REMAIN.
- C. DUCTUORS 4 PIPING IN EXTERIOR CORRIDOR CEILING SPACE TO REMAIN.
- E. REPLACE DAMAGED OR MISSING CEILING TILES WHERE CEILING OUTLETS ARE REMOVED OR IN THE COURSE OF THE WORK.
- F. DISPOSAL OF ALL DEMOLISHED EQUIPMENT AND MATERIAL IS THE THE RESPONSIBILITY OF CONTRACTOR, SOLID WASTE REPORT MUST BE SUBMITTED.

SHEET LEGEND & KEY NOTES

1	+	(E) DUCTUORK TO REMAIN IN PLACE
2	 	REMOVE (E) DUCTWORK, INSULATION & SUPPORTS
3	}	(E) PIPING TO REMAIN
4	}}	REMOVE (E) PIPING, INSULATION 4 SUPPORTS
5	×	REMOVE (E) CEILING SUPPLY AIR DIFFUSE
6	Ø	REMOVE (E) CEILING RETURN AIR GRILLE
1	□	REMOVE (E) WALL REGISTER OR GRILLE
B		DISCONNECT & REMOVE (E) FAN COIL, VAN OR AIR HANDLING UNIT AND ASSOCIATED SUPPORTS
9	t ===\$	CAP (E) DUCTWORK TO REMAIN IN PLACE
0		CAP (E) PIPING TO REMAIN IN PLACE
	<u>□</u> b	(E) VENTILATION SUPPLY FAN TO REMAIN I

KEY PLAN



SCALE: 1/8" = 1'-0"



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104/30/14

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WAHIAWA ARMORY **MECHANICAL IMPROVEMENTS**

77-230 KAMEHAMEHA HIGHWAY WAHIAWA, HI, 96786 T.M.K.: 7-6-001:002

DEPARTMENT OF DEFENSE OFFICE OF THE ADJUTANT GENERAL

3949 DIAMOND HEAD RD. Honolulu, HI 96816

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	100% CD		07-27-2012
	50%	CD	06-15-2012
Mark	Desc	ription	Date
DAT	Ε	11-14-2011	
PRO	JECT NO.	10-2597.01	
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SECTION B -FIRST FLOOR **DEMO PLAN**

SCALE: NOTED ON DRAWINGS

SHEET

M1.1B

SECTION B - FIRST FLOOR DEMO PLAN

19/6

5/

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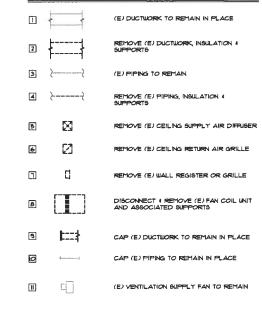
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DEMOLITION TO BE CONDUCTED IN PHASES AS DETAILED IN PHASING PLAN, SEE SHEETS MOS 4 MOS. (E) CHILLED WATER SYSTEM TO REMAIN OPERATIONAL UNTIL ALL AIR SYSTEMS HAVE BEEN REPLACED.

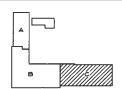
GENERAL SHEET NOTES

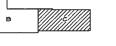
- A DEMOLISH (E) HVAC SYSTEM COMPONENTS AS SHOUN, INCLUDING AIR HANDLING WINTS, FAN COIL WINTS AND ASSOCIATED DUCTUDENCE, SUPPLY, AIR (RETURN AIR OUTLETS, CHILLED WATER PIPING FITTING, VALVES, CONDENSATE DRAIN PIPING AND ASSOCIATED SUPPORTS.
- B. (E) VENTILATION FANS & DUCTUORIX TO REMAIN.
- C. DUCTUORK & PIPING IN EXTERIOR CORRIDOR CEILING SPACE TO REMAIN.
- D. PATCH AND SEAL ALL WALL PENETRATIONS & OPENINGS CREATED BY DUCT AND PIPE REMOVAL.
- E. REPLACE DAMAGED OR MISSING CEILING TILES WHERE CEILING OUTLETS ARE REMOVED OR IN THE COURSE OF THE WORK.
- F. DISPOSAL OF ALL DEMOLISHED EQUIPMENT AND MATERIAL IS THE THE RESPONSIBILITY OF CONTRACTOR SOLID WASTE REPORT MUST DE SUBMITTED.
- G. (E) TEMPORARY CHILLER TO BE REMOVED BY OWNER.
- H. (E) TEMPORY MECHANICAL 4 ELECTRICAL CHILLER CONNECTIONS TO BE REMOVED BY CONTRACTOR

SHEET LEGEND & KEY NOTES



KEY PLAN





(E) TEMPORARY CHILLER AND CHILLED WATER PUMP (TO BE REMOVED BY OWNER)

SCALE: 1/8" = 1'-0"

M1.1C SHEET

SCALE: NOTED ON DRAWINGS

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LICENSED PROFESSIONAL ENGINEER NO. 11156-Ma

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WILL BE UNDER MY SUPERVISION (SUPERVISION OF CONSTRUCTION AS DEFINED IN SECTION 1.2(H)OF THE RULES AND REQULATIONS OF THE BOARD OF PROFESSIONAL ENGINEERS, ARCHITECTS AND SURVEYORS OF THE STATE OF HAWAII.)

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WAHIAWA ARMORY

77-230 KAMEHAMEHA HIGHWAY WAHIAWA, HI. 96786

MECHANICAL

T.M.K.: 7-6-001:002

DEFENSE

IMPROVEMENTS

DEPARTMENT OF

OFFICE OF THE

3949 DIAMOND HEAD RD.

100% CD

50% CD

Description

DATE 11-14-2011 PROJECT NO. 10-2597.01 CAD DWG FILE 2597_M1.1.dwg DRAWN BY AC CHECKED BY JH/EM SHEET TITLE SECTION C -FIRST FLOOR **DEMO PLAN**

DATE

07-27-2012

06-15-2012 Date

Honolulu, HI 96816

ADJUTANT GENERAL

SECTION C - FIRST FLOOR DEMO PLAN

DEMUMIDIFIER-

TERR SAR-

CAP DUCT &

PIPING FUR PHASING

9x9 CD, 212 CFM (TYP, 2)

154

-19/6

FILT

2100 CFM

PHASE IV PHASE I

COHN. FULL-SIZE OA

-- 16/12

19X18 -

B

9X9 CD--350 CFH

54

⋽┐

5

14/10 7 2 10/0 -

HAR

/FC

155

9X9 CD-230 CFM

16X6 SAR

2

9x9 CD, 175 CFH (TYP, 21

- B

LIZEXIE SAR

18/19

/5

Bh.

9X9 CD.260 CFM:

4/2/2

157

10%5 SAR 200 CFM

220 CFH

12/8 -

L* COR DN. TO FLOOR SINK

- LOXE SAR

DAMPER

12/8-

12/5-

161

9X9 CD -180 CFM

16/12

156

6

HAR

18/6 RA DUCT 260 CFM - SEE

--FLEX CONN.

-26/19 RA DUCT 1440 CFM

-10/8 OA GRILLE 100 CFM

(TYP.)

168

164

167

The second section of the second seco

4" CHVS 8 CHVR PIPING ABV.CEILING

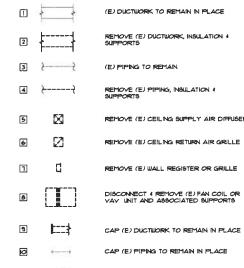


DEMOLITION TO BE CONDUCTED IN PHASES AS DETAILED IN PHASING PLAN, SEE SHEETS MOS 4 MOS.

GENERAL SHEET NOTES

- B. (E) VENTILATION FANS 4 DUCTUORK TO REMAIN.
- C. DUCTUORK & PIPING IN EXTERIOR CORRIDOR CEILING SPACE TO REMAIN.
- D. PATCH AND SEAL ALL WALL PENETRATIONS 4 OPENINGS CREATED BY DUCT AND PIPE REMOVAL.

SHEET LEGEND & KEY NOTES





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WAHIAWA ARMORY **MECHANICAL**

77-230 KAMEHAMEHA HIGHWAY

IMPROVEMENTS

DEPARTMENT OF

3949 DIAMOND HEAD RD.

ADJUTANT GENERAL

DEFENSE OFFICE OF THE

WAHIAWA, HI, 96786 T.M.K.: 7-6-001:002

SHEET TITLE SECTION B -SECOND FLOOR

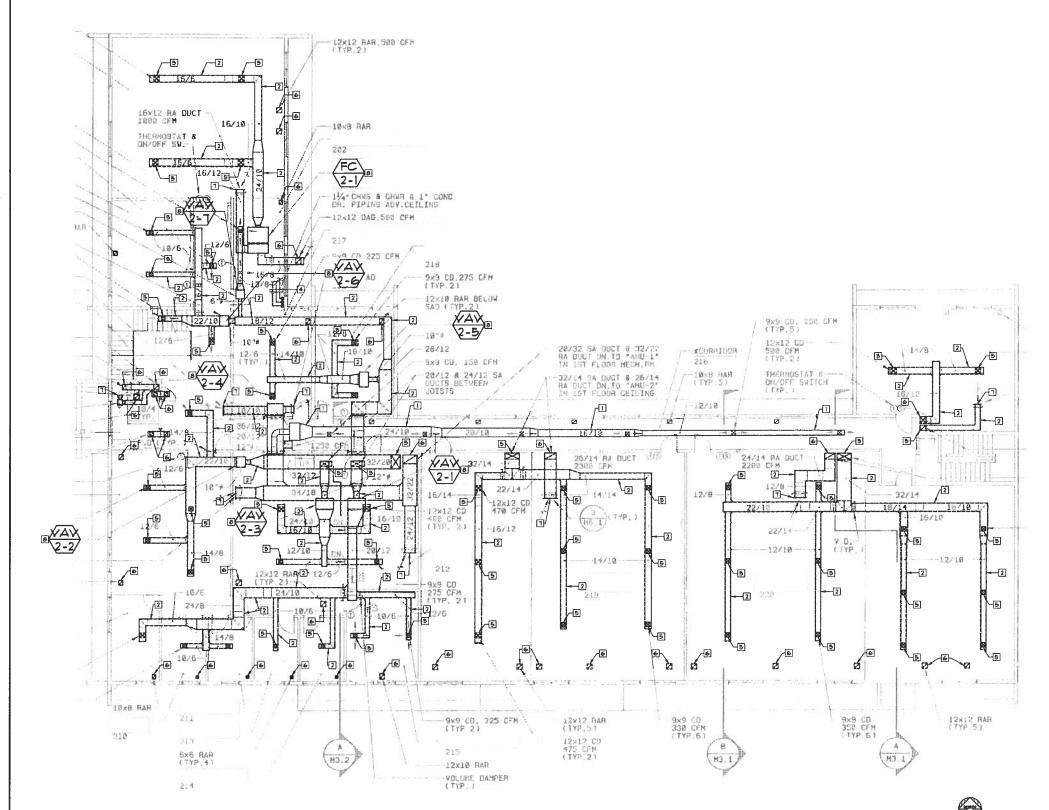
DEMO PLAN

SHEET

CHECKED BY JH/EM

SCALE: NOTED ON DRAWINGS

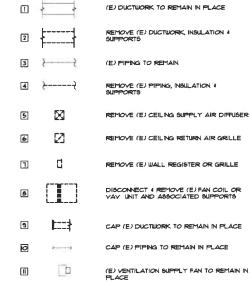
M1.2B



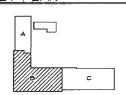
SECTION B - SECOND FLOOR DEMO PLAN

- A DEMOLISH (E) HYAC SYSTEM COMPONENTS AS SHOUN, INCLUDING CHILLER, AIR HANDLING UNITS, FAN COIL UNITS AND ASSOCIATED DUCTUORS, SUPPLY AIR & RETURN AIR OUTLETS, CHILLED WATER PIPING FITTING, VALUES, CONDENSATE DRAIN PIPING AND ASSOCIATED SUPPORTS.

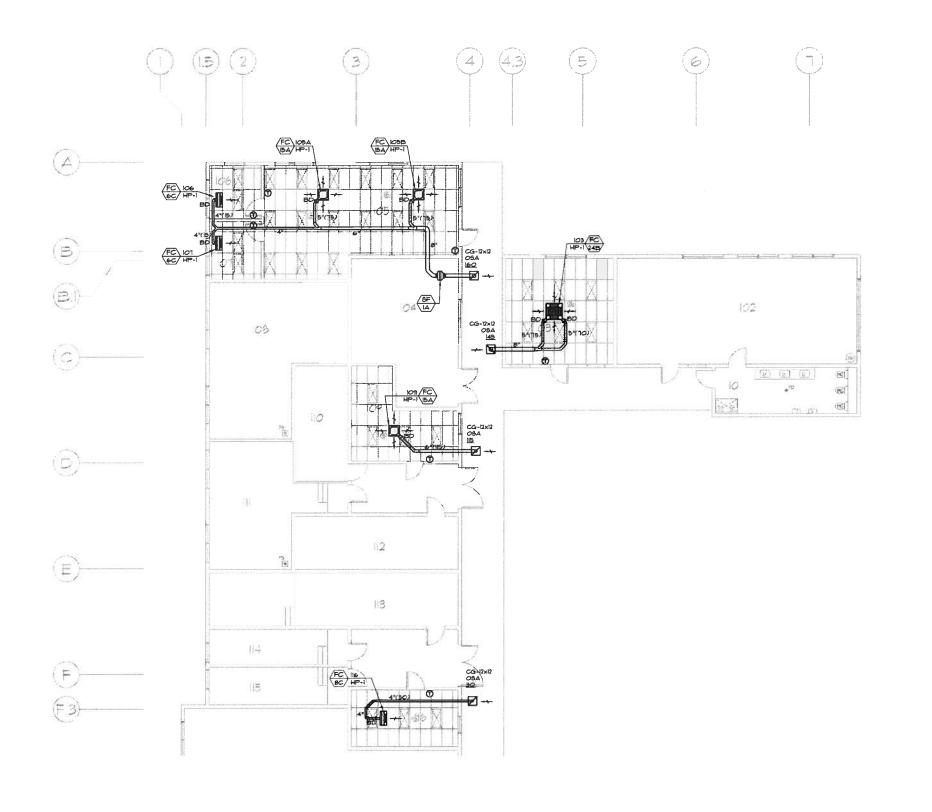
- E. REPLACE DAMAGED OR MISSING CEILING TILES WHERE CEILING OUTLETS ARE REMOVED OR IN THE COURSE OF THE WORK.
- F. DISPOSAL OF ALL DEMOLISHED EQUIPMENT AND MATERIAL IS THE THE RESPONSIBILITY OF CONTRACTOR SOLID WASTE REPORT MUST BE SUBMITTED.
- F. (E) SPLIT SYSTEM AIR CONDITIONING UNITS IN ROOMS 219, 220 ¢ 221 TO REMAIN IN PLACE.



KEY PLAN



SCALE: 1/8" = 1'-0"



GENERAL SHEET NOTES

A. INSTALL INDOOR FAN COIL UNITS IN BUSPENDED CEILING SPACES AS SHOUM AND PER MANUFACTURERS' INSTRUCTIONS. SEE DETAIL 5 6 7 1800 1800 1800

C. NOTALL ENERGY RECOVERY VENTILATION UNITS
AS SHOUN AND PER MANUFACTURERS'
NOTRICTIONS
BEE DETAIL 6
ME.O.

D. INSTALL VENTILATION AIR DUCTS ROUTED FROM OUTDOOR AIR INTAKE LOUVERS TO INDOOR FANCOIL UNITS AS SHOWN.

E. VENTILATION AIR DUCT MAINS ARE TO BE RIGID DUCTS 4 FITTINGS INTERNALLY LINED FOR CORROSION PROTECTION CONSTRUCTED OF 24 GAIGE GALVANIZED SHEET METAL. INSTALL AND SUPPORT DUCTS PER SMACNA STANDARDS.

F. VENTILATION AIR DUCT BRANCHES AT FAN COIL
UNITS ARE TO BE FLEX DUCTS WITH BALANCING
DAMPERS AT EACH UNIT, FLEX DUCTS ARE NOT
TO EXCEED 6 FEET IN LENGTH.

G. PROVIDE FIRE STOPPING AT ALL FIRE RATED WALL/FLOOR DUCT PENETRATIONS.

H. VERIFY SITE CONDITIONS FOR POSSIBLE CONFLICTS WITH DUCT & REPRIGERANT PIPING ROUTED IN CEILING SPACES.

ADJUST AND BALANCE VENTILATION AIR FLOW RATES TO EACH FAN COIL UNIT AS INDICATED

SHEET LEGEND

EXISTING LIGHT FIXTURE

S EXISTING SOLAR LIGHT TUBE

THERMOSTAT SERVING MULTIPLE FAN COIL UNITS

THERMOSTAT CONTROLLER MOUNTED
4' ABOVE FLOOR

ON DEMAND VENTILATION CO: SENSOR MOUNTED 6' FROM FLOOR



SE UNITS: OUTSIDE AIR SUPPLY FAN UNITS: SEE EQUIPMENT SCHEDULE, SHEET MOJ

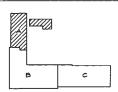


EG UNITS: FAN COIL UNITS, SEE EGUIPMENT SCHEDULE, SHEET MOJ

OUTSIDE AIR FLOW RATE

OUTSIDE AIR INTAKE CEILING GRILLE WITH INTEGRAL REMOVABLE MERY 8 FILTER CG

KEY PLAN



SCALE: 1/8" = 1'-0"



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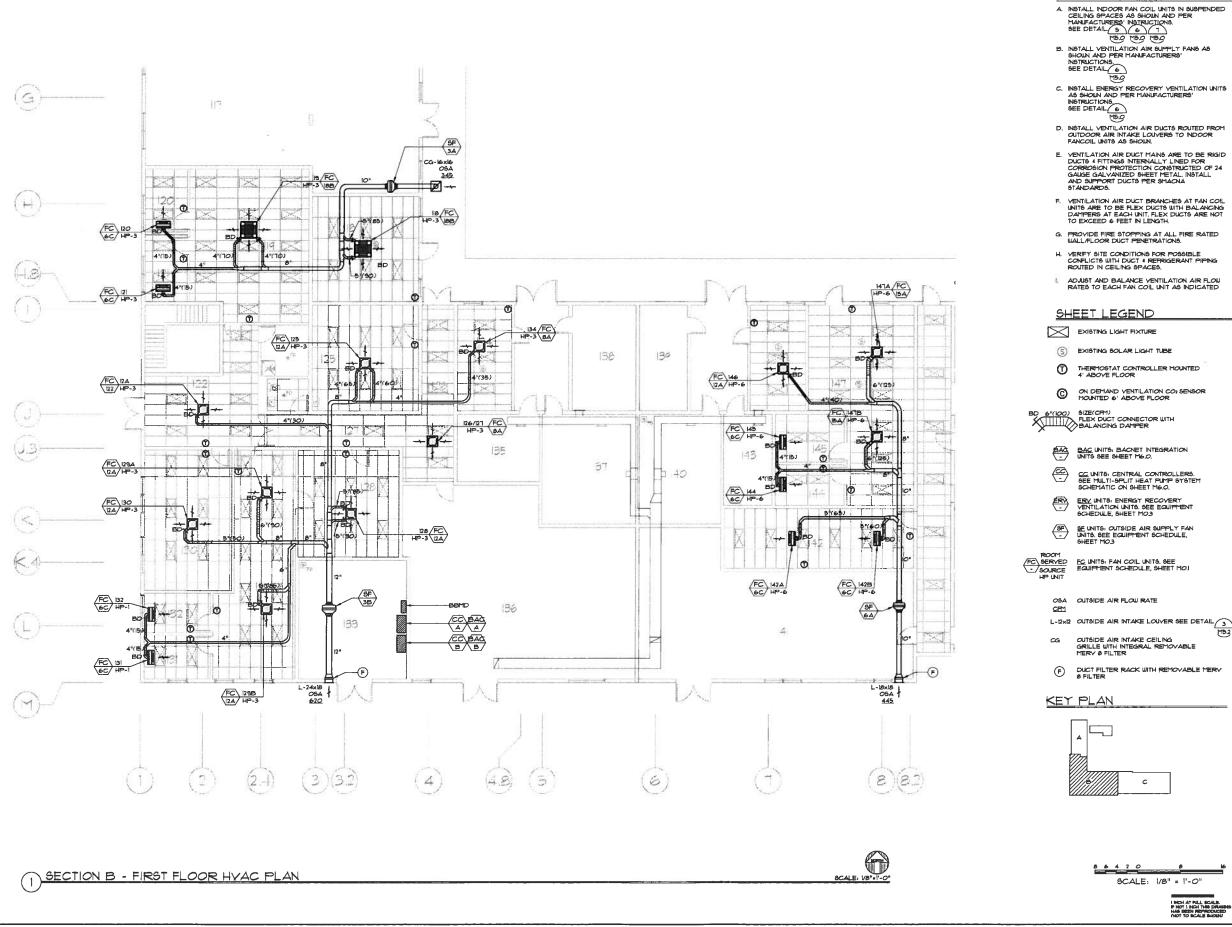
FIRST FLOOR HVAC PLAN

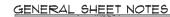
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SECTION A - FIRST FLOOR HVAC PLAN







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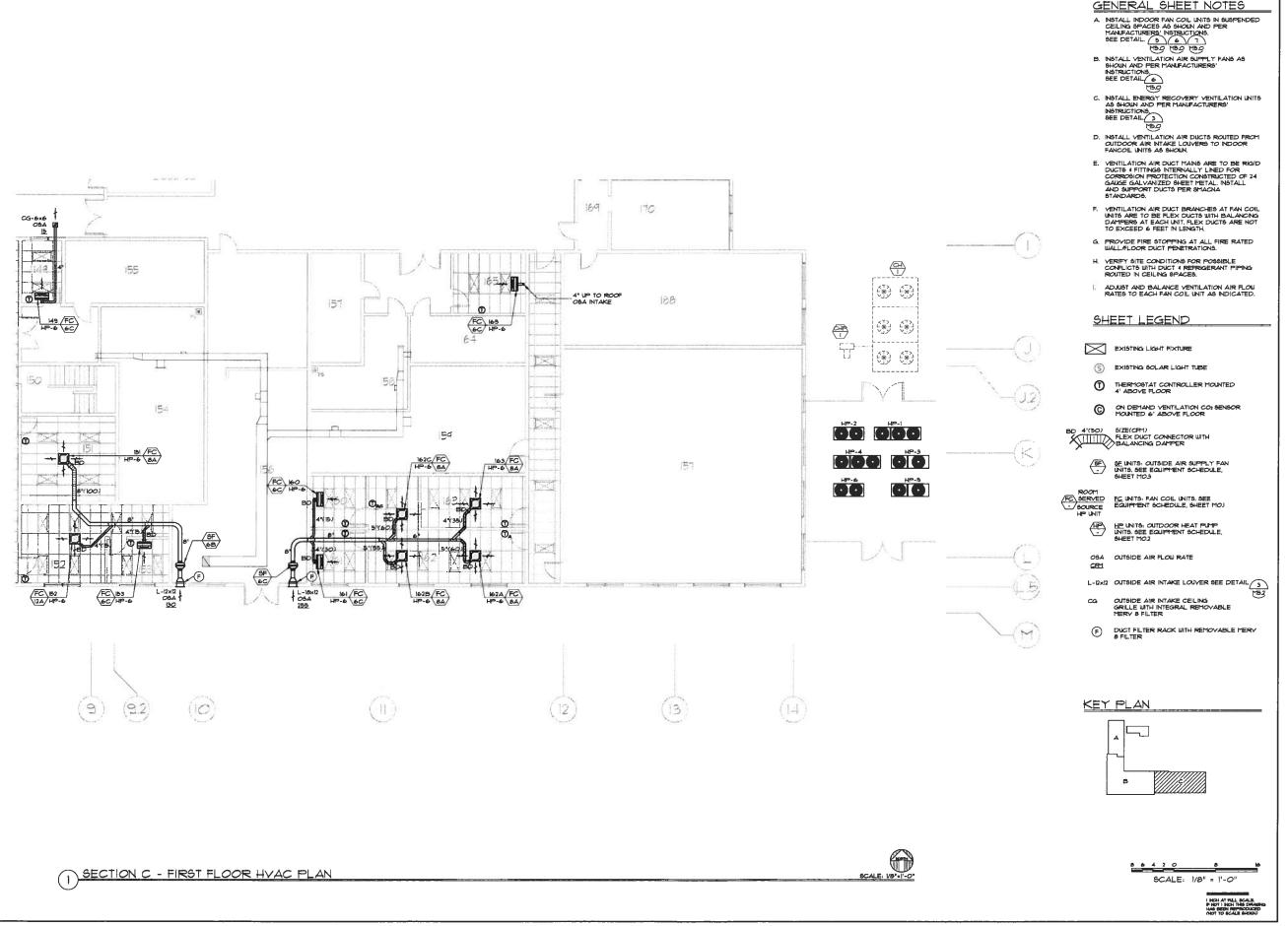
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SECTION B-FIRST FLOOR HVAC PLAN

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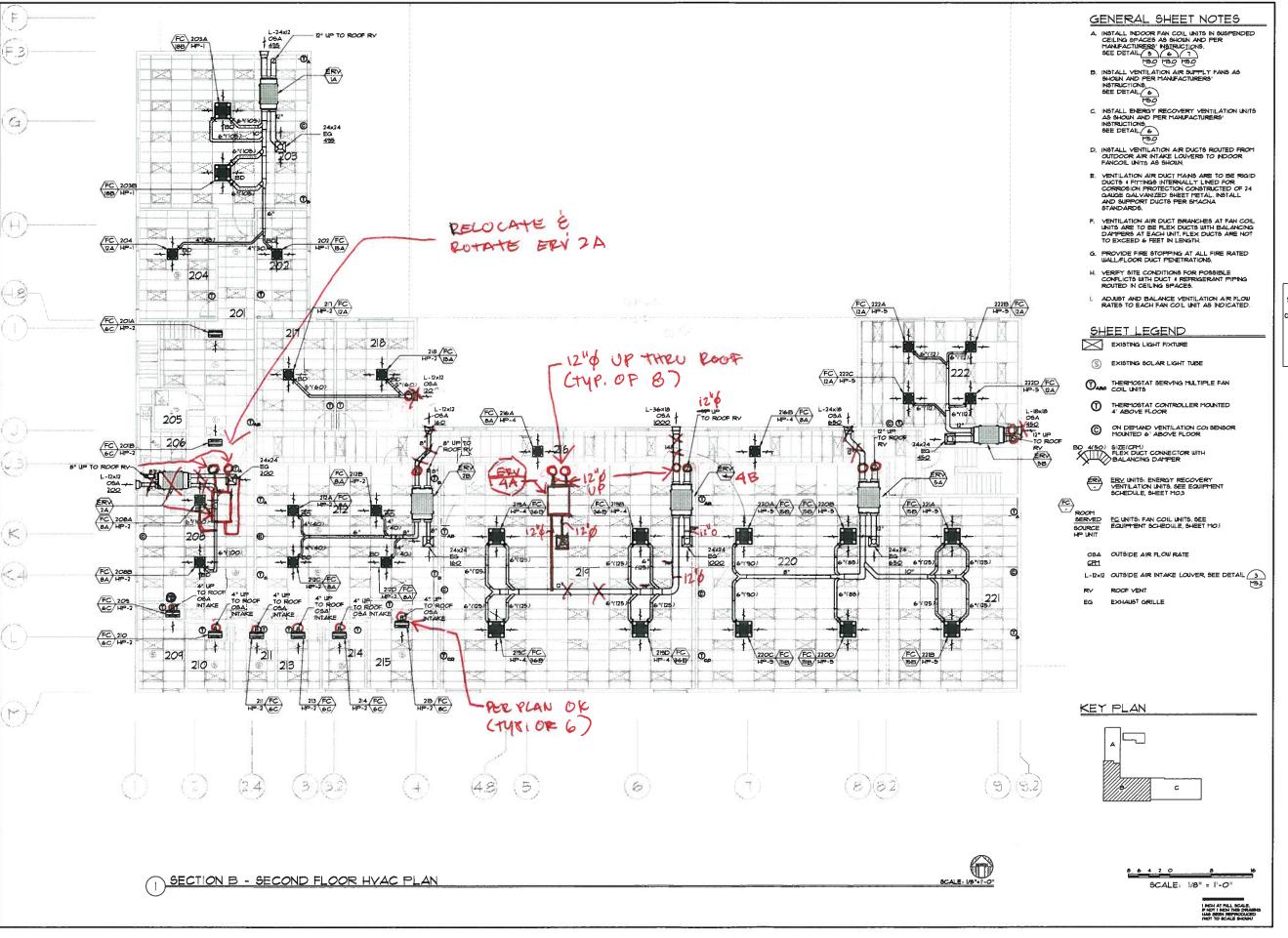
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SECTION C -FIRST FLOOR **HVAC PLAN**

SHEET

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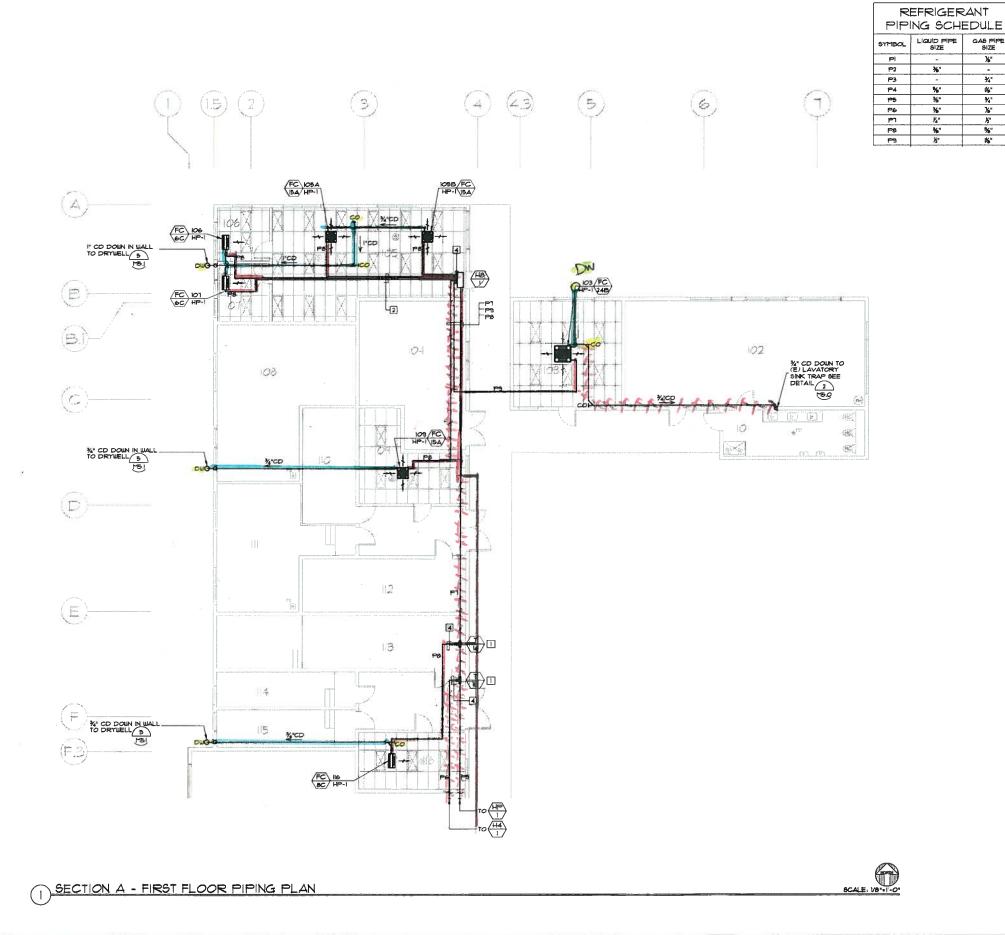
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SECTION B -SECOND FLOOR HVAC PLAN

SCALE: NOTED ON DRAWINGS

M2.2b



GENERAL SHEET NOTES

- A. NDOOR REPRIGERANT PIPING TO BE TYPE ACR COPPER TUBING WITH 1/2" ELASTOTIERIC PIPE INSULATION, PIPE LENGTHS JOINED WITH FLARED JOINT FITTINGS.
- B. OUTDOOR REPRIGERANT LINES TO BE TYPE ACR COPPER TUBING WITH I" ELASTOMERIC INSULATION AND ALLMINUM JACKET,
- SEE REFRIGERANT PIPING SCHEDULE ON THIS SHEET FOR PIPE SIZING REQUIREMENTS.
- D. PROVIDE LONG SUEEP BENDS AT CHANGES OF PIPE DIRECTION.

%*

- REFRIGERANT PIPING ROUTED IN CEILING SPACE, SUPPORTED AS REQUIRED, SEE DETAIL.
- VERIFY SITE CONDITIONS FOR POSSIBLE CONFLICTS WITH DUCT & REPRICERANT PIPING ROUTED IN CEILING SPACES, REPLOYE SECTIONS OF EXISTING DUCT AS REQUIRED.
- H. MAINTAIN ACCESS FREE OF OBSTRUCTIONS FOR EQUIPMENT MAINTENANCE.
- LOCATE REFRIGERANT PIPING ELBOUS, TEES AND HEADERS AS SHOWN, TO MAINTAIN CALCULATED PIPING EQUIVALENT LENGTHS. SUBMIT PIPING LAYOUT SHOP DRAWINGS FOR APPROVAL BY ENGINEER.
- J. PRESSURE TEST ALL REFRIGERANT PIPING PER MANUFACTURERS INSTRUCTIONS.
- K. CONDENSATE DRAIN PIPING TO BE TYPE M COPPER PIPING. SUPPORT PIPING PER THE UNIFORM PLUMBING CODE.
- L. SLOPE ALL CONDENSATE DRAIN PIPING 1/4" PER FOOT TO DRAIN AS SHOUN.
- M. PROVIDE IDENTIFICATION LABELING ON ALL PIPING. INDICATE HP SOURCE UNIT ON REFRIGERANT PIPE MAINS, INDICATE FOU SERVED AT DISTRIBUTION HEADERS.

SHEET LEGEND

CONDENSATE DRAIN FIFE

REFRIGERANT (LIQUID AND GAS)
 PIPING, SEE REFRIGERANT PIPING
 SCHEDULE.

CLEAN OUT

DRY WELL SEE DETAIL 5

6 OUTLET REFRIGERANT PIPE HEADER. SEE 6CHEMATICS, MG SHEET SERIES.

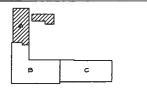
₩ 💾 4 OUTLET REPRIGERANT PIPE HEADER SEE SCHEMATICS, MG SHEET SERIES.

SOURCE HP UNIT REFRIGERANT PIPE TEE FITTING SEE

KEY NOTES

- [] LOCATE REPRIGERANT PIPING TEE FITTINGS AS SHOUN, TO MAINTAIN EQUIPMENT PIPE LENGTH REQUIREMENTS.
- [2] ROUTE PIPING AT CEILING, SUPPORT AS REQUIRED, SEE DETAIL 1 155
- 3 ROUTE PIPING AT GRADE, SUPPORT AS REQUIRED, SEE DETAIL 2
- 4 PROVIDE REFRIGERANT BRANCH SHUTOFF VALVES AT DISTRIBUTION HEADER OR TEE.

KEY PLAN



SCALE: 1/8" = 1'-0"



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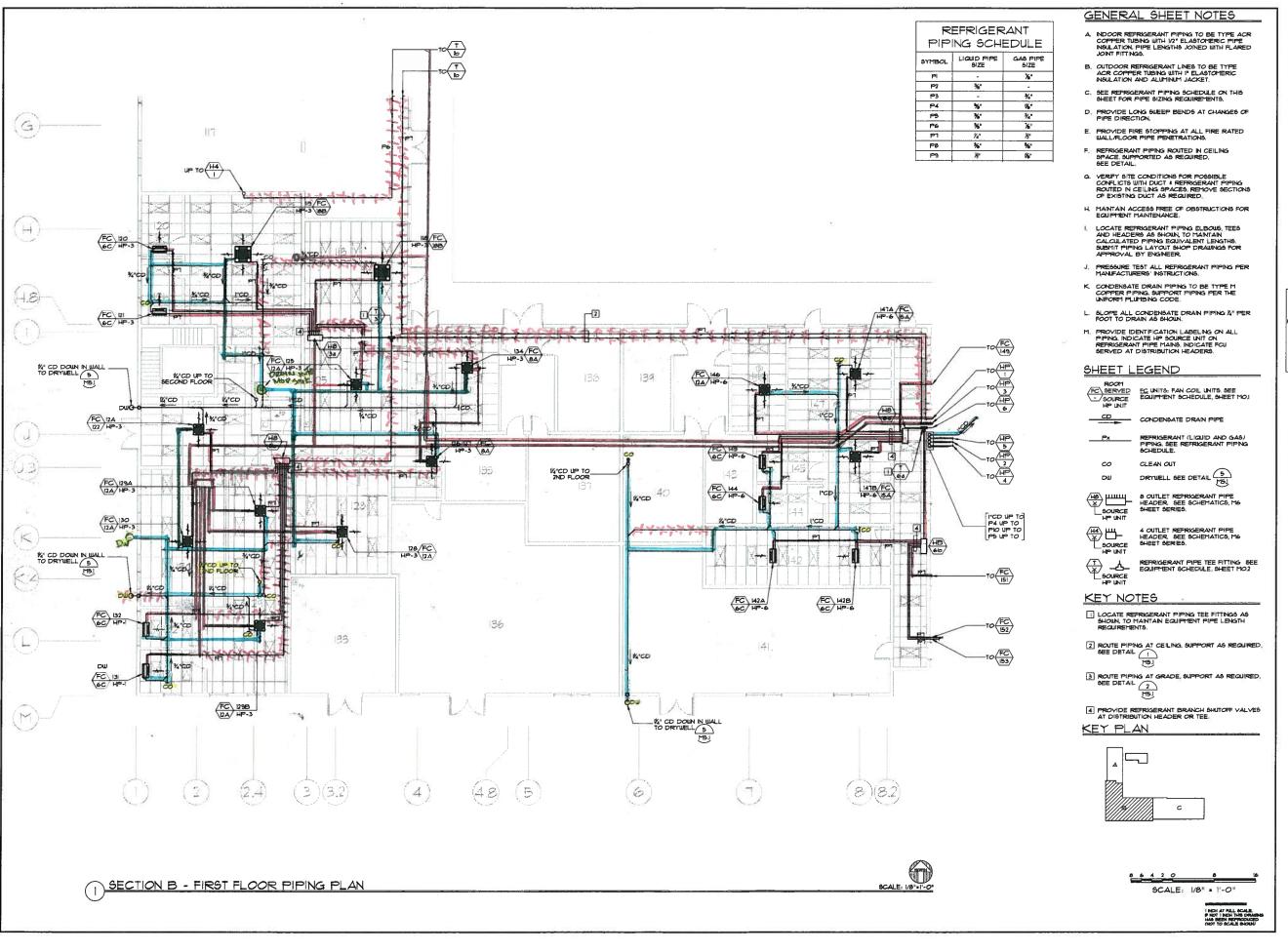
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SECTION A -FIRST FLOOR PIPING PLAN

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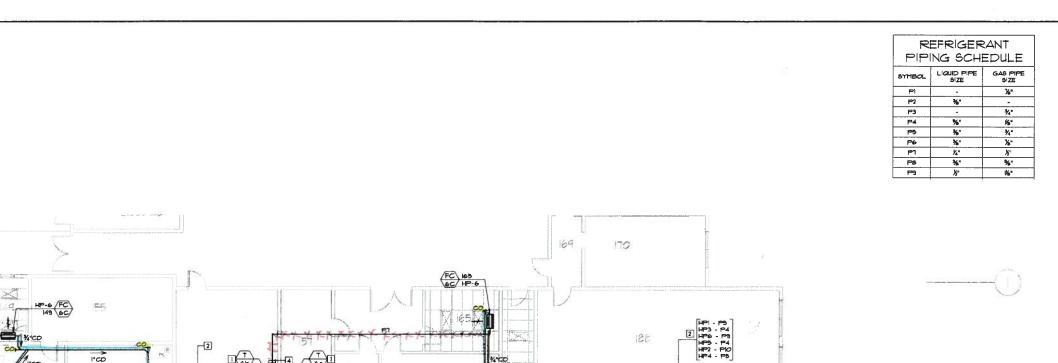
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SECTION B -FIRST FLOOR PIPING PLAN

SCALE; NOTED ON DRAWINGS

M3.1B



TO DRYWELL 5

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SECTION C - FIRST FLOOR PIPING PLAN

I'CD

56

GENERAL SHEET NOTES

- A. INDOOR REFRIGERANT PIPING TO BE TYPE ACR COPPER TUBING WITH 1/2" ELASTOMERIC PIPE INSULATION, PIPE LENGTHS JOINED WITH FLARED JOINT FITTINGS.
- B. OUTDOOR REPRIGERANT LINES TO BE TYPE ACR COPPER TUBING WITH I" ELASTOMERIC INSULATION AND ALLMINUM JACKET.
- C. SEE REFRIGERANT PIPING SCHEDULE ON THIS SHEET FOR PIPE SIZING REQUIREMENTS.
- PROVIDE LONG SWEEP BENDS AT CHANGES OF PIPE DIRECTION.
- E. PROVIDE FIRE STOPPING AT ALL FIRE RATED WALL FLOOR PIPE PENETRATIONS.
- REPRIGERANT PIPING ROUTED IN CEILING SPACE, SUPPORTED AS REQUIRED. SEE DETAIL.
- G. VERIFY SITE CONDITIONS FOR POSSIBLE CONFLICTS WITH DUCT & REPRIGERANT PIPING ROUTED IN CEILING SPACES, REPROVE SECTIONS OF EXISTING DUCT AS REQUIRED.
- H. MAINTAIN ACCESS FREE OF OBSTRUCTIONS FOR EQUIPMENT MAINTENANCE.
- I. LOCATE REFRIGERANT PIPING ELBOWS, TEES AND HEADERS AS SHOWN, TO MAINTAIN CALCULATED PIPINS EQUIVALENT LENGTHS. SUBHIT PIPINS LAYOUT SHOP DRAWINGS FOR APPROVAL BY EMBINER.
- K. CONDENSATE DRAIN PIPING TO BE TYPE M COPPER PIPING. SUPPORT PIPING PER THE UNIFORM PLUMBING CODE.
- L. SLOPE ALL CONDENSATE DRAIN PIPING 1/4" PER FOOT TO DRAIN AS SHOWN...
- M, PROVIDE IDENTIFICATION LABELING ON ALL PIPNG, INDICATE HP SOURCE UNIT ON REFRIGERANT PIPE MAINS, INDICATE FOU SERVED AT DISTRIBUTION HEADERS.

SHEET LEGEND

MIN. 3'-6" TYP.

TYPICAL OUTDOOR VRF SYSTEM HEAT PUMP UNIT, SEE DETAIL

4" ELEVATED CONCRETE EQUIPMENT PAD TYPICAL,

6' HIGH CHAIN LINKED --

FC SERVED - SOURCE - HP UNIT FC UNITS: FAN COIL UNITS, SEE EQUIPMENT SCHEDULE, SHEET MO.I

CD CONDENSATE DRAIN PIPE

REFRIGERANT (LIQUID AND GAS) PIPING: SEE REFRIGERANT PIPING SCHEDULE.

co CLEAN OUT DRYWALL SEE DETAIL 5 DW

SOURCE HP UNIT

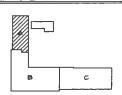
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SOURCE HP UNIT REFRIGERANT PIPE TEE FITTING SEE EQUIPMENT SCHEDULE, SHEET MO2

KEY NOTES

- LOCATE REFRIGERANT PIPING TEE FITTINGS AS SHOUN, TO MAINTAIN EQUIPMENT PIPE LENGTH
- 2 ROUTE PIPING AT CE LING, SUPPORT AS REQUIRED, SEE DETAIL (1) MB.I
- 3 ROUTE PIPMS AT GRADE, SUPPORT AS REQUIRED, SEE DETAIL 2 PBJ
- 4 PROVIDE REFRIGERANT BRANCH SHITOFF VALVES AT DISTRIBUTION HEADER OR TEE.

KEY PLAN



SCALE: 1/8" = 1'-0"







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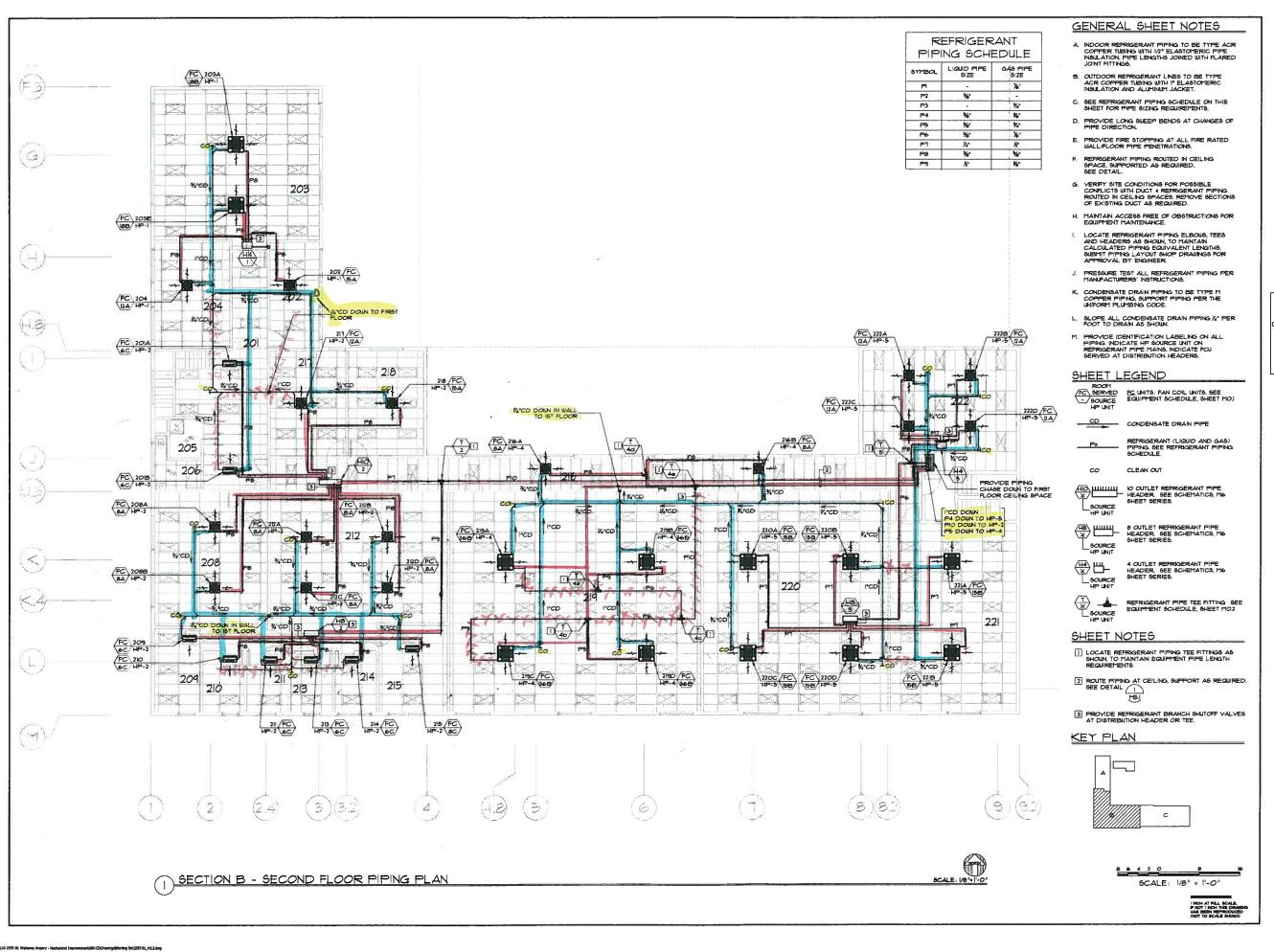
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SECTION C -FIRST FLOOR PIPING PLAN

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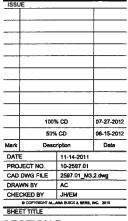
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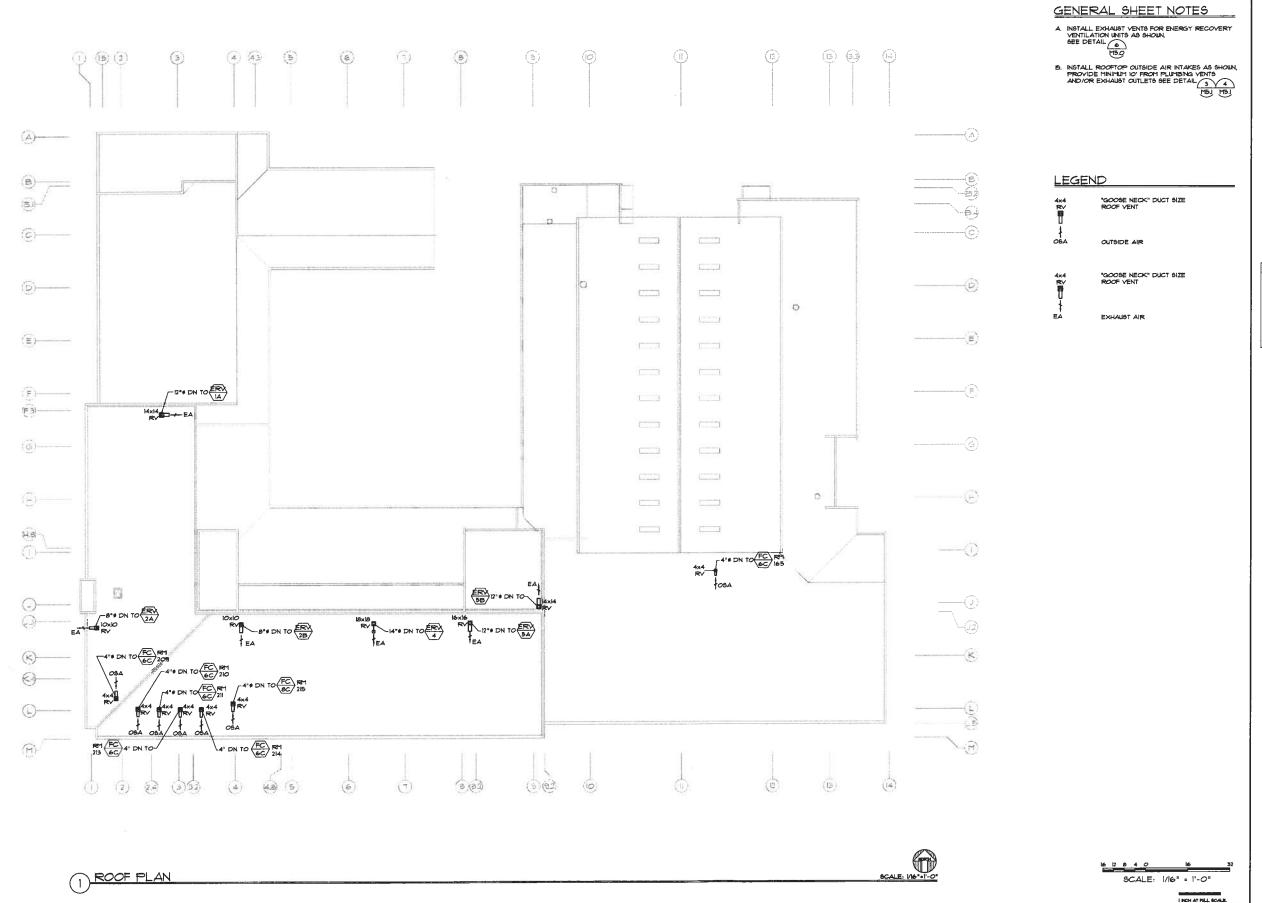


SECTION B -SECOND FLOOR PIPING PLAN

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M3.2b







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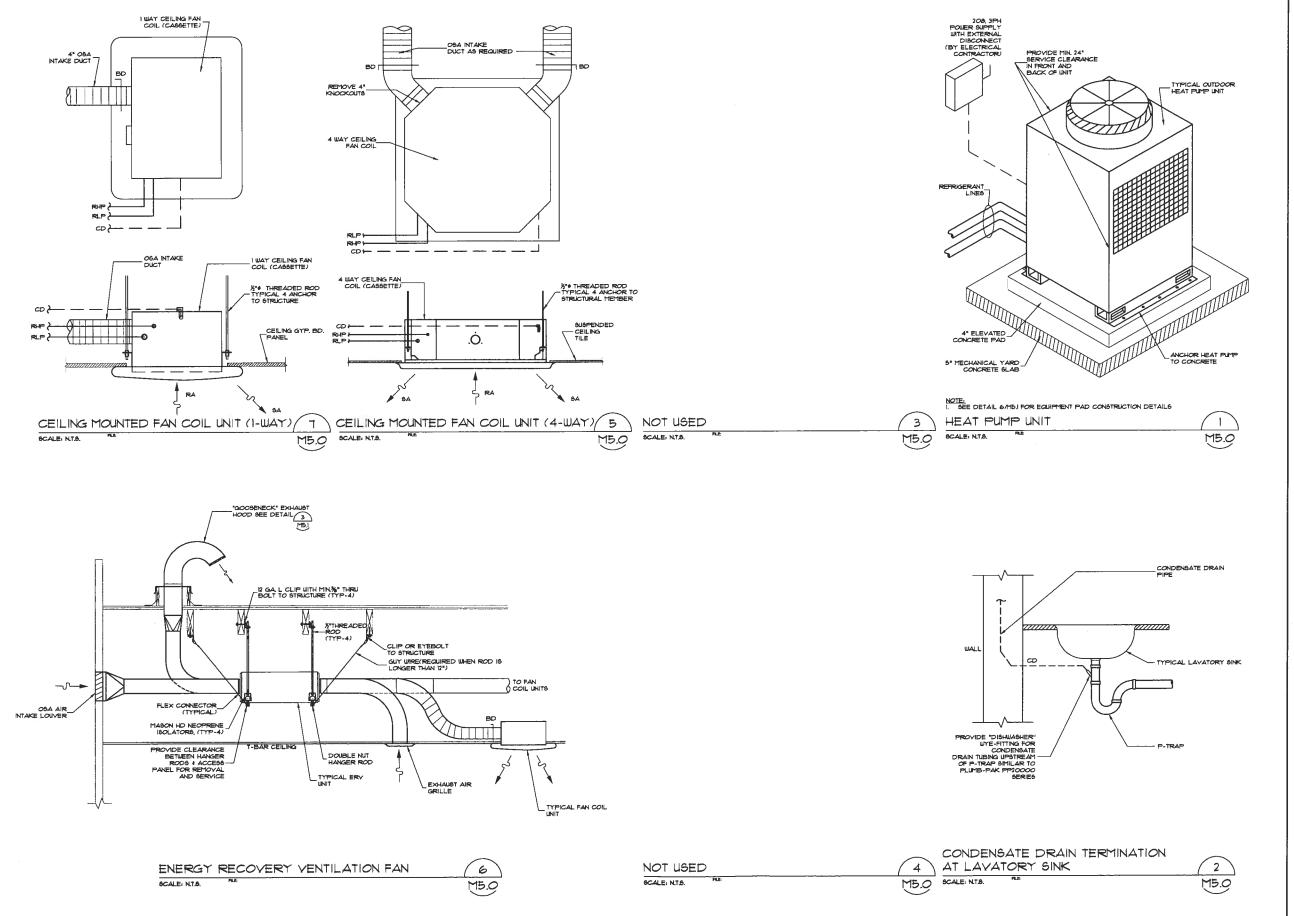
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ROOF PLAN					

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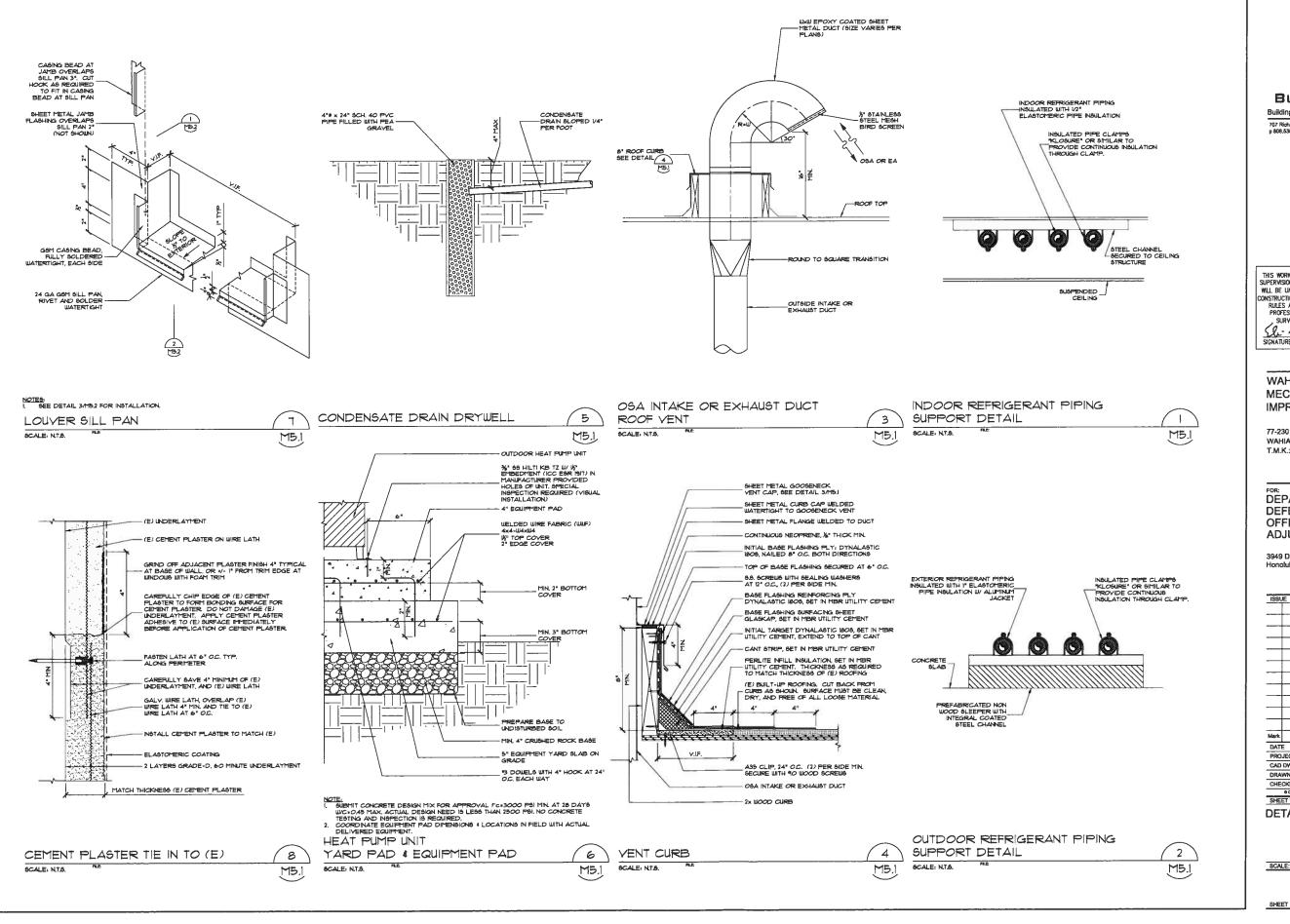
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SIGNATURE EXPIRATION DATE OF THE LICENSE

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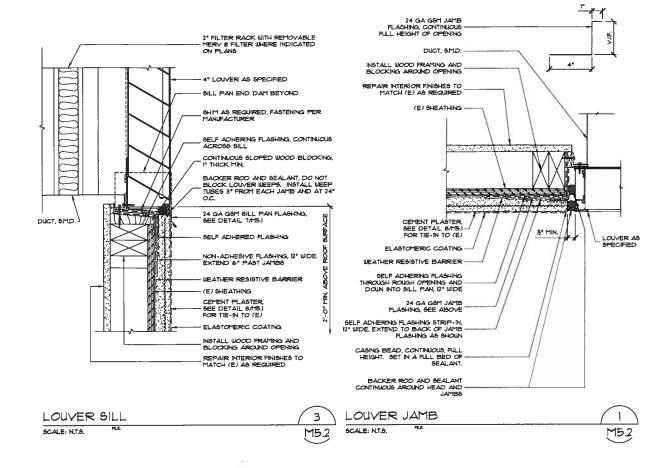
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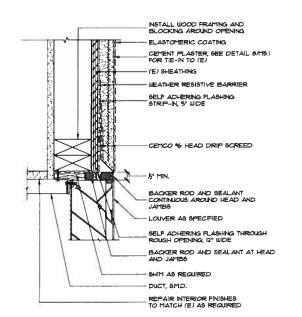
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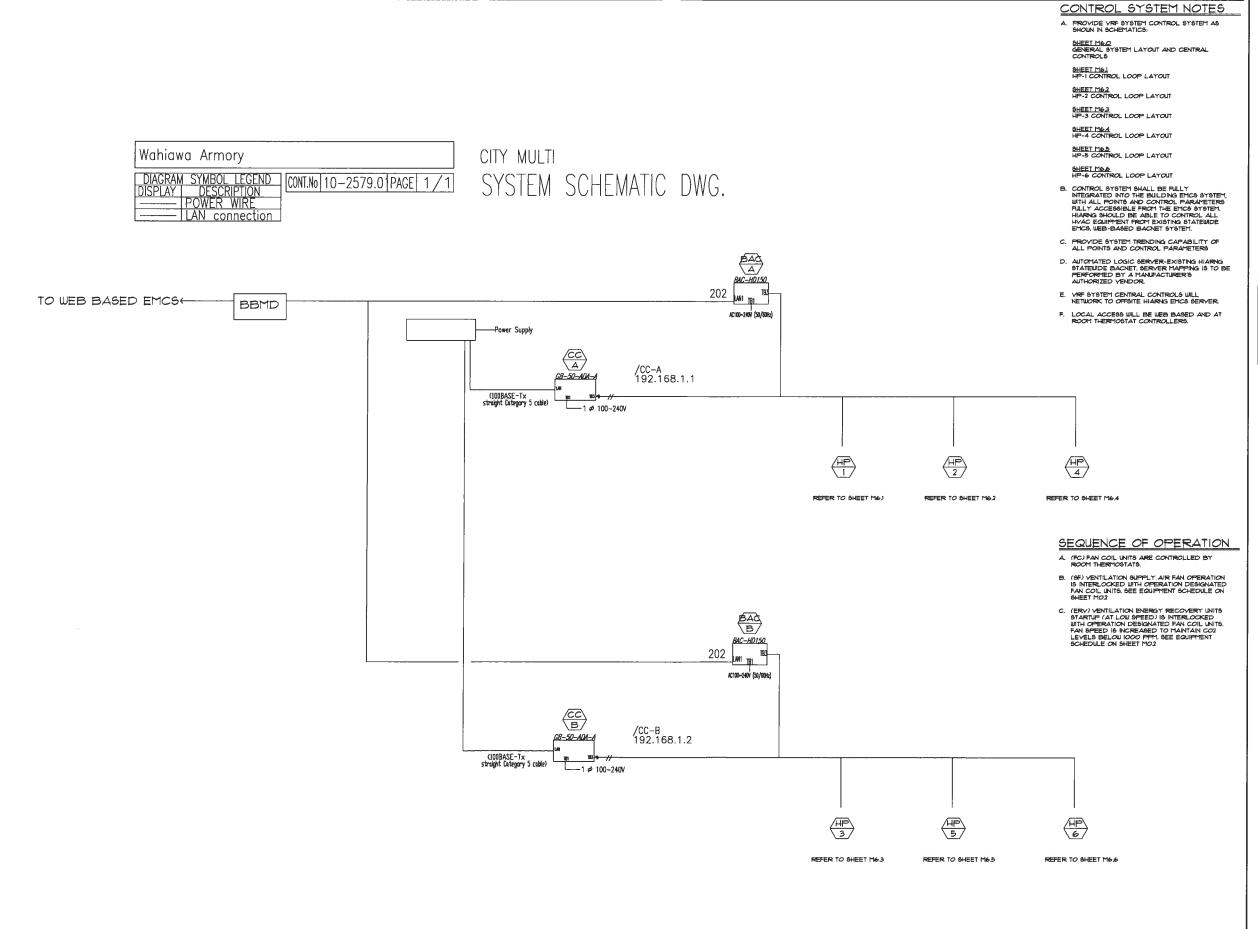
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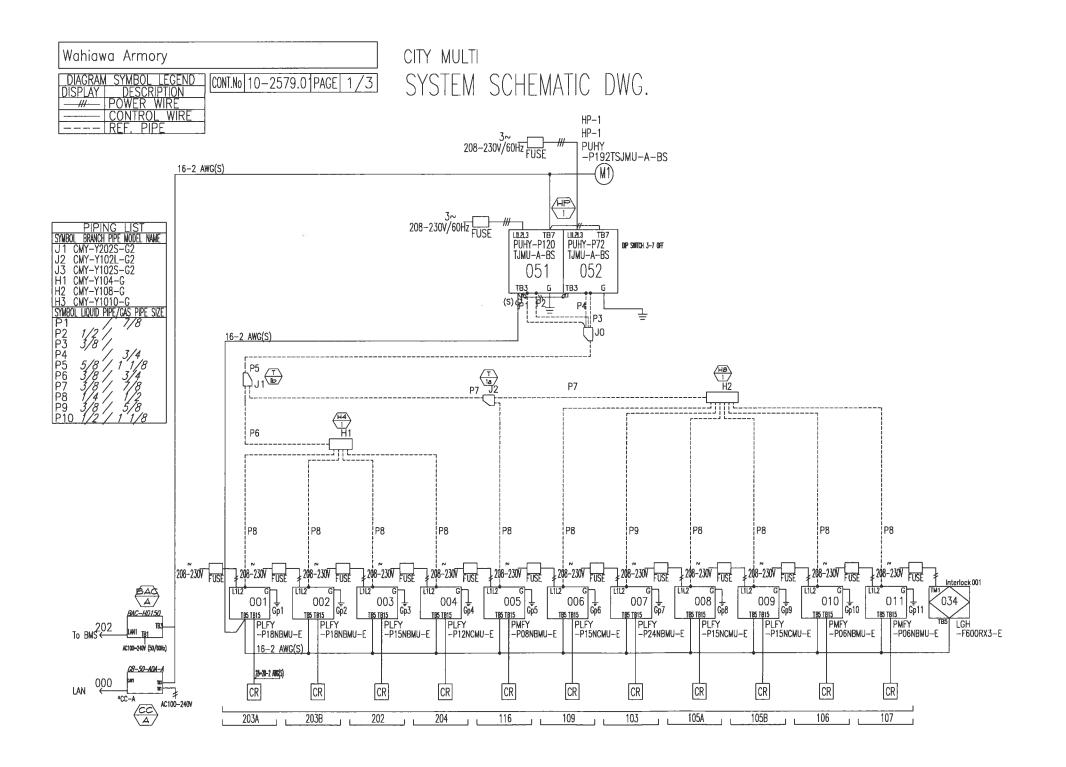
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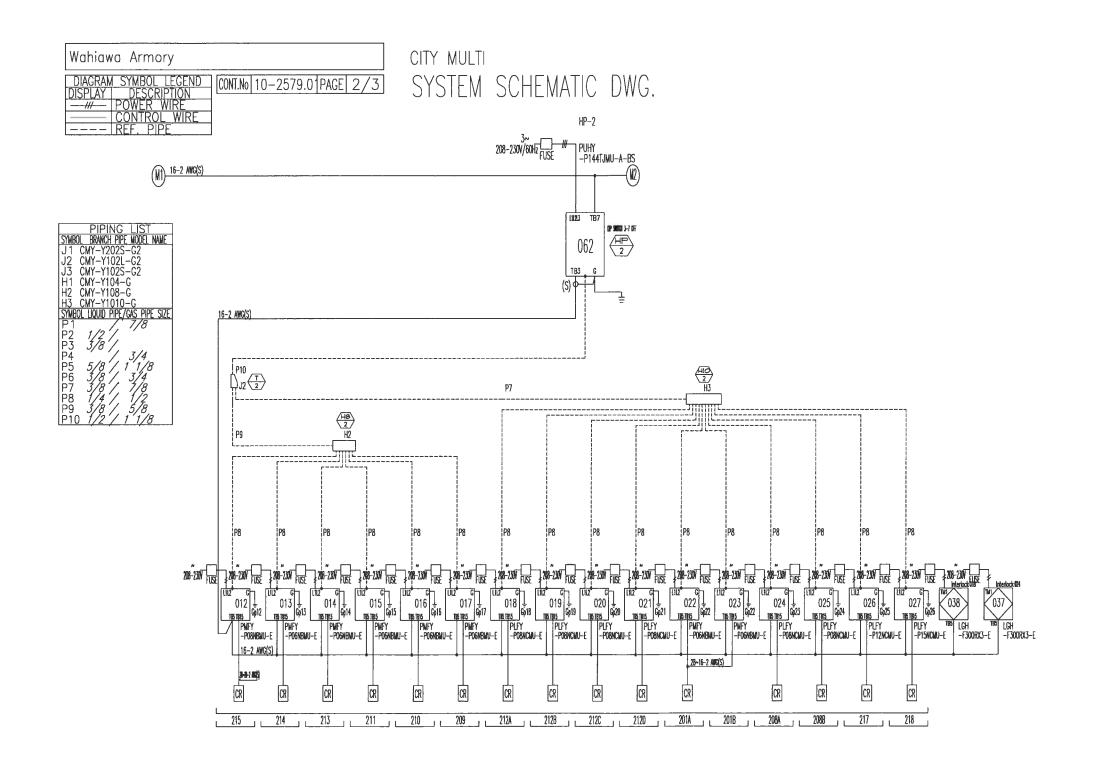
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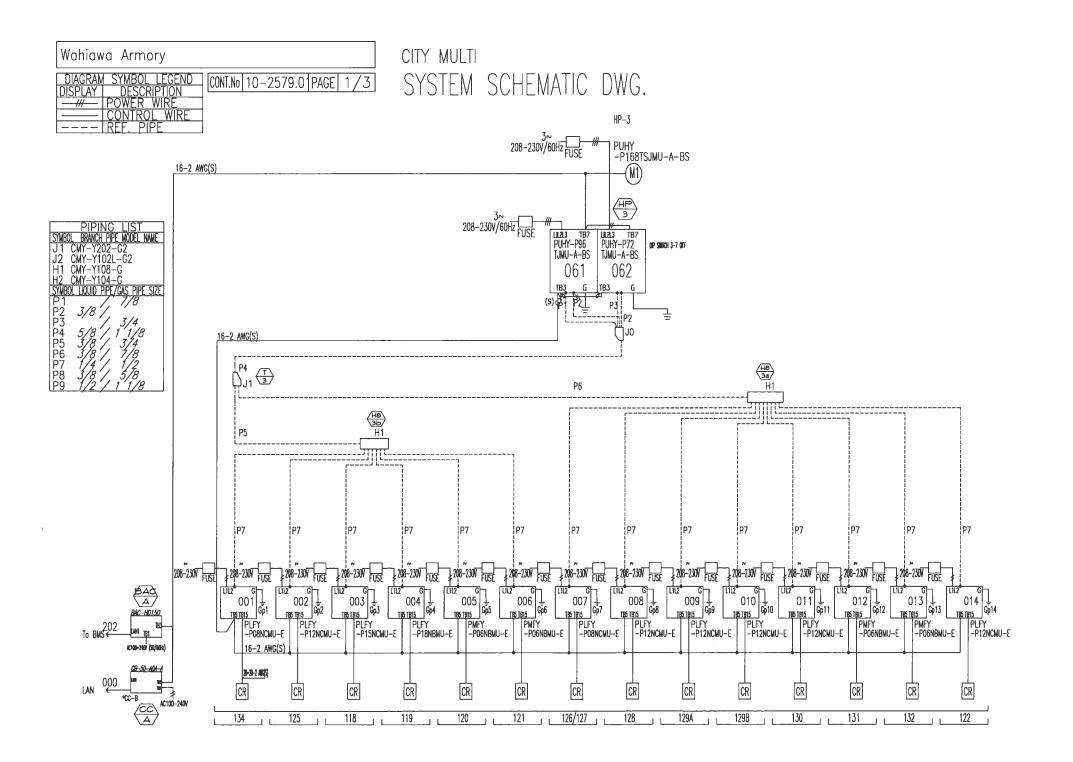
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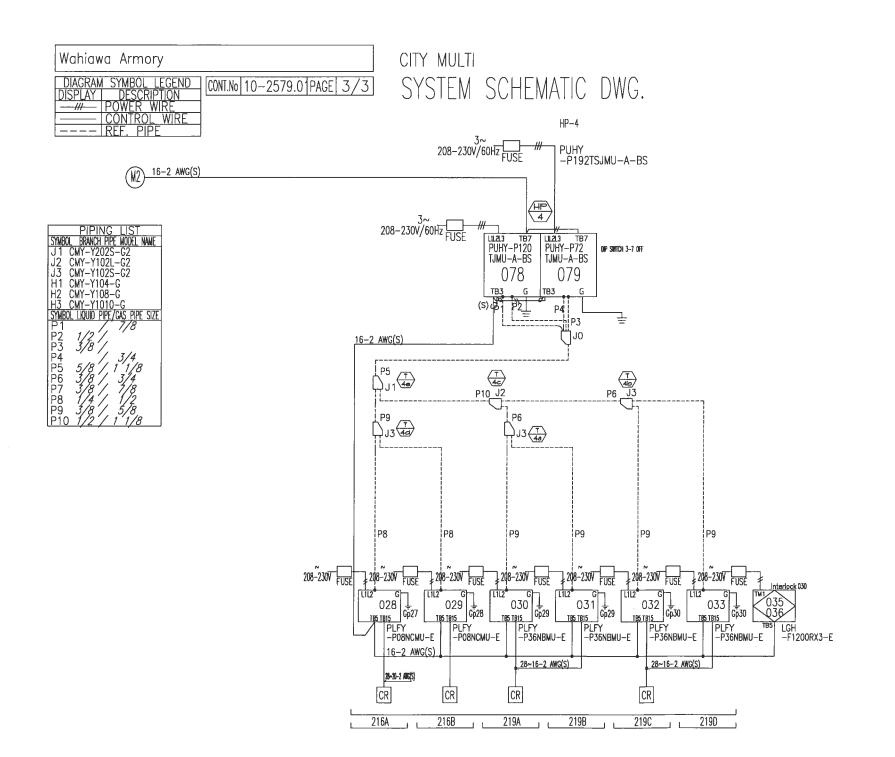
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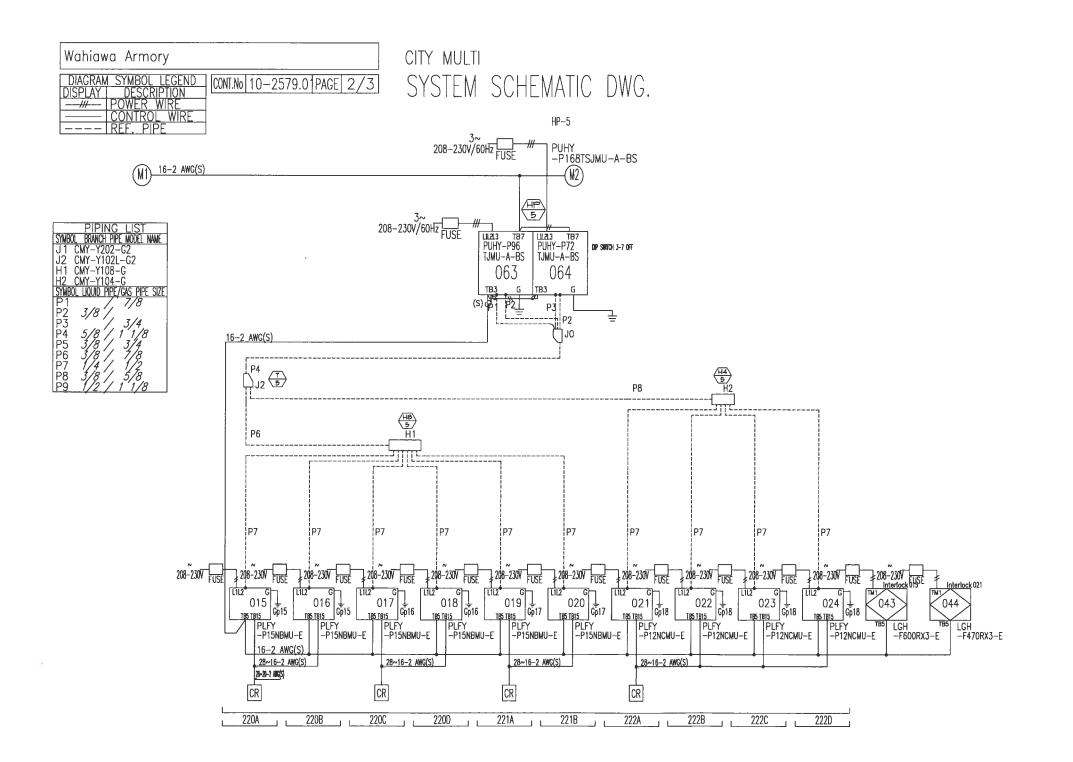
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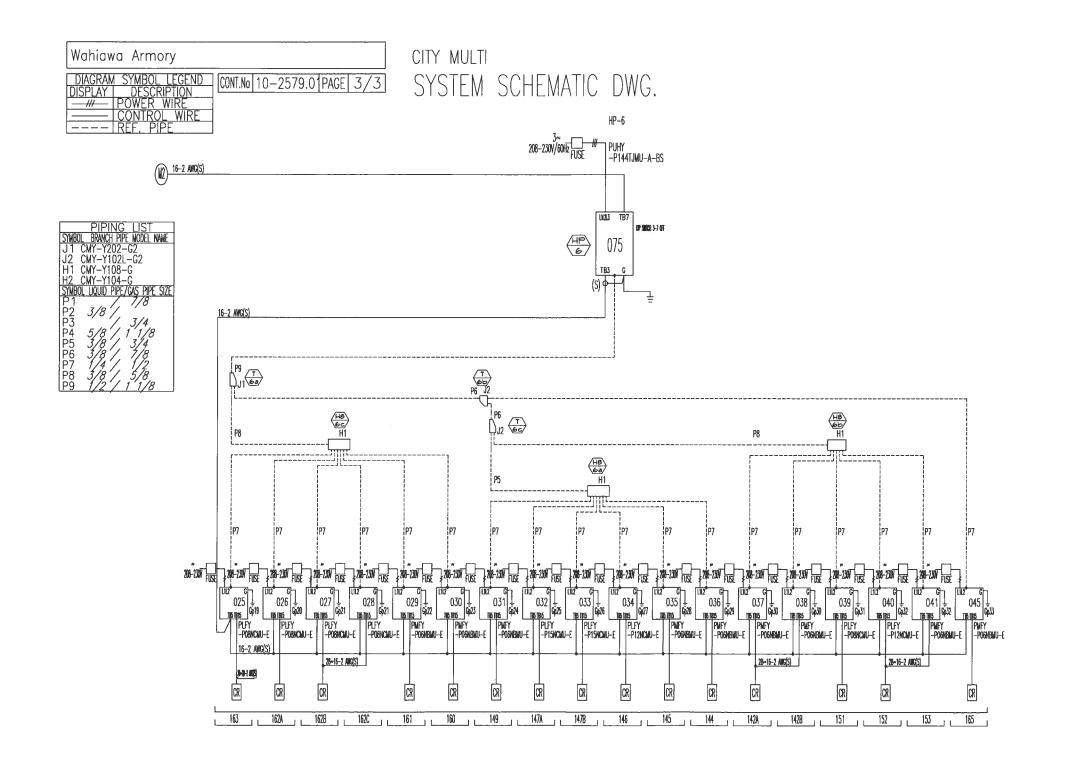
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