ABBREVIATIONS

ABBREVIATION	DESCRIPTION
AC	AIR CONDITIONING UNIT
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AL	ACOUSTICAL LINING
AMB	AMBIENT
AMP	AMPERE (AMPS)
BHP	BRAKE HORSE POWER
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BTU	BRITISH THERMAL UNIT
BTUH	BTU PER HOUR
BD	BACKDRAFT DAMPER
C	CELSIUS
CFM	CUBIC FEET PER MINUTE
CO	CLEANOUT
CONT.	CONTINUATION
D	DRAIN
DB	DRY BULB
DIA.	DIAMETER
DX	DIRECT EXPANSION
EFF	EFFICIENCY
ENT	ENTERING
EXH	EXHAUST
EMCS	ENERGY MANAGEMENT CONTROL SYSTEM
°F	DEGREES FAHRENHEIT
FCO	FLOOR CLEANOUT
FC	FAN COIL UNIT
FD	FLOOR DRAIN
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FS	FLOOR SINK
FSD	FIRE SMOKE DAMPER
GA	GAUGE
GAL	GALLONS
GPM	GALLONS PER MINUTE
HB	HOSE BIB
HD	HAND DAMPER
HORZ	HORIZONTAL
HP	HORSE POWER
HR	HOUR
IN	INCHES
KVA	KILOVOLT-AMPERE
KW	KILOWATT
KWH	KILOWATT HOUR
LBS	POUNDS
MAX	MAXIMUM
MIN	MINIMUM
N/A	NOT APPLICABLE
NC.	NOISE CRITERIA
NC	NUMBER
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
QTY	QUANTITY
QUAD	QUADRANT
RA	RETURN AIR
REQ	REQUIRED
RH	RELATIVE HUMIDITY
RM	ROOM
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SD	SMOKE DAMPER
SP	STATIC PRESSURE
TEMP	TEMPERATURE
T-STAT	THERMOSTAT
TP	TOTAL PRESSURE
TYP	TYPICAL
V	VOLTS
VAC	VOLTS, ALTERNATING CURRENT
VAV	VARIABLE AIR VOLUME
VEL	VELOCITY
VTR	VENT THRU ROOF
WB	WET BULB
WCO	WALL CLEAN OUT

MECHANICAL LEGEND AND ABBREVIATIONS

SYMBOL	ABBREVIATION	DESCRIPTION
		SQUARE ELBOW WITH TURNING VANES
		RADIUS ELBOW
	MVD	MANUAL VOLUME DAMPER
	MOD	MOTOR OPERATED DAMPER
	BDD	BACKDRAFT DAMPER
FD	FD	FIRE DAMPER
SD	SD	DUCT MOUNTED SMOKE DETECTOR
FSD	FSD	COMBINATION FIRE/SMOKE DAMPER
	FLEX	FLEXIBLE CONNECTION (DUCTWORK)
	FLEX	FLEXIBLE CONNECTION OR SEISMIC JOINT
	FLEX	FLEXIBLE DUCTWORK
		LINED DUCTWORK (OR PLENUM)
UP		DUCT RISE IN DIRECTION OF FLOW
DN		DUCT DROP IN DIRECTION OF FLOW
		DUCT TRANSITION
		ROUND DUCT UP
		ROUND DUCT DOWN
		SUPPLY DUCT UP
		SUPPLY DUCT DOWN
	RA/OA	RETURN AIR DUCT/OUTSIDE AIR DUCT UP
		RETURN AIR DUCT/OUTSIDE AIR DUCT DOWN
		EXHAUST AIR DUCT UP
		EXHAUST AIR DUCT DOWN
	CD	SUPPLY AIR CEILING DIFFUSER
	RR	RETURN REGISTER
	ER	EXHAUST REGISTER
T AC-1	T'STAT	THERMOSTAT OR TEMPERATURE SENSOR (NUMBER INDICATES EQUIPMENT OR ZONE SERVED)
H	H'STAT	HUMIDISTAT
		DIRECTION OF AIRFLOW

SOME ABBREVIATIONS AND SYMBOLS MAY NOT BE USED IN THE DOCUMENTS THAT FOLLOW.

GENERAL NOTES

1. NOTES APPLY TO ALL MECHANICAL SHEETS.
2. EACH CONTRACTOR IS RESPONSIBLE FOR HAVING THOROUGH KNOWLEDGE OF ALL DRAWINGS AND SPECIFICATIONS AS THEY RELATE TO THIS WORK. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED DUE TO LACK OF THIS KNOWLEDGE.
3. PROVIDE ALL MATERIALS FOR A COMPLETE INSTALLATION IN ALL RESPECTS READY FOR INTENDED USE AND IN STRICT ACCORDANCE WITH STATE AND LOCAL CODES AND MANUFACTURER'S RECOMMENDATIONS.
4. SPRINKLER HEAD AND LIGHTING FIXTURE LOCATIONS TAKE PRECEDENCE OVER DIFFUSER LOCATIONS. COORDINATE WITH ELECTRICAL CONTRACTOR AND FIRE PROTECTION CONTRACTOR.
5. DUCTWORK IDENTIFICATION AND INSTALLATION TO ADHERE TO GOVERNING CODES.
6. DUCT SIZES INDICATED ARE INSIDE CLEAR DIMENSIONS AND REPRESENTATIVE OF THE INSIDE EQUIVALENT FREE AREA REQUIRED TO MAINTAIN THE AIR FLOW SPECIFIED. IF DUCT LINING IS REQUIRED, INCREASE DUCT SIZE TO MAINTAIN ORIGINAL INSIDE DIMENSIONS. IF DUCT SIZES NEED TO BE ALTERED FOR SPACE REQUIREMENTS, ENSURE THE ORIGINAL INSIDE DUCT EQUIVALENT FREE AREA IS MAINTAINED.
7. TYPICAL BRANCH DUCT FITTING DETAIL IS APPLICABLE THROUGHOUT. FLEXIBLE DUCTWORK IS ONLY PERMITTED FOR FINAL CONNECTION - MAX LENGTH OF 6'-0".
8. FURNISH AND INSTALL VOLUME/BALANCE DAMPERS AT ALL BRANCH DUCTS TO DIFFUSERS. LOCATE DAMPERS A MINIMUM 4'-0" AWAY FROM DIFFUSERS. PROVIDE ACCESS AS REQUIRED.
9. ALL CEILING DIFFUSERS ARE 4-WAY PATTERN UNLESS SHOWN OTHERWISE.
10. PROVIDE A COMPLETE TEST AND BALANCE FOR HVAC SYSTEM. AIR BALANCE SHALL BE WITHIN 5% OF SCHEDULED AIRFLOWS.
11. INSTALL VTR'S AND EXHAUST FANS A MINIMUM OF 10 FT FROM OUTSIDE AIR INTAKE.
12. ALL PIPING AND DUCTS IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN FURRED CHASES OR SUSPENDED CEILINGS, UNLESS OTHERWISE NOTED.
13. PROVIDE ACCESS PANELS OR DOORS IN INACCESSIBLE CEILINGS AND/OR CHASES FOR ALL VALVES, TRAPS, DAMPERS, CLEANOUTS, COILS, FANS, CONTROLS, ETC. ACCESS DOOR RATING SHALL MATCH CLASSIFICATION OF WALL AND CEILING FIRE RATING.
14. COORDINATE THE LOCATION OF ALL DIFFUSERS, GRILLES, REGISTERS, ACCESS DOORS, ETC., WITH THE ARCHITECTURAL REFLECTED CEILING PLAN.
15. ALL ROUND RUN OUTS AND DROPS TO DIFFUSERS SHALL BE THE SAME NOMINAL SIZE AS THE SCHEDULED DIFFUSER NECK SIZE.
16. PROVIDE TURNING VANES IN ALL SQUARE ELBOWS. EXCEPT TRANSFER AIR SOUND ELBOWS.
17. REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL FIRE RATED AND/OR SMOKE RATED WALLS AND ASSEMBLIES. PROVIDE APPROVED FIRE AND FIRE/SMOKE DAMPERS IN ALL REQUIRED PENETRATIONS FOR DUCTWORK, GRILLES, REGISTERS AND DIFFUSERS. ALL PIPE AND DUCTWORK PENETRATIONS OF FIRE, SMOKE AND FULL HEIGHT WALLS SHALL BE CAULKED AIR TIGHT TO THE ADJACENT STRUCTURE BY MEANS OF U.L. APPROVED FIRE PROOF CAULKING MATERIAL.
18. CONTRACTOR SHALL COORDINATE ALL DUCTWORK, PIPING. PLUMBING AND FIRE PROTECTION PIPING WITH STRUCTURAL AND ELECTRICAL SYSTEMS AND SHALL PROVIDE NECESSARY OFFSETS TO AVOID CONFLICTS AND TO MAINTAIN EQUIPMENT ACCESS AND SERVICEABILITY.
19. CONTRACTOR SHALL FURNISH ALL NECESSARY STRUCTURES, INSERTS, SLEEVES, AND HANGING DEVICES FOR INSTALLATION OF MECHANICAL AND PLUMBING EQUIPMENT, DUCTWORK AND PIPING. ETC. CONTRACTOR SHALL COORDINATE WITH GENERAL CONTRACTOR AND ALL BUILDING TRADES TO AVOID CONFLICTS AND TO MAINTAIN EQUIPMENT ACCESS AND SERVICEABILITY.
20. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY MISCELLANEOUS ANGLES, CHANNELS, UNISTRUT, ETC., AS MAYBE REQUIRED TO ADEQUATELY SUPPORT THE MECHANICAL PIPING. DUCTWORK, AND EQUIPMENT IN A MANNER APPROVED BY THE ARCHITECT WHICH WILL NOT OVERLOAD THE BUILDING STRUCTURAL SYSTEM.
21. SEAL ALL TRANSVERSE JOINTS, LONGITUDINAL SEAMS, DUCTWALL PENETRATIONS AND FITTING CONNECTIONS ON ALL DUCT SYSTEMS.

CALIFORNIA GREEN BUILDING NOTES

1. THE PERMANENT HVAC SYSTEM SHALL ONLY BE USED DURING CONSTRUCTION IF NECESSARY TO CONDITION THE BUILDING OR AREAS OF ADDITION OR ALTERATION WITHIN THE REQUIRED TEMPERATURE RANGE FOR MATERIAL AND EQUIPMENT INSTALLATION. IF THE HVAC SYSTEM IS USED DURING CONSTRUCTION, RETURN AIR FILTER WITH A MINIMUM EFFICIENCY REPORTING VALUE (MERV) OF 8, BASED ON ASHRAE 52.2-1999, OR AN AVERAGE EFFICIENCY OF 30% BASED ON ASHRAE 52.1-1992 SHALL BE USED. ALL FILTERS SHALL BE REPLACED IMMEDIATELY PRIOR TO OCCUPANCY OR AT THE CONCLUSION OF CONSTRUCTION. (CAL GREEN SECTION: 5.504.1.3)
2. AT THE TIME OF ROUGH INSTALLATION AND DURING STORAGE ON THE CONSTRUCTION SITE UNTIL FINAL STARTUP OF THE HEATING, COOLING AND VENTILATING EQUIPMENT, ALL DUCT AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED WITH TAPE. PLASTIC, SHEETMETAL, OR OTHER METHODS ACCEPTABLE TO THE ENFORCING AGENCY TO REDUCE THE AMOUNT OF DUST, WATER AND DEBRIS WHICH MAY ENTER THE SYSTEM. (CAL GREEN SECTION: 5.504.3)
3. IN MECHANICALLY VENTILATED BUILDINGS, REGULARLY OCCUPIED AREAS OF THE BUILDING SHALL BE PROVIDED WITH AIR FILTRATION MEDIA FOR OUTSIDE AND RETURN AIR THAT PROVIDES AT LEAST A MINIMUM EFFICIENCY REPORTING VALUE (MERV) OF 8, MERV 8 FILTERS SHALL BE INSTALLED PRIOR TO OCCUPANCY, AND RECOMMENDATIONS FOR MAINTENANCE WITH FILTERS OF THE SAME VALUE SHALL BE INCLUDED IN THE OPERATION AND MAINTENANCE MANUAL. (CAL GREEN SECTION: 5.504.5.3)
4. EXCEPTION TO CAL GREEN SECTION: 5.504.5.3:- AN ASHRAE 10-PERCENT TO 15-PERCENT EFFICIENCY FILTER SHALL BE PERMITTED FOR AN HVAC UNIT MEETING THE 2013 CALIFORNIA ENERGY CODE HAVING 60000 BTU/H OR LESS CAPACITY PER FAN COIL, IF THE ENERGY USE OF THE AIR DELIVERY SYSTEM IS 0.4 W/CFM OR LESS AT DESIGN AIR FLOW.
5. MECHANICALLY OR NATURALLY VENTILATED SPACES IN BUILDING SHALL MEET THE MINIMUM REQUIREMENTS OF SECTION 121 (REQUIREMENTS OF VENTILATION) OF THE 2010 CALIFORNIA CODE, OR THE APPLICABLE LOCAL CODE, WHICHEVER IS MORE STRINGENT, AND DIVISION 1, CHAPTER 4 OF CCR, TITLE 8. (CAL GREEN SECTION: 5. 506.1)
6. FOR BUILDINGS OR ADDITIONS EQUIPPED WITH DEMAND CONTROL VENTILATION, CO2 SENSORS AND VENTILATION CONTROLS SHALL BE SPECIFIED AND INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF2013 CALIFORNIA ENERGY CODE, SECTION 120(C)(4).(CAL GREEN SECTION: 5.506.2)
7. INSTALLATION OF HVAC, REFRIGERATION AND FIRE SUPPRESSION EQUIPMENT SHALL COMPLY WITH SECTION 5.508.1.1 AND 5.508.1.2. HVAC, REFRIGERATION AND FIRE SUPPRESSION EQUIPMENT SHALL NOT CONTAIN CHLOROFLUOROCARBONS (CFCS) AND SHALL NOT CONTAIN HALONS (SECTION: 5.508.1).
8. IN ADDITION TO TESTING AND ADJUSTING, BEFORE A NEW SPACE-CONDITIONG SYSTEM SERVING A BUILDING OR SPACE IS OPERATED FOR NORMAL USE, BALANCE THE SYSTEM IN ACCORDANCE WITH THE PROCEDURES DEFINED BY THE TESTING ADJUSTING AND BALANCING BUREAU NATIONAL STANDARDS; THE NATIONAL ENVIRONMENTAL BALANCING BUREAU PROCEDURAL STANDARDS; OR ASSOCIATED AIR BALANCE COUNCIL NATIONAL STANDARDS.
9. PROVIDE THE BUILDING OWNER OR REPRESENTATIVE WITH DETAILED OPERATING AND MAINTENANCE INSTRUCTIONS AND COPIES OF GURANTIES/WARRANTIES FOR EACH SYSTEM. O&M INSTRUCTIONS SHALL BE CONSISTENT WITH OSHA REQUIREMENT IN CCR, TITLE 8, SECTION 5142, AND OTHER RELATED REGULATIONS.
10. PLUMBING FIXTURE AND FITTINGS SHALL COMPLY WITH ALL THE REQUIREMENTS IN SECTION 5.303 IN THE 2013 CALIFORNIA GREEN BUILDING CODE.

EXHAUST FAN SCHEDULE

UNIT	MANUF	MODEL #	CFM	SP "WG	MOTOR HP	MOTOR VOLT/Ø	SPEED	BAROM. DPR.	WIRE SCREEN	DRIVE	REMARKS
EF1	GREENHECK	G-080-D	275	0.5"	1/20	120/1	-	-	YES	DIRECT	-

HEAT PUMP UNIT SCHEDULE

AREA SERVED	UNIT	MODEL	MIN. NOM. TON	CFM	SP "WG	MOTOR HP	SENS MBH	TOTAL MBH	HTG MBH	VOLT/Ø	MCA	MOCP	FLA	WEIGHT LBS.	OSA (CFM)	FILTER AT UNIT
ADMIN BLDG	RTU-2	CARRIER 50GCQJ06A2A6	5	2000	.5	-	45.64	60.81	41.56	480/3	13	20	12	596	200	RETURN
ADMIN BLDG	RTU-1	CARRIER 50FCQM07A2A6	6	2400	.5	-	57.48	74.33	48.59	480/3	14	20	29	589	600	RETURN

GRILLE, REGISTER AND DIFFUSER SCHEDULE

UNIT	DESCRIPTION	MANUFACTURER	MODEL #	MATERIAL	FRAME	TYPE	DAMPER	FINISH
CD1	VARIABLE FLOW DIFFUSER (24X24)	PRICE INDUSTRIES	VPD-C	STEEL	LAY-IN	VARIABLE	NONE	WHITE
CD2	SUPPLY DIFFUSER (12X12)	PRICE INDUSTRIES	520D	STEEL	DUCT MTD	LOUVERED	YES	WHITE
RG1	RETURN GRILLE (24X24)	PRICE INDUSTRIES	530D	STEEL	LAY IN	LOUVERED	YES	WHITE
RG2	RETURN GRILLE (12X12)	PRICE INDUSTRIES	530D	STEEL	DUCT MTD	LOUVERED	YES	WHITE
EF1	EXHAUST GRILLE (12X12)	PRICE INDUSTRIES	530D	STEEL	DUCT MTD	LOUVERED	YES	WHITE

SPLIT SYSTEM SCHEDULE (COOLING ONLY)

MARK	MANUFACTURER	MODEL NUMBER		FAN COIL UNIT (COIL)					CONDENSING UNIT			EFFICIENCY	COOLING CAPACITIES						INDOOR UNIT LBS	OUTDOOR UNIT LBS	REMARKS
		CONDENSER UNIT	FCU - FURNACE & COOLING COIL	CFM	ESP	MCA	MOCP	VOLT/Ø	MCA	MOCP	VOLTS		EAT DB	EAT WB	LAT DB	LAT WB	MBH TOTAL	MBH SENSIBLE			
FC-1 CU-1	CARRIER	RAV-SP122AT2P	RAV-SM122KRTP	475	0.0	-	-	-	14	25	208/1	25 SEER	88.3	68	57.5	57.5	12.1	10.9	40	106	(1)(2)(3)

(1) DISCONNECT BY ELECTRICAL CONTRACTOR.

(2) ALL REFRIGERANT PIPING FROM CONDENSING UNIT TO A/C UNITS SHALL BE DESIGNED AND SIZED BY EQUIPMENT MANUFACTURER. VERIFY THE INSULATION OF VAPOR LINE AND PROVIDE PROPER SUPPORT FOR REFRIGERATION LINES.

(3) PROVIDE DIGITAL NON-PROGRAMMABLE THERMOSTAT.

Plot Date:

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ADMINISTRATION BUILDING

EDUARDO GALINDO ARCHITECT
9733 W. SUNNYSLOPE LANE
PEORIA, ARIZONA 85345
480.751.8780 ed@egadesign.net
egadesign.net

ISSUED	REV	DATE
DART Submittal		15 May 2015
Site Development Plan 1		23 June 2015
30% Schematic Design		30 Oct. 2015
Pre-App & Architectural Board of Review Submittal		23 Apr. 2016
Architectural Board of Review Submittal		25 Jan. 2017
Architectural Board of Review		10 OCT 2022

REGISTERED PROFESSIONAL ENGINEER
EDUARDO ERIC GONZALES
M 37200
Exp. 03/31/25
MECHANICAL
STATE OF CALIFORNIA

08/09/2023

DRAWING
MECHANICAL NOTES, ABBREVIATIONS, SYMBOLS, & SPECIFICATIONS

N.T.S.

SCALE

40903

PROJECT NUMBER

DRAWING NUMBER
M-0.0