

DATE

DESIGNED BY

QUANTITIES BY

CHECKED BY

ORIGINAL

NOTE BOOK

No.

CHECKED BY

DATE

DESIGNED BY

QUANTITIES BY

CHECKED BY

GENERAL NOTES:

1.

CONSTRUCTION DOCUMENTS CONSIST OF DESIGN DRAWINGS (DWG) AND WRITTEN SPECIFICATIONS (SPEC). WHEREVER DISCREPANCIES OR CONFLICTS ARE FOUND BETWEEN DWG AND SPEC, THE MORE STRINGENT REQUIREMENTS/CRITERIA SHALL GOVERN.
2.

ALL WORK SHOWN ON THESE DRAWINGS ARE NEW UNLESS OTHERWISE NOTED.
3.

EXISTING CONDITIONS AND DIMENSIONS SHOWN ON THESE DRAWINGS ARE APPROXIMATE, BIDDERS SHALL VISIT THE PREMISES AND THOROUGHLY FAMILIARIZE THEMSELVES WITH ALL DETAILS OF WORK AND WORKING CONDITIONS BEFORE SUBMITTING THEIR BID. REASONABLE MODIFICATIONS IN LOCATION AND ARRANGEMENTS TO SUIT JOB CONDITIONS SHALL NOT CONSTITUTE BASIS FOR REQUESTING OF ADDITIONAL FUNDS FROM THE STATE.
4.

PRIOR TO ORDERING MATERIALS AND PROCURING EQUIPMENT, SUCCESSFUL BIDDER (CONTRACTOR) SHALL BE REQUIRED TO VERIFY ALL EXISTING CONDITIONS, INCLUDING BUT NOT LIMITED TO EQUIPMENT, MATERIALS, SIZES, DIMENSIONS, INVERTS, AND VOLTAGES THAT AFFECT HIS WORK. SUBMIT A LETTER TO THE ENGINEER CONFIRMING THAT THIS WAS DONE. IF WRITTEN CONFIRMATION IS NOT RECEIVED BY THE ENGINEER, SHOP DRAWINGS AND OTHER SUBMITTALS WILL BE RETURNED WITHOUT REVIEW. SHOW ALL DISCREPANCIES ON SHOP DRAWINGS AND NOTIFY THE ENGINEER IN WRITING OF SUCH DISCREPANCIES PRIOR TO PROCUREMENT.
5.

EXISTING UTILITY LATERAL LOCATIONS ARE CRITICAL WHERE BUILDING UTILITIES CONNECT TO EXISTING, CONTRACTOR SHALL VERIFY THE EXACT LOCATION (BY TONING) AND INVERTS (BY EXCAVATION), BEFORE ORDERING MATERIALS.
6.

ALL UTILITIES AND APPURTENANCES SHALL BE PROTECTED AT ALL TIMES DURING CONSTRUCTION, AND IF DAMAGED, SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE STATE.
7.

REMOVE ALL UNUSED PIPING UNLESS SPECIFICALLY INDICATED AS "ABANDON IN PLACE". ALL ABANDONED PIPES SHALL BE CAPPED AT BOTH ENDS.
8.

THIS CONTRACT REQUIRES THE PLUMBING, AND MECHANICAL SUBCONTRACTORS TO CAREFULLY COORDINATE THEIR WORK WITH EACH OTHER, THE GENERAL CONTRACTOR AND OTHER TRADES. PRIORITY SHALL BE GIVEN IN THE FOLLOWING ORDER:

A.

GRAVITY FLOW: SEWER, STORM DRAIN, DOWNSPOUT AND CONDENSATE PIPING.

B.

EQUIPMENT AND DUCTWORK.

C.

FORCED AND PRESSURE PIPING SUCH AS WATER PIPING.
9.

ALL UNDERGROUND PRESSURE PIPING WITH MECHANICAL JOINTS SHALL HAVE CONCRETE REACTION BLOCKS AT ALL ELBOWS, TEES AND DEAD END PLUGS.
10.

CONTRACTOR SHALL PROVIDE DIELECTRIC UNIONS AT CONNECTION POINTS FOR PIPING OF DISSIMILAR METALS.
11.

FOR ALL FLOOR, WALL PARTITION, CEILING AND ROOF PENETRATIONS, SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR DETAILS.
12.

ALL PENETRATIONS OF REQUIRED FIRE RATED WALLS, PARTITIONS AND FLOORS SHALL BE PROVIDED WITH FIRE STOPPING MATERIAL PER IBC.
13.

NO CUTTING OR DRILLING OF ANY STRUCTURAL MEMBERS WILL BE PERMITTED WITHOUT THE APPROVAL OF THE ARCHITECT.
14.

ALL FASTENERS, SUPPORTS, PIPE HANGERS, SPRING ISOLATORS, AND MISCELLANEOUS STEEL ITEMS INCLUDING BUT NOT LIMITED TO BOLTS, NUTS, SCREWS, RODS, PLATES, AND ANGLES, ETC. SHALL BE GALVANIZED UNLESS OTHERWISE NOTED OR SPECIFIED.
15.

DEVICES THAT REQUIRE SERVICE CLEARANCE INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING: FAN COIL

UNITS, VOLUME DAMPERS, PRESSURE SENSORS, VALVES, ETC. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND ALL SUBCONTRACTORS TO CAREFULLY PLAN AND COORDINATE THE WORK OF ALL TRADES TO PROVIDE THE REQUIRED SERVICE CLEARANCES FOR THESE DEVICES. PROVIDE ACCESS PANELS TO CONCEALED SPACES (WHETHER SHOWN ON THE PLANS OR NOT) TO ALLOW ACCESS. PROVIDE FIRE RATED ACCESS PANELS AS REQUIRED. COORDINATE TYPE OF ACCESS PANEL WITH WALL OR CEILING CONTRACTOR. DO NOT BLOCK ACCESS BY INSTALLING EQUIPMENT, DUCTWORK, PIPING, CABLE TRAYS, CONDUITS, ETC., DIRECTLY BELOW SUCH DEVICES OR DIRECTLY ABOVE ACCESS PANELS. INSTALLATION SHALL PROVIDE SERVICE CLEARANCE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS (BUT NOT LESS THAN 24") IN FRONT OF SUCH DEVICES. ACCESS PANELS SHALL BE 24"x24" MINIMUM UNLESS OTHERWISE NOTED.

MECHANICAL NOTES:

1.

CONSTRUCTION DOCUMENTS CONSIST OF DESIGN DRAWINGS (DWG) AND WRITTEN SPECIFICATIONS (SPEC). WHEREVER DISCREPANCIES OR CONFLICTS ARE FOUND BETWEEN DWG AND SPEC, THE MORE STRINGENT REQUIREMENTS/CRITERIA SHALL GOVERN.
2.

DUCTWORK SHOWN INDICATES GENERAL LAYOUT REQUIREMENTS. SHOP DRAWINGS SHALL INDICATE ADDITIONAL DUCT OFFSETS, DROPS, RISES, ETC. REQUIRED TO FIR SPACE AVAILABLE. MECHANICAL CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR TO ENSURE ADEQUATE SPACE IS AVAILABLE FOR ALL LIGHTS.
3.

CONTRACTOR SHALL VERIFY THE EXACT QUANTITIES OF FAN COIL UNITS, EXHAUST FANS, SUPPLY FANS, ROOF CAP, ETC. FROM THE PLANS. EQUIPMENT SCHEDULE ON SHEET M4 DOES NOT REFLECT THE EXACT QUANTITY OF EQUIPMENT.
4.

ALL AIR DEVICES SHALL BE ALUMINUM INCLUDING OPPOSED BLADE VOLUME DAMPERS, "OFF-WHITE" FINISH. ALL SUPPLY AIR REGISTERS SHALL BE DOUBLE DEFLECTION WITH 1/4" ON CENTER HORIZONTAL FACE BARS.
5.

LARGE DUCTS (OVER 30" IN ONE DIMENSION) SHALL BE REINFORCED WITH GALVANIZED ANGLE IRONS ON ALL SIDES TO PREVENT LOW RUMBLE VIBRATION, PER SMACNA "DUCT CONSTRUCTION STANDARDS."
6.

ALL DUCT DIMENSIONS ARE INSIDE DIMENSIONS: INCREASE DUCT DIMENSIONS TO COMPENSATE FOR DUCT LINER INSULATION THICKNESS.
7.

SEE DETAIL \_\_\_/M-\_\_\_ WHERE DUCT PENETRATIONS ARE THRU FLOORS AND FIRE RATED WALLS. COORDINATE ALL DUCT OPENING LOCATIONS AND SIZES THRU FLOORS AND WALLS.
8.

ALL AIR CONDITIONING SUPPLY, RETURN AIR DUCTS AND OUTSIDE AIR DUCTS SHALL BE INSULATED WITH DUCT WRAP.HALL BE GIVEN IN THE FOLLOWING ORDER:

A.

ACCESSORIES SUCH AS ATTENUATORS SHALL BE PROVIDED WITH 1-1/2" THICK RIGID FIBERGLASS EXTERNAL INSULATION.

B.

ALL EDGES OF DUCT AND PLENUM LINERS SHALL BE COATED AND PROVIDED WITH METAL NOSING AT ALL SUPPLY AND RETURN DUCT CONNECTIONS TO ALL AIR HANDLING EQUIPMENT.
9.

FLEXIBLE CONNECTIONS SHALL BE PROVIDED BETWEEN DUCTWORK FAN COIL UNITS, IN-LINE SUPPLY FANS AND EXHAUST FANS.

10.

SPLITTER DAMPERS SHALL BE INSTALLED IN DUCT TEES WHERE BRANCH DUCTS DO NOT HAVE THE SAME AIR CAPACITIES. VOLUME DAMPERS SHALL BE PROVIDED TO BALANCE AIR, SEE PLANS FOR LOCATIONS.
11.

ALL FLEXIBLE DUCTS SHALL BE WIRE REINFORCED WITH MINIMUM 1" THICK INSULATION AND MAXIMUM 5'-0" LENGTH WITH BELL MOUTH TAP.
12.

ALL PENETRATIONS OF REQUIRED FIRE RATED WALLS, PARTITIONS AND FLOORS SHALL BE PROVIDED WITH FIRE STOPPING MATERIAL PER UBC.
13.

AIR DEVICES LOCATED IN FIRE RATED CEILING SHALL HAVE FIRE DAMPERS AND OR FIRE/SMOKE DAMPERS AT EACH PENETRATION PER UBC CHAPTER 7. SEE ARCHITECTUAL DRAWINGS FOR FIRE RATED CEILING LOCATIONS.
14.

CONTRACTOR SHALL PROVIDE DIELECTRIC UNIONS AT CONNECTION POINT FOR ALL DISSIMILAR PIPING.
15.

SOLDERING FLUX AND SOLDER SHALL NOT CONTAIN LEAD. SOLDERING FLUX SHALL BE NON-CORROSIVE. SELF-CLEANING SOLDER FLUX SHALL NOT BE USED.
16.

REFRIGERANT AND CONDENSATE DRAIN PIPE INSULATION SHALL BE RIGID FIBERGLASS WITH VAPOR BARRIER. PROVIDE ALUMINUM JACKETING FOR INSULATION EXPOSED TO WEATHER OR EXPOSED WITHIN 7'-0" ABOVE FINISHED FLOOR.
17.

AIR CONDITIONING CONTRACTOR SHALL INSULATE ALL PIPING THAT COLLECTS CONDENSATE INCLUDING WASTE PIPE, ETC. FROM POINT OF CONNECTION TO TOP OF CONCRETE FLOOR SLAB ON GRADE.
18.

WHEN VALVES ARE INSTALLED IN A HORIZONTAL POSITION, VALVE STEMS SHALL BE INSTALLED IN A UPRIGHT POSITION. IF THIS IS NOT POSSIBLE BECAUSE OF SPACE AND HEADROOM CONSTRAINTS, VALVE STEMS SHALL BE INSTALLED IN A INCLINED POSITION ABOVE THE HORIZONTAL CENTERLINE OF THE PIPE.
19.

ALL CONTROL WIRING SHALL BE PLACED IN CONDUIT AND SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE. NO EMT ALLOWED FOR CONDUIT EXPOSED TO WEATHER.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-ART18-01	2022	45	79

HVAC LEGEND:

A/C	AIR CONDITIONING
ACCU	AIR COOLED CONDENSING UNIT
AFF	ABOVE FINISHED FLOOR
AP	ACCESS PANEL
AUX	AUXILIARY
BDD	BACKDRAFT DAMPER
BOD	BOTTOM OF DUCT (ABOVE FINISHED FLOOR)
CD	CEILING DIFFUSER
CDR	CONDENSATE DRAIN
CONN	CONNECT OR CONNECTION
CONT	CONTINUATION
DN	DOWN
EF	EXHAUST FAN
ER	EXHAUST REGISTER
EXH	EXHAUST
EXST	EXISTING
FCU	FAN COIL UNIT
FLXC	FLEXIBLE CONNECTOR
GC	GENERAL CONTRACTOR
OA	OUTSIDE AIR
OAF	OUTSIDE AIR FAN
POC	POINT OF CONNECTION
RA	RETURN AIR
RL	REFRIGERANT LIQUID
RR	RETURN REGISTER
RS	REFRIGERANT SUCTION
SA	SUPPLY AIR
SR	SUPPLY REGISTER
S/S	STAINLESS STEEL
TERM	TERMINATE
UC	UNDERCUT
VD	VOLUME DAMPER

COUNTY OF MAUI  
MAUI COUNTY CODE, CHAPTER 16.16B ENERGY CODE  
COMMERCIAL PROVISIONS

COMPLIANCE METHOD

Check applicable method

☒

C401.2(1) ANSI/ASHRAE/IESNA 90.1

☐

C401.2(2) Sections C402 through C406

☐

C401.2(3) Sections C402.5, C403.2, C404, C405.2, C405.3, C405.4, C405.6 & C407

☐

C102.1 Alternative

To the best of my knowledge, this project's design substantially conforms to the Energy Code.

Signature:

\_\_\_\_\_

Date: 5/09/2022

Name:

KYLE T. Y. CHENG

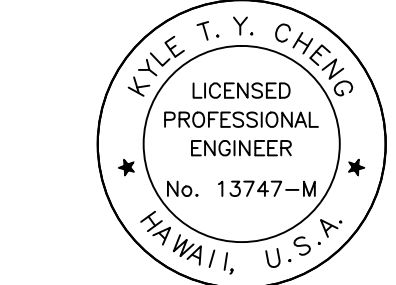
Title:

VICE PRESIDENT

License No.:

13747-M

KYLE T. Y. CHENG  
LICENSED PROFESSIONAL ENGINEER  
No. 13747-M  
HAWAII, U.S.A.



This work was prepared by me or under my supervision and construction of the project will be under my observation. Expiration date 04/30/24.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

MECHANICAL NOTES AND LEGEND

MAUI DISTRICT BASEYARD  
Project No. HWY-M-ART18.01

Scale: NONE Date: MAY 2022