GENERAL NOTES

GENERAL

1. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. UNLESS OTHERWISE INDICATED, THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE, WORKMEN, AND OTHER PERSONS DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO BRACING, SHORING FOR CONSTRUCTION EQUIPMENT, SHORING FOR THE BUILDING, SHORING FOR THE EARTH BANKS, FORMS, SCAFFOLDING, PLANNING, SAFETY NETS, SUPPORT AND BRACING FOR CRANES, GIN POLES, ETC. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK, AND HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY THE ARCHITECT OR THE ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS.
2. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION.
3. EQUIPMENT FRAMING LOADS, OPENINGS AND STRUCTURE IN ANY WAY RELATED TO HVAC, PLUMBING, OR ELECTRICAL REQUIREMENTS ARE SHOWN FOR BIDDING PURPOSES ONLY. EXACT WEIGHTS AND LOCATIONS OF MECHANICAL EQUIPMENT SHALL BE COORDINATED BY CONTRACTOR. IF THE FINAL LOCATION VARIES FROM THAT SHOWN ON THE PLANS, CONTRACTOR TO NOTIFY ARCHITECT AND ENGINEER FOR APPROVAL BEFORE INSTALLATION.
4. SHOULD ANY OF THE DETAILED INSTRUCTIONS SHOWN ON THE PLANS CONFLICT WITH THESE STRUCTURAL NOTES, THE SPECIFICATIONS, OR WITH EACH OTHER, THE STRICTEST PROVISION SHALL GOVERN.
5. THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE JOB SITE AND SHALL BE RESPONSIBLE FOR CONDITIONS OF ALL WORK AND MATERIALS.
6. THE CONTRACTOR SHALL REVIEW AND VERIFY ALL DIMENSIONS AND ELEVATIONS. CONTRACTOR SHALL REPORT ANY DISCREPANCIES IN WRITING TO THE ARCHITECT. ANY CONFLICT BETWEEN THE DRAWING AND SPECIFICATIONS OF THE VARIOUS TRADES INVOLVED SHALL BE REPORTED TO THE ARCHITECT AND ENGINEER.
7. DETAILS SHOWN ON DRAWINGS APPLY AT SIMILAR CONDITIONS.
8. ALL WORK SHALL BE DONE IN ACCORDANCE WITH LOCAL STANDARDS AND TO ALL APPLICABLE PROVISIONS OF THE GOVERNING BUILDING CODE.
9. THE ARCHITECT AND ENGINEER SHALL BE NOTIFIED IN WRITING WHEN WORK COMMENCES.
10. CONTRACTOR SUBSTITUTIONS: ANY MATERIALS OR PRODUCTS THAT ARE SUBMITTED FOR APPROVAL THAT ARE DIFFERENT FROM THE MATERIALS OR PRODUCTS SPECIFIED IN THE CONTRACT DOCUMENTS WILL ONLY BE CONSIDERED IF THE FOLLOWING CRITERIA ARE SATISFIED.
    A) A COST SAVING TO THE OWNER IS DOCUMENTED AND SUBMITTED WITH THE REQUEST
    B) THE MATERIAL OR PRODUCT HAS BEEN APPROVED BY THE INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS (ICBO) AND THE ICBO REPORT IS SUBMITTED WITH THE REQUEST.

STRUCTURAL OBSERVATION

1. THE PROFESSIONAL ENGINEER OR HIS/HER AUTHORIZED REPRESENTATIVE SHALL CONDUCT ALL STRUCTURAL OBSERVATIONS. STRUCTURAL OBSERVATIONS SHALL BE FOR THE PURPOSE OF ASCERTAINING GENERAL COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS. HOWEVER, SUCH OBSERVATION VISITS SHALL NOT RELIEVE THE CONTRACTOR FROM HIS OBLIGATIONS AND RESPONSIBILITIES TO THE CONSTRUCTION DOCUMENTS.
2. ITEMS THAT REQUIRE A STRUCTURAL OBSERVATION ARE AS FOLLOWS:
    A. STEEL REINFORCEMENT IN SLAB OR FOUNDATION
3. NOTIFY ENGINEER 24 HOURS IN ADVANCE WHEN A STRUCTURAL OBSERVATION IS REQUIRED.

DESIGN CRITERIA

1. DESIGN LOADS, STRUCTURAL ANALYSIS AND PREPARATION OF STRUCTURAL MEMBERS ARE BASED ON THE FOLLOWING CRITERIA:
2. CODE: ..... IBC 2018
3. VERTICAL LOADS
    A. DEAD LOAD: ..... 200 PSF
    B. MECHANICAL LOAD:
    THE GENERAL CONTRACTOR SHALL SUBMIT ACTUAL WEIGHTS AND LOCATIONS OF EQUIPMENT TO BE USED IN THE PROJECT TO THE STRUCTURAL ENGINEER FOR VERIFICATION OF LOADS USED IN THE DESIGN AT LEAST TWO WEEKS PRIOR TO FABRICATION AND CONSTRUCTION OF THE SUPPORTING STRUCTURE.

LATERAL LOADS
- A. WIND SPEED (V-ULT): ..... 126 MPH
- WIND SPEED (U-ASD): ..... 98 MPH
- B. EXPOSURE CATEGORY: C
- C. IMPORTANCE FACTOR: 1.00
- D. BUILDING CATEGORY: I
- E. SEISMIC DESIGN CATEGORY: ..... A
- F. SITE CLASS: ..... D

4. GEOTECHNICAL ENGINEERING REPORT: NONE PROVIDED

GEOTECHNICAL INVESTIGATION

THE OWNER OF THIS PROJECT HAS DECLINED TO FURNISH A GEOTECHNICAL INVESTIGATION REPORT THEREFORE THE FOUNDATION DESIGN WAS BASED UPON AVERAGE SOIL CONDITIONS IN HIDALGO COUNTY, TEXAS. IF HIGHLY EXPANSIVE SOILS OR SOFT SOILS ARE ENCOUNTERED, DIFFERENTIAL FOUNDATION MOVEMENTS CAN BE EXPECTED. ALTHOUGH WE ATTEMPT TO MAKE ASSUMPTIONS THAT WILL NOT IMPAIR STRUCTURAL INTEGRITY OF THE PROJECT, WE DO NOT HAVE THE EXPERTISE OR BENEFIT OF LABORATORY INVESTIGATIONS OF A GEOTECHNICAL ENGINEER, THEREFORE THIS FIRM CANNOT ASSUME RESPONSIBILITY FOR THE PERFORMANCE OF THE DESIGN FOUNDATION SHOULD ACTUAL SURFACE OR SUBSURFACE SOIL CONDITIONS VARY FROM THOSE ASSUMED. FOLLOWING ASSUMPTIONS:

1. SOIL BEARING PRESSURE (AT PROPOSED SITE) = 1000 PSF

FOUNDATION NOTES

1. CONSTRUCTION AREAS REMOVE AT LEAST 24 INCHES OF TOP SOIL, VEGETATION, DEBRIS, ETC., FROM THE PROPOSED BUILDING AREA TO A DISTANCE OF 5'-0" OUTSIDE THE BUILDING LINE PROPOSED.
2. EXPOSED SUBGRADE SHOULD BE THOROUGHLY PROOF ROLLED IN ORDER TO LOCATE AND DENSIFY ANY WEAK, COMPRESSIBLE ZONES. WEAK OR SOFT AREAS IDENTIFIED DURING PROOF ROLLING SHOULD BE REMOVED AND REPLACED WITH A SUITABLE, COMPACTED SELECT FILL IN ACCORDANCE WITH THE REQUIREMENTS BELOW. PRIOR TO FILL PLACEMENT, THE EXPOSED SUBGRADE SHOULD BE MOISTURE CONDITIONED BY SCARIFYING TO A MINIMUM DEPTH OF 8" AND RECOMPOSING TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED FROM THE ASTM D698 COMPACTION TEST. THE MOISTURE CONTENT SHOULD BE MAINTAINED WITHIN THE OPTIMUM TO 3% ABOVE.
3. FILL BACK TO REQUIRED GRADE (A MINIMUM OF 24" OF SELECT FILL IS REQUIRED. REFER TO CIVIL PLANS FOR FINISHED FLOOR ELEVATION TO DETERMINE ADDITIONAL AMOUNT OF SELECT FILL NEEDED) WITH MATERIAL SELECTED AND COMPACTED IN ACCORDANCE WITH THE REQUIREMENTS BELOW.
4. SELECT FILL, WHEN PROPERLY SLAKED AND TESTED BY STANDARD LABORATORY METHODS, SHALL MEET THE FOLLOWING REQUIREMENTS:

    A. MEET THE TxDOT 2014 STANDARD SPECIFICATION FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS, AND BRIDGES, ITEM 247 FLEXIBLE BASE, TYPE A, TYPE B, OR TYPE C, GRADES 1 THROUGH 3.

ALTERNATIVELY

    B. THE FOLLOWING SOILS, AS CLASSIFIED ACCORDING TO THE USCS, MAY BE CONSIDERED SATISFACTORY FOR USE AS SELECT FILL MATERIALS AT THIS SITE: SC, GC, AND COMBINATIONS OF THESE SOILS. IN ADDITION TO THE USCS CLASSIFICATION, ALTERNATIVE SELECT FILL MATERIALS SHALL HAVE A MAXIMUM LIQUID LIMIT OF 35 PERCENT, A PLASTICITY INDEX BETWEEN 5 AND 17 PERCENT, AND A MAXIMUM PARTICLE SIZE NOT EXCEEDING 4 INCHES OR ONE-HALF THE LOOSE LIFT THICKNESS, WHICHEVER IS SMALLER.

5. SAMPLES OF PROPOSED SELECT FILL SHALL BE FURNISHED TO THE TESTING LABORATORY 7 DAYS PRIOR TO INSTALLATION TO PERMIT TIME FOR SPECIFICATION COMPLIANCE INSPECTION AND APPROVAL.
6. SELECT FILL UNDER ALL FLOORS AND WALKS SHALL BE COMPACTED IN THE FIELD IN LIFTS NOT TO EXCEED 8" TO 98% OF THE MAXIMUM DENSITY, 2% BELOW OR 2% ABOVE OF THE OPTIMUM MOISTURE CONTENT, AS DETERMINED BY TEST METHOD ASTM D698
7. SITE PREPARATION TESTING SHALL BE AS FOLLOWS:
    A. ATTERBERG LIMITS OF SELECT FILL MATERIAL:
    (1) ONE TEST PER 5,000 CY
    B. COMPACTION TEST:
    TO BE PERFORMED PER LIFT ON TEST PER 3,000 SF MINIMUM
    OF (4) FOUR TEST PER LIFT
8. FINAL SITE GRADING TO SLOPE AWAY FROM THE STRUCTURE AND SHALL PREVENT WATER FROM PONDING IN THE AREAS ADJACENT TO THE STRUCTURE FOR A MINIMUM DISTANCE OF 10'-0". ANY PONDING CLOSE TO THE STRUCTURE MAY CREATE VOLUMETRIC CHANGES IN THE SOIL AND MAY LEAD TO LESS THAN OPTIMUM PERFORMANCE OF THE BUILDING FOUNDATION.
9. IT IS ALSO IMPORTANT TO MINIMIZE CHANGES IN MOISTURE CONTENT CREATED BY ROOF DRAINAGE, PLUMBING LEAKS, LANDSCAPING / IRRIGATION, AND DOWNSPOUT OUTFALLS. ANY PLUMBING LEAKS SHALL BE REPAIRED AS SOON AS POSSIBLE AND PROPER DRAINAGE PROVIDED AWAY FROM THE BUILDING. LARGE BUSHES AND TREES SHALL NOT BE PLACED IN AREAS DIRECTLY ADJACENT TO THE FOUNDATION AS THEIR ROOT SYSTEM MAY CREATE SUBSTANTIAL MOISTURE DIFFERENTIALS THAT MAY LEAD TO VOLUME CHANGES IN THE SOIL. LARGE BUSHES AND TREES SHOULD BE LOCATED AT A REASONABLE DISTANCE FROM THE FOUNDATION.

STEEL REINFORCING

1. ALL REINFORCEMENT SHALL BE NEW BILLET STEEL CONFORMING TO ASTM A-615 GRADE 60.
2. REINFORCING STEEL SHALL BE DESIGNED, DETAILED, FABRICATED AND PLACED IN ACCORDANCE WITH THE LATEST ACI DETAILING MANUAL (SP-66) AND CSRI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE, (ACI #315) LATEST EDITIONS.
3. BARS SCHEDULED OR DETAILED "CONT" SHALL BE SPLICED ONLY WHEN UNAVOIDABLE AT POINTS OF MINIMUM STRESS AND WITH A MINIMUM LAP AS FOLLOWS:
    A. HORIZONTAL BARS w/ MORE THAN 12" OF FRESH CONCRETE CAST BELOW LAPS.
        #6 BARS AND SMALLER - 57 BAR DIAMETERS
        #7 BARS AND BIGGER - 72 BAR DIAMETERS
    B. OTHER BARS
        #6 BARS AND SMALLER - 44 BAR DIAMETERS
        #7 BARS AND BIGGER - 55 BAR DIAMETERS
    C. ALL SPLICES TO BE STAGGERED A MINIMUM OF 4'-0". TOP BAR AND BOTTOM BAR SPLICES TO BE LOCATED AT MID-SPAN AND WITHIN 1/3 SPAN RESPECTIVELY.
4. CORNER REINFORCING BARS SHALL BE USED AT ALL CORNERS AND INTERSECTIONS.
5. EXTEND THE SLAB REINFORCING STEEL PERPENDICULAR TO EXTERIOR GRADE BEAM TO THE TOP OUT SIDE REINFORCING BAR OF BEAM.
6. SPACE REINFORCING BARS WITH MINIMUM CLEAR SPACING IN ACCORDANCE WITH ACI 318 OF ONE BAR DIAMETER, BUT NOT LESS THAN 1 INCH. FOR COMPRESSION MEMBERS, SPACE AT A MINIMUM OF 1.5 INCHES OR 1.5 BAR DIAMETERS, WHICHEVER IS GREATER.
7. WHERE REINFORCING BARS ARE PLACED IN MULTIPLE LAYERS, PLACE UPPER BARS DIRECTLY ABOVE LOWER BARS.
8. MAINTAIN CONCRETE COVER AROUND REINFORCEMENT IN ACCORDANCE WITH ACI 318 AND AS FOLLOWS:
    A. FOOTING AND CONCRETE CAST AGAINST EARTH - 3 INCHES
    B. EXPOSED TO EARTH OR WEATHER
        #6 BARS AND BIGGER - 2 INCHES
        #5 BARS AND SMALLER - 1.5 INCHES
    C. BEAMS AND COLUMNS - 1.5 INCHES
    D. SLABS AND WALLS - 1 INCH
9. REPAIR ANY DAMAGE TO VAPOR RETARDER PER MANUFACTURER SPECIFICATIONS.
10. ADDITIONAL REINFORCING TO BE PROVIDED ON SITE FOR USE AS DIRECTED BY STRUCTURAL ENGINEER.
    #4 BARS - 100 FT.
    #5 BARS - 100 FT.
    #6 BARS - 100 FT.

CONCRETE

1. ALL CONCRETE WORK SHALL BE EXECUTED IN ACCORDANCE WITH ACI 318 AND ACI 301 LATEST EDITION.
2. CEMENT SHALL CONFORM TO ASTM CI50 TYPE I AGGREGATE SHALL CONFORM TO ASTM C33.
3. CONCRETE SHALL HAVE A MINIMUM 28 DAYS COMPRESSIVE STRENGTH AS FOLLOWS:

MEMBER TYPE	STRENGTH	SLUMP	MAX AGG.
FOUNDATION AND SLAB	3000 PSI	4"-6"	1.5 IN.

4. INSTALL 10 MIL VAPOR RETARDER UNDER SLABS ON GRADE AND ALONG SIDE OF TRENCHES IN ACCORDANCE WITH ASTM E1643. LAP JOINTS MINIMUM OF 12 INCHES.
5. PLACE CONCRETE CONTINUOUSLY BETWEEN PRE-DETERMINED EXPANSION AND CONSTRUCTION JOINTS.
6. ALL CONSTRUCTION JOINT LOCATIONS TO BE APPROVED BY ARCHITECT AND STRUCTURAL ENGINEER.
7. HORIZONTAL CONSTRUCTION JOINTS SHALL NOT BE PERMITTED.
8. CURE CONCRETE IN ACCORDANCE WITH ACI 308.1
9. REFER TO ARCHITECTURAL AND MECHANICAL PLANS FOR LOCATIONS OF ALL DEPRESSIONS, OPENINGS, ACCESSORIES, ETC.
10. CONDUIT AND PLUMBING LINES SHALL BE PLACED BELOW SLAB REINFORCING AND SHALL BE NO BIGGER THAN 1 INCH.
11. FLYASH MAY BE USED TO REPLACE A PORTION OF THE PORTLAND CEMENT. THE RATIO OF FLYASH TO THE TOTAL OF THE FLYASH AND CEMENT IN A MIX SHALL NOT EXCEED 20%. FLYASH SHALL CONFORM TO ASTM C618, TYPE C OR F.
12. ALL FLOORS SHALL BE CONSTRUCTED WITH A MINIMUM FLATNESS FF = 35 AND A MINIMUM LEVELNESS OF FL = 25
13. CONTRACTION JOINTS TO BE INSTALLED WITHIN 12 HOURS OF POURING FOUNDATION.
14. TESTING OF CONCRETE SHALL BE DONE AS FOLLOWS:
    1) SETS SHALL CONSIST OF 3 CYLINDERS
    ONE TESTED AT 7 DAYS
    TWO TESTED AT 28 DAYS
    2) ONE SET SHALL BE TAKEN FOR EACH 150 CY AND FOR EVERY 5000 SF OF SURFACE AREA AND AT LEAST ONCE PER DAY OF POURING
    3) A MINIMUM OF 3 SETS SHALL BE TAKEN FOR EACH CLASS OF CONCRETE
15. NO WATER SHALL BE ADDED TO THE CONCRETE AT THE JOBSITE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE CONCRETE SUPPLIER TO ENSURE A PUMPABLE AND WORKABLE MIX WITHOUT THE ADDITION OF WATER AT THE JOBSITE. THE USE OF PLASTICIZERS, RETARDANTS AND OTHER ADDITIVES SHALL BE AT THE OPTION OF THE CONTRACTOR SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER. FOLLOW THE RECOMMENDATIONS OF THE MANUFACTURER FOR THE PROPER USE OF ADDITIVES. THE USE OF CALCIUM CHLORIDE OR OTHER CHLORIDE BEARING SALTS SHALL NOT BE PERMITTED.
16. PLACE CONCRETE IN A MANNER SO AS TO PREVENT SEGREGATION OF THE MIX. DELAY FLOATING AND TROWELING OPERATIONS UNTIL CONCRETE HAS LOST SURFACE WATER SHEEN OR ALL FREE WATER. DO NOT SPRINKLE FREE CEMENT ON THE SLAB SURFACE. FINISHING OF SLAB SURFACES SHALL COMPLY WITH THE RECOMMENDATIONS OF AC1 302.1 AND 304.
17. UNLESS SPECIFIED, CONCRETE MUST REACH THE FOLLOWING PERCENTAGES OF ITS 28-DAY COMPRESSIVE STRENGTH (F'c), BEFORE FORMS MAY BE REMOVED.

    WALL, COLUMNS, & BEAM SIDES.....40%
    JOIST PANS & BEAM BOTTOMS (IF RESHORED).....70%
    SHORING FOR FLOOR SYSTEMS (IF NOT RESHORED).....85%

18. NO CONCRETE SHALL BE PLACED OUTSIDE OF THESE SPECIFICATIONS WITHOUT THE OWNER'S PRIOR APPROVAL. ANY ITEMS NOT IN COMPLIANCE WITH THE OUTLINED SPECIFICATION SHALL BE REPORTED TO THE OWNER AND STRUCTURAL ENGINEER WITHIN 24 HOURS.
19. CONSTRUCTION VEHICLE LOADS SHALL NOT BE PERMITTED ON ELEVATED SLABS AT ANY TIME.
20. ALL RETAINING WALLS TO BE SHORED UNTIL UPPER SLAB IS IN PLACE AND HAS REACHED 70% OF ITS DESIGN STRENGTH OR THE RETAINING WALL HAS REACHED 100% OF ITS DESIGN STRENGTH. PROVIDE GRANULAR BACKFILL AND PERFORATED DRAIN PIPE CONNECTED TO SITE DRAINAGE, RE: CIVIL PLAN.

SHOP DRAWINGS & SUBMITTALS

1. SUBMITTAL THAT WILL BE REQUIRED FOR APPROVAL INCLUDE:
    A. CONCRETE MIX DESIGN
    B. CURING COMPOUND FOR CONCRETE
    C. REINFORCING STEEL

    ALLOW (2) WEEKS MINIMUM FOR REVIEW OF SHOP DRAWINGS.
2. PRIOR TO ISSUING THE SUBMITTALS TO THE ENGINEER, THE CONTRACTOR SHALL REVIEW THE SHOP DRAWINGS. CONTRACTOR MUST VERIFY ALL DIMENSION WITH ARCHITECTURAL PLANS.
3. REVIEW OF SHOP DRAWINGS BY THE ENGINEER IS FOR GENERAL CONFORMANCE TO THE STRUCTURAL DRAWINGS. APPROVAL OF THE SHOP DRAWINGS BY THE ENGINEER DOES NOT RELIEVE THE CONTRACTOR FOR ANY ERRORS IN DIMENSIONS OR MATERIAL INDICATED ON THE SHOP DRAWINGS.

CONTRACTOR NOTE

THE STRUCTURAL SYSTEM FOR THIS PROJECT SHALL NOT BE CONSTRUCTED BY USING THE STRUCTURAL DRAWINGS ALONE. THESE DRAWINGS WERE DEVELOPED FROM DATA DERIVED PRIMARILY FROM THE ARCHITECTURAL DRAWINGS AND SECONDARILY FROM MEP, CIVIL AND OTHER DISCIPLINES' DOCUMENTS. IT IS INTENDED THAT CONSTRUCTION PROCEED BY UTILIZING ALL OF THE INFORMATION CONTAINED IN THE ENTIRE SET OF CONSTRUCTION DOCUMENTS TAKEN AS A WHOLE; FAILURE TO DO SO WILL RESULT IN ERRORS WHICH SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.

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STATE OF TEXAS
HECTOR RAMIREZ
103720
LICENSED PROFESSIONAL ENGINEER
6-03-24

PROJECT # : 24195
DATE: 06/03/24
CHECKED BY: HR

REVISION:
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WISD MEMORIAL ELEMENTARY SCHOOL
HVAC REPLACEMENT
WESLACO TEXAS

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S1.0

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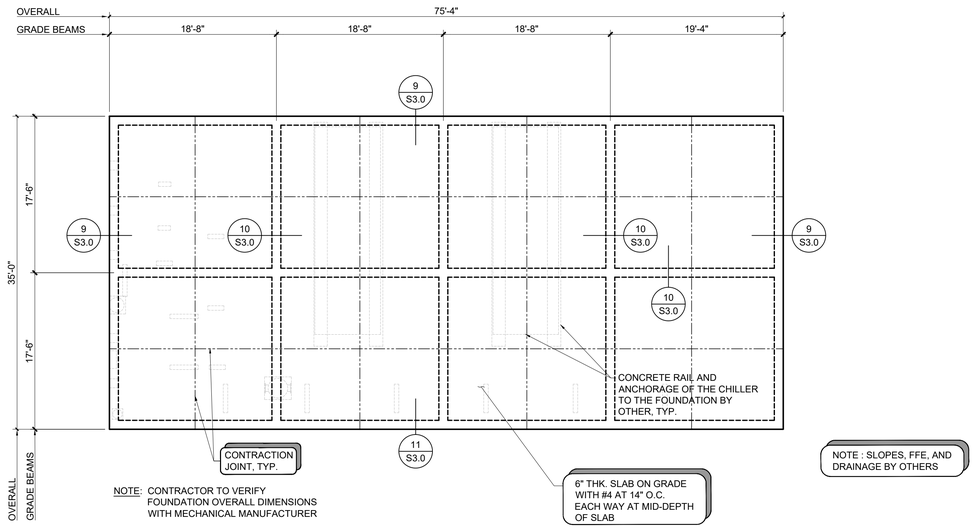

NOTE: CONTRACTOR TO VERIFY FOUNDATION OVERALL DIMENSIONS WITH MECHANICAL MANUFACTURER

FOUNDATION NOTES:

1. CONTRACTOR TO VERIFY ALL DIMENSIONS WITH ARCHITECTURAL PLANS BEFORE COMMENCING WORK.
2. CONTRACTOR TO VERIFY LOCATION OF ANY/ALL DROPS AND DRAINS IN SLAB WITH ARCHITECTURAL DRAWINGS.
3. CONTRACTOR TO VERIFY REQUIRED F.F.E. WITH EXISTING CONDITIONS AND MEP DRAWINGS.

PLAN NORTH

1 FOUNDATION PLAN FOR MEMORIAL ELEMENTARY

SCALE: 1/4"=1'-0"

WISD MEMORIAL ELEMENTARY SCHOOL HVAC REPLACEMENT

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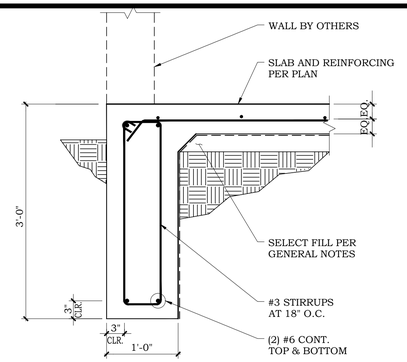
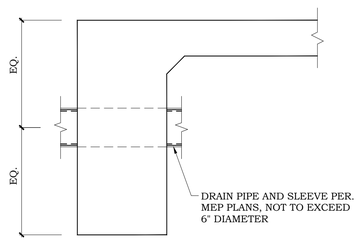
NOT USED	17	NOT USED	13	EXTERIOR FOOTING	9	PIPE EXTERIOR FOOTING	5	NOT USED	1		
NOT USED	18	NOT USED	14	INTERIOR FOOTING	10	STANDARD HOOKS	6	TYPICAL SLEEVE IN GRADE BEAM	2		
NOT USED	19	NOT USED	15	EXTERIOR FOOTING	11	OPENINGS IN SLAB	7	TYPICAL CORNER BARS	3		
NOT USED	20	NOT USED	16	NOT USED	12	CONTRACTION JOINT DETAIL	8	NOT USED	4		





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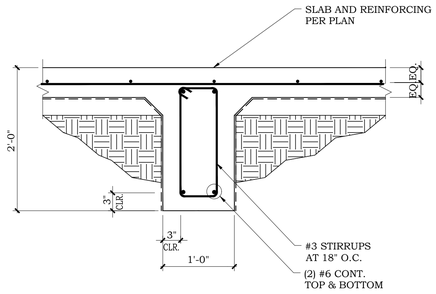
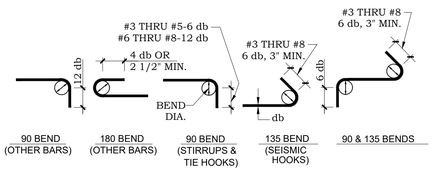
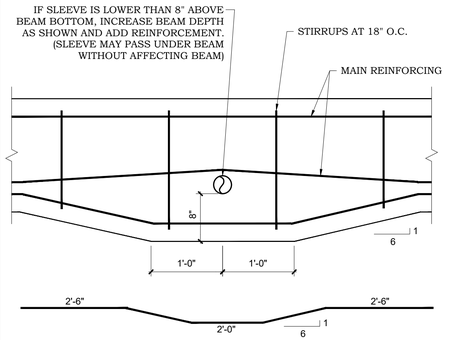
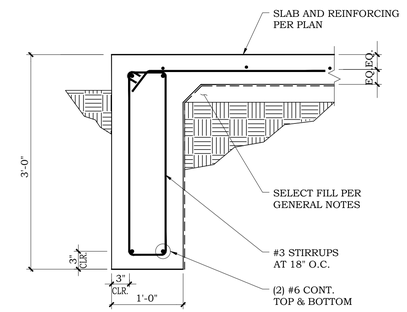
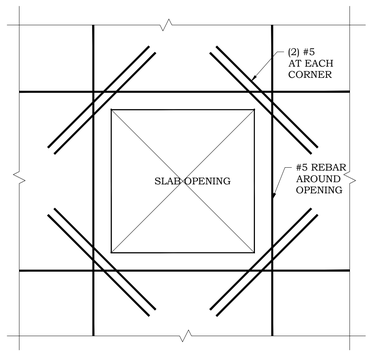


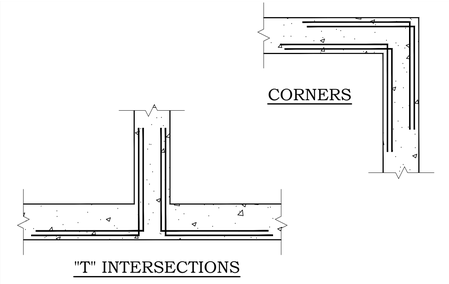


DIAMETER OF BENDS	
STIRRUPS AND TIES	4 db FOR #3 THRU #5 BARS
	6 db FOR #6 THRU #8 BARS
ALL OTHERS	6 db FOR #3 THRU #8 BARS
	8 db FOR #9 THRU #11 BARS
	10 db FOR #14 THRU #18 BARS

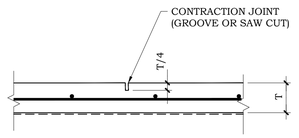








NOTE:
PROVIDE (4) #6 x 6'-0" CORNER BARS
(2-TOP & 2-BOTTOM) AS SHOWN IN DETAILS ABOVE



1. JOINT PATTERN SHALL BE NEARLY SQUARE
2. JOINT SPACING SHALL NOT EXCEED 15'-0"

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WISD MEMORIAL ELEMENTARY SCHOOL
HVAC REPLACEMENT

WESLACO

TEXAS

S3.0

GENERAL NOTES - MECHANICAL:

(1) THE MECHANICAL CONTRACTOR IS FULLY RESPONSIBLE FOR PERFORMING THE WORK IN FULL COMPLIANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL CODES UNDER THIS SECTION OF THE CONTRACT. IF THE CONTRACTOR DETERMINES THAT THE CONTRACT DOCUMENTS AND PLANS ARE NOT IN COMPLIANCE WITH THE APPLICABLE LOCAL CODES, HE/SHE SHALL INFORM THE ENGINEER PRIOR TO CONSTRUCTION START FOR DIRECTION. FAILURE TO DO SO SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO MEET APPLICABLE LOCAL CODES, AND RE-WORK SHALL BE AT CONTRACTOR'S EXPENSE.

(2) CONTRACTOR SHALL HANG AND INSTALL ALL DUCTWORK FLUSH WITH THE BUILDING STRUCTURE TO ACCOMMODATE NEW CEILINGS. CONTRACTOR SHALL COORDINATE ALL INSTALLATION WORK WITH ARCHITECTURAL AND ELECTRICAL DESIGN. ALL DUCTWORK SHALL BE MODIFIED AS NECESSARY AND REQUIRED TO FIT AROUND BUILDING STRUCTURES, ARCHITECTURAL BUILD-OUT AND ELECTRICAL CABLE TRAY INSTALLATIONS. MECHANICAL CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE WORK SCOPE OF OTHER TRADES AND PARTICIPATE IN COORDINATING ALL CONSTRUCTION EFFORTS.

(3) CONNECT EACH DIFFUSER TO THE MAIN DISTRIBUTION DUCTS WITH A FLEX-DUCT SECTION; CONNECTIONS SHALL BE COMPLETED IN ACCORDANCE WITH THE DETAIL. EACH FLEX-DUCT CONNECTION SHALL INCLUDE A BUTTERFLY DAMPER TO BE INSTALLED AT THE TRUNK DUCT.

(4) CONTRACTOR SHALL PROVIDE ALL DUCTWORK REQUIRED TO COMPLETE THE HVAC SYSTEM. TIE IN BRANCH DUCTS TO MAIN DUCTS WITH SHEET METAL FLANGES. FLANGE CONNECTION SHALL BE FASTENED WITH CRIMPED SHEET METAL STRIPS AND SEALED WITH SILICONE CAULK.

(5) CONTRACTOR SHALL SUPPLY AND INSTALL FIRE DAMPERS AND ACCESS DOORS IN THE HORIZONTAL DUCTS WHERE THEY PENETRATE FIRE WALLS & BARRIERS.

(6) ALL OPENINGS CUT IN MASONRY AND PLASTER WALLS OR CONCRETE FLOORS SHALL BE CORE DRILLED OR SAWED WHEN POSSIBLE. CONTRACTOR SHALL CHECK BUILDING CONSTRUCTION BEFORE MAKING PENETRATIONS TO AVOID CUTTING THROUGH STRUCTURAL BEAMS AND REINFORCING. CONTRACTOR SHALL INFORM THE ENGINEER IF REINFORCING IS CUT OR DAMAGED WHILE MAKING OPENINGS. CONTRACTOR SHALL REINFORCE ALL OPENINGS AS REQUIRED BY DRAWINGS AND SPECIFICATIONS. PATCH AND SEAL OPENINGS WITH 8000 PSI CEMENT GROUT. INSTALL DECORATIVE TRIM (EQUIPMENT FLANGES, FRAMING OR ESCUTCHEONS) AROUND OPENINGS IN FINISHED AREAS. COORDINATE ALL CUTTING AND PATCHING WITH THE OTHER TRADES

(7) ON ANY WORK SHOWN ON MECHANICAL DRAWINGS REQUIRING DEMOLITION OF EXISTING OR NEW BUILDING STRUCTURES AND FINISHES, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COMPLETE THE NECESSARY DEMOLITION. CONTRACTOR SHALL PATCH AND REPAIR ALL DEMOLITION WORK. PATCHING SHALL BE COMPLETED WITH THE SAME MATERIALS AS THE SURROUNDING AREAS, OR WITH ARCHITECT-APPROVED PATCHING MATERIALS. REPAIRS SHALL BE COMPLETED ACCORDING TO ARCHITECTURAL SPECIFICATIONS. ALL REFINISHING SHALL BE APPROVED BY THE ARCHITECT.

(8) CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETING THE INSTALLATION OF THE AIR DISTRIBUTION SYSTEM SHOWN. DUCTWORK, DUCT ACCESSORIES AND CONTROLS SHOWN AND REQUIRED SHALL BE SUPPLIED AND INSTALLED. ALL INSTALLATION WORK SHALL BE DONE IN ACCORDANCE WITH APPLICABLE CODES, INCLUDING NFPA 90A AND 90B.(NFPA 90A: STANDARD FOR THE INSTALLATION OF AIR-CONDITIONING AND VENTILATING SYSTEMS)(NFPA 90B: STANDARD FOR THE INSTALLATION OF WARM AIR HEATING AND AIR-CONDITIONING SYSTEMS)

(9) MOUNT ALL THERMOSTATS (SENSORS) 48" ABOVE THE FINISHED FLOOR LEVEL. THERMOSTATS SHOWN SHALL BE IN CONTROL OF THE ZONE SYSTEM WHICH IS SUPPLYING AIR TO THE AREA WHERE THE THERMOSTAT IS LOCATED. CONTRACTOR SHALL SUPPLY AND INSTALL ALL CONTROL VOLTAGE WIRING AND CONDUIT FOR THERMOSTAT (DDC CONTROL) INSTALLATION.

(10) CONTRACTOR SHALL INSTALL NEW REFRIGERANT PIPING FLUSH WITH THE BUILDING STRUCTURE AND MECHANICAL ROOM BOUNDARIES AS SHOWN. CONTRACTOR SHALL COORDINATE ALL INSTALLATION WORK WITH DUCTS AND ELECTRICAL CONDUIT. MECHANICAL CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE WORK SCOPE OF OTHER TRADES AND PARTICIPATE IN COORDINATING ALL CONSTRUCTION EFFORTS.

(11) ALL PIPING SHALL BE INSULATED AND JACKETED. REFER TO THE SPECIFICATIONS. THE CONDENSING AND ROOF TOP CONDENSER COILS ARE TO BE COATED IN ACCORDANCE WITH THE SPECIFICATIONS.

(12) PROVIDE EACH HVAC SYSTEM OF 2000 CFM & GREATER W/ DUCT SMOKE DETECTOR(S) IN COMPLIANCE WITH IBC 907.2.13.1.2 & 907.3.1 IN RETURN AIR DUCTWORK TO SHUTDOWN CONTROLS ON AIR HANDLERS AND SUPPLY FANS. SMOKE DETECTORS SHALL BE PROVIDED BY MECHANICAL & INSTALLED BY ELECTRICAL (OR REGISTERED FIRE ALARM COMPANY WHERE APPLICABLE). COORDINATE W/ EQUIPMENT MANUFACTURER & AUTHORITY HAVING JURISDICTION FOR RECOMMENDED MOUNTING LOCATION AND METHOD. COORDINATE TO PROVIDE A COMPLETE SYSTEM. PROVIDE BOTH SUPPLY AND RETURN SIDE DEVICES.

(13) CONTRACTOR SHALL INCLUDE ALL COST IN BID TO COMPLETE PROJECT BY NOVEMBER 2024.

(14) INCLUDE ALL COST TO EXPEDIATE ALL HVAC EQUIPMENT FOR A DELIVERY TIME OF 20 WEEKS.

(15) FILTER INSTALLATION AND REPLACEMENT

A. INSTALL CONSTRUCTION RETURN FILTER AT EACH RETURN GRILLE BEFORE OPERATING PERMANENT AIR HANDLERS DURING CONSTRUCTION.

B. REPLACE FILTERS AFTER COMPLETING CONSTRUCTION AND BEFORE CONDUCTING BUILDING FLUSH-OUT.

1. REPLACE CONSTRUCTION RETURN FILTERS WITH FLUSH-OUT RETURN FILTERS.
2. REPLACE SUPPLY FILTERS.

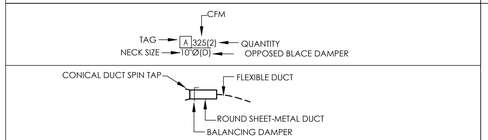
(16) PRIOR TO START UP

A. CONTRACTOR SHALL FOLLOW THE AIR CONDITIONING EQUIPMENT MANUFACTURER'S STARTUP CHECKLIST.

1. CONTRACTOR SHALL MAKE SURE THAT ALL DUCTWORK & EVAPORATOR COILS ARE CLEAN AND THAT FILTERS ARE PROVIDED FOR EACH UNIT. IF INTERIOR CONDITIONS ARE NOT CLEAN AND AIR BORN DUST IS STILL PRESENT, TEMPORARY FILTERS SHALL BE PROVIDED AT EVERY RETURN AIR GRILLE.

(17) WISD TO PROVIDE TESTING AND BALANCING (TAB).

MECHANICAL SYMBOL LEGEND



MECHANICAL ABBREVIATIONS

A/C	AIR CONDITIONED
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
BDD	BACK DRAFT DAMPER
BHP	BRAKE HORSEPOWER
BTU	BRITISH THERMAL UNIT
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
CHP	CHILLED WATER PUMP
CLG	CEILING
CWP	CONDENSER WATER PUMP
CO	CLEANOUT
CT	COOLING TOWER
CU	CONDENSING UNIT
CW	COLD WATER
CL	CENTER LINE
DB	DRY BULB
DIA	DIAMETER
DN	DOWN
DWG	DRAWING
DX	DIRECT EXPANSION
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EDH	ELECTRIC DUCT HEATER
EF	EXHAUST FAN
ELEC	ELECTRICAL
ELEV	ELEVATION
F	DEGREES FAHRENHEIT
FC	FAN COIL
FD	FIRE DAMPER W/ DUCT ACCESS DOOR
FLEX	FLEXIBLE
FLG	FLANGE
FLR	FLOOR
FPM	FEET PER MINUTE
FT	FEET, FOOT
FS	FLOW SWITCH
GAL	GALLON
GALV	GALVANIZED
GPM	GALLONS PER MINUTE
HB	HOSE BIBB
HP	HORSEPOWER
HR	HEAT PUMP (WATER SOURCE)
HR	HOUR
HVAC	HEATING/VENTILATING/ AIR CONDITIONING
HWP	HOT WATER PUMP
HZ	HERTZ
ID	INSIDE DIAMETER
IE	INVERT ELEVATION (FLOW LINE)
IN	INCHES
INSUL	INSULATION
IN WG	INCHES OF WATER
KW	KILOWATT(S)
LAT	LEAVING AIR TEMPERATURE
LB	POUND
L	LOUVER
MAX	MAXIMUM
MBD	MANUAL BALANCING DAMPER
MD	MOTORIZED DAMPER
MECH	MECHANICAL
MIN	MINIMUM
MS	MOTOR STARTER
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAH	OUTSIDE AIR INTAKE HOOD
OBD	OPPOSED BLADE DAMPER
OC	ON CENTER
P	PUMP
PBD	PARALLEL BLADE DAMPER
PP	PRIMARY CHILLED WATER PUMP
PRESS	PRESSURE
PRV	PRESSURE REDUCING VALVE
PSIG	POUNDS PER SQUARE INCH (GAUGE)
R	RETURN (AIR DEVICE)
RA	RETURN AIR
RE: 4M7.01	REFER TO DETAIL 4, SHEET M7.01
RET	RETURN
RH	RELATIVE HUMIDITY
RHD	RELIEF HOOD
RPM	REVOLUTIONS PER MINUTE
RTU	ROOF TOP UNIT
S	SUPPLY (AIR DEVICE)
SA	SUPPLY AIR
SCH	SCHEDULE
SCHP	SECONDARY CHILLED WATER PUMP
SD	SMOKE DAMPER
SEC	SECOND
SF	SUPPLY FAN
SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
SP	STATIC PRESSURE
SPEC	SPECIFICATION
SF	SQUARE FOOT
STD	STANDARD
TEMP	TEMPERATURE
TSTAT	THERMOSTAT
TYP	TYPICAL
UF	UNDER FLOOR
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES
VEL	VELOCITY
VENT	VENTILATE
VF	VENTILATION FAN
VOL	VOLUME
VOLT	VOLTAGE
W	WIDE, WIDTH
W/	WITH
WB	WET BULB
W/O	WITHOUT

APPLICABLE CODES

2015 INTERNATIONAL BUILDING CODE
2015 INTERNATIONAL ENERGY CONSERVATION CODE
2015 INTERNATIONAL MECHANICAL CODE
2015 INTERNATIONAL PLUMBING CODE
2014 NATIONAL ELECTRICAL CODE OF THE NATIONAL FIRE PROTECTION ASSOCIATION
2015 INTERNATIONAL FUEL GAS CODE
2015 INTERNATIONAL RESIDENTIAL CODE
2015 INTERNATIONAL SWIMMING POOL AND SPA CODE

INDEX OF SHEETS

PROJECT # : 23.1.40
DATE: 06/20/24
CHECKED BY: LM

REVISION:

WISD MEMORIAL ELEMENTARY SCHOOL HVAC REPLACEMENT

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Project number: 23.1.40

06/20/2024
STATE OF TEXAS
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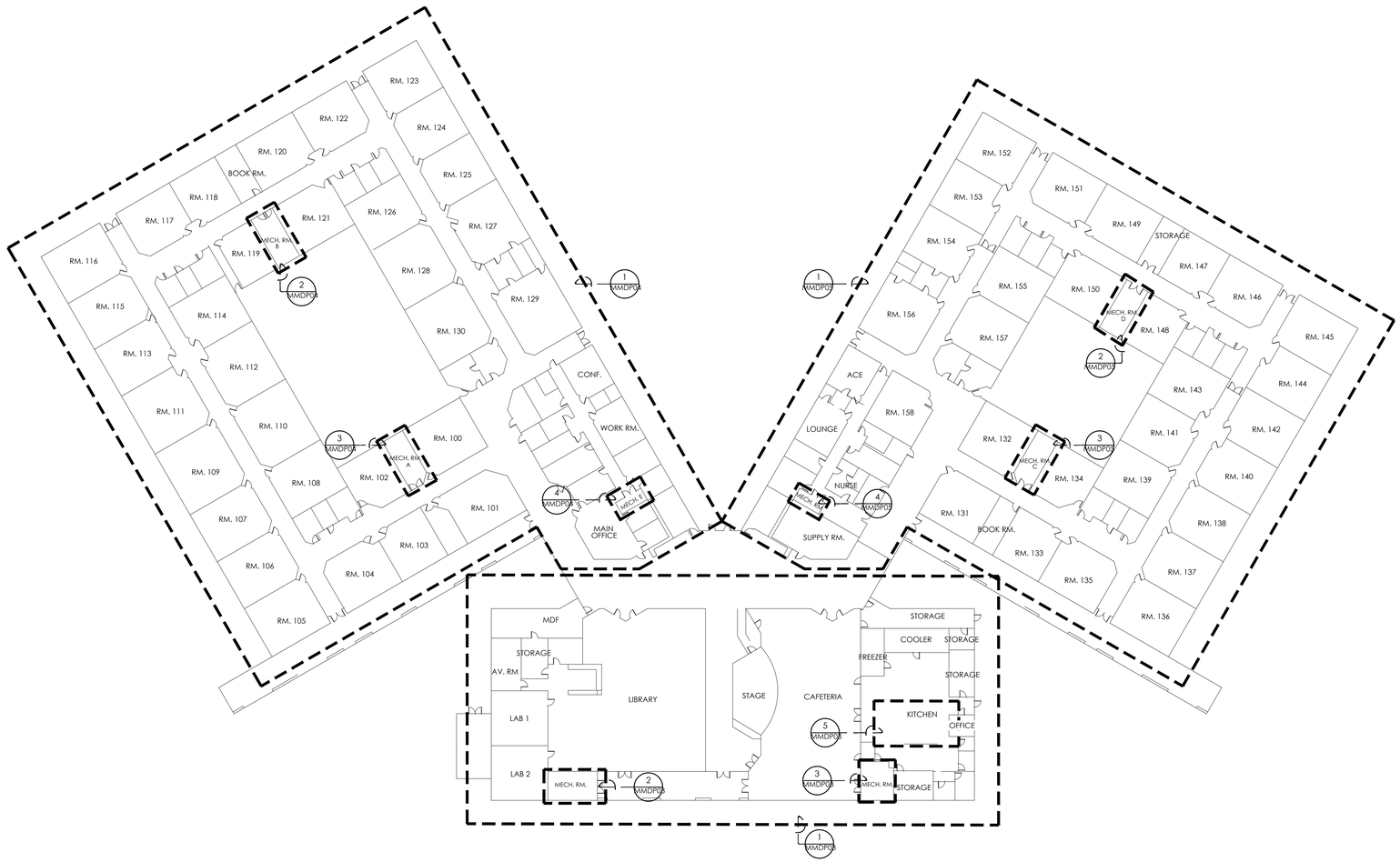
PROFESSIONAL ENGINEER

MG01



1 MECHANICAL OVERALL DEMOLITION PLAN

SCALE: 1" = 30'-0"

GENERAL DEMOLITION NOTES

A. THE EXTENT OF DEMOLITION WORK IS INDICATED ON THE ENGINEER DRAWINGS AND BY THE REQUIREMENTS OF THIS SECTION. A VISIT TO THE SITE WILL BE REQUIRED TO PROPERLY BID THE DEMOLITION WORK.

B. PROVIDE ALL DEMOLITION WORK REQUIRED FOR THE REMOVAL AND/OR RELOCATION OF HVAC FIXTURES AND EQUIPMENTS AND ASSOCIATED SERVICES TO PROVIDE A COMPLETE AND OPERABLE SYSTEM UPON COMPLETION OF THE PROJECT.

C. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE TO REVIEW THE ENGINEER DOCUMENTS IN ADDITION TO THE DIVISION 15 AND 16 DOCUMENTS TO DETERMINE THE COMPLETE SCOPE OF WORK.

D. WHERE EQUIPMENT IS INDICATED OR REQUIRED TO BE REMOVED, THE ASSOCIATED SERVICES SHALL BE CAPPED AT A CONCEALED LOCATION.

E. WHERE SERVICES RUN ABOVE INACCESSIBLE CEILINGS OR IN WALLS WHICH ARE TO REMAIN UNDISTURBED, SERVICES SHALL BE CAPPED AT CONCEALED LOCATION AND ABANDONED

F. WHERE THE REMOVAL OF EQUIPMENT RENDERS EQUIPMENT DOWNSTREAM INOPERABLE, SERVICES SHALL BE EXTENDED TO THE DOWNSTREAM EQUIPMENT SO THAT THE FIXTURES ARE LEFT IN OPERATING CONDITION.

G. COORDINATE DEMOLITION OF DIVISION 15 SYSTEMS AS REQUIRED WITH ALL OTHER TRADES.

H. ALL EXISTING H.V.A.C. AND EQUIPMENT REMOVED DURING CONSTRUCTION THAT ARE NOT TO BE REUSED SHALL BE REMOVED FROM THE JOB SITE AND PROPERLY RETURNED TO THE OWNER, IF DESIRED BY OWNER.

I. WHERE EXISTING EQUIPMENT IS TO BE RELOCATED, BE CAUTIOUS TO PREVENT DAMAGE DURING THE REMOVAL AND REINSTALLATION. WHERE DAMAGE OCCURS, THE EQUIPMENT SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION AND APPROVAL OF THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER.

J. EXISTING EQUIPMENT TO BE REUSED SHALL BE CLEANED AND REPAIRED AT THE DISCRETION OF THE ENGINEER WHERE APPLICABLE.

K. ALL DEVICES ATTACHED TO WALLS OR CEILINGS SHALL BE REMOVED PER DEMOLITION NOTE A - M WHETHER SHOWN ON DRAWINGS OR NOT.

L. CONTRACTOR TO REUSE AS MUCH EXISTING CEILING TILES AS POSSIBLE. ONLY DAMAGED CLG. TILES AND GRID DAMAGED BY THE SUB/CONTRACTOR WILL BE REPLACED WITH NEW.

M. REMOVE PARTIAL EXISTING CEILING TILES AND GRID BENEATH DUCT RUNS ONLY. STORE, PROTECT & REUSE TILES. RE: MEP ALL OTHER CEILING MOUNTED SYSTEMS (FIRE SPRINKLER HEADS, DIFFUSERS, LIGHT FIXTURES, ALARMS, STROBES, ETC.) SHALL REMAIN AND BE PROTECTED DURING DEMOLITION. RE: MEP FOR ADDT. INFO.

N. ALL EXISTING INDOOR AIR HANDLING UNITS SHALL HAVE THEIR EXISTING CONCRETE PADS DEMOLISHED & DISPOSED OF. ANY/ALL FLOOR DAMAGE UNDER REMOVED CONCRETE PADS TO BE REPAIRED.

KEYED NOTES: MECHANICAL DEMOLITION

1. EXISTING FAN TO BE DEMOLISHED AND REPLACED.
2. EXISTING AIR HANDLING UNIT/CONDENSER EQUIPMENT TO BE DEMOLISHED AND REPLACED. RETURN COMPONENTS TO OWNER IF OWNER SO DESIRES.
3. ALL INDICATED EXISTING OUTSIDE AIR DUCTWORK AND LOUVERS TO BE DEMOLISHED AND REPLACED. PATCH ANY ABANDONED/EXCESS LOUVER OPENINGS W/ CONSTRUCTION MATERIALS TO MATCH EXISTING CONSTRUCTION MATERIALS AND DESIGN. COORDINATE PATCHWORK W/ OWNER THROUGH ENGINEER PRIOR TO COMMENCING WORK AHEAD OF TIME.
4. DEMOLISH INDICATED SA/RA DUCTWORK.
5. DEMOLISH INDICATED EXISTING MOTORIZED ZONE DAMPER, TO BE REPLACED WITH NEW VAV BOX. REFER TO REMODEL PLAN.
6. EXISTING THERMOSTAT/TEMP SENSORS TO BE REPLACED WITH NEW HVAC CONTROLS TEMP/RH%/CO2 SENSOR. RETURN ALL EQUIPMENT TO OWNER.
7. CAP, SEAL AND INSULATE BYPASS AIR OPENINGS IN SA/RA DUCTWORK.
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15. EXISTING HOODS TO REMAIN.
16. EXISTING REFRIGERATION CONDENSERS TO REMAIN.
17. NEW GRILLE TO REPLACE EXISTING.

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WISD MEMORIAL ELEMENTARY SCHOOL HVAC REPLACEMENT

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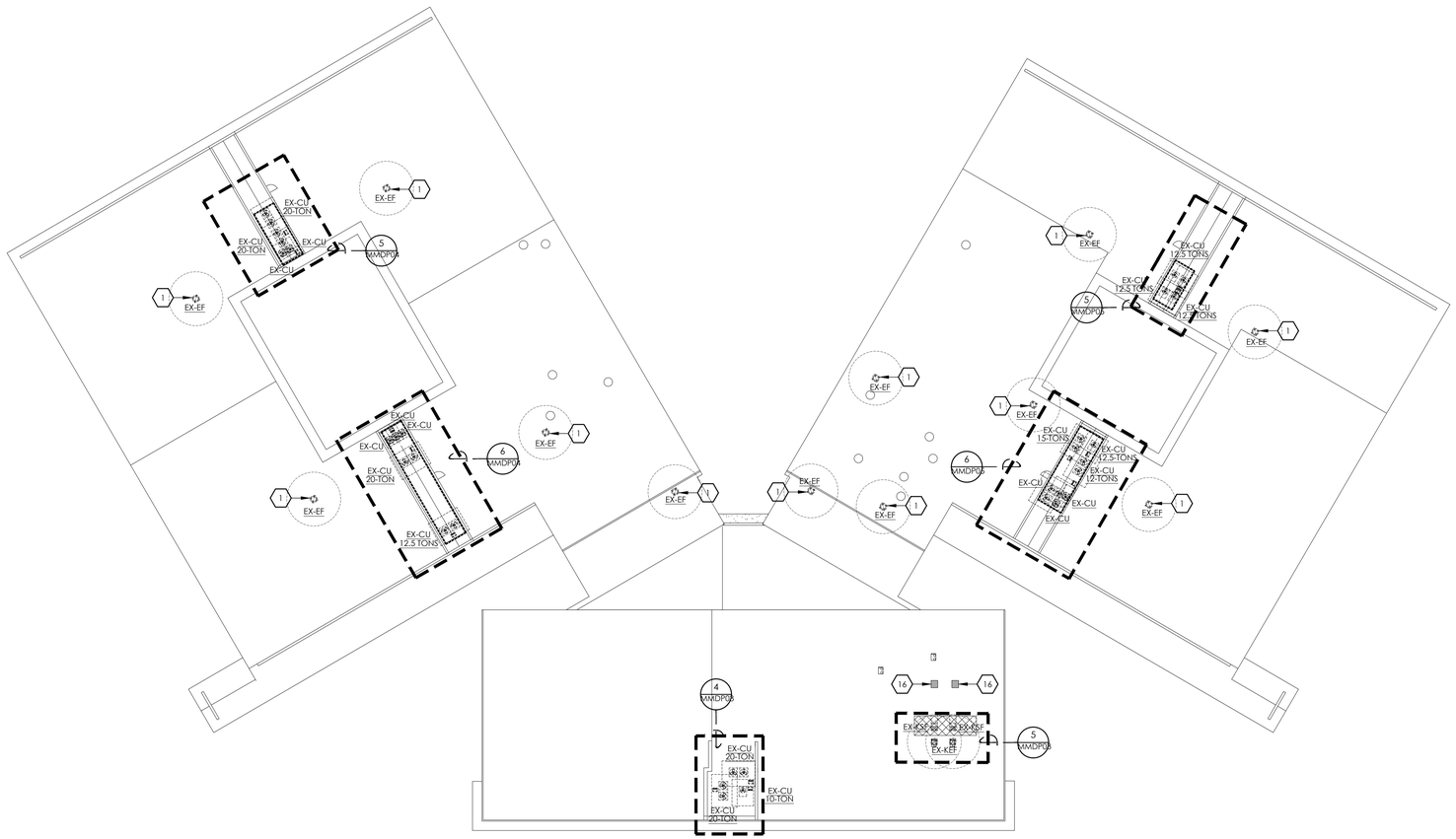

1 MECHANICAL DEMOLITION ROOF PLAN

SCALE: 1" = 30'-0"

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3. ALL INDICATED EXISTING OUTSIDE AIR DUCTWORK AND LOUVERS TO BE DEMOLISHED AND REPLACED. PATCH ANY ABANDONED/EXCESS LOUVER OPENINGS W/ CONSTRUCTION MATERIALS TO MATCH EXISTING CONSTRUCTION MATERIALS AND DESIGN. COORDINATE PATCHWORK W/ OWNER THROUGH ENGINEER PRIOR TO COMMENCING WORK AHEAD OF TIME.
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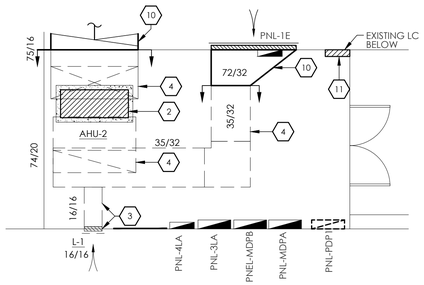
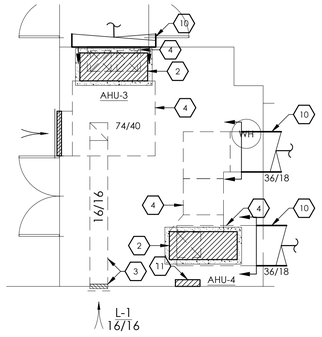
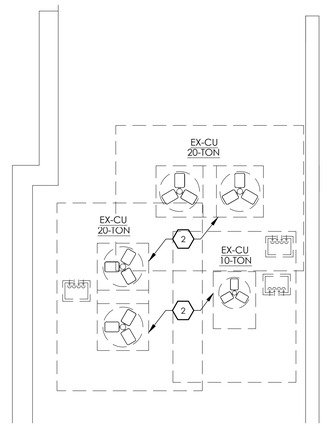


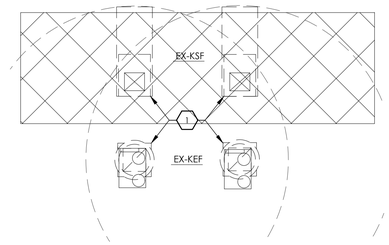
2 MECHANICAL ROOM - LIBRARY
SCALE: 3/16" = 1'-0"



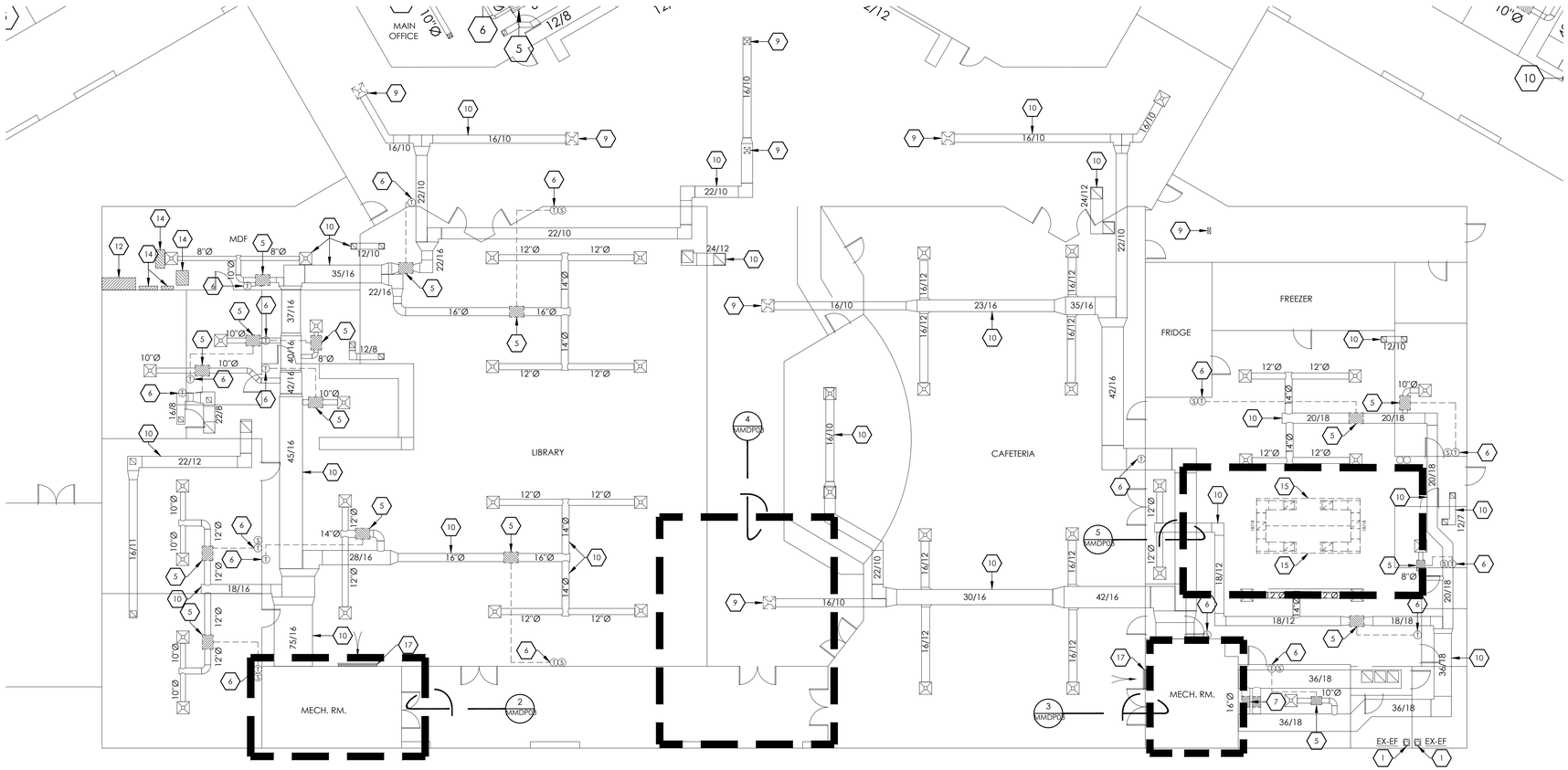
3 MECHANICAL ROOM - CAFETERIA
SCALE: 3/16" = 1'-0"



4 ROOF ENLARGED VIEW - LIBRARY/CAFE
SCALE: 3/16" = 1'-0"



5 ROOF ENLARGED VIEW - KITCHEN
SCALE: 3/16" = 1'-0"



1 MECHANICAL DEMOLITION PLAN - LIBRARY & CAFETERIA SECTION
SCALE: 3/32" = 1'-0"

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E. WHERE SERVICES RUN ABOVE INACCESSIBLE CEILINGS OR IN WALLS WHICH ARE TO REMAIN UNDISTURBED, SERVICES SHALL BE CAPPED AT CONCEALED LOCATION AND ABANDONED

F. WHERE THE REMOVAL OF EQUIPMENT RENDERS EQUIPMENT DOWNSTREAM INOPERABLE, SERVICES SHALL BE EXTENDED TO THE DOWNSTREAM EQUIPMENT SO THAT THE FIXTURES ARE LEFT IN OPERATING CONDITION.

G. COORDINATE DEMOLITION OF DIVISION 15 SYSTEMS AS REQUIRED WITH ALL OTHER TRADES.

H. ALL EXISTING H.V.A.C. AND EQUIPMENT REMOVED DURING CONSTRUCTION THAT ARE NOT TO BE REUSED SHALL BE REMOVED FROM THE JOB SITE AND PROPERLY RETURNED TO THE OWNER, IF DESIRED BY OWNER.

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J. EXISTING EQUIPMENT TO BE REUSED SHALL BE CLEANED AND REPAIRED AT THE DISCRETION OF THE ENGINEER WHERE APPLICABLE.

K. ALL DEVICES ATTACHED TO WALLS OR CEILINGS SHALL BE REMOVED PER DEMOLITION NOTE A - M WHETHER SHOWN ON DRAWINGS OR NOT.

L. CONTRACTOR TO REUSE AS MUCH EXISTING CEILING TILES AS POSSIBLE. ONLY DAMAGED CLG. TILES AND GRID DAMAGED BY THE SUB/CONTRACTOR WILL BE REPLACED WITH NEW.

M. REMOVE PARTIAL EXISTING CEILING TILES AND GRID BENEATH DUCT RUNS ONLY. STORE, PROTECT & REUSE TILES. RE: MEP ALL OTHER CEILING MOUNTED SYSTEMS (FIRE SPRINKLER HEADS, DIFFUSERS, LIGHT FIXTURES, ALARMS, STROBES, ETC.) SHALL REMAIN AND BE PROTECTED DURING DEMOLITION. RE: MEP FOR ADDT. INFO.

N. ALL EXISTING INDOOR AIR HANDLING UNITS SHALL HAVE THEIR EXISTING CONCRETE PADS DEMOLISHED & DISPOSED OF. ANY/ALL FLOOR DAMAGE UNDER REMOVED CONCRETE PADS TO BE REPAIRED.

KEYED NOTES: MECHANICAL DEMOLITION

1. EXISTING FAN TO BE DEMOLISHED AND REPLACED.
2. EXISTING AIR HANDLING UNIT/CONDENSER EQUIPMENT TO BE DEMOLISHED AND REPLACED. RETURN COMPONENTS TO OWNER IF OWNER SO DESIRES.
3. ALL INDICATED EXISTING OUTSIDE AIR DUCTWORK AND LOUVERS TO BE DEMOLISHED AND REPLACED. PATCH ANY ABANDONED/EXCESS LOUVER OPENINGS W/ CONSTRUCTION MATERIALS TO MATCH EXISTING CONSTRUCTION MATERIALS AND DESIGN. COORDINATE PATCHWORK W/ OWNER THROUGH ENGINEER PRIOR TO COMMENCING WORK AHEAD OF TIME.
4. DEMOLISH INDICATED SA/RA DUCTWORK.
5. DEMOLISH INDICATED EXISTING MOTORIZED ZONE DAMPER, TO BE REPLACED WITH NEW VAV BOX. REFER TO REMODEL PLAN.
6. EXISTING THERMOSTAT/TEMP SENSORS TO BE REPLACED WITH NEW HVAC CONTROLS TEMP/RH%/CO2 SENSOR. RETURN ALL EQUIPMENT TO OWNER.
7. CAP, SEAL AND INSULATE BYPASS AIR OPENINGS IN SA/RA DUCTWORK.
8. EXISTING OUTSIDE AIR DUCT TO BE DEMOLISHED. CAP, SEAL AND INSULATE OPENING IN DUCTWORK.
9. EXISTING INDICATED AIR DEVICE TO BE REPLACED WITH NEW.
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11. EXISTING CONTROLS/ENCLOSURES TO BE REMOVED AND REPLACED WITH NEW HVAC CONTROLS.
12. BATTERY BACKUP SYSTEM TO REMAIN.
13. INDICATED IT RACK TO BE RELOCATED BY WISD. COORDINATE WITH OWNER.
14. INDICATED IT RACK TO REMAIN. COORDINATE W/ OWNER. INDICATED CONTROLS ENCLOSURE & DEVICES TO BE RETURNED TO OWNER IN CONDITION IT WAS FOUND IN PRIOR TO DEMOLITION
15. EXISTING HOODS TO REMAIN.
16. EXISTING REFRIGERATION CONDENSERS TO REMAIN.
17. NEW GRILLE TO REPLACE EXISTING.

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06/20/2024
STATE OF TEXAS
Wilford L. McGee III
121939
REGISTERED
PROFESSIONAL ENGINEER

PROJECT # : 23.1.40
DATE: 06/20/24
CHECKED BY: LM

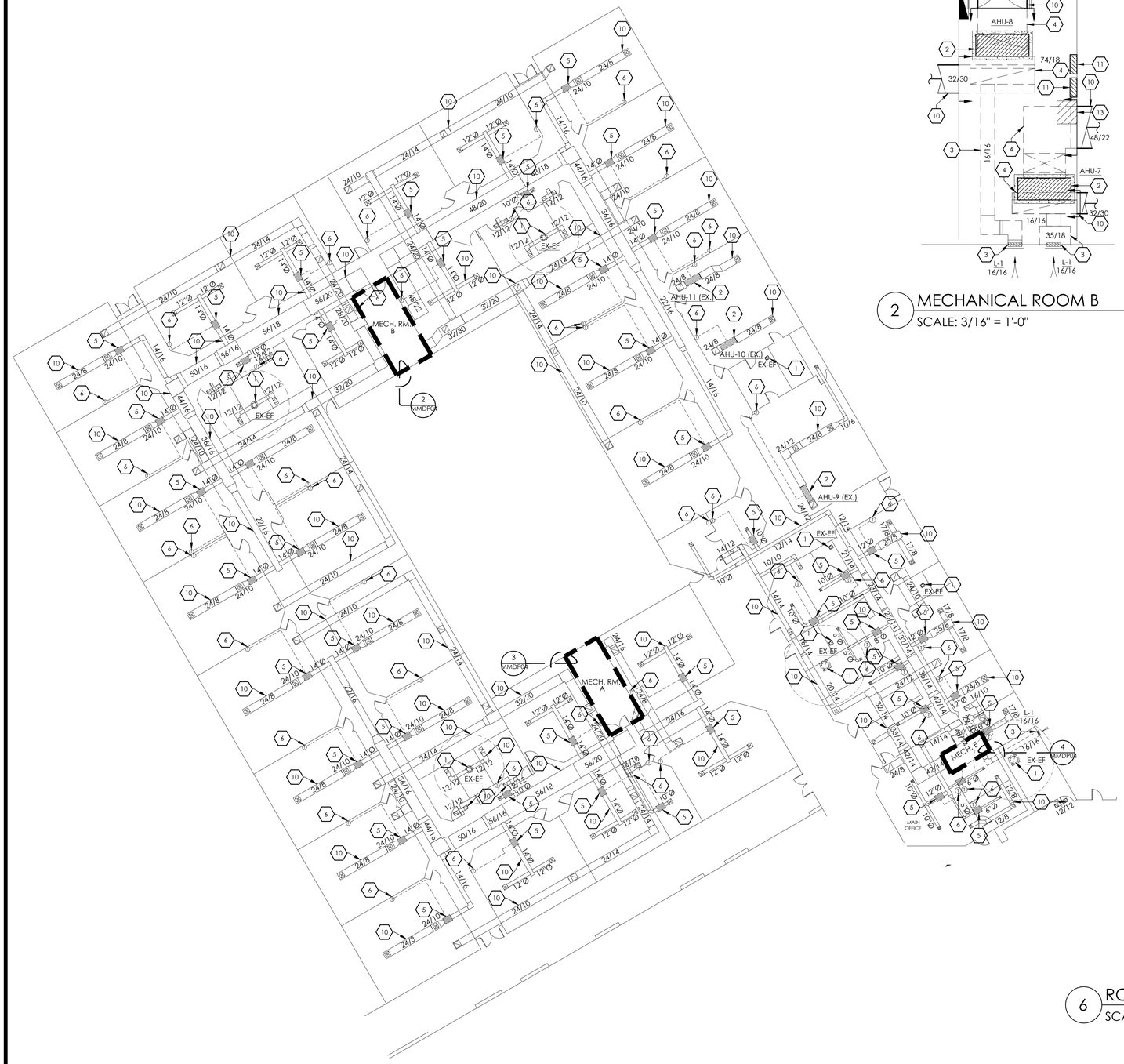
REVISION:

WISD MEMORIAL ELEMENTARY SCHOOL
HVAC REPLACEMENT

WESLACO

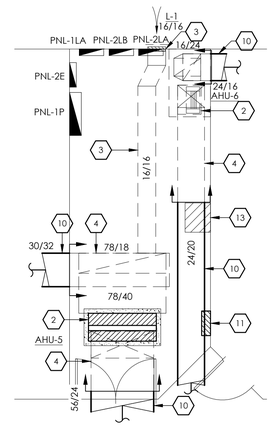
TEXAS

MMDP03

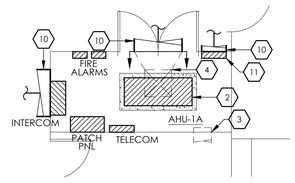


1 MECHANICAL DEMOLITION PLAN - LEFT WING SECTION
SCALE: 1/16" = 1'-0"

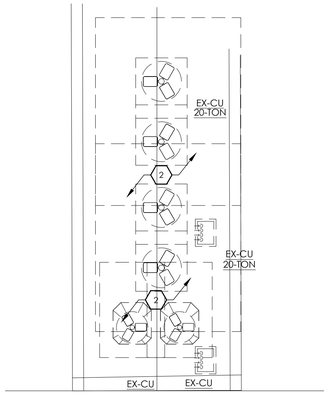
2 MECHANICAL ROOM B
SCALE: 3/16" = 1'-0"



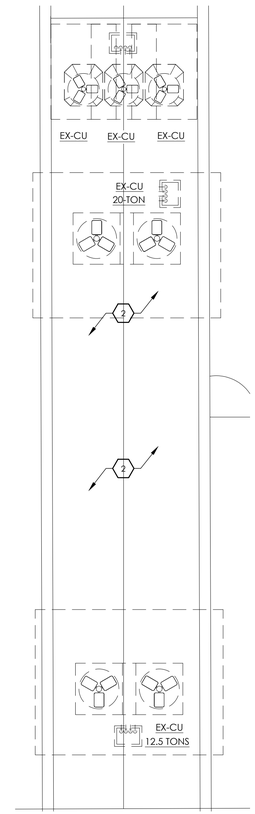
3 MECHANICAL ROOM A
SCALE: 3/16" = 1'-0"



4 MECHANICAL ROOM E
SCALE: 3/16" = 1'-0"



5 ROOF ENLARGED VIEW - MECH B
SCALE: 3/16" = 1'-0"



6 ROOF ENLARGED VIEW - MECH A
SCALE: 3/16" = 1'-0"

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A. THE EXTENT OF DEMOLITION WORK IS INDICATED ON THE ENGINEER DRAWINGS AND BY THE REQUIREMENTS OF THIS SECTION. A VISIT TO THE SITE WILL BE REQUIRED TO PROPERLY BID THE DEMOLITION WORK.

B. PROVIDE ALL DEMOLITION WORK REQUIRED FOR THE REMOVAL AND/OR RELOCATION OF HVAC FIXTURES AND EQUIPMENTS AND ASSOCIATED SERVICES TO PROVIDE A COMPLETE AND OPERABLE SYSTEM UPON COMPLETION OF THE PROJECT.

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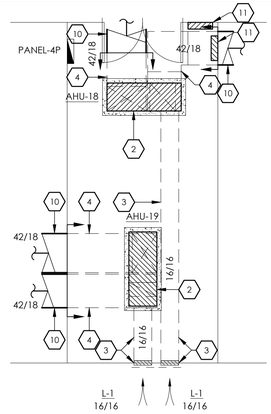
WISD MEMORIAL ELEMENTARY SCHOOL HVAC REPLACEMENT

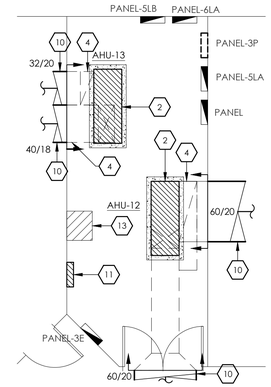
WESLACO TEXAS

MMDP04

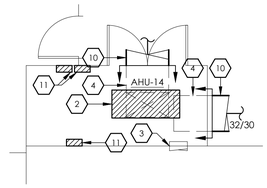
1 MECHANICAL DEMOLITION PLAN - RIGHT WING SECTION
SCALE: 1/16" = 1'-0"



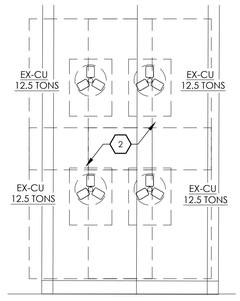
2 MECHANICAL ROOM TOP D
SCALE: 3/16" = 1'-0"



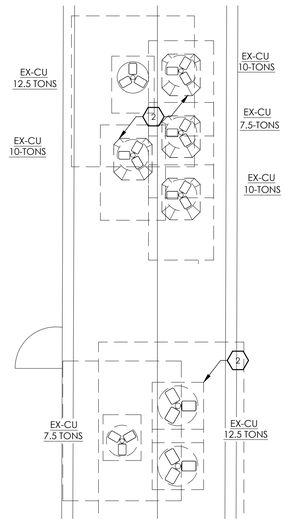
3 MECHANICAL ROOM C
SCALE: 3/16" = 1'-0"



4 MECHANICAL ROOM
SCALE: 3/16" = 1'-0"



5 ROOF ENLARGED VIEW - MECH ROOM D
SCALE: 3/16" = 1'-0"



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WISD MEMORIAL ELEMENTARY SCHOOL
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WESLACO

TEXAS

MMDP05

PIPING MATERIAL SCHEDULE

1" AND SMALLER
HARD DRAWN TYPE "K" COPPER WITH COMPRESSION FITTINGS

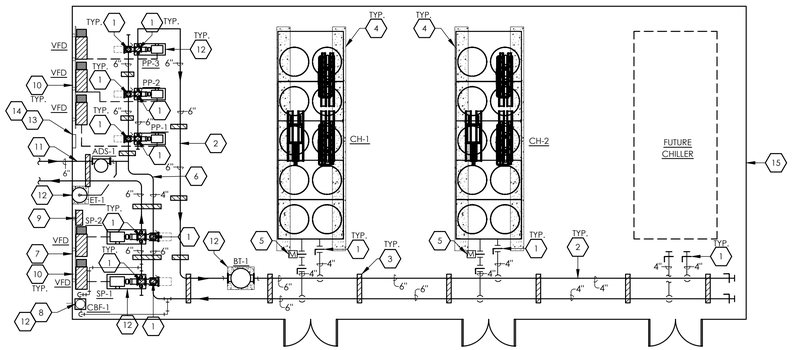
1 1/4" AND LARGER
SCHEDULE 40 BLACK STEEL PIPING WITH GROOVED END AND VICTAULIC FITTING

Weight of Chilled Water Piping

Nominal Pipe Size	Weight of Pipe Filled with Water (Lbs./Ft.)
½" in.	2 lbs.
1" in.	3 lbs.
1 ½" in.	5 lbs.
2" in.	6 lbs.
2 ½" in.	9 lbs.
3" in.	12 lbs.
4" in.	17 lbs.
6" in.	33 lbs.
8" in.	55 lbs.

KEYED NOTES: MECHANICAL CHILLER PLANT

1. PROVIDE CHILLED WATER SUPPLY AND RETURN LINES W/ BUTTERFLY ISOLATION VALVES AT INDICATED LOCATIONS AT ALL EQUIPMENT.
2. RUN CHILLED WATER LINES @ A MINIMUM OF 8' ABOVE FINISHED GRADE.
3. PROVIDE PIPE SUPPORT @ EVERY 8'. LINES TO RUN @ MIN 8' ABOVE FINISHED GRADE.
4. CHILLER TO BE MOUNTED ON A 4" THICK BY 18" WIDE CONCRETE PAD. COORDINATE WITH CHILLER ACTUAL DIMENSIONS FOR PROPER PAD LOCATION. COORDINATE W/ STRUCTURAL PLANS.
5. MOTORIZED BUTTERFLY ISOLATION VALVE AT THIS LOCATION. TYPICAL FOR ALL CHILLERS.
6. 4" CHILLED WATER BYPASS LINE. REFERENCE DETAIL 02 ON THIS SHEET FOR ALL GAGES, POTS, AND SENSORS REQUIRED.
7. MOUNT MAKE UP WATER LINE VALVES AND BACKFLOW ON THIS WALL. COORDINATE EXACT PLACEMENT WITH DIVISION 16. REF. DETAIL ON DETAIL SHEET CM5.2.
8. PLACE CHEMICAL POT FEEDER IN THIS LOCATION. REFERENCE DETAIL ON DETAIL SHEET FOR ALL VALVE AND LINE SIZES.
9. PLACE CONTROLS CONTROLLER ENCLOSURE IN THIS LOCATION.
10. MOUNT VFD AT THIS LOCATION.
11. PROVIDE TEMPERATURE AND PRESSURE GAUGES AT SUPPLY AND RETURN LINES.
12. MOUNT EQUIPMENT ON 4" CONCRETE HOUSEKEEPING PAD.
13. INSULATE MAKE-UP WATER LINES.
14. PROVIDE HOSE BIB.
15. PROVIDE WITH 6' CHAINLINK FENCE AROUND CHILLER YARD ANCHORED TO STRUCTURAL FOUNDATION.



2 ENLARGED CHILLED WATER PLANT
SCALE: 1/8" = 1'-0"

GENERAL NOTES - MECHANICAL:

(1) **PROVIDE HYDROSTATIC TEST BEFORE INSULATING ANY PIPE. CONTACT ENGINEER TO PROVIDE INSPECTION DURING HYDROSTATIC TEST.**

(2) **ALL CHILLED WATER PIPING TO BE FLUSHED BEFORE FINAL CONNECTION TO A/C EQUIPMENT.**

(3) **COORDINATE WITH DIVISION 16 FOR ALL LOCATIONS OF VFD'S AND ELECTRICAL DISCONNECTS.**

(4) **PROVIDE ALL HYDRONIC EQUIPMENT W/ BUTTERFLY ISOLATION VALVES IMMEDIATELY UPSTREAM & DOWNSTREAM OF EQUIPMENT. TYPICAL OF ALL EQUIPMENT PART OF CHILLED WATER SYSTEM.**

(5) **EXISTING ROOF IS STILL UNDER WARRANTY BY MANUFACTURER. ALL ROOF PENETRATIONS SHALL BE PROVIDED BY APPROVED VENDOR IN ORDER FOR ROOF WARRANTY TO BE MAINTAINED.**

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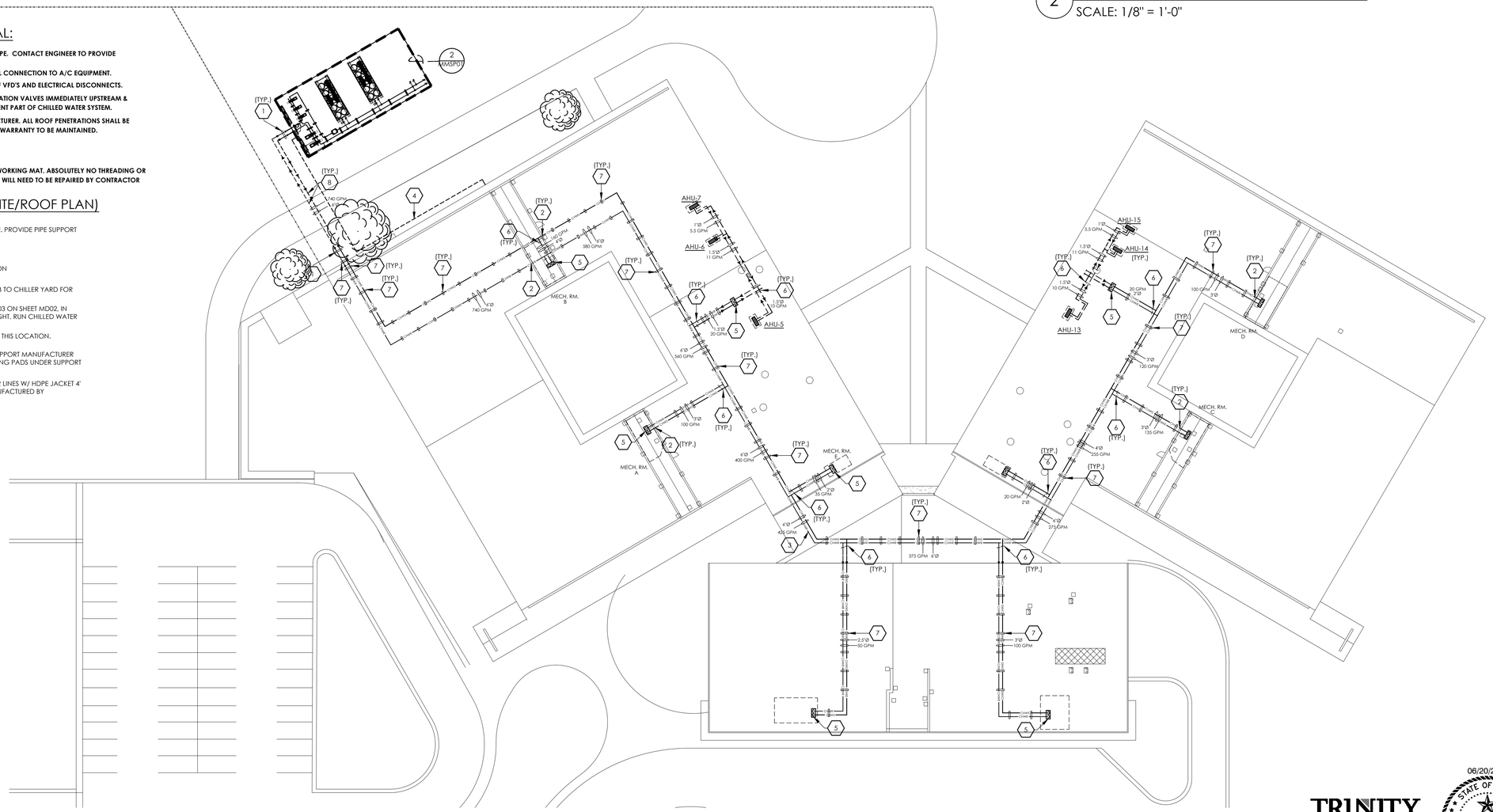
1606 S. REYNOLDS RIO HONDO, TX 78583

(6) **ALL WORK ON ROOF SHALL NEED TO BE DONE OVER A WORKING MAT. ABSOLUTELY NO THREADING OR WELDING WILL BE ALLOWED ON ROOF. ROOF DAMAGES WILL NEED TO BE REPAIRED BY CONTRACTOR AT CONTRACTOR'S EXPENSE.**

KEYED NOTES: MECHANICAL (SITE/ROOF PLAN)

1. RUN CHILLED WATER LINES AT 10' ABOVE FINISHED GRADE. PROVIDE PIPE SUPPORT AS SHOWN OR AT LEAST EVERY 8'.
2. ANCHOR CHILLED WATER LINES TO EXISTING STEEL RAILS.
3. PROVIDE DIFFERENTIAL PRESSURE SENSOR AT THS LOCATION
4. PROVIDE 3/4"WATER LINE FROM WALL MOUNTED HOSE BIB TO CHILLER YARD FOR MAKEUP WATER.
5. PROVIDE ROOF CURB MOUNTED PITCH PAN, REF. DETAIL 03 ON SHEET MD02, IN WHICH TO RUN LINES AND SEAL ALL OPENINGS WATER TIGHT. RUN CHILLED WATER LINES FROM ROOF TO EACH AIR HANDLER.
6. PROVDE BUTTERLEY CHILLED WATER ISOLATION VALVES @ THIS LOCATION.
7. PROVIDE CHILLED WATER PIPE SUPPORTS @ EVERY 10'. SUPPORT MANUFACTURER SHALL BE MIRO OR EQUAL. PROVIDE ADDITIONAL ROOFING PADS UNDER SUPPORT FOOTLEGS.
8. PROVIDE UNDERGROUND PRE-INSULATED CHILLED WATER LINES W/ HDPE JACKET 4' BELOW BUILDING GRADE, EQUAL TO FERRO-THERM MANUFACTURED BY THERMACOR.



1 MECHANICAL CHILLED WATER PIPING SITE PLAN
SCALE: 1" = 30'-0"

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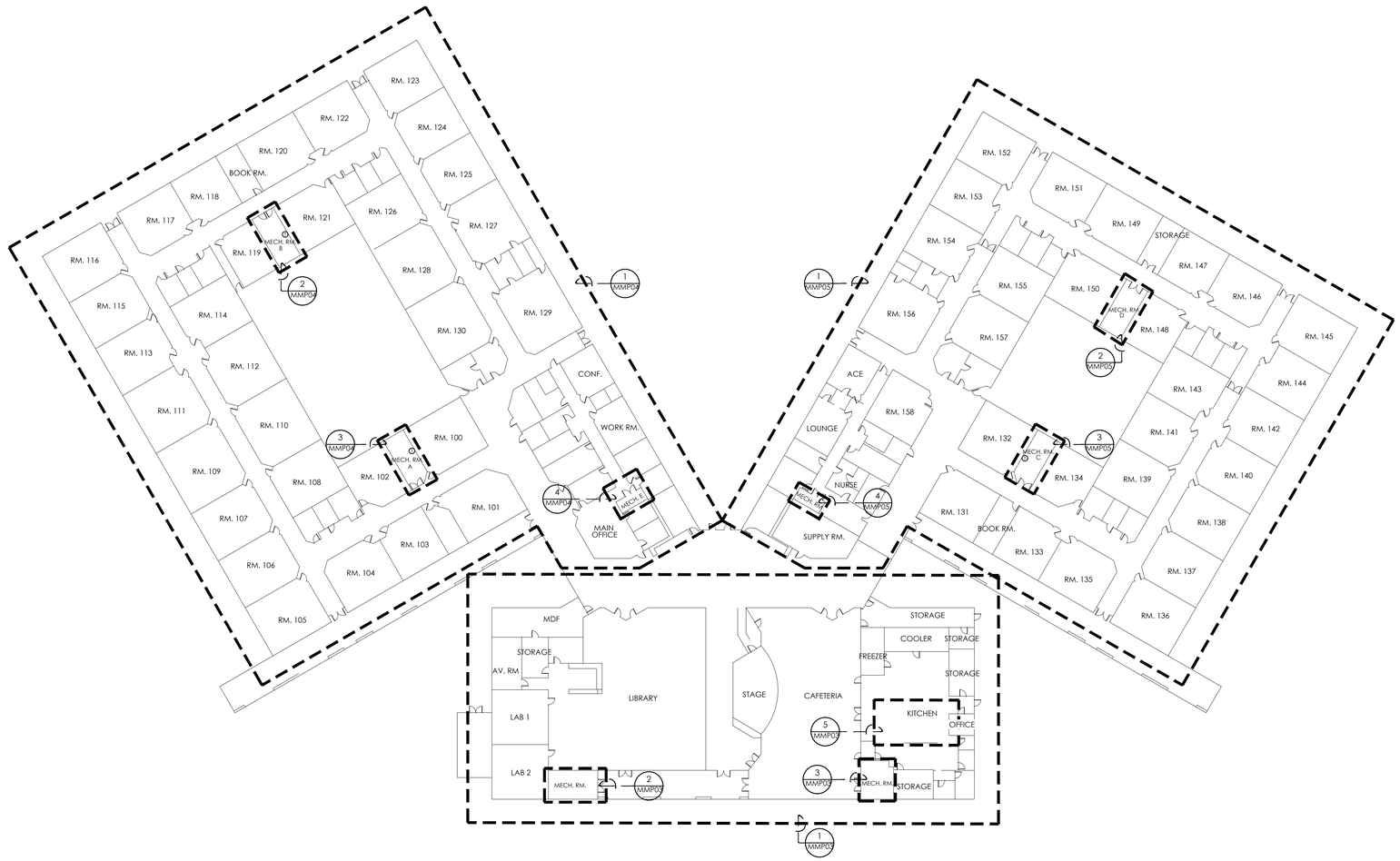
PROFESSIONAL ENGINEER

MMSP01



1 MECHANICAL OVERALL FLOOR PLAN
SCALE: 1" = 30'-0"

GENERAL NOTES:

(1) CONTRACTOR TO REUSE AS MUCH EXISTING CEILING TILES AS POSSIBLE. ONLY DAMAGED CLG. TILES AND GRID DAMAGED BY THE SUB/CONTRACTOR WILL BE REPLACED WITH NEW.

(2) REMOVE PARTIAL EXISTING CEILING TILES AND GRID BENEATH DUCT RUNS ONLY. STORE, PROTECT & REUSE TILES. RE: MEP ALL OTHER CEILING MOUNTED SYSTEMS (FIRE SPRINKLER HEADS, DIFFUSERS, LIGHT FIXTURES, ALARMS, STROBES, ETC.) SHALL REMAIN AND BE PROTECTED DURING DEMOLITION. RE :MEP FOR ADDT. INFO.

(3) NEW AIR HANDLING UNITS TO BE MOUNTED/INSTALLED IN MECHANICAL SPACE APPROXIMATELY WHERE EXISTING ONE WAS REMOVED. VENDOR TO MEASURE ALL ROOM DIMENSIONS AND EGRESS DIMENSIONS PRIOR TO SUBMITTALS TO VERIFY EASE OF INSTALLATION. RECONNECT TO EXISTING DUCTWORKS, PIPING AND WIRING.

(4) PROVIDE ADEQUATE CLEARANCES TO SERVICE BOTH CONDENSERS AND AIR HANDLERS FOR ALL UNITS.

(5) WHERE ADDITIONAL EQUIPMENT/TEMPERATURE CONTROLLED DAMPERS ARE DISCOVERED, COORDINATE WITH DESIGN TEAM TO PROVIDE ADDITIONAL REPLACEMENT EQUIPMENT/VAV BOXES.

(6) ALL CONDENSING UNITS SHALL BE PROVIDED W/ 2 NEW STRUCTURAL SUPPORTS FOR EVERY ROW OF CONDENSERS IN CONDENSER ENCLUSURE. SUPPORTS SHALL BE 6' GALVANIZED STEEL CHANNEL SUPPORTED AND WELDED ACROSS TO ENCLOSURE SCREENING STRUCTURE.

KEYED NOTES: MECHANICAL

1. PROVIDE NEW CONTROLS TRIPLE COMBO T-STAT (TEMPERATURE/HUMIDITY/CO2) WITH OCCUPANCY SENSOR FOR UNOCCUPIED SETPOINT SETBACKS.
2. PROVIDE W/ MOTORIZED DAMPER W/ OPEN/CLOSE OPERATION. DAMPER TO BE ACTUATED TO MAX ONLY WHEN HEATER IS ENERGIZED & ACTUATED TO THE CLOSED POSITION @ ALL OTHER TIMES. PROVIDE W/ ADDITIONAL MANUAL BALANCING DAMPER TO BALANCE CFM AMOUNTS OF OUTSIDE AIR. MECHANICAL CONTRACTOR TO PROVIDE W/ ANY ELECTRICAL HARDWARE TO POWER DAMPER.
3. PROVIDE ALUMINUM PIPING SUPPORTS AT EVERY 4' FEET. PROVIDE ALUMINUM JACKETING ON ALL LINES EXTERIOR TO THE BUILDING.
4. COORDINATE LOCATION/HEIGHT OF LOUVERS/WALLCAPS TO NOT CONFLICT WITH CONTROL JOINTS AND DOWNSPOUTS. FIELD COORDINATE LOCATIONS OF EXISTING CONDUITS/PIPE TO PLACE LOUVERS & COORDINATE W/ ENGINEER TO RERUN LIMITED QTY OF CONDUIT/CIRCUITS.
5. ROUTE REFRIGERANT LINES AND CONDENSER ELECTRICAL CONDUIT BELOW ROOF VIA A "ROOF PENETRATION HOUSING" EQUAL TO "MEDIUM VAULT" FROM 'ROOFPENETRATIONHOUSING.COM' ROUTE REFRIGERANT LINES TO RESPECTIVE AIR HANDLER, ANCHOR LINES TO STRUCTURE AND SEAL ALL PENETRATIONS WATER TIGHT. PROVIDE ALUMINUM JACKETING ON ALL LINES EXTERIOR TO THE BUILDING.
6. **ALTERNATE #01** TIE IN NEW FAN TO EXISTING EXHAUST TERMINATION.
7. PROVIDE WITH NEW VAV BOX TO REPLACE MOTORIZED DAMPER. RE-CONNECT TO EXISTING SA DUCTWORK INLET AND OUTLET. PROVIDE WITH NEW DUCT CONNECTIONS/EXTENSIONS WHERE REQUIRED. RE-INSULATE AS PER SPECS.
8. NEW SA DEVICE AND ASSOCIATED DUCTWORK TO TIE INTO EXISTING SA DUCTWORK.
9. TIE IN NEW SA/RA DUCTS INTO EXISTING DUCTWORK.
10. TRIPLE COMBO TEMPERATURE SENSORS BY CONTROLS CONTRACTOR. TO BE MOUNTED IN EXISTING SENSOR J-BOXES
11. UNIT TO BE MOUNTED ON A 24" HIGH PLATFORM CONSTRUCTED OF 1-1/2" ANGLE IRON/1" SQUARE METAL TUBING. WRAP PLATFORM IN GALVANIZED SHEET METAL. LINE INTERIOR OF PLATFORM W/ 1" DUCT BOARD, W/ FOIL FACING AIRSTREAM. COAT INSIDE W/ MASTIC (TO FACILITATE CLEANING) & SEAL AIR TIGHT.
12. **ALTERNATE #01** HOOD BELOW, RECONNECT NEW HOOD VENTILATION EQUIPMENT TO EXISTING EXHAUST/MAKEUP DUCTWORK.
13. NEW MINISPLIT SYSTEM TO REPLACE EXISTING SYSTEM.
14. WRAP GREASE DUCT & TOP OF HOOD ABOVE CEILING W/ TWO LAYERS OF '3M FIRE BARRIER DUCT WRAP 615+' OR EQUAL FROM HOOD COLLAR TO FAN ON ROOF.
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17. HVAC CONTROLS ENCLOSURE FOR CU'S.
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25. MOUNT NEW CONDENSING UNIT ON EXISTING STRUCTURAL SUPPORTS. MECHANICALLY FASTEN UNIT TO CURB.
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28. BAROMETRIC RELIEF DAMPER SET TO OPEN AT +0.05 W.C OF POSITIVE BUILDING PRESSURE.
29. MOUNT UNIT OVER A 4" CONCRETE HOUSEKEEPING PAD.
30. PROVIDE W/ REFRIGERANT LINE WALL PENETRATION HOUSING/PANEL EQUAL TO "TGS SERIES PRO SYSTEM KIT" MADE BY "AIREX MANUFACTURING INC". WALL PANEL TO BE SIZED TO ACCOMMODATED REFRIGERANT LINES . COORDINATE W/ ARCH FOR COLOR .SECURE WITH LOCK-TYPE TAMPER-RESISTANT FASTENERS TO PREVENT UNAUTHORIZED ACCESS. PROVIDE WITH UV/ WEATHER RESISTANT INSULATION PROTECTOR (E-FLEX GUARD). PROVIDE ALUMINUM JACKETING ON ALL LINES EXTERIOR TO THE BUILDING. MOUNT AT 24" A.F.F.
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PROJECT # : 23.1.40
DATE: 06/20/24
CHECKED BY: LM

REVISION:

WISD MEMORIAL ELEMENTARY SCHOOL
HVAC REPLACEMENT

WESLACO TEXAS

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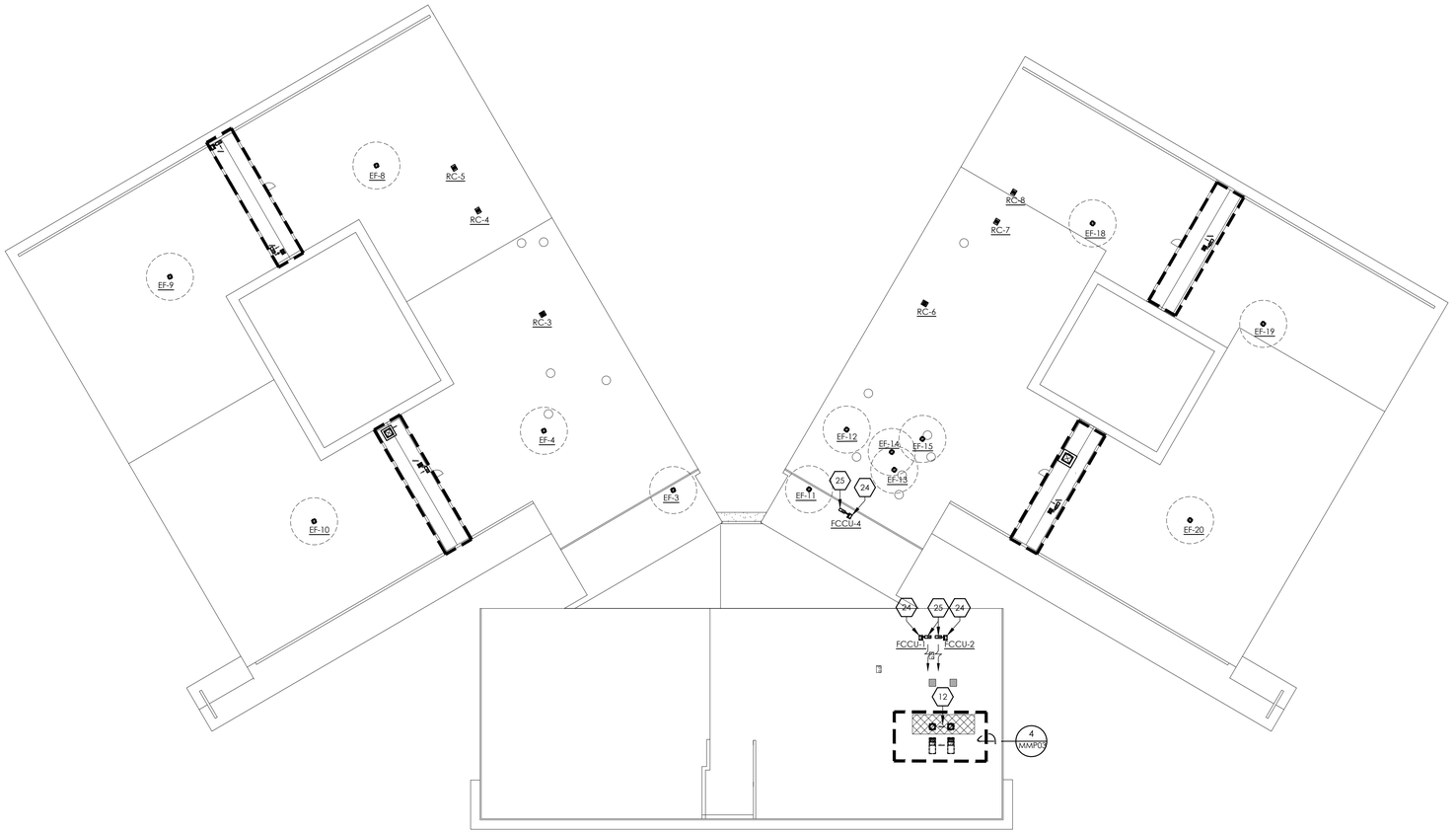
Texas Registered Engineering Firm - F10362
Project number: 23.1.40

06/20/2024
STATE OF TEXAS
Wilford L. McGee III
121939
REGISTERED
PROFESSIONAL ENGINEER

MMP01



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WISD MEMORIAL ELEMENTARY SCHOOL HVAC REPLACEMENT

WESLACO TEXAS

TRINITY
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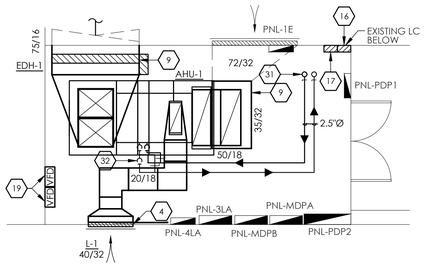
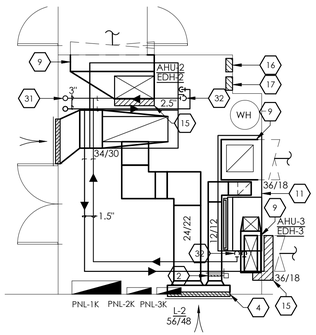
www.trinitymep.com I Copyright 2022
Texas Registered Engineering Firm - F10362
Project number: 23.1.40

06/20/2024
STATE OF TEXAS
Wilford L. McGee III
121939
REGISTERED
PROFESSIONAL ENGINEER

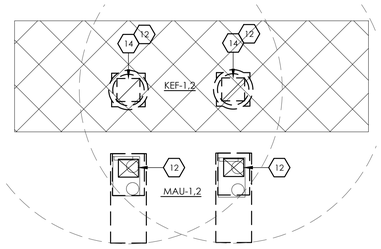
MMP02



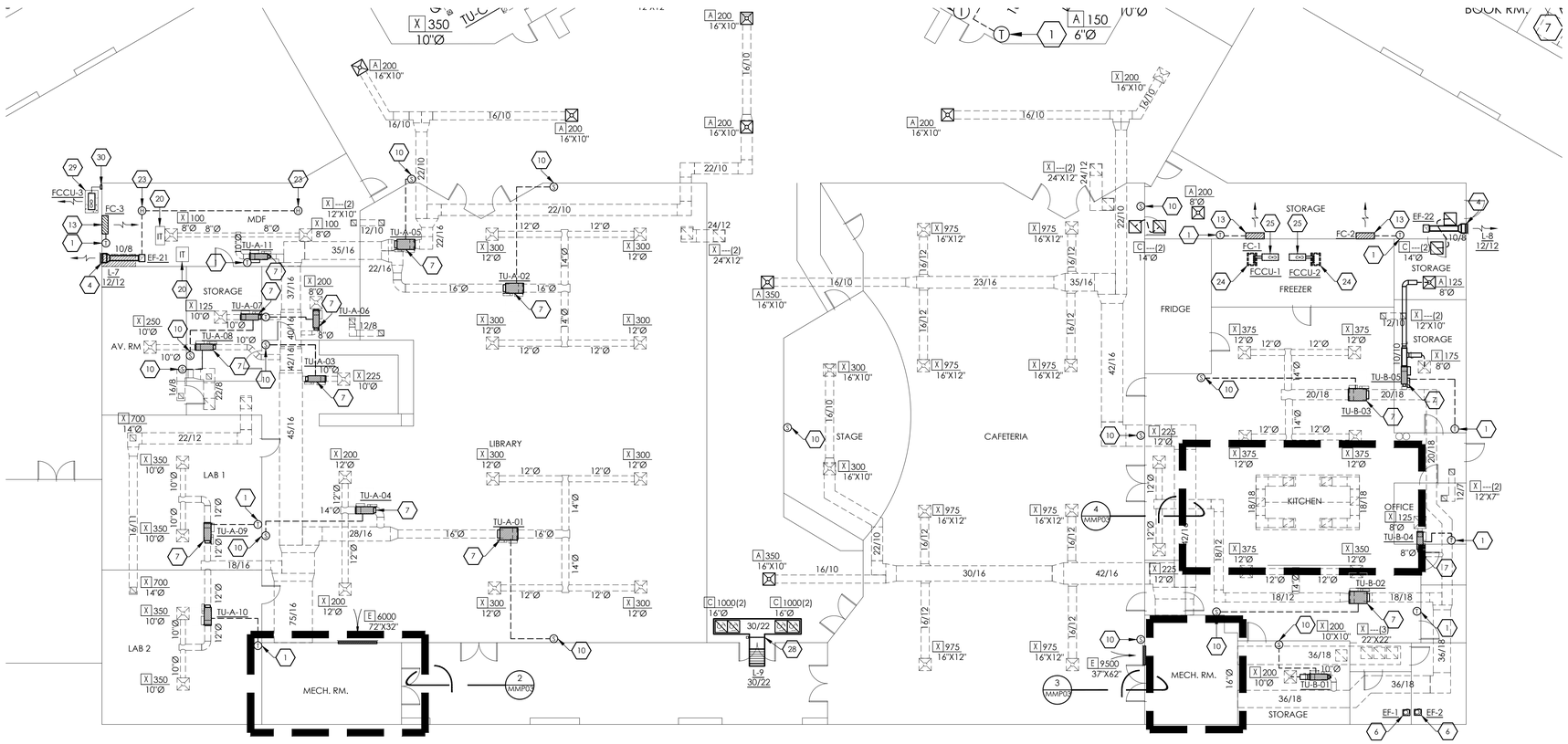
2 MECHANICAL ROOM - LIBRARY
SCALE: 3/16" = 1'-0"



3 MECHANICAL ROOM - CAFETERIA
SCALE: 3/16" = 1'-0"



4 ALTERNATE #1 ROOF ENLARGED VIEW - KITCHEN
SCALE: 3/16" = 1'-0"



1 MECHANICAL FLOOR PLAN - LIBRARY & CAFETERIA SECTION
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30. PROVIDE W/ REFRIGERANT LINE WALL PENETRATION HOUSING/PANEL EQUAL TO "TGS SERIES PRO SYSTEM KIT" MADE BY "AIREX MANUFACTURING INC". WALL PANEL TO BE SIZED TO ACCOMMODATED REFRIGERANT LINES , COORDINATE W/ ARCH FOR COLOR .SECURE WITH LOCK-TYPE TAMPER-RESISTANT FASTENERS TO PREVENT UNAUTHORIZED ACCESS. PROVIDE WITH UV/ WEATHER RESISTANT INSULATION PROTECTOR (E-FLEX GUARD). PROVIDE ALUMINUM JACKETING ON ALL LINES EXTERIOR TO THE BUILDING. MOUNT AT 24" A.F.F.
31. CW SUPPLY/RETURN LINES FROM ABOVE ROOF.
32. DROPS CONNECT TO CW COIL INLET AND OUTLETS. PROVIDE WITH COIL VALVE PACKAGE.

PROJECT # : 23.1.40
DATE: 06/20/24
CHECKED BY: LM

REVISION:

WISD MEMORIAL ELEMENTARY SCHOOL HVAC REPLACEMENT

WESLACO TEXAS

06/20/2024

TRINITY
MEP ENGINEERING
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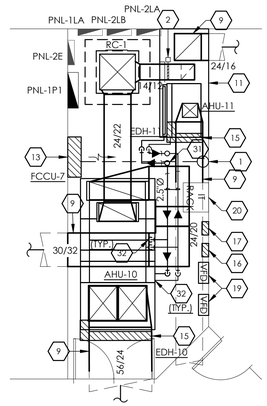
Texas Registered Engineering Firm - F10362
Project number: 23.1.40

STATE OF TEXAS
Wilford L. McGee III
121939
MECHANICAL

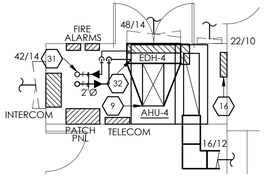
MMP03

1 MECHANICAL FLOOR PLAN - LEFT WING SECTION
SCALE: 3/16" = 1'-0"

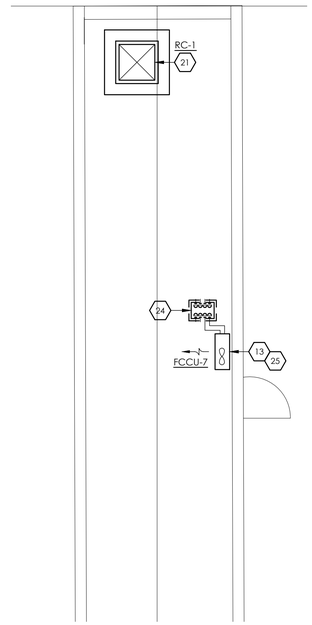
2 MECHANICAL ROOM B
SCALE: 3/16" = 1'-0"



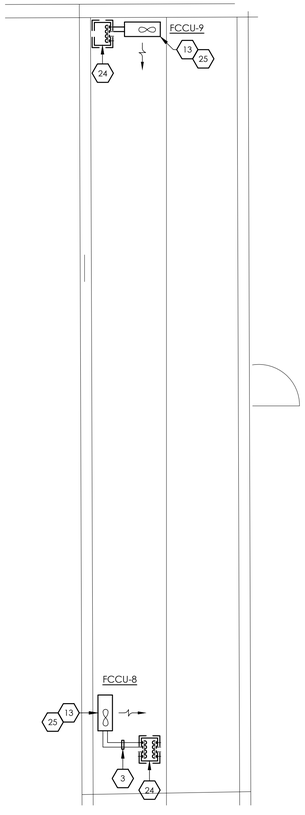
3 MECHANICAL ROOM A
SCALE: 3/16" = 1'-0"



4 MECHANICAL ROOM E
SCALE: 3/16" = 1'-0"



6 ROOF ENLARGED VIEW - MECH A
SCALE: 3/16" = 1'-0"



5 ROOF ENLARGED VIEW - MECH B
SCALE: 3/16" = 1'-0"

GENERAL NOTES:

(1) CONTRACTOR TO REUSE AS MUCH EXISTING CEILING TILES AS POSSIBLE. ONLY DAMAGED CLG. TILES AND GRID DAMAGED BY THE SUB/CONTRACTOR WILL BE REPLACED WITH NEW.

(2) REMOVE PARTIAL EXISTING CEILING TILES AND GRID BENEATH DUCT RUNS ONLY. STORE, PROTECT & REUSE TILES. RE: MEP ALL OTHER CEILING MOUNTED SYSTEMS (FIRE SPRINKLER HEADS, DIFFUSERS, LIGHT FIXTURES, ALARMS, STROBES, ETC.) SHALL REMAIN AND BE PROTECTED DURING DEMOLITION. RE :MEP FOR ADDT. INFO.

(3) NEW AIR HANDLING UNITS TO BE MOUNTED/INSTALLED IN MECHANICAL SPACE APPROXIMATELY WHERE EXISTING ONE WAS REMOVED. VENDOR TO MEASURE ALL ROOM DIMENSIONS AND EGRESS DIMENSIONS PRIOR TO SUBMITTALS TO VERIFY EASE OF INSTALLATION. RECONNECT TO EXISTING DUCTWORKS, PIPING AND WIRING.

(4) PROVIDE ADEQUATE CLEARANCES TO SERVICE BOTH CONDENSERS AND AIR HANDLERS FOR ALL UNITS.

(5) WHERE ADDITIONAL EQUIPMENT/TEMPERATURE CONTROLLED DAMPERS ARE DISCOVERED, COORDINATE WITH DESIGN TEAM TO PROVIDE ADDITIONAL REPLACEMENT EQUIPMENT/VAV BOXES.

(6) ALL CONDENSING UNITS SHALL BE PROVIDED W/ 2 NEW STRUCTURAL SUPPORTS FOR EVERY ROW OF CONDENSERS IN CONDENSER ENCLUSURE. SUPPORTS SHALL BE 6" GALVANIZED STEEL CHANNEL SUPPORTED AND WELDED ACROSS TO ENCLOSURE SCREENING STRUCTURE.

KEYED NOTES: MECHANICAL

1. PROVIDE NEW CONTROLS TRIPLE COMBO T-STAT (TEMPERATURE/HUMIDITY/CO2) WITH OCCUPANCY SENSOR FOR UNOCCUPIED SETPOINT SETBACKS.
2. PROVIDE W/ MOTORIZED DAMPER W/ OPEN/CLOSE OPERATION. DAMPER TO BE ACTUATED TO MAX ONLY WHEN HEATER IS ENERGIZED & ACTUATED TO THE CLOSED POSITION @ ALL OTHER TIMES. PROVIDE W/ ADDITIONAL MANUAL BALANCING DAMPER TO BALANCE CFM AMOUNTS OF OUTSIDE AIR. MECHANICAL CONTRACTOR TO PROVIDE W/ ANY ELECTRICAL HARDWARE TO POWER DAMPER.
3. PROVIDE ALUMINUM PIPING SUPPORTS AT EVERY 4' FEET. PROVIDE ALUMINUM JACKETING ON ALL LINES EXTERIOR TO THE BUILDING.
4. COORDINATE LOCATION/HEIGHT OF LOUVERS/WALLCAPS TO NOT CONFLICT WITH CONTROL JOINTS AND DOWNSPOUTS. FIELD COORDINATE LOCATIONS OF EXISTING CONDUITS/PIPE TO PLACE LOUVERS & COORDINATE W/ ENGINEER TO RERUN LIMITED QTY OF CONDUIT/CIRCUITS.
5. ROUTE REFRIGERANT LINES AND CONDENSER ELECTRICAL CONDUIT BELOW ROOF VIA A "ROOF PENETRATION HOUSING" EQUAL TO "MEDIUM VAULT" FROM 'ROOFPENETRATIONHOUSING.COM' ROUTE REFRIGERANT LINES TO RESPECTIVE AIR HANDLER, ANCHOR LINES TO STRUCTURE AND SEAL ALL PENETRATIONS WATER TIGHT. PROVIDE ALUMINUM JACKETING ON ALL LINES EXTERIOR TO THE BUILDING.
6. **ALTERNATE #01** TIE IN NEW FAN TO EXISTING EXHAUST TERMINATION.
7. PROVIDE WITH NEW VAV BOX TO REPLACE MOTORIZED DAMPER. RE-CONNECT TO EXISTING SA DUCTWORK INLET AND OUTLET. PROVIDE WITH NEW DUCT CONNECTIONS/EXTENSIONS WHERE REQUIRED. RE-INSULATE AS PER SPECS.
8. NEW SA DEVICE AND ASSOCIATED DUCTWORK TO TIE INTO EXISTING SA DUCTWORK.
9. TIE IN NEW SA/RA DUCTS INTO EXISTING DUCTWORK.
10. TRIPLE COMBO TEMPERATURE SENSORS BY CONTROLS CONTRACTOR. TO BE MOUNTED IN EXISTING SENSOR J-BOXES
11. UNIT TO BE MOUNTED ON A 24" HIGH PLATFORM CONSTRUCTED OF 1-1/2" ANGLE IRON/1" SQUARE METAL TUBING. WRAP PLATFORM IN GALVANIZED SHEET METAL. LINE INTERIOR OF PLATFORM W/ 1" DUCT BOARD, W/ FOIL FACING AIRSTREAM. COAT INSIDE W/ MASTIC (TO FACILITATE CLEANING) & SEAL AIR TIGHT.
12. **ALTERNATE #01** HOOD BELOW, RECONNECT NEW HOOD VENTILATION EQUIPMENT TO EXISTING EXHAUST/MAKEUP DUCTWORK.
13. NEW MINISPLIT SYSTEM TO REPLACE EXISTING SYSTEM.
14. WRAP GREASE DUCT & TOP OF HOOD ABOVE CEILING W/ TWO LAYERS OF '3M FIRE BARRIER DUCT WRAP 615+' OR EQUAL FROM HOOD COLLAR TO FAN ON ROOF.
15. PROVIDE WITH ELECTRIC DUCT HEATER IN SUPPLY AIR DUCT.
16. HVAC CONTROLS ENCLOSURE FOR AHU'S.
17. HVAC CONTROLS ENCLOSURE FOR CU'S.
18. **ALTERNATE #01** NEW KITCHEN VENTILATION EXHAUST FANS & TEMPERED MAKEUP AIR UNITS TO MATCH EXISTING EQUIPMENT AIR VOLUMES. PROVIDE W/ NEW KITCHEN CONTROLLER & BAS CONTROL STATUS POINTS ON ALL NEW EQUIPMENT.
19. NEW VFD W/ MANUAL BYPASS AS PER SCHEDULES.
20. COORDINATE LOCATIONS OF ALL IT RACKS W/ DISTRICT PRIOR TO COMMENCEMENT OF WORK.
21. OA DUCT DOWN FROM NEW ROOF CAP ON ROOF.
22. PROVIDE OUTSIDE AIR TO NEW UNIT FROM NEW ROOF CAP. PROVIDE 12" ROUND DUCT DOWN FROM ROOF CAP TO RETURN AIR PLENUM OF UNIT.
23. REMOTE H2 SENSOR LOCATED WITHIN SPACE, EQUAL TO "ACME GAS MONITOR" SENSOR, "UN-ECH", INSTALL AS PER MANUFACTURER'S INSTRUCTIONS. CONTROLS WIRING, RELAYS, & STARTERS BY ELECTRICAL CONTRACTOR.
24. ROUTE REFRIGERANT LINES AND CONDENSER ELECTRICAL CONDUIT BELOW ROOF VIA A "ROOF PENETRATION HOUSING" EQUAL TO "SMALL VAULT" FROM 'ROOFPENETRATIONHOUSING.COM' ROUTE REFRIGERANT LINES TO RESPECTIVE AIR HANDLER, ANCHOR LINES TO STRUCTURE AND SEAL ALL PENETRATIONS WATER TIGHT. PROVIDE ALUMINUM JACKETING ON ALL LINES EXTERIOR TO THE BUILDING.
25. MOUNT NEW CONDENSING UNIT ON EXISTING STRUCTURAL SUPPORTS. MECHANICALLY FASTEN UNIT TO CURB.
26. PROVIDE WITH DRYER VENT EXHAUST THRU WALL CAP. TO BE CONSTRUCTED OF KB DUCT "CLAMP TOGETHER" STYLE DUCT (OR EQUAL). DUCT TO BE SIZED ACCORDING TO DRYER MANUFACTURERS REQUIREMENTS, AND TO COMPLY WITH SECTION 504 OF THE INTERNATIONAL MECHANICAL CODE. PROVIDE WITH ONE LAYER OF '3M FIRE BARRIER DUCT WRAP 615+' OR EQUAL FROM DRYER VENT TO WALL CAP. REFER TO DRYER DUCT FITTINGS EQUIVALENT LENGTHS CHART.
27. PROVIDE WITH IN-WALL DRYER VENT BOX STYLE CONNECTION EQUAL TO THE DRYERBOX DB-480.
28. BAROMETRIC RELIEF DAMPER SET TO OPEN AT +0.05 W.C OF POSITIVE BUILDING PRESSURE.
29. MOUNT UNIT OVER A 4" CONCRETE HOUSEKEEPING PAD.
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WISD MEMORIAL ELEMENTARY SCHOOL HVAC REPLACEMENT

WESLACO TEXAS

MMP04

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06/20/2024
STATE OF TEXAS
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REGISTERED
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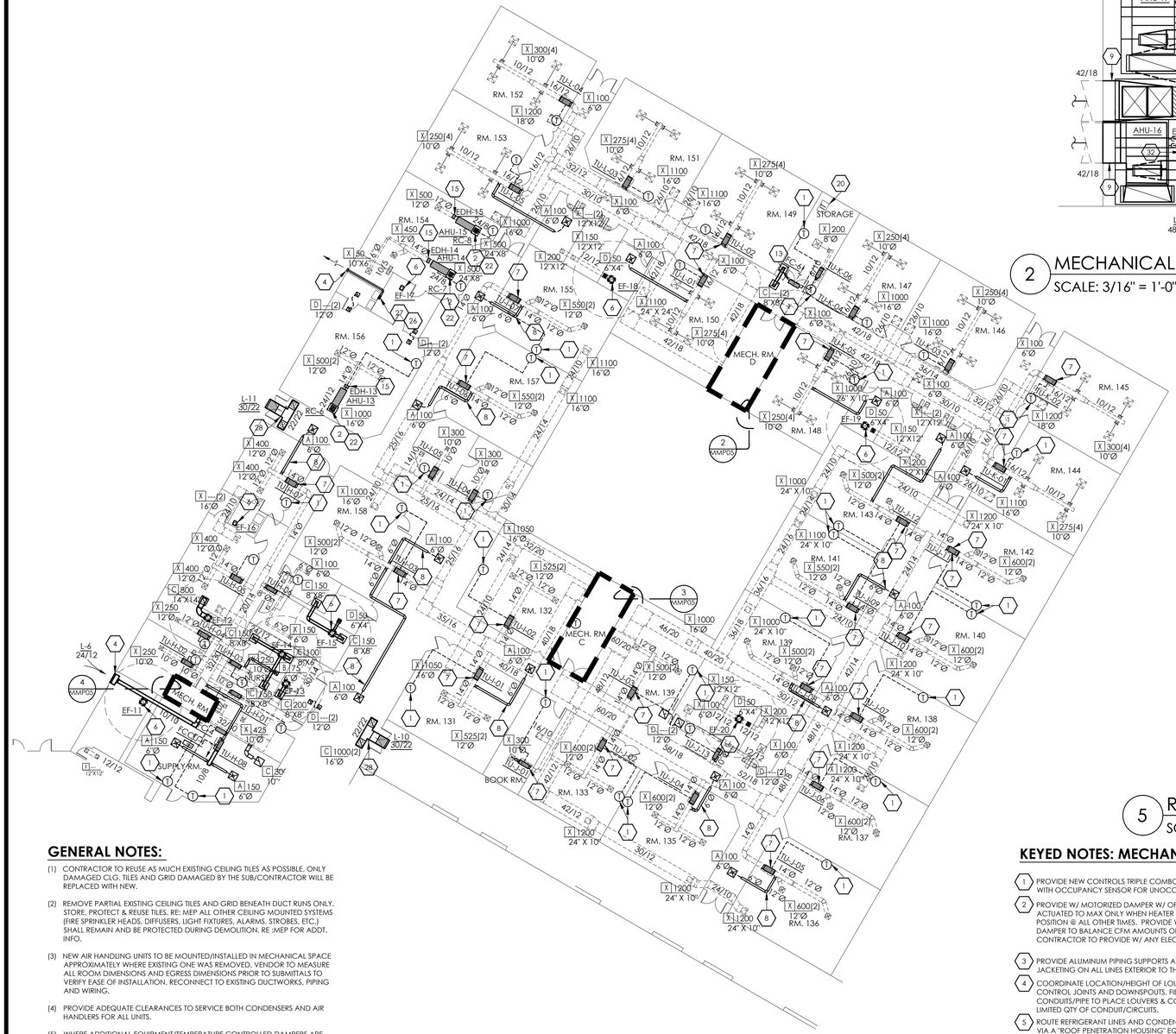
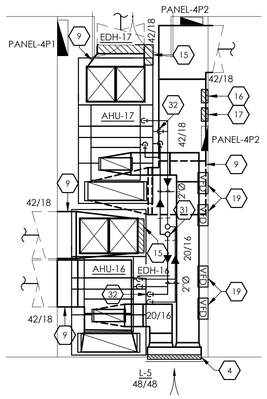
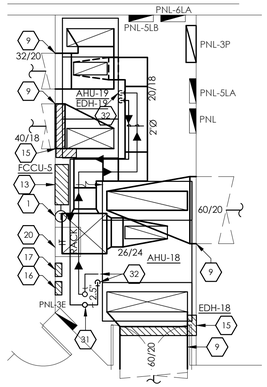


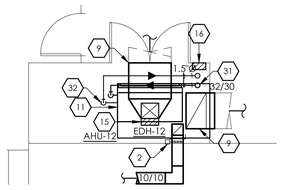
1 MECHANICAL FLOOR PLAN - RIGHT WING SECTION
SCALE: 1/16" = 1'-0"



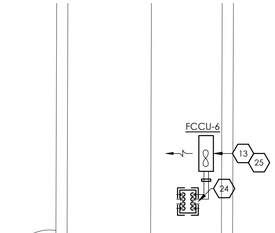
2 MECHANICAL ROOM D
SCALE: 3/16" = 1'-0"



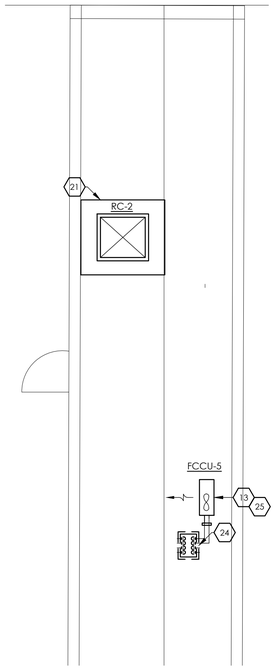
3 MECHANICAL ROOM C
SCALE: 3/16" = 1'-0"



4 MECHANICAL ROOM
SCALE: 3/16" = 1'-0"



5 ROOF ENLARGED VIEW - MECH ROOM D
SCALE: 3/16" = 1'-0"



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p:956.973.0500 I f:956-351-5750
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Texas Registered Engineering Firm - F10362
Project number: 23.1.40

06/20/2024
STATE OF TEXAS
Wilford L. McGee III
121939
REGISTERED
PROFESSIONAL
ENGINEER

PROJECT # : 23.1.40
DATE: 06/20/24
CHECKED BY: LM

REVISION:

WISD MEMORIAL ELEMENTARY SCHOOL HVAC REPLACEMENT

WESLACO TEXAS

MMP05

GENERAL NOTES:

(1.) CONTRACTOR SHALL INCLUDE ALL COST IN BID TO COMPLETE PROJECT BY AUGUST 2025.

(2.) INCLUDE ALL COST TO EXPEDITE ALL HVAC EQUIPMENT FOR A DELIVERY TIME OF 30 WEEKS.

AIR HANDLING UNIT SCHEDULE

TAG	AHU-1	AHU-2	AHU-3	AHU-4	AHU-5,13	AHU-6,7,14,15	AHU-8,9	AHU-10	AHU-11	AHU-12	AHU-16,17	AHU-18	AHU-19
TYPE	MULT ZN VAV	MULT ZN VAV	MULT ZN VAV	MULT ZN VAV	MULT ZN VAV	MULT ZN VAV	MULT ZN VAV	MULT ZN VAV	MULT ZN VAV	MULT ZN VAV	MULT ZN VAV	MULT ZN VAV	MULT ZN VAV
FLOW CONFIGURATION	VERTICAL	VERTICAL	VERTICAL	VERTICAL	VERTICAL	HORIZONTAL	VERTICAL	VERTICAL	VERTICAL	VERTICAL	VERTICAL	VERTICAL	VERTICAL
AREA SERVED	LIBRARY	CAFETERIA	KITCHEN	ADMIN	SPECIAL NEEDS	SPECIAL NEEDS	CLASSROOMS	CLASSROOMS	CLASSROOMS	NURSE	CLASSROOMS	CLASSROOMS	CLASSROOMS
SINGLE/DUAL PATH	DUAL	SINGLE	SINGLE	SINGLE	SINGLE	SINGLE	DUAL	DUAL	SINGLE	SINGLE	DUAL	DUAL	DUAL
AHU CONSTRUCTION	2" DOUBLE WALL	2" DOUBLE WALL	1" DOUBLE WALL	2" DOUBLE WALL	1" DOUBLE WALL	1" DOUBLE WALL	2" DOUBLE WALL	2" DOUBLE WALL	1" DOUBLE WALL	1" DOUBLE WALL	2" DOUBLE WALL	2" DOUBLE WALL	2" DOUBLE WALL
INDOOR UNIT FAN													
SUPPLY CFM	6000	8000	3500	5500	1000	500	8400	8400	2200	3500	6000	13500	6400
MIN. OUTSIDE AIR (CFM)	2000	3000	600	900	350	175	3250	3250	800	400	1750	3850	2000
EXT. STATIC INCHES WC	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
SINGLE/DUAL PATH	DUAL	SINGLE	SINGLE	SINGLE	SINGLE	SINGLE	DUAL	SINGLE	SINGLE	SINGLE	DUAL	DUAL	DUAL
MIN FAN POWER	10 HP	6 HP X 2	5 HP	6 HP	1 HP	0.5 HP	7.5 HP	7.5 HP X2	1.5 HP	3 HP	7.5 HP	4 HP X5	4 HP X2
MIN FAN QUANTITY	1	2	1	1	1	1	1	2	1	1	1	5	2
FAN TYPE	DIRECT DRIVE	DIRECT DRIVE	DIRECT DRIVE	DIRECT DRIVE	DIRECT DRIVE	DIRECT DRIVE	BELT DRIVE	DIRECT DRIVE PLENUM	DIRECT DRIVE	DIRECT DRIVE	BELT	DIRECT DRIVE	DIRECT DRIVE
MOTOR TYPE	VFD	ECM	ECM	ECM	ECM	ECM	VFD	VFD	ECM	ECM	VFD	ECM	ECM
RETURN AIR COOLING COIL													
ENTERING AIR DB/WB (°F)	73/61	84.8/70.6	78.27/65.57	77.96/65.32	83.85/69.97	83.85/69.97	73/61	73/61	84.16/70.20	76.41/64.01	73/61	73/61	73/61
LEAVING AIR DB/WB (°F	55/54.1	53.8/53.3	53.9/52.3	53.2/52.6	54.8/53.6	54.2/52.7	55/53.7	55/53.7	54.3/53.3	54.3/52.9	52.5/51.6	55/53.66	55/53.3
MIN. TOTAL/SENSIBLE CAPACITY (MBH)	78.9/76.9	441.6/274.3	138.16/93.5	207.3/150.2	51.85/32.1	29.4/17.2	106.9/101.7	106.9/101.7	118.2/72.5	114.1/85.2	112.5/95.8	202.2/190.6	96.3/86.9
ENTERING/LEAVING WATER TEMP (°F)	44/56	44/56	44/56	44/56	44/56	44/56	44/56	44/56	44/56	44/56	44/56	44/56	44/56
GPM/PRESSURE DROP	13.1/2.4	73/11	25/8.3	34.4/7	8.9/6	5.1/5	17.8/2	17.8/2	20.3/5	20.3/6	18.7/2.5	33.6/4	12.8/7
DESIGN RETURN AIR DB/WB (°F)	73/61	73/61	73/61	73/61	73/61	73/61	73/61	73/61	73/61	73/61	73/61	73/61	73/61
OUTSIDE AIR COOLING COIL													
ENTERING AIR DB/WB (°F)	104/83	-	-	-	-	-	104/83	104/83	-	-	104/83	104/83	104/83
LEAVING AIR DB/WB (°F	54/53.9	-	-	-	-	-	52/51.9	53/52.9	-	-	53/52.9	55/54.57	55/54.65
MIN. TOTAL/SENSIBLE CAPACITY (MBH)	217.8/111.9	-	-	-	-	-	371.3/189.2	362.7/185.5	-	-	195.4/99.9	409/211.1	213/109
ENTERING/LEAVING WATER TEMP (°F)	44/56	-	-	-	-	-	44/56	44/56	-	-	44/56	44/56	44/56
GPM/PRESSURE DROP	36.2/8.1	-	-	-	-	-	61.7/12	60.2/12	-	-	32.5/11	54/10	35.4/9
DESIGN OUTSIDE AIR DB/WB (°F)	104/83	-	-	-	-	-	104/83	104/83	-	-	104/83	104/83	104/83
DETAILS AND ACCESSORIES													
VOLTAGE/PHASE	208/3	208/3	208/3	208/3	208/3	208/3	208/3	208/3	208/3	208/3	208/3	208/3	208/3
MCA/MOCP	37/60	25.2/35	19.7/35	14.75/25	5.75/15	3/15	31.75/50	29.1/50 x2	9.5/15	14/25	31.7/50	11.63/20 X4	11/15 x2
MANUFACTURER	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE
MODEL	PCC	PCC	BCVE090	PCC	BCVE036	BCVE024	PCC	PCC	BCVE090	BCVE120	PCC	PCC	PCC
MAX LENGTH/WIDTH/HEIGHT (INCH)	126X51X70	77x79x72	31x48x67	68x71x71	23x30x50	62x30x17	108x71x84	136x67x83	31x48x67	31x58x67	108x71x81	125x80x94	125x67x81
MAX WEIGHT (lbs)	1880 LBS	1500 LBS	500 lbs	1200 lbs	250 lbs	250 lbs	2200 lbs	2500 lbs	500 lbs	500 lbs	2300 lbs	3100 lbs	2100 lbs
NOTES	1-7	1-7	1-7	1-7	1-7,9	1-7,9	1-7	1-7	1-7	1-7	1-7	1-7	1-7

NOTES:
01. MECHANIC ADJUSTING CONTRACTOR TO PROVIDE ADDITIONAL BELTS & PULLEYS AS NECESSARY SUCH THAT TESTING & BALANCING CAN BE PERFORMED TO THE DESIGN AIR VOLUMES SPECIFIED IN SCHEDULE ABOVE.
02. PROVIDE WITH 2" MERV 8 FILTER RACKS, CW COOLING COILS, STAINLESS STEEL DRAIN PANS, UNITS DESIGNATED AS 2" DOUBLE WALL TO BE PROVIDED WITH HINGED ACCESS PANELS.
03. EQUIPMENT MANUFACTURER TO PROVIDE CW SPECIALTIES VALVE PACKAGES (2-WAY)
04. PROVIDE W/ FACTORY DUCT SMOKE DETECTOR. REFER TO MANUFACTURER'S INTALLATION MANUAL FOR INSTRUCTIONS. TO BE MOUNTED & WIRED BY MECH CONTRACTOR.
04. TRANE, CARRIER, LENNOX/DAIKIN, ACCEPTABLE MFGs.
05. CLEARANCES & SA/RA COLLARS SHOWN ON PLANS ARE FOR SCHEDULED MAKE/MODEL. IF A SUBSTITUTION IS MADE, CONTRACTOR TO BE RESPONSIBLE FOR PROVIDING SA/RA DUCTWORK & CLEARANCES AS PER SUBSTITUTED MANUFACTURER'S REQUIREMENTS.
06. PROVIDE W/ SINGLE ZONE VAV OR MULTIZONE VAV CONTROL. REFER TO CONTROLS DIAGRAMS.
07. PROVIDE W/ FACTORY 8" BASE RAIL.
08. PROVIDE WITH CONDENSATE PUMP.
09. PROVIDE AN EXTRA SET OF ECM MOTORS PER SCHOOL PER HORSEPOWER.

CHILLER SCHEDULE

TAG	CH-1,2
TYPE	SCROLL
PHYSICAL PARAMETERS	
NOMINAL CAPACITY (TONS)	180
CAPACITY AT DESIGN CONDITIONS (TONS)	157
ENTERING WATER TEMP (DEG F)	56
LEAVING WATER TEMP (DEG F)	44
FOULING FACTOR	0.0001
EVAP CONFIG	2 PASS
DESIGN FLOW RATE (GPM)	313
MIN WATER FLOW RATE (GPM)	245
DESIGN PRESS. DROP FT. WATER	9
DETAILS AND ACCESSORIES	
AMBIENT DB (°F)	105
KW INPUT (MAX)	211.5
VOLTS / PHASE	480/3
POWER CONNECTION	SINGLE POINT
CKT 1 MCA/MOCP	379/450+
CKT 2 MCA/MOCP	-
MIN. FULL LOAD EFFICIENCY @ ARI (EER)	8.9
MIN. PART LOAD EFFICIENCY @ ARI (IPLV)	14.8
MANUFACTURER	TRANE
MODEL	ACSA180
MAX OPER. WEIGHT	9600 LBS
NOTES	ALL

NOTES:
01. SINGLE POINT POWER OF CONNECTION WITH FACTORY CIRCUIT BREAKER.
02. PROVIDE COMPLETE CONDENSER COIL COATING WITH MINIMUM 5,000 HR SALT SPRAY RATING PER ASTMB117. COATING TO BE UV RESISTANT.
03. PROVIDE BACNET OR LONWORKS COMMUNICATION INTERFACE CARD - COORDINATE REQUIREMENTS WITH SUCCESSFUL CONTROLS CONTRACTOR
04. PROVIDE 120V CONVENIENCE OUTLET, UNIT 20A RATED.
05. PROVIDE 5-YR ENTIRE UNIT PARTS, LABOR AND REFRIGERANT WARRANTY.
06. PROVIDE WITH HUMAN INTERFACE PANEL.
07. PROVIDE WITH FULL ARCHITECTURAL LOUVERS ON COILS AND BASE FRAME
08. PROVIDE W/ FACTORY EC MOTOR FANS
09. PROVIDE HOSE BIB.
10. PROVIDE HOUSE PADS TO PROVIDE CLEARANCE FOR CONDENSER COIL WASHING AND DRAINAGE.

PUMPS SCHEDULE

TAG	PP-1,2,3	SP-1,2
LOCATION	CHILLER YARD	CHILLER YARD
SERVICE	CHILLERS	CWAHU's
TYPE	END SUCTION	END SUCTION
PUMP DETAILS AND ACCESSORIES		
FLOW (GPM)	320	640
DESIGN HEAD (FT.)	35	100
PUMP EFF. (%)	83%	81%
MOTOR TYPE	NEMA PREMIUM	NEMA PREMIUM
MOTOR HOUSING	TEFC	TEFC
HP	5	25
RPM	1760	1760
IMPELLER DIA. (IN.)	6.5"	10.4"
SUCTION SIZE (IN.)	4	5
DISCHARGE (IN.)	3	4
VOLTS/PHASE	480/3	480/3
MANUFACTURER	TACO	TACO
MODEL	FI 3007D	FI 4011C
NOTES	ALL	ALL

NOTES:
01. PROVIDE W/ PREMIUM EFFICIENT MOTOR, EQUAL TO BALDOR SUPER E+.
02. PROVIDE W/ SHAFT GROUNDING RINGS.
03. MECHANICAL CONTRACTOR TO PROVIDE VFD W/ MANUAL BYPASS & DISCONNECT WITH OUTDOOR RATED ENCLOSURE. ELECTRICAL CONTRACTOR TO MOUNT AND WIRE VFD.
04. PROVIDE W/ EPOXY PAINT ON PUMP, MOTOR & BASE, FOR OUTDOOR USE.

LOUVER SCHEDULE

TAG	L-1	L-2	L-3	L-4	L-5	L-6	L-7,8	L-9-13
TYPE	INTAKE	INTAKE	INTAKE	INTAKE	INTAKE	INTAKE	EXHAUST	EXHAUST
SERVICE	AHU-1	AHU-2,3	AHU-4	AHU-8,9	AHU-16,17	AHU-12	EF-21,22	PRESSURE RELIEF
DETAILS AND ACCESSORIES								
MAX CFM	2000	4200	900	6500	3500	400	200	-
LENGTH/HEIGHT (IN)	40/32	56/48	32/24	64/64	48/48	24/16	12/12	30/22
FREE AREA (SQ FT)	3.46	7.78	1.88	12.4	6.8	0.76	0.3	1.55
MAX VELOCITY (FPM)	580	540	480	530	520	530	670	-
MAX PRESSURE DROP (IN. H2O)	0.0478	0.0419	0.0328	0.0394	0.038	0.0399	0.06	-
FINISH	1.2 mils 70% PVDF	1.2 mils 70% PVDF	1.2 mils 70% PVDF	1.2 mils 70% PVDF	1.2 mils 70% PVDF	1.2 mils 70% PVDF	1.2 mils 70% PVDF	1.2 mils 70% PVDF
INCLUDED SCREENS	BIRD	BIRD	BIRD	BIRD	BIRD	BIRD	BIRD	BIRD
ACTUATION TYPE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
BORDER STYLE	2" FLANGE	2" FLANGE	2" FLANGE	2" FLANGE	2" FLANGE	2" FLANGE	2" FLANGE	2" FLANGE
MAUNUFACTURER	GREENHECK	GREENHECK	GREENHECK	GREENHECK	GREENHECK	GREENHECK	GREENHECK	GREENHECK
MODEL	EHH-501X	EHH-501X	EHH-501X	EHH-501X	EHH-501X	EHH-501X	ESD-435X	ESD-202
NOTES	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2,3

NOTES:
01. LOUVER OPENINGS TO BE SAW CUT.
02. SEAL OPENING WEATHER TIGHT.
03. LOUVER TO BE MOUNTED IN SOFFIT.

ROOF CAP SCHEDULE

TAG	RC-1	RC-2	RC-3,6	RC-4,5,7,8
TYPE	INTAKE	INTAKE	INTAKE	INTAKE
SERVES	AHU-11,10	AHU-18,19	AHU-5,13	AHU-6,7,14,15
LOCATION	ROOF	ROOF	ROOF	ROOF
DETAILS AND ACCESSORIES				
MAX AIR VOL. (CFM)	4050	5850	350	175
NECK SIZE (INCHES)	32"X32"	40"X36"	10"X10"	8"X8"
MAX PRESSURE DROP (IN WG)	0.055	0.06	0.043	0.026
MAX. THROAT VELOCITY (FPM)	575	600	550	400
INCLUDED SCREEN(S)	BIRD	BIRD	BIRD	BIRD
HOUSING MATERIAL	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM
ROOF CURB HEIGHT	14" TDI CURB	14" TDI CURB	14" TDI CURB	14" TDI CURB
MANUFACTURER	GREENHECK	GREENHECK	GREENHECK	GREENHECK
MODEL	FGI	FGI	FGI	FGI
NOTES	1,2	1,2	1,2	1,2

NOTES:
01. TO BE HIGH WIND RATED.
02. PROVIDE W/ 2015 IBC COMPLIANT ROOF CURB, ANCHOR FAN TO STRUCTURE VIA CURB IN COMPLIANCE W/ TDI.

PROJECT # : 23.1.40
DATE: 06/20/24
CHECKED BY: LM

REVISION:

TEXAS

WISD MEMORIAL ELEMENTARY SCHOOL
HVAC REPLACEMENT

WESLACO

TRINITY
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Texas Registered Engineering Firm - F10362
Project number: 23.1.40

06/20/2024
STATE OF TEXAS
Wilford L. McGee III
121939
REGISTERED
PROFESSIONAL ENGINEER

MMS01

ELECTRIC DUCT HEATER SCHEDULE

TAG	EDH-1	EDH-2	EDH-3	EDH-4	EDH-5,13	EDH-6,7,14,15	EDH-8,9	EDH-10	EDH-11	EDH-12	EDH-16,17	EDH-18	EDH-19
SERVES	AHU-1 LIBRARY	AHU-2 CAFÉ	AHU-3 KITCHEN	AHU-4 ADMIN	AHU-5,13	AHU-6,7,14,15	AHU-8,9 CR	AHU-10 CR	AHU-11 SCIENCE	AHU-12 NURSES	AHU-16,17 CLASSES	AHU-18 CRs	AHU-16,17 CRs
LOCATION	LIB MECH RM	CAFE MECH RM	CAFE MECH RM	MECH RM, E	SPEC NEEDS CR	SPECIAL NEEDS CR	MECH RM, B	MECH RM, A	MECH RM, A	NURSE MECH RM	MECH RM, D	MECH RM, C	MECH RM, C
DETAILS & ACCESSORIES													
MAX CFM	4000	3000	3500	5500	1000	500	3250	3250	2200	3500	6000	3850	6000
ENTERING AIR TEMP (°F)	51.00	32.00	63.49	63.78	56.70	56.70	32.00	32.00	56.18	65.66	58.92	32.00	57.33
LEAVING AIR TEMP (°F)	79.4	69.9	74.8	81.0	85.1	85.1	73.8	80.6	81.3	79.2	80.0	61.5	70.0
VOLTAGE/PHASE	208/3	208/3	208/3	208/3	208/3	208/3	208/3	208/3	208/3	208/3	208/3	208/3	208/3
MAX INPUT CAPACITY (KW)	36.0	36.0	12.5	30.0	9.0	4.5	43.0	50.0	17.5	15.0	40.0	36.0	24.0
STAGES	SCR	SCR	SCR	SCR	SCR	SCR	SCR	SCR	SCR	SCR	SCR	SCR	SCR
(EXISTING/REPLACED KW)	20 KW	20 KW	15 KW	20 KW	6 KW	5.3 KW	34 KW	34 KW	11.3 KW		45 KW		
MANUFACTURER	TUTCO	TUTCO	TUTCO	TUTCO	TUTCO	TUTCO	TUTCO	TUTCO	TUTCO	TUTCO	TUTCO	TUTCO	TUTCO
MODEL	DD3	DD3	DD3	DD3	DD3	DD3	DD3	DD3	DD3	DD3	DD3	DD3	DD3

NOTES: PROVIDE ALL THE FOLLOWING OPTIONS ON ALL HEATERS

01. SLIP IN MOUNT
02. FULL FACE COVERAGE
03. GASKETED COVER
04. VAPOR BARRIER
05. 80/20 (Ni/Cr) RESISTANCE WIRE.
06. COORDINATE W/ PLANS/EXISTING CONDITIONS FOR DUCT HEATER DIMENSIONS.

TERMINAL UNIT SCHEDULE - A (AHU-1)

TAG	TU-A-01	TU-A-02	TU-A-03	TU-A-04	TU-A-05	TU-A-06	TU-A-07	TU-A-08	TU-A-09	TU-A-10	TU-A-11
TYPE	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT
AREA SERVED	LIBRARY	LIBRARY	LIBRARY	LIBRARY	CORRIDORS	OFFICE	STORAGE	AV RM	LAB 1	LAB 2	MDF
LOCATION											
AIR FLOW CHARACTERISTICS											
FAN FLOW (CFM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MAX/MIN PRIMARY (CFM)	1200/300	1200/300	225/75	400/100	800/200	200/50	125/50	250/75	700/175	700/175	200/50
MAX/MIN REHEAT (CFM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MAX AIR PRESSURE DROP (in.wg)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
HEATING COIL PERFORMANCE											
HEAT TYPE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
ENTERING/LEAVING AIR TEMP. (F°)	-	-	-	-	-	-	-	-	-	-	-
VOLTS/PHASE	120/1	120/1	120/1	120/1	120/1	120/1	120/1	120/1	120/1	120/1	120/1
HEAT INPUT/STAGES	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
MCA/MOCP	-	-	-	-	-	-	-	-	-	-	-
PHYSICAL PROPERTIES & ACCESSORIES											
FAN MOTOR VOLTAGE/PHASE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
INLET SIZE	12"Ø	12"Ø	6"Ø	6"Ø	10"Ø	6"Ø	4"Ø	6"Ø	10"Ø	10"Ø	4"Ø
OUTLET SIZE	16"x16"	16"x16"	12"x8"	12"x18"	14"x12"	12"x8"	12"x8"	12"x8"	14"x12"	14"x12"	12"x8"
MAX RAD/DIS NOISE	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC
MAX WEIGHT	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs
MANUFACTURER	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE
MODEL	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5
MODEL SIZE	12	12	6	6	10	6	4	6	10	10	4
NOTES	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3	1,2,3,4	1,2,3	1,2,3	1,2,3,4	1,2,3,4	1,2,3

NOTES
01. PROVIDE A MATTE FACE INTERIOR LINER.
02. FACTORY INSTALLED 3RD PARTY CONTROLS. TERMINAL UNIT MFGR. SHALL PROVIDE CONTROLS TRANSFORMER.
03. PROVIDE POWER FOR TRANSFORMERS.
04. PROVIDE W/ DISCHARGE SOUND ATTENUATOR.

TERMINAL UNIT SCHEDULE - B (AHU-3)

TAG	TU-B-01	TU-B-02	TU-B-03	TU-B-04	TU-B-05
TYPE	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT
AREA SERVED		KITCHEN	KITCHEN	STORAGE	STORAGE
LOCATION					
AIR FLOW CHARACTERISTICS					
FAN FLOW (CFM)	N/A	N/A	N/A	N/A	N/A
MAX/MIN PRIMARY (CFM)	200/50	1300/350	1700/450	125/50	175/50
MAX/MIN REHEAT (CFM)	N/A	N/A	N/A	N/A	N/A
MAX AIR PRESSURE DROP (in.wg)	0.25	0.25	0.25	0.25	0.25
HEATING COIL PERFORMANCE					
HEAT TYPE	NONE	NONE	NONE	NONE	NONE
ENTERING/LEAVING AIR TEMP. (F°)	-	-	-	-	-
VOLTS/PHASE	120/1	120/1	120/1	120/1	120/1
HEAT INPUT/STAGES	-/-	-/-	-/-	-/-	-/-
MCA/MOCP	-	-	-	-	-
PHYSICAL PROPERTIES & ACCESSORIES					
FAN MOTOR VOLTAGE/PHASE	N/A	N/A	N/A	N/A	N/A
INLET SIZE	4"Ø	12"Ø	14"Ø	4"Ø	4"Ø
OUTLET SIZE	12"x8"	16"x16"	20"x18"	12"x8"	12"x8"
MAX RAD/DIS NOISE	-- NC	-- NC	-- NC	-- NC	-- NC
MAX WEIGHT	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs
MANUFACTURER	PRICE	PRICE	PRICE	PRICE	PRICE
MODEL	SDV5	SDV5	SDV5	SDV5	SDV5
MODEL SIZE	4	12	14	4	4
NOTES	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3

NOTES
01. PROVIDE A MATTE FACE INTERIOR LINER.
02. FACTORY INSTALLED 3RD PARTY CONTROLS. TERMINAL UNIT MFGR. SHALL PROVIDE CONTROLS TRANSFORMER.
03. PROVIDE POWER FOR TRANSFORMERS.

TERMINAL UNIT SCHEDULE - C (AHU-4)

TAG	TU-C-01	TU-C-02	TU-C-03	TU-C-04	TU-C-05	TU-C-06	TU-C-07	TU-C-08	TU-C-09	TU-C-10	TU-C-11	TU-C-12	TU-C-13	TU-C-14
TYPE	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT
AREA SERVED														
LOCATION														
AIR FLOW CHARACTERISTICS														
FAN FLOW (CFM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MAX/MIN PRIMARY (CFM)	100/50	700/175	100/50	325/75	450/150	450/150	350/100	750/200	300/75	250/75	300/75	925/250	200/50	300/75
MAX/MIN REHEAT (CFM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MAX AIR PRESSURE DROP (in.wg)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
HEATING COIL PERFORMANCE														
HEAT TYPE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
ENTERING/LEAVING AIR TEMP. (F°)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VOLTS/PHASE	120/1	120/1	120/1	120/1	120/1	120/1	120/1	120/1	120/1	120/1	120/1	120/1	120/1	120/1
HEAT INPUT/STAGES	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
MCA/MOCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PHYSICAL PROPERTIES & ACCESSORIES														
FAN MOTOR VOLTAGE/PHASE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
INLET SIZE	4"Ø	10"Ø	4"Ø	4"Ø	8"Ø	8"Ø	6"Ø	10"Ø	6"Ø	6"Ø	6"Ø	10"Ø	4"Ø	6"Ø
OUTLET SIZE	12"x8"	14"x12"	12"x8"	12"x8"	12"x10"	12"x10"	12"x8"	14"x12"	12"x8"	12"x8"	12"x8"	14"x12"	12"x8"	12"x8"
MAX RAD/DIS NOISE	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC
MAX WEIGHT	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs
MANUFACTURER	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE
MODEL	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5
MODEL SIZE	4	10	4	4	8	8	6	10	6	6	6	10	4	6
NOTES	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3

NOTES
01. PROVIDE A MATTE FACE INTERIOR LINER.
02. FACTORY INSTALLED 3RD PARTY CONTROLS. TERMINAL UNIT MFGR. SHALL PROVIDE CONTROLS TRANSFORMER.
03. PROVIDE POWER FOR TRANSFORMERS.

PROJECT # : 23.1.40
DATE: 06/20/24
CHECKED BY: LM

REVISION:

TEXAS

WISD MEMORIAL ELEMENTARY SCHOOL
HVAC REPLACEMENT

WESLACO

06/20/2024

TRINITY
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Texas Registered Engineering Firm - F10362
Project number: 23.1.40

STATE OF TEXAS
Wilford L. McGee III
121939
LICENSED PROFESSIONAL ENGINEER

MMS02

TERMINAL UNIT SCHEDULE - D (AHU-8)

TAG	TU-D-01	TU-D-02	TU-D-03	TU-D-04	TU-D-05	TU-D-06	TU-D-07	TU-D-08	TU-D-09	TU-D-10
TYPE	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT
AREA SERVED	RM 130	RM 128	RM 126	RM 125/HALL	RM 124/HALL	RM 123	RM 122/HALL	RM 120/BOOK RM	RM 121/HALL	CORRIDOR
LOCATION										
AIR FLOW CHARACTERISTICS										
FAN FLOW (CFM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MAX/MIN PRIMARY (CFM)	850/350	850/350	950/350	1000/350	1000/350	1000/350	950/350	950/350	950/350	100/50
MAX/MIN REHEAT (CFM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MAX AIR PRESSURE DROP (in.wg)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
HEATING COIL PERFORMANCE										
HEAT TYPE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
ENTERING/LEAVING AIR TEMP. (F°)	-	-	-	-	-	-	-	-	-	-
VOLTS/PHASE	120/1	120/1	120/1	120/1	120/1	120/1	120/1	120/1	120/1	120/1
HEAT INPUT/STAGES	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
MCA/MOCP	-	-	-	-	-	-	-	-	-	-
PHYSICAL PROPERTIES & ACCESSORIES										
FAN MOTOR VOLTAGE/PHASE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
INLET SIZE	10"Ø	10"Ø	10"Ø	12"Ø	12"Ø	12"Ø	10"Ø	10"Ø	10"Ø	4"Ø
OUTLET SIZE	14"x12"	14"x12"	14"x12"	16"x16"	16"x16"	16"x16"	14"x12"	14"x12"	14"x12"	12"x8"
MAX RAD/DIS NOISE	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC
MAX WEIGHT	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs
MANUFACTURER	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE
MODEL	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5
MODEL SIZE	10	10	10	12	12	12	10	10	10	4
NOTES	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3

NOTES
01. PROVIDE A MATTE FACE INTERIOR LINER.
02. FACTORY INSTALLED 3RD PARTY CONTROLS. TERMINAL UNIT MFGR. SHALL PROVIDE CONTROLS TRANSFORMER.
03. PROVIDE POWER FOR TRANSFORMERS.

TERMINAL UNIT SCHEDULE - E (AHU-9)

TAG	TU-E-01	TU-E-02	TU-E-03	TU-E-04	TU-E-05	TU-E-06	TU-E-07	TU-E-08	TU-E-09	TU-E-10
TYPE	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT
AREA SERVED	RM 118	RM 119	RM 117	RM 116	RM 115/HALL	RM 113	RM 114/HALL	RM 111	RM 112	CORRIDOR
LOCATION										
AIR FLOW CHARACTERISTICS										
FAN FLOW (CFM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MAX/MIN PRIMARY (CFM)	950/350	950/350	950/350	950/350	1000/350	950/350	1000/350	950/350	950/350	100/50
MAX/MIN REHEAT (CFM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MAX AIR PRESSURE DROP (in.wg)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
HEATING COIL PERFORMANCE										
HEAT TYPE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
ENTERING/LEAVING AIR TEMP. (F°)	-	-	-	-	-	-	-	-	-	-
VOLTS/PHASE	120/1	120/1	120/1	120/1	120/1	120/1	120/1	120/1	120/1	120/1
HEAT INPUT/STAGES	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
MCA/MOCP	-	-	-	-	-	-	-	-	-	-
PHYSICAL PROPERTIES & ACCESSORIES										
FAN MOTOR VOLTAGE/PHASE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
INLET SIZE	10"Ø	10"Ø	10"Ø	10"Ø	10"Ø	10"Ø	10"Ø	10"Ø	10"Ø	4"Ø
OUTLET SIZE	14"x12"	14"x12"	14"x12"	14"x12"	14"x12"	14"x12"	14"x12"	14"x12"	14"x12"	12"x8"
MAX RAD/DIS NOISE	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC
MAX WEIGHT	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs
MANUFACTURER	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE
MODEL	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5
MODEL SIZE	10	10	10	10	10	10	10	10	10	4
NOTES	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3

NOTES
01. PROVIDE A MATTE FACE INTERIOR LINER.
02. FACTORY INSTALLED 3RD PARTY CONTROLS. TERMINAL UNIT MFGR. SHALL PROVIDE CONTROLS TRANSFORMER.
03. PROVIDE POWER FOR TRANSFORMERS.

TERMINAL UNIT SCHEDULE - F (AHU-10)

TAG	TU-F-01	TU-F-02	TU-F-03	TU-F-04	TU-F-05	TU-F-06	TU-F-07	TU-F-08	TU-F-09	TU-F-10	TU-F-11
TYPE	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT
AREA SERVED	RM 109	RM 110/HALL	RM 107	RM 108/HALL	RM 106/HALL	RM 105	RM 104/HALL	RM 103	COUNSELOR	RM 102	CORRIDOR
LOCATION											
AIR FLOW CHARACTERISTICS											
FAN FLOW (CFM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MAX/MIN PRIMARY (CFM)	850/350	1000/350	850/350	950/350	1000/350	900/350	1000/350	850/350	200/50	950/350	100/50
MAX/MIN REHEAT (CFM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MAX AIR PRESSURE DROP (in.wg)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
HEATING COIL PERFORMANCE											
HEAT TYPE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
ENTERING/LEAVING AIR TEMP. (F°)	-	-	-	-	-	-	-	-	-	-	-
VOLTS/PHASE	120/1	120/1	120/1	120/1	120/1	120/1	120/1	120/1	120/1	120/1	120/1
HEAT INPUT/STAGES	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
MCA/MOCP	-	-	-	-	-	-	-	-	-	-	-
PHYSICAL PROPERTIES & ACCESSORIES											
FAN MOTOR VOLTAGE/PHASE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
INLET SIZE	10"Ø	10"Ø	10"Ø	10"Ø	10"Ø	10"Ø	10"Ø	10"Ø	4"Ø	10"Ø	4"Ø
OUTLET SIZE	14"x12"	14"x12"	14"x12"	14"x12"	14"x12"	14"x12"	14"x12"	14"x12"	12"x8"	14"x12"	12"x8"
MAX RADIATED NOISE	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC
MAX WEIGHT	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	150 lbs	75 lbs	75 lbs
MANUFACTURER	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE
MODEL	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5
MODEL SIZE	10	10	10	10	10	10	10	10	4	10	4
NOTES	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3

NOTES
01. PROVIDE A MATTE FACE INTERIOR LINER.
02. FACTORY INSTALLED 3RD PARTY CONTROLS. TERMINAL UNIT MFGR. SHALL PROVIDE CONTROLS TRANSFORMER.
03. PROVIDE POWER FOR TRANSFORMERS.

TERMINAL UNIT SCHEDULE - G (AHU-11)

TAG	TU-G-01	TU-G-02
TYPE	SINGLE DUCT	SINGLE DUCT
AREA SERVED	RM 100	RM 101
LOCATION		
AIR FLOW CHARACTERISTICS		
FAN FLOW (CFM)	N/A	N/A
MAX/MIN PRIMARY (CFM)	1100/400	1100/400
MAX/MIN REHEAT (CFM)	N/A	N/A
MAX AIR PRESSURE DROP (in.wg)	0.25	0.25
HEATING COIL PERFORMANCE		
HEAT TYPE	NONE	NONE
ENTERING/LEAVING AIR TEMP. (F°)	-	-
VOLTS/PHASE	120/1	120/1
HEAT INPUT/STAGES	-	-
MCA/MOCP	-	-
PHYSICAL PROPERTIES & ACCESSORIES		
FAN MOTOR VOLTAGE/PHASE	N/A	N/A
INLET SIZE	12"Ø	12"Ø
OUTLET SIZE	16"x16"	16"x16"
MAX RADIATED NOISE	-- NC	-- NC
MAX WEIGHT	100 lbs	100 lbs
MANUFACTURER	PRICE	PRICE
MODEL	SDV5	SDV5
MODEL SIZE	12	12
NOTES	1,2,3	1,2,3

NOTES
01. PROVIDE A MATTE FACE INTERIOR LINER.
02. FACTORY INSTALLED 3RD PARTY CONTROLS. TERMINAL UNIT MFGR. SHALL PROVIDE CONTROLS TRANSFORMER.
03. PROVIDE POWER FOR TRANSFORMERS.

TERMINAL UNIT SCHEDULE - H (AHU-12)

TAG	TU-H-01	TU-H-02	TU-H-03	TU-H-04	TU-H-05	TU-H-06	TU-H-07
TYPE	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT
AREA SERVED	GENERAL OFFICE	ASST PRINCIPAL	NURSE	LOUNGE	LOUNGE	RRs	TEACHER WORK
LOCATION			NURSE				
AIR FLOW CHARACTERISTICS							
FAN FLOW (CFM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MAX/MIN PRIMARY (CFM)	525/125	300/75	325/75	300/75	850/200	250/50	850/200
MAX/MIN REHEAT (CFM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MAX AIR PRESSURE DROP (in.wg)	0.25	0.25	0.25	0.25	0.25	0.25	0.25
HEATING COIL PERFORMANCE							
HEAT TYPE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
ENTERING/LEAVING AIR TEMP. (F°)	-	-	-	-	-	-	-
VOLTS/PHASE	120/1	120/1	120/1	120/1	120/1	120/1	120/1
HEAT INPUT/STAGES	-/-	-/-	-/-	-/-	-/-	-/-	-/-
MCA/MOCP	-	-	-	-	-	-	-
PHYSICAL PROPERTIES & ACCESSORIES							
FAN MOTOR VOLTAGE/PHASE	N/A	N/A	N/A	N/A	N/A	N/A	N/A
INLET SIZE	8"Ø	6"Ø	6"Ø	6"Ø	10"Ø	6"Ø	10"Ø
OUTLET SIZE	12"x10"	12"x8"	12"x8"	12"x8"	14"x12"	12"x8"	14"x12"
MAX RADIATED NOISE	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC
MAX WEIGHT	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs
MANUFACTURER	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE
MODEL	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5
MODEL SIZE	8	6	6	6	10	6	10
NOTES	1-3	1-3	1-3	1-3	1-3	1-3	1-3

NOTES
01. PROVIDE A MATTE FACE INTERIOR LINER.
02. FACTORY INSTALLED 3RD PARTY CONTROLS. TERMINAL UNIT MFGR. SHALL PROVIDE CONTROLS TRANSFORMER.
03. PROVIDE POWER FOR TRANSFORMERS.

TERMINAL UNIT SCHEDULE - I (AHU-19)

TAG	TU-I-01	TU-I-02	TU-I-03	TU-I-04	TU-I-05	TU-I-06	TU-I-07
TYPE	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT
AREA SERVED	RM 131/HALL	RM 132	RM 158	TESTING	CONFERENCE	RM 157/HALL	RM 155
LOCATION							
AIR FLOW CHARACTERISTICS							
FAN FLOW (CFM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MAX/MIN PRIMARY (CFM)	1150/350	1050/350	1200/350	300/75	300/75	1200/350	1200/350
MAX/MIN REHEAT (CFM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MAX AIR PRESSURE DROP (in.wg)	0.25	0.25	0.25	0.25	0.25	0.25	0.25
HEATING COIL PERFORMANCE							
HEAT TYPE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
ENTERING/LEAVING AIR TEMP. (F°)	-	-	-	-	-	-	-
VOLTS/PHASE	120/1	120/1	120/1	120/1	120/1	120/1	120/1
HEAT INPUT/STAGES	-/-	-/-	-/-	-/-	-/-	-/-	-/-
MCA/MOCP	-	-	-	-	-	-	-
PHYSICAL PROPERTIES & ACCESSORIES							
FAN MOTOR VOLTAGE/PHASE	N/A	N/A	N/A	N/A	N/A	N/A	N/A
INLET SIZE	12"Ø	12"Ø	12"Ø	6"Ø	6"Ø	12"Ø	12"Ø
OUTLET SIZE	16"x16"	16"x16"	16"x16"	12"x8"	12"x8"	16"x16"	16"x16"
MAX RADIATED NOISE	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC
MAX WEIGHT	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs
MANUFACTURER	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE
MODEL	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5
MODEL SIZE	12	12	12	6	6	12	12
NOTES	1-3	1-3	1-3	1-3	1-3	1-3	1-3

NOTES
01. PROVIDE A MATTE FACE INTERIOR LINER.
02. FACTORY INSTALLED 3RD PARTY CONTROLS. TERMINAL UNIT MFGR. SHALL PROVIDE CONTROLS TRANSFORMER.
03. PROVIDE POWER FOR TRANSFORMERS.

PROJECT # : 23.1.40
DATE: 06/20/24
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REVISION:

WISD MEMORIAL ELEMENTARY SCHOOL
HVAC REPLACEMENT

WESLACO

TEXAS

MMS03

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Project number: 23.1.40

06/20/2024
STATE OF TEXAS
Wilford L. McGee III
121939
PROFESSIONAL ENGINEER

TERMINAL UNIT SCHEDULE - J (AHU-18)

TAG	TU-J-01	TU-J-02	TU-J-03	TU-J-04	TU-J-05	TU-J-06	TU-J-07	TU-J-08	TU-J-09	TU-J-10	TU-J-11	TU-J-12	TU-J-13
TYPE	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT
AREA SERVED	BOOK RM	RM 133	RM 139	RM 135/HALL	RM 136	RM 137	RM 138	RM 139/HALL	RM 141/HALL	RM 140	RM 142	RM 143	RR
LOCATION													
AIR FLOW CHARACTERISTICS													
FAN FLOW (CFM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MAX/MIN PRIMARY (CFM)	300/75	1200/350	1100/350	1300/400	1300/400	1200/350	1200/350	1300/400	1300/400	1200/350	1200/350	1100/350	200/50
MAX/MIN REHEAT (CFM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MAX AIR PRESSURE DROP (in.wg)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
HEATING COIL PERFORMANCE													
HEAT TYPE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
ENTERING/LEAVING AIR TEMP. (F°)	-	-	-	-	-	-	-	-	-	-	-	-	-
VOLTS/PHASE	120/1	120/1	120/1	120/1	120/1	120/1	120/1	120/1	120/1	120/1	120/1	120/1	120/1
HEAT INPUT/STAGES	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
MCA/MOCP	-	-	-	-	-	-	-	-	-	-	-	-	-
PHYSICAL PROPERTIES & ACCESSORIES													
FAN MOTOR VOLTAGE/PHASE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
INLET SIZE	6"Ø	12"Ø	12"Ø	12"Ø	12"Ø	12"Ø	12"Ø	12"Ø	12"Ø	12"Ø	12"Ø	12"Ø	4"Ø
OUTLET SIZE	12"x8"	16"x16"	16"x16"	16"x16"	16"x16"	16"x16"	16"x16"	16"x16"	16"x16"	16"x16"	16"x16"	16"x16"	12"x8"
MAX RADIATED NOISE	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC
MAX WEIGHT	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs
MANUFACTURER	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE
MODEL	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5
MODEL SIZE	6	12	12	12	12	12	12	12	12	12	12	12	4
NOTES	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3

NOTES
01. PROVIDE A MATTE FACE INTERIOR LINER.
02. FACTORY INSTALLED 3RD PARTY CONTROLS. TERMINAL UNIT MFGR. SHALL PROVIDE CONTROLS TRANSFORMER.
03. PROVIDE POWER FOR TRANSFORMERS.

TERMINAL UNIT SCHEDULE - K (AHU-17)

TAG	TU-K-01	TU-K-02	TU-K-03	TU-K-04	TU-K-05	TU-K-06
TYPE	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT
AREA SERVED	RM 149/HALL	RM 150	RM 151	RM 152	RM 153/RR	STORAGE
LOCATION						
AIR FLOW CHARACTERISTICS						
FAN FLOW (CFM)	N/A	N/A	N/A	N/A	N/A	N/A
MAX/MIN PRIMARY (CFM)	1200/350	1300/400	1200/350	1200/350	1100/350	200/50
MAX/MIN REHEAT (CFM)	N/A	N/A	N/A	N/A	N/A	N/A
MAX AIR PRESSURE DROP (in.wg)	0.25	0.25	0.25	0.25	0.25	0.25
HEATING COIL PERFORMANCE						
HEAT TYPE	NONE	NONE	NONE	NONE	NONE	NONE
ENTERING/LEAVING AIR TEMP. (F°)	-	-	-	-	-	-
VOLTS/PHASE	120/1	120/1	120/1	120/1	120/1	120/1
HEAT INPUT/STAGES	-/-	-/-	-/-	-/-	-/-	-/-
MCA/MOCP	-	-	-	-	-	-
PHYSICAL PROPERTIES & ACCESSORIES						
FAN MOTOR VOLTAGE/PHASE	N/A	N/A	N/A	N/A	N/A	N/A
INLET SIZE	12"Ø	12"Ø	12"Ø	12"Ø	12"Ø	4"Ø
OUTLET SIZE	16"x16"	16"x16"	16"x16"	16"x16"	16"x16"	12"x8"
MAX RADIATED NOISE	-- NC	-- NC	-- NC	-- NC	-- NC	-- NC
MAX WEIGHT	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs
MANUFACTURER	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE
MODEL	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5
MODEL SIZE	12	12	12	12	12	4
NOTES	1-3	1-3	1-3	1-3	1-3	1-3

NOTES
01. PROVIDE A MATTE FACE INTERIOR LINER.
02. FACTORY INSTALLED 3RD PARTY CONTROLS. TERMINAL UNIT MFGR. SHALL PROVIDE CONTROLS TRANSFORMER.
03. PROVIDE POWER FOR TRANSFORMERS.

DX MINI-SPLIT SCHEDULE

INDOOR UNIT TAG	FC-1-3	FC-4	FC-5,7,8	FC-6,9
SERVES	MDF/STORAGE	SUPPLY ROOM	MECH RM A,B,C	BOOK RM
LOCATION	WALL	WALL	WALL	WALL
UNIT TYPE	COOLING ONLY	HEAT PUMP	COOLING ONLY	HEAT PUMP
FAN PROPERTIES				
MIN SUPPLY (CFM)	400	400	400	400
MINIMUM O/A (CFM)	0	0	0	0
UNIT CAPACITIES				
ENTERING AIR (DB/WB)	74/62	74/62	74/62	74/62
TOTAL CAPACITY (BTUH	9,000	12,000	12,000	9,000
HEATING CAPACITY (BTUH)	0	12,000	0	9,000
UNIT DETAILS				
VOLTAGE/PHASE	208/1	208/1	208/1	208/1
MANUFACTURER	DAIKIN	DAIKIN	DAIKIN	DAIKIN
MODEL NO.	FTK09NMVJU	FTX12	FTKN12	FTX09
MAX WEIGHT (LBS)	25	25	25	25
CONDENSING UNIT TAG	**FCCU-1-3**	**FCCU-4**	**FCCU-5,7,8**	**FCCU-6,9**
DETAILS				
VOLTAGE/PHASE	208/1	208/1	208/1	208/1
MCA/MOCP	13/15	13/15	13/15	13/15
AMB. AIR TEMP. (CLG°F/HTG°F)	100/33	100/33	100/33	104/33
REFRIGERANT	R-410A	R-410A	R-410A	R-410A
COOLING MODE OPER. RANGE	15°F - 110°F	15°F - 110°F	15°F - 110°F	50°F - 110°F
HEATING MODE OPER. RANGE	N/A	5°F -065°F	N/A	5°F -065°F
MANUFACTURER	DAIKIN	DAIKIN	DAIKIN	DAIKIN
MODEL NO.	RK09NMVJU	RX12	RKN12	RX09
MAX WEIGHT (LBS)	75	75	75	50
MIN COOL/HEAT EFFICIENCY	19 SEER/-	19 SEER/9 HSPF	19 SEER/-	19 SEER/9 HSPF
MIN EQUIV. LINE LENGTH (FT)	65	65	65	65
MIN VERTICAL RISE (FT)	45	45	45	45
CONTROL TYPE	WL-RC	WL-RC	WL-RC	WL-RC
NOTES	ALL	ALL	ALL	ALL

NOTES:
01. ELECTRICAL CONTRACTOR TO PROVIDE SINGLE CIRCUIT POWER FROM SERVICE TO OUTDOOR UNIT & WIRE TO INDOOR UNIT.
02. PROVIDE W/ WIRED WALL MOUNTED THERMOSTAT W/ OFF-AUTO-ON FUNCTIONALITY. FAN COIL TO BE SET TO AUTO (TURNS FAN OFF WHEN SET-POINT IS REACHED).
03. PROVIDE INDOOR UNITS WITH MOUNTING BRACKETS IF REQUIRED.
04. SEE PLUMBING FOR CONDENSATE ROUTING.
05. CONTRACTOR TO PROVIDE ROOF CURB TO ANCHOR CONDENSER TO.
06. CONTRACTOR TO PROVIDE LINE SETS.
07. SIGHT GLASSES, FILTER DRYERS, & FIELD SUPPLIED EXPANSION VALVES ARE NOT TO BE USED ON THIS EQUIPMENT.
08. INSTALL PER MANUFACTURERS INSTRUCTIONS & PIPING RECOMMENDATIONS.
09. PROVIDE W/ SINGLE POINT POWERED CONDENSATE PUMP, REFER TO PLUMBING SHEETS FOR ROUTING.

FAN SCHEDULE

TAG	EF-1,2,5,16	EF-3,4,11	EF-6	EF-7,17	EF-8-10,15,18-20	EF-12	EF-13	EF-14	EF-21	EF-22
SERVICE	RRs	RRs	RRs	SPEC NEEDS HALL	RRs	BREAK ROOM	RR	NURSE	STORAGE/MDF	CUSTODIAL
LOCATION	CEILING	ROOF	CEILING	CEILING	ROOF	ROOF	ROOF	ROOF	CEILING	CEILING
FAN PROPERTIES										
CFM	150	300	100	200	350	850	200	350	200	200
FAN RPM	1020	1544	949	838	1616	1488	1508	1616	838	838
EXT SP (IN WG)	0.2	0.5	0.2	0.25	0.5	0.5	0.5	0.5	0.25	0.25
FAN MOTOR SIZE	128 W	1/6 HP	80 W	43 W	1/10 HP ECM	1/4 HP - ECM	1/10 HP - ECM	1/10 HP ECM	43 W	43 W
VOLTS/PHASE	120/1	120/1	120/1	120/1	120/1	120/1	120/1	120/1	120/1	120/1
SOUND LEVEL	2.5 SONES	7.5 SONES	1.5 SONES	1.5 SONES	8.0 SONES	10.1 SONES	7.3 SONES	8.0 SONES	1.5 SONES	1.5 SONES
MOUNTING	CEILING	14" CURB	CEILING	CEILING	14" TDI CURB	14" TDI CURB	14" TDI CURB	14" TDI CURB	CEILING	CEILING
MANUFACTURER	GREENHECK	GREENHECK	GREENHECK	GREENHECK	GREENHECK	GREENHECK	GREENHECK	GREENHECK	GREENHECK	GREENHECK
MODEL	SP-B150	G-085-VG	SP-B110	SP-A200	G-085-VG	G-099-VG	G-080-VG	G-085-VG	SP-A200	SP-A200
MAX WEIGHT	50 lbs	50 lbs	25 lbs	75 lbs	50 LBS	50 lbs	50 lbs	50 LBS	75 lbs	75 lbs
NOTES	1-6	1-3,7-9	1-6	1-6	1-3,7-9	1-3,6,8-10	1-3,7-9	1-3,7-9	1-3,5,11	1-5,7

NOTES:
01. PROVIDE WITH FACTORY INSTALLED DISCONNECT.
02. PROVIDE W/ FAN SPEED CONTROLLER
03. PROVIDE W/ BACKDRAFT DAMPER.
04. INTERLOCK FAN W/ LIGHTS.
05. PROVIDE W/ TIMED DELAY SHUTOFF
06. FAN TO BE MONITORED BY BUILDING AUTOMATION SYSTEM (BAS).
07. FAN TO BE OPERATED AND MONITORED BY BAS.
08. PROVIDE W/ LIFTING LUGS.
09. PROVIDE IBC 2015 COMPLIANT CURB & ATTACHMENTS FROM UNIT TO CURB & CURB TO STRUCTURE. EQUIPMENT OR CURB MANUFACTURER IS RESPONSIBLE FOR PROVIDING ENGINEERED DETAIL ANALYSIS OF:
    A) ATTACHMENT OF EQUIPMENT TO CURB.
    B) CURB TO STRUCTURE.
    C) CURB & ATTACHMENT HARDWARE STRENGTH.
    REFER TO ARCHITECTURAL & STRUCTURAL DRAWINGS FOR ROOF SUBSTRATE DETAILS. EQUIPMENT OR CURB MANUFACTURER IS ALSO RESPONSIBLE FOR PROVIDING ENGINEERED INSTALLATION DRAWINGS FOR ITEMS 'A' & 'B' LISTED ABOVE. BOTH, THE ENGINEERED ANALYSIS & THE ENGINEERED INSTALLATION DRAWINGS SHALL BE PERFORMED SPECIFICALLY FOR THIS BUILDING & PROJECT SITE & STAMPED & SEALED BY A TEXAS LICENSED ENGINEER. SUBMITTALS WILL NOT BE APPROVED UNTIL ALL DOCUMENTATION LISTED ABOVE IS PROVIDED ACCURATELY.
10. PROVIDE W/ WALL MOUNTED ROTARY TIMED DIAL SWITCH, 0-60 MINS, LABELED "VENT FAN".
11. PROVIDE FAN W/ H2 (HYDROGEN) GAS SENSOR 24" FROM FAN. FAN TO BE ENGAGED WHEN CONCENTRATION OF H2 GAS REACHES/EXCEEDS 1%.

TERMINAL UNIT SCHEDULE - L (AHU-16)

TAG	TU-L-01	TU-L-02	TU-L-03	TU-L-04	TU-L-05
TYPE	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT	SINGLE DUCT
AREA SERVED	RM 150/RR	RM 149	RM 151	RM 152	RM 153
LOCATION					
AIR FLOW CHARACTERISTICS					
FAN FLOW (CFM)	N/A	N/A	N/A	N/A	N/A
MAX/MIN PRIMARY (CFM)	1200/350	1200/350	1200/350	1300/350	1100/350
MAX/MIN REHEAT (CFM)	N/A	N/A	N/A	N/A	N/A
MAX AIR PRESSURE DROP (in.wg)	0.25	0.25	0.25	0.25	0.25
HEATING COIL PERFORMANCE					
HEAT TYPE	NONE	NONE	NONE	NONE	NONE
ENTERING/LEAVING AIR TEMP. (F°)	-	-	-	-	-
VOLTS/PHASE	120/1	120/1	120/1	120/1	120/1
HEAT INPUT/STAGES	-/-	-/-	-/-	-/-	-/-
MCA/MOCP	-	-	-	-	-
PHYSICAL PROPERTIES & ACCESSORIES					
FAN MOTOR VOLTAGE/PHASE	N/A	N/A	N/A	N/A	N/A
INLET SIZE	12"Ø	12"Ø	12"Ø	12"Ø	12"Ø
OUTLET SIZE	16"x16"	16"x16"	16"x16"	16"x16"	16"x16"
MAX RADIATED NOISE	-- NC	-- NC	-- NC	-- NC	-- NC
MAX WEIGHT	75 lbs	75 lbs	75 lbs	75 lbs	75 lbs
MANUFACTURER	PRICE	PRICE	PRICE	PRICE	PRICE
MODEL	SDV5	SDV5	SDV5	SDV5	SDV5
MODEL SIZE	12	12	12	12	12
NOTES	1-3	1-3	1-3	1-3	1-3

NOTES
01. PROVIDE A MATTE FACE INTERIOR LINER.
02. FACTORY INSTALLED 3RD PARTY CONTROLS. TERMINAL UNIT MFGR. SHALL PROVIDE CONTROLS TRANSFORMER.
03. PROVIDE POWER FOR TRANSFORMERS.

AIR DEVICE SCHEDULE

TAG	A	B	C	D	E
SERVICE TYPE	SUPPLY	SUPPLY	RETURN	RETURN	RETURN
PHYSICAL PROPERTIES					
FACE SIZE	24"x24"	12"x12"	24"x24"	12"x12"	SEE PLANS
NECK SIZE	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS
MOUNTING SURFACE	CEILING	CEILING	CEILING	CEILING	WALL
DETAILS AND ACCESSORIES					
DAMPER TYPE	OPPOSED BLADE	OPPOSED BLADE	OPPOSED BLADE	OPPOSED BLADE	OPPOSED BLADE
ACCESSORY	INSUL BACKPAN	INSUL BACKPAN	INSUL BACK PAN	INSUL BACK PAN	INSUL BACK PAN
COLOR FINISH	WHITE	WHITE	WHITE	WHITE	-
MATERIAL	STEEL	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM
MANUFACTURER	PRICE	PRICE	PRICE	PRICE	PRICE
MODEL	SCD	ASCD	80	80	96
NOTES					1

NOTES:
01. COORDINATE COLOR OF AIR DEVICE & FRAME W/ OWNER.

VFD SCHEDULE

SERVES	AHU-1	AHU-8	AHU-9	AHU-10	AHU-16	AHU-17	PP-1,2,3	SP-1,2
QUANTITY	2	1	1	2	2	2	3	2
DETAILS AND ACCESSORIES								
HP	7.5	.5	5	7.5	7.5	7.5	5	25
INPUT VOLTAGE	208/3	208/3	208/3	208/3	208/3	208/3	480/3	480/3
MOUNTING SURFACE	WALL	WALL	WALL	WALL	WALL	WALL	STAND	STAND
NEMA ENCLOSURE RATING	NEMA 1	NEMA 1	NEMA 1	NEMA 1	NEMA 1	NEMA 1	NEMA 4X	NEMA 4X
DDC SYSTEM INTERFACE	bacnet/ion	bacnet/ion	bacnet/ion	bacnet/ion	bacnet/ion	bacnet/ion	bacnet/ion	bacnet/ion
MANUFACTURER	DANFOSS	DANFOSS	DANFOSS	DANFOSS	DANFOSS	DANFOSS	DANFOSS	DANFOSS
MODEL	FC102	FC102	FC102	FC102	FC102	FC102	FC102	FC102
NOTES	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3,4	1-3,5-7	1-3,5-7

NOTES:
01. PROVIDE VFD W/ INTEGRAL MANUAL BYPASS AND DISCONNECT.
02. VFD SHALL BE PROVIDED BY MECHANICAL CONTRACTOR & WIRED BY ELECTRICAL CONTRACTOR.
03. PROVIDE W/ ONE EXTRA VFD FOR EACH NOMINAL SIZED VFD FOUND IN THIS SCHEDULE.
04. MOUNT VFD'S ON MECHANICAL ROOM WALL.
05. MOUNT VFD'S ON ELECTRICAL GEAR STAND.
06. PROVIDE SS NEMA 4X ENCLOSURE W/ HVAC UNIT.
07. ONE EXTRA NEMA 4X VFD WITH ENCLOSURE WITH DISCONNECT AND BYPASS AND HVAC UNIT.

PROJECT # : 23.1.40
DATE: 06/20/24
CHECKED BY: LM

REVISION:

TEXAS

WISD MEMORIAL ELEMENTARY SCHOOL
HVAC REPLACEMENT

WESLACO

TRINITY
MEP ENGINEERING
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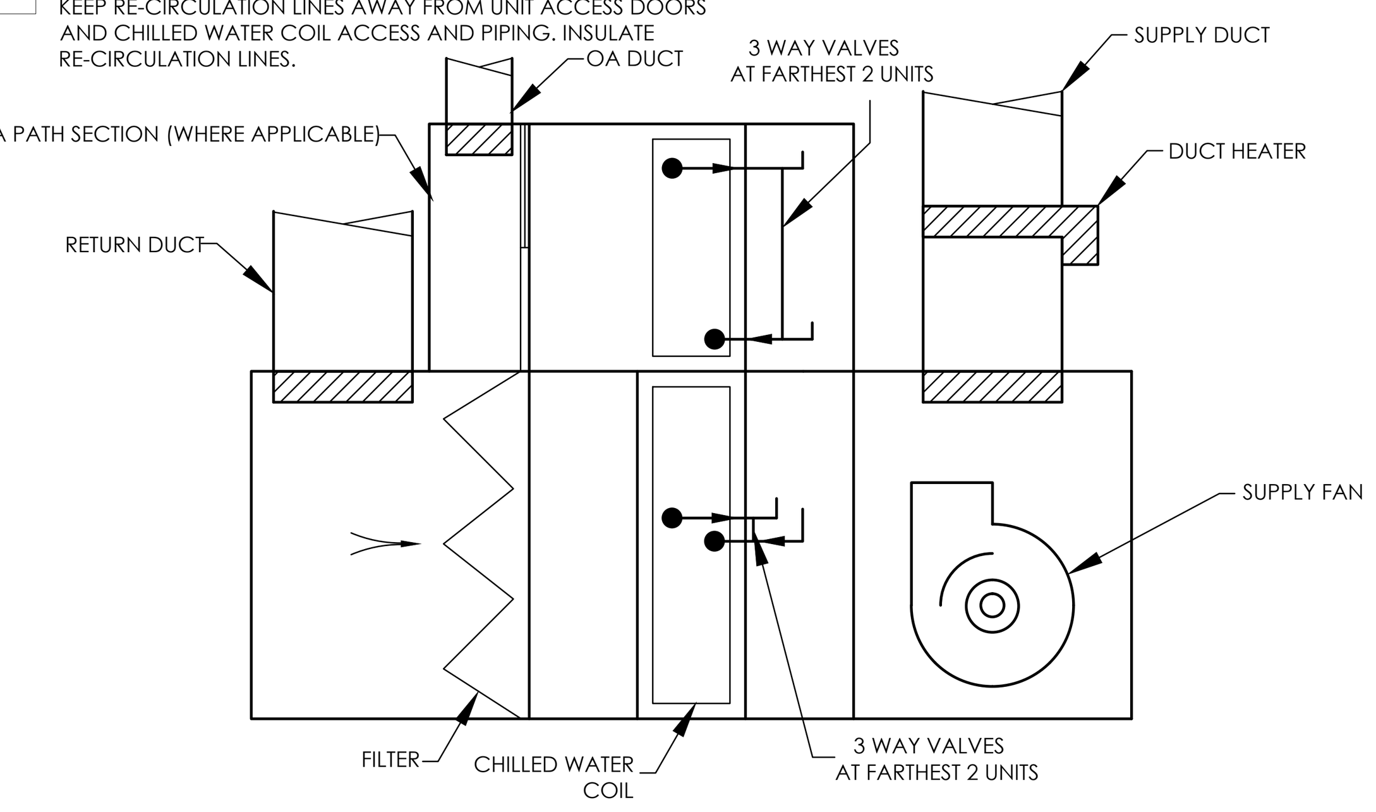
Texas Registered Engineering Firm - F10362
Project number: 23.1.40

06/20/2024
STATE OF TEXAS
Wilford L. McGee III
121939
PROFESSIONAL ENGINEER

MMS04

01

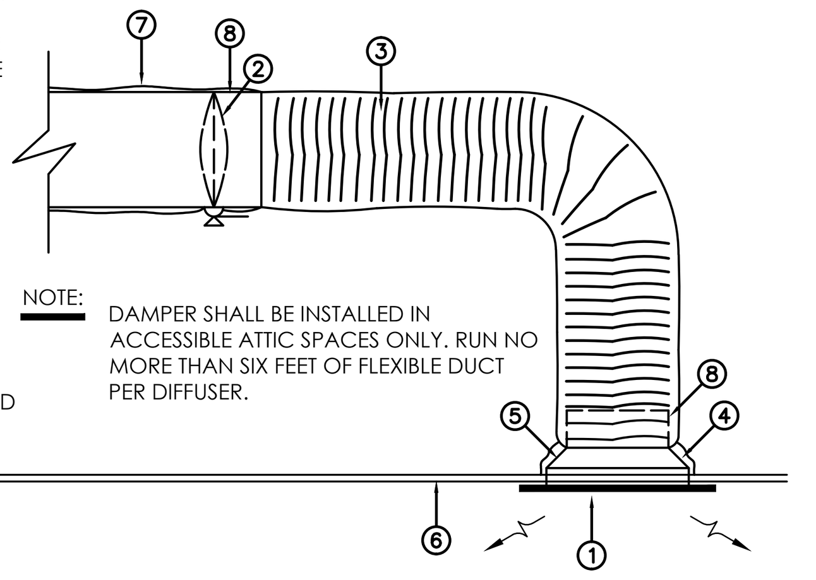
GENERAL NOTE:
KEEP RE-CIRCULATION LINES AWAY FROM UNIT ACCESS DOORS AND CHILLED WATER COIL ACCESS AND PIPING. INSULATE RE-CIRCULATION LINES.



WRAP-AROUND LOOP PIPING DETAIL
NO SCALE

02

1. CEILING DIFFUSER
2. ROUND MANUAL BALANCING DAMPER WITH FACTORY MOUNTED LOCKING HAND QUADRANT FLEXMASTER SLD OR EQUAL. DAMPER SIZE SAME AS FLEXIBLE DUCT SIZE.
3. FLEXIBLE ROUND DUCT. SEE DRAWINGS FOR SIZES. BY FLEXMASTER.
4. INSULATE BACK PAN OF DIFFUSER.
5. DIFFUSER
6. CEILING
7. ROUND METAL WRAPPED DUCT WITH INSULATION
8. PROVIDE TIE STRAP ON BOTH INNER AND OUTER SLEEVES ON FLEX DUCT.

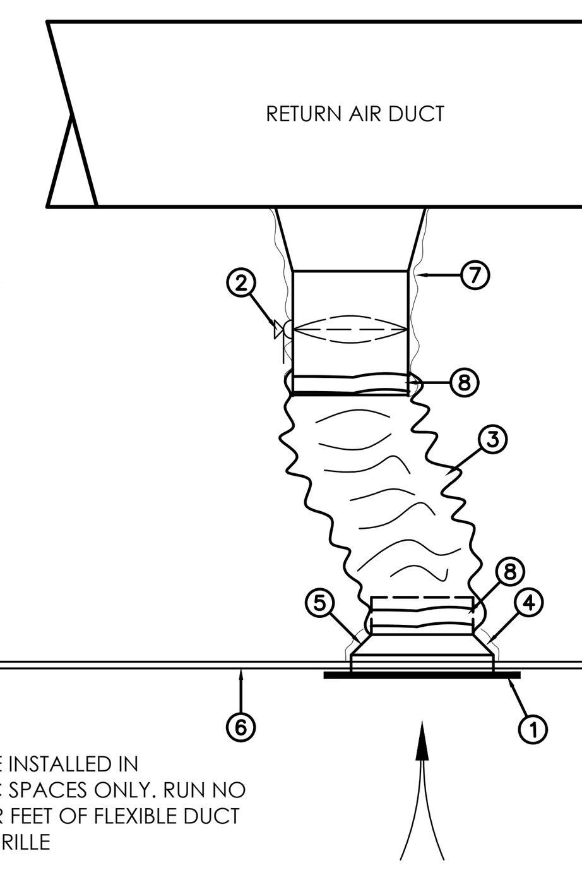


NOTE: DAMPER SHALL BE INSTALLED IN ACCESSIBLE ATTIC SPACES ONLY. RUN NO MORE THAN SIX FEET OF FLEXIBLE DUCT PER DIFFUSER.

DIFFUSER RUN OUT DETAIL
NO SCALE

03

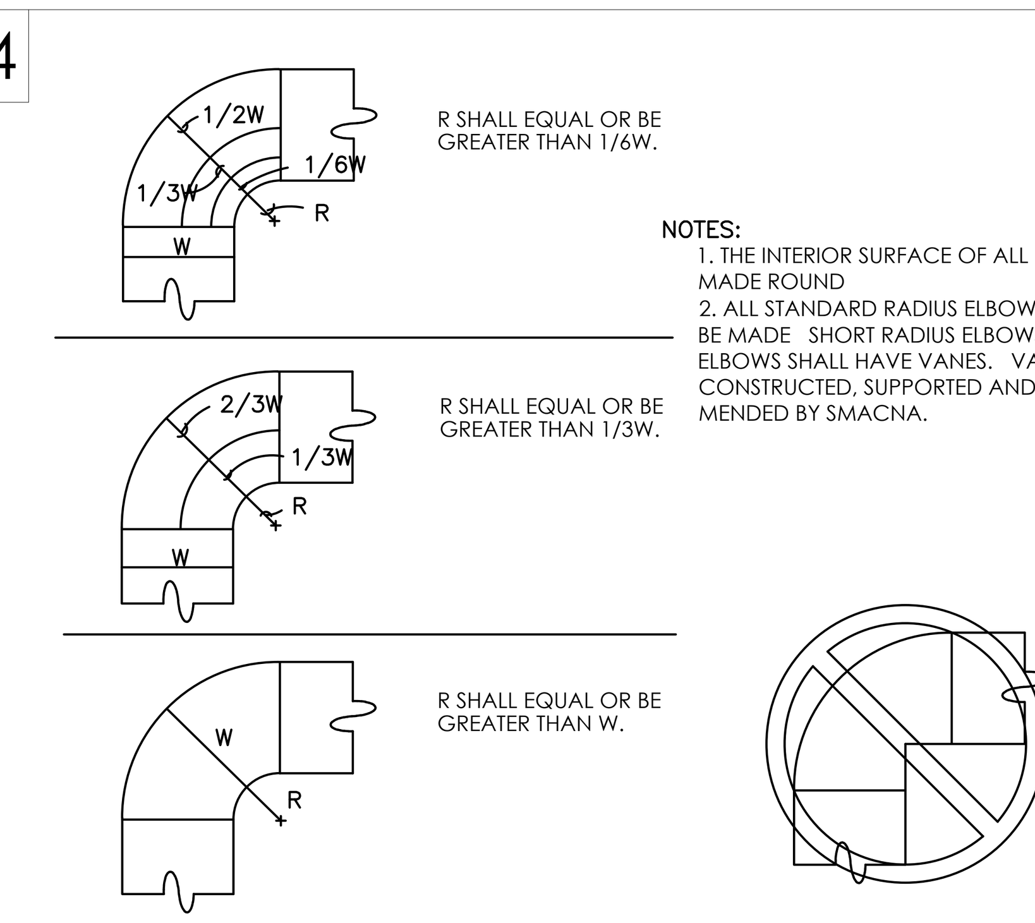
1. RETURN AIR GRILLE
2. ROUND MANUAL BALANCING DAMPER WITH FACTORY MOUNTED LOCKING HAND QUADRANT FLEXMASTER SLD OR EQUAL. DAMPER SIZE SAME AS FLEXIBLE DUCT SIZE.
3. FLEXIBLE ROUND DUCT, FOUR FEET OR LESS. SEE DRAWINGS FOR SIZES. BY FLEXMASTER
4. INSULATE BACK PAN OF GRILLE.
5. FIELD FABRICATED SQUARE TO ROUND TRANSITION, FROM NECK OF GRILLE TO SIZE INDICATED ON PLAN.
6. CEILING (SEE PLANS FOR CEILING TYPE)
7. ROUND METAL WRAPPED DUCT WITH INSULATION
8. PROVIDE TIE STRAP ON BOTH INNER AND OUTER SLEEVES ON FLEX DUCT.



NOTE: DAMPER SHALL BE INSTALLED IN ACCESSIBLE ATTIC SPACES ONLY. RUN NO MORE THAN FOUR FEET OF FLEXIBLE DUCT PER RETURN AIR GRILLE

RETURN AIR GRILLE ATTACHMENT DETAIL
NO SCALE

04

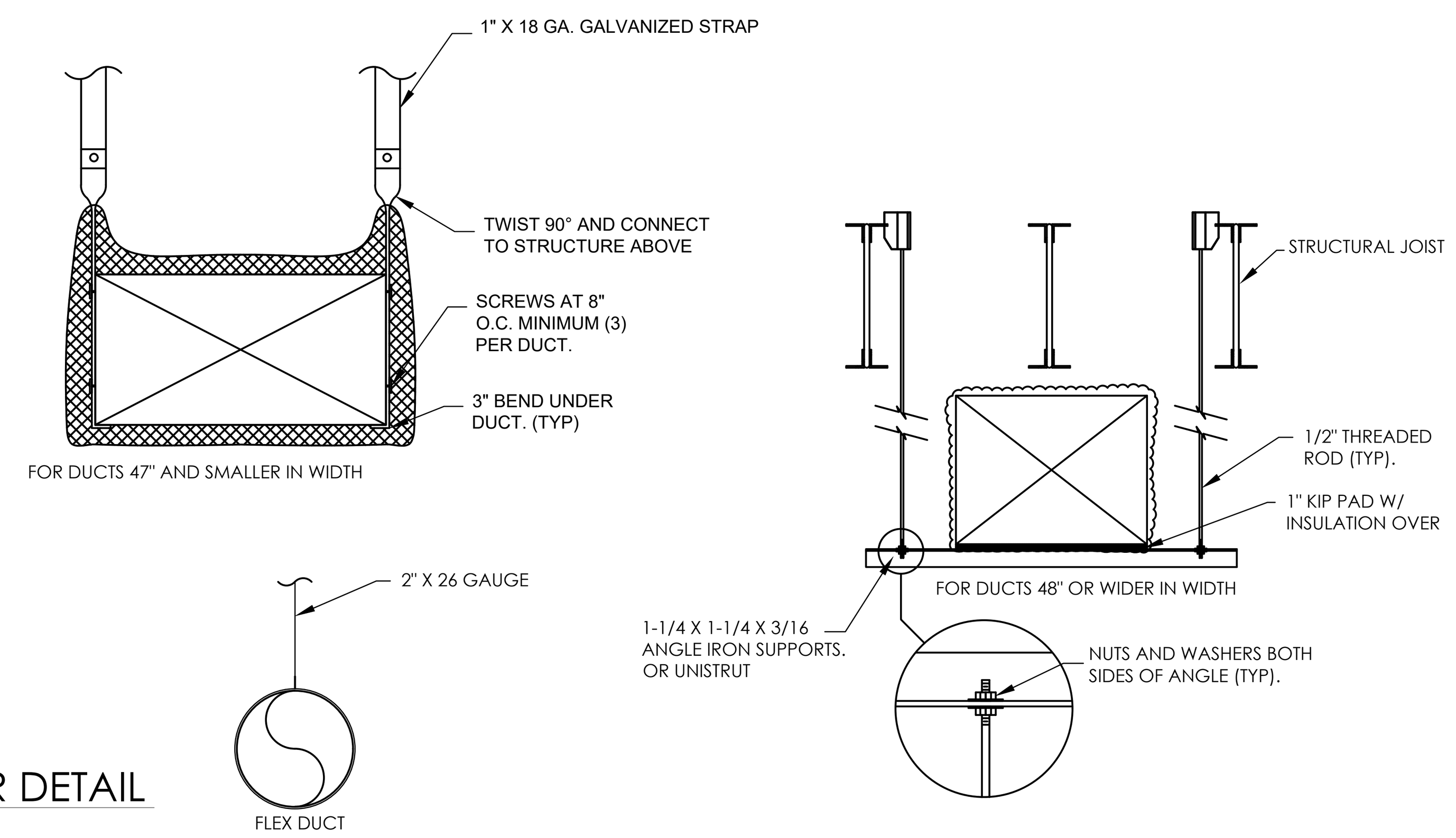


NOTES:
1. THE INTERIOR SURFACE OF ALL RADIUS ELBOWS SHALL BE MADE ROUND
2. ALL STANDARD RADIUS ELBOWS SHOWN ON PLANS MAY BE MADE SHORT RADIUS ELBOWS. ALL SHORT RADIUS ELBOWS SHALL HAVE VANES. VANES SHALL BE CONSTRUCTED, SUPPORTED AND FASTENED AS RECOMMENDED BY SMACNA.

RADIUS DUCT ELBOW DETAIL
NO SCALE

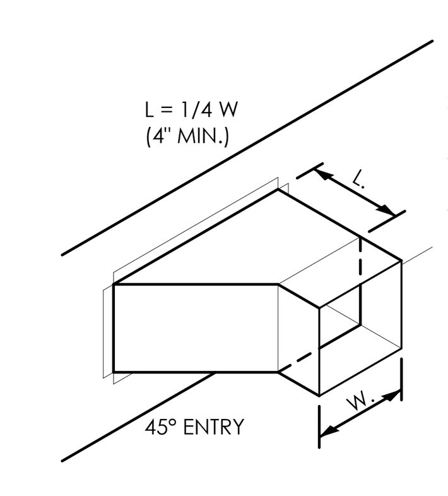
05

DUCT SUPPORT:
1. HANGER ATTACHMENTS TO STRUCTURE: SEE DIVISION 23 SECTION "HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT:. MINIMUM ROD OR BOLT SIZE IS 3⁄8 (9MM).
2. SUSPEND HORIZONTAL GALVANIZED RECTANGULAR DUCTWORK 47" (1220MM) OR LESS IN LARGEST DIMENSION FROM CONSTRUCTION BY 1 INCH BY 18 GAUGE (25MM X 1.3MM) GALVANIZED STRAP HANGERS SCREWED 8 INCHES (200MM) O.C. TO DUCTS. USE THREE (3) SCREWS MINIMUM PER STRAP. BEND STRAP UNDER DUCT AND SCREW INTO BOTTOM OF DUCT.
3. SUSPEND HORIZONTAL RECTANGULAR STAINLESS STEEL AND COATED DUCTWORK 48" (1220MM) OR LESS IN LARGEST DIMENSION FROM CONSTRUCTION BY 1 INCH BY 18 GAUGE (25MM BY 1.3MM) GALVANIZED STEEL STRAP HANGERS BOLTED TO MATING FLANGES AT MINIMUM OF THREE LOCATIONS. (TOP,MIDDLE,BOTTOM).
4. DUCTS OVER 48" (1220MM) IN LARGEST DIMENSION SUPPORT FROM UNISTRUT, SUPERSTRUT, OR EQUAL, TRAPEZE HANGERS SIZED FOR THE LOAD, PER SMACNA STANDARDS.
5. SUPPORT ROUND STEEL DUCTWORK FROM CONSTRUCTION BY 1 INCH BY 18 GUAGE (25MM BY 1.3MM) GALVANIZED STRAP HANGERS WITH INSIDE RADIUS OF LOOP HANGER EQUAL TO OUTSIDE RADIUS OF DUCT. FOR DUCTS UNDER 12" DIAMETER, PROVIDE SUPPORTS 10 FEET (3CM) O.C; 12 FEET (3.6M) AND OVER, 6 FEET (1.8M) O.C. PROVIDE NOT LESS THAN ONE HANGER PER BRANCH AND AT EACH CHANGE OF DIRECTION.
6. SUPPORT ROUND FLEXIBLE DUCTWORK FROM CONSTRUCTION BY 2 INCHES BY 26 GAUGE (50 MM BY 0.55MM) GALVANIZED STRAP HANGERS WITH INSIDE RADIUS OF LOOP HANGER EQUAL TO OUTSIDE RADIUS OF DUCT. LOCATE SUPPORTS TO AVOID KINKS AND SHARP BENDS.
7. DOUBLE FOLD STRAPS AT ATTACHMENTS TO STRUCTURE.
8. SPACE HANGERS NOT OVER 96 INCHES (2440MM) ON CENTER FOR DUCTS SMALLER THAN 18 INCHES (457MM) IN LARGEST DIMENSION; 60 INCHES (1524MM) O.C. FOR DUCTS 18 INCHES (457MM) AND OVER.



DUCT HANGER DETAIL
NO SCALE

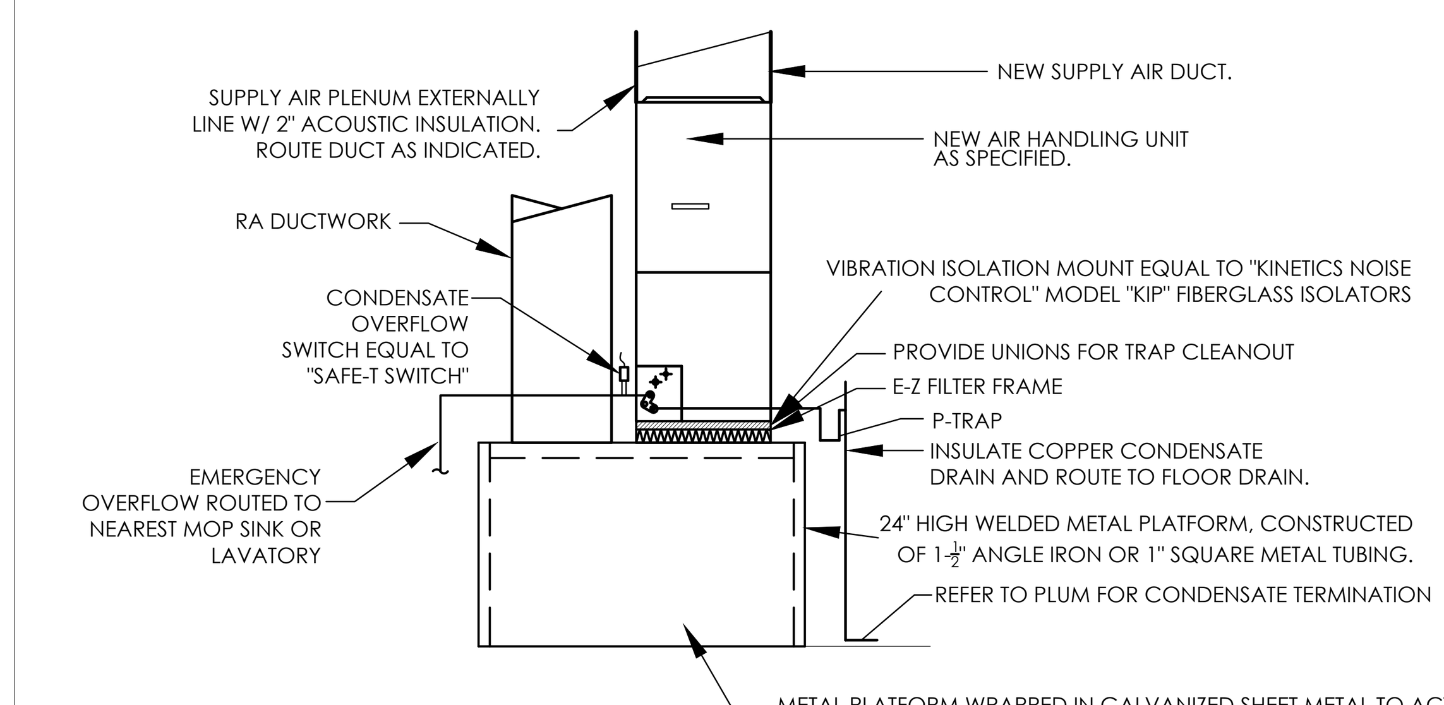
06



NOTES:
1. FIT ALL CONNECTIONS TO AVOID VISIBLE OPENINGS & SECURE SUITABLY FOR THE PRESSURE CLASS.
2. ADDITIONAL MECHANICAL FASTENERS REQ'D. FOR 4" W.G. & OVER.
3. DO NOT EXPOSE LINER EDGES ON LINED DUCT CONNECTIONS.
4. ALL OPENINGS TO BE CUT ACCURATELY IN SHAPE & SIZE.

BRANCH CONN. DETAIL
NO SCALE

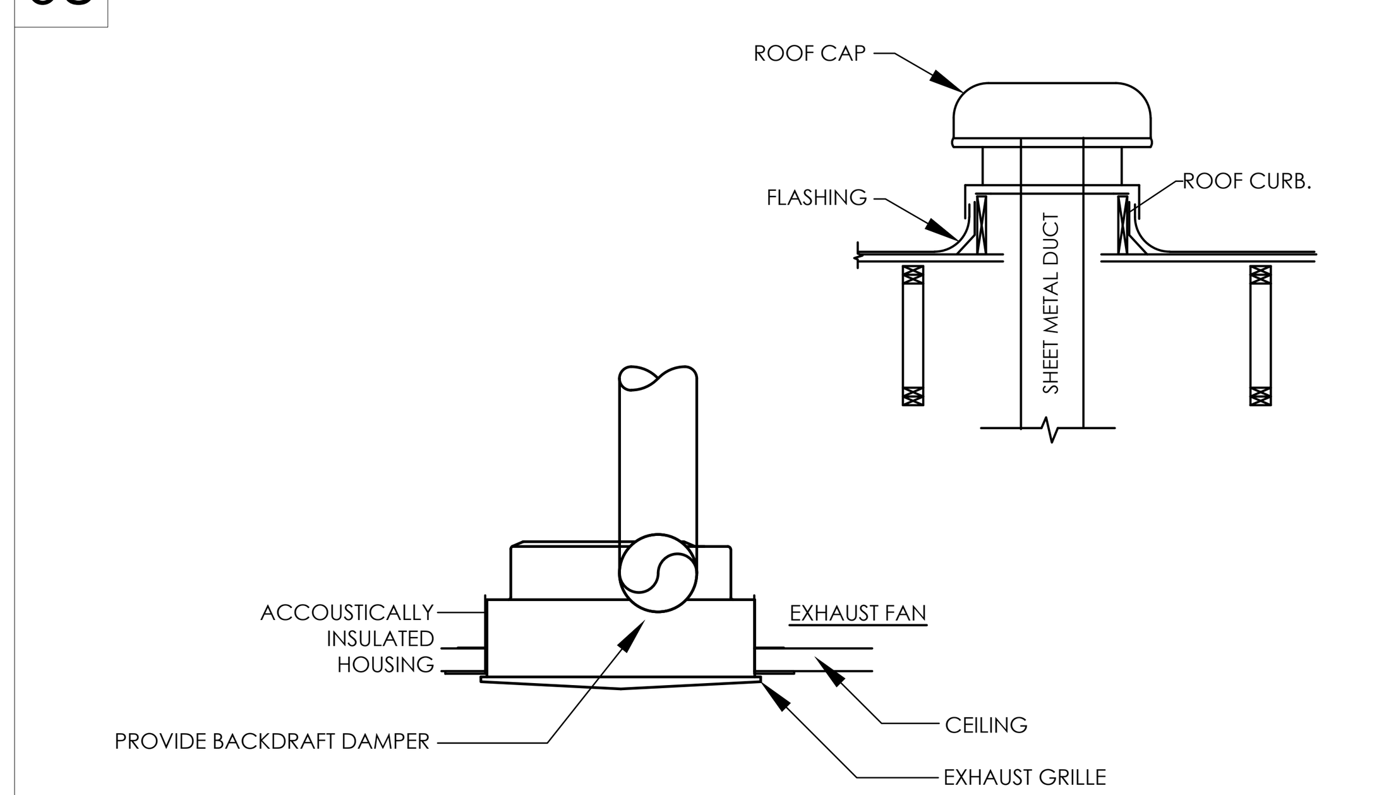
07



NOTE: THIS DETAIL IS NOT A SCALED SECTION OF THE PLAN. SOME DUCT AND AIR DEVICES MIGHT BE SHOWN DIFFERENTLY ON THE MECHANICAL FLOOR PLAN.

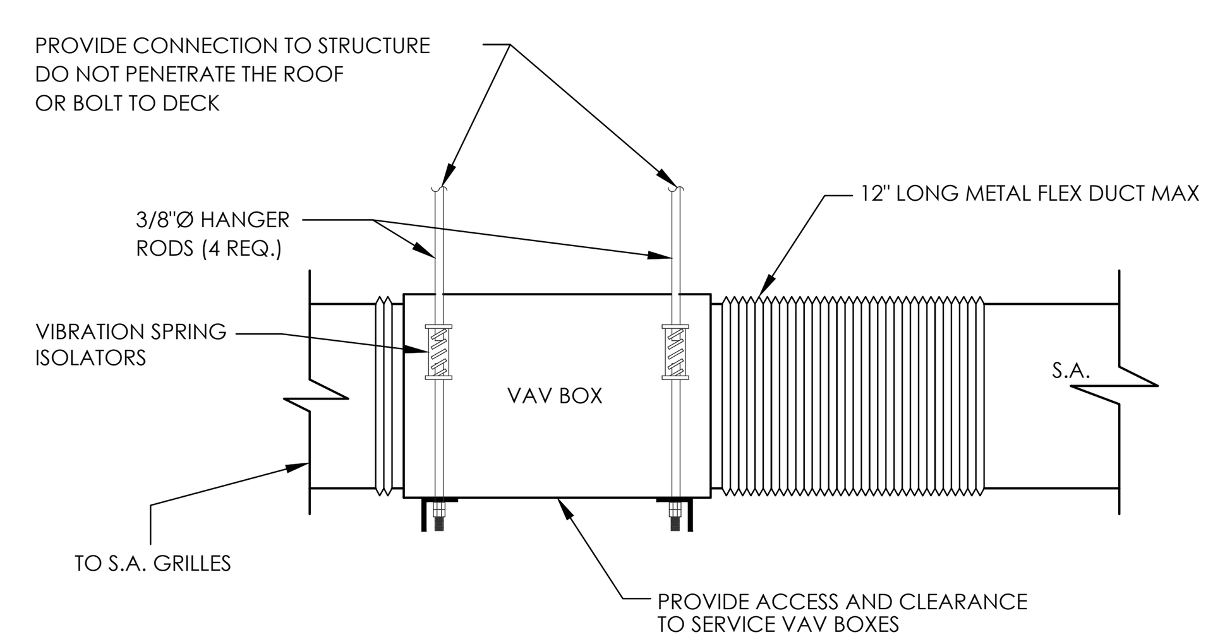
AIR HANDLING UNIT CONFIGURATION
NOT TO SCALE

08



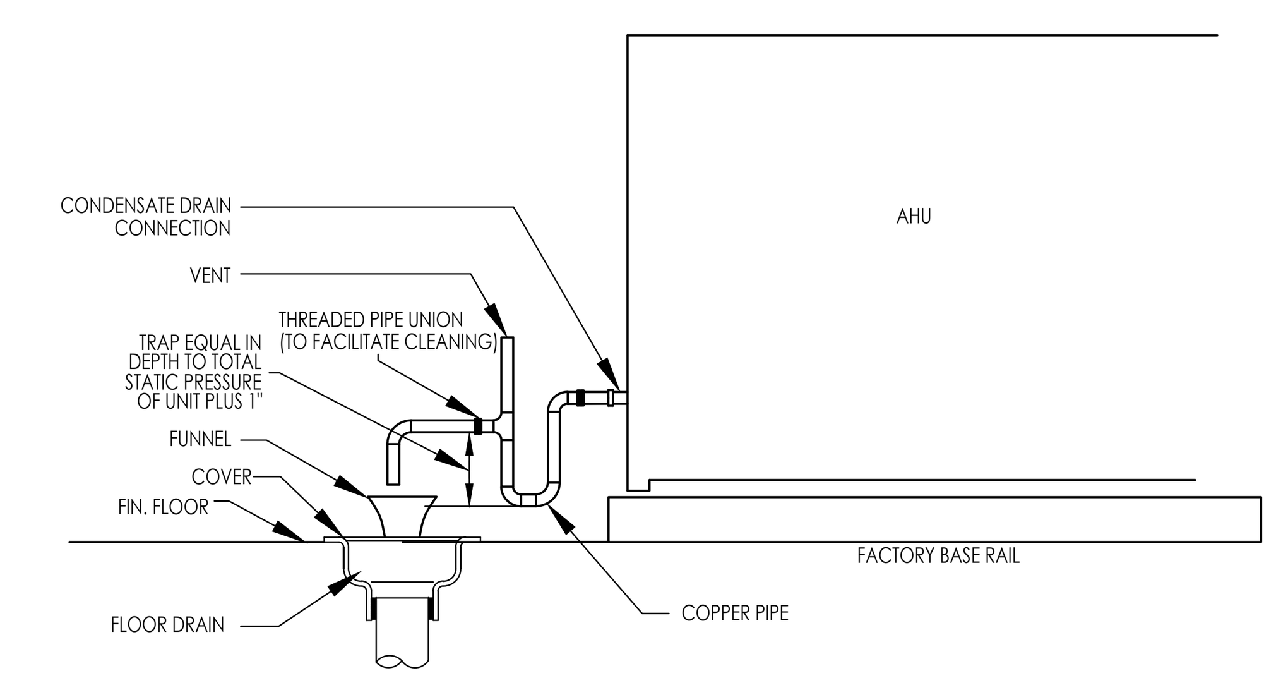
CEILING EXHAUST FAN DETAIL
NO SCALE

09



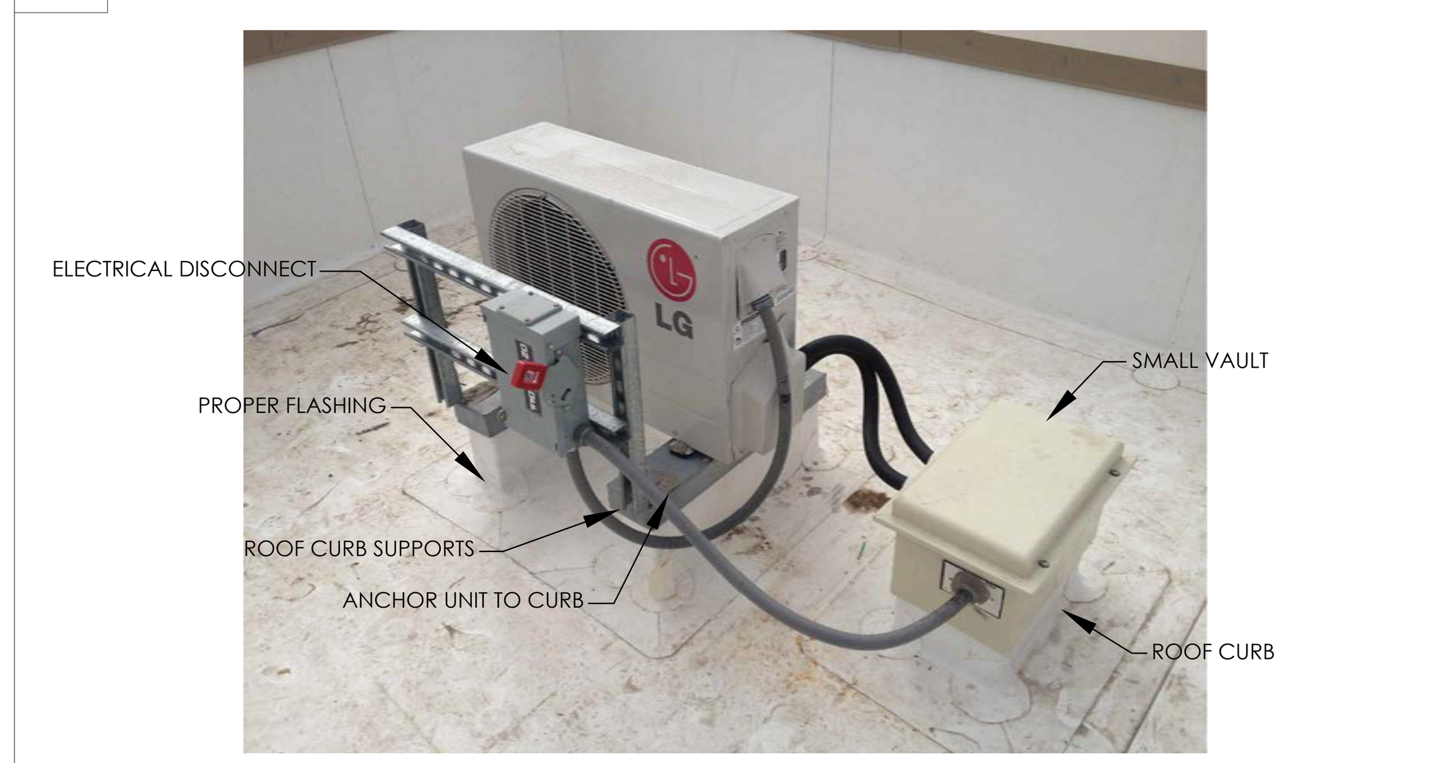
VAV BOX DETAIL
NO SCALE

10



CONDENSATE DRAIN DETAIL
NO SCALE

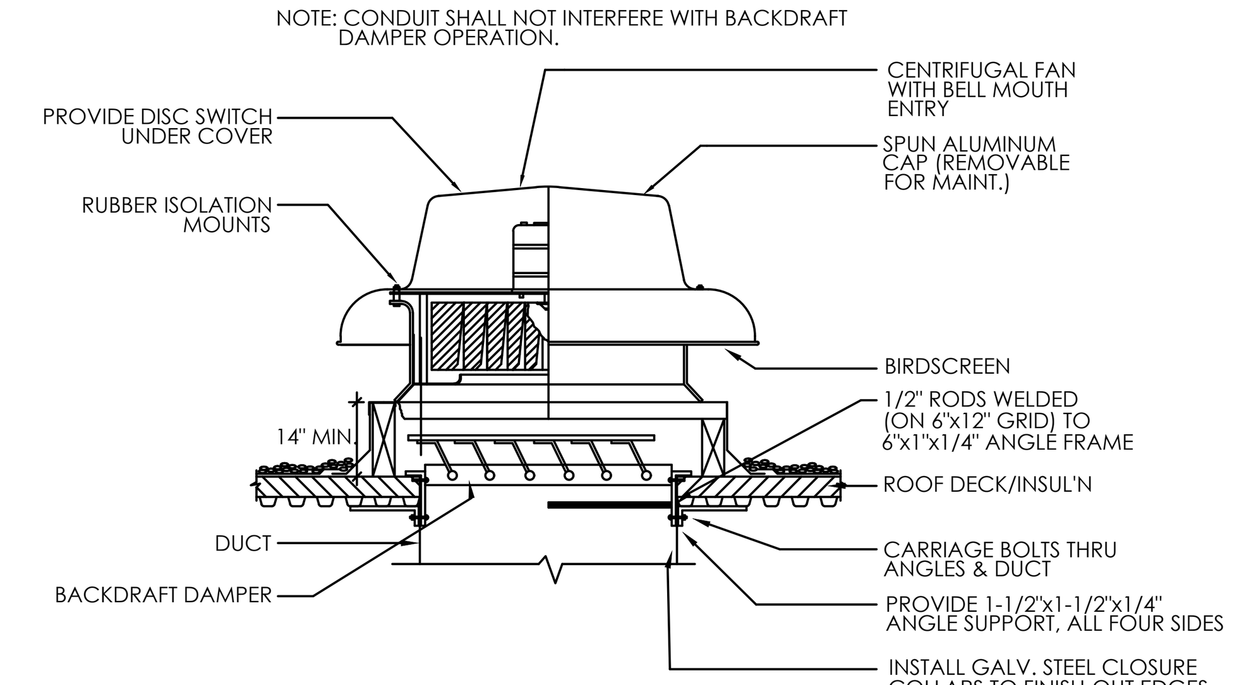
11



MINI SPLIT CONDENSING UNIT

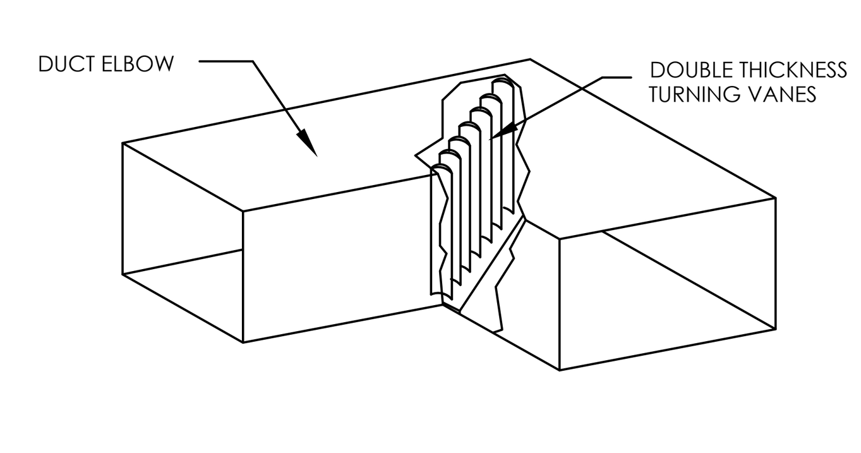
12

NOTE: CONDUIT SHALL NOT INTERFERE WITH BACKDRAFT DAMPER OPERATION.



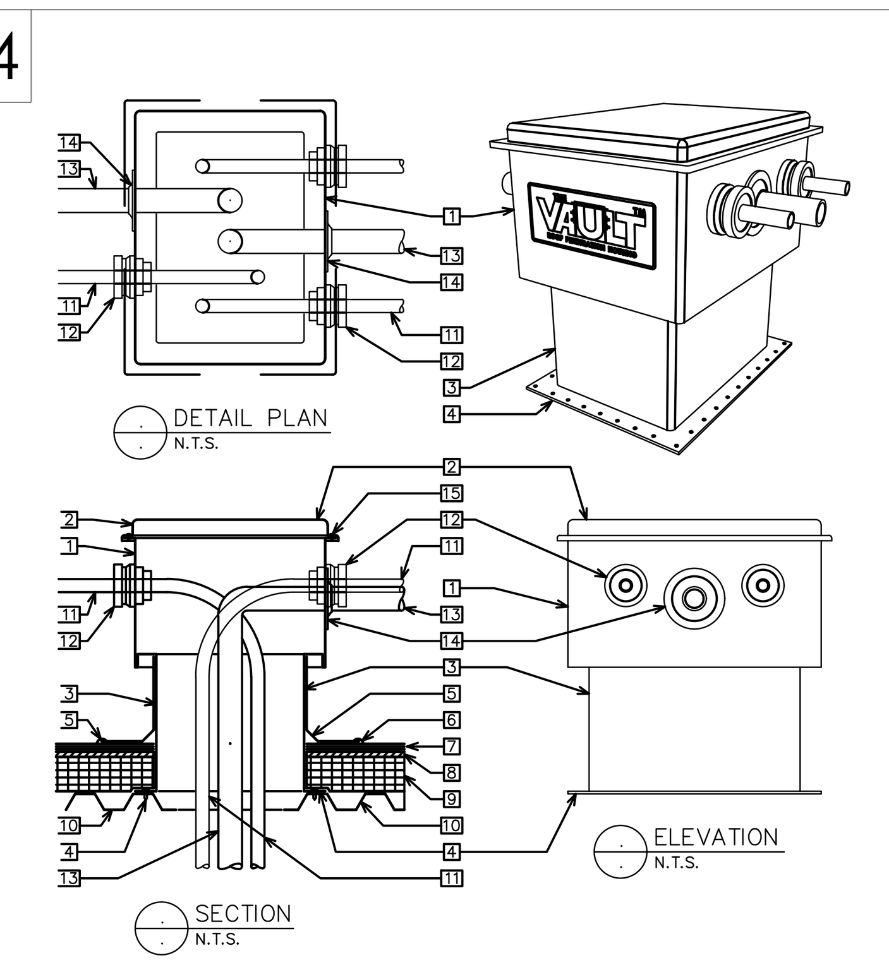
ROOF MTD. EXHAUST FAN
NO SCALE

13



MILTERED ELBOW DETAIL
NO SCALE

14

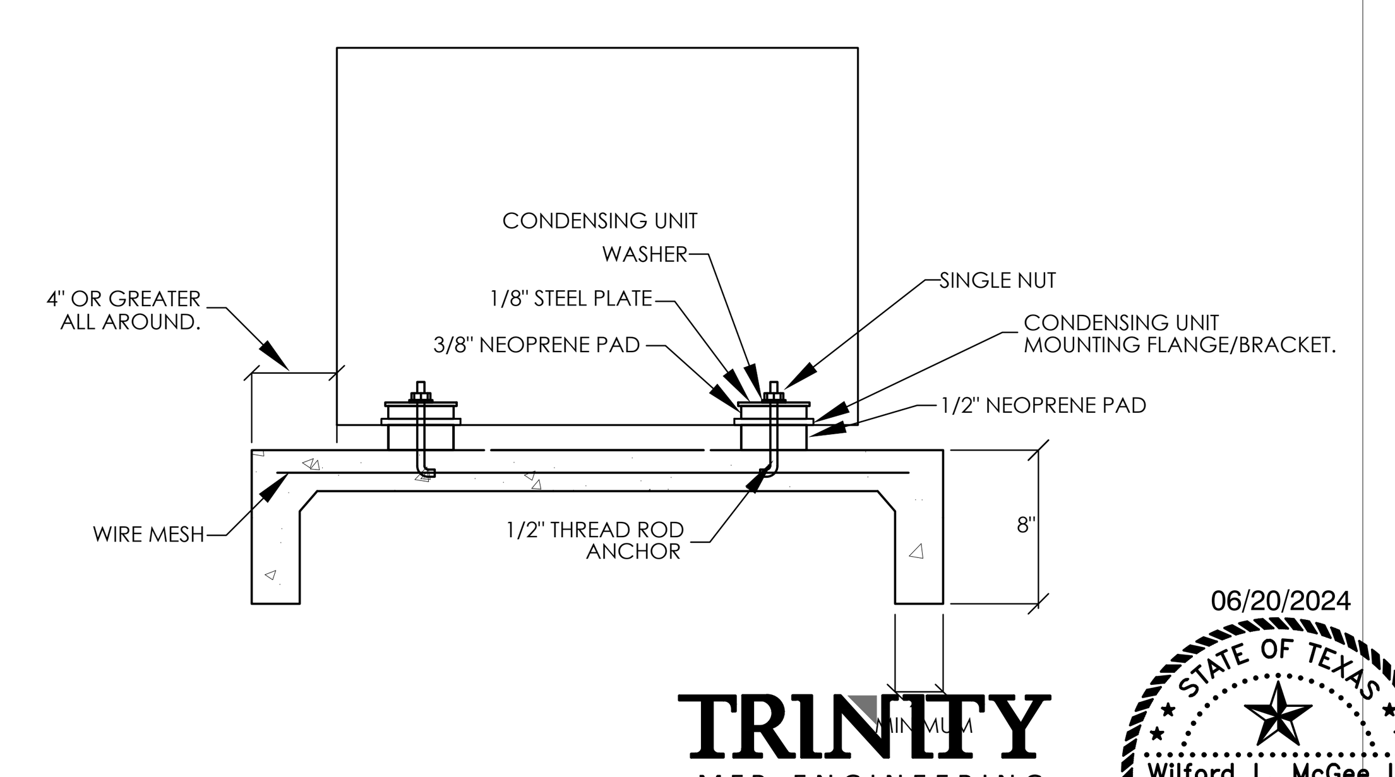


THE VAULT ™
ROOF PENETRATION HOUSING

LEGEND
1. THE VAULT (SPECIFY MODEL)
2. MATCHING PREFAB ALUMINUM CAP
3. MATCHING ALUMINUM CURB 14" HIGH MIN. TO COMPLY WITH WIND RATING, CURB MUST BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS.
4. ALUM FLANGE, FASTEN TO ROOF DECK
5. SBS FLASHING MEMBRANE
6. CONTINUOUS CAULK WITH RUBBERIZED ASPHALT SEALANT
7. ROOFING SYSTEM
8. RECOVERY BOARD
9. RIGID INSULATION
10. METAL ROOF DECK
11. CONDUIT, PIPE, REFRIGERANT LINE, ETC. SIZES FROM 0.25" THRU 1.90" O.D.
12. EXIT SEAL™ FOR SIZES FROM 0.25" THRU 1.90" O.D.
13. CONDUIT, PIPE, REFRIGERANT LINE, ETC. SIZES FROM 1.90" THRU 15" O.D.
14. EXIT SEAL™ FOR SIZES FROM 1.90" THRU 15" O.D.
15. VANDAL RESISTANT STAINLESS SCREWS
16. FASTEN CURB FLANGE TO ROOF DECK

CONTACT RPH AT 1–800–994–0945

15



4" HOUSE KEEPING CONCRETE PAD
NO SCALE

TRINITY
MEP ENGINEERING
www.trinitymep.com
Texas Registered Engineering Firm - F10362
Project number: 23.1.40

06/20/2024
STATE OF TEXAS
Wilford L. McGee III
121939

PROJECT # : 23.1.40
DATE: 06/20/24
CHECKED BY: LM

REVISION:

TEXAS

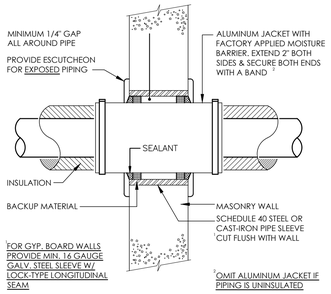
WISD MEMORIAL ELEMENTARY SCHOOL HVAC REPLACEMENT

WESLACO

MMD01

01

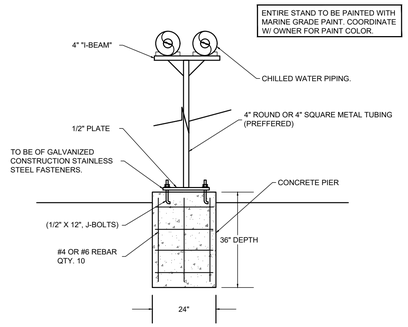
TYPICAL FOR ALL WALL PENETRATIONS



WALL PIPE PENETRATION DETAIL

NO SCALE

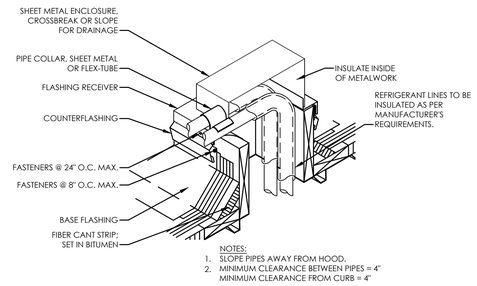
02



PIPE SUPPORT DETAIL

NO SCALE

03

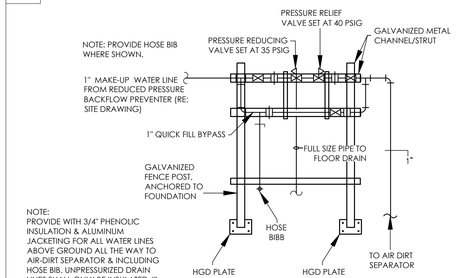


NOTES:
1. SLOPE PIPES AWAY FROM HOOD.
2. MINIMUM CLEARANCE BETWEEN PIPES = 4" MINIMUM CLEARANCE FROM CURB = 4"

ROOF PITCH PAN DETAIL

NO SCALE

04

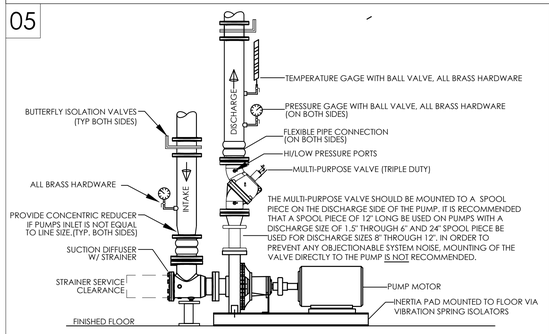


NOTE:
PROVIDE WITH 3/4" PHENOLIC INSULATION & ALUMINUM JACKETING FOR ALL WATER LINES ABOVE GROUND ALL THE WAY TO AIR-DIRT SEPARATOR & INCLUDING HOSE BIB. UNPRESSURIZED DRAIN LINES SHALL ONLY BE INSULATED 6' FROM TEE.

CHILLED WATER SYSTEM MAKE UP WATER

NO SCALE

05

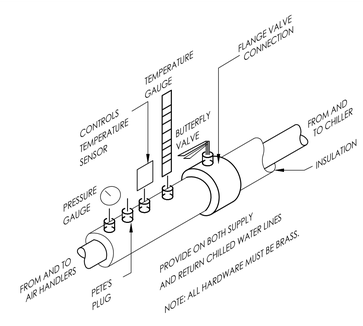


THE MULTI-PURPOSE VALVE SHOULD BE MOUNTED TO A SPOOL PIECE ON THE DISCHARGE SIDE OF THE PUMP. IT IS RECOMMENDED THAT A SPOOL PIECE OF 12" LONG BE USED ON PUMPS WITH A DISCHARGE SIZE OF 1.5" THROUGH 6" AND 24" SPOOL PIECE BE USED FOR DISCHARGE SIZES 8" THROUGH 12". IN ORDER TO PREVENT ANY OBJECTIONABLE SYSTEM NOISE, MOUNTING OF THE VALVE DIRECTLY TO THE PUMP IS NOT RECOMMENDED.

PUMP DETAIL(END SUCTION)

NO SCALE

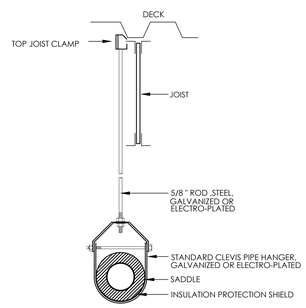
06



CHILLED WATER LINE AT EACH MECHANICAL ROOM

NO SCALE

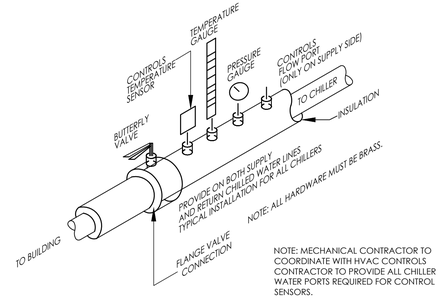
07



PIPE HANGER DETAIL

NOT TO SCALE

08

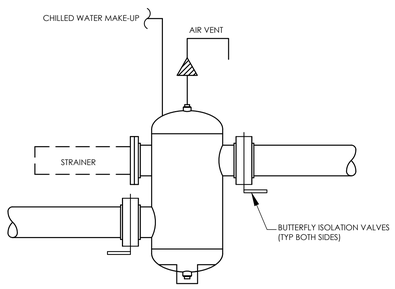


NOTE: MECHANICAL CONTRACTOR TO COORDINATE WITH HVAC CONTROLS CONTRACTOR TO PROVIDE ALL CHILLER WATER PORTS REQUIRED FOR CONTROL SENSORS.

CHILLED WATER LINE AT CHILLERS

NO SCALE

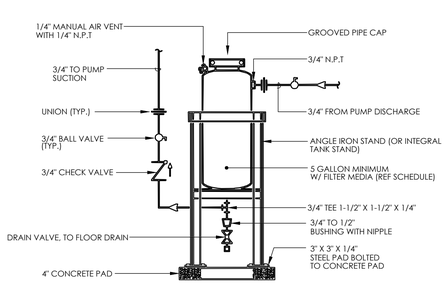
09



AIR-DIRT SEPARATOR

NO SCALE

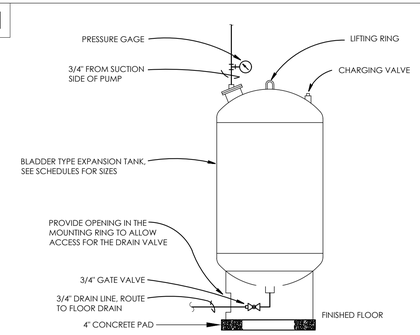
10



CHEMICAL BYPASS FEEDER

NO SCALE

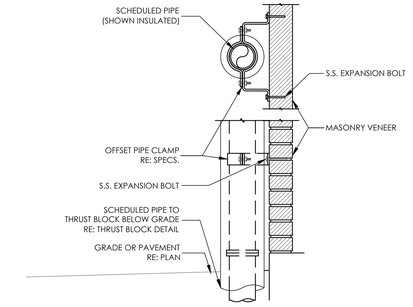
11



EXPANSION TANK DETAIL

NO SCALE

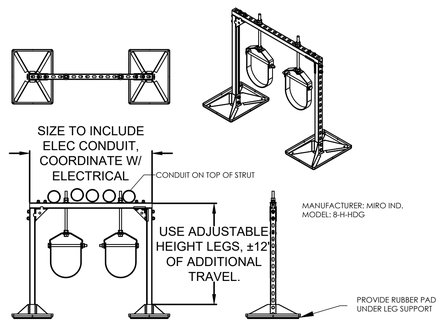
12



VERTICAL PIPING @ MASONRY WALL

NO SCALE

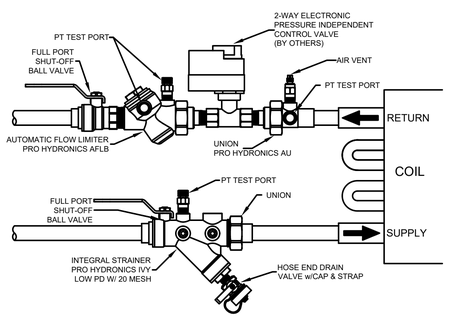
13



ROOF PIPE SUPPORTS

NO SCALE

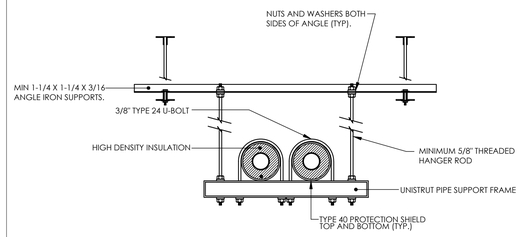
14



HYDRONIC COIL CONNECTION (2-WAY)

AUTOMATIC BALANCING

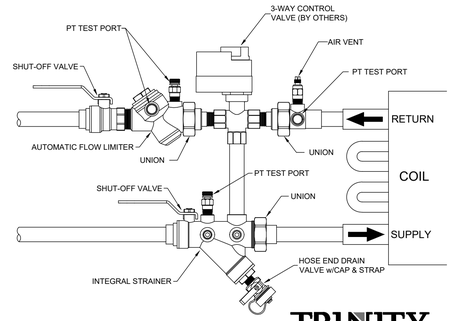
15



HORIZONTAL PIPE SUPPORT

NO SCALE

16



HYDRONIC COIL CONNECTION (3-WAY)

AUTOMATIC BALANCING

TRINITY MEP ENGINEERING
3533 Moreland Dr. Ste A I Weslaco, Tx 78596
p:956.973.0500 I f:956-351-5750
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Texas Registered Engineering Firm - F10362
Project number: 23.1.40

06/20/2024
STATE OF TEXAS
Wilford L. McGee III
121939
LICENSED PROFESSIONAL ENGINEER

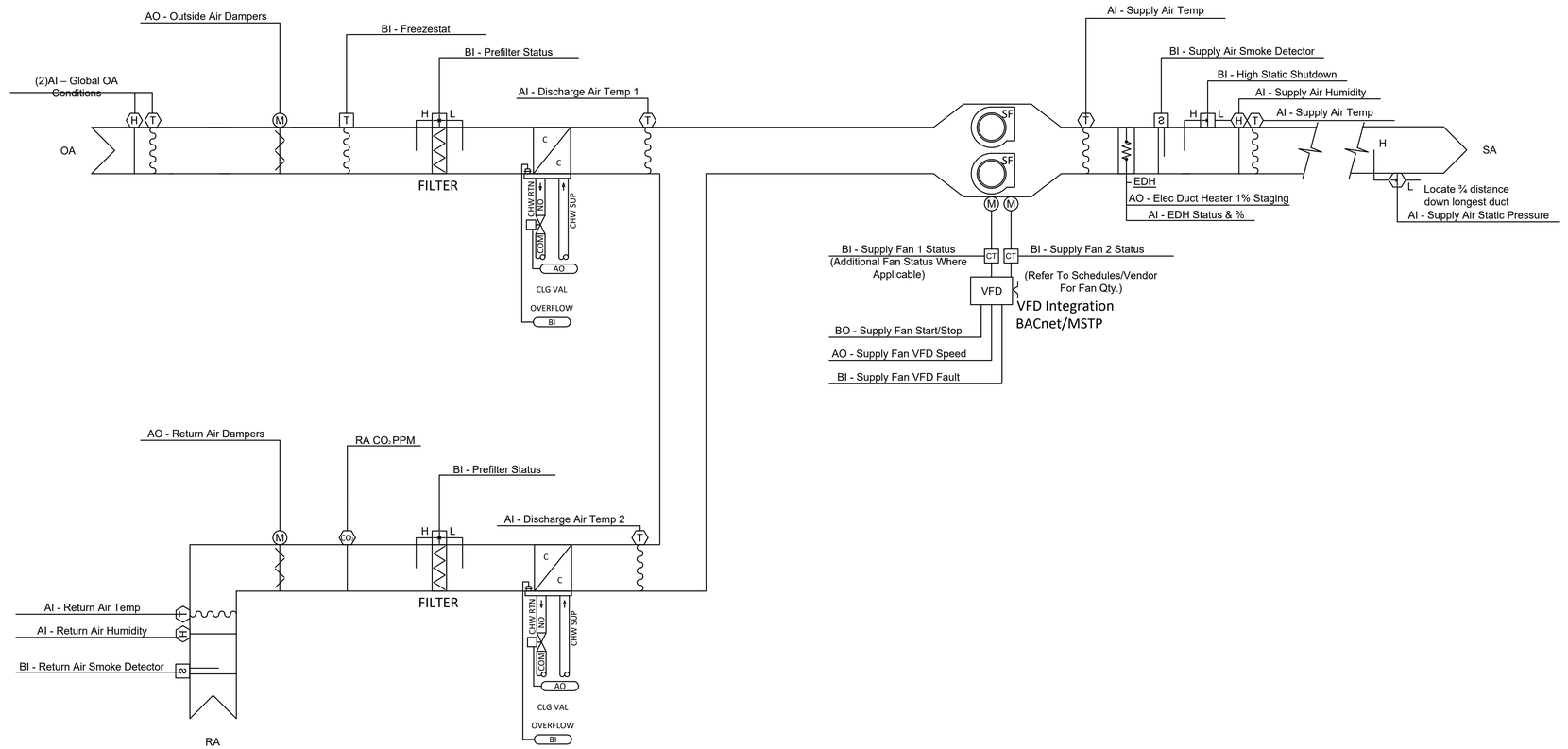
PROJECT # : 23.1.40
DATE: 06/20/24
CHECKED BY: LM

REVISION:

WISD MEMORIAL ELEMENTARY SCHOOL
HVAC REPLACEMENT

WESLACO TEXAS

MMD02



DUAL PATH CW MULTI-ZONE VARIABLE AIR VOLUME AIR HANDLING UNIT (TYPICAL)

THE AHU SHALL RUN BASED ON A USER DEFINED OCCUPANCY SCHEDULE OR WHEN REQUESTED FOR HEATING OR COOLING DURING UNOCCUPIED MODE. TO PREVENT SHORT CYCLING, THE SUPPLY FAN SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME.

THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM ON ANY OF THE FOLLOWING CONDITIONS:

- FREEZE PROTECTION STATUS IN ALARM
- SUPPLY AIR HIGH STATIC
- SMOKE DETECTOR STATUS IN ALARM
- AHU OPTIMAL START SHALL START PRIOR TO SCHEDULED OCCUPANCY BASED ON THE TIME NECESSARY FOR THE ZONES TO REACH THEIR OCCUPIED SETPOINTS. THE START TIME SHALL AUTOMATICALLY ADJUST BASED ON CHANGES IN OUTSIDE AIR TEMPERATURE AND ZONE TEMPERATURES.

MINIMUM OUTSIDE AIR VENTILATION:

MINIMUM OUTSIDE AIR VENTILATION - CARBON DIOXIDE (CO2) CONTROL:

THE OUTSIDE AIR DAMPERS WILL MAINTAIN A MINIMUM POSITION OF 10% (ADJ.) OPEN WHENEVER OCCUPIED. WHEN IN THE OCCUPIED MODE, THE CONTROLLER WILL MEASURE THE RETURN AIR CO2 CONCENTRATION AND MODULATE THE OUTSIDE AIR DAMPERS OPEN (AND IF NEEDED START MODULATING DOWN THE RA DAMPERS) ON RISING CO2 CONCENTRATIONS, OVERRIDING NORMAL DAMPER OPERATIONS TO MAINTAIN A CO2 SETPOINT OF 800 PPM TO 1000 PPM (ADJ.)

RETURN AIR CARBON DIOXIDE (CO2) CONCENTRATION MONITORING & DEMAND CONTROL VENTILATION (DCV):

THE CONTROLLER SHALL MEASURE THE RETURN AIR CO2 CONCENTRATION. VARIABLE OUTSIDE AIR DAMPERS (& RETURN AIR DAMPERS IF REQUIRED) SHALL MODULATE TO MAINTAIN CO2 CONCENTRATIONS BETWEEN 800-1100 PPM (ADJ). OPEN/CLOSED OA DAMPERS SHALL OPEN WHEN CO2 CONCENTRATION REACHES 1100 PPM (ADJ) OR HIGHER AND SHALL CLOSE WHEN CO2 CONCENTRATION REACHES 800 PPM (ADJ) OR LOWER.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH RETURN AIR CARBON DIOXIDE CONCENTRATION: IF THE RETURN AIR CO2 CONCENTRATION IS GREATER THAN 1200PPM (ADJ.) WHEN IN THE UNIT IS RUNNING.

OUTSIDE AIR COOLING/HEATING STAGES:

THE CONTROLLER SHALL MEASURE THE OUTSIDE AIR SUPPLY AIR TEMPERATURE AND MODULATED COOL/HEAT TO MAINTAIN OUTSIDE SUPPLY AIR SETPOINT, INITIALLY SET AT 52°F (ADJ).

THE COOLING SHALL BE ENABLED WHENEVER:

- OUTSIDE AIR TEMPERATURE IS GREATER THAN 54°F (ADJ.)
- AND THE SUPPLY FAN STATUS IS ON
- AND THE OUTSIDE AIR DAMPER IS OPEN

THE HEATING SHALL BE ENABLED WHENEVER:

- OUTSIDE AIR TEMPERATURE IS LESS THAN 50°F (ADJ.)
- AND THE SUPPLY FAN STATUS IS ON
- AND THE OUTSIDE AIR DAMPER IS OPEN

SUPPLY AIR DUCT STATIC PRESSURE CONTROL:

THE CONTROLLER SHALL MEASURE DUCT STATIC PRESSURE AND MODULATE THE SUPPLY FAN VFD SPEED TO MAINTAIN A DUCT STATIC PRESSURE SETPOINT. THE SPEED SHALL NOT DROP BELOW 10% (ADJ.).

THE STATIC PRESSURE SETPOINT SHALL BE RESET BASED UPON THE POSITION OF THE ZONE DAMPERS, WITH A GOAL OF REDUCING THE STATIC PRESSURE UNTIL AT LEAST ONE ZONE DAMPER IS NEARLY WIDE OPEN. THE INITIAL DUCT STATIC PRESSURE SETPOINT SHALL BE 2.0IN H2O (ADJ.). IF NO ZONE DAMPER IS NEARLY WIDE OPEN, THE SETPOINT SHALL INCREMENTALLY RESET DOWN TO A MINIMUM OF 1.25IN H2O (ADJ.) . AS ONE OR MORE DAMPERS NEARS THE WIDE OPEN POSITION, THE SETPOINT SHALL INCREMENTALLY RESET UP TO A MAXIMUM OF 1.8IN H2O (ADJ.).

THE OUTSIDE AIR IS DRAWN THROUGH ITS OWN COOLING COIL TO DEHUMIDIFY IT, WHICH THEN MIXES WITH THE AIR DRAWN THROUGH THE RETURN COOLING COIL. UNDER PART LOAD CONDITIONS, THIS ALLOWS SUPPLY AIR TO RESET TO HIGHER DRY BULB TEMPERATURES WHILE STILL MAINTAINING LOW WET BULB CONDITIONS.

SUPPLY AIR TEMPERATURE SETPOINT - OPTIMIZED:

THE CONTROLLER SHALL MONITOR THE SUPPLY AIR TEMPERATURE AND SHALL MAINTAIN A SUPPLY AIR TEMPERATURE SETPOINT RESET BASED ON ZONE COOLING AND HEATING REQUIREMENTS.

THE SUPPLY AIR TEMPERATURE SETPOINT SHALL BE RESET FOR COOLING BASED ON ZONE COOLING REQUIREMENTS AS FOLLOWS:

THE INITIAL SUPPLY AIR TEMPERATURE SETPOINT SHALL BE 55°F (ADJ.). AS COOLING DEMAND INCREASES, THE SETPOINT SHALL INCREMENTALLY RESET DOWN TO A MINIMUM OF 53°F (ADJ.). AS COOLING DEMAND DECREASES, THE SETPOINT SHALL INCREMENTALLY RESET UP TO A MAXIMUM OF 60°F (ADJ.) .

IF MORE ZONES NEED HEATING THAN COOLING (HEAT MODE), THEN THE SUPPLY AIR TEMPERATURE SETPOINT SHALL BE RESET FOR HEATING AS FOLLOWS: THE INITIAL SUPPLY AIR TEMPERATURE SETPOINT SHALL BE 80°F (ADJ.). AS HEATING DEMAND INCREASES, THE SETPOINT SHALL INCREMENTALLY RESET UP TO A MAXIMUM OF 85°F (ADJ.). AS HEATING DEMAND DECREASES, THE SETPOINT SHALL INCREMENTALLY RESET DOWN TO A MINIMUM OF 72°F (ADJ.).

RETURN AIR COOLING/HEATING STAGES:

THE CONTROLLER SHALL MEASURE THE SUPPLY AIR TEMPERATURE AND MODULATED CHILLED WATER VALVES TO MAINTAIN SUPPLY AIR COOLING SETPOINT.

THE COOLING SHALL BE ENABLED WHENEVER:

- OUTSIDE AIR TEMPERATURE IS GREATER THAN 60°F (ADJ.).
- AND THE SUPPLY FAN STATUS IS ON.
- AND AHU IS NOT IN HEAT MODE.

THE HEATING SHALL BE ENABLED WHENEVER:

- OUTSIDE AIR TEMPERATURE IS LESS THAN 55°F (ADJ)
- AND THE SUPPLY FAN STATUS IS ON
- AND THE AHU IS IN HEAT MODE

ELECTRIC HEATING WITH SCR:

THE CONTROLLER SHALL MEASURE THE SUPPLY AIR TEMPERATURE AND MODULATE THE HEATING TO MAINTAIN ITS SUPPLY AIR TEMPERATURE SETPOINT.

THE HEATING WILL BE ENABLED WHENEVER:

- THE AHU IS IN HEAT MODE
- AND THE SUPPLY AIR TEMPERATURE IS BELOW SUPPLY AIR TEMPERATURE SETPOINT
- AND THE FAN IS ON.

DEHUMIDIFICATION (DURING COOLING):

WHEN RA RH% REACHES OR EXCEEDS 60% (ADJ.), BAS SHALL MODULATE CW VALVE ON OA COIL, TO RESET COIL LAT TO 50°F (ADJ.) AND RA COIL TO RESET TO 60°F (ADJ.). AFTER 15 MINUTES (ADJ.), IF RH IS NOT BELOW 55% (ADJ.), RA COIL LAT MAY CONTINUE TO RESET UP TO 65°F (ADJ.) BASED ON SA TEMP RESET SEQUENCE DURING DEHUMIDIFICATION. WHEN RA RH% DROPS BELOW 55% (ADJ.), SYSTEM TO REVERT BACK TO NORMAL COOLING AFTER AN ADDITIONAL 15 MINUTE (ADJ.) TIMER EXPIRES OR RH DROPS BELOW 50% (ADJ.), WHICHEVER COMES FIRST.

PREFILTER STATUS:

THE CONTROLLER SHALL MONITOR THE PREFILTER STATUS.

THE CONTROLLER SHALL MONITOR:

- RETURN AIR HUMIDITY.
- RETURN AIR TEMPERATURE.
- SUPPLY AIR HUMIDITY.
- SUPPLY AIR TEMPERATURE.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- SUPPLY FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- SUPPLY FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- HIGH SUPPLY AIR STATIC PRESSURE: IF THE SUPPLY AIR STATIC PRESSURE IS 25% (ADJ.) GREATER THAN SETPOINT.
- LOW SUPPLY AIR STATIC PRESSURE: IF THE SUPPLY AIR STATIC PRESSURE IS 25% (ADJ.) LESS THAN SETPOINT.
- SUPPLY FAN VFD FAULT.
- FREEZE STAT TRIPPED ALARM
- HIGH SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS 5°F (ADJ.) GREATER THAN SETPOINT.
- LOW SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS 5°F (ADJ.) LESS THAN SETPOINT.
- PREFILTER CHANGE REQUIRED: PREFILTER DIFFERENTIAL PRESSURE EXCEEDS A USER DEFINABLE LIMIT (ADJ.).
- FINAL FILTER CHANGE REQUIRED: FINAL FILTER DIFFERENTIAL PRESSURE EXCEEDS A USER DEFINABLE LIMIT (ADJ.).
- HIGH RETURN AIR HUMIDITY: IF THE RETURN AIR HUMIDITY IS GREATER THAN 70% (ADJ.).
- LOW RETURN AIR HUMIDITY: IF THE RETURN AIR HUMIDITY IS LESS THAN 35% (ADJ.).
- HIGH SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS GREATER THAN 120°F (ADJ.).
- LOW SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS LESS THAN 45°F (ADJ.).

PROJECT # : 23.1.40
DATE: 06/20/24
CHECKED BY: LM

REVISION:

WISD MEMORIAL ELEMENTARY SCHOOL HVAC REPLACEMENT

TEXAS

WESLACO

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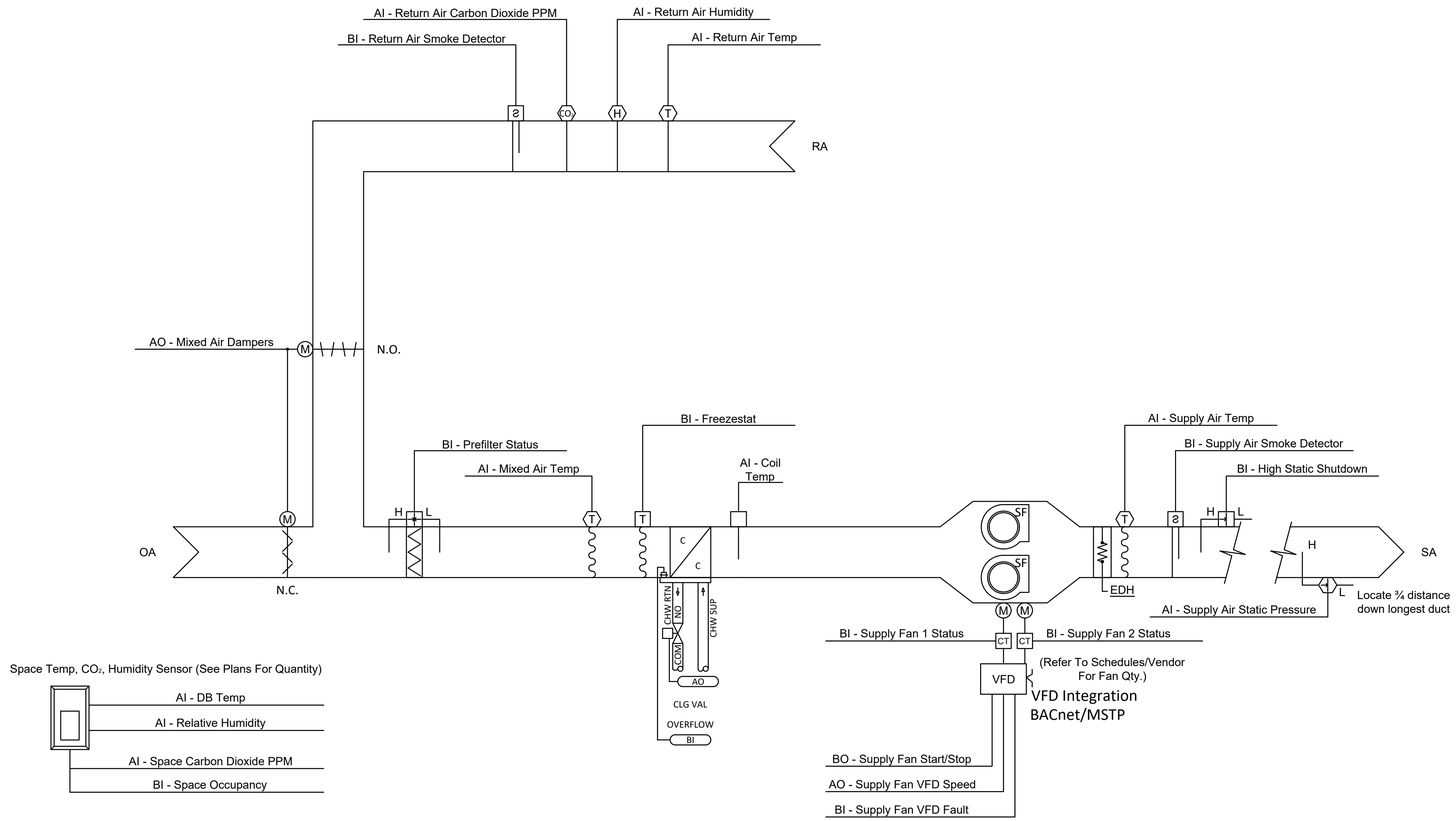
Texas Registered Engineering Firm - F10362
Project number: 23.1.40

06/20/2024

STATE OF TEXAS
Wilford L. McGee III
121939
REGISTERED
PROFESSIONAL ENGINEER

MMC01



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WESLACO

TEXAS

SINGLE PATH CW SINGLE ZONE VAV

RUN CONDITIONS - REQUESTED:
THE UNIT SHALL RUN WHENEVER:
- SCHEDULED OCCUPIED
- UNOCCUPIED BEYOND SETPOINT

FREEZE PROTECTION:
A HARDWIRED, LOW LIMIT TEMPERATURE SWITCH SHALL BE ELECTRICALLY INTERLOCKED WITH THE VARIABLE SPEED DRIVE. IF THE LOW LIMIT TEMPERATURE SWITCH IS TRIPPED 38F, THE OUTSIDE AIR DAMPER SHALL CLOSE, AND THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A FREEZESTAT STATUS. A MANUAL RESET OF THE LOW LIMIT TEMPERATURE SWITCH SHALL BE REQUIRED TO RESTART THE FAN.

HIGH STATIC SHUTDOWN:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING AN HIGH STATIC SHUTDOWN SIGNAL.

SMOKE DETECTION SHUTDOWN:
IF THE BUILDING DOES NOT HAVE A FIRE ALARM SYSTEM, THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM TO THE BAS UPON RECEIVING A SUPPLY OR RETURN AIR SMOKE DETECTOR ALARM STATUS. IF THE BUILDING HAS A FIRE ALARM SYSTEM, THE BUILDING FIRE ALARM SYSTEM SHALL PROVIDE AN AIR HANDLER SHUTDOWN SIGNAL TO EACH AIR HANDLER. THE BUILDING FIRE ALARM SYSTEM SHALL PROVIDE ONE DIGITAL OUTPUT TO THE BAS TO INDICATE AN ALARM CONDITION. WIRING FOR THIS ALARM POINT SHALL BE
PROVIDED BY THE BAS PROVIDER THROUGH COORDINATION WITH THE FIRE ALARM SYSTEM PROVIDER.

AHU OPTIMAL START:
THE UNIT SHALL START PRIOR TO SCHEDULED OCCUPANCY BASED ON THE TIME NECESSARY FOR THE ZONES TO REACH THEIR OCCUPIED SETPOINTS. THE START TIME SHALL AUTOMATICALLY ADJUST BASED ON CHANGES IN OUTSIDE AIR TEMPERATURE AND ZONE TEMPERATURES.

SUPPLY FAN:
THE SUPPLY FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN, UNLESS SHUTDOWN ON SAFETIES. TO PREVENT SHORT CYCLING, THE SUPPLY FAN SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME.
ALARMS SHALL BE PROVIDED AS FOLLOWS:
- SUPPLY FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- SUPPLY FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.

SUPPLY AIR TEMPERATURE SETPOINT - OPTIMIZED:
THE CONTROLLER SHALL MONITOR THE SUPPLY AIR TEMPERATURE AND SHALL MAINTAIN A SUPPLY AIR TEMPERATURE SETPOINT RESET BASED ON ZONE COOLING AND HEATING REQUIREMENTS
THE SUPPLY AIR TEMPERATURE SETPOINT SHALL BE RESET FOR COOLING BASED ON ZONE COOLING REQUIREMENTS AS FOLLOWS:
- THE INITIAL SUPPLY AIR TEMPERATURE SETPOINT SHALL BE 55°F (ADJ.).
- AS COOLING DEMAND INCREASES, THE SETPOINT SHALL INCREMENTALLY RESET DOWN TO A MINIMUM OF 53°F (ADJ.).
- AS COOLING DEMAND DECREASES, THE SETPOINT SHALL INCREMENTALLY RESET UP TO A MAXIMUM OF 65°F (ADJ.) .

IF MORE ZONES NEED HEATING THAN COOLING, THEN THE SUPPLY AIR TEMPERATURE SETPOINT SHALL BE RESET FOR HEATING AS FOLLOWS:
- THE INITIAL SUPPLY AIR TEMPERATURE SETPOINT SHALL BE 82°F (ADJ.).
- AS HEATING DEMAND INCREASES, THE SETPOINT SHALL INCREMENTALLY RESET UP TO A MAXIMUM OF 85°F (ADJ.).
- AS HEATING DEMAND DECREASES, THE SETPOINT SHALL INCREMENTALLY RESET DOWN TO A MINIMUM OF 72°F (ADJ.).

COOLING/HEATING STAGES:
THE CONTROLLER SHALL MEASURE THE SUPPLY AIR TEMPERATURE AND STAGE THE COMPRESSORS TO MAINTAIN SUPPLY AIR COOLING SETPOINT.

THE COOLING SHALL BE ENABLED WHENEVER:
- OUTSIDE AIR TEMPERATURE IS GREATER THAN 60°F (ADJ.)
- AND THE SUPPLY FAN STATUS IS ON
- AND THE AHU IS NOT IN HEAT MODE

THE HEATING SHALL BE ENABLED WHENEVER:
- OUTSIDE AIR TEMPERATURE IS LESS THAN 55°F (ADJ.)
- AND THE SUPPLY FAN STATUS IS ON
- AND THE AHU IS IN HEAT MODE

LOW SUPPLY AIR TEMPERATURE ALARM:
THE CONTROLLER SHALL ALARM IF THE SUPPLY AIR TEMPERATURE IS LESS THAN 45°F (ADJ.).

ECONOMIZER:
THE CONTROLLER SHALL MEASURE THE MIXED AIR TEMPERATURE AND MODULATE THE ECONOMIZER DAMPERS IN SEQUENCE TO MAINTAIN A SETPOINT 2°F (ADJ.) LESS THAN THE SUPPLY AIR TEMPERATURE SETPOINT. THE OUTSIDE AIR DAMPERS SHALL MAINTAIN A MINIMUM ADJUSTABLE POSITION OF 20% (ADJ.) OPEN WHENEVER OCCUPIED.
THE ECONOMIZER SHALL BE ENABLED WHENEVER:
- OUTSIDE AIR TEMPERATURE IS LESS THAN 65°F (ADJ.).
- AND THE OUTSIDE AIR ENTHALPY IS LESS THAN THE RETURN AIR ENTHALPY.
- AND THE SUPPLY FAN STATUS IS ON.

THE ECONOMIZER SHALL CLOSE WHENEVER:
- MIXED AIR TEMPERATURE DROPS FROM 40°F TO 35°F (ADJ.)
- OR THE FREEZESTAT (IF PRESENT) IS ON.
- OR ON LOSS OF SUPPLY FAN STATUS.

THE OUTSIDE AIR DAMPERS SHALL CLOSE AND THE RETURN AIR DAMPER SHALL OPEN WHEN THE UNIT IS OFF. IF OPTIMAL START UP IS AVAILABLE THE MIXED AIR DAMPER SHALL OPERATE AS DESCRIBED IN THE OCCUPIED MODE EXCEPT THAT THE OUTSIDE AIR DAMPER SHALL MODULATE TO FULLY CLOSED.

MINIMUM OUTSIDE AIR VENTILATION - FIXED PERCENTAGE:
THE OUTSIDE AIR DAMPERS SHALL MAINTAIN A MINIMUM ADJUSTABLE POSITION DURING BUILDING OCCUPIED HOURS AND BE CLOSED DURING UNOCCUPIED HOURS.

FILTER STATUS:
THE CONTROLLER SHALL MONITOR THE FILTER STATUS AND GENERATE AN ALARM AT THE BAS WHEN DIFFERENTIAL PRESSURE IS EXCEEDED.

MIXED AIR TEMPERATURE:
THE CONTROLLER SHALL MONITOR THE MIXED AIR TEMPERATURE AND USE AS REQUIRED FOR ECONOMIZER CONTROL (IF PRESENT) OR PREHEATING CONTROL (IF PRESENT).
ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH MIXED AIR TEMP: IF THE MIXED AIR TEMPERATURE IS GREATER THAN 90°F (ADJ.).
- LOW MIXED AIR TEMP: IF THE MIXED AIR TEMPERATURE IS LESS THAN 45°F (ADJ.).

RETURN AIR CARBON DIOXIDE (CO2) CONCENTRATION MONITORING & DEMAND CONTROL VENTILATION (DCV):
THE CONTROLLER SHALL MEASURE THE RETURN AIR CO2 CONCENTRATION. VARIABLE OUTSIDE AIR DAMPERS (& RETURN AIR DAMPERS IF REQUIRED) SHALL MODULATE TO MAINTAIN CO2 CONCENTRATIONS BETWEEN 800-1100 PPM (ADJ). OPEN/CLOSED OA DAMPERS SHALL OPEN WHEN CO2 CONCENTRATION REACHES 1100 PPM (ADJ) OR HIGHER AND SHALL CLOSE WHEN CO2 CONCENTRATION REACHES 800 PPM (ADJ) OR LOWER.
ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH RETURN AIR CARBON DIOXIDE CONCENTRATION: IF THE RETURN AIR CO2 CONCENTRATION IS GREATER THAN 1200PPM (ADJ.) WHEN IN THE UNIT IS RUNNING.

RETURN AIR HUMIDITY:
THE CONTROLLER SHALL MONITOR THE RETURN AIR HUMIDITY AND USE AS REQUIRED FOR ECONOMIZER CONTROL (IF PRESENT) OR HUMIDITY CONTROL (IF PRESENT).
ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH RETURN AIR HUMIDITY: IF THE RETURN AIR HUMIDITY IS GREATER THAN 70% (ADJ.).
- LOW RETURN AIR HUMIDITY: IF THE RETURN AIR HUMIDITY IS LESS THAN 35% (ADJ.).

RETURN AIR TEMPERATURE:
THE CONTROLLER SHALL MONITOR THE RETURN AIR TEMPERATURE AND USE AS REQUIRED FOR SETPOINT CONTROL OR ECONOMIZER CONTROL (IF PRESENT).
ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH RETURN AIR TEMP: IF THE RETURN AIR TEMPERATURE IS GREATER THAN 90°F (ADJ.).
- LOW RETURN AIR TEMP: IF THE RETURN AIR TEMPERATURE IS LESS THAN 45°F (ADJ.).

SUPPLY AIR TEMPERATURE:
THE CONTROLLER SHALL MONITOR THE SUPPLY AIR TEMPERATURE.
ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS GREATER THAN 120°F (ADJ.).
- LOW SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS LESS THAN 45°F (ADJ.).

ELECTRIC HEATING WITH SCR:
THE CONTROLLER SHALL MEASURE THE SUPPLY AIR TEMPERATURE AND MODULATE THE HEATING TO MAINTAIN ITS SUPPLY AIR TEMPERATURE SETPOINT AT 80°F (ADJ.)
THE HEATING WILL BE ENABLED WHENEVER:
- THE AHU IS IN HEAT MODE
- AND THE SUPPLY AIR TEMPERATURE IS BELOW SUPPLY AIR TEMPERATURE SETPOINT
- AND THE FAN IS ON.

HEAT/COOL UNOCCUPIED SETBACK:
DURING SCHEDULED HOURS OF OPERATION, IF OCCUPANCY SENSORS (ALL) DETECT SPACE IS UNOCCUPIED FOR 15 MINS, SPACE TEMPERATURE SETPOINT SHALL RESET TO 76°F (COOLING) AND 66°F (HEATING) AND OA DAMPERS SHALL RESET TO 5% (ADJ.)

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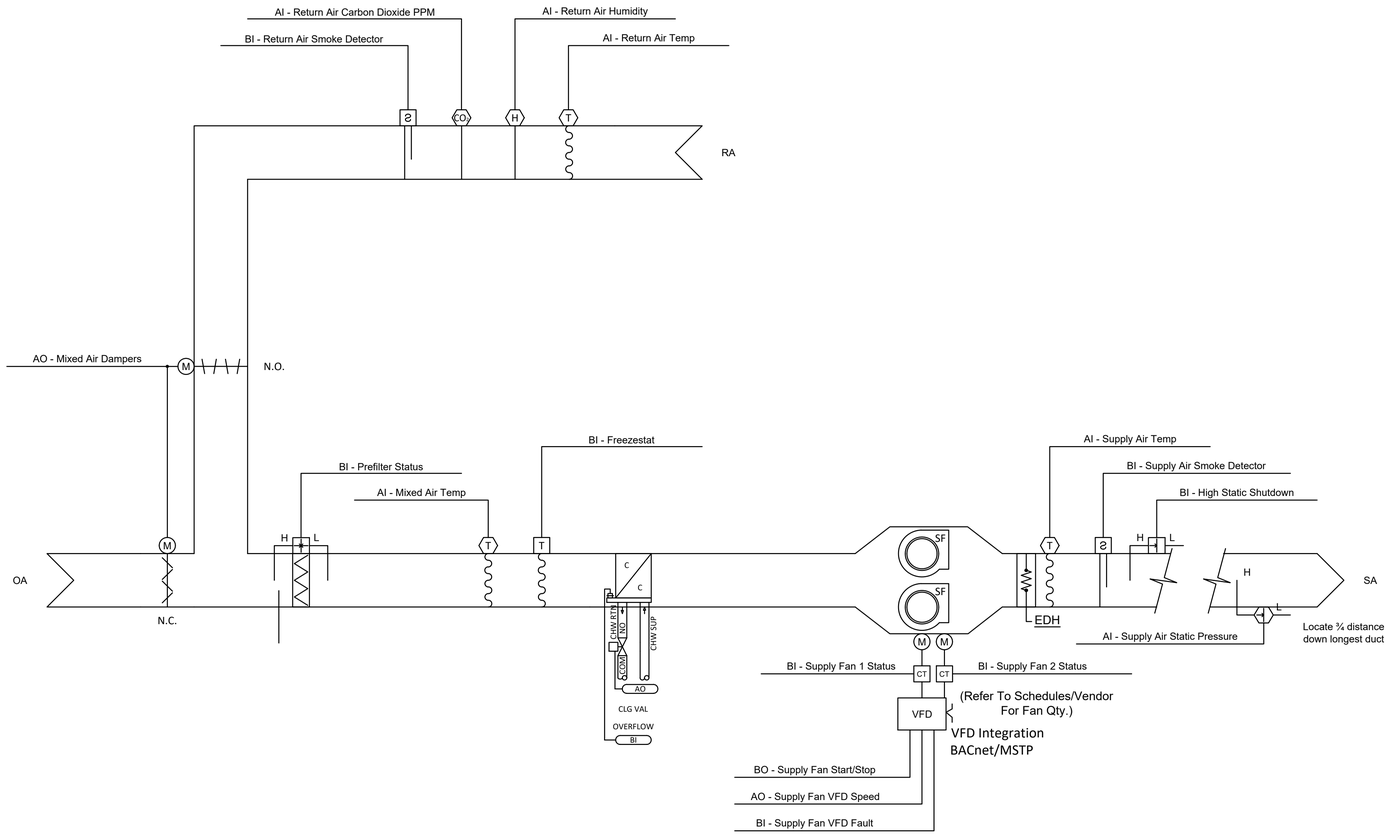

SINGLE PATH CW MULTIZONE VARIABLE AIR VOLUME - AHU (TYPICAL

RUN CONDITIONS - REQUESTED:
THE UNIT SHALL RUN WHENEVER:
- ANY ZONE IS OCCUPIED.
- OR A DEFINABLE NUMBER OF UNOCCUPIED ZONES NEED HEATING OR COOLING.

HIGH STATIC SHUTDOWN:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING AN HIGH STATIC SHUTDOWN SIGNAL.

SUPPLY FAN:
THE SUPPLY FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN, UNLESS SHUTDOWN ON SAFETIES. TO PREVENT SHORT CYCLING, THE SUPPLY FAN SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME.
ALARMS SHALL BE PROVIDED AS FOLLOWS:
- SUPPLY FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- SUPPLY FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- SUPPLY FAN RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

SUPPLY AIR DUCT STATIC PRESSURE CONTROL:
THE CONTROLLER SHALL MEASURE DUCT STATIC PRESSURE AND MODULATE THE SUPPLY FAN VFD SPEED TO MAINTAIN A DUCT STATIC PRESSURE SETPOINT. THE SPEED SHALL NOT DROP BELOW 30% (ADJ.). THE STATIC PRESSURE SETPOINT SHALL BE RESET BASED UPON THE POSITION OF THE ZONE DAMPERS, WITH A GOAL OF REDUCING THE STATIC PRESSURE UNTIL AT LEAST ONE ZONE DAMPER IS NEARLY WIDE OPEN.
- THE INITIAL DUCT STATIC PRESSURE SETPOINT SHALL BE 1.5IN H2O (ADJ.).
- IF NO ZONE DAMPER IS NEARLY WIDE OPEN, THE SETPOINT SHALL INCREMENTALLY RESET DOWN TO A MINIMUM OF 1.3IN H2O (ADJ.) .
- AS ONE OR MORE DAMPERS NEARS THE WIDE OPEN POSITION, THE SETPOINT SHALL INCREMENTALLY RESET UP TO A MAXIMUM OF 1.8IN H2O (ADJ.).

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH SUPPLY AIR STATIC PRESSURE: IF THE SUPPLY AIR STATIC PRESSURE IS 25% (ADJ.) GREATER THAN SETPOINT.
- LOW SUPPLY AIR STATIC PRESSURE: IF THE SUPPLY AIR STATIC PRESSURE IS 25% (ADJ.) LESS THAN SETPOINT.
- SUPPLY FAN VFD FAULT.

HEATING AND COOLING:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND MODULATE HEAT/COOL TO MAINTAIN ITS SETPOINT.
THE HEATING SHALL BE ENABLED WHENEVER:
- OUTSIDE AIR TEMPERATURE IS LESS THAN 65°F (ADJ.).
- AND THE FAN STATUS IS ON.

THE COOLING SHALL BE ENABLED WHENEVER:
- OUTSIDE AIR TEMPERATURE IS GREATER THAN 60°F (ADJ.).
- AND THE FAN STATUS IS ON.

ECONOMIZER:
THE CONTROLLER SHALL MEASURE THE MIXED AIR TEMPERATURE AND MODULATE THE ECONOMIZER DAMPERS IN SEQUENCE TO MAINTAIN A SETPOINT 2°F (ADJ.) LESS THAN THE SUPPLY AIR TEMPERATURE SETPOINT. THE OUTSIDE AIR DAMPERS SHALL MAINTAIN A MINIMUM ADJUSTABLE POSITION OF 20% (ADJ.) OPEN WHENEVER OCCUPIED.
THE ECONOMIZER SHALL BE ENABLED WHENEVER:
- OUTSIDE AIR TEMPERATURE IS LESS THAN 65°F (ADJ.).
- AND THE OUTSIDE AIR TEMPERATURE IS LESS THAN THE RETURN AIR TEMPERATURE.
- AND THE SUPPLY FAN STATUS IS ON.

THE ECONOMIZER SHALL CLOSE WHENEVER:
- MIXED AIR TEMPERATURE DROPS FROM 40°F TO 35°F (ADJ.).
- OR THE FREEZESTAT (IF PRESENT) IS ON.
- OR ON LOSS OF SUPPLY FAN STATUS.

THE OUTSIDE AIR DAMPERS SHALL CLOSE AND THE RETURN AIR DAMPER SHALL OPEN WHEN THE UNIT IS OFF. IF OPTIMAL START UP IS AVAILABLE THE MIXED AIR DAMPER SHALL OPERATE AS DESCRIBED IN THE OCCUPIED MODE EXCEPT THAT THE OUTSIDE AIR DAMPER SHALL MODULATE TO FULLY CLOSED.

MINIMUM OUTSIDE AIR VENTILATION - FIXED PERCENTAGE:
THE OUTSIDE AIR DAMPERS SHALL MAINTAIN A MINIMUM ADJUSTABLE POSITION DURING BUILDING OCCUPIED HOURS AND BE CLOSED DURING UNOCCUPIED HOURS.

PREFILTER DIFFERENTIAL PRESSURE MONITOR:
THE CONTROLLER SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE PREFILTER.
ALARMS SHALL BE PROVIDED AS FOLLOWS:
- PREFILTER CHANGE REQUIRED: PREFILTER DIFFERENTIAL PRESSURE EXCEEDS A USER DEFINABLE LIMIT (ADJ.).
- TIME OF HOURS OPERATION WEIGHTED WITH UNIT FAN SPEED.

MIXED AIR TEMPERATURE:
THE CONTROLLER SHALL MONITOR THE MIXED AIR TEMPERATURE AND USE AS REQUIRED FOR ECONOMIZER CONTROL (IF PRESENT) OR PREHEATING CONTROL (IF PRESENT).
ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH MIXED AIR TEMP: IF THE MIXED AIR TEMPERATURE IS GREATER THAN 90°F (ADJ.).
- LOW MIXED AIR TEMP: IF THE MIXED AIR TEMPERATURE IS LESS THAN 45°F (ADJ.).

RETURN AIR TEMPERATURE:
THE CONTROLLER SHALL MONITOR THE RETURN AIR TEMPERATURE AND USE AS REQUIRED FOR SETPOINT CONTROL OR ECONOMIZER CONTROL (IF PRESENT).
ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH RETURN AIR TEMP: IF THE RETURN AIR TEMPERATURE IS GREATER THAN 90°F (ADJ.).
- LOW RETURN AIR TEMP: IF THE RETURN AIR TEMPERATURE IS LESS THAN 45°F (ADJ.).

SUPPLY AIR TEMPERATURE:
THE CONTROLLER SHALL MONITOR THE SUPPLY AIR TEMPERATURE.
ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS GREATER THAN 100°F (ADJ.).
- LOW SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS LESS THAN 45°F (ADJ.).

SUPPLEMENTAL ELECTRIC HEATING WITH SCR:
THE CONTROLLER SHALL MEASURE THE SUPPLY AIR TEMPERATURE AND MODULATE THE HEATING TO MAINTAIN ITS SUPPLY AIR TEMPERATURE SETPOINT.
THE HEATING WILL BE ENABLED WHENEVER:
- THE AHU IS IN HEAT MODE
- AND THE SUPPLY AIR TEMPERATURE IS BELOW SUPPLY AIR TEMPERATURE SETPOINT
- AND THE FAN IS ON.

RETURN AIR CARBON DIOXIDE (CO2) CONCENTRATION MONITORING & DEMAND CONTROL VENTILATION (DCV):
THE CONTROLLER SHALL MEASURE THE RETURN AIR CO2 CONCENTRATION. VARIABLE OUTSIDE AIR DAMPERS (& RETURN AIR DAMPERS IF REQUIRED) SHALL MODULATE TO MAINTAIN CO2 CONCENTRATIONS BETWEEN 800-1100 PPM (ADJ). OPEN/CLOSED OA DAMPERS SHALL OPEN WHEN CO2 CONCENTRATION REACHES 1100 PPM (ADJ) OR HIGHER AND SHALL CLOSE WHEN CO2 CONCENTRATION REACHES 800 PPM (ADJ) OR LOWER.
ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH RETURN AIR CARBON DIOXIDE CONCENTRATION: IF THE RETURN AIR CO2 CONCENTRATION IS GREATER THAN 1200PPM (ADJ.) WHEN IN THE UNIT IS RUNNING.

DEHUMIDIFICATION:
IF RETURN AIR RELATIVE HUMIDITY (RH) EXCEEDS 65% (ADJ) WHILE UNIT IS RUNNING OR THE MAJORITY OF THE ZONES ARE AT 60% RH (ADJ) OR HIGHER, SUPPLY AIR TEMPERATURE SHALL RESET DOWN TO 50 DEGREES (ADJ) AND DISCHARGE SUPPLEMENTAL HEATER SHALL ENERGIZE AND MODULATE TO DISCHARGE 65 DEGREE (ADJ) AIR DOWN STREAM TO THE INLETS OF THE VAV BOXES. WHEN 60% (ADJ) OF ALL HUMIDITY SENSORS ARE AT 55% (ADJ) RELATIVE HUMIDITY OR BELOW, DEHUMIDIFICATION TO BE DISENGAGED.

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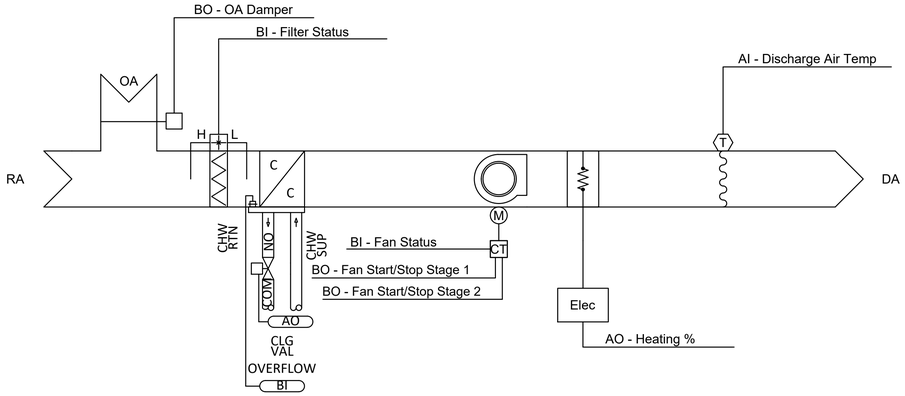

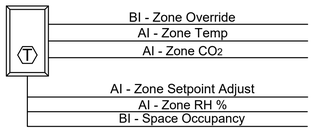

SINGLE ZONE CW SPLIT SYSTEM FC (TYPICAL)

RUN CONDITIONS - SCHEDULED:
THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE IN THE FOLLOWING MODES:
OCCUPIED MODE: THE UNIT SHALL MAINTAIN
- A 74°F (ADJ.) COOLING SETPOINT
- A 70°F (ADJ.) HEATING SETPOINT.

UNOCCUPIED MODE (NIGHT SETBACK): THE UNIT SHALL MAINTAIN
- A 80°F (ADJ.) COOLING SETPOINT.
- A 60°F (ADJ.) HEATING SETPOINT.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH ZONE TEMP: IF THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).
- LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).

ZONE SETPOINT ADJUST:
THE OCCUPANT SHALL BE ABLE TO ADJUST THE ZONE TEMPERATURE HEATING AND COOLING SETPOINTS AT THE ZONE SENSOR.

ZONE OPTIMAL START:
THE UNIT SHALL USE AN OPTIMAL START ALGORITHM FOR MORNING START-UP. THIS ALGORITHM SHALL MINIMIZE THE UNOCCUPIED WARM-UP OR COOL-DOWN PERIOD WHILE STILL ACHIEVING COMFORT CONDITIONS BY THE START OF SCHEDULED OCCUPIED PERIOD.

ZONE UNOCCUPIED OVERRIDE:
A TIMED LOCAL OVERRIDE CONTROL SHALL ALLOW AN OCCUPANT TO OVERRIDE THE SCHEDULE AND PLACE THE UNIT INTO AN OCCUPIED MODE FOR AN ADJUSTABLE PERIOD OF TIME. AT THE EXPIRATION OF THIS TIME, CONTROL OF THE UNIT SHALL AUTOMATICALLY RETURN TO THE SCHEDULE.

FAN:
THE FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN, UNLESS SHUTDOWN ON SAFETIES.

COOLING STAGE:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND STAGE THE COOLING TO MAINTAIN ITS COOLING SETPOINT.

THE COOLING SHALL BE ENABLED WHENEVER:
- OUTSIDE AIR TEMPERATURE IS GREATER THAN 60°F (ADJ.).
- AND THE ZONE TEMPERATURE IS ABOVE COOLING SETPOINT.
- AND THE FAN IS ON.

ELECTRIC HEATING STAGE:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND STAGE THE HEATING TO MAINTAIN ITS HEATING SETPOINT.

THE HEATING SHALL BE ENABLED WHENEVER:
- OUTSIDE AIR TEMPERATURE IS LESS THAN 65°F (ADJ.).
- AND THE ZONE TEMPERATURE IS BELOW HEATING SETPOINT.
- AND THE FAN IS ON.

FILTER STATUS:
THE CONTROLLER SHALL MONITOR THE FILTER STATUS AND GENERATE AN ALARM AT THE BAS WHEN DIFFERENTIAL PRESSURE IS EXCEEDED.

DISCHARGE AIR TEMPERATURE:
THE CONTROLLER SHALL MONITOR THE DISCHARGE AIR TEMPERATURE.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS GREATER THAN 100°F (ADJ.).
- LOW DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS LESS THAN 40°F (ADJ.).

FAN STATUS:
THE CONTROLLER SHALL MONITOR THE FAN STATUS.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.

ELECTRIC HEATING WITH SCR:
THE CONTROLLER SHALL MEASURE THE SUPPLY AIR TEMPERATURE AND MODULATE THE HEATING TO MAINTAIN ITS SUPPLY AIR TEMPERATURE SETPOINT.
THE HEATING WILL BE ENABLED WHENEVER:
- THE AHU IS IN HEAT MODE
- AND THE SUPPLY AIR TEMPERATURE IS BELOW SUPPLY AIR TEMPERATURE SETPOINT
- AND THE FAN IS ON.

RETURN AIR CARBON DIOXIDE (CO_2) CONCENTRATION MONITORING & DEMAND CONTROL VENTILATION (DCV):
THE CONTROLLER SHALL MEASURE THE RETURN AIR CO_2 CONCENTRATION. VARIABLE OUTSIDE AIR DAMPERS (& RETURN AIR DAMPERS IF REQUIRED) SHALL MODULATE TO MAINTAIN CO_2 CONCENTRATIONS BETWEEN 800-1100 PPM (ADJ). OPEN/CLOSED OA DAMPERS SHALL OPEN WHEN CO_2 CONCENTRATION REACHES 1100 PPM (ADJ) OR HIGHER AND SHALL CLOSE WHEN CO_2 CONCENTRATION REACHES 800 PPM (ADJ) OR LOWER.
ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH RETURN AIR CARBON DIOXIDE CONCENTRATION: IF THE RETURN AIR CO_2 CONCENTRATION IS GREATER THAN 1200PPM (ADJ.) WHEN IN THE UNIT IS RUNNING.

DEHUMIDIFICATION:
IF RETURN AIR RELATIVE HUMIDITY (RH) EXCEEDS 65% (ADJ) WHILE UNIT IS RUNNING, SUPPLY AIR TEMPERATURE SHALL RESET DOWN TO 50 DEGREES (ADJ) AND DISCHARGE SUPPLEMENTAL HEATER SHALL ENERGIZE AND MODULATE TO DISCHARGE 65 DEGREE (ADJ) AIR DOWN STREAM. WHEN HUMIDITY SENSORS ARE AT 50% (ADJ) RELATIVE HUMIDITY OR BELOW, DEHUMIDIFICATION TO BE DISENGAGED.

HEAT/COOL UNOCCUPIED SETBACK:
DURING SCHEDULED HOURS OF OPERATION, IF OCCUPANCY SENSORS (ALL) DETECT SPACE IS UNOCCUPIED FOR 15 MINS, SPACE TEMPERATURE SETPOINT SHALL RESET TO 76°F (COOLING) AND 66°F (HEATING) AND OA DAMPERS SHALL RESET TO 5% (ADJ.)

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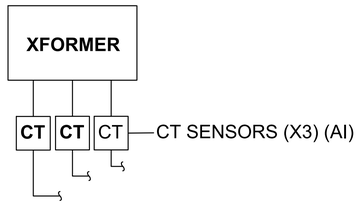
HVAC LOAD SHEDDING SEQUENCES:

COOLING:
DURING COOLING, IF THE BUILDING CURRENT LOAD (AMPS) MEETS/EXCEEDS 95% (ADJ.), THE COLDEST REPORTING ZONE SHALL HAVE IT'S TEMPERATURE SETPOINT (T-STAT) INCREASED BY 1°F (ADJ.). IF AFTER 1 MIN. (ADJ.) THE CONNECTED LOAD DOES NOT DROP BELOW 90% (ADJ.) OF MAX, REPEAT SEQUENCE.

HEATING:
THE WARMEST REPORTING ZONE SHALL HAVE IT'S TEMPERATURE SETPOINT (T-STAT) DECREASED BY 1°F (ADJ.) AND THE ASSOCIATED UNIT SA DISCHARGE SETPOINT DECREASED BY 1°F.



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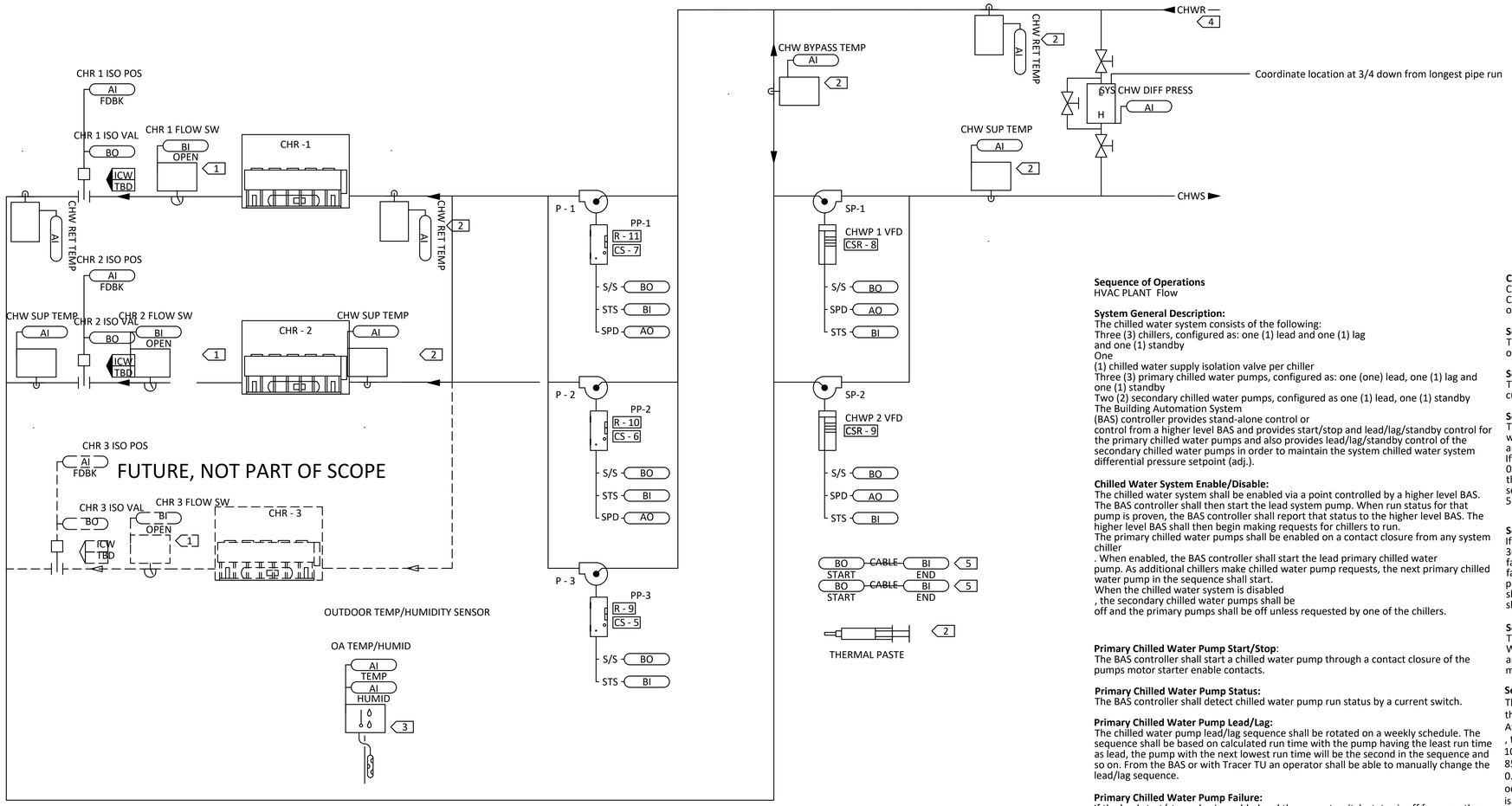

5 CHILLED WATER PUMP COMMAND. CONNECT CABLE FROM CHILLER TO CONTROLLER.

4 SCHEMATIC CONTROL FLOW DIAGRAM ONLY. SEE MECHANICAL DRAWINGS FOR PIPING DETAILS.

3 MOUNT OUTDOOR AIR TEMP SENSOR ON NORTHERN EXPOSURE USING A NON-CONDENSATING CONDUIT CONNECTION. MOUNT AWAY FROM EXHAUST VENTS AND OTHER HEAT SOURCES. CONSULT WITH PROJECT MANAGER BEFORE MOUNTING.

2 GREASE TEMPERATURE SENSOR PROBE WITH THERMAL COMPOUND AND INSERT INTO THERMOWELL.

1 WIRE SAFETY DEVICES TO CHILLER CONTROL PANEL.

Sequence of Operations
HVAC PLANT Flow

System General Description:
The chilled water system consists of the following:
Three (3) chillers, configured as: one (1) lead and one (1) lag
and one (1) standby
One
(1) chilled water supply isolation valve per chiller
Three (3) primary chilled water pumps, configured as: one (one) lead, one (1) lag and one (1) standby
Two (2) secondary chilled water pumps, configured as one (1) lead, one (1) standby
The Building Automation System
(BAS) controller provides stand-alone control or
control from a higher level BAS and provides start/stop and lead/lag/standby control for the primary chilled water pumps and also provides lead/lag/standby control of the secondary chilled water pumps in order to maintain the system chilled water system differential pressure setpoint (adj.).

Chilled Water System Enable/Disable:
The chilled water system shall be enabled via a point controlled by a higher level BAS. The BAS controller shall then start the lead system pump. When run status for that pump is proven, the BAS controller shall report that status to the higher level BAS. The higher level BAS shall then begin making requests for chillers to run.
The primary chilled water pumps shall be enabled on a contact closure from any system chiller
. When enabled, the BAS controller shall start the lead primary chilled water pump. As additional chillers make chilled water pump requests, the next primary chilled water pump in the sequence shall start.
When the chilled water system is disabled
, the secondary chilled water pumps shall be
off and the primary pumps shall be off unless requested by one of the chillers.

Primary Chilled Water Pump Start/Stop:
The BAS controller shall start a chilled water pump through a contact closure of the pumps motor starter enable contacts.

Primary Chilled Water Pump Status:
The BAS controller shall detect chilled water pump run status by a current switch.

Primary Chilled Water Pump Lead/Lag:
The chilled water pump lead/lag sequence shall be rotated on a weekly schedule. The sequence shall be based on calculated run time with the pump having the least run time as lead, the pump with the next lowest run time will be the second in the sequence and so on. From the BAS or with Tracer TU an operator shall be able to manually change the lead/lag sequence.

Primary Chilled Water Pump Failure:
If the lead start/stop relay is enabled and the current switch status is off for more than 30 seconds (adj.), the BAS controller shall annunciate a chilled water pump failure alarm to the BAS and start the next pump in the sequence.
Once the problem has been corrected, the operator shall be able to clear the alarm failure from the BAS controller using Tracer TU, from a BAS or by manually overriding the pump on momentarily.
This shall re
-enable the lead/lag sequence.

Chiller Isolation Valves:
Chiller isolation valves shall prevent the flow of water through non-operating chillers. Chiller chilled water pump operation will be coordinated with the isolation valve operation.

Secondary Chilled Water Pump Start/Stop:
The BAS controller shall start a secondary chilled water pump through a contact closure of the pumps VFD run-enable contacts.

Secondary Chilled Water Pump Status:
The BAS controller shall detect secondary chilled water pump run status by a VFD current switch.

Secondary Chilled Water Pump Lead/Lag:
The secondary chilled water pump lead/lag/standby sequence shall be based on a weekly schedule. From the BAS controller human-interface panel or a BAS workstation, an operator shall be able to manually change the lead/lag/standby sequence.
If the chilled water system differential pressure falls
0.5 psig (adj.) below setpoint and
the lead pump is at 100% (adj.) for more than 5 minutes (adj.), the next pump in the sequence shall start. If the pump speed control output is below 40% (adj.) for more than 5 minutes (adj.), the last operating pump in the sequence shall be disabled.

Secondary Chilled Water Pump Failure:
If the lead start/stop relay is enabled and the current switch status is off for more than 30 seconds (adj.), the BAS controller shall annunciate a secondary chilled water pump failure alarm to the BAS and start the lag pump. When a secondary chilled water pump failure exists, lead/lag/standby automation shall be disabled and the currently running pump becomes the lead pump. Once the problem has been corrected, the operator shall be able to clear the alarm failure from the BAS controller or BAS workstation. This shall re-enable the lead/lag/standby sequence.

Secondary Chilled Water Pump Speed:
The BAS controller shall monitor the chilled water system differential pressure sensor. When the pump variable frequency drive is enabled, the BAS controller shall control the analog speed signal that is sent to the variable frequency drives of operating pumps to maintain a chilled water system differential pressure setpoint of 15.0 psig (adj.).

Secondary Chilled Water AHU Pump Pressure Setpoint Optimization:
The BAS shall continually monitor the chilled water control valve position of all AHUs in the chilled water system.
At chilled water system startup
, the chilled water system pressure setpoint shall be
100% of the maximum pressure setpoint. When all chilled water valves are less than 85% open, the chilled water system differential pressure setpoint shall be lowered by 0.1 psig (adj.) of the current chilled water system differential pressure setpoint. This occurs every 5 minutes until at least one valve is more than 85% open, or if the setpoint is equal to the minimum chilled water system differential pressure setpoint, or if the pump variable frequency drives are at a minimum speed setting (22 Hz).
When any chilled water valve is more than
95% open, the chilled water system pressure
setpoint shall increase by 0.1 psig (adj.) of the current chilled water system differential setpoint. This occurs every 5 minutes until no valve is more than 95% open, or if the chilled water system differential pressure setpoint has risen to the systems maximum setting, or if the pump variable frequency drives are at the maximum setting (60 Hz).

NOTE: SEE HYDRONIC PLANS & DETAILS FOR ANY FURTHER LOCATIONS OF CONTROLS SENSORS.

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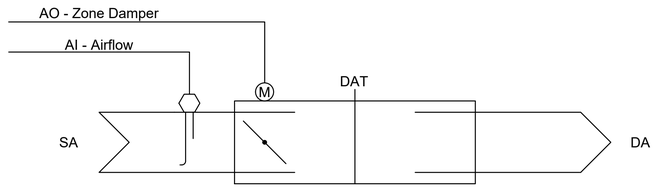
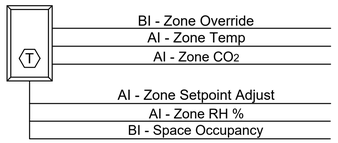
GENERAL NOTES (EXTERIOR LIGHTING):

NEW HVAC CONTROLS TO TIE INTO EXISTING EXTERIOR LIGHTING CONTACTOR.





VARIABLE AIR VOLUME TERMINAL UNIT (TYPICAL)

RUN CONDITIONS - SCHEDULED:
THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE IN THE FOLLOWING MODES:
OCCUPIED MODE: THE UNIT SHALL MAINTAIN
- A 74°F (ADJ.) COOLING SETPOINT
- A 70°F (ADJ.) HEATING SETPOINT.

UNOCCUPIED MODE (NIGHT SETBACK): THE UNIT SHALL MAINTAIN
- A 80°F (ADJ.) COOLING SETPOINT.
- A 60°F (ADJ.) HEATING SETPOINT.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH ZONE TEMP: IF THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).
- LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).

ZONE SETPOINT ADJUST:
THE OCCUPANT SHALL BE ABLE TO ADJUST THE ZONE TEMPERATURE HEATING AND COOLING SETPOINTS AT THE ZONE SENSOR.

ZONE OPTIMAL START:
THE UNIT SHALL USE AN OPTIMAL START ALGORITHM FOR MORNING START-UP. THIS ALGORITHM SHALL MINIMIZE THE UNOCCUPIED WARM-UP OR COOL-DOWN PERIOD WHILE STILL ACHIEVING COMFORT CONDITIONS BY THE START OF SCHEDULED OCCUPIED PERIOD.

ZONE UNOCCUPIED OVERRIDE:
A TIMED LOCAL OVERRIDE CONTROL SHALL ALLOW AN OCCUPANT TO OVERRIDE THE SCHEDULE AND PLACE THE UNIT INTO AN OCCUPIED MODE FOR AN ADJUSTABLE PERIOD OF TIME. AT THE EXPIRATION OF THIS TIME, CONTROL OF THE UNIT SHALL AUTOMATICALLY RETURN TO THE SCHEDULE.

REVERSING VARIABLE VOLUME TERMINAL UNIT - FLOW CONTROL:
THE UNIT SHALL MAINTAIN ZONE SETPOINTS BY CONTROLLING THE AIRFLOW THROUGH ONE OF THE FOLLOWING:

OCCUPIED:
- WHEN ZONE TEMPERATURE IS GREATER THAN ITS COOLING SETPOINT, THE ZONE DAMPER SHALL MODULATE BETWEEN THE MINIMUM OCCUPIED AIRFLOW (ADJ.) AND THE MAXIMUM COOLING AIRFLOW (ADJ.) UNTIL THE ZONE IS SATISFIED.
- WHEN THE ZONE TEMPERATURE IS BETWEEN THE COOLING SETPOINT AND THE HEATING SETPOINT, THE ZONE DAMPER SHALL MAINTAIN THE MINIMUM REQUIRED ZONE VENTILATION (ADJ.).
- WHEN ZONE TEMPERATURE IS LESS THAN ITS HEATING SETPOINT, THE CONTROLLER SHALL ENABLE HEATING TO MAINTAIN THE ZONE TEMPERATURE AT ITS HEATING SETPOINT. ADDITIONALLY, IF WARM AIR IS AVAILABLE FROM THE AHU, THE ZONE DAMPER SHALL MODULATE BETWEEN THE MINIMUM OCCUPIED AIRFLOW (ADJ.) AND THE MAXIMUM HEATING AIRFLOW (ADJ.) UNTIL THE ZONE IS SATISFIED.

UNOCCUPIED:
- WHEN THE ZONE IS UNOCCUPIED THE ZONE DAMPER SHALL CONTROL TO ITS MINIMUM UNOCCUPIED AIRFLOW (ADJ.).
- WHEN THE ZONE TEMPERATURE IS GREATER THAN ITS COOLING SETPOINT, THE ZONE DAMPER SHALL MODULATE BETWEEN THE MINIMUM UNOCCUPIED AIRFLOW (ADJ.) AND THE MAXIMUM COOLING AIRFLOW (ADJ.) UNTIL THE ZONE IS SATISFIED.
- WHEN ZONE TEMPERATURE IS LESS THAN ITS UNOCCUPIED HEATING SETPOINT, THE CONTROLLER SHALL ENABLE HEATING TO MAINTAIN THE ZONE TEMPERATURE AT THE SETPOINT. ADDITIONALLY, IF WARM AIR IS AVAILABLE FROM THE AHU, THE ZONE DAMPER SHALL MODULATE BETWEEN THE MINIMUM UNOCCUPIED AIRFLOW (ADJ.) AND THE AUXILIARY HEATING AIRFLOW (ADJ.) UNTIL THE ZONE IS SATISFIED.

DISCHARGE AIR TEMPERATURE:
THE CONTROLLER SHALL MONITOR THE DISCHARGE AIR TEMPERATURE.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS GREATER THAN 120°F (ADJ.).

LOW DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS LESS THAN 40°F (ADJ.).

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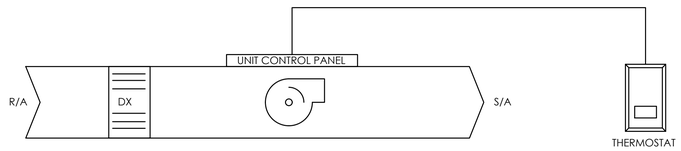
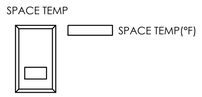
MMC07

DUCTLESS MINISPLIT

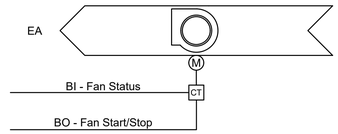




SEQUENCE OF OPERATIONS: COMPUTER ROOM MONITORING

A. SPACE TEMPERATURE MONITORING: THE BAS CONTROLLER SHALL MONITOR THE COMPUTER ROOM SPACE TEMPERATURE AND GENERATE ALARM IF THE SPACE TEMPERATURE GOES OUT ± 2°F FROM NORMAL OPERATING SET POINT INITIALLY AT 72° F (ADJ.) VIA BAS SYSTEM.

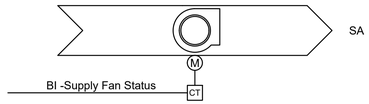
B. BAS SYSTEM SHALL MONITOR FAN RUN STATUS & REFRIGERANT SUCTION TEMPERATURE (DOWNSTREAM OF FAN COIL) & HAVE POINTS VISIBLE THROUGH BAS.

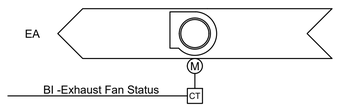


EXHAUST FAN - ON/OFF (TYPICAL)

RUN CONDITIONS:
EXHAUST FAN OPERATION SHALL BE DICTATED BY THE BAS SYSTEM UNDER A TIME OF DAY SCHEDULE UNLESS INTERLOCKED WITH AN AIR HANDLER SYSTEM IN WHICH CASE THE AIR HANDLER OPERATION SHALL DICTATE OPERATION. THE FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN UNLESS SHUTDOWN ON SAFETIES. THE FAN SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME.

FAN STATUS:
THE CONTROLLER SHALL MONITOR THE FAN STATUS.
ALARMS SHALL BE PROVIDED AS FOLLOWS:
- FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.





KITCHEN SUPPLY AND EXHAUST FAN - ON/OFF (TYPICAL)

RUN CONDITIONS - SCHEDULED:
EXHAUST FAN OPERATION SHALL BE DICTATED BY THE NEW KITCHEN VENTILATION CONTROL PANEL.
FAN STATUS:
THE CONTROLLER SHALL MONITOR THE FAN STATUS.
ALARMS SHALL BE PROVIDED AS FOLLOWS:
- FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.

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06/20/2024
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Wilford L. McGee III
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LICENSED PROFESSIONAL ENGINEER

MMC08

ELECTRICAL LEGEND-LIGHTING

---ALL SYMBOLS SHOWN MAY NOT APPEAR IN ALL DRAWINGS.
SYMBOLS ARE SHOWN SCHEMATIC AND MAY NOT BE TO SCALE.

SYMBOL	DESCRIPTION
	2'x4' LIGHT FIXTURE, REFER TO LUMINAIRE SCHEDULE
	2'X4' LIGHT FIXTURE W/EMERGENCY BATTERY PACK, REFER TO LUMINAIRE SCHEDULE
	2'x2' LIGHT FIXTURE, REFER TO LUMINAIRE SCHEDULE
	2'X2' LIGHT FIXTURE W/EMERGENCY BATTERY PACK, REFER TO LUMINAIRE SCHEDULE
	1'X4' LIGHT FIXTURE, REFER TO LUMINAIRE SCHEDULE
	TRACK LIGHT WITH HEADS AS INDICATED
	INCANDESCENT, LED, FLUORESCENT, OR HID WALL WASHER LIGHT FIXTURE CEILING MTD, REFER TO LUMINAIRE SCHEDULE
	INCANDESCENT, LED, FLUORESCENT, OR HID FIXTURE CLG. OR WALL MTD, REFER TO LUMINAIRE SCHEDULE
	LED, FLUORESCENT, OR HID FIXTURE WITH EMERGENCY BATTERY PACK. CLG. OR WALL MTD, REFER TO LUMINAIRE SCHEDULE
	EXIT LIGHT, CEILING OR WALL MOUNTED - SHADING INDICATING SINGLE OR DOUBLE FACE; DIRECTIONAL ARROWS AS INDICATED REFER TO LUMINAIRE SCHEDULE
	EXIT LIGHT SAME AS ABOVE, EXCEPT WITH AN EMERGENCY UNIT AS A COMBO, REFER TO LUMINAIRE SCHEDULE
	CEILING FAN
	STRIP UTILITY LIGHT FIXTURE, REFER TO LUMINAIRE SCHEDULE
	STRIP UTILITY STRIP LIGHT WITH EMERGENCY BATTERY PACK, REFER TO LUMINAIRE SCHEDULE
$	WALL SWITCH SPST, 20A,120/277V
$2	DOUBLE POLE TOGGLE SWITCH, 20A/120/277V
$3	3-WAY WALL SWITCH, 20A,120/277V
$4	4-WAY WALL SWITCH, 20A,120/277V
$D	WALL DIMMER SWITCH
$P	WALL SWITCH SPST, 20A,120/277V - PILOT LIGHT SWITCH
$XK	WALL SWITCH SPST, 20A,120/277V - KEYED SWITCH, X = 3 OR 4 WAY

ELECTRICAL LEGEND-SPECIAL SYSTEMS

---ALL SYMBOLS SHOWN MAY NOT APPEAR IN ALL DRAWINGS.
SYMBOLS ARE SHOWN SCHEMATIC AND MAY NOT BE TO SCALE.

SYMBOL	DESCRIPTION	
	WALL MOUNTED VOICE/DATA OUTLET. FURNISH AND INSTALL 1.25"C., WITH PULLSTRING AND INSULATED BUSHING, STUBBED ABOVE CEILING. +24" UNLESS OTHERWISE NOTE. BOX TO BE MINIMUM 2 1/8" DEEP.	
	WALL MOUNTED VOICE OUTLET. FURNISH AND INSTALL 1"C , WITH PULLSTRING AND INSULATED BUSHING, STUBBED ABOVE CEILING. +24" UNLESS OTHERWISE NOTE. BOX TO BE MINIMUM 2 1/8" DEEP.	
	WALL MOUNTED DATA OUTLET. FURNISH AND INSTALL 1.25"C , WITH PULLSTRING AND INSULATED BUSHING, STUBBED ABOVE CEILING. +24" UNLESS OTHERWISE NOTE. BOX TO BE MINIMUM 2 1/8" DEEP.	
P	PUBLIC TELEPHONE OUTLET.: J-BOX & 1"C	
TV	TELEVISION OUTLET. CLG. OR WALL MOUNTED - STUB 1" C. ABOVE CEILING FROM OUTLET BOX	
	PUSHBUTTON WALL MOUNTED.	
av	AUDIO VIDEO DROP, REFER TO DETAIL	
IC	INTERCOM - CALL SWITCH- JBOX WITH 3/4"C	
S	INTERCOM/PAGING LAY-IN SPEAKER	
I	PA EXTERIOR SPEAKER	10'-6" AFF
DC	SECURITY DOOR CONTACT SENSOR - STUB 1/2"C ABOVE CEILING FROM OUTLET BOX	
MD	SECURITY MOTION DETECTOR SENSOR - STUB 1/2"C ABOVE CEILING FROM OUTLET BOX	
G	SECURITY GLASS BREAK SENSOR - STUB 1/2"C ABOVE CEILING FROM OUTLET BOX	
KP	SECURITY KEY PAD - STUB 3/4"C ABOVE CEILING FROM OUTLET BOX	
SEC	SECURITY PANEL JUNCTION BOX	54"
ACC	ACCESS CONTROL PANEL JUNCTION BOX - BY OTHERS	54"
CR	CARD READER BOX - STUB 3/4"C ABOVE CEILING LEVEL FROM OUTLET BOX SYSTEM BY OTHERS	----
ML	MAGNETIC LOCK BOX - STUB 3/4"C ABOVE CEILING LEVEL FROM OUTLET BOX SYSTEM BY OTHERS	----
S	INTRUSION EXTERIOR SPEAKER	10'-6" AFF
©	SINGLE SIDED CLOCK, J-BOX W/3/4"C	96" AFF MIN.
©	DOUBLE SIDED CLOCK,J-BOX W/3/4"C	96" AFF MIN.
	CAMERA J-BOX W/ 3/4" CONDUIT	----
	TELEPHONE BOARD- 3/4"x8' FIRE RATED	

ELECTRICAL LEGEND-FIRE ALARM

---ALL SYMBOLS SHOWN MAY NOT APPEAR IN ALL DRAWINGS.
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SYMBOL	DESCRIPTION
F	FIRE ALARM PULL STATION: STUB 3/4"C ABOVE CEILING FROM J-BOX
AV	FIRE ALARM AUDIBLE/VISUAL SIGNAL: STUB 3/4"C ABOVE CEILING FROM J-BOX
V	FIRE ALARM VISUAL SIGNAL: STUB 3/4"C ABOVE CEILING FROM J-BOX
VS	FIRE ALARM CEILING MOUNT SPEAKER STROBE, UL LISTED, : J-BOX WITH 3/4"C
VS	FIRE ALARM CEILING WALL MOUNT OUTDOOR SPEAKER STROBE, UL LISTED, : J-BOX WITH 3/4"C
SD	FIRE ALARM SMOKE DETECTOR CEILING OR WALL MOUNTED: STUB 3/4"C ABOVE CEILING FROM J-BOX
H	HEAT DETECTOR CEILING OR WALL MOUNTED: STUB 3/4"C ABOVE CEILING FROM J-BOX
SD D	DUCT SMOKE DETECTOR: STUB 3/4"C ABOVE CEILING FROM J-BOX
SD A	SMOKE DETECTOR WITH AN AUDIBLE BASE: STUB 3/4"C ABOVE CEILING FROM J-BOX
FACP	FIRE ALARM CONTROL PANEL, ADDRESSABLE, SURFACE MTD UNO, INCLUDE A FIRE DOCUMENT BOX EQUAL TO MFR. SPACE AGE ELECTRONICS #FDB-ACE-11.
FACP-EVS	FIRE ALARM CONTROL PANEL WITH EMERGENCY VOICE SYSTEM, ADDRESSABLE, FLUSH MTD UNO, INCLUDE A FIRE DOCUMENT BOX EQUAL TO MFR. SPACE AGE ELECTRONICS #FDB-ACE-11.
EVES	FIRE ALARM EMERGENCY VOICE EVACUATION SYSTEM, FLUSH OR SURFACE.
FAAP	FIRE ALARM REMOTE ANNUNCIATOR PANEL, FLUSH MOUNTED UNO
PAD-X	POWER SUPPLY, DEDICATED 110V
DH	DOOR HOLDER DEVICE: STUB 3/4"C ABOVE CEILING FROM J-BOX
TS	TAMPER SWITCH: STUB 3/4"C ABOVE CEILING FROM J-BOX
FS	FLOW SWITCH: STUB 3/4"C ABOVE CEILING FROM J-BOX
F	FIRE ALARM OUTDOOR SPEAKER, WEATHER PROOF: STUB 3/4"C ABOVE CEILING FROM J-BOX

ELECTRICAL LEGEND-GENERAL

---ALL SYMBOLS SHOWN MAY NOT APPEAR IN ALL DRAWINGS.
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SYMBOL	DESCRIPTION
	HEAVY DUTY DISCONNECT SWITCH FUSED
	HEAVY DUTY DISCONNECT SWITCH NONFUSED
	HEAVY DUTY COMBINATION DISCONNECT/MOTOR STARTER
	HEAVY DUTY MOTOR STARTER
	ENCLOSED BREAKER, RE: TO SCH. FOR MORE INFO.
R	ROTARY TYPE DISCONNECT SWITCH
$M	120/277-208/480V,20AMP, MOTOR RATED SWITCH, NEMA-1(INTERIOR) ENCLOSURE, NEMA-3R(EXTERIOR) ENCLOSURE. VOLTAGE TO BE SELECTED PER EQUIPMENT CIRCUIT REQUIREMENTS.
	MOTOR
	PANELBOARD, CLEARANCE AS PER LATEST NEC
	SWITCH LEG
	ELECTRICAL CONDUIT
	UNDERGROUND ELECTRICAL CONDUIT
C	COMMUNICATION CONDUIT AND WIRING
X, X, X	MULTI-POLE DEVICE CIRCUIT NUMBERS
X/X/X	THREE SINGLE POLE DEVICE CIRCUIT NUMBERS
A-1	CONDUIT AND WIRE HOMERUN TO PANEL. SHORT HATCH INDICATES NEUTRAL CONDUCTOR, LONG HATCHES INDICATE PHASE CONDUCTORS, AND LONG HATCH WITH CIRCLE INDICATES ISOLATES OR INSULATED GROUND. ALPHANUMERIC DESCRIPTION INDICATES PANEL AND BREAKER.
A-1	UNDERGROUND CONDUIT AND WIRE HOMERUN TO PANEL. SHORT HATCH INDICATES NEUTRAL CONDUCTOR, LONG HATCHES INDICATE PHASE CONDUCTORS, AND LONG HATCH WITH CIRCLE INDICATES ISOLATED OR INSULATED GROUND. ALPHANUMERIC DESCRIPTION INDICATES PANEL AND BREAKER.
#	DETAIL NUMBER
#	SHEET NUMBER
T	THERMOSTAT WALL MOUNTED - STUB 1/2"C ABOVE CEILING FROM OUTLET BOX. COORDINATE EXACT LOCATION AND HEIGHT WITH MECHANCIAL DIVISION.
J	JUNCTION BOX - SIZE & MOUNTING AS REQUIRED MINIMUM OF 4" SQUARE
PC	PHOTO CELL(MFR.INTERMATIC #K4136M)
LC	LIGHTING CONTACTOR, NEMA-1, W/H.O.A. SWITCH
TC	TIME CLOCK (MFR.TORK#7202Z)
CP-1	CIRCULATING PUMP
$	ELECTRICAL DEVICE AS SHOWN ON PLANS SURFACE MOUNT RACEWAY. SURFACE MOUNT RACEWAY SHALL BE WIREMOLD #V700 SERIES. PROVIDE ALL RELATED #V700 SERIES ACCESSORIES FOR AN OPERABLE SYSTEM.

ELECTRICAL ABBREVIATIONS:

ABBV:	DESCRIPTION	ABBV:	DESCRIPTION
AFF	ABOVE FINISHED FLOOR	MFR.	MANUFACTURER
BFC	BELOW FINISHED CEILING	(S.C.)	SHARE CIRCUIT
C	CONDUIT	QRCPT(S)	QUAD RECEPTACLE(S)
CB	CIRCUIT BREAKER	RCPT(S)	DUPLEX RECEPTACLE(S)
EC	EMPTY CONDUIT	CRCPT(S)	I.G. RECEPTACLE(S)
EX	EXISTING	QCRCPT(S)	QUAD I.G. RECEPTACLE(S)
F	FUSE	PNL	PANEL
G	GROUND (EQUIPMENT)	SO (S.O.)	SPACE ONLY
GFI	GROUND FAULT INTERRUPTER	SP	SPARE
MTD	MOUNT OR MOUNTED	ST (S.T.)	SHUNT TRIP
NF	NONFUSED	SW	SWITCH
NIC	NOT IN CONTRACT	UF	UNDERFLOOR
H.D	HEAVY DUTY	UG	UNDERGROUND
NL	NIGHT LIGHT	UNO(U.N.O.)	UNLESS NOTED OTHERWISE
AC	ABOVE COUNTER	WG	WIRE GUARD
HT.	HEIGHT	WP	WEATHERPROOF
MTD.	MOUNTING	XFMR	TRANSFORMER
FDR.	FEEDER	MB	MAIN BREAKER
CKT.	CIRCUIT	MLO	MAIN LUGS ONLY
LTG.	LIGHTING	RMC	RIGID METAL CONDUIT
LC	LIGHTING CONTACTOR	RNC	RIGID NONMETALLIC CONDUIT
IG	ISOLATED GROUND	EMT	ELECTRICAL METALLIC TUBING CONDUIT
EA.	EACH	S/N	SOLID NEUTRAL
N1	NEMA-1	AC	ABOVE COUNTER
N3R	NEMA-3R	AHJ	AHUTHORITY HAVING JURISDICTION
N4X	NEMA-4X	T	TAMPER PROOF
SS	STAINLESS STEEL		

NOTES:

1.) 48" AFF INDICATES TO TOP OF DEVICE;
15" AFF INDICATES TO BOTTOM OF DEVICE;
ALL OTHER MOUNTING HEIGHTS REFER TO CENTERLINE OF DEVICE.
AC INDICATES 6" ABOVE COUNTER TO BOTTOM OF DEVICE.

ELECTRICAL LEGEND - WIRING DEVICES

---ALL SYMBOLS SHOWN MAY NOT APPEAR IN ALL DRAWINGS.
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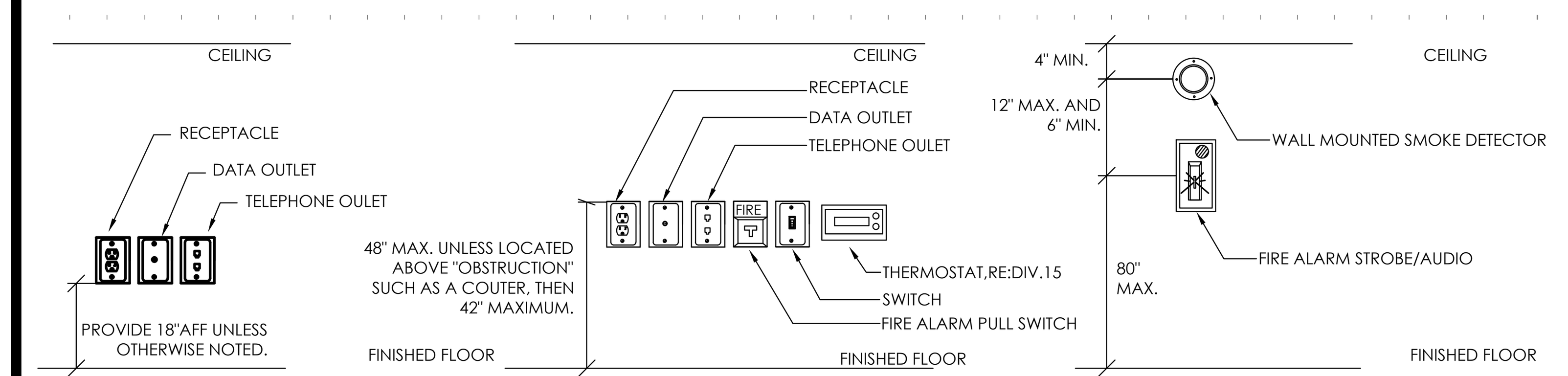
SYMBOL	DESCRIPTION
	SINGLE RECEPTACLE - 20A/125V/2P/3W/G NEMA 5-20R
	DUPLEX RECEPTACLE - 20A/125V/2P/3W/G NEMA 5-20R
T	DUPLEX RECEPTACLE TAMPER RESISTANT - 20A/125V/2P/3W/G NEMA 5-20R
H / H	HOSPITAL GRADE DUPLEX RECEPTACLE/GFI - 20A/125V/2P/3W/G NEMA 5-20R
	DUPLEX RCPT. GFI - 20A/125V/2P/3W/G NEMA 5-20R
WP/ "IN-USE"	DUPLEX RCPT.,WEATHER RESISTANT "WR", GFI INSTALLED IN A "IN-USE" WEATHER PROOF STEEL ENCLOSURE- 20A/125V/2P/3W/G NEMA 5-20R WP/"IN-USE" SHALL BE EQUAL TO MFR. CARLON, METALLIC SERIES SINGLE GANG, VERTICAL MOUNT #ME9UVMG DOUBLE GANG, VERTICAL MOUNT #ME9U2VMG
	QUADRAPLEX RECEPTACLE
	ISOLATED GROUND QUADPLEX RECEPTACLE
	ISOLATED GROUND DUPLEX RECEPTACLE - 20A/125V NEMA 5-20R
	208V RECEPTACLE, VERIFY NEMA NO. WITH EQUIPMENT SUPPLIER
	SPECIAL PURPOSE RECEPTACLE (NEMA NO. AS INDICATED)
HD	J-BOX - AIR HAND DRYER: (RECESSED HAND DRYERS TO BE PROVIDED BY DIVISION 16, ELECTRICAL) 120V MODEL #SLIMDRI AS MANUFACTURER BY WORLD DRYER. (COLOR WHITE) QUANTITY: REFER TO DRAWINGS (MIN. ONE PER LAV. COMPLETE W/ ELE. CONNECTIONS TYP.)
	4-GANG FLOOR MOUNTED BOX, 2-DUPLEX RECEPTACLE(INCLUDE RECEPTACLE WITH COVER PLATE)/2-GANG FOR DATA - FLUSH MOUNTED UNO FLOOR BOX = MFR.-HUBBELL MODEL#CFB4G30RCR-CFBS1R8CVRNKL(COVER)-(2)FBMPDUP-FBMP6KS -CFBHUB2(MULTISERVICE STEEL RECESSED FLOOR BOX -VERIFY FLOOR FINISH PRIOR TO ORDER SAME BOX FOR DATA OUTLETS.
6G	6-GANG FLOOR MOUNTED BOX, 2-DUPLEX RECEPTACLE(INCLUDE RECEPTACLE WITH COVER PLATE)/2-GANG FOR DATA - FLUSH MOUNTED UNO FLOOR BOX = MFR.-HUBBELL MODEL#CFB6G30RCR-CFBS1R8CVRNKL(COVER)-(3)FBMPDUP-FBMP6KS -CFBHB2(MULTISERVICE STEEL RECESSED FLOOR BOX-VERIFY FLOOR FINISH PRIOR TO ORDER SAME BOX FOR DATA OUTLETS.
6P	6" FIRE RATED POKE-TRHOUGHS BOX, 2-DUPLEX RECEPTACLE(INCLUDE RECEPTACLE WITH COVER PLATE)- MFR.-HUBBELL MODEL#S1R6PTFIT-S1R6SPE-S1R6SPL-S1R6SPH(50/50 DEVICE PLATE COMBINATION)-S1R6CVRALU(COVER) -VERIFY FLOOR FINISH PRIOR TO ORDER SAME BOX FOR DATA OUTLETS.
6JP	6" FIRE RATED POKE-TRHOUGHS BOX, FURNITURE FEED,- MFR.-HUBBELL MODEL#S1R6PTFFALU(ALUMINUM COVER) -VERIFY FLOOR FINISH PRIOR TO ORDER.
8P	8" FIRE RATED POKE-TRHOUGHS BOX, 2-DUPLEX RECEPTACLE(INCLUDE RECEPTACLE WITH COVER PLATE)- MFR.-HUBBELL MODEL#S1R8PTFIT3-S1R8CSPK-S1R8CSPK-S1R8PSPZ(50/50 DEVICE PLATE COMBINATION)-S1R8CVRALU(COVER) -VERIFY FLOOR FINISH PRIOR TO ORDER SAME BOX FOR DATA OUTLETS.

GENERAL ELECTRICAL NOTES

1. ALL SYMBOLS AND ABBREVIATIONS SHOWN ON THIS LEGEND MAY NOT APPEAR ON THIS SET OF DRAWINGS.
2. USE DIRECTIONAL ARROW ON EXIT SIGNS AS REQUIRED.
3. IEEE STANDARD C37.2-1991, ELECTRICAL POWER SYSTEM DEVICE FUNCTION NUMBERS.
4. CONTRACTOR SHALL NOT INSTALL MORE THAN THREE CURRENT CARRYING CONDUCTORS IN A COMMON RACEWAY. IF CONTRACTOR IS PLANNING ON GROUPING MULTIPLE CIRCUITS IN A SINGLE RACEWAY, THE CONTRCATOR MUST SUBMIT ALL DERATING CALCULATIONS FOR THE PROPOSED INSTALLATION IN ACCORDANCE WITH NEC ARTICLE 310.15 (B) (2) FOR APPROVAL PRIOR TO INSTALLATION. NON APPROVED INSTALLATIONS WILL BE REMOVED AND REINSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH THE NEC AT NO ADDITIONAL COST TO THE OWNER.
5. THERE SHALL NOT BE MORE THAN THE EQUIVALENT OF THREE 90° BENDS (270 DEGREES TOTAL) BETWEEN PULL POINTS. WHERE THERE ARE MORE THAN THREE QUARTER BENDS, CONTRACTOR SHALL PROVIDE PULL BOXES AS SPECIFIED AND SIZED IN ACCORDANCE WITH NEC.
6. COMPLY WITH NEC REQUIREMENTS FOR ELECTRICAL INSTALLATIONS. ALL ELECTRICAL EQUIPMENT AND MATERIAL TO BE APPROVED, LISTED, LABELED, IDENTIFIED AND INSTALLED PER RECOGNIZED ELECTRICAL TESTING LABORATORY.
7. ALL RECEPTACLES, SWITCHES AND JUNCTION BOXES SERVED BY EMERGENCY BRANCH CIRCUITS SHALL BE "RED" IN COLOR. COVERPLATES SHALL BE LABELED IN ACCORDANCE WITH SPECIFICATIONS TO INDICATE PANELBOARD AND CIRCUIT NO. (IE: ET*LA-3).

MOUNTING HEIGHT DETAIL

NOTE: VERIFY WITH ARCHITECTURAL FOR **ADA REQUIREMENTS.**



INDEX OF SHEETS

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STATE OF TEXAS
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PROFESSIONAL ENGINEER

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REVISION:

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HVAC REPLACEMENT

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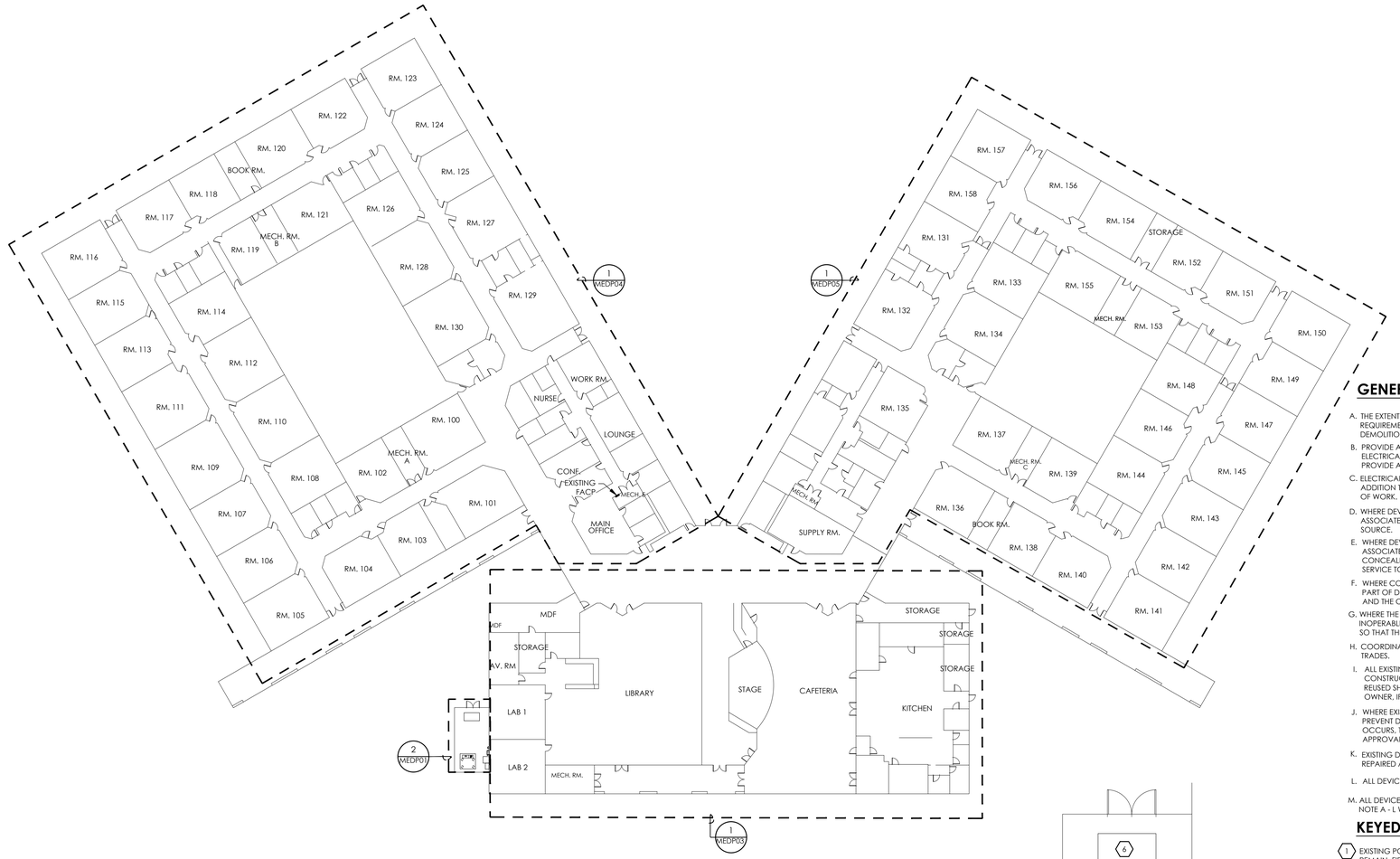
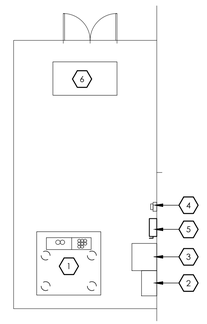


1 ELECTRICAL OVERALL DEMOLITION PLAN

SCALE: 1" = 30'-0"



2 ENLARGED VIEW - ELECTRICAL EQUIPMENT YARD

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

GENERAL DEMOLITION NOTES: (TO ALL SHEETS)

A. THE EXTENT OF DEMOLITION WORK IS INDICATED ON THE HVAC DRAWINGS AND BY THE REQUIREMENTS OF THIS SECTION. A VISIT TO THE SITE WILL BE REQUIRED TO PROPERLY BID THE DEMOLITION WORK.

B. PROVIDE ALL DEMOLITION WORK REQUIRED FOR THE REMOVAL AND/OR RELOCATION OF ELECTRICAL EQUIPMENT AND ASSOCIATED CONDUCTORS, CONDUIT, BOXES, ETC. TO PROVIDE A COMPLETE AND OPERABLE SYSTEM UPON COMPLETION OF THE PROJECT.

C. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO REVIEW THE HVAC DOCUMENTS IN ADDITION TO THE DIVISION 23 AND 26 DOCUMENTS TO DETERMINE THE COMPLETE SCOPE OF WORK.

D. WHERE DEVICES OR EQUIPMENT ARE INDICATED OR REQUIRED TO BE REMOVED, THE ASSOCIATED BOXES, CONDUIT, AND CONDUCTORS SHALL BE REMOVED BACK TO THEIR SOURCE.

E. WHERE DEVICES OR EQUIPMENT ARE INDICATED OR REQUIRED TO BE RELOCATED, THE ASSOCIATED BOXES, CONDUIT, AND CONDUCTORS SHALL BE REMOVED BACK TO A CONCEALED JUNCTION BOX AND NEW PRODUCTS SHALL BE USED TO EXTEND THE SERVICE TO THE NEW LOCATION.

F. WHERE CONDUITS RUN ABOVE INACCESSIBLE CEILINGS OR IN WALLS WHICH ARE NOT PART OF DEMOLITION ARE TO REMAIN UNDISTURBED. CONDUCTORS SHALL BE REMOVED AND THE CONDUITS CAPPED AND ABANDONED.

G. WHERE THE REMOVAL OF DEVICES OR EQUIPMENT RENDERS EQUIPMENT DOWNSTREAM INOPERABLE, SERVICE SHALL BE EXTENDED TO THE DOWNSTREAM DEVICE OR EQUIPMENT SO THAT THE DEVICE OR EQUIPMENT IS LEFT IN OPERATING CONDITION.

H. COORDINATE DEMOLITION OF DIVISION 26 SYSTEMS AS REQUIRED WITH ALL OTHER TRADES.

I. ALL EXISTING ELECTRICAL EQUIPMENT, CONDUIT AND WIRING REMOVED DURING CONSTRUCTION NO LONGER REQUIRED AS PART OF AN ACTIVE SYSTEM AND NOT TO BE REUSED SHALL BE REMOVED FROM THE JOB SITE AND PROPERLY RETURNED TO THE OWNER, IF DESIRED BY OWNER.

J. WHERE EXISTING EQUIPMENT IS TO BE RELOCATED, EXTREME CARE SHALL BE TAKEN TO PREVENT DAMAGE DURING THE REMOVAL AND REINSTALLATION. WHERE DAMAGE OCCURS, THE EQUIPMENT SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION AND APPROVAL OF THE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER.

K. EXISTING DEVICES AND/OR EQUIPMENT TO BE REUSED SHALL BE CLEANED AND REPAIRED AT THE DISCRETION OF THE OWNER WHERE APPLICABLE.

L. ALL DEVICES WITH AN "EX" SYMBOL ARE EXISTING TO REMAIN.

M. ALL DEVICES ATTACHED TO WALLS OR CEILINGS SHALL BE REMOVED PER DEMOLITION NOTE A - L WHETHER SHOWN ON DRAWINGS OR NOT.

KEYED NOTES: DEMOLITION

1. EXISTING POWER COMPANY PAD MOUNT TRANSFORMER 120/208V, 3Ø, 4W TO REMAIN. FIELD VERIFY EXISTING CONDITIONS.
2. EXISTING 120/208V, 3Ø, 4W 1200AMP, MFR. GE, N3R, MAIN SWITCH DISCONNECT TO REMAIN. **ALTERNATE#2** REPLACE EXISTING ELECTRICAL SERVICE EQUIPMENT, REFER TO ALTERNATE#2 RISER DIAGRAM.
3. EXISTING 120/208V, 3Ø, 4W 1600AMP, MFR. GE, N3R, MAIN SWITCH DISCONNECT TO REMAIN. **ALTERNATE#2** REPLACE EXISTING ELECTRICAL SERVICE EQUIPMENT, REFER TO ALTERNATE#2 RISER DIAGRAM.
4. EXISTING ELECTRICAL SERVICE METER TO REMAIN. FIELD VERIFY EXISTING CONDITIONS. **ALTERNATE#2** REPLACE EXISTING ELECTRICAL SERVICE EQUIPMENT, REFER TO ALTERNATE#2 RISER DIAGRAM.
5. EXISTING, 600AMP, 120/208V, 3Ø, 4W, DISCONNECT TO BE REMAIN. FIELD VERIFY EXISTING CONDITIONS. **ALTERNATE#2** REPLACE EXISTING ELECTRICAL SERVICE EQUIPMENT, REFER TO ALTERNATE#2 RISER DIAGRAM.
6. EXISTING ABANDONED GENERATOR TO REMOVED AND DISPOSED.

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PROJECT # : 23.1.40
DATE: 06/20/24
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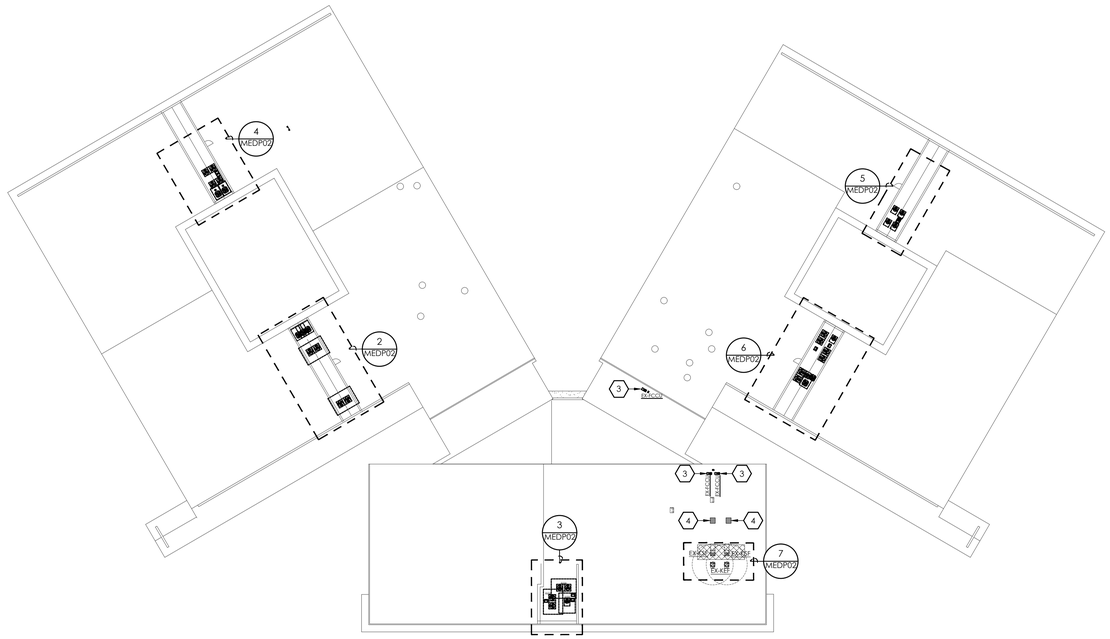
REVISION:

WISD MEMORIAL ELEMENTARY SCHOOL HVAC REPLACEMENT

WESLACO TEXAS

MEDP01



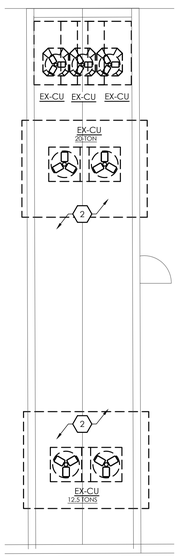
1 ELECTRICAL DEMOLITION ROOF PLAN
SCALE: 1" = 40'-0"

GENERAL NOTES:

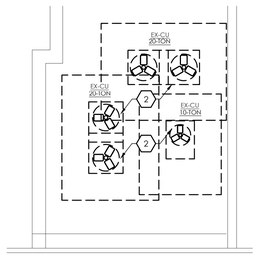
A. CONTRACTOR SHALL COORDINATE WITH ALL TRADES AND OWNER PRIOR TO ANY REMOVAL OF ANY EQUIPMENT.
B. ANY ELECTRICAL SHUT DOWN REQUIRED SHALL BE COORDINATE WITH OWNER 5 DAYS PRIOR TO ANY WORK.
C. CONTRACTOR SHALL COORDINATE WITH OWNER/ROOF MANUFACUTURER TO SEAL ANY EXISTING OPENINGS PRIOR TO ANY WORK.
D. MANDATORY FOR THE CONTRACTOR TO VISIT THE SITE EXISTING CONDITIONS PRIOR TO BID DATE AND INCLUDE ALL COST TO COMPLETE AN OPERABLE CODE COMPLIANT ELECTRICAL SYSTEM IN BID.
E. EXISTING FIRE ALARM SYSTEM HVAC DUCT SMOKE DETECTORS SHALL REUSE. CONTRACTOR SHALL CLEAN DEVICE AND SHALL BE PROTECTED TO BE USE WHEN NEW HVAC UNIT IS INSTALLED.

KEYED NOTES: DEMOLITION

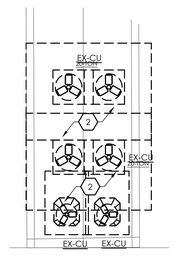
1. **ALTERNATE #01**. EXISTING HVAC EQUIPMENT ELECTRICAL CIRCUIT TO BE DISCONNECTED AND RECONNECTED TO REPLACEMENT EQUIPMENT. REFER TO REMODEL PLANS. FIELD VERIFY EXISTING CONDITIONS.
2. EXISTING AIR HANDLING UNIT/CONDENSER EQUIPMENT TO BE DEMOLISHED.
3. EXISTING MINI SPLIT EQUIPMENT TO BE REPLACED.
4. EXISTING REFRIGERATION CONDENSERS TO REMAIN.



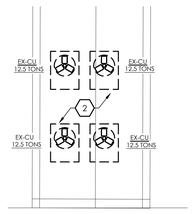
2 ROOF ENLARGED VIEW - MECH A
SCALE: 1/8" = 1'-0"



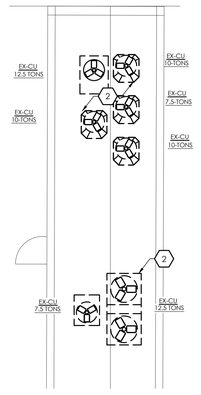
3 ROOF ENLARGED VIEW - LIBRARY/CAFE
SCALE: 1/8" = 1'-0"



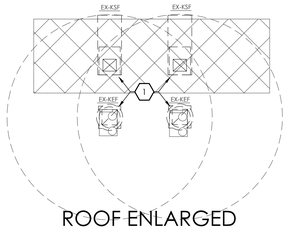
4 ROOF ENLARGED VIEW - MECH B
SCALE: 1/8" = 1'-0"



5 ROOF ENLARGED VIEW - MECH ROOM D
SCALE: 1/8" = 1'-0"



6 ROOF ENLARGED VIEW - MECH ROOM C
SCALE: 1/8" = 1'-0"



7 ROOF ENLARGED VIEW - KITCHEN
SCALE: 1/8" = 1'-0"

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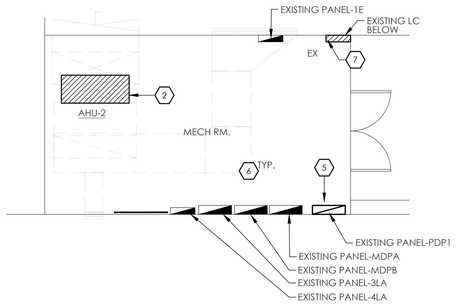
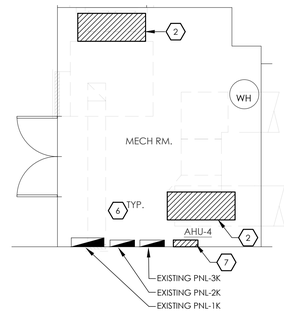


2 MECHANICAL ROOM - CAFETERIA
SCALE: 3/16" = 1'-0"



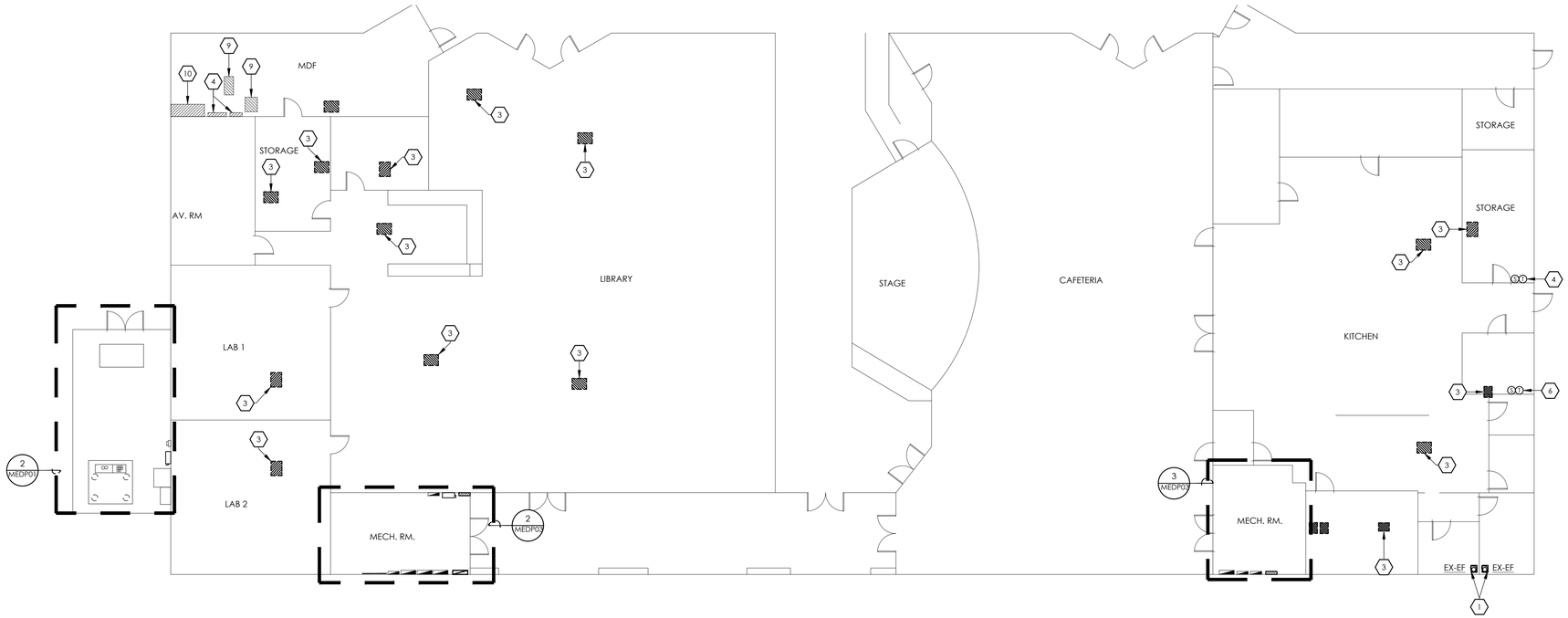
3 MECHANICAL ROOM - CAFETERIA
SCALE: 3/16" = 1'-0"

GENERAL NOTES:

A. CONTRACTOR SHALL COORDINATE WITH ALL TRADES AND OWNER PRIOR TO ANY REMOVAL OF ANY EQUIPMENT.
B. ANY ELECTRICAL SHUT DOWN REQUIRED SHALL BE COORDINATE WITH OWNER 5 DAYS PRIOR TO ANY WORK.
C. CONTRACTOR SHALL COORDINATE WITH OWNER/ROOF MANUFACUTURER TO SEAL ANY EXISTING OPENINGS PRIOR TO ANY WORK.
D. MANDATORY FOR THE CONTRACTOR TO VISIT THE SITE EXISTING CONDITIONS PRIOR TO BID DATE AND INCLUDE ALL COST TO COMPLETE AN OPERABLE CODE COMPLIANT ELECTRICAL SYSTEM IN BID.
E. EXISTING FIRE ALARM SYSTEM HVAC DUCT SMOKE DETECTORS SHALL REUSE. CONTRACTOR SHALL CLEAN DEVICE AND SHALL BE PROTECTED TO BE USE WHEN NEW HVAC UNIT IS INSTALLED.

ELECTRICAL KEYED NOTES: DEMOLITION

1. **ALTERNATE #01**. EXISTING FAN TO BE DEMOLISHED AND REPLACED. REFER TO ELECTRICAL REMODEL PLANS FOR EXISTING/NEW CIRCUIT REQUIREMENTS.
2. EXISTING AIR HANDLING UNIT/CONDENSER EQUIPMENT TO BE DEMOLISHED AND REPLACED. REMOVE ALL ASSOCIATED CONDUIT, WIRING, ELECTRICAL DEVICES. REFER TO ELECTRICAL REMODEL PLANS FOR EXISTING/NEW CIRCUIT REQUIREMENTS.
3. REMOVE INDICATED EXISTING MOTORIZED ZONE DAMPER, TO BE REPLACED WITH NEW VAV BOX, REFER TO REMODEL PLAN.
4. INDICATED CONTROLS TO BE REMOVED AND RETURNED TO OWNER.
5. EXISTING ELECTRICAL EQUIPMENT TO REMAIN.
6. ALL EXISTING ELECTRICAL EQUIPMENT TO REMAIN UNLESS OTHERWISE NOTED.
7. EXISTING HVAC CONTORLS TO BE REMOVED. FIELD VERIFY EXISTING CONDITIONS.
8. EXISTING MINI SPLIT EQUIPMENT TO BE DEMOLISHED AND REPLACED. REMOVE ALL ASSOCIATED CONDUIT, WIRING, ELECTRICAL DEVICES. REFER TO ELECTRICAL REMODEL PLANS FOR EXISTING/NEW CIRCUIT REQUIREMENTS.
9. INDICATED IT RACK/CONTROLS TO REMAIN.
10. EXISTING EMERGENCY BATTERY BACKUP CABINET TO REMAIN.



1 ELECTRICAL DEMOLITION PLAN - LIBRARY & CAFETERIA SECTION
SCALE: 3/32" = 1'-0"

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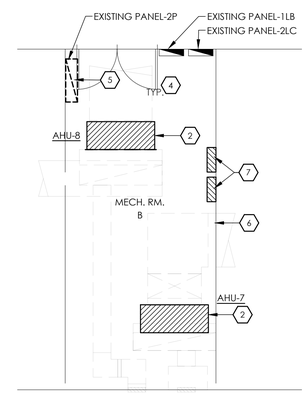
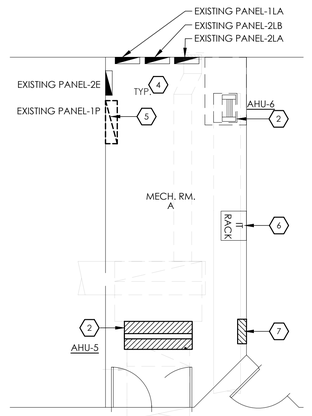
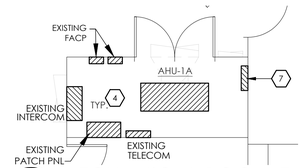
1 ELECTRICAL DEMOLITION PLAN - LEFT WING
SCALE: 1/16" = 1'-0"



2 MECHANICAL ROOM B
SCALE: 3/16" = 1'-0"



3 MECHANICAL ROOM A
SCALE: 3/16" = 1'-0"



4 MECHANICAL ROOM E
SCALE: 3/16" = 1'-0"

GENERAL NOTES:

A. CONTRACTOR SHALL COORDINATE WITH ALL TRADES AND OWNER PRIOR TO ANY REMOVAL OF ANY EQUIPMENT.
B. ANY ELECTRICAL SHUT DOWN REQUIRED SHALL BE COORDINATE WITH OWNER 5 DAYS PRIOR TO ANY WORK.
C. CONTRACTOR SHALL COORDINATE WITH OWNER/ROOF MANUFACUTURER TO SEAL ANY EXISTING OPENINGS PRIOR TO ANY WORK.
D. MANDATORY FOR THE CONTRACTOR TO VISIT THE SITE EXISTING CONDITIONS PRIOR TO BID DATE AND INCLUDE ALL COST TO COMPLETE AN OPERABLE CODE COMPLIANT ELECTRICAL SYSTEM IN BID.
E. EXISTING FIRE ALARM SYSTEM HVAC DUCT SMOKE DETECTORS SHALL REUSE. CONTRACTOR SHALL CLEAN DEVICE AND SHALL BE PROTECTED TO BE USE WHEN NEW HVAC UNIT IS INSTALLED.
F. ALL EXISTING HVAC SENSORS/ THERMOSTATS TO BE REPLACE WITH NEW AT EXISTING LOCATIONS. REFER TO MECHANICAL DOCUMENTS.

ELECTRICAL KEYED NOTES: DEMOLITION

1. **ALTERNATE #01**. EXISTING FAN TO BE DEMOLISHED AND REPLACED. REFER TO ELECTRICAL REMODEL PLANS FOR EXISTING/NEW CIRCUIT REQUIREMENTS.
2. EXISTING AIR HANDLING UNIT/CONDENSER EQUIPMENT TO BE DEMOLISHED AND REPLACED. REMOVE ALL ASSOCIATED CONDUIT, WIRING, ELECTRICAL DEVICES. REFER TO ELECTRICAL REMODEL PLANS FOR EXISTING/NEW CIRCUIT REQUIREMENTS.
3. REMOVE INDICATED EXISTING MOTORIZED ZONE DAMPER, TO BE REPLACED WITH NEW VAV BOX. REFER TO REMODEL PLAN.
4. ALL EXISTING ELECTRICAL EQUIPMENT TO REMAIN UNLESS OTHERWISE NOTED.
5. EXISTING ELECTRICAL EQUIPMENT TO BE REPLACED. REFER TO ELECTRICAL REMODEL PLANS.
6. EXISTING IT EQUIPMENT TO BE RELOCATED BY WISD. COORDINATE FINAL LOCATION WITH OWNER AND REMODEL PLANS.
7. EXISTING HVAC CONTORLS TO BE REMOVED. FIELD VERIFY EXISTING CONDITIONS.

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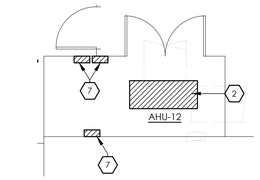
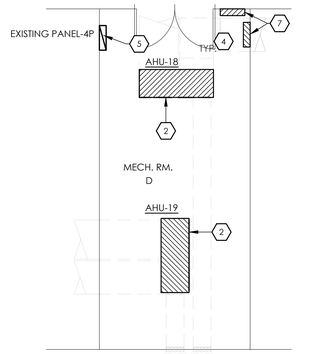
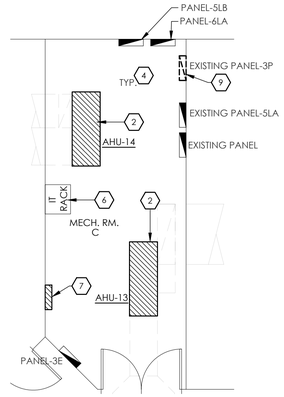
1 ELECTRICAL DEMOLITION PLAN - RIGHT WING SECTION
SCALE: 1/16" = 1'-0"



4 MECHANICAL ROOM
SCALE: 3/16" = 1'-0"



2 MECHANICAL ROOM D
SCALE: 3/16" = 1'-0"



3 MECHANICAL ROOM C
SCALE: 3/16" = 1'-0"

GENERAL NOTES:

A. CONTRACTOR SHALL COORDINATE WITH ALL TRADES AND OWNER PRIOR TO ANY REMOVAL OF ANY EQUIPMENT.
B. ANY ELECTRICAL SHUT DOWN REQUIRED SHALL BE COORDINATE WITH OWNER 5 DAYS PRIOR TO ANY WORK.
C. CONTRACTOR SHALL COORDINATE WITH OWNER/ROOF MANUFACUTURER TO SEAL ANY EXISTING OPENINGS PRIOR TO ANY WORK.
D. MANDATORY FOR THE CONTRACTOR TO VISIT THE SITE EXISTING CONDITIONS PRIOR TO BID DATE AND INCLUDE ALL COST TO COMPLETE AN OPERABLE CODE COMPLIANT ELECTRICAL SYSTEM IN BID.
E. EXISTING FIRE ALARM SYSTEM HVAC DUCT SMOKE DETECTORS SHALL REUSE. CONTRACTOR SHALL CLEAN DEVICE AND SHALL BE PROTECTED TO BE USE WHEN NEW HVAC UNIT IS INSTALLED.
F. ALL EXISTING HVAC SENSORS/ THERMOSTATS TO BE REPLACE WITH NEW AT EXISTING LOCATIONS. REFER TO MECHANICAL DOCUMENTS.

ELECTRICAL KEYED NOTES: DEMOLITION

1. **ALTERNATE #01**. EXISTING FAN TO BE DEMOLISHED AND REPLACED. REFER TO ELECTRICAL REMODEL PLANS FOR EXISTING/NEW CIRCUIT REQUIREMENTS.
2. EXISTING AIR HANDLING UNIT/CONDENSER EQUIPMENT TO BE DEMOLISHED AND REPLACED. REMOVE ALL ASSOCIATED CONDUIT, WIRING, ELECTRICAL DEVICES. REFER TO ELECTRICAL REMODEL PLANS FOR EXISTING/NEW CIRCUIT REQUIREMENTS.
3. REMOVE INDICATED EXISTING MOTORIZED ZONE DAMPER, TO BE REPLACED WITH NEW VAV BOX. REFER TO REMODEL PLAN.
4. ALL EXISTING ELECTRICAL EQUIPMENT TO REMAIN UNLESS OTHERWISE NOTED.
5. EXISTING ELECTRICAL EQUIPMENT TO BE DEMOLISHED AND REPLACED. REFER TO ELECTRICAL REMODEL PLANS.
6. EXISTING IT EQUIPMENT TO BE RELOCATED BY WISD. COORDINATE FINAL LOCATION WITH OWNER AND REMODEL PLANS.
7. EXISTING HVAC CONTORLS TO BE REMOVED. FIELD VERIFY EXISTING CONDITIONS.
8. INDICATED IT RACK TO REMAIN. NO WORK.
9. EXISTING ELECTRICAL EQUIPMENT TO BE REPLACED. REFER TO ELECTRICAL REMODEL PLANS.

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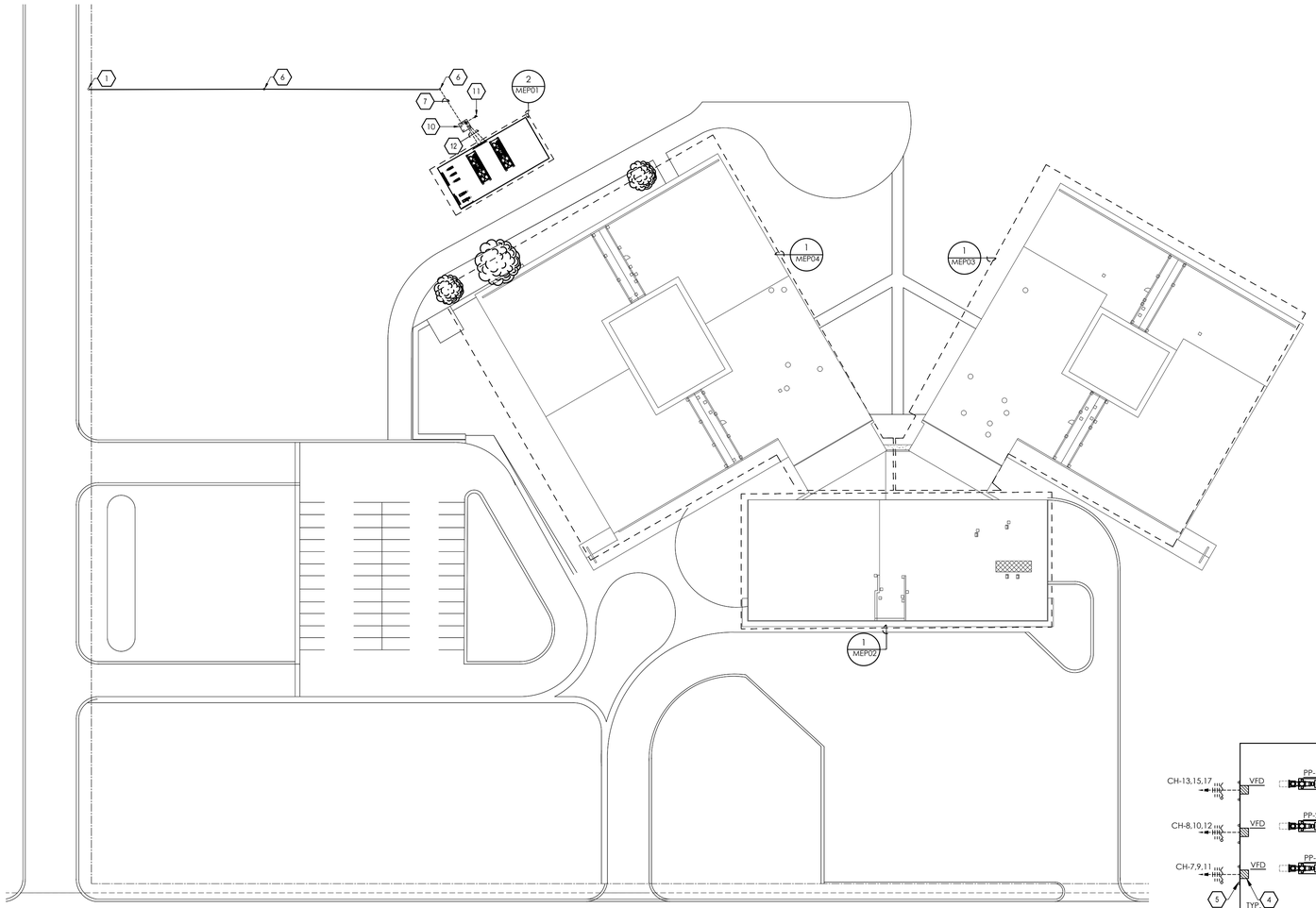


1 ELECTRICAL SITE PLAN
SCALE: 1" = 50'-0"

GENERAL NOTES - ELECTRICAL SITE

A. CONTRACTOR TO VERIFY ALL EXISTING AND NEW MAIN POWER SERVICES AND COORDINATE WITH POWER COMPANY FOR ALL NEW REQUIREMENTS AND ALL COST ASSOCIATED. CONTRACTOR SHALL INCLUDE ANY COST FOR THE NEW TRANSFORMER AND OTHER ASSOCIATED FEES IN BID. CONTRACTOR IS RESPONSIBLE TO VERIFY ALL FEES WITH POWER COMPANY AND TO INCLUDE IN BID. CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH POWER COMPANY AS SOON THE CONTRACT IS AWARDED TO ORDER TRANSFORMER AND THE RELATED ELECTRICAL SERVICE EQUIPMENT AS SOON AS POSSIBLE.

B. CONTRACTOR IS RESPONSIBLE FOR ALL EXCAVATION, TRENCHING AND BACKFILLING. COORDINATE WITH ALL UTILITIES PRIOR TO EXCAVATION.

C. ALL ELECTRICAL EQUIPMENT OUTDOORS SHALL BE RATED TYPE NEMA 3RUNLESS OTHERWISE NOTED.

D. CONTRACTOR SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES. ALL WORK SHALL CONFORM TO NATIONAL ELECTRICAL CODES AND ALL OTHER AUTHORITY HAVING JURISDICTION. OBTAIN PERMITS AND PAY ALL FEES. PERFORM MODIFICATIONS TO MEET CODE AND ORDINANCE REQUIREMENTS AT NO ADDITIONAL COST TO OWNER, OR ENGINEER. VERIFY PRIOR TO BID DATE.

E. VERIFY AT JOB SITE THE EXACT LOCATIONS OF STRUCTURAL MEMBERS SUCH AS BEAMS, COLUMNS, ETC. TO LOCATE EQUIPMENT CONDUIT, PANELS AND DEVICES. IF DEVIATIONS FROM THE DRAWING ARE NECESSARY TO MEET STRUCTURAL CONDITIONS MAKE DEVIATIONS WITHOUT ADDITIONAL COST,TO OWNER OR ENGINEER.

F. IN COOPERATION WITH OTHER CONTRACTORS, DETERMINE THE EXACT LOCATION OF EQUIPMENT AND DEVICES AND CONNECTIONS THERETO BY REFERENCE TO THE SUBMITTALS AND ROUGH-IN DRAWINGS, AND BY MEASUREMENTS AT THE SITE. REFER TO ALL OTHER TRADES SUBMITTAL FOR ELECTRICAL INFORMATION.

G. GROUND ENTIRE ELECTRICAL SYSTEM IN STRICT ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.

I. VERIFY AT JOB SITE GENERAL WORK TO BE DONE AS SPECIFIED, AS NOTED, OR AS REQUIRED FOR INSTALLATION ELECTRICAL SYSTEMS PRIOR TO SUBMISSION OF BIDS.

H. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND EQUIPMENT TO BE REMOVED AND REPLACED BEFORE SUBMITTING HIS BID.

I. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND SMALL SCALE ONLY. THEY CONVEY THE INTENT OF THE WORK BUT DO NOT SHOW DETAIL SUCH AS JUNCTION AND PULL BOXES REQUIRED BY THE SPECIFICATIONS AND THE NATIONAL ELECTRICAL CODE(NEC). PROVIDE ALL MATERIALS AND METHODS CALLED FOR IN THE SPECIFICATIONS AND AS REQUIRED IN THE NEC TO PROVIDE A COMPLETE INSTALLATION OF ALL WORK.

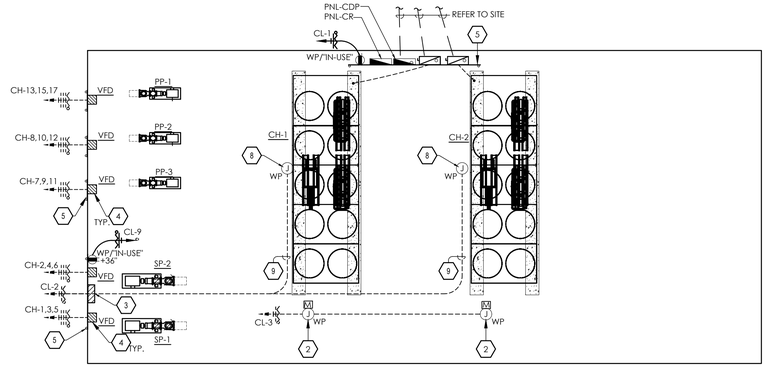
J. ALL WIRING SHALL BE COPPER.

K. ALL SLEEVES, PENETRATIONS, ETC. SHALL BE SEALED SOLID NON-SHRINKING MATERIAL IMMEDIATELY UPON FILLING OF THE OPENING WITH PIPE OR CONDUIT.

L. ARRANGE FOR SOURCES OF TEMPORARY CONSTRUCTION SERVICES. SUCH SERVICES SHALL BE NOMINALLY 120/240V, 1-PHASE, 3-WIRE FROM WHICH A COMPLETE SYSTEM OF TEMPORARY POWER AND LIGHTING SHALL BE PROVIDED FOR ALL CONSTRUCTION NEEDS.

ELECTRICAL KEYED NOTES: POWER

1. NEW POWER COMPANY POWER POLE . COORDINATE WITH UTILITY COMPANY PRIOR TO ANY WORK.
2. PROVIDE WEATHER PROOF JBOX FOR MOTORIZED BUTTERFLY ISOLATION VALVE POWER. COORDINATE EXACT LOCATION PRIOR TOP ANY WORK.
3. PROVIDE WEATHER PROOF JBOX FOR CONTROLLER POWER. COORDINATE EXACT LOCATION PRIOR TO ANY WORK.
4. NEW VFD FOR CHILLED WATER EQUIPMENT VFD BY DIVISION 23 INSTALLED BY DIVISION 26. COORDINATE EXACT LOCATION PRIOR TO ANY WORK.
5. 3"GALVANIZED PIPE WITH UNISTRUT STAND FOR ELECTRICAL SERVICE EQUIPMENT. COORDINATE WITH UTILITY COMPANY PRIOR TO ANY WORK.
6. NEW POWER COMPANY POWER POLE WITH RISER DIP POLE. FIELD COORDINATE EXACT LOCATION WITH POWER COMPANY PRIOR TO ANY WORK.
7. CONTRACTOR TO PROVIDE AND INSTALL (1)-4" PVC CONDUIT FROM PROPOSED NEW UTILITY COMPANY POWER POLE WITH RISER DIP POLE TO NEW PAD MOUNT TRANSFORMER VIA PULLBOXES. ALL UNDERGROUND WORK SHALL BE ACCORDING TO POWER COMPANY STANDARDS. VERIFY ALL REQUIREMENTS WITH THE POWER COMPANY BEFORE ANY ROUGH-IN. COORDINATE LOCATION, COST, AND INSTALLATION WITH POWER COMPANY PRIOR TO BID.
8. J-BOX FOR H.V.A.C. CONTROLS COORDINATE EXACT LOCATION AND ELECTRICAL REQUIREMENTS WITH EQUIPMENT SUPPLIER PRIOR TO COMMENCING ANY WORK.
9. PROVIDE 1-RUN OF 1" C WITH PULL STRING TO EACH UNIT FOR HVAC CONTROLS.
10. NEW POWER COMPANY PAD MOUNTED TRANSFORMER. PROVIDE CONCRETE PAD PER POWER COMPANY STANDARDS. COORDINATE COST AND INSTALLATION WITH POWER COMPANY PRIOR TO BID DATE. COORDINATE EXACT LOCATION WITH POWER COMPANY PRIOR TO ANY ROUGH-IN.
11. NEW 480/277V, 3Ø, 4W, ELECTRICAL SERVICE METER, ON A GALVANIZED UNISTRUT PIPE STAND.
12. CONTRACTOR TO PROVIDE AND INSTALL PVC CONDUIT FROM NEW UTILITY TRANSFORMER TO NEW ELECTRICAL DISCONNECT EQUIPMENT. VERIFY ALL REQUIREMENTS PRIOR TO ANY ROUGH-IN. REFER TO ELECTRICAL RISER DIAGRAM.



2 ENLARGED CHILLED WATER PLANT
SCALE: 1/8" = 1'-0"

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06/20/2024
STATE OF TEXAS
LEONARDO MUNOZ
97257
REGISTERED PROFESSIONAL ENGINEER

PROJECT # : 23.1.40
DATE: 06/20/24
CHECKED BY: LM

REVISION:
1 ADD#4 04/26/24
6 ADD#6 05/07/24

WISD AIRPORT ELEMENTARY SCHOOL
HVAC REPLACEMENT
WESLACO
TEXAS

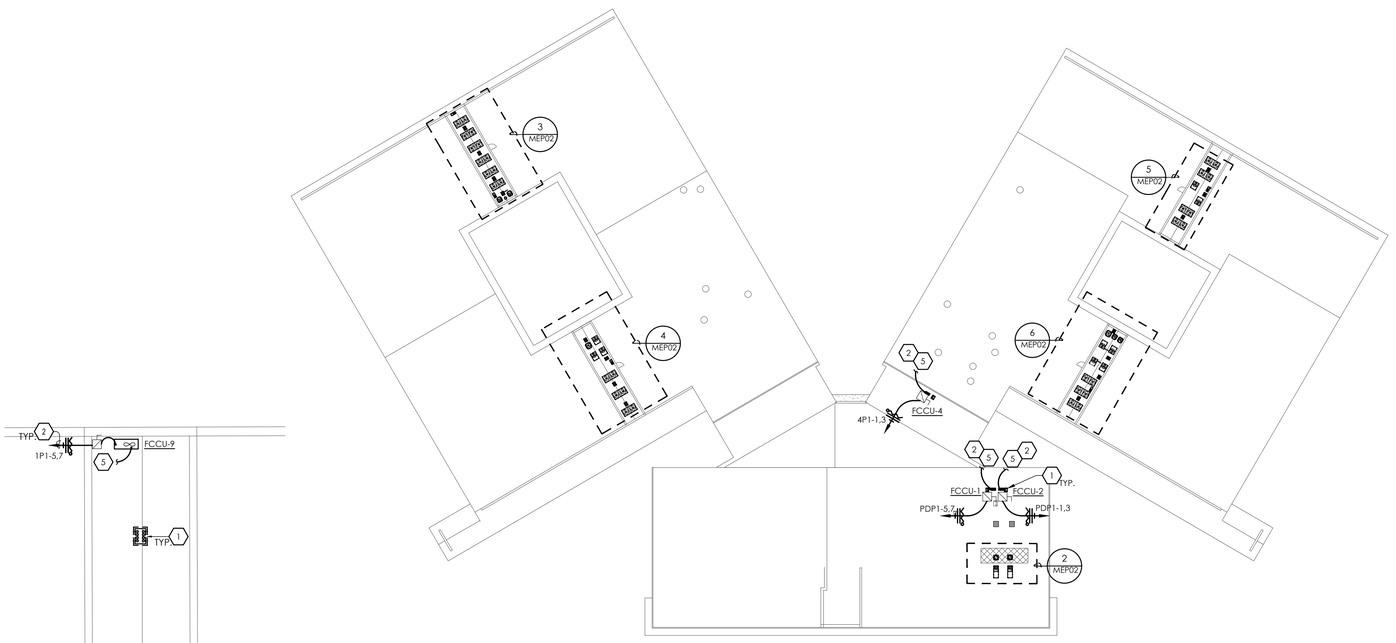
MEP01

GENERAL NOTES: POWER

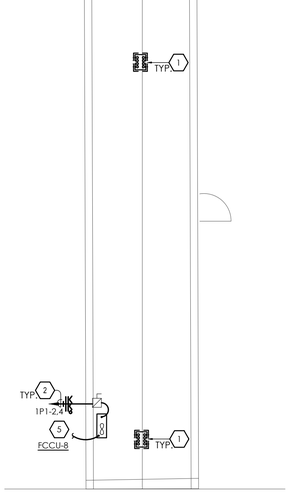
A. CONTRACTOR SHALL REFER TO EQUIPMENT SUBMITTAL FOR ALL ELECTRICAL REQUIREMENTS PRIOR TO COMMENCING ANY WORK.
B. ELECTRICAL CONTRACTOR SHALL MAKE FINAL CONNECTION TO H.V.A.C EQUIPMENT, PLUMBING EQUIPMENT, REFER TO PANEL SCHEDULE FOR WIRE SIZE.
C. ELECTRICAL CONTRACTOR SHALL PROVIDE STARTERS, RELAYS, CONTACTORS AND THE REQUIRED ELECTRICAL ACCESSORIES FOR MECHANICAL SYSTEM AS REQUIRED.
D. COORDINATE EXACT LOCATION OF ALL MECHANICAL EQUIPMENT IN ACCORDANCE W/MECHANICAL DRAWINGS TO MEET ELECTRICAL AND MECHANICAL REQUIRED CLEARANCE BY THE LATEST CODE.
E. NEMA RATED OUTLETS, REFER TO BREAKER SIZE AND COORDINATE WITH EQUIPMENT REQUIREMENTS PRIOR TO BID.
F. ELECTRICAL CONTRACTOR PROVIDE NEW H.V.A.C. CONTROLS/ THERMOSTATS AT EXISTING LOCATIONS. REFER TO MECHANICAL DOCUMENTS.
G. CONTRACTOR IS RESPONSIBLE TO REPLACE ANY DAMAGE CEILING TILES WITH NEW ONES TO MATCH EXISTING. CONTRACTOR SHALL INCLUDE AN ALLOWANCE OF 500 CEILING TILES PER SCHOOL IN BASE BID.
H. ALL EXISTING DUCT SMOKE DETECTOR SHALL BE REUSE. PROVIDE 5 CONVENTIONAL DUCT SMOKE DETECTOR, AND ADDRESSABLE MONITOR MODULE ADDITIONAL WITH 100' OF WIRING/LABOR FOR THE 5 ADDITIONAL IN BID.

ELECTRICAL KEYED NOTES: POWER

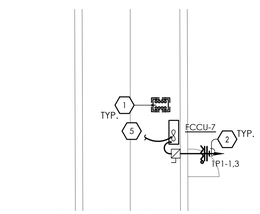
1. ROOF PENETRATION HOUSING. COORDINATED WITH MECHANICAL DOCUMENTS PRIOR TO ANY WORK.
2. CONDENSER ELECTRICAL CONDUIT TO ENTER BUILDING VIA ROOF PENETRATION HOUSING. COORDINATE EXACT ROUTE WITH REFRIGERANT LINES PRIOR TO ANY WORK. PROVIDE CONDUIT ROOF SUPPORTS AT EVERY 10'. ROOF SUPPORTS SHALL BE MFR. MIRO INDUSTRIES STAINLESS STEEL #12-BASE-12.
3. **ALTERNATE #01**. PROVIDE WEATHER PROOF JBOX WITH 1-1.5"C WITH PULLSTRING, ROUTE TO KITCHEN VENTILATION CONTROL PANEL SYSTEM. COORDINATE WITH EQUIPMENT SUPPLIER AND MECHANICAL DOCUMENTS PRIOR TO COMMENCING ANY WORK. REFER TO MECHANICAL DOCUMENTS FOR WIRING DIAGRAMS AND DETAILS.
4. **ALTERNATE #01**. NEW KITCHEN HVAC EQUIPMENT. EXISTING ELECTRICAL CIRCUIT TO BE REUSED. FIELD VERIFY EXISTING CONDITIONS.
5. NEW HVAC EQUIPMENT. INTERLOCK FCCU-_ WITH FC-_ H.V.A.C. EQUIPMENT. WIRING SHALL BE 3#10, 1#10G, 3/4"C.



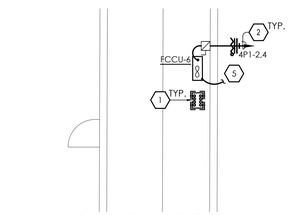
1 ELECTRICAL ROOF PLAN
SCALE: 1" = 40-0"



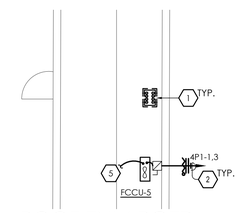
3 ROOF ENLARGED VIEW - MECH B
SCALE: 1/8" = 1'-0"



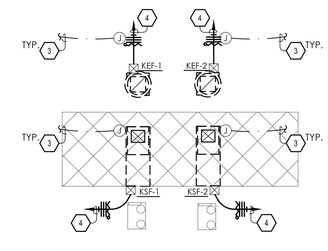
4 ROOF ENLARGED VIEW - MECH A
SCALE: 1/8" = 1'-0"



5 ROOF ENLARGED VIEW - MECH ROOM D
SCALE: 1/8" = 1'-0"



6 ROOF ENLARGED VIEW - MECH ROOM C
SCALE: 1/8" = 1'-0"



2 ALTERNATE #1 ROOF ENLARGED VIEW - KITCHEN
SCALE: 1/8" = 1'-0"

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06/20/2024
STATE OF TEXAS
LEONARDO MUNOZ
97137
LICENSED PROFESSIONAL ENGINEER

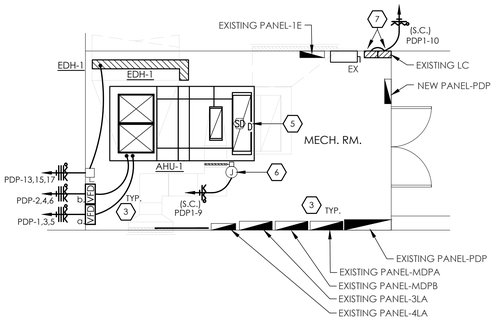
MEP02

GENERAL NOTES: POWER

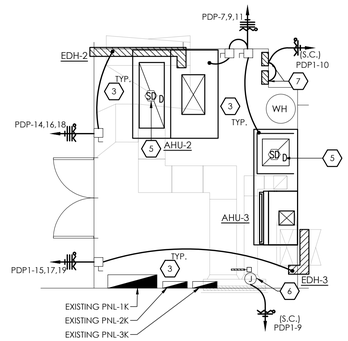
A. CONTRACTOR SHALL REFER TO EQUIPMENT SUBMITTAL FOR ALL ELECTRICAL REQUIREMENTS PRIOR TO COMMENCING ANY WORK.
B. ELECTRICAL CONTRACTOR SHALL MAKE FINAL CONNECTION TO H.V.A.C EQUIPMENT, PLUMBING EQUIPMENT, REFER TO PANEL SCHEDULE FOR WIRE SIZE.
C. ELECTRICAL CONTRACTOR SHALL PROVIDE STARTERS, RELAYS, CONTACTORS AND THE REQUIRED ELECTRICAL ACCESSORIES FOR MECHANICAL SYSTEM AS REQUIRED.
D. COORDINATE EXACT LOCATION OF ALL MECHANICAL EQUIPMENT IN ACCORDANCE W/MECHANICAL DRAWINGS TO MEET ELECTRICAL AND MECHANICAL REQUIRED CLEARANCE BY THE LATEST CODE.
E. NEMA RATED OUTLETS, REFER TO BREAKER SIZE AND COORDINATE WITH EQUIPMENT REQUIREMENTS PRIOR TO BID.
F. ELECTRICAL CONTRACTOR PROVIDE NEW H.V.A.C. CONTROLS/ THERMOSTATS AT EXISTING LOCATIONS. REFER TO MECHANICAL DOCUMENTS.
G. CONTRACTOR IS RESPONSIBLE TO REPLACE ANY DAMAGE CEILING TILES WITH NEW ONES TO MATCH EXISTING. CONTRACTOR SHALL INCLUDE AN ALLOWANCE OF 500 CEILING TILES PER SCHOOL IN BASE BID.
H. ALL EXISTING DUCT SMOKE DETECTOR SHALL BE REUSE. PROVIDE 5 CONVENTIONAL DUCT SMOKE DETECTOR, AND ADDRESSABLE MONITOR MODULE ADDITIONAL WITH 100' OF WIRING/LABOR FOR THE 5 ADDITIONAL IN BID.

ELECTRICAL KEYED NOTES: POWER

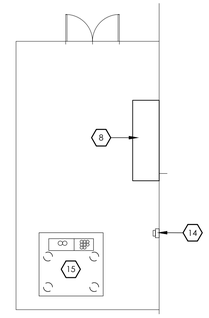
1. NEW HAVC EQUIPMENT. INTERLOCK FCCU-_ WITH FC-_ H.V.A.C. EQUIPMENT. WIRING SHALL BE 3#10, 1#10G, 3/4"C.
2. NEW EXHAUST FAN TO TIE INTO ROOMS LIGHTING CIRCUIT AND INTERLOCK FAN WITH ROOMS LIGHTS. WIRING SHALL BE 2#10, 1#10G, 3/4"C.
3. NEW ELECTRICAL EQUIPMENT, FIELD COORDINATE EXACT LOCATION WITH EXISTING CONDITIONS.
4. PROVIDE DISCONNECT ABOVE CEILING FOR NEW MECHANICAL EQUIPMENT. FIELD COORDINATE EXACT LOCATION WITH EXISTING CONDITIONS.
5. REUSE EXISTING FIRE ALARM DUCT SMOKE DETECTOR. TIE INTO EXISTING FIRE ALARM SYSTEM. INCLUDE ALL COST IN BID FOR A COMPLETE OPERABLE AND CODE COMPLIANT SYSTEM.
6. PROVIDE J-BOX FOR HVAC MOTORIZED DAMPER. COORDINATE EXACT LOCATION WITH MECHANICAL DOCUMENTS.
7. PROVIDE JBOX FOR NEW HVAC CONTROLS ENCLOSURE. REFER TO MECHANICAL DOCUMENTS.
8. **ALTERNATE #2. NEW SWITCHBOARD DISTRIBUTION PANELBOARD. FIELD COORDINATE EXACT LOCATION. REFER TO SHEET MER03, MER04.**
9. NEW MDF ROOM HAVC EQUIPMENT. INTERLOCK FCCU-_ WITH FC-_ H.V.A.C. EQUIPMENT. WIRING SHALL BE 3#10, 1#10G, 3/4"C.
10. EXISTING IT RACK TO BE RELOCATED BY OWNER. FIELD COORDINATE FINAL LOCATION WITH EXISTING CONDITIONS.
11. PROVIDE JBOX FOR H2 SENSOR. REFER TO MECHANICAL DOCUMENTS.
12. NEW EXHAUST FAN TO TIE INTO ROOMS LIGHTING CIRCUIT WITH 2#10, 1#10G, 3/4"C. SHALL BE CONTROLLED VIA H2 SENSOR, REFER TO MECHANICAL DOCUMENTS.
13. PROVIDE JBOX GAS DETECTION SYSTEM. REFER TO MECHANICAL DOCUMENTS.
14. EXISTING ELECTRICAL SERVICE METER. FIELD VERIFY EXISTING CONDITIONS.
15. EXISTING POWER COMPANY PAD MOUNT TRANSFORMER 120/208V, 3Ø, 4W.



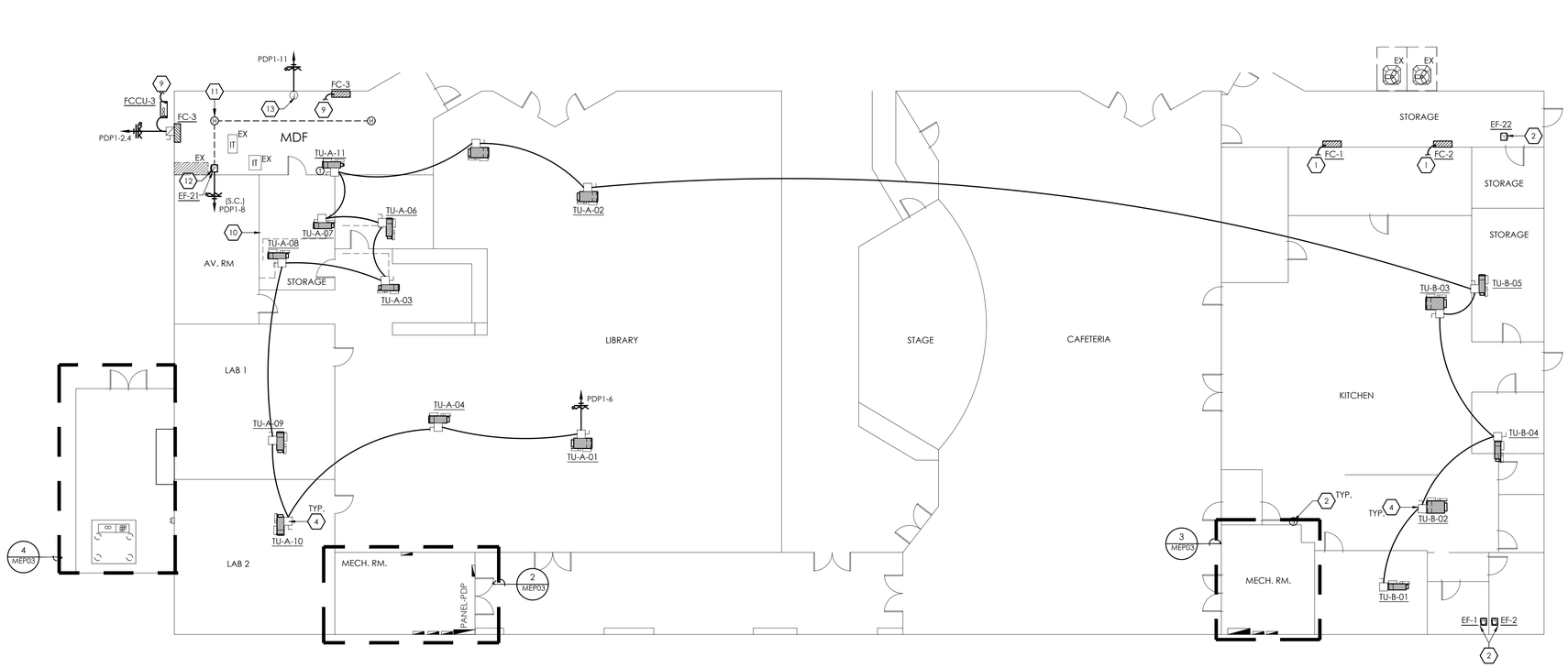
2 MECHANICAL ROOM - LIBRARY
SCALE: 3/16" = 1'-0"



3 MECHANICAL ROOM - CAFETERIA
SCALE: 3/16" = 1'-0"



ENLARGED VIEW - ELECTRICAL EQUIPMENT YARD POWER PLAN
SCALE: 1/8" = 1'-0"



1 ELECTRICAL FLOOR PLAN - LIBRARY & CAFETERIA SECTION
SCALE: 3/32" = 1'-0"

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06/20/2024
STATE OF TEXAS
LEONARDO MUNOZ
97137
LICENSED PROFESSIONAL ENGINEER

PROJECT # : 23.1.40
DATE: 06/20/24
CHECKED BY: LM

REVISION:

WISD MEMORIAL ELEMENTARY SCHOOL
HVAC REPLACEMENT

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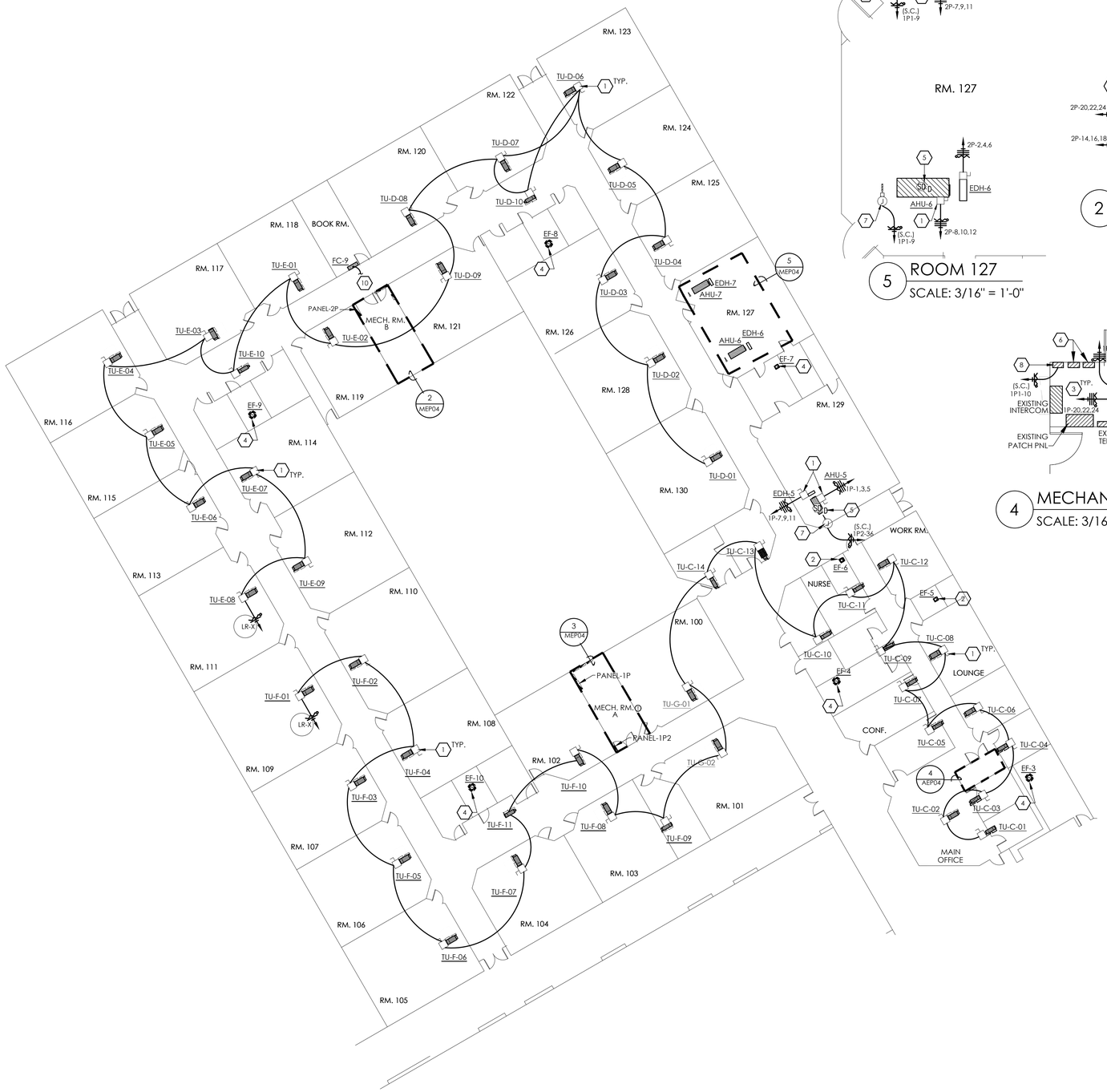
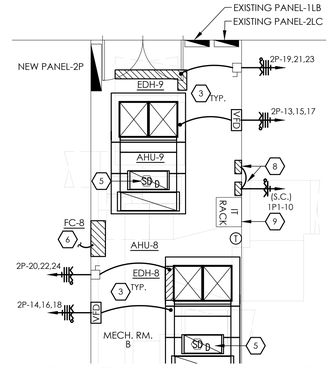
MEP03

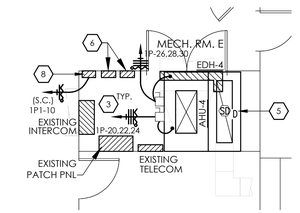


1 ELECTRICAL FLOOR PLAN - LEFT WING
SCALE: 1/16" = 1'-0"

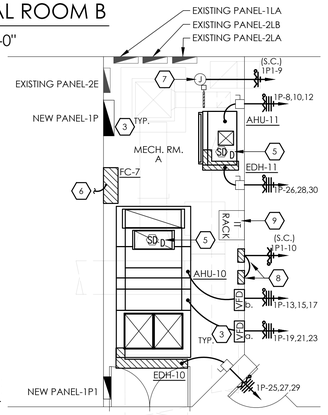
5 ROOM 127
SCALE: 3/16" = 1'-0"



2 MECHANICAL ROOM B
SCALE: 3/16" = 1'-0"



4 MECHANICAL ROOM E
SCALE: 3/16" = 1'-0"



3 MECHANICAL ROOM A
SCALE: 3/16" = 1'-0"

GENERAL NOTES: POWER

A. CONTRACTOR SHALL REFER TO EQUIPMENT SUBMITTAL FOR ALL ELECTRICAL REQUIREMENTS PRIOR TO COMMENCING ANY WORK.
B. ELECTRICAL CONTRACTOR SHALL MAKE FINAL CONNECTION TO H.V.A.C EQUIPMENT, PLUMBING EQUIPMENT, REFER TO PANEL SCHEDULE FOR WIRE SIZE.
C. ELECTRICAL CONTRACTOR SHALL PROVIDE STARTERS, RELAYS, CONTACTORS AND THE REQUIRED ELECTRICAL ACCESSORIES FOR MECHANICAL SYSTEM AS REQUIRED.
D. COORDINATE EXACT LOCATION OF ALL MECHANICAL EQUIPMENT IN ACCORDANCE W/MECHANICAL DRAWINGS TO MEET ELECTRICAL AND MECHANICAL REQUIRED CLEARANCE BY THE LATEST CODE.
E. NEMA RATED OUTLETS, REFER TO BREAKER SIZE AND COORDINATE WITH EQUIPMENT REQUIREMENTS PRIOR TO BID.
F. ELECTRICAL CONTRACTOR PROVIDE NEW H.V.A.C. CONTROLS/ THERMOSTATS AT EXISTING LOCATIONS. REFER TO MECHANICAL DOCUMENTS.
G. CONTRACTOR IS RESPONSIBLE TO REPLACE ANY DAMAGE CEILING TILES WITH NEW ONES TO MATCH EXISTING. CONTRACTOR SHALL INCLUDE AN ALLOWANCE OF 500 CEILING TILES PER SCHOOL IN BASE BID.
H. ALL EXISTING DUCT SMOKE DETECTOR SHALL BE REUSE. PROVIDE 5 CONVENTIONAL DUCT SMOKE DETECTOR, AND ADDRESSABLE MONITOR MODULE ADDITIONAL WITH 100' OF WIRING/LABOR FOR THE 5 ADDITIONAL IN BID.

ELECTRICAL KEYED NOTES: POWER

1. PROVIDE DISCONNECT ABOVE CEILING FOR NEW MECHANICAL EQUIPMENT. FIELD COORDINATE EXACT LOCATION WITH EXISTING CONDITIONS.
2. NEW EXHAUST FAN TO TIE INTO ROOMS LIGHTING CIRCUIT AND INTERLOCK FAN WITH ROOMS LIGHTS. WIRING SHALL BE 2#10, 1#10G, 3/4"C.
3. NEW ELECTRICAL EQUIPMENT. FIELD COORDINATE EXACT LOCATION WITH EXISTING CONDITIONS.
4. **ALTERNATE #01**. NEW EXHAUST FAN TO BE OPERATED AND MONITORED BY BAS. TIE INTO EXISTING EXHAUST FAN CIRCUIT.
5. REUSE EXISTING FIRE ALARM DUCT SMOKE DETECTOR. TIE INTO EXISTING FIRE ALARM SYSTEM. INCLUDE ALL COST IN BID FOR A COMPLETE OPERABLE AND CODE COMPLIANT SYSTEM.
6. APPROXIMATE LOCATION OF EXISTING MFR. SILENT NIGHT #SK-5208 FIRE ALARM CONTROL PANEL. FIELD VERIFY EXACT LOCATION AND EXISTING CONDITIONS.
7. PROVIDE J-BOX FOR HVAC MOTORIZED DAMPER. COORDINATE EXACT LOCATION WITH MECHANICAL DOCUMENTS.
8. PROVIDE JBOX FOR NEW HVAC CONTROLS ENCLOSURE. REFER TO MECHANICAL DOCUMENTS.
9. COORDINATE RELOCATION OF ALL IT RACKS WITH DISTRICT PRIOR TO COMMENCEMENT OF WORK.
10. NEW HVAC EQUIPMENT. INTERLOCK FCCU-_ WITH FC-_ H.V.A.C. EQUIPMENT. WIRING SHALL BE 3#10, 1#10G, 3/4"C.

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06/20/2024

STATE OF TEXAS
LEONARDO MUNOZ
97537
LICENSED PROFESSIONAL ENGINEER

PROJECT # : 23.1.40
DATE: 06/20/24
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REVISION:

WISD MEMORIAL ELEMENTARY SCHOOL
HVAC REPLACEMENT

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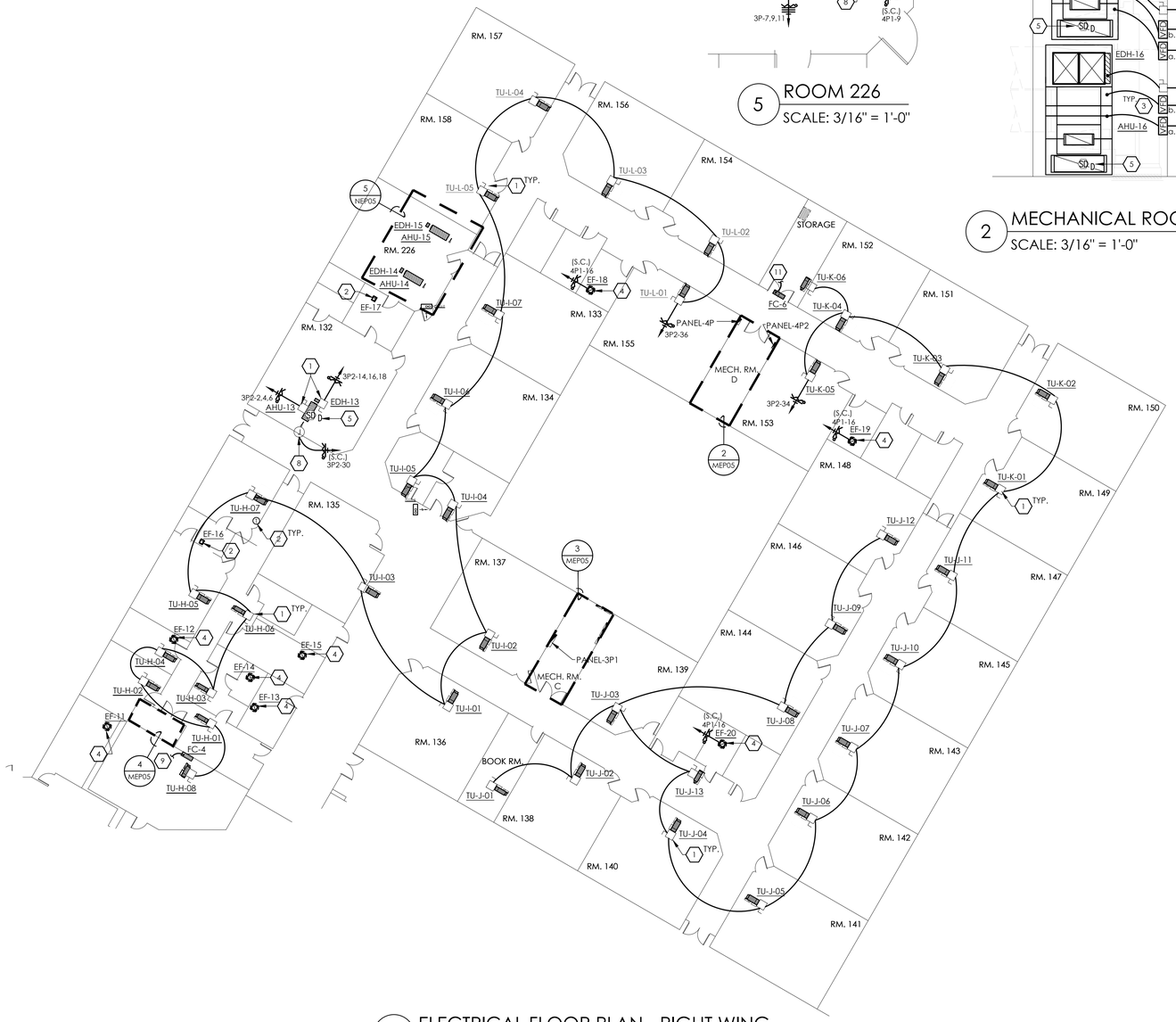
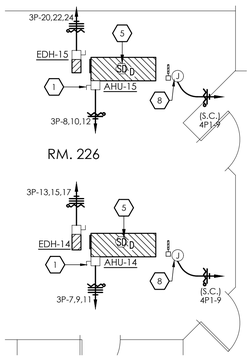
TEXAS

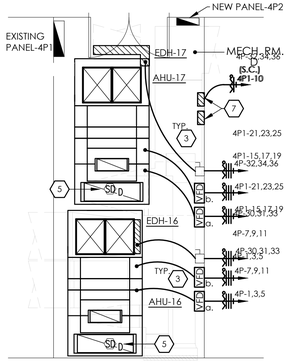
MEP04



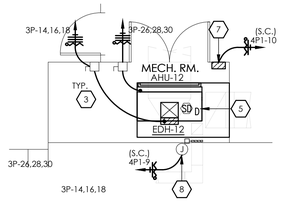
1 ELECTRICAL FLOOR PLAN - RIGHT WING
SCALE: 1/16" = 1'-0"



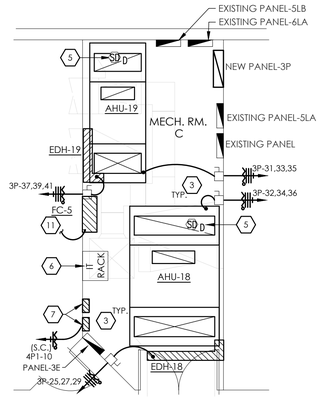
5 ROOM 226
SCALE: 3/16" = 1'-0"



2 MECHANICAL ROOM D
SCALE: 3/16" = 1'-0"



4 MECHANICAL ROOM



3 MECHANICAL ROOM C
SCALE: 3/16" = 1'-0"

GENERAL NOTES: POWER

A. CONTRACTOR SHALL REFER TO EQUIPMENT SUBMITTAL FOR ALL ELECTRICAL REQUIREMENTS PRIOR TO COMMENCING ANY WORK.
B. ELECTRICAL CONTRACTOR SHALL MAKE FINAL CONNECTION TO H.V.A.C EQUIPMENT, PLUMBING EQUIPMENT. REFER TO PANEL SCHEDULE FOR WIRE SIZE.
C. ELECTRICAL CONTRACTOR SHALL PROVIDE STARTERS, RELAYS, CONTACTORS AND THE REQUIRED ELECTRICAL ACCESSORIES FOR MECHANICAL SYSTEM AS REQUIRED.
D. COORDINATE EXACT LOCATION OF ALL MECHANICAL EQUIPMENT IN ACCORDANCE W/MECHANICAL DRAWINGS TO MEET ELECTRICAL AND MECHANICAL REQUIRED CLEARANCE BY THE LATEST CODE.
E. NEMA RATED OUTLETS, REFER TO BREAKER SIZE AND COORDINATE WITH EQUIPMENT REQUIREMENTS PRIOR TO BID.
F. ELECTRICAL CONTRACTOR PROVIDE NEW H.V.A.C. CONTROLS/ THERMOSTATS AT EXISTING LOCATIONS. REFER TO MECHANICAL DOCUMENTS.
G. CONTRACTOR IS RESPONSIBLE TO REPLACE ANY DAMAGE CEILING TILES WITH NEW ONES TO MATC EXISTING. CONTRACTOR SHALL INCLUDE AN ALLOWANCE OF 500 CEILING TILES PER SCHOOL IN BASE BID.
H. ALL EXISTING DUCT SMOKE DETECTOR SHALL BE REUSE. PROVIDE 5 CONVENTIONAL DUCT SMOKE DETECTOR, AND ADDRESSABLE MONITOR MODULE ADDITIONAL WITH 100' OF WIRING/LABOR FOR THE 5 ADDITIONAL IN BID.

ELECTRICAL KEYED NOTES: POWER

1. PROVIDE DISCONNECT ABOVE CEILING FOR NEW MECHANICAL EQUIPMENT. FIELD COORDINATE EXACT LOCATION WITH EXISTING CONDITIONS.
2. **ALTERNATE #01**, NEW EXHAUST FAN TO TIE INTO ROOMS LIGHTING CIRCUIT AND INTERLOCK FAN WITH ROOMS LIGHTS. WIRING SHALL BE 2#10, 1#10G, 3/4"C.
3. NEW ELECTRICAL EQUIPMENT. FIELD COORDINATE EXACT LOCATION WITH EXISTING CONDITIONS.
4. **ALTERNATE #01**. NEW EXHAUST FAN TO BE OPERATED AND MONITORED BY BAS. TIE INTO EXISTING EXHAUST FAN CIRCUIT.
5. REUSE EXISTING FIRE ALARM DUCT SMOKE DETECTOR. TIE INTO EXISTING FIRE ALARM SYSTEM. INCLUDE ALL COST IN BID FOR A COMPLETE OPERABLE AND CODE COMPLIANT SYSTEM.
6. COORDINATE RELOCATION OF ALL IT RACKS WITH DISTRICT PRIOR TO COMMENCEMENT OF WORK.
7. PROVIDE JBOX FOR NEW HVAC CONTROLS ENCLOSURE. REFER TO MECHANICAL DOCUMENTS.
8. PROVIDE J-BOX FOR HVAC MOTORIZED DAMPER. COORDINATE EXACT LOCATION WITH MECHANICAL DOCUMENTS.
9. NEW HVAC EQUIPMENT INTERLOCK FCCU-_ WITH FC-_, H.V.A.C. EQUIPMENT. WIRING SHALL BE 3#10, 1#10G, 3/4"C.

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Project number: 23.1.40

06/20/2024
STATE OF TEXAS
LEONARDO MUNOZ
97137
LICENSED PROFESSIONAL ENGINEER

PROJECT # : 23.1.40
DATE: 06/20/24
CHECKED BY: LM

REVISION:

WISD MEMORIAL ELEMENTARY SCHOOL
HVAC REPLACEMENT
WESLACO TEXAS

MEP05

DUCT HEATER DISCONNECT SCHEDULE

EDH-1	200AMP, 3PH, 4W, 208V, NEMA-1, HD, NF DISCONNECT
EDH-2	400AMP, 3PH, 4W, 208V, NEMA-1, HD, NF DISCONNECT
EDH-3	60AMP, 3PH, 4W, 208V, NEMA-1, HD, NF DISCONNECT
EDH-4	200AMP, 3PH, 4W, 208V, NEMA-1, HD, NF DISCONNECT
EDH5	60AMP, 3PH, 4W, 208V, NEMA-1, HD, NF DISCONNECT
EDH-6	30AMP, 3PH, 4W, 208V, NEMA-1, HD, NF DISCONNECT
EDH-7	30AMP, 3PH, 4W, 208V, NEMA-1, HD, NF DISCONNECT
EDH-8	400AMP, 3PH, 4W, 208V, NEMA-1, HD, NF DISCONNECT
EDH-9	400AMP, 3PH, 4W, 208V, NEMA-1, HD, NF DISCONNECT
EDH-10	400AMP, 3PH, 4W, 208V, NEMA-1, HD, NF DISCONNECT
EDH-11	100AMP, 3PH, 4W, 208V, NEMA-1, HD, NF DISCONNECT
EDH-12	100AMP, 3PH, 4W, 208V, NEMA-1, HD, NF DISCONNECT
EDH-13	60AMP, 3PH, 4W, 208V, NEMA-1, HD, NF DISCONNECT
EDH-14	30AMP, 3PH, 4W, 208V, NEMA-1, HD, NF DISCONNECT
EDH-15	30AMP, 3PH, 4W, 208V, NEMA-1, HD, NF DISCONNECT
EDH-16	200AMP, 3PH, 4W, N1, 208V, S/N, H.D. FUSED DISCONNECT, FUSED AT 150 AMPS
EDH-17	200AMP, 3PH, 4W, N1, 208V, S/N, H.D. FUSED DISCONNECT, FUSED AT 150 AMPS
EDH-18	400AMP, 3PH, 4W, 208V, NEMA-1, HD, NF DISCONNECT
EDH-19	200AMP, 3PH, 4W, 208V, NEMA-1, HD, NF DISCONNECT

NOTE:
1.) COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.
2.)COORDINATE WITH EQUIPMENT SUBMITTAL PRIOR TO ANY WORK.
3.) REFER TO ALL DOCUMENTS.
4.) REFER TO MECHANICAL DRAWINGS FOR QUANTITIES.

DISCONNECT SCHEDULE

FC-1 THUR 9	30AMP, 1Ø, 3W, N3R, 208V, S/N, H.D. FUSED DISCONNECT

NOTE: 1, REFER TO BREAKER SIZE FOR FUSE SIZE.
2. REFER TO PANELBOARD FOR DISCONNECT PHASES AND VOLTAGE.
3. PROVIDE SOLID STATE PHASE LOSS PROTECTION FOR ALL STARTER AND COMBOS .
4. REFER TO MECHANICAL DRAWINGS FOR QUANTITIES.

DISCONNECT SCHEDULE

AHU-1a,1b	3 HP VFD PROVIDED BY MECHANICAL CONTRACTOR, INSTALLED BY ELECTRICAL CONTRACTOR
AHU-2	60AMP, 3PH, 4W, N1, 208V, S/N, H.D. FUSED DISCONNECT, FUSED AT 35AMPS
AHU-3	60AMP, 3PH, 4W, N1, 208V, S/N, H.D. FUSED DISCONNECT, FUSED AT 35AMPS
AHU-4,5,6,7	30AMP, 3PH, 4W, N1, 208V, S/N, N.F., H.D. DISCONNECT
AHU-8,9,10a,10b	7.5 HP VFD PROVIDED BY MECHANICAL CONTRACTOR, INSTALLED BY ELECTRICAL CONTRACTOR
AHU-11,12,13,14,15	30AMP, 3PH, 4W, N1, 208V, S/N, N.F., H.D. DISCONNECT
AHU-16 AHU-17	7.5 HP VFD PROVIDED BY MECHANICAL CONTRACTOR, INSTALLED BY ELECTRICAL CONTRACTOR
AHU-18	30AMP, 3PH, 4W, N1, 208V, S/N, N.F., H.D. DISCONNECT
AHU-19	30AMP, 3PH, 4W, N1, 208V, S/N, N.F., H.D. DISCONNECT

NOTE:
1.) COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.
2.)COORDINATE WITH EQUIPMENT SUBMITTAL PRIOR TO ANY WORK.
3.) REFER TO ALL DOCUMENTS.
4.) REFER TO MECHANICAL DRAWINGS FOR QUANTITIES.

TERMINAL UNITS DISCONNECT SCHEDULE

TU UNIT TAG	DISCONNECT SIZE
TU-A-01 THRU TU-A-10	30AMP, 1PH, 3W, 120V, NEMA-1, HD
TU-B-01 THRU TU-B-05	30AMP, 1PH, 3W, 120V, NEMA-1, HD
TU-C-01 THRU TU-C-14	30AMP, 1PH, 3W, 120V, NEMA-1, HD
TU-D-01 THRU TU-D-09	30AMP, 1PH, 3W, 120V, NEMA-1, HD
TU-E-01 THRU TU-E-09	30AMP, 1PH, 3W, 120V, NEMA-1, HD
TU-F-01 THRU TU-F-10	30AMP, 1PH, 3W, 120V, NEMA-1, HD
TU-G-01 THRU TU-G-02	30AMP, 1PH, 3W, 120V, NEMA-1, HD
TU-H-01 THRU TU-H-08	30AMP, 1PH, 3W, 120V, NEMA-1, HD
TU-I-01 THRU TU-I-07	30AMP, 1PH, 3W, 120V, NEMA-1, HD
TU-J-01 THRU TU-J-12	30AMP, 1PH, 3W, 120V, NEMA-1, HD
TU-K-01 THRU TU-K-06	30AMP, 1PH, 3W, 120V, NEMA-1, HD
TU-L-01 THRU TU-L-05	30AMP, 1PH, 3W, 120V, NEMA-1, HD

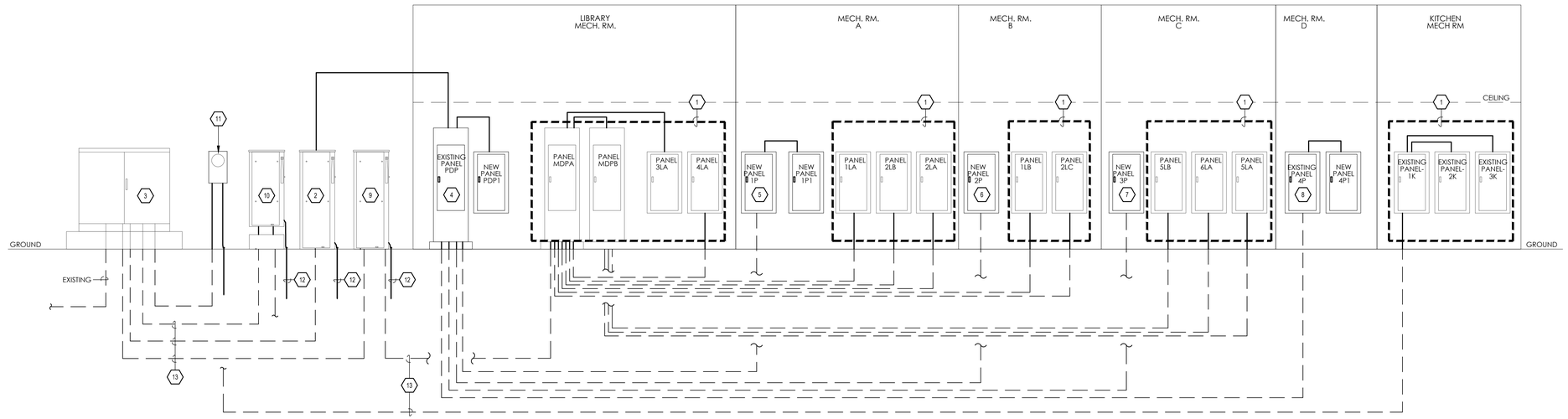
NOTE:
1.) COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.
2.)COORDINATE WITH EQUIPMENT SUBMITTAL PRIOR TO ANY WORK.
3.) REFER TO ALL DOCUMENTS.
4.) REFER TO MECHANICAL DRAWINGS FOR QUANTITIES.

GENERAL NOTES:

A. ALL EXISTING PANELBOARDS TO REMAIN. EXISTING MANUFACTUER-GENERAL ELECTRIC. PROVIDE NEW BREAKERS FOR NEW HVAC EQUIPMENT AS NOTED ON THE PANEL SCHEDULES. EXISTING BREAKERS TO BE REMOVE AND PROVIDE BLANK SPACES AS NEEDED.
B. EXISTING BREAKERS NOT USED BE RETURNED TO OWNER IF DESIRE. PROVIDE BLANK SPACES. PROVIDE NEW CIRCUIT OF INDEX.
C. ALL NEW BREAKERS SHALL MATCH EXISTING PANELBOARD AIC RATING.

ELECTRICAL RISER DIAGRAM KEYED NOTES:

1. EXISTING ELECTRICAL EQUIPMENT TO REMAIN UNLESS OTHERWISE NOTED. FIELD VERIFY EXISTING CONDITIONS PRIOR TO COMMENCING ANY WORK.
2. EXISTING 1600AMP, 120/208V, 3Ø, 4W, MAIN SERVICE DISCONNECT REMAIN.
3. EXISTING POWER COMPANY PAD MOUNT TRANSFORMER 120/208V, 3Ø, 4W TO REMAIN.
4. EXISTING, 1600AMP, 120/208V, 3Ø, 4W, PANEL-PDP TO REMAIN.
5. EXISTING, 400AMP, 120/208V, 3Ø, 4W, PANEL-1P TO BE REPLACED BY NEW PANEL WITH SIMILAR PHYSICAL CHARACTERISTICS.
6. EXISTING, 400AMP, 120/208V, 3Ø, 4W, PANEL-2P TO BE REPLACED BY NEW PANEL WITH SIMILAR PHYSICAL CHARACTERISTICS.
7. EXISTING, 800AMP, 120/208V, 3Ø, 4W, PANEL-3P TO BE REPLACED BY NEW PANEL WITH SIMILAR PHYSICAL CHARACTERISTICS.
8. EXISTING, 600AMP, 120/208V, 3Ø, 4W, PANEL-4P TO REMAIN.
9. EXISTING, 1200AMP, 120/208V, 3Ø, 4W,DISCONNECT TO REMAIN.
10. EXISTING, 600AMP, 120/208V, 3Ø, 4W, DISCONNECT TO REMAIN.
11. EXISTING ELECTRICAL METER TO REMAIN. FIELD VERIFY EXISTING CONDITIONS.
12. EXISTING ELECTRODE TO REMAIN.
13. EXISTING CONDUITS TO REMAIN.



1 MEMORIAL EXISTING/NEW ELECTRICAL RISER DIAGRAM

SCALE: NTS

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	DRY-TYPE TRANSFORMER SCHEDULE		
LABEL	TRANSFORMER DESCRIPTION	PRIMARY VOLTAGE FEEDER - 480V, 1Ø	SECONDARY VOLTAGE FEEDER - 120/240V, 1Ø, 3W
TX-CL	TYPE-DT-3: GENERAL, 15KVA, COPPER WINDINGS,1-PHASE, (P)480V-(S)240/120V,115°RISE,NEMA-3R	3#8, 1#10G IN 1.25"C	3#8, 1#10G IN 1.25"C

NOTE: ALL DRY-TYP TRANSFORMER SHALL BE ENERGY EFFICIENT MODELS AND MEET 2016 ENERGY EFFICIENT REQUIREMENTS..

ELECTRICAL RISER DIAGRAM KEYED NOTES:

1. NEW POWER COMPANY POLE WITH RISER DIP POLE. COORDINATE WITH POWER COMPANY FOR ALL REQUIREMENTS.
2. NEW ELECTRICAL SERVICE METER 480/277V, 3Ø, 4W. CONTRACTOR SHALL PROVIDE METER BASE. VERIFY WITH POWER FOR METER BASE REQUIREMENTS PRIOR TO BID DATE. INCLUDE ALL COST IN BID. COORDINATE ALLOCATION OF METER SOCKET AND WIRING WITH POWER COMPANY.
3. NEW POWER COMPANY PAD MOUNT TRANSFORMER 480/277V, 3Ø, 4W, PROVIDE CONCRETE PAD AS PER POWER COMPANY REQUIREMENTS.
4. FURNISH AND INSTALL 1-4"C FOR UTILITY PRIMARY RACEWAY TO POWER SOURCE AS DIRECTED BY UTILITY COMPANY. PROVIDE WARNING RIBBONS 12" ABOVE CONDUIT.
5. 1#3/0G IN 1"C, 3/4"X10' COPPER CLAD RODS. PROVIDE GROUNDING AS PER NEC REQUIREMENTS.
6. PROVIDE 2 RUNS EACH 4#4/0, 1#2G, 2.5"C.
7. PROVIDE 1-2"C WITH PULLSTRING.
8. PROVIDE 600AMP, 480V, 3Ø, 4W, S/N, N1, HEAVY DUTY FUSED AT 450AMPS.
9. PROVIDE 4#3/0, 2"C.
10. CHILLER HEATER CIRCUIT, FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS.
11. 1#8G, GROUND ELECTRODE CONDUCTOR.
12. 3"GALVANIZED PIPE WITH UNISTRUT STAND FOR ELECTRICAL SERVICE EQUIPMENT. COORDINATE WITH UTILITY COMPANY PRIOR TO ANY WORK.
13. NEW POWER COMPANY POLE. COORDINATE WITH POWER COMPANY FOR ALL REQUIREMENTS.

GENERAL NOTES:

A. PROVIDE GROUND /BONDING AS INDICATED ON THE NATIONAL ELECTRICAL CODE.

B. NAME PLATES SHALL BE PROVIDED FOR ALL ELECTRICAL SWITCH GEAR, PANEL BOARDS, LIGHTING CONTACTORS, LIGHTING CONTROL PANELS, ETC.. BY ELECTRICAL CONTRACTOR.

C. NEW ELECTRICAL METERING AND SERVICE EQUIPMENT SHALL BE PROVIDED AND INSTALLED ACCORDING TO THE LOCAL POWER UTILITY CO. AND CITY REQUIREMENTS. VERIFY AND COORDINATE WITH POWER UTILITY CO. AND AHJ BEFORE BID AND INSTALLATION.

D. COMPLY WITH NFPA 70E SAFETY REQUIREMENTS.

E. PANELBOARDS WITH MORE THAN 42 CIRCUITS SHALL BE IN ONE CABINET ENCLOSURE, UNLESS OTHERWISE NOTED.

F. PROVIDE 4"CONCRETE PAD FOR ALL DRY-TYPE TRANSFORMERS.

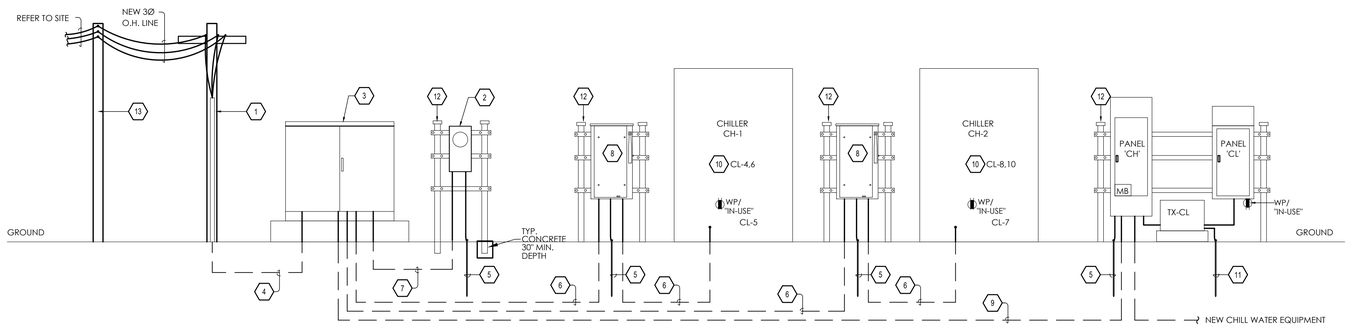
G. ALL TWO SECTION PANELBOARDS SHALL BE FEED THRU LUGS.

H. CONTRACTOR SHALL BE RESPONSIBLE FOR DELIVERY OF ELECTRICAL SERVICE TO THE NEW BUILDING WITHIN PROJECT SCHEDULE. COORDINATE ALL COST FOR LABOR AND MATERIALS WITH LOCAL ELECTRICAL UTILITY COMPANY PRIOR TO BID. ALL COST ASSOCIATED WITH THE DELIVERY OF ELECTRICAL SERVICE INCLUDING ALL MATERIALS SHALL BE INCLUDED IN BID. TRANSITION OF NEW ELECTRICAL SERVICE SHALL PROCEED IN WEEKENDS OR HOLIDAYS, INCLUDE ALL COST IN BID FOR OVERTIME FROM ELECTRIC UTILITY COMPANY. NO ADDITIONAL PAYMENT WILL BE MADE FOR SERVICE DELIVERY COSTS AFTER CONTRACT HAS BEEN AWARDED.

I. THE CONTRACTOR SHALL FURNISH AN ARC FLASH HAZARD ANALYSIS STUDY PER NFPA 70E-STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE, REFERENCE ARTICLE 130.3 AND ANNEX D.

J. CONTRACTOR SHALL INCLUDE ALL COST TO PROVIDE SHORT CIRCUIT AND PROTECTIVE DEVICE, THE SHORT-CURCUIT AND PROTECTIVE DEVICE COORDINATE STUDIES SHALL BE SUBMITTED TO THE DESIGN ENGINEER PRIOR TO RECEIVING FINAL APPROVAL OF THE DISTRIBUTION EQUIPMENT SHOP DRAWINGS AND/OR PRIOR TO RELEASE OF EQUIPMENT DRAWINGS FOR MANUFACTURING, APPROVAL FROM THE ENGINEER MAY BE OBTAINED FOR PRELIMINARILY SUBMITTAL OF SUFFICIENT STUDY DATA TO ENSURE THAT THE SELECTION OF DEVICE AND CHARACTERISTICS WILL BE SATISFACTORY.

480/277V, 3Ø, 4W ELECTRICAL LOAD ANALYSIS	
DESCRIPTION	TOTAL KVA
CHILLER #1	379
CHILLERS #2	379
PANEL-CH	90
TOTAL WATTS:	848 KVA
TOTAL AMPS:	1020 AMPS



1 CHILL WATER PLANT ELECTRICAL SCHEMATIC DIAGRAM

SCALE: NTS

PROJECT # : 23.1.40
DATE: 06/20/24
CHECKED BY: LM

REVISION:

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06/20/2024

STATE OF TEXAS
LEONARDO MUNOZ
97137
LICENSED PROFESSIONAL ENGINEER

ELECTRICAL RISER
DIAGRAM KEYED NOTES:

1. EXISTING ELECTRICAL EQUIPMENT TO REMAIN UNLESS OTHERWISE NOTED. FIELD VERIFY EXISTING CONDITIONS PRIOR TO COMMENCING ANY WORK.
2. EXISTING 1600AMP, 120/208V, 3Ø, 4W, MAIN SERVICE DISCONNECT TO BE REMOVED ONCE NEW REPLACEMENT SWITCH IS INSTALLED. FIELD VERIFY EXISTING CONDITIONS.
3. EXISTING POWER COMPANY PAD MOUNT TRANSFORMER 120/208V, 3Ø, 4W TO REMAIN.
4. EXISTING, 1600AMP, 120/208V, 3Ø, 4W, PANEL-PDP TO REMAIN.
5. EXISTING ELECTRICAL METER TO REMAIN. FIELD VERIFY EXISTING CONDITIONS. INCLUDE COST TO PROVIDE NEW CTS FOR NEW CONDUCTORS.
6. EXISTING CONDUITS TO BE REMOVED. FIELD VERIFY EXISTING CONDITIONS.
7. EXISTING ELECTRODE TO BE REMOVED.
8. EXISTING CONDUIT/WIRING TO REMAIN AND TO RECONNECT TO NEW ELECTRICAL GEAR. REFER TO REMODEL RISER DIAGRAM.
9. EXISTING, 1200AMP, 120/208V, 3Ø, 4W,DISCONNECT TO BE REMOVED. REMOVED ONCE NEW REPLACEMENT SWITCH IS INSTALLED. FIELD VERIFY EXISTING CONDITIONS.
10. EXISTING, 600AMP, 120/208V, 3Ø, 4W, DISCONNECT TO BE REMOVED. REMOVED ONCE NEW REPLACEMENT SWITCH IS INSTALLED. FIELD VERIFY EXISTING CONDITIONS.

GENERAL NOTES:

A. PROVIDE GROUND /BONDING AS INDICATED ON THE NATIONAL ELECTRICAL CODE.

B. NAME PLATES SHALL BE PROVIDED FOR ALL ELECTRICAL SWITCH GEAR, PANEL BOARDS, LIGHTING CONTACTORS, LIGHTING CONTROL PANELS, ETC., BY ELECTRICAL CONTRACTOR.

C. NEW ELECTRICAL METERING AND SERVICE EQUIPMENT SHALL BE PROVIDED AND INSTALLED ACCORDING TO THE LOCAL POWER UTILITY CO. AND CITY REQUIREMENTS. VERIFY AND COORDINATE WITH POWER UTILITY CO. AND AHJ BEFORE BID AND INSTALLATION.

D. COMPLY WITH NFPA 70E SAFETY REQUIREMENTS.

E. PANELBOARDS WITH MORE THAN 42 CIRCUITS SHALL BE IN ONE CABINET ENCLOSURE, UNLESS OTHERWISE NOTED.

F. PROVIDE 4"CONCRETE PAD FOR ALL DRY-TYPE TRANSFORMERS.

G. ALL TWO SECTION PANELBOARDS SHALL BE FEED THRU LUGS.

H. CONTRACTOR SHALL BE RESPONSIBLE FOR DELIVERY OF ELECTRICAL SERVICE TO THE NEW BUILDING WITHIN PROJECT SCHEDULE. COORDINATE ALL COST FOR LABOR AND MATERIALS WITH LOCAL ELECTRICAL UTILITY COMPANY PRIOR TO BID. ALL COST ASSOCIATED WITH THE DELIVERY OF ELECTRICAL SERVICE INCLUDING ALL MATERIALS SHALL BE INCLUDED IN BID. TRANSITION OF NEW ELECTRICAL SERVICE SHALL PROCEED IN WEEKENDS OR HOLIDAYS. INCLUDE ALL COST IN BID FOR OVERTIME FROM ELECTRIC UTILITY COMPANY. NO ADDITIONAL PAYMENT WILL BE MADE FOR SERVICE DELIVERY COSTS AFTER CONTRACT HAS BEEN AWARDED.

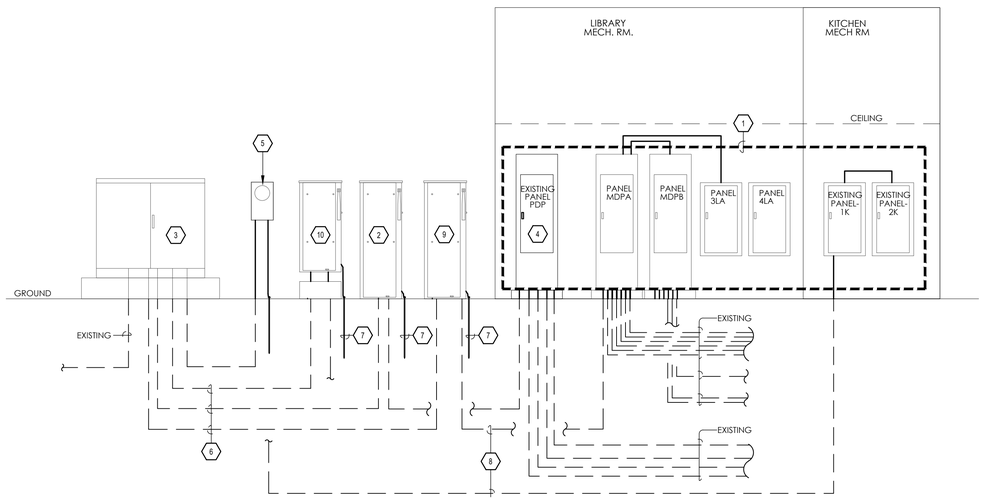
I. CONTRACTOR SHALL COORDINATE WITH OWNER ON ANY MATERIAL/EQUIPMENT TO BE RETURNED TO OWNER IF DESIRED. CONTRACTOR SHALL INCLUDE COST IN BID TO DISPOSE ANY ELECTRICAL PROPERTY.

J. ELECTRICAL SERVICE 120V THRU 480V 1000AMPS OR MORE SHALL INCLUDE AN ARC REDUCTION MAINTENANCE SWITCH. COORDINATE EXACT LOCATION OF SUCH SWITCH.

K. PROVIDE TRENCHING AND BACKFILLING FOR ALL UNDERGROUND CONDUITS FOR REGULAR NON-ASPHALT/CONCRETE SURFACE.

L. PROVIDE SAWCUT AND PATCHING FOR ALL UNDERGROUND CONDUITS FOR REGULAR ASPHALT OR CONCRETE SURFACE. INCLUDE ALL COST TO PATCH SURFACE TO MATCH EXISTING FINISH.

M. ELECTRICAL SERVICE TO STAY ACTIVE UNTIL NEW ELECTRICAL IS INSTALLED. INCLUDE ALL COST IN BID TO EXPEDITE ALL ELECTRICAL GEAR, TIME OF 25 WEEKS



ALTERNATE#2 MEMORIAL DEMO
ELECTRICAL RISER DIAGRAM

1 SCALE: NTS

PROJECT # : 23.1.40
DATE: 06/20/24
CHECKED BY: LM

REVISION:

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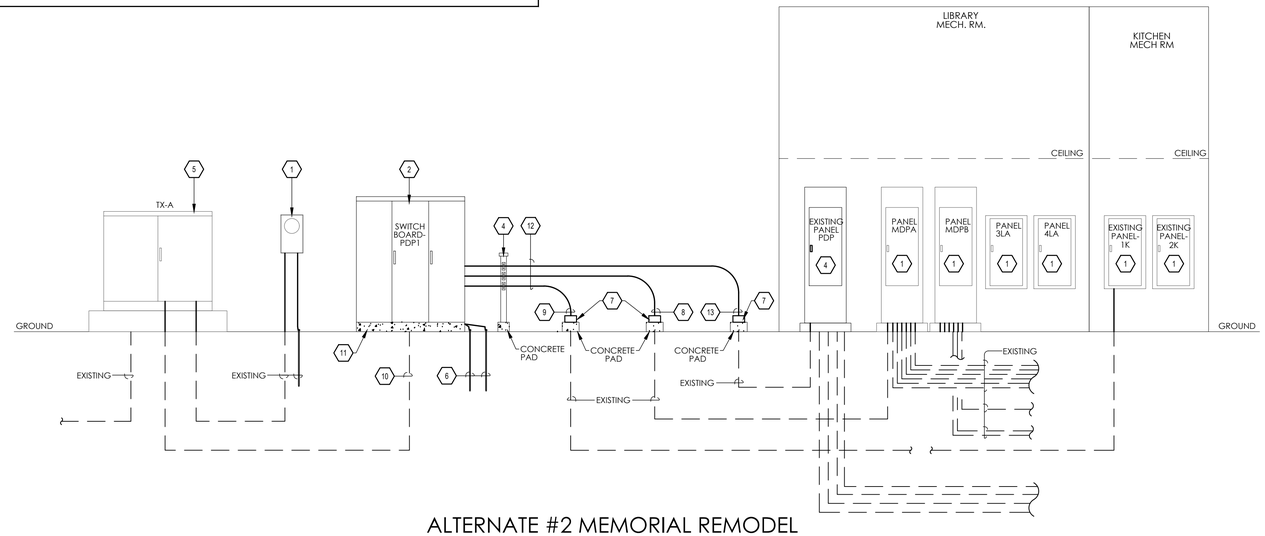
PANEL-MDPM	AMP	LUGS	NEMA	V(LL)		(P)		(W)			V(LN)	MNT	KAIC	FDR	
MEMORIAL	3000	MB	3R	208		3		4			120	SUR.	65		
LOAD	CKT	LOAD	BKR	POLE	FEEDER/BRANCH CIRCUIT					FEEDER/BRANCH CIRCUIT	POLE	BKR	LOAD	CKT	LOAD
SERVED	#	KVA	SIZE		SIZE	A	B	C		SIZE		SIZE	KVA	#	SERVED
1.) EXISTING PANEL-PDP	1	183	1600	3	4-RUNS 4#600KCMIL, 1#4/0G,5"C	*				3-RUNS 4#400KCMIL, 1#2/0G,4"C	3	1200	75	2	1.) EXISTING PANEL-MDP1
"	3	183			-		*			-			75	4	"
"	5	183			-			*		-			75	6	"
1.) EXISTING PANEL-K1	7	45	600	3	2-RUNS 4#350KCMIL, 1#1G,4"C	*				-	.	400		8	SPARE
"	9	45			-		*			-				10	"
"	11	45			-			*		-				12	"
SPARE	13		400	3		*				4#10, 1#10G,3/4"C	3	30		14	2) SPD
"	15				-		*			-				16	"
"	17				-			*		-				18	"
LOADS	-	(KVA)				303	303	303					(KVA)	-	DESCRIPTIVE LOADS
CONNECTED LOAD	-	909				KVA/PHASE							0	-	EXISTING PANELS
RESERVE	0	0											0	-	RECEPTACLES
TOTAL LOAD	-	**1000**											0	-	COOLING
													0	-	HEATING
TOTAL AMPS	-	**2776**											909	-	PANELS

NOTES:
1) 100% RATED SOLID STATE BREAKER
2) INTEGRAL SURGE PROTECTION DEVICE 160KVA WITH MEAN DISCONNECT
3) MAIN BREAKER SHALL BE 100% RATED SOLID STATE
4)
5)



ALTERNATE #2 MEMORIAL REMODEL
ELECTRICAL RISER DIAGRAM

1 SCALE: NTS

ELECTRICAL RISER DIAGRAM KEYED NOTES:

1. EXISTING ELECTRICAL EQUIPMENT TO REMAIN. FIELD VERIFY EXISTING CONDITIONS PRIOR TO COMMENCING ANY WORK.
2. NEW SWITCHBOARD DISTRIBUTION PANELBOARD. REFER TO PANEL SCHEDULES. FIELD COORDINATE EXACT LOCATION.
3. EXISTING POWER COMPANY PAD MOUNT TRANSFORMER 120/208V, 3Ø, 4W.
4. 3"GALVANIZED PIPE WITH UNISTRUT STAND FOR NEW ELECTRICAL CONDUITS. PROVIDE 6" CONCRETE PAD. SECURE TO EXISTING WALL. COORDINATE WITH EXISTING CONDITIONS.
5. EXISTING POWER COMPANY PAD MOUNT TRANSFORMER 120/208V, 3Ø, 4W TO REMAIN. INCLUDE ALL COST IN BID FOR NEW SECONDARY WIRING CONNECTIONS.
6. 1#3/0G IN 1"C, 3/4"X10' COPPER CLAD RODS. PROVIDE GROUNDING AS PER NEC REQUIREMENTS.
7. PROVIDE WEATHER PROOF J-BOX FOR NEW CONDUITS. FIELD COORDINATE EXACT LOCATION.
8. PROVIDE NEW CONDUIT/WIRE TO CONNECT TO EXISTING PANEL-MDPA FEEDER WITH 3-RUNS EACH 4#600KCMIL, 1#3/0G,4"C. INCLUDE POLARIS CONNECTORS IN A JUNCTION BOX. SIZE BOX AS REQUIRED, AND PROVIDE 8" CONCRETE PAD FOR BOX TO SIT ON.
9. PROVIDE NEW CONDUIT/WIRE TO CONNECT TO EXISTING PANEL-1K FEEDER WITH 2-RUNS EACH 4#350KCMIL, 1#1G, 4"C. INCLUDE POLARIS CONNECTORS IN A JUNCTION BOX. SIZE BOX AS REQUIRED, AND PROVIDE 8" CONCRETE PAD FOR BOX TO SIT ON.
10. PROVIDE 4-RUNS EACH, 4#600KCMIL, 4"C FROM EXISTING TRANSFORMER TO NEW ELECTRICAL GEAR. INCLUDE ALL COST IN BID FOR TRENCHING / BACKFILLING AND ANY COST ASSOCIATED WITH AEP FOR NEW INSTALLATION.
11. PROVIDE 6" CONCRETE PAD FOR NEW GEAR.
12. ALL NEW CONDUITS SHALL BE SIDE/ BACK MOUNT. NO TOP FEED. FIELD VERIFY SPACE REQUIRED FOR A COMPLETE INSTALLATION. PROVIDE NEW GALVANIZED UNISTRUT STANDS/ SUPPORTS.
13. PROVIDE NEW CONDUIT/WIRE TO CONNECT TO EXISTING PANEL-PDP FEEDER WITH 3-RUNS EACH 4#600KCMIL, 1#3/0G,4"C. INCLUDE POLARIS CONNECTORS IN A JUNCTION BOX. SIZE BOX AS REQUIRED, AND PROVIDE 8" CONCRETE PAD FOR BOX TO SIT ON.

GENERAL NOTES:

A. PROVIDE GROUND /BONDING AS INDICATED ON THE NATIONAL ELECTRICAL CODE.

B. NAME PLATES SHALL BE PROVIDED FOR ALL ELECTRICAL SWITCH GEAR, PANEL BOARDS, LIGHTING CONTACTORS, LIGHTING CONTROL PANELS, ETC.. BY ELECTRICAL CONTRACTOR.

C. NEW ELECTRICAL METERING AND SERVICE EQUIPMENT SHALL BE PROVIDED AND INSTALLED ACCORDING TO THE LOCAL POWER UTILITY CO. AND CITY REQUIREMENTS. VERIFY AND COORDINATE WITH POWER UTILITY CO. AND AHJ BEFORE BID AND INSTALLATION.

D. COMPLY WITH NFPA 70E SAFETY REQUIREMENTS.

E. PANELBOARDS WITH MORE THAN 42 CIRCUITS SHALL BE IN ONE CABINET ENCLOSURE, UNLESS OTHERWISE NOTED.

F. PROVIDE 4"CONCRETE PAD FOR ALL DRY-TYPE TRANSFORMERS.

G. ALL TWO SECTION PANELBOARDS SHALL BE FEED THRU LUGS.

H. CONTRACTOR SHALL BE RESPONSIBLE FOR DELIVERY OF ELECTRICAL SERVICE TO THE NEW BUILDING WITHIN PROJECT SCHEDULE. COORDINATE ALL COST FOR LABOR AND MATERIALS WITH LOCAL ELECTRICAL UTILITY COMPANY PRIOR TO BID. ALL COST ASSOCIATED WITH THE DELIVERY OF ELECTRICAL SERVICE INCLUDING ALL MATERIALS SHALL BE INCLUDED IN BID. TRANSITION OF NEW ELECTRICAL SERVICE SHALL PROCEED IN WEEKENDS OR HOLIDAYS, INCLUDE ALL COST IN BID FOR OVERTIME FROM ELECTRIC UTILITY COMPANY. NO ADDITIONAL PAYMENT WILL BE MADE FOR SERVICE DELIVERY COSTS AFTER CONTRACT HAS BEEN AWARDED.

I. PROVIDE TRENCHING AND BACKFILLING FOR ALL UNDERGROUND CONDUITS FOR REGULAR NON-ASPHALT/CONCRETE SURFACE.

J. PROVIDE SAWCUT AND PATCHING FOR ALL UNDERGROUND CONDUITS FOR REGULAR ASPHALT OR CONCRETE SURFACE. INCLUDE ALL COST TO PATCH SURFACE TO MATCH EXISTING FINISH.

K. PROVIDE CONCRETE PAD FOR ALL ELECTRICAL GEAR AND CONDUITS SUPPORTS.

L. ALL EXTERIOR J-BOXES SHALL BE GALVANIZED AND SIZED AS REQUIRED BY CODE.

M. THE CONTRACTOR SHALL FURNISH AN ARC FLASH HAZARD ANALYSIS STUDY PER NFPA 70E-STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE, REFERENCE ARTICLE 130.3 AND ANEEX D.

N CONTRACTOR SHALL INCLUDE ALL COST TO PROVIDE SHORT CIRCUIT AND PROTECTIVE DEVICE. THE SHORT-CURCUIT AND PROTECTIVE DEVICE COORDINATE STUDIES SHALL BE SUBMITTED TO THE DESIGN ENGINEER PRIOR TO RECEIVING FINAL APPROVAL OF THE DISTRIBUTION EQUIPMENT SHOP DRAWINGS AND/OR PRIOR TO RELEASE OF EQUIPMENT DRAWINGS FOR MANUFACTURING, APPROVAL FROM THE ENGINEER MAY BE OBTAINED FOR PRELIMINARILY SUBMITTAL OF SUFFICIENT STUDY DATA TO ENSURE THAT THE SELECTION OF DEVICE AND CHARACTERISTICS WILL BE SATISFACTORY.

PROJECT # : 23.1.40
DATE: 06/20/24
CHECKED BY: LM

REVISION:

WISD MEMORIAL ELEMENTARY SCHOOL
HVAC REPLACEMENT

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Texas Registered Engineering Firm - F10362
Project number: 23.1.40

06/20/2024
STATE OF TEXAS
LEONARDO MUNOZ
97137
LICENSED PROFESSIONAL ENGINEER

NEW PNL-1P	AMP	LUGS	NEMA	V(LL)		(P)		(W)		V(LN)	MNT	KAIC	FDR	
-	400	MLO	1	208		3		4		120	SUR.	35		
LOAD	CKT	LOAD	BKR	POLE	FEEDER/BRANCH CIRCUIT				FEEDER/BRANCH CIRCUIT	POLE	BKR	LOAD	CKT	LOAD
SERVED	#	KVA	SIZE		SIZE	A	B	C	SIZE		SIZE	KVA	#	SERVED
AHU-5	1	0.7	15	3	4#10, 1#10G,3/4"C	*			4#2, 1#6G,2"C	3	110	10	2	EDH-4 (30KW)
"	3	0.7			-		*		-			10	4	"
"	5	0.7			-			*	-			10	6	"
EDH-5 (9KW)	7	3	35	3	4#8, 1#10G,3/4"C	*			4#10, 1#10G,3/4"C	3	15	1.1	8	AHU-11(9.5/15)
"	9	3			-		*		-			1.1	10	"
"	11	3			-			*	-			1.1	12	"
AHU-10b	13	3.5	50	3	4#6, 1#10G,1"C	*			4#4, 1#8G,1 1/2"C	3	70	1.3	14	EDH-11(17.5KW)
"	15	3.5			-		*		-			1.3	16	"
"	17	3.5			-			*	-			1.3	18	"
AHU-10a	19	3.5	50	3	4#6, 1#10G,1"C	*			4#10, 1#10G,3/4"C	3	25	1.8	20	AHU-4 (14.75/25)
"	21	3.5			-		*		-			1.8	22	"
"	23	3.5			-			*	-			1.8	24	"
EDH-10 (50KW)	25	16.6	175	3	4#3/0, 1#6G,2"C	*			3#2, 1#8G,1 1/2"C	2	100	4	26	NEW PANEL-1P1
"	27	16.6			-		*		-			3	28	"
"	29	16.6			-			*	-			2	30	"
LOADS	-	(KVA)				46	44	44				(KVA)	-	DESCRIPTIVE LOADS
CONNECTED LOAD	-	134				KVA/PHASE						0	-	LIGHTING
RESERVE	0	0										0	-	RECEPTACLES
TOTAL LOAD	-	**134**										32	-	COOLING
												93	-	HEATING
TOTAL AMPS	-	**371**										9	-	OTHER

NOTES:
1)
2)
3)
4)
5)

EXISTING PNL-PDP	AMP	LUGS	NEMA	V(LL)		(P)		(W)		V(LN)	MNT	KAIC	FDR	
- MFR. GE AV-LINE SWITCHBOARD	1600	MLO	1	208		3		4		120	SUR.	65		
LOAD	CKT	LOAD	BKR	POLE	FEEDER/BRANCH CIRCUIT				FEEDER/BRANCH CIRCUIT	POLE	BKR	LOAD	CKT	LOAD
SERVED	#	KVA	SIZE		SIZE	A	B	C	SIZE		SIZE	KVA	#	SERVED
1) AHU-1a (37/60)	1	4.4	60	3	4#6, 1#10G,1"C	*			4#6, 1#10G,1"C	3	60	4.4	2	1) AHU-1b (37/60)
"	3	4.4			-		*		-			4.4	4	"
"	5	4.4			-			*	-			4.4	6	"
1) AHU-2(25.2/35), AHU-3 (14.75/25)	7	7.7	100	3	4#2, 1#8G,2"C	*			4#2, 1#8G,2"C	3	100	7	8	1) NEW PANEL-PDP1
"	9	7.7			-		*		-			6	10	"
"	11	7.7			-			*	-			7	12	"
1) EHD-1 (36KW)	13	12	125	3	4#1, 1#6G,2"C	*			4#1, 1#6G,2"C	3	125	12	14	1) EDH-2 (36KW)
"	15	12			-		*		-			12	16	"
"	17	12			-			*	-			12	18	"
1) EXISTING PNL-3P	19	54.2	400	3	EXISTING	*			EXISTING	3	400	40	20	1) EXISTING PNL-4P
"	21	54.2			-		*		-			39	22	"
"	23	54.2			-			*	-			39	24	"
1) EXISTING PNL-1P	25	45.7	350	3	EXISTING	*			EXISTING	3	350	40	26	1) EXISTING PNL-2P
"	27	44.3			-		*		-			40	28	"
"	29	43.7			-			*	-			40	30	"
LOADS	-	(KVA)				228	224	224				(KVA)	-	DESCRIPTIVE LOADS
CONNECTED LOAD	-	676				KVA/PHASE						0	-	LIGHTING
RESERVE	0	0										0	-	RECEPTACLES
TOTAL LOAD	-	**550**										50	-	COOLING
												72	-	HEATING
TOTAL AMPS	-	**1527**										554	-	OTHER

NOTES:
1) EXISTING BREAKER TO REMAIN.
2)
3)
4)
5)

NEW PNL-2P	AMP	LUGS	NEMA	V(LL)		(P)		(W)		V(LN)	MNT	KAIC	FDR	
-	400	MLO	1	208		3		4		120	SUR.			
LOAD	CKT	LOAD	BKR	POLE	FEEDER/BRANCH CIRCUIT				FEEDER/BRANCH CIRCUIT	POLE	BKR	LOAD	CKT	LOAD
SERVED	#	KVA	SIZE		SIZE	A	B	C	SIZE		SIZE	KVA	#	SERVED
EDH-7 (4.5)	1	1.5	20	3	4#10, 1#10G,3/4"C	*			4#10, 1#10G,3/4"C	3	20	1.5	2	EDH-6 (4.5W)
"	3	1.5			-		*		-			1.5	4	"
"	5	1.5			-			*	-			1.5	6	"
AHU-7 (3/15)	7	0.4	15	3	4#10, 1#10G,3/4"C	*			4#10, 1#10G,3/4"C	3	15	0.4	8	AHU-6 (3/15)
"	9	0.4			-		*		-			0.4	10	
"	11	0.4			-			*	-			0.4	12	
AHU-9 (31.75/50)	13	3.8	50	3	4#6, 1#10G,1"C	*			4#6, 1#10G,1"C	3	50	3.8	14	AHU-8 (31.75/50)
"	15	3.8			-		*		-			3.8	16	
"	17	3.8			-			*	-			3.8	18	
EDH-9 (43KW)	19	14.3	150	3	4#2/0, 1#6G,2"C	*			4#2/0, 1#6G,2"C	3	150	14.3	20	EDH-8 (43KW)
"	21	14.3			-		*		-			14.3	22	"
"	23	14.3			-			*	-			14.3	24	"
LOADS	-	(KVA)				40	40	40				(KVA)	-	DESCRIPTIVE LOADS
CONNECTED LOAD	-	120				KVA/PHASE						0	-	LIGHTING
RESERVE	0	0										0	-	RECEPTACLES
TOTAL LOAD	-	**120**										25	-	COOLING
												95	-	HEATING
TOTAL AMPS	-	**333**										0	-	OTHER

NOTES:
1)
2)
3)
4)
5)

NEW PNL-3P	AMP	LUGS	NEMA	V(LL)		(P)		(W)		V(LN)	MNT	KAIC	FDR	
-	400	MB	1	208		3		4		120	SUR.			
LOAD	CKT	LOAD	BKR	POLE	FEEDER/BRANCH CIRCUIT				FEEDER/BRANCH CIRCUIT	POLE	BKR	LOAD	CKT	LOAD
SERVED	#	KVA	SIZE		SIZE	A	B	C	SIZE		SIZE	KVA	#	SERVED
AHU-13 (5.75/15)	1	0.7	15	3	4#10, 1#10G,3/4"C	*			-				2	SPACE
"	3	0.7			-		*		-				4	SPACE
"	5	0.7			-			*	-				6	SPACE
AHU-14 (3/15)	7	0.4	15	3	4#10, 1#10G,3/4"C	*			4#10, 1#10G,3/4"C	3	15	0.4	8	AHU-15 (3/15)
"	9	0.4			-		*		-			0.4	10	"
"	11	0.4			-			*	-			0.4	12	"
EDH-14 (4.5KW)	13	1.5	20	3	4#10, 1#10G,3/4"C	*			4#6, 1#10G,1"C	3	60	5	14	EDH-12 (15KW)
"	15	1.5			-		*		-			5	16	"
"	17	1.5			-			*	-			5	18	"
SPACE	19				-	*			4#10, 1#10G,3/4"C	3	20	1.5	20	EDH-15 (4.5KW)
SPACE	21				-		*		-			1.5	22	"
SPACE	23				-			*	-			1.5	24	"
EDH-18 (36KW)	25	12	125	3	4#1, 1#6G,2"C	*			4#10, 1#10G,3/4"C	3	25	1.7	26	AHU-12 (15/25)
"	27	12			-		*		-			1.7	28	"
"	29	12			-			*	-			1.7	30	"
	31	3.9	100	3	4#2, 1#8G,2"C	*			4#2, 1#8G,2"C	3	100	7.5	32	AHU-18 (20HP)
"	33	3.9			-		*		-			7.5	34	"
"	35	3.9			-			*	-			7.5	36	"
EDH-19 (24KW)	37	8	150	3	4#2/0, 1#6G,2"C	*			4#8, 1#10G,3/4"C	3	35	3	38	EDH-13 (9KW)
"	39	8			-		*		-			3	40	"
"	41	8			-			*	-			3	42	"
LOADS	-	(KVA)				46	46	46				(KVA)	-	DESCRIPTIVE LOADS
CONNECTED LOAD	-	135				KVA/PHASE						0	-	LIGHTING
RESERVE	0	0										0	-	RECEPTACLE
TOTAL LOAD	-	**135**										44	-	COOLING
												92	-	HEATING
TOTAL AMPS	-	**376**										0	-	OTHER

NOTES:
1)
2)
3)
4)
5)

EXISTING PNL-4P	AMP	LUGS	NEMA	V(LL)		(P)		(W)		V(LN)	MNT	KAIC	FDR	
-MFR. SQ. D	600	MLO	1	208		3		4		120	SUR.			
LOAD	CKT	LOAD	BKR	POLE	FEEDER/BRANCH CIRCUIT				FEEDER/BRANCH CIRCUIT	POLE	BKR	LOAD	CKT	LOAD
SERVED	#	KVA	SIZE		SIZE	A	B	C	SIZE		SIZE	KVA	#	SERVED
1) AHU-16 (31.7/50)	1	3.8	50	3	4#6, 1#10G,1"C	*			4#4, 1#8G,1 1/2"C	3	70	4	2	1) NEW PANEL-4P1
"	3	3.8			-		*		-			3	4	"
"	5	3.8			-			*	-			2	6	"
1) AHU-17(31.7/50)	7	3.8	50	3	4#6, 1#10G,1"C	*			4#4, 1#8G,1 1/2"C	3	70		8	3) EXISTING
"	9	3.8			-		*		-				10	"
"	11	3.8			-			*	-				12	"
1.) EXISTING	13		20	1	-	*			4#4, 1#8G,1 1/2"C	3	70		14	3) EXISTING
SPACE	15				-		*		-				16	"
SPACE	17				-			*	-				18	"
SPACE	19				-	*			4#4, 1#8G,1 1/2"C	3	70		20	3) EXISTING
SPACE	21				-		*		-				22	"
SPACE	23				-			*	-				24	"
SPACE	25				-	*			-				26	
SPACE	27				-		*		-				28	
SPACE	29				-			*	-				30	
4) EDH-16(43KW)		14.3	175	3	4#3/0, 1#6G,2"C	*			4#3/0, 1#6G,2"C	3	175	14.3		4) EDH-17(43KW)
"		14.3			-		*		-			14.3		"
"		14.3			-			*	-			14.3		"
LOADS	-	(KVA)				40	39	39				(KVA)	-	DESCRIPTIVE LOADS
CONNECTED LOAD	-	118				KVA/PHASE						0	-	LIGHTING
RESERVE	0	0										0	-	AIR HANDLER
TOTAL LOAD	-	**118**										23	-	CONDENSER
												86	-	HEATING
TOTAL AMPS	-	**328**										9	-	OTHER

NOTES:
1)EXISTING BREAKER TO REMAIN.
2) FIELD ARRANGE AS REQUIRED FOR NEW BREAKERS.
3) REMOVE EXISTING BREAKERS NOT IN USE.
4) 2 SUB FED 175 AMP BREAKERS TO BE REMAIN.
5)

PROJECT # : 23.1.40
DATE: 06/20/24
CHECKED BY: LM

REVISION:

WISD MEMORIAL ELEMENTARY SCHOOL HVAC REPLACEMENT

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Texas Registered Engineering Firm - F10362
Project number: 23.1.40

06/20/2024
STATE OF TEXAS
LEONARDO MUNOZ
97137
LICENSED PROFESSIONAL ENGINEER

NEW PANEL-1P1	AMP	LUGS	NEMA	V(LL)		(P)	(W)		V(LN)	MNT	KAIC	FDR	
-	100	MB	1	208		3	4		120	SUR.	10		
LOAD	CKT	LOAD	BKR	POLE	FEEDER/BRANCH CIRCUIT				FEEDER/BRANCH CIRCUIT	POLE	BKR	LOAD	CKT	LOAD
SERVED	#	KVA	SIZE		SIZE	A	B	C	SIZE		SIZE	KVA	#	SERVED
FCCU-7	1	1	15	2	3#10, 1#10G,3/4"C	*			3#10, 1#10G,3/4"C	2	15	1	2	FCCU-8
-	3	1			-		*		-			1	4	-
FCCU-9	5	1	15	2	3#10, 1#10G,3/4"C			*	2#10, 1#10G,3/4"C	1	20	1.2	6	TU-E, TU-D
-	7	1				*			2#10, 1#10G,3/4"C	1	20	1.2	8	TU-F,TU-G TU-C
MOTORIZED DAMPERS	9	0.2	20	1	2#10, 1#10G,3/4"C		*		2#10, 1#10G,3/4"C	1	20	0.6	10	NEW HVAC CONTROLS
SPACE	11				-			*	-				12	SPACE
SPACE	13				-	*			-				14	SPACE
SPARE	15		20	1	-		*		-	1	20		16	SPARE
SPARE	17		20	1	-			*	-	1	20		18	SPARE
SPARE	19		20	1	-	*			-	1	20		20	SPARE

LOADS	-	(KVA)									(KVA)	-	DESCRIPTIVE LOADS
CONNECTED LOAD	-	13				4	3	2			0	-	LIGHTING
RESERVE	0	0				KVA/PHASE					3	-	RECEPTACLES
TOTAL LOAD	-	**13**									6	-	COOLING
											0	-	HEATING
TOTAL AMPS	-	**37**									0	-	OTHER
											0	-	OTHER-A
											0	-	OTHER-B
											4	-	OTHER-C

NOTES:
1)
2)
3)
4)
5)
6)

NEW PANEL-4P1	AMP	LUGS	NEMA	V(LL)		(P)	(W)		V(LN)	MNT	KAIC	FDR	
-	100	MLO	1	208		3	4		120	SUR.	10		
LOAD	CKT	LOAD	BKR	POLE	FEEDER/BRANCH CIRCUIT				FEEDER/BRANCH CIRCUIT	POLE	BKR	LOAD	CKT	LOAD
SERVED	#	KVA	SIZE		SIZE	A	B	C	SIZE		SIZE	KVA	#	SERVED
FCCU-4	1	1.4	15	2	3#10, 1#10G,3/4"C	*			3#10, 1#10G,3/4"C	2	15	1.4	2	FCCU-5
-	3	1.4			-		*		-			1.4	4	-
FCCU-6	5	1.4	15	2	3#10, 1#10G,3/4"C			*	2#10, 1#10G,3/4"C	1	20	1.2	6	TU-K, TU-J
-	7	1.4				*			2#10, 1#10G,3/4"C	1	20	1.2	8	TU-H,TU-I TU-L
MOTORIZED DAMPERS	9	0.2	20	1	2#10, 1#10G,3/4"C		*		2#10, 1#10G,3/4"C	1	20	0.6	10	NEW HVAC CONTROLS
EF-14,15	11	0.2	20	1	2#10, 1#10G,3/4"C			*	-				12	SPACE
SPACE	13				-	*			-				14	SPACE
SPARE	15		20	1	-		*		-	1	20		16	SPARE
SPARE	17		20	1	-			*	-	1	20		18	SPARE
SPARE	19		20	1	-	*			-	1	20		20	SPARE

LOADS	-	(KVA)									(KVA)	-	DESCRIPTIVE LOADS
CONNECTED LOAD	-	17				5	4	3			0	-	LIGHTING
RESERVE	0	0				KVA/PHASE					3	-	RECEPTACLES
TOTAL LOAD	-	**17**									8	-	COOLING
											0	-	HEATING
TOTAL AMPS	-	**48**									0	-	OTHER
											0	-	OTHER-A
											0	-	OTHER-B
											6	-	OTHER-C

NOTES:
1)
2)
3)
4)
5)
6)

NEW PANEL-CL	AMP	LUGS	NEMA	V(LL)		(P)	(W)		V(LN)	MNT	KAIC	FDR	
-	100	MB	3R	240		1	3		120	SUR.	10		
LOAD	CKT	LOAD	BKR	POLE	FEEDER/BRANCH CIRCUIT				FEEDER/BRANCH CIRCUIT	POLE	BKR	LOAD	CKT	LOAD
SERVED	#	KVA	SIZE		SIZE	A	B	C	SIZE		SIZE	KVA	#	SERVED
1 RCPT	1	1.2	20	1	2#12, 1#12G,1/2"C	*			2#10, 1#10G,3/4"C	1	20	0.6	2	CONTROLLER
MOTORIZED ISO. VALVE	3	1.2	20	1	2#10, 1#10G,3/4"C		*		3#8, 1#10G,3/4"C	2	30	1	4	CHILLER HEATER
CHILLER RCPT	5	1.2	20	1	2#10, 1#10G,3/4"C	*			-			1	6	"
CHILLER RCPT	7	1.2	20	1	2#10, 1#10G,3/4"C		*		3#8, 1#10G,3/4"C	2	30	1	8	CHILLER HEATER
1 RCPT	9	1.2	20	1	2#10, 1#10G,3/4"C	*			-			1	10	"
SPACE	11				-		*		-				12	SPACE
SPACE	13				-	*			-				14	SPACE
SPARE	15		20	1	-		*		-	1	20		16	SPARE
SPARE	17		20	1	-	*			-	1	20		18	SPARE
SPARE	19		20	1	-		*		-	1	20		20	SPARE

LOADS	-	(KVA)									(KVA)	-	DESCRIPTIVE LOADS
CONNECTED LOAD	-	11				6	4				0	-	LIGHTING
RESERVE	0	0				KVA/PHASE					11	-	RECEPTACLES
TOTAL LOAD	-	**11**									0	-	COOLING
											0	-	HEATING
TOTAL AMPS	-	**44**									0	-	OTHER

NOTES:
1) PROVIDE 60 AMP MAIN BREAKER.
2)
3)

NEW PANEL-CH	AMP	LUGS	NEMA	V(LL)		(P)		(W)		V(LN)	MNT	KAIC	FDR	
-	200	MB	3R	480		3		4		277	SUR.	35		
LOAD	CKT	LOAD	BKR	POLE	FEEDER/BRANCH CIRCUIT				FEEDER/BRANCH CIRCUIT	POLE	BKR	LOAD	CKT	LOAD
SERVED	#	KVA	SIZE		SIZE	A	B	C	SIZE		SIZE	KVA	#	SERVED
SP-1	1	11.2	50	3	4#6, 1#10G,1"C	*			4#6, 1#10G,1"C	3	50	11.2	2	SP-2
"	3	11.2			-		*		-			11.2	4	"
"	5	11.2			-			*	-			11.2	6	"
PP-1	7	2.1	15	3	4#10, 1#10G,3/4"C	*			4#10, 1#10G,3/4"C	3	15	2.1	8	PP-2
"	9	2.1			-		*		-			2.1	10	"
"	11	2.1			-			*	-			2.1	12	"
PP-3	13	2.1	15	3	4#10, 1#10G,3/4"C	*			-				14	SPACE
"	15	2.1			-		*		-				16	SPACE
"	17	2.1			-			*	-				18	SPACE
SPACE	19				-	*			-				20	SPACE
SPACE	21				-		*		-				22	SPACE
SPACE	23				-			*	-				24	SPACE
SPACE	25				-	*			-				26	SPACE
SPACE	27				-		*		-				28	SPACE
SPACE	29				-			*	-				30	SPACE
SPARE	31		20	1	-	*			-				32	SPACE
SPARE	33		20	1	-		*		-	1	20		34	SPARE
SPARE	35		20	1	-			*	-	1	20		36	SPARE
1) SPD	37		30	3	4#10, 1#10G,3/4"C	*			-	1	20		38	SPARE
"	39				-		*		3#2, 1#8G,1 1/2"C	2	100	6	40	PANEL-CL
"	41				-			*	-			4	42	VIA TX CL

LOADS	-	(KVA)									(KVA)	-	DESCRIPTIVE LOADS
CONNECTED LOAD	-	97				29	35	33			0	-	LIGHTING
RESERVE	25	24				KVA/PHASE					0	-	RECEPTACLES
TOTAL LOAD	-	**121**									86	-	COOLING
											0	-	HEATING
TOTAL AMPS	-	**145**									11	-	OTHER

NOTES:
1) PROVIDE INTEGRAL SURGE PROTECTION DEVICE. 150KA.
2)
3)
4)
5)

NEW PANEL-PDP1	AMP	LUGS	NEMA	V(LL)		(P)	(W)		V(LN)	MNT	KAIC	FDR	
-	100	MLO	1	208		3	4		120	SUR.	10		
LOAD	CKT	LOAD	BKR	POLE	FEEDER/BRANCH CIRCUIT				FEEDER/BRANCH CIRCUIT	POLE	BKR	LOAD	CKT	LOAD
SERVED	#	KVA	SIZE		SIZE	A	B	C	SIZE		SIZE	KVA	#	SERVED
FCCU-2	1	1.4	15	2	3#8, 1#10G,3/4"C	*			3#8, 1#10G,3/4"C	2	15	1.4	2	FCCU-3
"	3	1.4			-		*		-			1.4	4	"
FCCU-1	5	1.4	15	2	3#8, 1#10G,3/4"C			*	2#10, 1#10G,3/4"C	1	20	1.2	6	TU-A, TU-B
-	7	1.4			-	*			2#10, 1#10G,3/4"C	1	20	0.2	8	EF-21,22
MOTORIZED DAMPERS	9	0.2	20	1	2#10, 1#10G,3/4"C		*		2#10, 1#10G,3/4"C	1	20	0.6	10	NEW HVAC CONTROLS
GAS DETECTION	11	0.2	20	1	2#10, 1#10G,3/4"C			*	-				12	SPACE
SPACE	13				-	*			-				14	SPACE
1) EDH-3(12.5KW)	15	4	50	3	4#6, 1#10G,1"C		*		-	1	20		16	SPARE
"	17	4			-			*	-	1	20		18	SPARE
"	19	4			-	*			-	1	20		20	SPARE

LOADS	-	(KVA)									(KVA)	-	DESCRIPTIVE LOADS
CONNECTED LOAD	-	23				8	8	7			0	-	LIGHTING
RESERVE	0	0				KVA/PHASE					2	-	RECEPTACLES
TOTAL LOAD	-	**23**									8	-	COOLING
											0	-	HEATING
TOTAL AMPS	-	**63**									12	-	OTHER

NOTES:
1)
2)
3)
4)
5)
6)

PROJECT # : 23.1.40
DATE: 06/20/24
CHECKED BY: LM

REVISION:

WISD MEMORIAL ELEMENTARY SCHOOL HVAC REPLACEMENT

WESLACO TEXAS

MEPS02

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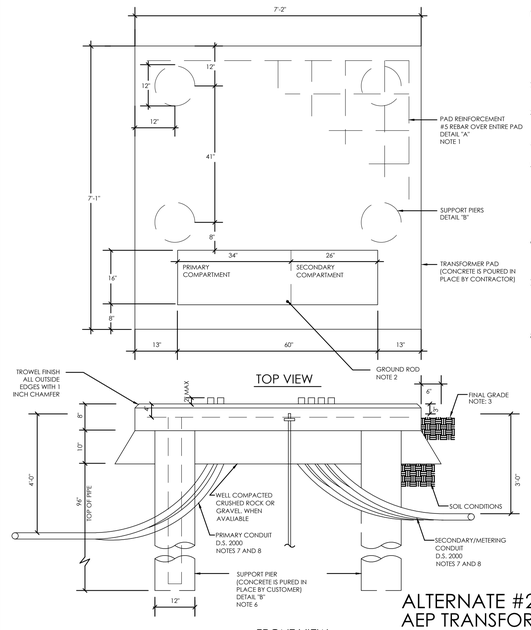
Project number: 23.1.40

06/20/2024
STATE OF TEXAS
LEONARDO MUNOZ
97157
LICENSED PROFESSIONAL ENGINEER

01

CONCRETE PAD & PIERS FOR THREE PHASE PAD-MOUNTED TRANSFORMER



AMERICAN ELECTRIC POWER COMPANY
DISTRIBUTION STANDARDS

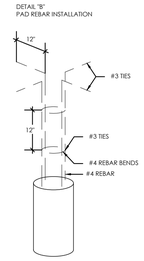
NOTE:

1. SLAB REINFORCEMENT SHALL BE #5 REBARS, ON CENTER (OC) SPACING TO FOLLOW DIMENSIONS SHOWN ON THE DRAWING WITH 4" COVER. REINFORCING BARS SHALL CONFORM TO ASTM A615 GRADE 60. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AFTER 28 DAYS.
2. FOR GROUND ROD PLACMENT, REFER TO DS 2235, 2236, OR 2237.
3. FINAL GRADE SHALL BE ESTABLISHED BEFORE INSTALLATION OF PAD.
4. CONCRETE PAD WITH PIERS IS TO BE INSTALLED OF PAD.
5. PIERS SHALL BE 12" MINIMUM IN DIAMETER, 8 FEET DEEP WITH 4 - #4 VERTICALE REBAR AND #3 TIES AT 12" ON CENTER (O/C), AND PROVIDE A MINIMUM 3" COVER. THE #4 BEND BARS SHOULD BE 12" LONG IN THE HORIZONTAL DIRECTION..
6. PIERS REBAR BENT IN THE HORIZONTAL DIRECTION SO THAT IT MAY TIE IN WITH PAD REBAR.
7. THE NUMBER AND PLACEMENT OF SECONDARY CONDUITS TO BE DETERMINED BY ENGINEERING. CONDUIT MAY EXTEND IN ANY DIRECTION AS REQUIRED BY THE CUSTOMER.
8. BURIAL DEPTH OF CONDUIT IS DEFINED AS THE DISTANCE BETWEEN FINAL GRADE AND THE TOP OF THE CONDUIT. UNLESS OTHERWISE DESIGNATED BY ENGINEERING, CONDUITS SHALL BE INSTALLED AT A BURIAL DEPTH OF NOT LESS THAN 4'-0" AND SECONDARY CONDUITS SHALL BE INSTALLED AT A BURIAL DEPTH OF NOT LESS THAN 3'-0", THESE INITIAL DEPTHS ARE TO ALLOW FOR CHANGES TO THE SURFACE CONDITIONS. LOCAL AGREEMENTS AND CODES MAY REQUIRE ADDITIONAL DEPTH. IF OTHER ARE KNOWN EXTENSIVE CHANGES TO THE FINAL GRADE SUCH THAT THEIR DEPTHS ARE NOT MAINTAINED, CORRECTIVE ACTION SHALL BE TAKEN.

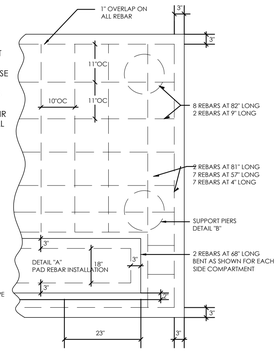
ALTERNATE #2 AEP TRANSFORMER CONCRETE PAD DETAIL

NO SCALE

DETAIL - "B" - PIER REBAR INSTALLATION



DETAIL - "A" - PAD INSTALLATION



CONCRETE PAD AND PIERS FOR THREE PHASE PAD-MOUNTED TRANSFORMERS
HIGH VOLUME CLAY OR SAND TYPE SOIL APPLICATIONS
75KVA - 2500KVA
25KV AND BELOW

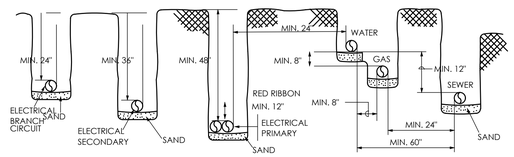
02

CLEAR TRENCH OF ALL ROCKS AND DEBRIS BEFORE ADDING SAND CUSHION.

COMPACT TRENCH FILL TO 95% PROCTOR DENSITY.

MAINTAIN A MINIMUM OF 60 INCHES UNDISTURBED EARTH BETWEEN PARALLEL WATER AND SEWER LINES OR SUPPORT WATER LINE ON SEPARATE SHELF A MINIMUM OF 12" ABOVE SEWER LINE.

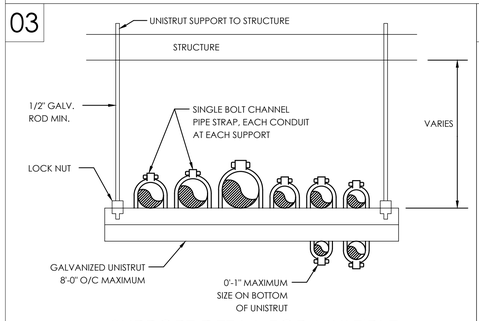
MAINTAIN A MINIMUM OF 24" HORIZONTALLY BETWEEN ELECTRICAL PRIMARY AND SEWER. MAINTAIN A MINIM OF 12" VERTICALLY OR 24" HORIZONTALLY BETWEEN ELECTRICAL PRIMARY AND WATER LINES, GAS LINES, TELEPHONE RACEWAYS AND CABLE RACEWAYS.



ALTERNATE #2 TRENCH DETAIL

NO SCALE

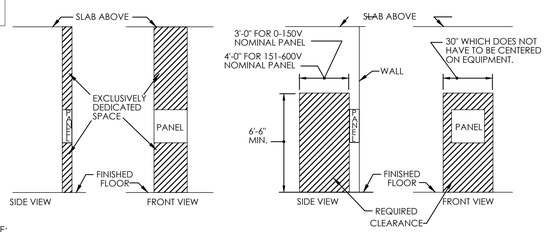
03



SUPPORT DETAIL FOR MULTIPLE CONDUIT HORIZONTAL RUNS

NO SCALE

04



NOTE:
REFER TO THE LATEST NATIONAL ELECTRICAL CODE AND LOCAL CODES.

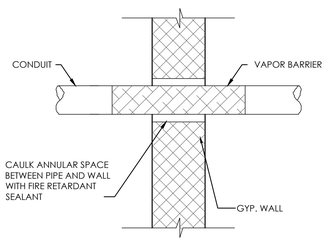
TYPICAL PANEL BOARD REQUIRED CLEARANCE

NO SCALE

05

NOTE: WHERE PIPING IS EXPOSED AT FINISHED WALLS, PROVIDE FLUSH MOUNTED SLEEVE AND ESCUTCHEON PLATES. (CONTRACTOR MAY USE FIELD FABRICATED S.S. PLATE).

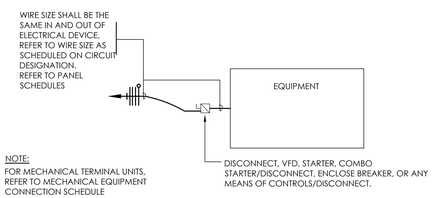
NOTE: SIMILAR FOR UNINSULATED PIPE AND CONDUIT.



CONDUIT THROUGH FIRE RATED WALL

NO SCALE

06



NOTE:
FOR MECHANICAL TERMINAL UNITS, REFER TO MECHANICAL EQUIPMENT CONNECTION SCHEDULE

EQUIPMENT CIRCUIT DETAIL

NO SCALE

ELECTRICAL SYSTEM

THE ELECTRICAL WORK INCLUDES PROVIDING NEW MATERIALS, FIXTURES, DEVICES AND ACCESSORIES NECESSARY FOR A COMPLETE FUNCTIONING ELECTRICAL SYSTEM. THE WORK ALSO INCLUDES FINAL CONNECTIONS TO EQUIPMENT ITEMS PROVIDED BY OTHERS. ALL WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES OR ORDINANCES AND SUBJECT TO INSPECTION.

THE INTENT OF THE DRAWINGS IS TO INDICATE THE GENERAL EXTENT OF WORK REQUIRED FOR THE PROJECT. THE DRAWINGS FOR ELECTRICAL WORK ARE DIAGRAMMATIC, SHOWING THE LOCATION, TYPE DEVICES AND EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENTS. PROVIDE ALL FIXTURES, LAMPS, DEVICES, ACCESSORIES, OFFSETS AND MATERIALS NECESSARY TO FACILITATE THE SYSTEM'S FUNCTIONING AS INDICATED BY THE DESIGN AND THE EQUIPMENT INDICATED.

COORDINATE WITH THE WORK OF OTHER SECTIONS. VERIFY EXISTING SITE CONDITIONS BEFORE BIDDING. MAKE ALL CONNECTIONS TO EQUIPMENT FURNISHED BY OTHERS. COMPLY WITH THE CONSTRAINTS OF THE EXISTING CONDITIONS OF THE PROJECT SITE.

ALL WORK SHALL COMPLY WITH LOCAL LAWS GOVERNING ELECTRICAL INSTALLATIONS, AND THE MOST RECENT EDITION OF THE "NATIONAL ELECTRIC CODE", REFER TO REFERENCE STANDARDS. PROVIDE CODE REQUIRED CLEARANCES AROUND ALL ELECTRICAL EQUIPMENT. OBTAIN ALL PERMITS RELATING TO ELECTRICAL WORK.

REFERENCE STANDARDS

A. Materials, equipment, devices and workmanship shall comply with applicable local, county, state and national codes, laws and ordinances, utility company regulations and industry standards.
B. In case of differences between building codes, state laws, local ordinances, industry standards, utility company regulations and the Contract Documents, the most stringent shall govern. The Contractor shall promptly notify the Owner's Representative in writing of any such difference. Should the Contractor perform any work that does not comply with local codes, laws and ordinances, industry standards or other governing regulations, the work shall be corrected of noncompliance deficiencies with the Contractor bearing all costs.
C. In addition to the aforementioned ordinances, industry standards published by the following organizations shall apply:

AABM - American Association of Battery Manufacturers
ADA - American's with Disabilities Act
AIA - American Institute of Architects
ANSI - American National Standards Institute
ASTM - American Society for Testing and Materials
CBM - Certified Ballast Manufacturers Association
ETL - Electrical Testing Laboratories
FM - Factory Mutual
ICEA - Insulated Cable Engineers Associated
IEEE - Institute of Electrical and Electronic Engineers
IES - Illuminating Engineering Society
IRI - Industrial Risk Insurance
NBS - National Bureau of Standards
NEC - National Electrical Code
NECA - National Electrical Contractors Association
NEMA - National Electrical Manufacturers Association
NESC - National Electrical Safety Code
NETA - National Electrical Testing Association
NFPA - National Fire Protection Association
UL - Underwriters Laboratories
IECC - International Energy Code

VERIFY VOLTAGE DROPS AND A.I.C. RATINGS FOR ALL EQUIPMENT CONNECTED, AND VERIFY SIZE OF ELECTRICAL SYSTEM BREAKERS, CONDUITS, ETC. REFER TO NEC 2011 FOR VOLTAGE DROP REQUIREMENTS.

ROOF PENETRATIONS SHALL COMPLY WITH "SMACNA" AND "NRCA" STANDARDS, AND WITH THE REQUIREMENTS OF THE EXISTING ROOFING WARRANTY, IF APPLICABLE. DO NOT PERFORM ROOFING PENETRATIONS IN A MANNER WHICH WOULD VOID OR OTHERWISE LIMIT THE EXISTING ROOFING WARRANTY.

TEMPORARY SERVICES: ARRANGE FOR SOURCES OF TEMPORARY CONSTRUCTION SERVICES. SUCH SERVICES SHALL BE NOMINALLY 120/208 VOLT, 1-PHASE, 3-WIRE FROM WHICH A COMPLETE SYSTEM OF TEMPORARY POWER AND LIGHTING SHALL BE PROVIDED FOR ALL CONSTRUCTION NEEDS.

DISCONNECT SWITCHES SHALL BE HEAVY-DUTY, QUICK-MAKE, QUICK-BREAK TYPE NEMA 1 ENCLOSURE (NEMA 3R FOR OUTDOOR). SWITCHES SHALL BE AS MANUFACTURED BY SQUARE "D", SIEMEN'S I.T.E., EATON MFR., & GE. PROVIDE ALL FUSES AS MANUFACTURED BY BUSSMAN, GOULD-SHAWMUT, OR LITTLE-FUSE. ALL CONDUCTOR TERMINALS TO BE U.L. FOR MINIMUM 75°C. MAIN SWITCH DISCONNECT SHALL BE LABELED "MAIN DISCONNECT".

PANELBOARDS SHALL BE AS MANUFACTURED BY SQUARE "D", EATON MFR., GE, OR SIEMEN'S I.T.E.; MEETING U.L. STANDARDS 30 AND 67, WITH U.L. LABEL. ALL CONDUCTOR TERMINALS TO BE U.L. FOR MINIMUM 75°C.

BREAKERS TO BE THERMAL MAGNETIC TYPE, BOLT-IN, QUICK-MAKE, QUICK-BREAK TYPE SINGLE UNIT CONSTRUCTION. TWO AND THREE POLE BREAKERS SHALL BE SINGLE UNIT COMMON TRIP TYPE. ALL BREAKERS CONNECTED TO LIGHTING BRANCH CIRCUITS SHALL BE APPROVED FOR THAT USE AND MARKED "SWD".

PANELBOARD CABINETS SHALL BE ONE PIECE CODE GAGE GALVANIZED STEEL WITH MOUNTING STUDS, WIRING GUTTERS OF AMPLE SIZE AND KNOCKOUTS FOR CONDUIT CONNECTIONS AS REQUIRED. BUS BARS SHALL BE 98% COPPER.
FRONTS SHALL BE ONE PIECE CODE GAGE STEEL WITH ADJUSTABLE FASTENERS. PROVIDE FLUSH MOUNT UNITS UNLESS OTHERWISE INDICATED. PROVIDE A PLASTIC COVERED TYPEWRITTEN SCHEDULE IDENTIFYING ALL BRANCH CIRCUITS INSIDE EACH CABINET.

GROUNDING SYSTEM: PERMANENTLY AND EFFECTIVELY GROUND ALL METALLIC CONDUITS, SUPPORTS, CABINETS, PANELBOARDS AND SYSTEM GROUNDING NEUTRAL. MAINTAIN CONTINUITY OF EQUIPMENT GROUND THROUGHOUT THE SYSTEM BY INSTALLING GROUNDING CONDUCTORS IN ALL FEEDERS AND CIRCUITS. PROVIDE INSULATED GREEN-COLORED GROUND CONDUCTOR. GROUND CLAMPS SHALL BE APPROVED TYPE, SPECIFICALLY DESIGNED FOR GROUNDING. GROUND WIRE SIZED IN ACCORDANCE WITH "NEC" TABLE 250-122. GROUND ROD SHALL BE COPPER-CLAD STEEL, SIZE: 3/4" BY 120" INCHES IN DIAMETER.

CONDUIT SHALL BE SIZED TO COMPLY WITH "NEC" FOR NUMBER AND SIZE OF CONDUCTORS INSTALLED, MINIMUM SIZE OF 1/2" ABOVE GRADE (UNLESS 3/4" IS REQUIRED BY LOCAL JURISDICTION). PROVIDE SCHEDULE 40 PVC PLASTIC OR RIGID STEEL CONDUIT BELOW GRADE, MINIMUM SIZE OF 3/4", MINIMUM 3/4". PROVIDE ELECTRICAL METAL TUBING (EMT) MEETING FS #W-C-563, OR FLEXIBLE CONDUIT (IN LENGTHS 6'-0" OR LESS) FOR INTERIOR LOCATIONS. EMT CONNECTORS AND COUPLINGS SHALL BE SET-SCREW TYPE. CLAMP CONDUIT TO BOXES WITH BUSHINGS INSIDE AND LOCKNUT OUTSIDE. TYPE AC & MC ARMORED CABLE AND METAL CLAD CABLE ARE NOT ACCEPTABLE FOR THIS INSTALLATION.

CONDUCTORS SHALL BE INSULATED SOFT ANNEALED 98% PURE COPPER WITH COLOR CODING, B & S GAGE, #10 AND SMALLER TO BE SOLID, #8 AND LARGER TO BE STRANDED, MINIMUM #12 UNLESS OTHERWISE INDICATED. ALUMINUM CONDUCTORS SHALL NOT BE ALLOWED. "THHN" MAY NOT BE USED UNDERGROUND, AT SERVICE ENTRANCE, OUTSIDE, OR IN WET LOCATIONS. ALL INSULATION TO BE RATED AT 75° FOR 600 VOLT AND TYPES AS FOLLOWS:

#10 AND SMALLER: THW, THHN, OR THWN
#8 AND LARGER: THW OR THHN
SERVICE ENTRANCE: USE-RHW

WIRE THROUGH FLUORESCENT FIXTURES OR WITHIN 3" OF HEATING EQUIPMENT TO BE "THHN".

DEVICES SHALL BE MANUFACTURED BY LEVITON OR EQUAL. ALL DEVICES AND COVER PLATES SHALL BE IVORY COLOR. STANDARD DUPLEX RECEPTACLES SHALL BE GROUNDING TYPE, 20 AMP, NEMA 5-20R, BACK AND SIDE WIRED. OTHER DEVICES SHALL BE AS INDICTED ON THE DRAWINGS OR AS REQUIRED BY THE EQUIPMENT ITEM INTENDED TO BE SERVED. WHERE SWITCHES ARE GROUPED, PROVIDE GANG PLATES.

LIGHT SWITCHES SHALL BE DECORA TYPE, GROUNDING TYPE, 20AMP. COORDINATE FINISH WITH OWNER PRIOR TO BID DATE.

WALL PLATES: PROVIDE STAINLESS STEEL PLATES AT ALL WIRING DEVICE LOCATIONS.

LAYOUT BRANCH CIRCUIT WIRING AND ARRANGEMENT OF HOME RUNS FOR MAXIMUM ECONOMY AND EFFICIENCY. INCREASE WIRE SIZE IF VOLTAGE DROP EXCEEDS 3% OR CONDUCTOR LENGTH EXCEEDS 100 FEET.

CONCEAL WIRING SYSTEM ABOVE SUSPENDED CEILINGS OR IN WALL OR FLOOR CONSTRUCTION WHERE POSSIBLE. INSTALL CONDUIT PARALLEL TO BUILDING LINES AND TO CLEAR ALL OPENINGS, DEPRESSIONS, PIPES, DUCTS, STRUCTURE, ETC.

INSTALL CONDUIT CONTINUOUS BETWEEN BOXES AND CABINETS WITH NO MORE THAN FOUR (4) 90° BENDS. SECURELY FASTEN IN PLACE WITH STRAPS, HANGERS AND STEEL SUPPORTS AS REQUIRED. DO NOT SUPPORT CONDUIT FROM SUSPENDED CEILING GRID OR SUSPENSION WIRES. REAM CONDUIT ENDS BEFORE INSTALLATION AND THOROUGHLY CLEAN BEFORE INSTALLATION. OPENINGS SHALL BE PLUGGED OR COVERED TO KEEP CONDUIT CLEAN. TERMINALS ON SWITCHES AND RECEPTACLES SHALL NOT BE USED TO "FEED-THRU" TO THE NEXT SWITCH OR RECEPTACLE. THE DISCONNECTING OR REMOVAL OF A DEVICE FROM A BOX SHALL NOT INTERFERE WITH OR INTERRUPT THE CONDUCTOR CONTINUITY.

CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EQUIPMENT AND SYSTEMS AGAINST HARMFUL EXPOSURE, OR ACCUMULATION OF DUST OR MOISTURE, FLOODING, CORROSION, AND ALL OTHER FORMS OF DAMAGE. CLEAN AND RESTORE DAMAGED FINISHES AND EQUIPMENT TO "LIKE-NEW" CONDITION.

ALL ELECTRICAL EQUIPMENT SHALL BE ADJUSTED AND TESTED FOR PROPER OPERATION. AFTER WIRES ARE IN PLACE AND CONNECTED TO DEVICES AND EQUIPMENT, THE SYSTEM SHALL BE TESTED FOR SHORTS AND GROUNDS. ALL HOT AND NEUTRAL CONDUCTORS, IF SHORTED OR GROUNDED, SHALL BE REMOVED AND REPLACED. ALL METERS, INSTRUMENTS, CABLE CONNECTIONS, EQUIPMENT, OR APPARATUS NECESSARY FOR MAKING ALL TESTS SHALL BE FURNISHED BY THIS CONTRACTOR.

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06/20/2024

STATE OF TEXAS
LEONARDO MUNOZ
97257
REGISTERED PROFESSIONAL ENGINEER

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REVISION:

WISD MEMORIAL ELEMENTARY SCHOOL
HVAC REPLACEMENT

WESLACO

TEXAS

MED01