Tulane University

Bernhard

PROJECT LOCATION

PERDIDO BUILDING

VICINITY MAP

TULANE UNIVERSITY - DOWNTOWN CAMPUS - PERDIDO SHEET LIST

SHEET NUMBER	SHEET TITLE	PERMIT SET 02/17/22	CONSTRUCTION DOCUMENTS 05/05/22
	GENERAL		
G1000	COVER	X	X
S1000	PERDIDO - GENERAL NOTES - STRUCTURAL	X	X
M1000	LEGEND AND GENERAL NOTES - MECHANICAL	X	X
M1001	PVF SCHEDULE		X
M1010	DETAILS - MECHANICAL	X	X
M1011	DETAILS - MECHANICAL	X	X
ATC1000	CONTROL SYMBOLS LEGEND	X	X
ATC1001	CONTROL DETAILS 1	X	X
ATC1002	CONTROL DETAILS 2	X	X
ATC1003	CONTROL DETAILS 3	X	X
~~ATC1004~~	~~BUILDING AUTOMATION RISER DIAGRAM~~	X	
ATC1004	CONTROL DETAILS 4		X
~~ATC1005~~	~~BUILDING CONTROL DASHBOARD~~	X	
ATC1005	BUILDING AUTOMATION RISER DIAGRAM		X
~~ATC1006~~	~~BUILDING CONTROL DASHBOARD 2~~	X	
ATC1006	BUILDING CONTROL DASHBOARD		X
ATC1007	BUILDING CONTROL DASHBOARD 2		X
E1000	LEGEND AND GENERAL NOTES - ELECTRICAL	X	X
E1010	DETAILS - ELECTRICAL	X	X
	UPGRADE CHILLED WATER SYSTEM		
S1110	PERDIDO - CHILLED WATER - STRUCTURAL DEMOLITION	X	X
S1120	PERDIDO - CHILLED WATER - STRUCTURAL	X	X
M1100	PERDIDO SCHEDULES - CHILLED WATER - MECHANICAL	X	X
M1110	PERDIDO FLOOR PLANS - CHILLED WATER - MECHANICAL DEMOLITION	X	X
M1120	PERDIDO FLOOR PLANS - CHILLED WATER - MECHANICAL	X	X
M1130	PERDIDO PIPING DIAGRAMS - CHILLED WATER AND TOWER WATER - MECHANICAL DEMOLITION	X	X
M1140	PERDIDO PIPING DIAGRAM - CHILLED WATER - MECHANICAL	X	X
ATC1100	CHILLED WATER CONTROL DIAGRAM - PERDIDO	X	X
ATC1101	CHILLED WATER CONTROL SEQUENCE - PERDIDO	X	X
E1100	PERDIDO SCHEDULES - CHILLED WATER - ELECTRICAL	X	X
E1110	PERDIDO FLOOR PLANS - CHILLED WATER - ELECTRICAL DEMOLITION	X	X
E1120	PERDIDO FLOOR PLANS - CHILLED WATER - ELECTRICAL	X	X
	UPGRADE HEATING WATER SYSTEM		
M1400	PERDIDO SCHEDULES - HEATING WATER - MECHANICAL	X	X
M1410	PERDIDO FLOOR PLANS - STEAM & CONDENSATE - MECHANICAL DEMOLITION	X	X
M1420	PERDIDO FLOOR PLANS - HEATING WATER - MECHANICAL	X	X
M1430	PERDIDO PIPING DIAGRAMS - STEAM AND NATURAL GAS - MECHANICAL DEMOLITION	X	X
M1440	PERDIDO PIPING DIAGRAMS - HEATING WATER AND NATURAL GAS - MECHANICAL	X	X
ATC1400	HEATING WATER CONTROL DIAGRAM - PERDIDO	X	X
ATC1401	HEATING WATER CONTROL SEQUENCE - PERDIDO	X	X
E1400	PERDIDO SCHEDULES - HEATING WATER - ELECTRICAL	X	X
E1410	PERDIDO FLOOR PLANS - HEATING WATER - ELECTRICAL DEMOLITION	X	X
E1420	PERDIDO FLOOR PLANS - HEATING WATER - ELECTRICAL	X	X
	UPGRADE AIR HANDLING UNITS		
M1500	PERDIDO SCHEDULES - AIR HANDLING UNITS - MECHANICAL	X	X
M1510	PERDIDO FLOOR PLANS - AIR HANDLING UNITS - MECHANICAL DEMOLITION	X	X
M1520	PERDIDO FLOOR PLANS - AIR HANDLING UNITS - MECHANICAL	X	X
~~ATC1500~~	~~AIR HANDLER POINT TABLES~~	X	
ATC1500	AHU-3 CONTROL DIAGRAM AND SEQUENCE		X
ATC1501	AHU-2 CONTROL DIAGRAM AND SEQUENCE		X
ATC1502	AHU-3 CONTROL DIAGRAM AND SEQUENCE		X
ATC1503	DUAL DUCT TERMINAL UNIT CONTROL DIAGRAM AND SEQUENCE		X
E1500	PERDIDO SCHEDULES - AIR HANDLING UNITS - ELECTRICAL	X	X
E1510	PERDIDO FLOOR PLANS - AIR HANDLING UNITS - ELECTRICAL DEMOLITION	X	X
E1520	PERDIDO FLOOR PLANS - AIR HANDLING UNITS - ELECTRICAL	X	X
	UPGRADE ELECTRICAL		
S1620	PERDIDO ROOF PLAN - ELECTRICAL UPGRADES - STRUCTURAL	X	X
M1620	PERDIDO FLOOR PLANS - ELECTRICAL UPGRADES - MECHANICAL	X	X
E1600	PERDIDO SCHEDULES AND ONE-LINE DIAGRAMS - ELECTRICAL UPGRADES - ELECTRICAL	X	X
E1610	PERDIDO FLOOR PLANS - ELECTRICAL UPGRADES - ELECTRICAL DEMOLITION	X	X
E1620	PERDIDO FLOOR PLANS - ELECTRICAL UPGRADES - ELECTRICAL	X	X
	UTILITY METERING		
ATC1900	UTILITY METERING - PERDIDO		X

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5/5/22
ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

SHEET TITLE:

COVER

SHEET NUMBER:

G1000

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications have been examined and no violations of the Comprehensive Zoning Ordinance or the Code of Ordinances of the City of New Orleans have been noted. This review is accepted on the basis that the plans and specifications submitted for review and final inspection upon completion of the work shall be the basis for the issuance of the Certificate of Occupancy.
The City of New Orleans does not warrant that the plans and specifications are free of errors or omissions and that the work will comply with the revised plans have been examined and approved.
Any & all work to specified in these approved drawings is subject to inspection by the Department of Safety & Permits to determine compliance with the International Building Code and other ordinances of the City of New Orleans.
REVIEWED FOR CODE COMPLIANCE
mnmurphy 07/20/2022

STRUCTURAL DESIGN CRITERIA

PER INTERNATIONAL BUILDING CODE **(IBC 2015)**

1. SEISMIC DESIGN:
   RISK CATEGORY: IV
   IMPORTANCE FACTOR: 1.5
   MAPPED SPECTRAL RESPONSE ACCELERATIONS: S_S = 0.086, S_1 = 0.054
   SITE CLASS: C (ASSUMED)
   SPECTRAL RESPONSE COEFFICIENTS: S_{DS} = 0.075, S_{D1} = 0.054
   SEISMIC DESIGN CATEGORY: A

2. SNOW LOAD
   GROUND SNOW LOAD: P_g = 0 PSF (ASCE 7)
   EXPOSURE COEFFICIENT, C_e = 1.0
   THERMAL FACTOR, C_t = 1.0
   IMPORTANCE FACTOR FOR SNOW, I = 1.25

3. WIND LOAD
   DESIGN ULTIMATE WIND SPEED: 150 MPH
   RISK CATEGORY: IV
   EXPOSURE CATEGORY: C
   GUST EFFECT FACTOR, G = 0.85
   VELOCITY PRESSURE: q_h = 49.0 PSF

ADHESIVE SET ANCHORS, REINFORCING BARS, & DOWEL NOTES

1. USE HILTIS HY270 SYSTEM OR APPROVED EQUAL FOR ATTACHMENT TO HOLLOW AND GROUT-FILLED MASONRY UNITS.
2. USE HILTIS HY200 SYSTEM OR APPROVED EQUAL FOR ATTACHMENT INTO SOLID SURFACES ONLY. (E.G., SOLID CONCRETE)
3. FOR REBAR AND DOWEL EMBEDMENT, USE HY200 ADHESIVE, OR APPROVED EQUAL AS NOTED ABOVE.
4. USE HILTIS THREADED RODS OR APPROVED EQUAL UNLESS SPECIFICALLY NOTED OTHERWISE. SUBSTITUTION OF A-36 ALL-THREAD ROD WILL **NOT** BE ALLOWED. RODS ANCHORING INTO UNREINFORCED MASONRY SHALL BE BENT AT 22 1/2° ANGLE UNO.
5. WHERE BASE MATERIAL IS HOLLOW BLOCK, BRICK OR OTHER MATERIAL CONTAINING POCKETS OR VOIDS, A SCREEN TUBE, PER MANUFACTURERS RECOMMENDATIONS, SHALL BE EMPLOYED IN THE SYSTEM.
6. FOLLOW MANUFACTURERS REQUIREMENTS FOR MINIMUM DEPTH OF BASE MATERIAL, MINIMUM EDGE DISTANCES, AND MINIMUM BOLT/BAR SPACING.
7. UNLESS SPECIFIED OTHERWISE, ANCHORS SHALL BE EMBEDDED IN THE APPROPRIATE SUBSTRATE WITH A MINIMUM EMBEDMENT OF 8 TIMES THE NOMINAL ANCHOR DIAMETER OR THE EMBEDMENT DEPTH REQUIRED TO SUPPORT THE INTENDED LOAD.
8. POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED ON THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER-OF-RECORD PRIOR TO INSTALLING POST-INSTALLED ANCHORS IN PLACE OR MISSING OR MISPLACED CAST-IN-PLACE ANCHORS. CARE SHALL BE TAKEN IN PLACING POST-INSTALLED ANCHORS TO AVOID CONFLICTS WITH EXISTING REINFORCING. HOLES SHALL BE DRILLED AND CLEANED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS. SUBSTITUTION REQUESTS FOR PRODUCTS OTHER THAN THOSE SPECIFIED BELOW SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER-OF-RECORD ALONG WITH CALCULATIONS THAT ARE PREPARED & SEALED BY A REGISTERED PROFESSIONAL ENGINEER. THE CALCULATIONS SHALL DEMONSTRATE THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERTINENT EQUIVALENT PERFORMANCE VALUES (MINIMUM) OF THE SPECIFIED PRODUCT USING THE APPROPRIATE DESIGN PROCEDURE AND/OR STANDARD(S) AS REQUIRED BY THE BUILDING CODE. PROVIDE CONTINUOUS SPECIAL INSPECTION FOR ALL ADHESIVES AND MECHANICAL ANCHORS PER THE PRODUCT'S APPLICABLE ICC-ES OR IAPMO-ES EVALUATION REPORT (ICC-ES ESR). CONTACT MANUFACTURER'S REPRESENTATIVE FOR THE INITIAL TRAINING AND INSTALLATION OF ANCHORS AND FOR PRODUCT RELATED QUESTIONS AND AVAILABILITY.

A. CONCRETE ANCHORS

   I. MECHANICAL ANCHORS SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACI 355.2 AND ICC-ES AC193 FOR CRACKED AND UNCRACKED CONCRETE RECOGNITION.

   II. ADHESIVE ANCHORS SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED AND UNCRACKED CONCRETE RECOGNITION.

B. MASONRY ANCHORS

   I. ANCHORAGE TO SOLID-GROUTED CONCRETE MASONRY
   - MECHANICAL ANCHORS SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ICC-ES AC01 OR AC106.
   - ADHESIVE ANCHORS SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ICC-ES AC58.

   II. ANCHORAGE TO HOLLOW CONCRETE MASONRY/UNREINFORCED CLAY BRICK MASONRY
   - MECHANICAL ANCHORS SHALL HAVE BEEN TESTED AND QUALIFIED IN ACCORDANCE WITH ICC-ES AC106
   - ADHESIVE ANCHORS WITH SCREEN TUBES SHALL BE TESTED AND QUALIFIED IN ACCORDANCE WITH ICC-ES AC58 OR AC60, AS APPROPRIATE.

GENERAL INFORMATION

1. SUBSTITUTION OF EXPANSION OR ADHESIVE ANCHORS FOR EMBEDDED ANCHORS SHALL NOT BE PERMITTED UNLESS SPECIFICALLY APPROVED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD PRIOR TO PLACING OF CONCRETE CONTAINING THE ANCHORS.
2. PERMANENT STABILITY OF THE BUILDING AND COMPONENTS IS NOT PROVIDED UNTIL THE ERECTION IS COMPLETED AS SHOWN ON THE CONTRACT DRAWINGS. PER SECT 7.10.3 OF AISC CODE OF STANDARD PRACTICE FOR BUILDINGS AND BRIDGES MARCH 18, 2005, "TEMPORARY SUPPORTS, SUCH AS TEMPORARY GUYS, BRACES, FALSEWORK, CRIBBING OR OTHER ELEMENTS REQUIRED FOR ERECTION OPERATION WILL BE DETERMINED, FURNISHED AND INSTALLED BY THE ERECTOR."
3. WEIGHTS OF MECHANICAL EQUIPMENT SHOWN ON THE STRUCTURAL PLANS ARE FOR UNITS SPECIFIED BY THE MECHANICAL ENGINEER. CONTRACTOR SHALL VERIFY WEIGHTS AND ANY SUBSTITUTIONS THAT RESULT IN INCREASED WEIGHT SHALL BE APPROVED BY THE STRUCTURAL ENGINEER OF RECORD.
4. THE CONTRACTOR SHALL INSURE THAT NO CONSTRUCTION LOAD EXCEEDS THE DESIGN LIVE LOADS INDICATED ON THE STRUCTURAL DRAWINGS AND THAT THESE LOADS ARE NOT PLACED ON THE STRUCTURAL MEMBERS PRIOR TO THE TIME THAT ALL FRAMING MEMBERS AND THEIR CONNECTIONS ARE IN PLACE.
5. THE SIZE AND LOCATION OF EQUIPMENT PADS AND PENETRATIONS THROUGH THE STRUCTURE FOR MECHANICAL, ELECTRICAL, AND PLUMBING WORK SHALL BE VERIFIED BY THE CONTRACTOR. OPENINGS AND PENETRATIONS NOT SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE SUBJECT TO APPROVAL BY THE STRUCTURAL ENGINEER OF RECORD.
6. REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION TO BE COORDINATED WITH THE STRUCTURAL DRAWINGS.
7. PRIOR TO FABRICATION AND/OR ERECTION OF ANY MATERIALS, THE CONTRACTOR SHALL FIELD VERIFY ALL PERTINENT EXISTING DIMENSIONS, ELEVATIONS, AND CONDITIONS AND SHALL REPORT ANY DISCREPANCIES TO THE STRUCTURAL ENGINEER OF RECORD IMMEDIATELY UPON DISCOVERY.
8. THE GENERAL CONTRACTOR SHALL VERIFY THE SITE CONDITIONS BEFORE STARTING WORK AND SHALL NOTIFY THE STRUCTURAL ENGINEER OF RECORD OF ANY CONDITIONS ENCOUNTERED CONTRADICTORY TO THOSE SHOWN ON THE STRUCTURAL CONTRACT DOCUMENTS.
9. THE GENERAL CONTRACTOR SHALL COORDINATE THE MECHANICAL, ELECTRICAL, PLUMBING AND CIVIL WORK WITH THE STRUCTURAL CONTRACT DOCUMENTS AND SHALL REPORT ANY SUSPECTED DISCREPANCIES OR OMISSIONS TO BERNHARD TME IMMEDIATELY. THE STRUCTURAL CONTRACT DOCUMENTS DO NOT INCLUDE SHOP DRAWINGS, VENDOR DRAWINGS NOR ANY MATERIAL PREPARED AND SUBMITTED BY THE CONTRACTOR OR SUBCONTRACTORS.
10. REFERENCE TO STANDARD SPECIFICATIONS OF ANY TECHNICAL SOCIETY, ORGANIZATION OR ASSOCIATION OR TO CODES OF LOCAL OR STATE AUTHORITIES SHALL MEAN THE LATEST STANDARD, CODE,SPECIFICATION OR TENTATIVE SPECIFICATION ADOPTED AND PUBLISHED AT THE DATE OF TAKING BIDS UNLESS SPECIFICALLY STATED OTHERWISE.
11. FOR DIMENSIONS NOT SHOWN ON THE STRUCTURAL CONTRACT DOCUMENTS, SEE CIVIL & MEP DRAWINGS.THE CONTRACTOR SHALL REVIEW THE STRUCTURAL DRAWINGS FOR SECTIONS AND DETAILS THAT ARE LABELED AS "TYPICAL" AND ARE NOT NECESSARILY REFERENCED ON THE STRUCTURAL PLANS WHERE THEY APPLY.

EXISTING CONSTRUCTION

1. BEFORE FABRICATION AND ERECTION OF ANY MATERIALS, FIELD VERIFY ALL EXISTING ELEVATIONS, DIMENSIONS, AND CONDITIONS AS SHOWN ON THE DRAWINGS AND REPORT ANY DISCREPANICIES TO THE ENGINEER OF RECORD AT ONCE.

SUBMITTAL PROCEDURES

1. TRANSMIT SUBMITTALS SUFFICIENTLY IN ADVANCE OF RELATED CONSTRUCTION ACTIVITIES TO AVOID UNNECESSARY DELAY. THE STRUCTURAL ENGINEER OF RECORD MAY WITHHOLD ACTION ON A SUBMITTAL REQUIRING COORDINATION WITH OTHER SUBMITTALS UNTIL ALL RELATED SUBMITTALS ARE RECEIVED.
2. SUBMIT DIGITAL COPIES THROUGH BERNHARD TME FOR THE "SHOP DRAWINGS" REVIEW.
3. CONTRACTOR SHALL COMPLY WITH DIVISION ONE SECTION - "SUBMITTALS"
4. NO REPRODUCTIONS OF THE CONSTRUCTION DOCUMENTS ARE ACCEPTABLE FOR USE AS SHOP DRAWINGS.
5. ACTION STAMP- THE STRUCTURAL ENGINEER OF RECORD WILL STAMP EACH SUBMITTAL WITH A UNIFORM ACTION STAMP TO INDICATE THE ACTION TAKEN IN ONE OF FOUR OPTIONS LISTED BELOW:

APPROVED	WORK COVERED BY THE SUBMITTAL COMPLIES WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
APPROVED AS NOTED	WORK COVERED BY THE SUBMITTAL MAY PROCEED PROVIDED IT COMPLIES WITH NOTATIONS OR CORRECTIONS ON THE SUBMITTAL AND REQUIREMENTS OF THE CONTRACT DOCUMENTS
REVISE AND RESUBMIT	WORK COVERED BY THE SUBMITTAL DOES NOT COMPLY WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND MUST BE CHANGED TO COMPLY AND RESUBMIT THE ENTIRE SUBMITTAL.
REJECTED	WORK COVERED BY THE SUBMITTAL IS TOTALLY UNACCEPTABLE AND MAY NOT PROCEED.

STEEL FRAMING NOTES

1. UNLESS SPECIFICALLY NOTED OTHERWISE, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH AISC SPECIFICATIONS, LATEST EDITION.
2. ALL STRUCTURAL STEEL HSS SQUARE/RECT SECTIONS SHALL BE ASTM A500, GRADE B (Fy=46 ksi). ALL STRUCTURAL STEEL WIDE FLANGE SHALL BE ASTM A992 GRADE 50. CHANNEL SHAPES AND ALL OTHER MISCELLANEOUS STEEL SHALL BE ASTM A36 OR A572. ALL STRUCTURAL STEEL HSS ROUND SHALL BE ASTM A500, GRADE B (Fy=42 ksi). ALL BASE PLATES SHALL BE ASTM A572-50.
3. ALL STRUCTURAL BOLTS CONNECTING STRUCTURAL STEEL SHALL BE ASTM A325 TYPE 1 WITH THREADS ALLOWED IN THE SHEAR PLANE, EXCEPT ANCHOR BOLTS SHALL BE ASTM F1554 GR55, MUST MEET S1 WELDABILITY REQUIREMENT OR GR36 AS NOTED.
4. WELD ELECTRODES SHALL BE E70XX.
5. DO NOT WELD BOTTOM FLANGE BRACES UNTIL ALL ROOF DEAD LOADS ARE IN PLACE.
6. AT HSS BEAM CONNECTION TO WIDE FLANGE OR HSS COLUMNS, WELD ALL AROUND WITH A COMBINATION OF 3/16" FILLET & FLARE BEVEL GROOVE WELDS (UNLESS NOTED OTHERWISE.)
7. UNLESS DETAILED OTHERWISE OR REACTIONS ARE INDICATED, BEAM CONNECTIONS SHALL BE SELECTED TO SUPPORT 70% THE TOTAL UNIFORM LOAD CAPICITY SHOWN IN THE "ALLOWABLE UNIFORM LOAD TABLES" IN PART 2 OF THE AISC STEEL CONSTRUCTION MANUAL, LATEST EDITION, FOR THE GIVEN BEAM SIZE, SPAN, AND STEEL SPECIFICATION OR FOR THE BEAM REACTION SHOWN ON THE DRAWINGS, WHICHEVER IS GREATER. THE MINIMUM BEAM CONNECTION SHALL NOT BE SMALLER THAN THOSE LISTED IN TABLES 10-1 & 10-2 OF THE AISC STEEL CONSTRUCTION MANUAL, LATEST EDITION FOR THE GIVEN BEAM DEPTH, BOLT DIAMETER, AND WELD SEPCIFICATION.
8. UNLESS OTHERWISE INDICATED, BEAM REACTIONS SHOWN ON THE PLANS ARE DESIGN SERVICE LEVEL (ASD) GRAVITY (DEAD LOAD PLUS LIVE LOAD) SHEAR LOADS. ANY AXIAL OR OTHER LOADS REQUIRED MUST BE CONSIDERED IN ADDITION TO THE VERTICAL REACTIONS SHOWN.
9. THE MINIMUM DESIGN LOAD FOR ANY CONNECTION SHALL BE SIX (6) KIPS (ASD) OR TEN (10) KIPS (LRFD) REGARDLESS OF THE BEAMS REACTION(S) SHOWN ON THE PLANS.
10. UNLESS DETAILED OTHERWISE, ALL SHOP CONNECTIONS SHALL BE WELDED. UNLESS DETAILED OTHERWISE, ALL FIELD CONNECTIONS SHALL BE MADE USING 3/4"Ø, AND 1"Ø WHERE INDICATED, ASTM A325-N (OR ASTM F1852) HIGH STRENGTH BOLTS ("N" INDICATES BEARING TYPE WITH THREADS INCLUDED IN SHEAR PLANE). WASHERS SHALL BE INSTALLED UNDER NUTS WHEN REQUIRED BY THE SPECIFICATIONS OF STRUCTURAL JOINTS.
11. WHERE FIELD AND SHOP WELDS ARE INDICATED ON THE DRAWINGS, THEY SHALL BE THE SIZE AND TYPE NOTED. ALL WELDING OF STRUCTURAL STEEL SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF AWS D1.1 CORRESPONDING TO THE AISC SPECIFICATION USED AND ALL WELDS INCLUDING FIELD WELDS SHALL BE MADE BY CERTIFIED WELDERS USING E70XX ELECTRODES.
12. HIGH STRENGTH BOLTS (3/4"Ø, AND 1"Ø, ASTM A325-N (OR ASTM F1852) SHALL BE TIGHTENED TO PROVIDE, WHEN ALL BOLTS IN THE JOINT ARE TIGHT, A MINIMUM BOLT TENSION OF 28(K)FOR 3/4"Ø BOLTS & 51(k) FOR 1"Ø BOLTS. ONE OF THE FOLLOW METHODS SHALL BE USED:
    A. POWER WRENCHES ADJUSTED TO STALL OR CUT-OUT AT THE CORRECT TENSION.
    B. MANUAL TORQUE WRENCHES WITH TORQUE INDICATION SET TO GIVE THE CORRECT TENSION.
    C. MANUAL WRENCHES USING THE "TURN-OF-NUT" METHOD OF ASSURING THE CORRECT BOLT TENSION.
    D. DIRECT-TENSION INDICATORS
    UNLESS SPECIFICALLY NOTED OTHERWISE, ALL HIGH-STRENGTH BOLTS (A325, F1852, AND A490) AND TWIST OFF BOLTS SHALL BE PRE-TENSIONED TO MEET SLIP-CRITICAL REQUIREMENTS EVEN IF THE JOINT IS DESIGNED AS A "SNUG-TIGHT" BEARING CONNECTION. ALL JOINTS SHALL BE DESIGNED TO BE BEARING TYPE CONNECTIONS UNLESS NOTED OTHERWISE.
13. ALL STEEL MEMBERS EXPOSED TO WEATHER SHALL BE HOT-DIPPED GALV. (INCLUDING MASONRY SUPPORT LINTELS). GALVANIZED OR PAINTED WITH TNEMEC EPOXY SYSTEM OR SIMILAR SYSTEM MEETING THE REQUIREMENTS FOR PAINTING STRUCTURAL STEEL IN THE PROJECT SPECIFICATIONS. ALL OTHER STEEL MEMBERS SHALL BE FURNISHED WITH A SHOP COAT OF TNEMEC RED OR GRAY OXIDE PRIMER OR SIMILAR SYSTEM MEETING THE REQUIREMENTS FOR PAINTING STRUCTURAL STEEL IN THE PROJECT SPECIFICATIONS. ALL PRIMERS SHALL BE COMPATIBLE WITH TOP COATINGS SPECIFIED.
14. FIELD CUTTING, DRILLING, OR OTHER MODIFICATION OF STRUCTURAL STEEL COMPONENTS IS NOT PERMITTED WITHOUT WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD. WHERE BEAM PENETRATIONS CANNOT BE AVOIDED OR WHERE CUTTING IS REQUIRED, THE CONTRACTOR SHALL SUBMIT, TO THE STRUCTURAL ENGINEER OF RECORD, ALL PERTINENT INFORMATION INCLUDING PENETRATION SHAPE, SIZE, LOCATION, AND METHOD OF CUTTING THE OPENINGS.
15. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR INCLUDING THE COSTS FOR ALL MISCELLANEOUS STEEL IN THEIR BID REGARDLESS OF WHETHER OR NOT THOSE ITEMS ARE INDICATED ON THE STRUCTURAL DRAWINGS. THESE COSTS SHALL INCLUDE, BUT ARE NOT LIMITED TO, MISCELLANEOUS STEEL ITEMS SHOWN ON CIVIL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS.
16. SUMBIT STEEL SHOP DRAWINGS FOR APPROVAL.

SPECIAL INSPECTION ITEMS

1. SPECIAL INSPECTION SHALL BE PROVIDED BY THE OWNER ACCORDING TO SECTION 1704 OF **IBC 2012**. THE APPROVED SPECIAL INSPECTOR SHALL DEMONSTRATE COMPETENCE FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION. THE SPECIAL INSPECTOR SHALL SEND REPORTS TO THE OWNER, THE BUILDING OFFICIAL, THE STRUCTURAL ENGINEER OF RECORD, AND THE CONTRACTOR. THE SPECIAL INSPECTOR SHALL BRING NON-CONFORMING ITEMS TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR AND NOTE ALL SUCH ITEMS IN THE REPORTS. ANY UNRESOLVED ITEM ABOUT TO BE COVERED BY THE WORK SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S CONSTRUCTION MANGER AS WELL AS STRUCTURAL ENGINEER OF RECORD. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT STATING WHETHER OR NOT THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE SPECIAL INSPECTION AGENCY REGARDING INDIVIDUAL INSPECTIONS FOR ITEMS LISTED ON THE SCHEDULE AND AS NOTED ON THE BUILDING DEPARTMENT APPROVED PLANS. ADEQUATE NOTICE AND ACCESS TO APPROVED PLANS SHALL BE PROVIDED SO THAT THE SPECIAL INSPECTOR HAS TIME TO BECOME FAMILIAR WITH THE PROJECT.
2. THIS SECTION INCLUDES ADMINISTRATIVE AND PROCEDURAL REQUIREMENTS NECESSARY FOR COMPLIANCE WITH THE INTERNATIONAL BUILDING CODE, CHAPTER 17, STRUCTURAL TESTS AND SPECIAL INSPECTIONS.
3. THE OWNER WILL ENGAGE ONE OR MORE QUALIFIED SPECIAL INSPECTORS AND/OR TESTING AGENCIES TO CONDUCT STRUCTURAL TESTS AND SPECIAL INSPECTIONS SPECIFIED IN THE SPECIFICATION AND RELATED SECTIONS AND AS MAYBE SPECIFIED IN OTHER DIVISIONS OF THESE SPECIFICATIONS.
4. STRUCTURAL TESTING AND SPECIAL INSPECTION SERVICES ARE REQUIRED TO VERIFY COMPLIANCE WITH REQUIREMENTS SPECIFIED OR INDICATED. THESE SERVICES DO NOT RELIEVE CONTRACTOR OF RESPONSIBILITY FOR COMPLIANCE WITH OTHER CONSTRUCTION DOCUMENT REQUIREMENTS.
   A. SPECIFIC QUALITY-ASSURANCE AND -CONTROL REQUIREMENTS FOR INDIVIDUAL CONSTRUCTION ACTIVITIES ARE SPECIFIED IN THE SECTIONS THAT SPECIFY THOSE ACTIVITIES. REQUIREMENTS IN THOSE SECTIONS MAY ALSO COVER PRODUCTION OF STANDARD PRODUCTS.
   B. SPECIFIED TESTS, INSPECTIONS, AND RELATED ACTIONS DO NOT LIMIT CONTRACTOR'S OTHER QUALITY ASSURANCE AND -CONTROL PROCEDURES THAT FACILITATE COMPLIANCE WITH THE CONSTRUCTION DOCUMENT REQUIREMENTS.
   C. REQUIREMENTS FOR CONTRACTOR TO PROVIDE QUALITY - ASSURANCE AND - CONTROL SERVICES REQUIRED BY ENGINEER, OWNER, OR AUTHORITIES HAVING JURISDICTION ARE NOT LIMITED BY PROVISIONS OF THIS SECTION
5. CONCRETE PLACEMENT (PER SECTION 1705.3)
6. STRUCTURAL STEEL (PER SECTION 1705.2).
   A. SHOP FABRICATION OF STEEL MEMBERS.
   B. STEEL MATERIAL ID MARKINGS & CONFORMANCE TO ASTM STANDARDS.
   C. ALL STRUCTURAL WELDING PER AWS D1.1, EXCEPT AS FOLLOWS:
      I. THE SPECIAL INSPECTOR NEED NOT BE CONTINUOUSLY PRESENT DURING WELDING OF THE FOLLOWING ITEMS, PROVIDED THE MATERIALS, QUALIFICATIONS OF WELDING PROCEDURES AND WELDERS ARE VERIFIED PRIOR TO THE START OF WORK; PERIODIC INSPECTION ARE MADE OF THE WORK IN PROGRESS; AND A VISUAL INSPECTION OF ALL WELDS IS MADE PRIOR TO COMPLETION.
      II. SINGLE PASS FILLET WELDS NOT EXCEEDING 5/16" SIZE.
      III. FLOOR AND ROOF DECK WELDING.
      IV. WELDED STUDS WHEN USED FOR STRUCTURAL DIAPHRAGM OR COMPOSITE SYSTEMS.
      V. WELDED SHEET STEEL FOR COLD-FORMED FRAMING MEMBERS SUCH AS WALL STUDS AND JOISTS.
   D. PERIODIC INSPECTION OF ALL HIGH STRENGTH BOLT INSTALLATIONS AND VERIFICATION THAT IDENTIFICATION MARKS FOR HIGH STRENGTH BOLT, NUTS AND WASHERS CONFORM TO APPLICABLE ASTM STANDARDS.
   E. PERIODIC INSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE WITH APPROVED CONSTRUCTION DOCUMENTS.
   F. METAL DECK DIAPHRAGM CONNECTIONS AND CONNECTIONS TO SUPPORTING STEEL FRAME MEMBERS.
7. ADDITIONALLY, COMPLIANCE IS REQUIRED WITH FIELD QUALITY CONTROL PROVISIONS OF THE FOLLOWING SPECIFICATION SECTIONS:
   A. CONCRETE: SECTION 03 3000.
   B. STRUCTURAL STEEL: SECTION 05 1200.

UNISTRUT NOTES

1. UNISTRUT SUPPORT SYSTEM IS DESIGNED AND PROVIDED BY UNISTRUT SUPPLIER.
2. STAMPED AND SIGNED SHOP DRAWINGS AND CALCULATIONS MUST BE SUBMITTED FOR REVIEW TO BERNHARD TME.
3. CONTRACTOR TO COORDINATE BETWEEN STRUCTURAL DRAWINGS AND UNISTRUT DRAWINGS AND REPORT ANY SUSPECTED DISCREPANCIES OR OMISSIONS TO STRUCTURAL ENGINEER IMMEDIATELY.

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
REVIEWED FOR CODE COMPLIANCE
mmurphy 07/20/2022

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ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	77-16-0005

SHEET TITLE:
PERDIDO - GENERAL NOTES - STRUCTURAL

SHEET NUMBER:
S1000

GENERAL ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
APD	AIR PRESSURE DROP
ATC	AUTOMATED TEMPERATURE CONTROL
BHP	BRAKE HORSEPOWER
BOB	BOTTOM OF BEAM
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BTUH	BRITISH THERMAL UNITS PER HOUR
CFM	CUBIC FEET PER MINUTE
DB	DRY BULB
DIA	DIAMETER
DN	DOWN
DTL	DETAIL
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EC	ELECTRICAL CONTRACTOR
ESP	EXTERNAL STATIC PRESSURE
EXH	EXHAUST
FT	FEET
GA	GAUGE
GAL	GALLONS
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
HP	HORSEPOWER
HVAC	HEATING, VENTILATING & AIR CONDITIONING
KW	KILOWATTS
LAT	LEAVING AIR TEMPERATURE
MAX	MAXIMUM
MBH	THOUSANDS BRITISH THERMAL UNITS PER HOUR
MIN	MINIMUM
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OF/CI	OWNER FURNISHED / CONTRACTOR INSTALLED
OPD	OPPOSED BLADE DAMPER
PC	PLUMBING CONTRACTOR
PD	PRESSURE DROP
RA	RETURN AIR
RH	RELATIVE HUMIDITY
RM	ROOM
SA	SUPPLY AIR
SEN	SENSIBLE
SP	STATIC PRESSURE
TFD	TO FLOOR DRAIN
TS	TEMPERATURE SENSOR
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UC	UNDERCUT DOOR
UNO	UNLESS NOTED OTHERWISE
V	VOLTS
VTR	VENT THRU ROOF

EQUIPMENT DESIGNATION

AC	AIR CURTAIN
AHU	AIR HANDLING UNIT
AF	AIR FILTER
AP	ACCESS PANEL
ADS	AIR / DIRT SEPARATOR
B	BOILER
PMP	PUMP
CU	CONDENSING UNIT
DDC	DIRECT DIGITAL CONTROL
DP	DIFFERENTIAL PRESSURE SWITCH
ERU	ENERGY RECOVERY UNIT
EF	EXHAUST FAN
EG	EXHAUST GRILLE
EH	ELECTRIC HEATER
ET	EXPANSION TANK OR EXHAUST TERMINAL
FD	FIRE DAMPER
FEP	FIELD EQUIPMENT PANEL
FSD	COMBINATION FIRE/SMOKE DAMPER
FLA	FULL LOAD AMPS
H	HUMIDIFIER
L	LOUVER
MCA	MINIMUM CIRCUT AMPACITY
RAF	RETURN FAN
RG	RETURN GRILLE
SD	SMOKE DAMPER
SF	SUPPLY FAN
SG	SUPPLY GRILLE
ST	SUPPLY TERMINAL
TG	TRANSFER GRILLE
UH	UNIT HEATER
VAV	VARIABLE AIR VOLUME BOX
VD	MANUAL VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE

ONE LINE PIPE SYMBOLS

TWS	SUPPLY FROM TOWER
TWR	RETURN TO TOWER
HWS	HEATING WATER SUPPLY
HWR	HEATING WATER RETURN
CHS	CHILLED WATER SUPPLY
CHR	CHILLED WATER RETURN
D	CONDENSATE DRAIN
S12	STEAM SUPPLY (PRESSURE NOTED)
SR12	STEAM RETURN (PRESSURE NOTED)
PSR	PUMPED STEAM RETURN
BFW	BOILER FEEDWATER
	BALL VALVE
	BUTTERFLY VALVE (LEVER HANDLE)
	BUTTERFLY VALVE (GEAR OPERATOR)
	GATE VALVE
	OS & Y GATE VALVE
	GLOBE VALVE
	CHECK VALVE (SWING CHECK)
	CHECK VALVE (BUTTERFLY CHECK)
	PRESSURE REDUCING VALVE
	FLOW LIMITING VALVE
	CALIBRATED BALANCING VALVE
	VALVE AT RISER
	STRAINER W/ DRAIN VALVE
	UNION
	AIR TERMINAL / FAN COIL UNIT/HOT WATER RETURN CONTROL VALVE (2-WAY) ELECTRIC OR ELECTRONIC
	AIR TERMINAL / FAN COIL UNIT CONTROL VALVE (3-WAY) ELECTRIC OR ELECTRONIC
	BUTTERFLY CONTROL VALVE (2-WAY) ELECTRIC OR ELECTRONIC
	BALL VALVE CONTROL VALVE (2-WAY) ELECTRIC OR ELECTRONIC
	CONTROL VALVE (3-WAY) ELECTRIC OR ELECTRONIC

ONE LINE PIPE SYMBOLS

	CONTROL VALVE (3-WAY) ELECTRIC OR ELECTRONIC
	CONTROL VALVE (2-WAY) PNEUMATIC
	CONTROL VALVE (3-WAY) PNEUMATIC
	EMERGENCY SHUT-OFF VALVE WITH FUSIBLE LINK
	FLEXIBLE PIPE CONNECTOR
	METAL BELLOWS PUMP CONNECTOR
H	AIR VENT (A - AUTO, H - HAND)
	PRESSURE AND TEMPERATURE TAP
	PRESSURE GAUGE
	PRESSURE GAUGE W/ SIPHON
	THERMOMETER W/ INSERTION WELL
	ANCHOR
	PIPE GUIDE
	FLANGE
	ELBOW, TURNED UP
	ELBOW, TURNED DOWN
	RISE OR DROP IN PIPE
	ELBOW
	TEE, SIDE CONNECTION
	TEE, OUTLET UP
	TEE, OUTLET DOWN
	CAPPED OUTLET
	CAPPED PIPE
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	STEAM TRAP (DRIP LEG)
	STEAM TRAP
	DIRECTION OF PITCH
TFD	PIPE TO FLOOR DRAIN
EMS	EMERGENCY MANAGEMENT SYSTEM INSERTION WELL

TWO LINE PIPE SYMBOLS

	ELBOW - FLANGED LONG RADIUS 45°
	ELBOW - FLANGED LONG RADIUS 90°
	ELBOW - WELDED LONG RADIUS 45°
	ELBOW - WELDED LONG RADIUS 90°
	END CAP
	FLANGES - SLIP ON
	FLANGES - WELD NECK
	REDUCERS - FLANGED CONCENTRIC
	REDUCERS - FLANGED ECCENTRIC
	REDUCERS - WELDED CONCENTRIC
	REDUCERS - WELDED ECCENTRIC
	TEE - FLANGED
	TEE - WELDED
	BUTTERFLY VALVE - LEVER OPERATOR
	BUTTERFLY VALVE - WORM GEAR OPERATOR
	BUTTERFLY VALVE - ACTUATOR
	CHECK VALVE - SWING CHECK
	CHECK VALVE - SILENT OR WAFER
	GATE VALVE - NON RISING STEM
	GATE VALVE - OUTSIDE STEM AND YOKE
	GLOBE VALVE
	STRAINER - Y
	STRAINER - BASKET
	SUCTION DIFFUSER
	FLEXIBLE CONNECTORS

DUCTWORK SYMBOLS

T	THERMOSTAT
	THERMOSTAT WIRING
H	HUMIDISTAT
TS	TEMPERATURE SENSOR
FM	GPM FLUID FLOW METER
SA	SUPPLY AIR DUCT
RA	RETURN AIR DUCT
EA	EXHAUST AIR DUCT
CFM	CUBIC FEET PER MINUTE
EMS	ENERGY MANAGEMENT SYSTEM
ATC	AUTOMATIC TEMP CONTROLS
CO2	CARBON DIOXIDE
PPM	PARTS PER MILLION
Ø	ROUND DIAMETER
	FLAT OVAL (MAJOR/MINOR)
	SHORT (1x) RADIUS ELL (RECTANGULAR OR ROUND) CENTERLINE RADIUS = 1d
	LONG (1.5x) RADIUS ELL (ROUND OR OVAL) CENTERLINE RADIUS = 1.5d
	SQUARE ELL
	ELL WITH TURNING VANES
	STREAMLINE TAP (RECTANGULAR)
Ø	STREAMLINE TAP (ROUND)
Ø	CONICAL TAP
	STRAIGHT TAP
	LATERAL TAP
	MANUAL VOLUME DAMPER
M	MOTORIZED VOLUME DAMPER
FD	FIRE DAMPER (FD)
FD	VERTICAL FIRE DAMPER (FD)
S	SMOKE DAMPER
S FD/S	COMBINATION FIRE / SMOKE DAMPER (FD/S)
20/12	RECTANGULAR DUCT (WIDTH/DEPTH)
	ROUND DUCT OFFSET
RISE	CHANGE IN ELEVATION (RISE, FALL)
	FLEXIBLE DUCT
	SUPPLY DUCT UP
	RETURN DUCT UP
	EXHAUST DUCT UP
	SUPPLY DUCT DOWN
	RETURN DUCT DOWN
	EXHAUST DUCT DOWN
	CEILING DIFFUSER
	RETURN AIR GRILLE
	EXHAUST AIR GRILLE
AP	ACCESS PANEL
AP	ACCESS PANEL IN ROUND OR OVAL DUCT
X -X - 000	TYPE - THROW - AIRFLOW
X- 000	TYPE - AIRFLOW

PLUMBING LEGEND

SYMBOL	DESCRIPTION
	NEW EQUIPMENT
	EXISTING EQUIPMENT
SS	SANITARY SEWER BELOW FLOOR
SS	SANITARY SEWER ABOVE FLOOR
CWV	COMBINATION WASTE & VENT BELOW FLOOR
CWV	COMBINATION WASTE & VENT ABOVE FLOOR
	SANITARY VENT (V)
SD	STORM DRAIN BELOW FLOOR
SD	STORM DRAIN ABOVE FLOOR
GW	GREASE WASTE BELOW FLOOR
GW	GREASE WASTE ABOVE FLOOR
AW	ACID WASTE BELOW FLOOR
AW	ACID WASTE ABOVE FLOOR
	ACID VENT (AV)
	COLD WATER (CW)
	HOT WATER (HW)
	HOT WATER RETURN (HWR)
TW	TEMPERED WATER
W	DOMESTIC WATER SERVICE TO BUILDING BELOW GRADE
DE	DEIONIZED WATER SUPPLY
DER	DEIONIZED WATER RETURN
DI	DISTILLED WATER SUPPLY
DIR	DISTILLED WATER RETURN
SPD	SUMP PUMP DISCHARGE ABOVE FLOOR
G	NATURAL GAS - LOW PRESSURE
MG	NATURAL GAS - MEDIUM PRESSURE
HG	NATURAL GAS - HIGH PRESSURE
LPG	LIQUID PROPANE GAS
OSD	OVERFLOW STORM DRAIN ABOVE FLOOR
MA	MEDICAL AIR
MV	MEDICAL VACUUM
O	OXYGEN
N	NITROGEN
NO	NITROUS OXIDE
A	COMPRESSED AIR
V	VACUUM
LA	LAB AIR
LV	LAB VACUUM
RO	REVERSE OSMOSIS WATER SUPPLY
ROR	REVERSE OSMOSIS WATER RETURN

SYMBOL	DESCRIPTION
WC-1	PLUMBING FIXTURE
FD	FLOOR DRAIN
RD	ROOF DRAIN
ORD	OVERFLOW ROOF DRAIN
DN	STORM DRAIN DOWNSPOUT NOZZLE
VTR	VENT THRU ROOF
AVTR	ACID VENT THRU ROOF
COP	CLEANOUT PLUG
FCO	FLOOR CLEANOUT
WCO	WALL CLEANOUT
COTG	CLEANOUT TO GRADE
	POINT OF CONNECTION TO EXISTING
	TERMINATION OF DEMOLITION
P1 / M3.1	PARTIAL PLAN NUMBER / SHEET NUMBER } PARTIAL PLAN DESIGNATION
R1 / M3.1	RISER NUMBER / SHEET NUMBER } RISER DESIGNATION
	MEDICAL GAS ALARM PANEL
	MEDICAL GAS VALVE BOX
S VA O2	MEDICAL GAS OUTLETS
X	KITCHEN EQUIPMENT REFERENCE NUMBER

PLUMBING DEMOLITION LEGEND

SYMBOL	DESCRIPTION
	EXISTING EQUIPMENT TO REMAIN
	EXISTING PIPING TO REMAIN
	EQUIPMENT TO BE REMOVED
	EXISTING PIPING TO BE REMOVED
	TERMINATION OF DEMOLITION

GENERAL NOTES:

1. ALL WORK IS TO CONFORM TO THE CODES OUTLINED IN THE SPECIFICATIONS.

2. BY NECESSITY, THESE DRAWINGS REFLECT A SYSTEM DESIGNED AROUND SPECIFIC REFERENCE PRODUCTS, THE SOLUTION OF WHICH HAS IMPACTED THE DESIGNS OF OTHER TRADES (ELECTRICAL, STRUCTURAL, ETC). IF ALTERNATE MANUFACTURERS, FUEL SOURCES, SIZES, OR MODEL NUMBERS ARE SUBMITTED OR BID, IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND ALL SUBCONTRACTORS TO COORDINATE ALL DIFFERENCES PRIOR TO BID. THE SUBSTITUTING CONTRACTOR SHALL BE RESPONSIBLE FOR AND SHALL PAY FOR CHANGES REQUIRED TO OTHER TRADES IF ALTERNATE EQUIPMENT IS BID OR INSTALLED AT THE CONTRACTORS OPTION.

3. ALL DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENTS OR GEOMETRIC RELATIONSHIPS OF EQUIPMENT AND SERVICES. THEY ARE NOT INTENDED TO SPECIFY OR SHOW EVERY OFFSET, FITTING, OR COMPONENT. CONTRACTOR SHALL NOT SCALE DRAWINGS. EQUIPMENT SCHEDULES SHALL TAKE PRECEDENCE OVER CONFLICTING DRAWING INFORMATION. DRAWINGS SPECIFIC TO THIS DISCIPLINE DO NOT LIMIT THE RESPONSIBILITY OF WORK REQUIRED BY CONTRACT DOCUMENTS. REFER TO, STRUCTURAL, ELECTRICAL, AND OTHER DRAWINGS FOR COMPLETE INFORMATION.

4. EXCEPT WHERE MODIFIED BY SPECIFIC NOTATION TO THE CONTRARY, IT SHALL BE UNDERSTOOD THAT THE INDICATION AND/OR DESCRIPTION OF ANY ITEM, IN THE DRAWINGS OR SPECIFICATIONS OR BOTH, CARRIES WITH IT THE INSTRUCTION TO FURNISH AND INSTALL THE ITEM, REGARDLESS OF WHETHER OR NOT THIS INSTRUCTION IS EXPLICITLY STATED AS PART OF THE INDICATION OR DESCRIPTION.

5. EXACT LOCATION OF ALL EQUIPMENT AND PIPING SHALL BE COORDINATED WITH OTHER TRADES. CEILING MOUNTED SPRINKLER, LIGHTING AND ELECTRICAL REQUIREMENTS TAKE PRECEDENCE OVER CEILING MOUNTED MECHANICAL REQUIREMENTS.

6. ALL SYSTEMS SHALL BE INSTALLED AS PER SPECIFICATIONS AND GOVERNING CODES.

7. INFORMATION AND COMPONENTS SHOWN ON PIPING DIAGRAMS OR DETAILS, BUT NOT SHOWN ON PLANS, AND VICE-VERSA, SHALL BE PROVIDED AS IF EXPRESSLY REQUIRED BY BOTH.

8. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL WORK WITH THAT OF OTHER TRADES, ELECTRICAL, STRUCTURAL, CIVIL, ETC. SEE STRUCTURAL DRAWINGS FOR BUILDING DETAILS AND DIMENSIONS. REFER TO CIVIL PLANS FOR ALL UTILITY CONNECTION POINTS OUTSIDE THE BUILDING.

9. REFER TO SPECIFICATIONS OR SCHEDULES ON DRAWINGS FOR ACCEPTABLE MANUFACTURERS AND MODELS OF PLUMBING FIXTURES AND EQUIPMENT, AND PROPER APPLICATIONS OF SAME

10. PROVIDE CLEANOUTS IN ALL SANITARY, STORM DRAINAGE & OVERFLOW LINES, WHETHER SHOWN OR NOT, AT INTERVALS NOT TO EXCEED 50 FEET, AT EACH DIRECTION 45 DEGREES AND GREATER, AND ON ALL VERTICAL RISERS AT A HEIGHT OF 18" A.F.F. AT THE BASE OF EACH STACK.

11. PROVIDE PRESSURE REDUCERS IN WATER SUPPLY LINES TO KEEP PRESSURE BELOW 70 PSI AT ALL OUTLETS. MINIMUM PRESSURE ACCEPTABLE AT WATER OUTLETS IS 25 PSI AT DIRECT SUPPLY FLUSH VALVES, AND 8 PSI AT ALL OTHER OUTLETS.

12. INSULATE ALL WATER LINES ABOVE FLOOR. INSULATE ALL HORIZONTAL STORM LINES (EXCLUDING OVERFLOW LINES) ABOVE FLOOR.

13. INSULATE ALL CONDENSATE LINES INSIDE BUILDING AS PER INSULATION REQUIREMENTS FOR COLD WATER LINE, IN SPECIFICATIONS.

14. SLOPE ALL SANITARY AND STORM LINES ARE 1/4" PER FOOT FOR PIPES LESS THAN 3" IN DIAMETER, AND NOT LESS THAN 1/8" PER FOOT FOR PIPES 3" AND LARGER. VERIFY INVERTS WITH SITE DRAWINGS AND COORDINATE INSTALLATION TO ASSURE PROPER FLOW.

15. SLEEVE AND SEAL ALL PIPE PENETRATIONS THRU RATED WALLS AND FLOORS. PIPE SLEEVES THROUGH FLOORS SHALL TERMINATE A MINIMUM OF 2" ABOVE FINISHED FLOOR. PLASTIC PIPING SHALL NOT BE USED TO PENETRATE FIRE RATED CONSTRUCTION.

16. PROVIDE WATER HAMMER ARRESTORS IN BRANCH WATER LINES AS REQUIRED BY GOOD PRACTICE, AT ALL QUICK CLOSING VALVES OR MINIMUM OF ONE ARRESTOR FOR EACH FIXTURE OR BANK OF FIXTURES.

17. PROVIDE STOP VALVES AT EVERY FIXTURE ON BOTH HOT AND COLD WATER SUPPLY LINES. VALVES, ESCUTCHEONS, FITTINGS, ETC. SHALL BE CHROMIUM PLATED WHERE PIPING IS EXPOSED.

18. ALL PIPE DROPS FROM CEILING PLENUM TO BELOW FLOOR SHALL BE MADE IN FURR-OUTS AT COLUMNS, IN WEBB OF BEAMS AT COLUMNS, OR IN WALLS UNLESS SHOWN OTHERWISE.

19. EXISTING INFORMATION SHOWN WAS GATHERED FROM "AS BUILT" DRAWINGS AND JOB SITE VISITS. EVERY ATTEMPT HAS BEEN MADE TO SHOW EXISTING SERVICES CORRECTLY. HOWEVER CONTRACTOR SHALL BE RESPONSIBLE TO FIELD VERIFY ALL EXISTING CONDITIONS AND MAKE ALL NECESSARY ADJUSTMENTS IN THE FIELD AT NO EXTRA COST TO THE OWNER/ARCHITECT/ENGINEER.

20. PROVIDE GAS COCK, DIRT LEG, AND UNION AT ALL FINAL CONNECTIONS OF GAS PIPING TO EQUIPMENT.

21. ⬡ WHERE THIS SYMBOL OCCURS ON THE DRAWINGS, REFERENCE SHOULD BE MADE TO THE KEYED NOTES ON THAT SAME SHEET AND THE CORRESPONDING NUMBER OF NOTE.

22. IN ALL AREAS SUBJECT TO FREEZING, WATER PIPING SHALL BE INSTALLED ON THE THERMAL SIDE OF THE INSULATION.

23. THE CONTRACTOR SHALL, PRIOR TO THE START OF ANY WORK UNDER THIS CONTRACT, VISIT JOB SITE TO VERIFY SIZE, ELEVATION, LOCATION, ETC., OF ANY EXISTING PIPING NOTED, SHOWN OR IMPLIED, TO WHICH NEW PIPING IS RELATED OR CONNECTED.

24. CUT WALLS, FLOORS OR CEILINGS AS REQUIRED TO INSTALL NEW PIPING. ALL FURRING AND REPAIRING SHALL BE BY THE GENERAL CONTRACTOR. COORDINATE REQUIREMENTS WITH GENERAL CONTRACTOR.

25. NO STRUCTURAL MEMBERS MAY BE CUT OR MODIFIED WITHOUT THE WRITTEN PERMISSION OF THE STRUCTURAL ENGINEER.

26. WHERE EXISTING FIXTURES AND EQUIPMENT ARE REMOVED AND NOT REPLACED, REMOVE PIPING BACK TO MAIN AND CAP.

27. REWORK EXISTING WATER, SANITARY AND VENT PIPING AS REQUIRED TO INSTALL NEW EQUIPMENT.

28. EXISTING FLOOR DRAINS SHALL BE THOROUGHLY CLEANED AND BUFFED. PIPING SHALL BE RODDED AND CLEANED TO THE POINT OF CONNECTION TO MAIN.

29. EXISTING PIPE TO WHICH NEW PIPE IS CONNECTED SHALL BE RODDED, FLUSHED AND CLEANED FROM POINT OF CONNECTIONS TO MAIN OUTSIDE BUILDING.

30. REMOVE ALL EXISTING PIPING WHICH IS DEEMED INOPERABLE AS A RESULT OF THIS CONTRACT UNLESS SHOWN OR NOTED OTHERWISE.

31. LOCATION OF FLOOR DRAINS IN MECHANICAL ROOMS SHALL BE COORDINATED WITH MECHANICAL EQUIPMENT AND MECHANICAL CONTRACTOR.

32. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL LICENSES, PERMITS, DOCUMENTS, FEES, SERVICES AND UTILITY FEES REQUIRED TO DO THE WORK OF THIS CONTRACT.

33. MAINTAIN A DISTANCE OF 25'-0" FROM A SANITARY VENT THROUGH THE ROOF AND ANY FRESH AIR INTAKES.

34. ALL PIPING IS TO BE CONCEALED UNLESS NOTED OTHERWISE. ALL EXPOSED PIPING IS TO BE CHROMIUM PLATED.

35. PROVIDE BACKFLOW PREVENTERS OR ANTI-SIPHON DEVICES AT ALL LOCATIONS WHERE THERE IS A POSSIBILITY OF CROSS CONTAMINATION.

36. MAKE ALL UTILITY CONNECTIONS AND INSTALLATIONS IN FULL ACCORDANCE WITH ALL UTILITY REGULATIONS. PROVIDE ALL ADDITIONAL APPURTENANCES AS REQUIRED BY THE UTILITY COMPANY. THE COMPLETED INSTALLATION SHALL BE IN ACCORDANCE WITH ALL APPLICABLE INDUSTRY STANDARDS OF GOOD PRACTICE AND SAFETY, AND THE MANUFACTURER'S STRICTEST RECOMMENDATIONS FOR EQUIPMENT AND PRODUCT APPLICATION AND INSTALLATION.

37. MAINTAIN ALL MANUFACTURER'S RECOMMENDED SERVICE CLEARANCES FOR ALL FIXTURES AND EQUIPMENT. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF PLUMBING FIXTURES.

38. CUTTING OF ROOF AND FLASHING OF PIPE CURBS, SANITARY VENT THROUGH ROOF, ETC., SHALL BE COORDINATED WITH AND PERFORMED BY THE ROOFING CONTRACTOR, AT THIS CONTRACTOR'S EXPENSE, TO MAINTAIN THE ROOF WARRANTY.

39. ALL ABOVE GRADE HORIZONTAL PIPING SHALL BE INSTALLED AS HIGH AS POSSIBLE. ALL RAIN CONDUCTORS AND OVERFLOW RAIN CONDUCTORS SHALL BE ROUTED THROUGH THE JOISTS (OR TRUSSES) FOR AS GREAT A DISTANCE AS POSSIBLE, WHILE MAINTAINING PROPER SLOPE, BEFORE DROPPING BELOW THE JOISTS (OR TRUSSES).

40. ALL LOCATIONS OF EXISTING EQUIPMENT, DUCTWORK, ACCESSORIES, ETC ARE APPROXIMATE. CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXACT FIELD CONDITIONS.

41. INTERRUPTION OF BUILDING SERVICES AND UTILITIES SHOULD BE MINIMIZED WHEN POSSIBLE AND COORDINATED WITH OWNER.

42. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO THE EXISTING BUILDING, EQUIPMENT AND SYSTEMS RESULTING FROM CONSTRUCTION.

43. REFER TO PIPING DIAGRAM FOR EXTENT OF WORK. CONTRACTOR IS RESPONSIBLE FOR COORDINATION BETWEEN FLOOR PLANS AND PIPING DIAGRAMS FOR ALL SCOPE OF WORK.

44. PRIOR TO CONNECTING ANY EXISTING SYSTEM TO THE NEW DISTRICT SYSTEM, CHEMICALLY TEST AND OBSERVE WATER QUALITY (TURBIDITY) OF THE EXISTING SYSTEM. FLUSH AND CLEAN THE EXISTING SYSTEMS UNTIL WATER QUALITY REQUIREMENTS (AS DETERMINED BY CHEMICAL TREATMENT PROVIDER) ARE ACHIEVED.

45. DEMOLISH EXISTING EQUIPMENT PADS AS REQUIRED FOR INSTALLATION OF NEW EQUIPMENT.

DEMOLITION AND RENOVATION SYMBOLS

	EQUIPMENT TO BE REMOVED
	EXISTING EQUIPMENT
	NEW EQUIPMENT
	POINT OF CONNECTION TO EXISTING
	TERMINATION OF DEMOLITION
	DUCT TO BE REMOVED
	EXISTING DUCT TO REMAIN
	NEW DUCT
	PIPING TO BE REMOVED
	EXISTING PIPING TO REMAIN
	NEW PIPING

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ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

SHEET TITLE:

LEGEND AND GENERAL NOTES - MECHANICAL

SHEET NUMBER:

M1000

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
REVIEWED FOR CODE COMPLIANCE
mnmurphy 07/20/2022

PVF SCHEDULE

SYSTEM	AREA	SIZE (INCHES)			PIPE				FITTINGS			FLANGES		BRANCH CONNECTIONS	INDIVIDUAL PIPE HANGERS / SUPPORTS	
					MATERIAL	GRADE	WALL	MANUFACTURER	MATERIAL	CONNECTION	MANUFACTURER	TYPE	GASKET		HORIZONTAL	VERTICAL
DOMESTIC WATER	ABOVEGROUND	1/2	<=	4	COPPER	HARD ASTM B88	TYPE L	-	COPPER	PRESS	VIEGA / MUELLER	VIEGA / MUELLER PRESS	GARLOCK 3760-U	TEE	PLATED CLEVIS, EXCEPT COPPER COATED FOR HANGERS IN CONTACT WITH COPPER PIPING	COPPER PLATED RISER
		2-1/2	<=	6	STAINLESS STEEL	GRADE 304 WELDED, ASTM A312	SCH. 10	-	SCH. 10 304 STAINLESS STEEL	VICTAULIC 807 / 877 PAINTED	VICTAULIC	VICTAULIC 445				PLATED RISER CLAMP
REVERSE OSMOSIS	ABOVEGROUND	1-1/2	<=	1-1/2	PVC	SPEARS LOW EXTRACTABLE	SCH. 40	SPEARS	LOW EXTRACT PVC	SPEARS LX-5	SPEARS			TEE	PLATED CLEVIS	PLATED RISER CLAMP
		-	<=	-	STAINLESS STEEL	GRADE 304 WELDED, ASTM A312	STD	-	150# CAST 304 SS	THREAD OR SOCKET WELD	-					
NATURAL GAS (30-PSIG & UNDER)	ABOVEGROUND	1/2	<=	2	CARBON STEEL	BLACK ERW, ASTM A53	STD	-	3000# FORGED STEEL	SOCKET WELD	-	THREAD / SOCKET WELD	NON-ASBESTOS	FORGED STEEL OUTLET	PLATED CLEVIS	PLATED RISER CLAMP
		2-1/2	<=	10					STD CARBON STEEL	BUTT WELD		SLIP-ON				
NATURAL GAS (ABOVE 30-PSIG)	ABOVEGROUND	1/2	<=	2	CARBON STEEL	BLACK ERW, ASTM A53	REFER TO ASME B31.8	-	3000# FORGED STEEL	SOCKET WELD	-	SLIP-ON	NON-ASBESTOS	FORGED STEEL OUTLET	PLATED CLEVIS	PLATED RISER CLAMP
		2-1/2	<=	10					REFER TO ASME B31.8	BUTT WELD						
CHILLED WATER HEATING WATER TOWER WATER MAKEUP WATER	ABOVEGROUND (PRESS)	1/2	<=	2	COPPER	HARD ASTM B88	TYPE L	-	COPPER	PRESS	VIEGA / MUELLER	VIEGA / MUELLER PRESS	NON-ASBESTOS	TEE	PLATED CLEVIS, EXCEPT COPPER COATED FOR HANGERS IN CONTACT WITH COPPER PIPING	COPPER PLATED RISER
CHILLED WATER HEATING WATER TOWER WATER MAKEUP WATER	ABOVEGROUND (GROOVE)	2-1/2	<=	12	CARBON STEEL	BLACK ERW, ASTM A53	STD	-	PAINTED DUCTILE IRON (1,2)	VICTAULIC 107, PAINTED VICTAULIC 177, PAINTED	VICTAULIC	VICTAULIC 45, PLAIN	NON-ASBESTOS	FORGED STEEL OUTLET	PLATED CLEVIS	PLATED RISER CLAMP
		14	<=	24						VICTAULIC W07, PAINTED VICTAULIC W77, PAINTED		VICTAULIC W45, PLAIN				
		30	<=	-		API 5L - PSL 2, GRADE B / X42										
CHILLED WATER HEATING WATER TOWER WATER MAKEUP WATER	ABOVEGROUND (WELD)	2-1/2	<=	24	CARBON STEEL	BLACK ERW, ASTM A53	STD	-	STD CARBON STEEL (1)	BUTT WELD	-	SLIP-ON (3)	NON-ASBESTOS	FORGED STEEL OUTLET	PLATED CLEVIS	PLATED RISER CLAMP
		30	<=	-		API 5L - PSL 2, GRADE B / X42						B16.47 WELD NECK, SERIES A				
CONDENSATE	ABOVEGROUND	3/4	<=	1	COPPER	HARD ASTM B88	TYPE L	-	COPPER	LF STERLING SOLDER	NIBCO				PLATED CLEVIS	COPPER PLATED RISER
		1-1/4	<=	-		HARD ASTM B306	DWV		DWV COPPER							
REFRIGERANT RELIEF	ABOVEGROUND	1/2	<=	2	CARBON STEEL	BLACK ERW, ASTM A53	STD	-	3000# FORGED STEEL	THREAD OR SOCKET WELD	-	SOCKET WELD	SPIRAL WOUND (4)	FORGED STEEL OUTLET	PLATED CLEVIS	PLATED RISER CLAMP
		2-1/2	<=	-					STD CARBON STEEL	BUTT WELD		SLIP-ON				
BOILER FEEDWATER	ABOVEGROUND	1/2	<=	2	CARBON STEEL	BLACK SEAMLESS, ASTM A106	XS	-	3000# FORGED STEEL	THREAD OR SOCKET WELD	-			FORGED STEEL OUTLET	PLATED CLEVIS	PLATED RISER CLAMP
LOW / HIGH PRESSURE STEAM SUPPLY	ABOVEGROUND	1/2	<=	2	CARBON STEEL	BLACK SEAMLESS, ASTM A106	XS	-	3000# FORGED STEEL	THREAD OR SOCKET WELD	-	SOCKET WELD	SPIRAL WOUND (4)	TEE	PLATED CLEVIS	PLATED RISER CLAMP
		2-1/2	<=	-		BLACK ERW, ASTM A53	STD		STD CARBON STEEL (5)	BUTT WELD		SLIP-ON		FORGED STEEL OUTLET		
LOW / HIGH PRESSURE CONDENSATE RETURN	ABOVEGROUND	1/2	<=	2	CARBON STEEL	BLACK SEAMLESS, ASTM A106	XS	-	3000# FORGED STEEL	THREAD OR SOCKET WELD	-	SOCKET WELD	SPIRAL WOUND (4)	TEE	PLATED CLEVIS	PLATED RISER CLAMP
		2-1/2	<=	-					STD CARBON STEEL (5)	BUTT WELD		SLIP-ON		FORGED STEEL OUTLET		

NOTES:
1. REDUCE PIPE SIZES USING ECCENTRIC REDUCER FITTING INSTALLED WITH LEVEL SIDE UP
2. 2" GROOVED JOINTS ALLOWED FOR TRANSITION TO COPPER ONLY
3. WELD NECK FOR CONNECTION TO LUG BUTTERFLY
4. FLEXITALLIC STYLE CG, 0.125" THICK, 304 SS WINDING, CARBON STEEL GUIDE RING, B7 STUDS / BOLT & NUTS
5. REDUCE PIPE SIZES USING ECCENTRIC REDUCER FITTING INSTALLED WITH LEVEL SIDE DOWN

PVF SCHEDULE CONTINUED

SYSTEM	AREA / CONNECTION	SIZE (INCHES)			VALVES				SPECIALTIES						MISC. ACCESSORIES		ANCHORS
					SHUT-OFF	CHECK	BALANCING	STRAINER	DIELECTRIC	PRESSURE GAUGE	GAUGE COCK	THERMOMETER	THERMOWELL	P&T PLUG			DROP-IN
DOMESTIC WATER	-	1/2	<=	2	NIBCO PC585-80-LF (1)	NIBCO PC413-Y-LF	NIBCO T-1810-LF	WATTS LF777SI	NIPPLE	TRERICE 600CB	NIBCO T-FP600A-LF						HILTI HDI HILTI HDI-P
	FLANGE CONNECTION	2-1/2	<=	6	NIBCO LD2000-3	NIBCO W-920-W-LF		WATTS 77F-DI-125									
	GROOVE CONNECTION				NIBCO GD4765-3	NIBCO G-920-W-LF											
REVERSE OSMOSIS	ABOVEGROUND	1-1/2	<=	1-1/2	SPEARS TRUE UNION LX	SPEARS BALL CHECK LX											
		-	<=	-	APOLLO 86A-100 / 200 SERIES	APOLLO 62-100-01 SERIES											
NATURAL GAS (30-PSIG & UNDER)	ABOVEGROUND	1/2	<=	2	HOMESTEAD 601										THREAD SEALANT: OATEY MEGALOC		
		2-1/2	<=	10	HOMESTEAD 612												
NATURAL GAS (ABOVE 30-PSIG)	ABOVEGROUND	1/2	<=	2	KECKLEY BVSCSWFCSRGSL										THREAD SEALANT: OATEY MEGALOC		
		2-1/2	<=	10	KECKLEY BVF2RF4FCSRGSL												
CHILLED WATER HEATING WATER TOWER WATER MAKEUP WATER	PRESS	1/2	<=	2	NIBCO PC585-70 (1)	NIBCO T-413-B OR S-413-B	NIBCO T-1810	WATTS LF777SI	NIPPLE	TRERICE 600CB 45 02 L A XXX WITH 870-1 SNUBBER XXX = PRESSURE CODE CHW / HW = 130 TW = 110	NIBCO T-FP600A	TRERICE BX9 1 XXX YY XXX = STEM LENGTH YY = TEMP RANGE CHW = 02 HW = 07 TW = 04	TRERICE BRASS	TRERICE PLUG: D3770 EXTENSION: D3753	THREAD SEALANT: OATEY MEGALOC		
	GROOVE CONNECTION	2-1/2	<=	6	VICTAULIC V-XXX-761SE-2	VICTAULIC 716	VICTAULIC 789										
		8	<=	12	VICTAULIC V-XXX-761SE-3												
		14	<=	24	VICTAULIC W-XXX-1582-20	VICTAULIC W715											
		30	<=	-	VICTAULIC W709												
	FLANGE CONNECTION	2-1/2	<=	6	NIBCO LD2000-3	NIBCO W-920-W-LF	VICTAULIC 788 (UP TO 16")	KECKLEY A-7 125#									
		8	<=	-	NIBCO LD2000-5												
REFRIGERANT RELIEF	-	-	<=	-											FLEX CONNECTOR: METRAFLEX SSTT OR SSTC		
BOILER FEEDWATER	-	1/2	<=	2	NIBCO T-174										THREAD SEALANT: OATEY MEGALOC		
		2-1/2	<=	-	NIBCO F-667-O												
LOW PRESSURE STEAM & CONDENSATE	-	1/2	<=	2	NIBCO T-111	NIBCO T-413-Y		KECKLEY B-7 (2)		TRERICE 600CB WITH WEKSLER CPS4 SIPHON	NIBCO T-111				THREAD SEALANT: OATEY MEGALOC		
		2-1/2	<=	-	NIBCO F-617-O			KECKLEY A-7 125# (2)									
HIGH PRESSURE STEAM & CONDENSATE	-	1/2	<=	2	NIBCO T-174	NIBCO T-473-Y		KECKLEY B-7 (2)		TRERICE 600CB WITH WEKSLER CPS4 SIPHON	NIBCO T-174				THREAD SEALANT: OATEY MEGALOC		
		2-1/2	<=	-	NIBCO F-667-O			KECKLEY A-7 250# (2)									

NOTES:
1. FOR INSULATED LINES, ORDER WITH NIBSEAL HANDLES
2. ORDER WITH SCREEN FOR STEAM SERVICE

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
REVIEWED FOR CODE COMPLIANCE
mmurphy 07/20/2022

Bernhard TME Engineering
1 ALLIED DRIVE, BUILDING 2
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STATE OF LOUISIANA
CHRISTOPHER C. GALLOWAY
License No. 45209
PROFESSIONAL ENGINEER
5/5/22
ENGINEER SEAL

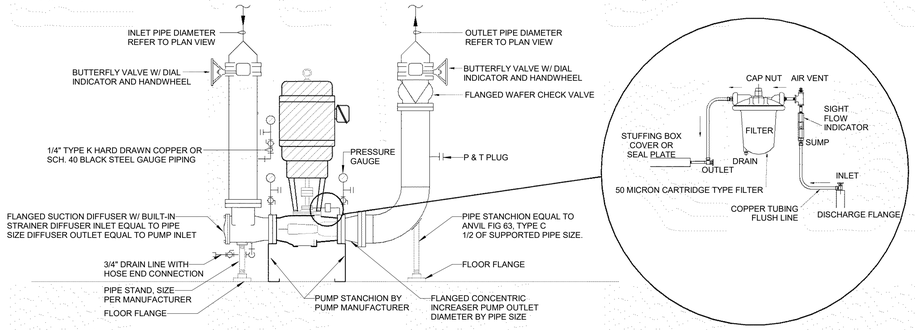
ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

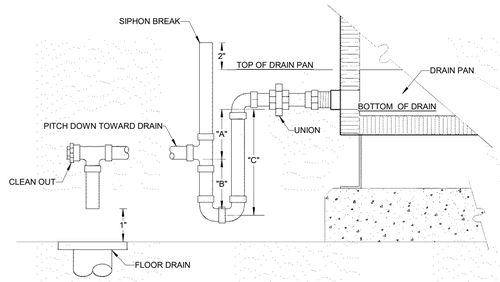
ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

SHEET TITLE:
PVF SCHEDULE

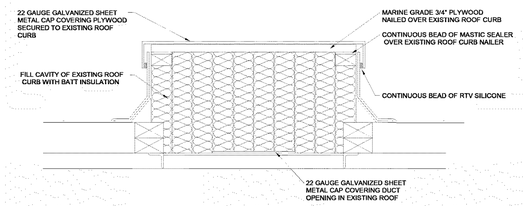
SHEET NUMBER:
M1001



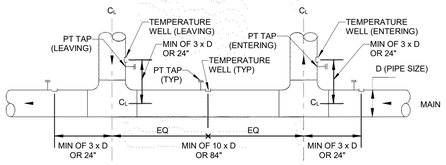
1 IN-LINE PUMP PIPING DETAIL
NOT TO SCALE:



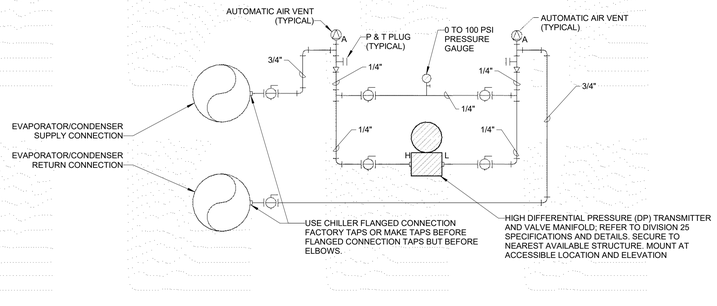
2 CONDENSATE DRAIN PIPING DETAIL
NOT TO SCALE:



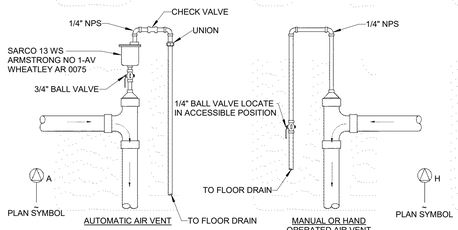
3 CAPPING OF EXISTING EQUIPMENT CURB DETAIL
NOT TO SCALE:



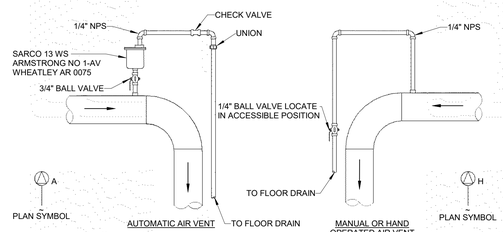
4 DECOUPLER SENSOR
NOT TO SCALE:



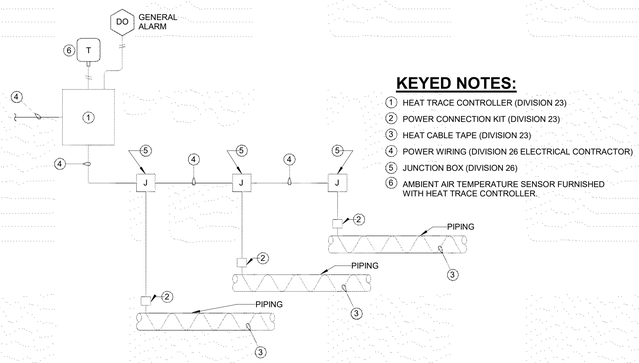
5 CHILLER DIFFERENTIAL PRESSURE TRANSMITTER
NOT TO SCALE:



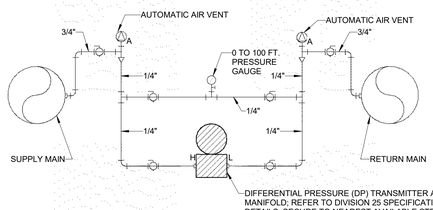
6 AIR ELIMINATOR DETAIL (FOR PIPES BELOW 3-INCH)
NOT TO SCALE:



7 AIR ELIMINATOR DETAIL (FOR 3-INCH PIPES & ABOVE)
NOT TO SCALE:



8 HEAT TRACE WIRING DIAGRAM DETAIL
NOT TO SCALE:



9 DIFFERENTIAL PRESSURE TRANSMITTER DETAIL
NOT TO SCALE:

Bernhard TME Engineering
1 ALLIED DRIVE, BUILDING 2
SUITE 2600
LITTLE ROCK, AR 72202
Phone: (501) 666-6776
Fax: (501) 663-8888
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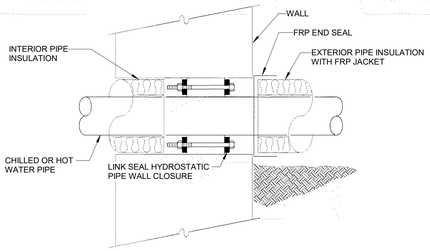
ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION
ISSUE DATE:		05/05/22
PROJECT NUMBER:		70-16-0005

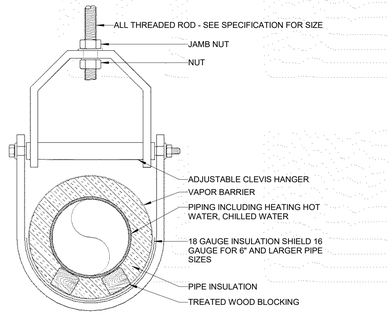
SHEET TITLE:
DETAILS - MECHANICAL

SHEET NUMBER:
M1010

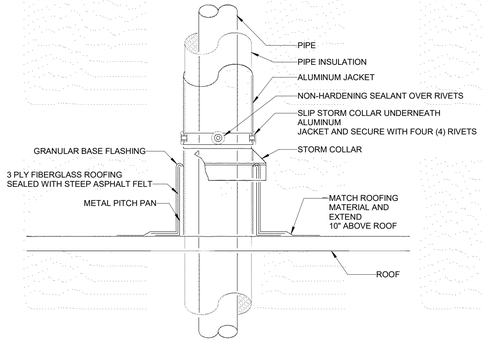
FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
REVIEWED FOR CODE COMPLIANCE
07/20/2022



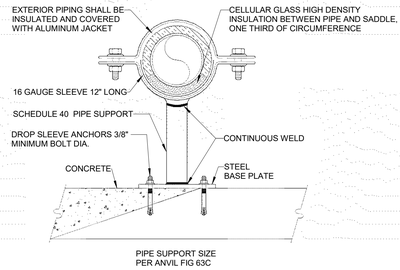
1 LINK SEAL DETAIL
NOT TO SCALE:



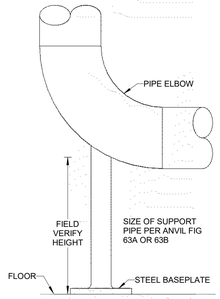
2 CLEVIS PIPE HANGER DETAIL
NOT TO SCALE:



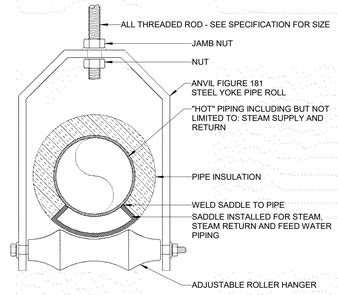
3 INSULATED PIPE PENETRATION THRU ROOF DETAIL
NOT TO SCALE:



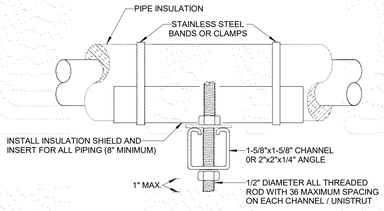
4 PIPE STANCHION DETAIL
NOT TO SCALE:



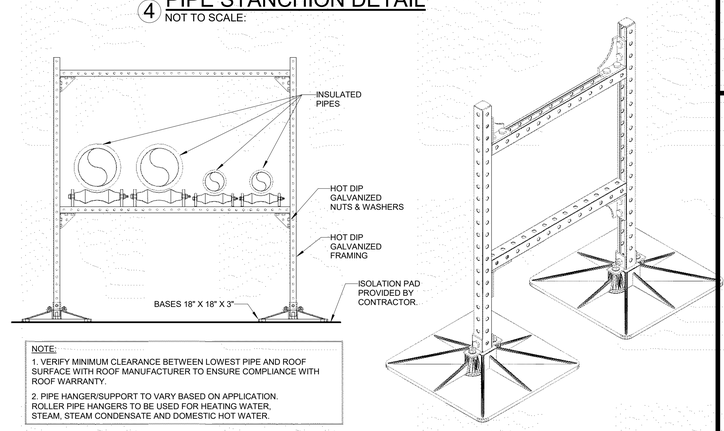
5 PIPE STAND SUPPORT
NOT TO SCALE:



6 ROLLER PIPE HANGER DETAIL
NOT TO SCALE:

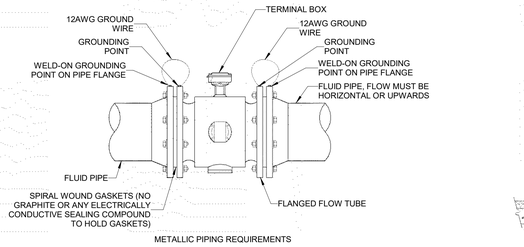


7 TRAPEZE PIPE HANGER DETAIL
NOT TO SCALE:

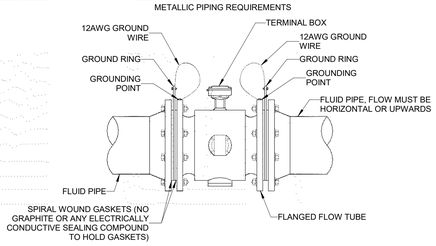


NOTE:
1. VERIFY MINIMUM CLEARANCE BETWEEN LOWEST PIPE AND ROOF SURFACE WITH ROOF MANUFACTURER TO ENSURE COMPLIANCE WITH ROOF WARRANTY.
2. PIPE HANGER/SUPPORT TO VARY BASED ON APPLICATION. ROLLER PIPE HANGERS TO BE USED FOR HEATING WATER, STEAM, STEAM CONDENSATE AND DOMESTIC HOT WATER.

8 TYPICAL ROOFTOP PIPE SUPPORT DETAIL
NOT TO SCALE:

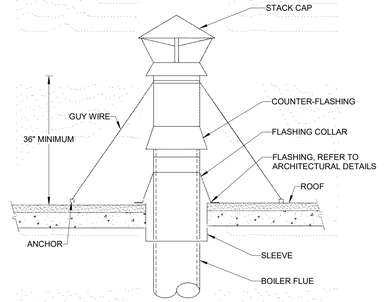


METALLIC PIPING REQUIREMENTS

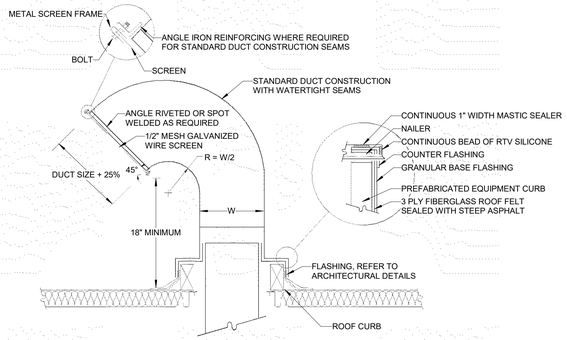


NON-METALLIC PIPING REQUIREMENTS

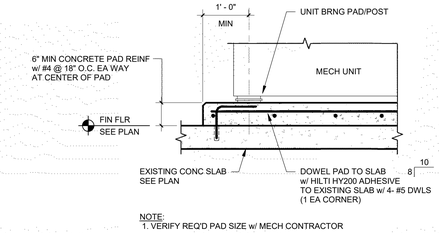
12 MAGNETIC FLOW METER - HYDRONIC
NOT TO SCALE



9 BOILER STACK DETAIL
NOT TO SCALE:

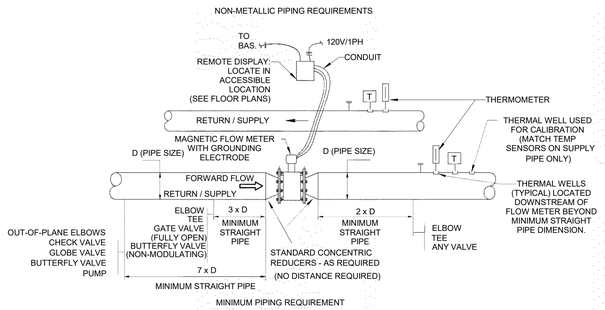


10 GOOSENECK DETAIL
NOT TO SCALE:

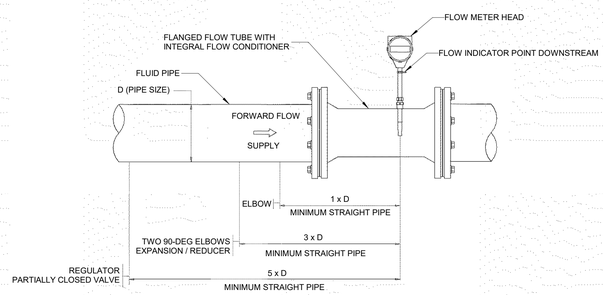


NOTE:
1. VERIFY REQ'D PAD SIZE w/ MECH CONTRACTOR

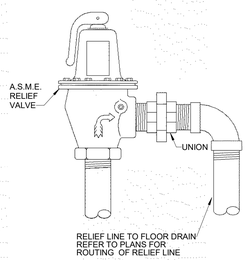
11 SECTION AT MECHANICAL EQUIPMENT
3/4" = 1'-0"



12 MAGNETIC FLOW METER - HYDRONIC
NOT TO SCALE



13 THERMAL MASS METER WITH FLOW CONDITIONER - NATURAL GAS
1/8" = 1'-0"



14 RELIEF VALVE DETAIL
NOT TO SCALE:

Bernhard TME Engineering
1 ALLIED DRIVE, BUILDING 2
SUITE 2600
LITTLE ROCK, AR 72202
Phone: (501) 666-6776
Fax: (501) 663-8888
bernhard.com
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STATE OF LOUISIANA
CHRISTOPHER C. GALLOWAY
License No. 45208
PROFESSIONAL ENGINEER
5/5/22
ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

SHEET TITLE:
DETAILS - MECHANICAL

SHEET NUMBER:
M1011

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
REVIEWED FOR CODE COMPLIANCE
tbrnurphy 07/20/2022

GENERAL NOTES APPLICABLE TO ALL CONTROL DIAGRAMS:

1. ALL CONTROL DEVICES SHOWN ON THE CONTROL DIAGRAMS ARE FURNISHED BY DIVISION 25 UNLESS OTHERWISE NOTED OR SPECIFIED.
2. ALL COMPONENTS REQUIRED FOR THE SEQUENCES OF OPERATION, SHOWN ON THE CONTROL DIAGRAMS, DESCRIBED IN THE SPECIFICATION, OR AS REQUIRED FOR A PROPERLY OPERATING SYSTEM SHALL BE FURNISHED AND INSTALLED BY DIVISION 25 UNLESS OTHERWISE NOTED, SHOWN, OR SPECIFIED.
3. DIVISION 25 IS RESPONSIBLE TO FURNISH, INSTALL, AND WIRE ALL COMPONENTS REQUIRED FOR INTEGRATION OF INFORMATION SHOWN TO BE ACCESSED BY THE EMS FROM OTHER SYSTEMS AND EQUIPMENT UNLESS OTHERWISE NOTED OR SPECIFIED.
4. ALL POWER WIRING AND TRANSFORMERS FOR SENSORS, ACTUATORS, AND OTHER CONTROL COMPONENTS AS REQUIRED FOR THE EMS AND/OR DDC SYSTEMS TO FUNCTION PROPERLY, SHALL BE FURNISHED AND INSTALLED BY DIVISION 25 UNLESS OTHERWISE SHOWN, NOTED, OR SPECIFIED.
5. ALL POWER WIRING FOR SENSORS, ACTUATORS, AND OTHER DEVICES SHALL BE FROM THE EQUIPMENT CONTROLLERS DDC PANELS OR THE FEP PANELS OF THE ASSOCIATED SYSTEM.
6. ALL CONTROL, INTERLOCK, AND POWER WIRING SHALL BE INSTALLED PER THE DIVISION 26, LOCAL, STATE, AND NATIONAL CODES. RACEWAY SHALL BE INSTALLED PER THE ELECTRICAL SPECIFICATIONS.
7. ALL CONTROL POINTS SHOWN ON THE CONTROL DIAGRAMS SHALL BE PROVIDED AND INTEGRATED INTO AN EMS SYSTEM GRAPHIC REPRESENTATIVE OF THE CONTROL DIAGRAMS.
8. ALL CONTROL BANDS, SETPOINTS, SETPOINT LIMITS, SETPOINT INCREMENT VALUES, SETPOINT DECREMENT VALUES, ALARM LIMITS, AND OTHER PARAMETERS SHALL BE ADJUSTABLE FROM THE EMS.
9. ALL CONTROL BANDS, SETPOINTS, TIME DELAYS, CONTROL LOOPS, AND OTHER PARAMETERS SHALL BE COMMISSIONED BY DIVISION 25 TO PROVIDE STABLE CONTROL OF ALL SYSTEMS.
10. ALL SETPOINTS SHALL BE ADJUSTABLE FROM THE EMS SYSTEM GRAPHIC(S).
11. SPACE SETPOINTS SHALL BE ADJUSTABLE FROM THE ROOM SENSOR UNLESS OTHERWISE SHOWN ON DRAWINGS OR SPECIFIED.
12. THE EMS SYSTEM GRAPHICS SHALL BE LINKED WITH ASSOCIATED BUILDING FLOOR PLANS FROM THE SPACE SENSOR OR AREA SERVED.
13. WHERE ONE SYSTEM IS ASSOCIATED WITH ANOTHER SYSTEM, THE SYSTEM GRAPHIC SHALL BE LINKED TO THE ASSOCIATED GRAPHIC AS WELL AS THE BUILDING FLOOR PLAN GRAPHIC. EXAMPLE - AN AIR HANDLING UNIT SYSTEM GRAPHIC SHALL BE LINKED TO THE CHILLED WATER SYSTEM GRAPHIC IN ADDITION TO BOTH BEING LINKED TO THE BUILDING FLOOR PLAN.
14. THE BUILDING FLOOR PLAN SHALL DISPLAY THE SPACE TEMPERATURE AND THE ACTIVE SET POINT AT EACH SPACE SENSOR LOCATION WITH AREA SERVED DISPLAYED IN SEPARATE COLORS BASED ON THE CONDITION OF THE ZONE. AREAS WITH HUMIDITY AND PRESSURE CONTROL WILL ALSO HAVE THOSE VALUES DISPLAYED. EXAMPLE - ALARM, NORMAL, HIGH OR LOW TEMPERATURE, HIGH OR LOW HUMIDITY, ETC.
15. ALL GRAPHICS (SCHEDULES, PLANS, AND DIAGRAMS) WILL INDICATE EQUIPMENT , POINTS, AND AREAS IN ALARM VIA A RED ALARM INDICATOR, RED TEXT, AND/OR A RED HIGHLIGHT. OVERRIDDEN POINTS WILL BE INDICATED WITH PURPLE.
16. THE BUILDING FLOOR PLAN SHALL DISPLAY THE DUCTWORK AND THE PIPING LAYOUT. THE DUCTWORK AND PIPING SHALL BE ABLE TO TOGGLE ON AND OFF INDEPENDENTLY.
17. ALL BUILDING FLOOR PLANS AND SYSTEM GRAPHICS SHALL DISPLAY OUTSIDE AIR TEMPERATURE AND HUMIDITY.
18. THE FLOOR PLAN GRAPHICS SHALL BE LINKED TO A BUILDING GRAPHIC WITH A DIGITAL PHOTOGRAPH BACKGROUND OF THE ACTUAL BUILDING. DURING CONSTRUCTION A TEMPORARY GRAPHIC MAY BE USED THAT IS REPRESENTATIVE OF THE BUILDING.
19. ALL GRAPHICS SHALL BE SUBMITTED IN COLOR WITH THE ATC SUBMITTAL. FAILURE TO INCLUDE ALL GRAPHICS IN SUBMITTAL SHALL BE CAUSE FOR REJECTION OF COMPLETE SUBMITTAL.
20. VARIABLE FREQUENCY DRIVES ARE FURNISHED BY DIVISION 23, INSTALLED AND WIRED BY DIVISION 26. REFER TO VARIABLE FREQUENCY DRIVE SCHEDULE. VERIFY ALL EXISTING MOTOR HORSEPOWER AND ELECTRICAL RATINGS PRIOR TO SUBMITTAL AND ORDERING VARIABLE FREQUENCY DRIVES.
21. POWER WIRING (PWR) FROM POWER SOURCE TO VARIABLE FREQUENCY DRIVES AND FROM VARIABLE FREQUENCY DRIVES TO MOTORS SHALL BE FURNISHED AND INSTALLED BY DIVISION 26.
22. POWER WIRING (PWR) FROM POWER SOURCE TO MOTOR STARTERS AND FROM MOTOR STARTERS TO MOTORS SHALL BE FURNISHED AND INSTALLED BY DIVISION 26.
23. POWER WIRING (PWR) FROM POWER SOURCE TO DDC, AND FEP PANELS SHALL BE FURNISHED AND INSTALLED BY THE DIVISION 26 UNLESS OTHERWISE NOTED ON DRAWINGS.
24. GLOBAL DDC SYSTEM POINTS ARE DEFINED AS A SINGLE POINT USED IN ALL SYSTEMS IN A BUILDING OR CAMPUS TO MAINTAIN CONSISTENCY OF CONTROL ACTIONS THROUGHOUT THE BUILDING OR CAMPUS. EXAMPLE: OUTSIDE AIR TEMPERATURE POINT SAMPLED ON THE NORTH SIDE OF A BUILDING USED TO ENABLE/DISABLE AIRSIDE ECONOMIZER OPERATION THROUGHOUT THE BUILDING OR CAMPUS.
25. THE PROJECT SEQUENCES ARE WRITTEN IN A GENERAL FORM INTENDED FOR IMPLEMENTATION BY ANY CONTROLS SYSTEM AND CONTRACTOR. DIVISION 25 SHALL REVIEW ALL SPECIFICATIONS AND CONTROL SEQUENCES FOR CONSTRUCTABILITY, COMPATIBILITY, AND FEASIBILITY WITH ACTUAL CONDITIONS, BUILDING EQUIPMENT, AND THEIR OWN HARDWARE AND SOFTWARE LIMITATIONS AND CAPABILITIES. CONTROL SEQUENCES ARE INTENDED TO BE THE GENERAL STRUCTURE OF THE CONTRACTORS PROGRAMING, BUT DO NOT NECESSARILY CONTAIN ALL THE REQUIRED DETAILS (LOOP AND TABLE STATEMENT TUNING, RAMPS, LIMITS, ETC) AND BEST PRACTICES FOR THE FINAL PRODUCT. DIVISION 25 SHALL PROVIDE A COMPLETE, OPERABLE, AND TUNED CONTROL SYSTEM THAT MEETS THE INTENDED SEQUENCES AND THE SPECIFIC EQUIPMENT REQUIREMENTS. IF UPON IMPLEMENTATION IT IS DISCOVERED THAT ADDITIONAL PROGRAMMING IS REQUIRED TO MEET THE INTENDED DESIGN OF THE CONTROLS SYSTEM, DIVISION 25 SHALL PROVIDE THE ADDITIONAL PROGRAMMING AT NO ADDITIONAL COST. ALL PROGRAMMING (GRAPHICAL AND/OR TEXT BASED) SHALL BE REVIEWED WITH THE DIVISION 25 AS PART OF THE SUBMITTAL AND COMMISSIONING PROCESSES. DIVISION 25 WILL PROVIDE A SUBMITTAL OF THE GRAPHICAL AND/OR TEXT BASED PROGRAMMING FOR A SIDE TO SIDE COMPARISON WITH THE CONTRACT DOCUMENTS. THIS REVIEW WILL PART OF A SCHEDULED MEETING INVOLVING THE BAS CONTROLS DESIGN TEAM, DIVISION 25, AND THE COMMISSIONING AGENT. LIBERTIES TAKEN BY DIVISION 25 ARE ALLOWED AFTER REVIEW AND APPROVAL FROM THE BAS DESIGN TEAM AND COMMISSIONING AGENT. ALL MODIFICATIONS SHALL BE RECORDED IN THE AS-BUILT DOCUMENTS. DIVISION 25 SHALL BE REQUIRED SET UP TRENDING AS INDICATED BY THE CONSTRUCTION DOCUMENTS, AND AS REQUESTED BY THE BAS DESIGN AND COMMISSIONING TEAM(S).
26. ALL EQUIPMENT SHALL HAVE THE OPTION OF BEING EXCLUDED FROM INDIVIDUAL RESET STRATEGIES BY EQUIPMENT SUMMARY SCHEDULES AND BY EQUIPMENT GRAPHICS.
27. ALL EQUIPMENT CONTROLLERS IN THIS PROJECT SHALL BE HARD WIRED. NO WIRELESS SENSORS SHALL BE ALLOWED UNLESS WRITTEN APPROVAL IS GIVEN BY THE OWNER AND EOR AND THE WIRELESS FREQUENCY BANDS ARE COORDINATED WITH THE OWNER.
28. DIVISION 25 SHALL SET UP ALARM CRITERIA ACCORDING TO THE CONTROL DRAWINGS, SPECIFICATIONS, AND AS FOLLOWS:
    LEVEL 1 ALARM: HIGHEST PRIORITY ALARM. ALL LOWER LEVEL PRIORITY ALARM RESPONSES APPLY PLUS ALL DESIGNATED OPERATIONS PERSONNEL ARE NOTIFIED VIA TEXT.
    LEVEL 2 ALARM: HIGH PRIORITY ALARM. ALL LOWER LEVEL PRIORITY ALARM RESPONSES APPLY PLUS ALL DESIGNATED OPERATIONS PERSONNEL ARE NOTIFIED VIA TEXT AND EMAIL.
    LEVEL 3 ALARM: HIGH PRIORITY ALARM. ALL LOWER LEVEL PRIORITY ALARM RESPONSES APPLY PLUS ALARM WARRANTS IMMEDIATE RESPONSE BY FACILITY PERSONNEL.
    LEVEL 4 ALARM: MEDIUM PRIORITY ALARM. ALL LOWER LEVEL PRIORITY ALARM RESPONSES APPLY. ALARM WARRANTS A PROMPT RESPONSE FROM PERSONNEL. MAINLY ALARMS CONCERNING COMFORT ISSUES. ALARM AND ALARM LEVEL IS INDICATED VIA FLASHING ALARMS AND POP UPS AT THE BAS.
    LEVEL 5 ALARM: LOW PRIORITY ALARM. ALARM IS LOGGED IN AN ALARM REVIEW SUMMARY.
29. AN ALARM SUMMARY SHALL BE CREATED FOR REVIEW OF BUILDING PERSONNEL DAILY. ALARM SUMMARY TO BE CAPABLE OF BEING SORTED BY ALARM LEVEL SYSTEMS, AND TIME OF ALARMS.
30. DIVISION 25 SHALL SET UP OPERATOR CLEARANCE REQUIREMENTS ACCORDING TO THE CONTROL DRAWINGS, SPECIFICATIONS, AND AS FOLLOWS:
    LEVEL 1: HIGHEST CLEARANCE REQUIRED. THESE SET POINTS CANNOT BE CHANGED OR OVERRIDDEN EXCEPT BY AN OPERATOR WITH THIS CLEARANCE .
    LEVEL 2: HIGH CLEARANCE REQUIRED. THESE SET POINTS CAN ONLY BE CHANGED OR OVERRIDDEN BY SOME ONE WITH THIS LEVEL CLEARANCE OR HIGHER.
    LEVEL 3: MEDIUM CLEARANCE REQUIRED. THESE SET POINTS CAN ONLY BE OVERRIDDEN BY SOMEONE WITH THIS LEVEL CLEARANCE, OR CHANGED BY SOMEONE WITH A HIGHER LEVEL CLEARANCE.
    LEVEL 4: LOW CLEARANCE REQUIRED. THESE SET POINTS CAN ONLY BE OVERRIDDEN BY SOMEONE WITH THIS LEVEL CLEARANCE, OR CHANGED BY SOMEONE WITH A HIGHER LEVEL CLEARANCE.
    LEVEL 5: NO CLEARANCE REQUIRED. THESE SET POINTS CAN BE CHANGED OR OVERRIDDEN BY ANYONE WITH BAS ACCESS. THIS IS ALSO THE CLEARANCE LEVEL FOR OCCUPANT CONTROL ITEMS SUCH AS THERMOSTATS.
31. AN OVERRIDE SUMMARY SHALL BE PROVIDED FOR ALL OVERRIDES AND SHALL BE CAPABLE OF BEING SORTED BY DATE, DURATION, AND LEVEL OF PRIORITY.
32. OVERRIDES SHALL BE CAPABLE OF TIMED RESETS.
33. CONTROL LOGIC AND COMPONENTS SHALL BE ADJUSTED TO OBTAIN AT A MINIMUM THE FOLLOWING RESULTS.
    A. TEMP CONTROL SHALL DEVIATE FROM SET POINT NO MORE THAN 0.2°F WITH PERIODS OF LESS THAN 1 MINUTE.
    B. AIRFLOW CONTROL SHALL DEVIATE FROM SET POINT NO MORE THAN 2% OF THE SYSTEM SET POINT, OR SET POINT FOR THAT BRANCH OF SYSTEM, WITHIN A PERIOD OF LESS THAN 5 MINUTES.
    C. HYDRONIC FLOW CONTROL SHALL DEVIATE FROM SET POINT NO MORE THAN 2% OF THE SYSTEM SET POINT, OR SET POINT FOR THAT BRANCH OF SYSTEM, WITHIN A PERIOD OF LESS THAN 5 MINUTES.
    D. ACTUATORS SHALL NOT OSCILLATE MORE THAN 1% WITHIN A 5 MINUTE PERIOD.
    E. VARIABLE FREQUENCY DRIVE COMMANDS SHALL NOT OSCILLATE MORE THAN 1% IN A 5 MINUTE PERIOD.

DIRECT DIGITAL CONTROL POINT TYPES

Symbol	Description
AI	DDC SYSTEM ANALOG INPUT POINT TYPE
AO	DDC SYSTEM ANALOG OUTPUT POINT TYPE
DI	DDC SYSTEM DIGITAL OR BINARY INPUT POINT TYPE
DO	DDC SYSTEM DIGITAL OR BINARY OUTPUT POINT TYPE
G AI	GLOBAL DDC SYSTEM ANALOG INPUT POINT TYPE
G AO	GLOBAL DDC SYSTEM ANALOG OUTPUT POINT TYPE
G DI	GLOBAL DDC SYSTEM DIGITAL OR BINARY INPUT POINT TYPE
G DO	GLOBAL DDC SYSTEM DIGITAL OR BINARY OUTPUT POINT TYPE

ANALOG INPUT SENSORS

Symbol	Description
T	DUCT TEMPERATURE SENSOR; FURNISHED, INSTALLED, AND WIRED BY DIVISION 25.
T	OUTSIDE AIR TEMPERATURE SENSOR; FURNISHED, INSTALLED, AND WIRED BY DIVISION 25.
VAC P	VACUUM PRESSURE SENSOR; FURNISHED, INSTALLED, AND WIRED BY DIVISION 25. TAP AND ISOLATION VALVE FURNISHED AND INSTALLED BY DIVISION 25.
T	ROOM TEMPERATURE SENSOR WITH SETPOINT, OVERRIDE PUSHBUTTON, AND DIGITAL DISPLAY: FURNISHED, INSTALLED, AND WIRED BY DIVISION 25.
T	ROOM TEMPERATURE SENSOR WITH SETPOINT, AND OVERRIDE PUSHBUTTON: FURNISHED, INSTALLED, AND WIRED BY DIVISION 25.
BSP	BUILDING STATIC PRESSURE SENSOR WITH DIGITAL DISPLAY; FURNISHED, INSTALLED, AND WIRED BY DIVISION 25. REFER TO DETAIL F.
DPS WM	DIFFERENTIAL PRESSURE SENSOR FOR WET MEDIA WITH DIGITAL DISPLAY; FURNISHED, INSTALLED, AND WIRED BY DIVISION 25. ISOLATION VALVES AND TAPS IN PIPING BY DIVISION 23.
H	DUCT RELATIVE HUMIDITY SENSOR; FURNISHED, INSTALLED, AND WIRED BY DIVISION 25.
T	STRAP ON TEMPERATURE SENSOR; FURNISHED, INSTALLED, AND WIRED BY DIVISION 25.
FM LIQ	LIQUID FLOW METER - FURNISHED AND WIRED BY DIVISION 25. INSTALLED IN PIPING BY DIVISION 23.
RPS	ROOM PRESSURE SENSOR: FURNISHED, INSTALLED, AND WIRED BY DIVISION 25
RPM	ROOM PRESSURE MONITOR: FURNISHED, INSTALLED, AND WIRED BY DIVISION 25.
HOOD PROX	FUME HOOD PROXIMITY SENSOR; FURNISHED, INSTALLED, AND WIRED BY DIVISION 25.
T	AVERAGING DUCT TEMPERATURE SENSOR; FURNISHED, INSTALLED, AND WIRED BY DIVISION 25. REFER TO DETAIL I.
T	PIPE TEMPERATURE SENSOR; FURNISHED AND WIRED BY DIVISION 25; THERMAL WELL INSTALLED IN THE PIPING BY DIVISION 23.
AIR P	AIR PRESSURE SENSOR; FURNISHED, INSTALLED, AND WIRED BY DIVISION 25. TAP AND ISOLATION VALVE FURNISHED AND INSTALLED BY DIVISION 23.
GAS P	GAS PRESSURE SENSOR; FURNISHED, INSTALLED, AND WIRED BY DIVISION 25. TAP AND ISOLATION VALVE FURNISHED AND INSTALLED BY DIVISION 23. COORDINATE PRESSURE REQUIREMENTS.
H	ROOM HUMIDITY SENSOR WITH DIGITAL DISPLAY; FURNISHED, INSTALLED, AND WIRED BY DIVISION 25.
H	ROOM HUMIDITY SENSOR: FURNISHED, INSTALLED, AND WIRED BY DIVISION 25.
DSP	DUCT STATIC PRESSURE SENSOR WITH DIGITAL DISPLAY; FURNISHED, INSTALLED AND WIRED BY DIVISION 25.
DPS	DIFFERENTIAL PRESSURE SENSOR WITH DIGITAL DISPLAY; FURNISHED, INSTALLED AND WIRED BY DIVISION 25.
PS WM	PRESSURE SENSOR FOR WET MEDIA WITH DIGITAL DISPLAY; FURNISHED, INSTALLED, AND WIRED BY DIVISION 25. ISOLATION VALVES AND TAPS IN PIPING BY DIVISION 23.
CO2	ROOM CARBON DIOXIDE SENSOR WITH DIGITAL DISPLAY: FURNISHED, INSTALLED, AND WIRED BY DIVISION 25.
CO2	DUCT CARBON DIOXIDE SENSOR WITH DIGITAL DISPLAY: FURNISHED, INSTALLED, AND WIRED BY DIVISION 25.
FM GAS	GAS FLOW METER - FURNISHED AND WIRED BY DIVISION 25. INSTALLED IN PIPING BY DIVISION 23.
FHC	FUME HOOD CONTOL WITH DISPLAY AND KEYPAD; FURNISHED, INSTALLED, AND WIRED BY DIVISION 25.

LEGEND

Symbol	Description
(line)	THREE PHASE POWER WIRING; FURNISHED AND INSTALLED BY DIVISION 26 (PWR)
(line)	SINGLE PHASE POWER WIRING; FURNISHED AND INSTALLED BY DIVISION 26 (PWR)
(line)	CONTROL AND INTERLOCK WIRING, FURNISHED AND INSTALLED BY DIVISION 23 (ILK)
(line)	EMS ETHERNET LAN COMMUNICATION WIRING, FURNISHED AND INSTALLED BY DIVISION 23 (EMS LAN)
(line)	EMS SUB-NETWORK COMMUNICATION WIRING, FURNISHED AND INSTALLED BY DIVISION 23 (EMS SN)
(line)	ROOM SENSOR COMMUNICATION WIRING, FURNISHED AND INSTALLED BY DIVISION 23 (EMS RS)
(line)	COMMUNICATION WIRING FOR OTHER HVAC SYSTEMS, FURNISHED AND INSTALLED BY DIVISION 23 (EMS OTH)
(line)	PNEUMATIC CONTROL TUBING, FURNISHED AND INSTALLED BY DIVISION 23
(line)	CONTROL PIPING, FURNISHED AND INSTALLED BY DIVISION 23
(symbol)	LOCAL AREA NETWORK DATA PORT DROP, FURNISHED AND INSTALLED BY DIVISION 26.
NC	NORMALLY CLOSED - POWERED OPEN
NO	NORMALLY OPEN - POWERED CLOSED
(symbol)	NORMALLY CLOSED - POWERED OPEN RELAY CONTACT
(symbol)	NORMALLY OPEN - POWERED CLOSED RELAY CONTACT
TFD	TO FLOOR DRAIN
S	PNEUMATIC CONTROL SUPPLY AIR CONNECTION
E-PWR	EMERGENCY (ESSENTIAL) ELECTRICAL POWER

DIGITAL INPUT SENSORS

Symbol	Description
TLL	LOW LIMIT TEMPERATURE SWITCH WITH MANUAL RESET; FURNISHED, INSTALLED, AND WIRED BY DIVISION 25. DPDT SWITCH FOR HARDWIRE INTERLOCK TO FANS AND DDC MONITORING. REFER TO DETAIL H.
OCC	OCCUPANCY SENSOR; FURNISHED AND WIRED BY DIVISION 25, INSTALLED IN LIGHTING CIRCUIT BY DIVISION 26.
ES	END SWITCH: FURNISHED, INSTALLED AND WIRED BY DIVISION 25 UNLESS OTHERWISE NOTED, SHOWN ON THE DRAWINGS, OR SPECIFIED.
WFS	WATER FLOW SWITCH SPECIFIED TO BE FURNISHED WITH HVAC EQUIPMENT; INSTALLED BY DIVISION 23; WIRED BY DIVISION 25.
RM OCC	WALL MOUNTED ROOM OCCUPANCY SWITCH; FURNISHED, INSTALLED, AND WIRED BY DIVISION 25.
MS	MOISTURE SENSOR: FURNISHED, INSTALLED, AND WIRED BY DIVISION 25.
KS	KEYED SWITCH; FURNISHED, INSTALLED AND WIRED BY DIVISION 25.
HSL	HIGH STATIC PRESSURE LIMIT SWITCH WITH MANUAL RESET; FURNISHED, INSTALLED, AND WIRED BY DIVISION 25. DPDT SWITCH FOR HARDWIRE INTERLOCK TO FANS AND DDC MONITORING. ORIENT FOR STATIC PRESSURE SENSING.
CSR	CURRENT SENSING RELAY; FURNISHED, INSTALLED, AND WIRED BY DIVISION 25.
FIL DP SW	FILTER DIFFERENTIAL PRESSURE SWITCH; FURNISHED, INSTALLED, AND WIRED BY DIVISION 25.
DP SW WM	DIFFERENTIAL PRESSURE SWITCH FOR WET MEDIA; FURNISHED, INSTALLED, AND WIRED BY DIVISION 25. PRESSURE TAPS IN PIPING BY DIVISION 25.
RM OCC	CEILING MOUNTED ROOM OCCUPANCY SWITCH. FURNISHED, INSTALLED, AND WIRED BY DIVISION 25.
PE SW	PRESSURE TO ELECTRIC SWITCH: FURNISHED, INSTALLED, PNEUMATIC PIPING, AND ELECTRICAL WIRING BY DIVISION 25.
EFS	ELECTRONIC WATER FLOW SENSOR; FURNISHED, AND WIRED BY DIVISION 25; INSTALLED IN PIPING BY DIVISION 23.

OUTPUT DEVICES

Symbol	Description
VA	CONTROL VALVE (2-WAY) WITH ELECTRIC OR ELECTRONIC ACTUATOR; FURNISHED AND WIRED BY DIVISION 25. INSTALLED IN PIPING BY DIVISION 23.
VA	CONTROL VALVE (3-WAY) ELECTRIC OR ELECTRONIC; FURNISHED AND WIRED BY DIVISION 25; INSTALLED IN PIPING BY DIVISION 23.
VA	BUTTERFLY CONTROL VALVE (2-WAY) WITH ELECTRONIC ACTUATOR; FURNISHED AND WIRED BY DIVISION 25; INSTALLED IN PIPING BY DIVISION 23.
VA	BUTTERFLY CONTROL VALVE (3-WAY) WITH ELECTRONIC ACTUATOR; FURNISHED AND WIRED BY DIVISION 25; INSTALLED BY DIVISION 23.
DA	DAMPER ACTUATOR; FURNISHED, INSTALLED, AND WIRED BY DIVISION 25 UNLESS OTHERWISE NOTED ON DRAWINGS OR IN SPECIFICATIONS.
SDA	SMOKE DAMPER ACTUATOR(S) FURNISHED AND INSTALLED BY DIVISION 23. REFER TO DETAIL G.
F/SDA	FIRE/SMOKE DAMPER ACTUATOR(S): FURNISHED AND INSTALLED BY DIVISION 23. REFER TO DETAIL G.
EPT	ELECTRIC TO PRESSURE TRANSDUCER: FURNISHED, INSTALLED, PIPED, AND WIRED BY DIVISION 25.
AFMS ATC	AIR FLOW MEASURING STATION WITH INTEGRAL CONTROL DAMPER; FURNISHED AND WIRED BY DIVISION 25; INSTALLED BY THE DIVISION 23.
VA ES	CONTROL VALVE (2-WAY) WITH ELECTRONIC ACTUATOR AND INTEGRAL END SWITCH; FURNISHED AND WIRED BY DIVISION 25. INSTALLED IN PIPING BY DIVISION 23.
VA ES	CONTROL VALVE (3-WAY) WITH ELECTRONIC ACTUATOR AND INTEGRAL END SWITCH; FURNISHED AND WIRED BY DIVISION 25; INSTALLED IN PIPING BY DIVISION 23.
VA ES	BUTTERFLY CONTROL VALVE (2-WAY) WITH ELECTRONIC ACTUATOR AND INTEGRAL END SWITCH; FURNISHED AND WIRED BY DIVISION 25; INSTALLED BY DIVISION 23.
VA ES	BUTTERFLY CONTROL VALVE (3-WAY) WITH ELECTRONIC ACTUATOR AND INTEGRAL END SWITCH; FURNISHED AND WIRED BY DIVISION 25; INSTALLED IN PIPING BY DIVISION 23.
DA ES	DAMPER ACTUATOR WITH INTEGRAL END SWITCH(ES); FURNISHED, INSTALLED, AND WIRED BY DIVISION 25 UNLESS OTHERWISE NOTED ON DRAWINGS OR IN SPECIFICATIONS.
SDA ES	SMOKE DAMPER ACTUATOR(S) WITH INTEGRAL END SWITCH: FURNISHED AND INSTALLED BY DIVISION 23. REFER TO DETAIL G.
F/SDA ES	FIRE/SMOKE DAMPER ACTUATOR(S) WITH INTEGRAL END SWITCH: FURNISHED AND INSTALLED BY DIVISION 23. REFER TO DETAIL G.
AFMS ATC	AIR FLOW MEASURING STATION; FURNISHED AND WIRED BY DIVISION 25; INSTALLED BY DIVISION 23.
(symbol)	EXHAUST AIRFLOW MEASURING DEVICE; FURNISHED BY DIVISION 23; INSTALLED BY DIVISION 23; DIFFERENTIAL PRESSURE SENSOR FURNISHED AND INSTALLED BY DIVISION 25.

OTHER CONTROL DEVICES

Symbol	Description
FEP	FIELD EQUIPMENT PANEL (FEP); FURNISHED AND INSTALLED BY DIVISION 25. POWER WIRING TO FEP BY DIVISION 26.
(symbol)	FILTER GAGE: FURNISHED WITH FILTERS; INSTALLATION AND INSTRUMENT PIPING BY DIVISION 25.
DDC	DIRECT DIGITAL CONTROL PANEL (DDC); FURNISHED AND INSTALLED BY DIVISION 25. POWER WIRING TO DDC PANEL BY DIVISION 26.
(symbol)	BALL-IN-TUBE VISUAL OFFSET INDICATOR FURNISHED AND INSTALLED BY DIVISION 25.

CONTROL DEVICES FURNISHED BY OTHER TRADES:

Symbol	Description
HHL EQ	HUMIDITY HIGH LIMIT SENSOR; FURNISHED WITH THE STEAM HUMIDIFIER; INSTALLED AND WIRED BY DIVISION 25.
AFMS EQ	AIR FLOW MEASURING STATION; FURNISHED AND INSTALLED BY THE AIR HANDLING UNIT MANUFACTURER. WIRING FROM THE AFMS TO THE DDC PANEL BY DIVISION 25. POWER WIRING BY DIVISION 26.
AFMS EQ (NC)	AIR FLOW MEASURING STATION WITH INTEGRAL CONTROL DAMPER; FURNISHED AND INSTALLED BY THE AIR HANDLING UNIT MANUFACTURER. WIRING TO DDC SYSTEM BY DIVISION 25.
AFMS SM (NC)	AIR FLOW MEASURING STATION WITH INTEGRAL CONTROL DAMPER; FURNISHED AND INSTALLED BY DIVISION 25.
AFMS SM	AIR FLOW MEASURING STATION; FURNISHED, AND INSTALLED BY DIVISION 25 WIRING FROM THE AFMS TO THE DDC PANEL BY DIVISION 25. POWER WIRING BY DIVISION 26.
FAR SMK	FIRE ALARM PROGRAMMABLE RELAY (FAR) FOR SMOKE PURGE OPERATION (SMK); FURNISHED, INSTALLED, AND PROGRAMMED BY DIVISION 28. FAR SHALL BE LOCATED IN SAME ROOM AS HVAC EQUIPMENT SERVED PER NFPA. ALL WIRING FROM FAR TO FIRE ALARM SYSTEM BY DIVISION 28. INTERLOCK WIRING FROM FAR TO ATC PANEL BY DIVISION 25.
DSD	DUCT MOUNTED SMOKE DETECTOR(S); FURNISHED, INSTALLED, AND WIRED BY DIVISION 28 AS PART OF THE FIRE ALARM SYSTEM.
(symbol)	PLENUM FAN INLET BELL HOUSING AIRFLOW MEASURING STATION FURNISHED AND INSTALLED BY THE FAN MANUFACTURER.
(symbol)	CENTRIFUGAL FAN INLET BELL HOUSING AIRFLOW MEASURING STATION FURNISHED AND INSTALLED BY THE FAN MANUFACTURER.
T EQ	EQUIPMENT STRAP ON TEMPERATURE SENSOR; FURNISHED WITH EQUIPMENT; INSTALLED, AND WIRED BY DIVISION 25.
VA EQ	CONTROL VALVE (2-WAY) WITH ELECTRIC OR ELECTRONIC ACTUATOR; FURNISHED WITH EQUIPMENT (EQ); WIRED BY DIVISION 25; INSTALLED IN PIPING BY DIVISION 23.
(symbol) NC	CONTROL DAMPER; FURNISHED BY DIVISION 23 AND INSTALLED BY DIVISION 23. DAMPER ACTUATOR FURNISHED INSTALLED AND WIRED BY DIVISION 25.
FAR	FIRE ALARM PROGRAMMABLE RELAY (FAR); FURNISHED, INSTALLED, AND PROGRAMMED BY DIVISION 28. FAR SHALL BE LOCATED IN SAME ROOM AS HVAC EQUIPMENT SERVED PER NFPA. ALL WIRING FROM FAR TO FIRE ALARM SYSTEM BY DIVISION 28. INTERLOCK WIRING FROM FAR TO ATC PANEL BY DIVISION 25.

ABBREVIATIONS

HWS	HEATING WATER SUPPLY	SAF	SUPPLY AIRFLOW
HWR	HEATING WATER RETURN	SAT	SUPPLY AIR TEMPERATURE
DHWS	DISTRICT HEATING WATER SUPPLY	MA	MIXED AIR
DHWR	DISTRICT HEATING WATER RETURN	MAT	MIXED AIR TEMPERATURE
CWS	CONDENSER SUPPLY	MAH	MIXED AIR HUMIDITY
BCHP	BUILDING CHILLED WATER PUMP	DAT	DISCHARGE AIR TEMPERATURE
BHWP	BUILDING HEATING WATER PUMP	DAH	DISCHARGE AIR HUMIDITY
CWR	CONDENSER RETURN	DB	DRY BULB
CHS	CHILLED WATER SUPPLY	WB	WET BULB
CHR	CHILLED WATER RETURN	RH	RELATIVE HUMIDITY
DCHS	DISTRICT CHILLED WATER SUPPLY	ILK	INTERLOCK
DCHR	DISTRICT CHILLED WATER RETURN	AHU	AIR HANDLING UNIT
SETP.	SETPOINT	BCCO	BLOWER COIL UNIT COOLING ONLY
SP	STATIC PRESSURE	BCU	BLOWER COIL UNIT
DP	DIFFERENTIAL PRESSURE	CVET	CONSTANT VOLUME EXHAUST TERMINAL
OA	OUTSIDE AIR	CVRT	CONSTANT VOLUME RETURN TERMINAL
OAF	OUTSIDE AIRFLOW	CVST	CONSTANT VOLUME SUPPLY TERMINAL
OAT	OUTSIDE AIR TEMPERATURE (DRY BULB)	FCCO	FAN COIL UNIT COOLING ONLY
OAH	OUTSIDE AIR HUMIDITY	FCHO	FAN COIL UNIT HEATING ONLY
RA	RETURN AIR	FCU	FAN COIL UNIT
RAF	RETURN AIRFLOW	IUH	INDUCTION UNIT HEATER
RAT	RETURN AIR TEMPERATURE	PFST	PARALLEL FAN SUPPLY TERMINAL
RAH	RETURN AIR HUMIDITY	SFST	SERIES FAN SUPPLY TERMINAL
SA	SUPPLY AIR	UH	UNIT HEATER
		VVET	VARIABLE VOLUME EXHAUST TERMINAL
		VVRT	VARIABLE VOLUME RETURN TERMINAL
		VVST	VARIABLE VOLUME SUPPLY TERMINAL

SHEET ABBREVIATIONS

SD	STANDARD DETAIL
SS	STANDARD SYSTEM
SME	STANDARD MATERIALS AND EQUIPMENT

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TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

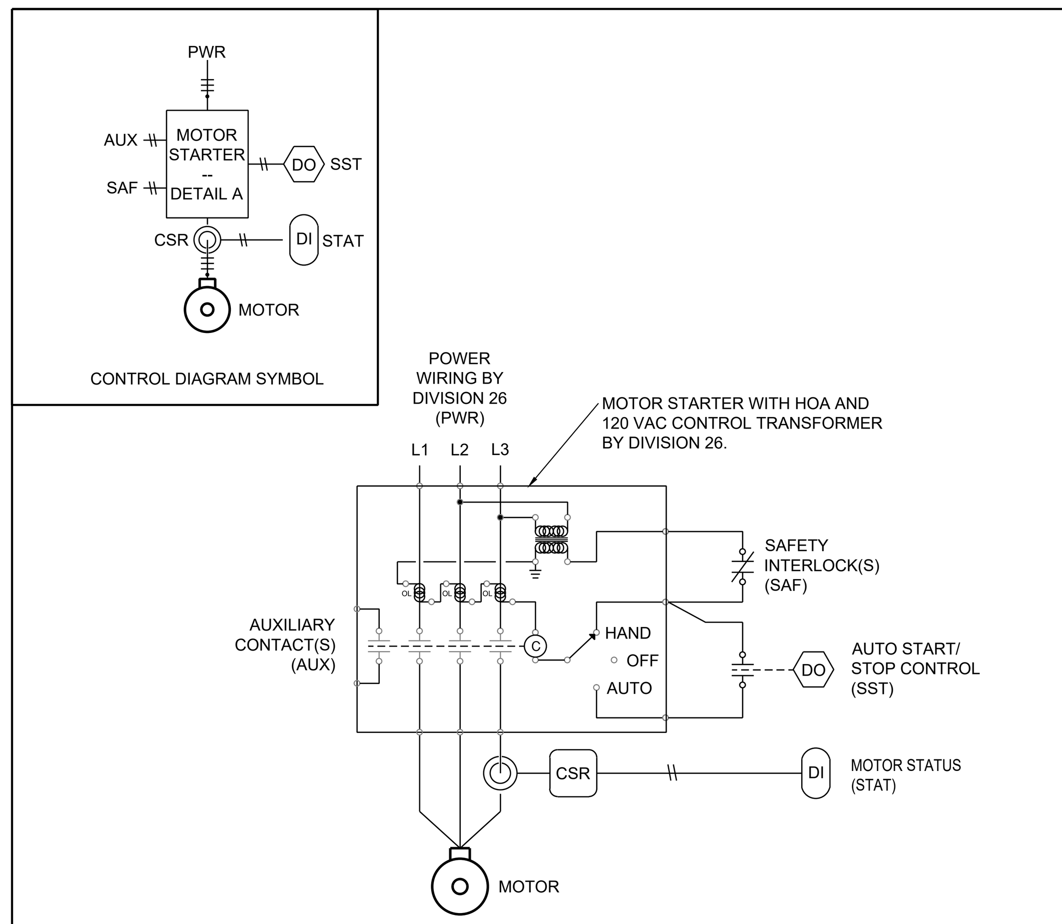
MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

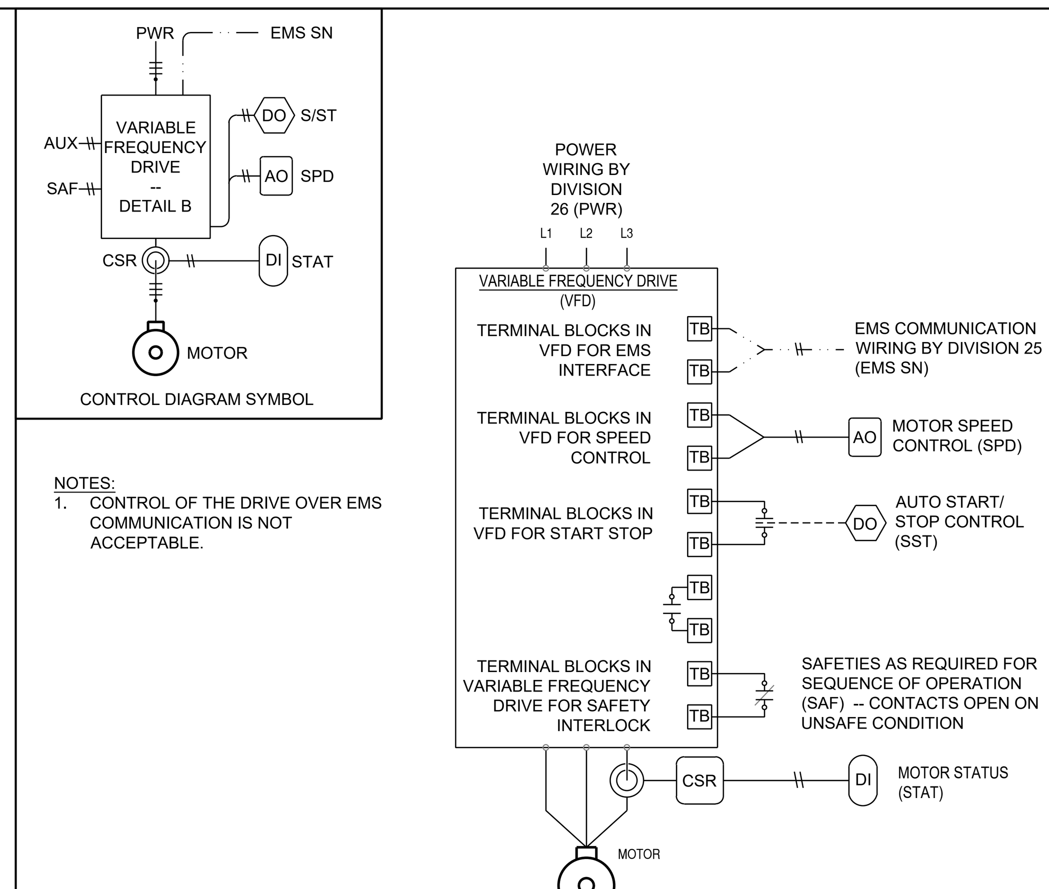
SHEET TITLE:
CONTROL SYMBOLS LEGEND

SHEET NUMBER:
ATC1000

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
REVIEWED FOR CODE COMPLIANCE
mnmurphy 07/20/2022

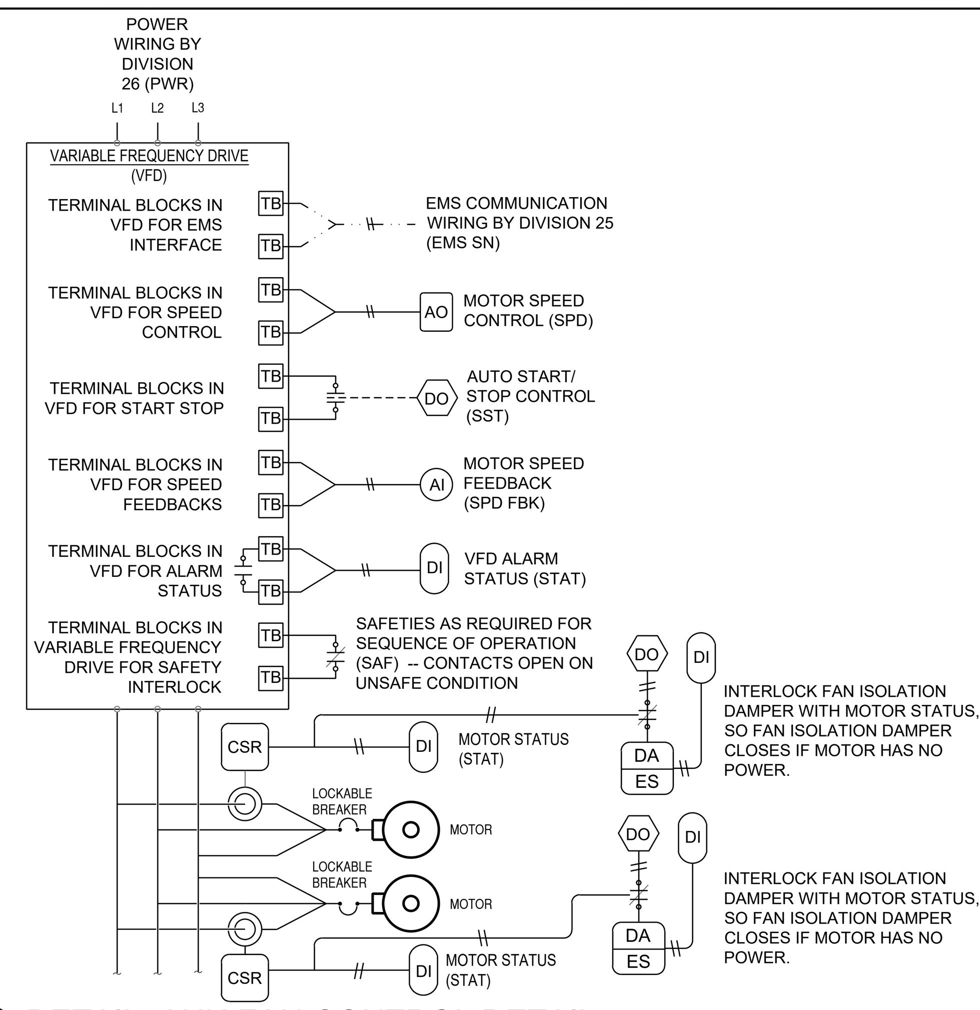


Ⓐ DETAIL: MOTOR STARTER INTERLOCK DETAIL
NOT TO SCALE

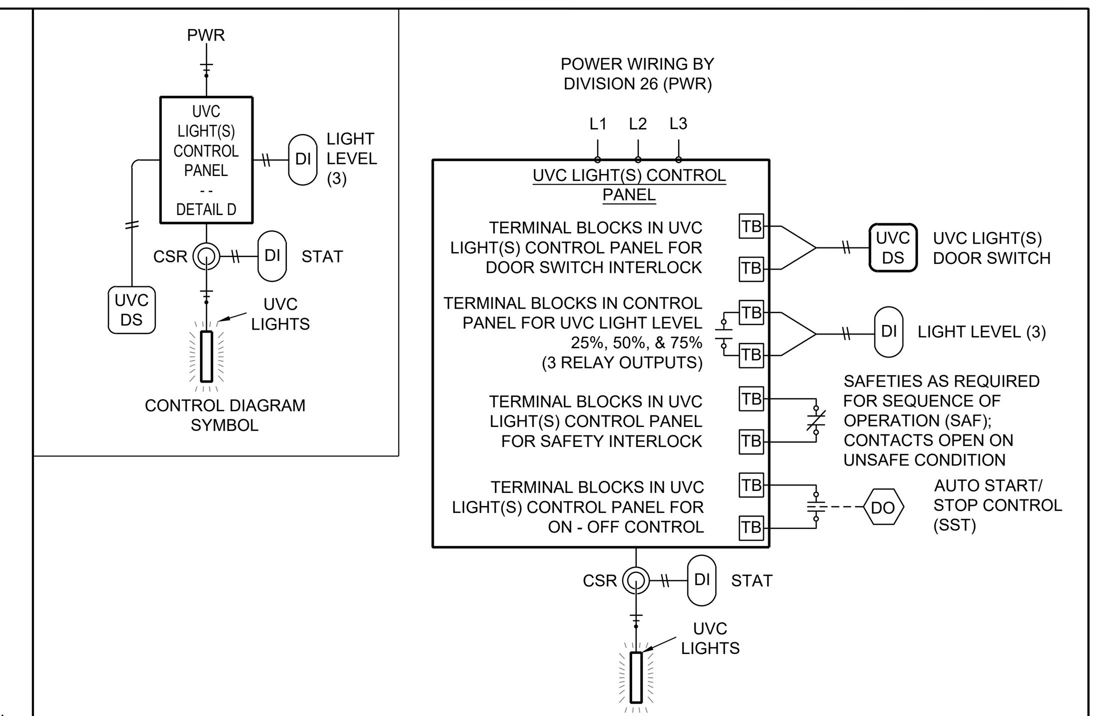


NOTES:
1. CONTROL OF THE DRIVE OVER EMS COMMUNICATION IS NOT ACCEPTABLE.

Ⓑ DETAIL: VARIABLE FREQUENCY DRIVE INTERLOCK
NOT TO SCALE

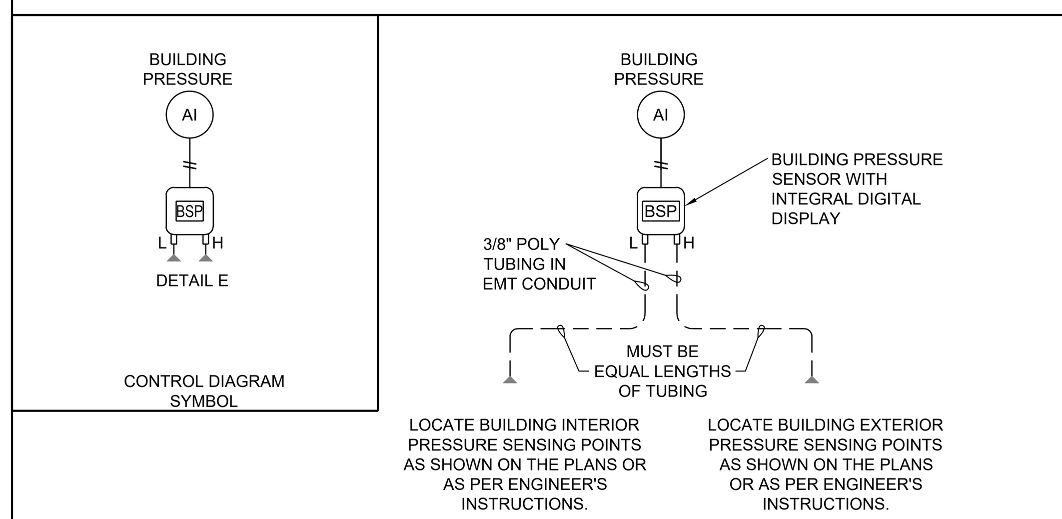


Ⓒ DETAIL: AHU FAN CONTROL DETAIL
NOT TO SCALE



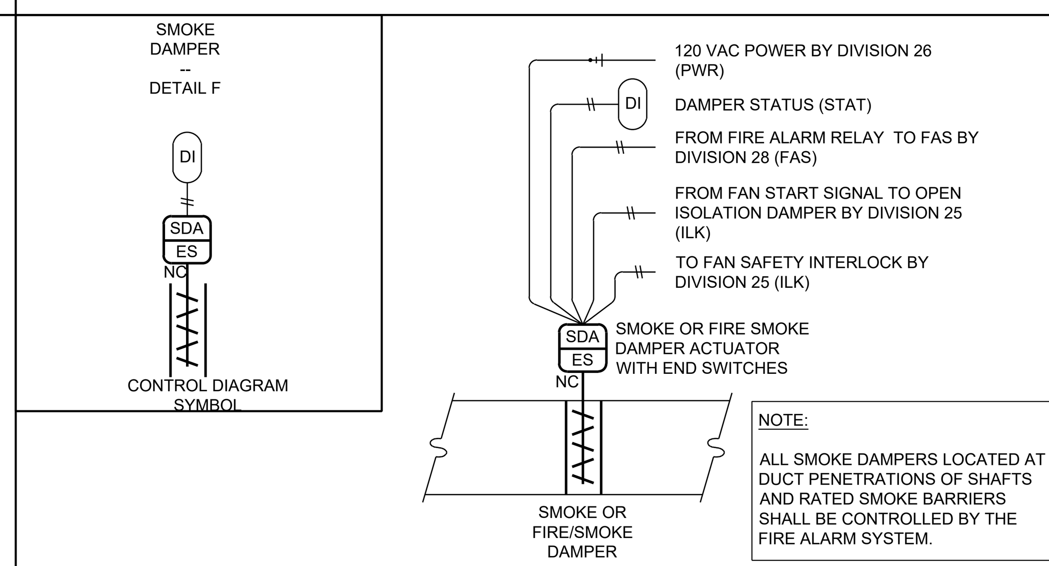
NOTES:
1. UVC LIGHT(S) AND CONTROL PANEL ARE FURNISHED WITH THE AIR HANDLING UNITS BY THE UNIT MANUFACTURERS.
2. DOOR SAFETY INTERLOCK SWITCH IS FURNISHED WITH THE UVC LIGHT(S) CONTROL PANEL. DOOR SAFETY INTERLOCK IS MOUNTED AND WIRED BY DIVISION 25.
3. UVC LIGHT(S) CONTROL PANEL FURNISHED WITH THREE (3) RELAYS FOR LIGHT LEVEL STATUS 25%, 50%, & 75%. WIRING FROM UVC LIGHT(S) CONTROL PANEL TO EMS FURNISHED AND INSTALLED BY DIVISION 25.
4. CURRENT SENSING RELAY (CRS) AND START-STOP RELAYS (SST) ARE FURNISHED, INSTALLED, AND WIRED BY DIVISION 25.
5. POWER WIRING TO THE UVC LIGHT(S) AND CONTROL PANEL IS BY DIVISION 26.

Ⓓ DETAIL: UVC LIGHT(S) AND CONTROL PANEL
NOT TO SCALE



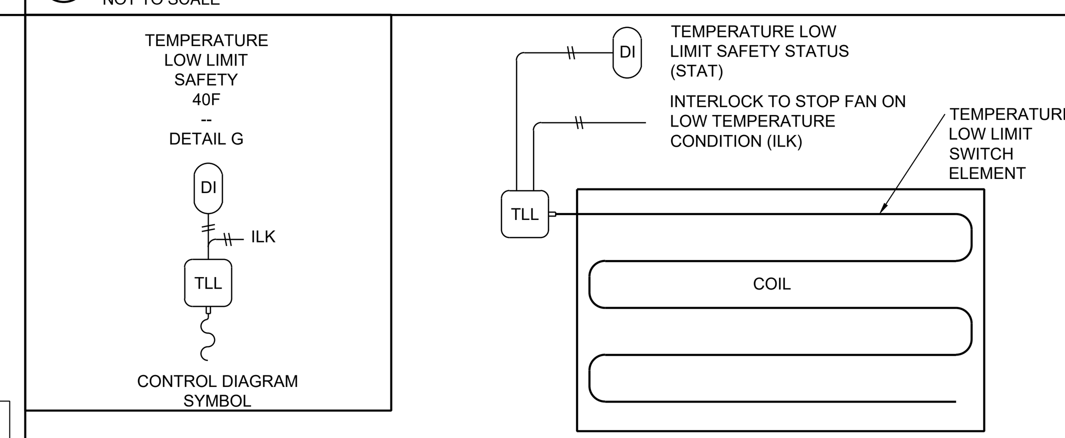
NOTES:
1. LOCATE BUILDING PRESSURE SENSOR TO ALLOW EQUAL LENGTHS OF TUBING TO BOTH INTERIOR AND EXTERIOR SENSING LOCATIONS.
2. CAPPED TEES ON DIFFERENTIAL PRESSURE TEST PORTS FURNISHED AND INSTALLED BY DIVISION 25.

Ⓔ DETAIL: BUILDING PRESSURE SENSOR
NOT TO SCALE



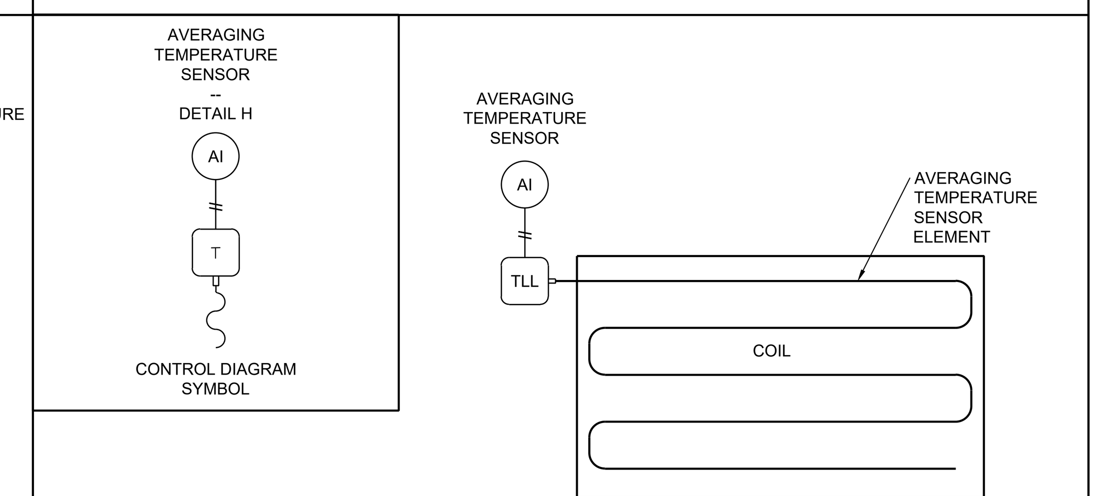
NOTES:
1. SMOKE OR FIRE/SMOKE DAMPER(S) ARE FURNISHED BY DIVISION 23 WITH ELECTRONIC SPRING RETURN TO CLOSED OR OPEN ACTUATOR(S) AND END SWITCH(ES).
2. SMOKE OR FIRE SMOKE DAMPER(S) ARE INSTALLED BY DIVISION 23.
3. FIRE ALARM RELAY(S) ARE FURNISHED AND INSTALLED BY DIVISION 28 AT THE SMOKE OR FIRE/SMOKE DAMPER ACTUATOR(S).
4. INTERLOCK WIRING FROM THE FIRE ALARM RELAY TO THE SMOKE OR FIRE/SMOKE DAMPER ACTUATOR(S) IS BY DIVISION 28.
5. WHERE SMOKE OR FIRE/SMOKE DAMPERS ARE USED AS ISOLATION DAMPERS FOR AIR HANDLING UNITS, THE INTERLOCK WIRING FROM THE FAN START SIGNAL TO OPEN THE ISOLATION SMOKE OR FIRE/SMOKE DAMPERS IS BY DIVISION 25.
6. INTERLOCK WIRING FROM THE SMOKE OR FIRE/SMOKE DAMPER ACTUATOR END SWITCH(ES) TO THE FAN SAFETY CIRCUIT(S) IS BY DIVISION 25.

Ⓕ DETAIL: SMOKE DAMPER INTERLOCK
NOT TO SCALE



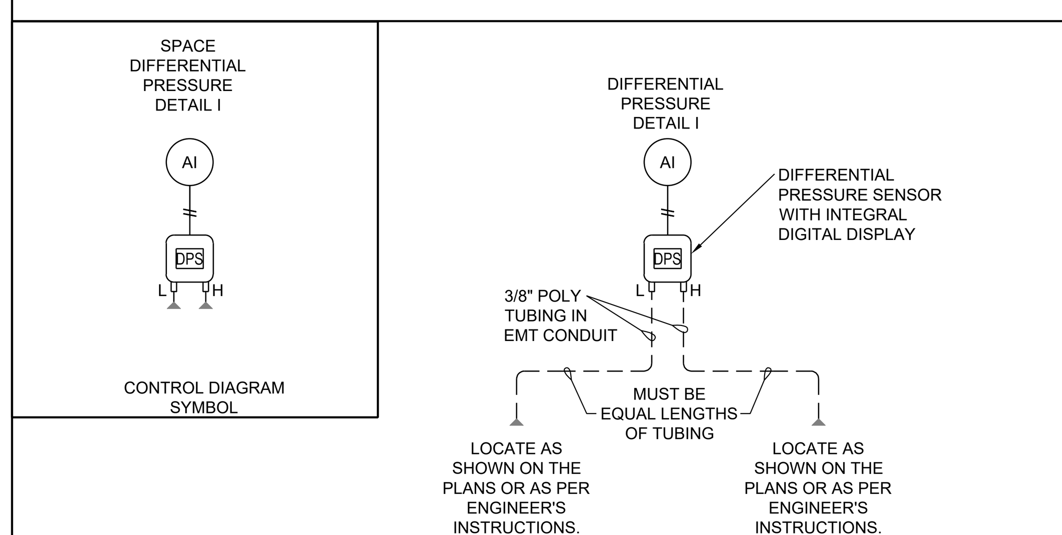
NOTES:
1. A MANUAL RESET TEMPERATURE LOW LIMIT (TLL) SWITCH WITH DPST OR DPDT CONTACTS FOR HARDWIRE INTERLOCK TO FANS AND DDC MONITORING SHALL BE PROVIDED. CONTACTS SHALL INCLUDE OPEN ON ALARM CONTACT FOR FAN SHUTDOWN AND A CLOSE ON ALARM CONTACT FOR ALARM STATUS.
2. TEMPERATURE LOW LIMIT SHALL HAVE ONE FOOT OF ELEMENT LENGTH PER ONE SQUARE FOOT OF COIL SURFACE EVENLY DISTRIBUTED OVER THE COIL SURFACE AS SHOWN IN DETAIL.
3. MULTIPLE TEMPERATURE LOW LIMIT SWITCHES MAY BE REQUIRED TO MEET THE ONE FOOT OF ELEMENT PER ONE SQUARE FOOT OF COIL SURFACE AND IN THIS EVENT THE MULTIPLE TEMPERATURE LOW LIMIT SWITCHES SHALL BE WIRED IN SERIES FOR FAN SHUTDOWN AND WIRED IN PARALLEL FOR ALARM STATUS.
4. INTERLOCK WIRING FROM THE TEMPERATURE LOW LIMIT SWITCH TO THE FAN CONTROLLER IS BY DIVISION 25.
5. TEMPERATURE LOW LIMIT SWITCH SHALL BE INSTALLED PER MANUFACTURER RECOMMENDATIONS AT REGULAR INTERVALS NOTED TO COVER THE ENTIRE COIL.
6. TEMPERATURE LOW LIMIT (TLL) SWITCHES SHALL HAVE SETPOINT ADJUSTMENT AND MANUAL RESET AT THE SWITCH.
7. TEMPERATURE LOW LIMIT SWITCH SHALL BE INSTALLED PER MANUFACTURE'S RECOMMENDATIONS IN A MANNER TO PREVENT THE ELEMENT FROM BEING DAMAGED FROM VIBRATION.

Ⓖ DETAIL: TEMPERATURE LOW LIMIT SWITCH
NOT TO SCALE



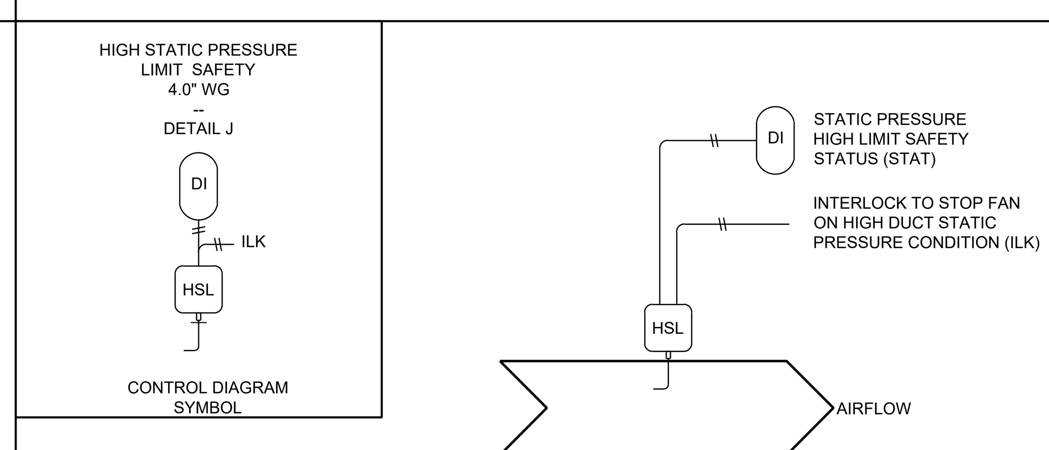
NOTES:
1. AVERAGING TEMPERATURE SENSOR SHALL HAVE ONE FOOT OF ELEMENT LENGTH PER THREE SQUARE FOOT OF COIL SURFACE EVENLY DISTRIBUTED OVER THE COIL SURFACE AS SHOWN IN DETAIL.
2. MULTIPLE AVERAGING TEMPERATURE SENSORS MAY BE REQUIRED TO MEET THE ONE FOOT OF ELEMENT PER TWO SQUARE FOOT OF COIL SURFACE AND IN THIS EVENT THE MULTIPLE AVERAGING TEMPERATURE SENSORS SHALL BE WIRED TO PROVIDE THE CORRECT AVERAGE TEMPERATURE TO THE DDC SYSTEM..
3. AVERAGING TEMPERATURE SENSORS SHALL BE INSTALLED PER MANUFACTURER RECOMMENDATIONS AT REGULAR INTERVALS TO COVER THE ENTIRE COIL.
4. AVERAGING TEMPERATURE SENSORS SHALL BE INSTALLED PER MANUFACTURE'S RECOMMENDATIONS IN A MANNER TO PREVENT THE ELEMENT FROM BEING DAMAGED FROM VIBRATION.

Ⓗ DETAIL: DUCT AVERAGING TEMPERATURE SENSOR
NOT TO SCALE



NOTES:
1. LOCATE BUILDING PRESSURE SENSOR TO ALLOW EQUAL LENGTHS OF TUBING TO BOTH SENSING LOCATIONS.
2. CAPPED TEES ON DIFFERENTIAL PRESSURE TEST PORTS FURNISHED AND INSTALLED BY DIVISION 25.

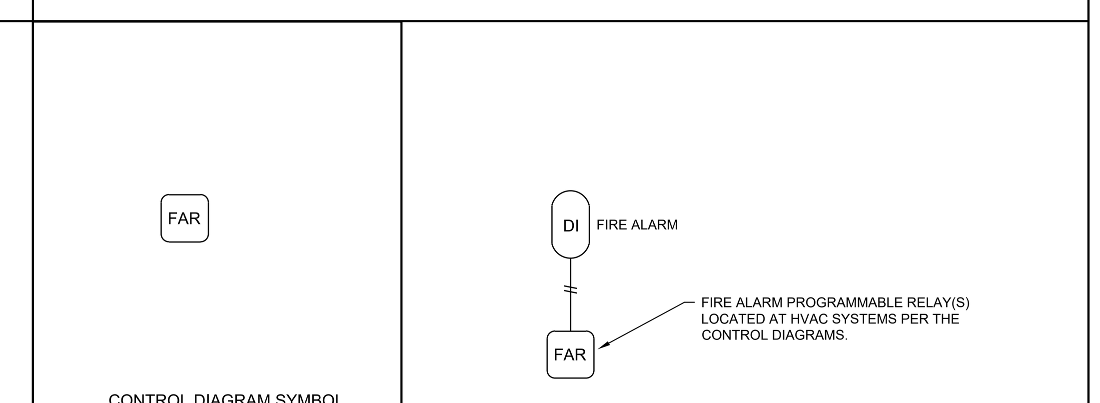
Ⓘ DETAIL: SPACE DIFFERENTIAL PRESSURE SENSOR
NOT TO SCALE



NOTES:
1. A MANUAL RESET DUCT HIGH STATIC PRESSURE LIMIT (HSL) SWITCH(ES) WITH DPST OR DPDT CONTACTS FOR HARDWIRE INTERLOCK TO FANS AND DDC MONITORING SHALL BE PROVIDED. CONTACTS SHALL INCLUDE OPEN ON ALARM CONTACT FOR FAN SHUTDOWN AND A CLOSE ON ALARM CONTACT FOR ALARM STATUS.
2. DUCT HIGH STATIC PRESSURE LIMIT (HSL) SWITCH(ES) SHALL BE INSTALLED TO SENSE DUCT STATIC PRESSURE AND STOP THE ASSOCIATED FAN TO PREVENT DAMAGE TO THE DUCT WORK.
3. MULTIPLE DUCT HIGH STATIC PRESSURE LIMIT (HSL) SWITCHES MAY BE REQUIRED AS SHOW ON THE CONTROL DIAGRAMS. THE MULTIPLE DUCT HIGH STATIC LIMIT SWITCHES SHALL BE WIRED IN SERIES FOR FAN SHUTDOWN AND WIRED IN PARALLEL FOR ALARM STATUS.
4. INTERLOCK WIRING FROM THE DUCT HIGH STATIC PRESSURE LIMIT (HSL) SWITCHES TO THE FAN CONTROLLER IS BY DIVISION 25.
5. DUCT HIGH STATIC PRESSURE LIMIT (HSL) SWITCHES SHALL HAVE SETPOINT ADJUSTMENT AND MANUAL RESET AT THE SWITCH.
6. DUCT HIGH STATIC LIMIT (HSL) SWITCHES SHALL BE INSTALLED PER MANUFACTURER RECOMMENDATIONS.

Ⓙ DETAIL: DUCT STATIC PRESSURE HIGH LIMIT SWITCH
NOT TO SCALE

Ⓚ DETAIL: SELF CONTAINED STEAM HUMIDIFIER INTERLOCK
NOT TO SCALE



NOTES:
1. DIVISION 28 SHALL PROVIDE A PROGRAMMABLE RELAY AT EACH HVAC SYSTEM AS SHOWN ON THE CONTROL DIAGRAMS OR AS REQUIRED FOR THE SEQUENCE OF OPERATION FOR THE SPECIFIC HVAC SYSTEM. THE FAR SHALL INITIATE THE EMERGENCY OPERATION OF THE HVAC SYSTEM ON AN ALARM CONDITION.
2. DIVISION 25 SHALL BE RESPONSIBLE FOR ADDITIONAL RELAY(S) AS REQUIRED TO ACTIVATE AUXILIARY SYSTEM COMPONENTS AS PER THE SEQUENCE OF OPERATION.
3. FIRE ALARM RELAY(S) LOCATED AT SMOKE OR FIRE/SMOKE DAMPER(S) IN DUCTWORK SYSTEM SHALL BE WIRED TO CLOSE THE DAMPER(S) IN THE EVENT OF AN ALARM CONDITION BY DIVISION 28.

Ⓛ DETAIL: FIRE ALARM RELAY (FAR)
NOT TO SCALE

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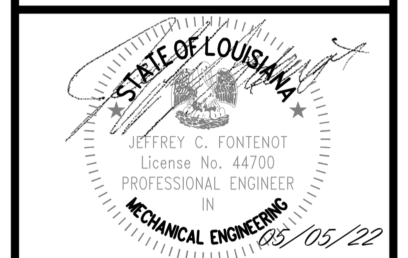
(COA #3930)



ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

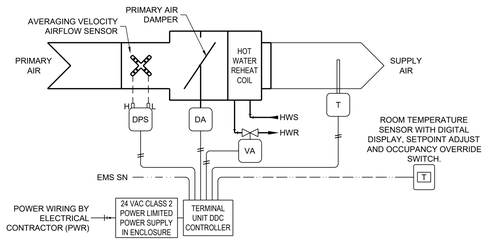
MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

SHEET TITLE:
CONTROL DETAILS 1

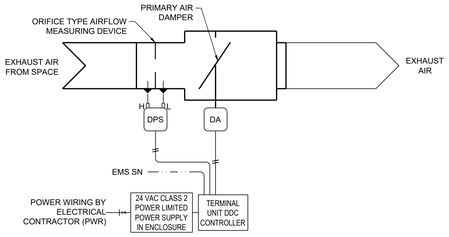
SHEET NUMBER:
ATC1001

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS PLAN REVIEW DIVISION
REVIEWED FOR CODE COMPLIANCE
mnmurphy 07/20/2022



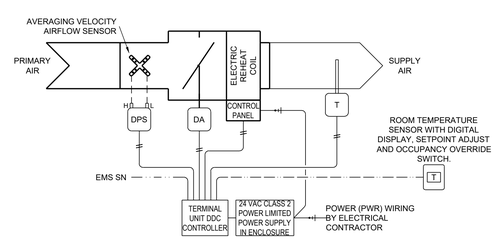
NOTES:
1. SUPPLY AIR TERMINAL UNIT(S) WITH REHEAT COIL(S), PRIMARY AIR DAMPER(S), AND AVERAGING VELOCITY SENSOR(S) ARE FURNISHED AND INSTALLED BY SHEETMETAL CONTRACTOR.
2. CONTROLS INCLUDING DIFFERENTIAL PRESSURE SENSOR(S), ELECTRONIC DAMPER ACTUATOR(S), ROOM TEMPERATURE SENSOR(S), AND SUPPLY AIR TEMPERATURE SENSOR(S) ARE FURNISHED, INSTALLED, AND WIRED BY ATC CONTRACTOR.
3. HOT WATER REHEAT COIL CONTROL VALVE(S) ARE FURNISHED AND WIRED BY THE ATC CONTRACTOR, INSTALLED IN THE PIPING BY THE MECHANICAL CONTRACTOR.
4. TERMINAL UNIT CONTROLLER(S) AND POWER SUPPLY(S) ARE FURNISHED, INSTALLED, AND WIRED BY THE ATC CONTRACTOR.
5. CONTROL TUBING FOR DIFFERENTIAL PRESSURE SENSOR(S) IS FURNISHED AND INSTALLED BY THE ATC CONTRACTOR.
6. POWER WIRING (PWR) TO THE TERMINAL UNIT POWER SUPPLY IS BY THE ELECTRICAL CONTRACTOR. ATC CONTRACTOR IS RESPONSIBLE FOR POWER WIRING FROM TERMINAL UNIT POWER SUPPLY TO CONTROLS REQUIRING POWER.
7. WHERE NOTED, FAST ACTING DAMPER ACTUATORS SHALL BE PROVIDED FOR SUPPLY AIR TERMINAL UNIT(S).

(M) DETAIL: TYPICAL SUPPLY AIR TERMINAL UNIT
NOT TO SCALE



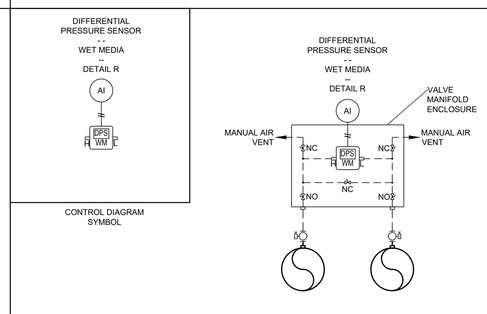
NOTES:
1. EXHAUST TERMINAL UNIT(S), PRIMARY AIR DAMPER(S), AND ORIFICE TYPE AIRFLOW MEASURING DEVICE(S) ARE FURNISHED AND INSTALLED BY SHEETMETAL CONTRACTOR.
2. CONTROLS INCLUDING DIFFERENTIAL PRESSURE SENSOR(S) AND ELECTRONIC DAMPER ACTUATOR(S) ARE FURNISHED, INSTALLED, AND WIRED BY ATC CONTRACTOR.
3. TERMINAL UNIT CONTROLLER(S) AND POWER SUPPLY(S) ARE FURNISHED, INSTALLED, AND WIRED BY THE ATC CONTRACTOR.
4. CONTROL TUBING FOR DIFFERENTIAL PRESSURE SENSOR(S) IS FURNISHED AND INSTALLED BY THE ATC CONTRACTOR.
5. POWER WIRING (PWR) TO THE TERMINAL UNIT POWER SUPPLY IS BY THE ELECTRICAL CONTRACTOR. ATC CONTRACTOR IS RESPONSIBLE FOR POWER WIRING FROM TERMINAL UNIT POWER SUPPLY TO CONTROLS REQUIRING POWER.
6. WHERE NOTED, FAST ACTING DAMPER ACTUATORS SHALL BE PROVIDED FOR EXHAUST TERMINAL UNIT(S).

(N) DETAIL: TYPICAL EXHAUST AIR TERMINAL UNIT
NOT TO SCALE



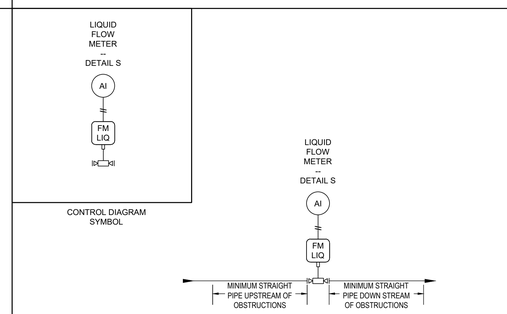
NOTES:
1. SUPPLY AIR TERMINAL UNIT(S) WITH ELECTRIC REHEAT COIL(S), PRIMARY AIR DAMPER(S), AND AVERAGING VELOCITY SENSOR(S) ARE FURNISHED AND INSTALLED BY SHEETMETAL CONTRACTOR.
2. CONTROLS INCLUDING DIFFERENTIAL PRESSURE SENSOR(S), ELECTRONIC DAMPER ACTUATOR(S), ROOM TEMPERATURE SENSOR(S), AND SUPPLY AIR TEMPERATURE SENSOR(S) ARE FURNISHED, INSTALLED, AND WIRED BY ATC CONTRACTOR.
3. ELECTRIC REHEAT COIL WITH CONTROL PANEL(S) ARE FACTORY MOUNTED AND WIRED BY THE TERMINAL UNIT MANUFACTURER, INSTALLED BY THE SHEETMETAL CONTRACTOR.
4. TERMINAL UNIT CONTROLLER(S) AND CONTROL POWER SUPPLY(S) ARE FURNISHED, INSTALLED, AND WIRED BY THE ATC CONTRACTOR.
5. CONTROL TUBING FOR DIFFERENTIAL PRESSURE SENSOR(S) IS FURNISHED AND INSTALLED BY THE ATC CONTRACTOR.
6. POWER WIRING (PWR) TO THE TERMINAL UNIT POWER SUPPLY IS BY THE ELECTRICAL CONTRACTOR. ATC CONTRACTOR IS RESPONSIBLE FOR POWER WIRING FROM TERMINAL UNIT POWER SUPPLY TO CONTROLS REQUIRING POWER.
7. WHERE NOTED, FAST ACTING DAMPER ACTUATORS SHALL BE PROVIDED FOR SUPPLY AIR TERMINAL UNIT(S).

(O) DETAIL: VAV TERMINAL UNIT WITH ELECTRIC REHEAT
NOT TO SCALE



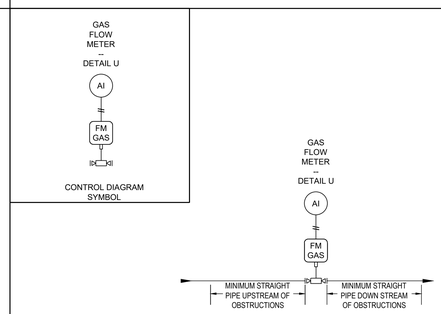
NOTES:
1. DIFFERENTIAL PRESSURE SENSOR FOR WET MEDIA WITH DIGITAL DISPLAY FURNISHED AND INSTALLED BY THE DIVISION 23.
2. VALVE MANIFOLD AND ENCLOSURE FOR DIFFERENTIAL PRESSURE SENSOR FURNISHED AND INSTALLED BY THE DIVISION 23.
3. ISOLATION VALVES AND TAPS IN PIPING SHALL BE FURNISHED AND INSTALLED BY THE DIVISION 23.
4. PIPING FROM ISOLATION VALVES TO VALVE MANIFOLD AND DIFFERENTIAL PRESSURE SENSOR BY THE DIVISION 23.

(R) DETAIL: DIFFERENTIAL PRESSURE SENSOR - WET MEDIA
NOT TO SCALE



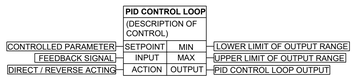
NOTES:
1. INSTALL FLOW METER PER MANUFACTURERS INSTALLATION INSTRUCTION FOR MINIMUM LENGTH OF STRAIGHT PIPE UP AND DOWN STREAM OF FLOW METER TO MAINTAIN THE PUBLISHED METER ACCURACY.
2. INSTALL STANDARD CONCENTRIC REDUCERS AS REQUIRED TO MAINTAIN PUBLISHED METER ACCURACIES.
3. FLOW METER IS WIRED BY THE ATC CONTRACTOR; FURNISHED AND INSTALLED IN PIPING BY MECHANICAL CONTRACTOR.

(S) DETAIL: LIQUID FLOW METER
NOT TO SCALE



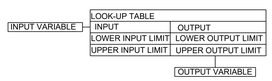
NOTES:
1. INSTALL FLOW METER PER MANUFACTURERS INSTALLATION INSTRUCTION FOR MINIMUM LENGTH OF STRAIGHT PIPE UP AND DOWN STREAM OF FLOW METER TO MAINTAIN THE PUBLISHED METER ACCURACY.
2. INSTALL STANDARD CONCENTRIC REDUCERS AS REQUIRED TO MAINTAIN PUBLISHED METER ACCURACIES.
3. FLOW METER IS FURNISHED AND WIRED BY THE ATC CONTRACTOR; INSTALLED IN PIPING BY MECHANICAL CONTRACTOR.

(T) DETAIL: GAS FLOW METER
NOT TO SCALE



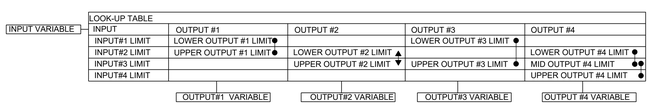
NOTES:
1. CYCLE TIMES, TUNING, LIMITS & PERFORMANCE OF ALL CONTROL LOOPS TO BE SET UP TO WORK WITH ALL ASSOCIATED SYSTEMS.
2. LAST COMMAND OUTPUT SHALL BE MAINTAINED UPON ANALOG INPUT FAILURE OR LOSS OF COMMUNICATION UNLESS OTHERWISE NOTED ON THE DRAWINGS.
3. PID LOOP SHALL BE DISABLED WHEN EQUIPMENT CONTROLS DISABLED.

(U) DETAIL: PID CONTROL LOOP (PROPORTIONAL INTEGRAL DERIVATIVE CONTROL METHOD)



NOTES:
1. COMMON SYNTAX FOR LOOK UP TABLES INCLUDE RESET TABLE, LINEAR RESET, AND TABLE STATEMENT.
2. WHEN INPUT IS EQUAL TO OR BELOW THE LOWER INPUT LIMIT, THE OUTPUT SHALL REMAIN THE LOWER OUTPUT LIMIT.
3. WHEN THE INPUT IS EQUAL TO OR ABOVE THE UPPER INPUT LIMIT, THE OUTPUT SHALL REMAIN THE UPPER OUTPUT LIMIT.
4. WHEN THE INPUT IS BETWEEN THE LOWER INPUT LIMIT AND UPPER INPUT LIMIT, THE OUTPUT SHALL BE LINEARLY SCALED BETWEEN THE LOWER OUTPUT LIMIT AND THE UPPER OUTPUT LIMIT.
5. SINGLE LOOK-UP TABLES CAN BE COMBINED INTO LARGER, MORE COMPLEX TABLES.

(V) SINGLE LOOK-UP TABLE
NOT TO SCALE



NOTES:
1. THE EXTENDED LOOK UP TABLE OF THIS DETAIL HAS BEEN EXPLODED BELOW TO PROVIDE AN EXAMPLE OF THE INFORMATION IT IS CONVEYING. THE CONTRACTOR IS ALLOWED TO USE THEIR PRE-DEFINED BLOCKS, SYNTAX, OR OTHER APPLICABLE TOOLS TO ACHIEVE THE SAME RESULTS. THE DESIGN INTENT SHALL STILL BE MET.
2. THE SYMBOL ▲ ▼ REPRESENTS A LINEAR RESET.
3. THE SYMBOL ▲ ▼ REPRESENTS A THRESHOLD OR A LATCH THAT PROVIDES A HYSTERESIS EFFECT.

(W) EXTENDED LOOK-UP TABLE
NOT TO SCALE

NOTE: DETAILS ARE FOR REFERENCE ONLY AND MAY NOT ALL BE USED ON THIS SPECIFIC PROJECT.

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STATE OF LOUISIANA
JEFFREY C. FONTENOT
License No. 44700
PROFESSIONAL ENGINEER
IN
MECHANICAL ENGINEERING
05/05/22
ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

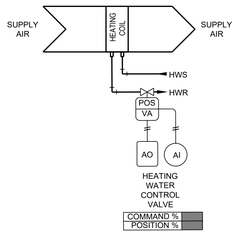
MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

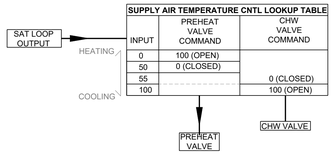
SHEET TITLE:
CONTROL DETAILS 2

SHEET NUMBER:
ATC1002

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications have been examined and no evidence of noncompliance with the applicable provisions of the Louisiana State Uniform Construction Code has been found. Approval of these plans and specifications does not permit the violation of any section of the Louisiana State Uniform Construction Code.
Work shall be installed in accordance with the approved plans and specifications. Any deviations must be approved by the Department of Safety and Permits and shall be the responsibility of those who installed them.
Work shall be subject to inspection by the Department of Safety and Permits or its authorized agents at such times and stages of construction as are required by the Louisiana State Uniform Construction Code.
REFERENCED FOR CODE COMPLIANCE
mmurphy 07/20/2022

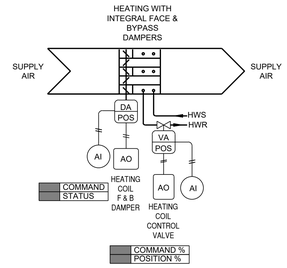


SEQUENCE OF OPERATION:



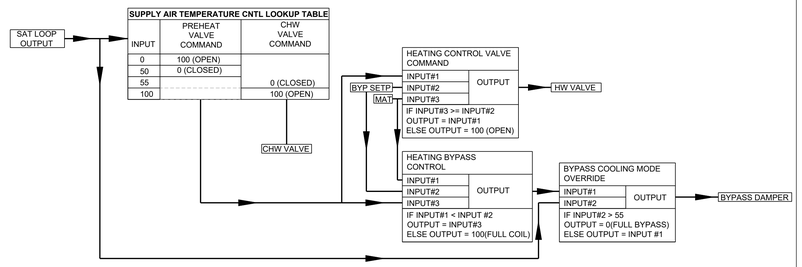
NOTES:
1. REFER TO AIR HANDLER UNIT SEQUENCES FOR SAT LOOP OUTPUT SIGNAL AND SAT CONTROL LOOKUP TABLE.

X DETAIL: HEATING COIL
NOT TO SCALE



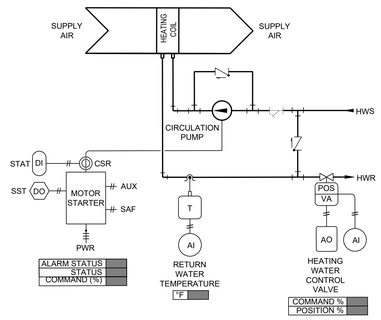
NOTES:
1. SEQUENCE OF OPERATION: MODULATE MECHANICAL DAMPER FOR REQUIRED AIRFLOW. INCOMING AIRSTREAM WILL BYPASS COIL OVERHEAD AND REDUCE PRESSURE DROP ACROSS COILS

SEQUENCE OF OPERATION:

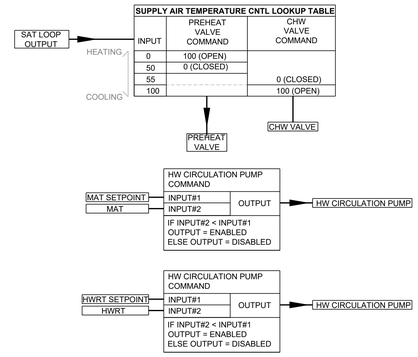


NOTES:
1. REFER TO SEQUENCE FOR SAT LOOP OUTPUT SIGNAL AND SAT CONTROL LOOKUP TABLE.
2. USE PREHEAT COMMAND SIGNAL FOR CRITICAL ZONE RESET AND NOT FINAL VALVE COMMAND
3. ALARM IF ACTUATOR FEEDBACK DOES NOT MATCH COMMAND

P DETAIL: INTEGRAL FACE AND BYPASS COIL
NOT TO SCALE



SEQUENCE OF OPERATION:

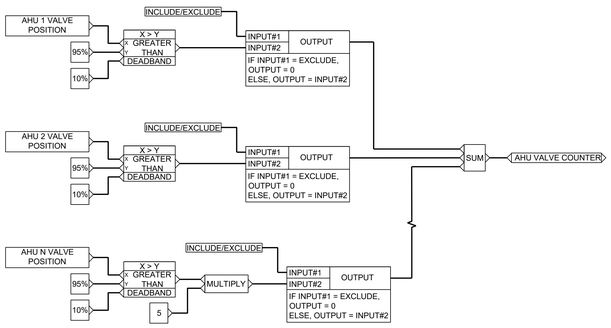


NOTES:
1. REFER TO SEQUENCE FOR SAT LOOP OUTPUT SIGNAL AND SAT CONTROL LOOKUP TABLE.
2. USE PREHEAT COMMAND SIGNAL FOR CRITICAL ZONE RESET AND NOT FINAL VALVE COMMAND
3. ALARM IF ACTUATOR FEEDBACK DOES NOT MATCH COMMAND
4. ALARM IF PUMP FEEDBACK DOES NOT MATCH COMMAND AFTER 5 MINUTES

Q DETAIL: HEATING COIL WITH CIRCULATION PUMP
NOT TO SCALE

AHU VALVE COUNTER

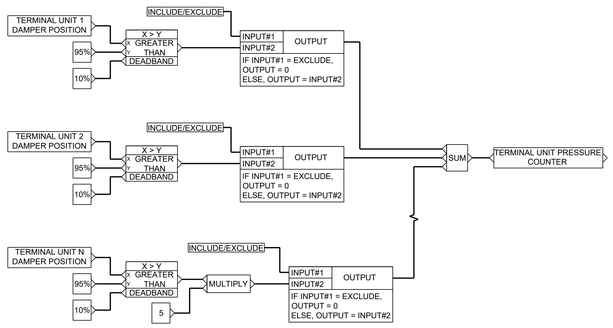
NOTES:
1. SEQUENCE OF OPERATION: ADD THE NUMBER OF AHU VALVES THAT ARE GREATER THAN 95% (ADJ) WITH A 10% (ADJ) DEADBAND. IF AN AHU SERVES AN AREA OF INCREASED IMPORTANCE, MULTIPLY THE AHU REQUEST BY A MULTIPLIER.



Y DETAIL: AHU VALVE POSITION COUNTER
NOT TO SCALE

TERMINAL UNIT PRESSURE COUNTER

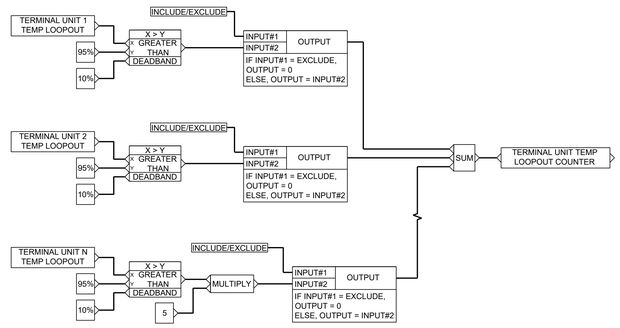
NOTES:
1. SEQUENCE OF OPERATION: ADD THE NUMBER OF TERMINAL UNIT DAMPERS THAT ARE GREATER THAN 95% (ADJ) WITH A 10% (ADJ) DEADBAND. IF A TERMINAL UNIT SERVES AN AREA OF INCREASED IMPORTANCE, MULTIPLY THE TERMINAL UNIT REQUEST BY A MULTIPLIER.



Z DETAIL: TERMINAL UNIT DAMPER POSITION COUNTER
NOT TO SCALE

TERMINAL UNIT TEMP LOOPOUT COUNTER

NOTES:
1. SEQUENCE OF OPERATION: ADD THE NUMBER OF TERMINAL UNIT TEMP LOOPOUTS THAT ARE GREATER THAN 95% (ADJ) WITH A 10% (ADJ) DEADBAND. IF A TERMINAL UNIT SERVES AN AREA OF INCREASED IMPORTANCE, MULTIPLY THE TERMINAL UNIT REQUEST BY A MULTIPLIER.



AA DETAIL: TERMINAL UNIT TEMP CONTROL LOOPOUT COUNTER
NOT TO SCALE

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05/05/22
ENGINEER SEAL

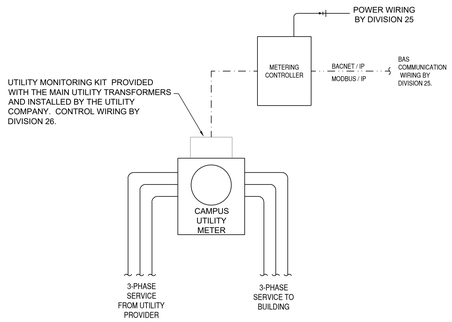
ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION
ISSUE DATE:		05/05/22
PROJECT NUMBER:		70-16-0005

SHEET TITLE:
CONTROL DETAILS 3

SHEET NUMBER:
ATC1003

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications have been examined and no evidence of violation of the Comprehensive Zoning Ordinance or of the laws and ordinances governing the matters set forth in the Building Code have been found to exist. Approval does not prevent the Director of Safety and Permits from requiring corrections to errors in the plans and specifications or from subsequently entering and inspecting the building and premises during construction. Approval does not grant any permission to violate or cancel any provision of the Building Code or other ordinances of the City of New Orleans.
Work must be installed in accordance with the manufacturer's instructions and conditions of the listing.
Approval of this document is valid only for the use and occupancy set forth in the application. Future use and occupancy may require additional review.
Work requiring a permit shall not be commenced until the permit holder or his agent shall have posted an approved permit card in a conspicuous place on the premises.
Issuance of permit does not waive the requirement of any other permit.
Issued under the authority of the Department of Safety and Permits and the Chief Administrative Officer.
REVIEWED FOR CODE COMPLIANCE
mmurphy 07/20/2022



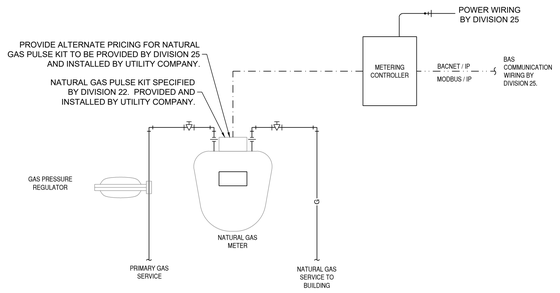
ENERGY MONITORING:
THE BAS SHALL OBTAIN THE BUILDING UTILITY USAGE. THE BAS SHALL LOG AND DISPLAY UTILITY USAGE (KWH). THE BAS TO CALCULATE AND DISPLAY:

A. TOTALIZED ELECTRICITY CONSUMPTION (KWH) = TOTALIZED PULSE COUNT X KWH PER PULSE.

B. 15 MINUTE INTERVAL ELECTRICITY CONSUMPTION (KWH) = DIFFERENCE BETWEEN TOTALIZED ELECTRICITY CONSUMPTION FROM 0:00 TO 0:15, 0:15 TO 0:30, ETC.

C. 15 MINUTE INTERVAL AVERAGE ELECTRICITY DEMAND (KW) = 15 MINUTE INTERVAL ELECTRICITY CONSUMPTION (KWH) X 4

(BB) CAMPUS ELECTRICAL UTILITY METERING
NOT TO SCALE



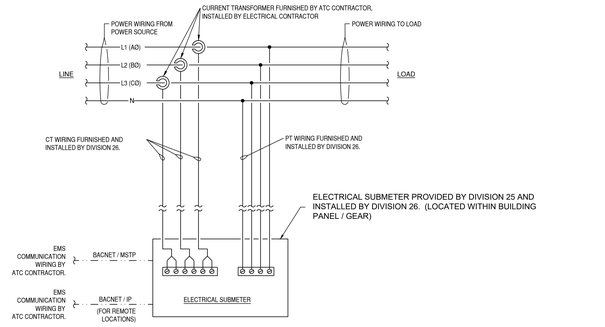
THE EMS IS TO CALCULATE AND DISPLAY ON GRAPHIC, TREND, AND ARCHIVE THE THE FOLLOWING VIRTUAL POINTS:

A. (FOR METERS WITH PRESSURE CORRECTION DEVICES) TOTALIZED NATURAL GAS CONSUMPTION (CCF) = TOTALIZED PULSE COUNT X CORRECTED CUBIC FEET PER PULSE / 100.

B. (FOR METERS WITHOUT PRESSURE CORRECTION DEVICES) TOTALIZED NATURAL GAS CONSUMPTION (CCF) = TOTALIZED PULSE COUNT X UNCORRECTED CUBIC FEET PER PULSE X PRESSURE CORRECTION FACTOR / 100.

C. 15 MINUTE INTERVAL NATURAL GAS CONSUMPTION (CCF) = DIFFERENCE BETWEEN TOTALIZED NATURAL GAS CONSUMPTION FROM 0:00 TO 0:15, 0:15 TO 0:30, ETC.

(CC) CAMPUS NATURAL GAS UTILITY METERING
NOT TO SCALE



ENERGY MONITORING:
THE BAS SHALL METER BUILDING ZONE UTILITY USAGE. THE BAS SHALL LOG AND DISPLAY UTILITY INSTANTANEOUS AND AVERAGE VOLTAGE, CURRENT, POWER (KW), USAGE (KWH), AND POWER FACTOR. THE BAS SHALL DISPLAY INSTANTANEOUS , HOURLY, DAILY, MONTHLY, YEARLY VALUES, ALARMS, AND PROVIDE COMPARATIVE DATA FROM PREVIOUS HOUR, DAY, MONTH, AND YEARS ON A DASH BOARD GRAPHIC IN THE BAS.
METERS TO BE SIZED BY ELECTRICAL, REFER TO DRAWINGS FOR SIZING.

(EE) TYPICAL ZONE ELECTRICAL METER
SCALE: NONE

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05/05/22
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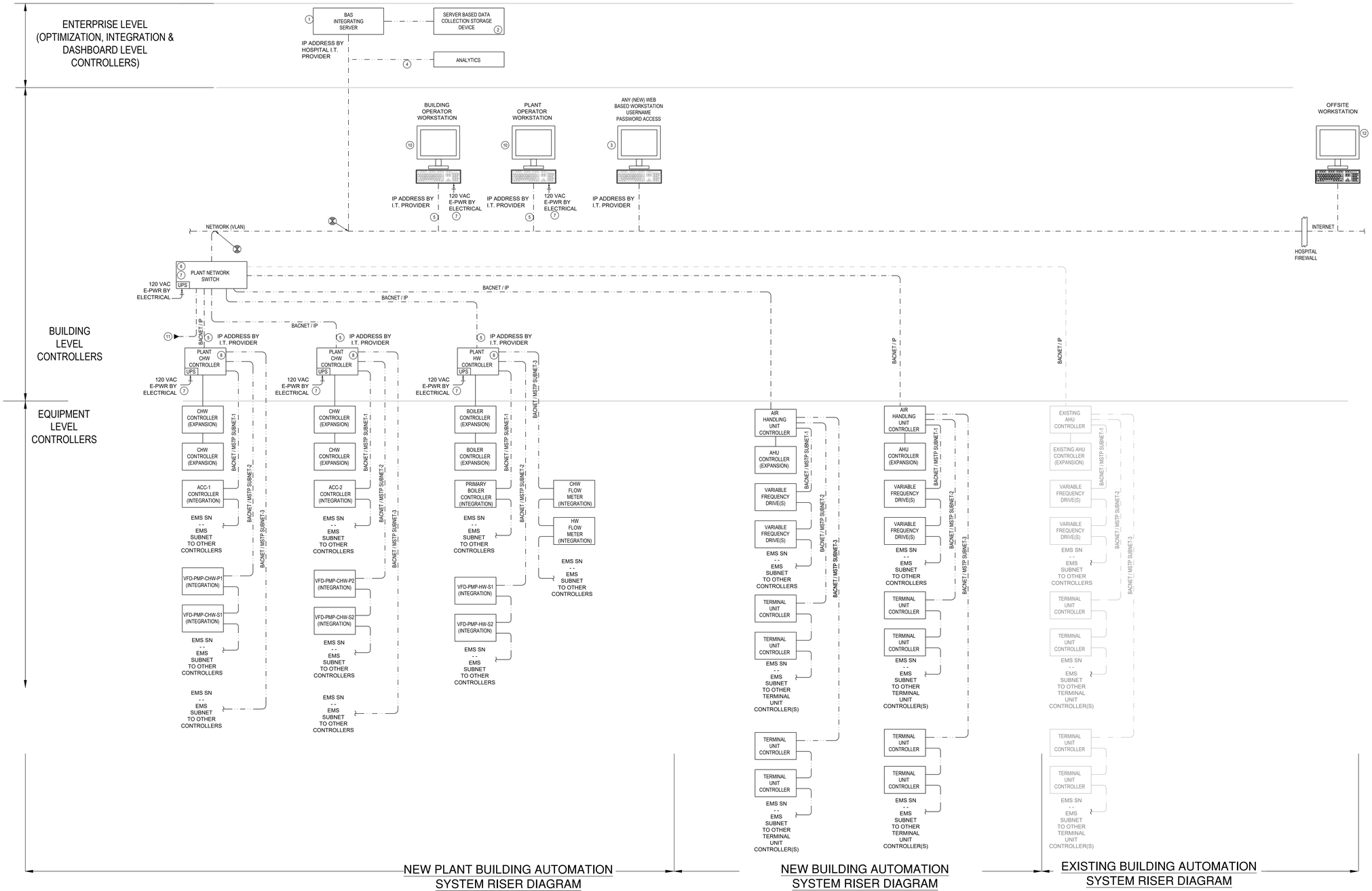
ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION
ISSUE DATE:		05/05/22
PROJECT NUMBER:		70-16-0005

SHEET TITLE:
CONTROL
DETAILS 4

SHEET NUMBER:
ATC1004

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications have been examined and do evidence compliance with the applicable requirements of the Code of Ordinances of the City of New Orleans. Any deviation shown on these plans and/or not complying with the code during the course of construction must be approved by the Department of Safety and Permits prior to construction.
Any changes, additions or deletions from these plans and specifications must be approved by the Department of Safety and Permits and may require additional plan review and fees.
Work started by the contractor without required approval of changes is a violation of the Comprehensive Zoning Ordinance and is subject to the penalties provided by the Ordinance.
REVIEWED FOR CODE COMPLIANCE
mmurphy 07/20/2022



NEW PLANT BUILDING AUTOMATION SYSTEM RISER DIAGRAM

NEW BUILDING AUTOMATION SYSTEM RISER DIAGRAM

EXISTING BUILDING AUTOMATION SYSTEM RISER DIAGRAM

EMS GENERAL NOTES:

1. THE BAS ARCHITECTURE SHOWN IS A DIAGRAMMATIC REPRESENTATION AND MAY NOT MATCH THE COMPLETED ARCHITECTURE FOR THIS PROJECT. DIVISION 25 SHALL DETERMINE EXACT ARCHITECTURE FOR THE SYSTEM BEING PROVIDED AND SHALL BE INCLUDED IN THE SUBMITTALS.
2. ETHERNET CONNECTIONS TO EQUIPMENT (FIELD EQUIPMENT PANELS, CONTROL PANELS, METERS, ETC) SHALL BE TO EQUIPMENT, NOT IN EQUIPMENT. PROVIDE PATCH CABLES AS REQUIRED.
3. SYSTEM SHALL BE CAPABLE OF RECEIVING OCCUPANCY STATUS FROM A PATIENT MANAGEMENT SYSTEM BUT IS NOT REQUIRED TO DO SO AT THIS TIME.
4. BAS NETWORK AND ENTERPRISE LEVEL CONTROLLERS, ALONG WITH ANY OTHER CRITICAL CONTROLLERS OR COMPONENTS SHALL BE ON EMERGENCY POWER AND SHALL BE PROVIDED BY DIVISION 25, INSTALLED BY DIVISION 26, WITH UNINTERRUPTIBLE POWER SUPPLIES (UPS) AS REQUIRED TO MAINTAIN AN OPERABLE SYSTEM. UPS SHALL BE EQUAL TO KELE PSH SERIES UPS'S WITH STATUS CONTACTS, OR OTHER APPROVED EQUAL. CONTACTS SHALL BE MONITORED BY THE BAS.
5. REFER TO CONTROL DIAGRAMS FOR HARD WIRED POINTS AND INTERLOCKS. THIS SYSTEM RISER DIAGRAM IS FOR COMMUNICATION WIRING ONLY AND DOES NOT COVER POINT TO POINT WIRING DETAIL. COMMUNICATION CONTROL OF IDENTIFIED HARD WIRED CONTROLLED POINTS IS NOT ALLOWED UNLESS EXPLICITLY EXPRESSED IN THE CONTRACT DOCUMENTS OR UNLESS WRITTEN APPROVAL PROVIDED BY THE ENGINEER OF RECORD.
6. PROVIDE AN UNLIMITED NUMBER OF ACCESS LICENSES FOR THE PROJECT.

KEYED NOTES:

1. VIRTUAL SERVER PARTITION PROVIDED BY THE I.T DEPARTMENT. DIVISION 25 TO COORDINATE THE REQUIREMENTS OF THE SERVER WITH DIVISION 27 AND ALL I.T. REQUIREMENTS. DIVISION 25 TO COORDINATE SYSTEM STRUCTURE WITH I.T. AS REQUIRED TO PROVIDE A RESILIENT SYSTEM. ATC CONTRACTOR SHALL COORDINATE SYSTEM ARCHITECTURE DETAILS WITH I.T. TO ENSURE THE SYSTEM IS AS FAIL SAFE AS PRACTICAL (PLANT CONTROLS TO RESIDE ON A COMMON OR REDUNDANT SWITCHES, CRITICAL POWER/UPS REQUIREMENTS, ETC. THE ENTERPRISE LEVEL SERVER SHALL BE CAPABLE OF INTEGRATING OTHER BACNET SYSTEMS AND SYSTEMS OF OTHER PROTOCOLS (REFER TO SPEC FOR DETAILS). DIVISION 25 SHALL COORDINATE ALL REQUIRED SOFTWARE AND WEB BASED ACCESS FOR THE BAS.
2. SERVER BASED DATA COLLECTION STORAGE REQUIREMENTS SHALL BE COORDINATED BY THE ATC CONTRACTOR WITH THE FACILITIES I.T. DEPARTMENT. ALL DATA SHALL BE MADE AVAILABLE TO THIRD PARTY VENDOR SOFTWARE HERE AND AT THE CONTROLLER LEVEL. REFER TO SPECIFICATIONS FOR FURTHER REQUIREMENTS.
3. ANY OPERATOR WITH PROPER ACCESS AND PASSWORD SHALL BE CAPABLE OF LOGGING ON TO THE BAS VIA WEB ACCESS FROM ANY COMPUTER.
4. ANALYTICS TO BE PROVIDED BY A THIRD PARTY VENDOR. DIVISION 25 SHALL PROVIDE ACCESS TO THE REQUIRED DATA OVER THE I.P. NETWORK. COORDINATE THE INDICATED TRENDING, FAULT DETECTION, AND ALARMS WITH THE REQUIREMENTS OF THIS PROJECT.
5. DATA DROPS PROVIDED BY DIVISION 27 OR THE I.T DEPARTMENT. DIVISION 25 SHALL COORDINATE DATA DROP LOCATION AND QUANTITIES REQUIRED FOR THE BUILDING AUTOMATION SYSTEM ALONG WITH I.P. ADDRESSES.
6. NETWORK SWITCH PROVIDED AND INSTALLED BY DIVISION 27 OR I.T. DEPARTMENT. THE ENTIRE PLANT SHALL ONLY REPORT TO A SINGLE SWITCH. COORDINATE THE ALLOWABLE QUANTITY OF SWITCHES IN SERIES WITH THE FACILITY I.T. DEPARTMENT (LIMIT 3). DIVISION 25 IS NOT ALLOWED TO PROVIDE UNMANAGED SWITCHES.
7. PROVIDE WITH A UPS AND EMERGENCY POWER. UPS SHALL BE EQUAL TO KELE PSH SERIES UPS'S WITH STATUS CONTACTS, OR AN APPROVED EQUAL. BAS SHALL MONITOR STATUS OF THE UPS(S).
8. BUILDING CONTROLLER SUB-NETWORKS SHALL BE STRUCTURED TO PROVIDE SYSTEM RESILIENCY. EQUIPMENT ON SUB NETWORKS ARE TO BE GROUPED BY EQUIPMENT WITH SIMILAR BAUD RATES AND NETWORK REQUIREMENTS (FOR EXAMPLE, GROUP CHILLERS ON ONE SUB NETWORK, METERS ON ANOTHER, VFD'S ON ANOTHER, AND SO ON). THE CHILLED WATER, CONDENSER WATER, AND HEATING WATER SYSTEM CONTROLLERS SHALL BE CAPABLE OF OPERATING EVEN WHEN THE CONNECTION TO THE SERVER IS DOWN. ALL CRITICAL FUNCTION SHALL REPORT TO THE SAME CONTROLLER, AND BE ON EMERGENCY POWER WITH A UPS SO THAT THE PLANT CAN CONTINUE TO OPERATE IF POSSIBLE AND SHALL RECOVER AS FAST AS POSSIBLE FROM A INTERRUPTION OF THE NETWORK.
9. EXISTING DATA DROP FOR EXISTING BUILDING CONTROLLERS AND EQUIPMENT. ATC CONTRACTOR SHALL OBTAIN ALL REQUIRED INFORMATION FROM THE EXISTING CONTROLLERS TO ACHIEVE THE INDICATED CRITICAL ZONE RESET STRATEGIES INDICATED IN THE BAS UPGRADE PROJECT AND IN THE PLANT CONTROL STRATEGIES OF THE PLANT PROJECTS.
10. OWNER TO PROVIDE ONE NEW OPERATOR WORKSTATION FOR THE PLANT OPERATORS AND ONE NEW OPERATOR WORKSTATION FOR THE HVAC SHOP. COORDINATE REQUIREMENTS OF THE COMPUTER WITH THE OWNER.
11. MAIN PLANT CONTROL CABINET SHALL HAVE A DATA DROP FROM THE CAMPUS BAS NETWORK FOR SERVICE, PROVIDED BY DIVISION 27.
12. REMOTE ACCESS CAPABILITY TO BE PROVIDED FOR PERSONNEL AS IDENTIFIED BY THE MANAGEMENT. COORDINATE REMOTE ACCESS WITH I.T. DEPARTMENT.
13. DIVISION 25 TO COORDINATE THE INCLUSION OF EXISTING BAS SYSTEM CONTROLLERS INTO THIS NEW BAS SYSTEM. THE EXISTING SYSTEMS ARE TO BE INTEGRATED TO FOR CONTROL AND MONITORING AND OPERATORS ARE TO BE PROVIDED WITH CONSISTENT GRAPHICS.

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
REVIEWED FOR CODE COMPLIANCE
mmurphy 07/20/2022

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05/05/22
ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

SHEET TITLE:
BUILDING AUTOMATION RISER DIAGRAM

SHEET NUMBER:
ATC1005

CHW DASHBOARD

DESIGNATION	COMMAND / STATUS	ALARMS	CHW FLOW SETPOINT (GPM)	CHW FLOW (GPM)	CHW EWT (°F)	CHW LWT (°F)	CHW PUMP SPEED COMMAND (%)	CHW PUMP SPEED (%)	QUEUE	KW/TON	KW	TON	DP (PSI)	DP SETPOINT (PSI)	CHW APPROACH (PSI)	TW APPROACH (PSI)
ACC-1	- / -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ACC-2	- / -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PLANT			-	-	-	-				-	-	-	-	-	-	-
TOTAL			-	-	-	-				-	-	-				

CHW DASHBOARD

DESIGNATION	COMMAND / STATUS	ALARMS	CHW FLOW SETPOINT (GPM)	CHW FLOW (GPM)	CHW EWT (°F)	CHW LWT (°F)	CHW P1 SPEED COMMAND (%)	CHW P1 SPEED (%)	CHW P2 SPEED COMMAND (%)	CHW P2 SPEED (%)	KW/TON	KW	TON	DP (PSI)	DP SETPOINT (PSI)	CHW APPROACH (PSI)	QUEUE
ACC-1	- / -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ACC-2	- / -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PLANT			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL			-	-	-	-											

HW DASHBOARD

DESIGNATION	COMMAND / STATUS	ALARMS	HW FLOW SETPOINT (GPM)	HW FLOW (GPM)	HW EWT (°F)	HW LWT (°F)	HW PUMP SPEED COMMAND (%)	HW PUMP SPEED (%)	KW/TON	KW	TON	DP (PSI)	DP SETPOINT (PSI)
BOILER-1	-	-	-	-	-	-	-	-	-	-	-	-	-
BOILER-2	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-	-	-	-	-	-

1 SYSTEM DASHBOARD

CRITICAL SPACES DASHBOARD

DESIGNATION	AHU	SPACE TEMPERATURE (°F)	SPACE TEMPERATURE SETPOINT (°F)	RH MIN (%RH)	RH (%RH)	RH MAX (%RH)	HUMIDIFIER COMMAND	OCC / UNOCC STATUS	REHEAT COMMAND	ACH's	SUPPLY AIRFLOW	SUPPLY AIRFLOW SETPOINT	ROOM PRESSURE
LAB SPACE	AHU-3	-	-	-	-	-	-	-	-	-	-	-	-
LAB SPACE	AHU-2	-	-	-	-	-	-	-	-	-	-	-	-
LAB SPACE	AHU-1	-	-	-	-	-	-	-	-	-	-	-	-

2 CRITICAL ZONES DASHBOARD

GENERAL NOTES:

1. GRAPHICS SHALL INCLUDE A DASHBOARD SIMILAR TO THAT SHOWN ON THIS SHEET.
2. GRAPHICS SHALL INCLUDE A FORM OF METERING DISPLAY WITH SET POINTS, MAXIMUM AND MINIMUM VALUES, RANGE INDICATIONS AND WARNINGS. ACTUAL MEASURED VALUES AND SET POINTS SHALL ALSO BE DISPLAYED.
3. DASHBOARD SHALL BE LINKED TO THE FACILITY FRONT END GRAPHIC AND TO PLANT GRAPHICS.
4. DIVISION 25 IS NOT LIMITED TO THE GAUGES AND TABLES INDICATED HERE. THESE ARE PROVIDED TO CONVEY THE MINIMUM LEVEL OF DETAIL EXPECTED. IF DIVISION 25 PREFERS DIFFERENT GRAPHICS AND MEANS OF CONVEYING INFORMATION, THIS CAN BE COORDINATED WITH THE ENGINEER OF RECORD AND OWNER.
5. DASHBOARD GRAPHICS SHALL INCLUDE LINKS TO OTHER SUMMARY TABLES AND GRAPHICS.
6. THE DASHBOARD WILL REQUIRE CALCULATIONS. WHERE NOT INHERENTLY IMPLIED, EQUATIONS SHALL BE PROVIDED BY THE EOR TO THE ATC CONTRACTOR TO BE IMPLEMENTED TO INDICATE ACCEPTABLE RANGES OF ENERGY USAGE AND ACCEPTABLE BUILDING LOADS, DAILY USAGE, SCORES, ETC.

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TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

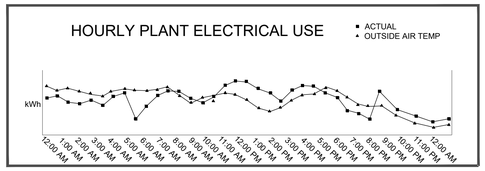
SHEET TITLE:

BUILDING CONTROL DASHBOARD

SHEET NUMBER:

ATC1006

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
REVIEWED FOR CODE COMPLIANCE
mmurphy 07/20/2022



2 HOURLY UTILITY SUMMARY
NOT TO SCALE

GENERAL NOTES:

1. THE SCHEDULES ON THIS PAGE ARE TO PROVIDE AND EXAMPLE OF WHAT AN EQUIPMENT SUMMARY SCHEDULE SHOULD CONVEY ON THE BAS GRAPHICS. THIS IS NOT AN EQUIPMENT SCHEDULE FOR THE SELECTION AND PURCHASE OF EQUIPMENT.
2. BAS GRAPHICS SHALL INCLUDE EQUIPMENT SUMMARIES FOR THE ENTIRE BUILDING / CAMPUS.
2. SUMMARIES SHALL INDICATE THE SYSTEM SERVED BY THE EQUIPMENT.
3. OPERATORS WITH APPROPRIATE CLEARANCE SHALL BE CAPABLE OF CHANGING THE AIR FLOWS AND SET POINTS FROM THE SUMMARY TABLE.
4. DIVISION 23 TO ASSIGN AIR FLOWS TO SUPPLY TERMINALS BASED ON ROOM VENTILATION SCHEDULE.
5. OVERRIDDEN VALUES SHALL BE HIGHLIGHTED PURPLE OR THE TEXT COLOR SHALL CHANGE TO INDICATE VALUES HAVE BEEN OVERRIDDEN.
6. EQUIPMENT IN ALARM SHALL BE HIGHLIGHTED RED OR THE TEXT SHALL TURN RED TO INDICATE AN ALARM.
7. IDENTIFY ALL ALARMS ASSOCIATED WITH EACH PIECE OF EQUIPMENT. A GENERAL ALARM STATUS CAN BE DISPLAYED AND SPECIFIC ALARMS CAN BE VIEWED BY CLICKING ON THE ALARM STATUS FOR THAT BOX.
8. REPORTS ARE NOT AN ACCEPTABLE FORM OF SYSTEM SUMMARIES. REPORTS SHALL CONTAIN LIVE DATA.
9. SCHEDULE COLUMNS SHALL BE CAPABLE OF BEING TOGGLED ON AND OFF.
10. ALL EQUIPMENT SHALL BE CAPABLE OF BEING EXCLUDED FROM ANY INDIVIDUAL RESET CALCULATION.
11. GRAPHICS SHALL INCLUDE A SUMMARY TABLE SIMILAR TO THAT SHOWN. THIS PROJECT MAY REQUIRE ADDITIONAL ROWS, COLUMNS, GRAPHICS, AND CALCULATIONS TO BE INCORPORATED (CONTROL LOOP OUTPUTS, BUILDINGS, ETC).
12. PROVIDE LINKS TO AND FROM BUILDING FLOOR GRAPHICS AND SYSTEM GRAPHICS.
13. TABLES INDICATED HERE ARE PROVIDED TO CONVEY THE MINIMUM LEVEL OF DETAIL EXPECTED.
14. TERMINAL SUMMARY SCHEDULES SHALL BE PROVIDED PER AIR HANDLING UNIT.
15. DESIGNATIONS SHALL SERVE AS A LINK TO A GRAPHIC FOR THAT PIECE OF EQUIPMENT.

CHILLED WATER SYSTEM SUMMARY SCHEDULE

DESIGNATION	AREA SERVED	ACTIVE DAT SET POINT (°F)	DAT (°F)	PRESSURE RESET INCLUDE / EXCLUDE	CHW VALVE COMMAND	CHW VALVE POSITION	UNIT ON / OFF STATUS	ALARMS
AHU- # # #	AREA ###	-	-	☑	-	-	-	-
FCCO- # # #	AREA ###	-	-	☑	-	-	-	-
FCU- # # #	AREA ###	-	-	☑	-	-	-	-
CRAC- # # #	AREA ###	-	-	☑	-	-	-	-
					MIN. / MAX.			
					- / -			

PLANT SUPPLY TEMP SET POINT(°F)	-	PLANT RETURN TEMPERATURE (°F)	-
PLANT SUPPLY TEMPERATURE (°F)	-		

HEATING WATER SYSTEM SUMMARY SCHEDULE

DESIGNATION	AREA SERVED	ACTIVE DAT SET POINT (°F)	DAT (°F)	PRESSURE RESET INCLUDE / EXCLUDE	HW VALVE COMMAND	HW VALVE POSITION	UNIT ON / OFF STATUS	ALARMS
AHU- # # #	AREA ###	-	-	☑	-	-	-	-
FCU- # # #	AREA ###	-	-	☑	-	-	-	-
VVST- # # #	AREA ###	-	-	☑	-	-	-	-
					MIN. / MAX.			
					- / -			

PLANT SUPPLY TEMP SET POINT(°F)	-	PLANT RETURN TEMPERATURE (°F)	-
PLANT SUPPLY TEMPERATURE (°F)	-		

TERMINAL SUMMARY SCHEDULE (PER AHU)

DESIGNATION	AHU SERVED	AREA SERVED	SPACE TEMP CONTROL LOOPOUT	MIN SPACE SETP.	MAX SPACE SETP.	ACTIVE SPACE TEMP. SET POINT	SPACE TEMP	DAT	MAX SAT DIFF. SET POINT	MAX RELATIVE HUMIDITY SET POINT	RELATIVE HUMIDITY	AIR FLOW	ACTIVE AIR FLOW SET POINT	TERMINAL DAMPER POSITION	STATIC PRESSURE SETP. RESET	COOLING COIL TEMP. RESET	HW PRESSURE. SETP. RESET	HW TEMP. RESET	HEATING VALVE POSITION	COOLING AIRFLOW				HEATING AIRFLOW				OCCUPANCY					ALARMS
																				OCC.		UNOC.		OCC.		UNOC.						
																				MIN.	MAX	MIN.	MAX	MIN.	MAX	MIN.	MAX	SCHED	SWITCH	SENSOR	OVERRIDE	STATUS	
VVST- # # #	AHU- # # #	AREA ###	-	-	-	-	-	-	-	-	-	-	-	-	☑	☑	☑	☑	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CVST- # # #	AHU- # # #	AREA ###	-	-	-	-	-	-	-	-	-	-	-	-	☑	☑	☑	☑	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VVRT- # # #	AHU- # # #	AREA ###	-	-	-	-	-	-	-	-	-	-	-	-	☑	☑	☑	☑	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CVRT- # # #	AHU- # # #	AREA ###	-	-	-	-	-	-	-	-	-	-	-	-	☑	☑	☑	☑	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VVET- # # #	AHU- # # #	AREA ###	-	-	-	-	-	-	-	-	-	-	-	-	☑	☑	☑	☑	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CVET- # # #	AHU- # # #	AREA ###	-	-	-	-	-	-	-	-	-	-	-	-	☑	☑	☑	☑	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SUMMARY			MIN. / MAX. - / -									TOTAL -	TOTAL -	MIN. / MAX. - / -					MIN. / MAX. - / -													

AHU DAT SETP	-	SA STATIC SETP	-	RA RH	-
AHU DAT	-	SA STATIC	-		

1 BUILDING EQUIPMENT SUMMARY SCHEDULE EXAMPLE

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(COA #3930)

ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

SHEET TITLE:
BUILDING CONTROL DASHBOARD 2

SHEET NUMBER:
ATC1007

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications comply with the applicable laws of the State of Louisiana and the ordinances of the City of New Orleans governing code edition, as amended. Approval of these plans and specifications does not relieve the owner, contractor, or their agents complying with the code during the construction, alteration, or demolition of the building.
Approval is based solely on the information provided and any omissions or conflicts in the documents may be subject to the requirements of Safety and Permits and applicable codes.
Work shall not be performed from plans and shall not be performed until all required permits have been purchased and posted at the jobsite. Plans shall be kept at the jobsite and shall be made available for inspection at the request of any authorized representative of the City of New Orleans.
RENEWABLE PACKAGE COMPLIANCE
mxmurphy 07/20/2022

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
S	SINGLE POLE SWITCH
SM	MANUAL MOTOR STARTER WITH OVERLOADS, TOGGLE OPERATED
WP/GFI	DUPLEX RECEPTACLE - GROUND FAULT INTERRUPTING AND WEATHER-PROOF TYPES AS INDICATED ON PLANS
DD S	FIRE ALARM DUCT DETECTOR (S = SUPPLY)
ACR	FIRE ALARM ADDRESSABLE CONTROL RELAY
J	JUNCTION BOX - CEILING MOUNTED
J	JUNCTION BOX - WALL/SURFACE MOUNTED
	NON-FUSED DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
	COMBINATION MOTOR STARTER AND DISCONNECT SWITCH
	DISCONNECT SWITCH PROVIDED WITH EQUIPMENT
	MOTOR STARTER
	ENCLOSED CIRCUIT BREAKER
	VARIABLE FREQUENCY DRIVE (BY MECHANICAL)
	SURFACE MOUNTED PANELBOARD
	WALL/UNISTRUT MOUNTED ELECTRICAL EQUIPMENT
	PAD MOUNTED ELECTRICAL EQUIPMENT
	UTILITY STRIP LIGHT FIXTURE - CHAIN OR SURFACE MOUNTED
	EXTERIOR WALL PACK LIGHT FIXTURE - WALL MOUNTED
	EMERGENCY POWER OFF PUSHBUTTON
	BRANCH CIRCUIT HOMERUN - PANEL & CIRCUIT NUMBER INDICATED
	EMERGENCY CIRCUIT IN CONDUIT
AFF AFG WP	ABOVE FINISHED FLOOR ABOVE FINISHED GRADE WEATHER PROOF

GENERAL ELECTRICAL DEMOLITION NOTES:

1. ALL SALVAGEABLE ITEMS SUCH AS LIGHT FIXTURES, SURVEILLANCE & SECURITY EQUIPMENT, DATA RACKS & EQUIPMENT, FIRE ALARM DEVICES, ETC. THAT ARE NOT TO BE REUSED SHALL BE TURNED OVER TO THE OWNER.
2. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER AS TO CONSTRUCTION SCHEDULING, SERVICE INTERRUPTIONS, AND ACCESS TO WORK AREAS A MINIMUM OF (3) DAYS PRIOR TO WORK.
3. ALL EXISTING BRANCH CIRCUITS NOT RE-USED SHALL BE REMOVED BACK TO PANEL. THE CIRCUIT BREAKERS SHALL BE LABELED AS SPARE AND EXISTING CONDUIT SHALL REMAIN FROM PANEL TO ABOVE ACCESSIBLE CEILING SPACE.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION IN AREAS OF RENOVATION. ALL WIRING DEVICES, LIGHT FIXTURES, WIRE, AND CONDUIT THAT ARE TO BE REMOVED SHALL BE STORED, AS DIRECTED BY THE OWNER, OR RELOCATED AS SHOWN ON THE NEW FLOOR PLANS.
5. APPROPRIATE MEASURES SHALL BE TAKEN TO ASSURE CONTINUITY OF EXISTING CIRCUITS WHERE REQUIRED AND ALL RESULTING OUTAGES SHALL BE COORDINATED WITH THE OWNER PRIOR TO THE WORK. SOME AREAS WILL REMAIN UN-RENOVATED.
6. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH OWNER WHEN REQUIRED TO TURN OFF AND LOCKOUT POWER TO EQUIPMENT THAT IS BEING DEMOLISHED AND/OR MODIFIED. ACCURATE RECORDS OF ALL FACILITY CHANGES SHALL BE DOCUMENTED AND FURNISHED TO OWNER AND ENGINEER OF RECORD.
7. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR UPDATING SCHEDULES IN ALL ELECTRICAL PANELS THAT ARE AFFECTED BY THIS WORK. UPDATED SCHEDULES ARE TO BE TYPEWRITTEN.

GENERAL ELECTRICAL NOTES

1. EACH CIRCUIT SHALL HAVE AN EQUIPMENT GROUNDING CONDUCTOR, AND MULTI-WIRE CIRCUITS OF DIFFERENT PHASES MAY SHARE EQUIPMENT GROUND CONDUCTOR. EQUIPMENT GROUND CONDUCTOR SIZE SHALL NOT BE LESS THAN #12 AWG OR AS INDICATED ON THE DRAWINGS.
2. ALL CONDUCTORS #10 AND SMALLER SHALL BE SOLID COPPER, AND ALL CONDUCTORS #8 AND LARGER SHALL BE STRANDED COPPER USING BOLTED LUGS AT TERMINALS.
3. MINIMUM CONDUIT SIZE SHALL BE 3/4" UNLESS OTHERWISE NOTED.
4. ALL WIRING DEVICES SHALL BE INSTALLED PLUMB, SQUARE, AND TRUE; AND ALL DEVICES INSTALLED AT A SINGLE LOCATION SHALL BE ALIGNED.
5. MINIMUM WIRE SIZE SHALL BE #12 AWG UNLESS OTHERWISE SPECIFIED.
6. ALL WORK SHALL COMPLY WITH THE 2014 EDITION OF THE NATIONAL ELECTRICAL CODE.
7. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR UPDATING SCHEDULES IN ALL ELECTRICAL PANELS THAT ARE AFFECTED BY THIS WORK. UPDATED SCHEDULES ARE TO BE TYPEWRITTEN.
8. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR MARKING ALL SWITCHES, RECEPTACLES, AND FIXED EQUIPMENT WITH THE BRANCH CIRCUIT PANEL NAME AND NUMBER SERVING EACH DEVICE.
9. ALL CONDUIT SHALL BE INSTALLED AS HIGH AS POSSIBLE (MOUNT TO BOTTOM OF STRUCTURE) TO AVOID CONFLICTS WITH DUCTWORK AND PIPING. THE ELECTRICAL CONTRACTOR SHALL COORDINATE INSTALLATION WITH THE MECHANICAL CONTRACTOR.
10. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER AS TO CONSTRUCTION SCHEDULING, SERVICE INTERRUPTIONS, AND ACCESS TO WORK AREAS A MINIMUM OF (3) DAYS PRIOR TO WORK.
11. ALL CONDUITS IN FINISHED AREAS SHALL BE CONCEALED IN HUNG CEILINGS, CONCEALED IN FURRED WALLS, OR INSTALLED INTO EXISTING WALLS TO REMAIN.
12. ON THREE PHASE, FOUR WIRE SYSTEMS, DO NOT USE A COMMON NEUTRAL FOR BRANCH CIRCUIT FEEDERS.
13. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO COORDINATE WITH ALL TRADES PRIOR TO BIDDING AND CONSTRUCTION. A COMPLETE SET OF DRAWINGS SHOULD BE REVIEWED TO ADEQUATELY UNDERSTAND THE SCOPE OF WORK.
14. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR WORK REQUIRED OUTSIDE THE PROJECT BOUNDARY TO ENSURE ADJACENT SERVICES REMAIN ENERGIZED DURING RENOVATIONS.
15. THE CONTRACTOR SHALL BE RESPONSIBLE TO CLOSELY COORDINATE ROUGH-IN REQUIREMENTS AND MOUNTING HEIGHTS WITH OWNER'S VENDOR OF CHOICE FOR OWNER SUPPLIED SYSTEMS.
16. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH OWNER PRIOR TO ANY REQUIRED CORE-DRILLING.
17. EXISTING CONDITIONS IN KEYED NOTES DEFINED. CONTRACTOR TO CONFIRM THAT THE VISIBLE EXISTING RACEWAYS, CONDUCTORS, AND BOXES PERTAINING TO THE WORK, MEET THE MINIMAL NEC REQUIREMENTS. IF DEFICIENCIES EXIST, REPORT TO ENGINEER OF RECORD.

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(COA #3930)

STATE OF LOUISIANA
TRENTON PAUL CHEVRON
No. 36287 CERTIFIED
PROFESSIONAL ENGINEER
IN
ELECTRICAL ENGINEERING
5/5/22
ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

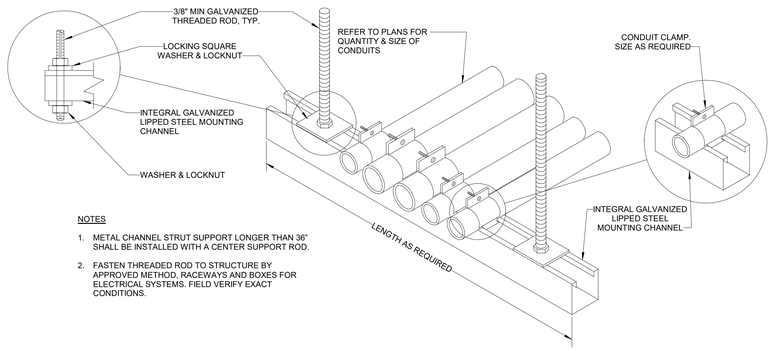
SHEET TITLE:

LEGEND AND GENERAL NOTES - ELECTRICAL

SHEET NUMBER:

E1000

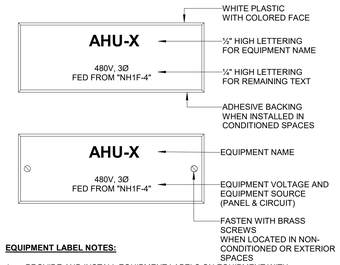
FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications have been examined and no evidence of violation of the Comprehensive Zoning Ordinance or the Building Code or other ordinances has been noted. This review is only for general conformance with the design concept of the project and does not include detailed technical calculations. Field verification and final inspection upon completion of the work is required before any structure may be occupied.
Approval is not to be construed that a permit for or an occupancy certificate has been issued. A permit for the work shall not be issued unless all necessary approvals have been secured and are in force. A building permit shall be required before any work is commenced.
It is the applicant's responsibility to obtain all necessary permits and to notify the appropriate inspection district office 48 hours before commencing work.
Approval of these plans does not include approval of any signage.
REVIEWED FOR CODE COMPLIANCE
07/20/2022
mmurphy



NOTES

1. METAL CHANNEL STRUT SUPPORT LONGER THAN 36" SHALL BE INSTALLED WITH A CENTER SUPPORT ROD.
2. FASTEN THREADED ROD TO STRUCTURE BY APPROVED METHOD. RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS. FIELD VERIFY EXACT CONDITIONS.

1 CONDUIT TRAPEZE MOUNTING DETAIL
NOT TO SCALE

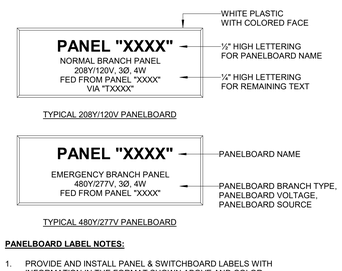


EQUIPMENT LABEL NOTES:

1. PROVIDE AND INSTALL EQUIPMENT LABELS ON EQUIPMENT WITH INFORMATION IN THE FORMAT SHOWN ABOVE AND COLOR CODED AS THE FOLLOWING:

   NORMAL BRANCH: BLACK
   EMERGENCY BRANCH: RED

2 EQUIPMENT LABEL DETAIL
NOT TO SCALE



PANELBOARD LABEL NOTES:

1. PROVIDE AND INSTALL PANEL & SWITCHBOARD LABELS WITH INFORMATION IN THE FORMAT SHOWN ABOVE AND COLOR CODED AS THE FOLLOWING:

   NORMAL BRANCH: BLACK
   EMERGENCY BRANCH: RED

3 PANELBOARD LABEL DETAIL
NOT TO SCALE

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STATE OF LOUISIANA
TRENTON PAUL CHEVRON
#34 REGISTERED LICENSED
PROFESSIONAL ENGINEER
IN
ELECTRICAL ENGINEERING
5/5/22
ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

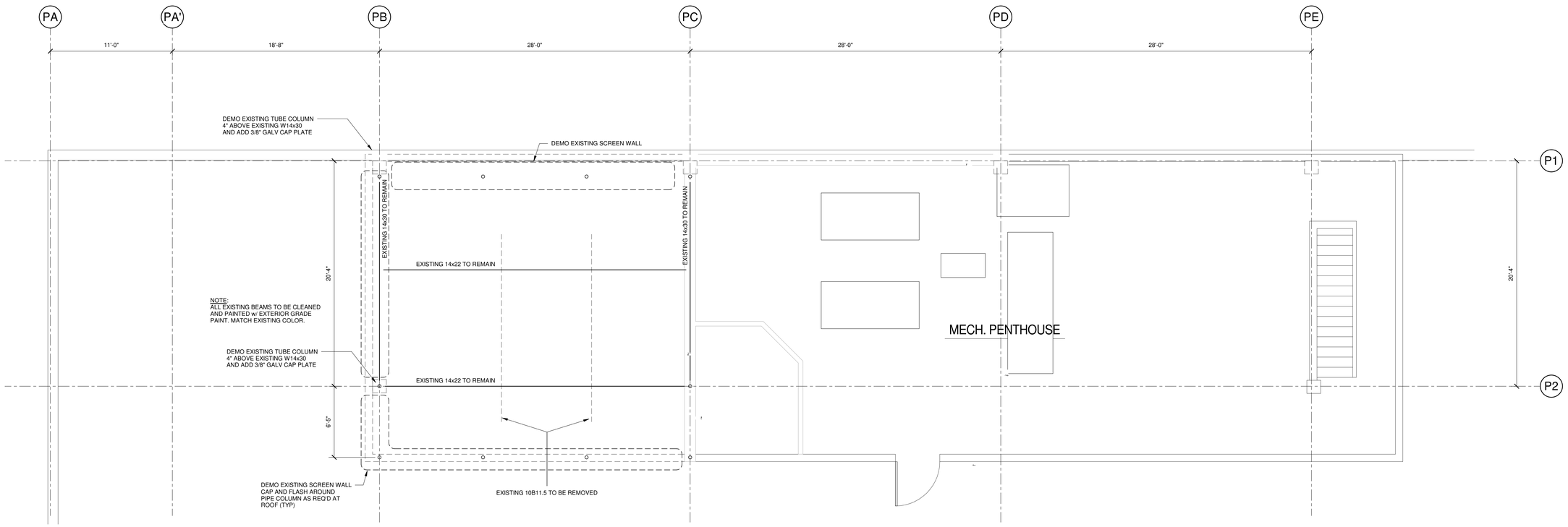
MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

SHEET TITLE:
DETAILS - ELECTRICAL

SHEET NUMBER:
E1010

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications have been examined and no evidence of violation of the Comprehensive Zoning Ordinance of New Orleans or the Code of Ordinances has been found. This review is arranged to secure the owner the benefits of the Chapter 5 of the Code of Ordinances and shall not relieve owner or lessee from full responsibility to comply with requirements of this Code or any other applicable laws.
Approval of this or revisions from approved plans must be obtained before any work is done which is not in accordance with the approved plans. Approved plans have been examined and found to comply with the Code.
Work which is specified in these approved drawings is not to be concealed before it has been inspected and approved by the Building Inspector.
Approved: Not Approved:
Date:
REVIEWED FOR CODE COMPLIANCE
mnmurphy 07/20/2022



1 PERDIDO - PENTHOUSE - TOWER WATER - STRUCTURAL DEMOLITION
1/4" = 1'-0"

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ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

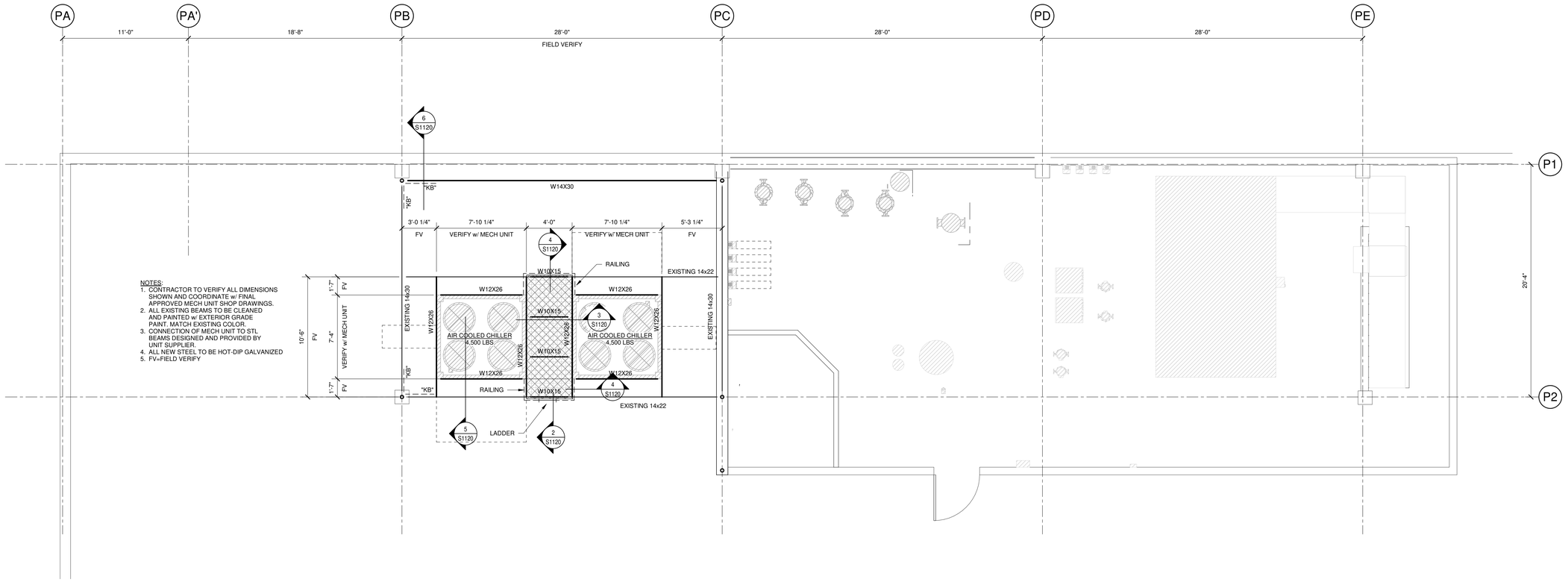
MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	77-16-0005

SHEET TITLE:
PERDIDO - CHILLED WATER - STRUCTURAL DEMOLITION

SHEET NUMBER:
S1110

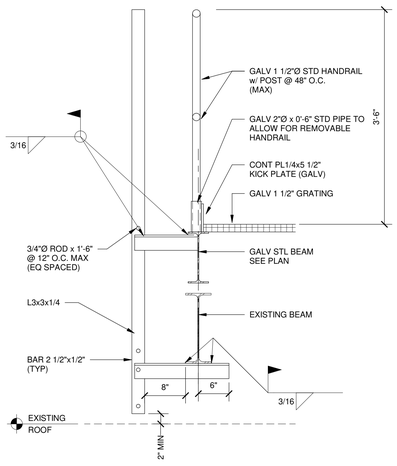
FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
REVIEWED FOR CODE COMPLIANCE
mmurphy 07/20/2022



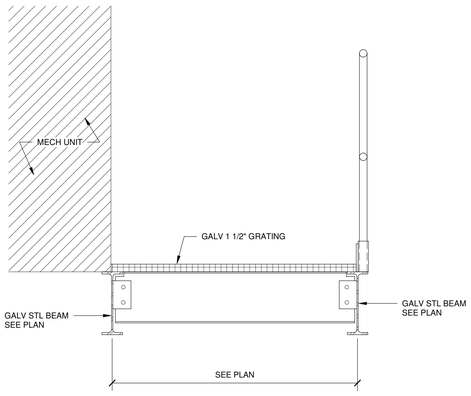
NOTES:
1. CONTRACTOR TO VERIFY ALL DIMENSIONS SHOWN AND COORDINATE w/ FINAL APPROVED MECH UNIT SHOP DRAWINGS.
2. ALL EXISTING BEAMS TO BE CLEANED AND PAINTED w/ EXTERIOR GRADE PAINT, MATCH EXISTING COLOR.
3. CONNECTION OF MECH UNIT TO STL BEAMS DESIGNED AND PROVIDED BY UNIT SUPPLIER.
4. ALL NEW STEEL TO BE HOT-DIP GALVANIZED
5. FV=FIELD VERIFY

1 PERDIDO - PENTHOUSE - CHILLED WATER - STRUCTURAL
1/4" = 1'-0"

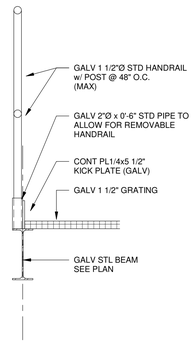
NOTES:
1. ALL STEEL TO BE HOT-DIP GALVANIZED
2. GALV STL GRATING 1 1/2"X3/16" BTNG BARS @ 1 3/16" O.C. w/ CROSS BARS @ 4" O.C. OR APPROVED EQUAL
3. GRATING TO BE BANDED ON ALL FOUR SIDES.
4. SADDLE CLIPS, ANCHOR CLIPS, WELD LUGS OR APPROVED EQUAL MAY BE USED FOR INSTALLATION WHERE GRATING IS SUBJECT TO REMOVAL. DO NOT WELD GRATING TO SUPPORTS.
5. CONTRACTOR TO FIELD VERIFY MECH UNIT SIZE BEFORE PLACING STEEL TO ASSURE PROPER LOCATION OF STEEL MEMBERS.



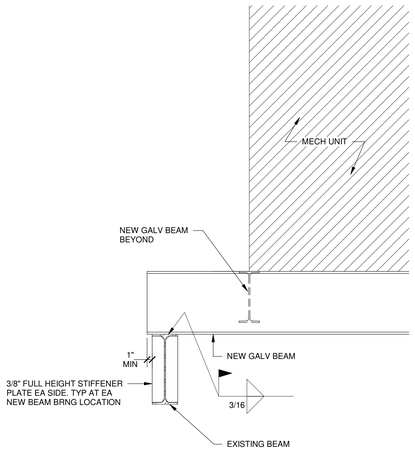
2 SECTION AT LADDER
1" = 1'-0"



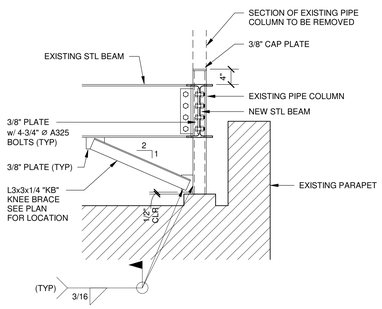
3 SECTION AT CATWALK
1" = 1'-0"



4 SECTION AT RAILING
1" = 1'-0"



5 SECTION AT RAILING
1" = 1'-0"



6 SECTION AT BRACE
3/4" = 1'-0"

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ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	77-16-0005

SHEET TITLE:
PERDIDO - CHILLED WATER - STRUCTURAL

SHEET NUMBER:
S1120

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
REVIEWED FOR CODE COMPLIANCE
mmurphy 07/20/2022

AIR-COOLED CHILLER SCHEDULE - PRE-PURCHASED; CONTRACTOR INSTALLED

DESIGNATION	REFERENCE PRODUCT	LOCATION	TOTAL CAPACITY (TONS)	OPERATING WEIGHT (LBS)	REFRIGERANT TYPE	REFRIGERANT QUANTITY (LBS)	EER	IPLV	EVAPORATOR									CONDENSER DESIGN AMBIENT TEMP. (DEGREE F)	PRIMARY ELECTRICAL CONNECTION				OVERALL LENGTH (IN)	OVERALL WIDTH (IN)	OVERALL HEIGHT (IN)	REMARKS
									DESIGN WATER FLOW RATE (GPM)	MIN. WATER FLOW RATE (GPM)	MAX. WATER FLOW RATE (GPM)	WATER EWT / LWT (DEGREE F)	DESIGN PRESSURE DROP (FT. WATER)	MIN PRESSURE DROP (FT. WATER)	MAX PRESSURE DROP (FT. WATER)	NO. OF PASSES	FOULING FACTOR		TOTAL DEMAND (KW)	MIN CIRCUIT AMPACITY (MCA)	MAX OVERCURRENT PROTECTION (MOCP)	VOLTS / PHASE				
ACC-1-PER	CARRIER 30RB080	PERDIDO BUILDING - ROOF	80	4,267	R-410A	66	9.36	15.92	174	96	384	52/42	6.5	2.19	19.00	2	0.000100	95	95	161	175	460 / 3	95	89	90	PROVIDE VARIABLE SPEED CONDENSER FANS AND DRIVES, LOW SOUND KIT, INTEGRAL STRAINER AND FLANGE KIT, FACTORY MOUNTED THERMAL DISPERSION FLOW SWITCH AND LOUVERED COIL GUARDS, SINGLE POINT CONNECTION WITH INTEGRAL DISCONNECT SWITCH.
ACC-2-PER	CARRIER 30RB080	PERDIDO BUILDING - ROOF	80	4,267	R-410A	66	9.36	15.92	174	96	384	52/42	6.5	2.19	19.00	2	0.000100	95	95	161	175	460 / 3	95	89	90	PROVIDE VARIABLE SPEED CONDENSER FANS AND DRIVES, LOW SOUND KIT, INTEGRAL STRAINER AND FLANGE KIT, FACTORY MOUNTED THERMAL DISPERSION FLOW SWITCH AND LOUVERED COIL GUARDS, SINGLE POINT CONNECTION WITH INTEGRAL DISCONNECT SWITCH.

AIR & DIRT SEPARATORS

DESIGNATION	REFERENCE PRODUCT	LOCATION	SERVES	PIPE CONNECTION SIZE (INCHES)	MAXIMUM HEIGHT (INCHES)	MAXIMUM DIAMETER (INCHES)	MAXIMUM OPERATING WEIGHT (LBS)	MAXIMUM FLOW RATE (GPM)	MAXIMUM PRESSURE DROP (FT. WATER)	MAXIMUM VELOCITY (FT/SEC)	REMARKS
ADS-CHW-1-PER	TACO 4906 ADHR-150	ROOF TOP MECH ROOM	CHILLED WATER	6	57.5	20	1,250	384	10.0	11	HIGH VELOCITY COALESCING MEDIA AIR/DIRT SEPARATOR, 150-PSIG WORKING PRESSURE, AUTO AIR VENT, DRAIN VALVE, ANSI 150# RF, REMOVABLE HEAD, PROVIDED WITH BASE RING.

EXPANSION TANK SCHEDULE

DESIGNATION	REFERENCE PRODUCT	LOCATION	SERVES	TYPE	SYSTEM FLUID	SYSTEM VOLUME (GALLONS)	MINIMUM TEMPERATURE (DEGREE F)	MAXIMUM TEMPERATURE (DEGREE F)	INITIAL TANK AIR PRESSURE (PSIG)	MAXIMUM PRESSURE (PSIG)	MINIMUM TANK SIZE (GALLONS)	MINIMUM ACCEPTANCE (GALLONS)	TANK DIAMETER (INCHES)	TANK HEIGHT/LENGTH (INCHES)	MAXIMUM OPERATING WEIGHT (LBS)	REMARKS
ET-CHW-1-PER	TACO CA90-125	MECHANICAL PENTHOUSE	CHILLED WATER	VERTICAL FULL ACCEPTANCE BLADDER TYPE	WATER	400	40	80	15	60	23	23	20	29.125	310	FLOOR MOUNTED, FULL ACCEPTANCE, ASME RATED 125-PSI

PUMP SCHEDULE

DESIGNATION	REFERENCE PRODUCT	LOCATION	SERVES	TYPE	WATER FLOW RATE (GPM)	TOTAL HEAD (FT. WATER)	ROTATION (RPM)	MINIMUM EFFICIENCY (%)	MOTOR SIZE		ELECTRICAL		REMARKS
									BHP	MHP	VOLTS	PHASE	
PMP-CHW-P1-PER	TACO KS3009D	PERDIDO MECHANICAL PENTHOUSE	ACC-1-PER	VERTICAL IN-LINE	192	35	1,160	79	2.2	3	480	3	STAINLESS STEEL TYPE 416 PUMP SHAFT; BRONZE OR STAINLESS STEEL FITTED CONSTRUCTION; WEAR RING; OSHA GUARD; NON-OVERLOADING / PREMIUM EFF. (NEMA 12.12) INVERTER READY MOTOR WITH CLASS F INSULATION; SHAFT GROUNDING RING; OUTSIDE BALANCED SEAL; SEAL FLUSH LINES WITH FILTER; SUCTION DIFFUSER. PROVIDE WITH PUMP STANCHION
PMP-CHW-P2-PER	TACO KS3009D	PERDIDO MECHANICAL PENTHOUSE	ACC-2-PER	VERTICAL IN-LINE	192	35	1,160	79	2.2	3	480	3	STAINLESS STEEL TYPE 416 PUMP SHAFT; BRONZE OR STAINLESS STEEL FITTED CONSTRUCTION; WEAR RING; OSHA GUARD; NON-OVERLOADING / PREMIUM EFF. (NEMA 12.12) INVERTER READY MOTOR WITH CLASS F INSULATION; SHAFT GROUNDING RING; OUTSIDE BALANCED SEAL; SEAL FLUSH LINES WITH FILTER; SUCTION DIFFUSER. PROVIDE WITH PUMP STANCHION
PMP-CHW-S1-PER	TACO KS3013D	PERDIDO MECHANICAL PENTHOUSE	PER CHILLED WATER SYSTEM	VERTICAL IN-LINE	192	65	1,160	76	3.8	7.5	480	3	STAINLESS STEEL TYPE 416 PUMP SHAFT; BRONZE OR STAINLESS STEEL FITTED CONSTRUCTION; WEAR RING; OSHA GUARD; NON-OVERLOADING / PREMIUM EFF. (NEMA 12.12) INVERTER READY MOTOR WITH CLASS F INSULATION; SHAFT GROUNDING RING; OUTSIDE BALANCED SEAL; SEAL FLUSH LINES WITH FILTER; SUCTION DIFFUSER. PROVIDE WITH PUMP STANCHION
PMP-CHW-S2-PER	TACO KS3013D	PERDIDO MECHANICAL PENTHOUSE	PER CHILLED WATER SYSTEM	VERTICAL IN-LINE	192	65	1,160	76	3.8	7.5	480	3	STAINLESS STEEL TYPE 416 PUMP SHAFT; BRONZE OR STAINLESS STEEL FITTED CONSTRUCTION; WEAR RING; OSHA GUARD; NON-OVERLOADING / PREMIUM EFF. (NEMA 12.12) INVERTER READY MOTOR WITH CLASS F INSULATION; SHAFT GROUNDING RING; OUTSIDE BALANCED SEAL; SEAL FLUSH LINES WITH FILTER; SUCTION DIFFUSER. PROVIDE WITH PUMP STANCHION

FLOW METER SCHEDULE

DESIGNATION	REFERENCE PRODUCT	SERVES	TYPE	FLUID TYPE	METER SIZE (INCH)	LINE SIZE (INCH)	FLUID FLOW (GPM)	PRESSURE LOSS (PSID)	ACCURACY (%)	ELECTRICAL REQUIREMENTS	REMARKS
FM-CHW-PER	BADGER M2000	CHILLED WATER PERDIDO	INLINE ELECTROMAGNETIC	WATER	6	6	192	-	+/- 0.25%	120VAC / 30VA	JUNCTION BOX WITH REMOTE WALL MOUNT NEMA 4X AMPLIFIER, NSF LISTED, SS GROUNDING RINGS, 316-SS-MAGNETIC FLOW TUBE WITH HARD RUBBER LINER, CLASS 150 RF CAST STEEL FLANGE, ONE (1) PROGRAMMABLE/SCALABLE 4-20mA ANALOG SIGNAL OUTPUT, FOUR (4) TOTAL DIGITAL OUTPUTS.
FM-CHW-MU-PER	BADGER RECORDALL	CHILLED WATER MAKEUP WATER PER	NUTATING DISC / POSITIVE DISPLACEMENT	WATER	1	1	40	5	+/- 1.5%	24 VDC	MAX OPERATING PRESSURE 150-PSIG; LEAD-FREE BRONZE ALLOY BODY; POLYMER MEASURING CHAMBER & DISC; STAINLESS STEEL TRIM; HR-LCD PULSE SCALED REGISTER.

VARIABLE FREQUENCY DRIVE SCHEDULE

DESIGNATION	REFERENCE PRODUCT	LOCATION	SERVES	TYPE	ENCLOSURE	VFD BYPASS	MOTOR RATED HORSEPOWER	VFD RATED HORSEPOWER	EFFICIENCY (%)	VOLTS	PHASE	MAX. OUTPUT CURRENT (AMPS)	REMARKS
VFD-PMP-CHW-P1-PER	ABB ACH580	PERDIDO MECHANICAL PENTHOUSE	PMP-CHW-P1-PER	PWM - 6-PULSE	NEMA 1	NO	3	5	98	480	3	7.6	UL LISTED; CUSTOM NAMEPLATE; INTEGRAL 5% INPUT LINE REACTOR; INPUT DRIVE DISCONNECT; FULL TEXT KEYPAD; RFI/EMI NOISE FILTER; EMS BACNET COMMUNICATION INTERFACE; PROVIDE OUTPUT LINE REACTORS WHEN DRIVE IS MORE THAN 75' FROM MOTOR; DC BUS OVERVOLTAGE RELIEF; SYNCHRONOUS SPEED MATCHING.
VFD-PMP-CHW-P2-PER	ABB ACH580	PERDIDO MECHANICAL PENTHOUSE	PMP-CHW-P2-PER	PWM - 6-PULSE	NEMA 1	NO	3	5	98	480	3	7.6	UL LISTED; CUSTOM NAMEPLATE; INTEGRAL 5% INPUT LINE REACTOR; INPUT DRIVE DISCONNECT; FULL TEXT KEYPAD; RFI/EMI NOISE FILTER; EMS BACNET COMMUNICATION INTERFACE; PROVIDE OUTPUT LINE REACTORS WHEN DRIVE IS MORE THAN 75' FROM MOTOR; DC BUS OVERVOLTAGE RELIEF; SYNCHRONOUS SPEED MATCHING.
VFD-PMP-CHW-S1-PER	ABB ACH580	PERDIDO MECHANICAL PENTHOUSE	PMP-CHW-S1-PER	PWM - 6-PULSE	NEMA 1	NO	7.5	10	98	480	3	14	UL LISTED; CUSTOM NAMEPLATE; INTEGRAL 5% INPUT LINE REACTOR; INPUT DRIVE DISCONNECT; FULL TEXT KEYPAD; RFI/EMI NOISE FILTER; EMS BACNET COMMUNICATION INTERFACE; PROVIDE OUTPUT LINE REACTORS WHEN DRIVE IS MORE THAN 75' FROM MOTOR; DC BUS OVERVOLTAGE RELIEF; SYNCHRONOUS SPEED MATCHING.
VFD-PMP-CHW-S2-PER	ABB ACH580	PERDIDO MECHANICAL PENTHOUSE	PMP-CHW-S2-PER	PWM - 6-PULSE	NEMA 1	NO	7.5	10	98	480	3	14	UL LISTED; CUSTOM NAMEPLATE; INTEGRAL 5% INPUT LINE REACTOR; INPUT DRIVE DISCONNECT; FULL TEXT KEYPAD; RFI/EMI NOISE FILTER; EMS BACNET COMMUNICATION INTERFACE; PROVIDE OUTPUT LINE REACTORS WHEN DRIVE IS MORE THAN 75' FROM MOTOR; DC BUS OVERVOLTAGE RELIEF; SYNCHRONOUS SPEED MATCHING.

CONTROL VALVE SCHEDULE

DESIGNATION	REFERENCE PRODUCT	SERVES	VALVE TYPE	VALVE BODY	VALVE TRIM	ANSI PRESSURE CLASS	ANSI LEAKAGE CLASS	FLOW CHARACTERISTIC	RANGEABILITY	FLOW RATE (GPM)	CALCULATED CV	ACTION (NO, NC)	FAIL POSITION (OPEN, CLOSED, LAST)	MINIMUM CLOSE-OFF PRESSURE (PSID)	MAXIMUM DIFFERENTIAL PRESSURE FOR MODULATING CONTROL (PSID)	DESIGN DIFFERENTIAL PRESSURE (PSID)	VALVE SIZE (IN)	LINE SIZE (IN)	OPERATOR	REMARKS
CV-CHW-AHU-3-PER	VSI-SERIES V	AHU-3-PER	SEGMENTED BALL	CARBON STEEL	SS	150	VI	EQUAL PERCENTAGE	300:1	260	150	NC	CLOSED	50	50	3	3.0	4.0	ELECTRIC (24-V); POSITION INDICATOR; PROPORTIONAL CONTROL SIGNAL (4-20mA); POSITION FEEDBACK SIGNAL (4-20mA)	200-PSI COLD WORKING PRESSURE.
CV-CHW-ACC-1-PER	VSI-SERIES V	ACC-1 PERDIDO	SEGMENTED BALL	CARBON STEEL	SS	150	VI	EQUAL PERCENTAGE	300:1	192	111	NC	LAST	50	50	3	4.0	4.0	ELECTRIC (24-V); POSITION INDICATOR; PROPORTIONAL CONTROL SIGNAL (4-20mA); POSITION FEEDBACK SIGNAL (4-20mA)	200-PSI COLD WORKING PRESSURE.
CV-CHW-ACC-2-PER	VSI-SERIES V	ACC-2 PERDIDO	SEGMENTED BALL	CARBON STEEL	SS	150	VI	EQUAL PERCENTAGE	300:1	192	111	NC	LAST	50	50	3	4.0	4.0	ELECTRIC (24-V); POSITION INDICATOR; PROPORTIONAL CONTROL SIGNAL (4-20mA); POSITION FEEDBACK SIGNAL (4-20mA)	200-PSI COLD WORKING PRESSURE.

PLUMBING PIPING SPECIALTIES SCHEDULE

DESIGNATION	FIXTURE	REFERENCE PRODUCT	LOCATION	SERVES	SIZE	DESCRIPTION
RPZ-MU-PER	REDUCED PRESSURE BACKFLOW PREVENTER	WILKINS 975XL	PERDIDO MECHANICAL PENTHOUSE	CHW & HW	1.5	ALL BRONZE CONSTRUCTION, REDUCED PRESSURE TYPE, COMPLETE WITH STRAINER, TEST COCKS, BALL VALVES, AND AIR GAP

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ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

ISSUE DATE: 05/05/22

PROJECT NUMBER: 70-16-0005

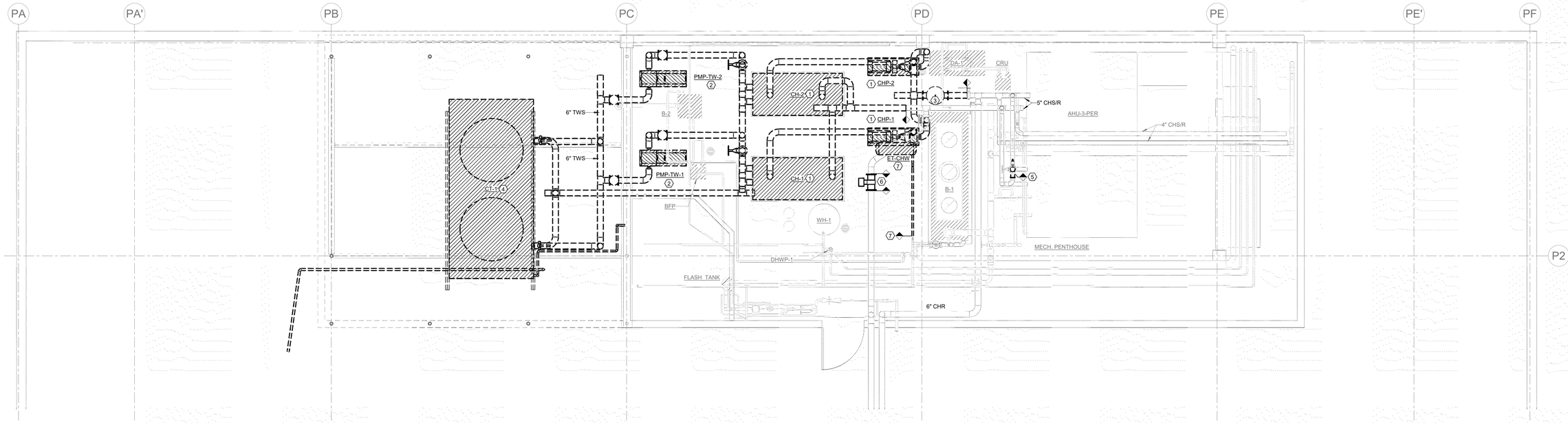
SHEET TITLE:

PERDIDO SCHEDULES - CHILLED WATER - MECHANICAL

SHEET NUMBER:

M1100

FINAL PERMIT RELEASE
DEPAR MENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans specifications have been examined and no evidence of deviation m the International Building Code (IBC), as amended by the City o ew Orleans, has been noted. This action is contingent upon inst tion and work complying with the code during the con uction and final inspection upon completion. [w Orleans Code Sections 26-14 and 26-15]
Any ch es to or deviation from approved plans must be immediatel ported to the Department of Safety and Permits and work mus op until the revised plans have been examined and approved.
Work beyo hat which is specified in these approved drawings is not authoriz Performing work beyond the scope of these plans is subject to Amendments to the International Building Code and/or revocation of the building permit.
Jay P. Dufour, AIA
Chief Plans Examiner
CITY OF NEW ORLEANS LOUISIANA
REVIEWED FOR CODE COMPLIANCE
mnmurphy 07/20/2022



1 PERDIDO PENTHOUSE FLOOR PLAN - CHILLED WATER - MECHANICAL DEMOLITION
1/4" = 1'-0"

DEMOLITION KEYED NOTES:

1. REMOVE & DISPOSE OF EXISTING WATER CHILLER AND ASSOCIATED PIPING & ACCESSORIES UP TO POINTS INDICATED. REFER TO PIPING DIAGRAMS. REMOVE (OR EXTEND WHERE REQUIRED) EXISTING ASSOCIATED CONCRETE EQUIPMENT PAD & LEVEL WITH EXISTING FLOOR.
2. REMOVE & DISPOSE OF EXISTING PUMP AND ASSOCIATED PIPING & ACCESSORIES UP TO POINTS INDICATED. REFER TO PIPING DIAGRAMS. REMOVE (OR EXTEND WHERE REQUIRED) EXISTING ASSOCIATED CONCRETE EQUIPMENT PAD & LEVEL WITH EXISTING FLOOR.
3. REMOVE & DISPOSE OF EXISTING AIR SEPARATOR AND ASSOCIATED PIPING & ACCESSORIES UP TO POINTS INDICATED. REFER TO PIPING DIAGRAMS.
4. REMOVE & DISPOSE OF EXISTING COOLING TOWER AND ASSOCIATED PIPING & ACCESSORIES UP TO POINTS INDICATED. REFER TO PIPING DIAGRAMS. REMOVE EXISTING ASSOCIATED COOLING TOWER SUPPORTS. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL DETAILS.
5. REMOVE & DISPOSE OF EXISTING THREE-WAY VALVE AND ASSOCIATED PIPING & ACCESSORIES FOR INSTALLATION OF NEW TWO-WAY CONTROL VALVE. SEE NEW WORK DWG FOR DETAILS.
6. PROTECT AND TEMPORARILY STORE FLOW METER DURING DEMOLITION OF PIPING. FLOW METER IS PROPERTY OF CENTRIO.
7. REMOVE & DISPOSE OF EXISTING CHILLED WATER MAKE UP PIPING AND ACCESSORIES UP TO POINT INDICATED. REMOVE & DISPOSE EXISTING CHILLED WATER EXPANSION TANK.

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ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

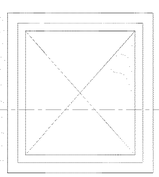
SHEET TITLE:
PERDIDO FLOOR PLANS - CHILLED WATER - MECHANICAL DEMOLITION

SHEET NUMBER:
M1110

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications have been examined and no evidence of violation of the Comprehensive Zoning Ordinance of New Orleans, Act 160 of 1929, as amended, or the Building Code of New Orleans, Ordinance No. 4730 M.C.S., as amended, is found. Permit is issued subject to inspection and final inspection upon completion.
This approval does not authorize the violation of any provisions of the Comprehensive Zoning Ordinance or the Building Code of New Orleans, Ordinance No. 4730 M.C.S., as amended, or with the revised plans if such have been submitted.
If it is found that work is being done in violation of the Comprehensive Zoning Ordinance or the Building Code of New Orleans, Ordinance No. 4730 M.C.S., as amended, the permit is subject to revocation.
REVIEWED FOR CODE COMPLIANCE
cwmurphy 07/20/2022

KEYED NOTES:

1. VARIABLE FREQUENCY DRIVE SHOWN FOR COORDINATION. VFD FURNISHED BY MECHANICAL CONTRACTOR, INSTALLED AND POWERED BY ELECTRICAL CONTRACTOR. REFER TO INDIVIDUAL DISCIPLINES FOR SCOPE AND SCHEDULES.
2. FLOW METER FURNISHED BY CONTROLS CONTRACTOR,FLOW METER INSTALLED BY MECHANICAL CONTRACTOR AND POWERED BY ELECTRICAL OR CONTROLS CONTRACTOR. REFER TO INDIVIDUAL DISCIPLINES FOR SCOPE AND SCHEDULES. REFER TO INDIVIDUAL DISCIPLINES FOR SCOPE, DETAILS, AND SCHEDULES.
3. INSTALL DECOUPLER PER DETAILS.
4. INSTALL NEW AIR COOLED CHILLER WITH MINIMUM CLEARANCE RECOMMENDED BY MANUFACTURER FOR MAINTENANCE ACCESSIBILITY AND ELECTRICAL CLEARANCE. ENTIRE AIR COOLED CHILLER TO BE SUPPORTED BY NEW SUPPORTS. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL DETAILS.
5. CONTROL VALVE FURNISHED BY CONTROLS CONTRACTOR, INSTALLED BY MECHANICAL CONTRACTOR, AND POWERED BY ELECTRICAL CONTRACTOR OR CONTROLS CONTRACTOR. REFER TO INDIVIDUAL DISCIPLINES FOR SCOPE AND SCHEDULES.
6. INSTALL NEW MAKE UP WATER LINE TO EXISTING DOMESTIC WATER VALVE AT POINT INDICATED.
7. PROVIDE NEW EXTENSION OF EXISTING CONCRETE HOUSEKEEPING EQUIPMENT PAD. REFER TO MECHANICAL DETAILS.
8. RPZ-MU-PER. SEE SCHEDULE FOR MORE INFORMATION. ROUTE DISCHARGE TO NEAREST FLOOR DRAIN AND TERMINATE WITH AIR GAP.
9. NEW FLOOR GRATING FOR AIR-COOLED CHILLER ACCESS AND MAINTENANCE TO BE FURNISHED BY MECHANICAL CONTRACTOR.



1 PERDIDO PENTHOUSE FLOOR PLAN - CHILLED WATER MECHANICAL
1/4" = 1'-0"

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications have been examined and no evidence of non-compliance with the applicable provisions of the Code has been found on the cover sheet. The above stamp does not relieve any property owner from applying with the code during the construction of the project.
Any changes made during construction must be submitted to the Department of Safety and Permits and approved.
Work must be performed by a licensed contractor or owner-builder as required by the Department of Safety and Permits and all applicable laws.
REVIEWED FOR CODE COMPLIANCE
mnmurphy 07/20/2022

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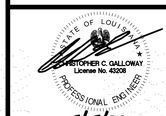


5/5/22
ENGINEER SEAL

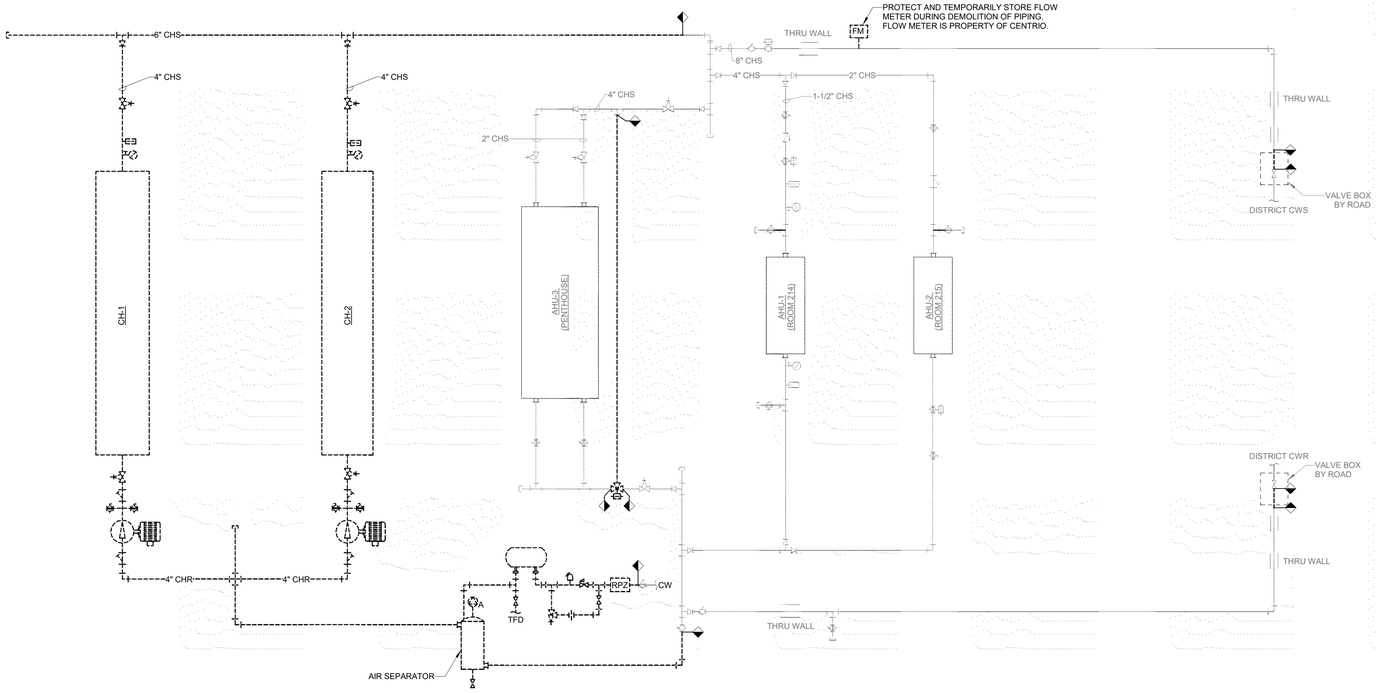
ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

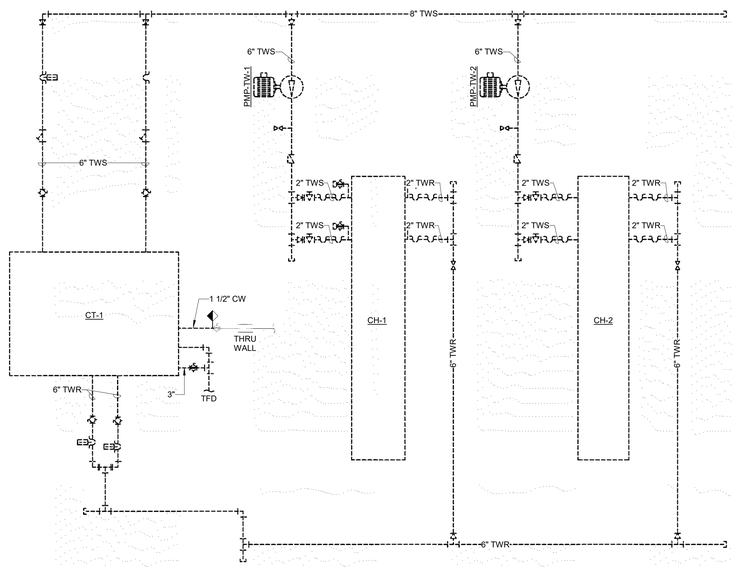
ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

SHEET TITLE:
PERDIDO FLOOR PLANS - CHILLED WATER - MECHANICAL

SHEET NUMBER:
M1120



1 PERDIDO PIPING DIAGRAM - CHILLED WATER - MECHANICAL DEMOLITION
1/8" = 1'-0"



2 PERDIDO PIPING DIAGRAMS - TOWER WATER - MECHANICAL DEMOLITION
1/8" = 1'-0"

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TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

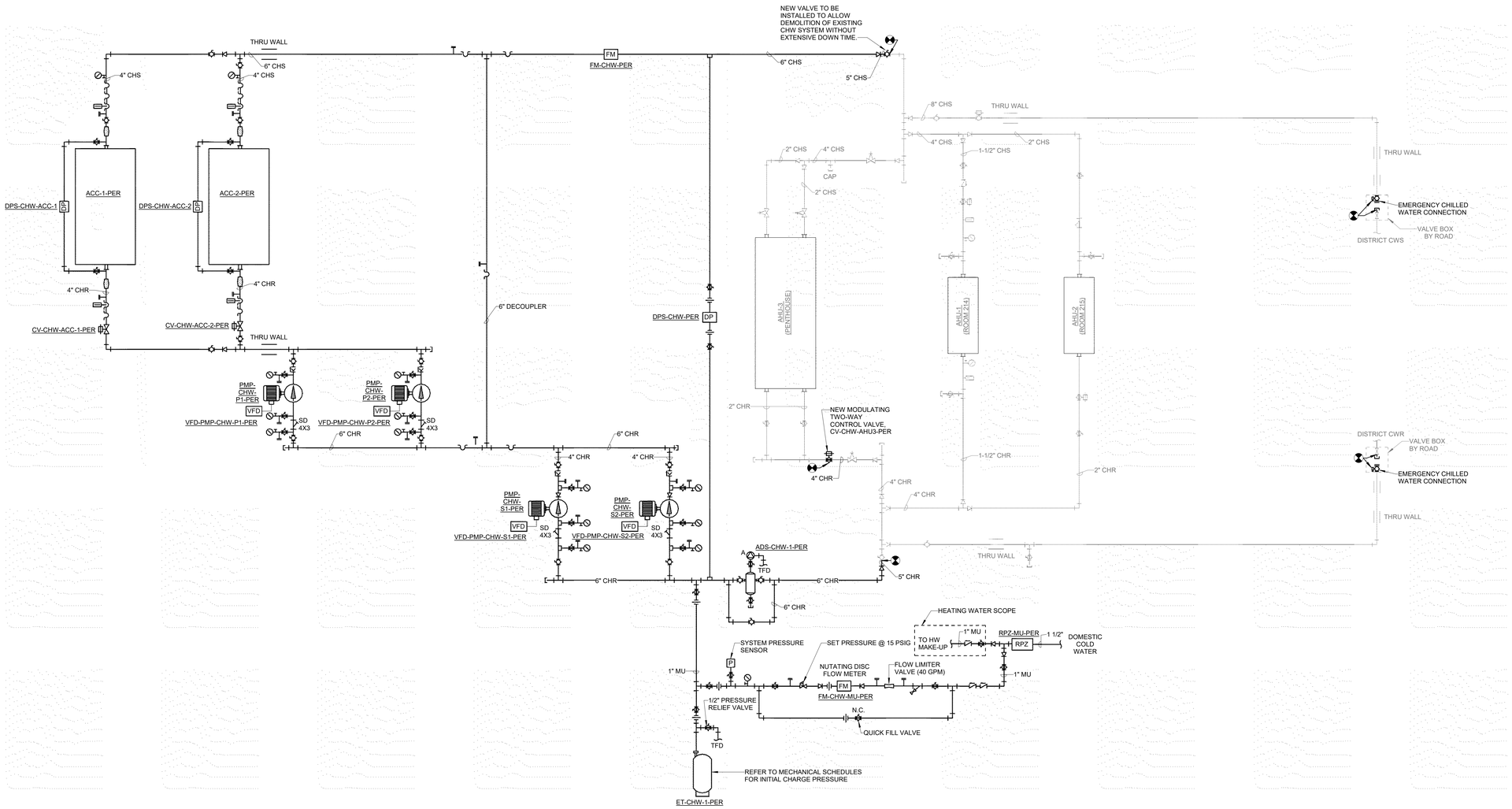
MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

SHEET TITLE:
PERDIDO PIPING DIAGRAMS - CHILLED WATER AND TOWER WATER - MECHANICAL DEMOLITION

SHEET NUMBER:
M1130

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications have been examined and no evidence of non-compliance with the applicable provisions of the Building Code, as adopted by the Jefferson Parish Council, has been found. The review is limited to the information submitted and does not relieve the owner, contractor and their respective agents of responsibility for compliance with the Building Code.
Any error or omission that subsequently comes to the attention of the Department of Safety and Permits shall be corrected in accordance with the current parish Flood Zone Construction Requirements.
All work shall be performed in strict accordance with the approved plans and specifications. Any deviation must be approved in writing by the Building Official.
REVIEWED FOR CODE COMPLIANCE
cwmurphy 07/20/2022



1 PERDIDO PIPING DIAGRAM - CHILLED WATER - MECHANICAL
1/8" = 1'-0"

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NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

SHEET TITLE:
PERDIDO PIPING DIAGRAM - CHILLED WATER - MECHANICAL

SHEET NUMBER:
M1140

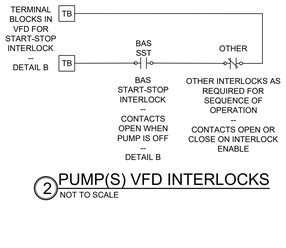
FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
REVIEWED FOR CODE COMPLIANCE
mmurphy 07/20/2022

GENERAL NOTES:

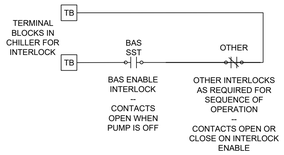
1. CONTROL VALVES, FLOW METERS, THERMOWELLS, AND TAPS ARE PROVIDED BY DIVISION 25 AND INSTALLED BY DIVISION 23 IN LOCATIONS INDICATED BY THE CONTROL DIAGRAMS AND AS SPECIFIED.
2. ALL CONTROLLERS, ACTUATORS, SENSORS, SWITCHES, TUBING, AND POINTS INDICATED ON THE PLANS ARE PROVIDED AND INSTALLED BY DIVISION 25, UNLESS NOTED OTHERWISE. TRANSFORMERS ARE PROVIDED BY DIVISION 25, INSTALLED BY DIVISION 26.
3. ALL POINTS INDICATED ON THE CONTROL DRAWINGS ARE NEW, PROVIDED BY DIVISION 25, UNLESS INDICATED OTHERWISE.
4. A SINGLE TRANSFORMER CAN BE PROVIDED FOR UP TO 10 CONTROLLERS PROVIDED LENGTH OF RUNS AND ZONING IS TAKEN INTO CONSIDERATION.
5. IF COMPONENT IS DISABLED DUE TO MAINTENANCE SHUTDOWN, IN ALARM, OR IN A FAULT CONDITION, COMPONENT SHALL BE HIGHLIGHTED, OUTLINED, FLASH, OR CHANGE COLORS.
6. INDICATE OVERRIDES BY HIGHLIGHTING THE VALUES IN PURPLE, OR CHANGING THE TEXT COLORS TO PURPLE.
7. THIS GRAPHIC SHALL BE REPRESENTED ON THE BAS, INCLUDING THE RESULTS OF AS-BUILT CONDITIONS. THE GRAPHIC IS TO BE POPULATED WITH LIVE VALUES. SET POINTS SHALL BE ADJUSTABLE FROM THIS GRAPHIC AND LINKS SHALL BE PROVIDED TO THE LIVE SEQUENCE AND TRENDING GROUPS. REFER TO SPECIFICATIONS FOR FURTHER GRAPHICAL REQUIREMENTS.
8. EQUIPMENT PROVIDED WITH CONTROLLERS (BOILERS, VARIABLE FREQUENCY DRIVES, CHILLERS, ETC) SHALL COMMUNICATE DIRECTLY WITH THE BAS. ALL REQUIRED GATEWAYS AND ROUTERS SHALL BE PROVIDED WITH EQUIPMENT WHERE AVAILABLE. ALL AVAILABLE POINTS SHALL BE OBTAINED FROM THE EQUIPMENT CONTROLLER AND THE BAS SHALL PROVIDE SET POINTS, COMMANDS, ETC, TO THE EQUIPMENT PER THE SEQUENCE OF OPERATIONS. ALL INDICATED HARD WIRED POINTS SHALL BE CONTROLLED VIA HARD WIRED CONNECTIONS. THE CONTRACTOR SHALL NOT USE INTEGRATED POINTS FOR IDENTIFIED HARDWIRED POINTS.
9. EQUIPMENT SHALL HAVE DEDICATED GRAPHICS PER SPECIFICATIONS. ALL COMMUNICATED POINTS SHALL BE AVAILABLE IN A LIST FORMAT WITH COMPLETE DESCRIPTIONS OF THE POINT, INCLUDING ALARMS. THE OPERATOR SHALL NOT HAVE TO REFER TO DOCUMENTATION TO DETERMINE WHAT THE POINT IS.
10. NETWORKED VARIABLE FREQUENCY DRIVES SHALL INDICATE HAND, OFF, AUTO, AND BYPASS STATUS ON THE GRAPHICS.

KEYED NOTES:

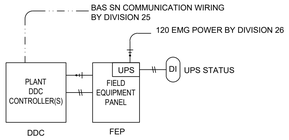
1. BAS SHALL RECEIVE ALL POINTS AVAILABLE FROM INTEGRATION TO THE CHILLER CONTROL PANEL. COORDINATE WITH ENGINEER OF RECORD ALL INFORMATION THAT IS TO BE DISPLAYED IN GRAPHICS. THE POINTS SPECIFIED IN THE PROJECT MANUAL SHALL BE THE MINIMUM REQUIRED TO BE INDICATED ON THE CHILLER GRAPHICS.
2. MOTOR SPEED CONTROL, START/STOP COMMAND, AND STATUS SHALL BE HARD WIRED. ALL OTHER VFD INFORMATION SHALL BE VIA BAS COMM. THE POINTS SPECIFIED IN THE PROJECT MANUAL SHALL BE THE MINIMUM REQUIRED TO BE INDICATED ON THE VFD GRAPHICS. EXISTING VFD'S CAPABLE "AS IS" OF COMMUNICATING H/O/A/B WILL BE REQUIRED TO DO SO ON THE GRAPHIC.
3. THERMAL DISPERSION FLOW SWITCH TO BE PROVIDED WITH CHILLER
4. PROVIDE AND INSTALL A SETRA MODEL 230 PRESSURE SENSOR WITH A 5-VALVE MANIFOLD OR APPROVED EQUAL. PROVIDE WITH A UNI-DIRECTIONAL DIFFERENTIAL PRESSURE RATING OF 0 PSI TO 50 PSI, A WORKING PRESSURE RATING OF 150 PSI, AND A BURST PRESSURE RATING OF 200 PSI.
5. PROVIDE AND INSTALL A SETRA MODEL 230 OR EQUIVALENT CHILLER EVAPORATOR DIFFERENTIAL PRESSURE SENSOR WITH 5-VALVE MANIFOLD OR APPROVED EQUAL. PROVIDE WITH A UNI-DIRECTIONAL DIFFERENTIAL PRESSURE RATING OF 0 PSI TO 50 PSI, A WORKING PRESSURE RATING OF 100 PSI, AND A BURST PRESSURE RATING OF 200 PSI.

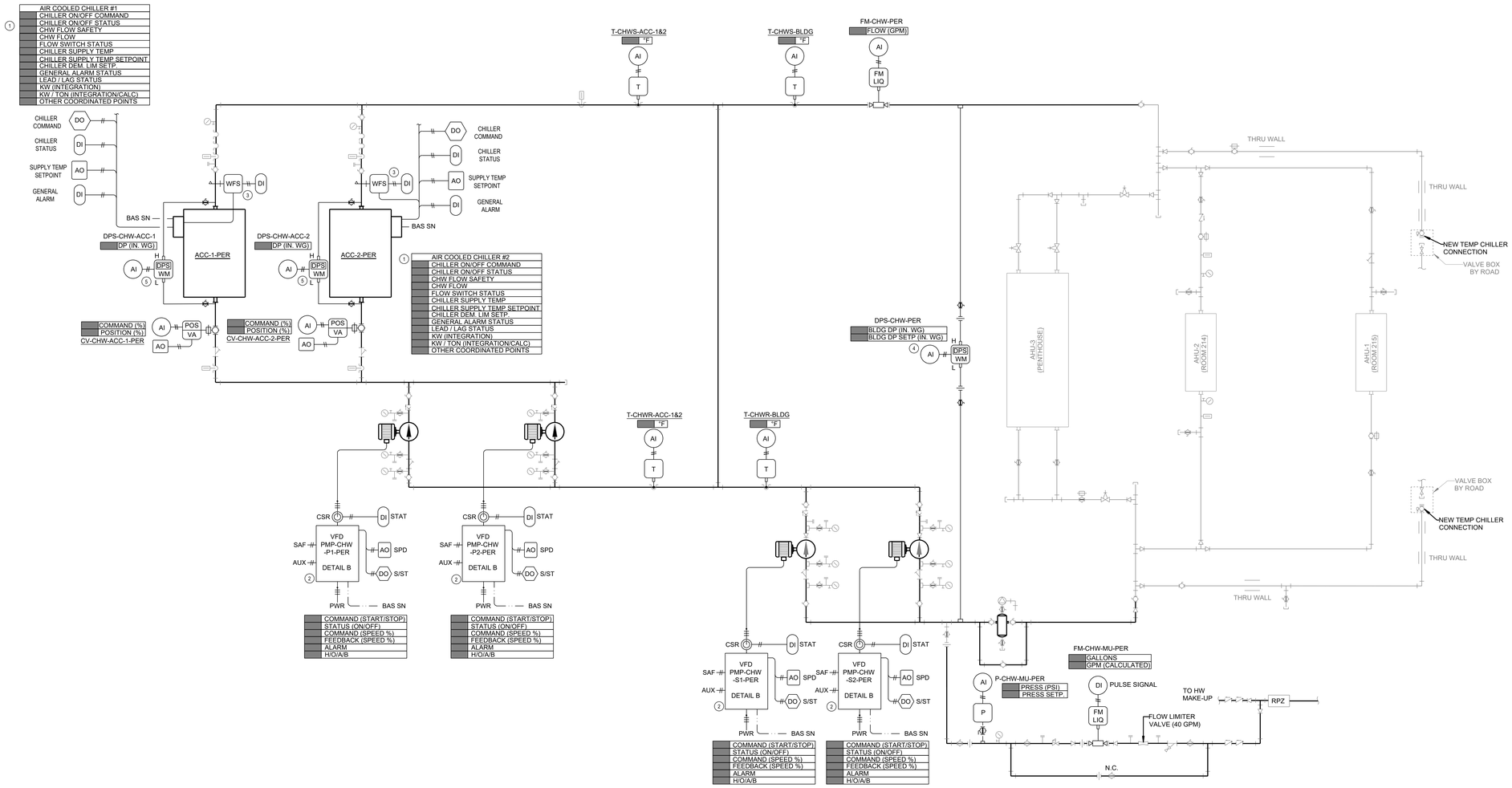


2 PUMP(S) VFD INTERLOCKS
NOT TO SCALE



3 AIR COOLED CHILLER(S) INTERLOCKS
NOT TO SCALE





1 CHILLED WATER CONTROL DIAGRAM - PERDIDO
NOT TO SCALE

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05/05/22
ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

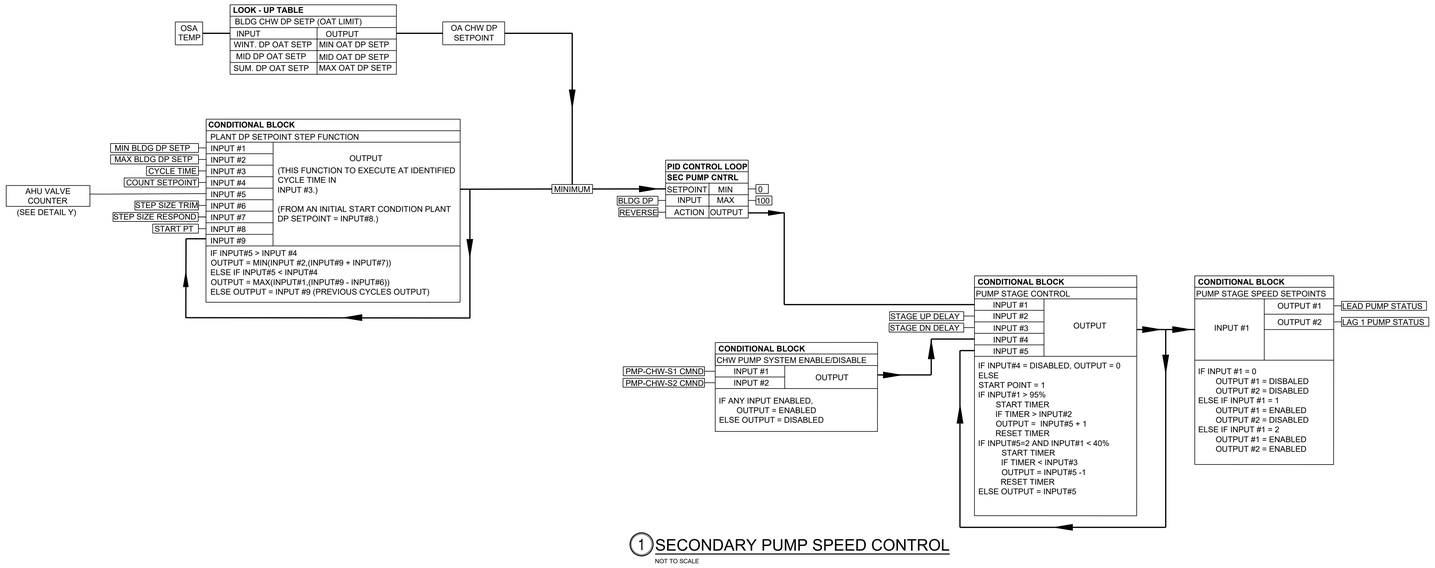
MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

SHEET TITLE:
CHILLED WATER CONTROL DIAGRAM - PERDIDO

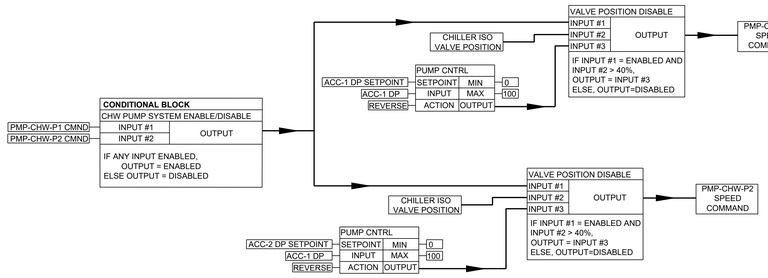
SHEET NUMBER:
ATC1100

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications have been examined and no violations of the applicable codes listed below have been found. Approval as to the structural stability of the building and to the adequacy of the means of egress facilities has been granted. This review is limited to building plans only and does not include other construction plans and final inspection upon completion. Any violations of the codes are the responsibility of the applicant.
This release is not to be construed as permission to violate any code or ordinance or to cancel or set aside any of its provisions, nor to grant the waiver or modification of any requirement of the codes listed below except as specifically stated herein.
Work which is specified in these approved drawings is subject to inspection by the Department of Safety and Permits and by such other agencies or individuals as may have jurisdiction over the work. Approval of these plans does not relieve the owner or his representative of the responsibility of obtaining such inspections.
REVIEWED FOR CODE COMPLIANCE
mnmurphy 07/20/2022



1 SECONDARY PUMP SPEED CONTROL

NOT TO SCALE



3 PRIMARY PUMP SPEED CONTROL

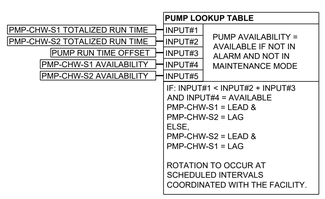
NOT TO SCALE

CHS TEMP SET POINT LOOK-UP TABLE	
INPUT	OUTPUT
CHST SUMMER SETP.	MIN CHW SUPPLY TEMP SETP. ◆
CHST MID SETP.	MID CHW SUPPLY TEMP SETP. ◆
CHST WINTER SETP.	MAX CHW SUPPLY TEMP SETP. ◆

OSA TEMP

2 CHILLED WATER SUPPLY TEMPERATURE CONTROL

NOT TO SCALE



4 SECONDARY PUMP LEAD/LAG CONTROL

NOT TO SCALE

CHILLED WATER SYSTEM SEQUENCE OF OPERATION:

MODE OF OPERATION:
THE CHILLED WATER SYSTEM MODES OF OPERATION SHALL BE EITHER OCCUPIED OR UNOCCUPIED BASED ON A SCHEDULE COMMUNICATED FROM THE BAS, AN OPERATOR OVERRIDE COMMAND FROM THE BAS, OR AN OCCUPANCY OVERRIDE SIGNAL FROM ANY CHILLED WATER EQUIPMENT. THE SYSTEM GRAPHICS SHALL CLEARLY INDICATE WHICH MODE THE SYSTEM IS IN.

UNOCCUPIED MODE:

UPON THE CHILLED WATER SYSTEM BEING DISABLED THE LEAD AND LAG CHILLER SHALL BE DISABLED, THEN THE DEDICATED PRIMARY PUMPS AND SECONDARY PUMPS SHALL BE DISABLED, AND THE CHILLERS' ISOLATION VALVES SHALL CLOSE.

OCCUPIED MODE:

UPON THE CHILLED WATER SYSTEM BEING ENABLED, THE LEAD CHILLER'S ISOLATION VALVE SHALL OPEN, THE LEAD PRIMARY AND SECONDARY CHILLED WATER PUMP SHALL START. THE LEAD CHILLER SHALL ONLY BE ENABLED UPON ITS ISOLATION VALVE PROVING OPEN, AND THE CHILLER MEASURED DIFFERENTIAL PRESSURE BEING 10% (ADJUSTABLE) ABOVE THE MINIMUM CHILLER DIFFERENTIAL PRESSURE.

PRIMARY CHILLED WATER PUMP OPERATION:

THE PRIMARY CHILLED WATER PUMPS SHALL OPERATE AS A LEAD/LAG AND SHALL ROTATE ON A WEEKLY BASIS TO EQUALIZE RUNTIMES. UPON THE CHILLED WATER SYSTEM BEING ENABLED THE LEAD PRIMARY CHILLED WATER PUMP SHALL START AND MODULATE TO MATCH THE FLOW OF THE LEAD SECONDARY PUMP IN THE SECONDARY LOOP. IF THE LEAD PUMP IS UNABLE TO MATCH THE FLOW IN THE SECONDARY LOOP FOR A PERIOD GREATER THAN 1 MINUTE (ADJUSTABLE), THEN THE LAG PRIMARY PUMP SHALL START. THE LEAD PRIMARY PUMP SHALL REDUCE SPEED TO MATCH THE LAG PRIMARY PUMP AND BOTH PUMPS SHALL MODULATE IN PARALLEL TO MATCH THE FLOW IN THE SECONDARY LOOP. IF BOTH PUMPS ARE UNABLE TO MATCH THE FLOW IN THE SECONDARY LOOP FOR A PERIOD GREATER THAN 2 MINUTES (ADJUSTABLE) OR IF EITHER PRIMARY PUMPS SPEED IS LESS THAN 30% (ADJUSTABLE) FOR 5 MINUTES (ADJUSTABLE) THEN THE LAG PRIMARY PUMP SHALL BE DISABLED. OPTIMAL PUMP STAGING SETPOINTS TO BE FIELD DETERMINED.

SECONDARY CHILLED WATER PUMP OPERATION:

THE SECONDARY CHILLED WATER PUMPS SHALL OPERATE IN A LEAD/LAG MODE AND SHALL ROTATE ON A WEEKLY BASIS TO EQUALIZE RUNTIMES. UPON THE CHILLED WATER SYSTEM BEING ENABLED THE LEAD SECONDARY CHILLED WATER PUMP SHALL MODULATE TO MAINTAIN THE BUILDING CHILLED WATER DIFFERENTIAL PRESSURE SETPOINT. IF THE LEAD PUMP'S SPEED IS GREATER THAN 95% (ADJUSTABLE) FOR 3 MINUTES (ADJUSTABLE), THEN THE LAG PUMP SHALL START AND MODULATE TO MAINTAIN THE BUILDING DP SETPOINT. THE LEAD PUMP SHALL REDUCE SPEED TO MATCH THE LAG PUMP AND BOTH PUMPS SHALL MODULATE IN PARALLEL TO MAINTAIN THE BUILDING DP SETPOINT. IF EITHER PUMP'S SPEED IS LESS THAN 40% (ADJUSTABLE) FOR 2 MINUTES (ADJUSTABLE) THE LAG PUMP SHALL BE DISABLED. OPTIMAL PUMP STAGING SETPOINTS SHOULD BE FIELD DETERMINED. REFER TO THE SECONDARY PUMP SPEED CONTROL DIAGRAM FOR THE DETAILED SEQUENCE. THE CONTROLS CONTRACTOR IS REQUIRED TO TUNE THE PID LOOPS TO ENSURE SMOOTH OPERATION THROUGH THE FULL RANGE OF OPERATION.

THE BUILDING CHILLED WATER DIFFERENTIAL PRESSURE SETPOINT SHALL MODULATE BETWEEN 2 PSIG (ADJUSTABLE) AND 15 PSIG (ADJUSTABLE) TO MAINTAIN THE COOLING COIL VALVE REQUESTS BELOW THE COUNT SETPOINT (ADJUSTABLE). REFER TO THE SECONDARY PUMP SPEED CONTROL DIAGRAM FOR BUILDING DIFFERENTIAL PRESSURE SETPOINT TRIM AND RESPONSE LOGIC.

AIR COOLED CHILLER SEQUENCING

THE CHILLERS SHALL BE OPERATED IN A LEAD / LAG MODE. UPON ENABLING THE LEAD CHILLER, THE CHILLER'S RESPECTIVE ISOLATION VALVE SHALL SLOWLY OPEN OVER A 2 MINUTE (ADJUSTABLE) TIME PERIOD. UPON THE CHILLER'S DIFFERENTIAL PRESSURE RISING ABOVE THE CHILLER'S MINIMUM DIFFERENTIAL PRESSURE SETPOINT, THE COMPRESSOR(S) SHALL BE ENABLED AND THE LEAD CHILLER SHALL MODULATE TO MAINTAIN ITS CHILLED WATER SUPPLY TEMPERATURE SETPOINT.

IF THE LEAD CHILLER IS UNABLE TO MAINTAIN ITS CHILLED WATER SUPPLY TEMPERATURE FOR A PERIOD OF 10 MIN (ADJUSTABLE) , THEN THE LAG CHILLER SHALL BE ENABLED AND FOLLOW THE SAME ENABLING SEQUENCE AS THE LEAD CHILLER. ONCE THE LAG CHILLER HAS COMPLETED THE ENABLING SEQUENCE, THE LEAD CHILLER SHALL REDUCE CAPACITY AS THE LAG CHILLER RAMPS UP. THE CHILLERS SHALL RAMP UP AND DOWN IN PARALLEL.

THE BAS SHALL DISABLE THE LAG CHILLER BASED ON THE OPERATING RLA OF EACH CHILLER. IF EACH CHILLER'S OPERATING RLA IS LESS THAN 35% FOR MORE THAN 15 MINUTES (ADJUSTABLE), THE LAG CHILLER SHALL BE DISABLED AND ITS RESPECTIVE ISOLATION VALVE SHALL SLOWLY CLOSE OVER 2 MINUTES (ADJUSTABLE).

CHILLED WATER SUPPLY TEMPERATURE RESET

THE CHILLED WATER SUPPLY TEMPERATURE SETPOINT SHALL BE RESET BETWEEN A MINIMUM OF 42°F AND A MAXIMUM OF 52°F. UPON SYSTEM ENABLE THE SYSTEM STARTING SETPOINT SHALL BE 42°F

THE CHILLED WATER SUPPLY TEMPERATURE SHALL BE RESET BASED ON OUTSIDE AIR TEMPERATURE. REFER TO CHILLED WATER SUPPLY TEMPERATURE CONTROL DIAGRAM FOR LOGIC.

SETPOINTS AND PARAMETERS:
ALL CONTROL BANDS, SETPOINTS, SETPOINT LIMITS, SETPOINT INCREMENT VALUES, SETPOINT DECREMENT VALUES, TIME DELAYS, EQUIPMENT ROTATION SEQUENCES, AND OTHER PARAMETERS SHALL BE ADJUSTABLE FROM THE BAS.

ALL PARAMETERS SHALL BE COMMISSIONED BY THE ATC CONTRACTOR TO PROVIDE STABLE CONTROL OF ALL SYSTEMS.

NOTES ON SEQUENCING

A. THE CONTRACTOR SHALL SUBMIT SYSTEM PROGRAMING TO THE ENGINEER PRIOR TO INSTALLATION .ANY PROGRAMING INSTALLED PRIOR TO ENGINEER APPROVAL WILL BE REPROGRAMMED AT THE OWNER OR ENGINEER'S DISCRETION AT NO ADDITIONAL COST.
B. THE CHILLER ISOLATION VALVES, CHILLED WATER PUMPS, AND OTHER SETPOINTS SHALL BE TUNED TO PROVIDE A SMOOTH SYSTEM OPERATION.
C. THE MINIMUM CHILLER SETPOINTS SHALL BE SET BASED ON THE APPROVED EQUIPMENT SUBMITTALS AND COORDINATED WITH THE CHILLER MANUFACTURER.

SET POINT SCHEDULE

SETPOINT	VALUE	OPERATOR CLEARANCE	NOTES
MIN PLANT CHILLED WATER DP SETPOINT	2 PSI	1	ADJUSTABLE
MAX PLANT CHILLED WATER DP SETPOINT	15 PSI	1	ADJUSTABLE
PMP-CHW-S1 MIN PUMP SPEED SETPOINT	20 %	3	ADJUSTABLE
PMP-CHW-S1 MAX PUMP SPEED SETPOINT	100 %	3	ADJUSTABLE
PMP-CHW-S2 MIN PUMP SPEED SETPOINT	20 %	3	ADJUSTABLE
PMP-CHW-S2 MAX PUMP SPEED SETPOINT	100 %	3	ADJUSTABLE
PMP-CHW-P1 MIN PUMP SPEED SETPOINT	20 %	3	ADJUSTABLE
PMP-CHW-P1 MAX PUMP SPEED SETPOINT	100 %	3	ADJUSTABLE
PMP-CHW-P2 MIN PUMP SPEED SETPOINT	20 %	3	ADJUSTABLE
PMP-CHW-P2 MAX PUMP SPEED SETPOINT	100 %	3	ADJUSTABLE
CHILLER 1 FLOW SETPOINT	--- GPM	N/A	CONFIRM WITH MANUFACTURER
CHILLER 1 ABSOLUTE MINIMUM FLOW	--- GPM	N/A	CONFIRM WITH MANUFACTURER
CHILLER 1 MINIMUM FLOW SETPOINT	--- GPM	3	ABSOLUTE MIN + 10% (ADJUSTABLE)
CHILLER 1 ABSOLUTE MAX FLOW	--- GPM	N/A	CONFIRM WITH MANUFACTURER
CHILLER 1 MAXIMUM FLOW	--- GPM	3	ABSOLUTE MAX - 5% (ADJUSTABLE)
CHILLER 2 FLOW SETPOINT	--- GPM	N/A	CONFIRM WITH MANUFACTURER
CHILLER 2 ABSOLUTE MINIMUM FLOW	--- GPM	N/A	CONFIRM WITH MANUFACTURER
CHILLER 2 MINIMUM FLOW SETPOINT	--- GPM	3	ABSOLUTE MIN + 10% (ADJUSTABLE)
CHILLER 2 ABSOLUTE MAX FLOW	--- GPM	N/A	CONFIRM WITH MANUFACTURER
CHILLER 2 MAXIMUM FLOW	--- GPM	3	ABSOLUTE MAX - 5% (ADJUSTABLE)
CHILLER 1 ISOLATION VALVE TRAVEL TIME	2 MINUTES	3	ADJUSTABLE
CHILLER 2 ISOLATION VALVE TRAVEL TIME	2 MINUTES	3	ADJUSTABLE
SYSTEM PRESSURE SETP.		1	ADJUSTABLE
CYCLE TIME	90 SEC	3	ADJUSTABLE
COUNT SETPOINT	1	3	ADJUSTABLE
STEP SIZE TRIM	0.5 PSI	3	ADJUSTABLE
STEP SIZE RESPOND	1 PSI	3	ADJUSTABLE
START PT	2 PSI	3	ADJUSTABLE
CHST SUMMER SETP.	80 °F	3	ADJUSTABLE
CHST MID SETP.	65 °F	3	ADJUSTABLE
CHST WINTER SETP.	50 °F	3	ADJUSTABLE
MIN PLANT CHS SETP.	42 °F	3	ADJUSTABLE
MID PLANT CHS SETP.	46 °F	3	ADJUSTABLE
MAX PLANT CHS SETP.	50 °F	3	ADJUSTABLE
WINT. DP OAT SETP	50°F	3	ADJUSTABLE
MID DP OAT SETP	65°F	3	ADJUSTABLE
SUM. DP OAT SETP	80°F	3	ADJUSTABLE
MIN OAT DP SETP	4 PSI	3	ADJUSTABLE
MID OAT DP SETP	10 PSI	3	ADJUSTABLE
MAX OAT DP SETP	15 PSI	3	ADJUSTABLE
STAGE UP DELAY	3 MINUTES	3	ADJUSTABLE
STAGE DN DELAY	2 MINUTES	3	ADJUSTABLE

NOTES:
1. TABLE SHALL BE SUBMITTED BY CONTROLS CONTRACTOR TO ENGINEER FOR APPROVAL ALONG WITH GRAPHICS AND INFORMATIONAL SUBMITTALS.

ALARMS

ALARM TYPE	PRIORITY LEVEL (ADJ)	CRITERIA
CHILLER CONTROLLER ALARMS/WARNINGS	TO BE COORD.	ALARMS AND WARNINGS COMMUNICATED FROM THE CHILLER.
FAILED ACTUATOR	3	FEEDBACK POSITION > 3% (ADJ) OF SETPOINT FOR MORE THAN 90 SECONDS (ADJ).
FAILED END SWITCH	3	END SWITCH NOT MET WITHIN 5 MINUTES (ADJ) OF COMMAND.
VFD FAILURE	3	ALARMS AND WARNINGS COMMUNICATED FROM THE VFD.
FAILED CURRENT SWITCH/SENSOR STATUS	3	STATUS NOT MET DURING A CALL TO OPERATE.
HIGH PLANT CHW PRESSURE	3	PLANT DP > PLANT DP SETPOINT + 1 PSI (ADJ) FOR MORE THAN 5 MIN. (ADJ)
LOW PLANT CHW PRESSURE	3	PLANT DP < PLANT DP SETPOINT - 1 PSI (ADJ) FOR MORE THAN 5 MIN. (ADJ)
LOW EVAPORATOR WATER LEAVING TEMP	3	LWT < LWT SETPOINT - 2 °F (ADJ) FOR MORE THAN 10 MIN (ADJ.)
HIGH EVAPORATOR WATER LEAVING TEMP	3	LWT > LWT SETPOINT + 2 °F (ADJ) FOR MORE THAN 10 MIN (ADJ.)
HIGH SYSTEM PRESSURE	3	SYSTEM PRESSURE > SYS PRESS SET POINT + 6 PSI (ADJ)
LOW SYSTEM PRESSURE	3	SYSTEM PRESSURE < SYS PRESS SET POINT - 6 PSI (ADJ)
UNRELIABLE SENSOR	TO BE COORD.	SENSOR OUT OF RANGE, DOESN'T CHANGE STATUS, ETC
UNRELIABLE METER	TO BE COORD.	VALUE OUT OF RANGE, DOESN'T CHANGE STATUS, ETC
HIGH MAKE UP WATER FLOW RATE	3	MORE THAN 1 GALLON (ADJ) OF FLOW IN AN HOUR (ADJ).
HIGH MAKE UP WATER FLOW RATE	3	MORE THAN 10 GALLONS (ADJ) OF FLOW IN A DAY (ADJ).
OWNER REQUESTED ALARMS	TO BE COORD.	ATC CONTRACTOR TO ADD ALARMS AS REQUESTED BY OWNER.
VFD IN HAND OR BYPASS	2	VFD IN HAND OR BYPASS (INDICATED THROUGH INTEGRATION)
VFD IN HAND OR BYPASS	2	VFD SPEED FEEDBACK +/- 5% OFF OF VFD SPEED COMMAND FOR MORE THAN 5 MIN. (ADJ)
CHILLER STANDBY TIMER EXCEEDS SETPOINT	2	CHILLER STANDBY TIMER HAS EXCEEDED STANDBY TIMER SETPOINT WITHOUT RUNNING FOR A MINIMUM OF 4 HOURS (ADJ.)
FAILED BUILDING DP SENSOR	2	SENSOR OUT OF RANGE, UNRELIABLE, DISCONNECTED, ETC

GENERAL NOTES:

1. CONTROL VALVES, FLOW METERS, THERMOWELLS, AND TAPS ARE PROVIDED BY DIVISION 25 AND INSTALLED BY DIVISION 23 IN LOCATIONS INDICATED BY THE CONTROL DIAGRAMS AND AS SPECIFIED.
2. ALL CONTROLLERS, ACTUATORS, SENSORS, SWITCHES, TUBING, AND POINTS INDICATED ON THE PLANS ARE PROVIDED AND INSTALLED BY DIVISION 25, UNLESS NOTED OTHERWISE. TRANSFORMERS ARE PROVIDED BY DIVISION 25, INSTALLED BY DIVISION 26.
3. ALL POINTS INDICATED ON THE CONTROL DRAWINGS ARE NEW, PROVIDED BY DIVISION 23, UNLESS INDICATED OTHERWISE.
4. A SINGLE TRANSFORMER CAN BE PROVIDED FOR UP TO 10 CONTROLLERS PROVIDED LENGTH OF RUNS AND ZONING IS TAKEN INTO CONSIDERATION.
5. IF COMPONENT IS DISABLED DUE TO MAINTENANCE SHUTDOWN, IN ALARM, OR IN A FAULT CONDITION, COMPONENT SHALL BE HIGHLIGHTED, OUTLINED, FLASH, OR CHANGE COLORS.
6. INDICATE OVERRIDES BY HIGHLIGHTING THE VALUES IN PURPLE, OR CHANGING THE TEXT COLORS TO PURPLE.
7. EQUIPMENT PROVIDED WITH CONTROLLERS (BOILERS, VARIABLE FREQUENCY DRIVES, CHILLERS, ETC) SHALL COMMUNICATE DIRECTLY WITH THE BAS. ALL REQUIRED GATEWAYS AND ROUTERS SHALL BE PROVIDED WITH EQUIPMENT WHERE AVAILABLE. ALL AVAILABLE POINTS SHALL BE OBTAINED FROM THE EQUIPMENT CONTROLLER AND THE BAS SHALL PROVIDE SET POINTS, COMMANDS, ETC, TO THE EQUIPMENT PER THE SEQUENCE OF OPERATIONS. ALL INDICATED HARD WIRED POINTS SHALL BE CONTROLLED VIA HARD WIRED CONNECTIONS. THE CONTRACTOR SHALL NOT USE INTEGRATED POINTS FOR IDENTIFIED HARDWIRED POINTS.
8. EQUIPMENT SHALL HAVE DEDICATED GRAPHICS PER SPECIFICATIONS. ALL COMMUNICATED POINTS SHALL BE AVAILABLE IN A LIST FORMAT WITH COMPLETE DESCRIPTIONS OF THE POINT, INCLUDING ALARMS. THE OPERATOR SHALL NOT HAVE TO REFER TO DOCUMENTATION TO DETERMINE WHAT THE POINT IS.
9. VARIABLE FREQUENCY DRIVES SHALL INDICATE HAND, OFF, AUTO, AND BYPASS STATUS.

FINAL PERMIT RELEASE

DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION

These plans and specifications have been examined and no evidence of violation of the Comprehensive Zoning Ordinance or the Building Regulations has been observed. Approval of these plans and specifications does not prevent the building official from requiring the correction of errors in the plans and specifications or violations that are found during the construction. Approval does not authorize the violation of any provision of the Comprehensive Zoning Ordinance (Ord 26,278 et seq.) or the Building Regulations (Ord 8474 et seq.).

Work must be performed in accordance with the approved plans and specifications. Any deviations must be approved by the Department of Safety and Permits prior to construction.

REVIEWED FOR CODE COMPLIANCE

cemurphy 07/20/2022

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IN
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05/05/22

ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

ISSUE DATE: 05/05/22

PROJECT NUMBER: 70-16-0005

SHEET TITLE:
CHILLED WATER CONTROL SEQUENCE - PERDIDO

SHEET NUMBER:
ATC1101

ELECTRICAL EQUIPMENT CONNECTION SCHEDULE - CHILLED WATER - PERDIDO

EQUIPMENT ID	EQUIPMENT SERVED	MOTOR HP	MOTOR KW	DEVICE	DEVICE PROVIDED BY	SIZE	ENCLOSURE	VOLTAGE	PHASE	LOAD	WIRE AND CONDUIT SIZE	NOTES
CNTRLR-ACC-1-PER	ACC-1-PER	-	95	FACTORY CONTROLLER	MECHANICAL	N/A	NEMA 3R	480 V	3	95000 VA	(3) #2/0 & (1) #6 GRD. IN 2" CONDUIT	-
CNTRLR-ACC-2-PER	ACC-2-PER	-	95	FACTORY CONTROLLER	MECHANICAL	N/A	NEMA 3R	480 V	3	95000 VA	(3) #2/0 & (1) #6 GRD. IN 2" CONDUIT	-
VFD-PMP-CHW-P1-PER	PMP-CHW-P1-PER	3	-	VFD	MECHANICAL	N/A	NEMA 1	480 V	3	3991 VA	(3) #12 & (1) #12 GRD. IN 3/4" CONDUIT	-
VFD-PMP-CHW-P2-PER	PMP-CHW-P2-PER	3	-	VFD	MECHANICAL	N/A	NEMA 1	480 V	3	3991 VA	(3) #12 & (1) #12 GRD. IN 3/4" CONDUIT	-
VFD-PMP-CHW-S1-PER	PMP-CHW-S1-PER	7.5	-	VFD	MECHANICAL	N/A	NEMA 1	480 V	3	9145 VA	(3) #12 & (1) #12 GRD. IN 3/4" CONDUIT	-
VFD-PMP-CHW-S2-PER	PMP-CHW-S2-PER	7.5	-	VFD	MECHANICAL	N/A	NEMA 1	480 V	3	9145 VA	(3) #12 & (1) #12 GRD. IN 3/4" CONDUIT	-

DISTRIBUTION PANEL: "PD-N"

LOCATION: MECH. PENTHOUSE
SUPPLY FROM: "GD"
MOUNTING: SURFACE
ENCLOSURE: NEMA 1

VOLTAGE: 480/277 Wye
PHASES: 3
WIRES: 4

AIC RATING: 65,000
MAINS RATING: 800 A
MCB RATING: 800 A (LSI)

NOTES:
PROVIDE ADEQUATE MOUNTING SPACE FOR FUTURE BREAKERS.

CCT	CIRCUIT DESCRIPTION	# OF POLES	FRAME SIZE (A)	TRIP RATING (A)	Load	REMARKS
1	EXISTING (EX. FAN #1)	3	--	20	6228	
2	EXISTING (EX. FAN #2)	3	--	20	6228	
3	EXISTING (EX. FAN #3)	3	--	20	6228	
4	EXISTING (EX. FAN #6)	3	--	20	6228	
5	EXISTING (AIR COMP. #2)	3	--	20	6228	
6	EXISTING (COND. RETURN)	3	--	20	6228	
7	EXISTING (COND. PUMP)	3	--	20	6228	
8	EXISTING (AIR COMP. #1)	3	--	20	6228	
9	EXISTING (2ND FLOOR A/C PUMP)	3	--	20	6228	FIELD VERIFY. EXISTING BREAKER IN PANEL "PD" IS OFF.
10	EXISTING (XFMR ENGINEER'S RM)	3	--	60	24912	
11	EXISTING (ROOFTOP ANIMAL RM A/C)	3	--	50	20760	FIELD VERIFY. EXISTING BREAKER IN PANEL "PD" IS OFF.
12	EXISTING (AIR PUMP NEW)	3	--	30	12456	FIELD VERIFY. EXISTING BREAKER IN PANEL "PD" IS OFF.
13	EXISTING (CAGE WASHER)	3	--	30	12456	FIELD VERIFY. EXISTING BREAKER IN PANEL "PD" IS OFF.
14	EXISTING (STERILIZER 2ND FLOOR)	3	--	30	12456	FIELD VERIFY. EXISTING BREAKER IN PANEL "PD" IS OFF.
15	EXISTING (BLOWERS RM 314 NEW A/C)	3	--	70	29064	
16	EXISTING (CAGE WASHER 2ND FLOOR)	3	--	40	16608	
17	EXISTING (AIR PUMP NEW)	3	--	30	12456	FIELD VERIFY. EXISTING BREAKER IN PANEL "PD" IS OFF.
18	EXISTING (AC FAN UNIT #3)	3	--	40	16608	
19	EXISTING (TRANSFORMER 3T)	3	--	100	41520	
20	EXISTING (ELEVATOR)	3	--	70	29064	
21	EXISTING (PANEL 3H)	3	--	100	41520	
22	ACC-1-PER	3	250	175	95000	LSI BREAKER
23	ACC-2-PER	3	250	175	95000	LSI BREAKER
24	PMP-CHW-P1-PER	3	100	20	3991	
25	PMP-CHW-P2-PER	3	100	20	3991	
26	PMP-CHW-S1-PER	3	100	20	9145	
27	PMP-CHW-S2-PER	3	100	20	9145	
28	PMP-HW-P1-PER	3	100	20	1330	
29	PMP-HW-P2-PER	3	100	20	1330	
30	PMP-HW-S1-PER	3	100	20	3991	
31	PMP-HW-S2-PER	3	100	20	3991	
32	NGC-1-PER	3	100	30	11639	
33						
34						
35						
				TOTAL LOAD:	564485 VA	
				TOTAL AMPS:	679 A	

LOAD CLASSIFICATIONS	CONNECTED LOAD	DEMAND / DESIGN FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
MOTOR EQUIPMENT	238553 VA	109.96%	262303 VA		
Spare	325932 VA	100.00%	325932 VA	**CONNECTED LOAD:**	564485 VA
				ESTIMATED DEMAND:	588235 VA
				CONNECTED CURRENT:	679 A
				EST. DEMAND CURRENT:	708 A

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
This set of plans and specifications has been examined and is considered to be in conformance with the applicable codes and ordinances adopted by the City of New Orleans. Any deviation from these codes and ordinances, not specifically noted, will require a separate review and approval. Code Compliance is the responsibility of the Architect and Engineer of Record.
Any deviation from approved plans must be approved in writing by the Architect or Engineer of Record and submitted to the Department of Safety and Permits for review and approval prior to construction. Work performed that is not in accordance with approved plans may be subject to a stop work order.
Approval of plans is specified to mean compliance with the applicable codes and ordinances adopted by the City of New Orleans. It is not to be construed as approval of omissions or errors in the construction documents.
REVIEWED FOR CODE COMPLIANCE
mmurphy 07/20/2022

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STATE OF LOUISIANA
THENTON PAUL CHECHOWN
REG. No. 38674
PROFESSIONAL ENGINEER
IN
ELECTRICAL ENGINEERING
5/5/22
ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

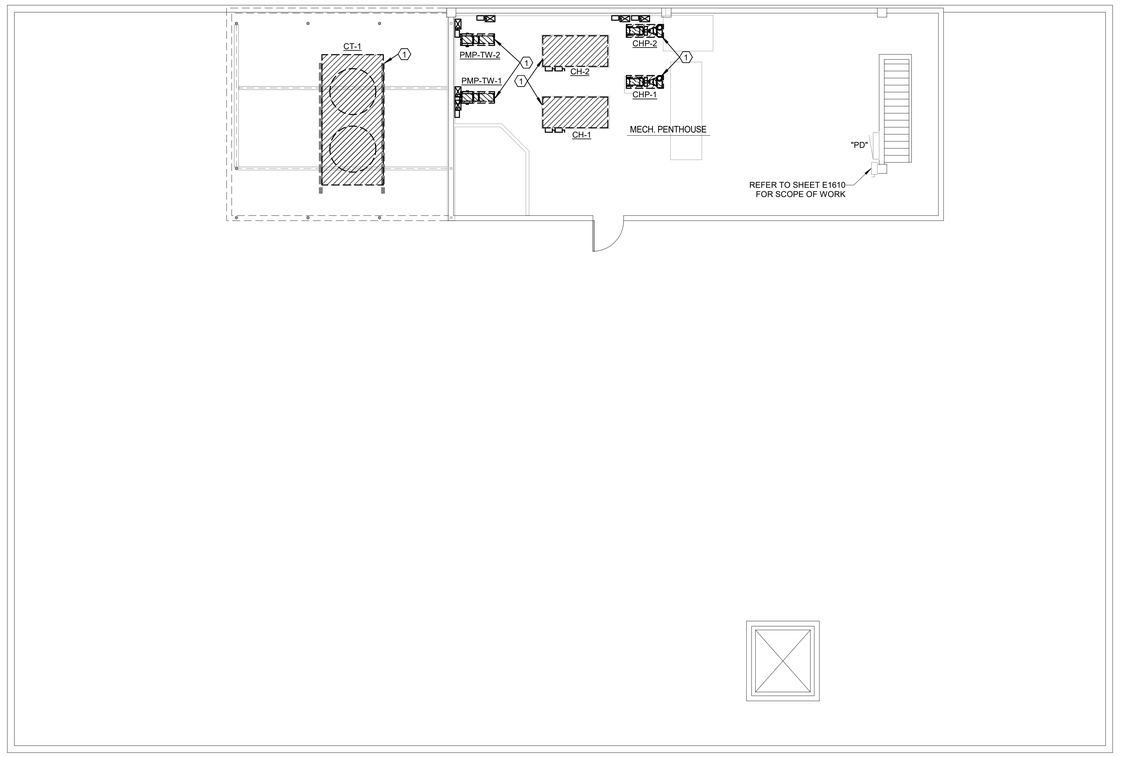
ISSUE DATE: 05/05/22
PROJECT NUMBER: 70-16-0005
SHEET TITLE: PERDIDO SCHEDULES - CHILLED WATER - ELECTRICAL
SHEET NUMBER: E1100

GENERAL DEMOLITION NOTES:

1. REFER TO GENERAL ELECTRICAL DEMOLITION NOTES, SHEET E1000.

KEYED DEMOLITION NOTES:

(1) EXISTING EQUIPMENT TO BE REMOVED. DISCONNECT AND REMOVE ALL ASSOCIATED ELECTRICAL BACK TO SERVING GEAR (DISTRIBUTION PANEL "PD") AND MAKE BREAKER A "SPARE".



1 PERDIDO - PENTHOUSE - CHILLED WATER - ELECTRICAL DEMOLITION
1/8" = 1'-0"

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STATE OF LOUISIANA
TRENTON PAUL CHECHOTA
No. 36274 LICENSED
PROFESSIONAL ENGINEER
IN
ELECTRICAL ENGINEERING

5/5/22
ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

SHEET TITLE:
PERDIDO FLOOR PLANS - CHILLED WATER - ELECTRICAL DEMOLITION

SHEET NUMBER:
E1110

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications have been examined and no evidence of violation of the Comprehensive Zoning Ordinance of New Orleans or the Code of the City of New Orleans has been found. This action is contingent on the work being performed in accordance with all applicable laws and final inspection upon completion.
Date: 07/20/2022
Plan review of the above approved plans must be requested and approved prior to the commencement of work. Approved plans must be on the project site at all times.
Any portion or specified in these approved drawings is not approved by virtue of this review. The applicant is responsible for the correction of these items during construction.
Director of Safety and Permits
or Authorized Representative
REVIEWED FOR CODE COMPLIANCE
mnmurphy 07/20/2022

GENERAL NOTES:

1. REFER TO GENERAL ELECTRICAL NOTES, SHEET E1000.

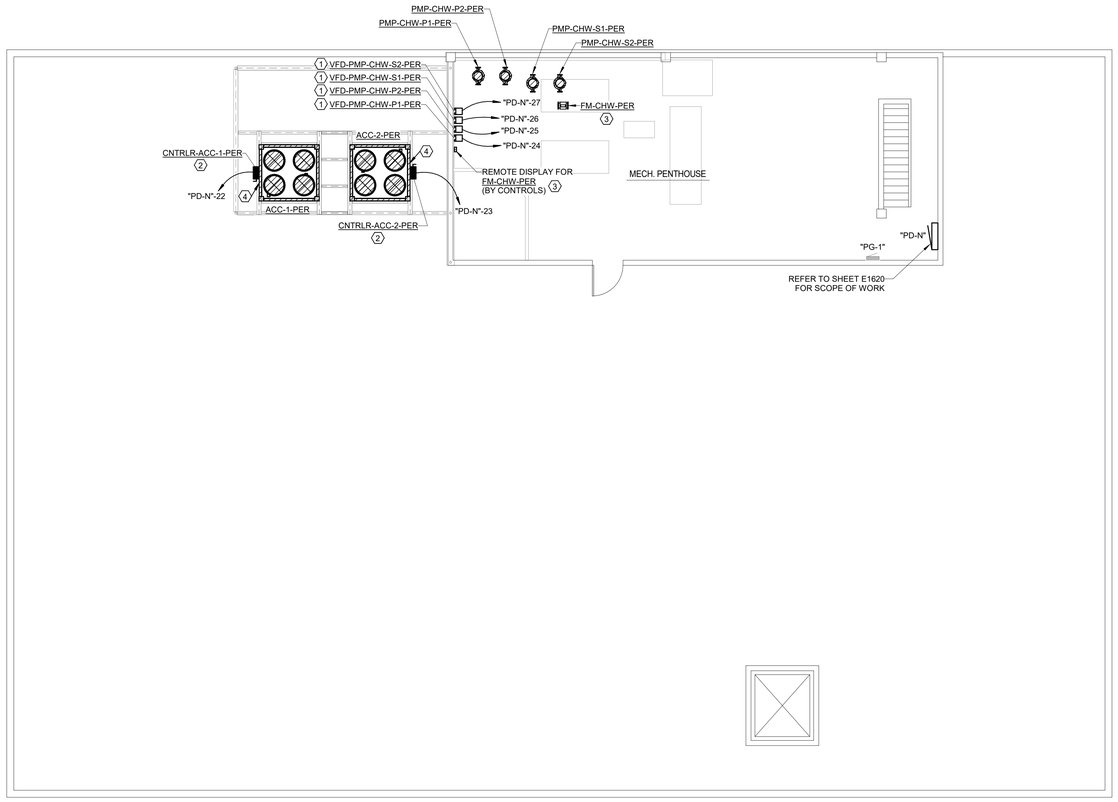
KEYED NOTES:

(1) REFER TO ELECTRICAL EQUIPMENT CONNECTION SCHEDULE, SHEET E1100 FOR FEEDER/CONDUIT FROM NEW CHILLED WATER PUMP TO NEW VFD AND FROM NEW VFD TO NEW DISTRIBUTION PANEL INDICATED.

(2) REFER TO ELECTRICAL EQUIPMENT CONNECTION SCHEDULE, SHEET E1100 FOR FEEDER/CONDUIT TO NEW DISTRIBUTION PANEL INDICATED.

(3) FLOW METER BY OTHERS. COORDINATE WITH CONTROLS CONTRACTOR TO PROVIDE 120V POWER AT FLOW METER REMOTE DISPLAY (BY OTHERS). LOW VOLTAGE CABLING FROM FLOW METER TO ASSOCIATED REMOTE DISPLAY TO BE BY CONTROLS. ROUTE (2) # 12 & (1) #12 GRD. IN 3/4" CONDUIT FROM REMOTE DISPLAY TO EXISTING BRANCH PANEL "PG-1". COORDINATE WITH OTHER BUILDING SCOPE FLOW METERS TO PROVIDE AND INSTALL (1) NEW 20A-1P, 250V BREAKER IN EXISTING SQUARE D "NOOD" PANELBOARD TO FEED ALL NEW METERS.

(4) PROVIDE AND INSTALL SPLIT-CORE CT DIGITAL ENERGY MONITOR IN AIR-COOLED CHILLER CONTROL CABINET FOR ENERGY CONSUMPTION METERING. SIEMENS #DEM-1000 OR APPROVED EQUAL. CONNECT VOLTAGE LEADS AND CURRENT TRANSFORMERS ON LINE SIDE OF CONTROL CABINET. COORDINATE WITH CONTROLS CONTRACTOR FOR ACCESS TO METERING POINT AND METER IDENTIFICATION LABELS. METER IDENTIFICATION LABEL TO INCLUDE METER ID AND METER ELECTRICAL CIRCUIT IDENTIFICATION.



(1) PERDIDO - PENTHOUSE - CHILLED WATER - ELECTRICAL
1/8" = 1'-0"

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STATE OF LOUISIANA
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IN
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5/5/22
ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

SHEET TITLE:
PERDIDO FLOOR PLANS - CHILLED WATER - ELECTRICAL

SHEET NUMBER:
E1120

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications have been examined and no violations of the applicable codes have been found. Approval does not prevent the Building Official from requiring the correction of errors in the plans and construction. Approval does not relieve the owner or his agent of responsibility for compliance with the applicable codes and final inspection upon completion.
Approval of these plans is valid for 180 days.
Work shall not be commenced before approved plans have been issued and permit obtained. Work shall not be commenced until the revised plans have been examined and approved.
Work which is specified in these approved drawings is subject to inspection by the Building Official or his authorized representative at such times as he may deem necessary.
Approved Plans Must Be Kept On Job Site At All Times
REVIEWED FOR CODE COMPLIANCE
mnmurphy 07/20/2022

HEATING WATER BOILER SCHEDULE

DESIGNATION	REFERENCE PRODUCT	TYPE	OVERALL LENGTH (INCH)	OVERALL WIDTH (INCH)	OVERALL HEIGHT (INCH)	OPERATING WEIGHT (LBS)	FUEL	HEATING OUTPUT (MBH)	MAX NATURAL GAS FIRING RATE (CFH)	MIN NATURAL GAS FIRING RATE (CFH)	NATURAL GAS PRESSURE RANGE (MIN - MAX; IN W.G.)	MAXIMUM NOX EMISSIONS (PPM)	FUEL EFFICIENCY (%)	FLUE VENT SIZE (IN)	COMBUSTION AIR INLET SIZE (IN)	PRESSURE VESSEL RATED PRESSURE (PSIG)	RELIEF VALVE SET PRESSURE (PSIG)	WATER VOLUME (GAL)	MAXIMUM WATER FLOW RATE (GPM)	WATER PRESSURE DROP AT MAX FLOW RATE (FT)	MINIMUM WATER FLOW RATE (GPM)	WATER PRESSURE DROP AT MIN FLOW RATE (FT)	ELECTRICAL: BURNER FAN MOTOR (HP)	ELECTRICAL: RLA	ELECTRICAL: MCA	ELECTRICAL: MOCP	ELECTRICAL: VOLTS / PHASE	REMARKS
HWB-1-PER	FULTON - ENDURA XE	CONDENSING BOILER	26.3	28.9	73.7	537	NATURAL GAS	-	391	49 (8:1)	3.5-14	<20-PPM	98.0	4	5	160	160	10.4	105	22.0	4	0.30	-	6	7.5	15	120/1	ASME SECTION IV, BACNET COMMUNICATION PROTOCOL; 160-PSIG ASME RELIEF VALVE, FLUE GAS ADAPTER, DEDICATED CONDENSATE DRAIN TRAP, DEDICATED CONDENSATE PH NEUTRALIZATION KIT, PRESSURE & TEMPERATURE GAUGE, LOW-WATER CUT-OFF, HIGH LIMIT AQUA-STAT, OPERATING AQUA-STAT, OPERATING TEMPERATURE SENSOR, O2-TRIM, FLUE GAS TEMPERATURE SENSOR, LOW NOX EMISSIONS <20-PPM, SEALED COMBUSTION, MERV-8 COMBUSTION AIR FILTER, COLOR TOUCH SCREEN HMI, REMOTE SETPOINT SIGNAL, BOILER PUMP START-STOP SIGNAL & SPEED CONTROL.
HWB-2-PER	FULTON - ENDURA XE	CONDENSING BOILER	26.3	28.9	73.7	537	NATURAL GAS	-	391	49 (8:1)	3.5-14	<20-PPM	98.0	4	5	160	160	10.4	105	22.0	4	0.30	-	6	7.5	15	120/1	ASME SECTION IV, BACNET COMMUNICATION PROTOCOL; 160-PSIG ASME RELIEF VALVE, FLUE GAS ADAPTER, DEDICATED CONDENSATE DRAIN TRAP, DEDICATED CONDENSATE PH NEUTRALIZATION KIT, PRESSURE & TEMPERATURE GAUGE, LOW-WATER CUT-OFF, HIGH LIMIT AQUA-STAT, OPERATING AQUA-STAT, OPERATING TEMPERATURE SENSOR, O2-TRIM, FLUE GAS TEMPERATURE SENSOR, LOW NOX EMISSIONS <20-PPM, SEALED COMBUSTION, MERV-8 COMBUSTION AIR FILTER, COLOR TOUCH SCREEN HMI, REMOTE SETPOINT SIGNAL, BOILER PUMP START-STOP SIGNAL & SPEED CONTROL.

PUMP SCHEDULE

DESIGNATION	REFERENCE PRODUCT	LOCATION	SERVES	TYPE	WATER FLOW RATE (GPM)	TOTAL HEAD (FT. WATER)	ROTATION (RPM)	MINIMUM EFFICIENCY (%)	MOTOR SIZE: BHP	MOTOR SIZE: MHP	ELECTRICAL: VOLTS	ELECTRICAL: PHASE	REMARKS
PMP-HW-P1-PER	TACO KS1507D	PERDIDO MECHANIAL PENTHOUSE	HWB-1-PER	VERTICAL IN-LINE	40	20	1,160	66	0.5	0.75	480	3	STAINLESS STEEL TYPE 416 PUMP SHAFT; BRONZE OR STAINLESS STEEL FITTED CONSTRUCTION; WEAR RING; OSHA GUARD; NON-OVERLOADING / PREMIUM EFF. (NEMA 12.12) INVERTER READY MOTOR WITH CLASS F INSULATION; SHAFT GROUNDING RING; OUTSIDE BALANCED SEAL; SEAL FLUSH LINES WITH FILTER; SUCTION DIFFUSER. PROVIDE WITH PUMP STANCHION
PMP-HW-P2-PER	TACO KS1507D	PERDIDO MECHANIAL PENTHOUSE	HWB-2-PER	VERTICAL IN-LINE	40	20	1,160	66	0.5	0.75	480	3	STAINLESS STEEL TYPE 416 PUMP SHAFT; BRONZE OR STAINLESS STEEL FITTED CONSTRUCTION; WEAR RING; OSHA GUARD; NON-OVERLOADING / PREMIUM EFF. (NEMA 12.12) INVERTER READY MOTOR WITH CLASS F INSULATION; SHAFT GROUNDING RING; OUTSIDE BALANCED SEAL; SEAL FLUSH LINES WITH FILTER; SUCTION DIFFUSER. PROVIDE WITH PUMP STANCHION
PMP-HW-S1-PER	TACO KS1507D	PERDIDO MECHANIAL PENTHOUSE	PER HW LOOP	VERTICAL IN-LINE	40	55	1,760	56	2.0	3	480	3	STAINLESS STEEL TYPE 416 PUMP SHAFT; BRONZE OR STAINLESS STEEL FITTED CONSTRUCTION; WEAR RING; OSHA GUARD; NON-OVERLOADING / PREMIUM EFF. (NEMA 12.12) INVERTER READY MOTOR WITH CLASS F INSULATION; SHAFT GROUNDING RING; OUTSIDE BALANCED SEAL; SEAL FLUSH LINES WITH FILTER; SUCTION DIFFUSER. PROVIDE WITH PUMP STANCHION
PMP-HW-S2-PER	TACO KS1507D	PERDIDO MECHANIAL PENTHOUSE	PER HW LOOP	VERTICAL IN-LINE	40	55	1,760	56	2.0	3	480	3	STAINLESS STEEL TYPE 416 PUMP SHAFT; BRONZE OR STAINLESS STEEL FITTED CONSTRUCTION; WEAR RING; OSHA GUARD; NON-OVERLOADING / PREMIUM EFF. (NEMA 12.12) INVERTER READY MOTOR WITH CLASS F INSULATION; SHAFT GROUNDING RING; OUTSIDE BALANCED SEAL; SEAL FLUSH LINES WITH FILTER; SUCTION DIFFUSER. PROVIDE WITH PUMP STANCHION

VARIABLE FREQUENCY DRIVE SCHEDULE

DESIGNATION	REFERENCE PRODUCT	LOCATION	SERVES	TYPE	ENCLOSURE	VFD BYPASS	MOTOR RATED HORSEPOWER	VFD RATED HORSEPOWER	EFFICIENCY (%)	VOLTS	PHASE	MAX. OUTPUT CURRENT (AMPS)	REMARKS
VFD-PMP-HW-P1-PER	ABB ACH580	PERDIDO MECHANIAL PENTHOUSE	PMP-HW-P1-PER	PWM - 6-PULSE	NEMA 1	NO	0.75	1	98	480	3	2.1	UL LISTED; CUSTOM NAMEPLATE; INTEGRAL 5% INPUT LINE REACTOR; INPUT DRIVE DISCONNECT; FULL TEXT KEYPAD; RFI/EMI NOISE FILTER; EMS BACNET COMMUNICATION INTERFACE; PROVIDE OUTPUT LINE REACTORS WHEN DRIVE IS MORE THAN 75' FROM MOTOR; DC BUS OVERVOLTAGE RELIEF; SYNCHRONOUS SPEED MATCHING.
VFD-PMP-HW-P2-PER	ABB ACH580	PERDIDO MECHANIAL PENTHOUSE	PMP-HW-P2-PER	PWM - 6-PULSE	NEMA 1	NO	0.75	1	98	480	3	2.1	UL LISTED; CUSTOM NAMEPLATE; INTEGRAL 5% INPUT LINE REACTOR; INPUT DRIVE DISCONNECT; FULL TEXT KEYPAD; RFI/EMI NOISE FILTER; EMS BACNET COMMUNICATION INTERFACE; PROVIDE OUTPUT LINE REACTORS WHEN DRIVE IS MORE THAN 75' FROM MOTOR; DC BUS OVERVOLTAGE RELIEF; SYNCHRONOUS SPEED MATCHING.
VFD-PMP-HW-S1-PER	ABB ACH580	MECHANICAL PENTHOUSE	PMP-HW-S1-PER	PWM - 6-PULSE	NEMA 1	NO	3	5	98	480	3	7.6	UL LISTED; CUSTOM NAMEPLATE; INTEGRAL 5% INPUT LINE REACTOR; INPUT DRIVE DISCONNECT; FULL TEXT KEYPAD; RFI/EMI NOISE FILTER; EMS BACNET COMMUNICATION INTERFACE; PROVIDE OUTPUT LINE REACTORS WHEN DRIVE IS MORE THAN 75' FROM MOTOR; DC BUS OVERVOLTAGE RELIEF; SYNCHRONOUS SPEED MATCHING.
VFD-PMP-HW-S2-PER	ABB ACH580	MECHANICAL PENTHOUSE	PMP-HW-S2-PER	PWM - 6-PULSE	NEMA 1	NO	3	5	98	480	3	7.6	UL LISTED; CUSTOM NAMEPLATE; INTEGRAL 5% INPUT LINE REACTOR; INPUT DRIVE DISCONNECT; FULL TEXT KEYPAD; RFI/EMI NOISE FILTER; EMS BACNET COMMUNICATION INTERFACE; PROVIDE OUTPUT LINE REACTORS WHEN DRIVE IS MORE THAN 75' FROM MOTOR; DC BUS OVERVOLTAGE RELIEF; SYNCHRONOUS SPEED MATCHING.

FLOW METER SCHEDULE

DESIGNATION	REFERENCE PRODUCT	SERVES	TYPE	FLUID TYPE	METER SIZE (INCH)	LINE SIZE (INCH)	FLUID FLOW (GPM)	PRESSURE LOSS (PSID)	ACCURACY (%)	ELECTRICAL REQUIREMENTS	REMARKS
FM-HW-PER	BADGER M2000	HEATING WATER PERDIDO	INLINE ELECTROMAGNETIC	WATER	3	3	40	-	+/- 0.25%	120VAC / 30VA	JUNCTION BOX WITH REMOTE WALL MOUNT NEMA 4X AMPLIFIER, NSF LISTED, SS GROUNDING RINGS, 316-SS-MAGNETIC FLOW TUBE WITH HARD RUBBER LINER, CLASS 150 RF CAST STEEL FLANGE, ONE (1) PROGRAMMABLE/SCALABLE 4-20mA ANALOG SIGNAL OUTPUT, FOUR (4) TOTAL DIGITAL OUTPUTS.
FM-HW-MU-PER	BADGER RECORDALL	HEATING WATER MAKEUP WATER PER	NUTATING DISC / POSITIVE DISPLACEMENT	WATER	1	1	40	5	+/- 1.5%	24 VDC	MAX OPERATING PRESSURE 150-PSIG; LEAD-FREE BRONZE ALLOY BODY; POLYMER MEASURING CHAMBER & DISC; STAINLESS STEEL TRIM; HR-LCD PULSE SCALED REGISTER.

AIR & DIRT SEPARATORS

DESIGNATION	REFERENCE PRODUCT	LOCATION	SERVES	PIPE CONNECTION SIZE (INCHES)	MAXIMUM HEIGHT (INCHES)	MAXIMUM DIAMETER (INCHES)	MAXIMUM OPERATING WEIGHT (LBS)	MAXIMUM FLOW RATE (GPM)	MAXIMUM PRESSURE DROP (FT. WATER)	MAXIMUM VELOCITY (FT/SEC)	REMARKS
ADS-HW-1-PER	TACO 4903 ADHR-150	ROOF TOP MECH ROOM	HEATING WATER	3	28.5	14	440	253	10.0	11.0	HIGH VELOCITY COALESCING MEDIA AIR/DIRT SEPARATOR, 150-PSIG WORKING PRESSURE, AUTO AIR VENT, DRAIN VALVE, ANSI 150# RF, REMOVABLE HEAD, WELDED SUPPORT BRACKETS FOR FLOOR SUPPORT VIA PIPE STANCHIONS.

EXPANSION TANK SCHEDULE

DESIGNATION	REFERENCE PRODUCT	LOCATION	SERVES	TYPE	SYSTEM FLUID	SYSTEM VOLUME (GALLONS)	MINIMUM TEMPERATURE (DEGREE F)	MAXIMUM TEMPERATURE (DEGREE F)	INITIAL TANK AIR PRESSURE (PSIG)	MAXIMUM PRESSURE (PSIG)	MINIMUM TANK SIZE (GALLONS)	MINIMUM ACCEPTANCE (GALLONS)	TANK DIAMETER (INCHES)	TANK HEIGHT/LENGTH (INCHES)	MAXIMUM OPERATING WEIGHT (LBS)	REMARKS
ET-HW-1-PER	TACO CA90-125	MECHANICAL PENTHOUSE	HEATING WATER	VERTICAL FULL ACCEPTANCE BLADDER TYPE	WATER	300	50	180	15	60	23	23	20	29.125	310	FLOOR MOUNTED, FULL ACCEPTANCE, ASME RATED 125-PSI

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STATE OF LOUISIANA
CHRISTOPHER C. GALLOWAY
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5/5/22
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ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

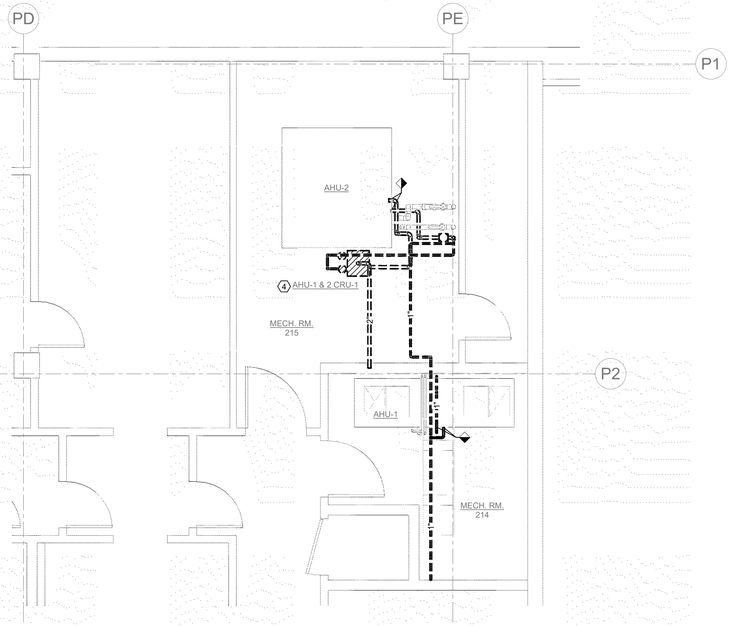
SHEET TITLE:

PERDIDO SCHEDULES - HEATING WATER - MECHANICAL

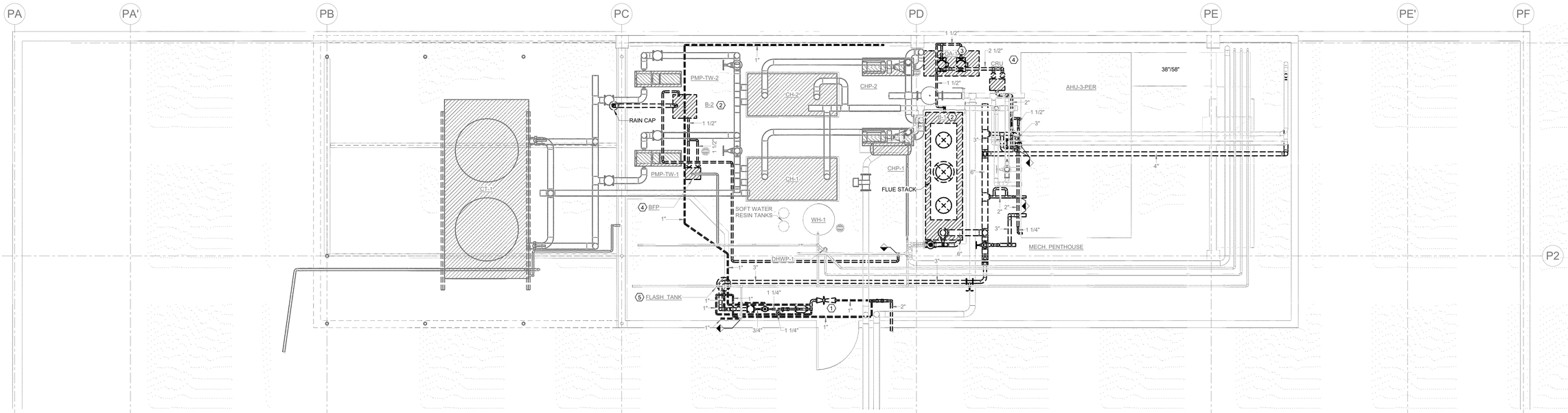
SHEET NUMBER:

M1400

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications have been examined and no evidence of deviations from the International Building Code (IBC), as amended by the City of New Orleans, has been noted. This action is contingent upon inspection and work complying with the code during the construction and final inspection upon completion. (New Orleans Code Sections 26-14 and 26-15)
Any changes to or deviation from approved plans must be immediately reported to the Department of Safety and Permits and work must stop until the revised plans have been examined and approved.
Work beyond that which is specified in these approved drawings is not authorized. Performing work beyond the scope of these plans is subject to Amendments to the International Building Code and/or revocation of the building permit.
Jay P. Dufour, AIA
Chief Plans Examiner
REVIEWED FOR CODE COMPLIANCE
mnmurphy 07/20/2022



1 PERDIDO 2ND FLOOR PLAN - STEAM - MECHANICAL DEMOLITION
1/4" = 1'-0"



2 PERDIDO PENTHOUSE FLOOR PLAN - STEAM - MECHANICAL DEMOLITION
1/4" = 1'-0"

DEMOLITION KEYED NOTES:

1. PROTECT AND TEMPORARILY STORE FLOW METER DURING DEMOLITION OF PIPING. FLOW METER IS PROPERTY OF CENTRIO.
2. PERFORM RADIATION TEST ON EXISTING BOILERS BEFORE REMOVAL AND DISPOSE ACCORDINGLY. DEMO ALL ASSOCIATED PIPING BACK TO ISOLATION VALVE. REFER TO PIPING DIAGRAMS.
3. REMOVE AND DISPOSE OF EXISTING DEAERATOR, FEEDWATER PUMPS AND ALL ASSOCIATED PIPING BACK TO ISOLATION VALVE. REFER TO PIPING DIAGRAMS.
4. REMOVE AND DISPOSE OF EXISTING CONDENSATE RETURN UNIT AND ALL ASSOCIATED PIPING BACK TO ISOLATION VALVE. REFER TO PIPING DIAGRAMS.
5. REMOVE AND DISPOSE OF EXISTING FLASH TANK AND ALL ASSOCIATED PIPING BACK TO ISOLATION VALVE. REFER TO PIPING DIAGRAMS.

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ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION
ISSUE DATE:		05/05/22
PROJECT NUMBER:		70-16-0005

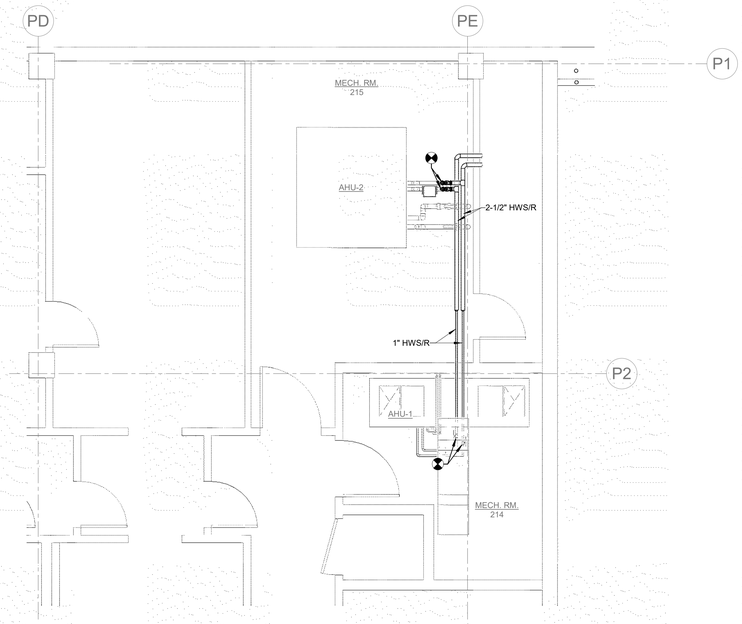
SHEET TITLE:
PERDIDO FLOOR PLANS - STEAM & CONDENSATE - MECHANICAL DEMOLITION

SHEET NUMBER:
M1410

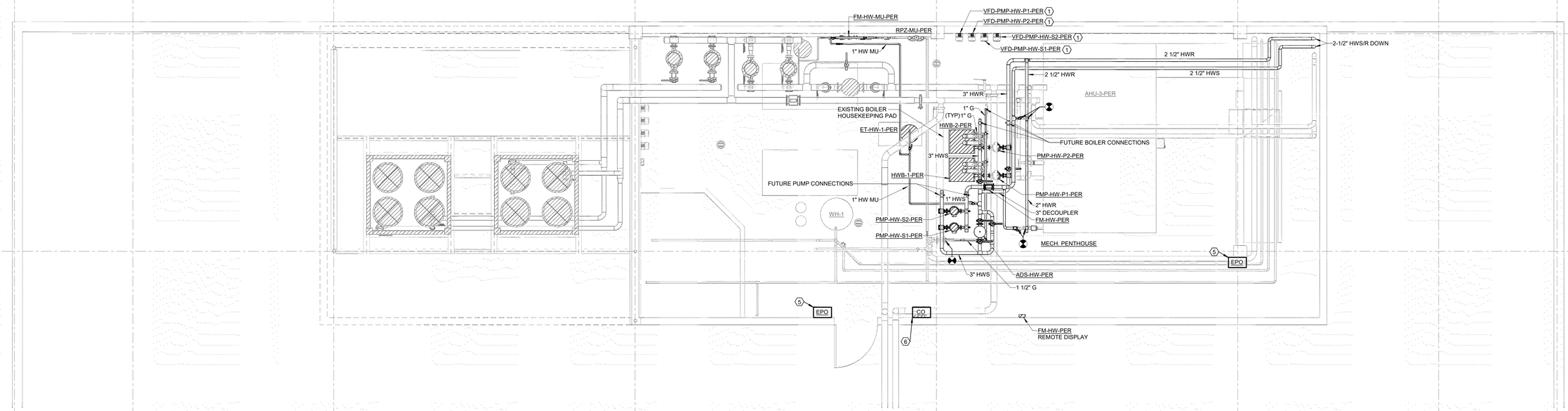
FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications have been examined and no violations of the New Orleans Building Code have been found to exist on the face of the plans. See plans dated May 5th 2022 for additional requirements. Permit is contingent upon all work being done and final inspection upon completion.
This is not to be construed as approval of any violation of any provisions of the Building Code or any other ordinance. Approval of plans does not authorize the violation of any ordinance.
Work which is specified in these approved drawings is not to be concealed before it has been inspected and approved by the Department of Safety and Permits. Failure to comply will result in the removal of any work installed.
REVIEWED FOR CODE COMPLIANCE
mnmurphy 07/20/2022

KEYED NOTES:

1. VARIABLE FREQUENCY DRIVE SHOWN FOR COORDINATION. VFD FURNISHED BY MECHANICAL CONTRACTOR, INSTALLED AND POWERED BY ELECTRICAL CONTRACTOR. REFER TO INDIVIDUAL DISCIPLINES FOR SCOPE AND SCHEDULES. MAINTAIN A MINIMUM CLEARANCE OF 3" IN FRONT OF VFD's.
2. FLOW METER FURNISHED BY CONTROLS CONTRACTOR,FLOW METER INSTALLED BY MECHANICAL CONTRACTOR AND POWERED BY ELECTRICAL CONTRACTOR. REFER TO INDIVIDUAL DISCIPLINES FOR SCOPE, DETAILS, AND SCHEDULES. INSTALL FLOW METER PER DETAILS
3. INSTALL DECOUPLER PER DETAILS.
4. INSTALL NEW HEATING WATER BOILER IN LOCATION SHOWN WITH MINIMUM CLEARANCE RECOMMENDED BY MANUFACTURER FOR MAINTENANCE ACCESSIBILITY AND ELECTRICAL CLEARANCE. ENTIRE BOILER TO BE SUPPORTED BY EXISTING EQUIPMENT PAD. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL DETAILS. CONNECT NEW BOILER TO EXISTING NATURAL GAS PIPING. REFER TO PIPING DIAGRAMS.
5. NEW EPO SWITCH PROVIDED BY ELECTRICAL CONTRACTOR. INSTALL NEAR DOORWAY COORDINATE EXACT LOCATION.
6. PROVIDE WALL MOUNTED CARBON MONOXIDE MONITOR.



1 PERDIDO 2ND FLOOR PLAN - HEATING WATER MECHANICAL
1/4" = 1'-0"



2 PERDIDO PENTHOUSE FLOOR PLAN - HEATING WATER MECHANICAL
1/4" = 1'-0"

Bernhard TME Engineering
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5/5/22
ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

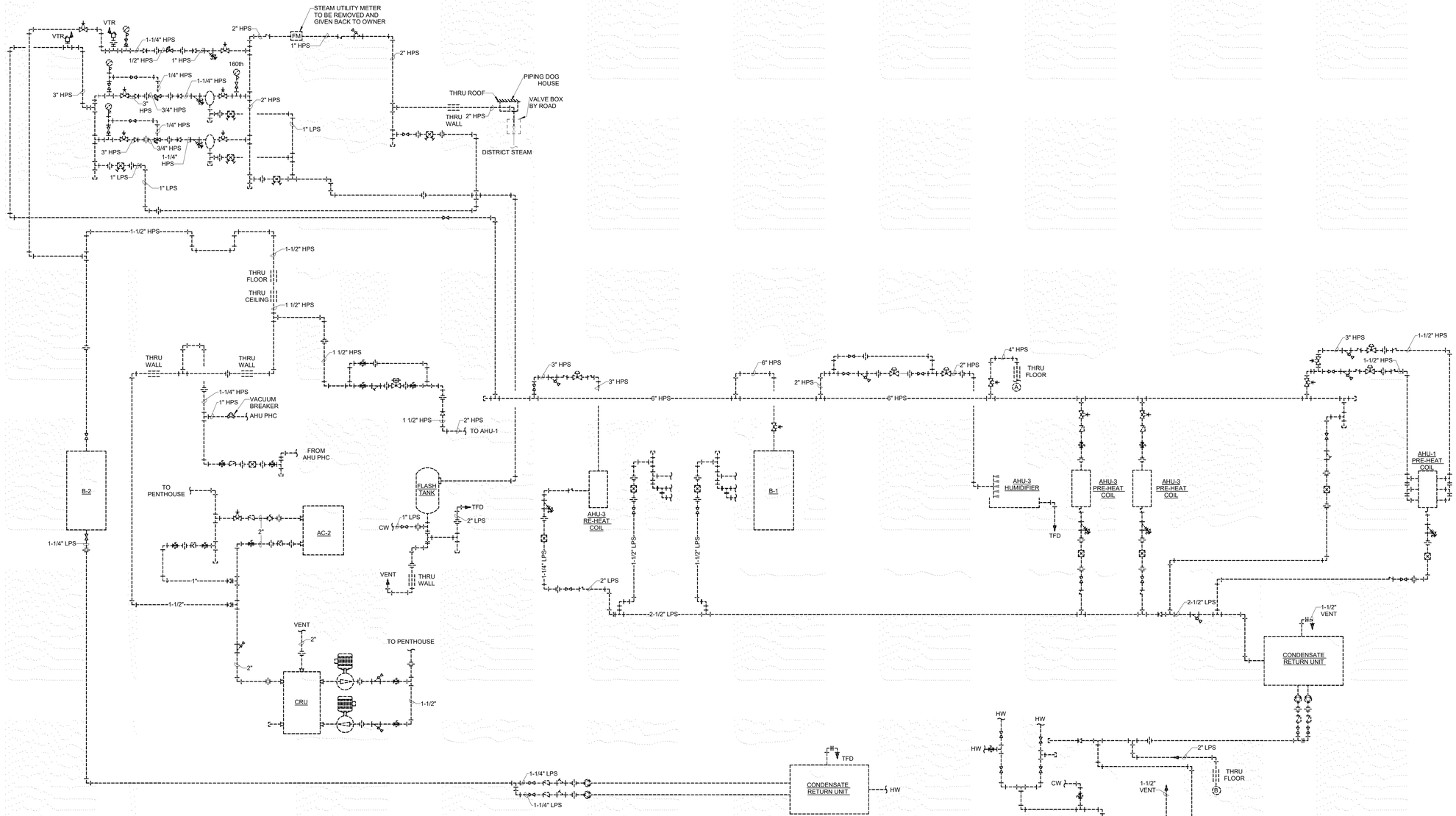
MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

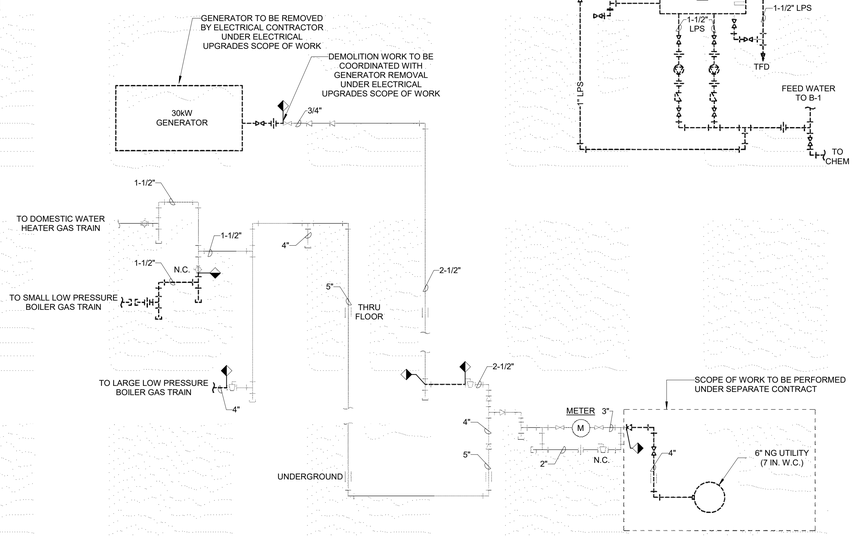
SHEET TITLE:
PERDIDO FLOOR PLANS - HEATING WATER - MECHANICAL

SHEET NUMBER:
M1420

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications have been examined and no evidence of violation of the Comprehensive Zoning Ordinance of New Orleans or of the Louisiana State Uniform Construction Code which is enforced within the City of New Orleans has been found. This release is accepted upon the condition that construction will be in accordance with all applicable laws and ordinances.
This release does not include any violations of the Louisiana State Uniform Construction Code which may be subsequently discovered or made apparent.
Work must be performed in accordance with the approved plans and specifications.
Work cannot be started until all required permits have been issued.
It is unlawful to occupy any premises until a Certificate of Occupancy has been issued by the Department of Safety and Permits.
REVIEWED FOR CODE COMPLIANCE
mmurphy 07/20/2022



1 PERDIDO BUILDING - STEAM PIPING DIAGRAM DEMOLITION
1/8" = 1'-0"



2 PERDIDO BUILDING - NATURAL GAS PIPING DIAGRAM - MECHANICAL DEMOLITION
1/8" = 1'-0"

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TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

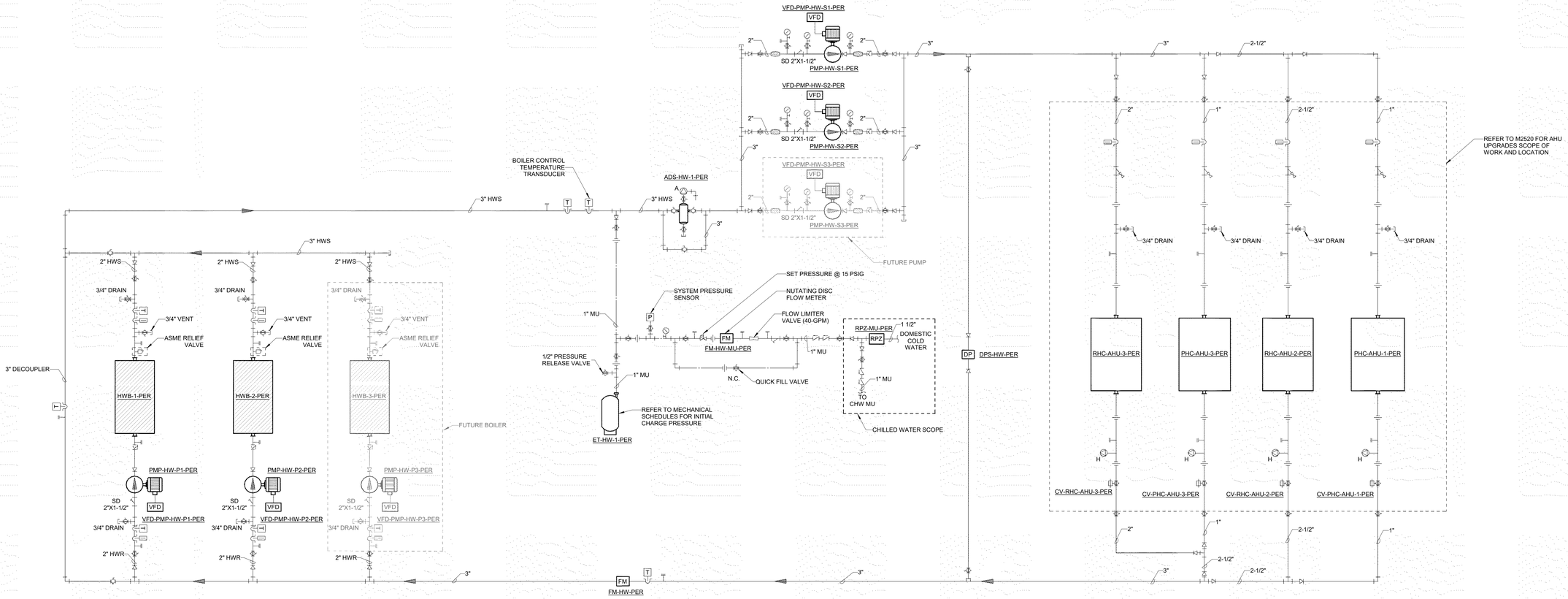
MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

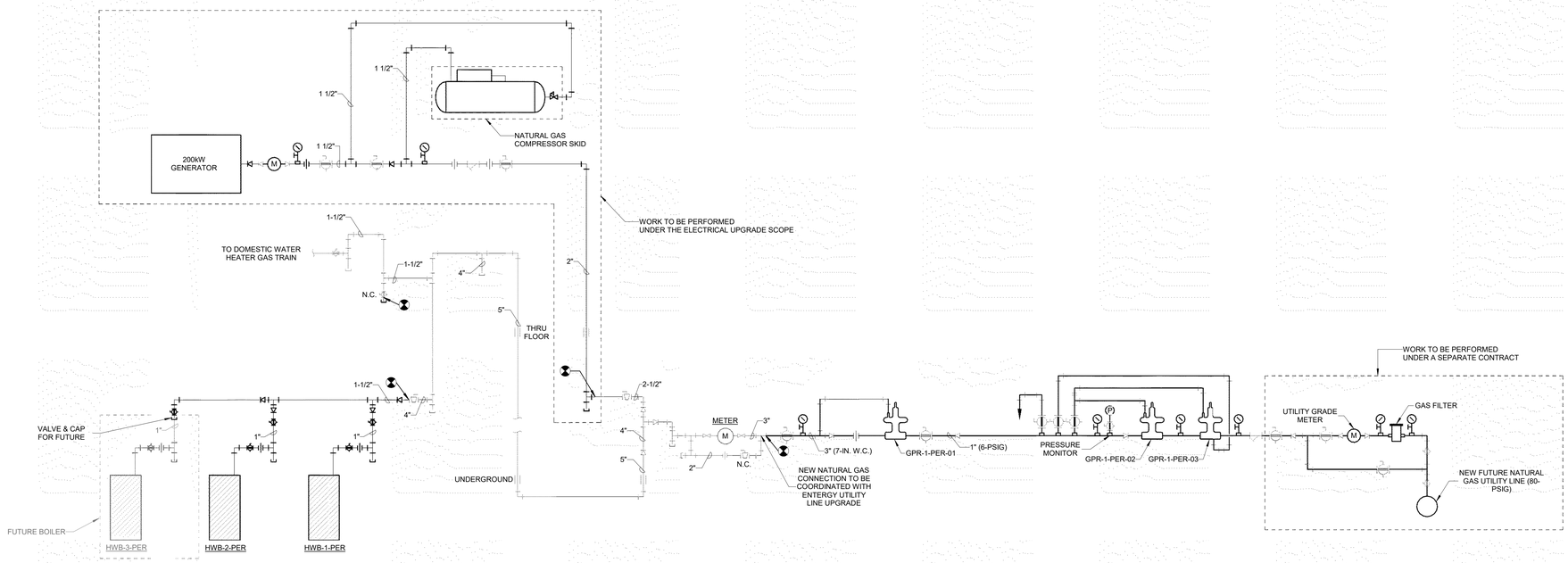
SHEET TITLE:
PERDIDO PIPING DIAGRAMS - STEAM AND NATURAL GAS - MECHANICAL DEMOLITION

SHEET NUMBER:
M1430

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications have been examined and no violations of the applicable codes have been found. Approval of these plans does not include the omission of any violations that may exist. The owner is charged with the responsibility of obtaining all required permits, inspections and final inspection upon completion.
Any changes must be approved by the Plan Review Division.
Any deviation from approved plans must be approved by the Plan Review Division and may require additional fees. Work shall be performed in accordance with the revised plans have been examined and approved.
Any work to, specified in these approved drawings, is subject to inspection by the Department of Safety and Permits, Plan Review Division.
mmurphy 07/20/2022
REVIEWED FOR CODE COMPLIANCE



1 PERDIDO BUILDING - HEATING WATER PIPING DIAGRAM - MECHANICAL
1/8" = 1'-0"



2 PERDIDO BUILDING - NATURAL GAS ONE-LINE DIAGRAM - MECHANICAL
1/8" = 1'-0"

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These construction documents and specifications have been examined and no evidence of non-compliance with the applicable provisions of the International Building Code, as adopted by the City of New Orleans, has been noted. The review is only for general conformance with the design concept of the project and does not relieve the architect, engineer, or contractor of responsibility for full compliance with all applicable codes, ordinances, and regulations. The review does not authorize the construction of any portion of the building beyond the scope of the permit issued. Construction must conform to the approved plans in every respect. Any deviation requires a separate review and approval before proceeding with the work.
IT IS UNLAWFUL TO ALTER THIS DOCUMENT IN ANY WAY WITHOUT THE WRITTEN CONSENT OF THE ISSUING AUTHORITY.
REVIEWED FOR CODE COMPLIANCE
cwmurphy 07/20/2022

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TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

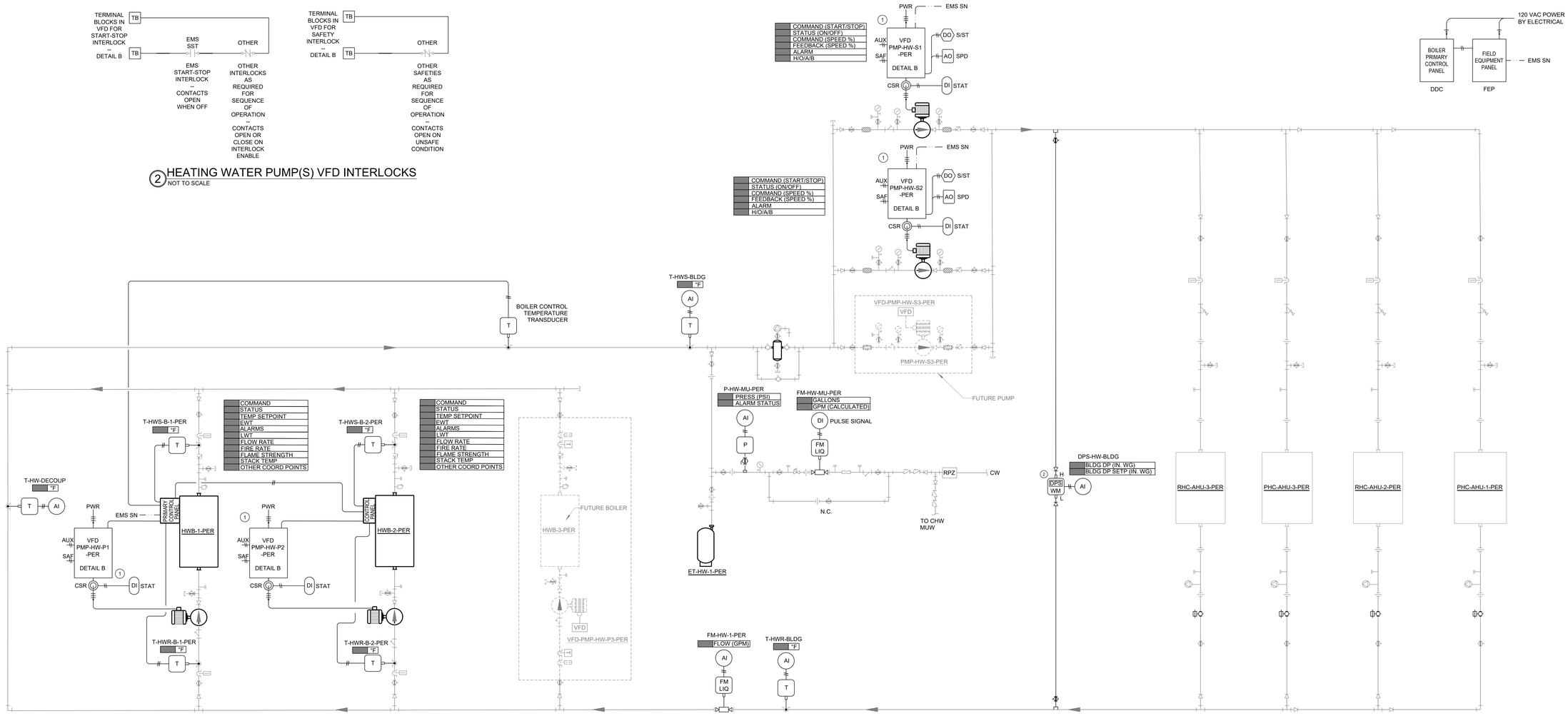
MARK	DATE	DESCRIPTION
ISSUE DATE:		05/05/22
PROJECT NUMBER:		70-16-0005

SHEET TITLE:
PERDIDO PIPING DIAGRAMS - HEATING WATER AND NATURAL GAS - MECHANICAL

SHEET NUMBER:
M1440

2 HEATING WATER PUMP(S) VFD INTERLOCKS

NOT TO SCALE



1 HEATING WATER CONTROL DIAGRAM

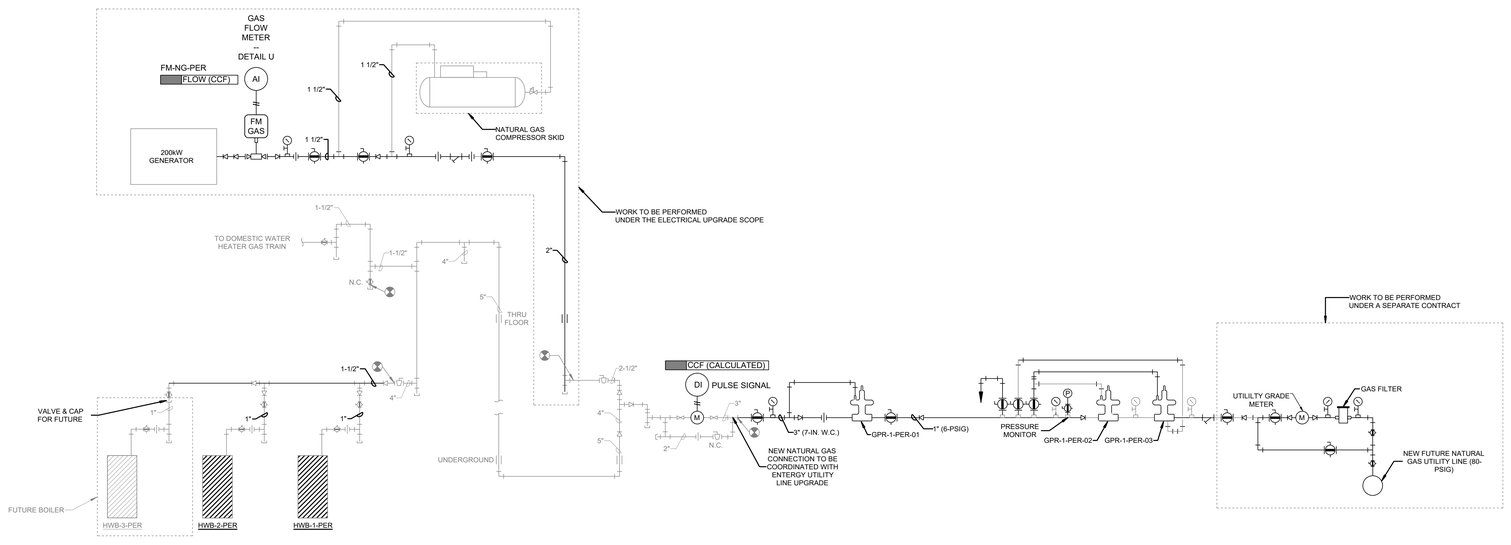
NOT TO SCALE

KEYED NOTES:

1. MOTOR SPEED CONTROL, START/STOP COMMAND, AND STATUS SHALL BE HARD WIRED. ALL OTHER VFD INFORMATION SHALL BE VIA EMS COMM. THE POINTS SPECIFIED IN THE PROJECT MANUAL SHALL BE THE MINIMUM REQUIRED TO BE INDICATED ON THE VFD GRAPHICS. EXISTING VFD'S CAPABLE "AS IS" OF COMMUNICATING H/O/A/B WILL BE REQUIRED TO DO SO ON THE GRAPHIC.
2. PROVIDE AND INSTALL A SETRA MODEL 231 PRESSURE SENSOR WITH A 5-VALVE MANIFOLD OR APPROVED EQUAL. PROVIDE WITH A UNI-DIRECTIONAL DIFFERENTIAL PRESSURE RATING OF 0 PSI TO 50 PSI, A WORKING PRESSURE RATING OF 150 PSI, AND A BURST PRESSURE RATING OF 200 PSI.

GENERAL NOTES:

1. CONTROL VALVES, FLOW METERS, THERMOWELLS, AND TAPS ARE PROVIDED BY DIVISION 25 AND INSTALLED BY DIVISION 23 IN LOCATIONS INDICATED BY THE CONTROL DIAGRAMS AND AS SPECIFIED.
2. ALL CONTROLLERS, ACTUATORS, SENSORS, SWITCHES, TUBING, AND POINTS INDICATED ON THE PLANS ARE PROVIDED AND INSTALLED BY DIVISION 25, UNLESS NOTED OTHERWISE. TRANSFORMERS ARE PROVIDED BY DIVISION 25, INSTALLED BY DIVISION 26.
3. ALL POINTS INDICATED ON THE CONTROL DRAWINGS ARE NEW, PROVIDED BY DIVISION 25, UNLESS INDICATED OTHERWISE.
4. A SINGLE TRANSFORMER CAN BE PROVIDED FOR UP TO 10 CONTROLLERS PROVIDED LENGTH OF RUNS AND ZONING IS TAKEN INTO CONSIDERATION.
5. IF COMPONENT IS DISABLED DUE TO MAINTENANCE SHUTDOWN, IN ALARM, OR IN A FAULT CONDITION, COMPONENT SHALL BE HIGHLIGHTED, OUTLINED, FLASH, OR CHANGE COLORS.
6. INDICATE OVERRIDES BY HIGHLIGHTING THE VALUES IN PURPLE, OR CHANGING THE TEXT COLORS TO PURPLE.
7. THIS GRAPHIC SHALL BE REPRESENTED ON THE BAS, INCLUDING THE RESULTS OF AS-BUILT CONDITIONS. THE GRAPHIC IS TO BE POPULATED WITH LIVE VALUES. SET POINTS SHALL BE ADJUSTABLE FROM THIS GRAPHIC AND LINKS SHALL BE PROVIDED TO THE LIVE SEQUENCE AND TRENDING GROUPS. REFER TO SPECIFICATIONS FOR FURTHER GRAPHICAL REQUIREMENTS.
8. EQUIPMENT PROVIDED WITH CONTROLLERS (BOILERS, VARIABLE FREQUENCY DRIVES, CHILLERS, ETC) SHALL COMMUNICATE DIRECTLY WITH THE BAS. ALL REQUIRED GATEWAYS AND ROUTERS SHALL BE PROVIDED WITH EQUIPMENT WHERE AVAILABLE. ALL AVAILABLE POINTS SHALL BE OBTAINED FROM THE EQUIPMENT CONTROLLER AND THE BAS SHALL PROVIDE SET POINTS, COMMANDS, ETC, TO THE EQUIPMENT PER THE SEQUENCE OF OPERATIONS. ALL INDICATED HARD WIRED POINTS SHALL BE CONTROLLED VIA HARD WIRED CONNECTIONS. THE CONTRACTOR SHALL NOT USE INTEGRATED POINTS FOR IDENTIFIED HARDWIRED POINTS.
9. EQUIPMENT SHALL HAVE DEDICATED GRAPHICS PER SPECIFICATIONS. ALL COMMUNICATED POINTS SHALL BE AVAILABLE IN A LIST FORMAT WITH COMPLETE DESCRIPTIONS OF THE POINT, INCLUDING ALARMS. THE OPERATOR SHALL NOT HAVE TO REFER TO DOCUMENTATION TO DETERMINE WHAT THE POINT IS.
10. VARIABLE FREQUENCY DRIVES FURNISHED BY 23, INSTALLED BY DIVISION 26.



FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
REVIEWED FOR CODE COMPLIANCE
mvmurphy 07/20/2022

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05/05/22
ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

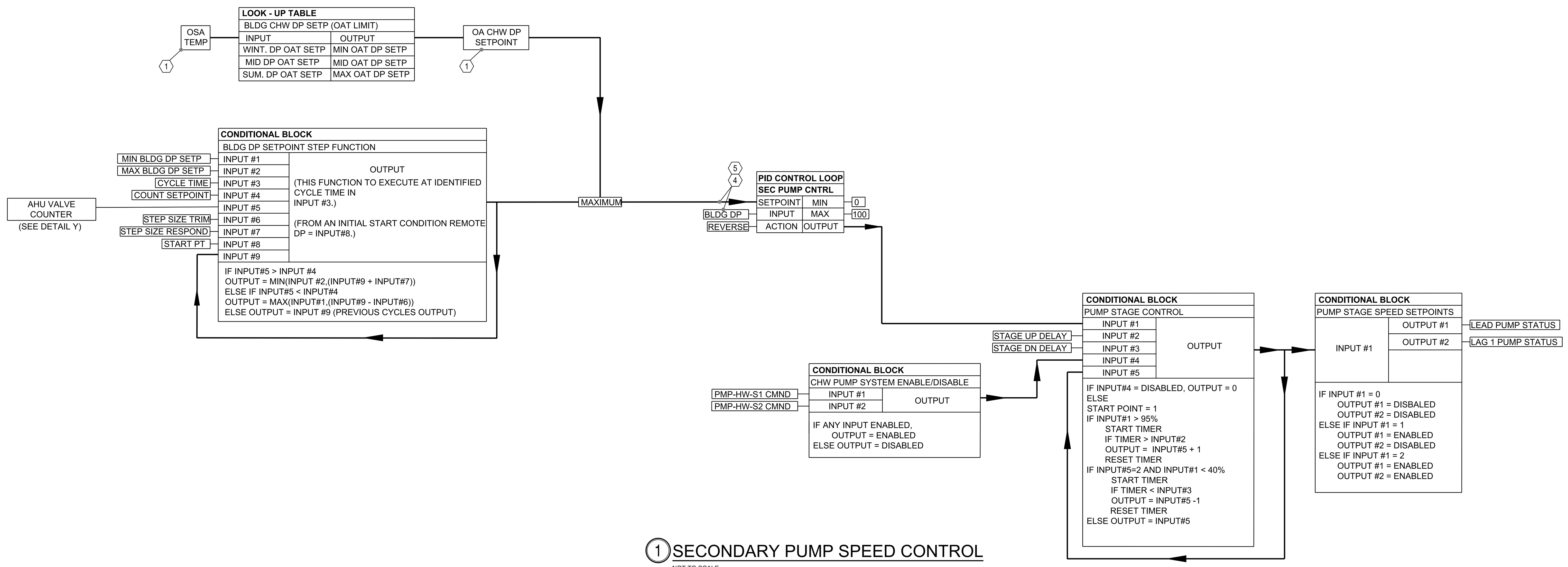
ISSUE DATE: 05/05/22

PROJECT NUMBER: 70-16-0005

SHEET TITLE:
HEATING WATER CONTROL DIAGRAM - PERDIDO

SHEET NUMBER:
ATC1400

SEQUENCE OF OPERATION:



1 SECONDARY PUMP SPEED CONTROL

NOT TO SCALE

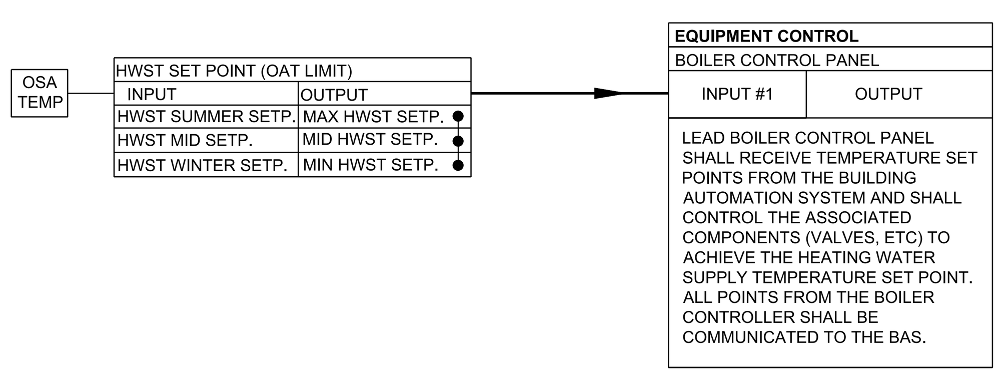
HEATING WATER SYSTEM CONTROL:

BOILER AND PRIMARY PUMP CONTROL:
THE BAS SHALL ENABLE THE PRIMARY BOILER CONTROL PANEL TO START THE BOILER SEQUENCING. THE BOILERS SHALL UTILIZE THE SEQUENCING TECHNOLOGY FROM THE PRIMARY CONTROL PANEL TO CONTROL BOTH THE BOILER AND PRIMARY PUMP SEQUENCING. ALL POINTS FROM THE BOILER CONTROLLER SHALL BE COMMUNICATED TO THE BAS. THE FOLLOWING CONTACTS FROM THE PRIMARY BOILER CONTROL PANEL SHALL BE HARD WIRED TO COMMUNICATE TO THE BAS:
1) GENERAL ALARM CONTACT
2) REMOTE BOILER ENABLE/DISABLE CONTACT

SECONDARY PUMP CONTROL:
UPON THE BOILER PLANT SEQUENCE BEING ENABLED, THE LEAD SECONDARY HEATING WATER PUMP SHALL ENERGIZE AND MODULATE TO MAINTAIN THE BUILDING HEATING WATER DIFFERENTIAL PRESSURE SETPOINT. IF THE LEAD PUMP'S SPEED IS GREATER THAN 95% (ADJUSTABLE) FOR 3 MINUTES (ADJUSTABLE) THE LAG PUMP SHALL BE ENABLED AND MODULATE TO MAINTAIN THE BUILDING DP SETPOINT. THE LEAD PUMP SHALL REDUCE SPEED TO MATCH THE LAG PUMP AND BOTH PUMPS SHALL MODULATE IN PARALLEL TO MAINTAIN THE BUILDING DP SETPOINT. IF EITHER PUMP'S SPEED IS LESS THAN 40% (ADJUSTABLE) FOR 2 MINUTES (ADJUSTABLE) THE LAG PUMP SHALL BE DISABLED. OPTIMAL PUMP STAGING SETPOINTS SHOULD BE FIELD DETERMINED. REFER TO THE SECONDARY PUMP SPEED CONTROL DIAGRAM FOR THE DETAILED SEQUENCE. THE CONTROLS CONTRACTOR IS REQUIRED TO TUNE THE PID LOOPS TO ENSURE SMOOTH OPERATION THROUGH THE FULL RANGE OF OPERATION.

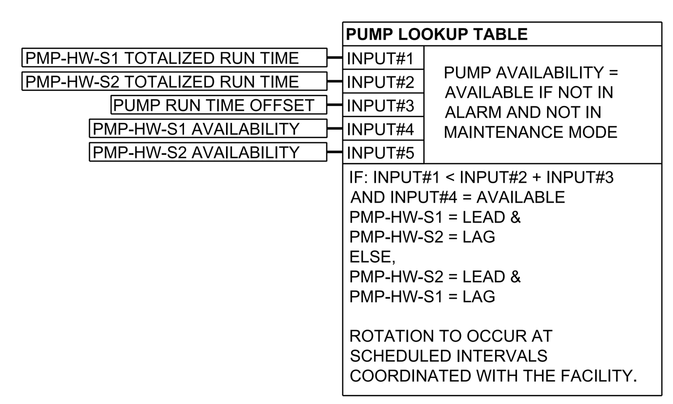
THE BUILDING HEATING WATER DIFFERENTIAL PRESSURE SETPOINT SHALL MODULATE BETWEEN 2 PSIG (ADJUSTABLE) AND 15 PSIG (ADJUSTABLE) TO MAINTAIN THE HEATING COIL VALVE REQUESTS BELOW THE COUNT SETPOINT (ADJUSTABLE). REFER TO THE SECONDARY PUMP SPEED CONTROL DIAGRAM FOR BUILDING DIFFERENTIAL PRESSURE SETPOINT TRIM AND RESPONSE LOGIC.

HEATING WATER SUPPLY TEMPERATURE CONTROL:
THE HEATING WATER SUPPLY TEMPERATURE SETPOINT SHALL BE RESET BASED ON OUTSIDE AIR TEMPERATURE. REFER TO THE HEATING WATER SUPPLY TEMPERATURE CONTROL DIAGRAM FOR THE DETAILED SEQUENCE.



2 HEATING WATER SUPPLY TEMPERATURE CONTROL

NOT TO SCALE



3 SECONDARY PUMP LEAD/LAG CONTROL

NOT TO SCALE

GENERAL NOTES:

1. CONTROL VALVES, FLOW METERS, THERMOWELLS, AND TAPS ARE PROVIDED BY DIVISION 25 AND INSTALLED BY DIVISION 23 IN LOCATIONS INDICATED BY THE CONTROL DIAGRAMS AND AS SPECIFIED.
2. ALL CONTROLLERS, ACTUATORS, SENSORS, SWITCHES, TUBING, AND POINTS INDICATED ON THE PLANS ARE PROVIDED AND INSTALLED BY DIVISION 25, UNLESS NOTED OTHERWISE. CONTROL VALVES AND THERMOWELLS ARE PROVIDED BY DIVISION 25, INSTALLED BY DIVISION 23. TRANSFORMERS ARE PROVIDED BY DIVISION 25, INSTALLED BY DIVISION 26.
3. ALL POINTS INDICATED ON THE CONTROL DRAWINGS ARE NEW, PROVIDED BY DIVISION 25, UNLESS INDICATED OTHERWISE.
4. A SINGLE TRANSFORMER CAN BE PROVIDED FOR UP TO 10 CONTROLLERS PROVIDED LENGTH OF RUNS AND ZONING IS TAKEN INTO CONSIDERATION.
5. IF COMPONENT IS DISABLED DUE TO MAINTENANCE SHUTDOWN, IN ALARM, OR IN A FAULT CONDITION, COMPONENT SHALL BE HIGHLIGHTED, OUTLINED, FLASH, OR CHANGE COLORS.
6. INDICATE OVERRIDES BY HIGHLIGHTING THE VALUES IN PURPLE, OR CHANGING THE TEXT COLORS TO PURPLE.
7. THIS GRAPHIC SHALL BE REPRESENTED ON THE BAS, INCLUDING THE RESULTS OF AS-BUILT CONDITIONS. THE GRAPHIC IS TO BE POPULATED WITH LIVE VALUES. SET POINTS SHALL BE ADJUSTABLE FROM THIS GRAPHIC AND LINKS SHALL BE PROVIDED TO THE LIVE SEQUENCE AND TRENDING GROUPS. REFER TO SPECIFICATIONS FOR FURTHER GRAPHICAL REQUIREMENTS.
8. EQUIPMENT PROVIDED WITH CONTROLLERS (BOILERS, VARIABLE FREQUENCY DRIVES, CHILLERS, ETC) SHALL COMMUNICATE DIRECTLY WITH THE BAS. ALL REQUIRED GATEWAYS AND ROUTERS SHALL BE PROVIDED WITH EQUIPMENT WHERE AVAILABLE. ALL AVAILABLE POINTS SHALL BE OBTAINED FROM THE EQUIPMENT CONTROLLER AND THE BAS SHALL PROVIDE SET POINTS, COMMANDS, ETC, TO THE EQUIPMENT PER THE SEQUENCE OF OPERATIONS. ALL INDICATED HARD WIRED POINTS SHALL BE CONTROLLED VIA HARD WIRED CONNECTIONS. THE CONTRACTOR SHALL NOT USE INTEGRATED POINTS FOR IDENTIFIED HARDWIRED POINTS.
9. EQUIPMENT SHALL HAVE DEDICATED GRAPHICS PER SPECIFICATIONS. ALL COMMUNICATED POINTS SHALL BE AVAILABLE IN A LIST FORMAT WITH COMPLETE DESCRIPTIONS OF THE POINT, INCLUDING ALARMS. THE OPERATOR SHALL NOT HAVE TO REFER TO DOCUMENTATION TO DETERMINE WHAT THE POINT IS.
10. VARIABLE FREQUENCY DRIVES SHALL INDICATE HAND, OFF, AUTO, AND BYPASS STATUS.

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
REVIEWED FOR CODE COMPLIANCE
mnmurphy 07/20/2022

ALARMS

ALARM TYPE	PRIORITY LEVEL (ADJ)	CRITERIA
FAILED ACTUATOR (MODULATING)	2	VALVE FEEDBACK + OFFSET > OR < COMMAND FOR MORE THAN 5 MINUTES
FAILED ACTUATOR (TWO POSTION)	2	SWITCHES DON'T MATCH COMMAND FOR MORE THAN 5 MIN. (ADJ)
FAILED CURRENT SWITCH/SENSOR STATUS	2	STATUS NOT MET DURING A CALL TO OPERATE.
HIGH BUILDING DIFFERENTIAL PRESSURE	3	BLDG. DP > BLDG. DP SET POINT + 1 PSI (ADJ) FOR MORE THAN 5 MIN. (ADJ)
LOW BUILDING DIFFERENTIAL PRESSURE	3	BLDG. DP < BLDG. DP SET POINT - 1 PSI (ADJ) FOR MORE THAN 5 MIN. (ADJ)
HIGH BUILDING PRESSURE	1	MAKEUP PRESS > HIGH MAKEUP PRESS SET POINT (ADJ) FOR MORE THAN 5 MIN. (ADJ)
LOW BUILDING PRESSURE	1	MAKEUP PRESS < LOW MAKEUP PRESS SET POINT (ADJ) FOR MORE THAN 5 MIN. (ADJ)
UNRELIABLE SENSOR	3	SENSOR OUT OF RANGE, DOESN'T CHANGE STATUS, ETC
UNRELIABLE METER	3	VALUE OUT OF RANGE, DOESN'T CHANGE STATUS, ETC
OWNER REQUESTED ALARMS	TOO BE COORD.	ATC CONTRACTOR TO ADD ALARMS AS REQUESTED BY OWNER.
VFD IN HAND	2	VFD IN HAND
VFD IN BYPASS	2	VFD IN BYPASS
VFD HAND OFF	2	VFD IN HAND OFF
VFD GENERAL ALARM	2	HARD WIRED GENERAL ALARM INDICATED.
VFD COMM ALARM	2	ALARMS AND WARNINGS COMMUNICATED FROM THE VFD.
FAILED BUILDING DP SENSOR	1	SENSOR OUT OF RANGE, UNRELIABLE, DISCONNECTED, ETC
BOILER INTEGRATED ALARMS	TOO BE COORD.	

SET POINT SCHEDULE

SETPOINT	VALUE	OPERATOR CLEARANCE	NOTES
MIN PLANT HEATING WATER DP SETPOINT	5 PSI	1	ADJUSTABLE
MAX PLANT HEATING WATER DP SETPOINT	15 PSI	1	ADJUSTABLE
MINIMUM HEATING WATER SUPPLY TEMP	110 °F	2	ADJUSTABLE
MAXIMUM HEATING WATER SUPPLY TEMP	150 °F	2	ADJUSTABLE
PMP-HW-S1 MIN PUMP SPEED SETPOINT	20 %	3	ADJUSTABLE
PMP-HW-S1 MAX PUMP SPEED SETPOINT	100 %	3	ADJUSTABLE
PMP-HW-S2 MIN PUMP SPEED SETPOINT	20 %	3	ADJUSTABLE
PMP-HW-S2 MAX PUMP SPEED SETPOINT	100 %	3	ADJUSTABLE
HWST SUMMER SETP.	80 °F	3	ADJUSTABLE
HWST MID SETP.	65 °F	3	ADJUSTABLE
HWST WINTER SETP.	50 °F	3	ADJUSTABLE
PUMP RUN TIME OFFSET	100 HRS	3	ADJUSTABLE
CYCLE TIME	90 SEC	3	ADJUSTABLE
COUNT SETPOINT	3	3	ADJUSTABLE
STEP SIZE TRIM	0.5 PSI	3	ADJUSTABLE
STEP SIZE RESPOND	1 PSI	3	ADJUSTABLE
START PT	2 PSI	3	ADJUSTABLE
SYSTEM PRESSURE SETP.	---PSI	1	COORDINATE WITH FACILITIES
MIN HWST SETP.	110 °F	3	ADJUSTABLE
MID HWST SETP.	130 °F	3	ADJUSTABLE
MAX HWST SETP.	150 °F	3	ADJUSTABLE
WINT. DP OAT SETP	50°F	3	ADJUSTABLE
MID DP OAT SETP	65°F	3	ADJUSTABLE
SUM. DP OAT SETP	80°F	3	ADJUSTABLE
MIN OAT DP SETP	6 PSI	3	ADJUSTABLE
MID OAT DP SETP	4 PSI	3	ADJUSTABLE
MAX OAT DP SETP	2 PSI	3	ADJUSTABLE
STAGE UP DELAY	3 MINUTES	3	ADJUSTABLE
STAGE DN DELAY	2 MINUTES	3	ADJUSTABLE

NOTES:
1. TABLE SHALL BE PRESENT ON THE GRAPHICS WITH UP TO DATE VALUES.
2. TABLE SHALL BE SUBMITTED BY CONTROLS CONTRACTOR TO ENGINEER FOR APPROVAL ALONG WITH GRAPHICS AND INFORMATIONAL SUBMITTALS.

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TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

ISSUE DATE: 05/05/22

PROJECT NUMBER: 70-16-0005

SHEET TITLE:
HEATING WATER CONTROL SEQUENCE - PERDIDO

SHEET NUMBER:
ATC1401

ELECTRICAL EQUIPMENT CONNECTION SCHEDULE - HEATING WATER - PERDIDO

EQUIPMENT ID	EQUIPMENT SERVED	MOTOR HP	MOTOR KW	DEVICE	DEVICE PROVIDED BY	SIZE	ENCLOSURE	VOLTAGE	PHASE	LOAD	WIRE AND CONDUIT SIZE	NOTES
VFD-PMP-HW-P1-PER	PMP-HW-P1-PER	0.75	-	VFD	MECHANICAL	N/A	NEMA 1	480 V	3	1330 VA	(3) #12 & (1) #12 GRD. IN 3/4" CONDUIT	-
VFD-PMP-HW-P2-PER	PMP-HW-P2-PER	0.75	-	VFD	MECHANICAL	N/A	NEMA 1	480 V	3	1330 VA	(3) #12 & (1) #12 GRD. IN 3/4" CONDUIT	-
VFD-PMP-HW-S1-PER	PMP-HW-S1-PER	3	-	VFD	MECHANICAL	N/A	NEMA 1	480 V	3	3991 VA	(3) #12 & (1) #12 GRD. IN 3/4" CONDUIT	-
VFD-PMP-HW-S2-PER	PMP-HW-S2-PER	3	-	VFD	MECHANICAL	N/A	NEMA 1	480 V	3	3991 VA	(3) #12 & (1) #12 GRD. IN 3/4" CONDUIT	-

DISTRIBUTION PANEL: "PD-N"

LOCATION: MECH. PENTHOUSE
SUPPLY FROM: "GD"
MOUNTING: SURFACE
ENCLOSURE: NEMA 1

VOLTAGE: 480/277 Wye
PHASES: 3
WIRES: 4

AIC RATING: 65,000
MAINS RATING: 800 A
MCB RATING: 800 A (LSI)

NOTES:
PROVIDE ADEQUATE MOUNTING SPACE FOR FUTURE BREAKERS.

CCT	CIRCUIT DESCRIPTION	# OF POLES	FRAME SIZE (A)	TRIP RATING (A)	Load	REMARKS
1	EXISTING (EX. FAN #1)	3	--	20	6228	
2	EXISTING (EX. FAN #2)	3	--	20	6228	
3	EXISTING (EX. FAN #3)	3	--	20	6228	
4	EXISTING (EX. FAN #6)	3	--	20	6228	
5	EXISTING (AIR COMP. #2)	3	--	20	6228	
6	EXISTING (COND. RETURN)	3	--	20	6228	
7	EXISTING (COND. PUMP)	3	--	20	6228	
8	EXISTING (AIR COMP. #1)	3	--	20	6228	
9	EXISTING (2ND FLOOR A/C PUMP)	3	--	20	6228	FIELD VERIFY. EXISTING BREAKER IN PANEL "PD" IS OFF.
10	EXISTING (XFMR ENGINEER'S RM)	3	--	60	24912	
11	EXISTING (ROOFTOP ANIMAL RM A/C)	3	--	50	20760	FIELD VERIFY. EXISTING BREAKER IN PANEL "PD" IS OFF.
12	EXISTING (AIR PUMP NEW)	3	--	30	12456	FIELD VERIFY. EXISTING BREAKER IN PANEL "PD" IS OFF.
13	EXISTING (CAGE WASHER)	3	--	30	12456	FIELD VERIFY. EXISTING BREAKER IN PANEL "PD" IS OFF.
14	EXISTING (STERILIZER 2ND FLOOR)	3	--	30	12456	FIELD VERIFY. EXISTING BREAKER IN PANEL "PD" IS OFF.
15	EXISTING (BLOWERS RM 314 NEW A/C)	3	--	70	29064	
16	EXISTING (CAGE WASHER 2ND FLOOR)	3	--	40	16608	
17	EXISTING (AIR PUMP NEW)	3	--	30	12456	FIELD VERIFY. EXISTING BREAKER IN PANEL "PD" IS OFF.
18	EXISTING (AC FAN UNIT #3)	3	--	40	16608	
19	EXISTING (TRANSFORMER 3T)	3	--	100	41520	
20	EXISTING (ELEVATOR)	3	--	70	29064	
21	EXISTING (PANEL 3H)	3	--	100	41520	
22	ACC-1-PER	3	250	175	95000	LSI BREAKER
23	ACC-2-PER	3	250	175	95000	LSI BREAKER
24	PMP-CHW-P1-PER	3	100	20	3991	
25	PMP-CHW-P2-PER	3	100	20	3991	
26	PMP-CHW-S1-PER	3	100	20	9145	
27	PMP-CHW-S2-PER	3	100	20	9145	
28	PMP-HW-P1-PER	3	100	20	1330	
29	PMP-HW-P2-PER	3	100	20	1330	
30	PMP-HW-S1-PER	3	100	20	3991	
31	PMP-HW-S2-PER	3	100	20	3991	
32	NGC-1-PER	3	100	30	11639	
33						
34						
35						
				TOTAL LOAD:	564485 VA	
				TOTAL AMPS:	679 A	

LOAD CLASSIFICATIONS	CONNECTED LOAD	DEMAND / DESIGN FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
MOTOR EQUIPMENT	238553 VA	109.96%	262303 VA		
Spare	325932 VA	100.00%	325932 VA	**CONNECTED LOAD:**	564485 VA
				ESTIMATED DEMAND:	588235 VA
				CONNECTED CURRENT:	679 A
				EST. DEMAND CURRENT:	708 A

BRANCH PANEL: "PG-1"

LOCATION: MECH. PENTHOUSE
SUPPLY FROM: UNKNOWN
MOUNTING: SURFACE
ENCLOSURE: NEMA 1

VOLTAGE: 120/208 Wye
PHASES: 3
WIRES: 4

AIC RATING:
BUS RATING: 100 A
MCB RATING: MLO

NOTES:

CCT	CIRCUIT DESCRIPTION	TRIP	POLES	A (VA)		B (VA)		C (VA)		POLES	TRIP	CIRCUIT DESCRIPTION	CCT
1	REC. ENGINEER'S ROOM	20	1	0	0					2	30	A.C. UNIT ENGINEER'S ROOM	2
3	REC. ENGINEER'S ROOM	20	1			0	0			--	--	--	4
5	OUTSIDE OUTLET	20	1					0	1440	1	20	**HWB-1-PER / HWB-2-PER**	6
7	AIR SAMPLE ROOF TOP	20	1	0	0					3	30	BOILER FEED PUMP	8
9	EX. FAN FOR 2ND FLOOR	20	2			0	0			--	--	--	10
11	--	--	--					0	0	--	--	--	12
13	PLC. POWER	20	1	0	0					1	25	SUMP PUMP POWER	14
15	VALVE ACTUATOR POWER	30	3			0	0			1	20	LIGHT AND MAINTENANCE POWER	16
17	--	--	--					0	0	1	20	JOHNSON PANEL ENGINE RM	18
19	--	--	--	0	0					1	20	EXISTING	20
21	EXISTING	20	1			0	0			--	--	-PREPARED SPACE-	22
23	POWER, OTHER	20	1					100	0	--	--	-PREPARED SPACE-	24
25	-PREPARED SPACE-	--	--	0	0					--	--	-PREPARED SPACE-	26
27	-PREPARED SPACE-	--	--			0	0			--	--	-PREPARED SPACE-	28
29	-PREPARED SPACE-	--	--					0	0	--	--	-PREPARED SPACE-	30
			TOTAL LOAD:	0 VA		0 VA		1540 VA					
			TOTAL AMPS:	0 A		0 A		13 A					

LOAD CLASSIFICATIONS	CONNECTED LOADS	DEMAND / DESIGN FACTORS	ESTIMATED DEMANDS	PANEL TOTALS	
MOTOR EQUIPMENT	1440 VA	112.50%	1620 VA		
POWER, OTHER	100 VA	100.00%	100 VA	**CONNECTED LOAD:**	1540 VA
				ESTIMATED DEMAND:	1720 VA
				CONNECTED CURRENT:	4 A
				EST. DEMAND CURRENT:	5 A

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STATE OF LOUISIANA
TRENTON PAUL CHEVRON
No. 36218
PROFESSIONAL ENGINEER
IN
ELECTRICAL ENGINEERING
5/5/22
ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

SHEET TITLE:
PERDIDO SCHEDULES - HEATING WATER - ELECTRICAL

SHEET NUMBER:
E1400

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications have been examined and no evidence of violation of the Comprehensive Zoning Ordinance of New Orleans or the Code of Ordinances has been found. They meet, in principle, the minimum and such complying with the code during the construction is required by law.
Approval of these plans does not include approval of any violations of the Louisiana State Uniform Construction Code.
Any changes must be submitted to the Department of Safety and Permits and approved before work is started.
Work cannot be started until a Permit Card is issued.
It is unlawful to occupy any building or structure for which a permit is required by the Code of Ordinances of New Orleans, Chapter 14.
REVIEWED FOR CODE COMPLIANCE
rmmurphy 07/20/2022

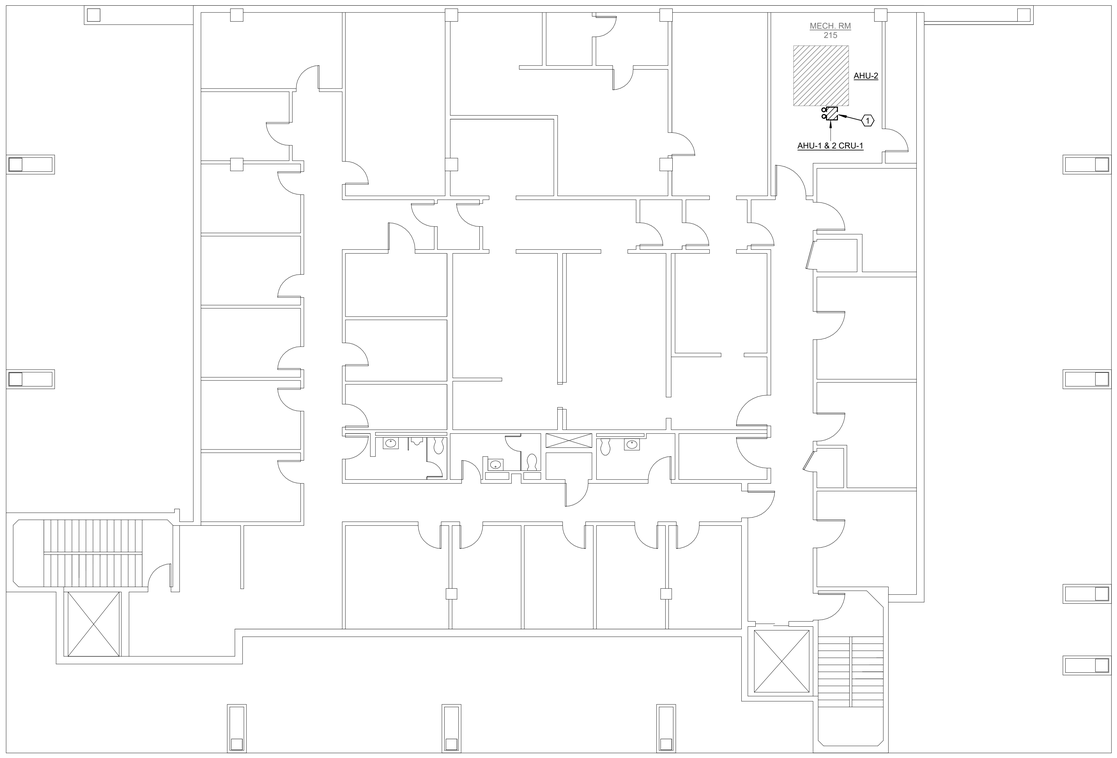
GENERAL DEMOLITION NOTES:

1. REFER TO GENERAL ELECTRICAL DEMOLITION NOTES, SHEET E1000.

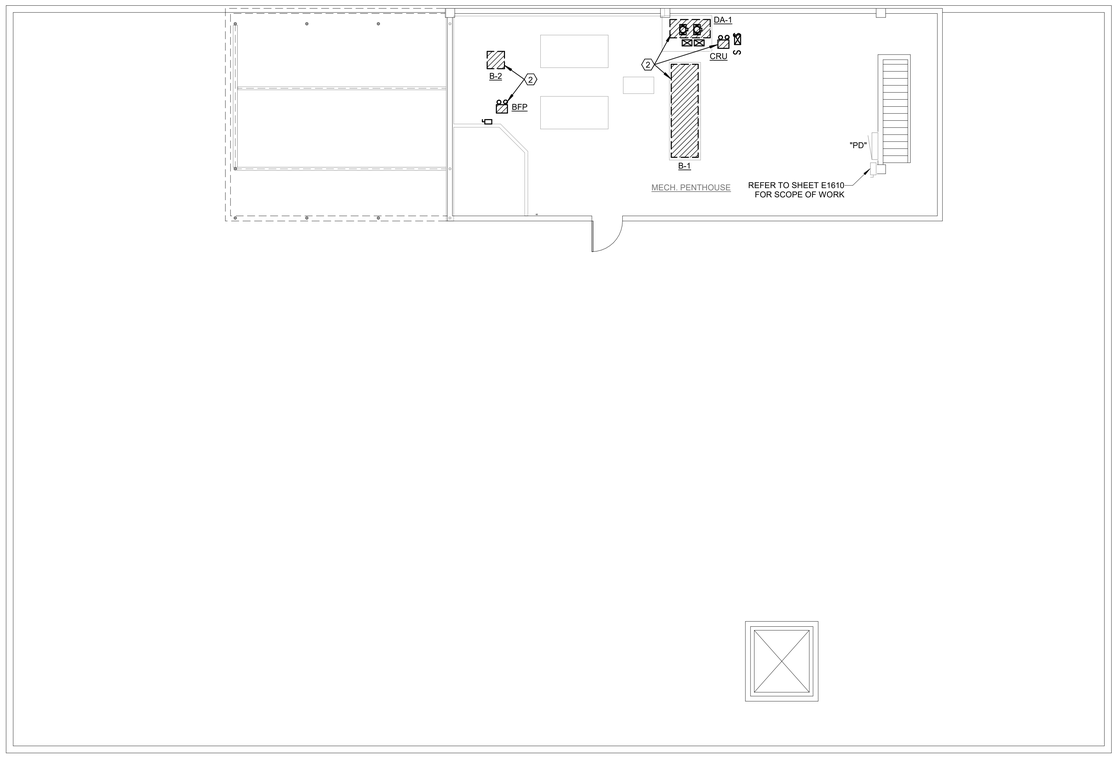
KEYED DEMOLITION NOTES:

(1) EXISTING EQUIPMENT TO BE REMOVED. DISCONNECT AND REMOVE ALL ASSOCIATED ELECTRICAL BACK TO SERVING GEAR (FIELD VERIFY) AND MAKE BREAKER A "SPARE".

(2) EXISTING EQUIPMENT TO BE REMOVED. DISCONNECT AND REMOVE ALL ASSOCIATED ELECTRICAL BACK TO SERVING GEAR (DISTRIBUTION PANEL "PD") AND MAKE BREAKER A "SPARE".



1 PERDIDO - 2ND FLOOR - HEATING WATER - ELECTRICAL DEMOLITION
1/8" = 1'-0"



2 PERDIDO - PENTHOUSE - HEATING WATER - ELECTRICAL DEMOLITION
1/8" = 1'-0"

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5/5/22
ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

SHEET TITLE:
PERDIDO FLOOR PLANS - HEATING WATER - ELECTRICAL DEMOLITION

SHEET NUMBER:
E1410

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications have been examined and no evidence of violation of the New Orleans Comprehensive Zoning Ordinance or the City Code is found. Any errors or omissions noted may be corrected and construction shall comply with the code during the progress of the work. Approval of these plans does not include approval of any work not shown on the plans.
Any changes, additions or deletions must be submitted to the Department of Safety and Permits and approved.
Work cannot be started until a building permit is issued.
A separate sign permit is required for all signs.
Approval of these plans does not include approval of any proposed encroachment.
REVIEWED FOR CODE COMPLIANCE
mrmurphy 07/20/2022

GENERAL NOTES:

1. REFER TO GENERAL ELECTRICAL NOTES, SHEET E1000.

KEYED NOTES:

(1) REFER TO ELECTRICAL EQUIPMENT CONNECTION SCHEDULE, SHEET E1400 FOR FEEDER/CONDUIT FROM NEW HEATING WATER PUMP TO NEW VFD AND FROM NEW VFD TO NEW DISTRIBUTION PANEL INDICATED.

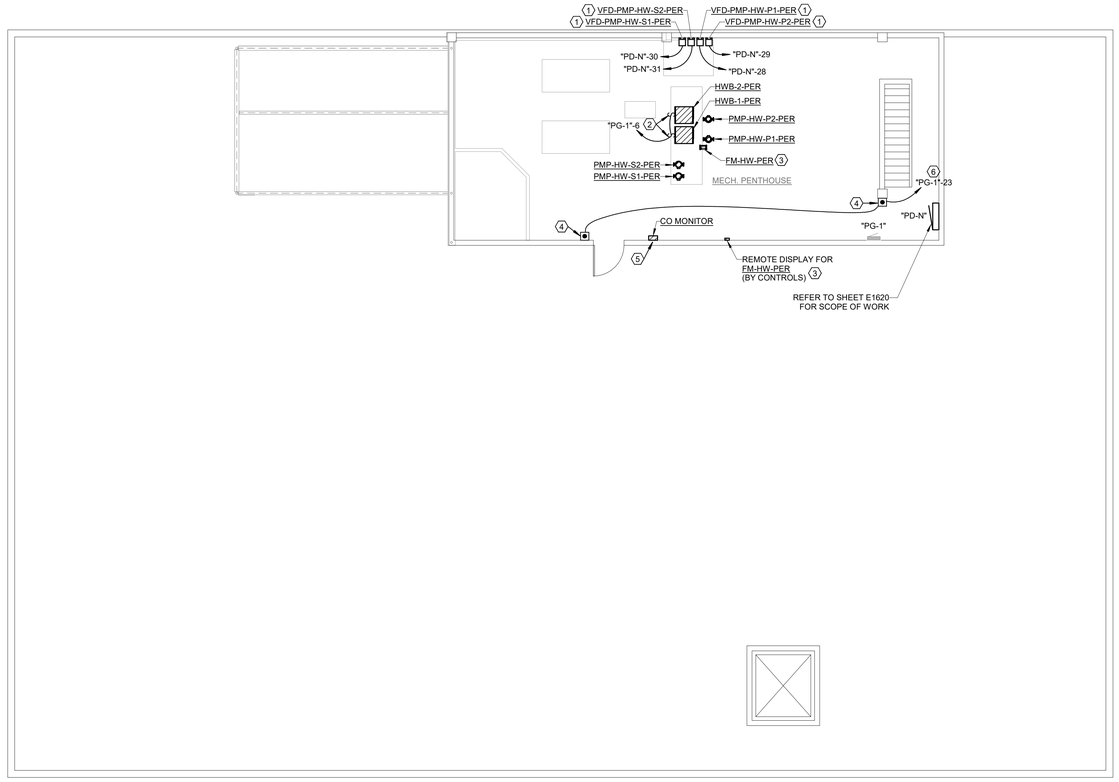
(2) FOR BOILER CONTROL POWER. ROUTE (2) #12 & (1) #12 GRD. IN 3/4" CONDUIT TO "SPARE" 20A-1P BREAKER IN EXISTING BRANCH PANEL INDICATED.

(3) FLOW METER BY OTHERS. COORDINATE WITH CONTROLS CONTRACTOR TO PROVIDE 120V POWER AT FLOW METER REMOTE DISPLAY (BY OTHERS). LOW VOLTAGE CABLING FROM FLOW METER TO ASSOCIATED REMOTE DISPLAY TO BE BY CONTROLS. ROUTE (2) # 12 & (1) #12 GRD. IN 3/4" CONDUIT FROM REMOTE DISPLAY TO EXISTING BRANCH PANEL "PG-1". COORDINATE WITH OTHER BUILDING SCOPE FLOW METERS TO PROVIDE AND INSTALL (1) NEW 20A-1P, 250V BREAKER IN EXISTING SQUARE D "NOOD" PANELBOARD TO FEED ALL NEW METERS.

(4) PROVIDE AND INSTALL LATCHING EPO PUSHBUTTON WITH HORN, ILLUMINATING BUTTON, AND CLEAR COVER FOR BOILER SHUTOFF. PROVIDE AND INSTALL DEVICE NUMBER LABEL ON EPO SWITCH COVER (I.E. - "BOILER EPO #1 OF 2", "BOILER EPO #2 OF 2"). PROVIDE AND INSTALL (1) 8-PIN RELAY INSIDE EACH NEW BOILER CONTROL PANEL (TOTAL OF 2) AT BOILER EMERGENCY STOP CONTACT AND CONNECT TO EPO SWITCH.

(5) CARBON MONOXIDE SENSOR BY OTHERS. ROUTE (2) #12 & (1) #12 GRD. IN 3/4" CONDUIT FROM SENSOR TO EXISTING BRANCH PANEL "PG-1". PROVIDE AND INSTALL (1) NEW 20A-1P, 250V BREAKER IN EXISTING SQUARE D "NOOD" PANELBOARD.

(6) ROUTE (2) #12 & (1) #12 GRD. IN 3/4" CONDUIT TO EXISTING BRANCH PANEL INDICATED. PROVIDE AND INSTALL (1) NEW 20A-1P, 250V BREAKER IN EXISTING SQUARE D "NOOD" PANELBOARD.



1 PERDIDO - PENTHOUSE - HEATING WATER - ELECTRICAL
1/8" = 1'-0"

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STATE OF LOUISIANA
TRENTON PAUL CHECHOTKIN
No. 36287 LICENSED
PROFESSIONAL ENGINEER
IN
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5/5/22
ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

SHEET TITLE:

PERDIDO FLOOR PLANS - HEATING WATER - ELECTRICAL

SHEET NUMBER:

E1420

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications have been examined and no evidence of violation of the Comprehensive Zoning Ordinance or the Code of Ordinances has been found. This action is contingent on the work being performed in accordance with all applicable laws and final inspection upon completion.
Approved: 07/20/2022
Not to be construed as an extension from approved plans issued or approved in error. Approval of these plans does not authorize the work to proceed unless all applicable permits have been examined and issued.
Work which is specified in these approved drawings is subject to inspection by the Department of Safety and Permits. Call 504-658-3811 for inspection requests.
REVIEWED FOR CODE COMPLIANCE
mnmurphy 07/20/2022

COIL SCHEDULE

DESIGNATION	PHC-AHU-3-PER	RHC-AHU-3-PER	HC-AHU-2-PER	HC-AHU-1-PER
REFERENCE PRODUCT	NORTEK TEMTROL	NORTEK TEMTROL	NORTEK TEMTROL	NORTEK TEMTROL
SERVES	AHU-3 PREHEAT	AHU-3 REHEAT	AHU-2	AHU-1
TYPE	HOT WATER	HOT WATER	HOT WATER	HOT WATER
AIR FLOW (CFM)	14950	14000	6950	2000
COIL DIMENSIONS (INCHES)	-	-	15"H x 65"L	18"H x 35"L
MAX COIL FACE VELOCITY (FPM)	500	500	1100	500
TUBE MATERIAL	COPPER	COPPER	COPPER	COPPER
MINIMUM TUBE OD (INCHES)	0.625	0.625	0.625	0.625
MINIMUM TUBE WALL THICKNESS (INCHES)	0.02	0.02	0.02	0.02
ROWS	2 (MIN.)	2 (MIN.)	2 (MIN.)	2 (MIN.)
MAX FIN SPACING (FINS PER FOOT)	120	120	120	120
FIN MATERIAL	AL	AL	AL	AL
MINIMUM FIN THICKNESS (INCHES)	0.0075	0.0075	0.0075	0.0075
ENTERING AIR TEMPERATURE (DB DEG.F.)	50.23	55	52.5	30.6
LEAVING AIR TEMPERATURE (DB DEG.F.)	55	95	82.3	55.2
MAX COIL AIR PRESSURE DROP (INCHES W.G.) (DESIGN)	0.5	0.5	0.85	0.5
ENTERING WATER TEMPERATURE (DEG.F.)	140	140	140	140
LEAVING WATER TEMPERATURE (DEG.F.)	110	110	110	110
WATER FLOW (GPM)	5.16	40.29	15.6	3.9
MAX COIL WATER PRESSURE DROP (FEET W.G.)	5	5	5	5
TUBE VELOCITY (FPS)	6	6	6	6
TOTAL CAPACITY (MBH)	77.5	604.8	231.5	57.5

NOTE: PHC-AHU-3-PER REPLACES TWO STEAM PREHEAT COILS IN SAME LOCATION. PROVIDE INSULATED BLANK OFFS FOR AHU IF NEEDED

CONTROL VALVE SCHEDULE

DESIGNATION	REFERENCE PRODUCT	SERVES	VALVE TYPE	VALVE BODY	VALVE TRIM	ANSI PRESSURE CLASS	ANSI LEAKAGE CLASS	FLOW CHARACTERISTIC	RANGEABILITY	FLOW RATE (GPM)	CALCULATED CV	ACTION (NO, NC)	FAIL POSITION (OPEN, CLOSED, LAST)	MINIMUM CLOSE-OFF PRESSURE (PSID)	MAXIMUM DIFFERENTIAL PRESSURE FOR MODULATING CONTROL (PSID)	DESIGN DIFFERENTIAL PRESSURE (PSID)	VALVE SIZE (IN)	LINE SIZE (IN)	OPERATOR	REMARKS
CV-PHC-AHU-1-PER	VSI-SERIES E	AHU-1-PER	SEGMENTED BALL	FORGED BRASS	SS	-	VI	MODIFIED EQUAL PERCENTAGE	300:1	5	2.9	NC	OPEN	50	50	3	0.75	1.0	ELECTRIC (24-V); POSITION INDICATOR; PROPORTIONAL CONTROL SIGNAL (4-20mA); POSITION FEEDBACK SIGNAL (4-20mA)	600-PSI COLD WORKING PRESSURE (WOG)
CV-RHC-AHU-2-PER	VSI-SERIES V	AHU-2-PER	SEGMENTED BALL	CARBON STEEL	SS	150	VI	EQUAL PERCENTAGE	300:1	53	30.6	NC	OPEN	50	50	3	1.5	2.5	ELECTRIC (24-V); POSITION INDICATOR; PROPORTIONAL CONTROL SIGNAL (4-20mA); POSITION FEEDBACK SIGNAL (4-20mA)	200-PSI COLD WORKING PRESSURE.
CV-RHC-AHU-3-PER	VSI-SERIES E	AHU-3-PER	SEGMENTED BALL	CARBON STEEL	SS	150	VI	EQUAL PERCENTAGE	300:1	40	20.0	NC	OPEN	50	50	4	1.0	2.0	ELECTRIC (24-V); POSITION INDICATOR; PROPORTIONAL CONTROL SIGNAL (4-20mA); POSITION FEEDBACK SIGNAL (4-20mA)	200-PSI COLD WORKING PRESSURE.
CV-PHC-AHU-3-PER	VSI-SERIES E	AHU-3-PER	SEGMENTED BALL	FORGED BRASS	SS	-	VI	MODIFIED EQUAL PERCENTAGE	300:1	5	2.9	NC	OPEN	50	50	3	0.75	1.0	ELECTRIC (24-V); POSITION INDICATOR; PROPORTIONAL CONTROL SIGNAL (4-20mA); POSITION FEEDBACK SIGNAL (4-20mA)	600-PSI COLD WORKING PRESSURE (WOG)

VARIABLE FREQUENCY DRIVE SCHEDULE

DESIGNATION	REFERENCE PRODUCT	LOCATION	SERVES	TYPE	ENCLOSURE	VFD BYPASS	MOTOR RATED HORSEPOWER	VFD RATED HORSEPOWER	EFFICIENCY (%)	VOLTS	PHASE	MAX. OUTPUT CURRENT (AMPS)	REMARKS
VFD-AHU-3-PER	ABB ACH580	PERDIDO MECHANICAL PENTHOUSE	AHU-3-PER	PWM - 6-PULSE	NEMA 1	NO	40	50	98	480	3	65	UL LISTED; CUSTOM NAMEPLATE; INTEGRAL 5% INPUT LINE REACTOR; INPUT DRIVE DISCONNECT; FULL TEXT KEYPAD; RFI/EMI NOISE FILTER; EMS BACNET COMMUNICATION INTERFACE; PROVIDE OUTPUT LINE REACTORS WHEN DRIVE IS MORE THAN 75' FROM MOTOR; DC BUS OVERVOLTAGE RELIEF; SYNCHRONOUS SPEED MATCHING.

AIRFLOW MEASURING STATION

DESIGNATION	REFERENCE PRODUCT	TYPE	SERVES	AIR FLOW RATE (CFM)	MAXIMUM AIR FLOW RATE (CFM)	MINIMUM AIR FLOW RATE (CFM)	DUCT WIDTH (INCHES)	DUCT HEIGHT (INCHES)	AIR PRESSURE DROP (INCHES WATER)	REMARKS
AFMS-AHU-3-RA-PER	ACCUTROL IAQ-TEK	INSERTION	AHU-3-PER RETURN AIR	5,775	17,325	1,800	36	72	0.07	FURNISH WITH TWO PROBES, TRANSDUCER, AND MONITOR. INSTALL PROBES AS SPECIFIED BY MANUFACTURER.
AFMS-AHU-3-MA-PER	ACCUTROL IAQ-TEK	INSERTION	AHU-3-PER MIXED AIR	23,100	23,100	-	-	60	-	FURNISH WITH THE CORRECT NUMBER OF PROBES FOR THE DUCT SIZE AS REQUIRED BY MANUFACTURER, TRANSDUCER, AND MONITOR. INSTALL PROBES AS SPECIFIED BY MANUFACTURER.

FINAL PERMIT RELEASE

DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION

These construction specifications have been examined and no evidence of violation of the New Orleans Building Code or other ordinances of the City of New Orleans was noted. Plan review does not relieve the contractor of responsibility for compliance with the Building Code. Inspection and final inspection upon completion is required. Contact Permits Customer Service at 658-7100 to schedule inspections.

Work must be started before the permit expires or the permit becomes void. Permits are valid for 6 months and may be renewed for 6 months if the unused permit fee is paid. Work must be completed before the renewed permit expires.

It is unlawful to occupy any building or structure or part thereof until a Certificate of Occupancy has been issued by the Department of Safety and Permits. Temporary Certificates of Occupancy may be issued for a portion or portions of a building which may safely be occupied prior to final completion of the building as a whole.

REVIEWED FOR CODE COMPLIANCE

cwmurphy 07/20/2022

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STATE OF LOUISIANA
CHRISTOPHER C. CALLOWAY
License No. 43208
PROFESSIONAL ENGINEER
5/5/22
ENGINEER SEAL

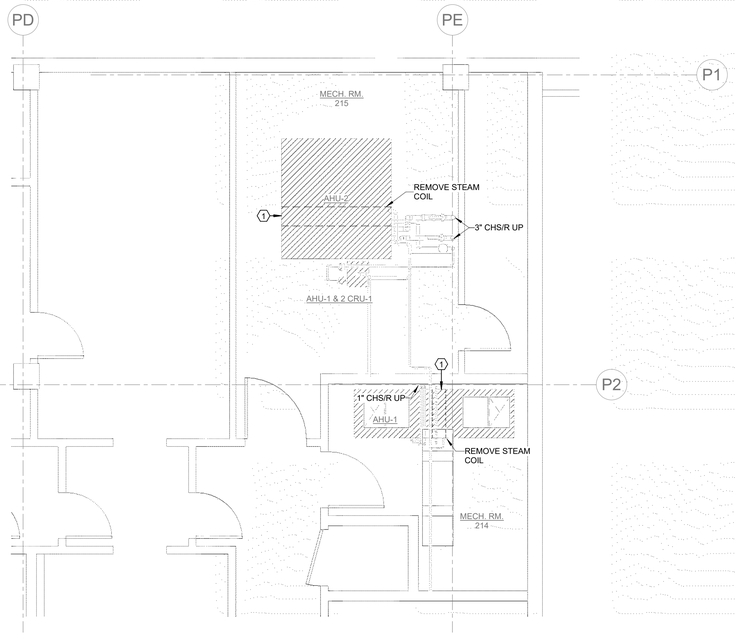
ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

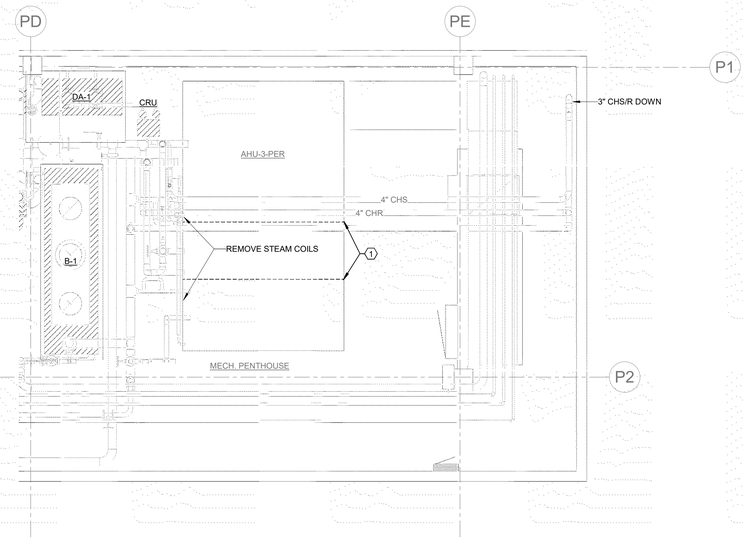
ISSUE DATE: 05/05/22
PROJECT NUMBER: 70-16-0005

SHEET TITLE:
PERDIDO SCHEDULES - AIR HANDLING UNITS - MECHANICAL

SHEET NUMBER:
M1500



1 PERDIDO 2ND FLOOR PLAN - AHU - MECHANICAL DEMOLITION
1/4" = 1'-0"



2 PERDIDO PENTHOUSE FLOOR PLAN - AHU - MECHANICAL DEMOLITION
1/4" = 1'-0"

DEMOLITION KEYED NOTES:

1 REMOVE AND DISPOSE OF EXISTING STEAM HEATING COILS. REFER TO PIPING DIAGRAMS.

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ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

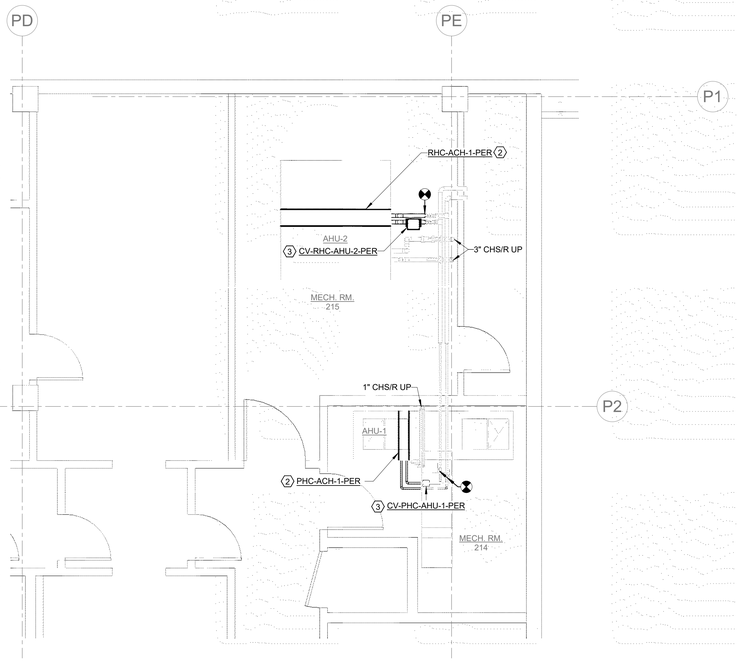
MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

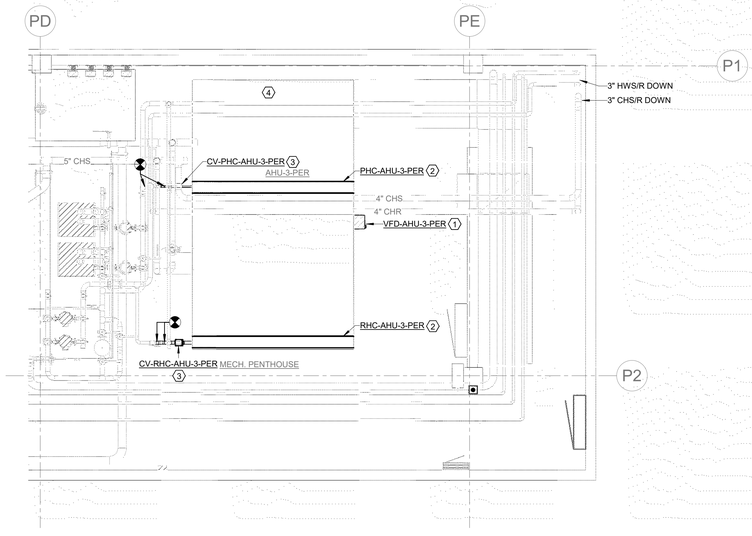
SHEET TITLE:
PERDIDO FLOOR PLANS - AIR HANDLING UNITS - MECHANICAL DEMOLITION

SHEET NUMBER:
M1510

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications have been examined and no evidence of violation of the Comprehensive Zoning Ordinance of New Orleans or of the Code of Ordinances has been found. They appear to comply with the code and zoning requirements in force at the present time.
Approval of these plans and specifications does not include approval of any violations of the Comprehensive Zoning Ordinance or the Code of Ordinances not shown on these plans and specifications.
Work must conform to the Department of Safety and Permits and all other pertinent laws.
Any deviation requires separate approval.
Approval expires six months from date of approval if work is not commenced.
APPROVED
Date: 07/20/2022
By: Building Official
REVIEWED FOR CODE COMPLIANCE
rmmurphy 07/20/2022



1 PERDIDO 2ND FLOOR - AHU - MECHANICAL
1/4" = 1'-0"



2 PERDIDO PENTHOUSE - AHU - MECHANICAL
1/4" = 1'-0"

KEYED NOTES:

1. VARIABLE FREQUENCY DRIVE (VFD) SHOWN FOR COORDINATION. VFD FURNISHED BY MECHANICAL CONTRACTOR, INSTALLED AND POWERED BY ELECTRICAL CONTRACTOR. REFER TO INDIVIDUAL DISCIPLINES FOR SCOPE AND SCHEDULES. MAINTAIN A MINIMUM CLEARANCE OF 3'-6" IN FRONT OF VFD's.
2. INSTALL NEW HEATING WATER COIL IN AIR HANDLING UNIT AND CONNECT TO NEW HEATING WATER PIPING. REFER TO PIPING DIAGRAMS, SHEET M1420, AND DETAILS.
3. CONTROL VALVE FURNISHED BY CONTROLS CONTRACTOR, INSTALLED BY MECHANICAL CONTRACTOR, AND POWERED BY ELECTRICAL CONTRACTOR OR CONTROLS CONTRACTOR. REFER TO INDIVIDUAL DISCIPLINES FOR SCOPE AND SCHEDULES.
4. AFMS IN OUTSIDE AIR DUCTWORK. CONTRACTOR SHALL CONFIRM DUCT SIZE PRIOR TO ORDERING.

FINAL PERMIT RELEASE

DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION

These plans and specifications have been examined and no evidence of non-compliance with the applicable provisions of the Comprehensive Zoning Ordinance has been found. This action is contingent upon the plans and specifications remaining unchanged. Any changes may void this approval. Final inspection and final occupancy will be issued upon completion of the project and compliance with all applicable codes and laws.

This is not to be construed as approval of any work not specifically shown on the plans nor does it relieve the owner or his agent from the responsibility to comply with the required plans check fees submitted and all applicable codes and laws.

Work shall not commence until a Notice to Proceed is issued.

Plan Review Engineer

REVIEWED FOR CODE COMPLIANCE

mmurphy 07/20/2022

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(COA #3930)

STATE OF LOUISIANA
CHRISTOPHER C. GALLOWAY
License No. 45208
PROFESSIONAL ENGINEER
5/5/22
ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

SHEET TITLE:
PERDIDO FLOOR PLANS - AIR HANDLING UNITS - MECHANICAL

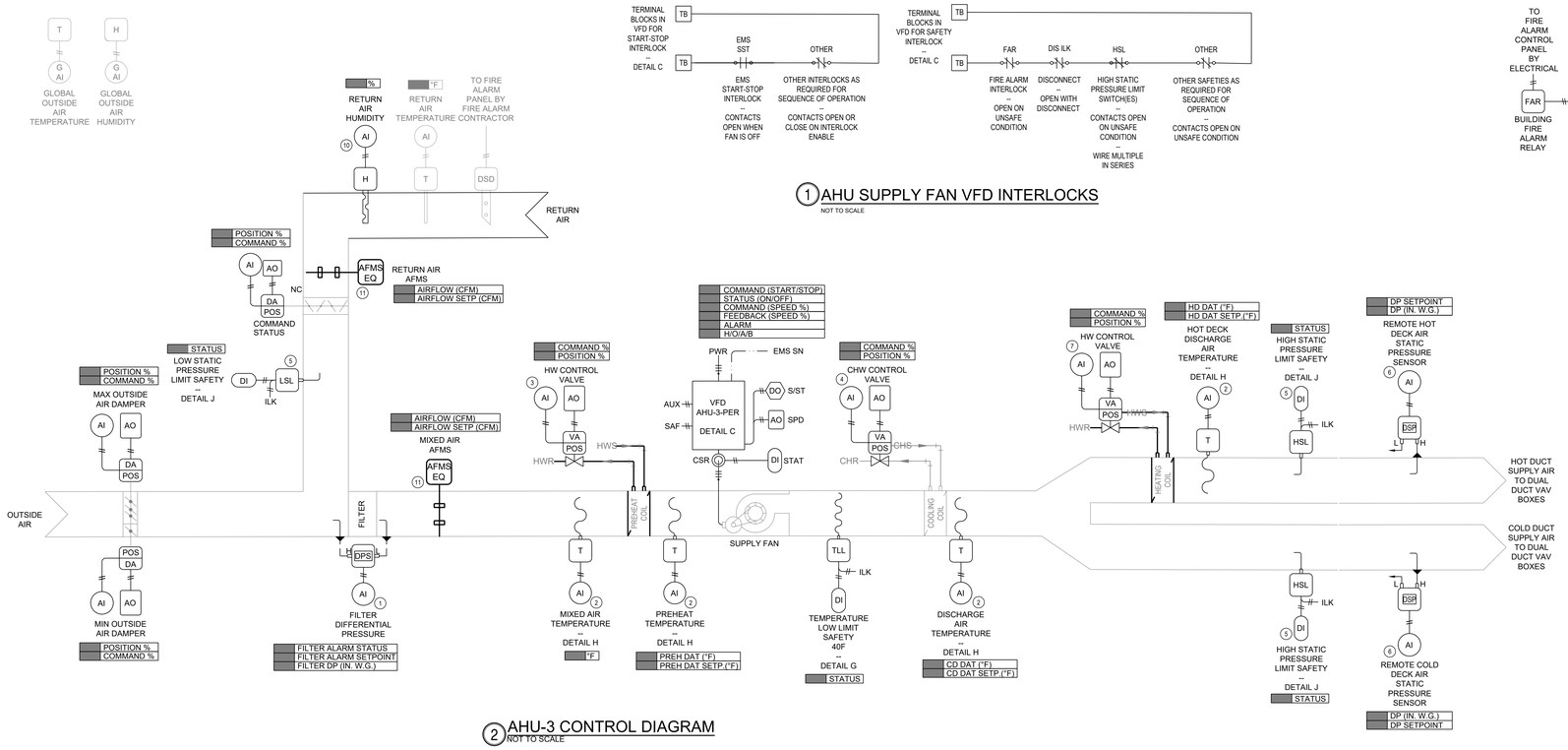
SHEET NUMBER:
M1520

GENERAL NOTES:

1. POWER WIRING (PWR) BY THE ATC CONTRACTOR. ATC CONTRACTOR IS RESPONSIBLE FOR POWER WIRING FROM FIELD EQUIPMENT PANEL TO CONTROLS REQUIRING POWER.
2. VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING WORK.
3. COORDINATE ACCESS TO AREA AND ANY SHUT DOWN REQUIRED WITH OWNER 48 HOURS IN ADVANCE OF BEGINNING ANY WORK IN AREA.
4. EXISTING FIRE ALARM INTERLOCKS TO BE CONNECTED TO MAINTAIN THE EXISTING FIRE ALARM SEQUENCE OF OPERATION. MAINTAIN ALL EXISTING LIFE SAFETY INTERLOCKS.
5. ATC CONTRACTOR RESPONSIBLE FOR REMOVING ALL PNEUMATIC TUBING, SENSORS, ACTUATORS, CONTROL VALVES, AND WIRING NOT REUSED AS PART OF THE NEW DDC SYSTEM.
6. ALL CONTROLS SHALL BE INSTALLED AS INDICATED ON THE DRAWINGS AND AS DESCRIBED IN THE SPECIFICATIONS.
7. A CUSTOM PROGRAMMABLE DDC CONTROLLER SHALL BE PROVIDED FOR EACH AIR HANDLING UNIT WITH ALL POINTS AND PROGRAMMING RESIDENT IN THE CONTROLLER.
8. WHERE EXISTING ACTUATORS ON DAMPERS OR VALVES HAVE FAILED, REPLACE THE FAILED ACTUATOR WITH NEW ELECTRONIC ACTUATOR AND CONVERSION KITS.

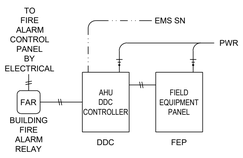
KEYED NOTES:

1. PROVIDE AND INSTALL A NEW DIFFERENTIAL PRESSURE SENSOR.
2. PROVIDE AND INSTALL NEW AVERAGING TEMPERATURE SENSOR.
3. PROVIDE AND INSTALL NEW DDC PREHEAT CONTROL VALVE AND ACTUATOR WITH FEEDBACK.
4. PROVIDE AND INSTALL NEW DDC CHILLED WATER CONTROL VALVE AND ACTUATOR WITH FEEDBACK.
5. PROVIDE AND INSTALL NEW HIGH STATIC PRESSURE SAFETY LIMIT.
6. PROVIDE AND INSTALL A NEW REMOTE AIR STATIC PRESSURE SENSOR.
7. PROVIDE AND INSTALL NEW DDC REHEAT CONTROL VALVE AND ACTUATOR WITH FEEDBACK.
8. PROVIDE AND INSTALL NEW PROBE TYPE TEMPERATURE SENSOR.
9. PROVIDE AND INSTALL NEW DDC CONTROLLER CAPABLE OF EXISTING AND NEW POINT TERMINATIONS.
10. PROVIDE AND INSTALL NEW RELATIVE HUMIDITY SENSOR.
11. PROVIDE AND INSTALL NEW VORTEX SHEDDING AIR FLOW MEASURING STATION



2 AHU-3 CONTROL DIAGRAM
NOT TO SCALE

1 AHU SUPPLY FAN VFD INTERLOCKS
NOT TO SCALE



SEQUENCE OF OPERATION:

SETPOINTS

VARIABLE NAME	SET POINT	NOTES
MIN. CD DAT SETPOINT	55° F	ADJUSTABLE
MAX. CD DAT SETPOINT	60° F	ADJUSTABLE
MIN. HD DAT SETPOINT	80° F	ADJUSTABLE
MAX. HD DAT SETPOINT	95° F	ADJUSTABLE
MIN SA SP SETPOINT	1.5" W.G.	ADJUSTABLE, COOR. WITH EXISTING SYSTEM REQMNTS
MAX SA SP SETPOINT	4" W.G.	ADJUSTABLE, COOR. WITH EXISTING SYSTEM REQMNTS
SA SP SETPOINT	2.5" W.G.	ADJUSTABLE, COOR. WITH EXISTING SYSTEM REQMNTS
MIN. SF SPEED SETPOINT	25%	ADJUSTABLE
MAX. SF SPEED SETPOINT	100%	ADJUSTABLE
HIGH RA RH SETPOINT	55%	ADJUSTABLE
MIN. OA DAMPER POSITION SETPOINT	XXX%	ADJUSTABLE,ESTABLISHED BY TAB CONTRACTOR
OUTSIDE AIRFLOW SETPOINT	XXX CFM	ADJUSTABLE,ESTABLISHED BY RVS
MIN MAT SETPOINT	45° F	ADJUSTABLE
MAX MAT SETPOINT	85° F	ADJUSTABLE
MAX ST LOOP OUT SETPOINT	90%	ADJUSTABLE
MAX ST DAMPER POS SETP	90%	ADJUSTABLE
CYCLE TIME	90 SECONDS	ADJUSTABLE
COUNT SETPOINT(CD DAT)	5	ADJUSTABLE
STEP SIZE TRIM (CD DAT)	1° F	ADJUSTABLE
STEP SIZE RESPOND (CD DAT)	0.5° F	ADJUSTABLE
START PT (CD DAT)	55° F	ADJUSTABLE
COUNT SETPOINT(HD DAT)	5	ADJUSTABLE
STEP SIZE TRIM (HD DAT)	0.5° F	ADJUSTABLE
STEP SIZE RESPOND (HD DAT)	1° F	ADJUSTABLE
START PT (HD DAT)	85° F	ADJUSTABLE
WINT. OAT SETP (DAT)	50° F	ADJUSTABLE
MID OAT SETP (DAT)	65° F	ADJUSTABLE
SUM. OAT SETP (DAT)	75° F	ADJUSTABLE
WINT. MAX CD SAT SETP	65° F	ADJUSTABLE
MID MAX CD SAT SETP	62° F	ADJUSTABLE
SUM. MAX CD SAT SETP	60° F	ADJUSTABLE
WINT. MAX HD SAT SETP	95° F	ADJUSTABLE
MID MAX HD SAT SETP	87° F	ADJUSTABLE
SUM. MAX HD SAT SETP	80° F	ADJUSTABLE
MINIMUM RA DAMPER POS SETP.	XXX%	ADJUSTABLE,ESTABLISHED BY TAB CONTRACTOR

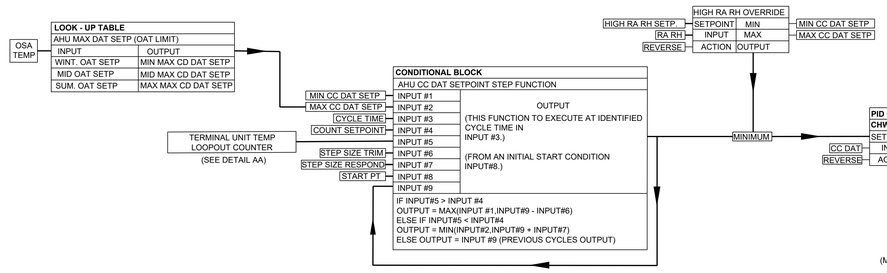
ALARMS

ALARM TYPE	PRIORITY LEVEL	CRITERIA
FAN STATUS	3	COMMAND DOESN'T MATCH STATUS
DAMPER STATUS	3	COMMAND DOESN'T MATCH STATUS (PROVIDE FOR EACH DAMPER)
HIGH STATIC PRESS SAFETY	2	HIGH STATIC PRESSURE SAFETY HAS TRIPPED
LOW STATIC PRESS SAFETY	2	LOW STATIC PRESSURE SAFETY HAS TRIPPED
TEMP. LOW LIMIT SAFETY	2	TEMPERATURE LOW LIMIT SAFETY HAS TRIPPED
HIGH SUPPLY AIR TEMP (COLD DECK)	3	SAT > SAT SET POINT + 3 °F (ADJ.) > 5 MIN. (ADJ.)
LOW SUPPLY AIR TEMP (COLD DECK)	3	SAT < SAT SET POINT - 3 °F (ADJ.) > 5 MIN. (ADJ.)
HIGH SUPPLY AIR TEMP (HOT DECK)	3	SAT > SAT SET POINT + 3 °F (ADJ.) > 5 MIN. (ADJ.)
LOW SUPPLY AIR TEMP (HOT DECK)	3	SAT < SAT SET POINT - 3 °F (ADJ.) > 5 MIN. (ADJ.)
HIGH RETURN RH	3	RA RH > MAX RA RH SET POINT FOR 10 MIN. (ADJ.)
FILTER DP	4	FILTER DP > 0.75 IN. WG >10 MIN. (ADJ.)
VFD IN HAND/BYPASS/OFF	3	VFD IN HAND/BYPASS/OFF
LOW OUTSIDE AIRFLOW	2	OUTSIDE AIRFLOW < OUTSIDE AIRFLOW SETPOINT > 5 MIN. (ADJ.)
HIGH MAT	3	MAT > MAX MAT SET POINT
LOW MAT	3	MAT < MIN MAT SET POINT

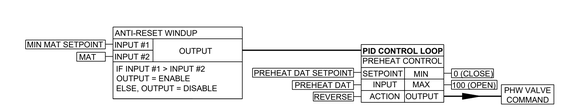
MODES OF OPERATION

NOTES:
1. IF AHU IS DISABLED FOR ANY REASON OTHER THAN THE CONDITIONS BELOW (SMOKE DAMPER END SWITCH INTERLOCK PREVENTS SUPPLY FAN FROM OPERATING, OTHER INTERLOCKS, POWER FAILURE, ETC, UNIT SHALL BE IN THE UNIT DISABLED MODE)
2. PRIORITY SHALL BE GIVEN TO LIFE SAFETY MODES , THEN ALARM MODES, THEN OTHER MODES, UNLESS UNIT IS MAINTENANCE MODE.

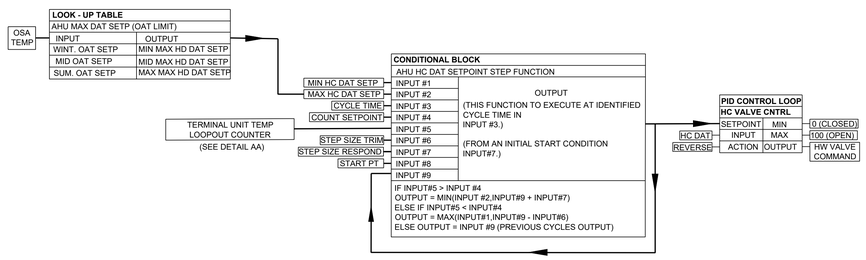
MODE	OUTSIDE AIR DAMPER	CHW VALVE	SUPPLY FAN	PREHEAT VALVE	HOT DECK VALVE	
NORMAL	ENABLED	ENABLED	ENABLED	ENABLED	ENABLED	
UNOCCUPIED NORMAL	ENABLED	ENABLED	ENABLED	ENABLED	ENABLED	
FREEZE ALARM	CLOSED	FULLY OPEN	DISABLED	FULLY OPEN	FULLY OPEN	
MAINTANENCE SHUTDOWN MODE	CLOSED	CLOSED	DISABLED	CLOSED	CLOSED	
HIGH STATIC SHUTDOWN	CLOSED	CLOSED	DISABLED	CLOSED	CLOSED	
FIRE ALARM SHUTDOWN	CLOSED	CLOSED	DISABLED	CLOSED	CLOSED	
LOW STATIC SHUTDOWN	CLOSED	CLOSED	DISABLED	CLOSED	CLOSED	



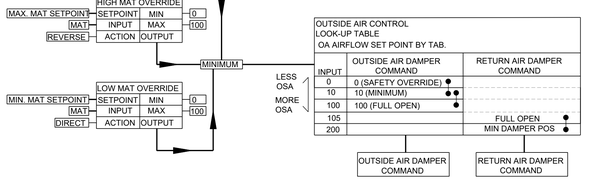
3 AHU-3 CHILLED WATER COIL VALVE CONTROL
NOT TO SCALE



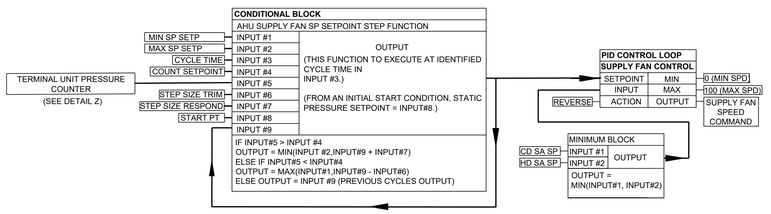
5 AHU-3 PREHEAT COIL VALVE CONTROL
NOT TO SCALE



4 AHU-3 HOT DECK COIL VALVE CONTROL
NOT TO SCALE



6 AHU-3 OUTSIDE AIR DAMPER CONTROL
NOT TO SCALE



7 AHU-3 SUPPLY FAN SPEED CONTROL
NOT TO SCALE

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STATE OF LOUISIANA — JEFFREY C. FONTENOT — License No. 44700 — PROFESSIONAL ENGINEER IN MECHANICAL ENGINEERING — 05/05/22

ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

ISSUE DATE: 05/05/22

PROJECT NUMBER: 70-16-0005

SHEET TITLE:
AHU-3 CONTROL DIAGRAM AND SEQUENCE

SHEET NUMBER:
ATC1500

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications comply with the applicable laws of the City of New Orleans. The issuance of this permit based upon plans, specifications and other data shall not be construed to be a permit for, or an approval of, any violation of any of the provisions of the building code. No permit will be issued based on conflicting plans. The holder of this permit may proceed with the work at his own risk before all corrections have been approved.
Any changes during construction must be approved by the Department of Safety and Permits and are subject to all applicable fees.
It is the responsibility of the permit holder to have approved drawings on the jobsite available to all inspectors.
Approval of these plans does not include approval of any proposed signage. Signage requires a separate permit application.
mvmurphy 07/20/2022
PERMISSION TO PROCEED WITH CONSTRUCTION

GENERAL NOTES:

1. POWER WIRING (PWR) BY THE ATC CONTRACTOR. ATC CONTRACTOR IS RESPONSIBLE FOR POWER WIRING FROM FIELD EQUIPMENT PANEL TO CONTROLS REQUIRING POWER.
2. VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING WORK.
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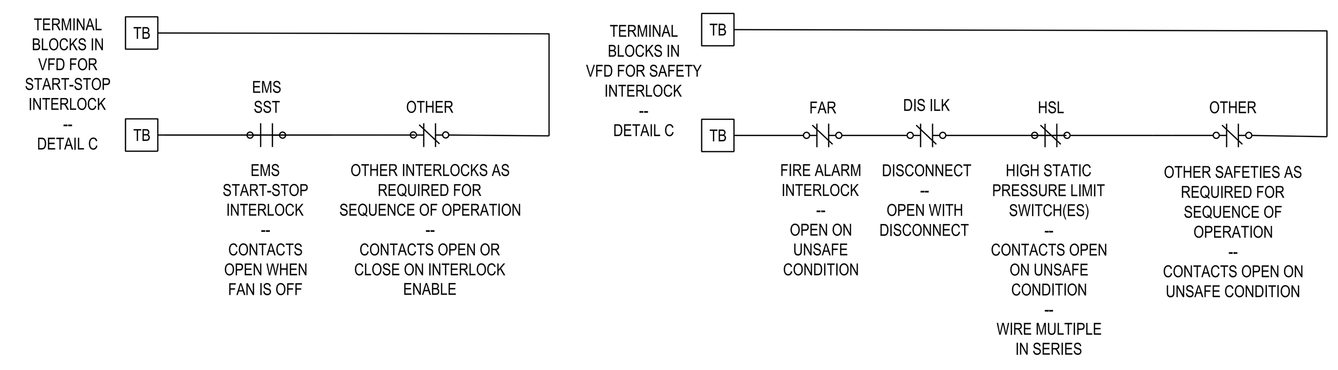
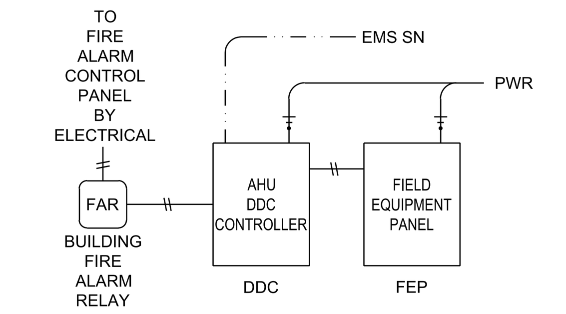
8. WHERE EXISTING ACTUATORS ON DAMPERS OR VALVES HAVE FAILED, REPLACE THE FAILED ACTUATOR WITH NEW ELECTRONIC ACTUATOR AND CONVERSION KITS.

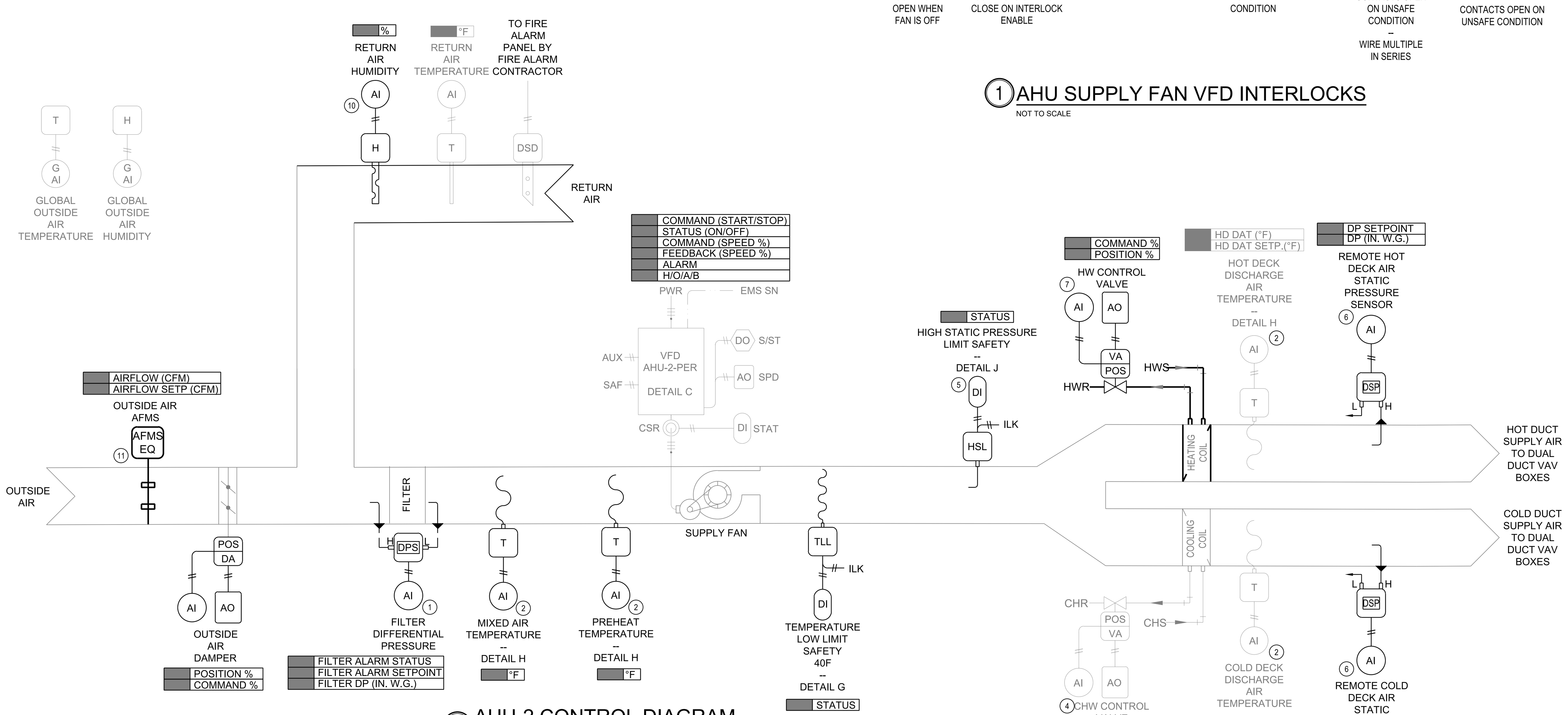
KEYED NOTES:

(1) PROVIDE AND INSTALL A NEW DIFFERENTIAL PRESSURE SENSOR.
(2) PROVIDE AND INSTALL NEW AVERAGING TEMPERATURE SENSOR.
(3) PROVIDE AND INSTALL NEW DDC PREHEAT CONTROL VALVE AND ACTUATOR WITH FEEDBACK.
(4) PROVIDE AND INSTALL NEW DDC CHILLED WATER CONTROL VALVE AND ACTUATOR WITH FEEDBACK.
(5) PROVIDE AND INSTALL NEW HIGH STATIC PRESSURE SAFETY LIMIT.
(6) PROVIDE AND INSTALL A NEW REMOTE AIR STATIC PRESSURE SENSOR.
(7) PROVIDE AND INSTALL NEW DDC REHEAT CONTROL VALVE AND ACTUATOR WITH FEEDBACK.
(8) PROVIDE AND INSTALL NEW PROBE TYPE TEMPERATURE SENSOR.
(9) PROVIDE AND INSTALL NEW DDC CONTROLLER CAPABLE OF EXISTING AND NEW POINT TERMINATIONS.
(10) PROVIDE AND INSTALL NEW RELATIVE HUMIDITY SENSOR.
(11) PROVIDE AND INSTALL NEW VORTEX SHEDDING AIR FLOW MEASURING STATION



(1) AHU SUPPLY FAN VFD INTERLOCKS
NOT TO SCALE

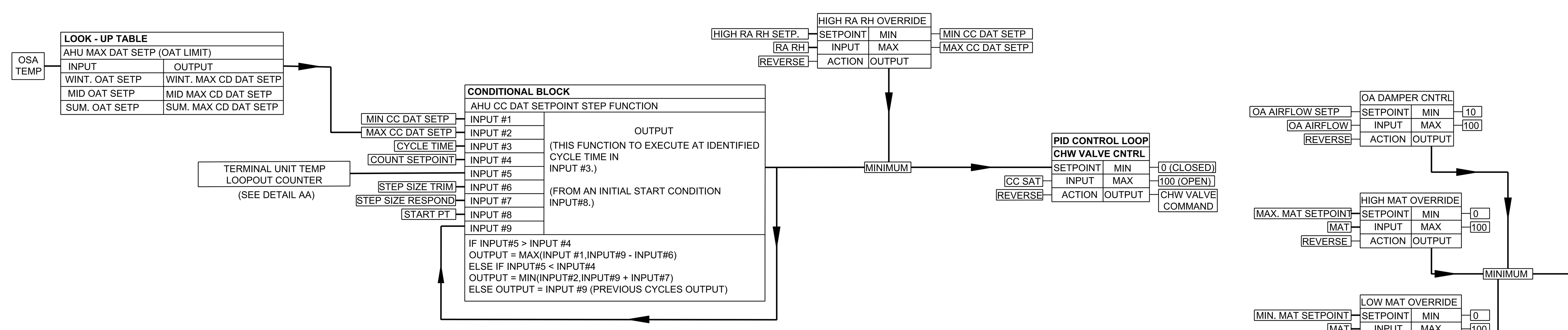




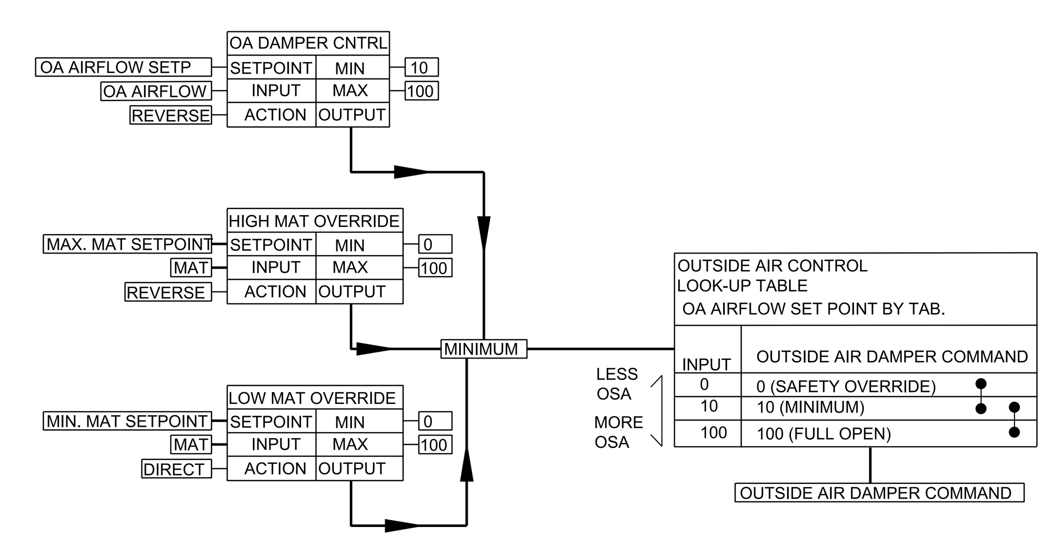
(2) AHU-2 CONTROL DIAGRAM
NOT TO SCALE

COUNT SETPOINT(SP) 5
STEP SIZE (SP) 0.5" W.G.
START PT (SP) 3" W.G.

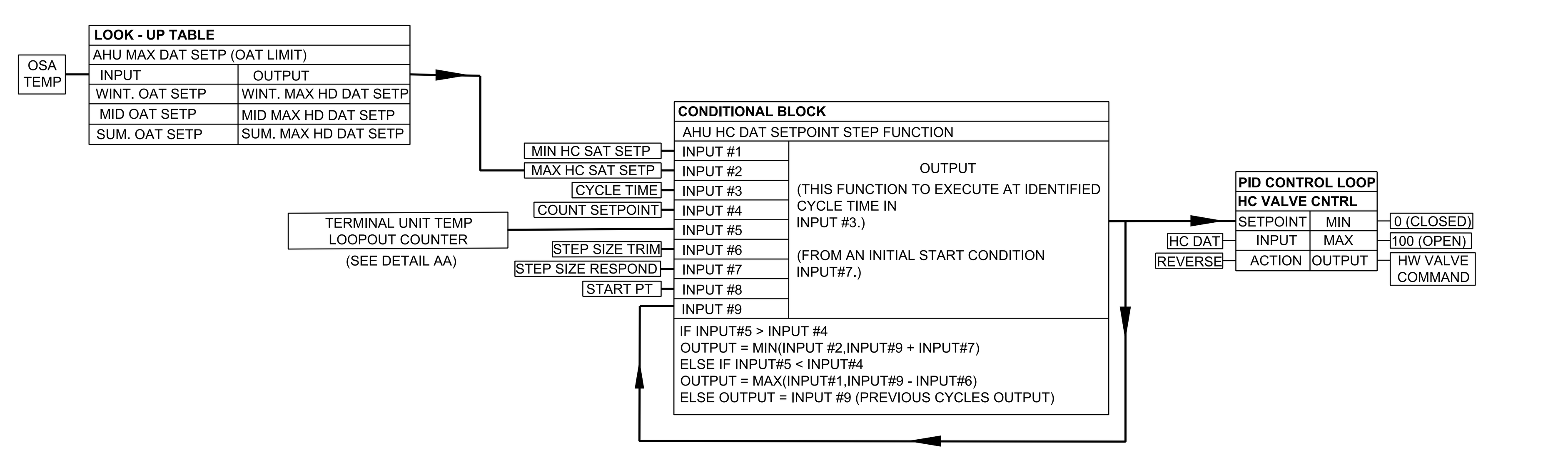
SEQUENCE OF OPERATION:



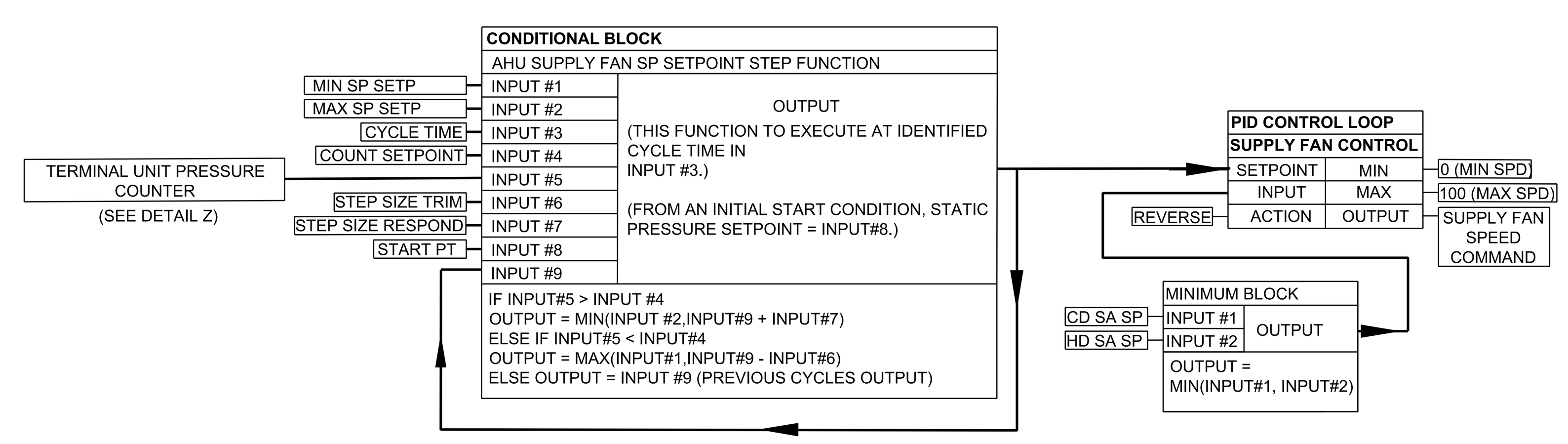
(3) AHU-2 CHILLED WATER COIL VALVE CONTROL
NOT TO SCALE



(5) AHU-2 OUTSIDE AIR DAMPER CONTROL
NOT TO SCALE



(4) AHU-2 HOT DECK COIL VALVE CONTROL
NOT TO SCALE



(6) AHU-2 SUPPLY FAN SPEED CONTROL
NOT TO SCALE

SETPOINTS

VARIABLE NAME	SET POINT	NOTES
MIN. CD DAT SETPOINT	55° F	ADJUSTABLE
MAX. CD DAT SETPOINT	60° F	ADJUSTABLE
MIN. HD DAT SETPOINT	80° F	ADJUSTABLE
MAX. HD DAT SETPOINT	95° F	ADJUSTABLE
MIN SA SP SETPOINT	1.5" W.G.	ADJUSTABLE, COOR. WITH EXISTING SYSTEM REQMNTS
MAX SA SP SETPOINT	4" W.G.	ADJUSTABLE, COOR. WITH EXISTING SYSTEM REQMNTS
SA SP SETPOINT	2.5" W.G.	ADJUSTABLE, COOR. WITH EXISTING SYSTEM REQMNTS
MIN. SF SPEED SETPOINT	25%	ADJUSTABLE
MAX. SF SPEED SETPOINT	100%	ADJUSTABLE
HIGH RA RH SETPOINT	55%	ADJUSTABLE
MIN. OA DAMPER POSITION SETPOINT	XXX%	ADJUSTABLE,ESTABLISHED BY TAB CONTRACTOR
OUTSIDE AIRFLOW SETPOINT	XXX CFM	ADJUSTABLE,ESTABLISHED BY RVS
MIN MAT SETPOINT	45° F	ADJUSTABLE
MAX MAT SETPOINT	85° F	ADJUSTABLE
MAX ST LOOP OUT SETPOINT	90%	ADJUSTABLE
MAX ST DAMPER POS SETP	90%	ADJUSTABLE
CYCLE TIME	90 SECONDS	ADJUSTABLE
COUNT SETPOINT(CD DAT)	5	ADJUSTABLE
STEP SIZE TRIM (CD DAT)	1° F	ADJUSTABLE
STEP SIZE RESPOND (CD DAT)	0.5° F	ADJUSTABLE
START PT (CD DAT)	55° F	ADJUSTABLE
COUNT SETPOINT(HD DAT)	5	ADJUSTABLE
STEP SIZE TRIM (HD DAT)	0.5° F	ADJUSTABLE
STEP SIZE RESPOND (HD DAT)	1° F	ADJUSTABLE
START PT (HD DAT)	85° F	ADJUSTABLE
WINT. OAT SETP (DAT)	50° F	ADJUSTABLE
MID OAT SETP (DAT)	65° F	ADJUSTABLE
SUM. OAT SETP (DAT)	75° F	ADJUSTABLE
WINT. MAX CD SAT SETP	65° F	ADJUSTABLE
MID MAX CD SAT SETP	62° F	ADJUSTABLE
SUM. MAX CD SAT SETP	60° F	ADJUSTABLE
WINT. MAX HD SAT SETP	95° F	ADJUSTABLE
MID MAX HD SAT SETP	87° F	ADJUSTABLE
SUM. MAX HD SAT SETP	80° F	ADJUSTABLE

ALARMS

ALARM TYPE	PRIORITY LEVEL	CRITERIA
FAN STATUS	3	COMMAND DOESN'T MATCH STATUS
DAMPER STATUS	3	COMMAND DOESN'T MATCH STATUS (PROVIDE FOR EACH DAMPER)
HIGH STATIC PRESS SAFETY	2	HIGH STATIC PRESSURE SAFETY HAS TRIPPED
LOW STATIC PRESS SAFETY	2	LOW STATIC PRESSURE SAFETY HAS TRIPPED
TEMP. LOW LIMIT SAFETY	2	TEMPERATURE LOW LIMIT SAFETY HAS TRIPPED
HIGH SUPPLY AIR TEMP (COLD DECK)	3	SAT > SAT SET POINT + 3 °F (ADJ.) > 5 MIN. (ADJ.)
LOW SUPPLY AIR TEMP (COLD DECK)	3	SAT < SAT SET POINT - 3 °F (ADJ.) > 5 MIN. (ADJ.)
HIGH SUPPLY AIR TEMP (HOT DECK)	3	SAT > SAT SET POINT + 3 °F (ADJ.) > 5 MIN. (ADJ.)
LOW SUPPLY AIR TEMP (HOT DECK)	3	SAT < SAT SET POINT - 3 °F (ADJ.) > 5 MIN. (ADJ.)
HIGH RETURN RH	3	RA RH > MAX RA RH SET POINT FOR 10 MIN. (ADJ.)
FILTER DP	4	FILTER DP > 0.75 IN. WG >10 MIN. (ADJ.)
VFD IN HAND/BYPASS/OFF	3	VFD IN HAND/BYPASS/OFF
LOW OUTSIDE AIRFLOW	2	OUTSIDE AIRFLOW < OUTSIDE AIRFLOW SETPOINT > 5 MIN. (ADJ.)
HIGH MAT	3	MAT > MAX MAT SET POINT
LOW MAT	3	MAT < MIN MAT SET POINT

MODES OF OPERATION

NOTES:
1. IF AHU IS DISABLED FOR ANY REASON OTHER THAN THE CONDITIONS BELOW (SMOKE DAMPER END SWITCH INTERLOCK PREVENTS SUPPLY FAN FROM OPERATING, OTHER INTERLOCKS, POWER FAILURE, ETC, UNIT SHALL BE IN THE UNIT DISABLED MODE)
2. PRIORITY SHALL BE GIVEN TO LIFE SAFETY MODES , THEN ALARM MODES, THEN OTHER MODES, UNLESS UNIT IS MAINTENANCE MODE.

MODE	OUTSIDE AIR DAMPER	CHW VALVE	SUPPLY FAN	PREHEAT VALVE	HOT DECK VALVE	
NORMAL	ENABLED	ENABLED	ENABLED	ENABLED	ENABLED	
UNOCCUPIED NORMAL	ENABLED	ENABLED	ENABLED	ENABLED	ENABLED	
FREEZE ALARM	CLOSED	FULLY OPEN	DISABLED	FULLY OPEN	FULLY OPEN	
MAINTANENCE SHUTDOWN MODE	CLOSED	CLOSED	DISABLED	CLOSED	CLOSED	
HIGH STATIC SHUTDOWN	CLOSED	CLOSED	DISABLED	CLOSED	CLOSED	
FIRE ALARM SHUTDOWN	CLOSED	CLOSED	DISABLED	CLOSED	CLOSED	
LOW STATIC SHUTDOWN	CLOSED	CLOSED	DISABLED	CLOSED	CLOSED	

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STATE OF LOUISIANA
JEFFREY C. FONTENOT
License No. 44700
PROFESSIONAL ENGINEER IN MECHANICAL ENGINEERING
05/05/22
ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

ISSUE DATE: 05/05/22
PROJECT NUMBER: 70-16-0005
SHEET TITLE: AHU-2 CONTROL DIAGRAM AND SEQUENCE
SHEET NUMBER: ATC1501

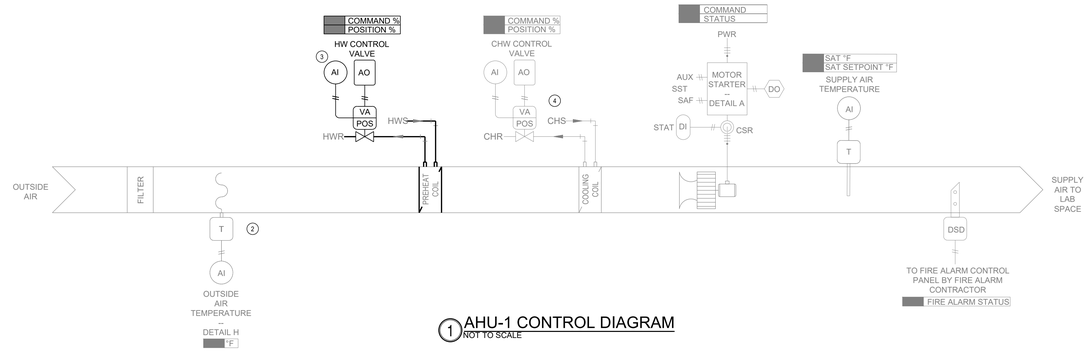
FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
REVIEWED FOR CODE COMPLIANCE
mnmurphy 07/20/2022

GENERAL NOTES:

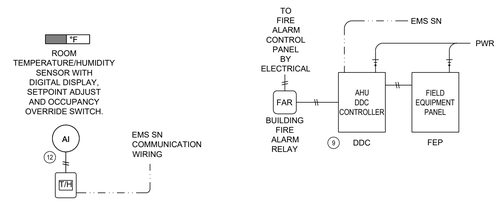
1. POWER WIRING (PWR) BY THE ATC CONTRACTOR. ATC CONTRACTOR IS RESPONSIBLE FOR POWER WIRING FROM FIELD EQUIPMENT PANEL TO CONTROLS REQUIRING POWER.
2. VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING WORK.
3. COORDINATE ACCESS TO AREA AND ANY SHUT DOWN REQUIRED WITH OWNER 48 HOURS IN ADVANCE OF BEGINNING ANY WORK IN AREA.
4. EXISTING FIRE ALARM INTERLOCKS TO BE CONNECTED TO MAINTAIN THE EXISTING FIRE ALARM SEQUENCE OF OPERATION. MAINTAIN ALL EXISTING LIFE SAFETY INTERLOCKS.
5. ATC CONTRACTOR RESPONSIBLE FOR REMOVING ALL PNEUMATIC TUBING, SENSORS, ACTUATORS, CONTROL VALVES, AND WIRING NOT REUSED AS PART OF THE NEW DDC SYSTEM.
6. ALL CONTROLS SHALL BE INSTALLED AS INDICATED ON THE DRAWINGS AND AS DESCRIBED IN THE SPECIFICATIONS.
7. A CUSTOM PROGRAMMABLE DDC CONTROLLER SHALL BE PROVIDED FOR EACH AIR HANDLING UNIT WITH ALL POINTS AND PROGRAMMING RESIDENT IN THE CONTROLLER.
8. WHERE EXISTING ACTUATORS ON DAMPERS OR VALVES HAVE FAILED, REPLACE THE FAILED ACTUATOR WITH NEW ELECTRONIC ACTUATOR AND CONVERSION KITS.

KEYED NOTES:

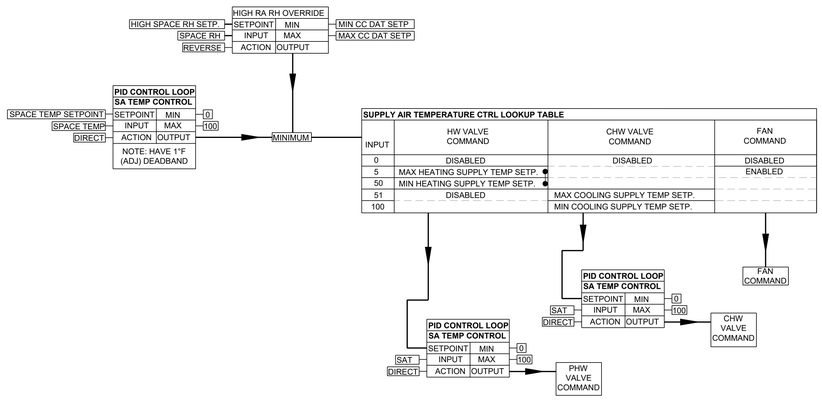
1. PROVIDE AND INSTALL A NEW DIFFERENTIAL PRESSURE SENSOR.
2. PROVIDE AND INSTALL NEW AVERAGING TEMPERATURE SENSOR.
3. PROVIDE AND INSTALL NEW DDC PREHEAT CONTROL VALVE ACTUATOR WITH FEEDBACK.
4. PROVIDE AND INSTALL NEW DDC CHILLED WATER CONTROL VALVE ACTUATOR WITH FEEDBACK.
5. PROVIDE AND INSTALL NEW HIGH STATIC PRESSURE SAFETY LIMIT.
6. PROVIDE AND INSTALL A NEW REMOTE AIR STATIC PRESSURE SENSOR.
7. PROVIDE AND INSTALL NEW DDC REHEAT CONTROL VALVE ACTUATOR WITH FEEDBACK.
8. PROVIDE AND INSTALL NEW PROBE TYPE TEMPERATURE SENSOR.
9. PROVIDE AND INSTALL NEW DDC CONTROLLER CAPABLE OF EXISTING AND NEW POINT TERMINATIONS.
10. PROVIDE AND INSTALL NEW RELATIVE HUMIDITY SENSOR.
11. PROVIDE AND INSTALL NEW AIR FLOW MEASURING STATION
12. PROVIDE AND INSTALL NEW PROGRAMMABLE THERMOSTAT/HUMIDITY SENSOR



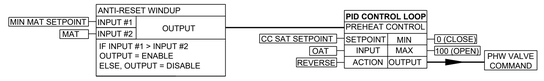
1 AHU-1 CONTROL DIAGRAM
NOT TO SCALE



SEQUENCE OF OPERATION:



2 AHU-1 SUPPLY AIR TEMPERATURE CONTROL
NOT TO SCALE



3 AHU-1 PREHEAT COIL VALVE CONTROL
NOT TO SCALE

SETPOINTS

VARIABLE NAME	SET POINT	NOTES
MIN COOLING SUPPLY TEMP SETPOINT	55° F	ADJUSTABLE
MAX COOLING SUPPLY TEMP SETPOINT	60° F	ADJUSTABLE
MIN HEATING SUPPLY TEMP SETPOINT	80° F	ADJUSTABLE
MAX HEATING SUPPLY TEMP SETPOINT	90° F	ADJUSTABLE
PREHEAT SAT SETPOINT	40° F	ADJUSTABLE
PREHEAT ENABLE SETPOINT	42° F	ADJUSTABLE
MAX SPACE RH SETPOINT	65 % RH	ADJUSTABLE
MIN SPACE RH SETPOINT	30 % RH	ADJUSTABLE
MAX SPACE TEMP SETPOINT	78° F	ADJUSTABLE
MIN SPACE TEMP SETPOINT	68° F	ADJUSTABLE

ALARMS

ALARM TYPE	PRIORITY LEVEL	CRITERIA
FAN STATUS	3	COMMAND DOESN'T MATCH STATUS
TEMP. LOW LIMIT SAFETY	2	TEMPERATURE LOW LIMIT SAFETY HAS TRIPPED
HIGH SUPPLY AIR TEMP	3	SAT > SAT SET POINT + 3 °F (ADJ.) > 5 MIN. (ADJ.)
LOW SUPPLY AIR TEMP	3	SAT < SAT SET POINT - 3 °F (ADJ.) > 5 MIN. (ADJ.)
HIGH SPACE TEMP	2	SPACE TEMP > SPACE TEMP SET POINT + 3°F (ADJ.) > 5 MIN. (ADJ.)
HIGH SPACE RH	2	SPACE RH > MAX RH SET POINT + 5% RH (ADJ.) > 5 MIN. (ADJ.)
LOW SPACE RH	2	SPACE RH < MIN RH SET POINT - 5% RH (ADJ.) > 5 MIN. (ADJ.)

MODES OF OPERATION

NOTES:
1. IF AHU IS DISABLED FOR ANY REASON OTHER THAN THE CONDITIONS BELOW (SMOKE DAMPER END SWITCH INTERLOCK PREVENTS SUPPLY FAN FROM OPERATING, OTHER INTERLOCKS, POWER FAILURE, ETC, UNIT SHALL BE IN THE UNIT DISABLED MODE)
2. PRIORITY SHALL BE GIVEN TO LIFE SAFETY MODES , THEN ALARM MODES, THEN OTHER MODES, UNLESS UNIT IS MAINTENANCE MODE.

MODE	CHW VALVE	SUPPLY FAN	PREHEAT VALVE	
NORMAL	ENABLED	ENABLED	ENABLED	
UNOCCUPIED NORMAL	ENABLED	ENABLED	ENABLED	
FREEZE ALARM	FULLY OPEN	DISABLED	FULLY OPEN	
MAINTANENCE SHUTDOWN MODE	CLOSED	DISABLED	CLOSED	
HIGH STATIC SHUTDOWN	CLOSED	DISABLED	CLOSED	
FIRE ALARM SHUTDOWN	CLOSED	DISABLED	CLOSED	
LOW STATIC SHUTDOWN	CLOSED	DISABLED	CLOSED	

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications have been examined and no violations of the City Code are evident. Approval of these plans does not authorize the violation of any City Code, Ordinance, Law or Regulation. Approval is granted only for the work shown on these plans and those inspections upon completion. Any changes must be approved by this office.
This is not an assurance that approved plans meet the requirements of the Americans with Disabilities Act. Compliance with the revised plans have been examined and approved.
Work shown as specified in these approved drawings is to be performed by a licensed contractor. Work shall be performed in accordance with the International Residential Code and/or International Building Code.
mmurphy 07/20/2022
REVIEWED FOR CODE COMPLIANCE

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IN
MECHANICAL ENGINEERING
05/05/22
ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

SHEET TITLE:
AHU-1 CONTROL DIAGRAM AND SEQUENCE

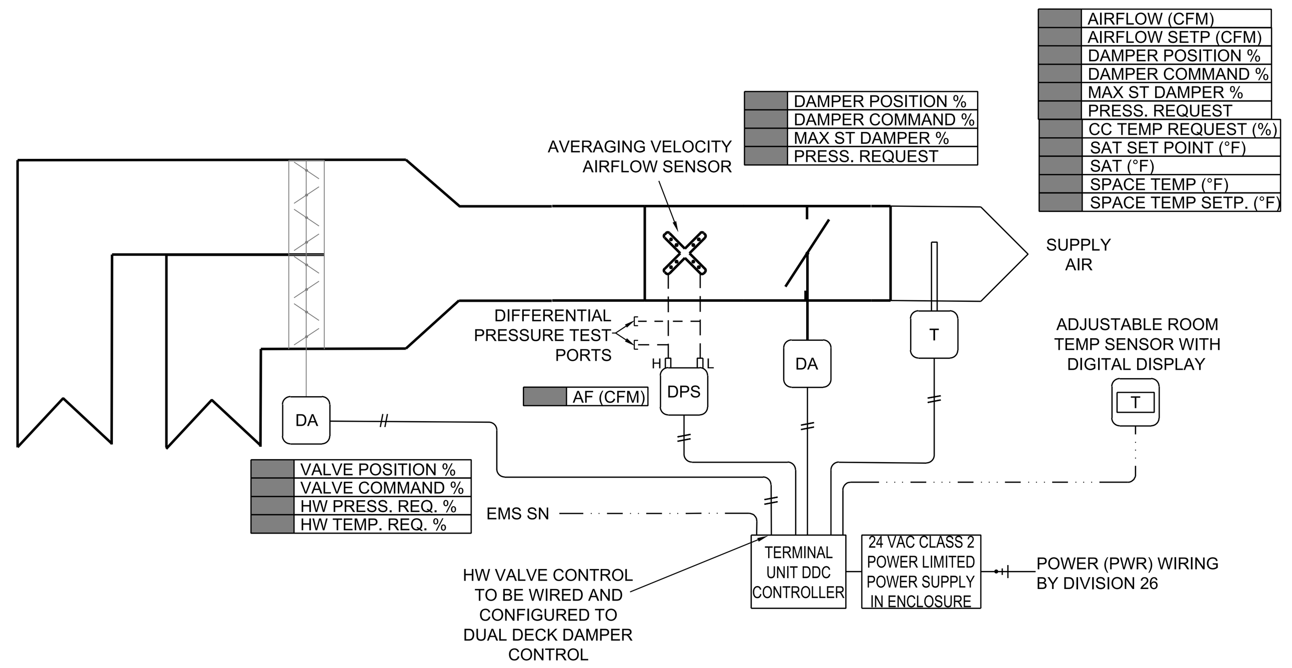
SHEET NUMBER:
ATC1502

GENERAL NOTES:

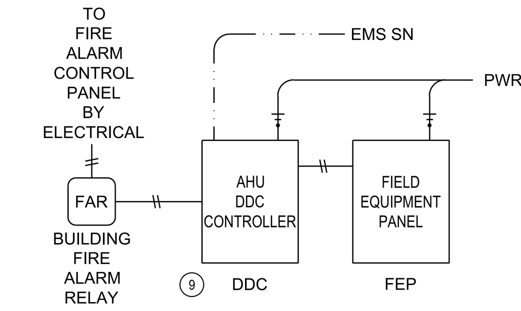
1. POWER WIRING (PWR) BY THE ATC CONTRACTOR. ATC CONTRACTOR IS RESPONSIBLE FOR POWER WIRING FROM FIELD EQUIPMENT PANEL TO CONTROLS REQUIRING POWER.
2. VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING WORK.
3. COORDINATE ACCESS TO AREA AND ANY SHUT DOWN REQUIRED WITH OWNER 48 HOURS IN ADVANCE OF BEGINNING ANY WORK IN AREA.
4. EXISTING FIRE ALARM INTERLOCKS TO BE CONNECTED TO MAINTAIN THE EXISTING FIRE ALARM SEQUENCE OF OPERATION. MAINTAIN ALL EXISTING LIFE SAFETY INTERLOCKS.
5. ATC CONTRACTOR RESPONSIBLE FOR REMOVING ALL PNEUMATIC TUBING, SENSORS, ACTUATORS, CONTROL VALVES, AND WIRING NOT REUSED AS PART OF THE NEW DDC SYSTEM.
6. ALL CONTROLS SHALL BE INSTALLED AS INDICATED ON THE DRAWINGS AND AS DESCRIBED IN THE SPECIFICATIONS.
7. A CUSTOM PROGRAMMABLE DDC CONTROLLER SHALL BE PROVIDED FOR EACH AIR HANDLING UNIT WITH ALL POINTS AND PROGRAMMING RESIDENT IN THE CONTROLLER.
8. WHERE EXISTING ACTUATORS ON DAMPERS OR VALVES HAVE FAILED, REPLACE THE FAILED ACTUATOR WITH NEW ELECTRONIC ACTUATOR AND CONVERSION KITS.

KEYED NOTES:

(1) PROVIDE AND INSTALL A NEW DIFFERENTIAL PRESSURE SENSOR.
(2) PROVIDE AND INSTALL NEW AVERAGING TEMPERATURE SENSOR.
(3) PROVIDE AND INSTALL NEW DDC PREHEAT CONTROL VALVE ACTUATOR WITH FEEDBACK.
(4) PROVIDE AND INSTALL NEW DDC CHILLED WATER CONTROL VALVE ACTUATOR WITH FEEDBACK.
(5) PROVIDE AND INSTALL NEW HIGH STATIC PRESSURE SAFETY LIMIT.
(6) PROVIDE AND INSTALL A NEW REMOTE AIR STATIC PRESSURE SENSOR.
(7) PROVIDE AND INSTALL NEW DDC REHEAT CONTROL VALVE ACTUATOR WITH FEEDBACK.
(8) PROVIDE AND INSTALL NEW PROBE TYPE TEMPERATURE SENSOR.
(9) PROVIDE AND INSTALL NEW DDC CONTROLLER CAPABLE OF EXISTING AND NEW POINT TERMINATIONS.
(10) PROVIDE AND INSTALL NEW RELATIVE HUMIDITY SENSOR.



(3) DUAL DUCT VAV TERMINAL UNIT CONTROL DIAGRAM
NOT TO SCALE
TYPICAL OF ALL DUAL DUCT BOXES IN PERDIDO



SEQUENCE OF OPERATION:

CONTROLLER POINTS			
NAME	TYPE	DEFAULT VALUE	NOTES
SPACE TEMP	ANALOG INPUT	- - -	
SPACE TEMP SP LOCAL	ANALOG INPUT	- - -	
SPACE TEMP SP OCC MIN	ANALOG VALUE	68F	ADJUSTABLE AT BAS
SPACE TEMP SP OCC MAX	ANALOG VALUE	74F	ADJUSTABLE AT BAS
SPACE TEMP SP OCC	ANALOG VALUE	72	ADJUSTABLE AT BAS
SPACE TEMP SP DB	ANALOG VALUE	0.5F	ADJUSTABLE AT BAS
SPACE TEMP SP OCC CLG	ANALOG VALUE	72.5	
SPACE TEMP SP OCC HTG	ANALOG VALUE	71.5	
SPACE TEMP SP UNOCC CLG	ANALOG VALUE	78	ADJUSTABLE AT BAS
SPACE TEMP SP UNOCC HTG	ANALOG VALUE	64	ADJUSTABLE AT BAS
SPACE TEMP SP ACTIVE CLG	ANALOG VALUE	72.5	ADJUSTABLE AT BAS
SPACE TEMP SP ACTIVE HTG	ANALOG VALUE	71.5	ADJUSTABLE AT BAS
OCC STATUS	BINARY VALUE	- - -	ADJUSTABLE AT BAS / SCHEDULE / OCCUPANCY SENSOR
AIRFLOW SP CLG MIN OCC	ANALOG VALUE	- - - CFM	ADJUSTABLE AT BAS
AIRFLOW SP CLG MIN UNOCC	ANALOG VALUE	- - - CFM	ADJUSTABLE AT BAS
AIRFLOW SP CLG MIN ACTIVE	ANALOG VALUE	- - - CFM	ADJUSTABLE AT BAS
AIRFLOW SP HTG MIN OCC	ANALOG VALUE	- - - CFM	ADJUSTABLE AT BAS
AIRFLOW SP HTG MIN UNOCC	ANALOG VALUE	- - - CFM	ADJUSTABLE AT BAS
AIRFLOW SP HTG MIN ACTIVE	ANALOG VALUE	- - - CFM	ADJUSTABLE AT BAS
AIRFLOW SP CLG MAX	ANALOG VALUE	- - - CFM	ADJUSTABLE AT BAS
AIRFLOW SP HTG MAX	ANALOG VALUE	- - - CFM	ADJUSTABLE AT BAS
PID LOOPOUT CLG	ANALOG VALUE	0%	ADJUSTABLE AT BAS
PID LOOPOUT HTG	ANALOG VALUE	0%	ADJUSTABLE AT BAS
PID LOOPOUT HTG LIMIT	ANALOG VALUE	100%	VALUE CALCULATED IN PROGRAMMING. POINT UPDATED EVERY 30 MINUTES.
AIRFLOW SP CLG	ANALOG VALUE	- - -	
AIRFLOW SP HTG	ANALOG VALUE	- - -	
AIRFLOW SP ACTIVE	ANALOG VALUE	- - -	ADJUSTABLE AT BAS
AIRFLOW	ANALOG INPUT	- - -	
DAMPER COMMAND	ANALOG OUTPUT	50%	ADJUSTABLE AT BAS
AHU SAT SP MIN	ANALOG VALUE	55F	ADJUSTABLE AT BAS
DAT SP	ANALOG VALUE	- - -	ADJUSTABLE AT BAS
DAT SP MAX DESIGN	ANALOG VALUE	95F	ADJUSTABLE AT BAS
DAT	ANALOG INPUT	- - -	ADJUSTABLE AT BAS
HW VALVE COMMAND	ANALOG OUTPUT	0%	ADJUSTABLE AT BAS
DAT CONTROL STAGE 2 VARIABLE	ANALOG VALUE	50%	VALUE CALCULATED IN PROGRAMMING
DAT CONTROL STAGE 3 VARIABLE	ANALOG VALUE	75%	VALUE CALCULATED IN PROGRAMMING
MODE ACTIVE	MULTI-STATE VALUE	- - -	ADJUSTED AT BAS

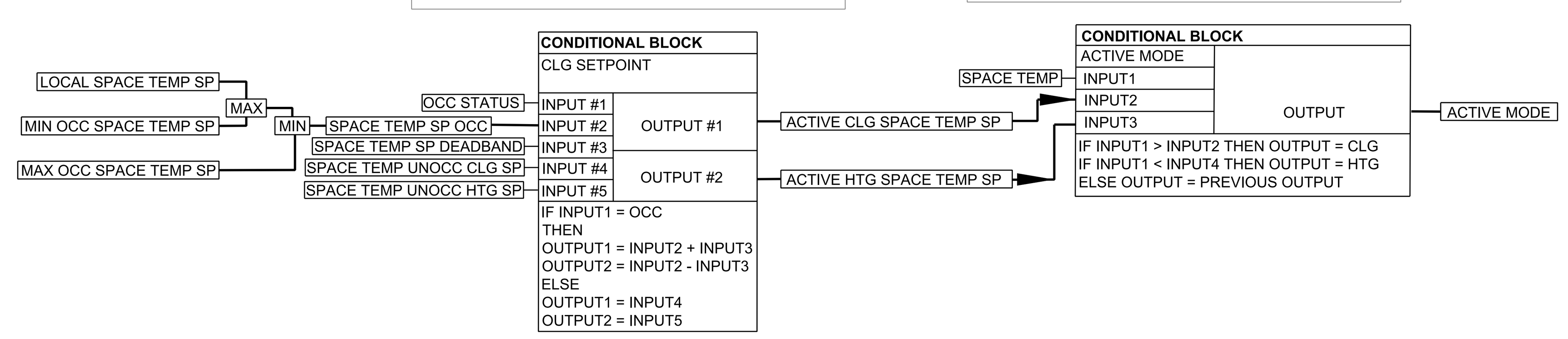
NOTES:
1. REFER TO ROOM VENTILATION SCHEDULE FOR TERMINAL AIRFLOW SET POINTS.
2. OCCUPANCY SHALL BE DETERMINED BY SCHEDULE, PUSHBUTTON OVERRIDE, OCCUPANCY SENSOR, A PATIENT MANAGEMENT SYSTEM, OR AS INDICATED ON DIAGRAMS.
3. TEMPERATURE SET POINTS SHALL SHALL FOLLOW THE FACILITY STANDARDS FOR ZONES SERVED.

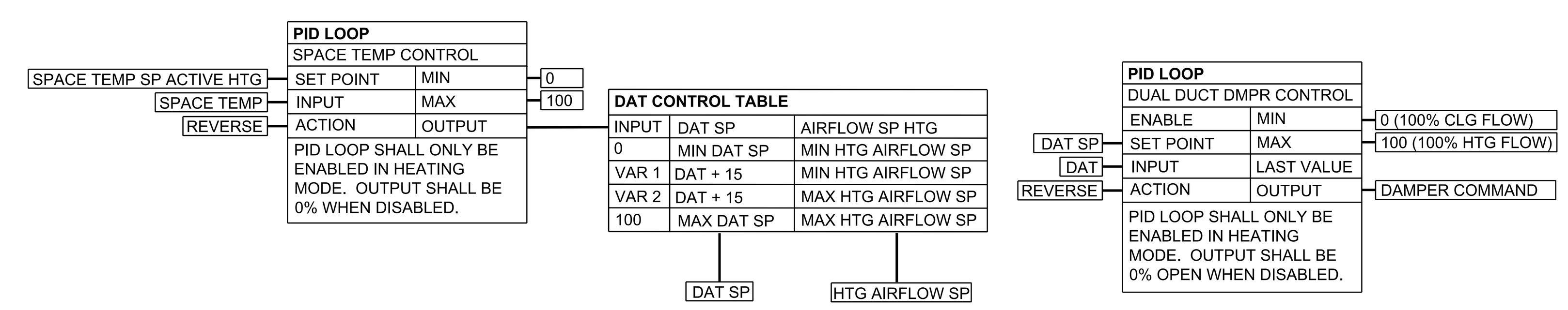
MODES OF OPERATION		
MODE	DAMPER COMMAND	AIRFLOW SET POINT
COOLING	DAMPER CONTROL	COOLING CONTROL
HEATING	DAMPER CONTROL	HEATING CONTROL

ALARMS					
ALARM TYPE	ALARM STATUS	ACK REQUIRED	CRITERIA	ON DELAY	ON DELAY
HIGH SUPPLY AIR TEMP	- - -	NO	SAT > 5F SET POINT	10 MINUTES (ADJ)	PARAMETERS ADJUSTABLE AT BAS
HIGH SPACE HUMIDITY ALARM	- - -	YES	SPACE RH > 60% (ADJ)	10 MINUTES (ADJ)	PARAMETERS ADJUSTABLE AT BAS
HIGH SPACE TEMP	- - -	YES	SPACE TEMP > SPACE TEMP SP + 5F (ADJ)	10 MINUTES (ADJ)	PARAMETERS ADJUSTABLE AT BAS
LOW SPACE TEMP	- - -	YES	SPACE TEMP < SPACE TEMP SP - 5F (ADJ)	10 MINUTES (ADJ)	PARAMETERS ADJUSTABLE AT BAS
HIGH AIRFLOW	- - -	NO		10 MINUTES (ADJ)	PARAMETERS ADJUSTABLE AT BAS
LOW AIRFLOW	- - -	NO		10 MINUTES (ADJ)	PARAMETERS ADJUSTABLE AT BAS
OWNER REQ. ALARMS	- - -	- - -	SPECIFIED BY OWNER	10 MINUTES (ADJ)	PARAMETERS ADJUSTABLE AT BAS

ACTIVE SETPOINTS
THE ACTIVE CLG AND HTG SETPOINTS WILL BE SELECTED BASED ON OCCUPANCY STATUS AND LOCAL THERMOSTAT AND WILL BE LIMITED BY MIN AND MAX SETPOINTS.

ACTIVE MODE
THE ACTIVE MODE SHALL BE SELECTED BASED ON THE DIFFERENCE BETWEEN THE SPACE TEMP AND BOTH ACTIVE CLG AND HTG SPACE TEMP SETPOINTS.



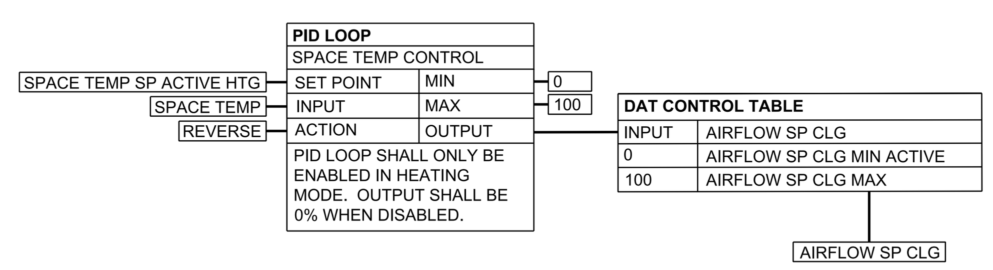


VAR 1 = 100 x [((SPACE TEMP SP + 15) - AHU SAT MIN SP) x AIRFLOW SP HTG MIN ACTIVE] / [(DAT SP MAX DESIGN - AHU SAT MIN SP) X AIRFLOW SP HTG MAX]

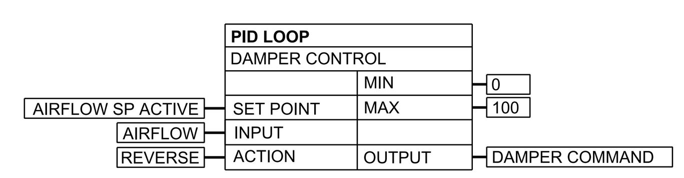
VAR 2 = 100 x [((SPACE TEMP SP + 15) - AHU SAT MIN SP) x AIRFLOW SP HTG MAX] / [(DAT SP MAX DESIGN - AHU SAT MIN SP) x AIRFLOW SP HTG MAX]

NOTE THAT SAFETY CHECKS SHOULD BE IN PLACE TO INSURE THAT AT NO TIME THE STAGE 2 VAR OR STAGE 3 VAR IS AN EQUATION WHICH DIVIDES BY ZERO. IF A POINT IS FAILED, THE DEFAULT VALUE SHOULD BE USED. IF THE AIRFLOW SP HTG MAX VALUE IS EVER COMMANDED TO BE ZERO, A VALUE OF 1 SHOULD BE USED IN ITS PLACE.

(4) TERMINAL UNIT CONTROL - HEATING MODE
NOT TO SCALE



(5) TERMINAL UNIT CONTROL - COOLING MODE
NOT TO SCALE



(3) TERMINAL UNIT CONTROL - DAMPER CONTROL
NOT TO SCALE

(4) AHU-3 DUAL DUCT MIXING BOX CONTROL SEQUENCE
NOT TO SCALE

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05/05/22
ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

SHEET TITLE:
DUAL DUCT TERMINAL UNIT CONTROL DIAGRAM AND SEQUENCE

SHEET NUMBER:
ATC1503

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
REVIEWED FOR CODE COMPLIANCE
mnmurphy 07/20/2022

ELECTRICAL EQUIPMENT CONNECTION SCHEDULE - AIR HANDLING UNITS - PERDIDO

EQUIPMENT ID	EQUIPMENT SERVED	MOTOR HP	MOTOR KW	DEVICE	DEVICE PROVIDED BY	SIZE	ENCLOSURE	VOLTAGE	PHASE	LOAD	WIRE AND CONDUIT SIZE	NOTES
VFD-AHU-3-PER	AHU-3-PER	40	-	VFD	MECHANICAL	N/A	NEMA 1	480 V	3	43231 VA	(3) #4 & (1) #8 GRD. IN 1-1/4" CONDUIT	-

DISTRIBUTION PANEL: "PD-N"

LOCATION: MECH. PENTHOUSE
SUPPLY FROM: "GD"
MOUNTING: SURFACE
ENCLOSURE: NEMA 1

VOLTAGE: 480/277 Wye
PHASES: 3
WIRES: 4

AIC RATING: 65,000
MAINS RATING: 800 A
MCB RATING: 800 A (LSI)

NOTES:
PROVIDE ADEQUATE MOUNTING SPACE FOR FUTURE BREAKERS.

CCT	CIRCUIT DESCRIPTION	# OF POLES	FRAME SIZE (A)	TRIP RATING (A)	Load	REMARKS
1	EXISTING (EX. FAN #1)	3	--	20	6228	
2	EXISTING (EX. FAN #2)	3	--	20	6228	
3	EXISTING (EX. FAN #3)	3	--	20	6228	
4	EXISTING (EX. FAN #6)	3	--	20	6228	
5	EXISTING (AIR COMP. #2)	3	--	20	6228	
6	EXISTING (COND. RETURN)	3	--	20	6228	
7	EXISTING (COND. PUMP)	3	--	20	6228	
8	EXISTING (AIR COMP. #1)	3	--	20	6228	
9	EXISTING (2ND FLOOR A/C PUMP)	3	--	20	6228	FIELD VERIFY. EXISTING BREAKER IN PANEL "PD" IS OFF.
10	EXISTING (XFMR ENGINEER'S RM)	3	--	60	24912	
11	EXISTING (ROOFTOP ANIMAL RM A/C)	3	--	50	20760	FIELD VERIFY. EXISTING BREAKER IN PANEL "PD" IS OFF.
12	EXISTING (AIR PUMP NEW)	3	--	30	12456	FIELD VERIFY. EXISTING BREAKER IN PANEL "PD" IS OFF.
13	EXISTING (CAGE WASHER)	3	--	30	12456	FIELD VERIFY. EXISTING BREAKER IN PANEL "PD" IS OFF.
14	EXISTING (STERILIZER 2ND FLOOR)	3	--	30	12456	FIELD VERIFY. EXISTING BREAKER IN PANEL "PD" IS OFF.
15	EXISTING (BLOWERS RM 314 NEW A/C)	3	--	70	29064	
16	EXISTING (CAGE WASHER 2ND FLOOR)	3	--	40	16608	
17	EXISTING (AIR PUMP NEW)	3	--	30	12456	FIELD VERIFY. EXISTING BREAKER IN PANEL "PD" IS OFF.
18	EXISTING (AC FAN UNIT #3)	3	--	40	16608	
19	EXISTING (TRANSFORMER 3T)	3	--	100	41520	
20	EXISTING (ELEVATOR)	3	--	70	29064	
21	EXISTING (PANEL 3H)	3	--	100	41520	
22	ACC-1-PER	3	250	175	95000	LSI BREAKER
23	ACC-2-PER	3	250	175	95000	LSI BREAKER
24	PMP-CHW-P1-PER	3	100	20	3991	
25	PMP-CHW-P2-PER	3	100	20	3991	
26	PMP-CHW-S1-PER	3	100	20	9145	
27	PMP-CHW-S2-PER	3	100	20	9145	
28	PMP-HW-P1-PER	3	100	20	1330	
29	PMP-HW-P2-PER	3	100	20	1330	
30	PMP-HW-S1-PER	3	100	20	3991	
31	PMP-HW-S2-PER	3	100	20	3991	
32	NGC-1-PER	3	100	30	11639	
33						
34						
35						
				TOTAL LOAD:	564485 VA	
				TOTAL AMPS:	679 A	

LOAD CLASSIFICATIONS	CONNECTED LOAD	DEMAND / DESIGN FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
MOTOR EQUIPMENT	238553 VA	109.96%	262303 VA		
Spare	325932 VA	100.00%	325932 VA	**CONNECTED LOAD:**	564485 VA
				ESTIMATED DEMAND:	588235 VA
				CONNECTED CURRENT:	679 A
				EST. DEMAND CURRENT:	708 A

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications have been examined and no evidence of violation of the Comprehensive Zoning Ordinance or the Building Code of the City of New Orleans was observed. This review is only for general conformance with the design concept of the project and does not include verification of dimensions, quantities, or details of construction. Plans may not be changed, modified or altered without authorization from the Safety and Permits Department. Work must be installed in accordance with the accepted plans and must be inspected by the appropriate inspector before it may be covered.
All of the above are the responsibility of the contractor and/or owner. A separate permit may be required for signs, fences, and/or demolition. Any work started before a permit is issued shall be subject to a triple permit fee.
Permit Number: PRMBLD22-00000-00000
Building Official
REVIEWED FOR CODE COMPLIANCE
mmurphy 07/20/2022

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ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

SHEET TITLE:
PERDIDO SCHEDULES - AIR HANDLING UNITS - ELECTRICAL

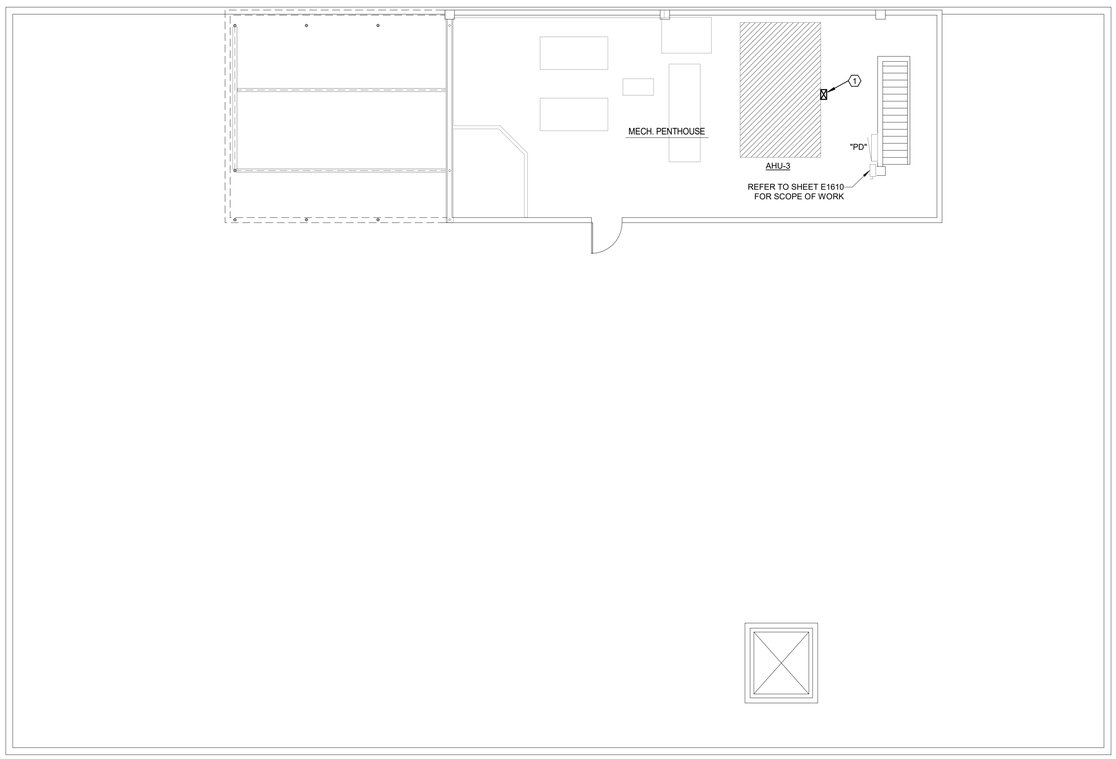
SHEET NUMBER:
E1500

GENERAL DEMOLITION NOTES:

1. REFER TO GENERAL ELECTRICAL DEMOLITION NOTES, SHEET E1000.

KEYED DEMOLITION NOTES:

(1) EXISTING AHU FAN STARTER TO BE REMOVED AND REPLACED WITH VFD. EXISTING FEEDER/CONDUIT FROM AHU FAN TO STARTER AND FROM STARTER TO SERVING GEAR (DISTRIBUTION PANEL "PD") TO BE CAPPED IN PLACE FOR CONNECTION TO NEW VFD. REFER TO SHEET E1520 (KEYED NOTE #1) FOR ADDITIONAL INFORMATION.



1 PERDIDO - PENTHOUSE - AIR HANDLING UNITS - ELECTRICAL DEMOLITION
1/8" = 1'-0"

Bernhard TME Engineering

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(COA #3930)

STATE OF LOUISIANA
TRENTON PAUL CHECHOTA
REG. NO. 38621
PROFESSIONAL ENGINEER
IN
ELECTRICAL ENGINEERING
5/5/22
ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

SHEET TITLE:
PERDIDO FLOOR PLANS - AIR HANDLING UNITS - ELECTRICAL DEMOLITION

SHEET NUMBER:
E1510

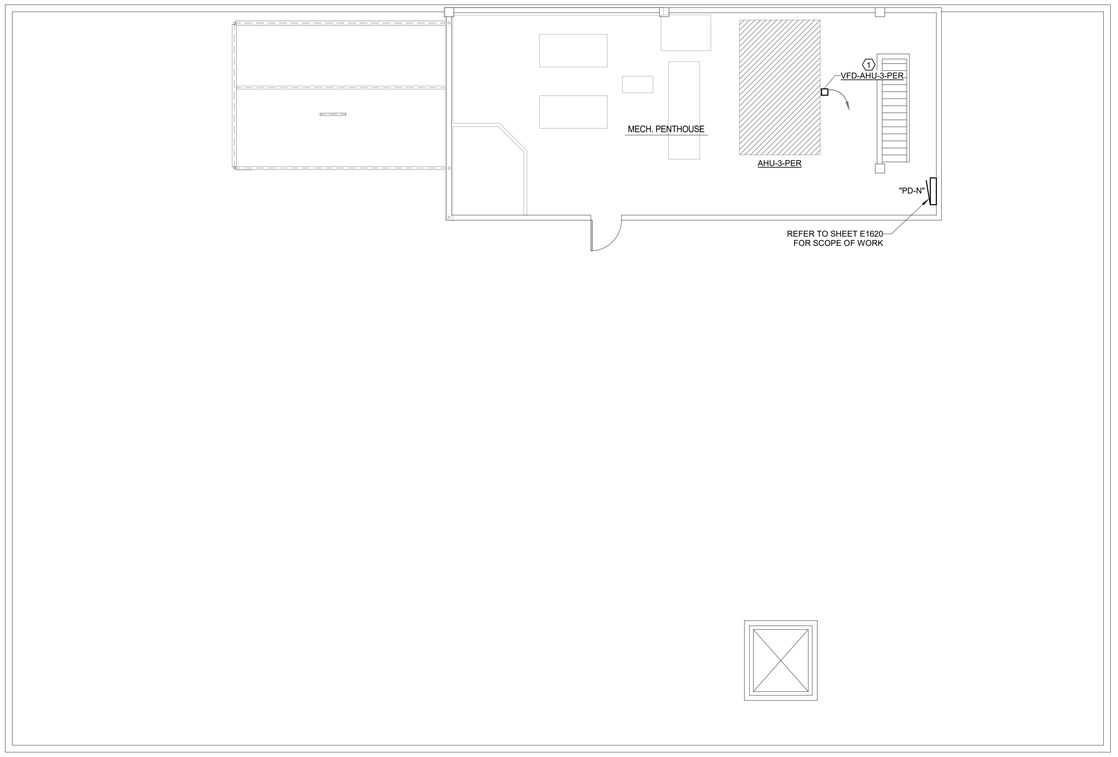
FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications have been examined and no violations of the Building Code or other applicable codes are found on the face of these plans. See plans dated. This action is contingent upon the plans and construction complying with all codes and final inspection upon completion.
Approved: 07/20/2022
This is not an extension from approved plans issued on ____ which expired on ____. Any changes made on these plans must be in bold print and have been examined and approved before they are made.
Work which is specified in these approved drawings is not to be concealed before it has been inspected and approved by the Building Inspector.
REVIEWED FOR CODE COMPLIANCE
mnmurphy 07/20/2022

GENERAL NOTES:

1. REFER TO GENERAL ELECTRICAL NOTES, SHEET E1000.

KEYED NOTES:

(1) AFTER CONFIRMING THAT THE EXISTING REMAINING CAPPED FEEDER/CONDUIT MEET CODE REQUIREMENTS, EXTEND AND RECONNECT TO NEW VFD AS REQUIRED. REFER TO ELECTRICAL EQUIPMENT CONNECTION SCHEDULE, SHEET E1500 IF NEW FEEDER/CONDUIT ARE REQUIRED. REVISE ASSOCIATED EQUIPMENT LABEL ON SERVING GEAR WITH NEW AHU DESIGNATION.



1 PERDIDO - PENTHOUSE - AIR HANDLING UNITS - ELECTRICAL
1/8" = 1'-0"

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STATE OF LOUISIANA
TRENTON PAUL CHECHOTKIN
REGISTERED PROFESSIONAL ENGINEER
ELECTRICAL ENGINEERING
5/5/22
ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

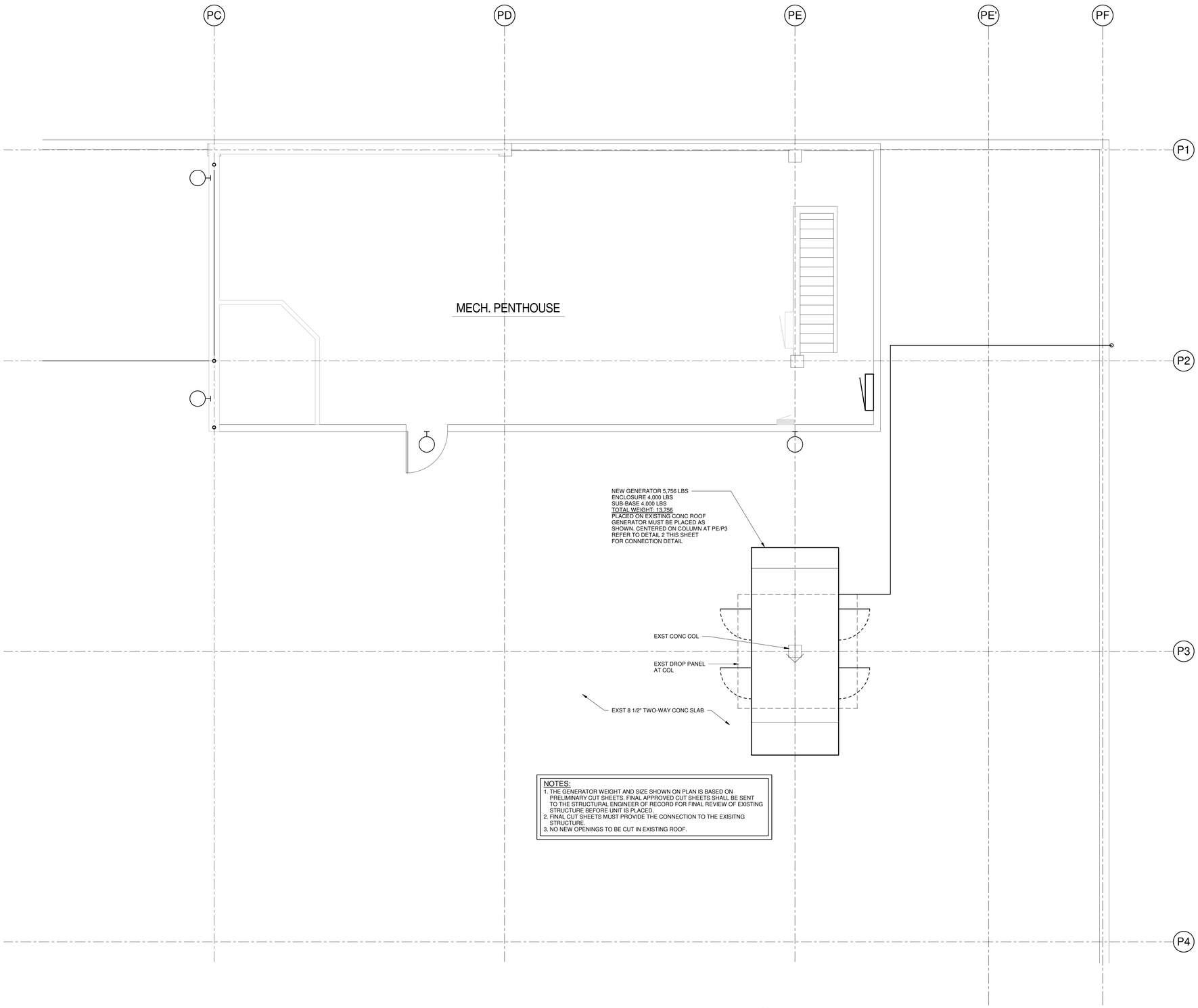
MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

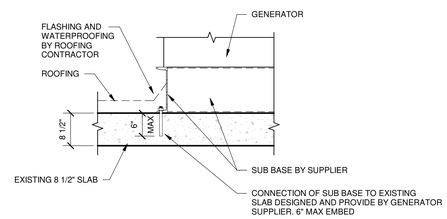
SHEET TITLE:
PERDIDO FLOOR PLANS - AIR HANDLING UNITS - ELECTRICAL

SHEET NUMBER:
E1520

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications have been examined and no evidence of violation of the City Code of Ordinances, Chapter 56 Buildings, or the Code of Ordinances, Chapter 28 Zoning, has been found. This action is contingent upon the work being performed and the building being occupied and used in accordance with the provisions of the Code and that inspections upon completion, as required by the Code, are made.
Neither the issuance of a permit based upon plans, nor the approval of plans by a plan examiner, nor the issuance of a certificate of occupancy shall be construed to be a permit for, or an approval of, any violation of any of the provisions of the Code or of any other ordinance of the City. No permit purporting to give authority to violate, or cancel the provisions of the Code or of any other ordinance of the City shall be valid.
Except as otherwise specified, it is also approved whereupon no inspection record card will be issued, nor building shall be occupied until all work performed as required by the Code and the building has been completed in accordance with all City requirements and a certificate of occupancy issued.
Approved: Robert Mansfield, Director
Safety and Permits
REVIEWED FOR CODE COMPLIANCE
mnmurphy 07/20/2022



NOTES:
1. THE GENERATOR WEIGHT AND SIZE SHOWN ON PLAN IS BASED ON PRELIMINARY CUT SHEETS. FINAL APPROVED CUT SHEETS SHALL BE SENT TO THE STRUCTURAL ENGINEER OF RECORD FOR FINAL REVIEW OF EXISTING STRUCTURE BEFORE UNIT IS PLACED.
2. FINAL CUT SHEETS MUST PROVIDE THE CONNECTION TO THE EXISITNG STRUCTURE.
3. NO NEW OPENINGS TO BE CUT IN EXISTING ROOF.



2 GENERATOR CONNECTION DETAIL
3/4" = 1'-0"

1 PERDIDO - PENTHOUSE - ELECTRICAL UPGRADES - STRUCTURAL
1/4" = 1'-0"

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ENGINEER SEAL

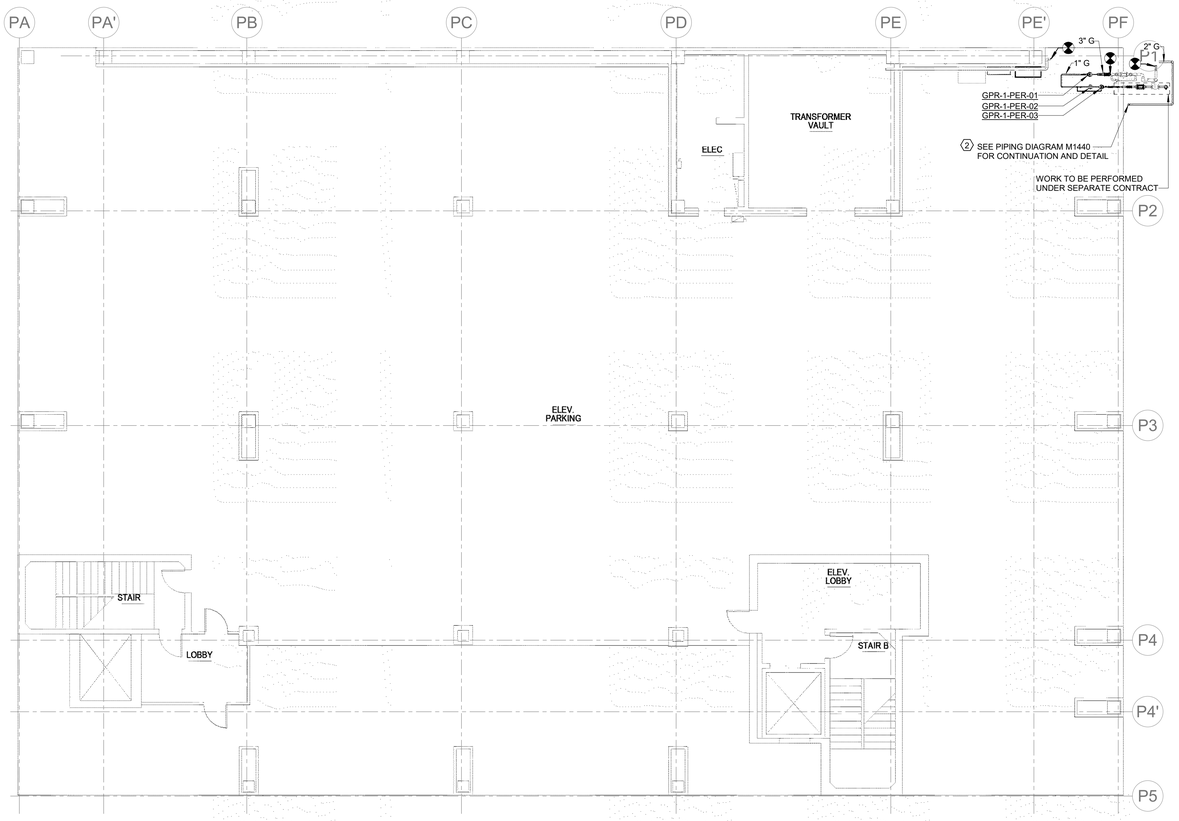
ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION
ISSUE DATE:		05/05/22
PROJECT NUMBER:		77-16-0005

SHEET TITLE:
PERDIDO ROOF PLAN - ELECTRICAL UPGRADES - STRUCTURAL

SHEET NUMBER:
S1620

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications have been examined just as evidence of the intent of the design professional and are not approved or disapproved for any violation of the Building Code. This review is exempted from any and all warranties implied or expressed. Construction shall meet all applicable codes and shall be inspected upon completion.
Approval of these plans does not authorize the violation of any ordinance or law.
Any deviation from or omission from approved plans must be approved by the Department of Safety and Permits prior to work being done to verify that the revised plans have been examined and approved.
Any & all work to specified in these approved drawings is subject to inspection by the Department of Safety and Permits.
Approved for Permit Issuance
Mo Hawkins, AIA
REVIEWED FOR CODE COMPLIANCE
mnmurphy 07/20/2022



1 PERDIDO - 1ST FLOOR - ELECTRICAL UPGRADES - MECHANICAL

1/8" = 1'-0"

KEYED NOTES:

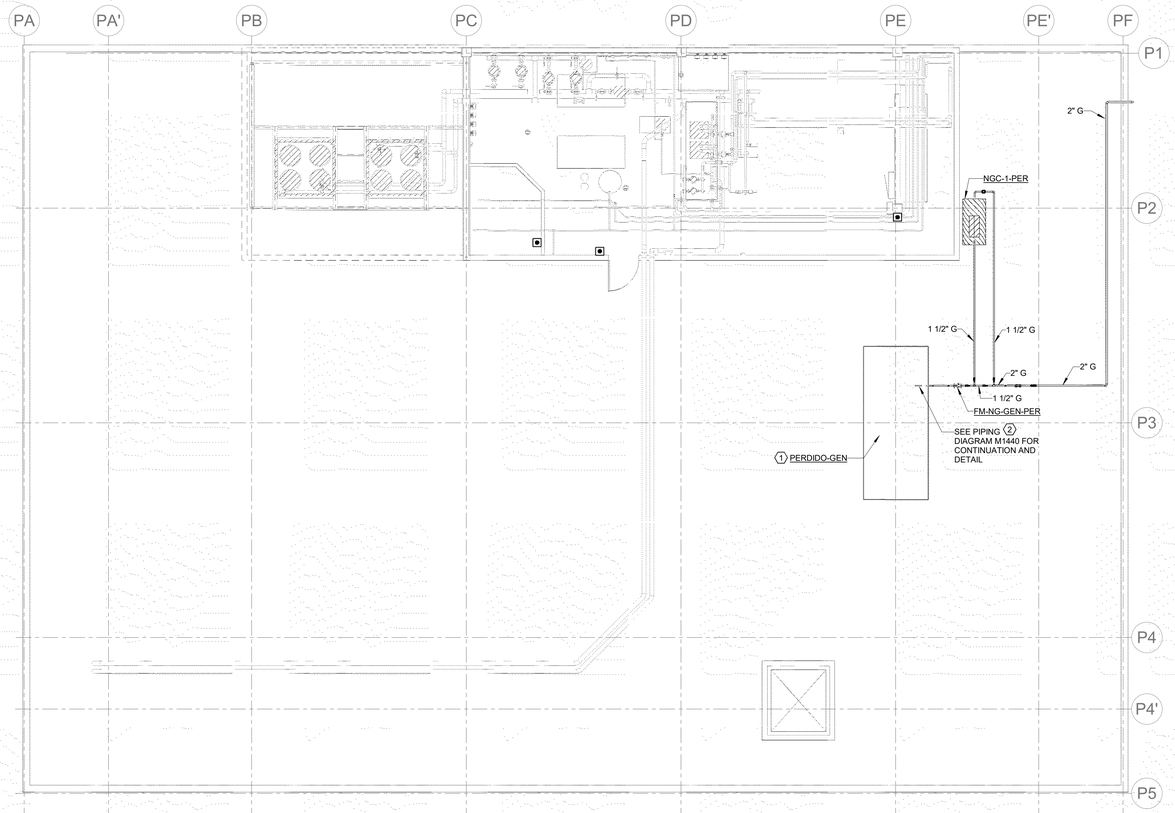
1. NATURAL GAS GENERATOR SHOWN FOR COORDINATION. GENERATOR FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. NATURAL GAS PIPING INSTALLED BY MECHANICAL CONTRACTOR. REFER TO INDIVIDUAL DISCIPLINES FOR SCOPE AND SCHEDULES.
2. INSTALL NEW NATURAL GAS PIPING FROM EXISTING NATURAL GAS LINE AND CONNECT TO NEW GENERATOR. REFER TO PIPING DIAGRAMS.

NATURAL GAS COMPRESSOR SCHEDULE

DESIGNATION	REFERENCE PRODUCT	LOCATION	SERVES	COMPRESSOR					ELECTRICAL			WEIGHT (LBS)	REMARKS
				QTY.	TYPE	SPEED (RPM)	FLOW (SCFM)	PRESSURE (PSIG)	MHP	VOLTS	PHASE		
NGC-1-PER	QUINCY QRNG 270	PERDIDO ROOF	GEN-PER	1	RECIPROCATING	500	44	30	10	480	3	1000	CUSTOM ASSEMBLY WITH 80 GALLON ASME PRESSURE VESSEL RECIEVER TANK WITH PRESSURE CUT-IN/CUT-OUT CONTROL, OUTLET PRESSURE REDUCING VALVE FOR 2 TO 5-PSIG DISCHARGE.

NATURAL GAS FLOW METER SCHEDULE

DESIGNATION	REFERENCE PRODUCT	SERVES	TYPE	FLUID TYPE	METER SIZE (INCH)	LINE SIZE (INCH)	FLUID FLOW (SCFH)	PRESSURE LOSS (PSID)	ACCURACY (%)	ELECTRICAL REQUIREMENTS	REMARKS
FM-NG-GEN-PER	SIERRA INSTRUMENTS 780I VT	GEN-PER NATURAL GAS	INSERTION THERMAL MASS FLOW METER	NATURAL GAS	2	2	2600 SCFH	0.05 (2-PSIG INLET)	+/- 0.5%	24 VDC	PROVIDE WITH LINE SIZE 316 SS IN-LINE FLOW BODY WITH INTEGRAL FLOW CONDITIONER WITH ANSI CLASS 150 FLANGE, DIRECT MOUNT NEMA 4X ENCLOSURE, 4-20mA OUTPUT SIGNALS FOR MASS FLOW RATE AND TEMPERATURE; LOCAL LCD DISPLAY; FLOW METER TO BE CALIBRATED FOR NATURAL GAS; COORDINATE DIGITAL COMMUNICATION REQUIREMENTS WITH BERNHARD LOGIC.



2 PERDIDO - PENTHOUSE - ELECTRICAL UPGRADES - MECHANICAL

1/8" = 1'-0"

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STATE OF LOUISIANA
CHRISTOPHER C. GALLOWAY
License No. 45208
PROFESSIONAL ENGINEER
5/5/22
ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION
ISSUE DATE:		05/05/22
PROJECT NUMBER:		70-16-0005

SHEET TITLE:
PERDIDO FLOOR PLANS - ELECTRICAL UPGRADES - MECHANICAL

SHEET NUMBER:
M1620

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications have been examined and no violations of the New Orleans Building Code have been found to exist on the face of these plans. See plans dated. This action is contingent upon the work being performed and the building occupied as shown and listed and made in strict conformity with the New Orleans Building Code.
This is not to be construed to be an approval of any violation of any provisions of the New Orleans Building Code or of any other ordinance of the City of New Orleans. No permit will be issued until the related plans have been examined and approved.
Work which is specified in these approved drawings is not to be concealed or enclosed until inspected and accepted by the authorized representatives of the Department of Safety and Permits.
REVIEWED FOR CODE COMPLIANCE
mrmurphy 07/20/2022

ONE-LINE DIAGRAM LEGEND

SYMBOL	DESCRIPTION
G	GENERATOR
	AUTOMATIC TRANSFER SWITCH
	BREAKER
	NON-FUSED SWITCH
	FUSED SWITCH
	TRANSFORMER
	DISTRIBUTION BUS
M	POWER METER
K	KEYED INTERLOCK
GAP	GENERATOR ANNUNCIATOR PANEL
EPO	EMERGENCY POWER-OFF RED MUSHROOM PUSHBUTTON WITH CLEAR COVER
▼	CONTINUATION ARROW
	NEW DEMOLISH AND REMOVE EXISTING-TO-REMAIN

PANEL "PD" LOAD TABLE

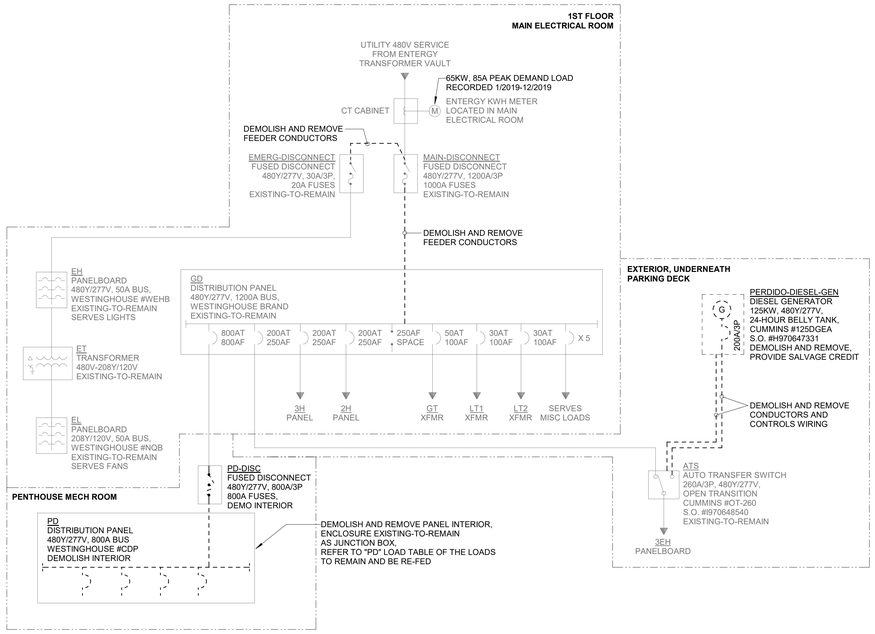
CCT	LOAD NAME	ON/OFF	BREAKER SIZE	DEMOLISH	REFEED
1	EXHAUST FAN #1	ON	15A/3P		X
2	EXHAUST FAN #2	ON	15A/3P		X
3	EXHAUST FAN #3	ON	15A/3P		X
4	EXHAUST FAN #6	ON	15A/3P		X
5	AIR COMPRESSOR #2	ON	15A/3P		X
6	CONDENSATE RETURN	ON	15A/3P		X
7	BOILER FEED PUMPS	OFF	15A/3P	X	
8	CONDENSATE PUMPS	ON	15A/3P		X
9	AIR COMPRESSOR #1	ON	15A/3P		X
10	2ND FLR AIR COMP	OFF	15A/3P		X
11	XFMR ENGINEER'S RM	ON	60A/3P		X
12	CHILLED WATER PUMP	OFF	20A/3P	X	
13	CIRC PUMP #1	OFF	20A/3P	X	
14	CHILLED WATER PUMP	OFF	20A/3P	X	
15	CIRC PUMP #2	OFF	20A/3P	X	
16	ROOF TOP ANIMAL RM A/C	OFF	50A/3P		X
17	AIR PUMP	OFF	30A/3P		X
18	CAGE WASHER	OFF	30A/3P		X
19	2ND FLR STERILIZER	OFF	30A/3P		X
20	BLOWERS RM 314	ON	70A/3P		X
21	2ND FLR CART WASHER	ON	40A/3P		X
22	AIR PUMP	OFF	30A/3P		X
23	FAN #3	ON	40A/3P		X
24	COOLING TWR FAN #1	OFF	40A/3P	X	
25	COOLING TWR FAN #2	OFF	40A/3P	X	
26	XFMR 3T	ON	100A/3P		X
27	ELEVATOR	ON	70A/3P		X
28	PANEL 3H	ON	100A/3P		X
29	CHILLER #1	OFF	250A/3P	X	
30	CHILLER #2	OFF	250A/3P	X	

PERDIDO LV FEEDER SCHEDULE

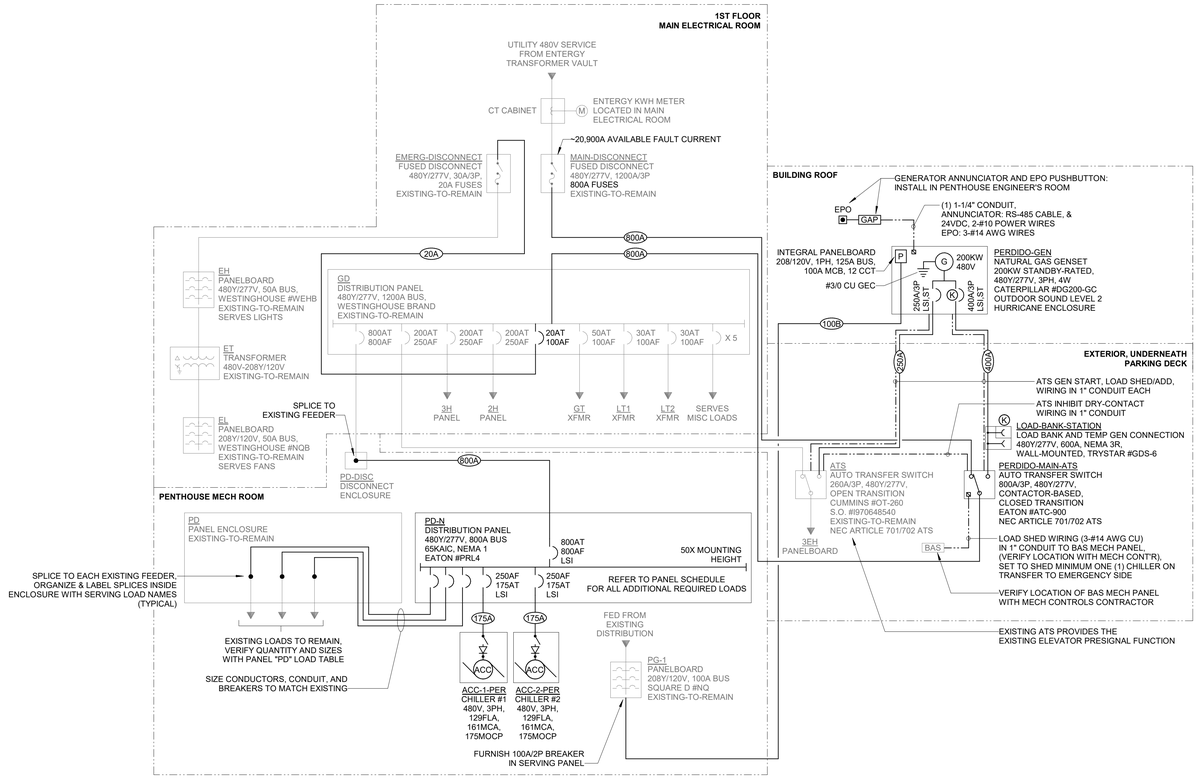
OVAL NOTE	FEEDER SIZE	OCP SIZE
20A	4-#12, #12G, 3/4"C	20A/3P
100B	3-#3, #8G, 1 1/4"C	100A/2P
175A	3-#2/0, #6G, 2"C	175A/3P
250A	4-250 KCMIL, #4G, 2 1/2"C	250A/3P
400A	(2 SETS) 4-#3/0, #3G, 2 1/2"C	400A/3P
800A	(2 SETS) 4-500 KCMIL, #1/0G, 4"C	800A/3P

GENERAL NOTES:

1. FURNISH SHORT CIRCUIT AND BREAKER COORDINATION STUDY. NOTE: SERVICE DISCONNECT "MAIN-DISCONNECT" 800A FUSES IS UNLIKELY TO COORDINATE WITH THE 800A BREAKER IN PANEL "GD". COORDINATE TO THE MAXIMUM EXTENT POSSIBLE. REFER TO REQUEST-FOR-PROPOSAL (RFP) DOCUMENT FOR COORDINATION SPECIFICATIONS.
2. THE GENERATOR AND MEDIUM-VOLTAGE ATS SHOWN ARE BEING PURCHASED THRU A REQUEST-FOR-PROPOSAL (RFP). REFER TO RFP DOCUMENT FOR EQUIPMENT SPECIFICATIONS.
3. REFER TO EMERGENCY PREPAREDNESS PLANS FOR MORE INFORMATION. TEMPORARY DISCONNECT AND TEMPORARY WIRING VIA EMERGENCY PREPAREDNESS PROJECT SHALL BE DEMO'D AND REMOVED AFTER INSTALLATION AND COMMISSIONING OF NEW GENERATOR AND AUTOMATIC TRANSFER SWITCHES IN THIS PROJECT.



1 PERDIDO - ONE-LINE DIAGRAM - ELECTRICAL DEMOLITION
NOT TO SCALE



2 PERDIDO - ONE-LINE DIAGRAM - ELECTRICAL
NOT TO SCALE

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#34 BEST No. 34864 LAWN
PROFESSIONAL ENGINEER
IN
ELECTRICAL ENGINEERING
5/5/22
ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

SHEET TITLE:
PERDIDO SCHEDULES AND ONE-LINE DIAGRAMS - ELECTRICAL UPGRADES - ELECTRICAL

SHEET NUMBER:
E1600

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications have been examined and no evidence of noncompliance with the applicable provisions of the State Uniform Construction Code has been noted. This review is limited to the plans and specifications only and does not relieve the owner, contractor and their respective agents from compliance with the State Uniform Construction Code.
This is not to be construed as approval of any item not complying with the State Uniform Construction Code which may be shown on the plans and specifications. All work must be performed to meet the State Uniform Code in every detail.
All work is subject to inspection by the authority having jurisdiction. It is the responsibility of the contractor to call for all inspections required by the authority having jurisdiction.
REVIEWED FOR CODE COMPLIANCE
mmurphy 07/20/2022

GENERAL DEMOLITION NOTES:

1. REFER TO GENERAL ELECTRICAL DEMOLITION NOTES, SHEET E1000.

KEYED DEMOLITION NOTES:

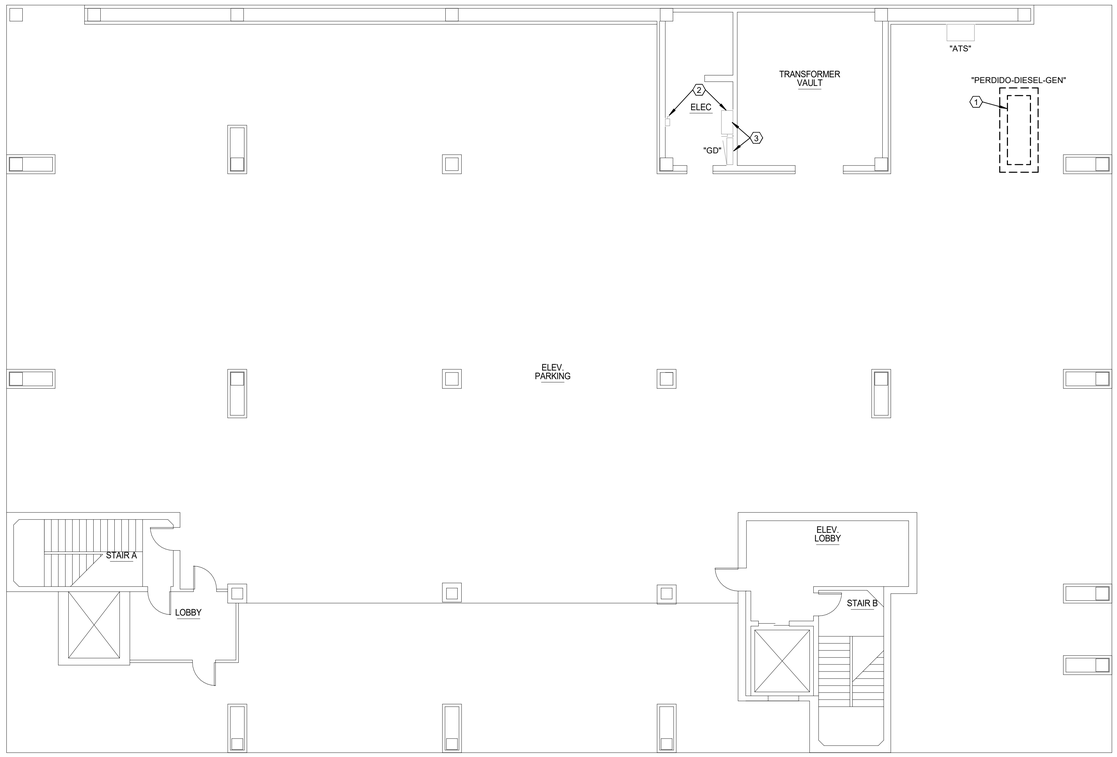
(1) EXISTING DIESEL GENERATOR TO BE REMOVED. DISCONNECT AND REMOVE ALL FEEDER/CONDUIT AND CONTROLS BACK TO EXISTING TRANSFER SWITCH "ATS".

(2) DISCONNECT AND REMOVE FEEDER/CONDUIT BETWEEN MAIN SERVICE DISCONNECT AND EMERGENCY DISCONNECT.

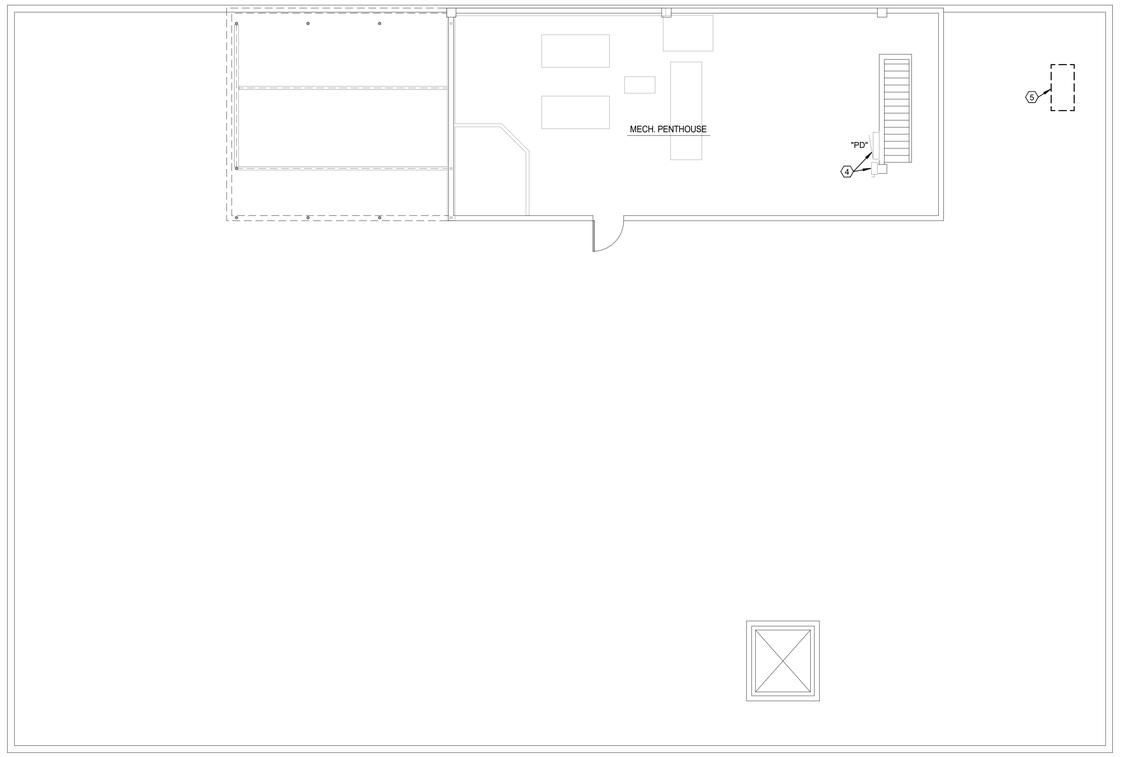
(3) DISCONNECT AND REMOVE FEEDER/CONDUIT BETWEEN MAIN SERVICE DISCONNECT AND MAIN DISTRIBUTION PANEL "GD".

(4) DEMOLISH AND REMOVE EXISTING PANEL INTERIOR. EXISTING ENCLOSURE TO REMAIN AS A JUNCTION BOX. ALL REMAINING LOADS AFTER DEMOLITION TO BE EXTENDED AND REFED FROM NEW DISTRIBUTION PANEL "PD-N" (REFER TO SHEET E620). DEMOLISH AND REMOVE EXISTING DISCONNECT INTERIOR FOR PANEL "PD". EXISTING DISCONNECT ENCLOSURE TO REMAIN AS A JUNCTION BOX. CAP FEEDER/CONDUIT FOR RECONNECTION TO NEW DISTRIBUTION PANEL "PD-N".

(5) EXISTING OBSOLETE 30KW GENERATOR TO BE REMOVED. REMOVE ALL REMAINING ASSOCIATED ELECTRICAL BACK TO SOURCE. REPAIR ROOF AS REQUIRED.



1 PERDIDO - 1ST FLOOR - ELECTRICAL UPGRADES - ELECTRICAL DEMOLITION
1/8" = 1'-0"



2 PERDIDO - PENTHOUSE - ELECTRICAL UPGRADES - ELECTRICAL DEMOLITION
1/8" = 1'-0"

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PROFESSIONAL ENGINEER
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ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

SHEET TITLE:
PERDIDO FLOOR PLANS - ELECTRICAL UPGRADES - ELECTRICAL DEMOLITION

SHEET NUMBER:
E1610

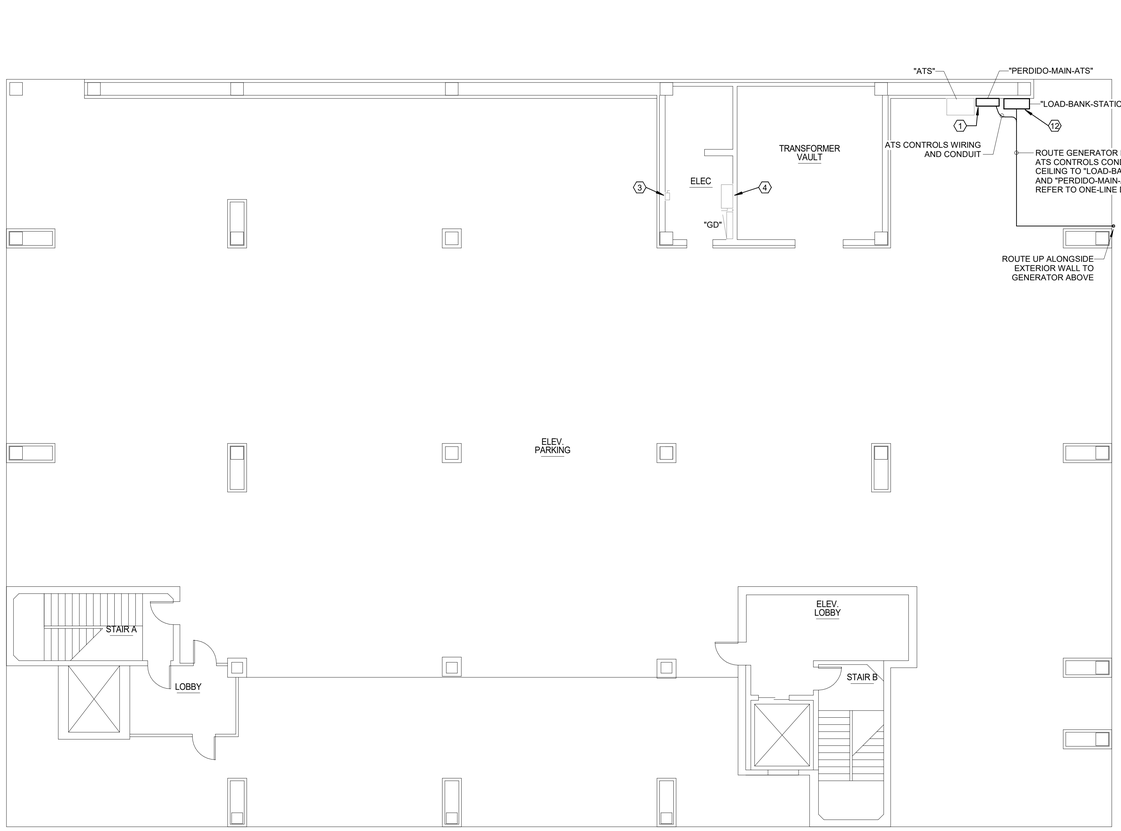
FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications have been examined and no violations of the Comprehensive Zoning Ordinance or the Code of Ordinances have been found. They are subject to changes required by other departments and to field inspection upon completion. Approval of these plans does not imply approval of omissions.
This is not to be construed as approval of any work done without permits. Construction shall not proceed until permits have been issued and the revised plans have been examined and approved for such work.
Work which is specified in these approved drawings is subject to inspection by the Department of Safety and Permits at such times as the Code requires. Call 658-7100 for inspection requests.
REVIEWED FOR CODE COMPLIANCE
mnmurphy 07/20/2022

GENERAL NOTES:

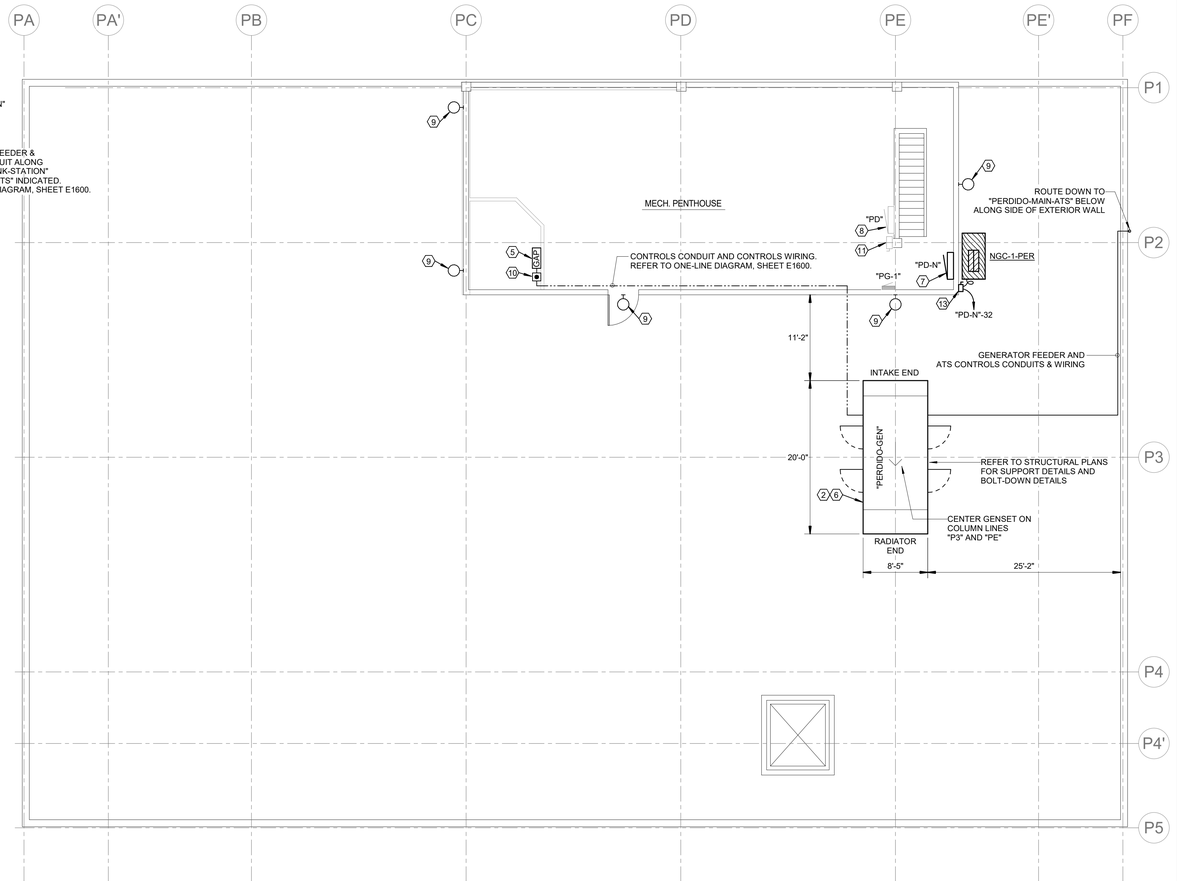
1. REFER TO GENERAL ELECTRICAL NOTES, SHEET E1000.

KEYED NOTES:

1. PROVIDE AND INSTALL NEW 800A-3P AUTOMATIC TRANSFER SWITCH NEXT TO EXISTING AUTOMATIC TRANSFER SWITCH TO REFEED EXISTING MAIN DISTRIBUTION PANEL "GD". REFER TO ONE-LINE DIAGRAM, SHEET E1600 FOR ADDITIONAL INFORMATION.
2. PROVIDE AND INSTALL NEW 200KW NATURAL GAS STAND-BY GENERATOR ON ROOF TO FEED EMERGENCY LINE SIDE OF EXISTING AUTOMATIC TRANSFER SWITCH "ATS" AND NEW AUTOMATIC TRANSFER SWITCH "PERDIDO-MAIN-ATS". REFER TO ONE-LINE DIAGRAM, SHEET E1600 FOR ADDITIONAL INFORMATION.
3. RECONNECT LINE SIDE OF EXISTING EMERGENCY DISCONNECT TO EXISTING MAIN DISTRIBUTION PANEL "GD". PROVIDE AND INSTALL NEW 20A-3P, 600V BREAKER IN EXISTING WESTINGHOUSE PANELBOARD. REFER TO ONE-LINE DIAGRAM, SHEET E1600 FOR ADDITIONAL INFORMATION.
4. RECONNECT LOAD SIDE OF EXISTING MAIN DISCONNECT TO NORMAL LINE SIDE OF NEW AUTOMATIC TRANSFER SWITCH "PERDIDO-MAIN-ATS". ADJUST FUSES IN MAIN DISCONNECT TO 800A. REFER TO ONE-LINE DIAGRAM, SHEET E1600 FOR ADDITIONAL INFORMATION.
5. PROVIDE AND INSTALL GENERATOR ANNUNCIATOR. COORDINATE FINAL LOCATION WITH OWNER. REFER TO ONE-LINE DIAGRAM, SHEET E1600 FOR ADDITIONAL INFORMATION.
6. INTEGRAL PANELBOARD TO BE ROUTED TO EXISTING PANEL "PG-1" IN MECH. PENTHOUSE. PROVIDE AND INSTALL NEW 100A-2P, 250V BREAKER IN EXISTING SQUARE D "NOOD" PANELBOARD. REFER TO ONE-LINE DIAGRAM, SHEET E1600 FOR ADDITIONAL INFORMATION.
7. PROVIDE AND INSTALL NEW 800A, 480Y/277V DISTRIBUTION PANEL TO REFEED EXISTING PENTHOUSE LOADS AND FEED NEW PENTHOUSE LOADS. REFER TO ONE-LINE DIAGRAM, SHEET E1600 FOR ADDITIONAL INFORMATION.
8. EXISTING PANEL TO BE REUSED AS A JUNCTION BOX. EXTEND ALL EXISTING LOADS REMAINING AFTER DEMOLITION TO NEW DISTRIBUTION PANEL "PD-N". REFER TO ONE-LINE DIAGRAM, SHEET E1600 FOR ADDITIONAL INFORMATION.
9. PROVIDE AND INSTALL LED WALL FIXTURE WITH INTEGRAL PHOTOCELL AND EMERGENCY BATTERY BACKUP. LITHONIA LIGHTING #DSXW1-LED-10C-700-40K-TFTM-MVOLT-PE-E20WC OR APPROVED EQUAL. MOUNT APPROX. 10'-0" AFF. CONNECT TO EXISTING ROOF LIGHTING CIRCUIT.
10. PROVIDE AND INSTALL LATCHING EPO PUSHBUTTON WITH HORN, ILLUMINATING BUTTON, AND CLEAR COVER FOR GENERATOR SHUTOFF. PROVIDE AND INSTALL DEVICE LABEL ON EPO SWITCH COVER (I.E. - "GENERATOR SHUT OFF"). REFER TO ONE-LINE DIAGRAM, SHEET E1600 FOR CONNECTION FROM GENERATOR TO EPO SWITCH.
11. EXISTING DISCONNECT TO BE REUSED AS A JUNCTION BOX. EXTEND MAIN FEEDER/CONDUIT TO NEW DISTRIBUTION PANEL "PD-N". REFER TO ONE-LINE DIAGRAM, SHEET E1600 FOR ADDITIONAL INFORMATION.
12. PROVIDE AND INSTALL NEW 600A, NEMA 3R LOAD BANK STATION FOR LOAD BANK AND TEMPORARY GENERATOR CONNECTIONS. REFER TO ONE-LINE DIAGRAM, SHEET E1600 FOR ADDITIONAL INFORMATION.
13. PROVIDE AND INSTALL NEMA 3R, 30A-3P, 600V NON-FUSED DISCONNECT FOR NGC-1-PER. DISCONNECT TO BE LOCKABLE. PROVIDE WITH EQUIPMENT LABEL. ROUTE (3) #10 & (1) # 10 GRD. IN 3/4" CONDUIT TO PANEL INDICATED.



1 PERDIDO - 1ST FLOOR - ELECTRICAL UPGRADES - ELECTRICAL
1/8" = 1'-0"



2 PERDIDO - PENTHOUSE - ELECTRICAL UPGRADES - ELECTRICAL
1/8" = 1'-0"

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STATE OF LOUISIANA
THENTON PAUL CHEEHOON
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PROFESSIONAL ENGINEER
IN
ELECTRICAL ENGINEERING
5/5/22
ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
TULANE UNIVERSITY
NEW ORLEANS, LOUISIANA

MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

SHEET TITLE:
PERDIDO FLOOR PLANS - ELECTRICAL UPGRADES - ELECTRICAL

SHEET NUMBER:
E1620

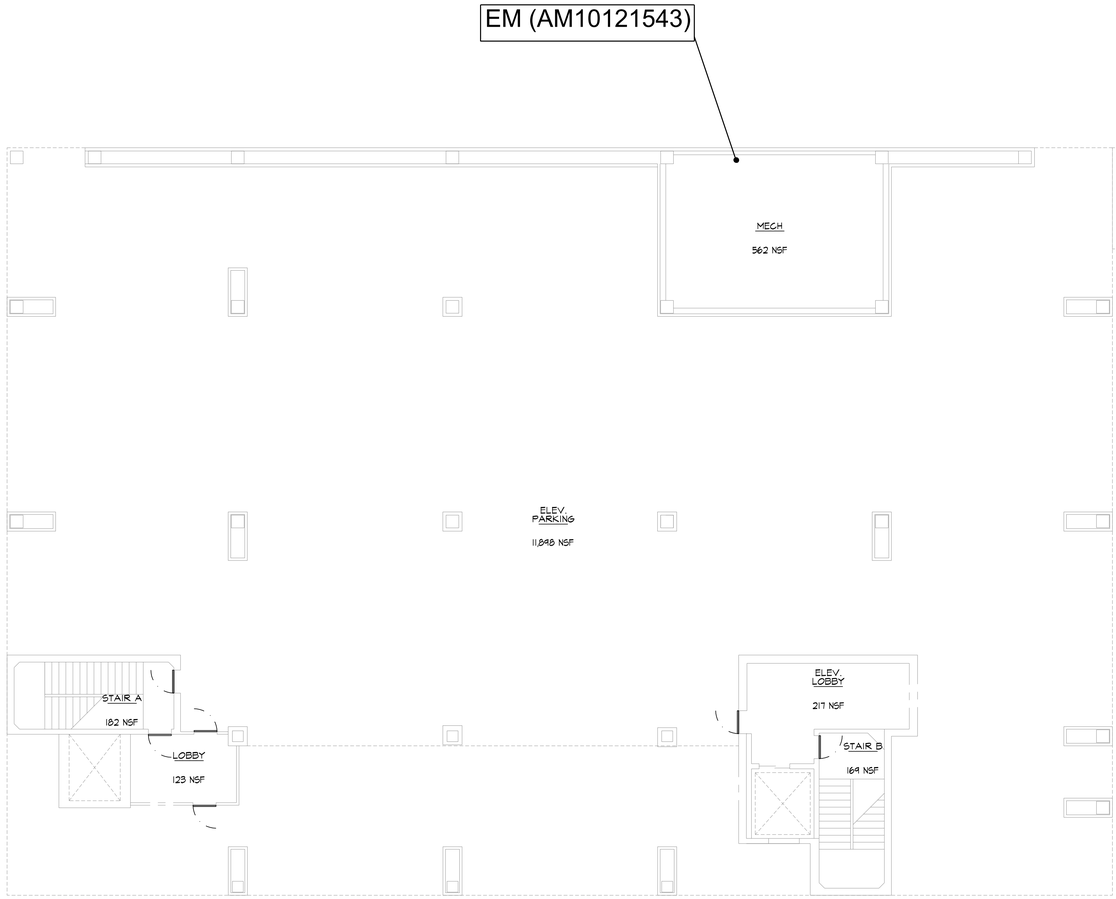
FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and Specifications have been examined and are evidenced as to be in compliance with the latest adopted Building Code (IBC) as amended by the City of New Orleans. Approval of these plans and specifications does not permit the violation of any section of the Building Code or any other law, ordinance or regulation.
Any deviation to or deviation from approved plans must be approved by the Department of Safety and Permits before such work is performed and until the revised plans have been examined and approved.
Work is limited to specified or listed construction in accordance with approved plans. Approval of plans does not authorize the omission of any required item.
REVIEWED FOR CODE COMPLIANCE
07/20/2022

* ENTERGY USES THE FOLLOWING FORMULA TO DETERMINE A CORRECTION FACTOR: (PRESSURE READING + 14.73) / 15.2

GM GAS UTILITY METER

EM ELEC UTILITY METER

FM DOMESTIC WATER METER



1 PERDIDO 1ST FLOOR
NOT TO SCALE

GENERAL NOTES:

1. ONE EXISTING UTILITY OWNED ELECTRIC METERS WILL BE INTEGRATED TO THE BUILDING AUTOMATION SYSTEM FOR MONITORING, TRENDING, AND ARCHIVING.
2. ONE EXISTING UTILITY OWNED NATURAL GAS METERS WILL BE INTEGRATED TO THE BUILDING AUTOMATION SYSTEM FOR MONITORING, TRENDING, AND ARCHIVING.
3. PROVIDE SEPARATE PRICING FOR EACH UTILITY METER TO BE INTEGRATED.
4. NOTIFY ENGINEER WHEN METER INSTALLATION AND BAS PROGRAMMING ARE COMPLETE. ENGINEER WILL EXECUTE FUNCTIONAL TESTING ON ALL METERS INTEGRATED TO THE BAS (INCLUDING THOSE PREVIOUSLY INTEGRATED) TO ENSURE AGREEMENT BETWEEN BAS TREND DATA AND INDEPENDENT SOURCES SUCH AS UTILITY METER READINGS. CONTRACTOR SHALL ASSIST IN RESOLUTION OF ANY DEFICIENCIES.
5. METERING CONTROLLER(S) WILL BE AN OBVIUS ACQUILITE A7810 OR AN APPROVED EQUIVALENT DEVICE. TULANE I.T TO PROVIDE IP DATA DROP FOR METERING CONTROLLER(S).

GENERAL NOTES:

1. COORDINATE WITH ELECTRIC UTILITY (ENTERGY, 800-766-1648) TO ENSURE METER HAS ALL NECESSARY COMPONENTS TO PROVIDE A PULSE OUTPUT AND TO DETERMINE KWH PER PULSE. PROVIDE ALL NECESSARY CONDUIT AND WIRING TO CONNECT PULSE OUTPUT TO METERING CONTROLLER. ATC CONTRACTOR TO INTEGRATE METERING CONTROLLER INTO EXISTING BAS. CALCULATE AND DISPLAY ON GRAPHIC, TREND, AND ARCHIVE THE FOLLOWING VIRTUAL POINTS:
   A. TOTALIZED ELECTRICITY CONSUMPTION (KWH) = TOTALIZED PULSE COUNT X KWH PER PULSE.
   B. 15 MINUTE INTERVAL ELECTRICITY CONSUMPTION (KWH) = DIFFERENCE BETWEEN TOTALIZED ELECTRICITY CONSUMPTION FROM 0:00 TO 0:15, 0:15 TO 0:30, ETC.
   C. 15 MINUTE INTERVAL AVERAGE ELECTRICITY DEMAND (KW) = 15 MINUTE INTERVAL ELECTRICITY CONSUMPTION (KWH) X 4
2. COORDINATE WITH NATURAL GAS UTILITY (ENTERGY, 800-766-1648) FOR REQUIREMENTS FOR CONNECTING TO EXISTING PULSE OUTPUT OF UTILITY OWNED NATURAL GAS METER CORRECTING INSTRUMENT AND TO DETERMINE CORRECTED CUBIC FEET PER PULSE. PROVIDE ALL NECESSARY CONDUIT AND WIRING TO CONNECT PULSE OUTPUT TO METERING CONTROLLER. ATC CONTRACTOR TO INTEGRATE METERING CONTROLLER INTO EXISTING BAS. CALCULATE AND DISPLAY ON GRAPHIC, TREND, AND ARCHIVE THE FOLLOWING VIRTUAL POINTS:
   D. TOTALIZED NATURAL GAS CONSUMPTION (CCF) = TOTALIZED PULSE COUNT X CORRECTED CUBIC FEET PER PULSE / 100.
   E. 15 MINUTE INTERVAL NATURAL GAS CONSUMPTION (CCF) = DIFFERENCE BETWEEN TOTALIZED NATURAL GAS CONSUMPTION FROM 0:00 TO 0:15, 0:15 TO 0:30, ETC.
3. COORDINATE WITH NATURAL GAS UTILITY (ENTERGY) FOR INSTALLATION OF PULSE OUTPUT KIT ON UTILITY OWNED NATURAL GAS METER AND TO DETERMINE UNCORRECTED CUBIC FEET PER PULSE. PROVIDE ALL NECESSARY CONDUIT AND WIRING TO CONNECT PULSE OUTPUT KIT TO METERING CONTROLLER. ATC CONTRACTOR TO INTEGRATE METERING CONTROLLER INTO EXISTING BAS. CALCULATE AND DISPLAY ON GRAPHIC, TREND, AND ARCHIVE THE FOLLOWING VIRTUAL POINTS:
   F. TOTALIZED NATURAL GAS CONSUMPTION (CCF) = TOTALIZED PULSE COUNT X UNCORRECTED CUBIC FEET PER PULSE X PRESSURE CORRECTION FACTOR / 100.
   G. 15 MINUTE INTERVAL NATURAL GAS CONSUMPTION (CCF) = DIFFERENCE BETWEEN TOTALIZED NATURAL GAS CONSUMPTION FROM 0:00 TO 0:15, 0:15 TO 0:30, ETC.

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05/05/22

ENGINEER SEAL

ENERGY IMPROVEMENTS
TULANE DOWNTOWN - PERDIDO BLDG.
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MARK	DATE	DESCRIPTION

ISSUE DATE:	05/05/22
PROJECT NUMBER:	70-16-0005

SHEET TITLE:
UTILITY METERING - PERDIDO

SHEET NUMBER:
ATC1900

FINAL PERMIT RELEASE
DEPARTMENT OF SAFETY AND PERMITS
PLAN REVIEW DIVISION
These plans and specifications have been examined and no evidence of violation of the Comprehensive Zoning Ordinance of New Orleans or other laws enforced by the Code Enforcement Bureau was found. Approval of these plans and specifications does not imply that the work may be done without permits or that any other violations of the Comprehensive Zoning Ordinance Code Sections 26-201 and 26-202.
Work must be performed in accordance with the approved plans and specifications and all applicable laws governing the work even though errors, omissions or contradictions may exist in these approved plans and specifications.
Work must be performed in accordance with the International Building Code with amendments as adopted by the City of New Orleans.
REVIEWED FOR CODE COMPLIANCE
mmurphy 07/20/2022