Tomball ISD Technology Building - Chiller Pkg 1
RFP #995-26

1302 Keefer Road
Tomball, Texas 77375

TOMBALL ISD
DESTINATION EXCELLENCE

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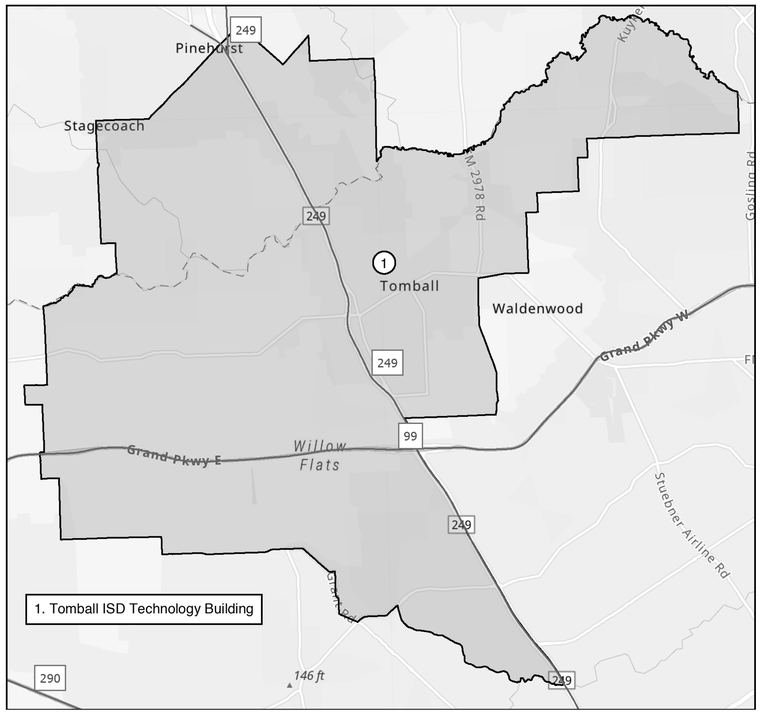
APPLICABLE CODES:

2021 INTERNATIONAL BUILDING CODE
2021 INTERNATIONAL MECHANICAL CODE
2021 INTERNATIONAL ENERGY CONSERVATION CODE
2023 NATIONAL ELECTRICAL CODE

VICINITY MAP



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REVISION:

No.	DATE	DESCRIPTION
	03/06/2026	ISSUE FOR PROPOSAL

SEAL:

ADAM C. JONES 110000 LICENSED PROFESSIONAL ENGINEER
3/6/26

Tomball ISD Technology Building - Chiller Pkg 1
1302 Keefer Road
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ABBREVIATIONS

A

A	AIR (COMPRESSED)
ABV	ABOVE
A/C	AIR CONDITIONING
AC	ALTERNATING CURRENT, AIR COMPRESSOR
ACCH	AIR COOLED CHILLER
ACCU	AIR COOLED CONDENSING UNIT
AD	ACCESS DOOR, AREA DRAIN
ADJ	ADJUSTABLE
AF	AIR FILTER
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHRI	AIR-CONDITIONING, HEATING, AND REFRIGERATION INSTITUTE
AHU	AIR HANDLING UNIT
AL	ALUMINUM
AMB	AMBIENT
AP	ACCESS PANEL
APD	AIR PRESSURE DROP
ARCH	ARCHITECT, ARCHITECTURAL
AS	AIR SEPARATOR
ASHP	AIR SOURCE HEAT PUMP
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS
AVG	AVERAGE
AWS	AMERICAN WELDING SOCIETY
AUX	AUXILIARY

B

B	BOILER
BC	BELOW COUNTER
B/C	BACK OF CURB
BFF	BELOW FINISHED FLOOR
BFV	BUTTERFLY VALVE
BLDG	BUILDING
BM	BENCHMARK
BOF	BOTTOM OF FOOTING
BOS	BOTTOM OF STRUCTURE
BP	BACKFLOW PREVENTER
BTU	BRITISH THERMAL UNIT
BV	BALL VALVE

C

C	CELSIUS
CAB	CABINET
CD	CONDENSATE DRAIN LINE
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CH	CHILLER
CHR	CHILLED WATER RETURN
CHS	CHILLED WATER SUPPLY
CHW	CHILLED WATER
CHWP	CHILLED WATER PUMP
CI	CAST IRON
CIRC	CIRCULATING
CL	CENTERLINE
CLG	CEILING
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
COMB	COMBINATION
COMP	COMPRESSOR
CONC	CONCRETE. CONCENTRIC
COND	CONDENSER, CONDENSATE
CONN	CONNECTION
CONT	CONTINUOUS,CONTINUATION
CTR	CENTER
CU	COPPER
CV	CONSTANT VOLUME

D

D	DEPTH, DRAIN, DRYER
DB	DRY BULB
DC	DIRECT CURRENT
DDC	DIRECT DIGITAL CONTROL
DDMB	DUAL DUCT MIXING BOX
DESIG	DESIGNATION
DTL	DETAIL
DIA	DIAMETER
DIFF	DIFFUSER
DIM	DIMENSION
DISC	DISCONNECT
DN	DOWN
DPR	DAMPER
DW	DISHWASHER
DWG	DRAWING
DX	DIRECT EXPANSION

E

EA	EACH
EAT	ENTERING AIR TEMPERATURE
EC	ELECTRICAL CONTRACTOR
ECC	ECCENTRIC
EDB	ENTERING DRY BULB
EDH	ELECTRIC DUCT HEATER
EF	EXHAUST FAN
EFF	EFFICIENCY
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
EMERG	EMERGENCY
ENCL	ENCLOSURE
ENGR	ENGINEER
EQ	EQUAL
EQUIP	EQUIPMENT
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
ETD	EXISTING TO BE DEMOLISHED
ETR	EXISTING TO REMAIN
EUH	ELECTRIC UNIT HEATER
EVAP	EVAPORATOR
EWB	ENTERING WET BULB
EWT	ENTERING WATER TEMPERATURE
EX	EXPLOSION PROOF
EXT	EXTERNAL
EXTG	EXISTING

F

F	FAHRENHEIT, FIRE
FBO	FURNISHED BY OTHERS
FCU	FAN COIL UNIT
FD	FLOOR DRAIN, FIRE DAMPER
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE
FLR	FLOOR
FPTU	FAN POWERED TERMINAL UNIT
FT	FOOT, FEET
FUT	FUTURE

G

G	GAS
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GLV	GLOBE VALVE
GND	GROUND
GPM	GALLONS PER MINUTE
GUH	GAS UNIT HEATER
GV	GATE VALVE

H

HDT	HORIZONTAL DRAW THROUGH
HORIZ	HORIZONTAL
HP	HORSEPOWER, HEAT PUMP
HSTAT	HUMIDISTAT
HT	HEIGHT
HTG	HEATING
HTR	HEATER
HW	HOT WATER
HWP	HEATING WATER PUMP
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
HX	HEAT EXCHANGER
HZ	HERTZ

I

ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IH	INFRARRED HEATER
IN	INCH
INSUL	INSULATION
INT	INTERNAL, INTERIOR

K

KEC	KITCHEN EQUIPMENT CONTRACTOR
KO	KNOCKOUT
KVA	KILOVOLT- AMPS
KW	KILOWATT

L

L	LENGTH
LAT	LEAVING AIR TEMPERATURE
LF	LINEAR FEET
LP	LOW PRESSURE
LRA	LOCKED ROTOR AMPS
LVL	LEVEL
LWB	LEAVING WET BULB
LWCO	LOW WATER CUT OFF
LWT	LEAVING WATER TEMPERATURE

M

MAT	MIXED AIR TEMPERATURE
MAX	MAXIMUM
MBTUH	THOUSAND OF BTU'S
MC	MECHANICAL CONTRACTOR
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MI	MALLEABLE IRON
MIN	MINIMUM
MP	MEDIUM PRESSURE
MTD	MOUNTED
MU	MAKE-UP
MVD	MANUAL VOLUME DAMPER
MSAH	MINI-SPLIT AIR HANDLER
MSCU	MINI-SPLIT CONDENSING UNIT
MZ	MULTI-ZONE

N

N.C.	NORMALLY CLOSED
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
N.O.	NORMALLY OPEN
NO.	NUMBER
NTS	NOT TO SCALE

O

OA	OUTSIDE AIR
OAF	OUTSIDE AIR FAN
OAHU	OUTSIDE AIR HANDLING UNIT
OBD	OPPOSED BLADE DAMPER
OC	ON CENTER
OD	OUTSIDE DIAMETER, OVERFLOW DRAIN
OFCU	OUTSIDE AIR FAN COIL UNIT
OPG	OPENING
OS&Y	OUTSIDE SCREW AND YOKE

P

PG	PRESSURE GAUGE
PP	POLYPROPYLENE
PPM	PART PER MILLION
PRI	PRIMARY
PRS	PRESSURE REDUCING STATION
PRV	PRESSURE REDUCING VALVE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE

Q

QTY	QUANTITY

R

RA	RETURN AIR
RAD	REFRIGERATED AIR DRYER
RAF	RETURN AIR FAN
RAG	RETURN AIR GRILLE
RAT	RETURN AIR TEMPERATURE
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
RE	REFERENCE, REFER
RED	REDUCER
REFR	REFRIGERATOR
REG	REGISTER
REINF	REINFORCING
REQD	REQUIRED
REV	REVISION, REVISE
RH	RELATIVE HUMIDITY
RHG	REFRIGERANT HOT GAS
RL	REFRIGERANT LIQUID
RLA	RUNNING LOAD AMPS
RM	ROOM
RPM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SUCTION
RTU	ROOFTOP UNIT
RV	RELIEF VALVE

S

SA	SUPPLY AIR
SAF	SUPPLY AIR FAN
SAG	SUPPLY AIR GRILLE
SAR	SUPPLY AIR REGISTER
SC	STEAM CONDENSATE
SCHED	SCHEDULED
SEC	SECONDARY
SECT	SECTION
SENS	SENSIBLE
SF	SQUARE FEET
SFCS	SPRINKLER FLOOR CONTROL STATION
SH	SHOWER
SHT	SHEET
SIM	SIMILAR
SM	SHEETMETAL
SP	STATIC PRESSURE, SUMP PUMP
SPEC	SPECIFICATION
SPR	SPRINKLER
SQ	SQUARE
SS	STAINLESS STEEL
SSSC	SOLID STATE SPEED CONTROL
STD	STANDARD
STL	STEEL
STM	STEAM
STR	STRAINER
SURF	SURFACE
SUSP	SUSPEND
SV	SANITARY VENT
SW	SOFT WATER
SZ	SINGLE ZONE

T

TC	TEMPERATURE CONTROL
TDH	TOTAL DYNAMIC HEAD
TF	TRANSFER FAN
TH BLK	THRUST BLOCK
THERM	THERMOMETER
TMV	THERMOSTATIC MIXING VALVE
TSP	TOTAL STATIC PRESSURE
TSTAT	THERMOSTAT
TW	TEMPERED HOT WATER
TYP	TYPICAL

U

UCD	UNDER CUT DOOR
UG	UNDERGROUND
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES, INC
UNO	UNLESS NOTED OTHERWISE
U/F	UNDERFLOOR
U/S	UNDERSLAB

V

V	VOLT
VA	VOLT- AMPERE
VAC	VACUUM
VAV	VARIABLE AIR VOLUME
VB	VALVE BOX, VACUUM BREAKER
VD	VOLUME DAMPER
VDT	VERTICAL DRAW THROUGH
VEL	VELOCITY
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VIB	VALVE IN BOX
VOV	VALVE ON VERTICAL
VP	VACUUM PUMP
VRF	VARIABLE REFRIGERANT FLOW
VVR	VARIABLE AIR VOLUME REHEAT

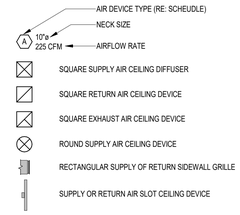
W

W	WATT, WIDTH
W/	WITH
W/O	WITHOUT
WB	WET BULB
WM	WATER METER
WP	WEATHERPROOF
WPD	WATER PRESSURE DROP
WSHP	WATER SOURCE HEAT PUMP
WWF	WELDED WIRE FABRIC

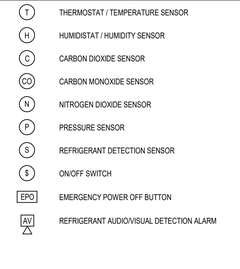
Z

Z	ZONE

AIR DEVICE TYPES



WALL MOUNTED SENSOR AND DEVICE TYPES



CONTROLS SCHEMATIC SYMBOLS LEGEND

AI	ANALOG INPUT	FS	FLOW SWITCH
AO	ANALOG OUTPUT	DAT	DISCHARGE AIR TEMPERATURE SENSOR
DI/BI	DIGITAL/BINARY INPUT	S	WALL SENSOR
DO/BO	DIGITAL/BINARY OUTPUT	T	THERMOSTAT
MD	ON-OFF MOTORIZED DAMPER	CO2	CARBON DIOXIDE SENSOR
MMD	MODULATING TYPE MOTORIZED DAMPER	SP	SET POINT
AFMS	AIR FLOW MEASURING STATION	S/A	SUPPLY AIR
MCV	CONTROL VALVE MODULATING TYPE	R/A	RETURN AIR
VFD	VARIABLE FREQUENCY DRIVE	O/A	OUTSIDE AIR
CSR	CURRENT SENSING RELAY	HC	HEATING COIL
FRZ	FREEZESTAT	CC	COOLING COIL
HSL	HIGH STATIC LIMIT	DX	DIRECT EXPANSION COOLING COIL
SPT	STATIC PRESSURE TRANSMITTER	PICCV	PRESSURE INDEPENDENT CHARACTERIZED CONTROL VALVE
DPT	DIFFERENTIAL PRESSURE TRANSDUCER	AFC	AIRFLOW CROSS
FM	FLOW METER	DPS	DIFFERENTIAL PRESSURE SWITCH

PIPING TYPES

CD	CONDENSATE DRAIN LINE	REF	REFRIGERANT PIPING SIZED BY MFR.
CHS	CHILLED WATER SUPPLY	HPS	HIGH PRESSURE STEAM SUPPLY
CHR	CHILLED WATER RETURN	HPR	HIGH PRESSURE CONDENSATE RETURN
HWS	HOT WATER SUPPLY	LPS	LOW PRESSURE STEAM SUPPLY
HWR	HOT WATER RETURN	LPR	LOW PRESSURE CONDENSATE RETURN
CWS	CONDENSER WATER SUPPLY	PCR	PUMPED CONDENSATE RETURN
CWR	CONDENSER WATER RETURN		

DESIGN CRITERIA

LOCATION:
1302 KEEFER ROAD, TOMBALL, TX 77375

ELEVATION: 154 FEET

DESIGN CONDITIONS:

HEATING DB:	29.8 °F (ASHRAE 99.6%)
COOLING DB / WB:	98.1 °F / 75.9 °F (ASHRAE 0.4%)
DEHUMIDIFICATION DP / DB:	78.7 °F / 82.5 °F (ASHRAE 0.4%)

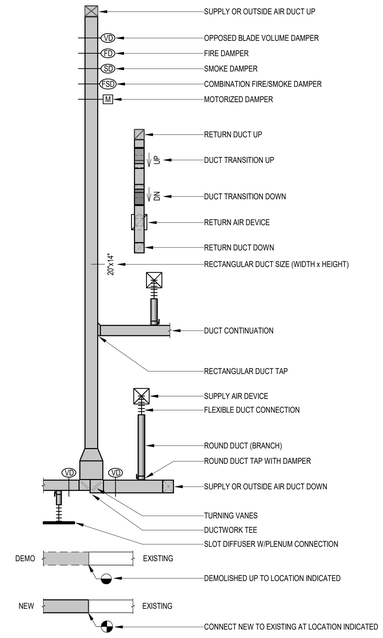
SPACE INDOOR DESIGN TEMPERATURE:

HEATING DB:	70 °F
COOLING DB:	75 °F
RELATIVE HUMIDITY	55%

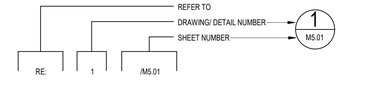
BUILDING CODES & STANDARDS

APPLICABLE CODES:
2021 INTERNATIONAL BUILDING CODE
2021 INTERNATIONAL MECHANICAL CODE
2021 INTERNATIONAL ENERGY CONSERVATION CODE
2023 NATIONAL ELECTRICAL CODE

DUCTWORK



DRAWING/DETAIL REFERENCE KEY



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TBPE Firm Registration No. 2234

DATE: 03/06/2026

DRAWN BY: DBR

CHECKED BY: DBR

PROJECT NUMBER 260018.000

SHEET TITLE: MECHANICAL SYMBOL LEGEND

SHEET NUMBER: M0.01

DEMOLITION & RENOVATION MECHANICAL GENERAL NOTES

A. MECHANICAL DEMOLITION DRAWINGS ARE GENERALLY DIAGRAMMATIC AND IT IS THE INTENT AND MEANING OF THE CONTRACT DOCUMENTS THAT ALL MECHANICAL SYSTEMS SHALL REMAIN UNLESS NOTED TO BE REMOVED OR DEMOLISHED. VERIFY EXACT LOCATIONS AND CONDITIONS AND COORDINATE WITH GENERAL CONTRACTOR AND OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO REMOVING ANY EXISTING ITEMS. DO NOT ABANDON ANY ITEMS IN PLACE.

B. EQUIPMENT, DUCTWORK, PIPING, ETC. INDICATED AS EXISTING (E) SHALL REMAIN AND BE RE-USED IN EXISTING LOCATIONS. IF EXISTING ITEMS CONFLICT WITH NEW CONSTRUCTION, CONTRACTOR SHALL RELOCATE, REWORK, REROUTE, RECONNECT, AND REINSTALL COMPLETELY AS REQUIRED AS IF NEW AT NO ADDITIONAL COST. COORDINATE WITH GENERAL CONTRACTOR, OWNER'S REPRESENTATIVE, ETC. PRIOR TO RELOCATION. REFER TO APPLICABLE NOTES FOR NEW ITEMS.

C. EQUIPMENT, DUCTWORK, PIPING ETC. INDICATED AS EXISTING TO BE DEMOLISHED (D) SHALL BE REMOVED IN THEIR ENTIRETY; ALL APPURTENANCES, RELATED COMPONENTS, INCLUDING ALL DUCTWORK, PIPING, SUPPORTS, HANGERS, CONTROLS, ETC. ASSOCIATED WITH EACH ITEM SHALL BE REMOVED UNLESS NOTED OTHERWISE. CAP ALL DUCTWORK AND PIPING AS REQUIRED SERVING EACH ITEM AT BUILDING MAINS. VERIFY EXACT LOCATIONS AND CONDITIONS AND COORDINATE WITH GENERAL CONTRACTOR AND OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO REMOVING ANY EXISTING ITEMS. DO NOT ABANDON ANY ITEMS IN PLACE.

D. WHERE CONSTRUCTION, EXISTING DUCTWORK, MECHANICAL / PLUMBING / FIRE SPRINKLER PIPING, ELECTRICAL CONDUIT, CABLING, ETC. WHICH MUST REMAIN AS PART OF AN ACTIVE SYSTEM CONFLICTS WITH NEW CONSTRUCTION, CONTRACTOR SHALL RELOCATE, REWORK, REROUTE, RECONNECT, AND REINSTALL COMPLETELY AS REQUIRED AS IF NEW AT NO ADDITIONAL COST. COORDINATE WITH GENERAL CONTRACTOR, OWNER'S REPRESENTATIVE, ETC. PRIOR TO RELOCATION. REFER TO APPLICABLE NOTES FOR NEW ITEMS.

E. CONTRACTOR SHALL COORDINATE WITH EACH TRADE CONTRACTOR FOR REMOVAL OF EXISTING ELECTRICAL AND PLUMBING SERVICES INCLUDING ALL CONDUIT, WIRING, PIPING, INSULATION, APPURTENANCES, RELATED COMPONENTS, ETC. ASSOCIATED WITH REMOVAL OF EXISTING MECHANICAL EQUIPMENT. VERIFY EXACT LOCATIONS AND CONDITIONS AND COORDINATE WITH GENERAL CONTRACTOR AND OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO REMOVING ANY EXISTING ITEMS. DO NOT ABANDON ANY ITEMS IN PLACE.

F. THESE DRAWINGS WERE PREPARED FROM THE BEST INFORMATION AVAILABLE. ORIGINAL DRAWINGS, FIELD OBSERVATIONS, ETC., BUT MAY NOT INDICATE THE EXACT LOCATION OF ALL EXISTING MECHANICAL COMPONENTS. THE CONTRACTOR SHALL CAREFULLY INVESTIGATE THE EXISTING CONDITIONS SURROUNDING THE INSTALLATION OF THEIR WORK PRIOR TO PROCEEDING WITH THE INSTALLATION. MODIFICATIONS REQUIRED DUE TO EXISTING CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER / OWNER FOR REVIEW BY WAY OF SHOP DRAWINGS OR SKETCHES DETAILING THE EXISTING CONDITIONS AND THE PROPOSED REVISION.

G. CONTRACTOR SHALL BE RESPONSIBLE TO VISIT THE JOBSITE, COMPLETELY REVIEW CONTRACT DOCUMENTS, AND FIELD VERIFY EXTENT OF WORK AND EXACT LOCATIONS AND CONDITIONS OF ALL NEW AND EXISTING CONSTRUCTION, ELEVATIONS, SERVICE POINTS, ETC. AS REQUIRED FOR A COMPLETE AND CORRECTLY OPERATING SYSTEM. CONTACTOR SHALL COORDINATE WITH GENERAL CONTRACTOR, OWNER'S REPRESENTATIVE, AND REPORT IN WRITING ANY CONFLICTS, PROBLEMS, OR ANY CONDITION THAT MAY ADVERSELY AFFECT THE PROPER EXECUTION OF THE WORK THAT IS NOT INDICATED ON THE DRAWINGS. THIS SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR MAKING ANY CORRECTIONS OR ALTERATIONS DEEMED NECESSARY TO COMPLETE THE WORK AND SHALL INCLUDE ALL ASSOCIATED COSTS IN THEIR BID WITH NO ADDITIONAL EXPENSE.

H. CONTRACTOR SHALL COORDINATE ALL CUTTING AND PATCHING OF EXISTING WALLS, CEILINGS, ROOF AND FLOOR REQUIRED FOR THEIR WORK WITH GENERAL CONTRACTOR, STRUCTURAL ENGINEER, AND OWNER'S REPRESENTATIVE. ALL PENETRATIONS SHALL BE SEALED AND RESTORED TO THE ORIGINAL CONDITIONS, STRUCTURAL PROPERTIES, AND FINISHED IN SAME MATERIALS AND MANNER AS ADJACENT AREAS. ALL ROOF PENETRATIONS, ROOF PIPE SUPPORTS, FLASHINGS, ETC. SHALL BE MADE WATERTIGHT AND AS RECOMMENDED BY THE ROOF MANUFACTURER. ALL EXISTING PENETRATIONS WHICH ARE NOT TO BE REUSED SHALL BE PROPERLY SEALED OFF TO MAINTAIN THE STRUCTURAL, WATERPROOF, AND FIREPROOF INTEGRITY OF THE WALL, FLOOR, OR ROOF SYSTEM PENETRATED.

J. COORDINATE ALL RENOVATIONS / REMODEL / DEMOLITION WORK WITH THE OWNER'S REPRESENTATIVE, BUILDING ENGINEER / MAINTENANCE PERSONNEL AND OTHER TRADES PERFORMING WORK IN THE BUILDING PRIOR TO THE REMOVAL OF ANY ITEMS OF MECHANICAL, ELECTRICAL, AND PLUMBING EQUIPMENT, FIXTURES, OR SYSTEMS THAT WILL AFFECT OTHER SYSTEM WITHIN THE AREA OF CONSTRUCTION, OR OTHER AREAS OF THE BUILDING. CONTRACTOR SHALL NOTE THAT THE BUILDING IS OCCUPIED, AND WILL REMAIN SO DURING CONSTRUCTION; AND, THEREFORE, UTILITIES / BUILDING SYSTEMS MUST REMAIN IN OPERATION. ANY REQUIRED OUTAGES MUST BE COORDINATED WITH GENERAL CONTRACTOR, OWNER'S REPRESENTATIVE AND BUILDING ENGINEER / MAINTENANCE PERSONNEL. PROVIDE TEMPORARY CONNECTIONS OF UTILITIES AND AIR CONDITIONING AS NECESSARY TO FACILITATE THE PHASING OF CONSTRUCTION.

K. ALL WORK SHALL BE SCHEDULED AND PERFORMED IN STRICT COORDINATION WITH CONSTRUCTION PHASING AND WITH OWNERS' SCHEDULES, OCCUPANCIES, ETC. PROVIDE ADDITIONAL VALVES, TAPS, TEMPORARY DUCTWORK, PIPING, ETC. AS NECESSARY TO PROVIDE UNINTERRUPTED SERVICE TO AREAS OUTSIDE OF THE PHASE IN WHICH WORK IS BEING PERFORMED. ALL NECESSARY SHUTDOWNS OR OUT OF PHASE WORK SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR AND OWNER'S REPRESENTATIVE.

L. PRIOR TO THE REMOVAL OF ANY MECHANICAL, ELECTRICAL, AND PLUMBING EQUIPMENT, FIXTURES, OR SYSTEMS, THE CONTRACTOR MUST VERIFY THE ORIGIN AND TERMINATION OF THOSE SYSTEM AND CONFIRM THAT THE ITEMS BEING REMOVED DO NOT SERVE ANY ITEMS THAT ARE TO REMAIN (INCLUDING THOSE IN AREAS OUTSIDE THE CONTRACT LIMITS). WHEN RENOVATION / REMODEL / DEMOLITION WORK IS PERFORMED, THE CONTRACTOR SHALL EXERCISE CARE IN PROTECTING EXISTING ITEMS TO REMAIN AND EXISTING ITEMS TO BE REMOVED AND RELOCATED. PROTECT ALL EXISTING BUILDING COMPONENTS, WALLS, FLOORS, FINISHES, FURNISHINGS, ADJACENT EQUIPMENT, LIGHTING, ETC. ANY ITEMS DAMAGED OR WHERE FINISHES HAVE BEEN MARRED, SHALL BE REPAIRED AND REFINISHED TO ORIGINAL CONDITION AT NO COST TO THE OWNER. ALL ITEMS SOILED IN THE PROGRESS OF THE WORK SHALL BE CLEANED TO THEIR PRE- EXISTING CONDITIONS.

M. ALL EXISTING EQUIPMENT REMOVED SHALL BE PROTECTED FROM DAMAGE IN SO FAR AS PRACTICAL. THESE ITEMS SHALL BE STORED ON SITE FOR A MINIMUM OF TWO (2) WEEKS UNLESS INDICTED OTHERWISE BY THE OWNER'S REPRESENTATIVE TO ALLOW INSPECTION BY THE OWNER. ALL ITEMS RETAINED BY THE OWNER SHALL BE TAGGED AND STORED ON SITE UNTIL DIRECTED OTHERWISE BY OWNER. ALL ITEMS NOT RETAINED BY THE OWNER SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE AND DISPOSED OF PROPERLY.

N. REWORK AND REPAIR ALL DUCTWORK AND PIPING INSULATION DAMAGED OR REMOVED DURING RENOVATION / REMODEL / DEMOLITION AS REQUIRED TO MATCH EXISTING.

O. EQUIPMENT INGRESS AND EGRESS ROUTES FOR THE RENOVATION WORK SHALL BE COORDINATED WITH THE OWNER. COORDINATE TIMES, DATES, AND DURATIONS WITH OWNER A MINIMUM OF 2 WEEKS IN ADVANCE TO ENSURE THERE ARE NO CONFLICTS IN USAGE OF EQUIPMENT/SPACES.

P. ALL EXISTING EQUIPMENT THAT INCLUDES A REFRIGERATION CIRCUIT THAT IS TO BE DEMOLISHED OR RELOCATED SHALL HAVE THE REFRIGERANT CHARGE RECOVERED PRIOR TO DEMOLITION OR RELOCATION. REFRIGERANT RECOVERY SHALL COMPLY WITH EPA, STATE, AND LOCAL JURISDICTION REQUIREMENTS. RECOVERED REFRIGERANTS SHALL NOT BE USED IN ANY SYSTEM, NEW OR EXISTING, UNLESS THE REFRIGERANT HAS BEEN RECLAIMED AND FOUND TO MEET THE PURITY REQUIREMENTS OF AHRI 700.

MECHANICAL GENERAL NOTES

A. MECHANICAL DRAWINGS AND SPECIFICATIONS ARE DIAGRAMMATIC IN NATURE AND INTENDED TO DESCRIBE AND ILLUSTRATE SYSTEMS THAT WILL NOT INTERFERE WITH THE ARCHITECTURAL / STRUCTURAL CONDITIONS OF THE BUILDING AND WILL FIT INTO AVAILABLE SPACES. CONTRACTOR SHALL COORDINATE ALL WORK TO CONFORM TO THE ARCHITECTURAL, STRUCTURAL, FINISH CONDITIONS, EQUIPMENT MANUFACTURER / FIXTURE CUTSHEETS AND WITH OTHER TRADES, TO AVOID OBSTRUCTIONS, AND TO ALLOW THE PROPER INSTALLATION OF EACH ITEM. EQUIPMENT SIZES, DIMENSIONS, AND REQUIRED CONNECTIONS SHALL BE VERIFIED WITH THE MANUFACTURER'S DRAWINGS AND CUTSHEETS PRIOR TO FABRICATING OF DUCTWORK, PIPING, OR POURING OF CONCRETE HOUSEKEEPING PADS. CONTRACTOR SHALL OBTAIN ALL EXISTING ARCHITECTURAL DRAWINGS AND STRUCTURAL DATA, LOCATIONS OF PIERS, BEAMS, COLUMNS, JOISTS, ETC., FROM EXISTING STRUCTURAL DRAWINGS AND PROVIDE OFFSETS, RELOCATIONS, ETC., AS REQUIRED TO MEET THIS INTENT AT NO ADDITIONAL COST. PROVIDE ALL NECESSARY PIPING, DUCTWORK, FITTING, INSULATION, AND OTHER ACCESSORIES IN ORDER TO COMPLETE THE INSTALLATION.

B. CONTRACTOR SHALL BE RESPONSIBLE TO EXAMINE ALL THE CONTRACT DOCUMENTS CAREFULLY BEFORE SUBMITTING THEIR BID, WITH PARTICULAR ATTENTION TO ERRORS, OMISSIONS, CONFLICTS WITH PROVISIONS OF LAWS AND CODES HAVING JURISDICTION, CONFLICTS BETWEEN DRAWINGS OR DRAWINGS AND SPECIFICATIONS, AND AMBIGUOUS DEFINITION OF THE EXTENT OF COVERAGE BETWEEN CONTRACTS. ANY SUCH DISCREPANCY SHALL BE BROUGHT IMMEDIATELY TO ATTENTION FOR CORRECTION. SHOULD ANY OF THESE ERRORS, OMISSIONS, CONFLICTS, OR AMBIGUITIES EXIST, THE CONTRACTOR SHALL HAVE THEM EXPLAINED AND AT THEIR EXPENSE, SUPPLY THE PROPER MATERIALS AND LABOR TO MAKE GOOD ANY DAMAGE OR DEFECTS IN THEIR WORK OR THE RESULTS OBTAINED THEREFORE, CAUSED BY SUCH DISCREPANCY. THE CONTRACTOR SHALL MAKE A CAREFUL EXAMINATION OF THE PREMISES AND THOROUGHLY FAMILIARIZE THEMSELVES WITH THE REQUIREMENTS OF THE CONTRACT. UPON COMMENCEMENT OF THE CONSTRUCTION FOR THE WORK INCLUDED IN THIS CONTRACT, THE CONTRACTOR SHALL BE DEEMED TO HAVE MADE SUCH A STUDY OR EXAMINATION AND ACCEPTS ALL CONDITIONS.

C. WHEREVER CONFLICTS OCCUR BETWEEN DIFFERENT PARTS OF THE CONTRACT DOCUMENTS (SUCH AS DRAWINGS AND SPECIFICATIONS), THE GREATER QUANTITY, THE BETTER QUALITY, THE LARGER SIZE, OR THE VALUE WITH THE GREATEST COST IMPACT SHALL PREVAIL UNLESS THE OWNER INFORMS THE CONTRACTOR OTHERWISE IN WRITING. THIS INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING DATA: DIMENSIONS, GAUGE THICKNESS, TEMPERATURES, PRESSURE, BTUH, SCHEDULE / TIME DURATION, ELECTRICAL RATING, MATERIAL, SAFETY RATING, ENERGY EFFICIENCY, ETC.

D. CONTRACTOR SHALL PROVIDE A MECHANICAL INSTALLATION THAT IS COMPLETE AND ALL ITEMS AND APPURTENANCES NECESSARY, REASONABLY INCIDENTAL, OR CUSTOMARILY INCLUDED, EVEN THOUGH EACH AND EVERY ITEM IS NOT SPECIFICALLY CALLED OUT OR SHOWN. THE CONTRACTOR SHALL PROVIDE ALL EQUIPMENT, MATERIALS, LABOR, SUPERVISION AND SERVICE NECESSARY SO AS TO PROVIDE A COMPLETE, FUNCTIONING MECHANICAL SYSTEM.

E. ALL EQUIPMENT, PIPING, ETC. SHALL BE LOCATED APPROXIMATELY IN GENERAL LOCATIONS SHOWN AND SHALL CONFORM TO ALL ARCHITECTURAL AND STRUCTURAL CONDITIONS. PROVIDE ANY ADDITIONAL SUPPORTS, HANGERS, OPENINGS, ETC. AS REQUIRED FOR A COMPLETE INSTALLATION. EQUIPMENT SHALL BE INSTALLED IN STRICT COMPLIANCE WITH MANUFACTURER'S PUBLISHED INSTALLATIONS INSTRUCTIONS ENSURING THAT ACCESS PANELS ARE NOT BLOCKED. EXPERIENCED CRAFTSMEN SHALL MAKE THE INSTALLATION OF ALL EQUIPMENT IN A NEAT WORKMANSHIP-LIKE MANNER. EQUIPMENT SHALL BE AS SCHEDULED OR APPROVED EQUAL. EQUIPMENT SHALL BE INSTALLED IN FULL ACCORDANCE WITH ALL APPLICABLE CODES HAVING JURISDICTION. COORDINATE BETWEEN ALL TRADES PRIOR TO STARTING ANY WORK. PROVIDE ADEQUATE CLEARANCE FOR PROPER OPERATION, SERVICE/ MAINTENANCE, AIR FLOW, ETC. PIPING AND DUCTWORK ARE NOT PERMITTED IN ELECTRICAL, ELEVATOR MACHINE, TELECOM, IT, AND COMMUNICATION ROOMS. ALL ELEVATIONS INDICATED IN THIS WAY (8' – 4") ARE THE ELEVATIONS FROM THE FINISHED FLOOR DIRECTLY BELOW TO THE BOTTOM OF THE BARE PIPE OR DUCT.

F. EXECUTE ALL WORK FOLLOWING LOCAL, STATE AND/OR NATIONAL CODES, ORDINANCES AND REGULATIONS GOVERNING THE PARTICULAR CLASS OF WORK INVOLVED. THE GOVERNING CODES ARE MINIMUM REQUIREMENTS. THE DRAWINGS AND/OR SPECIFICATIONS SHALL PREVAIL WHERE THE DRAWINGS ARE/OR ACCOMPANYING SPECIFICATIONS EXCEED THE CODE REQUIREMENTS.

G. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FILING AND PAYING ALL FEES AND OBTAINING NECESSARY PERMITS AND CERTIFICATES OF INSPECTION. THE CONTRACTOR SHALL DELIVER ALL CERTIFICATES OF INSPECTION TO OWNER/CONSTRUCTION MANAGER INCLUDING COPIES WITH MAINTENANCE MANUALS.

H. CONTRACTOR SHALL PROVIDE DETAILED AND DIMENSIONED HVAC PIPING FABRICATION SHOP DRAWINGS FOR APPROVAL BY THE OWNER/ ENGINEER. DURING THE INSTALLATIONS OF THE WORK, THE CONTRACTOR SHALL KEEP DETAILED RECORDS OF ANY AND ALL CHANGES MADE FROM THE WORK AS ACTUALLY INSTALLED. THESE RECORD DRAWINGS SHALL BE NOTED "AS-BUILT", AND SUBMITTED TO THE OWNER / ENGINEER FOR REVIEW WITH ALL O&M MANUALS.

I. PROPERLY SUPPORT ALL EQUIPMENT, DUCTWORK AND PIPING WITHIN THE BUILDING AND PROVIDE ADEQUATE PROVISIONS FOR SLOPE AND ANCHORAGE. CONTRACTOR SHALL USE HANGERS, RODS AND INSERTS LISTED BY UNDERWRITERS' LABORATORIES FOR THE SERVICE INTENDED, SECURELY SUPPORTED BY STRUCTURAL MEMBERS WHICH IN TURN ARE SUPPORTED DIRECTLY FROM THE BUILDING STRUCTURE.

J. CLEARANCE REQUIREMENTS BETWEEN MECHANICAL COMPONENTS AND SWITCHBOARDS, PANELBOARDS, POWER PANELS, MOTOR CONTROL CENTERS AND TRANSFORMERS SHALL CONFORM TO THE LATEST VERSION OF THE NATIONAL ELECTRICAL CODE.

K. PIPING SHALL BE INSTALLED CONCEALED ABOVE CEILINGS, INSIDES CHASES / WALLS, ETC. IN GENERAL LOCATIONS SHOWN, UNLESS NOTED OTHERWISE. CONFORM TO ALL ARCHITECTURAL, STRUCTURAL, AND FINISH CONDITIONS OF THE BUILDING. WHEREVER CONDITIONS ARISE WHICH WILL CAUSE NORMALLY CONCEALED MATERIALS TO BE EXPOSED, IMMEDIATELY CALL THE SITUATION TO THE ATTENTION OF THE OWNER AND STOP WORK IN THOSE AREAS UNTIL THE OWNER DIRECTS THE RESUMPTION OF THE WORK AND THE PROCEDURES TO BE FOLLOWED. ALL DUCTWORK, PIPING AND ASSOCIATED ACCESSORIES IN OCCUPIED AREAS THAT ARE EXPOSED TO VIEW SHALL BE PAINTED. REFER TO KISD DISTRICT STANDARDS FOR COLOR. IN ANY CASE WHERE A PIPE SHOWN ON THE PLAN SHEET DIFFERS FROM THAT SHOWN IN A SCHEMATIC OR DETAIL, PROVIDE THE LARGER OF THE TWO SIZES SHOWN.

L. SLOPE AND ARRANGE HVAC PIPING TO ESTABLISH HIGH POINTS FOR AIR ELIMINATION AND LOW POINTS TO PERMIT PROPER DRAINAGE. PROVIDE AIR VENTS AT HIGH POINTS AND DRAIN VALVES AT LOW POINTS. ALL EXTERIOR PIPING SHALL BE INSULATED AND JACKETED. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. MINIMUM PIPE SIZE FOR THE PROJECT SHALL BE 3/4".

M. HVAC SYSTEMS SHALL BE INSTALLED COMPLETE WITH ALL BALANCING AND REGULATING DEVICES NECESSARY FOR THE TAB CONTRACTOR TO PERFORM THEIR WORK. COORDINATE WITH THE TAB CONTRACTOR TO DETERMINE THEIR EXACT REQUIREMENTS. ALL HVAC SYSTEMS SHALL BE STARTED PER MANUFACTURER'S START-UP INSTRUCTIONS. REPLACE FILTERS, BELTS, SHEAVES, DAMPERS, VALVES, STARTERS AND HEATERS AS NECESSARY PRIOR TO TAB.

N. CONTRACTOR SHALL PROVIDE ALL TESTING, ADJUSTING, AND BALANCING WORK TO INCLUDE, BUT NOT LIMITED TO, ADJUSTMENT OF DAMPERS, BALANCE AIR DEVICES, VERIFY CORRECT SETPOINT AND CALIBRATION OF THERMOSTATS, VERIFY ALL SEQUENCE OF OPERATION, STAGING OF COOLING/ HEATING AS APPLICABLE, BALANCE OF CONDENSER AND HEATING WATER SYSTEMS, PUMPS, BOILERS, COOLING TOWERS, NOTE DEFICIENCIES IN MECHANICAL SYSTEM, ETC. FOR A CORRECTLY OPERATING MECHANICAL SYSTEM. CONTRACTOR SHALL REPLACE ALL FILTERS AND CLEAN ALL STRAINERS. TESTING AND BALANCING SUBCONTRACTOR MUST BE A MEMBER IN GOOD STANDING OF AABC AND SUBMIT REPORT ON AABC OR SMACNA FORMS FOR APPROVAL BY THE ENGINEER. PROVIDE A TEST AND BALANCE REPORT TO THE MECHANICAL INSPECTOR AT TIME OF HEATING FINAL INSPECTION. TAB CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL CONTRACTOR TO LOCATE DP SENSORS IN PIPING FOR PUMPING SYSTEMS.

O. MECHANICAL CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR FOR ALL EQUIPMENT POWER REQUIREMENTS. CONTRACTOR SHALL ENSURE THE FURNISHING AND INSTALLATION OF ALL BRANCH ELECTRICAL CIRCUIT WIRING, CONDUITS, PROTECTIVE DEVICES, DISCONNECTS, AND ACCESSORIES FOR ALL ELECTRICAL CONTROL POWER WIRING TO INCLUDE, BUT NOT LIMITED TO, CONTROL PANELS, ACTUATORS, SMOKE DETECTORS, CONTROL / MOTORIZED DAMPER, PRESSURE MONITORS, FIRE/SMOKE DAMPERS, VARIABLE FREQUENCY DRIVES, VAV TERMINALS (24V TRANSFORMER) AND ALL OTHER 120V CONTROLS AS REQUIRED FOR A COMPLETE CONTROL SYSTEM WHETHER SHOWN TO BE PERFORMED BY OTHER OR NOT. ALL ELECTRICAL WORK SHALL BE INSTALLED IN FULL ACCORDANCE WITH REQUIREMENTS OF ELECTRICAL SPECIFICATIONS AND THE NATIONAL ELECTRICAL CODE.

P. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING FINISHES AND FURNISHINGS FROM DAMAGE DURING WORK.

Q. CONTRACTOR TO PROVIDE TEMPORARY SPACE CONDITIONING DURING ALL HVAC EQUIPMENT OUTAGES AND PRIOR TO HVAC EQUIPMENT START-UP.

R. COMMISSIONING OF THE MECHANICAL SYSTEMS ON THIS PROJECT IS PART OF THE SCOPE OF WORK. DOCUMENTATION AND TESTING OF THESE SYSTEMS, AS WELL AS TRAINING OF THE OWNER'S OPERATION / MAINTENANCE PERSONNEL, IS REQUIRED IN COOPERATION WITH THE OWNER'S REPRESENTATIVE AND THE COMMISSIONING AGENT. PROJECT CLOSEOUT IS DEPENDENT ON SUCCESSFUL COMPLETION OF ALL COMMISSIONING PROCEDURES, DOCUMENTATION, AND ISSUE CLOSURE.

S. ALL PIPES, DUCTS, AND OTHER EQUIPMENT SHALL BE PROPERLY SUPPORTED BY GALVANIZED OR CADMIUM PLATED ANCHOR BOLTS, ALL THREAD RODS AND WASHERS, LOCK WASHERS OR DOUBLE NUTS, AND BOLTS.

T. INSTALLING CONTRACTOR SHALL STRICTLY ADHERE TO ANCHOR BOLT MANUFACTURER'S INSTALLATION RECOMMENDATIONS REGARDING PULL-OUT LOADS, ANCHOR DIAMETER AND DEPTH OF ANCHOR INSERTION FOR DRILLING THE ANCHOR POINT IN CONCRETE.

U. SUBMIT SUPPORT LOCATIONS AND LOADS OF PIPES GREATER THAN 6" DIAMETER TO ENGINEER FOR REVIEW.

V. POST-INSTALLED ANCHOR BOLTS ARE NOT PERMITTED TO BE INSTALLED IN THE SOFFIT OF BEAMS OR JOISTS.

W. POST-INSTALLED ANCHOR BOLTS INSTALLED ON THE SIDE OF BEAMS OR JOISTS SHALL BE LOCATED A MINIMUM OF 5" FROM BOTTOM OF THE BEAM OR JOIST.

X. NO PIPE HANGERS SHALL BE SPACED MORE THAN 10'-0" O.C. COMPLY WITH PIPE SPACING AS SPECIFIED IN THE PIPING SUPPORT SPECIFICATIONS.

Y. ALL PIPING LOCATED INSIDE BUILDING SHALL BE SUPPORTED FROM THE STRUCTURE WITH SADDLE OR TRAPEZE HANGERS WITH ADJUSTABLE CLEVIS OR THREADED RODS.

Z. COORDINATE LOCATIONS OF FLOOR AND WALL OPENINGS WITH OWNER AND ENGINEER.

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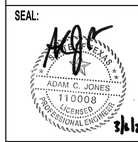

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TBPE Firm Registration No. 2234

DATE: 03/06/2026

DRAWN BY: Author

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PROJECT NUMBER 260018.000

SHEET TITLE: MECHANICAL GENERAL NOTES

SHEET NUMBER: M0.11

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MECHANICAL KEYED NOTES

M0.1 EXISTING CHILLER AND ALL ASSOCIATED CONTROLS, ELECTRICAL, AND ACCESSORIES SHALL BE REMOVED. CHILLERS ARE TO BE REMOVED AND REPLACED ONE AT A TIME TO KEEP BUILDING TEMPERED. EXISTING CONCRETE RAIL TO REMAIN.

M0.2 EXISTING CHILLER MANUAL ISOLATION VALVE TO BE REMOVED. REMOVE CHILLER PIPING 6" MINIMUM PAST ISOLATION VALVE. REMOVE ADDITIONAL PIPING AS NECESSARY TO ACCOMMODATE NEW CHILLER CONFIGURATION.

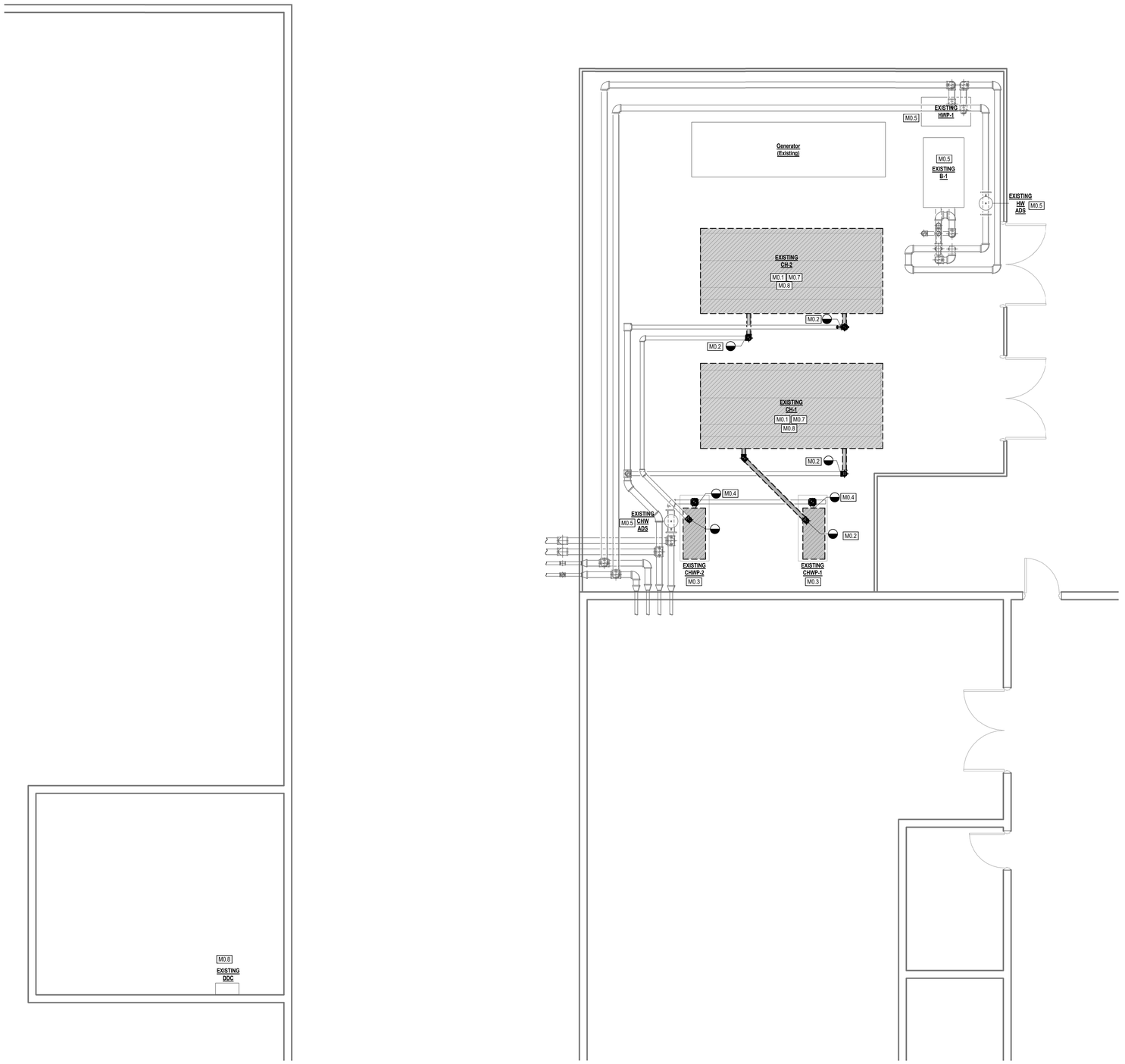
M0.3 EXISTING PUMP AND ASSOCIATED ISOLATION VALVE AND ACCESSORIES SHALL BE REMOVED AS PART OF ALTERNATE 4. EXISTING EQUIPMENT PADS TO REMAIN.

M0.4 EXISTING PUMP ISOLATION VALVE TO BE REMOVED AS PART OF ALTERNATE 4. REMOVE PIPING UP TO ISOLATION VALVE AS INDICATED AS ALTERNATE.

M0.5 EXISTING EQUIPMENT TO REMAIN.

M0.7 PRIOR TO DEMOLITION, EXISTING REFRIGERANT SHALL BE RECOVERED. RECOVERED REFRIGERANT SHALL BE RETURNED TO THE DISTRICT IN APPROPRIATE REFRIGERANT TANKS.

M0.8 REMOVE EXISTING CONTROLS COMMUNICATION WIRING FROM DDC PANEL TO CHILLERS AND DEMO ANY RACEWAY ABOVE GRADE. EXISTING RACEWAY BELOW GRADE TO BE ABANDONED.



1 **DEMOLITION MECHANICAL PLAN LEVEL 1 - CENTRAL PLANT**
1/4" = 1'-0"

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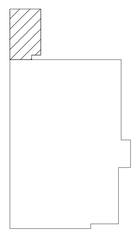
SHEET TITLE: DEMOLITION MECHANICAL PLAN - CENTRAL PLANT

SHEET NUMBER: M2.10

KEY PLAN



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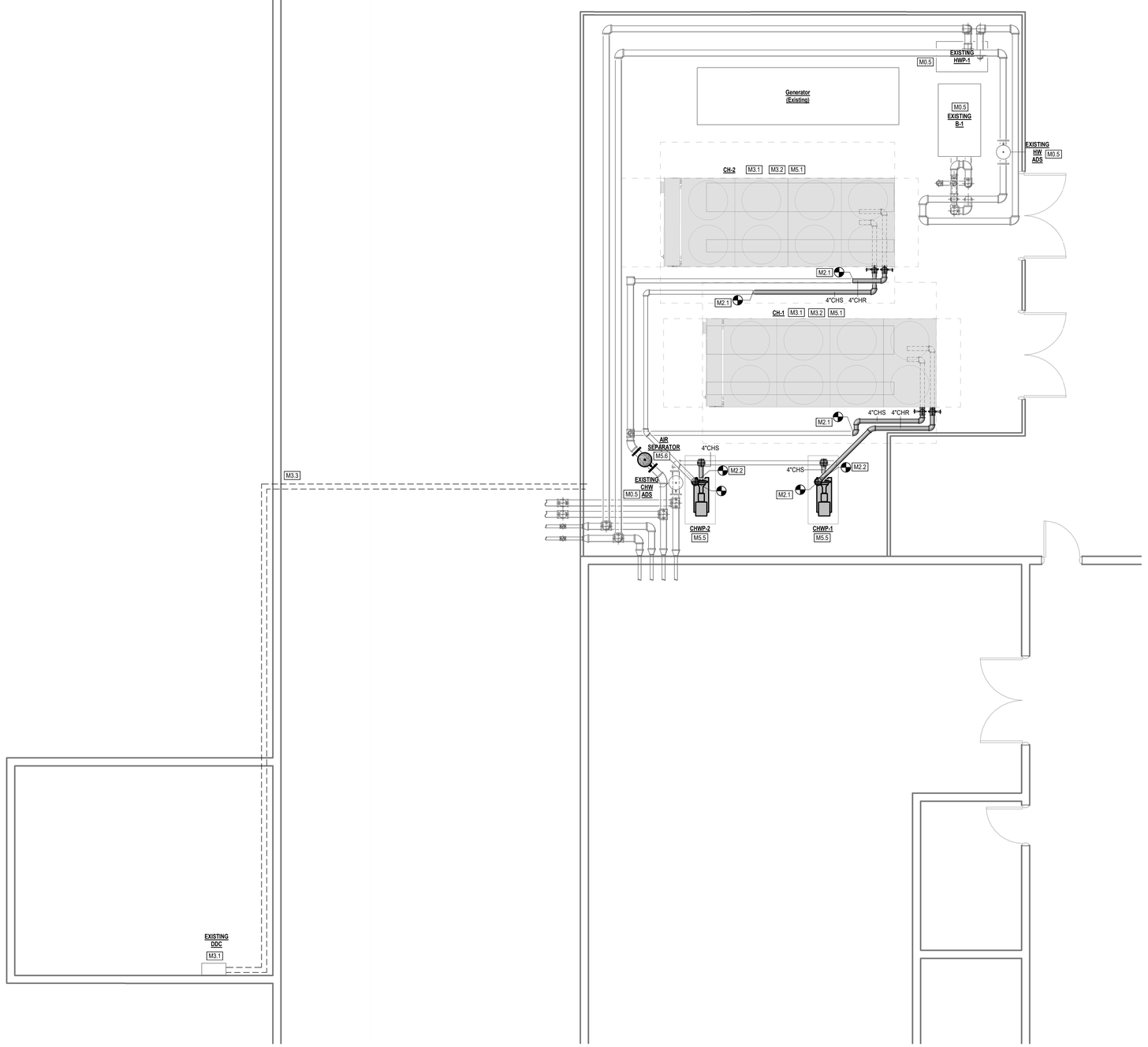

1 **MECHANICAL PLAN LEVEL 1 - CENTRAL PLANT**
1/4" = 1'-0"

MECHANICAL KEYED NOTES

M0.5 EXISTING EQUIPMENT TO REMAIN.

M2.1 EXISTING CHILLER ISOLATION VALVE, PIPING AND ASSOCIATED ACCESSORIES TO BE REPLACED FROM CHILLER TO 6" PAST ISOLATION VALVE AT A MINIMUM. PROVIDE NEW PIPING AS NECESSARY TO MATCH NEW CHILLER PIPING CONFIGURATION. RE: 01/M5.01 FOR CHILLER ACCESSORIES.

M2.2 EXISTING PUMP CHILLED WATER PIPING AND ASSOCIATED ACCESSORIES TO BE REPLACED FROM CHILLED WATER PUMP TO 6" PAST ISOLATION VALVE AT A MINIMUM AS PART OF ALTERNATE 4. PROVIDE NEW PIPING AS NECESSARY TO MATCH NEW PUMP CONFIGURATION. PROVIDE TRANSITIONS AS NECESSARY. RE: 03/M5.01.

M3.1 PROVIDE NEW CONDUIT FROM EXISTING RACEWAY FROM CONTROL PANEL TO CHILLER(S). EXISTING CONDUIT THAT IS ABOVE GROUND TO BE DEMOLISHED. CONDUIT IN GROUND TO BE ABANDONED. PROVIDE AND PULL ADDITIONAL SPARE WIRES FOR COMMUNICATION IN NEW RACEWAY FOR FUTURE REPURPOSING/ MAINTENANCE. FIELD VERIFY EXACT LOCATION OF PANEL IN STORAGE ROOM.

M3.2 INTEGRATE NEW CHILLER INTO EXISTING CONTROLS. ENSURE PUMPS ARE CONTROLLED VIA RELAYS AND CHILLER CONTROLLER PROGRAM. EMCS SHALL NOT START PUMPS. TEST EXISTING SEQUENCE OF OPERATION WITH NEW CHILLER TO VERIFY OPERATION MATCHES SEQUENCE. REMAP BACNET POINTS TO MATCH EXISTING BACNET POINTS. RE: M6.01.

M3.3 PROPOSED ROUTING FOR CONTROLS RACEWAY. PROVIDE APPROXIMATELY 1" DIAMETER CONDUIT OR APPROVED SIZE BY ALC.

M5.1 PROVIDE AIR COOLED CHILLER AT APPROXIMATE LOCATION SHOWN. PROVIDE ALL AIR FLOW CLEARANCES AS REQUIRED BY EQUIPMENT MANUFACTURER. INSTALL ON EXISTING CONCRETE RAILS. EXTEND EXISTING 28.5" X 186" AND 12.25" X 186" CONCRETE RAILS TO FIT NEW CHILLER AS NECESSARY. REFER TO CHILLER SCHEDULE ON M5.01 FOR NEW CHILLER DIMENSIONS. RE: DETAIL 1/M5.01.

M5.5 PROVIDE END SUCTION PUMP AND ASSOCIATED ACCESSORIES AT APPROXIMATE LOCATION SHOWN. INSTALL PER MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS. INSTALL ON EXISTING CONCRETE HOUSEKEEPING PAD. EXTEND EXISTING PAD AS NECESSARY. PUMP REPLACEMENT AND ASSOCIATED WORK TO BE AS PART OF ALTERNATE 4. RE: DETAIL 4/M5.01.

M5.6 PROVIDE AIR SEPARATOR WITH AUTOMATIC AIR VENT (BELL & GOSSET R-6F OR APPROVED EQUAL) AT APPROXIMATE LOCATION SHOWN AS PART OF ALTERNATES 2B AND 2C .

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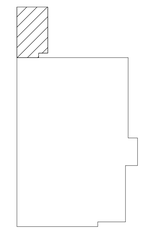
PROJECT NUMBER 260018.000

SHEET TITLE: MECHANICAL PLAN - CENTRAL PLANT

SHEET NUMBER: M2.11

KEY PLAN



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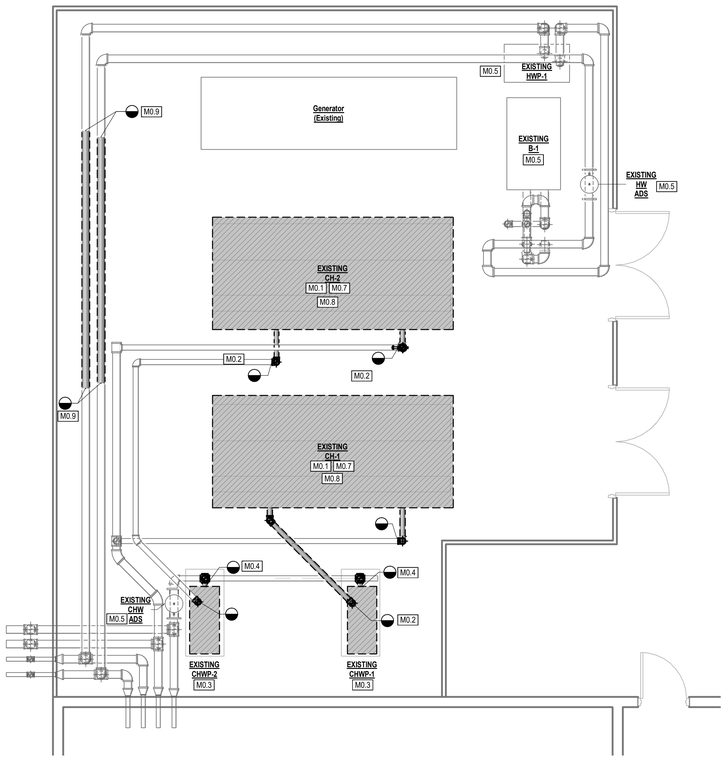
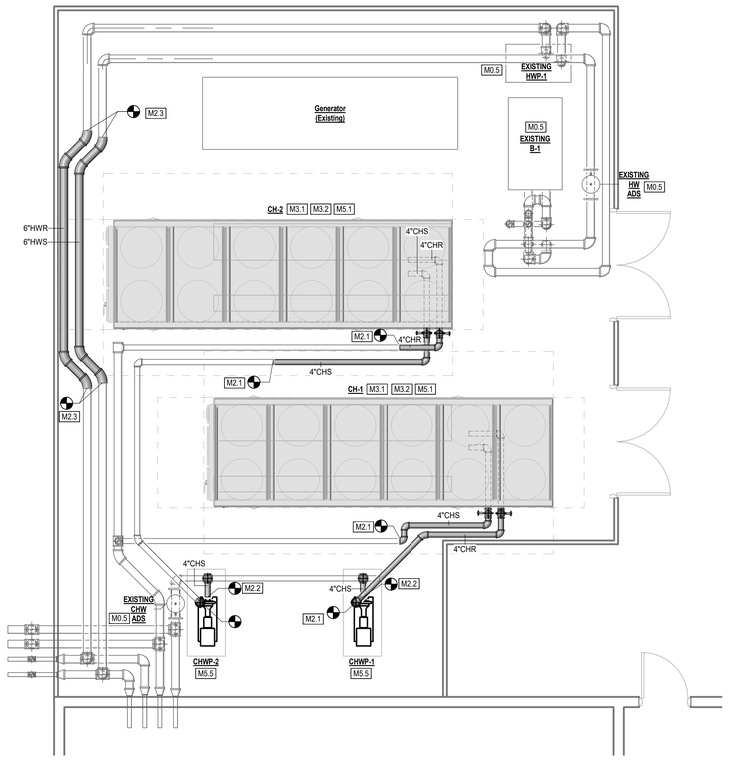


1 **DEMOLITION MECHANICAL PLAN LEVEL 1 - ALT 2A - CENTRAL PLANT**
1/4" = 1'-0"



2 **MECHANICAL PLAN LEVEL 1 - ALT 2A - CENTRAL PLANT**
1/4" = 1'-0"

MECHANICAL KEYED NOTES

M0.1 EXISTING CHILLER AND ALL ASSOCIATED CONTROLS, ELECTRICAL, AND ACCESSORIES SHALL BE REMOVED. CHILLERS ARE TO BE REMOVED AND REPLACED ONE AT A TIME TO KEEP BUILDING TEMPERED. EXISTING CONCRETE RAIL TO REMAIN.

M0.2 EXISTING CHILLER MANUAL ISOLATION VALVE TO BE REMOVED. REMOVE CHILLER PIPING 6" MINIMUM PAST ISOLATION VALVE. REMOVE ADDITIONAL PIPING AS NECESSARY TO ACCOMMODATE NEW CHILLER CONFIGURATION.

M0.3 EXISTING PUMP AND ASSOCIATED ISOLATION VALVE AND ACCESSORIES SHALL BE REMOVED AS PART OF ALTERNATE 4. EXISTING EQUIPMENT PADS TO REMAIN.

M0.4 EXISTING PUMP ISOLATION VALVE TO BE REMOVED AS PART OF ALTERNATE 4. REMOVE PIPING UP TO ISOLATION VALVE AS INDICATED AS ALTERNATE.

M0.5 EXISTING EQUIPMENT TO REMAIN.

M0.7 PRIOR TO DEMOLITION, EXISTING REFRIGERANT SHALL BE RECOVERED. RECOVERED REFRIGERANT SHALL BE RETURNED TO THE DISTRICT IN APPROPRIATE REFRIGERANT TANKS.

M0.8 REMOVE EXISTING CONTROLS COMMUNICATION WIRING FROM DDC PANEL TO CHILLERS AND DEMO ANY RACEWAY ABOVE GRADE. EXISTING RACEWAY BELOW GRADE TO BE ABANDONED.

M0.9 REMOVE EXISTING HYDRONIC PIPING AS INDICATED. REMOVE ASSOCIATED EXISTING PIPE SUPPORTS SUCH THAT NEW SUPPORTS CAN BE PROVIDED AND MEET NEW CHILLER CLEARANCES.

M2.1 EXISTING CHILLER ISOLATION VALVE, PIPING AND ASSOCIATED ACCESSORIES TO BE REPLACED FROM CHILLER TO 6" PAST ISOLATION VALVE AT A MINIMUM. PROVIDE NEW PIPING AS NECESSARY TO MATCH NEW CHILLER PIPING CONFIGURATION. RE: 01/M5.01 FOR CHILLER ACCESSORIES.

M2.2 EXISTING PUMP CHILLED WATER PIPING AND ASSOCIATED ACCESSORIES TO BE REPLACED FROM CHILLED WATER PUMP TO 6" PAST ISOLATION VALVE AT A MINIMUM AS PART OF ALTERNATE 4. PROVIDE NEW PIPING AS NECESSARY TO MATCH NEW PUMP CONFIGURATION. PROVIDE TRANSITIONS AS NECESSARY. RE: 03/M5.01.

M2.3 PROVIDE NEW HYDRONIC PIPING AS INDICATED. PROVIDE NEW SUPPORTS SUCH THAT NEW CHILLER CLEARANCES ARE MET. VERIFY EXACT ELEVATION AND LOCATION OF PIPE SUPPORTS WITH FIELD CONDITIONS. RE: DETAIL 02/M5.01.

M3.1 PROVIDE NEW CONDUIT FROM EXISTING RACEWAY FROM CONTROL PANEL TO CHILLER(S). EXISTING CONDUIT THAT IS ABOVE GROUND TO BE DEMOLISHED. CONDUIT IN GROUND TO BE ABANDONED. PROVIDE AND PULL ADDITIONAL SPARE WIRES FOR COMMUNICATION IN NEW RACEWAY FOR FUTURE REPURPOSING/ MAINTENANCE. FIELD VERIFY EXACT LOCATION OF PANEL IN STORAGE ROOM.

M3.2 INTEGRATE NEW CHILLER INTO EXISTING CONTROLS. ENSURE PUMPS ARE CONTROLLED VIA RELAYS AND CHILLER CONTROLLER PROGRAM. EMCS SHALL NOT START PUMPS. TEST EXISTING SEQUENCE OF OPERATION WITH NEW CHILLER TO VERIFY OPERATION MATCHES SEQUENCE. REMAP BACNET POINTS TO MATCH EXISTING BACNET POINTS. RE: M6.01.

M5.1 PROVIDE AIR COOLED CHILLER AT APPROXIMATE LOCATION SHOWN. PROVIDE ALL AIR FLOW CLEARANCES AS REQUIRED BY EQUIPMENT MANUFACTURER. INSTALL ON EXISTING CONCRETE RAILS. EXTEND EXISTING 28.5" X 186" AND 12.25" X 186" CONCRETE RAILS TO FIT NEW CHILLER AS NECESSARY. REFER TO CHILLER SCHEDULE ON M5.01 FOR NEW CHILLER DIMENSIONS. RE: DETAIL 1/M5.01.

M5.5 PROVIDE END SUCTION PUMP AND ASSOCIATED ACCESSORIES AT APPROXIMATE LOCATION SHOWN. INSTALL PER MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS. INSTALL ON EXISTING CONCRETE HOUSEKEEPING PAD. EXTEND EXISTING PAD AS NECESSARY. PUMP REPLACEMENT AND ASSOCIATED WORK TO BE AS PART OF ALTERNATE 4. RE: DETAIL 4/M5.01.

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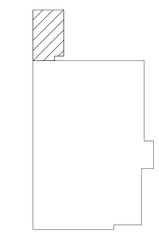
PROJECT NUMBER 260018.000

SHEET TITLE: MECHANICAL PLAN - CENTRAL PLANT - ALT 2A

SHEET NUMBER: M2.12

KEY PLAN



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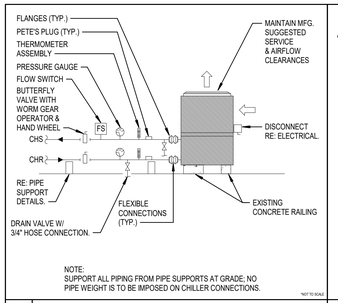
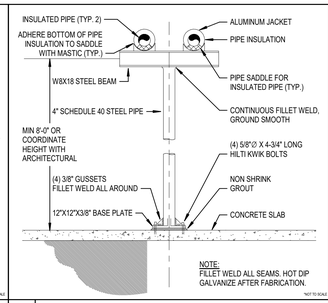
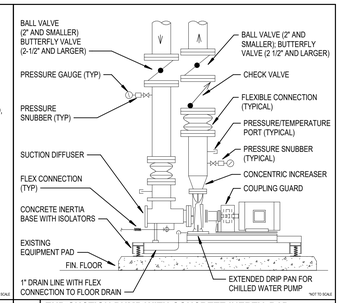


1 AIR COOLED CHILLER PIPING



2 PIPE SUPPORT AT SLAB



3 END SUCTION PUMP WITH CONCRETE INERTIA PAD AND SUCTION DIFFUSER

AIR COOLED CHILLER SCHEDULE - CARRIER

MARK	CH-1,2 (ALT 1A)	CH-1,2 (ALT 1B)	CH-1,2 (ALT 1C)
NOMINAL CAPACITY (TONS)	133	150	150
ACTUAL CAPACITY (TONS)	125.0	125.0	125.0
DESIGN FLOW RATE (GPM)	250.0	250.0	250.0
MINIMUM FLOW RATE (GPM)	227.2	180.0	156.0
EWT/LWT (°F)	56/42	56/42	56/42
AMBIENT DESIGN TEMPERATURE (°F)	105	105	105
MINIMUM AMBIENT TEMPERATURE (°F)	15	15	15
MAX. PRESSURE DROP (FT. HD.)	10	10	10
FOULING FACTOR (HR-FT2-°F/BTU)	0.0001	0.0001	0.0001
COMPRESSOR TYPE	SCREW	SCROLL	SCROLL
REFRIGERANT TYPE	R-513A	R-32	R-32
EER (AT AHRI CONDITIONS)	9.911	10.490	10.40
IPLV (AT AHRI CONDITIONS)	18.400	17.200	17.1
EER (AT DESIGN)	8.408	8.727	8.406
VOLTS/PHASE/HERTZ	460/3/60	460/3/60	460/3/60
MINIMUM CIRCUIT AMPACITY (A)	269	299.2	261.4
MAXIMUM OVER-CURRENT PROTECTION (A)	350	350	300
MANUFACTURER	CARRIER	CARRIER	CARRIER
MODEL NUMBER	30XV140M	30RC152S	30RC132S
OPERATING WEIGHT (LBS)	12,789	9,128	8,261
DIMENSIONS (L x W x H)	208" x 88" x 99"	199" x 88" x 99"	199" x 88" x 99"
NOTES	1,2,3,4,5,6,7,9	1,2,3,4,5,6,7,8,10	1,2,3,4,5,6,7,8,11

NOTES:
1. PROVIDE INTEGRAL NEMA 3R MAIN CIRCUIT BREAKER. SCCR SHALL BE 65,000A MINIMUM.
2. PROVIDE SOUND ATTENUATION PACKAGE ON COMPRESSORS AND CASING AND LOW NOISE CONDENSER FAN OPTION.
3. PROVIDE WITH FACTORY INSTALLED EVAPORATOR WATER FLOW SWITCH.
4. PROVIDE CHILLER WITH LOW AMBIENT HEAD PRESSURE CONTROL.
5. PROVIDE WITH BACNET INTERFACE CARD FOR INTEGRATION WITH EMCS. INTEGRATE NEW CHILLER INTO EXISTING CONTROLS.
6. PROVIDE INTERFACE TO EACH CHILLER THROUGH CHILLER BACNET INTERFACE CARD. PROVIDE A GRAPHIC PAGE FOR THE INTERFACE CARD THAT DISPLAYS ALL VALUES AVAILABLE.
7. EXTEND EXISTING 28.5" X 186" AND 12.25" X 186" CONCRETE RAILS AS NECESSARY TO FIT NEW UNIT.
8. PROVIDE ADDITIONAL AIR DIRT SEPERATOR WITH AUTOMATIC AIR VENT FOR CARRIER SCROLL COMPRESSOR ALTERNATES.
9. PROVIDE CHILLER AS ALTERNATE 1A.
10. PROVIDE CHILLER AS ALTERNATE 1B.
11. PROVIDE CHILLER AS ALTERNATE 1C.

AIR COOLED CHILLER SCHEDULE - TRANE

MARK	CH-1,2 (ALT 2A)	CH-1,2 (ALT 2B)	CH-1,2 (ALT 2C)
NOMINAL CAPACITY (TONS)	150	140	130
ACTUAL CAPACITY (TONS)	128.0	120.5	130.0
DESIGN FLOW RATE (GPM)	250.0	250.0	250.0
MINIMUM FLOW RATE (GPM)	171.0	176.2	174.7
EWT/LWT (°F)	56/42	56/42	56/42
AMBIENT DESIGN TEMPERATURE (°F)	105	105	105
MINIMUM AMBIENT TEMPERATURE (°F)	15	15	15
MAX. PRESSURE DROP (FT. HD.)	10	10	10
FOULING FACTOR (HR-FT2-°F/BTU)	0.0001	0.0001	0.0001
COMPRESSOR TYPE	SCREW	SCROLL	SCROLL
REFRIGERANT TYPE	R-513A	R-454B	R-454B
EER (AT AHRI CONDITIONS)	10.50	10.79	10.42
IPLV (AT AHRI CONDITIONS)	16.50	17.82	17.40
EER (AT DESIGN)	8.90	9.14	8.71
VOLTS/PHASE/HERTZ	460/3/60	460/3/60	460/3/60
MINIMUM CIRCUIT AMPACITY (A)	295	287	262
MAXIMUM OVER-CURRENT PROTECTION (A)	400	350	350
MANUFACTURER	TRANE	TRANE	TRANE
MODEL NUMBER	RTAF-150	ACSA 140	CGAM130
OPERATING WEIGHT (LBS)	9,628	7,897	7,900
DIMENSIONS (L x W x H)	274" x 87" x 94"	232" x 88" x 98"	205.2" x 88.4" x 92.5"
NOTES	1,3,4,5,6,7,8	1,2,3,4,5,6,7,9	1,2,3,4,5,6,7,10

NOTES:
1. PROVIDE INTEGRAL NEMA 3R MAIN CIRCUIT BREAKER. SCCR SHALL BE 65,000A MINIMUM.
2. PROVIDE SOUND ATTENUATION PACKAGE ON COMPRESSORS AND CASING AND LOW NOISE CONDENSER FAN OPTION.
3. PROVIDE WITH FACTORY INSTALLED EVAPORATOR WATER FLOW SWITCH.
4. PROVIDE CHILLER WITH LOW AMBIENT HEAD PRESSURE CONTROL.
5. PROVIDE WITH BACNET INTERFACE CARD FOR INTEGRATION WITH EMCS. INTEGRATE NEW CHILLER INTO EXISTING CONTROLS.
6. PROVIDE INTERFACE TO EACH CHILLER THROUGH CHILLER BACNET INTERFACE CARD. PROVIDE A GRAPHIC PAGE FOR THE INTERFACE CARD THAT DISPLAYS ALL VALUES AVAILABLE.
7. EXTEND EXISTING 28.5" X 186" AND 12.25" X 186" CONCRETE RAILS AS NECESSARY TO FIT NEW UNIT.
8. PROVIDE CHILLER AS ALTERNATE 2A. ADDITIONAL SITE COORDINATION REQUIRED. RE: M2.21.
9. PROVIDE CHILLER AS ALTERNATE 2B.
10. PROVIDE CHILLER AS ALTERNATE 2C.

AIR COOLED CHILLER SCHEDULE - YORK

MARK	CH-1,2 (ALT 3A)	CH-1,2 (ALT 3B)
NOMINAL CAPACITY (TONS)	153	155
ACTUAL CAPACITY (TONS)	125.0	128.2
DESIGN FLOW RATE (GPM)	250.0	250.0
MINIMUM FLOW RATE (GPM)	170.0	150.0
EWT/LWT (°F)	56/42	56/42
AMBIENT DESIGN TEMPERATURE (°F)	105	105
MINIMUM AMBIENT TEMPERATURE (°F)	15	15
MAX. PRESSURE DROP (FT. HD.)	10	10
FOULING FACTOR (HR-FT2-°F/BTU)	0.0001	0.0001
COMPRESSOR TYPE	VSD SCREW	SCROLL
REFRIGERANT TYPE	R-513A	R-454B
EER (AT AHRI CONDITIONS)	7.744	8.329
IPLV (AT AHRI CONDITIONS)	13.460	16.960
EER (AT DESIGN)	9.722	10.100
NPLV (AT DESIGN)	14.880	16.260
VOLTS/PHASE/HERTZ	460/3/60	460/3/60
MINIMUM CIRCUIT AMPACITY (A)	298.8	310
MAXIMUM OVER-CURRENT PROTECTION (A)	400	350
MANUFACTURER	YORK	YORK
MODEL NUMBER	YVAA0153	YLAA0155
OPERATING WEIGHT (LBS)	13,915	8,953
DIMENSIONS (L x W x H)	203.3" x 88.3 x 94.6	187.7" x 88.6" x 94.2"
NOTES	1,2,3,4,5,6,7,8,9	1,2,3,4,5,6,7,8,10

NOTES:
1. PROVIDE INTEGRAL NEMA 3R MAIN CIRCUIT BREAKER. SCCR SHALL BE 65,000A MINIMUM.
2. PROVIDE SOUND ATTENUATION PACKAGE ON COMPRESSORS AND CASING AND LOW NOISE CONDENSER FAN OPTION.
3. PROVIDE WITH FACTORY INSTALLED EVAPORATOR WATER FLOW SWITCH.
4. PROVIDE CHILLER WITH LOW AMBIENT HEAD PRESSURE CONTROL.
5. PROVIDE WITH BACNET INTERFACE CARD FOR INTEGRATION WITH EMCS. INTEGRATE NEW CHILLER INTO EXISTING CONTROLS.
6. PROVIDE INTERFACE TO EACH CHILLER THROUGH CHILLER BACNET INTERFACE CARD. PROVIDE A GRAPHIC PAGE FOR THE INTERFACE CARD THAT DISPLAYS ALL VALUES AVAILABLE.
7. EXTEND EXISTING 28.5" X 186" AND 12.25" X 186" CONCRETE RAILS AS NECESSARY TO FIT NEW UNIT.
8. PROVIDE ADDITIONAL WARRANTY TO PROTECT FROM COST OF REPLACEMENT OF MICROCHANNEL COILS PER TISD STANDARDS.
9. PROVIDE CHILLER AS ALTERNATE 3A.
10. PROVIDE CHILLER AS ALTERNATE 3B.

PUMP SCHEDULE

MARK	CHWP-1	CHWP-2
MANUFACTURER	BELL & GOSSET	BELL & GOSSET
MODEL NUMBER	e-1510 2.5BB	e-1510 2.5BB
DESIGN FLOW RATE (GPM)	250.0	250.0
MINIMUM FLOW RATE (GPM)	-	-
HEAD (FT. H2O)	85	85
APPROX. PUMP EFF. (%)	77.0	77.0
APPROX. IMPELLER DIA. (INCHES)	9.5	9.5
MOTOR RPM	1,770	1,770
HORSEPOWER	10	10
VOLTS/PHASE/HERTZ	460/3/60	460/3/60
NOTES	ALL	ALL

NOTES:
1. PUMP SHALL BE NON-OVERLOADING ACROSS ENTIRE GPM RANGE.
2. PROVIDE WITH PREMIUM EFFICIENCY TEFC MOTOR FOR OPERATION WITH EXISTING PUMP STARTER.
3. PUMPS TO BE REPLACED AS PART OF ALTERNATE 4.

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REVISION:

No.	DATE	DESCRIPTION
	03/06/2026	ISSUE FOR PROPOSAL

SEAL:

Tomball ISD Technology Building - Chiller Pkg 1
1302 Keefer Road
Tomball, Texas 77375

TBPE Firm Registration No. 2234

DATE: 03/06/2026

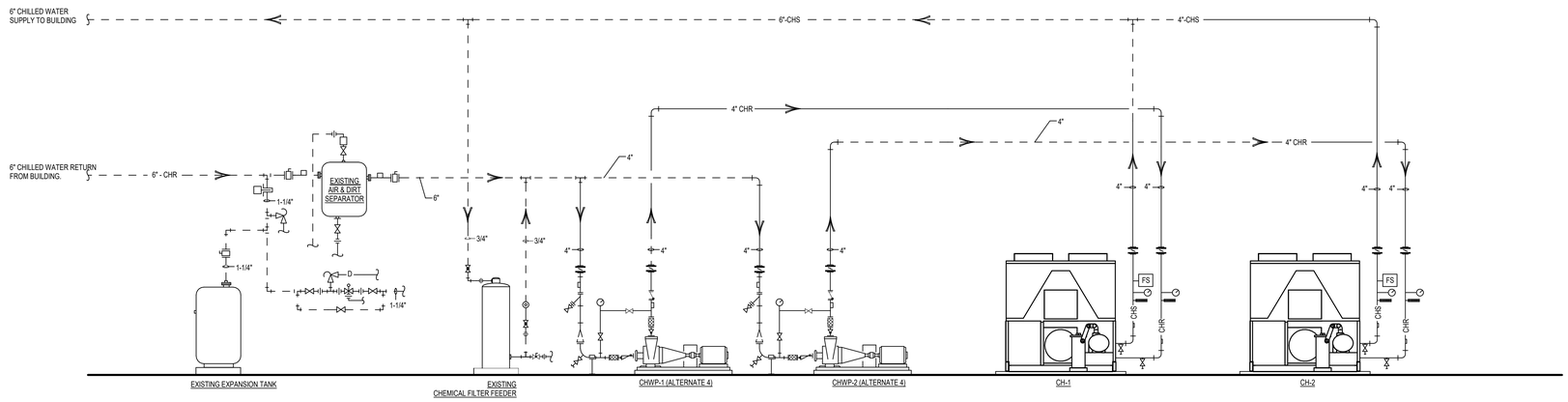
DRAWN BY: DBR

CHECKED BY: DBR

PROJECT NUMBER 260018.000

SHEET TITLE: MECHANICAL SCHEDULES AND DETAILS

SHEET NUMBER: M5.01



1 Chilled Water - Air Cooled - Dedicated Variable Primary System

1/8" = 1'-0"

Chiller Manager Sequence of Operation

Equipment Control Points	
AI	1) Bldg CHW supply temperature - 10kΩ immersion sensor 2) Bldg CHW return temperature - 10kΩ immersion sensor 3) Chiller CHW supply temperature (2) - 10kΩ immersion sensor 4) Chiller amps (2) - 4-20mA sensor 5) Outdoor air temperature (global information from sensor on the North side of the building
DI	1) Chiller pump status (2)— current switch 2) Chiller alarm (2) — dry contact
AO	None
DO	1) Chiller start/stop (2) - 24 VAC relay 2) Chiller pump start/stop (2) - 24 VAC relay

Chilled Water System Activation
The chilled water system will be activated by a request for cooling from any air handler supplied with chilled water.

Chiller Activation
When the chilled water system is activated, the chiller control program will start the lead chilled water pump by sending a 24 VAC signal to a relay mounted in the pump motor starter, which will complete the auto side of the control circuit and start the pump. A current switch will prove status to the Building Automation System (B.A.S.) and will alarm at the central site if the switch is not made within the adjustable time period. After 15 seconds (adjustable), the B.A.S. will send a 24 VAC signal to a relay, which will complete the remote start terminals in the chiller control circuit and allow the lead chiller to run. A flow switch will not allow the chiller to start until flow has been proven. The B.A.S. control module will monitor the chiller amps for load calculation and status. If a chiller fails to start the B.A.S. control module will automatically start the lag chiller and an alarm will be sent to the central site, Fifteen-minute (adjustable) time delays will be assigned to each chiller start/stop circuit to prevent short cycling.

Temperature Control and Staging
The chiller will maintain a chilled water supply temperature of 42°F (adjustable) by its own controls.

If the building load 45.5°F (adjustable) and the chilled water supply temperature is 3°F(adjustable) above setpoint for 15 minutes (adjustable) a run request will be sent to the lag chiller. When the load of the building decreases to 80% (adjustable) of one chiller for 10 minutes (adjustable) the run request to the lag chiller will be canceled in the opposite order they were energized.

The B.A.S. will initiate an alarm to the central site if the building chilled water supply temperature is more than 5°F (adjustable) above the building chilled water supply setpoint. An alarm output from the chiller panel will oe monitored for display at the central site.

Lead/Lag Sequencing

On a daily basis, change the chilled water pump lead/lag indexing. Daily lead pump indexed to run with the daily lead Chiller, daily lag pump indexed to run with the daily lag Chiller.

Chilled Water System Shutdown Sequence
After all requests for cooling have been satisfied or halted by the B.A.S. the chiller will cycle to its off status, and the chilled water pump will continue to run for 5 minutes (adjustable) to insure adequate flow during shutdown.

Equipment Off Conditions
When the chilled water system is inactive the chiller and the pump will be de-energized,

FOR REFERENCE FOR INTEGRATION OF NEW CHILLERS WITH EXISTING CONTROLS. CONTROL POINTS AND SEQUENCES FROM EXISTING SHOP DRAWINGS AND MAY NOT REFLECT FULL EXISTING SEQUENCE AND POINTS.

AI	ANALOG INPUT	S	WALL SENSOR
AO	ANALOG OUTPUT	T	THERMOSTAT
DI/BI	DIGITAL/BINARY INPUT	CO2	CARBON DIOXIDE SENSOR
DO/BO	DIGITAL/BINARY OUTPUT	SP	SET POINT
MD	ON-OFF MOTORIZED DAMPER	S/A	SUPPLY AIR
MMD	MODULATING TYPE MOTORIZED DAMPER	R/A	RETURN AIR
AFMS	AIR FLOW MEASURING STATION	O/A	OUTSIDE AIR
MCV	CONTROL VALVE MODULATING TYPE	HC	HEATING COIL
VFD	VARIABLE FREQUENCY DRIVE	CC	COOLING COIL
CSR	CURRENT SENSING RELAY	DX	DIRECT EXPANSION COOLING COIL
FRZ	FREEZESTAT	PICCV	PRESSURE INDEPENDENT CHARACTERIZED CONTROL VALVE
HSL	HIGH STATIC LIMIT	AFC	AIRFLOW CROSS
SPT	STATIC PRESSURE TRANSMITTER	DPS	DIFFERENTIAL PRESSURE SWITCH
DPT	DIFFERENTIAL PRESSURE TRANSDUCER		
FM	FLOW METER		
FS	FLOW SWITCH		
DAT	DISCHARGE AIR TEMPERATURE SENSOR		

2 **CONTROL SCHEMATIC LEGEND**
NOT TO SCALE

Chiller BACnet Integration

Furnish and install BACnet Integration means and provide one BACnet Integration screen in the BAS graphics that includes the following information at a minimum for monitoring purposes only:

Local/Remote mode
- Active Alert/Alarm with alarm code (Note: include cross-reference table for code deciphering)
- Active Demand limit
- Entering/ Leaving Temperatures
- Running Status/ Mode
- Compressor Discharge Pressure
- Compressor Winding Temperature
- Outdoor air temperature

3 **Chiller BACnet Integration**
NOT TO SCALE

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REVISION:

No.	DATE	DESCRIPTION
	03/06/2026	ISSUE FOR PROPOSAL

SEAL:

ADAM C. JONES 119008 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS

Tomball ISD Technology Building - Chiller Pkg 1
1302 Keefer Road
Tomball, Texas 77375

TBPE Firm Registration No. 2234

DATE: 03/06/2026
DRAWN BY: DBR
CHECKED BY: DBR
PROJECT NUMBER 260018.000
SHEET TITLE: MECHANICAL FLOW DIAGRAMS AND CONTROLS
SHEET NUMBER: M6.01

ABBREVIATIONS

AC	ALTERNATING CURRENT
AF	AMPERE FUSE, AMPERE FRAME
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERE INTERRUPT CAPACITY
AL	ALUMINUM
AM	AMMETER
AMP	AMPLIFIER
ANN	ANNUNCIATOR
ASC	AMPERES SHORT CIRCUIT
AT	AMPERE TRIP RATING
ATS	AUTOMATIC TRANSFER SWITCH
AUX	AUXILIARY
BKR	BREAKER
BLDG.	BUILDING
C	CONDUIT, CELSIUS
CKT	CIRCUIT
CLG.	CEILING
CONT.	CONTINUOUS,CONTINUATION
CONTR	CONTROLLER, CONTRACTOR
CT	CURRENT TRANSFORMER/COOLING TOWER
CU	COPPER
DAS	DISTRIBUTED ANTENNA SYSTEM
DC	DIRECT CURRENT
DISC	DISCONNECT
DP	DISTRIBUTION PANEL
DPDT	DOUBLE-POLE, DOUBLE-THROW
DPST	DOUBLE-POLE, SINGLE-THROW
DWG	DRAWING
ELEV.	ELEVATOR
EPO	EMERGENCY POWER OFF
ERRC	EMERGENCY RESPONDER RADIO COVERAGE SYSTEM
FA	FIRE ALARM
FF	FURNITURE FEED
FLA	FULL LOAD AMPS
FTL	FEED-THRU LUGS
GA	GAUGE
GEN	GENERATOR
GND	GROUND
GTD	GENERATOR TRANSFER DEVICE
IG	ISOLATED GROUND
LF	LINEAR FEET
LTG	LIGHTING
LV	LOW VOLTAGE
LVL	LEVEL
MAX.	MAXIMUM
MC	METAL CLAD CABLE
MCA	MINIMUM CIRCUIT AMPS
MCB	MAIN CIRCUIT BREAKER
MCCB	MOLDED CASE CIRCUIT BREAKER
MD	MOTORIZED DAMPER
MDP	MAIN DISTRIBUTION PANEL
MFR	MANUFACTURER
MIC	MICROPHONE
MIN.	MINIMUM
MLO	MAIN LUGS ONLY
MOCP	MAXIMUM OVER-CURRENT PROTECTION
MSB	MAIN SWITCHBOARD
N3R	NEMA 3R
N4X	NEMA 4X
N.C.	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NF	NON-FUSED
NFS	NON-FUSED SWITCH
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
N.O.	NORMALLY OPEN
NO.	NUMBER
NTS	NOT TO SCALE
PH	PHASE
POS	POINT OF SALE
QTY	QUANTITY
RCP	REFLECTED CEILING PLAN
RCPT	RECEPTACLE
RE	REFERENCE, REFER
SF	SQUARE FOOT
SIM	SIMILAR
SKVA	STARTING KILOVOLT-AMPS
SPD	SURGE PROTECTION DEVICE
SPDT	SINGLE-POLE, DOUBLE-THROW
SPST	SINGLE-POLE, SINGLE-THROW
SPEC	SPECIFICATION
SQFT	SQUARE FOOT
ST	SHUNT TRIP
SWB	SWITCHBOARD
TL	TWIST-LOCK
TOC	TOP OF CURB
TOS	TOP OF STEEL
TR	TAMPER RESISTANT RECEPTACLE
TV	TELEVISION
TYP	TYPICAL
UG	UNDERGROUND
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTIBLE POWER SYSTEM
VFD	VARIABLE FREQUENCY DRIVE
WP	WEATHERPROOF
WT	WATERTIGHT, WEIGHT
W/SF	WATTS PER SQUARE FOOT
XFMR	TRANSFORMER

MANY ABBREVIATIONS NOT LISTED MAY BE FOUND IN THE NATIONAL ELECTRIC CODE, OR IN THE INTERNATIONAL AND UNIFORM CODES

PHASING

(E)	EXISTING (TO REMAIN)
(D)	SHALL BE DEMOLISHED
(N)	PROVIDE NEW
(R)	RELOCATED ELEMENT

ELECTRICAL SYMBOLS

MOTORS AND CONTROLS

- MOTOR RATED SWITCH WITH THERMAL OVERLOADS
- SINGLE OR THREE PHASE MOTOR NUMBER INDICATES HORSE POWER
- ELECTRIC DUCT HEATER
- DISCONNECT (SAFETY) SWITCH "200/3/150" DENOTES AMPERES/POLE/FUSE. "NF" DENOTES NON-FUSED "N3R" DENOTES NEMA 3R
- ENCLOSED CIRCUIT BREAKER- "200/3/150" DENOTES AMPERES/POLE/TRIP
- MOTOR STARTER FURNISHED BY DIVISION 23 AND INSTALLED BY DIVISION 26.
- COMBINATION DISCONNECT (SAFETY) SWITCH AND MOTOR STARTER. "30/3/15/#0" DENOTES AMPERES/POLES/FUSE/ STARTER SIZE. "NF" DENOTES NON-FUSED. FURNISHED BY DIVISION 23 AND INSTALLED BY DIVISION 26.
- VFD — VARIABLE FREQUENCY DRIVE PROVIDED BY DIVISION 23 AND INSTALLED BY DIVISION 26.
- EPO — EMERGENCY POWER OFF BUTTON.

RECEPTACLES AND OUTLETS

ALL RECEPTACLES SHALL BE MOUNTED 18" ABOVE FINISHED FLOOR TO CENTER OF DEVICE UNLESS NOTED OTHERWISE. REFER TO SPECIFICATIONS AND DRAWINGS FOR ADDITIONAL REQUIREMENTS.

ABBREVIATIONS APPLICABLE TO RECEPTACLES:
- "GFCI" GROUND FAULT INTERRUPTER
- "WP" WEATHERPROOF
- "IG" ISOLATED GROUND
- "TR" TAMPER RESISTANT
- "USB" RECEPTACLE WITH USB CHARGING PORTS
- "AC" ABOVE COUNTER MOUNTING
- "UC" UNDER COUNTER MOUNTING
- "H" HORIZONTALLY ORIENTED RECEPTACLE

- SIMPLEX WALL RECEPTACLE, NEMA 5-20R, 20A, 125V.
- DUPLEX WALL RECEPTACLE, NEMA 5-20R, 20A, 125V. SHADED INDICATES SPLIT-WIRED
- FOURPLEX (QUADRUPLEX) RECEPTACLE
- DUPLEX RECEPTACLE (PEDESTAL MOUNTED)
- CONTROLLED WALL RECEPTACLE. DUPLEX: SPLIT-WIRED QUAD: SEPARATELY WIRED UNDER A COMMON COVERPLATE.
- POWER DEVICE RED IN COLOR, ON EMERGENCY POWER CIRCUIT
- CEILING RECEPTACLE/QUAD, EMERGENCY POWER SYMBOL MAY APPLY
- SPECIAL RECEPTACLE, NEMA CONFIGURATION PER PLAN OR EQUIPMENT
- TV — TV ROUGH-IN: 3-GANG RECESSED TV BOX, CONTAINING 1 DUPLEX RECEPTACLE, 1 GANG FOR AV, 1 GANG FOR DATA
- FLOOR BOX OR POKE THRU. POKE-THRU'S WHERE IN SUSPENDED SLABS, RECESSED IN FOUNDATION WHERE SLAB ON GRADE
- FLUSH ELECTRICAL FLOOR OUTLET. REFER TO FLOOR BOX SCHEDULE. FIRE RATED POKE-THROUGH SCHEDULE AND KEYED NOTES.
- DC — DROP CORD WITH SIMPLEX RECEPTACLE UNLESS OTHERWISE NOTED
- CR — CORD REEL WITH DUPLEX RECEPTACLE UNLESS OTHERWISE NOTED
- J — JUNCTION BOX
  - "MD" INDICATES POWER CONNECTION TO SERVE MOTOR DAMPER
  - "HD" INDICATES POWER CONNECTION TO SERVE HAND DRYER
  - "FV" INDICATES POWER CONNECTION TO SERVE FLUSH VALVES
- P — PULL BOX (OVER 4" SQUARE)
- BELL/BUZZER/CHIME
- PUSH BUTTON/DOOR BELL/START-STOP
- PP — POWER POLE
- POINT OF DIRECT CONNECTION TO EQUIPMENT
- C (2) — CLOCK RECEPTACLE SHALL BE MOUNTED 12" BELOW FINISHED CEILING. (2) DENOTES DOUBLE SIDED CLOCK.

LIGHTING

LETTER(S) DENOTE TYPE- SEE LIGHTING FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION.

2' X 4' 2' X 2' 1' X 4' 1' X 2' 1' X 1'

- STRIP LIGHTING FIXTURES.
- ROUND DOWNLIGHT FIXTURE.
- SQUARE DOWNLIGHT FIXTURE.
- WALL MOUNTED LIGHTING FIXTURE.
- TRACK LIGHTING FIXTURE. MOUNTED AS SHOWN ON LIGHTING FIXTURE SCHEDULE.
- CEILING MOUNTED EXIT SIGN; ARROWS AS INDICATED. SHADED AREA DENOTES FACE.
- WALL MOUNTED EXIT SIGN; ARROWS AS INDICATED. SHADED AREA DENOTES FACE.
- EMERGENCY WALL MOUNTED LIGHTING FIXTURE. BATTERY OPERATED UNLESS NOTED OTHERWISE.
- SITE LIGHTING FIXTURE.

HATCHING PATTERNS BELOW SHALL APPLY TO ALL LIGHTING FIXTURE SYMBOLS.

- NL — EMERGENCY LIGHT FIXTURE WITH BATTERY PACK. PROVIDE WITH UNSWITCHED HOT FOR LOSS OF VOLTAGE AND CHARGING (SAME CIRCUIT AS NORMAL POWER LIGHTING). FIXTURES SHALL BE WIRED IN A MANNER AS TO ALLOW SWITCHING OF FIXTURES WITHOUT DISCHARGING THE EMERGENCY BATTERY. BATTERY PACK IS TO ONLY OPERATE IN THE EVENT OF A POWER OUTAGE.
  "NL" NIGHT LIGHT ON UNSWITCHED 24HR OPERATION
- EM CIRCUIT — LIGHT FIXTURE ON LIFE SAFETY BRANCH CIRCUIT, GENERATOR TRANSFER DEVICES REQUIRED (UL1008 OR UL924) PROVIDE UNSWITCHED HOT, NEUTRAL AND GROUND FOR ALL LIFE SAFETY LIGHTING ORIGINATING FROM THE LIFE SAFETY CIRCUIT SHOWN.
- CRITICAL OPERATIONS LIGHTING ORIGINATING FROM THE CRITICAL CIRCUIT INDICATED, HATCHED AS INDICATED. HATCHING TYPICAL FOR ALL CRITICAL BRANCH LIGHT FIXTURES

RACEWAYS AND WIRING

- CAP AND STAKE
- CONDUIT CONCEALED IN WALL OR CEILING
- UNDERGROUND, UNDERSLAB, CONCEALED ROUTING
- OHE — OVERHEAD ELECTRIC PRIMARY UTILITY POWER LINE
- CONDUIT UP/DOWN
- HASH MARKS INDICATE NUMBER OF CONDUCTORS. LEFT TO RIGHT: PHASE/NEUTRAL/GROUND/ISOLATED GROUND. NO HASH MARKS INDICATES EMPTY CONDUIT, 1" MINIMUM, UNLESS NOTED OTHERWISE.
- 1LA-2,4,6 — HOMERUN TO PANEL WITH CIRCUIT NUMBER(S) AS INDICATED.
- (ON)1LA-6 — PARTIAL/SHARED CIRCUIT HOMERUN TO PANEL.
- TELECOMMUNICATIONS CABLE TRAY SHALL BE CONCEALED ABOVE ACCESSIBLE CEILING UNLESS OTHERWISE NOTED.

ELECTRICAL EQUIPMENT

- DISTRIBUTION PANEL
- MSB — SWITCHBOARD, MAIN DISTRIBUTION PANEL OR MOTOR CONTROL CENTER
- PANELBOARD (FLUSH/SURFACE MOUNT)
- FLOOR MOUNTED DRY-TYPE TRANSFORMER
- SUSPENDED OR WALL MOUNTED TRANSFORMER
- ATS — AUTOMATIC TRANSFER SWITCH
- FIRE RATED PLYWOOD TERMINAL BOARD, TYPE AS NOTED, 4' X 8' X 3/4" UNLESS NOTED OTHERWISE

COMMUNICATIONS

DEFAULT ELEVATION (UNLESS INDICATED OTHERWISE) TO CENTER OF ROUGH-IN: 18" ABOVE FINISHED FLOOR (AFF)

- DATA/COMM/AV ROUGH-IN. CONDUIT TO PLENUM AND BOX ONLY
- HS DS — SCHOOL INTERCOMMUNICATION SYSTEM HANDSET.

DEFAULT ELEVATION (UNLESS INDICATED OTHERWISE) TO CENTER OF ROUGH-IN: 42" AFF

- VC — VOLUME CONTROL - WALL MOUNTED
- CB — INTERCOMPA SYSTEM CALL-IN OR CALL-BACK DEVICE

DEFAULT ELEVATION (UNLESS INDICATED OTHERWISE) TO CENTER OF ROUGH-IN: 120" AFF OR 12" BELOW CEILING, WHICHEVER IS LOWER

- S L — INTERCOMPA SPEAKER "L" LOCAL SOUND REINFORCEMENT

CEILING MOUNTED DEVICES:

- S VC — INTERCOMPA SPEAKER "VC" INDICATES VOLUME CONTROL ON SPEAKER.

REFERENCE TECHNOLOGY/SECURITY SHEET FOR ADDITIONAL INFORMATION.

ONE-LINE DIAGRAM

- TRANSFORMER, TYPE AND RATINGS AS NOTED
- 800A/3P — SWITCH, RATING AS SHOWN
- 400A — FUSE, RATING AS SHOWN
- ST — SHUNT TRIP
- GF — GROUND FAULT PROTECTION
- AF — ARCH FAULT PROTECTION
- K — KIRK-KEY INTERLOCK
- M — DIGITAL METER OR SUB-METER INTEGRATED INTO EQUIPMENT
- 1200/5 — CURRENT TRANSFORMER, RATED AS SHOWN
- GROUND CONNECTION
- AUTOMATIC TRANSFER SWITCH
- BUS DUCT PLUG
- M — ELECTRICAL UTILITY REVENUE METER
- SPD — SURGE PROTECTION DEVICE
- GANN — GENERATOR ANNUNCIATOR PANEL
- CIRCUIT BREAKER
- DRAW-OUT CIRCUIT BREAKER
- NEW EQUIPMENT/WIRING
- DEMOLITION EQUIPMENT/WIRING
- EXISTING EQUIPMENT/WIRING
- UNDERGROUND WIRING

DAYLIGHT ZONES

DAYLIGHT ZONE/PRIMARY SECONDARY DAYLIGHT ZONE

DAYLIGHT ZONES SHALL BE INCLUSIVE OF THE FIXTURES WITHIN THE SHADED REGION, AND SHALL BE DIMMED USING ON-BOARD OR EXTERNAL CONTROL IN ACCORDANCE WITH IECC 2021. IECC 2018 OR 2015 MAY BE REFERENCED ONLY WHERE ADOPTED BY LOCAL AHJ.

GENERAL NOTES:

A. NOT ALL SYMBOLS SHOWN ON THIS SYMBOL LIST ARE USED IN THE CONTRACT DOCUMENTS.

MISCELLANEOUS

- F — SHADED SYMBOLS INDICATE EXISTING DEVICES TO REMAIN, UNLESS OTHERWISE NOTED.
- INDICATES WALL-MOUNTED WHEN ATTACHED TO ANY SYMBOL
- 1 — DRAWING NOTE REFERENCE
- SOS — AREA OF RESCUE ASSISTANCE

FIRE ALARM

- W — WATER FLOW SWITCH
- SP — SUPERVISORY SWITCH
- S — SMOKE DETECTOR - MULTI CRITERIA DETECTOR
- S # — SMOKE DETECTOR - "SB" INDICATES IN INTEGRAL SOUNDER BASE "D" INDICATES DUCT TYPE "R" INDICATES 120 VOLT RESIDENTIAL TYPE
- H — HEAT DETECTOR
- S BT — BEAM DETECTOR TRANSMITTER, HIGH IN CEILING WALL DIRECT LINE OF SIGHT.
- S BR — BEAM DETECTOR RECEIVER, HIGH IN CEILING WALL DIRECT LINE OF SIGHT.
- S — FIRE ALARM SPEAKER STROBE / CEILING MOUNTED
- S — FIRE ALARM SPEAKER / CEILING MOUNT.
- DH — MAGNETIC DOOR HOLDER
- R — AUXILIARY CONTROL RELAY
- FH — FIRE FIGHTER HANDSET
- F — FIRE ALARM PULL STATION +42" AFF
- F — FIREMAN'S TELEPHONE JACK +42" AFF
- AUDIO VISUAL FIRE ALARM HORN STROBE +80" AFF- 15/75cd U.N.O.
- VISUAL FIRE ALARM (STROBE) CEILING MOUNT - 15/75cd U.N.O.
- AUDIO FIRE ALARM HORN +80" AFF
- FACP — FIRE ALARM CONTROL PANEL
- ANN — REMOTE FIRE ALARM ANNUNCIATOR PANEL
- RPS — REMOTE POWER SUPPLY FOR AUDIO/VISUAL FIRE ALARM DEVICES.
- FSD — FIRE SMOKE DAMPER
- REMOTE LED INDICATOR LIGHT

SECURITY

- PB — ADA AUTO DOOR OPEN BUTTON
- DR — DOOR RELEASE BUTTON
- CR — WALL MOUNTED CARD READER

REFERENCE TECHNOLOGY/SECURITY SHEET FOR ADDITIONAL INFORMATION.

SWITCHES AND LIGHTING CONTROL DEVICES

ALL SWITCH TYPES AND SENSORS TYPES FOUND ON 'LIGHTING CONTROL DEVICE SCHEDULE' LOCATED ON ELECTRICAL SCHEDULE SHEETS

SWITCH ANNOTATION AS FOLLOWS:
- X — TYPE, PER SCHEDULE; NO TYPE INDICATES SINGLE POLE TOGGLE SWITCH
- a,b,c — SWITCH LEGS, PER PLAN, SHOWN HERE AS 3 (a,b,c)

OCCUPANCY SENSOR ANNOTATION, AS FOLLOWS:
- OCx — OCCUPANCY / VACANCE SENSOR 'x' INDICATES TYPE, PER SCHEDULE
  - CEILING SENSOR
  - WITH BRACKET INDICATES WALL / CORNER MOUNT

LIGHT SENSOR ANNOTATION, AS FOLLOWS:
- PC — DIGITAL PHOTOCELL
- DS — DAYLIGHT HARVESTING SENSOR

RELAY PANELS, CONTACTORS, TIME SWITCHES:
- XX — RELAYS/CONTACTORS/TIMERS/DEVICES WHERE 'XX' INDICATES:
  - "LC" LIGHTING CONTRACTOR
  - "LCP" LIGHTING CONTROL PANEL
  - "TS" TIME SWITCH
  - "TC" TIME CLOCK

DRAWING/DETAIL REFERENCE KEY

RE: 1 /E3-2 — REFER TO DRAWING/DETAIL NUMBER 1 / E3-2 — SHEET NUMBER

PANELBOARD NOMENCLATURE

5 DP C H A 1
- 5 — SUB PANEL
- DP — AREA
- C — VOLTAGE H: 480Y/277V L: 208Y/120V
- H — BRANCH NONE: NORMAL E: LIFE SAFETY O: EQUIPMENT C: CRITICAL R: LEGALLY REQUIRED X: OPTIONAL STAND-BY
- A — DISTRIBUTION PANEL (IF APPLICABLE)
- 1 — LEVEL

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SEAL:

ADAM C. JONES 110008 LICENSED PROFESSIONAL ENGINEER

Tomball ISD Technology Building - Chiller Pkg 1
1302 Keefer Road
Tomball, Texas 77375

TBPE Firm Registration No. 2234

DATE: 03/06/2026

DRAWN BY: DBR

CHECKED BY: DBR

PROJECT NUMBER 260018.000

SHEET TITLE: ELECTRICAL SYMBOL LEGEND

SHEET NUMBER: E0.01

GENERAL POWER DEMOLITION NOTES:

A. EXISTING CIRCUIT BREAKERS VACATED DUE TO REMODELING WORK SHALL REMAIN AS SPARE BREAKERS AND LEFT IN THE 'OFF' POSITION.

B. CONTRACTOR SHALL REPORT ANY DAMAGED DEVICES THAT ARE SHOWN AS EXISTING TO REMAIN. ALL DEVICES FOUND TO BE DAMAGED AT THE TIME OF SUBSTANTIAL COMPLETION THAT NOT REPORTED PRIOR TO STARTING WORK SHALL BE REPLACED AT THE CONTRACTOR'S COST.

C. EXISTING RECEPTACLE OR MECHANICAL CIRCUITS MODIFIED IN FIELD SHALL NOT EXCEED 80% CAPACITY BASED ON AMP-RATING OF CIRCUIT.

GENERAL ELECTRICAL DEMOLITION NOTES:

A. IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE VERIFIED THE EXISTING JOB SITE CONDITIONS DURING THE BIDDING PERIOD TO OBTAIN THE SCOPE OF ELECTRICAL WORK INVOLVED AS A RESULT OF THE ARCHITECTURAL MODIFICATIONS TO THE EXISTING CONDITIONS. THE SCOPE OF WORK SHALL INCLUDE MATERIALS AND OUTLETS, CONSISTING OF FIXTURES, DEVICES, EQUIPMENT OR APPARATUS, WHICH MUST BE REROUTED, RELOCATED OR REMOVED EITHER TEMPORARILY OR PERMANENTLY, OR WHICH MUST BE PROVIDED SO THAT THE REMODELING WORK MAY BE ACCOMPLISHED. NOT ALL EXISTING OUTLETS ARE NECESSARILY INDICATED ON THE DRAWINGS.

B. CONTRACTOR SHALL REVIEW DEMOLITION AND NEW WORK PLANS SIMULTANEOUSLY TO IDENTIFY SCOPE THAT IS TO BE MODIFIED FOR REUSE WITH NEW SCOPE.

C. OWNER SHALL HAVE FIRST RIGHT OF REFUSAL TO ALL REMOVED MATERIALS. CONTRACTOR SHALL COORDINATE WITH OWNER FOR LOCATION TO RETURN ANY AND ALL MATERIAL FOR OWNER STORAGE. FAILURE TO TURN OVER REMOVED MATERIAL TO OWNER MAY REQUIRE CONTRACTOR TO REPLACE EQUIPMENT REMOVED WITH NEW.

D. ALL ABANDONED CONDUIT AND BOXES FOUND IN CRAWLSPACES, CEILINGS SPACES, CHASES, OR UTILITY SPACES SHALL BE REMOVED. EXISTING UNDERGROUND CONDUIT MAY BE ABANDONED. CAP ABANDONED UNDERGROUND CONDUIT FLUSH WITH GRADE.

E. OWNER SHALL RESERVE THE RIGHT TO CLAIM ALL EQUIPMENT AND CABLING REMOVED DURING DEMOLITION.

F. PROVIDE ALL APPURTENANCES REQUIRED TO REROUTE, RELOCATE, REMOVE OR REINSTALL ALL ITEMS REQUIRED BY SCOPE OF REMODEL.

G. ALL ABANDONED MATERIAL SHALL BE REMOVED FROM JOBSITE PRIOR TO PROJECT COMPLETION.

H. IDENTIFICATION AND LABELING SHALL BE PROVIDED IN ACCORDANCE WITH SPECIFICATIONS.

I. CIRCUIT NUMBERS ARE FOR PLAN REFERENCE ONLY. CONTRACTOR SHALL RELABEL ALL CIRCUIT DIRECTORIES WITH LOAD NAMES FOR ALL EXISTING AND NEW PANELS THAT WERE MODIFIED WITHIN THIS PROJECT.

GENERAL ELECTRICAL NOTES:

A. ELECTRICAL DEVICE LOCATIONS SHOWN ARE NOT EXACT. ALL DEVICE LOCATIONS SHALL BE VERIFIED WITH ARCHITECTURAL MILLWORK, CASEWORK, AND GENERAL ELEVATION VIEWS.

B. HVAC AND PLUMBING EQUIPMENT LOCATIONS ARE NOT EXACT, AND THE EXACT POINT OF CONNECTION TO EQUIPMENT MAY VARY. COORDINATE EXACT ROUGH-IN REQUIREMENTS IN FIELD AND WITH FINAL SUBMITTALS.

C. PROVIDE LABELING OF ALL DEVICES, CONDUIT, PANELS, AND JUNCTION BOXES WITH TYPE-WRITTEN LABEL IDENTIFYING CIRCUIT ON THE BACK OF DEVICE COVER PLATES AND ON COVER OF JUNCTION BOXES IN ACCORDANCE WITH ELECTRICAL SPECIFICATIONS.

D. ROOF PENETRATIONS SHALL BE MINIMIZED. WHERE ABLE, ROUTE ALL CONDUIT FOR ROOF MOUNTED EQUIPMENT THROUGH ROOF CURB. CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING NECESSARY WATER PROOFING AROUND ROOF PENETRATIONS WITH ROOFING INSTALLER.

E. NEW ELECTRICAL EQUIPMENT LOCATED IN ELECTRICAL ROOMS SHALL BE ARRANGED TO COMPLY WITH LATEST NEC ARTICLE 110.

F. DISTRICT RETAINS FIRST RIGHT OF REFUSAL FOR ALL PARTS AND EQUIPMENT.

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Tomball, Texas 77375

TBPE Firm Registration No. 2234

DATE: 03/06/2026

DRAWN BY: DBR

CHECKED BY: DBR

PROJECT NUMBER 260018.000

SHEET TITLE: ELECTRICAL GENERAL NOTES

SHEET NUMBER: E0.11

ELECTRICAL KEYED NOTES

ED1.1 EXISTING CHILLER TO BE REMOVED. SCOPE OF ELECTRICAL WORK TO INCLUDE DISCONNECTION OF EXISTING CHILLER FROM THE EXISTING CHILLER POWER SUPPLY AND THE DEMOLISHING OF EXISTING FEEDER.

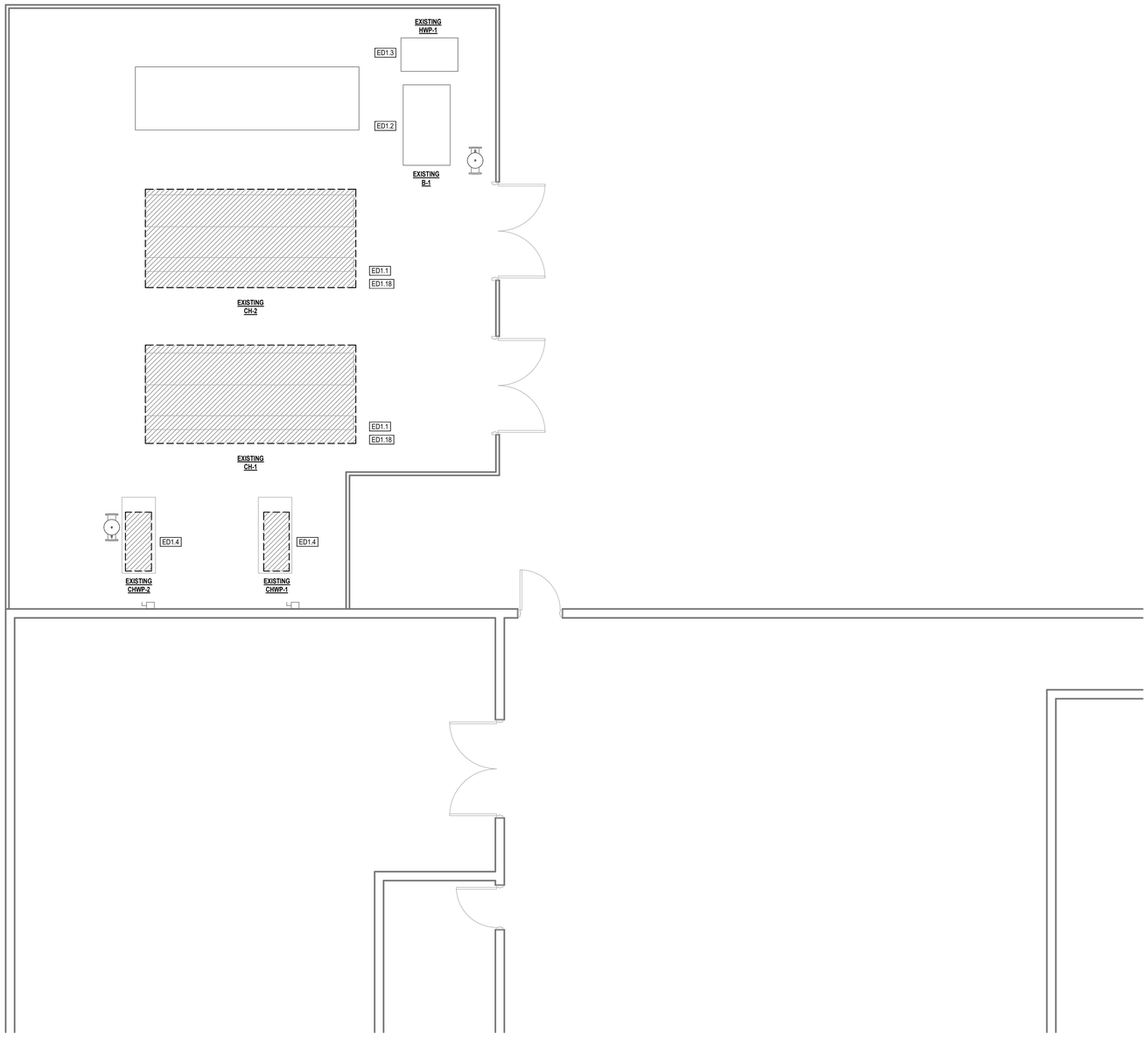
ED1.2 EXISTING BOILER B-1 TO REMAIN.

ED1.3 EXISTNG HWP-1 TO REMAIN.

ED1.4 EXISTING CHWP TO BE DEMOLISHED AND REPLACED WITH NEW AS ALTERNATE #4.

ED1.18 CONTRACTOR MAY REUSE EXISTING 120V CIRCUIT(S) FOR THE REPLACEMENT UNITS CONTROLS. HOWEVER PROVIDE ALL NEW CONDUIT/WIRE TO RECONNECT TO THE 120V, 20A/1P CIRCUIT BREAKER.

MSB



1 **DEMOLITION ELECTRICAL POWER PLAN - CENTRAL PLANT**
1/4" = 1'-0"

KEY PLAN

N

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STATE OF TEXAS

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DATE: 03/06/2026
DRAWN BY: DBR
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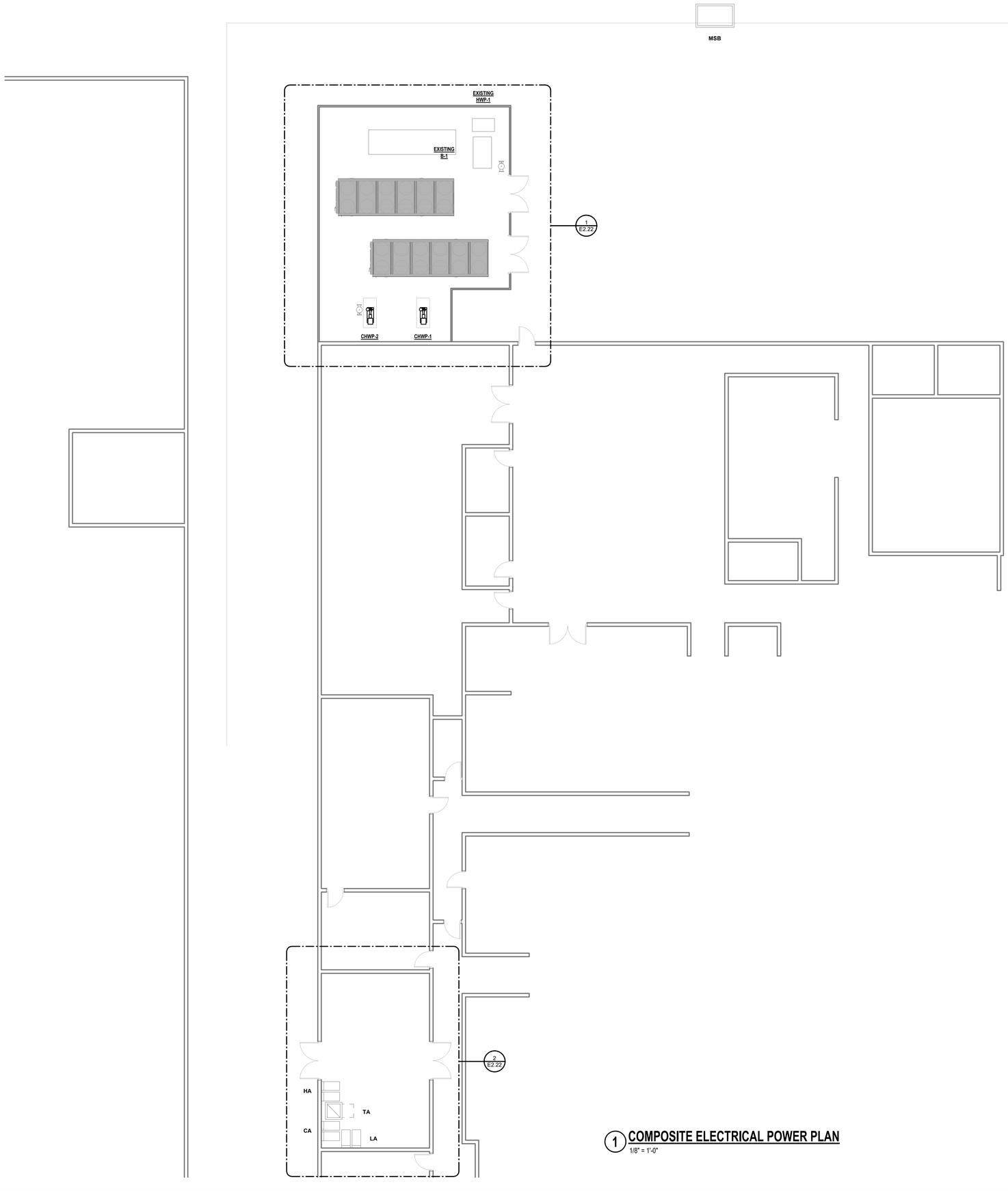
PROJECT NUMBER 260018.000
SHEET TITLE: DEMO ELECTRICAL POWER PLAN - CENTRAL PLANT
SHEET NUMBER: E2.11



1 **COMPOSITE ELECTRICAL POWER PLAN**
1/8" = 1'-0"

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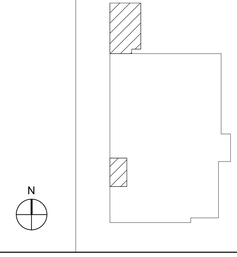
PROJECT NUMBER 260018.000

SHEET TITLE:
COMPOSITE ELECTRICAL POWER PLAN

SHEET NUMBER:
E2.21

KEY PLAN



N

ELECTRICAL KEYED NOTES

E3.2 PROVIDE POWER FOR CHILLER CONTROLS. WIRE AND CONNECT TO CHILLER CONTROL PANEL AS REQUIRED. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

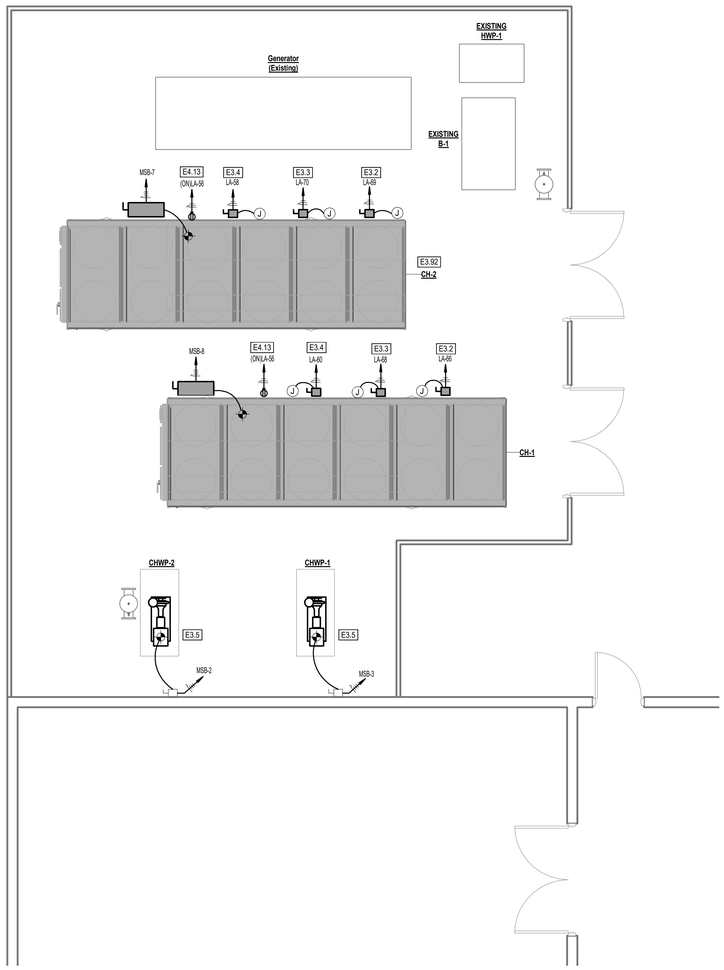
E3.3 PROVIDE POWER FOR CHILLER EVAPORATOR HEATER. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH DIVISION 23 PRIOR TO ROUGH-IN.

E3.4 PROVIDE POWER FOR CHILLER FREEZE PROTECTION. REUSE EXISTING FREEZE PROTECTION CIRCUIT. PROVIDE NEW BRANCH CIRCUIT (CONDUIT/WIRE) BACK TO PANEL. CIRCUIT NUMBER SHOWN FOR REFERENCE ONLY. FIELD VERIFY CIRCUIT NUMBER. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH DIVISION 23 PRIOR TO ROUGH-IN.

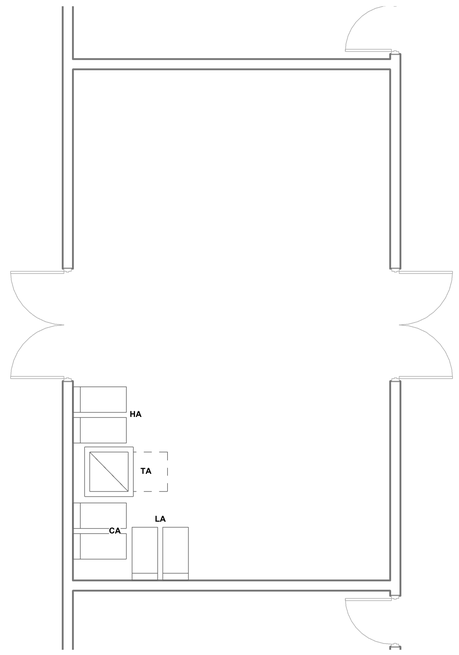
E3.5 EXISTING CHILLED WATER PUMP TO BE REPLACED WITH NEW AS ALTERNATE #4. RE-USE EXISTING CIRCUIT NUMBER VACATED BY DEMOLISHED CHWP FOR NEW CHWP. PUMP STARTER TO REMAIN. CIRCUIT NUMBER SHOWN FOR REFERENCE ONLY. FIELD VERIFY CIRCUIT NUMBER. COORDINATE WITH MECHANICAL CONTRACTOR.

E3.92 RELOCATE UNDERGROUND ELECTRICAL CONNECTIONS OF EXISTING CHILLER 2 TO PROPOSED LOCATION OF ELECTRICAL CONNECTION OF NEW CHILLER. EXTEND EXISTING RACEWAY FOR NEW CHILLER CONNECTION AND SAW CUT CONCRETE AND INFILL AS REQUIRED. ELECTRICAL CONTRACTOR TO FAMILIARIZE ALL EXISTING CONDITIONS AND EXACT PLACEMENT OF NEW CHILLER CONNECTION. COORDINATE WITH CHILLER MANUFACTURER'S REQUIREMENTS PRIOR TO RE-CONNECTION. INSTALL PER 2023 N.E.C.

E4.13 PROVIDE WP/GFCI RECEPTACLE. CONNECT TO EXISTING CIRCUIT SERVING RECEPTACLES IN THIS AREA. CIRCUIT NUMBER SHOWN FOR REFERENCE ONLY, FIELD VERIFY CIRCUIT NUMBER.



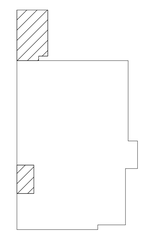
1 **ELECTRICAL POWER PLAN - CENTRAL PLANT**
1/4" = 1'-0"



2 **ENLARGED ELECTRICAL POWER PLAN - ELECTRICAL/MECHANICAL RM**
1/4" = 1'-0"

N

KEY PLAN



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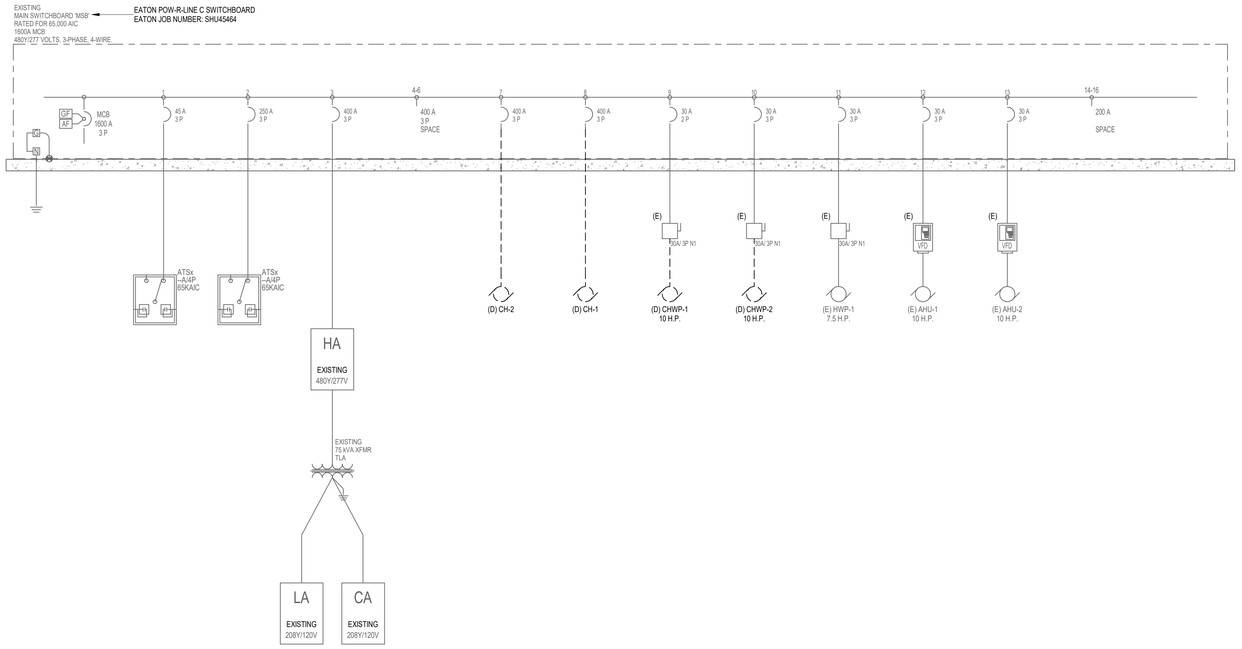
PROJECT NUMBER 260018.000

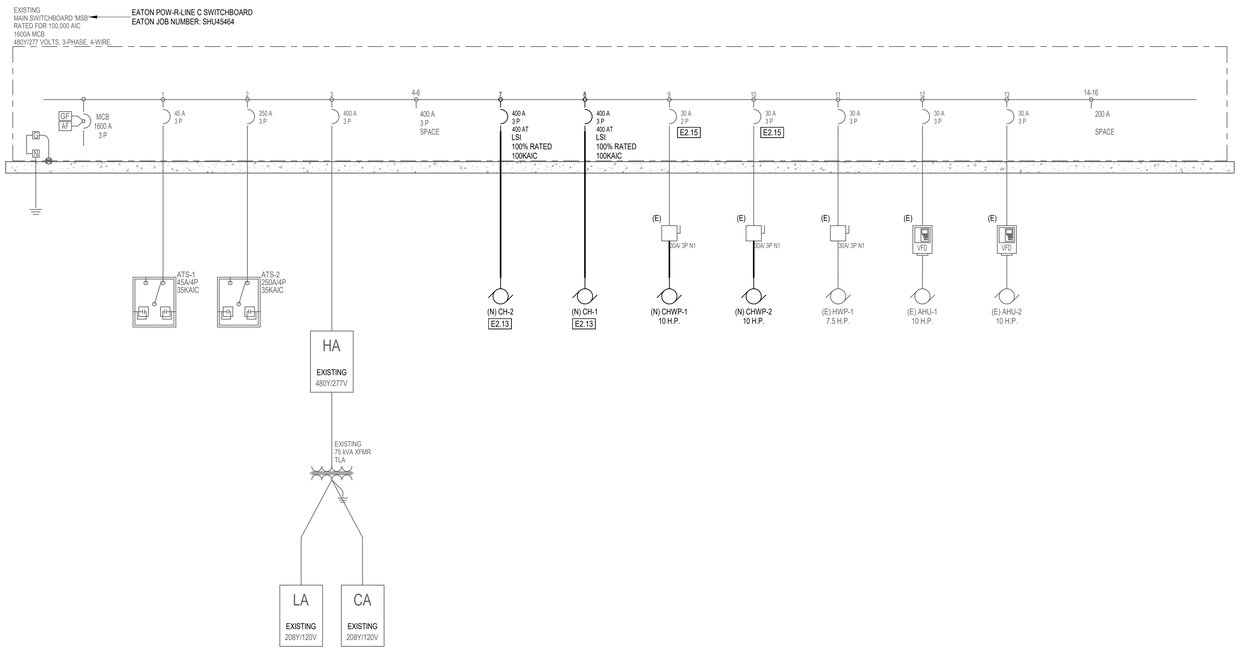
SHEET TITLE: ELECTRICAL POWER PLAN - CENTRAL PLANT

SHEET NUMBER: E2.22



1 EXISTING ELECTRICAL ONE LINE DIAGRAM

NOT TO SCALE



2 PROPOSED ELECTRICAL ONE LINE DIAGRAM

NOT TO SCALE

ONE-LINE DIAGRAM GENERAL NOTES:

B. CONTRACTOR SHALL UTILIZE THE MANUFACTURER OF ELECTRICAL EQUIPMENT TO PROVIDE A SHORT CIRCUIT AND ARC FLASH STUDY OF THE ENTIRE ELECTRICAL SYSTEM.

1. CONTRACTOR SHALL SUBMIT FULL STUDY PRIOR TO RELEASE OF ELECTRICAL EQUIPMENT FOR MANUFACTURER TO ENSURE EQUIPMENT COMPLIES WITH ALL STUDIES. STUDIES SHALL BE SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER.
2. PROVIDE DATA TO ENSURE SHORT CIRCUIT INTERRUPTING RATINGS OF EQUIPMENT IS GREATER THAN FAULT CURRENT AVAILABLE AT EQUIPMENT. SERIES RATINGS MAY BE USED EXCEPT FOR SWITCHBOARDS AND DISTRIBUTION PANELS. SWITCHBOARDS AND DISTRIBUTION PANELS SHALL BE FULLY RATED. WHERE SERIES RATINGS ARE UTILIZED, EQUIPMENT SHALL BEAR BLUE LABELS INDICATING SERIES RATED EQUIPMENT ON THE EXTERIOR OF EACH ENCLOSURE.
3. ARC FLASH STUDY SHALL PROVIDE ARC INCIDENT ENERGY LEVELS, ARC FLASH BOUNDARY, AND PPE INFORMATION TO BE PRINTED AND APPLIED TO EACH EQUIPMENT IN THE SYSTEM. PROVIDE EQUIPMENT INTERRUPTING DATA AS PART OF STUDY.
4. REFER TO SPECIFICATIONS SECTION 26.05.73.

C. PROVIDE METERING AS REQUIRED BY ELECTRIC UTILITY COMPANY STANDARDS AND REQUIREMENTS WHICH MAY INCLUDE SELF-CONTAINED METERS AND SOCKETS, CURRENT TRANSFORMERS (CTs) AND CT ENCLOSURES, BUSSED CT ENCLOSURES, TRANSOCKETS, METER MODULES, AND BUSSED GUTTERS AND METER ASSEMBLIES.

D. CONTRACTOR SHALL INSTALL FEEDERS BASED ON THE OVERCURRENT DEVICE RATING UNLESS OTHERWISE NOTED. CONTRACTOR SHALL REFER TO THE FEEDER SCHEDULE TO OBTAIN AND INSTALL THE FEEDERS REQUIRED.

E. SERVICE EQUIPMENT SHALL BE LEGIBLY MARKED IN THE FIELD WITH THE MAXIMUM AVAILABLE FAULT CURRENT AT THE TIME OF INSTALLATION AND CALCULATION. THE LABEL SHALL BE 2" X 3" IN SIZE AND SHALL BE BLUE LETTERING ON A CONTRASTING BACKGROUND. THIS LABEL SHALL ALSO INCLUDE THE DATE OF THE CALCULATION.

F. PRIOR TO INSTALLATION OF UNDERGROUND FEEDERS, THE ELECTRICAL CONTRACTOR SHALL SUBMIT AN UNDERGROUND ROUTING PLAN TO THE ENGINEER OF RECORD., INDICATING THE EXACT ROUTING PATH FOR ALL UNDERGROUND CONDUIT. INDICATE STUB-UP LOCATIONS, SIZE AND QUANTITY OF CONDUIT. ALL ELECTRICAL PANELS AND EQUIPMENT SHALL BE SHOWN ON THIS PLAN FOR REFERENCE OF CONDUIT TERMINATION.

G. CONTRACTOR SHALL COORDINATE NEW ELECTRICAL SERVICE WITH UTILITY COMPANY. PROVIDE CONDUIT, TRANSFORMER PAD, AND TAP BOX, WHERE REQUIRED. ALL NEW UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY STANDARDS.

☐ ELECTRICAL KEYED NOTES

E2.13 REPLACE EXISTING CHILLER WITH NEW. PROVIDE NEW FEEDER CONDUIT AND WIRE. COORDINATE WITH MECHANICAL CONTRACTOR.
- FOR NEW CHILLER ALTERNATE 1A, DEMOLISH EXISTING BREAKER AND REPLACE WITH NEW 350A/3P, 480V BREAKER. PROVIDE NEW WIRE AND REUSE EXISTING CONDUIT BACK TO PANEL. EXTEND EXISTING CONDUIT AS REQUIRED TO NEW CHILLER ELECTRICAL CONNECTION. COORDINATE WITH MECHANICAL CONTRACTOR.
- FOR NEW CHILLER ALTERNATE 1B, DEMOLISH EXISTING BREAKER AND REPLACE WITH NEW 350A/3P, 480V BREAKER. PROVIDE NEW WIRE AND REUSE EXISTING CONDUIT BACK TO PANEL. EXTEND EXISTING CONDUIT AS REQUIRED TO NEW CHILLER ELECTRICAL CONNECTION. COORDINATE WITH MECHANICAL CONTRACTOR.
- FOR NEW CHILLER ALTERNATE 1C, DEMOLISH EXISTING BREAKER AND REPLACE WITH NEW 300A/3P, 480V BREAKER. PROVIDE NEW WIRE AND REUSE EXISTING CONDUIT BACK TO PANEL. EXTEND EXISTING CONDUIT AS REQUIRED TO NEW CHILLER ELECTRICAL CONNECTION. COORDINATE WITH MECHANICAL CONTRACTOR.
- FOR NEW CHILLER ALTERNATE 2A, RE-USE EXISTING CIRCUIT BREAKER VACATED BY DEMOLISHED CHILLERS. FIELD VERIFY CIRCUIT NUMBER. PROVIDE NEW WIRE AND REUSE EXISTING CONDUIT BACK TO PANEL. EXTEND EXISTING CONDUIT AS REQUIRED TO NEW CHILLER ELECTRICAL CONNECTION. COORDINATE WITH MECHANICAL CONTRACTOR.
- FOR NEW CHILLER ALTERNATE 2B, DEMOLISH EXISTING BREAKER AND REPLACE WITH NEW 350A/3P, 480V BREAKER. PROVIDE NEW WIRE AND REUSE EXISTING CONDUIT BACK TO PANEL. EXTEND EXISTING CONDUIT AS REQUIRED TO NEW CHILLER ELECTRICAL CONNECTION. COORDINATE WITH MECHANICAL CONTRACTOR.
- FOR NEW CHILLER ALTERNATE 2C, DEMOLISH EXISTING BREAKER AND REPLACE WITH NEW 350A/3P, 480V BREAKER. PROVIDE NEW WIRE AND REUSE EXISTING CONDUIT BACK TO PANEL. EXTEND EXISTING CONDUIT AS REQUIRED TO NEW CHILLER ELECTRICAL CONNECTION. COORDINATE WITH MECHANICAL CONTRACTOR.
- FOR NEW CHILLER ALTERNATE 3A, RE-USE EXISTING CIRCUIT BREAKER VACATED BY DEMOLISHED CHILLERS. FIELD VERIFY CIRCUIT NUMBER. PROVIDE NEW WIRE AND REUSE EXISTING CONDUIT BACK TO PANEL. EXTEND EXISTING CONDUIT AS REQUIRED TO NEW CHILLER ELECTRICAL CONNECTION. COORDINATE WITH MECHANICAL CONTRACTOR.
- FOR NEW CHILLER ALTERNATE 3B, DEMOLISH EXISTING BREAKER AND REPLACE WITH NEW 350A/3P, 480V BREAKER. PROVIDE NEW WIRE AND REUSE EXISTING CONDUIT BACK TO PANEL. EXTEND EXISTING CONDUIT AS REQUIRED TO NEW CHILLER ELECTRICAL CONNECTION. COORDINATE WITH MECHANICAL CONTRACTOR.

E2.15 REPLACE EXISTING CHWP WITH NEW AS PART OF ALTERNATE. BREAKER AND PUMP STARTER TO REMAIN. PROVIDE NEW WIRE AND REUSE EXISTING CONDUIT BACK TO PUMP STARTER.

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DATE: 03/06/2026

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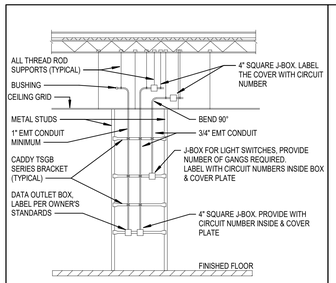
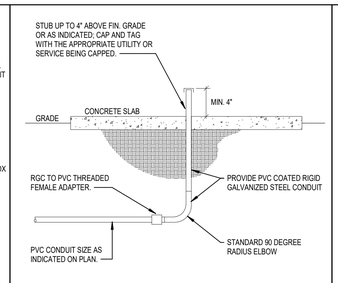
PROJECT NUMBER 260018.000

SHEET TITLE: ELECTRICAL ONE-LINE DIAGRAM

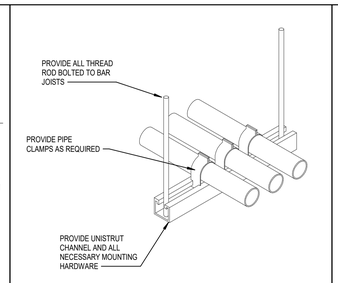
SHEET NUMBER: E4.01



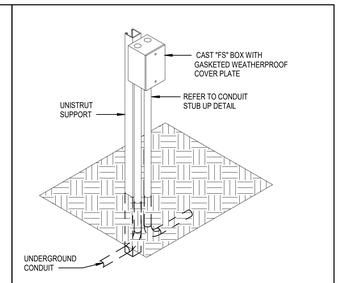
4 CONDUIT ROUGH-IN 1 E5602



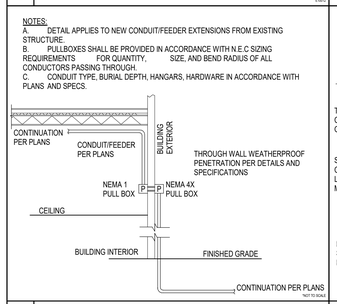
3 CONDUIT STUB-UP E5602



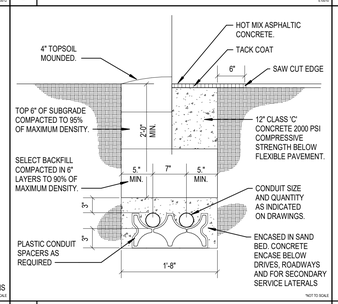
2 UNISTRUT CONDUIT E5602



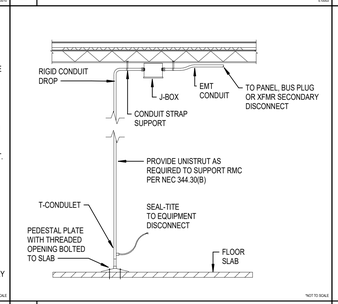
1 JUNCTION BOX MOUNTING E5602



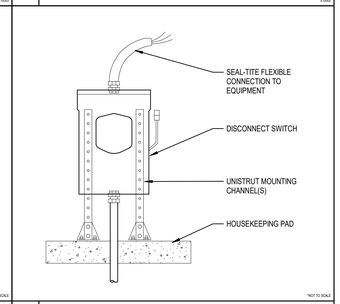
8 EXISTING BUILDING PENETRATION E5602



7 CONDUIT BURIAL E5602



6 RIGID CONDUIT DROP TO EQ. DISCONNECT E2602



5 DISCONNECT SWITCH MOUNTING AT CONCRETE PAD E1614

Load Analysis - Tomball ISD Chiller Pkg 1 Tech Bldg

480 / 277 , 3 -PHASE, 4 -WIRE

Date: 2/19/2026

DESCRIPTION			NEC	KVA
EXISTING:				
EXISTING BUILDING LOAD	654,000	VA		654.0
DEMOLISHED LOAD:				
CHILLER 1	-211,000	VA		-211.0
CHILLER 2	-211,000	VA		-211.0
CHWP-1,2	-23,268	VA		-23.3
NEW LOADS:				
HVAC CONTROLS:	1,000	VA		1.0
HVAC FREEZE PROTECTION:	5,500	VA		5.5
NEW HVAC LOADS:				
COOLING (CHILLERS)=	412,180	VA		412.2
CHWP-1,2	11,634	VA x 2		23.3
		TOTAL =		650.7
		TOTAL AMPS:		782.6
		SERVICE SIZE:		1600.0
		SPARE AMPACITY:		817.4

FEEDER SCHEDULE

COPPER ONLY

RATING	SETS	CONDUCTOR SIZE	CONDUIT
30A	1	#10, 1#10 G.	3/4"
40A	1	#8, 1#10 G.	1"
50A	1	#8, 1#10 G.	1"
60A	1	#6, 1#10 G.	1"
70A	1	#4, 1#8 G.	1 1/4"
80A	1	#4, 1#8 G.	1 1/4"
90A	1	#3, 1#8 G.	1 1/4"
100A	1	#3, 1#6 G.	1 1/2"
125A	1	#1, 1#6 G.	1 1/2"
150A	1	#1/0, 1#6 G.	1 1/2"
175A	1	#2/0, 1#6 G.	2"
200A	1	#3/0, 1#6 G.	2"
225A	1	#4/0, 1#4 G.	2 1/2"
250A	1	#250, 1#4 G.	2 1/2"
300A	1	#350, 1#4 G.	3"
350A	1	#500, 1#3 G.	3 1/2"
400A	1	#600, 1#3 G.	4"
450A	2	#4/0, 1#2 G.	2 1/2"
500A	2	#250, 1#2G.	2 1/2"
600A	2	#350, 1#1G.	3"
700A	2	#500, 1#1/0G.	4"
800A	2	#600, 1#1/0G.	4"
1000A	3	#500, 1#2/0G.	4"
1200A	4	#350, 1#3/0G.	3"
1600A	4	#600, 1#4/0G.	4"
	5	#500, 1#4/0G.	4"
2000A	5	#600, 1#250 G.	4"
	6	#500, 1#250 G.	4"
2500A	6	#600, 1#350 G.	4"
	7	#500, 1#350 G.	4"
3000A	8	#500, 1#400 G.	4"
3500A	9	#600, 1#500 G.	4"
	10	#500, 1#500 G.	4"
4000A	10	#600, 1#500 G.	4"
	11	#500, 1#500 G.	4"
5000A	12	#600, 1#750 G.	4"
	14	#500, 1#750 G.	4"

1. ELECTRICAL CONTRACTOR SHALL PROVIDE THE NUMBER OF LUGS AND PROPER LUG SIZES TO ACCEPT CONDUCTOR SIZES SHOWN.
2. GROUND NOT REQUIRED AT SERVICE LATERAL.

1-PHASE 3-WIRE FEEDER SCHEDULE

COPPER ONLY

RATING	SETS	CONDUCTOR SIZE	CONDUIT
30A	1	3#10, 1#10 G.	3/4"
40A	1	3#8, 1#10 G.	3/4"
50A	1	3#8, 1#10 G.	3/4"
60A	1	3#6, 1#10 G.	1"
70A	1	3#4, 1#8 G.	1"
80A	1	3#4, 1#8 G.	1"
90A	1	3#3, 1#8 G.	1 1/4"
100A	1	3#3, 1#8 G.	1 1/4"
125A	1	3#1, 1#6 G.	1 1/4"
150A	1	3#1/0, 1#6 G.	1 1/2"
175A	1	3#2/0, 1#6 G.	1 1/2"
200A	1	3#3/0, 1#6 G.	2"
225A	1	3#4/0, 1#4 G.	2"
250A	1	3#250, 1#4 G.	2 1/2"
300A	1	3#350, 1#4 G.	2 1/2"
350A	1	3#500, 1#3 G.	3"
400A	1	3#600, 1#3 G.	3 1/2"
450A	2	3#4/0, 1#2 G.	2"
500A	2	3#250, 1#2G.	2 1/2"
600A	2	3#350, 1#1G.	3"
700A	2	3#500, 1#1/0G.	3 1/2"
800A	2	3#600, 1#1/0G.	3 1/2"
1000A	3	3#500, 1#2/0G.	3"
1200A	4	3#350, 1#3/0G.	3"
1600A	4	3#600, 1#4/0G.	3 1/2"
	5	3#500, 1#4/0G.	3"
2000A	5	3#600, 1#250G.	3 1/2"
	6	3#500, 1#250G.	3"
2500A	6	3#600, 1#350G.	3 1/2"
	7	3#500, 1#350G.	3 1/2"
3000A	8	3#500, 1#400G.	3 1/2"
3500A	9	3#600, 1#500G.	3 1/2"
	10	3#500, 1#500G.	3 1/2"
4000A	10	3#600, 1#500G.	3 1/2"
	11	3#500, 1#500G.	3 1/2"

1. ELECTRICAL CONTRACTOR SHALL PROVIDE THE NUMBER OF LUGS AND PROPER LUG SIZES TO ACCEPT CONDUCTOR SIZES SHOWN.
2. GROUND NOT REQUIRED AT SERVICE LATERAL.

Panelboard LA

10000 A AIC Rating
New
X Existing

120/208 Wye Volt, 3 Phase, 4 Wire — Mains Type: 150 A MCB -- — LUGS: -- — Mounting Stye: SURFACE
2 Section — MCB — 150 A BUS (Copper) — --
Type 1 -Nema Rating — --

NOTE	LOAD (VA)	TYPE	DESCRIPTION	WIRE	CB	CKT	CKT	CB	WIRE	DESCRIPTION	TYPE	LOAD (VA)	NOTE
1	900 VA	R	EXISTING RECEPTACLES	12	20 A	1	2	20 A	12	EXISTING RECEPTACLES	R	900 VA	1
1	720 VA	R	EXISTING RECEPTACLES	12	20 A	3	4	20 A	12	EXISTING RECEPTACLES	R	1010 VA	1
1	720 VA	R	EXISTING RECEPTACLES	12	20 A	5	6	20 A	12	EXISTING RECEPTACLES	R	720 VA	1
1	540 VA	R	EXISTING RECEPTACLES	12	20 A	7	8	20 A	12	EXISTING RECEPTACLES	R	1010 VA	1
1	180 VA	R	EXISTING RECEPTACLES	12	20 A	9	10	20 A	12	EXISTING RECEPTACLES	R	1010 VA	1
1	1010 VA	R	EXISTING RECEPTACLES	12	20 A	11	12	20 A	12	EXISTING RECEPTACLES	R	900 VA	1
1	540 VA	R	EXISTING RECEPTACLES	12	20 A	13	14	20 A	12	EXISTING RECEPTACLES	R	1010 VA	1
1	540 VA	R	EXISTING RECEPTACLES	12	20 A	15	16	20 A	12	EXISTING RECEPTACLES	R	540 VA	1
1	1010 VA	R	EXISTING RECEPTACLES	12	20 A	17	18	20 A	12	EXISTING RECEPTACLES	R	720 VA	1
1	1600 VA	R	EXISTING RECEPTACLES	12	20 A	19	20	20 A	12	EXISTING RECEPTACLES	R	720 VA	1
1	1000 VA	R	EXISTING RECEPTACLES	12	20 A	21	22	20 A	12	EXISTING RECEPTACLES	R	720 VA	1
	0 VA	--	Spare	12	20 A	23	24	20 A	12	EXISTING RECEPTACLES	R	900 VA	1
1	1010 VA	R	EXISTING RECEPTACLES	12	20 A	25	26	20 A	12	EXISTING RECEPTACLES	R	540 VA	1
1	900 VA	R	EXISTING RECEPTACLES	12	20 A	27	28	20 A	12	EXISTING RECEPTACLES	R	900 VA	1
1	720 VA	R	EXISTING RECEPTACLES	12	20 A	29	30	20 A	12	EXISTING RECEPTACLES	R	1010 VA	1
1	1010 VA	R	EXISTING RECEPTACLES	12	20 A	31	32	20 A	12	EXISTING RECEPTACLES	R	1010 VA	1
1	1010 VA	R	EXISTING RECEPTACLES	12	20 A	33	34	20 A	12	EXISTING RECEPTACLES	R	1440 VA	1
1	720 VA	R	EXISTING RECEPTACLES	12	20 A	35	36	20 A	12	EXISTING RECEPTACLES	R	540 VA	1
1	1260 VA	R	EXISTING RECEPTACLES	12	20 A	37	38	20 A	12	EXISTING RECEPTACLES	R	540 VA	1
1	900 VA	R	EXISTING RECEPTACLES	12	20 A	39	40	20 A	12	EXISTING RECEPTACLES	R	540 VA	1
1	540 VA	R	EXISTING RECEPTACLES	12	20 A	41	42	20 A	12	EXISTING RECEPTACLES	R	540 VA	1
1	1200 VA	R	EXISTING LOAD	12	20 A	43	44	20 A	12	EXISTING RECEPTACLES	R	360 VA	1
1	1200 VA	R	EXISTING LOAD	12	20 A	45	46	20 A	12	EXISTING RECEPTACLES	R	360 VA	1
1	1200 VA	R	EXISTING LOAD	12	20 A	47	48	20 A	12	EXISTING OVERHEAD DOOR	R	500 VA	1
1	1200 VA	R	EXISTING LOAD	12	20 A	49	50	20 A	12	EXISTING LOAD	R	1000 VA	1
1	1200 VA	M	EXISTING EF-1	12	20 A	51	52	20 A	12	EXISTING LIGHTING	R	1200 VA	1
1	1200 VA	M	EXISTING EF-2	12	20 A	53	54	20 A	12	EXISTING BOILER B-1	M	1200 VA	1
1	1200 VA	M	EXISTING EF-3	12	20 A	55	56	20 A	12	WP/GFCI MECH. YARD...	R	360 VA	1
1	1200 VA	M	EXISTING EF-4	12	20 A	57	58	20 A	12	CHILLER FREEZE...	M	1250 VA	1
1	1200 VA	M	EXISTING SF-1	12	20 A	59	60	20 A	12	CHILLER FREEZE...	M	1250 VA	1
1	1200 VA	M	EXISTING SF-2	12	20 A	61	62	20 A	12	EXISTING BMCS PANEL	R	500 VA	1
1	1600 VA	R	EXISTING LOAD	12	20 A	63	64	20 A	12	EXISTING LIGHTING	L	500 VA	1
1	1600 VA	R	EXISTING LOAD	12	20 A	65	66	20 A	12	CHILLER CONTROLS	M	500 VA	2
1	0 VA	--	Spare	12	20 A	67	68	20 A	12	CHILLER EVAPORATOR...	M	1500 VA	2
2	500 VA	M	CHILLER CONTROLS	12	20 A	69	70	20 A	12	CHILLER EVAPORATOR...	M	1500 VA	2
	0 VA	--	Spare	12	20 A	71	72	20 A	12	Spare	--	0 VA	
	0 VA	--	Spare	12	20 A	73	74	20 A	12	Spare	--	0 VA	
	0 VA	--	Spare	12	20 A	75	76	20 A	12	Spare	--	0 VA	
	0 VA	--	Spare	12	20 A	77	78	20 A	12	Spare	--	0 VA	
	0 VA	--	Spare	12	20 A	79	80	20 A	12	Spare	--	0 VA	
	0 VA	--	Spare	12	20 A	81	82	20 A	12	Spare	--	0 VA	
	0 VA	--	Spare	12	20 A	83	84	20 A	12	Spare	--	0 VA	

NEC REF:	Load Type	Conn.	Fct.	Diversity	NEC REF:	Load Type	Conn.	Fct.	Diversity
220.47	(R)Receptacle	46330 VA	60.79%	28165 VA	210.20A	(L)Lighting	500 VA	125.00%	625 VA
220.56	(K)Kitchen					(EL)Ext. Ltg.			
220.60	(C)Cooling			0 VA	620.14	(E)Elevators			
220.60	(H)Heating			0 VA		(WH)Wat. Htr.			
220.60	(F)Fans				220.50	(MT)Lrg. Motor			
	(M)Misc.	14900 VA	100.00%	14900 VA		(SP)Sub Pnl.			
					630.11B	(W) Welders			

Total Connected Load: 61730 VA = 171 A
Total Load (Diversified): 43690 VA = 121 A

Location of Panel: MECHANICAL/ELECTRICAL 119

EXISTING PANEL SCHEDULE NOTES:
1. EXISTING BREAKER TO REMAIN.
2. UTILIZE EXISTING SPARE BREAKER TO ACCOMMODATE NEW LOAD.

DBR
SERVICE | QUALITY | INTEGRITY | SUSTAINABILITY

REVISION:

No.	DATE	DESCRIPTION
	03/06/2026	ISSUE FOR PROPOSAL

SEAL:

ADAM C. JONES
117000
LICENSED
PROFESSIONAL ENGINEER

Tomball ISD Technology Building - Chiller Pkg 1
1302 Keefer Road
Tomball, Texas 77375

TBPE Firm Registration No. 2234

DATE: 03/06/2026

DRAWN BY: DBR

CHECKED BY: DBR

PROJECT NUMBER 260018.000

SHEET TITLE: ELECTRICAL DETAILS AND SCHEDULES

SHEET NUMBER: E6.01

3/4/2026 11:56:41 AM
Autodesk Docs://260018.000_Tomball ISD-Chiller Pkg 1-Tech Bldg/260018.000_Tomball ISD-Chiller Pkg 1-Tech Bldg_MEP25.rvt