SALASO'BRIEN
| expect a difference |
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2022-03503-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART FOUR
CSP #23.06

REGINA HOWELL ELEMENTARY SCHOOL
5850 REGINA LN., BEAUMONT, TX 77706

CURTIS ELEMENTARY SCHOOL
6225 NORTH CIRCUIT DR., BEAUMONT, TX 77706

ODOM ACADEMY
2550 WEST VIRGINA ST., BEAUMONT, TX 77703

DISHMAN ELEMENTARY SCHOOL
3475 CHAMPIONS DR., BEAUMONT, TX 77707

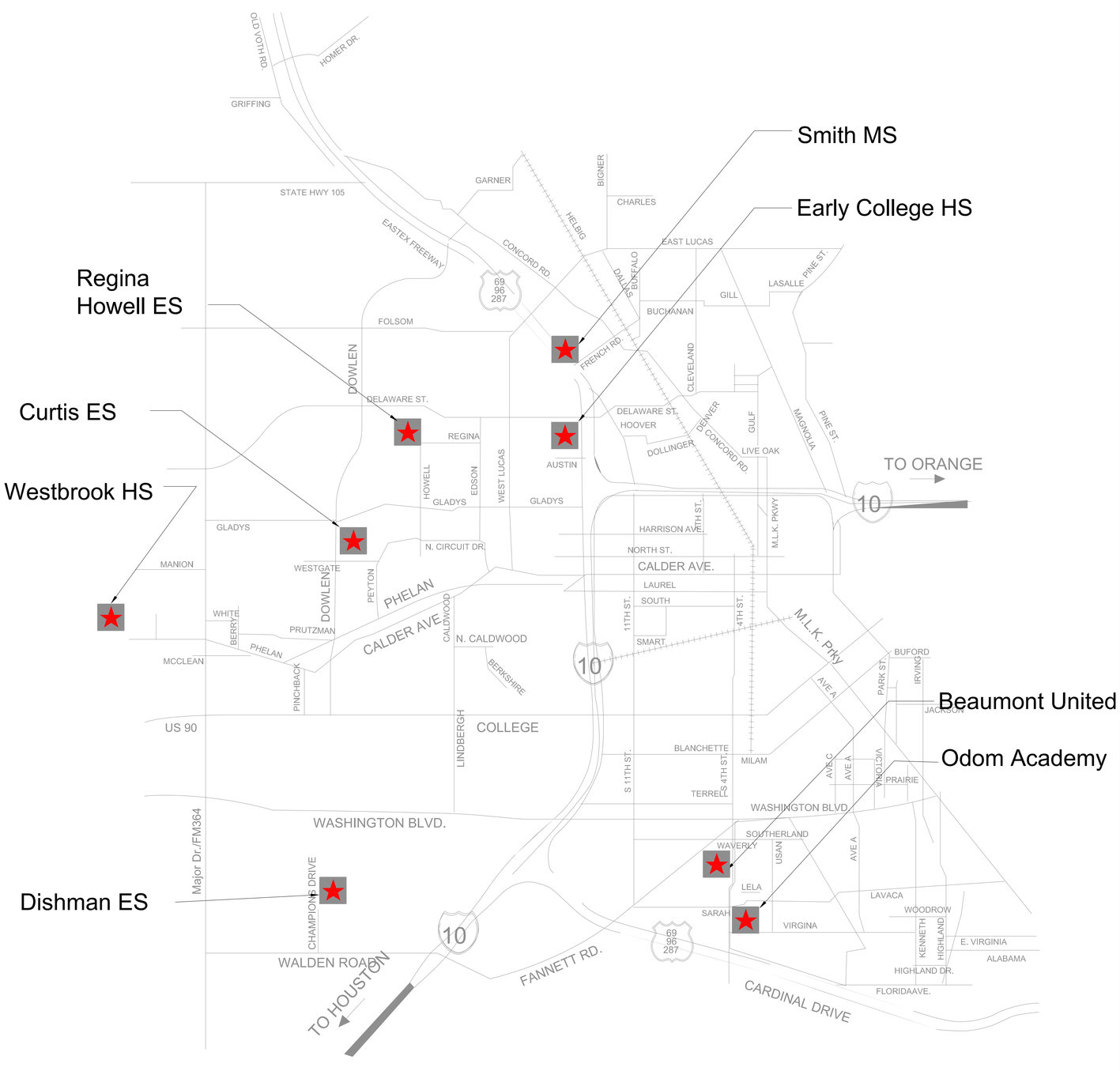
SMITH MIDDLE SCHOOL
4415 CONCORD DR., BEAUMONT, TX 77703

AUSTIN EARLY COLLEGE
3410 AUSTIN ST., BEAUMONT, TX 77706

BEAUMONT UNITED HIGH SCHOOL
3443 FANNETT RD., BEAUMONT, TX 77705

WEST BROOK HIGH SCHOOL
8750 PHELAN BLVD, BEAUMONT, TX 77706

SITE LOCATIONS





LIST OF DRAWINGS:

CS-1 COVER SHEET - LIST OF DRAWINGS
CS-2 COVER SHEET - SITES

REGINA ELEMENTARY SCHOOL
M0.1 MECHANICAL DEMOLITION FLOOR PLAN - REGINA ES
M1.1 MECHANICAL FLOOR PLAN - REGINA ES
M2.1 MECHANICAL DETAILS AND SCHEDULES - REGINA ES
E1.1 ELECTRICAL FLOOR PLANS - REGINA ES

CURTIS ELEMENTARY SCHOOL
M0.1 MECHANICAL DEMOLITION FLOOR PLAN - CURTIS ES
M1.1 MECHANICAL FLOOR PLAN - CURTIS ES
M2.1 MECHANICAL DETAILS AND SCHEDULES - CURTIS ES
E1.1 ELECTRICAL FLOOR PLANS - CURTIS ES

ODOM ACADEMY
M1.1 MECHANICAL FLOOR PLANS - ODOM ACADEMY
M2.1 MECHANICAL DETAILS AND SCHEDULES - ODOM ACADEMY
E1.1 ELECTRICAL FLOOR PLANS - ODOM ACADEMY

DISHMAN ELEMENTARY SCHOOL
M0.1 MECHANICAL DEMOLITION FLOOR PLAN - DISHMAN ES
M1.1 MECHANICAL FLOOR PLAN - DISHMAN ES
M2.1 MECHANICAL DETAILS AND SCHEDULES - DISHMAN ES
E1.1 ELECTRICAL FLOOR PLANS - DISHMAN ES

SMITH MIDDLE SCHOOL
M1.1 MECHANICAL FLOOR PLANS - SMITH MS
M2.1 MECHANICAL DETAILS AND SCHEDULES - SMITH MS
E1.1 ELECTRICAL FLOOR PLANS - SMITH MS

AUSTIN EARLY COLLEGE
M1.1 MECHANICAL FLOOR PLANS - AUSTIN EARLY COLLEGE
M2.1 MECHANICAL DETAILS AND SCHEDULES - AUSTIN EARLY COLLEGE
E1.1 ELECTRICAL FLOOR PLANS - AUSTIN EARLY COLLEGE

BEAUMONT UNITED HIGH SCHOOL
M0.1 MECHANICAL DEMOLITION FLOOR PLANS - BEAUMONT UNITED HS
M1.1 MECHANICAL FLOOR PLANS - BEAUMONT UNITED HS
M2.1 MECHANICAL DETAILS AND SCHEDULES - BEAUMONT UNITED HS
E1.1 ELECTRICAL FLOOR PLANS - BEAUMONT UNITED HS
E2.1 ELECTRICAL SCHEDULES AND DETAILS - BEAUMONT UNITED HS

WESTBROOK HIGH SCHOOL
M0.1 MECHANICAL DEMOLITION FLOOR PLAN - WESTBROOK HS
M1.1 MECHANICAL FLOOR PLAN - WESTBROOK HS
M2.1 MECHANICAL DETAILS AND SCHEDULES - WESTBROOK HS
E1.1 ELECTRICAL FLOOR PLANS - WESTBROOK HS



09-09-2022

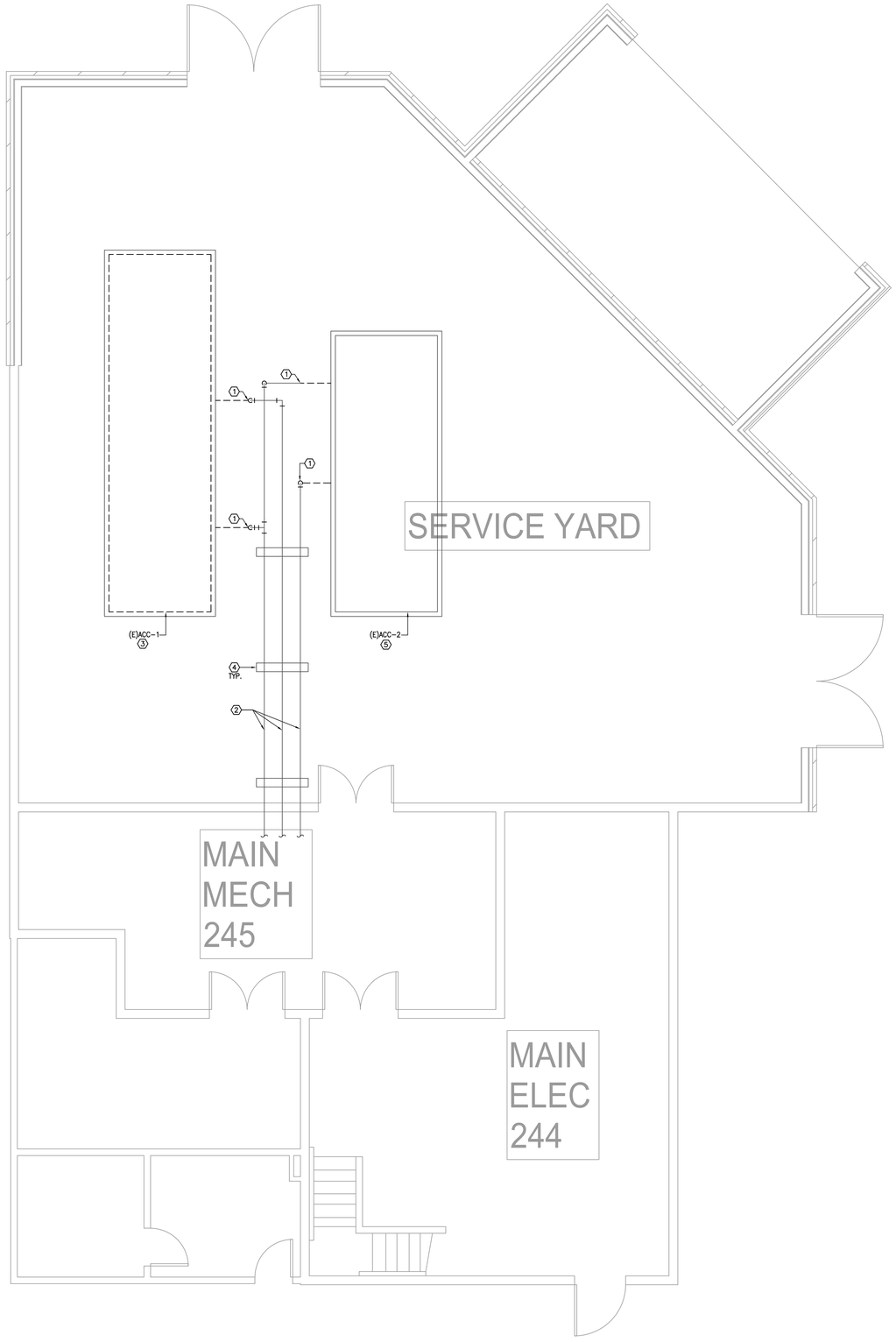
DEMOLITION GENERAL NOTES:

1. THESE CONSTRUCTION DRAWINGS ARE DIAGRAMMATIC, AND DO NOT NECESSARILY REFLECT ACTUAL DIMENSIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD-VERIFY ALL DIMENSIONS AND COORDINATE PLACEMENT OF ALL EQUIPMENT AND ROUTING OF ALL PIPING AND/OR DUCT SYSTEMS.
2. ALL MECHANICAL SYSTEMS SHOWN ON THIS PLAN ARE FROM EXISTING DRAWINGS AND PRELIMINARY FIELD WORK. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL LOCATIONS AND SIZES OF MECHANICAL SYSTEMS PRIOR TO THE START OF WORK.
3. OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL HVAC EQUIPMENT BEING REMOVED FROM THIS PROJECT. THIS INCLUDES BUT NOT LIMITED TO INTERNAL COMPONENTS OF CHILERS, VALVES, AND PIPE STANDS.

DEMOLITION KEYED NOTES:

1. REMOVE EXISTING SUPPLY AND RETURN CHILLED WATER PIPING AND ASSOCIATED VALVES UP TO POINT INDICATED. CONTRACTOR SHALL VERIFY EXISTING PIPE SIZE BEFORE DEMOLISHING.
2. EXISTING SUPPLY AND RETURN CHILLED WATER PIPING SHALL REMAIN.
3. EXISTING AIR COOLED CHILLER SHALL BE REMOVED. EXISTING CONCRETE PAD SHALL REMAIN.
4. EXISTING PIPING SUPPORTS SHALL REMAIN.
5. EXISTING AIR COOLED CHILLER SHALL REMAIN IN PLACE AND OPERATIONAL.

DEMO SYMBOL LEGEND	
RENOVATIONS	
	ITEM TO REMAIN
	ITEM TO BE REMOVED



NORTH

1 **MECHACNIAL DEMOLITION FLOOR PLAN - REGINA ES**
SCALE: 1/4" = 1'-0"

Project No: 2022-03503-00
Drawn By:
Checked By:
Date: 09-09-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912

SALAS O'BRIEN [expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2022-03503-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 4

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD Preparing Our Next Generation

BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
STATE OF TEXAS
09-09-2022

MECHANICAL DEMOLITION FLOOR PLAN - REGINA ES

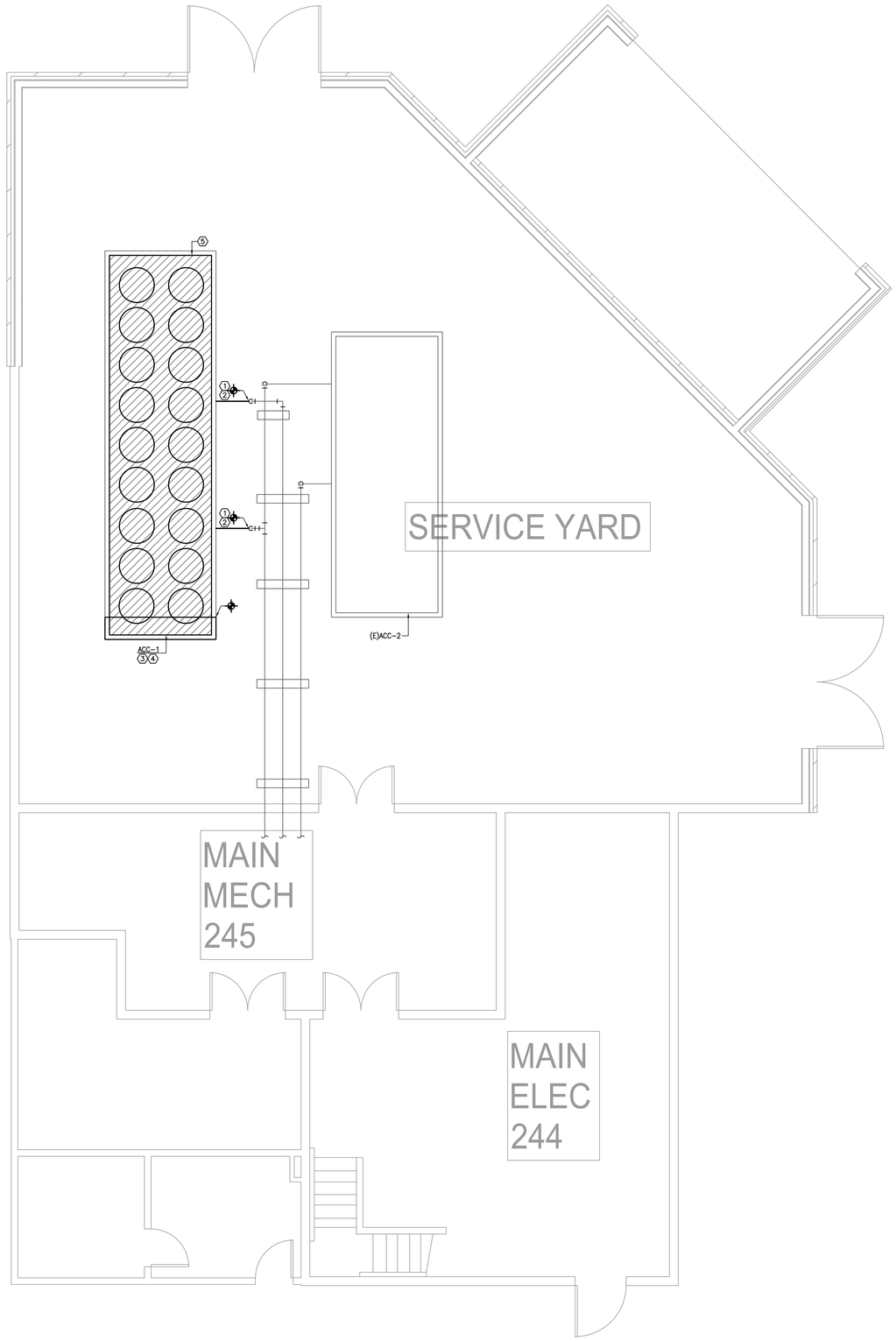
M0.1

MECHANICAL GENERAL NOTES:

1. MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL POWER REQUIREMENTS.
2. THESE CONSTRUCTION DRAWINGS ARE DIAGRAMMATIC, AND DO NOT NECESSARILY REFLECT ACTUAL DIMENSIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD-VERIFY ALL DIMENSIONS AND COORDINATE PLACEMENT OF ALL EQUIPMENT AND ROUTING OF ALL PIPING AND/OR DUCT SYSTEMS.

MECHANICAL KEYED NOTES:

1. PROVIDE OUTDOOR PIPING INSULATION AS SPECIFIED.
2. PROVIDE NEW CHW S/R PIPING AS SPECIFICED AND CONNECT TO EXISTING PIPING. RE:3/M2.1 FOR PARTIAL PIPING DIAGRAM.
3. VERIFY AIR-COOLED CHILLER SERVICE CLEARANCES WITH MANUFACTURER. COORDINATE WITH OTHER TRADES NOT TO OBSTRUCT.
4. INSTALL NEW CHILLER ON EXISTING CONCRETE PAD. EXTEND EXISTING CONCRETE PAD AS REQUIRED TO ACCOMMODATE NEW CHILLER.
5. POWER CONNECTION FOR NEW CHILLER SHALL BE AT THIS END, SAME LOCATION AS DEMOLISHED CHILLER.



NORTH

1 **MECHACNIAL FLOOR PLAN - REGINA ES**
SCALE: 1/4" = 1'-0"

Project No: 2022-03503-00
Drawn By:
Checked By:
Date: 09-09-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912

SALAS O'BRIEN [expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2022-03503-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 4

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD Preparing Our Next Generation

BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL
ENGINEER
09-09-2022

MECHANICAL FLOOR PLAN - REGINA ES

M1.1

PACKAGED AIR COOLED SCREW CHILLER

MARK	ACTUAL CAPACITY (TONS)	LEAVING WATER TEMP. (°F)	GPM	MAXIMUM WATER PRESSURE DROP (FT.)	AMBIENT AIR TEMP. (°F)	CURRENT CHARACTERISTIC	REMARKS
ACC-1	273.0	44	655.0	20.0	95.0	460/3/60	1,2,3,4

GENERAL NOTES:

1. MAXIMUM FOULING FACTOR FOR THE EVAPORATOR IS 0.0001
2. MAINTAIN MINIMUM CLEARANCES REQUIRED BY CHILLER MANUFACTURER FOR PROPER AIRFLOW TO FANS AND UNIT. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON EQUIPMENT FOR SERVICE, MAINTENANCE AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCES AS REQUIRED BY NEC.
3. CHILLER SHALL MEET OR EXCEED THE AHRI FULL-LOAD AND PART-LOAD PATH A OR PATH B EFFICIENCIES INDICATED IN THE 2015 IECC.

REMARKS:

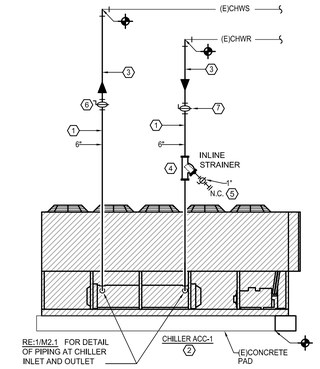
1. PROVIDE WITH LOW AMBIENT HEAD PRESSURE CONTROL.
2. PROVIDE WITH INTEGRAL MAIN ELECTRICAL DISCONNECT SWITCH.
3. PROVIDE WITH INSULATION ON ALL SUCTION LINES.
4. NEW CHILLER SHALL HAVE A MAX LENGTH OF 346".

SYMBOL LEGEND

SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
GENERAL	
(#)	KEY NOTE TAG
(#)	NOTE SPECIFIC TO DETAIL TAG
1	REVISION TAG
	NEW EQUIPMENT
PIPING	
—CWS&R—	CONDENSER WATER SUPPLY & RETURN (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—CWS—	CONDENSER WATER SUPPLY
—CWR—	CONDENSER WATER RETURN
-CHWS&R-	CHILLED WATER SUPPLY & RETURN (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—CHWS—	CHILLED WATER SUPPLY
—CHWR—	CHILLED WATER RETURN
-HWS&R-	HOT WATER FOR HYDRONIC HEATING SUPPLY & RETURN (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—HWS—	HOT WATER FOR HYDRONIC HEATING SUPPLY
—HWR—	HOT WATER FOR HYDRONIC HEATING RETURN
—D—	CONDENSATE DRAIN LINE
—AD—	AUXILLARY CONDENSATE DRAIN LINE
—RLR—	REFRIGERANT LIQUID & GAS RECIRCULATION LINE (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—RL—	REFRIGERANT LIQUID LINE
—HG—	REFRIGERANT HOT GAS LINE
—RS—	REFRIGERANT SUCTION LINE
	ELBOW UP
	ELBOW DOWN
	90° ELBOW
	45° ELBOW
	TEE
	TEE DOWN
	TEE UP
	TOP BRANCH CONNECTION
	BOTTOM BRANCH CONNECTION
	FLANGE
	CAP
	CONTINUATION
	FLOOR DRAIN (REFER TO PLUMBING DRAWINGS)
	GATE VALVE
	GLOBE VALVE
	CHECK VALVE
	BUTTERFLY VALVE
	BUTTERFLY VALVE WITH OPERATOR
	PLUG VALVE
	TWO-WAY CONTROL VALVE
	THREE-WAY CONTROL VALVE
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE
	BALL VALVE
	STRAINER
	UNION
	THERMOMETER WELL
	PETE'S PLUG
	PRESSURE GAUGE
	TEMPERATURE SENSOR IN PIPE
	VENTURI FLOW METER
	FLOW SWITCH
FM	FLOW MEASURING STATION
	EXPANSION JOINT
	FLEXIBLE CONNECTION
	GAUGE COCK
	SITE GLASS
	DIFFERENTIAL PRESSURE SENSOR
	TURBINE FLOW METER
	ANCHOR
	PIPE GUIDE
SUBSCRIPTS AND ABREVIATIONS	
AFF	ABOVE FINISHED FLOOR
BBS	BELOW BOTTOM OF STRUCTURE
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
CA	COMBUSTION AIR
CFM	CUBIC FEET PER MINUTE
EA	EXHAUST AIR
FPM	FEET PER MINUTE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
OA	OUTSIDE AIR
RA	RETURN AIR
SA	SUPPLY AIR

DEMO SYMBOL LEGEND

RENOVATIONS	
	ITEM TO REMAIN
	ITEM TO BE REMOVED

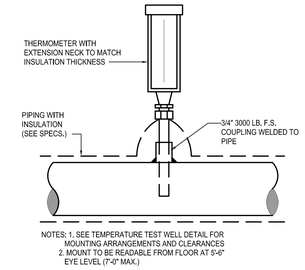


MECHANICAL KEYED NOTES

1. CONTRACTOR SHALL FIELD VERIFY EXISTING PIPE SIZES.
2. INSTALL NEW CHILLER ON EXISTING CONCRETE HOUSEKEEPING PAD, EXTEND EXISTING HOUSEKEEPING PAD AS REQUIRED TO ACCOMMODATE NEW CHILLER.
3. PROVIDE ALL OUTDOOR PIPING WITH INSULATION AND ALUMINUM JACKETING AS SPECIFIED.
4. PROVIDE INLINE STRAINER IN VERTICAL PIPE WITH 1" DRAIN LINE.
5. PROVIDE BALL VALVE WITH HOSE THREAD ADAPTER.
6. BALANCING VALVE TO BE PROVIDED WITH INFINITE POSITION CRANK OR MEMORY STOP FOR BALANCING
7. PROVIDE NEW ISOLATION VALVE.

3 CHILLED WATER PIPING DIAGRAM

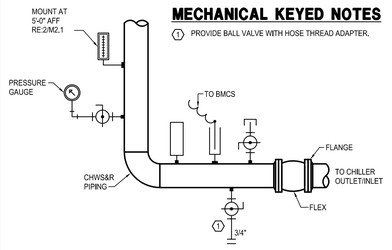
SCALE: NO SCALE



2 THERMOMETER INSTALLATION

SCALE: NONE

CP009



MECHANICAL KEYED NOTES

1. PROVIDE BALL VALVE WITH HOSE THREAD ADAPTER.

1 TYPICAL PIPING AT INLET AND OUTLET OF CHILLER

SCALE: NONE

Project No: 2022-03503-00
Drawn By: AA
Checked By: VP
Date: 09-09-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912

SALAS O'BRIEN [expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2022-03503-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 4

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD Preparing Our Next Generation



MECHANICAL DETAILS AND SCHEDULES - REGINA ES

M2.1

ELECTRICAL GENERAL NOTES:

1. UNLESS INDICATED OTHERWISE, ALL ELECTRICAL EQUIPMENT IS EXISTING TO REMAIN. ELECTRICAL EQUIPMENT INCLUDES: SWITCHBOARDS, TRANSFORMERS, PANELBOARDS, ETC...

ELECTRICAL KEYED NOTES:

1. EXISTING CHILLER ELECTRICAL STUB UP LOCATIONS/PATHWAYS TO REMAIN.
2. DISCONNECT AND REMOVE ALL ELECTRICAL TO EXISTING CHILLER, REMOVE EXISTING 480-VOLT CONDUCTORS BACK TO SOURCE, LEAVE CONDUIT IN PLACE FOR RE-USE. REMOVE 120-VOLT CIRCUIT(S) BACK TO NEAREST JUNCTION BOX, LEAVE CIRCUITRY INTACT FOR RE-CONNECTION.
3. CONNECT NEW CHILLER TO EXISTING CIRCUIT AND PULL NEW CONDUCTORS. EXTEND CONDUIT AND MAKE FINAL CONNECTION TO INTEGRAL DISCONNECT.
4. CONNECT NEW CHILLER HEATER TO EXISTING 120V CIRCUIT PRESERVED DURING DEMOLITION. EXTEND CONDUIT/WIRE AND MAKE FINAL CONNECTION. REPLACE EXISTING CIRCUIT BREAKER WITH NEW 30mA EGFCI BREAKER.
5. ROUTE 1"C. WITH PULL STRING TO NEAREST BUILDING MANAGEMENT SYSTEM CONTROL PANEL FOR CONTROL WIRING.

Project No: 2022-03503-00
Drawn By: DES
Checked By: JZ
Date: 09-09-2022
Revision Dates:

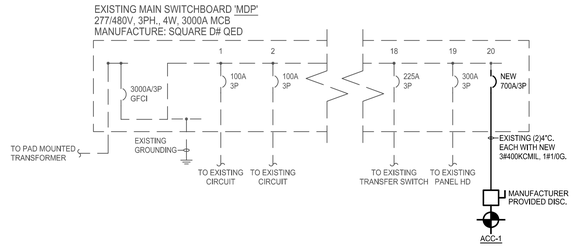
CONSULTANTS
MEP ENGINEERS
SALAS O'BRIEN 10930 W. SAM HOUSTON PKWY N., SUITE 900 HOUSTON, TX 77064 OFFICE: 281-664-1900 FAX: 281-664-1912
SALAS O'BRIEN [expect a difference] 10930 W. Sam Houston Parkway N., Suite 900 Houston, Texas 77064 281.664.1900 | Registration No. F-4111 Project No. 2022-03503-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 4

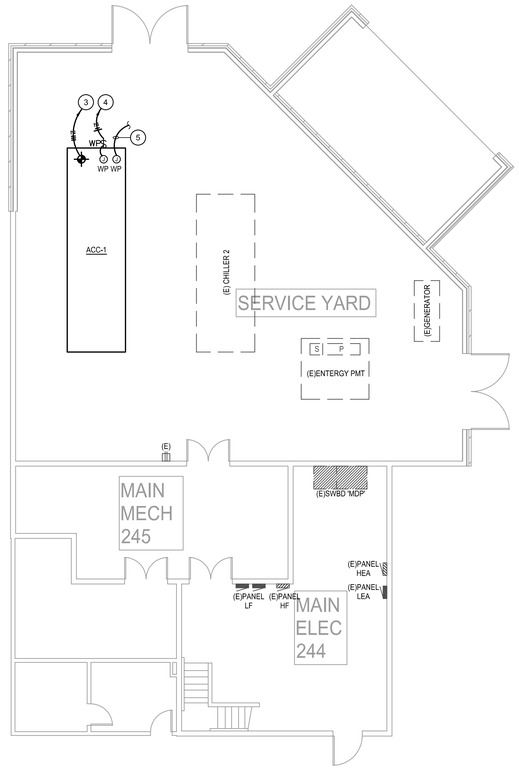
ELECTRICAL LOAD ANALYSIS: MSB 480V,3PH.,4W	
LOAD DESCRIPTION	LOAD KVA
EXISTING LOAD @ 125%	1560.0
EXISTING LOAD REMOVED	-364.9
REMAINING LOAD	1195.1
NEW:	
NEW CHILLER	421.5
TOTAL	1616.6

TOTAL / 480 $\sqrt{3}$ = 1945.4 AMPS
EXISTING 3000 AMP SERVICE

LINETYPE LEGEND	
DISCONNECT AND REMOVE EXISTING TO REMAIN	- - - - - - - - - -
NEW WORK	————

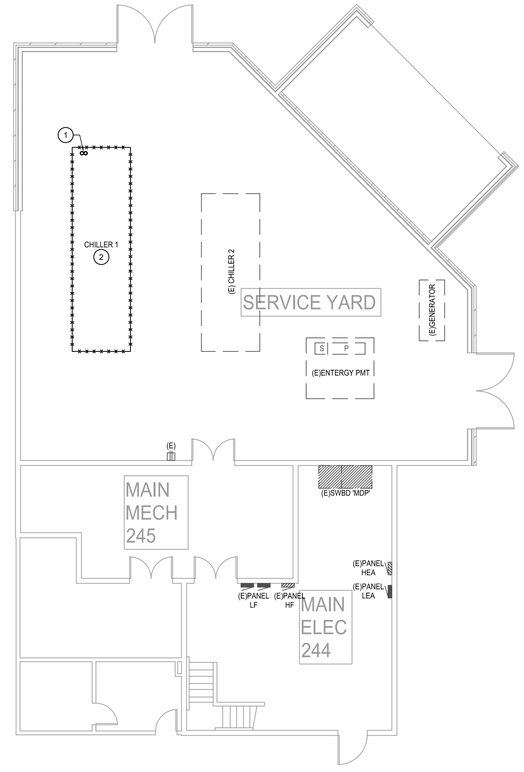


3 **PARTIAL ONE-LINE DIAGRAM**
SCALE: NONE



NORTH

2 **ELECTRICAL PLAN - REGINA ES**
SCALE: 1/8" = 1'-0"



NORTH

1 **ELECTRICAL DEMOLITION PLAN - REGINA ES**
SCALE: 1/8" = 1'-0"

SYMBOL SCHEDULE

SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
LIGHTING (LETTER DENOTES TYPE - SEE LIGHT FIXTURE SCHEDULE)	
	FLUORESCENT FIXTURE
	FLUORESCENT FIXTURE ON EMERGENCY CIRCUIT
	DOWNLIGHT FIXTURE
	LIGHT FIXTURE - WALL MOUNTED
	DOWNLIGHT FIXTURE ON EMERGENCY CIRCUIT
	LIGHT FIXTURE - WALL MOUNTED ON EMERGENCY CIRCUIT
	EXIT LIGHT-CEILING MTD WITH DIRECTIONAL ARROWS AS REQUIRED
	EXIT LIGHT-WALL MTD WITH DIRECTIONAL ARROWS AS REQUIRED
SWITCHES	
$	LINE VOLTAGE SINGLE POLE SWITCH
$3	LINE VOLTAGE 3-WAY SWITCH
$4	LINE VOLTAGE 4-WAY SWITCH
$K	LINE VOLTAGE MOMENTARY DPST KEYED SWITCH
$D	LINE VOLTAGE DIMMER SWITCH, SIZE AND TYPE AS REQUIRED
$P	LINE VOLTAGE SWITCH WITH PILOT LIGHT
$T	6-HOUR ROTARY TIMER SWITCH WITH NO HOLD U.N.O.
	PUSH BUTTON EPO SWITCH WITH COVER
$MC	LOW VOLTAGE MOMENTARY CONTACT SWITCH
$R	LOW VOLTAGE DIGITAL KEYPAD
$B	LOW VOLTAGE BUILDING MANAGEMENT (BMCS) LOCAL OVERRIDE SWITCH
	OCCUPANCY SENSOR (AUTO ON / AUTO OFF WITHIN 20-MINUTES)
	VACANCY SENSOR (MANUAL ON / AUTO OFF WITHIN 20-MINUTES)
	PHOTOCELL SENSOR
LCE	LIGHTING CONTROL SYSTEM, ('#' DENOTES TYPE - SEE LIGHTING CONTROLS SCHEDULE)
ERC	EMERGENCY LOAD CONTROL RELAY, MINIMUM 16A & 0-10V COMPATIBLE, PROVIDE U.L. 924 U.N.O.
RECEPTACLES AND OUTLETS	
	SIMPLEX RECEPTACLE
	DUPLEX RECEPTACLE
	125/250 VOLT, 1 PHASE, 3-WIRE, 20 AMPS UNLESS NOTED OTHERWISE
	DOUBLE DUPLEX IN 2-GANG BOX WITH SINGLE COVER PLATE
	250 VOLT, 1 PHASE, SPECIAL PURPOSE OUTLET, 20 AMPS UNLESS NOTED OTHERWISE
	JUNCTION BOX
	DUPLEX GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE
	DOUBLE DUPLEX GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE IN 2-GANG BOX WITH SINGLE COVER PLATE
	FLUSH FLOOR JUNCTION BOX
FACP	FIRE ALARM CONTROL PANEL
ANN	FIRE ALARM REMOTE ANNUCIATOR
MOTOR CONTROLLERS AND EQUIPMENT	
	MOTOR, MAKE FINAL MOTOR CONNECTION
	3-PHASE MOTOR, MAKE FINAL MOTOR CONNECTION
	DISCONNECT SWITCH AS REQUIRED
	COMBINATION MOTOR STARTER/DISCONNECT SWITCH AS REQUIRED
	MOTOR STARTER
$M	MANUAL MOTOR SWITCH AS REQUIRED
	PREWIRED DEVICE, MAKE ELECTRICAL FINAL CONNECTIONS
VFD	VARIABLE FREQUENCY DRIVE MOTOR CONTROLLER FURNISHED BY DIVISION 15 AND INSTALLED BY DIVISION 16
ELECTRICAL EQUIPMENT	
	277/480 VOLT DISTRIBUTION OR PANELBOARD
	120/208 VOLT PANELBOARD
	DRY TYPE TRANSFORMER
CIRCUITING	
	CONDUIT
	CONDUIT BELOW FLOOR, SLAB, OR GRADE
	3/4"C. UNLESS OTHERWISE NOTED; LONG HATCH, NEUTRAL; SHORT HATCH, PHASE; "Z" HATCH, INSULATED GROUND. NO HATCHES INDICATES 2 CONDUCTORS. ARROW INDICATES HOMERUN.
	PARTIAL ELECTRICAL HOME RUN
SUBSCRIPTS AND ABBREVIATIONS	
WP	INDICATES WEATHERPROOF
WG	INDICATES WIREGUARD
(E)	INDICATES EXISTING
TL	INDICATES TWIST LOCK TYPE
NL	LIGHT FIXTURE ON NIGHT LIGHT CIRCUIT
•	NEXT TO ANY SYMBOL INDICATES FINAL ROUGH-IN FIELD COORDINATION BY CONTRACTOR WITH ARCHITECTURAL MILLWORK DRAWINGS AND OTHER TRADES

GENERAL NOTE:
ALL EXTERIOR BUILDING ELECTRICAL EQUIPMENT TO BE WEATHERPROOF NEMA-3RX MINIMUM.

BEAUMONT INDEPENDENT SCHOOL DISTRICT
BISD Preparing Our Next Generation



ELECTRICAL FLOOR PLANS - REGINA ES

E1.1

DEMOLITION GENERAL NOTES:

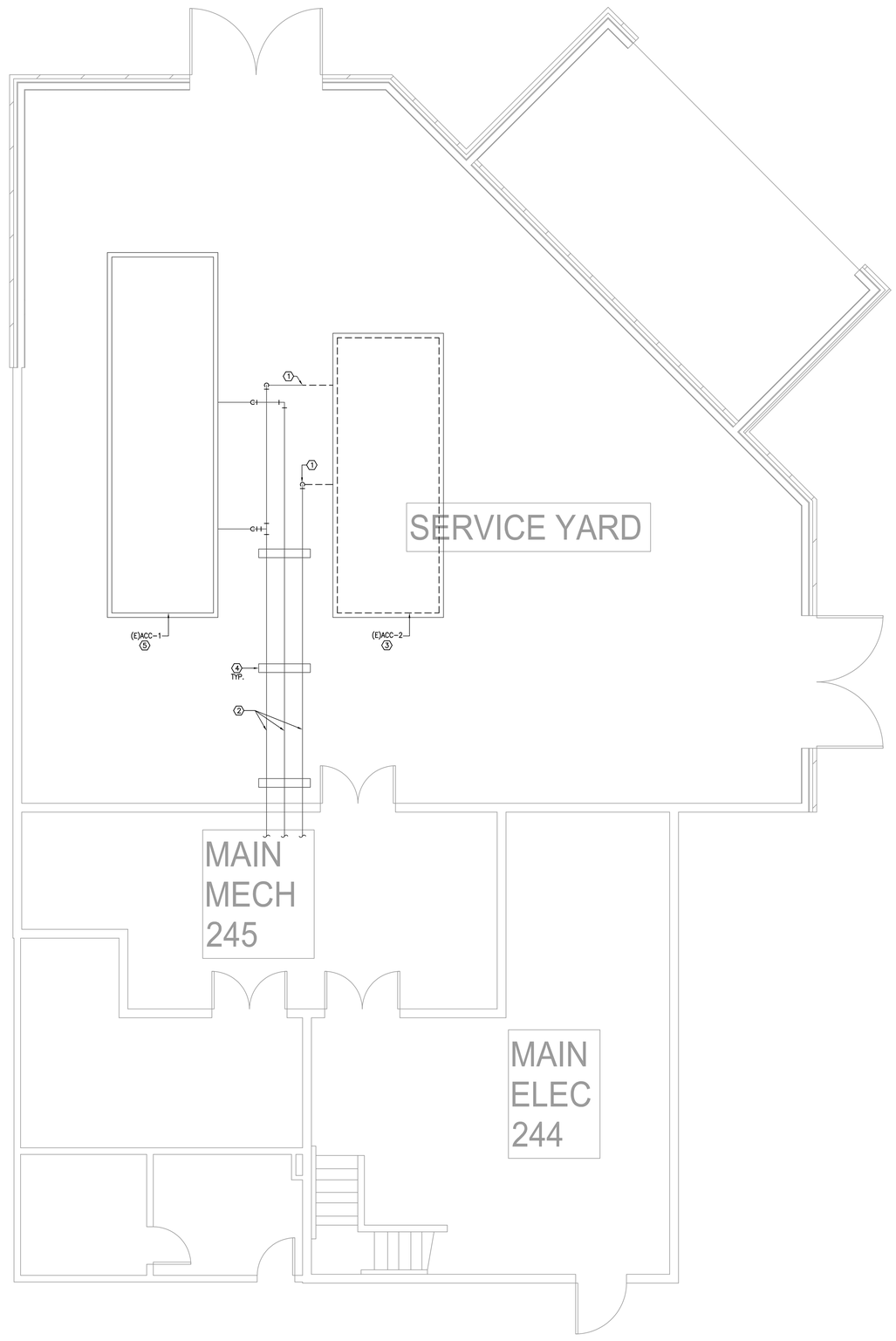
1. THESE CONSTRUCTION DRAWINGS ARE DIAGRAMMATIC, AND DO NOT NECESSARILY REFLECT ACTUAL DIMENSIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD-VERIFY ALL DIMENSIONS AND COORDINATE PLACEMENT OF ALL EQUIPMENT AND ROUTING OF ALL PIPING AND/OR DUCT SYSTEMS.
2. ALL MECHANICAL SYSTEMS SHOWN ON THIS PLAN ARE FROM EXISTING DRAWINGS AND PRELIMINARY FIELD WORK. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL LOCATIONS AND SIZES OF MECHANICAL SYSTEMS PRIOR TO THE START OF WORK.
3. OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL HVAC EQUIPMENT BEING REMOVED FROM THIS PROJECT. THIS INCLUDES BUT NOT LIMITED TO INTERNAL COMPONENTS OF CHILERS, VALVES, AND PIPE STANDS.

DEMOLITION KEYED NOTES:

1. REMOVE EXISTING SUPPLY AND RETURN CHILLED WATER PIPING AND ASSOCIATED VALVES UP TO POINT INDICATED. CONTRACTOR SHALL VERIFY EXISTING PIPE SIZE BEFORE DEMOLISHING.
2. EXISTING SUPPLY AND RETURN CHILLED WATER PIPING SHALL REMAIN.
3. EXISTING AIR COOLED CHILLER SHALL BE REMOVED. EXISTING CONCRETE PAD SHALL REMAIN.
4. EXISTING PIPING SUPPORTS SHALL REMAIN.
5. EXISTING AIR COOLED CHILLER SHALL REMAIN IN PLACE AND OPERATIONAL.

DEMO SYMBOL LEGEND

RENOVATIONS	
	ITEM TO REMAIN
	ITEM TO BE REMOVED



1 **MECHACNIAL DEMOLITION FLOOR PLAN - CURTIS ES**
SCALE: 1/4" = 1'-0"

Project No: 2022-03503-00
Drawn By:
Checked By:
Date: 09-09-2022
Revision Dates:

CONSULTANTS
MEP ENGINEERS
SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912
SALAS O'BRIEN [expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2022-03503-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 4

BEAUMONT INDEPENDENT SCHOOL DISTRICT
BISD Preparing Our Next Generation

BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
09-09-2022

MECHANICAL DEMOLITION FLOOR PLAN - CURTIS ES

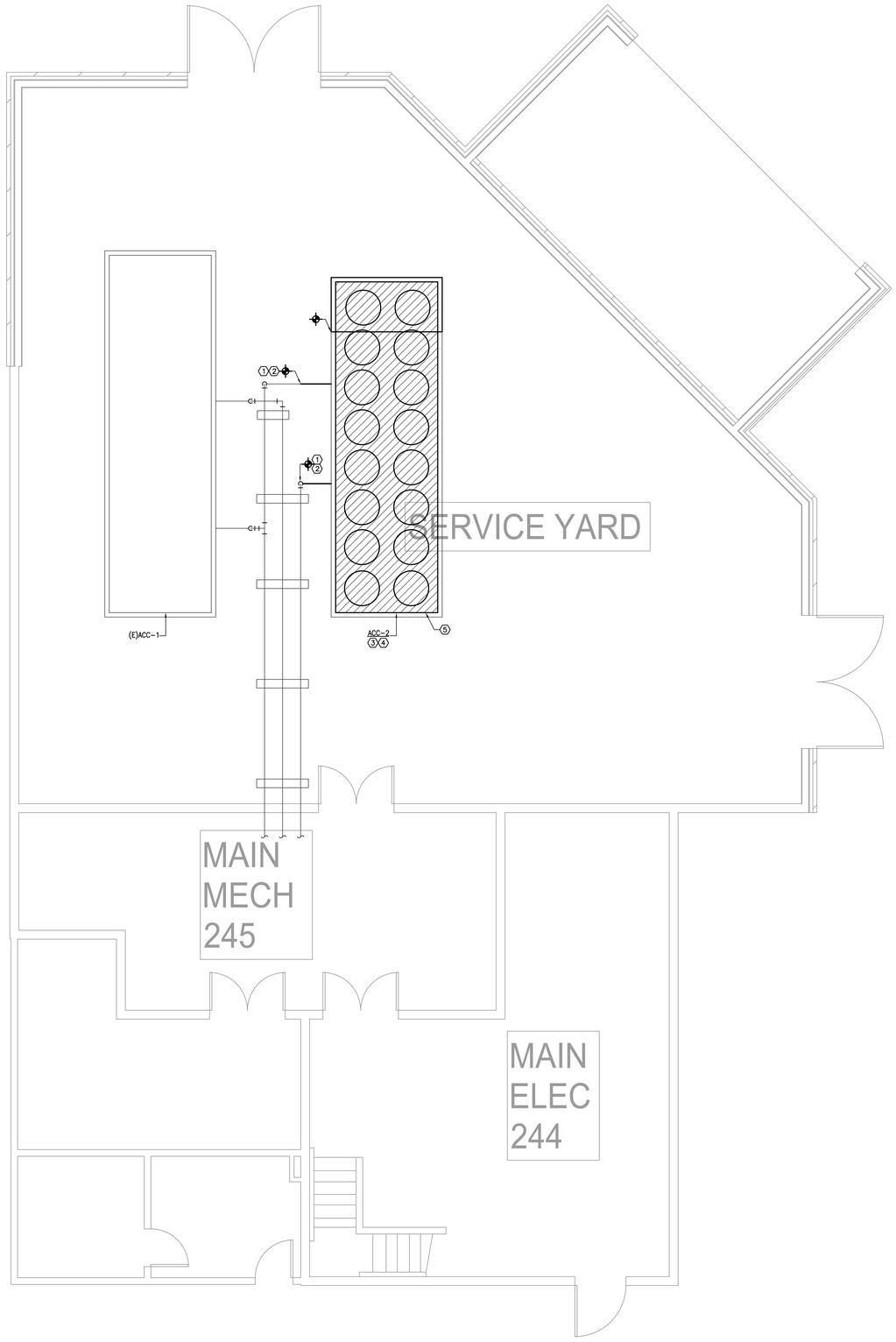
M0.1

MECHANICAL GENERAL NOTES:

1. MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL POWER REQUIREMENTS.
2. THESE CONSTRUCTION DRAWINGS ARE DIAGRAMMATIC, AND DO NOT NECESSARILY REFLECT ACTUAL DIMENSIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD–VERIFY ALL DIMENSIONS AND COORDINATE PLACEMENT OF ALL EQUIPMENT AND ROUTING OF ALL PIPING AND/OR DUCT SYSTEMS.

MECHANICAL KEYED NOTES:

1. PROVIDE OUTDOOR PIPING INSULATION AS SPECIFIED.
2. PROVIDE NEW CHW S/R PIPING AS SPECIFICED AND CONNECT TO EXISTING PIPING. RE:3/M2.1 FOR PARTIAL PIPING DIAGRAM.
3. VERIFY AIR–COOLED CHILLER SERVICE CLEARANCES WITH MANUFACTURER. COORDINATE WITH OTHER TRADES NOT TO OBSTRUCT.
4. INSTALL NEW CHILLER ON EXISTING CONCRETE PAD. EXTEND EXISTING CONCRETE PAD AS REQUIRED TO ACCOMMODATE NEW CHILLER.
5. POWER CONNECTION FOR NEW CHILLER SHALL BE AT THIS END, SAME LOCATION AS DEMOLISHED CHILLER.



NORTH

1 **MECHACNIAL FLOOR PLAN - CURTIS ES**
SCALE: 1/4" = 1'-0"

Project No: 2022-03503-00
Drawn By:
Checked By:
Date: 09-09-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912

SALAS O'BRIEN
[expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2022-03503-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 4

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD
Preparing Our Next Generation

BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
STATE OF TEXAS
09-09-2022

MECHANICAL FLOOR PLAN - CURTIS ES

M1.1

PACKAGED AIR COOLED SCREW CHILLER

MARK	ACTUAL CAPACITY (TONS)	LEAVING WATER TEMP. (°F)	GPM	MAXIMUM WATER PRESSURE DROP (FT.)	AMBIENT AIR TEMP. (°F)	CURRENT CHARACTERISTIC	REMARKS
ACC-2	200.0	44	480.0	20.0	95.0	460/3/60	1,2,3,4

GENERAL NOTES:

1. MAXIMUM FOULING FACTOR FOR THE EVAPORATOR IS 0.0001
2. MAINTAIN MINIMUM CLEARANCES REQUIRED BY CHILLER MANUFACTURER FOR PROPER AIRFLOW TO FANS AND UNIT. MANTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON EQUIPMENT FOR SERVICE, MAINTENANCE AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCES AS REQUIRED BY NEC.
3. CHILLER SHALL MEET OR EXCEED THE AHRI FULL-LOAD AND PART-LOAD PATH A OR PATH B EFFICIENCIES INDICATED IN THE 2015 IECC.

REMARKS:

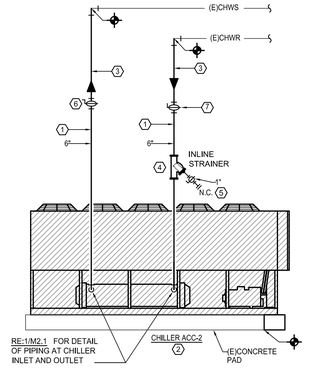
1. PROVIDE WITH LOW AMBIENT HEAD PRESSURE CONTROL.
2. PROVIDE WITH INTEGRAL MAIN ELECTRICAL DISCONNECT SWITCH.
3. PROVIDE WITH INSULATION ON ALL SUCTION LINES.
4. NEW CHILLER SHALL HAVE A MAX LENGTH OF 298".

SYMBOL LEGEND

SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
GENERAL	
	KEY NOTE TAG
	NOTE SPECIFIC TO DETAIL TAG
	REVISION TAG
	NEW EQUIPMENT
PIPING	
CWS&R	CONDENSER WATER SUPPLY & RETURN (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
CWS	CONDENSER WATER SUPPLY
CWR	CONDENSER WATER RETURN
CHWS&R	CHILLED WATER SUPPLY & RETURN (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
HWS&R	HOT WATER FOR HYDRONIC HEATING SUPPLY & RETURN (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
HWS	HOT WATER FOR HYDRONIC HEATING SUPPLY
HWR	HOT WATER FOR HYDRONIC HEATING RETURN
D	CONDENSATE DRAIN LINE
AD	AUXILLARY CONDENSATE DRAIN LINE
RLR	REFRIGERANT LIQUID & GAS RECIRCULATION LINE (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
RL	REFRIGERANT LIQUID LINE
HG	REFRIGERANT HOT GAS LINE
RS	REFRIGERANT SUCTION LINE
	ELBOW UP
	ELBOW DOWN
	90° ELBOW
	45° ELBOW
	TEE
	TEE DOWN
	TEE UP
	TOP BRANCH CONNECTION
	BOTTOM BRANCH CONNECTION
	FLANGE
	CAP
	CONTINUATION
	FLOOR DRAIN (REFER TO PLUMBING DRAWINGS)
	GATE VALVE
	GLOBE VALVE
	CHECK VALVE
	BUTTERFLY VALVE
	BUTTERFLY VALVE WITH OPERATOR
	PLUG VALVE
	TWO-WAY CONTROL VALVE
	THREE-WAY CONTROL VALVE
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE
	BALL VALVE
	STRAINER
	UNION
	THERMOMETER WELL
	PETE'S PLUG
	PRESSURE GAUGE
	TEMPERATURE SENSOR IN PIPE
	VENTURI FLOW METER
	FLOW SWITCH
FM	FLOW MEASURING STATION
	EXPANSION JOINT
	FLEXIBLE CONNECTION
	GAUGE COCK
	SITE GLASS
	DIFFERENTIAL PRESSURE SENSOR
	TURBINE FLOW METER
	ANCHOR
	PIPE GUIDE
SUBSCRIPTS AND ABREVIATIONS	
AFF	ABOVE FINISHED FLOOR
BBS	BELOW BOTTOM OF STRUCTURE
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
CA	COMBUSTION AIR
CFM	CUBIC FEET PER MINUTE
EA	EXHAUST AIR
FPM	FEET PER MINUTE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
OA	OUTSIDE AIR
RA	RETURN AIR
SA	SUPPLY AIR

DEMO SYMBOL LEGEND

RENOVATIONS	
	ITEM TO REMAIN
	ITEM TO BE REMOVED

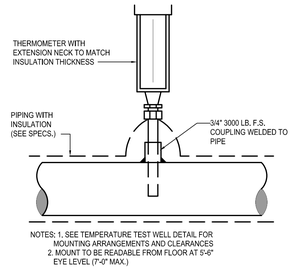


MECHANICAL KEYED NOTES

1. CONTRACTOR SHALL FIELD VERIFY EXISTING PIPE SIZES.
2. INSTALL NEW CHILLER ON EXISTING CONCRETE HOUSEKEEPING PAD. EXTEND EXISTING HOUSEKEEPING PAD AS REQUIRED TO ACCOMMODATE NEW CHILLER.
3. PROVIDE ALL OUTDOOR PIPING WITH INSULATION AND ALUMINUM JACKETING AS SPECIFIED.
4. PROVIDE INLINE STRAINER IN VERTICAL PIPE WITH 1" DRAIN LINE.
5. PROVIDE BALL VALVE WITH HOSE THREAD ADAPTER.
6. BALANCING VALVE TO BE PROVIDED WITH INFINITE POSITION CRANK OR MEMORY STOP FOR BALANCING
7. PROVIDE NEW ISOLATION VALVE.

3 CHILLED WATER PIPING DIAGRAM

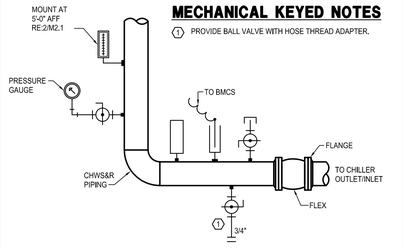
SCALE: NO SCALE



2 THERMOMETER INSTALLATION

SCALE: NONE

CP009



MECHANICAL KEYED NOTES

1. PROVIDE BALL VALVE WITH HOSE THREAD ADAPTER.

1 TYPICAL PIPING AT INLET AND OUTLET OF CHILLER

SCALE: NONE

Project No: 2022-03503-00
Drawn By: AA
Checked By: VP
Date: 09-09-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912

SALAS O'BRIEN [expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2022-03503-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 4

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD Preparing Our Next Generation

BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
09-09-2022

MECHANICAL DETAILS AND SCHEDULES - CURTIS ES

M2.1

ELECTRICAL GENERAL NOTES:

1. UNLESS INDICATED OTHERWISE, ALL ELECTRICAL EQUIPMENT IS EXISTING TO REMAIN. ELECTRICAL EQUIPMENT INCLUDES: SWITCHBOARDS, TRANSFORMERS, PANELBOARDS, ETC...

ELECTRICAL KEYED NOTES:

1. EXISTING CHILLER ELECTRICAL STUB UP LOCATIONS/PATHWAYS TO REMAIN.
2. DISCONNECT AND REMOVE ALL ELECTRICAL TO EXISTING CHILLER, REMOVE EXISTING 480-VOLT CONDUCTORS BACK TO SOURCE, LEAVE CONDUIT IN PLACE FOR RE-USE. REMOVE 120-VOLT CIRCUIT BACK TO NEAREST JUNCTION BOX, LEAVE CIRCUITRY INTACT FOR RE-CONNECTION.
3. CONNECT NEW CHILLER TO EXISTING CIRCUIT AND PULL NEW CONDUCTORS. EXTEND CONDUIT AND MAKE FINAL CONNECTION TO INTEGRAL DISCONNECT.
4. CONNECT NEW CHILLER HEATER TO EXISTING 120V CIRCUIT PRESERVED DURING DEMOLITION. EXTEND CONDUIT/WIRE AND MAKE FINAL CONNECTION. REPLACE EXISTING CIRCUIT BREAKER WITH NEW 30mA EGFCI BREAKER.
5. RE-CONNECT EXISTING BUILDING MANAGEMENT SYSTEM TO NEW CHILLER. EXTEND CONDUIT AND MAKE FINAL CONNECTION TO CONTROL PANEL.

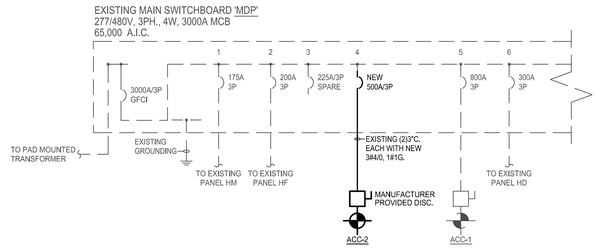
ELECTRICAL LOAD ANALYSIS: MSB 480V,3PH.,4W	
LOAD DESCRIPTION	LOAD KVA
EXISTING LOAD @ 125%	1560.0
EXISTING LOAD REMOVED	-253.3
REMAINING LOAD	1306.7
NEW:	
NEW CHILLER	304.5
TOTAL	1611.2

TOTAL / 480 $\sqrt{3}$ = 1938.9 AMPS

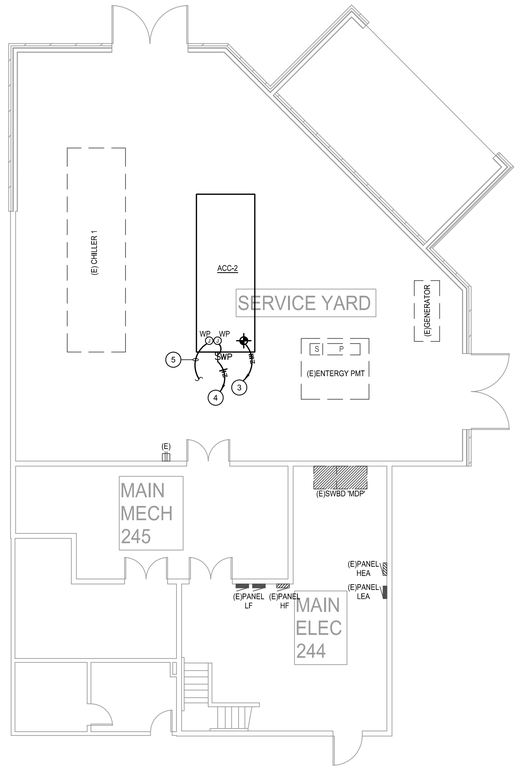
EXISTING 3000 AMP SERVICE

LINETYPE LEGEND

DISCONNECT AND REMOVE	- - - - - - - - - -
EXISTING TO REMAIN	— — — — —
NEW WORK	———————

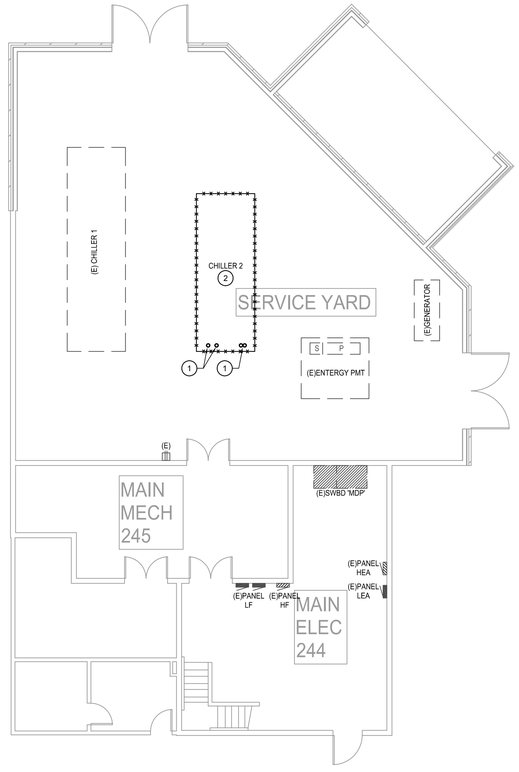


3 **PARTIAL ONE-LINE DIAGRAM**
SCALE: NONE



NORTH

2 **ELECTRICAL PLAN - CURTIS ES**
SCALE: 1/8" = 1'-0"



NORTH

1 **ELECTRICAL DEMOLITION PLAN - CURTIS ES**
SCALE: 1/8" = 1'-0"

SYMBOL SCHEDULE

SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
LIGHTING (LETTER DENOTES TYPE - SEE LIGHT FIXTURE SCHEDULE)	
	FLUORESCENT FIXTURE
	FLUORESCENT FIXTURE ON EMERGENCY CIRCUIT
	DOWNLIGHT FIXTURE
	LIGHT FIXTURE - WALL MOUNTED
	DOWNLIGHT FIXTURE ON EMERGENCY CIRCUIT
	LIGHT FIXTURE - WALL MOUNTED ON EMERGENCY CIRCUIT
	EXIT LIGHT-CEILING MTD WITH DIRECTIONAL ARROWS AS REQUIRED
	EXIT LIGHT-WALL MTD WITH DIRECTIONAL ARROWS AS REQUIRED
SWITCHES	
$	LINE VOLTAGE SINGLE POLE SWITCH
$3	LINE VOLTAGE 3-WAY SWITCH
$4	LINE VOLTAGE 4-WAY SWITCH
$K	LINE VOLTAGE MOMENTARY DPST KEYED SWITCH
$D	LINE VOLTAGE DIMMER SWITCH, SIZE AND TYPE AS REQUIRED
$P	LINE VOLTAGE SWITCH WITH PILOT LIGHT
$T	6-HOUR ROTARY TIMER SWITCH WITH NO HOLD U.N.O.
	PUSH BUTTON EPO SWITCH WITH COVER
$MC	LOW VOLTAGE MOMENTARY CONTACT SWITCH
$R	LOW VOLTAGE DIGITAL KEYPAD
$B	LOW VOLTAGE BUILDING MANAGEMENT (BMCS) LOCAL OVERRIDE SWITCH
	OCCUPANCY SENSOR (AUTO ON / AUTO OFF WITHIN 20-MINUTES)
	VACANCY SENSOR (MANUAL ON / AUTO OFF WITHIN 20-MINUTES)
	PHOTOCELL SENSOR
LCS	LIGHTING CONTROL SYSTEM, ('#' DENOTES TYPE - SEE LIGHTING CONTROLS SCHEDULE)
ERC	EMERGENCY LOAD CONTROL RELAY, MINIMUM 16A & 0-10V COMPATIBLE, PROVIDE U.L. 924 U.N.O.
RECEPTACLES AND OUTLETS	
	SIMPLEX RECEPTACLE
	DUPLEX RECEPTACLE
	125/250 VOLT, 1 PHASE, 3-WIRE, 20 AMPS UNLESS NOTED OTHERWISE
	DOUBLE DUPLEX IN 2-GANG BOX WITH SINGLE COVER PLATE
	250 VOLT, 1 PHASE, SPECIAL PURPOSE OUTLET, 20 AMPS UNLESS NOTED OTHERWISE
	JUNCTION BOX
	DUPLEX GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE
	DOUBLE DUPLEX GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE IN 2-GANG BOX WITH SINGLE COVER PLATE
	FLUSH FLOOR JUNCTION BOX
FACP	FIRE ALARM CONTROL PANEL
ANN	FIRE ALARM REMOTE ANNUCIATOR
MOTOR CONTROLLERS AND EQUIPMENT	
	MOTOR, MAKE FINAL MOTOR CONNECTION
	3-PHASE MOTOR, MAKE FINAL MOTOR CONNECTION
	DISCONNECT SWITCH AS REQUIRED
	COMBINATION MOTOR STARTER/DISCONNECT SWITCH AS REQUIRED
	MOTOR STARTER
$M	MANUAL MOTOR SWITCH AS REQUIRED
	PREWIRED DEVICE, MAKE ELECTRICAL FINAL CONNECTIONS
VFD	VARIABLE FREQUENCY DRIVE MOTOR CONTROLLER FURNISHED BY DIVISION 15 AND INSTALLED BY DIVISION 16
ELECTRICAL EQUIPMENT	
	277/480 VOLT DISTRIBUTION OR PANELBOARD
	120/208 VOLT PANELBOARD
	DRY TYPE TRANSFORMER
CIRCUITING	
	CONDUIT
	CONDUIT BELOW FLOOR, SLAB, OR GRADE
	3/4"C. UNLESS OTHERWISE NOTED; LONG HATCH, NEUTRAL; SHORT HATCH, PHASE; "Z" HATCH, INSULATED GROUND. NO HATCHES INDICATES 2 CONDUCTORS. ARROW INDICATES HOMERUN.
	PARTIAL ELECTRICAL HOME RUN
SUBSCRIPTS AND ABBREVIATIONS	
WP	INDICATES WEATHERPROOF
WG	INDICATES WIREGUARD
(E)	INDICATES EXISTING
TL	INDICATES TWIST LOCK TYPE
NL	LIGHT FIXTURE ON NIGHT LIGHT CIRCUIT
•	NEXT TO ANY SYMBOL INDICATES FINAL ROUGH-IN FIELD COORDINATION BY CONTRACTOR WITH ARCHITECTURAL MILLWORK DRAWINGS AND OTHER TRADES

GENERAL NOTE:

ALL EXTERIOR BUILDING ELECTRICAL EQUIPMENT TO BE WEATHERPROOF NEMA-3RX MINIMUM.

Project No: 2022-03503-00

Drawn By: DES

Checked By: JZ

Date: 09-09-2022

Revision Dates:

CONSULTANTS

MEP ENGINEERS

SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912

SALAS O'BRIEN [expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2022-03503-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 4

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD Preparing Our Next Generation

Bradley Kalmans
REGISTERED PROFESSIONAL ENGINEER
BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
09-09-2022

ELECTRICAL FLOOR PLANS - CURTIS ES

E1.1

MECHANICAL GENERAL NOTES:

1. MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL POWER REQUIREMENTS.

2. THESE CONSTRUCTION DRAWINGS ARE DIAGRAMMATIC, AND DO NOT NECESSARILY REFLECT ACTUAL DIMENSIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD-VERIFY ALL DIMENSIONS AND COORDINATE PLACEMENT OF ALL EQUIPMENT AND ROUTING OF ALL PIPING AND/OR DUCT SYSTEMS.

MECHANICAL KEYED NOTES:

(1) PROVIDE OUTDOOR PIPING INSULATION AS SPECIFIED.

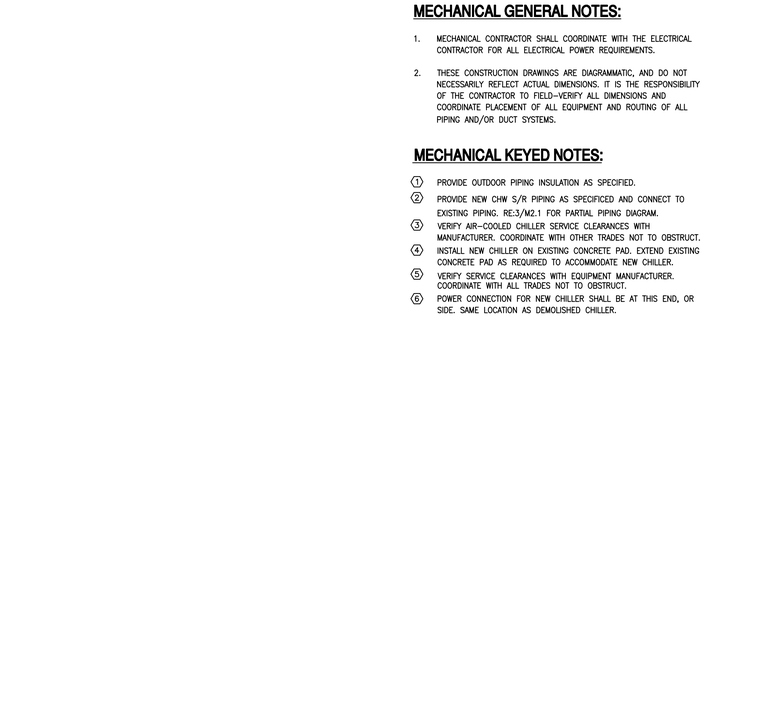
(2) PROVIDE NEW CHW S/R PIPING AS SPECIFICED AND CONNECT TO EXISTING PIPING. RE:3/M2.1 FOR PARTIAL PIPING DIAGRAM.

(3) VERIFY AIR-COOLED CHILLER SERVICE CLEARANCES WITH MANUFACTURER. COORDINATE WITH OTHER TRADES NOT TO OBSTRUCT.

(4) INSTALL NEW CHILLER ON EXISTING CONCRETE PAD. EXTEND EXISTING CONCRETE PAD AS REQUIRED TO ACCOMMODATE NEW CHILLER.

(5) VERIFY SERVICE CLEARANCES WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.

(6) POWER CONNECTION FOR NEW CHILLER SHALL BE AT THIS END, OR SIDE. SAME LOCATION AS DEMOLISHED CHILLER.



NORTH

2 **MECHACNIAL FLOOR PLAN - ODOM ACADEMY**
SCALE: 1/4" = 1'-0"

MECHANICAL DEMOLITION GENERAL NOTES:

1. THESE CONSTRUCTION DRAWINGS ARE DIAGRAMMATIC, AND DO NOT NECESSARILY REFLECT ACTUAL DIMENSIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FEILD-VERIFY ALL DIMENSIONS AND COORDINATE PLACEMENT OF ALL EQUIPMENT AND ROUTING OF ALL PIPING AND/OR DUCT SYSTEMS.

2. ALL MECHANICAL SYSTEMS SHOWN ON THIS PLAN ARE FROM EXISTING DRAWINGS AND PRELIMINARY FIELD WORK. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL LOCATIONS AND SIZES OF MECHANICAL SYSTEMS PRIOR TO THE START OF WORK.

3. OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL HVAC EQUIPMENT BEING REMOVED FROM THIS PROJECT. THIS INCLUDES BUT NOT LIMITED TO INTERNAL COMPONENTS OF CHILERS, VALVES, AND PIPE STANDS.

DEMOLITION KEYED NOTES:

(1) REMOVE EXISTING SUPPLY AND RETURN CHILLED WATER PIPING AND ASSOCIATED VALVES UP TO POINT INDICATED. CONTRACTOR SHALL VERIFY EXISTING PIPE SIZE BEFORE DEMOLISHING.

(2) EXISTING SUPPLY AND RETURN CHILLED WATER PIPING SHALL REMAIN.

(3) EXISTING AIR COOLED CHILLER SHALL BE REMOVED. EXISTING CONCRETE PAD SHALL REMAIN. CONTRACTOR SHALL VERIFY LOCATION OF POWER CONNECTION SO NEW CHILLER CAN BE INSTALLED WITH POWER CONNECTION IN SAME LOCATION.

(4) EXISTING PIPING SUPPORTS SHALL REMAIN.

(5) EXISTING PUMP SHALL BE REMOVED.

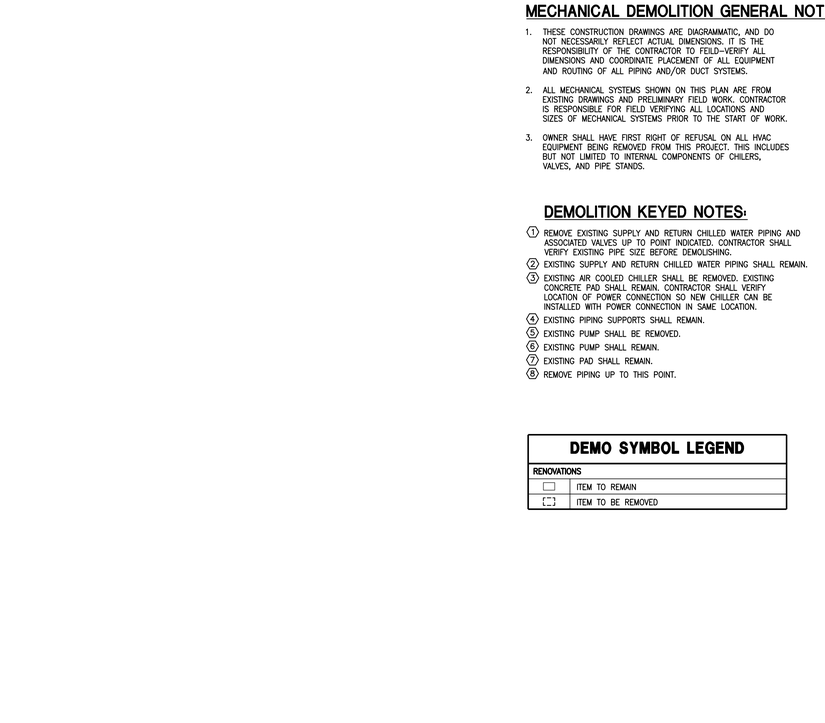
(6) EXISTING PUMP SHALL REMAIN.

(7) EXISTING PAD SHALL REMAIN.

(8) REMOVE PIPING UP TO THIS POINT.

DEMO SYMBOL LEGEND

RENOVATIONS	
☐	ITEM TO REMAIN
⬚	ITEM TO BE REMOVED



NORTH

1 **MECHACNIAL DEMOLITION FLOOR PLAN - ODOM ACADEMY**
SCALE: 1/4" = 1'-0"

Project No: 2022-03503-00
Drawn By:
Checked By:
Date: 09-09-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912

SALAS O'BRIEN [expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2022-03503-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 4

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD Preparing Our Next Generation

BRADLEY KALMANS
REGISTERED
80219
LICENSED
PROFESSIONAL
ENGINEER
STATE OF TEXAS

09-09-2022

MECHANICAL FLOOR PLANS - ODOM ACADEMY

M1.1

SYMBOL LEGEND

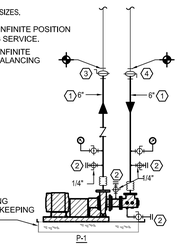
SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
GENERAL	
(#)	KEY NOTE TAG
#	NOTE SPECIFIC TO DETAIL TAG
#	REVISION TAG
	NEW EQUIPMENT
PIPING	
–CWS&R–	CONDENSER WATER SUPPLY & RETURN (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—CWS—	CONDENSER WATER SUPPLY
—CWR—	CONDENSER WATER RETURN
–CHWS&R–	CHILLED WATER SUPPLY & RETURN (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—CHWS—	CHILLED WATER SUPPLY
—CHWR—	CHILLED WATER RETURN
–HWS&R–	HOT WATER FOR HYDRONIC HEATING SUPPLY & RETURN (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—HWS—	HOT WATER FOR HYDRONIC HEATING SUPPLY
—HWR—	HOT WATER FOR HYDRONIC HEATING RETURN
— D —	CONDENSATE DRAIN LINE
—AD—	AUXILLARY CONDENSATE DRAIN LINE
—RLR—	REFRIGERANT LIQUID & GAS RECIRCULATION LINE (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—RL—	REFRIGERANT LIQUID LINE
—HG—	REFRIGERANT HOT GAS LINE
—RS—	REFRIGERANT SUCTION LINE
	ELBOW UP
	ELBOW DOWN
	90° ELBOW
	45° ELBOW
	TEE
	TEE DOWN
	TEE UP
	TOP BRANCH CONNECTION
	BOTTOM BRANCH CONNECTION
	FLANGE
	CAP
	CONTINUATION
	FLOOR DRAIN (REFER TO PLUMBING DRAWINGS)
	GATE VALVE
	GLOBE VALVE
	CHECK VALVE
	BUTTERFLY VALVE
	BUTTERFLY VALVE WITH OPERATOR
	PLUG VALVE
	TWO-WAY CONTROL VALVE
	THREE-WAY CONTROL VALVE
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE
	BALL VALVE
	STRAINER
	UNION
	THERMOMETER WELL
	PETE'S PLUG
	PRESSURE GAUGE
	TEMPERATURE SENSOR IN PIPE
	VENTURI FLOW METER
	FLOW SWITCH
FM	FLOW MEASURING STATION
	EXPANSION JOINT
	FLEXIBLE CONNECTION
	GAUGE COCK
	SITE GLASS
	DIFFERENTIAL PRESSURE SENSOR
	TURBINE FLOW METER
	ANCHOR
	PIPE GUIDE
SUBSCRIPTS AND ABREVIATIONS	
AFF	ABOVE FINISHED FLOOR
BBS	BELOW BOTTOM OF STRUCTURE
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
CA	COMBUSTION AIR
CFM	CUBIC FEET PER MINUTE
EA	EXHAUST AIR
FPM	FEET PER MINUTE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
OA	OUTSIDE AIR
RA	RETURN AIR
SA	SUPPLY AIR

DEMO SYMBOL LEGEND

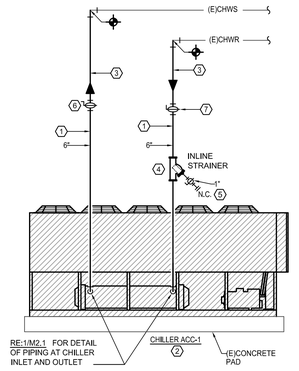
RENOVATIONS	
	ITEM TO REMAIN
	ITEM TO BE REMOVED

MECHANICAL KEYED NOTES

1. CONTRACTOR SHALL FIELD VERIFY EXISTING PIPE SIZES.
2. BALANCING VALVE TO BE PROVIDED WITH INFINITE POSITION CRANK OR MEMORY STOP FOR BALANCING SERVICE.
3. BALANCING VALVE TO BE PROVIDED WITH INFINITE POSITION CRANK OR MEMORY STOP FOR BALANCING SERVICE.
4. PROVIDE ISOLATION BUTTERFLY VALVE.



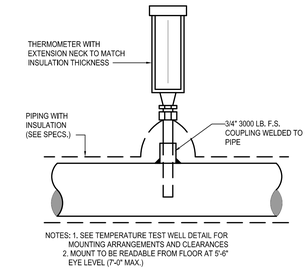
4 CHILLED WATER PUMP PIPING DIAGRAM
SCALE: NO SCALE



MECHANICAL KEYED NOTES

1. CONTRACTOR SHALL FIELD VERIFY EXISTING PIPE SIZES.
2. INSTALL NEW CHILLER ON EXISTING CONCRETE HOUSEKEEPING PAD.
3. PROVIDE ALL OUTDOOR PIPING WITH INSULATION AND ALUMINUM JACKETING AS SPECIFIED.
4. PROVIDE INLINE STRAINER IN VERTICAL PIPE WITH 1" DRAIN LINE.
5. PROVIDE BALL VALVE WITH HOSE THREAD ADAPTER.
6. BALANCING VALVE TO BE PROVIDED WITH INFINITE POSITION CRANK OR MEMORY STOP FOR BALANCING SERVICE.
7. PROVIDE NEW ISOLATION VALVE.

3 CHILLED WATER PIPING DIAGRAM
SCALE: NO SCALE



NOTES: 1. SEE TEMPERATURE TEST WELL DETAIL FOR MOUNTING ARRANGEMENTS AND CLEARANCES
2. MOUNT TO BE READABLE FROM FLOOR AT 5'-6" EYE LEVEL (7'-0" MAX.)

2 THERMOMETER INSTALLATION
SCALE NONE CP009

PUMP

MARK	SERVICE	TYPE	GPM	HEAD (FT.)	MAXIMUM RPM	MOTOR HORSEPOWER	CURRENT	MANUFACTURER	MODEL	REMARKS
P-1	CHILLED WATER	END SUCTION	576.0	100	1,750	40	460/3/60	BELL & GOSSETT	E-1510	1,2,3

GENERAL NOTES:
1. PUMP IS TO HAVE A NON-OVERLOADING MOTOR.
2. MINIMUM RECOMMENDED CLEARANCE AROUND A PUMP IS 24 INCHES. MAINTAIN MINIMUM CLEARANCES AS REQUIRED FOR SERVICE, MAINTENANCE, AND INSPECTION.

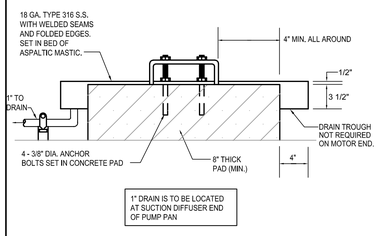
REMARKS:
1. PROVIDE WITH GAUGE TAPPINGS.
2. PROVIDE WITH SUCTION DIFFUSER.
3. PROVIDE WITH BACK PULL OUT.

PACKAGED AIR COOLED SCREW CHILLER

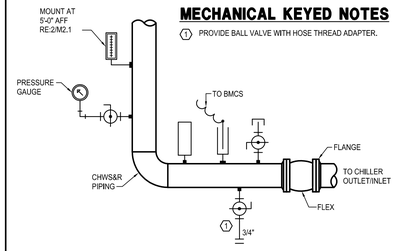
MARK	ACTUAL CAPACITY (TONS)	LEAVING WATER TEMP. (°F)	GPM	MAXIMUM WATER PRESSURE DROP (FT.)	AMBIENT AIR TEMP. (°F)	CURRENT CHARACTERISTIC	REMARKS
ACC-1	240.0	44	576.0	20.0	95.0	460/3/60	1,2,3,4

GENERAL NOTES:
1. MAXIMUM FOULING FACTOR FOR THE EVAPORATOR IS 0.0001
2. MAINTAIN MINIMUM CLEARANCES REQUIRED BY CHILLER MANUFACTURER FOR PROPER AIRFLOW TO FANS AND UNIT. MANTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON EQUIPMENT FOR SERVICE, MAINTENANCE AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCES AS REQUIRED BY NEC.
3. CHILLER SHALL MEET OR EXCEED THE AHRI FULL-LOAD AND PART-LOAD PATH A OR PATH B EFFICIENCIES INDICATED IN THE 2015 IECC.

REMARKS:
1. PROVIDE WITH LOW AMBIENT HEAD PRESSURE CONTROL.
2. PROVIDE WITH INTEGRAL MAIN ELECTRICAL DISCONNECT SWITCH.
3. PROVIDE WITH INSULATION ON ALL SUCTION LINES.
4. NEW CHILLER SHALL HAVE A MAX LENGTH OF 377".



5 PUMP PAN
SCALE NONE



MECHANICAL KEYED NOTES

1. PROVIDE BALL VALVE WITH HOSE THREAD ADAPTER.

1 TYPICAL PIPING AT INLET AND OUTLET OF CHILLER
SCALE NONE

Project No: 2022-03503-00
Drawn By: AA
Checked By: VP
Date: 09-09-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912

SALAS O'BRIEN [expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2022-03503-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT HVAC UPGRADES PART 4

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD Preparing Our Next Generation

BRADLEY KALMANS 80219 LICENSED PROFESSIONAL ENGINEER
09-09-2022

MECHANICAL DETAILS AND SCHEDULES - ODOM ACADEMY

M2.1

ELECTRICAL GENERAL NOTES:

1. UNLESS INDICATED OTHERWISE, ALL ELECTRICAL EQUIPMENT IS EXISTING TO REMAIN. ELECTRICAL EQUIPMENT INCLUDES: SWITCHBOARDS, TRANSFORMERS, PANELBOARDS, ETC.,.

ELECTRICAL KEYED NOTES:

1. DISCONNECT AND REMOVE ALL ELECTRICAL TO EXISTING CHILLER. REMOVE EXISTING 480-VOLT CONDUIT/WIRE BACK TO SOURCE. REMOVE 120-VOLT CIRCUIT(S) BACK TO NEAREST JUNCTION BOX, LEAVE CIRCUITRY INTACT FOR RE-CONNECTION.
2. DISCONNECT AND REMOVE ALL ELECTRICAL TO EXISTING PUMP BACK TO SOURCE.
3. CONNECT NEW CHILLER HEATER TO EXISTING 120V CIRCUIT PRESERVED DURING DEMOLITION. EXTEND CONDUIT/WIRE AND MAKE FINAL CONNECTION. REPLACE EXISTING CIRCUIT BREAKER WITH NEW 30mA EGFCI BREAKER.
4. RE-CONNECT EXISTING BUILDING MANAGEMENT SYSTEM TO NEW CHILLER. EXTEND CONDUIT AND MAKE FINAL CONNECTION TO CONTROL PANEL.
5. ROUTE 2#10, 1#10G., 3/4"C. TO NEAREST EXTERIOR CONVENIENCE RECEPTACLE.

Project No: 2022-03503-00
Drawn By: DES
Checked By: JZ
Date: 09-09-2022
Revision Dates:

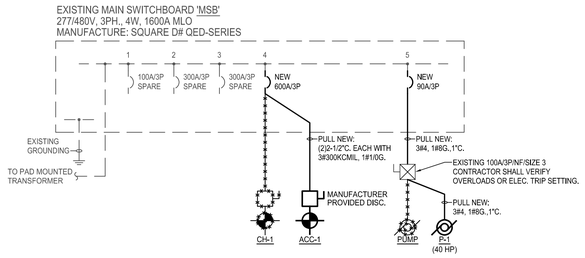
ELECTRICAL LOAD ANALYSIS: MSB 480V,3PH.,4W	
LOAD DESCRIPTION	LOAD KVA
EXISTING LOAD @ 125%	386.6
EXISTING LOAD REMOVED	-386.6
REMAINING LOAD	0.0
NEW:	
NEW CHILLER	355.0
NEW PUMP	43.2
25% LARGEST MOTOR	10.8
TOTAL	409.0

TOTAL / 480 $\sqrt{3}$ = 492.2 AMPS

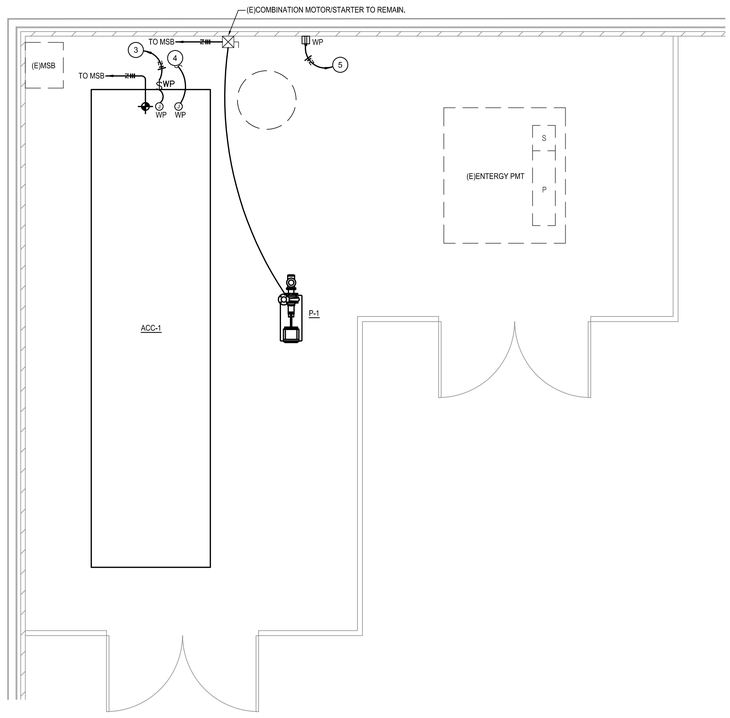
EXISTING 2000 AMP SERVICE

LINETYPE LEGEND

DISCONNECT AND REMOVE	- - - - - - - - -
EXISTING TO REMAIN	— — — — —
NEW WORK	———————

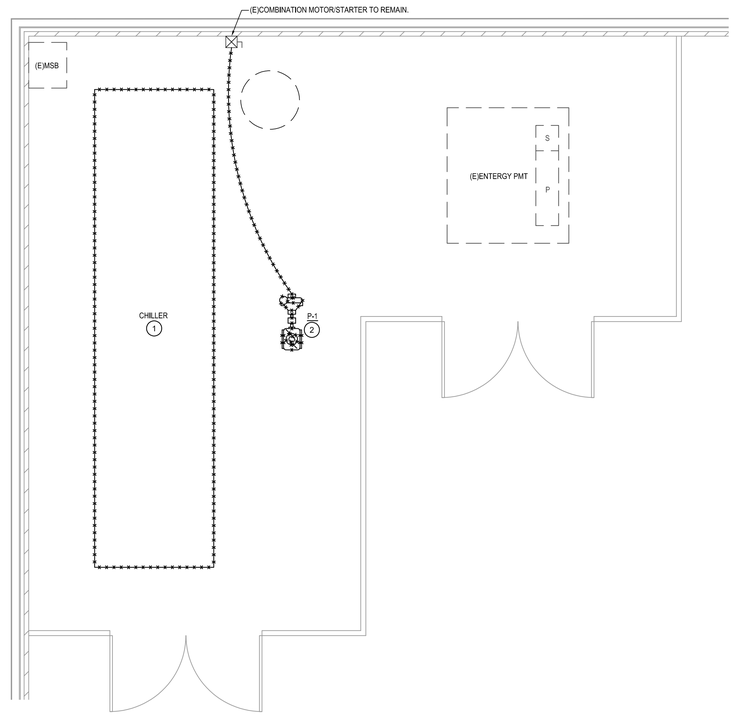


3 **PARTIAL ONE-LINE DIAGRAM**
SCALE: NONE



NORTH

2 **ELECTRICAL PLAN - ODOM ACADEMY**
SCALE: 1/4" = 1'-0"



NORTH

1 **ELECTRICAL DEMOLITION PLAN - ODOM ACADEMY**
SCALE: 1/4" = 1'-0"

SYMBOL SCHEDULE

SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
LIGHTING (LETTER DENOTES TYPE - SEE LIGHT FIXTURE SCHEDULE)	
	FLUORESCENT FIXTURE
	FLUORESCENT FIXTURE ON EMERGENCY CIRCUIT
	DOWNLIGHT FIXTURE
	LIGHT FIXTURE - WALL MOUNTED
	DOWNLIGHT FIXTURE ON EMERGENCY CIRCUIT
	LIGHT FIXTURE - WALL MOUNTED ON EMERGENCY CIRCUIT
	EXIT LIGHT-CEILING MTD WITH DIRECTIONAL ARROWS AS REQUIRED
	EXIT LIGHT-WALL MTD WITH DIRECTIONAL ARROWS AS REQUIRED
SWITCHES	
$	LINE VOLTAGE SINGLE POLE SWITCH
$3	LINE VOLTAGE 3-WAY SWITCH
$4	LINE VOLTAGE 4-WAY SWITCH
$K	LINE VOLTAGE MOMENTARY DPST KEYED SWITCH
$D	LINE VOLTAGE DIMMER SWITCH, SIZE AND TYPE AS REQUIRED
$P	LINE VOLTAGE SWITCH WITH PILOT LIGHT
$T	6-HOUR ROTARY TIMER SWITCH WITH NO HOLD U.N.O.
	PUSH BUTTON EPO SWITCH WITH COVER
$MC	LOW VOLTAGE MOMENTARY CONTACT SWITCH
$R	LOW VOLTAGE DIGITAL KEYPAD
$B	LOW VOLTAGE BUILDING MANAGEMENT (BMCS) LOCAL OVERRIDE SWITCH
	OCCUPANCY SENSOR (AUTO ON / AUTO OFF WITHIN 20-MINUTES)
	VACANCY SENSOR (MANUAL ON / AUTO OFF WITHIN 20-MINUTES)
	PHOTOCELL SENSOR
RSE	LIGHTING CONTROL SYSTEM. ('R' DENOTES TYPE - SEE LIGHTING CONTROLS SCHEDULE)
ERC	EMERGENCY LOAD CONTROL RELAY, MINIMUM 16A & 0-10V COMPATIBLE, PROVIDE U.L. 924 U.N.O.
RECEPTACLES AND OUTLETS	
	SIMPLEX RECEPTACLE
	DUPLEX RECEPTACLE
	125/250 VOLT, 1 PHASE, 3-WIRE, 20 AMPS UNLESS NOTED OTHERWISE
	DOUBLE DUPLEX IN 2-GANG BOX WITH SINGLE COVER PLATE
	250 VOLT, 1 PHASE, SPECIAL PURPOSE OUTLET, 20 AMPS UNLESS NOTED OTHERWISE
	JUNCTION BOX
	DUPLEX GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE
	DOUBLE DUPLEX GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE IN 2-GANG BOX WITH SINGLE COVER PLATE
	FLUSH FLOOR JUNCTION BOX
FACP	FIRE ALARM CONTROL PANEL
ANNC	FIRE ALARM REMOTE ANNUCIATOR
MOTOR CONTROLLERS AND EQUIPMENT	
	MOTOR, MAKE FINAL MOTOR CONNECTION
	3-PHASE MOTOR, MAKE FINAL MOTOR CONNECTION
	DISCONNECT SWITCH AS REQUIRED
	COMBINATION MOTOR STARTER/DISCONNECT SWITCH AS REQUIRED
	MOTOR STARTER
$M	MANUAL MOTOR SWITCH AS REQUIRED
	PREWIRED DEVICE, MAKE ELECTRICAL FINAL CONNECTIONS
VFM	VARIABLE FREQUENCY DRIVE MOTOR CONTROLLER FURNISHED BY DIVISION 15 AND INSTALLED BY DIVISION 16
ELECTRICAL EQUIPMENT	
	277/480 VOLT DISTRIBUTION OR PANELBOARD
	120/208 VOLT PANELBOARD
	DRY TYPE TRANSFORMER
CIRCUITING	
	CONDUIT
	CONDUIT BELOW FLOOR, SLAB, OR GRADE
	3/4"C, UNLESS OTHERWISE NOTED; LONG HATCH, NEUTRAL; SHORT HATCH, PHASE; "Z" HATCH, INSULATED GROUND. NO HATCHES INDICATES 2 CONDUCTORS, ARROW INDICATES HOMERUN.
	PARTIAL ELECTRICAL HOME RUN
SUBSCRIPTS AND ABBREVIATIONS	
WP	INDICATES WEATHERPROOF
WG	INDICATES WIREGUARD
(E)	INDICATES EXISTING
TL	INDICATES TWIST LOCK TYPE
NL	LIGHT FIXTURE ON NIGHT LIGHT CIRCUIT
•	NEXT TO ANY SYMBOL INDICATES FINAL ROUGH-IN FIELD COORDINATION BY CONTRACTOR WITH ARCHITECTURAL MILLWORK DRAWINGS AND OTHER TRADES

GENERAL NOTE:

ALL EXTERIOR BUILDING ELECTRICAL EQUIPMENT TO BE WEATHERPROOF NEMA-3RX MINIMUM.

CONSULTANTS

MEP ENGINEERS

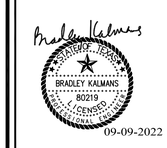
SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912

SALAS O'BRIEN [expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2022-03503-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 4

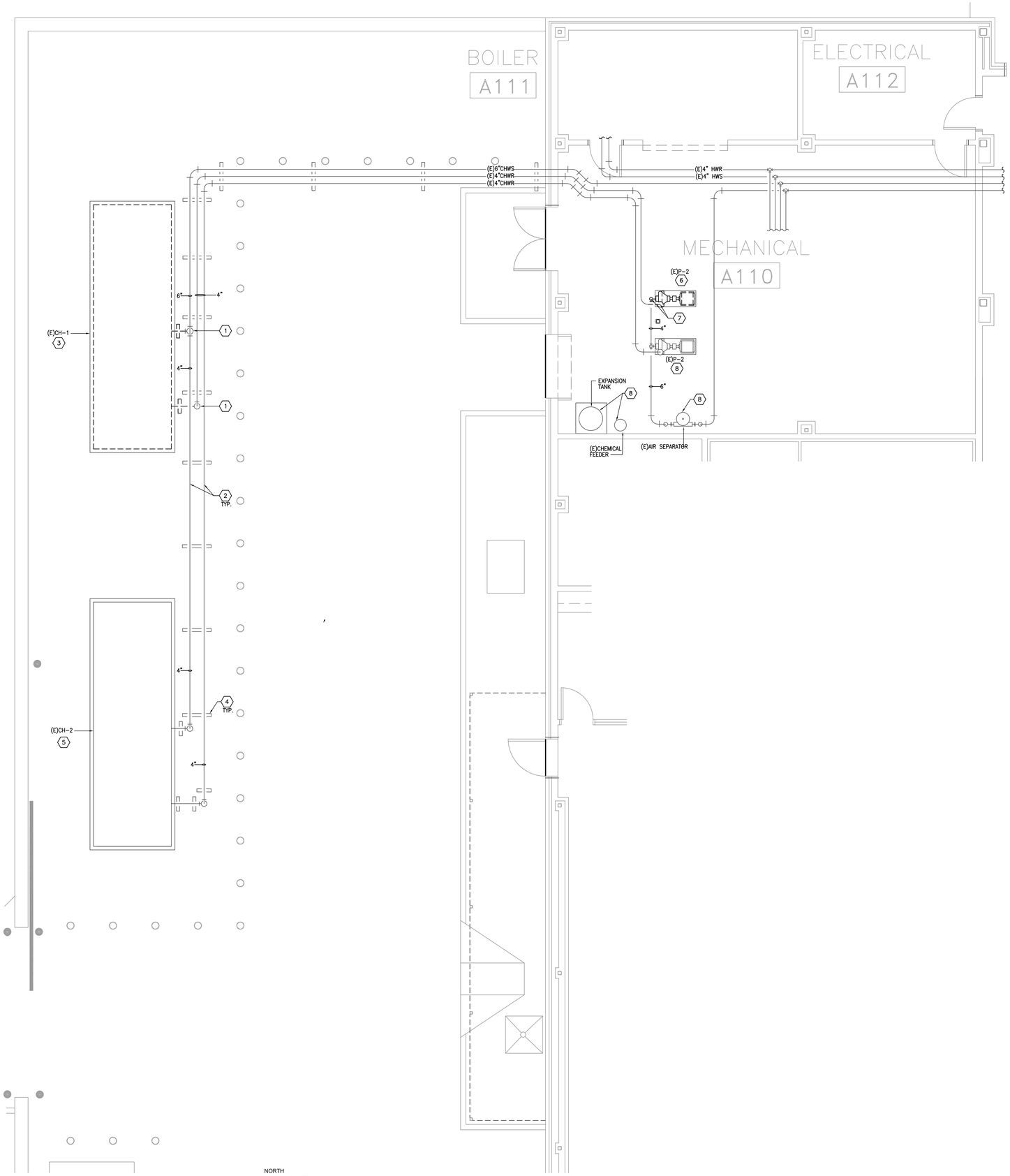
BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD Preparing Our Next Generation



ELECTRICAL FLOOR PLANS - ODOM ACADEMY

E1.1



NORTH

1 **MECHANICAL DEMOLITION FLOOR PLAM - DISHMAN ES**
SCALE: 1/4" = 1'-0"

DEMOLITION GENERAL NOTES:

1. THESE CONSTRUCTION DRAWINGS ARE DIAGRAMMATIC, AND DO NOT NECESSARILY REFLECT ACTUAL DIMENSIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FEILD-VERIFY ALL DIMENSIONS AND COORDINATE PLACEMENT OF ALL EQUIPMENT AND ROUTING OF ALL PIPING AND/OR DUCT SYSTEMS.
2. ALL MECHANICAL SYSTEMS SHOWN ON THIS PLAN ARE FROM EXISTING DRAWINGS AND PRELIMINARY FIELD WORK. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL LOCATIONS AND SIZES OF MECHANICAL SYSTEMS PRIOR TO THE START OF WORK.
3. OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL HVAC EQUIPMENT BEING REMOVED FROM THIS PROJECT. THIS INCLUDES BUT NOT LIMITED TO INTERNAL COMPONENTS OF CHILERS, VALVES, AND PIPE STANDS.

DEMOLITION KEYED NOTES:

1. REMOVE EXISTING SUPPLY AND RETURN CHILLED WATER PIPING AND ASSOCIATED VALVES UP TO POINT INDICATED. CONTRACTOR SHALL VERIFY EXISTING PIPE SIZE BEFORE DEMOLISHING.
2. EXISTING SUPPLY AND RETURN CHILLED WATER PIPING SHALL REMAIN.
3. EXISTING AIR COOLED CHILLER SHALL BE REMOVED. EXISTING CONCRETE PAD SHALL REMAIN.
4. EXISTING PIPING SUPPORTS SHALL REMAIN.
5. EXISTING AIR COOLED CHILLER SHALL REMAIN IN PLACE AND OPERATIONAL.
6. EXISTING PUMP SHALL BE REMOVED.
7. REMOVE PIPING AND VALVES UP TO THIS POINT.
8. EQUIPMENT IS EXISTING TO REMAIN.

DEMO SYMBOL LEGEND

RENOVATIONS	
	ITEM TO REMAIN
	ITEM TO BE REMOVED

Project No: 2022-03503-00
Drawn By:
Checked By:
Date: 09-09-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

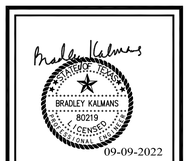
SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912

SALAS O'BRIEN [expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2022-03503-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 4

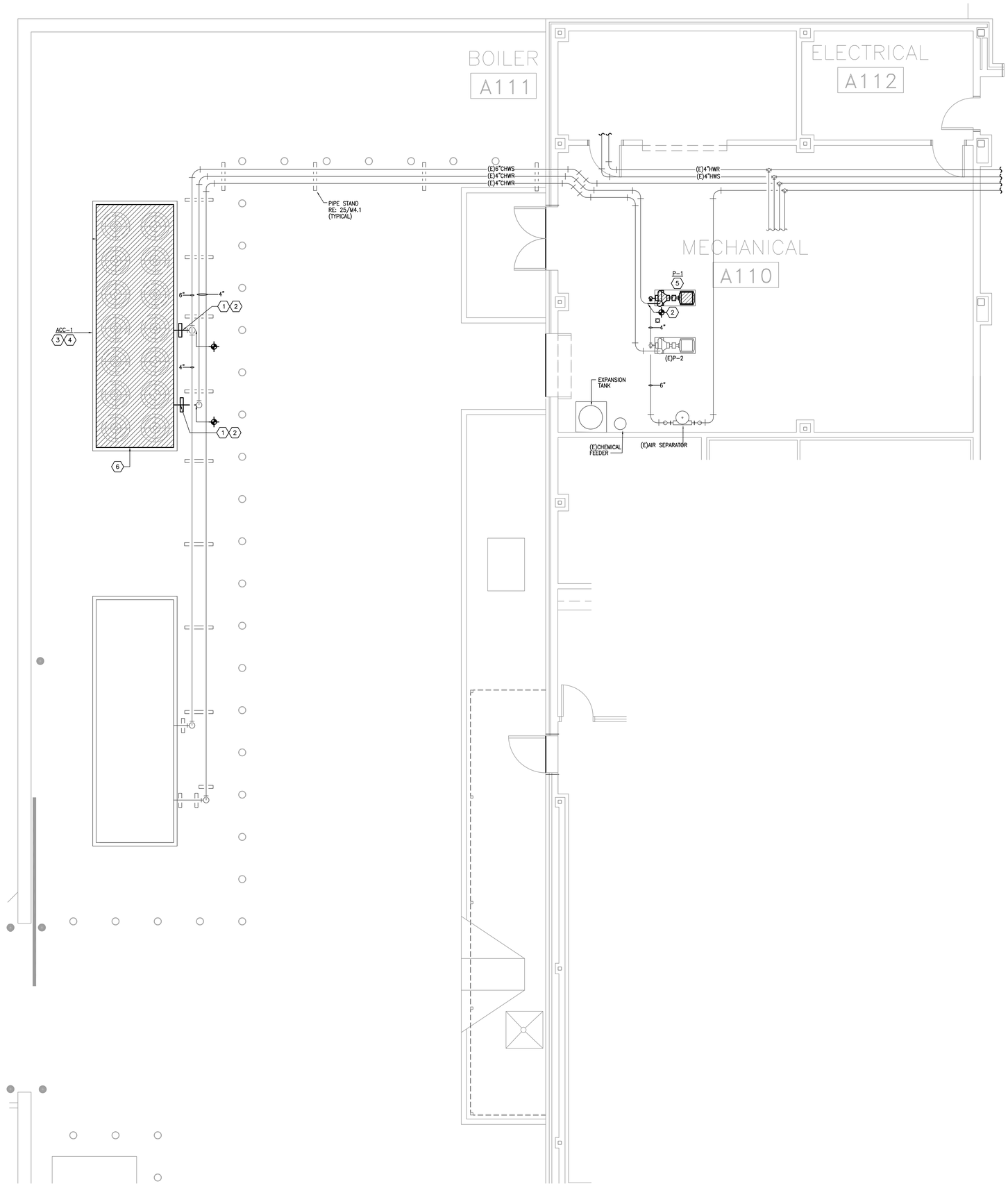
BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD Preparing Our Next Generation



MECHANICAL
DEMOLITION FLOOR
PLAN - DISHMAN ES

M0.1



NORTH

1 **MECHANICAL FLOOR PLAM - DISHMAN ES**
SCALE: 1/4" = 1'-0"

MECHANICAL GENERAL NOTES:

1. MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL POWER REQUIREMENTS.
2. THESE CONSTRUCTION DRAWINGS ARE DIAGRAMMATIC, AND DO NOT NECESSARILY REFLECT ACTUAL DIMENSIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD-VERIFY ALL DIMENSIONS AND COORDINATE PLACEMENT OF ALL EQUIPMENT AND ROUTING OF ALL PIPING AND/OR DUCT SYSTEMS.

MECHANICAL KEYED NOTES:

1. PROVIDE OUTDOOR PIPING INSULATION AS SPECIFIED.
2. PROVIDE NEW SUPPLY & RETURN CHILLED WATER PIPING AS SPECIFIED AND CONNECT TO EXISTING PIPING. RE:3/M2.1 FOR PARTIAL PIPING DIAGRAM.
3. VERIFY AIR-COOLED CHILLER SERVICE CLEARANCES WITH MANUFACTURER. COORDINATE WITH OTHER TRADES NOT TO OBSTRUCT.
4. INSTALL NEW CHILLER ON EXISTING CONCRETE PAD. EXTEND EXISTING CONCRETE PAD AS REQUIRED TO ACCOMMODATE NEW CHILLER.
5. VERIFY SERVICE CLEARANCES WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO
6. POWER CONNECTION FOR NEW CHILLER SHALL BE AT THIS END, SAME LOCATION AS DEMOLISHED CHILLER.

Project No: 2022-03503-00
Drawn By:
Checked By:
Date: 09-09-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912

SALAS O'BRIEN
[expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2022-03503-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 4

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD
Preparing Our Next Generation



MECHANICAL FLOOR PLAN - DISHMAN ES

M1.1

PUMP

MARK	SERVICE	TYPE	GPM	HEAD (FT.)	MAXIMUM RPM	MOTOR HORSEPOWER	CURRENT	MANUFACTURER	MODEL	REMARKS
P-1	CHILLED WATER	END SUCTION	348.0	110	1,750	40	460/3/60	BELL & GOSSETT	E-1510	1,2

GENERAL NOTES:
1. PUMP IS TO HAVE A NON-OVERLOADING MOTOR.
2. MINIMUM RECOMMENDED CLEARANCE AROUND A PUMP IS 24 INCHES. MAINTAIN MINIMUM CLEARANCES AS REQUIRED FOR SERVICE, MAINTENANCE, AND INSPECTION.

REMARKS:
1. PROVIDE WITH GAUGE TAPPINGS.
2. PROVIDE WITH SUCTION DIFFUSER.

PACKAGED AIR COOLED SCREW CHILLER

MARK	ACTUAL CAPACITY (TONS)	LEAVING WATER TEMP. (°F)	GPM	MAXIMUM WATER PRESSURE DROP (FT.)	AMBIENT AIR TEMP. (°F)	CURRENT CHARACTERISTIC	REMARKS
ACC-1	145.0	44.0	348.0	20.0	95.0	460/3/60	1,2,3,4

GENERAL NOTES:
1. MAXIMUM FOULING FACTOR FOR THE EVAPORATOR IS 0.0001
2. MAINTAIN MINIMUM CLEARANCES REQUIRED BY CHILLER MANUFACTURER FOR PROPER AIRFLOW TO FANS AND UNIT. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON EQUIPMENT FOR SERVICE, MAINTENANCE AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCES AS REQUIRED BY NEC.
3. CHILLER SHALL MEET OR EXCEED THE AHRI FULL-LOAD AND PART-LOAD PATH A OR PATH B EFFICIENCIES INDICATED IN THE 2015 IECC.

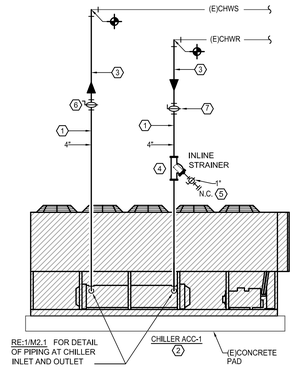
REMARKS:
1. PROVIDE WITH LOW AMBIENT HEAD PRESSURE CONTROL.
2. PROVIDE WITH INTEGRAL MAIN ELECTRICAL DISCONNECT SWITCH.
3. PROVIDE WITH INSULATION ON ALL SUCTION LINES.
4. NEW CHILLER SHALL HAVE A MAX LENGTH OF 278".

SYMBOL LEGEND

SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
GENERAL	
(#)	KEY NOTE TAG
(#)	NOTE SPECIFIC TO DETAIL TAG
	REVISION TAG
	NEW EQUIPMENT
PIPING	
—CWS&R—	CONDENSER WATER SUPPLY & RETURN (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—CWS—	CONDENSER WATER SUPPLY
—CWR—	CONDENSER WATER RETURN
-CHWS&R-	CHILLED WATER SUPPLY & RETURN (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—CHWS—	CHILLED WATER SUPPLY
—CHWR—	CHILLED WATER RETURN
—HWS&R—	HOT WATER FOR HYDRONIC HEATING SUPPLY & RETURN (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—HWS—	HOT WATER FOR HYDRONIC HEATING SUPPLY
—HWR—	HOT WATER FOR HYDRONIC HEATING RETURN
— D —	CONDENSATE DRAIN LINE
—AD—	AUXILLARY CONDENSATE DRAIN LINE
—RLR—	REFRIGERANT LIQUID & GAS RECIRCULATION LINE (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—RL—	REFRIGERANT LIQUID LINE
—HG—	REFRIGERANT HOT GAS LINE
—RS—	REFRIGERANT SUCTION LINE
	ELBOW UP
	ELBOW DOWN
	90° ELBOW
	45° ELBOW
	TEE
	TEE DOWN
	TEE UP
	TOP BRANCH CONNECTION
	BOTTOM BRANCH CONNECTION
	FLANGE
	CAP
	CONTINUATION
	FLOOR DRAIN (REFER TO PLUMBING DRAWINGS)
	GATE VALVE
	GLOBE VALVE
	CHECK VALVE
	BUTTERFLY VALVE
	BUTTERFLY VALVE WITH OPERATOR
	PLUG VALVE
	TWO-WAY CONTROL VALVE
	THREE-WAY CONTROL VALVE
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE
	BALL VALVE
	STRAINER
	UNION
	THERMOMETER WELL
	PETE'S PLUG
	PRESSURE GAUGE
	TEMPERATURE SENSOR IN PIPE
	VENTURI FLOW METER
	FLOW SWITCH
FM	FLOW MEASURING STATION
	EXPANSION JOINT
	FLEXIBLE CONNECTION
	GAUGE COCK
	SITE GLASS
	DIFFERENTIAL PRESSURE SENSOR
	TURBINE FLOW METER
	ANCHOR
	PIPE GUIDE
SUBSCRIPTS AND ABREVIATIONS	
AFF	ABOVE FINISHED FLOOR
BBS	BELOW BOTTOM OF STRUCTURE
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
CA	COMBUSTION AIR
CFM	CUBIC FEET PER MINUTE
EA	EXHAUST AIR
FPM	FEET PER MINUTE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
OA	OUTSIDE AIR
RA	RETURN AIR
SA	SUPPLY AIR

DEMO SYMBOL LEGEND

RENOVATIONS	
	ITEM TO REMAIN
	ITEM TO BE REMOVED



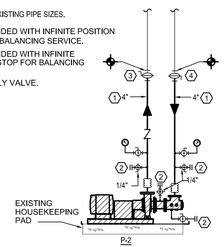
MECHANICAL KEYED NOTES

1. CONTRACTOR SHALL FIELD VERIFY EXISTING PIPE SIZES.
2. INSTALL NEW CHILLER ON EXISTING CONCRETE HOUSEKEEPING PAD.
3. PROVIDE ALL OUTDOOR PIPING WITH INSULATION AND ALUMINUM JACKETING AS SPECIFIED.
4. PROVIDE INLINE STRAINER IN VERTICAL PIPE WITH 1" DRAIN LINE.
5. PROVIDE BALL VALVE WITH HOSE THREAD ADAPTER.
6. BALANCING VALVE TO BE PROVIDED WITH INFINITE POSITION CRANK OR MEMORY STOP FOR BALANCING
7. PROVIDE NEW ISOLATION VALVE.

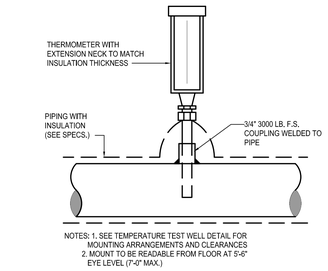
3 CHILLED WATER PIPING DIAGRAM
SCALE: NO SCALE

MECHANICAL KEYED NOTES

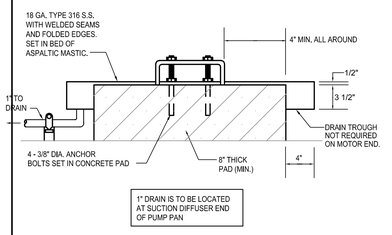
1. CONTRACTOR SHALL FIELD VERIFY EXISTING PIPE SIZES.
2. BALANCING VALVE TO BE PROVIDED WITH INFINITE POSITION CRANK OR MEMORY STOP FOR BALANCING SERVICE.
3. BALANCING VALVE TO BE PROVIDED WITH INFINITE POSITION CRANK OR MEMORY STOP FOR BALANCING SERVICE.
4. PROVIDE ISOLATION BUTTERFLY VALVE.



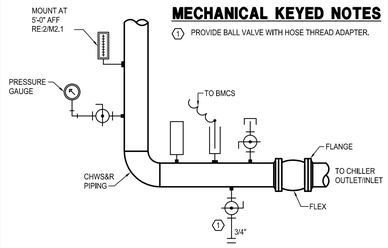
5 CHILLED WATER PUMP PIPING DIAGRAM
SCALE: NO SCALE



2 THERMOMETER INSTALLATION
SCALE NONE CP009



4 PUMP PAN
SCALE NONE



MECHANICAL KEYED NOTES

1. PROVIDE BALL VALVE WITH HOSE THREAD ADAPTER.

1 TYPICAL PIPING AT INLET AND OUTLET OF CHILLER
SCALE NONE

Project No: 2022-03503-00
Drawn By: AA
Checked By: VP
Date: 09-09-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912
SALAS O'BRIEN [expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2022-03503-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 4

BEAUMONT INDEPENDENT SCHOOL DISTRICT
BISD Preparing Our Next Generation

BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
STATE OF TEXAS
09-09-2022

MECHANICAL DETAILS AND SCHEDULES - DISHMAN ES

M2.1

ELECTRICAL LOAD ANALYSIS: MSB 480V,3PH.,4W	
LOAD DESCRIPTION	LOAD KVA
EXISTING LOAD @ 125%	1077.1
EXISTING LOAD REMOVED	-205.9
REMAINING LOAD	871.2
NEW:	
NEW CHILLER	234.7
TOTAL	1105.9

TOTAL / 480 $\sqrt{3}$ = 1330.7 AMPS

EXISTING 2500 AMP SERVICE

LINETYPE LEGEND

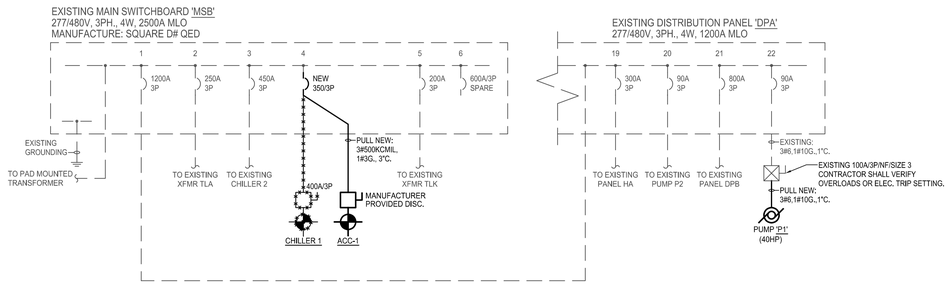
DISCONNECT AND REMOVE	
EXISTING TO REMAIN	
NEW WORK	

ELECTRICAL GENERAL NOTES:

1. UNLESS INDICATED OTHERWISE, ALL ELECTRICAL EQUIPMENT IS EXISTING TO REMAIN. ELECTRICAL EQUIPMENT INCLUDES: SWITCHBOARDS, TRANSFORMERS, PANELBOARDS, ETC...

ELECTRICAL KEYED NOTES:

1. DISCONNECT AND REMOVE ALL ELECTRICAL TO EXISTING CHILLER. REMOVE EXISTING 480-VOLT CONDUIT/WIRE BACK TO SOURCE.. REMOVE 120-VOLT CIRCUIT(S) BACK TO NEAREST JUNCTION BOX, LEAVE CIRCUITRY INTACT FOR RE-CONNECTION.
2. REMOVE EXISTING PULL BOX AND ASSOCIATED CONDUIT/WIRE BACK TO SOURCE.
3. REMOVE EXISTING DISCONNECT SWITCH AND ASSOCIATED CONDUIT/WIRE BACK TO SOURCE AND CAP UNDERGROUND CONDUIT,
4. DISCONNECT AND REMOVE ALL ELECTRICAL TO EXISTING PUMP BACK TO MOTOR STARTER/DISCONNECT, LEAVE CIRCUITRY INTACT FOR RE-CONNECTION.
5. CONNECT TO EXISTING CIRCUIT PRESERVED DURING DEMOLITION. EXTEND CONDUIT/WIRE AND MAKE FINAL CONNECTION.
6. CONNECT NEW CHILLER HEATER TO EXISTING 120V CIRCUIT PRESERVED DURING DEMOLITION. EXTEND CONDUIT/WIRE AND MAKE FINAL CONNECTION, REPLACE EXISTING CIRCUIT BREAKER WITH NEW 30mA EGFCI BREAKER.
7. RE-CONNECT EXISTING BUILDING MANAGEMENT SYSTEM TO NEW CHILLER. EXTEND CONDUIT AND MAKE FINAL CONNECTION TO CONTROL PANEL.



3 PARTIAL ONE-LINE DIAGRAM

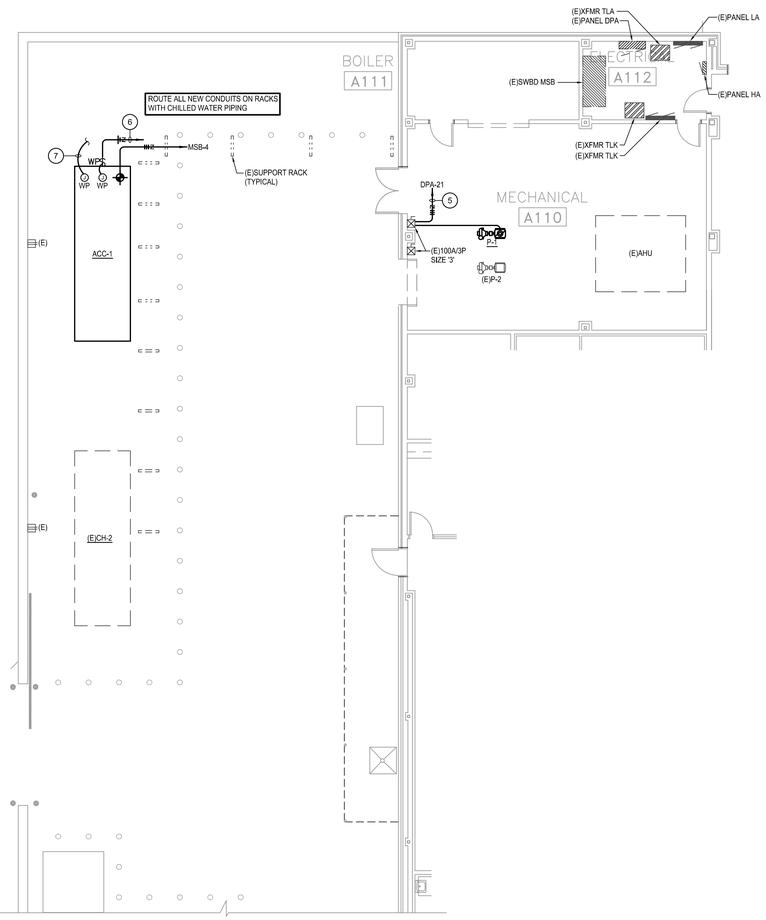
SCALE: 1/8" = 1'-0"

SYMBOL SCHEDULE

SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
LIGHTING (LETTER DENOTES TYPE - SEE LIGHT FIXTURE SCHEDULE)	
	FLUORESCENT FIXTURE
	FLUORESCENT FIXTURE ON EMERGENCY CIRCUIT
	DOWNLIGHT FIXTURE
	LIGHT FIXTURE - WALL MOUNTED
	DOWNLIGHT FIXTURE ON EMERGENCY CIRCUIT
	LIGHT FIXTURE - WALL MOUNTED ON EMERGENCY CIRCUIT
	EXIT LIGHT-CEILING MTD WITH DIRECTIONAL ARROWS AS REQUIRED
	EXIT LIGHT-WALL MTD WITH DIRECTIONAL ARROWS AS REQUIRED
SWITCHES	
$	LINE VOLTAGE SINGLE POLE SWITCH
$3	LINE VOLTAGE 3-WAY SWITCH
$4	LINE VOLTAGE 4-WAY SWITCH
$K	LINE VOLTAGE MOMENTARY DPST KEYED SWITCH
$D	LINE VOLTAGE DIMMER SWITCH, SIZE AND TYPE AS REQUIRED
$P	LINE VOLTAGE SWITCH WITH PILOT LIGHT
$T	6-HOUR ROTARY TIMER SWITCH WITH NO HOLD U.N.O.
	PUSH BUTTON EPO SWITCH WITH COVER
$MC	LOW VOLTAGE MOMENTARY CONTACT SWITCH
$R	LOW VOLTAGE DIGITAL KEYPAD
$B	LOW VOLTAGE BUILDING MANAGEMENT (BMCS) LOCAL OVERRIDE SWITCH
	OCCUPANCY SENSOR (AUTO ON / AUTO OFF WITHIN 20-MINUTES)
	VACANCY SENSOR (MANUAL ON / AUTO OFF WITHIN 20-MINUTES)
	PHOTOCELL SENSOR
RF	LIGHTING CONTROL SYSTEM. ('F' DENOTES TYPE - SEE LIGHTING CONTROLS SCHEDULE)
ER	EMERGENCY LOAD CONTROL RELAY, MINIMUM 16A & 0-10V COMPATIBLE. PROVIDE U.L. 924 U.N.O.
RECEPTACLES AND OUTLETS	
	SIMPLEX RECEPTACLE
	DUPLEX RECEPTACLE
	125/250 VOLT, 1 PHASE, 3-WIRE, 20 AMPS UNLESS NOTED OTHERWISE
	DOUBLE DUPLEX IN 2-GANG BOX WITH SINGLE COVER PLATE
	250 VOLT, 1 PHASE, SPECIAL PURPOSE OUTLET, 20 AMPS UNLESS NOTED OTHERWISE
J	JUNCTION BOX
	DUPLEX GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE
	DOUBLE DUPLEX GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE IN 2-GANG BOX WITH SINGLE COVER PLATE
FJ	FLUSH FLOOR JUNCTION BOX
FACP	FIRE ALARM CONTROL PANEL
ANNC	FIRE ALARM REMOTE ANNUCIATOR
MOTOR CONTROLLERS AND EQUIPMENT	
	MOTOR, MAKE FINAL MOTOR CONNECTION
	3-PHASE MOTOR, MAKE FINAL MOTOR CONNECTION
	DISCONNECT SWITCH AS REQUIRED
	COMBINATION MOTOR STARTER/DISCONNECT SWITCH AS REQUIRED
	MOTOR STARTER
$M	MANUAL MOTOR SWITCH AS REQUIRED
	PREWIRED DEVICE, MAKE ELECTRICAL FINAL CONNECTIONS
VFD	VARIABLE FREQUENCY DRIVE MOTOR CONTROLLER FURNISHED BY DIVISION 15 AND INSTALLED BY DIVISION 16
ELECTRICAL EQUIPMENT	
	277/480 VOLT DISTRIBUTION OR PANELBOARD
	120/208 VOLT PANELBOARD
	DRY TYPE TRANSFORMER
CIRCUITING	
	CONDUIT
	CONDUIT BELOW FLOOR, SLAB, OR GRADE
#12	3/4"C. UNLESS OTHERWISE NOTED: LONG HATCH, NEUTRAL; SHORT HATCH, PHASE; "Z" HATCH, INSULATED GROUND. NO HATCHES INDICATES 2 CONDUCTORS. ARROW INDICATES HOMERUN.
	PARTIAL ELECTRICAL HOME RUN
SUBSCRIPTS AND ABBREVIATIONS	
WP	INDICATES WEATHERPROOF
WG	INDICATES WIREGUARD
(E)	INDICATES EXISTING
TL	INDICATES TWIST LOCK TYPE
NL	LIGHT FIXTURE ON NIGHT LIGHT CIRCUIT
•	NEXT TO ANY SYMBOL INDICATES FINAL ROUGH-IN FIELD COORDINATION BY CONTRACTOR WITH ARCHITECTURAL MILLWORK DRAWINGS AND OTHER TRADES

GENERAL NOTE:

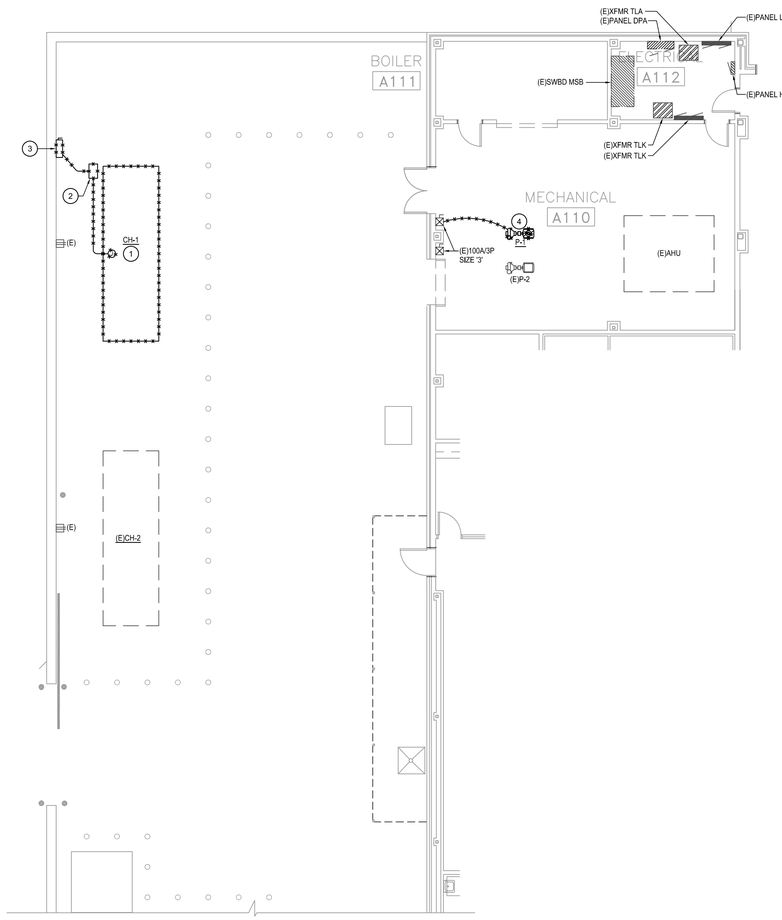
ALL EXTERIOR BUILDING ELECTRICAL EQUIPMENT TO BE WEATHERPROOF NEMA-3RX MINIMUM.



NORTH

2 ELECTRICAL PLAN - DISHMAN ES

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



NORTH

1 ELECTRICAL DEMOLITION PLAN - DISHMAN ES

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

Project No: 2022-03503-00

Drawn By: DES

Checked By: JZ

Date: 09-09-2022

Revision Dates:

CONSULTANTS

MEP ENGINEERS

SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912

SALAS O'BRIEN [expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2022-03503-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT HVAC UPGRADES PART 4

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD Preparing Our Next Generation



ELECTRICAL FLOOR PLANS - DISHMAN ES

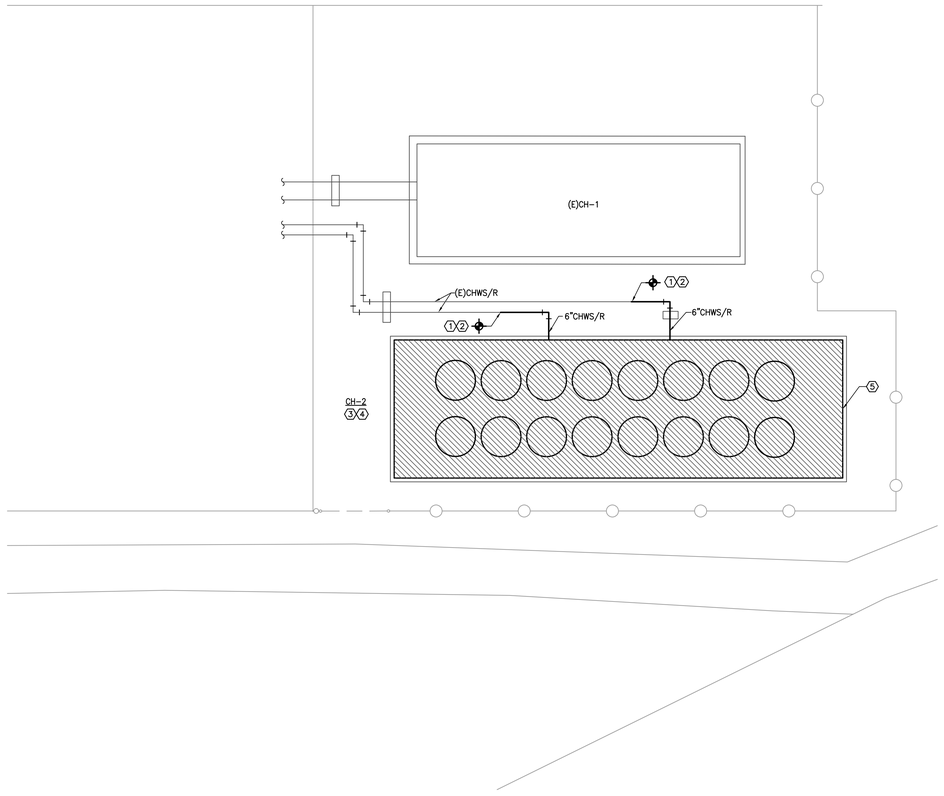
E1.1

MECHANICAL GENERAL NOTES:

1. MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL POWER REQUIREMENTS.
2. THESE CONSTRUCTION DRAWINGS ARE DIAGRAMMATIC, AND DO NOT NECESSARILY REFLECT ACTUAL DIMENSIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD-VERIFY ALL DIMENSIONS AND COORDINATE PLACEMENT OF ALL EQUIPMENT AND ROUTING OF ALL PIPING AND/OR DUCT SYSTEMS.

MECHANICAL KEYED NOTES:

1. PROVIDE OUTDOOR PIPING INSULATION AS SPECIFIED.
2. PROVIDE NEW CHW S/R PIPING AS SPECIFICED AND CONNECT TO EXISTING PIPING. RE:3/M2.01 FOR PARTIAL PIPING DIAGRAM.
3. VERIFY AIR-COOLED CHILLER SERVICE CLEARANCES WITH MANUFACTURER. COORDINATE WITH OTHER TRADES NOT TO OBSTRUCT.
4. INSTALL NEW CHILLER ON EXISTING CONCRETE PAD. EXTEND EXISTING CONCRETE PAD AS REQUIRED TO ACCOMMODATE NEW CHILLER.
5. POWER CONNECTION FOR NEW CHILLER SHALL BE AT THIS END, SAME LOCATION AS DEMOLISHED CHILLER.



NORTH

2 **MECHANICAL FLOOR PLAN - SMITH MS**
SCALE: 1/4" = 1'-0"

MECHANICAL DEMOLITION GENERAL NOTES:

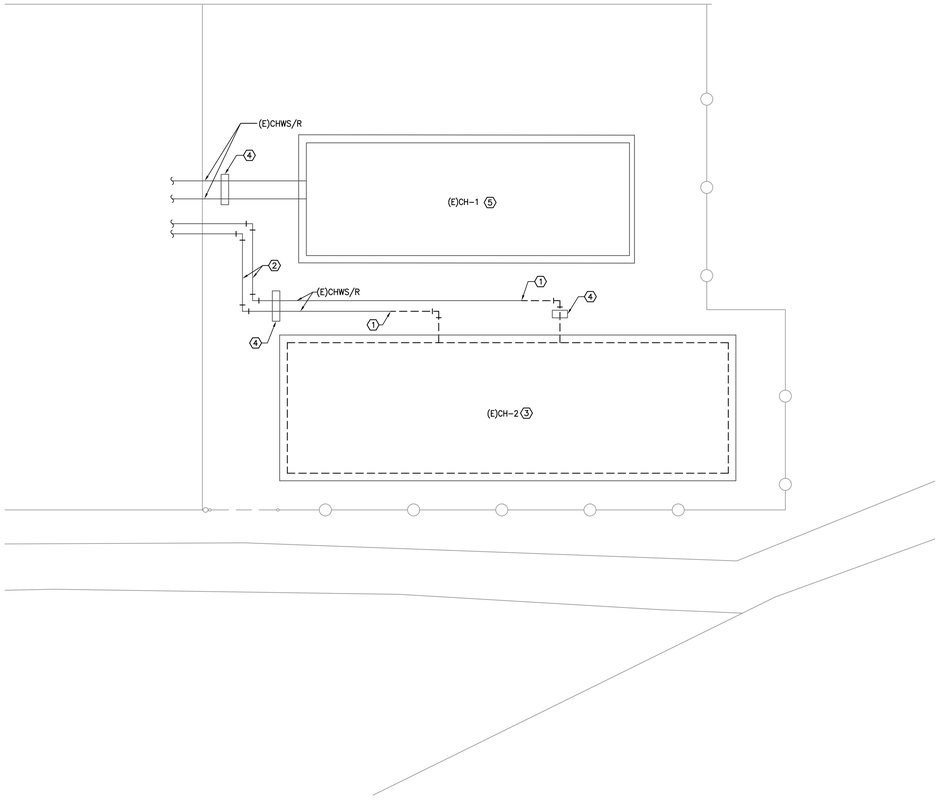
1. THESE CONSTRUCTION DRAWINGS ARE DIAGRAMMATIC, AND DO NOT NECESSARILY REFLECT ACTUAL DIMENSIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FEILD-VERIFY ALL DIMENSIONS AND COORDINATE PLACEMENT OF ALL EQUIPMENT AND ROUTING OF ALL PIPING AND/OR DUCT SYSTEMS.
2. ALL MECHANICAL SYSTEMS SHOWN ON THIS PLAN ARE FROM EXISTING DRAWINGS AND PRELIMINARY FIELD WORK. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL LOCATIONS AND SIZES OF MECHANICAL SYSTEMS PRIOR TO THE START OF WORK.
3. OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL HVAC EQUIPMENT BEING REMOVED FROM THIS PROJECT. THIS INCLUDES BUT NOT LIMITED TO INTERNAL COMPONENTS OF CHILERS, VALVES, AND PIPE STANDS.

DEMOLITION KEYED NOTES:

1. REMOVE EXISTING SUPPLY AND RETURN CHILLED WATER PIPING AND ASSOCIATED VALVES UP TO POINT INDICATED. CONTRACTOR SHALL VERIFY EXISTING PIPE SIZE BEFORE DEMOLISHING.
2. EXISTING SUPPLY AND RETURN CHILLED WATER PIPING SHALL REMAIN.
3. EXISTING AIR COOLED CHILLER SHALL BE REMOVED. EXISTING CONCRETE PAD SHALL REMAIN.
4. EXISTING PIPING SUPPORTS SHALL REMAIN.
5. EXISTING AIR COOLED CHILLER SHALL REMAIN IN PLACE AND OPERATIONAL.

DEMO SYMBOL LEGEND

RENOVATIONS	
▭	ITEM TO REMAIN
⬚	ITEM TO BE REMOVED



NORTH

1 **MECHANICAL DEMOLITION FLOOR PLAN - SMITH MS**
SCALE: 1/4" = 1'-0"

Project No: 2022-03503-00
Drawn By:
Checked By:
Date: 09-09-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912

SALAS O'BRIEN [expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2022-03503-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 4

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD Preparing Our Next Generation



MECHANICAL FLOOR PLANS - SMITH MS

M1.1

SYMBOL LEGEND

SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
GENERAL	
(#)	KEY NOTE TAG
(#)	NOTE SPECIFIC TO DETAIL TAG
(#)	REVISION TAG
	NEW EQUIPMENT
PIPING	
–CWS&R–	CONDENSER WATER SUPPLY & RETURN (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—CWS—	CONDENSER WATER SUPPLY
—CWR—	CONDENSER WATER RETURN
-CHWS&R-	CHILLED WATER SUPPLY & RETURN (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—CHWS—	CHILLED WATER SUPPLY
—CHWR—	CHILLED WATER RETURN
–HWS&R–	HOT WATER FOR HYDRONIC HEATING SUPPLY & RETURN (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—HWS—	HOT WATER FOR HYDRONIC HEATING SUPPLY
—HWR—	HOT WATER FOR HYDRONIC HEATING RETURN
—D—	CONDENSATE DRAIN LINE
—AD—	AUXILLARY CONDENSATE DRAIN LINE
—RLR—	REFRIGERANT LIQUID & GAS RECIRCULATION LINE (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—RL—	REFRIGERANT LIQUID LINE
—HG—	REFRIGERANT HOT GAS LINE
—RS—	REFRIGERANT SUCTION LINE
	ELBOW UP
	ELBOW DOWN
	90° ELBOW
	45° ELBOW
	TEE
	TEE DOWN
	TEE UP
	TOP BRANCH CONNECTION
	BOTTOM BRANCH CONNECTION
	FLANGE
	CAP
	CONTINUATION
	FLOOR DRAIN (REFER TO PLUMBING DRAWINGS)
	GATE VALVE
	GLOBE VALVE
	CHECK VALVE
	BUTTERFLY VALVE
	BUTTERFLY VALVE WITH OPERATOR
	PLUG VALVE
	TWO-WAY CONTROL VALVE
	THREE-WAY CONTROL VALVE
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE
	BALL VALVE
	STRAINER
	UNION
	THERMOMETER WELL
	PETE'S PLUG
	PRESSURE GAUGE
	TEMPERATURE SENSOR IN PIPE
	VENTURI FLOW METER
	FLOW SWITCH
FM	FLOW MEASURING STATION
	EXPANSION JOINT
	FLEXIBLE CONNECTION
	GAUGE COCK
	SITE GLASS
	DIFFERENTIAL PRESSURE SENSOR
	TURBINE FLOW METER
	ANCHOR
	PIPE GUIDE
SUBSCRIPTS AND ABREVIATIONS	
AFF	ABOVE FINISHED FLOOR
BBS	BELOW BOTTOM OF STRUCTURE
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
CA	COMBUSTION AIR
CFM	CUBIC FEET PER MINUTE
EA	EXHAUST AIR
FPM	FEET PER MINUTE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
OA	OUTSIDE AIR
RA	RETURN AIR
SA	SUPPLY AIR

DEMO SYMBOL LEGEND

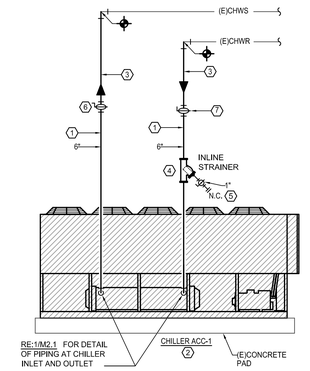
RENOVATIONS	
	ITEM TO REMAIN
	ITEM TO BE REMOVED

PACKAGED AIR COOLED SCREW CHILLER

MARK	ACTUAL CAPACITY (TONS)	LEAVING WATER TEMP. (°F)	GPM	MAXIMUM WATER PRESSURE DROP (FT.)	AMBIENT AIR TEMP. (°F)	CURRENT CHARACTERISTIC	REMARKS
CH-2	190.0	44	456.0	20.0	95.0	460/3/60	1,2,3

GENERAL NOTES:
1. MAXIMUM FOULING FACTOR FOR THE EVAPORATOR IS 0.0001
2. MAINTAIN MINIMUM CLEARANCES REQUIRED BY CHILLER MANUFACTURER FOR PROPER AIRFLOW TO FANS AND UNIT. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON EQUIPMENT FOR SERVICE, MAINTENANCE AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCES AS REQUIRED BY NEC.
3. CHILLER SHALL MEET OR EXCEED THE AHRI FULL-LOAD AND PART-LOAD PATH A OR PATH B EFFICIENCIES INDICATED IN THE 2015 IECC.

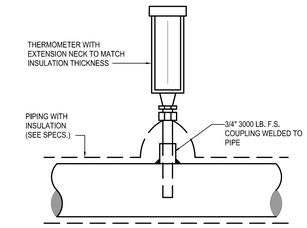
REMARKS:
1. PROVIDE WITH LOW AMBIENT HEAD PRESSURE CONTROL.
2. PROVIDE WITH INTEGRAL MAIN ELECTRICAL DISCONNECT SWITCH.
3. PROVIDE WITH INSULATION ON ALL SUCTION LINES.
4. NEW CHILLER SHALL HAVE A MAX LENGTH OF 258" (21'-6").



MECHANICAL KEYED NOTES

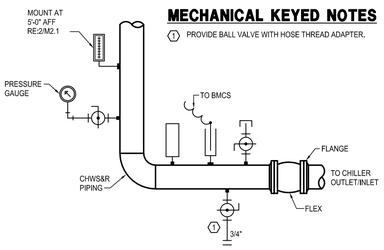
1. CONTRACTOR SHALL FIELD VERIFY EXISTING PIPE SIZES.
2. INSTALL NEW CHILLER ON EXISTING CONCRETE HOUSEKEEPING PAD.
3. PROVIDE ALL OUTDOOR PIPING WITH INSULATION AND ALUMINUM JACKETING AS SPECIFIED.
4. PROVIDE INLINE STRAINER IN VERTICAL PIPE WITH 1" DRAIN LINE.
5. PROVIDE BALL VALVE WITH HOSE THREAD ADAPTER.
6. BALANCING VALVE TO BE PROVIDED WITH INFINITE POSITION CRANK OR MEMORY STOP FOR BALANCING
7. PROVIDE NEW ISOLATION VALVE.

3 CHILLED WATER PIPING DIAGRAM
SCALE: NO SCALE



NOTES: 1. SEE TEMPERATURE TEST WELL DETAIL FOR MOUNTING ARRANGEMENTS AND CLEARANCES
2. MOUNT TO BE READABLE FROM FLOOR AT 5'-6" EYE LEVEL (7'-0" MAX.)

2 THERMOMETER INSTALLATION
SCALE NONE CP009



MECHANICAL KEYED NOTES

1. PROVIDE BALL VALVE WITH HOSE THREAD ADAPTER.

1 TYPICAL PIPING AT INLET AND OUTLET OF CHILLER
SCALE NONE

Project No: 2022-03503-00
Drawn By: AA
Checked By: VP
Date: 09-09-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912

SALAS O'BRIEN [expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2022-03503-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT HVAC UPGRADES PART 4

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD Preparing Our Next Generation

BRADLEY KALMANS 80219 LICENSED PROFESSIONAL ENGINEER
09-09-2022

MECHANICAL DETAILS AND SCHEDULES - SMITH MS

M2.1

ELECTRICAL GENERAL NOTES:

1. UNLESS INDICATED OTHERWISE, ALL ELECTRICAL EQUIPMENT IS EXISTING TO REMAIN. ELECTRICAL EQUIPMENT INCLUDES: SWITCHBOARDS, TRANSFORMERS, PANELBOARDS, ETC...

ELECTRICAL KEYED NOTES:

1. DISCONNECT AND REMOVE ALL ELECTRICAL TO EXISTING CHILLER. REMOVE EXISTING 480-VOLT CONDUIT/WIRE BACK TO SOURCE. REMOVE 120-VOLT CIRCUIT(S) BACK TO NEAREST JUNCTION BOX, LEAVE CIRCUITRY INTACT FOR RE-CONNECTION.
2. REMOVE EXISTING DISCONNECT SWITCH AND ASSOCIATED CONDUIT/WIRE BACK TO SOURCE. PATCH EXTERIOR WALL TO MATCH EXISTING AT REMOVED CONDUIT PENETRATION LOCATIONS.
3. CONNECT NEW CHILLER HEATER TO EXISTING 120V CIRCUIT PRESERVED DURING DEMOLITION. EXTEND CONDUIT/WIRE AND MAKE FINAL CONNECTION. REPLACE EXISTING CIRCUIT BREAKER WITH NEW 30mA EGFCI BREAKER.
4. RE-CONNECT EXISTING BUILDING MANAGEMENT SYSTEM TO NEW CHILLER. EXTEND CONDUIT AND MAKE FINAL CONNECTION TO CONTROL PANEL.

Project No: 2022-03503-00
Drawn By: DES
Checked By: JZ
Date: 09-09-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912

SALAS O'BRIEN [expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2022-03503-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 4

ELECTRICAL LOAD ANALYSIS: MSB 480V,3PH.,4W	
LOAD DESCRIPTION	LOAD KVA
EXISTING LOAD @ 125%	850.0
EXISTING LOAD REMOVED	-465.4
REMAINING LOAD	384.6
NEW:	
NEW CHILLER	305.8
TOTAL	690.4

TOTAL / 480 $\sqrt{3}$ = 830.8 AMPS
EXISTING 2000 AMP SERVICE

LINETYPE LEGEND

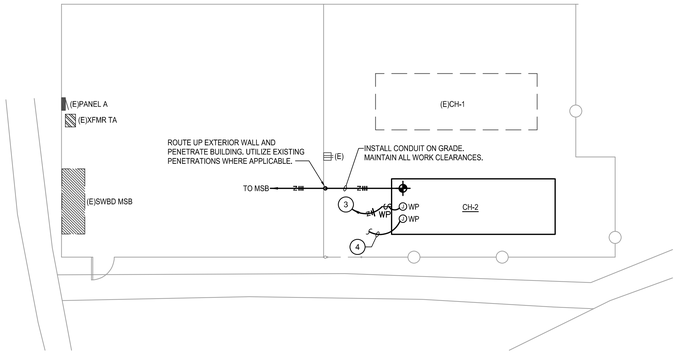
- DISCONNECT AND REMOVE
- EXISTING TO REMAIN
- NEW WORK

3 PARTIAL ONE-LINE DIAGRAM
SCALE: 1/8" = 1'-0"

SYMBOL SCHEDULE

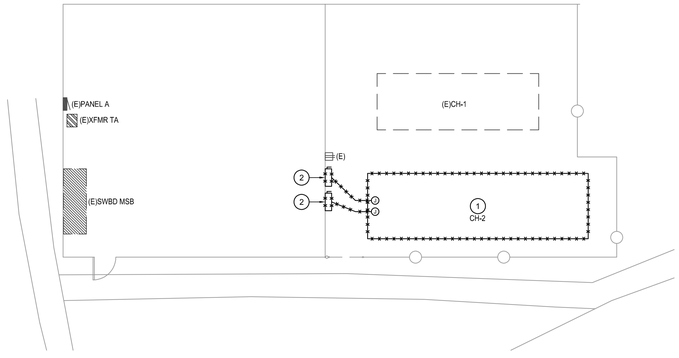
SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
LIGHTING (LETTER DENOTES TYPE - SEE LIGHT FIXTURE SCHEDULE)	
	FLUORESCENT FIXTURE
	FLUORESCENT FIXTURE ON EMERGENCY CIRCUIT
	DOWNLIGHT FIXTURE
	LIGHT FIXTURE - WALL MOUNTED
	DOWNLIGHT FIXTURE ON EMERGENCY CIRCUIT
	LIGHT FIXTURE - WALL MOUNTED ON EMERGENCY CIRCUIT
	EXIT LIGHT-CEILING MTD WITH DIRECTIONAL ARROWS AS REQUIRED
	EXIT LIGHT-WALL MTD WITH DIRECTIONAL ARROWS AS REQUIRED
SWITCHES	
$	LINE VOLTAGE SINGLE POLE SWITCH
$3	LINE VOLTAGE 3-WAY SWITCH
$4	LINE VOLTAGE 4-WAY SWITCH
$K	LINE VOLTAGE MOMENTARY DPST KEYED SWITCH
$D	LINE VOLTAGE DIMMER SWITCH, SIZE AND TYPE AS REQUIRED
$P	LINE VOLTAGE SWITCH WITH PILOT LIGHT
$T	6-HOUR ROTARY TIMER SWITCH WITH NO HOLD U.N.O.
	PUSH BUTTON EPO SWITCH WITH COVER
$MC	LOW VOLTAGE MOMENTARY CONTACT SWITCH
$R	LOW VOLTAGE DIGITAL KEYPAD
$B	LOW VOLTAGE BUILDING MANAGEMENT (BMCS) LOCAL OVERRIDE SWITCH
	OCCUPANCY SENSOR (AUTO ON / AUTO OFF WITHIN 20-MINUTES)
	VACANCY SENSOR (MANUAL ON / AUTO OFF WITHIN 20-MINUTES)
	PHOTOCELL SENSOR
[SE]	LIGHTING CONTROL SYSTEM, ('#' DENOTES TYPE - SEE LIGHTING CONTROLS SCHEDULE)
[ER]	EMERGENCY LOAD CONTROL RELAY, MINIMUM 16A & 0-10V COMPATIBLE. PROVIDE U.L. 924 U.N.O.
RECEPTACLES AND OUTLETS	
	SIMPLEX RECEPTACLE
	DUPLEX RECEPTACLE
	125/250 VOLT, 1 PHASE, 3-WIRE, 20 AMPS UNLESS NOTED OTHERWISE
	DOUBLE DUPLEX IN 2-GANG BOX WITH SINGLE COVER PLATE
	250 VOLT, 1 PHASE, SPECIAL PURPOSE OUTLET, 20 AMPS UNLESS NOTED OTHERWISE
J	JUNCTION BOX
	DUPLEX GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE
	DOUBLE DUPLEX GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE IN 2-GANG BOX WITH SINGLE COVER PLATE
F	FLUSH FLOOR JUNCTION BOX
[FACP]	FIRE ALARM CONTROL PANEL
[ANC]	FIRE ALARM REMOTE ANNUCIATOR
MOTOR CONTROLLERS AND EQUIPMENT	
	MOTOR, MAKE FINAL MOTOR CONNECTION
	3-PHASE MOTOR, MAKE FINAL MOTOR CONNECTION
	DISCONNECT SWITCH AS REQUIRED
	COMBINATION MOTOR STARTER/DISCONNECT SWITCH AS REQUIRED
	MOTOR STARTER
$M	MANUAL MOTOR SWITCH AS REQUIRED
	PREWIRED DEVICE, MAKE ELECTRICAL FINAL CONNECTIONS
[VFD]	VARIABLE FREQUENCY DRIVE MOTOR CONTROLLER FURNISHED BY DIVISION 15 AND INSTALLED BY DIVISION 16
ELECTRICAL EQUIPMENT	
	277/480 VOLT DISTRIBUTION OR PANELBOARD
	120/208 VOLT PANELBOARD
	DRY TYPE TRANSFORMER
CIRCUITING	
	CONDUIT
	CONDUIT BELOW FLOOR, SLAB, OR GRADE
#12	3/4"C. UNLESS OTHERWISE NOTED; LONG HATCH, NEUTRAL; SHORT HATCH, PHASE; "Z" HATCH, INSULATED GROUND. NO HATCHES INDICATES 2 CONDUCTORS. ARROW INDICATES HOMERUN.
	PARTIAL ELECTRICAL HOME RUN
SUBSCRIPTS AND ABBREVIATIONS	
WP	INDICATES WEATHERPROOF
WG	INDICATES WIREGUARD
(E)	INDICATES EXISTING
TL	INDICATES TWIST LOCK TYPE
NL	LIGHT FIXTURE ON NIGHT LIGHT CIRCUIT
•	NEXT TO ANY SYMBOL INDICATES FINAL ROUGH-IN FIELD COORDINATION BY CONTRACTOR WITH ARCHITECTURAL MILLWORK DRAWINGS AND OTHER TRADES

GENERAL NOTE:
ALL EXTERIOR BUILDING ELECTRICAL EQUIPMENT TO BE WEATHERPROOF NEMA-3RX MINIMUM.



NORTH

2 ELECTRICAL PLAN - SMITH MS
SCALE: 1/8" = 1'-0"



NORTH

1 ELECTRICAL DEMOLITION PLAN - SMITH MS
SCALE: 1/8" = 1'-0"

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD Preparing Our Next Generation



ELECTRICAL FLOOR PLANS - SMITH MS

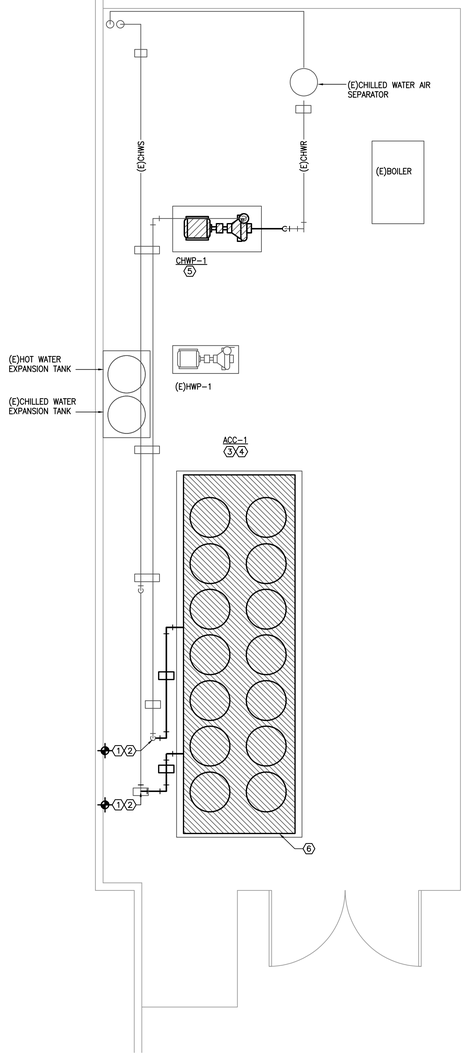
E1.1

MECHANICAL GENERAL NOTES:

1. MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL POWER REQUIREMENTS.
2. THESE CONSTRUCTION DRAWINGS ARE DIAGRAMMATIC, AND DO NOT NECESSARILY REFLECT ACTUAL DIMENSIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD-VERIFY ALL DIMENSIONS AND COORDINATE PLACEMENT OF ALL EQUIPMENT AND ROUTING OF ALL PIPING AND/OR DUCT SYSTEMS.

MECHANICAL KEYED NOTES:

1. PROVIDE OUTDOOR PIPING INSULATION AS SPECIFIED.
2. PROVIDE NEW CHW S/R PIPING AS SPECIFICED AND CONNECT TO EXISTING PIPING. RE:3/M3.01 FOR PARTIAL PIPING DIAGRAM.
3. VERIFY AIR-COOLED CHILLER SERVICE CLEARANCES WITH MANUFACTURER. COORDINATE WITH OTHER TRADES NOT TO OBSTRUCT.
4. INSTALL NEW CHILLER ON EXISTING CONCRETE PAD. EXTEND EXISTING CONCRETE PAD AS REQUIRED TO ACCOMMODATE NEW CHILLER.
5. VERIFY SERVICE CLEARANCES WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO
6. POWER CONNECTION FOR NEW CHILLER SHALL BE AT THIS END, SAME LOCATION AS DEMOLISHED CHILLER.



2 **MECHANICAL FLOOR PLAN - AUSTIN EARLY COLLEGE**
SCALE: 1/4" = 1'-0"

MECHANICAL DEMOLITION GENERAL NOTES:

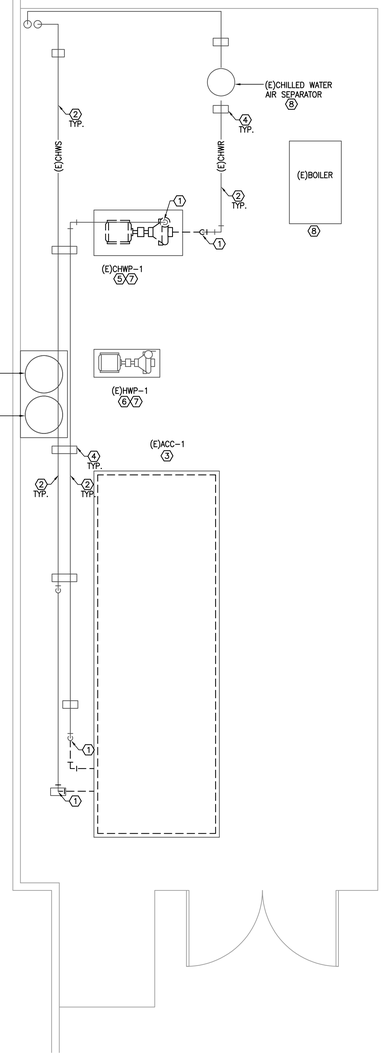
1. THESE CONSTRUCTION DRAWINGS ARE DIAGRAMMATIC, AND DO NOT NECESSARILY REFLECT ACTUAL DIMENSIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FEILD-VERIFY ALL DIMENSIONS AND COORDINATE PLACEMENT OF ALL EQUIPMENT AND ROUTING OF ALL PIPING AND/OR DUCT SYSTEMS.
2. ALL MECHANICAL SYSTEMS SHOWN ON THIS PLAN ARE FROM EXISTING DRAWINGS AND PRELIMINARY FIELD WORK. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL LOCATIONS AND SIZES OF MECHANICAL SYSTEMS PRIOR TO THE START OF WORK.
3. OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL HVAC EQUIPMENT BEING REMOVED FROM THIS PROJECT. THIS INCLUDES BUT NOT LIMITED TO INTERNAL COMPONENTS OF CHILERS, VALVES, AND PIPE STANDS.

DEMOLITION KEYED NOTES:

1. REMOVE EXISTING SUPPLY AND RETURN CHILLED WATER PIPING AND ASSOCIATED VALVES UP TO POINT INDICATED. CONTRACTOR SHALL VERIFY EXISTING PIPE SIZE BEFORE DEMOLISHING.
2. EXISTING SUPPLY AND RETURN CHILLED WATER PIPING SHALL REMAIN.
3. EXISTING AIR COOLED CHILLER SHALL BE REMOVED. EXISTING CONCRETE PAD SHALL REMAIN. CONTRACTOR SHALL VERIFY LOCATION OF POWER CONNECTION SO NEW CHILLER CAN BE INSTALLED WITH POWER CONNECTION IN SAME LOCATION.
4. EXISTING PIPING SUPPORTS SHALL REMAIN.
5. EXISTING PUMP SHALL BE REMOVED.
6. EXISTING PUMP SHALL REMAIN.
7. EXISTING PAD SHALL REMAIN.
8. EXISTING EQUIPMENT SHALL REMAIN.

DEMO SYMBOL LEGEND

RENOVATIONS	
	ITEM TO REMAIN
	ITEM TO BE REMOVED



1 **MECHANICAL DEMOLITION FLOOR PLAN - AUSTIN EARLY COLLEGE**
SCALE: 1/4" = 1'-0"

Project No: 2022-03503-00
Drawn By: AA
Checked By: VP
Date: 09-09-2022
Revision Dates:

CONSULTANTS
MEP ENGINEERS
SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912
SALAS O'BRIEN [expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2022-03503-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 4

BEAUMONT INDEPENDENT SCHOOL DISTRICT
BISD Preparing Our Next Generation

BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
STATE OF TEXAS
09-09-2022

MECHANICAL FLOOR PLANS - AUSTIN EARLY COLLEGE

M1.1

PUMP

MARK	SERVICE	TYPE	GPM	HEAD (FT.)	MAXIMUM RPM	MOTOR HORSEPOWER	CURRENT	MANUFACTURER	MODEL	REMARKS
CHWP-1	CHILLED WATER	END SUCTION	312.0	100	1,750	30	460/3/60	BELL & GOSSETT	E-1510	1,2

GENERAL NOTES:
1. PUMP IS TO HAVE A NON-OVERLOADING MOTOR.
2. MINIMUM RECOMMENDED CLEARANCE AROUND A PUMP IS 24 INCHES. MAINTAIN MINIMUM CLEARANCES AS REQUIRED FOR SERVICE, MAINTENANCE, AND INSPECTION.

REMARKS:
1. PROVIDE WITH GAUGE TAPPINGS.
2. PROVIDE WITH SUCTION DIFFUSER.

PACKAGED AIR COOLED SCREW CHILLER

MARK	ACTUAL CAPACITY (TONS)	LEAVING WATER TEMP. (°F)	GPM	MAXIMUM WATER PRESSURE DROP (FT.)	AMBIENT AIR TEMP. (°F)	CURRENT CHARACTERISTIC	REMARKS
ACC-1	130.0	44	312.0	20.0	95.0	460/3/60	1,2,3,4

GENERAL NOTES:
1. MAXIMUM FOULING FACTOR FOR THE EVAPORATOR IS 0.0001
2. MAINTAIN MINIMUM CLEARANCES REQUIRED BY CHILLER MANUFACTURER FOR PROPER AIRFLOW TO FANS AND UNIT. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON EQUIPMENT FOR SERVICE, MAINTENANCE AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCES AS REQUIRED BY NEC.
3. CHILLER SHALL MEET OR EXCEED THE AHRI FULL-LOAD AND PART-LOAD PATH A OR PATH B EFFICIENCIES INDICATED IN THE 2015 IECC.

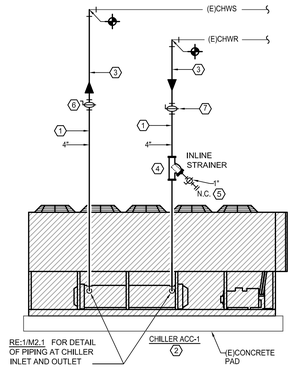
REMARKS:
1. PROVIDE WITH LOW AMBIENT HEAD PRESSURE CONTROL.
2. PROVIDE WITH INTEGRAL MAIN ELECTRICAL DISCONNECT SWITCH.
3. PROVIDE WITH INSULATION ON ALL SUCTION LINES.
4. NEW CHILLER SHALL HAVE A MAX LENGTH OF 273".

SYMBOL LEGEND

SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
GENERAL	
(#)	KEY NOTE TAG
(#)	NOTE SPECIFIC TO DETAIL TAG
	REVISION TAG
	NEW EQUIPMENT
PIPING	
—CWS&R—	CONDENSER WATER SUPPLY & RETURN (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—CWS—	CONDENSER WATER SUPPLY
—CWR—	CONDENSER WATER RETURN
-CHWS&R-	CHILLED WATER SUPPLY & RETURN (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—CHWS—	CHILLED WATER SUPPLY
—CHWR—	CHILLED WATER RETURN
—HWS&R—	HOT WATER FOR HYDRONIC HEATING SUPPLY & RETURN (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—HWS—	HOT WATER FOR HYDRONIC HEATING SUPPLY
—HWR—	HOT WATER FOR HYDRONIC HEATING RETURN
—D—	CONDENSATE DRAIN LINE
—AD—	AUXILLARY CONDENSATE DRAIN LINE
—RLR—	REFRIGERANT LIQUID & GAS RECIRCULATION LINE (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—RL—	REFRIGERANT LIQUID LINE
—HG—	REFRIGERANT HOT GAS LINE
—RS—	REFRIGERANT SUCTION LINE
	ELBOW UP
	ELBOW DOWN
	90° ELBOW
	45° ELBOW
	TEE
	TEE DOWN
	TEE UP
	TOP BRANCH CONNECTION
	BOTTOM BRANCH CONNECTION
	FLANGE
	CAP
	CONTINUATION
	FLOOR DRAIN (REFER TO PLUMBING DRAWINGS)
	GATE VALVE
	GLOBE VALVE
	CHECK VALVE
	BUTTERFLY VALVE
	BUTTERFLY VALVE WITH OPERATOR
	PLUG VALVE
	TWO-WAY CONTROL VALVE
	THREE-WAY CONTROL VALVE
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE
	BALL VALVE
	STRAINER
	UNION
	THERMOMETER WELL
	PETE'S PLUG
	PRESSURE GAUGE
	TEMPERATURE SENSOR IN PIPE
	VENTURI FLOW METER
	FLOW SWITCH
FM	FLOW MEASURING STATION
	EXPANSION JOINT
	FLEXIBLE CONNECTION
	GAUGE COCK
	SITE GLASS
	DIFFERENTIAL PRESSURE SENSOR
	TURBINE FLOW METER
	ANCHOR
	PIPE GUIDE
SUBSCRIPTS AND ABREVIATIONS	
AFF	ABOVE FINISHED FLOOR
BBS	BELOW BOTTOM OF STRUCTURE
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
CA	COMBUSTION AIR
CFM	CUBIC FEET PER MINUTE
EA	EXHAUST AIR
FPM	FEET PER MINUTE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
OA	OUTSIDE AIR
RA	RETURN AIR
SA	SUPPLY AIR

DEMO SYMBOL LEGEND

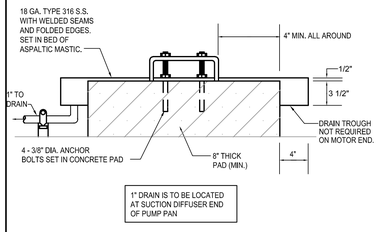
RENOVATIONS	
	ITEM TO REMAIN
	ITEM TO BE REMOVED



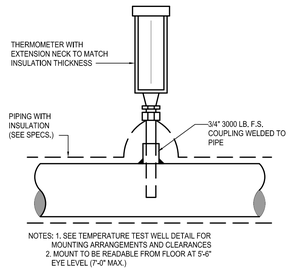
MECHANICAL KEYED NOTES

1. CONTRACTOR SHALL FIELD VERIFY EXISTING PIPE SIZES.
2. INSTALL NEW CHILLER ON EXISTING CONCRETE HOUSEKEEPING PAD.
3. PROVIDE ALL OUTDOOR PIPING WITH INSULATION AND ALUMINUM JACKETING AS SPECIFIED.
4. PROVIDE INLINE STRAINER IN VERTICAL PIPE WITH 1" DRAIN LINE.
5. PROVIDE BALL VALVE WITH HOSE THREAD ADAPTER.
6. BALANCING VALVE TO BE PROVIDED WITH INFINITE POSITION CRANK OR MEMORY STOP FOR BALANCING
7. PROVIDE NEW ISOLATION VALVE.

3 CHILLED WATER PIPING DIAGRAM
SCALE: NO SCALE



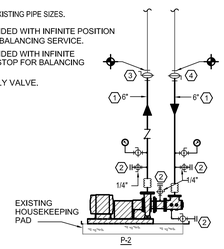
5 PUMP PAN
SCALE NONE



2 THERMOMETER INSTALLATION
SCALE NONE CP009

MECHANICAL KEYED NOTES

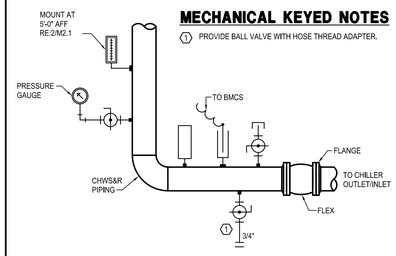
1. CONTRACTOR SHALL FIELD VERIFY EXISTING PIPE SIZES.
2. BALANCING VALVE TO BE PROVIDED WITH INFINITE POSITION CRANK OR MEMORY STOP FOR BALANCING SERVICE.
3. BALANCING VALVE TO BE PROVIDED WITH INFINITE POSITION CRANK OR MEMORY STOP FOR BALANCING SERVICE.
4. PROVIDE ISOLATION BUTTERFLY VALVE.



4 CHILLED WATER PUMP PIPING DIAGRAM
SCALE: NO SCALE

MECHANICAL KEYED NOTES

1. PROVIDE BALL VALVE WITH HOSE THREAD ADAPTER.



1 TYPICAL PIPING AT INLET AND OUTLET OF CHILLER
SCALE NONE

Project No: 2022-03503-00
Drawn By: AA
Checked By: VP
Date: 09-09-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912

SALAS O'BRIEN [expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2022-03503-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 4

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD Preparing Our Next Generation

BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
STATE OF TEXAS
09-09-2022

MECHANICAL DETAILS AND SCHEDULES - AUSTIN EARLY COLLEGE

M2.1

ELECTRICAL GENERAL NOTES:

1. UNLESS INDICATED OTHERWISE, ALL ELECTRICAL EQUIPMENT IS EXISTING TO REMAIN. ELECTRICAL EQUIPMENT INCLUDES: SWITCHBOARDS, TRANSFORMERS, PANELBOARDS, ETC...

ELECTRICAL KEYED NOTES:

1. DISCONNECT AND REMOVE ALL ELECTRICAL TO EXISTING CHILLER. REMOVE EXISTING 480-VOLT CONDUCTORS BACK TO SOURCE. LEAVE CONDUIT IN PLACE FOR RE-USE. REMOVE 120-VOLT CIRCUIT(S) BACK TO NEAREST JUNCTION BOX, LEAVE CIRCUITRY INTACT FOR RE-CONNECTION.
2. REMOVE EXISTING DISCONNECT/MOTOR STARTER AND RETURN TO OWNER.
3. EXISTING CHILLER ELECTRICAL STUB UP LOCATIONS/PATHWAYS TO REMAIN.
4. DISCONNECT AND REMOVE ALL ELECTRICAL TO EXISTING PUMP AND ASSOCIATED CONDUIT/WIRE, MOTOR STARTER BACK TO SOURCE.
5. REMOVE EXISTING UNISTRUT SUPPORT RACK.
6. CONNECT NEW CHILLER HEATER TO EXISTING 120V CIRCUIT PRESERVED DURING DEMOLITION. EXTEND CONDUIT/WIRE AND MAKE FINAL CONNECTION. REPLACE EXISTING CIRCUIT BREAKER WITH NEW 30mA EGFCI BREAKER.
7. RE-CONNECT EXISTING BUILDING MANAGEMENT SYSTEM TO NEW CHILLER. EXTEND CONDUIT AND MAKE FINAL CONNECTION TO CONTROL PANEL.

SYMBOL SCHEDULE

SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
LIGHTING (LETTER DENOTES TYPE - SEE LIGHT FIXTURE SCHEDULE)	
	FLUORESCENT FIXTURE
	FLUORESCENT FIXTURE ON EMERGENCY CIRCUIT
	DOWNLIGHT FIXTURE
	LIGHT FIXTURE - WALL MOUNTED
	DOWNLIGHT FIXTURE ON EMERGENCY CIRCUIT
	LIGHT FIXTURE - WALL MOUNTED ON EMERGENCY CIRCUIT
	EXIT LIGHT-CEILING MTD WITH DIRECTIONAL ARROWS AS REQUIRED
	EXIT LIGHT-WALL MTD WITH DIRECTIONAL ARROWS AS REQUIRED
SWITCHES	
$	LINE VOLTAGE SINGLE POLE SWITCH
$3	LINE VOLTAGE 3-WAY SWITCH
$4	LINE VOLTAGE 4-WAY SWITCH
$K	LINE VOLTAGE MOMENTARY DPST KEYED SWITCH
$D	LINE VOLTAGE DIMMER SWITCH, SIZE AND TYPE AS REQUIRED
$P	LINE VOLTAGE SWITCH WITH PILOT LIGHT
$T	6-HOUR ROTARY TIMER SWITCH WITH NO HOLD U.N.O.
	PUSH BUTTON EPO SWITCH WITH COVER
$MC	LOW VOLTAGE MOMENTARY CONTACT SWITCH
$R	LOW VOLTAGE DIGITAL KEYPAD
$B	LOW VOLTAGE BUILDING MANAGEMENT (BMCS) LOCAL OVERRIDE SWITCH
	OCCUPANCY SENSOR (AUTO ON / AUTO OFF WITHIN 20-MINUTES)
	VACANCY SENSOR (MANUAL ON / AUTO OFF WITHIN 20-MINUTES)
	PHOTOCELL SENSOR
RE	LIGHTING CONTROL SYSTEM, ('R' DENOTES TYPE - SEE LIGHTING CONTROLS SCHEDULE)
ER	EMERGENCY LOAD CONTROL RELAY, MINIMUM 16A & 0-10V COMPATIBLE. PROVIDE U.L. 924 U.N.O.
RECEPTACLES AND OUTLETS	
	SIMPLEX RECEPTACLE
	DUPLEX RECEPTACLE
	125/250 VOLT, 1 PHASE, 3-WIRE, 20 AMPS UNLESS NOTED OTHERWISE
	DOUBLE DUPLEX IN 2-GANG BOX WITH SINGLE COVER PLATE
	250 VOLT, 1 PHASE, SPECIAL PURPOSE OUTLET, 20 AMPS UNLESS NOTED OTHERWISE
	JUNCTION BOX
	DUPLEX GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE
	DOUBLE DUPLEX GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE IN 2-GANG BOX WITH SINGLE COVER PLATE
	FLUSH FLOOR JUNCTION BOX
FACP	FIRE ALARM CONTROL PANEL
FANN	FIRE ALARM REMOTE ANNUCIATOR
MOTOR CONTROLLERS AND EQUIPMENT	
	MOTOR, MAKE FINAL MOTOR CONNECTION
	3-PHASE MOTOR, MAKE FINAL MOTOR CONNECTION
	DISCONNECT SWITCH AS REQUIRED
	COMBINATION MOTOR STARTER/DISCONNECT SWITCH AS REQUIRED
	MOTOR STARTER
$M	MANUAL MOTOR SWITCH AS REQUIRED
	PREWIRED DEVICE, MAKE ELECTRICAL FINAL CONNECTIONS
VFD	VARIABLE FREQUENCY DRIVE MOTOR CONTROLLER FURNISHED BY DIVISION 15 AND INSTALLED BY DIVISION 16
ELECTRICAL EQUIPMENT	
	277/480 VOLT DISTRIBUTION OR PANELBOARD
	120/208 VOLT PANELBOARD
	DRY TYPE TRANSFORMER
CIRCUITING	
	CONDUIT
	CONDUIT BELOW FLOOR, SLAB, OR GRADE
#12	3/4"C. UNLESS OTHERWISE NOTED; LONG HATCH, NEUTRAL; SHORT HATCH, PHASE; "Z" HATCH, INSULATED GROUND. NO HATCHES INDICATES 2 CONDUCTORS. ARROW INDICATES HOMERUN.
	PARTIAL ELECTRICAL HOME RUN
SUBSCRIPTS AND ABBREVIATIONS	
WP	INDICATES WEATHERPROOF
WG	INDICATES WIREGUARD
(E)	INDICATES EXISTING
TL	INDICATES TWIST LOCK TYPE
NL	LIGHT FIXTURE ON NIGHT LIGHT CIRCUIT
•	NEXT TO ANY SYMBOL INDICATES FINAL ROUGH-IN FIELD COORDINATION BY CONTRACTOR WITH ARCHITECTURAL MILLWORK DRAWINGS AND OTHER TRADES

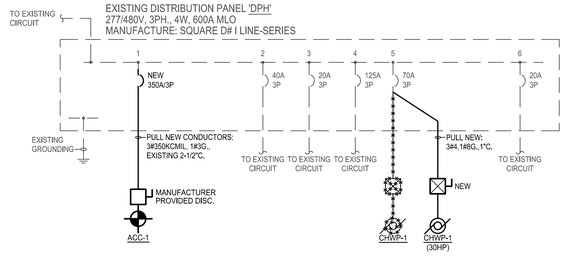
GENERAL NOTE:
ALL EXTERIOR BUILDING ELECTRICAL EQUIPMENT TO BE WEATHERPROOF NEMA-3RX MINIMUM.

ELECTRICAL LOAD ANALYSIS: DPH 480V,3PH.,4W	
LOAD DESCRIPTION	LOAD KVA
EXISTING LOAD @ 125%	342.4
EXISTING LOAD REMOVED	-210.9
REMAINING LOAD	131.5
NEW:	
NEW CHILLER	203.4
NEW PUMP	33.2
TOTAL	368.1

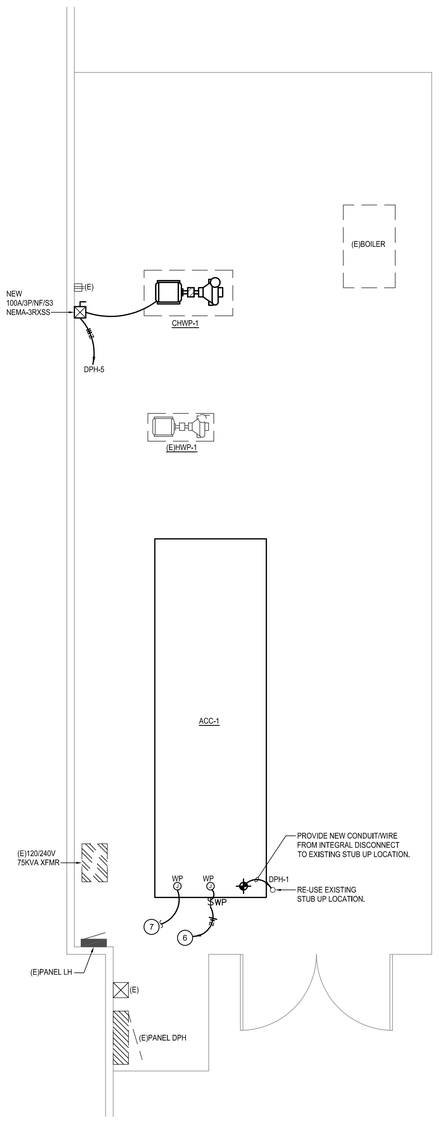
TOTAL / 480 $\sqrt{3}$ = 442.9 AMPS

LINETYPE LEGEND

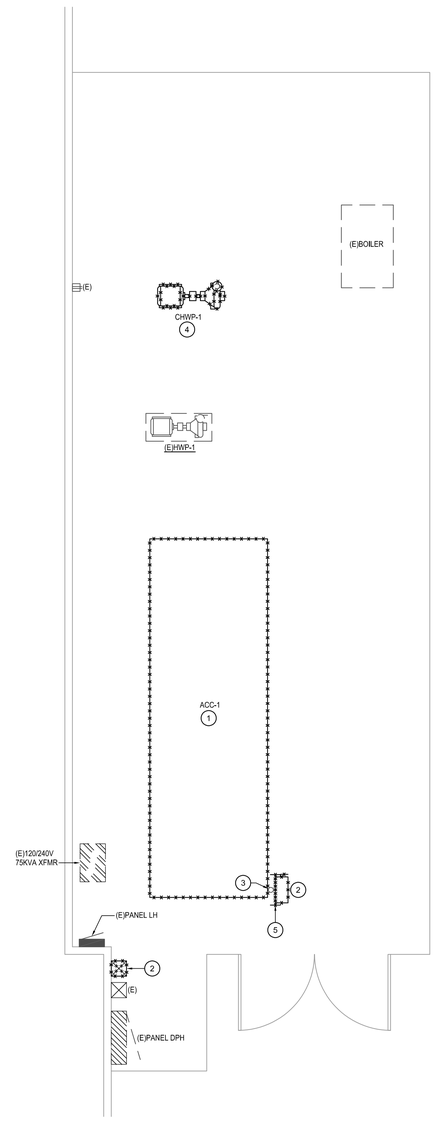
DISCONNECT AND REMOVE	
EXISTING TO REMAIN	
NEW WORK	



3 **PARTIAL ONE-LINE DIAGRAM**
SCALE: NONE



2 **ELECTRICALPLAN - AUSTIN EARLY COLLEGE**
SCALE: 1/4" = 1'-0"



1 **ELECTRICAL DEMOLITION PLAN - AUSTIN EARLY COLLEGE**
SCALE: 1/4" = 1'-0"

Project No: 2022-03503-00
Drawn By: DES
Checked By: JZ
Date: 09-09-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912

SALAS O'BRIEN [expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2022-03503-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT HVAC UPGRADES PART 4

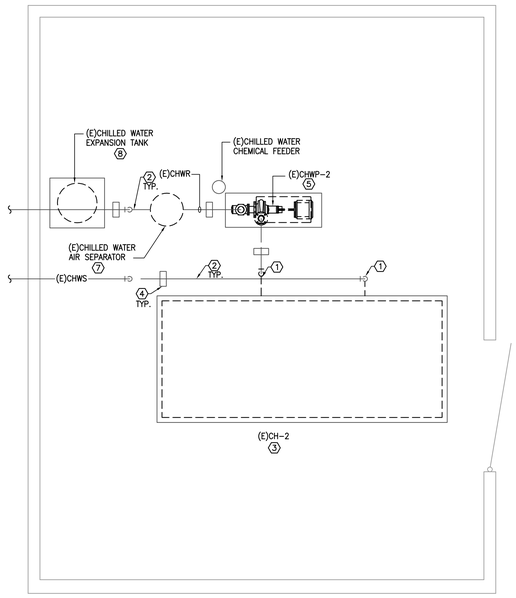
BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD Preparing Our Next Generation

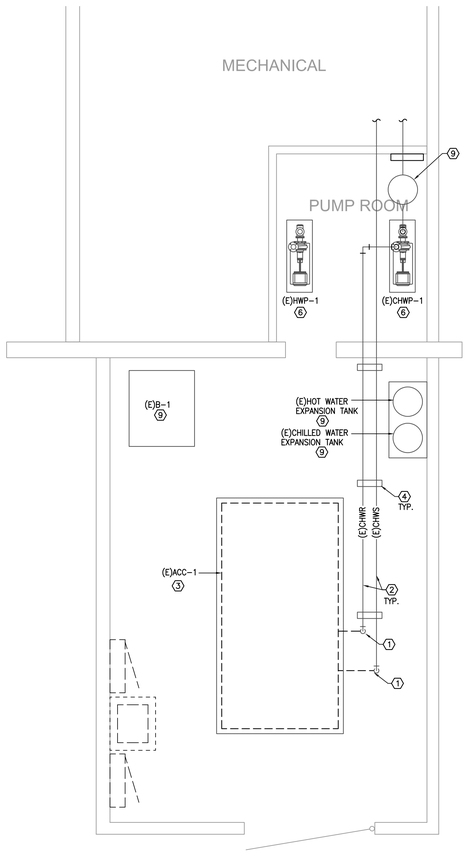
Bradley Kalmans
REGISTERED PROFESSIONAL ENGINEER
BRADLEY KALMANS
80219
LICENSED
ELECTRICAL
STATE OF TEXAS
09-09-2022

ELECTRICAL FLOOR PLANS - AUSTIN EARLY COLLEGE

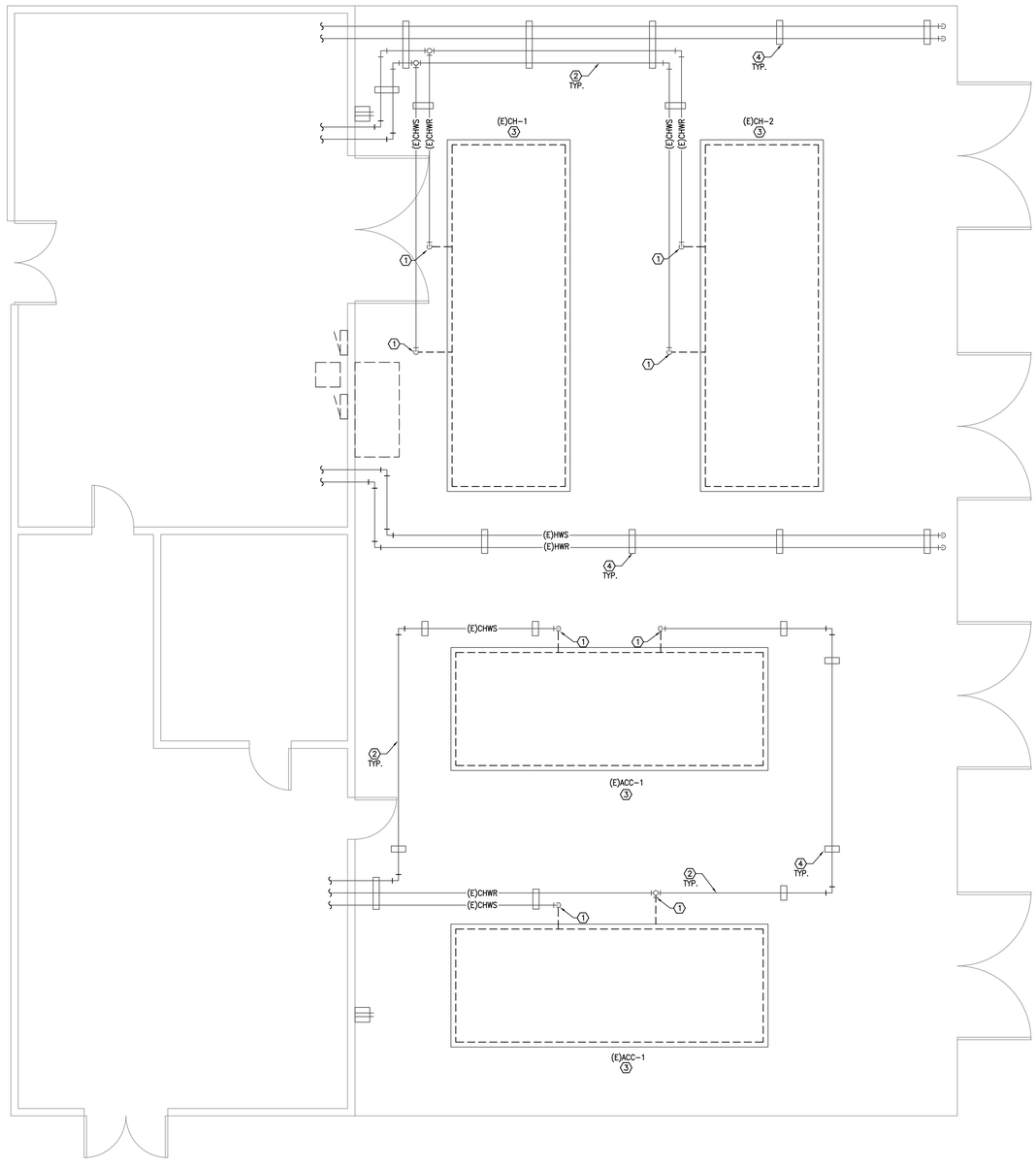
E1.1



3 MECHANICAL PLAN - HALL B - BEAUMONT UNITED HS
SCALE: 1/4" = 1'-0"



2 MECHANICAL DEMOLITION PLAN - HALL A - BEAUMONT UNITED HS
SCALE: 1/4" = 1'-0"



1 MECHANICAL DEMOLITION PLAN - GYM PLANT - BEAUMONT UNITED HS
SCALE: 1/4" = 1'-0"

MECHANICAL DEMOLITION GENERAL NOTES:

1. THESE CONSTRUCTION DRAWINGS ARE DIAGRAMMATIC, AND DO NOT NECESSARILY REFLECT ACTUAL DIMENSIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FEILD-VERIFY ALL DIMENSIONS AND COORDINATE PLACEMENT OF ALL EQUIPMENT AND ROUTING OF ALL PIPING AND/OR DUCT SYSTEMS.
2. ALL MECHANICAL SYSTEMS SHOWN ON THIS PLAN ARE FROM EXISTING DRAWINGS AND PRELIMINARY FIELD WORK. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL LOCATIONS AND SIZES OF MECHANICAL SYSTEMS PRIOR TO THE START OF WORK.
3. OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL HVAC EQUIPMENT BEING REMOVED FROM THIS PROJECT. THIS INCLUDES BUT NOT LIMITED TO INTERNAL COMPONENTS OF CHILERS, VALVES, AND PIPE STANDS.

DEMOLITION KEYED NOTES:

1. REMOVE EXISTING SUPPLY AND RETURN CHILLED WATER PIPING AND ASSOCIATED VALVES UP TO POINT INDICATED. CONTRACTOR SHALL VERIFY EXISTING PIPE SIZE BEFORE DEMOLISHING.
2. EXISTING SUPPLY AND RETURN CHILLED WATER PIPING SHALL REMAIN.
3. EXISTING AIR COOLED CHILLER SHALL BE REMOVED. EXISTING CONCRETE PAD SHALL REMAIN. CONTRACTOR SHALL VERIFY LOCATION OF POWER CONNECTION SO NEW CHILLER CAN BE INSTALLED WITH POWER CONNECTION IN SAME LOCATION.
4. EXISTING PIPING SUPPORTS SHALL REMAIN.
5. EXISTING PUMP SHALL BE REMOVED.
6. EXISTING PUMP SHALL REMAIN.
7. EXISTING CHILLED WATER AIR SEPARATOR SHALL BE REMOVED.
8. EXISTING CHILLED WATER EXPANSION TANK SHALL BE REMOVED.
9. EXISTING EQUIPMENT SHALL REMAIN.

DEMO SYMBOL LEGEND

RENOVATIONS	
	ITEM TO REMAIN
	ITEM TO BE REMOVED

Project No: 2022-03503-00
Drawn By: AA
Checked By: VP
Date: 09-09-2022
Revision Dates:

CONSULTANTS

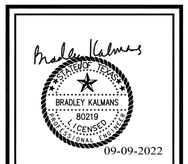
MEP ENGINEERS

SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912

SALAS O'BRIEN [expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2022-03503-00

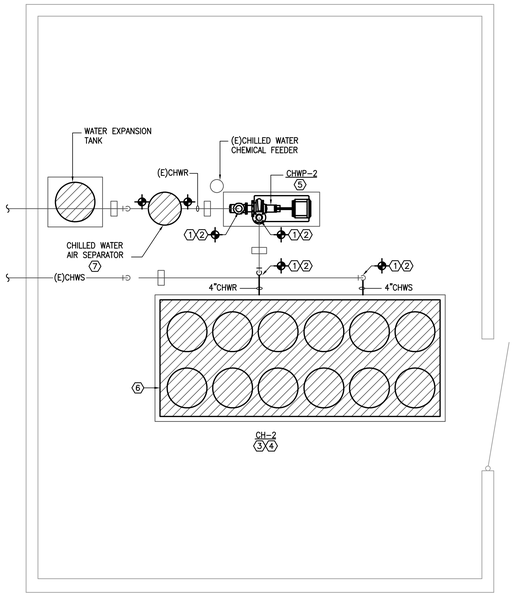
BEAUMONT INDEPENDENT SCHOOL DISTRICT HVAC UPGRADES PART 4

BEAUMONT INDEPENDENT SCHOOL DISTRICT
BISD Preparing Our Next Generation

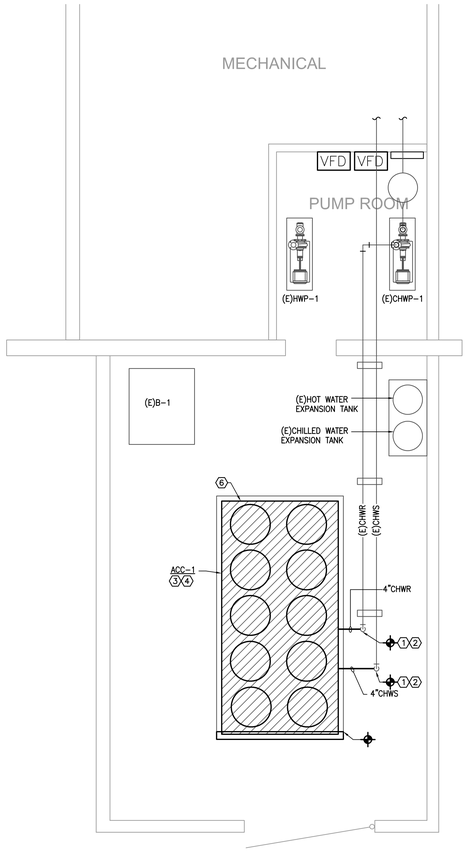


MECHANICAL DEMOLITION PLANS - BEAUMONT UNITED HS

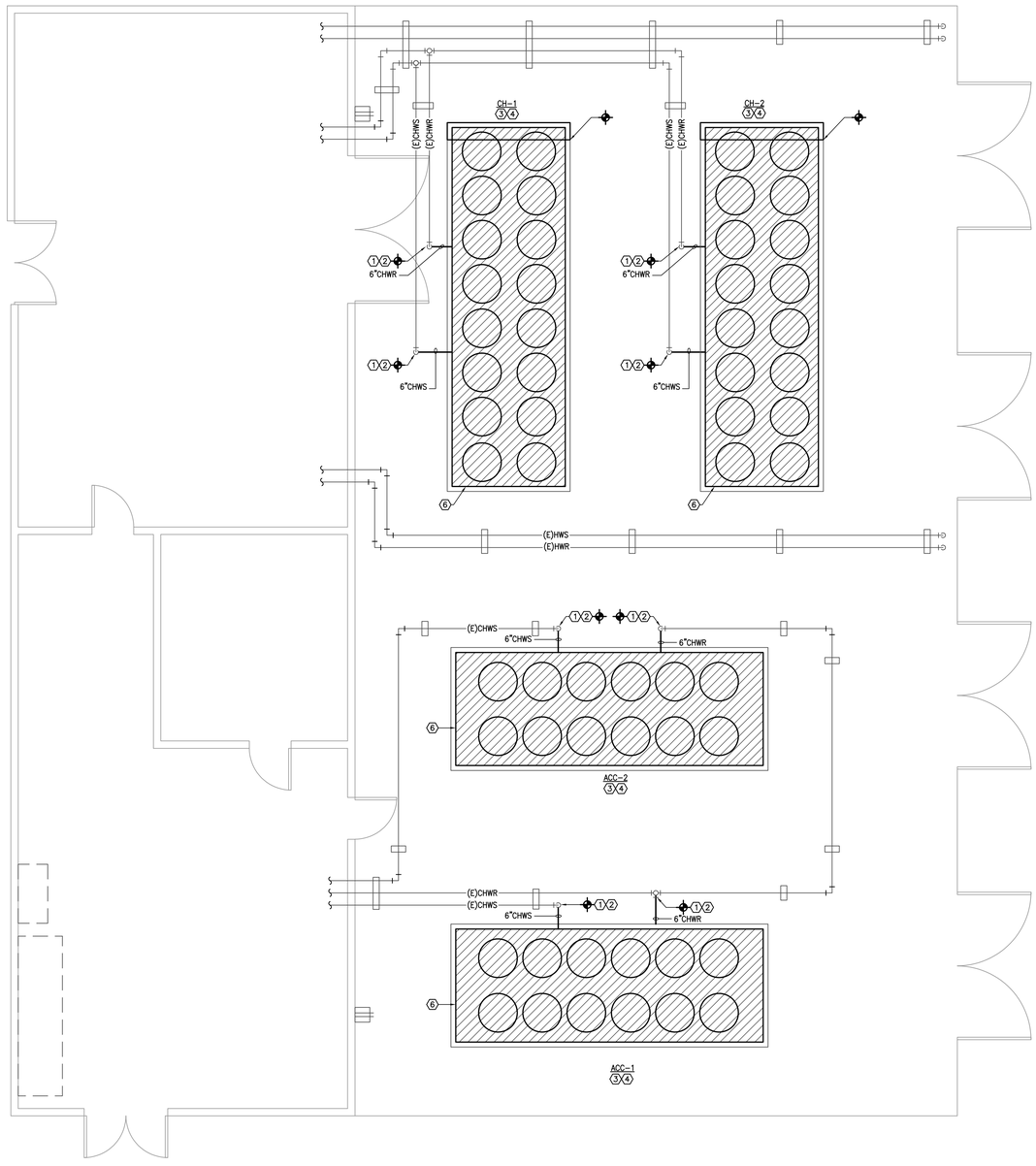
M0.1



3 MECHANICAL FLOOR PLAN - HALL B - BEAUMONT UNITED HS
SCALE: 1/4" = 1'-0"



2 MECHANICAL FLOOR PLAN - HALL A - BEAUMONT UNITED HS
SCALE: 1/4" = 1'-0"



1 MECHANICAL FLOOR PLAN - GYM PLANT - BEAUMONT UNITED HS
SCALE: 1/4" = 1'-0"

MECHANICAL GENERAL NOTES:

1. MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL POWER REQUIREMENTS.
2. THESE CONSTRUCTION DRAWINGS ARE DIAGRAMMATIC, AND DO NOT NECESSARILY REFLECT ACTUAL DIMENSIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD-VERIFY ALL DIMENSIONS AND COORDINATE PLACEMENT OF ALL EQUIPMENT AND ROUTING OF ALL PIPING AND/OR DUCT SYSTEMS.

MECHANICAL KEYED NOTES:

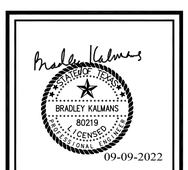
1. PROVIDE OUTDOOR PIPING INSULATION AS SPECIFIED.
2. PROVIDE NEW CHW S/R PIPING AS SPECIFICED AND CONNECT TO EXISTING PIPING. RE:3/M2.01 FOR PARTIAL PIPING DIAGRAM.
3. VERIFY AIR-COOLED CHILLER SERVICE CLEARANCES WITH MANUFACTURER. COORDINATE WITH OTHER TRADES NOT TO OBSTRUCT.
4. INSTALL NEW CHILLER ON EXISTING CONCRETE PAD. EXTEND EXISTING CONCRETE PAD AS REQUIRED TO ACCOMMODATE NEW CHILLER.
5. VERIFY SERVICE CLEARANCES WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO
6. POWER CONNECTION FOR NEW CHILLER SHALL BE AT THIS END, SAME LOCATION AS DEMOLISHED CHILLER.
7. PROVIDE AIR/DIRT SEPARATOR AT LOCATION SHOWN. REFER TO DETAILS.

Project No: 2022-03503-00
Drawn By: AA
Checked By: VP
Date: 09-09-2022
Revision Dates:

CONSULTANTS
MEP ENGINEERS
SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912
SALAS O'BRIEN [expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2022-03503-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT HVAC UPGRADES PART 4

BEAUMONT INDEPENDENT SCHOOL DISTRICT
BISD Preparing Our Next Generation



MECHANICAL FLOOR PLANS - BEAUMONT UNITED HS

M1.1

GYM
PACKAGED AIR COOLED SCREW CHILLER

MARK	ACTUAL CAPACITY (TONS)	LEAVING WATER TEMP., (°F)	GPM	MAXIMUM WATER PRESSURE DROP (FT.)	AMBIENT AIR TEMP. (°F)	CURRENT CHARACTERISTIC	REMARKS
ACC-1	195.0	44	468.0	20.0	95.0	460/3/60	1,2,3,4
ACC-2	195.0	44	468.0	20.0	95.0	460/3/60	1,2,3,4
CH-1	130.0	44	312.0	20.0	95.0	460/3/60	1,2,3,5
CH-2	130.0	44	312.0	20.0	95.0	460/3/60	1,2,3,5

GENERAL NOTES:
1. MAXIMUM FOULING FACTOR FOR THE EVAPORATOR IS 0.0001
2. MAINTAIN MINIMUM CLEARANCES REQUIRED BY CHILLER MANUFACTURER FOR PROPER AIRFLOW TO FANS AND UNIT. MANTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON EQUIPMENT FOR SERVICE, MAINTENANCE AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCES AS REQUIRED BY NEC.
3. CHILLER SHALL MEET OR EXCEED THE AHRI FULL-LOAD AND PART-LOAD PATH A OR PATH B EFFICIENCIES INDICATED IN THE 2015 IECC.

REMARKS:
1. PROVIDE WITH LOW AMBIENT HEAD PRESSURE CONTROL.
2. PROVIDE WITH INTEGRAL MAIN ELECTRICAL DISCONNECT SWITCH.
3. PROVIDE WITH INSULATION ON ALL SUCTION LINES.
4. NEW CHILLER SHALL HAVE A MAX LENGTH OF 250".
5. NEW CHILLER SHALL HAVE A MAX LENGTH OF 278".

HALL "A"
PACKAGED AIR COOLED SCROLL CHILLER

MARK	ACTUAL CAPACITY (TONS)	LEAVING WATER TEMP., (°F)	GPM	MAXIMUM WATER PRESSURE DROP (FT.)	AMBIENT AIR TEMP. (°F)	CURRENT CHARACTERISTIC	REMARKS
ACC-1	104.0	44	249.6	20.0	95.0	460/3/60	1,2,3,4

GENERAL NOTES:
1. MAXIMUM FOULING FACTOR FOR THE EVAPORATOR IS 0.0001
2. MAINTAIN MINIMUM CLEARANCES REQUIRED BY CHILLER MANUFACTURER FOR PROPER AIRFLOW TO FANS AND UNIT. MANTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON EQUIPMENT FOR SERVICE, MAINTENANCE AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCES AS REQUIRED BY NEC.
3. CHILLER SHALL MEET OR EXCEED THE AHRI FULL-LOAD AND PART-LOAD PATH A OR PATH B EFFICIENCIES INDICATED IN THE 2015 IECC.

REMARKS:
1. PROVIDE WITH LOW AMBIENT HEAD PRESSURE CONTROL.
2. PROVIDE WITH INTEGRAL MAIN ELECTRICAL DISCONNECT SWITCH.
3. PROVIDE WITH INSULATION ON ALL SUCTION LINES.
4. NEW CHILLER SHALL HAVE A MAX LENGTH OF 178".

HALL "B"
PACKAGED AIR COOLED SCREW CHILLER

MARK	ACTUAL CAPACITY (TONS)	LEAVING WATER TEMP., (°F)	GPM	MAXIMUM WATER PRESSURE DROP (FT.)	AMBIENT AIR TEMP. (°F)	CURRENT CHARACTERISTIC	REMARKS
CH-2	130.0	44	312.0	20.0	95.0	460/3/60	1,2,3,4

GENERAL NOTES:
1. MAXIMUM FOULING FACTOR FOR THE EVAPORATOR IS 0.0001
2. MAINTAIN MINIMUM CLEARANCES REQUIRED BY CHILLER MANUFACTURER FOR PROPER AIRFLOW TO FANS AND UNIT. MANTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON EQUIPMENT FOR SERVICE, MAINTENANCE AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCES AS REQUIRED BY NEC.
3. CHILLER SHALL MEET OR EXCEED THE AHRI FULL-LOAD AND PART-LOAD PATH A OR PATH B EFFICIENCIES INDICATED IN THE 2015 IECC.

REMARKS:
1. PROVIDE WITH LOW AMBIENT HEAD PRESSURE CONTROL.
2. PROVIDE WITH INTEGRAL MAIN ELECTRICAL DISCONNECT SWITCH.
3. PROVIDE WITH INSULATION ON ALL SUCTION LINES.
4. NEW CHILLER SHALL HAVE A MAX LENGTH OF 221".

PUMP (HALL B)

MARK	SERVICE	TYPE	GPM	HEAD (FT.)	MAXIMUM RPM	MOTOR HORSEPOWER	CURRENT	MANUFACTURER	MODEL	REMARKS
CHWP-1	CHILLED WATER	END SUCTION	312.0	110	1,750	30	460/3/60	BELL & GOSSETT	E-1510	1,2

GENERAL NOTES:
1. PUMP IS TO HAVE A NON-OVERLOADING MOTOR.
2. MINIMUM RECOMMENDED CLEARANCE AROUND A PUMP IS 24 INCHES. MAINTAIN MINIMUM CLEARANCES AS REQUIRED FOR SERVICE, MAINTENANCE, AND INSPECTION.

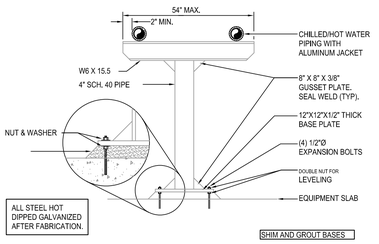
REMARKS:
1. PROVIDE WITH GAUGE TAPPINGS.
2. PROVIDE WITH SUCTION DIFFUSER.

SYMBOL LEGEND

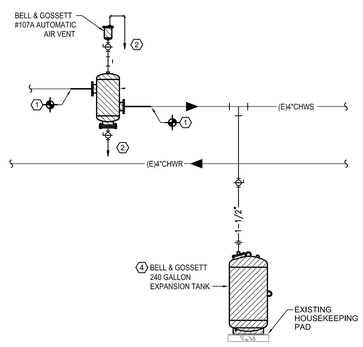
SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
GENERAL	
	KEY NOTE TAG
	NOTE SPECIFIC TO DETAIL TAG
	REVISION TAG
	NEW EQUIPMENT
PIPING	
—CWS&R—	CONDENSER WATER SUPPLY & RETURN (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—CWS—	CONDENSER WATER SUPPLY
—CWR—	CONDENSER WATER RETURN
—CHWS&R—	CHILLED WATER SUPPLY & RETURN (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—CHWS—	CHILLED WATER SUPPLY
—CHWR—	CHILLED WATER RETURN
—HWS&R—	HOT WATER FOR HYDRONIC HEATING SUPPLY & RETURN (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—HWS—	HOT WATER FOR HYDRONIC HEATING SUPPLY
—HWR—	HOT WATER FOR HYDRONIC HEATING RETURN
—D—	CONDENSATE DRAIN LINE
—AD—	AUXILLARY CONDENSATE DRAIN LINE
—RLR—	REFRIGERANT LIQUID & GAS RECIRCULATION LINE (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—RL—	REFRIGERANT LIQUID LINE
—HG—	REFRIGERANT HOT GAS LINE
—RS—	REFRIGERANT SUCTION LINE
	ELBOW UP
	ELBOW DOWN
	90° ELBOW
	45° ELBOW
	TEE
	TEE DOWN
	TEE UP
	TOP BRANCH CONNECTION
	BOTTOM BRANCH CONNECTION
	FLANGE
	CAP
	CONTINUATION
	FLOOR DRAIN (REFER TO PLUMBING DRAWINGS)
	GATE VALVE
	GLOBE VALVE
	CHECK VALVE
	BUTTERFLY VALVE
	BUTTERFLY VALVE WITH OPERATOR
	PLUG VALVE
	TWO-WAY CONTROL VALVE
	THREE-WAY CONTROL VALVE
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE
	BALL VALVE
	STRAINER
	UNION
	THERMOMETER WELL
	PETE'S PLUG
	PRESSURE GAUGE
	TEMPERATURE SENSOR IN PIPE
	VENTURI FLOW METER
	FLOW SWITCH
FM	FLOW MEASURING STATION
	EXPANSION JOINT
	FLEXIBLE CONNECTION
	GAUGE COCK
	SITE GLASS
	DIFFERENTIAL PRESSURE SENSOR
	TURBINE FLOW METER
	ANCHOR
	PIPE GUIDE
SUBSCRIPTS AND ABREVIATIONS	
AFF	ABOVE FINISHED FLOOR
BBS	BELOW BOTTOM OF STRUCTURE
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
CA	COMBUSTION AIR
CFM	CUBIC FEET PER MINUTE
EA	EXHAUST AIR
FPM	FEET PER MINUTE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
OA	OUTSIDE AIR
RA	RETURN AIR
SA	SUPPLY AIR

DEMO SYMBOL LEGEND

RENOVATIONS	
	ITEM TO REMAIN
	ITEM TO BE REMOVED

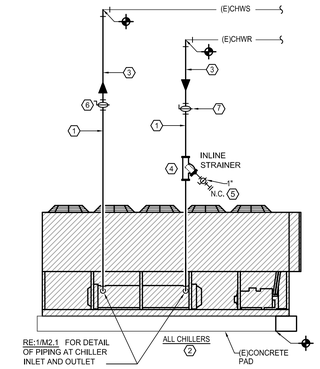


6 PIPE STAND
SCALE NONE



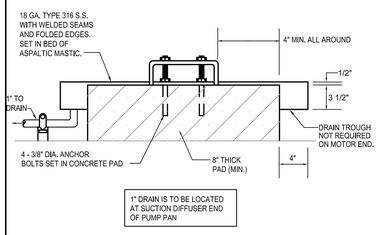
1 CONTRACTOR SHALL FIELD VERIFY EXISTING PIPE SIZES.
2 PROVIDE FULL SIZE DRAIN BALL VALVE WITH HOSE THREAD ADAPTER.
3 PROVIDE ISOLATION BUTTERFLY VALVE.
4 INSULATE OUTDOOR EQUIPMENT PER SPECIFICATIONS.

5 CHILLED WATER AIR SEPARATOR AND CHW EXPANSION TANK PIPING DIAGRAM
SCALE:



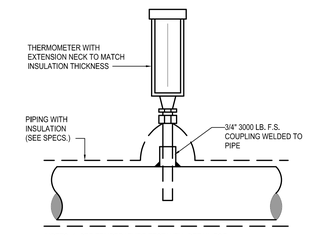
MECHANICAL KEYED NOTES
1 CONTRACTOR SHALL FIELD VERIFY EXISTING PIPE SIZES.
2 INSTALL NEW CHILLER ON EXISTING CONCRETE HOUSEKEEPING PAD. EXTEND EXISTING HOUSEKEEPING PAD AS REQUIRED TO ACCOMMODATE NEW CHILLER IF REQUIRED ON FLOOR PLAN.
3 PROVIDE ALL OUTDOOR PIPING WITH INSULATION AND ALUMINUM JACKETING AS SPECIFIED.
4 PROVIDE INLINE STRAINER IN VERTICAL PIPE WITH 1" DRAIN LINE.
5 PROVIDE BALL VALVE WITH HOSE THREAD ADAPTER.
6 BALANCING VALVE TO BE PROVIDED WITH INFINITE POSITION CRANK OR MEMORY STOP FOR BALANCING
7 PROVIDE NEW ISOLATION VALVE.

3 CHILLED WATER PIPING DIAGRAM
SCALE: NO SCALE



1" DRAIN IS TO BE LOCATED AT SUCTION DIFFUSER END OF PUMP PAN

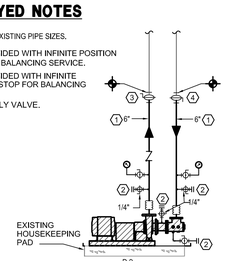
5 PUMP PAN
SCALE NONE



NOTES: 1. SEE TEMPERATURE TEST WELL DETAIL FOR MOUNTING ARRANGEMENTS AND CLEARANCES
2. MOUNT TO BE READABLE FROM FLOOR AT 5'-6" EYE LEVEL (7'-0" MAX.)

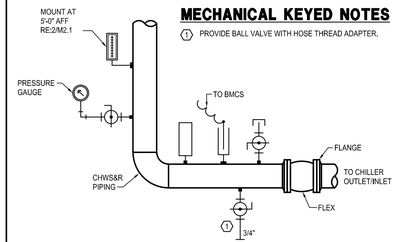
2 THERMOMETER INSTALLATION
SCALE NONE CP009

MECHANICAL KEYED NOTES
1 CONTRACTOR SHALL FIELD VERIFY EXISTING PIPE SIZES.
2 BALANCING VALVE TO BE PROVIDED WITH INFINITE POSITION CRANK OR MEMORY STOP FOR BALANCING SERVICE.
3 BALANCING VALVE TO BE PROVIDED WITH INFINITE POSITION CRANK OR MEMORY STOP FOR BALANCING SERVICE.
4 PROVIDE ISOLATION BUTTERFLY VALVE.



4 CHILLED WATER PUMP PIPING DIAGRAM
SCALE: NO SCALE

MECHANICAL KEYED NOTES
1 PROVIDE BALL VALVE WITH HOSE THREAD ADAPTER.



1 TYPICAL PIPING AT INLET AND OUTLET OF CHILLER
SCALE NONE

Project No: 2022-03503-00
Drawn By: AA
Checked By: VP
Date: 09-09-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS
SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912

SALAS O'BRIEN [expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2022-03503-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT HVAC UPGRADES PART 4

BEAUMONT INDEPENDENT SCHOOL DISTRICT
BISD Preparing Our Next Generation

BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
09-09-2022

MECHANICAL DETAILS AND SCHEDULES - BEAUMONT UNITED HS

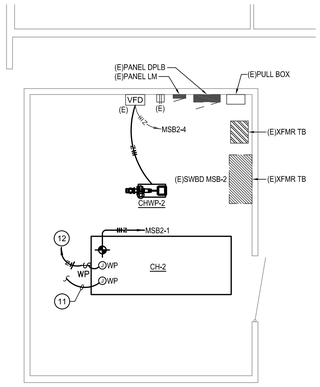
M2.1

ELECTRICAL GENERAL NOTES:

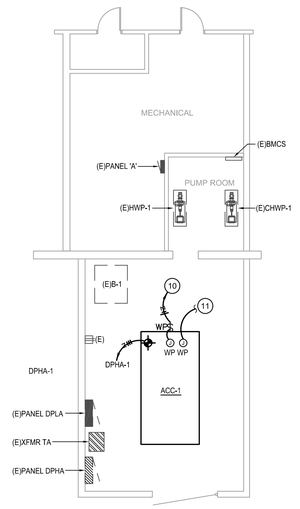
1. UNLESS INDICATED OTHERWISE, ALL ELECTRICAL EQUIPMENT IS EXISTING TO REMAIN. ELECTRICAL EQUIPMENT INCLUDES: SWITCHBOARDS, TRANSFORMERS, PANELBOARDS, ETC...

ELECTRICAL KEYED NOTES:

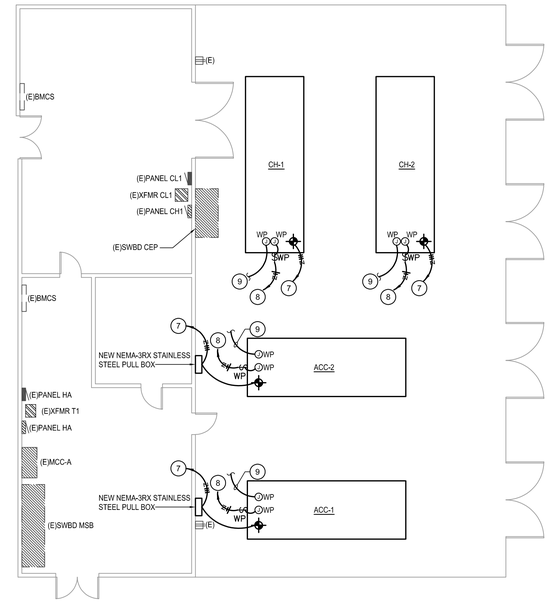
1. EXISTING CHILLER ELECTRICAL STUB UP LOCATIONS/PATHWAYS TO REMAIN.
2. DISCONNECT AND REMOVE ALL ELECTRICAL TO EXISTING CHILLER. REMOVE EXISTING 460-VOLT CONDUCTORS BACK TO SOURCE. LEAVE CONDUIT IN PLACE FOR RE-USE. REMOVE 120-VOLT CIRCUIT(S) BACK TO NEAREST JUNCTION BOX, LEAVE CIRCUITRY INTACT FOR RE-CONNECTION.
3. REMOVE EXISTING DISCONNECT SWITCH AND RETURN TO OWNER.
4. DISCONNECT AND REMOVE ALL ELECTRICAL TO EXISTING CHILLER AND ASSOCIATED CONDUIT/WIRE BACK TO SOURCE.
5. DISCONNECT AND REMOVE ALL ELECTRICAL TO EXISTING CHILLER. REMOVE EXISTING 460-VOLT CONDUIT/WIRE BACK TO SOURCE. REMOVE 120-VOLT CIRCUIT(S) BACK TO NEAREST JUNCTION BOX, LEAVE CIRCUITRY INTACT FOR RE-CONNECTION.
6. DISCONNECT AND REMOVE ALL ELECTRICAL TO EXISTING PUMP AND ASSOCIATED CONDUIT/WIRE BACK TO DISCONNECT/MOTOR CONTROLLER.
7. CONNECT NEW CHILLER TO EXISTING CIRCUIT AND PULL NEW CONDUCTORS. EXTEND CONDUIT AND MAKE FINAL CONNECTION TO INTEGRAL DISCONNECT.
8. CONNECT NEW CHILLER HEATER TO EXISTING 120V CIRCUIT PRESERVED DURING DEMOLITION. EXTEND CONDUIT/WIRE AND MAKE FINAL CONNECTION. REPLACE EXISTING CIRCUIT BREAKER WITH NEW 30mA EGFCI BREAKER.
9. RE-CONNECT EXISTING BUILDING MANAGEMENT SYSTEM TO NEW CHILLER. EXTEND CONDUIT AND MAKE FINAL CONNECTION TO CONTROL PANEL.
10. ROUTE 2#12, 1#12G., 3/4"C. TO EXISTING PANEL 'A'. PROVIDE NEW 20A/1P CIRCUIT BREAKER WITH 30mA EGFCI.
11. ROUTE 1"C., WITH PULL STRING TO NEAREST BUILDING MANAGEMENT CONTROL SYSTEM (BMCS) FOR CONTROL WIRING.
12. ROUTE 2#12, 1#12G., 3/4"C. TO EXISTING PANEL 'LM'. PROVIDE NEW 20A/1P CIRCUIT BREAKER WITH 30mA EGFCI.



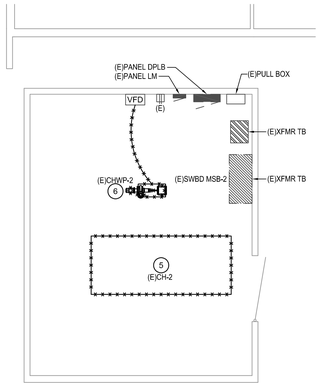
6 **ELECTRICAL PLAN - HALL B - BEAUMONT UNITED HS**
SCALE: 1/8" = 1'-0"



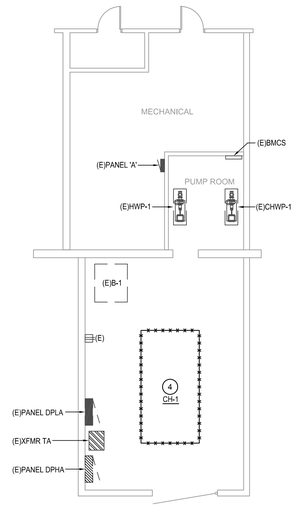
3 **ELECTRICAL PLAN - HALL A - BEAUMONT UNITED HS**
SCALE: 1/8" = 1'-0"



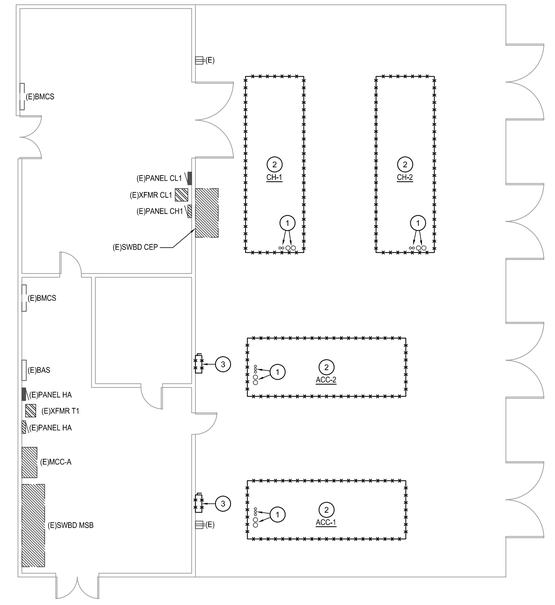
2 **ELECTRICAL PLAN - GYM PLANT - BEAUMONT UNITED HS**
SCALE: 1/8" = 1'-0"



5 **ELECTRICAL DEMOLITION PLAN - HALL B - BEAUMONT UNITED HS**
SCALE: 1/8" = 1'-0"



3 **ELECTRICAL DEMOLITION PLAN - HALL A - BEAUMONT UNITED HS**
SCALE: 1/8" = 1'-0"



1 **ELECTRICAL DEMOLITION PLAN - GYM PLANT - BEAUMONT UNITED HS**
SCALE: 1/8" = 1'-0"

Project No: 2022-03503-00
Drawn By: DES
Checked By: JZ
Date: 09-09-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912

SALAS O'BRIEN [expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2022-03503-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 4

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD Preparing Our Next Generation

BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
09-09-2022

ELECTRICAL FLOOR PLANS - BEAUMONT UNITED HS

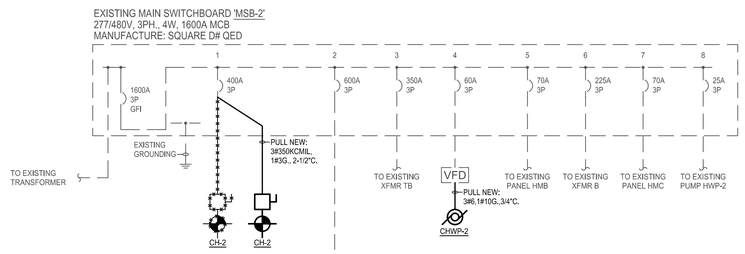
E1.1

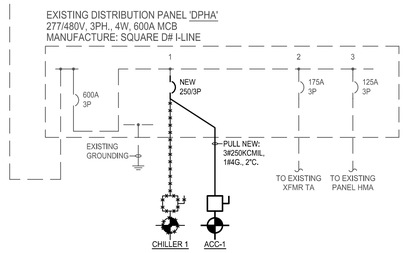
ELECTRICAL LOAD ANALYSIS: MSB-2 480V,3PH.,4W	
LOAD DESCRIPTION	LOAD KVA
EXISTING LOAD @ 125%	748.0
EXISTING LOAD REMOVED	-345.7
REMAINING LOAD	402.3
NEW:	
NEW CHILLERS	359.0
TOTAL	761.3

TOTAL / 480 /√3 = 916.1AMPS
EXISTING 1600 AMP SERVICE

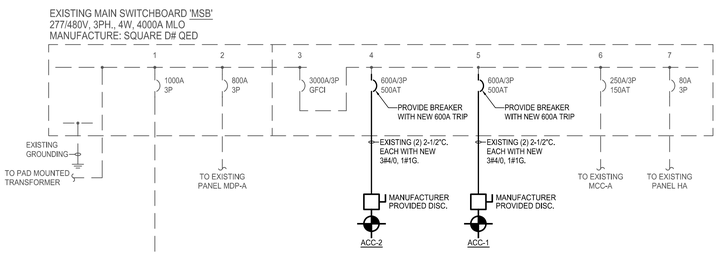
ELECTRICAL LOAD ANALYSIS: MSB 480V,3PH.,4W	
LOAD DESCRIPTION	LOAD KVA
EXISTING LOAD @ 125%	1945.0
EXISTING LOAD REMOVED	-904.2
REMAINING LOAD	1040.8
NEW:	
NEW CHILLERS	999.9
TOTAL	2040.7

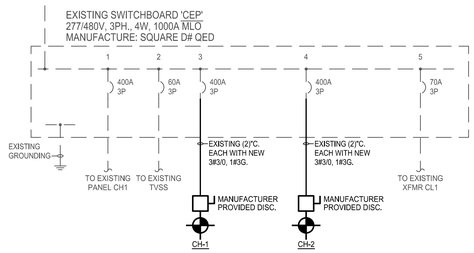
TOTAL / 480 /√3 = 2455.7 AMPS
EXISTING 4000 AMP SERVICE





2 **PARTIAL ONE-LINE DIAGRAM - HALL A/B**
SCALE: NONE





1 **PARTIAL ONE-LINE DIAGRAM - GYM PLANT**
SCALE: NONE

LINETYPE LEGEND

DISCONNECT AND REMOVE	-•-•-•-•-•-•-
EXISTING TO REMAIN	— — — —
NEW WORK	———

SYMBOL SCHEDULE

SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
LIGHTING (LETTER DENOTES TYPE - SEE LIGHT FIXTURE SCHEDULE)	
▭	FLUORESCENT FIXTURE
▭	FLUORESCENT FIXTURE ON EMERGENCY CIRCUIT
○	DOWNLIGHT FIXTURE
⊢○	LIGHT FIXTURE - WALL MOUNTED
⊘	DOWNLIGHT FIXTURE ON EMERGENCY CIRCUIT
⊢⊘	LIGHT FIXTURE - WALL MOUNTED ON EMERGENCY CIRCUIT
⊠	EXIT LIGHT-CEILING MTD WITH DIRECTIONAL ARROWS AS REQUIRED
⊢⊠	EXIT LIGHT-WALL MTD WITH DIRECTIONAL ARROWS AS REQUIRED
SWITCHES	
$	LINE VOLTAGE SINGLE POLE SWITCH
$3	LINE VOLTAGE 3-WAY SWITCH
$4	LINE VOLTAGE 4-WAY SWITCH
$K	LINE VOLTAGE MOMENTARY DPST KEYED SWITCH
$D	LINE VOLTAGE DIMMER SWITCH, SIZE AND TYPE AS REQUIRED
$P	LINE VOLTAGE SWITCH WITH PILOT LIGHT
$T	6-HOUR ROTARY TIMER SWITCH WITH NO HOLD U.N.O.
	PUSH BUTTON EPO SWITCH WITH COVER
$MC	LOW VOLTAGE MOMENTARY CONTACT SWITCH
$R	LOW VOLTAGE DIGITAL KEYPAD
$B	LOW VOLTAGE BUILDING MANAGEMENT (BMCS) LOCAL OVERRIDE SWITCH
◊	OCCUPANCY SENSOR (AUTO ON / AUTO OFF WITHIN 20-MINUTES)
◊	VACANCY SENSOR (MANUAL ON / AUTO OFF WITHIN 20-MINUTES)
◊	PHOTOCELL SENSOR
LCR	LIGHTING CONTROL SYSTEM, ('#' DENOTES TYPE - SEE LIGHTING CONTROLS SCHEDULE)
ELR	EMERGENCY LOAD CONTROL RELAY, MINIMUM 16A & 0-10V COMPATIBLE, PROVIDE U.L. 924 U.N.O.
RECEPTACLES AND OUTLETS	
⊖	SIMPLEX RECEPTACLE
⊜	DUPLEX RECEPTACLE
⊜	125/250 VOLT, 1 PHASE, 3-WIRE, 20 AMPS UNLESS NOTED OTHERWISE
⊕	DOUBLE DUPLEX IN 2-GANG BOX WITH SINGLE COVER PLATE
⊗	250 VOLT, 1 PHASE, SPECIAL PURPOSE OUTLET, 20 AMPS UNLESS NOTED OTHERWISE
ⓙ	JUNCTION BOX
▤	DUPLEX GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE
▦	DOUBLE DUPLEX GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE IN 2-GANG BOX WITH SINGLE COVER PLATE
ⓙ	FLUSH FLOOR JUNCTION BOX
FACP	FIRE ALARM CONTROL PANEL
ANNC	FIRE ALARM REMOTE ANNUCIATOR
MOTOR CONTROLLERS AND EQUIPMENT	
	MOTOR, MAKE FINAL MOTOR CONNECTION
	3-PHASE MOTOR, MAKE FINAL MOTOR CONNECTION
	DISCONNECT SWITCH AS REQUIRED
	COMBINATION MOTOR STARTER/DISCONNECT SWITCH AS REQUIRED
	MOTOR STARTER
$M	MANUAL MOTOR SWITCH AS REQUIRED
	PREWIRED DEVICE, MAKE ELECTRICAL FINAL CONNECTIONS
VFH	VARIABLE FREQUENCY DRIVE MOTOR CONTROLLER FURNISHED BY DIVISION 15 AND INSTALLED BY DIVISION 16
ELECTRICAL EQUIPMENT	
	277/480 VOLT DISTRIBUTION OR PANELBOARD
	120/208 VOLT PANELBOARD
	DRY TYPE TRANSFORMER
CIRCUITING	
——	CONDUIT
- - - -	CONDUIT BELOW FLOOR, SLAB, OR GRADE
#2	3/4"C. UNLESS OTHERWISE NOTED; LONG HATCH, NEUTRAL; SHORT HATCH, PHASE; "2" HATCH, INSULATED GROUND. NO HATCHES INDICATES 2 CONDUCTORS. ARROW INDICATES HOMERUN.
—+	PARTIAL ELECTRICAL HOME RUN
SUBSCRIPTS AND ABBREVIATIONS	
WP	INDICATES WEATHERPROOF
WG	INDICATES WIREGUARD
(E)	INDICATES EXISTING
TL	INDICATES TWIST LOCK TYPE
NL	LIGHT FIXTURE ON NIGHT LIGHT CIRCUIT
•	NEXT TO ANY SYMBOL INDICATES FINAL ROUGH-IN FIELD COORDINATION BY CONTRACTOR WITH ARCHITECTURAL MILLWORK DRAWINGS AND OTHER TRADES

GENERAL NOTE:
ALL EXTERIOR BUILDING ELECTRICAL EQUIPMENT TO BE WEATHERPROOF NEMA-3RX MINIMUM.

Project No: 2022-03503-00
Drawn By: DES
Checked By: JZ
Date: 09-09-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912

SALAS O'BRIEN [expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2022-03503-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 4

BEAUMONT INDEPENDENT SCHOOL DISTRICT
BISD Preparing Our Next Generation

Bradley Kalmans
REGISTERED PROFESSIONAL ENGINEER
BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
09-09-2022

ELECTRICAL SCHEDULE AND DETAILS - BEAUMONT UNITED HS

E2.1

MECHANICAL DEMOLITION GENERAL NOTES:

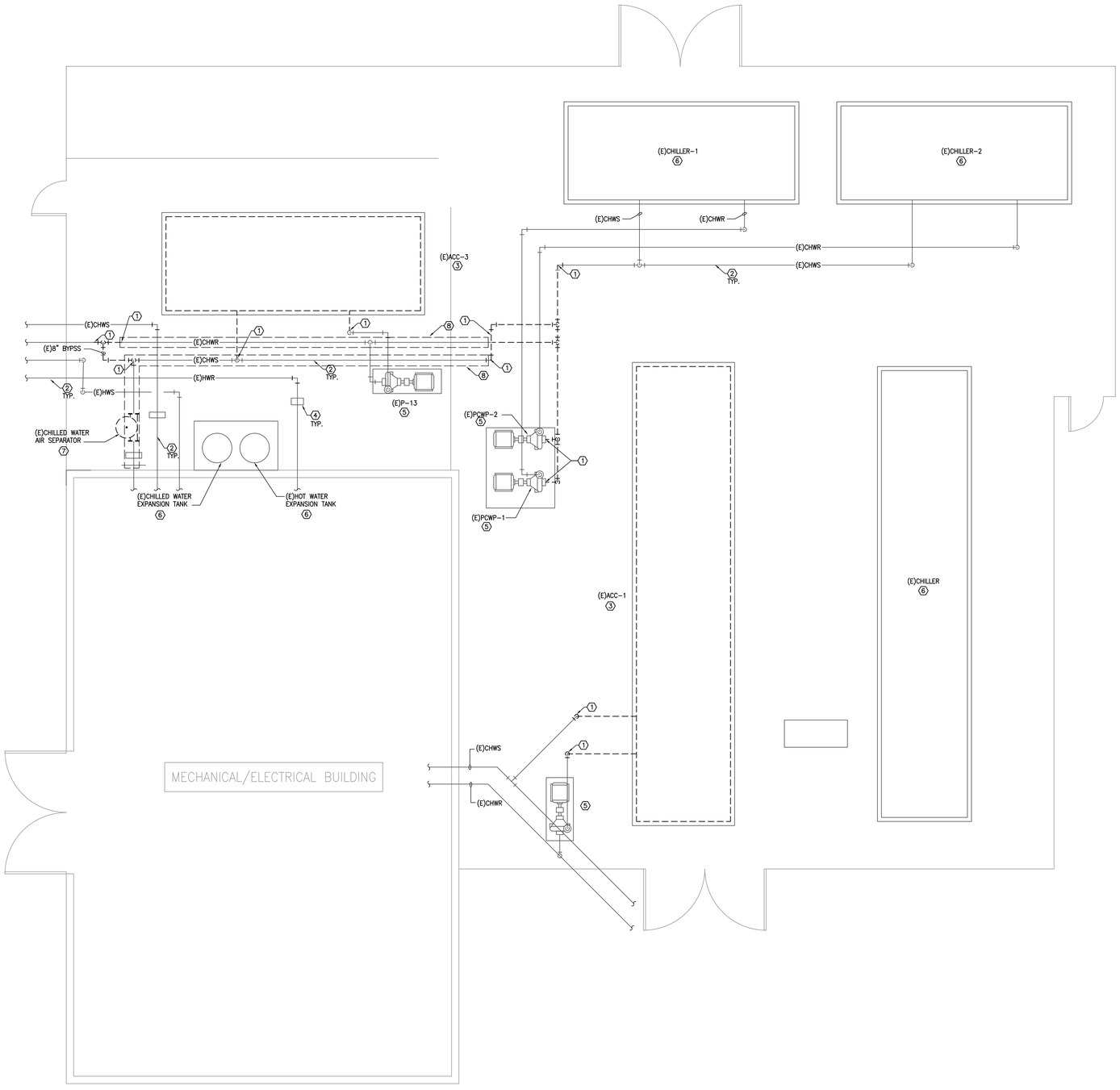
1. THESE CONSTRUCTION DRAWINGS ARE DIAGRAMMATIC, AND DO NOT NECESSARILY REFLECT ACTUAL DIMENSIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD-VERIFY ALL DIMENSIONS AND COORDINATE PLACEMENT OF ALL EQUIPMENT AND ROUTING OF ALL PIPING AND/OR DUCT SYSTEMS.
2. ALL MECHANICAL SYSTEMS SHOWN ON THIS PLAN ARE FROM EXISTING DRAWINGS AND PRELIMINARY FIELD WORK. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL LOCATIONS AND SIZES OF MECHANICAL SYSTEMS PRIOR TO THE START OF WORK.
3. OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL HVAC EQUIPMENT BEING REMOVED FROM THIS PROJECT. THIS INCLUDES BUT NOT LIMITED TO INTERNAL COMPONENTS OF CHILERS, VALVES, AND PIPE STANDS.

MECHANICAL DEMOLITION KEYED NOTES:

1. REMOVE EXISTING SUPPLY AND RETURN CHILLED WATER PIPING AND ASSOCIATED VALVES UP TO POINT INDICATED. CONTRACTOR SHALL VERIFY EXISTING PIPE SIZE BEFORE DEMOLISHING.
2. EXISTING SUPPLY AND RETURN CHILLED WATER PIPING SHALL REMAIN.
3. EXISTING AIR COOLED CHILLER SHALL BE REMOVED. EXISTING CONCRETE PAD SHALL REMAIN. CONTRACTOR SHALL VERIFY LOCATION OF POWER CONNECTION SO NEW CHILLER CAN BE INSTALLED WITH POWER CONNECTION IN SAME LOCATION.
4. EXISTING PIPING SUPPORTS SHALL REMAIN.
5. EXISTING PUMP SHALL REMAIN.
6. EXISTING EQUIPMENT SHALL REMAIN.
7. EXISTING AIR SEPARATOR SHALL BE REMOVED.
8. REMOVE EXISTING JACKETING AND INSULATION FOR THIS PIPE SEGMENT.

DEMO SYMBOL LEGEND

RENOVATIONS	
	ITEM TO REMAIN
	ITEM TO BE REMOVED



1 **MECHANICAL DEMOLITION FLOOR PLAN - WESTBROOK HS**
SCALE: 1/8" = 1'-0"

Project No: 2022-03503-00
Drawn By: AA
Checked By: VP
Date: 09-09-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912

SALAS O'BRIEN [expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2022-03503-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 4

BEAUMONT INDEPENDENT SCHOOL DISTRICT
BISD Preparing Our Next Generation

BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
09-09-2022

MECHANICAL DEMOLITION FLOOR PLAN - WESTBROOK HS

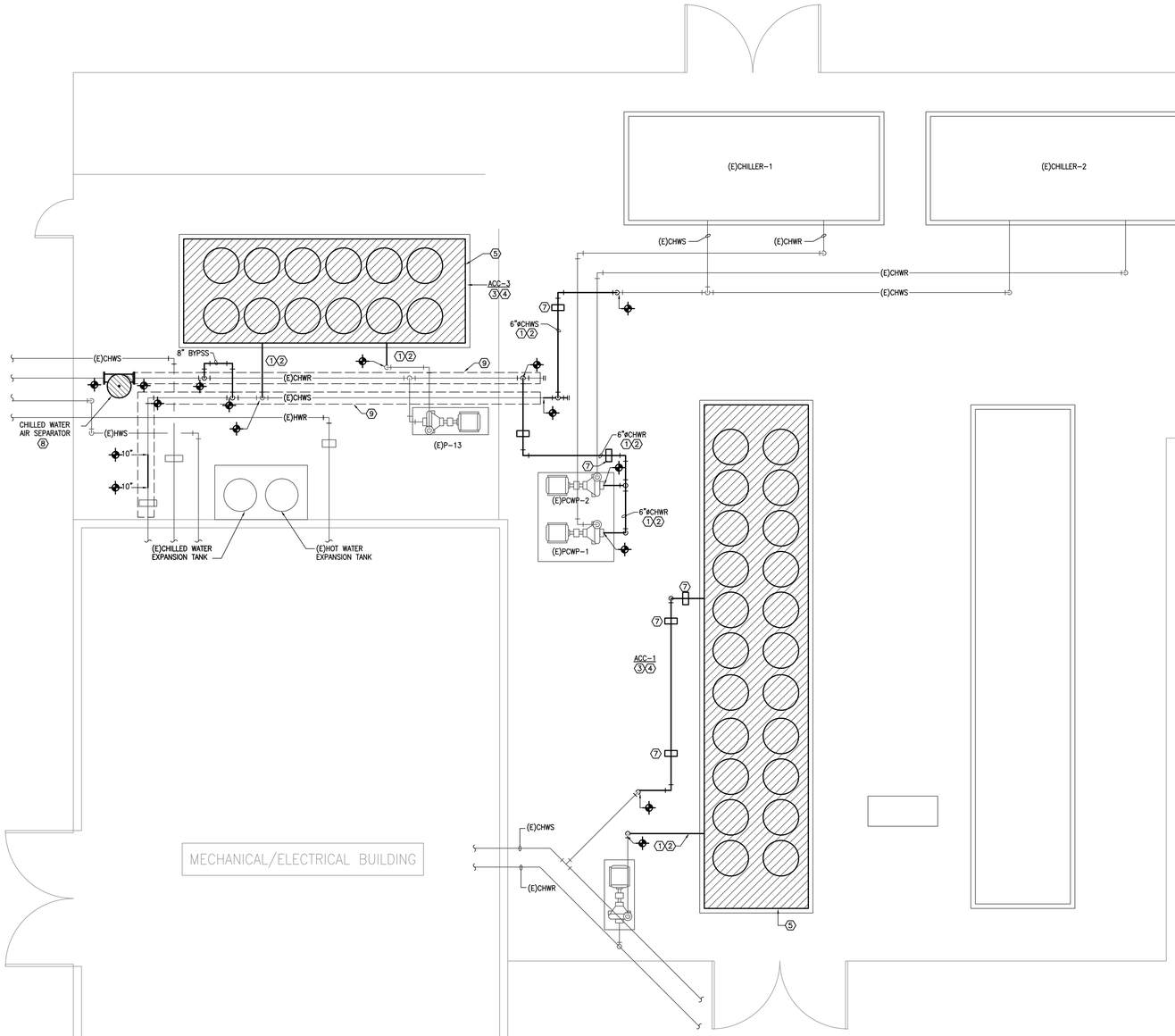
M0.1

MECHANICAL GENERAL NOTES:

1. MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL POWER REQUIREMENTS.
2. THESE CONSTRUCTION DRAWINGS ARE DIAGRAMMATIC, AND DO NOT NECESSARILY REFLECT ACTUAL DIMENSIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD-VERIFY ALL DIMENSIONS AND COORDINATE PLACEMENT OF ALL EQUIPMENT AND ROUTING OF ALL PIPING AND/OR DUCT SYSTEMS.

MECHANICAL KEYED NOTES:

1. PROVIDE OUTDOOR PIPING INSULATION AS SPECIFIED.
2. PROVIDE NEW CHW S/R PIPING AS SPECIFICED AND CONNECT TO EXISTING PIPING. RE:3/M2.01 FOR PARTIAL PIPING DIAGRAM.
3. VERIFY AIR-COOLED CHILLER SERVICE CLEARANCES WITH MANUFACTURER. COORDINATE WITH OTHER TRADES NOT TO OBSTRUCT.
4. INSTALL NEW CHILLER ON EXISTING CONCRETE PAD. EXTEND EXISTING CONCRETE PAD AS REQUIRED TO ACCOMMODATE NEW CHILLER.
5. POWER CONNECTION FOR NEW CHILLER SHALL BE AT THIS END.
6. VERIFY SERVICE CLEARANCES WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO
7. PROVIDE NEW PIPE SUPPORT AS SPECIFIED.
8. PROVIDE GROUND MOUNTED AIR/DIRT SEPARATOR AT LOCATION SHOWN.
9. PROVIDE NEW ALUMINUM JACKETING AND INSULATION FOR THIS EXISTING PIPE SEGMENT.



1 **MECHANICAL FLOOR PLAN - WESTBROOK HS**
SCALE: 1/8" = 1'-0"

Project No: 2022-03503-00
Drawn By: AA
Checked By: VP
Date: 09-09-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912

SALAS O'BRIEN [expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2022-03503-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 4

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD Preparing Our Next Generation

Bradley Kalmans
REGISTERED PROFESSIONAL ENGINEER
BRADLEY KALMANS
80219
LICENSED
STATE OF TEXAS
09-09-2022

MECHANICAL FLOOR PLAN - WESTBROOK HS

M1.1

PACKAGED AIR COOLED SCREW CHILLER

MARK	ACTUAL CAPACITY (TONS)	LEAVING WATER TEMP. (°F)	GPM	MAXIMUM WATER PRESSURE DROP (FT.)	AMBIENT AIR TEMP. (°F)	CURRENT CHARACTERISTIC	REMARKS
ACC-1	294.0	44	705.6	20.0	95.0	460/3/60	1,2,3,4
ACC-3	130.0	44	312.0	20.0	95.0	460/3/60	1,2,3,5

GENERAL NOTES:

1. MAXIMUM FOULING FACTOR FOR THE EVAPORATOR IS 0.0001
2. MAINTAIN MINIMUM CLEARANCES REQUIRED BY CHILLER MANUFACTURER FOR PROPER AIRFLOW TO FANS AND UNIT. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON EQUIPMENT FOR SERVICE, MAINTENANCE AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCES AS REQUIRED BY NEC.
3. CHILLER SHALL MEET OR EXCEED THE AHRI FULL-LOAD AND PART-LOAD PATH A OR PATH B EFFICIENCIES INDICATED IN THE 2015 IECC.

REMARKS:

1. PROVIDE WITH LOW AMBIENT HEAD PRESSURE CONTROL.
2. PROVIDE WITH INTEGRAL MAIN ELECTRICAL DISCONNECT SWITCH.
3. PROVIDE WITH INSULATION ON ALL SUCTION LINES.
4. NEW CHILLER SHALL HAVE A MAX LENGTH OF 437"
5. NEW CHILLER SHALL HAVE A MAX LENGTH OF 249"

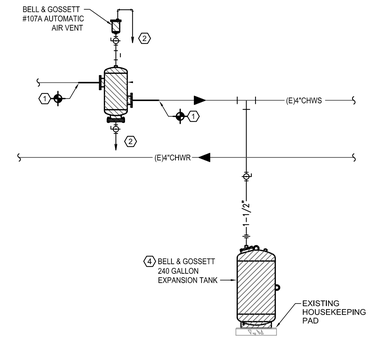
SYMBOL LEGEND

SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
GENERAL	
(#)	KEY NOTE TAG
(#)	NOTE SPECIFIC TO DETAIL TAG
	REVISION TAG
	NEW EQUIPMENT
PIPING	
—CWSAR—	CONDENSER WATER SUPPLY & RETURN (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—CWS—	CONDENSER WATER SUPPLY
—CWR—	CONDENSER WATER RETURN
-CHWSAR-	CHILLED WATER SUPPLY & RETURN (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—CHWS—	CHILLED WATER SUPPLY
—CHWR—	CHILLED WATER RETURN
—HWSAR—	HOT WATER FOR HYDRONIC HEATING SUPPLY & RETURN (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—HWS—	HOT WATER FOR HYDRONIC HEATING SUPPLY
—HWR—	HOT WATER FOR HYDRONIC HEATING RETURN
—D—	CONDENSATE DRAIN LINE
—AD—	AUXILLARY CONDENSATE DRAIN LINE
—RLR—	REFRIGERANT LIQUID & GAS RECIRCULATION LINE (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—RL—	REFRIGERANT LIQUID LINE
—HG—	REFRIGERANT HOT GAS LINE
—RS—	REFRIGERANT SUCTION LINE
	ELBOW UP
	ELBOW DOWN
	90° ELBOW
	45° ELBOW
	TEE
	TEE DOWN
	TEE UP
	TOP BRANCH CONNECTION
	BOTTOM BRANCH CONNECTION
	FLANGE
	CAP
	CONTINUATION
	FLOOR DRAIN (REFER TO PLUMBING DRAWINGS)
	GATE VALVE
	GLOBE VALVE
	CHECK VALVE
	BUTTERFLY VALVE
	BUTTERFLY VALVE WITH OPERATOR
	PLUG VALVE
	TWO-WAY CONTROL VALVE
	THREE-WAY CONTROL VALVE
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE
	BALL VALVE
	STRAINER
	UNION
	THERMOMETER WELL
	PETE'S PLUG
	PRESSURE GAUGE
	TEMPERATURE SENSOR IN PIPE
	VENTURI FLOW METER
	FLOW SWITCH
FM	FLOW MEASURING STATION
	EXPANSION JOINT
	FLEXIBLE CONNECTION
	GAUGE COCK
	SITE GLASS
	DIFFERENTIAL PRESSURE SENSOR
	TURBINE FLOW METER
	ANCHOR
	PIPE GUIDE

SUBSCRIPTS AND ABREVIATIONS	
AFF	ABOVE FINISHED FLOOR
BBS	BELOW BOTTOM OF STRUCTURE
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
CA	COMBUSTION AIR
CFM	CUBIC FEET PER MINUTE
EA	EXHAUST AIR
FPM	FEET PER MINUTE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
OA	OUTSIDE AIR
RA	RETURN AIR
SA	SUPPLY AIR

DEMO SYMBOL LEGEND

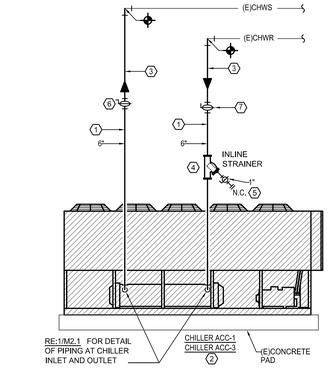
RENOVATIONS	
	ITEM TO REMAIN
	ITEM TO BE REMOVED



1. CONTRACTOR SHALL FIELD VERIFY EXISTING PIPE SIZES.
2. PROVIDE FULL SIZE DRAIN BALL VALVE WITH HOSE THREAD ADAPTER.
3. PROVIDE ISOLATION BUTTERFLY VALVE.
4. INSULATE OUTDOOR EQUIPMENT PER SPECIFICATIONS.

6 CHILLED WATER AIR SEPARATOR AND CHW EXPANSION TANK PIPING DIAGRAM

SCALE:

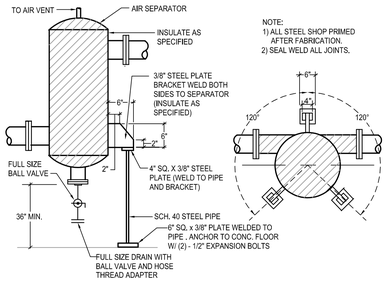


MECHANICAL KEYED NOTES

1. CONTRACTOR SHALL FIELD VERIFY EXISTING PIPE SIZES.
2. INSTALL NEW CHILLER ON EXISTING CONCRETE HOUSEKEEPING PAD.
3. PROVIDE ALL OUTDOOR PIPING WITH INSULATION AND ALUMINUM JACKETING AS SPECIFIED.
4. PROVIDE INLINE STRAINER IN VERTICAL PIPE WITH 1" DRAIN LINE.
5. PROVIDE BALL VALVE WITH HOSE THREAD ADAPTER.
6. BALANCING VALVE TO BE PROVIDED WITH INFINITE POSITION CRANK OR MEMORY STOP FOR BALANCING
7. PROVIDE NEW ISOLATION VALVE.

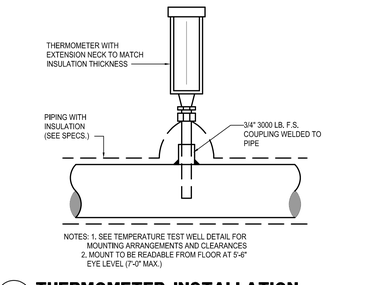
3 CHILLED WATER PIPING DIAGRAM

SCALE: NO SCALE



5 FLOOR MOUNTED AIR SEPARATOR

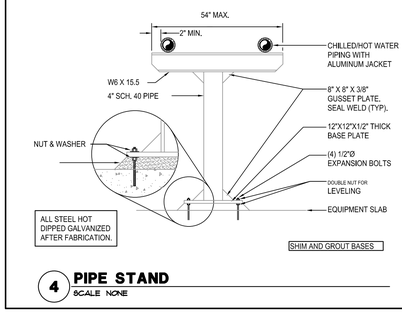
SCALE: NONE



2 THERMOMETER INSTALLATION

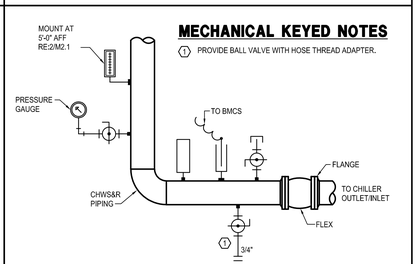
SCALE: NONE

CP009



4 PIPE STAND

SCALE: NONE



MECHANICAL KEYED NOTES

1 TYPICAL PIPING AT INLET AND OUTLET OF CHILLER

SCALE: NONE

Project No: 2022-03503-00
Drawn By: AA
Checked By: VP
Date: 09-09-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

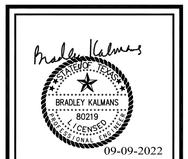
SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912

SALAS O'BRIEN [expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2022-03503-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT HVAC UPGRADES PART 4

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD Preparing Our Next Generation



MECHANICAL DETAILS AND SCHEDULES - WESTBROOK HS

M2.1

ELECTRICAL GENERAL NOTES:

1. UNLESS INDICATED OTHERWISE, ALL ELECTRICAL EQUIPMENT IS EXISTING TO REMAIN. ELECTRICAL EQUIPMENT INCLUDES: SWITCHBOARDS, TRANSFORMERS, PANELBOARDS, ETC...

ELECTRICAL KEYED NOTES:

1. DISCONNECT AND REMOVE ALL ELECTRICAL TO EXISTING CHILLER. REMOVE EXISTING 480-VOLT CONDUIT/WIRE BACK TO SOURCE. REMOVE 120-VOLT CIRCUIT(S) BACK TO NEAREST JUNCTION BOX, LEAVE CIRCUITRY INTACT FOR RE-CONNECTION.
2. CONDUITS ROUTED IN THIS AREA SHALL BE REMOVED AS REQUIRED TO FACILITATE EXISTING CHILLER REMOVAL AND INSTALLATION OF NEW CHILLER. CONTRACTOR SHALL EXTEND AND RE-ROUTE CONDUIT/WIRE AROUND NEW CHILLER; ROUTE CONDUITS WITH CHILLED WATER PIPING WHERE FEASIBLE, PROVIDE NEW CONDUIT SUPPORTS AS NEEDED, AND VERIFY EXISTING CONDITIONS, MAINTAIN CONTINUITY OF CIRCUITS TO EXISTING EQUIPMENT TO REMAIN.
3. AFTER NEW CHILLER ACC-2 IS INSTALLED, EXTEND CONDUIT/WIRE FOR ACC-1 AND RECONNECT ELECTRICAL AS REQUIRED. RE-USE EXISTING CONDUIT WHERE FEASIBLE AND PULL NEW WIRE FROM CHILLER TO NEW PULL BOX.
4. CONNECT NEW CHILLER HEATER TO EXISTING 120V CIRCUIT PRESERVED DURING DEMOLITION. EXTEND CONDUIT/WIRE AND MAKE FINAL CONNECTION. REPLACE EXISTING CIRCUIT BREAKER WITH NEW 30mA EGFCI BREAKER.
5. RE-CONNECT EXISTING BUILDING MANAGEMENT SYSTEM TO NEW CHILLER. EXTEND CONDUIT AND MAKE FINAL CONNECTION TO CONTROL PANEL.

ELECTRICAL LOAD ANALYSIS: MSB 480V,3PH,,4W	
LOAD DESCRIPTION	LOAD KVA
EXISTING LOAD @ 125%	1960.0
EXISTING LOAD REMOVED	-602.0
REMAINING LOAD	1358.0
NEW:	
NEW CHILLERS	606.1
TOTAL	1964.1

TOTAL / 480 $\sqrt{3}$ = 2363.5 AMPS

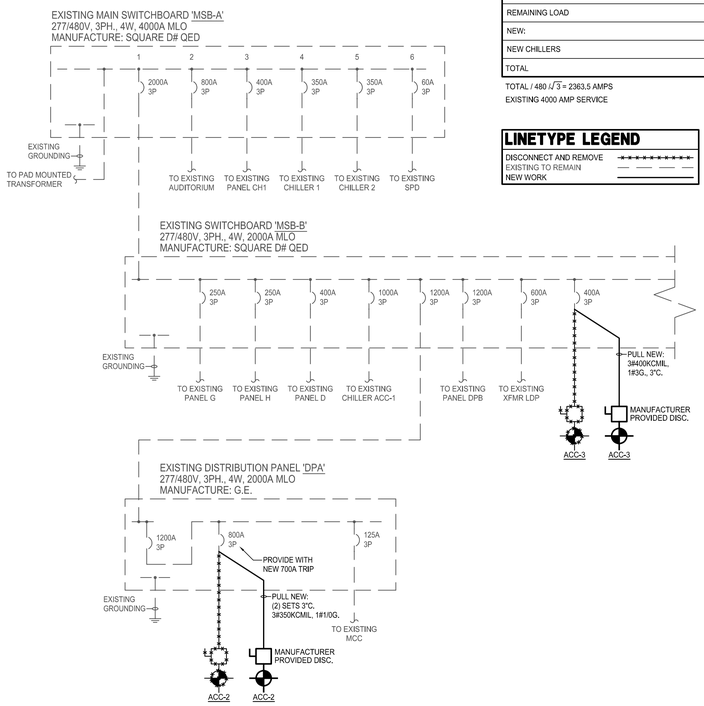
EXISTING 4000 AMP SERVICE

LINETYPE LEGEND

DISCONNECT AND REMOVE	
EXISTING TO REMAIN	
NEW WORK	



3 **EXISTING CONDUIT ROUTING ABOVE CHILLER**
SCALE: NONE

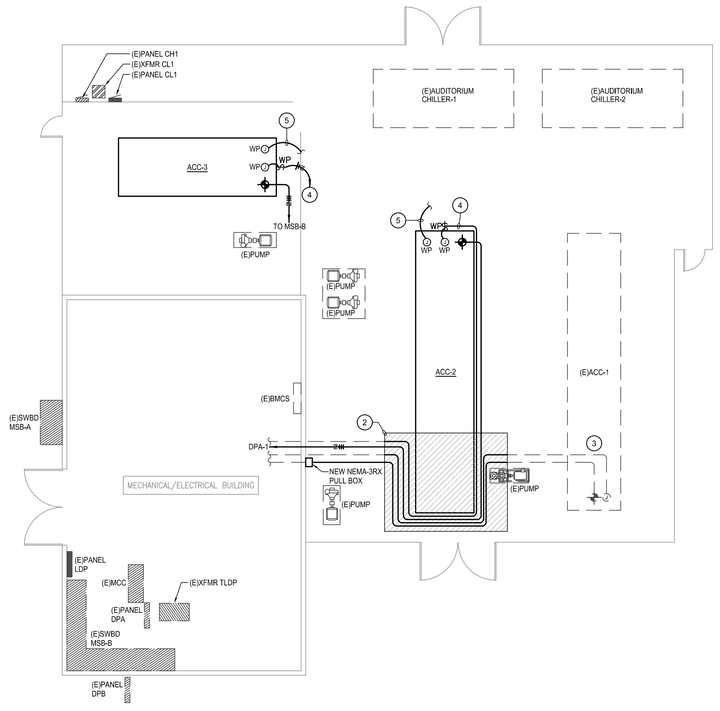


3 **PARTIAL ELECTRICAL ONE-LINE - WESTBROOK HS**
SCALE: NONE

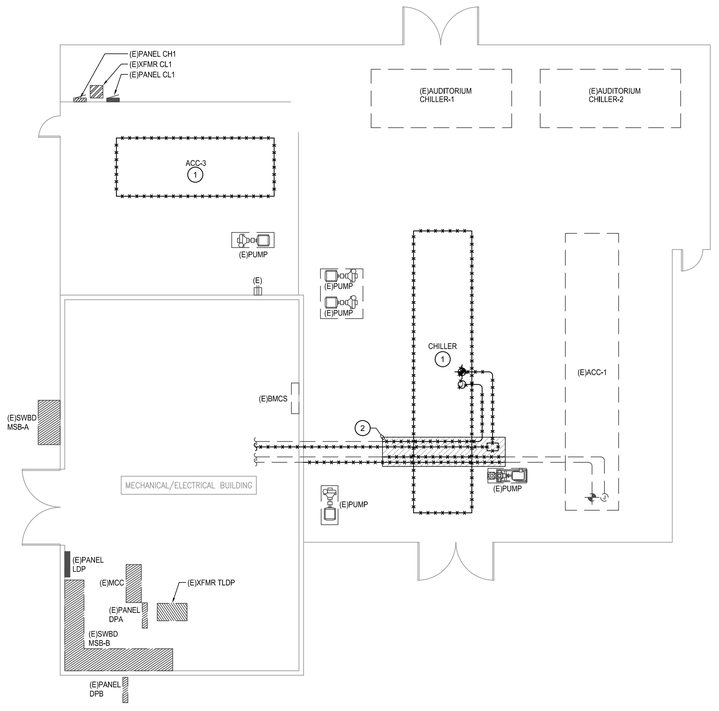
SYMBOL SCHEDULE

SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
LIGHTING (LETTER DENOTES TYPE - SEE LIGHT FIXTURE SCHEDULE)	
	FLUORESCENT FIXTURE
	FLUORESCENT FIXTURE ON EMERGENCY CIRCUIT
	DOWNLIGHT FIXTURE
	LIGHT FIXTURE - WALL MOUNTED
	DOWNLIGHT FIXTURE ON EMERGENCY CIRCUIT
	LIGHT FIXTURE - WALL MOUNTED ON EMERGENCY CIRCUIT
	EXIT LIGHT-CEILING MTD WITH DIRECTIONAL ARROWS AS REQUIRED
	EXIT LIGHT-WALL MTD WITH DIRECTIONAL ARROWS AS REQUIRED
SWITCHES	
$	LINE VOLTAGE SINGLE POLE SWITCH
$3	LINE VOLTAGE 3-WAY SWITCH
$4	LINE VOLTAGE 4-WAY SWITCH
$K	LINE VOLTAGE MOMENTARY DPST KEYED SWITCH
$D	LINE VOLTAGE DIMMER SWITCH, SIZE AND TYPE AS REQUIRED
$P	LINE VOLTAGE SWITCH WITH PILOT LIGHT
$T	6-HOUR ROTARY TIMER SWITCH WITH NO HOLD U.N.O.
	PUSH BUTTON EPO SWITCH WITH COVER
$MC	LOW VOLTAGE MOMENTARY CONTACT SWITCH
$R	LOW VOLTAGE DIGITAL KEYPAD
$B	LOW VOLTAGE BUILDING MANAGEMENT (BMCS) LOCAL OVERRIDE SWITCH
	OCCUPANCY SENSOR (AUTO ON / AUTO OFF WITHIN 20-MINUTES)
	VACANCY SENSOR (MANUAL ON / AUTO OFF WITHIN 20-MINUTES)
	PHOTOCELL SENSOR
LCS	LIGHTING CONTROL SYSTEM, ('#' DENOTES TYPE - SEE LIGHTING CONTROLS SCHEDULE)
ERC	EMERGENCY LOAD CONTROL RELAY, MINIMUM 16A & 0-10V COMPATIBLE. PROVIDE U.L. 924 U.N.O.
RECEPTACLES AND OUTLETS	
	SIMPLEX RECEPTACLE
	DUPLEX RECEPTACLE
	125/250 VOLT, 1 PHASE, 3-WIRE, 20 AMPS UNLESS NOTED OTHERWISE
	DOUBLE DUPLEX IN 2-GANG BOX WITH SINGLE COVER PLATE
	250 VOLT, 1 PHASE, SPECIAL PURPOSE OUTLET, 20 AMPS UNLESS NOTED OTHERWISE
	JUNCTION BOX
	DUPLEX GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE
	DOUBLE DUPLEX GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE IN 2-GANG BOX WITH SINGLE COVER PLATE
FJ	FLUSH FLOOR JUNCTION BOX
FACP	FIRE ALARM CONTROL PANEL
ANNC	FIRE ALARM REMOTE ANNUCIATOR
MOTOR CONTROLLERS AND EQUIPMENT	
	MOTOR, MAKE FINAL MOTOR CONNECTION
	3-PHASE MOTOR, MAKE FINAL MOTOR CONNECTION
	DISCONNECT SWITCH AS REQUIRED
	COMBINATION MOTOR STARTER/DISCONNECT SWITCH AS REQUIRED
	MOTOR STARTER
$M	MANUAL MOTOR SWITCH AS REQUIRED
	PREWIRED DEVICE, MAKE ELECTRICAL FINAL CONNECTIONS
VFM	VARIABLE FREQUENCY DRIVE MOTOR CONTROLLER FURNISHED BY DIVISION 15 AND INSTALLED BY DIVISION 16
ELECTRICAL EQUIPMENT	
	277/480 VOLT DISTRIBUTION OR PANELBOARD
	120/208 VOLT PANELBOARD
	DRY TYPE TRANSFORMER
CIRCUITING	
	CONDUIT
	CONDUIT BELOW FLOOR, SLAB, OR GRADE
#2	3/4"C. UNLESS OTHERWISE NOTED; LONG HATCH, NEUTRAL; SHORT HATCH, PHASE; "Z" HATCH, INSULATED GROUND. NO HATCHES INDICATES 2 CONDUCTORS. ARROW INDICATES HOMERUN.
	PARTIAL ELECTRICAL HOME RUN
SUBSCRIPTS AND ABBREVIATIONS	
WP	INDICATES WEATHERPROOF
WG	INDICATES WIREGUARD
(E)	INDICATES EXISTING
TL	INDICATES TWIST LOCK TYPE
NL	LIGHT FIXTURE ON NIGHT LIGHT CIRCUIT
•	NEXT TO ANY SYMBOL INDICATES FINAL ROUGH-IN FIELD COORDINATION BY CONTRACTOR WITH ARCHITECTURAL MILLWORK DRAWINGS AND OTHER TRADES

GENERAL NOTE:
ALL EXTERIOR BUILDING ELECTRICAL EQUIPMENT TO BE WEATHERPROOF
NEMA-3RX MINIMUM.



2 **ELECTRICAL FLOOR PLAN - WESTBROOK HS**
SCALE: 1/8" = 1'-0"



1 **ELECTRICAL DEMOLITION FLOOR PLAN - WESTBROOK HS**
SCALE: 1/8" = 1'-0"

Project No: 2022-03503-00
Drawn By: AA
Checked By: VP
Date: 09-09-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912

SALAS O'BRIEN [expect a difference]
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2022-03503-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 4

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD Preparing Our Next Generation

BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
09-09-2022

ELECTRICAL
FLOOR PLANS -
WESTBROOK HS

E1.1