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. 2022-02715-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART THREE
CSP #23.03

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

MARSHALL MIDDLE SCHOOL
6455 GLADYS AVE, BEAUMONT, TX 77706

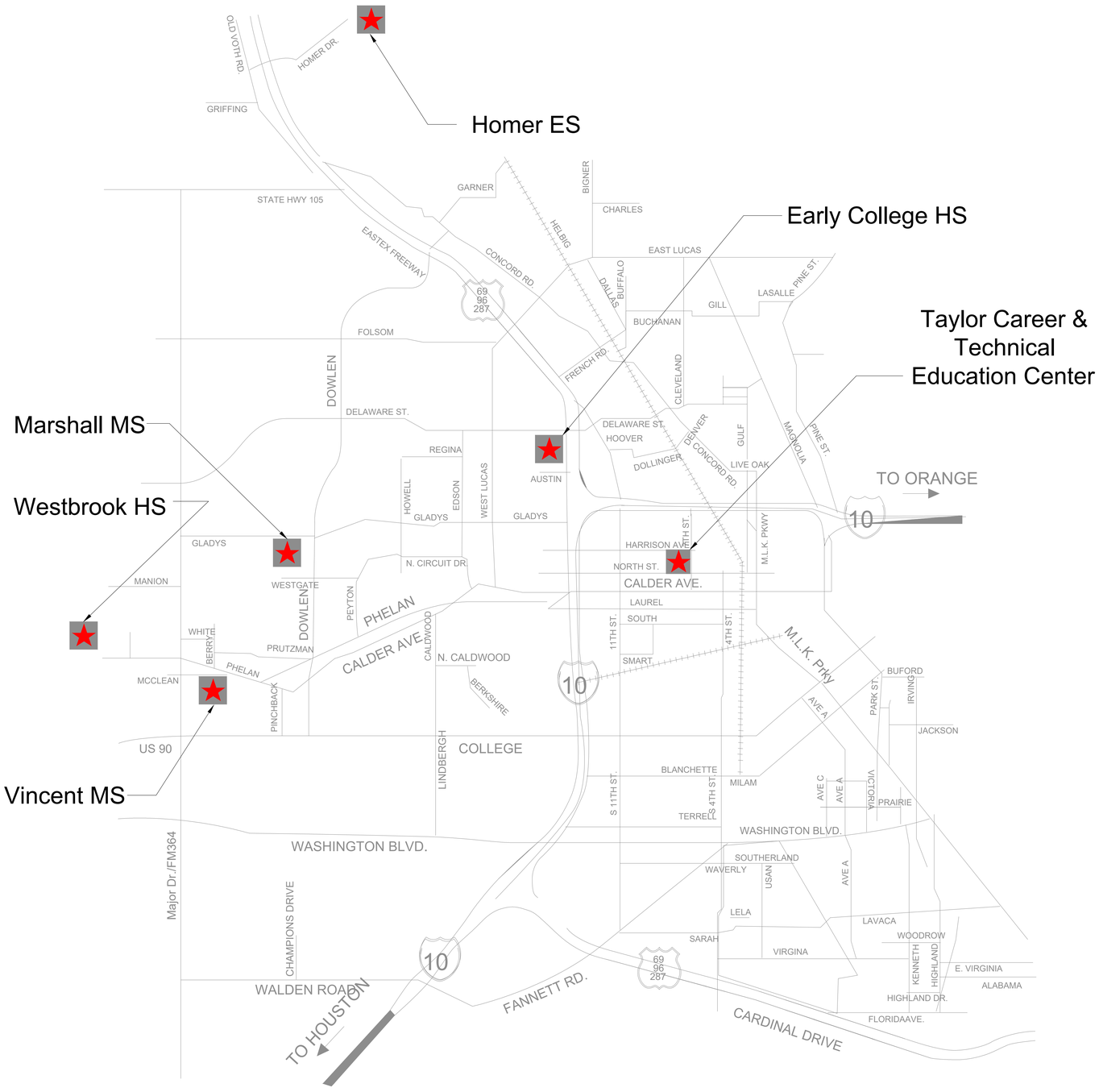
TAYLOR CAREER AND TECHNICAL EDUCATION CENTER
2330 NORTH ST., BEAUMONT, TX 77702

VINCENT MIDDLE SCHOOL
350 ELDRIDGE ST., BEAUMONT, TX 77707

HOMER ELEMENTARY SCHOOL
8950 HOMER DR., BEAUMONT, TX 77708

WESTBROOK HIGH SCHOOL
8750 PHELAN BLVD, BEAUMONT, TX 77706

SITE LOCATIONS



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LIST OF DRAWINGS:

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

EARLY COLLEGE HIGH SCHOOL
M0.1 MECHANICAL DEMOLITION FLOOR PLANS - AUSTIN EARLY COLLEGE HS
M1.1 MECHANICAL FLOOR PLANS - AUSTIN EARLY COLLEGE HS
M1.2 MECHANICAL BOILER FLOOR PLANS - AUSTIN EARLY COLLEGE HS
M2.1 MECHANICAL VRF PIPING DIAGRAM - AUSTIN EARLY COLLEGE HS
M3.1 MECHANICAL LEGENDS AND DETAILS - AUSTIN EARLY COLLEGE HS
M4.1 MECHANICAL SCHEDULES - AUSTIN EARLY COLLEGE HS
E1.1 ELECTRICAL SITE PLAN - AUSTIN EARLY COLLEGE HS
E2.1 ELECTRICAL FLOOR PLANS - FIBERBOND BUILDING - AUSTIN EARLY COLLEGE HS
E2.2 ELECTRICAL FLOOR PLANS - CENTRAL PLANT - AUSTIN EARLY COLLEGE HS
E3.1 ELECTRICAL DETAILS AND SCHEDULES - AUSTIN EARLY COLLEGE HS
P1.1 PLUMBING FLOOR PLANS - AUSTIN EARLY COLLEGE HS
P1.2 PLUMBING BOILER FLOOR PLANS - AUSTIN EARLY COLLEGE HS
P4.1 PLUMBING SCHEDULES, LEGENDS, AND DETAILS - AUSTIN EARLY COLLEGE HS

TAYLOR CAREER AND TECHNICAL EDUCATION CENTER
M0.1 MECHANICAL DEMOLITION FIRST FLOOR PLANS - TAYLOR CAREER & TECH ED CENTER
M0.2 MECHANICAL DEMOLITION SECOND FLOOR PLANS - TAYLOR CAREER & TECH ED CENTER
M1.1 MECHANICAL FIRST FLOOR PLANS - TAYLOR CAREER & TECH ED CENTER
M1.2 MECHANICAL SECOND FLOOR PLANS - TAYLOR CAREER & TECH ED CENTER
M2.1 MECHANICAL ENLARGED PLANS - TAYLOR CAREER & TECH ED CENTER
M3.1 MECHANICAL PIPING DIAGRAM - TAYLOR CAREER & TECH ED CENTER
M4.1 MECHANICAL DETAILS - TAYLOR CAREER & TECH ED CENTER
M5.1 MECHANICAL SCHEDULES - TAYLOR CAREER & TECH ED CENTER
E0.1 ELECTRICAL DEMOLITION FIRST FLOOR PLANS - TAYLOR CAREER & TECH ED CENTER
E0.2 ELECTRICAL DEMOLITION SECOND FLOOR PLANS - TAYLOR CAREER & TECH ED CENTER
E1.1 ELECTRICAL FIRST FLOOR PLANS - TAYLOR CAREER & TECH ED CENTER
E1.2 ELECTRICAL SECOND FLOOR PLANS - TAYLOR CAREER & TECH ED CENTER
E2.1 ELECTRICAL ENLARGED PLANS - TAYLOR CAREER & TECH ED CENTER
E3.1 ELECTRICAL ONE-LINE - TAYLOR CAREER & TECH ED CENTER
P1.1 PLUMBING FLOOR PLANS - TAYLOR CAREER & TECH ED CENTER
P3.1 PLUMBING SCHEDULES, LEGENDS, AND DETAILS - TAYLOR CAREER & TECH ED CENTER

MARSHALL MIDDLE SCHOOL
M0.1 MECHANICAL DEMOLITION FLOOR PLANS - MARSHALL MS
M1.1 MECHANICAL FLOOR PLANS - MARSHALL MS
M2.1 MECHANICAL VRF PIPING DIAGRAMS - MARSHALL MS
M3.1 MECHANICAL LEGENDS AND DETAILS - MARSHALL MS
M4.1 MECHANICAL SCHEDULES - MARSHALL MS
E1.1 ELECTRICAL FLOOR PLANS - MARSHALL MS
E2.1 ELECTRICAL DETAILS - MARSHALL MS
P1.1 PLUMBING FLOOR PLANS - MARSHALL MS
P3.1 PLUMBING SCHEDULES, LEGENDS, AND DETAILS - MARSHALL MS

VINCENT MIDDLE SCHOOL
M0.1 MECHANICAL DEMOLITION FLOOR PLANS - VINCENT MS
M1.1 MECHANICAL FLOOR PLANS - VINCENT MS
M2.1 MECHANICAL VRF PIPING DIAGRAMS - VINCENT MS
M3.1 MECHANICAL LEGENDS AND DETAILS - VINCENT MS
M4.1 MECHANICAL SCHEDULES - VINCENT MS
E1.1 ELECTRICAL FLOOR PLANS - VINCENT MS
E2.1 ELECTRICAL DETAILS - VINCENT MS
P1.1 PLUMBING FLOOR PLANS - VINCENT MS
P3.1 PLUMBING SCHEDULES, LEGENDS, AND DETAILS - VINCENT MS

HOMER ELEMENTARY SCHOOL
M0.1 MECHANICAL DEMOLITION FLOOR PLANS - HOMER ES
M1.1 MECHANICAL FLOOR PLANS - HOMER ES
M2.1 MECHANICAL VRF PIPING DIAGRAMS - HOMER ES
M3.1 MECHANICAL LEGENDS AND DETAILS - HOMER ES
M4.1 MECHANICAL SCHEDULES - HOMER ES
E1.1 ELECTRICAL FLOOR PLANS - HOMER ES
E2.1 ELECTRICAL DETAILS - HOMER ES
P1.1 PLUMBING FLOOR PLANS - HOMER ES
P3.1 PLUMBING SCHEDULES, LEGENDS, AND DETAILS - HOMER ES

WESTBROOK HIGH SCHOOL
MP1.1 MECHENICAL AND PLUMBING FLOOR PLAN - WESTBROOK HS
M2.1 MECHANICAL LEGENDS, SCHEDULES, AND DETAILS - WESTBROOK HS
E1.1 ELECTRICAL FLOOR PLANS - WESTBROOK HS
E2.1 ELECTRICAL DETAILS - WESTBROOK HS

BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
09-14-2022

COVER SHEET – LIST OF DRAWINGS
CS-1

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BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART THREE
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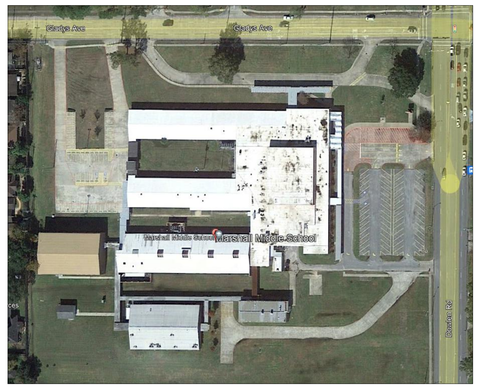
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SITE LOCATIONS

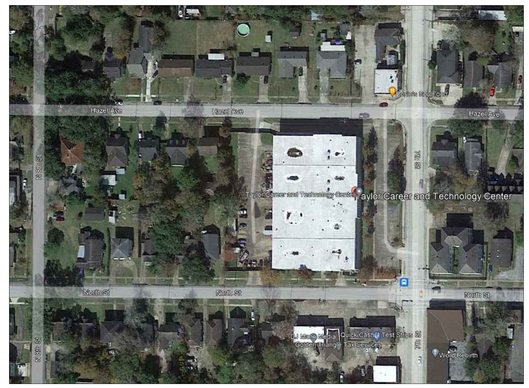
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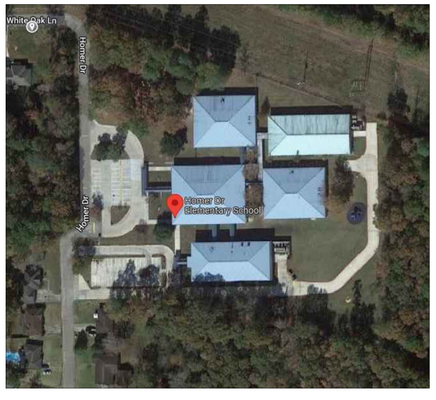
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COVER SHEET – SITES
CS-2

THROUGHOUT CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY AND RENTAL EQUIPMENT, INCLUDING POWER FOR SUCH EQUIPMENT, AND TO PROVIDE PHASING TO ENSURE SPACE TEMPERATURE AND HUMIDITY IS MAINTAINED. REFER TO SPECIFICATION 23 05 11 MECHANICAL ALTERATIONS PROJECT PROCEDURES, ARTICLE 3.8 FOR ADDITIONAL REQUIREMENTS. CONTRACTOR SHALL REVIEW ALL REQUIREMENTS PRIOR TO BID.

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. CONTROLS WORK SHOWN AS A PART OF THE PROJECT ON THIS CAMPUS WILL REQUIRE INCIDENTAL ARCHITECTURAL CEILING WORK. ALL SUCH WORK SHALL BE INCLUDED IN THE CONTRACTORS BID. THIS WORK SHALL BE PERFORMED WITHOUT ANY IMPACT TO THE CONSTRUCTION SCHEDULE AND/OR ADDITIONAL COST.
4. CONTRACTOR SHALL REMOVE AND REPLACE CEILING WHERE REQUIRED TO COMPLETE THE INDICATED SCOPE OF CONTROLS WORK. EXISTING CEILING SHALL BE RE-INSTALLED IN THE EXACT CONDITION IT WAS REMOVED IN. DAMAGED CEILING AND/OR CEILING TILES SHALL BE REPLACED TO MATCH CONDITIONS EXISTING PRIOR TO THE BEGINNING OF CONSTRUCTION. IF A MATCH IS NOT POSSIBLE, CONTRACTOR SHALL REPLACE ALL CEILING FROM WALL TO WALL OR BOUNDARY SEPARATION IN CORRIDOR, CLASSROOM, OR ANY OTHER SPACE.
5. REMOVE ALL EXISTING SPACE MOUNTED TEMPERATURE AND HUMIDITY SENSORS NOT BEING REUSED. PROVIDE STAINLESS STEEL COVER PLATES.
6. OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL HVAC EQUIPMENT BEING REMOVED FROM THIS PROJECT. THIS INCLUDES BUT NOT LIMITED TO CONDENSING UNITS, AIR HANDLING UNITS, AND CONTROLS.
7. ALL EXISTING SUPPLY, RETURN, OUTSIDE AIR, AND EXHAUST SHALL BE EXISTING TO REMAIN UNLESS OTHERWISE NOTED.
8. ALL EXISTING FIRE DAMPERS SHALL BE EXISTING TO REMAIN UNLESS OTHERWISE NOTED.

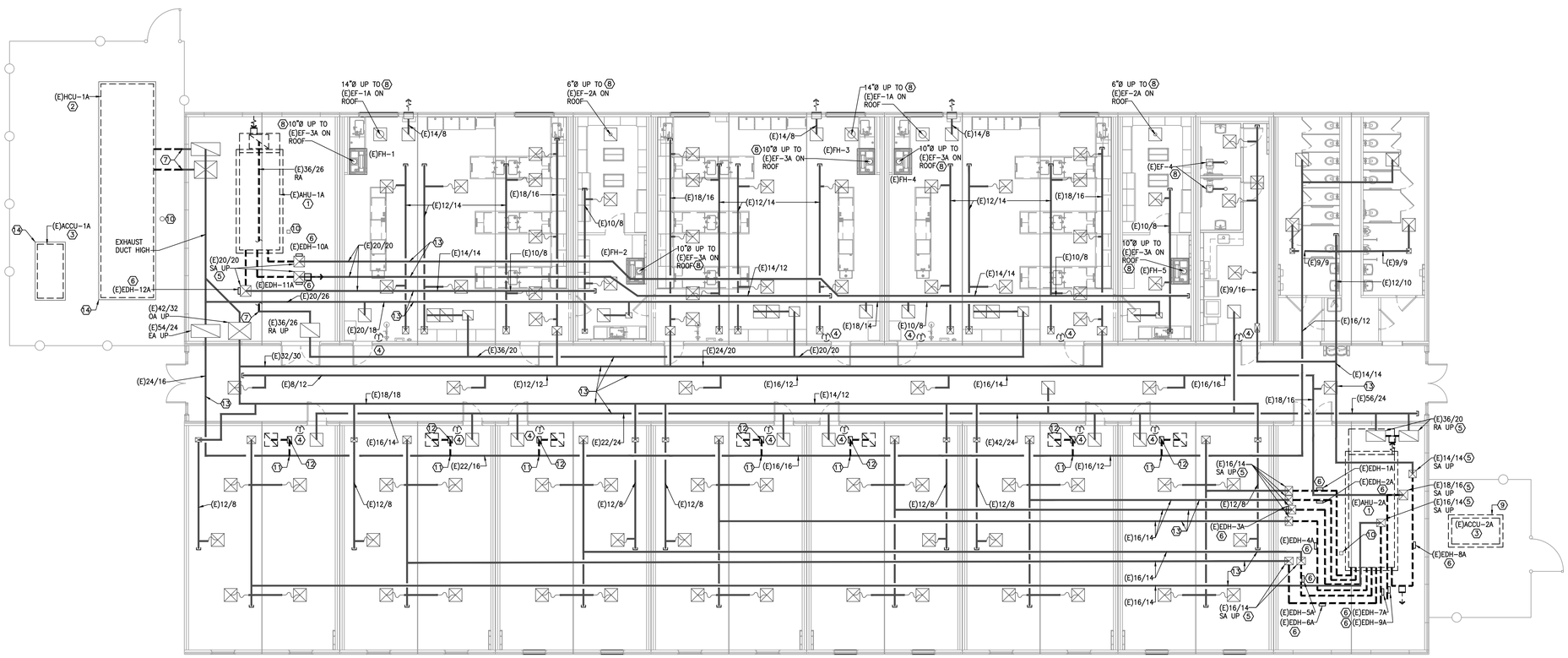
DEMOLITION KEYED NOTES:

1. REMOVE EXISTING MULTIZONE AIR HANDLING UNIT, ASSOCIATED CONTROLS, CONCRETE HOUSEKEEPING PAD, AND ALL OTHER ASSOCIATED APPURTENANCES.
2. REMOVE EXISTING HUMIDITY CONTROL UNIT, CONTROLS, AND ALL ASSOCIATED APPURTENANCES.
3. REMOVE EXISTING CONDENSING UNIT, ALL ASSOCIATED PIPING, AND ALL ASSOCIATED APPURTENANCES.
4. REMOVE EXISTING TEMPERATURE SENSOR AND ALL ASSOCIATED CONTROL WIRING.
5. REMOVE EXISTING DUCTWORK BACK TO 0'-12" BELOW EXISTING STRUCTURE.
6. REMOVE EXISTING ELECTRIC DUCT HEATER AND ALL ASSOCIATED APPURTENANCES.
7. REMOVE EXISTING DUCTWORK BACK TO POINT INDICATED.
8. EXISTING EXHAUST FAN TO REMAIN.
9. REMOVE EXISTING CONCRETE HOUSEKEEPING PAD.
10. EXISTING FLOOR DRAIN TO REMAIN.
11. REMOVE EXISTING DUCTWORK BACK TO POINT INDICATED. PATCH, SEAL, AND INSULATE EXISTING DUCTWORK AS SPECIFIED.
12. REMOVE DUCTWORK UP STREAM AND DOWN STREAM OF FIRE DAMPER. FIRE DAMPER SHALL REMAIN.
13. EXISTING MAIN DUCTWORK TO REMAIN. ALL ASSOCIATED DAMPERS, DIFFUSERS SHALL REMAIN UNLESS OTHERWISE NOTED.
14. EXISTING CONCRETE HOUSEKEEPING PAD TO REMAIN.

DEMO SYMBOL LEGEND

RENOVATIONS	
	ITEM TO REMAIN
	ITEM TO BE REMOVED

BMCS NOTE:
EXISTING CONTROL SYSTEM IS BY AUTOMATED LOGIC.
REFER TO BMCS SPECIFICATION FOR MORE INFORMATION.



NORTH

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

Project No: 2022-02715-00
Drawn By: BB
Checked By: VP
Date: 09-14-2022
Revision Dates:

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BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

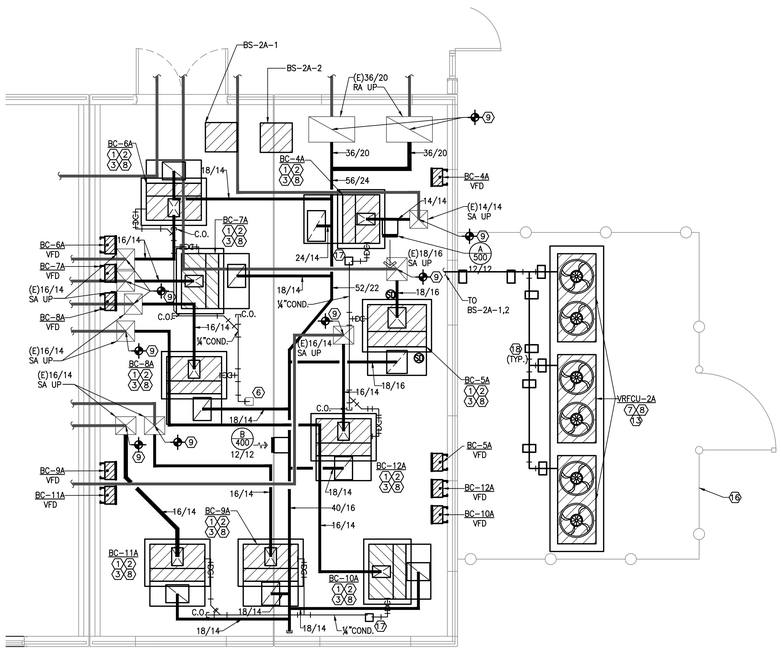
BEAUMONT INDEPENDENT SCHOOL DISTRICT

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09-14-2022

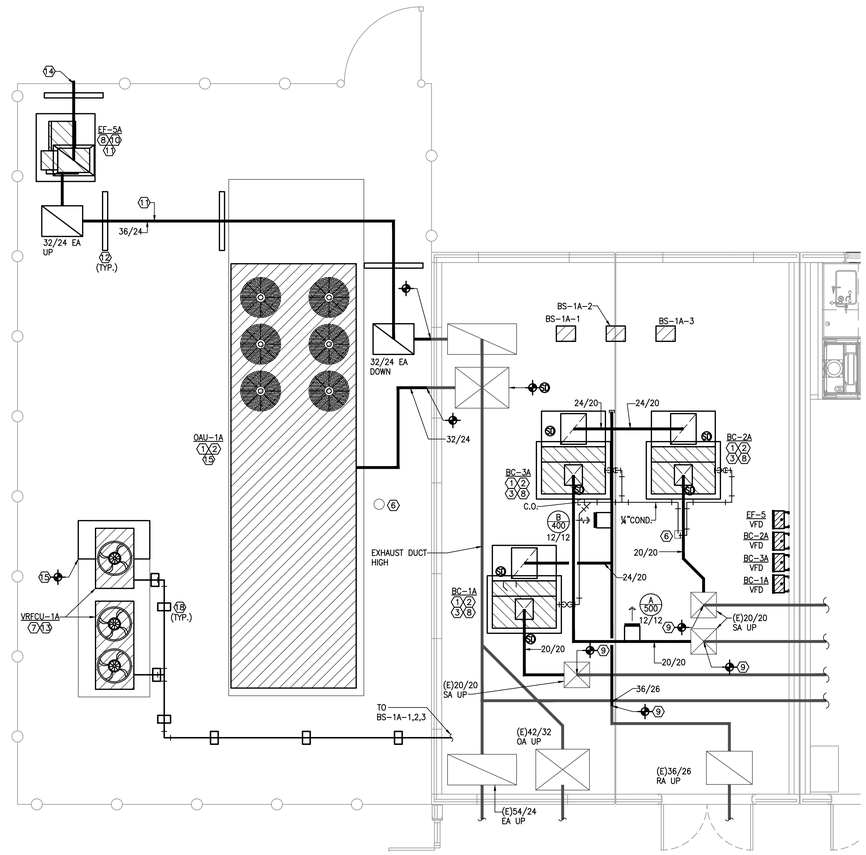
MECHANICAL DEMOLITION FLOOR PLAN - AUSTIN EARLY COLLEGE HS

M0.1



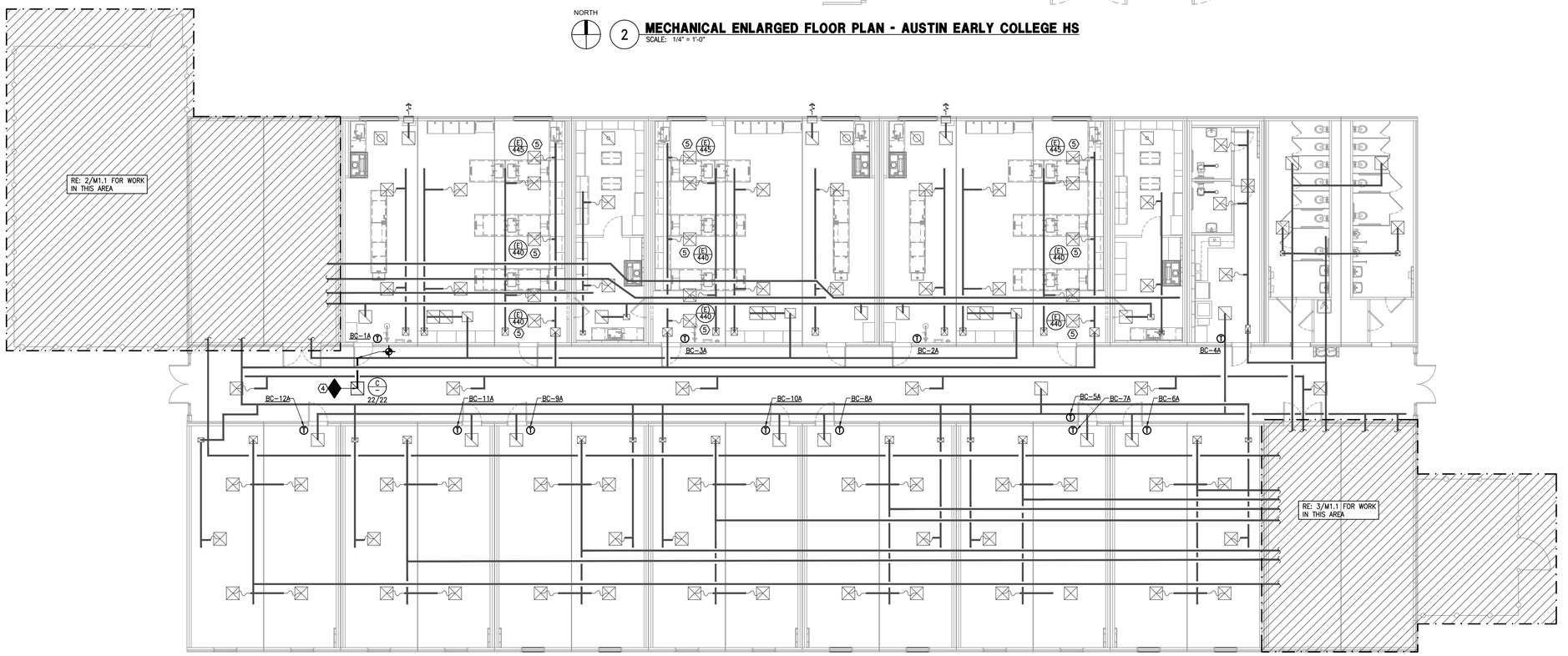
NORTH

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



NORTH

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



NORTH

1 **MECHANICAL FLOOR PLAN - AUSTIN EARLY COLLEGE HS**
SCALE: 1/8" = 1'-0"

MECHANICAL GENERAL NOTES:

1. MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL REQUIREMENTS.
2. THESE 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 OR DUCT SYSTEMS.
3. ALL MECHANICAL SYSTEMS SHOWN ON THIS PLAN ARE FROM PRELIMINARY FILED WORK. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL LOCATIONS AND SIZES OF MECHANICAL EQUIPMENT PRIOR TO START OF WORK.
4. THE SCOPE OF WORK SHOWN AS A PART OF THE PROJECT ON THIS CAMPUS WILL REQUIRE INCIDENTAL ARCHITECTURAL CEILING WORK. ALL SUCH WORK SHALL BE INCLUDED IN THE CONTRACTORS BID. THIS WORK SHALL BE PERFORMED WITHOUT ANY IMPACT TO THE CONSTRUCTION SCHEDULE AND/OR ADDITIONAL COST.
5. CONTRACTOR SHALL REMOVE AND REPLACE CEILING WHERE REQUIRED TO COMPLETE THE INDICATED SCOPE OF WORK. EXISTING CEILING SHALL BE RE-INSTALLED IN THE EXACT CONDITION IT WAS REMOVED IN. DAMAGED CEILING AND/OR CEILING TILES SHALL BE REPLACED TO MATCH CONDITIONS EXISTING PRIOR TO THE BEGINNING OF CONSTRUCTION. IF A MATCH IS NOT POSSIBLE, CONTRACTOR SHALL REPLACE ALL CEILING FROM WALL TO WALL OR BOUNDARY SEPARATION IN CORRIDOR, CLASSROOM, OR ANY OTHER SPACE.

THROUGHOUT CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY AND RENTAL EQUIPMENT, INCLUDING POWER FOR SUCH EQUIPMENT, AND TO PROVIDE PHASING TO ENSURE SPACE TEMPERATURE AND HUMIDITY IS MAINTAINED. REFER TO SPECIFICATION 23 05 11 MECHANICAL ALTERATIONS PROJECT PROCEDURES, ARTICLE 3.8 FOR ADDITIONAL REQUIREMENTS. CONTRACTOR SHALL REVIEW ALL REQUIREMENTS PRIOR TO BID.

MECHANICAL KEYED NOTES:

1. VERIFY SERVICE CLEARANCE FOR AIR FILTER, FAN SHAFT, AND COIL REMOVAL WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.
2. ROUTE FULL SIZE CONDENSATE TO FLOOR DRAIN. ROUTE CONDENSATE DRAIN PIPE TO ENSURE THAT IT WILL NOT CREATE A TRIPPING HAZARD. INSTALL CONDENSATE TRAP AS RECOMMENDED BY MANUFACTURER.
3. ROUTE REFRIGERANT LINES TO ASSOCIATED VRF AIR COOLED CONDENSING UNIT. SIZE REFRIGERANT LINES PER MANUFACTURERS RECOMMENDATIONS.
4. PROVIDE FIRE DAMPER AT VERTICAL THROUGH CONCRETE DECK.
5. BALANCE EXISTING GRILLE TO CFM INDICATED ON DRAWINGS.
6. CONTRACTOR SHALL CLEAN EXISTING FLOOR DRAIN TO LIKE NEW CONDITIONS.
7. REFER TO MANUFACTURER FOR REFRIGERANT PIPE SIZES, AIRFLOW CLEARANCES, AND MAINTENANCE CLEARANCES.
8. PROVIDE 6" CONCRETE HOUSEKEEPING PAD.
9. CONNECT DUCTWORK AT EXISTING SIZE.
10. VERIFY SERVICE CLEARANCE WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.
11. PROVIDE EXHAUST FAN WITH EQUIPMENT SUPPORT. RE: 7/M3.1 FOR DETAIL.
12. PROVIDE DUCT SUPPORT AS SPECIFIED. RE: 8/M3.1 FOR DETAIL.
13. NEW REFRIGERANT PIPING SHALL UTILIZE EXISTING OPENING IN WALL. MODIFY OPENING AS REQUIRED TO ACCOMMODATE NEW REFRIGERANT PIPING. REFER TO DETAILS.
14. 32/24 EXHAUST DUCTWORK SHALL TERMINATE 10'-0" ABOVE FINISHED FLOOR (A.F.F.). PROVIDE DUCTWORK WITH WEATHER HOOD. PROVIDE OPENING WITH 1/4" ALUMINUM MESH. SUPPORT DUCTWORK FROM EXISTING FENCE. RE: 6/M3.1 FOR DETAIL.
15. MODIFY EXISTING CONCRETE HOUSE KEEPING PAD TO ACCOMMODATE NEW OUTSIDE AIR UNIT.
16. EXTEND EXISTING CHAIN LINK FENCE AS REQUIRED TO ACCOMMODATE VRF CONDENSING UNIT AND MAINTAIN CONDENSING UNIT AIRFLOW AND MAINTENANCE CLEARANCES RECOMMENDED BY MANUFACTURER.
17. REFER TO PLUMBING DRAWINGS FOR EXACT LOCATION OF FLOOR DRAIN.
18. ROUTE REFRIGERANT PIPING ON GALVANIZED UNISTRUT ANCHORED TO CONCRETE. ATTACH PIPING TO UNISTRUT WITH GALVANIZED CUSH-A-CLAMP. FASTENERS SHALL BE STAINLESS STEEL.
19. MODIFY EXISTING DUCTWORK AS NEEDED TO ACCOMMODATE NEW SMOKE DETECTOR.

BMCS NOTE:
EXISTING CONTROL SYSTEM IS BY AUTOMATED LOGIC.
REFER TO BMCS SPECIFICATION FOR MORE INFORMATION.

Project No: 2022-02715-00
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BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

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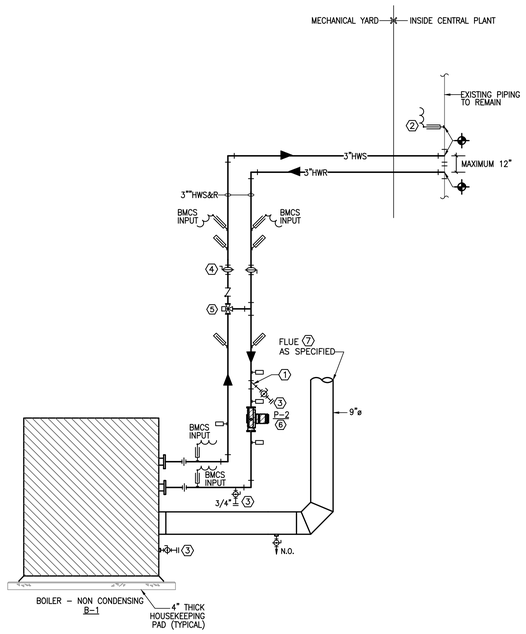
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MECHANICAL FLOOR PLANS - AUSTIN EARLY COLLEGE HS

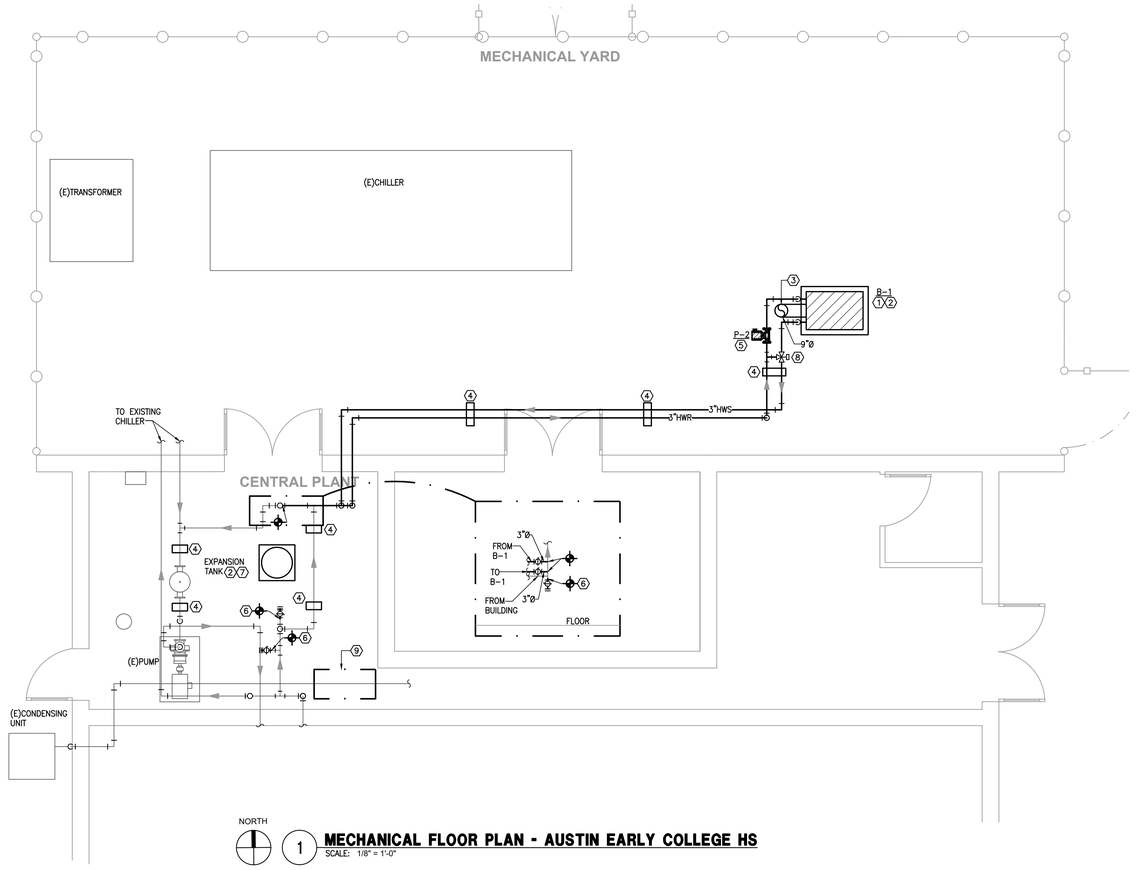
M1.1

MECHANICAL HOT WATER KEYED NOTES:

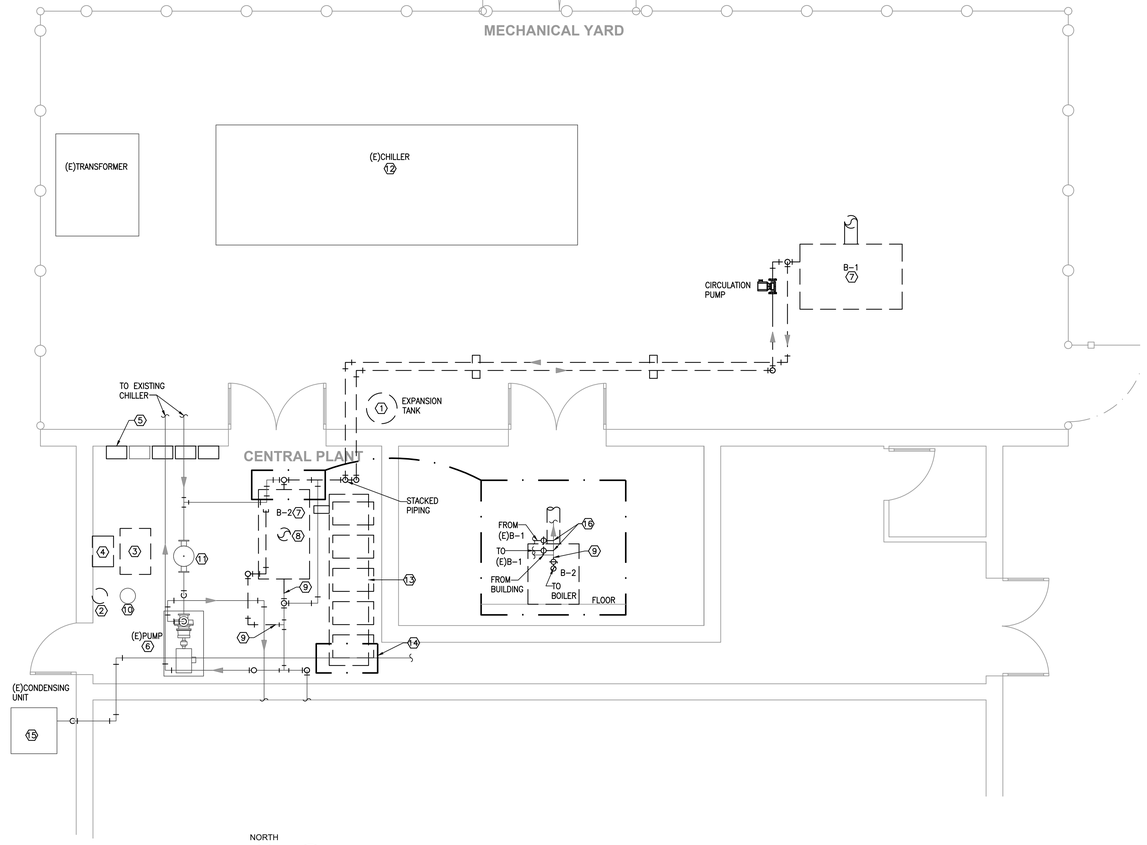
1. PROVIDE INLINE STRAINER.
2. HEADER TEMPERATURE SENSOR. PROVIDED BY BOILER MANUFACTURER.
3. PROVIDE BALL VALVE WITH HOSE THREAD ADAPTER AT FULL SIZE UNLESS OTHERWISE NOTED.
4. BALANCING VALVE TO BE PROVIDED WITH INFINITE POSITION CRANK OR MEMORY STOP FOR BALANCING SERVICE.
5. 3-WAY MIXING VALVE. PROVIDE WITH BOILER.
6. CIRCULATING PUMP SIZED AND PROVIDED BY BOILER MANUFACTURER.
7. PROVIDE STAINLESS STEEL BOILER FLUE AT SIZE INDICATED. REFER TO SPECIFICATIONS. FLUE SHALL TERMINATE 7'-0" ABOVE FINISHED FLOOR (A.F.F.). SUPPORT BOILER FLUE AS RECOMMENDED BY MANUFACTURER. PROVIDE FLUE TERMINATION AS RECOMMENDED BY MANUFACTURER.



1 **HOT WATER PIPING DIAGRAM**
SCALE: NO SCALE



1 **MECHANICAL FLOOR PLAN - AUSTIN EARLY COLLEGE HS**
SCALE: 1/8" = 1'-0"



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

MECHANICAL 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 DUCT SIZES ARE INSIDE CLEAR, INCREASE ACCORDINGLY WHERE INTERIOR LINER IS SHOWN OR SPECIFIED.
3. MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL POWER REQUIREMENTS.
4. THERMOSTATS SHALL BE MOUNTED AT +48" AFF (ABOVE FINISHED FLOOR), UNLESS OTHERWISE NOTED.

MECHANICAL KEYED NOTES:

1. VERIFY SERVICE CLEARANCES WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.
2. PROVIDE 4" CONCRETE HOUSEKEEPING PAD.
3. PROVIDE STAINLESS STEEL BOILER FLUE AT SIZE INDICATED. REFER TO SPECIFICATIONS. FLUE SHALL TERMINATE 7'-0" ABOVE FINISHED FLOOR (A.F.F.). SUPPORT BOILER FLUE AS RECOMMENDED BY MANUFACTURER. PROVIDE FLUE TERMINATION AS RECOMMENDED BY MANUFACTURER.
4. PROVIDE PIPING STAND. REFER TO DETAIL. (TYPICAL)
5. PROVIDE BOILER CIRCULATION PUMP. PUMP PROVIDED BY BOILER MANUFACTURER.
6. PROVIDE ISOLATION VALVE WITH BLIND FLANGE. CONNECT TO EXISTING PIPING AS INDICATED.
7. NEW LOCATION OF EXISTING EXPANSION TANK. CONNECT TO EXISTING SYSTEM AT SAME LOCATION.
8. PROVIDE WITH 3-WAY MIXING VALVE AT LOCATION SHOWN.
9. SUPPORT REFRIGERANT PIPING FROM STRUCTURE.

DEMO SYMBOL LEGEND	
RENOVATIONS	
	ITEM TO REMAIN
	ITEM TO BE REMOVED

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 PACKAGED DEHUMIDIFICATION UNIT, BMCS, TEMPERATURE SENSORS, CONTROL DEVICES, EXPANSION TANKS, AND BOILERS.

DEMOLITION KEYED NOTES:

1. EXISTING EXPANSION TANK TO BE RELOCATED. REMOVE EXISTING PIPING BACK TO MAINS. PATCH AND SEAL EXISTING MAIN AS SPECIFIED.
2. REMOVE EXISTING WALL MOUNTED CHEMICAL FEEDER.
3. REMOVE EXISTING AIR COMPRESSOR AND ALL ASSOCIATED APPURTENANCES.
4. REMOVE EXISTING WALL MOUNTED FILTER DRYER AND ALL ASSOCIATED APPURTENANCES.
5. REMOVE EXISTING BOILER CONTROLLER.
6. EXISTING END SUCTION PUMP TO REMAIN.
7. REMOVE EXISTING BOILER, CONCRETE HOUSEKEEPING PAD, CONTROLS, FLUE, AND ALL ASSOCIATED APPURTENANCES.
8. PATCH EXISTING OPENING AS SPECIFIED.
9. REMOVE EXISTING PIPING AND INSULATION BACK TO POINT INDICATED.
10. EXISTING CHEMICAL FEEDER TO REMAIN.
11. EXISTING AIR SEPARATOR TO REMAIN.
12. EXISTING CHILLER TO REMAIN.
13. REMOVE EXISTING STORAGE TANKS AND ASSOCIATED STORAGE RACK.
14. REMOVE EXISTING REFRIGERANT PIPING SUPPORTS AS REQUIRED TO REMOVING EXISTING STORAGE TANK RACK.
15. EXISTING CONDENSING UNIT TO REMAIN.
16. REMOVE EXISTING PIPING AND INSULATION BACK TO POINT INDICATED. PATCH AND SEAL MAIN PIPE LINE AS SPECIFIED.

Project No: 2022-02715-00
Drawn By: BB
Checked By: VP
Date: 09-14-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

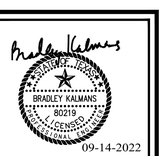
SALAS O'BRIEN
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Project No. 2022-02715-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT HVAC UPGRADES PART 3

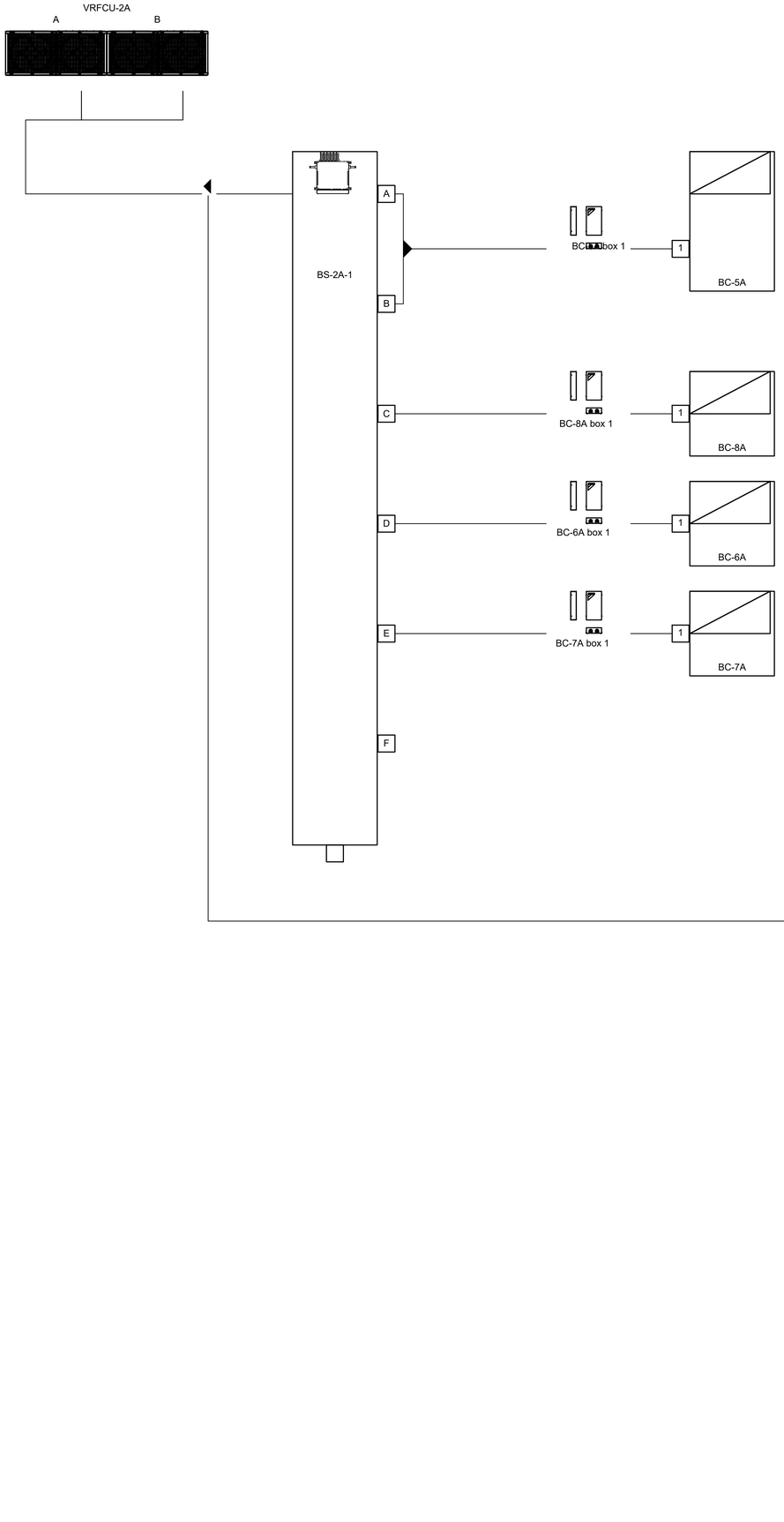
BEAUMONT INDEPENDENT SCHOOL DISTRICT

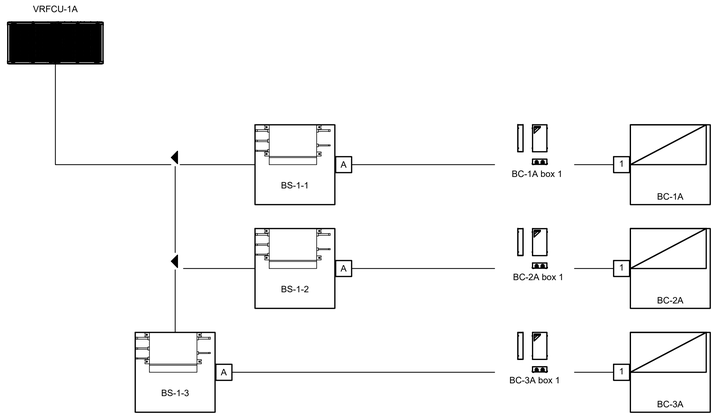
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MECHANICAL BOILER FLOOR PLANS - AUSTIN EARLY COLLEGE HS

M1.2





MECHANICAL GENERAL NOTES:

1. THESE SCHEMATICS ARE FOR INFORMATION PURPOSES ONLY. REFER TO MANUFACTURER FOR FINAL PIPE SIZES AND LENGTHS.

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Drawn By: BB

Checked By: VP

Date: 09-14-2022

Revision Dates:

CONSULTANTS

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Project No. 2022-02715-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD Preparing Our Next Generation

BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
STATE OF TEXAS

09-14-2022

MECHANICAL VRF PIPING DIAGRAM - AUSTIN EARLY COLLEGE HS

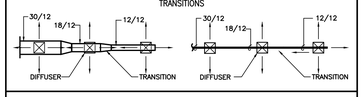
M2.1

SYMBOL LEGEND

SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
GENERAL	
(#)	KEY NOTE TAG
(#)	NOTE SPECIFIC TO DETAIL TAG
(#)	REVISION TAG
	NEW EQUIPMENT
DUCTWORK	
	SUPPLY AIR DUCTWORK
	RETURN AIR AND OUTSIDE AIR DUCTWORK
	EXHAUST AIR DUCTWORK
	FLEXIBLE DUCTWORK
	SUPPLY AIR DUCTWORK THROUGH HORIZONTAL PARTITION
	RETURN AIR AND OUTSIDE AIR DUCTWORK THROUGH HORIZONTAL PARTITION
	EXHAUST AIR DUCTWORK THROUGH HORIZONTAL PARTITION
	FIRE DAMPER (VERTICAL)
	FIRE DAMPER (HORIZONTAL)
	SMOKE DAMPER (VERTICAL)
	SMOKE DAMPER (HORIZONTAL)
	COMBINATION FIRE & SMOKE DAMPER (VERTICAL)
	COMBINATION FIRE & SMOKE DAMPER (HORIZONTAL)
	MANUAL BALANCING DAMPER (SEE DAMPER SCHEDULE)
	MOTORIZED DAMPER (SEE DAMPER SCHEDULE)
SENSORS	
(T)	THERMOSTAT AND TEMPERATURE SENSOR
(H)	HUMIDISTAT
(SD)	SMOKE DETECTOR
(HD)	HEAT DETECTOR
AIR DEVICES	
(#)	GRILLE SIZE TAG (REFER TO GRILLE SIZE LEGEND)
	SUPPLY AIR GRILLE WITH FOUR-WAY THROW
	SUPPLY AIR GRILLE WITH THREE-WAY THROW
	SUPPLY AIR GRILLE WITH TWO-WAY THROW
	SUPPLY AIR GRILLE WITH TWO-WAY CORNER THROW
	SUPPLY AIR GRILLE WITH ONE-WAY THROW
	RETURN AIR GRILLE
	RETURN AIR GRILLE WITH SOUND BOOT
	EXHAUST AIR GRILLE
	SUPPLY AIR SIDEWALL GRILLE
	RETURN AIR SIDEWALL GRILLE
20X12	RETURN AIR OPENING ABOVE CEILING
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
	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
RENOVATIONS	
	POINT OF CONNECTION FROM NEW TO EXISTING
	ITEM TO REMAIN
	ITEM TO BE REMOVED

DUCTWORK SYMBOLS LEGEND

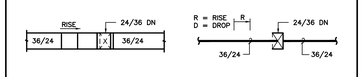
TRANSITIONS



MAIN BRANCH TAKE-OFFS



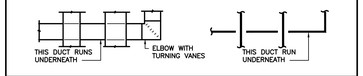
RISERS



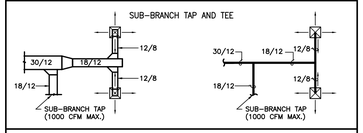
SIDEWALL REGISTERS



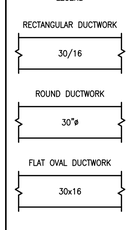
DUCT CROSSOVERS



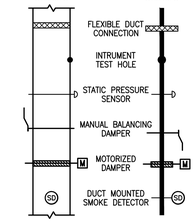
SUB-BRANCH TAP AND TEE



TWO LINE DUCTWORK LEGEND



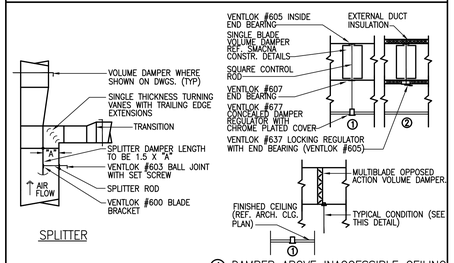
TWO LINE DUCTWORK SYMBOLS

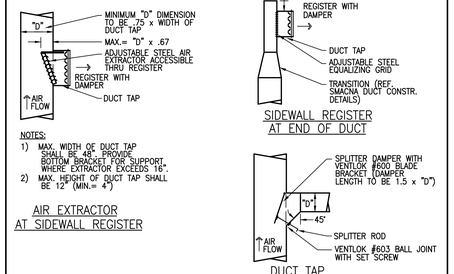


ONE LINE DUCTWORK SYMBOLS

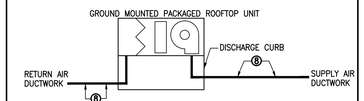
MS02

DUCTWORK CONSTRUCTION DETAILS

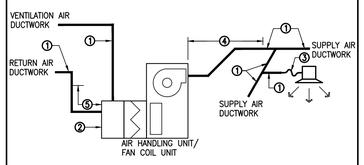




DUCT LINER AND INSULATION



GROUND MOUNTED PACKAGED ROOFTOP UNIT



AIR HANDLING UNITS AND FAN COIL UNITS

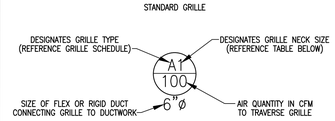
NOTES

1. SHEETMETAL DUCTWORK WITH EXTERNAL DUCTWORK INSULATION AS SPECIFIED.
2. SHEETMETAL DUCTWORK RETURN AIR PLENUM WITH EXTERNAL DUCTWORK INSULATION AS SPECIFIED.
3. FLEXIBLE DUCTWORK WITH EXTERNAL DUCTWORK INSULATION AS SPECIFIED.
4. SHEETMETAL DUCTWORK WITH EXTERNAL DUCTWORK INSULATION AS SPECIFIED AND 1" THICK 1-1/2 LB LINER AS SPECIFIED FROM AIR HANDLING UNIT DISCHARGE TO 10'-0" DOWNSTREAM. PROVIDE METAL NOSING AND MASTIC COVERING. REFER TO THE DUCT LINING SECTION IN THE DUCTWORK SPECIFICATION FOR MORE INFORMATION.
5. SHEETMETAL DUCTWORK WITH EXTERNAL DUCTWORK INSULATION AS SPECIFIED AND 1" THICK 1-1/2 LB LINER AS SPECIFIED FROM AIR HANDLING UNIT INLET TO 10'-0" UPSTREAM.
6. EXHAUST DUCTWORK AS SPECIFIED WITH FIREBOARD INSULATION AS SPECIFIED.
7. SHEETMETAL DUCTWORK ONLY. NO INSULATION REQUIRED.
8. ALL OUTSIDE DUCTWORK SHALL BE DOUBLE WALL CONSTRUCTION WITH TWO COATS OF EPOXY PAINT. REFER TO SPECIFICATIONS FOR MORE DETAILS.

MS01

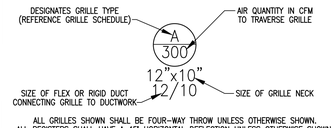
GRILLE SIZING SCHEDULE

STANDARD GRILLE



ALL GRILLES SHOWN SHALL BE FOUR-WAY THROW UNLESS OTHERWISE SHOWN.

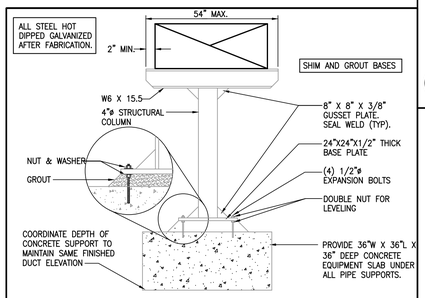
REGISTER OR NONSTANDARD GRILLE



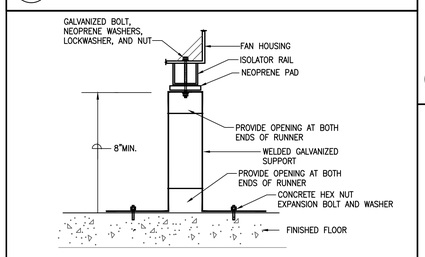
ALL GRILLES SHOWN SHALL BE FOUR-WAY THROW UNLESS OTHERWISE SHOWN.
ALL REGISTERS SHALL HAVE A 45° HORIZONTAL DEFLECTION UNLESS OTHERWISE SHOWN.

GRILLE SIZE DESIGNATION	GRILLE NECK SIZE	GRILLE SIZE DESIGNATION	GRILLE NECK SIZE
1	6" x 6"	7	15" x 15"
2	8" x 8"	8	16" x 16"
3	9" x 9"	9	18" x 18"
4	10" x 10"	10	20" x 20"
5	12" x 12"	11	22" x 22"
6	14" x 14"	12	24" x 24"

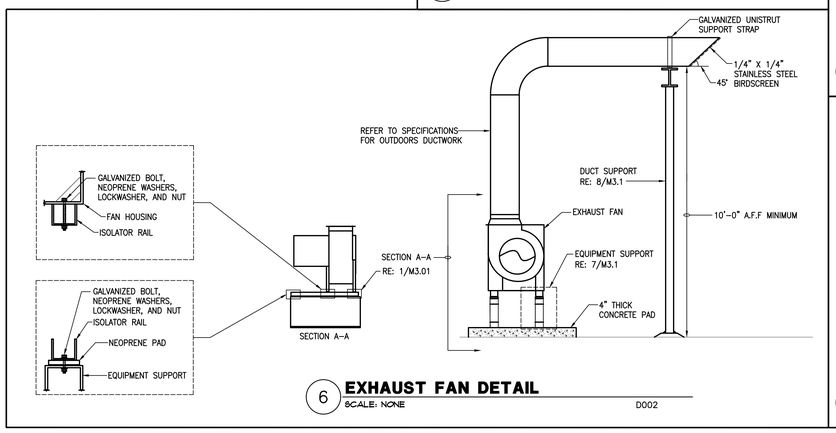
MS01



8 **DUCT STAND**
SCALE: NONE PS003

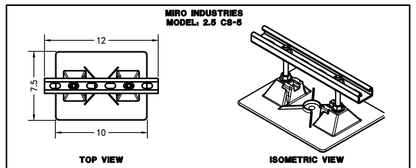


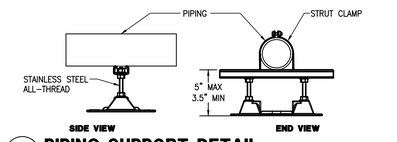
7 **EQUIPMENT SUPPORT**
SCALE: NONE C004



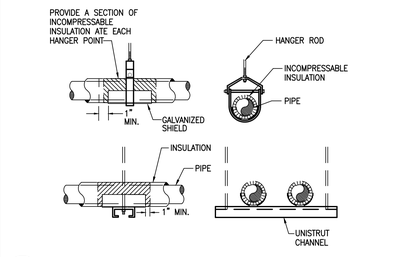
6 **EXHAUST FAN DETAIL**
SCALE: NONE D002

MIRO INDUSTRIES MODEL: 2.5 CS-5

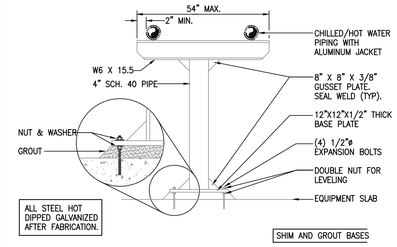




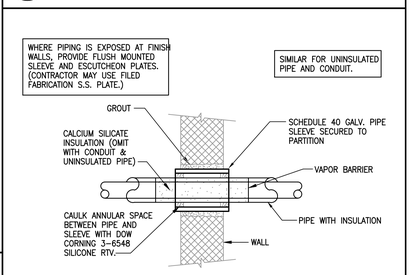
5 **PIPING SUPPORT DETAIL**
SCALE: NONE PS002



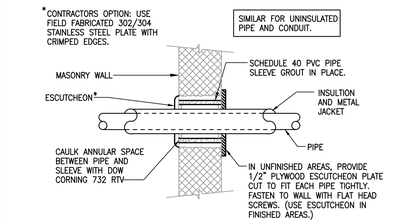
4 **PIPE HANGERS**
SCALE: NONE PS002



3 **PIPE STAND**
SCALE: NONE PS003



2 **PIPE THRU FIRE RATED WALL**
SCALE: NONE PS010



1 **PIPE THROUGH EXTERIOR WALL**
SCALE: NONE PS007

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BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT
BISD Preparing Our Next Generation

BRADLEY KALMANS 80219 LICENSED PROFESSIONAL ENGINEER
09-14-2022

MECHANICAL LEGENDS AND DETAILS - AUSTIN EARLY COLLEGE HS

M3.1

100 PERCENT GROUND MOUNTED PACKAGED UNIT - GAS HEAT

MARK	INDOOR AIR FAN					COOLING					GAS HEATING			REMARKS
	SUPPLY AIR CFM	OUTSIDE AIR CFM	EXT. STATIC PRESSURE (IN. W.C.)	HORSE POWER	CURRENT CHARAC.	AIR TEMPERATURE (°F) ENTERING DRY BULB	ENTERING WET BULB	OUTDOOR AMBIENT	MIN. TOTAL CAPACITY (MBH)	MIN. SENSIBLE CAPACITY (MBH)	MINIMUM EER/ IEER	ENTERING AIR TEMP. (°F)	MIN. CAPACITY OUTPUT (MBH)	AGA EFFICIENCY (%)	
OAU–1A	6,460	6,460	2.0	7.5	208/3/60	98.0	80.0	98.0	629.6	314.0	–/11.4	27.0	314.0	80	(1–11)

GENERAL NOTES:
1. EXTERNAL STATIC PRESSURE INCLUDES LOSSES DUE TO DUCTWORK, AIR DEVICES, DAMPERS, AND DUCT MOUNTED HOT WATER COILS WHERE APPLICABLE. DIRTY FILTER AND UNIT CASING MUST BE ADDED TO EXTERNAL STATIC PRESSURE TO OBTAIN TOTAL PRESSURE LOSS. INCREASE HORSEPOWER AS REQUIRED TO MEET YOUR TOTAL PRESSURE LOSS. COORDINATE WITH ELECTRICIAN.
2. MINIMUM RECOMMENDED CLEARANCE AROUND ROOFTOP UNIT IS 12 INCHES ON NON–SERVICE SIDES AND 30 INCHES ON SERVICE SIDES. MAINTAIN MINIMUM CLEARANCE FOR CONDENSER AIR FLOW AS RECOMMENDED BY ROOFTOP UNIT MANUFACTURER. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON ROOFTOP UNIT FOR SERVICE, MAINTENANCE, AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCE AS REQUIRED BY NEC.

REMARKS:
1. PROVIDE WITH DISCONNECT SWITCH & PAD MOUNTED CURB OR HORIZONTAL DISCHARGE.
2. PROVIDE UNIT WITH FACTORY MOUNTED GFCI RECEPTACLE. ELECTRICIAN TO WIRE TO SEPARATE CIRCUIT.
3. PROVIDE UNIT WITH LOW AMBIENT CONTROL.
4. PROVIDE A WATER LEVEL SENSING DEVICE IN THE PRIMARY DRAIN PAN. THIS DEVICE SHALL SHUT OFF THE APPLIANCE IN THE EVENT THE PRIMARY DRAIN LINE BECOMES RESTRICTED.
5. PROVIDE WITH DISCHARGE AIR TEMPERATURE SENSOR.
6. PROVIDE WITH MODULATING GAS HEAT.
7. PROVIDE WITH STAINLESS STEEL HEAT EXCHANGER.
8. VELOCITY SHALL NOT EXCEED 450 FPM ON COOLING COIL. PROVIDE UNIT WITH A LEAVING AIR TEMPERATURE OF 53°F DRY BULB AND 52.5°F WET BULB.
9. PROVIDE WITH MODULATING HOT GAS REHEAT TO A NEUTRAL CONDITION OF 72°F.
10. PROVIDE WITH VARIABLE SPEED COMPRESSOR OR DIGITAL SCROLL COMPRESSOR AND VARIABLE SPEED CONDENSER FANS. REFER TO SPECIFICATIONS.
11. PROVIDE WITH VFD ON SUPPLY FAN.

DX BLOWER COIL UNIT - VRF

MARK	FAN					COOLING						HEATING		REMARKS
	SUPPLY AIR CFM	OUTSIDE AIR CFM	EXT. STATIC PRESSURE (IN. W.C.)	HORSE POWER	CURRENT CHARAC.	AIR TEMPERATURE (°F) ENTERING DRY BULB	ENTERING WET BULB	LEAVING DRY BULB	LEAVING WET BULB	MIN. TOTAL CAPACITY (BTUH)	MIN. SENS. CAPACITY (BTUH)	ENTERING AIR TEMPERATURE (°F)	MINIMUM CAPACITY (BTUH)	
BC–1A	2,945	0	1.0	3.0	208/3/60	75.0	62.5	53.0	52.5	84,709	69,973	68.0	85,876	(1–11)
BC–2A	2,945	0	1.5	3.0	208/3/60	75.0	62.5	53.0	52.5	84,709	69,973	68.0	85,876	(1–11)
BC–3A	3,095	0	1.0	3.0	208/3/60	75.0	62.5	53.0	52.5	74,642	61,657	68.0	75,670	(1–11)
BC–4A	1,820	0	1.0	2.0	208/3/60	75.0	62.5	53.0	52.5	52,349	43,243	68.0	53,071	(1–11)
BC–5A	2,010	0	1.5	3.0	208/3/60	75.0	62.5	53.0	52.5	57,815	47,757	68.0	58,611	(1–11)
BC–6A	1,340	0	1.0	2.0	208/3/60	75.0	62.5	53.0	52.5	38,543	31,838	68.0	39,074	(1–11)
BC–7A	1,340	0	1.0	2.0	208/3/60	75.0	62.5	53.0	52.5	38,543	31,838	68.0	39,074	(1–11)
BC–8A	1,340	0	1.5	2.0	208/3/60	75.0	62.5	53.0	52.5	38,543	31,838	68.0	39,074	(1–11)
BC–9A	1,340	0	1.75	2.0	208/3/60	75.0	62.5	53.0	52.5	38,543	31,838	68.0	39,074	(1–11)
BC–10A	1,340	0	1.75	2.0	208/3/60	75.0	62.5	53.0	52.5	38,543	31,838	68.0	39,074	(1–11)
BC–11A	1,340	0	2.0	2.0	208/3/60	75.0	62.5	53.0	52.5	38,543	31,838	68.0	39,074	(1–11)
BC–12A	1,340	0	2.0	2.0	208/3/60	75.0	62.5	53.0	52.5	38,543	31,838	68.0	39,074	(1–11)

GENERAL NOTES:
1. EXTERNAL STATIC PRESSURE INCLUDES LOSSES DUE TO DUCTWORK, AIR DEVICES, DAMPERS, AND DUCT MOUNTED HOT WATER COILS WHERE APPLICABLE. DIRTY FILTER AND UNIT CASING MUST BE ADDED TO EXTERNAL STATIC PRESSURE TO OBTAIN TOTAL PRESSURE LOSS. INCREASE HORSEPOWER AS REQUIRED TO MEET YOUR TOTAL PRESSURE LOSS. COORDINATE WITH ELECTRICIAN.
2. MAINTAIN MINIMUM CLEARANCE FOR COIL PULL AS RECOMMENDED BY UNIT MANUFACTURER. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON UNIT FOR SERVICE, MAINTENANCE, AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCE AS REQUIRED BY NEC.

REMARKS:
1. VELOCITY NOT TO EXCEED 500 FPM ON COOLING COIL.
2. PROVIDE VERTICAL UNIT.
3. PROVIDE VARIABLE VOLUME UNIT.
4. PROVIDE TOP DISCHARGE.
5. PROVIDE WITH FLAT FILTER.
6. THE VARIABLE REFRIGERANT VOLUME SYSTEM SHALL BE CAPABLE OF INTEGRATING TO A MODULAR BUILT UP AIR HANDLING UNIT.
7. FULL PORT, BI–DIRECTIONAL FLOW ISOLATION VALVES SHALL BE INSTALLED UPSTREAM OF AIR HANDLING UNIT INTEGRATION KIT. ENSURE SCHRADER FITTING IS POSITIONED ON THE DOWNSTREAM SIDE OF THE VALVE.
8. THE INTEGRATION KIT SHALL ALLOW CONNECTION AND CONTROL IN ADDITION TO FULL INTEGRATION OF NON VRF AIR HANDLING EQUIPMENT INTO A VRF SYSTEM.
9. THE INTEGRATION KIT SHALL INCLUDE AN ELECTRONIC EXPANSION VALVE CAPABLE OF 2000 STEPS TO CONTROL REFRIGERANT FLOW TO COIL.
10. INTEGRATED CONTROL MODULE SHALL COMMUNICATE WITH VRV CONDENSING UNIT.
11. PROVIDE WITH DOUBLE WALL INSULATED UNIT CASING WITH SOLID INNER WALL.

PUMP

MARK	SERVICE	TYPE	GPM	HEAD (FT.)	MAXIMUM RPM	MOTOR HORSEPOWER	CURRENT	MANUFACTURER	MODEL	REMARKS
P–2	HOT WATER	INLINE CIRCULATOR	217	35	1,800	3.0	480/3/60	BELL & GOSSETT	E–80	(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. PUMP SHALL BE SELECTED BY BOILER MANUFACTURER, WITH DISCONNECT AND STARTER BY ELECTRICAL CONTRACTOR AND CONTROLLED BY BOILER.
2. PROVIDE WITH GAUGE TAPPINGS.

OUTDOOR BOILER - FORCED AIR

MARK	TYPE	MINIMUM GAS INPUT (MBH)	MINIMUM HEATING OUTPUT (MBH)	MAXIMUM WATER PRESSURE DROP (FT.)	GPM	FLUE SIZE (IN. ROUND)	ELECTRICAL BLOWER HORSEPOWER	ELECTRICAL CURRENT CHARAC. (V/PH/Hz)	MANUFACTURER	MODEL	REMARKS
B–1	HOT WATER SYSTEM	2,500	2,175	10	217	9	1	208/1/60	LOCHINVAR	POWER FIN PBN2500	(1,2,3)

GENERAL NOTES:
1. PROVIDE 8 OUNCE GAS PRESSURE TO BOILER.
2. MAINTAIN MINIMUM CLEARANCE AROUND A BOILER OF 24 INCHES PER TEXAS BOILER LAW. MAINTAIN MINIMUM CLEARANCES FOR TUBE PULL AND CLEANING OF TUBES AS RECOMMENDED BY THE BOILER'S MANUFACTURER. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS FOR SERVICE, MAINTENANCE AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCES AS REQUIRED BY NEC.

REMARKS:
1. PROVIDE WITH CIRCULATING PUMP, SIZED BY BOILER MANUFACTURER TO ENSURE CONSTANT FLOW THROUGH BOILER. PUMP TO BE SHIPPED LOOSE. POWER BY ELECTRICAL CONTRACTOR BUT CONTROLLED BY BOILER. CONTRACTOR TO WIRE FROM BOILER PUMP CONTROL CIRCUIT TO PUMP STARTER RELAY.
2. PROVIDE NON–CONDENSING BOILER.
3. PROVIDE BOILER WITH OUTDOOR KIT.

VRF AIR COOLED CONDENSING UNIT

MARK	MIN. TOTAL CAPACITY COOLING (BTUH)	MIN. TOTAL CAPACITY HEATING (BTUH)	OUTDOOR AIR TEMP (°F)	MINIMUM EER/ SEER	CURRENT CHARAC.	MCA	MOCP	RELATED UNIT MARK	REMARKS
VRFCU–1A	241,067	191,411	98	10.8/–	208/3/60	82.0	125.0	BC–1A,2A,3A	(1,2,3,4,5)
VRFCU–2A	385,273	351,159	98	10.5/–	208/3/60	119.6	180.0	BC–4A,5A,6A,7A 8A,9A,10A,11A,12A	(1,2,3,4,5)

GENERAL NOTES:
1. MINIMUM RECOMMENDED CLEARANCE AROUND ROOFTOP UNIT IS 12 INCHES ON NON–SERVICE SIDES AND 30 INCHES ON SERVICE SIDES. MAINTAIN MINIMUM CLEARANCE FOR CONDENSER AIR FLOW AS RECOMMENDED BY UNIT MANUFACTURER. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON UNIT FOR SERVICE, MAINTENANCE, AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCE AS REQUIRED BY NEC.

REMARKS:
1. PROVIDE WITH LOW AMBIENT CONTROL DOWN TO 20°F.
2. PROVIDE WITH DISCONNECT SWITCH.
3. REFRIGERANT LINES TO BE SIZED PER MANUFACTURER'S REQUIREMENTS.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING DX EXPANSION VALVES. ELECTRICIAN SHALL BE RESPONSIBLE FOR WIRING 208–230V/1PH DX EXPANSION VALVES.
5. PROVIDE HEAT RECOVERY UNIT.

BRANCH SELECTOR

MARK	ELECTRICAL CURRENT CHARAC.	ELECTRICAL MCA	ELECTRICAL MOCP	NUM. OF PORTS	REMARKS
BS–1A–1	208/1/60	0.10	15.0	1	(1,2,3,4)
BS–1A–2	208/1/60	0.10	15.0	1	(1,2,3,4)
BS–1A–3	208/1/60	0.10	15.0	1	(1,2,3,4)
BS–2A–1	208/1/60	0.60	15.0	6	(1,2,3,4)
BS–2A–2	208/1/60	0.60	15.0	6	(1,2,3,4)

GENERAL NOTES:
1. BRANCH SELECTOR MODULES ARE TYPICAL. SEE DRAWINGS AND PIPING SCHEMATICS FOR QUANTITY AND LOCATION.
2. BRANCH SELECTORS SHALL HAVE BRAZED CONNECTIONS.

REMARKS:
1. SINGLE–PORT FLOW SELECTORS ARE POWERED FROM INDOOR UNITS.
2. STANDARD SINGLE–PORT FLOW SELECTORS (I.E. NOT "LONG" MODELS) COME STANDARD WITH POWER AND COMMUNICATION WIRES FOR CONNECTION TO INDOOR UNIT.
3. MULTI–PORT FLOW SELECTORS REQUIRE DEDICATED POWER SUPPLY.
4. EACH PORT OF MULTI–PORT FLOW SELECTORS SHALL HAVE A MAXIMUM CAPACITY OF 61 KBTU/HR.

GRILLE

MARK	SERVICE	TYPE	DAMPER	CONSTRUCTION MATERIAL	FINISH COLOR	MANUFACTURER	MODEL NUMBER	REMARKS
A	SUPPLY AIR	GRILLE	–	STEEL	WHITE	TITUS	300RL	DOUBLE DEFLECTION SIDEWALL GRILLE WITH HORIZONTAL FRONT BARS. SURFACE MOUNTED.
B	RETURN AIR	GRILLE	–	STEEL	WHITE	TITUS	350RL	SINGLE DEFLECTION SIDEWALL GRILLE WITH HORIZONTAL FRONT BARS. SURFACE MOUNTED.
C	RETURN AIR	DIFFUSER	–	STEEL	WHITE	TITUS	PAR	EXPOSED T–BAR CEILING FRAME STYLE WITH 24"x24" FACE. PERFORATED.
(E)	EXISTING	DIFFUSER	–	–	–	–	–	EXISTING AIR DEVICE TO REMAIN

GENERAL NOTES:
1. DAMPERS NOTED AS U. L. SHALL BE A "U. L." CLASSIFIED CEILING RADIATION DAMPER WITH THERMAL BLANKET.
2. COORDINATE AIR DEVICE FINISH COLOR AND LOCATION WITH ARCHITECT.

REMARKS:
1. N/A

DAMPER

MARK	ACTUATOR	DUTY	BLADE ACTION	MANUFACTURER	MODEL NUMBER	REMARKS
D–1	MANUAL BALANCING	UNDER 9" WIDE	N/A	N/A	N/A	SEE SMACNA CONSTRUCTION DETAILS REFERENCED "TYPICAL CONSTRUCTION DETAILS FOR LOW VELOCITY DUCTS."
D–2	MANUAL BALANCING	OVER 9" WIDE	OPPOSED	RUSKIN	MD–35	MANUAL DAMPER WITH STANDARD CONSTRUCTION FEATURES AND VENTLOCK #639 LOCKING REGULATOR.
D–3	MOTORIZED	OVER 9" WIDE	OPPOSED	RUSKIN	CD–60	LOW LEAKAGE DAMPER WITH BLADE SEALS

NOTES:
N/A – NOT APPLICABLE

FAN

MARK	LOCATION	CFM	MAXIMUM RPM	EXT. STATIC PRESSURE (IN. W.C.)	HORSE POWER	CURRENT CHARAC.	LOCALLY SWITCHED BY	INTERLOCKED WITH	FAN TYPE	BELT/DIRECT DRIVE	MANUFACTURER	MODEL NUMBER	REMARKS
EF–5A	MECHANICAL YARD	5,480	1,338	2.0	3.0	208/3/60	–	OAU–1	CENTRIFUGAL BLOWER	BELT	COOK	CPS	(1,2,3,4,5,6,7)

GENERAL NOTES:
1. EXTERNAL STATIC PRESSURE INCLUDES LOSSES DUE TO DUCTWORK, AIR DEVICES, DAMPERS, AND DUCT MOUNTED HOT WATER COILS WHERE APPLICABLE. DIRTY FILTER AND UNIT CASING MUST BE ADDED TO EXTERNAL STATIC PRESSURE TO OBTAIN TOTAL PRESSURE LOSS. INCREASE HORSEPOWER AS REQUIRED TO MEET YOUR TOTAL PRESSURE LOSS. COORDINATE WITH ELECTRICIAN.
2. MINIMUM RECOMMENDED CLEARANCE AROUND UNIT IS 12 INCHES ON NON–SERVICE SIDES AND 30 INCHES ON SERVICE SIDES. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON UNIT FOR SERVICE, MAINTENANCE, AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCE AS REQUIRED BY NEC.
3. FAN SHALL BE CENTRIFUGAL, BELT DRIVEN TYPE UNLESS OTHERWISE SCHEDULED.

REMARKS:
1. PROVIDE WITH DISCONNECT SWITCH.
2. PROVIDE WITH OSHA APPROVED MOTOR GUARD.
3. PROVIDE WITH VARIABLE FREQUENCY DRIVE (VFD).
4. MOTOR SHALL BE RATED FOR USE WITH A VARIABLE FREQUENCY DRIVE (VFD).
5. PROVIDE WITH SPRING ISOLATION RAIL.
6. PROVIDE WITH TOP DISCHARGE.
7. PROVIDE WITH DRAIN AT BOTTOM OF FAN HOUSING.

Project No: 2022-02715-00
Drawn By: BB
Checked By: VP
Date: 09-14-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

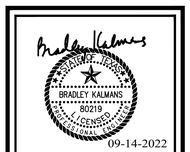
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Project No. 2022-02715-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD
Preparing Our Next Generation



09-14-2022

MECHANICAL
SCHEDULES - AUSTIN EARLY COLLEGE HS

M4.1

ELECTRICAL WORK SHOWN AS A PART OF THIS PROJECT WILL REQUIRE INCIDENTAL FIRE ALARM SYSTEM WORK. ALL SUCH WORK SHALL BE INCLUDED IN THE CONTRACTORS PROPOSAL. THIS WORK SHALL BE PERFORMED WITHOUT ANY IMPACT TO THE CONSTRUCTION SCHEDULE AND AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL INCLUDE ANY FIRE ALARM DEVICES THAT ARE REQUIRED TO BE REMOVED, PROTECTED, AND RE-INSTALLED. FIRE ALARM SYSTEM SHALL BE TESTED PRIOR TO COMMENCEMENT OF WORK AND UPON COMPLETION. REFER TO SPECIFICATION 26 31 02 EXPANSION OF EXISTING FIRE DETECTION AND ALARM SYSTEM FOR ADDITIONAL REQUIREMENTS.

EASTEX FREEWAY

REFER TO SHEETS E2.1

REFER TO SHEET E2.2

AUSTIN STREET

NORTH

1 **ELECTICAL FLOOR PLAN - AUSTIN EARLY COLLEGE HS**
SCALE: 1" = 60'-0"

Project No:	2022-02715-00
Drawn By:	AW
Checked By:	JZ
Date:	09-14-2022
Revision Dates:	

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Project No. 2022-02715-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

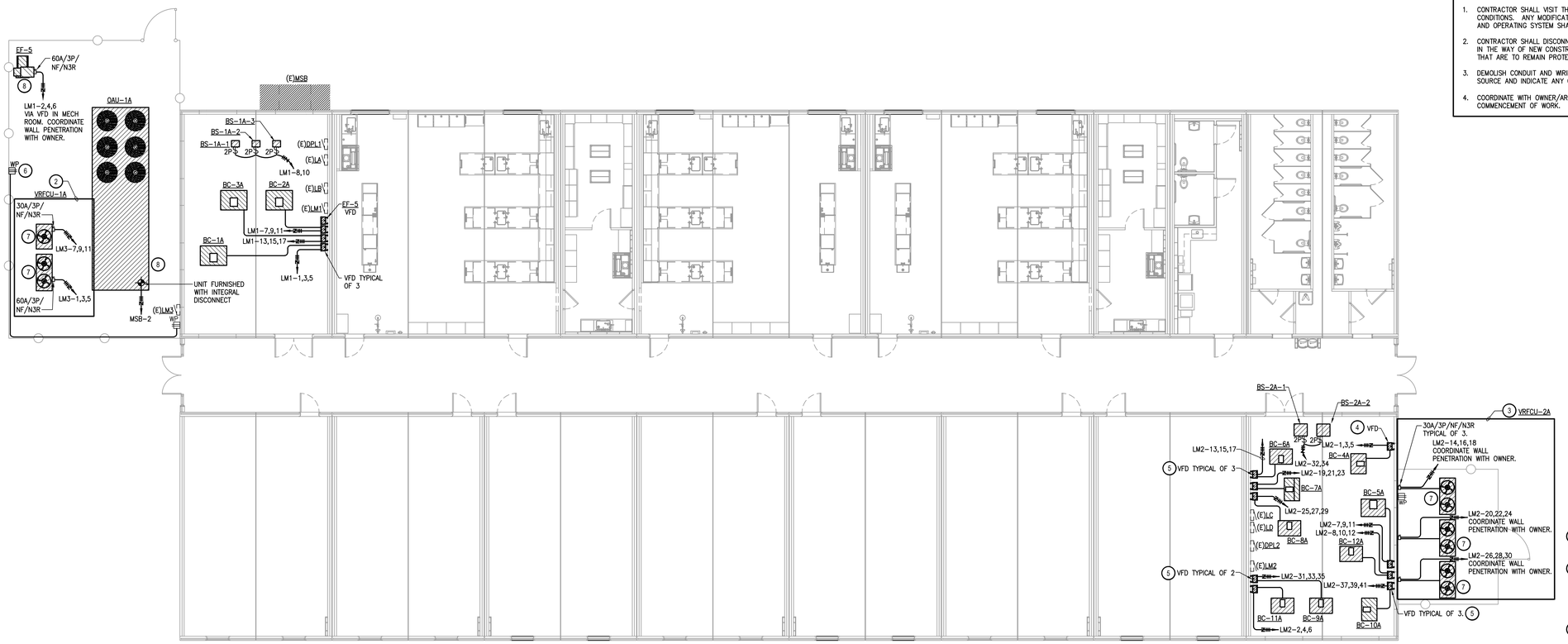
BEAUMONT INDEPENDENT SCHOOL DISTRICT

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PROFESSIONAL ENGINEER
09-14-2022

ELECTRICAL SITE PLAN - AUSTIN EARLY COLLEGE HS

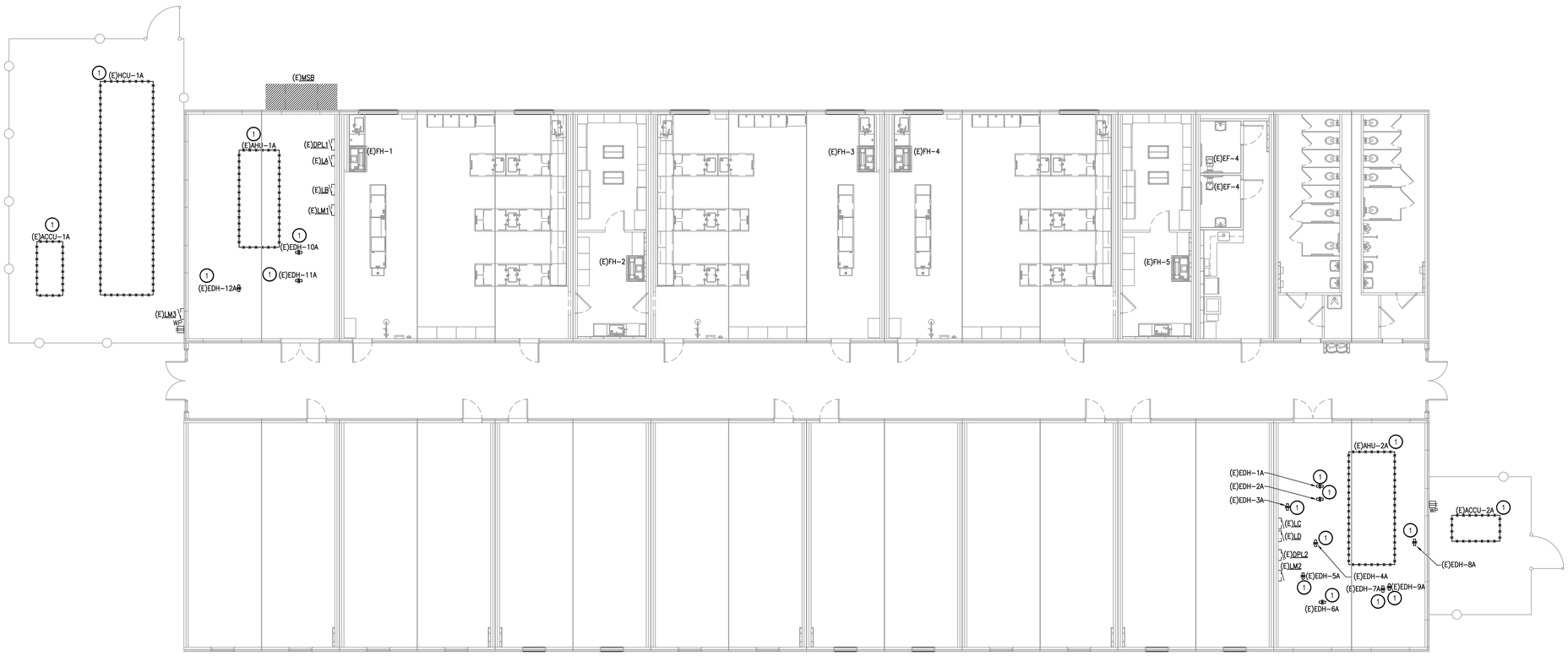
E1.1



NORTH

2 ELECTICAL NEW FLOOR PLAN - AUSTIN EARLY COLLEGE HS

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



NORTH

1 ELECTICAL DEMOLITION FLOOR PLAN - AUSTIN EARLY COLLEGE HS

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

EXISTING CONDITIONS/DEMOLITION NOTES

1. CONTRACTOR SHALL VISIT THE SITE BEFORE SUBMITTING A PROPOSAL AND VERIFY EXISTING CONDITIONS. ANY MODIFICATIONS REQUIRED CONTRARY TO THESE DOCUMENTS FOR A COMPLETE AND OPERATING SYSTEM SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
2. CONTRACTOR SHALL DISCONNECT AND REMOVE ANY MECHANICAL, ELECTRICAL OR PLUMBING ITEMS IN THE WAY OF NEW CONSTRUCTION AND NOT BEING REUSED. CONTRACTOR TO KEEP ALL ITEMS THAT ARE TO REMAIN PROTECTED DURING CONSTRUCTION.
3. DEMOLISH CONDUIT AND WIRING ASSOCIATED WITH HVAC EQUIPMENT BEING REMOVED BACK TO SOURCE AND INDICATE ANY OPEN CIRCUIT BREAKER AS SPARE.
4. COORDINATE WITH OWNER/ARCHITECT FOR EXACT DEMOLITION SCOPE OF WORK PRIOR TO COMMENCEMENT OF WORK.

LINETYPE LEGEND

EXISTING TO REMAIN
REMOVE EXISTING
NEW WORK

OWNER OR ITS REPRESENTATIVE SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED FROM THIS PROJECT. CONTRACTOR TO NOTIFY DISTRICT REPRESENTATIVE PRIOR TO DEMOLITION WORK TO DISCUSS ALL RETURNED ITEMS TO DISTRICT.

ELECTRICAL WORK SHOWN AS A PART OF THIS PROJECT WILL REQUIRE INCIDENTAL FIRE ALARM SYSTEM WORK. ALL SUCH WORK SHALL BE INCLUDED IN THE CONTRACTORS PROPOSAL. THIS WORK SHALL BE PERFORMED WITHOUT ANY IMPACT TO THE CONSTRUCTION SCHEDULE AND AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL INCLUDE ANY FIRE ALARM DEVICES THAT ARE REQUIRED TO BE REMOVED, PROTECTED, AND RE-INSTALLED. FIRE ALARM SYSTEM SHALL BE TESTED PRIOR TO COMMENCEMENT OF WORK AND UPON COMPLETION. REFER TO SPECIFICATION 26 31 02 EXPANSION OF EXISTING FIRE DETECTION AND ALARM SYSTEM FOR ADDITIONAL REQUIREMENTS.

GENERAL NOTES:

1. DISCONNECT AND REMOVE ALL CONDUIT, WIRE, AND DISCONNECTING MEANS ASSOCIATED WITH HVAC EQUIPMENT BEING REMOVED.
2. DISCONNECT AND REMOVE ALL ABANDONED WIRING AND CONDUIT.
3. VARIABLE FREQUENCY DRIVES FURNISHED BY DIVISION 23.
4. ALL NEW ELECTRICAL FEEDING SHALL BE ROUTED ABOVE GRADE. ROUTE TO AVOID CREATING TRIPPING HAZARDS. FIELD COORDINATE EXACT ROUTING WITH OWNER. UTILIZE EXISTING AND/OR NEW PIPE STANDS AS NEEDED.

ELECTRICAL KEYED NOTES:

1. DISCONNECT EXISTING MECHANICAL EQUIPMENT AND ASSOCIATED CONTROL DEVICE. REMOVE EXISTING CIRCUIT BACK TO SOURCE OR NEXT EXISTING DEVICE TO REMAIN.
2. CONTRACTOR TO COORDINATE FINAL DISCONNECT SIZE AND NUMBER OF FEEDS WITH MECHANICAL SELECTIONS.
   IF DAIKIN IS SELECTED PROVIDE (1) CONNECTION THROUGH A 100A/3P/NF/N3R DISCONNECT.
   IF TRANE IS SELECTED PROVIDE (1) CONNECTION THROUGH A 200A/3P/NF/N3R DISCONNECT.
3. CONTRACTOR TO COORDINATE FINAL DISCONNECT SIZE AND NUMBER OF FEEDS WITH MECHANICAL SELECTIONS.
   IF DAIKIN IS SELECTED PROVIDE (2) CONNECTIONS THROUGH 60A/3P/NF/N3R DISCONNECTS.
   IF TRANE IS SELECTED PROVIDE (2) CONNECTIONS THROUGH 100A/3P/NF/N3R DISCONNECTS.
4. CONTRACTOR TO COORDINATE FINAL DISCONNECT WITH MECHANICAL SELECTIONS. IF DAIKIN IS SELECTED, CONTRACTOR TO PROVIDE 2 POLE 20A DISCONNECT.
5. CONTRACTOR TO COORDINATE FINAL DISCONNECT WITH MECHANICAL SELECTIONS. IF DAIKIN IS SELECTED, CONTRACTOR TO PROVIDE 2 POLE 30A DISCONNECT.
6. EXTEND NEW 2#12, 1#12G IN 3/4"C. TO NEW RECEPTACLE SUPPORTED BY CONDUIT FROM EXISTING RECEPTACLE TO REMAIN. FIELD VERIFY CONNECTED LOAD NOT TO EXCEED 1500 W @ 120V.
7. ROUTE 3/4"C. WITH PULLSTRING TO ASSOCIATED INDOOR UNIT. ROUTE PARALLEL WITH REFRIGERATION LINES.
8. ROUTE 3/4"C. WITH PULLSTRING FOR CONTROL WIRING INSIDE BUILDING. COORDINATE FINAL TERMINATION WITH MECHANICAL CONTRACTOR.

Project No:	2022-02715-00
Drawn By:	AW
Checked By:	JZ
Date:	09-14-2022
Revision Dates:	

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BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

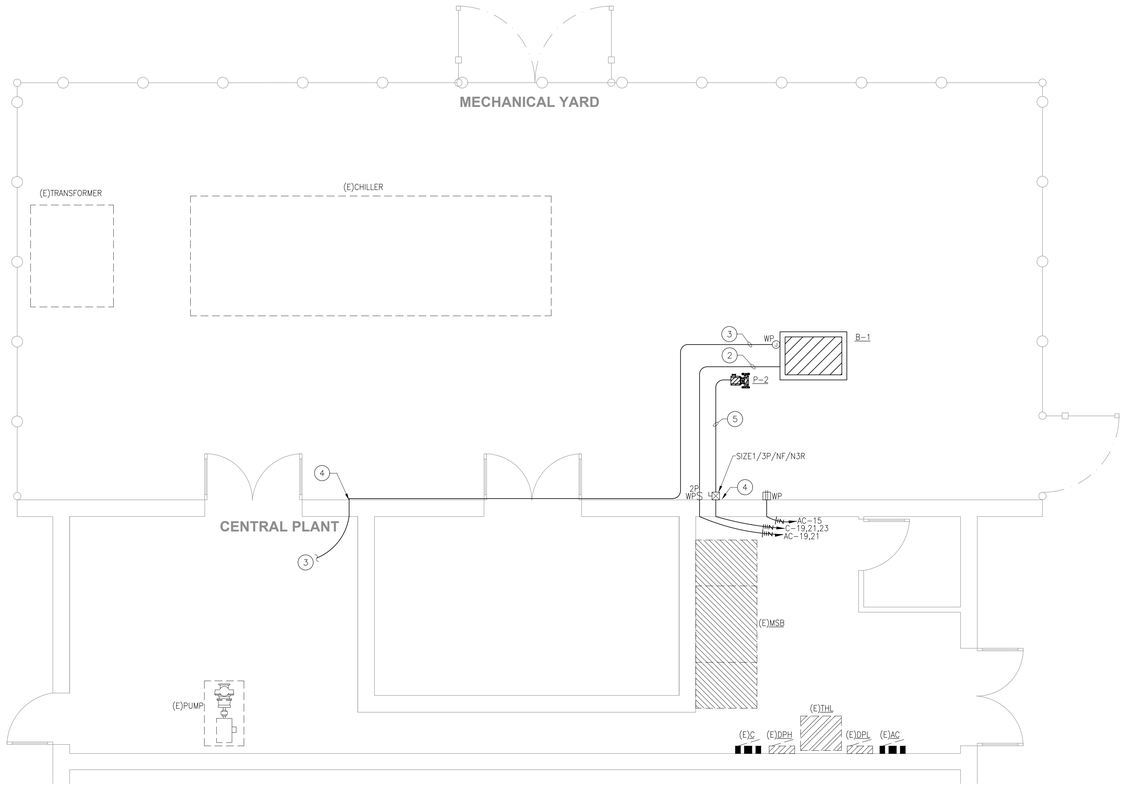
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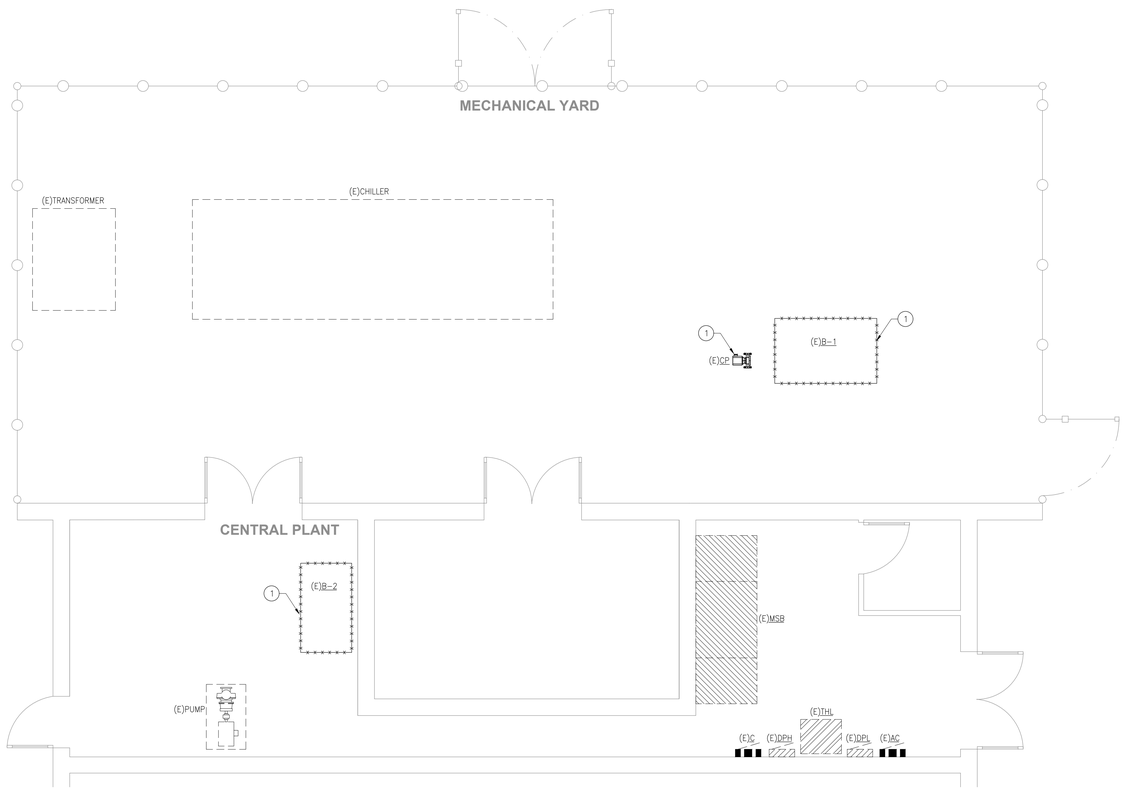
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PROFESSIONAL ENGINEER
STATE OF TEXAS
09-14-2022

ELECTRICAL FLOOR PLANS - FIBERBOND BUILDING - AUSTIN EARLY COLLEGE HS

E2.1



2 **ELECTRICAL FLOOR PLAN - CENTRAL PLANT - EARLY COLLEGE HS**
SCALE: 1/4" = 1'-0"



1 **ELECTRICAL DEMOLITION FLOOR PLAN - CENTRAL PLANT - EARLY COLLEGE HS**
SCALE: 1/4" = 1'-0"

OWNER OR ITS REPRESENTATIVE SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED FROM THIS PROJECT. CONTRACTOR TO NOTIFY DISTRICT REPRESENTATIVE PRIOR TO DEMOLITION WORK TO DISCUSS ALL RETURNED ITEMS TO DISTRICT.

LINETYPE LEGEND

EXISTING TO REMAIN
EXISTING TO DEMOLISH
NEW WORK

GENERAL NOTES:

1. DISCONNECT AND REMOVE ALL CONDUIT, WIRE, AND DISCONNECTING MEANS ASSOCIATED WITH HVAC EQUIPMENT BEING REMOVED.
2. DISCONNECT AND REMOVE ALL ABANDONED WIRING AND CONDUIT.
3. ALL NEW ELECTRICAL FEEDING SHALL BE ROUTED ABOVE GRADE. ROUTE TO AVOID CREATING TRIPPING HAZARDS. FIELD COORDINATE EXACT ROUTING WITH OWNER. UTILIZE EXISTING AND/OR NEW PIPE STANDS AS NEEDED.

ELECTRICAL KEYED NOTES:

1. DISCONNECT EXISTING MECHANICAL EQUIPMENT AND ASSOCIATED CONTROL DEVICE. REMOVE EXISTING CIRCUIT BACK TO SOURCE OR NEXT EXISTING DEVICE TO REMAIN.
2. ROUTE NEW 3#10, 1#10G IN 3/4"C.
3. ROUTE NEW 3/4"C WITH PULLSTRING FOR CONTROL WIRING TO EXISTING BOILER CONTROLS. COORDINATE LOCATION WITH MECHANICAL CONTRACTOR.
4. PENETRATE BUILDING. COORDINATE EXACT LOCATION WITH OWNER. TYPICAL.
5. ROUTE NEW 3#10, 1#10G IN 3/4"C.

EXISTING CONDITIONS/DEMOLITION NOTES

1. CONTRACTOR SHALL VISIT THE SITE BEFORE SUBMITTING A PROPOSAL AND VERIFY EXISTING CONDITIONS. ANY MODIFICATIONS REQUIRED CONTRARY TO THESE DOCUMENTS FOR A COMPLETE AND OPERATING SYSTEM SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
2. CONTRACTOR SHALL DISCONNECT AND REMOVE ANY MECHANICAL, ELECTRICAL OR PLUMBING ITEMS IN THE WAY OF NEW CONSTRUCTION AND NOT BEING REUSED. CONTRACTOR TO KEEP ALL ITEMS THAT ARE TO REMAIN PROTECTED DURING CONSTRUCTION.
3. DEMOLISH CONDUIT AND WIRING ASSOCIATED WITH HVAC EQUIPMENT BEING REMOVED BACK TO SOURCE AND INDICATE ANY OPEN CIRCUIT BREAKER AS SPARE.
4. COORDINATE WITH OWNER/ARCHITECT FOR EXACT DEMOLITION SCOPE OF WORK PRIOR TO COMMENCEMENT OF WORK.

ELECTRICAL WORK SHOWN AS A PART OF THIS PROJECT WILL REQUIRE INCIDENTAL FIRE ALARM SYSTEM WORK. ALL SUCH WORK SHALL BE INCLUDED IN THE CONTRACTORS PROPOSAL. THIS WORK SHALL BE PERFORMED WITHOUT ANY IMPACT TO THE CONSTRUCTION SCHEDULE AND AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL INCLUDE ANY FIRE ALARM DEVICES THAT ARE REQUIRED TO BE REMOVED, PROTECTED, AND RE-INSTALLED. FIRE ALARM SYSTEM SHALL BE TESTED PRIOR TO COMMENCEMENT OF WORK AND UPON COMPLETION. REFER TO SPECIFICATION 26 31 02 EXPANSION OF EXISTING FIRE DETECTION AND ALARM SYSTEM FOR ADDITIONAL REQUIREMENTS.

Project No: 2022-02715-00
Drawn By: AW
Checked By: JZ
Date: 09-14-2022
Revision Dates:

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Project No. 2022-02715-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT
BISD Preparing Our Next Generation

BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL
ENGINEER
09-14-2022

ELECTRICAL FLOOR PLANS - CENTRAL PLANT - AUSTIN EARLY COLLEGE HS

E2.2

LINETYPE LEGEND

EXISTING TO REMAIN	———
EXISTING TO DEMOLISH	- - - - - - - - - -
NEW WORK	———

SYMBOL LEGEND

SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
MOTOR CONTROLLERS AND EQUIPMENT	
	DISCONNECT SWITCH
$	1P–20A MOTOR RATED SWITCH U.O.N.
ELECTRICAL EQUIPMENT	
	277/480V PANELBOARD
	120/208V PANELBOARD
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 HOMERUN

GENERAL NOTE:
ALL EXTERIOR BUILDING ELECTRICAL EQUIPMENT TO BE WEATHERPROOF

PANELBOARD CIRCUIT DIRECTORY:

CONTRACTOR SHALL RECORD AND/OR PRESERVE THE EXISTING CIRCUIT DIRECTORY, IF ANY, FOR THE SOLE PURPOSE UPON COMPLETION OF NEW WORK OF PRODUCING A NEW CIRCUIT DIRECTORY.

CONTRACTOR SHALL PROVIDE AS PART OF THE CONSTRUCTION DOCUMENTS A NEW, NEATLY TYPED DIRECTORY. CONTRACTOR SHALL LEGIBLY IDENTIFY AS TO ITS CLEAR, EVIDENT, AND SPECIFIC PURPOSE OR USE, LOADS SERVED AND LOCATION AND/OR THE PANELBOARD SCHEDULE ON THE DRAWINGS. THE WORD "EXISTING" SHALL NOT BE USED ON PANELBOARD DIRECTORIES. SPARE BREAKERS ARE TO BE LISTED AS "SPARE". SPACES WITH NO BREAKERS ARE TO BE LEFT BLANK. REFER TO NEC–2020: 408.4(A) FOR DETAILS.

CONTRACTOR SHALL PERMANENTLY LABEL AS PART OF THE CONSTRUCTION DOCUMENTS ALL SWITCHBOARDS, SWITCHGEAR AND PANELBOARDS TO INDICATE EACH POWER SOURCE. REFER TO NEC–2020: 408.4(B) FOR DETAILS.

ELECTRICAL KEYED NOTES:

1. CONTRACTOR TO COORDINATE FINAL BREAKER SIZING WITH MECHANICAL SELECTIONS.

CONTRACTOR TO FIELD VERIFY INTERRUPTING FAULT CURRENT CAPACITY OF EXISTING PANELS AND/OR SWITCHBOARDS AND TO PROVIDE NEW BREAKERS TO MATCH EXISTING

EXISTING PANEL 'AC'

LOCATION: ELECTRICAL RM

120/208V., 3 PHASE, 4 WIRE, SOLID NEUTRAL, GROUND BAR

200 PANEL AMPERAGE — X MLO — X NEMA-1 — PROVIDE FEED THRU LUGS
X SURFACE MOUNTED — MCB — NEMA-3R — PROVIDE 200% NEUTRAL
RECESS MOUNTED — TVSS — S.S. ENCL. — ISOLATED GROUND BUS

CKT	VA	DESCRIPTION	COND.	BRKR			BRKR	COND.	DESCRIPTION	VA	CKT
1	100	EXISTING CHILLER CTRLS	(E)	20/1	A		20/1	(E)	EXISTING CONTROL AC	100	2
3	100	EXISTING CHILLER CTRLS	(E)	20/1		B	20/1	(E)	EXISTING CHILLER CTRLS	100	4
5	300	EXISTING LOAD	(E)	20/1			C 20/1	(E)	EXIST COMPRESSOR CTRLS	100	6
7	100	EXISTING BOILER CTRLS	(E)	20/1	A		20/1	(E)	EXISTING CONF CTRLS	100	8
9	1800	EXISTING DRYER BOILER RM	(E)	30/2		B	20/1	(E)	EXISTING EMS CTRLS	100	10
11	1800	---	(E)	--			C 20/1	(E)	EXISTING LOAD	600	12
13	600	EXISITNG LOAD	(E)	20/1	A		20/1	(E)	EXISTING KNOX BOX SHUNT	100	14
15	180	NEW RECEPTACLE	#12	20/1		B	20/1		SPARE		16
17		SPARE		20/1			C 20/1		SPARE		18
19	960	NEW B-1 (1)	#10	20/2	A		30/3	(E)	SPD		20
21	960	---	#10	--		B	--	(E)	---		22
23		SPACE					C --	(E)	---		24

	CONNECTED	NEC				
LIGHTING	0.0 KVA	0.0 KVA				
RECEPTS	0.2 KVA	0.2 KVA			CONNECTED	AMPS
EXISTING	6.0 KVA	6.0 KVA		PHASE A	2.1 KVA	17.2 A
HVAC	1.9 KVA	1.9 KVA		PHASE B	3.2 KVA	27.0 A
EQUIPMENT	0.0 KVA	0.0 KVA		PHASE C	2.8 KVA	23.3 A
KITCHEN	0.0 KVA	0.0 KVA				NEC AMPS
SUBFEED	0.0 KVA	0.0 KVA		TOTAL	8.1 KVA	22.5 A
TOTAL	8.1 KVA	8.1 KVA				

(1) PROVIDE NEW BREAKER AND CIRCUIT

EXISTING PANEL 'C'

LOCATION: ELECTRICAL RM

277/480V., 3 PHASE, 4 WIRE, SOLID NEUTRAL, GROUND BAR

200 PANEL AMPERAGE — X MLO — X NEMA-1 — PROVIDE FEED THRU LUGS
SURFACE MOUNTED — MCB — NEMA-3R — PROVIDE 200% NEUTRAL
RECESS MOUNTED — TVSS — S.S. ENCL. — ISOLATED GROUND BUS

CKT	VA	DESCRIPTION	COND.	BRKR			BRKR	COND.	DESCRIPTION	VA	CKT
1	600	EXISTING BOILER	(E)	15/1	A		15/1	(E)	EXISTING NORTH SHOP	600	2
3	5000	EXISTING WELD MACHINE	(E)	40/2		B	40/2	(E)	EXISTING WELD MACHINE	5000	4
5	5000	---	(E)	--		C	--	(E)	---	5000	6
7	5000	EXISTING WELD MACHINE	(E)	40/2	A		15/1	(E)	EXISTING CORRIDOR	600	8
9	5000	---	(E)	--		B	20/1		SPARE		10
11	600	EXISTING CENTER SHOP	(E)	15/1		C	20/1		SPARE		12
13		SPARE		20/1	A		30/3	(E)	EXIST DUST COLLECTION	1800	14
15		SPARE		20/1	B		--	(E)	---	1800	16
17		SPARE		20/1		C	--	(E)	---	1800	18
19	1331	NEW P-2 (1)	#12	20/3	A		30/3	(E)	SPD		20
21	1331	---	#12	--		B	--	(E)	---		22
23	1331	---	#12	--			C --	(E)	---		24

	CONNECTED	NEC				
LIGHTING	0.0 KVA	0.0 KVA				
RECEPTS	0.0 KVA	0.0 KVA			CONNECTED	AMPS
EXISTING	37.8 KVA	37.8 KVA		PHASE A	9.9 KVA	35.9 A
HVAC	4.0 KVA	4.0 KVA		PHASE B	18.1 KVA	65.5 A
EQUIPMENT	0.0 KVA	0.0 KVA		PHASE C	13.7 KVA	49.6 A
KITCHEN	0.0 KVA	0.0 KVA				NEC AMPS
SUBFEED	0.0 KVA	0.0 KVA		TOTAL	41.8 KVA	50.3 A
TOTAL	41.8 KVA	41.8 KVA				

(1) PROVIDE NEW BREAKER AND CIRCUIT

EXISTING PANEL 'LM3'

LOCATION: MAIN YARD

120/208V., 3 PHASE, 4 WIRE, SOLID NEUTRAL, GROUND BAR

600 PANEL AMPERAGE — X MLO — NEMA-1 — PROVIDE FEED THRU LUGS
X SURFACE MOUNTED — MCB — X NEMA-3R — PROVIDE 200% NEUTRAL
RECESS MOUNTED — TVSS — S.S. ENCL. — ISOLATED GROUND BUS

CKT	VA	DESCRIPTION	COND.	BRKR			BRKR	COND.	DESCRIPTION	VA	CKT
1	4924	NEW VRFCU-1A (1) (2)	#8	35/3	A				EXISTING SPACE		2
3	4924	---	#8	--		B			EXISTING SPACE		4
5	4924	---	#8	--			C		EXISTING SPACE		6
7	4924	NEW VRFCU-1A (1) (2)	#10	25/3	A				EXISTING SPACE		8
9	4924	---	#10	--		B			EXISTING SPACE		10
11	4924	---	#10	--			C		EXISTING SPACE		12
13		EXISTING SPACE			A				EXISTING SPACE		14
15		EXISTING SPACE				B			EXISTING SPACE		16
17		EXISTING SPACE					C		EXISTING SPACE		18

	CONNECTED	NEC				
LIGHTING	0.0 KVA	0.0 KVA				
RECEPTS	0.0 KVA	0.0 KVA			CONNECTED	AMPS
EXISTING	0.0 KVA	0.0 KVA		PHASE A	9.8 KVA	82.1 A
HVAC	29.5 KVA	29.5 KVA		PHASE B	9.8 KVA	82.1 A
EQUIPMENT	0.0 KVA	0.0 KVA		PHASE C	9.8 KVA	82.1 A
KITCHEN	0.0 KVA	0.0 KVA				NEC AMPS
SUBFEED	0.0 KVA	0.0 KVA		TOTAL	29.5 KVA	82.1 A
TOTAL	29.5 KVA	29.5 KVA				82.1 A

(1) PROVIDE NEW BREAKER AND CIRCUIT

(2) CONTRACTOR TO COORDINATE FINAL BREAKER COUNT, BREAKER SIZING AND WIRE SIZING WITH MECHANICAL SELECTIONS.
IF DAIKIN IS SELECTED, THE (2) BREAKERS WITH THIS KEYNOTE ARE TO BE REPLACED WITH (1) 80/3P BREAKER.
FEED EQUIPMENT WITH (1) 3#4 & 1#8G IN 1–1/4"C.
IF TRANE IS SELECTED, THE (2) BREAKERS WITH THIS KEYNOTE ARE TO BE REPLACED WITH (1) 125/3P BREAKER.
FEED EQUIPMENT WITH (1) 3#1/0 & 1#6G IN 2"C.

EXISTING PANEL 'LM2'

LOCATION: MECH/ELEC 119

120/208V., 3 PHASE, 4 WIRE, SOLID NEUTRAL, GROUND BAR

1000 PANEL AMPERAGE — X MLO — X NEMA-1 — PROVIDE FEED THRU LUGS
X SURFACE MOUNTED — MCB — NEMA-3R — PROVIDE 200% NEUTRAL
RECESS MOUNTED — TVSS — S.S. ENCL. — ISOLATED GROUND BUS

CKT	VA	DESCRIPTION	COND.	BRKR			BRKR	COND.	DESCRIPTION	VA	CKT
1	930	NEW BC-4A (1) (2) (3)	#12	20/3	A		20/3	#12	NEW BC-11A (1) (2) (4)	1200	2
3	930	---	#12	--		B	--	#12	---	1200	4
5	930	---	#12	--		C	--	#12	---	1200	6
7	1683	NEW BC-5A (1) (2) (4)	#12	20/3	A		20/3	#12	NEW BC-12A (1) (2) (4)	1200	8
9	1683	---	#12	--		B	--	#12	---	1200	10
11	1683	---	#12	--		C	--	#12	---	1200	12
13	1200	NEW BC-6A (1) (2) (4)	#12	20/3	A		30/3	#10	NEW VRFCU-2A (1) (5)	11244	14
15	1200	---	#12	--		B	--	#10	---	11244	16
17	1200	---	#12	--		C	--	#10	---	11244	18
19	1200	NEW BC-7A (1) (2) (4)	#12	20/3	A		30/3	#10	NEW VRFCU-2A (1) (5)	11244	20
21	1200	---	#12	--		B	--	#10	---	11244	22
23	1200	---	#12	--		C	--	#10	---	11244	24
25	1200	NEW BC-8A (1) (2) (4)	#12	20/3	A		30/3	#10	NEW VRFCU-2A (1) (5)	11244	26
27	1200	---	#12	--		B	--	#10	---	11244	28
29	1200	---	#12	--		C	--	#10	---	11244	30
31	1200	NEW BC-9A (1) (2) (4)	#12	20/3	A		20/2	#12	NEW BRANCH SELECTORS	100	32
33	1200	---	#12	--		B	--	#12	---	100	34
35	1200	---	#12	--		C			EXISTING SPACE		36
37	1200	NEW BC-10A (1) (2) (4)	#12	20/3	A				EXISTING SPACE		38
39	1200	---	#12	--		B			EXISTING SPACE		40
41	1200	---	#12	--		C			EXISTING SPACE		42

	CONNECTED	NEC				
LIGHTING	0.0 KVA	0.0 KVA				
RECEPTS	0.0 KVA	0.0 KVA			CONNECTED	AMPS
EXISTING	0.0 KVA	0.0 KVA		PHASE A	44.8 KVA	373.7 A
HVAC	134.4 KVA	134.4 KVA		PHASE B	44.8 KVA	373.7 A
EQUIPMENT	0.0 KVA	0.0 KVA		PHASE C	44.7 KVA	372.9 A
KITCHEN	0.0 KVA	0.0 KVA				NEC AMPS
SUBFEED	0.0 KVA	0.0 KVA		TOTAL	134.4 KVA	373.4 A
TOTAL	134.4 KVA	134.4 KVA				373.4 A

(1) PROVIDE NEW BREAKER AND CIRCUIT

(2) CONTRACTOR TO COORDINATE FINAL BREAKER SIZING WITH MECHANICAL SELECTIONS.

(3) CONTRACTOR TO COORDINATE FINAL BREAKER SELECTION WITH MECHANICAL SELECTIONS.
IF DAIKIN IS SELECTED CONTRACTOR TO PROVIDE 20A/2P BREAKER.

(4) CONTRACTOR TO COORDINATE FINAL BREAKER SELECTION WITH MECHANICAL SELECTIONS.
IF DAIKIN IS SELECTED, CONTRACTOR TO PROVIDE 30A/2P BREAKER.
FEED EQUIPMENT WITH (1) 2#10 & 1#10G IN 3/4"C.

(5) CONTRACTOR TO COORDINATE FINAL BREAKER COUNT, BREAKER SIZING AND WIRE SIZING WITH MECHANICAL SELECTIONS.
IF DAIKIN IS SELECTED, THE (3) BREAKERS WITH THIS KEYNOTE WILL BE REPLACED WITH (2) 60/3P BREAKERS.
FEED EQUIPMENT WITH (2) 3#6 & 1#10G IN 1"C.
IF TRANE IS SELECTED, THE (3) BREAKERS WITH THIS KEYNOTE WILL BE REPLACED WITH (2) 80/3P BREAKER.
FEED EQUIPMENT WITH (2) 3#4 & 1#8G IN 1–1/4"C.

EXISTING PANEL 'LM1'

LOCATION: MECH/ELEC 111

120/208V., 3 PHASE, 4 WIRE, SOLID NEUTRAL, GROUND BAR — EXISTING AIC

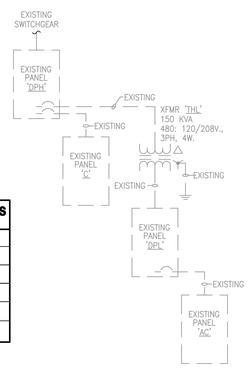
600 PANEL AMPERAGE — X MLO — X NEMA-1 — PROVIDE FEED THRU LUGS
X SURFACE MOUNTED — MCB — NEMA-3R — PROVIDE 200% NEUTRAL
RECESS MOUNTED — TVSS — S.S. ENCL. — ISOLATED GROUND BUS

CKT	VA	DESCRIPTION	COND.	BRKR			BRKR	COND.	DESCRIPTION	VA	CKT
1	1690	NEW BC-1A (1) (2)	#12	20/3	A		40/3	#8	NEW EF-5A (1) (2)		2
3	1690	---	#12	--		B	--	#8	---		4
5	1690	---	#12	--			C --	#8	---		6
7	1690	NEW BC-2A (1) (2)	#12	20/3	A		20/2	#12	NEW BRANCH SELECTORS	100	8
9	1690	---	#12	--		B	--	#12	---	100	10
11	1690	---	#12	--		C			EXISTING SPACE		12
13	1297	NEW BC-3A (1) (2)	#12	20/3	A				EXISTING SPACE		14
15	1297	---	#12	--		B			EXISTING SPACE		16
17	1297	---	#12	--		C			EXISTING SPACE		18

	CONNECTED	NEC				
LIGHTING	0.0 KVA	0.0 KVA				
RECEPTS	0.0 KVA	0.0 KVA			CONNECTED	AMPS
EXISTING	0.0 KVA	0.0 KVA		PHASE A	4.8 KVA	39.8 A
HVAC	14.2 KVA	14.2 KVA		PHASE B	4.8 KVA	39.8 A
EQUIPMENT	0.0 KVA	0.0 KVA		PHASE C	4.7 KVA	39.0 A
KITCHEN	0.0 KVA	0.0 KVA				NEC AMPS
SUBFEED	0.0 KVA	0.0 KVA		TOTAL	14.2 KVA	39.5 A
TOTAL	14.2 KVA	14.2 KVA				39.5 A

(1) PROVIDE NEW BREAKER AND CIRCUIT

(2) CONTRACTOR TO COORDINATE FINAL BREAKER SIZING WITH MECHANICAL SELECTIONS.

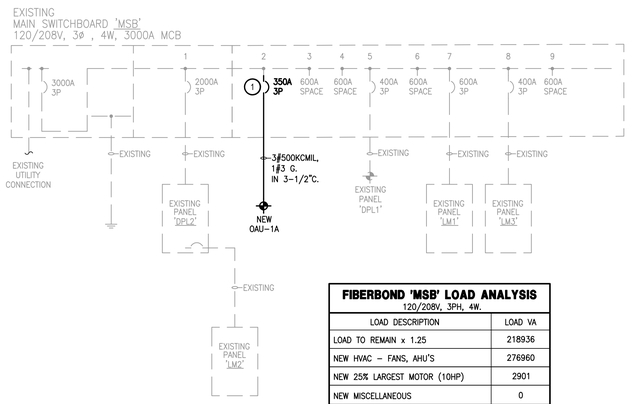


MAIN BUILDING 'DPH' LOAD ANALYSIS
277/480V, 3PH, 4W.

LOAD DESCRIPTION	LOAD VA
LOAD TO REMAIN x 1.25	247964
NEW HVAC – FANS, AHU'S	4749
NEW 25% LARGEST MOTOR (2HP)	707
NEW MISCELLANEOUS	0
TOTAL	253420

253420/ 480*3^1/2 = 305 AMPS
EXISTING 600 AMPS SERVICE

3 MAIN BUILDING ELECTRICAL ONELINE
SCALE: NONE

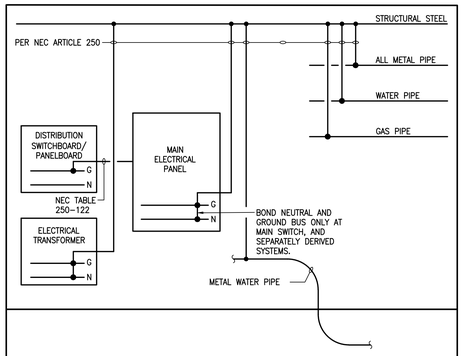


FIBERBOND 'MSB' LOAD ANALYSIS
120/208V, 3PH, 4W.

LOAD DESCRIPTION	LOAD VA
LOAD TO REMAIN x 1.25	218936
NEW HVAC – FANS, AHU'S	276960
NEW 25% LARGEST MOTOR (10HP)	2901
NEW MISCELLANEOUS	0
TOTAL	498797

498797/ 208*3^1/2 = 1386 AMPS
EXISTING 3000 AMPS SERVICE

2 FIBERBOND BUILDING ELECTRICAL ONELINE
SCALE: NONE



1 GROUNDING DETAIL
SCALE: NONE

Project No: 2022-02715-00
Drawn By: AW
Checked By: JZ
Date: 09-14-2022
Revision Dates:

CONSULTANTS

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BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT

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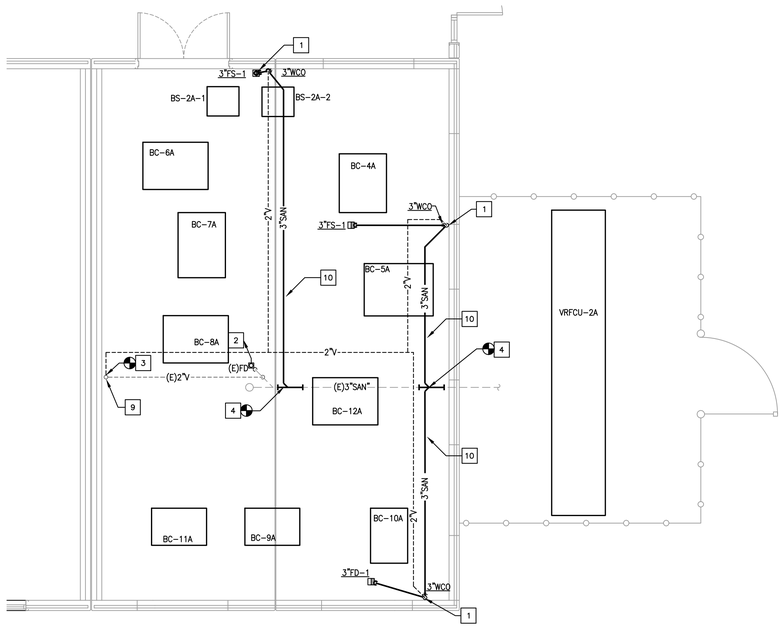
BRADLEY KALMANS
80219
LICENSED PROFESSIONAL ENGINEER
09-14-2022

ELECTRICAL ONELINES, DETAILS & SCHEDULES - AUSTIN EARLY COLLEGE HS

E3.1

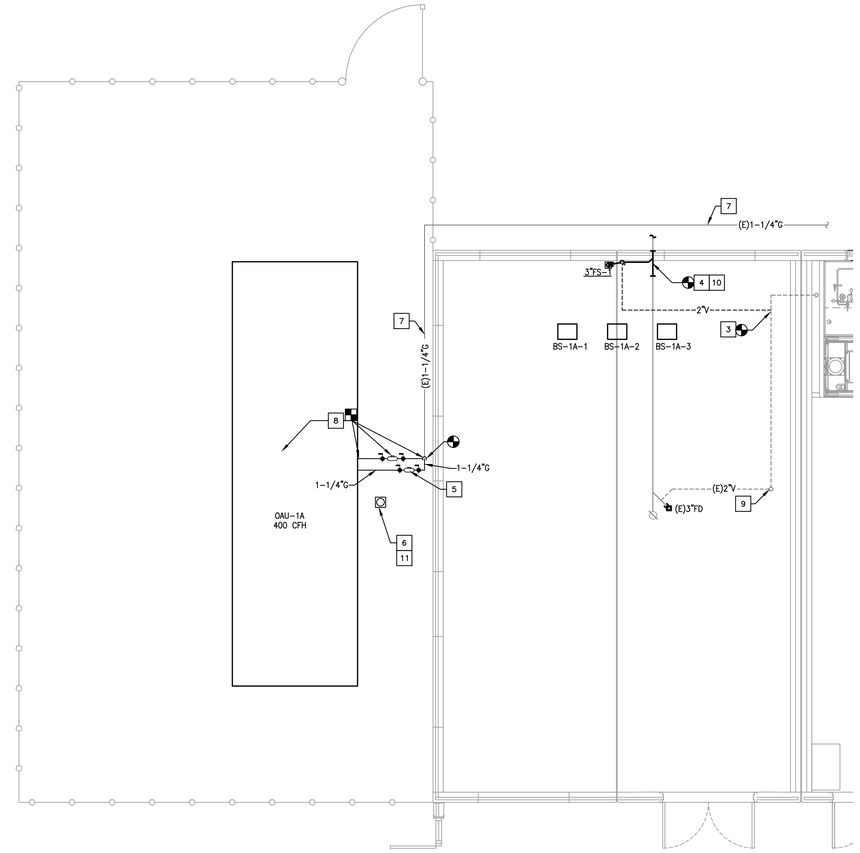
PLUMBING KEYED NOTES:

1. 2" VENT UP.
2. EXISTING FLOOR DRAIN TO REMAIN
3. CONNECT NEW 2" VENT TO EXISTING 2" VENT.
4. CONNECT NEW 3" SANITARY TO EXISTING 3" SANITARY.
5. GAS PRESSURE REGULATOR, 5 PSI TO 8 OZ, 400 CFH.
6. EXISTING FLOOR DRAIN TO REMAIN
7. EXISTING GAS PIPING BELOW GRADE TO REMAIN.
8. EXISTING OAU TO BE REMOVED, REFER TO MECHANICAL DRAWINGS. REMOVE ASSOCIATED EXISTING GAS PIPING BACK TO AND INCLUDING ELBOW ABOVE SLAB.
9. EXISTING 2" VTR TO REMAIN.
10. SAW CUT CONCRETE TO ACCOMMODATE FOR NEW UNDERGROUND SANITARY. FIELD VERIFY EXACT LOCATION OF EXISTING SANITARY CONNECTION.
11. REFER TO PLUMBING DETAIL 3/P4.1 FOR CURB AROUND FLOOR DRAIN.



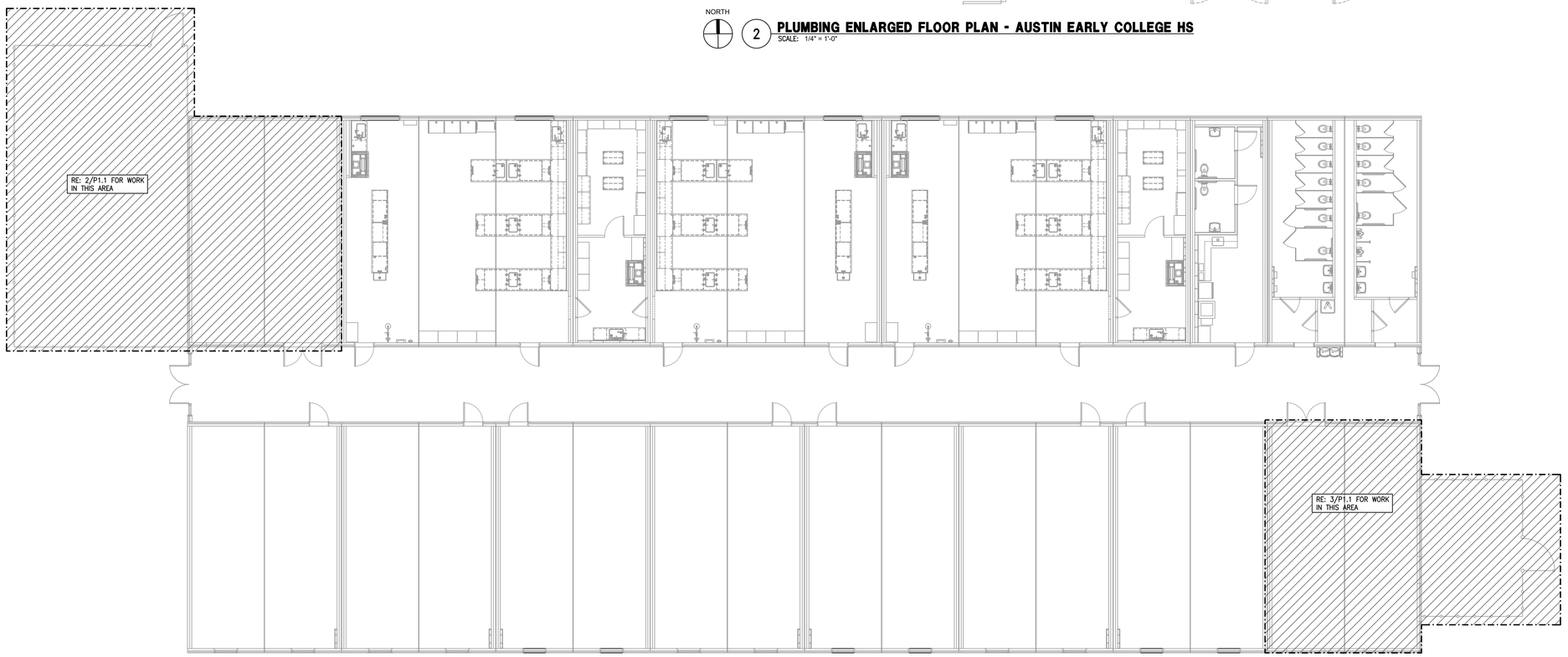
NORTH

3 PLUMBING ENLARGED FLOOR PLAN - AUSTIN EARLY COLLEGE HS
SCALE: 1/4" = 1'-0"



NORTH

2 PLUMBING ENLARGED FLOOR PLAN - AUSTIN EARLY COLLEGE HS
SCALE: 1/4" = 1'-0"



NORTH

1 PLUMBING FLOOR PLAN - AUSTIN EARLY COLLEGE HS
SCALE: 1/8" = 1'-0"

Project No: 2022-02715-00
Drawn By: EH
Checked By: KBG
Date: 09-14-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

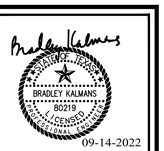
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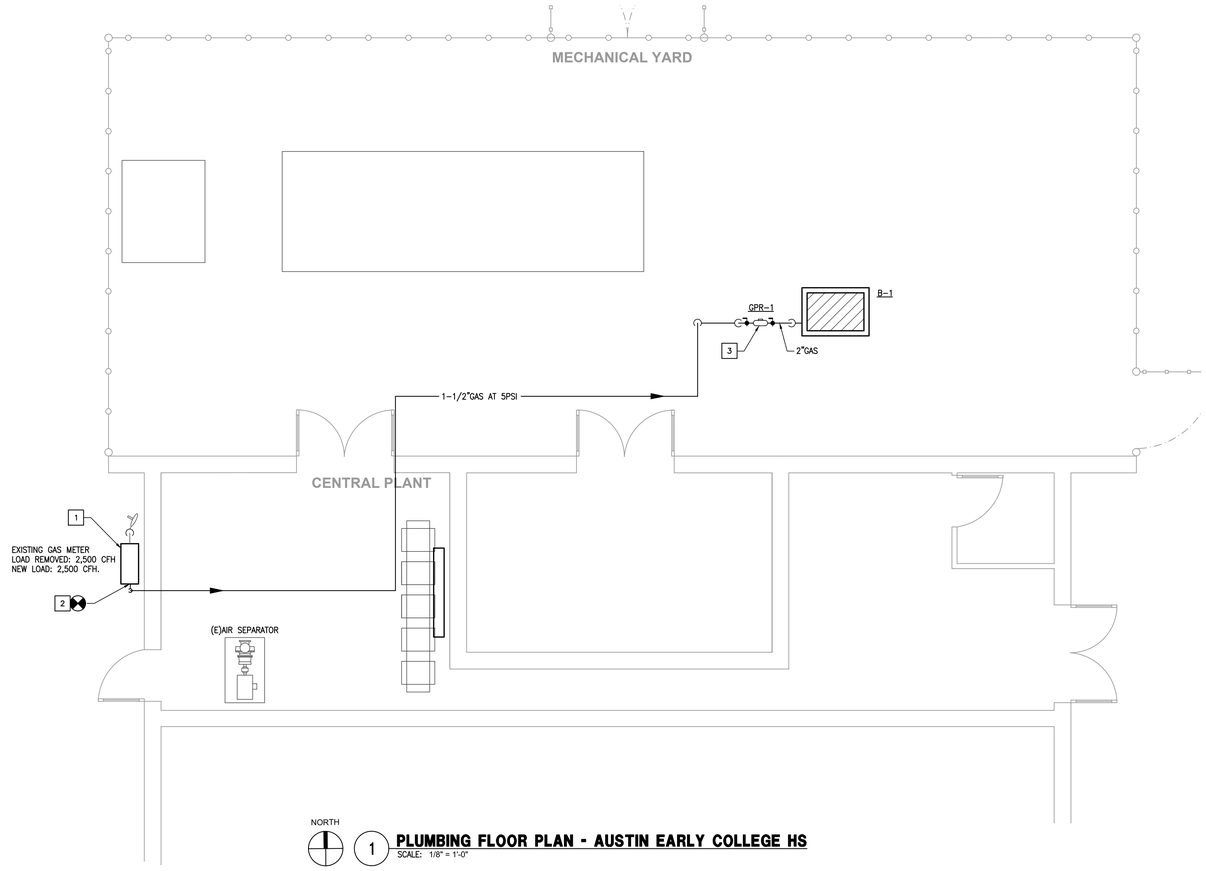
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09-14-2022

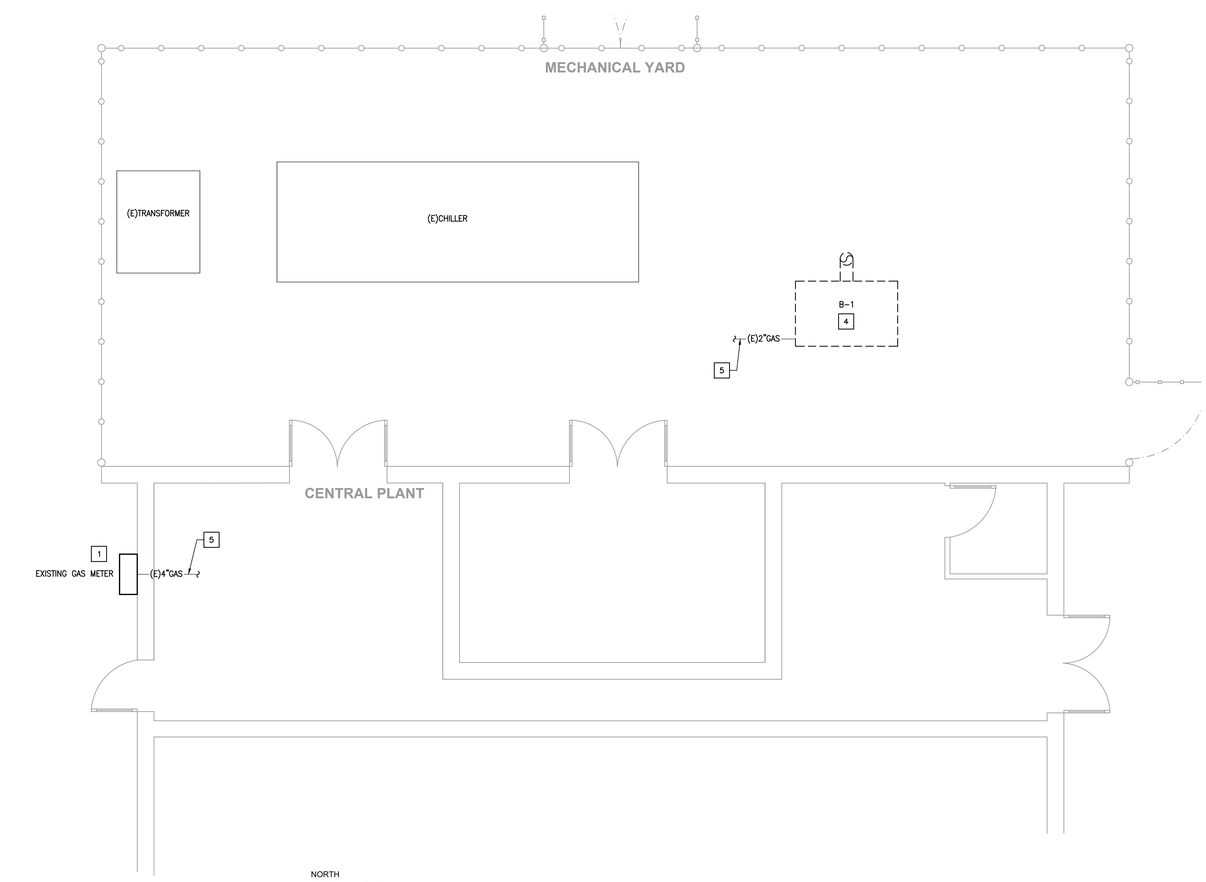
PLUMBING FLOOR PLANS - AUSTIN EARLY COLLEGE HS

P1.1



NORTH

1 **PLUMBING FLOOR PLAN - AUSTIN EARLY COLLEGE HS**
SCALE: 1/8" = 1'-0"



NORTH

1 **PLUMBING DEMOLITION FLOOR PLAN - AUSTIN EARLY COLLEGE HS**
SCALE: 1/8" = 1'-0"

PLUMBING KEYED NOTES:

1. EXISTING GAS METER AND REGULATOR SET AT 5PSI TO REMAIN.
2. CONNECT NEW 1-1/2" GAS TO EXISTING GAS METER.
3. PROVIDE NEW GAS REGULATOR SIZED FOR 5PSI TO 8OZ.
4. EXISTING BOILER TO BE DEMOLISHED. DISCONNECT GAS PIPING BACK TO METER. EXISTING LOAD OF 2,500 CFH TO BE REMOVED.
5. EXISTING GAS PIPING TO REMAIN.

Project No: 2022-02715-00

Drawn By: EH

Checked By: KBG

Date: 09-14-2022

Revision Dates:

CONSULTANTS

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Project No. 2022-02715-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD Preparing Our Next Generation

BRADLEY KALMANS
80219
LICENSED PROFESSIONAL ENGINEER
09-14-2022

PLUMBING BOILER FLOOR PLANS - AUSTIN EARLY COLLEGE HS

P1.2

PLUMBING GENERAL NOTES

1. WITHIN THE EXISTING BUILDING, EXISTING WATER, WASTE AND VENT SERVICES ARE TO BE MODIFIED AS REQUIRED AND REUSED FOR THE INSTALLATION OF NEW AND/OR RELOCATED PLUMBING FIXTURES. REFER TO PLUMBING FLOOR PLANS FOR POINTS OF CONNECTION.
2. WITHIN THE EXISTING BUILDING, SAWCUT AND REMOVE EXISTING FLOOR SLAB AS REQUIRED TO PROVIDE NEW AND/OR RELOCATED PLUMBING FIXTURES, CLEANOUTS, AND UNDERSLAB WASTE AND VENT PIPING. PATCH AND REFINISH FLOOR TO MATCH EXISTING.
3. IN AREAS WHERE THE FLOOR SLAB IS REMOVED, CONTRACTOR SHALL ALSO REMOVE UNDERSLAB WASTE AND VENT PIPING WHICH SERVES FIXTURES DESIGNATED FOR REMOVAL. PRIOR TO ANY REMOVAL, FIELD VERIFY THAT LINES TO BE REMOVED DO NOT SERVE ANY EXISTING FIXTURES TO REMAIN OR NEW FIXTURES TO BE INSTALLED.
4. IN AREAS WHERE THE FLOOR SLAB IS NOT REMOVED, CONTRACTOR SHALL ABANDON IN PLACE ANY UNDERSLAB WASTE AND VENT PIPING NO LONGER NEEDED, UNLESS THE PIPING MUST BE REMOVED TO ACCOMMODATE NEW CONSTRUCTION. IF NEW WORK DOES NOT NECESSITATE THEIR REMOVAL, CUT AND PLUG SUCH LINES BELOW SLAB, AND PATCH FLOOR TO MATCH EXISTING.
5. FIELD VERIFY EXACT LOCATION, SIZE, DEPTH, DIRECTION OF FLOW, CAPACITY, PIPE MATERIAL AND CONDITION OF EXISTING WASTE PIPING PRIOR TO BEGINNING CONSTRUCTION. ENSURE THAT PROPER CONNECTIONS TO AND EXTENSION OF SUCH UTILITIES CAN BE MADE.
6. WASTE LINES TO BE RE-USED OR RECONNECTED TO SHALL BE THOROUGHLY RODDED OUT AND FLUSHED TO ENSURE THEY ARE FREE FROM BLOCKAGES.
7. CONTRACTOR SHALL COORDINATE ROUTING OF PIPING BELOW SLAB WITH COLUMN FOOTINGS, GRADE BEAMS, UNDERGROUND PLUMBING AND ELECTRICAL UTILITIES, AND OTHER SUB-SURFACE BUILDING ELEMENTS.
8. CONTRACTOR SHALL COORDINATE ROUTING OF PIPING IN CEILING SPACES WITH MECHANICAL AND ELECTRICAL EQUIPMENT, DUCTWORK AND CONDUIT. SHOULD A CONFLICT OCCUR THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER PRIOR TO INSTALLING AN ALTERNATE PIPING PLAN.
9. CONTRACTOR TO COORDINATE ALL REMODEL WORK WITH THE WORK OF OTHER TRADES TO AVOID CONFLICTS AND TO MINIMIZE INTERRUPTION OF SERVICES.
10. COORDINATE ALL FIXTURE AND EQUIPMENT LOCATIONS AND CONNECTION REQUIREMENTS WITH LATEST ARCHITECTURAL DRAWINGS AND SPECIFICATIONS PRIOR TO ANY ROUGH-INS.
11. DO NOT ROUGH-IN FROM THESE DRAWINGS. REFER TO LATEST ARCHITECTURAL DRAWINGS FOR DIMENSIONED LOCATIONS.
12. CONTRACTOR TO FIELD VERIFY AS NECESSARY THE EXACT ROUTING AND SIZES OF ALL PIPING.
13. ALL WORK, METHODS AND INSTALLATIONS INVOLVED IN THE PLUMBING DESIGN SHALL BE IN ACCORDANCE WITH THE CITY BUILDING CODE, INSPECTION REGULATIONS AND ALL OTHER OFFICIALS HAVING JURISDICTION.
14. THE PROPER INSTALLATION OF NEW FIXTURES AND THE PROPER CONTINUED OPERATION OF EXISTING FIXTURES TO REMAIN SHALL DETERMINE THE EXTENT AND NATURE OF PLUMBING REMODEL WORK.
15. EACH VENT SHALL TERMINATE VERTICALLY NOT LESS THAN 6" ABOVE ROOF, MAINTAIN MINIMUM 10'-0" DISTANCE BETWEEN VENT TERMINALS THROUGH ROOF AND ALL FRESH AIR INTAKES, AND A MINIMUM 5'-0" FROM ANY EXTERIOR WALL.
16. PRIOR TO BEGINNING CONSTRUCTION, COORDINATE BUILDING BACKFLOW PREVENTION REQUIREMENTS WITH THE LOCAL AUTHORITY HAVING JURISDICTION AND PROVIDE AS DIRECTED.

PLUMBING PIPING LEGEND

SYMBOLS	DESCRIPTION
SAN	SANITARY OR WASTE PIPING ABOVE GRADE (SAN)
SAN	SANITARY OR WASTE PIPING BELOW GRADE (SAN)
GW	GREASE WASTE PIPING (GW)
GW	GREASE WASTE PIPING BELOW GRADE (GW)
SD	STORM DRAIN PIPING (SD)
SD	STORM DRAIN PIPING BELOW GRADE (GW)
SSD	SUB-SOIL DRAIN OR FOOTING DRAIN (SSD)
AW	ACID WASTE PIPING (AW)
AW	ACID WASTE PIPING BELOW GRADE (AW)
PD	PUMPED DISCHARGE (PD)
CD	CONDENSTATE DRAIN PIPING (CD)
D	CONDENSTATE – INDIRECT DRAIN PIPING (D)
	VENT PIPING (V)
CW	COLD WATER PIPING (CW)
HW	HOT WATER PIPING (HW)
HWR	HOT WATER RETURN PIPING (HWR)
SCW	SOFT COLD WATER PIPING (SCW)
CDW	CHILLED DRINKING WATER PIPING (CDW)
TP	TRAP PRIMER LINE (TP)
F	FIRE PROTECTION PIPING (F)
AS	AUTOMATIC SPRINKLER PIPING (AS)
GAS	NATURAL GAS PIPING (G)
GV	GAS VENT PIPING (GV)
AIR	COMPRESSED AIR PIPING (A)
	FLOW DIRECTIONAL ARROW
	SHUT-OFF VALVE
	BALANCING VALVE (BV)
	SOLENOID VALVE (SV)
	BALL VALVE (BV)
	BUTTERFLY VALVE
	LUBRICATED PACKED PLUG STOP STOP COCK (PC)
	HORIZONTAL SWING CHECK
	UNION
	HORIZONTAL SWING CHECK
	REDUCER OR INCREASER
	ECCENTRIC REDUCER
	REDUCED PRESSURE BACKFLOW PREVENTER (RPBFP)
	PIPING DOWN
	RISE OR DROP PIPING
	PIPING UP -OR- PIPING UP & DOWN
	CAP ON END OF PIPE
	CLEANOUT (WALL OR CEILING) (CO)
	FLOOR CLEANOUT (FCO)
	EXTERIOR CLEANOUT WITH 18"x18"x4" CONCRETE PAD (ECO)
	TWO-WAY CLEANOUT (PROVIDE 18"x24"x4" CONCRETE PAD OUTSIDE)
	FIRE DEPARTMENT VALVE AT RISER
	FIRE HYDRANT
	FIRE DEPARTMENT CONNECTION
	PRESSURE REDUCING VALVE (PRV)
	BRANCH CONNECTION OUT OF TOP
	BRANCH CONNECTION OUT OF BOTTOM
	BRANCH CONNECTION OUT OF SIDE
	WYE & 1/8TH BEND BRANCH CONNECTION
	WYE BRANCH CONNECTION
	HOSE BIBB
	PRESSURE GAUGE WITH COCK
	THERMOMETER
	GAS PRESSURE REGULATOR
	TEST COCK
	GAS METER
	WALL HYDRANT
	VALVE IN RISE
	ASME TEMPERATURE & PRESSURE RELIEF VALVE
	VACUUM RELIEF VALVE
	ANGLE VALVE
	OS&Y VALVE
	ROOF DRAIN
	REFER TO KEYED NOTE
FS	FLOW SWITCH
	FLOOR SINK (FS)
	FLOOR DRAIN (FD)
	FLOOR DRAIN WITH P-TRAP (FD)
	FLOOR DRAIN WITH P-TRAP AT 45° ANGLE (FD)
	HUB DRAIN (HD)
	ACCESS PANEL FOR TRAP PRIMER OR SHOCK ABSORBER
AP	ACCESS PANEL LOCATION SYMBOL
A	SHOCK ABSORBER
	AIR CHAMBER
(E)	EXISTING
(N)	NEW
VTR	VENT THRU ROOF
B.F.F.	BELOW FINISHED FLOOR
A.F.F.	ABOVE FINISHED FLOOR
	NEW CONNECTION
IE=100.00'	INVERT ELEVATION
1	DELTA CHANGE SYMBOL
P 1 4" VTR	RISER FLAG

PLUMBING MATERIAL LIST

ABOVE GRADE, INSIDE BUILDING

SANITARY WASTE AND VENT PIPING SHALL BE

NO-HUB CAST IRON SYSTEM CONFORMING TO CISPI. STANDARD NO. 301-75. NEOPRENE GASKETS SHALL CONFORM TO ASTM STANDARD C564-75, OR,

BELOW GRADE, INSIDE BUILDING

SANITARY WASTE AND VENT PIPING SHALL BE

SCHEDULE 40 DWV POLYVINYL CHLORIDE PIPE AND FITTINGS CONFORMING TO ASTM-2665 WITH SOLVENT WELDED JOINTS. DO NOT USE IN AIR SUPPLY OR RETURN PLENUMS, AND OR WHERE FIRE RATED WALLS, PARTITIONS, OR FLOORS ARE PENETRATED.

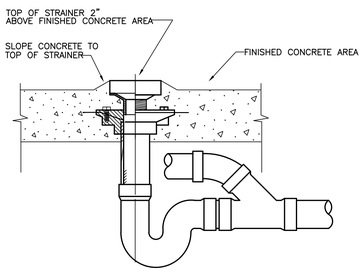
GAS PIPING SHALL BE

PIPE 2" AND SMALLER. PROVIDE SCHEDULE 40 ASTM A 53 BLACK STEEL WITH FACTORY FABRICATED SOCKET WELD FITTINGS.

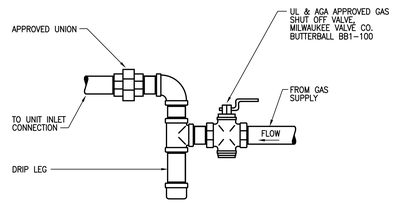
PIPE LARGER THAN 2", USE SCHEDULE 40 ASTM A 53 BLACK STEEL PIPE WITH LONG RADIUS WELD FITTINGS.

PLUMBING FIXTURE SCHEDULE

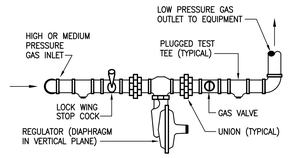
TYPE:	FS-1
SERVICE:	MECHANICAL EQUIPMENT CONDENSATE
DESCRIPTION:	CAST IRON 8" SQUARE FLOOR SINK WITH 6" DEEP SUMP, A.R.E. INTERIOR, ALUMINUM DOME BOTTOM STRAINER, STAINLESS FRAME AND HALF GRATE, ANCHOR FLANGE, CLAMPING COLLAR WADE #9110-B5-15-26-48
TRAP SEAL:	PROVIDE PRO-SET SYSTEMS, INC. TRAP GUARD FACTORY FITTED TO MATCH EACH FLOOR SINK BY SIZE, MODEL, AND MANUFACTURER.
ROUGH-IN:	REFER TO FLOOR PLANS FOR SIZES. COORDINATE FINAL LOCATION WITH ARCHITECTURAL DRAWINGS / EQUIPMENT PLACEMENT.



3 **OUTDOOR CONDENSATE DRAIN**
SCALE: NONE
CD04-11/12/08



2 **GAS CONNECTION**
SCALE: NONE
GA07-11/12/08



NOTE: REFERENCE DRAWINGS FOR PIPE SIZES.

1 **GAS PRESSURE REGULATOR INSTALLATION**
SCALE: NONE
GA02-11/12/08

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BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

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PLUMBING SCHEDULES, LEGENDS, AND DETAILS - AUSTIN EARLY COLLEGE HS

P4.1

THROUGHOUT CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY AND RENTAL EQUIPMENT, INCLUDING POWER FOR SUCH EQUIPMENT, AND TO PROVIDE PHASING TO ENSURE SPACE TEMPERATURE AND HUMIDITY IS MAINTAINED. REFER TO SPECIFICATION 23 05 11 MECHANICAL ALTERATIONS PROJECT PROCEDURES, ARTICLE 3.8 FOR ADDITIONAL REQUIREMENTS. CONTRACTOR SHALL REVIEW ALL REQUIREMENTS PRIOR TO BID.

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.
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4. CONTRACTOR SHALL REMOVE AND REPLACE CEILING WHERE REQUIRED TO COMPLETE THE INDICATED SCOPE OF CONTROLS WORK. EXISTING CEILING SHALL BE RE-INSTALLED IN THE EXACT CONDITION IT WAS REMOVED IN. DAMAGED CEILING AND/OR CEILING TILES SHALL BE REPLACED TO MATCH CONDITIONS EXISTING PRIOR TO THE BEGINNING OF CONSTRUCTION. IF A MATCH IS NOT POSSIBLE, CONTRACTOR SHALL REPLACE ALL CEILING FROM WALL TO WALL OR BOUNDARY SEPARATION IN CORRIDOR, CLASSROOM, OR ANY OTHER SPACE.
5. PRIOR TO STARTING ANY WORK AND PRIOR TO SUBSTANTIAL COMPLETION, SCHEDULE WITH THE ENGINEER AND OWNER A DEMONSTRATION AND TESTING OF THE EXISTING FIRE ALARM AND CAMERA SYSTEM. THE CONTRACTOR SHALL HAVE ALL SUBCONTRACTORS WORKING ON THE BMCS SYSTEM REPLACEMENT PRESENT FOR THESE TESTS AND DEMONSTRATIONS.
6. REMOVE ALL EXISTING SPACE MOUNTED TEMPERATURE AND HUMIDITY SENSORS NOT BEING REUSED. PROVIDE STAINLESS STEEL COVER PLATES.
7. CONTROLS CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ADDITIONAL PIPE TAPS REQUIRED FOR NEW CONTROLS END DEVICES.
8. OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL HVAC EQUIPMENT BEING REMOVED FROM THIS PROJECT. THIS INCLUDES BUT NOT LIMITED TO EVAPORATIVE FLUID COOLER, PUMPS, PIPE STANDS, VALVES, WATER SOURCE HEAT PUMPS, CONTROLS, AND BOILERS.

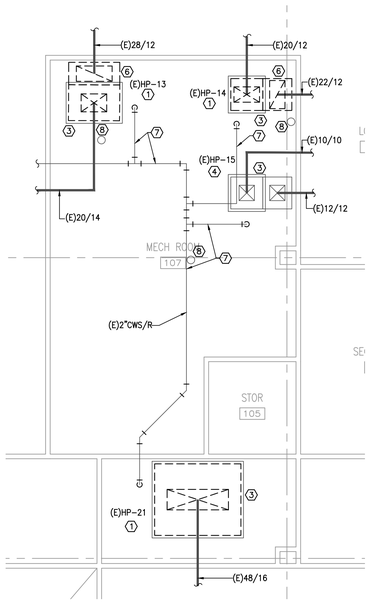
DEMOLITION KEYED NOTES:

1. REMOVE EXISTING WATER SOURCE HEAT PUMP AND ALL ASSOCIATED CONTROLS. REMOVE EXISTING DUCTWORK AS NEEDED TO REMOVE HEAT PUMP. REMOVE EXISTING CONDENSER WATER PIPING FROM UPSTREAM AND DOWNSTREAM OF EXISTING ISOLATION VALVES TO WATER SOURCE HEAT PUMP. EXISTING FLEXIBLE HOSE AND ISOLATION VALVES SHALL BE REMOVED. REMOVE EXISTING CONDENSATE PIPING IN ITS ENTIRETY INCLUDING CONDENSATE TRAP. RE: 3/M4.1 FOR DETAIL.
2. EXISTING TEMPERATURE SENSOR AND CONTROL WIRE TO BE REMOVED BACK TO ASSOCIATED MECHANICAL EQUIPMENT. FIELD VERIFY AND DOCUMENT EXACT LOCATION OF SENSOR PRIOR TO DEMOLITION.
3. EXISTING CONCRETE HOUSEKEEPING PAD TO REMAIN.
4. EXISTING WATER SOURCE HEAT PUMP AND ALL ASSOCIATED APPURTENANCES TO REMAIN.
5. EXISTING THERMOSTAT TO REMAIN.
6. REMOVE EXISTING RETURN AIR PLENUM.
7. EXISTING CONDENSER WATER PIPING TO REMAIN.
8. EXISTING FLOOR DRAIN TO REMAIN.
9. REMOVE EXISTING SECONDARY DRAIN PAN AND PIPING IN ITS ENTIRETY.
10. REMOVE EXISTING EXHAUST FAN AND ALL ASSOCIATED CONTROLS. REMOVE EXISTING DUCTWORK AS NEEDED TO REMOVE EXHAUST FAN.

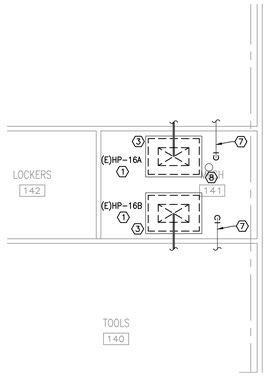
DEMO SYMBOL LEGEND

RENOVATIONS	
	ITEM TO REMAIN
	ITEM TO BE REMOVED

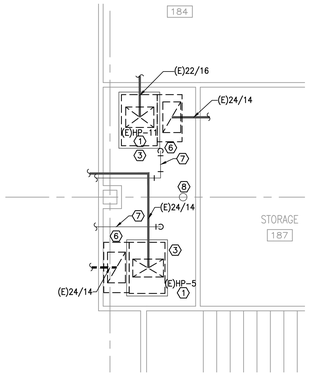
BMCS NOTE:
EXISTING CONTROL SYSTEM IS BY AUTOMATED LOGIC.
REFER TO BMCS SPECIFICATION FOR MORE INFORMATION.



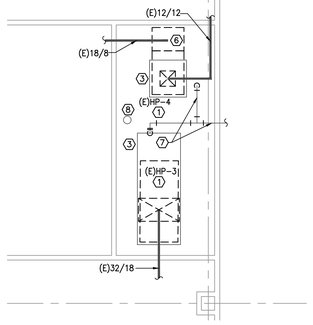
7 **ENLARGED MECH. ROOM - DEMOLITION**
SCALE: 1/4" = 1'-0"



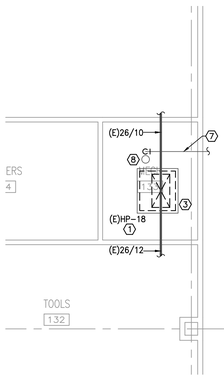
4 **ENLARGED MECH. ROOM - DEMOLITION**
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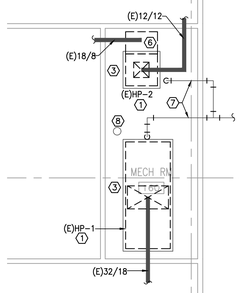
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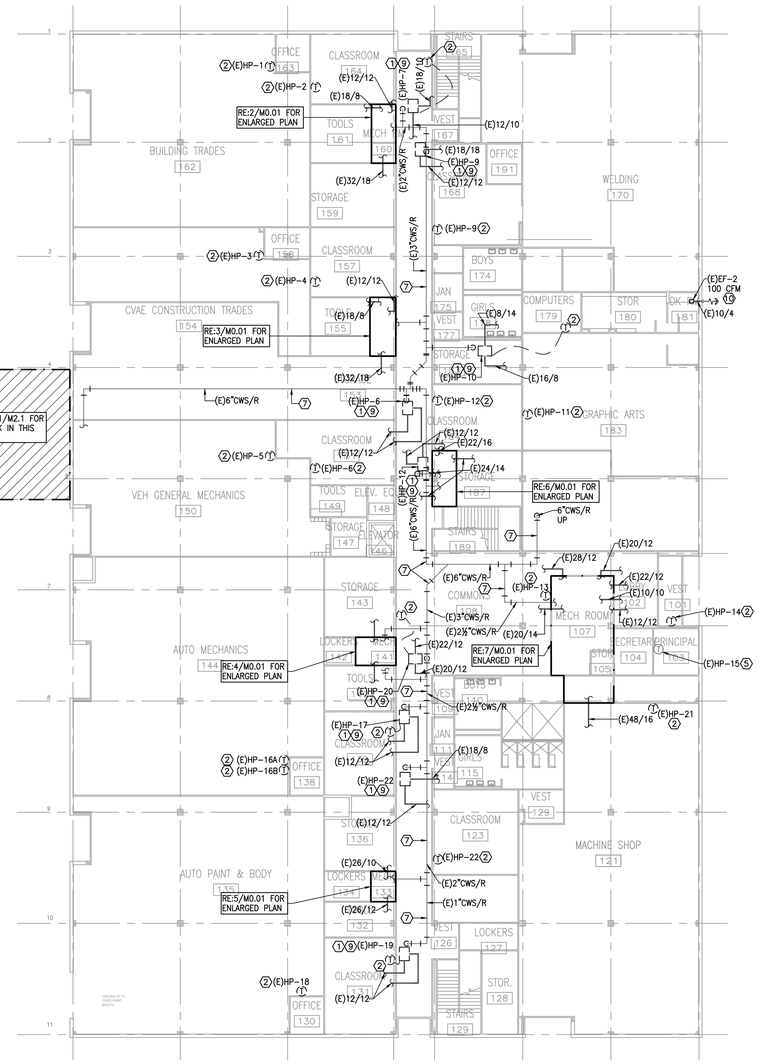
3 **ENLARGED MECH. ROOM - DEMOLITION**
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5 **ENLARGED MECH. ROOM - DEMOLITION**
SCALE: 1/4" = 1'-0"



2 **ENLARGED MECH. ROOM - DEMOLITION**
SCALE: 1/4" = 1'-0"



NORTH

1 **MECHANICAL DEMOLITION FIRST FLOOR PLAN - TAYLOR CAREER CENTER**
SCALE: 1/16" = 1'-0"

Project No:	2022-02715-00
Drawn By:	BB
Checked By:	VP
Date:	09-14-2022
Revision Dates:	

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BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT
BISD Preparing Our Next Generation

BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
09-14-2022

MECHANICAL
DEMOLITION FIRST FLOOR PLANS - TAYLOR CAREER AND TECHNICAL EDUCATION CENTER

M0.1

THROUGHOUT CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY AND RENTAL EQUIPMENT, INCLUDING POWER FOR SUCH EQUIPMENT, AND TO PROVIDE PHASING TO ENSURE SPACE TEMPERATURE AND HUMIDITY IS MAINTAINED. REFER TO SPECIFICATION 23 05 11 MECHANICAL ALTERATIONS PROJECT PROCEDURES, ARTICLE 3.8 FOR ADDITIONAL REQUIREMENTS. CONTRACTOR SHALL REVIEW ALL REQUIREMENTS PRIOR TO BID.

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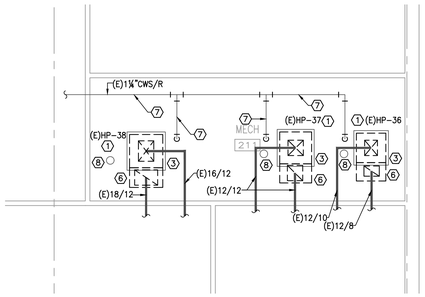
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DEMOLITION KEYED NOTES:

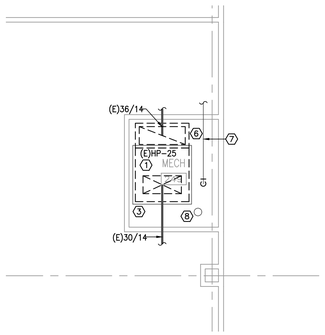
1. REMOVE EXISTING WATER SOURCE HEAT PUMP AND ALL ASSOCIATED CONTROLS. REMOVE EXISTING DUCTWORK AS NEEDED TO REMOVE HEAT PUMP. REMOVE EXISTING CONDENSER WATER PIPING FROM UPSTREAM AND DOWNSTREAM OF EXISTING ISOLATION VALVES TO WATER SOURCE HEAT PUMP. EXISTING FLEXIBLE HOSE AND ISOLATION VALVES SHALL BE REMOVED. REMOVE EXISTING CONDENSATE PIPING IN ITS ENTIRETY INCLUDING CONDENSATE TRAP. RE: 3/M4.1 FOR DETAIL.
2. EXISTING TEMPERATURE SENSOR AND CONTROL WIRE TO BE REMOVED BACK TO ASSOCIATED MECHANICAL EQUIPMENT. FIELD VERIFY AND DOCUMENT EXACT LOCATION OF SENSOR PRIOR TO DEMOLITION.
3. EXISTING CONCRETE HOUSEKEEPING PAD TO REMAIN.
4. EXISTING WATER SOURCE HEAT PUMP AND ALL ASSOCIATED APPURTENANCES TO REMAIN.
5. EXISTING THERMOSTAT TO REMAIN.
6. REMOVE EXISTING RETURN AIR PLENUM.
7. EXISTING CONDENSER WATER PIPING TO REMAIN.
8. EXISTING FLOOR DRAIN TO REMAIN.
9. REMOVE EXISTING SECONDARY DRAIN PAN AND PIPING IN ITS ENTIRETY.
10. REMOVE EXISTING EXHAUST FAN, ROOF CURB, AND ALL ASSOCIATED CONTROLS. CONTRACTOR SHALL PRESERVE EXISTING OPENING FOR DURATION OF CONSTRUCTION. REMOVE EXISTING DUCTWORK AS NEEDED TO REMOVE EXHAUST FAN.

DEMO SYMBOL LEGEND	
RENOVATIONS	
	ITEM TO REMAIN
	ITEM TO BE REMOVED

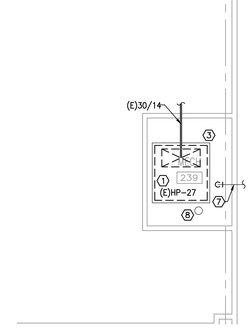
BMCS NOTE:
EXISTING CONTROL SYSTEM IS BY AUTOMATED LOGIC.
REFER TO BMCS SPECIFICATION FOR MORE INFORMATION.



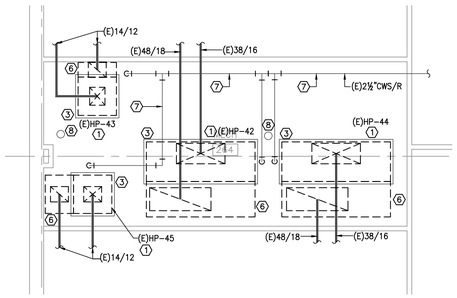
7 **ENLARGED MECH. ROOM - DEMOLITION**
SCALE: 1/4" = 1'-0"



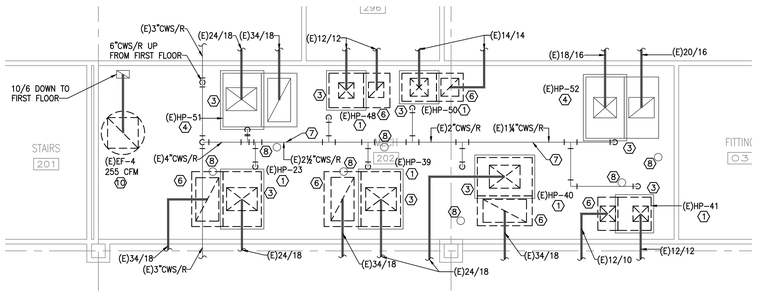
4 **ENLARGED MECH. ROOM - DEMOLITION**
SCALE: 1/4" = 1'-0"



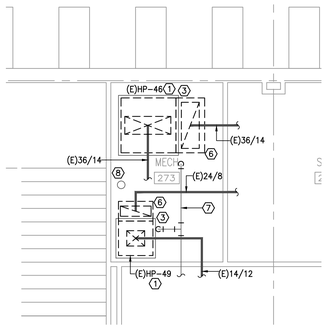
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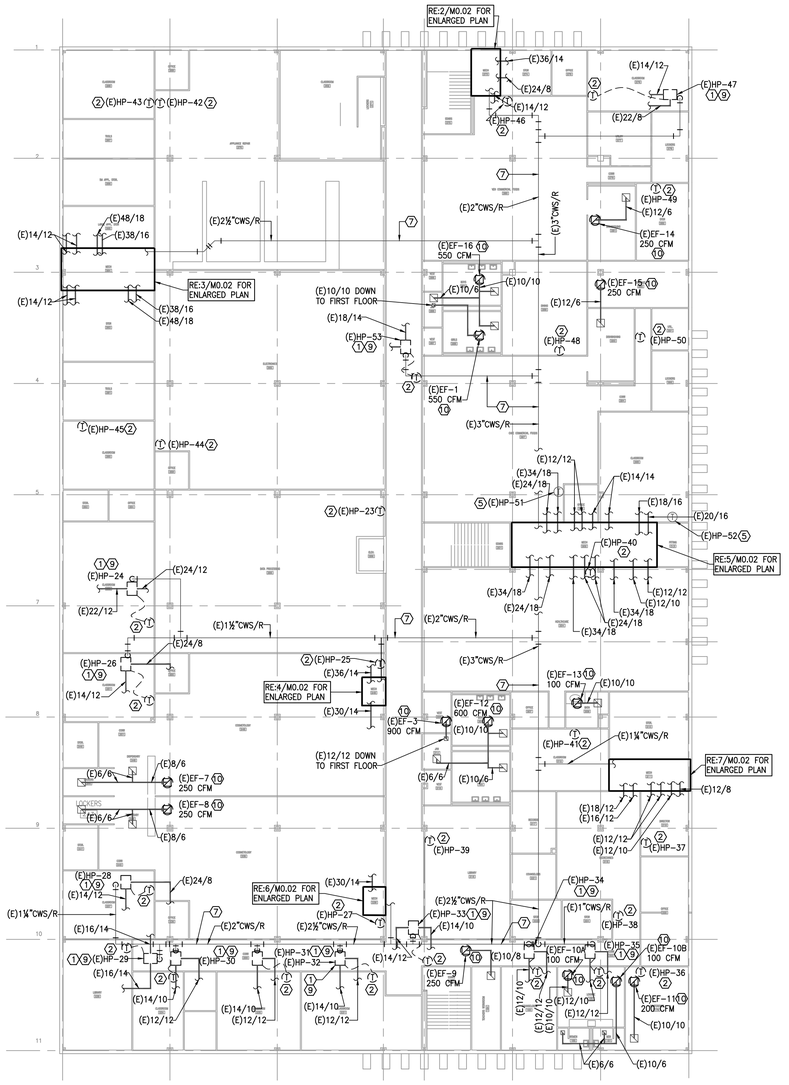
3 **ENLARGED MECH. ROOM - DEMOLITION**
SCALE: 1/4" = 1'-0"



5 **ENLARGED MECH. ROOM - DEMOLITION**
SCALE: 1/4" = 1'-0"



2 **ENLARGED MECH. ROOM - DEMOLITION**
SCALE: 1/4" = 1'-0"



NORTH

1 **MECHANICAL DEMOLITION SECOND FLOOR PLAN - TAYLOR CAREER CENTER**
SCALE: 1/16" = 1'-0"

Project No:	2022-02715-00
Drawn By:	BB
Checked By:	VP
Date:	09-14-2022
Revision Dates:	

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BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

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BRADLEY KALMANS
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09-14-2022

MECHANICAL DEMOLITION SECOND FLOOR PLANS - TAYLOR CAREER AND TECHNICAL EDUCATION CENTER

M0.2

THROUGHOUT CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY AND RENTAL EQUIPMENT, INCLUDING POWER FOR SUCH EQUIPMENT, AND TO PROVIDE PHASING TO ENSURE SPACE TEMPERATURE AND HUMIDITY IS MAINTAINED. REFER TO SPECIFICATION 23 05 11 MECHANICAL ALTERATIONS PROJECT PROCEDURES, ARTICLE 3.8 FOR ADDITIONAL REQUIREMENTS. CONTRACTOR SHALL REVIEW ALL REQUIREMENTS PRIOR TO BID.

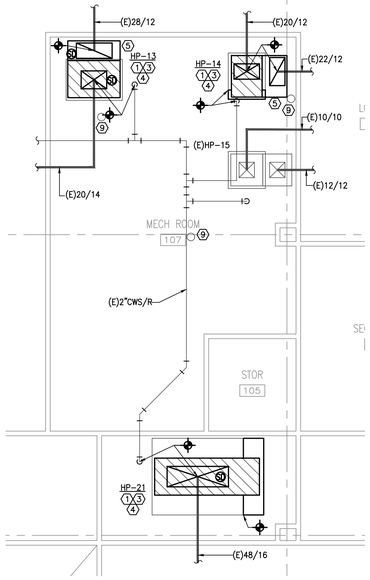
MECHANICAL GENERAL NOTES:

1. MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL REQUIREMENTS.
2. THESE 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 OR DUCT SYSTEMS.
3. ALL MECHANICAL SYSTEMS SHOWN ON THIS PLAN ARE FROM PRELIMINARY FILED WORK. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL LOCATIONS AND SIZES OF MECHANICAL EQUIPMENT PRIOR TO START OF WORK.
4. THE SCOPE OF WORK SHOWN AS A PART OF THE PROJECT ON THIS CAMPUS WILL REQUIRE INCIDENTAL ARCHITECTURAL CEILING WORK. ALL SUCH WORK SHALL BE INCLUDED IN THE CONTRACTORS BID. THIS WORK SHALL BE PERFORMED WITHOUT ANY IMPACT TO THE CONSTRUCTION SCHEDULE AND/OR ADDITIONAL COST.
5. CONTRACTOR SHALL REMOVE AND REPLACE CEILING WHERE REQUIRED TO COMPLETE THE INDICATED SCOPE OF WORK. EXISTING CEILING SHALL BE RE-INSTALLED IN THE EXACT CONDITION IT WAS REMOVED IN. DAMAGED CEILING AND/OR CEILING TILES SHALL BE REPLACED TO MATCH CONDITIONS EXISTING PRIOR TO THE BEGINNING OF CONSTRUCTION. IF A MATCH IS NOT POSSIBLE, CONTRACTOR SHALL REPLACE ALL CEILING FROM WALL TO WALL OR BOUNDARY SEPARATION IN CORRIDOR, CLASSROOM, OR ANY OTHER SPACE.

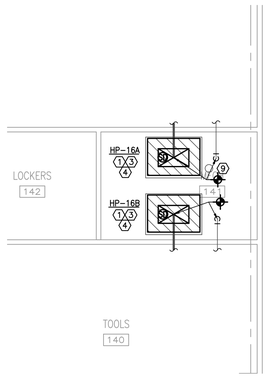
BMCS NOTE:
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MECHANICAL KEYED NOTES:

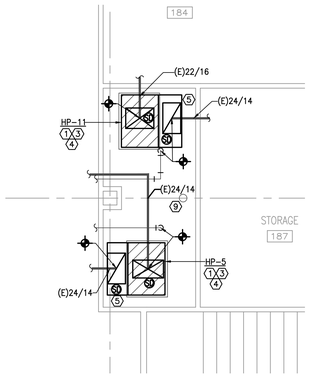
1. INSTALL NEW WATER SOURCE HEAT PUMP AND ALL ASSOCIATED CONTROLS. RE-CONNECT EXISTING DUCTWORK TO WATER SOURCE HEAT PUMP. PROVIDE NEW DUCTWORK AND INSULATION AS SPECIFIED AT EXISTING SIZE TO MAKE FINAL CONNECTIONS. EXTEND ALL CONDENSER WATER PIPING AS REQUIRED TO ENSURE A MAXIMUM HOSE LENGTH IS UTILIZED. MODIFY EXISTING CONCRETE HOUSEKEEPING PAD AS REQUIRED TO ACCOMMODATE NEW WATER SOURCE HEAT PUMP.
2. INSTALL NEW WATER SOURCE HEAT PUMP AND ALL ASSOCIATED CONTROLS. RE-CONNECT EXISTING DUCTWORK TO WATER SOURCE HEAT PUMP. PROVIDE NEW DUCTWORK AND INSULATION AS SPECIFIED AT EXISTING SIZE TO MAKE FINAL CONNECTIONS. EXTEND ALL CONDENSER WATER PIPING AS REQUIRED TO ENSURE A MAXIMUM HOSE LENGTH IS UTILIZED.
3. PROVIDE NEW WATER SOURCE HEAT PUMP WITH ISOLATION VALVES AND FLEXIBLE HOSE. CONNECT TO EXISTING AS INDICATED. RE: 1/M4.1 FOR DETAIL.
4. ROUTE FULL SIZE CONDENSATE DRAIN PIPE TO EXISTING DRAIN. INSTALL CONDENSATE TRAP PER MANUFACTURE'S RECOMMENDATIONS.
5. SHEET METAL PLENUM, FULL SIZE OF RETURN AIR OPENING; LENGTH AS REQUIRED FOR ALL DUCT CONNECTIONS SHOWN.
6. PROVIDE NEW WATER SOURCE HEAT PUMP WITH ISOLATION VALVES AND FLEXIBLE HOSE. CONNECT TO EXISTING AS INDICATED. RE: 3/M4.1 FOR DETAIL.
7. PROVIDE NEW 7 DAY PROGRAMMABLE THERMOSTAT AT LOCATION SHOWN. PROVIDE NEW CONTROL WIRING FROM THERMOSTAT TO NEW WATER SOURCE HEAT PUMP. INSTALL NEW THERMOSTAT AT EXISTING LOCATION.
8. WATER SOURCE HEAT PUMPS INDICATED SHALL BE HEADERED TOGETHER ON A SINGLE 1-1/4" CONDENSATE DRAIN LINE AND ROUTED TO THE EXISTING DRAIN ABOVE CEILING. FOLLOW EXISTING CONDENSATE DRAIN PIPE ROUTING.
9. CONTRACTOR SHALL CLEAN EXISTING FLOOR DRAIN TO LIKE NEW CONDITIONS.
10. PROVIDE ISOLATION VALVE AND BLIND FLANGE FOR FUTURE CONNECTION.
11. INSTALL NEW EXISTING FAN AT LOCATION SHOWN. MODIFY EXISTING DUCTWORK TO ACCOMMODATE NEW MOTORIZED DAMPER (D-3).



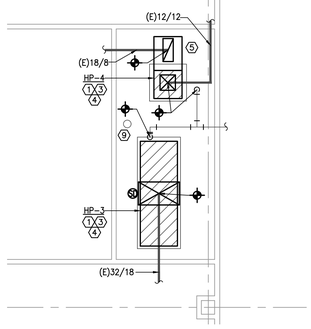
7 **ENLARGED MECH. ROOM**
SCALE: 1/4" = 1'-0"



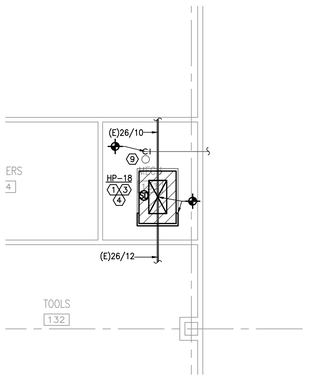
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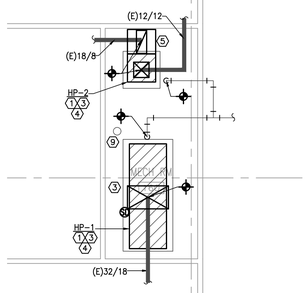
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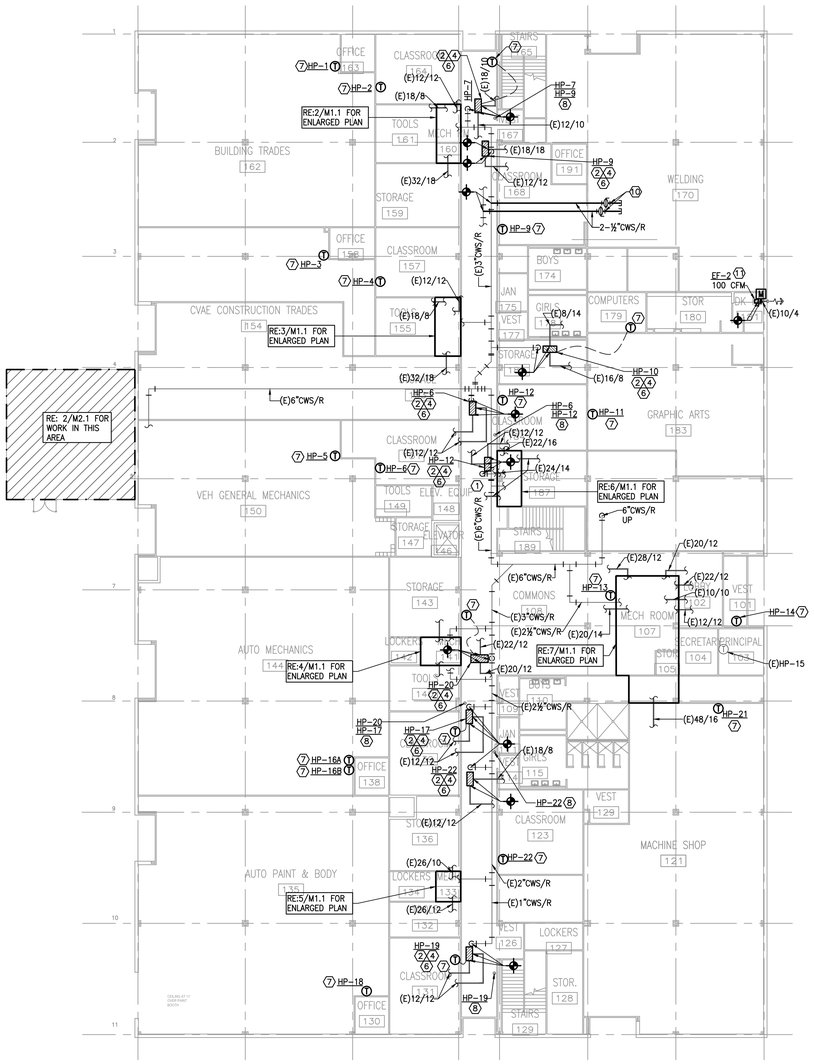
3 **ENLARGED MECH. ROOM**
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5 **ENLARGED MECH. ROOM**
SCALE: 1/4" = 1'-0"



2 **ENLARGED MECH. ROOM**
SCALE: 1/4" = 1'-0"



NORTH

1 **MECHANICAL FIRST FLOOR PLAN - TAYLOR CAREER CENTER**
SCALE: 1/16" = 1'-0"

Project No: 2022-02715-00
Drawn By: BB
Checked By: VP
Date: 09-14-2022
Revision Dates:

CONSULTANTS

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09-14-2022

MECHANICAL FIRST FLOOR PLANS - TAYLOR CAREER AND TECHNICAL EDUCATION CENTER

M1.1

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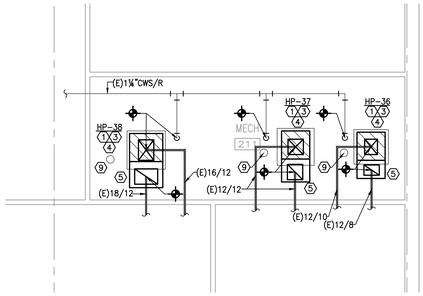
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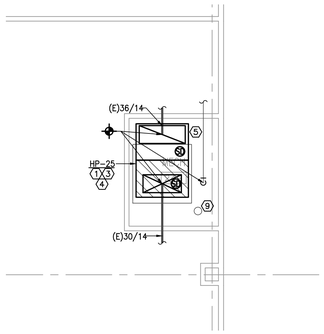
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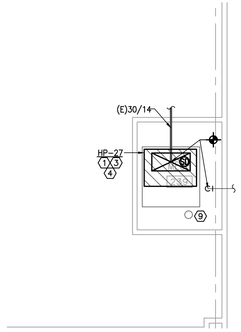
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9. CONTRACTOR SHALL CLEAN EXISTING FLOOR DRAIN TO LIKE NEW CONDITIONS.
10. INSTALL NEW EXHAUST FAN ON EXISTING ROOF OPENING. MODIFY EXISTING OPENING TO ACCOMMODATE NEW EXHAUST FAN. PROVIDE NEW EXHAUST FAN WITH ROOF CURB. RE: 8/M4.1 FOR DETAIL. MODIFY EXISTING DUCTWORK TO ACCOMMODATE NEW MOTORIZED DAMPER (D-3).



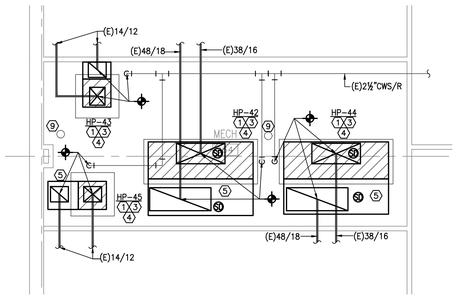
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SCALE: 1/4" = 1'-0"



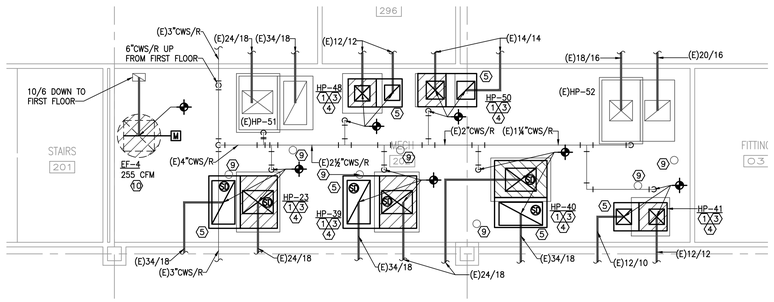
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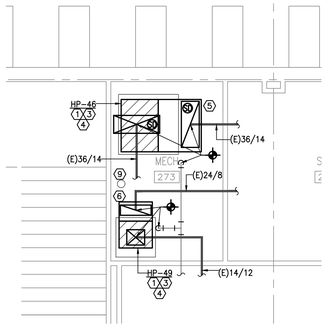
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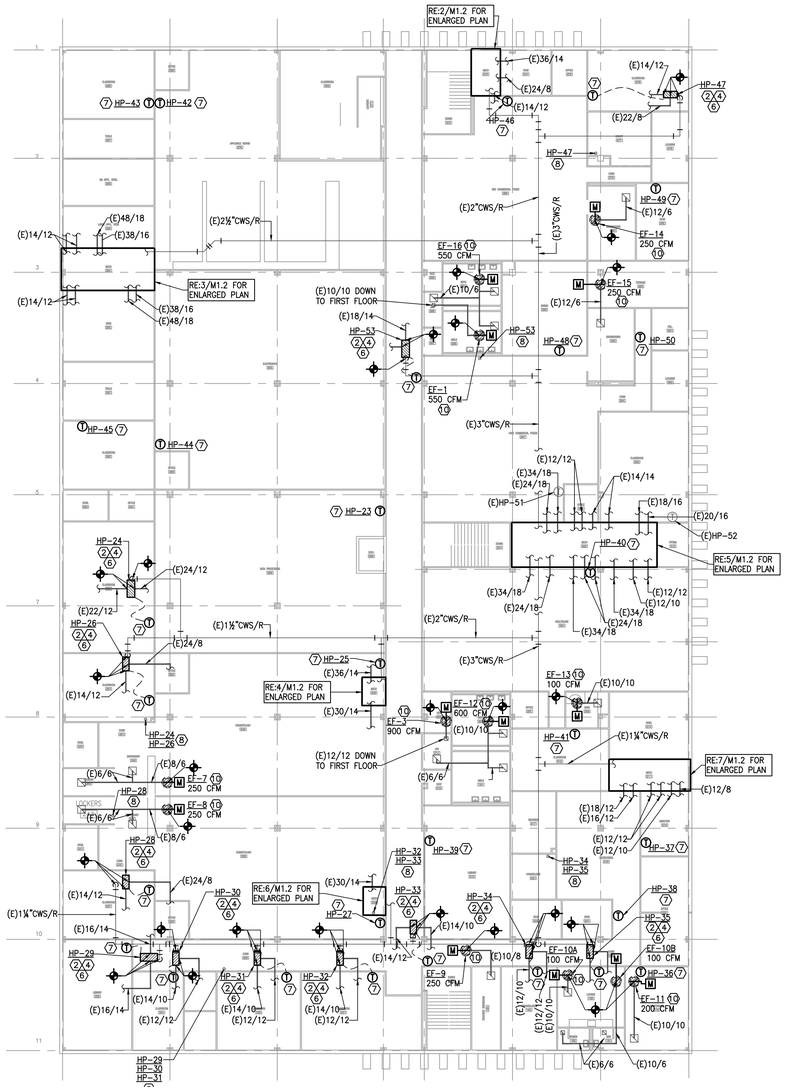
3 **ENLARGED MECH. ROOM**
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5 **ENLARGED MECH. ROOM**
SCALE: 1/4" = 1'-0"



2 **ENLARGED MECH. ROOM**
SCALE: 1/4" = 1'-0"



NORTH

1 **MECHANICAL SECOND FLOOR PLAN - TAYLOR CAREER CENTER**
SCALE: 1/16" = 1'-0"

Project No: 2022-02715-00
Drawn By: BB
Checked By: VP
Date: 09-14-2022
Revision Dates:

CONSULTANTS

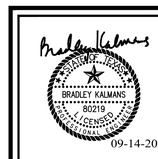
MEP ENGINEERS

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MECHANICAL SECOND FLOOR PLANS - TAYLOR CAREER AND TECHNICAL EDUCATION CENTER

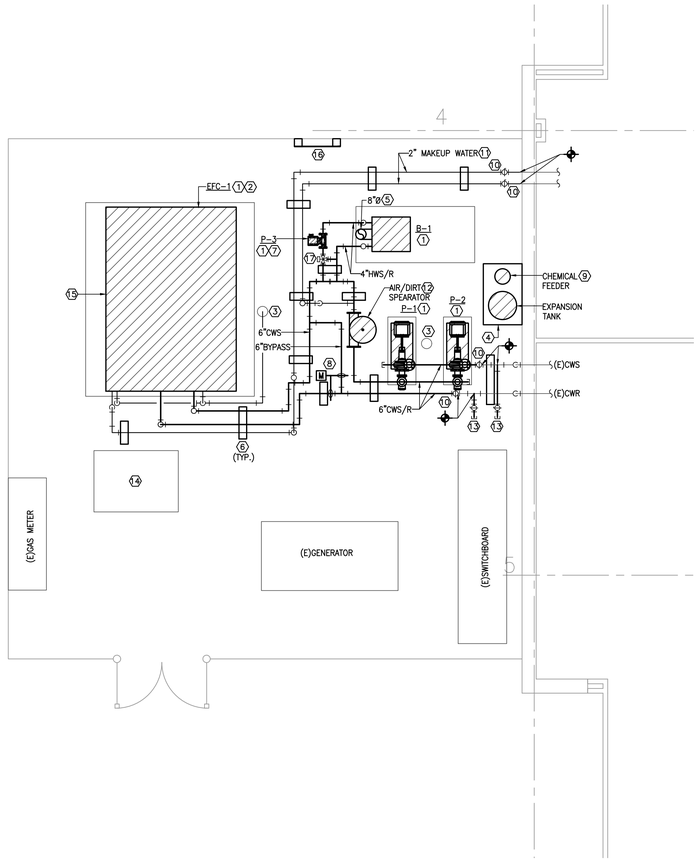
M1.2

MECHANICAL 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 DUCT SIZES ARE INSIDE CLEAR, INCREASE ACCORDINGLY WHERE INTERIOR LINER IS SHOWN OR SPECIFIED.
3. MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL POWER REQUIREMENTS.
4. 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. VERIFY SERVICE CLEARANCES WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.
2. ROUTE NEW FULL SIZE DRAIN LINE TO EXISTING FLOOR DRAIN.
3. CONTRACTOR SHALL CLEAN EXISTING FLOOR DRAIN TO LIKE NEW CONDITIONS. REFER TO PLUMBING DRAWINGS.
4. PROVIDE 4" CONCRETE HOUSEKEEPING PAD.
5. PROVIDE STAINLESS STEEL BOILER FLUE AT SIZE INDICATED. REFER TO SPECIFICATIONS. FLUE SHALL TERMINATE 7'-0" ABOVE FINISHED FLOOR (A.F.F.). SUPPORT BOILER FLUE AS RECOMMENDED BY MANUFACTURER. PROVIDE FLUE TERMINATION AS RECOMMENDED BY MANUFACTURER.
6. PROVIDE PIPING STAND. REFER TO DETAIL. (TYPICAL)
7. PROVIDE BOILER CIRCULATION PUMP. PUMP PROVIDED BY BOILER MANUFACTURER.
8. PROVIDE MOTORIZED 3 WAY DIVERTER VALVE AT LOCATION SHOWN.
9. PROVIDE CHEMICAL FEEDER SUPPORT. REFER TO DETAILS.
10. PROVIDE ISOLATION VALVES AT LOCATION SHOWN.
11. PROVIDE MAKE UP WATER LINE WITH HEAT TRACE.
12. PROVIDE AIR/DIRT SEPARATOR AT LOCATION SHOWN. REFER TO DETAILS.
13. VALVE AND FLANGE CONNECTIONS HAVE BEEN PROVIDED IN EXISTING CONDENSER WATER SYSTEM TO ALLOW FOR CONNECTION OF RENTAL FLUID COOLER TO ALLOW FOR PHASING OF WORK WHILE MAINTAINING SPACE TEMPERATURE AND HUMIDITY. REFER TO 23 05 11 FOR ADDITIONAL REQUIREMENTS FOR MAINTAINING SPACE TEMPERATURE AND HUMIDITY DURING CONSTRUCTION. COORDINATE LOCATION WITH EXISTING ELECTRICAL GEAR AS TO NOT INTERFERE WITH N.E.C. CLEARANCES.
14. EXISTING FLUID COOLER CHEMICAL TREATMENT SHED. EXISTING CHEMICAL TREATMENT COMPANY SHALL CONNECT AND REINSTALL ALL PIPING AND EQUIPMENT REQUIRED TO PROVIDE A COMPLETE CHEMICAL TREATMENT SYSTEM.
15. NEW FLUID COOLER SHALL BE INSTALLED ON THE EXISTING CONCRETE PAD AND THE EXISTING GALVANIZED STEEL STRUCTURAL STEEL SUPPORTS. ADJUST STEEL SUPPORTS AS REQUIRED TO MATCH NEW FLUID COOLER FOOTPRINT.
16. PROVIDE NEW UNISTRUT GALVANIZED RACK FOR MAKE UP WATER STATIONS.
17. PROVIDE THERMOSTATIC MIXING VALVE AT LOCATION SHOWN.



NORTH

1 **MECHANICAL ENLARGED CENTRAL PLANT - TAYLOR CAREER CENTER**
SCALE: 1/4" = 1'-0"

THROUGHOUT CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY AND RENTAL EQUIPMENT, INCLUDING POWER FOR SUCH EQUIPMENT, AND TO PROVIDE PHASING TO ENSURE SPACE TEMPERATURE AND HUMIDITY IS MAINTAINED. REFER TO SPECIFICATION 23 05 11 MECHANICAL ALTERATIONS PROJECT PROCEDURES, ARTICLE 3.8 FOR ADDITIONAL REQUIREMENTS. CONTRACTOR SHALL REVIEW ALL REQUIREMENTS PRIOR TO BID.

DEMO SYMBOL LEGEND

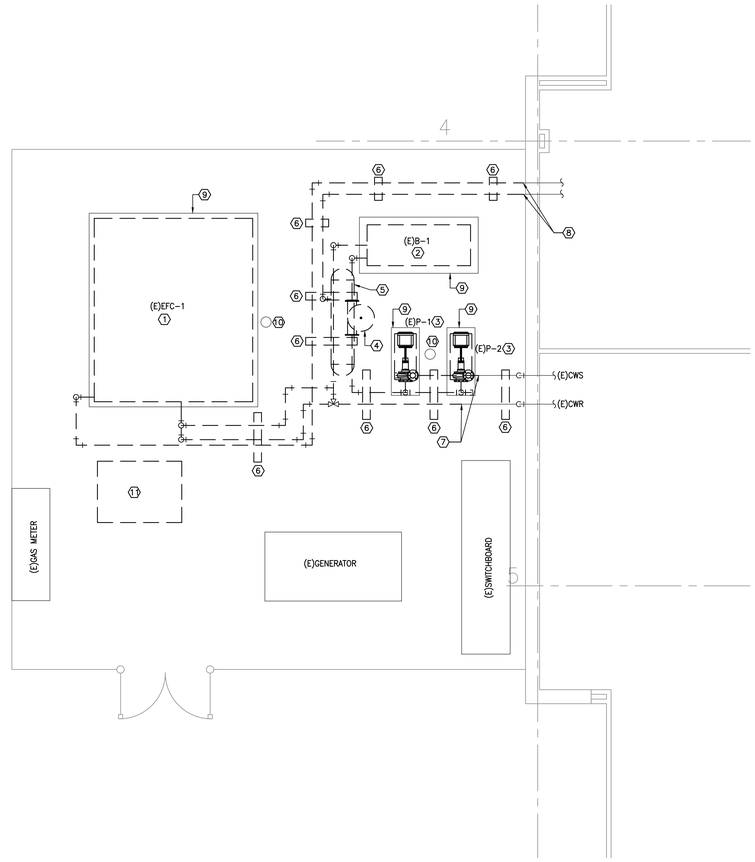
RENOVATIONS	
☐	ITEM TO REMAIN
⬚	ITEM TO BE REMOVED

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 EVAPORATIVE FLUID COOLER, PUMPS, PIPE STANDS, VALVES, AND BOILERS.

DEMOLITION KEYED NOTES:

1. REMOVE EXISTING EVAPORATIVE FLUID COOLER AND ALL ASSOCIATED APPURTENANCES.
2. REMOVE EXISTING BOILER, CONTROLS AND ALL ASSOCIATED APPURTENANCES.
3. REMOVE EXISTING CONDENSER WATER PUMP AND ALL ASSOCIATED APPURTENANCES.
4. REMOVE EXISTING AIR SEPARATOR.
5. REMOVE EXISTING EXPANSION TANK.
6. REMOVE EXISTING PIPE STAND.
7. REMOVE EXISTING CONDENSER WATER PIPING BACK TO POINT INDICATED.
8. REMOVE MAKEUP WATER PIPING BACK TO POINT INDICATED.
9. EXISTING CONCRETE HOUSEKEEPING PAD AND EXISTING GALVANIZED STEEL TOWER SUPPORTS TO REMAIN AND BE REUSED FOR NEW TOWER.
10. EXISTING FLOOR DRAIN TO REMAIN.
11. EXISTING FLUID COOLER CHEMICAL TREATMENT SHED. EXISTING CHEMICAL TREATMENT COMPANY SHALL DISCONNECT AND REMOVE/STORE ANY EQUIPMENT AND PIPING AS REQUIRED FOR THE REMOVAL OF THE EXISTING FLUID COOLER AND INSTALLATION OF NEW FLUID COOLER.



NORTH

1 **MECHANICAL DEMOLITION ENLARGED CENTRAL PLANT - TAYLOR CAREER CENTER**
SCALE: 1/4" = 1'-0"

Project No: 2022-02715-00
Drawn By: BB
Checked By: VP
Date: 09-14-2022
Revision Dates:

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BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT
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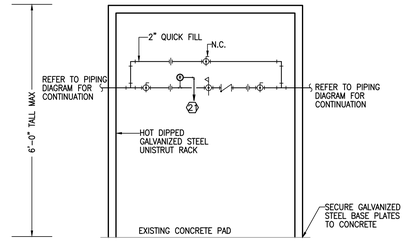
BRADLEY KALMANS
80219
LICENSED PROFESSIONAL ENGINEER
09-14-2022

MECHANICAL ENLARGED PLANS - TAYLOR CAREER AND TECHNICAL EDUCATION CENTER

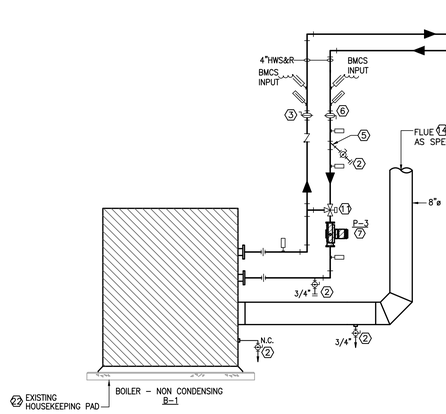
M2.1

MECHANICAL KEYED NOTES:

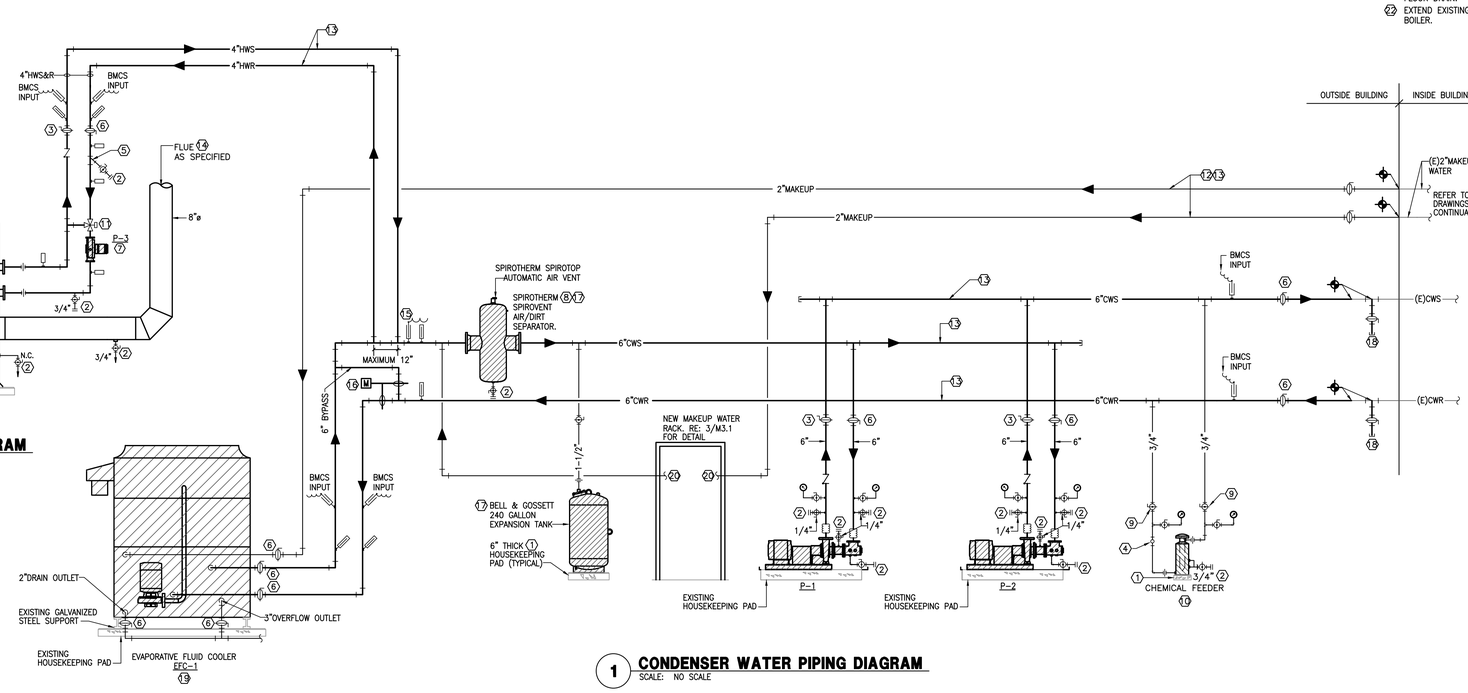
1. PROVIDE 6" CONCRETE HOUSEKEEPING PAD.
2. PROVIDE FULL SIZE DRAIN BALL VALVE WITH HOSE THREAD ADAPTER.
3. BALANCING VALVE TO BE PROVIDED WITH INFINITE POSITION CRANK OR MEMORY STOP FOR BALANCING SERVICE.
4. PROVIDE AN ERNEST GAUGE #E-57-3 BRONZE BODY SIGHT GLASS WITH S.S. SHAFT, PLASTIC SPINNER AND DOUBLE WINDOW. OPERATING TEMPERATURE AND PRESSURE SHALL BE 200°F, 125 PSI MINIMUM.
5. PROVIDE STRAINER.
6. PROVIDE ISOLATION BUTTERFLY VALVE.
7. CIRCULATOR PUMP PROVIDED BY BOILER MANUFACTURER.
8. REFER TO DETAIL FOR MORE INFORMATION ON AIR/DIRT SEPARATOR SUPPORT.
9. PROVIDE ISOLATION VALVE AS CLOSE AS POSSIBLE TO POT FEEDER.
10. REFER TO DETAIL FOR MORE INFORMATION ON CHEMICAL FEEDER.
11. PROVIDE THERMOSTATIC MIXING VALVE AT LOCATION SHOWN.
12. PROVIDE MAKEUP WATER LINE WITH HEAT TRACE.
13. PROVIDE OUTDOOR PIPING WITH INSULATION AND ALUMINUM JACKETING AS SPECIFIED.
14. BOILER FLUE SHALL TERMINATE 7'-0" ABOVE FURNISHED FLOOR (A.F.F.). SUPPORT BOILER FLUE AS RECOMMENDED BY MANUFACTURER. PROVIDE FLUE TERMINATION AS RECOMMENDED BY MANUFACTURER.
15. HEADER TEMPERATURE SENSOR. PROVIDED BY BOILER MANUFACTURER.
16. MOTORIZED 3-WAY DIVERTER VALVE.
17. INSULATE OUTDOOR EQUIPMENT PER SPECIFICATIONS.
18. VALVE AND FLANGE CONNECTIONS HAVE BEEN PROVIDED IN EXISTING CONDENSER WATER SYSTEM TO ALLOW FOR CONNECTION OF RENTAL FLUID COOLER TO ALLOW FOR PHASING OF WORK WHILE MAINTAINING SPACE TEMPERATURE AND HUMIDITY. REFER TO 23 05 11 FOR ADDITIONAL REQUIREMENTS FOR MAINTAINING SPACE TEMPERATURE AND HUMIDITY DURING CONSTRUCTION. COORDINATE LOCATION WITH EXISTING ELECTRICAL GEAR AS TO NOT INTERFERE WITH N.E.C. CLEARANCES.
19. NEW FLUID COOLER SHALL BE INSTALLED ON THE EXISTING CONCRETE PAD AND THE EXISTING GALVANIZED STEEL STRUCTURAL STEEL SUPPORTS. ADJUST STEEL SUPPORTS AS REQUIRED TO MATCH NEW FLUID COOLER FOOTPRINT.
20. REFER TO ENLARGED DIAGRAM OF MAKE UP WATER STATION.
21. ROUTE TYPE "L" COPPER DRAIN AT FULL SIZE OR SIZE INDICATED TO NEAREST FLOOR DRAIN.
22. EXTEND EXISTING CONCRETE HOUSEKEEPING PAD AS REQUIRED FOR NEW BOILER.



3 ENLARGED MAKEUP WATER STATION DETAIL
SCALE: NO SCALE



2 HOTWATER PIPING DIAGRAM
SCALE: NO SCALE



1 CONDENSER WATER PIPING DIAGRAM
SCALE: NO SCALE

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CONSULTANTS

MEP ENGINEERS

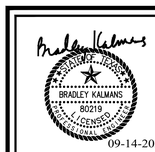
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BISD Preparing Our Next Generation



09-14-2022

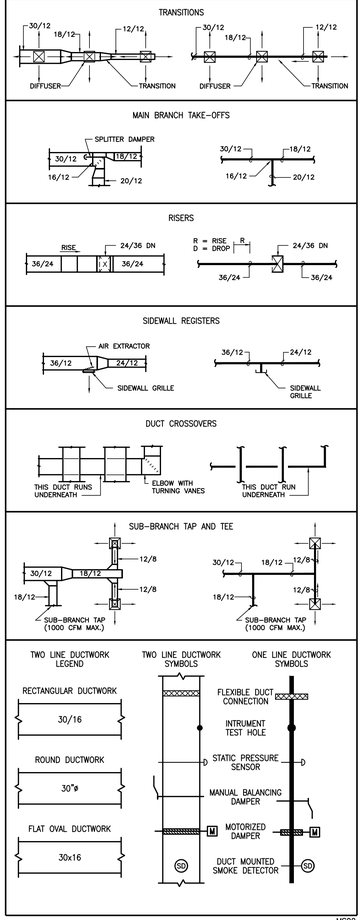
MECHANICAL PIPING DIAGRAM - TAYLOR CAREER AND TECHNICAL EDUCATION CENTER

M3.1

SYMBOL LEGEND

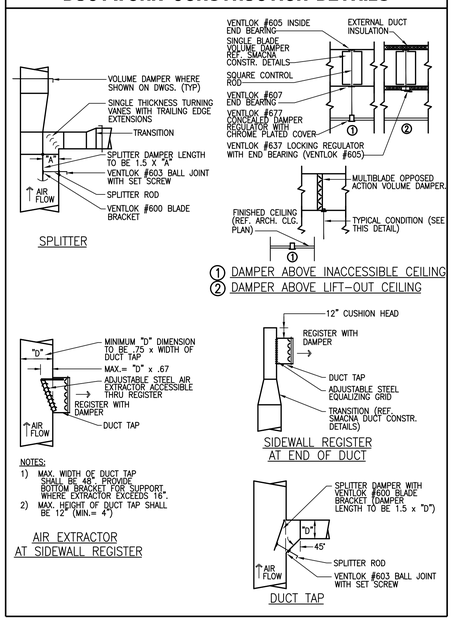
SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
GENERAL	
(#)	KEY NOTE TAG
(#)	NOTE SPECIFIC TO DETAIL TAG
(#)	REVISION TAG
	NEW EQUIPMENT
DUCTWORK	
	SUPPLY AIR DUCTWORK
	RETURN AIR AND OUTSIDE AIR DUCTWORK
	EXHAUST AIR DUCTWORK
	FLEXIBLE DUCTWORK
	SUPPLY AIR DUCTWORK THROUGH HORIZONTAL PARTITION
	RETURN AIR AND OUTSIDE AIR DUCTWORK THROUGH HORIZONTAL PARTITION
	EXHAUST AIR DUCTWORK THROUGH HORIZONTAL PARTITION
	FIRE DAMPER (VERTICAL)
	FIRE DAMPER (HORIZONTAL)
	SMOKE DAMPER (VERTICAL)
	SMOKE DAMPER (HORIZONTAL)
	COMBINATION FIRE & SMOKE DAMPER (VERTICAL)
	COMBINATION FIRE & SMOKE DAMPER (HORIZONTAL)
	MANUAL BALANCING DAMPER (SEE DAMPER SCHEDULE)
	MOTORIZED DAMPER (SEE DAMPER SCHEDULE)
SENSORS	
T	THERMOSTAT AND TEMPERATURE SENSOR
H	HUMIDISTAT
SD	SMOKE DETECTOR
HD	HEAT DETECTOR
AIR DEVICES	
	GRILLE SIZE TAG (REFER TO GRILLE SIZE LEGEND)
	SUPPLY AIR GRILLE WITH FOUR-WAY THROW
	SUPPLY AIR GRILLE WITH THREE-WAY THROW
	SUPPLY AIR GRILLE WITH TWO-WAY THROW
	SUPPLY AIR GRILLE WITH TWO-WAY CORNER THROW
	SUPPLY AIR GRILLE WITH ONE-WAY THROW
	RETURN AIR GRILLE
	RETURN AIR GRILLE WITH SOUND BOOT
	EXHAUST AIR GRILLE
	SUPPLY AIR SIDEWALL GRILLE
	RETURN AIR SIDEWALL GRILLE
20X12	RETURN AIR OPENING ABOVE CEILING
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
	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
FS	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
RENOVATIONS	
	POINT OF CONNECTION FROM NEW TO EXISTING
	ITEM TO REMAIN
	ITEM TO BE REMOVED

DUCTWORK SYMBOLS LEGEND

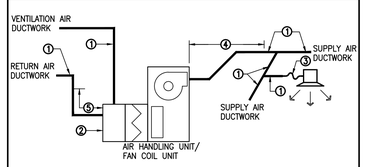


MS02

DUCTWORK CONSTRUCTION DETAILS



DUCT LINER AND INSULATION

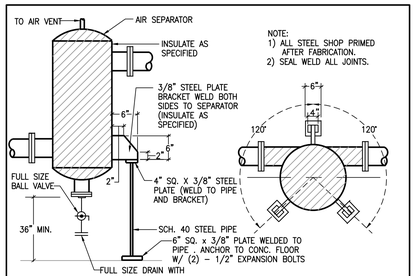


WATER SOURCE HEAT PUMPS

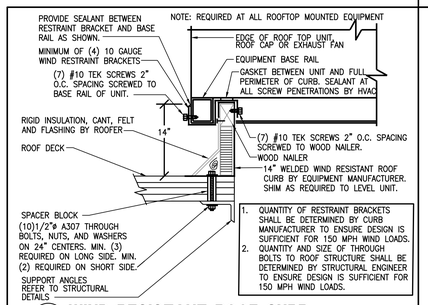
NOTES

1. SHEETMETAL DUCTWORK WITH EXTERNAL DUCTWORK INSULATION AS SPECIFIED.
2. SHEETMETAL DUCTWORK RETURN AIR PLENUM WITH EXTERNAL DUCTWORK INSULATION AS SPECIFIED.
3. FLEXIBLE DUCTWORK WITH EXTERNAL DUCTWORK INSULATION AS SPECIFIED.
4. SHEETMETAL DUCTWORK WITH EXTERNAL DUCTWORK INSULATION AS SPECIFIED AND 1" THICK 1-1/2 LB LINER AS SPECIFIED FROM AIR HANDLING UNIT DISCHARGE TO 10'-0" DOWNSTREAM. PROVIDE METAL NOSING AND MASTIC COVERING. REFER TO THE DUCT LINING SECTION IN THE DUCTWORK SPECIFICATION FOR MORE INFORMATION.
5. SHEETMETAL DUCTWORK WITH EXTERNAL DUCTWORK INSULATION AS SPECIFIED AND 1" THICK 1-1/2 LB LINER AS SPECIFIED FROM AIR HANDLING UNIT INLET TO 10'-0" UPSTREAM.

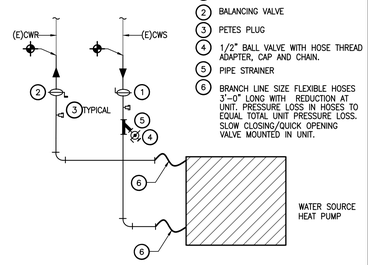
MS04



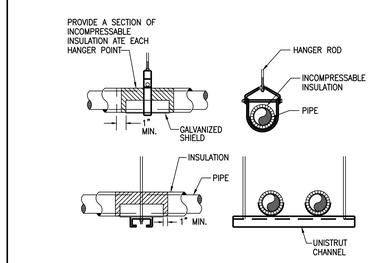
5 FLOOR MOUNTED AIR SEPARATOR
SCALE: NONE



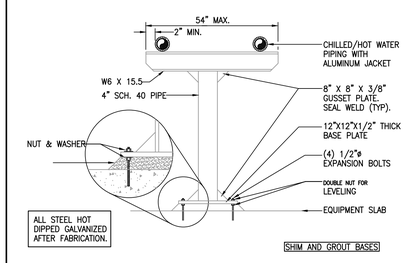
8 WIND RESISTANT ROOF CURB
SCALE: NONE



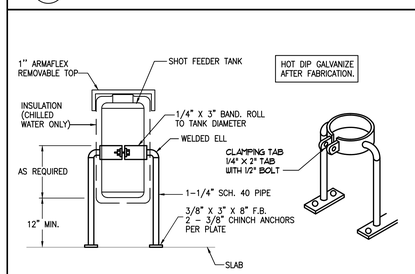
3 PIPING AT WATER SOURCE HEAT PUMP
SCALE: NONE



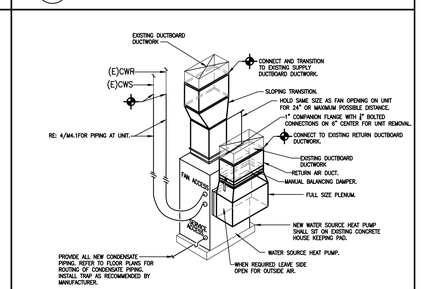
7 PIPE HANGER
SCALE: NONE



2 PIPE STAND
SCALE: NONE



6 CHEMICAL FEEDER TANK SUPPORT
SCALE: NONE



1 VERTICAL WATER SOURCE HEAT PUMP
SCALE: NONE

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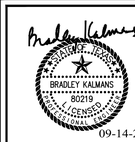
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MECHANICAL DETAILS AND LEGENDS - TAYLOR CAREER AND TECHNICAL EDUCATION CENTER

M4.1

OUTDOOR BOILER - FORCED AIR

MARK	TYPE	MINIMUM GAS INPUT (MBH)	MINIMUM HEATING OUTPUT (MBH)	MAXIMUM WATER PRESSURE DROP (FT.)	GPM	FLUE SIZE (IN. ROUND)	ELECTRICAL		MANUFACTURER	MODEL	REMARKS
							BLOWER HORSEPOWER	CURRENT CHARAC. (V/PH/Hz)			
B-1	HOT WATER SYSTEM	1,500	1,260	10	101	8	1	120/1/60	LOCHINVAR	OUTDOOR POWERFIN 1501	(1,2,3)

GENERAL NOTES:
1. PROVIDE 8 OUNCE GAS PRESSURE TO BOILER.
2. MAINTAIN MINIMUM CLEARANCE AROUND A BOILER OF 24 INCHES PER TEXAS BOILER LAW. MAINTAIN MINIMUM CLEARANCES FOR TUBE PULL AND CLEANING OF TUBES AS RECOMMENDED BY THE BOILER'S MANUFACTURER. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS FOR SERVICE, MAINTENANCE AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCES AS REQUIRED BY NEC.

REMARKS:
1. PROVIDE WITH CIRCULATING PUMP, SIZED BY BOILER MANUFACTURER TO ENSURE CONSTANT FLOW THROUGH BOILER. PUMP TO BE SHIPPED LOOSE. POWER BY ELECTRICAL CONTRACTOR BUT CONTROLLED BY BOILER. CONTRACTOR TO WIRE FROM BOILER PUMP CONTROL CIRCUIT TO PUMP STARTER RELAY.
2. PROVIDE NON CONDENSING BOILER.
3. PROVIDE BOILER WITH OUTDOOR KIT.

PUMP

MARK	SERVICE	TYPE	GPM	HEAD (FT.)	MAXIMUM RPM	MOTOR HORSEPOWER	CURRENT	MANUFACTURER	MODEL	REMARKS
P-1	CONDENSER WATER	END SUCTION SUCTION	684	100	1,800	25	460/3/60	BELL & GOSSETT	E-1510	(2,3)
P-2	CONDENSER WATER	END SUCTION SUCTION	684	100	1,800	25	460/3/60	BELL & GOSSETT	E-1510	(2,3)
P-3	HOT WATER	INLINE CIRCULATOR	101	20	1,800	1.0	460/3/60	BELL & GOSSETT	E-60	(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. PUMP SHALL BE SELECTED BY BOILER MANUFACTURER, WITH DISCONNECT AND STARTER BY ELECTRICAL CONTRACTOR AND CONTROLLED BY BOILER.
2. PROVIDE WITH GAUGE TAPPINGS.
3. PROVIDE WITH SUCTION DIFFUSER.

EVAPORATIVE FLUID COOLER

MARK	ENTERING WATER TEMP. (°F)	LEAVING WATER TEMP. (°F)	GPM	AMBIENT WET BULB TEMP. (°F)	PUMP HP	FAN HP	FAN CURRENT CHARACTERISTIC	REMARKS
EFC-1	98	90	684	80	7.5	10.0	480/3/60	(1,2,3,4)

REMARKS:
1. STAINLESS STEEL CONSTRUCTION.
2. MOTOR SHALL BE OUT OF AIR STREAM.
3. PROVIDE WITH LADDERS THAT EXTEND TO GROUND AND PLATFORMS. LADDER LENGTH SHALL BE ADJUSTED TO ENSURE FLUID COOLER SUPPORT IS ACCOUNTED FOR.
4. PROVIDE TOWER WITH BASIN HEATER. BASIN HEATER SHALL BE PROVIDED WITH STAINLESS STEEL HEATING ELEMENTS. REFER TO SPECIFICATION.

EXHAUST FANS

MARK	LOCATION	CFM	MAXIMUM RPM	EXT. STATIC PRESSURE (IN. W.C.)	HORSE POWER	CURRENT CHARAC.	INTERLOCKED WITH	LOCALLY SWITCHED BY	FAN TYPE	BELT/DIRECT DRIVE	MANUFACTURER	MODEL NUMBER	REMARKS
EF-1	RM. 288	500	1,548	0.50	0.125	120/1/60	HP-7	–	ROOF MOUNTED	DIRECT	COOK	ACED	(1,2,3,4,5)
EF-2	RM. 181	100	889	0.250	38(W)	120/1/60	HP-11	–	CEILING MOUNTED	DIRECT	COOK	GC	(1,6)
EF-3	RM. 205	900	1,187	0.50	0.250	120/1/60	HP-20	–	ROOF MOUNTED	DIRECT	COOK	ACED	(1,2,3,4,5)
EF-4	MECH. 202	255	1,446	0.50	0.125	120/1/60	HP-13	–	ROOF MOUNTED	DIRECT	COOK	ACED	(1,2,3,4,5)
EF-7	RM. 245	250	1,394	0.375	0.125	120/1/60	HP-25	–	ROOF MOUNTED	DIRECT	COOK	ACED	(1,2,3,4,5)
EF-8	RM. 247	250	1,394	0.375	0.125	120/1/60	HP-27	–	ROOF MOUNTED	DIRECT	COOK	ACED	(1,2,3,4,5)
EF-9	RM. 223	250	1,394	0.375	0.125	120/1/60	HP-33	.	ROOF MOUNTED	DIRECT	COOK	ACED	(1,2,3,4,5)
EF-10A	RM. 227	200	1,294	0.375	0.125	120/1/60	–	SWITCH	ROOF MOUNTED	DIRECT	COOK	ACED	(1,2,3,4,5)
EF-10B	RM. 227	100	1,239	0.250	0.050	120/1/60	–	SWICTH	ROOF MOUNTED	DIRECT	COOK	ACED	(1,2,3,4,5)
EF-11	RM. 226	200	1,294	0.375	0.125	120/1/60	–	SWITCH	ROOF MOUNTED	DIRECT	COOK	ACED	(1,2,3,4,5)
EF-12	RM. 206	600	1,494	0.50	0.125	120/1/60	HP-39	–	ROOF MOUNTED	DIRECT	COOK	ACED	(1,2,3,4,5)
EF-13	RM. 209	100	1,239	0.250	0.050	120/1/60	HP-40	–	ROOF MOUNTED	DIRECT	COOK	ACED	(1,2,3,4,5)
EF-14	RM. 281	250	1,394	0.375	0.125	120/1/60	–	SWITCH	ROOF MOUNTED	DIRECT	COOK	ACED	(1,2,3,4,5)
EF-15	RM. 290	250	1,394	0.375	0.125	120/1/60	–	SWITCH	ROOF MOUNTED	DIRECT	COOK	ACED	(1,2,3,4,5)
EF-16	RM. 206	550	1,413	0.375	0.125	120/1/60	HP-53	–	ROOF MOUNTED	DIRECT	COOK	ACED	(1,2,3,4,5)

GENERAL NOTES:
1. EXTERNAL STATIC PRESSURE INCLUDES LOSSES DUE TO DUCTWORK, AIR DEVICES, DAMPERS, AND DUCT MOUNTED HOT WATER COILS WHERE APPLICABLE. DIRTY FILTER AND UNIT CASING MUST BE ADDED TO EXTERNAL STATIC PRESSURE TO OBTAIN TOTAL PRESSURE LOSS. INCREASE HORSEPOWER AS REQUIRED TO MEET YOUR TOTAL PRESSURE LOSS. COORDINATE WITH ELECTRICIAN.
2. MINIMUM RECOMMENDED CLEARANCE AROUND ROOFTOP UNIT IS 12 INCHES ON NON-SERVICE SIDES AND 30 INCHES ON SERVICE SIDES. MAINTAIN MINIMUM CLEARANCE FOR CONDENSER AIR FLOW AS RECOMMENDED BY ROOFTOP UNIT MANUFACTURER. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON ROOFTOP UNIT FOR SERVICE, MAINTENANCE, AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCE AS REQUIRED BY NEC.

REMARKS:
1. PROVIDE WITH DISCONNECT SWITCH.
2. PROVIDE WITH LOW LEAKAGE MOTORIZED DAMPER THAT SHALL CLOSE WHEN UNIT IS NOT OPERATING.
3. PROVIDE EXHAUST FAN WITH ALUMINUM BIRD SCREEN.
4. PROVIDE WITH ROOF CURB AS SPECIFIED.
5. PROVIDE WITH FAN SPEED CONTROLLER.
6. PROVIDE WITH FAN SPEED CONTROLLER, VIBRATION ISOLATION KIT, AND BACKDRAFT DAMPER.

WATER SOURCE HEAT PUMP

MARK	INDOOR AIR FAN				ELECTRICAL REQUIREMENTS			COOLING				CONDENSER				HEATING			UNITS BASED ON COMFORT AIRE GEOLOGIX	REMARKS
	SUPPLY AIR CFM	OUTSIDE AIR CFM	EXT. STATIC PRESSURE (IN. W.C.)	HORSE POWER	CURRENT CHARAC.	MCA	MOCP	AIR TEMPERATURE (°F) ENTERING DRY BULB	ENTERING WET BULB	MIN. TOTAL CAPACITY (BTUH)	MIN. SENSIBLE CAPACITY (BTUH)	ENTERING WATER TEMP. (°F)	LEAVING WATER TEMP. (°F)	GPM	MAXIMUM PRESSURE DROP (FT.)	ENTERING WATER TEMP. (°F)	ENTERING AIR TEMP. (°F)	MIN. CAPACITY (BTUH)		
HP-1	4,910	500	0.50	3.0	480/3/60	29.3	40.0	77.0	64.6	138,740	100,120	90.0	98.0	30.0	13.0	60.0	69.4	220,000	HBV160	(2,3,4,5,6,7,8,9)
HP-2	725	100	0.35	–	208/1/60	20.3	30.0	77.8	65.5	29,260	17,550	90.0	98.0	4.7	3.1	60.0	67.4	21,810	HBV030	(2,3,4,5,6,7,8,9)
HP-3	4,910	500	0.50	3.0	480/3/60	29.3	40.0	77.0	64.6	138,740	100,120	90.0	98.0	30.0	13.0	60.0	69.4	220,000	HBV160	(2,3,4,5,6,7,8,9)
HP-4	765	100	0.35	–	208/1/60	20.3	30.0	77.6	65.3	29,750	18,250	90.0	98.0	9.5	11.8	60.0	67.8	22,680	HBV030	(2,3,4,5,6,7,8,9)
HP-5	2,310	500	0.50	2.0	480/3/60	16.9	20.0	79.3	66.9	91,080	50,210	90.0	98.0	20.0	12.5	60.0	63.1	147,900	HBV096	(2,3,4,5,6,7,8,9)
HP-6	765	100	0.35	–	208/1/60	20.3	30.0	77.6	65.3	29,750	18,250	90.0	98.0	9.5	11.8	60.0	67.8	22,680	HBH030	(1,3,4,5,6,7,8,9)
HP-7	920	100	0.40	–	208/1/60	20.3	30.0	77.2	64.8	26,470	18,540	90.0	98.0	4.7	3.1	60.0	69.0	25,930	HBH030	(1,3,4,5,6,7,8,9)
HP-8	3,250	500	0.50	3.0	480/3/60	21.7	25.0	78.1	65.7	110,200	68,540	90.0	98.0	30.0	13.0	60.0	66.5	220,000	HBV120	(2,3,4,5,6,7,8,9)
HP-9	765	100	0.35	–	208/1/60	23.6	40.0	77.6	65.3	29,750	18,250	90.0	98.0	9.5	11.8	60.0	67.8	22,680	HBH036	(1,3,4,5,6,7,8,9)
HP-10	480	50	0.30	–	208/1/60	7.9	15.0	77.1	64.7	14,120	9,900	90.0	98.0	2.4	3.9	60.0	69.3	13,450	HBH015	(1,3,4,5,6,7,8,9)
HP-11	2,590	200	0.50	2.0	480/3/60	16.9	20.0	76.5	64.1	72,200	53,820	90.0	98.0	14.0	6.6	60.0	70.8	68,320	HBV096	(2,3,4,5,6,7,8,9)
HP-12	765	100	0.35	–	208/1/60	23.6	40.0	77.6	65.3	29,750	18,250	90.0	98.0	9.5	11.8	60.0	67.8	22,680	HBH036	(1,3,4,5,6,7,8,9)
HP-13	2,155	200	0.50	1.0	480/3/60	14.7	20.0	76.9	64.5	64,830	45,860	90.0	98.0	14.0	6.6	60.0	69.9	58,960	HBV072	(2,3,4,5,6,7,8,9)
HP-14	1,580	–	0.35	–	480/3/60	9.5	15.0	75.0	62.5	31,570	30,890	90.0	98.0	6.6	3.7	60.0	75.0	25,830	HBV048	(2,3,4,5,6,7,8,9)
HP-16A	2,270	250	0.50	1.0	480/3/60	14.7	20.0	77.0	64.8	67,580	46,775	90.0	98.0	15.0	6.5	60.0	68.9	110,000	HBV072	(2,3,4,5,6,7,8,9)
HP-16B	2,270	250	0.50	1.0	480/3/60	14.7	20.0	77.0	64.8	67,580	46,775	90.0	98.0	15.0	6.5	60.0	68.9	110,000	HBV072	(2,3,4,5,6,7,8,9)
HP-17	765	100	0.35	–	208/1/60	20.3	30.0	77.6	65.3	29,750	18,250	90.0	98.0	9.5	11.8	60.0	67.8	22,680	HBH030	(1,3,4,5,6,7,8,9)
HP-18	3,875	200	0.50	3.0	480/3/60	21.7	25.0	76.0	63.5	97,600	79,110	90.0	98.0	20.0	12.5	60.0	72.2	158,000	HBV120	(2,3,4,5,6,7,8,9)
HP-19	725	100	0.35	–	208/1/60	20.3	30.0	77.8	65.5	29,260	17,550	90.0	98.0	4.7	3.1	60.0	67.4	21,810	HBH030	(1,3,4,5,6,7,8,9)
HP-20	1,470	200	0.35	–	480/3/60	9.5	15.0	77.7	65.4	46,540	30,350	90.0	98.0	13.6	14.6	60.0	67.5	44,210	HBH048	(1,3,4,5,6,7,8,9)
HP-21	6,385	200	0.50	3.0	480/3/60	29.3	40.0	75.6	63.1	148,600	128,380	90.0	98.0	30.0	13.0	60.0	73.3	116,230	HBV160	(2,3,4,5,6,7,8,9)
HP-22	765	100	0.35	–	208/1/60	20.3	30.0	77.6	65.3	27,689	21,676	90.0	98.0	9.5	11.8	60.0	67.8	22,680	HBH030	(1,3,4,5,6,7,8,9)
HP-23	3,510	200	0.50	2.0	480/3/60	16.9	20.0	76.1	63.6	89,500	71,560	90.0	98.0	20.0	12.5	60.0	71.9	88,380	HBV096	(2,3,4,5,6,7,8,9)
HP-24	1,615	100	0.35	–	480/3/60	9.5	15.0	76.2	63.7	46,070	34,870	90.0	98.0	8.0	6.3	60.0	71.6	41,190	HBH048	(1,3,4,5,6,7,8,9)
HP-25	3,170	200	0.50	3.0	480/3/60	21.7	25.0	76.3	63.8	100,720	71,440	90.0	98.0	20.0	12.5	60.0	71.5	81,200	HBV120	(2,3,4,5,6,7,8,9)
HP-26	855	100	0.35	–	208/1/60	20.3	30.0	77.3	64.9	31,620	20,100	90.0	98.0	9.5	11.8	60.0	68.6	24,600	HBH030	(1,3,4,5,6,7,8,9)
HP-27	3,170	200	0.50	3.0	480/3/60	21.7	25.0	76.3	63.8	100,720	71,440	90.0	98.0	20.0	12.5	60.0	71.5	81,200	HBV120	(2,3,4,5,6,7,8,9)
HP-28	855	100	0.35	–	208/1/60	20.3	30.0	77.3	64.9	31,620	20,100	90.0	98.0	9.5	11.8	60.0	68.6	24,600	HBH030	(1,3,4,5,6,7,8,9)
HP-29	1,470	100	0.35	–	480/3/60	9.5	15.0	76.4	64.0	43,760	32,010	90.0	98.0	13.6	14.6	60.0	71.3	37,970	HBH048	(1,3,4,5,6,7,8,9)
HP-30	740	100	0.35	–	208/1/60	20.3	30.0	77.7	65.4	29,800	17,840	90.0	98.0	9.5	11.8	60.0	67.6	22,100	HBH030	(1,3,4,5,6,7,8,9)
HP-31	740	100	0.35	–	208/1/60	20.3	30.0	77.7	65.4	29,800	17,840	90.0	98.0	9.5	11.8	60.0	67.6	22,100	HBH030	(1,3,4,5,6,7,8,9)
HP-32	740	100	0.35	–	208/1/60	20.3	30.0	77.7	65.4	29,800	17,840	90.0	98.0	9.5	11.8	60.0	67.6	22,100	HBH030	(1,3,4,5,6,7,8,9)
HP-33	855	100	0.35	–	208/1/60	20.3	30.0	77.3	64.9	25,170	17,690	90.0	98.0	3.8	4.2	60.0	68.8	25,270	HBH030	(1,3,4,5,6,7,8,9)
HP-34	520	50	0.30	–	208/1/60	10.2	15.0	76.9	64.5	15,090	10,800	90.0	98.0	2.4	3.9	60.0	69.7	14,340	HBH018	(1,3,4,5,6,7,8,9)
HP-35	580	50	0.30	–	208/1/60	10.2	15.0	76.7	64.5	18,640	13,010	90.0	98.0	6.0	11.0	60.0	70.3	15,620	HBH018	(1,3,4,5,6,7,8,9)
HP-36	500	50	0.30	–	208/1/60	10.2	15.0	77.0	64.6	16,290	11,130	90.0	98.0	3.0	3.0	60.0	69.5	13,900	HBH018	(2,3,4,5,6,7,8,9)
HP-37	765	50	0.30	–	208/1/60	20.3	30.0	76.3	63.8	19,370	15,370	90.0	98.0	3.8	4.2	60.0	71.4	19,680	HBV030	(2,3,4,5,6,7,8,9)
HP-38	1,275	100	0.30	–	208/1/60	23.6	40.0	76.6	64.2	33,990	25,630	90.0	98.0	5.3	4.3	60.0	70.7	33,770	HBV036	(2,3,4,5,6,7,8,9)
HP-39	3,225	200	0.50	2.0	480/3/60	16.9	20.0	76.2	63.7	86,830	67,100	90.0	98.0	20.0	12.5	60.0	71.6	82,250	HBV096	(2,3,4,5,6,7,8,9)
HP-40	3,490	200	0.50	2.0	480/3/60	16.9	20.0	76.1	63.6	88,990	71,210	90.0	98.0	20.0	12.5	60.0	71.8	88,260	HBV096	(2,3,4,5,6,7,8,9)
HP-41	670	100	0.35	–	208/1/60	17.5	30.0	78.0	65.6	27,940	15,490	90.0	98.0	4.7	3.1	60.0	66.8	20,590	HBV024	(2,3,4,5,6,7,8,9)
HP-42	5,310	200	0.50		480/3/60	29.3	40.0	75.8	63.3	127,,780	107,750	90.0	98.0	30.0	13.0	60.0	70.0	14,175	HBV160	(2,3,4,5,6,7,8,9)
HP-43	855	100	0.35	–	208/1/60	20.3	30.0	77.3	64.9	31,620	20,100	90.0	98.0	9.5	11.8	60.0	68.6	24,600	HBV030	(2,3,4,5,6,7,8,9)
HP-44	5,100	200	0.50		480/3/60	29.3	40.0	75.8	63.3	123,690	103,500	90.0	98.0	30.0	13.0	60.0	72.8	123,400	HBV160	(2,3,4,5,6,7,8,9)
HP-45	855	100	0.35	–	208/1/60	20.3	30.0	77.3	64.9	31,620	20,100	90.0	98.0	9.5	11.8	60.0	68.6	24,600	HBV030	(2,3,4,5,6,7,8,9)
HP-46	3,380	200	0.50	3.0	480/3/60	21.7	25.0	76.2	63.7	96,410	72,950	90.0	98.0	20.0	12.5	60.0	71.7	67,420	HBV120	(2,3,4,5,6,7,8,9)
HP-47	855	100	0.35	–	208/1/60	20.3	30.0	77.3	64.9	31,620	20,100	90.0	98.0	9.5	11.8	60.0	68.6	24,600	HBH030	(1,3,4,5,6,7,8,9)
HP-48	770	100	0.35	–	208/1/60	20.3	30.0	76.9	66.1	28,820	16,970	90.0	98.0	4.7	3.1	60.0	67.9	18,550	HBH030	(2,3,4,5,6,7,8,9)
HP-49	1,000	200	0.35	–	208/1/60	23.6	40.0	79.0	66.7	37,650	21,230	90.0	98.0	10.9	16.9	60.0	64.0	33,790	HBV036	(2,3,4,5,6,7,8,9)
HP-50	1,025	200	0.35	–	208/1/60	23.6	40.0	78.9	66.6	37,950	21,570	90.0	98.0	10.9	16.9	60.0	64.3	34,300	HBV036	(2,3,4,5,6,7,8,9)
HP-53	1,630	200	0.50	–	480/3/60	9.5	15.0	77.5	65.2	48,450	32,800	90.0	98.0	8.0	6.3	60.0	68.3	47,440	HBH048	(1,3,4,5,6,7,8,9)

GENERAL NOTES:
1. EXTERNAL STATIC PRESSURE INCLUDES LOSSES DUE TO DUCTWORK, AIR DEVICES, DAMPERS, AND DUCT MOUNTED HOT WATER COILS WHERE APPLICABLE. DIRTY FILTER AND UNIT CASING MUST BE ADDED TO EXTERNAL STATIC PRESSURE TO OBTAIN TOTAL PRESSURE LOSS. INCREASE HORSEPOWER AS REQUIRED TO MEET YOUR TOTAL PRESSURE LOSS. COORDINATE WITH ELECTRICIAN.
2. MINIMUM RECOMMENDED CLEARANCE AROUND HEAT PUMP UNIT IS 12 INCHES ON NON-SERVICE SIDES AND 30 INCHES ON SERVICE SIDES. MAINTAIN MINIMUM CLEARANCE FOR COIL PULL AS RECOMMENDED BY HEAT PUMP UNIT MANUFACTURER. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON HEAT PUMP UNIT FOR SERVICE, MAINTENANCE, AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCE AS REQUIRED BY NEC.
3. ENTERING HEATING CONDENSER WATER TEMPERATURE SHALL BE 60°F. ENTERING COOLING CONDENSER WATER TEMPERATURE SHALL BE 90°F.
4. MINIMUM UNIT COOLING AND HEATING EFFICIENCIES SHALL MEET IECC 2015 REQUIREMENTS.
   A. <17,000 BTU/H 12.2 EER
   B. >=17,000 BTU/H AND <65,000 BTU/H = 13.0 EER
   C. >=65,000 BTU/H AND <135,000 BTU/H = 13.0 EER

REMARKS:
1. HORIZONTAL UNIT.
2. VERTICAL UNIT.
3. PROVIDE A DRAIN PAN WITH A WATER LEVEL SENSING DEVICE. THIS DEVICE SHALL SHUT OFF THE UNIT IN THE EVENT THE PRIMARY DRAIN LINE BECOMES RESTRICTED.
4. PROVIDE EACH UNIT WITH A HONEYWELL T4 PRO SKUTH4110U2005 FOR HEAT PUMP APPLICATION.
5. PROVIDE UNIT WITH A SINGLE POINT ELECTRICAL CONNECTION, MOTOR STARTER AND MAIN DISCONNECT SWITCH.
6. CONTRACTOR SHALL CONFIRM SUPPLY, RETURN, AND CONDENSER WATER CONFIGURATION WITH EXISTING UNIT BEFORE ORDERING NEW UNIT.
7. PROVIDE UNIT WITH COPPER WATER COIL AND NON COATED AIR COIL.
8. PROVIDE UNIT WITH COMMERCIAL STANDARD RANGE CABINET.
9. PROVIDE UNIT WITH CXM CONTROLS.

DAMPER

MARK	ACTUATOR	DUTY	BLADE ACTION	MANUFACTURER	MODEL NUMBER	REMARKS
D-1	MANUAL BALANCING	UNDER 9" WIDE	N/A	N/A	N/A	SEE SMACNA CONSTRUCTION DETAILS REFERENCED "TYPICAL CONSTRUCTION DETAILS FOR LOW VELOCITY DUCTS."
D-2	MANUAL BALANCING	OVER 9" WIDE	OPPOSED	RUSKIN	MD-35	MANUAL DAMPER WITH STANDARD CONSTRUCTION FEATURES AND VENTLOCK #639 LOCKING REGULATOR.
D-3	MOTORIZED	OVER 9" WIDE	OPPOSED	RUSKIN	CD-60	LOW LEAKAGE DAMPER WITH BLADE SEALS

NOTES:
N/A – NOT APPLICABLE

DS01

Project No: 2022-02715-00
Drawn By: BB
Checked By: VP
Date: 09-14-2022
Revision Dates:

CONSULTANTS

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BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD Preparing Our Next Generation

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09-14-2022

MECHANICAL SCHEDULES - TAYLOR CAREER AND TECHNICAL EDUCATION CENTER

M5.1

ELECTRICAL KEYED NOTES:

1. DISCONNECT EXISTING MECHANICAL EQUIPMENT. REMOVE ASSOCIATED DISCONNECT. EXISTING CIRCUIT TO REMAIN IN PLACE FOR REUSE.
2. DISCONNECT EXISTING MECHANICAL EQUIPMENT. REMOVE ASSOCIATED DISCONNECT. PULL CIRCUIT BACK TO GUTTER.
3. DISCONNECT EXISTING MECHANICAL EQUIPMENT AND EXISTING DISCONNECT. PULL CIRCUIT BACK TO SOURCE OR NEAREST DEVICE TO REMAIN.
4. DISCONNECT EXISTING MECHANICAL EQUIPMENT. REMOVE ASSOCIATED DISCONNECT. REMOVE ALL CONDUCTORS AND CONDUIT INBETWEEN DISCONNECT AND EQUIPMENT. CIRCUIT AND CONDUIT FEEDING DISCONNECT TO REMAIN IN PLACE FOR REUSE.
5. DISCONNECT AND REMOVE EXISTING PANEL. EXISTING FEEDER AND BRANCH CIRCUIT TO REMAIN IN PLACE FOR RECONNECTION TO REPLACEMENT PANEL. CONTRACTOR TO FIELD VERIFY EXISTING FEEDER WAS INSTALLED AS INDICATED ON EXISTING DRAWINGS AND ONELINE PRIOR TO BID. PROVIDE NEW FEEDER MATCHING ONELINE IF EXISTING FEEDER DOES NOT MATCH EXISTING DRAWINGS AND ONELINE.
6. DISCONNECT AND REMOVE EXISTING PANEL. REMOVE EXISTING FEEDER AND PULLBACK TO SOURCE. BRANCH CIRCUIT TO REMAIN IN PLACE FOR RECONNECTION TO REPLACEMENT PANEL.

GENERAL NOTES:

1. EXCEPT AS OTHERWISE NOTED, ALL EXISTING ELECTRICAL WORK WHICH WILL NOT BE RENDERED OBSOLETE & WHICH MAY BE DISTURBED DUE TO ANY CHANGES REQUIRED UNDER THIS CONTRACT, SHALL BE RESTORED TO ITS ORIGINAL OPERATING CONDITION. OTHER ELECTRICAL WORK OR MATERIAL RENDERED OBSOLETE SHALL BE ABANDONED WHERE CONCEALED AND REMOVED WHERE EXPOSED. OLD UNUSED WIRING AND DEVICES SHALL BE REMOVED FROM THE ABANDONED (CONCEALED) CONDUITS. OUTLETS SHALL BE PROVIDED WITH BLANK COVERS. ANY CONDUITS OUT OF MASONRY SURFACE SHALL BE CUT INTO SURFACE AND PATCHED.
2. THE LOCATIONS OF EXISTING CIRCUITS AND EQUIPMENT ARE SHOWN IN AN APPROXIMATE WAY ONLY & HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING ELECTRICAL DEVICES, EQUIPMENT & WIRING BEFORE COMMENCING WORK & AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTORS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL EXISTING PORTIONS OF THE ELECTRICAL SYSTEM.
3. THE CONTRACTOR SHALL REMOVE SUCH EXISTING WORK AS CALLED FOR ON THE DRAWINGS OR AS REQUIRED TO CLEAR THE AREAS OF NEW CONSTRUCTION.
4. IF ANY BRANCH CIRCUIT WIRING FEEDING EQUIPMENT TO REMAIN IN PLACE FOR REUSE IS DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL REPLACE WITH NEW BRANCH CIRCUIT WIRING OF THE SAME SIZE AND TYPE AS EXISTING AT NOT COST TO THE OWNER.

EXISTING CONDITIONS/DEMOLITION NOTES

1. CONTRACTOR SHALL VISIT THE SITE BEFORE SUBMITTING A PROPOSAL AND VERIFY EXISTING CONDITIONS. ANY MODIFICATIONS REQUIRED CONTRARY TO THESE DOCUMENTS FOR A COMPLETE AND OPERATING SYSTEM SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
2. CONTRACTOR SHALL DISCONNECT AND REMOVE ANY MECHANICAL, ELECTRICAL OR PLUMBING ITEMS IN THE WAY OF NEW CONSTRUCTION AND NOT BEING REUSED. CONTRACTOR TO KEEP ALL ITEMS THAT ARE TO REMAIN PROTECTED DURING CONSTRUCTION.
3. DEMOLISH CONDUIT AND WIRING ASSOCIATED WITH HVAC EQUIPMENT BEING REMOVED BACK TO SOURCE AND INDICATE ANY OPEN CIRCUIT BREAKER AS SPARE.
4. COORDINATE WITH OWNER/ARCHITECT FOR EXACT DEMOLITION SCOPE OF WORK PRIOR TO COMMENCEMENT OF WORK.

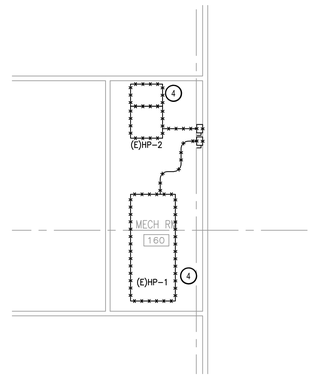
PROVIDE SMOKE DETECTION CONTROLLER/SENSORS TO SHUT DOWN HEAT PUMP UNITS INCASE OF FIRE/DETECTION OR SMOKE. CONTRACTOR TO COORDINATE EXACT REQUIREMENTS WITH FIRE ALARM CONTRACTOR AND TO MAKE ALL FINAL CONNECTIONS AS NEEDED.

LINETYPE LEGEND

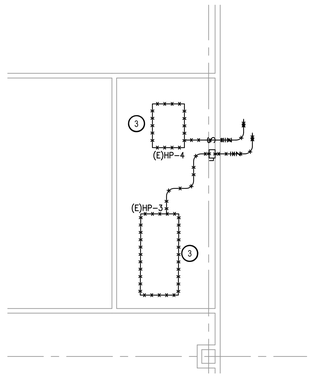
EXISTING TO REMAIN
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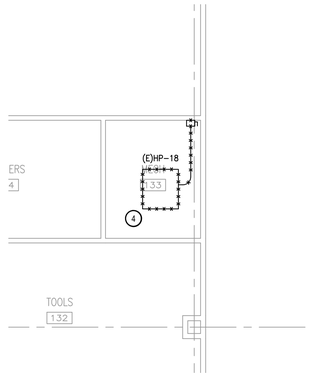
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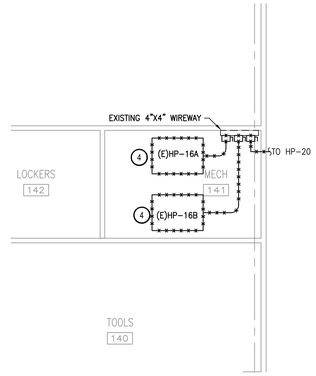
7 **ENLARGED MECH. ROOM - DEMOLITION**
SCALE: 1/4" = 1'-0"



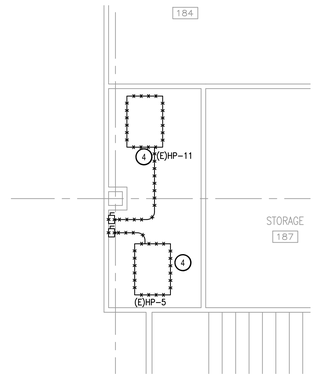
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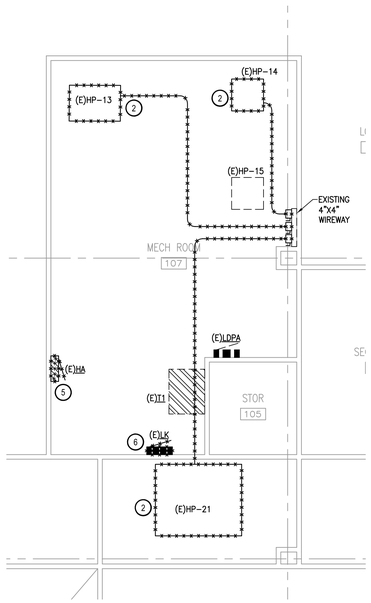
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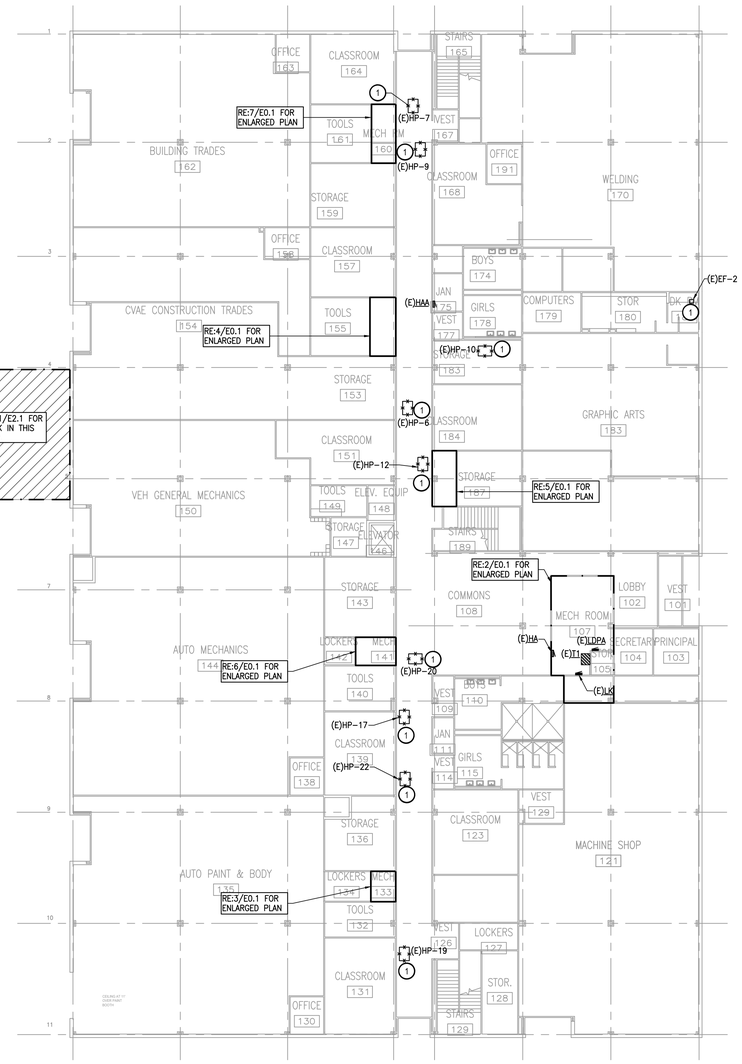
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2 **ENLARGED MECH. ROOM - DEMOLITION**
SCALE: 1/4" = 1'-0"



1 **ELECTRICAL DEMOLITION FIRST FLOOR PLAN - TAYLOR CAREER & TECHNICAL EDUCATION CENTER**
SCALE: 1/16" = 1'-0"

Project No: 2022-02715-00
Drawn By: AW
Checked By: JZ
Date: 09-14-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

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10930 W. SAM HOUSTON PKWY N., SUITE 900
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BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD Preparing Our Next Generation

Bradley Kalmans
REGISTERED PROFESSIONAL ENGINEER
BRADLEY KALMANS
80219
LICENSED
ELECTRICAL
09-14-2022

ELECTRICAL DEMOLITION FIRST FLOOR PLANS - TAYLOR CAREER AND TECHNICAL EDUCATION CENTER

E0.1

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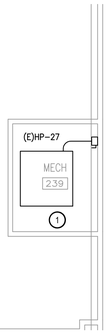
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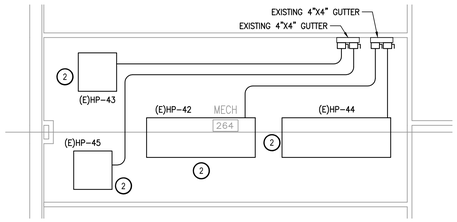
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ELECTRICAL KEYED NOTES:

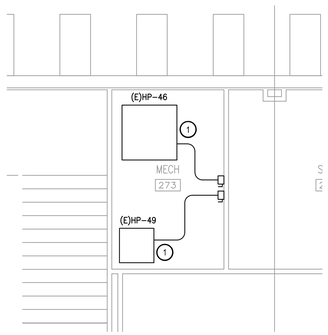
1. DISCONNECT EXISTING MECHANICAL EQUIPMENT. REMOVE ASSOCIATED DISCONNECT. EXISTING CIRCUIT TO REMAIN IN PLACE FOR REUSE.
2. DISCONNECT EXISTING MECHANICAL EQUIPMENT. REMOVE ASSOCIATED DISCONNECT. PULL CIRCUIT BACK TO GUTTER.
3. DISCONNECT EXISTING MECHANICAL EQUIPMENT. REMOVE ASSOCIATED DISCONNECT AND CONTROL SWITCH. EXISTING CIRCUIT TO REMAIN IN PLACE FOR REUSE.
4. DISCONNECT EXISTING MECHANICAL EQUIPMENT. REMOVE ASSOCIATED DISCONNECT. REMOVE ALL CONDUCTORS AND CONDUIT INBETWEEN DISCONNECT AND EQUIPMENT. CIRCUIT AND CONDUIT FEEDING DISCONNECT TO REMAIN IN PLACE FOR REUSE.



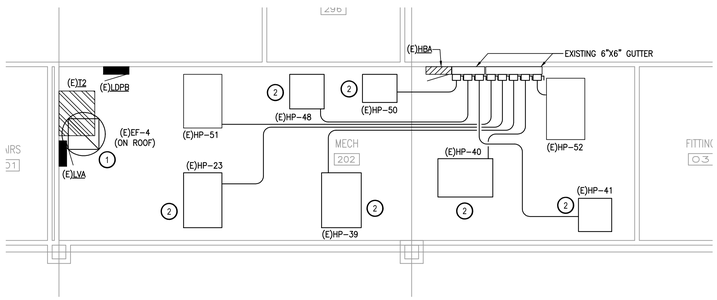
5 **ENLARGED MECH. ROOM - DEMOLITION**
SCALE: 1/4" = 1'-0"



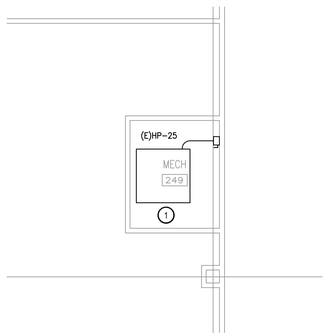
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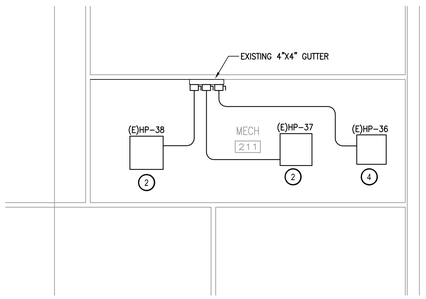
7 **ENLARGED MECH. ROOM - DEMOLITION**
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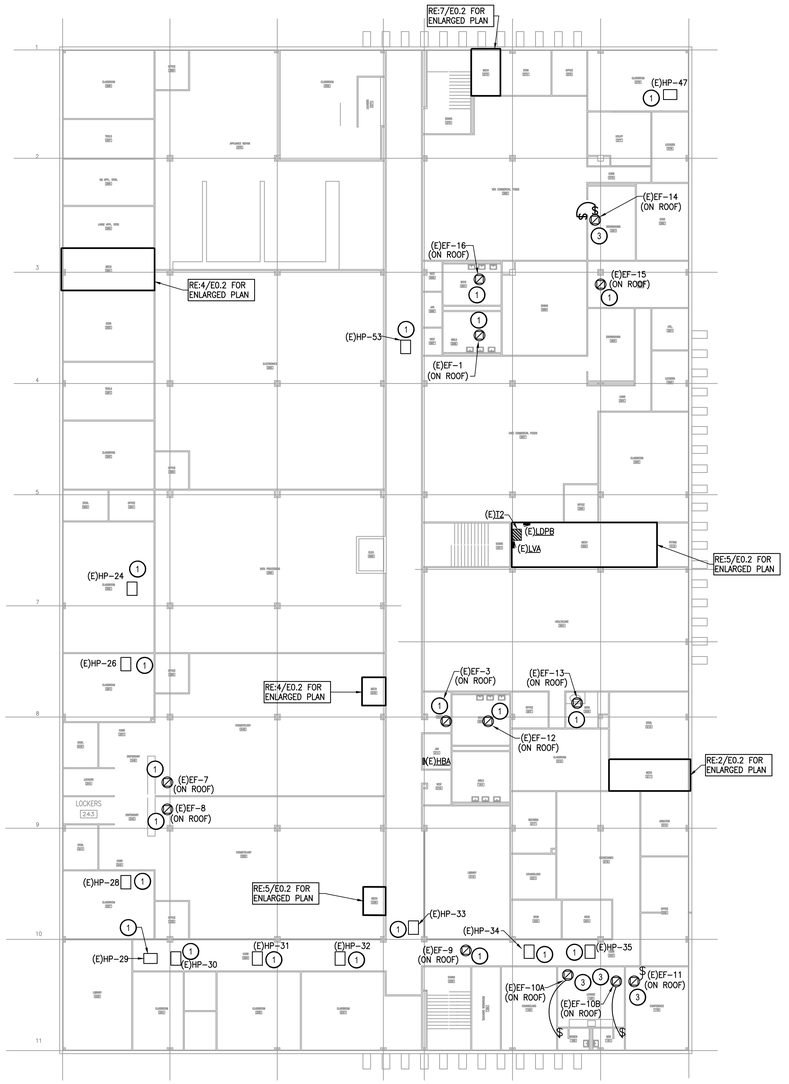
3 **ENLARGED MECH. ROOM - DEMOLITION**
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6 **ENLARGED MECH. ROOM - DEMOLITION**
SCALE: 1/4" = 1'-0"



2 **ENLARGED MECH. ROOM - DEMOLITION**
SCALE: 1/4" = 1'-0"



NORTH

1 **ELECTRICAL DEMOLITION SECOND FLOOR PLAN - TAYLOR CAREER & TECHNICAL EDUCATION CENTER**
SCALE: 1/16" = 1'-0"

Project No:	2022-02715-00
Drawn By:	AW
Checked By:	JZ
Date:	09-14-2022
Revision Dates:	

CONSULTANTS

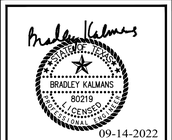
MEP ENGINEERS

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.
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BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT
BISD Preparing Our Next Generation



ELECTRICAL DEMOLITION SECOND FLOOR PLANS - TAYLOR CAREER AND TECHNICAL EDUCATION CENTER

E0.2

ELECTRICAL GENERAL NOTES:

1. ALL LIGHTING, RECEPTACLE, AND EQUIPMENT BRANCH CIRCUITS CONDUITS SHALL CONTAIN A GROUND WIRE. USING THE CONDUIT SYSTEM AS THE ONLY GROUND PATH IS NOT ACCEPTABLE.
2. REFER TO MECHANICAL DRAWINGS FAN SCHEDULE. DIVISION 26 TO PROVIDE ALL LOCAL SWITCHES AS INDICATED ON MECHANICAL FAN SCHEDULE. LOCATE SWITCH BY DOOR UNLESS INDICATED OTHERWISE FOR ALL LOCALLY SWITCHED FANS.
3. PROVIDE SMOKE DETECTORS AT EACH RETURN AIR INLET INTO EACH MECHANICAL ROOM AS REQUIRED FOR OPENING SIZE.
4. PROVIDE DUCT MOUNTED SMOKE DETECTORS IN SUPPLY AND RETURN DUCTS OF ALL AIR HANDLERS 2000 CFM OR GREATER.
5. ALL SWITCHES ARE MOTOR RATED UNLESS NOTED OTHERWISE.

ELECTRICAL KEYED NOTES:

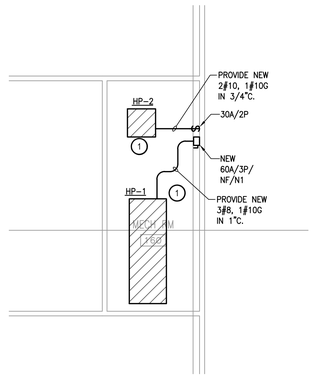
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2. CONNECT NEW MECHANICAL EQUIPMENT TO NEW CIRCUIT THROUGH NEW ENCLOSED CB FROM EXISTING SERVICE GUTTER AS INDICATED.
3. PROVIDE NEW PANEL 'HA'. EXTEND EXISTING FEEDER, ALL CIRCUITS AND CONDUITS TO NEW MAIN LUGS AND BREAKERS AS INDICATED BY PANEL SCHEDULE.
4. PROVIDE NEW PANEL 'LK'. PROVIDE NEW FEEDER FROM PANEL LDPA. EXTEND ALL BRANCH CIRCUITS AND CONDUITS TO NEW BREAKERS AS INDICATED BY PANEL SCHEDULE.
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LINETYPE LEGEND

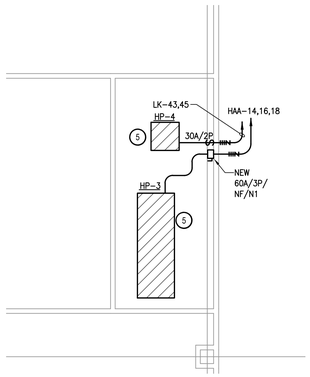
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ELECTRICAL WORK SHOWN AS A PART OF THIS PROJECT WILL REQUIRE INCIDENTAL FIRE ALARM SYSTEM WORK. ALL SUCH WORK SHALL BE INCLUDED IN THE CONTRACTORS PROPOSAL. THIS WORK SHALL BE PERFORMED WITHOUT ANY IMPACT TO THE CONSTRUCTION SCHEDULE AND AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL INCLUDE ANY FIRE ALARM DEVICES THAT ARE REQUIRED TO BE REMOVED, PROTECTED, AND RE-INSTALLED. FIRE ALARM SYSTEM SHALL BE TESTED PRIOR TO COMMENCEMENT OF WORK AND UPON COMPLETION. REFER TO SPECIFICATION 26 31 02 EXPANSION OF EXISTING FIRE DETECTION AND ALARM SYSTEM FOR ADDITIONAL REQUIREMENTS.

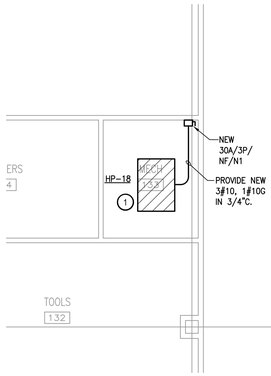
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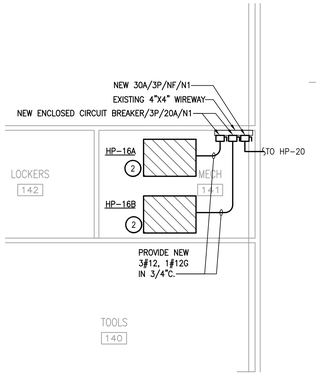
7 ENLARGED MECH. ROOM
SCALE: 1/4" = 1'-0"



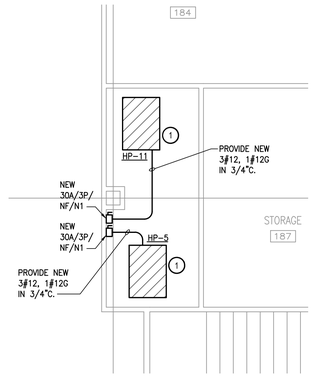
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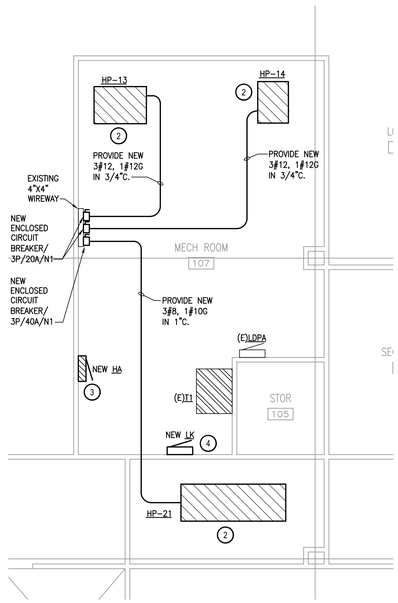
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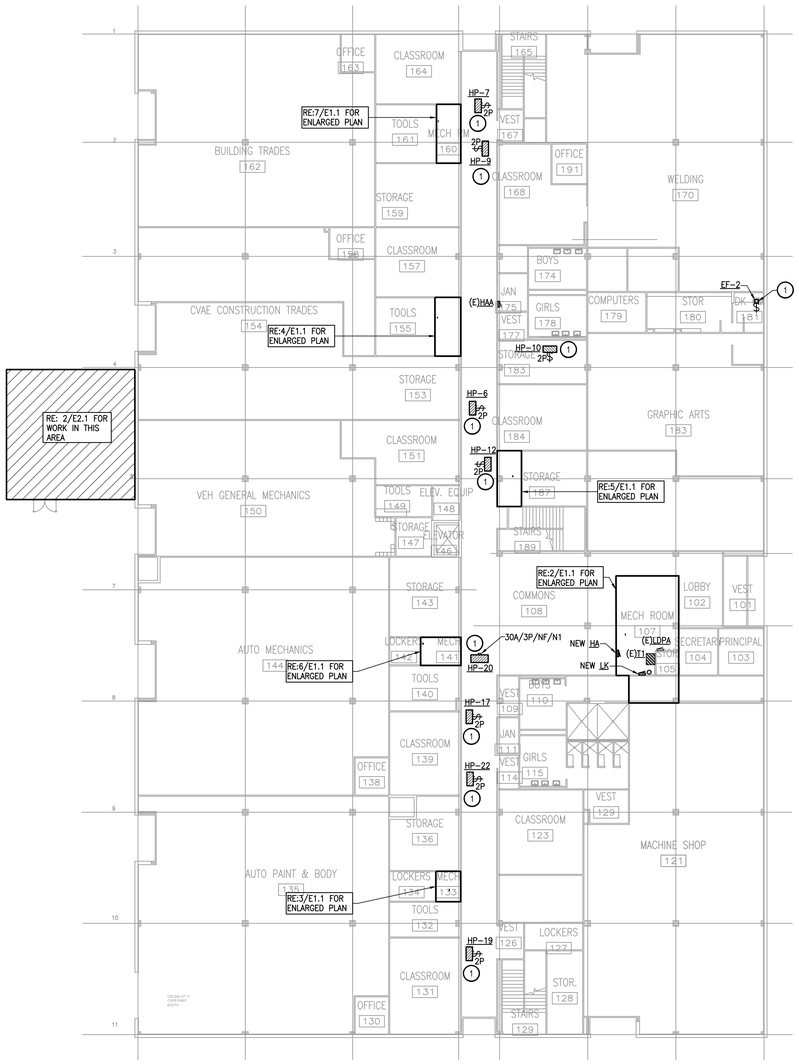
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NORTH

1 ELECTRICAL FIRST FLOOR PLAN - TAYLOR CAREER & TECHNICAL EDUCATION CENTER
SCALE: 1/16" = 1'-0"

Project No:	2022-02715-00
Drawn By:	AW
Checked By:	JZ
Date:	09-14-2022
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REGISTERED
80219
CENSED
PROFESSIONAL ENGINEER
09-14-2022

ELECTRICAL FIRST FLOOR PLANS - TAYLOR CAREER AND TECHNICAL EDUCATION CENTER

E1.1

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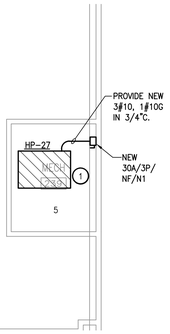
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3. CONNECT NEW MECHANICAL EQUIPMENT TO CIRCUIT LEFT IN PLACE AFTER DEMOLITION. EXTEND EXISTING CIRCUITS TO NEW EQUIPMENT LOCATIONS. PROVIDE NEW DISCONNECT AS INDICATED ON DRAWINGS. PROVIDE NEW CONTROL SWITCH AS INDICATED. COORDINATE FINAL LOCATION WITH OWNER PRIOR TO INSTALL.

LINETYPE LEGEND

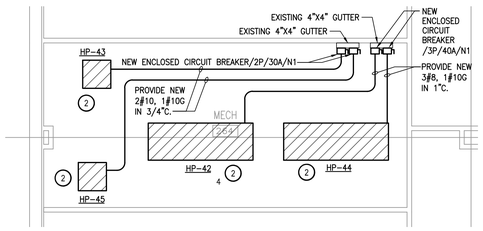
EXISTING TO REMAIN	———
REMOVE EXISTING	- - - -
NEW WORK	———

ELECTRICAL WORK SHOWN AS A PART OF THIS PROJECT WILL REQUIRE INCIDENTAL FIRE ALARM SYSTEM WORK. ALL SUCH WORK SHALL BE INCLUDED IN THE CONTRACTORS PROPOSAL. THIS WORK SHALL BE PERFORMED WITHOUT ANY IMPACT TO THE CONSTRUCTION SCHEDULE AND AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL INCLUDE ANY FIRE ALARM DEVICES THAT ARE REQUIRED TO BE REMOVED, PROTECTED, AND RE-INSTALLED. FIRE ALARM SYSTEM SHALL BE TESTED PRIOR TO COMMENCEMENT OF WORK AND UPON COMPLETION. REFER TO SPECIFICATION 26 31 02 EXPANSION OF EXISTING FIRE DETECTION AND ALARM SYSTEM FOR ADDITIONAL REQUIREMENTS.

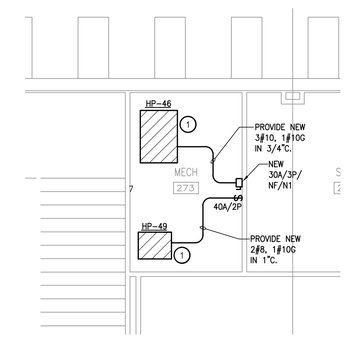
PROVIDE SMOKE DETECTION CONTROLLER/SENSORS TO SHUT DOWN HEAT PUMP UNITS INCASE OF FIRE/DETECTION OR SMOKE. CONTRACTOR TO COORDINATE EXACT REQUIREMENTS WITH FIRE ALARM CONTRACTOR AND TO MAKE ALL FINAL CONNECTIONS AS NEEDED.



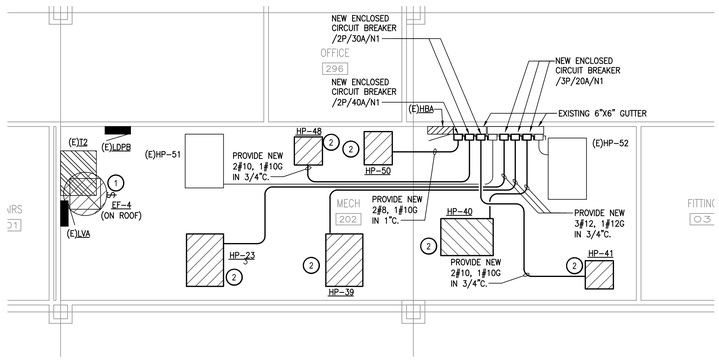
5 ENLARGED MECH. ROOM - DEMOLITION
SCALE: 1/4" = 1'-0"



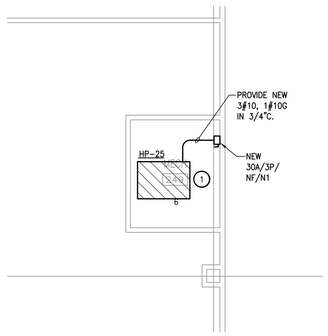
4 ENLARGED MECH. ROOM - DEMOLITION
SCALE: 1/4" = 1'-0"



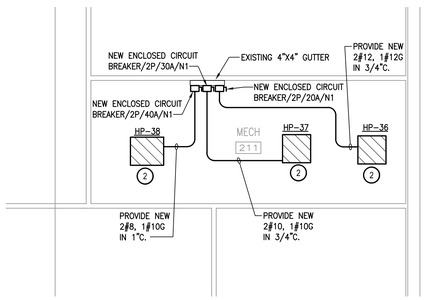
7 ENLARGED MECH. ROOM - DEMOLITION
SCALE: 1/4" = 1'-0"



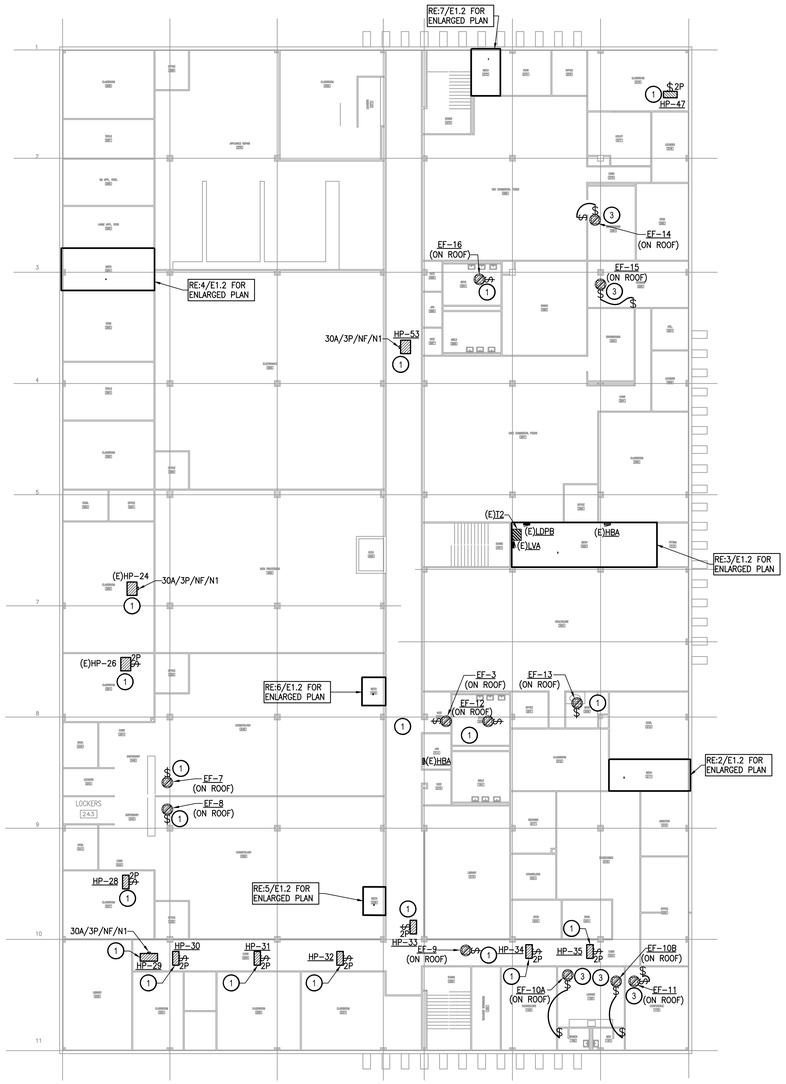
3 ENLARGED MECH. ROOM - DEMOLITION
SCALE: 1/4" = 1'-0"



6 ENLARGED MECH. ROOM - DEMOLITION
SCALE: 1/4" = 1'-0"



2 ENLARGED MECH. ROOM - DEMOLITION
SCALE: 1/4" = 1'-0"



NORTH

1 ELECTRICAL SECOND FLOOR PLAN - TAYLOR CAREER & TECHNICAL EDUCATION CENTER
SCALE: 1/16" = 1'-0"

Project No:	2022-02715-00
Drawn By:	AW
Checked By:	JZ
Date:	09-14-2022
Revision Dates:	

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Project No. 2022-02715-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT
BISD Preparing Our Next Generation

BRADLEY KALMANS
80219
LICENSED PROFESSIONAL ENGINEER
09-14-2022

ELECTRICAL SECOND FLOOR PLANS - TAYLOR CAREER AND TECHNICAL EDUCATION CENTER

E1.2

GENERAL NOTES:

1. EXCEPT AS OTHERWISE NOTED, ALL EXISTING ELECTRICAL WORK WHICH WILL NOT BE RENDERED OBSOLETE & WHICH MAY BE DISTURBED DUE TO ANY CHANGES REQUIRED UNDER THIS CONTRACT, SHALL BE RESTORED TO ITS ORIGINAL OPERATING CONDITION. OTHER ELECTRICAL WORK OR MATERIAL RENDERED OBSOLETE SHALL BE ABANDONED WHERE CONCEALED AND REMOVED WHERE EXPOSED. OLD UNUSED WIRING AND DEVICES SHALL BE REMOVED FROM THE ABANDONED (CONCEALED) CONDUITS. OUTLETS SHALL BE PROVIDED WITH BLANK COVERS. ANY CONDUITS OUT OF MASONRY SURFACE SHALL BE CUT INTO SURFACE AND PATCHED.
2. THE LOCATIONS OF EXISTING CIRCUITS AND EQUIPMENT ARE SHOWN IN AN APPROXIMATE WAY ONLY & HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING ELECTRICAL DEVICES, EQUIPMENT & WIRING BEFORE COMMENCING WORK & AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTORS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL EXISTING PORTIONS OF THE ELECTRICAL SYSTEM.
3. THE CONTRACTOR SHALL REMOVE SUCH EXISTING WORK AS CALLED FOR ON THE DRAWINGS OR AS REQUIRED TO CLEAR THE AREAS OF NEW CONSTRUCTION.
4. IF ANY BRANCH CIRCUIT WIRING FEEDING EQUIPMENT TO REMAIN IN PLACE FOR REUSE IS DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL REPLACE WITH NEW BRANCH CIRCUIT WIRING OF THE SAME SIZE AND TYPE AS EXISTING AT NOT COST TO THE OWNER.
5. VARIABLE FREQUENCY DRIVES FURNISHED BY DIVISION 23.
6. ALL NEW ELECTRICAL FEEDING SHALL BE ROUTED ABOVE GRADE. ROUTE TO AVOID CREATING TRIPPING HAZARDS. FIELD COORDINATE EXACT ROUTING WITH OWNER. UTILIZE EXISTING AND/OR NEW PIPE STANDS AS NEEDED.

ELECTRICAL KEYED NOTES:

1. DISCONNECT EXISTING MECHANICAL EQUIPMENT. REMOVE ASSOCIATED DISCONNECT. PULL CIRCUIT BACK TO SOURCE OR NEAREST DEVICE TO REMAIN.
2. PROVIDE WEATHERPROOF CONNECTION AND WEATHERPROOF DISCONNECT FOR HEAT TRACE ON NEW MAKEUP LINE. COORDINATE MOUNTING HEIGHT ONSITE WITH NEW MAKEUP LINE AND MECHANICAL CONTRACTOR. FEED NEW CIRCUIT FROM 30mA EQUIPMENT EGFI BREAKER.
3. STUB UP CONDUIT AND PENETRATE BUILDING. COORDINATE FINAL LOCATION OF BUILDING PENETRATION WITH OWNER, OTHER TRADES AND EXISTING OBSTACLES.
4. PROVIDE POWER FOR MOTORIZED THREE-WAY DIVERTER. COORDINATE FINAL LOCATION AND CONNECTION WITH MECHANICAL CONTRACTOR.
5. EXISTING FLUID COOLER CHEMICAL TREATMENT SHED. CONTRACTOR SHALL DISCONNECT ANY ELECTRICAL AS NEEDED TO SUPPORT THE CHEMICAL TREATMENT AND REMOVAL OF EXISTING FLUID COOLER. IN ADDITION CONTRACTOR SHALL CONNECT EQUIPMENT UPON COMPLETION OF FLUID COOLER.

EXISTING CONDITIONS/DEMOLITION NOTES

1. CONTRACTOR SHALL VISIT THE SITE BEFORE SUBMITTING A PROPOSAL AND VERIFY EXISTING CONDITIONS. ANY MODIFICATIONS REQUIRED CONTRARY TO THESE DOCUMENTS FOR A COMPLETE AND OPERATING SYSTEM SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
2. CONTRACTOR SHALL DISCONNECT AND REMOVE ANY MECHANICAL, ELECTRICAL OR PLUMBING ITEMS IN THE WAY OF NEW CONSTRUCTION AND NOT BEING REUSED. CONTRACTOR TO KEEP ALL ITEMS THAT ARE TO REMAIN PROTECTED DURING CONSTRUCTION.
3. DEMOLISH CONDUIT AND WIRING ASSOCIATED WITH HVAC EQUIPMENT BEING REMOVED BACK TO SOURCE AND INDICATE ANY OPEN CIRCUIT BREAKER AS SPARE.
4. COORDINATE WITH OWNER/ARCHITECT FOR EXACT DEMOLITION SCOPE OF WORK PRIOR TO COMMENCEMENT OF WORK.

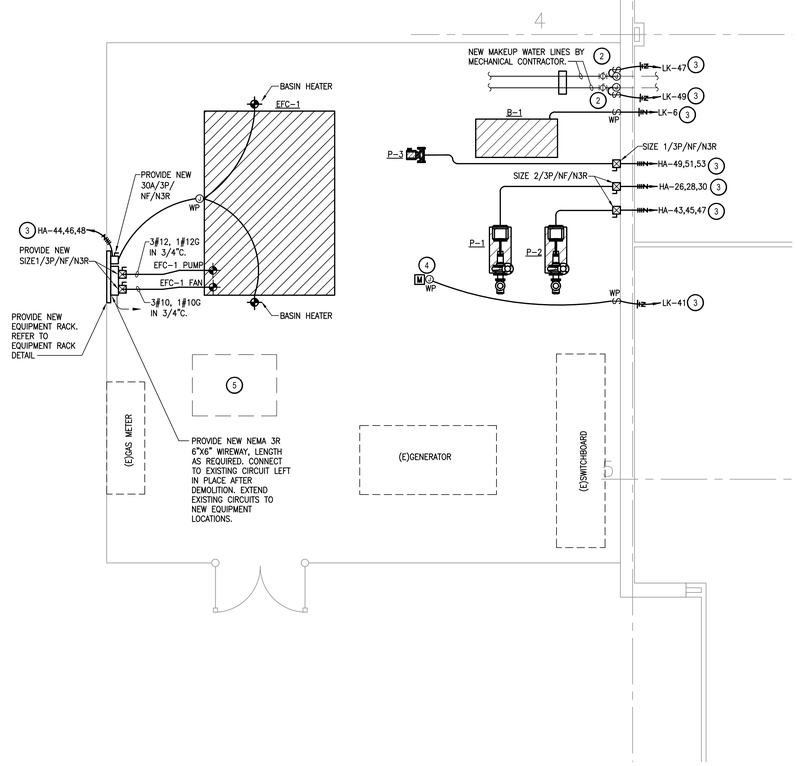
LINETYPE LEGEND

EXISTING TO REMAIN	———
REMOVE EXISTING	———
NEW WORK	———

OWNER OR ITS REPRESENTATIVE SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED FROM THIS PROJECT. CONTRACTOR TO NOTIFY DISTRICT REPRESENTATIVE PRIOR TO DEMOLITION WORK TO DISCUSS ALL RETURNED ITEMS TO DISTRICT.

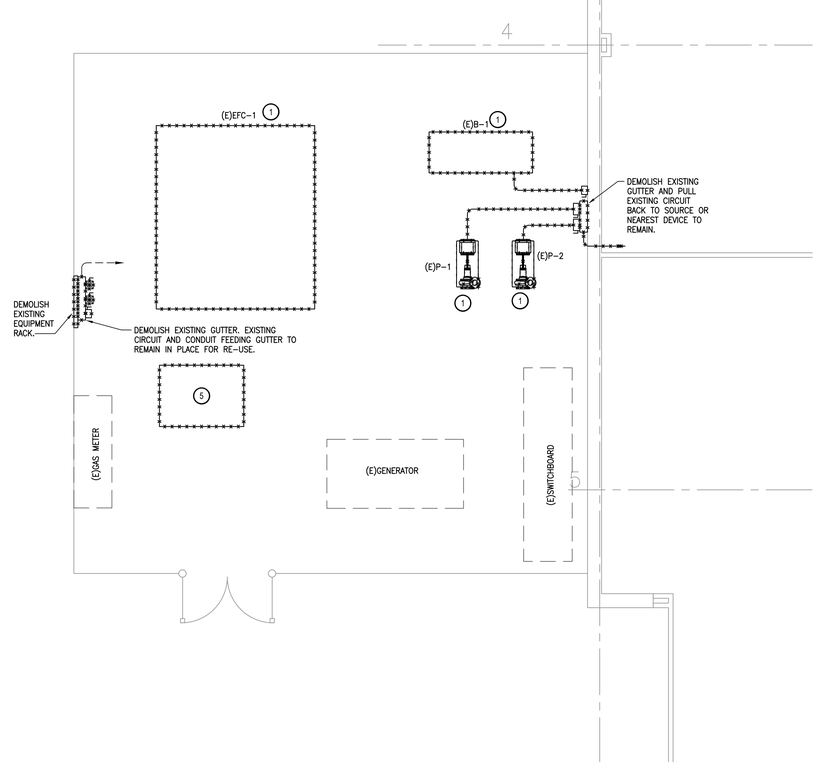
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NORTH

2 **ELECTRICAL ENLARGED CENTRAL PLANT - TAYLOR CAREER & TECHNICAL EDUCATION CENTER**
SCALE: 1/4" = 1'-0"



NORTH

1 **ELECTRICAL DEMOLITION ENLARGED CENTRAL PLANT - TAYLOR CAREER & TECHNICAL EDUCATION CENTER**
SCALE: 1/4" = 1'-0"

Project No: 2022-02715-00
Drawn By: AW
Checked By: JZ
Date: 09-14-2022
Revision Dates:

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BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

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BISD Preparing Our Next Generation

Bradley Kalmans
LICENSED PROFESSIONAL ENGINEER
BRADLEY KALMANS
80219
CENSED
09-14-2022

ELECTRICAL ENLARGED PLANS - TAYLOR CAREER AND TECHNICAL EDUCATION CENTER

E2.1

EXISTING PANEL 'LVA'

LOCATION: ROOM 202

120/208V., 3 PHASE, 4 WIRE, SOLID NEUTRAL, GROUND BAR

400	PANEL AMPERAGE	X	MLO	X	NEMA-1	PROVIDE FEED THRU LUGS
X	SURFACE MOUNTED		MCB		NEMA-3R	PROVIDE 200% NEUTRAL
	RECESS MOUNTED		TVSS		S.S. ENCL.	ISOLATED GROUND BUS

CKT	VA	DESCRIPTION	COND.	BRKR			BRKR	COND.	DESCRIPTION	VA	CKT
1	5179	EXISTING GUTTER	(E)	80/2	A		90/2	(E)	EXISTING GUTTER	6861	2
3	5179	---	(E)	--		B	--	(E)	---	6861	4
5	2111	NEW HP-26 (1)	(E)	40/2			30/2	(E)	NEW HP-28 (1)	2111	6
7	2111	---	(E)	--	A		--	(E)	---	2111	8
9	2111	NEW HP-30 (1)	(E)	40/2		B	30/2	(E)	NEW HP-31 (1)	2111	10
11	2111	---	(E)	--		C	--	(E)	---	2111	12
13	2111	NEW HP-32 (1)	(E)	40/2	A		15/2	(E)	NEW HP-35	1061	14
15	2111	---	(E)	--		B	--	(E)	---	1061	16
17	1061	NEW HP-34	(E)	20/2		C	20/1	(E)	EXISTING GUTTER	600	18
19	1061	---	(E)	--	A		30/2	(E)	NEW HP-33	2111	20
21	2387	EXISTING GUTTER	(E)	80/2		B	--	(E)	---	2111	22
23	2387	---	(E)	--		C			SPACE		24
25	2111	NEW HP-47 (1)	(E)	40/2	A		40/2	(E)	NEW HP-49	2454	26
27	2111	---	(E)	--		B	--	(E)	---	2454	28
29	7205	EXISTING PANEL 'LV'	(E)	100/3		C	20/1	(E)	EXIST RECEPTACLE	180	30
31	7205	---	(E)	--	A		20/1	(E)	EXIST RECEPTACLE	180	32
33	7205	---	(E)	--		B	20/1	(E)	EXIST FIRE CTRL PANEL	200	34
35	2883	EXISTING LOAD	(E)	40/3		C			EXISTING SPACE		36
37	2883	---	(E)	--	A				EXISTING SPACE		38
39	2883	---	(E)	--		B			EXISTING SPACE		40
41		EXISTING SPACE				C			EXISTING SPACE		42

	CONNECTED	NEC
LIGHTING	0.0 KVA	0.0 KVA
RECEPTS	0.0 KVA	0.0 KVA
EXISTING	31.4 KVA	39.3 KVA
HVAC	67.6 KVA	67.6 KVA
MISC	0.0 KVA	0.0 KVA
KITCHEN	0.0 KVA	0.0 KVA
SUBFEED	0.0 KVA	0.0 KVA
TOTAL	99.0 KVA	106.8 KVA

	CONNECTED	AMPS
PHASE A	37.4 KVA	312.0 A
PHASE B	38.8 KVA	323.2 A
PHASE C	22.8 KVA	189.7 A
	TOTAL	99.0 KVA

NEC AMPS
275.0 A
296.8 A

(1) PROVIDE NEW BREAKER

NEW PANEL 'LK'

LOCATION: MECH 107

120/208V., 3 PHASE, 4 WIRE, SOLID NEUTRAL, GROUND BAR

225	PANEL AMPERAGE	X	MLO	X	NEMA-1	PROVIDE FEED THRU LUGS
X	SURFACE MOUNTED		MCB		NEMA-3R	PROVIDE 200% NEUTRAL
	RECESS MOUNTED		TVSS		S.S. ENCL.	ISOLATED GROUND BUS

CKT	VA	DESCRIPTION	COND.	BRKR			BRKR	COND.	DESCRIPTION	VA	CKT
1	360	EXIST RECEPTACLES	(E)	20/1	A		20/1	(E)	EXIST RECEPTACLES	360	2
3	360	EXIST RECEPTACLES	(E)	20/1		B	20/1	(E)	EXIST RECEPTACLES	360	4
5	360	EXIST RECEPTACLES	(E)	20/1			20/1	#10	NEW BOILER	600	6
7	360	EXIST RECEPTACLES	(E)	20/1	A		20/1	(E)	EXISTING LOAD	600	8
9	360	EXIST RECEPTACLES	(E)	20/1		B	40/2	(E)	NEW HP-17	2111	10
11	600	EXISTING LOAD	(E)	20/1			--	(E)	---	2111	12
13	2000	(E) WH-1	(E)	30/2	A		40/2	(E)	NEW HP-19	2111	14
15	2000	---	(E)	--		B	--	(E)	---	2111	16
17	1750	(E) HP-15	(E)	30/2			40/2	(E)	NEW HP-22	2111	18
19	1750	---	(E)	--	A		--	(E)	---	2111	20
21	2111	NEW HP-7	(E)	40/2		B	40/2	(E)	NEW HP-9	2454	22
23	2111	---	(E)	--			--	(E)	---	2454	24
25	2111	NEW HP-6	(E)	40/2	A		40/2	(E)	NEW HP-12	2454	26
27	2111	---	(E)	--		B	--	(E)	---	2454	28
29	822	NEW HP-10	(E)	20/2			40/2	(E)	NEW HP-2	2111	30
31	822	---	(E)	--	A		--	(E)	---	2111	32
33	4000	EXISTING LOAD	(E)	40/2		B	20/1	(E)	EXIST RECEPTACLES	360	34
35	4000	---	(E)	--			20/1	(E)	EXIST RECEPTACLES	600	36
37	4000	EXISTING LOAD	(E)	70/2	A		20/1	(E)	EXISTING A/C CONTROL	200	38
39	4000	---	(E)	--		B	20/1	(E)	EXIST RECEPTACLES	360	40
41		EXISTING SPACE		20/1			20/1	(E)	EXISTING LOAD	600	42
43	1407	NEW HP-4	#10	30/2	A		20/1		NEW SPARE		44
45	1407	---	#10	--		B	20/1		NEW SPARE		46
47	1000	NEW HEAT TRACE (2)	#10	20/1			20/1		NEW SPARE		48
49	1000	NEW HEAT TRACE (2)	#10	20/1	A		20/1		NEW SPARE		50
51		NEW SPARE		20/1		B	20/1		NEW SPARE		52
53		NEW SPARE		20/1			20/1		NEW SPARE		54

	CONNECTED	NEC
LIGHTING	0.0 KVA	0.0 KVA
RECEPTS	0.0 KVA	0.0 KVA
EXISTING	20.5 KVA	25.7 KVA
HVAC	49.0 KVA	49.0 KVA
MISC	2.0 KVA	2.0 KVA
KITCHEN	0.0 KVA	0.0 KVA
SUBFEED	0.0 KVA	0.0 KVA
TOTAL	71.6 KVA	76.7 KVA

	CONNECTED	AMPS
PHASE A	23.8 KVA	198.0 A
PHASE B	26.6 KVA	221.3 A
PHASE C	21.2 KVA	176.9 A
	TOTAL	71.6 KVA

NEC AMPS
198.8 A
213.0 A

(1) PROVIDE NEW BREAKER
(2) PROVIDE NEW 30mA EQUIPMENT GFCI BREAKER

EXISTING PANEL 'LDPA'

LOCATION: MECH 107

120/208V., 3 PHASE, 4 WIRE, SOLID NEUTRAL, GROUND BAR

800	PANEL AMPERAGE		MLO	X	NEMA-1	PROVIDE FEED THRU LUGS
X	SURFACE MOUNTED	X	MCB		NEMA-3R	PROVIDE 200% NEUTRAL
	RECESS MOUNTED		TVSS		S.S. ENCL.	ISOLATED GROUND BUS

CKT	VA	DESCRIPTION	COND.	BRKR			BRKR	COND.	DESCRIPTION	VA	CKT
1	5760	EXISITING PANEL 'LA'	(E)	100/3	A		100/3	(E)	EXISTING PANEL 'LB'	5760	2
3	5760	---	(E)	--		B	--	(E)	---	5760	4
5	5760	---	(E)	--			--	(E)	---	5760	6
7	8640	EXISITING PANEL 'LC'	(E)	150/3	A		100/3	(E)	EXISTING PANEL 'LDA'	5760	8
9	8640	---	(E)	--		B	--	(E)	---	5760	10
11	8640	---	(E)	--			--	(E)	---	5760	12
13	5760	EXISITING PANEL 'LE'	(E)	100/3	A		100/3	(E)	EXISITING PANEL 'LG'	5760	14
15	5760	---	(E)	--		B	--	(E)	---	5760	16
17	5760	---	(E)	--			--	(E)	---	5760	18
19	5760	EXISITING PANEL 'LH'	(E)	100/3	A		200/3	(E)	EXISTING PANEL 'LJ'	11520	20
21	5760	---	(E)	--		B	--	(E)	---	11520	22
23	5760	---	(E)	--			--	(E)	---	11520	24
25	23758	NEW PANEL 'LK' (1)	#4/0	225/3	A				EXISTING SPACE		26
27	26561	---	#4/0	--		B			---		28
29	21231	---	#4/0	--					---		30

	CONNECTED	NEC
LIGHTING	0.0 KVA	0.0 KVA
RECEPTS	0.0 KVA	0.0 KVA
EXISTING	184.7 KVA	230.9 KVA
HVAC	49.0 KVA	49.0 KVA
MISC	2.0 KVA	2.0 KVA
KITCHEN	0.0 KVA	0.0 KVA
SUBFEED	71.6 KVA	71.6 KVA
TOTAL	235.7 KVA	281.9 KVA

	CONNECTED	AMPS
PHASE A	78.5 KVA	654.0 A
PHASE B	81.3 KVA	677.3 A
PHASE C	76.0 KVA	632.9 A
	TOTAL	235.7 KVA

NEC AMPS
654.8 A
783.0 A

(1) PROVIDE NEW BREAKER

EXISTING PANEL 'HBA'

LOCATION: ROOM 214

277/480V., 3 PHASE, 4 WIRE, SOLID NEUTRAL, GROUND BAR

200	PANEL AMPERAGE	X	MLO	X	NEMA-1	PROVIDE FEED THRU LUGS
X	SURFACE MOUNTED		MCB		NEMA-3R	PROVIDE 200% NEUTRAL
	RECESS MOUNTED		TVSS		S.S. ENCL.	ISOLATED GROUND BUS

CKT	VA	DESCRIPTION	COND.	BRKR			BRKR	COND.	DESCRIPTION	VA	CKT
1	2633	NEW HP-29	(E)	20/3	A		20/3	(E)	NEW HP-53	2633	2
3	2633	---	(E)	--		B	--	(E)	---	2633	4
5	2633	---	(E)	--			--	(E)	---	2633	6
7	9305	EXISTING GUTTER	(E)	80/3	A				SPACE		8
9	9305	---	(E)	--		B			SPACE		10
11	9305	---	(E)	--					SPACE		12
13		SPACE			A		30/3	(E)	NEW HP-46	6013.7	14
15		SPACE				B	--	(E)	---	6013.7	16
17		SPACE					--	(E)	---	6013.7	18
19		SPACE			A		20/1		SPARE		20
21		SPACE				B	20/1		SPARE		22
23		SPACE					20/1		SPARE		24
25		SPACE			A		20/1		SPARE		26
27		SPACE				B			SPACE		28
29		SPACE							SPACE		30

	CONNECTED	NEC
LIGHTING	0.0 KVA	0.0 KVA
RECEPTS	0.0 KVA	0.0 KVA
EXISTING	0.0 KVA	0.0 KVA
HVAC	61.8 KVA	61.8 KVA
MISC	0.0 KVA	0.0 KVA
KITCHEN	0.0 KVA	0.0 KVA
SUBFEED	0.0 KVA	0.0 KVA
TOTAL	61.8 KVA	61.8 KVA

	CONNECTED	AMPS
PHASE A	20.6 KVA	74.3 A
PHASE B	20.6 KVA	74.3 A
PHASE C	20.6 KVA	74.3 A
	TOTAL	61.8 KVA

NEC AMPS
74.3 A

EXISTING PANEL 'HB'

LOCATION: MECH 202

277/480V., 3 PHASE, 4 WIRE, SOLID NEUTRAL, GROUND BAR

400	PANEL AMPERAGE	X	MLO	X	NEMA-1	PROVIDE FEED THRU LUGS
X	SURFACE MOUNTED		MCB		NEMA-3R	PROVIDE 200% NEUTRAL
	RECESS MOUNTED		TVSS		S.S. ENCL.	ISOLATED GROUND BUS

CKT	VA	DESCRIPTION	COND.	BRKR			BRKR	COND.	DESCRIPTION	VA	CKT
1	3000	EXISTING LIGHTS	(E)	20/1	A		20/1	(E)	EXISTING LIGHTS	3000	2
3	3000	EXISTING LIGHTS	(E)	20/1		B	20/1	(E)	EXISTING LIGHTS	3000	4
5	3000	EXISTING LIGHTS	(E)	20/1			20/1	(E)	EXISTING LIGHTS	3000	6
7	3000	EXISTING LIGHTS	(E)	20/1	A		20/1	(E)	EXISTING LIGHTS	3000	8
9	3000	EXISTING LIGHTS	(E)	20/1		B	20/1	(E)	EXISTING LIGHTS	3000	10
11	3000	EXISTING LIGHTS	(E)	20/1			20/1	(E)	EXISTING LIGHTS	3000	12
13	3000	EXISTING LIGHTS	(E)	20/1	A		20/1	(E)	EXISTING LIGHTS	3000	14
15	3000	EXISTING LIGHTS	(E)	20/1		B	20/1	(E)	EXISTING LIGHTS	3000	16
17	3000	EXISTING LIGHTS	(E)	20/1			20/1	(E)	EXISTING LIGHTS	3000	18
19	3000	EXISTING LIGHTS	(E)	20/1	A		20/1	(E)	EXISTING LIGHTS	3000	20
21	3000	EXISTING LIGHTS	(E)	20/1		B	20/1	(E)	EXISTING LIGHTS	3000	22
23	3000	EXISTING LIGHTS	(E)	20/1			20/1	(E)	EXISTING LOAD	1000	24
25	25814	EXISTING GUTTER	(E)	150/3	A		20/3	(E)	NEW HP-24	2633	26
27	25814	---	(E)	--		B	--	(E)	---	2633	28
29	25814	---	(E)	--			--	(E)	---	2633	30
31	6014	NEW HP-25	(E)	30/3	A		30/3	(E)	NEW HP-27	6014	32
33	6014	---	(E)	--		B			---	6014	34
35	6014	---	(E)	--			--	(E)	---	6014	36
37	1000	EXISTING LOAD	(E)	20/1	A		20/1	(E)	EXISTING LOAD	1000	38
39	1000	EXISTING LOAD	(E)	20/1		B			EXISTING SPACE		40
41	1000	EXISTING LOAD	(E)	20/1					EXISTING SPACE		42

	CONNECTED	NEC
LIGHTING	0.0 KVA	0.0 KVA
RECEPTS	0.0 KVA	0.0 KVA
EXISTING	74.0 KVA	92.5 KVA
HVAC	121.4 KVA	121.4 KVA
MISC	0.0 KVA	0.0 KVA
KITCHEN	0.0 KVA	0.0 KVA
SUBFEED	0.0 KVA	0.0 KVA
TOTAL	195.4 KVA	213.9 KVA

	CONNECTED	AMPS
PHASE A	66.5 KVA	240.0 A
PHASE B	65.5 KVA	236.4 A
PHASE C	63.5 KVA	229.2 A
	TOTAL	195.4 KVA

NEC AMPS
235.2 A
257.4 A

EXISTING PANEL 'HAA'

LOCATION: ROOM 175

277/480V., 3 PHASE, 4 WIRE, SOLID NEUTRAL, GROUND BAR

200	PANEL AMPERAGE	X	MLO	X	NEMA-1	PROVIDE FEED THRU LUGS
X	SURFACE MOUNTED		MCB		NEMA-3R	PROVIDE 200% NEUTRAL
	RECESS MOUNTED		TVSS		S.S. ENCL.	ISOLATED GROUND BUS

CKT	VA	DESCRIPTION	COND.	BRKR			BRKR	COND.	DESCRIPTION	VA	CKT
1	13303	EXIST DC-1, DC-2	(E)	60/3	A		40/3	(E)	NEW HP-1	8120	2
3	13303	---	(E)	--		B	--	(E)	---	8120	4
5	13303	---	(E)	--			--	(E)	---	8120	6
7		EXISTING SPARE		40/3	A		20/3	(E)	NEW HP-11	4683	8
9		---		--		B	--	(E)	---	4683	10
11		---		--			--	(E)	---	4683	12
13	4683	NEW HP-5 (1)	(E)	40/3	A		40/3	#8	NEW HP-3 (1)	8120	14
15	4683	---	(E)	--		B	--	#8	---	8120	16
17	4683	---	(E)	--			--	#8	---	8120	18
19		EXISTING SPARE		20/1	A		20/1		EXISTING SPARE		20
21		EXISTING SPARE		20/1		B	20/1		EXISTING SPARE		22
23		EXISTING SPARE		20/1		C	20/1		EXISTING SPARE		24
25		EXISTING SPARE		20/1	A		20/1		EXISTING SPARE		26
27		EXISTING SPARE		20/1		B	20/1		EXISTING SPARE		28
29		EXISTING SPARE		20/1		C	20/1		EXISTING SPARE		30
31		EXISTING SPARE		20/1	A		20/1		EXISTING SPARE		32
33		EXISTING SPARE		20/1		B	20/1		EXISTING SPARE		34
35		EXISTING SPARE		20/1		C	20/1		EXISTING SPARE		36
37		EXISTING SPARE		20/1	A		20/1		EXISTING SPARE		38
39		EXISTING SPARE		20/1		B	20/1		EXISTING SPARE		40
41	3000	EXISTING SITE LIGHTS	(E)	20/1		C	20/1	(E)	EXISTING SITE LIGHTS	3000	42

	CONNECTED	NEC
LIGHTING	0.0 KVA	0.0 KVA
RECEPTS	0.0 KVA	0.0 KVA
EXISTING	45.9 KVA	57.4 KVA
HVAC	76.8 KVA	76.8 KVA
MISC	0.0 KVA	0.0 KVA
KITCHEN	0.0 KVA	0.0 KVA
SUBFEED	0.0 KVA	0.0 KVA
TOTAL	122.7 KVA	134.2 KVA

	CONNECTED	AMPS
PHASE A	38.9 KVA	140.5 A
PHASE B	38.9 KVA	140.5 A
PHASE C	44.9 KVA	162.1 A
	TOTAL	122.7 KVA

NEC AMPS
147.7 A
161.5 A

(1) PROVIDE NEW BREAKER

NEW PANEL 'HA'

LOCATION: MECH 107

277/480V., 3 PHASE, 4 WIRE, SOLID NEUTRAL, GROUND BAR

400	PANEL AMPERAGE	X	MLO	X	NEMA-1	PROVIDE FEED THRU LUGS
X	SURFACE MOUNTED		MCB		NEMA-3R	PROVIDE 200% NEUTRAL
	RECESS MOUNTED		TVSS		S.S. ENCL.	ISOLATED GROUND BUS

CKT	VA	DESCRIPTION	COND.	BRKR			BRKR	COND.	DESCRIPTION	VA	CKT
1	2500	EXISTING LIGHTS	(E)	20/1	A		20/1	(E)	EXISTING LIGHTS	2500	2
3	2500	EXISTING LIGHTS	(E)	20/1		B	20/1	(E)	EXISTING LIGHTS	2500	4
5	2500	EXISTING LIGHTS	(E)	20/1		C	20/1	(E)	EXISTING LIGHTS	2500	6
7	2500	EXISTING LIGHTS	(E)	20/1	A		20/1	(E)	EXISTING LIGHTS	2500	8
9	2500	EXISTING LIGHTS	(E)	20/1		B	20/1	(E)	EXISTING LIGHTS	2500	10
11	2500	EXISTING LIGHTS	(E)	20/1		C	20/1	(E)	EXISTING LIGHTS	2500	12
13	2500	EXISTING LIGHTS	(E)	20/1	A		20/1	(E)	EXISTING LIGHTS	2500	14
15	2500	EXISTING LIGHTS	(E)	20/1		B	20/1	(E)	EXISTING LIGHTS	2500	16
17	2500	EXISTING LIGHTS	(E)	20/1		C	20/1	(E)	EXISTING LIGHTS	2500	18
19	2500	EXISTING LIGHTS	(E)	20/1	A		60/3	(E)	EXIST A/C METAL TRADES	13300	20
21	2500	EXISTING LIGHTS	(E)	20/1		B	--	(E)	---	13300	22
23	2500	EXISTING LIGHTS	(E)	20/1		C	--	(E)	---	13300	24
25	6930	NEW EFC-1	(E)	100/3	A		70/3	#4	NEW P-1	6650	26
27	6930	---	(E)	--		B	--	#4	---	6650	28
29	6930	---	(E)	--		C	--	#4	---	6650	30
31	10780	EXISTING GUTTER	(E)	60/3	A		40/3	(E)	NEW HP-18	6014	32
33	10780	---	(E)	--		B	--	(E)	---	6014	34
35	10780	---	(E)	--		C	--	(E)	---	6014	36
37	13378	EXISTING GUTTER	(E)	90/3	A		60/3	(E)	EXISTING LOAD	13300	38
39	13378	---	(E)	--		B	--	(E)	---	13300	40
41	13378	---	(E)	--		C	--	(E)	---	13300	42
43	6650	NEW P-2	#4	70/3	A		20/3	#10	EFC-1 BASIN HEATER	3333	44
45	6650	---	#4	--		B	--	#10	---	3333	46
47	6650	---	#4	--		C	--	#10	---	3333	48
49	582	NEW P-3	#12	20/3	A				NEW SPACE		50
51	582	---	#12	--		B			NEW SPACE		52
53	582	---	#12	--		C			NEW SPACE		54

	CONNECTED	NEC
LIGHTING	0.0 KVA	0.0 KVA
RECEPTS	0.0 KVA	0.0 KVA
EXISTING	132.3 KVA	165.4 KVA
HVAC	151.2 KVA	151.2 KVA
MISC	10.0 KVA	10.0 KVA
KITCHEN	0.0 KVA	0.0 KVA
SUBFEED	0.0 KVA	0.0 KVA
TOTAL	293.5 KVA	326.6 KVA

	CONNECTED	AMPS
PHASE A	98.4 KVA	355.3 A
PHASE B	98.4 KVA	355.3 A
PHASE C	98.4 KVA	355.3 A
	TOTAL	293.5 KVA

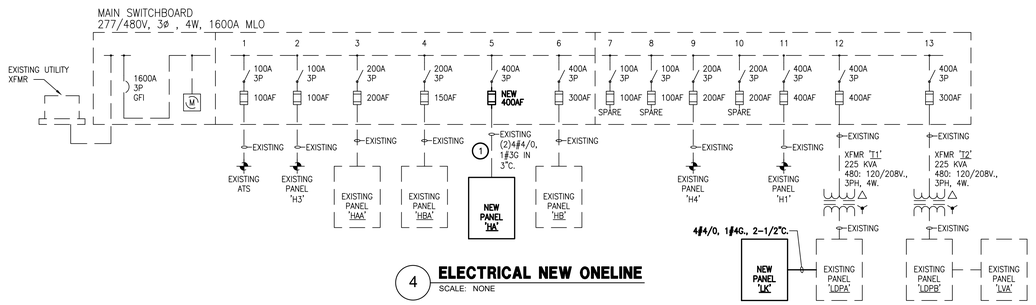
NEC AMPS
353.2 A
393.0 A

ELECTRICAL LOAD ANALYSIS

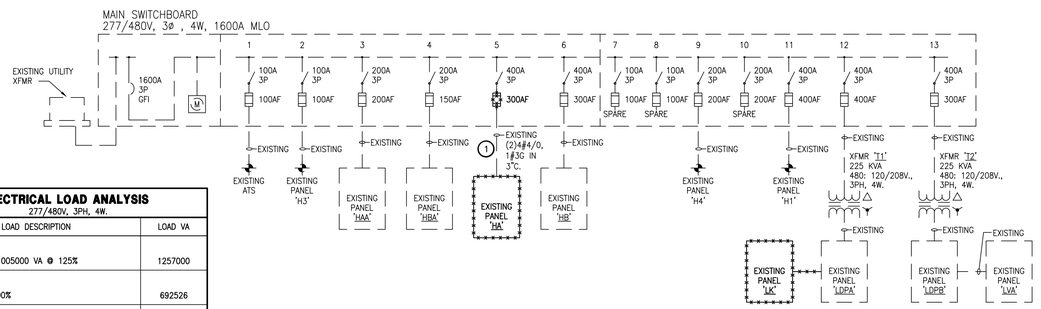
277/480V, 3PH, 4W.

LOAD DESCRIPTION	LOAD VA
EXISTING LOAD	
ORIGINAL PEAK 1005000 VA @ 125%	1257000
REMOVED LOAD	
694.3 KVA @ 100%	692526
MISCELLANEOUS	2000
HVAC - FANS, AHU'S	577497
25% LARGEST MOTOR (25HP)	7067
TOTAL	1151038

1151038VA / (480V*√3) = 1385A
EXISTING 1600A SERVICE PROVIDED



4 **ELECTRICAL NEW ONELINE**
SCALE: NONE



3 **ELECTRICAL DEMOLITION ONELINE**
SCALE: NONE

LINETYPE LEGEND

EXISTING TO REMAIN	— — — —
EXISTING TO DEMOLISH	- - - - - - - - - -
NEW WORK	————

SYMBOL LEGEND

SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
MOTOR CONTROLLERS AND EQUIPMENT	
	DISCONNECT SWITCH
S	1P-20A MOTOR RATED SWITCH U.O.N.
ELECTRICAL EQUIPMENT	
	277/480V PANELBOARD
	120/208V PANELBOARD
CIRCUITING	
————	CONDUIT
- - - -	CONDUIT BELOW FLOOR, SLAB, OR GRADE
#6	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 HOMERUN

GENERAL NOTE:
ALL EXTERIOR BUILDING ELECTRICAL EQUIPMENT TO BE WEATHERPROOF

PANELBOARD CIRCUIT DIRECTORY:

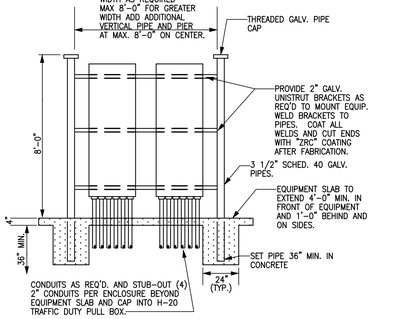
CONTRACTOR SHALL RECORD AND/OR PRESERVE THE EXISTING CIRCUIT DIRECTORY, IF ANY, FOR THE SOLE PURPOSE UPON COMPLETION OF NEW WORK OF PRODUCING A NEW CIRCUIT DIRECTORY.

CONTRACTOR SHALL PROVIDE AS PART OF THE CONSTRUCTION DOCUMENTS A NEW, NEATLY TYPED DIRECTORY. CONTRACTOR SHALL LEGIBLY IDENTIFY AS TO ITS CLEAR, EVIDENT, AND SPECIFIC PURPOSE OR USE, LOADS SERVED AND LOCATION AND/OR THE PANELBOARD SCHEDULE ON THE DRAWINGS. THE WORD "EXISTING" SHALL NOT BE USED ON PANELBOARD DIRECTORIES. SPARE BREAKERS ARE TO BE LISTED AS "SPARE". SPACES WITH NO BREAKERS ARE TO BE LEFT BLANK. REFER TO NEC-2020: 408.4(A) FOR DETAILS.

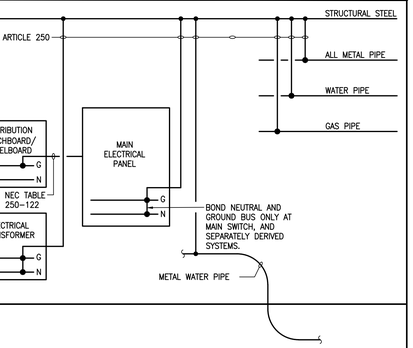
CONTRACTOR SHALL PERMANENTLY LABEL AS PART OF THE CONSTRUCTION DOCUMENTS ALL SWITCHBOARDS, SWITCHGEAR AND PANELBOARDS TO INDICATE EACH POWER SOURCE. REFER TO NEC-2020: 408.4(B) FOR DETAILS.

ELECTRICAL KEYED NOTES:

1 CONTRACTOR TO FIELD VERIFY EXISTING FEEDER. PROVIDE NEW FEEDER AS INDICATED IF EXISTING FEEDER IS LESS THAN (2) 4#3/0, 1#2G IN 2"C.



2 **ELECTRICAL EQUIPMENT RACK MOUNT DETAIL**
SCALE: NONE



1 **GROUNDING DETAIL**
SCALE: NONE

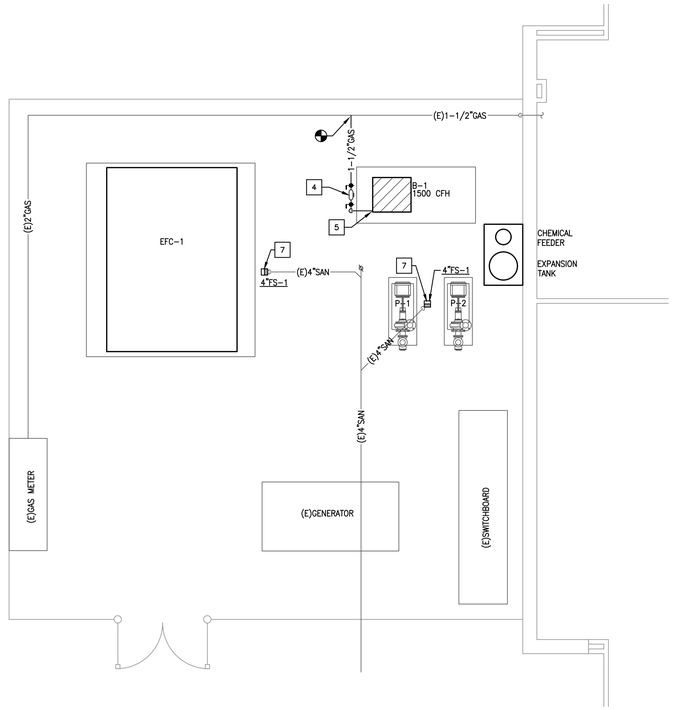
Project No: 2022-02715-00
Drawn By: AW
Checked By: JZ
Date: 09-14-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

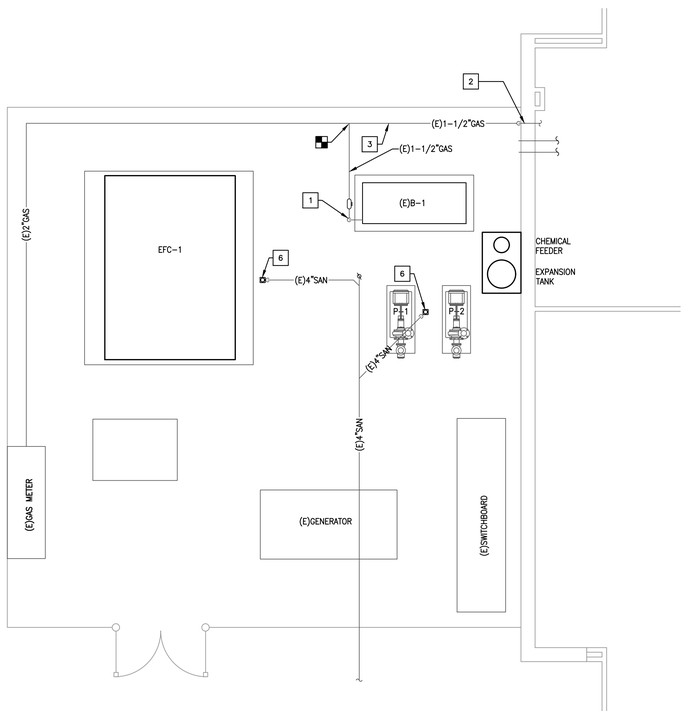
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SALAS O'



NORTH

1 **PLUMBING ENLARGED CENTRAL PLANT - TAYLOR CAREER & TECHNICAL EDUCATION CENTER**
SCALE: 1/4" = 1'-0"

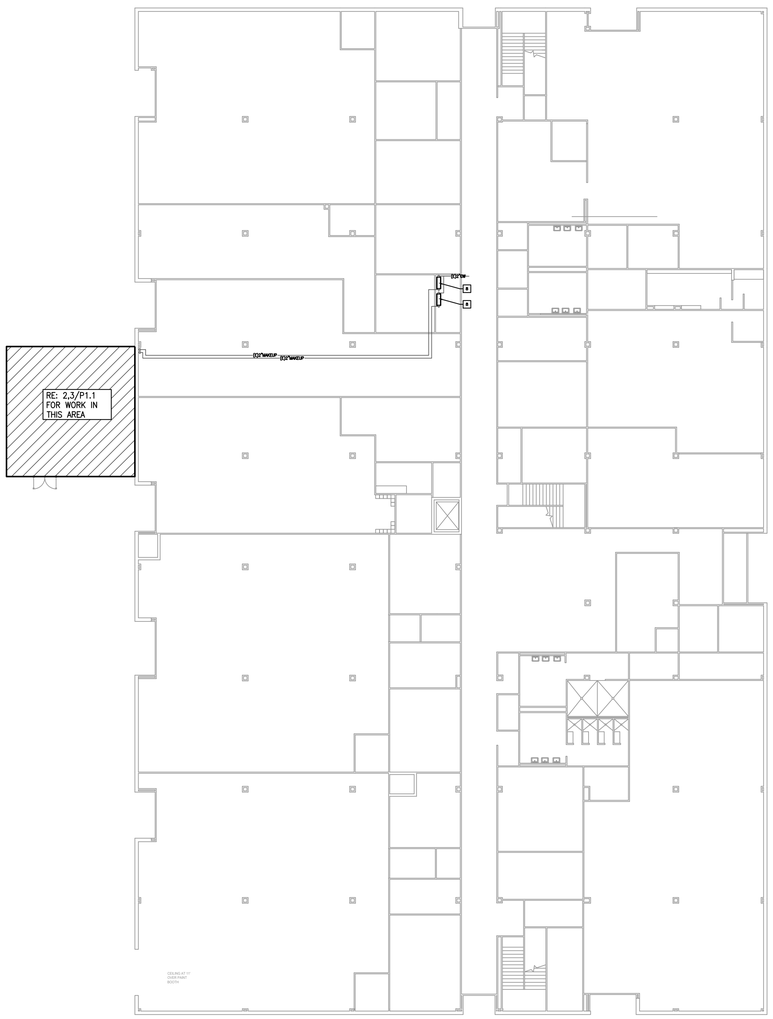


NORTH

1 **PLUMBING DEMOLITION ENLARGED CENTRAL PLANT - TAYLOR CAREER & TECHNICAL EDUCATION CENTER**
SCALE: 1/4" = 1'-0"

PLUMBING KEYED NOTES:

1. DEMO EXISTING GAS CONNECTION AND REGULATOR FOR REMOVAL OF EXISTING BOILER BY MECHANICAL.
2. GAS LINE TO BULDING IS TO REMAIN.
3. 1-1/2" GAS PIPE TO REMAIN
4. INSTALL NEW GAS REGULATOR SIZED FOR 1500 CFH DEMAND TO 5 PSI TO 8 OZ. FOR NEW BOILER. REFER TO M5.1 FOR BOILER SCHEDULE.
5. FIELD VERIFY EXISTING GAS LOCATION AND COORDINATE WITH MECHANICAL FOR GAS INLET.
6. EXISTING FLOOR DRAIN TO BE REMOVED AND REPLACED WITH NEW. REFER TO FLOOR PLAN FOR NEW.
7. REFER TO DETAIL 3/P3.1 FOR OUTDOOR INSTALLATION DETAIL.
8. EXISTING 2" REDUCED PRESSURE ZONE BACKFLOW PREVENTER TO BE REMOVED AND REPLACED WITH NEW REDUCED PRESSURE ZONE BACKFLOW PREVENTER. WATTS #LF009-QT. MODIFY EXISTING PIPING AS NECESSARY TO MAKE CONNECTIONS.



NORTH

1 **PLUMBING FIRST FLOOR PLAN - TAYLOR CAREER & TECHNICAL EDUCATION CENTER**
SCALE: 1/16" = 1'-0"

Project No: 2022-02715-00
Drawn By: TR
Checked By: EH
Date: 09-14-2022
Revision Dates:

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Project No. 2022-02715-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD
Preparing Our Next Generation

BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
09-14-2022

PLUMBING FIRST FLOOR PLANS - TAYLOR CAREER AND TECHNICAL EDUCATION CENTER

P1.1

PLUMBING GENERAL NOTES

1. WITHIN THE EXISTING BUILDING, EXISTING WATER, WASTE AND VENT SERVICES ARE TO BE MODIFIED AS REQUIRED AND REUSED FOR THE INSTALLATION OF NEW AND/OR RELOCATED PLUMBING FIXTURES. REFER TO PLUMBING FLOOR PLANS FOR POINTS OF CONNECTION.
2. WITHIN THE EXISTING BUILDING, SAWCUT AND REMOVE EXISTING FLOOR SLAB AS REQUIRED TO PROVIDE NEW AND/OR RELOCATED PLUMBING FIXTURES, CLEANOUTS, AND UNDERSLAB WASTE AND VENT PIPING. PATCH AND REFINISH FLOOR TO MATCH EXISTING.
3. IN AREAS WHERE THE FLOOR SLAB IS REMOVED, CONTRACTOR SHALL ALSO REMOVE UNDERSLAB WASTE AND VENT PIPING WHICH SERVES FIXTURES DESIGNATED FOR REMOVAL. PRIOR TO ANY REMOVAL, FIELD VERIFY THAT LINES TO BE REMOVED DO NOT SERVE ANY EXISTING FIXTURES TO REMAIN OR NEW FIXTURES TO BE INSTALLED.
4. IN AREAS WHERE THE FLOOR SLAB IS NOT REMOVED, CONTRACTOR SHALL ABANDON IN PLACE ANY UNDERSLAB WASTE AND VENT PIPING NO LONGER NEEDED, UNLESS THE PIPING MUST BE REMOVED TO ACCOMMODATE NEW CONSTRUCTION. IF NEW WORK DOES NOT NECESSITATE THEIR REMOVAL, CUT AND PLUG SUCH LINES BELOW SLAB, AND PATCH FLOOR TO MATCH EXISTING.
5. FIELD VERIFY EXACT LOCATION, SIZE, DEPTH, DIRECTION OF FLOW, CAPACITY, PIPE MATERIAL AND CONDITION OF EXISTING WASTE PIPING PRIOR TO BEGINNING CONSTRUCTION. ENSURE THAT PROPER CONNECTIONS TO AND EXTENSION OF SUCH UTILITIES CAN BE MADE.
6. WASTE LINES TO BE RE-USED OR RECONNECTED TO SHALL BE THOROUGHLY RODDED OUT AND FLUSHED TO ENSURE THEY ARE FREE FROM BLOCKAGES.
7. CONTRACTOR SHALL COORDINATE ROUTING OF PIPING BELOW SLAB WITH COLUMN FOOTINGS, GRADE BEAMS, UNDERGROUND PLUMBING AND ELECTRICAL UTILITIES, AND OTHER SUB-SURFACE BUILDING ELEMENTS.
8. CONTRACTOR SHALL COORDINATE ROUTING OF PIPING IN CEILING SPACES WITH MECHANICAL AND ELECTRICAL EQUIPMENT, DUCTWORK AND CONDUIT. SHOULD A CONFLICT OCCUR THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER PRIOR TO INSTALLING AN ALTERNATE PIPING PLAN.
9. CONTRACTOR TO COORDINATE ALL REMODEL WORK WITH THE WORK OF OTHER TRADES TO AVOID CONFLICTS AND TO MINIMIZE INTERRUPTION OF SERVICES.
10. COORDINATE ALL FIXTURE AND EQUIPMENT LOCATIONS AND CONNECTION REQUIREMENTS WITH LATEST ARCHITECTURAL DRAWINGS AND SPECIFICATIONS PRIOR TO ANY ROUGH-INS.
11. DO NOT ROUGH-IN FROM THESE DRAWINGS. REFER TO LATEST ARCHITECTURAL DRAWINGS FOR DIMENSIONED LOCATIONS.
12. CONTRACTOR TO FIELD VERIFY AS NECESSARY THE EXACT ROUTING AND SIZES OF ALL PIPING.
13. ALL WORK, METHODS AND INSTALLATIONS INVOLVED IN THE PLUMBING DESIGN SHALL BE IN ACCORDANCE WITH THE CITY BUILDING CODE, INSPECTION REGULATIONS AND ALL OTHER OFFICIALS HAVING JURISDICTION.
14. THE PROPER INSTALLATION OF NEW FIXTURES AND THE PROPER CONTINUED OPERATION OF EXISTING FIXTURES TO REMAIN SHALL DETERMINE THE EXTENT AND NATURE OF PLUMBING REMODEL WORK.
15. EACH VENT SHALL TERMINATE VERTICALLY NOT LESS THAN 6" ABOVE ROOF, MAINTAIN MINIMUM 10'-0" DISTANCE BETWEEN VENT TERMINALS THROUGH ROOF AND ALL FRESH AIR INTAKES, AND A MINIMUM 5'-0" FROM ANY EXTERIOR WALL.
16. PRIOR TO BEGINNING CONSTRUCTION, COORDINATE BUILDING BACKFLOW PREVENTION REQUIREMENTS WITH THE LOCAL AUTHORITY HAVING JURISDICTION AND PROVIDE AS DIRECTED.

PLUMBING PIPING LEGEND

SYMBOLS	DESCRIPTION
SAN	SANITARY OR WASTE PIPING ABOVE GRADE (SAN)
SAN	SANITARY OR WASTE PIPING BELOW GRADE (SAN)
GW	GREASE WASTE PIPING (GW)
GW	GREASE WASTE PIPING BELOW GRADE (GW)
SD	STORM DRAIN PIPING (SD)
SD	STORM DRAIN PIPING BELOW GRADE (GW)
SSD	SUB-SOIL DRAIN OR FOOTING DRAIN (SSD)
AW	ACID WASTE PIPING (AW)
AW	ACID WASTE PIPING BELOW GRADE (AW)
PD	PUMPED DISCHARGE (PD)
CD	CONDENSTATE DRAIN PIPING (CD)
D	CONDENSTATE – INDIRECT DRAIN PIPING (D)
	VENT PIPING (V)
CW	COLD WATER PIPING (CW)
HW	HOT WATER PIPING (HW)
HWR	HOT WATER RETURN PIPING (HWR)
SCW	SOFT COLD WATER PIPING (SCW)
CDW	CHILLED DRINKING WATER PIPING (CDW)
TP	TRAP PRIMER LINE (TP)
F	FIRE PROTECTION PIPING (F)
AS	AUTOMATIC SPRINKLER PIPING (AS)
GAS	NATURAL GAS PIPING (G)
GV	GAS VENT PIPING (GV)
AIR	COMPRESSED AIR PIPING (A)
	FLOW DIRECTIONAL ARROW
	SHUT-OFF VALVE
	BALANCING VALVE (BV)
	SOLENOID VALVE (SV)
	BALL VALVE (BV)
	BUTTERFLY VALVE
	LUBRICATED PACKED PLUG STOP STOP COCK (PC)
	HORIZONTAL SWING CHECK
	UNION
	HORIZONTAL SWING CHECK
	REDUCER OR INCREASER
	ECCENTRIC REDUCER
	REDUCED PRESSURE BACKFLOW PREVENTER (RPBFP)
	PIPING DOWN
	RISE OR DROP PIPING
	PIPING UP –OR– PIPING UP & DOWN
	CAP ON END OF PIPE
	CLEANOUT (WALL OR CEILING) (CO)
	FLOOR CLEANOUT (FCO)
	EXTERIOR CLEANOUT WITH 18"x18"x4" CONCRETE PAD (ECO)
	TWO-WAY CLEANOUT (PROVIDE 18"x24"x4" CONCRETE PAD OUTSIDE)
	FIRE DEPARTMENT VALVE AT RISER
	FIRE HYDRANT
	FIRE DEPARTMENT CONNECTION
	PRESSURE REDUCING VALVE (PRV)
	BRANCH CONNECTION OUT OF TOP
	BRANCH CONNECTION OUT OF BOTTOM
	BRANCH CONNECTION OUT OF SIDE
	WYE & 1/8TH BEND BRANCH CONNECTION
	WYE BRANCH CONNECTION
	HOSE BIBB
	PRESSURE GAUGE WITH COCK
	THERMOMETER
	GAS PRESSURE REGULATOR
	TEST COCK
	GAS METER
	WALL HYDRANT
	VALVE IN RISE
	ASME TEMPERATURE & PRESSURE RELIEF VALVE
	VACUUM RELIEF VALVE
	ANGLE VALVE
	OS&Y VALVE
	ROOF DRAIN
	REFER TO KEYED NOTE
FS	FLOW SWITCH
	FLOOR SINK (FS)
	FLOOR DRAIN (FD)
	FLOOR DRAIN WITH P-TRAP (FD)
	FLOOR DRAIN WITH P-TRAP AT 45° ANGLE (FD)
	HUB DRAIN (HD)
	ACCESS PANEL FOR TRAP PRIMER OR SHOCK ABSORBER
AP	ACCESS PANEL LOCATION SYMBOL
A	SHOCK ABSORBER
	AIR CHAMBER
(E)	EXISTING
(N)	NEW
VTR	VENT THRU ROOF
B.F.F.	BELOW FINISHED FLOOR
A.F.F.	ABOVE FINISHED FLOOR
	NEW CONNECTION
IE=100.00'	INVERT ELEVATION
1	DELTA CHANGE SYMBOL
P 1 4" VTR	RISER FLAG

PLUMBING MATERIAL LIST

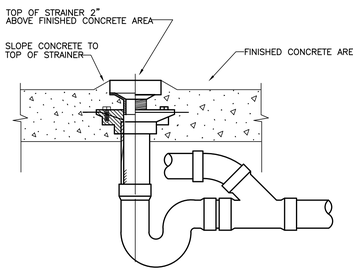
GAS PIPING SHALL BE

PIPE 2" AND SMALLER. PROVIDE SCHEDULE 40 ASTM A 53 BLACK STEEL WITH FACTORY FABRICATED SOCKET WELD FITTINGS.

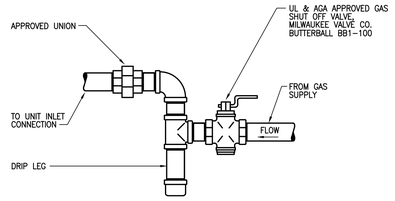
PIPE LARGER THAN 2", USE SCHEDULE 40 ASTM A 53 BLACK STEEL PIPE WITH LONG RADIUS WELD FITTINGS.

PLUMBING FIXTURE SCHEDULE

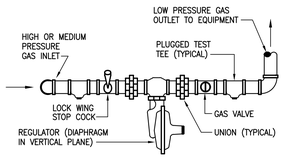
TYPE:	FS-1
SERVICE:	MECHANICAL EQUIPMENT CONDENSATE
DESCRIPTION:	CAST IRON 8" SQUARE FLOOR SINK WITH 6" DEEP SUMP, A.R.E. INTERIOR, ALUMINUM DOME BOTTOM STRAINER, STAINLESS FRAME AND HALF GRATE, ANCHOR FLANGE, CLAMPING COLLAR WADE #9110-85-15-26-48
TRAP SEAL:	PROVIDE PRO-SET SYSTEMS, INC. TRAP GUARD FACTORY FITTED TO MATCH EACH FLOOR SINK BY SIZE, MODEL, AND MANUFACTURER.
ROUGH-IN:	REFER TO FLOOR PLANS FOR SIZES. COORDINATE FINAL LOCATION WITH ARCHITECTURAL DRAWINGS / EQUIPMENT PLACEMENT.



3 OUTDOOR CONDENSATE DRAIN
SCALE: NONE — C004-11/12/08



2 GAS CONNECTION
SCALE: NONE — GA07-11/12/08



NOTE: REFERENCE DRAWINGS FOR PIPE SIZES.

1 GAS PRESSURE REGULATOR INSTALLATION
SCALE: NONE — GA02-11/12/08

Project No: 2022-02715-00
Drawn By: TR
Checked By: EH
Date: 09-14-2022
Revision Dates:

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Project No. 2022-02715-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD Preparing Our Next Generation

BRADLEY KALMANS
80219
LICENSED PROFESSIONAL ENGINEER
09-14-2022

PLUMBING SCHEDULES, LEGENDS, AND DETAILS - TAYLOR CAREER AND TECHNICAL EDUCATION CENTER

P3.1

THROUGHOUT CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY AND RENTAL EQUIPMENT, INCLUDING POWER FOR SUCH EQUIPMENT, AND TO PROVIDE PHASING TO ENSURE SPACE TEMPERATURE AND HUMIDITY IS MAINTAINED. REFER TO SPECIFICATION 23 05 11 MECHANICAL ALTERATIONS PROJECT PROCEDURES, ARTICLE 3.8 FOR ADDITIONAL REQUIREMENTS. CONTRACTOR SHALL REVIEW ALL REQUIREMENTS PRIOR TO BID.

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. CONTROLS WORK SHOWN AS A PART OF THE PROJECT ON THIS CAMPUS WILL REQUIRE INCIDENTAL ARCHITECTURAL CEILING WORK. ALL SUCH WORK SHALL BE INCLUDED IN THE CONTRACTORS BID. THIS WORK SHALL BE PERFORMED WITHOUT ANY IMPACT TO THE CONSTRUCTION SCHEDULE AND/OR ADDITIONAL COST.
4. CONTRACTOR SHALL REMOVE AND REPLACE CEILING WHERE REQUIRED TO COMPLETE THE INDICATED SCOPE OF CONTROLS WORK. EXISTING CEILING SHALL BE RE-INSTALLED IN THE EXACT CONDITION IT WAS REMOVED IN. DAMAGED CEILING AND/OR CEILING TILES SHALL BE REPLACED TO MATCH CONDITIONS EXISTING PRIOR TO THE BEGINNING OF CONSTRUCTION. IF A MATCH IS NOT POSSIBLE, CONTRACTOR SHALL REPLACE ALL CEILING FROM WALL TO WALL OR BOUNDARY SEPARATION IN CORRIDOR, CLASSROOM, OR ANY OTHER SPACE.
5. REMOVE ALL EXISTING SPACE MOUNTED TEMPERATURE AND HUMIDITY SENSORS NOT BEING REUSED. PROVIDE STAINLESS STEEL COVER PLATES.
6. OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL HVAC EQUIPMENT BEING REMOVED FROM THIS PROJECT. THIS INCLUDES BUT NOT LIMITED TO CONDENSING UNITS, AIR HANDLING UNITS, AND CONTROLS.
7. ALL EXISTING SUPPLY, RETURN, OUTSIDE AIR, AND EXHAUST SHALL BE EXISTING TO REMAIN UNLESS OTHERWISE NOTED.
8. ALL EXISTING FIRE DAMPERS SHALL BE EXISTING TO REMAIN UNLESS OTHERWISE NOTED.

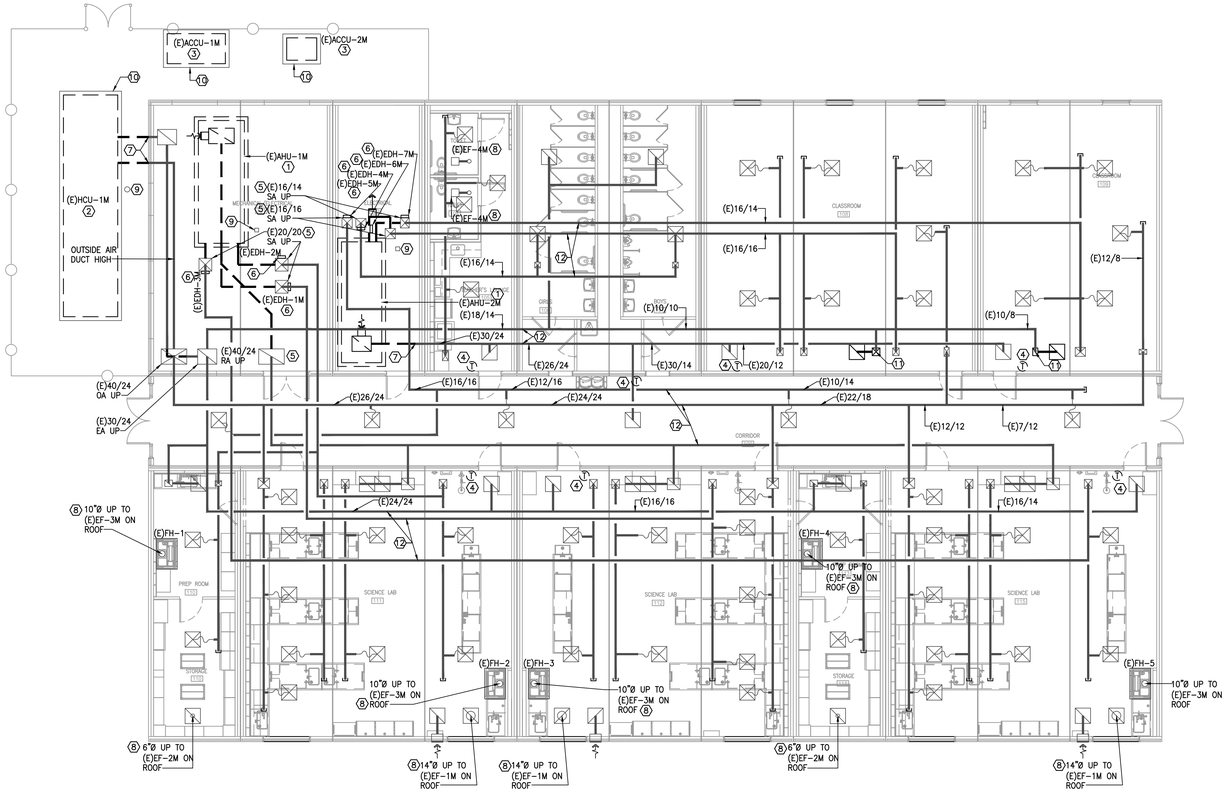
DEMOLITION KEYED NOTES:

1. REMOVE EXISTING MULTIZONE AIR HANDLING UNIT, ASSOCIATED CONTROLS, CONCRETE HOUSEKEEPING PAD, AND ALL OTHER ASSOCIATED APPURTENANCES.
2. REMOVE EXISTING HUMIDITY CONTROL UNIT, CONTROLS, AND ALL ASSOCIATED APPURTENANCES.
3. REMOVE EXISTING CONDENSING UNIT, ALL ASSOCIATED REFRIGERANT PIPING, AND ALL ASSOCIATED APPURTENANCES.
4. REMOVE EXISTING TEMPERATURE SENSOR AND ALL ASSOCIATED CONTROL WIRING.
5. REMOVE EXISTING DUCTWORK BACK TO 0'-12" BELOW EXISTING STRUCTURE.
6. REMOVE EXISTING ELECTRIC DUCT HEATER AND ALL ASSOCIATED APPURTENANCES.
7. REMOVE EXISTING DUCTWORK BACK TO POINT INDICATED.
8. EXISTING EXHAUST FAN TO REMAIN.
9. EXISTING FLOOR DRAIN TO REMAIN.
10. EXISTING CONCRETE HOUSEKEEPING PAD TO REMAIN.
11. REMOVE EXISTING DUCTWORK UP TO 0'-12" BELOW EXISTING FIRE DAMPER. CAP EXISTING DUCTWORK AIR TIGHT BELOW EXISTING FIRE DAMPER.
12. EXISTING MAIN DUCTWORK TO REMAIN. ALL ASSOCIATED DAMPERS, DIFFUSERS SHALL REMAIN UNLESS OTHERWISE NOTED.

DEMO SYMBOL LEGEND

RENOVATIONS	
	ITEM TO REMAIN
	ITEM TO BE REMOVED

BMCS NOTE:
EXISTING CONTROL SYSTEM IS BY AUTOMATED LOGIC.
REFER TO BMCS SPECIFICATION FOR MORE INFORMATION.



NORTH

1 **MECHANICAL DEMOLITION FLOOR PLAN - MARSHALL MS**
SCALE: 1/8" = 1'-0"

Project No: 2022-02715-00
Drawn By: BB
Checked By: VP
Date: 09-14-2022
Revision Dates:

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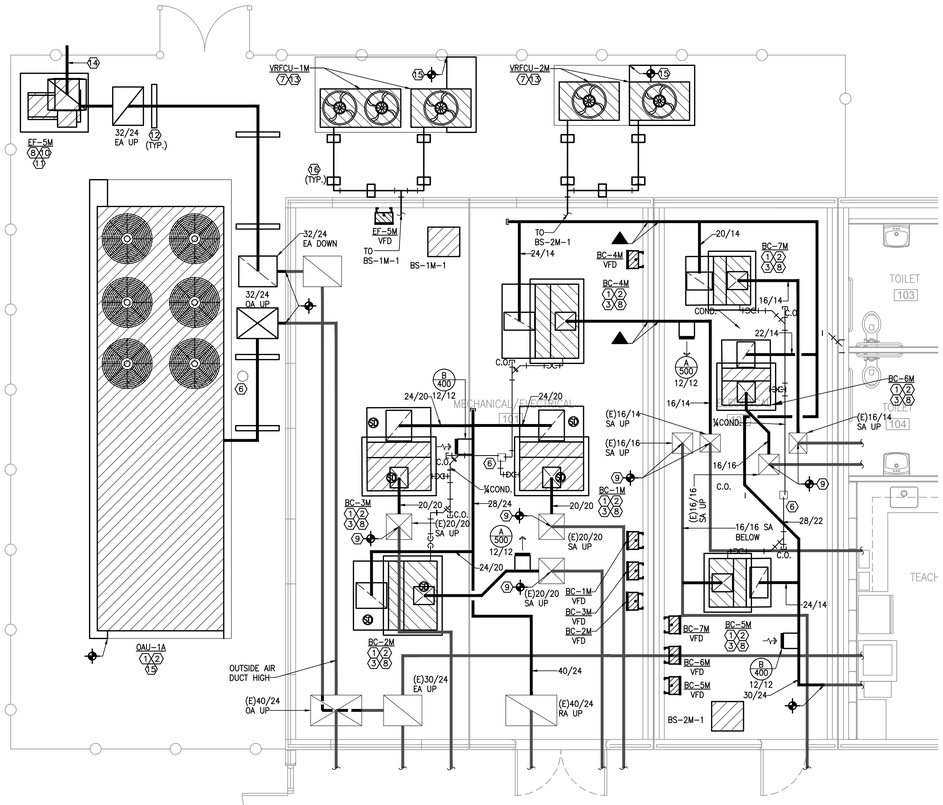
BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT
BISD Preparing Our Next Generation

REGISTERED PROFESSIONAL ENGINEER
BRADLEY KALMANS
80219
LICENSED
09-14-2022

MECHANICAL DEMOLITION FLOOR PLANS - MARSHALL MS

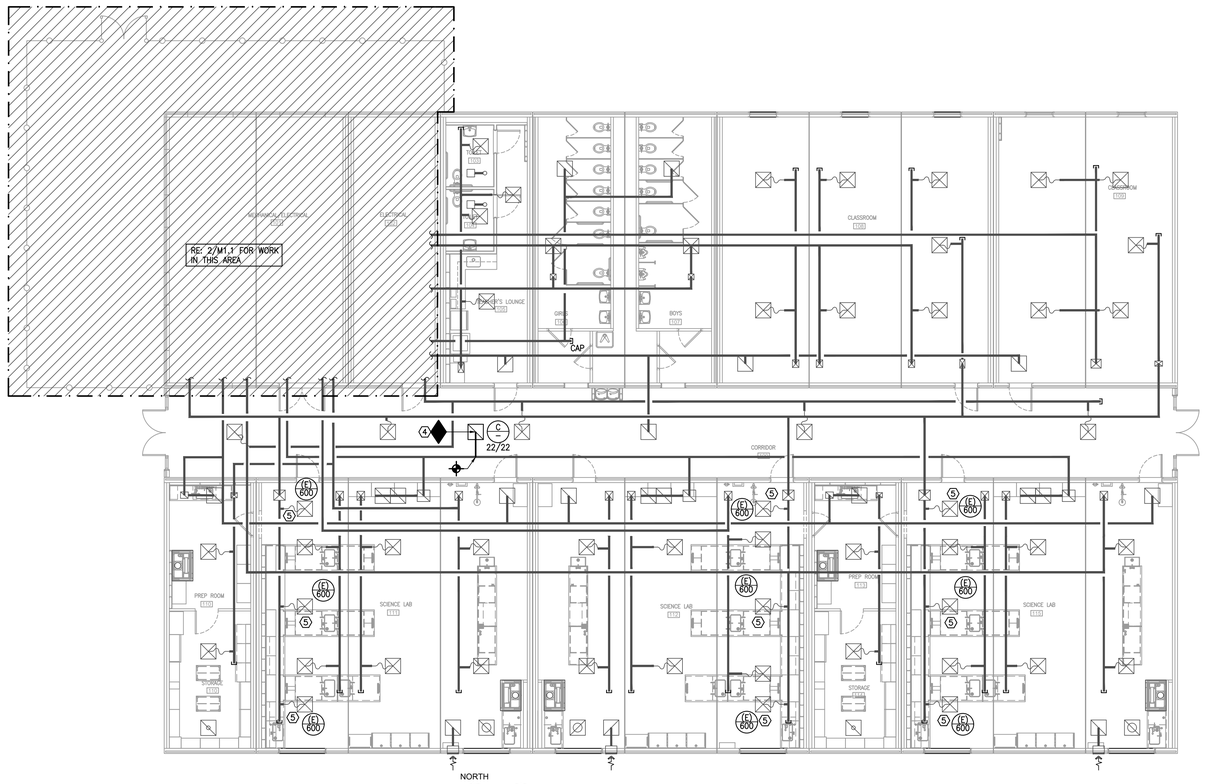
M0.1



NORTH

2 MECHANICAL ENLARGED FLOOR PLAN - MARSHALL MS

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



NORTH

1 MECHANICAL FLOOR PLAN - MARSHALL MS

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

THROUGHOUT CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY AND RENTAL EQUIPMENT, INCLUDING POWER FOR SUCH EQUIPMENT, AND TO PROVIDE PHASING TO ENSURE SPACE TEMPERATURE AND HUMIDITY IS MAINTAINED. REFER TO SPECIFICATION 23 05 11 MECHANICAL ALTERATIONS PROJECT PROCEDURES, ARTICLE 3.8 FOR ADDITIONAL REQUIREMENTS. CONTRACTOR SHALL REVIEW ALL REQUIREMENTS PRIOR TO BID.

MECHANICAL GENERAL NOTES:

1. MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL REQUIREMENTS.
2. THESE 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 OR DUCT SYSTEMS.
3. ALL MECHANICAL SYSTEMS SHOWN ON THIS PLAN ARE FROM PRELIMINARY FILED WORK. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL LOCATIONS AND SIZES OF MECHANICAL EQUIPMENT PRIOR TO START OF WORK.
4. THE SCOPE OF WORK SHOWN AS A PART OF THE PROJECT ON THIS CAMPUS WILL REQUIRE INCIDENTAL ARCHITECTURAL CEILING WORK. ALL SUCH WORK SHALL BE INCLUDED IN THE CONTRACTORS BID. THIS WORK SHALL BE PERFORMED WITHOUT ANY IMPACT TO THE CONSTRUCTION SCHEDULE AND/OR ADDITIONAL COST.
5. CONTRACTOR SHALL REMOVE AND REPLACE CEILING WHERE REQUIRED TO COMPLETE THE INDICATED SCOPE OF WORK. EXISTING CEILING SHALL BE RE-INSTALLED IN THE EXACT CONDITION IT WAS REMOVED IN. DAMAGED CEILING AND/OR CEILING TILES SHALL BE REPLACED TO MATCH CONDITIONS EXISTING PRIOR TO THE BEGINNING OF CONSTRUCTION. IF A MATCH IS NOT POSSIBLE, CONTRACTOR SHALL REPLACE ALL CEILING FROM WALL TO WALL OR BOUNDARY SEPARATION IN CORRIDOR, CLASSROOM, OR ANY OTHER SPACE.

BMCS NOTE:
EXISTING CONTROL SYSTEM IS BY AUTOMATED LOGIC.
REFER TO BMCS SPECIFICATION FOR MORE INFORMATION.

MECHANICAL KEYED NOTES:

1. VERIFY SERVICE CLEARANCE FOR AIR FILTER, FAN SHAFT, AND COIL REMOVAL WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.
2. ROUTE FULL SIZE CONDENSATE TO FLOOR DRAIN. ROUTE CONDENSATE DRAIN PIPE TO ENSURE THAT IT WILL NOT CREATE A TRIPPING HAZARD. INSTALL CONDENSATE TRAP AS RECOMMENDED BY MANUFACTURER.
3. ROUTE REFRIGERANT LINES TO ASSOCIATED VRF AIR COOLED CONDENSING UNIT. SIZE REFRIGERANT LINES PER MANUFACTURERS RECOMMENDATIONS.
4. PROVIDE FIRE DAMPER AT VERTICAL THROUGH CONCRETE DECK.
5. BALANCE EXISTING GRILLE TO CFM INDICATED ON DRAWINGS.
6. CONTRACTOR SHALL CLEAN EXISTING FLOOR DRAIN TO LIKE NEW CONDITIONS.
7. REFER TO MANUFACTURER FOR REFRIGERANT PIPE SIZES, AIRFLOW CLEARANCES, AND MAINTENANCE CLEARANCES.
8. PROVIDE 6" CONCRETE HOUSEKEEPING PAD.
9. CONNECT DUCTWORK AT EXISTING SIZE.
10. VERIFY SERVICE CLEARANCE WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.
11. PROVIDE EXHAUST FAN WITH EQUIPMENT SUPPORT. RE: 7/M3.1 FOR DETAIL.
12. PROVIDE DUCT SUPPORT AS SPECIFIED. RE: 8/M3.1 FOR DETAIL.
13. NEW REFRIGERANT PIPING SHALL UTILIZE EXISTING OPENING IN WALL. MODIFY OPENING AS REQUIRED TO ACCOMMODATE NEW REFRIGERANT PIPING. REFER TO DETAILS.
14. 32/24 EXHAUST DUCTWORK SHALL TERMINATE 10'-0" ABOVE FINISHED FLOOR (A.F.F.). PROVIDE DUCTWORK WITH WEATHER HOOD. PROVIDE OPENING WITH 1/4" ALUMINUM MESH. SUPPORT DUCTWORK FROM EXISTING FENCE.
15. MODIFY EXISTING CONCRETE HOUSE KEEPING PAD TO ACCOMMODATE NEW OUTSIDE AIR UNIT.
16. ROUTE REFRIGERANT PIPING ON GALVANIZED UNISTRUT ANCHORED TO CONCRETE. ATTACH PIPING TO UNISTRUT WITH GALVANIZED CUSH-A-CLAMP. FASTENERS SHALL BE STAINLESS STEEL.

Project No:	2022-02715-00
Drawn By:	BB
Checked By:	VP
Date:	09-14-2022
Revision Dates:	

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Project No. 2022-02715-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD Preparing Our Next Generation

BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL
ENGINEER
STATE OF TEXAS

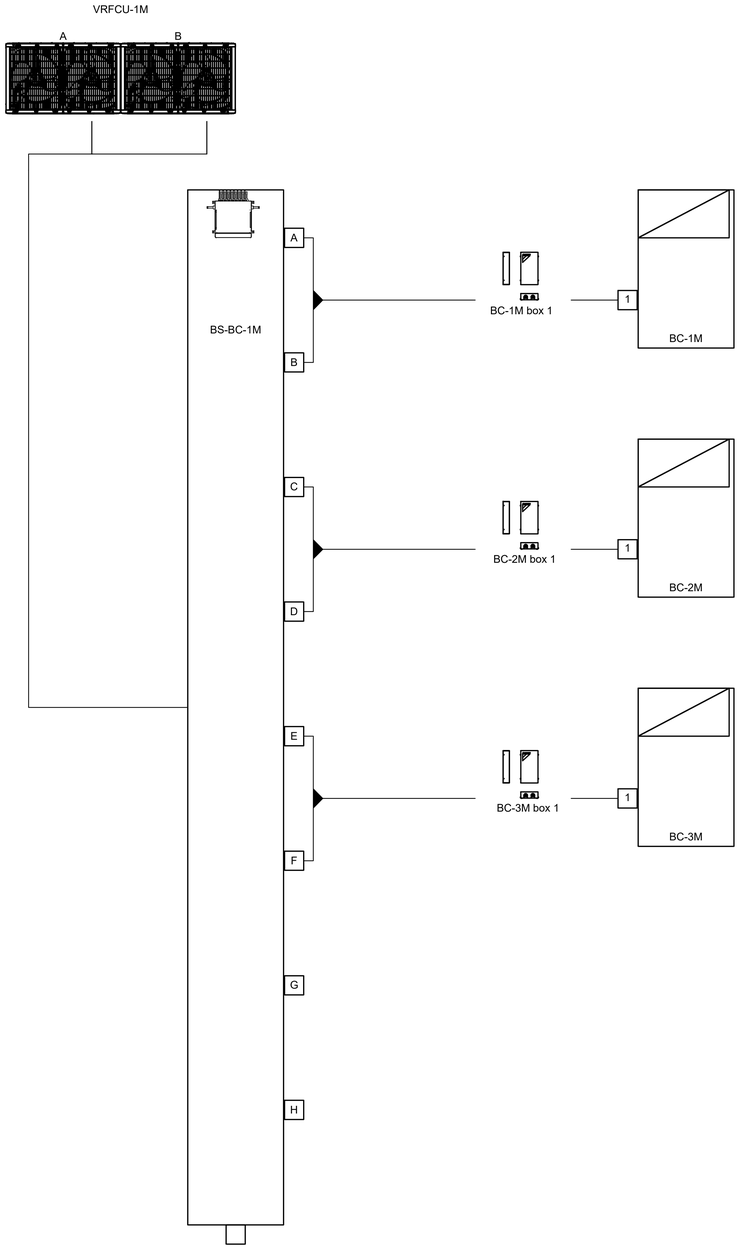
09-14-2022

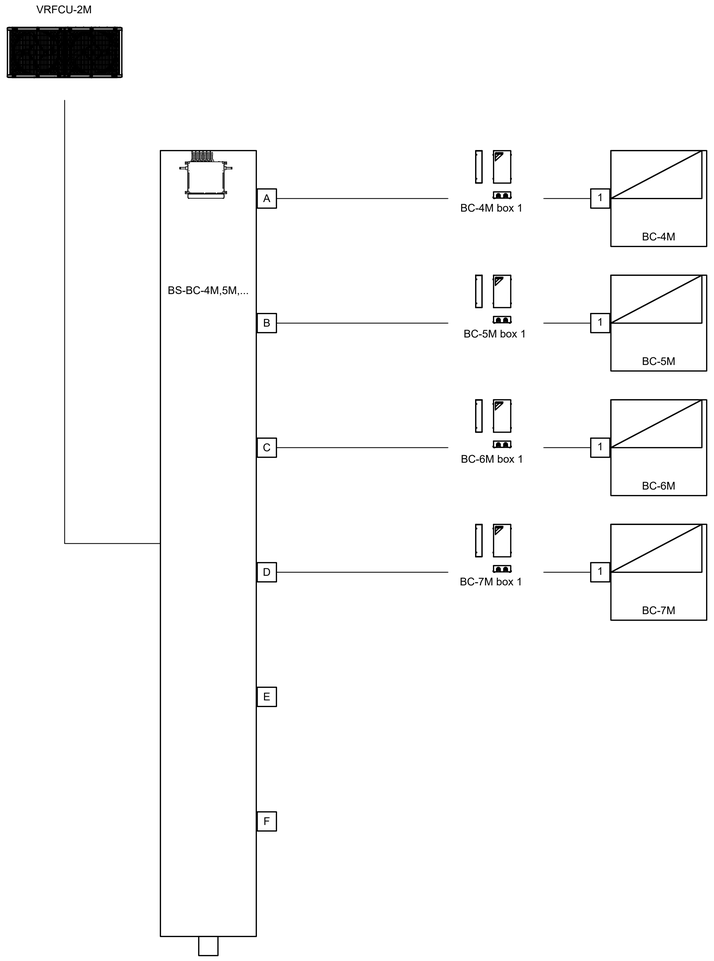
MECHANICAL FLOOR PLANS - MARSHALL MS

M1.1

MECHANICAL GENERAL NOTES:

1. THESE SCHEMATICS ARE FOR INFORMATION PURPOSES ONLY. REFER TO MANUFACTURER FOR FINAL PIPE SIZES AND LENGTHS.





Project No: 2022-02715-00

Drawn By: BB

Checked By: VP

Date: 09-14-2022

Revision Dates:

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Project No. 2022-02715-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD Preparing Our Next Generation

BRADLEY KALMANS 80219 LICENSED PROFESSIONAL ENGINEER

09-14-2022

MECHANICAL VRF PIPING DIAGRAM - MARSHALL MS

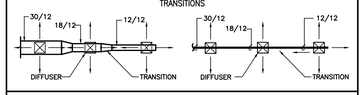
M2.1

SYMBOL LEGEND

SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
GENERAL	
	KEY NOTE TAG
	NOTE SPECIFIC TO DETAIL TAG
	REVISION TAG
	NEW EQUIPMENT
DUCTWORK	
	SUPPLY AIR DUCTWORK
	RETURN AIR AND OUTSIDE AIR DUCTWORK
	EXHAUST AIR DUCTWORK
	FLEXIBLE DUCTWORK
	SUPPLY AIR DUCTWORK THROUGH HORIZONTAL PARTITION
	RETURN AIR AND OUTSIDE AIR DUCTWORK THROUGH HORIZONTAL PARTITION
	EXHAUST AIR DUCTWORK THROUGH HORIZONTAL PARTITION
	FIRE DAMPER (VERTICAL)
	FIRE DAMPER (HORIZONTAL)
	SMOKE DAMPER (VERTICAL)
	SMOKE DAMPER (HORIZONTAL)
	COMBINATION FIRE & SMOKE DAMPER (VERTICAL)
	COMBINATION FIRE & SMOKE DAMPER (HORIZONTAL)
	MANUAL BALANCING DAMPER (SEE DAMPER SCHEDULE)
	MOTORIZED DAMPER (SEE DAMPER SCHEDULE)
SENSORS	
T	THERMOSTAT AND TEMPERATURE SENSOR
H	HUMIDISTAT
SD	SMOKE DETECTOR
HD	HEAT DETECTOR
AIR DEVICES	
	GRILLE SIZE TAG (REFER TO GRILLE SIZE LEGEND)
	SUPPLY AIR GRILLE WITH FOUR-WAY THROW
	SUPPLY AIR GRILLE WITH THREE-WAY THROW
	SUPPLY AIR GRILLE WITH TWO-WAY THROW
	SUPPLY AIR GRILLE WITH TWO-WAY CORNER THROW
	SUPPLY AIR GRILLE WITH ONE-WAY THROW
	RETURN AIR GRILLE
	RETURN AIR GRILLE WITH SOUND BOOT
	EXHAUST AIR GRILLE
	SUPPLY AIR SIDEWALL GRILLE
	RETURN AIR SIDEWALL GRILLE
20X12	RETURN AIR OPENING ABOVE CEILING
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
	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
RENOVATIONS	
	POINT OF CONNECTION FROM NEW TO EXISTING
	ITEM TO REMAIN
	ITEM TO BE REMOVED

DUCTWORK SYMBOLS LEGEND

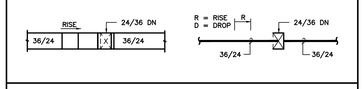
TRANSITIONS



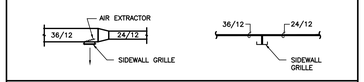
MAIN BRANCH TAKE-OFFS



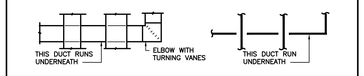
RISERS



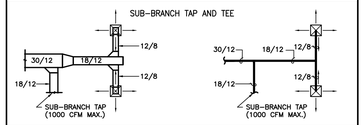
SIDEWALL REGISTERS



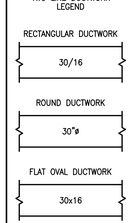
DUCT CROSSOVERS



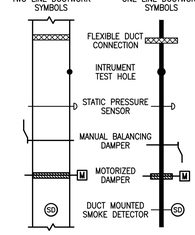
SUB-BRANCH TAP AND TEE



TWO LINE DUCTWORK LEGEND



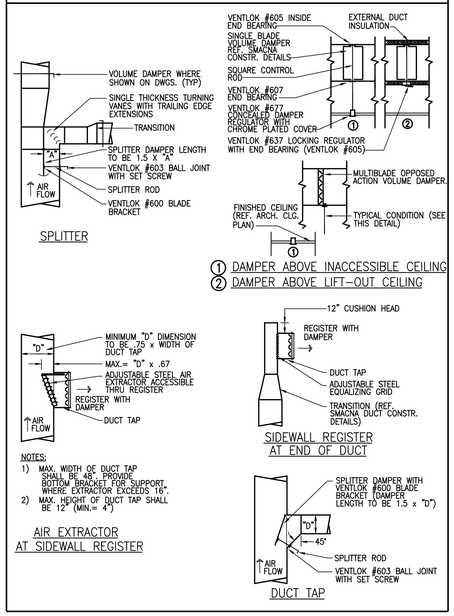
TWO LINE DUCTWORK SYMBOLS



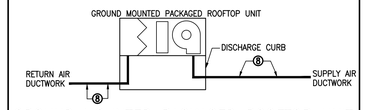
ONE LINE DUCTWORK SYMBOLS

MS02

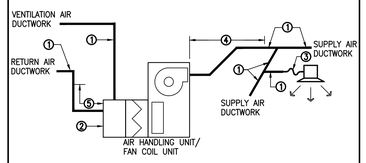
DUCTWORK CONSTRUCTION DETAILS



DUCT LINER AND INSULATION



GROUND MOUNTED PACKAGED ROOFTOP UNIT



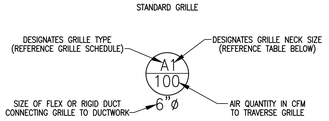
AIR HANDLING UNITS AND FAN COIL UNITS

NOTES

1. SHEETMETAL DUCTWORK WITH EXTERNAL DUCTWORK INSULATION AS SPECIFIED.
2. SHEETMETAL DUCTWORK RETURN AIR PLENUM WITH EXTERNAL DUCTWORK INSULATION AS SPECIFIED.
3. FLEXIBLE DUCTWORK WITH EXTERNAL DUCTWORK INSULATION AS SPECIFIED.
4. SHEETMETAL DUCTWORK WITH EXTERNAL DUCTWORK INSULATION AS SPECIFIED AND 1" THICK 1-1/2 LB LINER AS SPECIFIED FROM AIR HANDLING UNIT DISCHARGE TO 10'-0" DOWNSTREAM. PROVIDE METAL NOSING AND MASTIC COVERING. REFER TO THE DUCT LINING SECTION IN THE DUCTWORK SPECIFICATION FOR MORE INFORMATION.
5. SHEETMETAL DUCTWORK WITH EXTERNAL DUCTWORK INSULATION AS SPECIFIED AND 1" THICK 1-1/2 LB LINER AS SPECIFIED FROM AIR HANDLING UNIT INLET TO 10'-0" UPSTREAM.
6. EXHAUST DUCTWORK AS SPECIFIED WITH FIREBOARD INSULATION AS SPECIFIED.
7. SHEETMETAL DUCTWORK ONLY. NO INSULATION REQUIRED.
8. ALL OUTSIDE DUCTWORK SHALL BE DOUBLE WALL CONSTRUCTION WITH TWO COATS OF EPOXY PAINT. REFER TO SPECIFICATIONS FOR MORE DETAILS.

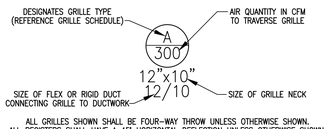
GRILLE SIZING SCHEDULE

STANDARD GRILLE



ALL GRILLES SHOWN SHALL BE FOUR-WAY THROW UNLESS OTHERWISE SHOWN.

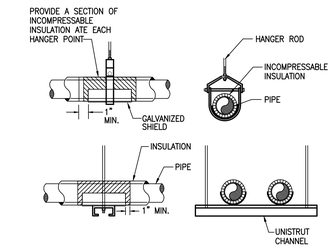
REGISTER OR NONSTANDARD GRILLE



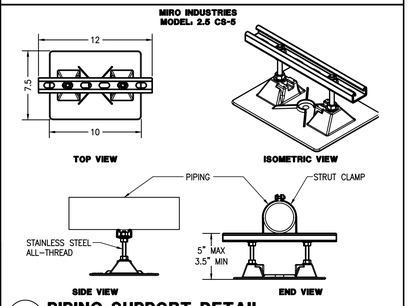
ALL GRILLES SHOWN SHALL BE FOUR-WAY THROW UNLESS OTHERWISE SHOWN.
ALL REGISTERS SHALL HAVE A 45° HORIZONTAL DEFLECTION UNLESS OTHERWISE SHOWN.

GRILLE SIZE DESIGNATION	GRILLE NECK SIZE	GRILLE SIZE DESIGNATION	GRILLE NECK SIZE
1	6" x 6"	7	15" x 15"
2	8" x 8"	8	16" x 16"
3	9" x 9"	9	18" x 18"
4	10" x 10"	10	20" x 20"
5	12" x 12"	11	22" x 22"
6	14" x 14"	12	24" x 24"

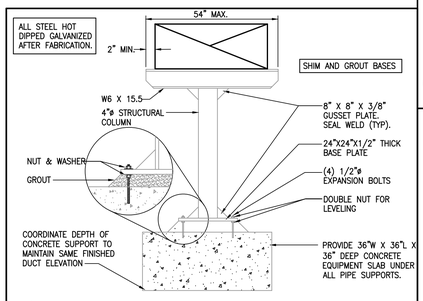
MS01



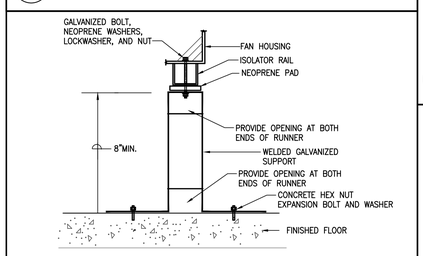
5 **PIPE HANGERS**
SCALE: NONE PS002



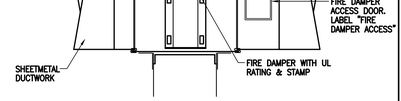
4 **PIPING SUPPORT DETAIL**
SCALE: NONE PS002



8 **DUCT STAND**
SCALE: NONE PS003

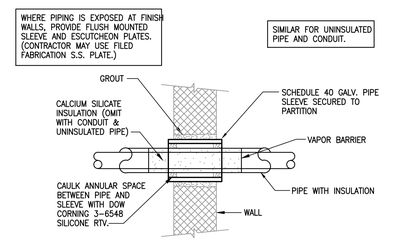


7 **EQUIPMENT SUPPORT**
SCALE: NONE C004

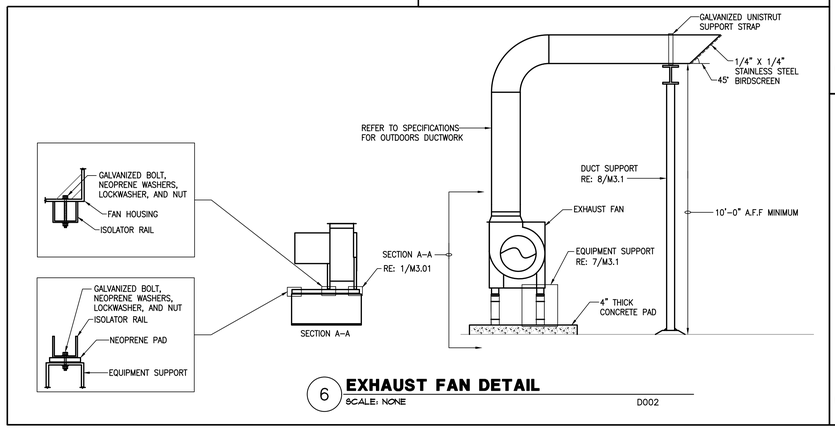


REFERENCE FIRE DAMPER MANUFACTURERS' INSTALLATION REQUIREMENTS AND LATEST SMACNA-FIRE, SMOKE, AND RADIATION DAMPER INSTALLATION GUIDE FOR HVAC SYSTEMS.

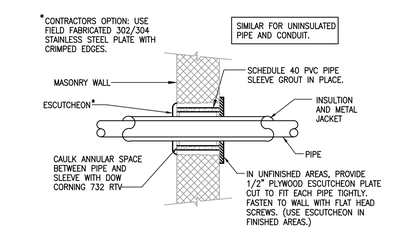
3 **FIRE DAMPER**
SCALE: NONE D001



2 **PIPE THRU FIRE RATED WALL**
SCALE: NONE PS010



6 **EXHAUST FAN DETAIL**
SCALE: NONE D002



1 **PIPE THROUGH EXTERIOR WALL**
SCALE: NONE PS007

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Project No. 2022-02715-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT
BISD Preparing Our Next Generation



MECHANICAL LEGENDS AND DETAILS - MARSHALL MS

M3.1

100 PERCENT GROUND MOUNTED PACKAGED UNIT - GAS HEAT

MARK	INDOOR AIR FAN					COOLING						GAS HEATING		REMARKS
	SUPPLY AIR CFM	OUTSIDE AIR CFM	EXT. STATIC PRESSURE (IN. W.C.)	HORSE POWER	CURRENT CHARAC.	AIR TEMPERATURE (°F) ENTERING DRY BULB	ENTERING WET BULB	OUTDOOR AMBIENT	MIN. TOTAL CAPACITY (MBH)	MIN. SENSIBLE CAPACITY (MBH)	MINIMUM EER/ IEER	ENTERING AIR TEMP. (°F)	MIN. CAPACITY OUTPUT (MBH)	ACA EFFICIENCY (%)	
OAU-1M	6,560	6,560	2.0	7.5	208/3/60	98.0	80.0	98.0	639.3	318.8	-/11.4	27.0	318.8	80	(1-11)

GENERAL NOTES:
1. EXTERNAL STATIC PRESSURE INCLUDES LOSSES DUE TO DUCTWORK, AIR DEVICES, DAMPERS, AND DUCT MOUNTED HOT WATER COILS WHERE APPLICABLE. DIRTY FILTER AND UNIT CASING MUST BE ADDED TO EXTERNAL STATIC PRESSURE TO OBTAIN TOTAL PRESSURE LOSS. INCREASE HORSEPOWER AS REQUIRED TO MEET YOUR TOTAL PRESSURE LOSS. COORDINATE WITH ELECTRICIAN.
2. MINIMUM RECOMMENDED CLEARANCE AROUND ROOFTOP UNIT IS 12 INCHES ON NON-SERVICE SIDES AND 30 INCHES ON SERVICE SIDES. MAINTAIN MINIMUM CLEARANCE FOR CONDENSER AIR FLOW AS RECOMMENDED BY ROOFTOP UNIT MANUFACTURER. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON ROOFTOP UNIT FOR SERVICE, MAINTENANCE, AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCE AS REQUIRED BY NEC.

REMARKS:
1. PROVIDE WITH DISCONNECT SWITCH & PAD MOUNTED CURB OR HORIZONTAL DISCHARGE.
2. PROVIDE UNIT WITH FACTORY MOUNTED GFCI RECEPTACLE. ELECTRICIAN TO WIRE TO SEPARATE CIRCUIT.
3. PROVIDE UNIT WITH LOW AMBIENT CONTROL.
4. PROVIDE A WATER LEVEL SENSING DEVICE IN THE PRIMARY DRAIN PAN. THIS DEVICE SHALL SHUT OFF THE APPLIANCE IN THE EVENT THE PRIMARY DRAIN LINE BECOMES RESTRICTED.
5. PROVIDE WITH DISCHARGE AIR TEMPERATURE SENSOR.
6. PROVIDE WITH MODULATING GAS HEAT.
7. PROVIDE WITH STAINLESS STEEL HEAT EXCHANGER.
8. VELOCITY SHALL NOT EXCEED 450 FPM ON COOLING COIL. PROVIDE UNIT WITH A LEAVING AIR TEMPERATURE OF 53°F DRY BULB AND 52.5°F WET BULB.
9. PROVIDE WITH MODULATING HOT GAS REHEAT TO A NEUTRAL CONDITION OF 72°F.
10. PROVIDE WITH VARIABLE SPEED COMPRESSOR OR DIGITAL SCROLL COMPRESSOR AND VARIABLE SPEED CONDENSER FANS. REFER TO SPECIFICATIONS.
11. PROVIDE WITH VFD ON SUPPLY FAN.

BRANCH SELECTOR

MARK	ELECTRICAL			NUM. OF PORTS	REMARKS
	CURRENT CHARAC.	MCA	MOCP		
BS-1M-1	208/1/60	0.80	15.0	8	(1,2,3,4)
BS-2M-1	208/1/60	0.60	15.0	6	(1,2,3,4)

GENERAL NOTES:
1. BRANCH SELECTOR MODULES ARE TYPICAL. SEE DRAWINGS AND PIPING SCHEMATICS FOR QUANTITY AND LOCATION.
2. BRANCH SELECTORS SHALL HAVE BRAZED CONNECTIONS.

REMARKS:
1. SINGLE-PORT FLOW SELECTORS ARE POWERED FROM INDOOR UNITS.
2. STANDARD SINGLE-PORT FLOW SELECTORS (I.E. NOT "LONG" MODELS) COME STANDARD WITH POWER AND COMMUNICATION WIRES FOR CONNECTION TO INDOOR UNIT.
3. MULTI-PORT FLOW SELECTORS REQUIRE DEDICATED POWER SUPPLY.
4. EACH PORT OF MULTI-PORT FLOW SELECTORS SHALL HAVE A MAXIMUM CAPACITY OF 61 KBTU/HR.

DX BLOWER COIL UNIT - VRF

MARK	FAN					COOLING						HEATING		REMARKS
	SUPPLY AIR CFM	OUTSIDE AIR CFM	EXT. STATIC PRESSURE (IN. W.C.)	HORSE POWER	CURRENT CHARAC.	AIR TEMPERATURE (°F) ENTERING DRY BULB	ENTERING WET BULB	LEAVING DRY BULB	LEAVING WET BULB	MIN. TOTAL CAPACITY (BTUH)	MIN. SENS. CAPACITY (BTUH)	ENTERING AIR TEMPERATURE (°F)	MINIMUM CAPACITY (BTUH)	
BC-1M	2,930	0	1.5	3.0	208/3/60	75.0	62.5	53.0	52.5	84,277	69,616	68.0	85,438	(1-11)
BC-2M	3,080	0	1.5	3.0	208/3/60	75.0	62.5	53.0	52.5	88,592	73,180	68.0	89,812	(1-11)
BC-3M	2,930	0	2.0	3.0	208/3/60	75.0	62.5	53.0	52.5	84,277	69,616	68.0	85,438	(1-11)
BC-4M	1,750	0	1.5	2.0	208/3/60	75.0	62.5	53.0	52.5	50,336	41,580	68.0	51,030	(1-11)
BC-5M	1,600	0	2.0	2.0	208/3/60	75.0	62.5	53.0	52.5	46,021	38,016	68.0	46,656	(1-11)
BC-6M	1,560	0	2.0	2.0	208/3/60	75.0	62.5	53.0	52.5	44,871	37,065	68.0	45,489	(1-11)
BC-7M	1,340	0	2.0	2.0	208/3/60	75.0	62.5	53.0	52.5	38,543	31,838	68.0	39,074	(1-11)

GENERAL NOTES:
1. EXTERNAL STATIC PRESSURE INCLUDES LOSSES DUE TO DUCTWORK, AIR DEVICES, DAMPERS, AND DUCT MOUNTED HOT WATER COILS WHERE APPLICABLE. DIRTY FILTER AND UNIT CASING MUST BE ADDED TO EXTERNAL STATIC PRESSURE TO OBTAIN TOTAL PRESSURE LOSS. INCREASE HORSEPOWER AS REQUIRED TO MEET YOUR TOTAL PRESSURE LOSS. COORDINATE WITH ELECTRICIAN.
2. MAINTAIN MINIMUM CLEARANCE FOR COIL PULL AS RECOMMENDED BY UNIT MANUFACTURER. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON UNIT FOR SERVICE, MAINTENANCE, AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCE AS REQUIRED BY NEC.

REMARKS:
1. VELOCITY NOT TO EXCEED 500 FPM ON COOLING COIL.
2. PROVIDE VERTICAL UNIT.
3. PROVIDE VARIABLE VOLUME UNIT.
4. PROVIDE TOP DISCHARGE.
5. PROVIDE WITH FLAT FILTER.
6. THE VARIABLE REFRIGERANT VOLUME SYSTEM SHALL BE CAPABLE OF INTEGRATING TO A MODULAR BUILT UP AIR HANDLING UNIT.
7. FULL PORT, BI-DIRECTIONAL FLOW ISOLATION VALVES SHALL BE INSTALLED UPSTREAM OF AIR HANDLING UNIT INTEGRATION KIT. ENSURE SCHRADER FITTING IS POSITIONED ON THE DOWNSTREAM SIDE OF THE VALVE.
8. THE INTEGRATION KIT SHALL ALLOW CONNECTION AND CONTROL IN ADDITION TO FULL INTEGRATION OF NON VRF AIR HANDLING EQUIPMENT INTO A VRF SYSTEM.
9. THE INTEGRATION KIT SHALL INCLUDE AN ELECTRONIC EXPANSION VALVE CAPABLE OF 2000 STEPS TO CONTROL REFRIGERANT FLOW TO COIL.
10. INTEGRATED CONTROL MODULE SHALL COMMUNICATE WITH VRV CONDENSING UNIT.
11. PROVIDE WITH DOUBLE WALL INSULATED UNIT CASING WITH SOLID INNER WALL.

VRF AIR COOLED CONDENSING UNIT

MARK	MIN. TOTAL CAPACITY COOLING (BTUH)	MIN. TOTAL CAPACITY HEATING (BTUH)	OUTDOOR AIR TEMP (°F)	MINIMUM EER/ SEER	CURRENT CHARAC.	MCA	MOCP	RELATED UNIT MARK	REMARKS
VRFCU-1M	253,697	253,346	98	10.6/-	208/3/60	111.6	150.0	BC-1M,2M,3M	(1,2,3,4,5)
VRFCU-2M	183,458	177,393	98	11.5/-	208/3/60	79.6	105.0	BC-4M,5M,6M,7M	(1,2,3,4,5)

GENERAL NOTES:
1. MINIMUM RECOMMENDED CLEARANCE AROUND ROOFTOP UNIT IS 12 INCHES ON NON-SERVICE SIDES AND 30 INCHES ON SERVICE SIDES. MAINTAIN MINIMUM CLEARANCE FOR CONDENSER AIR FLOW AS RECOMMENDED BY UNIT MANUFACTURER. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON UNIT FOR SERVICE, MAINTENANCE, AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCE AS REQUIRED BY NEC.

REMARKS:
1. PROVIDE WITH LOW AMBIENT CONTROL DOWN TO 20°F.
2. PROVIDE WITH DISCONNECT SWITCH.
3. REFRIGERANT LINES TO BE SIZED PER MANUFACTURER'S REQUIREMENTS.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING DX EXPANSION VALVES. ELECTRICIAN SHALL BE RESPONSIBLE FOR WIRING 208-230V/1PH DX EXPANSION VALVES.
5. PROVIDE HEAT RECOVERY UNIT.

GRILLE

MARK	SERVICE	TYPE	DAMPER	CONSTRUCTION MATERIAL	FINISH COLOR	MANUFACTURER	MODEL NUMBER	REMARKS
A	SUPPLY AIR	GRILLE	-	STEEL	WHITE	TITUS	300RL	DOUBLE DEFLECTION SIDEWALL GRILLE WITH HORIZONTAL FRONT BARS. SURFACE MOUNTED.
B	RETURN AIR	GRILLE	-	STEEL	WHITE	TITUS	350RL	SINGLE DEFLECTION SIDEWALL GRILLE WITH HORIZONTAL FRONT BARS. SURFACE MOUNTED.
C	RETURN AIR	DIFFUSER	-	STEEL	WHITE	TITUS	PAR	EXPOSED T-BAR CEILING FRAME STYLE WITH 24"x24" FACE. PERFORATED.
(E)	EXISTING	DIFFUSER	-	-	-	-	-	EXISTING AIR DEVICE TO REMAIN.

GENERAL NOTES:
1. DAMPERS NOTED AS U. L. SHALL BE A "U. L." CLASSIFIED CEILING RADIATION DAMPER WITH THERMAL BLANKET.
2. COORDINATE AIR DEVICE FINISH COLOR AND LOCATION WITH ARCHITECT.

REMARKS:
1. N/A

DAMPER

MARK	ACTUATOR	DUTY	BLADE ACTION	MANUFACTURER	MODEL NUMBER	REMARKS
D-1	MANUAL BALANCING	UNDER 9" WIDE	N/A	N/A	N/A	SEE SMACNA CONSTRUCTION DETAILS REFERENCED "TYPICAL CONSTRUCTION DETAILS FOR LOW VELOCITY DUCTS."
D-2	MANUAL BALANCING	OVER 9" WIDE	OPPOSED	RUSKIN	MD-35	MANUAL DAMPER WITH STANDARD CONSTRUCTION FEATURES AND VENTLOCK #639 LOCKING REGULATOR.
D-3	MOTORIZED	OVER 9" WIDE	OPPOSED	RUSKIN	CD-60	LOW LEAKAGE DAMPER WITH BLADE SEALS

NOTES:
N/A - NOT APPLICABLE

FAN

MARK	LOCATION	CFM	MAXIMUM RPM	EXT. STATIC PRESSURE (IN. W.C.)	HORSE POWER	CURRENT CHARAC.	LOCALLY SWITCHED BY	INTERLOCKED WITH	FAN TYPE	BELT/DIRECT DRIVE	MANUFACTURER	MODEL NUMBER	REMARKS
EF-5M	MECHANICAL YARD	5,580	1,544	2.0	5.0	208/3/60	-	OAU-1	CENTRIFUGAL BLOWER	BELT	COOK	CPS	(1,2,3,4,5,6,7)

GENERAL NOTES:
1. EXTERNAL STATIC PRESSURE INCLUDES LOSSES DUE TO DUCTWORK, AIR DEVICES, DAMPERS, AND DUCT MOUNTED HOT WATER COILS WHERE APPLICABLE. DIRTY FILTER AND UNIT CASING MUST BE ADDED TO EXTERNAL STATIC PRESSURE TO OBTAIN TOTAL PRESSURE LOSS. INCREASE HORSEPOWER AS REQUIRED TO MEET YOUR TOTAL PRESSURE LOSS. COORDINATE WITH ELECTRICIAN.
2. MINIMUM RECOMMENDED CLEARANCE AROUND UNIT IS 12 INCHES ON NON-SERVICE SIDES AND 30 INCHES ON SERVICE SIDES. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON UNIT FOR SERVICE, MAINTENANCE, AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCE AS REQUIRED BY NEC.
3. FAN SHALL BE CENTRIFUGAL, BELT DRIVEN TYPE UNLESS OTHERWISE SCHEDULED.

REMARKS:
1. PROVIDE WITH DISCONNECT SWITCH.
2. PROVIDE WITH OSHA APPROVED MOTOR GUARD.
3. PROVIDE WITH VARIABLE FREQUENCY DRIVE (VFD).
4. MOTOR SHALL BE RATED FOR USE WITH A VARIABLE FREQUENCY DRIVE (VFD).
5. PROVIDE WITH SPRING ISOLATION RAIL.
6. PROVIDE WITH TOP DISCHARGE.
7. PROVIDE WITH DRAIN AT BOTTOM OF FAN HOUSING.

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Project No. 2022-02715-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT
BISD Preparing Our Next Generation



MECHANICAL SCHEDULES - MARSHALL MS

M4.1

EXISTING CONDITIONS/DEMOLITION NOTES

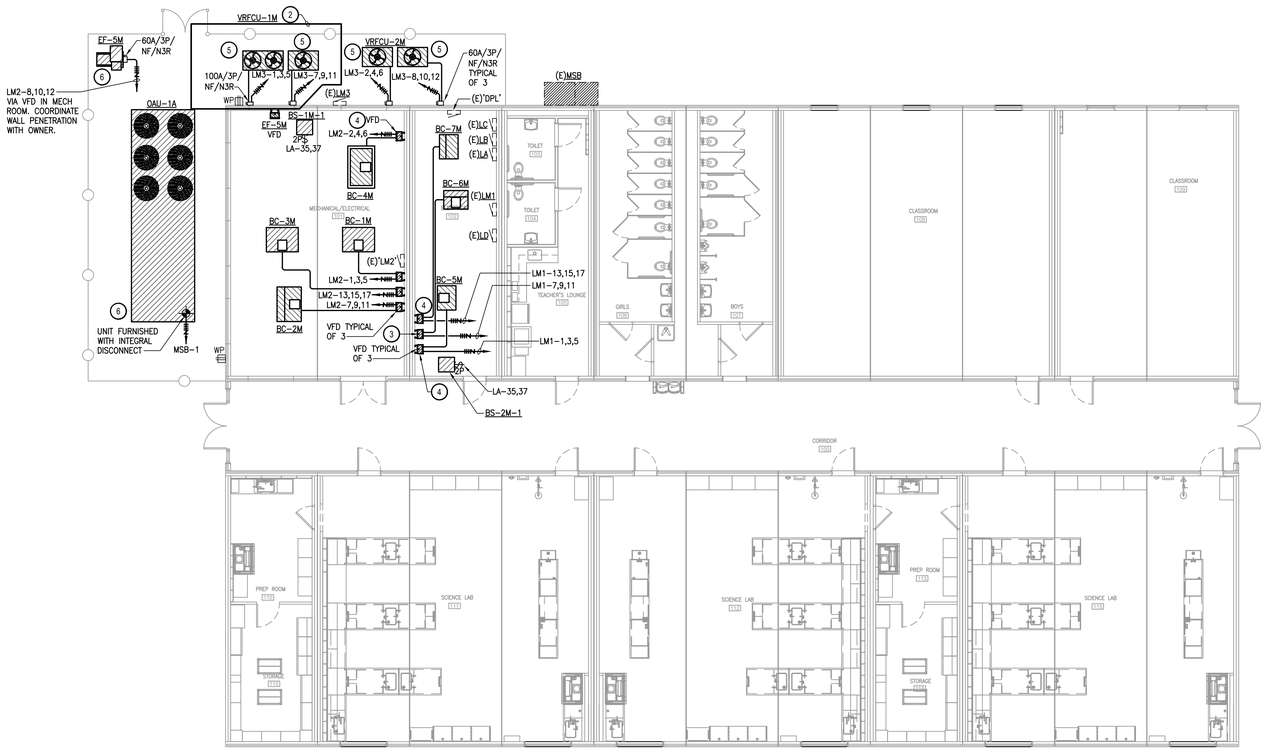
1. CONTRACTOR SHALL VSIT THE SITE BEFORE SUBMITTING A PROPOSAL AND VERIFY EXISTING CONDITIONS. ANY MODIFICATIONS REQUIRED CONTRARY TO THESE DOCUMENTS FOR A COMPLETE AND OPERATING SYSTEM SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
2. CONTRACTOR SHALL DISCONNECT AND REMOVE ANY MECHANICAL, ELECTRICAL OR PLUMBING ITEMS IN THE WAY OF NEW CONSTRUCTION AND NOT BEING REUSED. CONTRACTOR TO KEEP ALL ITEMS THAT ARE TO REMAIN PROTECTED DURING CONSTRUCTION.
3. DEMOLISH CONDUIT AND WIRING ASSOCIATED WITH HVAC EQUIPMENT BEING REMOVED BACK TO SOURCE AND INDICATE ANY OPEN CIRCUIT BREAKER AS SPARE.
4. COORDINATE WITH OWNER/ARCHITECT FOR EXACT DEMOLITION SCOPE OF WORK PRIOR TO COMMENCEMENT OF WORK.

LINETYPE LEGEND

EXISTING TO REMAIN
REMOVE EXISTING
NEW WORK

OWNER OR ITS REPRESENTATIVE SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED FROM THIS PROJECT. CONTRACTOR TO NOTIFY DISTRICT REPRESENTATIVE PRIOR TO DEMOLITION WORK TO DISCUSS ALL RETURNED ITEMS TO DISTRICT.

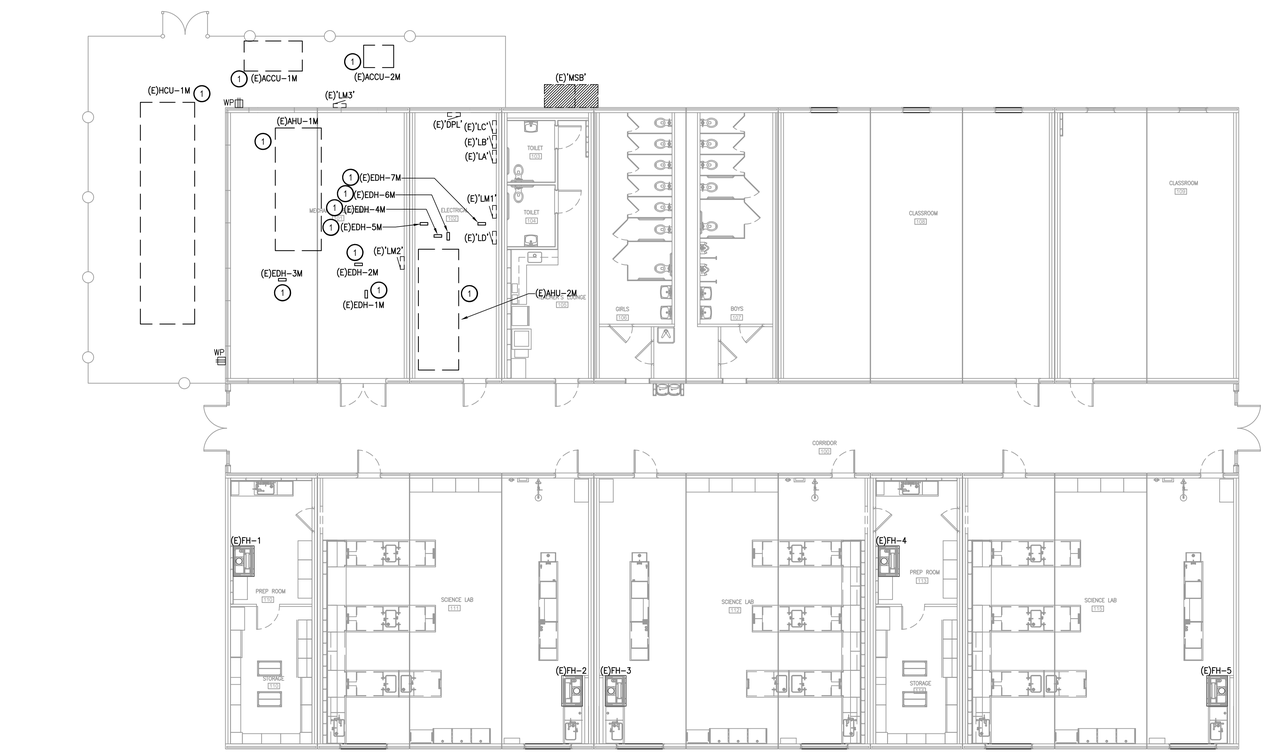
ELECTRICAL WORK SHOWN AS A PART OF THIS PROJECT WILL REQUIRE INCIDENTAL FIRE ALARM SYSTEM WORK. ALL SUCH WORK SHALL BE INCLUDED IN THE CONTRACTORS PROPOSAL. THIS WORK SHALL BE PERFORMED WITHOUT ANY IMPACT TO THE CONSTRUCTION SCHEDULE AND AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL INCLUDE ANY FIRE ALARM DEVICES THAT ARE REQUIRED TO BE REMOVED, PROTECTED, AND RE-INSTALLED. FIRE ALARM SYSTEM SHALL BE TESTED PRIOR TO COMMENCEMENT OF WORK AND UPON COMPLETION. REFER TO SPECIFICATION 26 31 02 EXPANSION OF EXISTING FIRE DETECTION AND ALARM SYSTEM FOR ADDITIONAL REQUIREMENTS.



NORTH

2 ELECTRICAL NEW FLOOR PLAN - MARSHALL MS

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



NORTH

1 ELECTRICAL DEMO FLOOR PLAN - MARSHALL MS

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

GENERAL NOTES:

1. DISCONNECT AND REMOVE ALL CONDUIT, WIRE, AND DISCONNECTING MEANS ASSOCIATED WITH HVAC EQUIPMENT BEING REMOVED.
2. DISCONNECT AND REMOVE ALL ABANDONED WIRING AND CONDUIT.
3. VARIABLE FREQUENCY DRIVES FURNISHED BY DIVISION 23.
4. ALL NEW ELECTRICAL FEEDING SHALL BE ROUTED ABOVE GRADE. ROUTE TO AVOID CREATING TRIPPING HAZARDS. FIELD COORDINATE EXACT ROUTING WITH OWNER. UTILIZE EXISTING AND/OR NEW PIPE STANDS AS NEEDED.

ELECTRICAL KEYED NOTES:

1. DISCONNECT EXISTING MECHANICAL EQUIPMENT AND ASSOCIATED CONTROL DEVICE. REMOVE EXISTING CIRCUIT BACK TO SOURCE OR NEXT EXISTING DEVICE TO REMAIN.
2. CONTRACTOR TO COORDINATE FINAL DISCONNECT SIZE AND NUMBER OF FEEDS WITH MECHANICAL SELECTIONS. IF DAIKIN IS SELECTED PROVIDE (1) CONNECTION THROUGH A 60A/3P/NF/N3R DISCONNECT.
3. CONTRACTOR TO COORDINATE FINAL DISCONNECT WITH MECHANICAL SELECTIONS. IF DAIKIN IS SELECTED, CONTRACTOR TO PROVIDE 2 POLE 20A DISCONNECT.
4. CONTRACTOR TO COORDINATE FINAL DISCONNECT WITH MECHANICAL SELECTIONS. IF DAIKIN IS SELECTED, CONTRACTOR TO PROVIDE 2 POLE 30A DISCONNECT.
5. ROUTE 3/4"C. WITH PULLSTRING TO ASSOCIATED INDOOR UNIT. ROUTE PARALLEL WITH REFRIGERATION LINES.
6. ROUTE 3/4"C. WITH PULLSTRING FOR CONTROL WIRING INSIDE BUILDING. COORDINATE FINAL TERMINATION WITH MECHANICAL CONTRACTOR.

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Project No. 2022-02715-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT

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ELECTRICAL FLOOR PLANS - MARSHALL MS

E1.1

EXISTING CONDITIONS/DEMOLITION NOTES

1. CONTRACTOR SHALL VISIT THE SITE BEFORE SUBMITTING A BID AND VERIFY EXISTING CONDITIONS. ANY MODIFICATIONS REQUIRED CONTRARY TO THESE DOCUMENTS FOR A COMPLETE AND OPERATING SYSTEM SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
2. CONTRACTOR SHALL DISCONNECT AND REMOVE ANY MECHANICAL, ELECTRICAL OR PLUMBING ITEMS IN THE WAY OF NEW CONSTRUCTION AND NOT BEING REUSED. CONTRACTOR TO KEEP ALL ITEMS THAT ARE TO REMAIN PROTECTED DURING CONSTRUCTION.
3. DISCONNECT AND REMOVE LIGHT FIXTURES, RECEPTACLES, DATA OUTLETS, AND ASSOCIATED CONDUIT AND WIRING BACK TO NEAREST EXISTING TO REMAIN DEVICE OR BACK TO SOURCE U.O.N.
4. DEMOLISH CONDUIT AND WIRING ASSOCIATED WITH HVAC EQUIPMENT BEING REMOVED BACK TO SOURCE AND INDICATE ANY OPEN CIRCUIT BREAKER AS SPARE.
5. EXTEND/REROUTE EXISTING BRANCH CIRCUITS TO SERVE NEW RECEPTACLES/DEVICES WHERE POSSIBLE. CONTRACTOR TO VERIFY THAT THE LOAD ON THE CIRCUIT DOES NOT EXCEED 16A, CONTRACTOR TO MAINTAIN CIRCUIT CONTINUITY.
6. COORDINATE WITH OWNER/ARCHITECT FOR EXACT DEMOLITION SCOPE OF WORK PRIOR TO COMMENCEMENT OF WORK.

CONTRACTOR TO FIELD VERIFY INTERRUPTING FAULT CURRENT CAPACITY OF EXISTING PANELS AND/OR SWITCHBOARDS AND TO PROVIDE NEW BREAKERS TO MATCH EXISTING

LINETYPE LEGEND

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

ELECTRICAL KEYED NOTES:

1. CONTRACTOR TO COORDINATE FINAL BREAKER SIZING WITH MECHANICAL SELECTIONS.

EXISTING PANEL 'LA'

LOCATION: ELEC 102

120/208V., 3 PHASE, 4 WIRE, SOLID NEUTRAL, GROUND BAR

	PANEL AMPERAGE		MLO		NEMA-1		PROVIDE FEED THRU LUGS
	SURFACE MOUNTED		MCB		NEMA-3R		PROVIDE 200% NEUTRAL
	RECESS MOUNTED		TVSS		S.S. ENCL.		ISOLATED GROUND BUS

CKT	VA	DESCRIPTION	COND.	BRKR			BRKR	COND.	DESCRIPTION	VA	CKT
1	750	EXISTING LIGHTS	(E)	20/1	A		20/1	(E)	EXISTING LIGHTS	300	2
3	450	EXISTING LIGHTS	(E)	20/1		B	20/1	(E)	EXISTING LIGHTS	1500	4
5	820	EXISTING LIGHTS	(E)	20/1		C	20/1	(E)	EXISTING LIGHTS	1500	6
7	1500	EXISTING LIGHTS	(E)	20/1	A		20/1	(E)	EXISTING LIGHTS	300	8
9	1500	EXISTING LIGHTS	(E)	20/1		B	20/1	(E)	EXISTING LIGHTS	300	10
11	260	EXISTING LIGHTS	(E)	20/1		C	20/1	(E)	EXISTING LIGHTS	223	12
13	726	EXISTING LIGHTS	(E)	20/2	A		20/2	(E)	EXISTING LIGHTS	726	14
15	726	---	(E)	--		B	--	(E)	---	726	16
17	900	EXISTING RECEPTACLES	(E)	20/1		C	20/1	(E)	EXISTING RECEPTACLES	540	18
19	900	EXISTING RECEPTACLES	(E)	20/1	A		20/1	(E)	EXISTING RECEPTACLES	1000	20
21	900	EXISTING RECEPTACLES	(E)	20/1		B	20/1	(E)	EXISTING RECEPTACLES	1200	22
23	720	EXISTING RECEPTACLES	(E)	20/1		C	20/1	(E)	EXISTING RECEPTACLES	540	24
25	500	EXISTING CAMERAS	(E)	20/1	A		20/1	(E)	EXISTING RECEPTACLES	1964	26
27	500	EXISTING CAMERAS	(E)	20/1		B	20/1	(E)	EXISTING RECEPTACLES	360	28
29	900	EXISTING RECEPTACLES	(E)	20/1		C	20/1	(E)	EXISTING RECEPTACLES	900	30
31	540	EXISTING RECEPTACLES	(E)	20/1	A		20/1	(E)	EXISTING SACP	500	32
33	500	EXISTING FIRE ALARM	(E)	20/1		B	20/1		EXISTING SPARE		34
35	100	NEW BRANCH SELECTORS	#12	20/1		C	20/1		EXISTING SPARE		36
37	100	---	#12	--	A		20/1		EXISTING SPARE		38
39		EXISTING SPARE		20/1		B	20/1		EXISTING SPARE		40
41		EXISTING SPARE		20/1		C	20/1		EXISTING SPARE		42

	CONNECTED	NEC
LIGHTING	12.3 KVA	15.4 KVA
RECEPTS	11.4 KVA	10.7 KVA
EXISTING	0.0 KVA	0.0 KVA
HVAC	0.0 KVA	0.0 KVA
EQUIPMENT	2.0 KVA	2.0 KVA
KITCHEN	0.0 KVA	0.0 KVA
SUBFEED	0.0 KVA	0.0 KVA
TOTAL	25.7 KVA	28.1 KVA

	CONNECTED	AMPS	
PHASE A	9.8 KVA	81.7 A	
PHASE B	8.7 KVA	72.2 A	
PHASE C	7.4 KVA	61.7 A	
			NEC AMPS
TOTAL	25.7 KVA	71.3 A	78.0 A

(1) PROVIDE NEW BREAKER AND CIRCUIT

(1) PROVIDE NEW BREAKER AND CIRCUIT
(2) CONTRACTOR TO COORDINATE FINAL BREAKER SIZING WITH MECHANICAL SELECTIONS.
(3) CONTRACTOR TO COORDINATE FINAL BREAKER SELECTION WITH MECHANICAL SELECTIONS.
IF DAIKIN IS SELECTED, CONTRACTOR TO PROVIDE 30A/2P BREAKER.
FEED EQUIPMENT WITH (1) 2#10 & 1#10G IN 3/4"C.

EXISTING PANEL 'LM3'

LOCATION: CENTRAL PLANT

120/208V., 3 PHASE, 4 WIRE, SOLID NEUTRAL, GROUND BAR

600	PANEL AMPERAGE	X	MLO		NEMA-1		PROVIDE FEED THRU LUGS
X	SURFACE MOUNTED		MCB	X	NEMA-3R		PROVIDE 200% NEUTRAL
	RECESS MOUNTED		TVSS		S.S. ENCL.		ISOLATED GROUND BUS

CKT	VA	DESCRIPTION	COND.	BRKR			BRKR	COND.	DESCRIPTION	VA	CKT
1	7950	NEW VRFCU-1M (1) (3)	#4	70/3	A		60/3	#6	NEW VRFCU-2M (1) (2)	5741	2
3	7950	---	#4	--		B	--	#6	---	5741	4
5	7950	---	#4	--		C	--	#6	---	5741	6
7	5453	NEW VRFCU-1M (1) (3)	#6	60/3	A		45/3	#6	NEW VRFCU-2M (1) (2)	4384	8
9	5453	---	#6	--		B	--	#6	---	4384	10
11	5453	---	#6	--		C	--	#6	---	4384	12

	CONNECTED	NEC
LIGHTING	0.0 KVA	0.0 KVA
RECEPTS	0.0 KVA	0.0 KVA
EXISTING	0.0 KVA	0.0 KVA
HVAC	57.4 KVA	57.4 KVA
EQUIPMENT	0.0 KVA	0.0 KVA
KITCHEN	0.0 KVA	0.0 KVA
SUBFEED	0.0 KVA	0.0 KVA
TOTAL	57.4 KVA	57.4 KVA

	CONNECTED	AMPS	
PHASE A	23.5 KVA	196.1 A	
PHASE B	23.5 KVA	196.1 A	
PHASE C	23.5 KVA	196.1 A	
			NEC AMPS
TOTAL	57.4 KVA	159.5 A	159.5 A

(1) PROVIDE NEW BREAKER AND CIRCUIT
(2) CONTRACTOR TO COORDINATE FINAL BREAKER SIZING WITH MECHANICAL SELECTIONS.
(3) CONTRACTOR TO COORDINATE FINAL BREAKER COUNT, BREAKER SIZING AND WIRE SIZING WITH MECHANICAL SELECTIONS.
IF DAIKIN IS SELECTED, THE (2) BREAKERS WITH THIS KEYNOTE WILL BE REPLACED WITH (1) 60/3P BREAKER.
FEED EQUIPMENT WITH (1) 3#6 & 1#10G IN 1"C.

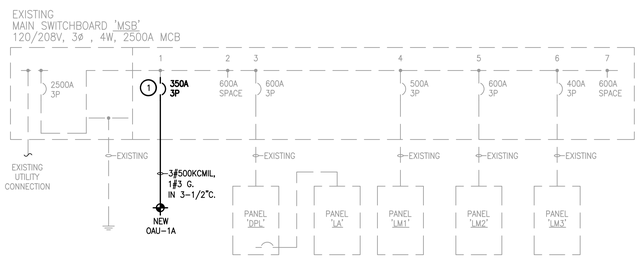
(1) PROVIDE NEW BREAKER AND CIRCUIT
(2) CONTRACTOR TO COORDINATE FINAL BREAKER SIZING WITH MECHANICAL SELECTIONS.
(3) CONTRACTOR TO COORDINATE FINAL BREAKER SELECTION WITH MECHANICAL SELECTIONS.
IF DAIKIN IS SELECTED, CONTRACTOR TO PROVIDE 20A/2P BREAKER.
(4) CONTRACTOR TO COORDINATE FINAL BREAKER SELECTION WITH MECHANICAL SELECTIONS.
IF DAIKIN IS SELECTED, CONTRACTOR TO PROVIDE 30A/2P BREAKER.
FEED EQUIPMENT WITH (1) 2#10 & 1#10G IN 3/4"C.

MSB LOAD ANALYSIS

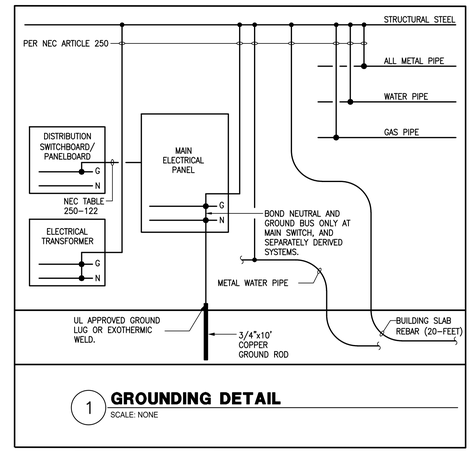
120/208V, 3PH, 4W.

LOAD DESCRIPTION	LOAD VA
LOAD TO REMAIN x 1.25	150300
NEW HVAC - FANS, AHU'S	207400
NEW 25% LARGEST MOTOR (10HP)	2901
NEW MISCELLANEOUS	0
TOTAL	360601

360601 / $208*3^{1/2}$ = 1001 AMPS
EXISTING 2500 AMPS SERVICE



2 **ELECTRICAL-ONELINE**
SCALE: NONE



1 **GROUNDING DETAIL**
SCALE: NONE

Project No: 2022-02715-00
Drawn By: AW
Checked By: JZ
Date: 09-14-2022
Revision Dates:

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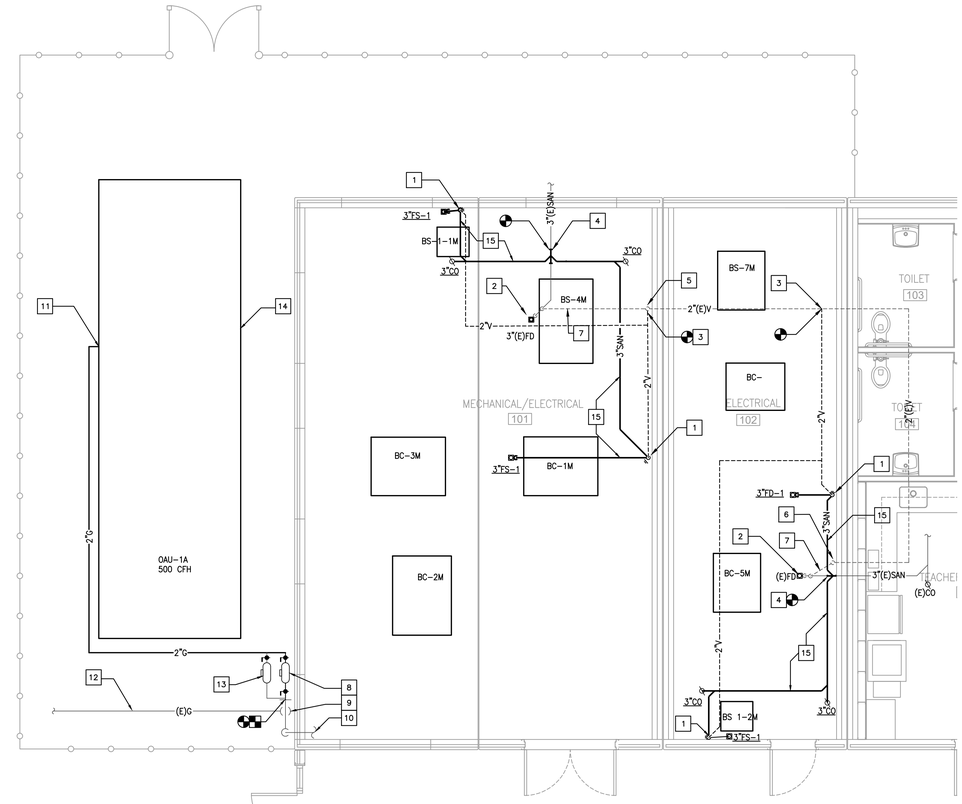
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09-14-2022

ELECTRICAL DETAILS - MARSHALL MS

E2.1



NORTH

2 PLUMBING ENLARGED FLOOR PLAN - MARSHALL MS

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

PLUMBING KEYED NOTES:

1. 2" VENT UP.
2. EXISTING FLOOR DRAIN TO REMAIN
3. CONNECT NEW 2" VENT TO EXISTING 2" VENT.
4. CONNECT NEW 3" SANITARY TO EXISTING 3" SANITARY.
5. EXISTING 2" VTR TO REMAIN. FIELD VERIFY EXACT LOCATION
6. EXISTING 2" VENT.
7. EXISTING 2" VENT FROM BELOW SERVING EXISTING FLOOR DRAIN TO REMAIN.
8. NEW GAS PRESSURE REGULATOR, 5 PSI TO 8 OZ, 500 CFH.
9. EXISTING GAS FROM BELOW TO REMAIN.
10. EXISTING GAS PIPE TO REMAIN.
11. MAKE FINAL GAS CONNECTION TO OAU-1A. FIELD VERIFY EXACT LOCATION INLET WITH MECHANICAL CONTRACTOR. SUPPORT GAS PIPE WITH UNISTRUT ANCHORED TO CONCRETE AND CLAMPS.
12. EXISTING GAS PIPING BELOW GRADE TO REMAIN.
13. EXISTING GAS PRESSURE REGULATOR TO BE REMOVED.
14. EXISTING OUTSIDE AIR UNIT (750 CFH) TO BE REMOVED, REFER TO MECHANICAL DRAWINGS. REMOVE ASSOCIATED GAS PIPING BACK TO POINT SHOWN.
15. SAW CUT CONCRETE TO ACCOMMODATE FOR NEW UNDERGROUND SANITARY. FIELD VERIFY EXACT LOCATION OF EXISTING SANITARY CONNECTION.



NORTH

1 PLUMBING FLOOR PLAN - MARSHALL MS

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

Project No: 2022-02715-00
Drawn By: EH
Checked By: KBG
Date: 09-14-2022
Revision Dates:

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PLUMBING FLOOR PLANS - MARSHALL MS

P1.1

PLUMBING GENERAL NOTES

1. WITHIN THE EXISTING BUILDING, EXISTING WATER, WASTE AND VENT SERVICES ARE TO BE MODIFIED AS REQUIRED AND REUSED FOR THE INSTALLATION OF NEW AND/OR RELOCATED PLUMBING FIXTURES. REFER TO PLUMBING FLOOR PLANS FOR POINTS OF CONNECTION.
2. WITHIN THE EXISTING BUILDING, SAWCUT AND REMOVE EXISTING FLOOR SLAB AS REQUIRED TO PROVIDE NEW AND/OR RELOCATED PLUMBING FIXTURES, CLEANOUTS, AND UNDERSLAB WASTE AND VENT PIPING. PATCH AND REFINISH FLOOR TO MATCH EXISTING.
3. IN AREAS WHERE THE FLOOR SLAB IS REMOVED, CONTRACTOR SHALL ALSO REMOVE UNDERSLAB WASTE AND VENT PIPING WHICH SERVES FIXTURES DESIGNATED FOR REMOVAL PRIOR TO ANY REMOVAL. FIELD VERIFY THAT LINES TO BE REMOVED DO NOT SERVE ANY EXISTING FIXTURES TO REMAIN OR NEW FIXTURES TO BE INSTALLED.
4. IN AREAS WHERE THE FLOOR SLAB IS NOT REMOVED, CONTRACTOR SHALL ABANDON IN PLACE ANY UNDERSLAB WASTE AND VENT PIPING NO LONGER NEEDED, UNLESS THE PIPING MUST BE REMOVED TO ACCOMMODATE NEW CONSTRUCTION. IF NEW WORK DOES NOT NECESSITATE THEIR REMOVAL, CUT AND PLUG SUCH LINES BELOW SLAB, AND PATCH FLOOR TO MATCH EXISTING.
5. FIELD VERIFY EXACT LOCATION, SIZE, DEPTH, DIRECTION OF FLOW, CAPACITY, PIPE MATERIAL AND CONDITION OF EXISTING WASTE PIPING PRIOR TO BEGINNING CONSTRUCTION. ENSURE THAT PROPER CONNECTIONS TO AND EXTENSION OF SUCH UTILITIES CAN BE MADE.
6. WASTE LINES TO BE RE-USED OR RECONNECTED TO SHALL BE THOROUGHLY RODDED OUT AND FLUSHED TO ENSURE THEY ARE FREE FROM BLOCKAGES.
7. CONTRACTOR SHALL COORDINATE ROUTING OF PIPING BELOW SLAB WITH COLUMN FOOTINGS, GRADE BEAMS, UNDERGROUND PLUMBING AND ELECTRICAL UTILITIES, AND OTHER SUB-SURFACE BUILDING ELEMENTS.
8. CONTRACTOR SHALL COORDINATE ROUTING OF PIPING IN CEILING SPACES WITH MECHANICAL AND ELECTRICAL EQUIPMENT, DUCTWORK AND CONDUIT. SHOULD A CONFLICT OCCUR THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER PRIOR TO INSTALLING AN ALTERNATE PIPING PLAN.
9. CONTRACTOR TO COORDINATE ALL REMODEL WORK WITH THE WORK OF OTHER TRADES TO AVOID CONFLICTS AND TO MINIMIZE INTERRUPTION OF SERVICES.
10. COORDINATE ALL FIXTURE AND EQUIPMENT LOCATIONS AND CONNECTION REQUIREMENTS WITH LATEST ARCHITECTURAL DRAWINGS AND SPECIFICATIONS PRIOR TO ANY ROUGH-INS.
11. DO NOT ROUGH-IN FROM THESE DRAWINGS. REFER TO LATEST ARCHITECTURAL DRAWINGS FOR DIMENSIONED LOCATIONS.
12. CONTRACTOR TO FIELD VERIFY AS NECESSARY THE EXACT ROUTING AND SIZES OF ALL PIPING.
13. ALL WORK, METHODS AND INSTALLATIONS INVOLVED IN THE PLUMBING DESIGN SHALL BE IN ACCORDANCE WITH THE CITY BUILDING CODE, INSPECTION REGULATIONS AND ALL OTHER OFFICIALS HAVING JURISDICTION.
14. THE PROPER INSTALLATION OF NEW FIXTURES AND THE PROPER CONTINUED OPERATION OF EXISTING FIXTURES TO REMAIN SHALL DETERMINE THE EXTENT AND NATURE OF PLUMBING REMODEL WORK.
15. EACH VENT SHALL TERMINATE VERTICALLY NOT LESS THAN 6" ABOVE ROOF, MAINTAIN MINIMUM 10'-0" DISTANCE BETWEEN VENT TERMINALS THROUGH ROOF AND ALL FRESH AIR INTAKES, AND A MINIMUM 5'-0" FROM ANY EXTERIOR WALL.
16. PRIOR TO BEGINNING CONSTRUCTION, COORDINATE BUILDING BACKFLOW PREVENTION REQUIREMENTS WITH THE LOCAL AUTHORITY HAVING JURISDICTION AND PROVIDE AS DIRECTED.

PLUMBING PIPING LEGEND

SYMBOLS	DESCRIPTION
SAN	SANITARY OR WASTE PIPING ABOVE GRADE (SAN)
SAN	SANITARY OR WASTE PIPING BELOW GRADE (SAN)
GW	GREASE WASTE PIPING (GW)
GW	GREASE WASTE PIPING BELOW GRADE (GW)
SD	STORM DRAIN PIPING (SD)
SD	STORM DRAIN PIPING BELOW GRADE (GW)
SSD	SUB-SOIL DRAIN OR FOOTING DRAIN (SSD)
AW	ACID WASTE PIPING (AW)
AW	ACID WASTE PIPING BELOW GRADE (AW)
PD	PUMPED DISCHARGE (PD)
CD	CONDENSTATE DRAIN PIPING (CD)
D	CONDENSTATE – INDIRECT DRAIN PIPING (D)
	VENT PIPING (V)
CW	COLD WATER PIPING (CW)
HW	HOT WATER PIPING (HW)
HWR	HOT WATER RETURN PIPING (HWR)
SCW	SOFT COLD WATER PIPING (SCW)
CDW	CHILLED DRINKING WATER PIPING (CDW)
TP	TRAP PRIMER LINE (TP)
F	FIRE PROTECTION PIPING (F)
AS	AUTOMATIC SPRINKLER PIPING (AS)
GAS	NATURAL GAS PIPING (G)
GV	GAS VENT PIPING (GV)
AIR	COMPRESSED AIR PIPING (A)
	FLOW DIRECTIONAL ARROW
	SHUT-OFF VALVE
	BALANCING VALVE (BV)
SV	SOLENOID VALVE (SV)
	BALL VALVE (BV)
	BUTTERFLY VALVE
	LUBRICATED PACKED PLUG STOP STOP COCK (PC)
	HORIZONTAL SWING CHECK
	UNION
	HORIZONTAL SWING CHECK
	REDUCER OR INCREASER
	ECCENTRIC REDUCER
	REDUCED PRESSURE BACKFLOW PREVENTER (RPBFP)
	PIPING DOWN
	RISE OR DROP PIPING
	PIPING UP –OR– PIPING UP & DOWN
	CAP ON END OF PIPE
	CLEANOUT (WALL OR CEILING) (CO)
	FLOOR CLEANOUT (FCO)
	EXTERIOR CLEANOUT WITH 18"x18"x4" CONCRETE PAD (ECO)
	TWO-WAY CLEANOUT (PROVIDE 18"x24"x4" CONCRETE PAD OUTSIDE)
	FIRE DEPARTMENT VALVE AT RISER
	FIRE HYDRANT
	FIRE DEPARTMENT CONNECTION
	PRESSURE REDUCING VALVE (PRV)
	BRANCH CONNECTION OUT OF TOP
	BRANCH CONNECTION OUT OF BOTTOM
	BRANCH CONNECTION OUT OF SIDE
	WYE & 1/8TH BEND BRANCH CONNECTION
	WYE BRANCH CONNECTION
	HOSE BIBB
	PRESSURE GAUGE WITH COCK
	THERMOMETER
	GAS PRESSURE REGULATOR
	TEST COCK
	GAS METER
	WALL HYDRANT
	VALVE IN RISE
	ASME TEMPERATURE & PRESSURE RELIEF VALVE
	VACUUM RELIEF VALVE
	ANGLE VALVE
	OS&Y VALVE
	ROOF DRAIN
	REFER TO KEYED NOTE
FS	FLOW SWITCH
	FLOOR SINK (FS)
	FLOOR DRAIN (FD)
	FLOOR DRAIN WITH P-TRAP (FD)
	FLOOR DRAIN WITH P-TRAP AT 45° ANGLE (FD)
	HUB DRAIN (HD)
	ACCESS PANEL FOR TRAP PRIMER OR SHOCK ABSORBER
AP	ACCESS PANEL LOCATION SYMBOL
A	SHOCK ABSORBER
	AIR CHAMBER
(E)	EXISTING
(N)	NEW
VTR	VENT THRU ROOF
B.F.F.	BELOW FINISHED FLOOR
A.F.F.	ABOVE FINISHED FLOOR
	NEW CONNECTION
IE=100.00'	INVERT ELEVATION
1	DELTA CHANGE SYMBOL
P 1 4" VTR	RISER FLAG

PLUMBING MATERIAL LIST

ABOVE GRADE, INSIDE BUILDING

SANITARY WASTE AND VENT PIPING SHALL BE

NO-HUB CAST IRON SYSTEM CONFORMING TO CISPI STANDARD NO. 301-75. NEOPRENE GASKETS SHALL CONFORM TO ASTM STANDARD C564-75, OR,

BELOW GRADE, INSIDE BUILDING

SANITARY WASTE AND VENT PIPING SHALL BE

SCHEDULE 40 DWV POLYVINYL CHLORIDE PIPE AND FITTINGS CONFORMING TO ASTM-2665 WITH SOLVENT WELDED JOINTS. DO NOT USE IN AIR SUPPLY OR RETURN PLENUMS, AND OR WHERE FIRE RATED WALLS, PARTITIONS, OR FLOORS ARE PENETRATED.

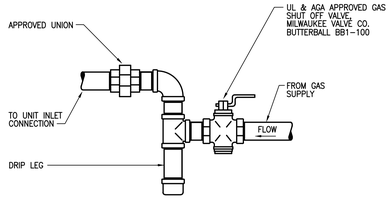
GAS PIPING SHALL BE

PIPE 2" AND SMALLER. PROVIDE SCHEDULE 40 ASTM A 53 BLACK STEEL WITH FACTORY FABRICATED SOCKET WELD FITTINGS.

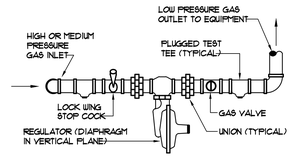
PIPE LARGER THAN 2", USE SCHEDULE 40 ASTM A 53 BLACK STEEL PIPE WITH LONG RADIUS WELD FITTINGS.

PLUMBING FIXTURE SCHEDULE

TYPE:	FS-1
SERVICE:	MECHANICAL EQUIPMENT CONDENSATE
DESCRIPTION:	CAST IRON 8" SQUARE FLOOR SINK WITH 6" DEEP SUMP, A.R.E. INTERIOR, ALUMINUM DOME BOTTOM STRAINER, STAINLESS FRAME AND HALF GRATE, ANCHOR FLANGE, CLAMPING COLLAR WADE #9110-85-15-26-48
TRAP SEAL:	PROVIDE PRO-SET SYSTEMS, INC. TRAP GUARD FACTORY FITTED TO MATCH EACH FLOOR SINK BY SIZE, MODEL, AND MANUFACTURER.
ROUGH-IN:	REFER TO FLOOR PLANS FOR SIZES. COORDINATE FINAL LOCATION WITH ARCHITECTURAL DRAWINGS / EQUIPMENT PLACEMENT.



2 **GAS CONNECTION**
SCALE: NONE GA07-11/12/08



NOTE: REFERENCE DRAWINGS FOR PIPE SIZES.

1 **GAS PRESSURE REGULATOR INSTALLATION**
SCALE: NONE GA02-11/12/08

Project No: 2022-02715-00
Drawn By: EH
Checked By: KBG
Date: 09-14-2022
Revision Dates:

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PLUMBING SCHEDULES, LEGENDS, AND DETAILS - MARSHALL MS

P3.1

THROUGHOUT CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY AND RENTAL EQUIPMENT, INCLUDING POWER FOR SUCH EQUIPMENT, AND TO PROVIDE PHASING TO ENSURE SPACE TEMPERATURE AND HUMIDITY IS MAINTAINED. REFER TO SPECIFICATION 23 05 11 MECHANICAL ALTERATIONS PROJECT PROCEDURES, ARTICLE 3.8 FOR ADDITIONAL REQUIREMENTS. CONTRACTOR SHALL REVIEW ALL REQUIREMENTS PRIOR TO BID.

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. CONTROLS WORK SHOWN AS A PART OF THE PROJECT ON THIS CAMPUS WILL REQUIRE INCIDENTAL ARCHITECTURAL CEILING WORK. ALL SUCH WORK SHALL BE INCLUDED IN THE CONTRACTORS BID. THIS WORK SHALL BE PERFORMED WITHOUT ANY IMPACT TO THE CONSTRUCTION SCHEDULE AND/OR ADDITIONAL COST.
4. CONTRACTOR SHALL REMOVE AND REPLACE CEILING WHERE REQUIRED TO COMPLETE THE INDICATED SCOPE OF CONTROLS WORK. EXISTING CEILING SHALL BE RE-INSTALLED IN THE EXACT CONDITION IT WAS REMOVED IN. DAMAGED CEILING AND/OR CEILING TILES SHALL BE REPLACED TO MATCH CONDITIONS EXISTING PRIOR TO THE BEGINNING OF CONSTRUCTION. IF A MATCH IS NOT POSSIBLE, CONTRACTOR SHALL REPLACE ALL CEILING FROM WALL TO WALL OR BOUNDARY SEPARATION IN CORRIDOR, CLASSROOM, OR ANY OTHER SPACE.
5. REMOVE ALL EXISTING SPACE MOUNTED TEMPERATURE AND HUMIDITY SENSORS NOT BEING REUSED. PROVIDE STAINLESS STEEL COVER PLATES.
6. OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL HVAC EQUIPMENT BEING REMOVED FROM THIS PROJECT. THIS INCLUDES BUT NOT LIMITED TO CONDENSING UNITS, AIR HANDLING UNITS, AND CONTROLS.
7. ALL EXISTING SUPPLY, RETURN, OUTSIDE AIR, AND EXHAUST SHALL BE EXISTING TO REMAIN UNLESS OTHERWISE NOTED.
8. ALL EXISTING FIRE DAMPERS SHALL BE EXISTING TO REMAIN UNLESS OTHERWISE NOTED.

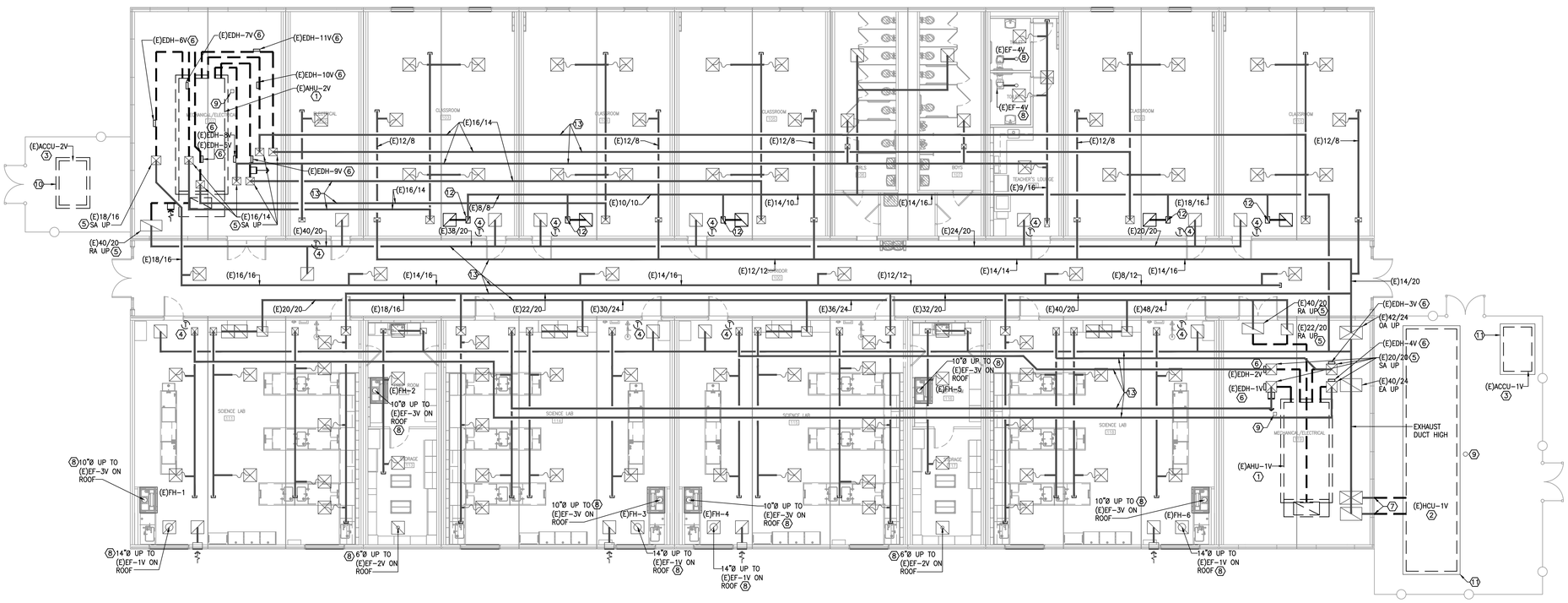
DEMOLITION KEYED NOTES:

1. REMOVE EXISTING MULTIZONE AIR HANDLING UNIT, ASSOCIATED CONTROLS, CONCRETE HOUSEKEEPING PAD, AND ALL OTHER ASSOCIATED APPURTENANCES.
2. REMOVE EXISTING HUMIDITY CONTROL UNIT, CONTROLS, AND ALL ASSOCIATED APPURTENANCES.
3. REMOVE EXISTING CONDENSING UNIT, ALL ASSOCIATED REFRIGERANT PIPING, AND ALL ASSOCIATED APPURTENANCES.
4. REMOVE EXISTING TEMPERATURE SENSOR AND ALL ASSOCIATED CONTROL WIRING.
5. REMOVE EXISTING DUCTWORK BACK TO 0'-12" BELOW EXISTING STRUCTURE.
6. REMOVE EXISTING ELECTRIC DUCT HEATER AND ALL ASSOCIATED APPURTENANCES.
7. REMOVE EXISTING DUCTWORK BACK TO POINT INDICATED.
8. EXISTING EXHAUST FAN TO REMAIN.
9. EXISTING FLOOR DRAIN TO REMAIN.
10. REMOVE EXISTING CONCRETE HOUSEKEEPING PAD.
11. EXISTING CONCRETE HOUSEKEEPING PAD TO REMAIN.
12. REMOVE EXISTING DUCTWORK UP TO 0'-12" BELOW EXISTING FIRE DAMPER. CAP EXISTING DUCTWORK AIR TIGHT BELOW EXISTING FIRE DAMPER.
13. EXISTING MAIN DUCTWORK TO REMAIN. ALL ASSOCIATED DAMPERS, DIFFUSERS SHALL REMAIN UNLESS OTHERWISE NOTED.

DEMO SYMBOL LEGEND

RENOVATIONS	
	ITEM TO REMAIN
	ITEM TO BE REMOVED

BMCS NOTE:
EXISTING CONTROL SYSTEM IS BY AUTOMATED LOGIC.
REFER TO BMCS SPECIFICATION FOR MORE INFORMATION.



NORTH

1 **MECHANICAL DEMOLITION FLOOR PLAN - VINCENT MS**
SCALE: 1/8" = 1'-0"

Project No: 2022-02715-00
Drawn By: BB
Checked By: VP
Date: 09-14-2022
Revision Dates:

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Project No. 2022-02715-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT
BISD Preparing Our Next Generation

Bradley Kalmans
REGISTERED PROFESSIONAL ENGINEER
BRADLEY KALMANS
80219
LICENSED
MECHANICAL
09-14-2022

MECHANICAL DEMOLITION FLOOR PLANS - VINCENT MS

M0.1

THROUGHOUT CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY AND RENTAL EQUIPMENT, INCLUDING POWER FOR SUCH EQUIPMENT, AND TO PROVIDE PHASING TO ENSURE SPACE TEMPERATURE AND HUMIDITY IS MAINTAINED. REFER TO SPECIFICATION 23 05 11 MECHANICAL ALTERATIONS PROJECT PROCEDURES, ARTICLE 3.8 FOR ADDITIONAL REQUIREMENTS. CONTRACTOR SHALL REVIEW ALL REQUIREMENTS PRIOR TO BID.

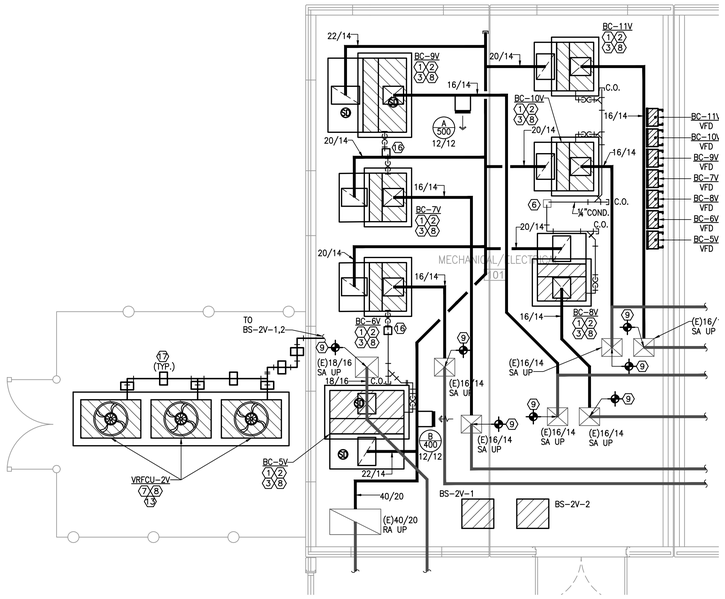
MECHANICAL GENERAL NOTES:

1. MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL REQUIREMENTS.
2. THESE 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 OR DUCT SYSTEMS.
3. ALL MECHANICAL SYSTEMS SHOWN ON THIS PLAN ARE FROM PRELIMINARY FILED WORK. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL LOCATIONS AND SIZES OF MECHANICAL EQUIPMENT PRIOR TO START OF WORK.
4. THE SCOPE OF WORK SHOWN AS A PART OF THE PROJECT ON THIS CAMPUS WILL REQUIRE INCIDENTAL ARCHITECTURAL CEILING WORK. ALL SUCH WORK SHALL BE INCLUDED IN THE CONTRACTORS BID. THIS WORK SHALL BE PERFORMED WITHOUT ANY IMPACT TO THE CONSTRUCTION SCHEDULE AND/OR ADDITIONAL COST.
5. CONTRACTOR SHALL REMOVE AND REPLACE CEILING WHERE REQUIRED TO COMPLETE THE INDICATED SCOPE OF WORK. EXISTING CEILING SHALL BE RE-INSTALLED IN THE EXACT CONDITION IT WAS REMOVED IN. DAMAGED CEILING AND/OR CEILING TILES SHALL BE REPLACED TO MATCH CONDITIONS EXISTING PRIOR TO THE BEGINNING OF CONSTRUCTION. IF A MATCH IS NOT POSSIBLE, CONTRACTOR SHALL REPLACE ALL CEILING FROM WALL TO WALL OR BOUNDARY SEPARATION IN CORRIDOR, CLASSROOM, OR ANY OTHER SPACE.

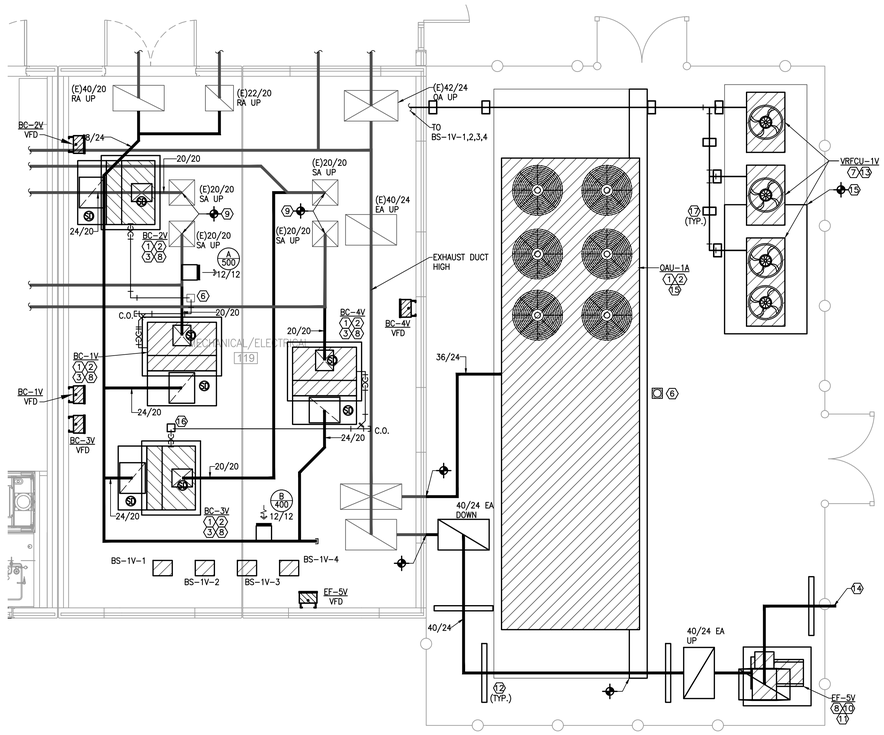
MECHANICAL KEYED NOTES:

1. VERIFY SERVICE CLEARANCE FOR AIR FILTER, FAN SHAFT, AND COIL REMOVAL WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.
2. ROUTE FULL SIZE CONDENSATE TO FLOOR DRAIN. ROUTE CONDENSATE DRAIN PIPE TO ENSURE THAT IT WILL NOT CREATE A TRIPPING HAZARD. INSTALL CONDENSATE TRAP AS RECOMMENDED BY MANUFACTURER.
3. ROUTE REFRIGERANT LINES TO ASSOCIATED VRF AIR COOLED CONDENSING UNIT. SIZE REFRIGERANT LINES PER MANUFACTURERS RECOMMENDATIONS.
4. PROVIDE FIRE DAMPER AT VERTICAL THROUGH CONCRETE DECK.
5. BALANCE EXISTING GRILLE TO CFM INDICATED ON DRAWINGS.
6. CONTRACTOR SHALL CLEAN EXISTING FLOOR DRAIN TO LIKE NEW CONDITIONS.
7. REFER TO MANUFACTURER FOR REFRIGERANT PIPE SIZES, AIRFLOW CLEARANCES, AND MAINTENANCE CLEARANCES.
8. PROVIDE 6" CONCRETE HOUSEKEEPING PAD.
9. CONNECT DUCTWORK AT EXISTING SIZE.
10. VERIFY SERVICE CLEARANCE WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.
11. PROVIDE EXHAUST FAN WITH EQUIPMENT SUPPORT. RE: 6/M3.1 FOR DETAIL.
12. PROVIDE DUCT SUPPORT AS SPECIFIED. RE: 7/M3.1 FOR DETAIL.
13. NEW REFRIGERANT PIPING SHALL UTILIZE EXISTING OPENING IN WALL. MODIFY OPENING AS REQUIRED TO ACCOMMODATE NEW REFRIGERANT PIPING. REFER TO DETAILS.
14. 40/24 EXHAUST DUCTWORK SHALL TERMINATE 10'-0" ABOVE FINISHED FLOOR (A.F.F.). PROVIDE DUCTWORK WITH WEATHER HOOD. PROVIDE OPENING WITH 1/4" ALUMINUM MESH. SUPPORT DUCTWORK FROM EXISTING FENCE.
15. MODIFY EXISTING CONCRETE HOUSE KEEPING PAD TO ACCOMMODATE NEW OUTSIDE AIR UNIT.
16. REFER TO PLUMBING DRAWINGS FOR EXACT LOCATION OF FLOOR DRAIN.
17. ROUTE REFRIGERANT PIPING ON GALVANIZED UNISTRUT ANCHORED TO CONCRETE. ATTACH PIPING TO UNISTRUT WITH GALVANIZED CUSH-A-CLAMP. FASTENERS SHALL BE STAINLESS STEEL.

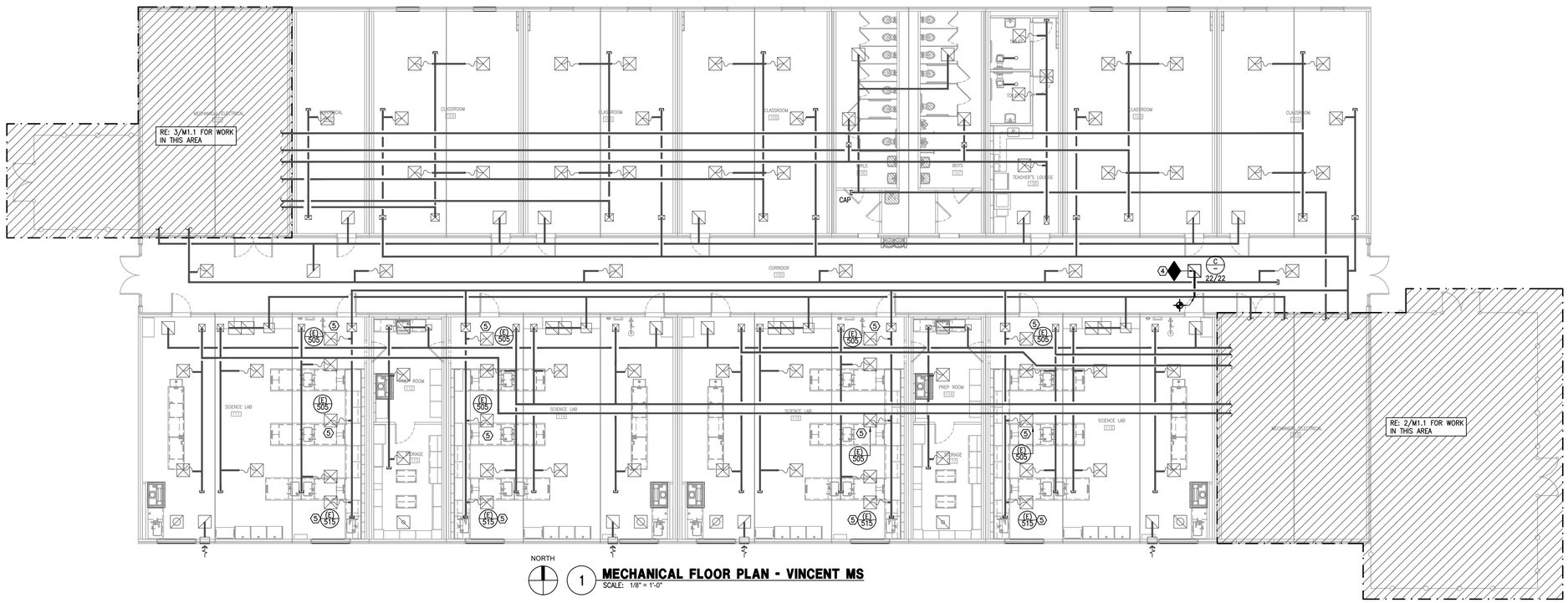
BMCS NOTE:
EXISTING CONTROL SYSTEM IS BY AUTOMATED LOGIC.
REFER TO BMCS SPECIFICATION FOR MORE INFORMATION.



NORTH
3 **MECHANICAL ENLARGED FLOOR PLAN - VINCENT MS**
SCALE: 1/4" = 1'-0"



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



NORTH
1 **MECHANICAL FLOOR PLAN - VINCENT MS**
SCALE: 1/8" = 1'-0"

Project No:	2022-02715-00
Drawn By:	BB
Checked By:	VP
Date:	09-14-2022
Revision Dates:	

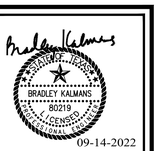
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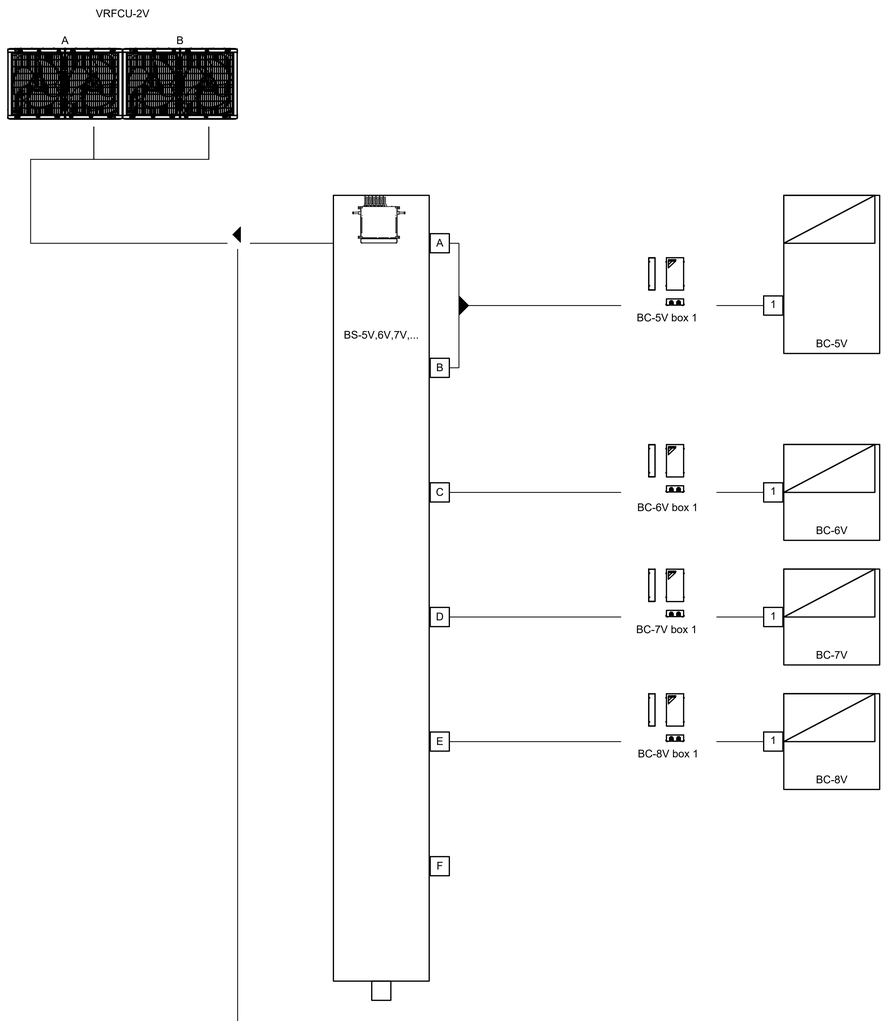
BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

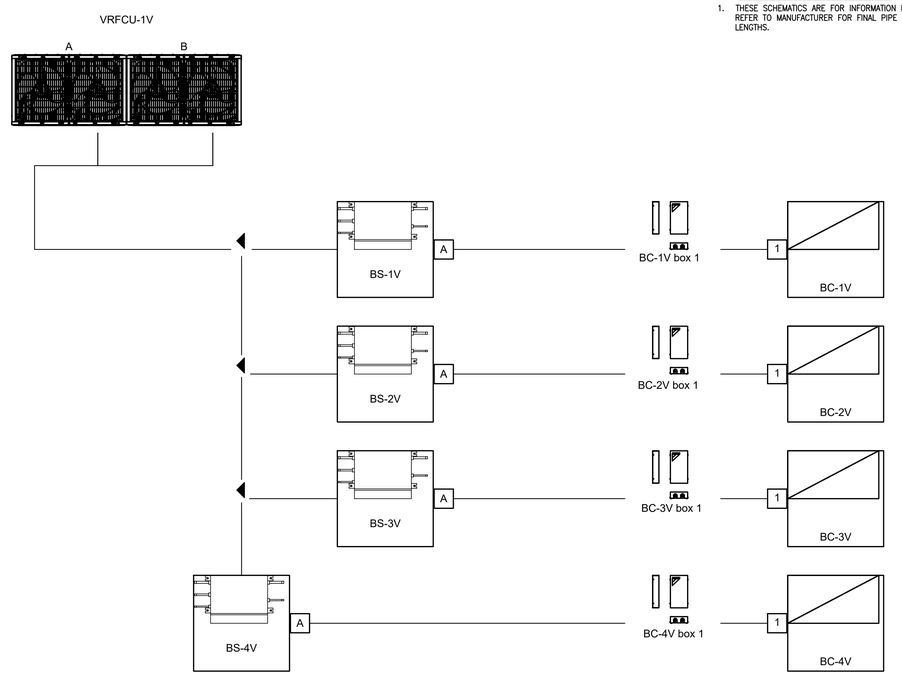
BEAUMONT INDEPENDENT SCHOOL DISTRICT
BISD Preparing Our Next Generation

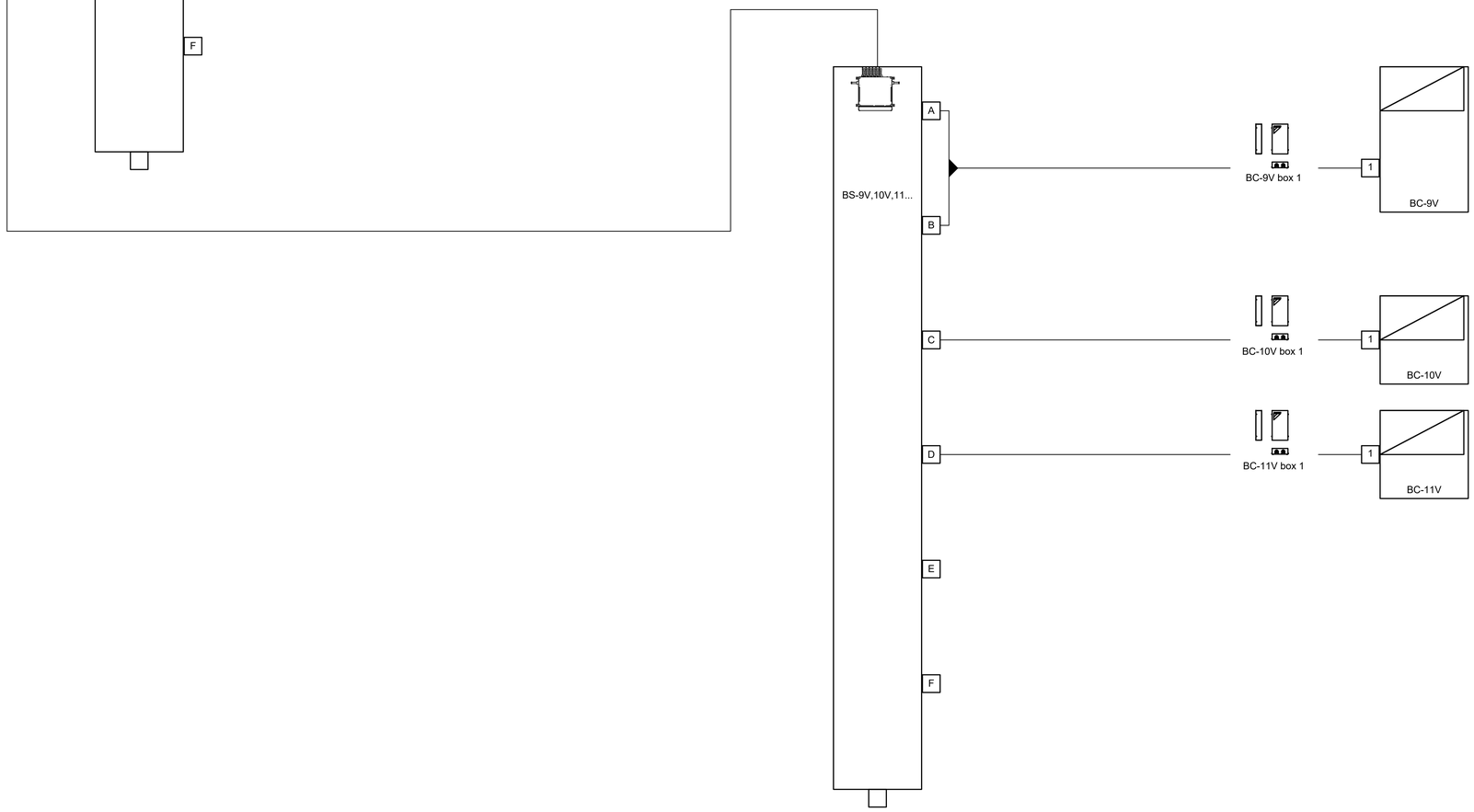


MECHANICAL FLOOR PLANS - VINCENT MS

M1.1







MECHANICAL GENERAL NOTES:

1. THESE SCHEMATICS ARE FOR INFORMATION PURPOSES ONLY. REFER TO MANUFACTURER FOR FINAL PIPE SIZES AND LENGTHS.

Project No: 2022-02715-00

Drawn By: BB

Checked By: VP

Date: 09-14-2022

Revision Dates:

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BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD
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PROFESSIONAL ENGINEER
09-14-2022

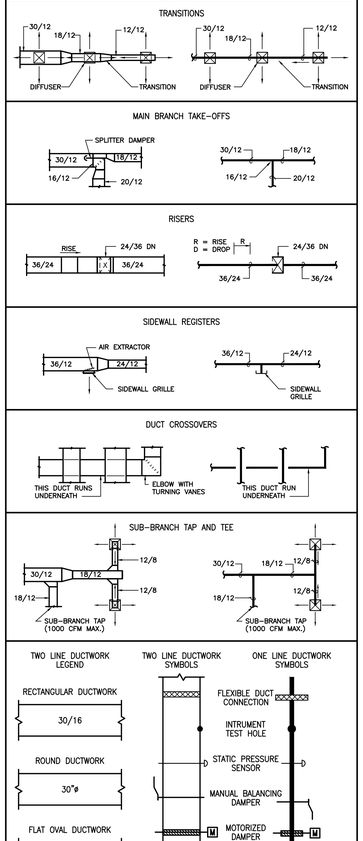
MECHANICAL VRF PIPING DIAGRAM - VINCENT MS

M2.1

SYMBOL LEGEND

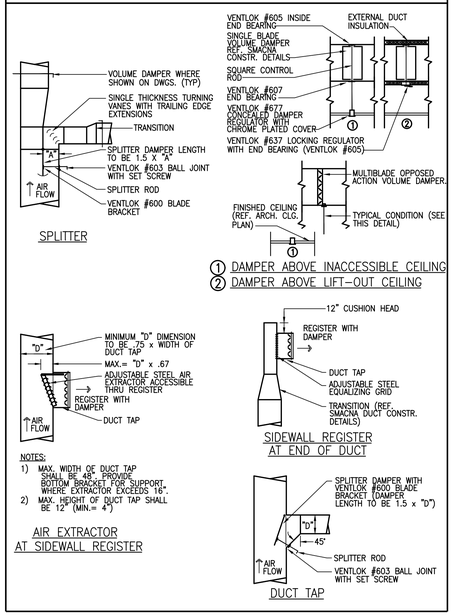
SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
GENERAL	
(#)	KEY NOTE TAG
(#)	NOTE SPECIFIC TO DETAIL TAG
(#)	REVISION TAG
	NEW EQUIPMENT
DUCTWORK	
	SUPPLY AIR DUCTWORK
	RETURN AIR AND OUTSIDE AIR DUCTWORK
	EXHAUST AIR DUCTWORK
	FLEXIBLE DUCTWORK
	SUPPLY AIR DUCTWORK THROUGH HORIZONTAL PARTITION
	RETURN AIR AND OUTSIDE AIR DUCTWORK THROUGH HORIZONTAL PARTITION
	EXHAUST AIR DUCTWORK THROUGH HORIZONTAL PARTITION
	FIRE DAMPER (VERTICAL)
	FIRE DAMPER (HORIZONTAL)
	SMOKE DAMPER (VERTICAL)
	SMOKE DAMPER (HORIZONTAL)
	COMBINATION FIRE & SMOKE DAMPER (VERTICAL)
	COMBINATION FIRE & SMOKE DAMPER (HORIZONTAL)
	MANUAL BALANCING DAMPER (SEE DAMPER SCHEDULE)
	MOTORIZED DAMPER (SEE DAMPER SCHEDULE)
SENSORS	
(T)	THERMOSTAT AND TEMPERATURE SENSOR
(H)	HUMIDISTAT
(SD)	SMOKE DETECTOR
(HD)	HEAT DETECTOR
AIR DEVICES	
	GRILLE SIZE TAG (REFER TO GRILLE SIZE LEGEND)
	SUPPLY AIR GRILLE WITH FOUR-WAY THROW
	SUPPLY AIR GRILLE WITH THREE-WAY THROW
	SUPPLY AIR GRILLE WITH TWO-WAY THROW
	SUPPLY AIR GRILLE WITH TWO-WAY CORNER THROW
	SUPPLY AIR GRILLE WITH ONE-WAY THROW
	RETURN AIR GRILLE
	RETURN AIR GRILLE WITH SOUND BOOT
	EXHAUST AIR GRILLE
	SUPPLY AIR SIDEWALL GRILLE
	RETURN AIR SIDEWALL GRILLE
20X12	RETURN AIR OPENING ABOVE CEILING
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
	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
RENOVATIONS	
	POINT OF CONNECTION FROM NEW TO EXISTING
	ITEM TO REMAIN
	ITEM TO BE REMOVED

DUCTWORK SYMBOLS LEGEND

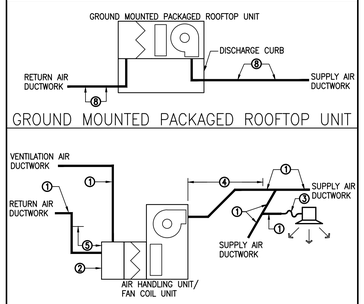


MS02

DUCTWORK CONSTRUCTION DETAILS



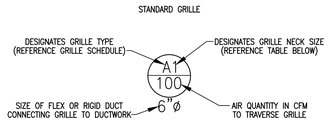
DUCT LINER AND INSULATION



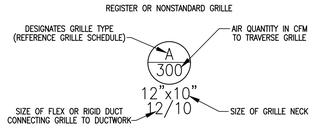
NOTES

1. SHEETMETAL DUCTWORK WITH EXTERNAL DUCTWORK INSULATION AS SPECIFIED.
2. SHEETMETAL DUCTWORK RETURN AIR PLENUM WITH EXTERNAL DUCTWORK INSULATION AS SPECIFIED.
3. FLEXIBLE DUCTWORK WITH EXTERNAL DUCTWORK INSULATION AS SPECIFIED.
4. SHEETMETAL DUCTWORK WITH EXTERNAL DUCTWORK INSULATION AS SPECIFIED AND 1" THICK 1-1/2 LB LINER AS SPECIFIED FROM AIR HANDLING UNIT DISCHARGE TO 10'-0" DOWNSTREAM. PROVIDE METAL NOSING AND MASTIC COVERING. REFER TO THE DUCT LINING SECTION IN THE DUCTWORK SPECIFICATION FOR MORE INFORMATION.
5. SHEETMETAL DUCTWORK WITH EXTERNAL DUCTWORK INSULATION AS SPECIFIED AND 1" THICK 1-1/2 LB LINER AS SPECIFIED FROM AIR HANDLING UNIT INLET TO 10'-0" UPSTREAM.
6. EXHAUST DUCTWORK AS SPECIFIED WITH FIREBOARD INSULATION AS SPECIFIED.
7. SHEETMETAL DUCTWORK ONLY. NO INSULATION REQUIRED.
8. ALL OUTSIDE DUCTWORK SHALL BE DOUBLE WALL CONSTRUCTION WITH TWO COATS OF EPOXY PAINT. REFER TO SPECIFICATIONS FOR MORE DETAILS.

GRILLE SIZING SCHEDULE



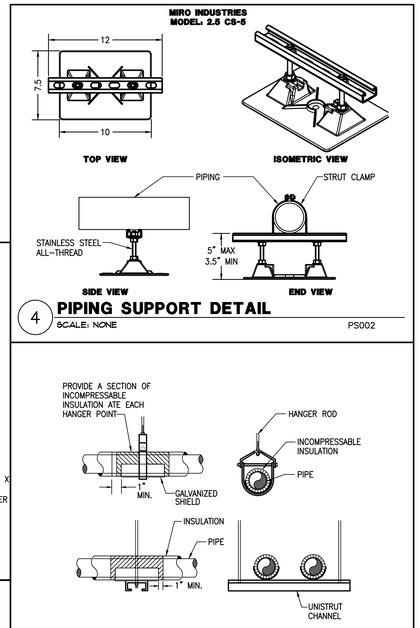
ALL GRILLES SHOWN SHALL BE FOUR-WAY THROW UNLESS OTHERWISE SHOWN.



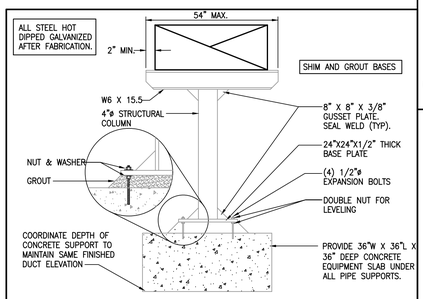
ALL GRILLES SHOWN SHALL BE FOUR-WAY THROW UNLESS OTHERWISE SHOWN.
ALL REGISTERS SHALL HAVE A 45° HORIZONTAL DEFLECTION UNLESS OTHERWISE SHOWN.

GRILLE SIZE DESIGNATION	GRILLE NECK SIZE	GRILLE SIZE DESIGNATION	GRILLE NECK SIZE
1	6" x 6"	7	15" x 15"
2	8" x 8"	8	16" x 16"
3	9" x 9"	9	18" x 18"
4	10" x 10"	10	20" x 20"
5	12" x 12"	11	22" x 22"
6	14" x 14"	12	24" x 24"

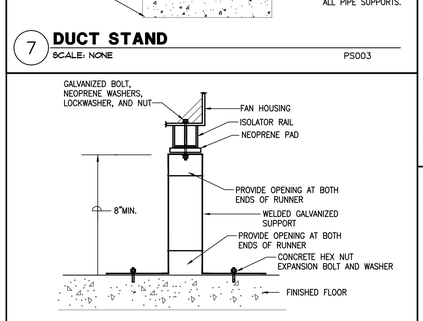
MS01



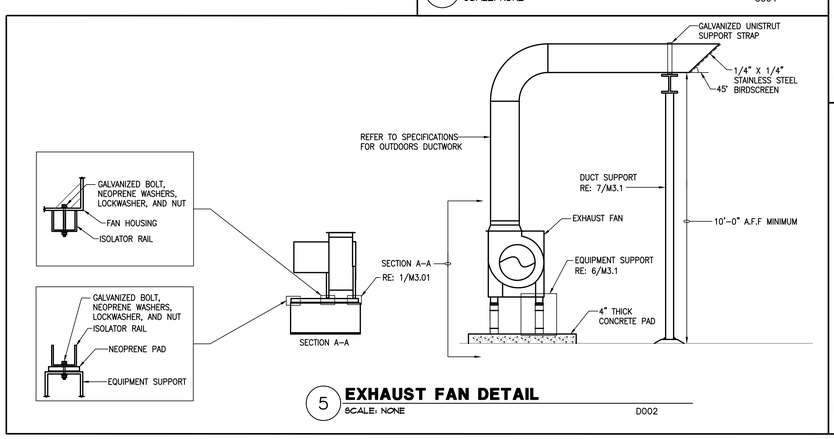
4 **PIPING SUPPORT DETAIL**
SCALE: NONE — PS002



7 **DUCT STAND**
SCALE: NONE — PS003

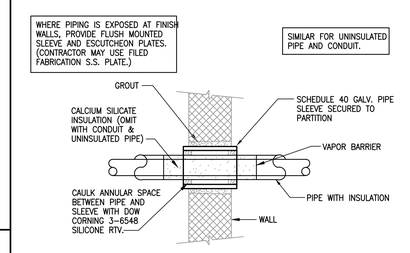


6 **EQUIPMENT SUPPORT**
SCALE: NONE — C004

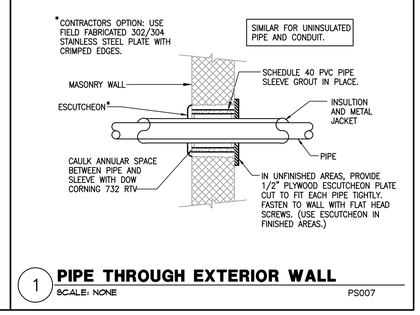


5 **EXHAUST FAN DETAIL**
SCALE: NONE — D002

3 **PIPE HANGERS**
SCALE: NONE — PS002



2 **PIPE THRU FIRE RATED WALL**
SCALE: NONE — PS010



1 **PIPE THROUGH EXTERIOR WALL**
SCALE: NONE — PS007

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Project No. 2022-02715-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT
BISD Preparing Our Next Generation

BRADLEY KALMANS
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LICENSED
PROFESSIONAL ENGINEER
09-14-2022

MECHANICAL LEGENDS AND DETAILS - VINCENT MS

M3.1

100 PERCENT GROUND MOUNTED PACKAGED UNIT - GAS HEAT

MARK	INDOOR AIR FAN					COOLING						GAS HEATING			REMARKS
	SUPPLY AIR CFM	OUTSIDE AIR CFM	EXT. STATIC PRESSURE (IN. W.C.)	HORSE POWER	CURRENT CHARAC.	AIR TEMPERATURE (°F) ENTERING DRY BULB	ENTERING WET BULB	OUTDOOR AMBIENT	MIN. TOTAL CAPACITY (MBH)	MIN. SENSIBLE CAPACITY (MBH)	MINIMUM EER/ SEER	ENTERING AIR TEMP. (°F)	MIN. CAPACITY OUTPUT (MBH)	ACA EFFICIENCY (%)	
OAU–1V	7,875	7,875	2.0	10	208/3/60	98.0	80.0	98.0	767.5	382.7	9.5/–	27.0	382.7	80	(1–11)

GENERAL NOTES:
1. EXTERNAL STATIC PRESSURE INCLUDES LOSSES DUE TO DUCTWORK, AIR DEVICES, DAMPERS, AND DUCT MOUNTED HOT WATER COILS WHERE APPLICABLE. DIRTY FILTER AND UNIT CASING MUST BE ADDED TO EXTERNAL STATIC PRESSURE TO OBTAIN TOTAL PRESSURE LOSS. INCREASE HORSEPOWER AS REQUIRED TO MEET YOUR TOTAL PRESSURE LOSS. COORDINATE WITH ELECTRICIAN.
2. MINIMUM RECOMMENDED CLEARANCE AROUND ROOFTOP UNIT IS 12 INCHES ON NON–SERVICE SIDES AND 30 INCHES ON SERVICE SIDES. MAINTAIN MINIMUM CLEARANCE FOR CONDENSER AIR FLOW AS RECOMMENDED BY ROOFTOP UNIT MANUFACTURER. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON ROOFTOP UNIT FOR SERVICE, MAINTENANCE, AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCE AS REQUIRED BY NEC.

REMARKS:
1. PROVIDE WITH DISCONNECT SWITCH & PAD MOUNTED CURB OR HORIZONTAL DISCHARGE.
2. PROVIDE UNIT WITH FACTORY MOUNTED GFCI RECEPTACLE. ELECTRICIAN TO WIRE TO SEPARATE CIRCUIT.
3. PROVIDE UNIT WITH LOW AMBIENT CONTROL.
4. PROVIDE A WATER LEVEL SENSING DEVICE IN THE PRIMARY DRAIN PAN. THIS DEVICE SHALL SHUT OFF THE APPLIANCE IN THE EVENT THE PRIMARY DRAIN LINE BECOMES RESTRICTED.
5. PROVIDE WITH DISCHARGE AIR TEMPERATURE SENSOR.
6. PROVIDE WITH MODULATING GAS HEAT.
7. PROVIDE WITH STAINLESS STEEL HEAT EXCHANGER.
8. VELOCITY SHALL NOT EXCEED 450 FPM ON COOLING COIL. PROVIDE UNIT WITH A LEAVING AIR TEMPERATURE OF 53°F DRY BULB AND 52.5°F WET BULB.
9. PROVIDE WITH MODULATING HOT GAS REHEAT TO A NEUTRAL CONDITION OF 72°F.
10. PROVIDE WITH VARIABLE SPEED COMPRESSOR OR DIGITAL SCROLL COMPRESSOR AND VARIABLE SPEED CONDENSER FANS. REFER TO SPECIFICATIONS.
11. PROVIDE WITH VFD ON SUPPLY FAN.

BRANCH SELECTOR

MARK	ELECTRICAL			NUM. OF PORTS	REMARKS
	CURRENT CHARAC.	MCA	MOCP		
BS–1V–1	208/1/60	0.10	15.0	1	(1,2,3,4)
BS–1V–2	208/1/60	0.10	15.0	1	(1,2,3,4)
BS–1V–3	208/1/60	0.10	15.0	1	(1,2,3,4)
BS–1V–4	208/1/60	0.10	15.0	1	(1,2,3,4)
BS–2V–1	208/1/60	0.60	15.0	6	(1,2,3,4)
BS–2V–2	208/1/60	0.60	15.0	6	(1,2,3,4)

GENERAL NOTES:
1. BRANCH SELECTOR MODULES ARE TYPICAL. SEE DRAWINGS AND PIPING SCHEMATICS FOR QUANTITY AND LOCATION.
2. BRANCH SELECTORS SHALL HAVE BRAZED CONNECTIONS.

REMARKS:
1. SINGLE–PORT FLOW SELECTORS ARE POWERED FROM INDOOR UNITS.
2. STANDARD SINGLE–PORT FLOW SELECTORS (I.E. NOT "LONG" MODELS) COME STANDARD WITH POWER AND COMMUNICATION WIRES FOR CONNECTION TO INDOOR UNIT.
3. MULTI–PORT FLOW SELECTORS REQUIRE DEDICATED POWER SUPPLY.
4. EACH PORT OF MULTI–PORT FLOW SELECTORS SHALL HAVE A MAXIMUM CAPACITY OF 61 KBTU/HR.

DX BLOWER COIL UNIT - VRF

MARK	FAN					COOLING						HEATING		REMARKS
	SUPPLY AIR CFM	OUTSIDE AIR CFM	EXT. STATIC PRESSURE (IN. W.C.)	HORSE POWER	CURRENT CHARAC.	AIR TEMPERATURE (°F) ENTERING DRY BULB	ENTERING WET BULB	LEAVING DRY BULB	LEAVING WET BULB	MIN. TOTAL CAPACITY (BTUH)	MIN. SENS. CAPACITY (BTUH)	ENTERING AIR TEMPERATURE (°F)	MINIMUM CAPACITY (BTUH)	
BC–1V	3,095	0	2.0	3.0	208/3/60	75.0	62.5	53.0	52.5	89,023	73,537	68.0	90,250	(1–11)
BC–2V	2,945	0	1.5	3.0	208/3/60	75.0	62.5	53.0	52.5	84,709	69,973	68.0	85,876	(1–11)
BC–3v	2,595	0	1.0	3.0	208/3/60	75.0	62.5	53.0	52.5	74,642	61,657	68.0	75,670	(1–11)
BC–4V	2,945	0	2.0	3.0	208/3/60	75.0	62.5	53.0	52.5	84,709	69,973	68.0	85,876	(1–11)
BC–5V	2,010	0	2.0	3.0	208/3/60	75.0	62.5	53.0	52.5	57,815	47,757	68.0	58,611	(1–11)
BC–6V	1,340	0	1.0	2.0	208/3/60	75.0	62.5	53.0	52.5	38,543	31,838	68.0	39,074	(1–11)
BC–7V	1,340	0	1.5	2.0	208/3/60	75.0	62.5	53.0	52.5	38,543	31,838	68.0	39,074	(1–11)
BC–8V	1,340	0	1.5	2.0	208/3/60	75.0	62.5	53.0	52.5	38,543	31,838	68.0	39,074	(1–11)
BC–9V	2,050	0	1.75	2.0	208/3/60	75.0	62.5	53.0	52.5	58,965	48,708	68.0	59,778	(1–11)
BC–10V	1,340	0	2.0	2.0	208/3/60	75.0	62.5	53.0	52.5	38,543	31,838	68.0	39,074	(1–11)
BC–11V	1,340	0	2.0	2.0	208/3/60	75.0	62.5	53.0	52.5	38,543	31,838	68.0	39,074	(1–11)

GENERAL NOTES:
1. EXTERNAL STATIC PRESSURE INCLUDES LOSSES DUE TO DUCTWORK, AIR DEVICES, DAMPERS, AND DUCT MOUNTED HOT WATER COILS WHERE APPLICABLE. DIRTY FILTER AND UNIT CASING MUST BE ADDED TO EXTERNAL STATIC PRESSURE TO OBTAIN TOTAL PRESSURE LOSS. INCREASE HORSEPOWER AS REQUIRED TO MEET YOUR TOTAL PRESSURE LOSS. COORDINATE WITH ELECTRICIAN.
2. MAINTAIN MINIMUM CLEARANCE FOR COIL PULL AS RECOMMENDED BY UNIT MANUFACTURER. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON UNIT FOR SERVICE, MAINTENANCE, AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCE AS REQUIRED BY NEC.

REMARKS:
1. VELOCITY NOT TO EXCEED 500 FPM ON COOLING COIL.
2. PROVIDE VERTICAL UNIT.
3. PROVIDE VARIABLE VOLUME UNIT.
4. PROVIDE TOP DISCHARGE.
5. PROVIDE WITH FLAT FILTER.
6. THE VARIABLE REFRIGERANT VOLUME SYSTEM SHALL BE CAPABLE OF INTEGRATING TO A MODULAR BUILT UP AIR HANDLING UNIT.
7. FULL PORT, BI–DIRECTIONAL FLOW ISOLATION VALVES SHALL BE INSTALLED UPSTREAM OF AIR HANDLING UNIT INTEGRATION KIT. ENSURE SCHRADER FITTING IS POSITIONED ON THE DOWNSTREAM SIDE OF THE VALVE.
8. THE INTEGRATION KIT SHALL ALLOW CONNECTION AND CONTROL IN ADDITION TO FULL INTEGRATION OF NON VRF AIR HANDLING EQUIPMENT INTO A VRF SYSTEM.
9. THE INTEGRATION KIT SHALL INCLUDE AN ELECTRONIC EXPANSION VALVE CAPABLE OF 2000 STEPS TO CONTROL REFRIGERANT FLOW TO COIL.
10. INTEGRATED CONTROL MODULE SHALL COMMUNICATE WITH VRV CONDENSING UNIT.
11. PROVIDE WITH DOUBLE WALL INSULATED UNIT CASING WITH SOLID INNER WALL.

VRF AIR COOLED CONDENSING UNIT

MARK	MIN. TOTAL CAPACITY COOLING (BTUH)	MIN. TOTAL CAPACITY HEATING (BTUH)	OUTDOOR AIR TEMP (°F)	MINIMUM EER/ SEER	CURRENT CHARAC.	MCA	MOCP	RELATED UNIT MARK	REMARKS
VRFCU–1A	323,100	286,976	98	10.6/–	208/3/60	142.9	160.0	BC–1V,2V,3V,4V	(1,2,3,4,5)
VRFCU–2A	321,216	286,572	98	10.6/–	208/3/60	125.0	180.0	BC–5V,6V,7V,8V 9V,10V,11V	(1,2,3,4,5)

GENERAL NOTES:
1. MINIMUM RECOMMENDED CLEARANCE AROUND ROOFTOP UNIT IS 12 INCHES ON NON–SERVICE SIDES AND 30 INCHES ON SERVICE SIDES. MAINTAIN MINIMUM CLEARANCE FOR CONDENSER AIR FLOW AS RECOMMENDED BY UNIT MANUFACTURER. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON UNIT FOR SERVICE, MAINTENANCE, AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCE AS REQUIRED BY NEC.

REMARKS:
1. PROVIDE WITH LOW AMBIENT CONTROL DOWN TO 20°F.
2. PROVIDE WITH DISCONNECT SWITCH.
3. REFRIGERANT LINES TO BE SIZED PER MANUFACTURER'S REQUIREMENTS.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING DX EXPANSION VALVES. ELECTRICIAN SHALL BE RESPONSIBLE FOR WIRING 208–230V/1PH DX EXPANSION VALVES.
5. PROVIDE HEAT RECOVERY UNIT.

GRILLE

MARK	SERVICE	TYPE	DAMPER	CONSTRUCTION MATERIAL	FINISH COLOR	MANUFACTURER	MODEL NUMBER	REMARKS
A	SUPPLY AIR	GRILLE	–	STEEL	WHITE	TITUS	300RL	DOUBLE DEFLECTION SIDEWALL GRILLE WITH HORIZONTAL FRONT BARS. SURFACE MOUNTED.
B	RETURN AIR	GRILLE	–	STEEL	WHITE	TITUS	350RL	SINGLE DEFLECTION SIDEWALL GRILLE WITH HORIZONTAL FRONT BARS. SURFACE MOUNTED.
C	RETURN AIR	DIFFUSER	–	STEEL	WHITE	TITUS	PAR	EXPOSED T–BAR CEILING FRAME STYLE WITH 24"x24" FACE. PERFORATED.
(E)	EXISTING	DIFFUSER	–	–	–	–	–	EXISTING AIR DEVICE TO REMAIN.

GENERAL NOTES:
1. DAMPERS NOTED AS U. L. SHALL BE A "U. L." CLASSIFIED CEILING RADIATION DAMPER WITH THERMAL BLANKET.
2. COORDINATE AIR DEVICE FINISH COLOR AND LOCATION WITH ARCHITECT.

REMARKS:
1. N/A

DAMPER

MARK	ACTUATOR	DUTY	BLADE ACTION	MANUFACTURER	MODEL NUMBER	REMARKS
D–1	MANUAL BALANCING	UNDER 9" WIDE	N/A	N/A	N/A	SEE SMACNA CONSTRUCTION DETAILS REFERENCED "TYPICAL CONSTRUCTION DETAILS FOR LOW VELOCITY DUCTS."
D–2	MANUAL BALANCING	OVER 9" WIDE	OPPOSED	RUSKIN	MD–35	MANUAL DAMPER WITH STANDARD CONSTRUCTION FEATURES AND VENTLOCK #639 LOCKING REGULATOR.
D–3	MOTORIZED	OVER 9" WIDE	OPPOSED	RUSKIN	CD–60	LOW LEAKAGE DAMPER WITH BLADE SEALS

NOTES:
N/A – NOT APPLICABLE

FAN

MARK	LOCATION	CFM	MAXIMUM RPM	EXT. STATIC PRESSURE (IN. W.C.)	HORSE POWER	CURRENT CHARAC.	LOCALLY SWITCHED BY	INTERLOCKED WITH	FAN TYPE	BELT/DIRECT DRIVE	MANUFACTURER	MODEL NUMBER	REMARKS
EF–5V	MECHANICAL YARD	6,880	1,527	2.0	5.0	208/3/60	–	OAU–1	CENTRIFUGAL BLOWER	BELT	COOK	CPS	(1,2,3,4,5,6,7)

GENERAL NOTES:
1. EXTERNAL STATIC PRESSURE INCLUDES LOSSES DUE TO DUCTWORK, AIR DEVICES, DAMPERS, AND DUCT MOUNTED HOT WATER COILS WHERE APPLICABLE. DIRTY FILTER AND UNIT CASING MUST BE ADDED TO EXTERNAL STATIC PRESSURE TO OBTAIN TOTAL PRESSURE LOSS. INCREASE HORSEPOWER AS REQUIRED TO MEET YOUR TOTAL PRESSURE LOSS. COORDINATE WITH ELECTRICIAN.
2. MINIMUM RECOMMENDED CLEARANCE AROUND UNIT IS 12 INCHES ON NON–SERVICE SIDES AND 30 INCHES ON SERVICE SIDES. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON UNIT FOR SERVICE, MAINTENANCE, AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCE AS REQUIRED BY NEC.
3. FAN SHALL BE CENTRIFUGAL, BELT DRIVEN TYPE UNLESS OTHERWISE SCHEDULED.

REMARKS:
1. PROVIDE WITH DISCONNECT SWITCH.
2. PROVIDE WITH OSHA APPROVED MOTOR GUARD.
3. PROVIDE WITH VARIABLE FREQUENCY DRIVE (VFD).
4. MOTOR SHALL BE RATED FOR USE WITH A VARIABLE FREQUENCY DRIVE (VFD).
5. PROVIDE WITH SPRING ISOLATION RAIL.
6. PROVIDE WITH TOP DISCHARGE.
7. PROVIDE WITH DRAIN AT BOTTOM OF FAN HOUSING.

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HVAC UPGRADES PART 3

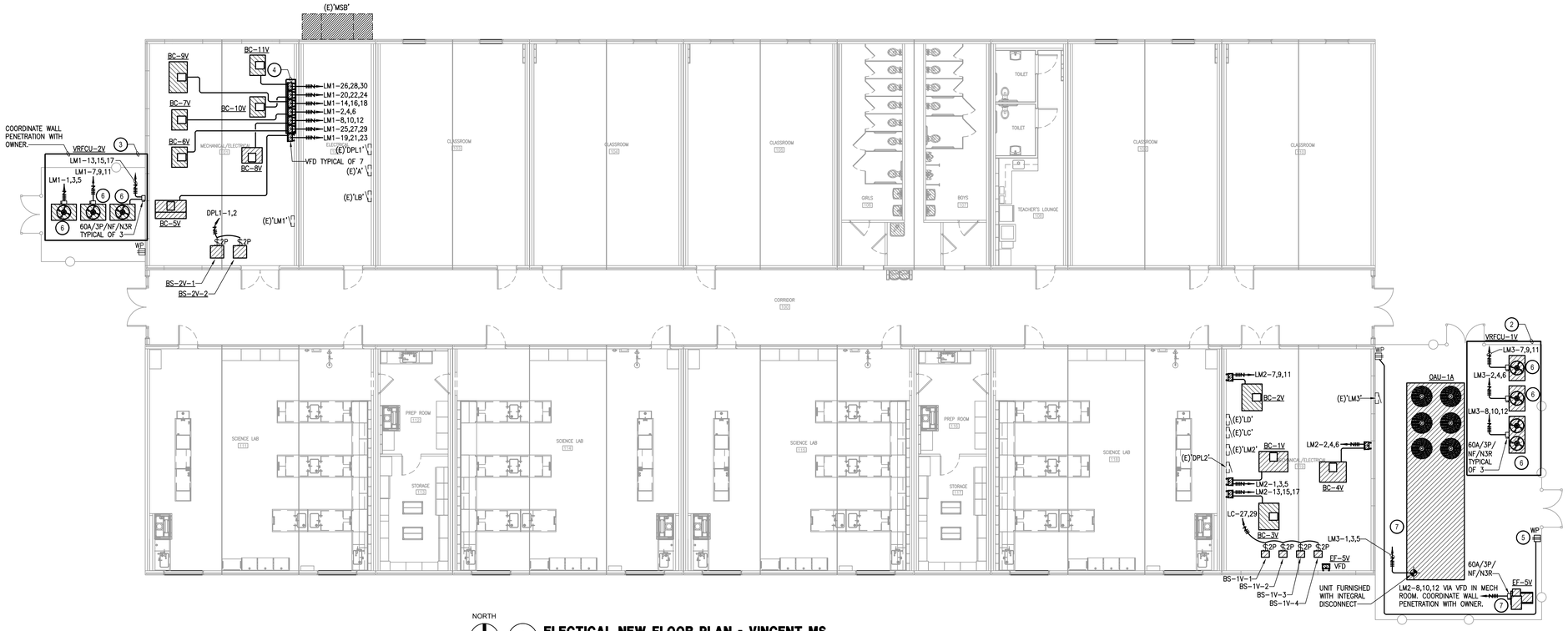
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BISD
Preparing Our Next Generation

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09-14-2022

MECHANICAL SCHEDULES - VINCENT MS

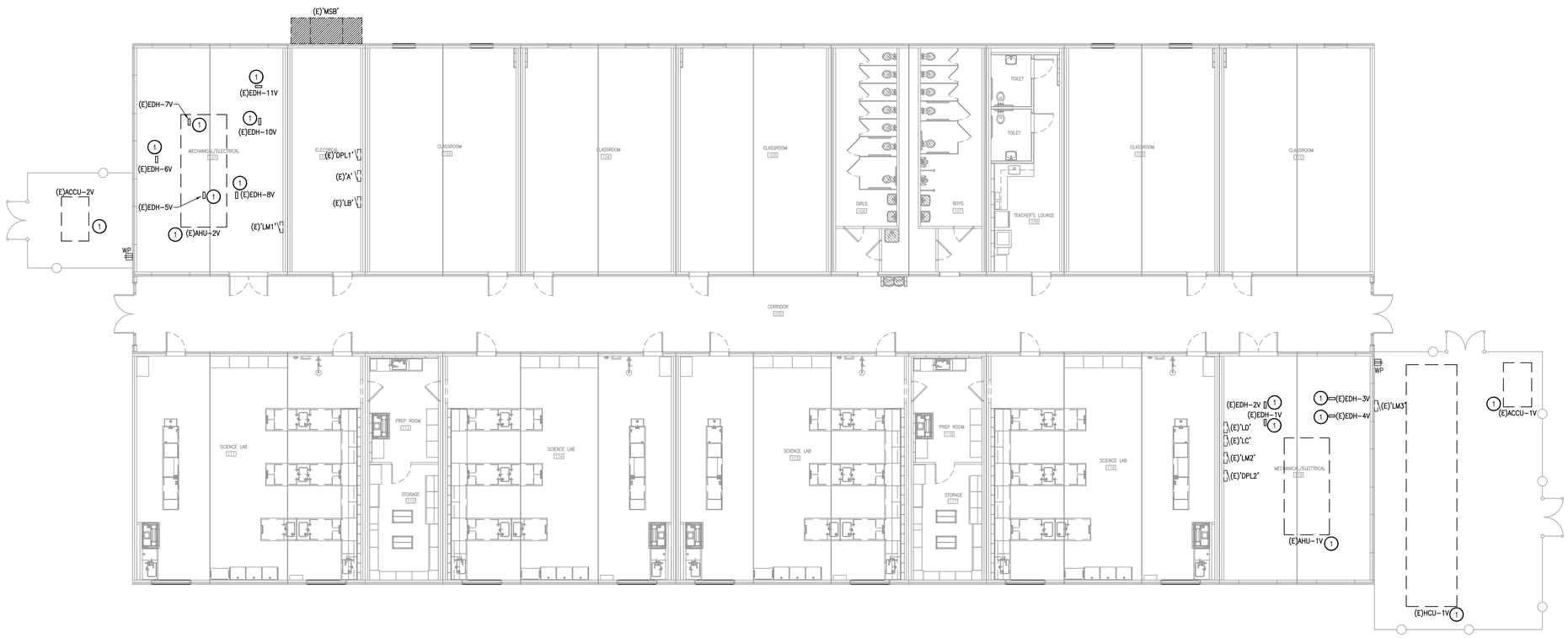
M4.1



NORTH

2 ELECTICAL NEW FLOOR PLAN - VINCENT MS

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



NORTH

1 ELECTICAL DEMOLITION FLOOR PLAN - VINCENT MS

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

EXISTING CONDITIONS/DEMOLITION NOTES

1. CONTRACTOR SHALL VISIT THE SITE BEFORE SUBMITTING A PROPOSAL AND VERIFY EXISTING CONDITIONS. ANY MODIFICATIONS REQUIRED CONTRARY TO THESE DOCUMENTS FOR A COMPLETE AND OPERATING SYSTEM SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
2. CONTRACTOR SHALL DISCONNECT AND REMOVE ANY MECHANICAL, ELECTRICAL OR PLUMBING ITEMS IN THE WAY OF NEW CONSTRUCTION AND NOT BEING REUSED. CONTRACTOR TO KEEP ALL ITEMS THAT ARE TO REMAIN PROTECTED DURING CONSTRUCTION.
3. DEMOLISH CONDUIT AND WIRING ASSOCIATED WITH HVAC EQUIPMENT BEING REMOVED BACK TO SOURCE AND INDICATE ANY OPEN CIRCUIT BREAKER AS SPARE.
4. COORDINATE WITH OWNER/ARCHITECT FOR EXACT DEMOLITION SCOPE OF WORK PRIOR TO COMMENCEMENT OF WORK.

LINETYPE LEGEND

EXISTING TO REMAIN
REMOVE EXISTING
NEW WORK

OWNER OR ITS REPRESENTATIVE SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED FROM THIS PROJECT. CONTRACTOR TO NOTIFY DISTRICT REPRESENTATIVE PRIOR TO DEMOLITION WORK TO DISCUSS ALL RETURNED ITEMS TO DISTRICT.

ELECTRICAL WORK SHOWN AS A PART OF THIS PROJECT WILL REQUIRE INCIDENTAL FIRE ALARM SYSTEM WORK. ALL SUCH WORK SHALL BE INCLUDED IN THE CONTRACTORS PROPOSAL. THIS WORK SHALL BE PERFORMED WITHOUT ANY IMPACT TO THE CONSTRUCTION SCHEDULE AND AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL INCLUDE ANY FIRE ALARM DEVICES THAT ARE REQUIRED TO BE REMOVED, PROTECTED, AND RE-INSTALLED. FIRE ALARM SYSTEM SHALL BE TESTED PRIOR TO COMMENCEMENT OF WORK AND UPON COMPLETION. REFER TO SPECIFICATION 26 31 02 EXPANSION OF EXISTING FIRE DETECTION AND ALARM SYSTEM FOR ADDITIONAL REQUIREMENTS.

GENERAL NOTES:

1. DISCONNECT AND REMOVE ALL CONDUIT, WIRE, AND DISCONNECTING MEANS ASSOCIATED WITH HVAC EQUIPMENT BEING REMOVED.
2. DISCONNECT AND REMOVE ALL ABANDONED WIRING AND CONDUIT.
3. VARIABLE FREQUENCY DRIVES FURNISHED BY DIVISION 23.
4. ALL NEW ELECTRICAL FEEDING SHALL BE ROUTED ABOVE GRADE. ROUTE TO AVOID CREATING TRIPPING HAZARDS. FIELD COORDINATE EXACT ROUTING WITH OWNER. UTILIZE EXISTING AND/OR NEW PIPE STANDS AS NEEDED.

ELECTRICAL KEYED NOTES:

1. DISCONNECT EXISTING MECHANICAL EQUIPMENT AND ASSOCIATED CONTROL DEVICE. REMOVE EXISTING CIRCUIT BACK TO SOURCE OR NEXT EXISTING DEVICE TO REMAIN.
2. CONTRACTOR TO COORDINATE FINAL DISCONNECT SIZE AND NUMBER OF FEEDS WITH MECHANICAL SELECTIONS.
   IF DAIKIN IS SELECTED PROVIDE (2) CONNECTIONS THROUGH 60A/3P/NF/N3R DISCONNECTS.
   IF TRANE IS SELECTED PROVIDE (1) CONNECTION THROUGH A 200A/3P/NF/N3R DISCONNECT.
3. CONTRACTOR TO COORDINATE FINAL DISCONNECT SIZE AND NUMBER OF FEEDS WITH MECHANICAL SELECTIONS.
   IF DAIKIN IS SELECTED PROVIDE (2) CONNECTIONS THROUGH 60A/3P/NF/N3R DISCONNECTS.
   IF TRANE IS SELECTED PROVIDE (2) CONNECTIONS THROUGH 100A/3P/NF/N3R DISCONNECTS.
4. CONTRACTOR TO COORDINATE FINAL DISCONNECT WITH MECHANICAL SELECTIONS. IF DAIKIN IS SELECTED, CONTRACTOR TO PROVIDE 2 POLE 20A DISCONNECTS.
5. EXTEND NEW 2#12, 1#12G IN 3/4"C. TO NEW RECEPTACLE SUPPORTED BY CONDUIT FROM EXISTING RECEPTACLE TO REMAIN. FIELD VERIFY CONNECTED LOAD NOT TO EXCEED 1500 W @ 120V.
6. ROUTE 3/4"C. WITH PULLSTRING TO ASSOCIATED INDOOR UNIT. ROUTE PARALLEL WITH REFRIGERATION LINES.
7. ROUTE 3/4"C. WITH PULLSTRING FOR CONTROL WIRING INSIDE BUILDING. COORDINATE FINAL TERMINATION WITH MECHANICAL CONTRACTOR.

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ELECTRICAL FLOOR PLANS - VINCENT MS

E1.1

EXISTING PANEL 'LM3'

LOCATION: CENTRAL PLANT — 120/208V., 3 PHASE, 4 WIRE, SOLID NEUTRAL, GROUND BAR

600	PANEL AMPERAGE	X	MLO		NEMA-1		PROVIDE FEED THRU LUGS
X	SURFACE MOUNTED		MCB	X	NEMA-3R		PROVIDE 200% NEUTRAL
	RECESS MOUNTED		TVSS		S.S. ENCL.		ISOLATED GROUND BUS

CKT	VA	DESCRIPTION	COND.	BRKR			BRKR	COND.	DESCRIPTION	VA	CKT
1	42055	NEW OAU-1 (1) (2)	#500	400/3	A		50/3	#6	NEW VRFCU-1V (1) (3)	5452	2
3	42055	---	#500	--		B	--	#6	---	5452	4
5	42055	---	#500	--			C --	#6	---	5452	6
7	6257	NEW VRFCU-1V (1) (3)	#6	60/3	A		50/3	#6	NEW VRFCU-1V (1) (3)	5452	8
9	6257	---	#6	--		B	--	#6	---	5452	10
11	6257	---	#6	--			C --	#6	---	5452	12

	CONNECTED	NEC
LIGHTING	0.0 KVA	0.0 KVA
RECEPTS	0.0 KVA	0.0 KVA
EXISTING	0.0 KVA	0.0 KVA
HVAC	177.6 KVA	177.6 KVA
EQUIPMENT	0.0 KVA	0.0 KVA
KITCHEN	0.0 KVA	0.0 KVA
SUBFEED	0.0 KVA	0.0 KVA
TOTAL	177.6 KVA	177.6 KVA

	CONNECTED	AMPS
PHASE A	59.2 KVA	493.5 A
PHASE B	59.2 KVA	493.5 A
PHASE C	59.2 KVA	493.5 A
TOTAL	177.6 KVA	493.5 A

NEC AMPS 493.5 A

(1) PROVIDE NEW BREAKER AND CIRCUIT

(2) CONTRACTOR TO COORDINATE FINAL BREAKER SIZING WITH MECHANICAL SELECTIONS.

(3) CONTRACTOR TO COORDINATE FINAL BREAKER COUNT, BREAKER SIZING AND WIRE SIZING WITH MECHANICAL SELECTIONS.
IF DAIKIN IS SELECTED, THE (3) BREAKERS WITH THIS KEYNOTE ARE TO BE REPLACED WITH (2) 60/3P BREAKERS.
FEED EQUIPMENT WITH (2) 3#6 & 1#10G IN 1"C.
IF TRANE IS SELECTED, THE (3) BREAKERS WITH THIS KEYNOTE ARE TO BE REPLACED WITH (1) 125/3P BREAKERS.
FEED EQUIPMENT WITH (1) 3#1/0 & 1#6G IN 2"C.

EXISTING PANEL 'LM2'

LOCATION: MECH/ELEC 119 — 120/208V., 3 PHASE, 4 WIRE, SOLID NEUTRAL, GROUND BAR

600	PANEL AMPERAGE	X	MLO	X	NEMA-1		PROVIDE FEED THRU LUGS
X	SURFACE MOUNTED		MCB		NEMA-3R		PROVIDE 200% NEUTRAL
	RECESS MOUNTED		TVSS		S.S. ENCL.		ISOLATED GROUND BUS

CKT	VA	DESCRIPTION	COND.	BRKR			BRKR	COND.	DESCRIPTION	VA	CKT
1	2150	NEW BC-1V (1) (2)	#10	30/3	A		30/3	#10	NEW BC-4V (1) (2)	2150	2
3	2150	---	#10	--		B	--	#10	---	2150	4
5	2150	---	#10	--		C	--	#10	---	2150	6
7	1681	NEW BC-2V (1) (2)	#10	30/3	A		40/3	#8	NEW EF-5 (1) (2)	2102	8
9	1681	---	#10	--		B	--	#8	---	2102	10
11	1681	---	#10	--		C	--	#8	---	2102	12
13	1297	NEW BC-3V (1) (2)	#12	20/3	A				EXISTING SPACE		14
15	1297	---	#12	--		B			EXISTING SPACE		16
17	1297	---	#12	--			C		EXISTING SPACE		18

	CONNECTED	NEC
LIGHTING	0.0 KVA	0.0 KVA
RECEPTS	0.0 KVA	0.0 KVA
EXISTING	0.0 KVA	0.0 KVA
HVAC	28.1 KVA	28.1 KVA
EQUIPMENT	0.0 KVA	0.0 KVA
KITCHEN	0.0 KVA	0.0 KVA
SUBFEED	0.0 KVA	0.0 KVA
TOTAL	28.1 KVA	28.1 KVA

	CONNECTED	AMPS
PHASE A	9.4 KVA	78.2 A
PHASE B	9.4 KVA	78.2 A
PHASE C	9.4 KVA	78.2 A
TOTAL	28.1 KVA	78.2 A

NEC AMPS 78.2 A

(1) PROVIDE NEW BREAKER AND CIRCUIT

(2) CONTRACTOR TO COORDINATE FINAL BREAKER SIZING WITH MECHANICAL SELECTIONS.

EXISTING PANEL 'LM1'

LOCATION: MECH/ELEC 101 — 120/208V., 3 PHASE, 4 WIRE, SOLID NEUTRAL, GROUND BAR

800	PANEL AMPERAGE	X	MLO	X	NEMA-1		PROVIDE FEED THRU LUGS
X	SURFACE MOUNTED		MCB		NEMA-3R		PROVIDE 200% NEUTRAL
	RECESS MOUNTED		TVSS		S.S. ENCL.		ISOLATED GROUND BUS

CKT	VA	DESCRIPTION	COND.	BRKR			BRKR	COND.	DESCRIPTION	VA	CKT
1	5428	NEW VRFCU-2V (1) (3)	#6	50/3	A		20/3	#12	NEW BC-7V (1) (4)	2788	2
3	5428	---	#6	--		B	--	#12	---	2788	4
5	5428	---	#6	--		C	--	#12	---	2788	6
7	5428	NEW VRFCU-2V (1) (3)	#6	50/3	A		20/3	#12	NEW BC-8V (1) (4)	2788	8
9	5428	---	#6	--		B	--	#12	---	2788	10
11	5428	---	#6	--		C	--	#12	---	2788	12
13	4107	NEW VRFCU-2V (1) (3)	#4	40/3	A		30/3	#10	NEW BC-9V (1) (4)	1681	14
15	4107	---	#4	--		B	--	#10	---	1681	16
17	4107	---	#4	--		C	--	#10	---	1681	18
19	2078	NEW BC-5V (1) (2)	#12	20/3	A		20/3	#12	NEW BC-10V (1) (4)	1141	20
21	2078	---	#12	--		B	--	#12	---	1141	22
23	2078	---	#12	--		C	--	#12	---	1141	24
25	2788	NEW BC-6V (1) (4)	#12	20/3	A		20/3	#12	NEW BC-11V (1) (4)	1141	26
27	2788	---	#12	--		B	--	#12	---	1141	28
29	2788	---	#12	--		C	--	#12	---	1141	30

	CONNECTED	NEC
LIGHTING	0.0 KVA	0.0 KVA
RECEPTS	0.0 KVA	0.0 KVA
EXISTING	0.0 KVA	0.0 KVA
HVAC	88.1 KVA	88.1 KVA
EQUIPMENT	0.0 KVA	0.0 KVA
KITCHEN	0.0 KVA	0.0 KVA
SUBFEED	0.0 KVA	0.0 KVA
TOTAL	88.1 KVA	88.1 KVA

	CONNECTED	AMPS
PHASE A	29.4 KVA	244.7 A
PHASE B	29.4 KVA	244.7 A
PHASE C	29.4 KVA	244.7 A
TOTAL	88.1 KVA	244.7 A

NEC AMPS 244.7 A

(1) PROVIDE NEW BREAKER AND CIRCUIT

(2) CONTRACTOR TO COORDINATE FINAL BREAKER SIZING WITH MECHANICAL SELECTIONS.

(3) CONTRACTOR TO COORDINATE FINAL BREAKER COUNT, BREAKER SIZING AND WIRE SIZING WITH MECHANICAL SELECTIONS.
IF DAIKIN IS SELECTED, THE (3) BREAKERS WITH THIS KEYNOTE ARE TO BE REPLACED WITH (2) 60/3P BREAKERS.
FEED EQUIPMENT WITH (2) 3#6 & 1#10G IN 1"C.
IF TRANE IS SELECTED, THE (3) BREAKERS WITH THIS KEYNOTE ARE TO BE REPLACED WITH (2) 90/3P BREAKERS.
FEED EQUIPMENT WITH (2) 3#2 & 1#8G IN 1-1/4"C.

(4) CONTRACTOR TO COORDINATE FINAL BREAKER SELECTION WITH MECHANICAL SELECTIONS.
IF DAIKIN IS SELECTED CONTRACTOR TO PROVIDE 20A/2P BREAKER.

EXISTING PANEL 'DPL1'

LOCATION: ELEC 102 — 120/208V., 3 PHASE, 4 WIRE, SOLID NEUTRAL, GROUND BAR

600	PANEL AMPERAGE	X	MLO	X	NEMA-1		PROVIDE FEED THRU LUGS
X	SURFACE MOUNTED		MCB		NEMA-3R		PROVIDE 200% NEUTRAL
	RECESS MOUNTED		TVSS		S.S. ENCL.		ISOLATED GROUND BUS

CKT	VA	DESCRIPTION	COND.	BRKR			BRKR	COND.	DESCRIPTION	VA	CKT
1	100	NEW BRANCH SELECTS (1)	#12	20/2	A				EXISTING SPACE		2
3	100		#12	--		B			EXISTING SPACE		4
5		EXISTING SPACE				C			EXISTING SPACE		6
7		EXISTING SPACE			A				EXISTING SPACE		8
9		EXISTING SPACE				B			EXISTING SPACE		10
11		EXISTING SPACE				C			EXISTING SPACE		12
13	1440	EXISTING CLASSROOM 1	(E)	100/3	A		100/3	(E)	EXISTING CLASSROOM 2	1440	14
15	1440	---	(E)	--		B	--	(E)	---	1440	16
17	1440	---	(E)	--		C	--	(E)	---	1440	18
19	8400	EXISTING PANEL 'A'	(E)	200/3	A		100/3	(E)	EXISTING CLASSROOM 3	1440	20
21	8400	---	(E)	--		B	--	(E)	---	1440	22
23	8400	---	(E)	--		C	--	(E)	---	1440	24
25	17100	EXISTING PANEL 'LB'	(E)	225/3	A		200/3	(E)	EXISTING PANEL 'LA'	8000	26
27	17100	---	(E)	--		B	--	(E)	---	8000	28
29	17100	---	(E)	--		C	--	(E)	---	8000	30

	CONNECTED	NEC
LIGHTING	0.0 KVA	0.0 KVA
RECEPTS	0.0 KVA	0.0 KVA
EXISTING	113.5 KVA	113.5 KVA
HVAC	0.2 KVA	0.2 KVA
EQUIPMENT	0.0 KVA	0.0 KVA
KITCHEN	0.0 KVA	0.0 KVA
SUBFEED	0.0 KVA	0.0 KVA
TOTAL	113.7 KVA	113.7 KVA

	CONNECTED	AMPS
PHASE A	37.9 KVA	316.0 A
PHASE B	37.9 KVA	316.0 A
PHASE C	37.8 KVA	315.2 A
TOTAL	113.7 KVA	315.7 A

NEC AMPS 315.7 A

(1) PROVIDE NEW BREAKER AND CIRCUIT

EXISTING PANEL 'LC'

LOCATION: MECH/ELEC 119 — 120/208V., 3 PHASE, 4 WIRE, SOLID NEUTRAL, GROUND BAR

225	PANEL AMPERAGE	X	MLO	X	NEMA-1		PROVIDE FEED THRU LUGS
X	SURFACE MOUNTED		MCB		NEMA-3R		PROVIDE 200% NEUTRAL
	RECESS MOUNTED		TVSS		S.S. ENCL.		ISOLATED GROUND BUS

CKT	VA	DESCRIPTION	COND.	BRKR			BRKR	COND.	DESCRIPTION	VA	CKT
1	4940	EXISTING WH-2	(E)	60/2	A		30/2	(E)	EXISTING WH-1	1785	2
3	4940	---	(E)	--		B	--	(E)	---	1785	4
5	720	EXISTING RECEPTACLES	(E)	20/1		C	20/1	(E)	EXISTING RECEPTACLES	720	6
7	900	EXISTING RECEPTACLES	(E)	20/1	A		20/1	(E)	EXISTING RECEPTACLES	360	8
9	720	EXISTING RECEPTACLES	(E)	20/1		B	20/1	(E)	EXISTING EF-1	864	10
11	720	EXISTING RECEPTACLES	(E)	20/1		C	20/1	(E)	EXISTING EF-3	1176	12
13	720	EXISTING RECEPTACLES	(E)	20/1	A		20/1	(E)	EXISTING FUME HOOD CTRLS	300	14
15	1000	EXISTING SOLENOIDS	(E)	20/1		B	20/1	(E)	EXISTING RECEPTACLES	360	16
17	2880	EXISTING CONTACTOR	(E)	20/1		C	20/1	(E)	EXISTING EF-2	700	18
19	1200	EXISTING RECEPTACLE	(E)	20/1	A		20/1	(E)	EXISTING RECEPTACLES	900	20
21	1920	EXISTING DISHWASHER	(E)	20/1		B	20/1	(E)	EXISTING RECEPTACLES	900	22
23	1176	EXISTING EF-3	(E)	20/1		C	20/1	(E)	EXISTING SOLENOIDS	1000	24
25	300	EXISTING FUME HOOD	(E)	20/1	A		20/1	(E)	EXISTING CONTACTOR	2880	26
27	100	NEW BRANCH SELECT (1)	#12	20/2		B	20/1		EXISTING SPARE		28
29	100	---	#12	--		C	20/1		EXISTING SPARE		30
31		EXISTING SPARE		20/1	A		20/1		EXISTING SPARE		32
33		EXISTING SPARE		20/1		B	20/1		EXISTING SPARE		34
35		EXISTING SPARE		20/1		C	20/1		EXISTING SPARE		36
37		EXISTING SPARE		20/1	A		20/1		EXISTING SPARE		38
39		EXISTING SPARE		20/1		B	20/1		EXISTING SPARE		40
41		EXISTING SPARE		20/1		C	20/1		EXISTING SPARE		42

	CONNECTED	NEC
LIGHTING	0.0 KVA	0.0 KVA
RECEPTS	8.2 KVA	8.2 KVA
EXISTING	0.0 KVA	0.0 KVA
HVAC	4.7 KVA	4.7 KVA
EQUIPMENT	23.1 KVA	23.1 KVA
KITCHEN	0.0 KVA	0.0 KVA
SUBFEED	0.0 KVA	0.0 KVA
TOTAL	36.1 KVA	36.1 KVA

	CONNECTED	AMPS
PHASE A	14.3 KVA	119.0 A
PHASE B	12.6 KVA	104.9 A
PHASE C	9.2 KVA	76.6 A
TOTAL	36.1 KVA	100.2 A

NEC AMPS 100.2 A

(1) PROVIDE NEW BREAKER AND CIRCUIT

CONTRACTOR TO FIELD VERIFY INTERRUPTING FAULT CURRENT CAPACITY OF EXISTING PANELS AND/OR SWITCHBOARDS AND TO PROVIDE NEW BREAKERS TO MATCH EXISTING

LINETYPE LEGEND

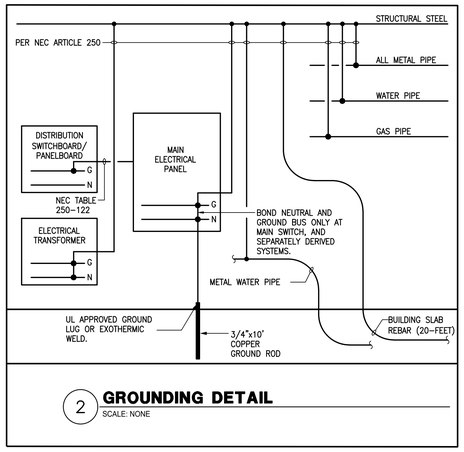
EXISTING TO REMAIN	— — — — — —
REMOVE EXISTING	-+-+-+-+-+-+-
NEW WORK	———

GENERAL NOTES:

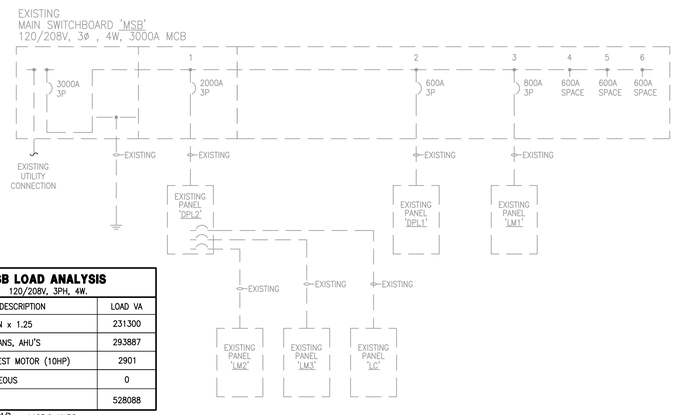
1. DISCONNECT AND REMOVE ALL CONDUIT, WIRE, AND DISCONNECTING MEANS ASSOCIATED WITH HVAC EQUIPMENT BEING REMOVED.
2. DISCONNECT AND REMOVE ALL ABANDONED WIRING AND CONDUIT.

EXISTING CONDITIONS/DEMOLITION NOTES

1. CONTRACTOR SHALL VISIT THE SITE BEFORE SUBMITTING A BID AND VERIFY EXISTING CONDITIONS. ANY MODIFICATIONS REQUIRED CONTRARY TO THESE DOCUMENTS FOR A COMPLETE AND OPERATING SYSTEM SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
2. CONTRACTOR SHALL DISCONNECT AND REMOVE ANY MECHANICAL, ELECTRICAL OR PLUMBING ITEMS IN THE WAY OF NEW CONSTRUCTION AND NOT BEING REUSED. CONTRACTOR TO KEEP ALL ITEMS THAT ARE TO REMAIN PROTECTED DURING CONSTRUCTION.
3. DISCONNECT AND REMOVE LIGHT FIXTURES, RECEPTACLES, DATA OUTLETS, AND ASSOCIATED CONDUIT AND WIRING BACK TO NEAREST EXISTING TO REMAIN DEVICE OR BACK TO SOURCE U.O.N.
4. DEMOLISH CONDUIT AND WIRING ASSOCIATED WITH HVAC EQUIPMENT BEING REMOVED BACK TO SOURCE AND INDICATE ANY OPEN CIRCUIT BREAKER AS SPARE.
5. EXTEND/REROUTE EXISTING BRANCH CIRCUITS TO SERVE NEW RECEPTACLES/DEVICES WHERE POSSIBLE, CONTRACTOR TO VERIFY THAT THE LOAD ON THE CIRCUIT DOES NOT EXCEED 16A, CONTRACTOR TO MAINTAIN CIRCUIT CONTINUITY.
6. COORDINATE WITH OWNER/ARCHITECT FOR EXACT DEMOLITION SCOPE OF WORK PRIOR TO COMMENCEMENT OF WORK.



2 **GROUNDING DETAIL**
SCALE: NONE



MSB LOAD ANALYSIS
120/208V, 3PH, 4W.

LOAD DESCRIPTION	LOAD VA
LOAD TO REMAIN x 1.25	231300
NEW HVAC - FANS, AHU'S	293887
NEW 25% LARGEST MOTOR (10HP)	2901
NEW MISCELLANEOUS	0
TOTAL	528088

528088 / 208*3^1/2 = 1465.9 AMPS
EXISTING 2500 AMPS SERVICE

1 **ELECTRICAL-ONELINE**
SCALE: NONE

Project No: 2022-02715-00
Drawn By: AW
Checked By: JZ
Date: 09-14-2022
Revision Dates:

CONSULTANTS

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Project No. 2022-02715-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT
BISD Preparing Our Next Generation

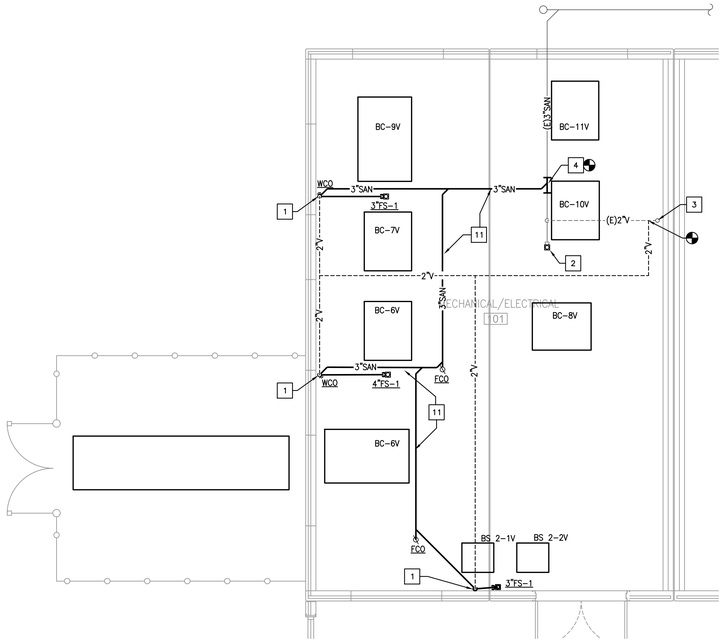
BRADLEY KALMANS
LICENSED
80219
PROFESSIONAL ENGINEER
09-14-2022

ELECTRICAL DETAILS - VINCENT MS

E2.1

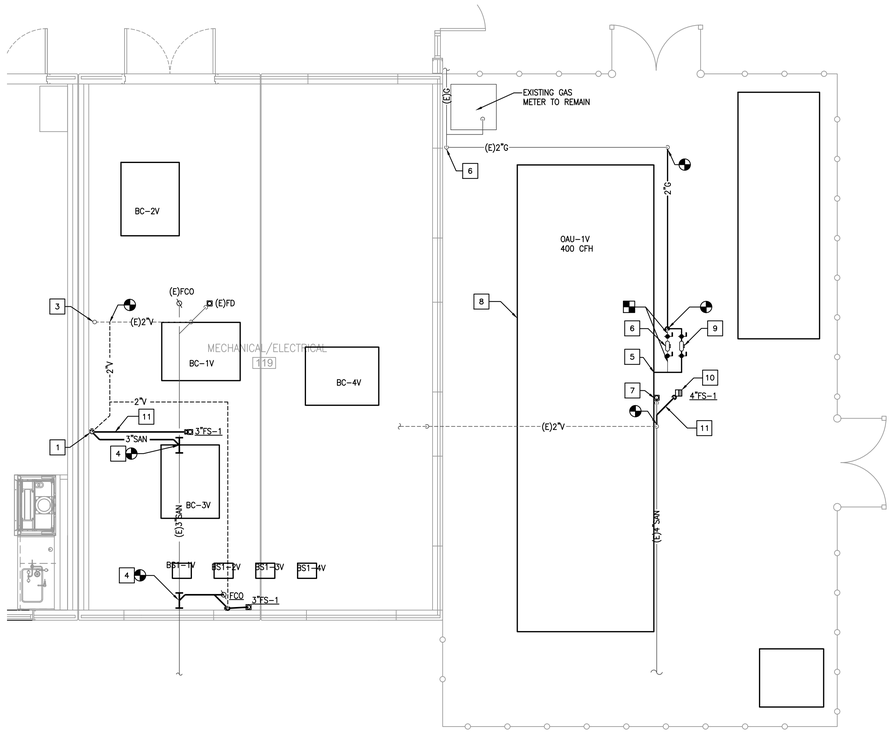
PLUMBING KEYED NOTES:

1. 2" VENT UP.
2. EXISTING FLOOR DRAIN TO REMAIN
3. EXISTING 2" VTR.
4. CONNECT NEW 3" SANITARY TO EXISTING 3" SANITARY.
5. CONNECT NEW GAS TO NEW OUTSIDE AIR UNIT. FIELD VERIFY EXACT LOCATION. SUPPORT GAS PIPE WITH UNISTRUT ANCHORED TO CONCRETE WITH PIPE CLAMPS.
6. EXISTING GAS PRESSURE REGULATOR IN VERTICAL TO BE REMOVED.
7. EXISTING FLOOR DRAIN TO BE REMOVED. REMOVE EXISTING SANITARY TO POINT SHOWN.
8. EXISTING OUTSIDE AIR UNIT (400 CFH) TO BE REMOVED, REFER TO MECHANICAL DRAWINGS. REMOVE ASSOCIATED GAS PIPING BACK TO POINT SHOWN.
9. PROVIDE NEW GAS REULATOR 5PSI TO 8OZ. 400 CFH
10. REFER TO PLUMBING DETAIL 3/P3.1 FOR CURB AROUND FLOOR DRAIN.
11. SAW CUT CONCRETE TO ACCOMMODATE FOR NEW UNDERGROUND SANITARY. FIELD VERIFY EXACT LOCATION OF EXISTING SANITARY CONNECTION.



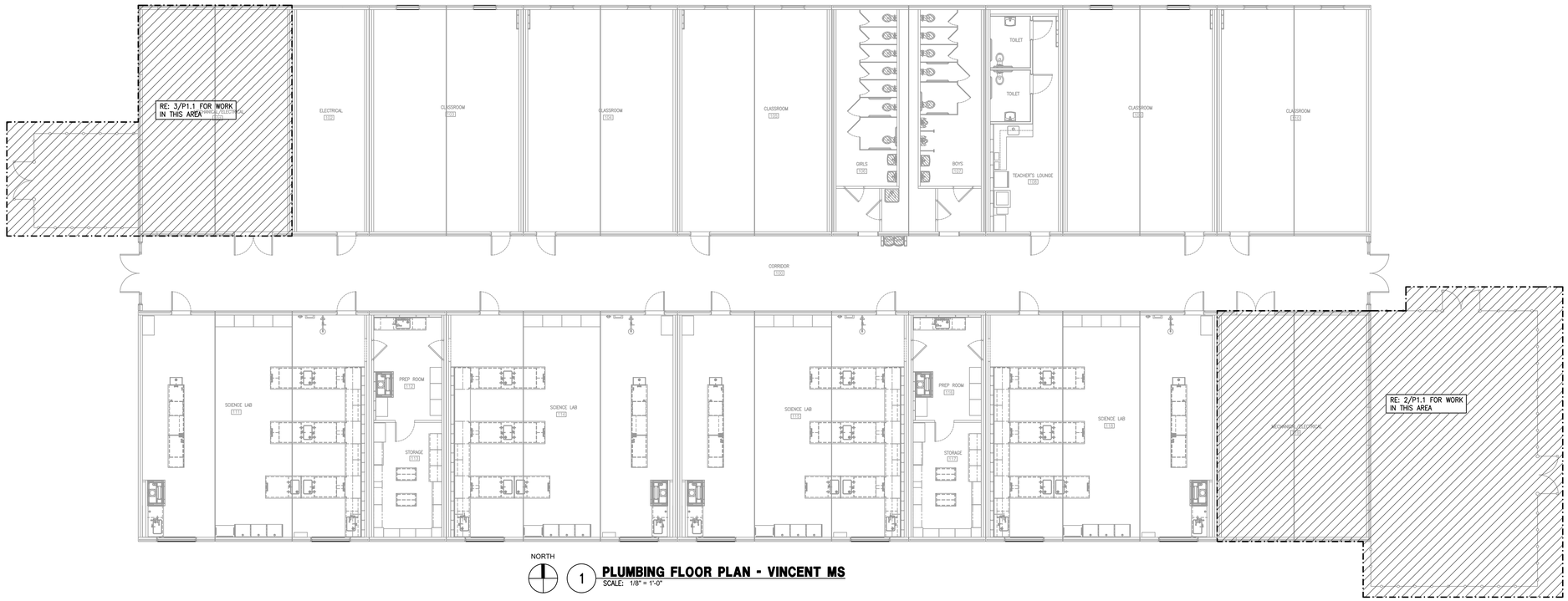
NORTH

3 **PLUMBING ENLARGED FLOOR PLAN - VINCENT MS**
SCALE: 1/4" = 1'-0"



NORTH

2 **PLUMBING ENLARGED FLOOR PLAN - VINCENT MS**
SCALE: 1/4" = 1'-0"



NORTH

1 **PLUMBING FLOOR PLAN - VINCENT MS**
SCALE: 1/8" = 1'-0"

Project No: 2022-02715-00
Drawn By: EH
Checked By: KBG
Date: 09-14-2022
Revision Dates:

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Project No. 2022-02715-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD Preparing Our Next Generation

BRADLEY KALMANS
80219
LICENSED PROFESSIONAL ENGINEER
09-14-2022

PLUMBING FLOOR PLANS - VINCENT MS

P1.1

PLUMBING GENERAL NOTES

1. WITHIN THE EXISTING BUILDING, EXISTING WATER, WASTE AND VENT SERVICES ARE TO BE MODIFIED AS REQUIRED AND REUSED FOR THE INSTALLATION OF NEW AND/OR RELOCATED PLUMBING FIXTURES. REFER TO PLUMBING FLOOR PLANS FOR POINTS OF CONNECTION.
2. WITHIN THE EXISTING BUILDING, SAWCUT AND REMOVE EXISTING FLOOR SLAB AS REQUIRED TO PROVIDE NEW AND/OR RELOCATED PLUMBING FIXTURES, CLEANOUTS, AND UNDERSLAB WASTE AND VENT PIPING. PATCH AND REFINISH FLOOR TO MATCH EXISTING.
3. IN AREAS WHERE THE FLOOR SLAB IS REMOVED, CONTRACTOR SHALL ALSO REMOVE UNDERSLAB WASTE AND VENT PIPING WHICH SERVES FIXTURES DESIGNATED FOR REMOVAL. PRIOR TO ANY REMOVAL, FIELD VERIFY THAT LINES TO BE REMOVED DO NOT SERVE ANY EXISTING FIXTURES TO REMAIN OR NEW FIXTURES TO BE INSTALLED.
4. IN AREAS WHERE THE FLOOR SLAB IS NOT REMOVED, CONTRACTOR SHALL ABANDON IN PLACE ANY UNDERSLAB WASTE AND VENT PIPING NO LONGER NEEDED, UNLESS THE PIPING MUST BE REMOVED TO ACCOMMODATE NEW CONSTRUCTION. IF NEW WORK DOES NOT NECESSITATE THEIR REMOVAL, CUT AND PLUG SUCH LINES BELOW SLAB, AND PATCH FLOOR TO MATCH EXISTING.
5. FIELD VERIFY EXACT LOCATION, SIZE, DEPTH, DIRECTION OF FLOW, CAPACITY, PIPE MATERIAL AND CONDITION OF EXISTING WASTE PIPING PRIOR TO BEGINNING CONSTRUCTION. ENSURE THAT PROPER CONNECTIONS TO AND EXTENSION OF SUCH UTILITIES CAN BE MADE.
6. WASTE LINES TO BE RE-USED OR RECONNECTED TO SHALL BE THOROUGHLY RODDED OUT AND FLUSHED TO ENSURE THEY ARE FREE FROM BLOCKAGES.
7. CONTRACTOR SHALL COORDINATE ROUTING OF PIPING BELOW SLAB WITH COLUMN FOOTINGS, GRADE BEAMS, UNDERGROUND PLUMBING AND ELECTRICAL UTILITIES, AND OTHER SUB-SURFACE BUILDING ELEMENTS.
8. CONTRACTOR SHALL COORDINATE ROUTING OF PIPING IN CEILING SPACES WITH MECHANICAL AND ELECTRICAL EQUIPMENT, DUCTWORK AND CONDUIT. SHOULD A CONFLICT OCCUR THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER PRIOR TO INSTALLING AN ALTERNATE PIPING PLAN.
9. CONTRACTOR TO COORDINATE ALL REMODEL WORK WITH THE WORK OF OTHER TRADES TO AVOID CONFLICTS AND TO MINIMIZE INTERRUPTION OF SERVICES.
10. COORDINATE ALL FIXTURE AND EQUIPMENT LOCATIONS AND CONNECTION REQUIREMENTS WITH LATEST ARCHITECTURAL DRAWINGS AND SPECIFICATIONS PRIOR TO ANY ROUGH-INS.
11. DO NOT ROUGH-IN FROM THESE DRAWINGS. REFER TO LATEST ARCHITECTURAL DRAWINGS FOR DIMENSIONED LOCATIONS.
12. CONTRACTOR TO FIELD VERIFY AS NECESSARY THE EXACT ROUTING AND SIZES OF ALL PIPING.
13. ALL WORK, METHODS AND INSTALLATIONS INVOLVED IN THE PLUMBING DESIGN SHALL BE IN ACCORDANCE WITH THE CITY BUILDING CODE, INSPECTION REGULATIONS AND ALL OTHER OFFICIALS HAVING JURISDICTION.
14. THE PROPER INSTALLATION OF NEW FIXTURES AND THE PROPER CONTINUED OPERATION OF EXISTING FIXTURES TO REMAIN SHALL DETERMINE THE EXTENT AND NATURE OF PLUMBING REMODEL WORK.
15. EACH VENT SHALL TERMINATE VERTICALLY NOT LESS THAN 6" ABOVE ROOF, MAINTAIN MINIMUM 10'-0" DISTANCE BETWEEN VENT TERMINALS THROUGH ROOF AND ALL FRESH AIR INTAKES, AND A MINIMUM 5'-0" FROM ANY EXTERIOR WALL.
16. PRIOR TO BEGINNING CONSTRUCTION, COORDINATE BUILDING BACKFLOW PREVENTION REQUIREMENTS WITH THE LOCAL AUTHORITY HAVING JURISDICTION AND PROVIDE AS DIRECTED.

PLUMBING MATERIAL LIST

ABOVE GRADE, INSIDE BUILDING

SANITARY WASTE AND VENT PIPING SHALL BE

NO-HUB CAST IRON SYSTEM CONFORMING TO CISPI. STANDARD NO. 301-75. NEOPRENE GASKETS SHALL CONFORM TO ASTM STANDARD C564-75, OR,

BELOW GRADE, INSIDE BUILDING

SANITARY WASTE AND VENT PIPING SHALL BE

SCHEDULE 40 DWV POLYVINYL CHLORIDE PIPE AND FITTINGS CONFORMING TO ASTM-2665 WITH SOLVENT WELDED JOINTS. DO NOT USE IN AIR SUPPLY OR RETURN PLENUMS, AND OR WHERE FIRE RATED WALLS, PARTITIONS, OR FLOORS ARE PENETRATED.

GAS PIPING SHALL BE

PIPE 2" AND SMALLER. PROVIDE SCHEDULE 40 ASTM A 53 BLACK STEEL WITH FACTORY FABRICATED SOCKET WELD FITTINGS.

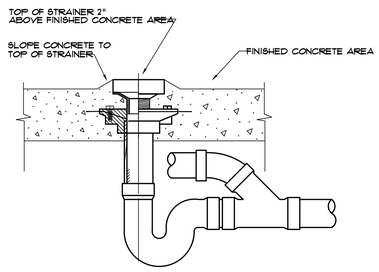
PIPE LARGER THAN 2", USE SCHEDULE 40 ASTM A 53 BLACK STEEL PIPE WITH LONG RADIUS WELD FITTINGS.

PLUMBING FIXTURE SCHEDULE

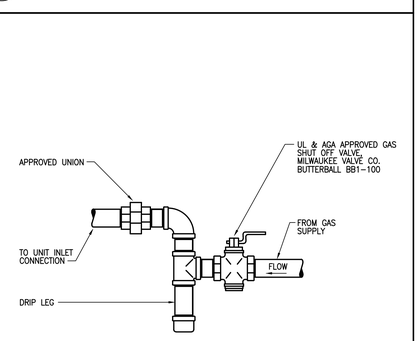
TYPE:	FS-1
SERVICE:	MECHANICAL EQUIPMENT CONDENSATE
DESCRIPTION:	CAST IRON 8" SQUARE FLOOR SINK WITH 6" DEEP SUMP, A.R.E. INTERIOR, ALUMINUM DOME BOTTOM STRAINER, STAINLESS FRAME AND HALF GRATE, ANCHOR FLANGE, CLAMPING COLLAR WADE #9110-85-15-26-48
TRAP SEAL:	PROVIDE PRO-SET SYSTEMS, INC. TRAP GUARD FACTORY FITTED TO MATCH EACH FLOOR SINK BY SIZE, MODEL, AND MANUFACTURER.
ROUGH-IN:	REFER TO FLOOR PLANS FOR SIZES. COORDINATE FINAL LOCATION WITH ARCHITECTURAL DRAWINGS / EQUIPMENT PLACEMENT.

PLUMBING PIPING LEGEND

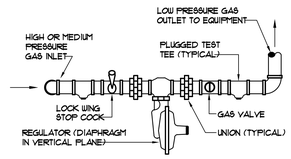
SYMBOLS	DESCRIPTION
SAN	SANITARY OR WASTE PIPING ABOVE GRADE (SAN)
SAN	SANITARY OR WASTE PIPING BELOW GRADE (SAN)
GW	GREASE WASTE PIPING (GW)
GW	GREASE WASTE PIPING BELOW GRADE (GW)
SD	STORM DRAIN PIPING (SD)
SD	STORM DRAIN PIPING BELOW GRADE (GW)
SSD	SUB-SOIL DRAIN OR FOOTING DRAIN (SSD)
AW	ACID WASTE PIPING (AW)
AW	ACID WASTE PIPING BELOW GRADE (AW)
PD	PUMPED DISCHARGE (PD)
CD	CONDENSTATE DRAIN PIPING (CD)
D	CONDENSTATE – INDIRECT DRAIN PIPING (D)
	VENT PIPING (V)
CW	COLD WATER PIPING (CW)
HW	HOT WATER PIPING (HW)
HWR	HOT WATER RETURN PIPING (HWR)
SCW	SOFT COLD WATER PIPING (SCW)
CDW	CHILLED DRINKING WATER PIPING (CDW)
TP	TRAP PRIMER LINE (TP)
F	FIRE PROTECTION PIPING (F)
AS	AUTOMATIC SPRINKLER PIPING (AS)
GAS	NATURAL GAS PIPING (G)
GV	GAS VENT PIPING (GV)
AIR	COMPRESSED AIR PIPING (A)
	FLOW DIRECTIONAL ARROW
	SHUT-OFF VALVE
	BALANCING VALVE (BV)
	SOLENOID VALVE (SV)
	BALL VALVE (BV)
	BUTTERFLY VALVE
	LUBRICATED PACKED PLUG STOP STOP COCK (PC)
	HORIZONTAL SWING CHECK
	UNION
	HORIZONTAL SWING CHECK
	REDUCER OR INCREASER
	ECCENTRIC REDUCER
	REDUCED PRESSURE BACKFLOW PREVENTER (RPBFP)
	PIPING DOWN
	RISE OR DROP PIPING
	PIPING UP –OR– PIPING UP & DOWN
	CAP ON END OF PIPE
	CLEANOUT (WALL OR CEILING) (CO)
	FLOOR CLEANOUT (FCO)
	EXTERIOR CLEANOUT WITH 18"x18"x4" CONCRETE PAD (ECO)
	TWO-WAY CLEANOUT (PROVIDE 18"x24"x4" CONCRETE PAD OUTSIDE)
	FIRE DEPARTMENT VALVE AT RISER
	FIRE HYDRANT
	FIRE DEPARTMENT CONNECTION
	PRESSURE REDUCING VALVE (PRV)
	BRANCH CONNECTION OUT OF TOP
	BRANCH CONNECTION OUT OF BOTTOM
	BRANCH CONNECTION OUT OF SIDE
	WYE & 1/8TH BEND BRANCH CONNECTION
	WYE BRANCH CONNECTION
	HOSE BIBB
	PRESSURE GAUGE WITH COCK
	THERMOMETER
	GAS PRESSURE REGULATOR
	TEST COCK
	GAS METER
	WALL HYDRANT
	VALVE IN RISE
	ASME TEMPERATURE & PRESSURE RELIEF VALVE
	VACUUM RELIEF VALVE
	ANGLE VALVE
	OS&Y VALVE
	ROOF DRAIN
	REFER TO KEYED NOTE
FS	FLOW SWITCH
	FLOOR SINK (FS)
	FLOOR DRAIN (FD)
	FLOOR DRAIN WITH P-TRAP (FD)
	FLOOR DRAIN WITH P-TRAP AT 45° ANGLE (FD)
	HUB DRAIN (HD)
	ACCESS PANEL FOR TRAP PRIMER OR SHOCK ABSORBER
AP	ACCESS PANEL LOCATION SYMBOL
A	SHOCK ABSORBER
	AIR CHAMBER
(E)	EXISTING
(N)	NEW
VTR	VENT THRU ROOF
B.F.F.	BELOW FINISHED FLOOR
A.F.F.	ABOVE FINISHED FLOOR
	NEW CONNECTION
IE=100.00'	INVERT ELEVATION
1	DELTA CHANGE SYMBOL
P 1 4" VTR	RISER FLAG



3 **OUTDOOR CONDENSATE DRAIN**
SCALE: NONE
CD04-11/12/08



2 **GAS CONNECTION**
SCALE: NONE
GA07-11/12/08



NOTE: REFERENCE DRAWINGS FOR PIPE SIZES.

1 **GAS PRESSURE REGULATOR INSTALLATION**
SCALE: NONE
GA02-11/12/08

Project No: 2022-02715-00
Drawn By: EH
Checked By: KBG
Date: 09-14-2022
Revision Dates:

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Project No. 2022-02715-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT

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80219
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PROFESSIONAL ENGINEER
STATE OF TEXAS
09-14-2022

PLUMBING SCHEDULES, LEGENDS, AND DETAILS
- VINCENT MS

P3.1

THROUGHOUT CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY AND RENTAL EQUIPMENT, INCLUDING POWER FOR SUCH EQUIPMENT, AND TO PROVIDE PHASING TO ENSURE SPACE TEMPERATURE AND HUMIDITY IS MAINTAINED. REFER TO SPECIFICATION 23 05 11 MECHANICAL ALTERATIONS PROJECT PROCEDURES, ARTICLE 3.8 FOR ADDITIONAL REQUIREMENTS. CONTRACTOR SHALL REVIEW ALL REQUIREMENTS PRIOR TO BID.

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. CONTROLS WORK SHOWN AS A PART OF THE PROJECT ON THIS CAMPUS WILL REQUIRE INCIDENTAL ARCHITECTURAL CEILING WORK. ALL SUCH WORK SHALL BE INCLUDED IN THE CONTRACTORS BID. THIS WORK SHALL BE PERFORMED WITHOUT ANY IMPACT TO THE CONSTRUCTION SCHEDULE AND/OR ADDITIONAL COST.
4. CONTRACTOR SHALL REMOVE AND REPLACE CEILING WHERE REQUIRED TO COMPLETE THE INDICATED SCOPE OF CONTROLS WORK. EXISTING CEILING SHALL BE RE-INSTALLED IN THE EXACT CONDITION IT WAS REMOVED IN. DAMAGED CEILING AND/OR CEILING TILES SHALL BE REPLACED TO MATCH CONDITIONS EXISTING PRIOR TO THE BEGINNING OF CONSTRUCTION. IF A MATCH IS NOT POSSIBLE, CONTRACTOR SHALL REPLACE ALL CEILING FROM WALL TO WALL OR BOUNDARY SEPARATION IN CORRIDOR, CLASSROOM, OR ANY OTHER SPACE.
5. REMOVE ALL EXISTING SPACE MOUNTED TEMPERATURE AND HUMIDITY SENSORS NOT BEING REUSED. PROVIDE STAINLESS STEEL COVER PLATES.
6. OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL HVAC EQUIPMENT BEING REMOVED FROM THIS PROJECT. THIS INCLUDES BUT NOT LIMITED TO CONDENSING UNITS, AIR HANDLING UNITS, AND CONTROLS.
7. ALL EXISTING SUPPLY, RETURN, OUTSIDE AIR, AND EXHAUST SHALL BE EXISTING TO REMAIN UNLESS OTHERWISE NOTED.
8. ALL EXISTING FIRE DAMPERS SHALL BE EXISTING TO REMAIN UNLESS OTHERWISE NOTED.

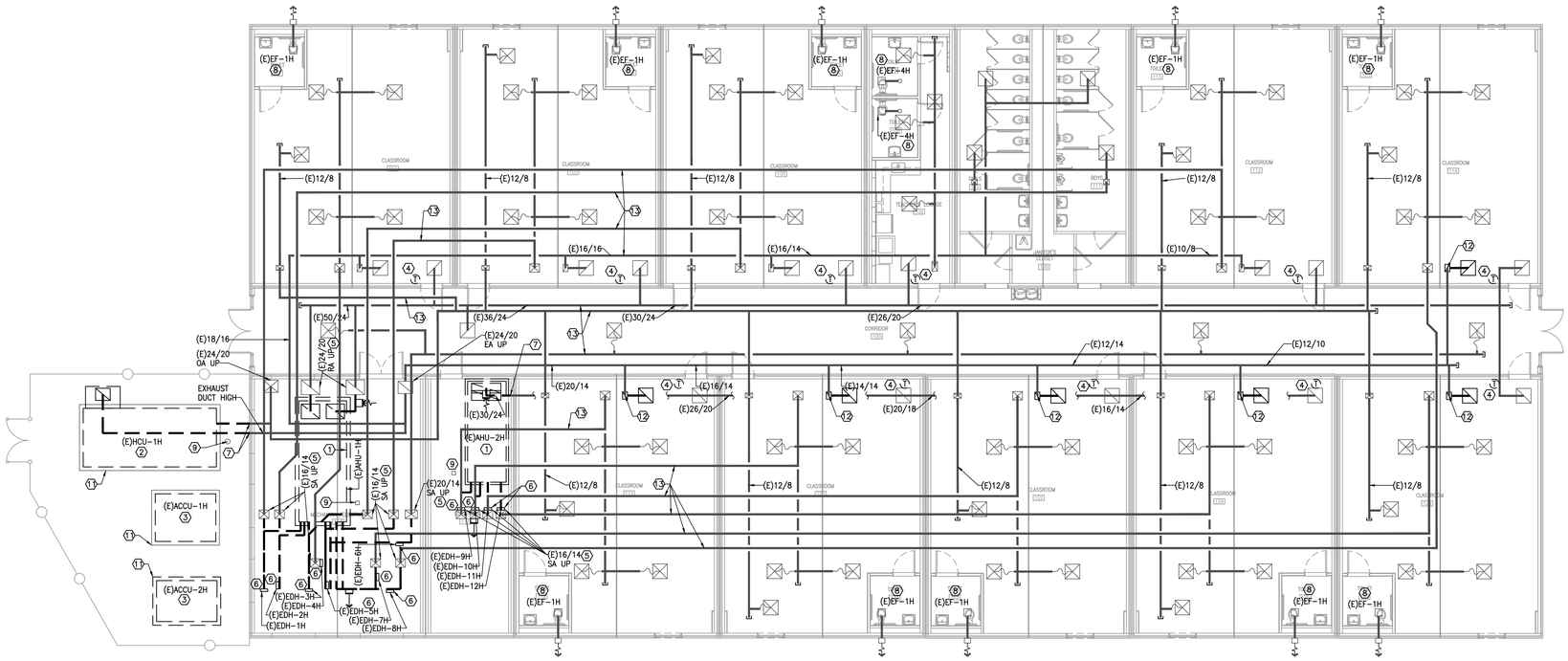
DEMOLITION KEYED NOTES:

1. REMOVE EXISTING MULTIZONE AIR HANDLING UNIT, ASSOCIATED CONTROLS, CONCRETE HOUSEKEEPING PAD, AND ALL OTHER ASSOCIATED APPURTENANCES.
2. REMOVE EXISTING HUMIDITY CONTROL UNIT, CONTROLS, AND ALL ASSOCIATED APPURTENANCES.
3. REMOVE EXISTING CONDENSING UNIT, ALL ASSOCIATED REFRIGERANT PIPING, AND ALL ASSOCIATED APPURTENANCES.
4. REMOVE EXISTING TEMPERATURE SENSOR AND ALL ASSOCIATED CONTROL WIRING.
5. REMOVE EXISTING DUCTWORK BACK TO 0'-12" BELOW EXISTING STRUCTURE.
6. REMOVE EXISTING ELECTRIC DUCT HEATER AND ALL ASSOCIATED APPURTENANCES.
7. REMOVE EXISTING DUCTWORK BACK TO POINT INDICATED.
8. EXISTING EXHAUST FAN TO REMAIN.
9. EXISTING FLOOR DRAIN TO REMAIN.
10. REMOVE EXISTING CONCRETE HOUSEKEEPING PAD.
11. EXISTING CONCRETE HOUSEKEEPING PAD TO REMAIN.
12. REMOVE EXISTING DUCTWORK UP TO 0'-12" BELOW EXISTING FIRE DAMPER. CAP EXISTING DUCTWORK AIR TIGHT BELOW EXISTING FIRE DAMPER.
13. EXISTING MAIN DUCTWORK TO REMAIN. ALL ASSOCIATED DAMPERS, DIFFUSERS SHALL REMAIN UNLESS OTHERWISE NOTED.

DEMO SYMBOL LEGEND

RENOVATIONS	
	ITEM TO REMAIN
	ITEM TO BE REMOVED

BMCS NOTE:
EXISTING CONTROL SYSTEM IS BY AUTOMATED LOGIC.
REFER TO BMCS SPECIFICATION FOR MORE INFORMATION.



NORTH

1 **MECHANICAL DEMOLITION FLOOR PLAN - HOMER ES**
SCALE: 1/8" = 1'-0"

Project No:	2022-02715-00
Drawn By:	BB
Checked By:	VP
Date:	09-14-2022
Revision Dates:	

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BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT

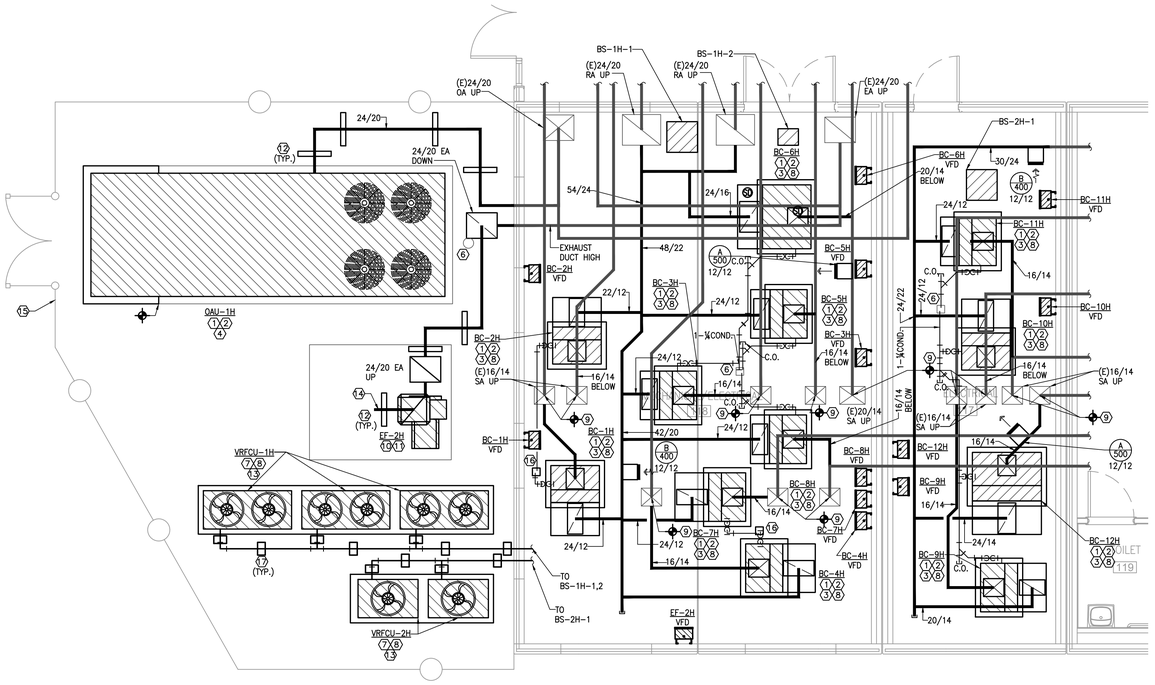
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09-14-2022

MECHANICAL DEMOLITION FLOOR PLANS - HOMER ES

M0.1

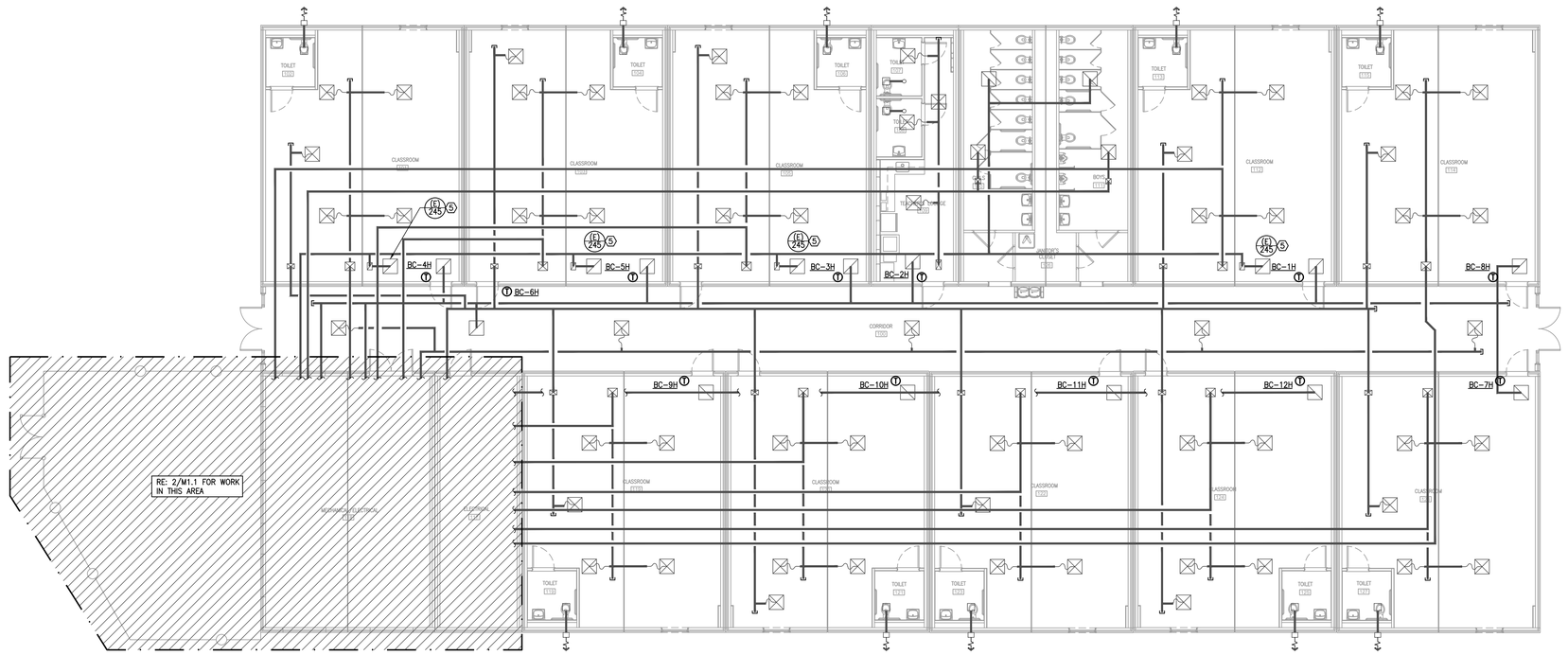
THROUGHOUT CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY AND RENTAL EQUIPMENT, INCLUDING POWER FOR SUCH EQUIPMENT, AND TO PROVIDE PHASING TO ENSURE SPACE TEMPERATURE AND HUMIDITY IS MAINTAINED. REFER TO SPECIFICATION 23 05 11 MECHANICAL ALTERATIONS PROJECT PROCEDURES, ARTICLE 3.8 FOR ADDITIONAL REQUIREMENTS. CONTRACTOR SHALL REVIEW ALL REQUIREMENTS PRIOR TO BID.



NORTH

2 MECHANICAL ENLARGED FLOOR PLAN - HOMER ES

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



NORTH

1 MECHANICAL FLOOR PLAN - HOMER ES

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

MECHANICAL GENERAL NOTES:

1. MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL REQUIREMENTS.
2. THESE 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 OR DUCT SYSTEMS.
3. ALL MECHANICAL SYSTEMS SHOWN ON THIS PLAN ARE FROM PRELIMINARY FILED WORK. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL LOCATIONS AND SIZES OF MECHANICAL EQUIPMENT PRIOR TO START OF WORK.
4. THE SCOPE OF WORK SHOWN AS A PART OF THE PROJECT ON THIS CAMPUS WILL REQUIRE INCIDENTAL ARCHITECTURAL CEILING WORK. ALL SUCH WORK SHALL BE INCLUDED IN THE CONTRACTORS BID. THIS WORK SHALL BE PERFORMED WITHOUT ANY IMPACT TO THE CONSTRUCTION SCHEDULE AND/OR ADDITIONAL COST.
5. CONTRACTOR SHALL REMOVE AND REPLACE CEILING WHERE REQUIRED TO COMPLETE THE INDICATED SCOPE OF WORK. EXISTING CEILING SHALL BE RE-INSTALLED IN THE EXACT CONDITION IT WAS REMOVED IN. DAMAGED CEILING AND/OR CEILING TILES SHALL BE REPLACED TO MATCH CONDITIONS EXISTING PRIOR TO THE BEGINNING OF CONSTRUCTION. IF A MATCH IS NOT POSSIBLE, CONTRACTOR SHALL REPLACE ALL CEILING FROM WALL TO WALL OR BOUNDARY SEPARATION IN CORRIDOR, CLASSROOM, OR ANY OTHER SPACE.

MECHANICAL KEYED NOTES:

1. VERIFY SERVICE CLEARANCE FOR AIR FILTER, FAN SHAFT, AND COIL REMOVAL WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.
2. ROUTE FULL SIZE CONDENSATE TO FLOOR DRAIN. ROUTE CONDENSATE DRAIN PIPE TO ENSURE THAT IT WILL NOT CREATE A TRIPPING HAZARD. INSTALL CONDENSATE TRAP AS RECOMMENDED BY MANUFACTURER.
3. ROUTE REFRIGERANT LINES TO ASSOCIATED VRF AIR COOLED CONDENSING UNIT. SIZE REFRIGERANT LINES PER MANUFACTURERS RECOMMENDATIONS.
4. MODIFY EXISTING CONCRETE HOUSE KEEPING PAD TO ACCOMMODATE NEW OUTSIDE AIR UNIT.
5. BALANCE EXISTING GRILLE TO CFM INDICATED ON DRAWINGS.
6. CONTRACTOR SHALL CLEAN EXISTING FLOOR DRAIN TO LIKE NEW CONDITIONS.
7. REFER TO MANUFACTURER FOR REFRIGERANT PIPE SIZES, AIRFLOW CLEARANCES, AND MAINTENANCE CLEARANCES.
8. PROVIDE 6" CONCRETE HOUSEKEEPING PAD.
9. CONNECT DUCTWORK AT EXISTING SIZE.
10. VERIFY SERVICE CLEARANCE WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.
11. PROVIDE EXHAUST FAN WITH EQUIPMENT SUPPORT. RE: 6/M3.1 FOR DETAIL.
12. PROVIDE DUCT SUPPORT AS SPECIFIED. RE: 7/M3.1 FOR DETAIL.
13. NEW REFRIGERANT PIPING SHALL UTILIZE EXISTING OPENING IN WALL. MODIFY OPENING AS REQUIRED TO ACCOMMODATE NEW REFRIGERANT PIPING. REFER TO DETAILS.
14. 24/20 EXHAUST DUCTWORK SHALL TERMINATE 10'-0" ABOVE FINISHED FLOOR (A.F.F.). PROVIDE DUCTWORK WITH WEATHER HOOD. PROVIDE OPENING WITH 1/4" ALUMINUM MESH.
15. EXTEND EXISTING CHAIN LINK FENCE AS REQUIRED TO ACCOMMODATE OUTSIDE AIR UNIT AND MAINTAIN OUTSIDE AIR UNIT AIRFLOW AND MAINTENANCE CLEARANCES RECOMMENDED BY MANUFACTURER.
16. REFER TO PLUMBING DRAWINGS FOR EXACT LOCATION OF FLOOR DRAIN.
17. ROUTE REFRIGERANT PIPING ON GALVANIZED UNISTRUT ANCHORED TO CONCRETE. ATTACH PIPING TO UNISTRUT WITH GALVANIZED CUSH-A-CLAMP. FASTENERS SHALL BE STAINLESS STEEL.

BMCS NOTE:
EXISTING CONTROL SYSTEM IS BY AUTOMATED LOGIC.
REFER TO BMCS SPECIFICATION FOR MORE INFORMATION.

Project No: 2022-02715-00
Drawn By: BB
Checked By: VP
Date: 09-14-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

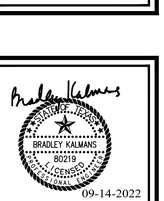
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HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT

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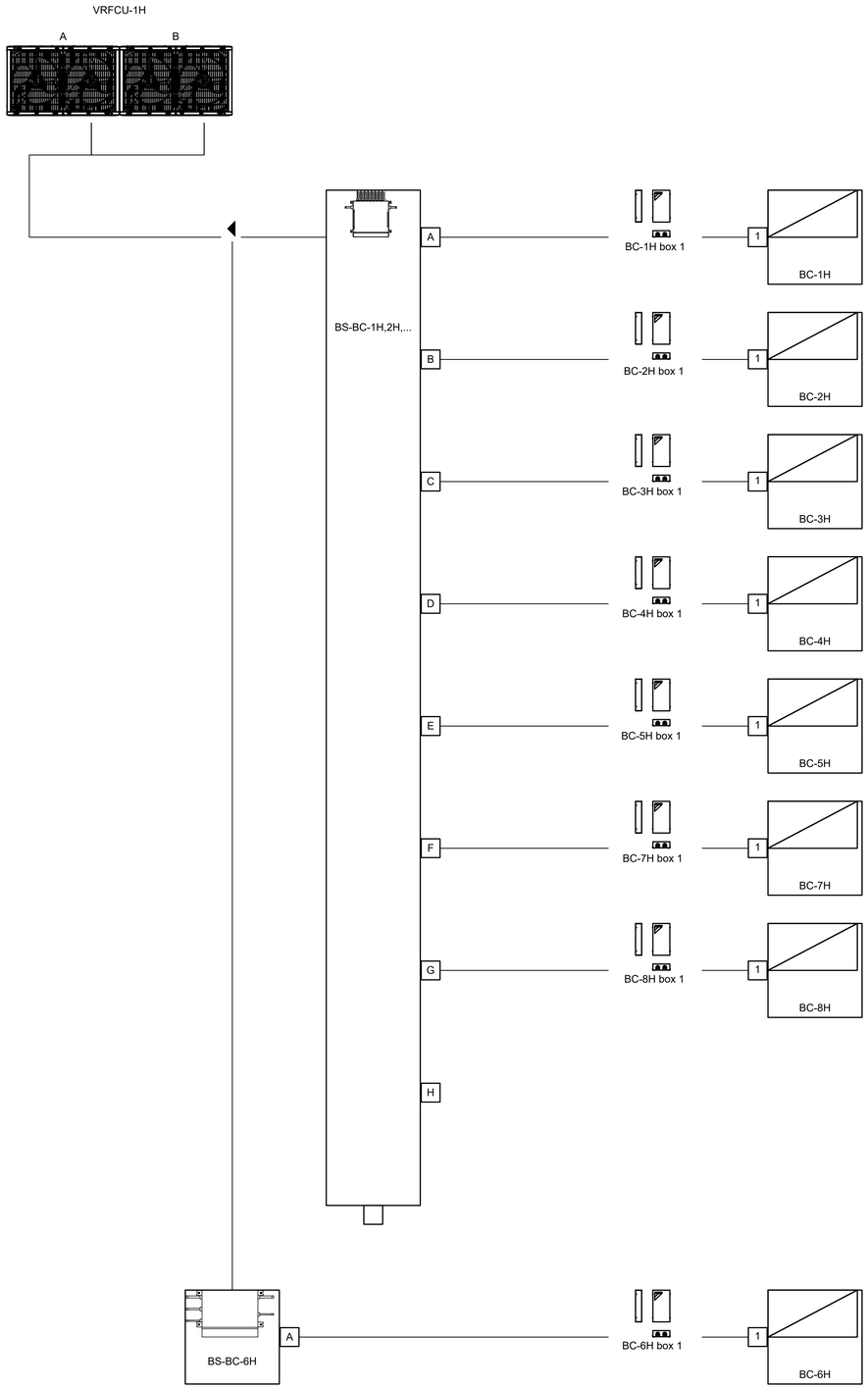


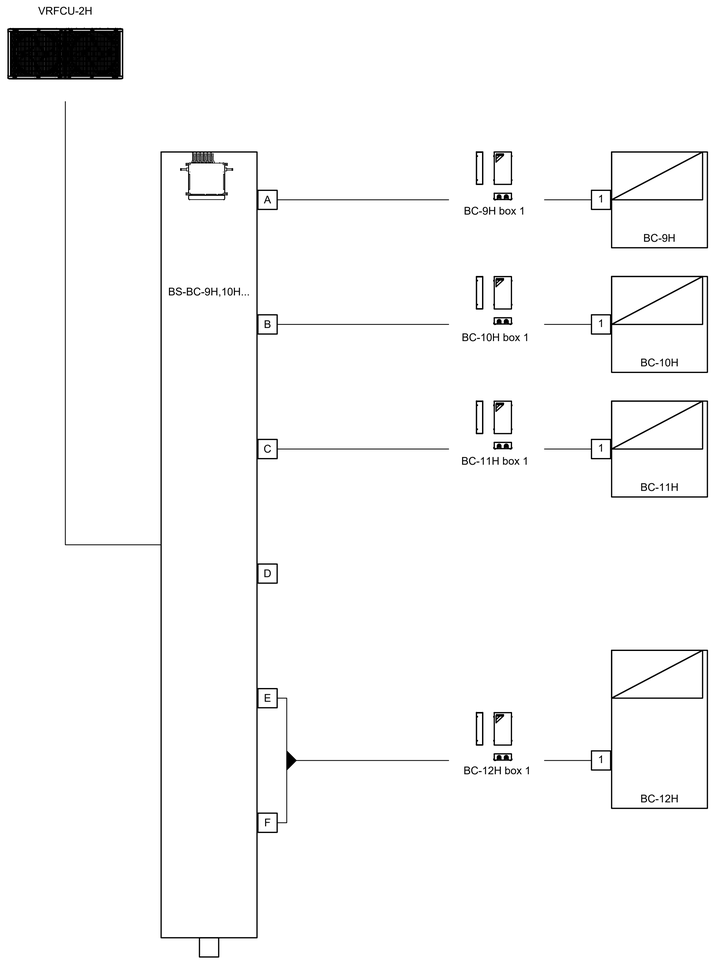
MECHANICAL FLOOR PLANS - HOMER ES

M1.1

MECHANICAL GENERAL NOTES:

1. THESE SCHEMATICS ARE FOR INFORMATION PURPOSES ONLY. REFER TO MANUFACTURER FOR FINAL PIPE SIZES AND LENGTHS.





Project No: 2022-02715-00
Drawn By: BB
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STATE OF TEXAS
09-14-2022

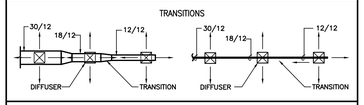
MECHANICAL VRF PIPING DIAGRAM - HOMER ES

M2.1

SYMBOL LEGEND

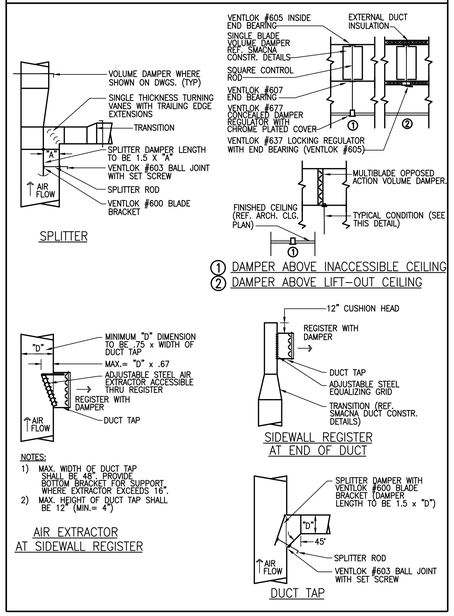
SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
GENERAL	
(#)	KEY NOTE TAG
(#)	NOTE SPECIFIC TO DETAIL TAG
(#)	REVISION TAG
	NEW EQUIPMENT
DUCTWORK	
	SUPPLY AIR DUCTWORK
	RETURN AIR AND OUTSIDE AIR DUCTWORK
	EXHAUST AIR DUCTWORK
	FLEXIBLE DUCTWORK
	SUPPLY AIR DUCTWORK THROUGH HORIZONTAL PARTITION
	RETURN AIR AND OUTSIDE AIR DUCTWORK THROUGH HORIZONTAL PARTITION
	EXHAUST AIR DUCTWORK THROUGH HORIZONTAL PARTITION
	FIRE DAMPER (VERTICAL)
	FIRE DAMPER (HORIZONTAL)
	SMOKE DAMPER (VERTICAL)
	SMOKE DAMPER (HORIZONTAL)
	COMBINATION FIRE & SMOKE DAMPER (VERTICAL)
	COMBINATION FIRE & SMOKE DAMPER (HORIZONTAL)
	MANUAL BALANCING DAMPER (SEE DAMPER SCHEDULE)
	MOTORIZED DAMPER (SEE DAMPER SCHEDULE)
SENSORS	
(T)	THERMOSTAT AND TEMPERATURE SENSOR
(H)	HUMIDISTAT
(SD)	SMOKE DETECTOR
(HD)	HEAT DETECTOR
AIR DEVICES	
(#)	GRILLE SIZE TAG (REFER TO GRILLE SIZE LEGEND)
	SUPPLY AIR GRILLE WITH FOUR-WAY THROW
	SUPPLY AIR GRILLE WITH THREE-WAY THROW
	SUPPLY AIR GRILLE WITH TWO-WAY THROW
	SUPPLY AIR GRILLE WITH TWO-WAY CORNER THROW
	SUPPLY AIR GRILLE WITH ONE-WAY THROW
	RETURN AIR GRILLE
	RETURN AIR GRILLE WITH SOUND BOOT
	EXHAUST AIR GRILLE
	SUPPLY AIR SIDEWALL GRILLE
	RETURN AIR SIDEWALL GRILLE
20X12	RETURN AIR OPENING ABOVE CEILING
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
	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
RENOVATIONS	
	POINT OF CONNECTION FROM NEW TO EXISTING
	ITEM TO REMAIN
	ITEM TO BE REMOVED

DUCTWORK SYMBOLS LEGEND

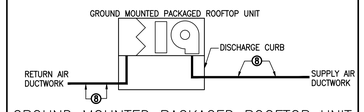


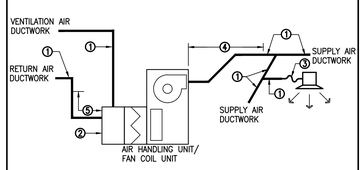
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DUCTWORK CONSTRUCTION DETAILS



DUCT LINER AND INSULATION

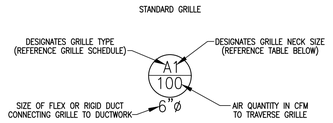




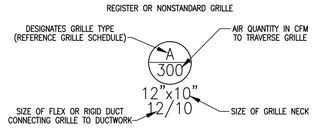
NOTES

1. SHEETMETAL DUCTWORK WITH EXTERNAL DUCTWORK INSULATION AS SPECIFIED.
2. SHEETMETAL DUCTWORK RETURN AIR PLENUM WITH EXTERNAL DUCTWORK INSULATION AS SPECIFIED.
3. FLEXIBLE DUCTWORK WITH EXTERNAL DUCTWORK INSULATION AS SPECIFIED.
4. SHEETMETAL DUCTWORK WITH EXTERNAL DUCTWORK INSULATION AS SPECIFIED AND 1" THICK 1-1/2 LB LINER AS SPECIFIED FROM AIR HANDLING UNIT DISCHARGE TO 10'-0" DOWNSTREAM. PROVIDE METAL NOSING AND MASTIC COVERING. REFER TO THE DUCT LINING SECTION IN THE DUCTWORK SPECIFICATION FOR MORE INFORMATION.
5. SHEETMETAL DUCTWORK WITH EXTERNAL DUCTWORK INSULATION AS SPECIFIED AND 1" THICK 1-1/2 LB LINER AS SPECIFIED FROM AIR HANDLING UNIT INLET TO 10'-0" UPSTREAM.
6. EXHAUST DUCTWORK AS SPECIFIED WITH FIREBOARD INSULATION AS SPECIFIED.
7. SHEETMETAL DUCTWORK ONLY. NO INSULATION REQUIRED.
8. ALL OUTSIDE DUCTWORK SHALL BE DOUBLE WALL CONSTRUCTION WITH TWO COATS OF EPOXY PAINT. REFER TO SPECIFICATIONS FOR MORE DETAILS.

GRILLE SIZING SCHEDULE



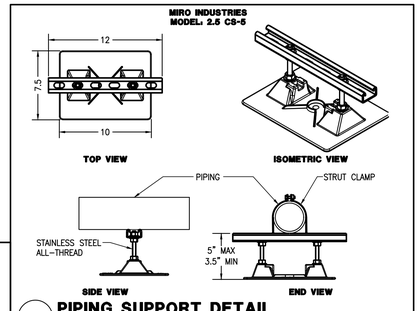
ALL GRILLES SHOWN SHALL BE FOUR-WAY THROW UNLESS OTHERWISE SHOWN.



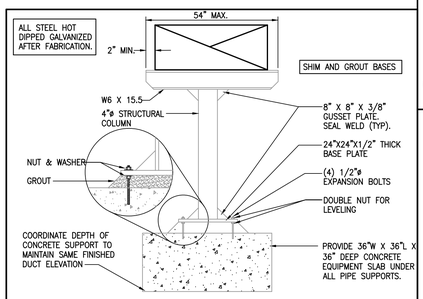
ALL GRILLES SHOWN SHALL BE FOUR-WAY THROW UNLESS OTHERWISE SHOWN.
ALL REGISTERS SHALL HAVE A 45° HORIZONTAL DEFLECTION UNLESS OTHERWISE SHOWN.

GRILLE SIZE DESIGNATION	GRILLE NECK SIZE	GRILLE SIZE DESIGNATION	GRILLE NECK SIZE
1	6" x 6"	7	15" x 15"
2	8" x 8"	8	16" x 16"
3	9" x 9"	9	18" x 18"
4	10" x 10"	10	20" x 20"
5	12" x 12"	11	22" x 22"
6	14" x 14"	12	24" x 24"

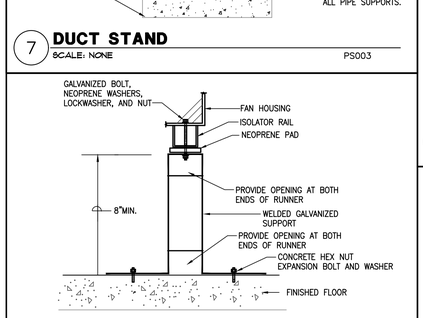
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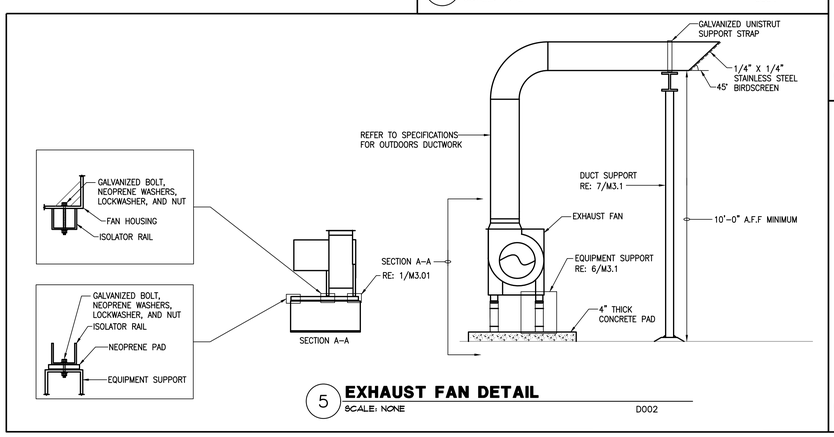
4 **PIPING SUPPORT DETAIL**
SCALE: NONE — PS002



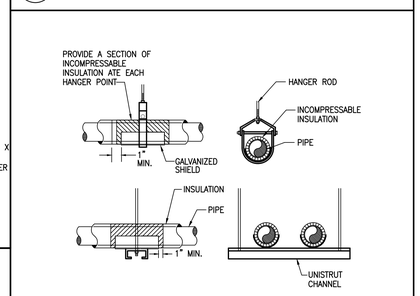
7 **DUCT STAND**
SCALE: NONE — PS003



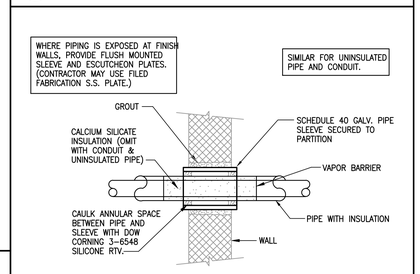
6 **EQUIPMENT SUPPORT**
SCALE: NONE — C004



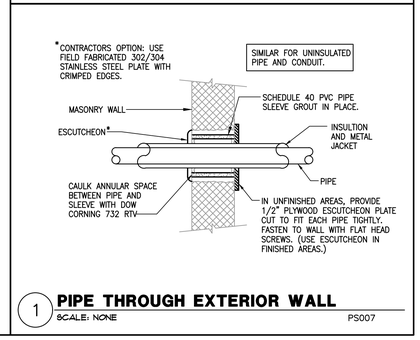
5 **EXHAUST FAN DETAIL**
SCALE: NONE — D002



3 **PIPE HANGERS**
SCALE: NONE — PS002



2 **PIPE THRU FIRE RATED WALL**
SCALE: NONE — PS010



1 **PIPE THROUGH EXTERIOR WALL**
SCALE: NONE — PS007

Project No: 2022-02715-00
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Date: 09-14-2022
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BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT
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09-14-2022

MECHANICAL SCHEDULES - HOMER ES

M4.1

100 PERCENT GROUND MOUNTED PACKAGED UNIT - GAS HEAT

MARK	INDOOR AIR FAN					COOLING						GAS HEATING			REMARKS
	SUPPLY AIR CFM	OUTSIDE AIR CFM	EXT. STATIC PRESSURE (IN. W.C.)	HORSE POWER	CURRENT CHARAC.	AIR TEMPERATURE (°F) ENTERING DRY BULB	ENTERING WET BULB	OUTDOOR AMBIENT	MIN. TOTAL CAPACITY (MBH)	MIN. SENSIBLE CAPACITY (MBH)	MINIMUM EER/ SEER	ENTERING AIR TEMP. (°F)	MIN. CAPACITY OUTPUT (MBH)	AGA EFFICIENCY (%)	
OAU–1H	3,550	3,550	2.0	5.0	208/3/60	98.0	80.0	98.0	346.0	172.5	9.8/–	27.0	172.5	80	(1–11)

GENERAL NOTES:
1. EXTERNAL STATIC PRESSURE INCLUDES LOSSES DUE TO DUCTWORK, AIR DEVICES, DAMPERS, AND DUCT MOUNTED HOT WATER COILS WHERE APPLICABLE. DIRTY FILTER AND UNIT CASING MUST BE ADDED TO EXTERNAL STATIC PRESSURE TO OBTAIN TOTAL PRESSURE LOSS. INCREASE HORSEPOWER AS REQUIRED TO MEET YOUR TOTAL PRESSURE LOSS. COORDINATE WITH ELECTRICIAN.
2. MINIMUM RECOMMENDED CLEARANCE AROUND ROOFTOP UNIT IS 12 INCHES ON NON–SERVICE SIDES AND 30 INCHES ON SERVICE SIDES. MAINTAIN MINIMUM CLEARANCE FOR CONDENSER AIR FLOW AS RECOMMENDED BY ROOFTOP UNIT MANUFACTURER. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON ROOFTOP UNIT FOR SERVICE, MAINTENANCE, AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCE AS REQUIRED BY NEC.

REMARKS:
1. PROVIDE WITH DISCONNECT SWITCH & PAD MOUNTED CURB OR HORIZONTAL DISCHARGE.
2. PROVIDE UNIT WITH FACTORY MOUNTED GFCI RECEPTACLE. ELECTRICIAN TO WIRE TO SEPARATE CIRCUIT.
3. PROVIDE UNIT WITH LOW AMBIENT CONTROL.
4. PROVIDE A WATER LEVEL SENSING DEVICE IN THE PRIMARY DRAIN PAN. THIS DEVICE SHALL SHUT OFF THE APPLIANCE IN THE EVENT THE PRIMARY DRAIN LINE BECOMES RESTRICTED.
5. PROVIDE WITH DISCHARGE AIR TEMPERATURE SENSOR.
6. PROVIDE WITH MODULATING GAS HEAT.
7. PROVIDE WITH STAINLESS STEEL HEAT EXCHANGER.
8. VELOCITY SHALL NOT EXCEED 450 FPM ON COOLING COIL. PROVIDE UNIT WITH A LEAVING AIR TEMPERATURE OF 53°F DRY BULB AND 52.5°F WET BULB.
9. PROVIDE WITH MODULATING HOT GAS REHEAT TO A NEUTRAL CONDITION OF 72°F.
10. PROVIDE WITH VARIABLE SPEED COMPRESSOR OR DIGITAL SCROLL COMPRESSOR AND VARIABLE SPEED CONDENSER FANS. REFER TO SPECIFICATIONS.
11. PROVIDE WITH VFD ON SUPPLY FAN.

BRANCH SELECTOR

MARK	ELECTRICAL			NUM. OF PORTS	REMARKS
	CURRENT CHARAC.	MCA	MOCP		
BS–1H–1	208/1/60	0.80	15.0	8	(1,2,3,4)
BS–1H–2	208/1/60	0.10	15.0	1	(1,2,3,4)
BS–2H–1	208/1/60	0.60	15.0	6	(1,2,3,4)

GENERAL NOTES:
1. BRANCH SELECTOR MODULES ARE TYPICAL. SEE DRAWINGS AND PIPING SCHEMATICS FOR QUANTITY AND LOCATION.
2. BRANCH SELECTORS SHALL HAVE BRAZED CONNECTIONS.

REMARKS:
1. SINGLE–PORT FLOW SELECTORS ARE POWERED FROM INDOOR UNITS.
2. STANDARD SINGLE–PORT FLOW SELECTORS (I.E. NOT "LONG" MODELS) COME STANDARD WITH POWER AND COMMUNICATION WIRES FOR CONNECTION TO INDOOR UNIT.
3. MULTI–PORT FLOW SELECTORS REQUIRE DEDICATED POWER SUPPLY.
4. EACH PORT OF MULTI–PORT FLOW SELECTORS SHALL HAVE A MAXIMUM CAPACITY OF 61 KBTU/HR.

DX BLOWER COIL UNIT - VRF

MARK	FAN					COOLING						HEATING			REMARKS
	SUPPLY AIR CFM	OUTSIDE AIR CFM	EXT. STATIC PRESSURE (IN. W.C.)	HORSE POWER	CURRENT CHARAC.	AIR TEMPERATURE (°F) ENTERING DRY BULB	ENTERING WET BULB	LEAVING DRY BULB	LEAVING WET BULB	MIN. TOTAL CAPACITY (BTUH)	MIN. SENS. CAPACITY (BTUH)	ENTERING AIR TEMPERATURE (°F)	MINIMUM CAPACITY (BTUH)	
BC–1H	1,430	0	2.0	2.0	208/3/60	75.0	62.5	53.0	52.5	41,132	33,976	68.0	41,698	(1–11)
BC–2H	1,250	0	1.5	2.0	208/3/60	75.0	62.5	53.0	52.5	35,954	29,700	68.0	36,450	(1–11)
BC–3H	1,430	0	1.5	2.0	208/3/60	75.0	62.5	53.0	52.5	41,132	33,976	68.0	41,698	(1–11)
BC–4H	1,430	0	1.0	2.0	208/3/60	75.0	62.5	53.0	52.5	41,132	33,976	68.0	41,698	(1–11)
BC–5H	1,430	0	1.5	2.0	208/3/60	75.0	62.5	53.0	52.5	41,132	33,976	68.0	41,698	(1–11)
BC–6H	2,500	0	2.0	3.0	208/3/60	75.0	62.5	53.0	52.5	71,909	59,400	68.0	72,900	(1–11)
BC–7H	1,430	0	2.0	2.0	208/3/60	75.0	62.5	53.0	52.5	41,132	33,976	68.0	41,698	(1–11)
BC–8H	1,430	0	2.0	2.0	208/3/60	75.0	62.5	53.0	52.5	41,132	33,976	68.0	41,698	(1–11)
BC–9H	1,430	0	1.0	2.0	208/3/60	75.0	62.5	53.0	52.5	41,132	33,976	68.0	41,698	(1–11)
BC–10H	1,430	0	1.5	2.0	208/3/60	75.0	62.5	53.0	52.5	41,132	33,976	68.0	41,698	(1–11)
BC–11H	1,430	0	1.5	2.0	208/3/60	75.0	62.5	53.0	52.5	41,132	33,976	68.0	41,698	(1–11)
BC–12H	1,930	0	2.0	3.0	208/3/60	75.0	62.5	53.0	52.5	55,513	45,856	68.0	56,278	(1–11)

GENERAL NOTES:
1. EXTERNAL STATIC PRESSURE INCLUDES LOSSES DUE TO DUCTWORK, AIR DEVICES, DAMPERS, AND DUCT MOUNTED HOT WATER COILS WHERE APPLICABLE. DIRTY FILTER AND UNIT CASING MUST BE ADDED TO EXTERNAL STATIC PRESSURE TO OBTAIN TOTAL PRESSURE LOSS. INCREASE HORSEPOWER AS REQUIRED TO MEET YOUR TOTAL PRESSURE LOSS. COORDINATE WITH ELECTRICIAN.
2. MAINTAIN MINIMUM CLEARANCE FOR COIL PULL AS RECOMMENDED BY UNIT MANUFACTURER. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON UNIT FOR SERVICE, MAINTENANCE, AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCE AS REQUIRED BY NEC.

REMARKS:
1. VELOCITY NOT TO EXCEED 500 FPM ON COOLING COIL.
2. PROVIDE VERTICAL UNIT.
3. PROVIDE VARIABLE VOLUME UNIT.
4. PROVIDE TOP DISCHARGE.
5. PROVIDE WITH FLAT FILTER.
6. THE VARIABLE REFRIGERANT VOLUME SYSTEM SHALL BE CAPABLE OF INTEGRATING TO A MODULAR BUILT UP AIR HANDLING UNIT.
7. FULL PORT, BI–DIRECTIONAL FLOW ISOLATION VALVES SHALL BE INSTALLED UPSTREAM OF AIR HANDLING UNIT INTEGRATION KIT. ENSURE SCHRADER FITTING IS POSITIONED ON THE DOWNSTREAM SIDE OF THE VALVE.
8. THE INTEGRATION KIT SHALL ALLOW CONNECTION AND CONTROL IN ADDITION TO FULL INTEGRATION OF NON VRF AIR HANDLING EQUIPMENT INTO A VRF SYSTEM.
9. THE INTEGRATION KIT SHALL INCLUDE AN ELECTRONIC EXPANSION VALVE CAPABLE OF 2000 STEPS TO CONTROL REFRIGERANT FLOW TO COIL.
10. INTEGRATED CONTROL MODULE SHALL COMMUNICATE WITH VRV CONDENSING UNIT.
11. PROVIDE WITH DOUBLE WALL INSULATED UNIT CASING WITH SOLID INNER WALL.

VRF AIR COOLED CONDENSING UNIT

MARK	MIN. TOTAL CAPACITY COOLING (BTUH)	MIN. TOTAL CAPACITY HEATING (BTUH)	OUTDOOR AIR TEMP (°F)	MINIMUM EER/ SEER	CURRENT CHARAC.	MCA	MOCP	RELATED UNIT MARK	REMARKS
VRFCU–1H	323,871	287,141	98	–	208/3/60	109.8	120.0	BC–1H,2H,3H,4H, 5H,6H,7H,8H	(1,2,3,4,5)
VRFCU–2H	183,458	177,393	98	11.50	208/3/60	90.0	140.0	BC–9H,10H,11H, 12H	(1,2,3,4,5)

GENERAL NOTES:
1. MINIMUM RECOMMENDED CLEARANCE AROUND ROOFTOP UNIT IS 12 INCHES ON NON–SERVICE SIDES AND 30 INCHES ON SERVICE SIDES. MAINTAIN MINIMUM CLEARANCE FOR CONDENSER AIR FLOW AS RECOMMENDED BY UNIT MANUFACTURER. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON UNIT FOR SERVICE, MAINTENANCE, AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCE AS REQUIRED BY NEC.

REMARKS:
1. PROVIDE WITH LOW AMBIENT CONTROL DOWN TO 20°F.
2. PROVIDE WITH DISCONNECT SWITCH.
3. REFRIGERANT LINES TO BE SIZED PER MANUFACTURER'S REQUIREMENTS.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING DX EXPANSION VALVES. ELECTRICIAN SHALL BE RESPONSIBLE FOR WIRING 208–230V/1PH DX EXPANSION VALVES.
5. PROVIDE HEAT RECOVERY UNIT.

GRILLE

MARK	SERVICE	TYPE	DAMPER	CONSTRUCTION MATERIAL	FINISH COLOR	MANUFACTURER	MODEL NUMBER	REMARKS
A	SUPPLY AIR	GRILLE	–	STEEL	WHITE	TITUS	300RL	DOUBLE DEFLECTION SIDEWALL GRILLE WITH HORIZONTAL FRONT BARS. SURFACE MOUNTED.
B	RETURN AIR	GRILLE	–	STEEL	WHITE	TITUS	350RL	SINGLE DEFLECTION SIDEWALL GRILLE WITH HORIZONTAL FRONT BARS. SURFACE MOUNTED.
(E)	EXISTING	DIFFUSER	–	–	–	–	–	EXISTING AIR DEVICE TO REMAIN.

GENERAL NOTES:
1. DAMPERS NOTED AS U. L. SHALL BE A "U. L." CLASSIFIED CEILING RADIATION DAMPER WITH THERMAL BLANKET.
2. COORDINATE AIR DEVICE FINISH COLOR AND LOCATION WITH ARCHITECT.

REMARKS:
1. N/A

DAMPER

MARK	ACTUATOR	DUTY	BLADE ACTION	MANUFACTURER	MODEL NUMBER	REMARKS
D–1	MANUAL BALANCING	UNDER 9" WIDE	N/A	N/A	N/A	SEE SMACNA CONSTRUCTION DETAILS REFERENCED "TYPICAL CONSTRUCTION DETAILS FOR LOW VELOCITY DUCTS."
D–2	MANUAL BALANCING	OVER 9" WIDE	OPPOSED	RUSKIN	MD–35	MANUAL DAMPER WITH STANDARD CONSTRUCTION FEATURES AND VENTLOCK #639 LOCKING REGULATOR.
D–3	MOTORIZED	OVER 9" WIDE	OPPOSED	RUSKIN	CD–60	LOW LEAKAGE DAMPER WITH BLADE SEALS

NOTES:
N/A – NOT APPLICABLE

FAN

MARK	LOCATION	CFM	MAXIMUM RPM	EXT. STATIC PRESSURE (IN. W.C.)	HORSE POWER	CURRENT CHARAC.	LOCALLY SWITCHED BY	INTERLOCKED WITH	FAN TYPE	BELT/DIRECT DRIVE	MANUFACTURER	MODEL NUMBER	REMARKS
EF–2H	MECHANICAL YARD	2,560	2,409	2.0	2.0	208/3/60	–	OAU–1	CENTRIFUGAL BLOWER	BELT	COOK	CPS	(1,2,3,4,5,6,7)

GENERAL NOTES:
1. EXTERNAL STATIC PRESSURE INCLUDES LOSSES DUE TO DUCTWORK, AIR DEVICES, DAMPERS, AND DUCT MOUNTED HOT WATER COILS WHERE APPLICABLE. DIRTY FILTER AND UNIT CASING MUST BE ADDED TO EXTERNAL STATIC PRESSURE TO OBTAIN TOTAL PRESSURE LOSS. INCREASE HORSEPOWER AS REQUIRED TO MEET YOUR TOTAL PRESSURE LOSS. COORDINATE WITH ELECTRICIAN.
2. MINIMUM RECOMMENDED CLEARANCE AROUND UNIT IS 12 INCHES ON NON–SERVICE SIDES AND 30 INCHES ON SERVICE SIDES. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON UNIT FOR SERVICE, MAINTENANCE, AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCE AS REQUIRED BY NEC.
3. FAN SHALL BE CENTRIFUGAL, BELT DRIVEN TYPE UNLESS OTHERWISE SCHEDULED.

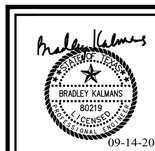
REMARKS:
1. PROVIDE WITH DISCONNECT SWITCH.
2. PROVIDE WITH OSHA APPROVED MOTOR GUARD.
3. PROVIDE WITH VARIABLE FREQUENCY DRIVE (VFD).
4. MOTOR SHALL BE RATED FOR USE WITH A VARIABLE FREQUENCY DRIVE (VFD).
5. PROVIDE WITH SPRING ISOLATION RAIL.
6. PROVIDE WITH TOP DISCHARGE.
7. PROVIDE WITH DRAIN AT BOTTOM OF FAN HOUSING.

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Drawn By: BB
Checked By: VP
Date: 09-14-2022
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HVAC UPGRADES PART 3

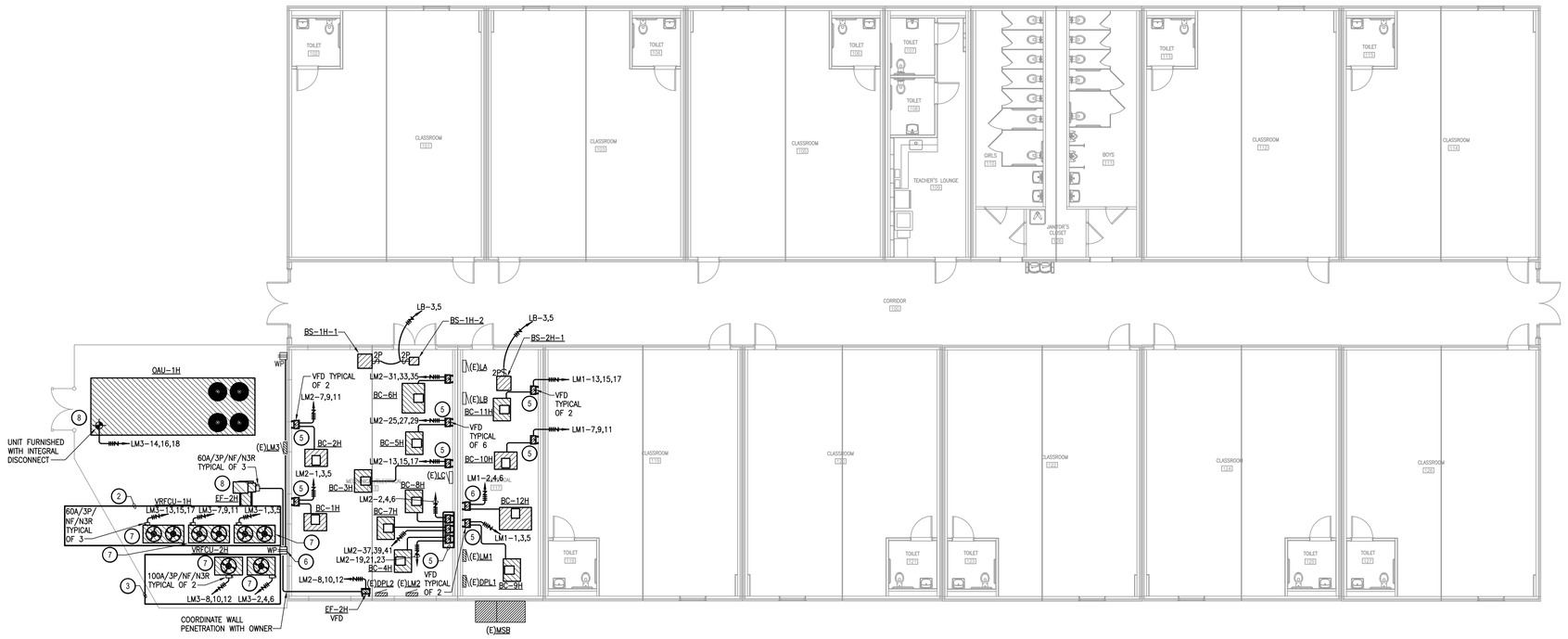
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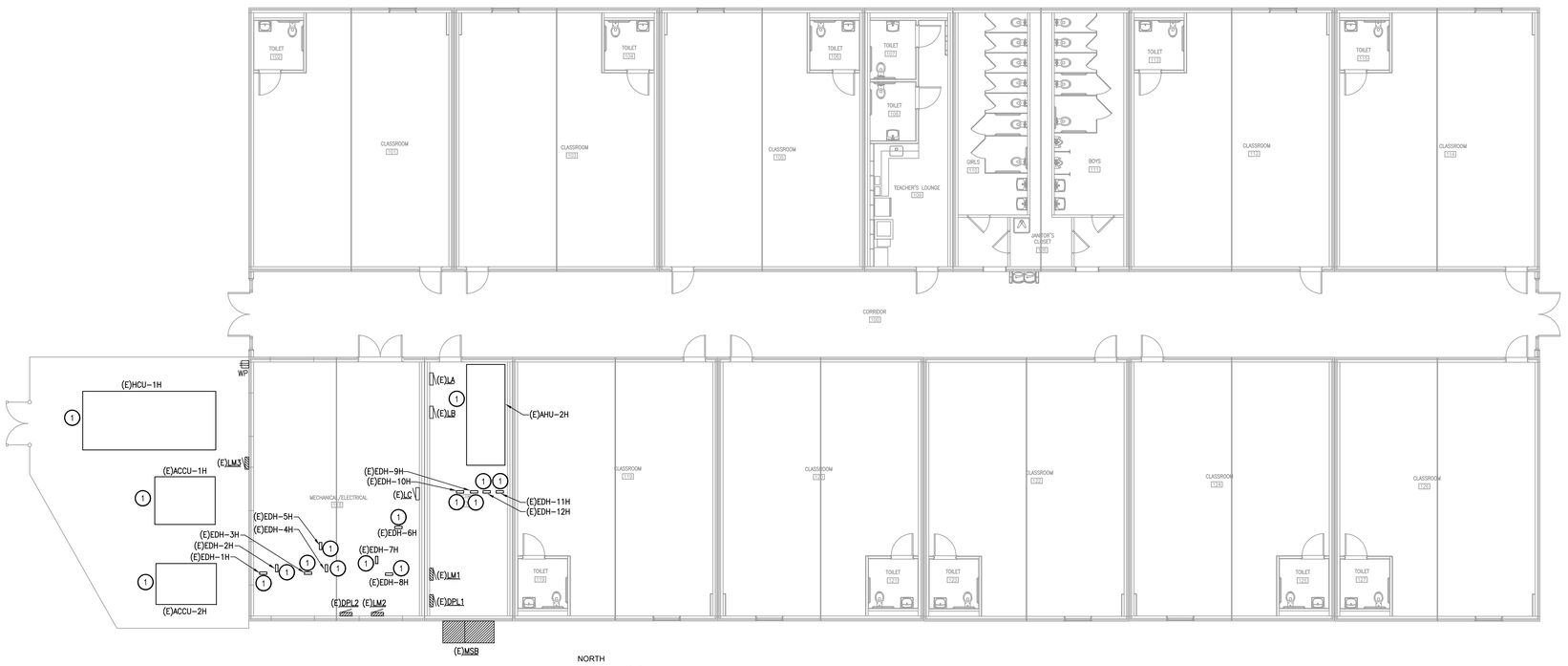
MECHANICAL SCHEDULES - HOMER ES

M4.1



NORTH

1 **ELECTRICAL FLOOR PLAN - HOMER ES**
SCALE: 1/8" = 1'-0"



NORTH

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

EXISTING CONDITIONS/DEMOLITION NOTES

1. CONTRACTOR SHALL VISIT THE SITE BEFORE SUBMITTING A PROPOSAL AND VERIFY EXISTING CONDITIONS. ANY MODIFICATIONS REQUIRED CONTRARY TO THESE DOCUMENTS FOR A COMPLETE AND OPERATING SYSTEM SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
2. CONTRACTOR SHALL DISCONNECT AND REMOVE ANY MECHANICAL, ELECTRICAL OR PLUMBING ITEMS IN THE WAY OF NEW CONSTRUCTION AND NOT BEING REUSED. CONTRACTOR TO KEEP ALL ITEMS THAT ARE TO REMAIN PROTECTED DURING CONSTRUCTION.
3. DEMOLISH CONDUIT AND WIRING ASSOCIATED WITH HVAC EQUIPMENT BEING REMOVED BACK TO SOURCE AND INDICATE ANY OPEN CIRCUIT BREAKER AS SPARE.
4. COORDINATE WITH OWNER/ARCHITECT FOR EXACT DEMOLITION SCOPE OF WORK PRIOR TO COMMENCEMENT OF WORK.

LINETYPE LEGEND

EXISTING TO REMAIN	———
REMOVE EXISTING	———
NEW WORK	———

OWNER OR ITS REPRESENTATIVE SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED FROM THIS PROJECT. CONTRACTOR TO NOTIFY DISTRICT REPRESENTATIVE PRIOR TO DEMOLITION WORK TO DISCUSS ALL RETURNED ITEMS TO DISTRICT.

ELECTRICAL WORK SHOWN AS A PART OF THIS PROJECT WILL REQUIRE INCIDENTAL FIRE ALARM SYSTEM WORK. ALL SUCH WORK SHALL BE INCLUDED IN THE CONTRACTORS PROPOSAL. THIS WORK SHALL BE PERFORMED WITHOUT ANY IMPACT TO THE CONSTRUCTION SCHEDULE AND AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL INCLUDE ANY FIRE ALARM DEVICES THAT ARE REQUIRED TO BE REMOVED, PROTECTED, AND RE-INSTALLED. FIRE ALARM SYSTEM SHALL BE TESTED PRIOR TO COMMENCEMENT OF WORK AND UPON COMPLETION. REFER TO SPECIFICATION 26 31 02 EXPANSION OF EXISTING FIRE DETECTION AND ALARM SYSTEM FOR ADDITIONAL REQUIREMENTS.

GENERAL NOTES:

1. DISCONNECT AND REMOVE ALL CONDUIT, WIRE, AND DISCONNECTING MEANS ASSOCIATED WITH HVAC EQUIPMENT BEING REMOVED.
2. DISCONNECT AND REMOVE ALL ABANDONED WIRING AND CONDUIT.
3. VARIABLE FREQUENCY DRIVES FURNISHED BY DIVISION 23.
4. ALL NEW ELECTRICAL FEEDING SHALL BE ROUTED ABOVE GRADE. ROUTE TO AVOID CREATING TRIPPING HAZARDS. FIELD COORDINATE EXACT ROUTING WITH OWNER. UTILIZE EXISTING AND/OR NEW PIPE STANDS AS NEEDED.

ELECTRICAL KEYED NOTES:

1. DISCONNECT EXISTING MECHANICAL EQUIPMENT AND ASSOCIATED CONTROL DEVICE. REMOVE EXISTING CIRCUIT BACK TO SOURCE OR NEXT EXISTING DEVICE TO REMAIN.
2. CONTRACTOR TO COORDINATE FINAL DISCONNECT SIZE AND NUMBER OF FEEDS WITH MECHANICAL SELECTIONS.
   IF TRANE IS SELECTED PROVIDE (2) CONNECTIONS THROUGH 60A/3P/NF/N3R DISCONNECTS.
   IF DAIKIN IS SELECTED PROVIDE (1) CONNECTION THROUGH A 60A/3P/NF/N3R DISCONNECT.
3. CONTRACTOR TO COORDINATE FINAL DISCONNECT SIZE AND NUMBER OF FEEDS WITH MECHANICAL SELECTIONS.
   IF TRANE IS SELECTED PROVIDE (2) CONNECTIONS THROUGH 100A/3P/NF/N3R DISCONNECTS.
   IF CARRIER IS SELECTED PROVIDE (1) CONNECTION THROUGH A 60A/3P/NF/N3R DISCONNECT & (1) CONNECTION THROUGH A 30A/3P/NF/N3R DISCONNECT.
4. CONTRACTOR TO COORDINATE FINAL DISCONNECT WITH MECHANICAL SELECTIONS. IF DAIKIN IS SELECTED, CONTRACTOR TO PROVIDE 2 POLE 20A DISCONNECT.
5. CONTRACTOR TO COORDINATE FINAL DISCONNECT WITH MECHANICAL SELECTIONS. IF DAIKIN IS SELECTED, CONTRACTOR TO PROVIDE 2 POLE 30A DISCONNECT.
6. EXTEND NEW 2#12, 1#12G IN 3/4"C. TO NEW RECEPTACLE SUPPORTED BY CONDUIT FROM EXISTING RECEPTACLE TO REMAIN. FIELD VERIFY CONNECTED LOAD NOT TO EXCEED 1500 W @ 120V.
7. ROUTE 3/4"C. WITH PULLSTRING TO ASSOCIATED INDOOR UNIT. ROUTE PARALLEL WITH REFRIGERATION LINES.
8. ROUTE 3/4"C. WITH PULLSTRING FOR CONTROL WIRING INSIDE BUILDING. COORDINATE FINAL TERMINATION WITH MECHANICAL CONTRACTOR.

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Drawn By: AW
Checked By: JZ
Date: 09-14-2022
Revision Dates:

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BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

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BISD Preparing Our Next Generation

BRADLEY KALMANS
STATE OF TEXAS
80219
LICENSED PROFESSIONAL ENGINEER
09-14-2022

ELECTRICAL FLOOR PLANS - HOMER ES

E1.1

EXISTING PANEL 'LM3'

LOCATION: CENTRAL PLANT

120/208V., 3 PHASE, 4 WIRE, SOLID NEUTRAL, GROUND BAR

400 PANEL AMPERAGE — X MLO — NEMA-1 — PROVIDE FEED THRU LUGS
X SURFACE MOUNTED — MCB — X NEMA-3R — PROVIDE 200% NEUTRAL
RECESS MOUNTED — TVSS — S.S. ENCL. — ISOLATED GROUND BUS

CKT	VA	DESCRIPTION	COND.	BRKR			BRKR.	COND.	DESCRIPTION	VA	CKT
1	2811	NEW VRFCU-1H (1) (3)	#10	30/3	A		80/3	#4	NEW VRFCU-2H (1) (4)	9607	2
3	2811	---	#10	--		B	--	#4	---	9607	4
5	2811	---	#10	--			--	#4	---	9607	6
7	2811	NEW VRFCU-1H (1) (3)	#10	30/3	A		80/3	#4	NEW VRFCU-2H (1) (4)	9607	8
9	2811	---	#10	--		B	--	#4	---	9607	10
11	2811	---	#10	--			--	#4	---	9607	12
13	2811	NEW VRFCU-1H (1) (3)	#10	30/3	A		200/3	#3/0	NEW OAU-1H (2)	18338	14
15	2811	---	#10	--		B	--	#3/0	---	18338	16
17	2811	---	#10	--			--	#3/0	---	18338	18

	CONNECTED	NEC
LIGHTING	0.0 KVA	0.0 KVA
RECEPTS	0.0 KVA	0.0 KVA
EXISTING	0.0 KVA	0.0 KVA
HVAC	138.0 KVA	138.0 KVA
EQUIPMENT	0.0 KVA	0.0 KVA
KITCHEN	0.0 KVA	0.0 KVA
SUBFEED	0.0 KVA	0.0 KVA
TOTAL	138.0 KVA	138.0 KVA

	CONNECTED	AMPS
PHASE A	46.0 KVA	383.2 A
PHASE B	46.0 KVA	383.2 A
PHASE C	46.0 KVA	383.2 A
TOTAL	138.0 KVA	383.2 A

NEC AMPS: 383.2 A

(1) PROVIDE NEW BREAKER AND CIRCUIT

(2) CONTRACTOR TO COORDINATE FINAL BREAKER SIZING WITH MECHANICAL SELECTIONS.

(3) CONTRACTOR TO COORDINATE FINAL BREAKER COUNT, BREAKER SIZING AND WIRE SIZING WITH MECHANICAL SELECTIONS.
IF DAIKIN IS SELECTED, THE (3) BREAKERS WITH THIS KEYNOTE WILL BE REPLACED WITH (1) 60/3P BREAKERS.
FEED EQUIPMENT WITH (1) 3#6 & 1#10G IN 1"C.
IF TRANE IS SELECTED, THE (3) BREAKERS WITH THIS KEYNOTE WILL BE REPLACED WITH (2) 45/3P BREAKER.
FEED EQUIPMENT WITH (2) 3#6 & 1#10G IN 1-1"C.

(4) CONTRACTOR TO COORDINATE FINAL BREAKER COUNT, BREAKER SIZING AND WIRE SIZING WITH MECHANICAL SELECTIONS.
IF CARRIER IS SELECTED, THE (2) BREAKERS WITH THIS KEYNOTE WILL BE REPLACED WITH (1) 50/3P BREAKER,
FEED EQUIPMENT WITH (1) 3#6 & 1#10G IN 1"C. & (1) 30/3P BREAKER, FEED EQUIPMENT WITH (1) 3#10 & 1#10G IN 3/4"C.
IF TRANE IS SELECTED, THE (2) BREAKERS WITH THIS KEYNOTE WILL BE REPLACED WITH (2) 80/3P BREAKERS.
FEED EQUIPMENT WITH (2) 3#4 & 1#8G IN 1-11/4"C.

EXSITNG PANEL 'LM2'

LOCATION: MECH/ELEC 118

120/208V., 3 PHASE, 4 WIRE, SOLID NEUTRAL, GROUND BAR

600 PANEL AMPERAGE — X MLO — X NEMA-1 — PROVIDE FEED THRU LUGS
X SURFACE MOUNTED — MCB — NEMA-3R — PROVIDE 200% NEUTRAL
RECESS MOUNTED — TVSS — S.S. ENCL. — ISOLATED GROUND BUS

CKT	VA	DESCRIPTION	COND.	BRKR			BRKR.	COND.	DESCRIPTION	VA	CKT
1	1141	NEW BC-1H (1) (3)	#12	20/3	A		20/3	#12	NEW BC-8H (1) (3)	1141	2
3	1141	---	#12	--		B	--	#12	---	1141	4
5	1141	---	#12	--			--	#12	---	1141	6
7	1141	NEW BC-2H (1) (3)	#12	20/3	A		40/3	#8	NEW EF-2H (1) (2)	2102	8
9	1141	---	#12	--		B	--	#8	---	2102	10
11	1141	---	#12	--			--	#8	---	2102	12
13	1141	NEW BC-3H (1) (3)	#12	20/3	A				EXISTING SPACE		14
15	1141	---	#12	--		B			EXISTING SPACE		16
17	1141	---	#12	--					EXISTING SPACE		18
19	691	NEW BC-4H (1) (3)	#12	20/3	A				EXISTING SPACE		20
21	691	---	#12	--		B			EXISTING SPACE		22
23	691	---	#12	--					EXISTING SPACE		24
25	1141	NEW BC-5H (1) (3)	#12	20/3	A				EXISTING SPACE		26
27	1141	---	#12	--		B			EXISTING SPACE		28
29	1141	---	#12	--					EXISTING SPACE		30
31	1681	NEW BC-6H (1) (2)	#10	30/3	A				EXISTING SPACE		32
33	1681	---	#10	--		B			EXISTING SPACE		34
35	1681	---	#10	--					EXISTING SPACE		36
37	1141	NEW BC-7H (1) (3)	#12	20/3	A				EXISTING SPACE		38
39	1141	---	#12	--		B			EXISTING SPACE		40
41	1141	---	#12	--					EXISTING SPACE		42

	CONNECTED	NEC
LIGHTING	0.0 KVA	0.0 KVA
RECEPTS	0.0 KVA	0.0 KVA
EXISTING	0.0 KVA	0.0 KVA
HVAC	34.0 KVA	34.0 KVA
EQUIPMENT	0.0 KVA	0.0 KVA
KITCHEN	0.0 KVA	0.0 KVA
SUBFEED	0.0 KVA	0.0 KVA
TOTAL	34.0 KVA	34.0 KVA

	CONNECTED	AMPS
PHASE A	11.3 KVA	94.3 A
PHASE B	11.3 KVA	94.3 A
PHASE C	11.3 KVA	94.3 A
TOTAL	34.0 KVA	94.3 A

NEC AMPS: 94.3 A

(1) PROVIDE NEW BREAKER AND CIRCUIT

(2) CONTRACTOR TO COORDINATE FINAL BREAKER SIZING WITH MECHANICAL SELECTIONS.

(3) CONTRACTOR TO COORDINATE FINAL BREAKER SELECTION WITH MECHANICAL SELECTIONS.
IF DAIKIN IS SELECTED CONTRACTOR TO PROVIDE 20A/2P BREAKER.

EXISTING PANEL 'LM1'

LOCATION: ELEC 117

120/208V., 3 PHASE, 4 WIRE, SOLID NEUTRAL, GROUND BAR

600 PANEL AMPERAGE — X MLO — X NEMA-1 — PROVIDE FEED THRU LUGS
X SURFACE MOUNTED — MCB — NEMA-3R — PROVIDE 200% NEUTRAL
RECESS MOUNTED — TVSS — S.S. ENCL. — ISOLATED GROUND BUS

CKT	VA	DESCRIPTION	COND.	BRKR			BRKR.	COND.	DESCRIPTION	VA	CKT
1	1141	NEW BC-9H (1) (2)	#12	20/3	A		30/3	#10	NEW BC-12H (1) (3)	1681	2
3	1141	---	#12	--		B	--	#10	---	1681	4
5	1141	---	#12	--			--	#10	---	1681	6
7	1141	NEW BC-10H (1) (2)	#12	20/3	A				EXISTING SPACE		8
9	1141	---	#12	--		B			EXISTING SPACE		10
11	1141	---	#12	--					EXISTING SPACE		12
13	1141	NEW BC-11H (1) (2)	#12	20/3	A				EXISTING SPACE		14
15	1141	---	#12	--		B			EXISTING SPACE		16
17	1141	---	#12	--					EXISTING SPACE		18

	CONNECTED	NEC
LIGHTING	0.0 KVA	0.0 KVA
RECEPTS	0.0 KVA	0.0 KVA
EXISTING	0.0 KVA	0.0 KVA
HVAC	15.3 KVA	15.3 KVA
EQUIPMENT	0.0 KVA	0.0 KVA
KITCHEN	0.0 KVA	0.0 KVA
SUBFEED	0.0 KVA	0.0 KVA
TOTAL	15.3 KVA	15.3 KVA

	CONNECTED	AMPS
PHASE A	5.1 KVA	42.5 A
PHASE B	5.1 KVA	42.5 A
PHASE C	5.1 KVA	42.5 A
TOTAL	15.3 KVA	42.5 A

NEC AMPS: 42.5 A

(1) PROVIDE NEW BREAKER AND CIRCUIT

(2) CONTRACTOR TO COORDINATE FINAL BREAKER SELECTION WITH MECHANICAL SELECTIONS.
IF DAIKIN IS SELECTED CONTRACTOR TO PROVIDE 20A/2P BREAKER.

(3) CONTRACTOR TO COORDINATE FINAL BREAKER SELECTION WITH MECHANICAL SELECTIONS.
IF DAIKIN IS SELECTED, CONTRACTOR TO PROVIDE 30A/2P BREAKER.
FEED EQUIPMENT WITH (1) 2#10 & 1#10G IN 3/4"C.

EXISTING PANEL 'LB'

LOCATION: ELECTRICAL 117

120/208V., 3 PHASE, 4 WIRE, SOLID NEUTRAL, GROUND BAR

100 PANEL AMPERAGE — X MLO — X NEMA-1 — PROVIDE FEED THRU LUGS
X SURFACE MOUNTED — MCB — NEMA-3R — PROVIDE 200% NEUTRAL
RECESS MOUNTED — TVSS — S.S. ENCL. — ISOLATED GROUND BUS

CKT	VA	DESCRIPTION	COND.	BRKR			BRKR.	COND.	DESCRIPTION	VA	CKT
1	100	EXISTING UVC LIGHT	(E)	20/1	A		20/1		EXISTING SPARE		2
3	100	NEW BRANCH SELECT (1)	#12	20/2		B	20/1		EXISTING SPARE		4
5	100	---	#12	--			20/1		EXISTING SPARE		6
7		EXISTING SPARE		20/1	A		20/1		EXISTING SPARE		8
9		EXISTING SPARE		20/1		B	20/1		EXISTING SPARE		10
11		EXISTING SPARE		20/1			20/1		EXISTING SPARE		12
13		EXISTING SPACE			A				EXISTING SPACE		14
15		EXISTING SPACE				B			EXISTING SPACE		16
17		EXISTING SPACE							EXISTING SPACE		18
19		EXISTING SPACE			A				EXISTING SPACE		20
21		EXISTING SPACE				B			EXISTING SPACE		22
23		EXISTING SPACE							EXISTING SPACE		24
25		EXISTING SPACE			A				EXISTING SPACE		26
27		EXISTING SPACE				B			EXISTING SPACE		28
29		EXISTING SPACE							EXISTING SPACE		30

	CONNECTED	NEC
LIGHTING	0.0 KVA	0.0 KVA
RECEPTS	0.0 KVA	0.0 KVA
EXISTING	0.0 KVA	0.0 KVA
HVAC	0.2 KVA	0.2 KVA
EQUIPMENT	0.1 KVA	0.1 KVA
KITCHEN	0.0 KVA	0.0 KVA
SUBFEED	0.0 KVA	0.0 KVA
TOTAL	0.3 KVA	0.3 KVA

	CONNECTED	AMPS
PHASE A	0.1 KVA	0.8 A
PHASE B	0.1 KVA	0.8 A
PHASE C	0.1 KVA	0.8 A
TOTAL	0.3 KVA	0.8 A

NEC AMPS: 0.8 A

(1) PROVIDE NEW BREAKER AND CIRCUIT

CONTRACTOR TO FIELD VERIFY INTERRUPTING FAULT CURRENT CAPACITY OF EXISTING PANELS AND/OR SWITCHBOARDS AND TO PROVIDE NEW BREAKERS TO MATCH EXISTING

LINETYPE LEGEND

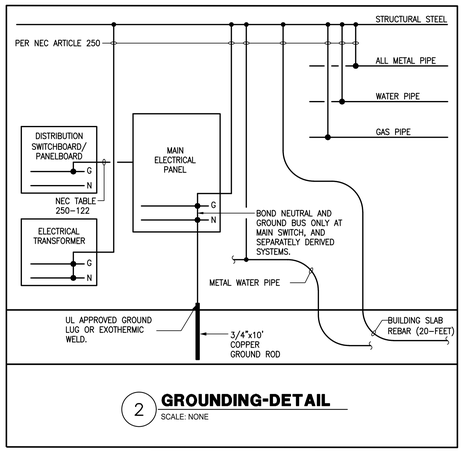
EXISTING TO REMAIN
REMOVE EXISTING
NEW WORK

GENERAL NOTES:

1. DISCONNECT AND REMOVE ALL CONDUIT, WIRE, AND DISCONNECTING MEANS ASSOCIATED WITH HVAC EQUIPMENT BEING REMOVED.
2. DISCONNECT AND REMOVE ALL ABANDONED WIRING AND CONDUIT.

EXISTING CONDITIONS/DEMOLITION NOTES

1. CONTRACTOR SHALL VISIT THE SITE BEFORE SUBMITTING A BID AND VERIFY EXISTING CONDITIONS. ANY MODIFICATIONS REQUIRED CONTRARY TO THESE DOCUMENTS FOR A COMPLETE AND OPERATING SYSTEM SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
2. CONTRACTOR SHALL DISCONNECT AND REMOVE ANY MECHANICAL, ELECTRICAL OR PLUMBING ITEMS IN THE WAY OF NEW CONSTRUCTION AND NOT BEING REUSED. CONTRACTOR TO KEEP ALL ITEMS THAT ARE TO REMAIN PROTECTED DURING CONSTRUCTION.
3. DISCONNECT AND REMOVE LIGHT FIXTURES, RECEPTACLES, DATA OUTLETS, AND ASSOCIATED CONDUIT AND WIRING BACK TO NEAREST EXISTING TO REMAIN DEVICE OR BACK TO SOURCE U.O.N.
4. DEMOLISH CONDUIT AND WIRING ASSOCIATED WITH HVAC EQUIPMENT BEING REMOVED BACK TO SOURCE AND INDICATE ANY OPEN CIRCUIT BREAKER AS SPARE.
5. EXTEND/REROUTE EXISTING BRANCH CIRCUITS TO SERVE NEW RECEPTACLES/DEVICES WHERE POSSIBLE, CONTRACTOR TO VERIFY THAT THE LOAD ON THE CIRCUIT DOES NOT EXCEED 16A, CONTRACTOR TO MAINTAIN CIRCUIT CONTINUITY.
6. COORDINATE WITH OWNER/ARCHITECT FOR EXACT DEMOLITION SCOPE OF WORK PRIOR TO COMMENCEMENT OF WORK.

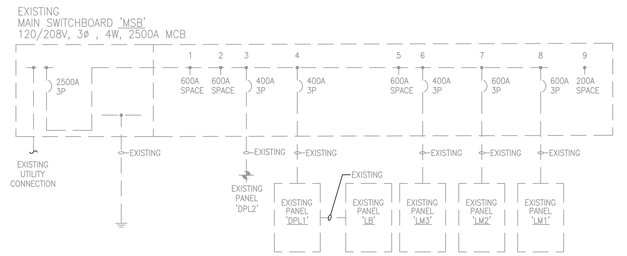


2 **GROUNDING-DETAIL**
SCALE: NONE

MSB LOAD ANALYSIS
120/208V, 3PH, 4W.

LOAD DESCRIPTION	LOAD KVA
LOAD TO REMAIN x 1.25	187900
NEW HVAC - FANS, AHU'S	187200
NEW 25% LARGEST MOTOR (10HP)	2901
NEW MISCELLANEOUS	0
TOTAL	378001

378001 / 208*3^1/2 = 1050A
EXISTING 2500A SERVICE



1 **ELECTRICAL-ONELINE**
SCALE: NONE

Project No: 2022-02715-00
Drawn By: AW
Checked By: JZ
Date: 09-14-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

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Project No: 2022-02715-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT
BISD Preparing Our Next Generation

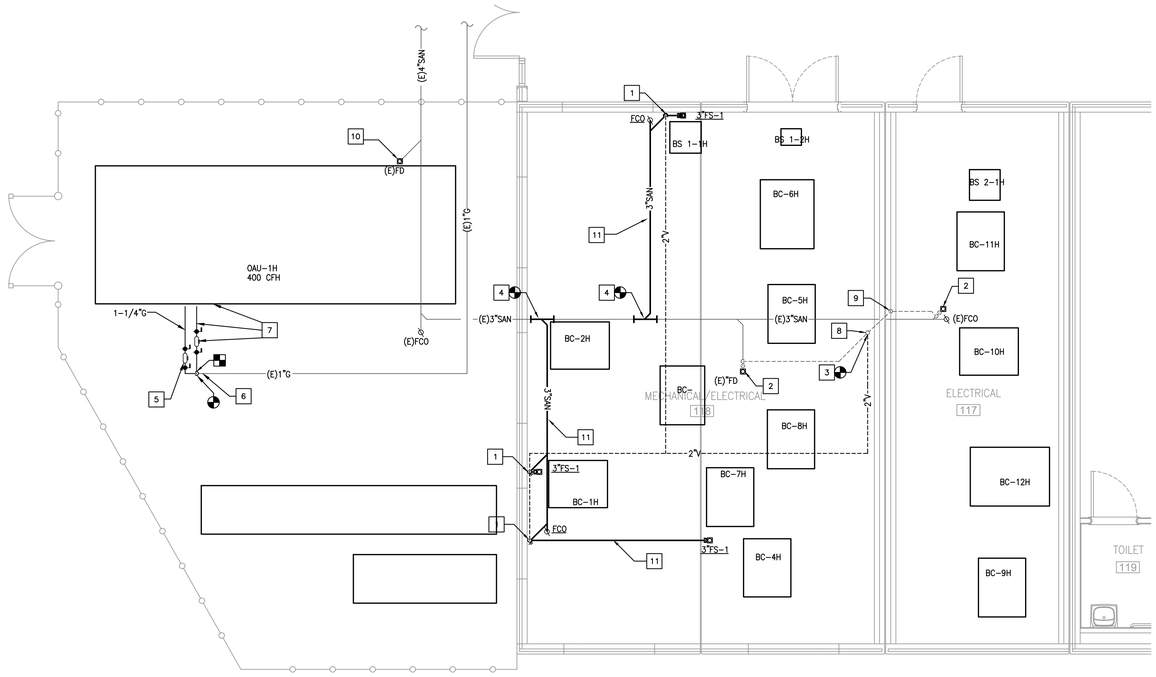
BRADLEY KALMANS
80219
LICENSED PROFESSIONAL ENGINEER
09-14-2022

ELECTRICAL DETAILS - HOMER ES

E2.1

PLUMBING KEYED NOTES:

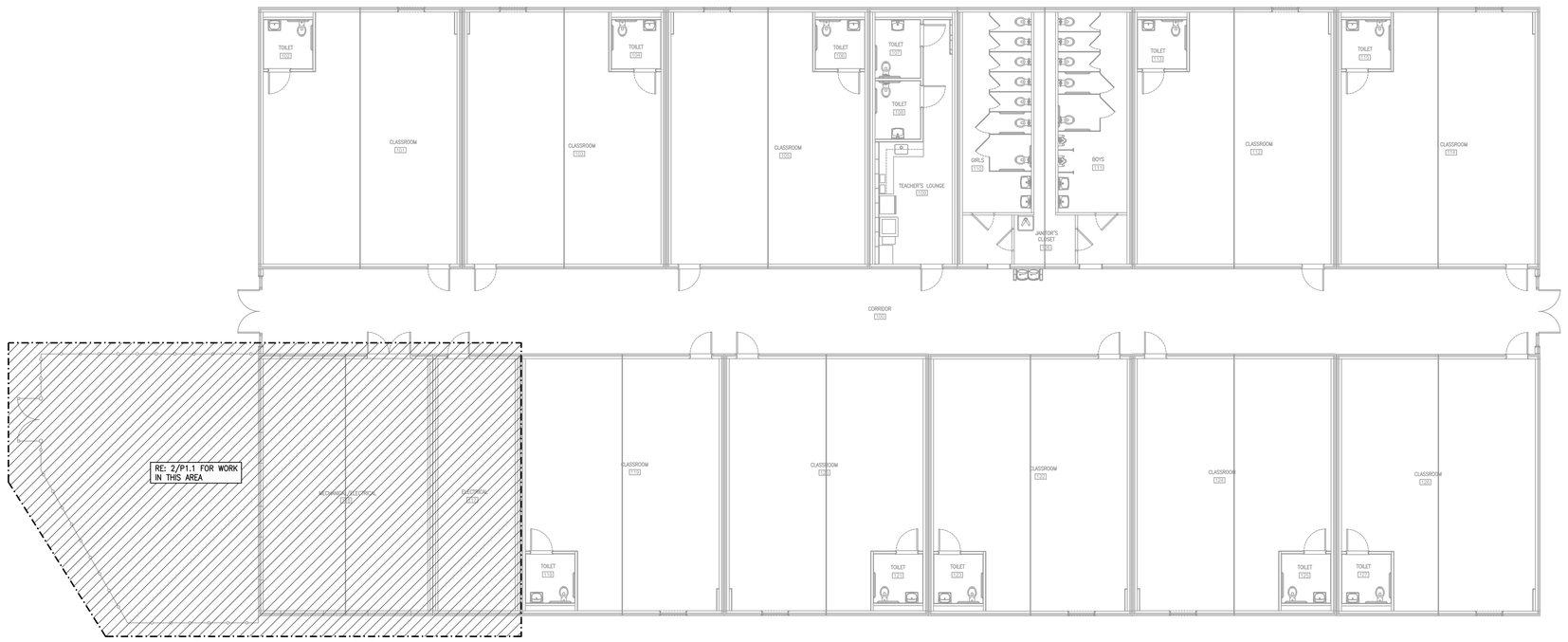
1. 2" VENT UP.
2. EXISTING FLOOR DRAIN TO REMAIN
3. CONNECT NEW 2" VENT TO EXISTING 2" VENT.
4. CONNECT NEW 3" SANITARY TO EXISTING 3" SANITARY.
5. GAS PRESSURE REGULATOR, 5 PSI TO OZ, 400 CFH.
6. EXISTING GAS PIPING BELOW GRADE TO REMAIN.
7. EXISTING OAU TO BE REMOVED, REFER TO MECHANICAL DRAWINGS. REMOVE ASSOCIATED EXISTING GAS PIPING BACK TO AND INCLUDING ELBOW ABOVE SLAB.
8. EXISTING 2" VTR TO REMAIN. FIELD VERIFY EXACT LOCATION
9. EXISTING 2" VENT FROM BELOW.
10. REFER TO PLUMBING DETAIL 3/P3.1 FOR CURB AROUND FLOOR DRAIN.
11. SAW CUT CONCRETE TO ACCOMMODATE FOR NEW UNDERGROUND SANITARY. FIELD VERIFY EXACT LOCATION OF EXISTING SANITARY CONNECTION.



NORTH

2 PLUMBING ENLARGED FLOOR PLAN - HOMER ES

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



NORTH

1 PLUMBING FLOOR PLAN - HOMER ES

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

Project No: 2022-02715-00
Drawn By: EH
Checked By: KBG
Date: 09-14-2022
Revision Dates:

CONSULTANTS

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BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

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BISD Preparing Our Next Generation

BRADLEY KALMANS
80219
LICENSED PROFESSIONAL ENGINEER
09-14-2022

PLUMBING FLOOR PLANS - HOMER ES

P1.1

PLUMBING GENERAL NOTES

1. WITHIN THE EXISTING BUILDING, EXISTING WATER, WASTE AND VENT SERVICES ARE TO BE MODIFIED AS REQUIRED AND REUSED FOR THE INSTALLATION OF NEW AND/OR RELOCATED PLUMBING FIXTURES. REFER TO PLUMBING FLOOR PLANS FOR POINTS OF CONNECTION.
2. WITHIN THE EXISTING BUILDING, SAWCUT AND REMOVE EXISTING FLOOR SLAB AS REQUIRED TO PROVIDE NEW AND/OR RELOCATED PLUMBING FIXTURES, CLEANOUTS, AND UNDERSLAB WASTE AND VENT PIPING. PATCH AND REFINISH FLOOR TO MATCH EXISTING.
3. IN AREAS WHERE THE FLOOR SLAB IS REMOVED, CONTRACTOR SHALL ALSO REMOVE UNDERSLAB WASTE AND VENT PIPING WHICH SERVES FIXTURES DESIGNATED FOR REMOVAL PRIOR TO ANY REMOVAL. FIELD VERIFY THAT LINES TO BE REMOVED DO NOT SERVE ANY EXISTING FIXTURES TO REMAIN OR NEW FIXTURES TO BE INSTALLED.
4. IN AREAS WHERE THE FLOOR SLAB IS NOT REMOVED, CONTRACTOR SHALL ABANDON IN PLACE ANY UNDERSLAB WASTE AND VENT PIPING NO LONGER NEEDED, UNLESS THE PIPING MUST BE REMOVED TO ACCOMMODATE NEW CONSTRUCTION. IF NEW WORK DOES NOT NECESSITATE THEIR REMOVAL, CUT AND PLUG SUCH LINES BELOW SLAB, AND PATCH FLOOR TO MATCH EXISTING.
5. FIELD VERIFY EXACT LOCATION, SIZE, DEPTH, DIRECTION OF FLOW, CAPACITY, PIPE MATERIAL AND CONDITION OF EXISTING WASTE PIPING PRIOR TO BEGINNING CONSTRUCTION. ENSURE THAT PROPER CONNECTIONS TO AND EXTENSION OF SUCH UTILITIES CAN BE MADE.
6. WASTE LINES TO BE RE-USED OR RECONNECTED TO SHALL BE THOROUGHLY RODDED OUT AND FLUSHED TO ENSURE THEY ARE FREE FROM BLOCKAGES.
7. CONTRACTOR SHALL COORDINATE ROUTING OF PIPING BELOW SLAB WITH COLUMN FOOTINGS, GRADE BEAMS, UNDERGROUND PLUMBING AND ELECTRICAL UTILITIES, AND OTHER SUB-SURFACE BUILDING ELEMENTS.
8. CONTRACTOR SHALL COORDINATE ROUTING OF PIPING IN CEILING SPACES WITH MECHANICAL AND ELECTRICAL EQUIPMENT, DUCTWORK AND CONDUIT. SHOULD A CONFLICT OCCUR THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER PRIOR TO INSTALLING AN ALTERNATE PIPING PLAN.
9. CONTRACTOR TO COORDINATE ALL REMODEL WORK WITH THE WORK OF OTHER TRADES TO AVOID CONFLICTS AND TO MINIMIZE INTERRUPTION OF SERVICES.
10. COORDINATE ALL FIXTURE AND EQUIPMENT LOCATIONS AND CONNECTION REQUIREMENTS WITH LATEST ARCHITECTURAL DRAWINGS AND SPECIFICATIONS PRIOR TO ANY ROUGH-INS.
11. DO NOT ROUGH-IN FROM THESE DRAWINGS. REFER TO LATEST ARCHITECTURAL DRAWINGS FOR DIMENSIONED LOCATIONS.
12. CONTRACTOR TO FIELD VERIFY AS NECESSARY THE EXACT ROUTING AND SIZES OF ALL PIPING.
13. ALL WORK, METHODS AND INSTALLATIONS INVOLVED IN THE PLUMBING DESIGN SHALL BE IN ACCORDANCE WITH THE CITY BUILDING CODE, INSPECTION REGULATIONS AND ALL OTHER OFFICIALS HAVING JURISDICTION.
14. THE PROPER INSTALLATION OF NEW FIXTURES AND THE PROPER CONTINUED OPERATION OF EXISTING FIXTURES TO REMAIN SHALL DETERMINE THE EXTENT AND NATURE OF PLUMBING REMODEL WORK.
15. EACH VENT SHALL TERMINATE VERTICALLY NOT LESS THAN 6" ABOVE ROOF, MAINTAIN MINIMUM 10'-0" DISTANCE BETWEEN VENT TERMINALS THROUGH ROOF AND ALL FRESH AIR INTAKES, AND A MINIMUM 5'-0" FROM ANY EXTERIOR WALL.
16. PRIOR TO BEGINNING CONSTRUCTION, COORDINATE BUILDING BACKFLOW PREVENTION REQUIREMENTS WITH THE LOCAL AUTHORITY HAVING JURISDICTION AND PROVIDE AS DIRECTED.

PLUMBING PIPING LEGEND

SYMBOLS	DESCRIPTION
SAN	SANITARY OR WASTE PIPING ABOVE GRADE (SAN)
SAN	SANITARY OR WASTE PIPING BELOW GRADE (SAN)
GW	GREASE WASTE PIPING (GW)
GW	GREASE WASTE PIPING BELOW GRADE (GW)
SD	STORM DRAIN PIPING (SD)
SD	STORM DRAIN PIPING BELOW GRADE (GW)
SSD	SUB-SOIL DRAIN OR FOOTING DRAIN (SSD)
AW	ACID WASTE PIPING (AW)
AW	ACID WASTE PIPING BELOW GRADE (AW)
PD	PUMPED DISCHARGE (PD)
CD	CONDENSTATE DRAIN PIPING (CD)
D	CONDENSTATE – INDIRECT DRAIN PIPING (D)
	VENT PIPING (V)
CW	COLD WATER PIPING (CW)
HW	HOT WATER PIPING (HW)
HWR	HOT WATER RETURN PIPING (HWR)
SCW	SOFT COLD WATER PIPING (SCW)
CDW	CHILLED DRINKING WATER PIPING (CDW)
TP	TRAP PRIMER LINE (TP)
F	FIRE PROTECTION PIPING (F)
AS	AUTOMATIC SPRINKLER PIPING (AS)
GAS	NATURAL GAS PIPING (G)
GV	GAS VENT PIPING (GV)
AIR	COMPRESSED AIR PIPING (A)
	FLOW DIRECTIONAL ARROW
	SHUT-OFF VALVE
	BALANCING VALVE (BV)
SV	SOLENOID VALVE (SV)
	BALL VALVE (BV)
	BUTTERFLY VALVE
	LUBRICATED PACKED PLUG STOP STOP COCK (PC)
	HORIZONTAL SWING CHECK
	UNION
	HORIZONTAL SWING CHECK
	REDUCER OR INCREASER
	ECCENTRIC REDUCER
	REDUCED PRESSURE BACKFLOW PREVENTER (RPBFP)
	PIPING DOWN
	RISE OR DROP PIPING
	PIPING UP –OR– PIPING UP & DOWN
	CAP ON END OF PIPE
CO	CLEANOUT (WALL OR CEILING) (CO)
FCO	FLOOR CLEANOUT (FCO)
ECO	EXTERIOR CLEANOUT WITH 18"x18"x4" CONCRETE PAD (ECO)
	TWO-WAY CLEANOUT (PROVIDE 18"x24"x4" CONCRETE PAD OUTSIDE)
	FIRE DEPARTMENT VALVE AT RISER
	FIRE HYDRANT
	FIRE DEPARTMENT CONNECTION
PRV	PRESSURE REDUCING VALVE (PRV)
	BRANCH CONNECTION OUT OF TOP
	BRANCH CONNECTION OUT OF BOTTOM
	BRANCH CONNECTION OUT OF SIDE
	WYE & 1/8TH BEND BRANCH CONNECTION
	WYE BRANCH CONNECTION
	HOSE BIBB
	PRESSURE GAUGE WITH COCK
	THERMOMETER
	GAS PRESSURE REGULATOR
	TEST COCK
	GAS METER
	WALL HYDRANT
	VALVE IN RISE
	ASME TEMPERATURE & PRESSURE RELIEF VALVE
	VACUUM RELIEF VALVE
	ANGLE VALVE
	OS&Y VALVE
	ROOF DRAIN
	REFER TO KEYED NOTE
FS	FLOW SWITCH
	FLOOR SINK (FS)
	FLOOR DRAIN (FD)
	FLOOR DRAIN WITH P-TRAP (FD)
	FLOOR DRAIN WITH P-TRAP AT 45° ANGLE (FD)
	HUB DRAIN (HD)
	ACCESS PANEL FOR TRAP PRIMER OR SHOCK ABSORBER
AP	ACCESS PANEL LOCATION SYMBOL
A	SHOCK ABSORBER
	AIR CHAMBER
(E)	EXISTING
(N)	NEW
VTR	VENT THRU ROOF
B.F.F.	BELOW FINISHED FLOOR
A.F.F.	ABOVE FINISHED FLOOR
	NEW CONNECTION
IE=100.00'	INVERT ELEVATION
1	DELTA CHANGE SYMBOL
P / 1	4" VTR RISER FLAG

PLUMBING MATERIAL LIST

ABOVE GRADE, INSIDE BUILDING

SANITARY WASTE AND VENT PIPING SHALL BE

NO-HUB CAST IRON SYSTEM CONFORMING TO CISPI, STANDARD NO. 301-75. NEOPRENE GASKETS SHALL CONFORM TO ASTM STANDARD C564-75, OR,

BELOW GRADE, INSIDE BUILDING

SANITARY WASTE AND VENT PIPING SHALL BE

SCHEDULE 40 DWV POLYVINYL CHLORIDE PIPE AND FITTINGS CONFORMING TO ASTM-2665 WITH SOLVENT WELDED JOINTS. DO NOT USE IN AIR SUPPLY OR RETURN PLENUMS, AND OR WHERE FIRE RATED WALLS, PARTITIONS, OR FLOORS ARE PENETRATED.

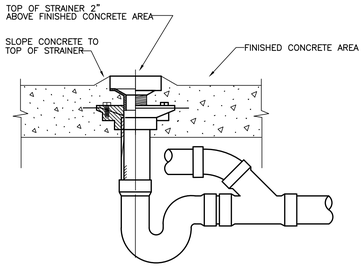
GAS PIPING SHALL BE

PIPE 2" AND SMALLER. PROVIDE SCHEDULE 40 ASTM A 53 BLACK STEEL WITH FACTORY FABRICATED SOCKET WELD FITTINGS.

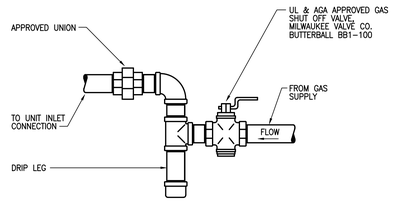
PIPE LARGER THAN 2", USE SCHEDULE 40 ASTM A 53 BLACK STEEL PIPE WITH LONG RADIUS WELD FITTINGS.

PLUMBING FIXTURE SCHEDULE

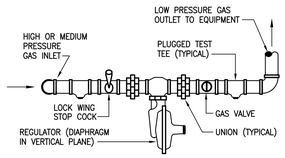
TYPE:	FS-1
SERVICE:	MECHANICAL EQUIPMENT CONDENSATE
DESCRIPTION:	CAST IRON 8" SQUARE FLOOR SINK WITH 6" DEEP SUMP, A.R.E. INTERIOR, ALUMINUM DOME BOTTOM STRAINER, STAINLESS FRAME AND HALF GRATE, ANCHOR FLANGE, CLAMPING COLLAR WADE #9110-85-15-26-48
TRAP SEAL:	PROVIDE PRO-SET SYSTEMS, INC. TRAP GUARD FACTORY FITTED TO MATCH EACH FLOOR SINK BY SIZE, MODEL, AND MANUFACTURER.
ROUGH-IN:	REFER TO FLOOR PLANS FOR SIZES. COORDINATE FINAL LOCATION WITH ARCHITECTURAL DRAWINGS / EQUIPMENT PLACEMENT.



3 **OUTDOOR CONDENSATE DRAIN**
SCALE: NONE
CD04-11/12/08



2 **GAS CONNECTION**
SCALE: NONE
GA07-11/12/08



NOTE: REFERENCE DRAWINGS FOR PIPE SIZES.

1 **GAS PRESSURE REGULATOR INSTALLATION**
SCALE: NONE
GA02-11/12/08

Project No: 2022-02715-00
Drawn By: EH
Checked By:
Date: 09-14-2022
Revision Dates:

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SALAS O'BRIEN | expect a difference.
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Project No. 2022-02715-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD Preparing Our Next Generation

BRADLEY KALMANS 80219 LICENSED PROFESSIONAL ENGINEER
09-14-2022

PLUMBING SCHEDULES, LEGENDS, AND DETAILS - HOMER ES

P3.1

MECHANICAL GENERAL NOTES:

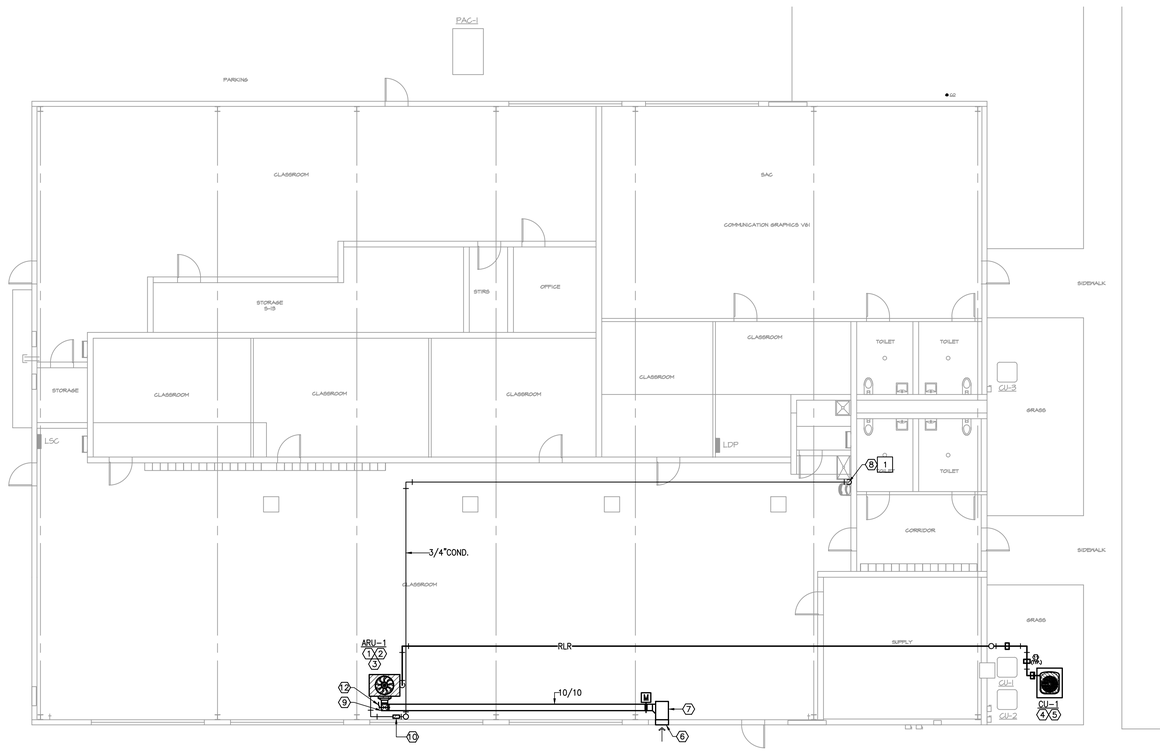
1. MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL REQUIREMENTS.
2. THESE DRAWINGS ARE DIAGRAMMATIC AND DO NOT NECESSARILY REFLECT ACTUAL DIMENSIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND COORDINATE PLACEMENT OF ALL EQUIPMENT AND ROUTING OF ALL PIPING OR DUCT SYSTEMS.
3. ALL MECHANICAL SYSTEMS SHOWN ON THIS PLAN ARE FROM PRELIMINARY FILED WORK. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL LOCATIONS AND SIZES OF MECHANICAL EQUIPMENT PRIOR TO START OF WORK.

MECHANICAL KEYED NOTES:

1. VERIFY SERVICE CLEARANCE FOR AIR FILTER, FAN SHAFT, AND COIL REMOVAL WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.
2. ROUTE CONDENSATE PIPE AT SIZE INDICATED TO WYE TAIL PIECE. INSTALL CONDENSATE DRAIN TRAP AT UNIT AS RECOMMENDED BY MANUFACTURER.
3. ROUTE REFRIGERANT LINES TO ASSOCIATED AIR COOLED CONDENSING UNIT. SIZE REFRIGERANT LINES PER MANUFACTURERS RECOMMENDATIONS.
4. PROVIDE AIR COOLED CONDENSING UNIT WITH 6" CONCRETE HOUSEKEEPING PAD. REFER TO MANUFACTURER FOR REFRIGERANT PIPE SIZES, AIRFLOW CLEARANCES, AND MAINTENANCE CLEARANCES.
5. VERIFY SERVICE CLEARANCE WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.
6. PROVIDE 20" WIDE X 14" HIGH RUSKIN MODEL EME520MD WIND-DRIVEN RAIN RESISTANT STATIONARY LOUVER OR APPROVED EQUAL WITH MINIMUM FREE AREA OF 0.64 SQ. FT. PROVIDE WITH BIRD SCREEN AND PAINT TO MATCH WALL.
7. PROVIDE DUCTWORK AT FULL SIZE OF LOUVER.
8. ROUTE CONDENSATE PIPE DOWN WALL TO NEW WYE TAIL PIECE AT EXISTING HAND SINK. REFER TO PLUMBING KEYED NOTE BELOW.
9. 10/10 OUTSIDE AIR DUCTWORK DOWN TO AIR ROTATION UNIT.
10. PROVIDE FRANKLIN ELECTRIC MODEL VCMX-20ULS CONDENSATE PUMP OR APPROVED EQUAL AT LOCATION SHOWN.
11. ROUTE REFRIGERANT PIPING ON GALVANIZED UNISTRUT ANCHORED TO CONCRETE. ATTACH PIPING TO UNISTRUT WITH GALVANIZED CUSH-A-CLAMP. FASTENERS SHALL BE STAINLESS STEEL.
12. PROVIDE MANUAL BALANCING DAMPER (D-2) IN VERTICAL.

PLUMBING KEYED NOTES:

1. REPLACE EXISTING TAILPIECE WITH WYE TAILPIECE FOR CONDENSATE, SIMILAR TO SIOUX CHIEF 213 SERIES. REFER TO 1/M1.1 FOR CONDENSATE CONNECTION TO SINK DRAIN.



NORTH

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

Project No: 2022-02715-00
Drawn By: BB/EH
Checked By: VP
Date: 09-14-2022
Revision Dates:

CONSULTANTS

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BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

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BRADLEY KALMANS
80219
LICENSED PROFESSIONAL ENGINEER
09-14-2022

MECHANICAL AND PLUMBING FLOOR PLAN - WESTBROOK HS

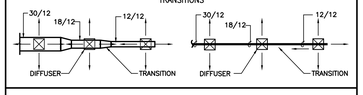
MP1.1

SYMBOL LEGEND

SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
GENERAL	
(F)	KEY NOTE TAG
(F)	NOTE SPECIFIC TO DETAIL TAG
1	REVISION TAG
	NEW EQUIPMENT
DUCTWORK	
	SUPPLY AIR DUCTWORK
	RETURN AIR AND OUTSIDE AIR DUCTWORK
	EXHAUST AIR DUCTWORK
	FLEXIBLE DUCTWORK
	SUPPLY AIR DUCTWORK THROUGH HORIZONTAL PARTITION
	RETURN AIR AND OUTSIDE AIR DUCTWORK THROUGH HORIZONTAL PARTITION
	EXHAUST AIR DUCTWORK THROUGH HORIZONTAL PARTITION
	FIRE DAMPER (VERTICAL)
	FIRE DAMPER (HORIZONTAL)
	SMOKE DAMPER (VERTICAL)
	SMOKE DAMPER (HORIZONTAL)
	COMBINATION FIRE & SMOKE DAMPER (VERTICAL)
	COMBINATION FIRE & SMOKE DAMPER (HORIZONTAL)
	MANUAL BALANCING DAMPER (SEE DAMPER SCHEDULE)
	MOTORIZED DAMPER (SEE DAMPER SCHEDULE)
SENSORS	
T	THERMOSTAT AND TEMPERATURE SENSOR
H	HUMIDISTAT
SD	SMOKE DETECTOR
HD	HEAT DETECTOR
PIPING	
-CWSR-	CONDENSER WATER SUPPLY & RETURN (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
-CWS-	CONDENSER WATER SUPPLY
-CWR-	CONDENSER WATER RETURN
-CHWSR-	CHILLED WATER SUPPLY & RETURN (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
-CHWS-	CHILLED WATER SUPPLY
-CHWR-	CHILLED WATER RETURN
-HWSR-	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
	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
RENOVATIONS	
	POINT OF CONNECTION FROM NEW TO EXISTING
	ITEM TO REMAIN
	ITEM TO BE REMOVED

DUCTWORK SYMBOLS LEGEND

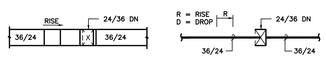
TRANSITIONS



MAIN BRANCH TAKE-OFFS



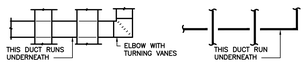
RISERS



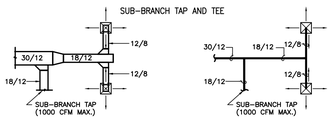
SIDEWALL REGISTERS

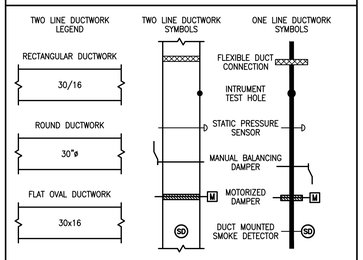


DUCT CROSSOVERS



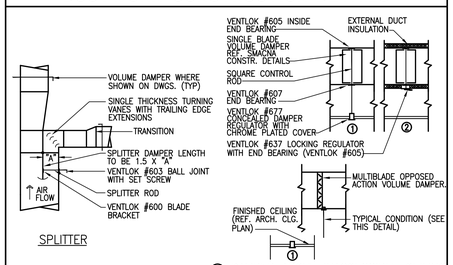
SUB-BRANCH TAP AND TEE



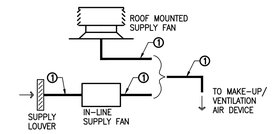


MS02

DUCTWORK CONSTRUCTION DETAILS



DUCT LINER AND INSULATION



MAKE-UP/VENTILATION AIR SYSTEMS

NOTES

1. SHEETMETAL DUCTWORK WITH EXTERNAL DUCTWORK INSULATION AS SPECIFIED.
2. SHEETMETAL DUCTWORK RETURN AIR PLENUM WITH EXTERNAL DUCTWORK INSULATION AS SPECIFIED.
3. FLEXIBLE DUCTWORK WITH EXTERNAL DUCTWORK INSULATION AS SPECIFIED.
4. SHEETMETAL DUCTWORK WITH EXTERNAL DUCTWORK INSULATION AS SPECIFIED AND 1" THICK 1-1/2 LB LINER AS SPECIFIED FROM AIR HANDLING UNIT DISCHARGE TO 10'-0" DOWNSTREAM. PROVIDE METAL NOSING AND MASTIC COVERING. REFER TO THE DUCT LINING SECTION IN THE DUCTWORK SPECIFICATION FOR MORE INFORMATION.
5. SHEETMETAL DUCTWORK WITH EXTERNAL DUCTWORK INSULATION AS SPECIFIED AND 1" THICK 1-1/2 LB LINER AS SPECIFIED FROM AIR HANDLING UNIT INLET TO 10'-0" UPSTREAM.
6. EXHAUST DUCTWORK AS SPECIFIED WITH FIREBOARD INSULATION AS SPECIFIED.
7. SHEETMETAL DUCTWORK ONLY. NO INSULATION REQUIRED.

DX AIR ROTATION UNIT

MARK	FAN					COOLING						
	SUPPLY AIR CFM	OUTSIDE AIR CFM	EXT. STATIC PRESSURE (IN. W.C.)	HORSE POWER	CURRENT CHARAC.	AIR TEMPERATURE (°F) ENTERING DRY BULB	AIR TEMPERATURE (°F) ENTERING WET BULB	MIN. TOTAL CAPACITY (MBH)	MIN. SENS. CAPACITY (MBH)	MCA	MOCP	UNIT BASED ON ARIZON	REMARKS
ARU-1	3,800	380	–	1.0	460/3/60	80.0	67.0	111.2	74.1	3.1	4.0	ARCD-10-460.3-144	(1,2,3,4,5,6,7)

GENERAL NOTES:
1. EXTERNAL STATIC PRESSURE INCLUDES LOSSES DUE TO DUCTWORK, AIR DEVICES, DAMPERS, AND DUCT MOUNTED HOT WATER COILS WHERE APPLICABLE. DIRTY FILTER AND UNIT CASING MUST BE ADDED TO EXTERNAL STATIC PRESSURE TO OBTAIN TOTAL PRESSURE LOSS. INCREASE HORSEPOWER AS REQUIRED TO MEET YOUR TOTAL PRESSURE LOSS. COORDINATE WITH ELECTRICIAN.
2. MAINTAIN MINIMUM CLEARANCE FOR COIL PULL AS RECOMMENDED BY UNIT MANUFACTURER. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON UNIT FOR SERVICE, MAINTENANCE, AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCE AS REQUIRED BY NEC.

REMARKS:
1. PROVIDE VERTICAL UNIT.
2. PROVIDE WITH DISCONNECT SWITCH.
3. PROVIDE WITH 2" MERV 8 FILTERS.
4. PROVIDE UNIT WITH CONDENSATE PUMP. CONDENSATE PUMP SHALL BE FRANKLIN ELECTRIC LITTLE GIANT VCMX-20 OR APPROVED EQUAL.
5. PROVIDE A WATER LEVEL SENSING DEVICE IN THE PRIMARY DRAIN PAN. THIS DEVICE SHALL SHUT OFF THE APPLIANCE IN THE EVENT THE PRIMARY DRAIN LINE BECOMES RESTRICTED.
6. PROVIDE WITH REMOTE CONDENSING UNIT.
7. CONTRACTOR SHALL COORDINATE WITH MANUFACTURER TO PROVIDE THE PROPER DISCHARGE PLENUM SECTION HEIGHT.

AIR COOLED CONDENSING UNIT

MARK	MIN. TOTAL CAPACITY (MBH)	OUTDOOR AIR TEMP (°F)	MINIMUM EER/ SEER	CURRENT CHARAC.	MCA	MOCP	RELATED UNIT MARK	REMARKS
CU-1	111.2	95	11.2/–	460/3/60	22.0	35	ARU-1	(1,2,3)

GENERAL NOTES:
1. MINIMUM RECOMMENDED CLEARANCE AROUND ROOFTOP UNIT IS 12 INCHES ON NON-SERVICE SIDES AND 30 INCHES ON SERVICE SIDES. MAINTAIN MINIMUM CLEARANCE FOR CONDENSER AIR FLOW AS RECOMMENDED BY UNIT MANUFACTURER. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON UNIT FOR SERVICE, MAINTENANCE, AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCE AS REQUIRED BY NEC.

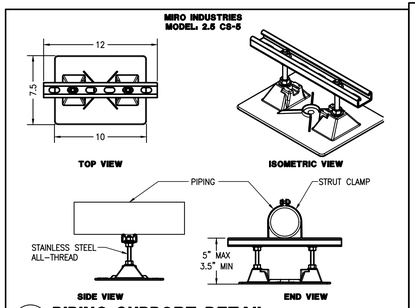
REMARKS:
1. PROVIDE WITH LOW AMBIENT CONTROL DOWN TO 20°F.
2. PROVIDE WITH DISCONNECT SWITCH.
3. REFRIGERANT LINES TO BE SIZED PER MANUFACTURER'S REQUIREMENTS.

DAMPER

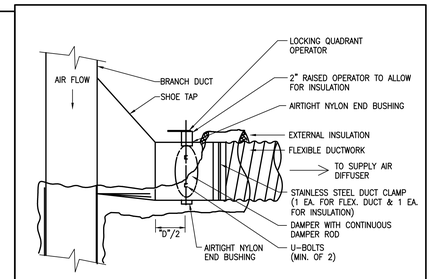
MARK	ACTUATOR	DUTY	BLADE ACTION	MANUFACTURER	MODEL NUMBER	REMARKS
D-1	MANUAL BALANCING	UNDER 9" WIDE	N/A	N/A	N/A	SEE SMACNA CONSTRUCTION DETAILS REFERENCED "TYPICAL CONSTRUCTION DETAILS FOR LOW VELOCITY DUCTS."
D-2	MANUAL BALANCING	OVER 9" WIDE	OPPOSED	RUSKIN	MD-35	MANUAL DAMPER WITH STANDARD CONSTRUCTION FEATURES AND VENTLOCK #639 LOCKING REGULATOR.
D-3	MOTORIZED	OVER 9" WIDE	OPPOSED	RUSKIN	CD-60	LOW LEAKAGE DAMPER WITH BLADE SEALS

NOTES:
N/A - NOT APPLICABLE

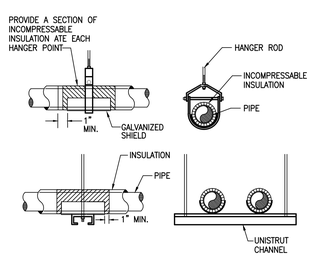
DS01



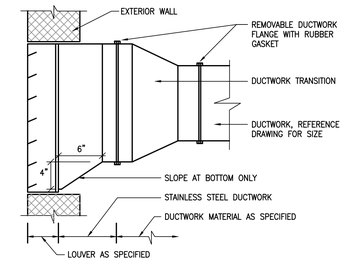
4 **PIPING SUPPORT DETAIL**
SCALE: NONE PS002



2 **FLEXIBLE DUCT TAP - SHOE**
SCALE: NONE D010



3 **PIPE HANGERS**
SCALE: NONE PS002



1 **DUCTWORK AT LOUVER**
SCALE: NONE D015

Project No: 2022-02715-00
Drawn By: BB
Checked By: VP
Date: 09-14-2022
Revision Dates:

CONSULTANTS

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HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT
BISD Preparing Our Next Generation



MECHANICAL LEGENDS, SCHEDULES, AND DETAILS - WESTBROOK HS

M2.1

EXISTING CONDITIONS/DEMOLITION NOTES

1. CONTRACTOR SHALL VISIT THE SITE BEFORE SUBMITTING A BID AND VERIFY EXISTING CONDITIONS. ANY MODIFICATIONS REQUIRED CONTRARY TO THESE DOCUMENTS FOR A COMPLETE AND OPERATING SYSTEM SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
2. CONTRACTOR SHALL DISCONNECT AND REMOVE ANY MECHANICAL, ELECTRICAL OR PLUMBING ITEMS IN THE WAY OF NEW CONSTRUCTION AND NOT BEING REUSED. CONTRACTOR TO KEEP ALL ITEMS THAT ARE TO REMAIN PROTECTED DURING CONSTRUCTION.
3. DISCONNECT AND REMOVE LIGHT FIXTURES, RECEPTACLES, DATA OUTLETS, AND ASSOCIATED CONDUIT AND WIRING BACK TO NEAREST EXISTING TO REMAIN DEVICE OR BACK TO SOURCE U.O.N.
4. DEMOLISH CONDUIT AND WIRING ASSOCIATED WITH HVAC EQUIPMENT BEING REMOVED BACK TO SOURCE AND INDICATE ANY OPEN CIRCUIT BREAKER AS SPARE.
5. EXTEND/REROUTE EXISTING BRANCH CIRCUITS TO SERVE NEW RECEPTACLES/DEVICES WHERE POSSIBLE, CONTRACTOR TO VERIFY THAT THE LOAD ON THE CIRCUIT DOES NOT EXCEED 16A, CONTRACTOR TO MAINTAIN CIRCUIT CONTINUITY.
6. COORDINATE WITH OWNER/ARCHITECT FOR EXACT DEMOLITION SCOPE OF WORK PRIOR TO COMMENCEMENT OF WORK.

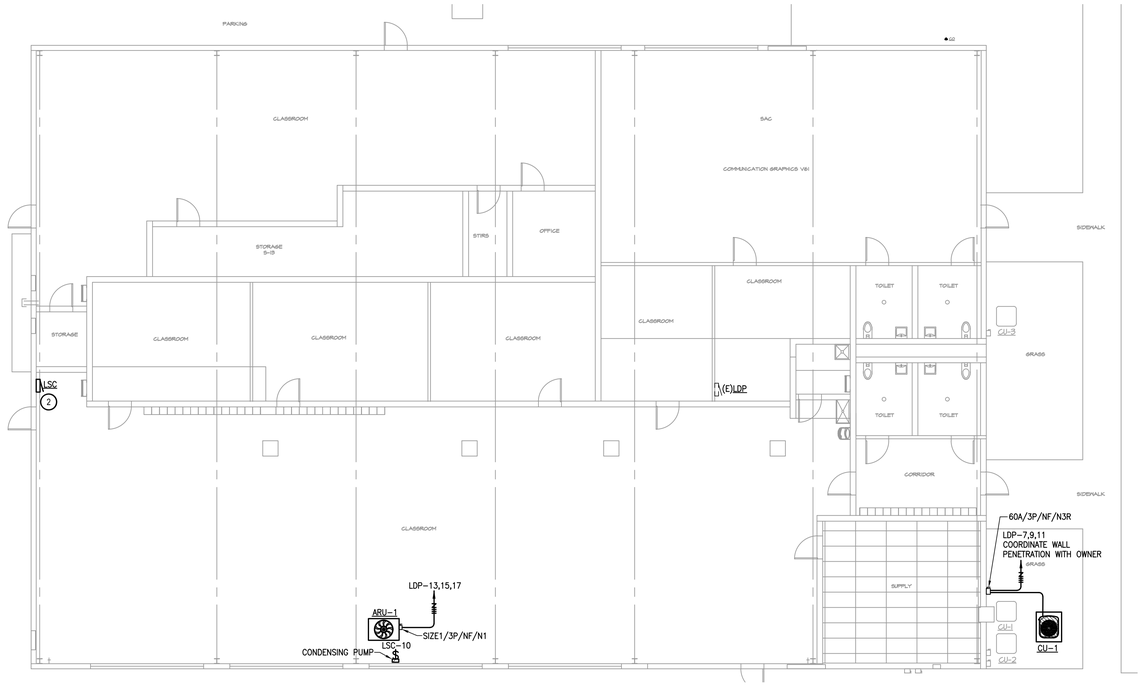
Project No:	2022-02715-00
Drawn By:	AW
Checked By:	JZ
Date:	09-14-2022
Revision Dates:	

LINETYPE LEGEND

EXISTING TO REMAIN	
REMOVE EXISTING	
NEW WORK	

ELECTRICAL KEYED NOTES:

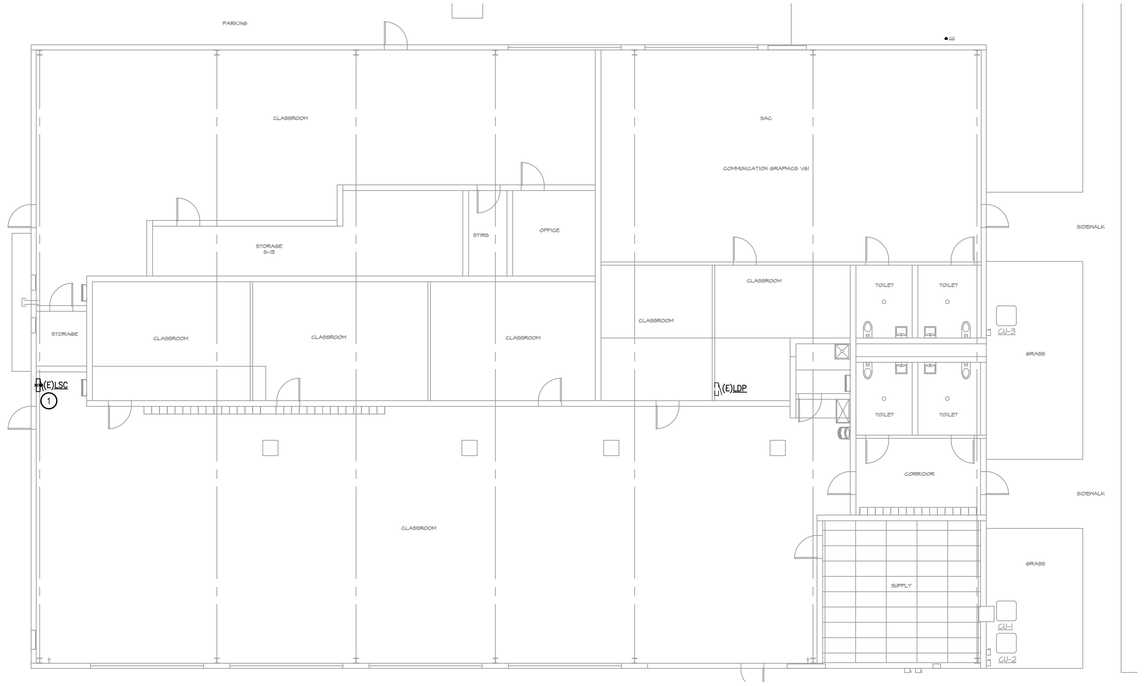
1. DISCONNECT AND REMOVE EXISTING PANEL. EXISTING FEEDER AND CIRCUITS TO REMAIN IN PLACE FOR RECONNECTION TO NEW PANEL 'LSC'.
2. PROVIDE NEW PANEL 'LSC' EXTEND EXISTING FEEDER, ALL CIRCUITS AND CONDUITS TO NEW MCB AND BREAKERS AS INDICATED BY PANEL SCHEDULE.
3. ROUTE 3/4"C. WITH PULLSTRING TO ASSOCIATED INDOOR UNIT. ROUTE PARALLEL WITH REFRIGERATION LINES.



NORTH

2 ELECTRICAL NEW FLOOR PLAN - WESTBROOK HS

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



NORTH

1 ELECTRICAL DEMOLITION FLOOR PLAN - WESTBROOK HS

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

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Project No. 2022-02715-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART 3

BEAUMONT INDEPENDENT SCHOOL DISTRICT

BISD Preparing Our Next Generation

BRADLEY KALMANS
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LICENSED
PROFESSIONAL ENGINEER
STATE OF TEXAS
09-14-2022

ELECTRICAL FLOOR PLANS - WESTBROOK HS

E1.1

SYMBOL LEGEND

SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
MOTOR CONTROLLERS AND EQUIPMENT	
	DISCONNECT SWITCH
$	1P-20A MOTOR RATED SWITCH U.O.N.
ELECTRICAL EQUIPMENT	
	277/480V PANELBOARD
	120/208V PANELBOARD
CIRCUITING	
———	CONDUIT
- - - -	CONDUIT BELOW FLOOR, SLAB, OR GRADE
	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 HOMERUN

GENERAL NOTE:
ALL EXTERIOR BUILDING ELECTRICAL EQUIPMENT TO BE WEATHERPROOF

PANELBOARD CIRCUIT DIRECTORY:

CONTRACTOR SHALL RECORD AND/OR PRESERVE THE EXISTING CIRCUIT DIRECTORY, IF ANY, FOR THE SOLE PURPOSE UPON COMPLETION OF NEW WORK OF PRODUCING A NEW CIRCUIT DIRECTORY.

CONTRACTOR SHALL PROVIDE AS PART OF THE CONSTRUCTION DOCUMENTS A NEW, NEATLY TYPED DIRECTORY. CONTRACTOR SHALL LEGIBLY IDENTIFY AS TO ITS CLEAR, EVIDENT, AND SPECIFIC PURPOSE OR USE, LOADS SERVED AND LOCATION AND/OR THE PANELBOARD SCHEDULE ON THE DRAWINGS. THE WORD "EXISTING" SHALL NOT BE USED ON PANELBOARD DIRECTORIES. SPARE BREAKERS ARE TO BE LISTED AS "SPARE". SPACES WITH NO BREAKERS ARE TO BE LEFT BLANK. REFER TO NEC-2020: 408.4(A) FOR DETAILS.

CONTRACTOR SHALL PERMANENTLY LABEL AS PART OF THE CONSTRUCTION DOCUMENTS ALL SWITCHBOARDS, SWITCHGEAR AND PANELBOARDS TO INDICATE EACH POWER SOURCE. REFER TO NEC-2020: 408.4(B) FOR DETAILS.

NEW PANEL 'LSC'

LOCATION: CLASSROOM — 120/208V., 3 PHASE, 4 WIRE, SOLID NEUTRAL, GROUND BAR — 10000 AIC

100	PANEL AMPERAGE		MLO	X	NEMA-1		PROVIDE FEED THRU LUGS	
X	SURFACE MOUNTED		MCB		NEMA-3R		PROVIDE 200% NEUTRAL	
	RECESS MOUNTED		TVSS		S.S. ENCL.		ISOLATED GROUND BUS	

CKT	VA	DESCRIPTION	COND.	BRKR			BRKR	COND.	DESCRIPTION	VA	CKT
1	180	EXISTING RECEPTACLE	(E)	20/1	A		20/1	(E)	EXISTING LIFT	900	2
3	180	EXISTING RECEPTACLE	(E)	20/1		B	20/1	(E)	EXISTING LIFT	900	4
5	3000	EXIST WELD RECEPTACLE	(E)	60/2			20/1	(E)	EXISTING LOAD	600	6
7	3000	---	(E)	--	A	C	20/1	(E)	EXISTING LOAD	600	8
9	3000	EXIST WELD RECEPTACLE	(E)	60/2		B	20/1	#12	NEW CONDENSING PUMP (1)	180	10
11	3000	---	(E)	--			20/1		SPARE		12
13	3000	EXIST WELD RECEPTACLE	(E)	60/2	A		20/1		SPARE		14
15	3000	---	(E)	--		B	20/1		SPARE		16
17	1000	EXISTING DROP LIGHTS	(E)	20/1		C	20/1		SPARE		18
19	180	EXISTING RECEPTACLE	(E)	20/1	A		30/3	#10	SPDL		20
21	180	EXISTING RECEPTACLE	(E)	20/1		B	--	#10	---		22
23	180	EXISTING RECEPTACLE	(E)	20/1		C	--	#10	---		24

	CONNECTED	NEC				
LIGHTING	0.0 KVA	0.0 KVA				
RECEPTS	0.0 KVA	0.0 KVA			CONNECTED	AMPS
EXISTING	22.9 KVA	28.6 KVA		PHASE A	7.9 KVA	65.5 A
HVAC	0.2 KVA	0.2 KVA		PHASE B	7.4 KVA	62.0 A
MISC	0.0 KVA	0.0 KVA		PHASE C	7.8 KVA	64.8 A
KITCHEN	0.0 KVA	0.0 KVA				NEC AMPS
SUBFEED	0.0 KVA	0.0 KVA		TOTAL	23.1 KVA	64.1 A 80.0 A
TOTAL	23.1 KVA	28.8 KVA				

(1) PROVIDE NEW BREAKER AND CIRCUIT

EXISTING PANEL 'LDP'

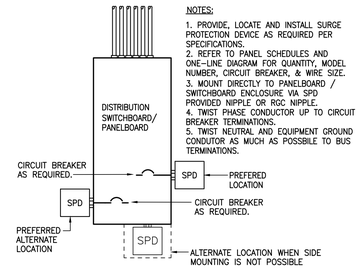
LOCATION: CLASSROOM — 277/480V., 3 PHASE, 4 WIRE, SOLID NEUTRAL, GROUND BAR

600	PANEL AMPERAGE	X	MLO	X	NEMA-1		PROVIDE FEED THRU LUGS	
X	SURFACE MOUNTED		MCB		NEMA-3R		PROVIDE 200% NEUTRAL	
	RECESS MOUNTED		TVSS		S.S. ENCL.		ISOLATED GROUND BUS	

CKT	VA	DESCRIPTION	COND.	BRKR			BRKR	COND.	DESCRIPTION	VA	CKT
1	44341	EXISTING LOAD	(E)	225/3	A				SPACE		2
3	44341	---	(E)	--		B			SPACE		4
5	44341	---	(E)	--					SPACE		6
7	6097	CU-1 (1)	#8	40/3	A	C			SPACE		8
9	6097	---	#8	--		B			SPACE		10
11	6097	---	#8	--					SPACE		12
13	860	ARU-1 (1)	#12	20/3	A				SPACE		14
15	860	---	#12	--		B			SPACE		16
17	860	---	#12	--					SPACE		18

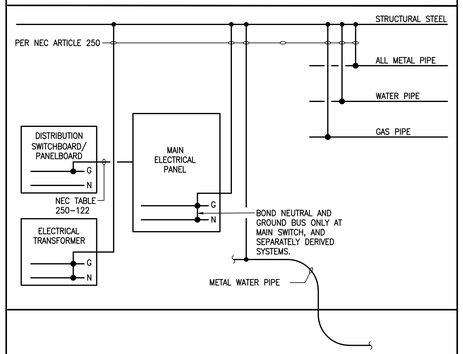
	CONNECTED	NEC				
LIGHTING	0.0 KVA	0.0 KVA				
RECEPTS	0.0 KVA	0.0 KVA			CONNECTED	AMPS
EXISTING	133.6 KVA	167.0 KVA		PHASE A	51.5 KVA	185.8 A
HVAC	20.9 KVA	20.9 KVA		PHASE B	51.5 KVA	185.8 A
MISC	0.0 KVA	0.0 KVA		PHASE C	51.5 KVA	185.8 A
KITCHEN	0.0 KVA	0.0 KVA				NEC AMPS
SUBFEED	0.0 KVA	0.0 KVA		TOTAL	154.4 KVA	185.8 A 226.0 A
TOTAL	154.4 KVA	187.8 KVA				

(1) PROVIDE NEW BREAKER AND CIRCUIT



NOTES:
1. PROVIDE, LOCATE AND INSTALL SURGE PROTECTION DEVICE AS REQUIRED PER SPECIFICATIONS.
2. REFER TO PANEL SCHEDULES AND ONE-LINE DIAGRAM FOR QUANTITY, MODEL NUMBER, CIRCUIT BREAKER, & WIRE SIZE.
3. MOUNT DIRECTLY TO PANELBOARD / SWITCHBOARD ENCLOSURE VIA SPD PROVIDED NIPPLE OR RGC NIPPLE.
4. TWIST PHASE CONDUCTOR UP TO CIRCUIT BREAKER TERMINATIONS.
5. TWIST NEUTRAL AND EQUIPMENT GROUND CONDUTOR AS MUCH AS POSSBILE TO BUS TERMINATIONS.

2 SURGE PROTECTION DEVICE DETAIL
SCALE: NONE



1 GROUNDING DETAIL
SCALE: NONE

Project No: 2022-02715-00
Drawn By: AW
Checked By: JZ
Date: 09-14-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

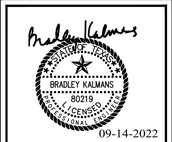
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E2.1