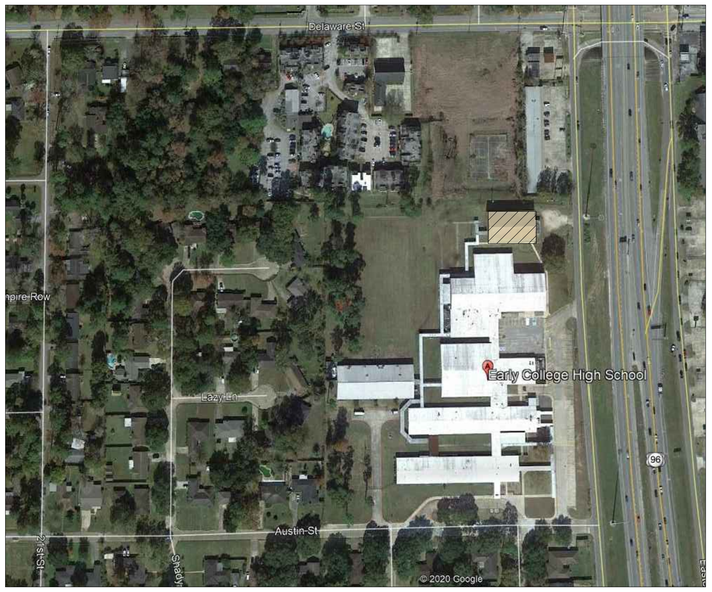
SALASO'BRIEN
| expect a difference |
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111

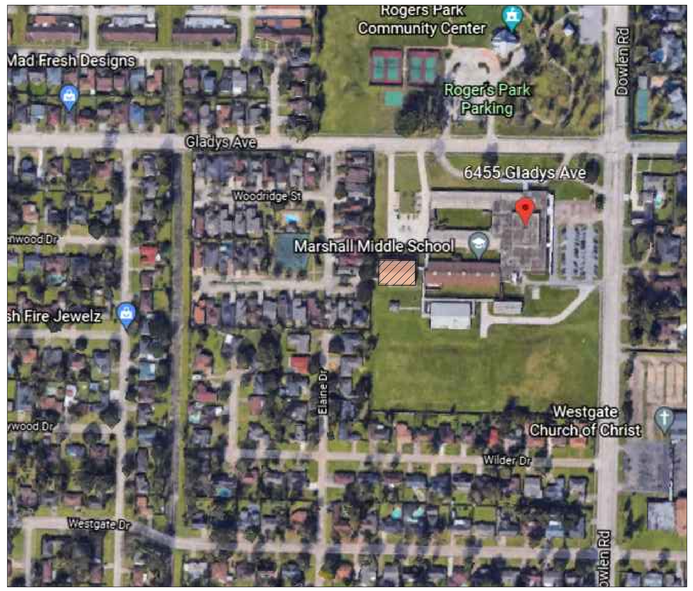
Project No. 2429-2020-02336-00

BEAUMONT INDEPENDENT SCHOOL DISTRICT
HVAC UPGRADES PART ONE
CSP 22.10

SITE LOCATIONS



BEAUMONT EARLY COLLEGE HIGH SCHOOL
3410 AUSTIN STREET, BEAUMONT, TX 77706



MARSHALL MIDDLE SCHOOL
6455 GLADYS AVENUE, BEAUMONT, TX 77706



ODOM ACADEMY MIDDLE SCHOOL
2550 W VIRGINIA STREET, BEAUMONT, TX 77705



VINCENT MIDDLE SCHOOL
350 ELDRIDGE DRIVE, BEAUMONT, TX 77707

Beaumont ISD
Preparing Our Next Generation

LIST OF DRAWINGS:

EARLY COLLEGE HIGH SCHOOL

MECHANICAL	
M1.01	**MECHANICAL FLOOR PLANS - EARLY COLLEGE HS**
M2.01	**MECHANICAL DETAILS, LEGENDS, AND SCHEDULES - EARLY COLLEGE HS**
ELECTRICAL	
E1.01	**ELECTRICAL FLOOR PLANS - EARLY COLLEGE HS**
E2.01	**ELECTRICAL DETAILS, LEGENDS, AND SCHEDULES - EARLY COLLEGE HS**
PLUMBING	
P1.01	**PLUMBING FLOOR PLANS - EARLY COLLEGE HS**

MARSHALL MIDDLE SCHOOL

MECHANICAL	
M1.01	**MECHANICAL FLOOR PLANS - MARSHALL MS**
M2.01	**MECHANICAL DETAILS, LEGENDS, AND SCHEDULES - MARSHALL MS**
ELECTRICAL	
E1.01	**ELECTRICAL FLOOR PLANS - MARSHALL MS**
E2.01	**ELECTRICAL DETAILS, LEGENDS, AND SCHEDULES - MARSHALL MS**
PLUMBING	
P1.01	**PLUMBING FLOOR PLANS - MARSHALL MS**

ODOM ACADEMY MIDDLE SCHOOL

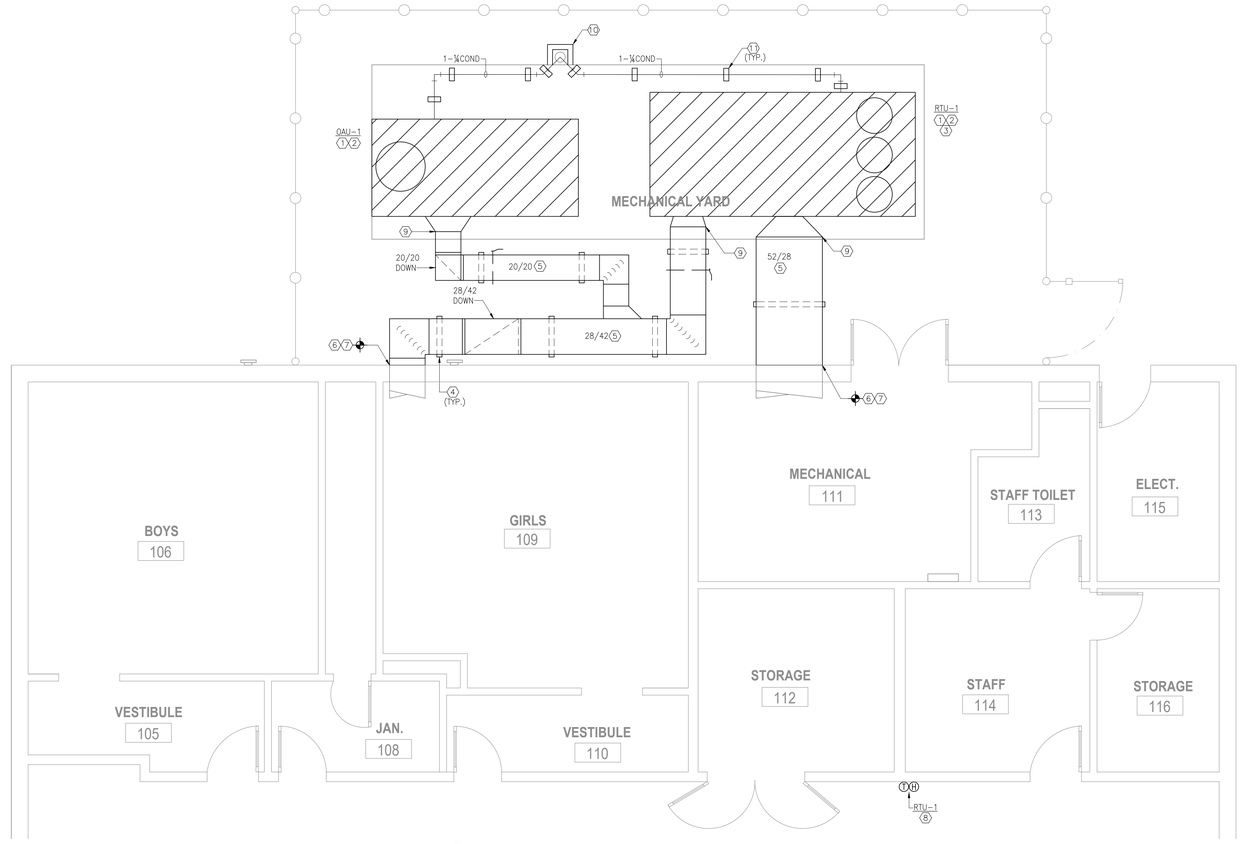
MECHANICAL	
M1.01	**MECHANICAL FLOOR PLANS - ODOM MS**
M2.01	**MECHANICAL DETAILS, LEGENDS, AND SCHEDULES - ODOM MS**
ELECTRICAL	
E1.01	**ELECTRICAL FLOOR PLANS - ODOM MS**
E2.01	**ELECTRICAL DETAILS, LEGENDS, AND SCHEDULES - ODOM MS**
PLUMBING	
P1.01	**PLUMBING FLOOR PLANS - ODOM MS**

VINCENT MIDDLE SCHOOL

MECHANICAL	
M1.01	**MECHANICAL FLOOR PLANS - VINCENT MS**
M2.01	**MECHANICAL DETAILS, LEGENDS, AND SCHEDULES - VINCENT MS**
ELECTRICAL	
E1.01	**ELECTRICAL FLOOR PLANS - VINCENT MS**
E2.01	**ELECTRICAL DETAILS, LEGENDS, AND SCHEDULES - VINCENT MS**
PLUMBING	
P1.01	**PLUMBING FLOOR PLANS - VINCENT MS**

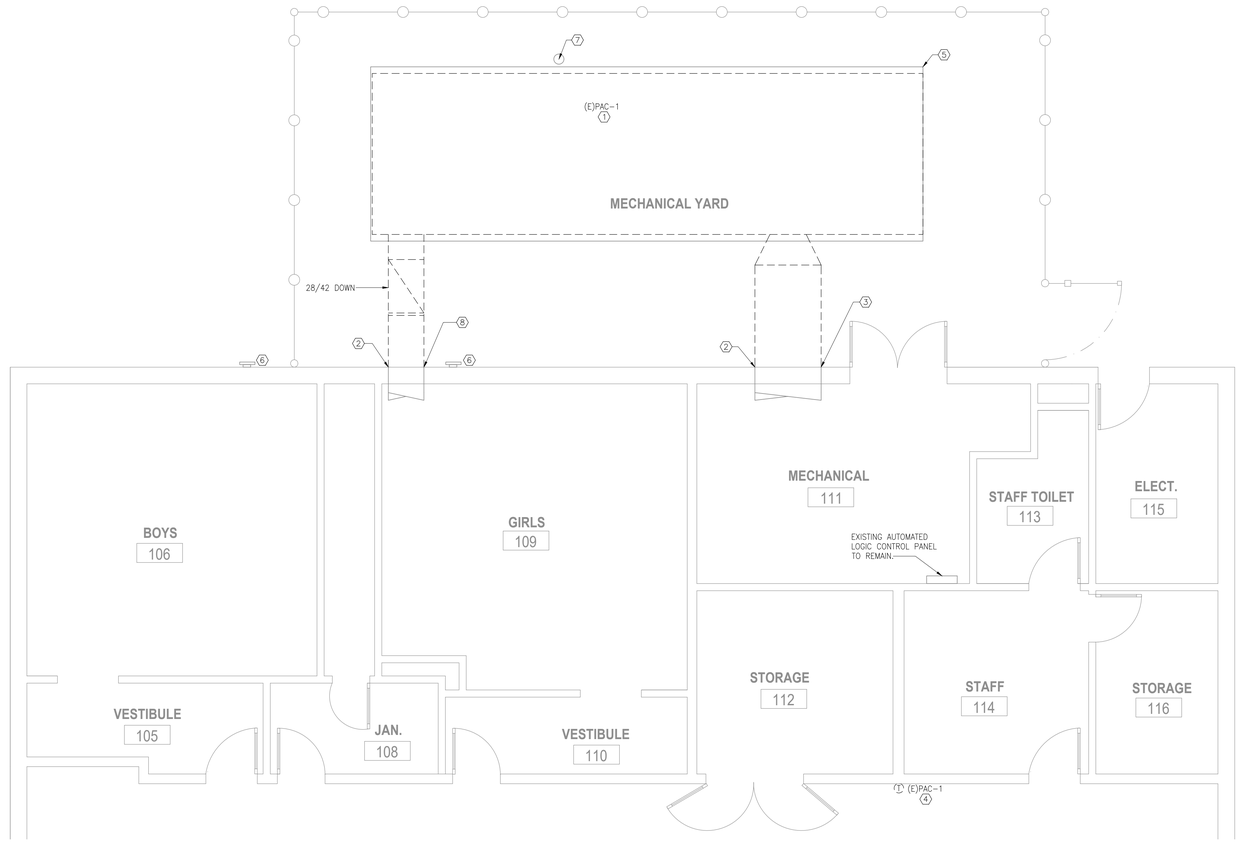
BRADLEY KALMANS
60219
LICENSED
PROFESSIONAL ENGINEER
01-19-2022

DRAWING NUMBER
CS-1



2 MECHANICAL FLOOR PLAN - EARLY COLLEGE HS

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



1 MECHANICAL DEMOLITION FLOOR PLAN - EARLY COLLEGE HS

SCALE: 1/4" = 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 CLEARANCE FOR AIR FILTER, FAN SHAFT, AND COIL REMOVAL WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.
2. ROUTE FULL SIZE CONDENSATE DRAIN PIPE TO EXISTING OUTDOOR HUB DRAIN AS INDICATED. INSTALL TRAP AS RECOMMENDED BY MANUFACTURER.
3. PROVIDE GROUND MOUNTED ROOFTOP UNIT WITH 4'-0" SUPPLY AND RETURN AIR DISCHARGE CURB.
4. PROVIDE MODEL PHP-D DUCT SUPPORT. REFER TO SPECIFICATIONS.
5. ALL OUTDOOR DUCTWORK SHALL BE DOUBLE WALL CONSTRUCTION. PAINT OUTDOOR DUCTWORK WITH TWO COATS OF EPOXY PAINT. COORDINATE COLOR WITH SCHOOL DISTRICT.
6. ROUTE NEW DOUBLE WALL DUCTWORK AS INDICATED AND CONNECT TO EXISTING.
7. REUSE EXISTING WALL OPENING.
8. PROVIDE THERMOSTAT AND HUMIDITY SENSOR WITH STEEL VENTED LOCKABLE COVER.
9. TRANSITION DUCTWORK TO CONNECT TO GROUND MOUNTED ROOFTOP OPENING.
10. REFER TO PLUMBING DRAWINGS FOR DRAIN CURB INFORMATION.
11. PROVIDE PHP MODEL SS8-C EVERY 6'-0" ON CENTER AND AT EACH CHANGE IN DIRECTION.

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 AND CONTROL DEVICES.

DEMOLITION KEYED NOTES:

1. REMOVE EXISTING PACKAGED DEHUMIDIFICATION UNIT, CONTROLS AND ALL ASSOCIATED APPURTENANCES.
2. REMOVE EXISTING OUTDOOR DUCTWORK UP TO EXTERIOR WALL AS INDICATED. CONTRACTOR SHALL PRESERVE REMAINING DUCTWORK DURING DURATION OF CONSTRUCTION.
3. CONTRACTOR SHALL PRESERVE EXISTING OPENING DURING DURATION OF CONSTRUCTION. OPENING IS LOW ON WALL.
4. REMOVE EXISTING THERMOSTAT AND CONTROL WIRE IN ITS ENTIRETY.
5. EXISTING CONCRETE HOUSEKEEPING PAD TO REMAIN.
6. EXISTING EXHAUST WALL CAP TO REMAIN.
7. EXISTING OUTDOOR FLOOR DRAIN TO REMAIN AND BE REUSED.
8. CONTRACTOR SHALL PRESERVE EXISTING OPENING DURING DURATION OF CONSTRUCTION. OPENING IS HIGH ON WALL.

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

Project No: 2429-2020-02336
Drawn By: BB
Checked By: SH
Date: 01-19-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

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

SALAS O'BRIEN | expect a difference

10930 W. Sam Houston Parkway N., Suite 900
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HVAC UPGRADES PART ONE
EARLY COLLEGE HIGH SCHOOL

BEAUMONT INDEPENDENT SCHOOL DISTRICT

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01-19-2022

MECHANICAL FLOOR PLANS - EARLY COLLEGE HS

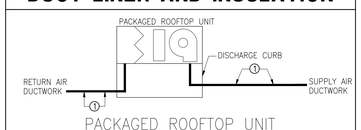
M1.01

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	
(GS)	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	
—D—	CONDENSATE DRAIN LINE
—AD—	AUXILLARY CONDENSATE DRAIN LINE
—RLR—	REFRIGERANT LIQUID & GAS RECIRCULATION LINE (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—RL—	REFRIGERANT LIQUID LINE
—HG—	REFRIGERANT HOT GAS LINE
—RS—	REFRIGERANT SUCTION LINE
	ELBOW UP
	ELBOW DOWN
	90° ELBOW
	45° ELBOW
	TEE
	TEE DOWN
	TEE UP
	TOP BRANCH CONNECTION
	BOTTOM BRANCH CONNECTION
	FLANGE
	CAP
	CONTINUATION
	FLOOR DRAIN (REFER TO PLUMBING DRAWINGS)
	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

MS03

DUCT LINER AND INSULATION



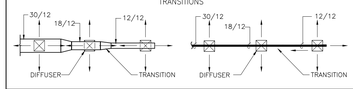
PACKAGED ROOFTOP UNIT

NOTES
① ALL OUTSIDE DUCTWORK SHALL BE DOUBLE WALL CONSTRUCTION WITH TWO COATS OF EPOXY PAINT. REFER TO SPECIFICATIONS FOR MORE DETAILS.

MS04

DUCTWORK SYMBOLS LEGEND

TRANSITIONS



MAIN BRANCH TAKE-OFFS



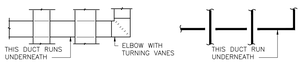
RISERS



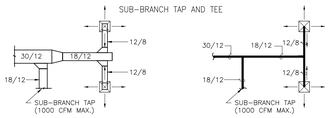
SIDEWALL REGISTERS

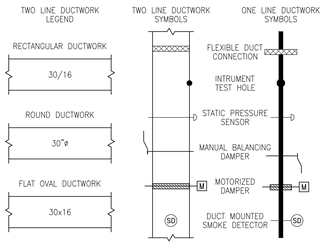


DUCT CROSSOVERS



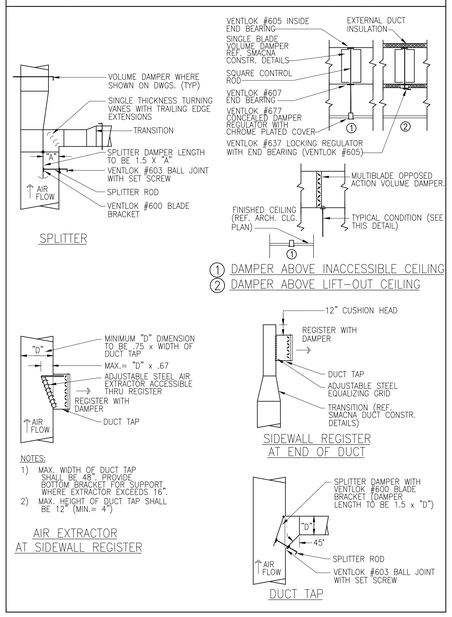
SUB-BRANCH TAP AND TEE





MS02

DUCTWORK CONSTRUCTION DETAILS



PACKAGED GROUND MOUNTED ROOFTOP UNIT - GAS HEAT

MARK	INDOOR AIR FAN				ELECTRICAL REQUIREMENTS			COOLING						GAS HEATING			REMARKS	BASIS OF DESIGN	MODEL NUMBER
	SUPPLY AIR CFM	OUTSIDE AIR CFM	EXT. STATIC PRESSURE (IN. W.C.)	HORSE POWER	V/PH/H	MCA	MOCP	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 (%)			
RTU-1	12,000	3,000	1.0	15	480/3/60	87.0	100.0	75.0	62.5	95	332.12	278.74	10.2/-	68.0	240.0	80	(1-15)	DAIKIN	MPS030F

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 UNIT WITH LOW AMBIENT CONTROL.
2. PROVIDE A STAINLESS STEEL GAS HEAT EXCHANGER.
3. PROVIDE UNIT WITH DISCONNECT SWITCH.
4. PROVIDE UNIT WITH A FIELD INSTALLED SPACE TEMPERATURE AND HUMIDITY SENSOR.
5. PROVIDE WITH UNIT POWERED GFCI RECEPTACLE.
6. PROVIDE UNIT WITH A WATER LEVEL SENSING DEVICE IN THE PRIMARY DRAIN PAN. DEVICE SHALL SHUT OFF THE UNIT IN THE EVENT THE PRIMARY DRAIN LINE BECOMES RESTRICTED.
7. PROVIDE WITH MODULATING HOT GAS REHEAT TO NEUTRAL CONDITIONS OF 72°F.
8. PROVIDE WITH DISCHARGE AIR TEMPERATURE SENSOR.
9. UNIT SHALL MAINTAIN SPACE TEMPERATURE AND HUMIDITY.
10. PROVIDE WITH VARIABLE SPEED COMPRESSORS AND VARIABLE SPEED FANS.
11. PROVIDE WITH MODULATING GAS HEAT CONTROL.
12. PROVIDE COATING FOR CONDENSER AND EVAPORATOR COILS. REFER TO SPECIFICATIONS.
13. VELOCITY NOT TO EXCEED 500 FPM ON COOLING COIL.
14. PROVIDE UNIT WITH 4'-0" CURB EXTENSION.
15. UNIT SHALL BE FACTORY PROGRAMMED TO OPERATE AS A SINGLE ZONE VAV UNIT.

100 PERCENT OA PACKAGED GROUND MOUNTED ROOFTOP UNIT - GAS HEAT

MARK	INDOOR AIR FAN				ELECTRICAL REQUIREMENTS			COOLING						GAS HEATING			REMARKS	BASIS OF DESIGN	MODEL NUMBER
	SUPPLY AIR CFM	OUTSIDE AIR CFM	EXT. STATIC PRESSURE (IN. W.C.)	HORSE POWER	V/PH/H	MCA	MOCP	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-1	3,000	3,000	1.0	2.0	480/3/60	50.3	70	98.0	80.0	95	264.86	143.38	10.1/-	27.0	140.0	80	(1-9)	DAIKIN	DPS020A

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 A STAINLESS STEEL GAS HEAT EXCHANGER.
2. PROVIDE UNIT WITH DISCONNECT SWITCH.
3. PROVIDE WITH UNIT POWERED GFCI RECEPTACLE.
4. PROVIDE UNIT WITH A WATER LEVEL SENSING DEVICE IN THE PRIMARY DRAIN PAN. DEVICE SHALL SHUT OFF THE UNIT IN THE EVENT THE PRIMARY DRAIN LINE BECOMES RESTRICTED.
5. PROVIDE WITH DISCHARGE AIR TEMPERATURE SENSOR.
6. PROVIDE WITH MODULATING GAS HEAT CONTROL.
7. PROVIDE COATING FOR CONDENSER AND EVAPORATOR COILS. REFER TO SPECIFICATIONS.
8. VELOCITY NOT TO EXCEED 450 FPM ON COOLING COIL.
9. PROVIDE UNIT WITH A LEAVING AIR TEMPERATURE OF 54.3°F DRY BULB AND 54.3 WET BULB.

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: 2429-2020-02336
Drawn By: BB
Checked By: SH
Date: 01-19-2022
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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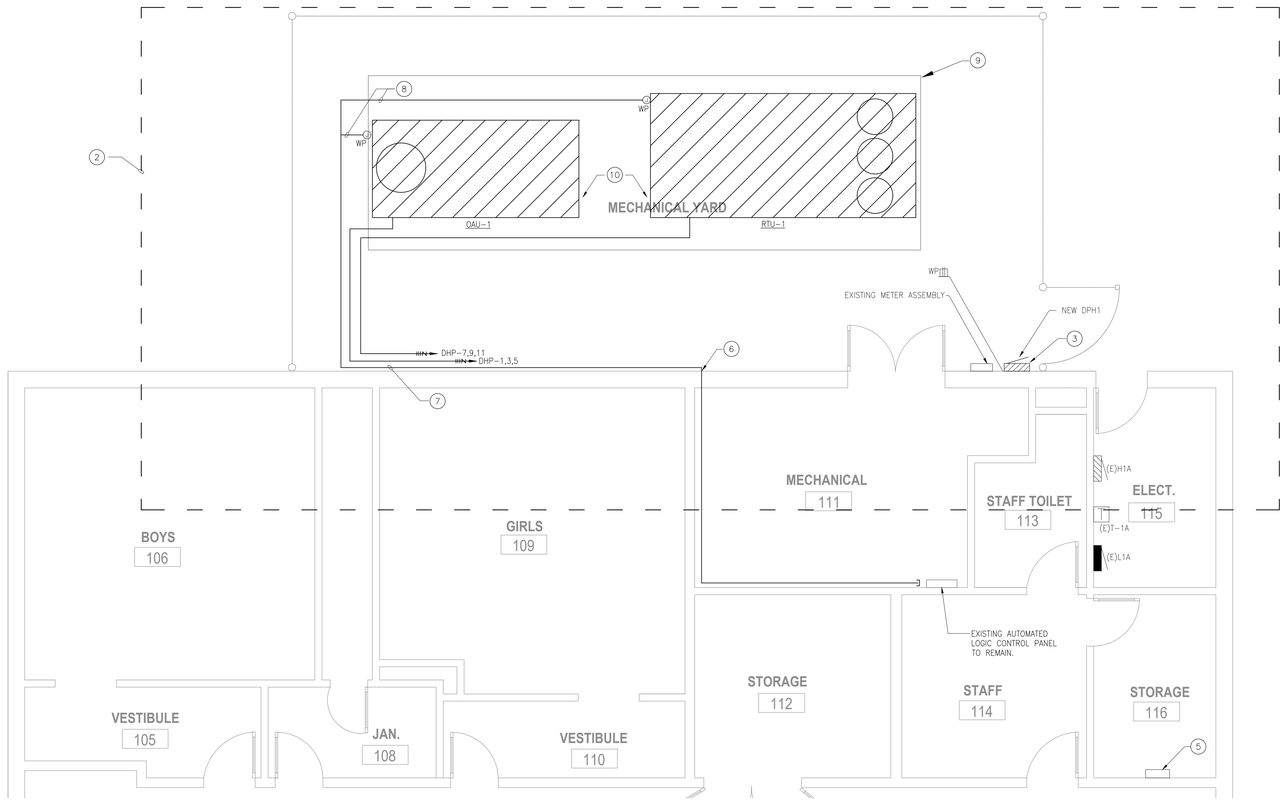
BEAUMONT ISD
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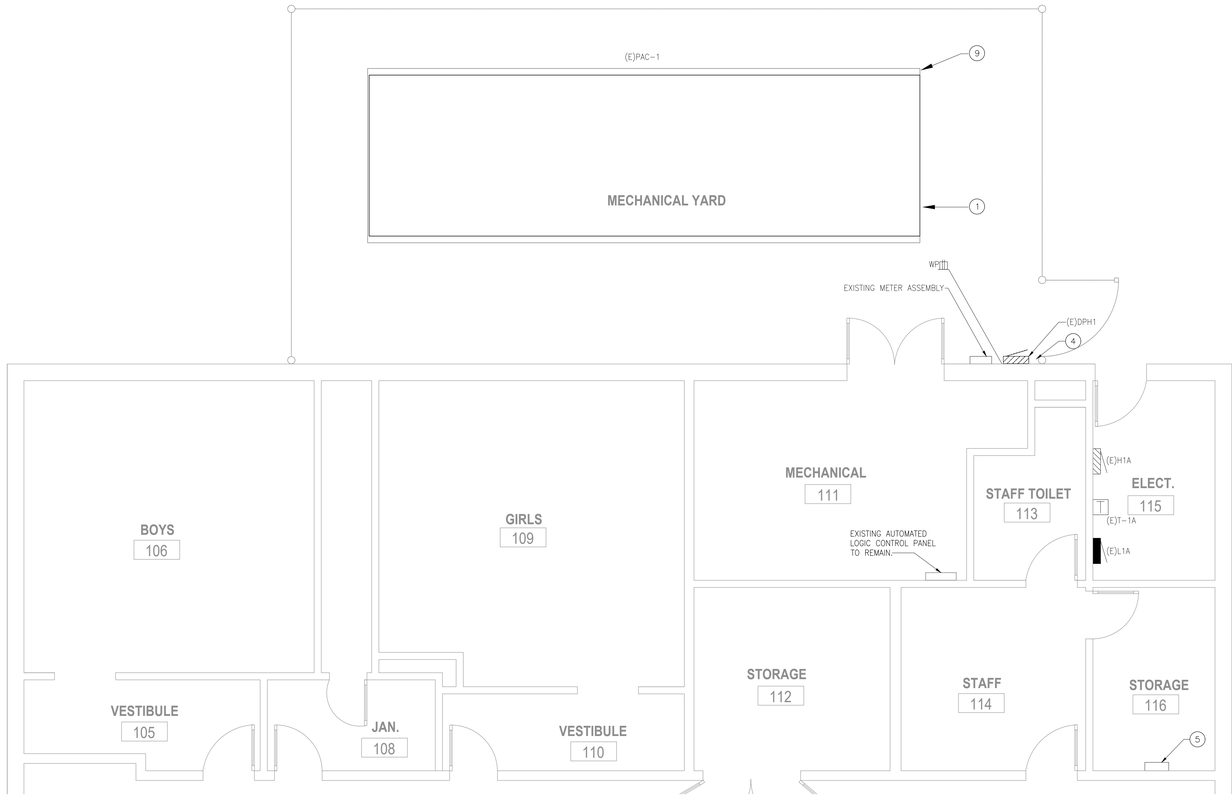
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LICENSED
PROFESSIONAL ENGINEER
01-19-2022

MECHANICAL DETAILS, LEGENDS, AND SCHEDULES - EARLY COLLEGE HS

M2.01



NORTH 2 **ELECTRICAL POWER FLOOR PLAN**
SCALE: 1/4" = 1'-0"



NORTH 1 **ELECTRICAL DEMOLITION FLOOR PLAN**
SCALE: 1/4" = 1'-0"

EXISTING TO REMAIN
EXISTING TO BE REMOVED

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.

ELECTRICAL KEYED NOTES:

1. DISCONNECT EXISTING EQUIPMENT REMOVE EXISTING WIRES AND CAP EXISTING CONDUIT. REMOVE EXISTING DUCT SMOKE DETECTORS FOR PAC-1.
2. ALL NEW ELECTRICAL FEEDING SHALL BE ROUTED ABOVE GRADE. ROUTE TO AVOID CREATING TRIPPING HAZARDS. FIELD COORDINATE EXACT ROUTING WITH OWNER/ENGINEER.
3. LOCATE NEW PANEL ABOVE EXISTING RECEPTACLE AND LOCATE AS CLOSE AS POSSIBLE TO CT ENCLOSURE.
4. REMOVE EXISTING PANEL DPH1 AND EXISTING WIRE AND CONDUIT TO THE CT ENCLOSURE.
5. EXISTING FARADAY FIRE ALARM PANEL TO REMAIN.
6. STUB UP AND PENETRATE BUILDING. COORDINATE FINAL ROUTING AND BUILDING WALL PENETRATION LOCATION WITH OWNER.
7. (2)1"C. ROUTE ALONG WALL AND ABOVE CEILING WHERE POSSIBLE TO MINIMIZE TRIPPING HAZARDS.
8. 1"C. FOR CONTROL WIRING.
9. EXISTING CONCRETE HOUSEKEEPING PAD TO REMAIN.
10. PROVIDE NEW DUCT SMOKE DETECTORS.

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.

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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Drawn By:
Checked By:
Date: 01-19-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

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

SALAS O'BRIEN | expect a difference
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2429-2020-02336-00

BEAUMONT ISD
HVAC UPGRADES PART ONE
EARLY COLLEGE HIGH SCHOOL

BEAUMONT INDEPENDENT SCHOOL DISTRICT
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BRADLEY KALMANS
80219
LICENSED PROFESSIONAL ENGINEER
01-19-2022

ELECTRICAL FLOOR PLANS -EARLY COLLEGE HS

E1.01

NEW PANEL 'DPH1' 277/480v.,3PH.,4W. MOUNTING: SURFACE
250 AMP MCB NEMA-3R
LOCATION: MECHANICAL YARD 18 K ISCA

CKT	LOAD	KVA	WIRE	BKR		BKR	WIRE	KVA	LOAD	CKT
1	OAU-1	41.9	#4	70/3		100/3	#2	24	H1A	2
3	– – –	–	–	–		–	–	–	– – –	4
5	– – –	–	–	–		–	–	–	– – –	6
7	RTU-1	72.4	#2	100/3		–	–	–	SPACE	8
9	– – –	–	–	–		–	–	–	SPACE	10
11	– – –	–	–	–		–	–	–	SPACE	12
13	SPACE	–	–	–		–	–	–	SPACE	14
15	SPACE	–	–	–		–	–	–	SPACE	16
17	SPACE	–	–	–		–	–	–	SPACE	18
19	SPACE	–	–	–		–	–	–	SPACE	20
21	SPACE	–	–	–		–	–	–	SPACE	22
23	SPACE	–	–	–		–	–	–	SPACE	24
25	SPACE	–	–	–		30/3	#10	–	SPD	26
27	SPACE	–	–	–		–	–	–	– – –	28
29	SPACE	–	–	–		–	–	–	– – –	30

EXISTING LOAD x 1.25 = 30 KVA
MISC. LOAD x 1.0 = 114.3 KVA
TOTAL KVA = 144.3 KVA

SPD:CGC50

DPH1 LOAD ANALYSIS

480/277V, 3PH, 4W.

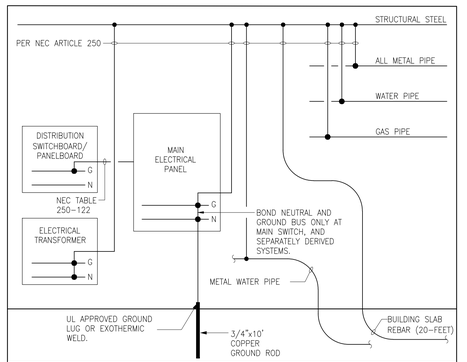
LOAD DESCRIPTION	LOAD KVA
LOAD TO REMAIN x 1.25	30
NEW HVAC – FANS, AHU'S	114.3
NEW 25% LARGEST MOTOR (15HP)	18.1
NEW MISCELLANEOUS	0
TOTAL	162.4

$162.4 / 480*3^{1/2} = 195$ AMPS
EXISTING 250 AMPS SERVICE

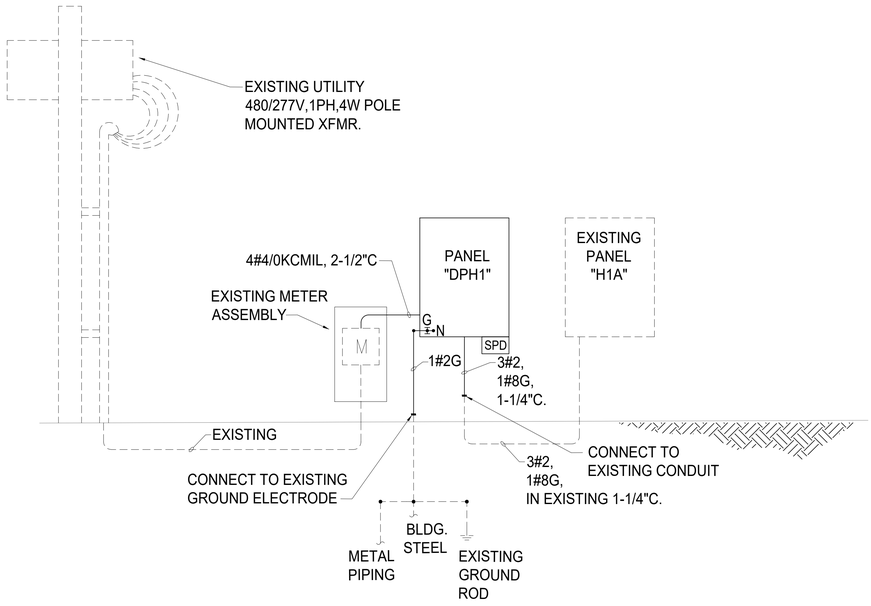
SYMBOL LEGEND

SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
MOTOR CONTROLLERS AND EQUIPMENT	
□F	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
——#2——►	3/4"C. UNLESS OTHERWISE NOTED; LONG HATCH = NEUTRAL; SHORT HATCH = PHASE; "2" HATCH = INSULATED GROUND, NO HATCHES INDICATES 2 CONDUCTORS, ARROW INDICATES HOMERUN
——•—►	PARTIAL ELECTRICAL HOMERUN

GENERAL NOTE:
ALL EXTERIOR BUILDING ELECTRICAL EQUIPMENT TO BE WEATHERPROOF



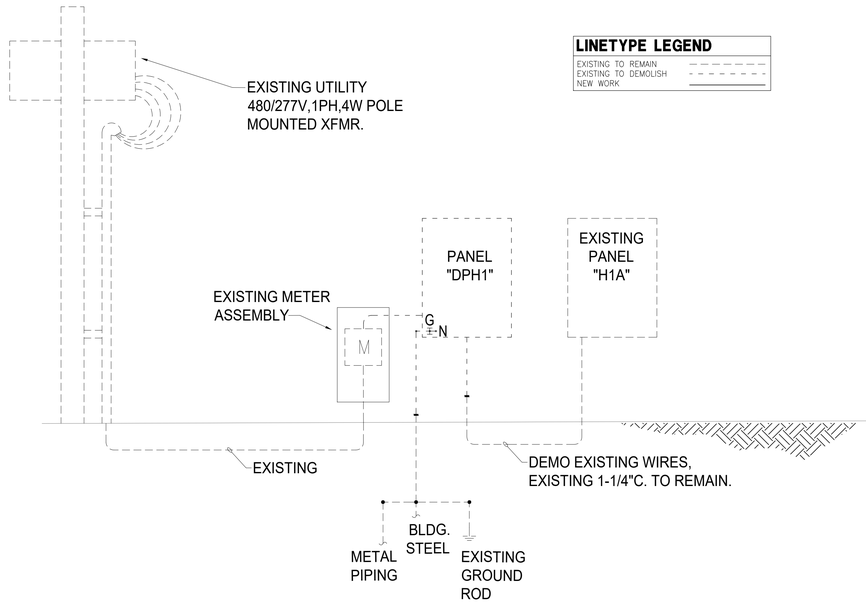
2 **GROUNDING DETAIL**
SCALE: NONE



2 **ELECTRICAL NEW ONE-LINE DIAGRAM**
SCALE: NONE

LINETYPE LEGEND

EXISTING TO REMAIN	———
EXISTING TO DEMOLISH	– – – –
NEW WORK	———



1 **ELECTRICAL DEMO ONE-LINE DIAGRAM**
SCALE: NONE

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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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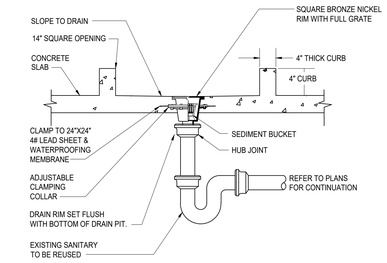
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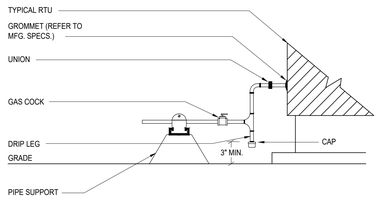
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80219
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PROFESSIONAL ENGINEER
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ELECTRICAL DETAILS, LEGENDS, AND SCHEDULES - EARLY COLLEGE HS

E2.01

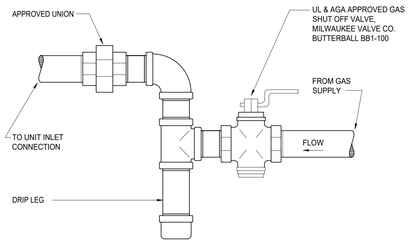


6 DRAIN WITH CONCRETE CURB
SCALE: NONE



NOTES:
1. MAINTAIN 3" MIN. CLEARANCE FOR DRAINING OF DRIP LEG.

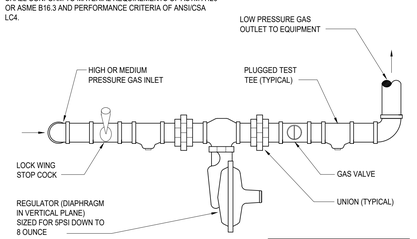
5 GAS CONNECTION AT MECHANICAL UNIT
SCALE: NONE



4 GAS CONNECTION
SCALE: NONE

PROVIDE AMERICAN METER COMPANY REGULATORS OR APPROVED EQUAL, SUITABLE FOR OUTDOOR INSTALLATION. REGULATORS OUTSIDE EXPOSED TO WEATHER SHALL BE INSTALLED WITH VENT IN VERTICAL DOWN POSITION.

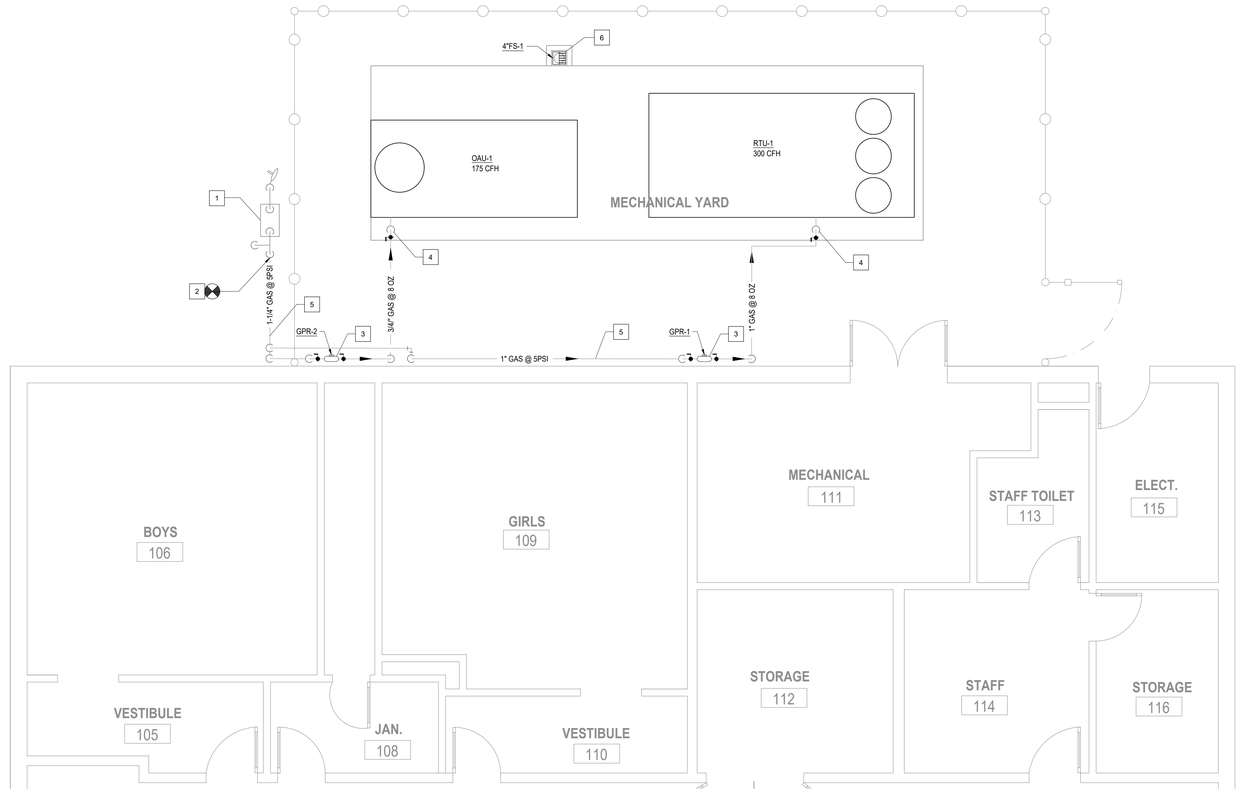
SHALL CONFORM TO MATERIAL REQUIREMENTS OF ASTM A420 OR ASME B16.3 AND PERFORMANCE CRITERIA OF ANSI/CSA LC4.



NOTE: REFERENCE DRAWINGS FOR PIPE SIZES.

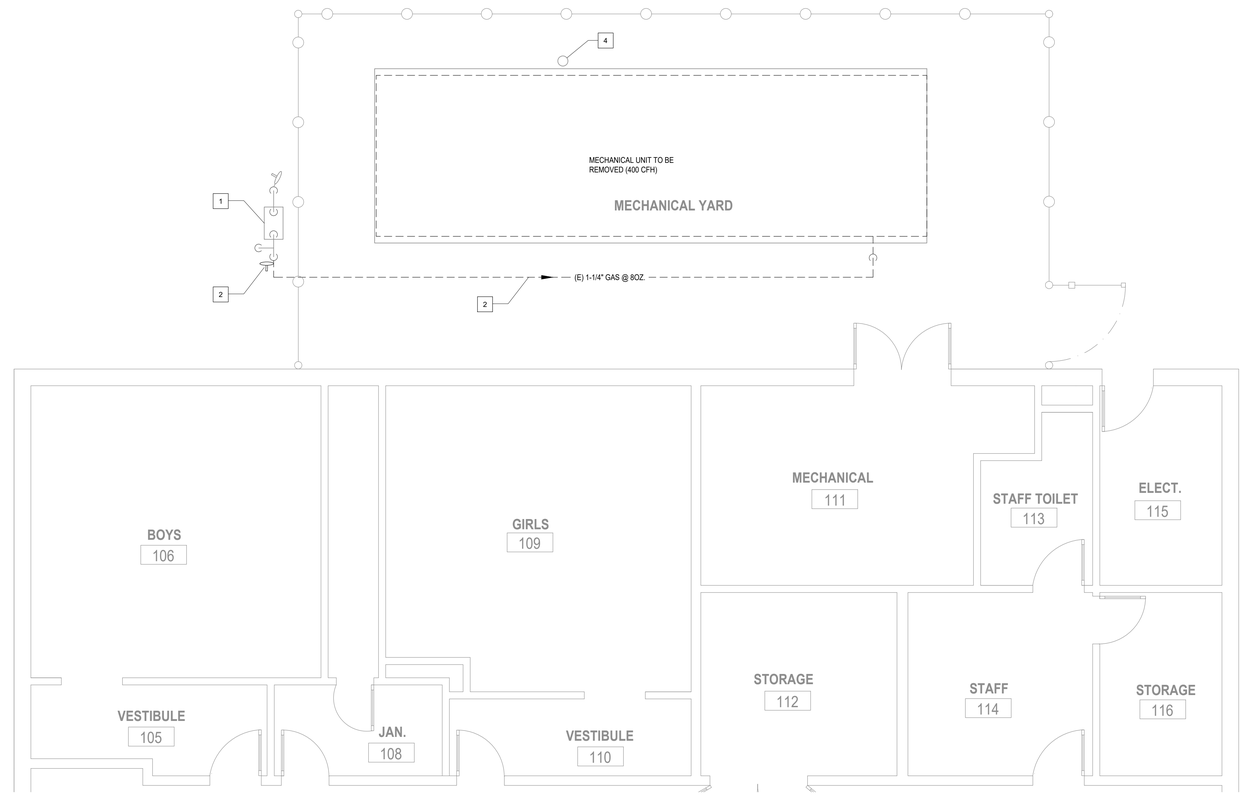
NOTE:
ENSURE GAS PRESSURE REGULATOR LOCATED CLEAR OF OUTSIDE AIR INTAKE ACCORDING TO JURISDICTION HAVING AUTHROITY. LOCATE GPR MINIMUM 10FT FROM RTU

3 GAS PRESSURE REGULATOR INSTALLATION
SCALE: NONE



NORTH

2 PLUMBING FLOOR PLAN
SCALE: 1/4" = 1'-0"



NORTH

1 PLUMBINGL DEMOLITION FLOOR PLAN
SCALE: 1/4" = 1'-0"

PLUMBING 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. PLUMBING CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL AND ELECTRICAL CONTRACTOR FOR ALL REQUIRED CLEARANCES.

PLUMBING KEYED NOTES:

1. EXISTING GAS METER AND REGULATOR SET AT 5PSI TO REMAIN. ADJUST LOAD TO PROVIDE A NEW DEMAND OF 475 CFH.
2. CONNECT NEW 1-1/4" GAS AT 5PSI TO EXISTING 1-1/4" GAS.
3. PROVIDE NEW GAS REGULATOR SIZED FOR 5PSI TO 8OZ.
4. CONNECT GAS PIPING TO EQUIPMENT WITH UNION AND PLUG VALVE. REFER TO THIS SHEET FOR DETAIL.
5. GAS LINE ROUTED ON GRADE. PROVIDE PIPE SUPPORTS PLACED AT 10 FOOT SPANS MAXIMUM AND EVERY CHANGE OF DIRECTION (4 FT. FROM ELBOWS).
6. PROVIDE NEW 4" FLOOR SINK. CONNECT TO EXISTING SANITARY PIPING PENETRATING GRADE. FLOOR SINK TO BE MOUNTED FLUSH WITH CONCRETE. PROVIDE 4" CONCRETE CURB AROUND THE FLOOR SINK. EXISTING DRAIN PIPING SHALL BE CLEARED OF ALL DEBRIS TO ENSURE PROPER DRAINAGE.

GAS EQUIPMENT

EQUIPMENT NUMBER	DESCRIPTION	BTU PER HOUR LOAD	TOTAL BTU PER HOUR	TOTAL CFH
OAU-1	NEW MECHANICAL UNIT	175,000 BTUH	175,000 BTUH	175 CFH
RTU-1	NEW MECHANICAL UNIT	300,000 BTUH	300,000 BTUH	300 CFH
TOTALS:			475,000 BTUH	475 CFH

GAS PRESSURE REGULATORS

ITEM NO.	DESCRIPTION	LOCATION	SERVES	CFH	INLET PRESSURE/ OUTLET PRESSURE
GPR-1	GAS PRESSURE REGULATOR	SERVICE YARD	RTU-1	300	5 PSI - INLET 8 OZ. - OUTLET
GPR-2	GAS PRESSURE REGULATOR	SERVICE YARD	OAU-1	140	5 PSI - INLET 8 OZ. - OUTLET

GENERAL NOTES:
1. MAINTAIN MINUMUM 10'-0" CLEARANCE BETWEEN REGULATOR VENTS AND OUTSIDE AIR INTAKES.
2. GAS PRESSURE REGULATORS INSIDE THE BUILDING ARE TO BE VENTED TO ATMOSPHERE IN ACCORDANCE WITH ALL AUTHORITIES HAVING JURISDICTION.

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 PLUMBING SYSTEMS SHOWN ON THIS PLAN ARE FROM EXISTING DRAWINGS AND PRELIMINARY FIELD WORK. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL LOCATIONS AND SIZES OF PLUMBING SYSTEMS PRIOR TO THE START OF WORK.
3. OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL PLUMBING EQUIPMENT BEING REMOVED FROM THIS PROJECT. THIS INCLUDES BUT NOT LIMITED TO PIPING, REGULATORS AND VALVES.
4. EXISTING GAS METER SERVICE TO REMAIN UNINTERRUPTED DURING CONTRUCTION.

DEMOLITION KEYED NOTES:

1. EXISTING GAS METER AND REGULATOR SET AT 5PSI TO REMAIN. EXISTING LOAD OF 400 CFH TO BE REMOVED.
2. EXISTING 5PSI TO 8OZ GAS REGULATOR SIZED AT 400 CFH TO BE REMOVED.
3. EXISTING 1-1/4" GAS PIPING (400 CFH) TO BE REMOVED.
4. EXISTING PIPE DRAIN TO REMAIN AND BE REUSED. SEE NEW FLOOR PLAN.

PLUMBING FIXTURE SPECIFICATIONS

TYPE: FS-1
SERVICE: MECHANICAL CONDENSATE
DESCRIPTION: A.R.C. COATED CAST IRON BODY 12" SQUARE FLOOR SINK WITH 8" DEEP SUMP, LOOSE SET CAST IRON SECONDARY STRAINER, CLAMPING DEVICE WITH STAINLESS STEEL FULL TOP GRATE. BOTTOM OUTLET WITH 1/2" TRAP PRIMER CONNECTION (CAPPED). WADE 9140-6-26-85.
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.

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CONSULTANTS
MEP ENGINEERS
SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912
SALAS O'BRIEN | expect a difference
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
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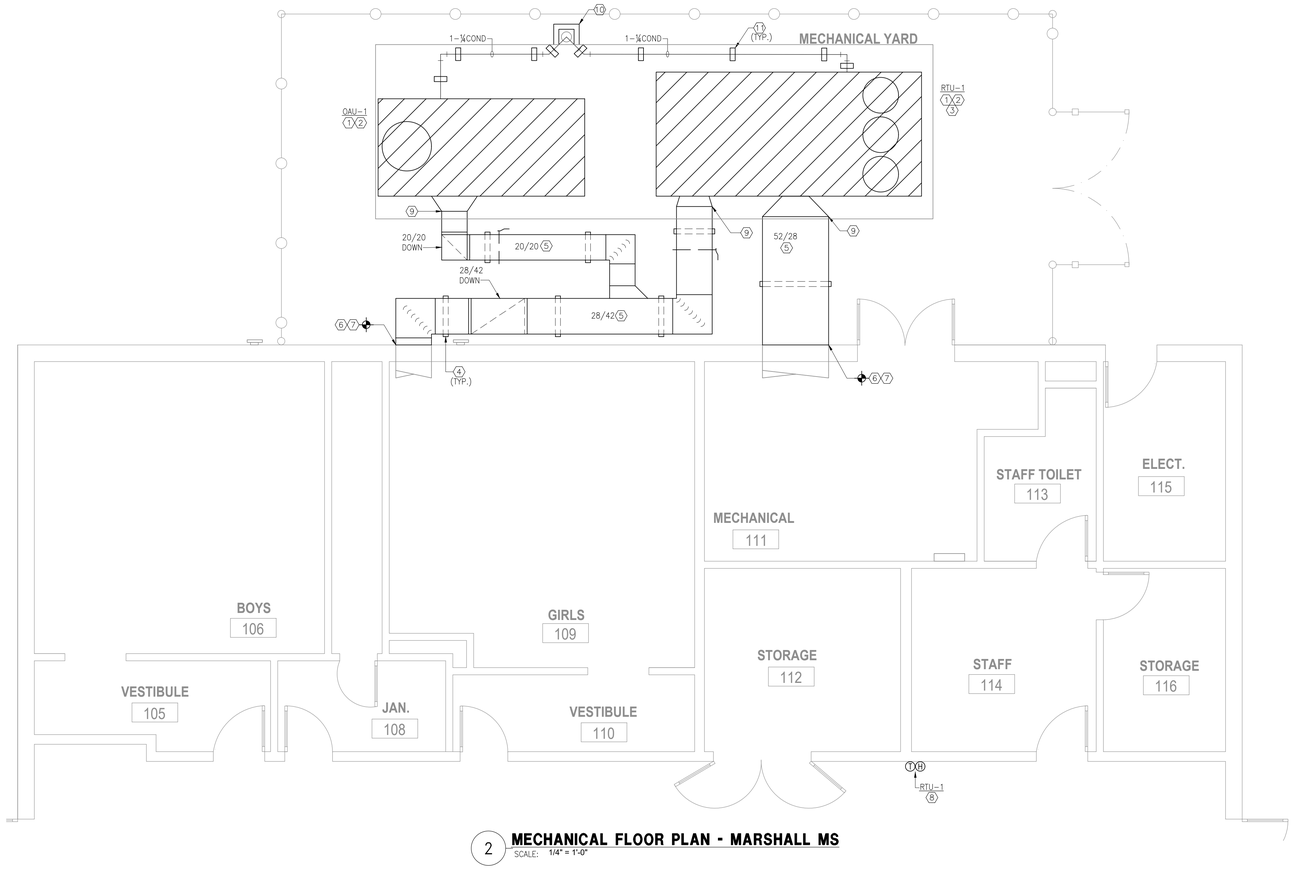
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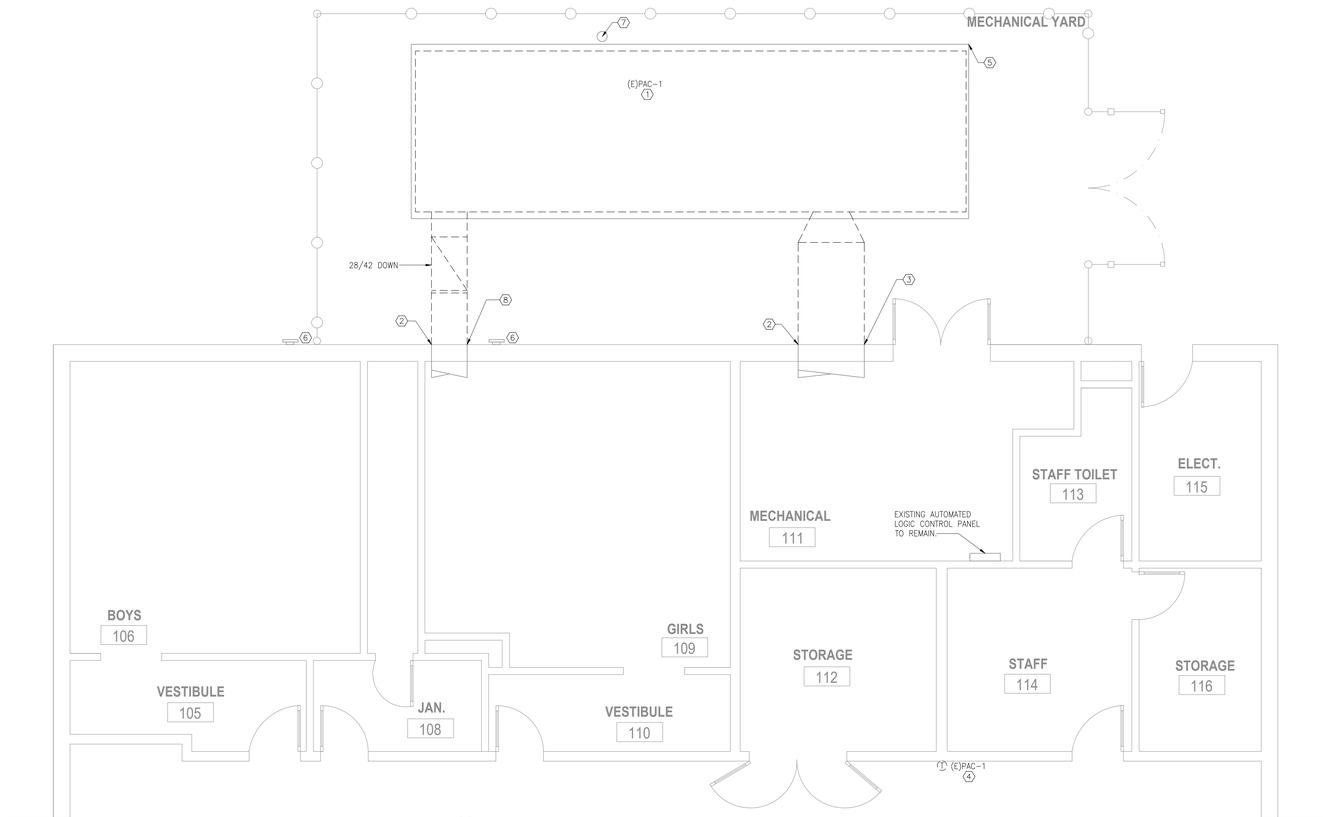
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01-19-2022

PLUMBING FLOOR PLANS - EARLY COLLEGE HS

P1.01



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



1 **MECHANICAL DEMOLITION FLOOR PLAN - MARSHALL MS**
SCALE: 1/4" = 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 CLEARANCE FOR AIR FILTER, FAN SHAFT, AND COIL REMOVAL WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.
2. ROUTE FULL SIZE CONDENSATE DRAIN PIPE TO EXISTING OUTDOOR HUB DRAIN AS INDICATED. INSTALL TRAP AS RECOMMENDED BY MANUFACTURER.
3. PROVIDE GROUND MOUNTED ROOFTOP UNIT WITH 4'-0" SUPPLY AND RETURN AIR DISCHARGE CURB.
4. PROVIDE MODEL PHP-D DUCT SUPPORT. REFER TO SPECIFICATIONS.
5. ALL OUTDOOR DUCTWORK SHALL BE DOUBLE WALL CONSTRUCTION. PAINT OUTDOOR DUCTWORK WITH TWO COATS OF EPOXY PAINT. COORDINATE COLOR WITH SCHOOL DISTRICT.
6. ROUTE NEW DOUBLE WALL DUCTWORK AS INDICATED AND CONNECT TO EXISTING.
7. REUSE EXISTING WALL OPENING.
8. PROVIDE THERMOSTAT AND HUMIDITY SENSOR WITH STEEL VENTED LOCKABLE COVER.
9. TRANSITION DUCTWORK TO CONNECT TO GROUND MOUNTED ROOFTOP OPENING.
10. REFER TO PLUMBING DRAWINGS FOR DRAIN CURB INFORMATION.
11. PROVIDE PHP MODEL SSB-C EVERY 6'-0" ON CENTER AND AT EACH CHANGE IN DIRECTION.

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 AND CONTROL DEVICES.

DEMOLITION KEYED NOTES:

1. REMOVE EXISTING PACKAGED DEHUMIDIFICATION UNIT, CONTROLS AND ALL ASSOCIATED APPURTENANCES.
2. REMOVE EXISTING OUTDOOR DUCTWORK UP TO EXTERIOR WALL AS INDICATED. CONTRACTOR SHALL PRESERVE REMAINING DUCTWORK DURING DURATION OF CONSTRUCTION.
3. CONTRACTOR SHALL PRESERVE EXISTING OPENING DURING DURATION OF CONSTRUCTION. OPENING IS LOW ON WALL.
4. REMOVE EXISTING THERMOSTAT AND CONTROL WIRE IN ITS ENTIRETY.
5. EXISTING CONCRETE HOUSEKEEPING PAD TO REMAIN.
6. EXISTING EXHAUST WALL CAP TO REMAIN.
7. EXISTING OUTDOOR FLOOR DRAIN TO REMAIN AND BE REUSED.
8. CONTRACTOR SHALL PRESERVE EXISTING OPENING DURING DURATION OF CONSTRUCTION. OPENING IS HIGH ON WALL.

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

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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

SALASO'BRIEN | expect a difference
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
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MECHANICAL FLOOR PLANS - MARSHALL MS

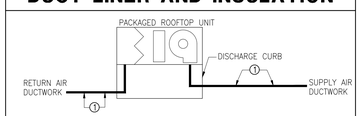
M1.01

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	
(GR)	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	
—D—	CONDENSATE DRAIN LINE
—AD—	AUXILLARY CONDENSATE DRAIN LINE
—RLR—	REFRIGERANT LIQUID & GAS RECIRCULATION LINE (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—RL—	REFRIGERANT LIQUID LINE
—HG—	REFRIGERANT HOT GAS LINE
—RS—	REFRIGERANT SUCTION LINE
	ELBOW UP
	ELBOW DOWN
	90° ELBOW
	45° ELBOW
	TEE
	TEE DOWN
	TEE UP
	TOP BRANCH CONNECTION
	BOTTOM BRANCH CONNECTION
	FLANGE
	CAP
	CONTINUATION
	FLOOR DRAIN (REFER TO PLUMBING DRAWINGS)
	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

MS03

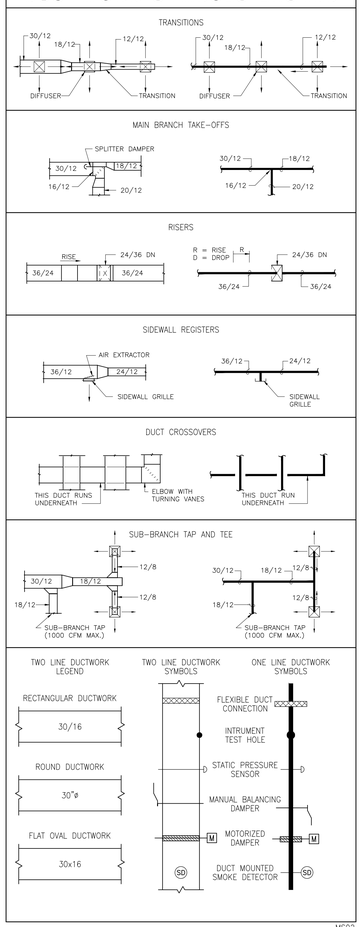
DUCT LINER AND INSULATION



NOTES
① ALL OUTSIDE DUCTWORK SHALL BE DOUBLE WALL CONSTRUCTION WITH TWO COATS OF EPOXY PAINT. REFER TO SPECIFICATIONS FOR MORE DETAILS.

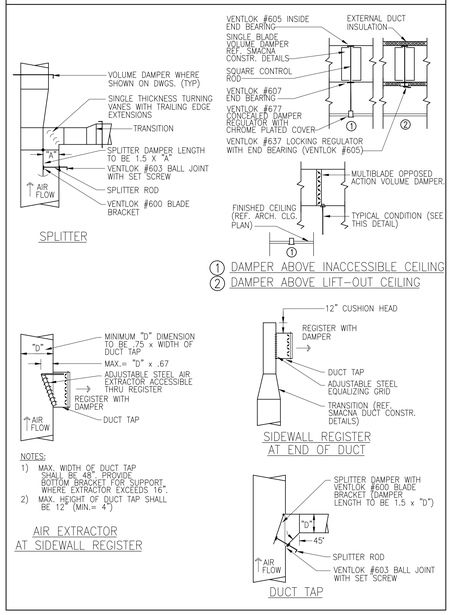
MS04

DUCTWORK SYMBOLS LEGEND



MS02

DUCTWORK CONSTRUCTION DETAILS



PACKAGED GROUND MOUNTED ROOFTOP UNIT - GAS HEAT

MARK	INDOOR AIR FAN				ELECTRICAL REQUIREMENTS			COOLING						GAS HEATING			REMARKS	BASIS OF DESIGN	MODEL NUMBER
	SUPPLY AIR CFM	OUTSIDE AIR CFM	EXT. STATIC PRESSURE (IN. W.C.)	HORSE POWER	V/PH/H	MCA	MOCP	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 (%)			
RTU-1	12,000	3,000	1.0	15	480/3/60	87.0	100.0	75.0	62.5	95	332.12	278.74	10.2/-	68.0	240.0	80	(1-15)	DAIKIN	MPS030F

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 UNIT WITH LOW AMBIENT CONTROL.
2. PROVIDE A STAINLESS STEEL GAS HEAT EXCHANGER.
3. PROVIDE UNIT WITH DISCONNECT SWITCH.
4. PROVIDE UNIT WITH A FIELD INSTALLED SPACE TEMPERATURE AND HUMIDITY SENSOR.
5. PROVIDE WITH UNIT POWERED GFCI RECEPTACLE.
6. PROVIDE UNIT WITH A WATER LEVEL SENSING DEVICE IN THE PRIMARY DRAIN PAN. DEVICE SHALL SHUT OFF THE UNIT IN THE EVENT THE PRIMARY DRAIN LINE BECOMES RESTRICTED.
7. PROVIDE WITH MODULATING HOT GAS REHEAT TO NEUTRAL CONDITIONS OF 72°F.
8. PROVIDE WITH DISCHARGE AIR TEMPERATURE SENSOR.
9. UNIT SHALL MAINTAIN SPACE TEMPERATURE AND HUMIDITY.
10. PROVIDE WITH VARIABLE SPEED COMPRESSORS AND VARIABLE SPEED FANS.
11. PROVIDE WITH MODULATING GAS HEAT CONTROL.
12. PROVIDE COATING FOR CONDENSER AND EVAPORATOR COILS. REFER TO SPECIFICATIONS.
13. VELOCITY NOT TO EXCEED 500 FPM ON COOLING COIL.
14. PROVIDE UNIT WITH 4'-0" CURB EXTENSION.
15. UNIT SHALL BE FACTORY PROGRAMMED TO OPERATE AS A SINGLE ZONE VAV UNIT.

100 PERCENT OA PACKAGED GROUND MOUNTED ROOFTOP UNIT - GAS HEAT

MARK	INDOOR AIR FAN				ELECTRICAL REQUIREMENTS			COOLING						GAS HEATING			REMARKS	BASIS OF DESIGN	MODEL NUMBER
	SUPPLY AIR CFM	OUTSIDE AIR CFM	EXT. STATIC PRESSURE (IN. W.C.)	HORSE POWER	V/PH/H	MCA	MOCP	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-1	3,000	3,000	1.0	2.0	480/3/60	50.3	70	98.0	80.0	95	264.86	143.38	10.1/-	27.0	140.0	80	(1-9)	DAIKIN	DPS020A

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 A STAINLESS STEEL GAS HEAT EXCHANGER.
2. PROVIDE UNIT WITH DISCONNECT SWITCH.
3. PROVIDE WITH UNIT POWERED GFCI RECEPTACLE.
4. PROVIDE UNIT WITH A WATER LEVEL SENSING DEVICE IN THE PRIMARY DRAIN PAN. DEVICE SHALL SHUT OFF THE UNIT IN THE EVENT THE PRIMARY DRAIN LINE BECOMES RESTRICTED.
5. PROVIDE WITH DISCHARGE AIR TEMPERATURE SENSOR.
6. PROVIDE WITH MODULATING GAS HEAT CONTROL.
7. PROVIDE COATING FOR CONDENSER AND EVAPORATOR COILS. REFER TO SPECIFICATIONS.
8. VELOCITY NOT TO EXCEED 450 FPM ON COOLING COIL.
9. PROVIDE UNIT WITH A LEAVING AIR TEMPERATURE OF 54.3°F DRY BULB AND 54.3 WET BULB.

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: 2429-2020-02336
Drawn By: BB
Checked By: SH
Date: 01-19-2022
Revision Dates:

CONSULTANTS

MEP ENGINEERS

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

SALAS O'BRIEN | expect a difference
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2429-2020-02336-00

BEAUMONT ISD
HVAC UPGRADES PART ONE
MARSHALL MIDDLE SCHOOL

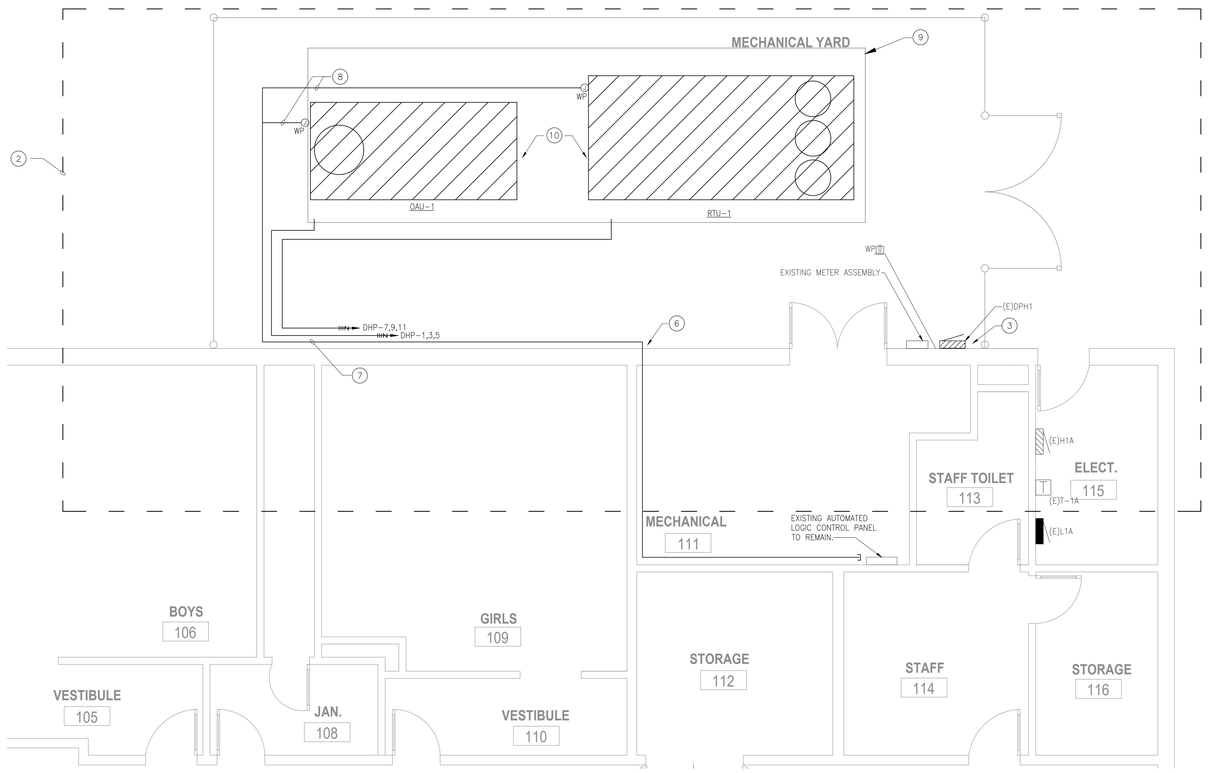
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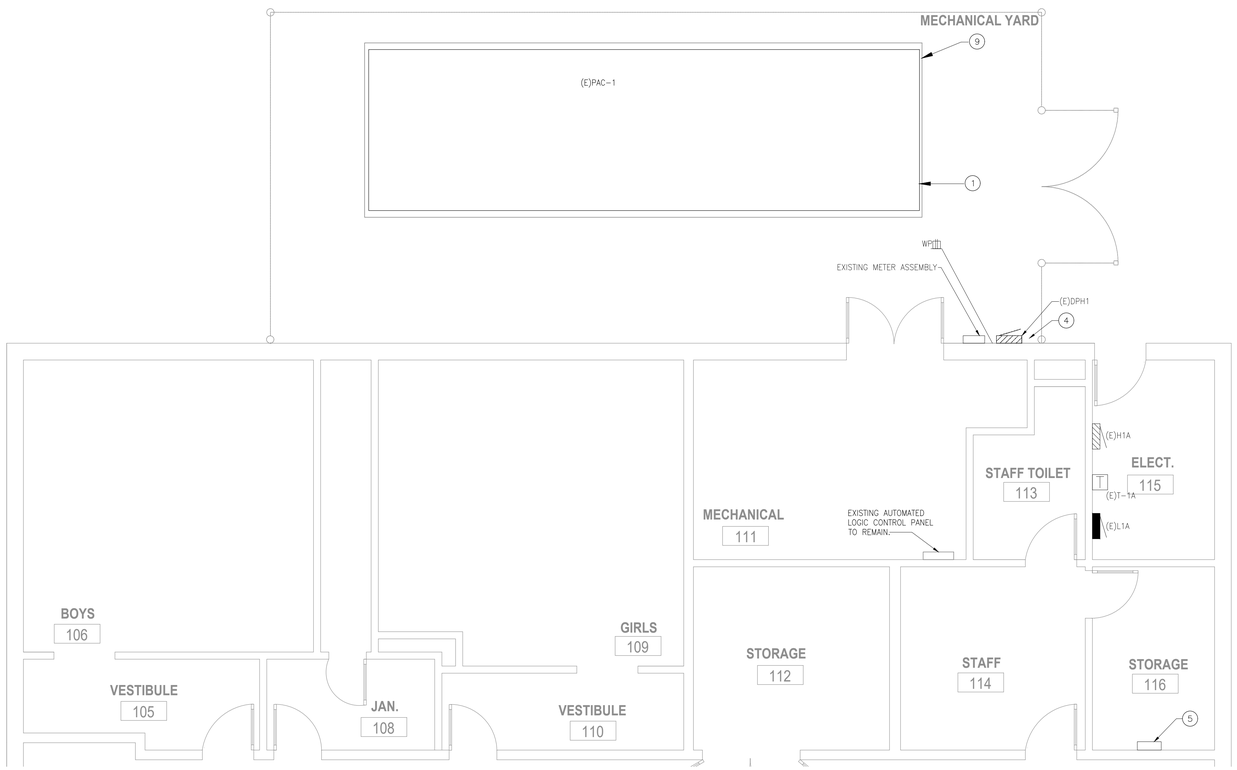
BRADLEY KALMANS
80219
LICENSED PROFESSIONAL ENGINEER
01-19-2022

MECHANICAL DETAILS, LEGENDS, AND SCHEDULES - MARSHALL MS

M2.01



NORTH 2 **ELECTRICAL POWER FLOOR PLAN - MARSHALL MS**
SCALE: 1/4" = 1'-0"



NORTH 1 **ELECTRICAL DEMOLITION FLOOR PLAN - MARSHAL MS**
SCALE: 1/4" = 1'-0"

EXISTING TO REMAIN
EXISTING TO BE REMOVED

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.

ELECTRICAL KEYED NOTES:

1. DISCONNECT EXISTING EQUIPMENT REMOVE EXISTING WIRES AND CAP EXISTING CONDUIT. REMOVE EXISTING DUCT SMOKE DETECTORS FOR PAC-1.
2. ALL NEW ELECTRICAL FEEDING SHALL BE ROUTED ABOVE GRADE. ROUTE TO AVOID CREATING TRIPPING HAZARDS. FIELD COORDINATE EXACT ROUTING WITH OWNER/ENGINEER.
3. LOCATE NEW PANEL ABOVE EXISTING RECEPTACLE AND LOCATE AS CLOSE AS POSSIBLE TO CT ENCLOSURE.
4. REMOVE EXISTING PANEL DPH1 AND EXISTING WIRE AND CONDUIT TO THE CT ENCLOSURE.
5. EXISTING FIRE ALARM PANEL TO REMAIN.
6. STUB UP AND PENETRATE BUILDING. COORDINATE FINAL ROUTING AND BUILDING WALL PENETRATION LOCATION WITH OWNER.
7. (2)1"C. ROUTE ALONG WALL AND ABOVE CEILING WHERE POSSIBLE TO MINIMIZE TRIPPING HAZARDS.
8. 1"C. FOR CONTROL WIRING.
9. EXISTING CONCRETE HOUSEKEEPING PAD TO REMAIN.
10. PROVIDE NEW DUCT SMOKE DETECTORS.

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.

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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Checked By:
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Revision Dates:

CONSULTANTS
MEP ENGINEERS
SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912
SALAS O'BRIEN | expect a difference
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
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BEAUMONT ISD
HVAC UPGRADES PART ONE
MARSHALL MIDDLE SCHOOL

BEAUMONT INDEPENDENT SCHOOL DISTRICT
BISD Preparing Our Next Generation

BRADLEY KALMANS 80219 LICENSED PROFESSIONAL ENGINEER
01-19-2022

ELECTRICAL POWER FLOOR PLAN - MARSHALL MS

E1.01

NEW PANEL "DPH1" 277/480V.,3PH.,4W. MOUNTING: SURFACE
NEMA-3R
LOCATION: MECHANICAL YARD 250 AMP MCB 18 K ISCA

CKT	LOAD	KVA	WIRE	BKR		BKR	WIRE	KVA	LOAD	CKT
1	OAU-1	41.9	#4	70/3		100/3	#2	24	H1A	2
3	- - -	-	-	-		-	-	-	- - -	4
5	- - -	-	-	-		-	-	-	- - -	6
7	RTU-1	72.4	#2	100/3		-	-	-	SPACE	8
9	- - -	-	-	-		-	-	-	SPACE	10
11	- - -	-	-	-		-	-	-	SPACE	12
13	SPACE	-	-	-		-	-	-	SPACE	14
15	SPACE	-	-	-		-	-	-	SPACE	16
17	SPACE	-	-	-		-	-	-	SPACE	18
19	SPACE	-	-	-		-	-	-	SPACE	20
21	SPACE	-	-	-		-	-	-	SPACE	22
23	SPACE	-	-	-		-	-	-	SPACE	24
25	SPACE	-	-	-		30/3	#10	-	SPD	26
27	SPACE	-	-	-		-	-	-	- - -	28
29	SPACE	-	-	-		-	-	-	- - -	30

EXISTING LOAD x 1.25 = 30 KVA
MISC. LOAD x 1.0 = 114.3 KVA
TOTAL KVA = 144.3 KVA

SPD:CGC50

DPH1 LOAD ANALYSIS
480/277V, 3PH, 4W.

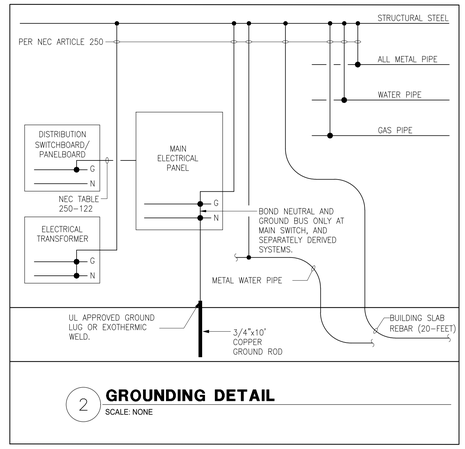
LOAD DESCRIPTION	LOAD KVA
LOAD TO REMAIN x 1.25	30
NEW HVAC – FANS, AHU'S	114.3
NEW 25% LARGEST MOTOR (60HP)	18.1
NEW MISCELLANEOUS	0
TOTAL	162.4

$162.4 / 480*3^{1/2} = 195$ AMPS
EXISTING 250 AMPS SERVICE

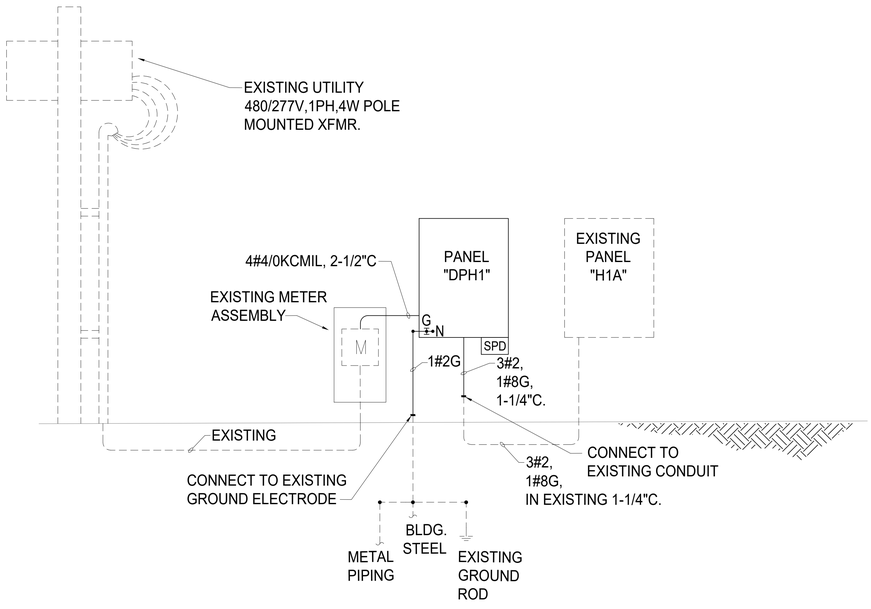
SYMBOL LEGEND

SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
MOTOR CONTROLLERS AND EQUIPMENT	
□ᵖ	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
⊣#2⊢	3/4"C. UNLESS OTHERWISE NOTED; LONG HATCH = NEUTRAL; SHORT HATCH = PHASE; "Z" HATCH = INSULATED GROUND, NO HATCHES INDICATES 2 CONDUCTORS, ARROW INDICATES HOMERUN
⊣⊢	PARTIAL ELECTRICAL HOMERUN

GENERAL NOTE:
ALL EXTERIOR BUILDING ELECTRICAL EQUIPMENT TO BE WEATHERPROOF



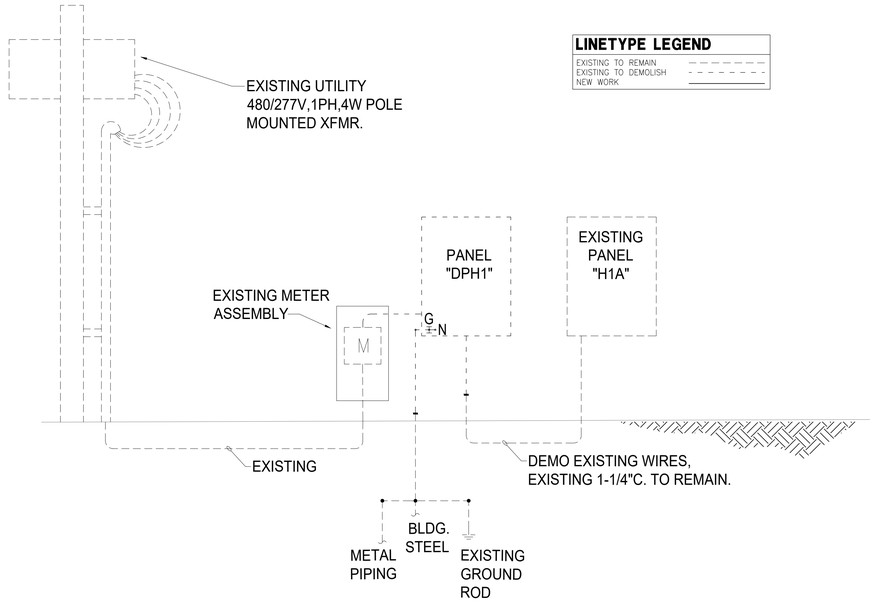
2 **GROUNDING DETAIL**
SCALE: NONE



2 **ELECTRICAL NEW ONE-LINE DIAGRAM**
SCALE: NONE

LINETYPE LEGEND

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



1 **ELECTRICAL DEMO ONE-LINE DIAGRAM**
SCALE: NONE

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MEP ENGINEERS
SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912
SALASO'BRIEN [expect a difference]
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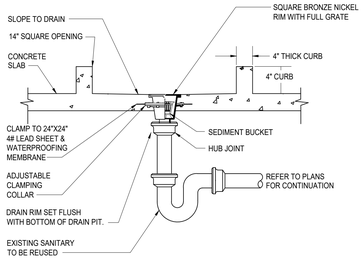
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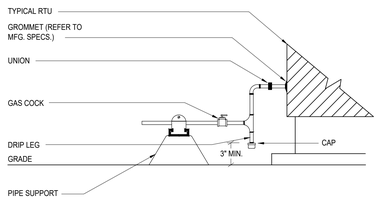
ELECTRICAL DETAILS, LEGENDS, AND SCHEDULES - MARSHALL MS

E2.01



6 DRAIN WITH CONCRETE CURB

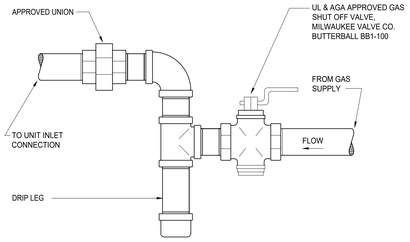
SCALE: NONE



NOTES:
1. MAINTAIN 3" MIN. CLEARANCE FOR DRAINING OF DRIP LEG.

5 GAS CONNECTION AT MECHANICAL UNIT

SCALE: NONE

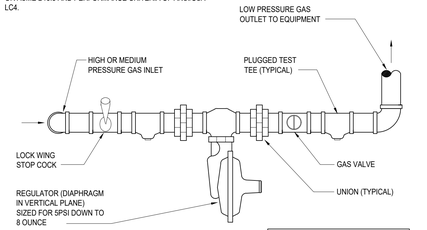


4 GAS CONNECTION

SCALE: NONE

PROVIDE AMERICAN METER COMPANY REGULATORS OR APPROVED EQUAL. SUITABLE FOR OUTDOOR INSTALLATION. REGULATORS OUTSIDE EXPOSED TO WEATHER SHALL BE INSTALLED WITH VENT IN VERTICAL DOWN POSITION.

SHALL CONFORM TO MATERIAL REQUIREMENTS OF ASTM A420 OR ASME B16.3 AND PERFORMANCE CRITERIA OF ANSI/CSA LC4.

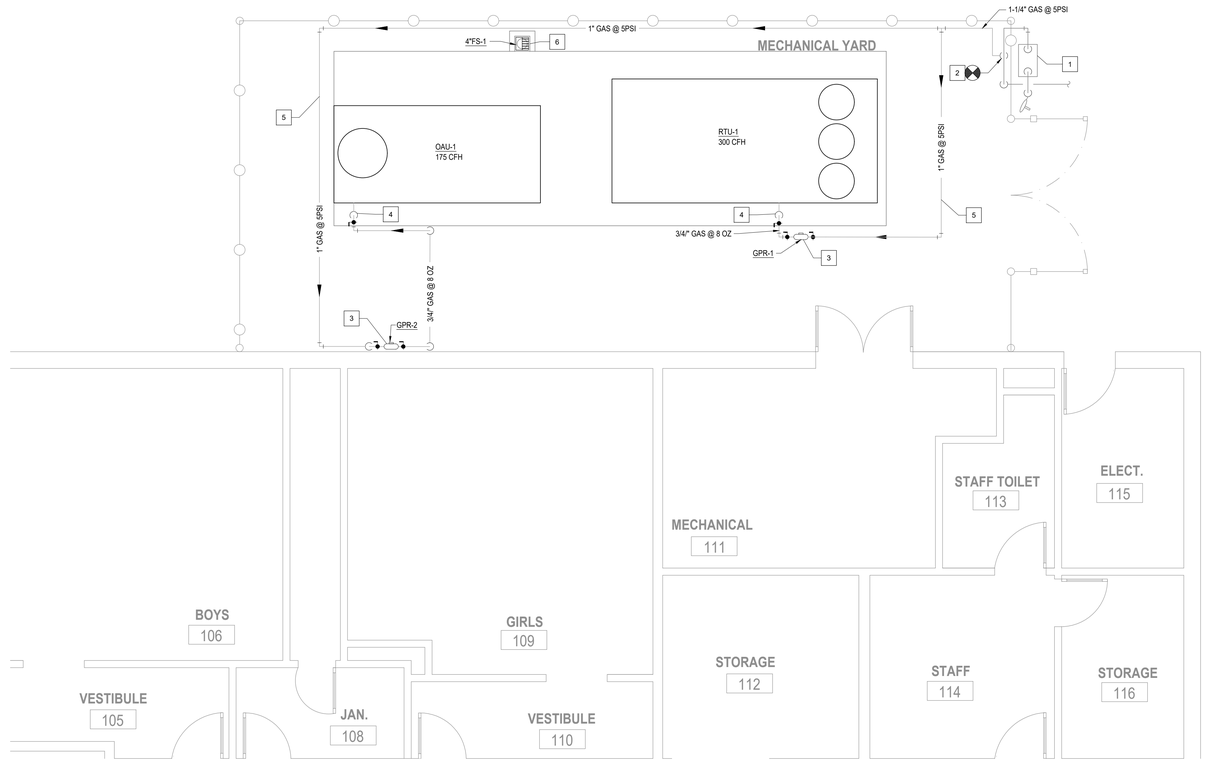


NOTE: REFERENCE DRAWINGS FOR PIPE SIZES.

NOTE:
ENSURE GAS PRESSURE REGULATOR LOCATED CLEAR OF OUTSIDE AIR INTAKE ACCORDING TO JURISDICTION HAVING AUTHROITY. LOCATE GPR MINIMUM 10FT FROM RTU

3 GAS PRESSURE REGULATOR INSTALLATION

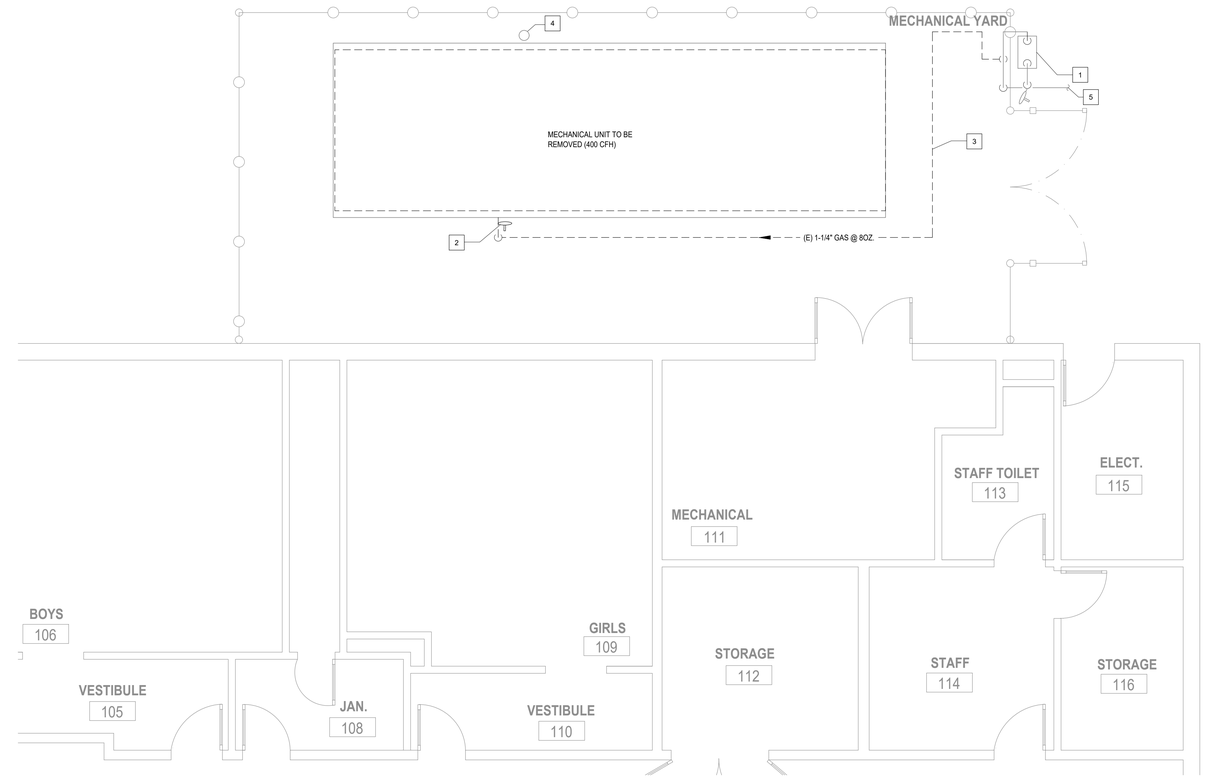
SCALE: NONE



NORTH

2 PLUMBING FLOOR PLAN - MARSHALL MS

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



NORTH

1 PLUMBINGL DEMOLITION FLOOR PLAN - MARSHALL MS

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

PLUMBING 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. PLUMBING CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL AND ELECTRICAL CONTRACTOR FOR ALL REQUIRED CLEARANCES.

PLUMBING KEYED NOTES:

1. EXISTING GAS METER AND REGULATOR SET AT 5PSI TO REMAIN. ADJUST LOAD TO PROVIDE A NEW DEMAND OF 475 CFH.
2. CONNECT NEW 1-1/4" GAS AT 5PSI TO EXISTING 1-1/4" GAS.
3. PROVIDE NEW GAS REGULATOR SIZED FOR 5PSI TO 8OZ.
4. CONNECT GAS PIPING TO EQUIPMENT WITH UNION AND PLUG VALVE. REFER TO THIS SHEET FOR DETAIL.
5. GAS LINE ROUTED ON GRADE. PROVIDE PIPE SUPPORTS PLACED AT 10 FOOT SPANS MAXIMUM AND EVERY CHANGE OF DIRECTION (4 FT. FROM ELBOWS).
6. PROVIDE NEW 4" FLOOR SINK. CONNECT TO EXISTING SANITARY PIPING PENETRATING GRADE. FLOOR SINK TO BE MOUNTED FLUSH WITH CONCRETE. PROVIDE 4" CONCRETE CURB AROUND THE FLOOR SINK. EXISTING DRAIN PIPING SHALL BE CLEARED OF ALL DEBRIS TO ENSURE PROPER DRAINAGE.

GAS EQUIPMENT

EQUIPMENT NUMBER	DESCRIPTION	BTU PER HOUR LOAD	TOTAL BTU PER HOUR	TOTAL CFH
OAU-1	NEW MECHANICAL UNIT	175,000 BTUH	175,000 BTUH	175 CFH
RTU-1	NEW MECHANICAL UNIT	300,000 BTUH	300,000 BTUH	300 CFH
(E)B-1	HYDRONIC BOILER	926,000 BTUH	926,000 BTUH	926 CFH
TOTALS:			1,401,000 BTUH	1,401 CFH

GAS PRESSURE REGULATORS

ITEM NO.	DESCRIPTION	LOCATION	SERVES	CFH	INLET PRESSURE/ OUTLET PRESSURE
GPR-1	GAS PRESSURE REGULATOR	SERVICE YARD	RTU-1	300	5 PSI - INLET 8 OZ. - OUTLET
GPR-2	GAS PRESSURE REGULATOR	SERVICE YARD	OAU-1	140	5 PSI - INLET 8 OZ. - OUTLET

GENERAL NOTES:
1. MAINTAIN MINUMUM 10'-0" CLEARANCE BETWEEN REGULATOR VENTS AND OUTSIDE AIR INTAKES.
2. GAS PRESSURE REGULATORS INSIDE THE BUILDING ARE TO BE VENTED TO ATMOSPHERE IN ACCORDANCE WITH ALL AUTHORITIES HAVING JURISDICTION.

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 PLUMBING SYSTEMS SHOWN ON THIS PLAN ARE FROM EXISTING DRAWINGS AND PRELIMINARY FIELD WORK. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL LOCATIONS AND SIZES OF PLUMBING SYSTEMS PRIOR TO THE START OF WORK.
3. OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL PLUMBING EQUIPMENT BEING REMOVED FROM THIS PROJECT. THIS INCLUDES BUT NOT LIMITED TO PIPING, REGULATORS AND VALVES.
4. EXISTING GAS METER SERVICE TO REMAIN UNINTERRUPTED DURING CONTRUCTION.

DEMOLITION KEYED NOTES:

1. EXISTING GAS METER AND REGULATOR SET AT 5PSI TO REMAIN. EXISTING LOAD OF 400 CFH TO BE REMOVED.
2. EXISTING 5PSI TO 8OZ GAS REGULATOR SIZED AT 400 CFH TO BE REMOVED.
3. EXISTING 1-1/4" GAS PIPING (400 CFH) TO BE REMOVED.
4. EXISTING PIPE DRAIN TO REMAIN AND BE REUSED. SEE NEW FLOOR PLAN.
5. EXISTING GAS SERVING HYDRONIC BOILER TO REMAIN. 926 CFH.

PLUMBING FIXTURE SPECIFICATIONS

TYPE: FS-1
SERVICE: MECHANICAL CONDENSATE
DESCRIPTION: A.R.C. COATED CAST IRON BODY 12" SQUARE FLOOR SINK WITH 8" DEEP SUMP, LOOSE SET CAST IRON SECONDARY STRAINER, CLAMPING DEVICE WITH STAINLESS STEEL FULL TOP GRATE. BOTTOM OUTLET WITH 1/2" TRAP PRIMER CONNECTION (CAPPED). WADE 9140-6-26-85.
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.

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CONSULTANTS

MEP ENGINEERS

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

SALAS O'BRIEN | expect a difference
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2429-2020-02336-00

BEAUMONT ISD
HVAC UPGRADES PART ONE
MARSHALL MIDDLE SCHOOL

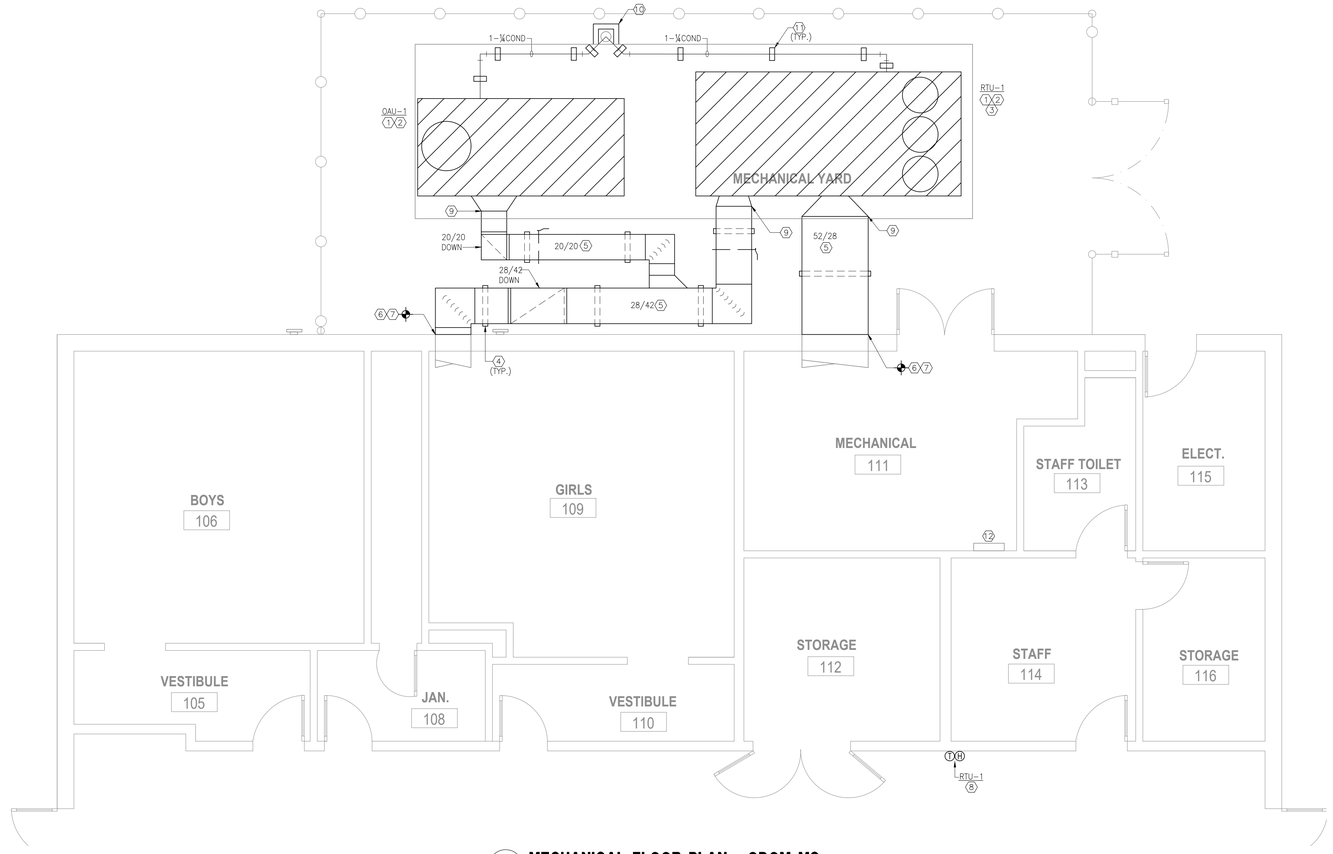
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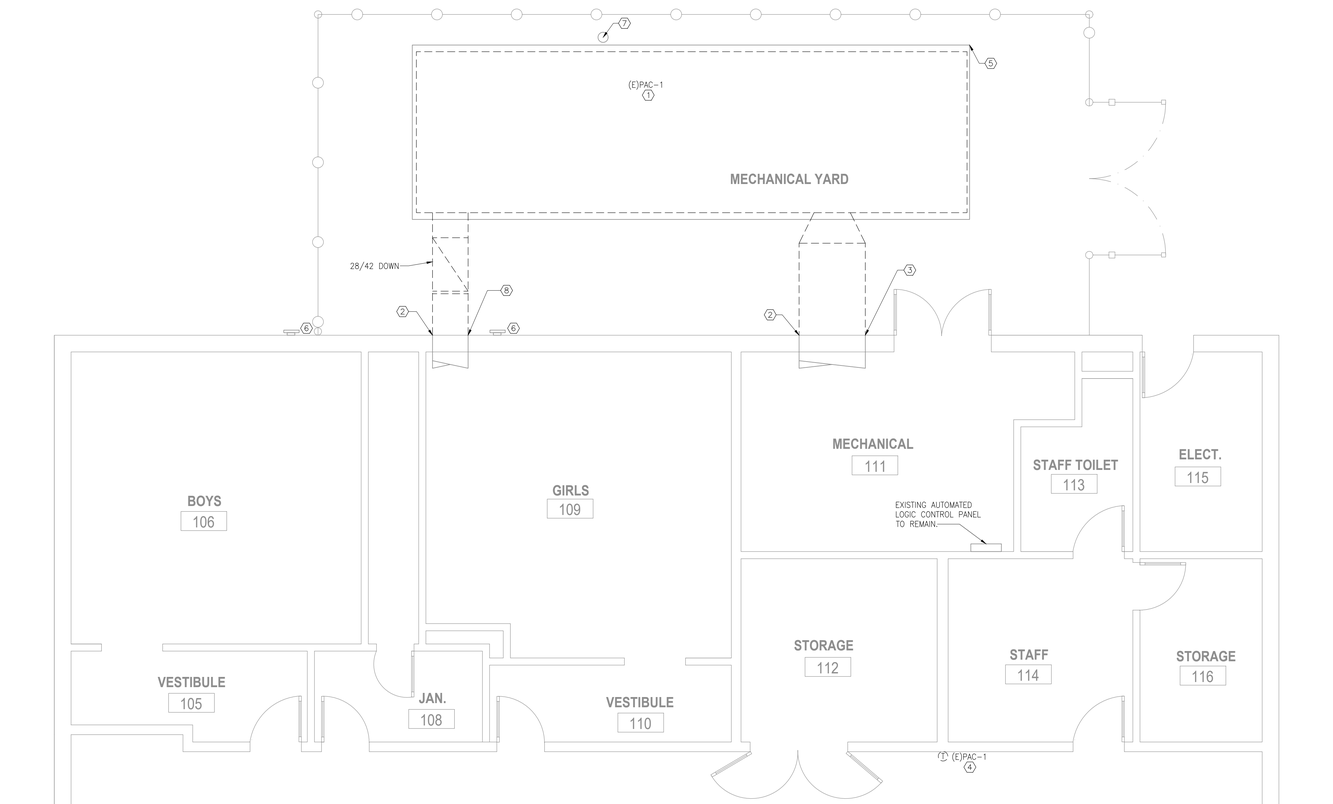
PLUMBING FLOOR PLANS - MARSHALL MS

P1.01



2 MECHANICAL FLOOR PLAN - ODOM MS

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



1 MECHANICAL DEMOLITION FLOOR PLAN - ODOM MS

SCALE: 1/4" = 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 CLEARANCE FOR AIR FILTER, FAN SHAFT, AND COIL REMOVAL WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.
2. ROUTE FULL SIZE CONDENSATE DRAIN PIPE TO EXISTING OUTDOOR HUB DRAIN AS INDICATED. INSTALL TRAP AS RECOMMENDED BY MANUFACTURER.
3. PROVIDE GROUND MOUNTED ROOFTOP UNIT WITH 4'-0" SUPPLY AND RETURN AIR DISCHARGE CURB.
4. PROVIDE MODEL PHP-D DUCT SUPPORT. REFER TO SPECIFICATIONS.
5. ALL OUTDOOR DUCTWORK SHALL BE DOUBLE WALL CONSTRUCTION. PAINT OUTDOOR DUCTWORK WITH TWO COATS OF EPOXY PAINT. COORDINATE COLOR WITH SCHOOL DISTRICT.
6. ROUTE NEW DOUBLE WALL DUCTWORK AS INDICATED AND CONNECT TO EXISTING.
7. REUSE EXISTING WALL OPENING.
8. PROVIDE THERMOSTAT AND HUMIDITY SENSOR WITH STEEL VENTED LOCKABLE COVER.
9. TRANSITION DUCTWORK TO CONNECT TO GROUND MOUNTED ROOFTOP OPENING.
10. REFER TO PLUMBING DRAWINGS FOR DRAIN CURB INFORMATION.
11. PROVIDE PHP MODEL SS8-C EVERY 6'-0" ON CENTER AND AT EACH CHANGE IN DIRECTION.
12. EXISTING CONTROL PANEL MODULES SHALL BE REPLACED AND EXISTING CONTROL SYSTEM SHALL BE REPAIRED TO ENSURE CONTROL PANEL IS COMMUNICATING WITH SYSTEM FRONT END.

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 AND CONTROL DEVICES.

DEMOLITION KEYED NOTES:

1. REMOVE EXISTING PACKAGED DEHUMIDIFICATION UNIT, CONTROLS AND ALL ASSOCIATED APPURTENANCES.
2. REMOVE EXISTING OUTDOOR DUCTWORK UP TO EXTERIOR WALL AS INDICATED. CONTRACTOR SHALL PRESERVE REMAINING DUCTWORK DURING DURATION OF CONSTRUCTION.
3. CONTRACTOR SHALL PRESERVE EXISTING OPENING DURING DURATION OF CONSTRUCTION. OPENING IS LOW ON WALL.
4. REMOVE EXISTING THERMOSTAT AND CONTROL WIRE IN ITS ENTIRETY.
5. EXISTING CONCRETE HOUSEKEEPING PAD TO REMAIN.
6. EXISTING EXHAUST WALL CAP TO REMAIN.
7. EXISTING OUTDOOR FLOOR DRAIN TO REMAIN AND BE REUSED.
8. CONTRACTOR SHALL PRESERVE EXISTING OPENING DURING DURATION OF CONSTRUCTION. OPENING IS HIGH ON WALL.

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

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MEP ENGINEERS

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

SALASO'BRIEN | expect a difference
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
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ODOM ACADEMY MIDDLE SCHOOL

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BRADLEY KALMANS
80279
LICENSED
PROFESSIONAL
ENGINEER
01-19-2022

MECHANICAL FLOOR PLANS - ODOM MS

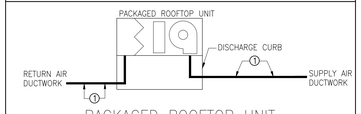
M1.01

SYMBOL LEGEND

SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
GENERAL	
(#)	KEY NOTE TAG
(#)	NOTE SPECIFIC TO DETAIL TAG
/A\	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	
(GS)	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	
—D—	CONDENSATE DRAIN LINE
—AD—	AUXILLARY CONDENSATE DRAIN LINE
—RLR—	REFRIGERANT LIQUID & GAS RECIRCULATION LINE (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—RL—	REFRIGERANT LIQUID LINE
—HG—	REFRIGERANT HOT GAS LINE
—RS—	REFRIGERANT SUCTION LINE
	ELBOW UP
	ELBOW DOWN
	90° ELBOW
	45° ELBOW
	TEE
	TEE DOWN
	TEE UP
	TOP BRANCH CONNECTION
	BOTTOM BRANCH CONNECTION
	FLANGE
	CAP
	CONTINUATION
	FLOOR DRAIN (REFER TO PLUMBING DRAWINGS)
	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

MS03

DUCT LINER AND INSULATION

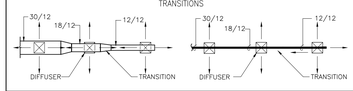


NOTES
1. ALL OUTSIDE DUCTWORK SHALL BE DOUBLE WALL CONSTRUCTION WITH TWO COATS OF EPOXY PAINT. REFER TO SPECIFICATIONS FOR MORE DETAILS.

MS04

DUCTWORK SYMBOLS LEGEND

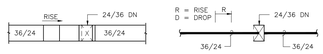
TRANSITIONS



MAIN BRANCH TAKE-OFFS



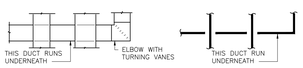
RISERS



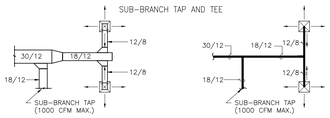
SIDEWALL REGISTERS

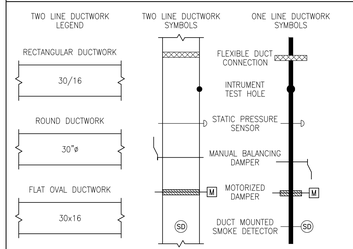


DUCT CROSSOVERS



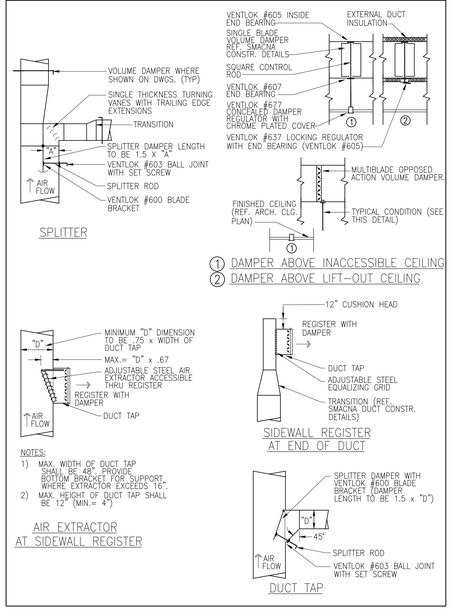
SUB-BRANCH TAP AND TEE





MS02

DUCTWORK CONSTRUCTION DETAILS



PACKAGED GROUND MOUNTED ROOFTOP UNIT - GAS HEAT

MARK	INDOOR AIR FAN: SUPPLY AIR CFM	OUTSIDE AIR CFM	EXT. STATIC PRESSURE (IN. W.C.)	HORSE POWER	ELECTRICAL REQUIREMENTS: V/PH/H	MCA	MOCP	COOLING: AIR TEMPERATURE (°F): ENTERING DRY BULB	ENTERING WET BULB	OUTDOOR AMBIENT	MIN. TOTAL CAPACITY (MBH)	MIN. SENSIBLE CAPACITY (MBH)	MINIMUM EER/ SEER	GAS HEATING: ENTERING AIR TEMP. (°F)	MIN. CAPACITY OUTPUT (MBH)	AGA EFFICIENCY (%)	REMARKS	BASIS OF DESIGN	MODEL NUMBER
RTU-1	12,000	3,000	1.0	15	480/3/60	87.0	100.0	75.0	62.5	95	332.12	278.74	10.2/-	68.0	240.0	80	(1-15)	DAIKIN	MPS030F

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 UNIT WITH LOW AMBIENT CONTROL.
2. PROVIDE A STAINLESS STEEL GAS HEAT EXCHANGER.
3. PROVIDE UNIT WITH DISCONNECT SWITCH.
4. PROVIDE UNIT WITH A FIELD INSTALLED SPACE TEMPERATURE AND HUMIDITY SENSOR.
5. PROVIDE WITH UNIT POWERED GFCI RECEPTACLE.
6. PROVIDE UNIT WITH A WATER LEVEL SENSING DEVICE IN THE PRIMARY DRAIN PAN. DEVICE SHALL SHUT OFF THE UNIT IN THE EVENT THE PRIMARY DRAIN LINE BECOMES RESTRICTED.
7. PROVIDE WITH MODULATING HOT GAS REHEAT TO NEUTRAL CONDITIONS OF 72°F.
8. PROVIDE WITH DISCHARGE AIR TEMPERATURE SENSOR.
9. UNIT SHALL MAINTAIN SPACE TEMPERATURE AND HUMIDITY.
10. PROVIDE WITH VARIABLE SPEED COMPRESSORS AND VARIABLE SPEED FANS.
11. PROVIDE WITH MODULATING GAS HEAT CONTROL.
12. PROVIDE COATING FOR CONDENSER AND EVAPORATOR COILS. REFER TO SPECIFICATIONS.
13. VELOCITY NOT TO EXCEED 500 FPM ON COOLING COIL.
14. PROVIDE UNIT WITH 4'-0" CURB EXTENSION.
15. UNIT SHALL BE FACTORY PROGRAMMED TO OPERATE AS A SINGLE ZONE VAV UNIT.

100 PERCENT OA PACKAGED GROUND MOUNTED ROOFTOP UNIT - GAS HEAT

MARK	INDOOR AIR FAN: SUPPLY AIR CFM	OUTSIDE AIR CFM	EXT. STATIC PRESSURE (IN. W.C.)	HORSE POWER	ELECTRICAL REQUIREMENTS: V/PH/H	MCA	MOCP	COOLING: AIR TEMPERATURE (°F): ENTERING DRY BULB	ENTERING WET BULB	OUTDOOR AMBIENT	MIN. TOTAL CAPACITY (MBH)	MIN. SENSIBLE CAPACITY (MBH)	MINIMUM EER/ SEER	GAS HEATING: ENTERING AIR TEMP. (°F)	MIN. CAPACITY OUTPUT (MBH)	AGA EFFICIENCY (%)	REMARKS	BASIS OF DESIGN	MODEL NUMBER
OAU-1	3,000	3,000	1.0	2.0	480/3/60	50.3	70	98.0	80.0	95	264.86	143.38	10.1/-	27.0	140.0	80	(1-9)	DAIKIN	DPS020A

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 A STAINLESS STEEL GAS HEAT EXCHANGER.
2. PROVIDE UNIT WITH DISCONNECT SWITCH.
3. PROVIDE WITH UNIT POWERED GFCI RECEPTACLE.
4. PROVIDE UNIT WITH A WATER LEVEL SENSING DEVICE IN THE PRIMARY DRAIN PAN. DEVICE SHALL SHUT OFF THE UNIT IN THE EVENT THE PRIMARY DRAIN LINE BECOMES RESTRICTED.
5. PROVIDE WITH DISCHARGE AIR TEMPERATURE SENSOR.
6. PROVIDE WITH MODULATING GAS HEAT CONTROL.
7. PROVIDE COATING FOR CONDENSER AND EVAPORATOR COILS. REFER TO SPECIFICATIONS.
8. VELOCITY NOT TO EXCEED 450 FPM ON COOLING COIL.
9. PROVIDE UNIT WITH A LEAVING AIR TEMPERATURE OF 54.3°F DRY BULB AND 54.3 WET BULB.

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: 2429-2020-02336
Drawn By: BB
Checked By: SH
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MEP ENGINEERS
SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
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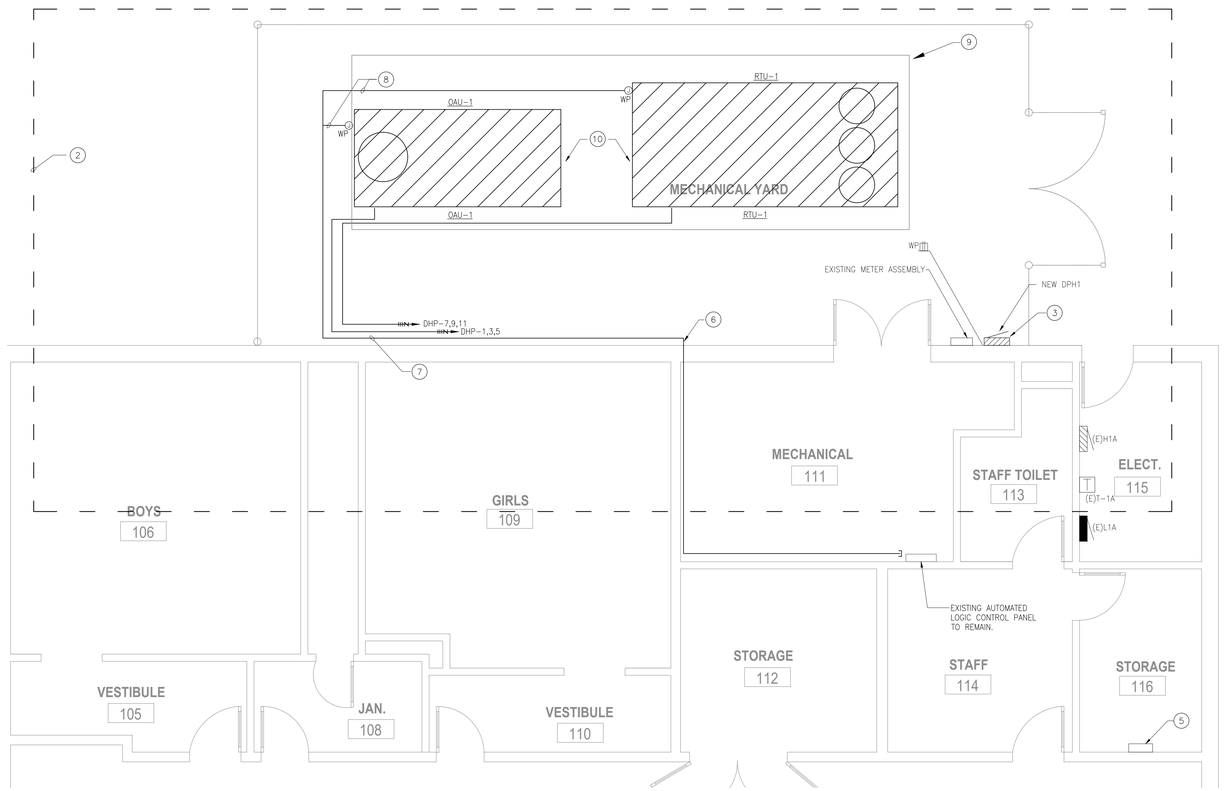
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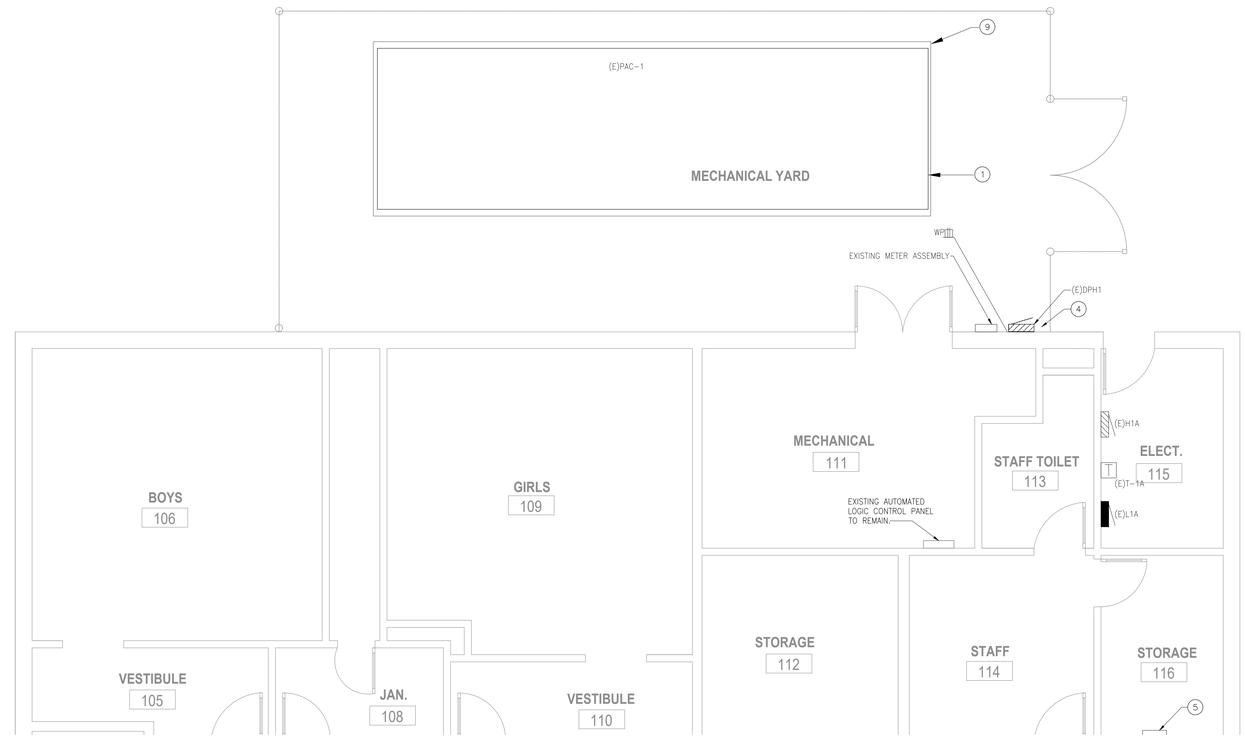
BRADLEY KALMANS
60219
LICENSED
PROFESSIONAL ENGINEER
01-19-2022

MECHANICAL DETAILS, LEGENDS, AND SCHEDULES - ODOM MS

M2.01



NORTH 2 **ELECTRICAL POWER FLOOR PLAN - ODOM MS**
SCALE: 1/4" = 1'-0"



NORTH 1 **ELECTRICAL DEMOLITION FLOOR PLAN - ODOM MS**
SCALE: 1/4" = 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.

ELECTRICAL KEYED NOTES:

1. DISCONNECT EXISTING EQUIPMENT REMOVE EXISTING WIRES AND CAP EXISTING CONDUIT. REMOVE EXISTING DUCT SMOKE DETECTORS FOR PAC-1.
2. ALL NEW ELECTRICAL FEEDING SHALL BE ROUTED ABOVE GRADE. ROUTE TO AVOID CREATING TRIPPING HAZARDS. FIELD COORDINATE EXACT ROUTING WITH OWNER/ENGINEER.
3. LOCATE NEW PANEL ABOVE EXISTING RECEPTACLE AND LOCATE AS CLOSE AS POSSIBLE TO CT ENCLOSURE.
4. REMOVE EXISTING PANEL DPH1 AND EXISTING WIRE AND CONDUIT TO THE CT ENCLOSURE.
5. EXISTING FIRE ALARM PANEL TO REMAIN.
6. STUB UP AND PENETRATE BUILDING. COORDINATE FINAL ROUTING AND BUILDING WALL PENETRATION LOCATION WITH OWNER.
7. (2)1"C. ROUTE ALONG WALL AND ABOVE CEILING WHERE POSSIBLE TO MINIMIZE TRIPPING HAZARDS.
8. 1"C. FOR CONTROL WIRING.
9. EXISTING CONCRETE HOUSEKEEPING PAD TO REMAIN.
10. PROVIDE NEW DUCT SMOKE DETECTORS.

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.

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: 2429-2020-02336
Drawn By:
Checked By:
Date: 01-19-2022
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
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. 2429-2020-02336-00

BEAUMONT ISD
HVAC UPGRADES PART ONE
ODOM ACADEMY MIDDLE SCHOOL

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ELECTRICAL FLOOR PLANS - ODOM MS

E1.01

NEW PANEL "DPH1" 277/480V.,3PH.,4W. MOUNTING: SURFACE
250 AMP MCB NEMA-3R
LOCATION: MECHANICAL YARD 18 K ISCA

CKT	LOAD	KVA	WIRE	BKR		BKR	WIRE	KVA	LOAD	CKT
1	OAU-1	41.9	#4	70/3		100/3	#2	24	H1A	2
3	- - -	-	-	-		-	-	-	- - -	4
5	- - -	-	-	-		-	-	-	- - -	6
7	RTU-1	72.4	#2	100/3		15/3	(E)	6.3	EXISTING LOAD	8
9	- - -	-	-	-		-	-	-	- - -	10
11	- - -	-	-	-		-	-	-	- - -	12
13	EXIST. LIFT STATION	6.3	(E)	30/3		-	-	-	SPACE	14
15	- - -	-	-	-		-	-	-	SPACE	16
17	- - -	-	-	-		-	-	-	SPACE	18
19	SPACE	-	-	-		-	-	-	SPACE	20
21	SPACE	-	-	-		-	-	-	SPACE	22
23	SPACE	-	-	-		-	-	-	SPACE	24
25	SPACE	-	-	-		30/3	#10	-	SPD	26
27	SPACE	-	-	-		-	-	-	- - -	28
29	SPACE	-	-	-		-	-	-	- - -	30

EXISTING LOAD x 1.25 = 45.7 KVA
MISC. LOAD x 1.0 = 114.3 KVA
TOTAL KVA = 160 KVA

SPD:CGC50

DPH1 LOAD ANALYSIS
480/277V, 3PH, 4W.

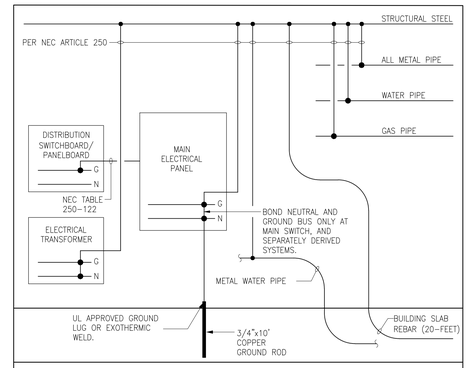
LOAD DESCRIPTION	LOAD KVA
LOAD TO REMAIN x 1.25	45.7
NEW HVAC - FANS, AHU'S	114.3
NEW 25% LARGEST MOTOR (60HP)	18.1
NEW MISCELLANEOUS	0
TOTAL	178.1

$178.1 / 480*3^{1/2} = 214.3$ AMPS
EXISTING 250 AMPS SERVICE

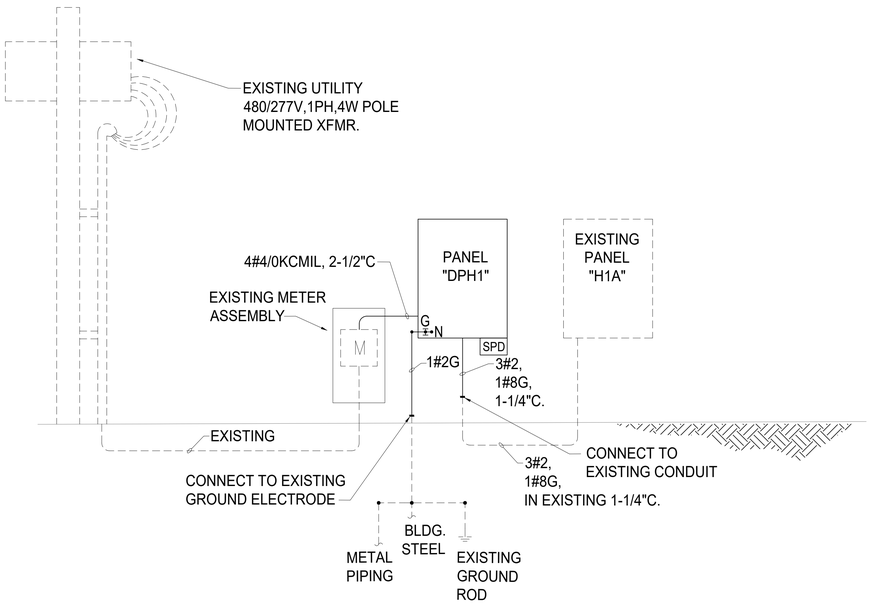
SYMBOL LEGEND

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



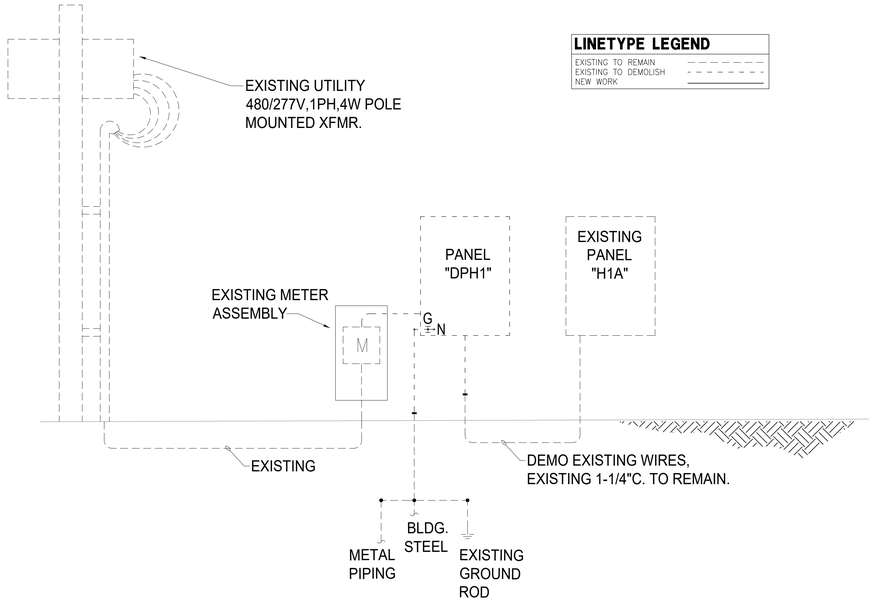
2 **GROUNDING DETAIL**
SCALE: NONE



2 **ELECTRICAL NEW ONE-LINE DIAGRAM**
SCALE: NONE

LINETYPE LEGEND

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



1 **ELECTRICAL DEMO ONE-LINE DIAGRAM**
SCALE: NONE

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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
SALASO'BRIEN | expect a difference |
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
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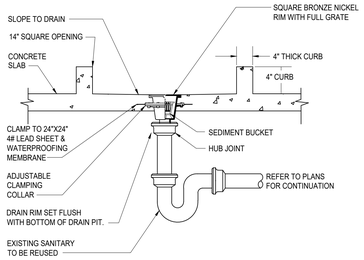
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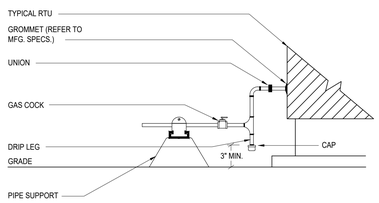
BRADLEY KALMAN
80219
LICENSED PROFESSIONAL ENGINEER
01-19-2022

ELECTRICAL DETAILS, LEGENDS, AND SCHEDULES - ODOM MS

E2.01

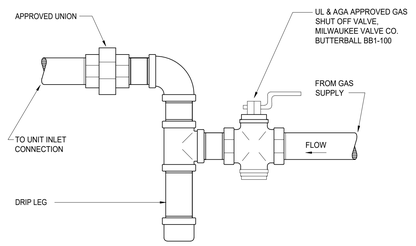


6 DRAIN WITH CONCRETE CURB
SCALE: NONE



NOTES:
1. MAINTAIN 3" MIN. CLEARANCE FOR DRAINING OF DRIP LEG.

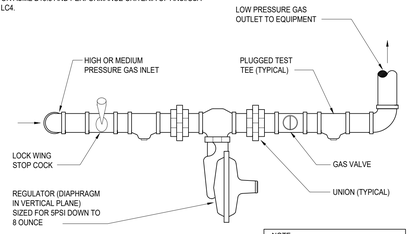
5 GAS CONNECTION AT MECHANICAL UNIT
SCALE: NONE



4 GAS CONNECTION
SCALE: NONE

PROVIDE AMERICAN METER COMPANY REGULATORS OR APPROVED EQUAL, SUITABLE FOR OUTDOOR INSTALLATION. REGULATORS OUTSIDE EXPOSED TO WEATHER SHALL BE INSTALLED WITH VENT IN VERTICAL DOWN POSITION.

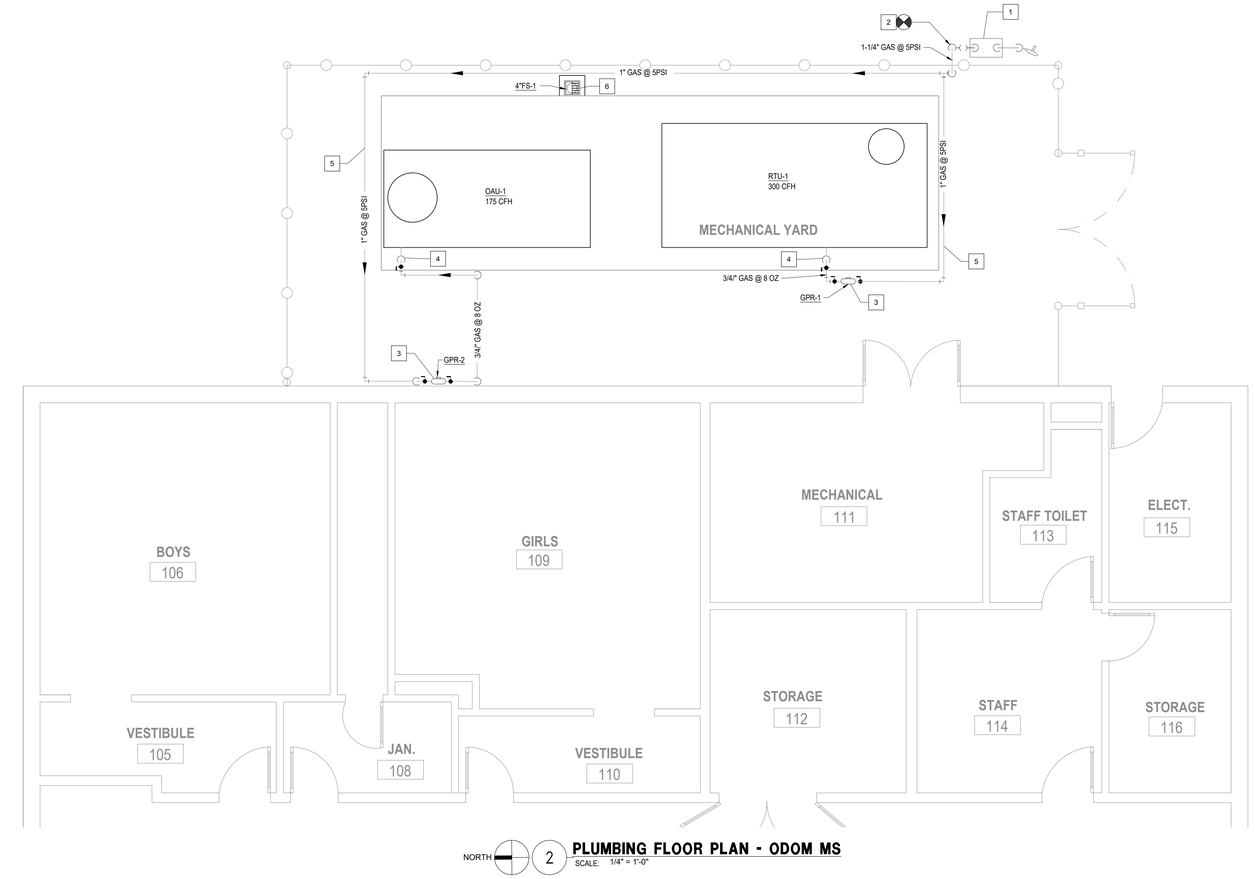
SHALL CONFORM TO MATERIAL REQUIREMENTS OF ASTM A420 OR ASME B16.3 AND PERFORMANCE CRITERIA OF ANSI/CSA LC4.



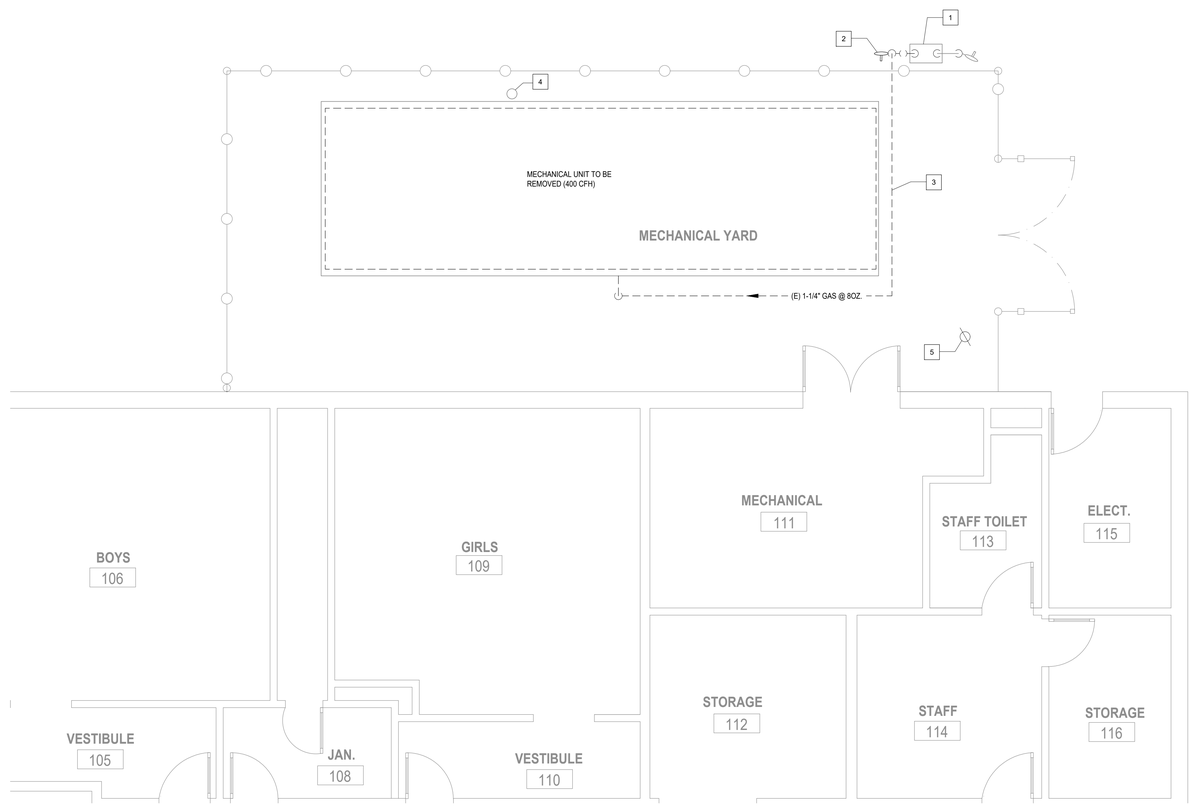
NOTE: REFERENCE DRAWINGS FOR PIPE SIZES.

NOTE:
ENSURE GAS PRESSURE REGULATOR LOCATED CLEAR OF OUTSIDE AIR INTAKE ACCORDING TO JURISDICTION HAVING AUTHROITY. LOCATE GPR MINIMUM 10FT FROM RTU

3 GAS PRESSURE REGULATOR INSTALLATION
SCALE: NONE



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



NORTH 1 **PLUMBINGL DEMOLITION FLOOR PLAN - ODOM MS**
SCALE: 1/4" = 1'-0"

PLUMBING 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. PLUMBING CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL AND ELECTRICAL CONTRACTOR FOR ALL REQUIRED CLEARANCES.

PLUMBING KEYED NOTES:

1. EXISTING GAS METER AND REGULATOR SET AT 5PSI TO REMAIN. ADJUST LOAD TO PROVIDE A NEW DEMAND OF 475 CFH.
2. CONNECT NEW 1-1/4" GAS AT 5PSI TO EXISTING 1-1/4" GAS.
3. PROVIDE NEW GAS REGULATOR SIZED FOR 5PSI TO 8OZ.
4. CONNECT GAS PIPING TO EQUIPMENT WITH UNION AND PLUG VALVE. REFER TO THIS SHEET FOR DETAIL.
5. GAS LINE ROUTED ON GRADE. PROVIDE PIPE SUPPORTS PLACED AT 10 FOOT SPANS MAXIMUM AND EVERY CHANGE OF DIRECTION (4 FT. FROM ELBOWS).
6. PROVIDE NEW 4" FLOOR SINK. CONNECT TO EXISTING SANITARY PIPING PENETRATING GRADE. FLOOR SINK TO BE MOUNTED FLUSH WITH CONCRETE. PROVIDE 4" CONCRETE CURB AROUND THE FLOOR SINK. EXISTING DRAIN PIPING SHALL BE CLEARED OF ALL DEBRIS TO ENSURE PROPER DRAINAGE.

GAS EQUIPMENT

EQUIPMENT NUMBER	DESCRIPTION	BTU PER HOUR LOAD	TOTAL BTU PER HOUR	TOTAL CFH
OAU-1	NEW MECHANICAL UNIT	175,000 BTUH	175,000 BTUH	175 CFH
RTU-1	NEW MECHANICAL UNIT	300,000 BTUH	300,000 BTUH	300 CFH
TOTALS:			475,000 BTUH	475 CFH

GAS PRESSURE REGULATORS

ITEM NO.	DESCRIPTION	LOCATION	SERVES	CFH	INLET PRESSURE/ OUTLET PRESSURE
GPR-1	GAS PRESSURE REGULATOR	SERVICE YARD	RTU-1	300	5 PSI - INLET 8 OZ. - OUTLET
GPR-2	GAS PRESSURE REGULATOR	SERVICE YARD	OAU-1	140	5 PSI - INLET 8 OZ. - OUTLET

GENERAL NOTES:
1. MAINTAIN MINUMUM 10'-0" CLEARANCE BETWEEN REGULATOR VENTS AND OUTSIDE AIR INTAKES.
2. GAS PRESSURE REGULATORS INSIDE THE BUILDING ARE TO BE VENTED TO ATMOSPHERE IN ACCORDANCE WITH ALL AUTHORITIES HAVING JURISDICTION.

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 PLUMBING SYSTEMS SHOWN ON THIS PLAN ARE FROM EXISTING DRAWINGS AND PRELIMINARY FIELD WORK. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL LOCATIONS AND SIZES OF PLUMBING SYSTEMS PRIOR TO THE START OF WORK.
3. OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL PLUMBING EQUIPMENT BEING REMOVED FROM THIS PROJECT. THIS INCLUDES BUT NOT LIMITED TO PIPING, REGULATORS AND VALVES.
4. EXISTING GAS METER SERVICE TO REMAIN UNINTERRUPTED DURING CONTRUCTION.

DEMOLITION KEYED NOTES:

1. EXISTING GAS METER AND REGULATOR SET AT 5PSI TO REMAIN. EXISTING LOAD OF 400 CFH TO BE REMOVED.
2. EXISTING 5PSI TO 8OZ GAS REGULATOR SIZED AT 400 CFH TO BE REMOVED.
3. EXISTING 1-1/4" GAS PIPING (400 CFH) TO BE REMOVED.
4. EXISTING PIPE DRAIN TO REMAIN AND BE REUSED. SEE NEW FLOOR PLAN.
5. EXISTING CLEANOUT TO REMAIN.

PLUMBING FIXTURE SPECIFICATIONS

TYPE: FS-1
SERVICE: MECHANICAL CONDENSATE
DESCRIPTION: A.R.C. COATED CAST IRON BODY 12" SQUARE FLOOR SINK WITH 8" DEEP SUMP, LOOSE SET CAST IRON SECONDARY STRAINER, CLAMPING DEVICE WITH STAINLESS STEEL FULL TOP GRATE. BOTTOM OUTLET WITH 1/2" TRAP PRIMER CONNECTION (CAPPED). WADE 9140-6-26-85.
TRAP SEAL: PROVIDE PRO-SET SYSTEMS, INC. TRAP GUARD FACTORY FITTED TO MATCH EACH FLOOR SINK BY SIZE, MODEL, AND MANUFACTURER. REFER TO FLOOR PLANS FOR SIZES. COORDINATE FINAL LOCATION WITH ARCHITECTURAL DRAWINGS / EQUIPMENT PLACEMENT.
ROUGH-IN:

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Drawn By: VU
Checked By: KBG
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Revision Dates:

CONSULTANTS
MEP ENGINEERS
SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912
SALAS O'BRIEN | expect a difference
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
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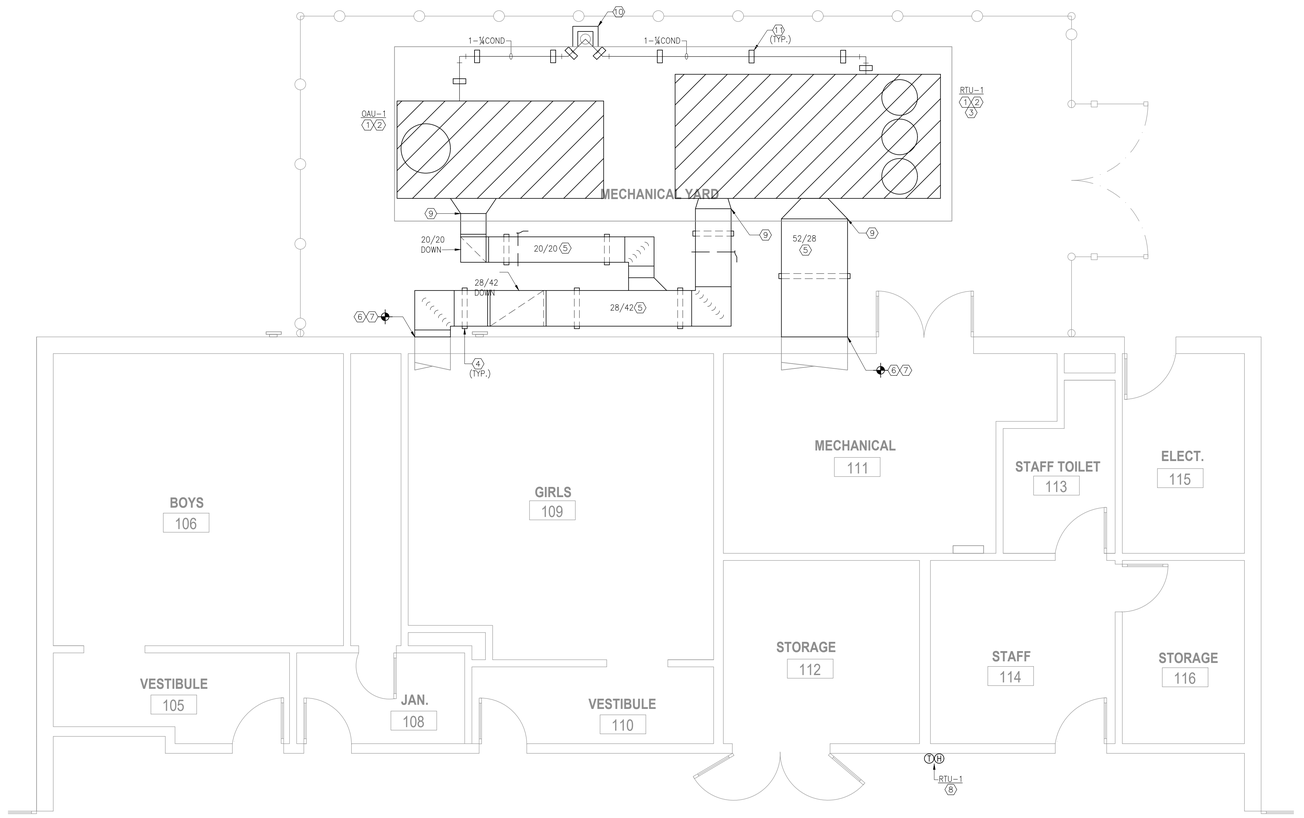
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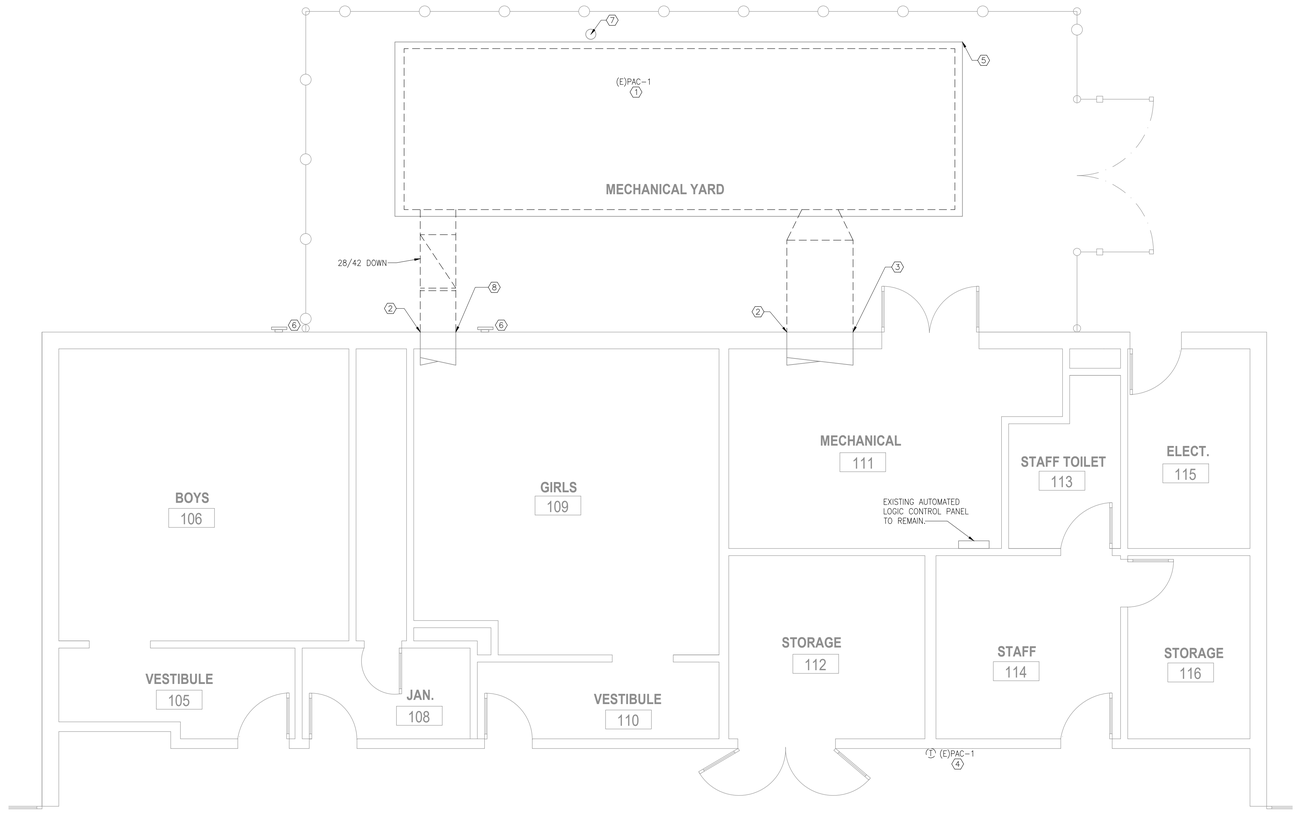
BRADLEY KALMANS
60219
LICENSED
PROFESSIONAL ENGINEER
01-19-2022

PLUMBING FLOOR PLANS - ODOM MS

P1.01



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



1 **MECHANICAL DEMOLITION FLOOR PLAN - VINCENT MS**
SCALE: 1/4" = 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 CLEARANCE FOR AIR FILTER, FAN SHAFT, AND COIL REMOVAL WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.
2. ROUTE FULL SIZE CONDENSATE DRAIN PIPE TO EXISTING OUTDOOR HUB DRAIN AS INDICATED. INSTALL TRAP AS RECOMMENDED BY MANUFACTURER.
3. PROVIDE GROUND MOUNTED ROOFTOP UNIT WITH 4'-0" SUPPLY AND RETURN AIR DISCHARGE CURB.
4. PROVIDE MODEL PHP-D DUCT SUPPORT. REFER TO SPECIFICATIONS.
5. ALL OUTDOOR DUCTWORK SHALL BE DOUBLE WALL CONSTRUCTION. PAINT OUTDOOR DUCTWORK WITH TWO COATS OF EPOXY PAINT. COORDINATE COLOR WITH SCHOOL DISTRICT.
6. ROUTE NEW DOUBLE WALL DUCTWORK AS INDICATED AND CONNECT TO EXISTING.
7. REUSE EXISTING WALL OPENING.
8. PROVIDE THERMOSTAT AND HUMIDITY SENSOR WITH STEEL VENTED LOCKABLE COVER.
9. TRANSITION DUCTWORK TO CONNECT TO GROUND MOUNTED ROOFTOP OPENING.
10. REFER TO PLUMBING DRAWINGS FOR DRAIN CURB INFORMATION.
11. PROVIDE PHP MODEL SS8-C EVERY 6'-0" ON CENTER AND AT EACH CHANGE IN DIRECTION.

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 AND CONTROL DEVICES.

DEMOLITION KEYED NOTES:

1. REMOVE EXISTING PACKAGED DEHUMIDIFICATION UNIT, CONTROLS AND ALL ASSOCIATED APPURTENANCES.
2. REMOVE EXISTING OUTDOOR DUCTWORK UP TO EXTERIOR WALL AS INDICATED. CONTRACTOR SHALL PRESERVE REMAINING DUCTWORK DURING DURATION OF CONSTRUCTION.
3. CONTRACTOR SHALL PRESERVE EXISTING OPENING DURING DURATION OF CONSTRUCTION. OPENING IS LOW ON WALL.
4. REMOVE EXISTING THERMOSTAT AND CONTROL WIRE IN ITS ENTIRETY.
5. EXISTING CONCRETE HOUSEKEEPING PAD TO REMAIN.
6. EXISTING EXHAUST WALL CAP TO REMAIN.
7. EXISTING OUTDOOR FLOOR DRAIN TO REMAIN AND BE REUSED.
8. CONTRACTOR SHALL PRESERVE EXISTING OPENING DURING DURATION OF CONSTRUCTION. OPENING IS HIGH ON WALL.

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

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Checked By: SH
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CONSULTANTS

MEP ENGINEERS

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

SALAS O'BRIEN | expect a difference |
10930 W. Sam Houston Parkway N., Suite 900
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281.664.1900 | Registration No. F-4111
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MECHANICAL FLOOR PLANS - VINCENT MS

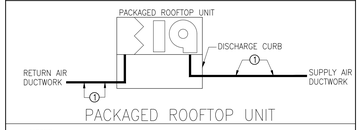
M1.01

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	
—D—	CONDENSATE DRAIN LINE
—AD—	AUXILLARY CONDENSATE DRAIN LINE
—RLR—	REFRIGERANT LIQUID & GAS RECIRCULATION LINE (TOTAL OF TWO PIPES, ONLY ONE PIPE SHOWN FOR DRAWING CLARITY)
—RL—	REFRIGERANT LIQUID LINE
—HG—	REFRIGERANT HOT GAS LINE
—RS—	REFRIGERANT SUCTION LINE
—HO	ELBOW UP
—HD	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)
	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

MS03

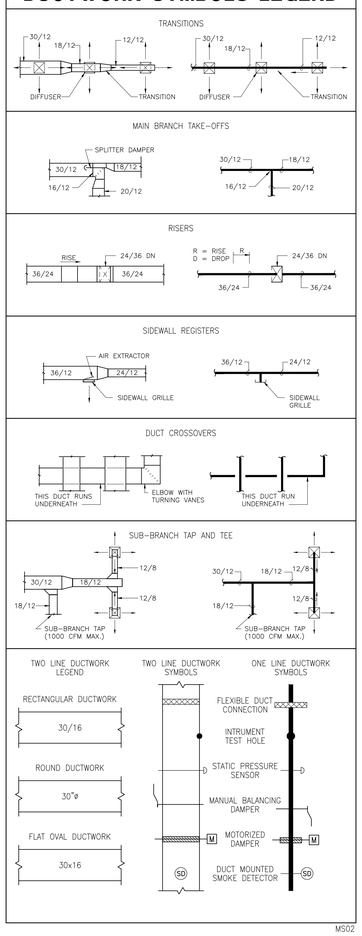
DUCT LINER AND INSULATION



NOTES
① ALL OUTSIDE DUCTWORK SHALL BE DOUBLE WALL CONSTRUCTION WITH TWO COATS OF EPOXY PAINT. REFER TO SPECIFICATIONS FOR MORE DETAILS.

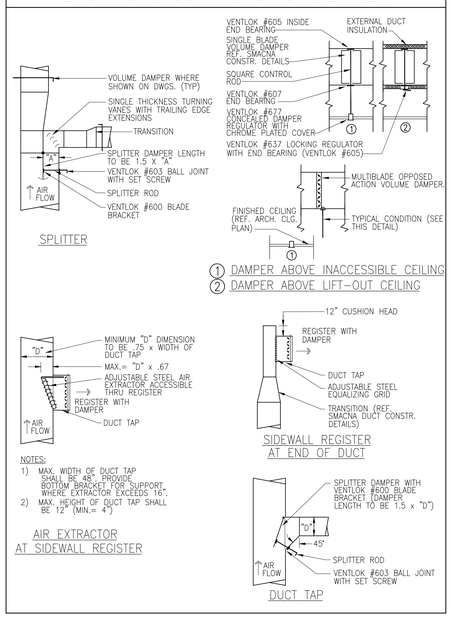
MS04

DUCTWORK SYMBOLS LEGEND



MS02

DUCTWORK CONSTRUCTION DETAILS



PACKAGED GROUND MOUNTED ROOFTOP UNIT - GAS HEAT

MARK	INDOOR AIR FAN				ELECTRICAL REQUIREMENTS			COOLING						GAS HEATING			REMARKS	BASIS OF DESIGN	MODEL NUMBER
	SUPPLY AIR CFM	OUTSIDE AIR CFM	EXT. STATIC PRESSURE (IN. W.C.)	HORSE POWER	V/PH/H	MCA	MOCP	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 (%)			
RTU-1	12,000	3,000	1.0	15	480/3/60	87.0	100.0	75.0	62.5	95	332.12	278.74	10.2/-	68.0	240.0	80	(1-15)	DAIKIN	MPS030F

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 UNIT WITH LOW AMBIENT CONTROL.
2. PROVIDE A STAINLESS STEEL GAS HEAT EXCHANGER.
3. PROVIDE UNIT WITH DISCONNECT SWITCH.
4. PROVIDE UNIT WITH A FIELD INSTALLED SPACE TEMPERATURE AND HUMIDITY SENSOR.
5. PROVIDE WITH UNIT POWERED GFCI RECEPTACLE.
6. PROVIDE UNIT WITH A WATER LEVEL SENSING DEVICE IN THE PRIMARY DRAIN PAN. DEVICE SHALL SHUT OFF THE UNIT IN THE EVENT THE PRIMARY DRAIN LINE BECOMES RESTRICTED.
7. PROVIDE WITH MODULATING HOT GAS REHEAT TO NEUTRAL CONDITIONS OF 72°F.
8. PROVIDE WITH DISCHARGE AIR TEMPERATURE SENSOR.
9. UNIT SHALL MAINTAIN SPACE TEMPERATURE AND HUMIDITY.
10. PROVIDE WITH VARIABLE SPEED COMPRESSORS AND VARIABLE SPEED FANS.
11. PROVIDE WITH MODULATING GAS HEAT CONTROL.
12. PROVIDE COATING FOR CONDENSER AND EVAPORATOR COILS. REFER TO SPECIFICATIONS.
13. VELOCITY NOT TO EXCEED 500 FPM ON COOLING COIL.
14. PROVIDE UNIT WITH 4'-0" CURB EXTENSION.
15. UNIT SHALL BE FACTORY PROGRAMMED TO OPERATE AS A SINGLE ZONE VAV UNIT.

100 PERCENT OA PACKAGED GROUND MOUNTED ROOFTOP UNIT - GAS HEAT

MARK	INDOOR AIR FAN				ELECTRICAL REQUIREMENTS			COOLING						GAS HEATING			REMARKS	BASIS OF DESIGN	MODEL NUMBER
	SUPPLY AIR CFM	OUTSIDE AIR CFM	EXT. STATIC PRESSURE (IN. W.C.)	HORSE POWER	V/PH/H	MCA	MOCP	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-1	3,000	3,000	1.0	2.0	480/3/60	50.3	70	98.0	80.0	95	264.86	143.38	10.1/-	27.0	140.0	80	(1-9)	DAIKIN	DPS020A

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 A STAINLESS STEEL GAS HEAT EXCHANGER.
2. PROVIDE UNIT WITH DISCONNECT SWITCH.
3. PROVIDE WITH UNIT POWERED GFCI RECEPTACLE.
4. PROVIDE UNIT WITH A WATER LEVEL SENSING DEVICE IN THE PRIMARY DRAIN PAN. DEVICE SHALL SHUT OFF THE UNIT IN THE EVENT THE PRIMARY DRAIN LINE BECOMES RESTRICTED.
5. PROVIDE WITH DISCHARGE AIR TEMPERATURE SENSOR.
6. PROVIDE WITH MODULATING GAS HEAT CONTROL.
7. PROVIDE COATING FOR CONDENSER AND EVAPORATOR COILS. REFER TO SPECIFICATIONS.
8. VELOCITY NOT TO EXCEED 450 FPM ON COOLING COIL.
9. PROVIDE UNIT WITH A LEAVING AIR TEMPERATURE OF 54.3°F DRY BULB AND 54.3 WET BULB.

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

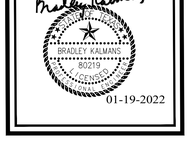
DS01

Project No: 2429-2020-02336
Drawn By: BB
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Revision Dates:

CONSULTANTS
MEP ENGINEERS
SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912
SALAS O'BRIEN | expect a difference
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
Project No. 2429-2020-02336-00

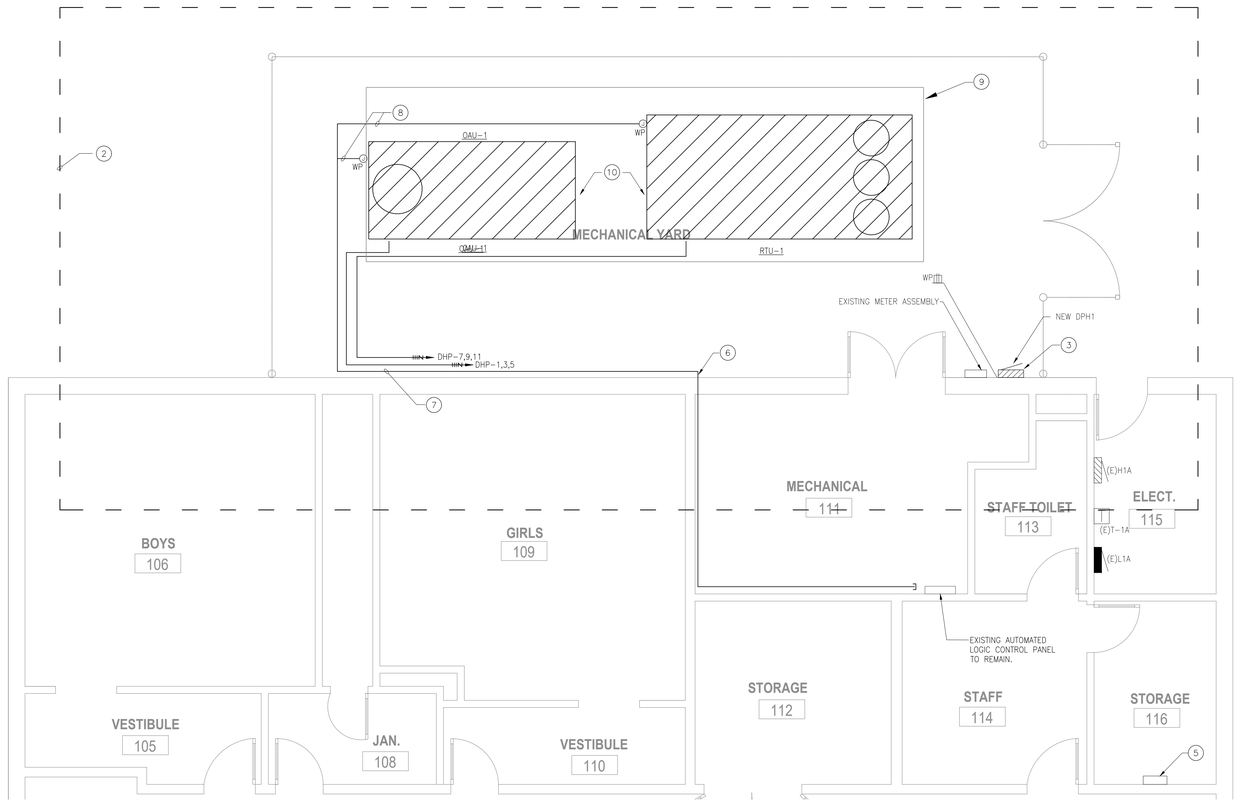
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VINCENT MIDDLE SCHOOL

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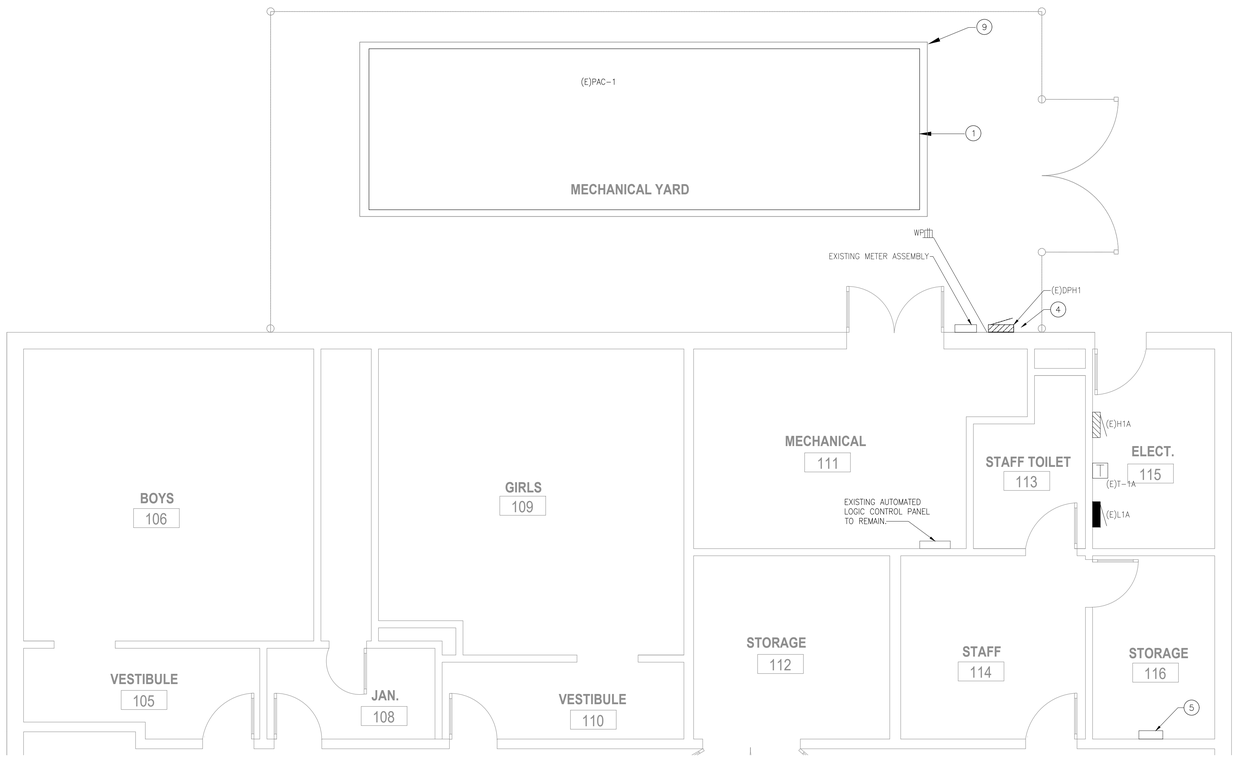


MECHANICAL DETAILS, LEGENDS, AND SCHEDULES - VINCENT MS

M2.01



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



NORTH 1 **ELECTRICAL DEMOLITION FLOOR PLAN - VINCENT MS**
SCALE: 1/4" = 1'-0"

EXISTING TO REMAIN
EXISTING TO BE REMOVED

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.

ELECTRICAL KEYED NOTES:

1. DISCONNECT EXISTING EQUIPMENT REMOVE EXISTING WIRES AND CAP EXISTING CONDUIT. REMOVE EXISTING DUCT SMOKE DETECTORS FOR PAC-1.
2. ALL NEW ELECTRICAL FEEDING SHALL BE ROUTED ABOVE GRADE. ROUTE TO AVOID CREATING TRIPPING HAZARDS. FIELD COORDINATE EXACT ROUTING WITH OWNER/ENGINEER.
3. LOCATE NEW PANEL ABOVE EXISTING RECEPTACLE AND LOCATE AS CLOSE AS POSSIBLE TO CT ENCLOSURE.
4. REMOVE EXISTING PANEL DPH1 AND EXISTING WIRE AND CONDUIT TO THE CT ENCLOSURE.
5. EXISTING FIRE ALARM PANEL TO REMAIN.
6. STUB UP AND PENETRATE BUILDING. COORDINATE FINAL ROUTING AND BUILDING WALL PENETRATION LOCATION WITH OWNER.
7. (2)1"C. ROUTE ALONG WALL AND ABOVE CEILING WHERE POSSIBLE TO MINIMIZE TRIPPING HAZARDS.
8. 1"C. FOR CONTROL WIRING.
9. EXISTING CONCRETE HOUSEKEEPING PAD TO REMAIN.
10. PROVIDE NEW DUCT SMOKE DETECTORS.

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.

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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CONSULTANTS
MEP ENGINEERS
SALAS O'BRIEN
10930 W. SAM HOUSTON PKWY N., SUITE 900
HOUSTON, TX 77064
OFFICE: 281-664-1900
FAX: 281-664-1912
SALAS O'BRIEN | expect a difference
10930 W. Sam Houston Parkway N., Suite 900
Houston, Texas 77064
281.664.1900 | Registration No. F-4111
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BRADLEY KALMANS 80219 LICENSED PROFESSIONAL ENGINEER
01-19-2022

ELECTRICAL FLOOR PLANS - VINCENT MS

E1.01

NEW PANEL 'DPH1' 277/480V.,3PH.,4W. MOUNTING: SURFACE NEMA-3R
LOCATION: MECHANICAL YARD 250 AMP MCB 18 K ISCA

CKT	LOAD	KVA	WIRE	BKR		BKR	WIRE	KVA	LOAD	CKT
1	OAU-1	41.9	#4	70/3		100/3	#2	24	H1A	2
3	- - -	-	-	-		-	-	-	- - -	4
5	- - -	-	-	-		-	-	-	- - -	6
7	RTU-1	72.4	#2	100/3		-	-	-	SPACE	8
9	- - -	-	-	-		-	-	-	SPACE	10
11	- - -	-	-	-		-	-	-	SPACE	12
13	SPACE	-	-	-		-	-	-	SPACE	14
15	SPACE	-	-	-		-	-	-	SPACE	16
17	SPACE	-	-	-		-	-	-	SPACE	18
19	SPACE	-	-	-		-	-	-	SPACE	20
21	SPACE	-	-	-		-	-	-	SPACE	22
23	SPACE	-	-	-		-	-	-	SPACE	24
25	SPACE	-	-	-		30/3	#10	-	SPD	26
27	SPACE	-	-	-		-	-	-	- - -	28
29	SPACE	-	-	-		-	-	-	- - -	30

EXISTING LOAD x 1.25 = 30 KVA
MISC. LOAD x 1.0 = 114.3 KVA
TOTAL KVA = 144.3 KVA

SPD:CGC50

DPH1 LOAD ANALYSIS
480/277V, 3PH, 4W.

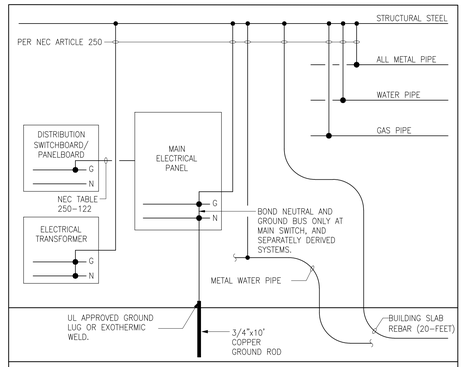
LOAD DESCRIPTION	LOAD KVA
LOAD TO REMAIN x 1.25	30
NEW HVAC - FANS, AHU'S	114.3
NEW 25% LARGEST MOTOR (60HP)	18.1
NEW MISCELLANEOUS	0
TOTAL	162.4

$162.4 / 480*3^{1/2} = 195$ AMPS
EXISTING 250 AMPS SERVICE

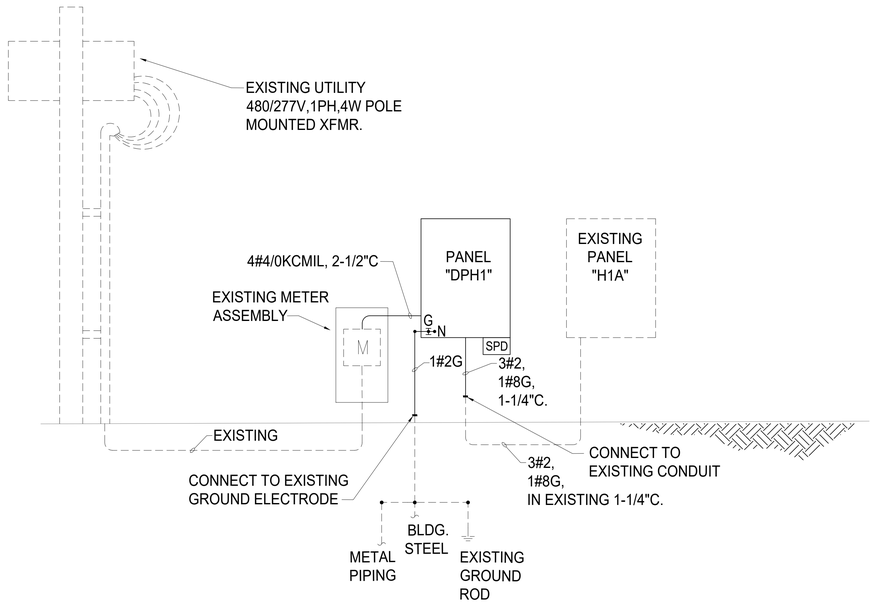
SYMBOL LEGEND

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
#12	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



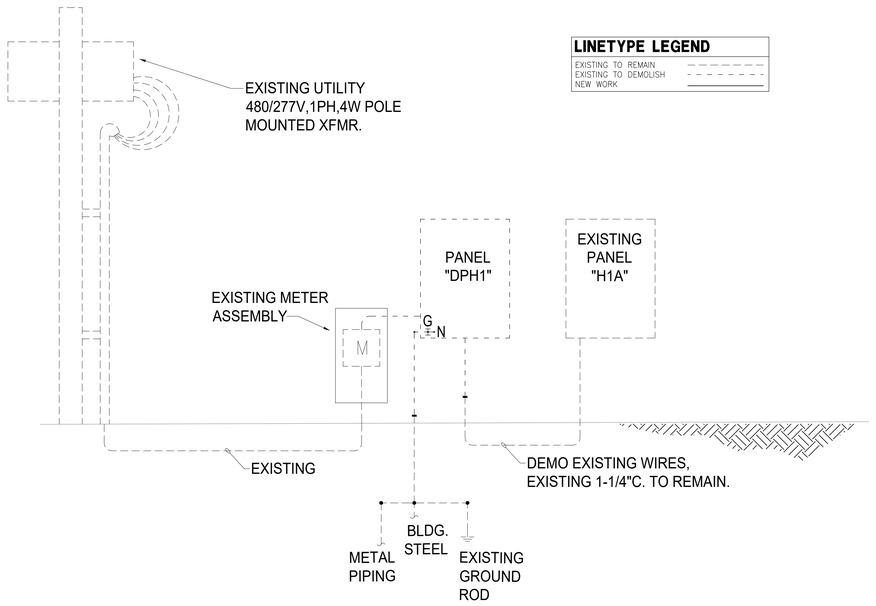
2 **GROUNDING DETAIL**
SCALE: NONE



2 **ELECTRICAL NEW ONE-LINE DIAGRAM**
SCALE: NONE

LINETYPE LEGEND

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



1 **ELECTRICAL DEMO ONE-LINE DIAGRAM**
SCALE: NONE

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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
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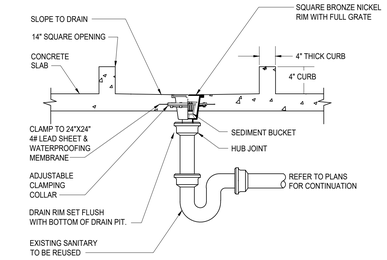
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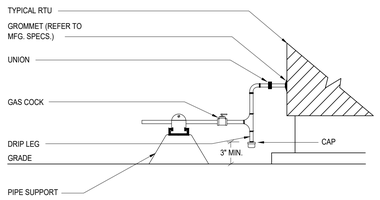
ELECTRICAL DETAILS, LEGENDS, AND SCHEDULES - VINCENT MS

E2.01



6 DRAIN WITH CONCRETE CURB

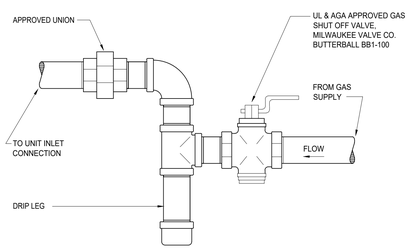
SCALE: NONE



NOTES:
1. MAINTAIN 3" MIN. CLEARANCE FOR DRAINING OF DRIP LEG.

5 GAS CONNECTION AT MECHANICAL UNIT

SCALE: NONE

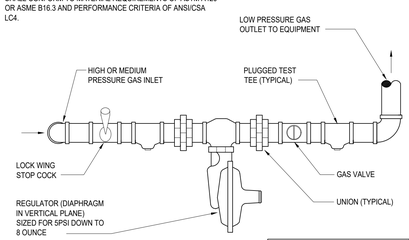


4 GAS CONNECTION

SCALE: NONE

PROVIDE AMERICAN METER COMPANY REGULATORS OR APPROVED EQUAL, SUITABLE FOR OUTDOOR INSTALLATION. REGULATORS OUTSIDE EXPOSED TO WEATHER SHALL BE INSTALLED WITH VENT IN VERTICAL DOWN POSITION.

SHALL CONFORM TO MATERIAL REQUIREMENTS OF ASTM A420 OR ASME B16.3 AND PERFORMANCE CRITERIA OF ANSI/CSA LC4.

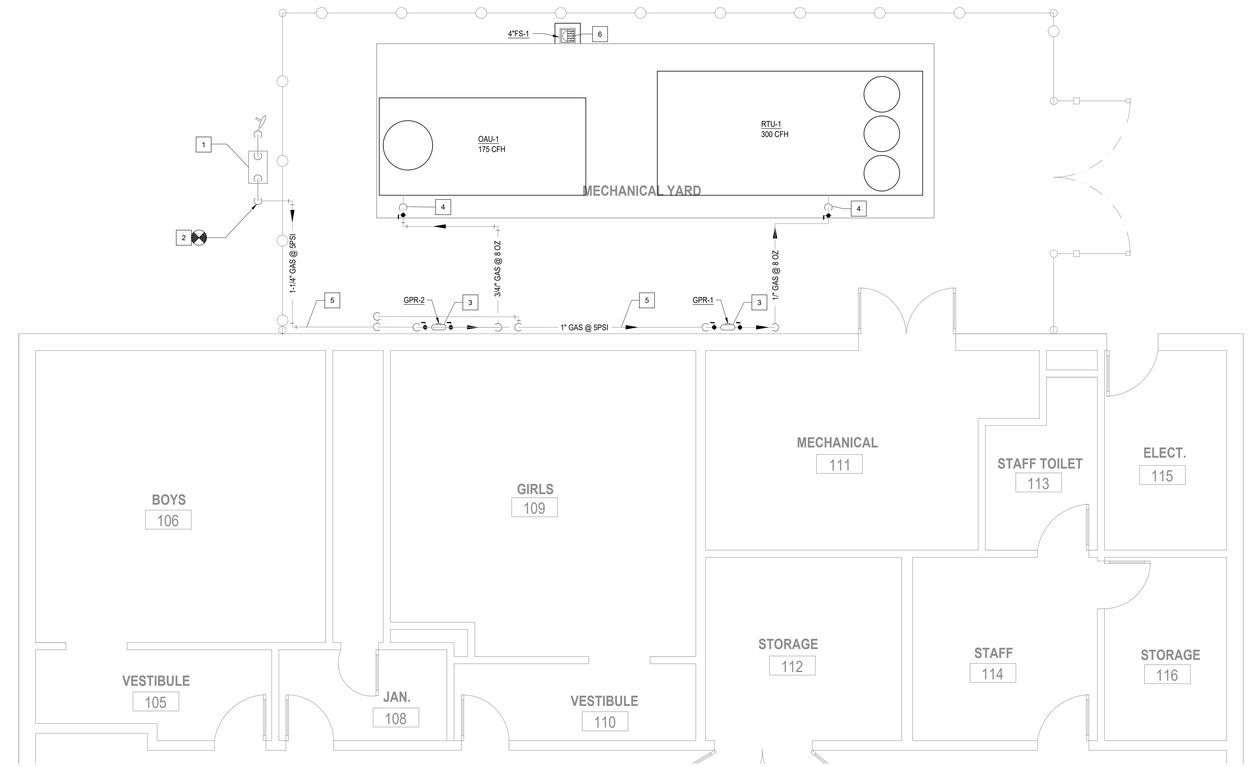


NOTE: REFERENCE DRAWINGS FOR PIPE SIZES.

NOTE:
ENSURE GAS PRESSURE REGULATOR LOCATED CLEAR OF OUTSIDE AIR INTAKE ACCORDING TO JURISDICTION HAVING AUTHROITY. LOCATE GPR MINIMUM 10FT FROM RTU

3 GAS PRESSURE REGULATOR INSTALLATION

SCALE: NONE



NORTH

2 PLUMBING FLOOR PLAN - VINCENT MS

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

PLUMBING 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. PLUMBING CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL AND ELECTRICAL CONTRACTOR FOR ALL REQUIRED CLEARANCES.

PLUMBING KEYED NOTES:

1. EXISTING GAS METER AND REGULATOR SET AT 5PSI TO REMAIN. ADJUST LOAD TO PROVIDE A NEW DEMAND OF 475 CFH.
2. CONNECT NEW 1-1/4" GAS AT 5PSI TO EXISTING 1-1/4" GAS.
3. PROVIDE NEW GAS REGULATOR SIZED FOR 5PSI TO 8OZ.
4. CONNECT GAS PIPING TO EQUIPMENT WITH UNION AND PLUG VALVE. REFER TO THIS SHEET FOR DETAIL.
5. GAS LINE ROUTED ON GRADE. PROVIDE PIPE SUPPORTS PLACED AT 10 FOOT SPANS MAXIMUM AND EVERY CHANGE OF DIRECTION (4 FT. FROM ELBOWS).
6. PROVIDE NEW 4" FLOOR SINK. CONNECT TO EXISTING SANITARY PIPING PENETRATING GRADE. FLOOR SINK TO BE MOUNTED FLUSH WITH CONCRETE. PROVIDE 4" CONCRETE CURB AROUND THE FLOOR SINK. EXISTING DRAIN PIPING SHALL BE CLEARED OF ALL DEBRIS TO ENSURE PROPER DRAINAGE.

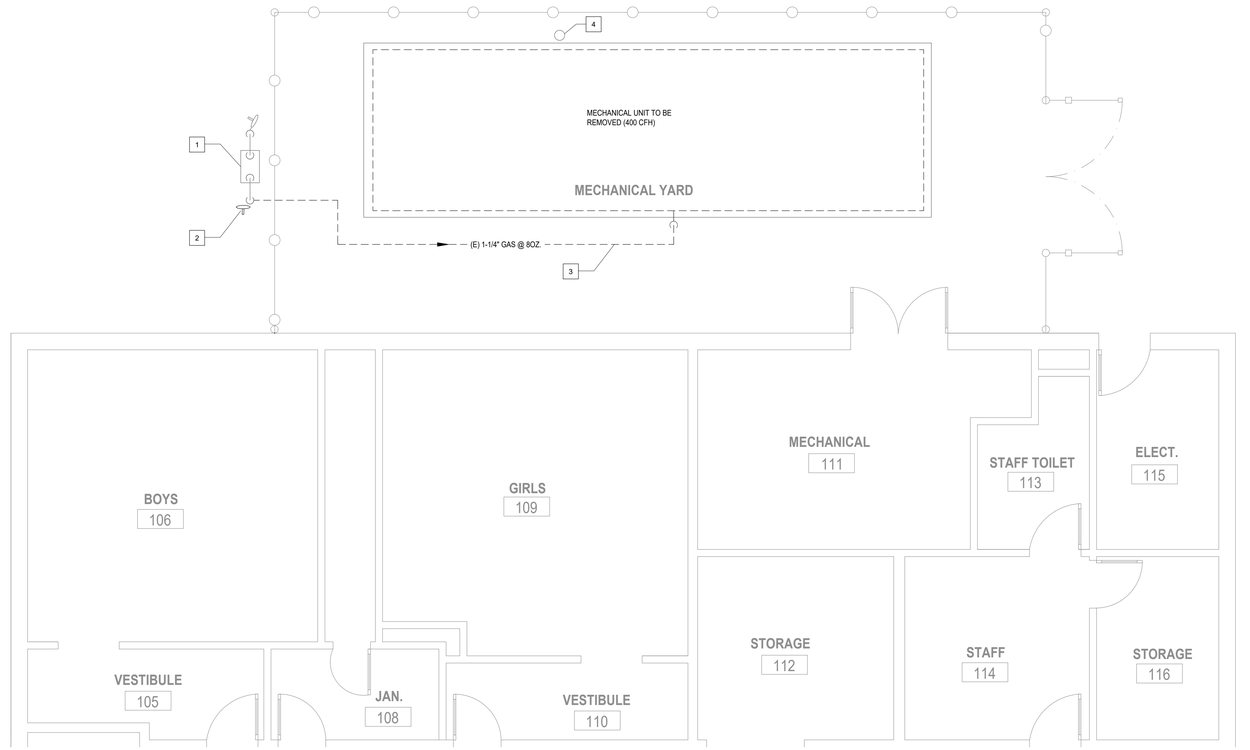
GAS EQUIPMENT

EQUIPMENT NUMBER	DESCRIPTION	BTU PER HOUR LOAD	TOTAL BTU PER HOUR	TOTAL CFH
OAU-1	NEW MECHANICAL UNIT	175,000 BTUH	175,000 BTUH	175 CFH
RTU-1	NEW MECHANICAL UNIT	300,000 BTUH	300,000 BTUH	300 CFH
TOTALS:			475,000 BTUH	475 CFH

GAS PRESSURE REGULATORS

ITEM NO.	DESCRIPTION	LOCATION	SERVES	CFH	INLET PRESSURE/ OUTLET PRESSURE
GPR-1	GAS PRESSURE REGULATOR	SERVICE YARD	RTU-1	300	5 PSI - INLET 8 OZ. - OUTLET
GPR-2	GAS PRESSURE REGULATOR	SERVICE YARD	OAU-1	140	5 PSI - INLET 8 OZ. - OUTLET

GENERAL NOTES:
1. MAINTAIN MINUMUM 10'-0" CLEARANCE BETWEEN REGULATOR VENTS AND OUTSIDE AIR INTAKES.
2. GAS PRESSURE REGULATORS INSIDE THE BUILDING ARE TO BE VENTED TO ATMOSPHERE IN ACCORDANCE WITH ALL AUTHORITIES HAVING JURISDICTION.



NORTH

1 PLUMBINGL DEMOLITION FLOOR PLAN - VINCENT MS

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

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 PLUMBING SYSTEMS SHOWN ON THIS PLAN ARE FROM EXISTING DRAWINGS AND PRELIMINARY FIELD WORK. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL LOCATIONS AND SIZES OF PLUMBING SYSTEMS PRIOR TO THE START OF WORK.
3. OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL PLUMBING EQUIPMENT BEING REMOVED FROM THIS PROJECT. THIS INCLUDES BUT NOT LIMITED TO PIPING, REGULATORS AND VALVES.
4. EXISTING GAS METER SERVICE TO REMAIN UNINTERRUPTED DURING CONTRUCTION.

DEMOLITION KEYED NOTES:

1. EXISTING GAS METER AND REGULATOR SET AT 5PSI TO REMAIN. EXISTING LOAD OF 400 CFH TO BE REMOVED.
2. EXISTING 5PSI TO 8OZ GAS REGULATOR SIZED AT 400 CFH TO BE REMOVED.
3. EXISTING 1-1/4" GAS PIPING (400 CFH) TO BE REMOVED.
4. EXISTING PIPE DRAIN TO REMAIN AND BE REUSED. SEE NEW FLOOR PLAN.

PLUMBING FIXTURE SPECIFICATIONS

TYPE: FS-1
SERVICE: MECHANICAL CONDENSATE
DESCRIPTION: A.R.C. COATED CAST IRON BODY 12" SQUARE FLOOR SINK WITH 8" DEEP SUMP, LOOSE SET CAST IRON SECONDARY STRAINER, CLAMPING DEVICE WITH STAINLESS STEEL FULL TOP GRATE. BOTTOM OUTLET WITH 1/2" TRAP PRIMER CONNECTION (CAPPED). WADE 9140-6-26-85.
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.

Project No: 2429-2020-02336
Drawn By: VU
Checked By: KBG
Date: 01-19-2022
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
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. 2429-2020-02336-00

BEAUMONT ISD
HVAC UPGRADES PART ONE
VINCENT MIDDLE SCHOOL

BEAUMONT INDEPENDENT SCHOOL DISTRICT
BISD Preparing Our Next Generation

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01-19-2022

PLUMBING FLOOR PLANS - VINCENT MS

P1.01