Blinn Bldg A and G | 100% CD

2598 Blinn Blvd, Texas 77802 | December 13, 2024 | Project Number 21055

BLINN
COLLEGE DISTRICT®

Mechanical:

M0.0 Mechanical Symbols and Abbreviations
MD1.1 Mechanical Demolition Plan - Second Floor - Building A
MD1.2 Mechanical Demolition Plan - Mech Room - Building G
M1.1 Mechanical New Work Plan - First Floor - Building A
M1.2 Mechanical New Work Plan - Second Floor - Building A
M1.3 Mechanical New Work Plan - Mech Room - Building G
M3.1 Mechanical Schedules
M4.1 Mechanical Controls
M4.2 Mechanical Controls
M5.1 Mechanical Details
M5.2 Mechanical Details

Electrical:

E0.0 Electrical Symbols and Abbreviations
ED2.1 Demolition Power Plan - Second Floor - Building A
E2.1 Electrical Power Plan - First Floor - Building A
E2.2 Electrical Mechanical Power Plan - Second Floor - Building A

MECHANICAL, PLUMBING AND ELECTRICAL ENGINEERS
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12/13/2024

BLINN BUILDINGS A & G
2598 BLINN BLVD
BRYAN, TEXAS 77802

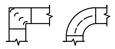
Drawn
Checked
Date 13 DECEMBER 2024
CZE Project No. 240566
Revisions

SHEET TITLE
TITLE SHEET

SHEET NO.
T0.0

MECHANICAL/REFRIGERATION SYMBOLS AND ABBREVIATIONS

NOTE: SELDOM ARE ALL SYMBOLS AND ABBREVIATIONS USED IN THE DRAWINGS; REFERENCE ONLY THOSE THAT ARE APPLICABLE.

SYMBOL	DESCRIPTION
	DUCT SIZE FIRST FIGURE IS SIDE SHOWN
	DUCT SECTION, POSITIVE PRESSURE, FIRST FIGURE IS TOP
	DUCT SECTION, NEGATIVE PRESSURE, FIRST FIGURE IS TOP
	CHANGE OF ELEVATION - UP OR DOWN
	DEMOLITION DUCTWORK
	EXISTING DUCT TO REMAIN
	FLEXIBLE DUCT
	MANUAL VOLUME DAMPER
	FIRE DAMPER (W/ ACCESS DOOR) SD=SMOKE DAMPER; SFD=SMOKE/FIRE DAMPER
	SPLITTER DAMPER (WITH DIMENSION AS NEEDED)
	DETECTORS, FIRE AND/OR SMOKE
	DUCT TRANSITION
	ELBOWS WITH TURNING VANES
	BRANCH DUCT WITH HEEL TAP AND DAMPERS (RETURN DUCT FLOW IS REVERSE)
	SUPPLY GRILLE OR REGISTER, SIDEWALL TYPE "A", 200 CFM.
	AIR DEVICE TYPE "A", 300 CFM
	AIR DEVICE TYPE "A", 300 CFM
	LINEAR SLOT DEVICE TYPE "A", 200 CFM
	RETURN/EXHAUST DEVICE TYPE "A"
	RETURN/EXHAUST GRILLE OR REGISTER, SIDEWALL, DEVICE TYPE "A"
	KEY NOTES
	MECHANICAL EQUIPMENT MARK
	THERMOSTAT/TEMPERATURE SENSOR
VAV-1	EXISTING MECHANICAL EQUIPMENT MARK
GR-1	PLUMBING EQUIPMENT MARK

SYMBOL	DESCRIPTION
	CALIBRATED BALANCING VALVE
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE
	TEMPERATURE AND PRESSURE RELIEF VALVE
	THREE WAY VALVE (AUTOMATIC)
	TWO WAY VALVE (AUTOMATIC)
	FLOW SWITCH
	STRAINER, WYE WITH DRAIN VALVE
	GLOBE VALVE
	BUTTERFLY VALVE
	HOSE VALVE (UTILITY PURPOSES)
	SWING CHECK VALVE
	NEW TO EXISTING CONNECTION
CWS	CHILLED WATER SUPPLY
CWR	CHILLED WATER RETURN
RL	REFRIGERANT LIQUID LINE
RS	REFRIGERANT SUCTION LINE
	NON-SLAM CHECK VALVE
	BALL VALVE
	FLOW - IN DIRECTION OF ARROW
	RISER DOWN (ELBOW)
	RISER UP (ELBOW)
	RISE OR DROP
	BRANCH CONNECTION OUT OF TOP
	BRANCH CONNECTION OUT OF BOTTOM
	BRANCH CONNECTION OUT OF SIDE
	CAP ON END OF PIPE
	NATURAL GAS REGULATOR

ABBREVIATION	DESCRIPTION
ABV	ABOVE
AFF	ABOVE FINISHED FLOOR
AV	AIR VENT
BF	BELOW FLOOR
BHP	BRAKE HORSEPOWER
BTU	BRITISH THERMAL UNIT
CFM	CUBIC FEET PER MINUTE
CLG	CEILING
CONNX/CONX.	CONNECTION
CONT	CONTINUATION
℄	CENTERLINE
CW	CHILLED WATER
DB	DRYBULB
DN	DOWN
DWG	DRAWING
EAT	ENTERING AIR TEMPERATURE
ELECT	ELECTRICAL
ELEV	ELEVATION
ENT	ENTERING
EXIST	EXISTING
F	FAHRENHEIT
FD	FLOOR DRAIN OR FIRE DAMPER
FT	FEET
GAL	GALLON(S)
GALV	GALVANIZED
GPM	GALLONS PER MINUTE
HB	HOSE BIBB
HP	HORSEPOWER
HTR	HEATER
H2O	WATER
HW	HOT WATER
HZ	HERTZ
INV	INVERT
IN	INCHES
LAT	LEAVING AIR TEMPERATURE
MAX	MAXIMUM
MECH	MECHANICAL
MIN	MINIMUM
MOBD	MOTORIZED OPPOSED BLADE DAMPER
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OH	OVERHEAD
PD	PRESSURE DROP
PLBG	PLUMBING
PRESS	PRESSURE
PSI	POUNDS PER SQUARE INCH, GAUGE
PVC	POLYVINYL CHLORIDE
RA	RETURN AIR
REFRIG.	REFRIGERATION
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SHT	SHEET
SP	STATIC PRESSURE
SPEC	SPECIFICATION
T/A	THROW AWAY (FILTERS)
TEMP	TEMPERATURE
TSH	TOTAL SENSIBLE HEAT
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRITER'S LABORATORIES
V	VENT
VTR	VENT THRU ROOF
WB	WET BULB
W/	WITH
W/O	WITHOUT

COMMISSIONING PLAN

A THIRD PARTY WILL BE RETAINED FOR PRE-COMMISSIONING AND COMMISSIONING SERVICES.

SYSTEM TO BE COMMISSIONED ARE HVAC AIR SYSTEMS (WHERE APPLICABLE) AND BUILDING AUTOMATION SYSTEMS.

REFER TO SPECIFICATION SECTIONS 019100 AND 230800 FOR ADDITIONAL REQUIREMENTS.

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SHEET TITLE
MECHANICAL SYMBOLS AND ABBREVIATIONS

SHEET NO.
M0.0

DEMOLITION KEYED NOTES:

1. DEMOLISH EXISTING MAU-C. CONTRACTOR TO COORDINATE SYSTEM SHUTDOWN WITH OWNER.
2. DEMOLISH EXISTING MAU-C STARTER. REFER TO ELECTRICAL FOR ELECTRICAL DEMOLITION REQUIREMENTS.
3. DEMOLISH EXISTING MAU-C WRAP-A-ROUND COIL PIPING AND ASSOCIATED TANKS AND PUMPS.
4. EXISTING OUTSIDE AIR DUCT TO REMAIN.
5. EXISTING SUPPLY AIR DUCT TO REMAIN.
6. EXISTING CHW PIPING TO REMAIN.
7. EXISTING HW PIPING TO REMAIN.
8. DEMOLISH EXISTING SUPPLY DUCT UP TO POINT INDICATED.
9. DEMOLISH EXISTING CHW PIPING FROM UNIT CONNECTION UP TO SHUTOFF VALVE.
10. DEMOLISH EXISTING HW PIPING FROM UNIT CONNECTION UP TO SHUTOFF VALVE.
11. EXISTING FCU TO REMAIN.
12. EXISTING BUILDING RELIEF DUCT TO REMAIN.
13. DEMOLISH EXISTING MAU-C CONTROLS CABLING AND ASSOCIATED SENSORS.

GENERAL DEMOLITION NOTES:

1. GENERAL: EXCEPT FOR ITEMS OR MATERIALS INDICATED TO BE REUSED, SALVAGED, REINSTALLED, OR OTHERWISE INDICATED TO REMAIN OWNER'S PROPERTY, REMOVE DEMOLISHED MATERIALS FROM PROJECT SITE AND LEGALLY DISPOSE OF THEM IN AN EPA-APPROVED LANDFILL. DO NOT ALLOW DEMOLISHED MATERIALS TO ACCUMULATE ON-SITE REMOVE FROM OWNER OCCUPIED AREAS DAILY. REMOVE AND TRANSPORT DEBRIS IN A MANNER THAT WILL PREVENT SPILLAGE ON ADJACENT SURFACES AND AREAS.

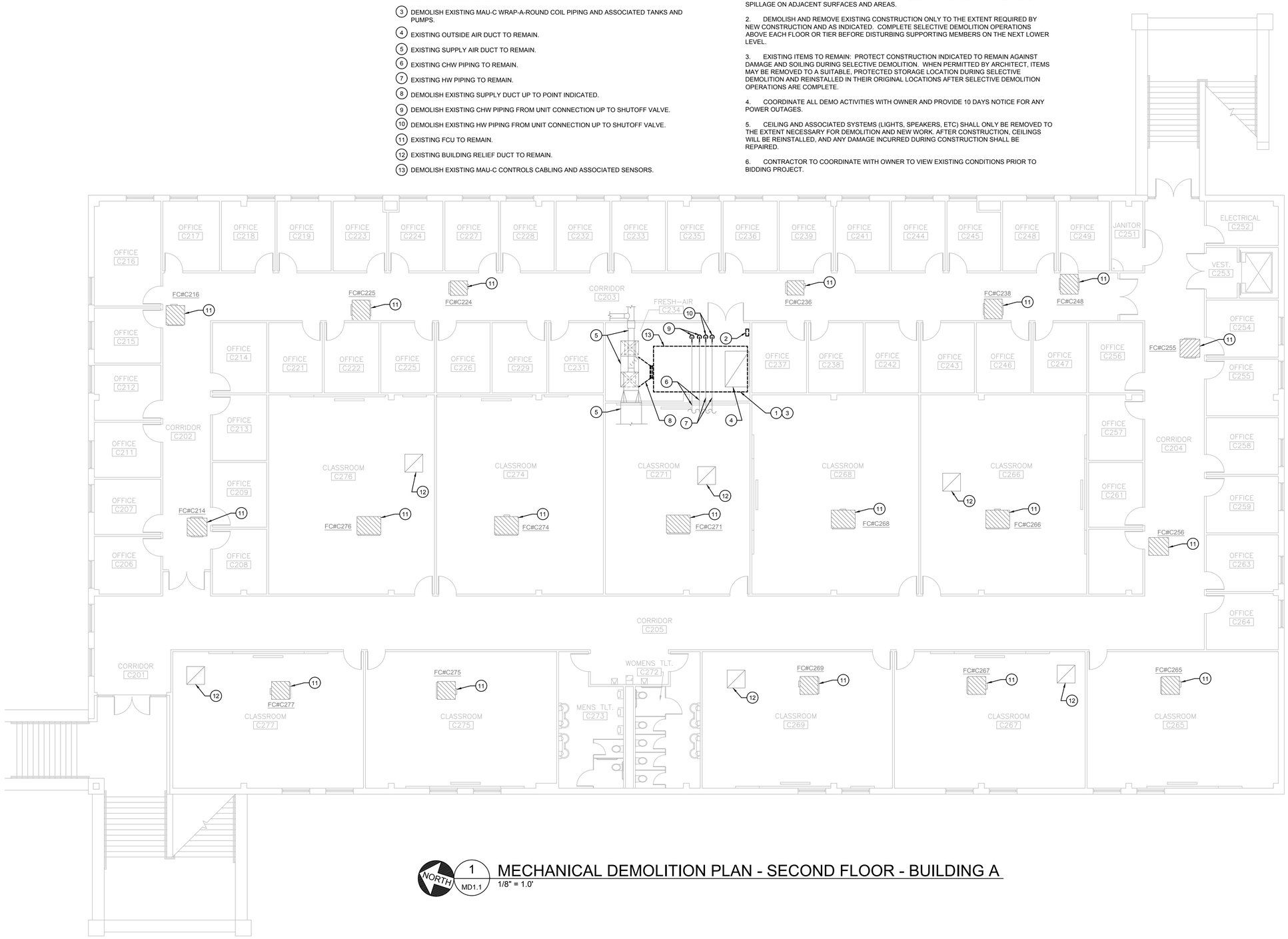
2. DEMOLISH AND REMOVE EXISTING CONSTRUCTION ONLY TO THE EXTENT REQUIRED BY NEW CONSTRUCTION AND AS INDICATED. COMPLETE SELECTIVE DEMOLITION OPERATIONS ABOVE EACH FLOOR OR TIER BEFORE DISTURBING SUPPORTING MEMBERS ON THE NEXT LOWER LEVEL.

3. EXISTING ITEMS TO REMAIN: PROTECT CONSTRUCTION INDICATED TO REMAIN AGAINST DAMAGE AND SOILING DURING SELECTIVE DEMOLITION. WHEN PERMITTED BY ARCHITECT, ITEMS MAY BE REMOVED TO A SUITABLE, PROTECTED STORAGE LOCATION DURING SELECTIVE DEMOLITION AND REINSTALLED IN THEIR ORIGINAL LOCATIONS AFTER SELECTIVE DEMOLITION OPERATIONS ARE COMPLETE.

4. COORDINATE ALL DEMO ACTIVITIES WITH OWNER AND PROVIDE 10 DAYS NOTICE FOR ANY POWER OUTAGES.

5. CEILING AND ASSOCIATED SYSTEMS (LIGHTS, SPEAKERS, ETC) SHALL ONLY BE REMOVED TO THE EXTENT NECESSARY FOR DEMOLITION AND NEW WORK. AFTER CONSTRUCTION, CEILINGS WILL BE REINSTALLED, AND ANY DAMAGE INCURRED DURING CONSTRUCTION SHALL BE REPAIRED.

6. CONTRACTOR TO COORDINATE WITH OWNER TO VIEW EXISTING CONDITIONS PRIOR TO BIDDING PROJECT.



NORTH 1 MD1.1

MECHANICAL DEMOLITION PLAN - SECOND FLOOR - BUILDING A

1/8" = 1.0'

0 5' 10' 20' 30'

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

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MECHANICAL DEMOLITION PLAN - SECOND FLOOR - BUILDING A

SHEET NO.
MD1.1

GENERAL DEMOLITION NOTES:

1. GENERAL: EXCEPT FOR ITEMS OR MATERIALS INDICATED TO BE REUSED, SALVAGED, REINSTALLED, OR OTHERWISE INDICATED TO REMAIN OWNER'S PROPERTY, REMOVE DEMOLISHED MATERIALS FROM PROJECT SITE AND LEGALLY DISPOSE OF THEM IN AN EPA-APPROVED LANDFILL. DO NOT ALLOW DEMOLISHED MATERIALS TO ACCUMULATE ON-SITE REMOVE FROM OWNER OCCUPIED AREAS DAILY. REMOVE AND TRANSPORT DEBRIS IN A MANNER THAT WILL PREVENT SPILLAGE ON ADJACENT SURFACES AND AREAS.

2. DEMOLISH AND REMOVE EXISTING CONSTRUCTION ONLY TO THE EXTENT REQUIRED BY NEW CONSTRUCTION AND AS INDICATED. COMPLETE SELECTIVE DEMOLITION OPERATIONS ABOVE EACH FLOOR OR TIER BEFORE DISTURBING SUPPORTING MEMBERS ON THE NEXT LOWER LEVEL.

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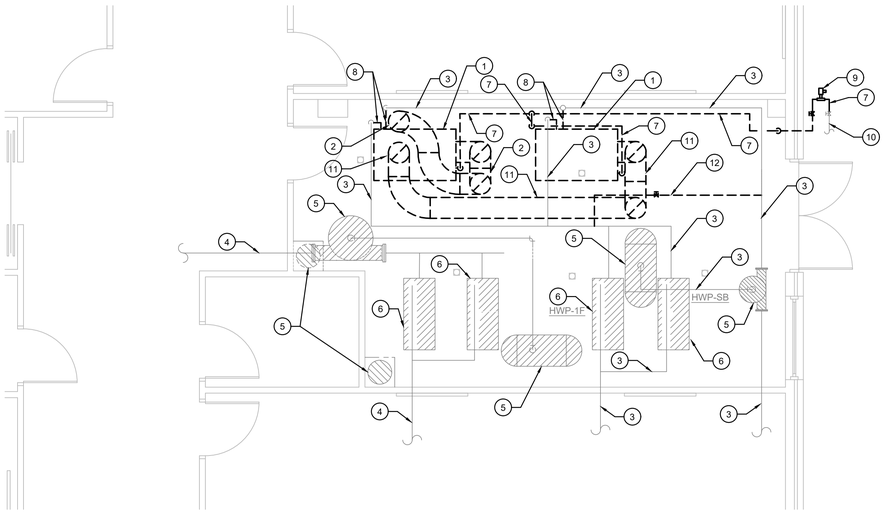
6. CONTRACTOR TO COORDINATE WITH OWNER TO VIEW EXISTING CONDITIONS PRIOR TO BIDDING PROJECT.

DEMOLITION KEYED NOTES:

1. DEMOLISH EXISTING BOILER AND ASSOCIATED HW PIPE CONNECTIONS, NATURAL GAS PIPE CONNECTIONS, BOILER VENT DUCT CONNECTIONS, HOUSEKEEPING PAD, AND ASSOCIATED CONTROLS CONNECTIONS.
2. DEMOLISH EXISTING BOILER VENT DUCT UP TO ROOF AND ASSOCIATED BOILER FLUE CAP AND STORM COLLAR ON ROOF.
3. EXISTING HW PIPING TO REMAIN.
4. EXISTING CHW PIPING TO REMAIN.
5. EXISTING MECHANICAL EQUIPMENT TO REMAIN.
6. EXISTING PUMPS TO REMAIN.
7. DEMOLISH EXISTING NATURAL GAS PIPING AND SUPPORTS UP TO POINT INDICATED.
8. DEMOLISH EXISTING HW PIPING UP TO EXISTING AUTOMATIC CONTROL VALVE. DEMOLISH ASSOCIATED BOILER HW CIRCULATION PUMP.
9. DEMOLISH EXISTING NATURAL GAS REGULATOR.
10. EXISTING NATURAL GAS PIPING TO REMAIN.
11. DEMOLISH EXISTING BOILER VENT DUCT UP TO ROOF AND ASSOCIATED BOILER FLUE CAP AND STORM COLLAR ON ROOF. CAP OPENING.
12. DEMOLISH EXISTING HW BYPASS LOOP. CAP AT HW MAIN AND INSULATE TO MATCH EXISTING.



NORTH

1 MD1.2

MECHANICAL DEMOLITION PLAN - MECH ROOM - BUILDING G

1/4" = 1.0'

0 5' 10' 15'

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

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SHEET TITLE
MECHANICAL DEMOLITION PLAN - MECH ROOM - BUILDING G

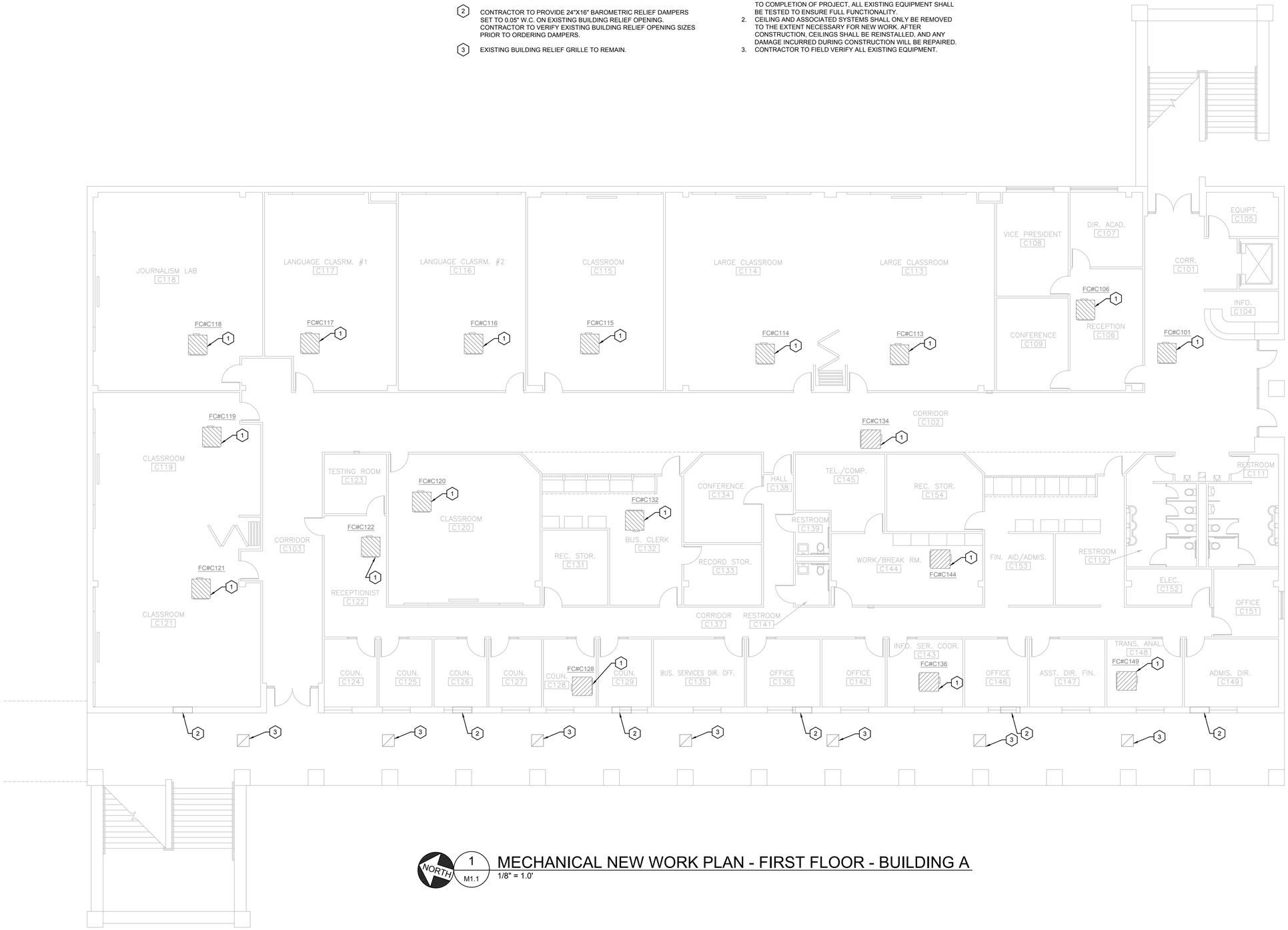
SHEET NO.
MD1.2

MECHANICAL KEYED NOTES:

1. EXISTING FCU TO REMAIN. REBALANCE EXISTING FCU OUTSIDE AIR. REFER TO M3.1 FOR DETAILS.
2. CONTRACTOR TO PROVIDE 24"X16" BAROMETRIC RELIEF DAMPERS SET TO 0.05" W.C. ON EXISTING BUILDING RELIEF OPENING. CONTRACTOR TO VERIFY EXISTING BUILDING RELIEF OPENING SIZES PRIOR TO ORDERING DAMPERS.
3. EXISTING BUILDING RELIEF GRILLE TO REMAIN.

MECHANICAL GENERAL NOTES:

1. ALL EQUIPMENT TO BE REUSED SHALL BE CLEANED AND RETURNED TO LIKE-NEW CONDITIONS BY CONTRACTOR. PRIOR TO COMPLETION OF PROJECT, ALL EXISTING EQUIPMENT SHALL BE TESTED TO ENSURE FULL FUNCTIONALITY.
2. CEILING AND ASSOCIATED SYSTEMS SHALL ONLY BE REMOVED TO THE EXTENT NECESSARY FOR NEW WORK. AFTER CONSTRUCTION, CEILINGS SHALL BE REINSTALLED, AND ANY DAMAGE INCURRED DURING CONSTRUCTION WILL BE REPAIRED.
3. CONTRACTOR TO FIELD VERIFY ALL EXISTING EQUIPMENT.



NORTH

1 M1.1 MECHANICAL NEW WORK PLAN - FIRST FLOOR - BUILDING A

1/8" = 1.0'

0 5' 10' 20' 30'

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

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SHEET TITLE
MECHANICAL NEW WORK PLAN - FIRST FLOOR - BUILDING A

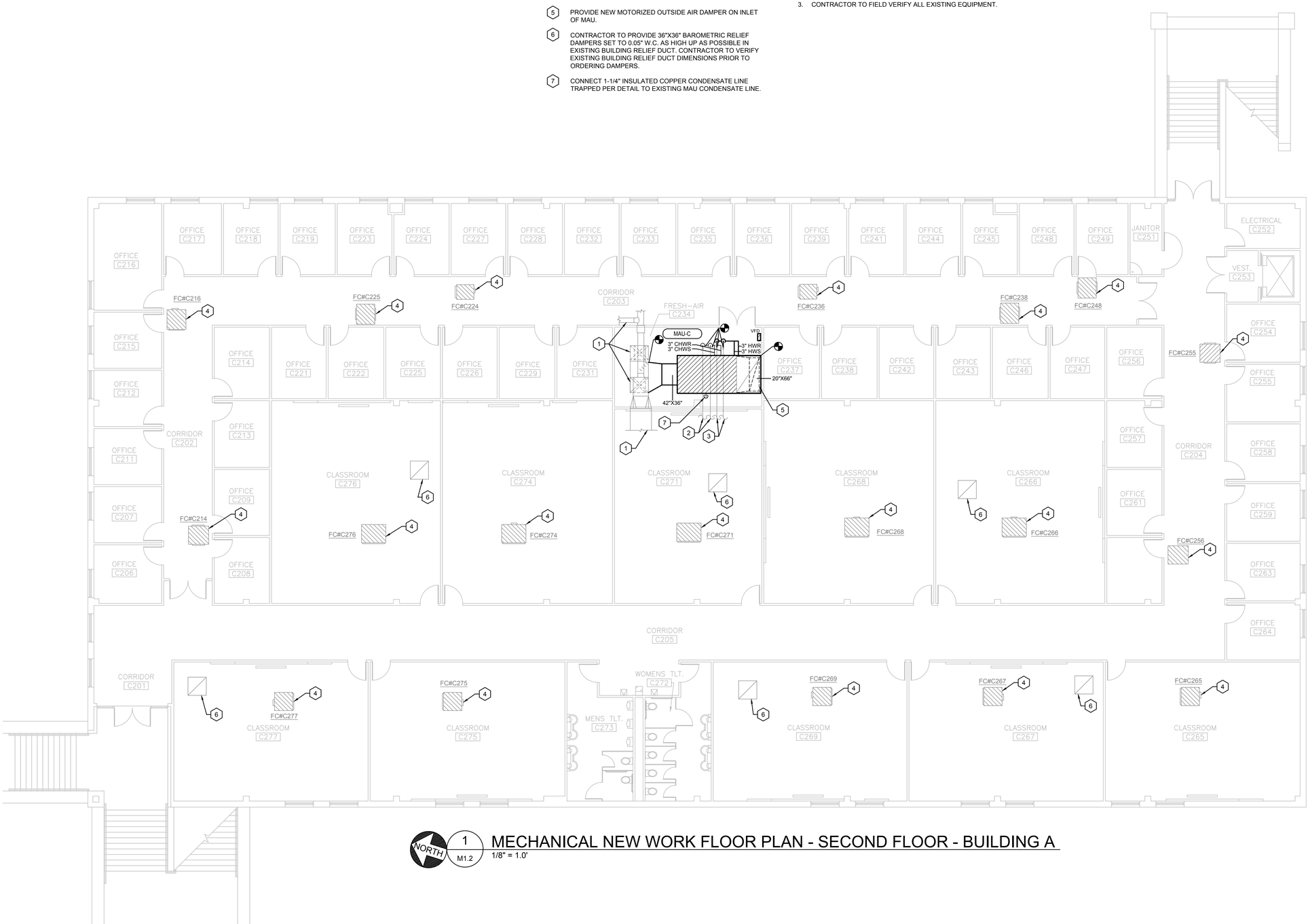
SHEET NO.
M1.1

MECHANICAL KEYED NOTES:

1. EXISTING DUCT TO REMAIN.
2. EXISTING CHW PIPING TO REMAIN.
3. EXISTING HW PIPING TO REMAIN.
4. EXISTING FCU TO REMAIN. REBALANCE EXISTING FCU OUTSIDE AIR. REFER TO M3.1 FOR DETAILS.
5. PROVIDE NEW MOTORIZED OUTSIDE AIR DAMPER ON INLET OF MAU.
6. CONTRACTOR TO PROVIDE 36"X36" BAROMETRIC RELIEF DAMPERS SET TO 0.05" W.C. AS HIGH UP AS POSSIBLE IN EXISTING BUILDING RELIEF DUCT. CONTRACTOR TO VERIFY EXISTING BUILDING RELIEF DUCT DIMENSIONS PRIOR TO ORDERING DAMPERS.
7. CONNECT 1-1/4" INSULATED COPPER CONDENSATE LINE TRAPPED PER DETAIL TO EXISTING MAU CONDENSATE LINE.

MECHANICAL GENERAL NOTES:

1. ALL EQUIPMENT TO BE REUSED SHALL BE CLEANED AND RETURNED TO LIKE-NEW CONDITIONS, PRIOR TO COMPLETION OF PROJECT, ALL EXISTING EQUIPMENT SHALL BE TESTED TO ENSURE FULL FUNCTIONALITY.
2. CEILING AND ASSOCIATED SYSTEMS SHALL ONLY BE REMOVED TO THE EXTENT NECESSARY FOR NEW WORK. AFTER CONSTRUCTION, CEILINGS SHALL BE REINSTALLED, AND ANY DAMAGE INCURRED DURING CONSTRUCTION WILL BE REPAIRED.
3. CONTRACTOR TO FIELD VERIFY ALL EXISTING EQUIPMENT.



NORTH

1 M1.2

MECHANICAL NEW WORK FLOOR PLAN - SECOND FLOOR - BUILDING A

1/8" = 1.0'

0 5' 10' 20' 30'

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

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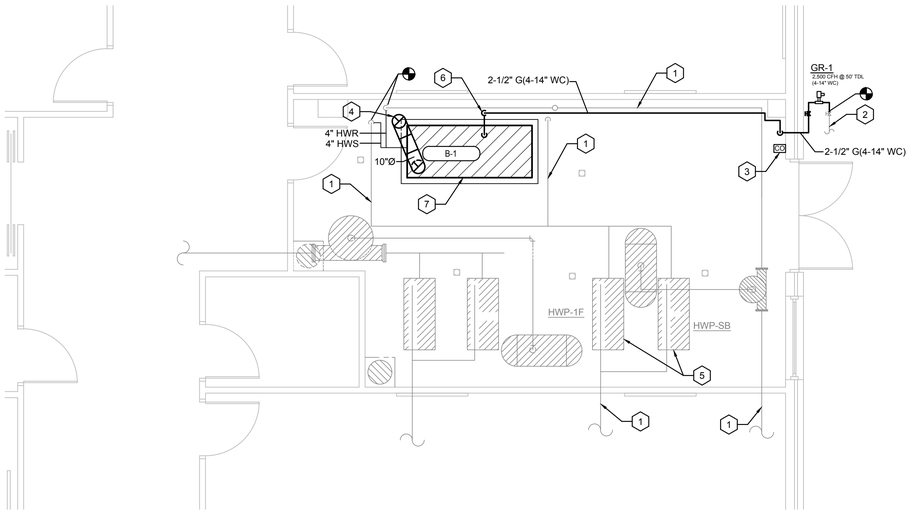
M1.2



1 M1.3 NORTH

MECHANICAL NEW WORK PLAN - MECH ROOM - BUILDING G

1/4" = 1.0'

MECHANICAL GENERAL NOTES:

1. ALL EQUIPMENT TO BE REUSED SHALL BE CLEANED AND RETURNED TO LIKE-NEW CONDITIONS. PRIOR TO COMPLETION OF PROJECT, ALL EXISTING EQUIPMENT SHALL BE TESTED TO ENSURE FULL FUNCTIONALITY.
2. CEILING AND ASSOCIATED SYSTEMS SHALL ONLY BE REMOVED TO THE EXTENT NECESSARY FOR NEW WORK. AFTER CONSTRUCTION, CEILINGS SHALL BE REINSTALLED, AND ANY DAMAGE INCURRED DURING CONSTRUCTION WILL BE REPAIRED.
3. CONTRACTOR TO FIELD VERIFY ALL EXISTING EQUIPMENT.

MECHANICAL KEYED NOTES:

1. EXISTING HW PIPING TO REMAIN.
2. EXISTING NATURAL GAS PIPING TO REMAIN.
3. CONTRACTOR TO PROVIDE CO SENSOR IN MECHANICAL ROOM WITH ALARM AND BOILER SHUTOFF OPTIONS.
4. ROUTE 10"Ø BOILER FLUE UP THROUGH ROOF PER MANUFACTURER REQUIREMENTS. REFER TO DETAIL.
5. EXISTING HW PUMPS TO REMAIN.
6. PROVIDE DIRT LEG ON NATURAL GAS PIPING AT INDICATED LOCATION.
7. CONNECT BOILER B-1 TO EXISTING BOILER B-2 ELECTRICAL CIRCUIT. EXISTING BOILER B-1 CIRCUIT TO REMAIN AS SPARE.

0 5' 10' 15'

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

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MECHANICAL NEW WORK PLAN - MECH ROOM - BUILDING G

SHEET NO.
M1.3

FC OUTSIDE AIR

FCU#	CFM
C214	100
C216	110
C224	110
C225	100
C236	105
C238	100
C248	100
C255	100
C256	95
C265	400
C266	500
C267	400
C268	500
C269	440
C271	400
C274	500
C275	440
C276	500
C277	500
TOTAL CFM	5500

GENERAL NOTES:
1. RE-BALANCE FCU FRESH ARE INTAKE TO INDICATED FLOWS.

FC OUTSIDE AIR

FCU#	CFM
C101	60
C102	75
C106	60
C113	550
C114	550
C115	450
C116	450
C117	450
C118	550
C119	450
C120	400
C121	475
C122	60
C128	60
C132	60
C134	75
C136	75
C144	100
C149	60
TOTAL CFM	5010

GENERAL NOTES:
1. RE-BALANCE FCU FRESH ARE INTAKE TO INDICATED FLOWS.

HOT WATER BOILER SCHEDULE

MARK	B-1
SERVICE	HYDRONIC HEATING
MIN. BOILER EFFICIENCY	96.1%
INPUT (MBH)	2,500
MIN. OUTPUT (MBH)	2,146
ELEC. SERVICE (FLA/V/PH)	4.5 / 120 / 1
FUEL	NATURAL GAS
BURNER TYPE	CONDENSING
FLOW (GPM)	209
SAFETY RELIEF VALVE (PSIG)	75
ASME WORKING PRESSURE	160
MAX. WATER PRESSURE DROP (FT)	5.3
OPERATING WEIGHT (LBS.)	1,025
MANUFACTURER	LOCHINVAR
MODEL NUMBER	FB-2501
NOTES	1 - 7

NOTES:
1. EFFICIENCY @ 130°F INLET, 110°F OUTLET WATER TEMP, AT HIGH FIRE.
2. LOW NOx COMPLIANT IN STATE OF TEXAS.
3. PROVIDE WITH MANUFACTURER'S ISOLATION MOUNTS.
4. PROVIDE WITH BACnet INTERFACE.
5. PROVIDE WITH MOTORIZED ISOLATION VALVE.
6. PROVIDE WITH OSLIN NATION CO100-N1 CARBON MONOXIDE MONITOR.
7. PROVIDE WITH CONDENSATE NEUTRALIZATION KIT.

GAS PRESSURE REGULATOR SCHEDULE

MARK	DESCRIPTION	TOTAL CFH	INLET PRESSURE (P.S.I./OZ)	OUTLET PRESSURE (P.S.I./W.C.)	PIPE SIZE	MANUFACTURER / MODEL	NOTES
GR-1	LOCHINVAR BOILER B-1	2,500	2 PSI	4-14" WC	2-1/2"	SENSUS # 243-12-1	
NOTES							

AIR HANDLING UNIT SCHEDULE

MARK	MAU-C
AREA SERVED	BUILDING A
UNIT LOCATION	C234
TOTAL CFM	10,510
O.A. CFM	10,510
EXT. S.P. *	1.5
DISCHARGE PLENUM	
REQUIRED?	NO
FAN	
TYPE	PLENUM
DRIVE	DIRECT
CONTROLS SEQUENCE #	M4.1
FAN QTY / FAN DIAMETER (IN.) [EACH]	4 / 16
FAN RPM [EACH] / MOTOR FLA [EACH]	2514 / 4.5
AIR MODULATION	CONSTANT
FAN MOTOR (MIN. HP [EACH] / V / PH)	3.5 / 460 / 3
ACCESS SECTION	
DOOR REQUIRED?	YES
DOOR SIZE (MIN.)	18" x 67.5"
COOLING COIL	
TYPE	CHW
CFM	10,510
EAT (DB / WB)	105 / 78
LAT (DB / WB)	54.4 / 54.3
MAX. FACE VEL. (FPM)	500
MAX. APD (IN. WC)	0.66
GPM AT 44 EWT (TEMP. RISE = 12°F)	161.0
MAX. WPD (FT.)	7.0
MIN. ROWS / MAX. FINS (PER IN.)	6 / 10
VALVE TYPE	2-WAY
TOTAL CAPACITY (MBH)	808.0
SENS. CAPACITY (MBH)	547.3
ACCESS SECTION	
DOOR REQUIRED?	YES
DOOR SIZE (MIN.)	18" x 67.5"
PRE-HEAT COIL	
TYPE	HW
CFM	10,510
EAT (DB)	20.0
LAT (DB)	55.4
MAX. FACE VEL (FPM)	442.5
MAX. APD (IN. WATER)	0.1
GPM AT 160 EWT (TEMP. DROP = 30°F)	30.0
MAX. WATER PD (FT)	5.4
MAX. ROWS / MAX. FINS (PER IN.)	1 / 10
OUTPUT (MIN. MBH)	442.8
ACCESS SECTION	
DOOR REQUIRED?	YES
DOOR SIZE (MIN.)	18" x 67.5"
INLET SECTION	
TYPE	FILTER
INLETS	1
FILTER TYPE	4" PLEATED
FINAL FILTER MERV (DIMENSIONS)	13 (20"x24"x4" / 20"x20"x4")
FILTER MOUNTING	FLAT
OA DAMPERS	YES
MAX. INITIAL FILTER PD @ 500 FPM	0.18
DIRTY FILTER ALLOWANCE (IN)**	0.75
OPERATING WEIGHT (LBS.)	6,428
REFERENCE	TEMTROL
NOTES	1 - 8

* EXTERNAL STATIC PRESSURE INCLUDES SYSTEM LOSSES ONLY AND EXCLUDES OPENING PRESSURE DROP AND LOSSES DUE TO ITEMS IN UNIT ITSELF (COILS, CASING, DAMPERS, CLEAN FILTERS, ETC.).
** DIRTY FILTER ALLOWANCE IS PRESSURE DROP ALLOWED IN ADDITION TO INITIAL FILTER PD.

AIR HANDLING UNIT NOTES:

1. UNIT TO BE PROVIDED WITH 2" DOUBLE WALL R-13 FOAM INSULATION.
2. PROVIDE ALL UNITS WITH STAINLESS STEEL DRAIN PAN AND COIL CASING.
3. AHU TO BE MOUNTED ON EXISTING HOUSEKEEPING PAD.
4. PROVIDE WEATHER-RESISTANT, GASKETED, INCADESCENT MARINE LED LIGHT IN FAN SECTION AND 120v CONVENIENCE OUTLET.
5. PROVIDE WITH VELOCITY PRESSURE AIRFLOW STATION ON EACH SUPPLY FAN.
6. PROVIDE WITH CONDENSATE DRAIN PAN CONNECTION ON OPPOSITE SIDE OF COIL CONNECTIONS.
7. PROVIDED UNIT WITH DWYER DIGIHELIC II DIFFERENTIAL PRESSURE CONTROLLER.
8. UNIT WAS PURCHASED AS PART OF A PREVIOUS EQUIPMENT PACKAGE. CONTRACTOR TO COORDINATE WITH OWNER FOR DELIVERY.

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BLINN BUILDINGS A & G
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Drawn AH
Checked ZS
Date 13 DECEMBER 2024
CZE Project No. 240566
Revisions

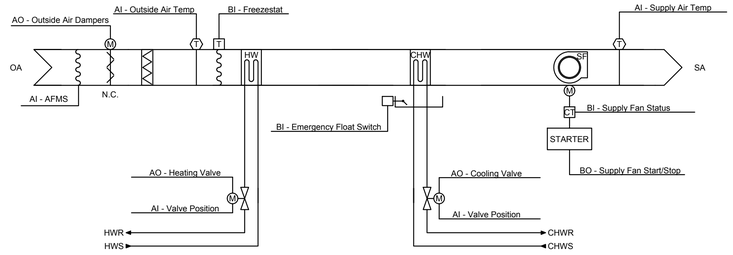
SHEET TITLE
MECHANICAL SCHEDULES

SHEET NO.
M3.1

GENERAL CONTROLS NOTES:

1. ALL WIRING TO BE RUN IN A NEAT AND WORKMANLIKE MANNER, PARALLEL AND PERPENDICULAR TO BUILDING LINES. WIRING TO BE RUN ON J-HOOKS IN ACCESSIBLE LOCATIONS, IN CONDUIT IN EXPOSED LOCATIONS, ABOVE GYP CEILINGS, AND BELOW 8 FOOT (ALL WIRING WITHIN WALLS TO BE RUN IN CONDUIT).

2. ALL DAMPERS, AIRFLOW MEASURING STATIONS AND SENSORS ARE TO BE LOW VOLTAGE (24V) POWERED BY DDC CONTRACTOR.



	Hardware Points				Software Points				
Point Name	AI	AO	BI	BO	LOOP	Sched	Trend	Alarm	Show On Graphic
Outside Air Temperature	●						●		●
Freezestat			●						●
Cooling Coil Leaving Air Temperature	●						●		●
Supply Air Temperature	●						●		●
Supply Fan Status			●					●	●
Supply Fan Start/Stop				●					●
Cooling Valve		●			●		●		●
Heating Valve		●			●		●		●
Outside Air Damper		●					●		●
Outside Airflow	●								●
Cooling Valve Position	●						●		●
Heating Valve Position	●						●		●

RESPONSIBILITY MATRIX				
DEVICE	SUPPLIED BY	INSTALLED BY	WIRING BY CONTROLS	WIRING BY ELECTRICAL
Temp/Humidity/Misc. Sensors	Controls Contractor	Controls Contractor	DDC Panel to Sensors	N/A
Fan VFD	Mechanical Contractor	Mechanical Contractor	DDC panel to VFD	Electrical panel to VFD/Fan
Fan	AHU Manufacturer	Mechanical Contractor	DDC Panel to Starter or VFD	Electrical panel to starter/VFD
Current Sensing Relay	Controls Contractor	Controls Contractor	DDC Panel to CSR	N/A
Motorized Valves-Body	Controls Contractor	Mechanical Contractor	N/A	N/A
Motorized Valves-Actuator	Controls Contractor	Controls Contractor	DDC Panel to Actuator	N/A
Dampers (O/A / Misc.)	Mechanical Contractor	Mechanical Contractor	N/A	N/A
Damper Actuators (O/A / Misc.)	Controls Contractor	Controls Contractor	DDC Panel to Actuator	N/A
Dampers (R/A)	AHU Manufacturer	Mechanical Contractor	N/A	N/A
Outside Air AFMS	Controls Contractor	Controls Contractor	DDC Panel to Sensors	N/A

Constant Volume CW w/ HW preheat
Run Conditions - Scheduled:
The unit shall run according to a user definable time schedule.
The supply fan shall run per a user defined schedule unless shutdown on safeties. The outside air damper shall close when the unit is off.
Any associated sfd shall close when the unit is off.

AHU Optimal Start:
The unit shall use an optimal start algorithm for morning start-up. This algorithm shall minimize the unoccupied warm-up or cool-down period while still achieving comfort conditions by the start of scheduled occupied period.

FREEZE PROTECTION:
Interlock freezestat with fan starter / VFD. Alarm input (dry contacts) to DDC,.
Via hardwire interlock:
- Force CW control valve to open 50%
- HW control valve to 100% open
- Open return air damper
- Close outside air damper

Manual reset at freezestat.

Supply Fan:
The supply fan shall run anytime the unit is commanded to run, unless shutdown on safeties.

Alarms shall be provided as follows:

- Supply Fan Failure: Commanded on, but the status is off.
- Supply Fan in Hand: Commanded off, but the status is on.
- Supply Fan Runtime Exceeded: Status runtime exceeds a user definable limit (adj.).

Cooling Mode:
The controller shall measure the supply air temperature and modulate the cooling coil valve to maintain its cooling setpoint.

Cooling mode shall be enabled whenever:

- The supply air temperature is above cooling setpoint.
- AND the supply fan status is on.
- AND the HW control valve position is closed.

Heating Mode:
The controller shall measure the outdoor air temperature and modulate the heating coil valve to maintain the supply air temperature setpoint.
Heating mode shall be enabled whenever:

- The outside air temperature is below the supply air temperature setpoint.
- AND the supply fan status is on.

Supply Air Temperature:
The controller shall monitor the supply air temperature.

- The supply air temperature setpoint shall be 55°F (adj.)

Alarms shall be provided as follows:

High Supply Air Temp: If the supply air temperature is greater than 120°F (adj.).

Low Supply Air Temp: If the supply air temperature is less than 45°F (adj.).

1 M4.1 CONSTANT VOLUME CW AIR HANDLER WITH HW PREHEAT
NOT TO SCALE (MAU-C)

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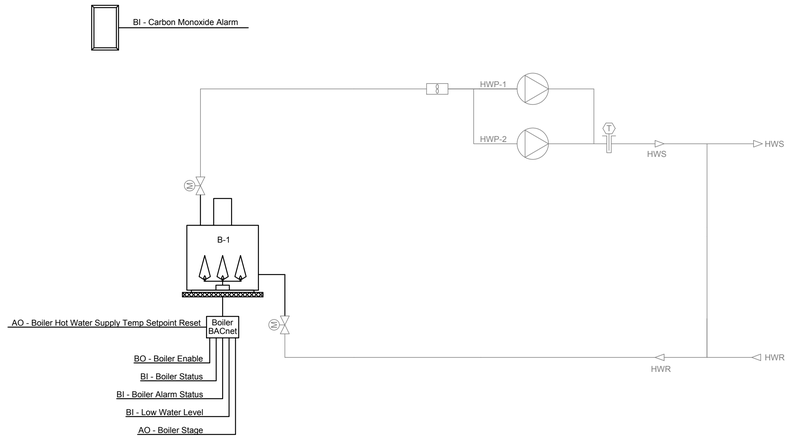
SHEET TITLE
MECHANICAL CONTROLS

SHEET NO.
M4.1



1 M4.2 HOT WATER BOILER SCHEMATIC
NOT TO SCALE

GENERAL CONTROLS NOTES:

1. ALL WIRING TO BE RUN IN A NEAT AND WORKMANLIKE MANNER, PARALLEL AND PERPENDICULAR TO BUILDING LINES. WIRING TO BE RUN ON J-HOOKS IN ACCESSIBLE LOCATIONS, IN CONDUIT IN EXPOSED LOCATIONS, ABOVE GYP CEILINGS, AND BELOW 8 FOOT (ALL WIRING WITHIN WALLS TO BE RUN IN CONDUIT).
2. ALL DAMPERS, AIRFLOW MEASURING STATIONS AND SENSORS ARE TO BE LOW VOLTAGE (24V) POWERED BY DDC CONTRACTOR.
3. CONTROLS CONTRACTOR TO MODIFY EXISTING BOILER CONTROLS ONLY TO THE EXTENT INDICATED.

	Hardware Points				Software Points				
Point Name	AI	AO	BI	BO	LOOP	Sched	Trend	Alarm	Show On Graphic
Boiler Hot Water Supply Temperature Setpoint Reset		●			●		●		●
Boiler Alarm Status			●				●	●	●
CO Monitor Alarm			●				●	●	●
Low Water Level			●				●	●	●
Boiler Status			●				●		●
Boiler Stage			●						
Boiler Enable				●		●	●		●
Boiler Failure								●	
Boiler Running in Hand								●	

RESPONSIBILITY MATRIX				
DEVICE	SUPPLIED BY	INSTALLED BY	WIRING BY CONTROLS	WIRING BY ELECTRICAL
Boiler	Boiler Manufacturer	Mechanical Contractor	N/A	Electrical Panel to Boiler
Boiler BACnet Interface	Boiler Manufacturer	Boiler Manufacturer	DDC Panel to Boiler BACnet	N/A
Temperature Sensors	Controls Contractor	Controls Contractor	DDC Panel to Sensors	N/A
Sensor Wells	Controls Contractor	Mechanical Contractor	N/A	N/A
Carbon Monoxide Sensor	Controls Contractor	Controls Contractor	DDC Panel to Alarm	N/A

BOILER SYSTEM RUN CONDITIONS:
The boiler system shall be enabled based on an operator adjustable occupied/unoccupied schedule.

To prevent short cycling, the boiler system shall run for a minimum of 30 minutes (adj.), unless shutdown on safeties. The boiler shall run subject to its own internal safeties and controls. The boiler system shall also run for freeze protection whenever outside air temperature is less than 38°F (adj.).

The boiler shall be modulated to maintain 130°F with a 20°F change in temperature.

BOILER OPTIMAL START:
The boiler system shall start prior to scheduled occupancy based on air handler operation status.

BOILER SAFETIES:
The following safeties shall be monitored:
- Boiler alarm.
- Low water level.
- CO Monitor Alarm

Alarms shall be provided as follows:
- Boiler alarm.
- Low water level alarm.
- CO Monitor Alarm

BOILER ENABLE:
The boiler and associated control valves shall be enabled when the boiler system is commanded on. The boiler shall be enabled after main pump status is proven through the hot water flow switch and shall run subject to its own internal safeties and controls.
Boiler shall be modulated based upon a siginal from hot water supply temperature and hot water return temperature.

Alarms shall be provided as follows:
- Boiler failure: commanded on, but the status is off.
- Boiler running in hand: commanded off, but the status is on.

HOT WATER SUPPLY TEMPERATURE SETPOINT RESET:
The hot water supply temperature setpoint shall reset based on outside air temperature. As outside air temperature rises from 40°F (adj.) to 70°F (adj.) the hot water supply temperature setpoint shall reset downwards by subtracting from 0°F (adj.) up to 20°F (adj.) from the current boiler setpoint.

HOT WATER TEMPERATURE MONITORING:
The following temperatures shall be monitored:
- Hot water supply.
- Hot water return.

Alarms shall be provided as follows:
- High hot water supply temp: if greater than 200°F (adj.).
- Low hot water supply temp: if less than 100°F (adj.).

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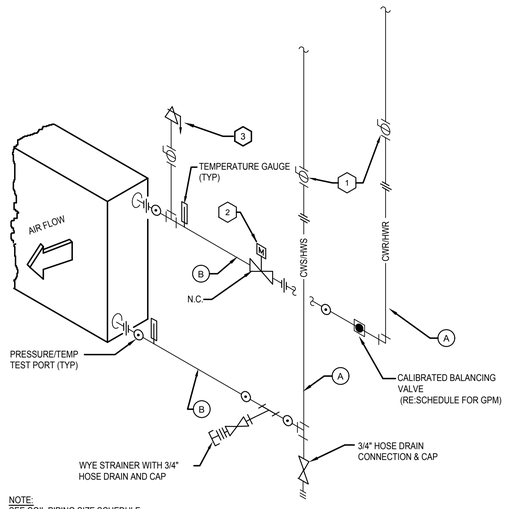
M4.2



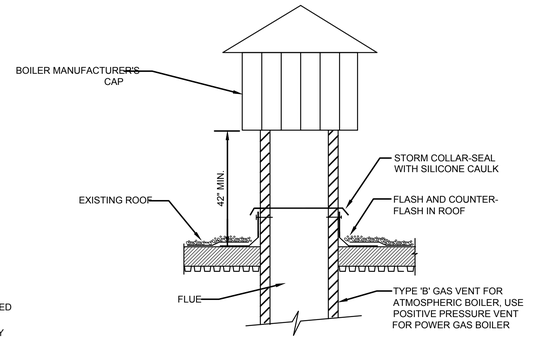
NOTE:
SEE COIL PIPING SIZE SCHEDULE FOR SIZES AND NOTES.

SIZE SCHEDULE				
MARK NO.	CHILL H20 COILS		HOT H20 COILS - PRE-HEAT	
	(A)	(B)	(A)	(B)
MAU-C	3"	3"	3"	3"

NOTE:
1. THERMOMETER WELL AND PETES PLUG TO BE INSTALLED FULLY ACCESSIBLE.
2. P/T PLUGS INDICATED ARE TO BE INDEPENDENT OF ANY PLUGS PROVIDED WITH OTHER APPURTENANCES.

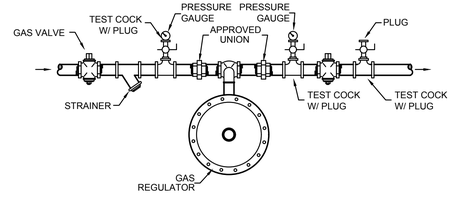
KEYED NOTES:
1. BALL OR BUTTERFLY ISOLATION VALVE DEPENDING ON SIZE.
2. 2-WAY MODULATING VALVE.
3. AUTOMATIC AIR VENT PIPED TO FLOOR DRAIN. PROVIDE WHEN MAINS ARE LOCATED BELOW COIL.
4. BYPASS VALVE (BALANCING PURPOSE) BALL OR BUTTERFLY VALVE DEPENDING ON SIZE. VALVE TO HAVE MEMORY STOP.

1 M5.1 CHILLED OR HOT WATER COIL PIPING SCHEMATIC
NOT TO SCALE

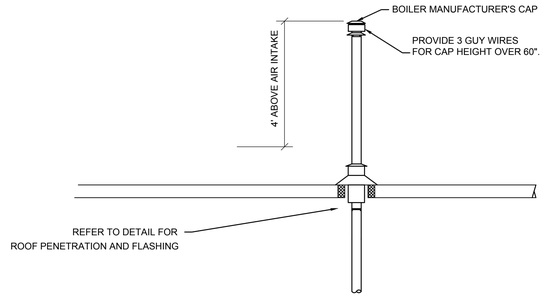


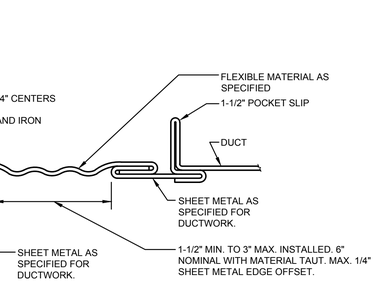
NOTE:
CONTRACTOR TO COORDINATE ALL ROOF PENETRATIONS WITH ROOF MANUFACTURER TO PREVENT VOIDING ROOF WARRANTY

2 M5.1 TYPICAL FLUE THRU ROOF
NOT TO SCALE

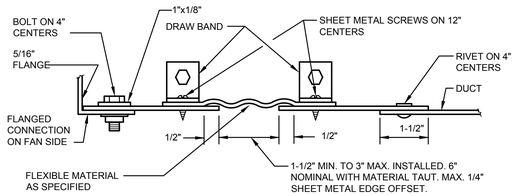


3 M5.1 TYPICAL GAS REGULATOR SCHEMATIC
NOT TO SCALE





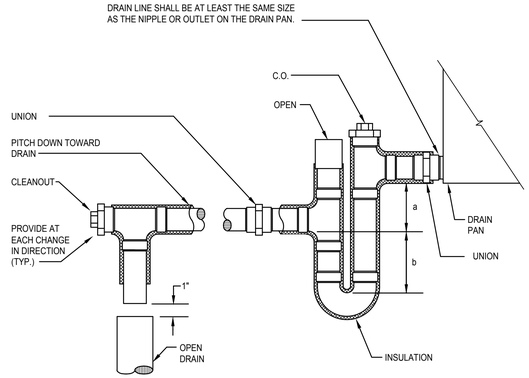
RECTANGULAR FLEXIBLE CONNECTION



ROUND FLEXIBLE CONNECTION

TO BE INSTALLED AT ALL BUILDING EXPANSION JOINTS AND ALL HVAC UNIT CONNECTIONS. CONTRACTOR IS RESPONSIBLE FOR LOCATION AND QUANTITY.

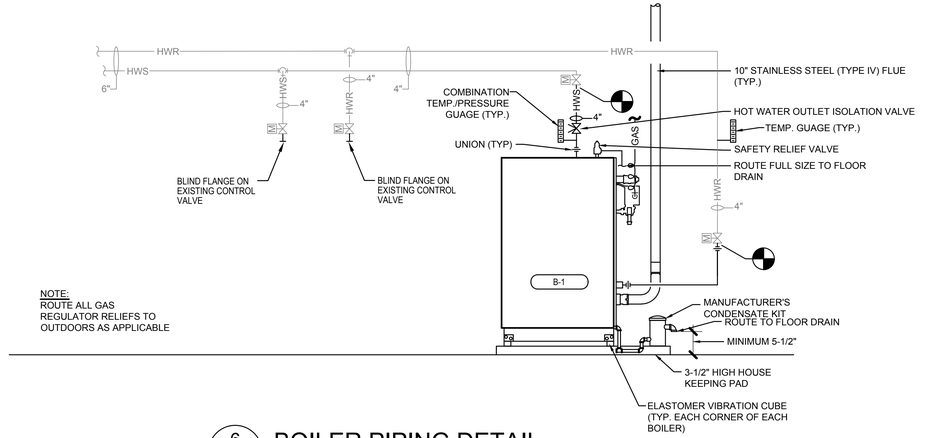
4 M5.1 DUCT FLEXIBLE CONNECTION DETAILS
NOT TO SCALE



UNIT STATIC PRESS.	a	b
0"-1"	1"	2"
1"-2"	2"	3"
2"-3"	3"	4"

NOTES:
1. FOR DEPTH OF SEAL, SEE SCHEDULE BELOW.
2. LOCATE TRAP SO AS TO BE ACCESSIBLE FOR CLEANING.
3. ALL FITTING TO BE DWV.
4. ALL CONDENSATE SHALL BE ROUTED TO SANITARY DRAIN. NO CONDENSATE TO STORM.

5 M5.1 TYPICAL DRAIN TRAP DETAIL
NOT TO SCALE



NOTE:
ROUTE ALL GAS REGULATOR RELIEFS TO OUTDOORS AS APPLICABLE

6 M5.1 BOILER PIPING DETAIL
NOT TO SCALE

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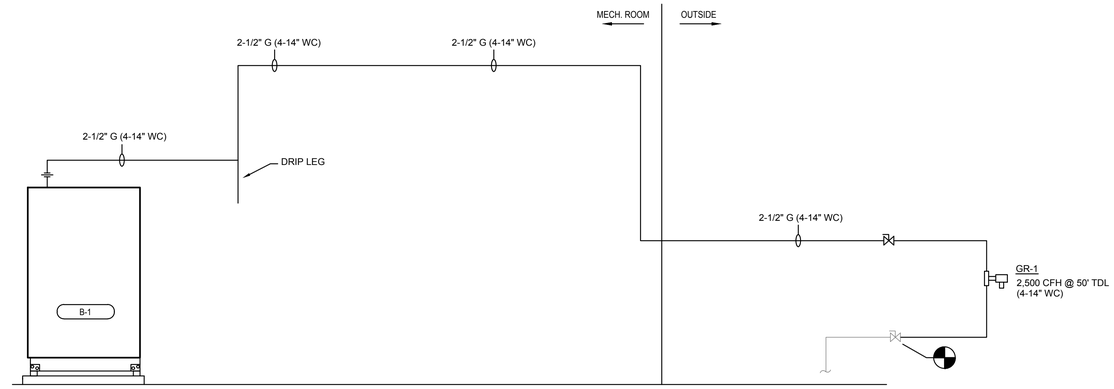

1 / M5.2 NATURAL GAS LINE RISER
NOT TO SCALE

GAS LOAD SUMMARY

GAS UNIT HEATERS

MARK	DESCRIPTION	QTY	LOAD (BTU)	TOTAL LOAD (BTU)
B-1	LOCHINVAR BOILER	1	2,500,000	2,500,000
			SUBTOTAL	2,500,000
			TOTAL NET GAS LOAD	2,500,000
		REQUESTED FROM UTILITY:	2,500 CFH @ 2PSI	

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ELECTRICAL SYMBOLS AND ABBREVIATIONS

(SOME SYMBOLS MAY NOT BE APPLICABLE TO THIS PROJECT)

SYMBOLS

GENERAL

- MOTOR, HP AS INDICATED
- CONTROLLER TO BE FURNISHED UNDER DIVISION 15 AND INSTALLED UNDER DIVISION 16
- DISCONNECT SWITCH
- MAGNETIC MOTOR STARTER
- COMBINATION MOTOR STARTER/DISCONNECT SWITCH
- GROUNDING REFERENCE POINT.
- JUNCTION BOX, CEILING MOUNTED
- JUNCTION BOX, WALL MOUNTED
- PHOTO CELL
- RELAY
- TIME CLOCK
- CONTACTOR
- BELL
- BUZZER
- CEILING MOUNTED CLOCK
- WALL MOUNTED CLOCK
- WALL MOUNTED DOUBLE FACE CLOCK
- HORN
- TRANSFORMER AS INDICATED
- AUTOMATIC TRANSFER SWITCH
- EQUIPMENT CONNECTION
- KEYED NOTE NO. 2
- MECHANICAL EQUIPMENT DESIGNATION

LUMINAIRES

- LUMINAIRE, CEILING OR WALL MOUNTED. SUBSCRIPT INDICATES ASSOCIATED SWITCHING. CAPITAL LETTER INDICATES FIXTURE TYPE.
- FIXTURE CEILING MOUNTED
- FIXTURE WALL MOUNTED
- WALLWASH FIXTURE CEILING MOUNTED
- EXIT LIGHT, CEILING MOUNTED WITH ARROWS
- EXIT LIGHT, WALL MOUNTED WITH ARROWS
- EMERGENCY FIXTURE
- FIXTURE WITH WIRELESS OCCUPANCY AND DAYLIGHT SENSOR
- EMERGENCY LIGHT, WALL MOUNTED
- POLE MOUNTED LUMINAIRE
- FLOOD LIGHT. ARROW INDICATES AIMING DIRECTION.
- TRACK LIGHT WITH HEADS AS INDICATED

RACEWAYS

- CONDUIT CONCEALED IN WALL OR CEILING
- CONDUIT UNDER FLOOR OR CAST IN STRUCTURE
- SWITCH LEG
- P1A-2,4,6 — BRANCH CIRCUIT HOMERUN 3/4"C, 3#12 AND 1#12 GND. MIN.
- SURFACE RACEWAY
- T — TELEPHONE
- BUS DUCT WITH TAKE OFF DEVICE

PANEL AND RELATED ITEMS

- PANELBOARD, SURFACE MOUNTED.
- PANELBOARD, FLUSH MOUNTED.
- SWBD — SWITCHBOARD OR DISTRIBUTION BOARD
- MCC — MOTOR CONTROL CENTER
- TVSS — TRANSIENT VOLTAGE SURGE SUPPRESSOR.
- TELE — PLYWOOD TELEPHONE BACKBOARD; PROVIDE WALL MOUNTED WHITE PAINTED 4x8' PLYWOOD BACKBOARD

OUTLETS

- SIMPLEX RECEPTACLE
- DUPLEX RECEPTACLE
- WP, T, GFI, IG C, TV,CR — DUPLEX RECEPTACLE; GFI=GROUND FAULT INTERRUPTING, WP=WEATHERPROOF, T=TAMPER RESISTANT, IG=ORANGE SOLATED GROUND, C=CLOCK OUTLET, TV=TV RECEPTACLE, CR=CONTROLLED RECEPTACLE
- DOUBLE DUPLEX RECEPTACLE
- EMERGENCY RED DUPLEX RECEPTACLE
- EMERGENCY RED QUAD RECEPTACLE
- DUPLEX RECEPTACLE WITH USB PORTS
- SPECIAL PURPOSE RECEPTACLE
- ROUND FLOOR BOX WITH POWER AND DATA
- SQUARE FLOOR BOX WITH POWER AND DATA
- TELEPHONE OUTLET
- TELEVISION OUTLET
- VOICE/DATA OUTLET

SWITCHES

- SINGLE POLE SWITCH
- DOUBLE POLE SWITCH
- THREE-WAY SWITCH
- FOUR-WAY SWITCH
- CEILING FAN SPEED SWITCH
- SWITCH WITH PILOT LIGHT IN HANDLE
- WEATHERPROOF SWITCH
- MOTOR RATED SWITCH
- EXPLOSION PROOF SWITCH
- TIMER SWITCH
- MULTIPLE SWITCHES, GANGED.
- CEILING MOUNTED OCCUPANCY SENSOR
- WALL MOUNTED OCCUPANCY SENSOR AND SWITCH
- LOW VOLTAGE SWITCH
- LOW VOLTAGE SWITCH WITH DIMMER
- WALL MOUNTED WIRELESS ON/OFF SWITCH
- WALL MOUNTED WIRELESS ON/OFF/DIM SWITCH
- PUSHBUTTON

P.A./INTERCOM

- REMOTE INTERCOM STATION
- INTERCOM MASTER STATION
- SPEAKER, CEILING MOUNTED
- SPEAKER, WALL MOUNTED
- AMPLIFIER AND ASSOCIATED EQUIPMENT
- MICROPHONE JACK
- INTERCOM CALL BOX

FIRE ALARM

- FIRE ALARM CONTROL PANEL
- FIRE ALARM EXPANSION PANEL
- REMOTE FIRE ALARM ANNUNCIATOR
- MANUAL PULL STATION
- SMOKE DETECTOR; DASHED INDICATES BELOW RAISED FLOOR
- SMOKE DETECTOR, DUCT MOUNTED
- TEST SWITCH
- HEAT DETECTOR
- FLOW SWITCH
- VALVE SWITCH
- FLOW SWITCH
- AUDIO-VISUAL ANNUNCIATOR (WALL, CEILING)
- VISUAL ANNUNCIATOR (WALL, CEILING)
- MAGNETIC DOOR HOLDER
- FIRE FIGHTERS PHONE JACK
- FIRE ALARM SPEAKER / VISUAL (VOICE EVACUATION)

SITE UTILITY

- MANHOLE NUMBER 1; CMH-INDICATES COMMUNICATIONS MANHOLE.
- PULLBOX OR HANDHOLE AS SPECIFIED ON DRAWINGS AND SPECIFICATIONS.
- POWER POLE
- POLE MOUNTED TRANSFORMERS
- TELEPHONE TERMINAL BOX
- AERIAL PRIMARY
- AERIAL SECONDARY
- AERIAL TELEPHONE; CATV = CABLE TELEVISION.
- UNDERGROUND PRIMARY
- UNDERGROUND SECONDARY
- UNDERGROUND TELEPHONE/COMMUNICATIONS

SECURITY

- SECURITY PANEL
- DOOR CONTACT
- CCTV CAMERA WITH FIXED WIDE ANGLE LENS WALL MOUNTED TO SET CAMERA 6" BELOW CEILING.
- CCTV CAMERA; PT=PAN AND TILT; Z=ZOOM LENS
- EXTERIOR CAMERA IN WEATHERPROOF ENCLOSURE WITH ANTI-FOG HEATERS.
- DOOR LOCK
- CARD READER ACCESS
- DURESS PUSHBUTTON
- KEYPAD

DISTRIBUTION

- MOLDED CASE CIRCUIT BREAKER
- DRAWOUT POWER CIRCUIT BREAKER AIR, VACUUM OR SF AS SPECIFIED.
- DISCONNECT SWITCH
- FUSIBLE DISCONNECT SWITCH
- TRANSFORMER
- SHEILDED ISOLATION TRANSFORMER
- VOLTMETER
- AMMETER
- VOLTMETER SELECTOR SWITCH
- AMMETER SELECTOR SWITCH
- SHUNT TRIP
- CT AND METER

GENERAL SCOPE NOTE
THE SCOPE OF THIS PROJECT WILL REQUIRE CONCRETE, DRYWALL, CEILING, AND OTHER WORK. ALL WORK REQUIRED FOR THE COMPLETE INSTALLATION SHALL BE PERFORMED UNDER THIS CONTRACT.

ABBREVIATIONS

A	AMPERE(S)
AC	ABOVE COUNTER
A/C	AIR CONDITIONING
AIC	AMPERE INTERRUPTING CAPACITY
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AL , ALUM	ALUMINUM
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
C	CONDUIT
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
CKT	CIRCUIT
COND	CONDUCTOR
CPU	CENTRAL PROCESSING UNIT
CT	CURRENT TRANSFORMER
DCP	DATA COLLECTION PANEL
DIA	DIAMETER
DC	DISCONNECT
DIST	DISTRIBUTION
DN	DOWN
DWGS	DRAWINGS
EC	EMPTY CONDUIT
EF	EXHAUST FAN
EQMT	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EXH	EXHAUST
EXP	EXPLOSION PROOF
EXTG	EXISTING
F/A , F.A.	FIRE ALARM
FLUOR	FLUORESCENT
FN	FULL NEUTRAL
FT	FEET, FOOT
GALV	GALVANIZED
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
GRD	GALVANIZED RIGID STEEL
HID	HIGH INTENSITY DISCHARGE
HP	HORSEPOWER
HOA	HAND OFF AUTOMATIC
HPS	HIGH PRESSURE SODIUM
HVAC	HEATING/VENTILATING/AIR CONDITIONING
HZ	HERTZ
ID	INSIDE DIAMETER
IG	ISOLATED GROUND
IMC	INTERMEDIATE STEEL CONDUIT
IN	INCHES
INCD	INCANDESCENT
JB	JUNCTION BOX
KV	KILOVOLT
KVA	KILOVOLT AMPERE
KVAC	KILOVOLT AMPERE CAPACTIVE
KVAR	KILOVOLT AMPERE REACTIVE
KW	KILOWATT
KWH	KILOWATT HOUR
LPS	LOW PRESSURE SODIUM
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANEL
MECH	MECHANICAL
MH	METAL HALIDE
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MTD	MOUNTED
MTG	MOUNTING
MV	MERCURY VAPOR
MW	MICROWAVE
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NF	NONFUSIBLE
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OC	ON CENTER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OH	OVERHEAD
P	POLE
PA	PUBLIC ADDRESS
PB	PUSHBUTTON
PBX	PRIVATE BUILDING EXCHANGE
PC	PULL CHAIN
P/C	PHOTO CELL
PDP	POWER DISTRIBUTION PANEL
PH , Ø	PHASE
PNL	PANELBOARD
PR	PAIR
PSI	POUNDS PER SQUARE INCH
PWR	POWER
QUAD	QUAD RECEPTACLE
REFR	REFRIGERATOR
S	SECURITY
S.C.	SPLIT CIRCUIT
SCC	STATUS COMMAND CENTER
SN	SOLID NEUTRAL
SPD	SURGE PROTECTION DEVICE
SQFT.	SQUARE FOOT
SW	SWITCH
SWBD	SWITCHBOARD
TC	TIME CLOCK
TELE	TELEPHONE
TSTAT	THERMOSTAT
TV	TELEVISION
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTABLE POWER SUPPLY
V	VOLT(S)
VEND	VENDING
VP	VAPOR PROOF
W	WIRE , WATT(S)
WP	WEATHERPROOF
XFMR	TRANSFORMER
1P	ONE POLE
2P	TWO POLE
3P	THREE POLE

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12/13/2024

BLINN BUILDINGS A & G

2598 BLINN BLVD
BRYAN, TEXAS 77802

Drawn	MD
Checked	MD
Date	13 DECEMBER 2024
CZE Project No.	240566
Revisions	

SHEET TITLE
ELECTRICAL SYMBOLS & ABBREVIATIONS

SHEET NO.
E0.0

GENERAL POWER NOTES:

1. SEE ALL OTHER PLANS FOR ADDITIONAL DEVICES. SOME POWER CIRCUITING MAY BE ON OTHER PLANS. COORDINATE THE LOCATIONS OF DATA/CATV JACKS WITH THE RECEPTACLES. MOUNT ADJACENT TO EACH OTHER.

2. WHEN LOCATING SYSTEMS NEXT TO DOORS FOLLOW DEVICE LOCATION GUIDELINES. MOUNT AT ADA HEIGHT. PROVIDE MULTI-GANG BOXES FOR SIMILAR SYSTEMS. ALL DEVICE PLATES SHALL BE ORTHOGONAL WITH ADJACENT PLATES.

3. MINIMUM CIRCUIT SIZE IS 2 #12 AND 1 #12 GROUND IN 3/4" CONDUIT. ALL CONDUCTORS SHALL BE 75 DEGREE COPPER THHN INDOOR, THWN FOR EXTERIOR USAGE, COLOR CODED AS PER NEC AND LOCAL AMENDMENTS WITH SIZE, TEMPERATURE, AND VOLTAGE PERMANENTLY PRINTED ON THE JACKET. ALL JOINTS SHALL BE MADE UP USING SELF LOCKING, TWIST-ON, COLOR CODED, SQUARE WIRE SPRING GRAB, LONG SKIRT, WIRE CONNECTORS WITH SWEPT WINGS.

4. COORDINATE RECEPTACLE LOCATIONS WITH MILLWORK AND COUNTERS. DO NOT LOCATE RECEPTACLES BEHIND DRAWERS OR HIDDEN IN MILLWORK UNLESS SPECIFICALLY DIRECTED BY OWNER/ARCHITECT. REVIEW ARCHITECTURAL ELEVATIONS PRIOR TO RECEPTACLE ROUGH-INS. SEE ARCH ELEVATIONS IN BREAKROOMS FOR APPLIANCES AND RECEPTACLE MOUNTING LOCATIONS.

5. ALL RECEPTACLES SHALL BE SPEC GRADE, MINIMUM 20 AMP RATED. GFI RECEPTACLES SHALL HAVE TEST BUTTONS WITH INDICATOR LIGHTS. EXTERIOR RECEPTACLES SHALL BE LABELED WEATHER RESISTANT WITH WP COVERS CONFORMING TO WET LOCATION CORD CONNECTION, NEC 406. MOUNT RECEPTACLES 18" AFF, 6" ABOVE BACKSPLASH AT COUNTERS, 48" IN TOILET ROOMS, AT EQUIPMENT ROUGH-IN LOCATIONS FOR APPLIANCES, AND AS INDICATED FOR TV'S. PROVIDE GFI RECEPTACLES WITHIN SIX (6) FEET OF ALL SINKS, EXTERIOR RECEPTACLES, AND UNDERCOUNTER EQUIPMENT. OVERSIZED COVER PLATES ARE NOT ALLOWED. COORDINATE COLOR WITH OWNER/ARCHITECT. PROVIDE SPEC GRADE RECEPTACLES MOUNTED BEHIND WATER COOLERS WITH GFI CIRCUIT BREAKERS.

6. CONTRACTOR IS RESPONSIBLE FOR UPDATING THE CIRCUITING INFORMATION OF ELECTRICAL PANELS, HVAC CONTROLS, INTERCOM SWITCH BANKS, DATA/VOICE/VIDEO CABLING, AND ANY CIRCUITED SYSTEM INDICATING THE FINAL ROOM NUMBERING AND CIRCUIT NUMBER BASED UPON THE ACTUAL INSTALLATION.

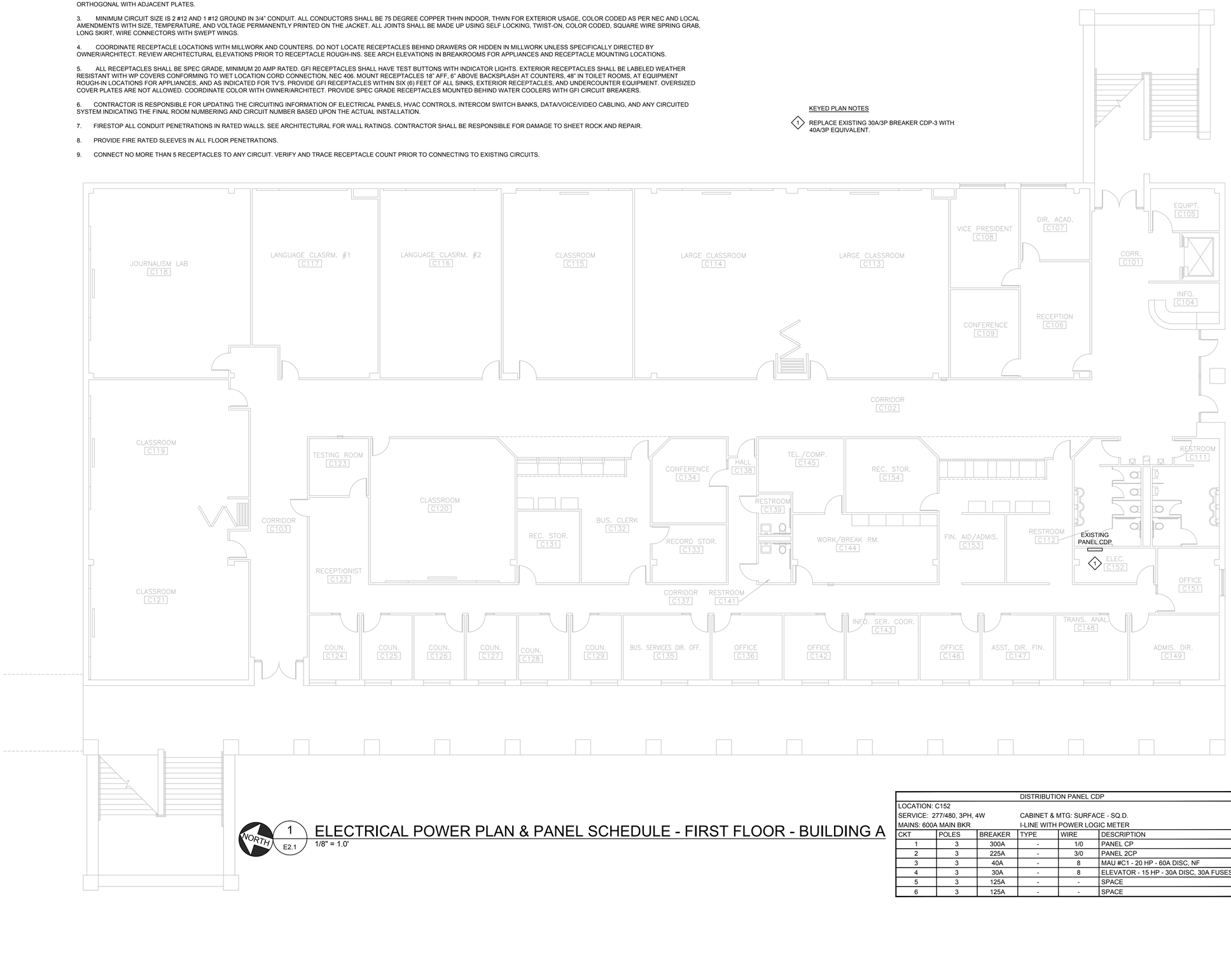
7. FIRESTOP ALL CONDUIT PENETRATIONS IN RATED WALLS. SEE ARCHITECTURAL FOR WALL RATINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO SHEET ROCK AND REPAIR.

8. PROVIDE FIRE RATED SLEEVES IN ALL FLOOR PENETRATIONS.

9. CONNECT NO MORE THAN 5 RECEPTACLES TO ANY CIRCUIT. VERIFY AND TRACE RECEPTACLE COUNT PRIOR TO CONNECTING TO EXISTING CIRCUITS.

KEYED PLAN NOTES

1 REPLACE EXISTING 30A/3P BREAKER CDP-3 WITH 40A/3P EQUIVALENT.



NORTH

1 E2.1

ELECTRICAL POWER PLAN & PANEL SCHEDULE - FIRST FLOOR - BUILDING A

1/8" = 1.0'

DISTRIBUTION PANEL CDP					
LOCATION: C152					
SERVICE: 277/480, 3PH, 4W			CABINET & MTG: SURFACE - SQ.D.		
MAINS: 600A MAIN BKR			I-LINE WITH POWER LOGIC METER		
CKT	POLES	BREAKER	TYPE	WIRE	DESCRIPTION
1	3	300A	-	1/0	PANEL CP
2	3	225A	-	3/0	PANEL 2CP
3	3	40A	-	8	MAU #C1 - 20 HP - 60A DISC, NF
4	3	30A	-	8	ELEVATOR - 15 HP - 30A DISC, 30A FUSES
5	3	125A	-	-	SPACE
6	3	125A	-	-	SPACE

0 5' 10' 20' 30'

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

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ELECTRICAL POWER PLAN - FIRST FLOOR - BUILDING A

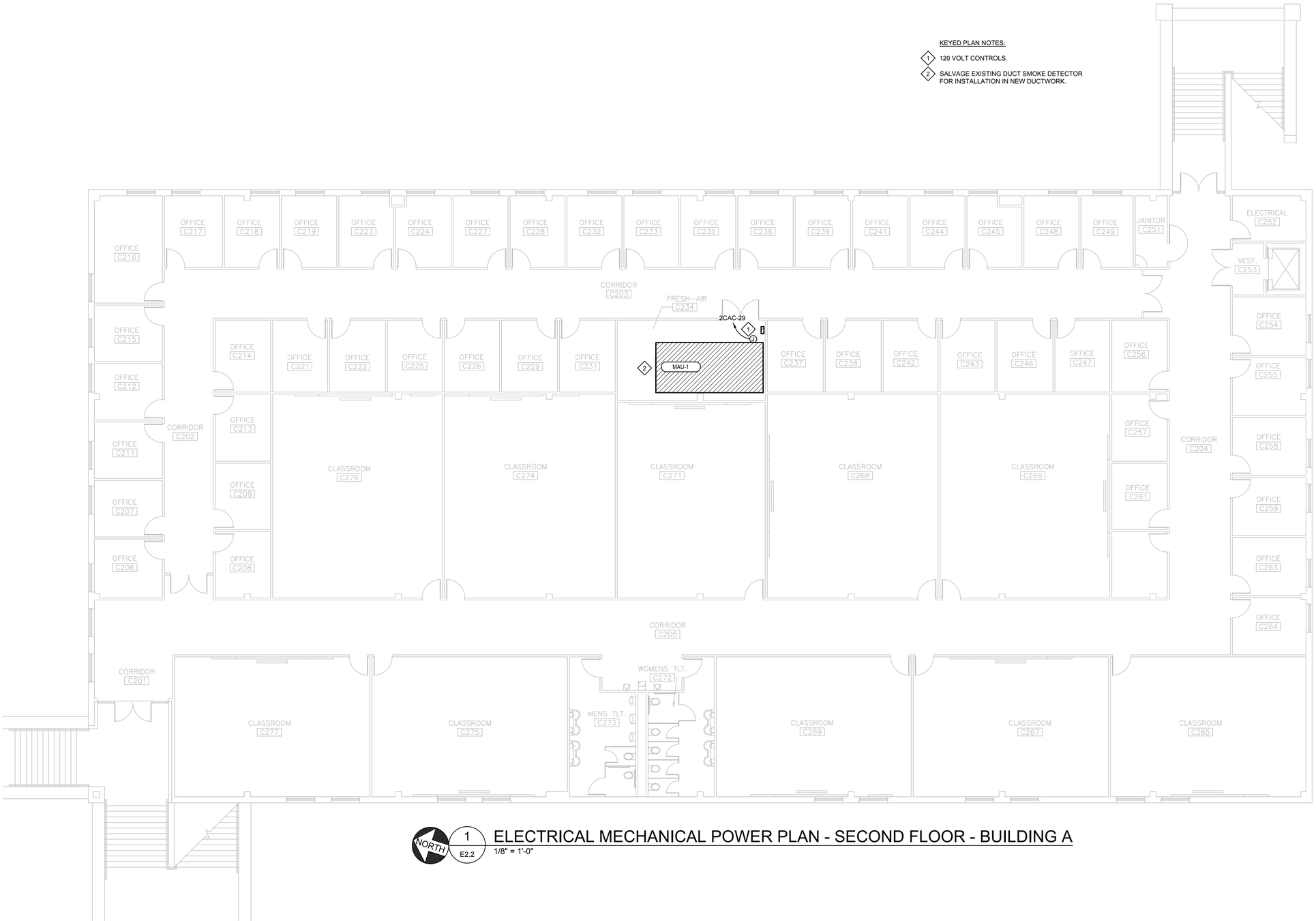
SHEET NO.
E2.1

MECHANICAL EQUIPMENT CONNECTIONS

MARK	VOLTAGE	LOAD	CIRCUIT	DISCONNECT	REMARKS
MAU-1	480-3-60	15 KVA	CDP-3	60A/3P/NF	4 #8 AND 1 #8 GROUND IN 3/4" CONDUIT.
MAU-1	120-1-60	500 KW	2CAC-31	RECEPTACLE	CONVENIENCE POWER AT MAU-1. 2#12 AND 1#12 GND IN 3/4" CONDUIT.
ALL LOCAL DISCONNECTS SHALL BE WITHIN SIGHT OF THE EQUIPMENT IT SERVES.					

KEYED PLAN NOTES:

1. 120 VOLT CONTROLS.
2. SALVAGE EXISTING DUCT SMOKE DETECTOR FOR INSTALLATION IN NEW DUCTWORK.



NORTH 1 E2.2

ELECTRICAL MECHANICAL POWER PLAN - SECOND FLOOR - BUILDING A

1/8" = 1'-0"

0 5' 10' 20' 30'

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

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SHEET NO.
E2.2

GENERAL DEMOLITION NOTES:

1. GENERAL: EXCEPT FOR ITEMS OR MATERIALS INDICATED TO BE REUSED, SALVAGED, REINSTALLED, OR OTHERWISE INDICATED TO REMAIN OWNER'S PROPERTY, REMOVE DEMOLISHED MATERIALS FROM PROJECT SITE AND LEGALLY DISPOSE OF THEM IN AN EPA-APPROVED LANDFILL. DO NOT ALLOW DEMOLISHED MATERIALS TO ACCUMULATE ON-SITE REMOVE FROM OWNER OCCUPIED AREAS DAILY. REMOVE AND TRANSPORT DEBRIS IN A MANNER THAT WILL PREVENT SPILLAGE ON ADJACENT SURFACES AND AREAS.

2. TRACE CIRCUITS FEEDING EXISTING TO-REMAIN PORTIONS OF THE BUILDING. DO NOT DEMOLISH CIRCUITS IN THESE AREAS. IF CIRCUITS ARE IN BOTH "TO REMAIN" AND "TO BE REMOVED" AREAS, DEMOLISH BACK TO NEAREST TO-REMAIN J-BOX.

3. DEMOLISH AND REMOVE EXISTING CONSTRUCTION ONLY TO THE EXTENT REQUIRED BY NEW CONSTRUCTION AND AS INDICATED. COMPLETE SELECTIVE DEMOLITION OPERATIONS ABOVE EACH FLOOR OR TIER BEFORE DISTURBING SUPPORTING MEMBERS ON THE NEXT LOWER LEVEL.

4. REMOVED AND SALVAGED ITEMS: CLEAN SALVAGED ITEMS, PACK OR CRATE ITEMS AFTER CLEANING. IDENTIFY CONTENTS OF CONTAINERS. STORE ITEMS IN A SECURE AREA UNTIL DELIVERY TO OWNER. TRANSPORT ITEMS TO OWNER'S STORAGE AREA DESIGNATED BY OWNER. PROTECT ITEMS FROM DAMAGE DURING TRANSPORT AND STORAGE.

5. REMOVED AND REINSTALLED ITEMS: CLEAN AND REPAIR ITEMS TO FUNCTIONAL CONDITION ADEQUATE FOR INTENDED REUSE. PAINT EQUIPMENT TO MATCH NEW EQUIPMENT. PACK OR CRATE ITEMS AFTER CLEANING AND REPAIRING. IDENTIFY CONTENTS OF CONTAINERS. PROTECT ITEMS FROM DAMAGE DURING TRANSPORT AND STORAGE. REINSTALL ITEMS IN LOCATIONS INDICATED. COMPLY WITH INSTALLATION REQUIREMENTS FOR NEW MATERIALS AND EQUIPMENT. PROVIDE CONNECTIONS, SUPPORTS, AND MISCELLANEOUS MATERIALS NECESSARY TO MAKE ITEM FUNCTIONAL FOR USE INDICATED.

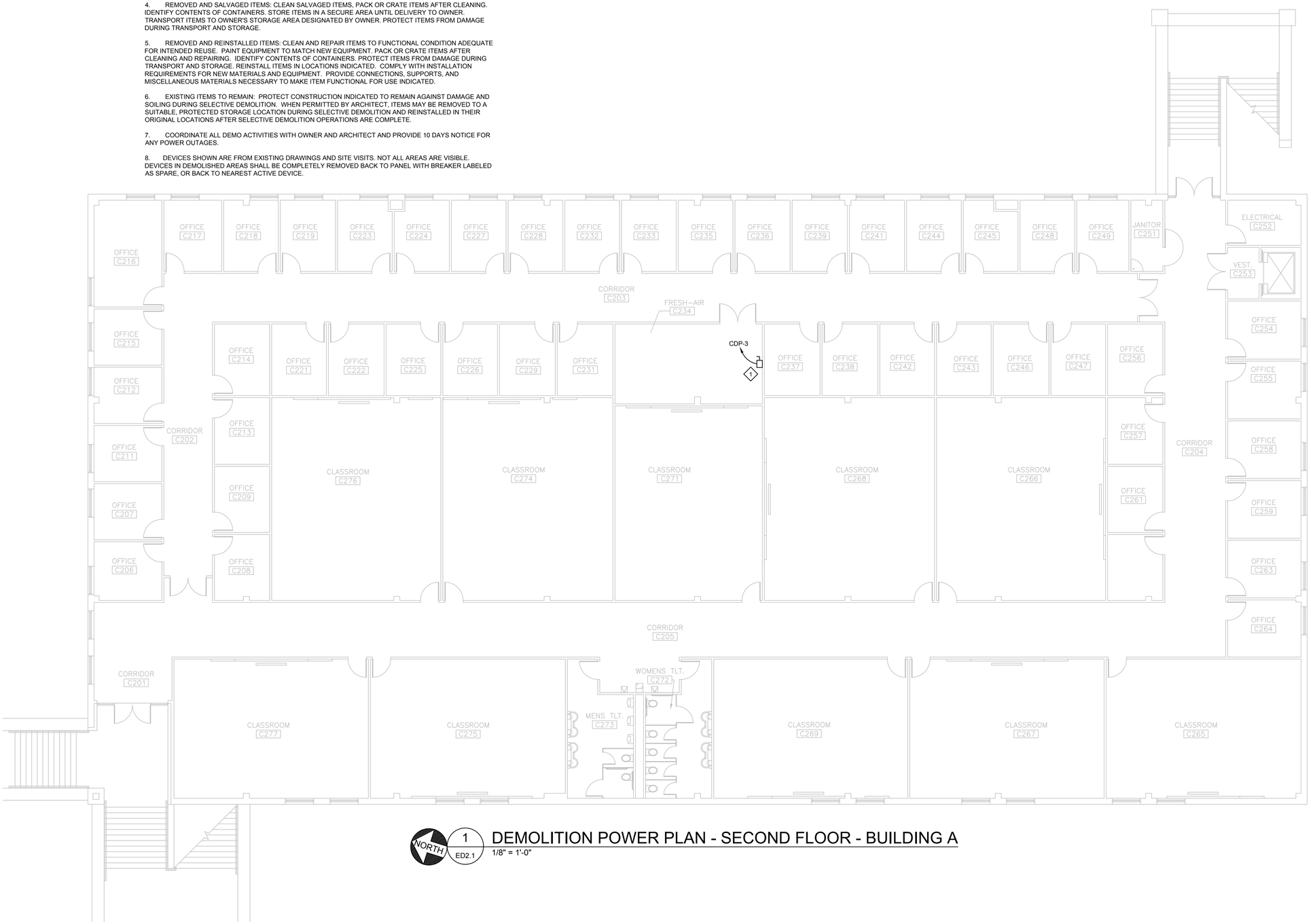
6. EXISTING ITEMS TO REMAIN: PROTECT CONSTRUCTION INDICATED TO REMAIN AGAINST DAMAGE AND SOILING DURING SELECTIVE DEMOLITION. WHEN PERMITTED BY ARCHITECT, ITEMS MAY BE REMOVED TO A SUITABLE, PROTECTED STORAGE LOCATION DURING SELECTIVE DEMOLITION AND REINSTALLED IN THEIR ORIGINAL LOCATIONS AFTER SELECTIVE DEMOLITION OPERATIONS ARE COMPLETE.

7. COORDINATE ALL DEMO ACTIVITIES WITH OWNER AND ARCHITECT AND PROVIDE 10 DAYS NOTICE FOR ANY POWER OUTAGES.

8. DEVICES SHOWN ARE FROM EXISTING DRAWINGS AND SITE VISITS. NOT ALL AREAS ARE VISIBLE. DEVICES IN DEMOLISHED AREAS SHALL BE COMPLETELY REMOVED BACK TO PANEL WITH BREAKER LABELED AS SPARE, OR BACK TO NEAREST ACTIVE DEVICE.

KEYED PLAN NOTES:

1 DEMOLISH EXISTING DISCONNECT. CIRCUIT TO REMAIN FOR CONNECTION TO NEW DISCONNECT.



NORTH 1 ED2.1

DEMOLITION POWER PLAN - SECOND FLOOR - BUILDING A

1/8" = 1'-0"

0 5' 10' 20' 30'

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

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