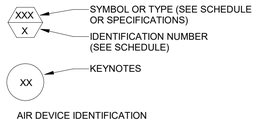
MECHANICAL LEGEND

SYMBOL	DESCRIPTION
	DUCT WIDTH X DEPTH CLEAR INSIDE DIMENSION
UP DN	SUPPLY AIR DUCT SECTION UP - DOWN
UP DN	RETURN AIR DUCT SECTION UP - DOWN
UP DN	EXHAUST AIR DUCT SECTION UP - DOWN
UP DN	ROUND SUPPLY AIR DUCT SECTION UP - DOWN
UP DN	ROUND RETURN AIR DUCT SECTION UP - DOWN
UP DN	ROUND EXHAUST AIR DUCT SECTION UP - DOWN
	SQUARE ELBOW W/TURNING VANES
DN	DROP IN DUCT (DIRECTION OF FLOW)
UP	RISE IN DUCT (DIRECTION OF FLOW)
	TAKE-OFF DAMPER/EXTRACTOR
	MANUAL VOLUME DAMPER
FD	FIRE DAMPER
FSD	FIRE & SMOKE DAMPER
M	MOTORIZED DAMPER
	RECTANGULAR TO ROUND TRANSITION
	SUPPLY DIFFUSER
	SUPPLY GRILLE
	EXHAUST GRILLE
	RETURN GRILLE
CD	CONDENSATE DRAIN PIPE
CS	CONDENSER WATER SUPPLY
CR	CONDENSER WATER RETURN
CWS	CHILLED WATER SUPPLY
CWR	CHILLED WATER RETURN
G	GAS PIPE
HWS	HEATING WATER SUPPLY
HWR	HEATING WATER RETURN
MU	MAKEUP WATER
RL RS	REFRIGERANT PIPE
	REDUCER
	UNION
	PIPE DOWN
	PIPE UP
	GAS PRESSURE REDUCING VALVE (GPR) WITH VENT
	ISOLATION VALVE
S	SOLENOID VALVE
	BALL VALVE (2-1/2" AND SMALLER)
	GLOBE VALVE
	CHECK VALVE
	BUTTERFLY VALVE (3" AND LARGER)
	BALANCING VALVE
	TWO WAY CONTROL VALVE
	THREE WAY CONTROL VALVE
	RELIEF(R), OR SAFETY(S) VALVE
	PUMP, IN SCHEMATIC PRESENTATION
T	THERMOSTAT
H	HUMIDISTAT
SD	DUCT SMOKE DETECTOR
CO	CARBON MONOXIDE DETECTOR
T/H	DUCT TEMP / HUMID SENSOR
	NEW CONNECTION
	LIMIT OF DEMOLITION
UC 1"	UNDERCUT
1 M3.1	SECTION TAKEN AT

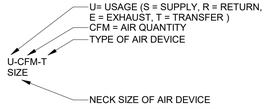
ABBREVIATIONS

AC	AIR CONDITIONING
ACH	AIR CHANGES PER HOUR
AD	ACCESS DOOR OR PANEL
AF	AIR FOIL
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
AMP	AMPERE
AP	ACCESS PANEL
ARCH	ARCHITECTURAL
ASSY	ASSEMBLY
B	BOILER
BAS	BUILDING AUTOMATION SYSTEM
BG	BELOW GRADE
BHP	BRAKE HORSEPOWER
BI	BACKWARD INCLINED
BLDG	BUILDING
BOP	BOTTOM OF PIPE
BS	BELOW SLAB
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNITS PER HOUR
C	COMMON
CA	COMPRESSED AIR, COMBUSTION AIR
CAP	CAPACITY
CB	CIRCUIT BREAKER
CC	COOLING COIL
CD	CEILING DIFFUSER
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
CFM	CUBIC FEET PER MINUTE
CFH	CUBIC FEET PER HOUR
CH	CHILLER
CLG	CEILING
CEF	CEILING EXHAUST FAN
CMU	CONCRETE MASONRY UNIT
COND	CONDENSER, CONDENSATE
CONT	CONTINUATION
COP	COEFFICIENT OF PERFORMANCE
CRD	CEILING RADIATION DAMPER
CTE	CONNECT TO EXISTING
CU	CONDENSING UNIT
DB	DRY BULB, OR DECIBEL
DDC	DIRECT DIGITAL CONTROL
DET	DETAIL
DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DWG	DRAWING
(E)	EXISTING
EA	EXHAUST AIR
EAD	EXHAUST AIR DAMPER
EAT	ENTERING AIR TEMPERATURE
EF	EXHAUST FAN
EFF	EFFICIENCY
EG	EXHAUST GRILLE
EL.	ELEVATION
ELEV	ELEVATION
ENT	ENTERING
EQUIP	EQUIPMENT
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
ETR	EXISTING TO REMAIN
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST AIR
EXT	EXTERIOR
F	FAHRENHEIT
F/A	FROM ABOVE
F/B	FROM BELOW
FC	FORWARD CURVED
FCU	FAN COIL UNIT
FLA	FULL LOAD AMPS
FLR	FLOOR
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FT	FEET
G	NATURAL GAS
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GPM	GALLONS PER MINUTE
GPR	GAS PRESSURE REDUCING VALVE
GR.	GRILLE
GSM	GALVANIZED SHEET METAL
HC	HEATING COIL
HP	HORSEPOWER, OR HEAT PUMP
HTG.	HEATING
HZ	HERTZ
ID	INSIDE DIAMETER
IN	INCHES
KEF	KITCHEN EXHAUST FAN
kW	KILOWATTS
KWH	KILOWATT HOURS
L	LENGTH
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LRA	LOCKED ROTOR AMPS
LTG	LIGHTING
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	THOUSAND BTUH
MCA	MINIMUM CIRCUIT AMPACITY
MEZZ	MEZZANINE
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MTD	MOUNTED
MTG	MEETING
(N)	NEW
NC	NORMALLY CLOSED
NO	NORMALLY OPEN, OR NUMBER
NPT	NATIONAL PIPE THREAD
N.R.	NOT REQUIRED
N.T.S.	NOT TO SCALE
OA	OUTSIDE AIR
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
OSA	OUTSIDE AIR
OSAD	OUTSIDE AIR DAMPER
P	PUMP
PD	PRESSURE DROP
PH	PHASE
PLBG	PLUMBING
PLC	PROGRAMMABLE LOGIC CONTROL
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAGE
(R)	REMOVE
R OR RA	RETURN AIR
RAD	RETURN AIR DAMPER
(RL)	RELOCATE
REQD	REQUIRED
RF	RETURN FAN
RM	ROOM
RPM	REVOLUTIONS PER MINUTE
RTU	ROOFTOP HVAC UNIT
S OR SA	SUPPLY AIR
SAD	SUPPLY AIR DAMPER
SCH	SCHEDULE
SF	SQUARE FEET
SHT	SHEET
SP	STATIC PRESSURE
SQ	SQUARE
SQ. FT.	SQUARE FEET
SR	SPRING RANGE
SS	STAINLESS STEEL
STD	STANDARD
T OR TA	TRANSFER AIR
T/A	TO ABOVE
T/B	TO BELOW
TDH	TOTAL DYNAMIC HEAD
TEMP	TEMPERATURE, OR TEMPORARY
TOS	TOP OF SLAB
TSP	TOTAL STATIC PRESSURE
TTC	TIGHT TO CEILING
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
V	VOLTS
VA	VOLT-AMPERE
VAV	VARIABLE AIR VOLUME
V.D.	VOLUME DAMPER
VEL	VELOCITY
VFD	VARIABLE FREQUENCY DRIVE
V.I.F.	VERIFY IN FIELD
VOL	VOLUME
VV	VARIABLE VOLUME
W/	WITH
WB	WET BULB
WC	WATER COLUMN
WG	WATER GAUGE
W/O	WITHOUT

EQUIPMENT IDENTIFICATION



AIR DEVICE IDENTIFICATION



IDAHO BUILDING DEPARTMENT NOTES

1. ALL WORK SHALL COMPLY WITH APPLICABLE SECTIONS OF THE INTERNATIONAL BUILDING CODE (IBC), 2018, AND ALL OTHER APPLICABLE LOCAL AND STATE CODES.

2. TESTING OF MECHANICAL SYSTEMS SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE INTERNATIONAL MECHANICAL CODE (IMC), 2018, INCLUDING BUT NOT LIMITED TO:

   A. VENTILATION SYSTEM BALANCING – IMC SECTION 403
   B. SMOKE CONTROL SYSTEMS – IMC SECTION 513

3. THE FOLLOWING COMPONENTS AND SYSTEMS SHALL CONFORM TO THE REFERENCED CODE SECTIONS OR APPLICABLE STANDARDS:

   A. STANDARDS OF HEATING – IMC SECTION 309
   B. DUCT CONSTRUCTION AND INSTALLATION – IMC SECTION 603
   C. AIR INTAKES AND EXHAUST OPENINGS – IMC SECTION 401.4
   D. AIR FILTERS – IMC SECTION 605
   E. FIRE AND SMOKE DAMPERS – IMC SECTIONS 606 & 607
   F. SMOKE CONTROL SYSTEMS – IMC SECTION 513
   G. PIPING AND INSULATION – IMC CHAPTER 12

4. THE MINIMUM TEMPERATURE MAINTAINED IN OCCUPIED SPACES DURING THE HEATING SEASON SHALL BE 68°F (20°C), AS REQUIRED BY IMC SECTION 309.1.

5. VENTILATION FOR ALL SPACES SHALL COMPLY WITH IMC CHAPTER 4.

6. A STATEMENT SHALL BE PROVIDED BY THE OWNER OR RESPONSIBLE PARTY CONFIRMING THAT THE VENTILATION SYSTEM WILL BE MAINTAINED IN CONTINUOUS OPERATION DURING OCCUPANCY, AS REQUIRED BY IMC SECTION 403.3.

7. ALL FIRE DAMPERS SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 555 AND INSTALLED PER IMC SECTION 607 AND MANUFACTURER'S INSTRUCTIONS.

8. COMBINATION FIRE/SMOKE DAMPERS AND SMOKE DAMPERS SHALL BE LISTED IN ACCORDANCE WITH UL 555S AND INSTALLED IN ACCORDANCE WITH IMC SECTION 607.

9. CEILING RADIATION DAMPERS SHALL BE LISTED IN ACCORDANCE WITH UL 555C AND INSTALLED IN FIRE-RESISTANT CEILING ASSEMBLIES IN ACCORDANCE WITH IMC SECTION 607.6.2.

10. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS AND TYPES OF REQUIRED FIRE-RATED WALLS AND SMOKE PARTITIONS.

11. THESE PLANS ARE APPROVED ONLY FOR THE SCOPE OF WORK INDICATED ON THE PERMIT APPLICATION. ALL OTHER CONDITIONS, ELEMENTS, OR SYSTEMS NOT COVERED IN THIS REVIEW ARE SUBJECT TO FIELD INSPECTION AND VERIFICATION FOR CODE COMPLIANCE.

GENERAL NOTES

1. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS INSTALLATION INSTRUCTIONS.

2. THE MECHANICAL EQUIPMENT HAS BEEN COORDINATED WITH THE ELECTRICAL DESIGN DRAWINGS BASED ON THE ELECTRICAL CHARACTERISTICS OF THE EQUIPMENT SPECIFIED.

GENERAL HVAC NOTES

1. PROVIDE ALL MATERIAL AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE MECHANICAL SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED, AND AS REQUIRED BY CODE.

2. CONTRACT DOCUMENT DRAWINGS FOR MECHANICAL WORK (HVAC, PLUMBING, AND FIRE PROTECTION) ARE DIAGRAMMATIC AND ARE INTENDED TO CONVEY SCOPE AND GENERAL ARRANGEMENT ONLY.

3. THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS THAT ARE NOT FIXED BY DIMENSIONS ARE APPROXIMATE ONLY.DO NOT SCALE DRAWINGS.

4. COORDINATE CONSTRUCTION OF ALL MECHANICAL WORK WITH ARCHITECTURAL, STRUCTURAL, CIVIL, ELECTRICAL WORK, ETC., SHOWN ON OTHER CONTRACT DOCUMENT DRAWINGS.

5. INSTALL ALL MECHANICAL EQUIPMENT AND APPURTENANCES IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS, CONTRACT DOCUMENTS, AND APPLICABLE CODES AND REGULATIONS.

6. ALL CONTROL WIRE AND CONDUIT SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE AND ELECTRICAL DIVISION OF THE SPECIFICATION.

7. PROVIDE VIBRATION ISOLATION FOR ALL MECHANICAL EQUIPMENT TO PREVENT TRANSMISSION OF VIBRATION TO BUILDING STRUCTURE.

8. LOCATE ALL TEMPERATURE AND FLOW MEASURING DEVICES IN ACCESSIBLE LOCATIONS WITH THE STRAIGHT SECTION OF PIPE OR DUCT UPSTREAM AND DOWNSTREAM AS RECOMMENDED BY THE MANUFACTURER FOR GOOD ACCURACY.

9. PROVIDE ACCESS PANELS FOR INSTALLATION IN WALLS AND CEILINGS, WHERE REQUIRED, TO SERVICE DAMPERS, VALVES, SMOKE DETECTORS, AND OTHER CONCEALED MECHANICAL EQUIPMENT. ACCESS PANELS SHALL BE TURNED OVER TO THE GENERAL CONTRACTOR FOR INSTALLATION. ACCESS PANELS SHALL HAVE THE EQUIVALENT FIRE-RATED CAPACITY (1 HR, 2 HR, ETC.) AS THE WALL.

10. ALL RTU AND AIR CONDITIONING CONDENSATE DRAIN LINES FROM EACH RTU AND AIR HANDLING UNIT SHALL BE PIPED FULL SIZE OF THE UNIT DRAIN OUTLET, WITH "P" TRAP, AND PIPED TO THE NEAREST APPROVED PLACE OF DISPOSAL. SEE THE DETAILS SHOWN IN THE DRAWINGS OR THE CONTRACT SPECIFICATIONS FOR THE DEPTH OF THE AIR CONDITIONING CONDENSATE TRAP.

    A. REFER TO TYPICAL DETAILS FOR DUCTWORK, PIPING, AND EQUIPMENT INSTALLATION.

THERMOSTATIC CONTROLS (IECC 2020):

C403.4.1 THERMOSTATIC CONTROLS (MANDATORY)

THE SUPPLY OF HEATING AND COOLING ENERGY TO EACH ZONE SHALL BE CONTROLLED BY INDIVIDUAL THERMOSTATIC CONTROLS CAPABLE OF RESPONDING TO TEMPERATURE WITHIN THE ZONE. WHERE HUMIDIFICATION OR DEHUMIDIFICATION OR BOTH IS PROVIDED, NOT FEWER THAN ONE HUMIDITY CONTROL DEVICE SHALL BE PROVIDED FOR EACH HUMIDITY CONTROL SYSTEM.

EXCEPTION: INDEPENDENT PERIMETER SYSTEMS THAT ARE DESIGNED TO OFFSET ONLY BUILDING ENVELOPE HEAT LOSSES, GAINS OR BOTH SERVING ONE OR MORE PERIMETER ZONES ALSO SERVED BY AN INTERIOR SYSTEM PROVIDED THAT BOTH OF THE FOLLOWING CONDITIONS ARE MET:
1. THE PERIMETER SYSTEM INCLUDES NOT FEWER THAN ONE THERMOSTATIC CONTROL ZONE FOR EACH BUILDING EXPOSURE HAVING EXTERIOR WALLS FACING ONLY ONE ORIENTATION (WITHIN ± 45 DEGREES) (0.8 RAD) FOR MORE THAN 50 CONTIGUOUS FEET (15 240 MM).
2. THE PERIMETER SYSTEM HEATING AND COOLING SUPPLY IS CONTROLLED BY THERMOSTATS LOCATED WITHIN THE ZONES SERVED BY THE SYSTEM.

C403.4.1.2 DEADBAND (MANDATORY)
WHERE USED TO CONTROL BOTH HEATING AND COOLING, ZONE THERMOSTATIC CONTROLS SHALL BE CONFIGURED TO PROVIDE A TEMPERATURE RANGE OR DEADBAND OF NOT LESS THAN 5°F (2.8°C) WITHIN WHICH THE SUPPLY OF HEATING AND COOLING ENERGY TO THE ZONE IS SHUT OFF OR REDUCED TO A MINIMUM.

EXCEPTIONS:
1. THERMOSTATS REQUIRING MANUAL CHANGEOVER BETWEEN HEATING AND COOLING MODES.
2. OCCUPANCIES OR APPLICATIONS REQUIRING PRECISION IN INDOOR TEMPERATURE CONTROL AS APPROVED BY THE CODE OFFICIAL.

C403.4.1.3 SETPOINT OVERLAP RESTRICTION (MANDATORY)
WHERE A ZONE HAS A SEPARATE HEATING AND A SEPARATE COOLING THERMOSTATIC CONTROL LOCATED WITHIN THE ZONE, A LIMIT SWITCH, MECHANICAL STOP OR DIRECT DIGITAL CONTROL SYSTEM WITH SOFTWARE PROGRAMMING SHALL BE CONFIGURED TO PREVENT THE HEATING SETPOINT FROM EXCEEDING THE COOLING SETPOINT AND TO MAINTAIN A DEADBAND IN ACCORDANCE WITH SECTION C403.4.1.2.

C403.4.2 OFF-HOUR CONTROLS (MANDATORY)
EACH ZONE SHALL BE PROVIDED WITH THERMOSTATIC SETBACK CONTROLS THAT ARE CONTROLLED BY EITHER AN AUTOMATIC TIME CLOCK OR PROGRAMMABLE CONTROL SYSTEM.
EXCEPTIONS:
1. ZONES THAT WILL BE OPERATED CONTINUOUSLY.
2. ZONES WITH A FULL HVAC LOAD DEMAND NOT EXCEEDING 6,800 BTU/H (2 KW) AND HAVING A MANUAL SHUTOFF SWITCH LOCATED WITH READY ACCESS.

C403.4.2.1 THERMOSTATIC SETBACK (MANDATORY)
THERMOSTATIC SETBACK CONTROLS SHALL BE CONFIGURED TO SET BACK OR TEMPORARILY OPERATE THE SYSTEM TO MAINTAIN ZONE TEMPERATURES DOWN TO 55°F (13°C) OR UP TO 85°F (29°C).

C403.4.2.2 AUTOMATIC SETBACK AND SHUTDOWN (MANDATORY)
AUTOMATIC TIME CLOCK OR PROGRAMMABLE CONTROLS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK AND RETAINING THEIR PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR NOT FEWER THAN 10 HOURS. ADDITIONALLY, THE CONTROLS SHALL HAVE A MANUAL OVERRIDE THAT ALLOWS TEMPORARY OPERATION OF THE SYSTEM FOR UP TO 2 HOURS; A MANUALLY OPERATED TIMER CONFIGURED TO OPERATE THE SYSTEM FOR UP TO 2 HOURS; OR AN OCCUPANCY SENSOR.

C403.4.2.3 AUTOMATIC START (MANDATORY)
AUTOMATIC START CONTROLS SHALL BE PROVIDED FOR EACH HVAC SYSTEM. THE CONTROLS SHALL BE CONFIGURED TO AUTOMATICALLY ADJUST THE DAILY START TIME OF THE HVAC SYSTEM IN ORDER TO BRING EACH SPACE TO THE DESIRED OCCUPIED TEMPERATURE IMMEDIATELY PRIOR TO SCHEDULED OCCUPANCY.

APPLICABLE CODES

2018 IDAHO BUILDING CODE (IBC) WITH AMENDMENTS
2020 IDAHO ENERGY CONSERVATION CODE (IECC-2018)
2018 IDAHO MECHANICAL CODE (IMC)
2017 IDAHO PLUMBING CODE (ADOPTS WITH AMENDMENTS UPC 2015)
2017 NATIONAL ELECTRIC CODE

MECHANICAL SHEET INDEX

COMcheck Software Version COMcheckWeb

Mechanical Compliance Certificate

Project Information

Energy Code: 2018 IECC
Project Title:
Location:
Climate Zone: 6b
Project Type: New Construction

Construction Site: Black Rock Coffee
Owner/Agent:
Designer/Contractor:

Additional Efficiency Package(s)

Credits: 1.0 Required 0.0 Proposed

Mechanical Systems List

Quantity System Type & Description

1 ELH-1 (Unknown w/ PerimeterSystem):
Heating: 1 each - Unit Heater, Electric, Capacity = 5 kBtu/h
No minimum efficiency requirement applies

1 RTU-1 (Single Zone):
Heating: 1 each - Central Furnace, Electric, Capacity = 41 kBtu/h
No minimum efficiency requirement applies
Cooling: 1 each - Single Package DX Unit, Capacity = 62 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 14.00 SEER, Required Efficiency = 14.00 SEER
Proposed Part Load Efficiency = 0.00 , Required Part Load Efficiency = 0.00

1 EWH-1:
Electric Storage Water Heater, Capacity: 50 gallons w/ Circulation Pump
No minimum efficiency requirement applies

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

ERIC ENGELL
Name - Title
Signature
07/01/25
Date:

Project Title: BRC
Data filename:
Report date: 07/01/25

BLACK ROCK COFFEE DRIVE THROUGH

NY ENGINEERS
NEARBY ENGINEERS
382 NE 191ST STREET SUITE
49674, MIAMI, FL 33179
PH-914.257.3455
WWW.NY-ENGINEERS.COM

CONTROL NO: #001

ISSUED FOR PERMIT (07-01-2025)

JOB NUMBER: 24-000325
DATE: 04-22-2025
CONTENTS: MECHANICAL LEGEND, ABBREVIATIONS AND NOTES

M0.1

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HVAC DUCTWORK - SHEET METAL

1. PROVIDE VOLUME DAMPER AT EACH TAP TO MAIN DUCT AND WHERE NECESSARY TO PROPERLY BALANCE SYSTEM.

2. SUPPLY AND RETURN DUCTWORK 10' FROM ALL AC UNITS SHALL BE LINED WITH 1" ACOUSTICAL LINING.

3. SUPPLY AND INSTALL ALL NECESSARY SUPPLY DIFFUSERS AND RETURN AIR REGISTERS WHERE INDICATED ON THE DRAWING. COORDINATE LOCATION OF DIFFUSERS AND REGISTERS WITH REFLECTED CEILING PLAN.

4. UNLESS OTHERWISE SHOWN, LOCATE ALL ROOM THERMOSTATS 4'-0" (CENTER LINE) ABOVE THE FINISHED FLOOR. NOTIFY THE ENGINEER OF ANY ROOMS WHERE THE PRECEDING LOCATION CANNOT BE MAINTAINED OR WHERE THERE IS A QUESTION ON LOCATION.

5. ALL DUCTWORK DIMENSIONS, AS SHOWN ON THE DRAWINGS, ARE INTERNAL CLEAR DIMENSIONS, AND DUCT SIZE SHALL BE INCREASED TO COMPENSATE FOR DUCT LINING THICKNESS.

6. PROVIDE ALL 90-DEGREE SQUARE ELBOWS WITH DOUBLE RADIUS TURNING VANES UNLESS OTHERWISE INDICATED. ELBOWS IN KITCHEN EXHAUSTS SHALL BE OF UN-VANED SMOOTH RADIUS CONSTRUCTION WITH A RADIUS EQUAL TO 1-1/2 TIMES THE WIDTH OF THE DUCT. PROVIDE ACCESS DOORS UPSTREAM OF ALL ELBOWS WITH TURNING VANES.

7. ALL RTU AND AIR HANDLING UNITS SHALL OPERATE WITHOUT MOISTURE CARRYOVER.

8. LOCATE ALL MECHANICAL EQUIPMENT FOR UNOBSTRUCTED ACCESS TO UNIT ACCESS PANELS, CONTROLS, AND VALVING.

9. PROVIDE FLEXIBLE CONNECTIONS IN ALL DUCTWORK SYSTEMS (SUPPLY, RETURN, AND EXHAUST) CONNECTED TO AIR HANDLING UNITS, FANS, AND OTHER EQUIPMENT THAT REQUIRE VIBRATION ISOLATION. FLEXIBLE CONNECTIONS SHALL BE PROVIDED AT THE POINT OF CONNECTION TO THE EQUIPMENT UNLESS OTHERWISE INDICATED.

10. UNLESS OTHERWISE NOTED, ALL DUCTWORK IS OVERHEAD, TIGHT TO THE UNDERSIDE OF THE STRUCTURE, WITH SPACE FOR INSULATION IF NEEDED.

11. PROVIDE ACCESS DOORS IN DUCTWORK TO PROVIDE ACCESS FOR ALL SMOKE DETECTORS, FIRE DAMPERS, SMOKE DAMPERS, VOLUME DAMPERS, COILS, AND OTHER ITEMS LOCATED IN THE DUCTWORK THAT REQUIRE SERVICE AND/OR INSPECTION.

12. PROVIDE ACCESS DOORS FOR THE OPERATION, ADJUSTMENT, AND MAINTENANCE OF ALL FANS, VALVES, AND MECHANICAL EQUIPMENT.

13. SEE SPECIFICATIONS FOR DUCTWORK GAUGES, BRACING, HANGERS, AND OTHER REQUIREMENTS.

SECTION 0101 - QUALITY OF WORK

1.1 CODE COMPLIANCE
A. ALL WORK SHALL MEET ALL STATE AND LOCAL CODES HAVING JURISDICTION.

END OF SECTION 0101

SECTION 230517 - SLEEVES AND SLEEVE SEALS FOR HVAC PIPING

1.1 SLEEVE-SEAL SYSTEMS
A. FIELD-ASSEMBLED, MODULAR SEALING-ELEMENT UNIT FOR FILLING ANNULAR SPACE BETWEEN PIPING AND SLEEVE.
1. SEALING ELEMENTS: EPDM RUBBER OR NBR.
2. PRESSURE PLATES: CARBON STEEL, PLASTIC, STAINLESS STEEL.
3. CONNECTING BOLTS AND NUTS: CARBON STEEL WITH CORROSION-RESISTANT COATING, STAINLESS STEEL.

B. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
1. ADVANCE PRODUCTS & SYSTEMS, INC.
2. CALPICO, INC.
3. METRAFLEX COMPANY (THE).
4. PIPELINE SEAL AND INSULATOR, INC.
5. PROCO PRODUCTS, INC.

1.2 GROUT
A. NON-SHRINK, FACTORY-PACKAGED.

1.3 SLEEVE AND SLEEVE-SEAL SCHEDULE
A. USE SLEEVES AND SLEEVE SEALS FOR THE FOLLOWING PIPING-PENETRATION APPLICATIONS:
1. INTERIOR PARTITIONS:
A. PIPING SMALLER THAN NPS 6 (DN 150): GALVANIZED-STEEL-PIPE SLEEVES, PVC-PIPE SLEEVES.
B. PIPING NPS 6 (DN 150) AND LARGER: GALVANIZED-STEEL-SHEET SLEEVES.

END OF SECTION 230517

SECTION 230518 - ESCUTCHEONS FOR HVAC PIPING

PART 2 - PRODUCTS
2.1 ESCUTCHEONS
A. ONE-PIECE, CAST-BRASS TYPE: WITH POLISHED, CHROME-PLATED AND ROUGH-BRASS FINISH AND SETSCREW FASTENER.
B. ONE-PIECE, DEEP-PATTERN TYPE: DEEP-DRAWN, BOX-SHAPED BRASS WITH CHROME-PLATED FINISH AND SPRING-CLIP FASTENERS.
C. ONE-PIECE, STAMPED-STEEL TYPE: WITH CHROME-PLATED FINISH AND SPRING-CLIP FASTENERS.
2.2 FLOOR PLATES
A. ONE-PIECE FLOOR PLATES: CAST-IRON FLANGE WITH HOLES FOR FASTENERS.

PART 3 - EXECUTION
3.1 INSTALLATION
A. INSTALL ESCUTCHEONS FOR PIPING PENETRATIONS OF WALLS, CEILINGS, AND FINISHED FLOORS.
B. INSTALL ESCUTCHEONS WITH ID TO CLOSELY FIT AROUND PIPE, TUBE, AND INSULATION OF PIPING AND WITH OD THAT COMPLETELY COVERS OPENING.
1. ESCUTCHEONS FOR NEW PIPING:
a. PIPING WITH FITTING OR SLEEVE PROTRUDING FROM WALL: ONE-PIECE, DEEP-PATTERN TYPE.
b. INSULATED PIPING: ONE-PIECE, STAMPED-STEEL TYPE.
c. BARE PIPING AT WALL AND FLOOR PENETRATIONS IN FINISHED SPACES: ONE-PIECE, CAST-BRASS TYPE WITH POLISHED, CHROME-PLATED FINISH OR STAMPED-STEEL TYPE.
d. BARE PIPING AT CEILING PENETRATIONS IN FINISHED SPACES: ONE-PIECE, CAST-BRASS TYPE WITH POLISHED, CHROME-PLATED FINISH OR STAMPED-STEEL TYPE.

END OF SECTION 230518

SECTION 230529 - HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT

1.1 PERFORMANCE REQUIREMENTS
A. DELEGATED DESIGN: DESIGN TRAPEZE PIPE HANGERS AND EQUIPMENT SUPPORTS, INCLUDING COMPREHENSIVE ENGINEERING ANALYSIS BY A QUALIFIED PROFESSIONAL ENGINEER, USING PERFORMANCE REQUIREMENTS AND DESIGN CRITERIA INDICATED.
B. STRUCTURAL PERFORMANCE: HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT SHALL WITHSTAND THE EFFECTS OF GRAVITY LOADS AND STRESSES WITHIN LIMITS AND UNDER CONDITIONS INDICATED ACCORDING TO ASCE/SEI 7.
1. DESIGN SUPPORTS FOR MULTIPLE PIPES CAPABLE OF SUPPORTING COMBINED WEIGHT OF SUPPORTED SYSTEMS, SYSTEM CONTENTS, AND TEST WATER.
2. DESIGN EQUIPMENT SUPPORTS CAPABLE OF SUPPORTING COMBINED OPERATING WEIGHT OF SUPPORTED EQUIPMENT AND CONNECTED SYSTEMS.
3. DESIGN SEISMIC-RESTRAINT HANGERS AND SUPPORTS FOR PIPING AND EQUIPMENT AND OBTAIN APPROVAL FROM AUTHORITIES HAVING JURISDICTION.

1.2 COMPONENTS
A. METAL PIPE HANGERS AND SUPPORTS: CARBON OR STAINLESS STEEL.
B. TRAPEZE PIPE HANGERS: CARBON OR STAINLESS STEEL.
C. FIBERGLASS PIPE HANGERS: CLEVIS, CENTURY COMPOSITES, COOPER B-LINE.
D. METAL FRAMING SYSTEMS: MFMA MANUFACTURER.
E. FIBERGLASS STRUT SYSTEMS: COOPER B-LINE.
F. THERMAL-HANGER SHIELD INSERTS.
G. FASTENER SYSTEMS: POWDER-ACTUATED FASTENERS OR MECHANICAL-EXPANSION ANCHORS.
H. PIPE STANDS: COMPACT, LOW TYPE, SINGLE PIPE; HIGH TYPE, SINGLE PIPE; HIGH TYPE, MULTIPLE PIPES; CURB-MOUNTED TYPE.
I. EQUIPMENT SUPPORTS.

END OF SECTION 230529

SECTION 230593 - TESTING, ADJUSTING, AND BALANCING FOR HVAC

1.1 SUMMARY
A. TESTING, ADJUSTING, AND BALANCING FOR THE FOLLOWING:
1. AIR SYSTEMS: CONSTANT-VOLUME SYSTEMS.
2. EXISTING SYSTEMS.

1.2 QUALITY ASSURANCE
A. PROCURE THE SERVICES OF A TESTING, ADJUSTING AND BALANCING (TAB) SPECIALIST WHO SPECIALIZES IN HEATING, VENTILATION AND AIR CONDITIONING SYSTEMS. THE TAB AGENT SHALL HAVE THE FOLLOWING QUALIFICATIONS: AABC, NEBB, OR TABB CERTIFIED.

END OF SECTION 230593

1.3 EXECUTION

A. THE TAB SPECIALIST SHALL PERFORM FLOW MEASUREMENTS OF ALL EXISTING AIR AND HYDRONIC SYSTEMS THAT ARE TO REMAIN OR TO BE INCORPORATED INTO NEW WORK PRIOR TO THE START OF WORK IN THE PROJECT SCOPE. A REPORT OF THESE MEASUREMENTS, INDICATING ANY AND ALL DEFICIENCIES, SHALL BE SUBMITTED FOR OWNER REVIEW.
B. THE TAB SPECIALIST SHALL PERFORM FLOW MEASUREMENTS OF ALL NEW AIR AND HYDRONIC SYSTEMS AS LISTED ABOVE IN THE PROJECT SCOPE. A REPORT OF THESE MEASUREMENTS, INDICATING ANY AND ALL DEFICIENCIES, SHALL BE SUBMITTED FOR OWNER REVIEW.

C. THE REPORT SHALL INDICATE A SCHEMATIC DIAGRAM SHOWING THE LOCATIONS OF ALL EQUIPMENT TESTED AND MEASUREMENT LOCATIONS.

D. PRIOR TO THE FINAL INSPECTION OF THE WORK, THE TAB SPECIALIST SHALL BALANCE ALL SYSTEMS AS INDICATED ABOVE TO THE REQUIREMENTS OF THE DESIGN.

E. FURNISH AND INSTALL ALL ADDITIONAL BALANCING EQUIPMENT, PRESSURE TAPS, GAUGES, AND OTHER EQUIPMENT AS REQUIRED FOR A PROPERLY BALANCED SYSTEM AT NO ADDITIONAL COST TO THE OWNER. SUCH ADDITIONAL EQUIPMENT SHALL ADHERE STRICTLY TO THE RESPECTIVE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.

F. COORDINATE ALL WORK OF THIS SECTION WITH THE BUILDING MANAGER. BALANCING WORK SHALL NOT CONFLICT WITH OTHER WORK SO AS TO MAINTAIN COMPLETION WITHIN THE SPECIFIED TIME.

G. ALL INSTRUMENTS USED FOR TAB SHALL BE MAINTAINED IN GOOD WORKING CONDITION AND ACCURATELY CALIBRATED.

H. TOLERANCES: PLUS OR MINUS 5 PERCENT OF DESIGN VALUES.

I. INSPECTIONS: RANDOM CHECKS BY OWNER OR ARCHITECT TO VERIFY FINAL TESTING, ADJUSTING, AND BALANCING REPORT.

J. ADDITIONAL TESTS: RANDOM TESTS WITHIN 90 DAYS OF COMPLETING TAB TO VERIFY BALANCE CONDITIONS AND SEASONAL TESTS.

END OF SECTION 230593

SECTION 230713 - DUCT INSULATION

1.1 QUALITY ASSURANCE

SURFACE-BURNING CHARACTERISTICS: ALL INSULATION SHALL HAVE A COMPOSITE (INSULATION JACKET OR FACING AND ADHESIVE USED TO ADHERE THE FACING OR JACKET TO THE INSULATION) A FLAME-SPREAD INDEX OF 25, AND SMOKE-DEVELOPED INDEX OF 50 FOR INSULATION INSTALLED INDOORS, 75, AND SMOKE-DEVELOPED INDEX OF 150 FOR INSULATION INSTALLED OUTDOORS; ACCORDING TO ASTM E84.

1.2 FIELD QUALITY CONTROL

A. FIELD INSPECTIONS: BY OWNER-ENGAGED AGENCY.

1.3 INDOOR DUCT AND PLENUM INSULATION SCHEDULE:

A. CONCEALED, RECTANGULAR, ROUND, AND FLAT-OVAL, SUPPLY RETURN, OUTDOOR, AND EXHAUST-AIR DUCT AND AIR PLENUM INSULATION.

B. FLEXIBLE ELASTOMERIC, MINERAL-FIBER BLANKET, MINERAL-FIBER BOARD, OR POLYOLEFIN WITH MINIMUM INSTALLED THERMAL RESISTANCE AS FOLLOWS:

- UNCONDITIONED SPACES WITHIN THE BUILDING: R-6
- WITHIN BUILDING ENVELOPE ASSEMBLY: R-12
- OUTSIDE OF BUILDING: R-12

1.4 ITEMS NOT INSULATED:

1. FIBROUS-GLASS DUCTS.
2. METAL DUCTS WITH DUCT LINER OR SUFFICIENT THICKNESS TO COMPLY WITH ENERGY CODE AND ASHRAE/IESNA 90.1.
3. FACTORY-INSULATED FLEXIBLE DUCTS.
4. FACTORY-INSULATED PLENUMS AND CASINGS.
5. FLEXIBLE CONNECTORS.
6. VIBRATION-CONTROL DEVICES.
7. FACTORY-INSULATED ACCESS PANELS AND DOORS.
8. DUCTS THAT HAVE INTERNAL ACOUSTICAL LINING.

1.5 PRODUCTS

A. THE FOLLOWING INSULATION MANUFACTURERS WILL BE ACCEPTABLE:

1. JOHNS-MANVILLE
2. OWENS-CORNING

1.6 ACOUSTICAL TREATMENT

WHERE SHOWN ON THE DRAWINGS, LOW-PRESSURE DUCTWORK SHALL BE LINED WITH 1.5" THICK R-6 AS MANUFACTURED BY DUCTMATE, 1-1/2 POUND MINIMUM DENSITY, NEOPRENE COATED, FLEXIBLE FIBERGLASS DUCT LINER. LINING SHALL COMPLY WITH NFPA 90A AND SHALL HAVE A FLAME SPREAD CLASSIFICATION OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED RATING NOT MORE THAN 50. DUCT SIZES WHERE LINING IS INDICATED ON PLANS ARE MINIMUM INSIDE CLEAR DIMENSIONS REQUIRED.

1.7 SEALANT MATERIALS

1. TWO-PART TAPE SEALING SYSTEM.
2. WATER-BASED JOINT AND SEAM SEALANT.
3. SOLVENT-BASED JOINT AND SEAM SEALANT.
4. FLANGED JOINT SEALANT.
5. FLANGE GASKETS.

END OF SECTION 230713

PIPING INSULATION

A. INSULATE ALL PIPING IN ACCORDANCE WITH INSULATION SCHEDULE EXCEPT AS OTHERWISE NOTED.

PIPING INSULATION SCHEDULE

SERVICE	SIZE (OPERATING TEMP.)	THICKNESS	FINISH
CONDENSATE PIPING (105-140°F)	<1.5"	1.0"	P-6

SECTION 233113 - METAL DUCTS

1.1 CONSTRUCTION

A. EACH DUCT SYSTEM SHALL BE CONSTRUCTED FOR THE SPECIFIC SMACNA DUCT PRESSURE CLASSIFICATIONS SHOWN ON THE CONTRACT DRAWINGS. WHERE NO PRESSURE CLASSES ARE SPECIFIED BY THE DESIGNER, THE SMACNA 2-1/2 INCH WG PRESSURE CLASS IS THE BASIS OF COMPLIANCE WITH THESE STANDARDS, REGARDLESS OF THE VELOCITY IN THE DUCT.

B. ALL DUCTWORK SHALL BE CONSTRUCTED TO SMACNA 2" WG DESIGN AND NOT LESS THAN THE FOLLOWING STANDARDS:

1. DUCTWORK SHALL BE TRANSVERSELY JOINTED BY CONNECTING SEAMS OF COMPANION ANGLES, FORMED FROM 1-1/2" X 1-1/2" X 1/8" GALVANIZED ANGLES, TACK-WELDED OR RIVETED TO THE DUCT. THE ANGLE FRAME SHALL BE CONTINUOUSLY FLANGED UP INTO THE UPRIGHT OF THE ANGLE AND EACH CORNER SHALL BE FILLED IN AND GROUND SMOOTH. JOINTS SHALL BE GASKETED WITH 1/8" THICK REINFORCED GASKET, OVERLAPPED AT CORNERS, GASKET SIMILAR TO 3M-1202 OR APPROVED EQUAL.

2. RECTANGULAR FITTINGS AND ALL TRANSITION PIECES FROM RECTANGULAR TO ROUND SHALL BE NO. 16 GAUGE ALL-WELDED CONSTRUCTION.

3. HORIZONTAL DUCTS SHALL BE SUPPORTED ON NOT MORE THAN 6' CENTERS. VERTICAL RISERS SHALL BE SUPPORTED AT EACH FLOOR.

4. LONGITUDINAL SEAMS FOR RECTANGULAR DUCTWORK SHALL BE PITTSBURGH LOCK SEAMS WITH SEALING COMPOUND, EQUAL TO BENJAMIN FOSTER NO. 30-03 INSERTED INTO THE SEAM. ALL SEAMS SHALL BE BRUSHED WITH NO. 30-02 AND COVERED WITH APPROVED SEALING TAPE.

5. RECTANGULAR DUCTWORK 18 GAUGE AND HEAVIER, FILLER RODS SHALL BE IN ACCORDANCE WITH SPECIFICATIONS FOR IRON AND STEEL GAS WELDING RODS, ASTM 215; AWG A5.2.

6. ALL FITTINGS SUCH AS ELBOWS, TEES, ETC., SHALL BE NO. 20 GAUGE ZINC-COATED STEEL. ELBOWS SHALL BE OF FIVE (5) PIECE WELDED AIRTIGHT CONSTRUCTION.

7. WHERE LATEST EDITION OF SMACNA DOES NOT CLEARLY STATE GAUGES AND/OR STIFFENERS TO BE USED OR, WHERE SMACNA STANDARDS REQUIRE INTERPRETATION, THE FOLLOWING MINIMUM METAL GAUGES AND BRACING SHALL BE USED:

ERS SHALL HAVE AN OPPOSED BLADE DAMPER UNLESS OTHERWISE NOTED.

USG	MAX. SIDE INCHES	TRANSVERSE JOINTS AND BRACING
22	UP TO 12	S SLIP, DRIVE SLIP, ONE INCH POCKET LOCK ON 8-FOOT CENTERS
22	13 TO 24	1" X 1" X 1/8" ANGLES ON 4-FOOT CENTERS
20	25 TO 35	1" X 1" X 1/8" ANGLES ON 2-FOOT CENTERS

A. PROVIDE TAPPING IN DUCTS FOR THERMOMETERS WHERE SPECIFIED. IN ADDITION, PROVIDE AN AIRTIGHT PLUGGED TAPPING LOCATED AS FOLLOWS:

1. UPSTREAM OF EACH REHEATING COIL AND VAV BOX.
2. DOWNSTREAM OF EACH REHEATING COIL AND VAV BOX.

B. FLAT-OVAL OR ROUND DUCTWORK MAY BE PROVIDED IN LIEU OF RECTANGULAR DUCTWORK, WITH THE REINFORCEMENT FOR FLAT SIDES THE SAME AS SPECIFIED FOR THE RECTANGULAR DUCTWORK, AND AS PER SMACNA FLAT OVAL DUCT CONSTRUCTION STANDARDS SHOWN IN FIG. 3-6 AND AS SHOWN IN FIG. 3-1 AND 3-2 FOR ROUND DUCTWORK.

C. ALL DUCTWORK SHALL BE SEALED TO CLASS "A" AND LEAK TESTED TO MEET SMACNA CLASS 6 FOR RECTANGULAR DUCTS AND CLASS 3 FOR ROUND DUCTS.

1.2 MATERIALS

A. SINGLE-WALL RECTANGULAR DUCTS AND FITTINGS.
B. SINGLE-WALL ROUND AND FLAT-OVAL DUCTS AND FITTINGS.
C. SHEET METAL MATERIALS:

1. GALVANIZED SHEET STEEL.
2. STAINLESS-STEEL SHEETS.
3. ALUMINUM SHEETS.
4. FACTORY-APPLIED ANTI-MICROBIAL COATING.

D. DUCT LINER:

1. FIBROUS GLASS, TYPE I, FLEXIBLE.
- WITH ANTI-MICROBIAL EROSION-RESISTANT COATING.
2. FLEXIBLE ELASTOMERIC.
3. NATURAL FIBER.

E. SEALANT MATERIALS:

1. TWO-PART TAPE SEALING SYSTEM.
2. WATER-BASED JOINT AND SEAM SEALANT.
3. SOLVENT-BASED JOINT AND SEAM SEALANT.
4. FLANGED JOINT SEALANT.
5. FLANGE GASKETS.
6. ROUND DUCT JOINT O-RING SEALS.

1.3 DUCT SCHEDULE

A. ALL DUCTS SHALL BE GALVANIZED STEEL EXCEPT AS FOLLOWS:

1. MOIST ENVIRONMENT DUCT MATERIAL: ALUMINUM.

END OF SECTION 233113

SECTION 233713 - DIFFUSERS, REGISTERS, AND GRILLES

1.1 PRODUCTS

A. DIFFUSERS, REGISTERS, AND GRILLES SHALL BE FURNISHED AND INSTALLED FOR CAPACITIES AND IN LOCATIONS INDICATED ON DRAWINGS. ALL REGISTERS AND DIFFUSERS SHALL BE PRIME-COATED STEEL OR EXTRUDED ALUMINUM FINISHED UNLESS OTHERWISE NOTED IN BAKED WHITE ENAMEL.

B. MANUFACTURERS: TITUS
1. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCT BY ONE OF THE FOLLOWING:

A. CARNES.
B. HART & COOLEY INC.
C. KRUEGER.
D. METALAIRE, INC.
E. NAILOR INDUSTRIES INC.

C. ALL DIFFUSERS SHALL HAVE CONTROLLING/EQUALIZING GRID AND OPPOSED BLADE DAMPER UNLESS OTHERWISE NOTED.

D. ALL DUCTED RETURN REGISTERS SHALL HAVE AN OPPOSED BLADE DAMPER UNLESS OTHERWISE NOTED.

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JOB NUMBER: 24-000325
DATE: 04-22-2025
CONTENTS: MECHANICAL SPECIFICATIONS

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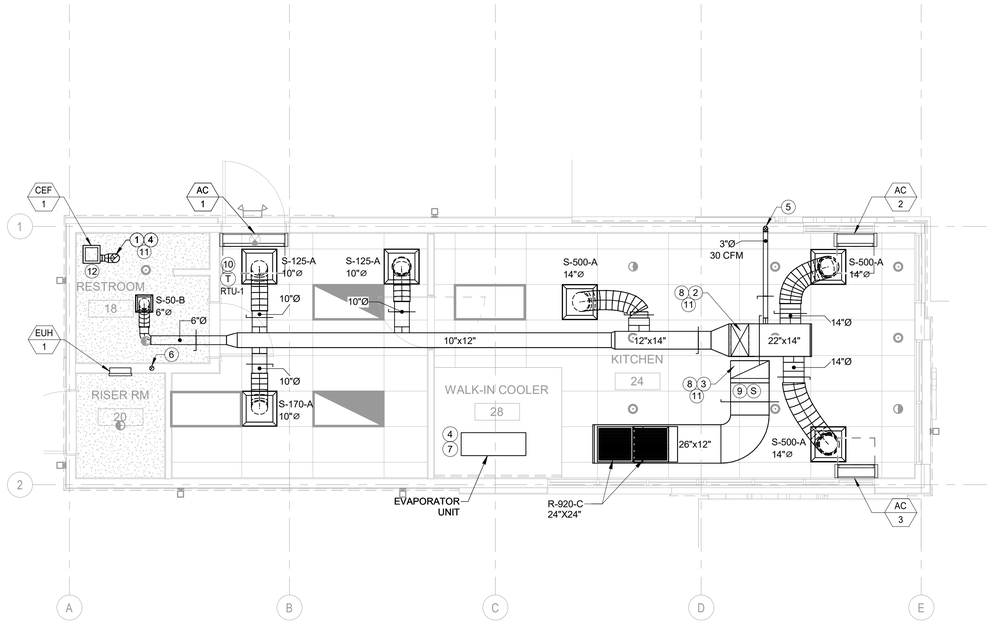
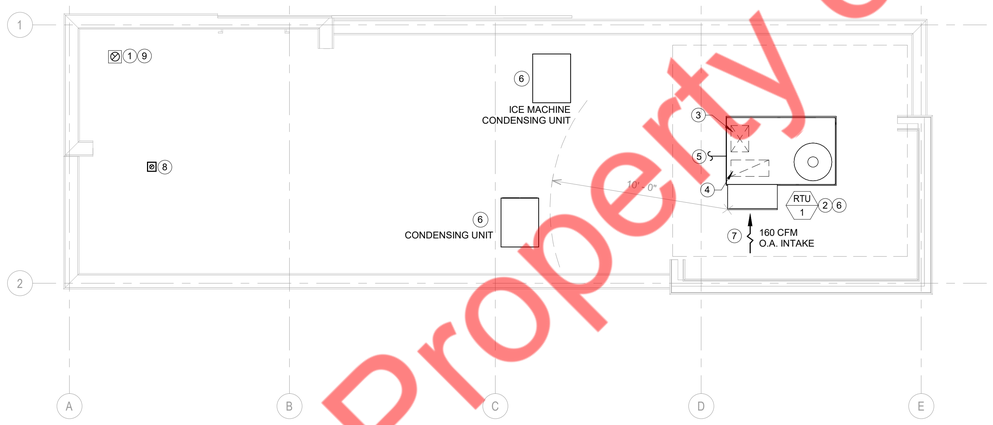


NORTH 1 **MECHANICAL FLOOR PLAN**

1/4" = 1'-0"

MECHANICAL FLOOR PLAN KEY NOTES:

1. 6"Ø EXHAUST DUCT UP TO ROOF CAP.
2. 22"x12" SUPPLY AIR DUCT UP TO RTU-1 ON ROOF.
3. 26"x12" RETURN AIR DUCT UP TO RTU-1 ON ROOF.
4. FIELD COORDINATE THE EXACT LOCATION OF HVAC EQUIPMENT. MAINTAIN CODE REQUIRED, MANUFACTURER RECOMMENDED CLEARANCES AT HVAC EQUIPMENT.
5. 3"Ø SUPPLY AIR DUCT DN TO CRAWL SPACE. BALANCE FOR 30 CFM. PROVIDE W.M.S.
6. 3"ø RELIEF AIR DUCT FROM CRAWL SPACE THROUGH ROOF CAP. PROVIDE W.M.S. AT DUCT END IN CRAWL SPACE.
7. TERMINATE THE CONDENSATE DRAIN PIPE INDIRECTLY TO THE NEAREST FLOOR SINK. THE CONTRACTOR IS REQUIRED TO VERIFY THE ROUTING AND TERMINATION IN THE FIELD.
8. ACOUSTICALLY LINE THE FIRST 10'-0" OF BOTH SUPPLY AND RETURN MAIN DUCTS.
9. PROVIDE NEW REMOTE TEMPERATURE/HUMIDITY SENSOR MOUNTED IN RETURN DUCT AND WIRE BACK TO T-STAT.
10. PROVIDE NEW 7-DAY PROGRAMMABLE THERMOSTAT . LOCATE THERMOSTAT 4' ABOVE FINISHED FLOOR. COORDINATE EXACT LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN. PROVIDE LOCKABLE COVER.
11. FIELD VERIFY FIRE RATING OF ROOF & PROVIDE FIRE/SMOKE DAMPER AS/IF REQUIRED.
12. INTERCONNECT EXHAUST FAN WITH RTU-1. FAN SHALL BE SUSPENDED FROM STRUCTURE ABOVE. VERIFY EXACT LOCATION OF STRUCTURAL MEMBERS PRIOR TO INSTALLATION.



NORTH 2 **MECHANICAL ROOF PLAN**

1/4" = 1'-0"

MECHANICAL ROOF PLAN KEY NOTES:

1. 6"Ø EXHAUST AIR DUCT TO ROOF CAP WITH SPRING LOADED BACK DRAFT DAMPER AND BIRD SCREEN. (MANUFACTURER #BROAN, MODEL NO: 634 OR EQUIVALENT).
2. MAINTAIN MINIMUM 10'-0" DISTANCE BETWEEN HVAC EQUIPMENT OUTDOOR AIR INTAKE AND BY BUILDING RELIEF (EXHAUST FANS, PLUMBING VENTS , FLUE VENTS,ETC.)
3. 22"X12" SUPPLY AIR DUCT DN.
4. 26"X12" RETURN AIR DUCT DN.
5. PROVIDE 3/4"ø PVC CONDENSATE DRAIN PIPE AND ROUTE CONDENSATE DRAIN TO THE NEAREST APPROVED PLACE OF DISPOSAL. PROVIDE ROOF SUPPORT AS NEEDED. DRAIN PIPING SHALL MAINTAIN A MINIMUM SLOPE OF 1% (1/8" PER FOOT) IN THE DIRECTION OF FLOW, PER IMC 307.2.1. CONDENSATE SHALL NOT DISCHARGE INTO A STREET, ALLEY, OR OTHER AREA TO CAUSE A NUISANCE.
6. FIELD COORDINATE THE EXACT LOCATION OF ROOFTOP EQUIPMENT WITH STRUCTURAL DRAWINGS. MAINTAIN CODE REQUIRED, MANUFACTURER RECOMMENDED CLEARANCES AT HVAC EQUIPMENT.
7. BALANCE OUTSIDE AIR AT 160 CFM.
8. 3"Ø RELIEF AIR DUCT THROUGH ROOF HOOD WITH BUILT IN INNER LOUVER. (MANUFACTURER #ACTIVE VENTILATION, MODEL NO:KV-3)
9. EXHAUST TERMINATION SHALL BE 3 FEET (914 MM) FROM PROPERTY LINES; 3 FEET (914 MM) FROM OPERABLE OPENINGS INTO BUILDINGS, AND 10 FEET (3048 MM) FROM MECHANICAL AIR INTAKES. AS PER IMC 2021 SECTION 501.3.1.

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CONTENTS: MECHANICAL FLOOR & ROOF PLAN

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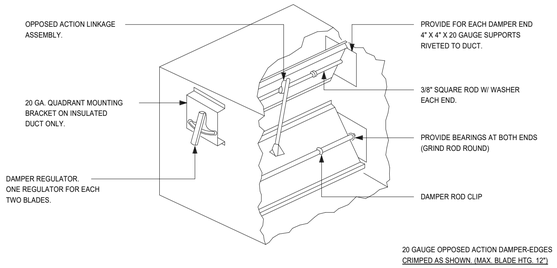
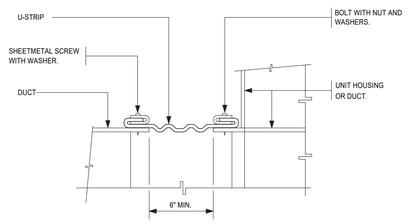
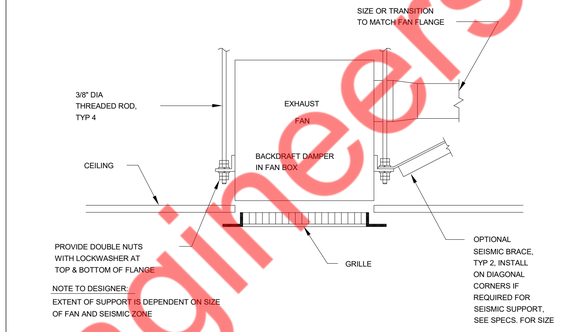


NOTE : 1. FOR DUCTS OVER 29" WIDE AND/OR OVER 12" HIGH.

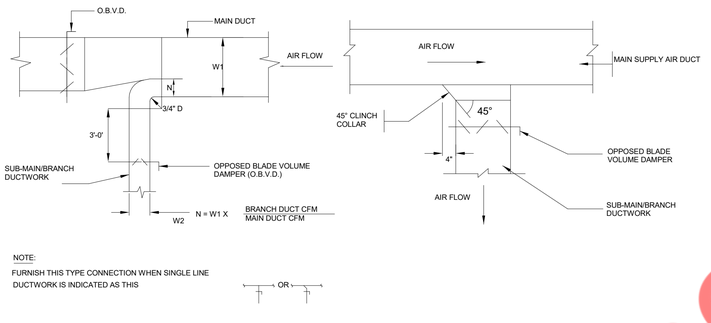
1 M2.0 LOW PRESSURE BALANCING DAMPER
N.T.S



2 M2.0 FLEXIBLE CONNECTION (DUCT-EQUIPMENT)
N.T.S



3 M2.0 CEILING EXHAUST FAN
N.T.S



NOTE:
FURNISH THIS TYPE CONNECTION WHEN SINGLE LINE DUCTWORK IS INDICATED AS THIS

OR

4 M2.0 SUPPLY AIR DUCTWORK SUB-MAIN/BRANCH DUCT CONNECTION
N.T.S

NOTES:
DUCTS TO BE ACOUSTICALLY LINED SHALL BE DESIGNATED BY THE SYMBOL IN FIG. "C" TO THE EXTENT OF LINING. THICKNESS SHALL BE AS SPECIFIED.
DUCTS LINED WITH ACOUSTICAL MATERIAL SHOULD BE FASTENED WITH CLIPS, ADHESIVE, OR PINS

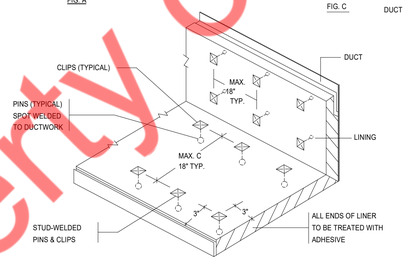
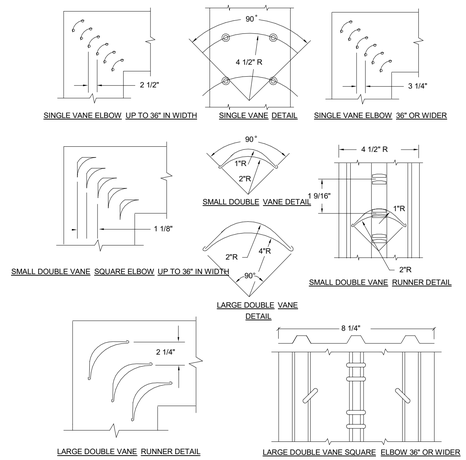


FIG. B

5 M2.0 ACOUSTICAL TREATMENT DUCT LINING
N.T.S



6 M2.0 LOW VELOCITY DUCTWORK ELBOWS
N.T.S

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CONTENTS: MECHANICAL DETAILS (1 OF 2)

M2.0

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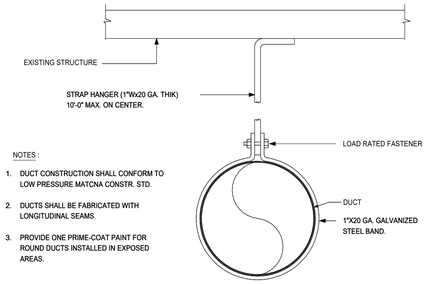
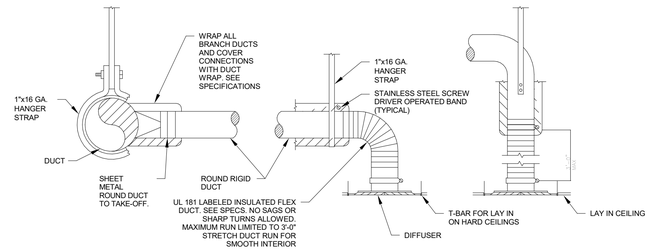


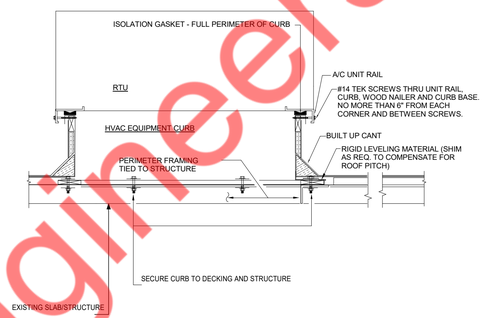
NOTES :

1. DUCT CONSTRUCTION SHALL CONFORM TO LOW PRESSURE MATCNA CONSTR. STD.
2. DUCTS SHALL BE FABRICATED WITH LONGITUDINAL SEAMS.
3. PROVIDE ONE PRIME-COAT PAINT FOR ROUND DUCTS INSTALLED IN EXPOSED AREAS.

1 / M2.1 METHOD OF HANGING DUCTWORK
N.T.S

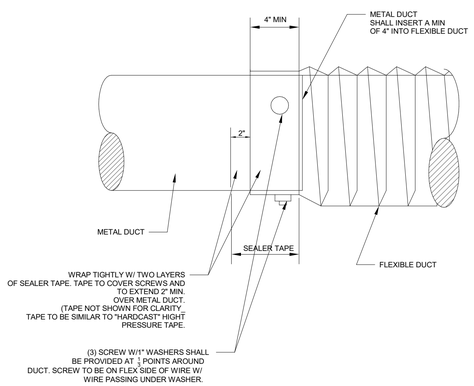


2 / M2.1 TYPICAL DIFFUSER CONNECTION DETAIL
N.T.S

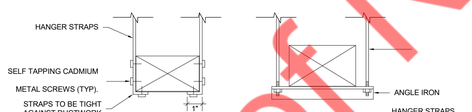


ACCEPTABLE FOR 170 MPH ZONE

3 / M2.1 UNIT INSTALLATION ON ROOF
N.T.S



4 / M2.1 FLEXIBLE DUCT/RIGID DUCT CONNECTION DETAIL
N.T.S



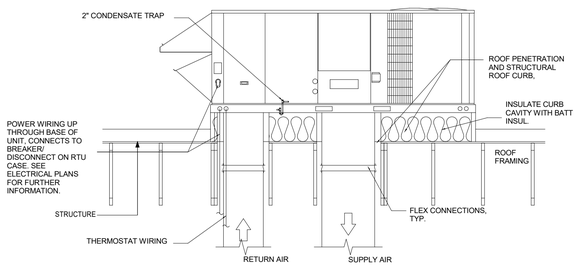
NOTE:
NO POP RIVETS ALLOWED, USE SELF-TAPPING SHEETMETAL SCREWS ONLY.

HANGER SIZES*

MAX. SIDE	HANGER	HORIZONTAL SUPPORT ANGLE	MAXIMUM SPACING
30"	1"x18" GAUGE STRAP	NONE REQUIRED	10'-0"
36"	1/4" ROD	1-1/2"x1-1/2"x1/8"	8'-0"
48"	1/4" ROD	2"x2"x1/8"	8'-0"
60"	5/16" ROD	2"x2"x1/8"	8'-0"
84"	3/8" ROD	2"x2"x1/8"	8'-0"

* FOR RECTANGULAR DUCTS

5 / M2.1 DUCT HANGING DETAILS
N.T.S



6 / M2.1 TYPICAL ROOF TOP UNIT DETAIL
N.T.S

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CONTENTS: MECHANICAL DETAILS (2 OF 2)

M2.1

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ELECTRIC HEAT ROOFTOP UNIT SCHEDULE

TAG	QTY.	PROJECT ELEVATION (FT)	SERVICE	NOMINAL TONS	TOTAL CFM	O.A. CFM	SUPPLY FAN DATA				COOLING DATA							ELECTRIC HEATING DATA			ELECTRICAL DATA					WEIGHT (LBS)	DIMENSION (IN.) (L X W X H)	POWER EXHAUST	EFFICIENCY		MODEL	BASIS OF DESIGN	NOTES
							FAN QTY.	E.S.P. (IN. W.C.)	BHP	MAX RPM	STAGE	TOTAL MBH	SENSIBLE MBH	EAT		LAT		STAGE	CAPACITY (kW)	MODEL	V/Ph/Hz	MCA	MOCP	DISCONNECT					SEER	EER			
														DB (°F)	WB (°F)	DB (°F)	WB (°F)							BY	TYPE							
RTU-1	1	5920	SEE PLAN	5.0	2000	160	1	1.20	1.44	2390	1	62.0	46.2	80	67	56.9	53.7	2	12 KW	CRHEATER328A00	208/3/60	55	60	MFR	NON-FUSE	830	74 3/8" X 46 5/8" X 33 3/8"	NO	14.0	11.4	50FE-B06A6M5-8A7C0 OR EQUAL	CARRIER OR EQUAL	1 TO 21

NOTES:
1. ALL EQUIPMENT MUST BE HIGH EFFICIENCY, MEETING OR EXCEEDING THE ENERGY CODE MINIMUM REQUIREMENTS.
2. ELECTRICAL CONNECTION TO BE SINGLE POINT AND TO BE THROUGH THE BOTTOM OF THE UNIT.
3. PROVIDE BAROMETRIC RELIEF DAMPER AND HOOD.
4. PROVIDE DIRTY FILTER STATUS SWITCH/ALARM.
5. PROVIDE 14" HIGH PRE-FAB INSULATED CURB WITH SEPARATE SUPPLY AND RETURN DUCT PENETRATIONS THROUGH THE ROOF WITHIN THE ROOF CURB.
6. PROVIDE A 7-DAY PROGRAMMABLE THERMOSTAT.
7. PROVIDE MERV-13 FILTER KIT. (FIELD OR FACTORY PROVIDED/INSTALLED BASED ON AVAILABILITY).
8. PROVIDE CONDENSER HAIL GUARDS.
9. PROVIDE FACTORY MOUNTED DISCONNECT SWITCH.
10. PROVIDE FACTORY MOUNT CONVENIENCE OUTLET.
11. THE FIRE ALARM CONTRACTOR SHALL INTERLOCK THE ROOFTOP UNIT WITH THE FIRE ALARM SYSTEM TO SHUT DOWN THE UNIT UPON DETECTION OF SMOKE.
12. PROVIDE ELECTRIC HEATER WITH SCR CONTROL.
13. PROVIDE A 5-YEAR EXTENDED WARRANTY ON NEW MECHANICAL EQUIPMENT.
14. ENTHALPY ECONOMIZER WITH BAROMETER RELIEF , PROVIDE FDD.
15. THE UNIT SHALL BE ANCHORED TO THE ROOF CURB.
16. ELECTRICAL CONNECTION TO BE SINGLE POINT AND TO BE THROUGH THE BOTTOM OF THE UNIT.
17. CABINET WITH 1/2" FIBERGLASS INSULATION.
18. PROVIDE 8-WIRE, 24 VAC, AUTOMATIC CHANGEOVER, 2-STAGE HEAT / COOL, REMOTELY PROGRAMMABLE THERMOSTAT.
19. REMOTE SENSORS SHALL BE PROVIDED IN RETURN AIR DUCT & WIRED BACK TO PROGRAMMABLE, 24 HOUR, 7 DAY, THERMOSTATS.
20. ANTI SHORT CYCLE TIMER.
21. VFD SUPPLY FAN.

CEILING EXHAUST FAN SCHEDULE

SYMBOL	TYPE	QTY.	LOCATION	FAN DATA					PHYSICAL DATA		SOUND (Sones)	MODEL	BASIS OF DESIGN
				AIR FLOW (CFM)	E.S.P. (IN. W.C.)	ELECTRICAL DATA			DIMENSION (IN.) (L X W X H)	NET WEIGHT (LBS)			
						V/Ph/Hz	MCA	AMPS					
CEF-1	CEILING MOUNTED	1	REFER TO PLAN	70	0.5	115/1/60	1.9	15	14" X 12" X 11"	30	1.5	CSP-A390-VG OR EQUAL	GREENHECK OR EQUAL

NOTES:
1. TO AVOID MOTOR BEARING DAMAGE AND NOISY OR UNBALANCED IMPELLERS, KEEP DRYWALL SPRAY, CONSTRUCTION DUST, ETC. OFF POWER UNIT.
2. IT SHALL BE DUCTED TO A ROOF OR WALL CAP USING ROUND DUCTWORK.
3. THE BLOWER ASSEMBLY SHALL BE REMOVABLE, HAVE A CENTRIFUGAL TYPE BLOWER WHEEL, AND A PERMANENTLY LUBRICATED.
4. PROVIDE MOTOR STARTERS AND DISCONNECTS WITH NEMA-1 ENCLOSURES FOR CEF-1, IF NOT FACTORY-PROVIDED. COORDINATE EXACT POWER REQUIREMENT WITH ELECTRICAL CONTRACTOR.
5. PROVIDE FAN WITH A BACKDRAFT DAMPER AND SPEED CONTROLLER FOR BALANCING PURPOSES.
6. ALL DIRECT-DRIVE FANS SHALL BE PROVIDED WITH ECM MOTORS.
7. PROVIDE FIRE BLANKET AND RADIATION DAMPER AS /IF REQUIRED FOR FIRE RATED CEILING.

AIR CURTAIN SCHEDULE

SYMBOL	TYPE	QTY.	LOCATION	FAN DATA				PHYSICAL DATA		SOUND (dBA)	MODEL	BASIS OF DESIGN
				AIR FLOW (CFM)	VELOCITY (FPM)	ELECTRICAL DATA		DIMENSION (IN.) (L X H)	NET WEIGHT (LBS)			
						V/Ph/Hz	AMPS					
AC-2,AC-3	WALL MOUNTED	2	REFER TO PLAN	625	1800	115/1/60	2.4	25" X 8"	20	49	LPV225-1U*-OB	MARS
AC-1	WALL MOUNTED	1	REFER TO PLAN	900	1800	115/1/60	2.4	36" X 8"	32	49	LPV236-1U*-OB	MARS

NOTES:
1. PROVIDE MANUFACTURER RECOMMENDED ACCESSORIES.
2. COORDINATE WITH ELECTRICAL CONTRACTOR FOR EXACT POWER REQUIREMENT.
3. COORDINATE COLOR CODE WITH CLIENT/ARCHITECT..
4.CONTRACTOR SHALL COORDINATE WITH ARCHITECT/OWNER FOR PROPER INTEGRATION OF AIR CURTAIN WITH DOOR SENSORS OR OTHER CONTROL MECHANISMS. CONTROL SHALL BE PROVIDED TO OPERATE THE AIR CURTAIN IN SYNCHRONIZATION WITH THE OPENING AND CLOSING OF THE DOOR.

VENTILATION SCHEDULE - 2018 INTERNATIONAL MECHANICAL CODE

SR.NO	NAME	OCCUPANCY CLASSIFICATION	FLOOR AREA (S.F.)	OCCUPANTS PER 1000 SQ.FT.	OCCUPANTS (ACTUAL) Pz	REQUIRED OUTSIDE AND EXHAUST AIR						ACTUAL ROOM VENTILATION				EQUIPMENT
						CFM/ PERSON Rp	CFM/SQ.FT. Ra	TOTAL O.A. Vbz	ZONE AIR DISTRIBUTION EFFECTIVENESS Ez	ZONE OUTDOOR AIRFLOW Voz	TOTAL EXHAUST CFM	TOTAL	% O.A.	TOTAL O.A.	EXHAUST CFM	
1	KITCHEN AREA	COFFEE STATION	325	20	7	7.5	0.18	103	0.8	130	0	1950	-	160	0	RTU-1
2	STORAGE	STORAGE	175	0	1	0	0.12	21	0.8	27	0					
2	RESTROOM	TOILET	55	0	0	0	0	0	0.8	0	70	50	0	0	70	CEF-1
3	RISER RM	-	30	0	0	0	0	0	0.8	0	0	0	0	0	0	EUH-1
	TOTAL		585	-	8	-	-	124	-	157	70	2000	-	160	70	-

NOTE:
1. COORDINATED WITH IMC 2018, TABLE 403.3.1.1.

CRAWL SPACE VENTILATION SCHEDULE

1 CFM/50 SF AS PER IDAHO BUILDING CODE 2018 (IBC 2018) 1202.4.3.1

TOTAL VENTILATION CFM REQUIRED = (1*630) / 50
= 12.6 CFM

ACTUAL VENTILATION CFM SUPPLY = 30 CFM

NOTE: ABOVE CALCULATION DONE BASED ON IBC 2018 SECTION - 1202.4.3.1

AIR DEVICE SCHEDULE

				NOMENCLATURE	U = USAGE (S = SUPPLY, R = RETURN, E = EXHAUST, T = TRANSFER)			EXAMPLE	REFERENCE IMAGE
				U-CFM-T SIZE	CFM = AIR QUANITY		T = TYPE OF AIR DEVICE	S-150-A 8"Ø	
					SIZE = NECK SIZE OF AIR DEVICE				
TYPE	SERVICE	SERVING	NECK SIZE	PANEL/FACE SIZE	MATERIAL	DESCRIPTION	MODEL NO.	BASIS OF DESIGN	NOTES
A	SUPPLY	REFER TO FLOOR PLAN	10"Ø,14"Ø	24" X 24"	ALUMINIUM	SQUARE CEILING DIFFUSER	TDC	TITUS	1,2,3,4
B	SUPPLY	REFER TO FLOOR PLAN	6"Ø	12" X 12"	ALUMINIUM	SQUARE CEILING DIFFUSER	TDC	TITUS	1,2,3,4
C	RETURN	REFER TO FLOOR PLAN	SEE PLAN	24" X 24"	STEEL	35º DEFLECTION GRILLE	350-RS	TITUS	1,2,3,4

NOTES:
1. PROVIDE FOAM GASKET SEAL.
2. COORDINATE FRAME TYPE WITH REFLECTED CEILING PLAN & ARCHITECT.
3. CUSTOM FINISH & COLOR AS SELECTED BY ARCHITECT/OWNER.
4. ARCHITECT/OWNER SHALL SELECT EXHAUST DIFFUSER BASE ON DRYWALL CEILING.
5. PROVIDE VOLUME CONTROL DAMPER/OPPOSED BLADE DAMPER AS ACCESSORY FOR ALL AIR TERMINAL FOR AIR BALANCING.

ELECTRIC UNIT HEATER SCHEDULE

SYMBOL	MOUNTING	QTY.	LOCATION	HEATING DATA	ELECTRICAL DATA		PHYSICAL DATA		MODEL	BASIS OF DESIGN	NOTES
				OUTPUT (kW)	V/Ph/Hz	AMPS	DIMENSION (IN.) (W X D X H)	WEIGHT (LBS)			
EUH-1	WALL	1	SEE PLAN	1.5	120/1/60	12.5	11" X 4" X 12"	25	CWH1151DSF OR EQUAL	QMARK OR EQUAL	1,2,3

NOTES:
1. UNIT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
2. PROVIDE A DISCONNECT SWITCH.
3. INTEGRAL TAMPER PROOF THERMOSTAT.

BLACK ROCK COFFEE DRIVE THROUGH

NY ENGINEERS
NEARBY ENGINEERS
382 NE 191ST STREET SUITE
49674, MIAMI, FL 33179
PH-914.257.3455
WWW.NY-ENGINEERS.COM

CONTROL NO: #001

ISSUED FOR PERMIT (07-01-2025)

JOB NUMBER: 24-000325
DATE: 04-22-2025
CONTENTS: MECHANICAL SCHEDULES

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ELECTRICAL LEGENDS

POWER

	ABOVE COUNTER QUADPLEX RECEPTACLE
	ABOVE COUNTER DUPLEX RECEPTACLE
	QUADPLEX RECEPTACLE
	DUPLEX RECEPTACLE
	SPECIAL RECEPTACLE
	WEATHER PROOF/GFI DUPLEX RECEPTACLE
D,GFI	DEDICATED, GFI OUTLET
IG	RECEPTACLE WITH ISOLATED GROUND
	CEILING DUPLEX RECEPTACLE
	CEILING QUADPLEX RECEPTACLE
	CEILING SPECIAL RECEPTACLE
	FLOOR QUADPLEX RECEPTACLE
	FLOOR DUPLEX RECEPTACLE
	FLOOR SPECIAL RECEPTACLE
	GFI FLOOR QUADPLEX RECEPTACLE
	GFI FLOOR DUPLEX RECEPTACLE
	PANELBOARD
SPD	SURGE PROTECTIVE DEVICE
J	DIRECT EQUIPMENT CONNECTION WITH THERMAL RATED DISCONNECT SWITCH

LOW VOLTAGE

	VOICE/DATA OUTLET
	ABOVE COUNTER VOICE/DATA OUTLET
	FLOOR / CEILING VOICE/DATA OUTLET
	DATA OUTLET
	FLOOR / CEILING VOICE/DATA OUTLET
	VOICE OUTLET
	FLOOR / CEILING VOICE OUTLET
TV	RECESSED CLOCK STYLE OUTLET FOR TV, REFER TO SPECIFICATIONS FOR MORE DETAILS

LIGHTING

$	SWITCH
$D	DIMMER SWITCH
$3W	3 - WAY SWITCH
$4W	4 - WAY SWITCH
$VS	VACANCY SENSOR (WALL MOUNTED)
$OS	OCCUPANCY SENSOR (WALL MOUNTED)
$M	LOW VOLTAGE MOMENTARY CONTACT SWITCH
$OV	TIME SWITCH OVER RIDE SWITCH
$R	SINGLE POLE ROCKER SWITCH WITH WI-FI CONTROL AND BLUETOOTH REMOTE(#AWS04F OR EQUAL)
$D,OS	DIMMER WITH WALL MOUNTED OCCUPANCY SWITCH
VS	VACANCY SENSOR (CEILING)
OS	OCCUPANCY SENSOR (CEILING)
DS	DAYLIGHT SENSOR (CEILING)
	BATTERY EMERGENCY LIGHT (WALL MOUNTED)
	BATTERY EMERGENCY LIGHT (CEILING MOUNTED)
	EXIT SIGN
X	UPPERCASE LETTER DENOTES FIXTURE TAG
x	LOWERCASE LETTER DENOTES SWITCH DESIGNATION
TC	TIME CLOCK

ANNOTATION

X	KEY NOTE TAG

LINE WEIGHT LEGEND

——	NEW

APPLICABLE CODES

1. 2018 IDAHO BUILDING CODE WITH AMMENDMENTS (IBC)
2. 2020 IDAHO ENERGY CONSERVATION CODE (IECC 2018)
3. 2018 IDAHO MECHANICAL CODE (IMC)
4. 2017 IDAHO PLUMBING CODE (ADOPTS WITH AMENDMENTS UPC 2015)
5. 2017 NATIONAL ELECTRICAL CODE

MISCELLANEOUS

J J	JUNCTION BOX - CEILING/WALL MOUNTED
PB	PULL BOX
	CONDUIT CONCEALED IN WALL, CEILING OR UNDERGROUND. CENTER LINES DENOTE UNDERGROUND/FLOOR CONDUIT. DASHED LINES DENOTE DEMOLITION. ARROWHEAD DENOTES HOMERUN TO PANEL. SLASHED DENOTE QUANTITY OF CONDUCTORS. DOT DENOTES GROUND. LONG SLASH DENOTES NEUTRAL CONDUCTOR. SHORT SLASH DENOTES PHASE CONDUCTOR, SWITCH LEG OR CONTROL.
	FLEXIBLE CONDUIT WHIP - MAX 6'-0" IN LENGTH
M	METER
	FUSED SWITCH
	CIRCUIT BREAKER
	ENCLOSED CIRCUIT BREAKER
	FUSED SWITCH
	DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
	COMBINATION STARTER DISCONNECT SWITCH W/H.O.A.
M	MOTOR

ELECTRICAL ABBREVIATIONS

ACP	ACCESS CONTROL PANEL
AOR	AREA OF RESCUE
AFF	ABOVE FINISHED FLOOR
BOH	BACK OF HOUSE
C	CEILING MOUNTED
CL	CENTER LINE
CKT	CIRCUIT
D	DEDICATED
EC	ELECTRICAL CONTRACTOR
EM	EMERGENCY
ER	EXISTING, RELOCATED
ETR	EXISTING TO REMAIN
EWH	ELECTRIC WATER HEATER
EX	EXISTING
FAC	FIRE ALARM CONTRACTOR
FPC	FIRE PROTECTION CONTRACTOR
GC	GENERAL CONTRACTOR
GFI	GROUND FAULT CIRCUIT INTERRUPTER
HD	HAND DRYER
IG	ISOLATED GROUND
LVC	LOW VOLTAGE CONTRACTOR
MC	MECHANICAL CONTRACTOR
MT	MOUNT
NL	NIGHT LIGHT
OH	OVERHEAD
PC	PHOTOCELL
PL	PILOT LIGHT
POS	POINT OF SALE
SM	SURFACE MOUNT
TS	TIME SWITCH
TGB	TELECOMMUNICATIONS GROUND BUS
TTC	TELEPHONE TERMINAL CABINET
UCR	UNDER COUNTER REFRIGERATOR
W	WALL MOUNT AT 48" AFF
WP	WEATHERPROOF

ELECTRICAL SHEET INDEX

GENERAL NOTES:

1. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE 2017 NATIONAL ELECTRICAL CODE AND ALL LOCAL CODE AMENDMENTS.
2. A COMPLETE GROUNDING SYSTEM SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH ARTICLE 250 OF THE NEC, AND AS SHOWN ON THE DRAWINGS.
3. CONDUCTORS SHALL BE COPPER RATED AT NOT LESS THAN 600 VOLTS. MINIMUM SIZE SHALL BE #12 AWG UNLESS OTHERWISE NOTED ON THE DRAWINGS. ALL WIRE #8 AWG AND LARGER SHALL BE STRANDED. ALL CONDUCTORS #10 AND SMALLER SHALL BE SOLID, UNLESS OTHERWISE NOTED.
4. BRANCH CIRCUIT CONDUCTORS SHALL BE TYPE THHN OR THWN AS REQUIRED.
5. PROVIDE A TYPED DIRECTORY IN ALL PANELBOARDS CLEARLY DESCRIBING THE LOCATION OF AND TYPE OF LOAD BEING SERVED FOR ALL CIRCUITS.
6. PHENOLIC NAMEPLATES FOR ALL PANELBOARDS AND DISCONNECT SWITCHES, BLACK LETTERS ON WHITE BACKGROUND.
7. VERIFY ALL REQUIREMENTS AND COORDINATE EXACT LOCATION OF INCOMING ELECTRICAL SERVICE WITH LOCAL POWER COMPANY PRIOR TO PROJECT START-UP. NOTIFY ENGINEER OF ANY CHANGES AS MAY BE REQUIRED.

ENERGY COMPLIANCE FOR OPTIONAL CANOPY:

COMcheck Software Version COMcheckWeb

Interior Lighting Compliance Certificate

Project Information

Energy Code: 2018 IECC
Project Title:
Project Type: New Construction
Construction Site: Owner/Agent: Designer/Contractor:

Additional Efficiency Package(s)

Credits: 1.0 Required 0.0 Proposed

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts
1-Black Rock Coffee, Idaho Optional Canopy (Dining; Cafeteria/Fast Food)	752	0.79	594
		Total Allowed Watts =	594

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
1-Black Rock Coffee, Idaho Optional Canopy (Dining; Cafeteria/Fast Food)				
LED: F1: 2' X 4' FLAT PANEL: Other:	1	4	42	167
LED: F2: 6" RECESSED DOWNLIGHT: Other:	1	12	22	270
		Total Proposed Watts =		437

Interior Lighting PASSES: Design 26% better than code

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

ERIC ENGELL — Name - Title — Signature — 07/02/25 Date

Project Title: Black Rock Coffee, Drive through — Report date: 07/02/25

COMcheck Software Version COMcheckWeb

Exterior Lighting Compliance Certificate

Project Information

Energy Code:
Project Title:
Project Type: New Construction
Exterior Lighting Zone 3 (Other (LZ3))
Construction Site: Owner/Agent: Designer/Contractor:

Allowed Exterior Lighting Power

A Area/Surface Category	B Quantity	C Allowed Watts /	D Tradable Wattage	E Allowed Watts (B X C)
Illuminated area of facade wall or surface	322 ft2	0.11	No	36
Entry canopy	584 ft2	0.4	Yes	234
			Total Tradable Watts (a) =	234
			Total Allowed Watts =	270
		Total Allowed Supplemental Watts (b) =		500

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.
(b) A supplemental allowance equal to 500 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Proposed Exterior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
Illuminated area of facade wall or surface (322 ft2): Non-tradable Wattage				
LED: F4: SURFACE MOUNTED LED DOWNLIGHT S: Other:	1	6	13	78
Entry canopy (584 ft2): Tradable Wattage				
LED: F3: 4" EXTERIOR DOWNLIGHT: Other:	1	15	9	135
			Total Tradable Proposed Watts =	135

Exterior Lighting PASSES: Design 80% better than code

Exterior Lighting Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

ERIC ENGELL — Name - Title — Signature — 07/02/25 Date

Project Title: Black Rock Coffee, Drive through — Report date: 07/02/25

ENERGY COMPLIANCE FOR STANDARD AWINING:

COMcheck Software Version COMcheckWeb

Interior Lighting Compliance Certificate

Project Information

Energy Code: 2018 IECC
Project Title:
Project Type: New Construction
Construction Site: Owner/Agent: Designer/Contractor:

Additional Efficiency Package(s)

Credits: 1.0 Required 0.0 Proposed

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts
1-Black Rock Coffee, Idaho Standard Awining (Dining; Cafeteria/Fast Food)	752	0.79	594
		Total Allowed Watts =	594

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
1-Black Rock Coffee, Idaho Standard Awining (Dining; Cafeteria/Fast Food)				
LED: F1: 2' X 4' FLAT PANEL: Other:	1	4	42	167
LED: F2: 6" RECESSED DOWNLIGHT: Other:	1	12	22	270
		Total Proposed Watts =		437

Interior Lighting PASSES: Design 26% better than code

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

ERIC ENGELL — Name - Title — Signature — 07/02/25 Date

Project Title: Black Rock Coffee, Drive through — Report date: 07/02/25

COMcheck Software Version COMcheckWeb

Exterior Lighting Compliance Certificate

Project Information

Energy Code: 2018 IECC
Project Title:
Project Type: New Construction
Exterior Lighting Zone 3 (Other (LZ3))
Construction Site: Owner/Agent: Designer/Contractor:

Allowed Exterior Lighting Power

A Area/Surface Category	B Quantity	C Allowed Watts /	D Tradable Wattage	E Allowed Watts (B X C)
Order Pickup (Drive-up windows/doors)	2 windows	200	No	400
Entry canopy	79 ft2	0.4	Yes	32
Illuminated area of facade wall or surface	395 ft2	0.11	No	45
			Total Tradable Watts (a) =	32
			Total Allowed Watts =	476
		Total Allowed Supplemental Watts (b) =		500

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.
(b) A supplemental allowance equal to 500 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Proposed Exterior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	X (C X D)
Order Pickup (Drive-up windows/doors, 2 windows or doors): Non-tradable Wattage				
LED: F3: 4" EXTERIOR DOWNLIGHT: Other:	1	13	9	117
Entry canopy (79 ft2): Tradable Wattage				
LED: F3: 4" EXTERIOR DOWNLIGHT: Other:	1	2	9	18
Illuminated area of facade wall or surface (395 ft2): Non-tradable Wattage				
LED: F4: SURFACE MOUNTED LED DOWNLIGHT S: Other:	1	8	13	104
			Total Tradable Proposed Watts =	18

Exterior Lighting PASSES: Design 96% better than code

Exterior Lighting Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

ERIC ENGELL — Name - Title — Signature — 07/02/25 Date

Project Title: Black Rock Coffee, Drive through — Report date: 07/02/25

BLACK ROCK COFFEE DRIVE THROUGH

NY ENGINEERS
NEARBY ENGINEERS
382 NE 191ST STREET SUITE
49674, MIAMI, FL 33179
PH-914.257.3455
WWW.NY-ENGINEERS.COM

CONTROL NO: #001

ISSUED FOR PERMIT (07-01-2025)

JOB NUMBER: 24-000325
DATE: 04-22-2025
CONTENTS: ELECTRICAL SYMBOL LIST AND GENERAL NOTES

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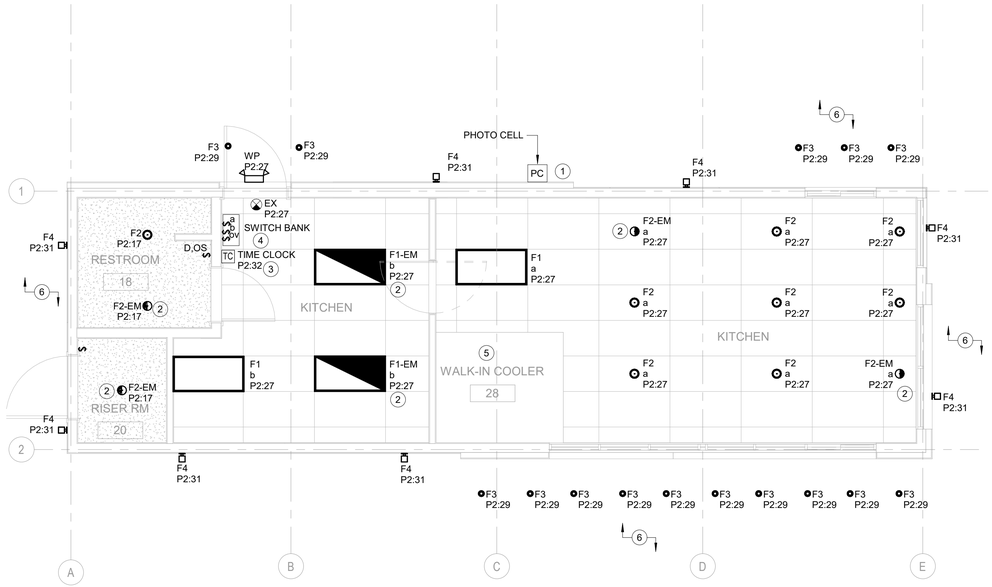
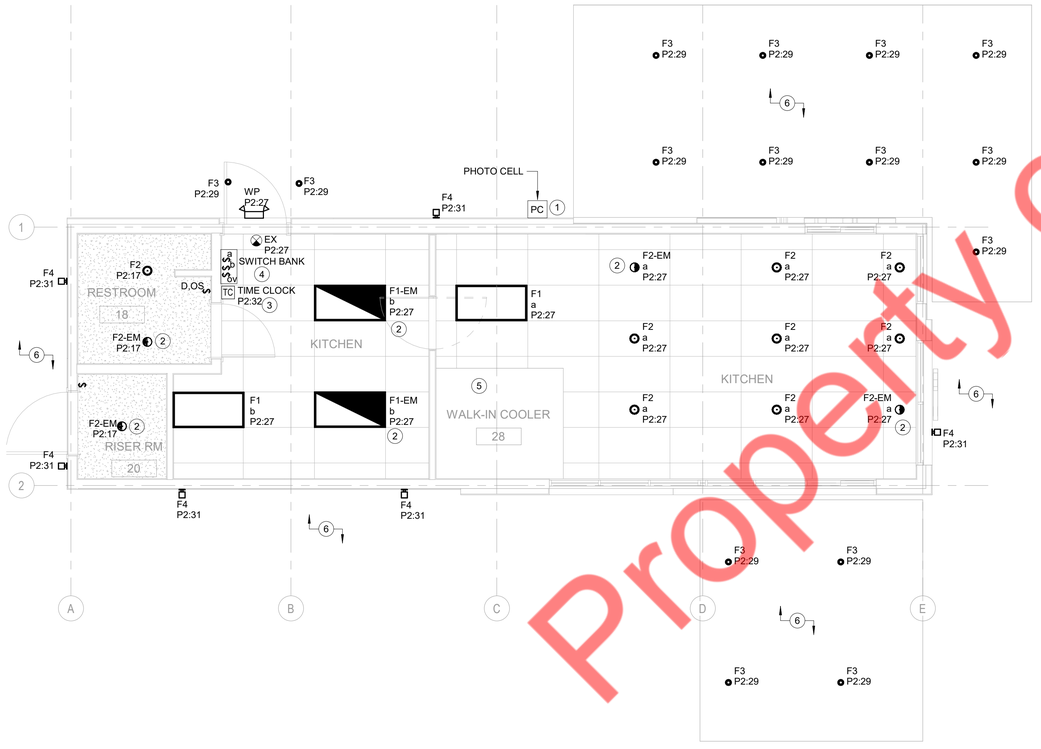


NORTH 1

LIGHTING PLAN - STANDARD AWNING

1/4" = 1'-0"



NORTH 2

LIGHTING PLAN - OPTIONAL CANOPY

1/4" = 1'-0"

LIGHTING KEY NOTES:

1. EXTERIOR MOUNTED PHOTOCELL. ROUTE ALL EXTERIOR LIGHTING CIRCUIT VIA PHOTOCELL AND LIGHTING CONTROL PANEL.
2. "EM" INDICATING EMERGENCY LIGHTING FIXTURE WITH 90 MINUTES BATTERY BACK. NIGHT LIGHTS SHALL BE CONNECTED TO THE NEAREST LIGHTING BRANCH CIRCUIT AHEAD OF ALL SWITCHING AND CONTROL FOR CONTINEOUS OPERATION.
3. NEW TIME CLOCK WITH MANUAL OVERIDE SWITCH.
4. NEW LIGHTING CONTROL SWITCHBANK.
5. LIGHTING FIXTURES FURNISHED BY WALK-IN BOX VENDOR. ELECTRICAL CONTRACTOR TO INSTALL AND CONNECT FIXTURES, COORDINATING ALL ELECTRICAL REQUIREMENTS AND EXACT LOCATION WITH VENDOR PRIOR TO ROUGH-IN.
6. EXTERNAL LIGHTS CONTROLLED BY PHOTOCELL AND TIME CLOCK.

LIGHTING GENERAL NOTES:

1. REFER TO ARCHITECTURAL PLANS FOR MOUNTING HEIGHTS OF DEVICES.
2. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT FIXTURE LOCATIONS FOR GENERAL LIGHTING.
3. ALL BRANCH CIRCUITS SHALL HAVE DEDICATED NEUTRAL CONDUCTOR AND FULLY SIZED INSULATED GROUNDING WIRE, INCLUDING IN MC CABLE. MULTIPLE CIRCUITS IN A COMMON RACEWAY MAY SHARE A COMMON GROUNDING WIRE.
4. ADJUST THE EMERGENCY AND EXIT LIGHTING QUATITIES/LOCATION AS REQUIRED TO MEET THE LOCAL AHJ REQUIREMENTS. LOCATE EXIT SIGNS AND DOWNLIGHTS IN THE CENTER OF CEILING TILES WHERE POSSIBLE.
5. PROVIDE AN UN-SWITCH HOT LEG TO ALL EMERGENCY AND EXIT FIXTURES. BATTERY EMERGENCY LIGHTING SHALL BE CONNECTED TO THE ROOM LIGHTING CIRCUIT, AHEAD OF ANY SWITCH OR CONTROL FOR CONTINUOUS OPERATION. EXIT SIGNS SHALL BE CONNECTED TO A DEDICATED, LOCK ON CIRCUIT AND SHALL BE PROVIDED WITH A DEDICATED FEEDER AND HOMERUN.
6. MAXIMUM VOLTAGE DROP FOR FEEDER AND BRANCH CIRCUIT CONDUCTORS COMBINED, SHALL NOT EXCEED A 5% VOLTAGE DROP.
7. LIGHTING FIXTURES WHICH ARE CONTROLLED BY A DIMMER SWITCH SHALL BE WIRED TO A CIRCUIT HAVING DEDICATED NEUTRAL WIRE.

LIGHTING CONTROL SCHEDULE

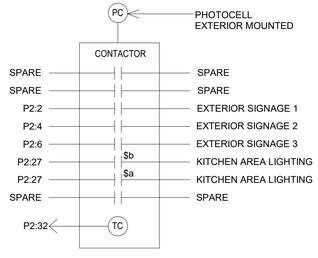
TAG	DESCRIPTION	MAKE/MODEL	WALL/CEILING	VOLTAGE	DEVICE DELAY SETTING	OPERATION	SENSING	RANGE (9' MOUNTING)	REMARKS
OS	OCCUPANCY MODE WALL MOUNT, DUAL TECHNOLOGY	SENSORSWITCH "WSX-PDT-SA"	WALL	120/277VAC	15 MIN	AUTO ON / AUTO OFF	INFRARED / MICROPHONICS	18' X 18'	SINGLE OUTPUT LOAD CONTROL, 120V, 800W MAX, 277V, 1200W MAX

NOTES:
1. CONTRACTOR SHALL INSTALL OCCUPANCY SENSOR DEVICES PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. CONTRACTOR SHALL PROVIDE OWNER TRAINING ON THE OPERATION OF ALL LIGHTING CONTROL DEVICES PRIOR TO TURN-OVER.
3. CONTACTOR SHALL RE-VISIT PROJECT SITE 30 DAYS POST-TURN OVER TO ADJUST CONTROL DEVICES WITH OWNER.
4. ENABLE WALK THRU MODE ON ALL SENSORS WHERE PROVIDED.
5. BASIS OF DESIGN IS SENSOR SWITCH. PROVIDE SENSOR SWITCH OR APPROVED EQUAL.

LUMINAIRE SCHEDULE

TAG	LUMINAIRE DESCRIPTION	LAMPS/LUMINAIRE		CONTROL TYPE	LUMINAIRE		MOUNTING	MANUFACTURER & CATALOG NUMBER
		QTY	TYPE		MAX VA	VOLTS		
F1	2' X 4' FLAT PANEL	1	LED	0-10V	41.8	120	RECESSED	CPX 2X4 6000LM 80CRI 35K SWL MIN10 120
F1-EM	2' X 4' FLAT PANEL WITH 90 MINUTES BATTERY BACKUP	1	LED	0-10V	41.8	120	RECESSED	CPX 2X4 6000LM 80CRI 35K SWL MIN10 120 E10WLCP
F2	6" RECESSED DOWNLIGHT	1	LED	0-10V	22.5	120	RECESSED	LDN6 35/20 L06 AR LS 120 EZ10
F2-EM	6" RECESSED DOWNLIGHT WITH 90 MINUTES BATTERY BACKUP	1	LED	0-10V	22.5	120	RECESSED	LDN6 35/20 L06 AR LS 120 EZ10 EL
F3	4" EXTERIOR DOWNLIGHT	1	LED	0-10V	9	120	SURFACE	ALPHABET LIGHTING NU4-QW-SW-10LM-27K-80-WW
F4	SURFACE MOUNTED LED DOWNLIGHT SCONCE	1	LED	SWITCHED	13	120	WALL/SURFACE	4428 IL-EXTERIOR SQUARE UP/DOWN LIGHT
WP	WALL PACK LIGHT WITH 90 MINUTES BATTERY BACKUP	2	LED	-	24	120	WALL/SURFACE	PHILIPS CHLORIDE: CLU2-N-"COLOR"-"REM"
EX	EXIT SIGN	1	LED	-	5	120	WALL/SURFACE	LITHONIA LIGHTING: EDGC 1RW-EL

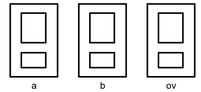
NOTES:
1. COORDINATE WITH ARCHITECT FOR EXACT INFORMATION, INCLUDING MANUFACTURER, MODEL NUMBER, COLORS, FINISHES, TRIMS,LAMP COLOR TEMPERATURE, AND CEILING TYPES.
2. REFER TO ARCHITECTURAL SHEETS FOR WALL, COLUMN, AND PENDANT MOUNTING HEIGHTS UNLESS NOTED OTHERWISE.
3. E.C. SHALL COORDINATE VOLTAGES REQUIRED FOR FIXTURES PRIOR TO ORDERING.
4. ALL FIXTURES SHALL BE UL OR ETL LISTED.
5. ALL FIXTURES SHALL BEAR A MAXIMUM WATTAGE LABEL AS INDICATED ABOVE. THE DISTRIBUTOR SHALL AFFIX THE MAX WATTAGE LABEL PRIOR TO SHIPMENT WHERE A REDUCTION IN MAXIMUM WATTAGE IS REQUIRED FOR ENERGY CODE COMPLIANCE.



3 TIME CLOCK DIAGRAM
N.T.S.

GENERAL NOTES:

1. E.C. TO PROVIDE TIME CLOCK FOR THE CONTROL OF THE SIGNAGE AND INTERIOR LIGHTING. TIME CALL SHALL BE AN INTERMATIC, ET90815CR OR EQUAL, 120-277VAC 8 CKT, 100 HR. BATTERY BACKUP WITH LOCAL OVER RIDE SWITCH (MAX. 2HRS.) TIME CLOCK.



4 SWITCH BANK
N.T.S

SWITCH BANK NOTES:

1. EC SHALL VERIFY EXACT CONFIGURATION REQUIRED WITH SPACE AVAILABLE.
2. PROVIDE LABELS AS DIRECTED BY OWNER.
3. SWITCHES SHALL NOT BE MOUNTED HIGHER THAN 48" A.F.F.
4. E.C. NEEDS TO COORDINATE EXACT LOCATION FOR THE SWITCH BANK AT SITE. ALL SWITCHES SHALL BE DIMMER SWITCHES COMPATIBLE WITH THE FIXTURES CONTROLLED. IT IS THE EC'S RESPONSIBILITY TO DETERMINE THAT ALL DIMMER SWITCHES ARE COMPATIBLE WITH THE FIXTURES CONTROLLED PRIOR TO ORDERING.

BLACK ROCK COFFEE DRIVE THROUGH

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NEARBY ENGINEERS
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49674, MIAMI, FL 33179
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CONTROL NO: #001

ISSUED FOR PERMIT (07-01-2025)

JOB NUMBER: 24-000325
DATE: 04-22-2025
CONTENTS: LIGHTING PLAN

E1.0

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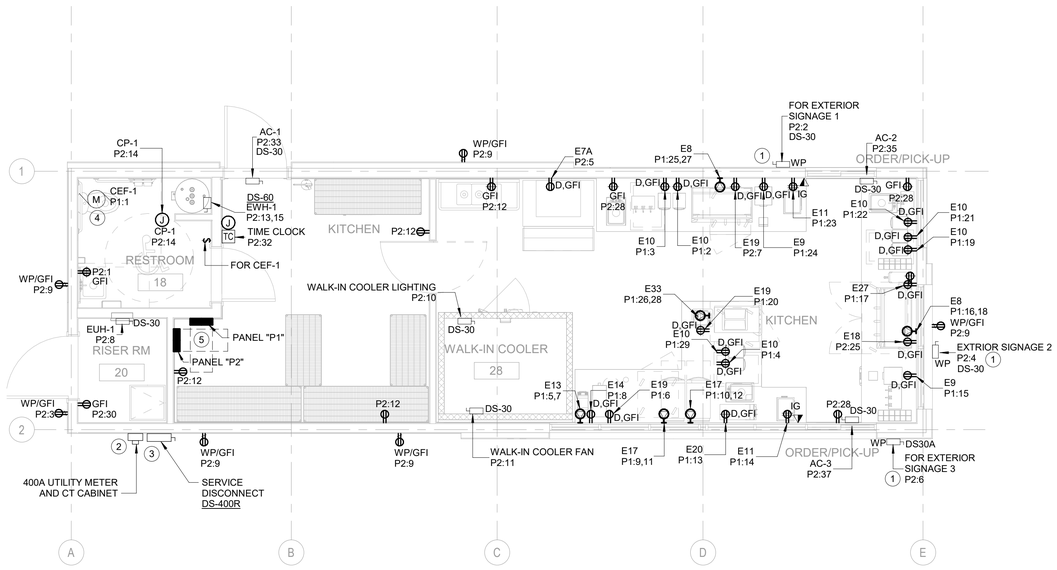
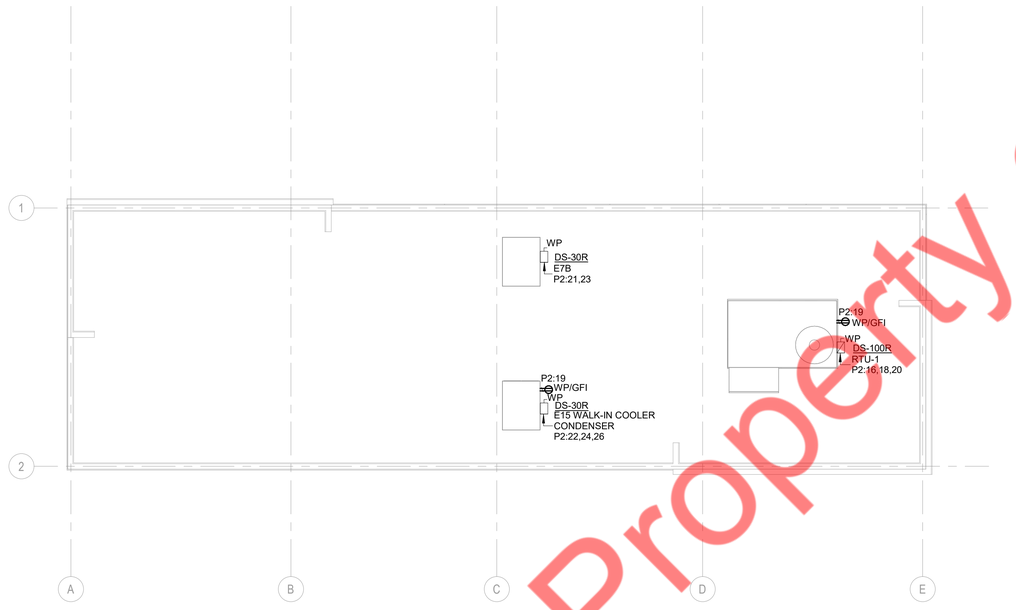


1 POWER PLAN

1/4" = 1'-0"



2 ROOF PLAN

1/4" = 1'-0"

POWER GENERAL NOTES:

1. ALL 125V THROUGH 250V RECEPTACLES SUPPLIED BY SINGLE PHASE BRANCH CIRCUITS RATED 150V TO GROUND, 50 AMPS OR LESS, INSTALLED WITHIN KITCHEN IN NON-DWELLING UNIT SHALL BE GFCI PROTECTED AS PER NEC SECTION 210.8(B)(2).
2. ALL 20A BRANCH CIRCUITS SHALL USE #12AWG CONDUCTORS IN 3/4"C MINIMUM. CONTRACTOR SHALL PROVIDE HOMERUNS TO ELECTRICAL PANELS AS REQUIRED. EACH CIRCUIT SHALL CONTAIN A DEDICATED NEUTRAL CONDUCTOR FOR A MAX. OF (1) NETWORK PER HOMERUN. ALL FEEDERS OR BRANCH CIRCUITS GREATER THAN 75' IN LENGTH SHALL BE INCREASED IN SIZE AS REQUIRED TO COMPENSATE FOR VOLTAGE DROP. ALL OTHER CIRCUITS CONDUCTORS SHALL BE SIZED TO MATCH THEIR RESPECTIVE OVER CURRENT PROTECTIVE DEVICES U.N.O.
3. THIS PROJECT IS SUBJECTED TO THE NEC 2017, AND ALL IDAHO LOCAL AMENDMENTS.
4. METALLIC CONDUIT MAY NOT BE USED AS AN EFFECTIVE GROUND PATH.PROVIDE A DEDICATED GROUND CONDUCTOR FOR ALL BRANCH CIRCUITS & FEEDERS.
5. ALL BRANCH CIRCUITING SHALL BE 3/4" CONDUIT WITH 2#12 AND 1#12 GROUND UNLESS NOTED OTHERWISE.
6. CONTRACTOR SHALL LABEL EACH RECEPTACLE WITH THE CIRCUIT NUMBER THAT SERVES IT.
7. ALL EXTERIOR WEATHERPROOF OUTLETS SHALL COMPLY WITH NEC ARTICLE 406.4(D)(6) FOR WEATHER-RESISTANT RECEPTACLES.
8. REFER TO ARCHITECTURAL SET FOR KITCHEN EQUIPMENT PLAN & SCHEDULE. E.C. SHALL VERIFY THE BREAKER, CABLE, ELECTRICAL LOAD AND CONDUIT REQUIREMENT, SIZES, RATINGS FOR ALL KITCHEN EQUIPMENTS/MECHANICAL EQUIPMENTS WITH EQUIPMENT SUPPLIER/MANUFACTURER AND PROVIDE THE ELECTRICAL CONNECTION ACCORDINGLY.
9. SEE ARCHITECTURAL ELEVATIONS FOR PLACEMENT OF DEVICES.
10. ALL EXTERIOR WEATHERPROOF OUTLETS SHALL COMPLY WITH NEC ARTICLE 406.4(D)(6) FOR WEATHER-RESISTANT RECEPTACLES.

(X) POWER KEY NOTES:

1. EXTERIOR WALL MOUNTED SIGNAGE POWERED VIA TIMECLOCK.FURNISH 20A,1P,120V SWITCH TO EXTERIOR SIGN PER 2017 NEC 600.6(A)(1).
2. LOCATION OF UTILITY METER IN NEMA 3R ENCLOSURE.
3. LOCATION OF SERVICE DISCONNECT IN NEMA 3R ENCLOSURE.
4. EXHAUST FAN.
5. E.C. SHALL MAINTAIN CLEARANCE FOR ELECTRICAL PANELS PER NEC 110.26 (A) (1).

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CONTENTS: POWER PLAN

E2.0

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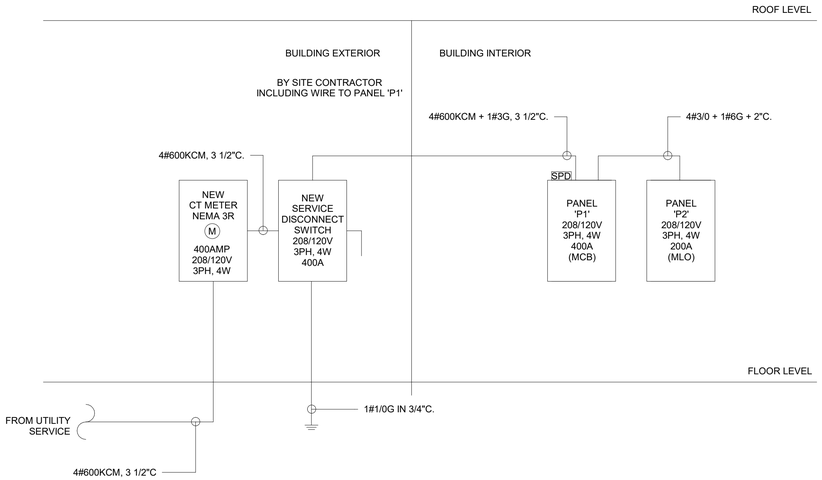
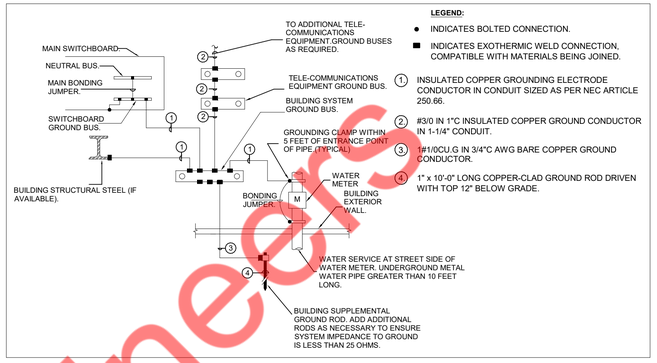


1 ELECTRICAL ONE-LINE DIAGRAM
1/4" = 1'-0"

ELECTRICAL ONE-LINE DIAGRAM NOTES:

1. INFORMATION SHOWN IS DIAGRAMMATIC AND IS NOT INTENDED TO REPRESENT PHYSICAL ARRANGEMENTS, LOCATIONS, ROUTING OR CONNECTIONS. PHYSICAL LAYOUTS ARE TO BE PER FIELD CONDITIONS AND AS INDICATED ELSEWHERE IN THE ELECTRICAL PLANS.
2. REFERENCE THE NOTES FOR ADDITIONAL REQUIREMENTS REGARDING EQUIPMENT AND INSTALLATION. NOT ALL INFORMATION SHOWN ON THIS DIAGRAM.
3. LABEL ALL DISTRIBUTION EQUIPMENT.
4. PROVIDE ARC-FLASH HAZARD WARNING FIELD LABELING TO ELECTRICAL EQUIPMENT IN ACCORDANCE WITH NEC 110.16.
5. SERVICE EQUIPMENT SHALL BE MARKED TO INDICATED THE MAXIMUM AVAILABLE FAULT CURRENT AS REQUIRED BY 2017 NEC SECTION 110.24. THE FIELD MARKING(S) SHALL INCLUDE THE DATE THE FAULT CURRENT CALCULATION WAS PERFORMED AND BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED. ELECTRICAL CONTRACTOR SHALL REQUEST A DATED LETTER WITH FAULT CURRENT INFORMATION FROM THE LOCAL UTILITY
6. ALL EXTERIOR ELECTRICAL EQUIPMENT SHALL BE PROVIDE WITH A NEMA-3R ENCLOSURE.
7. ALL ELECTRICAL EQUIPMENT SHALL BE UL LISTED OR APPROVED BY CITY RECOGNIZED ELECTRICAL TESTING COMPANY.
8. PROVIDE GROUNDING PER NEC FOR ALL EQUIPMENT AND DEVICES.
9. CONFIRM COLD SEQUENCING/HOT SEQUENCING CONFIGURATION WITH LOCAL UTILITY COMPANY.
10. SITE CONTRACTOR TO INSTALL UTILITY METER, CT CABINET AND MAINS DISCONNECT SWITCH AS PER LOCAL UTILITY APPROVED CONFIGURATION.



2 BUILDING GROUNDING ELECTRODE SYSTEM
N.T.S.

DISCONNECT AND STARTER SCHEDULE

NOTE: ALL DISCONNECTS (EXCEPT MANUAL STARTERS) SHALL BE HEAVY DUTY TYPE.

ITEM	DISCONNECT TYPE & RATING: HEAVY DUTY SWITCH: FUSED	HEAVY DUTY SWITCH: NON-FUSED	CIRCUIT BREAKER	VOLTAGE	POLES	NEMA ENCLOSURE	REMARKS	APPROVED MANUFACTURERS
DS-30		30	20A	120	1	1		SQUARE D EATON TYPE DH GENERAL ELECTRIC TYPE TH SIEMENS TYPE HNF
DS-30R		30	20A	208	2	3R		SQUARE D EATON TYPE DH GENERAL ELECTRIC TYPE TH SIEMENS TYPE HNF
DS-30R		30	20A	208	3	3R		SQUARE D EATON TYPE DH GENERAL ELECTRIC TYPE TH SIEMENS TYPE HNF
DS-60		60	50A	208	2	1		SQUARE D EATON TYPE DH GENERAL ELECTRIC TYPE TH SIEMENS TYPE HNF
DS-100R	100		60A	208	3	3R		SQUARE D EATON TYPE DH GENERAL ELECTRIC TYPE TH SIEMENS TYPE HNF
DS-400R		400		208	3	3R		SQUARE D EATON TYPE DH GENERAL ELECTRIC TYPE TH SIEMENS TYPE HNF

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JOB NUMBER: 24-000325
DATE: 04-22-2025
CONTENTS: ELECTRICAL RISER DIAGRAM

E3.0

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PANEL: P1

LOCATION: KITCHEN
SUPPLY FROM: 400AMP DISCONNECT SWITCH
MOUNTING: SURFACE MOUNTED
ENCLOSURE: NEMA 1

VOLTS: 120/208 Wye
PHASES: 3
WIRES: 4

A.I.C. RATING: V.I.F.
MAINS TYPE: MCB
MAINS RATING: 400 A
MCB RATING: 400 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A		B		C		POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	CEF-1	20 A	1	228 VA	1800 VA					1	20 A	E10_BLENDER	2
3	E10_BLENDER	20 A	1			1800 VA	1800 VA			1	20 A	E10_BLENDER	4
(1) 5	E13_COFFEE BREWER	40 A	2					2643 VA	240 VA	1	20 A	E19_UNDER COUNTER REFRIGERATOR	6
7				2643 VA	1320 VA					1	20 A	E14_BUNN GRINDER	8
(1) 9	E17_MICROWAVE	40 A	2			3100 VA	3100 VA			2	40 A	E17_MICROWAVE	10 (1)
11								3100 VA	3100 VA				12
13	E20_COFFEE DISPENSER	20 A	1	600 VA	500 VA					1	20 A	E11_POS SYSTEM	14
15	E9_SWIFT GRINDER	20 A	1			780 VA	3420 VA			2	45 A	E8_RANCILIO ESPRESSO MACHINE	16 (1)
17	E27_HOT WATER DISPENSER	20 A	1					1850 VA	3420 VA				18
19	E10_BLENDER	20 A	1	1800 VA	240 VA					1	20 A	E19_UNDER COUNTER REFRIGERATOR	20
21	E10_BLENDER	20 A	1			1800 VA	1800 VA			1	20 A	E10_BLENDER	22
23	E11_POS SYSTEM	20 A	1					500 VA	780 VA	1	20 A	E9_SWIFT GRINDER	24
(1) 25	E8_RANCILIO ESPRESSO MACHINE	45 A	2	3420 VA	1352 VA					2	20 A	E33_BEVERAGE FREEZER SPACEMAN	26
27						3420 VA	1352 VA						28
29	E10_BLENDER	20 A	1					1800 VA	0 VA	1	20 A	SPARE	30
31	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	32
33	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	34
35	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	36
37				14577 VA	0 VA								38
(2) 39	PANEL P2	200 A	3			14577 VA	0 VA			3	60 A	SURGE PROTECTIVE DEVICE	40
41								14577 VA	0 VA				42
		TOTAL LOAD:		28480 VA		36949 VA		32010 VA					
		TOTAL AMPS:		237 A		312 A		271 A					

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANELS TOTALS	
HVAC	228 VA	100.00%	228 VA		
KITCHEN	52000 VA	65.00%	33800 VA	**TOTAL CONN. LOAD:**	97440 VA
RECEPTACLES	1000 VA	100.00%	1000 VA	**TOTAL EST. DEMAND:**	79240 VA
REFRIGERATION	480 VA	100.00%	480 VA	**TOTAL CONN.:**	270 A
OTHER/MISCELLANEOUS	43732 VA	100.00%	43732 VA	**TOTAL EST. DEMAND:**	220 A

NOTES:
1. CONTRACTOR SHALL PROVIDE ADEQUATE WITHSTAND RATING OF EQUIPMENT PER AVAILABLE FAULT CURRENT FROM THE UTILITY OR DISTRIBUTION. COORDINATE WITH UTILITY.
2. THE CONTRACTOR SHALL ADJUST CIRCUITS AS REQUIRED BASED ON FINAL EQUIPMENT TO MAINTAIN 10% LOADING BETWEEN PHASES.
3. VERIFY ELECTRICAL REQUIREMENTS AND EQUIPMENT LOCATION PRIOR TO ROUGH-IN.

PANEL: P2

LOCATION: KITCHEN
SUPPLY FROM: PANEL P1
MOUNTING: SURFACE MOUNTED
ENCLOSURE: NEMA 1

VOLTS: 120/208 Wye
PHASES: 3
WIRES: 4

A.I.C. RATING: V.I.F.
MAINS TYPE: MLO
MAINS RATING: 200 A
MCB RATING:

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A		B		C		POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	RESTROOM RECEPTACLE(S)	20 A	1	180 VA	1200 VA					1	20 A	EXTERIOR SIGNAGE 1	2
3	IRRIGATION RECEPTACLES	20 A	1			800 VA	1200 VA			1	20 A	EXTERIOR SIGNAGE 2	4
5	E7A_ICE MACHINE	20 A	1					132 VA	1200 VA	1	20 A	EXTERIOR SIGNAGE 3	6
7	E19_UC REFRIGERATOR SMALL	20 A	1	240 VA	1500 VA					1	20 A	EUH-1	8
9	EXTERIOR RECEPTACLE(S)	20 A	1			900 VA	80 VA			1	20 A	WALK IN COOLER LIGHTING	10
11	WALK-IN COOLER FAN	20 A	1					80 VA	720 VA	1	20 A	KITCHEN RECEPTACLE(S)	12
13	EWH-1	50 A	2	4000 VA	200 VA					1	20 A	CP-1 (CIRCULATION PUMP)	14
15						4000 VA	6605 VA						16
17	REST AND RISER RM LIGHTING & CEF-1	20 A	1					69 VA	6605 VA	3	60 A	RTU-1	18 (1)
19	CONVENIENCE RECEPTACLE(S)	20 A	1	360 VA	6605 VA								20
21	E7B_ICE MACHINE CONDENSER	20 A	2			749 VA	696 VA						22
23								749 VA	696 VA	3	20 A	E15_WALK-IN COOLER CONDENSER	24
25	E18_UC REFRIGERATOR LARGE	20 A	1	360 VA	696 VA								26
27	KITCHEN AREA LIGHTING AND EX SIGN	20 A	1			404 VA	540 VA			1	20 A	KITCHEN RECEPTACLE(S)	28
29	EXTERIOR LIGHTING	20 A	1					261 VA	180 VA	1	20 A	RECEPTACLES	30
31	EXTERIOR LIGHTING	20 A	1	104 VA	50 VA					1	20 A	TIME CLOCK	32
33	AC-1	20 A	1			300 VA	0 VA			1	20 A	SPARE	34
35	AC-2	20 A	1					300 VA	0 VA	1	20 A	SPARE	36
37	AC-3	20 A	1	300 VA	0 VA					1	20 A	SPARE	38
39	SPACE	--	1			--	0 VA			1	20 A	SPARE	40
41	SPACE	--	1					--	0 VA	1	20 A	SPARE	42
		TOTAL LOAD:		15795 VA		16274 VA		10992 VA					
		TOTAL AMPS:		138 A		142 A		92 A					

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANELS TOTALS	
HVAC	25801 VA	100.00%	25801 VA		
LIGHTING	4518 VA	125.00%	5648 VA	**TOTAL CONN. LOAD:**	43061 VA
RECEPTACLES	3680 VA	100.00%	3680 VA	**TOTAL EST. DEMAND:**	44191 VA
REFRIGERATION	812 VA	100.00%	812 VA	**TOTAL CONN.:**	120 A
OTHER/MISCELLANEOUS	8250 VA	100.00%	8250 VA	**TOTAL EST. DEMAND:**	123 A

NOTES:
1. CONTRACTOR SHALL PROVIDE ADEQUATE WITHSTAND RATING OF EQUIPMENT PER AVAILABLE FAULT CURRENT FROM THE UTILITY OR DISTRIBUTION. COORDINATE WITH UTILITY.
2. THE CONTRACTOR SHALL ADJUST CIRCUITS AS REQUIRED BASED ON FINAL EQUIPMENT TO MAINTAIN 10% LOADING BETWEEN PHASES.
3. VERIFY ELECTRICAL REQUIREMENTS AND EQUIPMENT LOCATION PRIOR TO ROUGH-IN.

EQUIPMENT SCHEDULE										
TAG	EQUIPMENT NAME	QTY	VOLTAGE	PHASE	AMP	MOCP	WATT	LOAD TYPE	TOTAL WATT	KEY NOTES*
E7A	ICE MACHINE	1	120	1	1.1	20	132	C	132	
E7B	ICE MACHINE CONDENSER	1	208	1	7.2	20	1497	C	1497	
E8	RANCILIO ESPRESSO MACHINE	2	208	1	32.8	45	6000	K	13680	
E9	LA MARZOOCO SWIFT GRINDER	2	120	1	6.5	20	780	K	1560	
E10	VITAMIX BLENDER	7	120	1	15	20	1800	K	12600	
E11	POS SYSTEM	2	120	1	4.2	20	500	R	1000	
E13	COFFEE GRINDER	1	208	1	25.4	40	5285	K	5285	
E14	BUNN GRINDER	1	120	1	11	20	1320	K	1320	
E15	WALK-IN COOLER BOX WITH REMOTE CONDENSER	1	208	3	5.8	20	2089	C	2089	
E17	MICROWAVE	2	208	1	30	40	6200	K	12400	
E18	UNDER COUNTER REFRIGERATOR (LARGE)	1	120	1	3	20	360	C	360	
E19	UNDER COUNTER REFRIGERATOR (SMALL)	3	120	1	2	20	240	C	720	
E20	COUNTERTOP NITRO BREW COFFEE DISPENSER	1	120	1	5	20	600	K	600	
E27	HOT WATER DISPENSER	1	120	1	15.4	20	1850	K	1850	
E33	FROZEN BEVERAGE FREEZER	1	208	1	13	20	2704	C	2704	

	TOTAL REFRIGERATION(C) WATTS	7508
GENERAL NOTE:	TOTAL EQUIPMENT(EQ) WATTS	1000
VERIFY THE ELECTRICAL POWER REQUIREMENT WITH THE EQUIPMENT MANUFACTURER. COORDINATE WITH OWNER/GENERAL CONTRACTOR PRIOR TO INSTALLATION.	TOTAL KITCHEN(K) WATTS	49295
	TOTAL WATTS	57798

KEY NOTE:
1. EC SHALL CONNECT EQUIPMENT INTO CORD FROM ETR CHASE.
2. EC SHALL CONNECT EQUIPMENT INTO RECEPTACLE ON ETR ELECTRICAL CHASE.
3. EC SHALL PROVIDE ONE DATA CONNECTION FOR EACH MONITOR. CONNECTS INTO SET FROM CHASE ASSEMBLY.

ELECTRICAL LOAD SUMMARY

DESCRIPTION	CONNECTED KVA	VOLT	PHASE	DEMAND FACTOR	DEMAND KVA
LIGHTING	4.5	120	1	1.25	5.6
RECEPTACLES	4.7	120	1	>10kW=10+[0.5*(kW-10)]	4.7
HVAC	26.0	208	3	1.00	26.0
REFRIGERATION	1.3	208	3	1.00	1.3
KITCHEN EQUIPMENTS	52.0	208	3	0.65	33.8
OTHERS/MISCELLANEOUS	8.9	208	1	1.00	8.9
TOTAL	97.4				80.4

NOTES:
* USE GREATER VALUE OF THE TWO CATEGORIES.
** 125% OF THE LARGEST MOTOR OR COMPRESSOR IN SYSTEM APPLIED ONLY ON ONE UNIT.
*** N.E.C. ARTICLE 220-12 REQUIREMENT (200 VA PER FOOT OF SHOW WINDOW) MINUS ACTUAL SHOW WINDOW LIGHTING kVA.

N.E.C. DEMAND kVA x 1,000 / SYSTEM VOLTAGE x 1.732 = MINIMUM FEEDER AMPERAGE

80.4 / 208 x 1000 = 80,370 / x 1.732 = 360 — 223.1 AMPS — USE NEW 400AMP SERVICE

(X) PANEL SCHEDULE KEY NOTES:

1. WIRE SIZES:
   30A/2P= 2#10 + 1#10G, 3/4"C.
   40A/2P = 2#8 + 1#10G, 3/4"C.
   50A/2P = 2#8 + 1#10G, 3/4"C.
   60A/3P = 3#6 + 1#10G, 3/4"C.
   70A/3P = 3#4 + 1#8G, 1"C.

2. REFER RISER DIAGRAM FOR EXACT WIRE SIZE.

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JOB NUMBER: 24-000325
DATE: 04-22-2025
CONTENTS: ELECTRICAL PANEL SCHEDULES

E3.1

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PLUMBING LEGEND

SYMBOL	DESCRIPTION
	DOMESTIC COLD WATER PIPING (CW)
	DOMESTIC HOT WATER PIPING (HW)
	DOMESTIC HOT WATER RECIRCULATION (HWR)
	DOMESTIC COLD WATER UNDERGROUND PIPING (CW)
	DOMESTIC COLD WATER PIPING (CW)
	SANITARY PIPING (SAN)
	VENT PIPING (V)
	SANITARY PIPING(UNDER GROUND)
GW	GREASE WASTE
GW	GREASE WASTE (UNDER GROUND)
ST	STORM DRAIN
OST	OVERFLOW STORM DRAIN
G	GAS PIPING
DT	DRAIN TILE
	GAS PRESSURE REDUCING VALVE (GPR) WITH VENT
	ISOLATION VALVE
S	SOLENOID VALVE
	BALL VALVE (2-1/2" AND SMALLER)
	GLOBE VALVE
CLOSED / OPEN	NORMALLY OPEN VALVE NORMALLY CLOSED VALVE
	CHECK VALVE
	BUTTERFLY VALVE (3" AND LARGER)
	BALANCING VALVE (BV) / CIRCUIT SETTER
	TWO WAY CONTROL VALVE
	THREE WAY CONTROL VALVE
	RELIEF(R), OR SAFETY(S) VALVE
	PRESSURE REDUCING VALVE
T	THERMOSTAT MIXING VALVE
	STRAINER
	BACKFLOW PREVENTER ASSEMBLY (BFP)
	REDUCED PRESSURE ZONE ASSEMBLY (RPZ)
	BALANCING VALVE ASSEMBLY / CIRCUIT SETTER ASSEMBLY
P	PRESSURE GAUGE - CLOSED (FURNISHED WITH VALVE)
	HOSE BIBB
	PUMP, IN SCHEMATIC PRESENTATION
M	WATER METER
	FLOOR DRAIN (FD)
	FLOOR CLEANOUT (FCO)
	HALF-GRATE FLOOR SINK (FS)
	FULL-GRATE FLOOR SINK (FS)
	REDUCER
	UNION
	PIPE DOWN
	PIPE UP
	WALL CLEANOUT (WCO) / CLEANOUT (CO)
	DIRECTION OF FLOW
	PIPE PITCH ARROW (DOWN IN ARROW DIRECTION)
	TOP CONNECTION, 45 OR 90 DEGREES
	BOTTOM CONNECTION, 45 OR 90 DEGREES
	SIDE CONNECTION
	CAPPED OUTLET
	VALVE IN RISER
	NEW CONNECTION
	LIMIT OF DEMOLITION
1 P1.X	SECTION TAKEN AT

PLUMBING ABBREVIATIONS

AC	ACCESS DOOR
AD	AREA DRAIN
AAV	AIR ADMITTANCE VALVE
ABV	ABOVE
AFF	ABOVE FINISHED FLOOR
A/E	ARCHITECT/ENGINEER
AHJ	AUTHORITY HAVING JURISDICTION
ADA	AMERICANS WITH DISABILITIES ACT
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
BHP	BRAKE HORSEPOWER
BT	BATH TUB
BTU	BRITISH THERMAL UNIT
BFP	BACK FLOW PREVENTER
C/I	CONTRACTOR INSTALLED
CD	CONDENSATE
CO	CLEAN OUT
CONN	CONNECTION
CONT	CONTINUOUS
CP	CIRCULATION PUMP
CV	CHECK VALVE
CW	COLD WATER
DF	DRINKING FOUNTAIN
DFU	DRAINAGE FIXTURE UNIT
DIA	DIAMETER
DN	DOWN
DW	DISH WASHER
DWG	DRAWING
ECO	EXTERIOR CLEAN OUT
(E)	EXISTING
ET	EXPANSION TANK
EWC	ELECTRIC WATER COOLER
°F	DEGREE FAHRENHEIT
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
FFD	FLOOR FUNNEL DRAIN
FFL	FINISH FLOOR LEVEL
FS	FLOOR SINK
GAL	GALLONS
GD	GARBAGE DISPOSER
GPM	GALLONS PER MINUTE
GPR	GAS PRESSURE REGULATOR
GW	GREASE WASTE
GWH	GAS WATER HEATER
GI	GREASE INTERCEPTOR
HW	HOT WATER
HWR	HOT WATER RECIRCULATION
HB	HOSE BIB
I.E.	INVERT ELEVATION
IWH	INSTANTANEOUS WATER HEATER
KS	KITCHEN SINK
L	LAVATORY
M	METER
MB	MOP SINK
MX	MIXING VALVE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
N.T.S.	NOT TO SCALE
OW	OIL WASTE
PD	PUMP DISCHARGE
PDI	PLUMBING DRAINAGE INSTITUTE
PSIG	POUNDS PER SQUARE INCH GAUGE
RD	ROOF DRAIN
OD	OVERFLOW ROOF DRAIN
RC	ROOF CONDUCTOR
RM	ROOM
S	SINK
SAN	SANITARY
SH	SHOWER
TD	TRENCH DRAIN
TPV	TEMPERATURE/PRESSURE RELIEF VALVE
TP	TRAP PRIMER
TYP	TYPICAL
TW	TEMPERED WATER
UB	UTILITY BOX
U/G	UNDERGROUND
UR	URINAL
V	VENT
VTR	VENT THROUGH ROOF
W	WASTE
WC	WATER CLOSET
WCO	WALL CLEAN OUT
WH	WATER HEATER
WHA	WATER HAMMER ARRESTOR
WM	WASHING MACHINE

PLUMBING SHEET INDEX

APPLICABLE CODES

2018 IDAHO BUILDING CODE (IBC) WITH AMENDMENTS

2020 IDAHO ENERGY CONSERVATION CODE (IECC-2018)

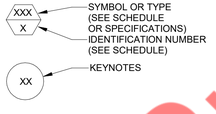
2018 IDAHO MECHANICAL CODE (IMC)

2017 IDAHO PLUMBING CODE (ADOPTS WITH AMENDMENTS UPC 2015)

2017 NATIONAL ELECTRIC CODE

NOTES:
ETR- EXISTING TO REMAIN.

EQUIPMENT IDENTIFICATION



ROOF DRAIN IDENTIFICATION

PLUMBING GENERAL NOTES

1. PLUMBING GENERAL NOTES ON THESE DRAWINGS ARE A PART OF THE PLUMBING SPECIFICATIONS TO THE SAME EXTENT AS IF WRITTEN HEREIN FULL.

2. ALL WORK AND MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF LOCAL AND STATE GOVERNING CODES, ORDINANCES AND HEALTH DEPARTMENT REGULATIONS.

3. ALL PIPING SHALL BE SUPPORTED FROM STRUCTURAL MEMBERS OF THE BUILDING, OR AS APPROVED BY THE ARCHITECT OR OWNER'S REPRESENTATIVE. PLACE ALL HANGERS ON EIGHT (8) FOOT CENTERS.

   3.1. PIPES ONE (1) INCH IN DIAMETER OR LESS: SOLID OR SPLIT RING TYPE
   3.2. PIPES LARGER THAN ONE (1) INCH: STANDARD WEIGHT CLEVIS HANGERS
   3.3. INSULATED PIPING: SEMI-CIRCULAR SHIELD.

4. VALVES,UNIONS, ETC. TO BE SAME SIZE AS PIPE UNLESS OTHER WISE INDICATED ON DRAWINGS.

5. IN CONCEALED LOCATIONS WHERE PIPING, OTHER THAN CAST IRON OR GALVANIZED STEEL, IS INSTALLED THROUGH HOLES OR NOTCHES IN STUDS, JOISTS, RAFTERS OR SIMILAR MEMBERS LESS THAN 1 1/4 INCHES FROM THE NEAREST EDGE OF THE MEMBER, THE PIPE SHALL BE PROTECTED BY STEEL SHIELD PLATES. SUCH PLATES SHALL COVER THE AREA OF THE PIPE WHERE THE MEMBER IS NOTCHED OR BORED, AND SHALL EXTEND NOT LESS THAN 2 INCHES ABOVE SOLE PLATES AND BELOW TOP PLATES.

6. SHIELD PLATES SHALL BE OF STEEL MATERIAL HAVING A THICKNESS OF NOT LESS THAN 0.0575 INCH.

PLUMBING SPECIFICATIONS

DEFINITIONS:

1. WATER DISTRIBUTION PIPING: INTERIOR DOMESTIC WATER PIPING.

2. WATER SERVICE: EXTERIOR DOMESTIC WATER PIPING.

3. ACCESSIBLE FIXTURE: PLUMBING FIXTURE THAT CAN BE APPROACHED, ENTERED, AND USED BY PEOPLE WITH DISABILITIES.

PERFORMANCE REQUIREMENTS:

1. DESIGN SUPPORTS FOR MULTIPLE PIPES CAPABLE OF SUPPORTING COMBINED WEIGHT OF SUPPORTED SYSTEMS, SYSTEM CONTENTS, AND COMPONENTS.

2. DESIGN EQUIPMENT SUPPORTS CAPABLE OF SUPPORTING COMBINED OPERATING WEIGHT OF SUPPORTED EQUIPMENT, CONNECTED SYSTEMS AND COMPONENTS.

3. DESIGN SEISMIC-RESTRAINT (IF APPLICABLE) HANGERS AND SUPPORTS FOR PIPING AND EQUIPMENT, AND OBTAIN APPROVAL FROM AUTHORITIES HAVING JURISDICTION.

4. COMPONENTS AND INSTALLATION SHALL BE CAPABLE OF WITHSTANDING THE FOLLOWING WORKING PRESSURE, UNLESS OTHERWISE INDICATED:

   4.1. DOMESTIC WATER PIPING: 125 PSIG.
   4.2. SANITARY WASTE AND VENT PIPING: 10' HEAD OF WATER.
   4.3. STORM DRAINAGE PIPING: 10' HEAD OF WATER.
   4.4. FORCE-MAIN: 100 PSIG.
   4.5. GAS PIPING: 60 PSIG.

PLUMBING FIXTURES:

1. PLUMBING FIXTURES AND TRIMMINGS HAVE BEEN SELECTED AS A BASE FOR THIS INSTALLATION, EXCEPT WHERE OTHERWISE SPECIFIED, BUT OTHER MAKES WHICH ARE EQUAL AND APPROVED MAY BE USED.

2. INSTALL/PROVIDE FLUSH VALVES AND/OR FLUSH TANKS WITH HANDLE ON OPEN SIDE OF FIXTURE.

3. CAULK ALL FIXTURES WATER TIGHT TO WALL AND FLOOR USING CLEAR SILICONE CAULK NEAT AND SMOOTHLY SET IN PLACE AND EXCESS CLEANED FROM WALL OR FIXTURE.

4. THERMOSTATIC MIXING VALVES, SHALL BE INSTALLED ON ALL SINKS AND LAVATORIES WITHOUT EXCEPTION.

HANGERS AND SUPPORTS:

1. STEEL PIPE HANGERS AND SUPPORTS: MSS SP-58, TYPES 1 THROUGH 58, FACTORY-FABRICATED COMPONENTS. REFER TO EXECUTION SECTION "HANGER AND SUPPORT APPLICATIONS."

   1.1. GALVANIZED, METALLIC COATINGS: PRE-GALVANIZED OR HOT DIPPED.
   1.2. NON-METALLIC COATINGS: PLASTIC COATING, JACKET, OR LINER.
   1.3. PADDED HANGERS: HANGER WITH FIBERGLASS OR OTHER PIPE INSULATION PAD OR CUSHION FOR SUPPORT OF BEARING SURFACE OF PIPING.

2. COPPER PIPING SHALL BE SUPPORTED AT INTERVALS NOT TO EXCEED 6'-0" AND AT EACH CHANGE IN HORIZONTALS OF VERTICAL. HANGERS SHALL SUPPORT PIPING AT PIPE WITH INSULATION OVER TOP OR WITH METAL SLEEVE TO PROTECT INSULATION FROM BEING CRUSHED.

   2.1. HANGER SHIELD: HANGERS FOR PIPING SHALL BE PLACED AROUND THE OUTSIDE OF THE INSULATION AND PROTECTIVE SHIELDS SHALL BE INSTALLED AT EVERY HANGER LOCATION. SHIELD SHALL NOT BE LESS THAN 2/3 THE CIRCUMFERENCE OF THE INSULATION AND WHERE SPEED CLIPS ARE USED, THE METAL SHIELD SHALL BE CONTINUOUS AROUND THE CIRCUMFERENCE OF THE PIPE INSULATION. SHIELDS SHALL BE FABRICATED OF THE FOLLOWING GAUGES:

NOMINAL PIPE SIZE	METAL GAUGE
0" - 1 1/2"	20
2" - 3"	16
3 1/2"	UP TO 14

3. TRAPEZE PIPE HANGERS: MSS SP-69, TYPE 69, SHOP OR FIELD FABRICATED PIPE-SUPPORT ASSEMBLY MADE FROM STRUCTURAL STEEL SHAPES WITH MSS-SP-58 HANGER RODS, NUTS, SADDLES, AND U-BOLTS.

4. METAL FRAMING SYSTEMS: MFMA-3, SHOP OR FIELD FABRICATED PIPE SUPPORT ASSEMBLY MADE OF STEEL CHANNELS AND OTHER COMPONENTS.

5. THERMAL HANGER SHIELD INSERTS: 100-PSIG MINIMUM, COMPRESSIVE STRENGTH INSULATION INSERT ENCASED IN SHEET METAL SHIELD.

6. FASTENER SYSTEMS:

   6.1. POWDER ACTUATED FASTENERS: THREADED STEEL STUD FOR USE IN HARDENED PORTLAND CEMENT CONCRETE WITH PULLOUT, TENSION, AND SHEAR CAPACITIES APPROPRIATE FOR SUPPORTED LOADS AND BUILDING MATERIALS WHERE USED.
   6.2. MECHANICAL ANCHORS: INSERT WEDGE TYPE, ZINC COATED OR STAINLESS STEEL, FOR USE IN HARDENED PORTLAND CEMENT CONCRETE WITH PULLOUT, TENSION, AND SHEAR CAPACITIES APPROPRIATE FOR SUPPORTED LOADS AND BUILDING MATERIALS WHERE USED.

7. EQUIPMENT SUPPORTS: WELDED, SHOP OR FIELD FABRICATED EQUIPMENT SUPPORT MADE FROM STRUCTURAL STEEL SHAPES.

8. MISCELLANEOUS MATERIALS:

   8.1. STRUCTURAL STEEL: ASTM A 46/A 36M, STEEL PLATES, AND BARS; BLACK AND GALVANIZED.
   8.2. GROUT: ASTM C 1107, FACTORY-MIXED AND PACKAGED, DRY, HYDRAULIC-CEMENT, NON-SHRINK AND NON-METALLIC GROUT; SUITABLE FOR INTERIOR AND EXTERIOR APPLICATIONS.
   8.3. PROPERTIES: NON-STAINING, NON-CORROSIVE, AND NON-GASEOUS.
   8.4. DESIGN MIX: 5000-PSI, 28-DAY COMPRESSIVE STRENGTH.

9. PROVIDE SEISMIC BRACING OF PIPING BASED ON SEISMIC CATEGORY OF ZONE PROJECT IS BEING CONSTRUCTED.

INSULATION:

1. THERMAL INSULATION MATERIALS SHALL MEET THE PROPERTY REQUIREMENTS OF THE FOLLOWING,

   1.1. ASTM C547, ASTM C585, AND ASTM C1136.

2. INSULATION MATERIALS SHALL MEET THE MINIMUM REQUIREMENTS OF IECC-2018.

3. INSULATION MATERIALS SHALL HAVE A MAXIMUM FLAME SPREAD INDEX OF 25 AND A MAXIMUM SMOKE DEVELOPED INDEX OF 50 WHEN TESTED IN ACCORDANCE WITH THE FOLLOWING TESTING STANDARDS:

   3.1. ASTM E84, UL 723 AND NFPA 255.

4. INSULATION SHALL BE FIBERGLASS PRE-FORMED PIPE INSULATION, ONE-PIECE, HINGED SECTION, WITH FACTORY APPLIED WHITE POLYMER FACING, TWO-COMPONENT ADHESIVE CLOSURE SYSTEM, AND MATCHING PRESSURE SENSITIVE TAPE. MANUFACTURER'S DATA REGARDING THICKNESS CONSTRAINTS IN RELATION TO OPERATING TEMPERATURE SHALL BE FOLLOWED. STAPLING IS NOT ALLOWED TO COMPLETE THE CLOSURE.

5. INSULATION MATERIAL CAN BE A FLEXIBLE ELASTOMERIC POLYETHYLENE INSULATION. INSTALL IN CONFORMATION WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS.

6. COVER ALL OF THE FOLLOWING PIPE TYPES LISTED WITH PRE MOLDED PIPE INSULATION OF THICKNESS INDICATED, 4 LB. DENSITY AND ASJ JACKET.

PIPE TYPE	INSULATION THICKNESS (INCHES)
DOMESTIC COLD WATER	
PIPE SMALLER THAN 1-1/2 INCH	1/2
PIPE 1-1/2" INCH AND LARGER	1
DOMESTIC HOT WATER	
PIPE SMALLER THAN 1-1/2 INCH	1
PIPE 1-1/2" AND LARGER	1-1/2
DOMESTIC HOT WATER (CIRCULATING)	
PIPE SMALLER THAN 1-1/2 INCH	1
PIPE 1-1/2" AND LARGER	1-1/2
STORM WATER	
PIPE 3 INCH AND LARGER	1

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JOB NUMBER: 24-000325
DATE: 04-22-25
CONTENTS: PLUMBING LEGENDS, ABBREVIATIONS, NOTES AND SPECIFICATIONS

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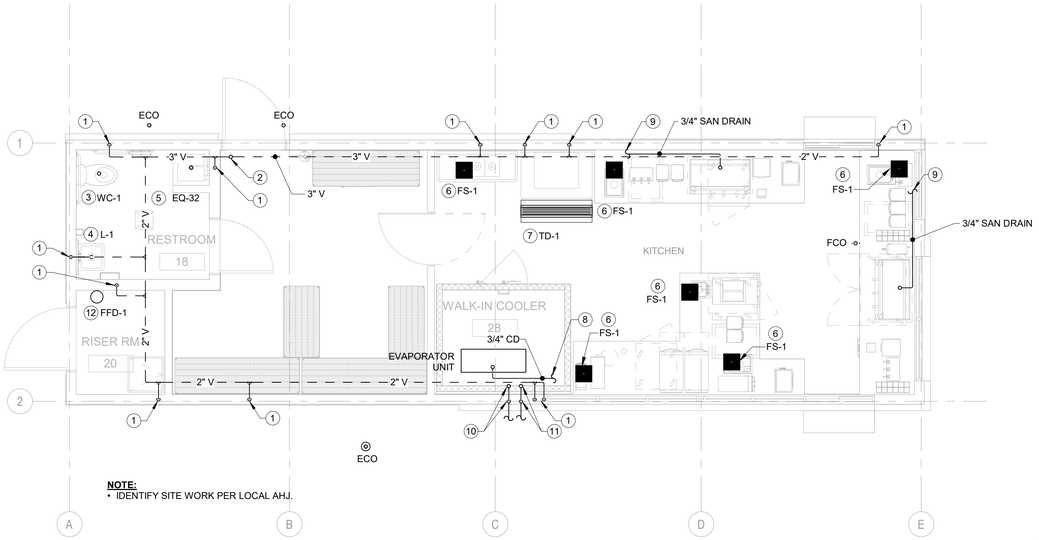
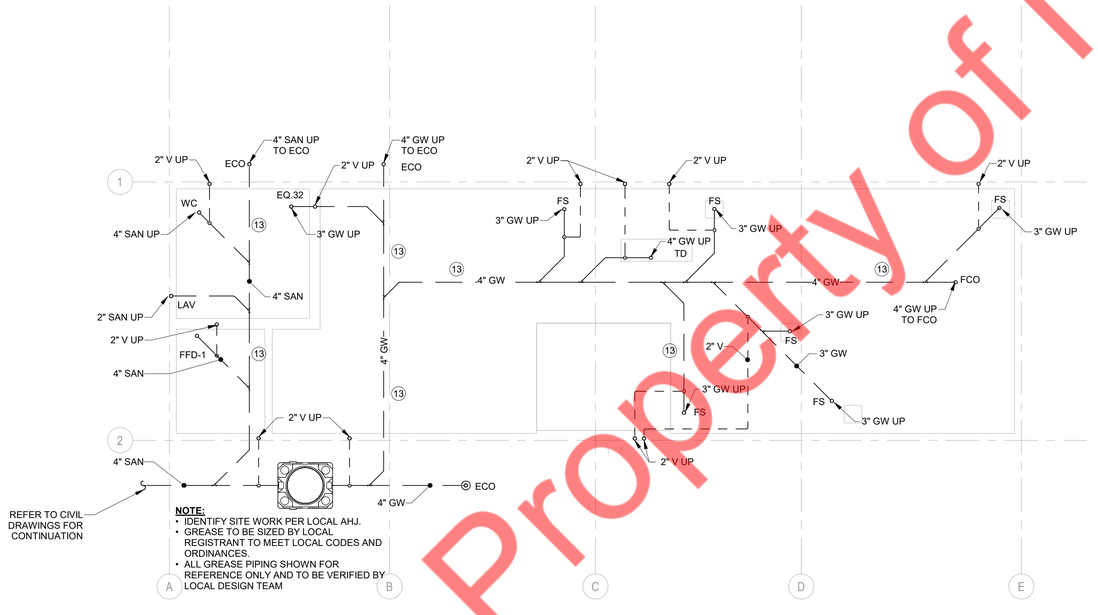


1 SANITARY DRAINAGE AND VENT FLOOR PLAN

1/4" = 1'-0"



2 SANITARY DRAINAGE UNDERGROUND PLAN

1/4" = 1'-0"

GENERAL NOTES:

A. ALL SEWER LINES TO BE MADE UP IN FIELD AFTER BUILDING IS PLACED AND COORDINATED WITH CIVIL ENGINEER UTILITY PLAN.

B. ALL THE SANITARY PIPING SHALL BE PROTECTED AGAINST FREEZING BY A HEAT TRACING SYSTEMS OR THERMAL INSULATION WITH VAPOR BARRIERS AS PER CODE.

(#) SANITARY DRAINAGE AND VENT FLOOR PLAN KEYNOTES:

1. 2"Ø V PIPE DN.
2. 3"Ø VENT UP & 3"Ø VTR.
3. 4"Ø SAN PIPE UP TO WC-1.
4. 2"Ø SAN PIPE UP TO L-1.
5. 3"Ø SAN PIPE UP TO EQUIP. 32.0.
6. 3"Ø GW PIPE UP TO FS-1.
7. 4"Ø GW PIPE UP TO TD-1.
8. TERMINATE THE CONDENSATE DRAIN PIPE INDIRECTLY TO THE NEAREST FLOOR SINK. THE CONTRACTOR IS REQUIRED TO VERIFY THE ROUTING AND TERMINATION IN THE FIELD.
9. TERMINATE THE DRAIN PIPE FOR ESPRESSO MACHINE INDIRECTLY TO THE NEAREST FLOOR SINK. THE CONTRACTOR IS REQUIRED TO VERIFY THE ROUTING AND TERMINATION IN THE FIELD.
10. 3"Ø OST PIPE UP/DN.
11. 3"Ø ST PIPE UP/DN.
12. 4"Ø SAN PIPE UP TO FFD-1.
13. PROVIDE HEAT TRACING FOR ALL EXPOSED SANITARY PIPING IF REQUIRED.

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CONTENTS: SANITARY DRAINAGE AND VENT FLOOR PLAN

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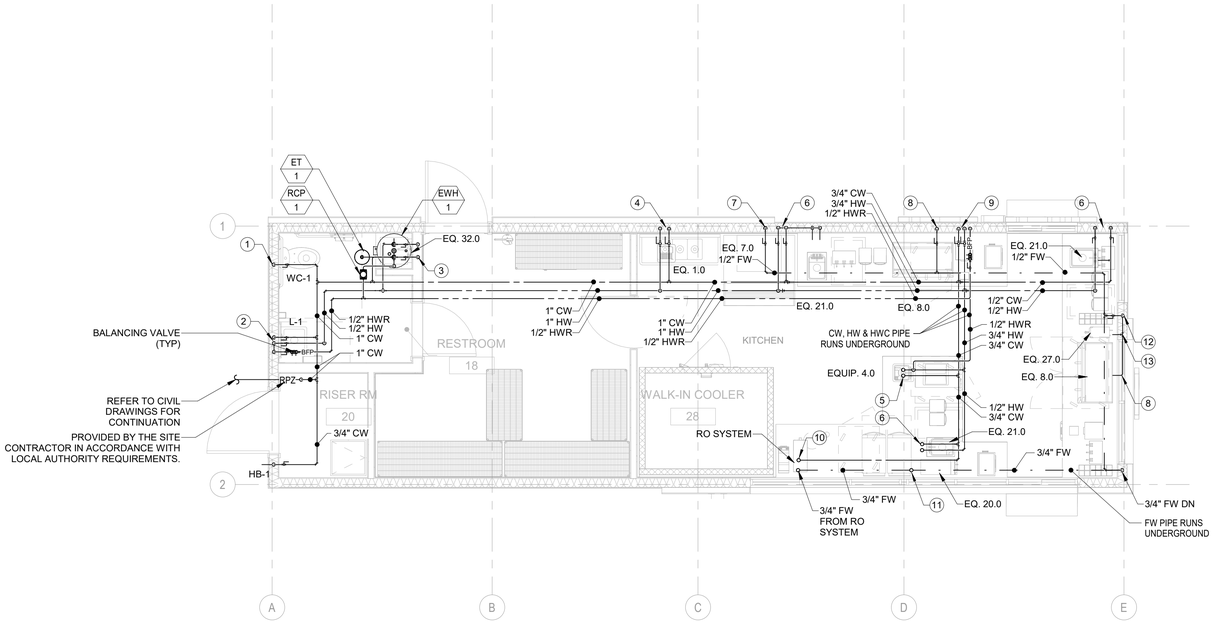

1 DOMESTIC WATER FLOOR PLAN

1/4" = 1'-0"

PLUMBING GENERAL NOTES:

A. REFER TO THE PLUMBING FIXTURE SCHEDULES FOR THE SIZES OF BRANCH PIPES OF FIXTURES NOT SHOWN ON PLANS.

B. REFERS TO FIXTURE & EQUIPMENT DESIGNATION. SEE CORRESPONDING SPECIFICATION AND EQUIPMENT SCHEDULE FOR FURTHER INFORMATION.

C. ESPRESSO MACHINE,COFFEE BREWER, & COFFEE DISPENSER SHALL BE PROTECTED AGAINST BACKFLOW BY A BACKFLOW PREVENTER CONFORMING TO ASSE 1022 OR ASSE 1024, OR PROTECTED BY AN AIR GAP.

D. ICE MACHINE SHALL BE PROTECTED AGAINST BACKFLOW BY BACKFLOW PREVENTERS AS PER CODE.

E. PROVIDE ASSE1070 APPROVED THERMOSTATIC MIXING VALVE AT ALL LAVATORIES, HAND WASHING SINKS & DUMP SINK AT TEMP 110 DEG F.

F. ALL THE WATER SUPPLY PIPING SHALL BE PROTECTED AGAINST FREEZING BY A HEAT TRACING SYSTEMS OR THERMAL INSULATION WITH VAPOR BARRIERS AS PER CODE.

DOMESTIC WATER FLOOR PLAN KEYNOTES:

1. 3/4"Ø CW PIPE DN TO WC-1.
2. 1/2"Ø CW, 1/2"Ø HW & 1/2"Ø HWC PIPE DN TO L-1.
3. 3/4"Ø CW & 3/4"Ø HW PIPE DN TO EQUIP-32.0.
4. 3/4"Ø CW & 3/4"Ø HW PIPE DN TO EQUIP-1.0.
5. 1/2"Ø CW, 1/2"Ø HW & 1/2"Ø HWC PIPE UP TO EQUIP-4.0.
6. 1/2"Ø CW & 1/2"Ø HW PIPE DN TO EQUIP-21.0.
7. 1/2"Ø FW PIPE DN TO EQUIP-7.0.
8. 1/2"Ø FW PIPE DN TO EQUIP-8.0.
9. 3/4"Ø CW, 3/4"Ø HW & 1/2"Ø HWC PIPE DN.
10. 1/2"Ø CW PIPE UP TO EQUIP-13.0.
11. 1/2"Ø FW PIPE UP TO EQUIP-20.0.
12. 1/2"Ø FW & 1/2"Ø HW PIPE DN.
13. 1/2"Ø FW PIPE DN TO EQUIP-27.0.

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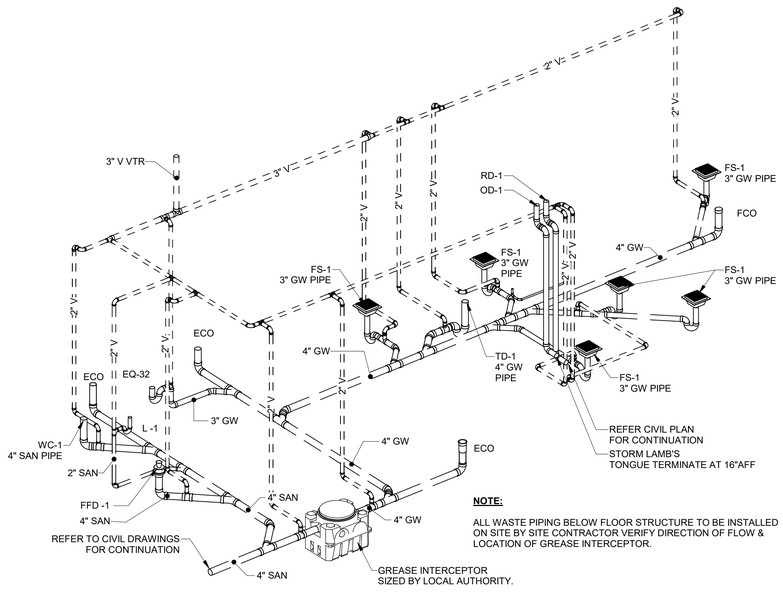
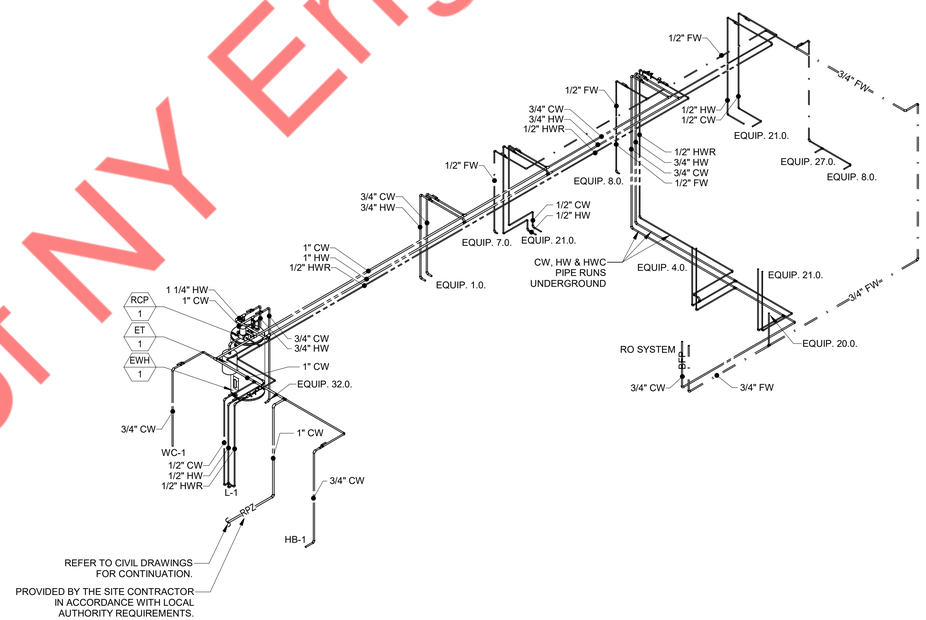


NOTE:

ALL WASTE PIPING BELOW FLOOR STRUCTURE TO BE INSTALLED ON SITE BY SITE CONTRACTOR VERIFY DIRECTION OF FLOW & LOCATION OF GREASE INTERCEPTOR.

1 SANITARY DRAINAGE RISER DIAGRAM

N.T.S SCALE



2 DOMESTIC WATER RISER DIAGRAM

N.T.S SCALE

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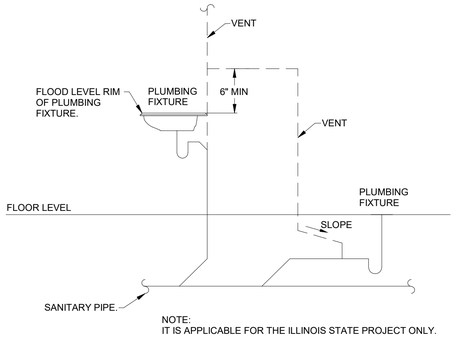
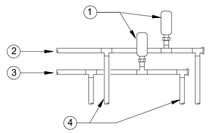


NOTE:
IT IS APPLICABLE FOR THE ILLINOIS STATE PROJECT ONLY.

1 PLUMBING VENT CONNECTION DETAIL

SCALE: N.T.S.



GENERAL NOTES:
1.WATER HAMMER ARRESTOR (WHA) SIZE ACCORDING TO MODEL NO. 1260XL-A (ZURN) & 15M2 (WATTS)

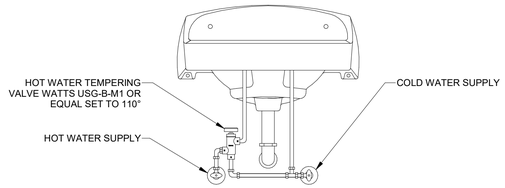
(#) KEY NOTES:

1. WATER HAMMER ARRESTOR (WHA) INSTALL AHEAD OF LAST FIXTURE SERVED BY BRANCH. (TYP)
2. CW PIPE
3. HW PIPE
4. CONNECT TO FIXTURE

WATER ARRESTOR SCHEDULE		
P.I.D. SYMBOL	FIXTURE UNIT RATING	SIZE (INCH.)
A	1-11	1/2"
B	12-32	3/4"
C	33-60	1"
D	61-113	1"

2 WATER HAMMER ARRESTOR DETAIL

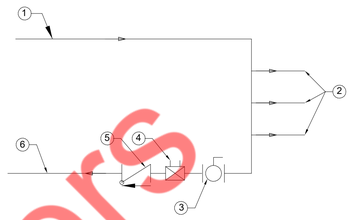
SCALE: N.T.S.



NOTE:
1. PROVIDE TRAP AND SUPPLY INSULATION AS REQUIRED. SEE SPECIFICATIONS.
2. PROVIDE HOTWATER TEMPERING VALVE IF THE WATER TEMPERATURE IS MORE THAN 110 F.
3. TYPICAL AT ALL HAND SINKS AND LAVATORIES U.N.O.

3 LAVATORY AND HANDSINK TEMPERING VALVE DETAIL

SCALE: N.T.S.

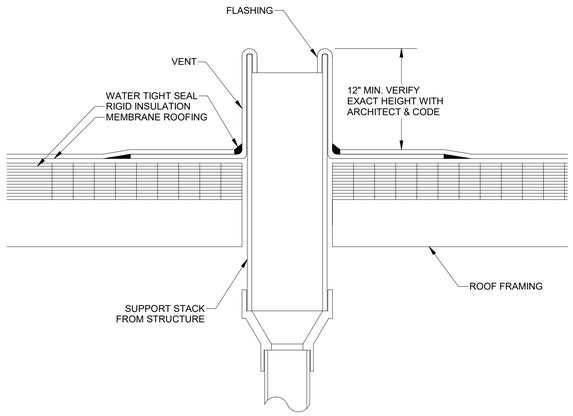


(#) KEY NOTES:

1. HOT WATER SUPPLY LINE FROM WATER HEATER.
2. PLUMBING FIXTURES.
3. BALL VALVE.
4. BALANCING VALVE / CIRCUIT SETTER (REFER PLAN FOR SET FLOW)
5. CHECK VALVE.
6. HOT WATER CIRCULATION LINE TO WATER HEATER.

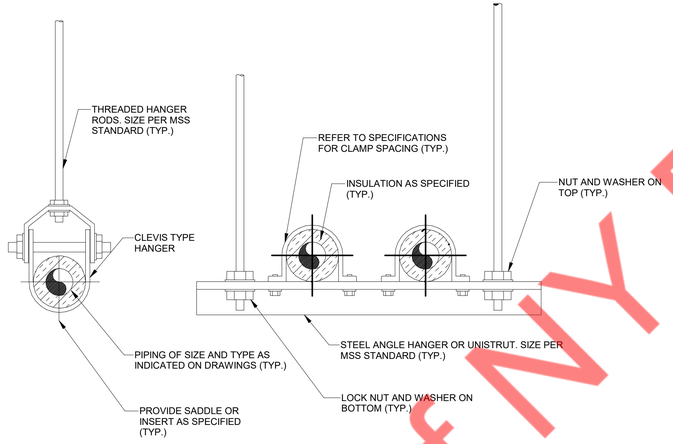
4 HOT WATER RETURN & FLOW CONTROL DEVICE CONNECTION DETAIL

SCALE: N.T.S.



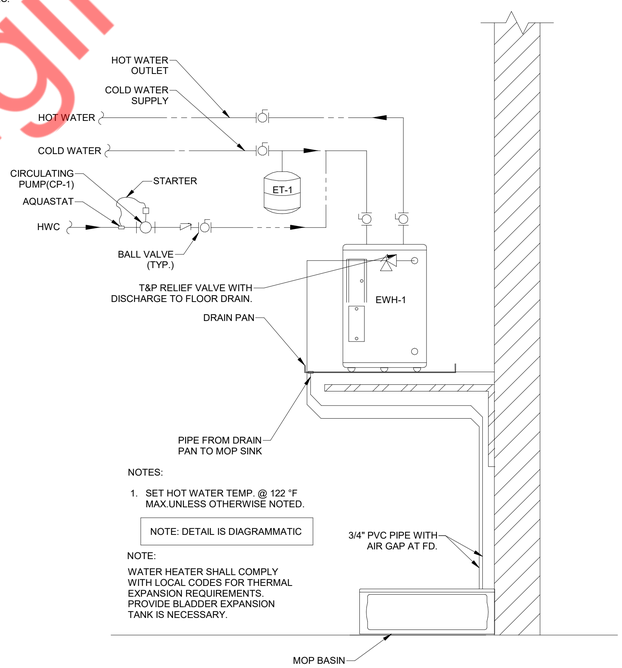
5 VENT THROUGH ROOF (VTR) DETAIL

SCALE: N.T.S.



6 TYPICAL PIPE HANGER DETAIL

SCALE: N.T.S.



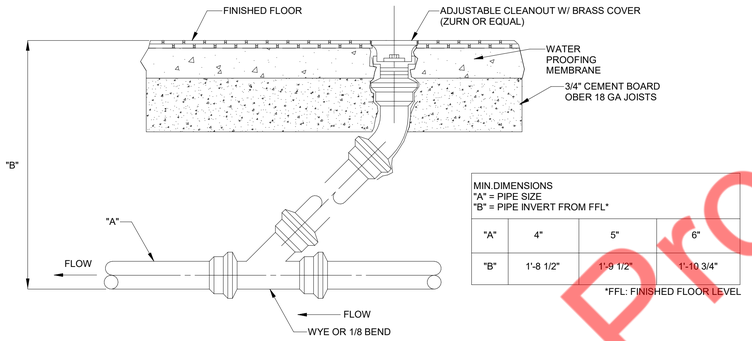
NOTES:
1. SET HOT WATER TEMP. @ 122 °F MAX.UNLESS OTHERWISE NOTED.

NOTE: DETAIL IS DIAGRAMMATIC

NOTE:
WATER HEATER SHALL COMPLY WITH LOCAL CODES FOR THERMAL EXPANSION REQUIREMENTS. PROVIDE BLADDER EXPANSION TANK IS NECESSARY.

9 ABOVE MOP BASIN MOUNTED ELECTRIC WATER HEATER CONNECTION DETAIL

SCALE: N.T.S.



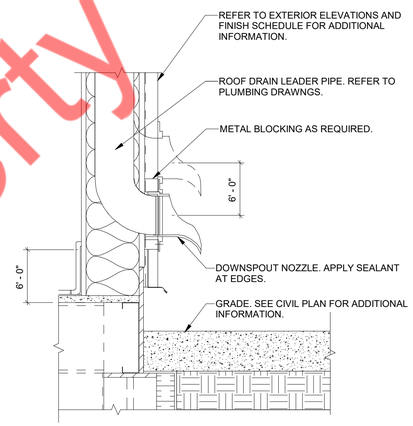
MIN.DIMENSIONS
"A" = PIPE SIZE
"B" = PIPE INVERT FROM FFL"

"A"	4"	5"	6"
"B"	1'-8 1/2"	1'-9 1/2"	1'-10 3/4"

*FFL: FINISHED FLOOR LEVEL

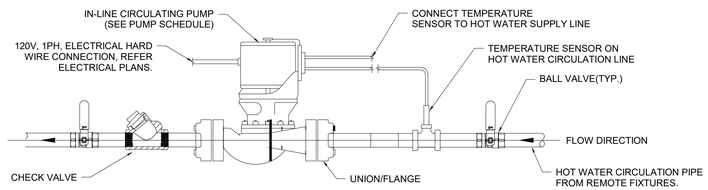
7 TYPICAL CLEANOUT TO FINISHED FLOOR

SCALE: N.T.S.



8 TYP. ROOF & OVERFLOW DRAIN

SCALE: N.T.S.



NOTES:
1. INSTALL AS PER MANUFACTURER'S INSTRUCTIONS.
2. EXTERNAL TEMPERATURE SENSOR MUST BE MOUNTED ON THE HOT WATER SUPPLY PIPE IN THE RANGE BETWEEN 8-20 INCHES FROM THE WATER HEATER AND THE LENGTH OF THE WIRE IS 8 FT.

10 INLINE HOT WATER RECIRCULATION PUMP DETAIL

SCALE: N.T.S.

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CONTROL NO: #001

ISSUED FOR PERMIT (07-01-2025)

JOB NUMBER: 24-000325
DATE: 04-22-25
CONTENTS: PLUMBING DETAILS

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PLUMBING FIXTURE SCHEDULE

SYMBOL	MANUFACTURER	MODEL	FIXTURE	MOUNTING	HW	CW	WASTE	VENT	ACCESSORIES / REMARKS	IMAGES
BALL VALVES	APOLLO / CONBRACO OR EQUAL	-	BALL VALVES	-	-	-	-	-	FULL PORT, BRASS BODY, 600 WOG	
ECO	ZURN OR EQUAL	Z1400	FLOOR CLEANOUT	FLOOR	-	-	REFER TO FLOOR PLAN	-	EXTRA HEAVY DUTY "LEVEL-TROL" ADJUSTABLE FLOOR CLEANOUT	
FCO	J.R. SMITH OR EQUAL	4020 SERIES	FLOOR CLEANOUT	FLOOR	-	-	REFER TO FLOOR PLAN	-	NO-HUB OUTLET, DUCO CAST IRON CLEANOUT WITH ROUND ADJUSTABLE SCORIATED NICKEL BRONZE ROUND TOP. VANDAL PROOF TOP.	
L-1	KOHLER OR EQUAL	K-2032	LAVATORY	WALL	1/2"	1/2"	2"	2"	WALL-MOUNT WITH OVERFLOOW DRAIN, VITREOUS CHINA, LENGTH: 20-3/4" x WIDTH: 18-1/4" ASME A112.19.2, ADA, IAPMO/UPC, CSA B45 FAUCET: MOEN FINDLAYTM/ TWO-HANDLE CENTERSET, 1.2 GPM, WATERSENSE, ASME A112.18.1/CSA B125.1	
PIPE HANGERS	B-LINE OR EQUAL	B3170	PIPE HANGERS	-	-	-	-	-	PRE GALVANIZED, AVAILABLE IN STAINLESS STEEL MATERIAL, FACTORY MUTUAL ENGINEERING APPROVED.	
RPZ	-	-	REDUCED PRESSURE ZONE	-	-	-	-	-	MANUFACTURER AND MODEL NO AS APPROVED BY LOCAL DEPARTMENT OF WATER. PRESSURE DROP SHALL NOT BE EXCEED MORE THAN 7 PSI.	
WC-1	KOHLER OR EQUAL	K-31674	WATER CLOSET	FLOOR	-	3/4"	4"	2"	TWO PIECE DESIGN, 1.28 GPF, ASME A112.19.2/CSA B45.1, EPA WATER SENSE, ADA. GRAVITY TYPE FLOOR MOUNTED WATER CLOSET.	
FS-1	SIOUX CHIEF OR EQUAL	861-3-PI-D	FLOOR SINK	FLOOR	-	-	3"	2"	FLOOR SINK SHALL BE MODELED FROM IMPACT- MODIFIED PVC WITH SCH. 40 HUB CONNECTION, WHICH CONFORMS TO ASTM D2665 DESIGNED IN ACCORDANCE WITH ASME A112.6.7-01.	
TD-1	ULTIMATE RESTAURANT EQUIPMENT OR EQUAL	URE-1248 OR EQUAL	FLOOR TROUGH DRAIN	FLOOR	-	-	4"	2"	12"X48"X4" FLOOR TROUGH DRAIN 14 GAUGE, 304 GRADE STAINLESS STEEL CONSTRUCTION	
HB-1	WOODFORD	MODEL 17 OR EQUAL	HOSE BIBB	FLOOR	3/4"	-	-	-	FREEZELESS WALL HYDRANT, ANODIZED ALUMINUM BOX, ASSE STANDARD 1052 APPROVED NIDEL MODEL 50HA DOUBLE CHECK BACKFLOW PREVENTER.	
FFD	ZURN OR EQUAL	Z-1724	FLOOR FUNNEL DRAIN	FLOOR	-	-	4"	2"		

NOTE:
1. REFER TO ARCHITECTURE, OWNERSHIP OR INTERIOR DESIGNER FOR ALL FIXTURE SELECTION AND ACCESSORIES. ALL ARE SUBJECT TO CHANGE.

CIRCULATING PUMP SCHEDULE

TAG	TYPE	QTY.	LOCATION	FLOW (GPM)	HEAD (FEET)	FLANGE SIZE: NPT (IN)	ELECTRICAL DATA		WEIGHT (LBS)	MANUFACTURER	MODEL
							WATTS	V/Ph/Hz			
RCP-1	CIRCULATING PUMP	1	SEE PLAN	2	10	1/2"	83	115/1/60	8.0	ASTRO	230

NOTES:
1. INSTALL AS PER THE MANUFACTURER'S INSTRUCTIONS.
2. THE PUMP SHALL BE CAPABLE OF TEMPERATURE-BASED CONTROLS.
3. PROVIDE TEMPERATURE SENSOR/THERMOSTAT ON RECIRCULATING WATER LINE AND CONNECT TO PUMP.

EXPANSION TANK SCHEDULE

SYMBOL	QTY.	TANK VOLUME (GAL)	MAX. ACCEPTANCE FACTOR	MAX. ACCEPT. VOLUME (GAL)	TYPE	DIAPHRAGM MATERIAL	SHELL MATERIAL	MAX. OPERATING TEMPERATURE (°F)	MAX. WORKING PRESSURE (PSIG)	DIMENSION(IN.) (DIA. X H)	SHIPPING WEIGHT (LBS)	MANUFACTURER	MODEL
ET-1	1	2.0	0.45	0.9	REPLACEABLE BLADDER	HEAVY DUTY BUTYL	STEEL	200	150	8" Ø X 13"	5	AMTROL	ST-5

NOTES:
1. INSTALL AS PER THE MANUFACTURER'S INSTRUCTIONS.
2. PROVIDE WITH STANDARD SCHRADER TIRE VALVE CONNECTION.
3. ADJUST CHARGE PRESSURE IN FIELD.

STORAGE TANK ELECTRIC WATER HEATER SCHEDULE

TAG	TYPE	QTY.	LOCATION	TANK CAPACITY (GALLONS)	TEMPERATURE RISE (°F)	RECOVERY IN G.P.H. @ TEMP RISE	WATER CONNECTION SIZE (IN.)	ELECTRICAL DATA					WEIGHT (LBS)	DIMENSION (IN.) (DIA. X H)	MANUFACTURER	MODEL
								OPERATION	PER ELEMENT WATTAGE (kW)	UPPER ELEMENT	LOWER ELEMENT	V/Ph/Hz	TOTAL WATTAGE (kW)			
EWH-1	ELECTRICAL	1	REFER TO PLAN	50	100	41	3/4" Ø	SIMULTANEOUS	4.0	1	1	208 / 1 / 60	8.0	125	20-1/2" Ø X 59	AO SMITH	DEN-40

NOTES:
1. INSTALL AS PER THE MANUFACTURER'S INSTRUCTIONS.
2. TO REDUCE THE RISK OF EXCESSIVE PRESSURE AND TEMPERATURE IN THIS WATER HEATER INSTALL TEMPERATURE AND PRESSURE PROTECTIVE EQUIPMENT REQUIRED BY LOCAL CODES.
3. THE HEATER MAY NOT BE INSTALLED ON OR AGAINST COMBUSTIBLE SURFACE.
4. THE ELECTRICAL WATER HEATER STORAGE TANK SIZING IS CALCULATED BASED ON THE ASHRAE TABLE. UP-SIZING OF THE STORAGE TANK IS ALLOWED AS PER CLIENT REQUIREMENTS.
5. PROVIDE DRAIN PAN.

EQUIPMENT SCHEDULE

TAG	QTY	DESCRIPTION	MAKE AND MODEL	COLD (INCH)	HOT (INCH)	DIRECT WASTE (INCH)	INDIRECT WASTE (INCH)	REMARKS
1	1	3-COMPARTMENT SINK WITH DUAL DRAINBOARDS	REGENCY / 600S31717181FT	3/4"	3/4"	-	2"	75-1/2"L x 44-3/4"W x 22-1/2" D
4	1	HAND SINK WITH SIDE SPLASH	BK RESOURCES BK-DDI-0909524-P-G	1/2"	1/2"	-	2"	11-1/8"L x 13-1/2"W x 5" D
7	1	ICE MACHINE	MANITOWOC / IYT1900N WITH REMOTE CONDENSER & F-1300 BIN	1/2"	-	-	1/2"	-
8	2	RANCILIO ESPRESSO MACHINE	RANCILIO CLASS 11-3 GOUP ESPRESSO MACHINE	1/2"	-	-	1/2"	-
20	1	COUNTERTOP NITRO BREW COFFEE DISPENSOR	CORNELIUS NITRO PRO MINI / 621058753	1/2"	-	-	-	-
21	3	DUMP SINK WITH SIDE SPLASH	BK RESOURCES / BK-DIS-1014-10-SS-P-G	1/2"	1/2"	-	2"	-
27	1	HOT WATER DISPENSER	BUNN H5X ELEMENT SST	1/2"	-	-	-	-
32	1	MOP SINK WITH TWO (2) DELTA 28T9 FAUCETS W/ HOOKS	FIAT TSB100 W/CAP ON TWO SIDES, CHROME PLATED DRAIN.	3/4"	3/4"	3"	-	24"H x 21.75"W x 12"D

STORM CONDUCTOR PIPE SIZING

ROOF	AREA	AREA (FT2)	WALL AREA (FT2)	TOTAL AREA (FT2)	RAINFALL INTENSITY (i) (INCH/HR)	RUN OFF COEFFICIENT©	FLOW (FT3/HR)	FLOW (GPM)	ROOF CONDUCTOR SIZE (INCH)
DRAIN-1	A	545	672	1217	2	1	243	30	3
MAIN HEADER	-	545	672	1217	-	-	243	30	3

PLUMBING FIXTURE DEMAND TABULATION

FIXTURE	DESCRIPTION	OCCUPANCY	QTY.	DRAINAGE FIXTURE UNITS	SUB-TOTAL	LOAD VALUES IN WATER (EACH) SUPPLY FIXTURE UNITS (WSFU)			LOAD VALUES IN WATER (TOTAL) SUPPLY FIXTURE UNITS (WSFU)			REMARK
						COLD	HOT	TOTAL	COLD	HOT	TOTAL	
WC-1	WATER CLOSET	PRIVATE	1	3	3	3.0	0.0	3.0	3.0	0.0	3.0	
L-1	LAVATORY	PRIVETE	1	1	1	0.75	0.75	1.0	0.75	0.75	1.0	
32	MOP BASIN	PUBLIC	1	3	3	2.25	2.25	3.0	2.25	2.25	3.0	
4	HAND SINK	PUBLIC	1	1	1	0.75	0.75	1.0	0.75	0.75	1.0	
21	DUMP SINK	PUBLIC	3	2	6	1.125	1.125	1.5	3.375	3.375	4.5	
1	3 COMPARTMENT SINK	PUBLIC	1	2	2	1.125	1.125	1.5	1.125	1.125	1.5	
7	ICE MACHINE	PUBLIC	1	0.5	0.5	0.5	0.0	0.5	0.5	0.0	0.5	
8	RANCILIO ESPRESSO MACHINE	PUBLIC	2	0.5	1	0.5	0.0	0.5	1.0	0.0	1.0	
27	HOT WATER DISPENSER	PUBLIC	1	0.5	0.5	0.5	0.0	0.5	0.5	0.0	0.5	
20	BREW COFFEE DISPENSER	PUBLIC	1	0.5	0.5	0.5	0.0	0.5	0.5	0.0	0.5	
HB-1	HOSE BIBB	PUBLIC	1	-	-	2.5	0.0	2.5	2.5	0.0	2.5	
FS-1	FLOOR SINK	PUBLIC	6	6	36				-			
TD-1	TRENCH DRAIN	PUBLIC	1	6	6				-			
FFD-1	FLOOR FUNNEL DRAIN	PUBLIC	1	8	8				-			
TOTALS					68.5	DFU			16.25	8.25	19.0	WSFU
DFU = DRAINAGE FIXTURE UNITS					EIGHTH	INCH SLOPE PER FOOT			MAXIMUM ALLOWABLE LENGTH=150			FEET
WSFU = WATER SUPPLY FIXTURE UNITS					4"	DIAMETER OF PIPE (INCHES)			1"	1"	1"	INCHES REQ'D.

PIPING MATERIALS SCHEDULE

PLAN TAG	PLUMBING SYSTEM DESCRIPTION	INSTALLATION	SIZES	SYSTEM MATERIAL AND FITTING SPECIFICATION
SAN	SANITARY (SOIL) PIPING	SUSPENDED	2-1/2" AND SMALLER	SANITARY PIPE AND FITTINGS SHALL BE POLYVINYL CHLORIDE (PVC) PER ASTM D 2665, WITH GASKETS PER ASTM C 1440, ELASTOMERIC SEAL
			3" AND LARGER	SANITARY PIPE AND FITTINGS SHALL BE POLYVINYL CHLORIDE (PVC) PER ASTM D 2665, WITH GASKETS PER ASTM C 1440, ELASTOMERIC SEAL
		BURIED	3" AND LARGER	SANITARY PIPE AND FITTINGS SHALL BE POLYVINYL CHLORIDE (PVC) PER ASTM D 2665, WITH GASKETS PER ASTM C 1440, ELASTOMERIC SEAL
V	VENT PIPING (ALL SYSTEMS)	SUSPENDED	2-1/2" AND SMALLER	SANITARY PIPE AND FITTINGS SHALL BE POLYVINYL CHLORIDE (PVC) PER ASTM D 2665, WITH GASKETS PER ASTM C 1440, ELASTOMERIC SEAL
				SANITARY PIPE AND FITTINGS SHALL BE POLYVINYL CHLORIDE (PVC) PER ASTM D 2665, WITH GASKETS PER ASTM C 1440, ELASTOMERIC SEAL
			3" AND LARGER	SANITARY PIPE AND FITTINGS SHALL BE POLYVINYL CHLORIDE (PVC) PER ASTM D 2665, WITH GASKETS PER ASTM C 1440, ELASTOMERIC SEAL
				SANITARY PIPE AND FITTINGS SHALL BE POLYVINYL CHLORIDE (PVC) PER ASTM D 2665, WITH GASKETS PER ASTM C 1440, ELASTOMERIC SEAL
		BURIED	2" AND LARGER	SANITARY PIPE AND FITTINGS SHALL BE POLYVINYL CHLORIDE (PVC) PER ASTM D 2665, WITH GASKETS PER ASTM C 1440, ELASTOMERIC SEAL
				SANITARY PIPE AND FITTINGS SHALL BE POLYVINYL CHLORIDE (PVC) PER ASTM D 2665, WITH GASKETS PER ASTM C 1440, ELASTOMERIC SEAL
CW	DOMESTIC COLD WATER DISTRIBUTION	SUSPENDED	2" AND SMALLER	DOMESTIC PIPE SHALL BE POLYETHYLENE CROSSLINK(PEX-B) PIPE PER ASTM F876 F877, WITH FITTINGS PER ASTM F1807, F2159
			2 1/2" AND LARGER	DOMESTIC PIPE SHALL BE POLYETHYLENE CROSSLINK(PEX-A) PIPE PER ASTM F876 F877, WITH FITTINGS PER ASTM F1960, F2080
				COPPER PIPE, ASTM B88, DRAWN TYPE L AND K WITH WROUGHT COPPER PRESSURE FITTINGS, SOLDERED, ASME B16.22
		BURIED	2" AND SMALLER	DOMESTIC PIPE SHALL BE POLYETHYLENE CROSSLINK(PEX-B) PIPE PER ASTM F876 F877, WITH FITTINGS PER ASTM F1807, F2159
			2 1/2" AND LARGER	DOMESTIC PIPE SHALL BE POLYETHYLENE CROSSLINK(PEX-A) PIPE PER ASTM F876 F877, WITH FITTINGS PER ASTM F1960, F2080
				COPPER PIPE, ASTM B88, DRAWN TYPE L AND K WITH WROUGHT COPPER PRESSURE FITTINGS, SOLDERED, ASME B16.22
HW & HWC	DOMESTIC HOT WATER DISTRIBUTION	SUSPENDED	2" AND SMALLER	DOMESTIC PIPE SHALL BE POLYETHYLENE CROSSLINK(PEX-B) PIPE PER ASTM F876 F877, WITH FITTINGS PER ASTM F1807, F2159
			2 1/2" AND LARGER	DOMESTIC PIPE SHALL BE POLYETHYLENE CROSSLINK(PEX-A) PIPE PER ASTM F876 F877, WITH FITTINGS PER ASTM F1960, F2080
				COPPER PIPE, ASTM B88, DRAWN TYPE L AND K WITH WROUGHT COPPER PRESSURE FITTINGS, SOLDERED, ASME B16.22
		BURIED	2" AND SMALLER	DOMESTIC PIPE SHALL BE POLYETHYLENE CROSSLINK(PEX-B) PIPE PER ASTM F876 F877, WITH FITTINGS PER ASTM F1807, F2159
			2 1/2" AND LARGER	DOMESTIC PIPE SHALL BE POLYETHYLENE CROSSLINK(PEX-A) PIPE PER ASTM F876 F877, WITH FITTINGS PER ASTM F1960, F2080
				COPPER PIPE, ASTM B88, DRAWN TYPE L AND K WITH WROUGHT COPPER PRESSURE FITTINGS, SOLDERED, ASME B16.22
ST & OST	STORM PIPE	SUSPENDED	3" AND SMALLER	STORM PIPE AND FITTINGS SHALL BE POLYVINYL CHLORIDE (PVC) PER ASTM D 2665, WITH GASKETS PER ASTM C 1440, ELASTOMERIC SEAL
			3" AND LARGER	STORM PIPE AND FITTINGS SHALL BE POLYVINYL CHLORIDE (PVC) PER ASTM D 2665, WITH GASKETS PER ASTM C 1440, ELASTOMERIC SEAL
		BURIED	3" AND SMALLER	STORM PIPE AND FITTINGS SHALL BE POLYVINYL CHLORIDE (PVC) PER ASTM D 2665, WITH GASKETS PER ASTM C 1440, ELASTOMERIC SEAL
			3" AND LARGER	STORM PIPE AND FITTINGS SHALL BE POLYVINYL CHLORIDE (PVC) PER ASTM D 2665, WITH GASKETS PER ASTM C 1440, ELASTOMERIC SEAL

NOTE:
THE MATERIALS ARE SUBJECT TO CHANGE WITH APPROVAL OF ARCHITECTURE OR OWNER.

GREASE INTERCEPTOR CALCULATIONS (LOCAL CODE GOVERNS)

ITEM NO.	QTY.	DESCRIPTION	DFU	DFU (TOTAL)	SINK BOWL INFORMATION				LIQUID HOLDING CAPACITY (GAL) CODE	FLOW RATE (GPM)
					BOWL QTY.	LENGTH	WIDTH	DEPTH		
1	1	3 COMP. SINK	2	2	3	17"	17"	12"	34	17
21	3	DUMP SINK	2	6	1	10"	14"	9"	4	6
4	1	HAND SINK	2	2	1	10"	10"	5"	2	1
32	1	MOP BASIN	2	2	1	20"	20"	10"	13	6
8	2	ESPRESSO MACHINE	1	2	-	-	-	-	-	2
TOTAL										32

NOTE:
1. REFER TO SECTION 1014.2 HYDOMECHANICAL GREASE INTERCEPTOR AS PER IDAHO PLUMBING CODE 2015 (UPC-2015).
2. GREASE INTERCEPTOR SIZED BY LOCAL AUTHORITY.
3. GREASE TRAP TO BE PROVIDE WITH FLOW CONTROL DEVICES.

ELECTRIC HEAT TRACING CABLE SCHEDULE FOR SANITARY DRAINAGE PIPING

MAKE	MODEL	ELECTRICAL DATA				DISCIPLINE	FLOOR (AREA)	REMARK
		VOLTAGE	APPROX LENGTH (FT.)	WATTS/ FT	AMPS			
RAYCHEM	5XL1-CR	120	200	4.5 W/FT	20	PLUMBING	REFER PLAN	- PROVIDE CONNECTION KITS AND ACCESSORIES, SPLICES, POWER CONNECTIONS, TEE KITS CROSS CONNECTIONS, TAPE, ETC. - PROVIDE AN AMBIENT THERMOSTAT SENSING RTD-200 BY RAYCHEM - PROVIDE ONE CONTROLLER ACS-30 FOR ALL DATA ELECTRIC CIRCUITS. - PROVIDE MAX. FIVE(5) CIRCUITS PER PANEL ACS-PCM2-5

NOTES:
1. PROVIDE CLEARANCES AS PER MANUFACTURER RECOMMENDATIONS.

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