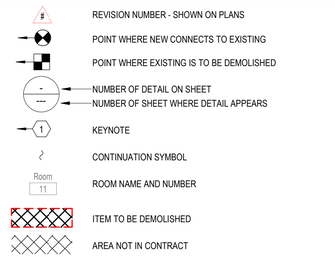
GENERAL MECHANICAL SYMBOLS

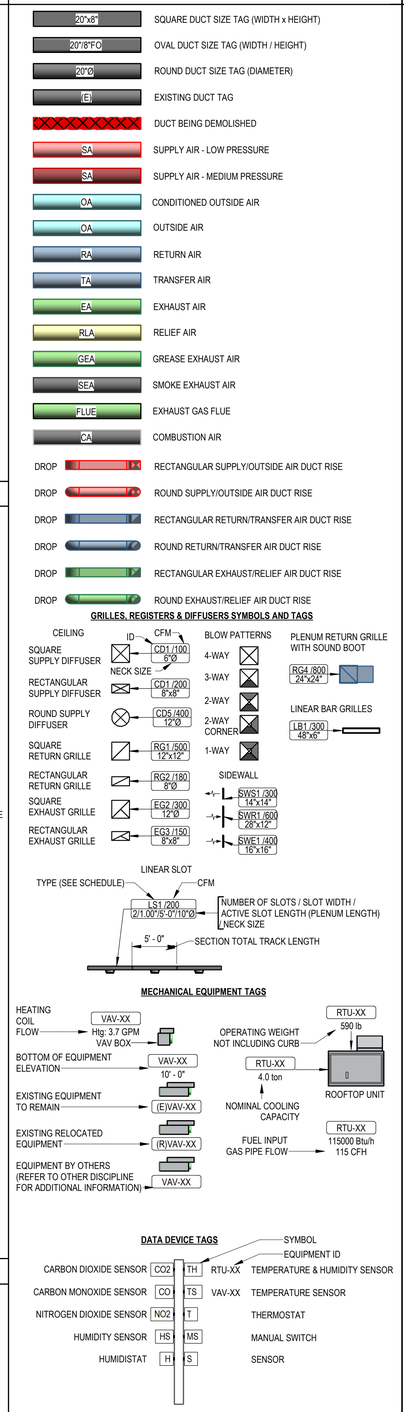


ABBREVIATIONS

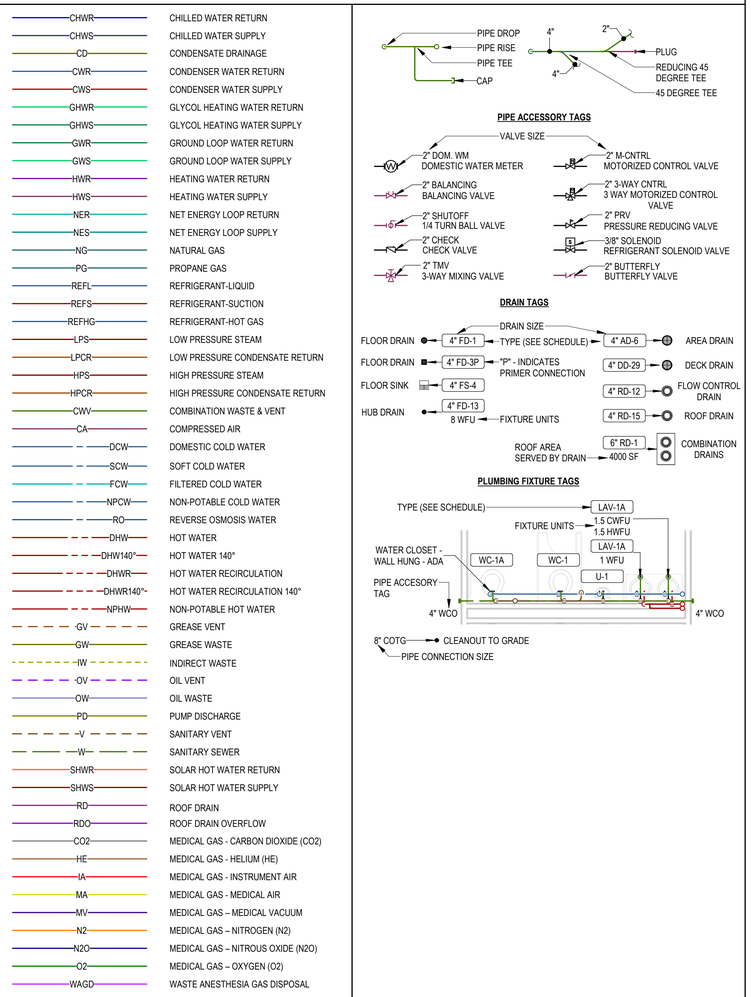
Ø	ROUND	LVR	LOUVER
ABV	ABOVE	LWT	LEAVING WATER TEMPERATURE
AC	AIR CONDITIONING	MA	MIXED AIR
AD	AREA DRAIN	MAX	MAXIMUM
ADD	ADDENDUM	MBH	ONE THOUSAND BTU PER HOUR
AFF	ABOVE FINISHED FLOOR	MCF	ONE THOUSAND CUBIC FEET
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY	MD	MOTORIZED DAMPER
ALT	ALTERNATE	MECH	MECHANICAL
AP	ACCESS PANEL	MFR	MANUFACTURER
ARCH	ARCHITECT/ARCHITECTURAL	MIN	MINIMUM
BFF	BELOW FINISHED FLOOR	MISC	MISCELLANEOUS
BLW	BELOW	MTR	MOTOR
BTU	BRITISH THERMAL UNITS	MUA	MAKE-UP/AIR
BTUH	BRITISH THERMAL UNITS PER HOUR	NC	NOISE CRITERIA
CAP	CAPACITY	NC	NORMALLY CLOSED
CB	CATCH BASIN	NIC	NOT IN CONTRACT
CFM	CUBIC FEET PER MINUTE	NO	NUMBER
CLG	CEILING	NO	NORMALLY OPEN
CO	CLEAN OUT	NTS	NOT TO SCALE
D	DEGREE	O	OXYGEN
DB	DRY BULB	OA	OUTSIDE AIR
DCW	DOMESTIC COLD WATER	PD	PRESSURE DROP
DHW	DOMESTIC HOT WATER	PIV	POST INDICATOR VALVE
DIA	DIAMETER	PLBG	PLUMBING
DN	DOWN	PRESS	PRESSURE
DW	DISTILLED WATER	PRV	PRESSURE REDUCING VALVE
EA	EACH	PSI	POUNDS PER SQUARE INCH
EAT	ENTERING AIR TEMPERATURE	PSIG	POUNDS PER SQUARE INCH GAUGE
ELEC	ELECTRICAL	PWR	POWER
EQUIP	EQUIPMENT	R	DUCT RISER
EWC	ELECTRIC WATER COOLER	RA	RETURN AIR
EWT	ENTERING WATER TEMPERATURE	RCP	RADIANT CEILING PANEL
EA	EXHAUST AIR	RD	ROOF DRAIN
EXIST	EXISTING	RDO	ROOF DRAIN OVERFLOW
F	DEGREES FAHRENHEIT	REC	RECESSED
FCO	FLOOR CLEAN OUT	RED	REDUCER
FD	FLOOR DRAIN	RH	RELATIVE HUMIDITY
FD	FIRE DAMPER	RL/A	RELIEF AIR
FDV	FIRE DEPARTMENT VALVE	RM	ROOM
FL	FLOOR	RPM	REVOLUTIONS PER MINUTE
FO	FUEL OIL	RW	RAIN WATER
FOV	FUEL OIL VENT	SF	SQUARE FOOT
FOR	FUEL OIL RETURN	SA	SUPPLY AIR
FOS	FUEL OIL SUPPLY	SAN	SANITARY
FPM	FEET PER MINUTE	SF	SQUARE FOOT
FS	FLOOR SINK	SD	SMOKE DAMPER
FT	FOOT/FEET	SM	SURFACE MOUNT
FTR	FIN TUBE RADIATION	SP	STANDPIPE
GAL	GALLON	SP	STATIC PRESSURE
GC	GENERAL CONTRACTOR	STM	STEAM
GPM	GALLONS PER MINUTE	T	THERMOSTAT
GW	GREASE WASTE	TD	TRENCH DRAIN
HB	HOSE BIB	TDR	TEMPERATURE DROP
HP	HORSE POWER	TEMP	TEMPERATURE
HTG	HEATING	TYP	TYPICAL
HTR	HEATER	UG	UNDERGROUND
HYD	HYDRANT	VAC	VACUUM
ID	INDIRECT	V	VENT
IN	INCH	VAV	VARIABLE AIR VOLUME
INV	INVERT	VENT	VENTILATION
LB	POUND	VTR	VENT THROUGH ROOF
LB/HR	POUNDS PER HOUR	W	WASTE
LAT	LEAVING AIR TEMPERATURE	WB	WET BULB
LP	LOW PRESSURE	WCO	WALL CLEAN OUT
LPG	LIQUEFIED PETROLEUM GAS	WH	WALL HYDRANT

HVAC SYMBOLS

HVAC SYMBOLS



PIPING SYMBOLS



* NOTE *

THE SYMBOLS AND ABBREVIATIONS SHOWN ON THIS SHEET MAY OR MAY NOT BE USED IN THIS SET OF DRAWINGS.

MECHANICAL SHEET INDEX

Architecture and Interiors

MSRDesign

510 Marquette Avenue South, Suite 200
Minneapolis, MN 55402 | 612 375 0336

RESOLUT

181 E 5600 S, Murray, UT 84107 | (801) 530-3148
info@resolutgroup.com | resolutgroup.com

Project #: 250296

UCA MILLCREEK HEAD START RENOVATION

336 E 3900 S
SALT LAKE CITY, UT 84107

Project No: 2025009

Architect Seal

LICENSED PROFESSIONAL ENGINEER
No. 354088
JAMES E. NIGHTINGALE
4-18-2025
STATE OF UTAH

Signature

Date License No

PERMIT SET

ISSUE / REVISION

Mark	Date	Description

MECHANICAL TITLE SHEET

M000

Autodesk Docs://2025009 UCA Head Start Renovation/2025009_UCA Community Action Renovate_MEP.rvt 4/17/2025 2:14:48 PM

FIRE PROTECTION GENERAL NOTES

1. NO FIRE PROTECTION LINE SHALL BE DESIGNED OR INSTALLED PRIOR TO CLOSE COORDINATION WITH ALL OTHER DISCIPLINES. DUCTWORK, MECHANICAL PIPING AND PLUMBING TAKE SPACE PRECEDENCE OVER FIRE PROTECTION REMOVAL AND REINSTALLATION AT THE FIRE PROTECTION CONTRACTORS EXPENSE.
2. ALL WORK DONE SHALL BE PERFORMED WITH WATER CONTROL IN MIND. CONTAINMENT OF WATER IS NECESSARY TO PREVENT WATER FROM DAMAGING SURROUNDING AREA.
3. COORDINATE EXACT LOCATION OF PIPING WITH STRUCTURAL MEMBERS, LIGHTS, REFLECTED CEILING PLANS, CABLE TRAY, ELECTRICAL CONDUITS, DUCTWORK, MECHANICAL AND PLUMBING PIPING, AND ALL OTHER TRADES AND ALL EXISTING CONDITIONS.
4. FIRE SUPPRESSION CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE AND/OR REROUTE ANY AND ALL FIRE PROTECTION PIPING, VALVING, SUPPORTS OR SYSTEMS, OTHERWISE WITHIN THE FIRE SUPPRESSION DISCIPLINE REGARDLESS OF WHO INSTALLED THEM OR WHEN THEY WERE INSTALLED, IN ORDER TO ACCOMMODATE MECHANICAL, PLUMBING, ELECTRICAL OR OTHER SYSTEMS. COORDINATE WORK WITH MECHANICAL, ELECTRICAL, PLUMBING OR OTHER CONTRACTORS UNTIL SUBSTANTIAL COMPLETION OF PROJECT.
5. PROVIDE ALTERATIONS TO THE EXISTING FIRE PROTECTION SYSTEM AS REQUIRED TO ACCOMMODATE THE NEW FLOOR PLAN AND NEW CEILING TYPES. PROVIDE A COMPLETE WET TYPE SYSTEM INCLUDING NEW MAINS, BRANCHES, HEADS, VALVES, AND ACCESSORIES AS REQUIRED. <u>REUSE EXISTING SYSTEM EQUIPMENT WHERE APPLICABLE.</u> THE SYSTEM SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS AND AS PER REQUIREMENTS OF THE STATE BUILDING CODE, LOCAL FIRE DEPARTMENT, AND ALL FEDERAL, STATE, AND LOCAL AUTHORITIES, NFPA, AND FACTORY MUTUAL.
6. THE BUILDINGS COMPLETE OPERATIONAL FIRE PROTECTION SYSTEMS SHALL REMAIN IN PLACE. THIS CONTRACTOR SHALL REPAIR ANY DAMAGE TO THIS SYSTEM CREATED BY THE REMOVAL OF ANY OTHER MECHANICAL SYSTEMS OR COMPONENTS.
7. THIS CONTRACTOR SHALL COORDINATE PHASING OF SPRINKLER WORK WITH THE GENERAL CONTRACTOR PRIOR TO STARTING WORK.
8. THE SPRINKLER SYSTEM SHALL BE DESIGNED BASED UPON ACTUAL WATER FLOW TEST DATA OBTAINED AT OR NEAR THE JOB SITE.
9. DIVISION 21 CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR PROPER INSTALLATION OF THE FIRE PROTECTION SYSTEMS ALARM DEVICES INVOLVED WITH FIRE SPRINKLER SYSTEM.
10. ALL SPRINKLER SYSTEM PIPING SHALL BE CONCEALED ABOVE THE SUSPENDED CEILING SYSTEM, UNLESS NOTED OTHERWISE. WRITTEN AUTHORIZATION SHALL BE OBTAINED FROM THE ARCHITECT PRIOR TO EXPOSING ANY PIPING IN ANY ROOM WHICH HAS A SUSPENDED CEILING.
11. THIS CONTRACTOR SHALL PROVIDE ALL ADDITIONAL SPRINKLER HEADS AS REQUIRED TO ENSURE AN APPROVED FIRE PROTECTION SYSTEM AT NO ADDITIONAL COST TO THE OWNER.
12. ROUTE SPRINKLER PIPING SUCH THAT IT DOES NOT RUN ABOVE ELECTRICAL PANELS, SWITCHGEAR, OR SIMILAR EQUIPMENT. SPRINKLER MAINS SHALL NOT RUN THROUGH ELECTRICAL OR COMMUNICATION ROOMS. SPRINKLER HEADS IN THESE ROOMS SHALL BE SERVED BY A DEDICATED BRANCH LINE FOR EACH ROOM. BRANCH LINE TO ENTER ROOM ABOVE DOOR.

PLUMBING GENERAL NOTES

1. UNLESS OTHERWISE NOTED, SLOPE PIPE AS FOLLOWS: WASTE BRANCHES: 1/4" PER FOOT; WASTE MAINS: 1/4" PER FOOT; ROOF DRAIN/ROOF DRAIN OVERFLOW: 1/8" PER FOOT. VERIFY ALL SLOPING WITH LOCAL CODES.
2. ALL WORK DONE SHALL BE PERFORMED WITH WATER CONTROL IN MIND. CONTAINMENT OF WATER IS NECESSARY TO PREVENT WATER FROM DAMAGING AREAS ON FLOORS BELOW.
3. PLUMBING DRAWINGS ARE SCHEMATIC IN NATURE. FIELD VERIFY EXACT PIPE ROUTING AND COORDINATE WITH ALL OTHER TRADES.
4. ALL PIPING IN PLUMBING CHASES SHALL BE ARRANGED TO ALLOW MAINTENANCE ACCESS.
5. NO PIPING TO RUN OVER ELECTRICAL PANELS, VFD'S OR MCC'S. PROTECT EQUIPMENT WITH A 42" DEEP ZONE IN FRONT OF PANELS, VFD'S, AND MCC'S.
6. CONTRACTOR TO PROVIDE VALVE IDENTIFICATION AND LOCATION ON ALL CEILING TILES WHERE VALVES ARE LOCATED.
7. REFER TO ARCHITECTURAL DRAWINGS FOR FIXTURE MOUNTING HEIGHTS, DIMENSIONS AND OTHER REQUIREMENTS.
8. CONTRACTOR TO VERIFY CONNECTION SIDE OF ADA FIXTURES AND ADJUST ACCORDINGLY. INSTALL FLUSH VALVES HANDLES ON WIDE SIDE OF ALL FIXTURES.
9. INSTALL A 24" X 24" ACCESS DOOR BELOW ALL ISOLATION VALVES, BALANCING VALVES AND WATER HAMMER ARRESTORS WHERE MOUNTED ABOVE HARD CEILINGS.
10. MOUNT ALL ISOLATION VALVES, CONTROL VALVES, BALANCING VALVES, ETC. NEAR CEILING HEIGHT FOR ACCESSIBILITY.
11. INSTALL ALL EQUIPMENT WITH SUFFICIENT CLEARANCE FOR MAINTENANCE PER MANUFACTURERS RECOMMENDATION.
12. SEE PLUMBING FIXTURE SCHEDULE FOR PIPE SIZES OF WASTE, VENT AND DOMESTIC WATER TO/FROM SINGLE FIXTURE.
13. FIELD VERIFY LOCATION AND INVERTS OF SITE UTILITIES PRIOR TO INSTALLATION.
14. FIELD VERIFY ALL NEW WATER, WASTE AND VENT PIPING CONNECTIONS AND PROVIDE NEW CONNECTIONS AS REQUIRED FOR PROPERLY OPERATING SYSTEMS.

MECHANICAL GENERAL NOTES

1. COORDINATE EXACT PLACEMENT OF DIFFUSERS, GRILLES AND REGISTERS WITH ARCHITECTURAL REFLECTED CEILING PLAN, TYPICAL.
2. SEE DETAIL FOR DIFFUSER CONNECTIONS TO DUCTWORK, TYPICAL.
3. BRANCH DUCTWORK SHALL BE SIZED TO MATCH THE NECK INLET SIZE OF THE DIFFUSERS, REGISTER OR GRILLE IT SERVES UNLESS NOTED OTHERWISE, TYPICAL.
4. COORDINATE EXACT MOUNTING LOCATION OF ALL THERMOSTATS WITH LATEST REVISION OF ARCHITECTURAL ELEVATION AND FURNISHINGS PLANS, TYPICAL.
5. PROVIDE AND INSTALL TURNING VANES IN ALL SQUARE LOW PRESSURE DUCTWORK AT ELBOWS OR TEES, TYPICAL.
6. PROVIDE AND INSTALL REMOTE DAMPER OPERATORS FOR ALL DAMPERS INSTALLED ABOVE INACCESSIBLE CEILING, SEE MECHANICAL SPECIFICATIONS FOR EQUIPMENT REQUIREMENTS, TYPICAL.
7. PROVIDE AND INSTALL HIGH EFFICIENCY TAKE-OFF FITTINGS AND BALANCING DAMPER AT ALL BRANCH CONNECTIONS TO LOW PRESSURE DUCTWORK. PROVIDE BALANCING DAMPERS AT EACH BRANCH TAKE OFF TO SERVE DIFFUSER OR GRILLE AS WELL AS WHERE INDICATED.
8. PROVIDE AND INSTALL HIGH EFFICIENCY OR CONICAL TAKE-OFFS AT ALL BRANCH CONNECTIONS TO MEDIUM PRESSURE DUCTWORK.
9. AT LOCATIONS WHERE DIFFUSERS OR GRILLES ARE UNDER DUCTWORK, CONTRACTOR TO FABRICATE TRANSITION BOOT FROM FLEX CONNECTION TO DIFFUSER OR GRILLE WITH BALANCING DAMPER, TYPICAL.
10. THE CONTRACTOR SHALL INFORM THE DESIGNER OF ANY PROPOSED DEVIATIONS FROM THE CONTRACT DOCUMENTS.
11. CONTRACTOR SHALL LOCATE THERMOSTATS AND TEMPERATURE SENSORS AT 4'-0" AFF, A MINIMUM OF 8" FROM LIGHT SWITCH, UNLESS OTHERWISE NOTED ON THE ARCHITECT'S ELEVATIONS. COORDINATE EXACT LOCATIONS WITH ARCHITECT.
12. CONDENSATE DRAINS SHALL BE SUPPLIED FOR ALL COOLING EQUIPMENT. CONTRACTOR SHALL ENSURE PROPER INSTALLATION AND DRAINAGE AS REQUIRED BY FEDERAL, STATE, AND LOCAL CODES. CONDENSATE PIPINE SHALL BE TYPE "L" COPPER UNLESS OTHERWISE NOTED IN THE SPECIFICATIONS.
13. PROVIDE A 4" HOUSEKEEPING PAD FOR EACH PIECE OF MECHANICAL EQUPMENT THAT IS FLOOR MOUNTED. COORDINATE SIZES WITH MECHANICAL EQUIPMENT SELECTED.
14. ALL SUPPLY, RETURN, AND EXHAUST DUCTWORK SHALL BE RATED FOR PRESSURE CLASS OF 2" W.G. UNLESS NOTED OTHERWISE ON THE PLANS OR IN THE SPECIFICATIONS.
15. THIS CONTRACTOR SHALL BE REQUIRED TO REPLACE FILTERS ON HVAC EQUIPMENT AFTER ALL DUST PRODUCING CONSTRUCTION HAS BEEN COMPLETED AND PRIOR TO THE FINAL PUNCH.

PROJECT GENERAL NOTES

1. THE PROJECT GENERAL NOTES APPLY TO ALL DISCIPLINES.
2. REMOVE ALL UNUSED PIPING, DUCTWORK, EQUIPMENT, AND ACCESSORIES.
3. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING CONDITIONS FOR PLUMBING AND MECHANICAL SYSTEMS WITHIN THE TENANT SPACE AND WITHIN CLOSE PROXIMITY TO THE TENANT SPACE. THE CONTRACTOR WILL FIELD VERIFY AS MUCH AS IS REASONABLE BEFORE THE FINAL BID. AFTER THE FINAL BID THE CONTRACTOR WILL NOTIFY THE OWNER, ARCHITECT, AND MECHANICAL DESIGN ENGINEER IMMEDIATELY UPON DISCOVERY OF EXISTING CONDITIONS THAT MAY AFFECT THE DESIGN.
4. COORDINATE INSTALLATION OF PIPING, DUCTWORK, CONDUIT, LIGHTS, CABLE TRAY, STRUCTURE, EQUIPMENT, CEILINGS, ARCHITECTURAL COMPONENTS, AND ANYTHING ELSE PERTAINING TO THE PROJECT TO PREVENT CONFLICTS.
5. THE CONTRACTOR SHALL BE FAMILIAR WITH ALL THE CONDITIONS BOTH EXISTING AND THOSE ILLUSTRATED BY THESE DOCUMENTS AND THOSE OF OTHER DISCIPLINES, INCLUDING, BUT NOT LIMITED TO ARCHITECTURAL, CIVIL, ELECTRICAL, VENTILATION, PLUMBING, AND OTHER SYSTEMS INVOLVED ON THIS PROJECT.
6. FINAL PRODUCT SHALL BE A COMPLETE AND FUNCTIONING SYSTEM, AND SHALL CONFORM TO ALL REQUIREMENTS OF APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING BUT NOT LIMITED TO THE INTERNATIONAL BUILDING CODE, INTERNATIONAL MECHANICAL CODE, AND INTERNATIONAL PLUMBING CODE.
7. LOCATE EQUIPMENT REQUIRING ACCESS 2'-0" MAXIMUM ABOVE CEILING.
8. COORDINATE INSTALLATION OF DUCTWORK, PIPING AND MECHANICAL EQUIPMENT WITH NEC CLEARANCES INCLUDING THE SPACE ABOVE ELECTRICAL PANELS, TRANSFORMERS AND OTHER ELECTRICAL EQUIPMENT. NO PIPING OR DUCTWORK TO RUN OVER ELECTRICAL PANELS, VFD'S OR MCC'S. PROTECT EQUIPMENT WITH A 42" DEEP ZONE IN FRONT OF PANELS, VFD'S AND MCC'S. PROVIDE PANS IF REQUIRED UNDER PIPING.
9. FIRE SEAL AROUND DUCT AND PIPING PENETRATIONS OF FIRE RATED WALLS. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR CAULKING AND SEALING ALL PENETRATIONS IN FIRE AND SMOKE RATED PARTITIONS TO MAINTAIN RATINGS. REFER TO SPECIFICATION.
10. TRANSITION PIPING AND DUCTWORK SIZES TO MATCH THE SIZE OF EQUIPMENT CONNECTION.
11. ALL PIPE AND DUCT SIZES SHOWN SHALL BE CONTINUED IN THE DIRECTION OF FLOW UNTIL ANOTHER SIZE IS SHOWN.
12. FOR DETAILS, EQUIPMENT CONNECTIONS, AND PIPE SIZES NOT SHOWN ON THE SEGMENTS, REFER TO DETAILS, SCHEDULES, AND SPECIFICATIONS.
13. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH THE RESPECTIVE MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS, AT A LEVEL OF WORKMANSHIP CONSISTENT WITH THE SPECIFICATIONS.
14. MECHANICAL CONTRACTOR SHALL ENSURE THAT ALL EQUIPMENT IS PROVIDED AND INSTALLED WITH CLEARANCES PER MANUFACTURERS RECOMMENDATIONS. THE CONTRACTOR SHALL MAINTAIN PROPER SERVICE SPACE FOR COIL PULLS, BAS DEVICES, MAINTENANCE ACCESS, ETC.
15. LOCATIONS OF PIPING, DUCTWORK AND EQUIPMENT, AS INDICATED ON THE DRAWING, ARE APPROXIMATE AND SUBJECT TO MINOR ADJUSTMENTS IN THE FIELD, INCLUDING, BUT NOT LIMITED TO, OFFSETS AND TRANSITIONS. NEW DUCTWORK, PIPING AND EQUIPMENT SHALL BE COORDINATED WITH STRUCTURE, LIGHTS, REFLECTED CEILING PLANS, CABLE TRAY, ELECTRICAL CONDUIT, PLUMBING, MECHANICAL AND FIRE PROTECTION PIPING, MEDICAL GASES, ALL OTHER TRADES AND ALL OTHER EXISTING CONDITIONS TO AVOID INTERFERENCE IN THE FIELD.
16. THE CONTRACTOR SHALL INFORM THE DESIGNER OF ANY PROPOSED DEVIATIONS FROM THE CONTRACT DOCUMENTS.
17. IF CONTRACTOR ENCOUNTERS MATERIAL WHICH MAY CONTAIN ASBESTOS, IMMEDIATELY STOP WORK IN THIS AREA AND NOTIFY THE OWNER.
18. INSTALL ALL PIPING AND DUCTWORK WITHOUT FORCING OR SPRINGING.
19. WHERE VALVING, ACCESSORIES, OR EQUIPMENT IS LOCATED IN A WALL, PROVIDE AN APPROPRIATELY SIZED ACCESS DOOR. COORDINATE ACCESS DOOR SIZE, LOCATION, AND STYLE WITH ARCHITECT.
20. CONTRACTOR TO PROVIDE VALVE IDENTIFICATION AND LOCATION ON ALL CEILING TILES WHERE VALVES ARE LOCATED.
21. MECHANICAL, PLUMBING, AND FIRE PROTECTION CONTRACTOR SHALL REFER TO THE PROJECT STRUCTURAL DRAWINGS AND NOTES TO DETERMINE HANGER PLACEMENT.

<u>* NOTE *</u>

ALL OF THE GENERAL NOTES ON THIS SHEET ARE TO BE APPLIED TO ALL OTHER DRAWINGS IN THIS SET.

Architecture and Interiors

MSRDesign

510 Marquette Avenue South, Suite 200
Minneapolis, MN 55402 | 612 375 0336

RESOLUT

181 E 5600 S, Murray, UT 84107 | (801) 530-3148
info@resolutgroup.com | resolutgroup.com

Project #: 250296

Project No: 2025009

UCA MILLCREEK HEAD START RENOVATION

336 E 3900 S
SALT LAKE CITY, UT 84107

Architect Seal

LICENSED PROFESSIONAL ENGINEER
No. 354088
JAMES E. NIGHTINGALE
4-18-2025
STATE OF UTAH

Signature

Date | License No

PERMIT SET

ISSUE / REVISION

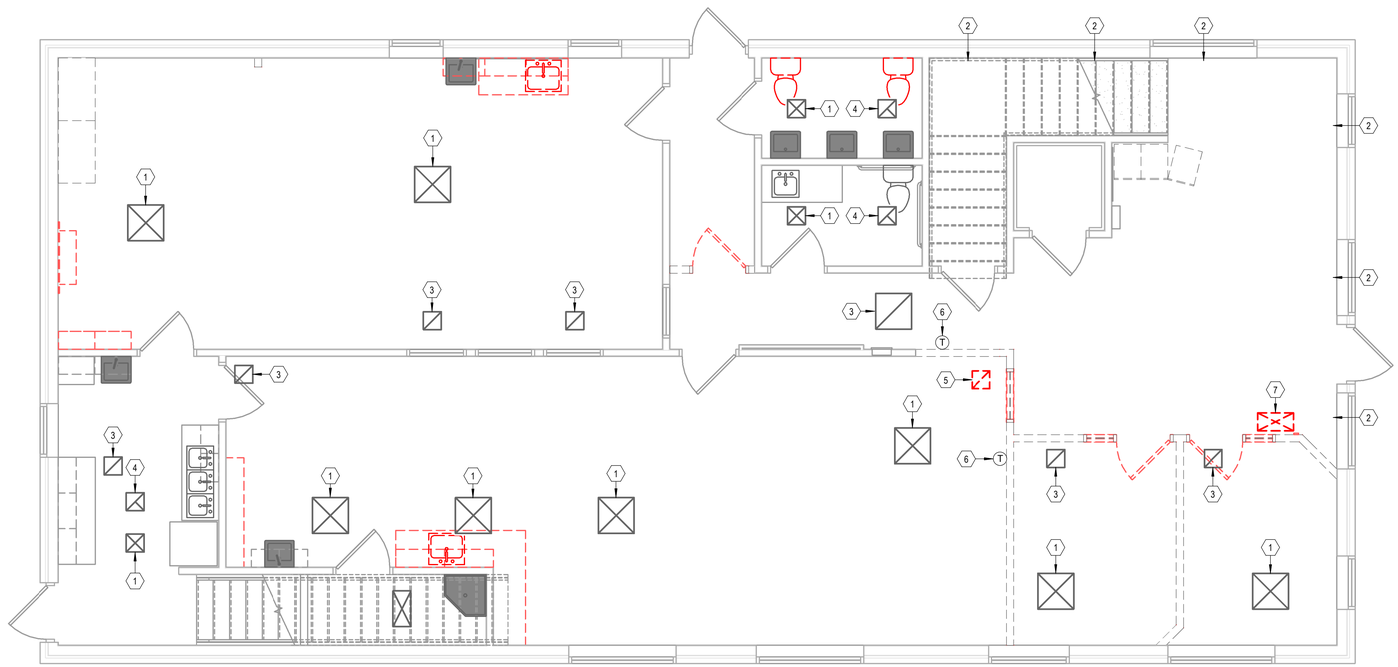
Mark Date | Description

MECHANICAL GENERAL NOTES

M001

KEYNOTES

1 EXISTING ACTIVE SUPPLY DIFFUSER TO REMAIN.
2 EXISTING INACTIVE SUPPLY DIFFUSER TO REMAIN.
3 EXISTING RETURN GRILLE TO REMAIN.
4 EXISTING EXHAUST GRILLE TO REMAIN.
5 EXISTING RETURN GRILLE TO BE RELOCATED. CONTRACTOR TO PRE READ VOLUME BEFORE DEMO.
6 CONTRACTOR TO CONFIRM WHICH T-STAT IS THE PRIMARY AND PREPARE TO RELOCATE (1) T-STAT TO NEW LOCATION SHOWN ON NEW FLOOR PLAN.
7 EXISTING GRILLE/DIFFUSER TO BE REMOVED. CAP DUCTWORK AIR TIGHT.



1 LEVEL 1 MECHANICAL DEMOLITION PLAN
MD101 1/4" = 1'-0"

Architecture and Interiors
MSRDesign
510 Marquette Avenue South, Suite 200
Minneapolis, MN 55402 | 612 375 0336

RESOLUT
181 E 5600 S, Murray, UT 84107 | (801) 530-3148
info@resolutgroup.com | resolutgroup.com

Project #: 250296

UCA MILLCREEK HEAD START RENOVATION

336 E 3900 S
SALT LAKE CITY, UT 84107

Project No: 2025051

Architect Seal

LICENSED PROFESSIONAL ENGINEER
No. 354088
JAMES E. NIGHTINGALE
4-18-2025
STATE OF UTAH

Signature
Date License No

PERMIT SET

ISSUE / REVISION

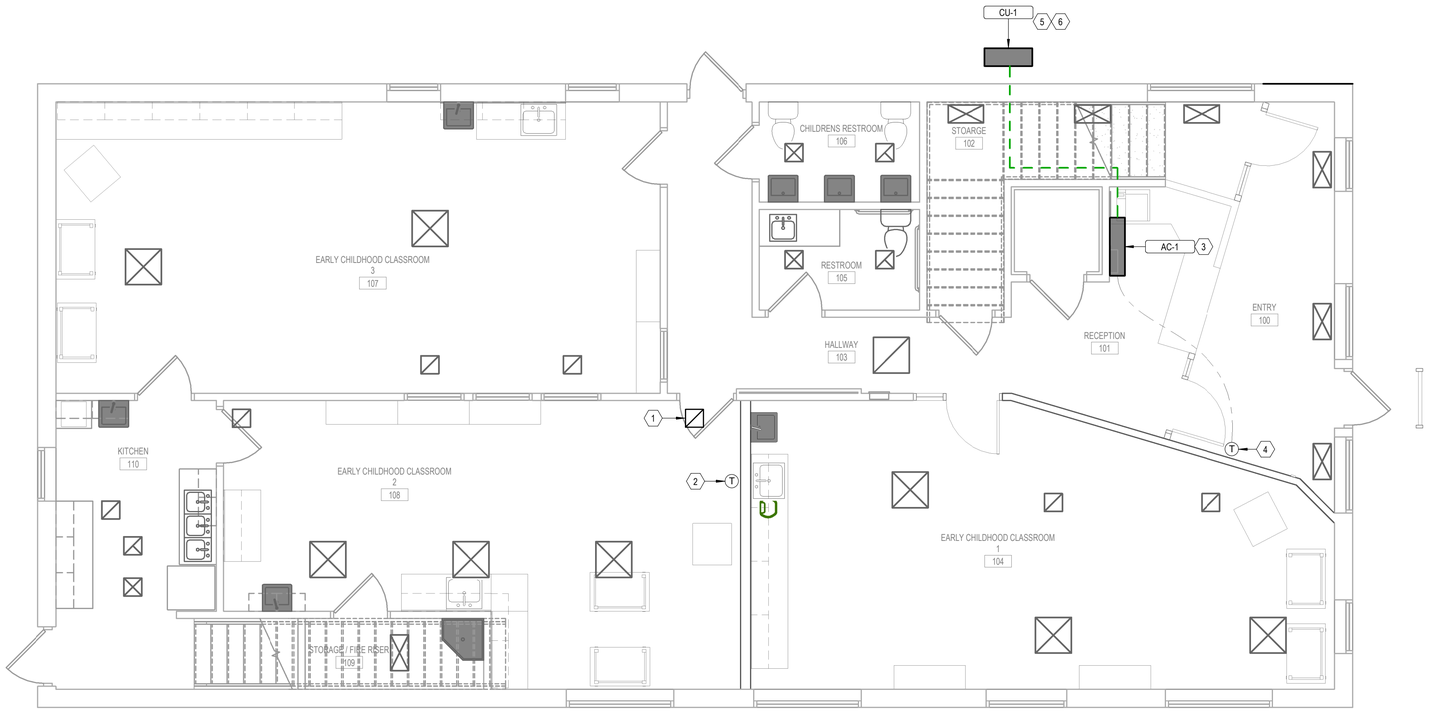
Mark	Date	Description

LEVEL 1
MECHANICAL
DEMOLITION PLAN

MD101

KEYNOTES

1. RELOCATED RETURN GRILLE AND DUCTWORK. CONTRACTOR TO CONNECT TO CLOSEST RETURN DUCT AND BALANCE TO VALUE FROM PRE-READ OR BALANCE TOTAL OF BOTH RETURN GRILLES IN THIS CLASSROOM TO THE TOTAL OF THE (3) SUPPLY DIFFUSERS.
2. RELOCATED THERMOSTAT TO THIS LOCATION THAT RUNS THE FURNACE, A/C UNIT FOR THE FIRST FLOOR. UNIT LOCATED ON SECOND FLOOR IN MECHANICAL ROOM.
3. CONTRACTOR TO FURNISH AND INSTALL WALL MOUNTED INDOOR UNIT FOR MINI SPLIT SYSTEM. SEE SCHEDULE FOR MANUFACTURER AND MODEL NUMBER.
4. PROVIDE OPTIONAL WIRED THERMOSTAT FOR MINI-SPLIT. THIS ENSURES THE UNIT WILL OPERATE CORRECTLY AND NOT RELY ON BATTERY POWER AT A WIRELESS REMOTE. COORDINATE MOUNTING LOCATION & HEIGHT WITH ARCHITECT.
5. PROVIDE AND INSTALL OUTDOOR CONDENSING UNIT BEHIND EXISTING CHAIN LINK FENCE.
6. CONTRACTOR TO PROVIDE PRICE FOR FENCING AROUND NEW CONDENSING UNIT FOR CHILD SAFETY.



1 LEVEL 1 MECHANICAL HVAC PLAN
M101 1/4" = 1'-0"

Architecture and Interiors

MSRDesign

510 Marquette Avenue South, Suite 200
Minneapolis, MN 55402 | 612 375 0336

RESOLUT

181 E 5600 S, Murray, UT 84107 | (801) 530-3148
info@resolutgroup.com | resolutgroup.com

Project #: 250296

UCA MILLCREEK HEAD START RENOVATION

336 E 3900 S
SALT LAKE CITY, UT 84107

Project No: 20250009

Architect Seal

LICENSED PROFESSIONAL ENGINEER
No. 354088
JAMES E. NIGHTINGALE
4-18-2025
STATE OF UTAH

Signature

Date License No

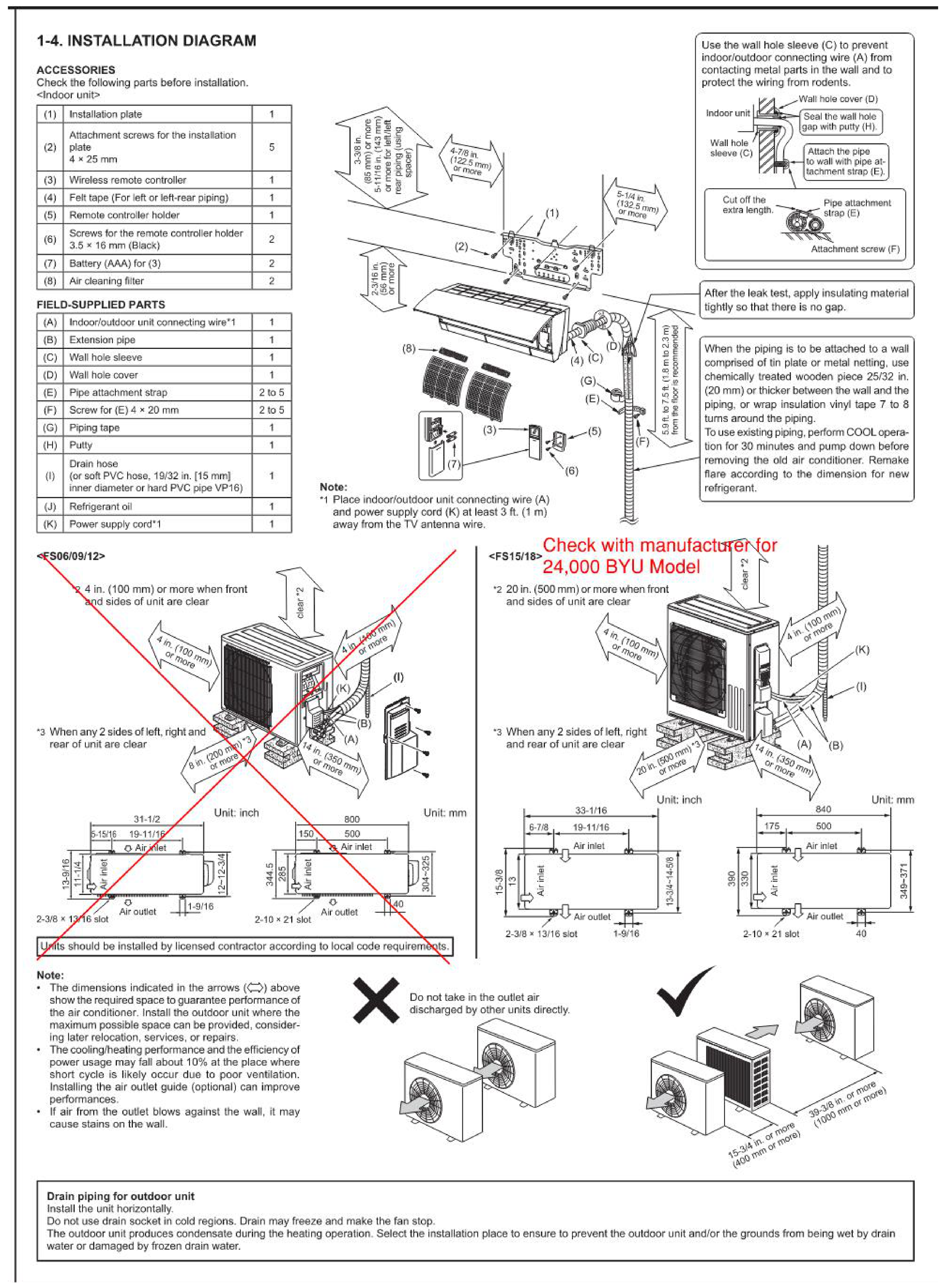
PERMIT SET

ISSUE / REVISION

Mark	Date	Description

LEVEL 1 MECHANICAL HVAC PLAN

M101


1-4. INSTALLATION DIAGRAM

ACCESSORIES
Check the following parts before installation.
<Indoor unit>

(1)	Installation plate	1
(2)	Attachment screws for the installation plate 4 × 25 mm	5
(3)	Wireless remote controller	1
(4)	Felt tape (For left or left-rear piping)	1
(5)	Remote controller holder	1
(6)	Screws for the remote controller holder 3.5 × 16 mm (Black)	2
(7)	Battery (AAA) for (3)	2
(8)	Air cleaning filter	2

FIELD-SUPPLIED PARTS

(A)	Indoor/outdoor unit connecting wire*1	1
(B)	Extension pipe	1
(C)	Wall hole sleeve	1
(D)	Wall hole cover	1
(E)	Pipe attachment strap	2 to 5
(F)	Screw for (E) 4 × 20 mm	2 to 5
(G)	Piping tape	1
(H)	Putty	1
(I)	Drain hose (or soft PVC hose, 19/32 in. [15 mm] inner diameter or hard PVC pipe VP16)	1
(J)	Refrigerant oil	1
(K)	Power supply cord*1	1

Use the wall hole sleeve (C) to prevent indoor/outdoor connecting wire (A) from contacting metal parts in the wall and to protect the wiring from rodents.

After the leak test, apply insulating material tightly so that there is no gap.

When the piping is to be attached to a wall comprised of tin plate or metal netting, use chemically treated wooden piece 25/32 in. (20 mm) or thicker between the wall and the piping, or wrap insulation vinyl tape 7 to 8 turns around the piping.
To use existing piping, perform COOL operation for 30 minutes and pump down before removing the old air conditioner. Remake flare according to the dimension for new refrigerant.

Note:
*1 Place indoor/outdoor unit connecting wire (A) and power supply cord (K) at least 3 ft. (1 m) away from the TV antenna wire.

<FS06/09/12>
*2 4 in. (100 mm) or more when front and sides of unit are clear
*3 When any 2 sides of left, right and rear of unit are clear

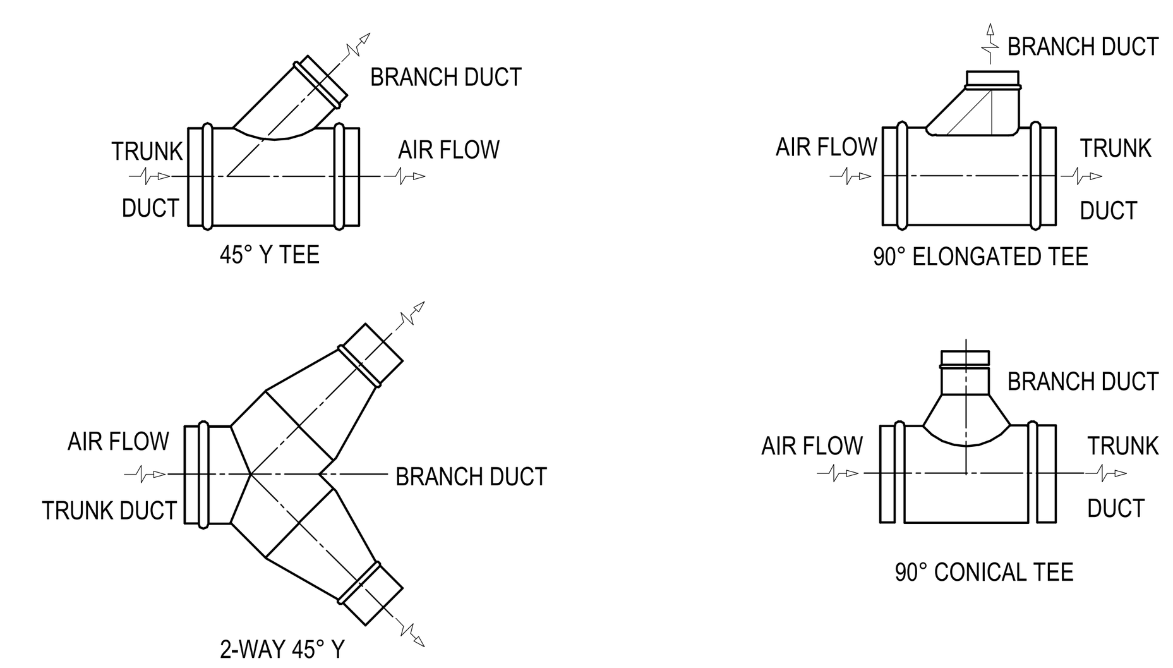
<FS15/18>
Check with manufacturer for 24,000 BYU Model
*2 20 in. (500 mm) or more when front and sides of unit are clear
*3 When any 2 sides of left, right and rear of unit are clear

Units should be installed by licensed contractor according to local code requirements.

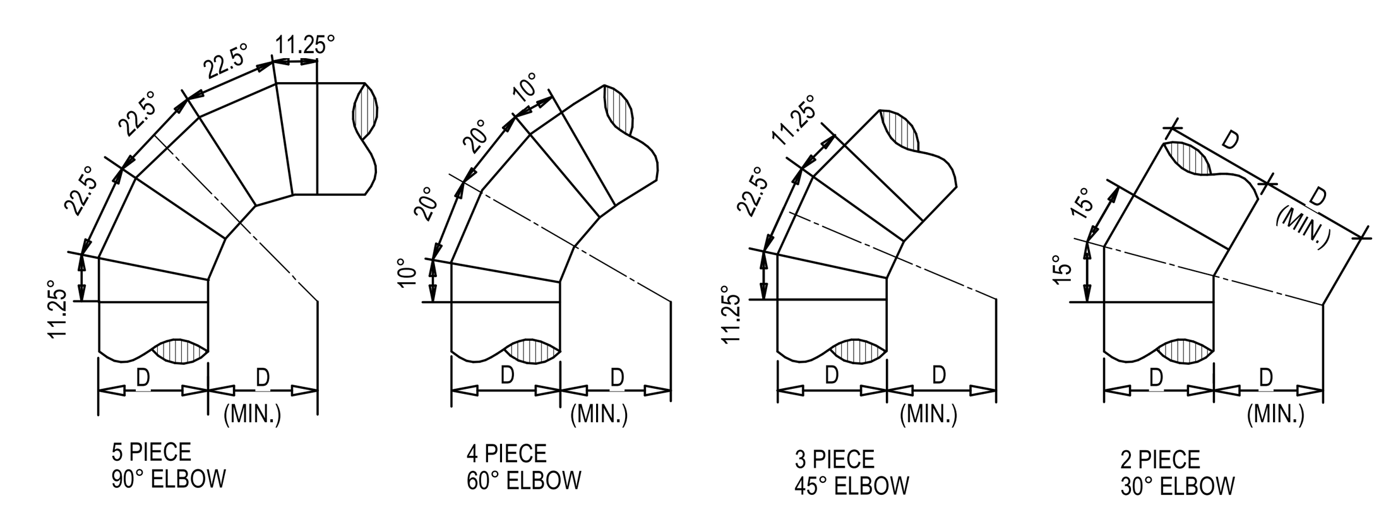
Note:
- The dimensions indicated in the arrows (⇔) above show the required space to guarantee performance of the air conditioner. Install the outdoor unit where the maximum possible space can be provided, considering later relocation, services, or repairs.
- The cooling/heating performance and the efficiency of power usage may fall about 10% at the place where short cycle is likely occur due to poor ventilation. Installing the air outlet guide (optional) can improve performances.
- If air from the outlet blows against the wall, it may cause stains on the wall.

Do not take in the outlet air discharged by other units directly.

Drain piping for outdoor unit
Install the unit horizontally.
Do not use drain socket in cold regions. Drain may freeze and make the fan stop.
The outdoor unit produces condensate during the heating operation. Select the installation place to ensure to prevent the outdoor unit and/or the grounds from being wet by drain water or damaged by frozen drain water.



1 M601 ROUND DUCT BRANCH TAKE-OFF DETAIL
12" = 1'-0"



2 M601 ROUND DUCT ELBOWS DETAIL
12" = 1'-0"

SPLIT SYSTEM HEAT PUMP																		
						INDOOR UNIT					OUTDOOR UNIT					REFRIGERANT LINES		
ID	MANUFACTURER AND MODEL NUMBER	LOCATION	SEER2	COOLING CAPACITY (BTU/H)	HEATING CAPACITY (BTU/H)	CFM RANGE	DIMENSIONS W" x H" x D"	WEIGHT (LBS.)	VOLTS/PH/HZ.		DIMENSIONS W" x H" x D"	WEIGHT (LBS.)	MCA (AMPS)	MOCP (AMPS)	VOLTS/PH/HZ.	LIQUID	GAS	NOTES
AC-1	MITSUBISHI KSSAE241A	LOBBY SPACE	18	24500	25260	675	39 X 11 X 10	29	24 VAC	CU-1	32 X 25 X 12	95	15	20	208 - 230 / 1 / 60	1/4	1/2	1,2,3,4,5,6,7

1. CAPACITIES RATED AT THE FOLLOWING OUTDOOR CONDITIONS: COOLING - 95 DEG. F. D.B., 75 DEG. F. W.B. HEATING - 40 DEG F DB
2. CAPACITIES RATED AT THE FOLLOWING INDOOR CONDITIONS: COOLING - 80 DEG. F. D.B., 67 DEG. F. W.B., HEATING - 70 DEG F DB
3. PROVIDE WIRED THERMOSTAT KIT
4. R454B REFRIGERANT.
5. INVERTER DRIVEN HEAT PUMP
6. PROVIDE ACCESSORY CONDENSATE PUMP FOR INDOOR UNIT
7. ALL INDOOR UNIT POWER ROUTED THROUGH CABLE FROM OUTDOOR CONDENSER

Architecture and Interiors
MSRDesign
510 Marquette Avenue South, Suite 200
Minneapolis, MN 55402 | 612 375 0336

RESOLUT
181 E 5600 S, Murray, UT 84107 | (801) 530-3148
info@resolutgroup.com | resolutgroup.com

Project #: 250296

UCA MILLCREEK HEAD START RENOVATION
336 E 3900 S
SALT LAKE CITY, UT 84107

Project No: 2025009

Architect Seal

LICENSED PROFESSIONAL ENGINEER
No. 354088
JAMES E. NIGHTINGALE
4-18-2025
STATE OF UTAH

Signature
Date License No

PERMIT SET

ISSUE / REVISION
Mark Date Description

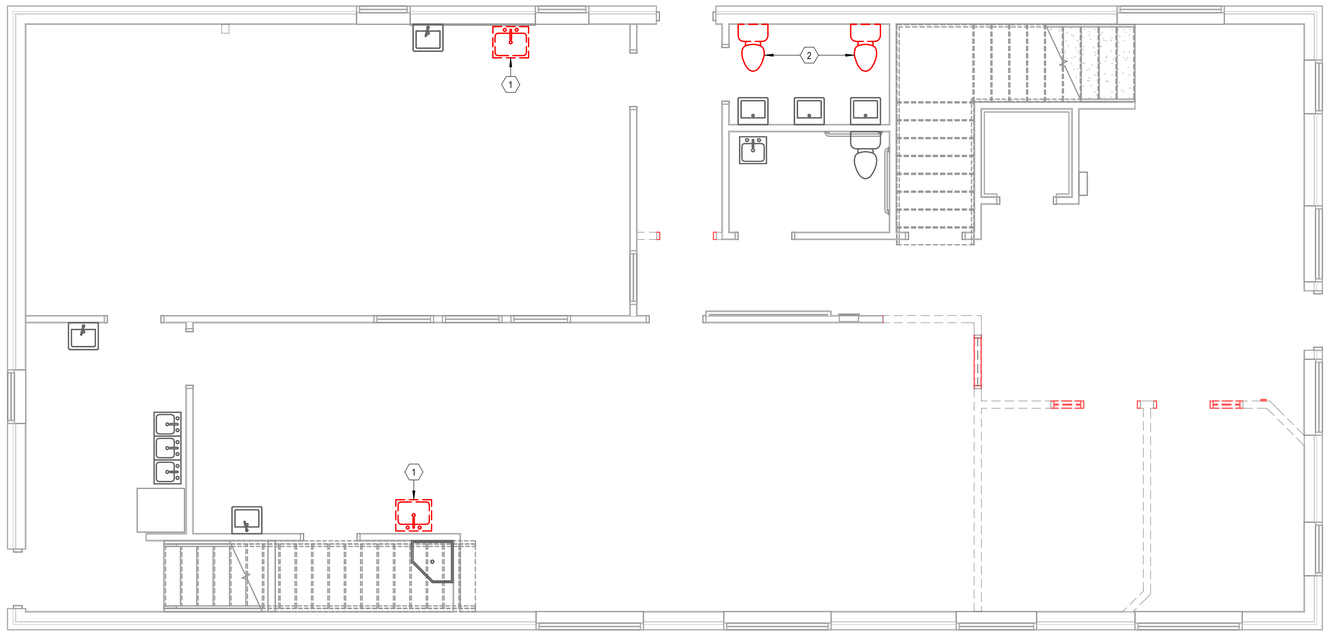
MECHANICAL DETAILS & SCHEDULES

M601

KEYNOTES

1 EXISTING COUNTER MOUNTED SINK TO BE REMOVED, INCLUDING FAUCET, AND BE RE-USED.

2 DEMOLISH EXISTING CHILD TOILET AND REPLACE WITH NEW.



1 LEVEL 1 PLUMBING DEMOLITION PLAN

PD101 1/4" = 1'-0"

Architecture and Interiors

MSRDesign

510 Marquette Avenue South, Suite 200
Minneapolis, MN 55402 | 612.375.0336

RESOLUT

181 E 5600 S, Murray, UT 84107 | (801) 530-3148
info@resolutgroup.com | resolutgroup.com

Project #: 250296

UCA MILLCREEK HEAD START RENOVATION

336 E 3900 S
SALT LAKE CITY, UT 84107

Project No: 2025093

Architect Seal

LICENSED PROFESSIONAL ENGINEER
No. 354088
JAMES E. NIGHTINGALE
4-18-2025
STATE OF UTAH

Signature

Date License No

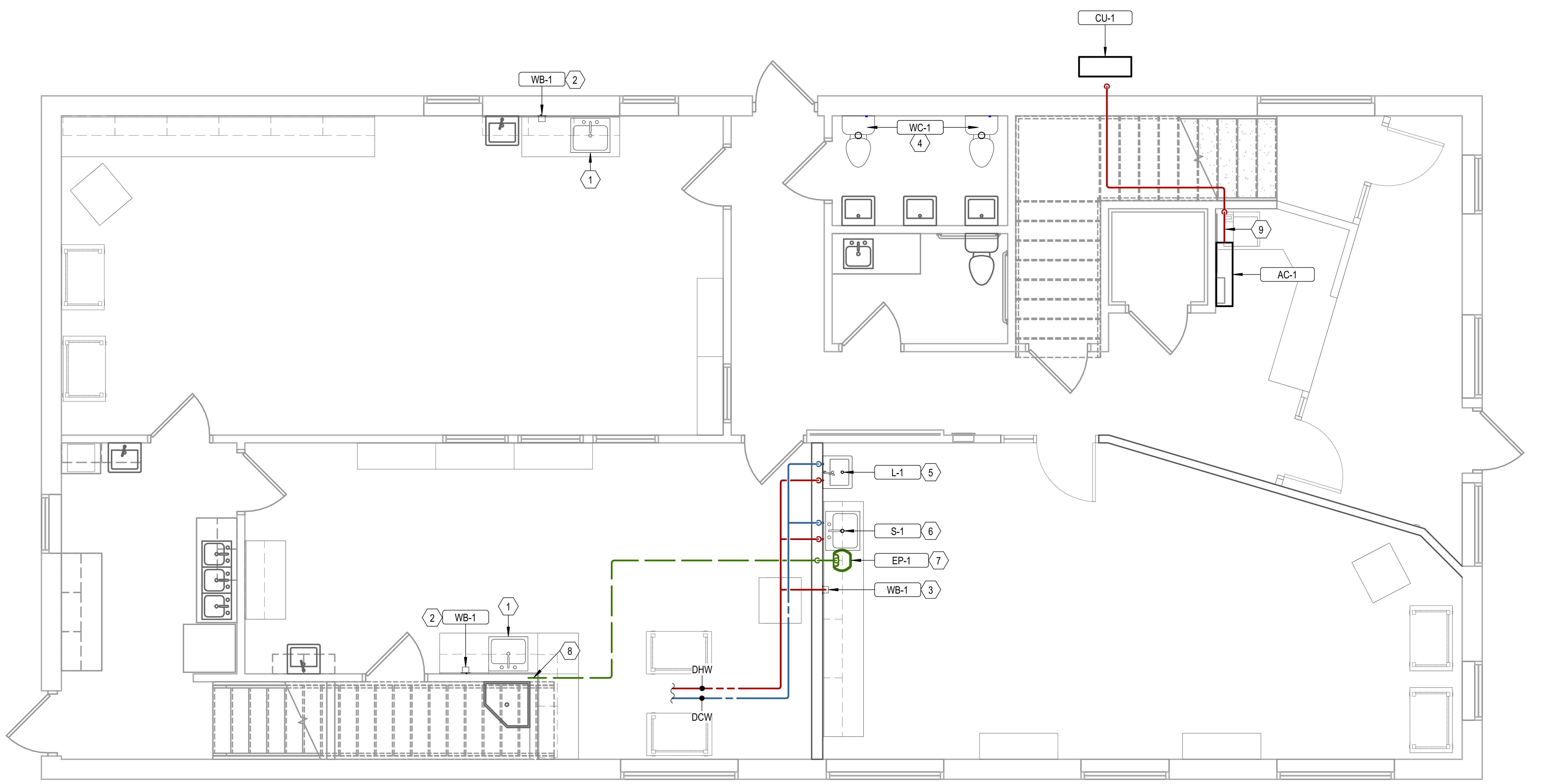
PERMIT SET

ISSUE / REVISION

Mark	Date	Description

LEVEL 1 PLUMBING DEMOLITION PLAN

PD101



1 LEVEL 1 PLUMBING PLAN

P101 1/4" = 1'-0"

KEYNOTES

1 RE-USED COUNTER MOUNTED SINK AND FAUCET TO BE INSTALLED IN NEW MILLWORK.

2 NEW IN WALL, WASHER BOX TO PROVIDE HOT WATER CONNECTION AND DRAIN FOR COUNTER MOUNTED DISHWASHER. OWNER PROVIDED DISHWASHER WITH EXACT MODEL UNKNOWN AT THIS TIME. CONNECT DOMESTIC HOT WATER TO SINK SUPPLY AND DRAIN TO TAIL PIECE OF SINK.

3 NEW IN WALL, WASHER BOX TO PROVIDE HOT WATER CONNECTION AND DRAIN FOR COUNTER MOUNTED DISHWASHER. OWNER PROVIDED DISHWASHER WITH EXACT MODEL UNKNOWN AT THIS TIME. CONNECT DOMESTIC HOT WATER TO SINK SUPPLY AND DRAIN TO UNDER SINK EJECTION PUMP/TANK.

4 FURNISH AND INSTALL NEW CHILD SIZE TOILETS TO FURNISH EXISTING FIXTURE LOCATION. RECONNECT TO WATER SUPPLIES FROM DEMOLISHED TOILETS.

5 FURNISH AND INSTALL NEW WALL MOUNTED HAND WASH LAVATORY. DRAIN TO EJECTOR PUMP WITH TANK.

6 FURNISH AND INSTALL NEW COUNTER MOUNTED SINK. EXTEND WATER UTILITIES FROM MOP SINK AREA. DRAIN TO EJECTOR PUMP WITH TANK.

7 BELOW COUNTER DRAIN COLLECTION TANK WITH PUMP. SEE PLUMBING FIXTURE SCHEDULE FOR MANUFACTURER AND MODEL.

8 ROUTE DRAIN PIPING FROM EP-1. EJECTOR PUMP WITH TANK TO WASTE PIPING OF EXISTING SINK IN THIS AREA.

9 PLUMBING CONTRACTOR TO PROVIDE AND INSTALL CONDENSATE PIPING FROM NEW INDOOR. WALL MOUNTED UNIT TO EXTERIOR. PROVIDE 3/4" COPPER PIPING WITH THE FIRST 10 FEET INSULATED FOR CONDENSATION CONTROL. WASTE TO BARK COVERED LANDSCAPE STRIP ADJACENT TO SIDEWALK. INSTALL INSECT SCREEN AT OPENING. DISCHARGE AT 12" ABOVE GRADE.

Architecture and Interiors

MSRDesign

510 Marquette Avenue South, Suite 200
Minneapolis, MN 55402 | 612 375 0336

RESOLUT

181 E 5600 S, Murray, UT 84107 | (801) 530-3148
info@resolutgroup.com | resolutgroup.com

Project #: 250296

UCA MILLCREEK HEAD START RENOVATION

336 E 3900 S
SALT LAKE CITY, UT 84107

Project No: 2025009

Architect Seal

LICENSED PROFESSIONAL ENGINEER
No. 354088
JAMES E. NIGHTINGALE
4-18-2025
STATE OF UTAH

Signature

Date License No

PERMIT SET

ISSUE / REVISION

Mark Date Description

LEVEL 1 PLUMBING PLAN

P101

MODEL 406

Compact Drain Pump

Liberty Pumps

A Family and Employee Owned Company

1/6 hp

1/8" Solids Handling

Features

- Factory pre-assembled, ready to install
- Quiet automatic operation
- Short profile design for compact areas – only 10" tall (base to top inlet flange)
- Float switch and pump serviceability via access cover
- Wet-end serviceability via removable pump "cartridge" – simple, 1/4 turn removal
- Rubber gasket for a superior gas-tight seal
- Floor-level side inlets, with integral check valve and couplings included for convenient plumbing
- Stepped discharge adapter – 1", 1.25", 1.5", with integral check valve

Patent: See www.LibertyPumps.com/patents

Applications

- Bar sinks
- Laundry trays
- Dehumidifiers
- Utility sinks
- Gray wastewater drainage below gravity lines
- Showers

MADE in the USA with US and global parts

SSPMA CERTIFIED

ASME A112.3.4 CSA B45.9

Meets UPC

innovate. evolve.

Model 406

Features

- Compact design for tight areas and in cabinets
- Factory pre-assembled
- Fully automatic operation
- Wet-end serviceability with easy to remove motor cartridge
- Integral check valve at bottom inlet connections
- Rubber gaskets for a superior gas-tight seal
- Float switch can be accessed and serviced without disconnecting piping
- Air-cooled motor with thermal-overload protection
- 9', 3-wire power cord with grounded plug
- Corrosion-resistant ABS basin with molded-in connections
- Maintenance free, permanently lubricated sealed bearings
- 1/8" Solids handling

Maximum Fluid Temperature

104°F (40°C) continuous duty

140°F (60°C) intermittent duty (10 seconds on/5 seconds off)

Motor Specifications

1/6 hp

Air-cooled, Thermally Protected

Dimensional Data

Weight: 13.5 lbs

Major Height: 14.1"

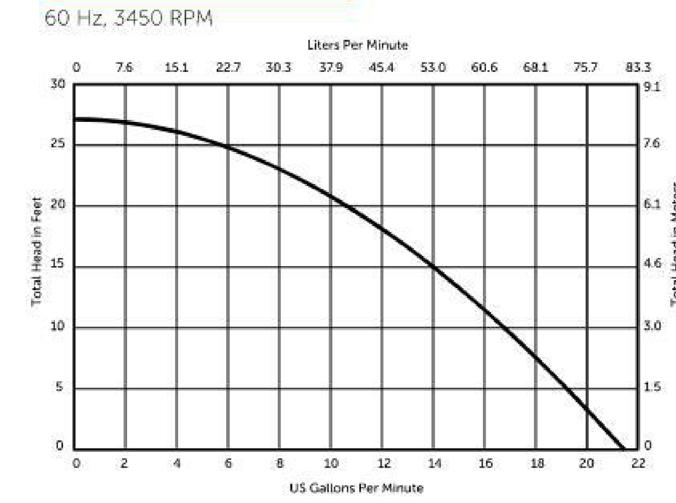
Major Width: 13.2"

Included Connection Kit

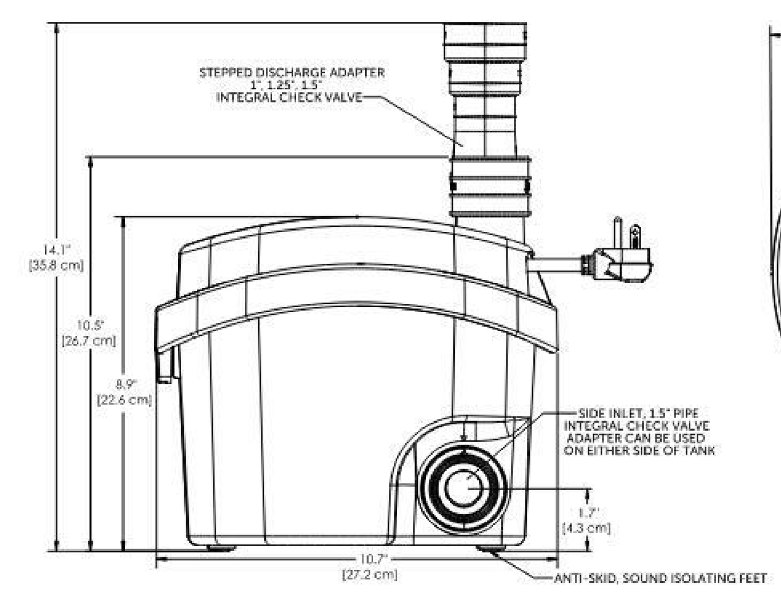
- 1 Stepped discharge adapter – 1", 1.25", 1.5", with integral check valve
- 1 Side inlet coupling (1.5") with integral check valve
- 1 Top vent coupling (1.5")
- 1 Top inlet coupling (1.5")
- 2 Pre-installed side inlet plugs
- 1 Pre-installed top inlet plug
- 7 Stainless-steel clamps

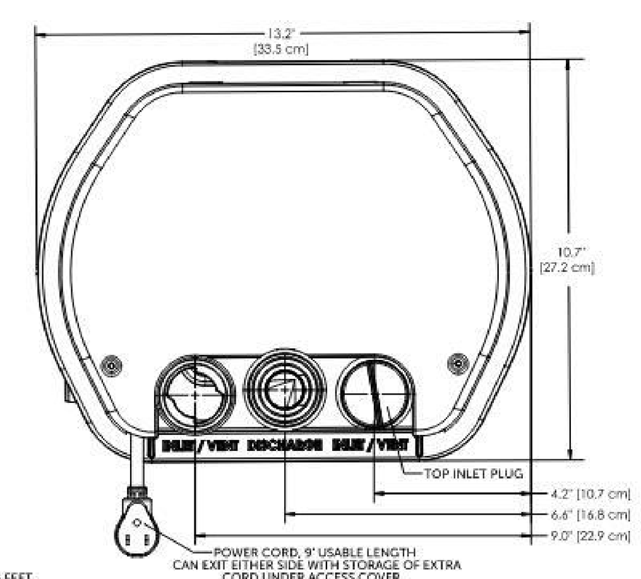
Performance Curve

60 Hz, 3450 RPM



For proper performance, tank inflow cannot exceed pump discharge capacity at the installed head level.
For technical assistance, consult the factory at 1-800-543-2550.





Models and Specifications

MODEL	HP	AMPS	VOLTS	FREQUENCY	INLET CONNECTIONS	INTEGRAL CHECK VALVE
406	1/6	1.7	115	60 Hz	1.5"	One on discharge One on side inlet
~~406HV~~	~~1/6~~	~~1.0~~	~~208/230~~	~~60 Hz~~	~~1.5"~~	One on discharge One on side inlet

406 Models are CSA Certified to the UPC, IPC, and NPC requirements of ASME A112.3.4 / CSA B45.9

Specifications subject to change without notice.

Liberty Pumps - 7000 Apple Tree Avenue - Bergen, New York 14416
Phone 800-543-2550 - Fax 585-494-1839 - www.LibertyPumps.com

BRANCH WATER LINE SCHEDULE

FIXTURE	FIXTURE UNITS	QUANTITY OF FIXTURES SERVED BY					
		1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
WATER CLOSET (FLUSH VALVE)	10	---	---	1	3	5	15
WATER CLOSET (TANK TYPE)	3	1	2	4	10	---	---
URINAL	5	---	1	2	6	10	30
LAVATORY	2	1	3	6	15	25	---
SERVICE SINK	4	1	3	6	---	---	---
QUANTITY OF FIXTURE UNITS SERVED BY	---	3	6	12	30	50	150

NOTE: WHERE PIPING IS SIZED ON DRAWINGS IT SHALL BE FOLLOWED. OTHERWISE INSTALL ACCORDING TO TABLE. WHERE FIXTURES ON A BRANCH ARE MIXED. TAKE THE SUM OF FIXTURE UNITS TO DETERMINE SIZING. THE BRANCHES SHALL BE REDUCED AS THE LOAD IS TAKEN OFF. MINIMUM SIZE TO ONE (1) FIXTURE SHALL BE 1/2".

PLUMBING FIXTURE SCHEDULE

ID	FIXTURE	CW (IN)	HW (IN)	W (IN)	V (IN)	DESCRIPTION	NOTES
WC-1	WATER CLOSET - CHILD	1	-	3	2	FLOOR MOUNTED, FLUSH TANK	WATER CLOSET (FLOOR MOUNT, FLUSH TANK, ADA): ZURN Z5590 CHILDS HEIGHT ROUND BOWL, TANK TYPE, 1.6 GPF WITH Z5959SS-JUV OPEN FRON SEAT
L-1	LAVATORY	1/2	1/2	1 1/2	1 1/2	WALL HUNG, VITREOUS CHINA, GOOSENECK WITH WRIST BLADES INSTALL AT CHILDS HEIGHT DEFINED BY ARCHITECT	SINK: KOHLER K2031, GREENWICH, 20" X 18", VITREOUS CHINA, WITH FRONT OVERFLOW,THREE HOLE DRILLING. MOEN 8938 FAUCET WITH GOOSENECK, 1.2 GPM. FLEXIBLE STAINLESS STEEL SUPPLIES WITH WITH LOOSE KEY ANGLE STOPS. CHICAGO 327-XCP OPEN-GRID STRAINER AND CAST BRASS P-TRAP WITH CLEAN OUT PLUG. SMITH 0700-Z CONCEALED ARM CHAIR CARRIER WITH FOOT SUPPORT. PROVIDE ADA COMPLIANT UNDER COUNTER PIPING WRAP BY TRUE-BRO, COLOR TO BE WHITE.
S-1	SINK	1/2	1/2	1 1/2	1 1/2	COUNTER MOUNTED STAINLESS STEEL SINK, GOOSENECK FAUCET WITH WRIST BLADES	SINK: ELKAY LRADQ151756PD 12" X 12" X 5-1/2" I.D. COUNTER MOUNT 18 GA. STAINLESS STEEL SINK WITH 3 HOLES ON 4" CENTERS DRILLING. MOEN 8938 FAUCET WITH GOOSENECK, 1.2 GPM. FLEXIBLE STAINLESS STEEL SUPPLIES WITH WITH LOOSE KEY ANGLE STOPS. CAST BRASS P-TRAP WITH CLEAN OUT PLUG, AND ELKAY PERFECT GRID DRAIN LKPDVR18B OPEN-GRID STRAINER MOUNTED FLUSH WITH SINK BOTTOM.
WB-1	WATER BOX WITH DRAIN	-	1/2	1 1/2	1 1/2	FLUSH MOUNTED IN WALL, WATER SUPPLY, WITH DRAIN	WATER-TITE W8902HA WATER OUTLET BOX WITH QUARTER TURN BALL VALVE AND WATER HAMMER ARRESTOR. ONLY INSTALL HOT WATER CONNECTION. INCLUDE BOX WITH WIDE MOUTH DRAIN FITTING, COORDINATE MOUNTING HEIGHT WITH ARCHITECT. EXPECTATION THAT BOX IC COMPLETELY ABOVE COUNTER FOR WATER AND DRAIN CONNECTION TO COUNTER MOUNTED DISHWASHER.
EP-1	EJECTION PUMP	-	-	1 1/2	1 1/2	DRAINAGE TANK WITH EJECTION PUMP	LIBERTY PUMPS: MODEL 406 COMPACT DRAIN PUMP. 1/6 HORSE POWER PUMP, 120 VAC 1.7 AMPS WITH 1.5" INLET AND OUTLET CONNECTIONS

Architecture and Interiors

MSRDesign

510 Marquette Avenue South, Suite 200
Minneapolis, MN 55402 | 612 375 0336

RESOLUT

181 E 5600 S, Murray, UT 84107 | (801) 530-3148
info@resolutgroup.com | resolutgroup.com

Project #: 250296

Project No. 2025009

UCA MILLCREEK HEAD START RENOVATION

336 E 3900 S
SALT LAKE CITY, UT 84107

Architect Seal

LICENSED PROFESSIONAL ENGINEER
No. 354088
JAMES E. NIGHTINGALE
4-18-2025
STATE OF UTAH

Signature

Date

License No

PERMIT SET

ISSUE / REVISION

Mark Date Description

PLUMBING DETAILS & SCHEDULES

P601