ABBREVIATIONS

GENERAL

AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AFC	ABOVE FINISHED GRADE
BHP	BRAKE HORSEPOWER
BOP	BOTTOM OF PIPE
BOT	BOTTOM
C/L	CENTER LINE
CLG	CEILING
CFM	CUBIC FEET PER MINUTE
CO	CARBON MONOXIDE
CO2	CARBON DIOXIDE
CSR	CURRENT SENSING RELAY
DISCH	DISCHARGE
DN	DOWN
DS	DISCONNECT SWITCH; DOOR SWITCH
(E)	EXISTING
EA	EACH
EC	ELECTRICAL CONTRACTOR; END CAP
EP	ELECTRICAL PANEL; END PLUG
EPO	EMERGENCY POWER OFF
ESP	EXTERNAL STATIC PRESSURE
(F)	FUTURE
FA	FIRE ALARM
FDC	FIRE DEPARTMENT CONNECTION
FDN	FOUNDATION
FLEX	FLEXIBLE
FLR	FLOOR
FP	FIRE PROTECTION
FTG	FOOTING
GA	GAGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
HP	HORSEPOWER; HIGH PRESSURE
HTG	HEATING
HTR	HEATER
IAW	IN ACCORDANCE WITH
ID	INSIDE DIAMETER/DIMENSION
IN WC	INCHES WATER COLUMN
MC	MECHANICAL CONTRACTOR
MFR	MANUFACTURER
MH	MANHOLE
MTD	MOUNTED
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN; NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OVHD	OVERHEAD
PERF	PERFORATED
POC	POINT OF CONNECTION
QTY	QUANTITY
(R)	RELOCATED
RCP	REFLECTED CEILING PLAN
REQD	REQUIRED
SECT	SECTION
SIM	SIMILAR
SPEC	SPECIFICATION
STD	STANDARD
TBD	TO BE DETERMINED
TI	TENANT IMPROVEMENTS
TOC	TOP OF CONCRETE
TOS	TOP OF STEEL
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UG	UNDERGROUND
UNO	UNLESS NOTED OTHERWISE
VFD	VARIABLE FREQUENCY DRIVE
VSD	VARIABLE SPEED DRIVE
W/	WITH
W/O	WITHOUT
WC	WATER COLUMN
WG	WATER GAUGE

HVAC

AC	AIR CONDITIONING
AHU	AIR HANDLING UNIT
BDD	BACKDRAFT DAMPER
BOD	BOTTOM OF DUCT
CC	COOLING COIL
CRU	COMPUTER ROOM UNIT
CT	COOLING TOWER
CV	CONSTANT VOLUME
DB	DUCT BOARD
DIFF	DIFFUSER
DMPR	DAMPER
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
ECG	EGGCRATE GRILLE
EF	EXHAUST FAN
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FM	FREQUENCY MODULATION
FP	FIRE PROTECTION; FAN POWERED
FSD	COMBINATION FIRE/SMOKE DAMPER
FTU	FAN TERMINAL UNIT
GRD	GRILLE, REGISTER, DIFFUSER
HC	HEATING COIL
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
LAT	LEAVING AIR TEMPERATURE
LD	LINEAR DIFFUSER
MA	MIXED AIR
MOD	MOTOR OPERATED DAMPER; MODULATING
MAU	MAKE-UP AIR UNIT
MUA	MAKE-UP AIR
OA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
RA	RETURN AIR
RAT	RETURN AIR TEMPERATURE
RTU	ROOF TOP UNIT
SA	SUPPLY AIR
SAT	SUPPLY AIR TEMPERATURE
SD	SMOKE DAMPER; SMOKE DETECTOR
SF	SUPPLY FAN
SL	SOUND LINED
SLSM	SOUND LINED SHEET METAL
SM	SHEET METAL
SO	SCREENED OPENING
SP	STATIC PRESSURE
TG	TRANSFER GRILLE
TOD	TOP OF DUCT
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER

PIPING

BD	STEAM BLOWDOWN
BP	BACKFLOW PREVENTER
CA	COMPRESSED AIR
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CLPS	CLEAN LOW PRESSURE STEAM
CNDS	CONDENSATE
CNDWR	CONDENSER WATER RETURN
CNDWS	CONDENSER WATER SUPPLY
DRAIN	TANK OVERFLOW & DRAINS
DTR	DUAL TEMPERATURE RETURN
DTS	DUAL TEMPERATURE SUPPLY
EWT	ENTERING WATER TEMPERATURE
FCD	FLUE CONDENSATE DRAIN
FEED	BOILER FEED WATER
FOF	FUEL OIL FILL
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOV	FUEL OIL VENT
G	NATURAL GAS
2# G	NATURAL GAS - LOW PRESSURE, 2 PSI
5# G	NATURAL GAS - LOW PRESSURE, 5 PSI
GE	GENERATOR EXHAUST
GFWR	GEO - FIELD WATER RETURN
GFWS	GEO - FIELD WATER SUPPLY
GWR	GROUND WATER RETURN
GWS	GROUND WATER SUPPLY
HPC	HIGH PRESSURE CONDENSATE
HPS	HIGH PRESSURE STEAM
HWR	HEATING WATER RETURN
HWS	HEATING WATER SUPPLY
LPC	LOW PRESSURE CONDENSATE
LPG	LIQUEFIED PROPANE GAS
LPS	LOW PRESSURE STEAM
LWT	LEAVING WATER TEMPERATURE
MPC	MEDIUM PRESSURE CONDENSATE
MPS	MEDIUM PRESSURE STEAM
PCW	PROCESS COLD WATER
PCWR	PROCESS COOLING WATER RETURN
PCWS	PROCESS COOLING WATER SUPPLY
PHW	PROCESS HOT WATER
PHWR	PROCESS HOT WATER RETURN
RL	REFRIGERATION LIQUID
RS	REFRIGERATION SUCTION
RV	REFRIGERATION VENT
SCW	SOFTENED COLD WATER
SRV	STEAM RELIEF VENT
TOP	TOP OF PIPE

PIPING IDENTIFICATION

HVAC

RETURN PIPING
SUPPLY PIPING

PIPING FITTINGS

TEE UP
TEE DOWN
TEE DN W/ ELBOW
TEE UP W/ ELBOW
90° ELBOW UP
90° ELBOW DN
CAP
UNION
FLANGE
FLEX HOSE CONNECTION
DOUBLE BELLOWS FLEX CONNECTION
SINGLE BELLOWS FLEX CONNECTION
FLOW ARROW
REDUCER
1% SLOPE SYMBOL
BREAK OR CONTINUATION SYMBOL
DOWN SPOUT NOZZLE
CLEANOUT

VALVES

MOTORIZED 2-WAY VALVE
MOTORIZED 3-WAY VALVE
PRESSURE REDUCING VALVE
CONTROL VALVE
RELIEF VALVE
BALL VALVE
3-WAY GATE VALVE
BUTTERFLY VALVE
DIAPHRAGM VALVE
CHECK VALVE
NEEDLE VALVE
GLOBE VALVE
GLOBE VALVE ANGLE
GLOBE VALVE 3-WAY
GATE VALVE
PLUG VALVE
BALANCING VALVE
HOSE BIBB
AUTO FLOW VALVE

PIPING ACCESSORIES

PUMP
MV MANUAL AIR VENT
AV AUTOMATIC AIR VENT
HAV HIGH CAPACITY AIR VENT
A SHOCK ARRESTOR
FS FLOW SWITCH
VB VACUUM BREAKER
PRESSURE GAUGE
TEMPERATURE SENSOR
TEMPERATURE INDICATOR
FM FLOW METER
Y STRAINER W/ BALL VALVE
PIPE SLEEVE
STEAM TRAP
PETES PLUG
SUCTION DIFFUSER W/ STRAINER
RPBP REDUCED PRESSURE BACKFLOW PREVENTOR

INSTRUMENTATION AND CONTROLS

T THERMOSTAT
S SENSOR
CO CARBON MONOXIDE SENSOR
CO2 CARBON DIOXIDE SENSOR
OCC OCCUPANCY SENSOR
SD SMOKE DETECTOR

GENERAL INFORMATION SYMBOLS

NEW MECHANICAL WORK
FUTURE TI SCOPE & NEW WORK OTHER THAN MECHANICAL
POINT OF CONNECTION
POINT OF DEMOLITION
CENTERLINE
X X KEY NOTE REFERENCE
X PIPING RISER CALLOUT (CHW; HW)
X PIPING RISER #
X PLAN NUMBER
X SHEET NUMBER WHERE PLAN SHOWN
X DETAIL OR DIAGRAM NUMBER
X SHEET NUMBER WHERE DETAIL/DIAGRAM SHOWN
X SECTION LETTER
X SHEET NUMBER WHERE SECTION SHOWN
X REVISION NUMBER - DENOTES NUMBER AND DATE WHEN REVISION OR ISSUE OCCURED
REVISION CLOUD - DENOTES AREA OF CHANGE
X X DETAIL REFERENCE OUTLINE WITH NUMBER AND SHEET LOCATION

DUCTWORK ACCESSORIES

PROJECT SPECIFIC

SUPPLY GRILLE
RETURN OR EXHAUST GRILLE
VOLUME DAMPER
M MOTOR OPERATED DAMPER
FM AIRFLOW MONITOR
Y REMOTELY OPERATED VOLUME DAMPER (YOUNG REGULATOR OR APPROVED)
BDD BACK DRAFT DAMPER
COORDINATE WITH CEILING APPURTENANCES.
FLEX CONNECTION
FIRE DAMPER THROUGH WALL
FD FD FIRE DAMPER THROUGH FLOOR
S FIRE/SMOKE DAMPER THROUGH WALL
FSD FSD FIRE/SMOKE DAMPER THROUGH FLOOR
AD AD ACCESS DOORS
12x12 XSL ACOUSTICALLY LINED DUCT (X" THICK SOUND LINING)
R CHANGE OF ELEVATION RISE(R) DROP(D)
TURNING VANES
RETURN / EXHAUST / OUTSIDE AIR
SUPPLY / TRANSFER AIR

DUCTWORK

RECTANGULAR DUCT	SUPPLY AIR DUCT TURNING UP OR TOWARD
RECTANGULAR DUCT	SUPPLY AIR DUCT TURNING DOWN OR AWAY
RECTANGULAR DUCT	RETURN AIR DUCT TURNING UP OR TOWARD
RECTANGULAR DUCT	RETURN AIR DUCT TURNING DOWN OR AWAY
RECTANGULAR DUCT	EXHAUST AIR DUCT TURNING UP OR TOWARD
RECTANGULAR DUCT	EXHAUST AIR DUCT TURNING DOWN OR AWAY
ROUND DUCT	SUPPLY AIR DUCT TURNING UP OR TOWARD
ROUND DUCT	SUPPLY AIR DUCT TURNING DOWN OR AWAY
ROUND DUCT	RETURN AIR DUCT TURNING UP OR TOWARD
ROUND DUCT	RETURN AIR DUCT TURNING DOWN OR AWAY
ROUND DUCT	EXHUAST AIR DUCT TURNING UP OR TOWARD
ROUND DUCT	EXHAUST AIR DUCT TURNING DOWN OR AWAY
OVAL DUCT	SUPPLY AIR DUCT TURNING UP OR TOWARD
OVAL DUCT	SUPPLY AIR DUCT TURNING DOWN OR AWAY
	FLEXIBLE DUCT

DEMOLITION NOTES

1. DEMOLITION DRAWINGS ARE INCLUDED TO GIVE A COMMON BASIS FOR BIDDING AND MAY NOT SHOW EVERY ITEM TO BE DEMOLISHED. VISIT SITE TO DETERMINE AND COORDINATE THE EXACT EXTENT OF DEMOLITION TO FACEPLATE WORK INDICATED BY THE CONTRACT DOCUMENTS. REWORK EXISTING TERMINATIONS, CONNECTIONS, ETC., TO ACCEPT NEW WORK. PRIOR TO START OF ANY DEMO WORK, VERIFY EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES FOR RESOLUTION.
2. REMOVE EXISTING HVAC EQUIPMENT AS INDICATED, INCLUDING ASSOCIATED PIPING, CONTROL SYSTEMS, AND APPURTENANCES.
3. REMOVE EXISTING DUCTWORK AS INDICATED. CAP EXISTING OPENINGS NOT BEING REUSED.
4. REMOVE EXISTING PIPING SERVING ITEMS TO BE REMOVED. CAP OR PLUG BRANCH LINES NOT BEING REUSED.
5. GIVE OWNER THE OPPORTUNITY TO RETAIN ANY REMOVED ITEMS THAT ARE NOT BEING REUSED. DISPOSE OF OTHER ITEMS LEGALLY.
6. CLEAN AND REFURBISH ITEMS INDICATED TO BE REMOVED AND REUSED PRIOR TO REUSE.

GRILLE/REGISTER/DIFFUSER

PROJECT SPECIFIC

CEILING SUPPLY AIR DIFFUSER
CEILING RETURN GRILLE OR TRANSFER AIR GRILLE
CEILING EXHAUST GRILLE
LINEAR DIFFUSER (CEILING)
LINEAR DIFFUSER (WALL)
LOUVER PLAN VIEW
LOUVER (ELEVATION VIEW)

HVAC - ANNOTATION

EQUIPMENT / LOUVER TAG

EF 2-1
EQUIPMENT DESIGNATION
CONSECUTIVE EQUIPUIPMENT #
FLOOR OF EQUIP. LOCATION

GRILLE, REGISTER, OR DIFFUSER TAG

SWG-WxH x CFM
TYPE CODE
WIDTH
HEIGHT
CFM

GENERAL NOTES

1. VERIFY LOCATIONS AND DIMENSIONS OF ALL EQUIPMENT AND COORDINATE ALL WORK PRIOR TO START OF CONSTRUCTION.
2. OBTAIN APPROVAL OF STRUCTURAL ENGINEER PRIOR TO INSTALLATION OF PENETRATIONS NOT PREVIOUSLY COORDINATED OR AGREED UPON, I.E. ANCHOR BOLT DEPTHS, ETC.
3. CONCRETE EQUIPMENT CURBS, PIPING RAT SLABS, SUMP BASINS, AND HOUSEKEEPING PADS ARE SHOWN FOR APPROXIMATE LOCATION AND SIZE AND ARE TO BE PROVIDED BY THE GENERAL CONTRACTOR. WHERE PROVIDED, REFER TO STRUCTURAL INFO FOR ADDITIONAL DETAILS.
4. HVAC EQUIPMENT SHALL NOT BE SIZED LARGER THAN THE NEXT LARGEST SIZE BASED ON LOAD CALCULATION, WSEC C403.2.2.
5. OCCUPIED SPACES ARE MECHANICALLY VENTILATED. SYSTEMS ARE DESIGNED TO PROVIDE MINIMUM OUTSIDE AIR PER MECHANICAL CODE AND SHALL NOT EXCEED 150% CALCULATED VALUE, WSEC 403.2.6 & 403.2.11.4.
6. COMPLETION AND COMMISSIONING FOR MECHANICAL SYSTEMS:
   - A. MECHANICAL SYSTEMS, EQUIPMENT AND CONTROL SHALL BE COMMISSIONED PER WSEC 408.2.
   - B. COMMISSIONING PLAN IS REQUIRED TO BE PREPARED BY CERTIFIED COMMISSIONING PROFESSIONAL AND SUBMITTED TO THE AHJ PRIOR TO FIRST MECHANICAL INSPECTION, PER WSEC 408.1.2. INCLUDE NARRATIVE OF ACTIVITIES, RESPONSIBILITIES OF Cx TEAM, SCHEDULE OF ACTIVITIES AND CONFLICT OF INTEREST PLAN.
     - a. PROVIDE SUMMARY OF REPORT OR COMPLIANCE CHECKLIST (SEE C408.1.4.2) AND PROVIDE TO OWNER PRIOR TO FINAL MECHANICAL INSPECTION.
   - C. BALANCE SYSTEMS TO WITHIN TOLERANCES SPECIFIED. FIRST BALANCE TO MINIMIZE THROTTLING LOSSES THEN TO MEET DESIGN FLOW, WSEC 408.2.2. PROVIDE TESTING AND BALANCING PER WSA IMC 401.7 AND 403.3.1.5.
   - D. PROVIDE RECORD DRAWINGS OF THE ACTUAL INSTALLATION TO THE OWNER PER WSEC C103.6.
   - E. PROVIDE MAINTENANCE MANUALS FOR ALL MECHANICAL EQUIPMENT, WSEC C103.6.
   - F. PROVIDE OWNERS OPERATING PERSONNEL TRAINING FOR MECHANICAL EQUIPMENT, WSEC C103.6.
   - G. PROVIDE WSEC COMPLIANCE FORMS AND CALCULATIONS, WSEC C103.6.
7. MINIMUM VENTILATION QUANTITIES WILL COMPLY WITH OR EXCEED THE 2018 INTERNATIONAL MECHANICAL CODE.
8. ALL SYSTEMS WILL BE INSULATED AS PRESCRIBED IN WSEC C403.2.8.1.
9. VERIFY THAT ALL NECESSARY INFORMATION HAS BEEN PROVIDED PRIOR TO CONNECTION OF EQUIPMENT FURNISHED BY THE OWNER OR OTHERS.
10. FOR ADDITIONAL SYSTEM AND EQUIPMENT SEISMIC REQUIREMENTS, REFER TO STRUCTURAL SEISMIC TIE-DOWN INFORMATION AND BACK-UP CALCULATIONS ARE PROVIDED SEPARATELY.
11. REFER TO CIVIL DRAWINGS FOR UTILITY WORK 5'-0" BEYOND THE BUILDING LINE.
12. ALL WORK SHALL BE NEW AND PROVIDED UNDER THIS CONTRACT UNLESS SPECIFICALLY MARKED AS EXISTING, EXIST, OR (E).

MECHANICAL INDEX

PROJECT SITE

VICINITY MAP

LEGAL DESCRIPTION

PARCEL NUMBER: 5870000151

THE APPROVED CONSTRUCTION PLANS, DOCUMENTS AND ALL ENGINEERING MUST BE POSTED ON THE JOB AT ALL INSPECTIONS IN A VISIBLE AND READILY ACCESSIBLE LOCATION.

FULL SIZED LEDGIBLE COLOR PLANS ARE REQUIRED TO BE PROVIDED BY THE PERMITEE ON SITE FOR INSPECTION

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

Building	Planning
Engineering	Public Works
Fire	Traffic

City of Puyallup Building APPROVED

See permit for additional requirements.

JMontgomery
11/23/2022
6:56:02 AM

CITY OF PUYALLUP STATE OF WASHINGTON

HVAC BASIS OF DESIGN

ITEM #	SYSTEM	CRITERIA	CRITERIA SOURCE
CODE BASIS FOR PROJECT			
1-1	CODE	2018 WASHINGTON STATE MECHANICAL CODE	PUYALLUP
1-2	CODE	2018 WASHINGTON STATE ENERGY CODE	PUYALLUP
1-3	CODE	2018 INTERNATIONAL PLUMBING CODE	PUYALLUP
BASIS FOR LOAD CALCULATIONS			
2-1	OUTDOOR TEMPERATURE	WINTER OSA DESIGN TEMP = 29°F DB	2018 WASHINGTON STATE ENERGY CODE
2-2	OUTDOOR TEMPERATURE	SUMMER OSA COOLING DESIGN TEMP = 83°F DB, 64°F WB;	2018 WASHINGTON STATE ENERGY CODE
2-3	INDOOR DESIGN CRITERIA	COOLING = 72°F	DESIGN VALUE
2-4	EQUIPMENT (PLUG) LOADS	SERVER RACKS IN STORAGE AREA (3-RACKS 2300 WATTS EACH)	OWNER CRITERIA
BASIS FOR SCOPE OF WORK			
3-1	EXISTING CONDITION	THERE ARE (3) SERVER RACKS IN EXISTING STORAGE ROOM . THE SERVERS ARE LOCATED IN CHAINLINK FENCE AREA. THERE IS NO MECHANICAL COOLING IN SPACE TO PROVIDE COOLING FOR SERVER EQUIPMENT.	DESIGN APPROACH
3-2	NEW MECHANICAL	PROVIDE AND INSTALL (1) 3- TONS SPLIT COOLING SYSTEM :3-TONS INDOOR WALL MOUNTED FAN COIL UNIT (FCU-01) WITH 3-TONS OUTDOOR CONDENSER (CU-01).	DESIGN APPROACH
3-3	INSTALLATION	1) INSTALL (1) NEW WALL MOUNTED FAN COIL (FCU-01) FACING TO THE FRONT OF THE SERVERS. 2) INSTALL OUTDOOR CONDENSER (CU-01) ON BRACKET AND ATTACH SEISMICALLY TO THE OUTSIDE WALL. 3) INSTALL REFRIGERANT SUCTION AND LIQUID LINES FROM CONDESING UNIT TO INDOOR FAN COIL UNIT. 5) INSTALL CONDENSATE PIPING FROM INDOOR UNIT AND ROUTE TO EXISTING FLOOR DRAIN IN MECHANICAL ROOM.	DESIGN APPROACH
3-4	CONTROLS	STANDALONE, THERMOSTATIC CONTROL.	DESIGN APPROACH
3-5	ECONOMIZER	ECONOMIZER IS NOT REQUIRED PER EXCEPTION 1, C503.4.2 OF 2018 WSEC (TOTAL COOLING OF SPACE IS 24,000 BTUH).	2018 WSEC

McKinstry
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McKINSTRY Co, LLC

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5005 3RD AVENUE S
PO BOX 24567
SEATTLE, WA 98124
1-800-669-6223

www.mckinstry.com

PROJECT:

PUYALLUP HS

SERVER RM
SPLIT SYSTEM

105 7TH St. S.W.
PUYALLUP, WA. 98371

CONSULTANTS:

PRMH20221752

REGISTRATION:

DANIAL DON MA STATE OF WASHINGTON 39995 REGISTERED PROFESSIONAL ENGINEER
November 9, 2022

THIS IS AN ELECTRONIC SIGNATURE. DIGITAL STAMP ORIGINAL ON FILE AT MCKINSTRY.

ISSUES:

NO	DATE	DESCRIPTION
	11-07-2022	MECHANICAL PERMIT SET

DESIGNED: A. SADIGH
DRAWN: A. SADIGH
CHECKED: D. MA
JOB NO: 123130-001
ISSUED ON:
SHEET TITLE:

MECHANICAL LEGEND, ABBREVIATIONS, VICINITY MAP & B.O.D.

SHEET NUMBER:

M-001

HVAC PIPING SPECIFICATION

ID	CATEGORY	SERVICE DESCRIPTION	MANUFACTURER, PRODUCT OR EQUAL	PRESSURE TEST PROCEDURE MEDIA	TEST PRESSURE	DURATION	CODE
CNDS	**CONDENSATE DRAIN**	**CONDENSATE DRAIN FROM EQUIPMENT COIL DRAIN PANS**		WATER	PLUG OUTLET AND FILL SYSTEM FROM LOWEST TO HIGHEST POINT OF TEST SECTION	MIN 15 MINUTES; VISUAL CHECKS FOR LEAKS	2018 UPC, SECTION 723.0
	PIPE IDENTIFICATION MARKER	WHITE LETTERING ON GREEN BACKGROUND - ANSI/ASME A 13.1 - 2007	HANPLY (HANSEN SUPPLY), MARKING SERVICES INC. MS-970 (INDOOR); MS-995 (OUTDOOR) ; DURALABEL				
	DESIGN OPERATING PRESS & TEMP	ATMOSHPHERIC					
	SIZES THRU 2"						
	PIPE MATERIAL	COPPER TUBE TYPE L ASTM B88	-				
	JOINTS	SWT, THREADED AT SPECIALTIES AS APPLICABLE	-				
	FITTINGS	WROT COPPER/BRONZE SWT JOINT	-				
	COUPLINGS	WROT COPPER/BRONZE SWT JOINT	-				
RL / RS	**REFRIGERANT LIQUID / REFRIGERANT SUCTION**	**REFRIGERANT PIPING FOR HEATING AND COOLING**		INERT GAS - NITROGEN OR CARBON DIOXIDE	1.5 TIMES PRESSURE RELIEF VALVE SETTING	1 HOUR	2018 IMC, SECTION 1108
	PIPE IDENTIFICATION MARKER	BLACK LETTERING ON ORANGE BACKGROUND - ANSI/ASME A 13.1 - 2007	HANPLY (HANSEN SUPPLY), MARKING SERVICES INC. MS-970 (INDOOR); MS-995 (OUTDOOR) ; DURALABEL				
	RATED OPERATING PRESS & TEMP	PER ASTM B31.5 REFRIGERATION PIPING AND HEAT TRANSFER COMPONENTS					
	SIZES THRU 1 1/8"						
	PIPE MATERIAL	PRE-INSULATED COPPER TUBING ON ROLLS, ASTM-B280 - SEALED AND CAPPED AT ENDS	PDM - GELCOPPER PRE-INSULATED COPPER ROLL (1/4" - 1- 1/8")				
	INSULATION	POLYETHYLENE CLOSED CELL FOAM - ASTM C 1427 COMPLIANT - UL94 & UL 723 (FLAME SPREAD<25 & SMOKE DEVELOPMENT <50)					
	JOINTS	SILVER BRAZED AND NITROGEN PURGE PER ASTM B828,	-				
	FITTINGS	WROT COPPER/BRONZE SWT JOINT PER ASTM B16.22;	-				
	SPECIALTIES	MISC.	PROJECT SPECIFIC REQUIREMENTS - SEE SPECIFICATION 232300 " REFRIGERANT PIPING"				
			`				

MECHANICAL PIPE INSULATION SCHEDULE - WASHINGTON

FROM 2018 WSEC TABLE C403.10.3

SPECIFICATION: 230700 HVAC INSULATION

PIPING SYSTEM	TEMP RANGE (Deg F)	THERMAL COND.	MEAN RATING TEMPERATURE	INSULATION MATERIAL	<1"	1" TO <1-1/2"	1 1/2" TO 4"	4" - 8"	OVER 8"	NOTES
REFRIGERANT SUCTION	< 40	0.20 - 0.26	75	E	0.5	1.0	1.0	1.0	1.0	1, 3, 4, 10
REFRIGERANT HOT-GAS	141-200	0.25 - 0.29	125	E	1.5	2.0	2.0	20.0	1.0	1, 3, 4, 10, 12

E: ELASTORMERIC CLOSED CELL INSULATION

KEY NOTES:

1. FOR PIPING CLAMPED TO UNISTRUT SUPPORTS, UTILIZE RIGID INSERTS WITH SHEETMETAL SHIELDS CONTINUOUS THROUGH THE HANGER; UTILIZE CALCIUM SILICATE INSERTS OR STYRENE INSERTS
3. UTILIZE RIGID INSERTS AND SHEETMETAL SHIELDS; INSULATION TO BE CONTINUOUS THROUGH THE HANGER; UTILIZE CALCIUM SILICATE INSERTS OR STYRENE INSERTS
4. JACKETING: ALUMINUM ROLLED JACKETING (ARJ) APPLIED TO EXTERIOR PIPING INSULATION EXPOSED TO WEATHER (I.E. ROOFTOP PIPING). SEE INSULATION SPEC FOR ALTERNATE JACKETING AND LOCATIONS.
10. ASTM E 84 OR UL 723 TESTED TO FLAME SPREAD INDEX OF 25 AND SMOKE DEVELOPED INDEX OF NOT EXCEEDING 450
12. REFRIGERANT HOT-GAS INSULATION FOR PERSONNEL PROTECTION ONLY, NOT REQUIRED BY ENERGY CODE AND MAY USE 1/2" E INSULATION FOR ALL SIZES . MANUFACTURER'S LINE SETS MAY BE USED IN LIEU OF ELASTOMERIC INSULATION AND MUST MEET ENERGY CODE AND SMOKE & FLAME REQUIREMENTS.

SPLIT SYSTEM UNIT SCHEDULE

DESCRIPTION		
UNIQUE TAG #	**FCU-01**	**CU-01**
LOCATION	SERVER RM	OUTSIDE WALL
QUANTITY	1	1
SCOPE QUALIFIER (PROJECT PHASE, FUTURE, ALTERNATE, ETC)	PROJECT PHASE	PROJECT PHASE
TYPE AND ARRANGEMENT (INDOOR/OUTDOOR, HORIZONTAL/VERTICAL)	INDOOR	OUTDOOR
AREA / SYSTEM SERVED	SERVER RM	
MANUFACTURER DATA		
STATUS (AS PROPOSED, AS APPROVED, AS BUILT)	AS PROPOSED	AS PROPOSED
MANUFACTURER	MITSUBISHI	
MODEL NUMBER (OR CUSTOM)	PKA-A36KA7	PUY-A36NKA7
OVERALL PHYSICAL DIMENSIONS		
LENGTH x WIDTH x HEIGHT (IN)	46-1/16 x 11-5/8 x 14-3/8	41-15/16 x13 x 52-11/16
ACCESS RESTRICTIONS: (FRONT / REAR / LEFT / RIGHT / TOP), EXPLANATION	21"x 1"x2"x0"	20"X8"X4"X14"X20"
OPERATING WEIGHT, INCLUDE BASE WEIGHT (LBS)	46	211
FACTORY CURB	NO	NO
SITE BUILT CURB OR PAD BY	NONE	WALL BRACKET
SIZE & TYPE OF EACH SUCTION PIPE CONN. (IN, CTS)	BRAZED & 5/8	BRAZED &5/8
SIZE & TYPE OF EACH LIQUID PIPE CONN. (IN, CTS)	BRAZED & 3/8	BRAZED & 3/8
CONDENSATE DRAIN CONNECTION SIZE (IN)	3/4	3/4
FILTRATION		
FILTER SECTION (FLAT, V-BANK, OR NONE)	WASHABLE	-
DIRECT REFRIGERANT EXPANSION (DX) COOLING COIL		
REFRIGERANT TYPE USED IN COIL	R-410A	R-410A
QUANTITY OF REFRIGERANT (LBS)	10 LBS-6 OZ	-
DESIGN COOLING OUTDOOR AMBIENT AIR DRYBULB TEMP. (°F)	-	86
COOLING COIL ENTERING AIR DRYBULB / WETBULB TEMP. (°F / °F)	78/67	-
COOLING COIL LEAVING AIR DRYBULB TEMPERATURE (°F)	55.0	-
DX COOLING COIL MAX/MIN TOTAL (MBH)	36/16	-
FAN CFM	705-810-920	3880
FAN MOTOR TYPE	DC MOTOR	1/8
SUCTION PIPE CONNECTION SIZE AND TYPE (IN, CTS)	5/8	-
LIQUID PIPE CONNECTION SIZE AND TYPE (IN, CTS)	3/8	-
DX COOLING COIL ROWS / FIN SPACING	-	-
DX COOLING COIL FACE AREA (FT²)	-	-
REFRIGERANT CONTROL	LEV	
SEER @ ARI CONDITIONS	-	18.8
SEER MINIMUM REQUIRED PER CODE	-	13
CONDENSATE PUMP INCLUDED	YES	-
LOW AMBIENT OPERATION MINIMUM TEMPERATURE (°F)		0
ELECTRICAL		
QUANTITY OF ELECTRICAL CONNECTIONS	1	1
VOLTAGE / PHASE	-	208-230/1
MINIMUM CIRCUIT AMPACITY (MCA) (AMPS)		25
OVERCURRENT PROTECTION (INDICATE MOCP OR MFS)		31
ALTERNATE POWER SOURCE REQUIRED	NO	NO
SMOKE DETECTOR PROVIDED AND WIRED BY ELECT? (RETURN, SUPPLY, NONE)	NONE	NA
MINIMUM SHORT CIRCUIT CURRENT RATING (SCCR) (AMPS)	-	5000
STARTER PROVIDED BY	NONE	NONE
DISCONNECT PROVIDED BY	ELECTRICAL	ELECTRICAL
VARIABLE FREQUENCY DRIVE PROVIDED BY	NONE	NONE
CODE REQUIRED ELECTRICAL OUTLET PROVIDED BY	ELECTRICAL	ELECTRICAL
CONTROLS		
CONTROL METHOD	FACTORY CONTROL- KUMO CLOUD	
CONTROLS INTERFACE / PROTOCOL	STAND ALONE-THERMOSTAT	
ACOUSTICAL & SEISMIC		
SOUND PRESSURE LEVEL dBA(A)	42	52
QUANTITY OF SEISMIC ATTACHMENTS (PER UNIT) TO STRUCTURE	NONE	SEE STRUCTURAL (SK-1)
MANUFACTURER'S CERTIFICATE OF COMPLIANCE INCLUDED PER IBC 1708.4	YES	YES
NOTES:	**3**	**1,2**

1. PROVIDE WITH BRACKET FOR STRUCTURAL ATTACH TO THE WALL.
2. PROVIDE WITH WIND BAFFLE.
3. PROVIDE WITH CONDENSATE PUMP.

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McKINSTRY Co, LLC

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SEATTLE, WA 98124
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PROJECT:

PUYALLUP HS

SERVER RM SPLIT SYSTEM

105 7TH St. S.W.
PUYALLUP, WA. 98371

CONSULTANTS:

PRMH20221752

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

Building	Planning
Engineering	Public Works
Fire	Traffic

REGISTRATION:

DANIAL DON MA
STATE OF WASHINGTON
39995
REGISTERED
PROFESSIONAL ENGINEER
November 9, 2022

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NO	DATE	DESCRIPTION
	11-07-2022	MECHANICAL PERMIT SET

DESIGNED: A. SADIGH
DRAWN: A. SADIGH
CHECKED: D. MA
JOB NO: 123130-001
ISSUED ON:
SHEET TITLE:

SCHEDULE AND SPECIFICATIONS

SHEET NUMBER:

M-060

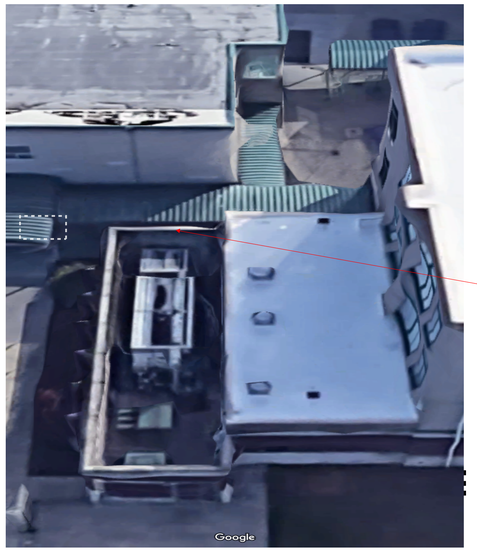
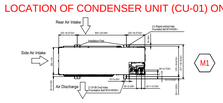


PHOTO OF CHILLER YARD

LOCATION OF CONDENSER UNIT (CU-01) ON THE WALL



GENERAL NOTES

1. NEW WORK SHOWN IN RED

KEYNOTES

M1 INSTALL NEW OUTDOOR CONDENSER (CU-01) ON BRACKET AND ATTACH TO CMU WALL (7'-0" ABOVE THE GROUND LEVEL) MAINTAIN AIR FLOW IN REAR, SIDE AND FRONT. MAINTAIN SERVICE CLEARANCES PER MANUFACTURER'S RECOMMENDATION. FOR SEISMIC ATTACHMENT REFER TO SHEET S-001, DETAIL (SK-1).

M2 INSTALL NEW 3/8" & 5/8" REFRIGERATION LINES (LIQUID & GAS) FROM CONDENSING UNIT (INSULATED)THRU THE CONCRETE WALL TO INDOOR UNIT. (FIRE CAULK THE PENETRATIONS)

M3 INSTALL NEW WALL MOUNTED FAN COIL UNIT (FCU-01) ON THE WALL FACING TO THE FRONT OF THE SERVER RACKS. (6'-0" A.F.F).

M4 CONNECT NEW 3/4" CONDENSATE DRAIN (PUMPED) TO EXISTING FLOOR DRAIN IN MECHANICAL ROOM.

1 / M-111 PARTIAL MECHANICAL FLOOR PLAN

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

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PROJECT:

PUYALLUP HS

SERVER RM
SPLIT SYSTEM

105 7TH St. S.W.
PUYALLUP, WA. 98371

CONSULTANTS:

PRMH20221752

City of Puyallup
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REGISTRATION:

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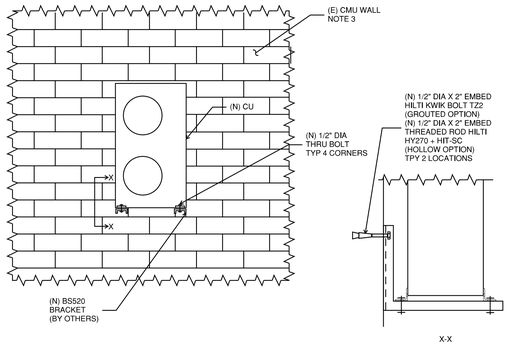
DESIGNED: A. SADIGH
DRAWN: A. SADIGH
CHECKED: D. MA
JOB NO: 123130-001

SHEET TITLE:

PATIAL FLOOR PLAN-MECHANICAL

SHEET NUMBER:

M-111



CONNECTION DETAIL

SCALE: NTS

NOTES:
1. (N) DENOTES "NEW"; (E) DENOTES "EXISTING".
2. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFO.
3. CONTRACTOR TO CONFIRM IF CMU WALL IS GROUTED OR HOLLOW.

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PROJECT:
PUYALLUP HIGH SCHOOL
105 7TH ST SW
PUYALLUP, WA 98371

ISSUES:

NO	DATE	DESCRIPTION

DESIGNED: HBS
DRAWN: HBS
CHECKED: JWG
JOB NO: 123130

SHEET TITLE:
CONN DETAIL

SHEET NUMBER:
SK-1

PKA-A36KA7 & PUY-A36NKA7(-BS)
36,000 BTU/H WALL-MOUNTED INDOOR UNIT
36,000 BTU/H COOLING ONLY OUTDOOR

MITSUBISHI ELECTRIC — HEATING & AIR CONDITIONING

Job Name:
System Reference: Date:

Indoor Unit PKA-A36KA7

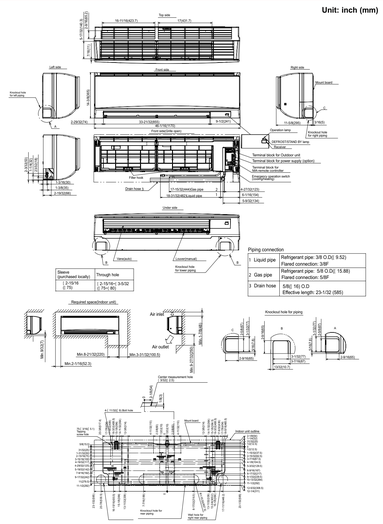
Outdoor Unit
☐ Standard Model PUY-A36NKA7
☐ Seacoast Model PUY-A36NKA7-BS

INDOOR UNIT FEATURES
- Sleek, compact design
- Simple installation
- Vane setting for air flow direction control
- Auto fan speed mode
- Ideal for spaces such as server rooms, daycare centers, classrooms, churches, small offices, and more
- Multiple control options available:
  - kumo cloud® smart device app for remote access
  - Third-party interface options
  - Wired or wireless controllers

OUTDOOR UNIT FEATURES
- Variable speed INVERTER-driven compressor
- Power receiver pre-charged with refrigerant volume for piping length up to 100 ft
- Low ambient cooling down to -40°F providing 100% capacity (with wind baffles)
- 24-hour continuous operation (cooling mode)
- High pressure protection
- Fast restart
- Superior energy and operational efficiency

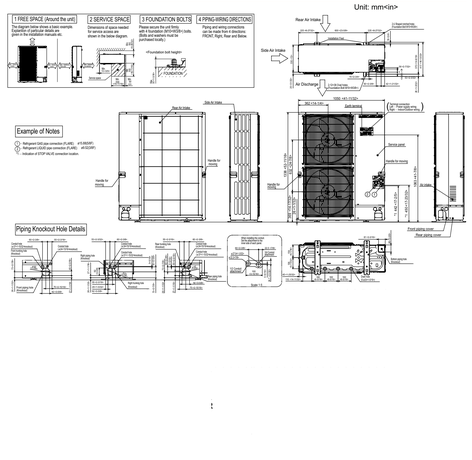
INDOOR UNIT DIMENSIONS: PKA-A36KA7

Unit: inch (mm)



OUTDOOR UNIT DIMENSIONS: PUY-A36NKA7(-BS)

Unit: mm<in>



Brackets & Floor Supports

HEAVY DUTY WALL BRACKET

Heavy duty wall bracket. Supplied with screws only.
CAPACITY: 440 Lbs / 200 Kg

Model	Material	Dimension (mm) (AxB)	Dimension (inch)(AxB)	Pallet/Ctn (pcs)
BS320	Gal. Steel	520x400	19"/₁₆" x 15¾	117

WALL BRACKET WITHOUT BAR

Wall bracket without bar. Supplied with screws, washers, & anchors.
CAPACITY: 300 Lbs / 140 Kg

Model	Material	Dimension (mm) (AxB)	Dimension (inch)(AxB)	Pallet/Ctn (pcs)
BS600	Gal. Steel	600x400	23⅝" x 15¾	117

ADJUSTABLE WALL BRACKET WITH BAR

Adjustable wall bracket with bar. Supplied with screws, washers, & anchors.
CAPACITY: 660 lbs / 300 kg

Model	Material	Dimension (mm) (AxBxC)	Dimension (inch)(AxBxC)	Pallet/Ctn (pcs)
BS30HDPKCB	Gal. Steel	520x400x960	19"/₁₆"x15¾"x37⅞"	117

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	11-07-2022	MECHANICAL PERMIT SET

DESIGNED: HBS
DRAWN: HBS
CHECKED: JWG
JOB NO: 123130-001
ISSUED ON:

SHEET TITLE:
DETAIL AND
AND EQUIPMENT DATA
SHEET

SHEET NUMBER:
S-001