



REVISION:	DATE:
RELOCATE HP-1	9/25/20
AND CHANGE IWH-1	
RELOCATE DRYER	9/28/20
EXHAUST TERMINATION	

DGC ENGINEERS

 ENGINEERING THROUGHOUT ALASKA WITH INFINITE POSSIBILITIES

10221 EVERGREEN TREE STREET
 ANCHORAGE, AK 99507
 (907) 441-9328
 WWW.DGCENGINEERS.COM

CRAIG DUPLEX
CRAIG, ALASKA

THIRHA JENKINS DRIVE JUNEAU, AK 99801
JOB NUMBER: 2003
DRAWN BY: DGC
CHECKED BY: DGC
LEGENDS, NOTES, AND SPECIFICATIONS
DATE: 9/28/2020

SHEET:
MO.1

MECHANICAL SYMBOL LEGEND

PIPING SYMBOLS		HVAC SYMBOLS		ABBREVIATIONS	
SYMBOL	ABBR.	DESCRIPTION	SYMBOL	ABBR.	DESCRIPTION
	C.I.S.P.	WASTE, CAST IRON SOIL PIPE			NEW DUCTWORK
	V	VENT			ACOUSTICALLY LINED DUCT
	CW	COLD WATER			THERMALLY INSULATED DUCT
	HW	HOT WATER			DUCTWORK UP
	HWC	HOT WATER RECIRCULATION			DUCTWORK DOWN
	HWR	HEATING WATER RETURN			TURNING VANES
	HWS	HEATING WATER SUPPLY			AIR EXTRACTOR
	FOR	FUEL OIL RETURN		S/A	SUPPLY AIR REG., GRILLE OR DIFFUSER
	FOS	FUEL OIL SUPPLY		R/A	RETURN/EXHAUST AIR REG. OR GRILLE
	GHR	GLYCOL HEATING RETURN			SUPPLY
	GHS	GLYCOL HEATING SUPPLY			RETURN OR EXHAUST
	TP	TRAP PRIMER			SUPPLY AIR SLOT WITH FLEX DUCT
	G	LOW PRESSURE NATURAL GAS			RETURN AIR SLOT
	RL	RAIN LEADER			FLEXIBLE DUCT
	RD	ROOF DRAIN			FLEXIBLE CONNECTION
	ORD	OVERFLOW ROOF DRAIN		VD, BD	VOLUME DAMPER
		DEEP SEAL TRAP		FD	FIRE DAMPER
		PIPE ELBOW DOWN		FSD	FIRE / SMOKE DAMPER
		PIPE ELBOW UP		MOD	MOTOR OPERATED DAMPER
		UNION			DUCT SIZE (SIDE SHOWN/OTHER SIDE)
	GV/SOV	GATE VALVE/SHUT-OFF VALVE		HC	HEATING COIL
	EXP	EXPANSION JOINT		S/A	SUPPLY AIR
		GAS COCK		R/A	RETURN / RELIEF AIR
		GLOBE VALVE		E/A	EXHAUST AIR
	MOV	MOTOR OPERATED VALVE 2-WAY		O/A	OUTSIDE AIR
	MOV	MOTOR OPERATED VALVE 3-WAY		DD	DUCT DETECTOR
	PRV	PRESSURE REDUCING VALVE			ACCESS PANEL
	RV	RELIEF VALVE		T/STAT	THERMOSTAT, THERMOSTAT W/INS. BASE
	CV	CHECK VALVE		SP	STATIC PRESSURE SENSOR
		BALL VALVE (FULL PORT)		U/C	UNDERCUT DOOR (X = AMOUNT)
		STRAINER			LOUVERED DOOR (X X X = SIZE)
		THERMOMETER			SWITCH
		PRESSURE GAGE W/ISOLATION VALVE			
		SOLENOID VALVE			
	BV	BALANCING VALVE			
		SQUARE HEAD COCK			
		FLEX CONNECTION			
	WHA	WATER HAMMER ARRESTER (Y=SIZE)			
		AUTOMATIC FLOW CONTROL			
	CO	CLEAN-OUT			
	WCO	WALL CLEAN-OUT			
	FCO	FLOOR CLEAN-OUT			
	FD	FLOOR DRAIN			
		PIPE ANCHOR			
		PIPE GUIDE			

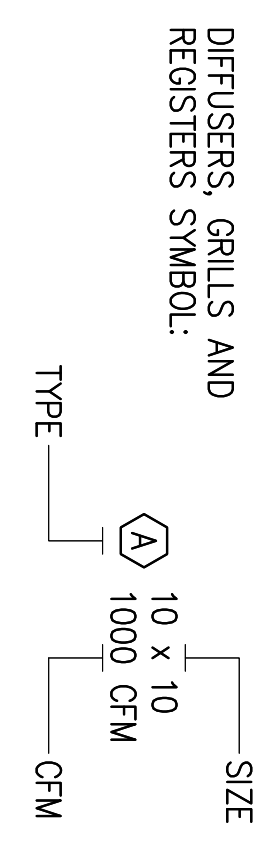
MECHANICAL NOTES

1. THESE DRAWINGS ARE DIAGRAMATICAL IN NATURE AND DO NOT SHOW ALL FITTINGS AND/OR ACCESSORIES NECESSARY FOR A COMPLETE FUNCTIONAL AND COORDINATED INSTALLATION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE A COMPLETE FUNCTIONAL SYSTEM AND TO COORDINATE HIS WORK WITH OTHER TRADES AND WITH FIELD CONDITIONS.

FIRE PROTECTION SYMBOLS

	FDC	FIRE DEPARTMENT CONNECTION
	F	FIRE WATER PIPING
	SP	SPRINKLER HEAD DRY
		SPRINKLER HEAD UP
		SPRINKLER HEAD DN
		SPRINKLER HEAD DRY
		SPRINKLER HEAD SIDEWALL

DIFFUSER KEY



MECHANICAL SPECIFICATIONS

- ALL PLUMBING PIPING SHALL BE PER THE UNIFORM PLUMBING CODE, MOST CURRENT AND ADOPTED EDITION AND ALL LOCAL AMENDMENTS.
- INSULATE COLD PIPES IN INTERIOR AREAS WITH 1" FIBERGLASS INSULATION, WITH VAPOR BARRIER JACKET. (FIBERGLASS 25ASU/SSL-11).
- INSULATE DOMESTIC HOT WATER PIPES, UP TO 2", WITH 1" FIBERGLASS INSULATION, PIPES 2-1/2" OR LARGER, INSULATE WITH 1-1/2" FIBERGLASS INSULATION. (FIBERGLASS 25 ASU/SSL-11)
- DOMESTIC HOT AND COLD WATER PIPING SHALL BE TYPE "L" HARD DRAWN COPPER TUBING, WROUGHT SOLDER TYPE FITTINGS, 95/5 TIN-ANTIMONY OR LEAD FREE SILVER BEARING SOLDER. OPTIONAL: DISTRIBUTION POTABLE PLUMBING PIPING SHALL BE REHAU ENGLE PROCESS PEX "A" RAUPEX UV SHIELDED PIPE. PIPES FOR COLD WATER SHALL BE BLUE UV SHIELDED AND FOR HOT WATER IT SHALL BE RED UV SHIELDED. FITTING SYSTEM SHALL BE REHAU EVERLOG, AND VALVES WHERE USED WITH PEX SHALL BE EITHER PEX COMPRESSION OR EVERLOG BY SWEAT. POTABLE SYSTEM. SHALL BE PLUMBED IN THE HOME RUN FASHION, WITH THE FEED TO EACH FIXTURE SUPPLIED BY A CONTINUOUS, UNINTERRUPTED RUN OF PEX FROM THE MANIFOLD TO THE FIXTURE SUPPLY INLET. ALL PEX PIPING ROUTED THROUGH ANY AIR PLENUM SHALL BE PLENUM RATED.
- SEWER PIPE SHALL BE CAST IRON SOIL PIPE WITH TYSEAL NEOPRENE GASKETS, CAST IRON NO-HUB MG, OR ALFA COUPLINGS. STAINLESS STEEL COUPLINGS PERMITTED. ABS PIPING AND FITTINGS PERMITTED.
- VENT PIPE SHALL BE CAST IRON SOIL PIPE WITH TYSEAL NEOPRENE GASKETS, NO-HUB FITTINGS, DWV COPPER PIPE AND FITTINGS, OR ABS PLASTIC PIPE AND FITTINGS.
- ALL MECHANICAL WORK SHALL BE PER THE INTERNATIONAL MECHANICAL CODE, MOST CURRENT AND ADOPTED EDITION AND ALL LOCAL AMENDMENTS.
- DUCTWORK SHALL BE FABRICATED SHEET METAL AND INSTALLED IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS.
- ALL PIPING SHALL BE PRESSURE TESTED IN CONFORMANCE WITH ALL CODES AND LOCAL AMENDMENTS.
- PROPANE PIPING SHALL BE TRACPIPE COUNTERSTRIKE FLEXIBLE GAS PIPING BY OMEGA/LEX.

MISC. CONSTRUCTION NOTES

- DOMESTIC WATER PIPES, BOTH HOT AND COLD, SHALL BE RUN IN UPPER HALF OF FLOOR JOISTS, AS CLOSE TO THE SUBFLOOR AS PRACTICAL, UNLESS THERE ARE STRUCTURAL RESTRICTION THAT REQUIRE PIPES TO BE INSTALLED BELOW FLOOR JOISTS. HOLES IN JOISTS MAY BE DRILLED IN WEBS IN ACCORDANCE WITH JOIST MANUFACTURER'S REQUIREMENTS, BUT NO FLANGES MAY BE CUT OR DRILLED WITHOUT PRIOR NOTIFICATION OF THIRHA ON SITE SUPERINTENDENT. USE SUFFICIENT SLEEVES AT HOLES TO PREVENT WATER PIPES FROM RATTLING. IF PEX TUBING IS USED, INSTALL SLEEVES AT HOLES AS RECOMMENDED BY MANUFACTURER.
- DOMESTIC WATER PIPE INSTALLED BELOW FLOOR JOISTS, OR IN LOWER HALF OF FLOOR JOISTS, MUST BE INSULATED WITH MINIMUM 1" WALL THICKNESS FOAM INSULATION. PIPES IN UPPER HALF OF FLOOR JOISTS DO NOT NEED PIPE INSULATION AS THEY WILL BE INSULATED WITH FLOOR INSULATION.
- ABS DWV PIPES CAN BE INSTALLED BELOW FLOOR JOISTS AND DO NOT NEED TO BE INSULATED.
- INSTALL DRAIN VALVES ON DOMESTIC WATER PIPES IN THE CRAWLSPACE, LOCATED AT THE LOW POINTS. DRAIN VALVES SHALL BE BALL VALVES WITH SOREW ON BRASS CAPS TO PREVENT ACCIDENTAL DRAINING. INSTALL JUST BELOW FLOOR INSULATION AND IDENTIFY WITH BRASS TAGS ON CHAINS TO IDENTIFY HOT OR COLD PIPE.
- ALL PLUMBING VENTS SHALL TERMINATE ABOVE THE ROOF AS SHOWN ON DRAWINGS.
- TRAPS SHALL BE ABS PIPE AND FITTINGS WITH THREADED COUPLINGS.
- WATER CLOSETS SHALL HAVE INSULATED TANKS WITH INSULATION BONDED TO THE INSIDE OF THE TANK.
- THE KITCHEN RANGE SHALL BE PROPANE AND PROVIDED BY THIRHA, CONTRACTOR TO PROVIDE THE PROPANE PIPING AS INDICATED ON DRAWINGS AND INCLUDE AN APPROVED SHUTOFF VALVE AND APPLIANCE CONNECTOR.
- THE CLOTHES DRYER SHALL BE PROPANE, CONTRACTOR TO PROVIDE THE PROPANE PIPING AS INDICATED ON DRAWINGS AND INCLUDE AN APPROVED SHUTOFF VALVE AND APPLIANCE CONNECTOR.
- CONTRACTOR TO PROVIDE AND INSTALL GARBAGE DISPOSAL UNIT AT EACH KITCHEN SINK, GARBAGE DISPOSAL TO BE 1/2 HP KENMORE #60011 OR EQUAL.

NO CHANGES THIS SHEET

MECHANICAL EQUIPMENT SCHEDULE

HEAT PUMP, HP-1 EXTERIOR
 FUJITSU MULTI ZONE HALCYON HEAT PUMP, MODEL AOU45RLEKZ, CAPABLE TO CONNECTING TO 5 INDOOR UNITS. 45 MBH COOLING CAPACITY 48 MBH HEATING CAPACITY. COOLING OPERATING RANGE 14°F TO 115°F, HEATING OPERATING RANGE 5°F TO 75°F. 208-230 VOLT, 60 HZ 1 PHASE. 30 AMP BREAKER.

HEAT PUMP, HP-2 INTERIOR
 FUJITSU MULTI ZONE HALCYON WALL MOUNTED, MODEL ASU15RLEF1, NOMINAL 14 MBH COOLING AND 16.3 MBH HEATING 208-230 VOLT, 60 HZ, 1 PHASE. 0.25 AMPS, 28 WATTS. 221 TO 430 HEATING CFM. PROVIDE WITH 2 WIRE SIMPLE REMOTE CONTROL.

HEAT PUMP, HP-2 INTERIOR
 FUJITSU MULTI ZONE HALCYON WALL MOUNTED, MODEL ASU17RLEF1, NOMINAL 7 MBH COOLING AND 8.1 MBH HEATING 208-230 VOLT, 60 HZ, 1 PHASE. 0.13 AMPS, 15 WATTS. 194 TO 330 HEATING CFM. PROVIDE WITH 2 WIRE SIMPLE REMOTE CONTROL.

DIRECT VENT GAS HEATER, GH-1
 RINNAI DIRECT VENT WALL FURNACE. 36.5 MBH PROPANE INPUT 29.2 MBH OUTPUT, 120V, 60 HZ, 117 WATTS, STAINLESS STEEL BURNERS. ELECTRONIC SPARK IGNITION. TEMPERATURE SETTINGS 60°F TO 80°F, 1 DEGREE INCREMENTS. RINNAI MODEL EX38CT.

INSTANTANEOUS WATER HEATER, IWH-1
 RINNAI MODEL RU199P SERIES, PROPANE, 15,000 - 199,000 BTU/HR, 0.26 - 9.8 GPM FLOW RATE (MIN TO MAX), 120 VOLT 60 HZ MAX CURRENT 4 AMP, FUSE 10 AMP. PROVIDE WITH CONCENTRIC VERTICAL VENTING KIT. ROUTE CONDENSATE TO WASHER BOX P8-1.

PROPANE TANK, PT-1
 420 POUND PROPANE TANK ON 42"x42"x4" CONCRETE PAD WITH FISHER MODEL #R232A-BBF 10-13" WC, MAX INLET 250 PSI REGULATOR.

HEAT RECOVERY VENTILATOR, HRV-1
 BROAN MODEL HRV160, 150 CFM AT 0.5" WC, 120 VOLT, 60HZ, 1.3 AMPS, 98 WATTS. PROVIDE WITH EXTERIOR WALL MOUNTED AIR INTAKE HOOD, EXTERIOR WALL MOUNTED EXHAUST AIR HOOD, 6" Ø WALL MOUNTED CIRCULAR AIR SUPPLY DIFFUSER AND 6" Ø WALL MOUNTED CIRCULAR RETURN AIR GRILL.

FAN SCHEDULE

TAG	LOCATION	SCFM	RPM	OUTLET PPM	SP	TYPE	NOM. SIZE	USE	DISC.	MOTOR HP VOLT/ PH	REMARKS
EF-1	KITCHEN UNIT	300	N/A	N/A	0.25"	CENT	N/A	E/A	HORIZ	1/25/ ①	BROAN ALLURE II MODEL QS2 SERIES, 30" 120V PANASONIC WHISPERFIT-LITE; FY-11VFLZ
EF-2	BATH ROOM UNIT	110	1,380	N/A	0.1"	CENT	N/A	E/A	HORIZ	35W / ①	

① COORDINATE ELECTRICAL REQUIREMENTS WITH ELECTRICAL DRAWINGS.

PLUMBING FIXTURE CONNECTION SCHEDULE

TAG	FIXTURE	WASTE	VENT	HW	CW	REMARKS
P1-1	WATER CLOSET, ADA	3"	2"	N/A	1/2"	TANK TYPE, FLOOR MOUNTED, ADA, AMERICAN STANDARD CABET, RIGHT HEIGHT, ELONGATED COUNTER TOP DROP-IN, ADA OVAL
P3-1	LAVATORY, ADA	1-1/2"	1-1/2"	1/2"	1/2"	AMERICAN STANDARD COLONY OVAL
P4-1	KITCHEN SINK	1-1/2"	1-1/2"	1/2"	1/2"	TWO COMPARTMENT, STAINLESS STEEL JUST MODEL ODL-2233-A-GR-L
P6-1	BATH TUB	1-1/2"	1-1/2"	1/2"	1/2"	① AMERICAN STANDARD ACRYLUX BATH KIT COMPLETE TUB AND WALL KIT
P8-1	WASHER BOX	2"	1-1/2"	1/2"	1/2"	GUY GREY MODEL T200
HB-1	HOSE BIB	N/A	N/A	N/A	1/2"	EXTERIOR, NON FREEZE WITH VACUUM BREAKER WOODFORD MODEL T7 SERIES
WHA-1	WATER HAMMER ARRESTOR	N/A	N/A	N/A	N/A	PISTON OPERATED WATER HAMMER ARRESTOR MIFAB MWHS-A

NOTE(S): ① PROVIDE WITH PRESSURE BALANCED VALVE.
 1. PROVIDE ALL PLUMBING FIXTURES WITH ALL REQUIRED TRIM FOR COMPLETE AND OPERABLE SYSTEMS.

9/28/2020



REVISION:	DATE:
△ RELOCATE <u>HP-1</u>	9/25/20
AND CHANGE <u>IWH-1</u>	
△ RELOCATE <u>DRYER</u>	9/28/20
EXHAUST TERMINATION	

DGC ENGINEERS

 ENGINEERING THROUGHOUT ALASKA WITH INFINITE POSSIBILITIES

10221 EVERGREEN TREE STREET
 ANCHORAGE, AK 99507
 (907) 441-9328
 WWW.DGCENGINEERS.COM

CRAIG DUPLEX
CRAIG, ALASKA

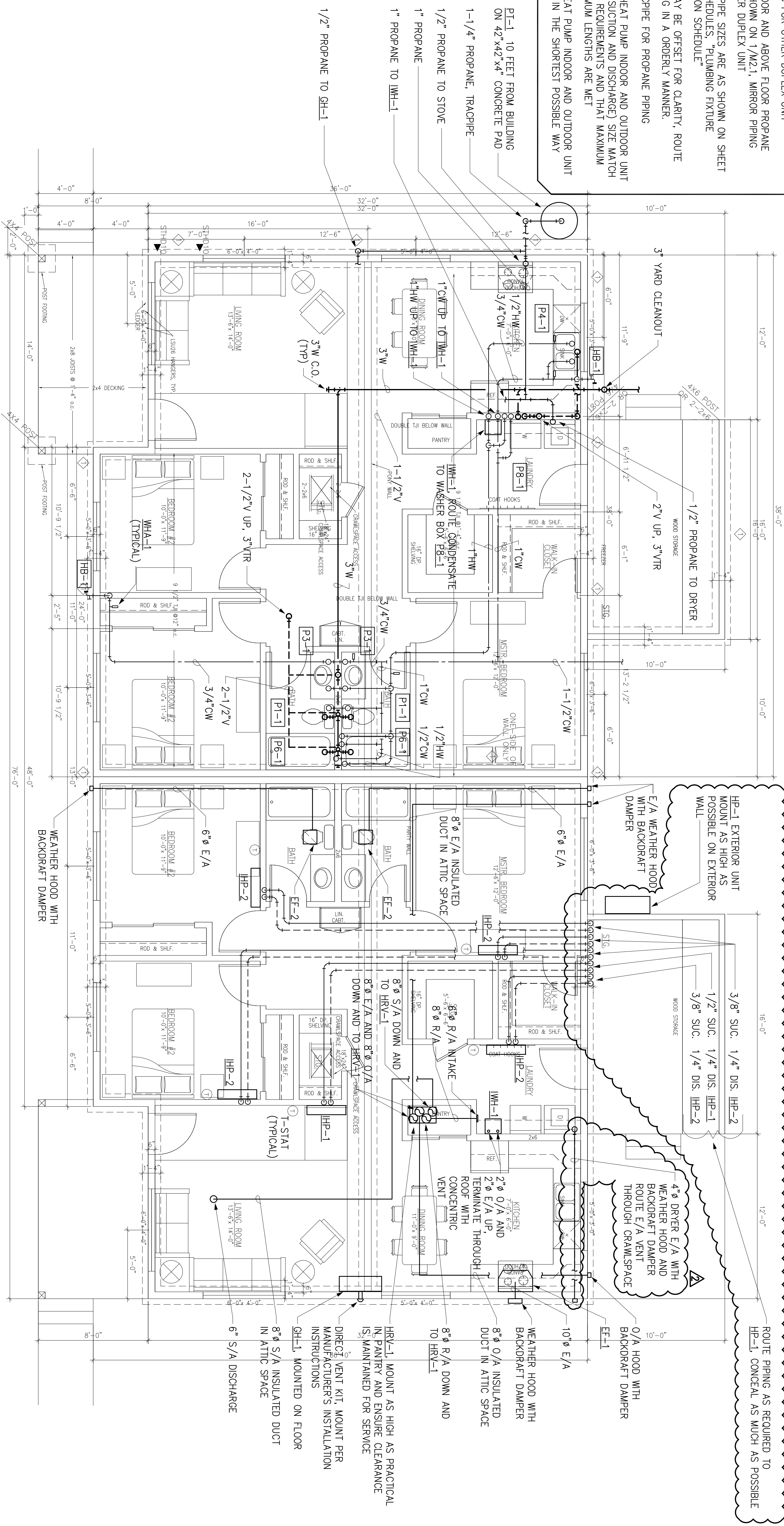
JOB NUMBER: 2003 DRAWN BY: DGC CHECKED BY: DGC MECHANICAL SCHEDULES	THIRHA JENKINS DRIVE JUNEAU, AK 99801
DATE: 9/28/2020	

SHEET:
M0.2

NO CHANGES THIS SHEET

NOTES:

1. UNDERFLOOR AND ABOVE FLOOR WASTE AND DOMESTIC WATER PIPING SHOWN ON 1/M2.1, MIRROR PIPING FOR OTHER DUPLEX UNIT
2. ALL VENT PIPING SHOWN ON 1/M2.1, MIRROR PIPING FOR OTHER DUPLEX UNIT
3. ALL HVAC SHOWN ON 2/M2.1, MIRROR ALL HVAC FOR OTHER DUPLEX UNIT
4. UNDERFLOOR AND ABOVE FLOOR PROPANE PIPING SHOWN ON 1/M2.1, MIRROR PIPING FOR OTHER DUPLEX UNIT
5. RUNOUT PIPE SIZES ARE AS SHOWN ON SHEET M0.2, SCHEDULES, PLUMBING FIXTURE CONNECTION SCHEDULE
6. PIPING MAY BE OFFSET FOR CLARITY, ROUTE ALL PIPING IN A ORDERLY MANNER.
7. USE TRACPIPE FOR PROPANE PIPING
8. ENSURE HEAT PUMP INDOOR AND OUTDOOR UNIT LINESET (SUCTION AND DISCHARGE) SIZE MATCH THE UNIT REQUIREMENTS AND THAT MAXIMUM AND MINIMUM LENGTHS ARE MET
9. ROUTE HEAT PUMP INDOOR AND OUTDOOR UNIT LINESETS IN THE SHORTEST POSSIBLE WAY



1 PLUMBING PLAN (TYPICAL EACH UNIT)
SCALE: 1/4" = 1'-0"

2 HVAC PLAN (TYPICAL EACH UNIT)
SCALE: 1/4" = 1'-0"



REVISION:	DATE:
RELOCATE HP-1	9/25/20
AND CHANGE IWH-1	
RELOCATE DRYER	9/28/20
EXHAUST TERMINATION	

8 DGC ENGINEERS 8
 ENGINEERING THROUGHOUT ALASKA WITH INFINITE POSSIBILITIES
 10221 EVERGREEN TREE STREET
 ANCHORAGE, AK 99507
 (907) 441-9328
 WWW.DGCENGINEERS.COM

**CRAIG DUPLEX
CRAIG, ALASKA**

JOB NUMBER: 2003 DRAWN BY: DGC CHECKED BY: DGC PLUMBING AND HVAC	DATE: 9/28/2020
---	--------------------

SHEET:
M2.1