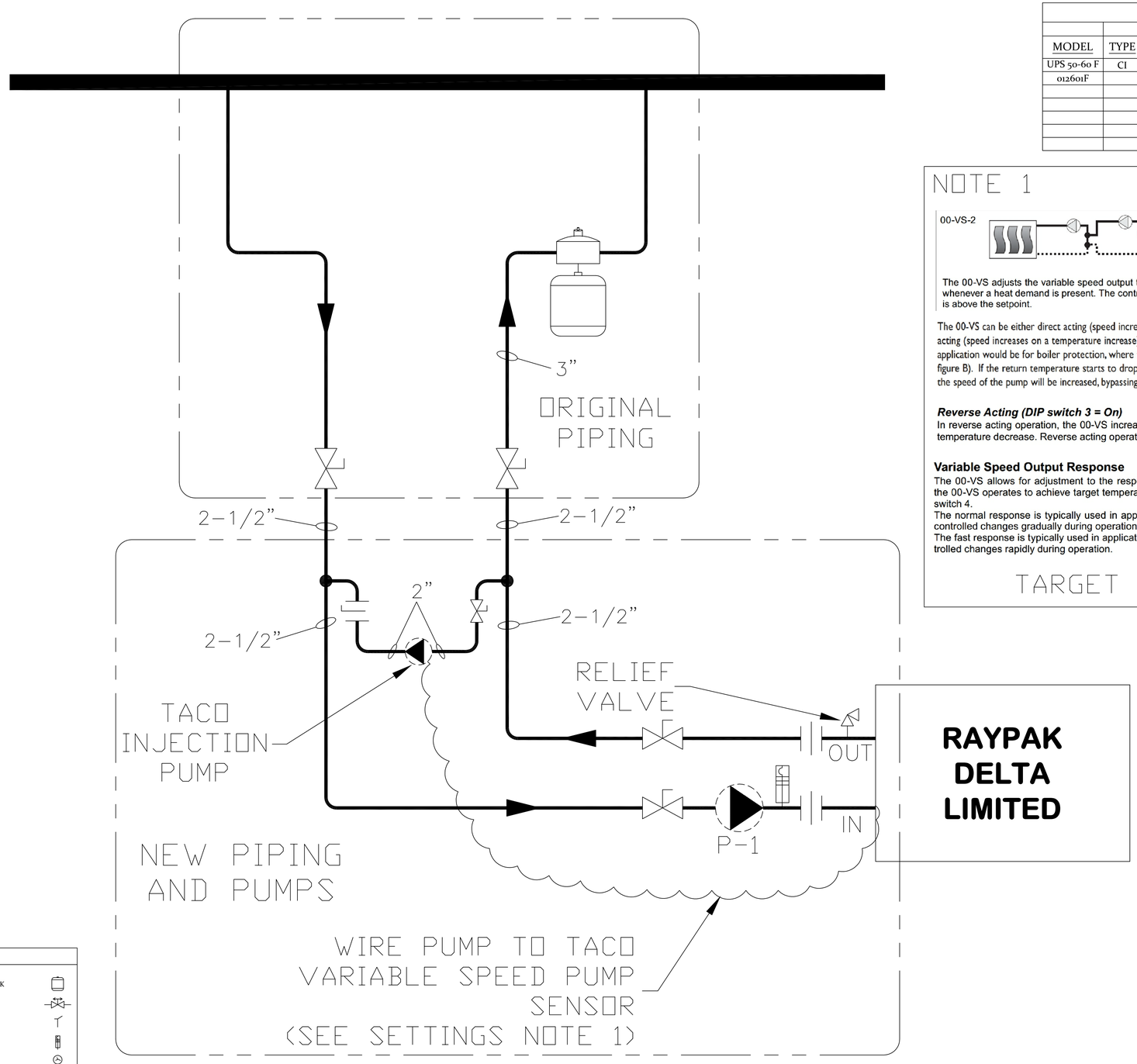


PIPING DIAGRAM

NOT TO SCALE

PUMP SCHEDULE

MODEL	TYPE	HP	PHASE	VOLTS	SPD.	FLANGE	MAT. #	SIZE	PUMP#
UPS 50-60 F	CI	1/2	1	115	1	96409354	97523134	2"	P-1
012601F								2"	TACO INJECT.

NOTE 1

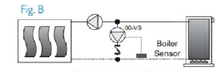
00-VS-2

DIP 5 = Off (Linear Output Characteristic)
DIP 3 = On (Reverse Acting)
DIP 1 = Off (Setpoint Target)

The 00-VS adjusts the variable speed output to the P1 pump to maintain at least a setpoint temperature at the boiler sensor (S3) whenever a heat demand is present. The control adjusts the variable speed output towards zero speed as long as the temperature is above the setpoint.

The 00-VS can be either direct acting (speed increases on a temperature decrease) or reverse acting (speed increases on a temperature increase). A typical direct acting (limiting setpoint) application would be for boiler protection, where the 00-VS is installed on a bypass loop (see figure B). If the return temperature starts to drop below the set temperature (75°- 165°F) then the speed of the pump will be increased, bypassing hot water to protect the boiler.

Fig. B

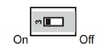


Bypass Injection System

See applications brochure for additional schematics.

Reverse Acting (DIP switch 3 = On)

In reverse acting operation, the 00-VS increases speed on a temperature increase and decreases speed on a temperature decrease. Reverse acting operation is typically used in cooling applications.

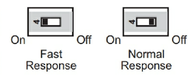


Variable Speed Output Response

The 00-VS allows for adjustment to the response rate. The response rate is the speed at which the 00-VS operates to achieve target temperature. The response adjustment is made through DIP switch 4.

The normal response is typically used in applications where the temperature at the sensor being controlled changes gradually during operation.

The fast response is typically used in applications where the temperature at the sensor being controlled changes rapidly during operation.



TARGET WATER TEMP: 120°

RAYPAK DELTA LIMITED

PIPING SYMBOLS LEGEND

MIXING VALVE		EXPANSION TANK	
DIVERTING VALVE		BY-PASS VALVE	
PRESSURE REDUCE VALVE		DRAIN VALVE	
PUMP		THERMOMETER	
CHECK VALVE		GAUGE	
UNIONS		BALL VALVE	
CIRCUIT SETTER		AIR SEPARATOR	
ZONE VALVE		BACK FLOW PREVENTER	
FLOWGARD VALVE		AIR VENT	

NOTES:

* MAX PIPE SPACING TO BE 12 INCHES OR 4 PIPE DIAMETERS APART OR WHICH EVER IS LESS.

CONSULTANTS:
B&C TEN AIR
41441 W 11 MILE RD MICHIGAN
NOVI

thawPAK
Snow Melting & Radiant Heating Systems

PROJECT NAME:
TRANSWESTERN MICHIGAN
NOVI

THAW-PAK DISTRIBUTOR:
PERFORMANCE engineering group

DRAWN BY: *Gordon Faustich*

REVIEWED BY: *JT*

APPROVED BY: *JT*

ISSUED FOR

02/06/14	INSTALLATION
02/12/14	INSTALLATION
02/17/14	CHANGED TO INJECTION PUMP
02/18/14	RECONFIGURED PIPING
05/05/14	ADDED PUMP SCHED. & INFO

DRAWING NO.
PEG14-003P_C

SHEET NO.
P1