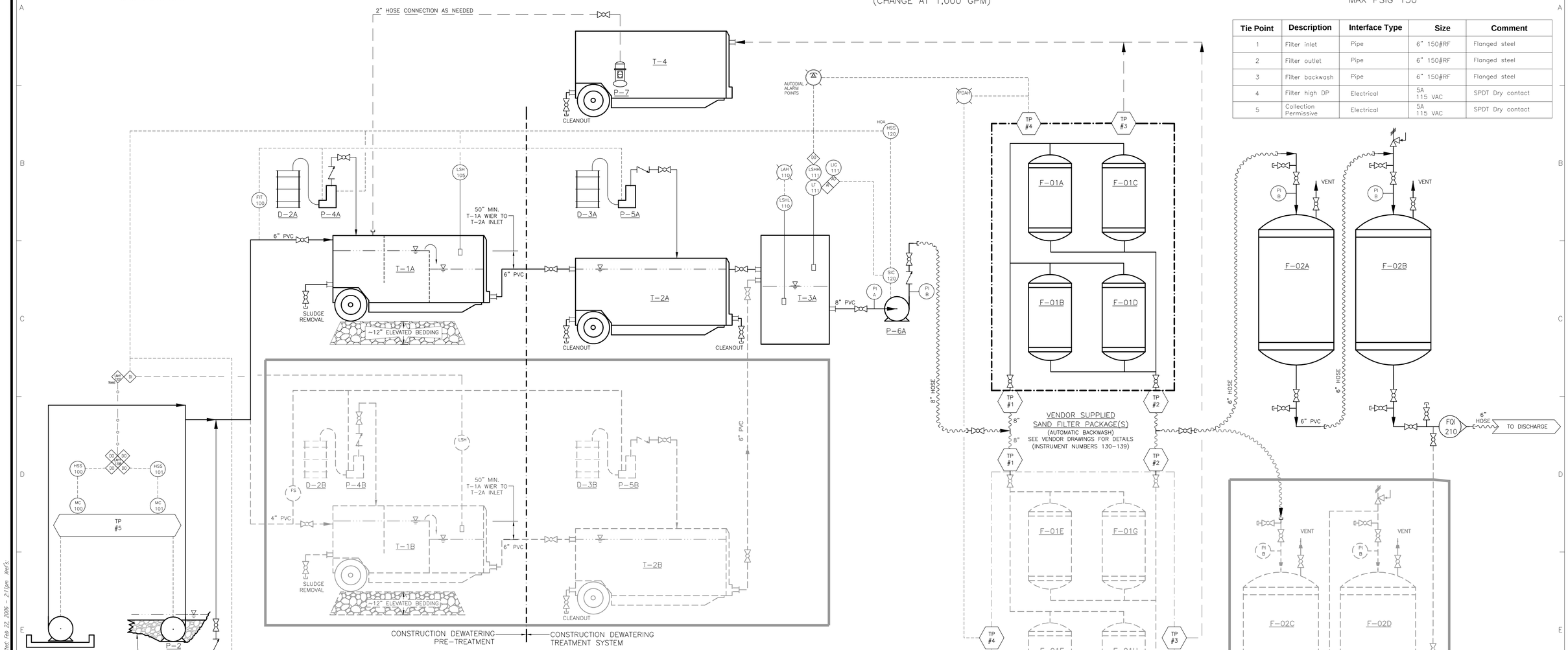
P-1	P-2	D-1	P-3A/B	D-2&3 A/B	P-4&5 A/B	T-1A/B	T-2A/B	T-3A/B	P-6A	F-01	P-7	T-4	F-02A/B
DECON AREA SUMP PUMP	CONSTRUCTION PIT SUMP PUMP TRASH PUMP 500 GPM GAS POWERED	DE-EMULSIFIER 55 GAL DRUM	DE-EMULSIFIER METERING PUMP	FLOCCULANT 55 GAL DRUM	CHITOSAN METERING PUMP	WEIR TANK 18,000 GAL CARBON STEEL	FRAC TANK 21,000 GAL CARBON STEEL	SURGE TANK 21,000 GAL CARBON STEEL	DISCHARGE PUMP 25 HP, 3ø, 460 VAC CENTRIFUGAL 500 GPM @ 110' TDH (CHANGE AT 1,000 GPM)	SAND FILTER UNIT VENDOR PACKAGE 2 PAIRS @ 500 GPM PER PAIR	SUBMERSIBLE TRANSFER PUMP 30 GPM, 115 VAC, ½ HP	BACKWASH HOLDING TANK 20,000 GAL CARBON STEEL	LIQUID PHASE GRANULAR ACTIVATED CARBON 10,000 LBS MAX PSIG 150

Tie Point	Description	Interface Type	Size	Comment
1	Filter inlet	Pipe	6" 150#RF	Flanged steel
2	Filter outlet	Pipe	6" 150#RF	Flanged steel
3	Filter backwash	Pipe	6" 150#RF	Flanged steel
4	Filter high DP	Electrical	5A 115 VAC	SPDT Dry contact
5	Collection Permissive	Electrical	5A 115 VAC	SPDT Dry contact



ABBREVIATIONS

AI	ANALOG IN
AO	ANALOG OUT
DI	DIGITAL IN
DO	DIGITAL OUT
FQI	FLOW TOTALIZING INDICATOR
HSS	HAND SELECTOR SWITCH
LAS	LEVEL ALARM SWITCH
LAH	LEVEL ALARM HIGH
LHY	LEVEL HIGH RADIO RECIEVER OR TRANSMITTER
LSH	LEVEL SWITCH HIGH
LSHH	LEVEL SWITCH HIGH-HIGH
LSHL	LEVEL SWITCH HIGH/LOW
MC	MOTOR CONTACT

LEGEND

—·—▽—·—	INDICATES FLUID LEVEL
— — — —	INTERMITTANT FLOW
- - - - - -	SIGNAL LINE
—o—o—o—o—	RADIO COMMUNICATIONS LINE
- - - - - -	ADDITIONAL EQUIPMENT FOR 1,000 GPM
PI A	PRESSURE INDICATOR 0-15 PSIG
PI B	PRESSURE INDICATOR 0-60 PSIG
	AUTO DIALER
TP ##	EQUIPMENT TIE POINT
DO	DIGITAL INTERFACE I/O

NOTES:

1. PRELIMINARY MOBILIZATION FOR TREATING 500 GALLONS PER MINUTE. PHANTOMED (— —) EQUIPMENT NEEDED FOR 1,000 GALLONS PER MINUTE.
2. ALL MAJOR PIPING FLEXIBLE HOSE WITH CAM-LOCK FITTINGS.
3. SPARE PUMP FOR TRANSFER OR DISCHARGE TO BE ONSITE.
4. TYPICAL OF 2 SYSTEMS.
5. SYSTEM SCHEMATIC REPRESENTS CONSTRUCTION PHASE TREATMENT SYSTEM.
6. SYSTEM TO INCLUDE HOSES AND FITTINGS NEEDED FOR BACKWASH.
7. DEWATERING CONTRACTOR TO PROVIDE DRY CONTACT (5 AMP) TO DISABLE DEWATERING PUMPS DURING ALARM EVENTS.

DRAFT BID SET

RETEC

NO	DRWN	DATE	REVISION	CHKD	DATE	APPVD	DATE
5							
4							
3							
C							
B	RCW	2/--/06	ISSUED FOR PRELIMINARY BID				
A	RCW	1/17/06	60% DRAWINGS - NOT FOR CONSTRUCTION				

THE BNSF RAILWAY COMPANY
SKYKOMISH, WASHINGTON
BN050-19390-200

CURRENT DATE 2/__/06

CONSTRUCTION WATER TREATMENT SYSTEM
PIPING & INSTRUMENTATION DIAGRAM

DRAWING NO. P-1 REVISION B

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