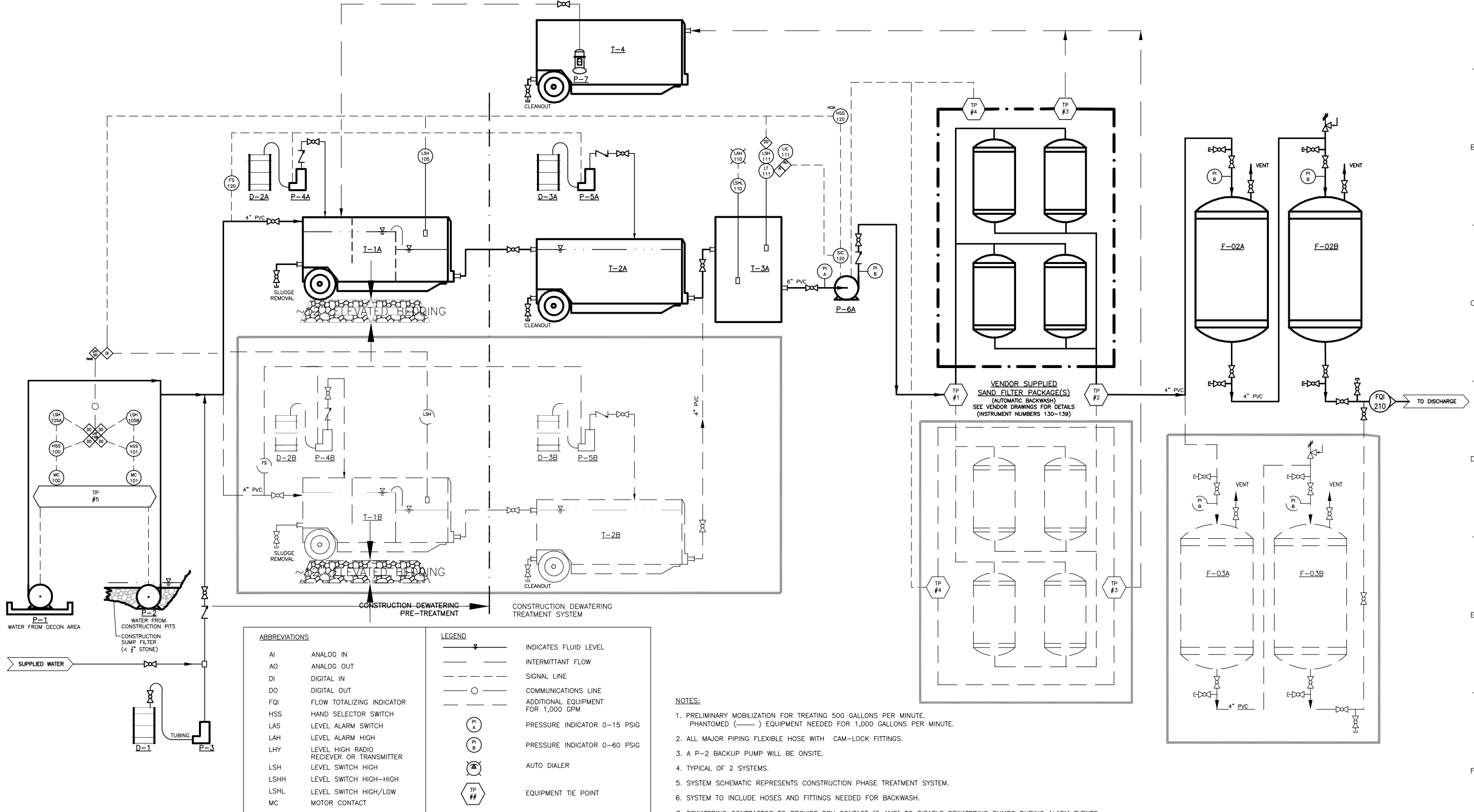


File: H:\BNSF-Skykomish\2008 remediation\30% drawings\water_treatment_system(B).dwg Layout: C-15 User: emarshall Plotted: Jan 09, 2008 - 12:25pm Xref's:

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|--------------------------------|------------------------------------------------------------------------------|-------------------------------------|------------------------------------------|----------------------------------------|----------------------------------------|---------------------------------------------------|---------------------------------------------------|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| P-1
DECON AREA
SUMP PUMP | P-2
CONSTRUCTION
PIT SUMP PUMP
TRASH PUMP
500 GPM
GAS POWERED | D-1
DE-EMULSIFIER
55 GAL DRUM | P-3A/B
DE-EMULSIFIER
METERING PUMP | D-2&3 A/B
FLOCCULANT
55 GAL DRUM | P-4&5 A/B
CHITOSAN METERING
PUMP | T-1A/B
WEIR TANK
20,000 GAL
CARBON STEEL | T-2A/B
FRAC TANK
20,000 GAL
CARBON STEEL | T-3A/B
SURGE TANK TANK
20,000 GAL
CARBON STEEL | P-6A
DISCHARGE PUMP
25 HP, 3 ϕ , 460 VAC
CENTRIFUGAL
500 GPM @ 110' TDH
(CHANGE AT 1,000 GPM) | F-01
SAND FILTER UNIT
VENDOR PACKAGE
2 PAIRS @
500 GPM PER PAIR | P-7
SUBMERSIBLE
SUMP PUMP
30 GPM, 115 VAC,
1/2 HP | T-4
BACKWASH
HOLDING TANK
20,000 GAL
CARBON STEEL | F-02A/B
LIQUID PHASE
GRANULAR
ACTIVATED CARBON
10,000 LBS
MAX PSIG 150 | F-03A/B
LIQUID PHASE
GRANULAR
ACTIVATED CARBON
10,000 LBS
MAX PSIG 150 |
|--------------------------------|------------------------------------------------------------------------------|-------------------------------------|------------------------------------------|----------------------------------------|----------------------------------------|---------------------------------------------------|---------------------------------------------------|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|



ABBREVIATIONS		LEGEND	
AI	ANALOG IN		INDICATES FLUID LEVEL
AO	ANALOG OUT		INTERMITTANT FLOW
DI	DIGITAL IN		SIGNAL LINE
DO	DIGITAL OUT		COMMUNICATIONS LINE
FQI	FLOW TOTALIZING INDICATOR		ADDITIONAL EQUIPMENT FOR 1,000 GPM
HSS	HAND SELECTOR SWITCH		PRESSURE INDICATOR 0-15 PSIG
LAS	LEVEL ALARM SWITCH		PRESSURE INDICATOR 0-60 PSIG
LAH	LEVEL ALARM HIGH		AUTO DIALER
LHY	LEVEL HIGH RADIO RECEIVER OR TRANSMITTER		EQUIPMENT TIE POINT
LSH	LEVEL SWITCH HIGH		
LSHH	LEVEL SWITCH HIGH-HIGH		
LSHL	LEVEL SWITCH HIGH/LOW		
MC	MOTOR CONTACT		

- NOTES:**
- PRELIMINARY MOBILIZATION FOR TREATING 500 GALLONS PER MINUTE. PHANTOMED (---) EQUIPMENT NEEDED FOR 1,000 GALLONS PER MINUTE.
 - ALL MAJOR PIPING FLEXIBLE HOSE WITH CAM-LOCK FITTINGS.
 - A P-2 BACKUP PUMP WILL BE ONSITE.
 - TYPICAL OF 2 SYSTEMS.
 - SYSTEM SCHEMATIC REPRESENTS CONSTRUCTION PHASE TREATMENT SYSTEM.
 - SYSTEM TO INCLUDE HOSES AND FITTINGS NEEDED FOR BACKWASH.
 - DEWATERING CONTRACTOR TO PROVIDE DRY CONTACT (5 AMP) TO DISABLE DEWATERING PUMPS DURING ALARM EVENTS.

PIPING AND INSTRUMENTATION DIAGRAM 30% DRAWINGS - NOT FOR CONSTRUCTION

		THE BNSF RAILWAY COMPANY SKYKOMISH, WASHINGTON 01140-204-270		SKYKOMISH 2008 EDR CONSTRUCTION WATER TREATMENT SYSTEM PROCESS AND INSTRUMENTATION DIAGRAM									
NO	DRWN	DATE	REVISION	CHKD	DATE	APPVD	DATE	CURRENT DATE	12/20/07	DRAWING NO.	C-18	REVISION	