DESIGN ANALYSIS

Design Loadings

The following tabulation summarizes the design loads and flows to be used for sizing the various processes at the Sedgwick County Rural Water District #1 Booster Pump Station.

Design Flows

Parameters

Flow (MGD)	
Minimum	0.07
Max Day	1.21

Process Design Analysis

1. Low Service Pumps

Number	2
Type	End Suction
Speed	3600 rpm
Design Conditions	840 gpm
TDH	116 ft
Horsepower	50 HP
Electrical	460/60/3

1. Jockey Pump

Number	1
Type	End Suction
Speed	1800 rpm
Design Conditions	120 gpm
TDH	81 ft
Horsepower	5 HP
Electrical	460/60/3

2. Ammonium Sulfate Feed (12% Solution)

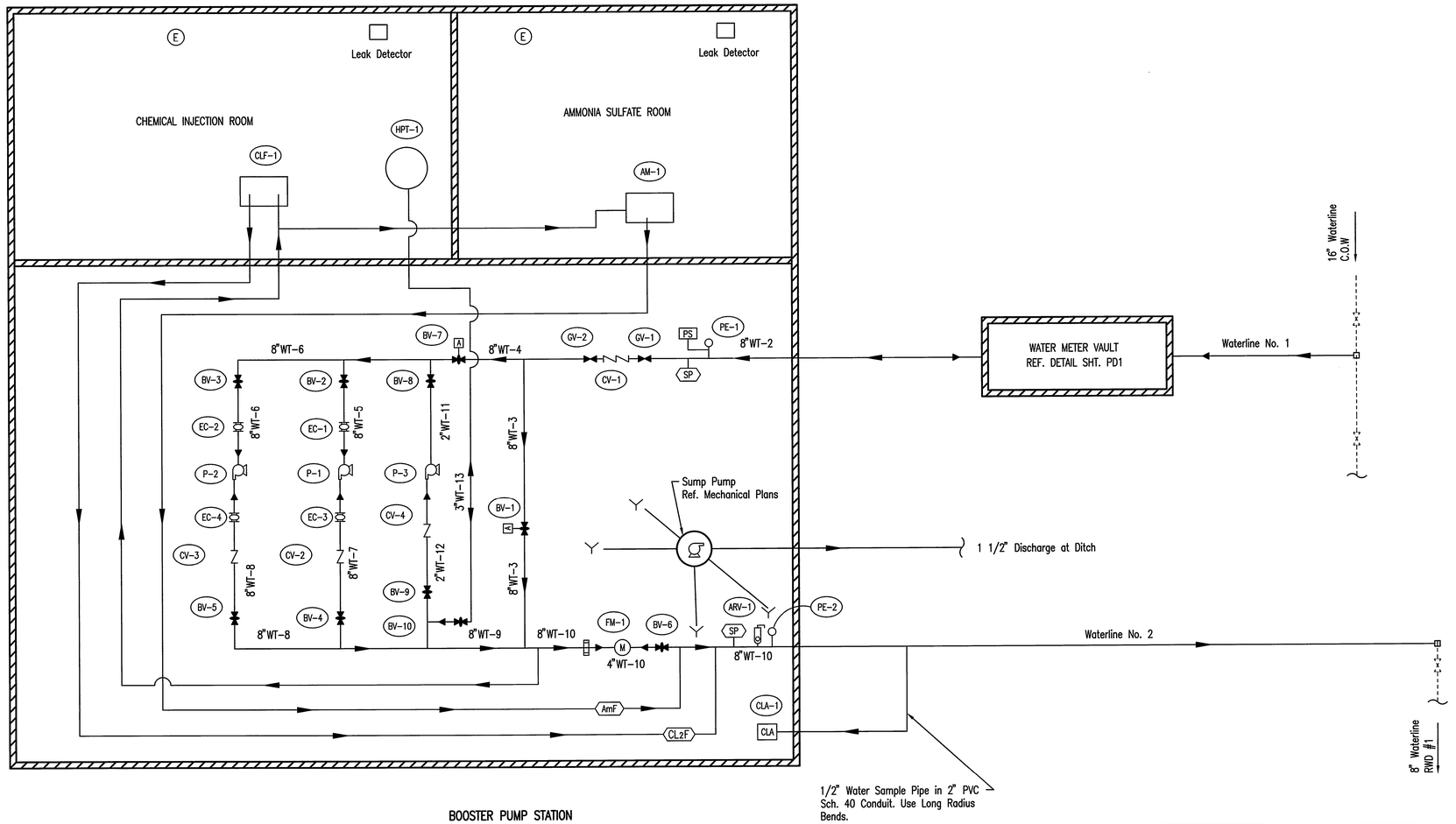
Number	1
Equipment Location	Booster Pump Station
Feed Location	8" Waterline
Feeder Type	Metering Pump
Metering Pump Size	5 gph
Range	0–2 mg/L
Storage	50 lb. bags

3. Chlorine Feed

Number	1
Equipment Location	Booster Pump Station
Feed Location	8" Waterline
Feeder Type	Liquid
Range	0–4 mg/L
Storage	50 lb. Pails

LEGEND

- GV– GATE VALVE
- BV– BUTTERFLY VALVE
- CV– CHECK VALVE
- P– PUMP
- FLOOR DRAIN
- PS PRESSURE SWITCH
- EC– EXPANSION COUPLING
- FM– M FLOW METER
- REDUCING FITTING
- A ACTUATOR
- SLEEVE COUPLING
- PE– PRESSURE ELEMENT
- DIRECTION OF FLOW
- PROPOSED PIPING
- E MAN DOWN CONTACT
- ARV– AIR AND VACUUM RELIEF VALVE
- BLIND FLANGE
- PIPING BY OTHERS
- PROPOSED STRUCTURE WALL
- 12"WT–10 PIPE DESIGNATION
- DENOTES CONNECTION TO EXISTING PIPE
- SP SAMPLE POINT (Ref Schematic, Sheet PS4)
- CLA– CLA CHLORINE ANALYZER (Ref Schematic, Sheet PS3)
- CLF– Cl2F CHLORINE FEED (Ref Schematic, Sheet PS3)
- AM– AmF AMMONIA FEED (Ref Schematic, Sheet PS4)



BOOSTER PUMP STATION

No.	Revision	By	Date

SEDGWICK COUNTY RURAL WATER DISTRICT #1
WATER DISTRIBUTION SYSTEM IMPROVEMENTS

PROCESS DESIGN AND SCHEMATICS

GARY JANZEN, P.E. – CITY ENGINEER
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Designed by	SCU	Job No.	34–11123
Drawn by	CAE	Date	JULY 2013

Sht. PS1 of 24

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O:\2011\11123\11123-PS1 Process Design and Schematic