

Section 11250



CORPS OF ENGINEERS
NORTHWEST AREA OFFICE

JUL 01 2002

APPROVAL DETAILS ON 4025
FORM 4025 ACTION CODE C

Quality Products for Quality Water

Submittal

Phase Construction
Date: DACAL67-99-D-107/0010
6-3-02
23-Item 1 11250

Prepared For:

John B. [Signature]

Wyekoff / Eagle Harbor
Superfund Site

April 25, 2002

Description:

MR-600-3" Twin Water Softener System

Job Number S-041202001

General Specifications

Job Name: Wyekoff/ Eagle Harbor Superfund Site Job No.: S-041202001

Model MR-600-3 Twin Alternating Water Softener System

Exchange Capacity (each vessel)

@ Maximum Salting 600,000 grains

@ Minimum Salting 400,000 grains

Exchange Resin (each vessel)

Quantity 20 Cu. Ft.

Flow Rates

Continuous 175 gpm @ 15 psi pressure loss

Peak 250 gpm @ 25 psi pressure loss

Backwash 30 gpm

Pipe Size

Service 3 in.

Drain 1-1/2 in.

Tank Sizes

Softener diameter 36 in. sideshell 60 in. quantity 2

Briner diameter 39 in. sideshell 60 in. quantity 1

Salt Storage Capacity 1,900 lbs. per tank

Salt used per regeneration 300 lbs. for maximum exchange capacity

Regenerations per refill 6 per tank

Water Meter

Size 3 in. Quantity 1 Type MF Econominder + 3200 ET

Operating Pressure Rating

30-100 psi

Operating Temperature Rating

40 to 120 degrees F.

Dimensions

Length 135 in. Width 50 in. Height 89 in.

Shipping Weight

5,000 lbs.

Marlo Reference Drawing # _____

Equipment Description

Pressure Vessels

Construction	Electric welded non-code construction using high quality low carbon steel.
Pressure Rating	<u>100</u> psi working pressure <u>150</u> psi test pressure
Access	11" x 15" manway in top head
Support	Seismic Zone 4 Structural Angle Iron Legs with Pads
Interior Lining	High quality, FDA and NSF approved, epoxy polyamide coating applied at a 10-12 Dry Film Thickness.
Exterior Coating	Self-priming epoxy paint finish coating. "Safety Blue" color applied at a 6-8 mil Dry Film Thickness.

Internal Distribution System

Upper Distributor	Single point baffle style constructed of Sch 40 galvanized piping and fittings.
Lower Distributor	Hub-radial design constructed of PVC with individual non-clogging fine slotted polyethylene strainers arranged for even flow distribution through the resin bed. The lower distributor will be embedded in a single layer of washed 1/8" x 1/16" gravel.

Face Piping

Pipe and Fittings	Sch 40 galvanized piping with Class 150 malleable cast iron fittings.
Control Valves	Class 125 Y-pattern type with cast iron body, Buna-N diaphragm and stainless steel/brass internal components. Each valve is purposely sized for its exact use to provide a properly balanced system. The valves are slow opening and closing, free of water hammer.

Flow Control

Type Automatic type that maintains proper backwash and flush rates over wide variations in operating pressure and requires no field adjustment.

Brine System

Type Dry salt platform design

Brine Tank Constructed of 3/16" thick rotationally molded polyethylene complete with snug fitting cover

Brine Valve Automatic type with positive air check and float controlled refill volume.

Brine Injector Constructed of PVC purposely sized to convey brine at the correct flow rates with an automatic self-adjusting compensator to maintain a constant brine draw rate regardless of variations in water pressure.

Exchange Resin

Type High capacity, virgin type, sodium-form cation exchange resin stable over the entire pH range.

Capacity Each cubic foot of resin has a nominal exchange capacity of 30,000 grains of hardness when regenerated with 15 lbs. of salt.

Control System

Cycle Controller The controller consists of a regeneration timer and regeneration stager factory assembled in a NEMA-12 enclosure.

Regeneration Timer Signal activated type with means for manual initiation. The timer is fully adjustable to allow for variations in cycle duration.

Regeneration Stager Motor driven multi-port type coupled with the timer to automatically control each step of the regeneration cycle. The stager can be manually operated in the event of electrical power failure.

Alternator

Control maintains a constant supply of soft water by allowing only one unit to be on-line at one time. Once the on-line unit is exhausted, the standby unit goes on-line and the exhausted unit regenerates. After regeneration this unit goes into standby position. This alternating sequence continues automatically when initiated by a meter.

Meter

Mechanical impeller flow meter with 3200ET electronic type timer with digital totalizer and flow rate panel display. User programmed batch volume, immediate regeneration initiation and automatic batch reset.

Accessories

Water hardness test kit.

Pressure gauges and sample cocks on inlet and outlet of each pressure vessel.(precision type with bourdom tube and phenolic case)(Ashcroft 1279 Duragauge)

Instructions

A complete set of installation, operating and maintenance manuals are included in book form.

GUARANTEE

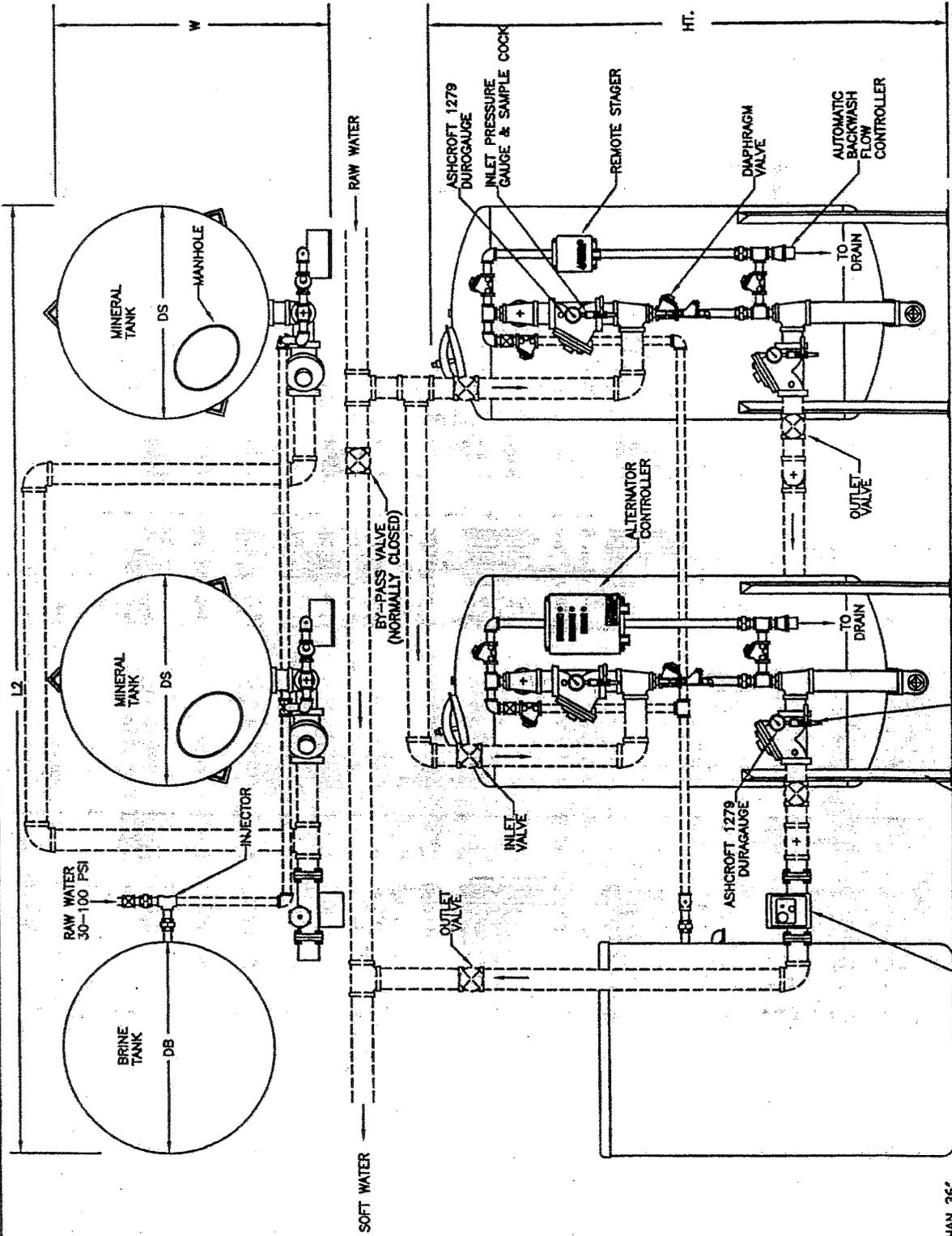
Under normal operating conditions:

1. The softener effluent shall be zero soft as determined by a soap test.
2. The loss of softening resin through attrition during the first three (3) years shall not exceed 3% per year.
3. The softening resin shall not be washed out of the system during backwash.
4. The color and turbidity of the softener effluent shall not be greater than the incoming water.

Any mechanical equipment proving defective in workmanship or material within one year after installation or 18 months after shipment, whichever comes first, shall be replaced FOB factory.

PRODUCT SERIES

MR SOFTENERS



DIMENSION TABLE

L2=	135'
V=	50'
HT=	89'
DS=	36'
DB=	39'

PIPE SIZES

INLET	3"
OUTLET	3"
DRAIN	1-1/2"
METER	3"
INJECTOR	1"

NOTES: MINERAL TANKS SMALLER THAN 36" DIAMETER HAVE HANDHOLES
 PIPING, FITTINGS, ETC. SHOWN IN BOLD LETTERS TO BE FURNISHED BY OTHERS

MR-208-3 FOR ALL SIZES
 VIKOFF/EAGLE HARDWARE
 SUPERFUND, S.I.T.E.
 SP-41302001-1