

File
AIS Projects

MAIN/TH/rn
11300
1 Oct 1980

Director, Utilities Division

Director, Operations Division (Attn: Fred Cone)

Development of Maintenance and Repair, Replacement, and New Work Projects

Encl: (1) Project Support Data

1. It is requested that appropriate projects be developed to accomplish the work described in enclosure (1).

T. HATCHER, P.E.

Page 2 of 2

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July 21A

Director, Operations Division

Director, Operations Division (Admin. Serv. Cont.)

Development of Maintenance and Repair, Ref. Materials, and New Work Projects

Enclosure (1) - Project Support Data

It is requested that appropriate projects be developed to accomplish the work described in enclosure (1).

T. W. BAKER, JR.

Replace Degasifier, RR-85 Water Treatment Plant

Replace the wood degasifier and associated wood components in the mixing chamber at RR-85 with a slat tray unit of fiberglass or other durable material resistant to corrosion for operation in an atmosphere saturated with water vapor, carbon dioxide, hydrogen sulfide and oxygen. The existing unit is worn out in service. The wood in the unit is decaying, and several of the inside trays have collapsed as a result of decay. The blower unit has also corroded. As a result of the deterioration, the unit can no longer effectively reduce CO₂ levels in the water or oxidize iron. See attached specifications.

Estimated Cost: \$15,600

Complete

Enclosure (1)

...the wood degradation and associated wood components in the existing
...with a size of 100-200 nm. The material is resistant to corrosion
...carbon dioxide, hydrogen sulfide and oxygen. The existing unit
...is worn out in service. The wood in the unit is 100%
...and several of the frame trays have collapsed as a result of load.
...As a result of the deterioration the unit
...levels in the water or oxide from
...specifications

Estimated cost: \$15,000

Handwritten notes:
100%
100%

SLAT TRAY DEGASIFIER SPECIFICATIONSGENERAL

The Permutit Co., Inc. will provide One Model TDG-5-26 Slat Tray Degasifier (s) as shown on illustrative drawings No. 185-15785 (6) and 129-25357, for the purpose of (reducing CO₂ from 15 to 5 ppm, oxidizing 4.3 ppm Fe ppm H₂S from 750 gpm of 64 °F water having an inlet alkalinity of 170 ppm.

EQUIPMENT DATAShell

Each Degasifier shall be fabricated of Permutit Permu/Core panels and measure 5 feet square by 10'2" feet high. A sliding, pivoting door shall be included for access to the trays.

The Permu/Core panels shall be reinforced with woven roving fiberglass reinforcement and have a finished gel coat surface. The core material shall be non-metallic; suitable for use in potable water treatment systems and of adequate strength to be free standing and have an adequate safety factor to support the loads. The panel edges shall be sealed and the panels bonded together at all corners.

Stainless Steel truss beams shall be provided to support the trays. Suitable lifting lugs, guide-wire fittings, and tiedown brackets shall be provided. The inlet and outlet connections shall be 6 " and 10 ", and fabricated of PVC terminating in standard flanges to receive the interconnecting piping.

Catchment Pan

The steel catchment pan at the bottom of the unit shall be an integral part of the shell and shall provide at least 12" of water depth to assure catchment and delivery to the effluent flange.

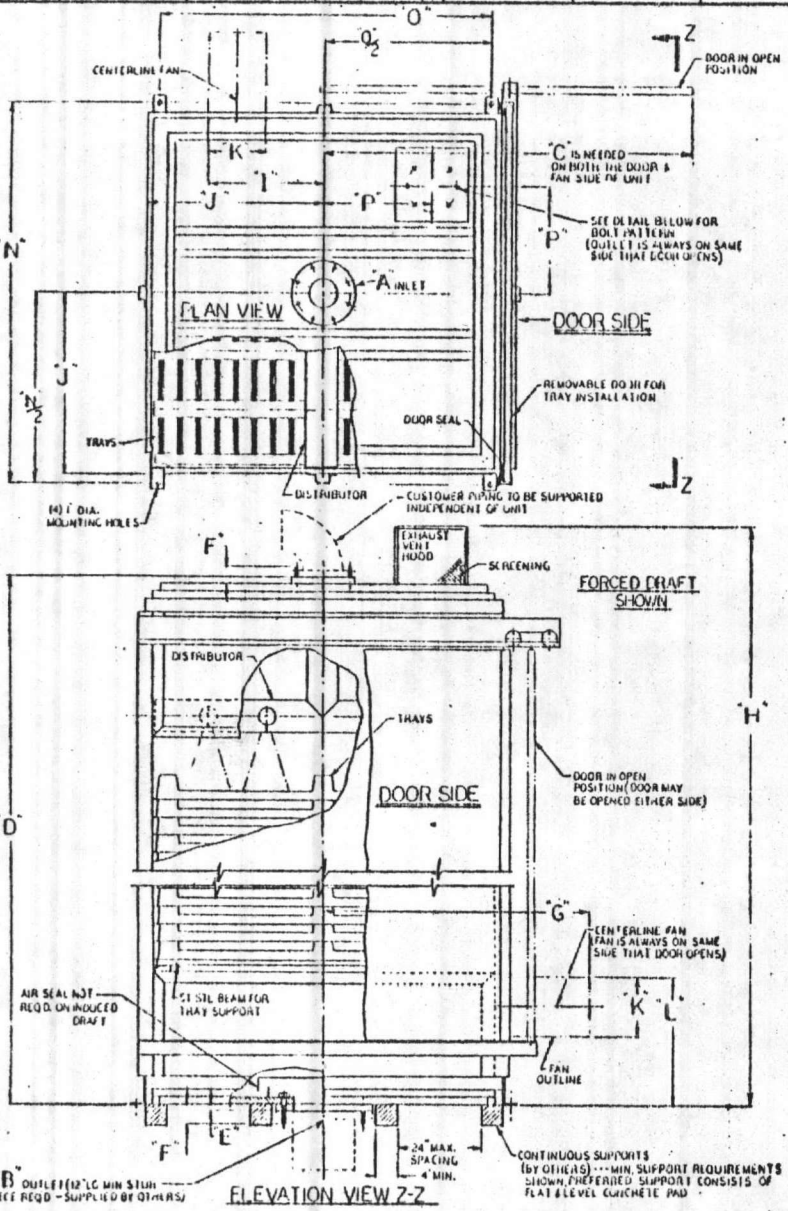
Inlet Header

Each Degasifier shall have an inlet header constructed of PVC pipe laterals with orifices and victaullic couplings to facilitate cleaning.

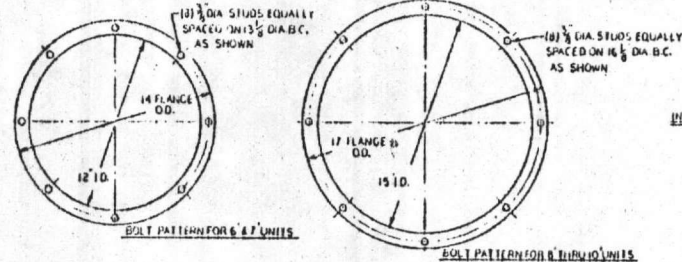




185-15786

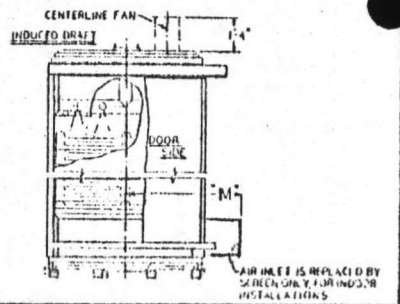


MODEL NO.	G.P.M.	AREA SQ. FT.	FAN VOLTS	HR	WEIGHT IN LBS.	DIMENSIONS																
						A	B	C	D	E	F	G	H	I	J	K	L	M	N	O		
TDC-6-C	1200	36	210	1/2	1600	4100	8	12	6-3/4	6-3/4	1-1/2	3-1/2	4-1/2	6-1/2	1-1/2	3-1/2	2-1/2	3-1/2	6-4	7-1/2	10	
-16					1900	4000																
-26					2300	4600																
-36					2700	6400																
-46					3100	7100																
-56					3400	7900																
-66					3800	8700																
TDC-7-C	1470	49			1800	5300	10	14	7-1/4	6-3/4	1-1/2	3-1/2	4-1/2	7-1/2	2-1/2	3-1/2	4-1/2	7-4	8-1/2	11-1/2	14	
-16					2300	7200																
-26					2700	7200																
-36					3100	8100																
-46					3600	10600																
-56					4100	10100																
-66					4500	11100																
TDC-8-C	1920	64	2		2000	6500	14	14	8-1/2	6-3/4	1-1/2	3-1/2	4-1/2	7-1/2	2-1/2	3-1/2	4-1/2	7-1/2	8-1/2	11-1/2	14	
-16					2600	7700																
-26					3100	8200																
-36					3600	10200																
-46					4200	11400																
-56					4700	13000																
-66					5300	13900																
TDC-9-G	2430	81			2300	7700	16	9-1/2	6-3/4	1-1/2	3-1/2	4-1/2	7-1/2	2-1/2	3-1/2	4-1/2	7-1/2	8-1/2	11-1/2	14	17-1/2	
-16					2900	9400																
-26					3500	11000																
-36					4200	12400																
-46					4800	12000																
-56					5400	15500																
-66					6100	17000																
TDC-10-G	3030	100			2500	9500	16	10-1/2	6-3/4	1-1/2	3-1/2	4-1/2	7-1/2	2-1/2	3-1/2	4-1/2	7-1/2	8-1/2	11-1/2	14	17-1/2	
-16					3300	11300																
-26					4000	13100																
-36					4800	15000																
-46					5500	16800																
-56					6300	18700																
-66					7000	20500																



MATERIALS OF CONSTRUCTION
 COLLAR SUPPORTS - STAINLESS STEEL
 SIDE PANELS - PERMUTIT
 TRAYS - STYRENE
 DISTRIBUTION - PVC
 FAN COATED STEEL

CONNECTIONS
 INLET & OUTLET - FLANGED 125I B STD
 BOLT HOLES STAINABLE CENTERLINE

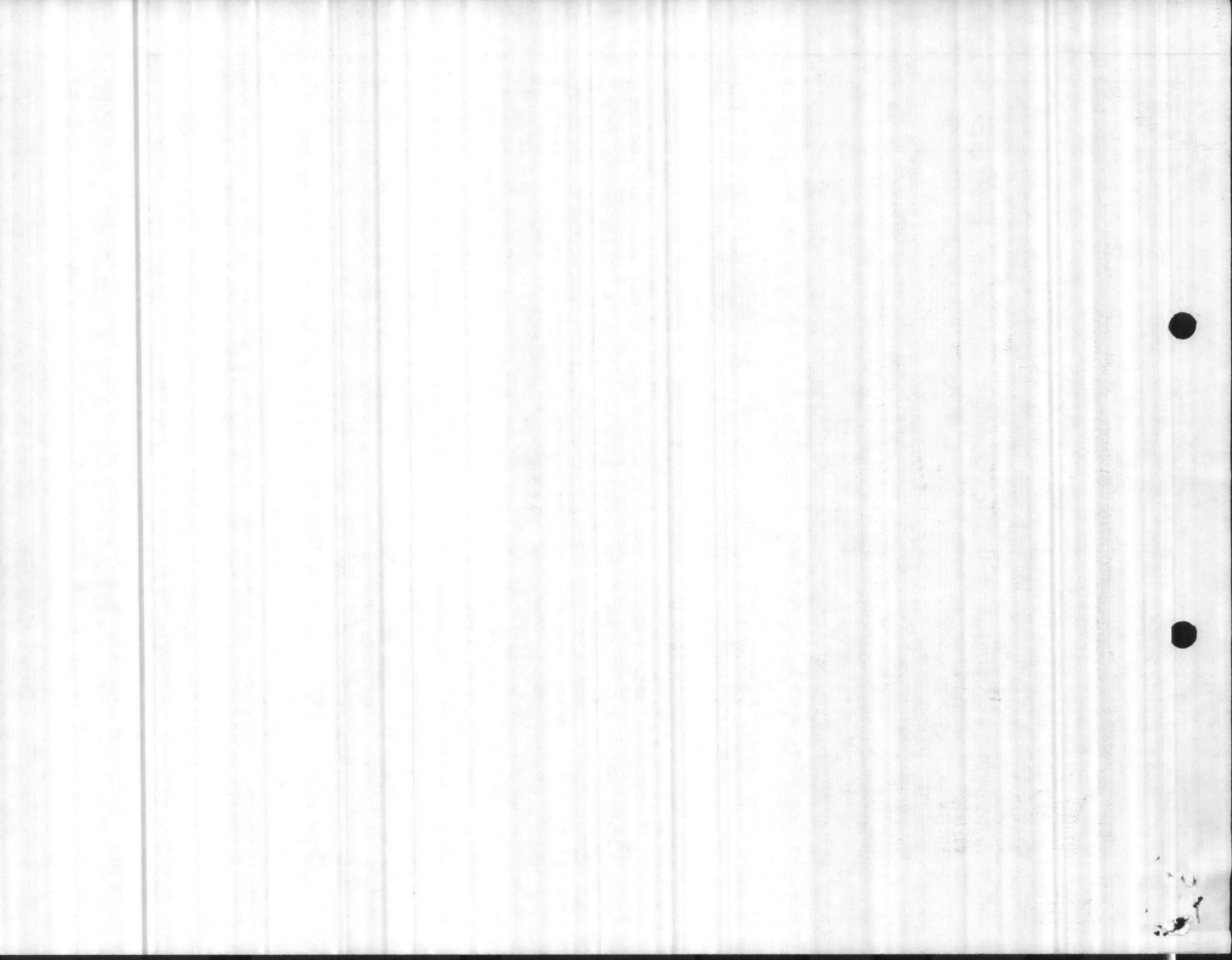


DO NOT SCALE THIS DRAWING USE DIMENSIONS ONLY

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REV	BY	DATE	REVISIONS	REV	BY	DATE	REVISIONS

PERMUTIT
 DEGASIFIER
 FORCED & INDUCED DRAFT
 6'-0" thru 10'-0" UNITS
 185-15786



Replace Water Filters and Associated Equipment, RR-85 Water Treatment Plant

Replace three water filters and equipment, to include, surface wash, sand, gravel, associated piping, valves, gauges and automatic controls. This equipment was installed in 1964, and has deteriorated beyond economical repair. The walls are pitted and have been repaired on several occasions. Replacement equipment should be AWWA approved for a pressure type sand filter for treated water with a working pressure of 125 PSI, capacity 134 GPM at 27 to 30 pounds operating pressure, with a maximum pressure drop 10' across unit at full load. Surface agitator in each filter as shown in diagram, all valves including multi-port valve will be automatically operated, tanks will be mounted on adjustable legs, having access manhole of standard size inlet and outlet pipe, size 6" with 6" header.

Estimated Cost: \$75,000

Water filters and equipment, in filter, brass wash, sand, gravel, associated piping, valves, gauges and automatic controls. This equipment was installed in 1961 and was designed to provide a continuous flow of water to the filter and associated equipment. The filter and associated equipment should be replaced on a regular basis. The filter for the water system with a working pressure of 150 PSI, capacity 1.5 GPM at 20 to 30 feet operating pressure with a maximum pressure drop of 10 feet at full load. The filter is a multi-stage filter. In addition, all valves including multi-port valves will be automatically operated. Tanks will be mounted on the legs, having access to the standard 1/2" pipe and outlet pipe, size 1/2" with a handle.

Estimated Cost: \$15,000

COCHRANE WATER CONDITIONING EQUIPMENT

ROTARY SURFACE WASH - PALMER AGITATOR

In some filtering operations, the filtered solids form a mat on the top of the bed that is not easily broken up. Backwashing would crack the mat and perhaps turn over one portion, which would then remain in the filter bed as an unbroken clump or "mud ball", too big to be washed out. In these cases the mat has to be broken up mechanically before the unit is backwashed. The rotary surface wash (Palmer Agitator) plays pressure water jets on the top of the bed to break up the matted and caked solids.

- The agitator consists of a supporting hub and two arms. Nozzles are installed in the arms so that the jet effect of the water leaving them is sufficient to cause the arms to rotate.

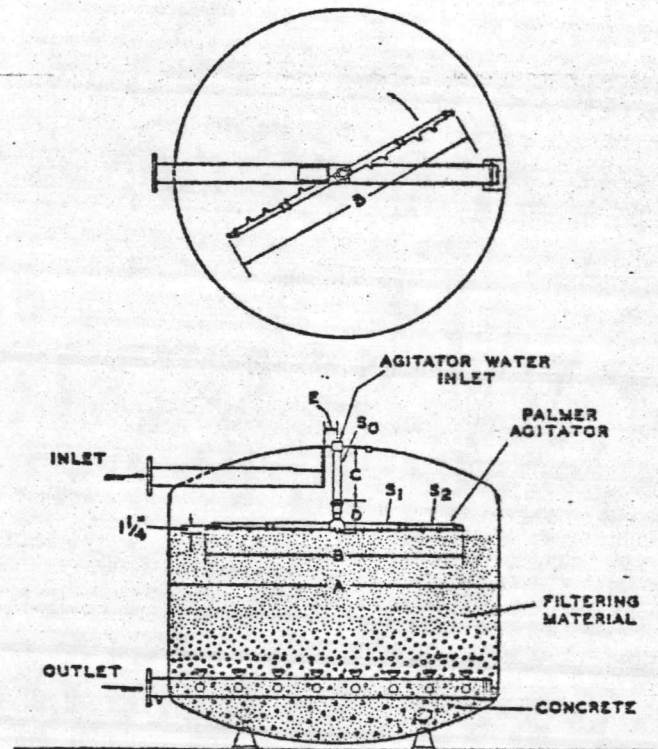
The arms are parallel to and one to three inches above the top layer of filtering material. The high velocity jet of water strikes the top of the filter bed and breaks up any deposits on the top of the bed, agitating and scrubbing the material on top of the filter bed.

A pressure of 40 to 75 lbs. per square inch must be maintained in the rotary surface washer nozzles for effective operation. If a pressure supply is not available, a separate booster pump must be provided. The volume of water needed will be approximately 1 gpm per square foot of filter area.

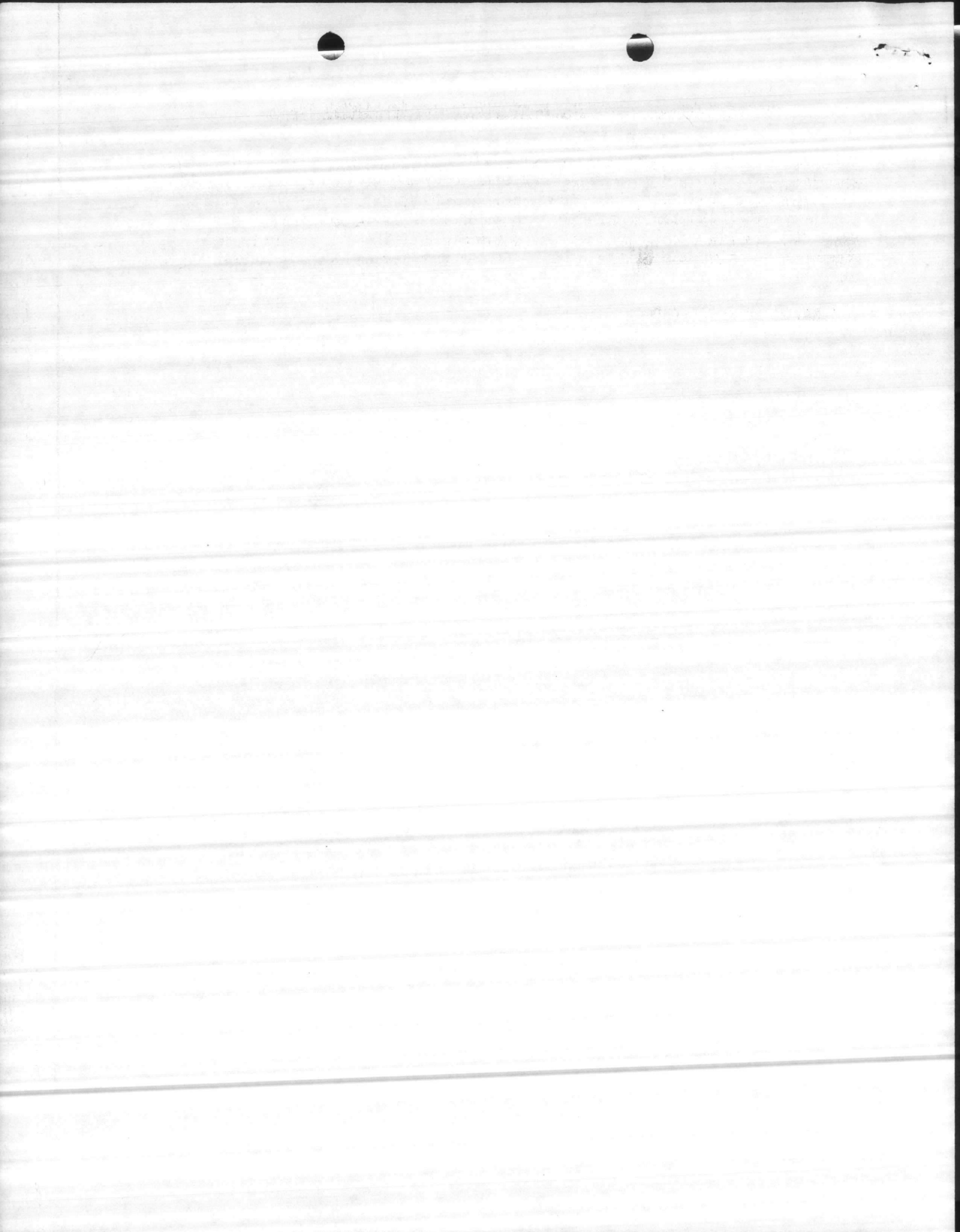
The agitator is to be operated for a period of 2 to 3 minutes with the backwash outlet

valve open, before the backwashing of the filter.

There is an alternate method for the operation of the agitator. Operate the agitator with the backwash outlet valve open for 2 to 3 minutes. One minute before shutting off the agitator, start backwashing the filter. Then stop the agitator.



E-13119



Replace Suction Header, MCAS-110 Water Treatment Plant

Replace existing 8" suction header for distribution pumps with a 12" header and install a new 12" line from reservoir MCAS-108 to existing 12" bypass line approximately 25' long. The existing header is too small to supply the three distribution pumps, which have a total capacity of 2700 GPM; the most that can be pumped with existing system is 1600 GPM. This is not enough to satisfy the demand during emergency situations. See attached sketch.

Estimated Cost: \$20,000

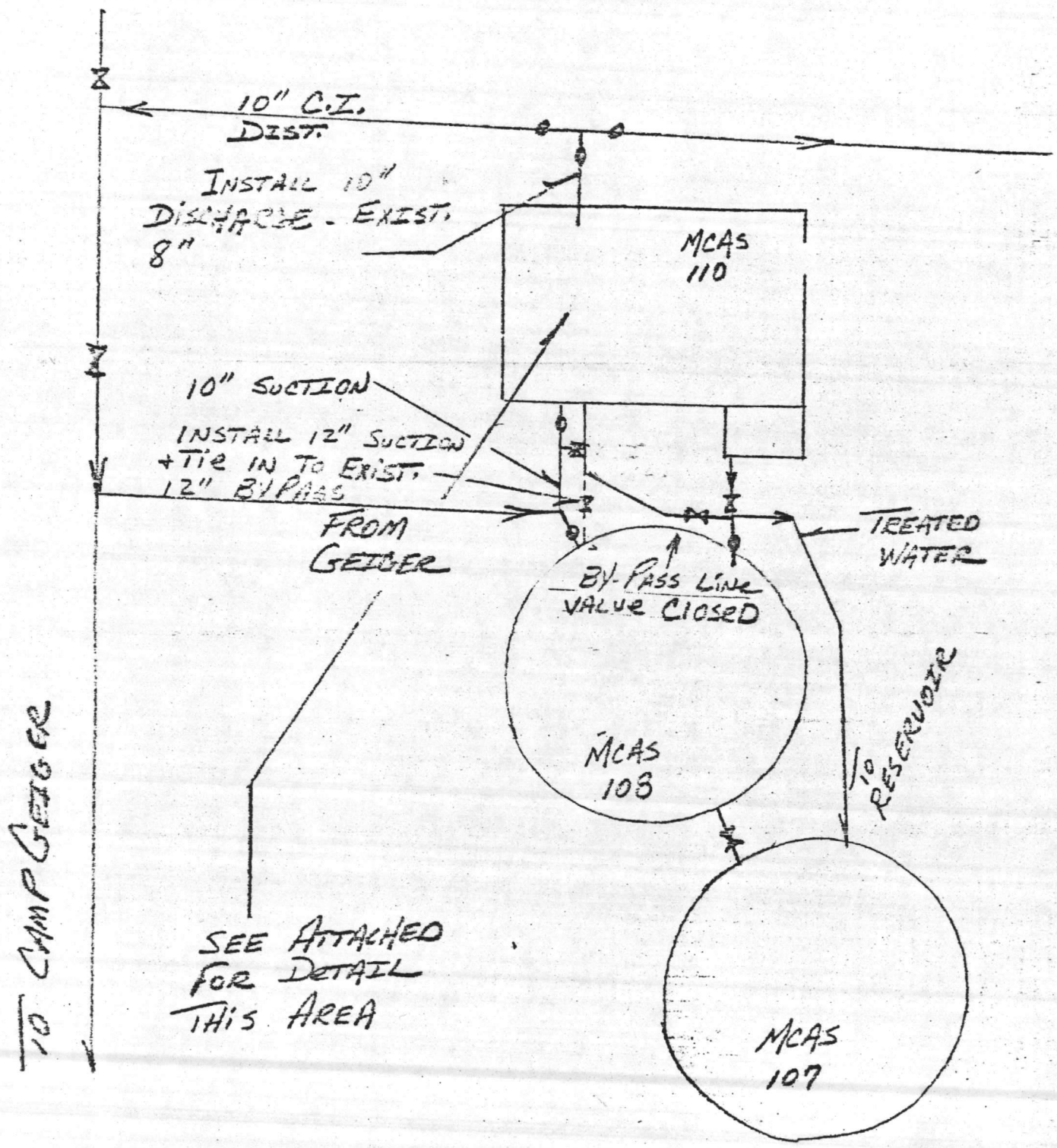
Complete

1964

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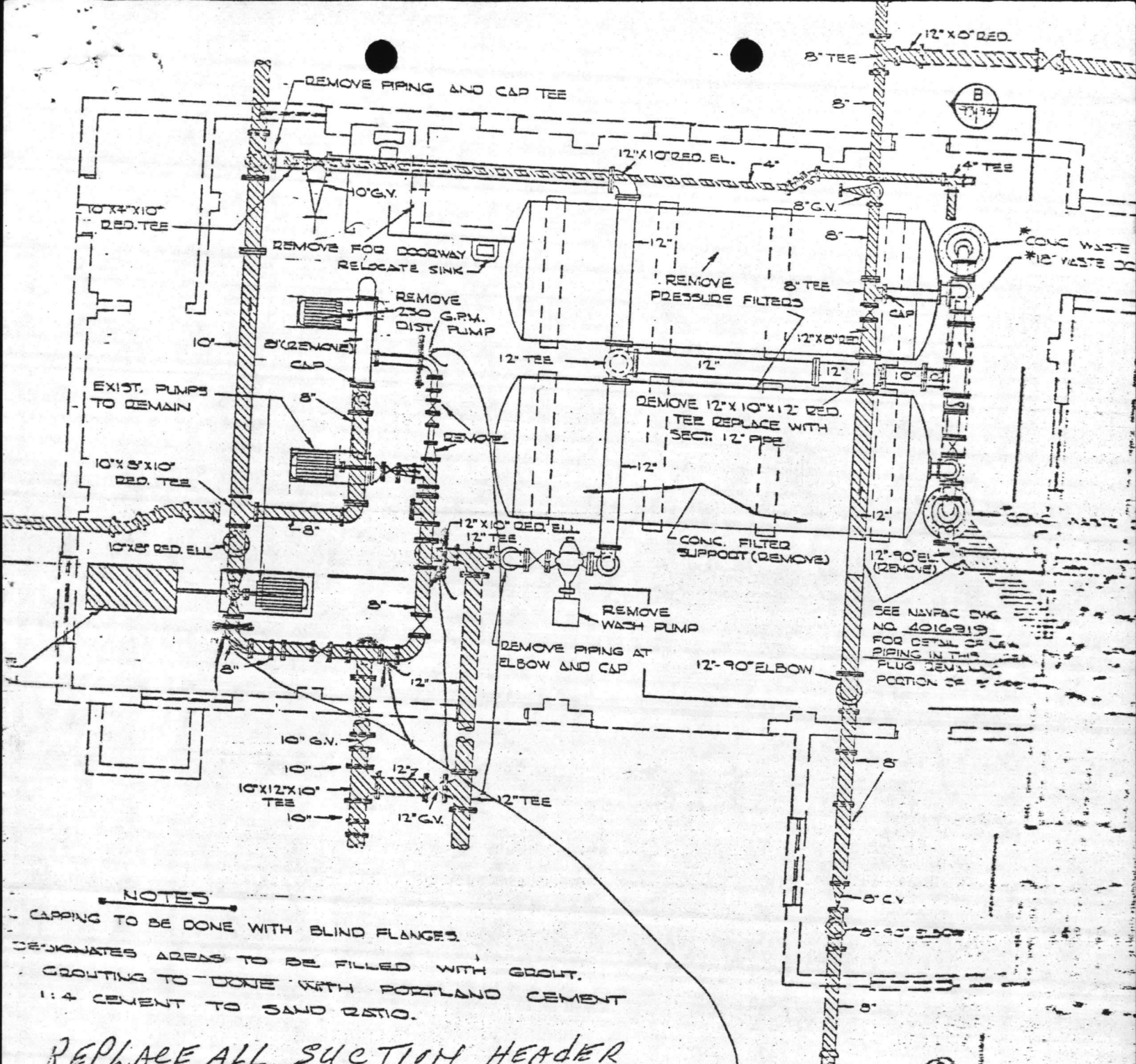
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FOR DETAIL YARD PIPING
SEE V+D NO. 883122





- NOTES**
- CAPPING TO BE DONE WITH BLIND FLANGES.
 - DESIGNATES AREAS TO BE FILLED WITH GROUT.
 - GROUTING TO BE DONE WITH PORTLAND CEMENT 1:4 CEMENT TO SAND RATIO.

*REPLACE ALL SUCTION HEADER
INSIDE PLANT AS INDICATED
WITH 12" HEADER*



Install CO₂ Recarbonation Unit, Bldg 670 Water Treatment Plant

The treatment of potable water in this plant does not meet the standard set by the EPA in the 1977 Safe Drinking Water Act on pH control. The lime dosage required for good treatment will leave a pH level of 9.5 to 10 units. The standards in the Safe Drinking Water Act are not to exceed 9.0 units of pH. A CO₂ recarbonation unit should be installed to eliminate the problem. Recarbonation unit should be an imp-jet submerged combustion propane burner capable of producing 1200# CO₂/24 hours. Supplier to furnish tank size and arrangements for up to 5 MGD flow capacity. See attached drawing.

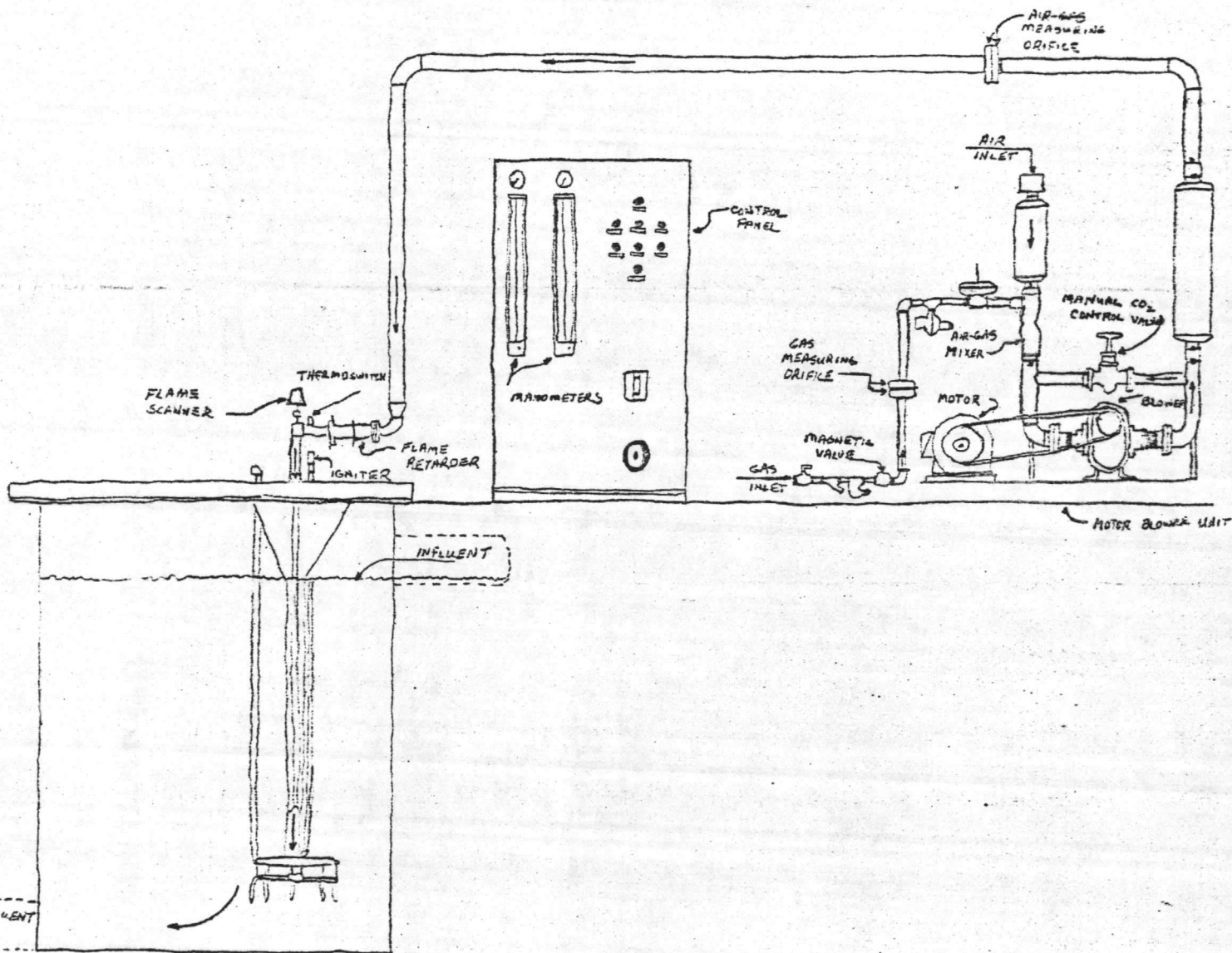
Estimated Cost: \$65,000

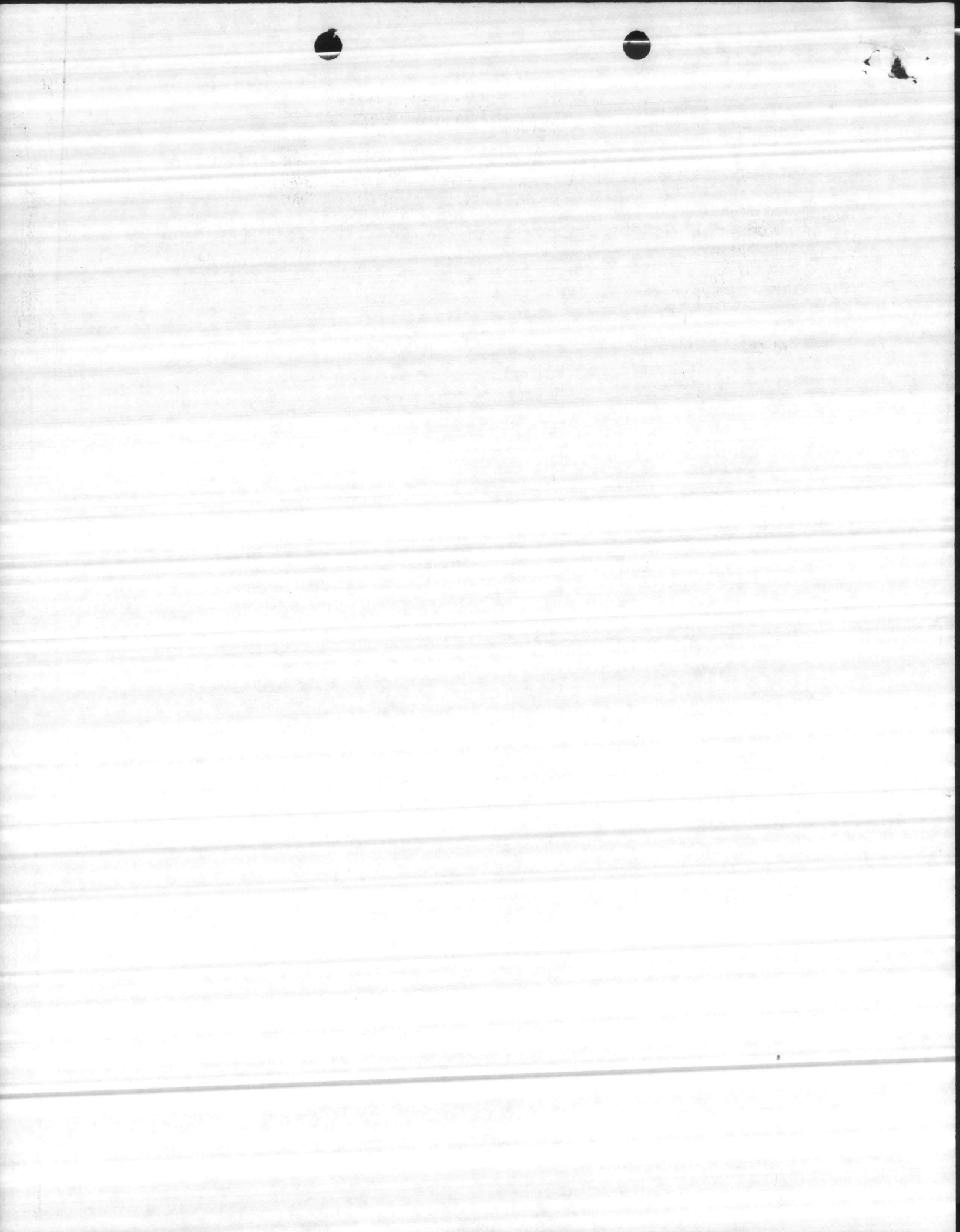
Incorporated into Bldg 670
Expansion

The treatment of effluent in this process will be similar to that in the 1971 State Drinking Water Act on all control. The effluent required for good treatment will have a pH level of 6.5 to 7.5. The standards in the State Drinking Water Act are not to exceed 9.0 units of pH. A 10% reduction unit should be installed to eliminate the pH level. Recarbonation unit should be installed to remove carbon dioxide from the effluent. Samples of effluent from the 1971 State Drinking Water Act should be analyzed for pH, alkalinity and hardness. See attached.

Estimated Cost: \$10,000

10/10/71
10/10/71





Install CO₂ Recarbonation Unit TT-38 Water Treatment Plant

The treatment of potable water in this plant does not meet the standard set by the EPA in the 1977 Safe Drinking Water Act on pH control. The lime dosage required for treatment leaves a pH level of 9.5 to 10.0 units. The standard in the Safe Drinking Water Act are not to exceed 9.0 units of pH. A CO₂ recarbonation unit should be installed to eliminate the problem. Recarbonation unit should be an imp-jet submerged combustion propane burner capable of producing 500# CO₂/24 hours. Supplier to furnish tank size and arrangement for a one to two MGD flow capacity. See attached sketch.

Estimated Cost: \$65,000

Cancel

Attachment 30 - Response to Public Comments

The treatment of potable water in this plant does not meet the standards set by the EPA in the Safe Drinking Water Act or the California State Water Resources Control Board. The standards in the Safe Drinking Water Act are not to exceed 5 units of total dissolved solids (TDS) per gallon of water. The standards in the California State Water Resources Control Board are not to exceed 10 units of TDS per gallon of water. The standards in the California State Water Resources Control Board are not to exceed 10 units of TDS per gallon of water. The standards in the California State Water Resources Control Board are not to exceed 10 units of TDS per gallon of water.

Estimated cost: \$500,000

