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ADKINS
AS-110

ADKINS

WATER TREATMENT SHOP 83

Water Treatment Branch at Camp Lejeune, North Carolina consists of 3 lime softening plants, and 3 ion exchange plants, all supplied by 92 deep wells. These plants have a combined capacity of 15,150,000 gallons per day. We also check and operate 7 swimming pools.

INDIVIDUAL PLANT CAPACITIES

Hadnot Point	5.0 M.G.D.	"A" Well	Serial # 04-67-041
Holcomb Blvd.	5.0 M.G.D.	" " Well	Serial # 04-67-043
MCAS	3.5 M.G.D.	"B" Well	Serial # 04-67-042
~~Rifle Range~~	~~.600 M.G.D.~~	~~"B" Well~~	~~Serial # 04-67-046~~
Courthouse Bay	.800 M.G.D.	"B" Well	Serial # 04-67-047
Onslow Beach	.250 M.G.D.	"B" Well	Serial # 04-67-048

There are 42 personnel, consisting of operators, mechanics, swimming pool operators and helpers maintaining these facilities which are regulated by the State of North Carolina.

WATER TREATMENT

1,762 MILES OF DISTRIBUTION LINES

1,000 MILES OF RAW WATER LINES

1,142 FIRE HYDRANTS

10,000 UNDERGROUND VALVES

7 SWIMMING POOLS

83 WELLS IN SERVICE

6 WATER PLANTS

PLANT CAPACITIES

Holcolm Blvd.	5,000,000
Hadnot Point	5,000,000
Courthouse Bay	800,000
~~Rifle Range~~	~~600,000~~
Onslow Beach	250,000
Air Station	~~3,500,000~~
TOTAL	15,150,000 PER DAY

TOTAL DELIVERED WATER FLOW FOR F/Y 1987 WAS 2,236,308,000 GALLONS.

42 PEOPLE

OPERATION IS 24 HOURS A DAY 365 DAYS A YEAR.

TOTAL STORAGE CAPACITY - 15,400,000

WASTEWATER TREATMENT

1,500 MILES OF SEWAGE LINES

69 LIFT STATIONS

15 OIL AND WATER SEPARATORS WITH MOTORS

PLANT CAPACITIES

Hadnot Point	8,000,000
~~Camp Geiger~~	~~1,600,000~~
~~Tarawa Terrace~~	~~1,250,000~~
Camp Johnson	1,000,000
Courthouse Bay	6,000,000
~~Rifle Range~~	~~525,000~~
~~Onslow Beach~~	~~195,000~~
TOTAL	~~18~~ 13,560,000

TOTAL FLOW FOR F/Y 1987 WAS 3,016,337,732 GALLONS.

44 PEOPLE

OPERATION IS 24 HOURS A DAY 365 DAYS A YEAR.

STORAGE TANKS - GROUND & ELEVATED

A. HADNOT POINT AREA

S-735 ----- 500,000 Capacity (Ground) (Treated) ✓
S-763 ----- 2,000,000 " " (Treated) ✓
B-20 ----- 800,000 " " (Raw)

ELEVATED TANKS

S-5 ----- 300,000 Capacity, Area #2 ✓
S-29 ----- 300,000 " , Area #5 ✓
S-1000 ---- 300,000 " , Industrial ✓
FC-314 ---- 300,000 " , Force Troops ✓

B. HOLCOMB BLVD. AREA

S-671 ----- 1,000,000 Capacity (Ground) (Treated) ✓
2,000,000 " " "
1,000,000 " " RAW

ELEVATED TANKS

S-830 ----- 300,000 Capacity, Berkley Manor ✓
S-2323 ---- 200,000 Capacity, Paradise Point ✓
S-4004 ---- 200,000 " , Midway Park ✓

C. TARAWA TERRACE AREA

STT-39 ---- 750,000 Capacity (Ground) Treated ✓

STT-40 ---- 250,000 Capacity (Elevated) ✓

D. MONTFORD POINT AREA

SM-179 ---- 400,000 Capacity (Ground) Treated ✓

SM-624 ---- 150,000 Capacity (Elevated) Treated ✓

E. MCAS AREA

~~MCAS-108 -- 200,000 Capacity (Ground) Treated~~ ✓
~~MCAS-107 -- 225,000 " " "~~ ✓
AS 2010 300 "
MCAS-310 -- 300,000 Capacity (Elevated) ✓
MCAS-4130 - 350,000 Capacity (Elevated) ✓ — white

~~MOQ-2002 -- 300,000 Capacity (Ground) Emergency Station~~ ✓

CAMP GEIGER

~~STC-500 --- 272,000 Capacity (Ground) Treated from MCAS~~ ✓
STC-509 --- 600,000 Capacity (Ground) " " " ✓

CAMP GEIGER (Con'T)

STC-606 ---- 100,000 Capacity (Elevated) ✓ TC510, 500,000 EL
STC-1070 --- 100,000 Capacity (Elevated) ✓

F. RIFLE RANGE AREA

SRR-86 ----- 360,000 Capacity (Ground) ✓

SRR-44 ----- 100,000 Capacity (Elevated) ✓

G. COURTHOUSE BAY AREA

SBB-191----- 350,000 Capacity (Ground) ✓

SBB-25 ----- 100,000 Capacity (Elevated) ✓
325,000 " "

ONSLOW BEACH AREA

SBA-139 ---- 250,000 Capacity (Ground) ✓

SBA-108 ---- 100,000 Capacity (Elevated) ✓

I. Amphibian Base -- 6,000 Capacity Pressure Tank (Emergency)

MAY 25 1989

PROCEDURE FOR BACKWASHING FILTERS - BLDG 20

Step 1. Close influent valve. Turn rate-of-flow on other filters in use up to maintain proper water level in re-carb. Do not exceed maximum filter capacity. (It may require another filter to be placed in service.)

Step 2. Allow filter to operate until water level reaches 6 inches from filter bed. Close rate-of-flow valve and filter effluent valve.

Step 3. Open waste valve when water reaches top of trough.

Step 4. Open surface wash valve and hose down filter walls and troughs.

Step 5. (Start backwash pump first) Then open wash valve slowly, wash for 6 minutes or until filter is clear. Close surface wash valve 2 minutes prior to ending backwash cycle. Close wash valve slowly - when almost closed, stop backwash pump.

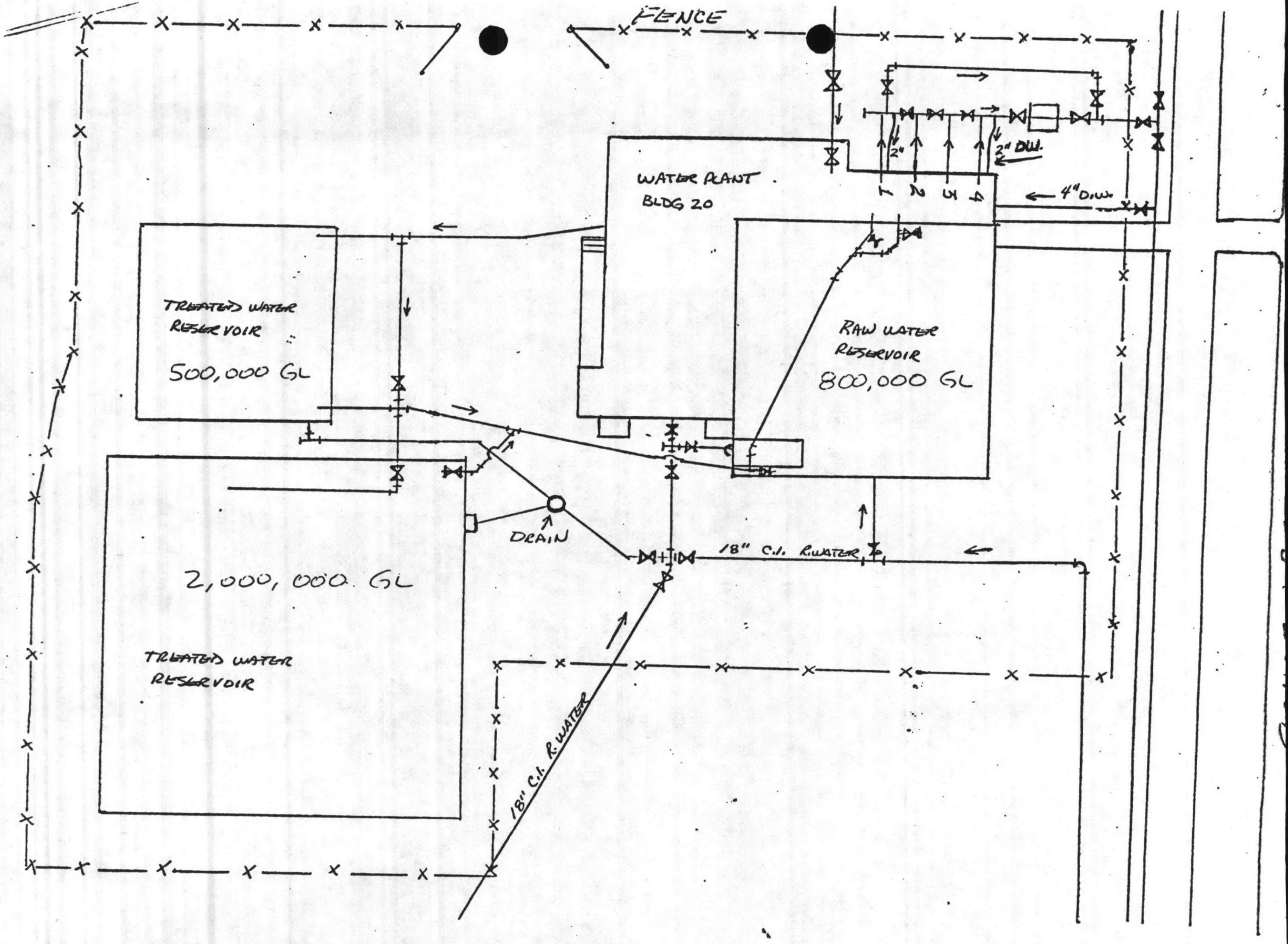
Step 6. Close waste valve.

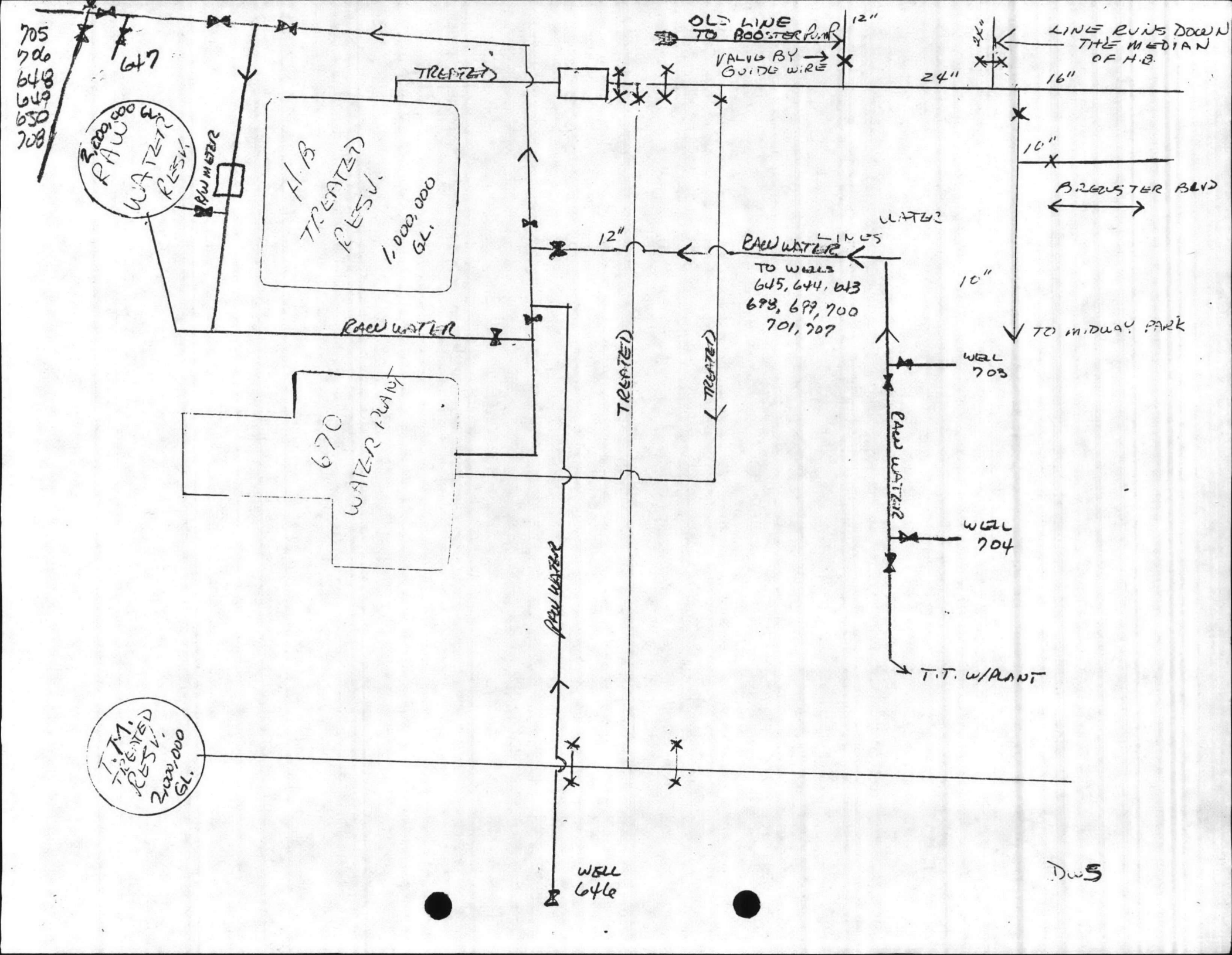
Step 7. Open influent valve.

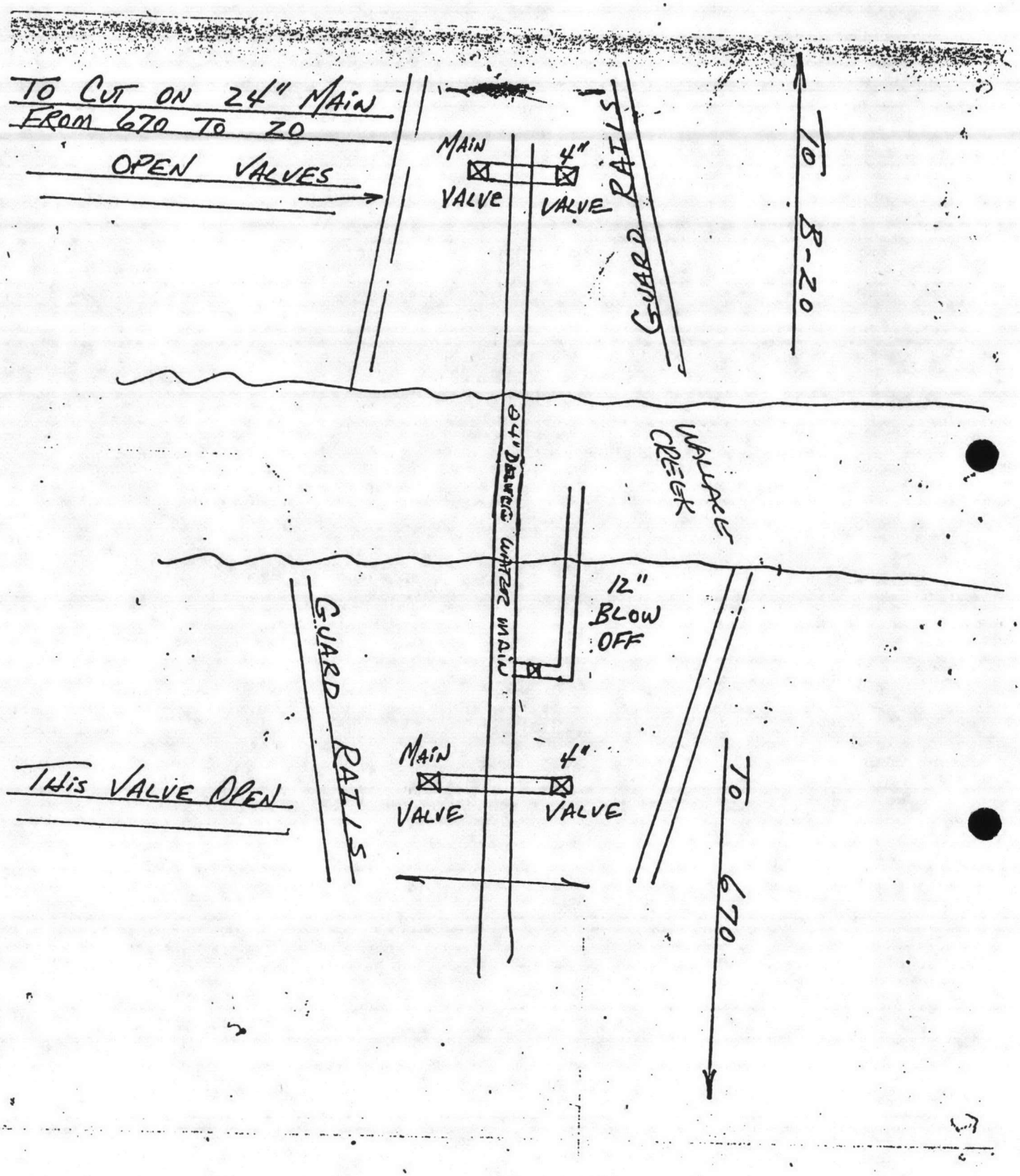
Step 8. Return all filters in service to their normal setting.

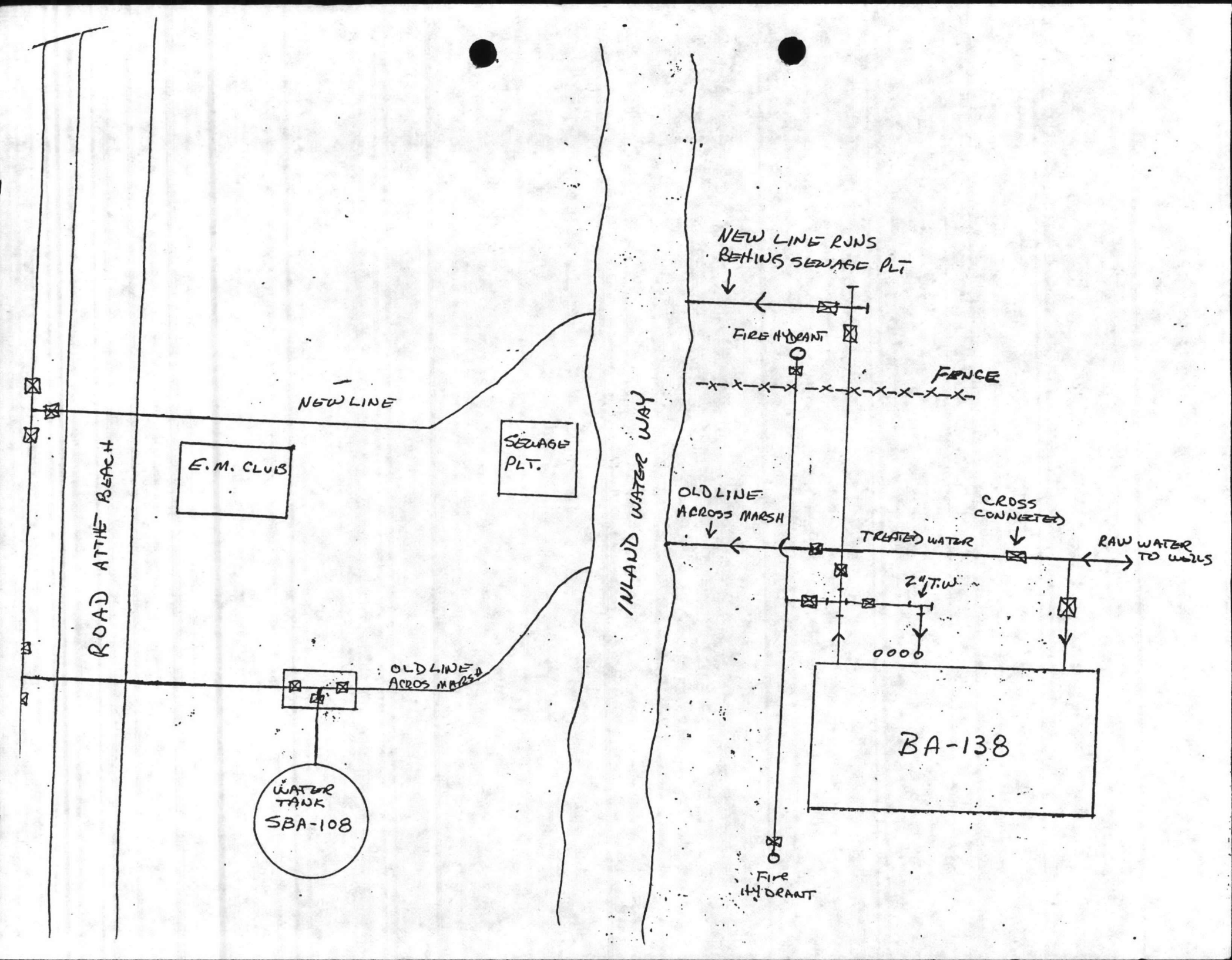
Step 9. Open rewash valve and rinse for 3 minutes (this not only rinses filter, it also settles filter bed).

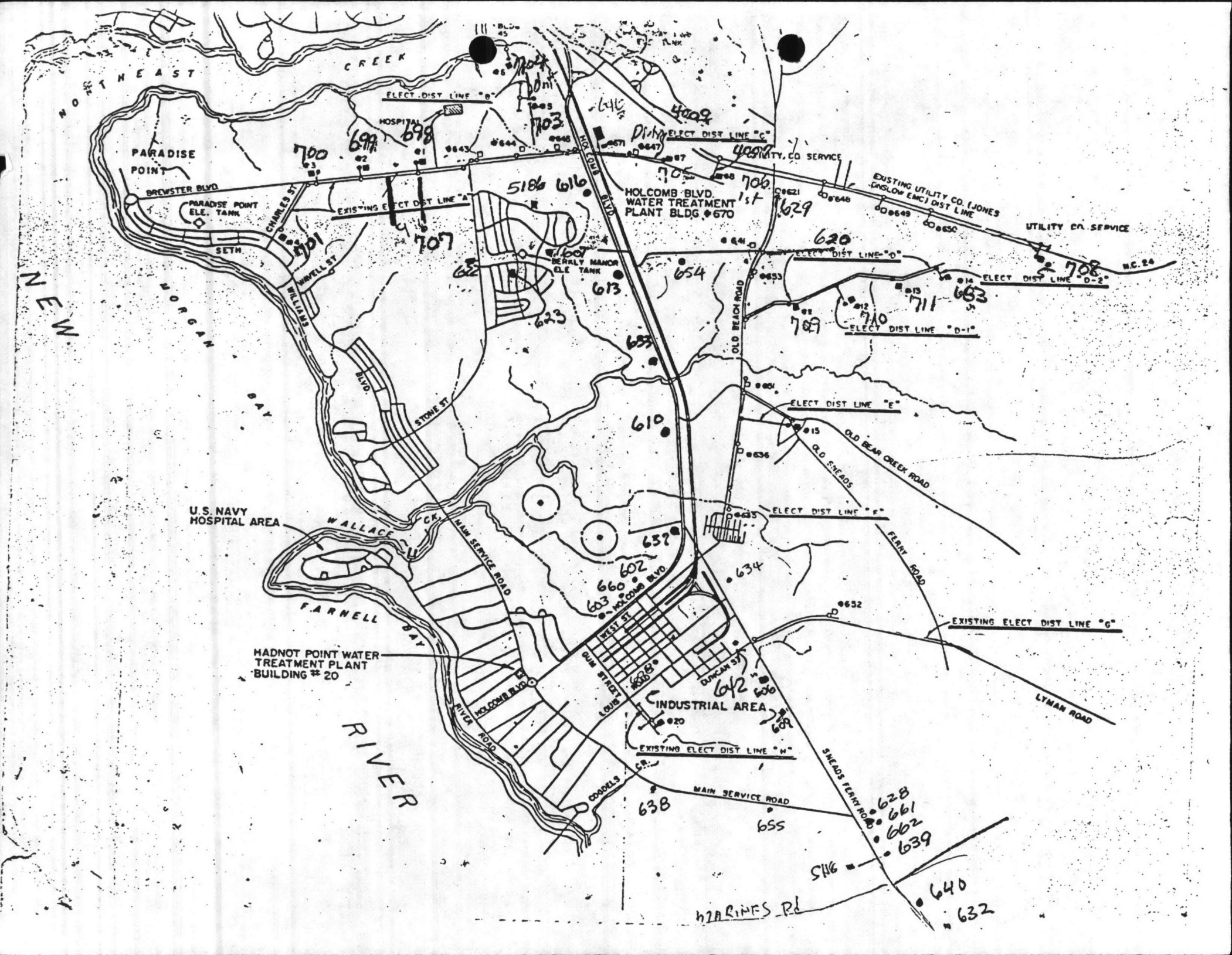
Step 10. Open effluent valve. Return rate-of-valve to proper setting.


FENCE
WATER PLANT
BLDG 20
2"
2" D.W.
4" D.W.
TREATED WATER
RESERVOIR
500,000 GL
RAW WATER
RESERVOIR
800,000 GL
DRAIN
18" C.I. R.WATER
2,000,000 GL
TREATED WATER
RESERVOIR
18" C.I. R.WATER


705
706
648
649
650
708
647
2,000,000 GL. RAW WATER RESV.
RAW WATER
H.B. TREATED RESV. 1,000,000 GL.
TREATED
OLD LINE TO BOOSTER PUMP
12"
VALVE BY GUIDE WIRE
LINE RUNS DOWN THE MEDIAN OF H.B.
24"
16"
10"
BRIDGEWATER BLVD
WATER LINES
RAW WATER
12"
TO WELLS 645, 644, 643 698, 699, 700 701, 707
10"
TO MIDWAY PARK
RAW WATER
670 WATER PLANT
TREATED
TREATED
WELL 703
RAW WATER
WELL 704
T.T. W/PLANT
RAW WATER
T.T. TREATED RESV. 2,000,000 GL.
WELL 646
Dw5


TO CUT ON 24" MAIN
FROM 670 TO 20
OPEN VALVES
MAIN VALVE
4" VALVE
GUARD RAILS
TO B-20
WALLACE CREEK
24" DRAWN WATER MAIN
12" BLOW OFF
GUARD RAILS
THIS VALVE OPEN
MAIN VALVE
4" VALVE
TO 670


NEW LINE RUNS BEHIND SEWAGE PLT
FIRE HYDRANT
FENCE
NEW LINE
E. M. CLUB
SEWAGE PLT.
ROAD AT THE BEACH
INLAND WATER WAY
OLD LINE ACROSS MARSH
CROSS CONNECTED
TREATED WATER
RAW WATER TO WELLS
2" T.W.
OLD LINE ACROSS MARSH
BA-138
WATER TANK SBA-108
Fire HYDRANT


NORTHEAST CREEK
NEW
NORGAN BAY
RIVER
FARNELL BAY
WALLACE CK.
PARADISE POINT
BREWSTER BLVD
PARADISE POINT ELE. TANK
CHARLES ST
SETH
WAVELL ST
WILLIAMS BLVD
STONE ST
HOSPITAL
ELECT DIST LINE "B"
EXISTING ELECT DIST LINE "A"
HOLCOMB BLVD.
HOLCOMB BLVD. WATER TREATMENT PLANT BLDG #670
BERALY MANOR ELE TANK
ELECT DIST LINE "C"
UTILITY CO SERVICE
EXISTING UTILITY CO. (JONES SNSLOW EMC) DIST LINE
ELECT DIST LINE "D"
ELECT DIST LINE "D-2"
ELECT DIST LINE "D-1"
OLD BEACH ROAD
ELECT DIST LINE "E"
OLD BEAR CREEK ROAD
OLD SNEADS
ELECT DIST LINE "F"
FERRY ROAD
EXISTING ELECT DIST LINE "G"
LYMAN ROAD
U.S. NAVY HOSPITAL AREA
MAIN SERVICE ROAD
HADNOT POINT WATER TREATMENT PLANT BUILDING # 20
HOLCOMB BLVD
RIVER ROAD
WEST ST
GUM STREET
LOUIS
DUNCAN ST
INDUSTRIAL AREA
EXISTING ELECT DIST LINE "H"
GOODELS
MAIN SERVICE ROAD
SNEADS FERRY ROAD
MARINES RD
N.C. 24

WATER TREATMENT PLANT

INDIVIDUAL PLANT DATA

PLANT NO. & LOCATION Marine Corp Air Station MCAS 110

The Air Station Plant is a lime softening plant with a capacity of 3.5 M.G.D., and is supplied water from 23 deep wells. The plant consists of the following equipment:

1. 2 Spiractors at 1200 G.P.M. EA
2. 3 Filters at 800 G.P.M. gradual delivery rate EA
3. ~~2 Raw water booster pumps, 1200 G.P.M. each~~
4. ~~3 Treated water clearwell booster pumps, 1 at 350 G.P.M., 1 at 600 G.P.M., and 1 at 900 G.P.M.~~
5. ~~3 High service pumps, 2 at 1000 G.P.M., and 1 at 500 G.P.M.~~
6. 1 Lime silo-40 tons
7. ~~1 day bin-17 ton~~
8. 2 Lime pumps at 245 G.P.H.
9. 2 Wallace & Tiernan chlorinators
10. 2 Backwash pumps at 6000 G.P.M.
11. 2 Surface wash pumps at 350 G.P.M.
12. ~~1 Recarbonation unit-Ozark Mahoning, 750 psi of CO_2/24 hrs.~~
13. 1 Generator Detroit 375 kva
14. ~~2 Treated water reservoirs, 1 at 200,000 gallons AS-107, and 1 at 225,000 gallons, AS-108.~~
15. 2 Elevated tanks, 1 at 300,000 gallons AS-310, and 1 at 350,000 gallons AS-4130.

~~MOQ 2002 PUMPING STATION~~

1. ~~1 Reservoir at 300,000 gallons~~
2. ~~4 High service pumps, 2 at 125 G.P.M., and 2 at 750 G.P.M.~~

CAMP GEIGER PUMPING STATION TC-501

1. 3 High service pumps at 700 G.P.M. each
2. 2 Treated water reservoirs, 1 at 272,000 gallons STC500, and 1 at 600,000 gallons STC509.
3. ~~2 Elevated tanks at 100,000 gallons each, STC1070 & STC606.~~
4. ~~1 International gasoline auxiliary engine~~

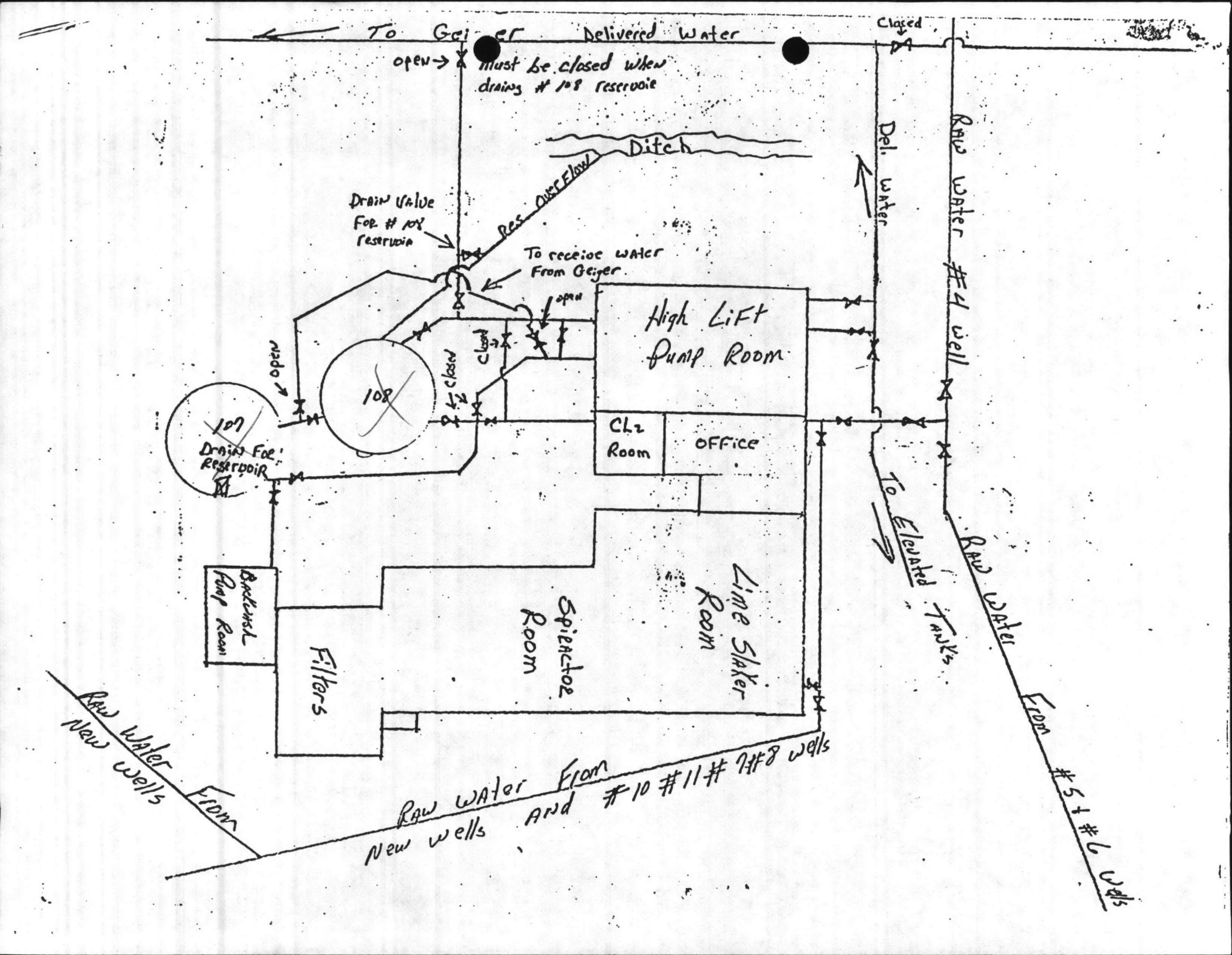
WATER TREATMENT PIANT

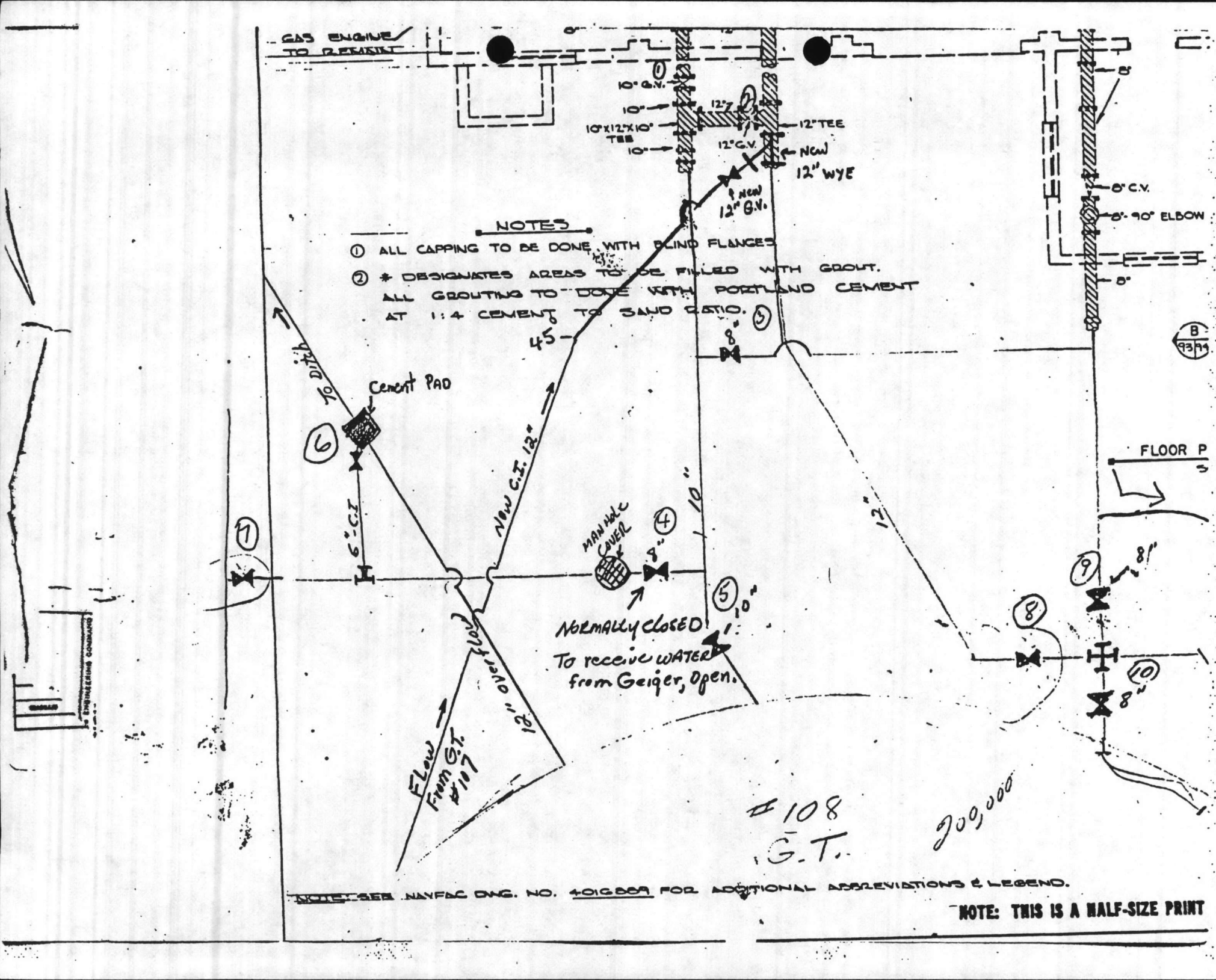
INDIVIDUAL PIANT DATA

PIANT NO. & LOCATION Marine Corps Air Station WELLS

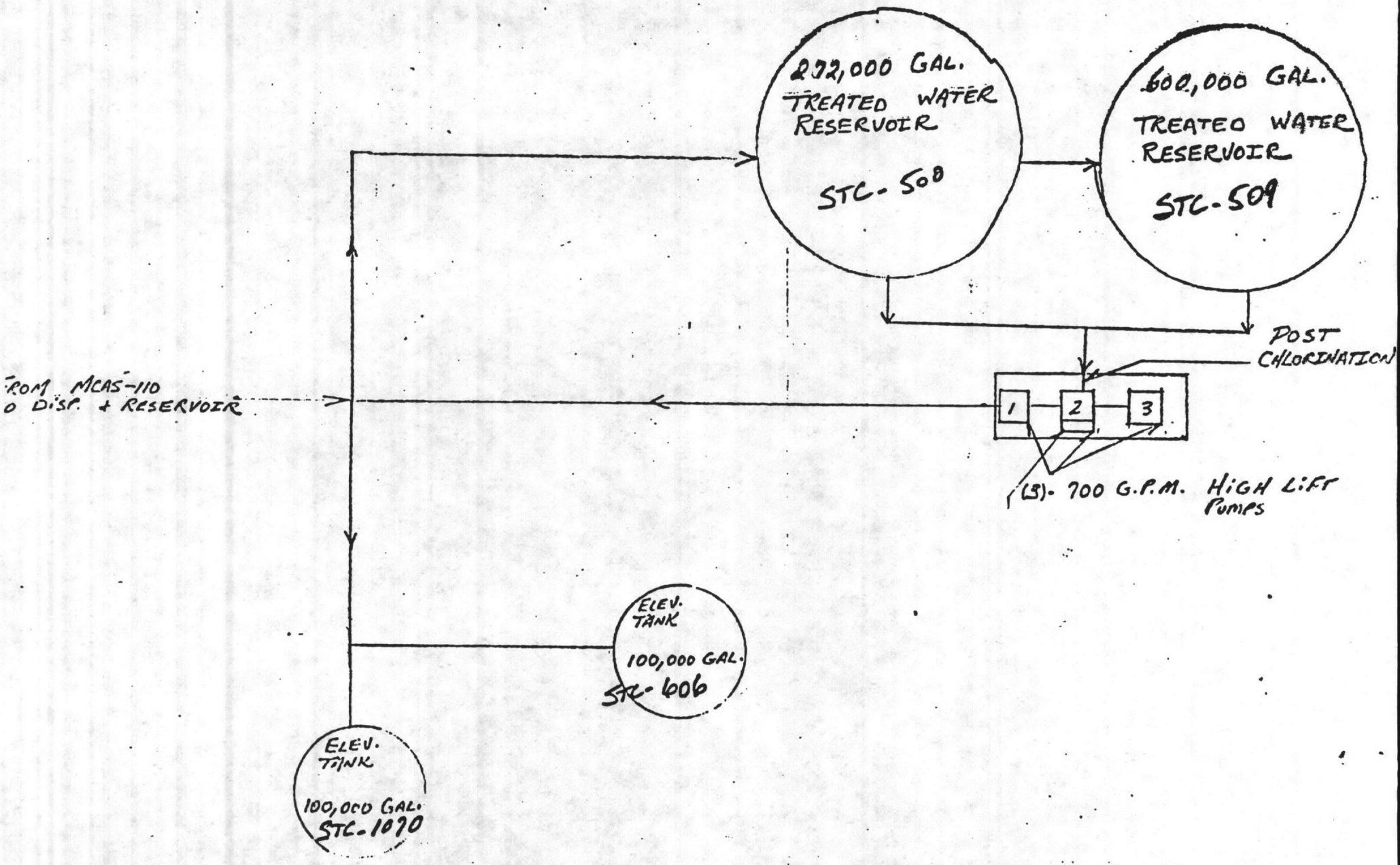
Raw water wells included in the treatment system:

A.S.WELLS BLDG. NO.	G.P.M.	AUXILIARY ENGINE	MANUFACTURE
106	226 H/C cont.		
131	285 H/C cont.		
190	250	Diesel	Ford
191	250 H/C		
203	207 H/C		
4140	100 H/C		
4150	128 cont.		
5001	137		
5009	115		
C.G.WELLS			
325	100	Diesel	Murphy
502	400 H/C	Gasoline	Ford
504	250	Diesel	Ford
600	167 H/C		
604	151		
700	100		
901	100		
1000	200		
1001	170	Gasoline	Wisconsin
1251	190	Gasoline	Ford
1252 (booster pump)	2-1400		
1253	185		
1254	152		
1255	100	Gasoline	Ford
1256	104		

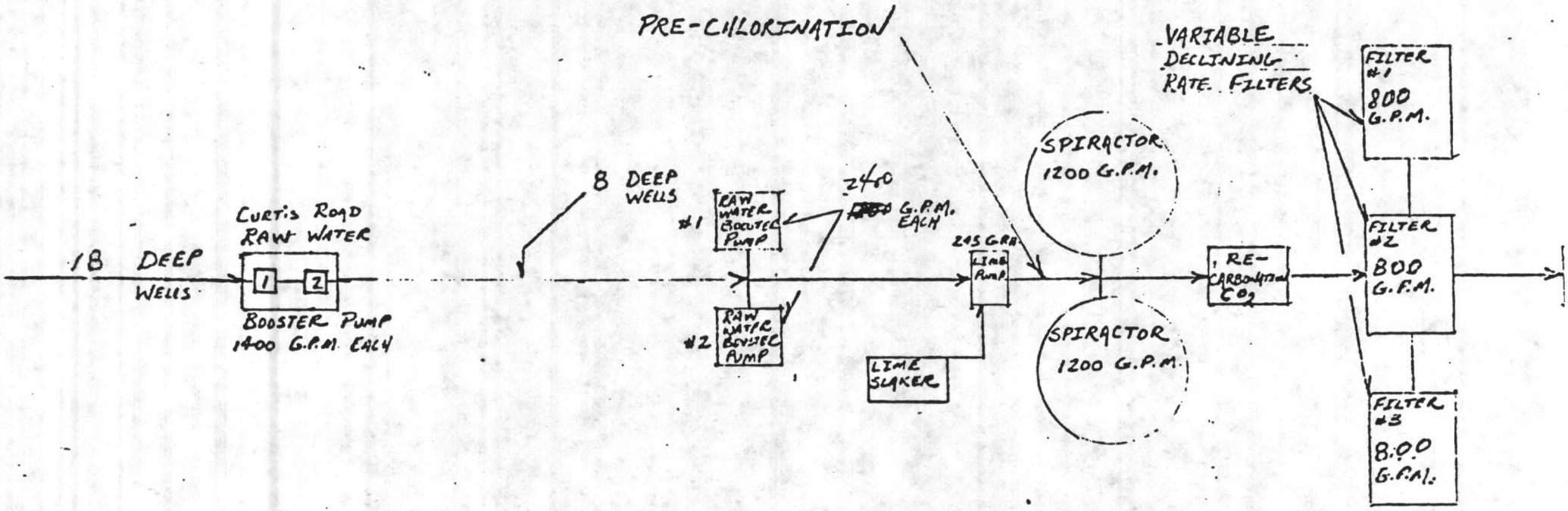

To Geiger
Delivered Water
Closed
open →
Must be closed when draining #108 reservoir
Ditch
Drain Valve For #108 reservoir
Res. Overflow
To receive water From Geiger
Del. Water
Raw Water #4 well
open
High Lift Pump Room
closed
closed
108
107
Drain For Reservoir
Cl2 Room
OFFICE
To Elevated Tanks
Raw Water From #5 + #6 wells
Backwash Pump Room
Filters
Spiractor Room
Lime Slaker Room
Raw Water From New wells
Raw Water From New wells And #10 #11 #7 #8 wells


GAS ENGINE TO REMAIN
10" G.V.
10"
10"x12"x10" TEE
12"
12" TEE
12" G.V.
NEW 12" WYE
NEW 12" G.V.
8" C.V.
8" 90° ELBOW
NOTES
① ALL CAPPING TO BE DONE WITH BLIND FLANGES
② * DESIGNATES AREAS TO BE FILLED WITH GROUT. ALL GROUTING TO BE DONE WITH PORTLAND CEMENT AT 1:4 CEMENT TO SAND RATIO.
45°
8"
B 93 79
Cement PAD
To Ditch
6" C.I.
NEW C.I. 12"
MANHOLE COVER
8"
10"
12"
NORMALLY CLOSED
To receive WATER from Geiger, Open.
10"
8"
8"
8"
FLOOR P
Flow From G.T. #107
12" Overflow
#108 G.T.
900,000
NOTE: SEE NAVFAC DWG. NO. 4016869 FOR ADDITIONAL ABBREVIATIONS & LEGEND.
NOTE: THIS IS A HALF-SIZE PRINT

CAMP [illegible] WATER PUMPING STATION
FC-501



MARINE CORPS AIR
CAPACITY 3.5 M.
LIME SOFT



ATION – BLDG. MCAS-110

-- 26 DEEP WELLS

LT.

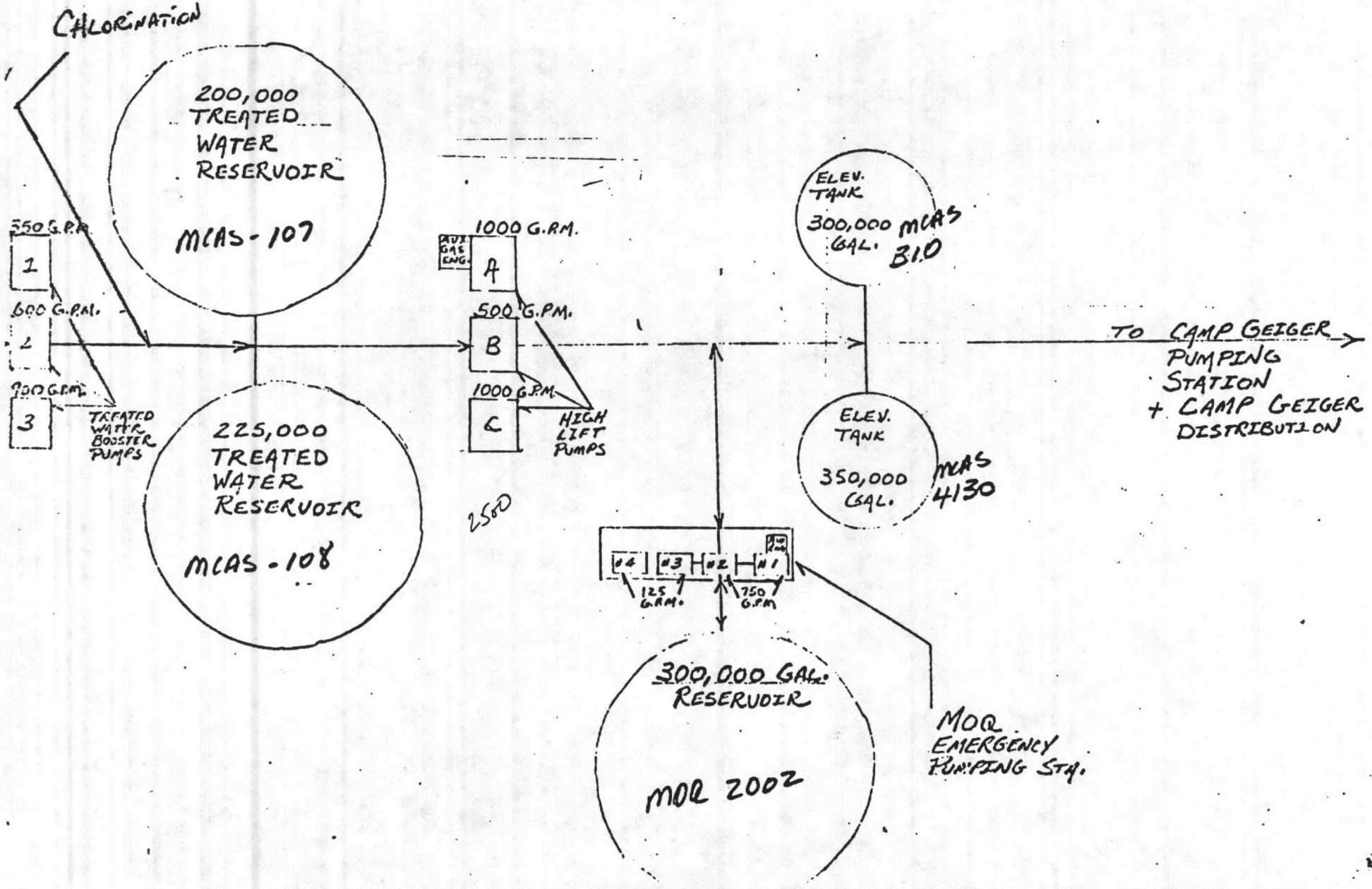


Table III C 3

WELL SURVEY SHEET

Sheet No. 8 DATE: 20 June 1984

WELL NO.	WELL TYPE	DRILLED DEPTH ft.	STATIC LEVEL (ft)	CASING SIZE (in.)	STAGES	DRAWDOWN AT RATED CAPACITY (feet	RATED CAPACITY (gpm)	PRESENT CAPACITY (gpm)
MCAS-								
106	DRILLED	174'	16'	8"	5	12'	178	125
203	DRILLED	173'	23'	8"	4	6'	100	75
131	DRILLED	189'	23'	8"	4	5'	250	200
140	DRILLED	UNKNOWN		8"	UNKNOWN		150	100
4150	DRILLED	UNKNOWN		6"	UNKNOWN		150	100
001	DRILLED	193'	44'	8"	3	10'	100	75
009	DRILLED		34'	8"	3	16'	150	100
190								
191								

WELL NO.	SPECIFIC CAPACITY (gpm/ft of drawdown)	PUMP HEAD (ft)	MOTOR H. P.	CHLORINATION (AMOUNT)	RESIDUAL CHLORINE (TYPE)	AUXILIARY POWER (TYPE)	DD FORM 710	DD FORM 636
MCAS-								
106	14.8		15.0					
203	16.7		7.5					
131	50.0		7.5					
4140	UNKNOWN		5.0					
4150	UNKNOWN		5.0					
5001	10.0	75'	5.0					
5009	9.4	75'	5.0					
190								
191								

Table III C 3

WELL SURVEY SHEET

Sheet No. 7 DATE: 20 June 1984

WELL NO.	WELL TYPE	DRILLED DEPTH ft.	STATIC LEVEL (ft)	CASING SIZE (in.)	STAGES	DRAWDOWN AT RATED CAPACITY (feet	RATED CAPACITY (gpm)	PRESENT CAPACITY (gpm)
TC-100	DRILLED	66'	19'	8"	6	10'	75	75
TC-201	DRILLED	67'	15'	8"	3	44'	150	100
TC-502	DRILLED	184'	27'	8"	4	9"	300	250
TC-504	DRILLED	100'	22'	8"	3	38'	250	150
TC-600	DRILLED	70'	8'	8"	3	28'	130	75
-604	DRILLED	138'	17'	8"	4	35'	150	100
TC-700	DRILLED	76'	23'	8"	4	21'	125	75
-1000	DRILLED	170'	10'	8"	4	37'	200	150
TC-1001	DRILLED	100'	25'	8"	5	20'	220	150
STC-190	DRILLED	200'	23.11'	8"	4		250	
STC-191	DRILLED	200'	23.4'	8"	4		250	
STC-325	DRILLED	180'	40'	8"		12'	150	
STC-1251	DRILLED	180'	14.9	8"	8	25'	150	
STC-1253	DRILLED	180'	18.6	8"	7	29.1'	150	

WELL NO.	SPECIFIC CAPACITY (gpm/ft of drawdown)	PUMP HEAD (ft)	MOTOR H. P.	CHLORINATION (AMOUNT)	RESIDUAL CHLORINE (TYPE)	AUXILIARY POWER (TYPE)	DD FORM 710	DD FORM 636
TC-100	7.5	80'	3.0					
TC-201	3.4	57'	5.0					
TC-502	33.3	112'	10.0			GASOLINE		
TC-504	6.6	66'	7.5			GASOLINE		
TC-600	4.6	58'	3.0					
TC-604	4.3	65'	5.0					
TC-700	5.9	70'	3.0					
TC-1000	5.4	65'	5.0					
TC-1001	11.0	61'	5.0			GASOLINE		
STC-190		91'	10.0			DIESEL		
STC-191		81'	10.0					
STC-325	12.5	60'	5.0					
STC-1251	6	110'	7.5			GASOLINE		
STC-1253	5.15	90'	5.0					

Table III C 3

WELL SURVEY SHEET

Sheet No. 7 cont'd DATE: 20 June 1984

WELL NO.	WELL TYPE	DRILLED DEPTH ft.	STATIC LEVEL (ft)	CASING SIZE (in.)	STAGES	DRAWDOWN AT RATED CAPACITY (feet	RATED CAPACITY (gpm)	PRESENT CAPACITY (gpm)
STC-1254	DRILLED	195'	24'	8"		4'	150	
STC-1255	DRILLED	200'	23.11	8"	7	25.1'	150	
STC-1256	DRILLED	200'	25'	8"		38'	150	

WELL NO.	SPECIFIC CAPACITY (gpm/ft of drawdown)	PUMP HEAD (ft)	MOTOR H. P.	CHLORINATION (AMOUNT)	RESIDUAL CHLORINE (TYPE)	AUXILIARY POWER (TYPE)	DD FORM 710	DD FORM 636
STC-1254	37.5	90'	5.0			GASOLINE		
STC-1255	5.9	90'	5.0					
STC-1256	3.9	90'	5.0					

WATER TREATMENT PIANT

INDIVIDUAL PIANT DATA

PIANT NO. & LOCATION Holcomb Blvd. Bldg. 670

The Holcomb Blvd. Plant is a lime softening plant with a capacity of 5.0 M.G.D., and is supplied water from 18 deep wells. The plant consists of the following equipment:

1. 5 Spiractors at 700 G.P.M. each
2. 5 Rapid sand filters at 700 G.P.M. each
3. 4 Raw water pumps, 2 at 1400 G.P.M., 2 at 2100 G.P.M.
4. 5 Holcomb High service pumps, 2 at 700 G.P.M., 2 at 1500 G.P.M., and 1 at 3500 G.P.M.
5. 3 Transmission Main High Service Pumps, 2 at 1400 G.P.M., and 1 at 2800 G.P.M.
6. 1 - 2 million gallon raw water reservoir
7. 2 Treated water reservoirs, 1 at 1 million gallons & 1 at 2 million gallons.
8. 2 Lime storage silo's 40 tons each
9. 2 - 500 pounds per day Lime feeders
10. 6 - 245 G.P.H. Lime pumps
11. 1 Wallace & Tiernan volumetric Fluoride feeder
12. 3 Wallace & Tiernan Chlorinators, 2 at 100 lbs/day, and 1 at 200 lbs/day
13. 2 Backwash pumps at 7500 G.P.M. each
14. 2 Generators, 1 Waukesha 6 cylinder, gas, 85 kw, & 1 Cummins diesel, 6 cyl. 400 kw.
15. 1 Ford 8 cyl., gas, and 1 Ford 6 cyl, gas auxiliary engines
16. 3 Elevated tanks, 2 at 200,000 gallons and 1 at 300,000 gallons

TARAWA TERRACE PUMPING STATION

1. 1 Treated water reservoir, STT-39, at 750,000 gallons
2. 4 High service pumps, 1 at 750 G.P.M., 1 at 850 G.P.M., 1 at 1200 G.P.M., 1 at 2000 G.P.M.
3. 2 Elevated tanks, 1 at 250,000 gallon, STT-40, 1 at 150,000 gallon, SM-624.
4. 1 Generator, Catapillar Diesel, 255 kw.

HOLCOMB BLVD BLDG. 670

CAPACITY 5 MGD WITH 18 DEEP WELLS

LIME SOFTENING PLANT

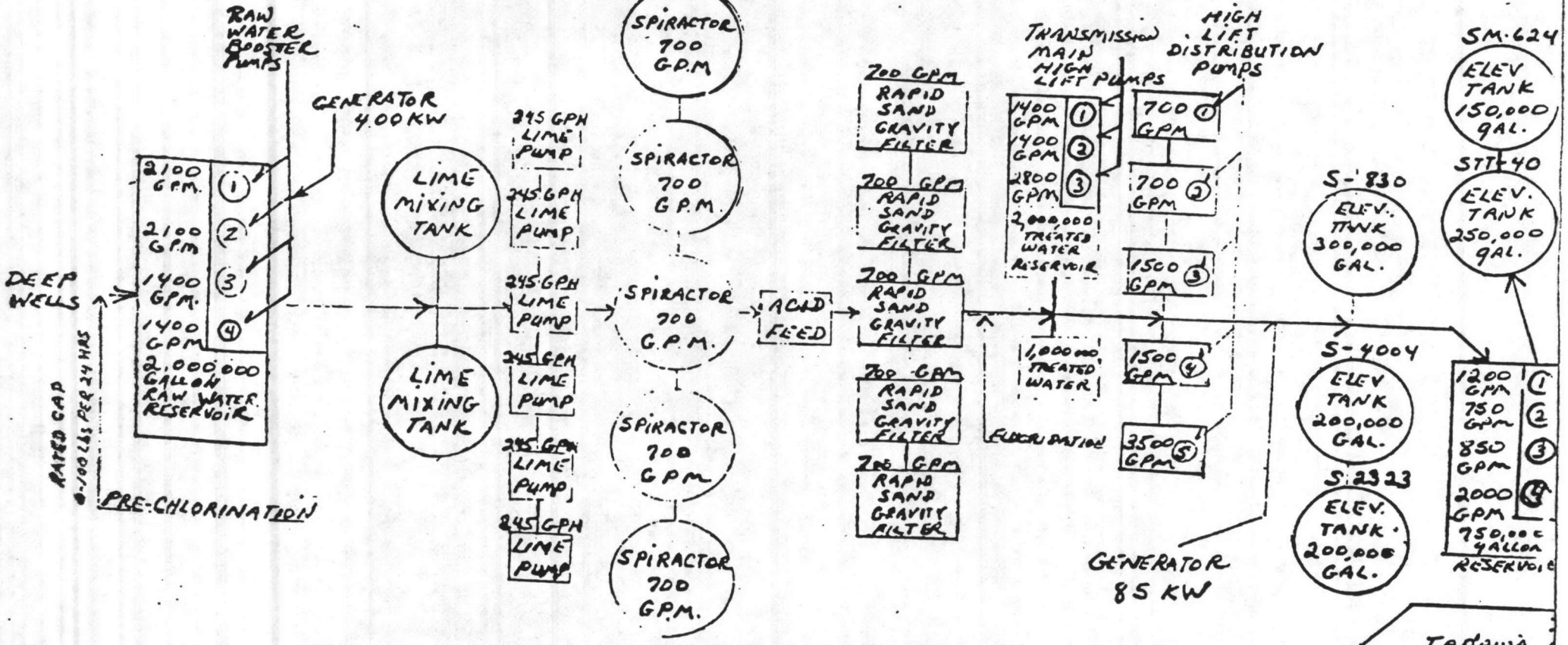


Table III C 3

WELL SURVEY SHEET*

Sheet No. 4 DATE: 3-3-77

WELL NO.	WELL TYPE	DRILLED DEPTH ft.	STATIC LEVEL (ft)	CASING SIZE (in.)	STAGES	DRAWDOWN AT RATED CAPACITY (feet)	RATED CAPACITY (gpm)	PRESENT CAPACITY (GPM)
HB-643	DRILLED	245'	24'	10"	4	36'	260	250
HB-644	DRILLED	255'	22'	10"	5	44'	260	280
HB-645	DRILLED	270'	18'	10"	4	34'	260	200
HB-646	DRILLED	270'	17'	10"	3	28'	260	150
B-647	DRILLED	200'	24"	10"	3	25'	260	200
dB-648	DRILLED	265'	22'	10"	4	77'	230	200
-649	DRILLED	284'	24'	10"	5	65'	400	300
B-650	DRILLED	179'	15'	10"	5	74'	260	225
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

WELL NO.	SPECIFIC CAPACITY (gpm/ft of drawdown)	PUMP HEAD (ft)	MOTOR H. P.	CHLORINATION (AMOUNT)	RESIDUAL CHLORINE (ppm)	AUXILIARY POWER (type)	DD FORM 710	DD FORM 686
HB-643	7.2	124'	15.0			GASOLINE		
HB-644	5.9	133'	15.0					
HB-645	7.6	103'	10.0			GASOLINE		
HB-646	9.3	75'	10.0			GASOLINE		
HB-647	10.4	91'	10.0			GASOLINE		
HB-648	2.9	184'	20.0					
HB-649	6.2	199'	20.0					
HB-650	3.5	210'	40.0					
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

WATER TREATMENT PLANT

INDIVIDUAL PLANT DATA

PLANT NO. & LOCATION Holcomb Blvd. Swimming Pools

The Holcomb Blvd. Plant personnel is responsible for checking and maintaining the following swimming pools:

1. Area #2 pool, bldg. 236, 440,000 gallon capacity
2. 1 filter pump at 1200 G.P.M.
3. 3 filters at 400 G.P.M. each
4. 1 Wallace & Tiernan chlorinator
5. 1 Strantrol
6. 1 Backwash holding tank S-256

1. Area #5 pool, bldg. 540, 440,000 gallon capacity
2. 1 filter pump at 1200 G.P.M.
3. 3 filters at 400 G.P.M. each
4. 1 Wallace & Tiernan chlorinator
5. 1 Strantrol
6. 1 backwash holding tank S-563

1. Paradise Point pool, bldg. 2632,bldg. 2631(baby pool), 188,000 gallon capacity
2. 1 Filter pump at 600 G.P.M.
3. 3 Filters at 200 G.P.M. each
4. 1 Wallace & Tiernan chlorinator
5. 1 Strantrol

1. Tarawa Terrace pool, TT-20, 298,000 gallon capacity
2. 1 filter, 3 cells, 50 sq. ft./cell, flow rate 5.59 gal/sq,ft./min.
3. 1 fiter pump at 830 G.P.M.
4. 1 Stantrol
5. 1 Wallace & Tiernan chlorinator

1. Camp Johnson pool, M-178, 440,000 gallon capacity
2. 3 filters at 400 G,P.M. each
3. 1 Filter pump at 1200 G.P.M.
4. 1 Wallace & Tiernan chlorinator
5. 1 Strantrol
6. 1 Backwash holding tank

WATER TREATMENT PLANT

INDIVIDUAL PLANT DATA

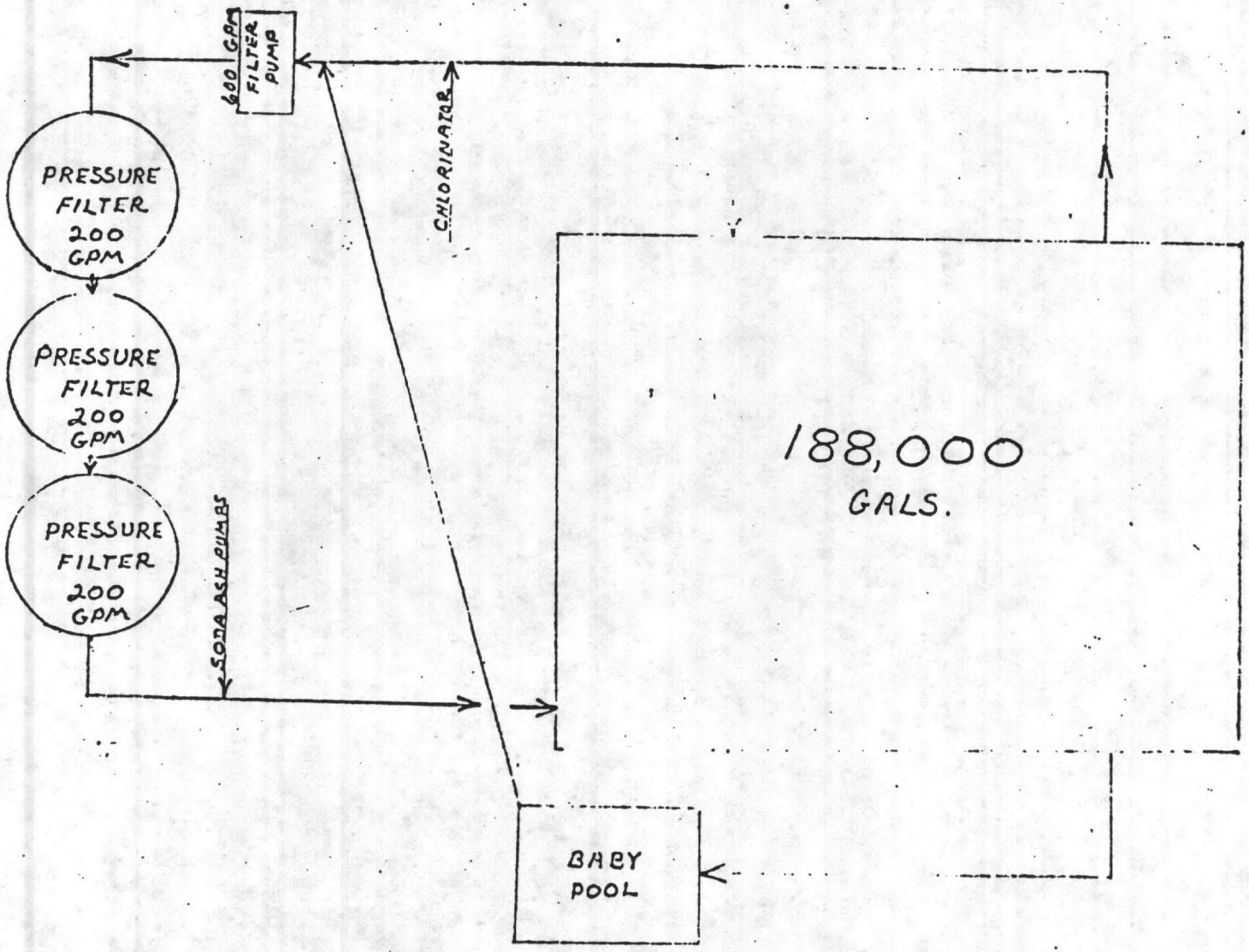
PLANT NO. & LOCATION Marine Corps Air Station Swimming Pools

The Air Station plant personnel is responsible for checking and maintaining the following pools:

1. Enlisted Pool, AS-204, 288,000 gallon capacity
2. 6 Pressure sand filters at 140 G.P.M. each
3. 2 Filter pumps at 600 G.P.M. each
4. 1 Chlorinator, Advance
5. 1 Strantrol

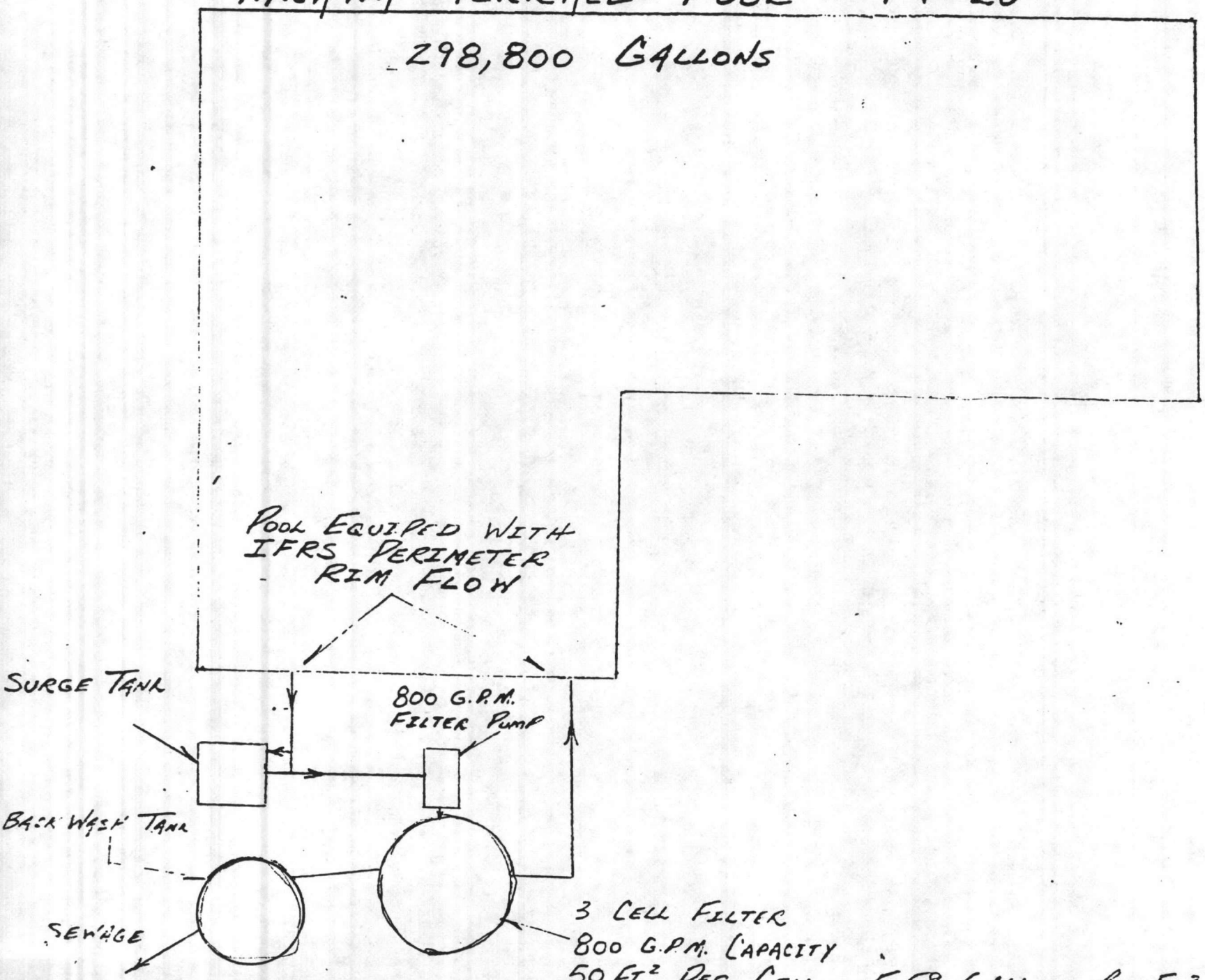
1. Officer's pool, AS-709, 110,000 gallon capacity
2. 2 Filters at 140 G.P.M. each
3. 1 Filter pump at 238 G.P.M.
4. 1 Chlorinator, Advance
5. 1 Strantrol

PARADISE POINT BLDG. 2615
SWIMMING POOL

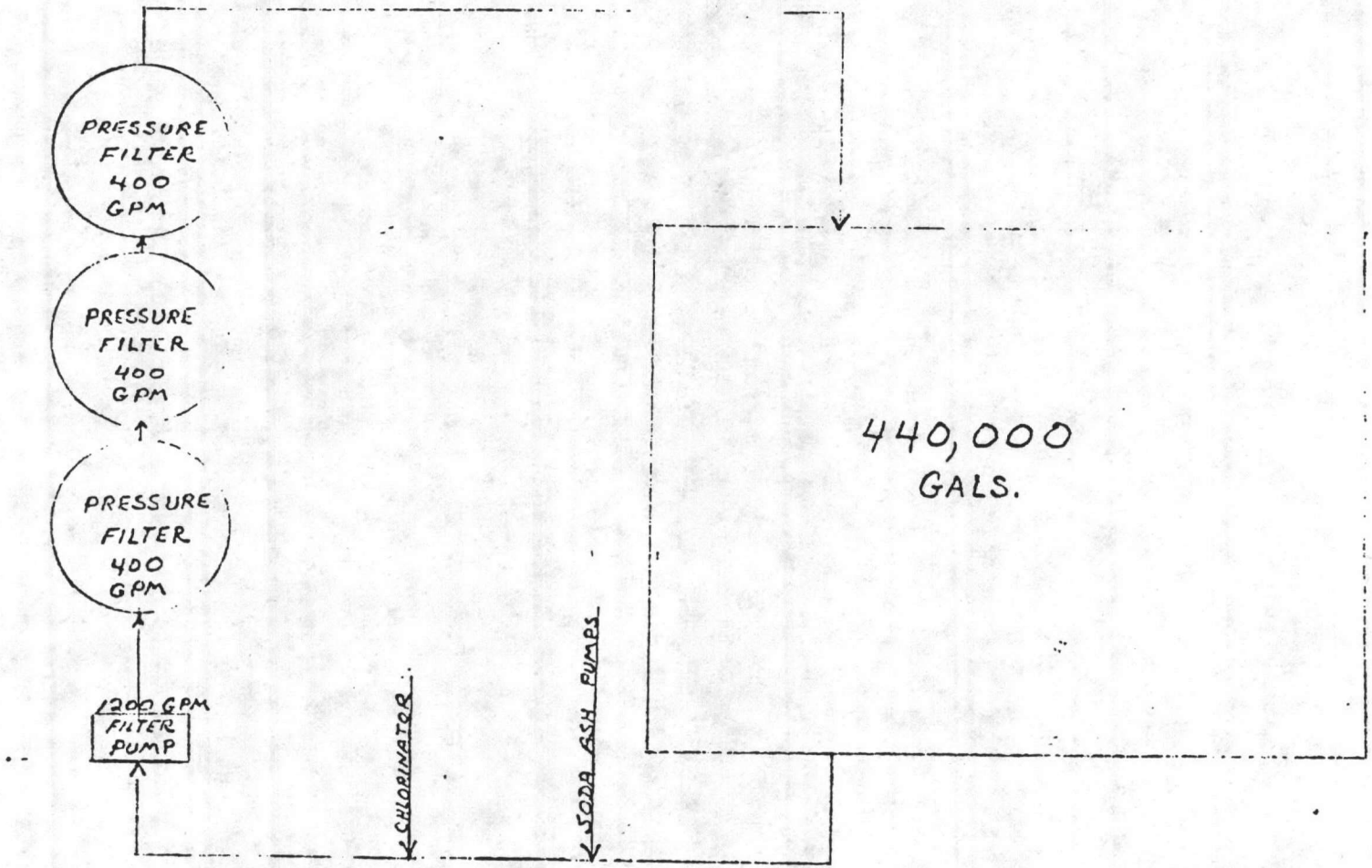


TARAWA TERRACE POOL - TT-20

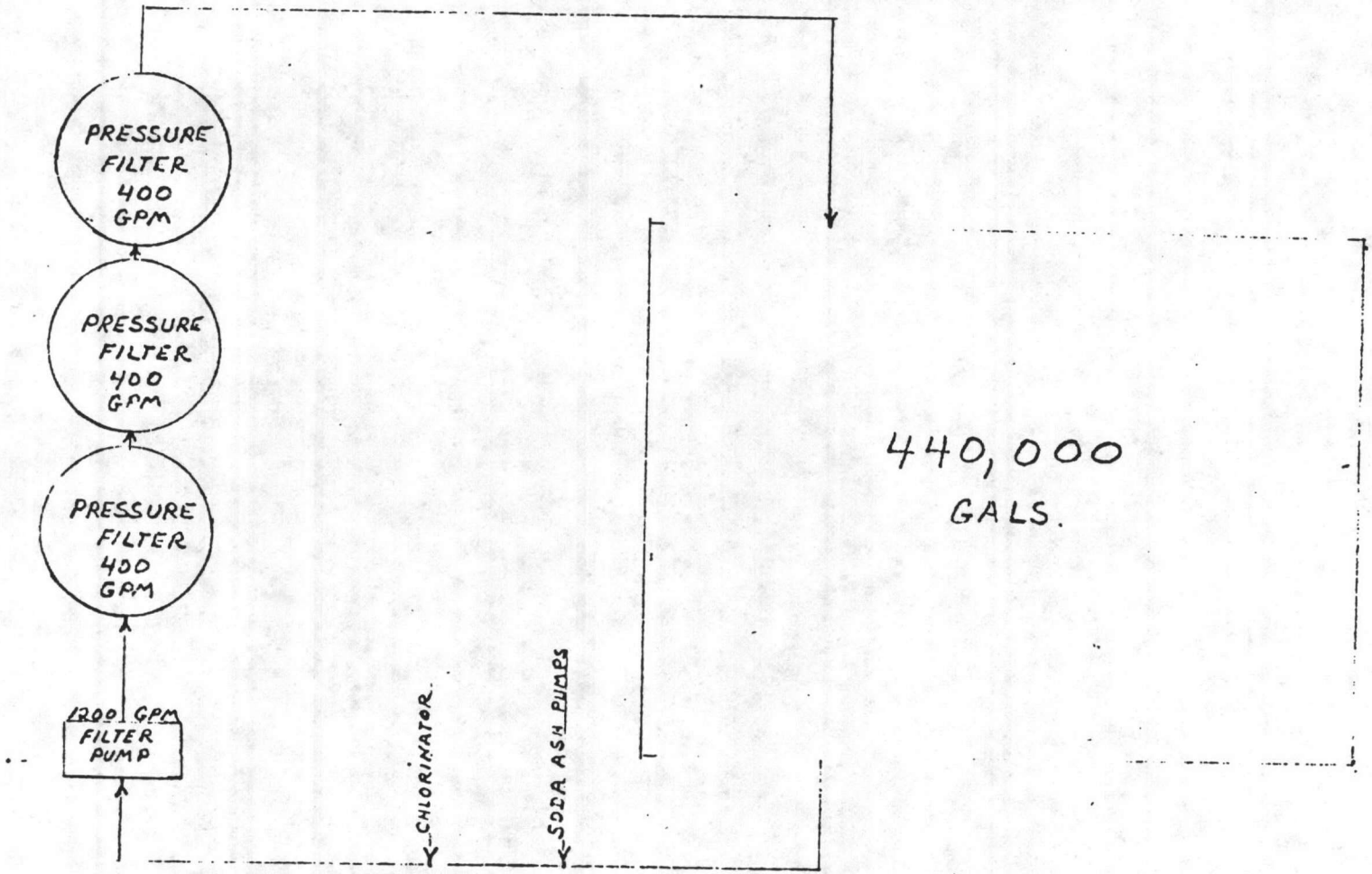
298,800 GALLONS



AREA 2 BLDG. 236
SWIMMING POOL



AREA 5 BLDG. 540
SWIMMING POOL



WATER TREATMENT PLANT

INDIVIDUAL PLANT DATA

PLANT NO. & LOCATION Hadnot Point Plant Bldg. 20

Write narrative description of overall system - include design capacity of plant, average daily flow; describe chemical treatment, chlorine, etc., other types, quantities used:

The Hadnot Point Plant is a lime softening plant with a capacity of 5.0 M.G.D. and is supplied water from 40 deep wells.
The Plant consists of the following equipment:

1. 5 Spiractors at 700 G.P.M. each
2. 5 Rapid sand filters at 700 G.P.M. each
3. 3 Raw water pumps, rated at 2800, 3500, & 4200 G.P.M.
4. 4 High service pumps, rated at 1500,1500,1500, & 3000 G.P.M.
5. 2 Wallace & Tiernan V-notch chlorinators, 0-100 lbs/day.
6. 2 Lime storage hoppers
7. 1 Lime storage silo 60 tons
8. 6 Lime pumps, rated at 245 G.P.H. each
9. 1 Backwash pump at 6300 G.P.M.
10. 1 Recarbination unit, Tomco 27 SCFM
11. 1 - 800,000 gallon Raw Water Reservoir
12. 2 Treated water reservoirs, 1 at 2,000,000 gallons, 1 at 500,000 gallons
13. 4 Elevated Tanks 300,000 gallons each.
14. 1 Wallace & Tiernan volumetric fluoride feeder
15. 1 each Catapillar generator 6 cyl, 275 kw (raw)
    1 each Catapillar generator 175 kw (high lift)

WATER TREATMENT PLANT

INDIVIDUAL PLANT DATA (con't)

PLANT NO. & LOCATION Hadnot Point Bldg. 20 WELLS

Raw Water Wells and Booster Pumps included in the treatment plant system:

H.P.WELLS BLDG. NO.	G.P.M.	AUXILIARY ENGINE	MANUFACTURE
602	154		
603	140	Diesel	Murphy
606	183		
607	270	Diesel	Murphy
608	208 cont.	Gasoline	Ford
609	119		
610	195	Diesel Gen.	Onan
613	190	Diesel	Murphy
616	210		
620	200		
622	300	Diesel	Murphy
623	242	Diesel	Murphy
628	150	Diesel	Murphy
629	200	Diesel	Murphy
632	205		
633	210		
634	219 cont.		
635	146		
636	119		
637	130 cont.		
638	192	Gasoline	Continential
639	105	Gasoline	Continential
640	154	Gasoline	Continential
641	319		
642	128		
651	242 cont.	Gasoline	Ford
652	216 cont.		
653	197 cont.		
654	230	Diesel	Ford
655	110	Diesel	Murphy
660	150	Diesel	Murphy
661	280	Diesel	Murphy

WATER TREATMENT PLANT

INDIVIDUAL PLANT DATA (con't)

PLANT NO. & LOCATION Hadnot Point Bldg. 20 WELLS

H.P.WELLS BLDG. NO.	G.P.M.	AUXILIARY ENGINE	MANUFACTURE
662	168	Diesel	Murphy
5186	214	Diesel	Murphy
LCH 4007	200	Diesel Gen.	Onan
LCH 4009	450	Diesel	Murphy
742 booster pump	700		
709	225	Diesel	MWM
710	200	Diesel	MWM
711	150		
663	300	Diesel	MWM

HADNOT POINT BLDG. #20

CAPACITY 5 MGD WITH 40 DEEP WELLS

LIME SOFTENING PLANT

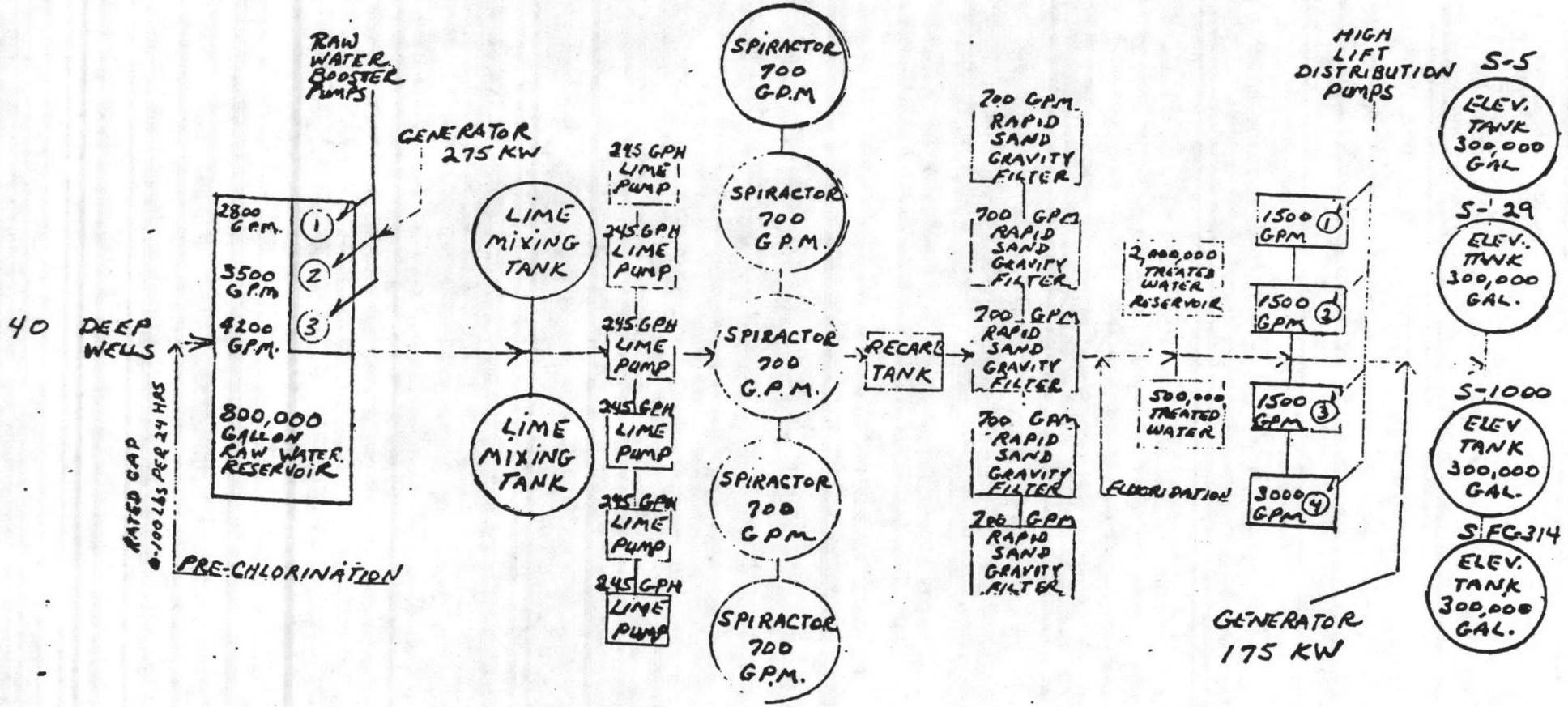


Table III C 3

WELL SURVEY SHEET*

Sheet No. 1 DATE: 3-3-77

WELL NO.	WELL TYPE	DRILLED DEPTH ft.	STATIC LEVEL (ft)	CASING SIZE (in.)	STAGES	DRAWDOWN AT RATED CAPACITY (feet)	RATED CAPACITY (gpm)	PRESENT CAPACITY (GPM)
HP-~~601~~ 660	DRILLED	195'	21'	8"	4	17'	250	100
HP-602	DRILLED	160'	30'	8"	5	15'	150	100
HP-603	DRILLED	195'	19'	8"	5	29'	250	175
HP-606	DRILLED	210'	17'	8"	6	35'	200	150
HP-608	DRILLED	126'	42'	8"	3	16'	250	150
HP-609	DRILLED	150'	11'	8"	4	33'	200	100
HP-610	DRILLED	190'	43'	8"	4	13'	250	175
HP-~~611~~ 613	DRILLED	146'	12'	8"	5	11'	250	150
HP-~~612~~ 617	DRILLED	190'	14'	8"	5	23'	200	100
HP-613	DRILLED	150'	15'	8"	6	5'	250	150
HP-~~614~~ 618	DRILLED	167'	11'	8"	6	19'	250	CAVED
HP-~~615~~ 584	DRILLED	158'	21'	8"	4	7'	250	75
HP-~~616~~ 619	DRILLED	1 0'	29'	8"	5	25'	250	100
								CAVED
								CAVED

HP-617 654
HP-619 653
11
12
13
14

WELL NO.	SPECIFIC CAPACITY (gpm/ft of drawdown)	PUMP HEAD (ft)	MOTOR H. P.	CHLORINATION (AMOUNT)	RESIDUAL CHLORINE (ppm)	AUXILIARY POWER (type)	DD FORM 710	DD FORM 686
HP-~~601~~ 669	14.7	78'	7.5			GASOLINE		
HP-602	10.0	36'	5.0					
HP-603	8.6	86'	10 0			GASOLINE		
HP-606	5.7	2'	10 0					
HP-608	15.6	73'	7.5			GASOLINE		
HP-609	6.1	85'	7.5					
HP-610	19.2	81'	7.5			GASOLINE		
HP-~~611~~ 613	22.7	91'	10.0					
HP-~~612~~ 617	8.6	84'	.5					
HP-613	50.0	90'	10.0			GASOLINE		
HP-~~614~~ 618	13.2	96'	10.0					
HP-~~615~~ 584	35.7	82'	7.5					
HP-616	10.0	85'	10.0					

11
12
13
14

Table III C 3

WELL SURVEY SHEET*

Sheet No. 2 DATE: 3-3-77

WELL NO.	WELL TYPE	DRILLED DEPTH ft.	STATIC LEVEL (ft)	CASING SIZE (in.)	STAGES	DRAWDOWN AT RATED CAPACITY (feet)	RATED CAPACITY (gpm)	PRESENT CAPACITY (GPM)
HP-620	DRILLED	54'	19'	8"	4	7'	200	100
HP-621	DRILLED	77'	10'	8"	4	20'	250	150
HP-622	DRILLED	207'	16'	8"	4	15'	180	100
HP-623	DRILLED	187'	38'	8"	4	12'	190	100
HP-632	DRILLED	74'	30'	8"	6	10'	250	150
HP-633	DRILLED	205'	25'	8"	3	23'	200	100
HP-634	DRILLED	225'	20'	8"	4	20'	130	50
HP-635	DRILLED	215'	15'	8"	4	25'	200	100
HP-636	DRILLED	227'	8'	8"	5	32'	200	100
HP-637	DRILLED	146'	26'	8"	7	16'	150	75
HP-638	DRILLED	136'	27'	8"	8	35'	185	100
HP-639	DRILLED	76'	23'	8"	7	42'	180	100
HP-640	DRILLED	75'	10'	8"	6	50'	290	250

HP 625 55 662 11 12 13 14

Caved

WELL NO.	SPECIFIC CAPACITY (gpm/ft of drawdown)	PUMP HEAD (ft)	MOTOR H. P.	CHLORINATION (AMOUNT)	RESIDUAL CHLORINE (ppm)	AUXILIARY POWER (type)	DD FORM 710	DD FORM 686
HP-620	28.6	72'	7.5					
HP-621	12.5	86'	7.5			GASOLINE		
HP-622	12.0	105'	10 0			GASOLINE		
HP-623	15.8	145'	10.0			GASOLINE		
HP-632	25.0	155'	10.0					
HP-633	8.6	98'	7.5					
HP-634	6.5	84'	7.5					
HP-635	8.0	84'	7.5					
HP-636	6.3	84'	7.5					
HP-637	9.3	130'	10.0					
HP-638	5.3	135'	10.0			GASOLINE		
HP-639	4.3	135'	20.0			GASOLINE		
HP-640	5.8	220'	20 0			GASOLINE		

662 5184 11 12 13 14

Table III C 3

WELL SURVEY SHEET*

Sheet No. 3 DATE: 3-3-77

WELL NO.	WELL TYPE	DRILLED DEPTH ft.	STATIC LEVEL (ft)	CASING SIZE (in.)	STAGES	DRAWDOWN AT RATED CAPACITY (feet)	RATED CAPACITY (gpm)	PRESENT CAPACITY (GPM)
HP-641	DRILLED	182'	58'	8"	~~8~~ 5	26'	~~168~~ 300	200
HP-642	DRILLED	206'	33'	8"	8	12'	136	100
HP-651	DRILLED	199'	14'	8"	8	60'	200	125
HP-652	DRILLED	183'	22'	8"	7	14'	200	150
LCH-M1	DRILLED	125'	50'	8"	6	35'	300	225
LCH-M2	DRILLED	150'	23'	8"	6	19'	287	160

WELL NO.	SPECIFIC CAPACITY (gpm/ft of drawdown)	PUMP HEAD (ft)	MOTOR H. P.	CHLORINATION (AMOUNT)	RESIDUAL CHLORINE (ppm)	AUXILIARY POWER (type)	DD FORM 710	DD FORM 686
HP-641	6.5	105'	15.0					
HP-642	11.3	110'	7.5					
HP-651	3.3	226'	20.0			GASOLINE		
HP-652	14.3	220'	15.0					
LCH-M1	8.6	210'	20.0					
LCH-M2	15.1	220'	20.0			GASOLINE		

WATER TREATMENT PLANT

INDIVIDUAL PLANT DATA

PLANT NO. & LOCATION Courthouse Bay BB-190

The Courthouse Bay Plant is an ion exchange softening plant with a capacity of 800,000 G.P.D., and is supplied water from 5 deep wells:

1. 6 Pressure sand filters at 90.6 G.P.M.
2. 4 ion exchange softeners at 102 G.P.M.
3. 2 Filter pumps at 400 G.P.M. each
4. 3 High service pumps, 2 at 500 G.P.M., 1 at 750 G.P.M.
5. 1 Reservoir, 350,000 gallon capacity SBB-191
6. 2 Elevated tanks, 1 at 100,000 gallon capacity SBB-25, and 1 at 325,000 gallon capacity at Boat Basin
7. 2 Wallace & Tiernan chlorinators
8. 1 Backwash holding tank SBB-188
9. 1 Auxiliary engine Continental 6 cylinder gasoline
10. 1 Generator 4 cylinder gasoline

Raw water wells included in the treatment plant system:

CHB.WELLS BLDG. NO.	G.P.M.	AUXILIARY ENGINE	MANUFACTURE
44	128		
220	140		
221	340	Diesel Gen.	Onan
43 (new)	280	Diesel	Murphy
221A (new)		Diesel	

COURTHOUSE BAY BLDG. BR-190

CAPACITY 800,000 GAL.

WITH 5 DEEP WELLS

ZEOLITE SOFTENING PLANT

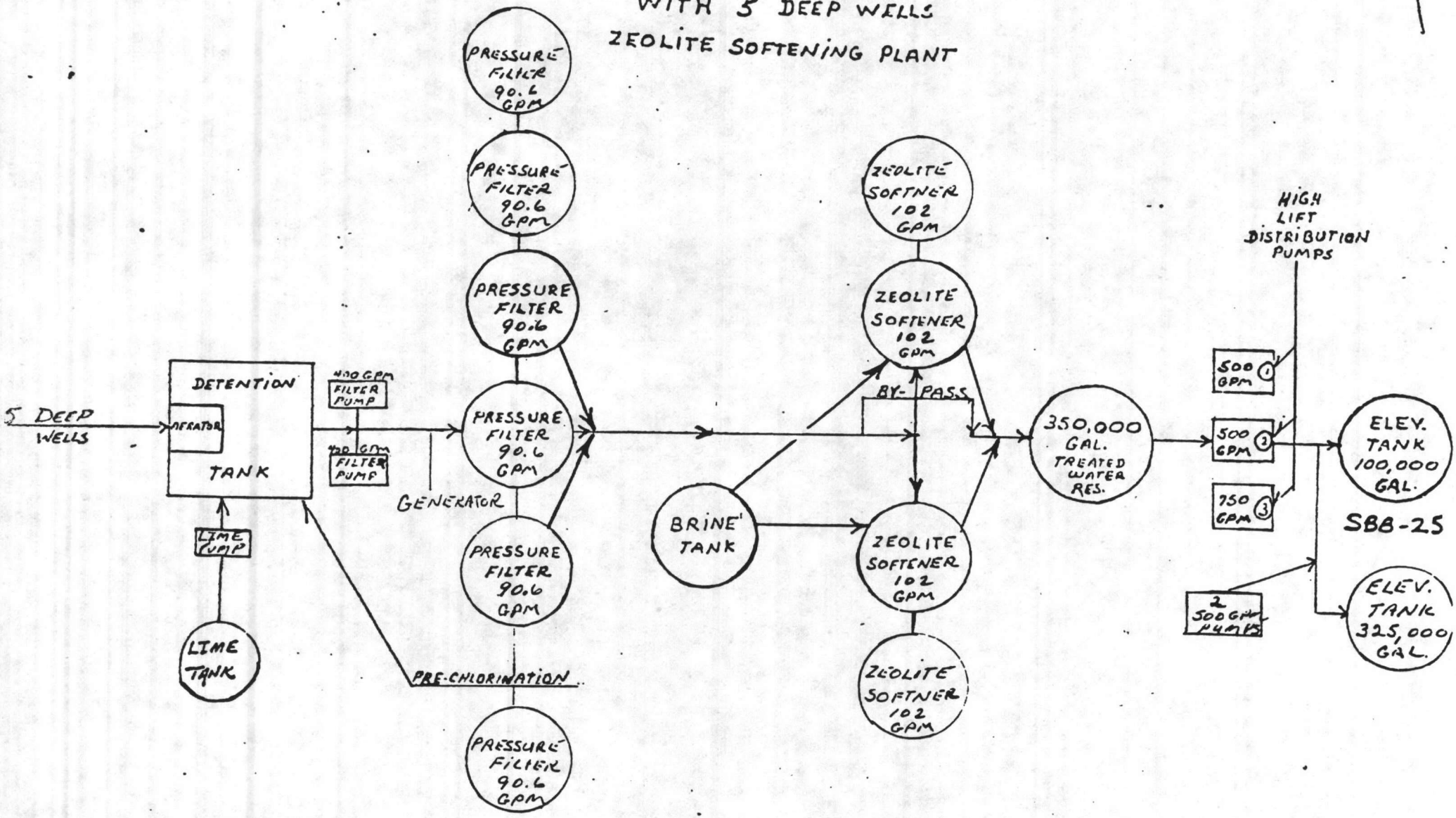


Table III C 3

WELL SURVEY SHEET

Sheet No. 10 DATE: 20 JUNE 1984

WELL NO.	WELL TYPE	DRILLED DEPTH ft.	STATIC LEVEL (ft)	CASING SIZE (in.)	STAGES	DRAWDOWN AT RATED CAPACITY (feet	RATED CAPACITY (gpm)	PRESENT CAPACITY (gpm)
~~BB-43~~	DRILLED	54'	18'	8"	4	19'	175	100
BB-44	DRILLED	63'	24'	8"	4	10'	200	100
BB-220	DRILLED	63'	34'	8"	3	6'	150	150
BB-221	DRILLED	65'	35'	6"	3	8'	300	300
~~A-5~~ NEW 43 221A	DRILLED	116'	18'	8"	4	14'	250	150

WELL NO.	SPECIFIC CAPACITY (gpm/ft of drawdown)	PUMP HEAD (ft)	MOTOR H. P.	CHLORINATION (AMOUNT)	RESIDUAL CHLORINE (TYPE)	AUXILIARY POWER (TYPE)	DD FORM 710	DD FORM 636
~~BB-43~~	9.2	63'	5.0			GASOLINE		
BB-44	20.0	60'	5.0					
BB-220	25.0	78'	7.5					
BB-221	31.5	82"	15.0					
~~A-5~~ NEW 43 221A	17.9	75'	3.0	5 lbs per day	0.6	GASOLINE		

WATER TREATMENT PLANT

INDIVIDUAL PLANT DATA

PLANT NO. & LOCATION Onslow Beach BA-138

The Onslow Beach Plant is an ion exchange softening plant with a capacity of 250,000 G.P.D., and is supplied water from 2 deep wells. The plant consists of the following equipment:

1. 2 Pressure sand filters at 37 G.P.M.
2. 2 ion exchange softeners at 75 G.P.M.
3. 1 Treated water reservoir, SBA-139, 250,000 gallons capacity
4. 1 Elevated tank, SBA-108, 100,000 gallons capacity
5. 3 High service pumps, 1 at 300 G.P.M., 1 at 750 G.P.M., & 1 at 1000 G.P.M.
6. 1 Auxiliary engine, Ford, Diesel
7. 2 Wallace & Tiernan chlorinators

Raw water wells included in the treatment plant system:

O.B.WELLS BLDG. NO.	G.P.M.	AUXILIARY ENGINE	MANUFACTURE
164	159	Diesel	Ford
190	210		

Table III C 3

WELL SURVEY SHEET

Sheet No. 11 DATE: 20 June 1984

WELL NO.	WELL TYPE	DRILLED DEPTH ft.	STATIC LEVEL (ft)	CASING SIZE (in.)	STAGES	DRAWDOWN AT RATED CAPACITY (feet	RATED CAPACITY (gpm)	PRESENT CAPACITY (gpm)
BA-164	DRILLED	61'	17'	8"	8	8'	200	175
BA-190	DRILLED	115'	7'	8"	7	20'	250	-

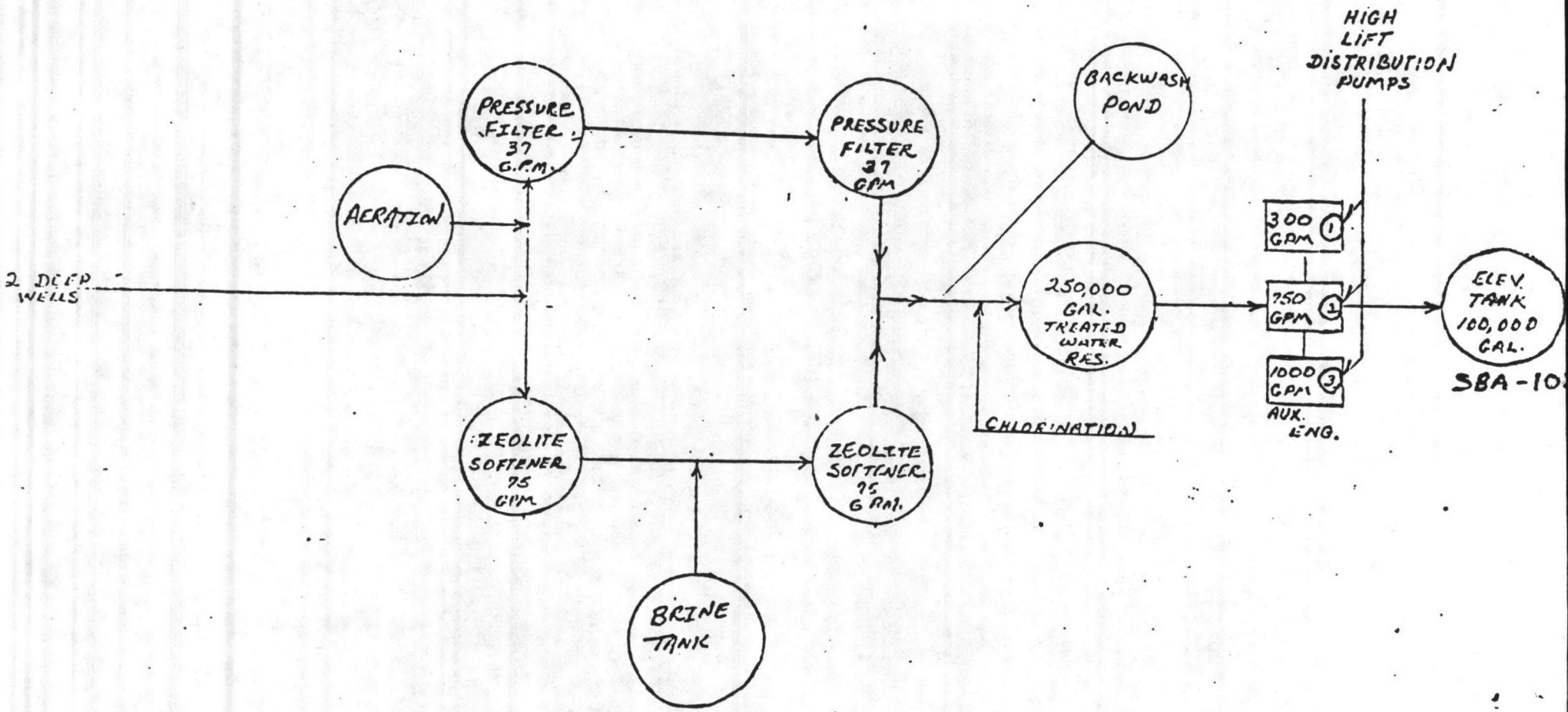
WELL NO.	SPECIFIC CAPACITY (gpm/ft of drawdown)	PUMP HEAD (ft)	MOTOR H. P.	CHLORINATION (AMOUNT)	RESIDUAL CHLORINE (TYPE)	AUXILIARY POWER (TYPE)	DD FORM 710	DD FORM 636
BA-164	25.0	130	10.0			GASOLINE		
BA-190	12.5	157.5	15.0					

ONSLOW BEACH BLDG. [illegible]-138

CAPACITY 250,000 GPD.

WITH 2 DEEP WELLS

ZEOLITE SOFTENING PLANT



WATER TREATMENT PLANT

INDIVIDUAL PLANT DATA

PLANT NO. & LOCATION Rifle Range Bldg. RR-85

The Rifle Range water plant is an ion exchange softening plant with a capacity of 600,000 G.P.D., and is supplied water from 4 deep wells:
The plant consists of the following equipment:

1. 3 Pressure sand filters at 134 G.P.M. each
2. 2 ion exchange softeners at 128 G.P.M. each
3. 2 Filter pumps at 400 G.P.M. each
4. 3 High service pumps, 2 at 500 G.P.M., and 1 at 750 G.P.M.
5. 1 Treated water reservoir at 350,000 gallons, SRR-86
6. 1 Elevated tank, 100,000 gallon capacity SRR-44
7. 2 Wallace & Tiernan chlorinators
8. 1 Backwash holding tank SRR-102
9. 1 Auxiliary engine Continetal 6 cylinder, gasoline
10. 1 Generator, Onan 125 kw

R.R.WELLS BLDG. NO.	G.P.M.	AUXILIARY ENGINE	MANUFACTURE
45	201	Gasoline	Allis Chalmers
47	104		
97	151		
229	300 cont.	Diesel	Murphy

Table III C 3

WELL SURVEY SHEET

Sheet No. 9 DATE: 20 June 1984

WELL NO.	WELL TYPE	DRILLED DEPTH ft.	STATIC LEVEL (ft)	CASING SIZE (in.)	STAGES	DRAWDOWN AT RATED CAPACITY (feet	RATED CAPACITY (gpm)	PRESENT CAPACITY (gpm)
RR-45	DRILLED	130'	27'	8"	10	8'	140	100
RR-47	DRILLED	85'	11'	8"	7	6'	250	175
RR-97	DRILLED	200'	52'	8"	13	14'	150	150
New well to replace 227 still under contract								
229								

WELL NO.	SPECIFIC CAPACITY (gpm/ft of drawdown)	PUMP HEAD (ft)	MOTOR H. P.	CHLORINATION (AMOUNT)	RESIDUAL CHLORINE (TYPE)	AUXILIARY POWER (TYPE)	DD FORM 710	DD FORM 636
RR-45	17.5	205'	15.0			GASOLINE		
RR-47	41.7	109'	20.0					
RR-97	10.7	180	10.0					
229								

BLDG. KK-85

CAPACITY 600,000 GPD

WITH 4 DEEP WELLS

ZEOLITE SOFTENING PLANT