

agenda

CITY OF BROOKINGS
SPECIAL WORK STUDY SESSION
Brookings City Hall Council Chambers
898 Elk Drive, Brookings, Oregon
February 23, 2000
10:00AM

- I. CALL TO ORDER
- II. PLEDGE OF ALLEGIANCE
- III. ROLL CALL
- IV. WATER MANAGEMENT AND CONSERVATION PLAN - HGE, Inc.,
Architects Engineers Surveyors & Planners
- V. OTHER
- VI. ADJOURNMENT



BROOKINGS WTP PRE-DESIGN



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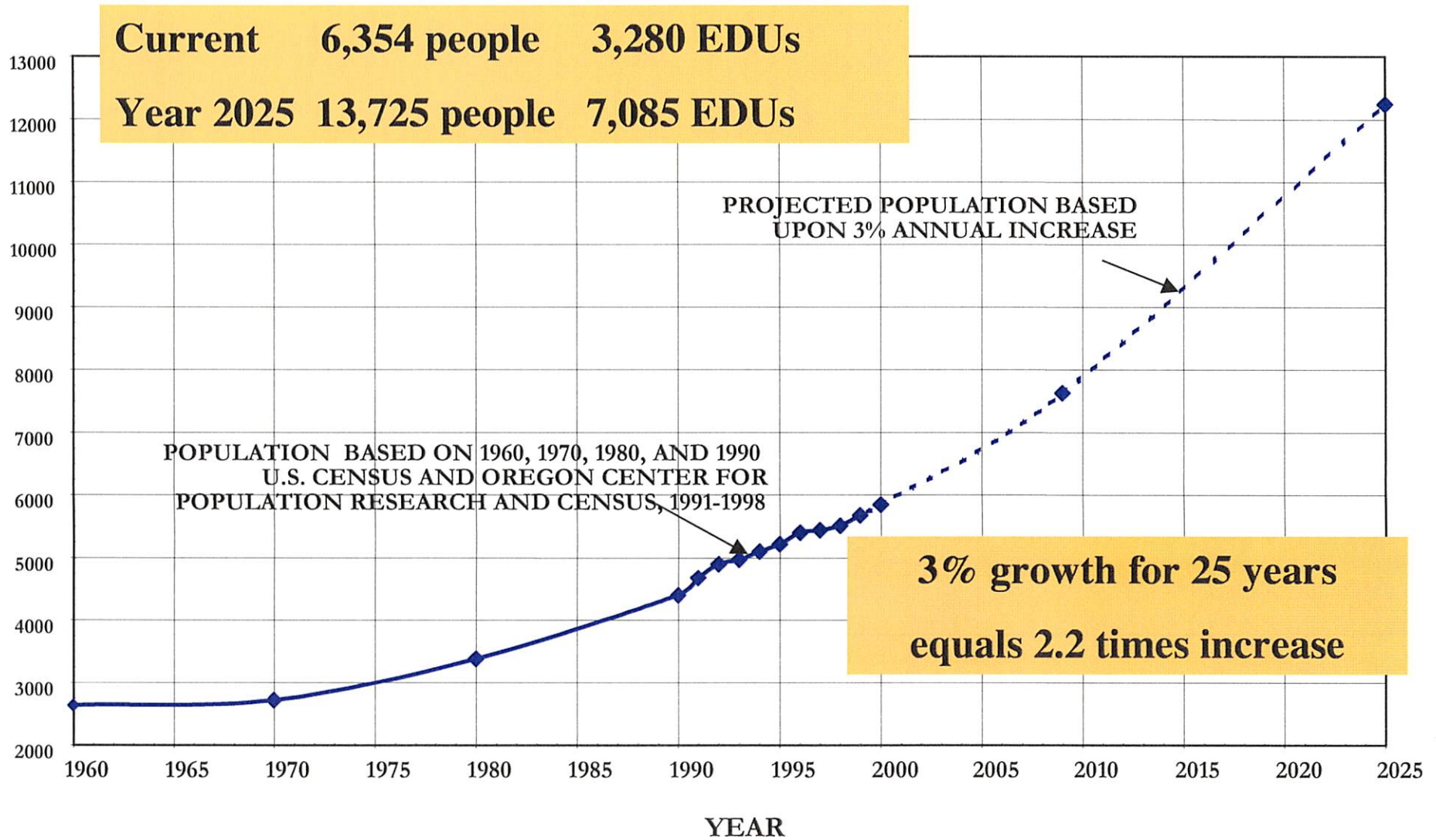
ONGOING REPORTS

- 1. Pre-Design – Water Treatment
- 2. Water Master Plan
- 3. Water Conservation Plan



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WATER USE CHARACTERISTICS

Per Capita Use (Average Day)

130 gallons per day, *metered residential*

38 gallons per day, *metered nonresidential*

40 gallons per day, *non-metered*

208 gallons per day, *total*

Equivalent Dwelling Unit (EDU)

325 gallons per day at meter



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DESIGN PRODUCTION VALUES FOR TREATMENT

Year	Maximum Day Demand (gallons per day)
Current	2,600,000 gpd
Year 2005	3,200,000 gpd
Year 2015	4,300,000 gpd
Year 2025	5,800,000 gpd



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HYDRAULIC PROFILE

1.5 MG RESERVOIR
NORTHEAST BASE LEVEL

EL. 330.0

50% of max daily flow + fire protection

14" capacity 3.2 mgd

8050 LF
14" A.C.

16" capacity 6 mgd

12" capacity 2.6 mgd

Ranney well capacity 6 mgd

1.5 MGD WATER
TREATMENT PLANT

4900 LF
12" STEEL

EL. 74.0
EL. 68.0
EL. 62.0

INTAKE PUMPS
CHETCO RIVER

49,000 GAL
CLEARWELL
W.S. EL. 34.0
FLOOR EL. 26.0
MAX. WATER LEVEL 24.0
MIN. WATER LEVEL 13.2
WATER FILTERS

9560 LF
16" DIP

MAX W.S. 38.0
EL. 20.3
EL. 41.0
EL. -6.98
EL. -7.48

Plant capacity 2.2 – 2.6 mgd

Treated water pump capacity 2.6 mgd

Intake pump capacity 2.6 – 3 mgd

RAW WATER PUMPING AND TRANSMISSION

Current

Estimated capacity	2.6 mgd to 3 mgd
Estimated time until expansion is needed	1 to 4 years

Phase I Upgrade

Phase I	Replace 4,900 feet of 12" line with 16"
Estimated capacity	3.2 to 3.6 mgd
Projected year capacity will last through	2005 to 2010
Opinion of probable cost	\$530,000



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A decorative blue line graphic that starts as a horizontal line and then zig-zags upwards and to the right, ending in a small peak.

TREATED WATER PUMPING AND TRANSMISSION

Current

Estimated capacity	2.3 mgd to 2.6 mgd
Estimated time until expansion is needed	0, at capacity

Phase I Upgrade

Phase I	Install in-line booster pump, 125 Hp
Estimated capacity	3.2 mgd
Projected year capacity will last through	2005 to 2007
Opinion of probable cost	\$120,000



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WATER FILTRATION

Current

Estimated capacity	2.2 mgd to 2.6 mgd
Estimated time until expansion is needed	0, at capacity

Phase I Upgrade

Phase I	Upgrade with either conventional filtration or membrane microfiltration
Estimated capacity	3.2 to 4.4 mgd
Projected year capacity will last through	2005 to 2015
Opinion of probable cost	\$2,100,000



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RESERVOIR STORAGE

Current

Estimated capacity	50% of max day + fire
Estimated time until expansion is needed	0, at capacity

Phase I Upgrade

Phase I	New 2.5 MG reservoir
Estimated capacity	3.6 mgd (maximum day)
Projected year capacity will last through	2010
Opinion of probable cost	\$2,050,000



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RAW WATER PUMPING AND TRANSMISSION

Phase II Upgrade

Phase II

Replace 40 Hp intake
pumps with 120 Hp pumps

Estimated capacity

5.5 to 6 mgd

Projected year capacity will last
through

2025

Opinion of probable cost

\$235,000



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TREATED WATER PUMPING AND TRANSMISSION

Phase II Upgrade

Phase II

Install 18" line to reservoir,
replace 125 Hp treated
water pumps with 300 Hp

Estimated capacity

5.8 mgd

Projected year capacity will last
through

2025

Opinion of probable cost

\$1,500,000



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WATER FILTRATION

Phase II Upgrade

Phase II

Upgrade conventional or
add additional membrane
microfiltration units

Estimated capacity

4.4 to 5.8 mgd

Projected year capacity will last
through

2015 to 2025

Opinion of probable cost

\$1,250,000 to \$2,605,000



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RESERVOIR STORAGE

Phase II Upgrade

Phase II

Second new 2.5 MG
reservoir

Estimated capacity

6 mgd (maximum day)

Projected year capacity will last
through

2025

Opinion of probable cost

\$2,050,000



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COMBINED COSTS

Intake, Transmission,
Filtration, Base Level Storage

Opinion of Probable
Cost

Phase I

\$4,800,000

Phase II

\$5,015,000 to \$6,365,000

Total

\$9,815,000 to \$11,165,000



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FINANCING

- **\$1,000,000 Loan**

6.0% interest, 20 years

Annual payback \$87,200

Number EDUs 3,280

Monthly rate increase \$2.20

- **\$4,800,000 Loan**

6.0% interest, 20 years

Annual payback \$418,500

Number EDUs 3,280

Monthly rate increase \$10.65



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FILTRATION OPTIONS

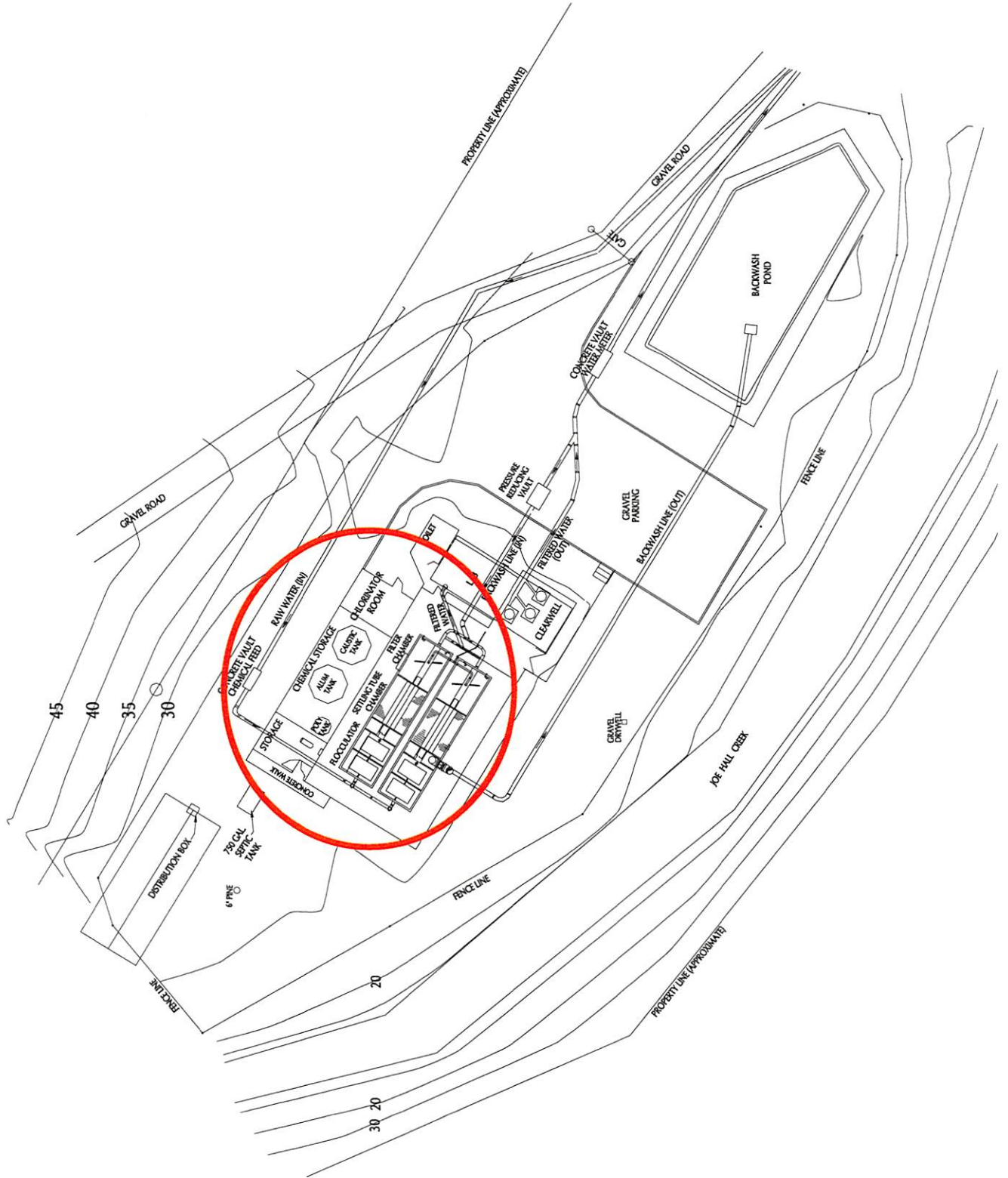
- 1. Natural Filtration
- 2. Split-Stream Treatment
- 3. Conventional Rapid Sand Filtration
- 4. Membrane Filtration



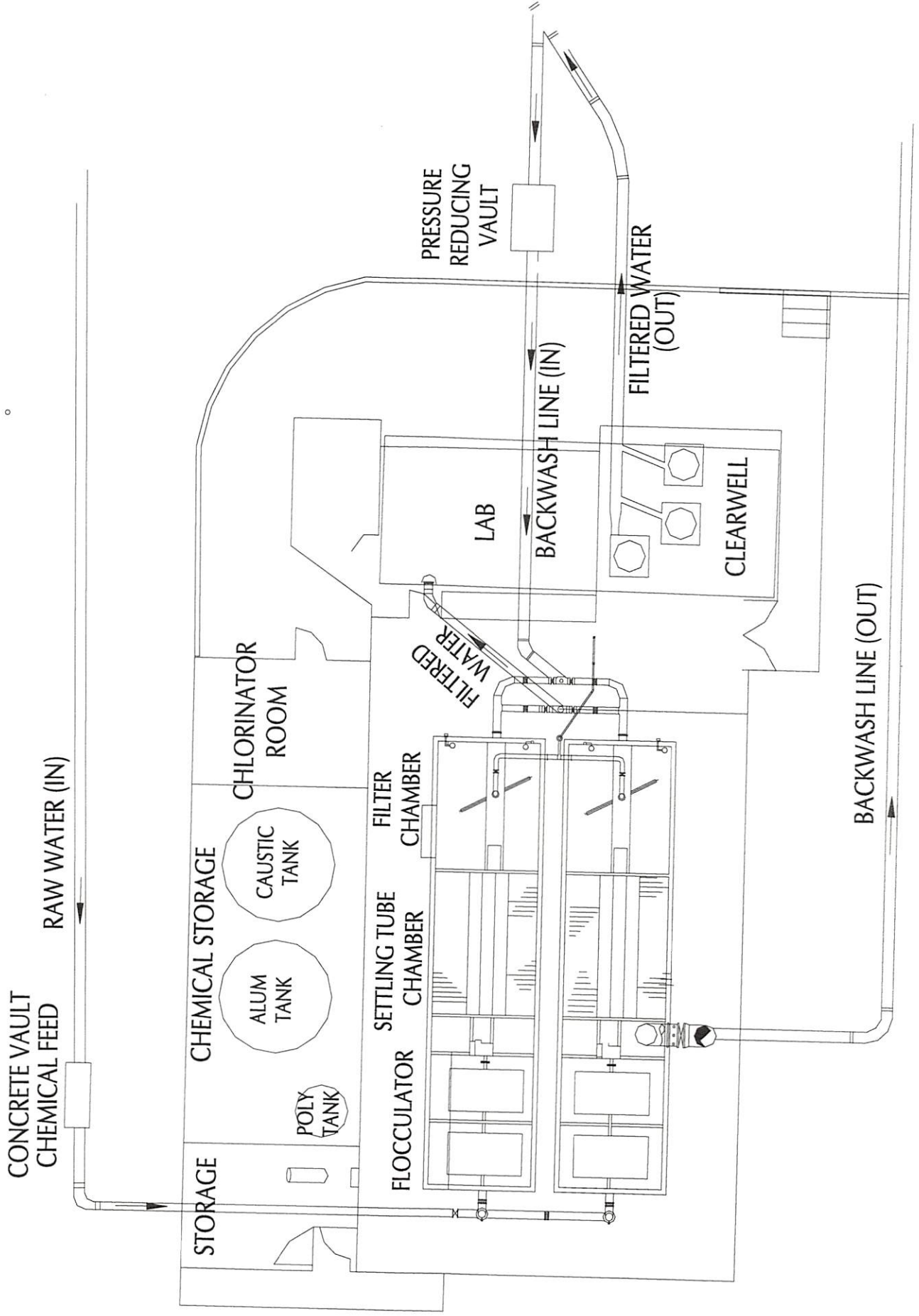
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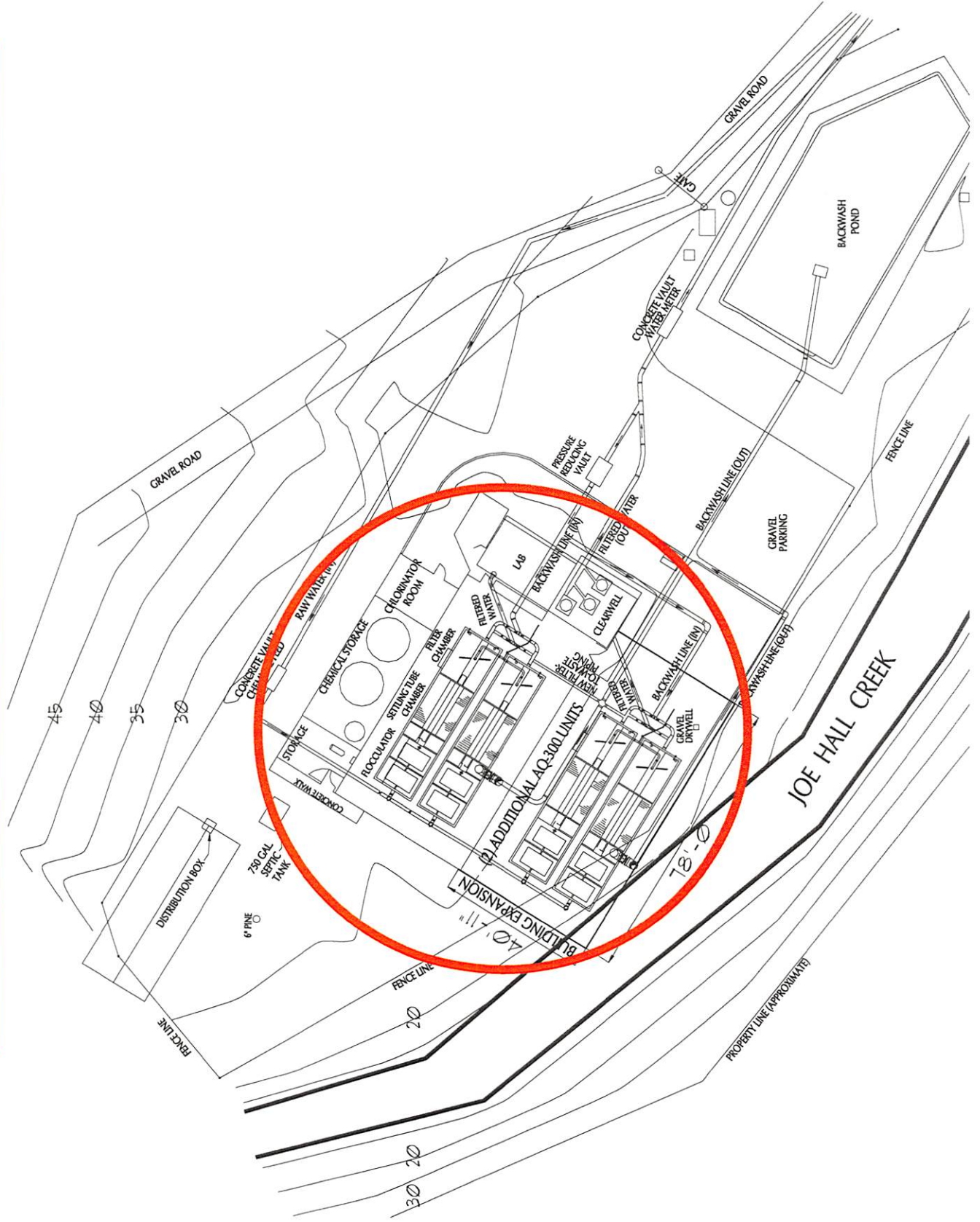
EXISTING WTP SITE PLAN



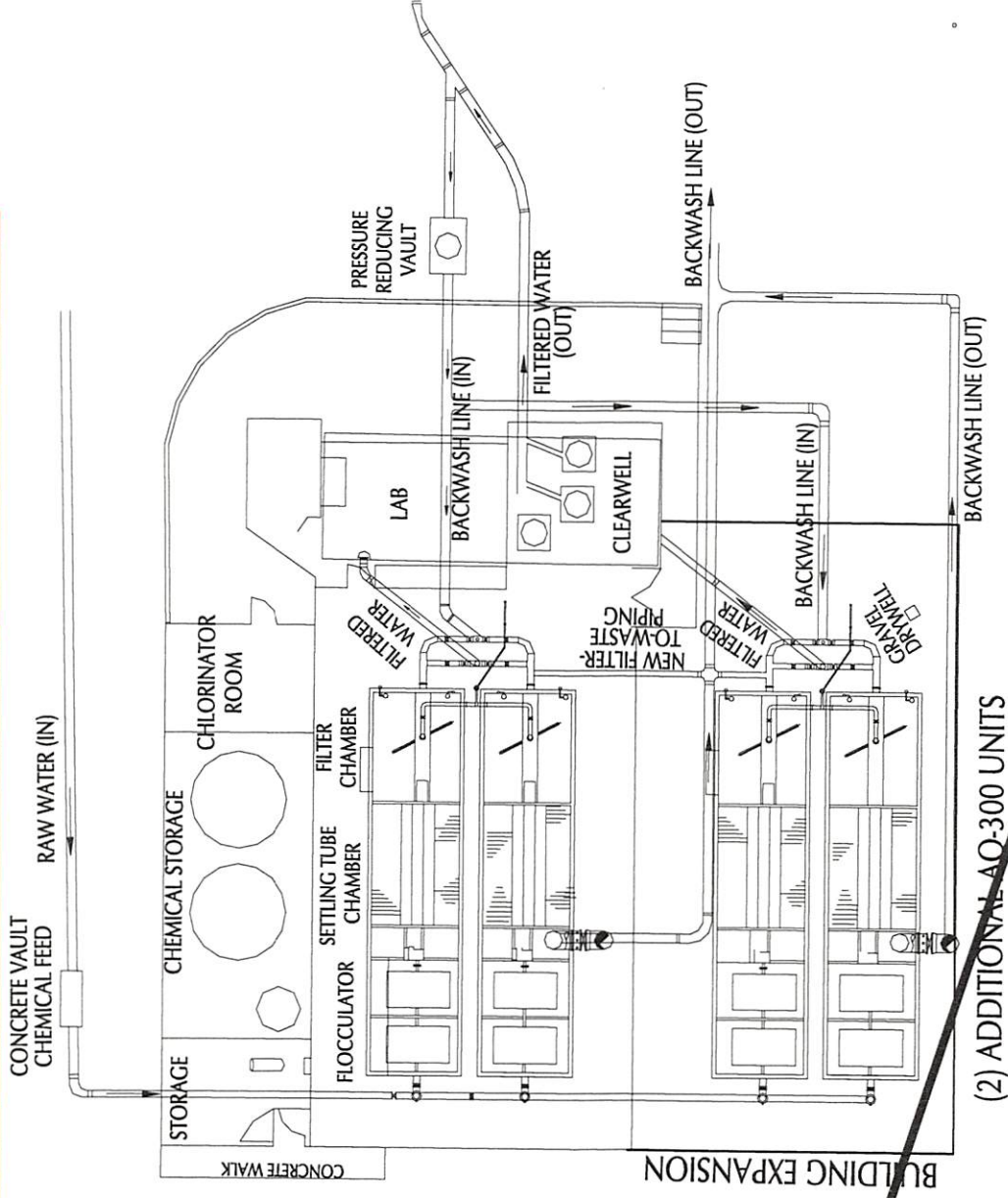
EXISTING WATER TREATMENT PLANT - FLOOR PLAN



(2) ADDITIONAL AQ-300 UNITS

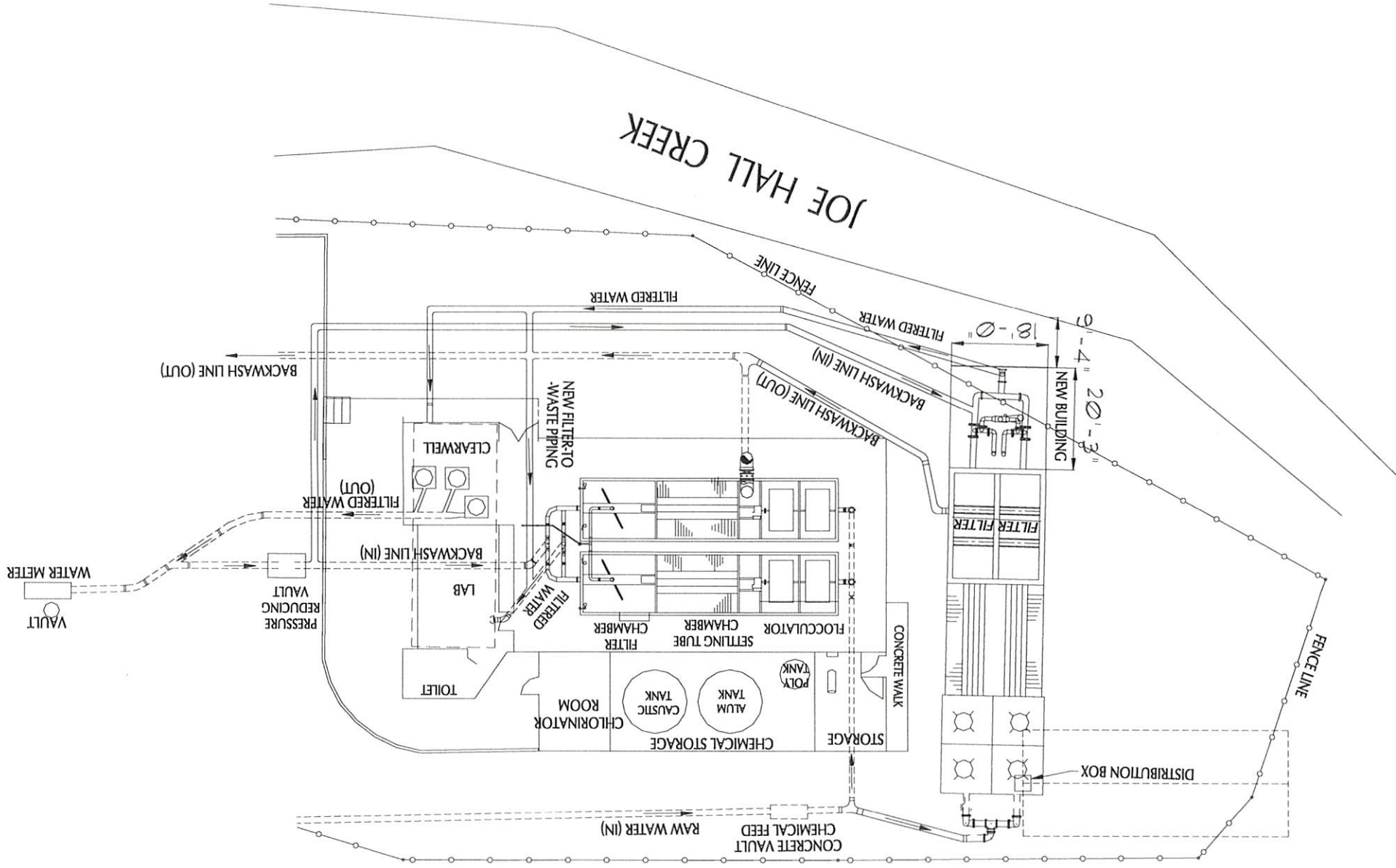


ADDITIONAL AQ-30 UNIT

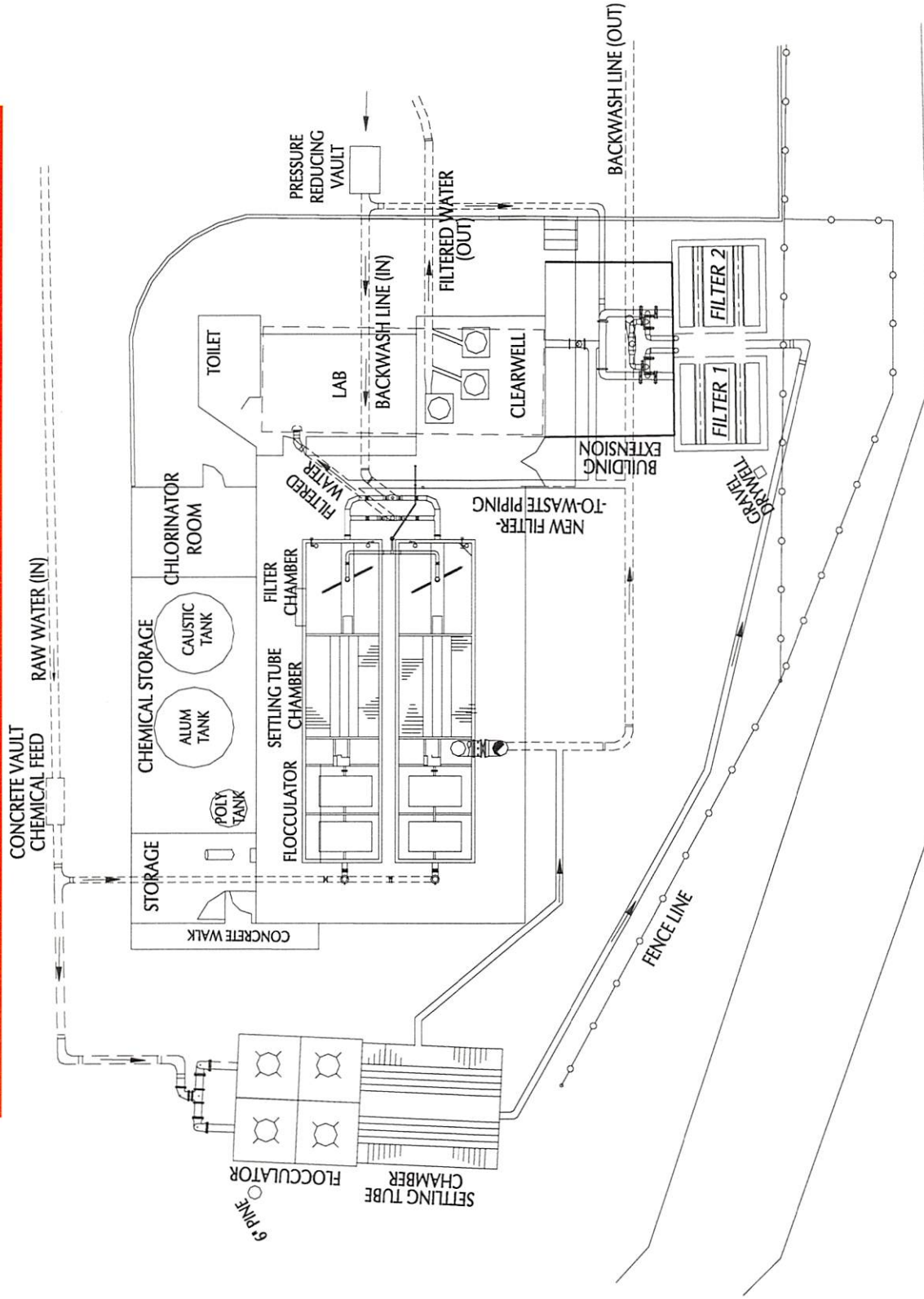


JOE HALL CREEK

CONCRETE UNIT OPTION #1

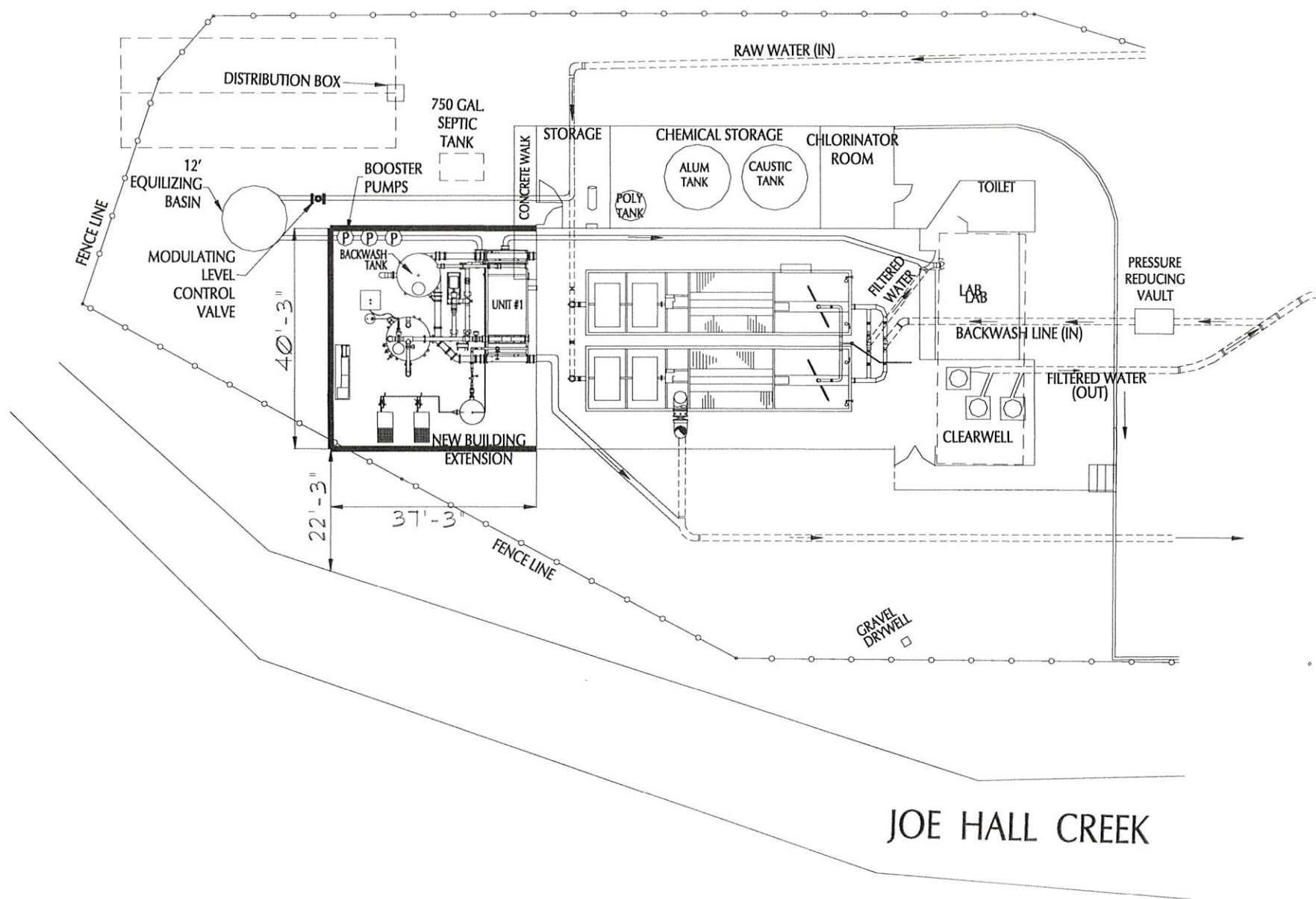


CONCRETE UNIT OPTION #2



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MICROFILTER PHASE I



MICROFILTER PHASE II

