ROANOKE RIVER

MEAN ANNUAL FLOW (MAF)= 250± cfs AT INTAKE SITE.
0.4 x MAF = 100 cfs
0.3 x MAF = 75 cfs
0.2 x MAF = 50 cfs
100 YR FLOOD ELEVATION = 1170.5 ft MSL AT INTAKE SITE

INTAKE SCREENS

QUANTITY	4 (4 FUTURE)
MAXIMUM DESIGN CAPACITY	40 MGD (80 MGD FUTURE)
DIMENSIONS	54 in. diameter, 179 in. long, 36 in. tee connect.
OPENING SIZE	1 mm
MAXIMUM VELOCITY	0.50 fps
CLEANING SYSTEM	AIR SCOUR
CONNECTION NOZZLE	6 in. diameter
COMPRESSOR TYPE	2 stage, 7.5 hp rotary
COMPRESSOR CAPACITY	36 scfm
RECEIVER TANK	140 cf 150 psi

INTAKE STRUCTURE

PUMP WET WELL DIMENSIONS	8 ft wide x 50 ft long x 30'-33' (VARIES) (each pump chamber)
MAX APPROACH CHANNEL VELOCITY	0.4 fps @ 20 MGD (each pump chamber)
CHANNEL ISOLATION SLUICE GATES	60 in. x 60 in.
MIN. WATER DEPTH AT PUMPS	12 ft

VERTICAL TURBINE PUMPS

	INITIAL				
EQUIPMENT NUMBER	VT-01	VT-02	VT-03	VT-04	VT-05
NUMBER OF STAGES	3	3	3	3	3
MAX SPEED (rpm)	900	900	900	900	900
COLUMN DIAMETER (in)	24	24	24	24	24
DISCHARGE NOZZLE DIA (in)	24	24	24	24	24
MOTOR (bhp)	800	800	800	800	800
NOMINAL CAPACITY (mgd)	16	16	16	16	16

PUMP DISCHARGE PIPING

DIAMETER	24 INCH
MATERIAL	DI CLASS 53 OR AWWA C200 STEEL, 1/4 in. WALL
LINING	CEMENT MORTAR AWWA C104 (OR C205)

FLOWMETERS

TYPE:	VELOCITY-SENSING FLOW TRANSDUCER
LOCATION:	1 ON EACH PUMP DISCHARGE LINE
FEATURES:	LOCAL READ OUT/SUMMING STATION & TOTALIZER

DISCHARGE HEADER

DIAMETER	54 in.,
MATERIAL	AWWA C200 STEEL, 3/8 in. wall
LINING	CEMENT MORTAR AWWA C205
VELOCITY @ 80 MGD	7.78 fps

RAW WATER TRANSMISSION MAIN

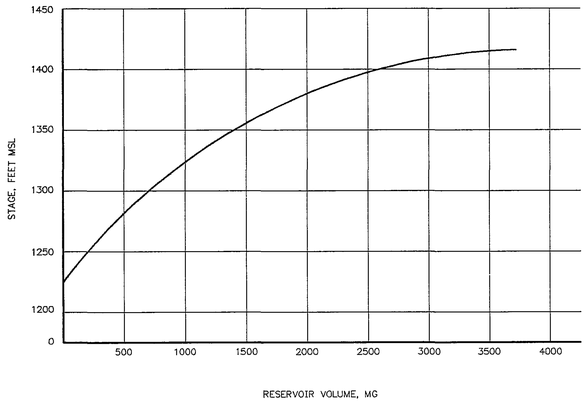
LENGTH (approximate)	960 ft
DIAMETER (inside)	42 in. INSIDE (42 in. PARALLEL MAIN – FUTURE)
MATERIAL	DI CLASS 53 OR AWWA C200 STEEL, 3/8 in. THICKNESS
LINING	CEMENT MORTAR AWWA C205
VELOCITY @ 40 MGD	6.43 fps

ENERGY DISSIPATION STRUCTURE

DESIGN DISCHARGE RATE	0–30 MGD
DISCHARGE RATE, PEAK	60 MGD (PMF RELEASE)
ENERGY DISSIPATION VALVES	
TYPE	MULTI-JET SLEEVE VALVE, ELECTRIC OPERATOR
QUANTITY	2
SIZE	20 in.
CAPACITY	32 MGD (each)
DISCHARGE WEIR	
TYPE	RECTANGULAR, SHARP-CRESTED
DIMENSIONS	12 ft width
FLOWMETER	ULTRASONIC

RESERVOIR

DRAINAGE AREA	0.80 SQUARE MILES
PROBABLE MAXIMUM FLOOD	1669 ACRE-FEET



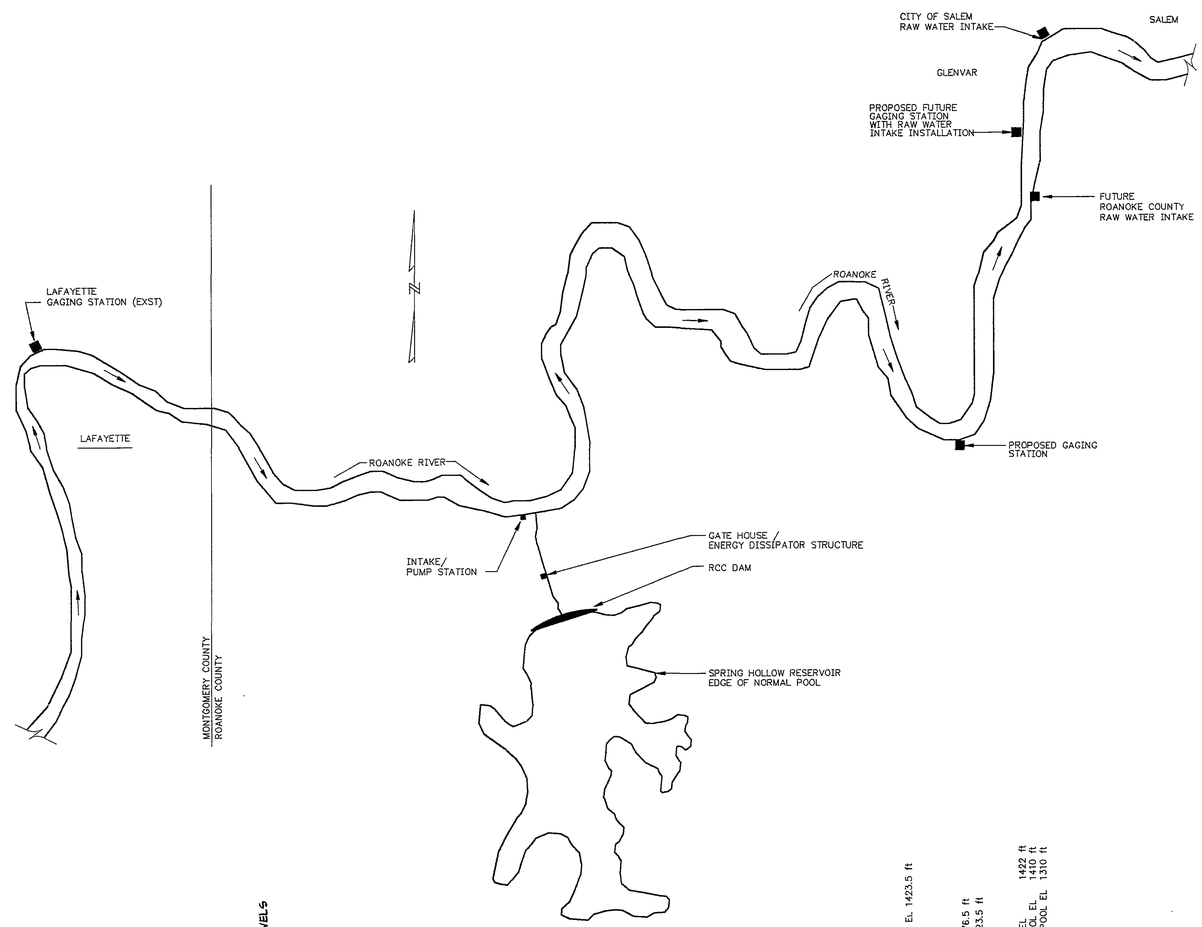
WITHDRAWAL TOWER

WITHDRAWAL RATE FOR PMF RELEASE	60 MGD
DURATION OF PMF RELEASE	10 DAYS
WITHDRAWAL RATE FOR WATER DEMAND	0–23 MGD
SLUICE GATES:	

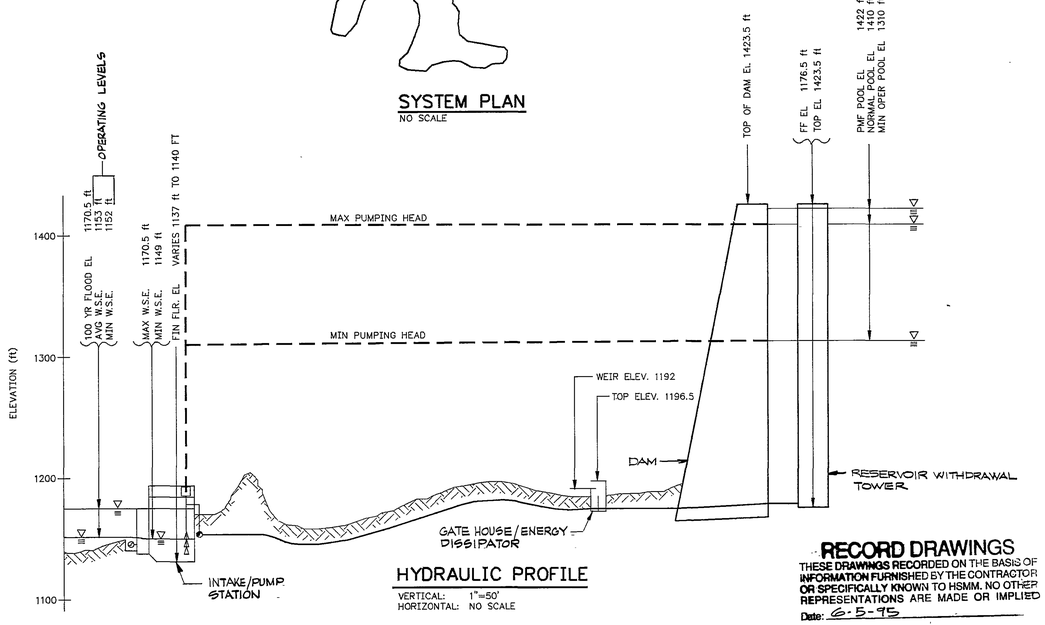
QTY	DESIGNATION	SIZE	INVERT ELEV.	CAPACITY
2	RESERVOIR DRAIN	3 ft x 4 ft	1220 ft	15 MGD
2	LOW	4 ft x 4 ft	1300 ft	20 MGD
2	MIDDLE	4 ft x 6 ft	1344 ft	30 MGD
2	UPPER	4 ft x 6 ft	1374 ft	30 MGD

HIGH LEVEL RELIEF OPENINGS:

2	HIGH LEVEL	2 ft x 6 ft	1415 ft



SYSTEM PLAN
NO SCALE



HYDRAULIC PROFILE

VERTICAL: 1"=50'
HORIZONTAL: NO SCALE

RECORD DRAWINGS
THESE DRAWINGS RECORDED ON THE BASIS OF INFORMATION FURNISHED BY THE CONTRACTOR OR SPECIFICALLY KNOWN TO HSMM. NO OTHER REPRESENTATIONS ARE MADE OR IMPLIED
Date: 6-5-95

DESIGNED	MPD	DATE 3/4/91
DRAWN	DAT	DATE 8/4/91
CHECKED	TSK	DATE 8/4/91
APPROVED	QA?	DATE 8/4/91
ISSUED	JPB/s	DATE 8/2/91

COMMONWEALTH OF VIRGINIA — JOHN P. BROADSHAW, JR. — CERTIFICATE No. 3083 — REGISTERED PROFESSIONAL ENGINEER

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
8-15-94	BA	PER CONTR RECORD DWG						
6-5-95	JBH	ISSUED TO VA. DAM SAFETY						
3-31-97	RWF	RECORD DRAWING						

COUNTY OF ROANOKE VIRGINIA 1838

SPRING HOLLOW RESERVOIR
ROANOKE COUNTY, VIRGINIA

HAYES, SEAY, MATTERN & MATTERN, INC.
ARCHITECTS – ENGINEERS – PLANNERS
ROANOKE, VIRGINIA

CIVIL
SUMMARY OF DESIGN CRITERIA

SCALE	DATE	COMM	SHEET	DWG
AS NOTED	8/4/91	4194E	C-1	3

4194E-C3 C4194E AU0591 REV. E ACAD DAY PLOT SCALE: 1=1