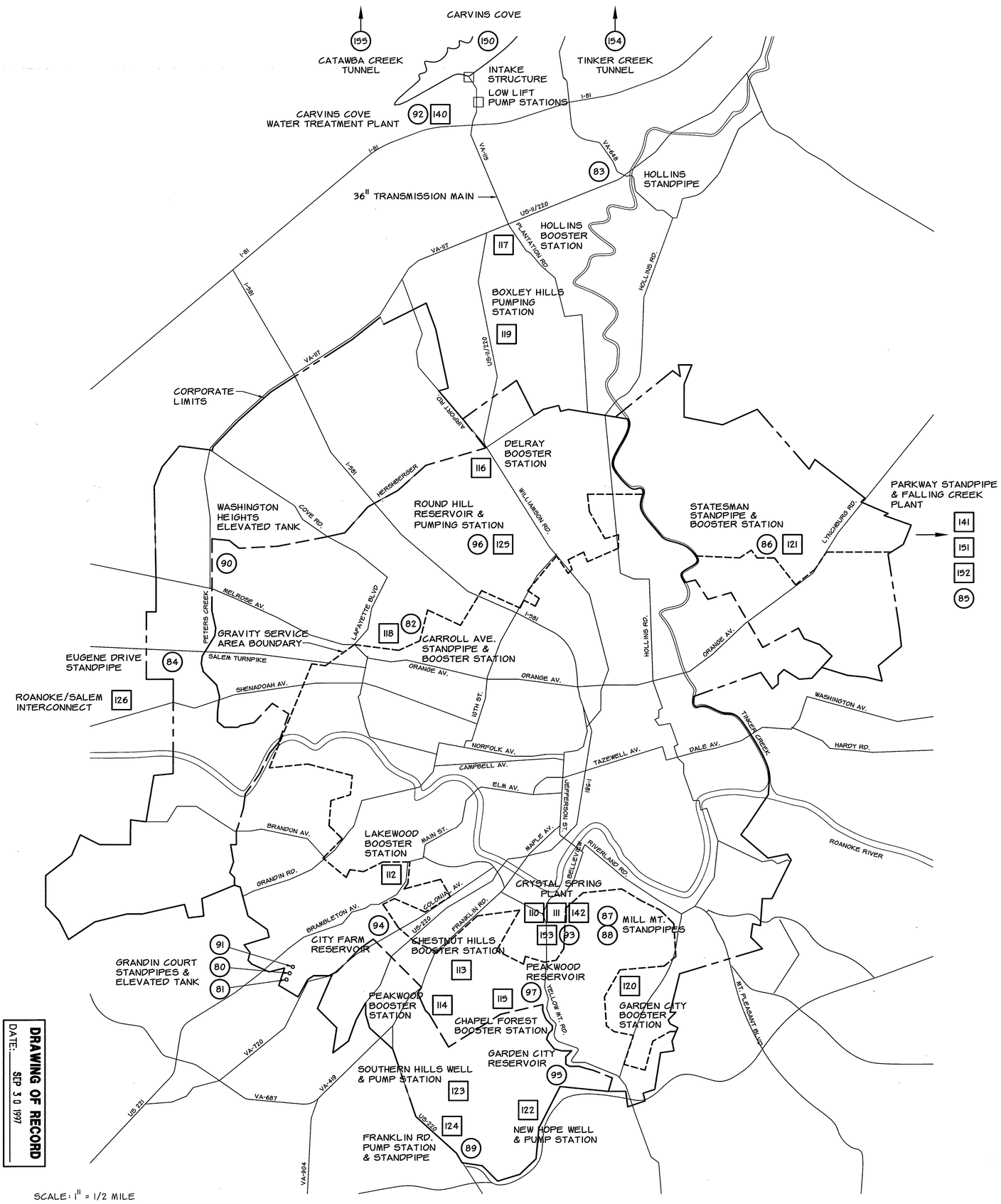

SCALE: 1" = 1/2 MILE

0 1/2 MILE 1 MILE 2 MILES

DRAWING OF RECORD
DATE: SEP 30 1997

STANDPIPES

	NAME	CAPACITY (GALLONS)	ELEVATIONS GROUND	ELEVATIONS OVERFLOW	DIAM.	FEET OF WATER	GALLONS PER FT.
80	GRANDIN CT. #2	750,000	1250.85	1329	40 FT.	78.15	9,600
81	GRANDIN CT. #3	1,000,000	1248.5	1330.36	47 FT.	81.86	12,200
82	CARROL AVE.	2,000,000	1098	1136	95 FT.	38	52,600
83	HOLLINS	1,000,000	1161	1263	42 FT.	102	9,800
84	EUGENE DR.	2,000,000	1153	1253	60 FT.	100	20,000
85	PARKWAY	1,000,000	1279	1329	60 FT.	50	20,000
86	STATESMAN PARK	250,000	APP. 1050	1081		31	8,000
87	MILL MTN. #1	5,587	1721	1732	9 FT.	11	500
88	MILL MTN. #2	2,000	1721	1732		11	180
89	FRANKLIN ROAD (U.S. 220)	500,000	1482	1562	33 FT.	80	6,250

ELEVATED TANKS

	NAME	CAPACITY (GALLONS)	ELEVATIONS BOT. BOWL	ELEVATIONS OVERFLOW	DIAM.	FEET OF WATER	GALLONS PER FT.
90	WASH. HTS.	500,000	1228	1263		35	14,280
91	GRANDIN CT. #1	250,000	1301	1329		28	9,000

RESERVOIRS

	NAME	CAPACITY (GALLONS)	ELEVATIONS BOTTOM	ELEVATIONS OVERFLOW	DIAM.	FEET OF WATER	GALLONS PER FT.
92	CARVINS COVE	2,000,000	1129	1146		20	100,000
93	CRYSTAL SPRING	3,000,000	930	940		10	300,000
94	CITY FARM	2,000,000	1115	1136		20	100,000
95	GARDEN CITY	500,000	1309	1329		20	25,000
96	ROUND HILL	200,000	1253	1263		10	20,000
97	PEAKWOOD	150,000	1527	1591.33	33 FT.	24.33	6,500

PUMPING & BOOSTER STATIONS & WELL SYSTEMS

110 CRYSTAL SPRING PUMPING STATION
2 PUMPS - 1 - 2780 GPM (4 MGD)
1 - 3480 GPM (5 MGD) TOTAL 9 MGD

111 CRYSTAL SPRING BOOSTER STATION
4 PUMPS - 3 - 700 GPM
1 - 2100 GPM TOTAL 4200 GPM
(MILL MTN. - 2 PUMPS, 1 - 100 GPM, 1 - 42 GPM)

112 LAKEWOOD BOOSTER STATION
1 PUMP - 350 GPM (.5 MGD)

113 CHESTNUT HILLS BOOSTER STATION
1 PUMP - 36 GPM

114 PEAKWOOD BOOSTER STATION
3 PUMPS - 1 - 100 GPM
1 - 100 GPM
1 - 150 GPM TOTAL 350 GPM

115 CHAPEL FOREST BOOSTER STATION
4 PUMPS - 1 - 100 GPM
1 - 40 GPM
1 - 100 GPM
(FIRE PUMP) 1 - 350 GPM TOTAL 590 GPM

116 DELRAY BOOSTER STATION
3 PUMPS - 1 - 695 GPM (1 MGD)
1 - 1390 GPM (2 MGD)
1 - 2780 GPM (4 MGD) TOTAL 7 MGD

117 HOLLINS BOOSTER STATION
2 PUMPS - 1 - 695 GPM (1 MGD)
1 - 695 GPM (1 MGD) TOTAL 2 MGD

118 CARROLL AVENUE BOOSTER STATION
1 PUMP - 700 GPM (1 MGD)

119 BOXLEY HILLS PUMPING STATION
2 PUMPS - 17,350 GPM EACH (25 MGD EACH)

119 BOXLEY HILLS PUMPING STATION
2 PUMPS - 1 - 120 GPM
1 - 120 GPM TOTAL 240 GPM

121 STATESMAN PARK BOOSTER STATION
4 PUMPS - 2 - 1500 GPM (2.2 MGD) FIRE PUMPS
1 - 200 GPM
1 - 100 GPM

122 NEW HOPE WELL & PUMP STATION
1 WELL PUMP, 7.5 HP - 42 GPM
2 PUMPS, 2 HP - 40 GPM EACH

123 SOUTHERN HILLS WELL & PUMP STATION
1 WELL PUMP, 7.5 HP - 42 GPM
1 PUMP, 2 HP - 35 GPM

124 FRANKLIN ROAD PUMPING STATION
2 PUMPS - 1 - 200 GPM
1 - 350 GPM

125 ROUND HILL PUMPING STATION
2 PUMPS - 65 GPM EACH

126 ROANOKE-SALEM INTERCONNECT PUMPING STATION
2 PUMPS - 800 GPM EACH

WATER PRODUCTION FACILITIES

140 CARVINS COVE WATER TREATMENT PLANT
AERATION, FLOCCULATION MIXING BASINS, SETTLING BASINS, AND 10 RAPID SAND FILTERS. FILTERS ARE CAPPED WIH 9" ANTHRAFILT.

DESIGN CAPACITY 18 MGD (4x1.5 MGD - 6x2.0 MGD)

141 FALLING CREEK FILTER PLANT
AQUARIUS 300 MICROFLOC PACKAGE TREATMENT PLANT
1.99 MGD ALUM, CAUSTIC SODA, SODIUM HEXAMETAPHOSPHATE, CHLORINE, FLUORIDE, POTASSIUM PERMANGANATE, AND POLYMER ADDED.

142 CRYSTAL SPRING PLANT
GRAVITY FLOW TO 3 MG COVERED BASIN. ONLY CHLORINE AND FLUORIDE IS ADDED.
SPRING FLOW IS 3.5-4.0 MGD. HAS FLOWED 6.1 MGD

WATER SOURCES & FACILITIES

150 CARVINS COVE
LAND OWNED - 11,520 ACRES
TOTAL DRAINAGE - 13,868 ACRES
COVERED BY WATER - 630.38 ACRES
STORAGE CAPACITY - 6.47 BILLION GALLONS
SAFE YIELD - 20 MGD

151 FALLING CREEK
LAND OWNED - 906 ACRES
COVERED BY WATER - 21.2 ACRES
STORAGE CAPACITY - 85 MILLION GALLONS
SAFE YIELD - 1.5 MGD

152 BEAVER
LAND OWNED - 1,101 ACRES
COVERED BY WATER - 69 ACRES
STORAGE CAPACITY - 435 MILLION GALLONS
CONNECTED TO FALLING CREEK BY 1950 FT. TUNNEL WITH PIPE

153 CRYSTAL SPRING
NATURAL SPRING FLOWING 3.5-4.0 MGD

154 TINKER CREEK TUNNEL
OPENED NOV., 1966, 6,528.25 FT. LONG, 30 FT. DROP (0200'-8170')
CONCRETE LINED, 6.0 FT. DIAMETER
MAX. FLOW 268 MGD WITH 10 FT. SURCHARGE
BY COURT ORDER - MINIMUM BY-PASS FLOWS DOWNSTREAM
2 CFS IF CARVINS COVE IS NOT FULL ON JANUARY 1st
4 CFS IF CARVINS COVE IS FULL ON JANUARY 1st

155 CATAWBA CREEK TUNNEL
OPENED DEC., 1974, 10,995 FT. LONG, 88 FT. DROP (1410'-1322')
CONCRETE LINED, HORSESHOE SHAPE, $6'-2^{1/2}$" HIGH, $6'-6$" WIDE
MAX. FLOW 355 MGD WITH 8 FT. SURCHARGE
BY COURT ORDER - MINIMUM BY-PASS FLOWS DOWNSTREAM
3 CFS IF CARVINS COVE IS NOT FULL ON JANUARY 1st
6 CFS IF CARVINS COVE IS FULL ON JANUARY 1st

MATTERN & CRAIG
CONSULTING ENGINEERS • SURVEYORS
ROANOKE VIRGINIA

ALVORD, BURDICK & HOWSON
ENGINEERS CHICAGO

DESIGNED:
DRAWN:
CHECKED:

COMMONWEALTH OF VIRGINIA
YA-TAI LIN
NO. 022786
PROFESSIONAL ENGINEER

REV.	DATE	DESCRIPTION	BY	APP.

CARVINS COVE FILTER PLANT IMPROVEMENTS – PHASE I

ROANOKE, VIRGINIA

SCADA SYSTEM MAP

DATE MARCH 1992
COMM. NO. 9130
SHEET SR1

PLAN NO. 6199