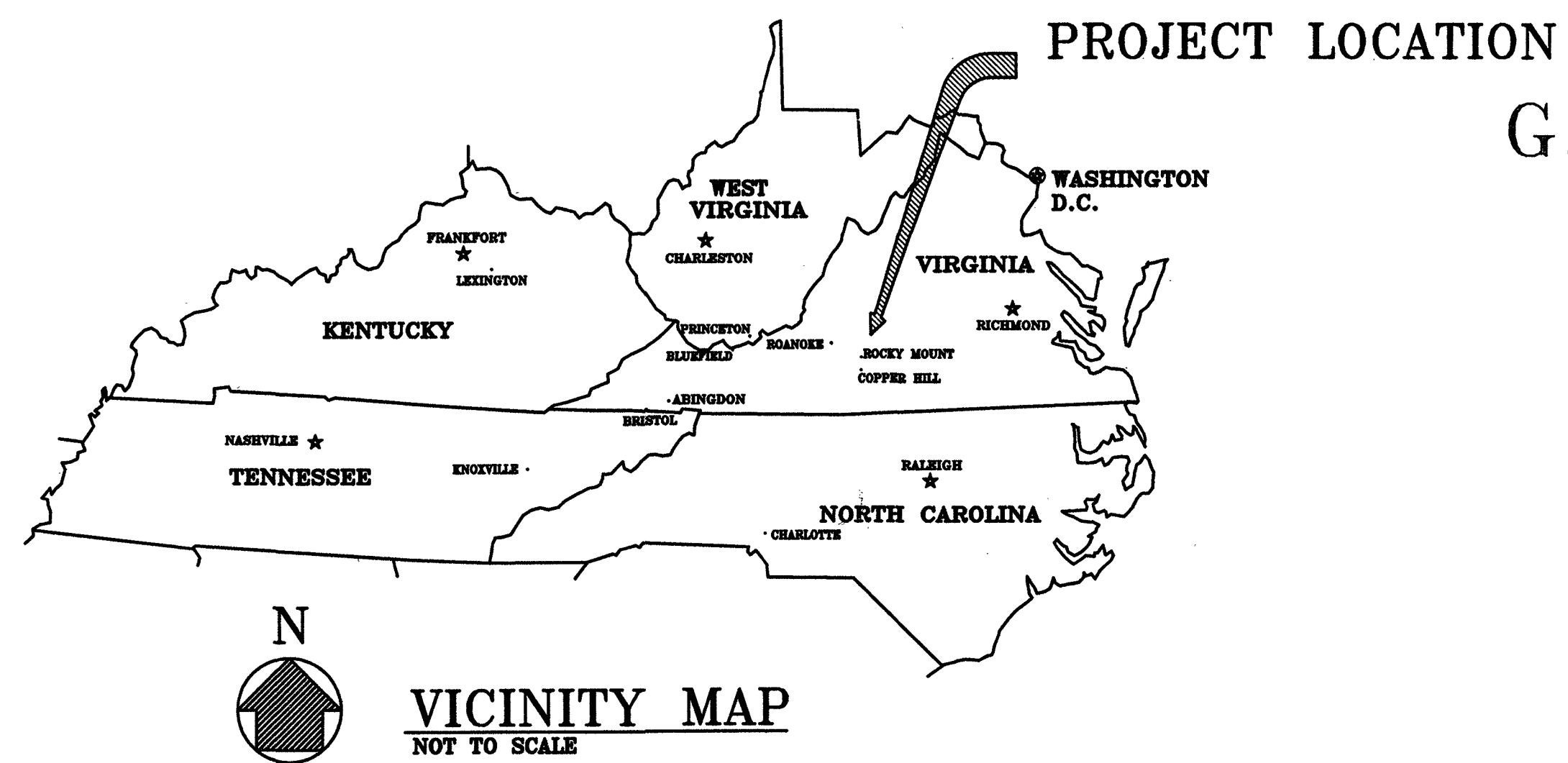
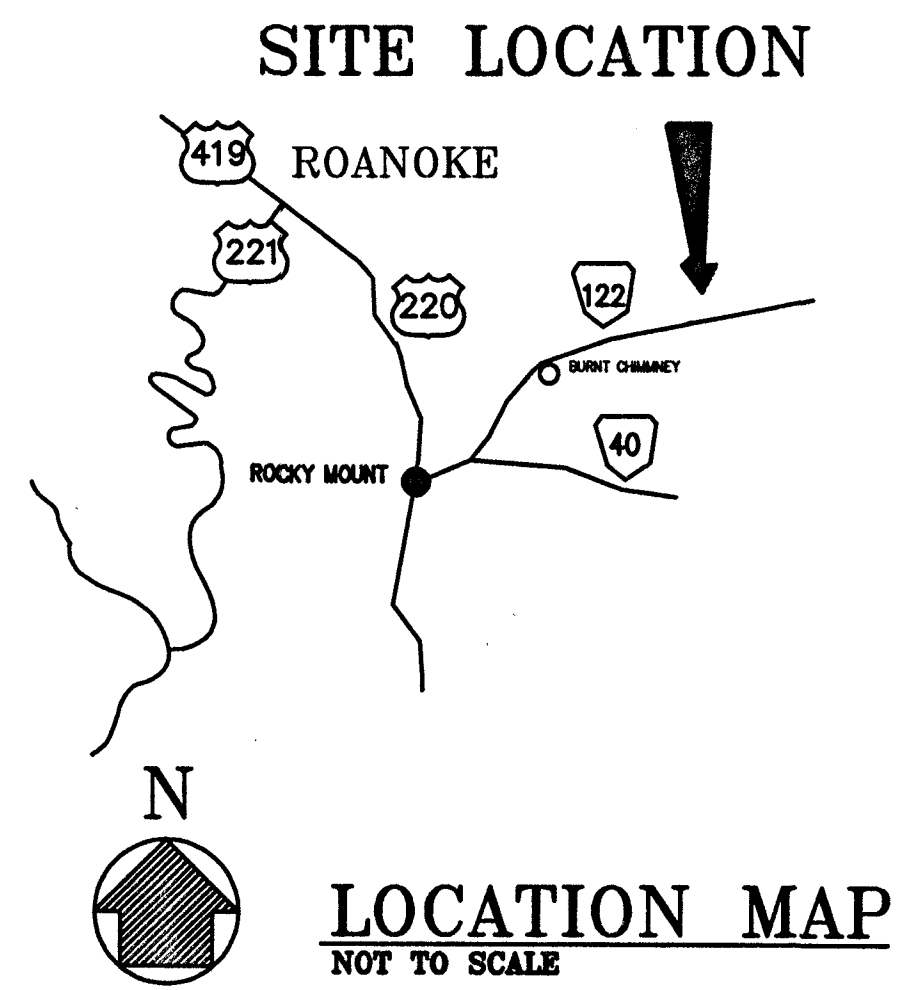


LONG ISLAND ESTATES IRON AND MANGANESE REMOVAL FILTER



OWNER
G. RAY BOONE, AUBON WATER CO.
70 SOUTH MAIN ST
ROCKY MOUNT, VIRGINIA
24151



SPECTRUM DESIGN, P.C.
CIVIL ENGINEERS
325 MOUNTAIN AVENUE,
ROANOKE, VIRGINIA 24016 (540) 345-8020

EXISTING LAND USE WATER TREATMENT PLANT
PROPOSED LAND USE WATER TREATMENT PLANT EXPANSION
BUILDING SIZE 15'X15' (225 SF.) 1 STORY BLOCK CONSTRUCTION.
TYPE CONSTRUCTION IRON AND MANGANESE FILTER ENCLOSURE

ENGINEERS NOTES

SPECTRUM DESIGN, PC assumes no responsibility for information on or adequacy of the plans until they have been approved by required public authorities.

Commencement of any work on the project is at the sole risk of the Owner/Developer.

SPECTRUM DESIGN, PC assumes no responsibility for the completion or quality of performance of the Contracts of the General Contractor, Sub-contractors or other third parties.

GENERAL NOTES

STANDARDS: All materials and methods shall comply with the applicable standards of the American Society of Testing and Materials (ASTM), American National Standards Institute (ANSI), Virginia Department of Transportation (VDOT), Virginia Erosion and Sediment Control Handbook (ESC Handbook), Commonwealth of Virginia Department of Health (VDH) and/or the County of Franklin, latest editions. Installation recommendations of applicable materials manufacturer shall also be followed as part of this Contract.

PLANS, PERMITS, INSPECTION, VERIFICATION: The Contractor shall be responsible for obtaining any and all necessary permits, including fees. No work shall begin on this project without written approval of Construction Documents from Franklin County. An approved set of Construction Documents shall be available on-site at all times while work is in progress. All work shall be subject to inspection by Franklin County and Virginia Department of Transportation (VDOT) Inspectors. Contractor shall verify and be responsible for all dimensions on site.

AS BUILT PLANS

As-built information/data for projects constructed within Franklin County shall be the responsibility of the developer for that approved project. Actual in-field measurements of construction must be performed for as-built plans during the construction phase of the project and maintained on site. As-built plans for water, sewer, and storm sewer utilities must be submitted to and approved by the County as a condition of tentative acceptance. As-built information for the stormwater facilities (detention ponds) will be required for final acceptance of the project.

WATER LINE

a. Label all water lines with size and materials.
b. Label all fittings, gate valves and blow-offs.
c. Show all water services and meter box locations.
d. Reference gate valve and fitting locations from two fixed objects.
e. Label the distance from the main to the gate valve and from the gate valve to the hydrant.

STAKING: Grade stakes shall be set for all curb (& gutter), culvert, sanitary and storm sewer.

FIELD CORRECTIONS: Field corrections shall be approved by the Franklin County Engineering Department prior to such construction.

DEBRIS: Construction debris shall be containerized in accordance

with the Virginia Litter Control Act. No less than one litter receptacle shall be provided on site. All damaged material or surplus excavated material not suitable for use as fill, backfill or topsoil shall become the property of the Contractor to dispose of offsite as he wishes, without injury to the Owner or any individual.

CLEANUP & RESTORATION: Keep the construction site neat, clean and orderly at all times. Cleanup shall be vigorous and continuous to minimize hazards or obstructions.

Materials at the site shall be stored in a neat and orderly manner. All damaged material shall be removed from the site immediately and disposed of in a proper manner. After trenching, remove all excavated materials unsuitable for, or in excess of, backfill requirements.

Immediately following each portion of the Work as it progresses, by cleanup and restoration, make every reasonable effort to encourage return of the entire surface and all improvements to a pleasant appearance and useful condition appropriate and complementary to the surroundings, and equal or superior to that before construction began.

UNDERGROUND UTILITIES: The Contractor shall verify the location and elevation of all underground utilities shown on the plans in areas of construction prior to starting work. The Engineer shall be contacted immediately:

- if any location or elevation is different from that shown on the plans,
- if there appears to be any conflict, or
- upon discovery of any utility not shown on the plans.

TO MISS UTILITIES CALL "MISS UTILITY" OF VIRGINIA (TOLL FREE) 1-800-552-7001 48 HOURS BEFORE YOU DIG. It shall be the Contractor's responsibility to notify area public utilities of proposed construction, through the above number, at least two but not more than ten working days in advance.

TOPSOILING, SEEDING, PLANTING NOTES

SEEDING: All cut and fill slopes shall be seeded and mulched as soon as possible after grading. All areas to be landscaped shall be seeded or receive finished surface treatment within seven (7) days of finished grading.

MATERIALS: Topsoil shall be fertile, agricultural soil, typical for locality, capable of sustaining vigorous plant growth, taken from a drained site; free of subsoil, clay or impurities, plants, weeds and roots; minimum pH value of 5.5 and maximum of 7.0.

Seed shall be the following mixture and application rate:
Temporary Seeding for Erosion and Sediment Control: Based on seeding date, use species indicated.

Date	Common Name	Rate
May - Aug.	German Foxtail Millet	25#/ac
Sept. - Oct.	Annual Rye Grass	30#/ac
Nov. - Feb.	Winter Rye	25#/ac
Mar. - Apr.	Annual Rye Grass	30#/ac

Lawns (Permanent Seeding):

Percentage	Common Name	Rate
90%	Turf-Type Tall Fescue	215#/ac
10%	Kentucky Bluegrass (i.e.; Rebel, Rebel 2, Bonanza, Falcon, Mustang, or equivalent)	

90% Turf-Type Tall Fescue 215#/ac
10% Kentucky Bluegrass (i.e.; Rebel, Rebel 2, Bonanza, Falcon, Mustang, or equivalent)
(If seeding out of season and temporary seeding hasn't been done previously, add appropriate temporary seed to above)

Soil Amendments shall be the following materials and application rates:

Lime: Natural dolomitic limestone containing not less than 85% of total carbonates with a maximum of 30% magnesium carbonates, ground so that not less than 90% passes a 100-mesh sieve. Apply three (3) tons/acre (140 lbs/1000 sq ft) pulverized agricultural lime.

Commercial Fertilizer: Complete fertilizer of neutral character, with some elements derived from organic sources and containing the following percentages of available plant nutrients.
- For lawns, provide fertilizer with the percentage of nitrogen required to provide not less than one (1) pound of actual nitrogen per 100 square feet of lawn area and not less than 4% phosphoric acid and 2% potassium. Provide nitrogen in a form that will be available to lawn during initial period of growth: at least 50% of nitrogen shall be organic form.

SOIL PREPARATION: Loosen subgrade of lawn areas to a minimum depth of 4". Remove stones over 1-1/2" in any dimension and sticks, roots, rubbish and other extraneous matter which may hinder preparation, growth and maintenance operations. Limit preparation to areas which will be planted promptly after preparation.

Spread topsoil to the depth required to meet lines, grades and elevations shown (4" min.), after light rolling and natural settlement. Topsoil shall not be spread if the topsoil is either wet or frozen. Add specified soil amendments and mix thoroughly into upper 4" of topsoil. Excess topsoil shall be removed from the site or stored onsite as directed by the Owner.
Fine grade lawn areas to smooth, even surface with loose, uniformly fine texture. Roll, rake and drag lawn areas. Remove ridges and fill depressions as required to meet finish grades. Limit fine grading to areas which can be planted immediately after grading.

Moisten prepared lawn areas before planting if soil is dry. Water thoroughly and allow surface moisture to dry before planting lawns. Do not create a muddy soil condition.
Restore lawn areas to specified condition if eroded or otherwise disturbed after fine grading and prior planting.

METHOD OF APPLICATION: Do not use wet seed or seed which is moldy or otherwise damaged in transit or storage. Do not seed within 48 hours of fertilizing. Do not seed when wind velocity exceeds 5 mph.

Apply seed uniformly on seed bed by sowing equal quantity in two directions at right angles to each other with a cyclone seeder, or drill cultipacker seeder on a firm, moist seed bed. Maximum seeding depth should be 1/4 inch on clayey soils and 1/2 inch on sandy soils.
Sow not less than the quantity of seed specified or scheduled. Rake seed lightly into top 1/4" of soil, roll lightly, and water with a fine spray.

MULCHING: Seeding shall be followed with the application of organic mulch conforming in material and application to Std & Spec 3.35 of the ESC Handbook.

RECONDITIONING EXISTING LAWNS: Recondition existing lawn areas damaged by Contractor's operations including storage of materials and equipment and movement of vehicles. Also recondition existing lawn areas where minor regrading is required.

ESTABLISHMENT: The Contractor shall water, fertilize, mow and otherwise maintain all seeded areas beginning at installation and going through the third cutting of an established lawn. An established stand shall be uniform in coverage and of the specified mixture. The Contractor shall restore/replace any portion of the seeding and/or mulch work that is found defective or which becomes damaged prior to final acceptance.

WATER NOTES

STANDARDS: Construction of all water lines, structures, and pavement replacement shall conform to the requirements of the Virginia Department of Transportation (VDOT) "Road and Bridge Standards and Specifications" and the Commonwealth of Virginia/State Board of Health (VDH) "Water Works Regulations" latest editions, as minimum standards, as well as those of Franklin County. See details.

SURFACE & COVER: In areas of water line construction, grades shall be within six (6) inches of finished subgrade prior to the commencement of this work. Minimum clear cover over all water pipe shall be three (3) feet.

MATERIAL: Water main shall be minimum class 52 Ductile Iron in accordance to AWWA C-151 or Polyvinyl Chloride (PVC) conforming to AWWA C-900 with a DI OD dimension ratio (DR) of 14, pressure class 200. On specific authorization of the Franklin County Utility Director, transmission lines may be PVC meeting Uni-Bell-B-11 with (DR-25) PR-165 rating. For PVC pipe only bell and spigot joints with elastomeric gaskets shall be used. Solvent-cement joints or pipe requiring use of couplings shall not be used.

BEDDING, BACKFILLING, LOCATING: Bedding and backfilling shall be per VDOT Standards & Spec. PVC pipe shall be installed, embedded and backfilled in accordance with the manufacturer's written instructions. To facilitate future locating of PVC water pipe, a metallic wire shall be laid with the pipe and in contact with all fittings and valves.

SERVICE: All service line connections to PVC pipe shall be made using a service saddle and corporation stop. The service saddle shall be of a type specifically manufactured for PVC pipe and shall be of the extra wide or double band type. No direct tap to PVC pipe will be permitted. All water service pipe from the main connection to the meter box assembly shall be Type "K", hard drawn, copper tubing. All connections shall use flared fittings. The minimum size service connection shall be 3/4 inch ID for a single setter and 1 inch for a double setter. Fittings for service lines shall meet AWWA spec. C-800. Water service pipe from the meter to the plumbing connection at five (5) feet from the building shall be PVC conforming to applicable codes.

FINISH GRADE: The Contractor shall locate and uncover all valve boxes after pavement/surface treatment of roads and adjust the tops to final road grades, if necessary.

DRAWING INDEX

DRAWING NUMBER:	DESCRIPTION:
C-101	UTILITY PLAN & LEGEND
C-102	FILTER SCHEMATIC & PIPING PLAN
C-500	DETAILS
E-101	ELECTRICAL PLAN
A-1	FLOOR PLAN, ELEVATIONS

SEPARATION:

Under normal conditions, water piping shall be laid at least ten feet horizontally from a sewer line or sewer manhole wherever possible, measured edge to edge.
When conditions prevent ten feet horizontal separation, the water piping may be laid close to the sewer line or sewer manhole provided that:
a) The bottom (invert) of the water piping shall be at least 18 inches above the top (crown) of the sewer piping.
b) Where this vertical separation cannot be obtained, the sewer piping shall be constructed of AWWA-approved water pipe and pressure tested to 100 psi in place without leakage prior to backfilling.

ALSO SEE BOOK SPECS.

Disinfection of Pipelines and Storage Tanks with Testing Requirement.
Disinfection of Well.
Pressure and Leakage Testing to 100 psi.
Well Abandonment
Reference to VDOT stds. apply to everything but measurement and payment.