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Qualifications

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World.

PROFESSIONAL ENGINEERING SERVICES

WATER AND SEWER SYSTEM
RECORD DRAWINGS

TOWN OF RUTLEDGE, TENNESSEE

SEPTEMBER 18, 1997

Purchasing - Bids, Proposals, and
Specifications



Mattern & Craig
CONSULTING ENGINEERS • SURVEYORS

Purchasing - Bids, Proposals
and Specifications

**STATEMENT OF
QUALIFICATIONS**

Professional Engineering Services to Prepare
Water and Sewer System Record Drawings

Town of Rutledge, Tennessee

Prepared by:

Mattern & Craig, Inc.
Consulting Engineers-Surveyors
429 Clay Street
Kingsport, Tennessee 37660

Due Date:

Thursday, 2:00 p.m.
September 18, 1997

Contact:

Randy W. Beckner, P.E.
Principal
(423) 245-4970
FAX (423) 245-7691

MTAS LIBRARY



Mattern & Craig
CONSULTING ENGINEERS • SURVEYORS

J. Wayne Craig
Stewart W. Hubbell
Sam H. McGhee, III
Gene R. Cress
Edwin K. Mattern, Jr. 1949-1982

September 18, 1997

Wm. James Jones
Michael S. Agee
Steven A. Campbell
Kyle D. Austin

Town of Rutledge
P. O. Box 36
Rutledge, TN 37861

Re: Statement of Qualifications
Professional Engineering Services
to Prepare Water and Sewer Record
Drawings

Gentlemen:

I am pleased to have the opportunity to submit Mattern & Craig's qualifications to perform professional services to prepare mapping for the Town's water and sewer systems.

Mattern & Craig has considerable mapping experience, specifically as it relates to water and sewer projects. We are currently providing sewer evaluation and mapping for the Town of Honaker, Virginia. We also recently provided sewer mapping for the Cities of Kingsport and Bristol, Tennessee. We have extensive mapping experience for clients such as TDOT, VDOT and the Veterans Administration in Johnson City, Tennessee, many of which were completed through the use of GPS. I encourage you to contact our client references listed in Section 5 for the firm's performance on past projects.

The Project Team proposed for this project includes me as Principal In Charge/Project Manager and David Wilson as Project Engineer. The qualifications of our key staff to be assigned to this project, and their related experience, are summarized in Section 4. This key staff is available for assignment to this project immediately upon contract award.

I look forward to the opportunity to further discuss our qualifications to successfully complete this project.

Very truly yours,

MATTERN & CRAIG

Randy W. Beckner, P.E.
Principal

RWB/pfj
Enclosures (5)



TABLE OF CONTENTS

	<u>PAGE</u>
1. INTRODUCTION	1
2. PROJECT APPROACH	2
3. SIMILAR PROJECT EXPERIENCE	3-11
4. PROJECT TEAM	12
- MANAGEMENT AND STAFFING CHART	13
- RESUMES	14-20
5. REFERENCES	21
6. EXAMPLE OF WORK PRODUCT	22

1. INTRODUCTION

Mattern & Craig is a civil, sanitary and structural engineering firm with over 19 years experience specializing in working with state, federal and local governments and their agencies and private industries. The firm's principals are involved in the technical aspects and details of each project and maintain daily contact with the work. The firm is incorporated and is located at 429 Clay Street, Kingsport, Tennessee 37660. The firm also has offices in Roanoke, Virginia at 701 First Street, SW, Roanoke, Virginia 24016 and in Asheville, North Carolina at 72 Wall Street, Asheville, North Carolina 28801. The firm has over 80 personnel on its staff, with twenty-two graduate engineers including thirteen civil engineers, six transportation engineers, three structural engineers, six licensed land surveyors, and registered associates in mechanical and electrical engineering and architecture. Surveying is performed in-house by the firm's field survey parties employing total station equipment for vertical and horizontal control.

Mattern & Craig has a total of 22 personnel in Kingsport, including seven graduate civil engineers and three certified land surveyors. The Kingsport office is fully equipped with CADD for design and drafting and EDM for surveying.

The firm provides complete services on civil engineering projects including surveying and mapping from the initial planning through inspection of construction.

Since its founding in 1978, Mattern & Craig has established an excellent working relationship with its clients on a variety of projects, delivering the projects on schedule, within budget, with negligible change orders during construction, at economical design fees. Mattern & Craig is an employee-owned corporation, and is licensed to provide engineering and surveying services. Mattern & Craig is financially stable and maintains a \$4,000,000 professional liability insurance policy and an approved affirmative action plan.

2. PROJECT APPROACH

After discussions with the Town of Rutledge personnel, Mattern & Craig understands that the level of mapping desired by the Town has not been determined.

Mattern & Craig's approach to this project would fall into three categories and is dependent upon the Town's expectations.

1. The most basic level of mapping would include adding water and sewer lines to a basic "road-type" map. The only information that this mapping would contain would be service areas, line sizes and general location of the lines.

2. The next level of utility mapping would include aerial mapping of the service area with accurate utility locations. Many of the utility appurtenances, such as manholes, fire hydrants, valves, etc., will be located by the aerial. Some field investigations would also be required. This mapping will give accurate locations of the utility lines and appurtenances.

3. The highest level of mapping would be GIS. This would consist of attaching a computer data base to the mapping which would include information such as manhole top and invert elevations, line grades, material, condition, etc., for sewer lines and pressure and flow information, material, burial depth, condition, etc. for water lines.

With any of these options, Mattern & Craig can provide computer files and drawings of the maps with the utilities color coded.

Mattern & Craig is prepared to complete this project to any extent that the Town of Rutledge desires.

3. SIMILAR PROJECT EXPERIENCE

Mattern & Craig has experience in a significant number of mapping projects. The more recent projects include:

- Mapping of Entire Sewage Collection System for the City of Bristol, Tennessee.
- Water and Sewer Mapping for the Town of Boiling Springs, North Carolina.
- Digital Mapping of the Entire Sewer System for the City of Kingsport, Tennessee.
- Sewer Mapping for the Sanitary Sewer System for the Town of Honaker, Virginia.

Mattern & Craig also has extensive experience on water and sewer projects. These projects were comprehensive in nature and involved all aspects of water and sewer facilities. Many of these projects also included mapping.

Mattern & Craig has established an excellent working relationship with its clients on a variety of projects, delivering the projects on schedule, within budget, with negligible change orders during construction, at economical design fees.

The following pages identify clients for whom Mattern & Craig is currently performing or has performed similar mapping services.

PROJECT NAME AND LOCATION	NATURE OF FIRM'S RESPONSIBILITY	OWNER'S NAME AND ADDRESS	DATE COMPLETE	COST	
				ENTIRE PROJECT	FIRM'S RESPONSIBILITY OF COLUMN 2
1. Bristol Sewer Mapping Bristol, Tennessee	Mapping of entire sewage collection system on City's GIS mapping.	City of Bristol P.O. Box 1189 Bristol TN 37621-1189 Mr. Don Brown (423) 989-5516	1996	N/A	100%
2. Water and Sewer Mapping Boiling Springs, North Carolina	Map preparation of Town's water and sewer system.	Town of Boiling Springs P. O. Box 1014 Boiling Springs, NC 28017 Mr. Rick Howell, Town Administrator (704) 434-2357	1996	N/A	100%
3. Kingsport Inflow/Infiltration Study and Mapping Kingsport, Tennessee	Study of entire sewer system including smoke testing, flow monitoring and coordination of line tying efforts. From data obtained, generated report for submittal to the Tennessee Department of Environment and Conservation, in accordance with their issued agreed order, including complete digital mapping of the system, prioritization of sewersheds for repair and identification of approximately \$20 million of repair/rehabilitation projects including detailed cost estimates. An intermediate report was prepared for the highest priority sewershed, which was used to secure a \$5 million State Revolving Load to complete a portion of the repair/rehabilitation in this sewershed.	City of Kingsport 225 Center Street Kingsport, TN 37660 Mr. Les Williams (423) 229-9350	1996	\$248,000	100%
4. Sanitary Sewer Evaluation and Mapping Honaker, Virginia	Evaluation of sanitary sewer system including sewer mapping, flow monitoring, smoke testing, and inspection of entire system to determine cause of high influent flows to the Wastewater Treatment Plant.	Town of Honaker P.O. Box 746 Honaker, VA 24260 Mr. Jeff Sykes Public Works Director (540) 873-6556	1997	\$15,350	100%

CURRENT AND RECENT EXPERIENCE SURVEYING/MAPPING



PROJECT NAME AND LOCATION	NATURE OF FIRM'S RESPONSIBILITY	OWNER'S NAME AND ADDRESS	DATE COMPLETE	COST	
				ENTIRE PROJECT	FIRM'S RESPONSIBILITY OF COLUMN 2
5. Route 58 6058-070-E21 Patrick County, Virginia	Metric surveys, aerial mapping, ROW and road construction plans for dual-laning 3.5 miles of two-lane roadway. 2 miles of curb and gutter and closed system storm drain design and stormwater management design.	Virginia Department of Transportation 1401 E. Broad Street Richmond, VA 23219 Ms. June S. Baldwin (804) 225-4952	August 1997	\$9,000,000	100% (15% DBE) Sub
6. Dynax Site Development Eastpark Commerce Center Botetourt County, Virginia	Aerial mapping of site, subdivision map, survey, design of 16 acre site including grading, drainage, utilities, dimensional layout, detention basin, highway entrance permit, and construction stakeout and coordination.	Avis Construction Company 521 Rutherford Avenue, N.E. Roanoke, VA 24012 Mr. Barry Baird (540) 982-3558	Surveys In Progress	Site Work \$250,000	Site Work 100%
7. Route 58 6058-052-E27 Lee County, Virginia	Metric surveys, aerial mapping, Phase I cultural resource study, traffic data, geotechnical investigations, ROW and road construction plans for dual-laning 5.2 miles of two-lane roadway. Hydraulic analysis for 1.0 miles channel charge and dual lane bridges over Powell River, scour analysis, storm drainage and stormwater management design.	Virginia Department of Transportation 1401 E. Broad Street Richmond, VA 23219 Mr. E. M. White (804) 225-4957	Surveys Complete Nov. 1996	\$14,000,000	100% (15% DBE) Sub
8. Roanoke Electric Steel Corporation Roanoke, Virginia	Provide all horizontal and vertical control necessary for photogrammetric mapping.	Roanoke Electric Steel Corp. P.O. Box 13948 Roanoke, VA 24038-3948 Mr. R.G. Garrett, Jr. "Bob" Environmental and Special Projects Engineer (540) 345-9342	1996	\$15,000	100%

CURRENT AND RECENT EXPERIENCE SURVEYING/MAPPING



PROJECT NAME AND LOCATION	NATURE OF FIRM'S RESPONSIBILITY	OWNER'S NAME AND ADDRESS	DATE COMPLETE	COST	
				ENTIRE PROJECT	FIRM'S RESPONSIBILITY OF COLUMN 2
9. Surveys State Route 91 Carter County, Tennessee Tennessee Department of Transportation	Control and Aerial Mapping for road design for 5.1 miles of SR-91 from Maury Price Road to Panhandle Road consisting of three 12' traffic lanes with curb and gutter and 40 mph design.	Tennessee Department of Transportation James K. Polk Building Nashville, TN 37243-0348 Mr. Paul R. Morrison, Civil Engineering Director, Design Division (615) 741-2222	R.O.W. Plans January 1997 Construction Plans July 1998	\$456,659	100%
10. GPS Control Cemetery Drainage VA Medical Center Mountain Home, Tennessee	Preliminary Engineering Report for analysis of urban drainage sheds using TR-20 SCS computer model, analyzing five alternative solutions to problems for 25 and 50 year storms. Survey, design and administration of construction for recommended solution.	VA Medical Hospital Building 42 Mountain Home, TN 37684 Mr. Tom Whitt (615) 926-1171	1996	\$600,000	100%
11. Surveys State Route 61 Anderson County Tennessee Department of Transportation	Control and Aerial Mapping for SR-91, Anderson County.	Tennessee Department of Transportation James K. Polk Building Nashville, TN 37243-0348 Mr. Paul R. Morrison, Civil Engineering Director, Design Division (615) 741-2222	1996	N/A	100%
12. Surveys State Route 35 Cocke County Tennessee Department of Transportation	Control and Aerial Mapping for SR-35, Cocke County.	Tennessee Department of Transportation James K. Polk Building Nashville, TN 37243-0348 Mr. Paul R. Morrison, Civil Engineering Director, Design Division (615) 741-2222	1996	N/A	100%

CURRENT AND RECENT EXPERIENCE SURVEYING/MAPPING



PROJECT NAME AND LOCATION	NATURE OF FIRM'S RESPONSIBILITY	OWNER'S NAME AND ADDRESS	DATE COMPLETE	COST	
				ENTIRE PROJECT	FIRM'S RESPONSIBILITY OF COLUMN 2
13. Surveys State Route 354 Washington County Tennessee Department of Transportation	Control and Aerial Mapping for SR-354, Washington County.	Tennessee Department of Transportation James K. Polk Building Nashville, TN 37243-0348 Mr. Paul R. Morrison, Civil Engineering Director, Design Division (615) 741-2222	1996	N/A	100%
14. Surveys Pine Ridge Road, Roane County Tennessee Department of Transportation	Control and Aerial Mapping for Pine Ridge, Roane County.	Tennessee Department of Transportation James K. Polk Building Nashville, TN 37243-0348 Mr. Paul R. Morrison, Civil Engineering Director, Design Division (615) 741-2222	1996	\$32,200	100%
15. Surveys Route 33 Loudon County, Tennessee	Control and aerial mapping for ROW and Construction plans for 4-laning 3.7 miles north of Little Tennessee River to Route 95 at Greenback.	Tennessee Department of Transportation James K. Polk Building Nashville, TN 37243-0348 Mr. Paul R. Morrison, Civil Engineering Director, Design Division (615) 741-2221	ROW Plans - 1995 Construction Plans 1995	\$5,000,000	100%
16. Aerial Topographic Mapping Martinsville, Virginia	Controlled aerial photography of seven potential industrial sites, topographic mapping and annexation.	City of Martinsville P.O. Drawer 1112 Martinsville, VA 24114 Mr. Tom Harned Director of Economic Devel. (540) 656-5172	Phase A 1995	N/A	100%

CURRENT AND RECENT EXPERIENCE SURVEYING/MAPPING



PROJECT NAME AND LOCATION	NATURE OF FIRM'S RESPONSIBILITY	OWNER'S NAME AND ADDRESS	DATE COMPLETE	COST	
				ENTIRE PROJECT	FIRM'S RESPONSIBILITY OF COLUMN 2
17. Peters Creek Flood Reduction Roanoke, Virginia	Aerial mapping, field surveys, modeling of three miles of urban creek using TR-20 and HEC 2 to design facilities to reduce flooding including clearing, channelization, culvert replacement and three large detention basins.	City of Roanoke 215 W. Church Avenue Roanoke, VA 24011 Mr. John Peters (540) 981-2731	1995	\$4,000,000	100%
18. Water System Improvements Moccasin Gap Sanitation District Weber City, Virginia	Preliminary Study including Kentucky pipe analysis, design, construction administration, staking location and inspection of approximately 15,000 feet of 8" water line, pump station rehabilitation and 250,000 gallon ground level welded steel water storage tank; surveys, construction staking for grade and site approach to water storage tank site, geotechnical borings, and O & M Manual.	Moccasin Gap Sanitation District 105 Reading Road Weber City, VA 24290 Mr. Edmond Bowling, Chairman (540) 386-3401	1994	\$900,000	100%
19. Annexation Boundary Survey Hillsville, Virginia	Annexation survey utilizing G.P.S. to survey and set 61,000 feet or 11.55 miles of new boundary for the Town of Hillsville.	Town of Hillsville P.O. Box 545 410 N. Main Street Hillsville, VA 24343 Mr. Larry South, Town Manager (540) 728-2128	1995	\$15,000	100%
20. Wastewater Collection System Improvements Clinchco, Virginia	Survey and design of 32,000 LF of 6" force main and two sewage pump stations to convey sewage to the Haysi sewage treatment works, construction administration and inspection.	Town of Clinchco Town Hall Clinchco, VA 24226 Mr. Randall Lawler, Mayor (540) 835-1160	1993	\$700,000 CDBG \$797,000 FrnHA	100%
21. Golfsource, Inc. Kingsport, Tennessee	Complete boundary survey, property plat for land acquisition, topographic mapping in CADD format for 300 acre golf course, including field stakeout and Phase I environmental site assessment for identification of hazardous materials.	Golfsource, Inc. 2176 Hillsboro Road, Suite 120 Franklin, TN 37064 Mr. Roger R. Hopkins (615) 377-9123	1993	N/A	100%

CURRENT AND RECENT EXPERIENCE SURVEYING/MAPPING



PROJECT NAME AND LOCATION	NATURE OF FIRM'S RESPONSIBILITY	OWNER'S NAME AND ADDRESS	DATE COMPLETE	COST	
				ENTIRE PROJECT	FIRM'S RESPONSIBILITY OF COLUMN 2
22. Sewershed Implementation and Project Identification Roanoke, Virginia	The project involved implementation of the Sewershed Evaluation Plan developed for the City of Roanoke by Mattern & Craig. This was in accordance with the Consent Order on the City by the SWCB. The work involved preparing CADD mapping of three sewersheds in the City (Mudlick, Peters Creek and Lick Run) involving more than 4,000 manholes. Flo-totes were installed in the sewer system at strategic manholes and rain gauges were installed in the sewershed. Data for base infiltration, dry weather flow and wet weather flow (during rain events) was gathered. Data was analyzed and cost benefit report for I/I elimination were prepared. Projects were identified and the City proceeded with plans for construction.	City of Roanoke 215 W. Church Avenue Roanoke, VA 24011 Mr. Charles Huffine (540) 853-2731	1992/1993/1994	N/A	100%
23. Water and Sewer Comprehensive Plan Update Henry County, Virginia	Preparation of water and sewer comprehensive plan update for development of centralized public facilities, study to include guide implementation for a 20 year planning period; provide construction cost estimates for recommended plans and to meet SWCB Quality Standards; provide mapping to show water and wastewater service areas, determine capabilities of the Smith River to provide withdrawal of drinking water, disposal of wastewater; assist in permits with regulatory agencies; develop financial plan and assist with bond issues.	West Piedmont Planning District Commission One Starling Avenue P. O. Box 1191 Martinsville, VA 24114 Mr. Robert W. Dowd Executive Director (540) 638-3987	1992	N/A	100%

CURRENT AND RECENT EXPERIENCE SURVEYING/MAPPING



PROJECT NAME AND LOCATION	NATURE OF FIRM'S RESPONSIBILITY	OWNER'S NAME AND ADDRESS	DATE COMPLETE	COST	
				ENTIRE PROJECT	FIRM'S RESPONSIBILITY OF COLUMN 2
24. Pritchard Prairie Residence Hall and Site Development Virginia Polytechnic Institute and State University Blacksburg, Virginia	Topographic mapping for civil engineering related to the site development and utilities including grading, erosion control, sewer, water, storm drainage, steam, communications, and walkways for four story dormitory.	Virginia Polytechnic Institute and State University Blacksburg, VA 24061 Mr. J. B. Sutphin (540) 231-5411 c/o Hanbury, Evans, Newill & Vlattas 120 Atlantic Street Norfolk, VA 23510 Ms. Jane Wright (804) 627-5775	1992	\$300,000 (Site)	100% Site
25. Surveys Blackstone, Virginia	Aerial survey, aerial photos, ground panels, and ground control survey; Town boundary survey.	Town of Blackstone 100 W. Elm Street Blackstone, VA 23824 Mr. Larry Palmore, Town Manager (804) 292-7251	1992	N/A	100%
26. Special Purpose Housing Virginia Polytechnic Institute and State University Blacksburg, Virginia	Topographic mapping; site design for seven residence halls, managers residence, and maintenance building including grading, erosion control, parking, water, sanitary sewer, storm drainage, underground electrical and communications facilities.	Virginia Polytechnic Institute and State University Blacksburg, VA 24061 Mr. J. B. Sutphin (540) 231-5411 c/o Hanbury, Evans, Newill & Vlattas 120 Atlantic Street Norfolk, VA 23510 Ms. Jane Wright (804) 627-5775	1990	N/A	100% Site

CURRENT AND RECENT EXPERIENCE SURVEYING/MAPPING



PROJECT NAME AND LOCATION	NATURE OF FIRM'S RESPONSIBILITY	OWNER'S NAME AND ADDRESS	DATE COMPLETE	COST	
				ENTIRE PROJECT	FIRM'S RESPONSIBILITY OF COLUMN 2
27. Field and Aerial Topographic Mapping Roanoke Centre for Industry and Technology Roanoke, Virginia	Field and aerial topographic mapping for design of Phase II and Phase III Improvements including 4,000 LF of street, water sanitary sewer, storm drainage and retention, site and roadway grading, subdivision and right-of-way plats for 300 acre centre.	City of Roanoke Municipal Building Room 350 Roanoke, VA 24011 Mr. Robert Bengtson (540) 981-2686	1990	N/A	100%
28. Control Surveys and Aerial Mapping Explore Project Roanoke, Salem, Vinton Roanoke County, Virginia	Horizontal and vertical control surveys (25 miles), aerial mapping and civil engineering consultation for \$100,000,000 project including 25 mile scenic parkway, zoological park, steam railroad and bike paths. Photo mapping of 57 miles of proposed corridor from Blacksburg to Booker T. Washington Memorial Park.	The River Foundation P. O. Box 457 Vinton, VA 24179 Mr. Richard Burrow Project Director (540) 345-1295	1989	N/A	100%

CURRENT AND RECENT EXPERIENCE SURVEYING/MAPPING



4. PROJECT TEAM

The firm has over eighty personnel on its staff, with expertise in civil and sanitary engineering, and surveying and has assigned licensed, specialized, experienced personnel to this project. The firm also has backup personnel as needed and can work in shifts around the clock, if necessary, to meet critical schedule or emergency requirements.

If Mattern & Craig is selected to provide engineering services to the Town of Rutledge, the following staff will be committed to the project, and as shown on the following Management and Staffing Chart:

Principal in Charge/Project Manager	-	Randy W. Beckner, P.E.
Project Engineer	-	David P. Wilson, P.E.
GIS Specialist	-	William K. Bailey
Design Technician	-	Randal J. Radford, R.L.S
Field Investigations/Surveys	-	Charles T. Johnson, R.L.S.

Randy W. Beckner, P.E., Principal in Charge/Project Manager

Mr. Beckner has 11 years experience with relevant project management experience. Recent projects include the Boiling Springs Water and Sewer Mapping, Boiling Springs, North Carolina; Bristol Sewer Mapping, Bristol, Tennessee; Kingsport I/I Study and Mapping, Kingsport, Tennessee; Sewer System Evaluation and Mapping, Honaker, Virginia; and Utilities Inventory for Dulles and National Airports, Washington, D.C. He served as City Engineer for the City of Galax for two-year period and understands the issues of water and sewer projects from the owner's viewpoint.

David P. Wilson, P.E., Project Engineer

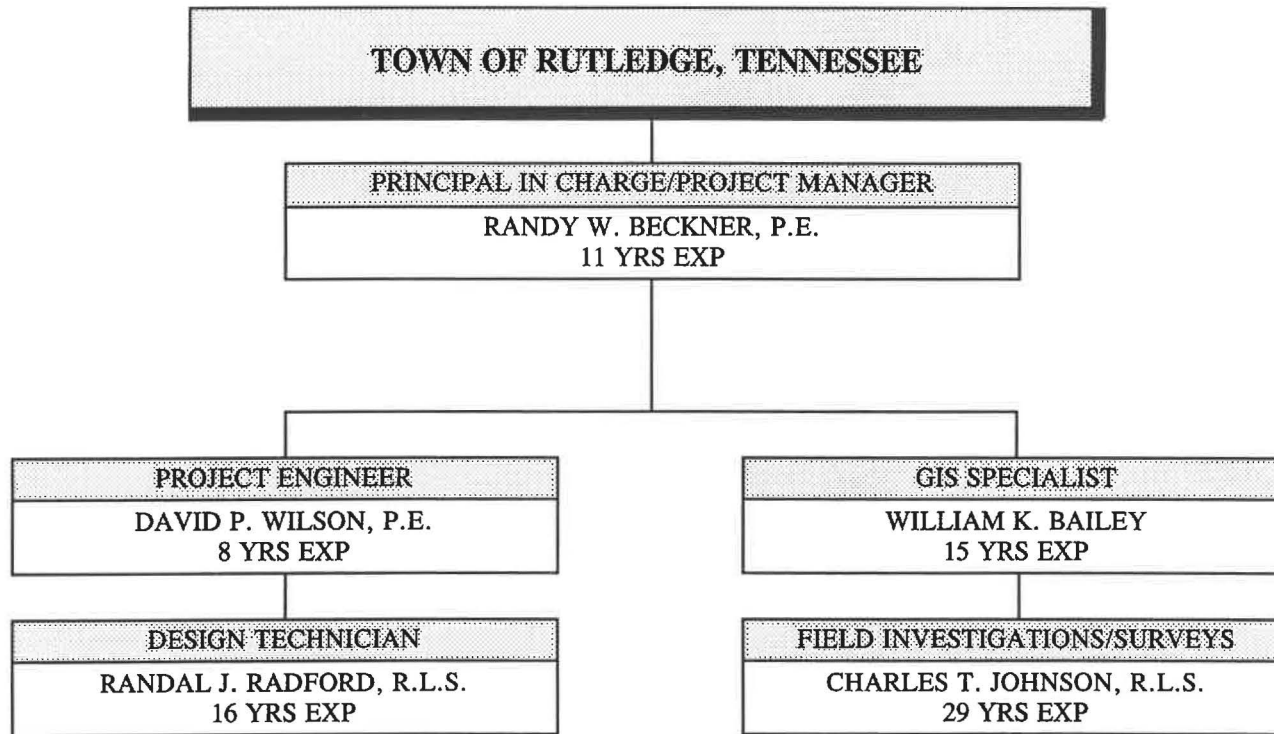
Mr. Wilson has 8 years engineering experience. He served as Project Engineer for the City of Kingsport Inflow/Infiltration analysis. Study included review and analysis of flow monitoring, sewer mapping, smoke testing, and inspection data of the 350 mile system and the recommendation of repairs and rehabilitation where necessary. Detailed cost estimates for all aspects of project were developed in securing revolving loan funds from the State of Tennessee. Other recent experience includes the Sanitary Sewer Evaluation, Honaker, Virginia and the I/I Study and Mapping, City of Kingsport, Tennessee.

Charles T. Johnson, R.L.S., Field Investigations/Surveys

Mr. Johnson will supervise any required topographic surveys and field investigations. He has performed topographic mapping and boundary surveys for many projects throughout Tennessee and Virginia. His recent experience includes several mapping projects for the Tennessee Department of Transportation; mapping of a portion of Johnson City, Tennessee, for a drainage study being conducted for the Veterans Administration, which utilized GPS equipment to establish control; and mapping of the Bristol Industrial Park, Bristol, Tennessee.

Detailed resumes of the entire project team follow for your reference. These personnel are available to meet your needs immediately upon Notice to Proceed.

Mattern & Craig has built a strong reputation in providing continuity in personnel throughout a project. The firm has provided consistent and expeditious services in its 19 years of service.



WATER AND SEWER RECORD DRAWINGS

KEY PERSONNEL

Randy W. Beckner, P.E.
Principal in Charge/Project Manager

Office Location: Kingsport, Tennessee

Years of Experience: 11

Graduate: Virginia Polytechnic Institute & State University, 1986, Civil Engineering
Concentration in Structures and Hydrology

Licensed: Tennessee, 1994 - #101559
Virginia, 1991 - #21885
North Carolina, 1994 - #20327
Registered as Class III Wastewater Operator - #2200
Certificate, 1994, Industrial Wastewater Pretreatment

Member: Order of the Engineer
American Society of Civil Engineers
Tennessee Water/Wastewater Association

Specialties: civil and structural engineering

- water and wastewater buildings and structures
- water and sewer distribution, storage, treatment and collection
- storm drainage and flood protection
- landfills
- site development
- bridges and roadways

Related Experience:

- Sewer Mapping, City of Bristol, Tennessee
- Sanitary Sewer Evaluation and Sewer Mapping, Town of Honaker, Virginia
- Water and Sewer Mapping, Town of Boiling Springs, North Carolina
- Bristol Industrial Park Utilities, City of Bristol, Tennessee
- Kingsport Inflow/Infiltration Study, City of Kingsport, Tennessee
- Inflow/Infiltration Projects 6-1, 6-2 and 6-3, City of Kingsport, Tennessee
- Shelby Street Sewerline, City of Bristol, Tennessee
- Drop Forge Water Systems; Phipps Bend Industrial Park, Hawkins County, Tennessee
- Reservoir Road Waterline, Kingsport, Tennessee
- Water Distribution System Improvements, Moccasin Gap Sanitation District, Weber City, Virginia
- Cullewee Waterline Extension, Tuckasegee Water and Sewer Authority, Jackson County, North Carolina
- Henard Properties Sewerline, City of Bristol, Tennessee
- Southside Sewerline, City of Bristol, Tennessee
- Phase I Blountville Highway Sewerline, City of Bristol, Tennessee
- Grove Park Sewage Facilities, City of Bristol, Tennessee
- Tennessee and Poplar Street Sewerline Replacement, City of Bristol, Tennessee
- Beltway Utility Relocations, City of Bristol, Tennessee
- Volunteer Parkway Sewer, City of Bristol, Tennessee
- Comprehensive Sanitary Sewer Plan, Bristol, Tennessee
- Sewershed Evaluation Plan, City of Roanoke, Virginia
- Survey and Design of Sewer Line; Industrial Park, City of Galax, Virginia

Randy W. Beckner, P.E.
cont.

- *Sewage Collection Facilities; The Virginian Residential and Golf Community, Bristol, Virginia*
- *South Fork and Meadow Branch Sewer Line Extensions, Town of Pound, Virginia*
- *Preliminary Engineering Report; The Virginian Golf Course Development, Washington County, Virginia*
- *Sinking Creek Sewer Extension, Washington County, Virginia*
- *Sewage Facilities Improvements, Clinchco, Virginia*
- *Mad Branch Sub-System Project 6-5; Downtown West Sewer Replacement, Kingsport, Tennessee*
- *Mad Branch Sub-System Project 6-6; Mad Branch Interceptor Replacement, Kingsport, Tennessee*
- *Mad Branch Sub-System Project 6-7; Downtown East Sewer Replacement, Kingsport, Tennessee*
- *Mad Branch Sub-System Project 6-8; Dobyms-Bennett Sewer Replacement, Kingsport, Tennessee*
- *Mad Branch Sub-System Project 6-10; Highland Sewer Replacement, Kingsport, Tennessee*
- *Site Utilities; Peddinghaus Modern Technologies; Phipps Bend Industrial Park, Hawkins County, Tennessee*

KEY PERSONNEL

David P. Wilson, P.E.
Project Engineer

Office Location: *Kingsport, Tennessee*

Years of Experience: *8*

Graduate: *Virginia Polytechnic Institute and State University, 1989, Civil Engineering*

Licensed: *1994/Tennessee - #101911*
1993/Virginia - #24800
1996/North Carolina - #22317

Member: *American Water Works Association*

Specialties: *water and wastewater*
grading design
stormwater management
drainfields
erosion and sediment control
bond estimates
field surveys, inspection and testing

Related Experience:

- *I/I Study, City of Kingsport, Tennessee*
- *Sanitary Sewer Evaluation, Town of Honaker, Virginia*
- *Grove Park Sewer Extension, Subproject 7, Bristol, Tennessee*
- *Bristol Industrial Park Utilities, Bristol, Tennessee*
- *PMT Site Utilities, Phipps Bend Industrial District, Hawkins County, Tennessee*
- *Mad Branch Sub-System Project 6-7, Downtown East Sewer Replacement, Kingsport, Tennessee*
- *Additional Services Aeration Basin, Kingsport, Tennessee*
- *Water Distribution System Improvements, Moccasin Gap Sanitation District, Weber City, Virginia*
- *Reservoir Road Waterline Extension, City of Kingsport, Tennessee*
- *40 Residential and Commercial Interceptors and Collector Lines (8" to 36"), County of Roanoke, Virginia*
- *Design Review and Project Management, Sanitary Sewer Facilities, Aurawood Subdivision, City of Kingsport, Tennessee*
- *Project Manager for the review and merger of the WASUA and DECA construction specifications, Specifications Merger, Washington, D.C.*
- *Water and Sewerline Extensions, Lewis Lane, City of Kingsport, Tennessee*
- *Groundwater Monitoring for Compliance with EPA Contaminant Level Standards, Virginia Department of Health - Office of Water Programs*
- *IPCLC Sewer Extension, Phipps Bend Industrial Park, Hawkins County, Tennessee*
- *Wastewater System Improvements, Town of Clinchco, Virginia*
- *Black Bottom Utility Improvements Study, City of Elizabethton, Tennessee*
- *Site Utilities - Peddinghaus Modern Technologies, Phipps Bend Industrial Park, Hawkins County, Tennessee*
- *Bristol Industrial Park Utilities, Bristol, Tennessee*

KEY PERSONNEL

*William K. Bailey
GIS Specialist*

Office Location: Kingsport, Tennessee

Years of Experience: 15

*Graduate: ETSU, 1992, Engineering Tech
Mountain Empire Community College, 1981, Industrial Tech*

*Specialties: GIS mapping
topographic and boundary surveying
- water and wastewater
- underground service mapping
- roadways
- site development
- utilities
- storm drainage
Equipment experience includes electronic survey equipment, Topcon, Nikon survey equipment, AutoCad, Microstation, Geo/SQL, ArcInfo, ArcCad, Soft Desk, Eagle Point, TDS, Unix and DOS PC*

Related Experience:

- *Mapping of 13 miles, Westmoreland Coal Company, Wise County, Virginia*
- *Establishment of GIS System, City of Union, South Carolina*
- *Management of GIS System, City of Johnson City, Tennessee*
- *Water System Upgrade and Expansion, Cullowhee, North Carolina*
- *Habitat for Humanity Water and Sewer, Marion, North Carolina*
- *Route 33, Tennessee Department of Transportation, Monroe County, Tennessee*
- *Route 131, Grainger County, Tennessee*
- *Pine Ridge Road, Tennessee Department of Transportation, Roane County, Tennessee*
- *Jo Hall Road, Morristown, Tennessee*
- *Route 61 - 3.7 miles, Tennessee Department of Transportation, Anderson County, Tennessee*
- *Route 91, Tennessee Department of Transportation, Carter County, Tennessee*

KEY PERSONNEL

*Charles T. Johnson, R.L.S.
Field Investigations/Surveys*

Office Location: *Kingsport, Tennessee*

Years of Experience: *29*

Graduate: *Tennessee Technical Institute, 1982, Surveying
East Tennessee State University, 1981, Math and Business*

Licensed: *Tennessee, 1989 - #1555*

Seminars: *VDOT Flagging Certification - 1996
Boundary Law in Tennessee - 1996
Fundamentals of GPS - 1996
OSHA Safety Compliance - 1996
Traffic Control for Roadway Construction, University of Tennessee
Improving Field Procedures and Mathematics for Surveyors and Civil Engineers
Surveying Automation Conference on Equipment, Software and Computer Applications for
Design Professionals
Pipeline Design Life Seminar, American Concrete Pipe Association, 1993
Surveyors Professional Responsibility and Liability, 1994
Tennessee Survey Issues, 1994*

Member: *Tennessee Association of Professional Surveyors
North East Tennessee Association of Professional Surveyors*

Specialties: *surveying activities*

- *water distribution*
- *sanitary sewer*
- *storm drainage*
- *land development*

project manager

- *rural and urban highway*
- *bridge*
- *airport*
- *industrial park*

Formerly employed by the Tennessee Department of Transportation

- *highway design and construction*
 - *control and location surveys*
 - *right-of-way and construction layout*

Related Experience:

- *GPS Surveys, City of Kingsport, Tennessee*
- *GPS Surveys, Veterans Administration, Johnson City, Tennessee*
- *Boundary Surveys, Bumpas Cove, Tennessee Wildlife Resources Agency*
- *Right-of-Way Plats, Clinchco, Virginia*
- *Right-of-Way Plats, Bristol, Tennessee*
- *Mad Branch Sub-System, Property Plat Projects 6-4, Kingsport, Tennessee*
- *Mad Branch Interceptor, Property Plats, Kingsport, Tennessee*
- *Power Line Survey, Rogersville, Tennessee*
- *Reservoir Road Water, Kingsport, Tennessee*

Charles T. Johnson, R.L.S.
cont.

- *Water and Sewer Improvements, Lakeview Utility District, Rogersville, Tennessee*
- *Water Distribution System, Chuckey Utilities District, Greene and Washington Counties, Tennessee*
- *Water System Improvements, Moccasin Gap Sanitation District, Weber City, Virginia*
- *Mad Branch Sub-System Downtown East, Dobyns-Bennett, Kingsport, Tennessee*
- *Property Plats Projects 6-10, Kingsport, Tennessee*
- *Clinchco Sewerage System Design, Town of Clinchco, Virginia*
- *Sewer Collection System, Town of Mt. Carmel, Tennessee*
- *Sewer Collection System, Town of Bulls Gap, Tennessee*
- *Shelby Street Sewerline; Tennessee and Poplar Street Sewerline Replacement; Phase I Blountville Highway Sewerline Replacement, City of Bristol, Tennessee*
- *Extension to Route 421 Sewer Collection System, City of Bristol, Tennessee*
- *Sewer Collection System, City of Luttrell, Tennessee*
- *Sanitary Sewer System, Sneedville, Tennessee*
- *Sanitary Sewer System, Baileyton, Tennessee*
- *Red Bank Sewer System Construction Layout, Chattanooga, Tennessee*
- *Hemlock Park Water and Sewer, Kingsport, Tennessee*
- *Southside Avenue Sewer, Bristol, Tennessee*
- *Forcemain Sewer, Henard Property, Bristol, Tennessee*
- *Raytheon Road Sewer, Bristol, Tennessee*
- *Sneedville Sewer, Town of Sneedville, Tennessee*
- *Groundwater Monitoring c/o STS Consultants, Bristol, Virginia*
- *Closure Plan, Holiday Inn, Bristol, Tennessee*
- *Grove Park, Sewer Collection System, Bristol, Tennessee*
- *KYPIPE Analysis, Moccasin Gap Sanitation District, Weber City, Virginia*

- *SR 354, Parsons Brincker-Hoff, Washington County, Tennessee*
- *US 321, Tennessee Department of Transportation, Cocke County, Tennessee*
- *Route 33 Metric Design, Tennessee Department of Transportation, Loudon County, Tennessee*
- *Two-Year Continuing Survey Contract, Metric Field Surveys, Tennessee Department of Transportation*
- *SR 91, 5.1 miles, Carter County, Tennessee*
- *SR 61, Anderson County, Tennessee*
- *Pine Ridge Road, Tennessee Department of Transportation, Roanoke, Virginia*
- *Street Improvements and Storm Drain, Community Development Project, City of Greeneville, Tennessee*
- *Layout and Survey of 11 Bridges, Tennessee Department of Transportation, Middle Tennessee*
- *4-lane S.R. 34; 4-lane S.R. 37, Tennessee Department of Transportation, Sullivan County, Tennessee*
- *4-lane I-181, Tennessee Department of Transportation, Unicoi County, Tennessee*
- *4-lane S.R. 37, Tennessee Department of Transportation, Carter County, Tennessee*
- *I-181 Corridor Study, Aerial Control, Tennessee Department of Transportation*
- *SR 58 Field Survey, Virginia Department of Transportation, Lee County, Virginia*
- *SR 58 Properties, Virginia Department of Transportation, Patrick County, Virginia*
- *Bristol Industrial Park, Bristol, Tennessee*
- *Golfsource, Inc., Sullivan County, Tennessee*
- *Community Tectonics, Incorporated, Hawkins County, Tennessee*
- *Central Appalachian Service, Bristol, Tennessee*
- *Phipps Bend Industrial District, Hawkins County, Tennessee*

KEY PERSONNEL

Randal Joe Radford, R.L.S.
Design Technician

Office Location: Kingsport, Tennessee

Years of Experience: 16

Graduate: East Tennessee State University, 1987, M.S. Engineering Technology
East Tennessee state University, 1980, Engineering Technology, Surveying

Licensed: Tennessee, 1991 - #1635

Seminars: Automation and Computerization - The Building of a Total Surveying System, Automated Engineering and Office Systems - 1987
Global Positioning System - A Technical Workshop, Iowa Transportation Center in Conjunction with the Federal Highway Administration - 1995
Microstation V5, Modern Technology Corporation - 1995
Eagle Point Software - 1994

Member: Tennessee Association of Professional Surveyors

Specialties: topographic, boundary and construction surveys
site design for municipal and industrial facilities
computer systems on both DOS and Unix Base computers
- AutoCad
- VersaCad
- Microstation
- Cadkey

Related Experience:

- Boiling Springs Water and Sewer Map, Boiling Springs, North Carolina
- Bristol Sewer Mapping, Bristol, Tennessee
- Cashiers Wastewater Treatment Plant Expansion; Tuckaseigee Water and Sewer Authority, Sylva, North Carolina
- Steel Creek Sewer Project, City of Bristol, Virginia
- Moccasin Gap Water Project, Weber City, Virginia
- Grove Park; Shelby Street Sewerline; Tennessee & Popular Street Sewerline Replacement; I/I Study and Comprehensive Sewer Plan, City of Bristol, Tennessee
- Sewer Improvements, Clinchco, Virginia
- The Virginian - Phase II, Sewer and Storm Water Management, Washington County, Virginia
- Tuckaseigee Water & Sewer Authority, Cashiers Sewer Plant, Sylva, North Carolina
- Habitat for Humanity Water and Sewer, Marion, North Carolina
- Dillsboro Pump Station and Force Main; Tuckaseigee Water and Sewer Authority Sylva, North Carolina
- Phipps Bend Industrial Park, Hawkins County, Tennessee
- Bristol Industrial Park, Bristol, Tennessee
- Golfsource Site Development, Kingsport, Tennessee
- Hampton Elementary School, Carter County, Tennessee
- West View Elementary School, Washington County, Tennessee
- WalMart, Kingsport, Tennessee
- Centre South Plaza, Johnson City, Tennessee
- Johnson City Mall, Johnson City, Tennessee
- Cemetery Drainage - Phase I Study; VA Medical Center - Mountain Home, Tennessee
- U.S. Forest Service, Cherokee National Forest, Unicoi County, Tennessee
- USGS, Establishment of Baseline, East Tennessee State University Campus, Johnson City, Tennessee

5. REFERENCES

- **City of Kingsport (Various Sewer and Surveying Services)**
225 West Center Street
Kingsport, TN 37660-4237
Mr. Rusty Wilkerson
(423) 229-9470
- **City of Bristol (Sewerlines, Industrial Park)**
P.O. Drawer 1189
104 8th Street
Bristol, TN 37621-1189
Mr. William Sorah, Operations Director
Mr. Don Brown, Deputy City Manager-Development
(423) 968-9141
- **City of Elizabethton**
136 W. Sycamore Street
Elizabethton, TN 37643-3328
Mr. Charles Stahl, IV, City Manager
(423) 543-3551
- **City of Morristown (Wastewater Pump Station)**
144 West First North Street
P.O. Box 1499
Morristown, TN 37816-1499
Mr. Philip W. Lynn, Engineer
(423) 581-0100
- **City of Jefferson City (Wastewater Plant)**
112 West Broadway
P.O. Box 666
Jefferson City, TN 37760
Mr. Mike Jones, Public Works Director
(423) 475-9071
- **County of Hawkins (Industrial Park, Airport)**
150 Washington Street
Rogersville, TN 37857
Mr. Doug Price, County Executive
(423) 272-7359

6. EXAMPLE OF WORK PRODUCT

The following inserts contain examples of utility mapping previously prepared by Mattern & Craig. The first insert is an example of basic mapping discussed in Section 2, while the second is an example of sewer on aerial mapping.



- LEGEND**
- 16" WATER LINE
 - 12" WATER LINE
 - 8" WATER LINE
 - 6" WATER LINE
 - 4" WATER LINE
 - 2" WATER LINE
 - 3/4" WATER LINE
 - GATE VALVE
 - FIRE HYDRANT
 - METER
 - SEWER LINE
 - MANHOLE

**EXAMPLE
SEWER & WATER MAPPING**



& Craig
 ENGINEERS • SURVEYORS
 429 CLAY STREET
 TENNESSEE 37660
 (423) 245-4970
 (423) 245-5832

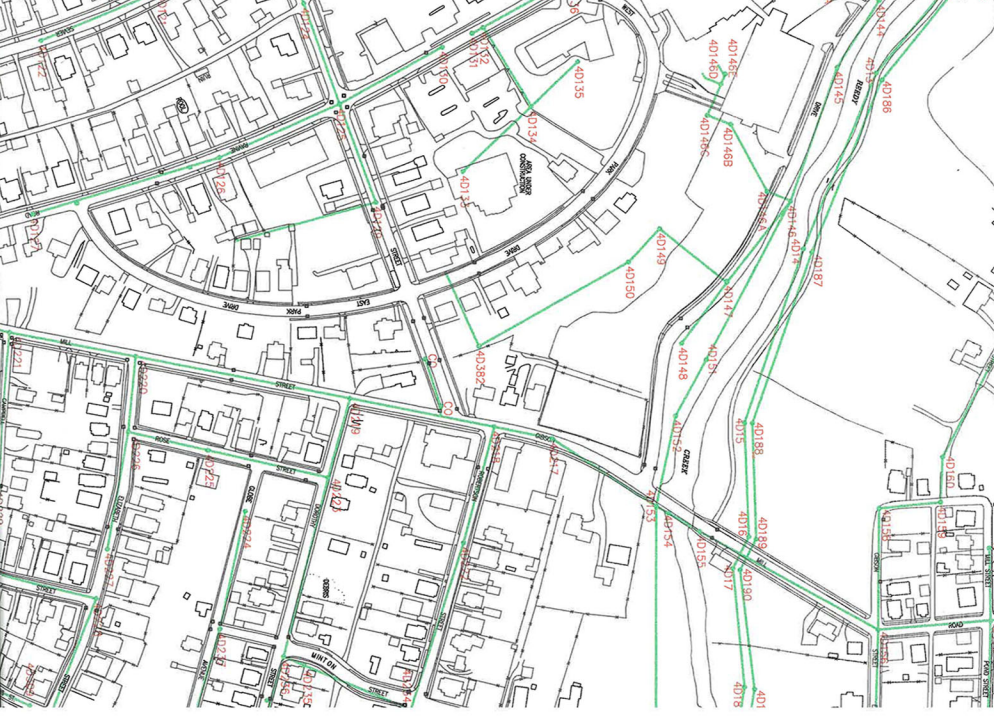
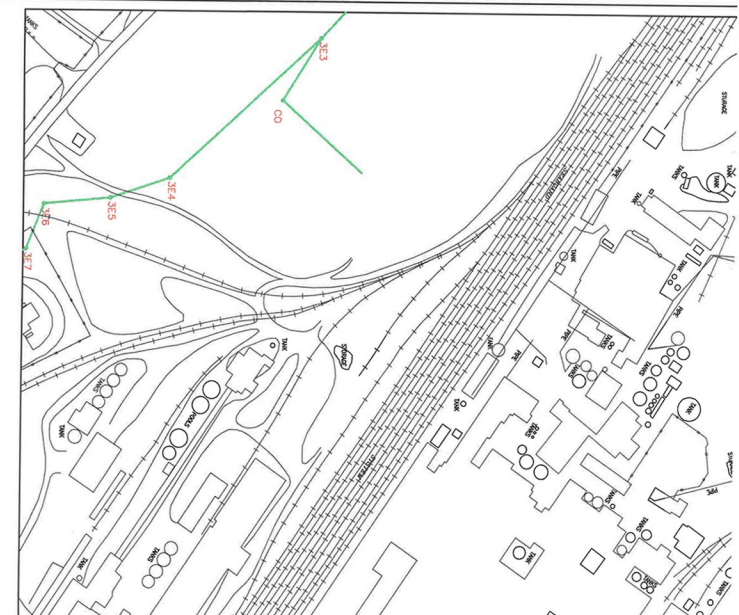
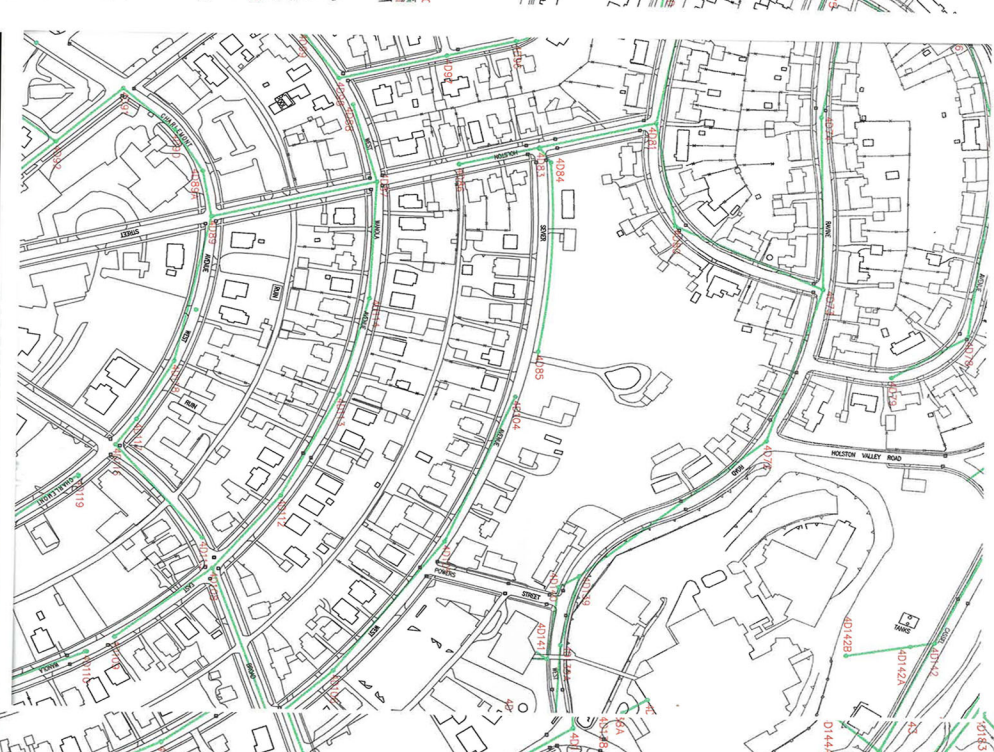
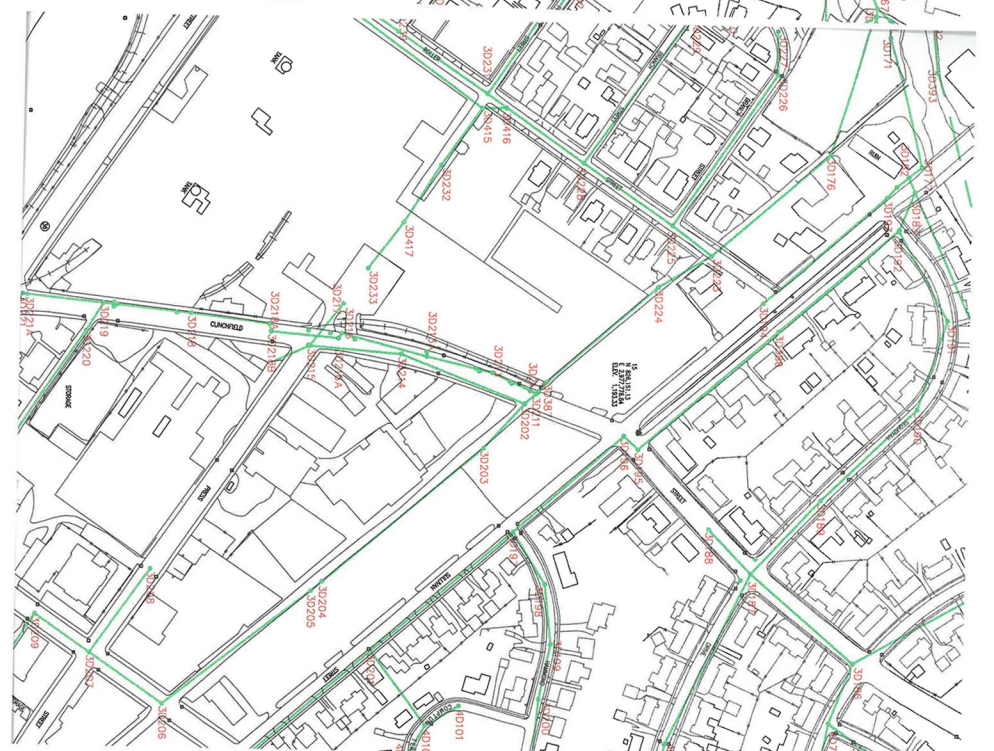
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Drawn By:		Revisions	
Designed By:			
Checked By:			
Date:			

Sheet No.: **1**

Issue Date:

Horizontal Scale: 1"=400'

Vertical Scale: N/A



INDEX

D-4	D-5	D-6
E-4	E-5	E-6
F-4	F-5	F-6

