

Town of Windsor

Memorandum

September 13, 2022

TO: The Honorable Mayor and Town Council
FROM: William G. Saunders, IV, Town Manager *WGS IV*
SUBJECT: Duke Street and Virginia Avenue Water Main Replacement Project

Background

The Duke Street and Virginia Avenue Water Main Replacement project has been in the Town's Capital Improvement Plan for some time. The project was nearly put out to bid previously, when it was realized that some of the new water mains were outside of the VDOT right-of-way and did not have some necessary utility easements. Following this, Bowman engineers have created easement exhibits for the properties and the town has created deeds of easement and obtained signatures from the land owners.

Specifics

The project includes the replacement of 1,750 linear feet of 4" water main with 8" main on Duke Street, the replacement of 1,450 linear feet of 4" water main with 6" main on Virginia Avenue, the relocation of 2 fire hydrants, the addition of 3 fire hydrants, and the relocation of 38 water meters.

The next phase of the project is to put the project out to bid. Enclosed herein are documents to include plan sheets and estimate for project administration and inspection oversight. While the project has been approved through the adoption of the budget, with \$750,000 in the FY23 CIP, it is recommended that the Council vote to approve putting the project out to bid, as well as the agreement with Bowman engineers on oversight.

Once the bids are received, they will come back before Council for further action.

Note: A project cost estimate will be provided by Bowman Consulting prior to bid opening.

Enclosures

Duke St. / Virginia Ave. Water Main Project Plan Sheets
Agreement for engineering and inspection services with Bowman Consulting

Recommendation

Approve Putting the Project out to Bid and Entering Bowman Agreement

Bowman

Aug 3, 2022

William Saunders
Town Manager
Town of Windsor
8 E. Windsor Boulevard
P.O. Box 307
Windsor, VA 23487

Re: Construction Administration and Construction Inspection Services for the Duke Street and Virginia Avenue Water Mains (the "Project")
Windsor, VA
Proposal to provide Engineering Services (the "Proposal")
Proposal No. 08.22.120

Dear Mr. Saunders:

We are pleased to submit this Proposal to provide Engineering services for the above referenced Project. Upon verbal or written direction to proceed with performance of the services described herein, this Proposal, along with all attachments thereto, will constitute a binding agreement (the "Agreement") between Bowman Consulting Group Ltd. ("Bowman") and Town of Windsor (the "Client").

Proposal Assumptions and Project Understanding

Bowman Consulting Group, Ltd. ("Bowman") is pleased to submit this proposal to provide construction administration services and field inspection services for the above reference project to the Town of Windsor ("Client"). This project is a continuation of our services that have been completed for the final design of the water mains associated with this project which includes the replacement of 3,600 LF of undersized watermains and providing new fire hydrants to provide improved fire protection within the project area. The project also includes providing new water meters along the new sections of piping. In this next phase of the contract, Bowman will support the project during bidding, construction, inspection, acceptance testing, commissioning, preparation of record plans, and closing out of the project.

Standard of Care - Services provided by Bowman under this proposal will be performed in a manner consistent with the degree of care and skill ordinarily exercised by members of the same profession practicing under similar circumstances, including standard of care at the time the services were provided.

Quality Control - A portion of the stated compensation is set-aside for Quality Control/Quality Assurance, which is part of the Bowman Quality Control Policy.

SCOPE OF SERVICES AND FEES

The scope of services (the "Scope") and associated fees shall be as follows:

PART 1 – CONSTRUCTION ADMINISTRATION SERVICES

Task 1.1 – Project Management and Coordination

Project management includes coordination of the engineering team, conducting in-house meetings and correspondence throughout the duration of the construction phase of the project. Project management also includes preparation of monthly

Proposal No. 08.22.120

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progress reports, presenting work activities completed during the reporting period, budget status, schedule status, and identification of any out-of-scope items. Monthly invoices will be prepared which detail project labor costs and other direct costs. For this project, it is anticipated that a weekly or bi-weekly check-in call will be conducted with Bowman's construction manager, field inspector and the client team.

Task 1.2 – Prepare Conformed Plans and Specification Documents and Cost Estimate [ND1]

Based on questions and comments during the bidding process which resulted in the issuance of Addenda, Bowman will incorporate those revisions and comments into final electronic conformed plans and specifications documents for distribution to the Client and the Contractor awarded the work. The documents will be distributed electronically for use in executing the construction phase of the project. The documents will be prepared in PDF format. A Final engineer opinion of probable construction cost will be updated prior to the bid opening.

Task 1.3 - Preconstruction Meeting

Bowman will prepare a detailed agenda and lead one onsite preconstruction meeting with the contractor and key members of the Client staff. At the preconstruction meeting, the following topics will be reviewed:

- Project scope and key considerations during construction
- Project team members
- Project schedule
- Project management and communications protocols
- Review key project milestones
- Document control system

Task 1.4 - Progress Meetings

Bowman will participate in up to six (6) progress meetings to discuss construction progress, staffing, budget, items for resolution, status of shop drawings and submittals, active RFIs, Change Orders and other items of concern. Progress meetings will be conducted monthly during construction. It is anticipated that one meeting will be conducted by teleconference prior to construction mobilization or at the end of the project and attended by two Bowman representatives.

Task 1.5 – Submittal Reviews

Bowman will review and accept or reject Submittals prepared by or for the Contractor in accordance with the Contract Documents such as shop drawings, product data, samples, material schedules, Plans, and Operation and Maintenance Manuals. The reviews will confirm whether the Submittals are consistent with and in compliance with requirements of the Contract Documents or whether additional information is required. Bowman will issue a cover sheet that clearly indicates whether the submittal is "Approved", "Approved as Corrected", "Revise and Resubmit" or "Rejected". When changes are requested, instructions will be provided with the coversheet or the body of the Submittal. Each resubmittal to a rejected Submittal is considered a new item for review. It is anticipated that 20 percent of the Submittals will be returned as Approved Amend and Resubmit and require a second review.

Bowman will maintain a submittal log throughout the duration of the contract and will record date of receipt of Samples, Shop Drawings, and the review status. The following is the estimated submittals to be received, but is not limited to:

1. Valves including gate valves, curb stops, air release valves, ball valves and other specialty valves
2. Metallic and plastic piping materials
3. Pipe fittings and restraining systems
4. Pipe system appurtenances such as valve boxes, meter boxes and air release structures
5. Cast-in-place concrete and asphalt paving
6. Hydrants
7. Disinfection and testing protocols and results
8. Water meters
9. Certifications for materials and testing

- Up to 5 submittals may require significant review
- Up to 5 Resubmittals that require a second round of comments
- No submittals that will require 3 reviews (two resubmittals)

Task 1.6 – Interpretation of Contract Documents

Bowman will provide interpretation of Contract Documents including Contractor's request for information (RFI) and indicate when clarifications and interpretations of the Contract Documents are needed. Requests for Interpretation (RFIs) submitted by the Contractor will be reviewed and responded to including supplemental information or sketches as necessary and appropriate. Other topics relating to the contract will be reviewed with the Client and decisions communicated to the

Bowman

Contractor. Clarifications and interpretations will be transmitted to the Contractor as appropriate. It is estimated that there will be up to 8 RFI's, 2 field orders and up to 2 contractual topics to be resolved.

Task 1.7 – Completion Inspection

Bowman will assist with the punch list preparation and attend a final site visit to verify that items on the list have been corrected to the Town's and Bowman's satisfaction. A draft punch list will be prepared and submitted to the Town for approval prior to distributing to the Contractor. Upon notification by the Contractor that all items on the punch list have been completed, Bowman will attend a final inspection in the company of the Town and the Contractor. One engineer from Bowman will attend the inspection and provide a written memorandum if punch list items remain to be completed or there are additional deficiencies to be remedied. If the punch list items have been addressed to Bowman's and the Town's satisfaction, Bowman will provide a written opinion that the project is substantially complete and customers service can then be transferred to the new water main system.

Task 1.8 – On-Call As-Needed Support

Bowman will provide up to 16 hours of on-call services on an "as-needed" basis for unanticipated activities. These activities are expected to be short in duration and require a relatively minor level of effort. Following a need being identified, Bowman will summarize the specific activity and estimated effort in an e-mail to advise the Client of the need for providing the services. Examples of potential On Call Services are:

- Responding to unanticipated field conditions
- Unforeseen utilities and underground piping conflicts that require field review
- Addressing any issues or questions from regulatory or permitting agencies
- Providing advice for non-identified activities in this proposal such as the preparation of asset management planning, operational optimization advice, or development of SOPs or addressing community input during construction

PART 2 – CONSTRUCTION INSPECTION SERVICES

Bowman will provide the services of a project inspector for up to 40 hours a week for up to 5-month period (20 weeks). The inspector will serve as the Owner's and Engineer's agent at the site and will monitor and report on any matters pertaining to the Contractor's work in progress. Among other tasks, our field inspections staff will provide the following services:

- Review the progress schedule, schedule of Shop Drawing and Sample Submittals, and schedule of values prepared by Contractor and consult with the Client concerning acceptability.
- Attend meetings with Contractor, such as pre-construction conferences, progress meetings, job conferences and other project-related meetings.
- Serve as a liaison with Contractor and assist in understanding the intent of the Contract Documents.
- Receive Samples which are furnished at the Site by Contractor and notify the project team of availability of Samples for examination.
- Conduct on-Site observations of Contractor's work in progress to assist in determining if the Work is in general proceeding in accordance with the Contract Documents.
- Report whenever it is believed that any part of Contractor's work in progress will not produce a completed Project that conforms generally to the Contract Documents.
- Consult with the project team in advance of scheduled major inspections, tests, and systems startups of important phases of the Work.
- Verify that tests, equipment, and systems startups and operating and maintenance training are conducted in the presence of appropriate personnel, and that Contractor maintains adequate records thereof.
- Observe, record, and report appropriate details relative to the test procedures and systems startups.
- Maintain orderly files for correspondence, reports of job conferences, reproductions of original Contract Documents including all Change Orders, Field Orders, Work Change Directives, Addenda, additional Drawings issued after the execution of the Contract, clarifications and interpretations of the Contract Documents, progress reports, Shop Drawing and Sample submittals received from and delivered to Contractor, and other Project-related documents.
- Prepare a daily report recording Contractor's hours on the Site, weather conditions, data relative to questions of Change Orders, Field Orders, Work Change Directives, or changed conditions, Site visitors, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures. The daily logs will be completed and made available daily.
- Before issuing a Certificate of Substantial Completion, a list of observed items requiring completion or correction will be developed.
- Observe whether Contractor has arranged for inspections required by Laws and Regulations, including but not limited to those to be performed by public agencies having jurisdiction over the Work.
- Participate in a final inspection in the company of appropriate project staff. Prepare a final list of items to be

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completed or corrected.

- Observe whether all items on final list have been completed or corrected and make recommendations concerning acceptance and issuance of the Notice of Acceptability of the Work.

Part 3 – ADDITIONAL SURVEY FOR TX MAP - 54B-01-0053A

- An additional survey was performed along the revised watermain corridor. Property lines were identified, and a topographic survey was completed. Additionally, the trees were identified along the waterline easement. Work was completed in late July and incorporated into the final bid ready documents.

PROJECT FEE SUMMARY

The Lump Sum fee is summarized below. The fee is anticipated to be lump sum by Task.

Task	Description	Total
	Part 1 Construction Administration Services	\$0.00
Task 1.1	Project Management and Coordination	\$2,880.00
Task 1.2	Prepare Conformed Plans, Specification and Cost Estimate	\$4,964.00
Task 1.3	Preconstruction Meeting	\$1,288.00
Task 1.4	Progress Meetings (6)	\$4,380.00
Task 1.5	Submittal Reviews	\$7,296.00
Task 1.6	Interpretation of Contract Documents	\$4,792.00
Task 1.7	Completion Inspection	\$3,468.00
Task 1.8	On-Call As-Needed Support	\$2,392.00
Task 2	Part 2 Construction Inspection Services	\$71,000.00
Task 3	Part 3 Additional Survey for Tax Map - 54B-01-0053A	\$1,500.00
Total Estimated Fees		\$103,960.00

EXCLUSIONS

The following services are specifically excluded from the scope of this agreement and may be performed as contract addendums upon request:

- All "Post Construction" tasks are excluded from this proposal, including but not limited to Operations and Maintenance Manuals, and Record/As-Built Drawings.

Funding agency mandated contract administration is excluded from this scope. Administration of Davis Bacon is excluded from the scope.

Full-time inspection services are not included in this scope. Additional hours can be included

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- Items not specifically delineated in Scope.

ASSUMPTIONS REIMBURSABLE EXPENSES

Reimbursable expenses shall include actual expenditures made by Bowman in the interest of the Project and will be invoiced at the actual cost to Bowman plus fifteen percent (15%) for handling and indirect costs. Reimbursable expenses shall include but not be limited to costs of the following:

- Mailing, shipping, and out source delivery (i.e. DHL, FedEx) costs.
- Fees and expenses of special consultants as authorized by the Client.
- Parking fees and mileage for employee travel by car to facilitate the project.

REPROGRAPHIC AND COURIER CHARGES

Reprographic, plotting, in-house courier, and archive retrieval services will be invoiced in accordance with Schedule A attached hereto.

CLIENT RESPONSIBILITIES

The Client shall be responsible for obtaining permission for Bowman, its employees, agents and subcontractors to enter onto the subject property and any properties in the vicinity as reasonably necessary for Bowman to perform the services described herein. By either countersigning this Proposal or verbally authorizing Bowman to proceed, the Client warrants and represents that it has obtained such permission.

OTHER TERMS

This proposal is based on the scope of services indicated herein and the information available at the time of the proposal preparation. If any additional services are required due to unforeseen circumstances and/or conditions, client or regulatory requested revisions, additional meetings, regulatory changes, etc, Bowman will notify the client that additional scope of work and fees are required and will obtain the client's written approval prior to proceeding with any additional work.

Bowman's Standard Terms and Conditions and Hourly Rate Schedule are attached hereto and incorporated into this Proposal by reference.

Please indicate your acceptance of this proposal by executing below and returning a copy to this office. Thank you for the opportunity to provide service to Town of Windsor.

Sincerely,

BOWMAN CONSULTING GROUP LTD.

Robert Krallinger

Robert Krallinger
Principal, Water Practice Leader

Town of Windsor hereby accepts all terms and conditions of this Proposal (including the Standard Terms and Conditions) and authorizes Bowman to proceed with the Project, and the undersigned represents that he or she is authorized by Town of

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Windsor to so execute this Proposal.

Town of Windsor

By:

Title:

Date:

Bowman

BOWMAN CONSULTING GROUP LTD.

SCHEDULE A - FEES FOR REPROGRAPHIC, DELIVERY, TRAVEL AND OTHER SERVICES

January 2022

Reprographic Services

B&W Photo Copies	\$0.35/sf, or \$0.23 for 8-1/2" x11" sheet
Color Photo Copies	\$0.50/sf, or \$0.32 for 8-1/2" x11" sheet
Printing (bond)	\$0.35/sf, or \$2.10 for 24" x 36" sheet
Printing (mylar)	\$3.00/sf, or \$18.00 for 24" x 36" sheet

Binding, Mounting and Folding of plan sets, reports, or drawings will be invoiced at our standard hourly rates. Copying of Plans that have been archived in storage is subject to a minimum archive retrieval fee of \$50 plus applicable reprographic fees above.

Delivery Services

In-house delivery services are invoiced at \$2.00 per mile (one way) and subject to a minimum \$20.00 charge for standard delivery during normal business hours. Rush services and times outside normal business hours are subject to a minimum \$20.00 surcharge.

Outsourced courier services (i.e. Federal Express, DHL, etc.) are invoiced at cost plus 15%.

Travel

Mileage for employee travel by car to facilitate the project, including travel to the project site and for meetings with the client, project team, contractors, or governmental agencies, will be invoiced at the current IRS standard mileage rate.

Airfare and/or lodging to facilitate the project will be coordinated with the client in advance and will be invoiced at cost plus 15%.

Miscellaneous

Other costs associated with sub-consultants, specialty equipment, laboratory testing, field testing, tolls, parking or other miscellaneous items will be invoiced at cost plus 15%.

Initials: Bowman *R.K.* / Client

BOWMAN CONSULTING GROUP LTD.

SCHEDULE B - HOURLY RATE

January 2022

CLASSIFICATION	HOURLY RATES
Principal	\$269.00/HR
Department Executive	\$222.00/HR
Senior Project Manager	\$211.00/HR
Project Manager	\$160.00/HR
Project Coordinator	\$148.00/HR
Senior Surveyor	\$140.00/HR
Engineer I II III	\$103.00/HR \$121.00/HR \$143.00/HR
Planner I II III	\$ 97.00/HR \$114.00/HR \$121.00/HR
Designer I II III	\$ 97.00/HR \$114.00/HR \$137.00/HR
CADD Drafter I II III	\$ 81.00/HR \$103.00/HR \$126.00/HR
Senior Construction Observer	\$155.00/HR
Construction Manager	\$105.00/HR
Construction Inspector	\$ 77.00/HR
Landscape Architect I II III	\$ 86.00/HR \$ 97.00/HR \$108.00/HR
Certified Arborist	\$132.00/HR
Senior Environmental Scientist	\$148.00/HR
Environmental Scientist I II III	\$108.00/HR \$121.00/HR \$126.00/HR
Right of Way Specialist I II III	\$ 81.00/HR \$ 97.00/HR \$121.00/HR
Survey Technician I II III	\$ 81.00/HR \$ 92.00/HR \$113.00/HR
Project Surveyor	\$124.00/HR
Survey Field Crew – 1 Man	\$ 97.00/HR
Survey Field Crew – 2 Man	\$146.00/HR
Survey Field Crew – 3 Man	\$166.00/HR
3D Scanning Crew	\$239.00/HR
Survey Field Technician	\$ 59.00/HR
3D/UAV Modeling Technician	\$135.00/HR
UAV Operation	\$239.00/HR
Machine Control Technician	\$135.00/HR
Administrative Professional	\$ 80.00/HR

Initials: Bowman *R.K.* / Client

Table 345 - PUBLIC 2022 Southern VA

BOWMAN CONSULTING GROUP LTD.
SCHEDULE C - REQUEST FOR INFORMATION

Accounts Payable Contact:

Point of Contact:
Phone:
Fax:
E-Mail:

Billing Information:

Billing Entity:
Billing Address: Same as Proposal
 If Different, Please Provide:

Billing Requirements:

Invoice Due Date:
Requirements/Attachments:
Invoices Transmitted Via Electronic Mail to:
Offer ACH Direct Deposit: Yes, Contact:
 Not Sure, Contact Our Office
 Not At This Time

Initials: Bowman *R.K.* / Client

BOWMAN CONSULTING GROUP LTD TERMS AND CONDITIONS

These Terms and Conditions are incorporated by reference into the Proposal and its exhibits (the "Proposal") from **Bowman Consulting Group Ltd.** ("Bowman") to **Town of Windsor** ("Client") for performance of services described in the Proposal and associated with the project described in the Proposal (the "Project"), and in any subsequent approved Change Order related to the Project. These Terms and Conditions, the accepted Proposal, and any Change Orders or other amendments thereto, shall constitute a final, complete, and binding agreement (the "Agreement") between Bowman and Client, and supersede any previous agreement or understanding.

1. Scope of Services. Bowman will provide the services expressly described in and limited by the Proposal (the "Scope"). If in Bowman's professional judgment the Scope must be expanded or revised, Bowman will forward a change order agreement to Client that describes the revision to the Scope (the "Change Order") and the adjusted fee associated therewith.

2. Standard of Care. The standard of care for all services performed by Bowman for Client shall be the care and skill ordinarily used by members of the applicable profession practicing under similar circumstances at the same time and locality of the Project. Client shall not rely upon the correctness or completeness of any design or document prepared by Bowman unless such design or document has been properly signed and sealed by a licensed professional on behalf of Bowman.

3. Payment Terms. Bowman will invoice Client monthly or more frequently based on a percentage of the work completed for lump sum tasks, number of units completed for unit tasks, and actual hours spent for hourly tasks. Invoices are due and payable in full upon receipt without offset of any kind or for any reason. Bowman shall have the discretion to apply payments made by Client to an invoice or retainer account of Client in accordance with its business practices. Client agrees to pay a finance charge of one and one-half percent (1.5%) per month from the invoice date on any unpaid balance not received by Bowman within thirty (30) days of the invoice date. Payment of invoices is subject to the following further terms and conditions:

(a) If any invoice is not paid in full within forty-five (45) days of the invoice date, and Client has not timely and in good faith disputed the invoice as provided below, Bowman shall have the right at its election by giving notice to Client to either: (i) suspend the performance of further services under this Agreement and, at its sole discretion, suspend the performance of further services on other projects which are being performed by Bowman on behalf of Client or any related Client entities, until all invoices are paid in full and Bowman has received a retainer in such amount as Bowman deems appropriate to be held as described below; or (ii) deem Client to be in material breach of this Agreement and proceed pursuant to Section 17 below. Client agrees to pay any and all charges, costs or fees incurred in collection of unpaid invoices, including reasonable attorneys' fees and costs. Following Bowman's election above, Bowman shall bear no liability to Client or any other person or entity for any loss, liability or damage resulting from any resulting delay, and any schedule for the performance of services hereunder prepared previously shall be deemed void with any future schedule for the performance of services requiring the approval of both Client and Bowman.

(b) If Client disputes any submitted invoice, Client shall give written notice to Bowman within thirty (30) days of the invoice date detailing the dispute. If no written notice of a dispute is provided to Bowman within that time period, the invoice shall then be conclusively deemed good and correct. If part of an invoice is disputed, Client shall remain liable to timely pay the undisputed portion of the invoice in accordance with the terms of this Agreement. Client and Bowman shall promptly negotiate in good faith to resolve any disputed portion of an invoice.

4. Retainer and Other Payments. Bowman reserves the right to require that Client make a payment to be held by Bowman as an advance against future billings (the "Retainer"). The Retainer is not intended as the regular source of payment for invoices issued to Client under this Agreement or otherwise, and the parties intend that the Retainer be applied to the final invoice for the services described in the Agreement, or against any other unpaid amounts owed to Bowman should Client (or any affiliate of Client) fail to timely pay invoices due Bowman. The Retainer account may consist in part of payments applied by Bowman pursuant to the authority granted it under Paragraph 3 above. If the Retainer is applied during the course of the Agreement, Client agrees to promptly replenish the Retainer upon request of Bowman. Upon the conclusion of this Agreement, or its earlier termination, Bowman shall (a) apply the Retainer to any unpaid amount owed Bowman by Client (or its affiliates), and (b) return any unapplied portion to Client. The Retainer shall not be required to be held in a separate account nor shall it bear interest, and the Retainer may include other amounts paid to Bowman by Client with respect to the Project or other projects.

5. Client Duties and Responsibilities. Client shall inform Bowman of any special criteria or requirements related to the Project or Scope, and shall timely and at its cost furnish any and all information in its possession relating to the Project, including reports, plans, drawings, surveys, deeds, topographical information and/or title reports. Bowman shall bear no responsibility for errors, omissions, inaccuracy or incompleteness in third-party information or additional costs arising out of its reliance upon such third-party information

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supplied by Client. Client warrants and represents that: (a) Client has obtained the full and unconditioned prior written consent from any third-party for Bowman to use such third-party information; (b) such consent shall be provided to Bowman upon request; and (c) such consent shall be in a form that, in Bowman's reasonable discretion, does not violate any applicable law, regulation, or code of ethics. If the Scope requires a current title report, Client shall timely and at its cost provide such title report to Bowman. If the Scope includes preparation of plats to be recorded in the land records of the Project jurisdiction, Client shall timely prepare, submit, and record necessary deeds and pay all recording fees associated with deeds and plats. All off-site easements are the responsibility of Client. Client shall indemnify and hold harmless Bowman from and against any and all claims, demands, losses, costs, and liabilities, including without limitation reasonable attorney fees and expenses incurred by Bowman and arising out of (a) Client's breach of this Agreement or (b) an action by Client or a third-party with respect to any matter not included in the Scope or that is excluded from the responsibility of Bowman pursuant to this Agreement.

6. Insurance. Bowman and its employees are protected by workman's compensation, commercial general liability, automobile liability, and professional liability insurance policies. Upon request of Client, Bowman shall provide a certificate of insurance to Client evidencing such coverage and shall attempt to include Client as an additional insured on those coverages that permit additional insured status. Client acknowledges it has been offered the opportunity to review the current limits of such coverage and finds them satisfactory, and further agrees that in no event shall Bowman's liability to Client or any party claiming through Client be greater than the limits of such insurance. From time to time Bowman may, without notice to Client, amend the carriers, conditions, exclusions, deductibles or limits of any such insurance; provided that prior to any decrease in any insurance limit becoming effective Bowman shall give notice thereof to Client.

7. Potential Liability of Bowman. The following provisions shall operate with respect to any potential liability of Bowman arising under the Agreement:

(a) Client may not assert that there is a breach, defect, error, omission or negligence in the services performed by Bowman that Client believes creates liability on the part of Bowman unless Client gave written notice to Bowman not later than the first to occur of (i) the beginning of any corrective work, or (ii) thirty (30) days after Client had knowledge of the existence of the breach, defect, error, omission or negligence. Bowman shall have the opportunity to participate in decisions regarding the corrective work, and Client shall ensure that corrective action is taken at the lowest reasonable expense under the circumstances.

(b) Notwithstanding any other provision of this Agreement, the total liability, in the aggregate, of Bowman and Bowman's officers, directors, partners, employees, agents, and consultants to Client and anyone claiming through Client, shall not in any manner whatsoever exceed the direct losses incurred by Client (to the extent of and in proportion to Bowman's comparative degree of fault) that resulted from the error, omission or negligent act of Bowman in the performance of services under this Agreement.

(c) To the fullest extent permitted by law, Bowman and Bowman's officers, directors, partners, employees, agents, and sub-consultants shall not be liable to Client or anyone claiming through Client for any special, incidental, indirect, or consequential damages whatsoever arising out of, resulting from, or in any way related to the Project or this Agreement, regardless of whether such damages are alleged to be caused by the negligence, professional errors or omissions, strict liability, breach of contract, or breach of express or implied warranty.

(d) Client agrees that Bowman's shareholders, principals, partners, members, agents, directors, officers and/or employees shall have no personal liability whatsoever arising out of or in connection with this Agreement or the performance of services hereunder.

8. Certificate of Merit. In addition to the requirement of notice under section 7(a) above, Client shall make no claim (whether directly or in the form of a third-party claim) against Bowman unless Client shall have first provided Bowman with a written certification executed by an independent professional licensed in the state in which the Project is located and licensed in the profession to which the claim relates. Such certificate shall: (a) contain the name and license number of the certifier; (b) specify each and every act or omission which the certifier contends constitutes a violation of the standard of care expected of a professional performing professional services under similar circumstances; (c) state in complete detail the basis for the certifier's opinion that each such act or omission constitutes such a violation; and (d) be provided to Bowman thirty (30) days prior to the presentation of and as a precondition to any such claim, or the institution of any mediation, arbitration, judicial or other dispute resolution proceeding.

9. Conflict Resolution and Applicable Law. Any dispute, controversy or claim arising out of or relating to this Agreement, or the breach thereof, that cannot be resolved by the parties and for which the amount in controversy is less than One Hundred Thousand Dollars (\$100,000.00) shall be settled by arbitration administered in Fairfax County, Virginia by the American Arbitration Association in accordance with its Commercial Arbitration Rules and Expedited Procedures, and judgment on the award rendered by the arbitrator(s) may be entered in any court having jurisdiction over the parties. For any other dispute, controversy or claim arising out of or relating to this Agreement, or the breach thereof, the parties agree to first submit such dispute, controversy or claim to non-binding mediation, with each party to bear its own costs of such mediation and to equally share the costs of any mediator. If such mediation does not

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successfully resolve all issues, then the parties agree that the state and federal courts located in Virginia shall have jurisdiction and venue over such dispute. This Agreement shall be governed and interpreted in accordance with the laws of the state in which the Project is located, without giving effect to conflicts of laws principles thereof.

10. Ownership of Documents and Other Rights of Bowman.

(a) All reports, plans, specifications, computer files, field data, notes, and other documents and instruments prepared by Bowman as instruments of service ("Work Product") shall remain the property of Bowman up until such time as all monies due to Bowman have been paid in full, at which time (i) Client may take possession of the Work Product, and (ii) Bowman shall be deemed to have granted Client a fully paid, non-exclusive license to use the same solely for the Project. Subject to such license Bowman shall retain all common law, statutory, and other reserved rights, including the copyright to all Work Product. If Client or a party acting on Client's behalf modifies any part of the Work Product or reuses them on a different project, Client agrees to indemnify and hold Bowman harmless from any claim, liability or cost (including reasonable attorneys' fees and defense costs) arising therefrom. Client acknowledges that if Bowman provides Client with Work Product in an electronic or digital format ("Electronic Data"), Client is responsible for cross checking the Electronic Data with the applicable paper document for full conformance and consistency between such paper document and the Electronic Data.

(b) Bowman reserves the right to include photographs and descriptions of the Project in its promotional, marketing, and professional materials. Client grants its consent to Bowman for Bowman to install reasonable signage at the Project equivalent to that which is or could be installed by other vendors to the Project.

11. Modification. From time to time Bowman may either in writing or by electronic mail submit a Change Order to Client and Client shall be deemed to have approved such Change Order if: (a) Client signs the Change Order; (b) Client signifies its consent to the Change Order by electronic mail; or (c) a representative of Client with actual or apparent authority to approve the Change Order orally approves it and Bowman subsequently confirms such approval in writing or by email and begins work associated therewith without receiving written or electronic mail objection thereto. Except for Change Orders authorized by Client as provided immediately above, this Agreement may be amended, modified, or supplemented only in writing signed by all parties hereto. Any signature required or permitted hereunder may be either by hand or by electronic signature.

12. Exclusions from Scope. By way of illustration and not limitation, unless specifically included in the Scope, Bowman has no obligation or responsibility for: (a) favorable or timely comment or action by any governmental entity; (b) taking into account off-site conditions or circumstances that are not clearly visible or reasonably ascertainable by the performance of on-site services; (c) the accurate location or characteristics of any subsurface utility or feature that is not clearly and entirely visible from the surface; or (d) structural design (including, but not limited, to structural design of retaining wall(s) or of special drainage structure(s)).

13. Limits of Scope.

(a) Early Bid Documents. Client agrees that if it requests submission of Work Product documents to contractors for bid purposes either prior to full completion thereof by Bowman or prior to final governmental approval, the potential exists for additional design and construction costs arising from required subsequent revisions and additions to Bowman design documents so as to conform to those of other design disciplines and/or governmental agencies, and any such costs shall be Client's responsibility.

(b) Estimates. Any cost, timing or quantity estimates provided as a part of the Scope are estimates only and reflect Bowman's judgment as a design professional familiar with the construction industry, but expressly do not represent a guarantee of quantities or construction costs. Client agrees that Bowman has no control over contractors as to cost, timing, or quantity matters, and further agrees that if Client desires greater accuracy as to construction costs it should engage an independent cost estimator.

(c) Construction Means and Methods. Client agrees that Bowman does not control and is not responsible for construction means, methods, techniques, sequences, or procedures, or for any safety precautions in connection with the Project or for the acts or omissions of any contractor, subcontractor, or any other person or entity performing work for the Project.

(d) Shop Drawing Review. If specifically included in the Scope, Bowman shall review and check the contractor's shop drawings, product data, and samples, but only for the limited purpose of checking for general conformance with the intent of such contract documents. Client acknowledges that such review is not for the purpose of determining or substantiating the accuracy and completeness of other details, such as dimensions or quantities, or for substantiating instructions for installation or performance of equipment or systems designed by the contractor. Bowman's review shall not constitute approval of safety precautions, construction means, methods, techniques, schedules, sequences or procedures, or of structural features.

(e) Plan and Permit Processing. If the Scope includes preparation of plans and/or plats for review and approval by public agencies, submission and processing of such plans and plats in a manner consistent with a normal course of business is included within the Scope. If Client requests Bowman to either expedite the plan review process by attending meetings, hand carrying plans and

Bowman

documents from agency to agency, or performing similar services, or to prepare and process permit applications of any type, then, unless specifically included in the Scope, those services will be performed by Bowman as hourly rate services under Section 14 below.

(f) Building Plan Coordination. If the Scope includes preparation of site plans, site grading plans, subdivision plans, or similar plans that involve coordination with building plans (including architectural, mechanical, structural, or plumbing plans) to be prepared by others, Client shall provide such building plans to Bowman by such date and in such state as Bowman reasonably deems necessary to timely perform its services. If Client fails to so provide building plans to Bowman, Bowman may make reasonable assumptions regarding building characteristics in order to timely perform its services and any later revisions to Bowman plans required to properly coordinate them with building plans will require a Change Order, subject to an additional fee.

14. Fees by Hourly Rate Schedule. If Client requests Bowman to perform services not included in the Proposal or an approved Change Order (including, without limitation, attending meetings and conferences on an as-needed basis with public agencies), Client shall compensate Bowman for such services in accordance with the Hourly Rate Schedule attached to and made a part of the Agreement. Expert witness testimony or participation at legal discussions, hearings or depositions, including necessary preparation time, will be charged at 150% of the quoted rates. If the Project extends beyond the calendar year in which the Proposal is dated, Bowman may revise its Hourly Rate Schedule in January of each subsequent year.

15. Covenants Benefiting Third-Parties. Bowman and Client acknowledge that from time to time third-parties may request Bowman to execute documents which benefit that third-party. These documents may include certifications, consent of assignment, and/or waiver of certain of Bowman's rights under this Agreement ("Requested Covenant"). Client acknowledges that execution of Requested Covenants is beyond the Scope, is at Bowman's discretion, and, if Bowman decides to so execute a Requested Covenant, the language, terms, and conditions of such Requested Covenant must be acceptable to Bowman, at Bowman's discretion.

16. Assignment. This Agreement may not be assigned by one party without the express written consent of the other party. Notwithstanding the forgoing, Bowman may employ consultants, sub-consultants, or subcontractors as it deems necessary to perform the services described in the scope. Also, Bowman may assign its right to receive payments under this Agreement.

17. Termination. Either party may terminate the provision of further services by Bowman under this Agreement for convenience with thirty (30) days advance notice to the other party. In addition, following a material breach by the other party, the non-breaching party may terminate the provision of further services by Bowman under this Agreement by giving ten (10) days prior notice and an opportunity to cure to the reasonable satisfaction of the non-breaching party. Client acknowledges that its failure to timely pay undisputed invoices is a material breach and that full payment of all undisputed invoices is required to cure such breach. Following any termination of services: (a) Client shall immediately pay Bowman for all services performed through the termination date, including reasonable costs of transitioning the Project to a new design professional designated by Client, if applicable; (b) Bowman shall have the right to withhold from Client the use or possession of Work Product prepared by Bowman for Client under this or any other agreement with Client, until all outstanding invoices are paid in full; (c) if the termination by Bowman resulted from a material breach by Client, Bowman shall have the right to withdraw any Work Product or other documents filed with any governmental agency by Bowman in its name on behalf of Client; and (d) if Client selects a new design professional then, as a condition of transferring any files or documents, Client and Client's new design professional shall execute Bowman's standard Electronic File Transfer Agreement or such other similar agreement as the parties shall in good faith negotiate.

18. Miscellaneous. If any provision of this Agreement shall be held invalid, illegal or unenforceable, the other provisions of this Agreement shall remain in full force and effect. The failure of a party to enforce any provision hereof shall not affect its right at a later time to enforce same. A waiver by a party of any condition or breach hereunder must be in writing to be effective and, unless that writing provides otherwise, shall waive only one instance of that condition or breach. This Agreement is solely for the benefit of the parties hereto and, to the extent provided herein, their respective affiliates, directors, officers, employees, agents and representatives, and no provision of this Agreement shall be to confer upon third-parties any remedy, claim, liability, reimbursement, cause of action, or other right. The headings in this Agreement are for convenience and identification purposes only, are not an integral part of this Agreement, and are not to be considered in the interpretation of any part hereof. This Agreement may be executed in counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. References in this Agreement to any gender shall include references to all genders. Unless the context otherwise requires, references in the singular include references in the plural and vice versa. The words "include," "including," or "includes" shall be deemed to be followed by the phrase "without limitation." The individual who signs this Agreement warrants that he has the authority to sign as, or on behalf of, Client, and to bind Client to all of the terms and conditions of this Agreement. To the extent that they are inconsistent or contradictory, the terms of the Proposal or an authorized Change Order shall supersede these Terms and Conditions.

19. Notices. Any notice, request, instruction, or other document to be given hereunder by a party hereto shall be in writing and shall be deemed to have been deemed delivered: (a) on the day sent if delivered personally or by courier service during regular business hours (i.e., prior to 5:00 p.m. on weekdays that are not Federal holidays); (b) on the business day after the day sent if sent by overnight

Bowman

delivery service; or (c) two business days after the day sent if sent by certified mail or delivered by two-day delivery service.

If to Client, notice shall be addressed to the individual signing this Agreement at the address noted on the Proposal.

If to Bowman, notice shall be sent to the address set forth in the proposal, with a copy sent to:


Bowman Consulting Group Ltd.
12355 Sunrise Valley Drive, Suite 520
Reston, Virginia 20191
Attn: Robert A. Hickey

or to such other individual or address as a party hereto may designate for itself by notice given as herein provided.

Initials: Bowman *R.K.* / Client

Signature Certificate

Reference number: RXCFW-UFVBH-AJUNY-FVQ7M

Signer	Timestamp	Signature
Robert Krallinger Email: rkrallinger@bowman.com		
Sent:	04 Aug 2022 16:19:45 UTC	
Viewed:	04 Aug 2022 16:20:33 UTC	
Signed:	04 Aug 2022 16:21:16 UTC	
Recipient Verification: ✓Email verified	04 Aug 2022 16:20:33 UTC	IP address: 184.180.32.213 Location: Williamsburg, United States

Document completed by all parties on:
04 Aug 2022 16:21:16 UTC

Page 1 of 1



Signed with PandaDoc

PandaDoc is a document workflow and certified eSignature solution trusted by 30,000+ companies worldwide.



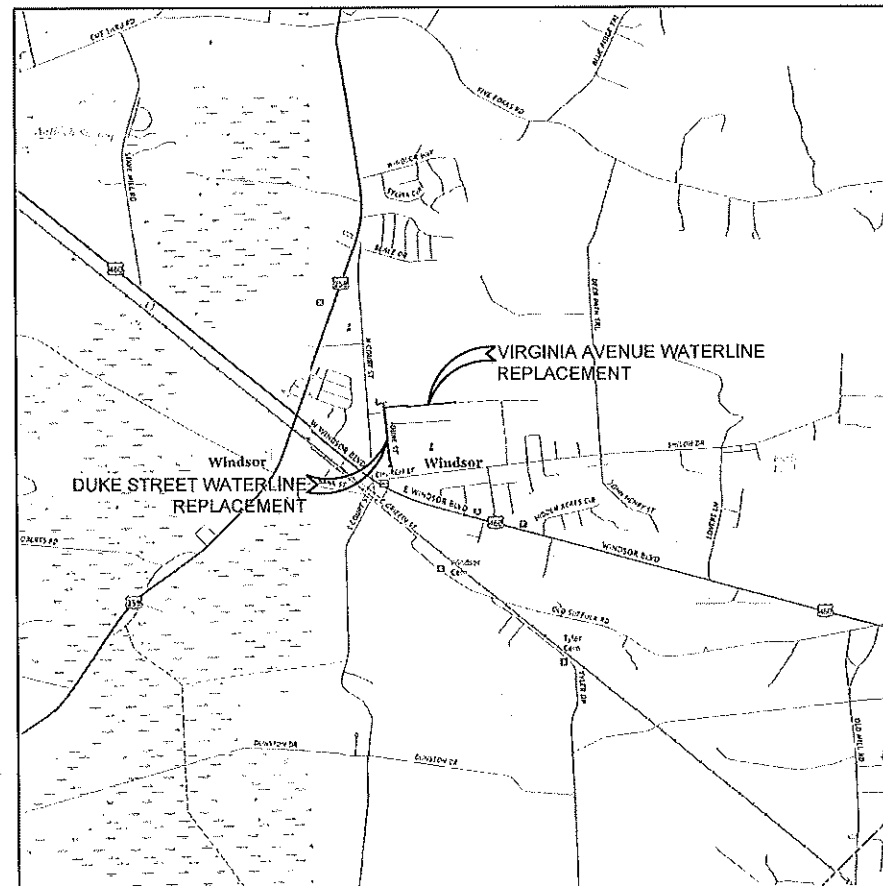
TOWN OF WINDSOR WATER LINE REPLACEMENT

ISLE OF WIGHT COUNTY

VIRGINIA

GENERAL NOTES

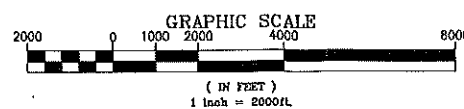
- THE PROJECT IS GENERALLY DESCRIBED AS WATER LINE REPLACEMENT WITHIN THE TOWN OF WINDSOR.
- THE PROJECT INCLUDES THE CONSTRUCTION OF APPROXIMATELY 1734 L.F. OF 8-INCH DISTRIBUTION MAIN ALONG DUKE STREET ROUTE-T-1812, 1,435 L.F. OF 6-INCH MAIN ALONG VIRGINIA AVENUE ROUTE-T-1813. THE DISTRIBUTION MAINS WILL ALSO INCLUDE FIRE HYDRANTS, NEW WATER METERS AND METER BOXES, METER SETTERS, AND SERVICE LATERALS AS SHOWN ON THE DRAWINGS.
- THE CONTRACTOR SHALL CONTACT THE ENGINEER BEFORE STARTING CONSTRUCTION FOR A PRE-CONSTRUCTION CONFERENCE.
- BEFORE DIGGING, CALL "MISS UTILITY" OF VIRGINIA, 1-800-552-7001.
- ALL EXCESS CUTS, VEGETATION AND DELETERIOUS MATERIAL ENCOUNTERED SHALL BE REMOVED AND DISPOSED OF OFF SITE.
- SELECT MATERIAL IS REQUIRED FOR FILL AND BACKFILL UNDER PAVEMENT, FOOTINGS, AND STRUCTURES. IT SHALL BE PLACED IN LAYERS NOT TO EXCEED EIGHT INCHES (8") IN THICKNESS AND COMPACTED TO 95% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D-698.3.
- ANY PAVEMENT AND ASPHALT DAMAGED BY CONSTRUCTION SHALL BE REPAIRED AND REPLACED TO MATCH EXISTING CONDITIONS.
- ALL GREEN AREAS, WITHIN LIMITS OF CONSTRUCTION, WHICH ARE DISTURBED BY CONSTRUCTION ACTIVITIES, SHALL BE TOPSOILED, FERTILIZED, SEEDED, AND MULCHED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING, PROTECTING, AND RESOLVING ANY CONFLICTS WITH EXISTING UTILITIES. ANY DAMAGES ARE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REPAIRED TO ORIGINAL CONDITIONS MATCHING THE OWNER'S SPECIFICATIONS. UTILITIES FOUND TO BE IN CONFLICT WITH THE DESIGN SHOWN HEREIN SHALL BE MADE KNOWN TO THE OWNER AND ENGINEER.
- REVIEW DRAWINGS AND SPECIFICATIONS BEFORE BIDDING. SUBMIT QUESTIONS REGARDING ANY DEFICIENCIES OR DISCREPANCIES BEFORE BIDS. FAILURE TO ASK FOR CLARIFICATION WILL NOT BE CONSIDERED AS JUSTIFICATION FOR A CHANGE ORDER.
- ANY CHANGES TO THE FINAL PLANS SHALL BE APPROVED BY THE ENGINEER AND SHALL BE ACCURATELY INDICATED ON THE "AS-BUILT" DRAWINGS.
- ANY REQUIRED LOCAL PERMITS, BONDS AND APPROVALS SHALL BE OBTAINED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LAWS, ORDINANCES, RULES, REGULATIONS AND ORDERS OF ANY PUBLIC BODY HAVING JURISDICTION. THE CONTRACTOR SHALL ERECT AND MAINTAIN, AS REQUIRED BY THE CONDITIONS AND PROGRESS OF THE WORK, ALL NECESSARY SAFEGUARDS FOR SAFETY AND PROTECTION.
- ALL CONSTRUCTION MATERIALS AND INSTALLATION SHALL CONFORM TO THE PROJECT SPECIFICATIONS AND THE LATEST EDITION OF THE COMMONWEALTH OF VIRGINIA DEPARTMENT OF HEALTH WATERWORKS REGULATIONS.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A WRITTEN PLAN IF A ROAD SHUTDOWN OR REALIGNMENT WILL BE REQUIRED TO THE ENGINEER AND OWNER. ANY ANTICIPATED DISRUPTIONS IN SERVICE SHALL BE COORDINATED WITH THE OWNER AND THE ENGINEER IN ADVANCE.
- EXISTING CONDITIONS BASED UPON A SURVEY PERFORMED BY BOWMAN CONSULTING GROUP.
- THERE SHALL BE NO OPEN CUTTING OF VDOT PAVEMENT. ALL WATER LINES CROSSING UNDERNEATH VDOT ROADWAYS SHALL BE DIRECTIONALLY DRILLED.
- RESTORE ALL DISTURBED DITCHES TO ORIGINAL OR BETTER CONDITION TO PROVIDE POSITIVE DRAINAGE. LINE WITH EC-2 MATING IF REQUIRED.
- ALL COMPONENTS OF THE WATER DISTRIBUTION SYSTEM SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND THE LATEST EDITION OF THE COMMONWEALTH OF VIRGINIA WATERWORKS REGULATIONS. THE CONTRACTOR SHALL USE ONLY NEW MATERIALS, PARTS AND PRODUCTS ON ALL PROJECTS. ALL MATERIAL SHALL BE STORED SO AS TO ASSURE THE PRESERVATION OF THEIR QUALITY AND FITNESS FOR THE WORK.
- THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL MATERIALS FOR APPROVAL TO THE OWNER PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- THE CONTRACTOR SHALL COMPLY WITH EROSION AND SEDIMENT CONTROL STANDARDS OUTLINED IN THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH). THESE ARE MINIMUM REQUIREMENTS. FIELD CONDITIONS MAY REQUIRE ADDITIONAL CONTROLS.
- AFTER TESTING IS COMPLETE AND ALL COMPONENTS OF THE WATER SYSTEM ARE ACCEPTABLE, THEN ALL RED LINE (AS-BUILT) FIELD DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER. ANY DISCREPANCIES NOTED DURING THE FINAL INSPECTION SHALL BE CORRECTED BY THE CONTRACTOR WITHIN 30 DAYS.
- ROUTINE PERIODIC INSPECTIONS DURING CONSTRUCTION WILL BE PROVIDED BY THE ENGINEER. THESE INSPECTIONS DO NOT RELIEVE THE CONTRACTOR FROM HIS OBLIGATION AND RESPONSIBILITY FOR CONSTRUCTING A WATER DISTRIBUTION SYSTEM IN STRICT ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND THE VIRGINIA WATERWORKS STANDARDS.
- THE CONTRACTOR IS RESPONSIBLE FOR SECURING A COPY OF THE LATEST EDITION OF THE VIRGINIA WORK AREA PROTECTION MANUAL, STANDARDS AND GUIDELINES FOR TEMPORARY TRAFFIC CONTROL BY THE VIRGINIA DEPARTMENT OF TRANSPORTATION. THESE STANDARDS AND GUIDELINES SHALL BE KEPT ON THE PROJECT SITE AT ALL TIMES DURING CONSTRUCTION. THE APPLICABLE TRAFFIC CONTROLS SHALL BE FOLLOWED DEPENDING ON SPECIFIC SITE CONDITIONS.
- WHEN WORKING WITHIN THE RIGHT-OF-WAY THE CONTRACTOR SHALL COMPLY WITH LATEST EDITION OF VDOT'S ROAD AND BRIDGE STANDARDS.
- BEFORE COMMENCING CONSTRUCTION THE CONTRACTOR SHALL SUBMIT FOR APPROVAL A DETAILED SEQUENCE OF CONSTRUCTION AND ABANDONMENT THAT ENSURES MINIMAL DISTURBANCE OF WATER SERVICE.
- CONTRACTOR SHALL COORDINATE WITH THE TOWN AND PROPERTY OWNERS REGARDING EACH WATER SERVICE LINE AND METER ISOLATION AND SHUTDOWNS.
- THIS PROJECT IS A LINEAR CONSTRUCTION PROJECT. CONTRACTOR SHALL NOT DISTURB MORE THAN 2,500 SQUARE FEET PER DAY. CONTRACTOR SHALL HAVE NO MORE THAN 300 LINEAR FEET OF TRENCH OPEN AT ONE TIME. OPENED TRENCHES SHALL BE FILLED AND COVERED AT THE END OF EACH DAY.



MAPPING SOURCE: USGS "WINDSOR, VA" & "ZUNI, VA" QUAD SHEETS, DATED 2016

SITE LOCATION

SCALE: 1" = 2000'



SHEET INDEX NO. TITLE

- | | |
|----|--|
| 1 | COVER SHEET |
| 2 | OVERALL LAYOUT & SHEET INDEX |
| 3 | DUKE STREET - STA. 10+00 TO STA. 16+50 |
| 4 | DUKE STREET - STA. 16+50 TO STA. 22+50 |
| 5 | DUKE STREET - STA. 22+50 TO STA. 27+33 |
| 6 | VIRGINIA AVENUE - STA. 10+00 TO STA. 17+50 |
| 7 | VIRGINIA AVENUE - STA. 17+50 TO STA. 22+00 |
| 8 | VIRGINIA AVENUE - STA. 22+00 TO 27+29 |
| 9 | TRAFFIC CONTROL DETAILS |
| 10 | VDOT NOTES |
| 11 | VDOT DETAILS |
| 12 | WATER SYSTEM DETAILS |
| 13 | SPECIFICATIONS |

OWNER

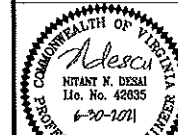
TOWN OF WINDSOR
WILLIAM SAUNDERS, TOWN MANAGER
8 EAST WINDSOR BLVD.
P.O. BOX 307
WINDSOR, VA 23487

Bowman
CONSULTING

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460 McLure Circle
Suite 100
Williamsburg, Virginia 23185
Phone: (757) 228-1776
Fax: (757) 228-4885
www.bowmanconsulting.com
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COVER SHEET
TOWN OF WINDSOR
WATER LINE REPLACEMENT
ISLE OF WIGHT COUNTY
VIRGINIA

COUNTY PROJECT NUMBER



PLAN STATUS

DATE	DESCRIPTION
07.29.2019	VDOT COMMENTS
03.18.2020	VDOT COMMENTS
05.11.2020	TOWN COMMENTS
06.30.2022	CO. E&S COMMENTS
08.01.2022	TREE REMOVAL

DATE	DESCRIPTION
DESIGN	DWD DRAWN
SCALE	1" = 2000' V. N/A

JOB No. 8493-01-007

DATE : JUNE 28, 2019

FILE No. 8493-01-007-XXX

SHEET 1 OF 13

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Allow required time for marking.

Respect the marks.

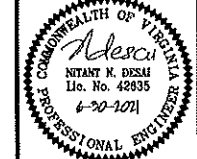
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DUKE STREET - STA. 10+00 TO STA. 16+50
TOWN OF WINDSOR
WATER LINE REPLACEMENT
ISLE OF WIGHT COUNTY VIRGINIA

COUNTY PROJECT NUMBER



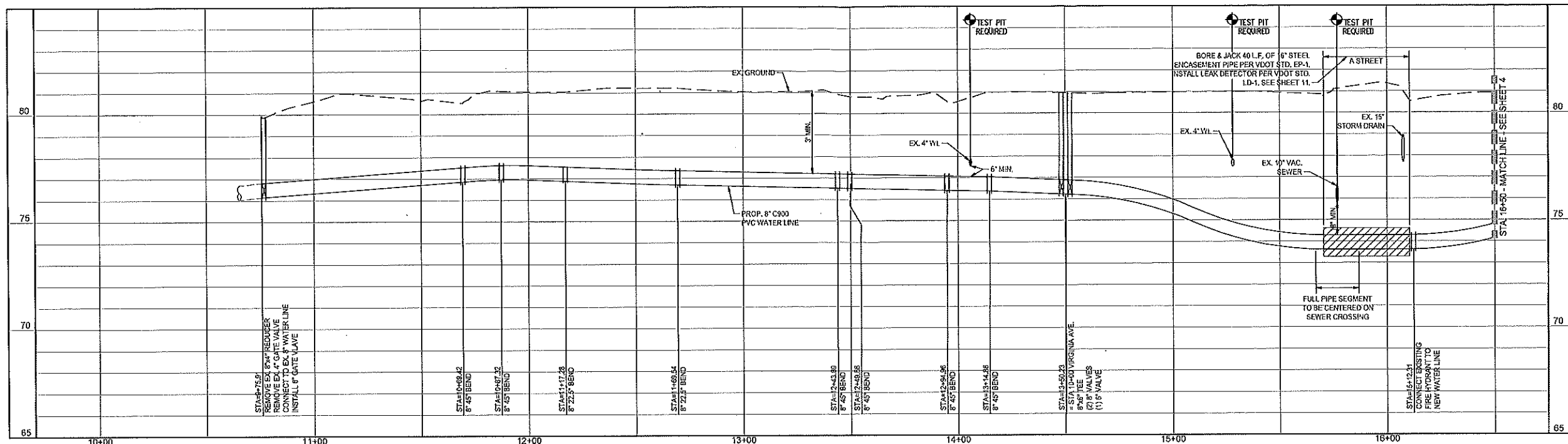
PLAN STATUS

DATE	DESCRIPTION
07.29.2019	VDOT COMMENTS
03.18.2020	VDOT COMMENTS
05.11.2020	TOWN COMMENTS
08.03.2022	TREE REMOVAL

DATE	DESCRIPTION
OWD	DWD
DESIGN	DRAWN
SCALE	1"=25'
	1"=25'

JOB No. 8493-01-007
DATE: JUNE 28, 2019
FILE No. 8493-01-007-XXX

SHEET 3 OF 13



NOTES:

- CONTRACTOR SHALL DIRECTIONAL DRILL THE PROPOSED WATERLINES UNDER EXISTING ASPHALT AND CONCRETE DRIVEWAYS. CONTRACTOR MAY OPEN CUT AND REPAIR DRIVEWAYS AS A BID ALTERNATE.
- HORIZONTAL 'CURVATURE' OF PIPE SHOWN WITH A RADIUS SHALL BE ACHIEVED BY JOINT DEFLECTION ONLY. NO LONGITUDINAL BENDING OF PIPE SEGMENTS IS ALLOWED EITHER HORIZONTALLY OR VERTICALLY.
- MAXIMUM JOINT DEFLECTION OF C900 PIPE IS 1". VERTICAL GRADE BREAKS SHALL BE ACHIEVED BY JOINT DEFLECTION OVER THE NUMBER OF PIPE SEGMENTS INDICATED IN THE CHART BELOW.

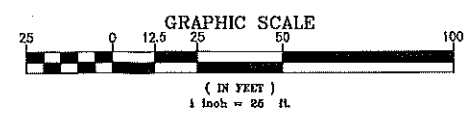
PIPE JOINT DEFLECTION	VERTICAL DEFLECTION (%)	HORIZONTAL DEFLECTION (DEG.)
1 JOINT	0.175%	0° - 1°
2 JOINTS	1.75% - 3.50%	1.0° - 2.0°
3 JOINTS	3.50% - 5.25%	2.0° - 3.0°
4 JOINTS	5.25% - 7.00%	3.0° - 4.0°
5 JOINTS	7.00% - 8.75%	4.0° - 5.0°
6 JOINTS	8.75% - 10.50%	5.0° - 6.0°
7 JOINTS	10.50% - 12.25%	6.0° - 7.0°

CONSTRUCTION NOTES

- INSTALL NEW SERVICE LATERAL, METER BOX, METER SETTER & WATER METER.
- EXTEND SERVICE LINE FROM OLD METER LOCATION TO NEW METER LOCATION. (CONTRACTOR MAY HAVE TO LOCATE OLD METER)
- REMOVE OLD METER BOX & METER, BACKFILL

NOTES:

- CONTRACTOR SHALL REMOVE ONE 16" DECIDUOUS TREE, TWO 18" PINE TREES, ONE 20" PINE TREE, AND ONE 22" PINE TREE. CONTRACTOR SHALL COORDINATE WITH THE OWNER FOR TREE AND STUMP REMOVAL AND FOR DISPOSAL OFF SITE.
- CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF EXISTING BUSHES AND COORDINATE WITH THE OWNER TO RELOCATE THE BUSHES OR RELOCATE THE LINE.

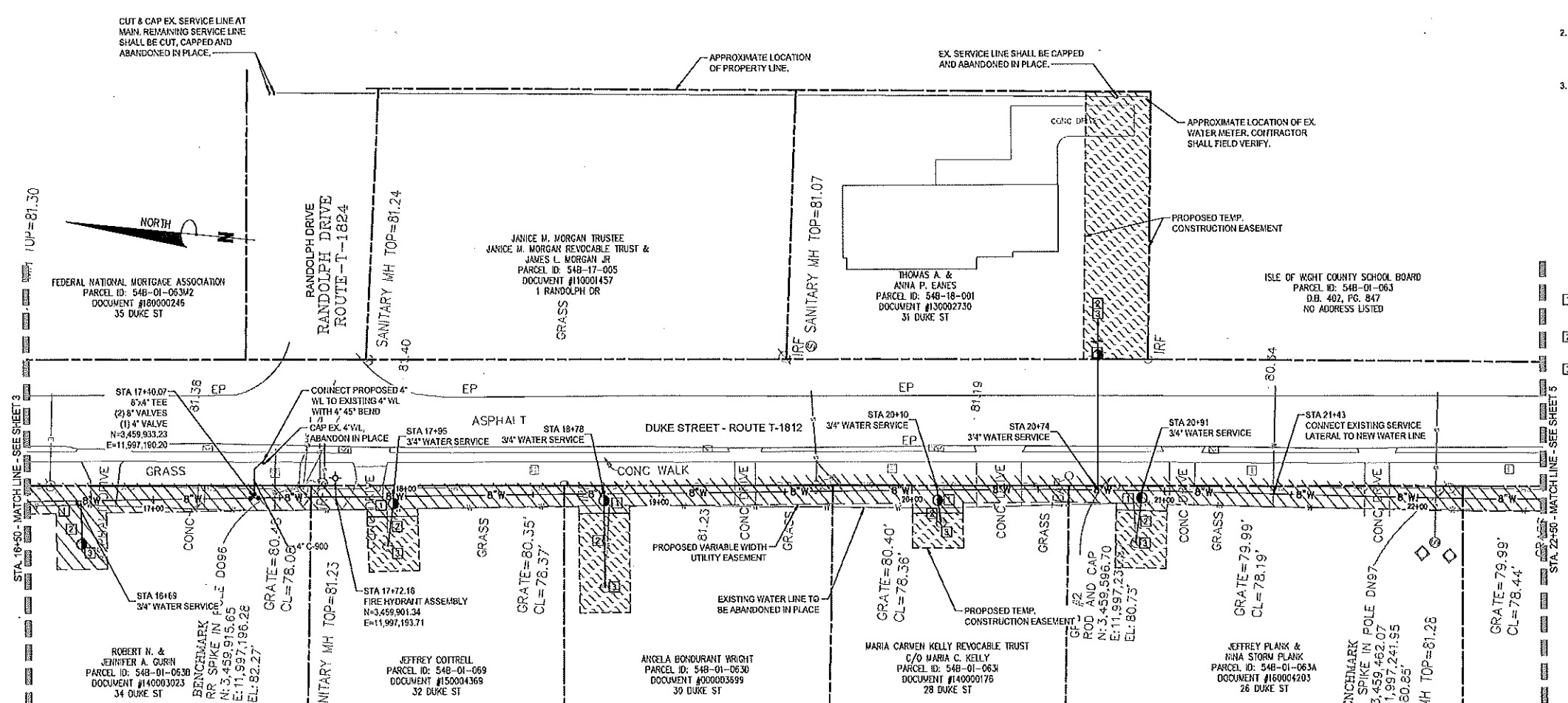
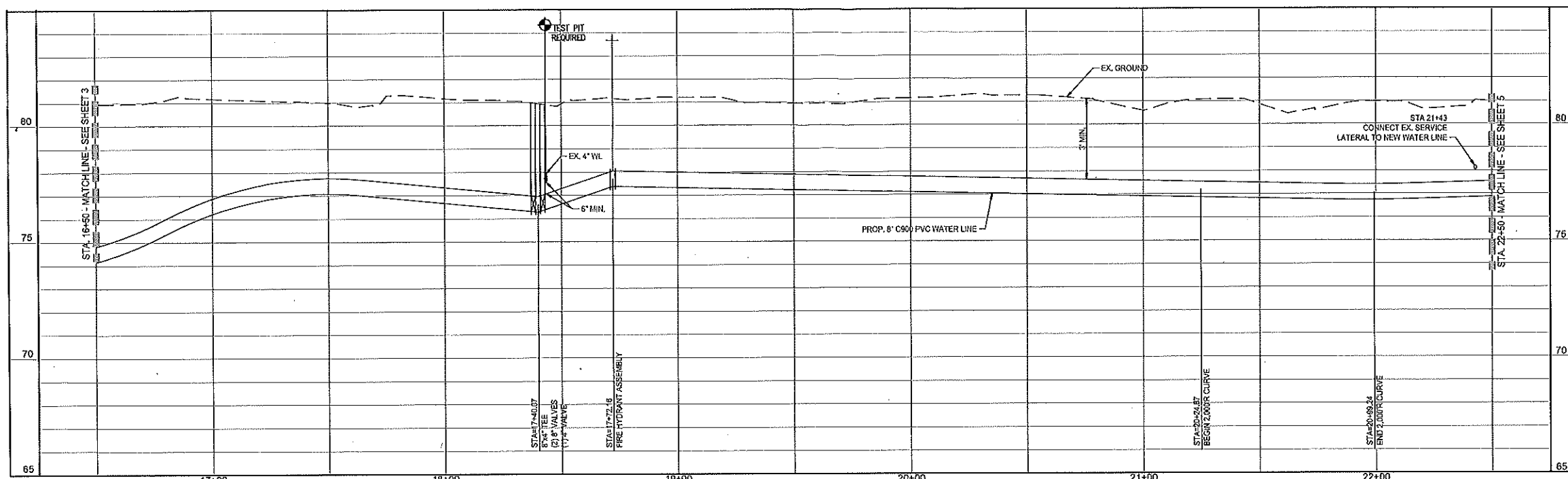


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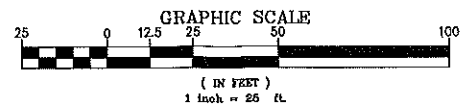
NOTES:

- CONTRACTOR SHALL DIRECTIONAL DRILL THE PROPOSED WATER LINES UNDER EXISTING ASPHALT AND CONCRETE DRIVEWAYS. CONTRACTOR MAY OPEN CUT AND REPAIR DRIVEWAYS AS A BID ALTERNATE.
- HORIZONTAL 'CURVATURE' OF PIPE SHOWN WITH A RADIUS SHALL BE ACHIEVED BY JOINT DEFLECTION ONLY. NO LONGITUDINAL BENDING OF PIPE SEGMENTS IS ALLOWED EITHER HORIZONTALLY OR VERTICALLY.
- MAXIMUM JOINT DEFLECTION OF C900 PIPE IS 1". VERTICAL GRADE BREAKS SHALL BE ACHIEVED BY JOINT DEFLECTION OVER THE NUMBER OF PIPE SEGMENTS INDICATED IN THE CHART BELOW:

JOINT DEFLECTIONS (1" MAX.)		
PIPE JOINT DEFLECTION	VERTICAL DEFLECTION (%)	HORIZONTAL DEFLECTION (DEG.)
1 JOINT	0-1.75%	0-1°
2 JOINTS	1.75-3.50%	1.0°-2.0°
3 JOINTS	3.50%-5.25%	2.0°-3.0°
4 JOINTS	5.25%-7.00%	3.0°-4.0°
5 JOINTS	7.00%-8.75%	4.0°-5.0°
6 JOINTS	8.75%-10.50%	5.0°-6.0°
7 JOINTS	10.50%-12.25%	6.0°-7.0°

CONSTRUCTION NOTES

- INSTALL NEW SERVICE LATERAL, METER BOX, METER SETTER & WATER METER.
- EXTEND SERVICE LINE FROM OLD METER LOCATION TO NEW METER LOCATION. (CONTRACTOR MAY HAVE TO LOCATE OLD METER)
- REMOVE OLD METER BOX & METER, BACKFILL



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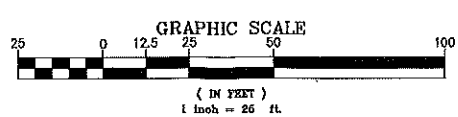
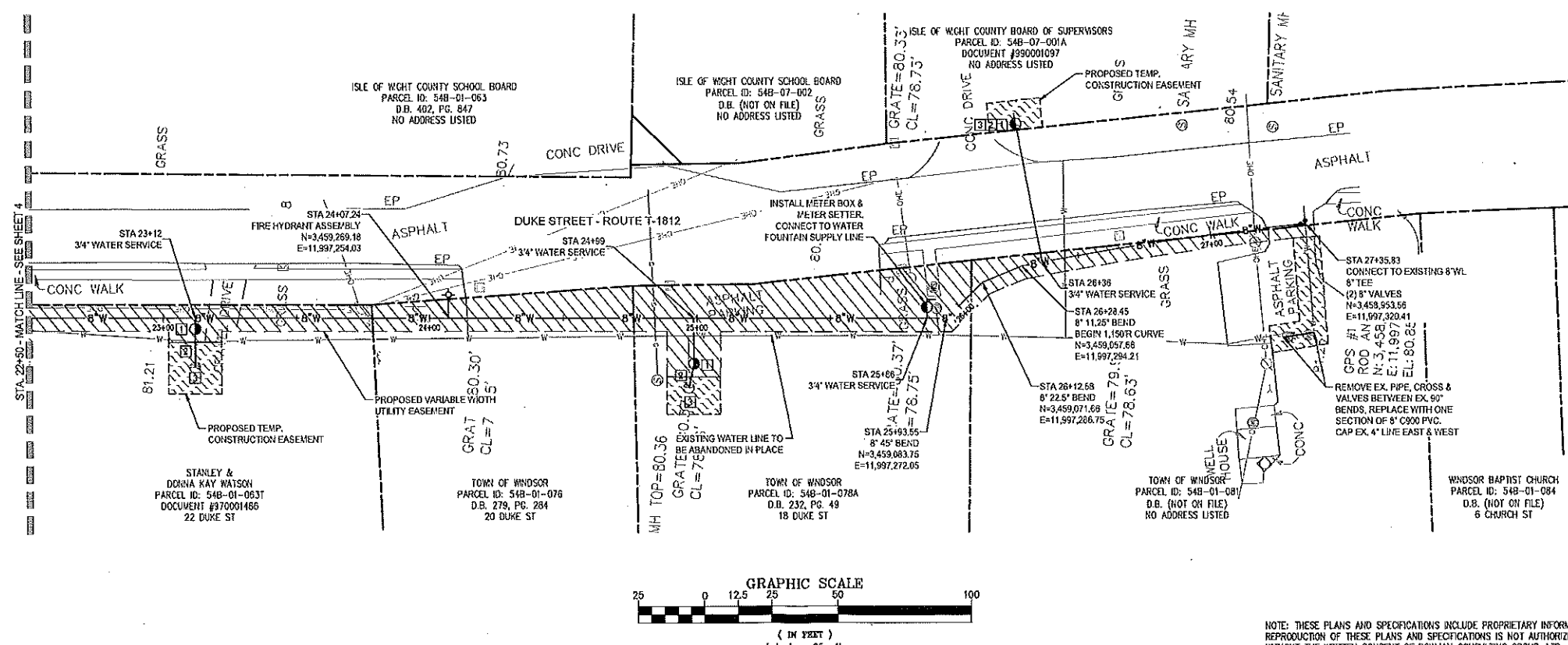
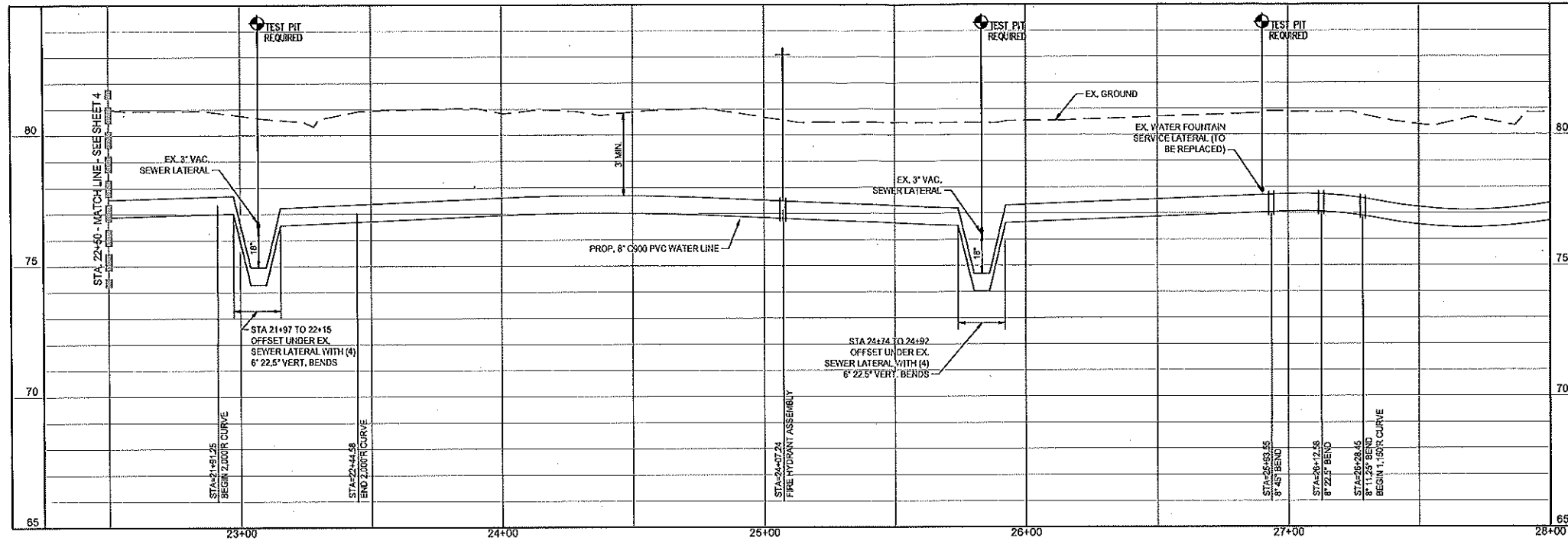
DUKE STREET - STA. 16+50 TO STA. 22+50
TOWN OF WINDSOR
WATER LINE REPLACEMENT

COUNTY PROJECT NUMBER



PLAN STATUS	DATE	DESCRIPTION
07.29.2019	DWD	VDOT COMMENTS
03.18.2020	DRN	VDH COMMENTS
05.11.2020	CHKD	TOWN COMMENTS

DATE	DESCRIPTION
DWD	DWD
DESIGN	CHKD
SCALE	H: 1"=25' V: 1"=2.5'
JOB No.	8493-01-007
DATE	JUNE 28, 2019
FILE No.	8493-01-007-XXX
SHEET	4 OF 13



NOTES:

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JOINT DEFLECTIONS (1" MAX.)		
PIPE JOINT DEFLECTION	VERTICAL DEFLECTION (ft)	HORIZONTAL DEFLECTION (DEG.)
1 JOINT	0-1.75%	0-1°
2 JOINTS	1.75-3.50%	1.0°-2.0°
3 JOINTS	3.50%-5.25%	2.0°-3.0°
4 JOINTS	5.25%-7.00%	3.0°-4.0°
5 JOINTS	7.00%-8.75%	4.0°-5.0°
6 JOINTS	8.75%-10.50%	5.0°-6.0°
7 JOINTS	10.50%-12.25%	6.0°-7.0°

CONSTRUCTION NOTES

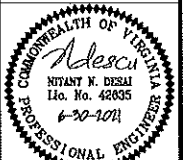
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- EXTEND SERVICE LINE FROM OLD METER LOCATION TO NEW METER LOCATION. (CONTRACTOR MAY HAVE TO LOCATE OLD METER)
- REMOVE OLD METER BOX & METER, BACKFILL

Bowman
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DUKE STREET - STA. 22+50 TO STA. 27+33
TOWN OF WINDSOR
WATER LINE REPLACEMENT
ISLE OF WIGHT COUNTY, VIRGINIA

COUNTY PROJECT NUMBER



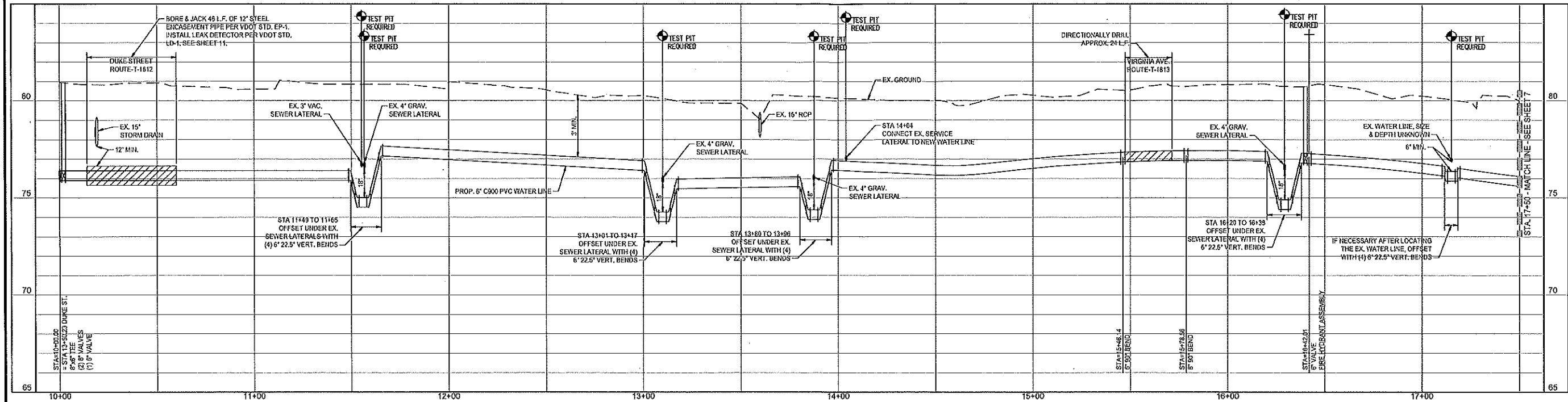
PLAN STATUS	
07.29.2019	VDOT COMMENTS
03.18.2020	VDOT COMMENTS
05.11.2020	TOWN COMMENTS

DATE	DESCRIPTION
DWD	DWD
DESIGN	DRAWN
SCALE	HE: 1"=25' VE: 1"=25'
JOB No.	8493-01-007
DATE	JUNE 28, 2019
FILE No.	8493-01-007-XXX

Dig With Keep Virginia Safe!

- Call Miss Utility @ 811 before you dig.
- Allow required time for marking.
- Respect the marks.
- Excavate carefully.

NOTE: THESE PLANS AND SPECIFICATIONS INCLUDE PROPRIETARY INFORMATION. REPRODUCTION OF THESE PLANS AND SPECIFICATIONS IS NOT AUTHORIZED WITHOUT THE WRITTEN CONSENT OF BOWMAN CONSULTING GROUP, LTD.



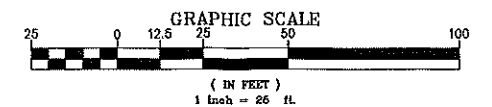
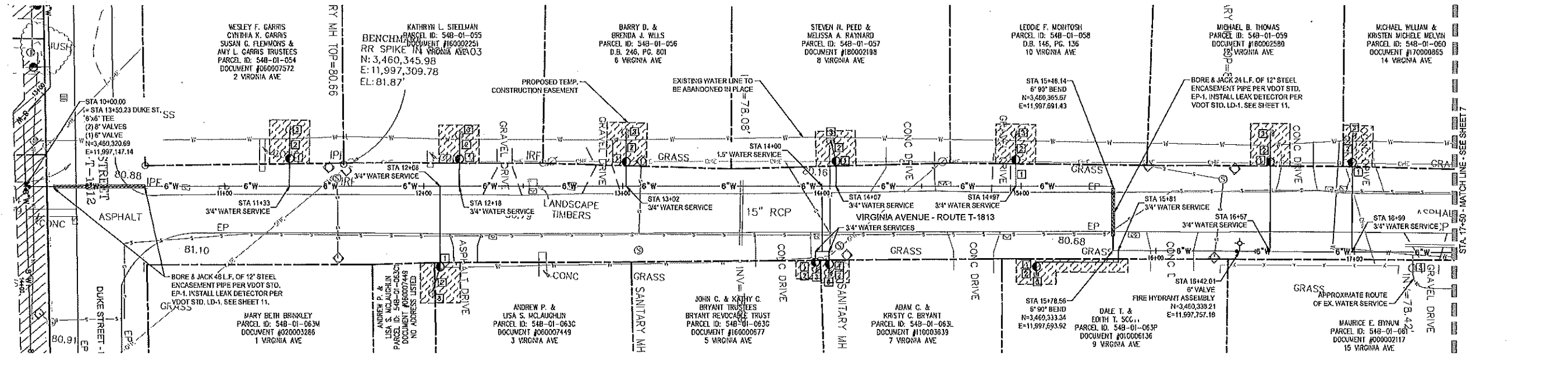
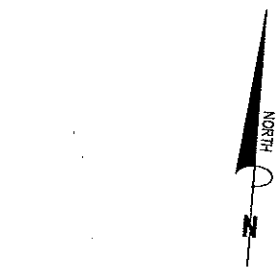
NOTES:

CONSTRUCTION NOTES

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JOINT DEFLECTIONS (1" MAX.)		
PIPE JOINT DEFLECTION	VERTICAL DEFLECTION (%)	HORIZONTAL DEFLECTION (DEG.)
1 JOINT	0.176%	0° - 1"
2 JOINTS	1.76 - 3.50%	1.0° - 2.0"
3 JOINTS	3.50% - 5.25%	2.0° - 3.0"
4 JOINTS	5.25% - 7.00%	3.0° - 4.0"
5 JOINTS	7.00% - 8.75%	4.0° - 5.0"
6 JOINTS	8.75% - 10.50%	5.0° - 6.0"
7 JOINTS	10.50% - 12.25%	6.0° - 7.0"



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VIRGINIA AVENUE - STA. 10+00 TO STA. 17+50
TOWN OF WINDSOR
WATER LINE REPLACEMENT
 ISLE OF WIGHT COUNTY, VIRGINIA

COUNTY PROJECT NUMBER

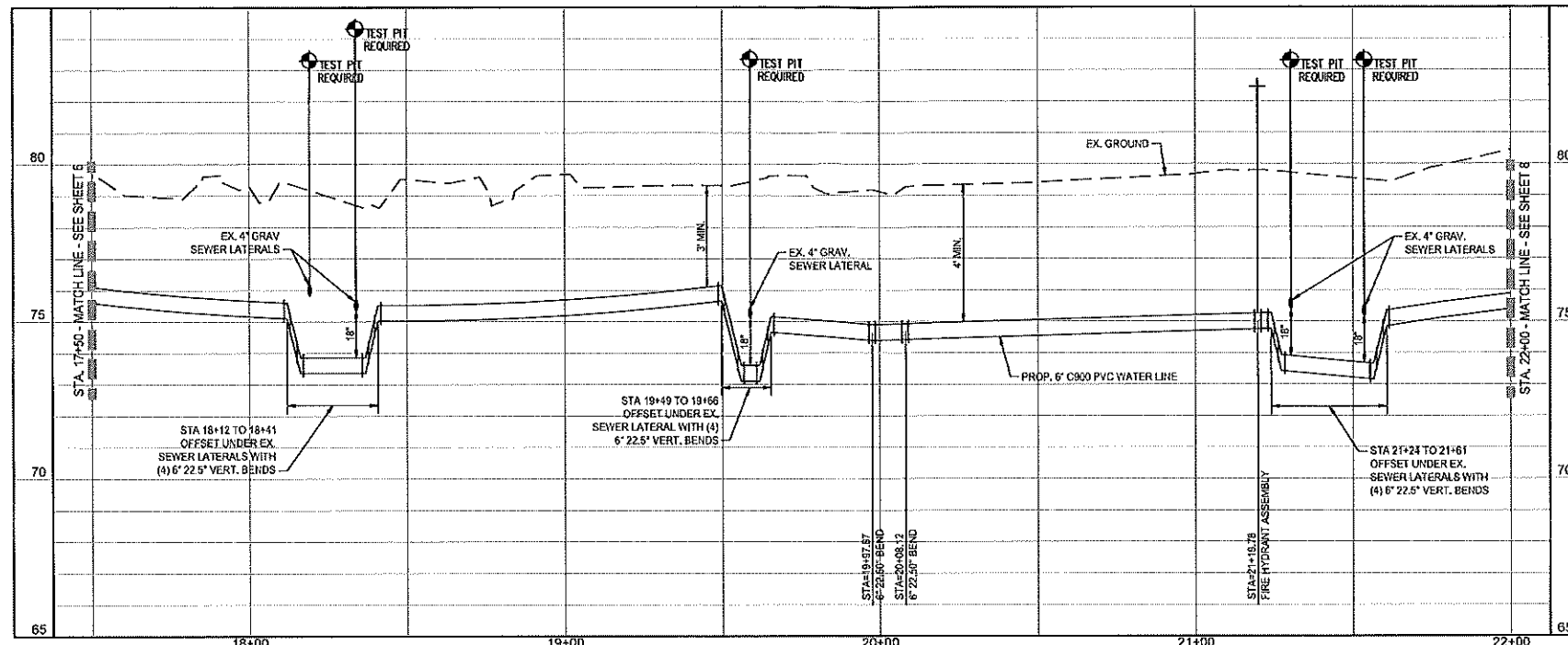


PLAN STATUS

DATE	DESCRIPTION
07.29.2019	VDOT COMMENTS
03.18.2020	VH COMMENTS
05.11.2020	TOWN COMMENTS

DATE	DESCRIPTION
DVD	DVD
DESIGN	DRAWN
SCALE	HE 1"=25'
	VE 1"=25'

JOB No. 8493-01-007
 DATE : JUNE 28, 2019
 FILE No. 8493-01-007-XXX



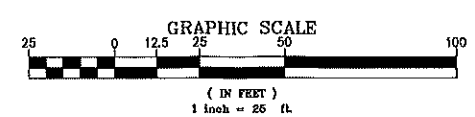
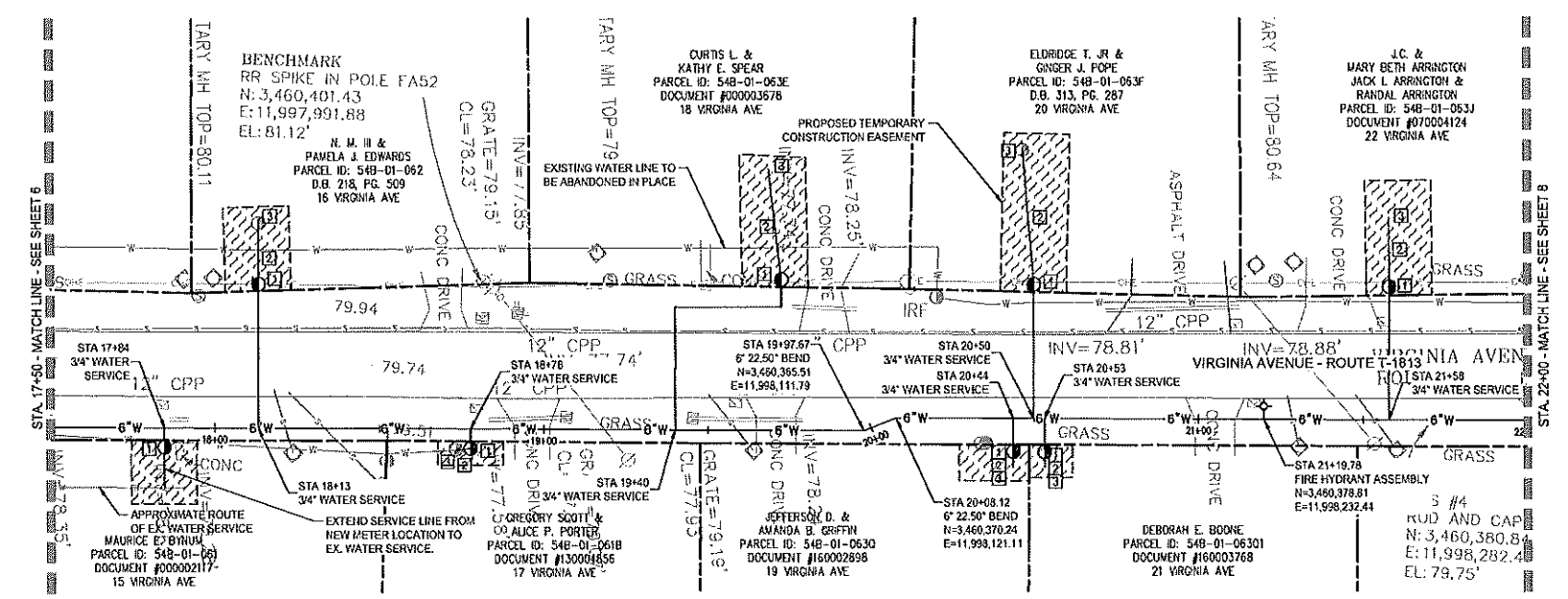
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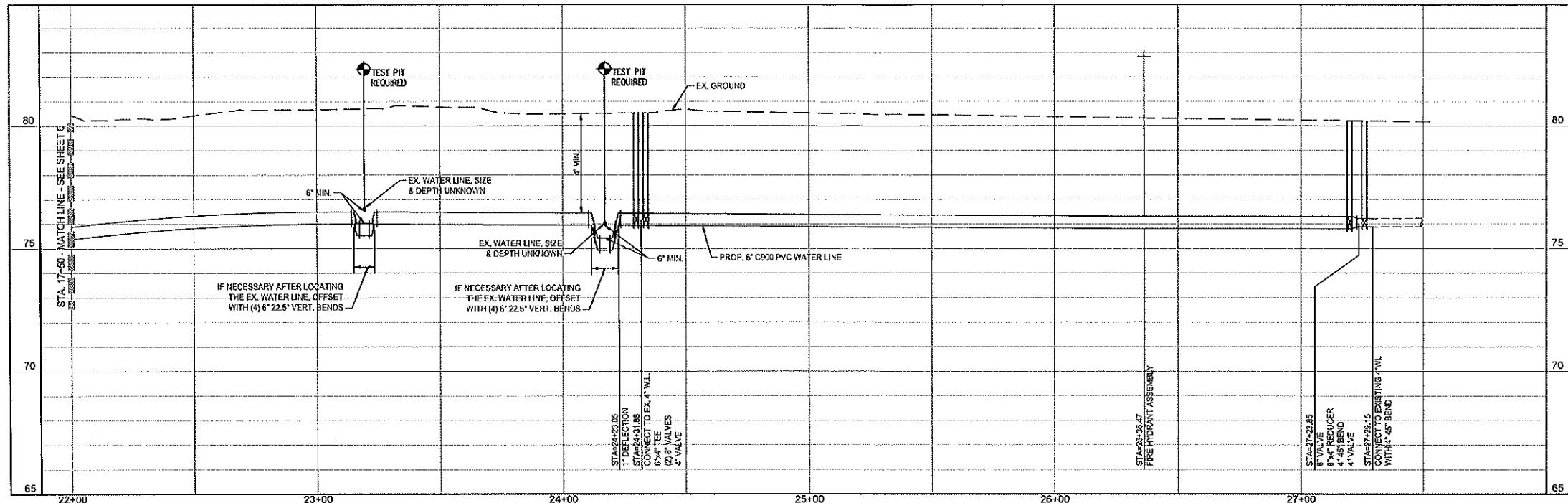


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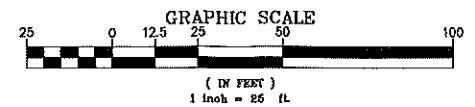
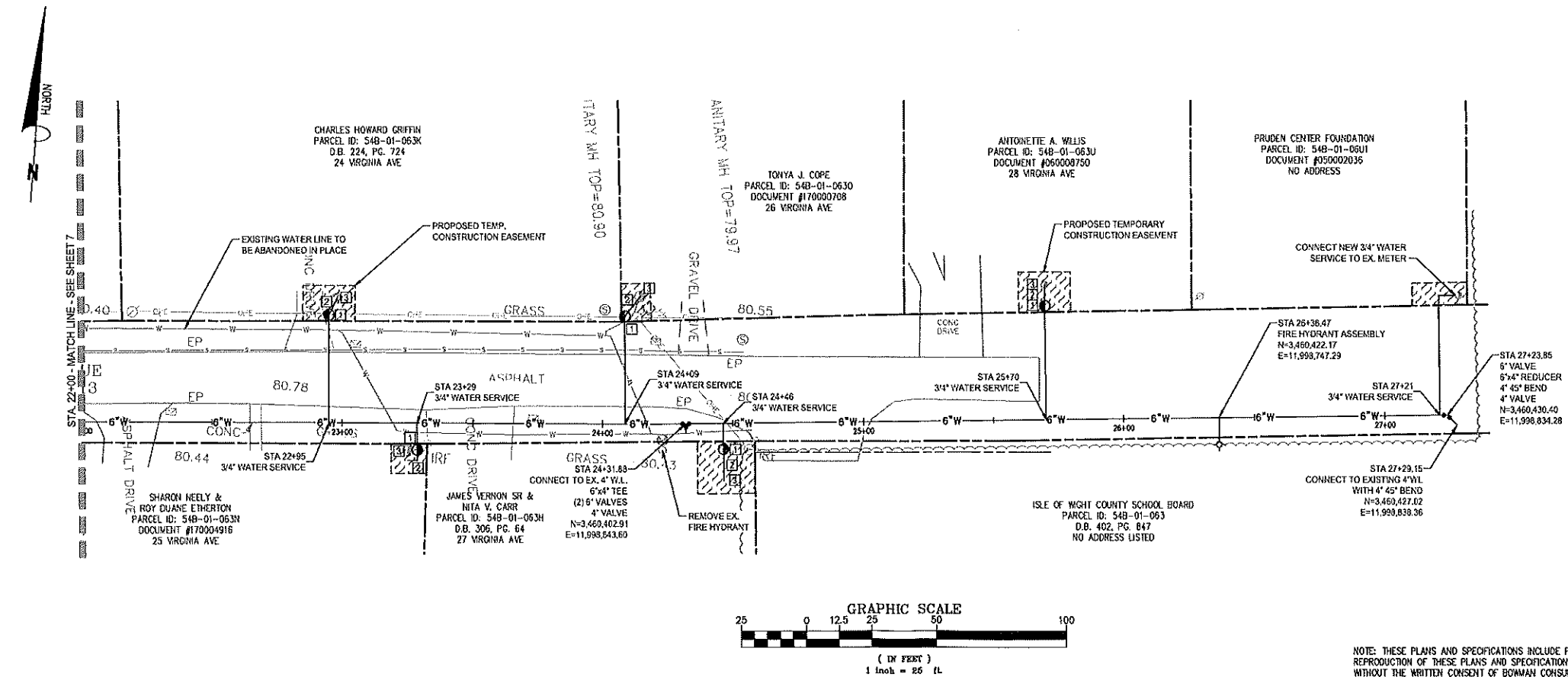
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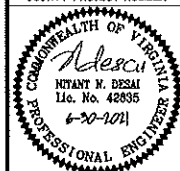
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 ISLE OF WIGHT COUNTY VIRGINIA

COUNTY PROJECT NUMBER



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DATE	DESCRIPTION

DATE	DESCRIPTION