



4 County Complex Court, Woodbridge, Virginia 22195-2266 · Fax (703) 335-7954

July 18, 2024

Addendum # 1

RFP SA 2423 – Professional Engineering, and As-Built Survey Services

THIS SOLICITATION IS HEREBY AMENDED AS FOLLOWS:

- Effective July 1, 2024, Prince William County Service Authority is doing business as Prince William Water. All potential Offerors are directed to use Prince William Water's new website address, www.princewilliamwater.org, for any solicitation updates. Moving forward, Offerors are advised to use our new organization name, Prince William Water. However, using our old name will still be accepted. The resulting contract under this solicitation will be in the name of Prince William County Service Authority doing business as “Prince William Water.”
- The attached responses to questions have been added for clarification.

Acknowledgement: Offerors submitting a proposal response for the above named solicitation shall take note of the following changes, additions, deletions, clarification, etc., in the Contract Documents, which shall become a part of and have precedence over anything shown or described in the Contract Documents, and as such shall be taken into consideration and be included in the Offeror’s response. All other terms and conditions of the Invitation of the Request for Proposals shall remain unchanged. Offerors must acknowledge receipt of this amendment by signing and returning this addendum with the proposal response prior to the proposal deadline.

Authorized Signature **Date**

Name Printed **Title**

Company Name

Direct all inquiries to procurement@pwwater.org

Questions and Responses:

1. **Question:** Tab 6 – Subconsultants – Could you please clarify which form is needed for Subconsultants for references. Scopes mentions for them to provide the same information requested in Tabs 1, 2, 3, 4, 5, and 6. See the snip clip below as a reference in part A.

Tab 6 –Subconsultants

- A. Provide a list of any proposed Subconsultant (s) that You may use on this project. Provide the same information required in Tab 1 Sections E and F, Tab 2 Section A, and complete Tabs 3, 4, 5, and 6 for each Subconsultant.
- B. Include a completed Subconsultant Reference Form for each Subconsultant proposed. Please use the attached **Form B – Subconsultant Reference Form**.

Response: Tab 6 is not required for each proposed subconsultant. Regarding Insurance and litigation information, the Offeror is required to provide its subcontractors’ proof of insurability and litigation information. However, the insurance limits applicable to subconsultants may vary from those mandated for the prime consultant. Prince William Water will assess the adequacy of the proposed limits during the review process.

2. **Question:** What are the monetary limits of this term contract?

Response: Prince William Water requires this BOA’s services on an as-needed basis, but has not set annual spending limits. The only spending restrictions are those set by the Virginia Public Procurement Act for Professional Services.

3. **Question:** Regarding the RFP instructions in 6.2 Economy of Presentation I. Proposal Package 1. e). (page 21) included below, is Prince William Water open to either of the following options to ensure legibility?

- o putting the USB Thumb Drive into a pocket with the RFP title on the outside
- o printing the RFP title onto a sticker to adhere to the USB Thumb Drive

e) You should clearly print: “RFP SA 2423 – Professional Engineering, and As-Built Survey Services” and the Offeror’s name directly on the top surface of each USB Thumb Drive with an indelible marker.

Response: Either of the following options will be acceptable:

1. Place the USB Thumb Drive in a pocket with the RFP title on the outside.
2. Printing the RFP title on a sticker to attach to the USB thumb drive.

4. **Question:** What are some examples of MEP and structural projects anticipated to be delivered through this contract?

Response: Engineering support is provided as needed for MEP and Structural disciplines on limited scope specific projects that are not tied to utility disciplines or major architectural facility work.

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5. **Question:** Form D – SWaM Subcontracting Plan – GROUPE is a SWaM certified organization. If our subconsultants are also SWaM certified, are we checking both boxes and listing all SWaM certified firms on this form or do we only check the one box stating we are SWaM and only fill out portion A of this 2-page form?

Response: Please check and complete all sections that are applicable.
6. **Question:** How many current contracts does Prince William Water have for the Professional Engineering and As-Built Survey Contract and who are the incumbents?

Response: We have two current contracts. The incumbents are Pennoni Associates and Rinker Design Associates.
7. **Question:** We would like an example of PDF As-Built of a general project.

Response: Refer to the attached sample.
8. **Question:** What current version of AutoCAD and ESRI GIS database does Prince William Water use?

Response: Autodesk AutoCAD LT 2020 version 47.0.0 and ESRI 10.7.1 Geodatabase, running on SQL Server 2019
9. **Question:** In the RFP, it is stated on Page 21, Section 6.3 Proposal Package Guidelines, F. Page Size and Format, 3. Text should be left justified. Please confirm that the formatted text is to have each line begin at the same distance from the left-hand edge of the page or column and leave a ragged right edge to the paragraph.

Response: Confirmed. The Text Should be formatted as stated in question.
10. **Question:** In the RFP, it is stated on Page 22, Section 6.3 Proposal Package Guidelines, I. Proposal Package, 3. You should include on the USB Thumb Drive in addition to all of the required Proposal Package submittal information, a text “INDEX” file that lists all files on the USB Thumb Drive with the complete file name (filename plus extension) and a concise written description of what is included in the file. e) you should clearly print: “RFP SA 2423 – Professional Engineering, and As-Built Survey Services” and the Offeror’s name directly on the top surface of each USB Thumb Drive with an indelible marker. Our Company’s name and website are imprinted on the top of our USB Thumb Drives. Is it acceptable to print “RFP SA 2423 – Professional Engineering, and As-Built Survey Services” on the opposite side?

Response: Please see response to question #3.
11. **Question:** In the RFP, it is stated on Page 23, Section 6.4 Proposal Package Sections, Tab 1 – Introduction, Profile & Required Information I. Licenses & Permits. Documentation showing any licenses and/or permits required and applicable to this requirement. Virginia licenses are required for all key staff; Professional Engineer (PE) and Land Surveyor (LS) from prime Consultant and Subconsultant. Section 6.4 Proposal Package Sections, Tab 2 – Evaluation Criteria, A. Staffing Plan and Experience of Key Personnel, 2. Program/Project Manager, c) Education and formal training, including copies of any pertinent and required licenses / certifications. Please confirm that the licenses / certifications for the Program/Project Manager shall be provided in Tab 1 and Tab 2.

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Response: The licenses / certifications for the Program/Project Manager must be presented in Tab 1, whereas Tab 2 merely outlines how it will be evaluated.

12. **Question:** Section 5.34.4 of Contract – requires Consultant to assume all risks of work under the contract; this makes all liability under the contract as strict liability for Consultant. Can Section 5.34.4 of the Contract be revised?

Response: You may include this in your exceptions if you are selected as one of the top-ranked offerors pursuant to Section 5.17. It will not be altered at this time.

13. **Question:** Section 5.39.19 – Consultant shall not introduce Harmful Code and shall deal with it at Consultant’s sole cost; this should contain a reasonableness standard, that we will reasonably attempt to make sure that no malicious code is introduced. Will the County entertain changes to Section 5.39.19 of the contract?

Response: You may include this in your exceptions if you are selected as one of the top-ranked offerors pursuant to Section 5.17. It will not be altered at this time.

14. **Question:** The RFP on page 65 states that travel expenses outside Prince William County will not be reimbursed without approval. We have a SWaM subconsultant that would travel 225 miles per day for site visits. Will Prince William County Service Authority pay for this travel time and mileage?

Response: You may include this in your exceptions if you are selected as one of the top-ranked offerors pursuant to Section 5.17. It will not be altered at this time.

15. **Question:** We are aware of your name change to Prince William Water. What is your preference when referencing you name throughout the RFP response? PW Water? PWW? Prince William County Service Authority?

Response: Please refer to the first paragraph of this addendum for the response to this question.

16. **Question:** Page 21 – Section F. Page Size & Format – Number 5. You reference the text size should be not less than 11 point and no larger than 14 points. Are you referring to the main body copy throughout, or does that also include headers, footers, graphics, captions, tables etc.?

Response: Please refer to this statement from the RFP: A “page” is defined as all information that can be legibly printed within one piece of 8.5 x 11-inch piece of paper in accordance with the requirements 2-6 below:

17. **Question:** Our subs have a question regarding the forms. For “Form C-Subconsultant No-Conflict of Interest Form”, does it need to be notarized if there are no conflicts of interest? It’s not very clear the way they say to list exceptions, but don’t have a spot for it.

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respects fair and without collusion or fraud.

EXCEPTIONS (List)

Signature: _____

Printed Name: _____

Firm Name: _____

Date: _____

Sworn to and subscribed before me this _____ day of _____ 202_

Personally Known _____
or Produced Identification _____, Type of Identification _____

My Commission Expires _____

(Printed, typed or stamped commissioned name of notary)

**THIS FORM MUST BE COMPLETED AND RETURNED WITH YOUR PROPOSAL
PACKAGE FOR EACH PROPOSED**

Response: Yes, this form needs to be notarized.

18. **Question:** Please clarify request below: Are you looking for photos, charts, and drawings included in the text as separate jpeg files? Or are you looking for an index list of all art, photos, etc. included in the response?

1. You should include on the USB Thumb Drive in addition to all of the required Proposal Package submittal information, a text "INDEX" file that lists all files on the USB Thumb Drive with the complete file name (filename plus extension) and a concise written description of what is included in the file.
 - i. You should submit all text files in the PDF format.
 - ii. You should submit spreadsheets in a Microsoft Excel format.
 - iii. You should scan and submit manufacturers' specifications pages in the PDF format, or, in an HTML format.
 - iv. You should submit pictures, photos, and/or drawings in JPG, BMP or GIF formats.

Response: The USB Thumb Drive must contain a complete copy of the proposal package, along with an index list of the documentation, as mentioned.

3. You should include on the USB Thumb Drive in addition to all of the required Proposal Package submittal information, a text "INDEX" file that lists all files on the USB Thumb Drive with the complete file name (filename plus extension) and a concise written description of what is included in the file.

- a) You should submit all text files in the PDF format.
- b) You should submit spreadsheets in a Microsoft Excel format.

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- c) You should scan and submit manufacturers' specifications pages in the PDF format, or, in an HTML format.
- d) You should submit pictures, photos, and/or drawings in JPG, BMP or GIF formats.
- e) You should clearly print: "RFP SA 2423 – Professional Engineering, and As-Built Survey Services" and the Offeror's name directly on the top surface of each USB Thumb Drive with an indelible marker.
- f) Electronic or facsimile (FAX) submission of Proposal Packages is not permitted for this RFP.

19. **Question:** Page 22 of the RFP, Section H states that the original proposal must be submitted in a binder. How should we submit the 4 copies? Can they be clipped?

Response: The four proposal copies must be submitted in a binder .

20. **Question:** Page 23 of the RFP, Section A1 states "(Reference Tab 1 E, Form D, SWaM Subcontracting Plan) which is already requested in Tab 1 section E. Can you please clarify what is needed here. Do we need to include Form D in this section again, or only in Tab 1E?"

Response: You will need to include Form D in Tab E only.

21. **Question:** Page 24 of the RFP, Section B4 - what is the deliverable for this item? Shall we include a page acknowledging it?

Response: This is a statement to inform that Prince William Water reserves the right to conduct background checks on the Offerors.

22. **Question:** Page 25 of the RFP, Tab 6A states that information from Tab 4 must be provided for each subconsultant, however Tab 4 is Form A Offeror Reference Form. Please confirm subconsultant only need to complete Form B Subconsultant Reference Form.

Response: Yes, Offeror needs to complete Form A Offeror Reference Form and Subconsultants need to complete Form B Subconsultant Reference Form

23. **Question:** Do the GIS shapefiles require a vertical coordinate system (Z enabled)? If so, does the GIS data need to be digitized in 3D?

Response: We do not require a vertical coordinate system.

24. **Question:** Does the Service Authority have any GIS quality checks such as SQL or Data reviewer files that can be shared?

Response: PW Water is in the process of restructuring our quality check files and cannot release them at this time.

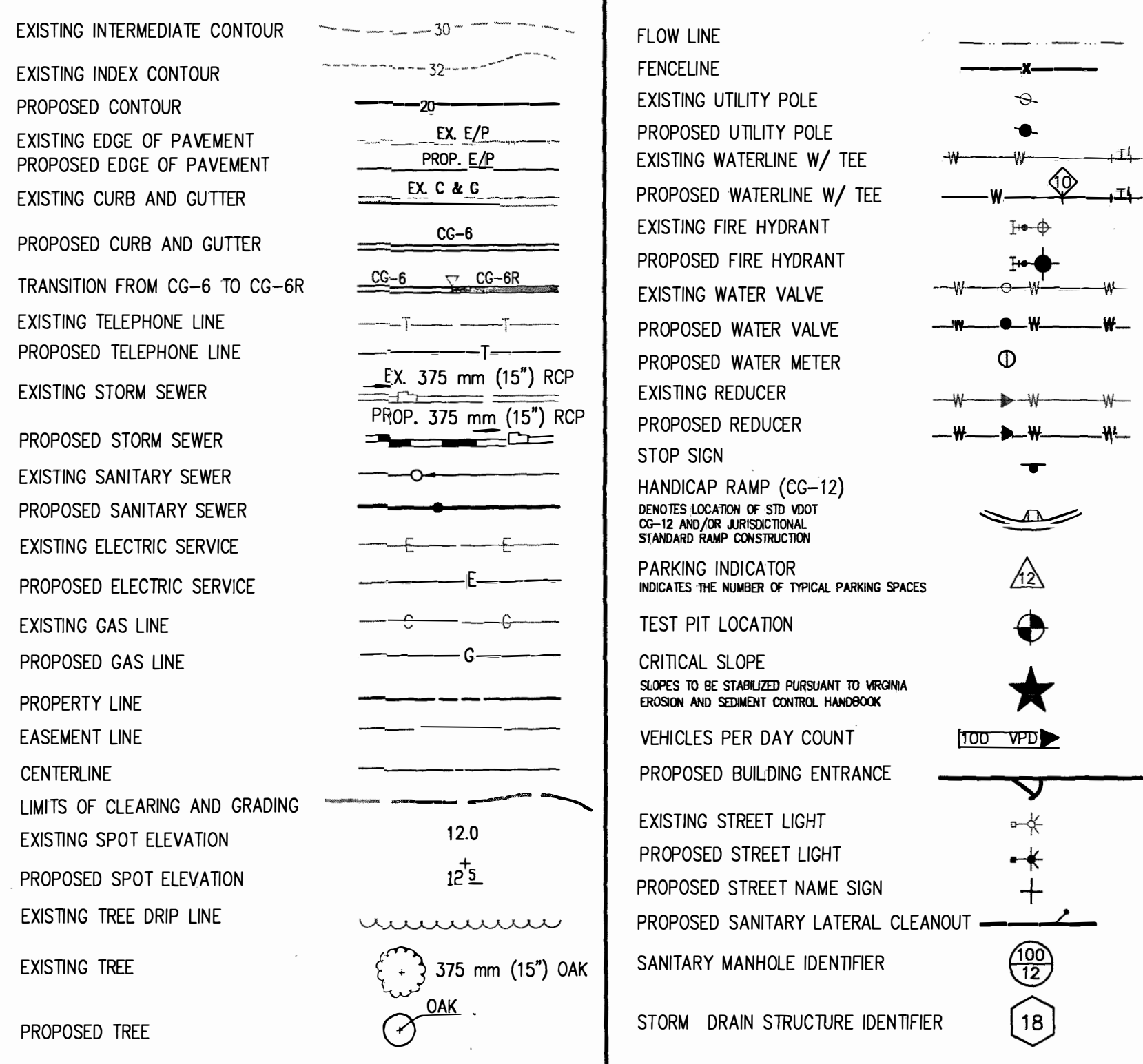
End of Addendum Number One



GENERAL NOTES

- 1. This site has been addressed by the Prince William County Mapping Office as: 6702 SOMERSET CROSSING DRIVE HAYMARKET VA 20169 (addresses for subdivision lots shall appear on the approved plot for recordation).
2. Addresses assigned are for the layout of individual businesses or dwelling units and are for exterior doors as shown on this plan only.
3. Methods and materials used in the construction of the improvements herein shall conform to the current County construction standards and specifications and/or current VDOT standards and specifications.
4. The contractor or developer is required to notify the Prince William County Department of Public Works in writing three (3) days prior to the beginning of the construction and specifically request inspection before beginning -- (703) 792-7070.
5. Measures to control erosion and siltation, including detention ponds serving as silt basins during construction, must be provided prior to issuance of the site development permit.
6. A permit must be obtained from the Office of the Resident Engineer, Virginia Department of Transportation (VDOT) Prince William County, prior to construction in existing State right-of-way.
7. Approval of this plan does not guarantee issuance of an entrance permit by VDOT when such permit is required under State law.
8. The exact location of all guard rails will be determined by VDOT personnel.
9. An approved set of plans and all applicable permits must be available at the construction site.
10. Warning signs, markers, barricades or flagmen should be in accordance with the Manual on Uniform Traffic Control Devices (MUTCD).
11. All unsuitable material shall be removed from the construction limits of the roadway before placing embankment.
12. All pavement sections on the approved plans are based on a minimum CBR value of 10.
13. All roadside ditches at grades of more than 5% shall be paved with cement concrete to the limits indicated on the plans and as required at the field inspection.
14. All springs shall be capped and piped to the nearest storm sewer manholes or curb inlet.
15. All standard street name signs, traffic control devices, and street lights shall be installed by the developer when the first building unit is occupied.
16. Construction debris shall be containerized in accordance with the Virginia Litter Control Act; no less than one litter receptacle shall be provided at the construction site.
17. The contractor shall provide adequate means of cleaning mud from trucks and/or other equipment prior to entering public streets, and it is the contractor's responsibility to clean streets, dust, and to take whatever measures are necessary to insure that the streets are maintained in a clean, mud and dust free condition at all times.
18. Notification shall be given to the appropriate utility company (Service Authority, Virginia-American Water Company, or Dale Service Corporation) prior to construction of water and/or sanitary sewer lines.
19. All sanitary sewers and water mains and appurtenances shall be constructed in accordance with the current standards and specifications of Prince William County and/or the Service Authority.
20. The developer and/or contractor shall be responsible to supply all utility companies with copies of plans that have been approved by Prince William County and/or the Service Authority.
21. Contractors shall notify operators who maintain underground utility lines in the area of proposed excavation or blasting at least two (2) working days, but not more than ten (10) working days, prior to commencement of excavation or demolition.
22. The location of existing utilities shown in these plans are taken from existing records.
23. The developer will be responsible for any damage to the existing streets and utilities which occurs as a result of his construction project within or contiguous to the existing right-of-way.
24. All utilities placed under existing streets shall be bored or jacked.
25. When grading is proposed within easements of utilities, letters of permission from all involved companies must be provided to Prince William County Planning Office prior to issuance of grading and/or site development permits.
26. The developer will be responsible for the relocation of any utilities which is required as a result of his project.
27. Before burning, blasting, transportation or storage of explosives in Prince William County, a permit shall be obtained from the Fire Marshal's Office.
28. Fire and Rescue Services must be notified immediately (792-6810) in the event that unusual items such as tanks, cylinders, unidentified containers, etc. which could contain potentially hazardous materials are discovered or observed.
29. Sidewalk underdrains shall be installed per Section 650 of the Design and Construction Standards Manual.
30. All walkways outside of the right-of-way limits will be maintained by the homeowners association.
31. Maintenance of the Storm Drainage or Storm Water Management facilities located therein shall be pursuant to Section 700 of the Prince William County Design and Construction Standards Manual.
32. If units shown on this plan will be occupied in phases, a phasing plan must be approved by the engineering inspection branch prior to the issuance of any occupancy permits.
33. These plans identify the location of all known gravesites.
34. Roof top mechanical equipment, if any, must be enclosed within a wall or similar screening barrier.
35. Individual sign permits will be required from the Zoning Office for all free standing and facade signs prior to erecting the signs.
36. All buffer areas shall be screened according to the Design and Construction Standards Manual.
37. For proffers statement and proffers analysis, see sheet(s) 3&4 of 42.
38. For waivers see sheet(s) N/A of N/A.
39. Anticipated sewage flows: 390 GPD/UNIT x 25 UNITS = 9,750 GPD
40. Anticipated fire flows: 1,000 GPM @ 37 PSI
41. Distance to nearest existing school or proposed school site: 903.53 FT. ± OR 0.171 MILES TO HAYMARKET ELEMENTARY
42. All utilities existing and proposed must be located underground in accordance to Section 32-250.71 of the Zoning Ordinance.

LEGEND



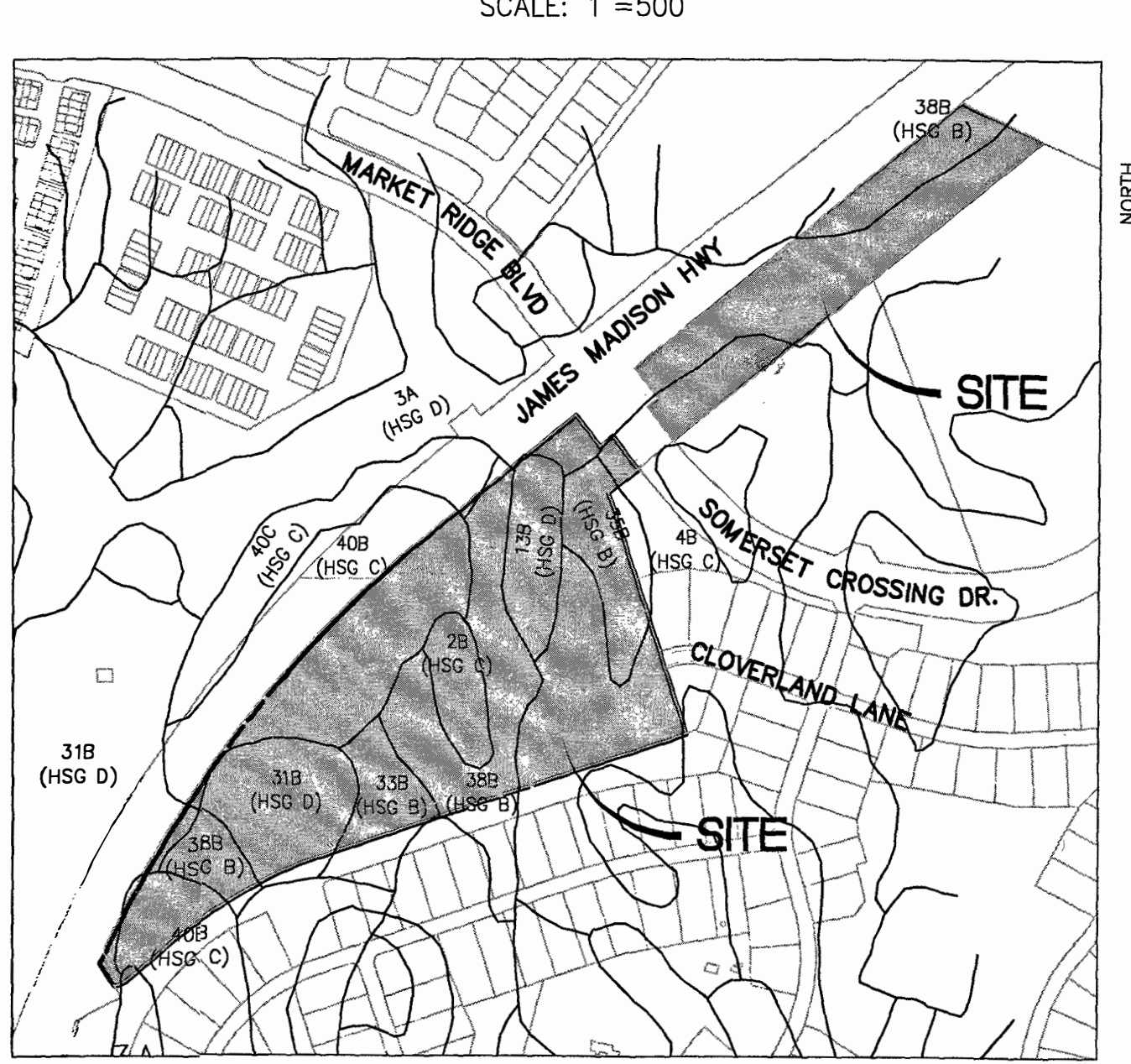
REVISIONS

Table with columns: DATE, DESIGNER NO., DESCRIPTION. It is currently empty.

SURVEY AND TOPOGRAPHIC INFORMATION

- 1. Horizontal and vertical control surveys were performed by The ENGINEERING GROUPE, Inc. in 2021.
2. All elevations must be referenced to the National Geodetic Vertical Datum of 1929 (NGVD 29).
3. Source of topographic mapping is MCKENZIE-SNYDER dated APRIL 3, 2011. And field verified August 10, 2022 by the Engineering Groupe, Inc.
4. Boundary survey was performed by The ENGINEERING GROUPE, Inc. dated APRIL 13, 2021.
5. The application of the professional's seal and signature as required by Section 1.14 of the STATE BOARD OF ARCHITECTS, PROFESSIONAL ENGINEERS, LAND SURVEYORS AND CERTIFIED LANDSCAPE ARCHITECTS RULES AND REGULATIONS shall be evidence that: the boundary data is correct to the best of the land surveyor's knowledge, and complies with the minimum standards and procedures of the said Board; the topographic information is accurate to within one-half of the contour interval, as shown. Application of the seal and signature indicates acceptance of responsibility for the work shown hereon.

SOILS MAP



SOILS DATA

Table with columns: SOILS SYMBOL, SOILS NAME, ERODIBILITY, SLOPE RANGE, SOIL CATEGORY, SURFACE RUNOFF. It lists various soil types and their characteristics.



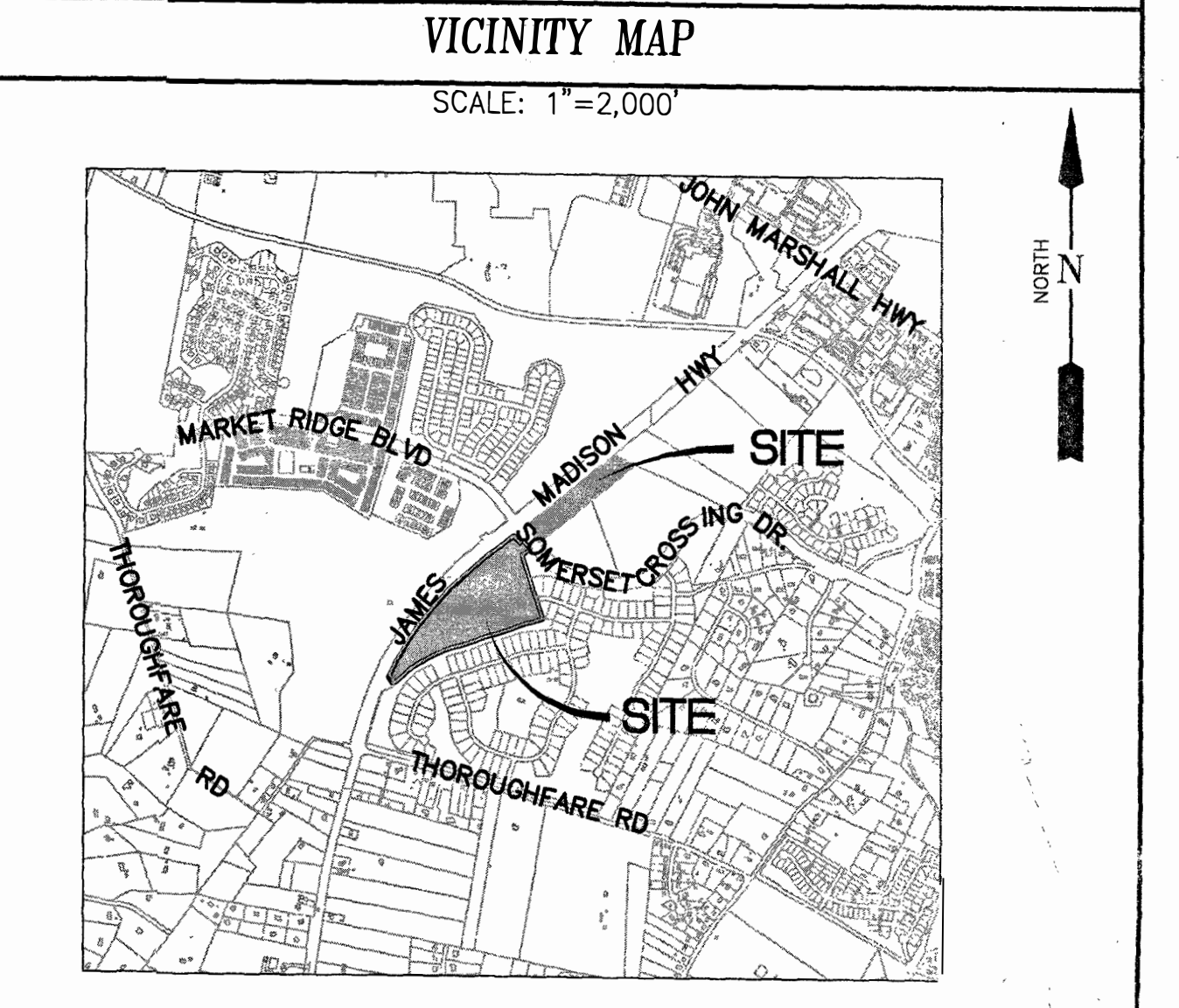
The attached information was compiled from available records or collected by a third party for the sole benefit of the Prince William County Service Authority. The Service Authority strongly recommends that all elements of the existing infrastructure important to the design of a project be checked by a field survey. Utility information is provided "as-is" without warranties of any kind, expressed or implied, including but not limited to warranties of accuracy for any particular purpose or use. The Service Authority will be held harmless from any direct or indirect claim based on this data. The Service Authority is not responsible for assumptions, calculations, designs, or construction activities making use of, or derived from the data.

Bond Estimate table with columns: ITEM, COUNTY BOND, VDOT BOND. Rows include: TOTAL CONSTRUCTION COST (\$1,866,874.50), ADMINISTRATIVE COST (\$50,000.00), INFLATION COST (3%) (\$84,009.35), TOTAL PERFORMANCE BOND AMOUNT (\$2,000,883.85), LANDSCAPE ESCROW (\$77,880.00), EROSION AND SEDIMENT ESCROW (\$414,983.80).

Professional seal and signature of Radillo Caceres M, Professional Engineer, License No. 65289, dated 5/04/2023.

THESE PLANS ARE IN CONFORMANCE WITH PRINCE WILLIAM COUNTY STANDARDS AND ORDINANCES. ANY DEVIATION OR CHANGE IN THESE PLANS SHALL BE APPROVED BY THE DIRECTOR OF PLANNING PRIOR TO CONSTRUCTION.

Per Prince William County DCSCM 125.01.1.1, except for transmission power lines of 34,500 volts or greater, water towers or other installations set forth herein, all onsite utility facilities shall be reviewed and installed at or the effective date of this section to serve any use (to include water, sewer, gas, telephone, and cable) shall be installed underground. This plan has been reviewed and has been found to be in general conformance with the requirements of Prince William County. The developer is hereby authorized to obtain all necessary land development permits, subject to all designs, procedures, materials and workmanship being in compliance with local requirements. If not bonded or permitted (if applicable) within five (5) years of the authorized date or lawfully extended, this authorization will expire. A valid agreement and bond with Prince William County must be maintained to assure plan and permit validity.



Sheet List Table with columns: Sheet Number, Sheet Title. It lists 42 sheets including: COVER SHEET, NOTES - DETAILS, TYPICAL SECTIONS, AND SIGHT DISTANCE PROFILE, APPROVED PROFFERS & WETLAND PERMIT, PROFFER ANALYSIS, EXISTING CONDITIONS AND DEMOLITION PLAN, OVERALL PLAN, SITE PLAN, PLAN & PROFILE - CLOVERLAND LANE, PLAN & PROFILE - JEWEL COURT, STORM SEWER COMPUTATIONS, STORM SEWER PROFILES, STORM SEWER PROFILES, PWCSA INFORMATION SHEET, PWCSA INFORMATION SHEET, WATERLINE PROFILES, SANITARY SEWER PROFILES, EROSION & SEDIMENT CONTROL NOTES AND DETAILS, EROSION & SEDIMENT CONTROL NOTES AND DETAILS, EROSION & SEDIMENT CONTROL PLAN - PHASE I, EROSION & SEDIMENT CONTROL PLAN - PHASE II, POLLUTION PREVENTION PLAN, BMP AREAS, VIRGINIA RUNOFF REDUCTION METHOD, PRE DEVELOPMENT, POST DEVELOPMENT, SWM NARRATIVE, COMPS, & DETAILS, SWM COMPS, SWM WET POND DETAILS, SWM WET POND DETAILS, SWM WET POND CHECKLIST, SWM WET POND CHECKLIST, LANDSCAPE PLAN, LANDSCAPE DETAILS AND TABULATIONS, FIRE HYDRANT COVERAGE PLAN, GENERAL DEVELOPMENT PLAN (FOR INFO ONLY), GENERAL DEVELOPMENT PLAN (FOR INFO ONLY), GENERAL DEVELOPMENT PLAN (FOR INFO ONLY), SPECIMEN TREE PRESERVATION PLAN, SPECIMEN TREE PRESERVATION PLAN, GEOTECHNICAL RECOMMENDATIONS, GEOTECHNICAL RECOMMENDATIONS, UNIT PRICE LIST.

PRINCE WILLIAM COUNTY

COVER SHEET

090-110

Project Name: WILLIAMS PROPERTY. Subdivision or Site Plan Name: WILLIAMS PROPERTY. Market Name: BRENTSVILLE. Present Zoning & Use: SR-1 SEMI-RURAL RESIDENTIAL. Date of Plan: 7 Month, Day, Year: SEPTEMBER 30, 2022. Owner: 15510 HAYMARKET DRIVE LLC. Address: 6702 SOMERSET CROSSING DR, HAYMARKET, VA 20169 443-845-4146. Developer: THE ENGINEERING GROUPE, INC. 13580 GROUPE DR, STE 200 WOODBRIDGE, VA 22192 (703) 670-0985. Parcel Identification Number: G.P.I.N. 7297-27-9016. Total Area: 36.14 Ac. Project Area: 28.16 Ac. Disturbed Area: 16.27 Ac. Impervious Area: 5.40 Ac. BMP Storage/Hectare: 1.77 cf/ac. Related Plans Tracking Numbers (Including Rez. & S.U.P.): REZ2022-00002; ASP2021-00038; ASP2021-0037; FPS 09-00130.

WILLIAMS PROPERTY Subdivision/Site Plan Name: SDR 2023-00016 S04 PWC File Number: SDR 2023-00016 S04

CONSTRUCTION NOTES

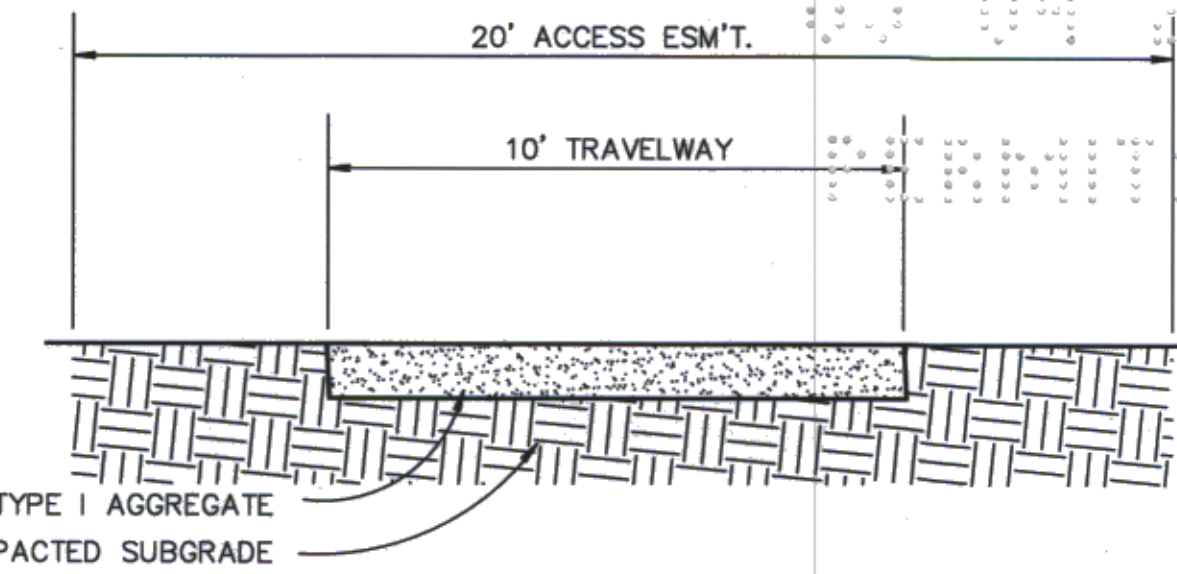
- THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO COMMENCEMENT OF ANY LAND DISTURBING ACTIVITIES.
- THE CONTRACTOR OR HIS AGENT SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ANY EXISTING UNDERGROUND UTILITIES PRIOR TO THE BEGINNING OF CONSTRUCTION. UTILITIES SHOWN HEREON ARE BASED ON AVAILABLE INFORMATION. IF DURING CONSTRUCTION OPERATIONS THE CONTRACTOR SHOULD ENCOUNTER ANY UTILITIES OTHER THAN THOSE SHOWN ON THESE PLANS, HE SHALL IMMEDIATELY NOTIFY THE ENGINEER AND TAKE NECESSARY AND PROPER STEPS TO PROTECT THE FACILITY AND ASSURE CONTINUANCE OF SERVICES. ANY DAMAGES WHICH OCCUR BY FAILURE TO LOCATE OR PRESERVE THESE UTILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- ENGINEERED FILL AND BACKFILL SHALL BE APPROVED SELECT MATERIALS AND SHALL BE PLACED IN SIX TO EIGHT INCH LAYERS WITH UNIFORM COMPACTION THROUGHOUT. EACH LAYER OF ENGINEERED FILL SHALL BE COMPACTED AT OPTIMUM MOISTURE, PLUS OR MINUS TWO PERCENT, TO A DENSITY OF NOT LESS THAN 95 PERCENT IN ACCORDANCE WITH A.A.S.H.T.O. T-99 OR A.S.T.M. D-698.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR OR DEVELOPER TO HAVE SUFFICIENT SOILS AND FOUNDATION TESTING PERFORMED TO DETERMINE THAT THE SUPPORT VALUES AND C.B.R.'S ARE ADEQUATE FOR THE STANDARDS SHOWN ON THIS PLAN.
- ALL FILL MATERIALS AND THEIR SUBGRADE WILL BE APPROVED BY THE SOILS ENGINEER FOR THIS SITE. COMPACTION TESTS WILL BE REQUIRED ON CONTROLLED FILLS.
- ALL CONSTRUCTION INVOLVING PROBLEM SOILS MUST BE PERFORMED UNDER THE FULL-TIME INSPECTION OF A PROFESSIONAL GEOTECHNICAL ENGINEER.
- THE CONTRACTOR SHALL PERFORM NECESSARY GRADING TO PRECLUDE THE PONDING OF WATER IN THE ROADWAYS AND ON ALL LOT AREAS.
- TEST PITS SHALL BE REQUIRED PRIOR TO CONSTRUCTION TO ADEQUATELY DETERMINE THE LOCATIONS OF EXISTING UNDERGROUND UTILITY LINES.
- PRIOR TO ANY CLEARING & GRADING ON SLOPES 25% OR GREATER, ALL SURFACE DRAINAGE WILL BE ROUTED AWAY FROM THE AREA TO BE GRADED.
- TEMPORARY CHEMICAL TOILETS SHALL BE PROVIDED IN ACCORDANCE WITH APPLICABLE CODES AND REGULATIONS.
- ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE FEDERAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- ANY TRAFFIC CONTROL SIGNS, PAVEMENT MARKINGS, GUARDRAILS AND/OR PAVED DITCHES DEEMED NECESSARY, BY VDOT AND COUNTY STAFF SHALL BE FURNISHED AND INSTALLED AT THE DEVELOPERS EXPENSE.
- IF NON STANDARD STRUCTURES ARE TO BE USED IN LIEU OF THE STANDARD VDOT APPROVED PRECAST STRUCTURES SPECIFIED ON THESE PLANS, WRITTEN APPROVAL OF THE SHOP DRAWINGS PREPARED BY THE DESIGN ENGINEER SHALL BE OBTAINED PRIOR TO ORDERING OR INSTALLATION OF THE STRUCTURES.
- REFER TO VDOT ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS, DCSM, PWCSA USM, OTHER MANUALS (STATE AND LOCAL) (CURRENT EDITIONS) FOR CONSTRUCTION DETAILS NOT INCLUDED HEREIN.
- PRIOR TO ANY WORK WITHIN A DEDICATED VDOT RIGHT-OF-WAY, THE CONTRACTOR SHALL OBTAIN APPLICABLE PERMITS FROM VDOT.
- DAMAGE TO ANY EXISTING ENTRANCES, CURB AND GUTTER, SIDEWALK OR PAVEMENT WITHIN STATE RIGHT-OF-WAY NOT PROPOSED TO BE DISTURBED WITH THIS DEVELOPMENT WILL BE THE RESPONSIBILITY OF THE DEVELOPER AND MUST BE REPAIRED TO THE SATISFACTION OF THE ADJOINING OWNERS THAT MAY BE AFFECTED.
- THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND/OR DIMENSIONS ON THE SITE.
- CONTRACTORS ARE RESPONSIBLE FOR BEING AWARE OF AND CONFORMING TO OSHA RULES AND REGULATIONS AS THEY APPLY TO CONSTRUCTION PROCEDURES ON THIS SITE.
- A COPY OF THE MOST CURRENT APPROVED PLANS AND PLATS MUST BE LOCATED ONSITE.

GENERAL NOTES

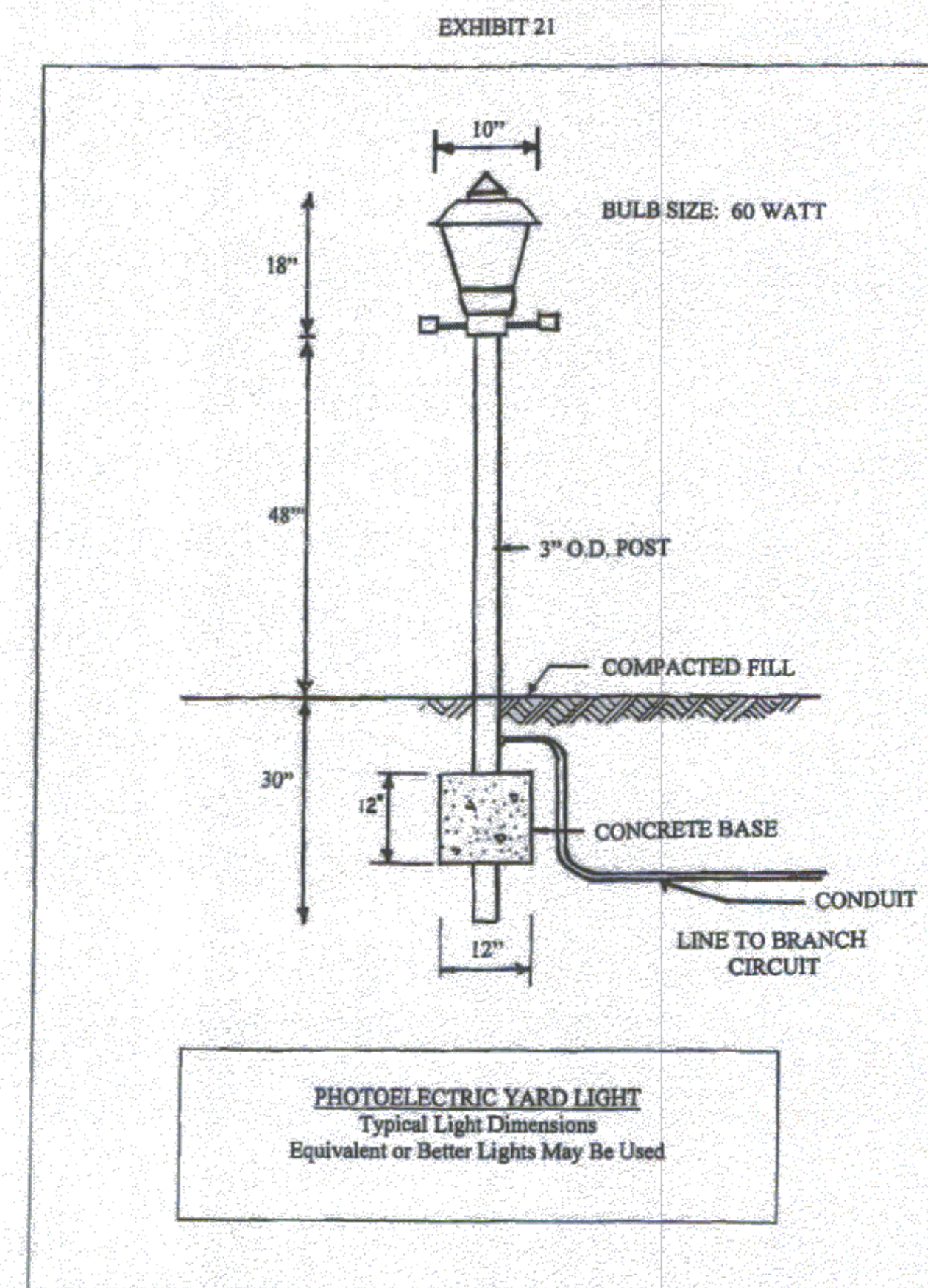
- ALL CONSTRUCTION SHALL CONFORM TO EXISTING STATE AND COUNTY BUILDING CODES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE AWARE OF ALL APPLICABLE STANDARDS AND SPECIFICATIONS AS WELL AS REQUIRED METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL HAVE APPROVED AND CURRENT DRAWINGS IN HIS POSSESSION AT THE CONSTRUCTION SITE AT ALL TIMES.
- THE SOIL SURVEY OF PRINCE WILLIAM COUNTY WAS UTILIZED IN DETERMINING EXISTING SOILS DATA SHOWN ON COVER SHEET.
- NO SUBSURFACE INVESTIGATION HAS BEEN PERFORMED BY THE ENGINEERING GROUPE INC. TO ATTEST TO THE SOIL CONDITIONS OR TO THE PRESENCE OF TOXIC OR CONTAMINATED WASTE.
- THE PROPOSED DEVELOPMENT SHALL BE SERVED BY PUBLIC WATER AND A PUBLIC SEWER SYSTEM AS SHOWN HEREIN.
- THE PROPERTY SHOWN HEREIN IS LOCATED IN ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 500 YR FLOODPLAIN), ACCORDING TO PRINCE WILLIAM COUNTY F.I.R.M. MAP 5115J3C0066D, DATED JANUARY 5, 1995. FLOODPLAIN STUDY CONDUCTED BY DEWBERRY & DAVIS UNDER FLOOD PLAIN STUDY 09-00130, PASA 11-00139.
- NO USE SHALL BE MADE OF, NOR SHALL ANY IMPROVEMENTS BE MADE IN THE FLOOD HAZARD AREA, WITHOUT SPECIFIC AUTHORIZATION FROM THE DEPARTMENT OF PUBLIC WORKS.
- ANY EXISTING CEMETERIES AND/OR GRAVE SITES FOUND ON THIS SITE SHALL BE PRESERVED IN ACCORDANCE WITH COUNTY AND STATE REGULATIONS. NO CEMETERIES OR GRAVE SITES ARE KNOWN TO EXIST ON THIS SITE.
- NO HISTORIC BUILDINGS OR FEATURES ARE KNOWN TO EXIST ON THIS SITE.
- MAPPED RPA EXISTS ON THIS SITE BASED ON PASA/PFD PREPARED BY WETLAND STUDIES AND SOLUTIONS INC. ON MAY 24TH 2021 AND IS OUTSIDE THE LIMITS OF DISTURBANCE. THERE IS NO FLOODPLAIN ON THIS SITE. NO USE SHALL BE MADE OF, NOR SHALL ANY IMPROVEMENTS OR MODIFICATIONS BE MADE IN THE RESOURCE PROTECTION AREA WITHOUT SPECIFIC WRITTEN AUTHORIZATION FROM THE DIRECTOR OF PUBLIC WORKS.
- WETLANDS ARE LOCATED ON THIS SITE.
- PROPOSED ENTRY SIGNS WILL BE DONE UNDER A SEPARATE PERMIT.
- THIS PLAN COMPLIES WITH THE PRINCE WILLIAM COUNTY SERVICE AUTHORITY UTILITY STANDARDS MANUAL, WHICH WENT INTO EFFECT APRIL 1, 2022. ALL UTILITY PERMITS ISSUED AFTER THIS DATE MUST COMPLY WITH THE CONSTRUCTION CRITERIA IN THE NEW MANUAL, INCLUDING ANY REVISIONS WHICH HAVE BEEN ISSUED.

VDOT GENERAL NOTES

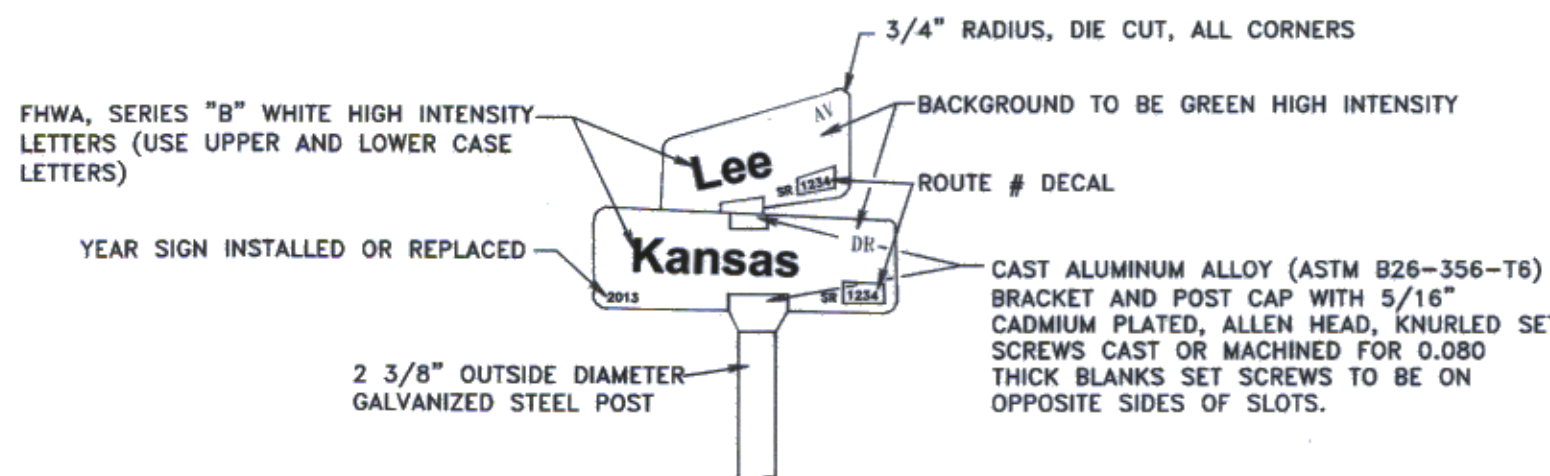
- THESE PLANS WERE PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF (SELECT ONE):
VDOT SECONDARY STREET ACCEPTANCE REQUIREMENTS (SSAR 24VAC-30-92 EFFECTIVE FEBRUARY 1, 2012 AND VDOT ROAD DESIGN MANUAL APPENDIX B1).
VDOT SECONDARY STREET ACCEPTANCE REQUIREMENTS (SSAR 24VAC-30-92 EFFECTIVE FEBRUARY 1, 2012 AND VDOT ROAD DESIGN MANUAL APPENDIX B2 AS APPROVED FOR USE IN DESIGNATED HIGH DENSITY DEVELOPMENT AREAS).
VDOT ROAD DESIGN MANUAL APPENDIX C, RURAL AND URBAN GEOMETRIC DESIGN STANDARDS EFFECTIVE AT THE TIME OF VDOT RECOMMENDED PLAN APPROVAL.
LIST STANDARD USED: GS-_____
- VDOT APPROVED EXCEPTIONS/WAIVERS (MUST BE INCORPORATED IN THE PLAN):
• ACCESS MANAGEMENT - DATE OF APPROVAL: N/A
• SSAR - DATE OF APPROVAL: 02-08-2023 (SEE SHEET 6 FOR APPROVAL LETTER)
• DESIGN WAIVER - DATE OF APPROVAL: N/A
• OTHER: N/A DATE OF APPROVAL: _____
- SSAR CONNECTIVITY SUMMARY (PROVIDE A CHECK MARK WHERE APPLICABLE OR WRITE N/A):
• CONNECTIONS IN MULTIPLE DIRECTIONS (FIRST CONNECTION MUST BE TO A VDOT MAINTAINED ROAD, THE SECOND CONNECTION MAY EITHER BE TO A VDOT ROAD OR TO A STUB OUT) N/A
• STUB OUT CONNECTION (THE PROP. RIGHT OF WAY TERMINATES AT PARCEL ABUTTING THE DEVELOPMENT AND CONSISTS OF A SHORT SEGMENT THAT IS INTENDED TO SERVE CURRENT AND FUTURE DEVELOPMENT; THE APPLICANT MUST VERIFY THAT CONNECTION WITH A FUTURE STREET IS FEASIBLE)
• NETWORK ADDITIONS PROVIDING DIRECT ACCESS TO (i) MORE THAN 200 DWELLING UNITS OR (ii) LOTS WHOSE TRIP GENERATION IS EXPECTED TO BE OVER 2,000 VPD MAY BE ACCEPTED INTO THE SECONDARY SYSTEM OF STATE HIGHWAYS IF THE NETWORK ADDITION PROVIDES AN ADDITIONAL EXTERNAL CONNECTION BEYOND THAT REFERENCED ABOVE. N/A
- ALL WORK ON THIS PROJECT SHALL CONFORM TO THE CURRENT EDITIONS OF AND LATEST REVISIONS TO THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) ROAD AND BRIDGE SPECIFICATIONS AND STANDARDS, THE VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS, AND ANY OTHER APPLICABLE STATE, FEDERAL OR LOCAL REGULATIONS. IN CASE OF A DISCREPANCY OR CONFLICT BETWEEN THE STANDARDS OR SPECIFICATIONS AND REGULATIONS, THE MOST STRINGENT SHALL GOVERN.
- ALL RIGHT OF WAY DEDICATED TO PUBLIC USE SHALL BE CLEAR AND UNENCUMBERED.
- ALL UTILITIES, INCLUDING ALL POLES, ARE TO BE RELOCATED AT THE DEVELOPER'S EXPENSE, PRIOR TO CONSTRUCTION.
- THE DEVELOPER IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING ROADS AND UTILITIES WHICH OCCUR AS A RESULT OF PROJECT CONSTRUCTION WITHIN OR CONTIGUOUS TO EXISTING RIGHT OF WAY.
- OPEN CUTTING OF PAVED OR SURFACE TREATED ROADS IS NOT PERMITTED. ALL UTILITIES WHICH WILL BE PLACED UNDER EXISTING STREETS ARE TO BE BORED OR JACKED. ANY EXCEPTIONS, DUE TO EXTENUATING CIRCUMSTANCES, ARE TO BE ADDRESSED AT THE PERMIT STAGE.
- THE PAVEMENT DESIGN IS BASED ON AN ASSUMED CBR VALUE OF 10 (USE A CBR VALUE OF 6 IN LOUDOUN CO.). SOIL TESTS OF SUBGRADE MUST BE SUBMITTED FOR THE ACTUAL DETERMINATION OF THE REQUIRED THICKNESS OF THE PAVEMENT INCLUDING LAYERS OF ASPHALT AND SUBBASE PRIOR TO SUBBASE PLACEMENT.
- PAVEMENT DESIGN SHALL BE PROVIDED IN ACCORDANCE WITH THE PAVEMENT DESIGN GUIDE FOR SUBDIVISION AND SECONDARY ROADS IN VIRGINIA. FOR PRIMARY ROADS AND INTERSTATE HIGHWAYS WHERE TRUCK TRAFFIC EXCEEDS 5%, PAVEMENT DESIGN SHALL BE PROVIDED IN ACCORDANCE WITH AASHTO GUIDELINES. TYPICAL PAVEMENT SECTIONS SHALL DEPICT THE TOP 6" OF THE SUBGRADE IMMEDIATELY UNDER THE PAVEMENT STRUCTURE COMPACTED TO 100% OF THE THEORETICAL MAXIMUM DRY DENSITY.
- ALL UNTREATED AGGREGATE USED IN BASE OR SUBBASE COURSES SHALL BE 21B, EXCEPT ON ROADS WITH AN ADT OF 1000 VPD OR LESS, WHERE 21A AGGREGATE MAY BE USED. WHEN 21B AGGREGATE IS USED, UD-4 UNDERDRAINS MUST BE PROVIDED.
- A 4" (MIN.) LAYER OF STONE IS REQUIRED BENEATH CURB AND GUTTER (MAY BE SHOWN ON TYPICAL SECTION IN LIEU OF A NOTE).
- THE ENTIRE SURFACE OF THE ROADWAY (OLD AND NEW PORTIONS) SHALL BE OVERLAID AND RE-STRIPED AS REQUIRED BY VDOT PERSONNEL. OVERLAY OF EXISTING PAVEMENT SHALL BE A MINIMUM OF 1.25" DEPTH; ANY COSTS ASSOCIATED WITH PAVEMENT OVERLAY, OR THE MILLING OF EXISTING PAVEMENT TO OBTAIN REQUIRED DEPTH, SHALL BE ASSUMED BY THE DEVELOPER.
- A SMOOTH GRADE SHALL BE MAINTAINED FROM THE CENTERLINE OF THE EXISTING ROAD TO THE PROPOSED EDGE OF PAVEMENT TO PRECLUDE THE FORMING OF FALSE GUTTERS AND/OR THE PONDING OF ANY WATER IN THE ROADWAY.
- ASPHALT PAVEMENT WIDENING SHALL CONFORM TO VDOT STANDARD WP-2.
- ANY TYPE OF REVERSE CURB (SPILL CURB, CG-6R, ETC.) AND TRANSITION TO THESE CURBS SHALL NOT BE USED WITHIN THE PUBLIC RIGHT OF WAY.
- THE COUNTY/TOWN SHALL OBTAIN A PERMIT FOR ALL SIDEWALKS/CROSSWALKS WITHIN THE RIGHT OF WAY THAT DO NOT QUALIFY FOR VDOT MAINTENANCE.
- ADDITIONAL DITCH LININGS OR SILTATION AND EROSION CONTROL MEASURES SHALL BE PROVIDED, AT THE DEVELOPER'S EXPENSE, AS DETERMINED NECESSARY BY VDOT AND/OR THE COUNTY/TOWN DURING FIELD REVIEW. ALL COSTS SHALL BE ASSUMED BY THE DEVELOPER.
- STANDARD GUARDRAILS AND/OR HANDRAILS SHALL BE INSTALLED AT HAZARDOUS LOCATIONS AS DESIGNATED DURING FIELD REVIEW BY THE COUNTY/TOWN INSPECTOR OR VDOT.
- A LANDSCAPING AND IRRIGATION SYSTEMS PLAN SHALL BE SUBMITTED FOR VDOT APPROVAL PRIOR TO INSTALLING ANY LANDSCAPING AND IRRIGATION SYSTEMS WITHIN THE PUBLIC RIGHT OF WAY.
- FLOWERS, SHRUBS, TREES, AND IRRIGATION SHALL NOT BE PLACED WITHIN STATE MAINTAINED RIGHT OF WAY LIMITS WITHOUT AN APPROVED SET OF PLANS AND AN APPROVED PLANTING AGREEMENT. NO IRRIGATION (SPRINKLER) SYSTEMS, BRICK COLUMNS, END WALLS, AND/OR BRICK MAILBOXES WILL BE CONSTRUCTED OR INSTALLED WITHIN STATE MAINTAINED RIGHT OF WAY LIMITS WITHOUT A PERMIT. ANY OF THE ABOVE ITEMS FOUND IN THE RIGHT OF WAY WITHOUT A PERMIT WILL BE REMOVED, AND ALL COSTS OF THE REMOVAL WILL BE BORNE BY THE OWNER AND/OR DEVELOPER.
- TRAFFIC CONTROL DEVICES OR ADVISORY SIGNS, SUCH AS MULTIWAY STOPS, SPEED LIMITS, WATCH FOR CHILDREN, PEDESTRIAN TRAFFIC ETC., SHALL NOT BE INSTALLED UNLESS SPECIFICALLY APPROVED BY VDOT TRAFFIC ENGINEERING SECTION. SHOULD UNAPPROVED SIGNS BE NOTED AT THE TIME OF VDOT INSPECTION, THE ROAD ACCEPTANCE PROCESS SHALL BE TERMINATED IMMEDIATELY AND NOT RECOMMENDED UNTIL A DETERMINATION IS MADE REGARDING THE APPROVAL OF ANY ADDITIONAL SIGNS. IMMEDIATE REMOVAL OF SUCH SIGNS SHALL NOT NEGATE THE NEED FOR THE SUBMISSION OF A REVISION.
- A SPEED STUDY CERTIFIED BY A PROFESSIONAL ENGINEER SHALL BE SUBMITTED FOR VDOT APPROVAL PRIOR TO THE STREET ACCEPTANCE FOR ANY ROAD TO BE POSTED OTHER THAN THE STATUTORY SPEED LIMIT.
- THE DEVELOPER IS RESPONSIBLE FOR ALL TRAFFIC CONTROL. THE DEVELOPER SHALL SUBMIT A SIGNING, STRIPING AND/OR SIGNALIZATION PLAN TO THE VDOT LAND DEVELOPMENT SECTION PRIOR TO PERMIT APPLICATION. THE DEVELOPER SHALL NOT COMMENCE CONSTRUCTION OF ANY PAVEMENT COURSE WITHOUT AN APPROVED STRIPING PLAN.
- THE DEVELOPER IS RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ANY TRAFFIC SIGNAL INSTALLATION OR MODIFICATION WHICH WILL BE NECESSARY AS A RESULT OF THE DEVELOPMENT OF THIS SITE.
- DURING CONSTRUCTION, THE MAINTENANCE OF TRAFFIC SHALL CONFORM TO THE REQUIREMENTS IN THE MOST RECENT VERSION OF THE VIRGINIA WORK AREA PROTECTION MANUAL AND THE MUTCD.
- THE ENGINEER OF RECORD, WHOSE PROFESSIONAL SEAL IS AFFIXED TO THIS PLAN, IS RESPONSIBLE TO ENSURE ALL VDOT STANDARDS ARE MET HEREIN. VDOT REVIEW AND SIGNATURE OF THIS PLAN SHALL NOT BE INTERPRETED AS A GUARANTEE THE PLAN IS WITHOUT ERROR. THAT IS SOLELY THE RESPONSIBILITY OF THE ENGINEER OF RECORD.
- ANY FIXTURES OR FEATURES BEING PLACED WITHIN THE VDOT RIGHT OF WAY THAT DO NOT SERVE THE GENERAL PUBLIC WILL REQUIRE A SEPARATE LAND USE PERMIT (LUP-A) AND COVENANT OF PERPETUAL MAINTENANCE (CPM).



TYPICAL PAVEMENT SECTION FOR SWM POND ACCESS ROAD



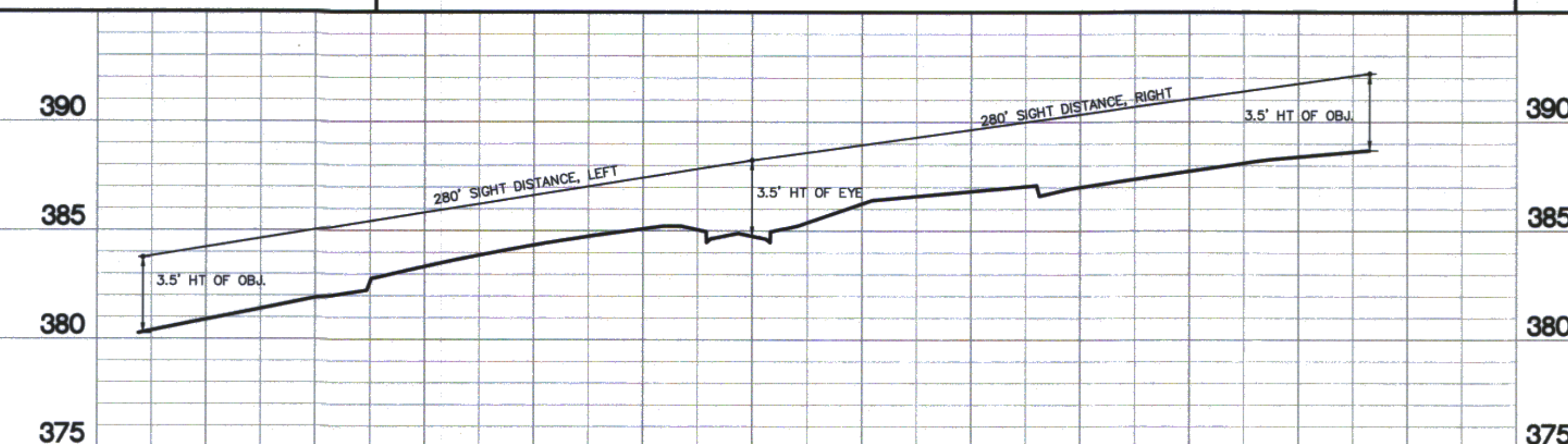
Adopted June 17, 2014 Exhibit 21 Effective July 1, 2014



- POST MAY BE SET IN TAMPED EARTH OR CONCRETE CLASS A3 IN ACCORDANCE WITH VDOT'S ST-1 DETAIL.
- BREAK-AWAY POSTS ARE OPTIONAL.

VPD:

THE VPD COUNTS SHOWN ON THIS PLAN ARE BASED UPON THE RATES FOR SINGLE FAMILY DETACHED PER THE PRINCE WILLIAM COUNTY DESIGN AND CONSTRUCTION STANDARDS MANUAL:
SINGLE FAMILY DETACHED: 10.1 TRIPS PER DAY x 25 UNITS = 253 VPD



INTX. JEWELL COURT AND CLOVERLAND LANE
DESIGN SPEED = 25 mph

SITE TABULATION

GPIN: 7297-27-9016 ZONE: SR-1 (CLUSTER) USE: SINGLE FAMILY DETACHED PROPOSED LOTS: 25 SITE AREA: 36.14 AC. PROJECT AREA: 28.16 AC. LOT AREA: 12.57 AC. STREET DEDICATION: 2.03 AC. OPEN SPACE: 21.47 AC. (59.41%) OPEN SPACE REQUIRED: 12.65 AC. (35%)	MINIMUM LOT SIZE: 20,000 SF. MINIMUM WIDTH: 100' MINIMUM WIDTH CUL-DE-SAC: 80' MAXIMUM LOT COVERAGE: 30% MINIMUM BUILDING SETBACK REQUIREMENTS: FRONT: 35' REAR: 25' SIDE: 10' SIDE (CORNER LOT): 20' PARKING REQUIRED: 2 SP/DWELLING UNIT (50) (EXCLUSIVE OF GARAGE) PARKING PROVIDED: 50 SPACES (DRIVEWAY)
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ENGINEERING GROUPE PROJECT STATUS

DATE	ACTION
4/18/23	ADDRESS COUNTY COMMENTS
3/10/23	ADDRESS COUNTY COMMENTS
2/27/23	ADDRESS PWCSA COMMENTS
1/10/23	2ND SUBMISSION TO COUNTY
10/14/22	1ST SUBMISSION TO COUNTY

The Engineering Groupe Inc.
 Engineers | Surveyors | Planners
 www.enggroupe.com
 South Office
 10333 Southpoint Landing Blvd, Suite 121
 Fredericksburg, VA 22407
 Phone: 703.670.0985
 West Office
 42795 Generation Drive, Suite 200
 Ashburn, VA 20147
 Phone: 703.670.0985

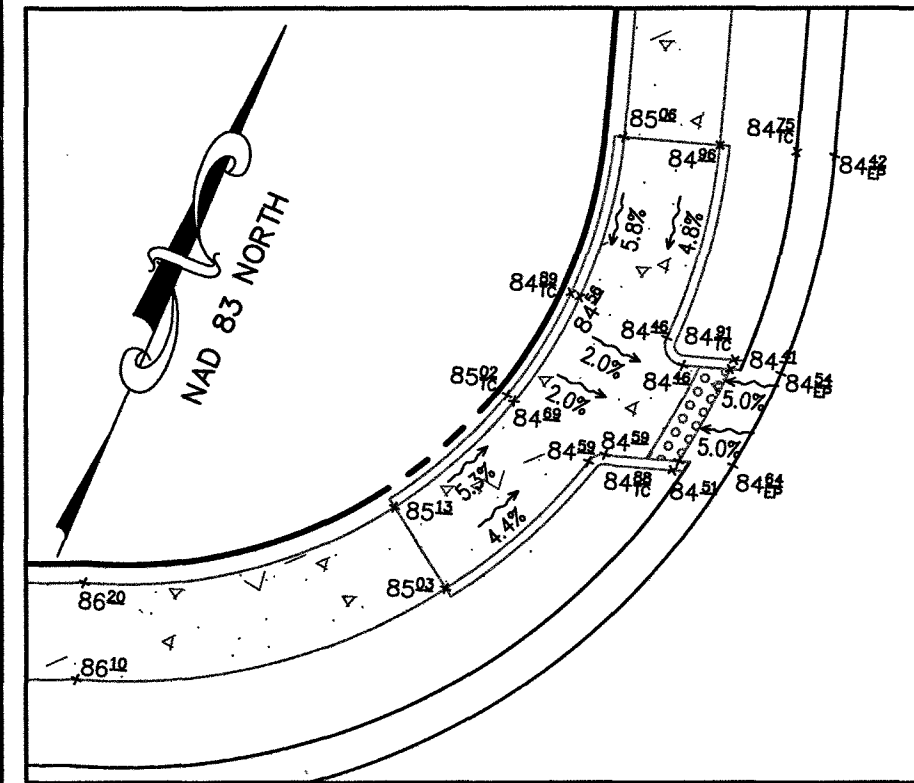
WILLIAMS PROPERTY
 BRENTSVILLE MAGISTERIAL DISTRICT
 PRINCE WILLIAM COUNTY, VIRGINIA

NOTES
 DETAILS, TYPICAL SECTIONS, AND SIGHT DISTANCE PROFILE

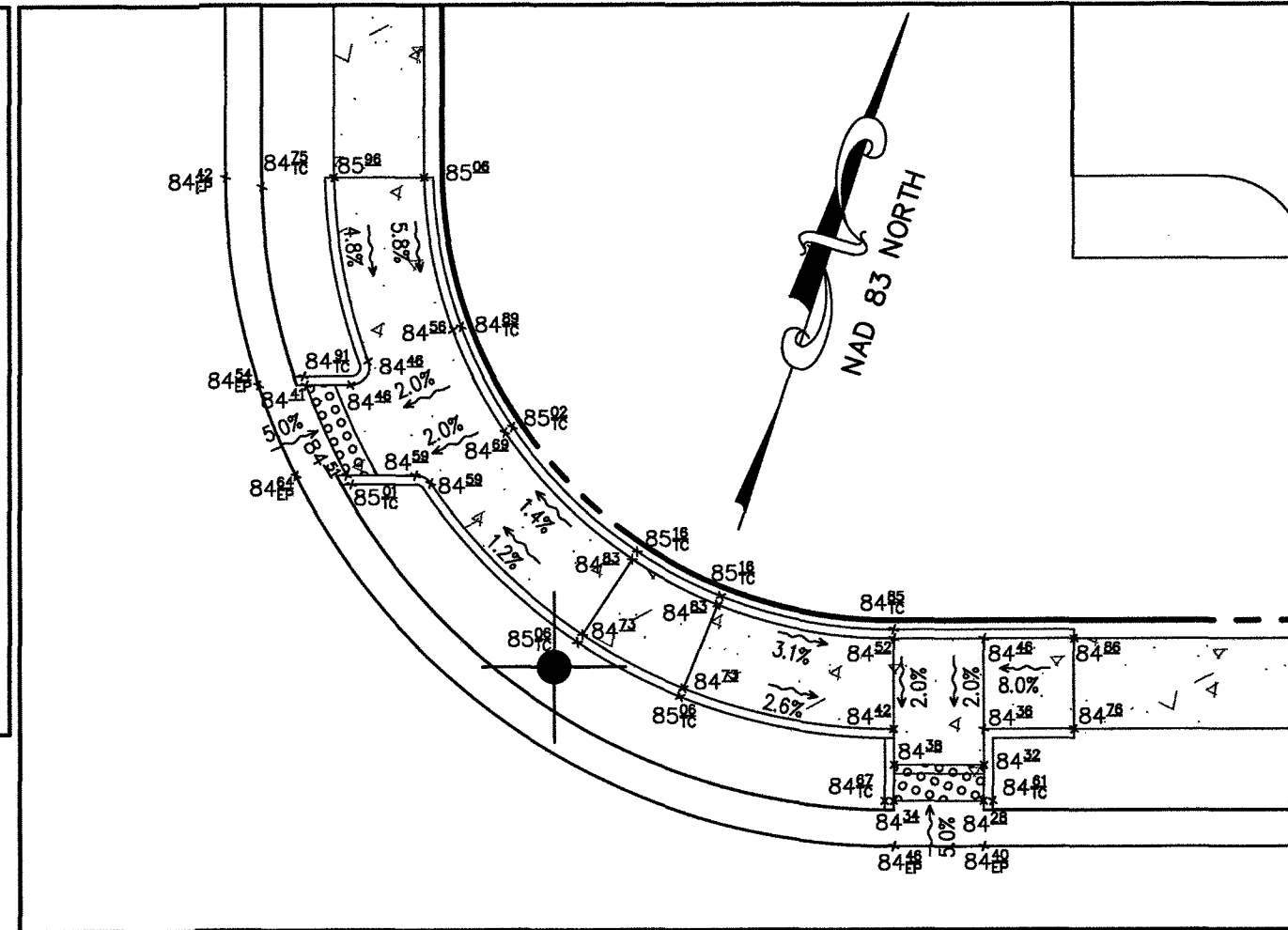
DATE: SEPT. 30, 2022
SCALE: AS SHOWN
DESIGNER: VF, MPC, JB
DRAFTSMAN: MPC, JB, YQ, ZS
FILE NO.: SP-449
SHEET 2 OF 42

Detail No. 650.52	SNS-1	COUNTY OF PRINCE WILLIAM VIRGINIA	STREET NAME SIGN STANDARD SHEET 1 OF 2	Date 7/15/14
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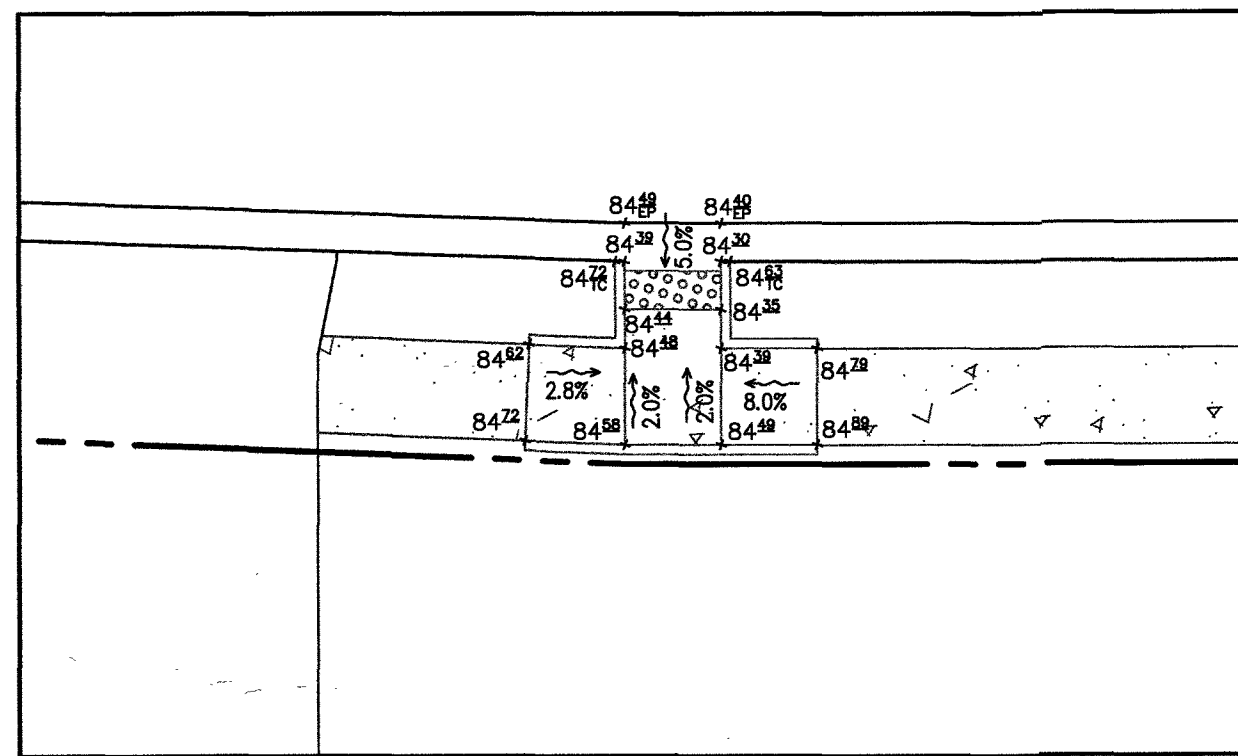
CG-12C RAMP 1
SCALE: 1"=10'



CG-12B RAMP 2 & CG-12C RAMP 3
SCALE: 1"=10'

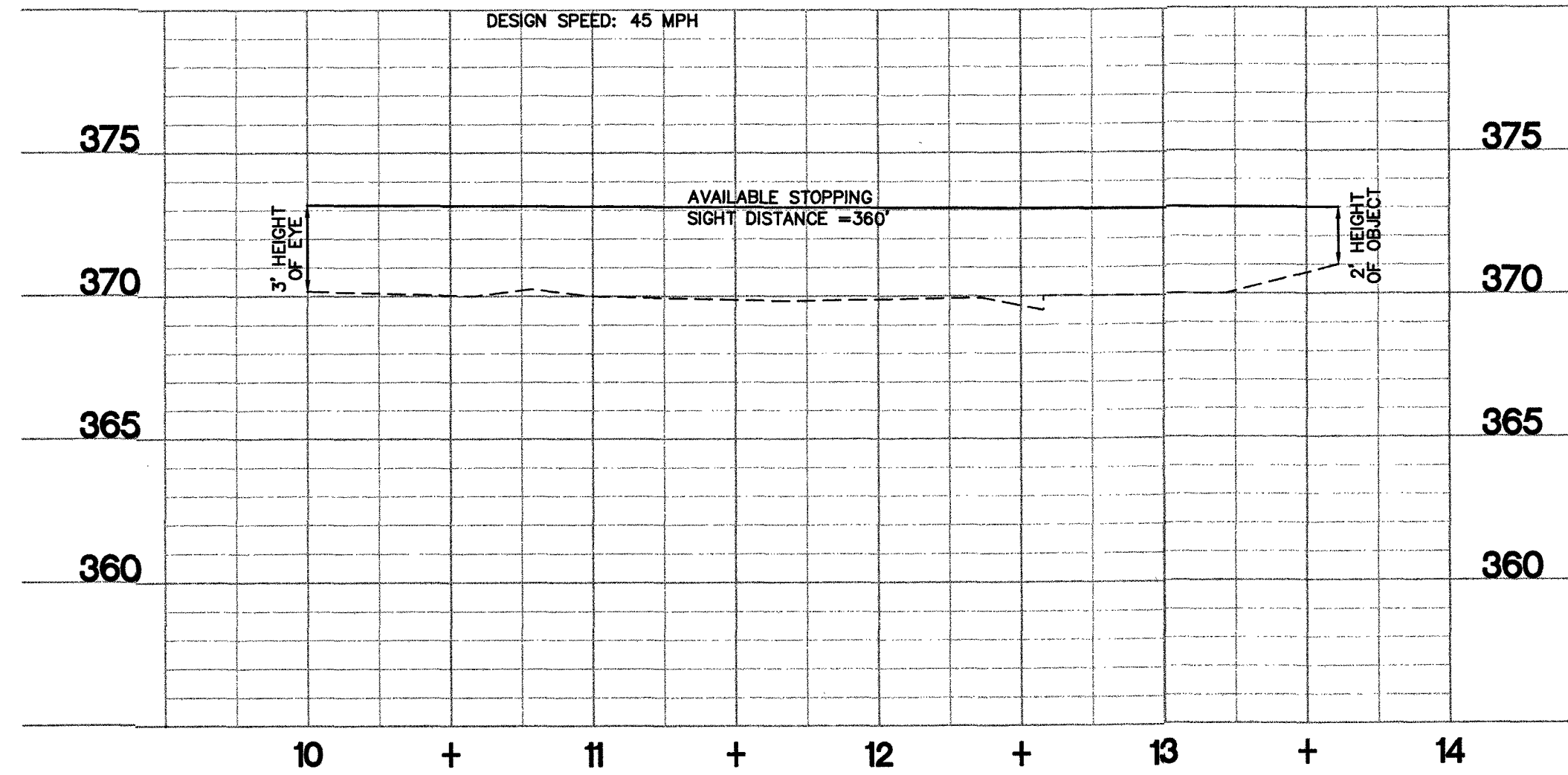


CG-12C RAMP 4
SCALE: 1"=10'



STOPPING SIGHT DISTANCE
FOR SWM ACCES ROAD

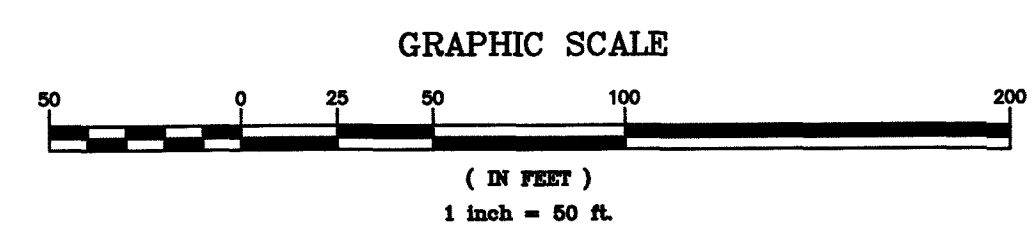
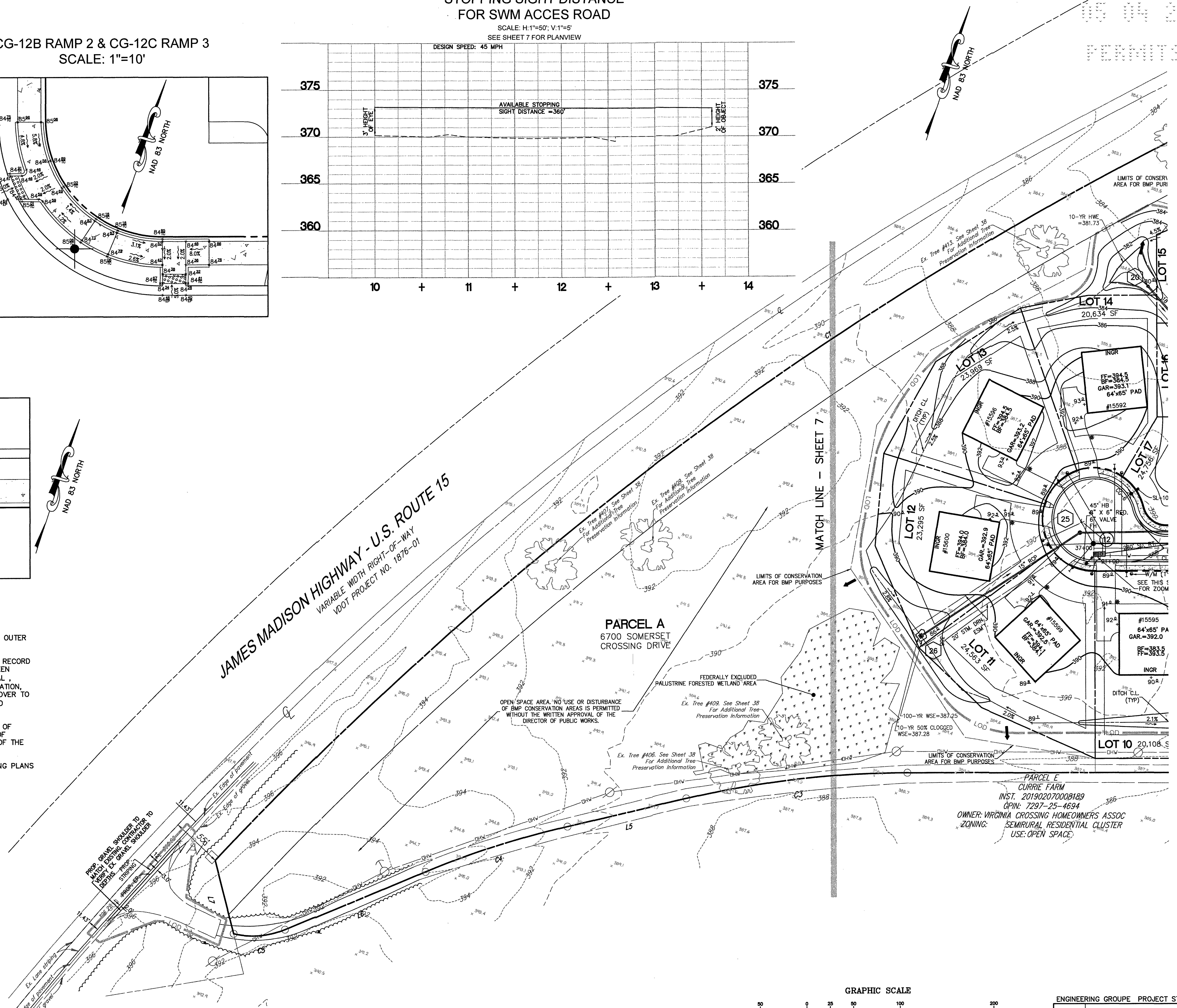
SCALE: H:1"=50'; V:1"=5'
SEE SHEET 7 FOR PLANVIEW
DESIGN SPEED: 45 MPH



- NOTES:
- ALL WATERMETERS ARE TO HAVE A MINIMUM 1' SEPARATION FROM THE OUTER EDGE OF THE WATERMETER TO THE EDGE OF THE DRIVEWAY.
 - AFTER THE CONSTRUCTION IS COMPLETE, GEOTECHNICAL ENGINEER OF RECORD SHALL PROVIDE A WRITTEN CERTIFICATION THAT THE SLOPES HAVE BEEN CONSTRUCTED (INCLUDING BUT NOT LIMITED TO THE TYPE OF MATERIAL, DEGREE OF COMPACTION, DEPTH AND SPACING OF PILES/PIERS; LOCATION, LENGTH, SPACING, STRENGTH AND TYPE OF GEOGRID, AND GROUND COVER TO PROTECT THE SLOPE) IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS.
 - AFTER THE CONSTRUCTION IS COMPLETE, THE PROJECT CIVIL ENGINEER OF RECORD OR LAND SURVEYOR DULY LICENSED IN THE COMMONWEALTH OF VIRGINIA SHALL PROVIDE A WRITTEN CERTIFICATION ON THE GRADIENT OF THE CONSTRUCTED SLOPE AS DIRECTED BY THE COUNTY STAFF.
 - THIS PLAN IS NOT A FINAL LOT GRADING PLAN. INDIVIDUAL LOT GRADING PLANS ARE REQUIRED.
 - CURB RADII SHOWN WERE TAKEN ALONG FACE OF CURB.
 - SEE SHEET 11 FOR OVERLAND RELIEF COMPUTATIONS.

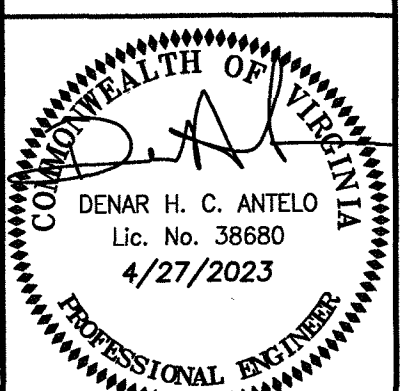
* YARD LIGHT

JAMES MADISON HIGHWAY - U.S. ROUTE 15
VARIABLE WIDTH RIGHT-OF-WAY
VDOT PROJECT NO. 1876-01



DATE	ACTION
4/19/23	ADDRESS COUNTY COMMENTS
3/10/23	ADDRESS COUNTY COMMENTS
2/27/23	ADDRESS PWCSA COMMENTS
1/10/23	2ND SUBMISSION TO COUNTY
10/14/22	1ST SUBMISSION TO COUNTY

DATE	ACTION
SEPT. 30, 2022	



WILLIAMS PROPERTY
BRENTSVILLE MAGISTERIAL DISTRICT
PRINCE WILLIAM COUNTY, VIRGINIA

NO.	DATE	COUNTY REVISIONS

The Engineering Group Inc.
Engineers | Surveyors | Planners
www.enggroup.com
South Office
10333 Southampton Landing Blvd, Suite 121
Farmingdale, NY 11737
PH: 718.670.0985
West Office
42795 Generation Drive, Suite 200
Woodbridge, VA 22191
PH: 703.670.0985

GENERAL PLAN INFORMATION

Project Plan Name: Williams Property
 Prince William County Plan Number: SDR 2023-00016
 Engineering Firm: The Engineering Group, Inc.
 Project Location: South of the intersection of James Madison Highway (U.S. Route 15) and Somerset Crossing Drive.

SERVICE AREA INFORMATION

Pressure Zone: Haymarket
 High Hydraulic Grade Line (ft): 535
 Low Hydraulic Grade Line (ft): 515
 Sewer Shed: North Branch
 Local Facility Charge: Not Applicable
 Master Plan Utility Adjustment Applicable: No

PROJECT METRICS

WATER MAIN			GRAVITY SANITARY SEWER MAIN		
Size:	Length:	Material:	Size:	Length:	Material:
8-inch	1467	DIP	8-inch	1484	C-900
12-inch	0		10-inch	0	
16-inch	0		12-inch	0	
18-inch	0		16-inch	0	
Total Length 1467 Feet			Total Length 1484 Feet		

LOW PRESSURE FORCE MAIN			PUMP STATION FORCE MAIN		
Size:	Length:	Material:	Size:	Length:	Material:
1.5-inch	0		4-inch	0	
2-inch	0		6-inch	0	
2.5-inch	0		8-inch	0	
3-inch	0		12-inch	0	
Total Length 0 Feet			Total Length 0 Feet		

Total Number of 4-inch or 6-inch proposed valves: 4 Each
 Total Number of 8-inch or 12-inch proposed valves: 4 Each
 Total Number of 16-inch or 24-inch proposed valves: 0 Each

Total Number of Proposed Manholes: 4 Each
 Total Number of Proposed Fire Hydrants: 4 Each
 Total Number of Proposed Residential Meter Cocks to be Installed: 25 Each
 Total Number of 5/8"x 3/4" Residential Meters to be Certified: 25 Each

PIPE TOTALS FOR FEE CALCULATIONS

Pipe Quantity Summary	Total Project Quantities Proposed By This Plan	Quantities Previously Approved & Permitted by Plan #	Net Increase
WATER MAIN INSPECTION	1467		
WATER MAIN AS-BUILT	1467		
SANITARY SEWER / FORCE MAIN INSP.	1484		
SANITARY SEWER/FORCE MAIN AS-BUILT	1484		
TV SANITARY SEWER MAIN INSPECTION	1484		

Minimum water main inspection fee applies for water quantities less than 100 feet: No
 Minimum sanitary sewer / force main inspection fee applies for quantities less than 100 linear feet: No
 Minimum as-built fee applies when total as-built cost are less than \$1000.00: No

THRUST RESTRAINT ASSUMPTIONS FOR CALCULATIONS

The profile shall call out the station restraint to start and the station restraint is end for each fitting, reducer, and dead end.

Pipe Material: DIP - POLYWRAP
 Soil Type: Fine Grained Soils ML - Inorganic silts, very fine sands, rock flour, silty or clayey fine sands (backfilled using native)
 Safety Factor: (1.5 to 1 is typical) 1.5 to 1
 Trench Type: (Type 4 is typical for the Service Authority backfill requirements) Type 4
 Test Pressure: (100 psi plus their max static pressure, but no less than 200 psi) 200 psi

DESIGNATION OF THE RESPONSIBLE PARTY & AS-BUILT RELEASE OF PLANS

The undersigned Engineer and/or firm, on behalf of itself and its successors, does hereby assume full liability and responsibility for the accuracy of the calculations, selections made, or information presented in this information sheet and agrees to hold harmless the Service Authority from any claim.

The undersigned Engineer and/or firm agrees that the Prince William County Service Authority shall have the right to use these plans and electronic files for the preparation of as-built records, as necessary. The Engineer and/or firm further agrees that the right to use the plans and electronic files shall be provided without cost to the Service Authority.

Signature: DENAR H. C. ANTELO (Type or Print)

HYDRAULIC SUMMARY

Maximum static water pressure in the proposed water system: 57 psi
 Minimum static water pressure in the proposed water system: 52 psi
 Information above is provided from the hydraulic model with applied maximum day water demands.

FIRE FLOW SUMMARY

Available Fire Flow: 1,000 gpm
 Lowest Residual Pressure during a fire flow scenario: 37 psi
 Information above is provided from the hydraulic model with applied maximum day and fire flow water demands.
 Are residential fire sprinkler systems proposed? No

DELIVERY PRESSURE SUMMARY

High Hydraulic Grade Line: 535 feet
 Lowest Finished Floor Elevation proposed within the development: 372.2 feet
 Estimated highest static pressure at the finished floor elevation: 71 psi
 Low Hydraulic Grade Line: 515 feet
 Highest Finished Floor Elevation proposed within the development: 394.5 feet
 Estimated lowest static pressure at the finished floor elevation: 52 psi

Estimates are made with an assumed high and low hydraulic grade line and do not take into account the effects of friction loss or water booster pumps in the water system. Actual pressures may vary and delivery pressures are not guaranteed.

International Residential Code P2903.3 Minimum static pressure (as determined by the local water authority) at the building entrance for either public or private water service shall be 40 psi (276 kPa).

International Residential Code P2903.3.1 Maximum pressure. Maximum static pressure shall be 80 psi (551 kPa). When main pressure exceeds 80 psi (551 kPa), an approved pressure-reducing valve conforming to ASSE 1003 shall be installed on the domestic water branch main or riser at the connection to the water-service pipe.

Note: The professional engineer is responsible to account for the effects of friction loss on the delivery pressure at the finished floor elevation from the service line, meter, and other plumbing appurtenances. The Service Authority requires calculations to size the private service lines when delivery pressures are 45 psi or less and the service line is in excess of 70 feet.

The hydraulic design and all finished floor elevations comply with the applicable plumbing code for pressure without a water booster pump or pressure reducing device.

The use of private water booster pumps and/or pressure reducing devices are required for the following lots to comply with applicable plumbing code for pressure.

Lot or Block ID	Elev. @ Finished Floor (ft)	High Hydraulic Grade Line (ft)	Low Hydraulic Grade Line (ft)	Estimated High Press. (psi)	Estimated Low Press. (psi)	Private Water Booster P. Needed	Pres. Red. Device
1		535	515				
2		535	515				
3		535	515				

AWWA WATER DEMAND ESTIMATE AND METER SIZING USING FUTURE VALUES
 (Based on AWWA M22 Manual, Second Edition)

Building Identifier: _____
 Multi-Dwelling Residential or Non-Residential: Low Demand (e.g. Multi-Family Residential)

Maximum static water pressure at the meter location: 60 psi
 (Obtained from hydraulic study at the meter location)

Fixture or Appliance	Fixture Value (at 60 psi)	Number of Fixtures	Subtotal Fixture Value
Toilet (tank)			
Toilet (flush valve)			
Urinal (wall or stall)			
Urinal (flush valve)			
Bidet			
Shower (single head)			
Sink / Faucet (Lavatory)			
Kitchen Sink			
Utility Sink			
Dishwasher			
Bathtub			
Clothes Washer			
Hose Connections (with 50 ft of hose)			
1/2 in.			
5/8 in.			
3/4 in.			
Miscellaneous			
Bedpan washers			
Drinking fountains			
Dental units			
Combined Fixture Value			0
Demand (gpm) from AWWA Curve			0.0
Pressure Adjustment Factor			1
Adjusted demand (gpm)			0
Irrigation Demand (gpm) that will occur simultaneously with normal water use			0
Water demand for equipment will occur simultaneously with normal water use			0
Total estimated peak flow			0
Required AWWA Meter Size			FALSE

GENERAL NOTES

- Methods and materials used in the construction of water mains, sanitary sewer mains, force mains and appurtenances shall be in conformance with the current Prince William County Service Authority (Service Authority) Utility Standards Manual (USM) and the Virginia Department of Health Regulations.
- Acceptance of these plans by the Service Authority will in no way relieve the owner from complying with the methods, policies or requirements stated in the Service Authority's USM.
- Service Authority has Local Review Authority for water mains up to and including 18-inch and sanitary sewer mains up to and including 24-inch. Utilities outside the Service Authority's Local Review Authority, including low pressure force mains systems, are subject to the review, approval and permitting process of either the Virginia Department of Health Office of Drinking Water or Department of Environmental Quality. It is the Professional Engineer's responsibility to submit all necessary applications and plans and to secure all applicable plan approvals and permits from the different governing authorities.
- Trees, fences, monuments, signs, entrance features, sheds, decks, overhanging canopies, or permanent structures shall not be placed in easements dedicated to the Service Authority without written permission from the Service Authority.
- The contractor shall notify the Service Authority Inspection Manager at least two (2) business days, but not more than ten (10) business days, prior to the commencement of demolition, excavation or blasting in areas with underground water mains, sanitary sewer mains, and/or force mains.
- All subdivision will require an address listing approved by the Prince William County Mapping Office. The address listing must be presented to the Service Authority at the time the utility permit is issued. Forms are available at the Service Authority. (Fax copies are not acceptable.)
- Low pressure sewer force main systems are subject to the review and requirements of the Virginia Department of Environmental Quality.
- The developer is responsible for all costs associated with damages to or relocation of water mains, sanitary sewer mains, force mains or service lines caused by the construction of this project.
- The contractor shall coordinate all relocation of water mains, sanitary sewer mains and/or force mains with the Service Authority's Field Inspector. Water or sanitary sewer system shutdowns will not be executed without the prior approval of the Service Authority Field Inspector. The Field Inspector shall require the contractor to submit a relocation work plan for Service Authority acceptance prior to the commencement of the relocation work. The work plan will detail how the work will be done and the manpower, materials, and equipment that will be at the site to perform the work.
- The Service Authority does not guarantee the availability or construction of utilities that are proposed by another entity even if those utilities are shown as existing in this plan set. If needed utilities shown as existing are not available or do not exist, it is the developer's responsibility to acquiring the necessary rights and permits to install on-site and off-site water and sanitary sewer utilities to provide the desired service.
- Existing unused water service lines shall be exposed at the connection point on the water main and shall be cut and terminated (e.g. crimped) as directed by the Service Authority Field Inspector.
- Existing unused laterals or sanitary service lines shall be cut and capped at the connection point to the sanitary sewer main or force main as directed by the Service Authority Field Inspector.
- When an existing water service line, lateral, of sanitary service line will be reused as part of a new development, the Service Authority shall inspect the existing service line to insure that it is acceptable and meets current Service Authority material specifications. Any defects or out-of-date materials shall be repaired or replaced to the satisfaction of the Service Authority to ensure the service line is water tight before the existing service line is placed back in service.

Engineer's Seal & Signature

Service Authority
 Prince William County

Water & Sanitary Sewer Information Sheet
 Sheet effective as of September 1, 2019

SHEET 1 OF 2

METER SCHEDULES

MULTI-DWELLING METER SCHEDULE

Building Identifier	Building Address	Meter Use	Account Type	Number of Dwelling Units	Peak Demand (GPM)	ERU Purchase	Meter Size	Meter Type	(Reserved for Future Use)	(Reserved for Future Use)	Non-Binding Estimated Availability Fee
						#N/A					
						#N/A					
						#N/A					
						#N/A					
						#N/A					
						#N/A					
						#N/A					
						#N/A					
						#N/A					

NOTES:
 1 A fixture unit list and meter sizing calculations shall be provided in the plan set for each proposed meter in accordance with the current AWWA M22 standard.
 2 The number of ERUs for a multi-family building is 50% of the total number of dwelling units associated with the meter and is rounded up to the next full unit.
 3 For water only accounts, the minimum purchased number of ERU units must match the allocation with the meter size as defined in Table VI. Availability Fees of the Customer Handbook.
 4 The Availability Fee is not the total fee due. New connections may be subject to the following fees: meter, meter installation, sewer and/or water inspection, application and Local Facility charges. See the Customer Handbook for additional information.

NON-RESIDENTIAL METER SCHEDULE

Building Identifier	Building Address	Meter Use	Account Type	Est. Max Month Consumption (Gallons)	Peak Demand (GPM)	ERU Purchase	Meter Size	Meter Type	(Reserved for Future Use)	(Reserved for Future Use)	Non-Binding Estimated Availability Fee

NOTES:
 1 For meters 2-inch and larger the maximum month water consumption shall be reported. The purchased number of ERUs shall be based on the estimated maximum month consumption, but shall not be less than the allocated number of ERUs associated with the meter size. For meters smaller than 2-inch, the maximum month water consumption does not need to be reported.
 2 A fixture unit list and meter sizing calculations shall be provided in the plan set for each proposed meter in accordance with the current AWWA M22 standard.
 3 For all meters the minimum purchased number of ERU units must match the allocation with the meter size as defined in Table VI. Availability Fees of the Customer Handbook.
 4 The Availability Fee is not the total fee due. New connections may be subject to the following fees: meter, meter installation, sewer and/or water inspection, application and Local Facility charges. See the Customer Handbook for additional information.

DATA CENTER METER SCHEDULE

Building Identifier	Building Address	Meter Use	Account Type	Est. Max Month Consumption (Gallons)	Peak Demand (GPM)	ERU Purchase	Meter Size	Meter Type	Meter Manufacturer	Flow Rate (gpm)	Non-Binding Estimated Availability Fee

NOTES:
 1 For sewer only meters and 3-inch meters and larger, the purchased number of ERUs shall be based on the estimated maximum month consumption, but shall not be less than the allocated number of ERUs associated with the meter size.
 2 A fixture unit list and meter sizing calculations shall be provided in the plan set for each proposed meter in accordance with the current AWWA M22 standard.
 3 For all meters the minimum purchased number of ERU units must match the allocation with the meter size as defined in Table VI. Availability Fees of the Customer Handbook.
 4 The Availability Fee is not the total fee due. New connections may be subject to the following fees: meter, meter installation, sewer and/or water inspection, application and Local Facility charges. See the Customer Handbook for additional information.

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 West Office: 42795 Generation Blvd, Suite 200, Ashburn, VA 20147
 Central Office: 15380 Crowpe Drive, Suite 200, Woodbridge, VA 22192
 PH: 703.670.0925

PWCSA INFORMATION SHEET
WILLIAMS PROPERTY
 BRENTSVILLE MAGISTERIAL DISTRICT
 PRINCE WILLIAM COUNTY, VIRGINIA

COUNTY REVISIONS

DATE

NO.

Service Authority
 Prince William County

Water & Sanitary Sewer Information Sheet
 Sheet effective as of September 1, 2019

SHEET 1 OF 2

DATE: SEPT. 30, 2022

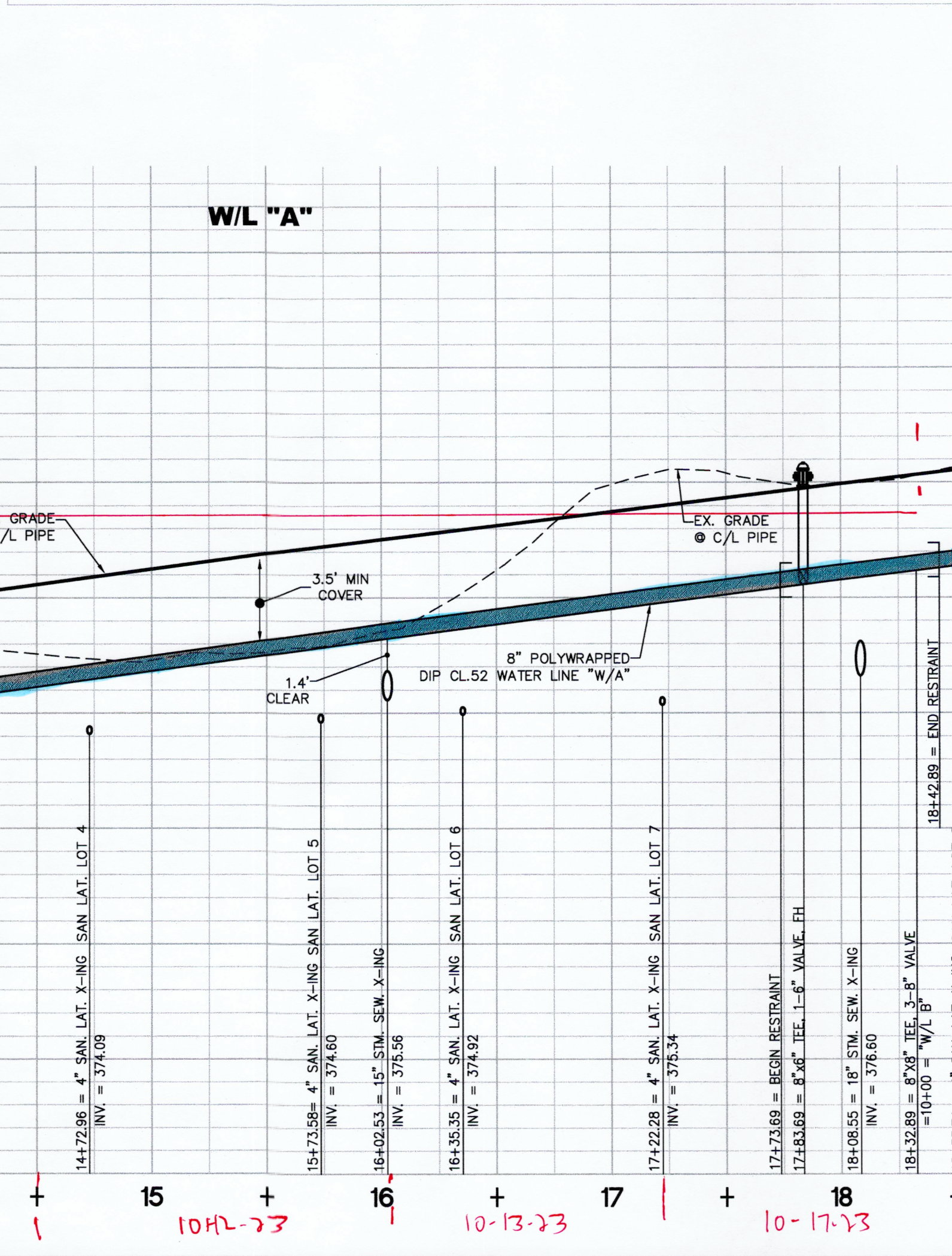
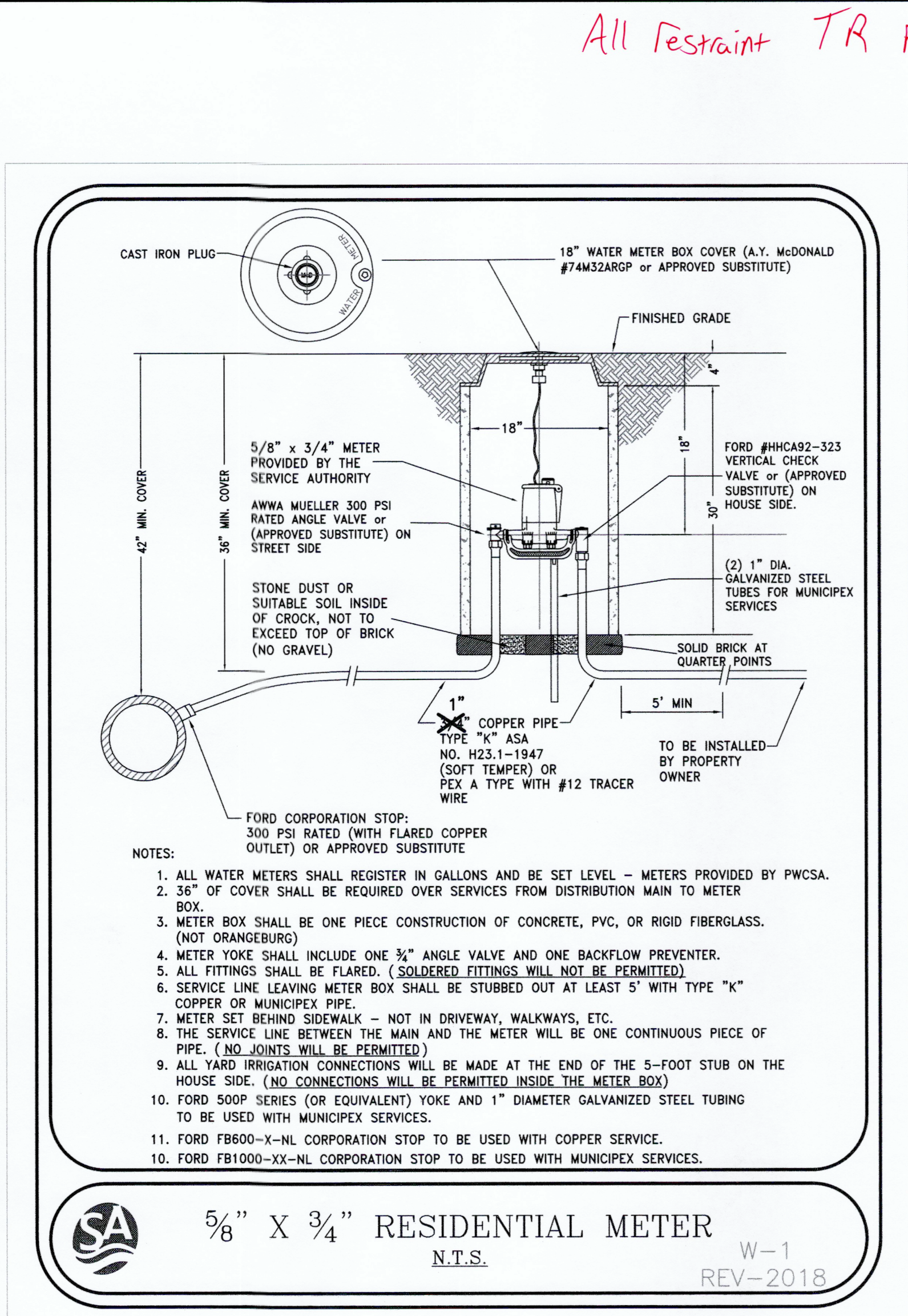
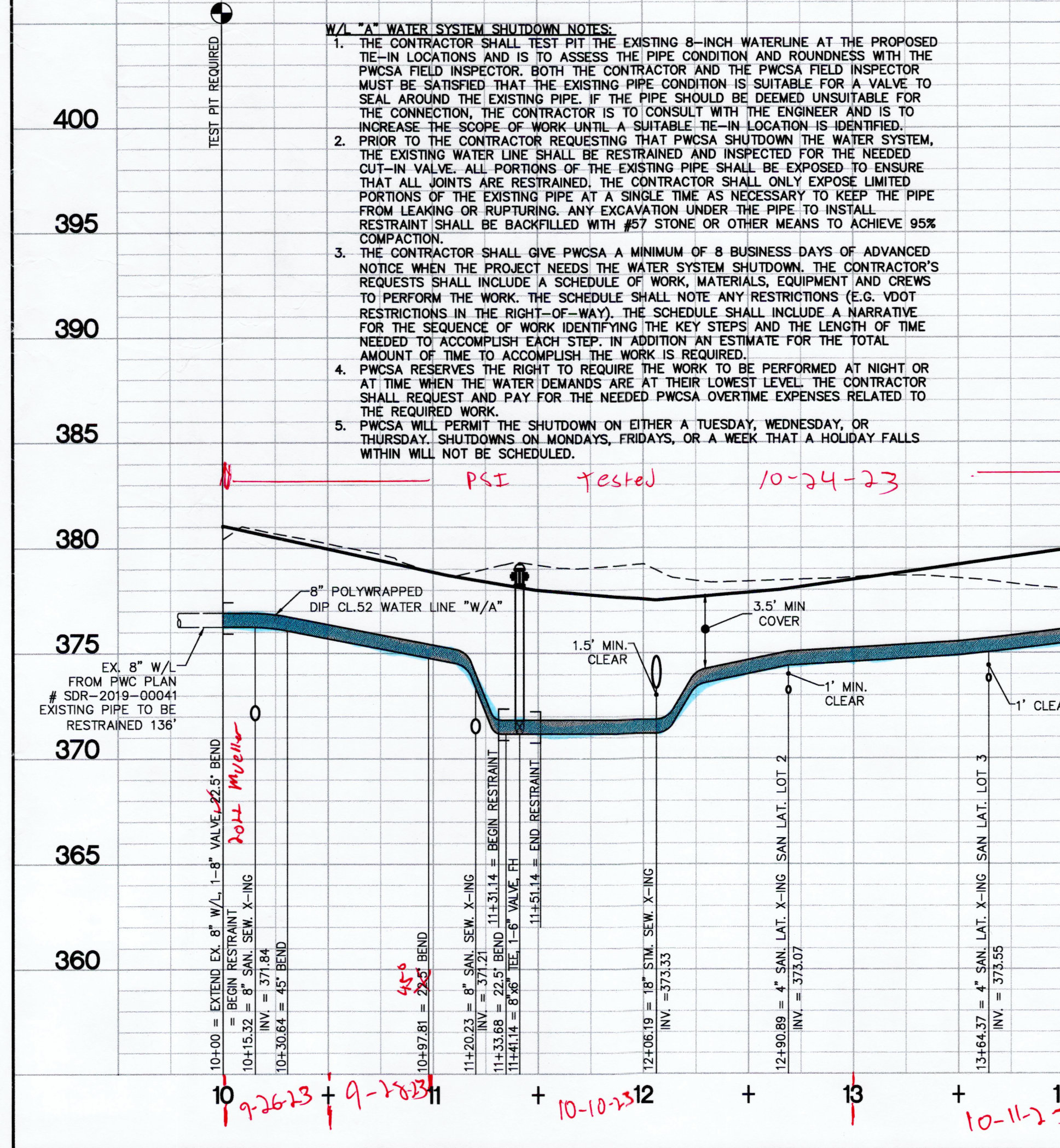
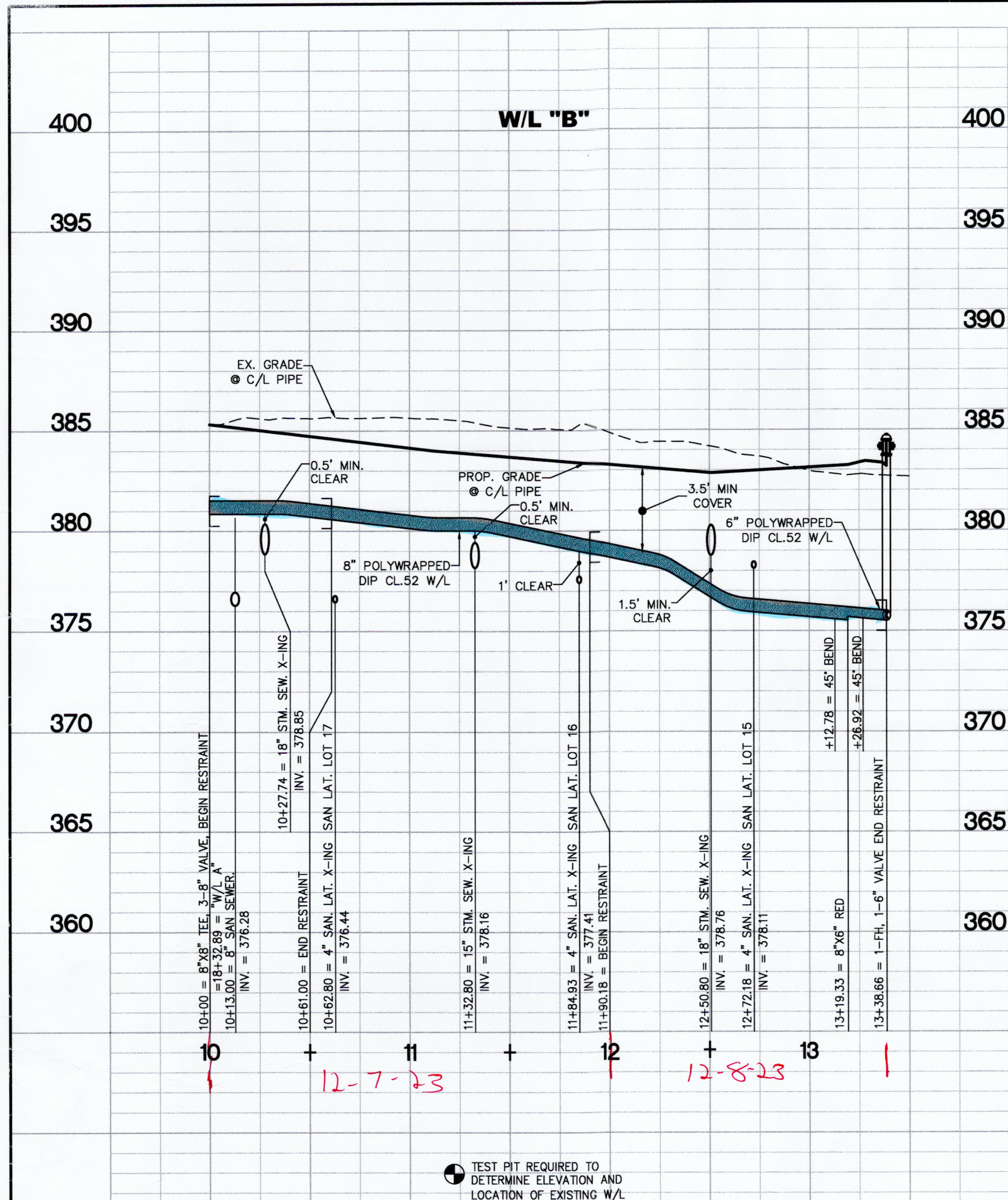
SCALE: N/A

DESIGNER: VF, MPC, JB
 DRAFTSMAN: MPC, JB, YQ

FILE NO. SP-446

ENGINEERING GROUPE PROJECT STATUS

Date	Address	County	Comments
4/19/23			
3/10/23			
2/27/23			
1/10/23			
10/14/22			



SERVICE LINE LOSS COMPUTATIONS

Lot#	Elev @ Finished Floor	Low Hydraulic Grad Line	Static Head (FT)	Static Pressure at FF Elev. (PSI)	Diameter of Service Line	Diameter of Private Line	Total Expected PSI Loss in Ser. Line & Meter	Expected Pressure at FF Elev.	Expected Delivery Pressure at 2nd Floor	Length of PWCSA Service Line	Loss in Line / 100'	Loss in PWCSA Service Line	Length of Private Line	Loss in Private Line	Loss in Meter (PSI)	Head Loss 18 feet from FF (2nd Floor)	
																	Elev.
1	383.5	515	131.5	57.0	1"	1"	4.7	52.3	44.5	26	4.04	1.05	40	4.04	1.62	2	8
2	383.6	515	131.4	57.0	1"	1"	4.5	52.4	44.6	23	4.04	0.93	40	4.04	1.62	2	8
3	385.1	515	129.9	56.3	1"	1"	4.5	51.8	44.0	23	4.04	0.93	40	4.04	1.62	2	8
4	385.6	515	129.4	56.1	1"	1"	4.5	51.5	43.7	23	4.04	0.93	40	4.04	1.62	2	8
5	386.9	515	128.1	55.5	1"	1"	4.5	51.0	43.2	22	4.04	0.89	40	4.04	1.62	2	8
6	390	515	125	54.2	1"	1"	4.5	49.7	41.9	22	4.04	0.89	40	4.04	1.62	2	8
7	390.5	515	124.5	54.0	1"	1"	4.5	49.5	41.7	22	4.04	0.89	40	4.04	1.62	2	8
7	390.5	515	124.5	54.0	1"	1"	4.3	49.6	41.8	18	4.04	0.73	40	4.04	1.62	2	8
7	390.5	515	124.5	54.0	1"	1"	4.3	49.6	41.8	18	4.04	0.73	40	4.04	1.62	2	8
11	394.1	515	120.9	52.4	1"	1"	5.6	45.8	39.0	30	4.04	1.21	60	4.04	2.42	2	8
12	394	515	121	52.4	1"	1"	7.5	45.0	37.2	91	4.04	3.68	45	4.04	1.82	2	8
13	394.5	515	120.5	52.2	1"	1"	8.2	44.1	36.2	98	4.04	3.96	55	4.04	2.22	2	8
14	394.5	515	120.5	52.2	1"	1"	7.9	44.4	36.6	88	4.04	3.56	57	4.04	2.30	2	8
15	388.6	515	126.4	54.8	1"	1"	6.0	48.8	41.0	18	4.04	0.73	80	4.04	3.23	2	8
16	388.6	515	126.4	54.8	1"	1"	4.7	50.1	42.3	18	4.04	0.73	48	4.04	1.94	2	8
17	391.5	515	123.5	53.5	1"	1"	4.9	48.7	40.9	36	4.04	1.45	35	4.04	1.41	2	8
18	387.5	515	127.5	55.3	1"	1"	7.5	47.8	40.0	90	4.04	3.64	45	4.04	1.82	2	8
19	387.5	515	127.5	55.3	1"	1"	4.7	50.6	42.8	22	4.04	0.89	45	4.04	1.82	2	8
20	387.6	515	127.4	55.2	1"	1"	4.7	50.6	42.8	21	4.04	0.85	45	4.04	1.82	2	8
21	387.7	515	127.3	55.2	1"	1"	4.6	50.6	42.8	21	4.04	0.85	43	4.04	1.74	2	8
22	384.6	515	130.4	56.5	1"	1"	4.5	52.0	44.2	22	4.04	0.89	40	4.04	1.62	2	8
23	383.5	515	131.5	57.0	1"	1"	4.5	52.5	44.7	22	4.04	0.89	41	4.04	1.66	2	8
24	382.6	515	132.4	57.4	1"	1"	4.5	52.8	45.0	22	4.04	0.89	41	4.04	1.66	2	8
25	382.2	515	132.8	57.6	1"	1"	4.5	53.1	45.3	20	4.04	0.81	41	4.04	1.66	2	8

- NOTES:
1. ALL WATER METERS SHALL REGISTER IN GALLONS AND BE SET LEVEL - METERS PROVIDED BY PWCSA.
 2. 36" OF COVER SHALL BE REQUIRED OVER SERVICES FROM DISTRIBUTION MAIN TO METER BOX.
 3. METER BOX SHALL BE ONE PIECE CONSTRUCTION OF CONCRETE, PVC, OR RIGID FIBERGLASS. (NOT ORANGEBURG)
 4. METER YOKE SHALL INCLUDE ONE 3/4" ANGLE VALVE AND ONE BACKFLOW PREVENTER.
 5. ALL FITTINGS SHALL BE FLARED. (SOLDERED FITTINGS WILL NOT BE PERMITTED)
 6. SERVICE LINE LEAVING METER BOX SHALL BE STUBBED OUT AT LEAST 5' WITH TYPE "K" COPPER OR MUNIPEX PIPE.
 7. METER SET BEHIND SIDEWALK - NOT IN DRIVEWAY, WALKWAYS, ETC.
 8. THE SERVICE LINE BETWEEN THE MAIN AND THE METER WILL BE ONE CONTINUOUS PIECE OF PIPE. (NO JOINTS WILL BE PERMITTED)
 9. ALL YARD IRRIGATION CONNECTIONS WILL BE MADE AT THE END OF THE 5-FOOT STUB ON THE HOUSE SIDE. (NO CONNECTIONS WILL BE PERMITTED INSIDE THE METER BOX)
 10. FORD SOOP SERIES (OR EQUIVALENT) YOKE AND 1" DIAMETER GALVANIZED STEEL TUBING TO BE USED WITH MUNIPEX SERVICES.
 11. FORD FB600-X-NL CORPORATION STOP TO BE USED WITH COPPER SERVICE.
 12. FORD FB1000-XX-NL CORPORATION STOP TO BE USED WITH MUNIPEX SERVICES.

5/8" X 3/4" RESIDENTIAL METER
N.T.S. W-1
REV-2018

- W/L "A" WATER SYSTEM SHUTDOWN NOTES:**
1. THE CONTRACTOR SHALL TEST PIT THE EXISTING 8-INCH WATERLINE AT THE PROPOSED TIE-IN LOCATIONS AND IS TO ASSESS THE PIPE CONDITION AND ROUNDNESS WITH THE PWCSA FIELD INSPECTOR. BOTH THE CONTRACTOR AND THE PWCSA FIELD INSPECTOR MUST BE SATISFIED THAT THE EXISTING PIPE CONDITION IS SUITABLE FOR A VALVE TO SEAL AROUND THE EXISTING PIPE. IF THE PIPE SHOULD BE DEEMED UNSUITABLE FOR THE CONNECTION, THE CONTRACTOR IS TO CONSULT WITH THE ENGINEER AND IS TO INCREASE THE SCOPE OF WORK UNTIL A SUITABLE TIE-IN LOCATION IS IDENTIFIED.
 2. PRIOR TO THE CONTRACTOR REQUESTING THAT PWCSA SHUTDOWN THE WATER SYSTEM, THE EXISTING WATER LINE SHALL BE RESTRAINED AND INSPECTED FOR THE NEEDED RESTRAINT SHALL BE BACKFILLED WITH #57 STONE OR OTHER MEANS TO ACHIEVE 95% COMPACTION.
 3. THE CONTRACTOR SHALL GIVE PWCSA A MINIMUM OF 8 BUSINESS DAYS OF ADVANCED NOTICE WHEN THE PROJECT NEEDS THE WATER SYSTEM SHUTDOWN. THE CONTRACTOR'S REQUESTS SHALL INCLUDE A SCHEDULE OF WORK, MATERIALS, EQUIPMENT AND CREWS TO PERFORM THE WORK. THE SCHEDULE SHALL NOTE ANY RESTRICTIONS (E.G. VDOT RESTRICTIONS IN THE RIGHT-OF-WAY). THE SCHEDULE SHALL INCLUDE A NARRATIVE FOR THE SEQUENCE OF WORK IDENTIFYING THE KEY STEPS AND THE LENGTH OF TIME NEEDED TO ACCOMPLISH EACH STEP. IN ADDITION AN ESTIMATE FOR THE TOTAL AMOUNT OF TIME TO ACCOMPLISH THE WORK IS REQUIRED.
 4. PWCSA RESERVES THE RIGHT TO REQUIRE THE WORK TO BE PERFORMED AT NIGHT OR AT TIME WHEN THE WATER DEMANDS ARE AT THEIR LOWEST LEVEL. THE CONTRACTOR SHALL REQUEST AND PAY FOR THE NEEDED PWCSA OVERTIME EXPENSES RELATED TO THE REQUIRED WORK.
 5. PWCSA WILL PERMIT THE SHUTDOWN ON EITHER A TUESDAY, WEDNESDAY, OR THURSDAY. SHUTDOWNS ON MONDAYS, FRIDAYS, OR A WEEK THAT A HOLIDAY FALLS WITHIN WILL NOT BE SCHEDULED.

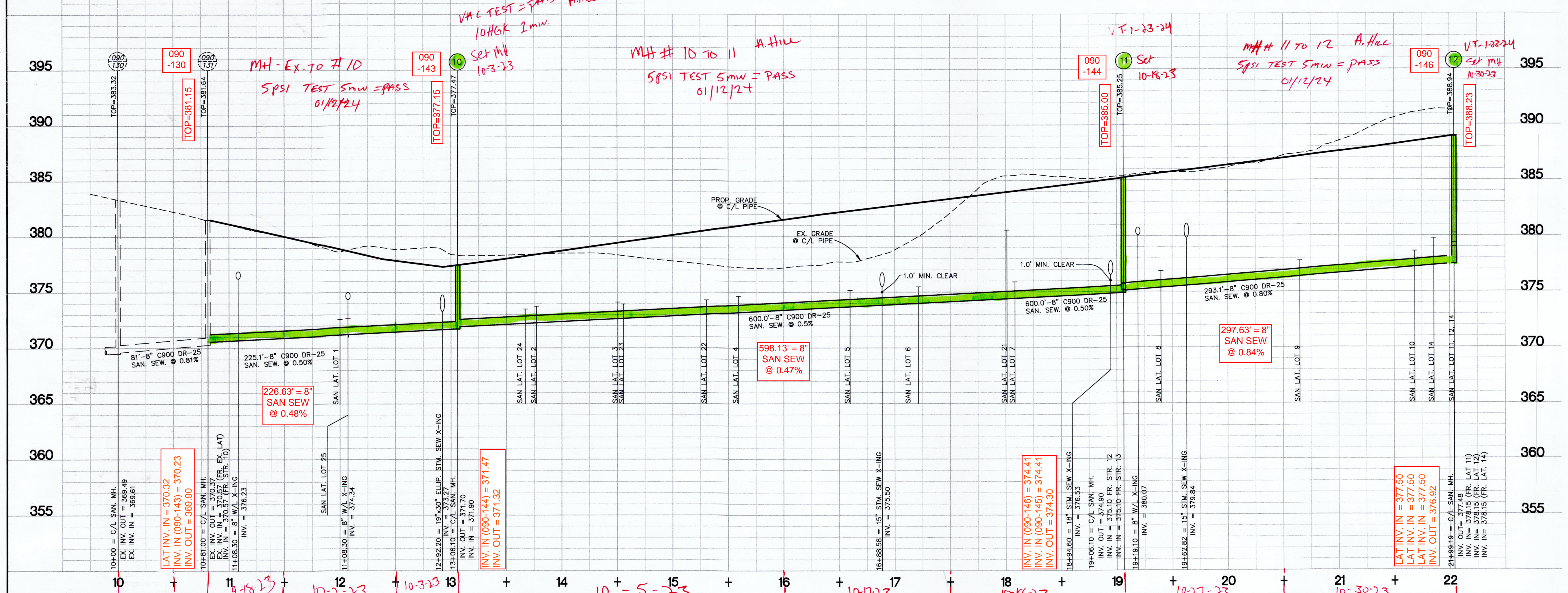
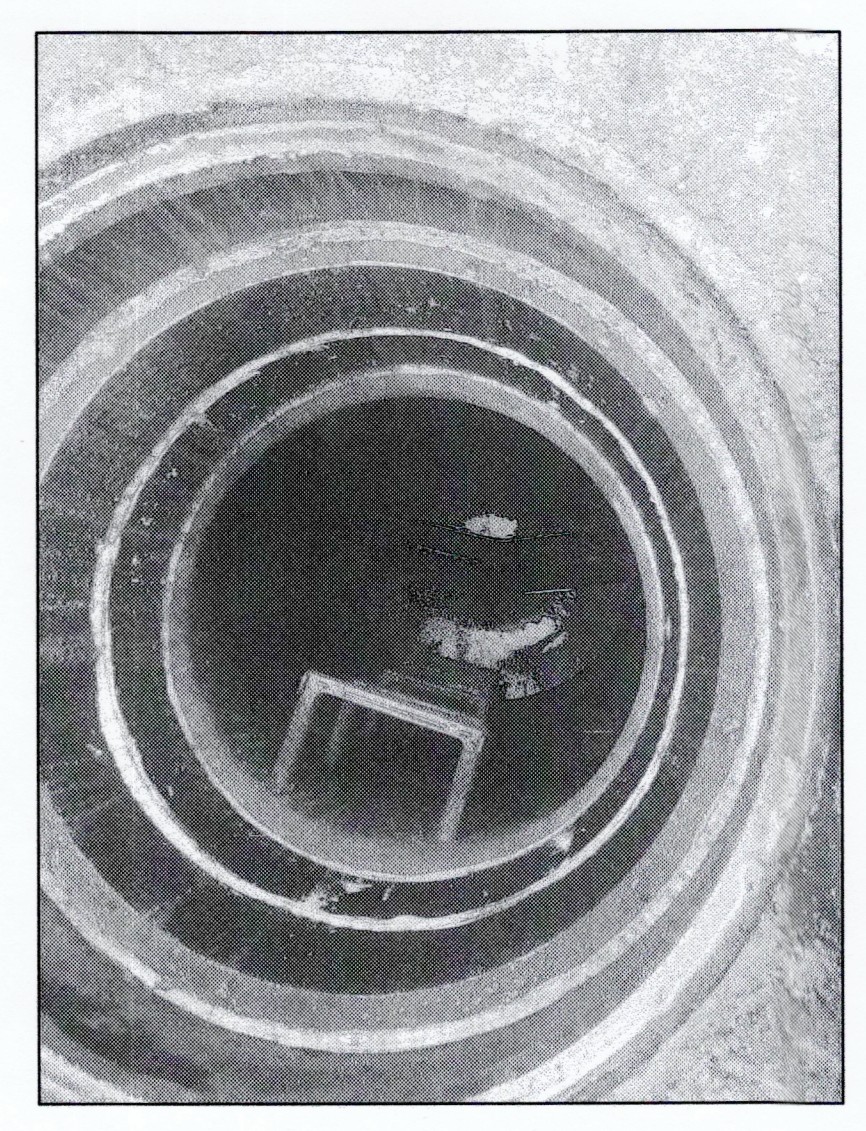
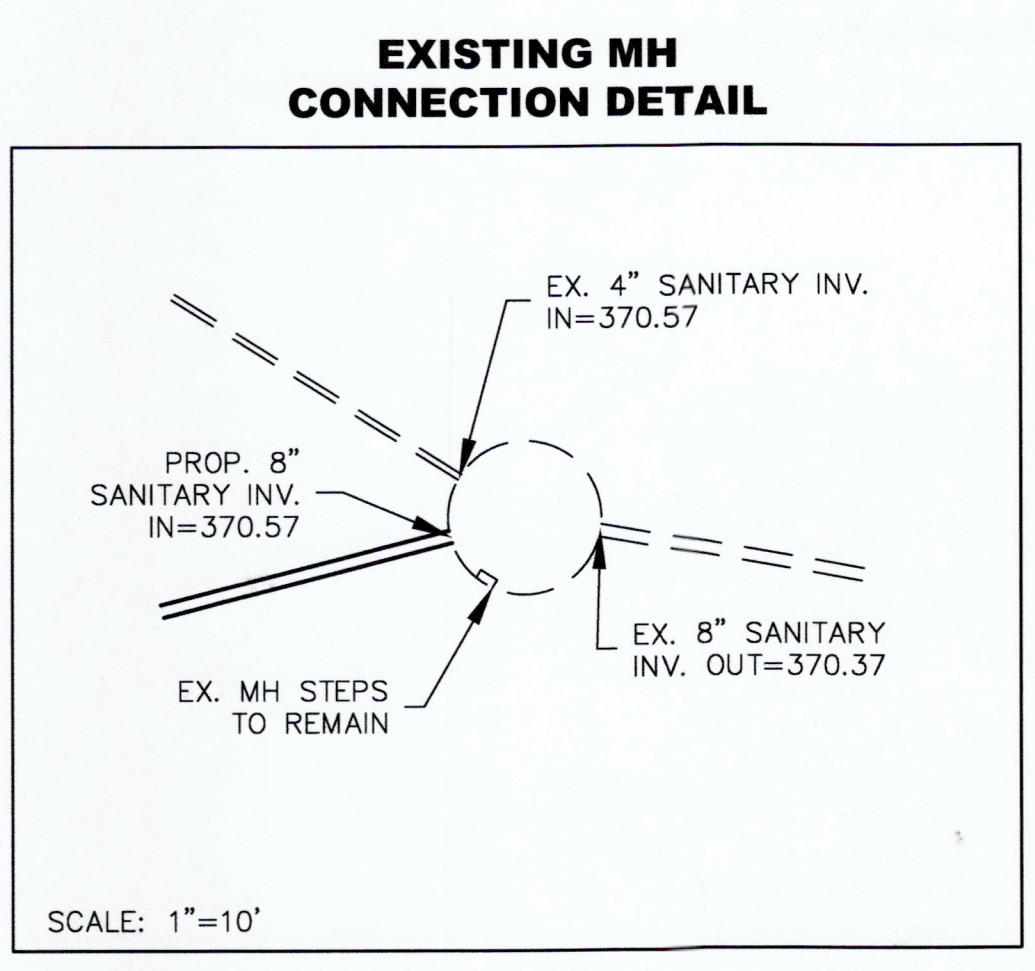
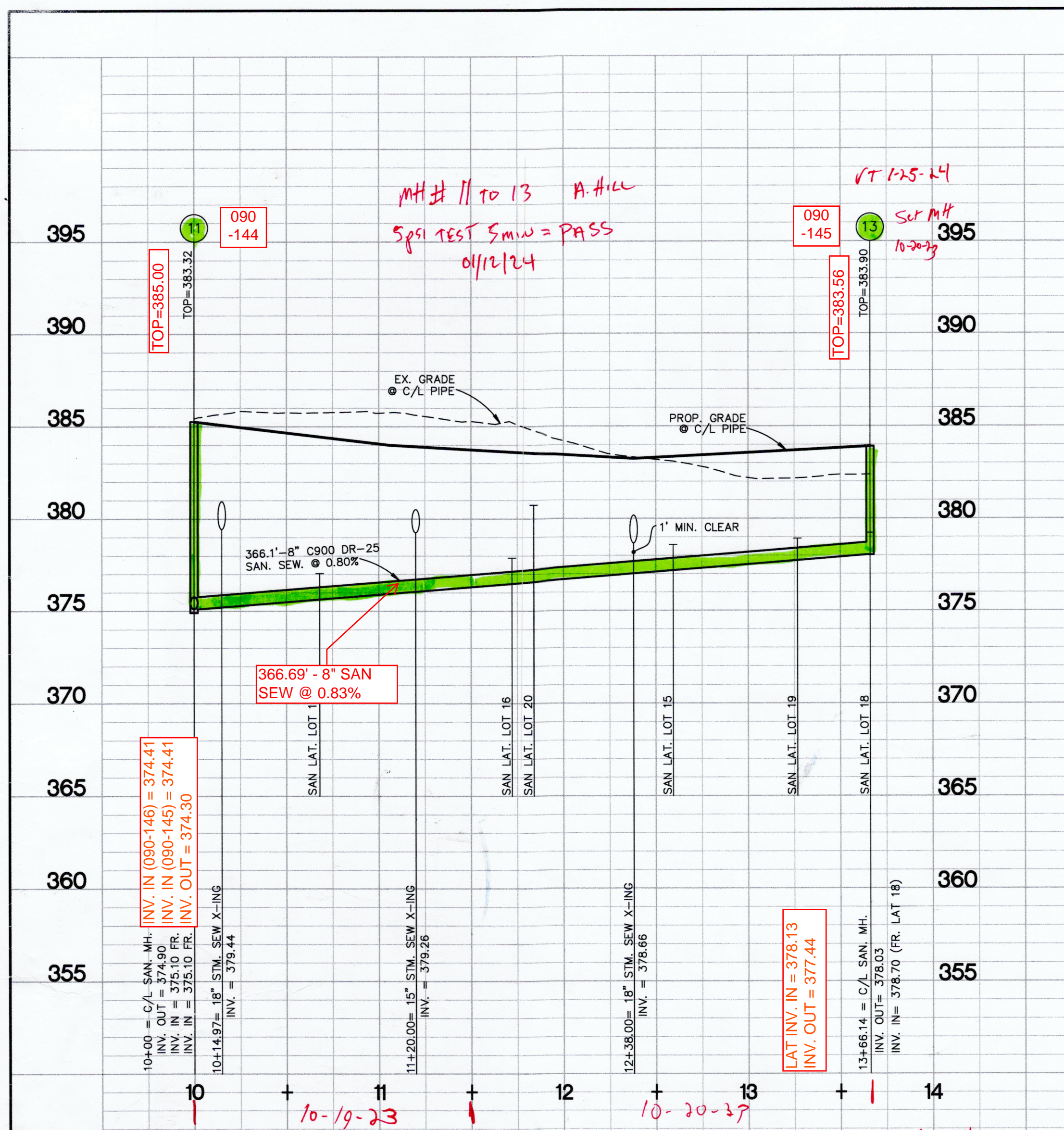
DATE	ACTION
4/19/23	ADDRESS COUNTY COMMENTS
3/10/23	ADDRESS COUNTY COMMENTS
2/27/23	ADDRESS PWCSA COMMENTS
1/10/23	2ND SUBMISSION TO COUNTY
10/14/22	1ST SUBMISSION TO COUNTY

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South Office
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Arlington, VA 22207
Tel: 703.610.0985

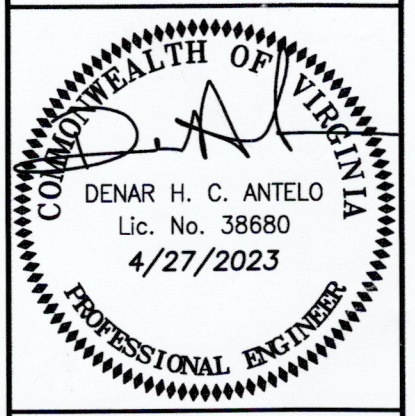
WATERLINE PROFILES
WILLIAMS PROPERTY
BRENTSVILLE MAGISTERIAL DISTRICT
PRINCE WILLIAM COUNTY, VIRGINIA

DENAR H. C. ANTELO
Lic. No. 38680
4/27/2023
PROFESSIONAL ENGINEER

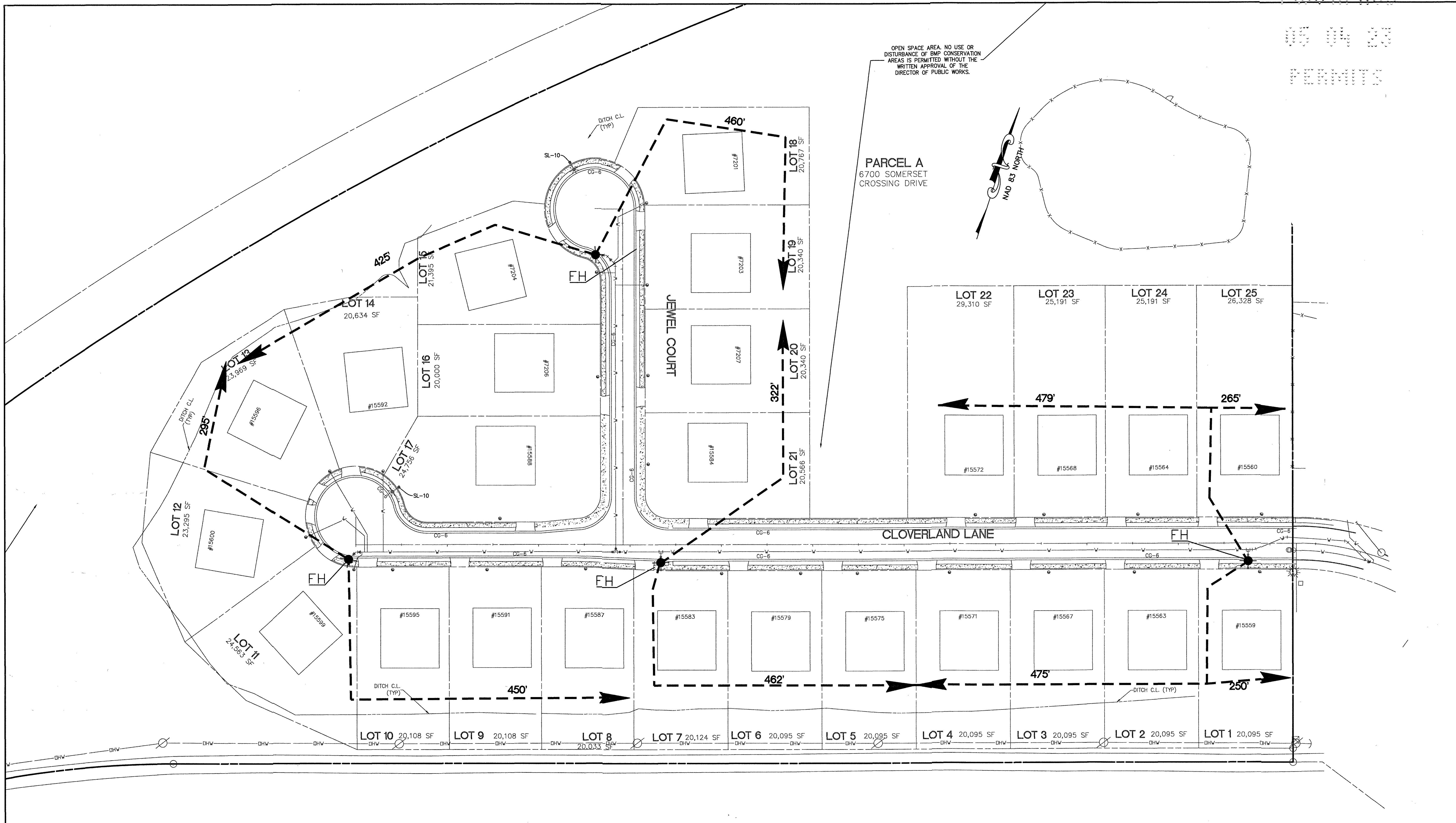
DATE: SEPT. 30, 2022
SCALE: HORIZ: 1" = 50'
VERT: 1" = 5'
DESIGNER: VF-MPC/JB
DRAFTSMAN: MPC/JB/YQ/ZS
FILE NO. SP-449
SHEET 16 OF 42



SANITARY SEWER PROFILES
WILLIAMS PROPERTY
 BRENTSVILLE MAGISTERIAL DISTRICT
 PRINCE WILLIAM COUNTY, VIRGINIA

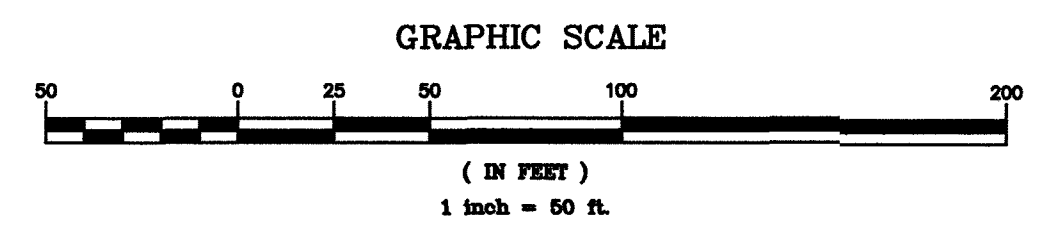
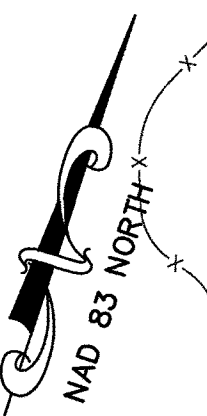


ENGINEERING GROUPE PROJECT STATUS		DATE: SEPT. 30, 2022	
4/19/23	ADDRESS COUNTY COMMENTS	SCALE: HORIZ: 1"=50'	VERT: 1"=5'
3/10/23	ADDRESS COUNTY COMMENTS	DESIGNER: V.F. MFC/JB	DRAFTSMAN: MFC/JB/YQ/ZS
2/27/23	ADDRESS PWCSA COMMENTS	FILE NO. SP-449	
1/10/23	2ND SUBMISSION TO COUNTY		
10/14/22	1ST SUBMISSION TO COUNTY		
DATE	ACTION	SHEET 17	OF 42



OPEN SPACE AREA. NO USE OR DISTURBANCE OF BMP CONSERVATION AREAS IS PERMITTED WITHOUT THE WRITTEN APPROVAL OF THE DIRECTOR OF PUBLIC WORKS.

PARCEL A
6700 SOMERSET
CROSSING DRIVE



SIGN SPECIFICATIONS

- A. METAL CONSTRUCTION, 12' X 15'
- B. RED LETTERS ON REFLECTIVE WHITE BACKGROUND WITH 3/8" RED TRIM STRIP AROUND ENTIRE OUTER EDGE OF SIGN.
- C. LETTERING ON SIGN TO BE: "NO PARKING OR STANDING FIRE LANE".
- D. LETTERING SIZE TO BE AS FOLLOWS: "NO PARKING" - 2"; "OR" - 1" "STANDING" - 2"; "FIRE LANE" - 2.5"; ARROWS 1" X 6" SOLID SHAFT WITH A SOLID HEAD 1.5" WIDE AND 2" DEEP.
- E. SIGNS ARE TO BE MOUNTED WITH THE BOTTOM NO LESS THAN 6" FROM THE GROUND AND THE TOP NO MORE THAN 8' TO THE GROUND UNLESS OTHERWISE DIRECTED BY THE FIRE MARSHALS OFFICE.
- F. POSTS FOR SIGNS, WHEN REQUIRED, SHALL BE METAL AND SECURELY MOUNTED, UNLESS WRITTEN PERMISSION FOR ALTERNATIVES IS OBTAINED PRIOR TO INSTALLATION FROM THE FIRE MARSHALS OFFICE.
- G. A MINIMUM OF TWO SIGNS, WITH APPROPRIATE ARROWS, ONE AT EACH END FACING INWARDS, ARE REQUIRED TO ESTABLISH A FIRE LANE. WHEN THERE ARE BREAKS IN THE CURBING ALONG THE LENGTH OF THE FIRE LANE, SUCH AS ISLANDS IN A PARKING LOT, BUMP OUTS FOR TRAFFIC EASING OR EMBEDDED PARKING SPACES, ADDITIONAL SIGNS, WITH APPROPRIATE ARROWS, SHALL BE ADDED AS NEEDED TO MAINTAIN THE CONTINUITY OF THE FIRE LANE. ADDITIONAL SIGNS, HAVING APPROPRIATE ARROWS, SHALL ALSO BE INSTALLED AS NEEDED TO MAINTAIN THE SPACING BETWEEN THE SIGNS TO 100' (30.48 M) OR LESS.

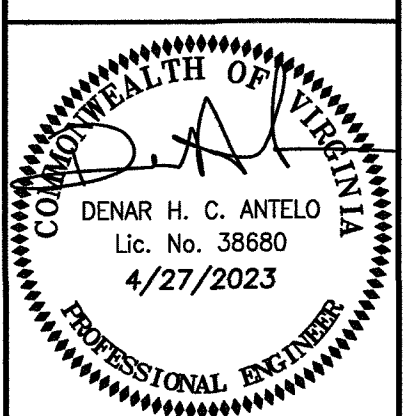
CURB DESIGNATION

- A. WHEN CURBING IS PROVIDED ADJACENT TO THE FIRE LANE IT MUST BE PAINTED YELLOW WITHIN THE LIMITS OF THE FIRE LANE.
- B. WHEN CURBING IS NOT PROVIDED, THE EDGE OF PAVEMENT ADJACENT TO THE FIRE LANE MUST BE PAINTED YELLOW WITHIN THE LIMITS OF THE FIRE LANE.

NOTE

JEWEL COURT AND CLOVERLAND LANE ARE WIDE ENOUGH TO ALLOW PARKING ON ONE SIDE OF THE STREET. THE HOA IS RESPONSIBLE TO DETERMINE THE SIDE OF THE STREET TO HAVE FIRE LANE MARKINGS AND SIGNAGE FOR THOSE TYPES OF STREETS WITH SUCH SIGNAGE AND MARKINGS TO ADHERE TO THE STANDARDS SHOWN ON THESE PLANS.

FIRE HYDRANT COVERAGE PLAN
WILLIAMS PROPERTY
 BRENTSVILLE MAGISTERIAL DISTRICT
 PRINCE WILLIAM COUNTY, VIRGINIA



DATE	ACTION
4/19/23	ADDRESS COUNTY COMMENTS
3/10/23	ADDRESS COUNTY COMMENTS
2/27/23	ADDRESS PWCS COMMENTS
1/10/23	2ND SUBMISSION TO COUNTY
10/14/22	1ST SUBMISSION TO COUNTY

ENGINEERING GROUPE PROJECT STATUS
 DATE: SEPT. 30, 2022
 SCALE: 1"=50'
 DESIGNER: VF, MPC, JB
 DRAFTER: MAN, MPC, JB, YQ, ZS
 FILE NO. SP-449
 SHEET 34 OF 42

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 www.engrgrupe.com
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 Woodbridge, VA 22192
 PH 703.670.0885
 West Office
 42795 Generation Drive, Suite 200
 PH 703.670.0885

REVISED: February 1, 2022
EFFECTIVE DATE: February 1, 2022

PRINCE WILLIAM COUNTY
DEPARTMENT OF DEVELOPMENT SERVICES - LAND DEVELOPMENT DIVISION
UNIT PRICE LIST
FOR
PERFORMANCE BONDS, LANDSCAPING ESCROWS, SILTATION & EROSION
CONTROL ESCROWS, AND FLOODPLAIN ITEMS ESCROWS

PROJECT NAME: Williams Property
P.W.C. FILE # SDR2023-00016 DATE PREPARED: 2/14/2023

NOTE:
This form is to be used to estimate performance bond, landscaping
escrow and soil erosion escrow prices posted with Prince William County.
These prices do not include items that are to be bonded separately with
the Virginia Department of Transportation.

1. MOBILIZATION/DEMOLITION OF CONSTRUCTION EQUIPMENT

Table with 2 columns: Description, Cost. Mobilization/Demolition Lump Sum \$15,000.00 (min.)

2. STORM DRAINAGE

A. STRUCTURES

Table with 3 columns: QUANTITY, ITEM, COST. Lists items like DI-1, DI-3, DI-4, MH-1, MH-2, JB-1, DI-7, DI-12 with their respective costs.

B. CONCRETE PIPE

Table with 3 columns: QUANTITY, ITEM, COST. Lists various pipe diameters from 12" to 72" with costs.

C. END WALLS

Table with 3 columns: QUANTITY, ITEM, COST. Lists pipe diameters from 12" to 72" with costs.

D. END SECTIONS (ES-1)

Table with 3 columns: QUANTITY, ITEM, COST. Lists pipe diameters from 12" to 60" with costs.

E. CORRUGATED METAL PIPES

Table with 3 columns: QUANTITY, ITEM, COST. Lists pipe diameters from 12" to 60" with costs.

F. END SECTIONS (ES-2)

Table with 3 columns: QUANTITY, ITEM, COST. Lists pipe diameters from 15" to 48" with costs.

G. AD N-12 (HDPE)

Table with 3 columns: QUANTITY, ITEM, COST. Lists pipe diameters from 12" to 60" with costs.

H. STORMWATER MANAGEMENT BMP FACILITIES COST ESTIMATES PER IMPERVIOUS ACRE TREATED (See note #3)

Table with 4 columns: QUANTITY, ITEM, PRICE, COST. Lists various BMP items like Dry Retention Pond, Wet Pond/Wetlands, etc.

Table with 4 columns: QUANTITY, ITEM, PRICE, COST. Lists various BMP items like Proprietary Manufactured BMP, Aqua-Swirl Stormwater Treatment System, etc.

I. MISCELLANEOUS STORMWATER MANAGEMENT

Table with 4 columns: QUANTITY, ITEM, PRICE, COST. Lists various items like Seed, Fertilizer & Mulch, Hydroguard, Stormceptor MAX, etc.

J. MISCELLANEOUS DRAINAGE ITEMS

Table with 4 columns: QUANTITY, ITEM, PRICE, COST. Lists various items like Box Culvert, Energy Dissipator, Wing Walls, Ditches, etc.

3. CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY AND/OR PRIVATE INGRESS/EGRESS EASEMENTS

A. SITE WORK

Table with 4 columns: QUANTITY, ITEM, PRICE, COST. Lists various site work items like Clear & Grub, Excavation, Embankment, etc.

B. SUBGRADE, SUBBASE AND BASE COURSE ITEMS

Table with 4 columns: QUANTITY, ITEM, PRICE, COST. Lists various subgrade and base course items like Subgrade preparation, Aggregate, etc.

Summary tables for JEWEL COURT CATEGORY I SECTION, CLOVERLAND LANE CATEGORY I SECTION, and CLOVERLAND LANE CATEGORY III SECTION, showing item quantities, prices, and costs.

C. ENTRANCES AND PIPESTEMS

Table with 4 columns: QUANTITY, ITEM, PRICE, COST. Lists various entrance and pipestem items like DE-1, DE-2, DE-3, etc.

D. MISCELLANEOUS CONSTRUCTION ITEMS

Table with 4 columns: QUANTITY, ITEM, PRICE, COST. Lists various construction items like Sidewalk, Curb & Gutter, Bicycle Trail/Walkway, etc.

4. SANITARY SEWER & WATER LINE CONSTRUCTION

Table with 4 columns: QUANTITY, ITEM, PRICE, COST. Lists various sewer and water line items like Fire Hydrant Assembly, Central Sewer Lift/Pump Station Construction, etc.

WATER MAIN (Exclusive of Fire Hydrants)

Table with 4 columns: QUANTITY, ITEM, PRICE, COST. Lists various water main items like 4" DIA. DIP, 6" DIA. DIP, etc.

SANITARY SEWER PIPE LINE (Exclusive of Manhole Structures)

Table with 4 columns: QUANTITY, ITEM, PRICE, COST. Lists various sanitary sewer pipe line items like 1.5" DIA. thru 4" DIA. LPPM, etc.

For sizes larger than 15" Dia., add \$4.00 per inch increase in diameter.

5. MISCELLANEOUS COSTS

Table with 4 columns: QUANTITY, ITEM, PRICE, COST. Lists various miscellaneous costs like Administrative Cost, Inflation Cost, etc.

6. FLOODPLAIN ITEMS ESCROW

Table with 4 columns: QUANTITY, ITEM, PRICE, COST. Lists various floodplain items escrow items like LOMR, Elevation Certificate, etc.

7. LANDSCAPING ESCROWS

Table with 4 columns: QUANTITY, ITEM, PRICE, COST. Lists various landscaping escrow items like Deciduous Trees, Evergreen Trees, Shrubs, etc.

8. SILTATION AND EROSION CONTROL ESCROWS

Table with 4 columns: QUANTITY, ITEM, PRICE, COST. Lists various siltation and erosion control escrow items like Diversion Dike, Silt Traps, etc.

TOTAL CONSTRUCTION COST = \$1,866,874.50

TOTAL PERFORMANCE BOND AMOUNT: \$2,000,883.85
TOTAL FLOODPLAIN ITEMS ESCROW: \$0.00
TOTAL LANDSCAPE ESCROW AMOUNT: \$77,880.00

TOTAL SILTATION & EROSION CONTROL ESCROW AMOUNT: \$414,983.80

Minimum acceptable amount for Siltation and Erosion Control Escrow is \$2,500.00

I hereby certify that the above is my best estimate of the quantities and current costs of bondable improvements, landscaping items, and Siltation & Erosion Control Escrow in this subdivision or site plan.

PREPARED'S SIGNATURE: [Signature]

DENAR H. C. ANTELO

THE ENGINEERING GROUP, INC.

COMPANY OR FIRM

NOTES:

1. For items identified with ** the quantity for the embankment material is the net difference of total fill material needed and cut material available at the project site, if excavated or cut material is suitable for embankment.

2. The excavation and embankment costs include the necessary grading, spreading, and/or compaction of soil in accordance with County and State Standards and Specifications.

3. The unit cost for each of the items in this Unit Price List is the installation cost which includes factors such as materials, excavation, bedding, backfilling, compaction, form work, etc.

4. Inflation has been calculated based on the Northern Virginia Consumer Price Index of the Washington D.C. area provided by the Bureau of Labor and Statistics.

5. Whoever certifies the site development plans must also certify the total cost of the bonded items, landscaping escrow and siltation and erosion control escrow and must sign of "Preparer's Signature" of this form.

6. Floodplain Items Escrow not to be part of Bond/Escrow reduction.

Table with 2 columns: DATE, ACTION. Shows dates from 4/19/23 to 10/14/22 and corresponding actions like ADDRESS COUNTY COMMENTS, 2ND SUBMISSION TO COUNTY, etc.

ENGINEERING GROUP PROJECT STATUS

Table with 2 columns: DATE, ACTION. Shows dates from 4/19/23 to 10/14/22 and corresponding actions like ADDRESS COUNTY COMMENTS, etc.

DATE: SEPT. 30, 2022

SCALE: N/A

DESIGNER: VF, MPC, JB

DRAFTSMAN: MPC, JB, YQ, ZS

FILE NO. SP-449

SHEET 42 OF 42

The Engineering Group Inc. logo and contact information: West Office, South Office, Central Office, 13590 Group Drive, Suite 200, Woodbridge, VA 22192, 42795 Generation Drive, Suite 200, Ashburn, VA 20147, PH 703.670.0985

Table with 2 columns: NO., DATE. Shows revision numbers and dates.

WILLIAMS PROPERTY BRENTSVILLE MAGISTERIAL DISTRICT PRINCE WILLIAM COUNTY, VIRGINIA

Professional Engineer seal for DENAR H. C. ANTELO, Lic. No. 38550, 4/27/2023