POTOMAC AND RAPPAHANNOCK TRANSPORTATION COMMISSION (PRTC)

INVITATION FOR BIDS

IFB No. 025-001

PRTC FUEL STORAGE TANKS AND DISPENSERS REPLACEMENT

IFB Issued: August 27, 2024

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I. INTRODUCTION

I.1 Purpose

The Potomac and Rappahannock Transportation Commission (PRTC) is soliciting bids to establish a Contract with a qualified and experienced Contractor to replace the existing underground fuel storage tanks, fuel dispensers, and fuel management system at the fuel island in the Bus Yard located at the PRTC Transit Center, 14700 Potomac Mills Road, Woodbridge, Virginia 22192.

Failure to provide all the required certifications and documents listed and described in this Invitation for Bid (IFB) may cause the bid to be rejected and be considered non-responsive.

I.2 Background Information

Located in the Greater Prince William County area about 25 miles southwest of Washington, D.C., the Potomac and Rappahannock Transportation Commission (PRTC) is a multimodal, multijurisdictional agency providing local and commuter bus services and Transportation Demand Services (TDM) services in Prince William County and the Cities of Manassas and Manassas Park. PRTC's services are operated under the OmniRide brand name and PRTC is a partner in several regional services. PRTC prides itself on providing high quality, progressive and innovative transportation services for residents of its member jurisdictions.

I.3 PRTC Contract Management:

Contract Administrator: Matters relating to prices, terms and conditions, period of performance, quantities to be supplied, and financial adjustments shall be handled through the Contract Administrator, Cynthia Porter-Johnson, PRTC's Manager of Grants and Procurement.

Project Manager: **Vince Walker** will serve as the Project Manager (PM) for this Contract. The PM is responsible for the technical administration of the Contract and technical liaison with Engineering Consultants, IMEG (Mike Massey, II and Tucker E. Travis) and the successful Contractor. The PM is responsible for the day-to-day clarifications and guidance of Contractor's personnel as may be required under the Contract.

Contracting Officer: PRTC's Executive Director is the only individual who can legally commit or obligate PRTC for the expenditure of federal/public funds. Only the Contracting Officer shall have the authority to revise the terms and conditions of the Contract, and any such revisions shall be authorized in writing.

Contract or Agreement: The contractual agreement between PRTC and the successful Contractor to perform work described in this solicitation and successful Contractor's bid. **Note: The Contractual instrument for this project will be PRTC's standard form Contract provided as Attachment G, modified as required to conform to this project. PRTC will not use the Offeror's form contract.**

I.4 Scope of Work

The Potomac and Rappahannock Transportation Commission (PRTC) seeks to replace the existing underground fuel storage tanks, fuel dispensers, and fuel management system at the fuel island in the Bus Yard located at the PRTC Transit Center, 14700 Potomac Mills Road, Woodbridge, Virginia 22192. The full Scope of Services for the procurement is described in **Section III – Scope of Work** in this document. The successful Bidder shall provide the means to fulfill the types of requirements listed herein.

I.5 Period of Contract

The term of this Contract shall be until the successful completion of all work as outlined in the Scope of Work, site plans, drawings and technical specifications. The term of this Contract will begin upon execution of the Contract.

I.6 Type of Contract

PRTC expects to award a firm-fixed price contract to replace the existing underground fuel storage tanks, fuel dispensers, and fuel management system at the fuel island in the Bus Yard located at the PRTC Transit Center, 14700 Potomac Mills Road, Woodbridge, Virginia 22192, based on costs provided on the Price Schedule, for the services and materials specified in the Scope of Work to the lowest responsive and responsible bidder.

I.7 Pre-Bid Conference and Submission of Questions

An information meeting, referred to here as a Pre-Bid Conference, will be conducted in person at the PRTC Transit Center, 14700 Potomac Mills Road, Woodbridge, Virginia 22192 and virtually via Zoom on **September 17, 2024 at 11:00 AM.** Attendance is encouraged as it will assist PRTC in providing the best information on its requirements and resources to all parties.

Questions to be discussed at the meeting may be submitted as follows:

- in advance of the pre-bid conference
- orally at the pre-bid conference
- after the pre-bid conference but **no later than September 24, 2024 at 5:00 PM**

Questions submitted to PRTC in advance of the pre-bid conference may be sent by e-mail to lglymph@omniride.com and **must be titled "PRTC Fuel Storage Tanks and Dispensers**

Replacement Questions." The company posing the question must be clearly identified. PRTC will provide responses to questions via an addendum.

I.8 Posting/Notice of Award

PRTC intends to award this Contract to the lowest responsive and responsible Bidder and the Commission reserves the right to reject any and all bids received, although PRTC also reserves the right to waive irregularities. Notice of Award, made as a result of this solicitation, will be made via official electronic mail. All participants will receive either notification that they are not the lowest responsive and responsible Bidder or "Intent to Award" to the actual lowest responsive and responsible Bidder selected.

I.9 Clarification of Terms

In order to ensure an impartial competitive process, questions, and private communications with the Prospective Bidders during bid preparation and the evaluation period will not be accepted. If a Prospective Bidder has questions about the scope of work or other solicitation documents, the Prospective Bidder should contact in writing to LaWana Glymph, PRTC's Contract Specialists, whose name appears on the cover page of this solicitation. Inquiries regarding this IFB will be accepted up until **September 24, 2024 at 5:00 PM** and the inquiries together with the responses shall be distributed to all IFB recipients. Any revisions to the solicitation shall be made only by addendum issued by PRTC.

I.10 Permits and Licenses

Contractor must be registered and licensed to perform the requested services in the Commonwealth of Virginia.

I.11 Emergency Order

In the event of any emergency, PRTC reserves the right to order the contracted services from other sources which could provide a faster delivery time.

II. PROCUREMENT SCHEDULE

PRTC anticipates following the procurement schedule as shown below. PRTC reserves the right to make changes to the schedule. All such changes shall be made by an addendum to the solicitation. Bidders must frequently monitor PRTC's procurement webpage at the following location: https://omniride.com/about/business/procurement/ for information concerning this solicitation, including any addenda or notices.

August 27, 2024	**IFB Issued by PRTC**
September 17, 2024	**Pre-bid Conference 11:00 am Eastern Standard Time (EST) In-Person at the PRTC Transit Center, 14700 Potomac Mills Rd, Woodbridge, VA. 22192 and Virtual via Zoom** **Site Visit to Fuel Island Immediately following Pre-Bid Conference**
September 24, 2024	**Final Questions Due 5:00 pm EST**
October 1, 2024	**PRTC Response to Questions**
October 15, 2024	**BIDS DUE (Bid Opening) 2:00pm EST**
November 7, 2024	**Recommend Award to PRTC Board**

III. SCOPE OF WORK

III.1 Purpose

A. The Potomac and Rappahannock Transportation Commission (PRTC) seeks to replace the existing underground fuel storage tanks, fuel dispensers, and fuel management system at the fuel island in the Bus Yard located at the PRTC Transit Center, 14700 Potomac Mills Road, Woodbridge, Virginia 22192.

III.2 Background/Overview

A. The existing three (3) underground fuel storage tanks (UST), dispensing equipment, and all related piping, connections, etc. were installed during the original construction of the PRTC Transit Center in 1997 and are being replaced. The USTs consist of two (2) 15,000-gallon diesel tanks and one (1) 6,000-gallon unleaded gasoline tank that are nearing the end of their useful life. The existing above ground diesel exhaust fluid tank shall be replaced with an underground tank.

B. To assist with the fuel storage tanks and dispenser replacement, PRTC contracted with the engineering firm, IMEG, to develop the Fuel Tank Replacement Plan (**Attachment A-4**) and to provide construction administration services. IMEG shall not be responsible for construction, means, methods, techniques, or procedures utilized by the Contractor, nor shall IMEG be responsible for the safety of the public or the Contractor's employees or the failure of the Contractor to carry out the work in accordance with the contract documents and standard construction practices.

C. PRTC also contracted with Hillmann Consulting to provide a limited subsurface investigation, using up to four (4) borings around the perimeter of the UST field. A copy of the Limited Subsurface Investigation Report is provided as **Attachment A-1**. Preliminary soil sampling found a confirmed petroleum release is present. The petroleum release has been reported to the Commonwealth of Virginia Department of Environmental Quality (DEQ), which will require special handling/disposal of petroleum-impacted soil and groundwater.

D. Hillmann Consulting is gauging and recording liquid levels from the tank field observation wells on a monthly basis. Recent well gauging data is provided as **Attachment A-3** and has indicated an increase in product thickness. In conjunction with the monthly well gauging events, Hillmann Consulting is using a dedicated reusable bailer to manually recover petroleum product from the on-site observation wells. The recovered petroleum product/groundwater is stored on site in a 55-gallon drum to await off-site disposal at a later date, which will be the responsibility of the selected contractor. The liquid levels and estimated quantities of product/total fluids recovered from the observation wells are reported to DEQ monthly. The monthly product recover events began in late July/early August 2024 and is expected to end in February 2025.

E. In addition, a 10,000-gallon temporary diesel fuel tank with fueling equipment shall be provided on site on the east side of the site as shown on the Fuel Tank Replacement Plan (**Attachment A-4, Sheet C400)** that shall be utilized as part of the PRTC Bus Operations throughout the construction process.

F. Petroleum-impacted soil will be encountered during excavation in the tank field and the soil will require proper transportation and disposal at an approved facility that accepts petroleum-impacted soil.

G. Additionally, any dewatering of the tank field prior to or during excavation activities will require pre-treatment of petroleum-impacted groundwater prior to discharge, or proper off-site disposal of petroleum-impacted groundwater.

H. A staging area has been provided at the Gravel lot located at the intersection of Telegraph Road and Potomac Mills Road (14775 Telegraph Road, Woodbridge, VA. 22192) as shown on the Fuel Tank Replacement Plan **(Attachment A-4, Sheet C701)**.

III.3 General Requirements

A. All work shall be performed during the hours of 7:00am – 6:00pm Monday through Friday. Any work performed outside of this period must be pre-approved by PRTC. A project timeline is required with material lead-times indicated.

B. All construction shall be in accordance with Prince William County's standards and the latest edition of the Virginia Department of Transportation Road and Bridge Standards.

C. All communication between the Contractor and IMEG shall be through formal channels. Any questions or submittals are to be presented as a written request for information, shop drawing, or submittal package.

D. All required shop drawings are to be submitted to IMEG for review and approval 30 days prior to installation and shall be signed and sealed by a registered professional engineer licensed and experienced in the Commonwealth of Virginia.

E. All fill, base and subbase material shall be compacted to a minimum of 95% of theoretical maximum density as determined by A.A.S.H.T.O. T-99 method a within plus or minus 2% of optimum moisture as specified by the geotechnical report.

F. This Project requires access to the Bus Yard. The Contractor shall provide traffic control safety measures as required when the Contractor impacts vehicle traffic. In no way shall the Contractor impede the movement of the buses around the Bus Yard, ingress or egress to the Bus Yard.

G. The waterline, electric, telephone, and cable tv (catv) underground utilities shown hereon are based on field markings by Utility Professionals, Inc. (UPI). The limits of the underground sand filters (designated by "sf#") and the underground stormwater

management facility shown hereon are approximate and are based on plans retrieved from Prince William County records and design plans prepared by IMEG. No certification has been made as to the locations of underground utilities such as, but not limited to electric, gas, telephone, CATV, water, sanitary and storm sewers. The storm sewer lines referenced in this note are approximate; physical, sub-surface verification will be necessary to confirm pipe size and material.

H. The temporary diesel fuel tank shall be operational prior to the start of construction.

I. Safety vests or a suitable substitute will be worn at all times when Contractor or subcontractors are in any of the PRTC areas.

J. All work shall be done in a manner of workmanship that shall reflect full journeyman capabilities in the required trade and meet industry standards.

III.4 Contractor Responsibilities are listed below, but not limited to the following:

A. The Contractor shall contact Miss Utility as required before digging.

B. The Contractor shall dig test pits as required following notification and marking of all existing utilities to verify the location and depth of existing utilities. Test pits are to be performed at least 30 days prior to start of construction. Any discrepancies are to be reported immediately to PRTC and IMEG. Redesign and approval by reviewing agencies shall be obtained, if required.

C. The Contractor is responsible for proper transportation and disposal of petroleum-impacted soil at an approved facility that accepts petroleum-impacted soil.

D. The Contractor shall be responsible for complying with all applicable federal, state, and local environmental regulations.

E. The Contractor is responsible for ensuring that all employees are properly trained to carry out environmental responsibilities.

F. The Contractor 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.

G. If the Contractor or others become aware of any discrepancies in unanticipated site conditions, any reasons for nonconformance with the design documents, or any proposed field revisions, prompt written notice thereof shall be given to IMEG.

H. The Contractor will install and maintain necessary erosion and sediment control measures to prevent sediment from leaving the site.

I. The Contractor will be responsible for all material, supplies, supervision, equipment, labor, and testing needed to complete the Project as well as transportation needed.

J. The Contractor will also be responsible for the removal of all trash, materials and/or debris generated on a daily basis. Work must be limited to within the area of disturbance indicated on the Fuel Tank Replacement Plan drawings by IMEG. Discarded material will be disposed of pursuant to any applicable EPA regulations.

K. The Contractor shall take all necessary precautions to protect existing site features which are to remain. Any damage incurred due to the Contractor's or any subcontractor's actions shall be repaired immediately at the Contractor's expense.

L. All utilities, including all poles, which are to be relocated, shall be at the Contractor expense prior to construction. The Contractor is to contact applicable utilities at least 60 days prior to needing facility relocated.

M. The Contractor is responsible for securing all required permits prior to construction.

N. The Contractor is responsible for arranging all necessary inspections.

O. The Contractor is responsible for maintaining a safe construction site and complying with all OSHA, DEQ/State and local regulations.

P. The Contractor shall be responsible for making a smooth transition to existing curbs and sidewalks, if applicable to ensure positive drainage.

Q. The Contractor must ensure that positive drainage occurs on site to prevent ponding or drainage problems on adjacent properties.

R. During rough grading of the site, the Contractor will immediately notify the geotechnical engineer if ground water seepage/springs are identified.

S. The Contractor will comply with PRTC safety regulations. Work is to be completed in a safe and professional manner.

T. The Contractor is to restore pavement grades back to the original conditions.

U. The Contractor is to restore all pavement striping back to its original condition.

V. The Contractor shall be responsible for coordinating construction activities with the PRTC Transit Center Facility Manager during construction so as to minimize disruption of daily activities outside of the limits of construction. This shall include the export and import of excavation and fill, material deliveries, asphalt paving, striping and all other activities associated with the scope of this project.

W. The Contractor is responsible for returning the Gravel lot located at the intersection of Telegraph Road and Potomac Mills Road (14775 Telegraph Road, Woodbridge, VA. 22192) used for staging to the original conditions promptly once the project has been completed.

IV. GENERAL TERMS AND CONDITIONS

IV.1 Bid and Contract Requirements

This IFB plus the resulting bid and contract shall be consistent with and governed by the Virginia Public Procurement Act, Va. Code §§ 2.2-4300 *et seq*. In the event of an inconsistency between the solicitation and the selection requirements set forth in this IFB versus those set forth in the Virginia Public Procurement Act, the inconsistency shall be resolved by giving precedence to the solicitation and selection requirements of the Virginia Public Procurement Act.

PRTC will provide a contract for execution by the Successful Contractor – a sample contract containing these provisions is included as **Attachment G**. Successful Contractors will not use their own standard contracts for this engagement.

IV.2 Obligation of Prospective Contractor

By submitting a bid, the Prospective Contractor agrees that it has satisfied itself from a personal investigation of the conditions to be met, that the obligations herein are fully understood, and no claim may be made, nor will there be any right to cancellation or relief from the Contract because of any misunderstanding or lack of information.

IV.3 Qualification of Offerors

The Prospective Contractor must demonstrate to the satisfaction of PRTC that it has the necessary experience, skilled personnel, and financial resources to perform the services required under this solicitation. Qualified Contractors shall have substantial recent experience in providing similar services on a scale equal to or greater than what PRTC is requesting and meet the following requirements:

- Receive high praise from past clients for quality of work, timely delivery, and fair and equitable handling of change orders.
- Employ, or have the ability to hire, the necessary complement of personnel to complete all work in the specified time.

PRTC may make such reasonable investigations as deemed proper and necessary to determine the competency and financial stability of the Offeror to perform the contract. The Offeror shall furnish PRTC such information and data for this purpose as may be requested. PRTC reserves the right to inspect the Prospective Contractor's physical plant prior to award to satisfy questions regarding the Prospective Contractor's capabilities.

If, after the investigation, the evidence of competency and financial stability is not satisfactory, in the sole opinion of PRTC, PRTC reserves the right to reject the bid.

IV.4 Additional Information

PRTC reserves the right to ask any Prospective Contractor to clarify its offer.

IV.5 Qualification Acceptance Period

The bid and any modification thereof shall be binding upon the Prospective Contractor for 90 calendar days following the bid due date. Any bid for which the Prospective Contractor shortens the acceptance period may be rejected. At the end of that time, the Prospective Contractor may retract its bid by giving written notice to PRTC.

IV.6 Delays in Award

Delays in the award of a contract, beyond the anticipated starting date, may result in a change in the contract period indicated in the solicitation. If this situation occurs, PRTC reserves the right to award a contract covering the period equal to or less than the initial term indicated in the solicitation.

IV.7 Award for All or Part

Unless otherwise specified, PRTC may, if it is in the best interest of PRTC to do so, award all or part of the bid to any Prospective Contractor whose bid is the most responsible and responsive and whose bid meets the requirements and criteria set forth in the Request for Bid with respect to the items in question.

IV.8 Rejection of Bids

PRTC expressly reserves the right to reject any or all bids or any part of a bid, and to re-solicit the services in question, if such action is deemed to be in PRTC's best interest. PRTC will not compensate Offerors for the cost of bid preparation whether or not an award is consummated.

IV.9 Single Bid

If a single conforming bid is received, a price and/or cost analysis of the Bid shall be made by PRTC. A price analysis is the process of examining and evaluating a prospective price without evaluation of the separate cost element. It should be recognized that a price analysis through comparison to other similar contracts should be based on an established or competitive price of the elements used in the comparison. The comparison shall be made to the cost of similar projects and involve similar specifications.

IV.10 Inspection of Bids

The Virginia Freedom of Information Act, §§ 2.2-3700 *et seq*. shall govern the release of public records related to the Contract. Trade secrets or proprietary information related to procurement may not be subject to public disclosure, provided the requirements at Va. Code § 2.2-4342.F. are met.

IV.11 Protest of Award

A Prospective Contractor who wants to protest an award or a decision to award a contract must submit the protest, in writing, to PRTC no later than 10 days after either the decision to award or the award, whichever occurs first. The protest must include the basis for the protest and the relief sought. Within 10 days after receipt of the protest, the Executive Director of PRTC will issue a written decision stating the reasons for the action taken. This decision is final. Further action, by a Prospective Contractor, may be taken by instituting action as provided by the Code of Virginia.

IV.12 Protest Policy

PRTC policy and procedure for the administrative resolution of protest is set forth in §3.8 of the Public Procurement Policy and Procedures Manual (Procurement Manual). The Procurement Manual contains rules for the filing and administration of protests. The Contract Administrator shall furnish a copy of §3.8 upon request.

IV.13 Debarment Status

The Commonwealth Transportation Board's Policy of Debarment, dated January 1, 1987, shall apply with the exception that the debarment period shall be for a period of up to thirty-six (36) months. By submitting a bid, the Prospective Contractor certifies that it is not currently debarred from submitting bids on contracts by any agency of the Commonwealth of Virginia, nor is an agent of any person or entity that is currently debarred from submitting bids or contracts by any agency of the Commonwealth of Virginia.

IV.14 Anti-Discrimination

By submitting a bid, the Prospective Contractor certifies to PRTC that it will conform to the provisions of Title VI of the Federal Civil Rights Act of 1964, as amended; DOT regulations, "Nondiscrimination in Federally-Assisted Programs of the Department of Transportation" -- Effectuation of Title VI of the Civil Rights Act; the Virginia Fair Employment Act of 1975, as amended, where applicable; all requirements of Title VIII of the Civil Rights Act of 1964, as amended, 42 U.S.C. § 20003, and 49 U.S.C. §4332 and any implementing requirements FTA may issue; the provisions of 49 U.S.C, § 5332, "Nondiscrimination in Federal Transit Programs," which prohibits discrimination on the basis of race, color, creed, national origin, sex, or age, and prohibits discrimination in employment or business opportunity; and Va. Code § 2.2-4311 of the Virginia Public Procurement Act.

IV.15 Insurance

PRTC will require the Contractor to purchase and maintain insurance coverage to the levels described in this section.

A description of the proposed insurance as specified below, including insurance carrier names and policy numbers, should be included in the Offeror's technical bid. The cost of insurance should be shown by line of coverage.

A checklist of required insurance coverage is attached and identified as Insurance Checklist **(Attachment E).** Items marked "X" are required to be provided. If such insurance is incomplete, provide a letter from your insurance agent stating that the Offeror is eligible to obtain insurance to the prescribed limits should a Contractual offer be extended.

PRTC may require that insurance be raised due to change orders to this Contract and/or execution of "Options." At no time shall the insurance coverage be less than required.

The Successful Contractor agrees to include the provisions of the foregoing clause in every subcontract or purchase order so that the provisions shall be binding upon each subcontractor or vendor.

In addition to the terms and provisions set forth above, the Successful Contractor shall be required to provide evidence of the minimum coverage described in **Attachment E**, Insurance Checklist. No contract shall be finalized, and no work shall commence until PRTC's insurance requirements are met. The Successful Contractor shall comply with the insurance requirements set forth in the following numbered paragraphs, plus the coverage and limits indicated on **Attachment E**, Insurance Checklist. Technical proposals must note any desired exceptions to the insurance coverage, which may include the submission of proposed alternatives.

a. The firm shall be responsible for its work and every part thereof, and for all materials, equipment, and property of any and all description used in connection therewith. The firm assumes all risks of direct and indirect damage or injury to any person or property wherever located, resulting from any action, omission, commission, or operation under the contract, or in connection in any way whatsoever with the contracted work.

b. The firm shall, during the continuance of all work under the contract provide and agree to maintain the following unless omitted from the attached "Insurance Checklist":

i. Workers' Compensation and Employers' Liability insurance under the Commonwealth of Virginia statutory requirements, to protect the firm from any liability or damages for any injuries (including death and disability) to any and all of its employees, volunteers, or subcontractors, including any and all liability or damage which may arise by virtue of any statute or law in force within the Commonwealth of Virginia, or which may be hereinafter enacted.

ii. General Liability insurance in the amount prescribed by PRTC, to protect the Contractor, its subcontractors, and the interest of PRTC, against any and all injuries to third parties, including bodily injury and personal injury, wherever located, resulting from any action or operation under the Contract or in connection with the contracted work. The General Liability insurance shall also include the Broad Form General Liability endorsement, in addition to coverage for explosion, collapse, and underground hazards, where required. Completed Operations Liability coverage shall continue in force for one year after completion of work.

iii. Automobile Liability insurance, including property damage, covering all owned, non-owned, borrowed, leased, or rented vehicles operated by the Successful Contractor. In addition,

all mobile equipment used by the Successful Contractor in connection with the contracted work, shall be insured under either a standard Automobile Liability policy, or a Commercial General Liability policy.

c. Liability insurance may be arranged by General Liability and automobile Liability policies for the full limits required, or by a combination of underlying Liability policies for lesser limits with the remaining limits provided by an Excess or Umbrella Liability policy.

d. The Successful Contractor agrees to provide insurance issued by companies admitted within the Commonwealth of Virginia, with the Best's Key Rating of at least A: VI.

e. The Successful Contractor will provide an original, signed Certificate of Insurance, showing PRTC as an additional insured, evidencing such insurance and such endorsements as prescribed herein, and shall have it filed with the PRTC Executive Director before a contract is executed and any work is started.

f. The Successful Contractor will secure and maintain all insurance policies of its subcontractors, which shall be made available to PRTC on demand.

g. The Successful Contractor will provide on demand, certified copies of all insurance coverage on behalf of the Contract within ten (10) business days of demand by PRTC. These certified copies shall be sent to PRTC from the Contractor's insurance agent or representative.

h. No change, cancellation, or non-renewal shall be made in any insurance coverage without a 30-day written notice to the PRTC Executive Director. The Successful Contractor shall furnish a new certificate prior to any change or cancellation date. The failure of the Contractor to deliver a new and valid certificate will result in the suspension of all payments until the new certificate is furnished to the PRTC Executive Director.

i. Insurance coverage required in these specifications shall be in force throughout the Contract term. Should the Successful Contractor fail to provide acceptable evidence of current insurance within five days of written notice at any time during the Contract term, PRTC shall have the absolute right to terminate the Contract without any further obligation to the Successful Contractor, and the Successful Contractor shall be liable to PRTC for the entire additional cost of procuring the incomplete portion of the Contract at time of termination.

j. Compliance by the Successful Contractor and all subcontractors with the foregoing requirements as to carrying insurance shall not relieve the Successful Contractor and all subcontractors of their liabilities and obligations under this hearing or under any other section or provisions of the Contract.

k. Contractual and other Liability insurance provided under the Contract shall not contain a supervision, inspection, or services exclusion that would preclude PRTC from supervising and/or inspecting the project as to the end result. The Successful Contractor shall assume all on-the-job responsibilities as to the control of persons directly employed by it and of the subcontractors and any person employed by the subcontractor.

l. Nothing contained herein shall be construed as creating any contractual relationship between the subcontractor and PRTC. The Successful Contractor shall be as fully responsible to PRTC for the acts and omissions of the subcontractors and of persons employed by them as it is for acts and omissions of persons directly employed by it.

m. Precaution shall be exercised at all times for the protection of persons (including employees) and property.

n. The Successful Contractor and all subcontractors shall comply with the Occupational Safety and Health Act of 1970, Public Law 91-956, as it may apply to the Contract.

o. If the Successful Contractor does not meet the specifications of these insurance requirements, alternate insurance coverage, satisfactory to the PRTC Executive Director, may be considered.

p. PRTC shall be named an additional insured in the General Liability policies and stated so on the Certificate.

V. INSTRUCTIONS TO BIDDERS

V.1 General

The following general information is provided all bidders to facilitate the preparation of suitable bids for the goods or services identified in this IFB, and the requirements set forth shall be binding on all bidders.

Bids must be based on the entire bid set and nothing else, and bidders are expected to take into consideration that the bid set, including any contract which is a part of the Invitation, will constitute the terms of the bargain between PRTC and the successful bidder. Where a contract is provided, it is intended that it shall incorporate the terms and conditions of the bid, rendering further reference to the bid set unnecessary.

PRTC is not at liberty to change the terms of the bargain after the opening of bids. Where questions and discussions prior to bid opening disclose a need for additional information or amendments, appropriate addenda to the IFB will be prepared and distributed so that all bidders will be offering price quotes based on the same information and specifications.

The PRTC Executive Director may extend the date and time for opening of bids if he believes it is necessary.

V.2 Bid Format

One (1) copy of the Bid Submission Package including the required forms must be returned.

The Bid Submission Package should include the following:

a. Title Page – show the name of the Bidder's firm, local address, telephone number, name of contact person and date.

b. Letter of Transmittal summarizing the bid and noting exceptions (if any).

c. A written statement giving the name and address of all proposed subcontractors, the portion of the work and materials which the proposed subcontractors are to perform and any other information which indicates the proposed subcontractors have the necessary facilities, skills, integrity, past experience and financial resources to perform the work.

d. Required Bid Submission Forms as listed below:

   1. Price Schedule (**Attachment B**)
   2. Reference Form (**Attachment C**)
   3. IFB Submission Form (**Attachment D**)

4. Insurance Checklist, including Offeror and Insurance Agent Statement (**Attachment E**)
5. Bid Bond Form **(Attachment F)**

Additionally, Bidders may submit other materials describing their company, qualifications, etc.

Vendors can respond to PRTC's solicitations by submitting bids in paper and also in electronic format, using the Commonwealth of Virginia electronic procurement portal. eVA is Virginia's online, electronic procurement system and is available using the link: https://mvendor.cgieva.com/Vendor/public/AllOpportunities.jsp

Paper bids shall be submitted in a sealed envelope or package which clearly identifies the Project or procurement name, the name of the bidder, the due date and time of the bid opening and plainly states that the bid is not to be opened until bid opening. The bidder assumes the risk that an envelope not properly marked will be mistakenly opened, and thus may be rendered ineligible for consideration. The PRTC Executive Director or his representative(s) shall not be responsible for the premature opening of a bid not properly addressed and identified as specified herein.

V.3 Completeness

All information required by the IFB must be supplied in order for the bid to be considered complete. Inadequate information may require disqualification of the bid. Bids cannot ordinarily be modified after they are opened. Any modifications not expressly provided for in the Invitation may require rejection of the bid.

V.4 Net Prices

Bid prices, unless otherwise specified, must be net, including transportation and handling charges fully prepaid by the Contractor to destination, and subject only to any discount for prompt payment that may be provided in this Invitation.

V.5 Tax Exemption

PRTC is exempt from the payment of any Federal excise or any Virginia sales tax. However, when under established trade practice any Federal excise tax is included in the list price, the bidder may quote the list price and shall show separately the amount of Federal tax, as a flat sum, which shall be deducted by PRTC.

V.6 Only Authorized Parties to Sign

Each bid, and any contract, must be signed by a person authorized to bind the bidder to a valid Contract with PRTC. The PRTC Executive Director may require that any bidder submit powers of attorney or other appropriate documentation showing the authority of the signature to act on the Contractor's behalf. If, whether such proof of agency has been

demanded or not, it later appears that the signatory was not authorized to act, PRTC may declare the Contract void if it is in its best interests to do so.

V.7 Time for Submission of Bids

Written sealed bids for the goods or services identified must be submitted not later than the date and time set forth elsewhere in this IFB.

V.8 Return of Bid Package

If a prospective Bidder is unable to submit a bid in response to this IFB, the bidder should return the IFB with a statement as to why the bidder is unable to bid. Because of the large number of firms listed on PRTC's qualified list of bidders, it is necessary to delete from these lists the names of those persons, firms or corporations who fail to respond after having been invited to bid on three successive solicitations. Furthermore, PRTC is interested in learning whether problems with the bid process have discouraged responses.

V.9 Bidders Present

Contents of bids (price schedule) will be made public at the time fixed for the opening of bids. Bidders are strongly encouraged to attend all openings, and to offer constructive suggestions for improvements to bid procedures, format, or other matters.

V.10 Evaluation of Bids

Bids shall be evaluated on the basis of those requirements which are set forth in the IFB, the Specifications, and the requirements of these General Provisions, any Special Provisions, and the Virginia Public Procurement Act. Bids shall be awarded to the lowest responsive and responsible bidder as set forth in Va. Code § 2.2-4318.

V.11 Competency of Bidder

No bid will be accepted from, or contract awarded to any person, firm, or corporation that is in arrears, or is in default to PRTC upon any debt or contract, or that has defaulted as surety or otherwise upon any obligation to PRTC. The bidder, if requested, must present within forty-eight (48) hours evidence satisfactory to the PRTC Executive Director of performance ability, and possession of necessary facilities, pecuniary resources, and adequate insurance to comply with the terms of these Specifications and contract documents.

V.12 Waiver of Informalities or Irregularities

The PRTC Executive Director is authorized to waive any irregularity or informality in any bid; provided, however, bids or amendments which are received after the time specified for the opening of bids will be neither opened nor considered.

V.13 Withdrawals of Bids

Withdrawal of bids is strictly governed by Va. Code § 2.2-4330. If a bid may be lawfully withdrawn under that section, notice of withdrawal must be provided in writing within two (2) business days after the bid opening.

V.14 One Responsive and Responsible Bid

When only one responsive and responsible bid is received, the IFB may be cancelled and items rebid, unless the PRTC Executive Director determines the price bid is reasonable and in the best interests of PRTC, on the basis of price comparison, value analysis, prior price history, an engineering estimate, or other method which establishes the reasonableness of the price bid.

When the PRTC Executive Director personally determines that the above methods of establishing price reasonableness are not feasible, he may enter into negotiations with the single responsible and responsive bidder. Such negotiations shall consist of detailed discussions with regard to the cost of labor, materials, overhead and profit. The PRTC Executive Director shall establish a detailed cost/price objective that he determines to be in the best interest of PRTC, prior to the initiation of negotiations.

Any bidder who is a party to such negotiations shall be required to certify that its price proposal is complete, current, and accurate prior to the initiation of such negotiations.

A record of negotiations shall be prepared upon the completion thereof, which shall detail the most significant considerations which resulted in the agreed upon Contract price.

V.15 Cancellation of the Invitation for Bid

Virginia Code § 2.2-4319, permits the PRTC Executive Director to cancel any solicitation if it is in the best interest of PRTC to do so.

Bids received at PRTC after the date and time prescribed will not be considered for Contract award and will be returned to the Offeror. The names of the Offerors submitting bids will be available after the bid closing time and date.

VI. ATTACHMENTS

ATTACHMENT A – SOIL REPORTS, SITE PLANS AND TECHNICAL SPECIFICATIONS

ATTACHMENT B – PRICE SCHEDULE

ATTACHMENT C - REFERENCE FORM

ATTACHMENT D - IFB SUBMISSION FORM

ATTACHMENT E - INSURANCE CHECKLIST

ATTACHMENT F – BID BOND FORM

ATTACHMENT G – PRTC SAMPLE CONTRACT

ATTACHMENT A

ATTACHMENT A-1

Limited Subsurface Investigation

by Hillmann Consulting

April 29, 2024

Ms. Doris Lookabill
Potomac and Rappahannock Transportation Commission
14700 Potomac Mills Road
Woodbridge, VA 22192

Re: Limited Subsurface Investigation
Underground Storage Tank Replacement Project
14700 Potomac Mills Road
Woodbridge, VA 22192
Hillmann Project #14885

Dear Ms. Lookabill:

Hillmann Consulting, LLC (Hillmann) performed a limited Phase II subsurface investigation at 14700 Potomac Mills Road, Woodbridge, Virginia on behalf of the Potomac and Rappahannock Transportation Commission (PRTC).

Hillmann understands PRTC is planning to remove/replace the three underground storage tanks (USTs) currently used at the facility to fuel the bus/vehicle fleet. The USTs currently in use include two 15,000-gallon diesel tanks and one 6,000-gallon gasoline tank, each approximately 27 years of age. The location of the UST tank field is depicted on Figure 1.

The purpose of the limited subsurface investigation was to evaluate soil quality in the immediate vicinity of the UST tank field to determine the likelihood of petroleum-impacted soil being encountered during the upcoming UST removal/replacement project. Hillmann performed the environmental sampling in conjunction with a geotechnical investigation being performed by Soil Consultants Engineering (SCE). The environmental soil samples were analyzed for the following parameters:

- Full Suite Volatile Organic Compounds (VOCs) via EPA Method 8260B; and
- Total Petroleum Hydrocarbons (TPH) Diesel Range Organics (DRO) and Gasoline Range Organics (GRO) via EPA Method 8015C.

Groundwater sampling was not included in the scope of work.

FIELD ACTIVITIES (April 10, 2024)

Soil subsurface investigation activities were performed around the perimeter of the tank field on April 10, 2024. Four soil borings (identified as SB-1 through SB-4) were advanced using a hollow-stem auger drill rig to depths of approximately 20-feet below grade (note, SB-4 was terminated at a depth of 7-feet below grade due to auger refusal). Groundwater was encountered in SB-2 only, at approximately 13-feet below grade.

The soil encountered in the borings consisted primarily of sand with a mix of clay and silt. Soil samples were continuously field-screened using a portable photoionization detector (PID), which can detect volatile organic vapors typically associated with petroleum hydrocarbons and some volatile solvents. The split spoon samplers were continuously decontaminated using Alconox® detergent and distilled water.

The four soil boring locations are depicted on Figure 2 and the field boring logs are attached.

Soil samples were retained from three of the borings (SB-1, SB-2 and SB-3) and submitted to Maryland Spectral Services, Inc., for analysis of VOCs, TPH-GRO and TPH-DRO. The soil samples were collected at either the soil-groundwater interface, or the depth where field screening identified the most petroleum impact. Due to probe refusal and minimal soil recovery at a depth of 7-feet below grade in SB-4, a soil sample was not retained for laboratory analysis.

RESULTS

Measurable PID response readings were recorded from the recovered soil samples in SB-1, SB-2 and SB-3 ranging from 28.4 to 621 parts per million (ppm) equivalents. No PID response readings were noted in the SB-4 soil samples.

The VOC concentrations in the soil samples obtained during this investigation were compared to the Virginia Department of Environmental Quality (VDEQ) Voluntary Remediation Program (VRP) Tier II Residential Screening Levels (SLs), revised August 2023. The VDEQ VRP Tier II SLs for unrestricted residential site use are based on U.S. EPA Region III Risk-Based Concentration (RBC) values or are derived from the U.S. EPA Soil Screening Level (SSL) guidance for transfer from soil to air or groundwater. In general, Tier II screening levels represent contaminant concentrations below which affected media would not require remediation for unrestricted (residential) use.

The VOCs detected in the soil samples obtained from SB-1, SB-2 and SB-3 were either less than the laboratory's minimum Reporting Limits (<RL) or less than the respective VRP Tier II Residential SLs.

TPH-GRO was detected in SB-1, SB-2 and SB-3 at concentrations ranging from 23 ppm to 543 ppm. Additionally, TPH-DRO was detected in SB-1, SB-2 and SB-3 at concentrations ranging from 881 ppm to 14,100 ppm. TPH concentrations in soil are typically evaluated using Virginia DEQ standards – the State reporting threshold is 100 ppm TPH in soil. The soil samples from SB-1, SB-2 and SB-3 exceeded the State reporting threshold indicating a petroleum release.

A summary of the soil results is included as Table 1, along with the corresponding VRP Tier II Residential SLs (VOCs) and the DEQ TPH threshold reporting level. The complete laboratory report and chain of custody documentation is attached.

CONCLUSIONS AND RECOMMENDATIONS

This limited subsurface investigation included four soil borings and the collection of three soil samples for laboratory analysis of VOCs, TPH-GRO and TPH-DRO. Measurable PID response readings were recorded during the continuous field screening of soil samples in SB-1, SB-2 and SB-3 ranging from 28.4 to 621 ppm equivalents. Concentrations of VOCs were reported less the respective laboratory reporting level (RL) and VRP Tier II screening level (SL). The soil samples from SB-1, SB-2 and SB-3 exceeded the State TPH reporting threshold of 100 ppm, indicating a petroleum release.

Based on the findings of this limited subsurface investigation, petroleum-impacted soils appear to be present in the subsurface in the vicinity of the tank field. Hillmann recommends in accordance with State regulation, the DEQ be notified of a suspected petroleum release. It is possible the DEQ will issue a directive to further evaluate the extent of the release prior to the commencement of the tank removal/replacement project. Additionally, petroleum-impacted soils are likely to be encountered during upcoming tank removal/replacement activities and additional assessment of soils excavated during construction activities may be necessary to ensure proper handling/disposal of petroleum-impacted soils. Note, if construction dewatering is necessary at the time of tank/removal and replacement, petroleum impacted-groundwater may be encountered in the tank excavation pit and additional assessment of groundwater in the vicinity of the tank field may be necessary to ensure proper handling/disposal of groundwater encountered during construction.

Hillmann appreciates the opportunity to provide you with our services. If you have any questions, or need additional information, please contact our office at (703) 914-1135.

Sincerely,

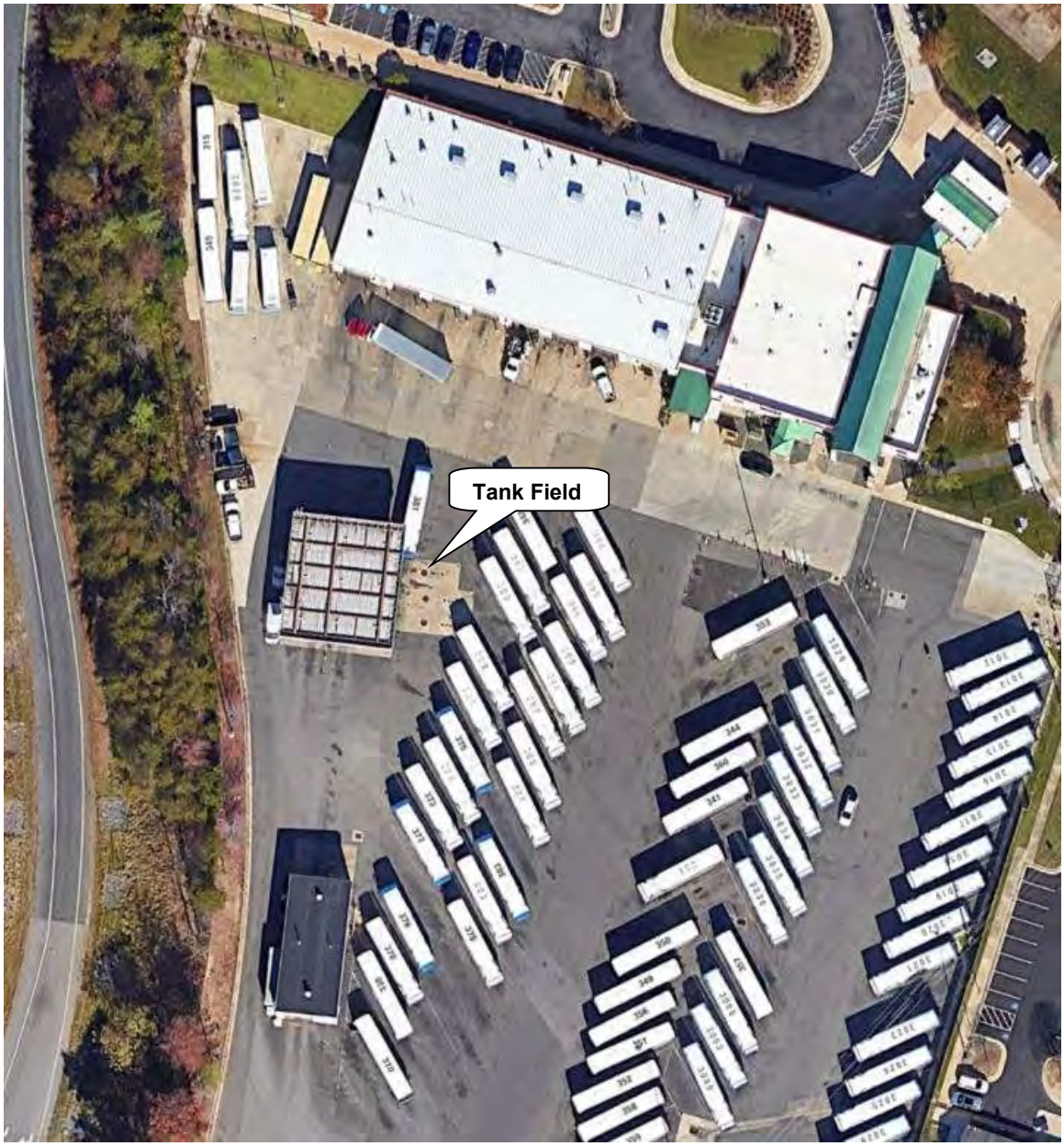
Hillmann Consulting, LLC

James M. Riggs
Senior Project Manager
jriggs@hillmann.com

Chris Hirschmann, CHMM
Director, Environmental Services
chirschmann@hillmann.com

Attachments

FIGURES

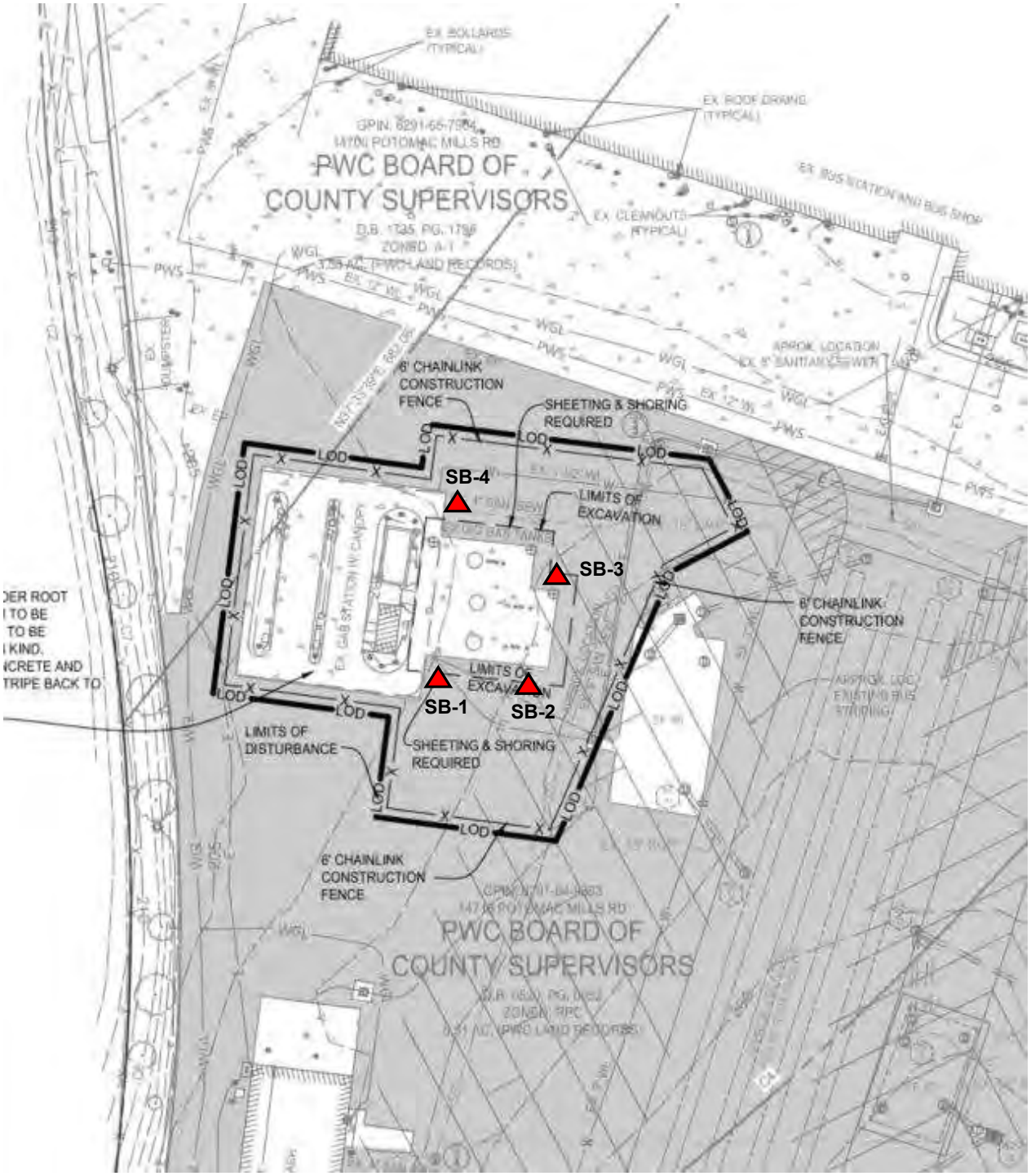


Source: Google Earth

Figure 1: Site Location	SCALE: (Not to Scale)	N

HILLMANN CONSULTING

Project Location:	PRTC – Tank Replacement Project 14700 Potomac Mills Road Woodbridge, VA
Project No.:	V3-14885



Base Map: Fuel Tank Replacement Plan (IMEG)

Figure 2: Boring Locations	SCALE: (Not to Scale)	N

HILLMANN CONSULTING	**Project Location:**	PRTC – Tank Replacement Project 14700 Potomac Mills Road Woodbridge, VA
	Project No.:	V3-14885

SOIL QUALITY TABLE

TABLE 1

SOIL ANALYTICAL RESULTS (DETECTIONS ONLY)

PRTC
UST Replacement Project
14700 Potomac Mills Road
Woodbridge, Virginia

Samples Collected April 10, 2024

Parameter	Units	SB-1 (13 ft)	SB-2 (11 ft)	SB-3 (13 ft)	SB-4 (7 ft)	DEQ Tier II Residential Soil SL	DEQ Storage Tank Program Reporting Level
Volatile Organic Compounds (VOCs)							
Acetone	ug/kg	<RL	78.1	<RL	--	700,000	NA
n-Butylbenzene	ug/kg	588	706	92.9	--	390,000	NA
sec-Butylbenzene	ug/kg	<RL	780	49.7	--	780,000	NA
n-Propylbenzene	ug/kg	393	651	<RL	--	380,000	NA
tert-Butylbenzene	ug/kg	<RL	26.8	<RL	--	780,000	NA
Ethylbenzene	ug/kg	<RL	338	22.6	--	58,000	NA
Isopropylbenzene (Cumene)	ug/kg	<RL	283	21.3	--	190,000	NA
4-Isopropyltoluene	ug/kg	<RL	795	36.5	--	190,000	NA
Naphthalene	ug/kg	<RL	<RL	73.3	--	13,000	NA
n-Propylbenzene	ug/kg	<RL	651	58.6	--	380,000	NA
Tetrachloroethene	ug/kg	<RL	20.1	<RL	--	8,100	NA
Toluene	ug/kg	<RL	<RL	2.8	--	490,000	NA
1,2,4-Trimethylbenzene	ug/kg	2,510	7,010	795	--	30,000	NA
1,3,5-Trimethylbenzene	ug/kg	690	5,230	242	--	27,000	NA
o-Xylene	ug/kg	414	15.5	90.0	--	64,000	NA
m- & p-Xylenes	ug/kg	656	2,290	147	--	55,000	NA
Total Petroleum Hydrocarbons (TPH)							
TPH-Gasoline Range Organics (GRO)	mg/kg	**111**	**543**	23.0	--	NA	100
TPH-Diesel Range Organics (DRO)	mg/kg	**1,740**	**14,100**	**881**	--	NA	100

Notes:
SL = Screening Level
NA = Not applicable
-- = target compound not analyzed
ug/kg = microgram per kilogram (parts per billion)
mg/kg = milligram per kilogram (parts per million)
<RL = target compound(s) not detected above the analytical minimum reporting limit (RL)
Bold designates target compound detected at concentration greater than the DEQ Storage Tank Program reporting threshold
DEQ = Virginia Department of Environmental Quality
TPH Values compared to DEQ Storage Tank Program reporting level
VOCs values compared to DEQ VRP Tier II Residential Screening Levels for soil based on EPA Region III RSL (Updated August 2023)

BORING LOGS

Soil Boring Field Logs

PRTC - 14700 Potomac Mills Rd, Woodbridge, VA
Project: V3-14885
Date of Drilling: 4/10/2024

Soil Boring ID	Boring Depth (bgs)	Subsurface Stratigraphy (bgs)	Water Depth (bgs)	Field Notes
SB-1	Boring Terminated at 20'	0-1' Asphalt, sub-base, aggregate and fines 1-3' Red-brown, silty SAND, some clay, PID = 0 3-7' Yellow-brown, silty SAND, some clay, PID = 0 7-9' Gray, silty CLAY, little sand, PID = 0 9-11' Orange, sandy SILT, little clay, PID = 89.4 ppm 11-13' Orange-gray mottled, SILT, little sand and silt, PID = 422 ppm @ 13' 13-20' Same lithology, PID = 92.4 ppm max.	N/A	Soil sample SB-1 collected @ 13'
SB-2	Refusal at 19'	0-1' Asphalt, sub-base, aggregate and fines 1-10' Yellow-brown, sandy CLAY, PID = 141 ppm @ 7' 10-13' Dark gray, silty SAND, tr. gravel, PID = 621 ppm @ 11' 13-19' Light gray, silty SAND, wet @ 13', PID = 409 ppm	13'	Soil sample SB-2 @ collected 11'
SB-3	Boring Terminated at 20'	0-1' Asphalt, sub-base, aggregate and fines 1-8' Red-brown, sandy CLAY, PID = 0 ppm 8-11' Red-brown, SAND, gravel, some clay, PID = 0 ppm 11-17' Gray-brown, sandy SILT, PID = 70.3 ppm @ 11', PID = 414 ppm @ 13', PID = 53.4 ppm @ 16' 17'-20' Gray, SAND, gravel, little silt, PID = 37.1 ppm	N/A	Soil sample SB-3 collect @ 13'
SB-4	Refusal at 7'	0-1' Asphalt, sub-base, aggregate and fines 2-5' Red-brown, sandy CLAY, PID = 0 ppm 6-7'' Gray, SAND, gravel, some silt PID = 0 ppm (minimal recovery)	N/A	No soil sample collected

LABORATORY REPORTS
&
CHAIN OF CUSTODY DOCUMENTATION

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

22 April 2024

James Riggs
Hillmann Consulting, LLC
6800 Versar Center, Suite 415 West
Springfield, VA 22151
RE: PRTC OMNI WOODBRIDGE

Enclosed are the results of analyses for samples received by the laboratory on 04/11/24 10:40.

Maryland Spectral Services, Inc. is a TNI 2016 Standard accredited laboratory and as such, all analyses performed at Maryland Spectral Services included in this report are 2016 TNI certified except as indicated at the end of this report. Please visit our website at www.mdspectral.com for a complete listing of our TNI 2016 Standard accreditations.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Brewington
President

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: PRTC OMNI WOODBRIDGE

Project Number: V314885
Project Manager: James Riggs

Reported:
04/22/24 13:37

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB-1		4041108-01	Soil	04/10/24 00:00	04/11/24 10:40
SB-2		4041108-02	Soil	04/10/24 00:00	04/11/24 10:40
SB-3		4041108-03	Soil	04/10/24 00:00	04/11/24 10:40

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, President

All analyses performed at Maryland Spectral Services included in the report are TNI certified except as indicated at the end of the report.

Analytical Results

Project: PRTC OMNI WOODBRIDGE

Project Number: V314885
Project Manager: James Riggs

Reported:
04/22/24 13:37

SB-1

4041108-01 (Soil)
Sampled on: 04/10/24 00:00

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/MS) Prepared by 5030-GCMS									
Acetone	ND		ug/kg dry	1540	1540	50	04/17/24	04/17/24 17:49	LL
tert-Amyl alcohol (TAA)	ND		ug/kg dry	7700	7700	50	04/17/24	04/17/24 17:49	LL
tert-Amyl methyl ether (TAME)	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
Benzene	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
Bromobenzene	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
Bromochloromethane	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
Bromodichloromethane	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
Bromoform	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
Bromomethane	ND		ug/kg dry	770	770	50	04/17/24	04/17/24 17:49	LL
tert-Butanol (TBA)	ND		ug/kg dry	7700	7700	50	04/17/24	04/17/24 17:49	LL
2-Butanone (MEK)	ND		ug/kg dry	1540	1540	50	04/17/24	04/17/24 17:49	LL
n-Butylbenzene	**588**	J	ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
sec-Butylbenzene	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
tert-Butylbenzene	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
Carbon disulfide	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
Carbon tetrachloride	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
Chlorobenzene	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
Chloroethane	ND		ug/kg dry	770	770	50	04/17/24	04/17/24 17:49	LL
Chloroform	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
Chloromethane	ND		ug/kg dry	770	770	50	04/17/24	04/17/24 17:49	LL
2-Chlorotoluene	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
4-Chlorotoluene	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
1,2-Dibromo-3-chloropropane	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
Dibromochloromethane	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
1,2-Dibromoethane (EDB)	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
Dibromomethane	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
1,2-Dichlorobenzene	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
1,3-Dichlorobenzene	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
1,4-Dichlorobenzene	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
Dichlorodifluoromethane	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
1,1-Dichloroethane	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
1,2-Dichloroethane	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
1,1-Dichloroethene	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL

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Will Brewington, President

All analyses performed at Maryland Spectral Services included in the report are TNI certified except as indicated at the end of the report.

Analytical Results

Project: PRTC OMNI WOODBRIDGE

Project Number: V314885
Project Manager: James Riggs

Reported:
04/22/24 13:37

SB-1

4041108-01 (Soil)
Sampled on: 04/10/24 00:00

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/MS) Prepared by 5030-GCMS (continued)									
cis-1,2-Dichloroethene	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
trans-1,2-Dichloroethene	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
Dichlorofluoromethane	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
1,2-Dichloropropane	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
1,3-Dichloropropane	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
2,2-Dichloropropane	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
1,1-Dichloropropene	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
cis-1,3-Dichloropropene	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
trans-1,3-Dichloropropene	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
Diisopropyl ether (DIPE)	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
Ethyl tert-butyl ether (ETBE)	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
Ethylbenzene	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
Hexachlorobutadiene	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
2-Hexanone	ND		ug/kg dry	1540	1540	50	04/17/24	04/17/24 17:49	LL
Isopropylbenzene (Cumene)	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
4-Isopropyltoluene	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
4-Methyl-2-pentanone	ND		ug/kg dry	1540	1540	50	04/17/24	04/17/24 17:49	LL
Methylene chloride	ND		ug/kg dry	3080	3080	50	04/17/24	04/17/24 17:49	LL
Naphthalene	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
n-Propylbenzene	**393**	J	ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
Styrene	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
1,1,1,2-Tetrachloroethane	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
1,1,2,2-Tetrachloroethane	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
Tetrachloroethene	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
Toluene	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
1,2,3-Trichlorobenzene	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
1,2,4-Trichlorobenzene	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
1,1,1-Trichloroethane	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
1,1,2-Trichloroethane	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
Trichloroethene	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
Trichlorofluoromethane (Freon 11)	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
1,2,3-Trichloropropane	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL

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Will Brewington, President

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Analytical Results

Project: PRTC OMNI WOODBRIDGE

Project Number: V314885
Project Manager: James Riggs

Reported:
04/22/24 13:37

SB-1

4041108-01 (Soil)
Sampled on: 04/10/24 00:00

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/MS) Prepared by 5030-GCMS (continued)									
1,2,4-Trimethylbenzene	**2510**		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
1,3,5-Trimethylbenzene	**690**	J	ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
Vinyl chloride	ND		ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
o-Xylene	**414**	J	ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
m- & p-Xylenes	**656**	J	ug/kg dry	770	308	50	04/17/24	04/17/24 17:49	LL
Surrogate: 1,2-Dichloroethane-d4			*70-130*	*106 %*			*04/17/24*	*04/17/24 17:49*	
Surrogate: Toluene-d8			*75-120*	*98 %*			*04/17/24*	*04/17/24 17:49*	
Surrogate: 4-Bromofluorobenzene			*65-120*	*104 %*			*04/17/24*	*04/17/24 17:49*	
GASOLINE RANGE ORGANICS BY EPA 5030/8015C Prepared by 5030-GC									
Gasoline-Range Organics	**111**		mg/kg dry	15.4	15.4	50	04/18/24	04/18/24 23:47	MNB
Surrogate: a,a,a-Trifluorotoluene [FID]			*85-115*	*105 %*			*04/18/24*	*04/18/24 23:47*	
DIESEL RANGE ORGANICS BY EPA 3540/8015C Prepared by 3540-GC(Soxhlet)									
Diesel-Range Organics (C10-C28)	**1740**		mg/kg dry	197	197	20	04/19/24	04/22/24 10:08	TS
Surrogate: o-Terphenyl			*70-130*	*%*			*04/19/24*	*04/22/24 10:08*	*S-01*
PERCENT SOLIDS BY ASTM D2216-05 Prepared by Percent Solids									
Percent Solids	**81**		%			1	04/11/24	04/12/24 09:44	PM

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Analytical Results

Project: PRTC OMNI WOODBRIDGE

Project Number: V314885
Project Manager: James Riggs

Reported:
04/22/24 13:37

SB-2

4041108-02 (Soil)
Sampled on: 04/10/24 00:00

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/MS) Prepared by 5030-GCMS									
Acetone	**78.1**		ug/kg dry	59.0	59.0	5	04/17/24	04/17/24 18:14	LL
tert-Amyl alcohol (TAA)	ND		ug/kg dry	295	295	5	04/17/24	04/17/24 18:14	LL
tert-Amyl methyl ether (TAME)	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
Benzene	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
Bromobenzene	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
Bromochloromethane	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
Bromodichloromethane	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
Bromoform	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
Bromomethane	ND		ug/kg dry	29.5	29.5	5	04/17/24	04/17/24 18:14	LL
tert-Butanol (TBA)	ND		ug/kg dry	295	295	5	04/17/24	04/17/24 18:14	LL
2-Butanone (MEK)	ND		ug/kg dry	59.0	59.0	5	04/17/24	04/17/24 18:14	LL
n-Butylbenzene	**706**		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
sec-Butylbenzene	**780**		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
tert-Butylbenzene	**26.8**	J	ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
Carbon disulfide	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
Carbon tetrachloride	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
Chlorobenzene	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
Chloroethane	ND		ug/kg dry	29.5	29.5	5	04/17/24	04/17/24 18:14	LL
Chloroform	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
Chloromethane	ND		ug/kg dry	29.5	29.5	5	04/17/24	04/17/24 18:14	LL
2-Chlorotoluene	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
4-Chlorotoluene	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
1,2-Dibromo-3-chloropropane	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
Dibromochloromethane	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
1,2-Dibromoethane (EDB)	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
Dibromomethane	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
1,2-Dichlorobenzene	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
1,3-Dichlorobenzene	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
1,4-Dichlorobenzene	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
Dichlorodifluoromethane	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
1,1-Dichloroethane	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
1,2-Dichloroethane	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
1,1-Dichloroethene	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL

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Analytical Results

Project: PRTC OMNI WOODBRIDGE

Project Number: V314885
Project Manager: James Riggs

Reported:
04/22/24 13:37

SB-2

4041108-02 (Soil)
Sampled on: 04/10/24 00:00

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/MS) Prepared by 5030-GCMS (continued)									
cis-1,2-Dichloroethene	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
trans-1,2-Dichloroethene	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
Dichlorofluoromethane	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
1,2-Dichloropropane	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
1,3-Dichloropropane	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
2,2-Dichloropropane	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
1,1-Dichloropropene	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
cis-1,3-Dichloropropene	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
trans-1,3-Dichloropropene	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
Diisopropyl ether (DIPE)	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
Ethyl tert-butyl ether (ETBE)	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
Ethylbenzene	**338**		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
Hexachlorobutadiene	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
2-Hexanone	ND		ug/kg dry	59.0	59.0	5	04/17/24	04/17/24 18:14	LL
Isopropylbenzene (Cumene)	**283**		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
4-Isopropyltoluene	**795**		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
4-Methyl-2-pentanone	ND		ug/kg dry	59.0	59.0	5	04/17/24	04/17/24 18:14	LL
Methylene chloride	ND		ug/kg dry	118	118	5	04/17/24	04/17/24 18:14	LL
Naphthalene	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
n-Propylbenzene	**651**		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
Styrene	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
1,1,1,2-Tetrachloroethane	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
1,1,2,2-Tetrachloroethane	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
Tetrachloroethene	**20.1**	J	ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
Toluene	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
1,2,3-Trichlorobenzene	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
1,2,4-Trichlorobenzene	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
1,1,1-Trichloroethane	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
1,1,2-Trichloroethane	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
Trichloroethene	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
Trichlorofluoromethane (Freon 11)	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
1,2,3-Trichloropropane	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
1,2,4-Trimethylbenzene	**7010**	E	ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL

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Analytical Results

Project: PRTC OMNI WOODBRIDGE

Project Number: V314885
Project Manager: James Riggs

Reported:
04/22/24 13:37

SB-2

4041108-02 (Soil)
Sampled on: 04/10/24 00:00

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/MS) Prepared by 5030-GCMS (continued)									
1,3,5-Trimethylbenzene	**5230**	E	ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
Vinyl chloride	ND		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
o-Xylene	**15.5**	J	ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
m- & p-Xylenes	**2290**		ug/kg dry	29.5	11.8	5	04/17/24	04/17/24 18:14	LL
Surrogate: 1,2-Dichloroethane-d4			*70-130*	*101 %*			*04/17/24*	*04/17/24 18:14*	
Surrogate: Toluene-d8			*75-120*	*115 %*			*04/17/24*	*04/17/24 18:14*	
Surrogate: 4-Bromofluorobenzene			*65-120*	*455 %*			*04/17/24*	*04/17/24 18:14*	*S-04*
DIESEL RANGE ORGANICS BY EPA 3540/8015C Prepared by 3540-GC(Soxhlet)									
Diesel-Range Organics (C10-C28)	**14100**		mg/kg dry	944	944	100	04/19/24	04/22/24 10:33	TS
Surrogate: o-Terphenyl			*70-130*	*%*			*04/19/24*	*04/22/24 10:33*	*S-01*
PERCENT SOLIDS BY ASTM D2216-05 Prepared by Percent Solids									
Percent Solids	**85**		%			1	04/11/24	04/12/24 09:44	PM

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Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: PRTC OMNI WOODBRIDGE

Project Number: V314885
Project Manager: James Riggs

Reported:
04/22/24 13:37

SB-2

4041108-02RE1 (Soil)
Sampled on: 04/10/24 00:00

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
GASOLINE RANGE ORGANICS BY EPA 5030/8015C Prepared by 5030-GC									
Gasoline-Range Organics	**543**		mg/kg dry	14.7	14.7	50	04/19/24	04/19/24 23:59	MNB
Surrogate: a,a,a-Trifluorotoluene [FID]			*85-115*	*101 %*			*04/19/24*	*04/19/24 23:59*	

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Analytical Results

Project: PRTC OMNI WOODBRIDGE

Project Number: V314885
Project Manager: James Riggs

Reported:
04/22/24 13:37

SB-3

4041108-03 (Soil)
Sampled on: 04/10/24 00:00

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/MS) Prepared by 5030-GCMS									
Acetone	ND		ug/kg dry	12.0	12.0	1	04/17/24	04/17/24 18:40	LL
tert-Amyl alcohol (TAA)	ND		ug/kg dry	59.9	59.9	1	04/17/24	04/17/24 18:40	LL
tert-Amyl methyl ether (TAME)	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
Benzene	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
Bromobenzene	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
Bromochloromethane	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
Bromodichloromethane	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
Bromoform	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
Bromomethane	ND		ug/kg dry	6.0	6.0	1	04/17/24	04/17/24 18:40	LL
tert-Butanol (TBA)	ND		ug/kg dry	59.9	59.9	1	04/17/24	04/17/24 18:40	LL
2-Butanone (MEK)	ND		ug/kg dry	12.0	12.0	1	04/17/24	04/17/24 18:40	LL
n-Butylbenzene	**92.9**		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
sec-Butylbenzene	**49.7**		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
tert-Butylbenzene	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
Carbon disulfide	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
Carbon tetrachloride	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
Chlorobenzene	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
Chloroethane	ND		ug/kg dry	6.0	6.0	1	04/17/24	04/17/24 18:40	LL
Chloroform	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
Chloromethane	ND		ug/kg dry	6.0	6.0	1	04/17/24	04/17/24 18:40	LL
2-Chlorotoluene	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
4-Chlorotoluene	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
1,2-Dibromo-3-chloropropane	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
Dibromochloromethane	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
1,2-Dibromoethane (EDB)	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
Dibromomethane	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
1,2-Dichlorobenzene	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
1,3-Dichlorobenzene	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
1,4-Dichlorobenzene	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
Dichlorodifluoromethane	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
1,1-Dichloroethane	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
1,2-Dichloroethane	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
1,1-Dichloroethene	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL

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Analytical Results

Project: PRTC OMNI WOODBRIDGE

Project Number: V314885
Project Manager: James Riggs

Reported:
04/22/24 13:37

SB-3

4041108-03 (Soil)
Sampled on: 04/10/24 00:00

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/MS) Prepared by 5030-GCMS (continued)									
cis-1,2-Dichloroethene	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
trans-1,2-Dichloroethene	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
Dichlorofluoromethane	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
1,2-Dichloropropane	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
1,3-Dichloropropane	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
2,2-Dichloropropane	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
1,1-Dichloropropene	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
cis-1,3-Dichloropropene	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
trans-1,3-Dichloropropene	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
Diisopropyl ether (DIPE)	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
Ethyl tert-butyl ether (ETBE)	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
Ethylbenzene	**22.6**		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
Hexachlorobutadiene	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
2-Hexanone	ND		ug/kg dry	12.0	12.0	1	04/17/24	04/17/24 18:40	LL
Isopropylbenzene (Cumene)	**21.3**		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
4-Isopropyltoluene	**36.5**		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
4-Methyl-2-pentanone	ND		ug/kg dry	12.0	12.0	1	04/17/24	04/17/24 18:40	LL
Methylene chloride	ND		ug/kg dry	24.0	24.0	1	04/17/24	04/17/24 18:40	LL
Naphthalene	**73.3**		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
n-Propylbenzene	**58.6**		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
Styrene	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
1,1,1,2-Tetrachloroethane	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
1,1,2,2-Tetrachloroethane	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
Tetrachloroethene	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
Toluene	**2.8**	J	ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
1,2,3-Trichlorobenzene	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
1,2,4-Trichlorobenzene	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
1,1,1-Trichloroethane	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
1,1,2-Trichloroethane	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
Trichloroethene	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
Trichlorofluoromethane (Freon 11)	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
1,2,3-Trichloropropane	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
1,2,4-Trimethylbenzene	**795**	E	ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, President

All analyses performed at Maryland Spectral Services included in the report are TNI certified except as indicated at the end of the report.

Analytical Results

Project: PRTC OMNI WOODBRIDGE

Project Number: V314885
Project Manager: James Riggs

Reported:
04/22/24 13:37

SB-3

4041108-03 (Soil)
Sampled on: 04/10/24 00:00

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Volatile Organics by EPA 8260B (GC/MS) Prepared by 5030-GCMS (continued)									
1,3,5-Trimethylbenzene	**242**	E	ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
Vinyl chloride	ND		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
o-Xylene	**90.0**		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
m- & p-Xylenes	**147**		ug/kg dry	6.0	2.4	1	04/17/24	04/17/24 18:40	LL
Surrogate: 1,2-Dichloroethane-d4			*70-130*	*95 %*			*04/17/24*	*04/17/24 18:40*	
Surrogate: Toluene-d8			*75-120*	*105 %*			*04/17/24*	*04/17/24 18:40*	
Surrogate: 4-Bromofluorobenzene			*65-120*	*104 %*			*04/17/24*	*04/17/24 18:40*	
GASOLINE RANGE ORGANICS BY EPA 5030/8015C Prepared by 5030-GC									
Gasoline-Range Organics	**23.0**		mg/kg dry	0.60	0.60	5	04/16/24	04/16/24 18:10	MNB
Surrogate: a,a,a-Trifluorotoluene [FID]			*85-115*	*101 %*			*04/16/24*	*04/16/24 18:10*	
DIESEL RANGE ORGANICS BY EPA 3540/8015C Prepared by 3540-GC(Soxhlet)									
Diesel-Range Organics (C10-C28)	**881**		mg/kg dry	95.8	95.8	10	04/19/24	04/22/24 10:57	TS
Surrogate: o-Terphenyl			*70-130*	*118 %*			*04/19/24*	*04/22/24 10:57*	
PERCENT SOLIDS BY ASTM D2216-05 Prepared by Percent Solids									
Percent Solids	**84**		%			1	04/11/24	04/12/24 09:44	PM

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Will Brewington, President

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Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: PRTC OMNI WOODBRIDGE

Project Number: V314885
Project Manager: James Riggs

Reported:
04/22/24 13:37

Maryland Spectral Services does not maintain certification for the following analytical parameters:

Maryland Spectral Services

Matrix , Method , Analyte

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Will Brewington, President

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Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: PRTC OMNI WOODBRIDGE

Project Number: V314885
Project Manager: James Riggs

Reported:
04/22/24 13:37

Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
S-01	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference.
QM-4X	The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
J	Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate (CLP E-flag).
RE	Sample reanalyses are done at the laboratory's discretion as a mechanism to improve data quality. Any client requested reanalysis will be identified with a sample qualifier.
ND	Analyte NOT DETECTED at or above the reporting limit
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
%-Solids	Percent Solids is a supportive test and as such does not require accredidation

If this report contains any samples analyzed for gasoline range organics (GRO) by EPA Method 8015C and no trip blank was shipped, stored, and received with the sample(s) as required by Section 3.1 of the EPA Method, the sample analysis contained in this report cannot exclude the possibility that any reportable GRO measurement was due to environmental contamination of the sample during shipping or storage.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, President

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IFB No. 025-001
PRTC Fuel Storage Tanks and Dispensers Replacement

CHAIN-OF-CUSTODY RECORD

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410-247-7600 * Fax 410-247-7602
reporting@mdspectral.com

Matrix Codes: NPW - non-potable water
DW - drinking water

Company Name:	Project Manager:
Hillmann Consulting LLC	Jim Riggs
Project Name:	**Project ID:**
PRTC Omni Woodbridge	V314885
Sampler(s):	**P.O. Number:**
Jim Riggs	V314885
State of Origin: VA	

Field Sample ID:	Date	Time	DW	NPW	Soil	Other	Grab	Composite	# of containers	VOCs 8260	TPH-GRO 8015	TPH-DRO 8015	Preservative	Field Notes	MSS Lab ID
SB-1	4/10/24				X		X		2	X	X	X			404108-01
SB-2	↓				X		X		2	X	X	X			-02
SB-3	↓				X		X		2	X	X	X			-03

Relinquished by: (Signature)	Date /Time	Relinquished by: (Signature)
(Printed) Jim Riggs	4/11/24	(Printed)
Relinquished by: (Signature)	Date /Time	Received by lab: (Signature)
(Printed)	10:40 4-11-24	(Printed) Lori Foster

Special Instructions / QC Requirements & Comments:
Site: 14700 Potomac Mills Rd.

Please indicate if any of the following certifications are required:
- ☐ Virginia VELAP
- ☐ Pennsylvania NELAP
- ☐ West Virginia DEP
- ☐ MD Drinking Water
- ☐ VA Drinking Water
- ☐ Other _____

Turn Around Time:
- ☒ Normal (7 day)
- ☐ 5 day
- ☐ 4 day
- ☐ 3 day
- ☐ Rush (2 day)
- ☐ Next Day
- ☐ Other: _____
- ☐ Specific Due Date: _____

Delivery Method:
- ☐ Courier
- ☒ Client
- ☐ UPS
- ☐ Fed Ex
- ☐ USPS
- ☐ Other _____

Lab Use:
Temp: 2.7 °C
- ☑ Received on Ice
- ☐ Received Same Day
  - ☑ T-41
  - ☐ T-45

Sample Disposal:
- ☐ Return to Client
- ☒ Disposal by lab
- ☐ Archive for __ days

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ATTACHMENT A-2

Subsurface Exploration and Geotechnical Engineering Report

by Soil Consultants Engineering (SCE)

SCE
SOIL CONSULTANTS ENGINEERING

CONSULTING ENGINEERS · BUILDING OFFICIALS
CONSTRUCTION PROFESSIONALS · SOIL SCIENTISTS & GEOLOGISTS

SUBSURFACE EXPLORATION
AND
GEOTECHNICAL ENGINEERING REPORT

FOR:

OMNI RIDE FUEL TANK REPLACEMENT
14700 & 14720 POTOMAC MILLS ROAD,
WOODBRIDGE, VIRGINIA 22192

SCE PROJECT NO: 23-0429V

MAY 16th, 2024

PREPARED FOR: **Ms. Doris Lookabill**
PRTC
14700 Potomac Mills Road,
Woodbridge, VA 22192

TABLE OF CONTENTS

AUTHORIZATION

Ms. Doris Lookabill is planning to replace the existing underground fuel tanks at 14700 & 14720 Potomac Mills Road, Woodbridge, Prince William County, Virginia 22192. Previously, Ms. Lookabill authorized Soil Consultants Engineering, LLC. (SCE) to perform a subsurface exploration and prepare a geotechnical engineering report for the proposed project. This report summarizes the results of the subsurface exploration and the geotechnical engineering study. It specifically addresses the following topics:

- Scope of services and procedures used during this investigation:
- Site description;
- Brief review of published geologic and soil mapping;
- Observed subsurface conditions, including soil stratigraphy, and depths to groundwater;
- Evaluation of the effects of the observed subsurface conditions on the proposed construction;
- Recommendations for:
    - Earthwork Specifications
    - Soil bearing capacities
    - Waterproofing and backfill material
    - Slabs
    - Site drainage
    - Pavements
    - Underground Fuel Storage Tanks

Ms. Lookabill provided SCE with a copy of the "Fuel Tank Replacement Plan" drafted by IMEG dated November 14th, 2023. A portion of the "Fuel Tank Replacement Plan" has been reproduced as our "**Boring Location Plan**" enclosed in the appendix to this report.

SITE DESCRIPTION AND PROPOSED PROJECT

The site is located at 14700 & 14720 Potomac Mills Road, Woodbridge, Prince William County, Virginia 22192. For the details, please refer to the appended "**Site Vicinity Map**."

The site is currently developed with an active bus depot. The project includes the replacement of the existing fuel tanks (UST) with two diesel XERXES 8' DIA DW UL CAP. 15,000 Gallons Advanced Fueling Systems and one unleaded XERXES 8' DIA DW UL CAP. 6,000 Gallons Advanced Fueling Systems.

SOIL MAPPING AND GEOLOGY

According to the *"Virginia Division of Mineral Resources, 1993, Geologic Map of Virginia: Virginia Division of Mineral Resources,"* the site is mapped as the **Potomac Formation (Kp).**

The **Potomac Formation (Kp)** is described by the USGS as comprised of fine- to coarse-grained, locally gravelly, crossbedded, light-colored, interbedded with white or variegated red and yellow, massive clay, and rarely dark-gray, woody clay. This unit dates to the Cretaceous.

According to the Natural Resource Conservation Service (NRCS), the soils on this site are mapped as the ***Quantico sandy loam (47C***) and ***Watt channery silt loam (55D).***

The ***Watt channery silt loam (55D)*** is a well-drained soil with slopes of 15 to 25 percent. The parent material is composed of graphitic schist residuum. A typical soil profile consists of channery silt loam from 0 to 7 inches, very channery silt loam from 7 to 16 inches, extremely channery silt loam from 16 to 29 inches, and bedrock from 29 to 33 inches. The typical depth to restrictive features is 20 to 40 inches to paralithic bedrock, and the depth to water table is more than 80 inches. Prince William County has designated this soil unit as Type II.

The ***Quantico sandy loam (47C)*** is a well-drained soil with slopes of 7 to 15 percent. The parent material is composed of marine deposits. A typical soil profile consists of loam from 0 to 13 inches, clay loam from 13 to 18 inches, clay from 18 to 47 inches, and sandy clay from 47 to 72 inches. The typical depth to restrictive features is more than 80 inches, and the depth to water table is more than 80 inches. Prince William County has designated this soil unit as Type I.

The mean annual precipitation for these soils is 19 to 50 inches and mean annual air temperature is 46 to 69 degrees Fahrenheit.

SCOPE OF SERVICE

Soil Consultants personnel explored the subsurface conditions at the site by advancing four (4) borings (B-1 through B-4) adjacent to the underground tank field. SCE subcontracted RECON Drilling who used a CME 45-B truck mounted drill rig with an automatic drop hammer, and 2 ¼" hollow stem augers (HSA).

SCE personnel selected the location and the number of borings based on a review of the site plan, and boring elevations were estimated based on the "Fuel Tank Replacement Plan." All borings were drilled on the existing asphalt surfaces. All boring locations were cleared and marked by a private utility locator, GPRS, Inc, prior to the start of drilling.

Due to the proximity of the borings to the existing tank field, a third-party, environmental compliance company, Hill Consulting, LLC was onsite during time of drilling to clean all split-spoons after SPT-testing. The soil spoils were placed back into the borings upon completion of drilling until flush with existing surface grade, and the borings cold-patched with asphalt. The residual spoils were placed into 55-gallon drums and will be taken to a third-party environmental hazardous waste-testing company. The arrangement of the environmental testing is not within SCE's scope of work and shall be the responsibility of Hillman Consulting, LLC.

The drilling subcontractor used a CME 45-B truck mounted drill rig with a 140-pound automatic drop hammer to perform Standard Penetration Test (SPT) in accordance with ASTM D-1586; this was used to measure the allowable soil bearing capacity over one (1.0) foot intervals.

SPT blow-counts for all borings can be found in the attached "**Boring Logs**" section in the appendix of this report. The penetration resistance, in conjunction with soil classifications, provides an indication of engineering characteristics of a soil.

A Soil Consultants geologist observed and visually identified the excavated soils per ASTM D-2488 procedures. The geologist prepared field logs that described the depth and identity of the observed materials, logged all recovered soil samples, and observed groundwater conditions. The SCE laboratory performed three (3) classification tests on representative soil samples in accordance with ASTM D-2487 and six (6) natural moisture tests in accordance with ASTM D-2216.

The boring logs are our interpretation of the subsurface conditions based upon our field geologist's visual classifications of the soil. The strata boundaries indicated on our logs are an interpretation of the soil profile. Soil types often grade into one another, and the strata changes may be gradual rather than distinct. The approximate boring locations are shown on a copy of the "Fuel Tank Replacement Plan" entitled "**Boring Location Plan**," which is presented as an appendix of this report.

OBSERVED SUBSURFACE CONDITIONS

The subsurface conditions at the site generally consist of three (3) distinct soil strata, as summarized within the table below. Detailed boring logs can be found in the appendix; the boring logs included in the appendix should be reviewed for specific information at the boring locations, in the attached "**Boring Logs**". The strata boundaries indicated on our logs are an interpretation of the soil profile. Soil types often grade into one another, and the strata changes are usually gradual rather than distinct.

Summary of Boring Profiles

Approximate Depth Range (feet)	Approximate Elevation Range (feet)	Stratum	Description	SPT N-Values (bpf)
0.0 – 1.5	204.0 – 201.5	N/A	An approximately 1.0- to 1.5-foot asphalt and crushed stone aggregate layer in all borings.	N/A
1.0 – 12.3	203.0 – 191.0	I	Existing FILL consisting of very loose to medium-dense Silty SAND (SM), Clayey SAND (SC), and Well-Graded GRAVEL (GW)	1 - 18
5.8 – 20.6	198.2 – 183.1	II	Native interbedded very hard SILT (ML) and Sandy SILT (ML) and very dense Silty SAND (SM) trace gravel.	>50
6.0 – 7.5	198.0 – 196.5	III	Weathered to unweathered bedrock mapped as "The Potomac Formation" and is described by the USGS as comprised of fine- to coarse-grained, locally gravelly, crossbedded, light-colored, interbedded with white or variegated red and yellow, massive clay, and rarely dark-gray, woody clay.	>100

The Soil Consultants laboratory performed three (3) classification tests in accordance with ASTM D-2487 and six (6) natural moisture content tests in accordance with ASTM D-2216 on representative soil samples. The results of our laboratory classification and moisture tests are summarized in the table below:

Summary of Laboratory Testing Results

Borehole No.	Depth (feet)	Liquid Limit	Plastic Limit	Plasticity Index	Gravel %	Sand %	%<200 Sieve	Classification (USCS)	Water Content (%)
B-1	14.5	36	28	8	0.0	30.1	69.9	ML	18.6
B-2	16.0	NP	NP	NP	0.0	33.0	67.0	ML	23.2
B-2	14.0	--	--	--	--	--	--	--	10.9
B-3	18.0	--	--	--	--	--	--	--	13.5
B-3	13.5	55	31	24	0.0	9.1	90.1	MH	19.1
B-4	6.0	--	--	--	--	--	--	--	7.5

"NP" is abbreviated for "non-plastic", a term used when soils exhibit non-plastic behavior. Typically, these soils contain limited amounts of cohesive soils, i.e., silt and clay, and mainly consist of "clean" coarse-grained soils. Non-plastic soils do not have a transitionary phase between the solid phase and liquid phases, and immediately exhibit liquid properties when water is added to the sample.

EVALUATION

While the site may be developed as proposed, there are some conditions which merit special attention in engineering analysis, design, and construction.

Organic Soils and Surface Layer

An organic surface layer was not encountered in any boring. All borings were advanced in the asphalt parking area away from any organic soils. The organic surface layers, the underlying soils (when containing organic matter), and any soft or excessively wet or disturbed soils are unsuitable as subgrade materials for building foundations, pavements, and slabs-on-grade, and for areas to receive compacted, controlled fill. Such unsuitable soils should be removed from all building and pavement areas and areas to receive fill.

These near surface soils can become soft or excessively wet due to construction traffic and wet weather especially next to or within low-lying areas and swales.

Near trees the depth of organic materials may be deeper than observed in the boring locations.

Any undercutting below finished subgrades should be replaced with compacted, controlled fill. The amount of required undercutting depends to a large extent on the weather conditions and the time of the year during which the earthwork operations are done.

Extra undercutting due to soft or excessively wet soils will be required if earthwork is done during a wet period, and less undercutting will be required during a dry period.

Please note the information in our report and on our boring logs may not be sufficient for earthwork take-off and estimates.

High Seasonal Water Table

Groundwater was encountered during subsurface exploration in B-2 at a depth of 13.0 feet below surface elevation, only at time of drilling. Mottling, an indication of high seasonal water table, was not encountered during subsurface exploration. Groundwater and mottling may exist in other areas that were not explored. The site grading around the building must ensure that surface water is carried away from the building.

Soil mottling is an indication of a high seasonal water table and is evident as blotchy colored and spotted soils interspersed in the dominant soil color. Soil mottling is formally known as "redoximorphic features" and is one indication of a seasonal high-water level. Extended periods of water-saturated soils create anaerobic conditions that result in permanent deposition of gray ferrous iron oxide which can be used to determine the elevation limit of a seasonal high-water level. High-water levels are seasonally dependent and can fluctuate in response to rainfall and dry periods.

During construction, the groundwater must be maintained at least 2.0 feet below the bottom of an excavation. If water is allowed to enter an excavation, the bottom of the excavation can heave, and the sides of the excavation can become unstable.

If it becomes obvious that groundwater is within 2.0 feet of the bottom of an excavation, all construction activities must cease until the groundwater can be lowered accordingly.

The geotechnical engineer or the engineer's qualified representative shall observe the groundwater level before the resumption of construction activities. The contractor shall be responsible for the ways and means of dewatering.

Expansive Soils

SCE did encounter high expansive potential (i.e. shrink-swell) soils during subsurface exploration in B-3 between 12.0 and 16.5 feet below surface elevation. Expansive soils may exist in areas that were not explored. With regard to such soils, Prince William County issued the following:

A. Expansive soil is defined by the International Building Code and the International Residential Code as:

"Soils meeting all four of the following provisions shall be considered expansive, except that tests to show compliance with Items 1, 2 and 3 shall not be required if the test prescribed in Item 4 is conducted:

1. Plasticity Index (PI) of 15 or greater determined in accordance with ASTM D 4318.
2. More than 10 percent of the soil particles pass a No. 200 sieve (0.75 μm), determined in accordance with ASTM D 422.
3. More than 10 percent of the soil particles are less than 5 micrometers in size, determined in accordance with ASTM D 422.
4. Expansion Index greater than 20, determined in accordance with ASTM D 4829."

B. Plastic Index Corrected

$$PI_{cor} = PI \times \frac{\text{(\% Passing No. 40 Sieve)}}{100}$$

C. Expansive Index Corrected

$$EI_{cor} = EI \times \frac{\text{(\% Passing No. 4 Sieve)}}{100}$$

D. Liquid Limit – The water content corresponding to the behavior change between the liquid and plastic state of silt or clay soil, determined in accordance with ASTM D 4318.

Policy

If the Plasticity Index of the soil is 20 or less (e.g. PI <= 20) and the Liquid Limit is 45 or less (e.g. LL <= 45), the Plasticity Index Corrected (PI_{cor}) or the Expansion Index Corrected (EI_{cor}) may be substituted in the definition of Expansive Soil.

In support of this policy, Prince William County has defined unacceptably expansive soils beneath roadways as those with Liquid Limits and Plasticity Indexes greater than 40 and 15, respectively.

Beneath buildings and retaining walls, unacceptably expansive soils are those with Liquid Limits and Plasticity Indexes equal to or greater than 40 and 15, respectively.

This includes not only Highly PLASTIC CLAY (CH) and ELASTIC SILT (MH) but also some Lean CLAY (CL) and SILT (ML). By these definitions, some of the tested soils at this site are not acceptable for use under pavements or structures.

When expansive soils are observed within 2.0 vertical feet of floor slabs, pavements, sidewalks, or curbs and gutters, they must be removed to a depth of at least 2.0 feet below the design subgrade and replaced with suitable compacted, controlled fill or drained coarse aggregate (VDOT No.57 stone).

When expansive soils are observed at the design foundation bearing elevation, the footings for the proposed structures should extend through the expansive soils to bear on the underlying stiff or dense non-expansive soils. Alternatively, the foundations may rest on these expansive soils at a depth of at least 4.0 feet below the final exterior grades. This places the bearing elevation below the zone of normal seasonal moisture change.

When this alternative is selected, the foundation may be constructed at the under-cut depth or the undercut may be back-filled to design footing bearing elevation with lean concrete, so-called "flowable fill."

There must be at least 3.0 feet of non-expansive backfill between foundation walls and the expansive soils exposed in the sidewalls of the excavation.

Shallow Depth to Rock

Shallow depth to bedrock was encountered in B-4 at 7.5 feet below surface elevation. Groundwater tends to pond around foundations that are excavated into bedrock. The pit used for the foundation acts as a bowl due to the impermeability of the bedrock. In cases of shallow bedrock, it would be essential to provide adequate, dependable drainage.

Use of Rock Excavating Techniques

The backhoe could excavate to depths as shallow as 7.5 to 20.6 feet below the existing grades. While larger track-hoes will be able to excavate deeper, it is probable that rock excavation techniques will be required in some of the road and utility cuts. Standard blasting techniques may not be needed for this project site.

Existing Fill

Existing fill was encountered in all borings, to a maximum depth of 12.3 feet below ground surface elevation. The fill consisted mainly of asphalt and concrete with an underlaying layer of coarse, crushed stone aggregate. Existing fill may be encountered in other areas onsite and within the planned development area. Such unsuitable soils should be removed from all foundation, pavement areas, and areas to receive fill, including the required offsets.

Any undercutting below finished subgrades should be replaced with compacted, controlled fill, except foundations may rest on expansive soils with adequate bearing capacity when footings are extended to more than 4.0 feet (per County regulations) below exterior grade.

Use of On-Site Soils for Fill

Controlled, compacted soil fill should consist of material that is free from trash, organic materials, clay lumps, stones larger than 3.0 inches (except as noted below), and other deleterious material.

The fill should consist of clean, non-plastic Sandy SILT (ML) or more granular material (not including "clean sands or gravels," i.e. SP, SW, GP, or GW) with a Liquid Limit less than 40 and a Plastic Limit less than 15.

Some of the observed soils may be suitable for structural fills or wall backfill. Soil Consultants suggests that laboratory classification, moisture density relationship, and moisture content tests should be performed on potential fill materials before construction to verify their suitability.

Slab-on-Grade

The UST bottom ballast slab will be designed as a slab-on-grade ("floating slab"). The slab resting on natural ground or compacted, controlled fill shall be designed as a slab-on-grade and shall bear on at least 6.0 inches of crushed stone aggregate, with an approved 6-mil. polyethylene vapor retarder installed over the crushed stone aggregate. The fuel tanks will bear on at least 6.0 inches of pea gravel between it and the bottom ballast slab with pea gravel surrounding it.

The top ballast slab will be designed as a slab-on-grade ("floating slab"). The slab resting on compacted, controlled fill shall be designed as a slab-on-grade and shall bear on the pea gravel backfill surrounding the fuel tanks. The top ballast slab will be designed as a turn down edge slab-on-grade with turn down edges extending below the frost depth to at least twenty-four (24.0) inches below surface grade elevation.

The aggregate layer shall be placed over stiff or dense natural subgrade or on compacted, controlled fill. Before placing the aggregate and vapor barrier, the geotechnical engineer or the engineer's qualified representative shall observe the slab subgrades for bearing and material compliance.

If soft, loose, or wet material is observed, then that soil shall be removed down to firm subgrade and replaced with either compacted, controlled fill or a thicker layer of coarse aggregate.

If deep layers of soft, loose, or wet materials exist at the slab subgrade, the geotechnical engineer shall be contacted for additional recommendations.

If expansive soils, Highly PLASTIC CLAY (CH) or ELASTIC SILT (MH), are located within 2.0 vertical feet of the slab subgrade, then the expansive soil shall be excavated to a depth of 2.0 feet below the slab subgrade.

The excavated material shall be replaced with compacted, controlled fill. The concrete for slabs shall be placed as soon as possible after the excavation is completed to prevent degradation of the bearing soils.

Provided the placement of structural fill and granular drainage layer are installed per the recommendations discussed above, the slab-on-grade may be designed assuming a modulus of subgrade reaction, k1 of 100 pci (lbs./cu. inch).

Pavement Design

When the travelway is to be paved, Soil Consultants estimates the California Bearing Ratio (CBR) value for the travelway soils to be between 2 and 4. A CBR of 3 may be used for preliminary design purposes, although the final design should be based upon the actual tested CBR value.

SEISMIC CLASSIFICATION AND OSHA SOIL TYPE

It is SCE's opinion that the soil conditions at this site can be categorized as Site Class D per the ASCE/SEI Standard 7-16 and the 2018 International Building Code. This categorization is based on the near surface boring results, general geologic information for the region, and the information contained in the ASCE/SEI Standard 7-16 and IBC 2018 codes. The onsite soils are classified as OSHA Type "B."

GEOTECHNICAL REQUIREMENTS

OMNI RIDE FUEL TANK REPLACEMENT, 14700 & 14720 POTOMAC MILLS ROAD, WOODBRIDGE, VIRGINIA 22192 MAY 16th, 2024 PROJECT NUMBER: 24-0115V

BY SOIL CONSULTANTS ENGINEERING, LLC.
9303 CENTER STREET, MANASSAS, VIRGINIA
PHONE NUMBER: 703-366-3000
FACSIMILIE NUMBER: 703-366-3400

The following recommendations pertain to the geotechnical aspects of the design and construction for the underground fuel tank replacement at 14700 & 14720 Potomac Mills Road, Woodbridge, Prince William County, Virginia 22192.

1. Earthwork

a. Site Preparation

Before the start of any other construction, all unsuitable materials shall be removed from all building and pavement areas including offsets as defined below.

Unsuitable material includes but is not limited to: uncontrolled fill; vegetation; topsoil; organic soils; soil mixed with excessive amounts of roots or other deleterious materials; soft, very wet, and loose soils; and any building remains, including foundations and slabs, existing utility lines, pavements, debris, septic tanks and drain fields and backfill soil. Holes formed by the removal of trees shall be cleaned and backfilled with compacted, controlled fill, as specified herein.

Offsets for building and pavement areas shall be at least 10.0 feet or 5.0 feet plus the height of any required fill, whichever is greater, outside all pavement lines. For compacted, controlled fill within any slope, the cleared area shall include offsets of at least 10.0 feet beyond the toe of the slope.

Once the clearing and removal of unsuitable materials, as defined above, is complete, a geotechnical engineer or the engineer's qualified representative shall observe the subgrade of the excavation. The cleared pavement subgrades or areas to receive fill, shall be proof-rolled using a fully loaded dump truck with an axle weight of at least 10.0 tons.

The truck shall make at least two complete "passes" of all cleared areas in the presence of the geotechnical engineer or the engineer's qualified representative. If pumping or rutting is observed, the soft or wet material shall be removed down to firm subgrade and replaced with suitable fill.

If high shrink-swell potential soil (soil with a Liquid Limit of 40 or greater or with a Plasticity Index of 15 or greater) is encountered within 2.0 vertical feet of the subgrade of slabs-on-grade, pavements (including driveways), sidewalks, or curb and gutter, it shall be undercut to a depth of at least 2.0 feet below the design subgrade elevation and replaced by compacted, controlled fill (See **d. Shrink Swell Soils** below).

If the soil at the subgrade of an excavation becomes wet, due to surface water or groundwater entering the excavation, the excavation shall be halted. Dewatering measures shall be applied to lower the groundwater or prevent surface water from entering the excavation. Excavation shall be resumed only after the geotechnical engineer or the engineer's qualified representative has confirmed that the groundwater level has been lowered at least 2.0 feet below the level of the planned excavation.

If softening of the subgrade occurs, or if water permeates the excavation, it will be necessary to remove all the soft and/or excessively wet soils, and replace them with compacted, controlled fill. If the soils in an undercut area are moist and pump under the load of heavy construction equipment, the geotechnical engineer shall be informed so that appropriate remedial action may be designed.

Utility trenches shall be sloped or shored in accordance with the current OSHA and VOSHA regulations.

b. Uncontrolled Fill

Existing fill was encountered in all borings to a maximum depth of 12.3 feet below surface ground elevation, during the subsurface exploration. The fill consisted mainly of asphalt and concrete with an underlaying layer of coarse, crushed stone aggregate. Existing fill may be encountered in other areas onsite and within the planned development area. Such unsuitable soils must be removed before construction is continued. Existing fill soils can be highly variable, and man-made debris and organic matter could be present. We highly recommend that SCE be retained as the project geotechnical engineer for the project during construction, so we can verify our assumptions concerning any existing fill materials.

Additional soil testing and all necessary excavation and removal or relocation of existing fill should be completed. We recommend that any existing fill inside of the planned building construction area to be removed and replaced with structural fill. The resulting excavations should be backfilled in accordance with the recommendations presented in the **c. Structural Fill** section of this report.

Soil density tests should be performed to verify that the backfill materials have been placed in accordance with the recommendations of this report.

There is no site-specific information regarding the fracture pattern and fracture frequency of the rock or weathered rock. Rock excavation techniques to include blasting may not be necessary for the excavation. If rock excavation is required within this latter zone, ripping, hoe ramming and jack hammers shall be used.

Utility trenches shall be sloped or shored in accordance with the current OSHA and VOSHA regulations.

c. Structural Fill

Compacted, controlled fill shall consist of clean, non-plastic Sandy SILT (ML) or more granular soil (per ASTM D 2487) with a Liquid Limit less than 40 and Plasticity Index less than 15 (See **d. Shrink Swell Soils** below). The fill material shall not contain organics or roots, plastic clay or silt lumps, deleterious materials, or stones larger than 3.0 inches. It shall have a Maximum Dry Density, per ASTM D 698, and uncorrected for gravel, of not less than 105 pounds per cubic foot.

Fill shall be placed in layers of 6.0 to 8.0 inches and compacted to a density of not less than 95 percent of the Maximum Dry Density according to ASTM D 698. (Fill placed in VDOT rights-of-way shall be placed and compacted in accordance with VDOT specifications.) A qualified technician shall test the density of each layer of such fill.

Additional fill shall be placed only after the test results show that the required compaction has been achieved. Compacted, controlled fill shall extend outside all building and pavement lines a distance of at least 10.0 feet or 5.0 feet plus the height of the fill, whichever is greater.

The sides of all excavations shall be sloped back or shall be supported according to County, State and Federal regulations.

d. Shrink-Swell Soils

High expansive potential (i.e. shrink-swell) soils were encountered during our subsurface exploration in B-3 between 12.0 and 16.5 feet below surface elevation. Other locations that were not explored may have potential shrink-swell soils. These soils are not suitable for foundation subgrade, structural fill or for backfill around foundation walls.

With regard to such soils, Prince William County has issued the following IBC/IRC regulations defining "expansive" soil. The policy became effective January 2009. All geotechnical submissions shall be required to meet the guidelines stipulated below:

Definitions

A. **Expansive soil** is defined by the International Building Code and the International Residential Code as:

"Soils meeting all four of the following provisions shall be considered expansive, except that tests to show compliance with Items 1, 2 and 3 shall not be required if the test prescribed in Item 4 is conducted:

1. Plasticity Index (PI) of 15 or greater determined in accordance with ASTM D 4318.
2. More than 10 percent of the soil particles pass a No. 200 sieve (0.75 μm), determined in accordance with ASTM D 422.
3. More than 10 percent of the soil particles are less than 5 micrometers in size, determined in accordance with ASTM D 422.

4. Expansion Index greater than 20, determined in accordance with ASTM D 4829."

B. Plastic Index Corrected

$$PI_{cor} = PI \times \frac{\text{(\% Passing No. 40 Sieve)}}{100}$$

C. Expansive Index Corrected

$$EI_{cor} = EI \times \frac{\text{(\% Passing No. 4 Sieve)}}{100}$$

D. Liquid Limit – The water content corresponding to the behavior change between the liquid and plastic state of silt or clay soil, determined in accordance with ASTM D 4318.

Policy

If the Plasticity Index of the soil is 20 or less (e.g. PI <= 20) and the Liquid Limit is 45 or less (e.g. LL <= 45), the Plasticity Index Corrected (PI_{cor}) or the Expansion Index Corrected (EI_{cor}) may be substituted in the definition of Expansive Soil.

In support of this policy, Prince William County has defined unacceptably expansive soils beneath roadways as those with Liquid Limits (LL) and Plasticity Indexes (PI) greater than 40 and 15, respectively.

Beneath buildings and retaining walls unacceptably expansive soils are those with Liquid Limits (LL) and Plasticity Indexes (PI) of 40 and 15, or greater, respectively. This includes not only Highly PLASTIC CLAY (CH) and ELASTIC SILT (MH) but also some Lean CLAY (CL) and some SILT (ML).

If expansive soils, as defined above, are observed within 2.0 vertical feet of slabs, pavements, sidewalks, or curbs and gutters, they must be removed to a depth of at least 2.0 feet below the design subgrade and replaced with suitable well-graded compacted, controlled fill.

If expansive soils are observed at the design foundation bearing elevation, the footings for the proposed structures should extend through the expansive soils to bear on the underlying stiff or dense non-expansive soils.

Alternatively, foundations may rest on these expansive soils at a depth of at least 4.0 feet below the final exterior grades. This places the bearing elevation below the zone of normal seasonal moisture change.

If these soils are observed at the design footing elevation and within 4.0 feet of the design exterior grades, the footings for the proposed structures must be extended through the elastic or plastic soils to bear on the underlying stiff or dense non-plastic soils. This places the bearing elevation below the zone of normal seasonal moisture change.

If this alternative is selected the foundation may be constructed at the under-cut depth or the undercut may be back-filled to design footing bearing elevation with lean concrete, so- called "flowable fill."

e. Shallow Depth to Rock

Shallow depth to bedrock was encountered in B-4 at 7.5 feet. Groundwater tends to pond around foundations that are excavated into bedrock. The pit used for the foundation acts as a bowl due to the impermeability of the bedrock. In cases of shallow bedrock, it would be essential to provide adequate, dependable drainage.

f. Use of Rock Excavating Techniques

The backhoe could excavate to depths as shallow as 7.5 to 20.6 feet below the existing grades. While larger track-hoes will be able to excavate deeper, it is probable that rock excavation techniques will be required in some of the road and utility cuts.

There is no site-specific information regarding the fracture pattern and fracture frequency of the rock or weathered rock. Rock excavation techniques to include blasting may not be necessary for the excavation. If rock excavation is required within this latter zone, ripping, hoe ramming and jack hammers shall be used.

Utility trenches shall be sloped or shored in accordance with the current OSHA and VOSHA regulations.

g. On-Site Utilities

All underground utilities shall be installed in accordance with County and State regulations.

The sides of all excavations shall be sloped back or shall be supported according to County, State (VOSHA) and Federal (OSHA) regulations.

Backfill for utilities shall be placed in accordance with section **c. Structural Fill** above, except that fill placed in landscaped areas need only be compacted to 95% of the Maximum Dry Density according to ASTM D 698.

2. Slab-on-Grade

The bottom ballast slab will be designed as a slab-on-grade ("floating slab"). The slab resting on natural ground or compacted, controlled fill shall be designed as a slab-on-grade and shall bear on at least 6.0 inches of crushed stone aggregate, with an approved 6-mil. polyethylene vapor retarder installed over the crushed stone aggregate. The fuel tanks will bear on at least 6.0 inches of pea gravel between it and the bottom ballast slab with pea gravel surrounding it.

The top ballast slab will be designed as a slab-on-grade ("floating slab"). The slab resting on compacted, controlled fill shall be designed as a slab-on-grade and shall bear on the pea gravel backfill surrounding the fuel tanks. The top ballast slab will be designed as a turn down edge slab-on-grade with turn down edges extending below the frost depth to at least twenty-four (24.0) inches below surface grade elevation.

The aggregate layer shall be placed over stiff or dense natural subgrade or on compacted, controlled fill. Before placing the aggregate and vapor barrier, the geotechnical engineer or the engineer's qualified representative shall observe the slab subgrades for bearing and material compliance.

If soft, loose, or wet material is observed, then that soil shall be removed down to firm subgrade and replaced with either compacted, controlled fill or a thicker layer of coarse aggregate.

If deep layers of soft, loose, or wet materials exist at the slab subgrade, the geotechnical engineer shall be contacted for additional recommendations.

If unacceptable expansive soil (soil with a Liquid Limit and a Plasticity Index equal to or greater than 40 and 15, respectively, see definition of expansive soil in **1. Earthwork, d. Shrink-Swell Soils** above) is located within 2.0 vertical feet of the slab subgrade, then the expansive soil shall be excavated to a depth of 2.0 feet below the slab subgrade.

The excavated material shall be replaced with compacted, controlled fill. The concrete for slabs shall be placed as soon as possible after the excavation is completed to prevent degradation of the bearing soils.

Provided the placement of structural fill and granular drainage layer are installed per the recommendations discussed above, the slab-on-grade may be designed assuming a modulus of subgrade reaction, k1 of 100 pci (lbs./cu. inch).

3. Site Drainage

All unpaved ground surfaces shall slope away from the buildings at a minimum grade of 5 %. This shall occur over a distance of not less than 10.0 feet. Roof drains must discharge beyond the limits of excavation for the foundations.

4. Underground Storage Tanks

The buoyancy force capacity of the underground storage tank should be limited with effective methods that will keep a storage tank underground by increasing the burial depth of the tank, deadman anchors, bottom ballast slab, and concrete grade paving slab placed on the surface of the earth above the tank. For design purposes, a concrete unit weight of 145 pcf and a soil unit weight of 110 pcf should be used.

Backfilling adjacent to and over the top of the underground storage tanks shall be performed in accordance with the tank manufacturer's specifications.

5. Pavement Construction

"The pavements design recommendations shall conform to the latest VDOT – Road and Bridge Standards and Specifications." Partial construction of the pavement section, a common practice in the industry, is likely to result in pavement and subgrade failure, due to inadequate support capability of an incomplete pavement, heavier than design traffic loads and maneuvering of construction traffic. Subgrade failures will likely translate to additional maintenance and poor performance of the permanent pavement if not repaired.

The subgrade for the travelway shall consist of firm, natural, inorganic, non-plastic soils or controlled, compacted fill, placed in accordance with item **1. Earthwork, c. Structural Fill**, above.

If Highly PLASTIC CLAY (CH) and ELASTIC SILT (MH) is located within 2.0 vertical feet of the subgrade of the pavement, then the plastic soil shall be excavated to a depth of 2.0 feet below the pavement subgrade. The excavated material shall be replaced with compacted, controlled fill.

The soil subgrade in the paved areas, including the sidewalk, curb and gutter, and driveway aprons, is recommended to be compacted to at least 98 percent of the Maximum Dry Density as determined by ASTM D698 Method (Standard Proctor) for soils up to 12.0 inches below the planned subgrade elevations for structural fills. The moisture content of the subgrade soils should be within plus or minus two (±2) percentage points of the optimum moisture content for these soils.

If the existing soils on site do not have the minimum CBR value of 3, the soil in pavement areas shall be scarified and re-compacted or replaced with suitable material to increase CBR values to the minimum specified. Alternatively, if soils in the pavement area do not satisfy the minimum CBR value, the design professional shall create a design that corrects the deficient subgrade conditions.

"Graded Aggregate Course should be placed in accordance with the specification in the latest VDOT – Road and Bridge Standards and Specifications." Aggregate base course should be placed on a subgrade compacted to 98% of Maximum Dry Density per Standard Proctor (ASTM D698).

6. Construction Monitoring

Soil Consultants recommends that all footing, slab and pavement subgrades and all fill operations, to include proof-rolling of subgrades as well as fill placement, be monitored during construction. Because of our familiarity with the site conditions and the recommendations of this report, Soil Consultants can effectively perform the required construction monitoring services.

Construction monitoring should include the following services during the construction phase of the project:

- Observe footing, slab, and pavement subgrades.
- Verify the suitability of off-site and on-site material for use as compacted, controlled fill beneath the structures by performing laboratory tests as required.
- Monitor and test subgrade and fill layers before, during and after fill placement.
- Perform at least one field density test for every 2500 square feet of fill placed to confirm that the required soil compaction has been achieved.
- Perform at least one field density test for each lift of fill placed for each 200 feet of utility trench, to confirm that required soil compaction has been achieved.
- Submit a daily field report for each day's work during construction summarizing the compaction test results, observations, and general quality control comments.
- Monitor concrete placement and perform laboratory compressive strength tests as required for compliance with project specifications.

REMARKS

The evaluations and recommendations of this report are based upon the observations at point locations using soil borings. Soil conditions often change from one point to another. Therefore, different conditions may be encountered during construction in areas outside the test locations.

If conditions observed at the site during construction are different from those described in this report, we shall be immediately notified so that we may decide if such situations will require any changes in the geotechnical recommendations. Soil Consultants will not be responsible for any modification to, or incorrect interpretation of, its recommendations by others.

This report contains geotechnical-engineering requirements that must be followed to provide suitable subgrades for building foundations, slabs, and pavements. When a final site plan and architectural and structural drawings are available, Soil Consultants shall be authorized to review these plans, and to decide if any changes to the geotechnical requirements are necessary.

Soil Consultants Engineering has provided this report for use by the client and client's design professionals to make site evaluations and to aid in the design of the project. This report may be made available to contractors. However, the report would be for their information only and it may not be sufficient to estimate costs and quantities. Our scope of services did not include environmental matters, wetlands, specific construction dewatering recommendations, slope stability analysis, storm water management and cost/quantity estimates.

Sincerely,

For: **SOIL CONSULTANTS ENGINEERING, LLC.**

05/16/2024

Lubomir Peytchev

Collin Martinowsky
Geotechnical Assistant

Lubomir D. Peytchev, P.E.
Principal Engineer

QUALIFICATIONS

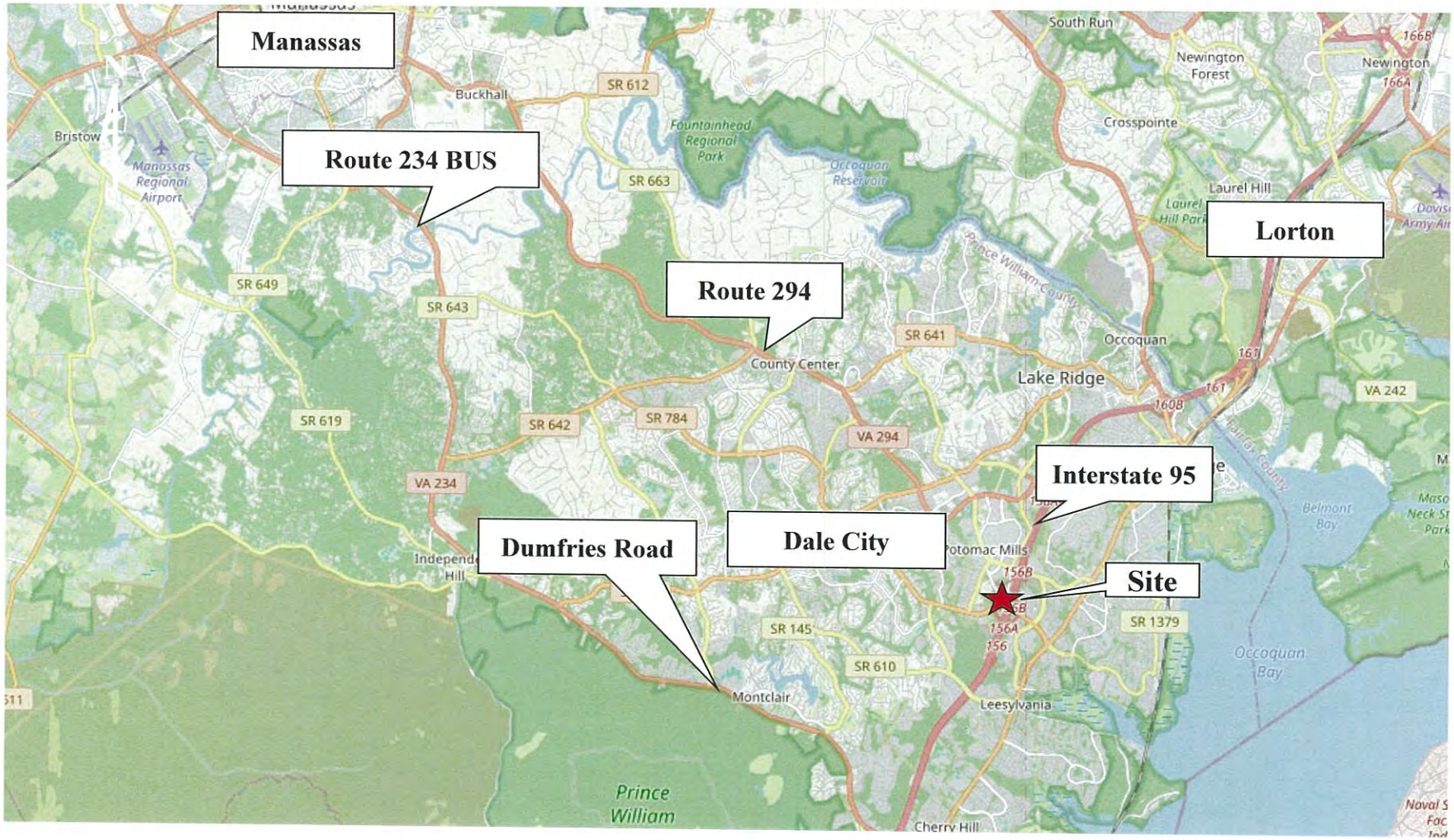
All findings presented in this report are based upon the assumption that the subsurface conditions do not deviate appreciably from those revealed by the boring locations.

Since the subsurface conditions may vary substantially from those shown in the subsurface exploration, any change in soil type during construction, or change in location plan and/or grade should be provided to Soil Consultants so that the conclusions and recommendations might be modified.

In conducting this investigation, our professional services have been performed, our findings obtained, and our recommendations made according to generally accepted engineering principles and practices. This warranty is instead of all other warranties either expressed or implied. Any conclusions or recommendations based on data contained in this report made by others are the responsibilities of others.

SCE Project No. 24-0115V

Map Source: USGS 2024– Not to Scale

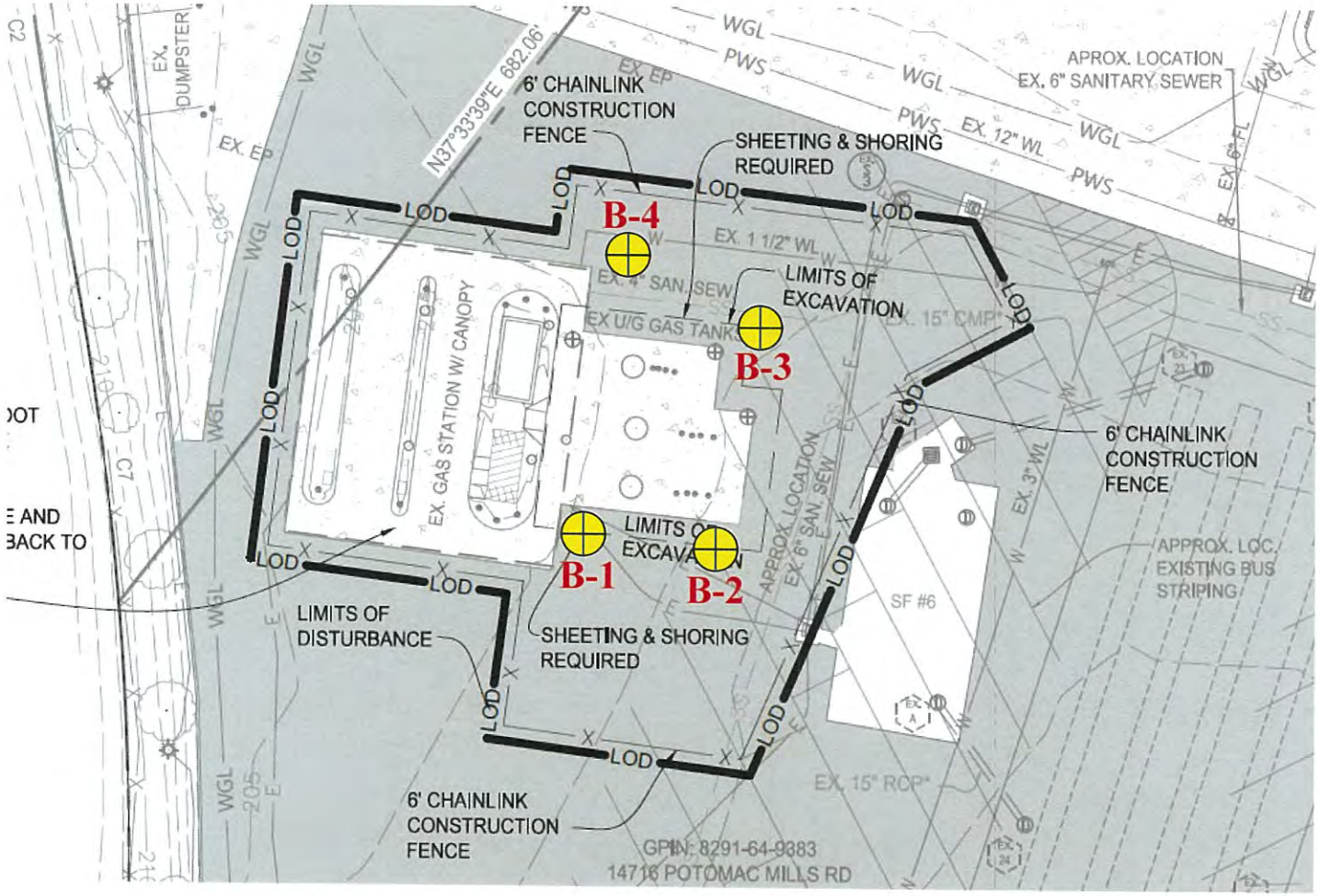


SCE — Consulting Engineers · Building Officials · Construction Professionals · Soil Scientists & Geologists

REVISIONS

SITE VICINITY MAP
Omni Ride Fuel Tank Replacement

14700 & 14720 Potomac Mills Road, Woodbridge, VA 22192		05/XX/2024
CM	Not Drawn To Scale	24-0115V



LEGEND
Approx. Boring Location ⊕ B-1

SCE — SOIL CONSULTANTS ENGINEERING
CONSULTING ENGINEERS · BUILDING OFFICIALS
CONSTRUCTION PROFESSIONALS · SOIL SCIENTISTS & GEOLOGISTS

REVISIONS

BORING LOCATION PLAN
Omni Ride Fuel Tank Replacement

14700 & 14720 Potomac Mills Road, Woodbridge, VA 22192			05/xx/2024
CM		Not Drawn To Scale	24-0115V

Soil Consultants Engineering, LLC
9303 Center Street
Manassas, VA 20110
Telephone: (703) 366-3000
Fax: (703) 366-3400

BORING NUMBER B-1

CLIENT Ms. Doris Lookabill
PROJECT NUMBER 24-0115V
DATE STARTED 4/10/24 **COMPLETED** 4/10/24
DRILLING CONTRACTOR RECON DRILLING
DRILLING METHOD Hollow Stem Auger 2 1/4"
LOGGED BY Collin Martinowsky **CHECKED BY** Lubo Peytchev
NOTES CME 45-B Truck Drill Rig with Automatic Drop Hammer

PROJECT NAME Omni Ride Fuel Tank Replacement
PROJECT LOCATION 14700 & 14720 Potomac Mills Road, Woodbridge, VA 22192
GROUND ELEVATION 204 ft **HOLE SIZE** 4 inches
GROUND WATER LEVELS:
AT TIME OF DRILLING --- Dry
AT END OF DRILLING --- Dry - Cave-in at 10.7 feet
AFTER DRILLING --- N/A

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
0							Approximately 8.0-inch asphalt layer.	0.7 / 203.3
							Approximately 4.0-inch coarse, crushed stone aggregate layer.	1.0 / 203.0
	SS 1	75	6-6-7-13 (13)		GW		(GW) Medium-dense, grayish-beige, Well-Graded GRAVEL, trace sand Moist FILL	1.4 / 202.6
	SS 2	75	4-6-7-11 (13)		SM		(SM) Medium-dense, beige, Silty SAND Moist FILL	
5	SS 3	79	3-7-9-11 (16)		SM		(SM) Medium-dense, reddish-beige, Silty SAND Moist FILL	5.0 / 199.0 7.0 / 197.0
	SS 4	71	13-20-31-48 (51)		ML		(ML) Very hard, light gray, SILT Moist Natural	9.6 / 194.4
10	SS 5	74	21-37-39-50/5"		ML		(ML) Very hard, pale orange, SILT Moist Natural	13.0 / 191.0
	SS 6	71	10-12-16-21 (28)					
	SS 7	100	9-50/6"	MC = 19% LL = 36 PL = 28 Fines = 70%				
15	SS 8	81	12-32-50/4"		ML		(ML) Very hard, light gray, Sandy SILT Moist Natural	17.0 / 187.0
	SS 9	100	50/4"		SM		(SM) Very dense, dark brown/ black, Silty SAND, trace gravel Moist Natural	
20	SS 10	63	9-16-40-50/1"					20.6 / 183.4
							Bottom of borehole at 20.6 feet.	

GENERAL BH / TP / WELL - HAND AUGER TEMPLATE.GDT - 5/7/24 11:26 - G:\ALL ACTIVE JOBS AFTER 4.19.13\JOB FOLDERS YR2024\24-0115V OMNIRIDE.GPJ

Soil Consultants Engineering, LLC
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Manassas, VA 20110
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Fax: (703) 366-3400

BORING NUMBER B-2

CLIENT Ms. Doris Lookabill
PROJECT NAME Omni Ride Fuel Tank Replacement
PROJECT NUMBER 24-0115V
PROJECT LOCATION 14700 & 14720 Potomac Mills Road, Woodbridge, VA 22192
DATE STARTED 4/10/24 **COMPLETED** 4/10/24
GROUND ELEVATION 203 ft **HOLE SIZE** 4 inches
DRILLING CONTRACTOR RECON DRILLING
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger 2 1/4"
▽ **AT TIME OF DRILLING** 13.00 ft / Elev 190.00 ft
LOGGED BY Collin Martinowsky **CHECKED BY** Lubo Peytchev
AT END OF DRILLING --- Dry - Cave-in at 8.0 feet
NOTES CME 45-B Truck Drill Rig with Automatic Drop Hammer
AFTER DRILLING --- N/A

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
0							Approximately 9.0-inch asphalt layer.	
							0.7	202.3
							Approximately 9.0-inch coarse, crushed stone aggregate layer.	
							1.5	201.5
	SS 1	71	7-5-5-6 (10)		SC		(SC) Loose, yellowish-brown, Clayey SAND Moist FILL	
5	SS 2	67	5-5-5-5 (10)					
	SS 3	88	4-4-5-5 (9)					
	SS 4	79	3-4-4-1 (8)				8.5	194.5
10					SC		(SC) Loose, grayish-orange, Clayey-SAND Moist FILL	
	SS 5	75	0-1-0-6 (1)		SM		10.0	193.0
							(SM) Very loose, dark gray, Silty SAND, trace gravel Moist FILL	
	SS 6	70	8-11-40-50/2"				12.3	190.7
	SS 7	100	50/3"	MC = 11%	ML		(ML) Very hard, light gray, SILT, trace sand ▽ Moist Natural	
15							15.9	187.1
	SS 8	100	50/6"	MC = 23% LL = NP PL = NP Fines = 67%	ML		(ML) Very hard, beige, Sandy SILT, trace gravel Moist Natural - Spoon refusal on very dense soil at 18.0 feet.	
							18.0	185.0
	SS 9	0	50/0"				Bottom of borehole at 18.0 feet.	

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Fax: (703) 366-3400

BORING NUMBER B-3

CLIENT Ms. Doris Lookabill
PROJECT NAME Omni Ride Fuel Tank Replacement
PROJECT NUMBER 24-0115V
PROJECT LOCATION 14700 & 14720 Potomac Mills Road, Woodbridge, VA 22192
DATE STARTED 4/10/24 **COMPLETED** 4/10/24
GROUND ELEVATION 203 ft **HOLE SIZE** 4 inches
DRILLING CONTRACTOR RECON DRILLING
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger 2 1/4"
AT TIME OF DRILLING --- Dry
LOGGED BY Collin Martinowsky **CHECKED BY** Lubo Peytchev
AT END OF DRILLING --- Dry - Cave-in at 10.0 feet
NOTES CME 45-B Truck Drill Rig with Automatic Drop Hammer
AFTER DRILLING --- N/A

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
0							Approximately 9.0-inch asphalt layer.	
								0.7 / 202.3
							Approximately 9.0-inch coarse, crushed stone aggregate layer.	
								1.5 / 201.5
	SS 1	8	4-3-3-3 (6)		SC		(SC) Loose to medium-dense, beige, Clayey SAND, trace mica Moist FILL	
5	SS 2	29	3-3-2-2 (5)					
	SS 3	92	5-7-11-10 (18)					
	SS 4	75	6-9-8-10 (17)					
10								8.5 / 194.5
	SS 5	92	2-6-11-18 (17)		SM		(SM) Medium-dense, brownish-yellow, Silty SAND Moist FILL	
	SS 6	91	9-25-39-50/5"	MC = 19% LL = 55 PL = 31 Fines = 91%				12.0 / 191.0
	SS 7	100	15-50/4"		MH		(MH) Very hard, tannish-gray, ELASTIC SILT Moist Natural	
15								16.5 / 186.5
	SS 8	83	11-21-31-28 (52)		ML		(ML) Very hard, grayish-tan, Sandy SILT Moist Natural	
	SS 9	91	11-40-33-50/5"	MC = 14%				19.1 / 183.9
					ML		(ML) Very hard, brownish-red, Sandy SILT Moist Natural	19.9 / 183.1
							Bottom of borehole at 19.9 feet.	

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Manassas, VA 20110
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Fax: (703) 366-3400

BORING NUMBER B-4

CLIENT Ms. Doris Lookabill
PROJECT NAME Omni Ride Fuel Tank Replacement
PROJECT NUMBER 24-0115V
PROJECT LOCATION 14700 & 14720 Potomac Mills Road, Woodbridge, VA 22192
DATE STARTED 4/10/24 **COMPLETED** 4/10/24
GROUND ELEVATION 204 ft **HOLE SIZE** 4 inches
DRILLING CONTRACTOR RECON DRILLING
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger 2 1/4"
AT TIME OF DRILLING --- Dry
LOGGED BY Collin Martinowsky **CHECKED BY** Lubo Peytchev
AT END OF DRILLING --- Dry - Cave-in at 3.0 feet
NOTES CME 45-B Truck Drill Rig with Automatic Drop Hammer
AFTER DRILLING --- N/A

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
0.0							Approximately 9.0-inch asphalt layer.	
								0.7 / 203.3
							Approximately 8.0-inch coarse, crushed stone aggregate layer.	
								1.4 / 202.6
							(SM) Medium-dense, light brown, Silty SAND Moist FILL	
2.5	SS 1	92	5-5-6-8 (11)		SM			
								3.4 / 200.6
							(SC) Medium-dense, reddish-brown, Clayey SAND Moist FILL	
5.0	SS 2	92	5-9-8-9 (17)		SC			
								5.8 / 198.2
					ML		(ML) Very hard, light gray, SILT, trace gravel Moist Natural	6.0 / 198.0
	SS 3	100	50/4"	MC = 8%			The Potomac Formation (Kp) is described by the USGS as comprised of fine- to coarse-grained, locally gravelly, crossbedded, light-colored, interbedded with white or variegated red and yellow, massive clay, and rarely dark-gray, woody clay. -Auger and spoon refusal on unweathered bedrock [Potomac Formation] at 7.5 feet.	
7.5								7.5 / 196.5
	SS 4	0	50/0"				Refusal at 7.5 feet. Bottom of borehole at 7.5 feet.	

SCE
SOIL CONSULTANTS ENGINEERING

KEY TO TERMS AND SYMBOLS

USCS SYMBOLS


FILL – MAN-PLACED SOILS


ASPHALT


CONCRETE


BEDROCK


PEAT


(OL) LOW PLASTICITY ORGANIC CLAY OR SILT


(OH) ORGANIC SILT OR CLAY


(ML) SILT


(MH) ELASTIC SILT


(CL) LEAN CLAY


(CH) FAT CLAY


(GP) POORLY-GRADED GRAVEL


(GW) WELL-GRADED GRAVEL


(GM) SILTY GRAVEL


(GC) CLAYEY GRAVEL


(SP) POORLY-GRADED SAND


(SW) WELL-GRADED SAND


(SC) CLAYEY SAND


(SM) SILTY SAND

PENETRATION (SPT) RESISTANCE

DENSITY (SANDS, GRAVELS)		CONSISTENCY (SILTS, CLAYS)	
N-VALUE	**TERM**	**N-VALUE**	**TERM**
0 – 4	VERY LOOSE	0 – 2	VERY SOFT
5 – 10	LOOSE	3 – 4	SOFT
11 – 30	MED. DENSE	5 – 8	FIRM
31 – 50	DENSE	9 – 15	STIFF
50+	VERY DENSE	16 – 30	VERY STIFF
		31 – 50	HARD
		50+	VERY HARD

PARTICLE SIZE IDENTIFICATION

BOULDERS	GREATER THAN 12 INCHES
COBBLES	3 TO 12 INCHES
GRAVEL	COARSE - 3/4 INCH - 3 INCHES FINE - 4.75 MM - 3/4 INCH
SAND	COARSE - 2 MM – 4.75 MM MEDIUM - 0.425 MM – 2 MM FINE - 0.075 MM – 0.42 MM
SILT	0.005 MM – 0.075 MM
CLAY	LESS THAN 0.005 MM

WATER LEVEL DESIGNATION


LEVEL AT TIME OF DRILLING


LEVEL AT END OF DRILLING


LEVEL AFTER DRILLING (24H+)

RELATIVE COMPOSITION OF SOILS

MAJOR CONSTITUENT

CONSTITUENT 50% OR MORE OF THE SAMPLE AND IS WRITTEN IN CAPITAL LETTERS. IF NO COMPONENT IS GREATER THAN 50%, THE PREDOMINANT COMPONENT IS CAPITALIZED.

MINOR CONSTITUENT

CONSTITUENT 25% - 40% OF SOIL TYPE AND WILL BE WRITTEN WITH THE FIRST LETTER OF THE SOIL TYPE CAPITALIZED.

ACCESSORY CONSTITUENTS

TRACE = <5%, *FEW* = 5 TO 10%, *LITTLE* = 11 TO 20%, *WITH* = 15 TO 25%, *SOME* = 21 TO 35%, *AND* = 36 TO 50%

SCE
SOIL CONSULTANTS ENGINEERING

ROCK KEY TO TERMS AND SYMBOLS

DEGREE OF WEATHERING

UNWEATHERED	ROCK GENERALLY FRESH, JOINTS LIGHTLY STAINED AND DISCOLORATION EXTENDS INTO ROCK NO MORE THAN ½ IN, OPEN JOINTS MAY CONTAIN CLAY, CORE RINGS UNDER HAMMER IMPACT.
WEATHERED	ROCK MASS DECOMPOSED 50% OR LESS, SIGNIFICANT DISCOLORATION, CORE CANNOT BE BROKEN BY HAND OR SCRAPED BY KNIFE
HIGHLY WEATHERED	ROCK MASS IS MORE THAN 50% DECOMPOSED, COMPLETE DISCOLORATION OF ROCK FABRIC, CORE MAY BE EXTREMELY BROKEN AND GIVES CLUNK SOUND WHEN STRUCK BY HAMMER, MAY BE SHAVED WITH A KNIFE.

ROCK QUALITY DESCRIPTION

ROCK MASS DESCRIPTION	RQD VALUE (%)
EXCELLENT	90-100
GOOD	75-90
FAIR	50-75
POOR	25-50
VERY POOR	LESS THAN 25

SCALE OF RELATIVE ROCK HARDNESS

TSF	CONSISTENCY
EXTREMELY SOFT	2.5 - 10
VERY SOFT	10 - 50
SOFT	50 - 250
MEDIUM HARD	250 – 525
MODERATELY HARD	525-1,050
HARD	1,050 – 2,600
VERY HARD	> 2,600

ROCK BEDDING THICKNESS

DESCRIPTION	CRITERIA
VERY THICK BEDDED	GREATER THAN 3 FT
THICK BEDDED	1 FT – 3 FT
MEDIUM BEDDED	4 IN – 1 FT
THIN BEDDED	1 ¼ IN – 4 IN
VERY THIN BEDDED	½ IN – 1 ¼ IN
THICKLY LAMINATED	1/8 IN – ½ IN
THINLY LAMINATED	1/8 IN OR LESS

ROCK VOIDS

VOIDS	VOID DIAMETER
PIT	< ½ IN
VUG	½ IN – 2 IN
CAVITY	2 IN – 24 IN
CAVE	>24 IN

GRAIN SIZE TERMINOLOGY

COMPONENT	SIZE RANGE
VERY COARSE GRAINED	>4.76 MM
COARSE GRAINED	2.0 MM – 4.76 MM
MEDIUM GRAINED	0.42 MM – 2.0 MM
FINE GRAINED	0.075 MM – 0.42 MM
VERY FINE GRAINED	<0.075 MM

STRUCTURE DESCRIPTION

DESCRIPTION	CRITERIA	DESCRIPTION	CRITERIA
STRATIFIED	ALTERNATING LAYERS OF VARYING MATERIAL OR COLOR WITH LAYERS AT LEAST ¼ -IN THICK	LENSED	INCLUSION OF SMALL POCKETS OF DIFFERENT SOILS
LAMINATED	ALTERNATING LAYERS OF VARYING MATERIAL OR COLOR WITH LAYERS LESS THAN ¼ -IN THICK	LAYER	INCLUSION GREATER THAN 3-IN THICK
FISSURED	BREAKS ALONG DEFINITE PLANES OF FRACTURE WITH LITTLE RESISTANCE TO FRACTURING	SEAM	INCLUSION 1/8 IN – 3 IN THICK EXTENDING THROUGH THE SAMPLE
SLICKENED	FRACTURE PLANES APPEAR POLISHED OR GLOSSY, SOMETIMES STRIATED	PARTING	INCLUSION LESS THAN 1/8 IN THICK
BLOCKY	COHESIVE SOIL THAT CAN BE BROKEN DOWN INTO SMALL ANGULAR LUMPS WHICH RESIST FURTHER BREAKDOWN		

Soil Consultants Engineering, LLC
9303 Center Street
Manassas, VA 20110
Telephone: (703) 366-3000
Fax: (703) 366-3400

SUMMARY OF LABORATORY RESULTS

CLIENT Ms. Doris Lookabill **PROJECT NAME** Omni Ride Fuel Tank Replacement

PROJECT NUMBER 24-0115V **PROJECT LOCATION** 14700 & 14720 Potomac Mills Road, Woodbridge, VA 22192

Borehole	Depth	Liquid Limit	Plastic Limit	Plasticity Index	Maximum Size (mm)	%<#200 Sieve	Classification	Water Content (%)	
B-1	14.5	36	28	8	4.75	70	ML	18.6	
B-2	14.0							10.9	
B-2	16.0	NP	NP	NP	4.75	67	ML	23.2	
B-3	13.5	55	31	24	2	91	MH	19.1	
B-3	18.0							13.5	
B-4	6.0							7.5	

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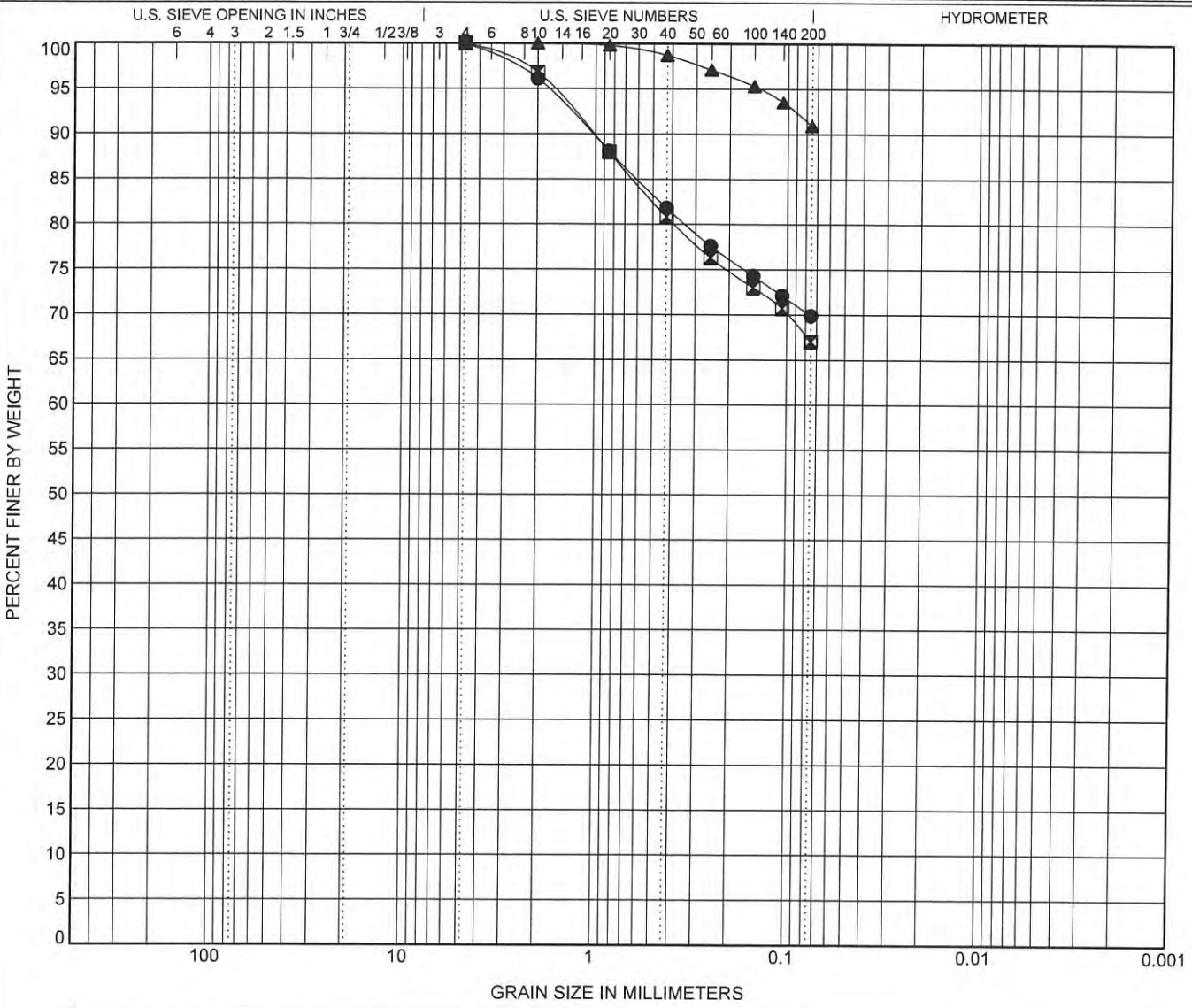
GRAIN SIZE DISTRIBUTION

CLIENT Ms. Doris Lookabill **PROJECT NAME** Omni Ride Fuel Tank Replacement

PROJECT NUMBER 24-0115V **PROJECT LOCATION** 14700 & 14720 Potomac Mills Road, Woodbridge, VA 22192



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

BOREHOLE		DEPTH	Classification	LL	PL	PI	Cc	Cu
●	B-1	14.5	SANDY SILT(ML)	36	28	8		
⊠	B-2	16.0	SANDY SILT(ML)	NP	NP	NP		
▲	B-3	13.5	ELASTIC SILT(MH)	55	31	24		

BOREHOLE		DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B-1	14.5	4.75				0.0	30.1	69.9	
⊠	B-2	16.0	4.75				0.0	33.0	67.0	
▲	B-3	13.5	2				0.0	9.1	90.9	

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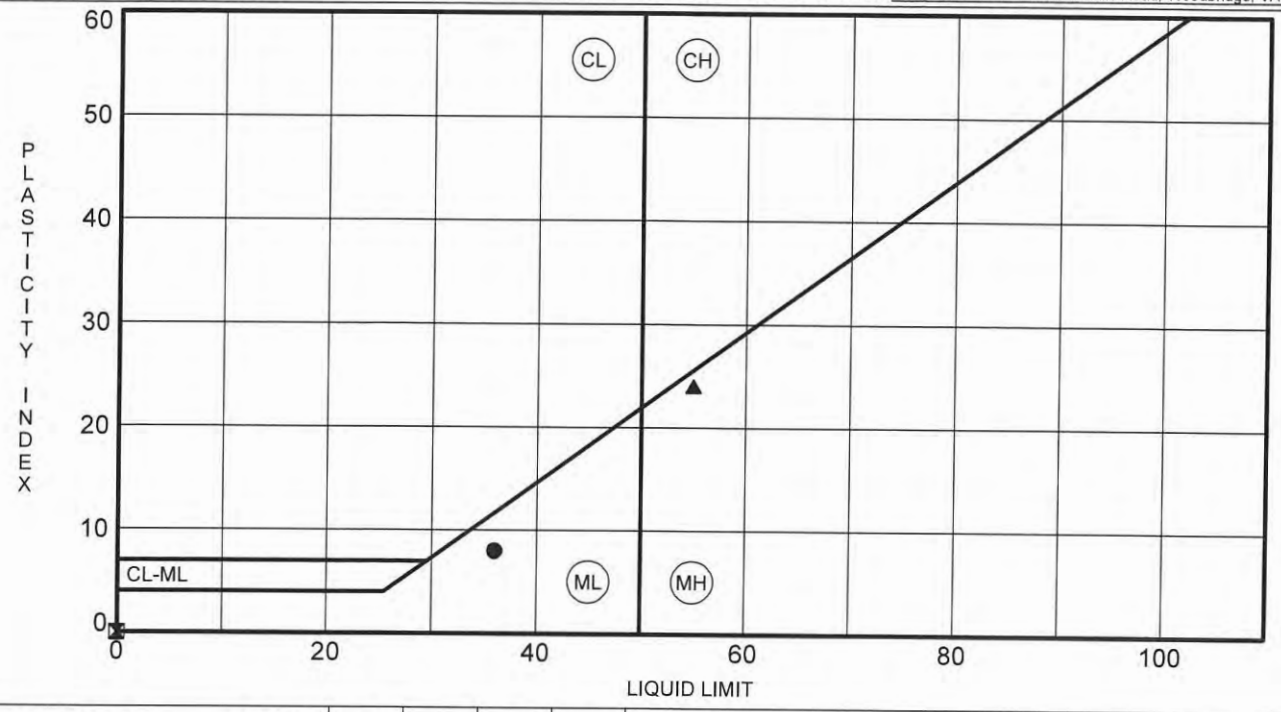
ATTERBERG LIMITS' RESULTS

CLIENT Ms. Doris Lookabill

PROJECT NAME Omni Ride Fuel Tank Replacement

PROJECT NUMBER 24-0115V

PROJECT LOCATION 14700 & 14720 Potomac Mills Road, Woodbridge, VA 22192



	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	B-1	14.5	36	28	8	70	SANDY SILT(ML)
⊠	B-2	16.0	NP	NP	NP	67	SANDY SILT(ML)
▲	B-3	13.5	55	31	24	91	ELASTIC SILT(MH)

ATTACHMENT A-3

PRTC Tank Field Liquid Level Data

by Hillmann Consulting

PRTC Tank Field Liquid Level Data

Hillmann Consulting, LLC began gauging and recording liquid levels from the tank field observation wells on 05/24/24. The latest liquid level data is shown below.

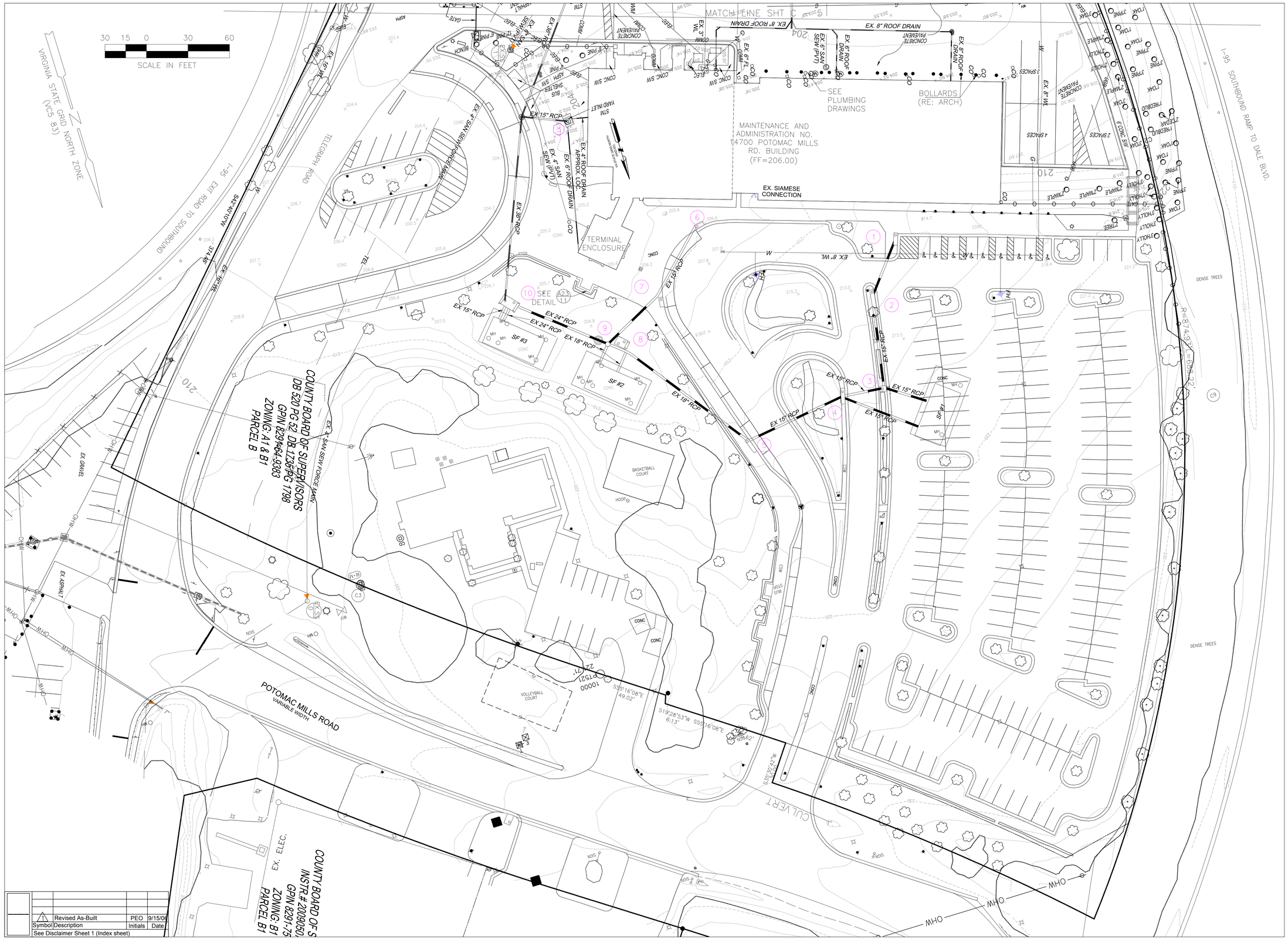
The tank field observation wells at the PRTC Woodbridge facility were gauged for a 3rd time on August 2, 2024. Below is the liquid level data, to date. We started hand bailing product from OW-3 and storing it in a dedicated drum on site. We will continue to bail product from OW-3 during each upcoming visit.

Well ID	Date	DTP (feet)	DTW (feet)	Product Thickness (feet)	Product Recovered (gallons)	Comments	Total Depth of Well (Feet)
OW-1	8/2/24	10.74	10.78	0.04	--		13.25
	6/27/24	10.71	10.74	0.03	--		
	5/24/24	10.62	10.66	0.04	--		
OW-2	8/2/24	--	--	--	--	Inaccessible - inoperative bus parked overtop well	13.33
	6/27/24	10.81	10.83	0.02	--		
	5/24/24	10.73	10.75	0.02	--		
OW-3	8/2/24	11.56	11.96	0.40	0.5 gall		12.97
	6/27/24	11.32	11.69	0.37	--	Verified w/ clear bailer	
	5/24/24	11.65	11.69	0.04	--		
OW-4	NA	Top of Casing Inaccessible					NA

ATTACHMENT A-4

SITE PLANS - PRTC Transit Center

by Gauthier, Alvarado &Associates, Inc.



Symbol	Description	Initials	Date
1	Revised As-Built	PEO	9/15/06

See Disclaimer Sheet 1 (Index sheet)

Gauthier, Alvarado & Associates, Inc.

Architecture Engineering Planning

PROJECT TITLE

PRTC

POTOMAC AND RAPPAHANNOCK TRANSPORTATION COMMISSION

MULTI-PURPOSE TRANSIT CENTER

TRANSPORTATION CONSULTANTS:
SG Associates, Inc.

SITE ENGINEERS:
Springfield Engineering Associates. Inc.

PLANNING LANDSCAPE AND SIGNAGE CONSULTANTS:
Coffin & Coffin

REVISIONS

NO.	DATE	DESCRIPTION
	3-11-96	PRINT FOR BIDDING
1	5-10-96	PERMIT REVISIONS
7	7-3-97	ROOF DRAIN

DRAWN KLT

CHECKED

DRAWING TITLE

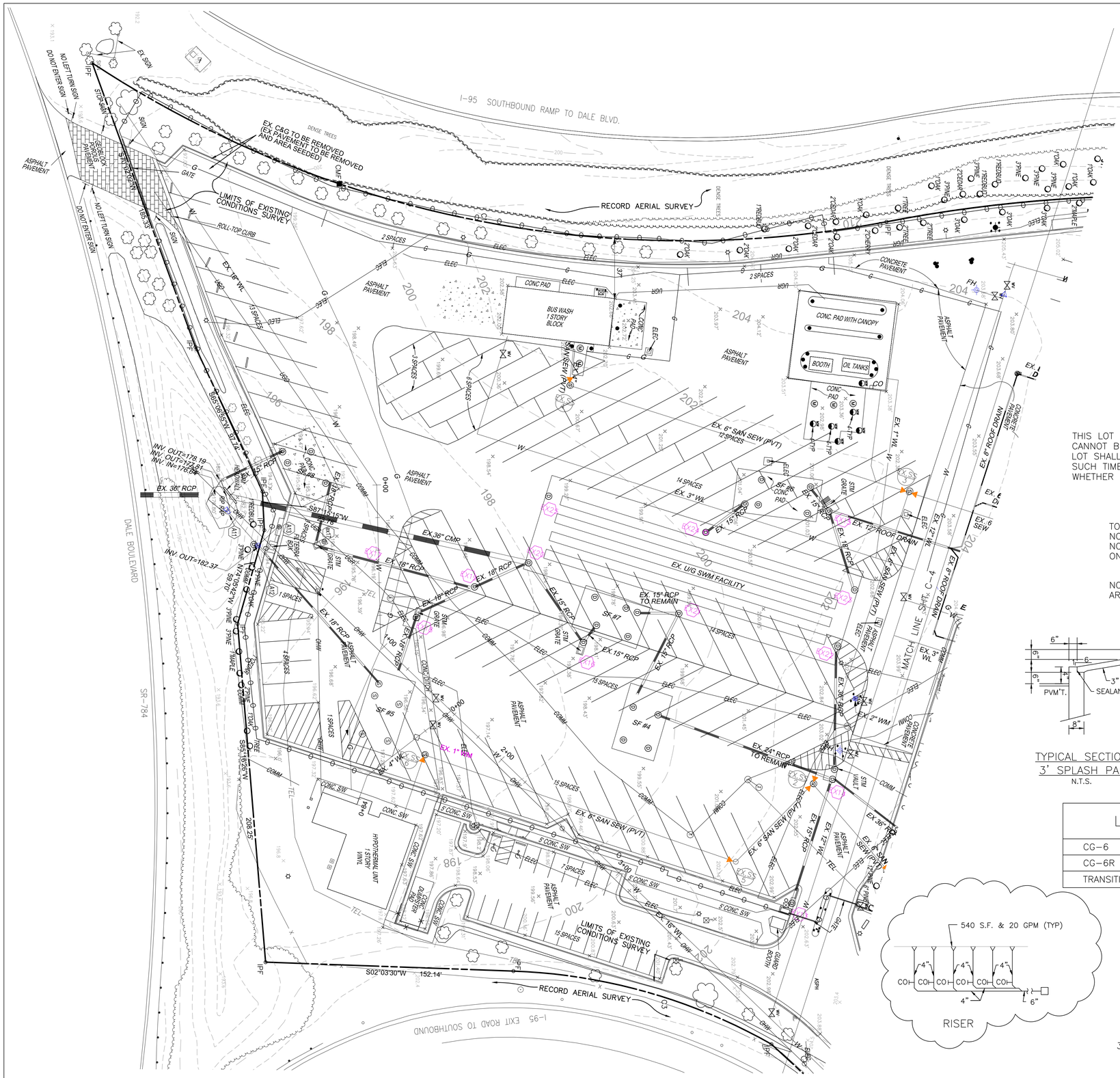
SITE PLAN

DATE JUNE. 30.2011

DRAWING NUMBER

C-4

4 OF 29



VIRGINIA STATE GRID NORTH ZONE (VCS 83)

NOTE: ALL ONSITE GRAVITY SEW. LINES, PUMP STA. 8.4" FORCE MAIN PRIVATELY OWNED AND MAINTAINED.

NOTE:

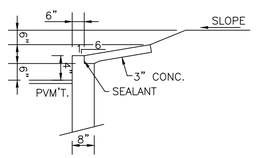
REFER TO BUS YARD EXPANSION PROJECT FILES FOR DETAILS.

BUILDING USAGE	SQ. FT.	HT. (FT)
USE GROUP 'B' ADMINISTRATION	18,356	27
USE GROUP 'S' MAINTENANCE	16,579	23
TERMINAL ENCLOSURE	775	15
BUS WASH BUILDING	1,452	18
BUS SHELTERS (5 TOTAL)	305	8
HYPOTHERMIA UNIT	2,350	14
TOTAL	39.817	

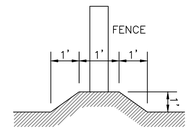
THIS LOT IS BEING CREATED SOLELY FOR USE AS A PUBLIC FACILITY, AND CANNOT BE USED FOR ANY OTHER PURPOSE. IF THE PUBLIC USE OF THIS LOT SHALL CEASE, NO FURTHER USE OF THE LOT MAY COMMENCE UNTIL SUCH TIME AS ALL THE REQUIREMENTS OF THE ZONING ORDINANCE ARE MET, WHETHER BY AGGREGATION WITH OTHER PROPERTIES, OR OTHERWISE.

TOTAL PROJECT SITE ACREAGE=12.349 AC.
NO MAPPED RPA'S ON THE SITE.
NO 100 YEAR FLOOD AREAS ON THE SITE BASED ON FIRM PANEL 510119 0218 B.

NO CEMETERIES OR OTHER HISTORIC SITES ARE KNOWN TO EXIST ON THE SITE.



TYPICAL SECTION
3' SPLASH PAN
N.T.S.



SECTION "A-A"
GRADING AT FENCE
SEE ARCHITECTURAL FOR FENCE DETAILS
N.T.S.

LEGEND	
CG-6	
CG-6R	
TRANSITION	

30 15 0 30 60
SCALE IN FEET

Symbol	Description	Initials	Date
1	Revised As-Built	PEO	9/15/06
See Disclaimer Sheet 1 (Index sheet)			

Gauthier, Alvarado & Associates, Inc.

Architecture Engineering Planning

PROJECT NO. 10085

PLAN NO. 96-00152

SEA JOB NO. 974.000

PROJECT TITLE

PRTC

POTOMAC AND RAPPAHANNOCK TRANSPORTATION COMMISSION

MULTI-PURPOSE TRANSIT CENTER

TRANSPORTATION CONSULTANTS:
SG Associates, Inc.

SITE ENGINEERS:
Springfield Engineering Associates. Inc.

PLANNING LANDSCAPE AND SIGNAGE CONSULTANTS:
Coffin & Coffin

REVISIONS

NO.	DATE	DESCRIPTION
	3-11-96	PRINT FOR BIDDING
1	5-10-96	PERMIT REVISIONS
7	7-3-97	FULL 186, DRAIN

DRAWN KLT

CHECKED

DRAWING TITLE

SITE PLAN

DATE SEPT. 29,1995

DRAWING NUMBER

C-5

5 OF 29

MATCH LINE SHT C-7

BUS SHELTER TYPE 'B' (TYP. -3 EA.)

SEE PRP PROJECTS PLANS C-7-1 THROUGH C-7-3 FOR DETAILS

SEE DWG 104 (2 OF 3) SITE PLAN FOR PVMT REPAIRS

MAINTENANCE AND ADMINISTRATION NO. 14700 POTOMAC MILLS RD. BUILDING (FF=206.00)

SEE DRAWINGS A-19, 20, 21, 22, & S-5, S-6 FOR DETAILS

SIAMESE CONNECTION

2 EA. FIRE LANE SIGNS

TERMINAL ENCLOSURE

18' FIRE LANE

3' SPLASH PAN (SEE DETAIL)

9 H.C. SPACES (VAN ACCESSIBLE)

4 SPACES

CHAIN LINK FENCE

I-95 SOUTHBOUND RAMP TO DALE BLVD.

I-95 EXIT ROAD TO SOUTHBOUND

TELEGRAPH ROAD

PAVEMENT SECTION 'B'

EX. FENCE

EX. ELEC.

NEW FENCE (SEE SECT. A-A SHT C-5)

PARKING TABULATION

USE	REQUIREMENT	REQUIRED	PROVIDED
OFFICE/ ADMINISTRATION	1 PER 250 SF X 18,356 SF	74	94
MAINTENANCE	2 PER BAY X 8 BAYS	16	16
HYPERTHERMIA UNIT	1 PER 2 BEDS X 32 BEDS	16	16
BUS PARKING	–	–	77
VAN PARKING	–	–	24
COMMUTER PARKING	–	–	193
TOTAL		106	420

H.C SPACES REQUIRED
COMMUTER PARKING= 6 (ONE VAN ACCESSIBLE
EMPLOYEE PARKING=5(ONE VAN ACCESSIBLE)
H.C. SPACES PROVIDED
COMMUTER PARKING =9(ONE VAN ACCESSIBLE)
EMPLOYEE PARKING = 8(ONE VAN ACCESSIBLE)

COUNTY HOME FOR BOYS

ZONED A-1 (RESIDENT SCHOOL) GPIN #8291-64-9383

EX. M.H. INV. IN=210.33 INV. OUT=210.21

8" SAN. SEWER

R=2196.83' L=380.01'

S55°16'08"E 49.02'

S55°16'08"E 66.62'

S37°29'17"W 5.01'

POTOMAC MILLS ROAD

EXXON CORPORATION ZONED B-1 (ABANDONED) GPIN #8291-75-3529

CHARLES W. & ANNA LEE DEAN ZONED B-1 (AUTO REPAIR) GPIN #8291-75-2140

CHARLES W. & ANNA LEE DEAN ZONED A-1 (VACANT) GPIN #8291-75-1759

P.T. 80+56.45

P.C. 81+71.85

TYPICAL SECTION POTOMAC MILLS ROAD WIDENING

12' 1/4 IN/FT CG-6 1 1/2" SM-2C 8" BM-2 8" 21-A

BUS SHELTER TYPE 'A' (TYP. 2 EA.)

PAVEMENT SECTION 'B'

3' SPLASH GUARD

10 SPACES 11 SPACES 12 SPACES 13 SPACES

14 SPACES 7 SPACES

R=874.93' L=688.22'

TO DALE BOULEVARD

I-95 EXT RAMP

VIRGINIA STATE GRID NORTH ZONE (NCS 83)

R=1727.02' L=240.69'

35'R CG-12 SEE TYPICAL SECTION

51.13' N77°41'40"E

100' 50' TAPER

SCALE IN FEET 30 15 0 30 60

NOTE:

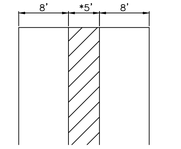
REFER TO BUS YARD EXPANSION PROJECT FILES FOR DETAILS.

LEGEND (EXISTING CONDITIONS SURVEY)

SYMBOL	DESCRIPTION
	STORM MANHOLE
	HANDICAP PARKING SPACE
	LIGHT POLE
	SANITARY MANHOLE
	UTILITY POLE
	POST
	DRAIN
	EXISTING MED./COMPACT DECIDUOUS
	PROPOSED COMPACT DECIDUOUS TREE
	CLEAN-OUT
	ELECTRIC PEDESTAL
	GAS VALVE
	MANHOLE
	CHAIN-LINK FENCE
	WOOD FENCE
	LIMITS OF EXISTING CONDITIONS SURVEY
	CURB AND GUTTER
UGO	ORANGE PAINT LINE (UNDERGROUND UTILITY)
OHW	OVERHEAD WIRE

LEGEND

CG-6	
CG-6R	
TRANSITION	



TYPICAL HANDICAP PARKING SPACES

* 8' MIN. WHEN SERVING VAN ACCESSIBLE SPACES

1	Revised As-Built	PEO	9/15/06
Symbol	Description	Initials	Date
See Disclaimer Sheet 1 (Index sheet)			

Gauthier, Alvarado & Associates, Inc.

Architecture Engineering Planning

PROJECT NO. 10085

PLAN NO. 96-00152

SAE JOB NO. 974.000

PROJECT TITLE

PRTC

POTOMAC AND RAPPAHANNOCK TRANSPORTATION COMMISSION

MULTI-PURPOSE TRANSIT CENTER

TRANSPORTATION CONSULTANTS:
SG Associates, Inc.

SITE ENGINEERS:
Springfield Engineering ASSOCIATES, INC.

PLANNING LANDSCAPE AND SIGNAGE CONSULTANTS:
Coffin & Coffin

REVISIONS

NO.	DATE	DESCRIPTION
	3-11-96	PRINT FOR BIDDING
1	5-10-96	PERMIT REVISIONS

DRAWN KLT

CHECKED

DRAWING TITLE

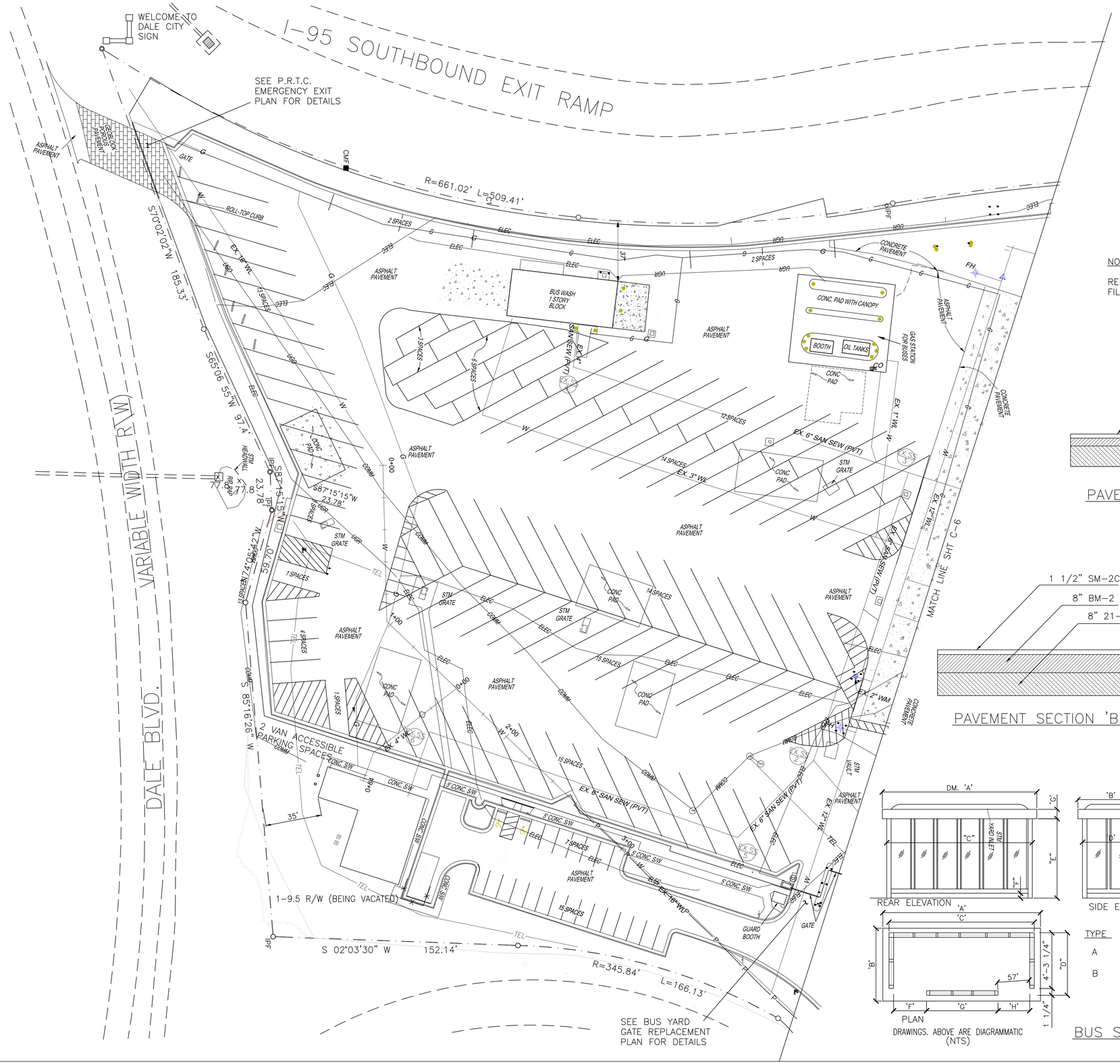
SITE LAYOUT PLAN

DATE JUN. 28, 2011

DRAWING NUMBER

C-6

6 OF 29



VIRGINIA STATE GRID NORTH ZONE (VCS 83)

30 15 0 30 60

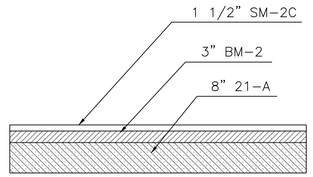
SCALE IN FEET

PARKING TABULATION

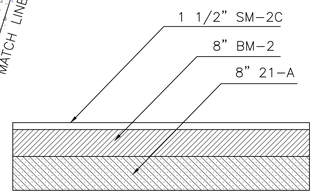
BUS SPACES	77
VAN SPACES	24
EMPLOYEE PARKING	117
ADMINISTRATION	9
COMMUTER PARKING	193
TOTAL	420

NOTE:

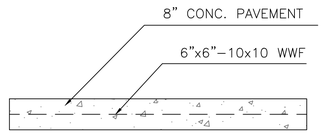
REFER TO BUS YARD EXPANSION PROJECT FILES FOR DETAILS.



PAVEMENT SECTION 'A'



PAVEMENT SECTION 'B'



CONCRETE PAVEMENT SECTION

DRAWINGS. ABOVE ARE DIAGRAMMATIC (NTS)

TYPE	'C'	'D'
A	9'-0 1/4"	4'-9 1/2"
B	11'-11"	6'-1 1/2"

BUS SHELTERS

LEGEND

CG-6	
CG-6R	
TRANSITION	

Symbol	Description	Initials	Date
1	Revised As-Built	PEO	9/15/06
	See Disclaimer Sheet 1 (Index sheet)		

Gauthier, Alvarado & Associates, Inc.

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PLAN NO. 96-00152

SEA JOB NO. 974.000

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NO.	DATE	DESCRIPTION
	3-11-96	PRINT FOR BIDDING
1	5-10-96	PERMIT REVISIONS

DRAWN KLT

CHECKED

DRAWING TITLE

SITE LAYOUT PLAN

DATE SEPT. 29, 1995

DRAWING NUMBER

C-7

7 OF 29

ATTACHMENT A-5

SITE PLANS – Fuel Tank Replacement Plan

by IMEG

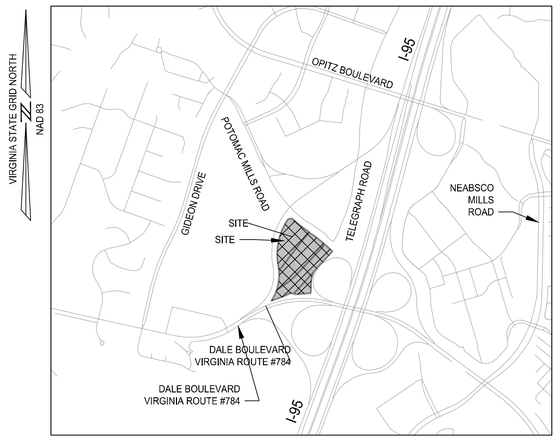
POTOMAC AND RAPPAHANNOCK TRANSPORTATION

FUEL TANK REPLACEMENT PLAN
NEABSCO MAGISTERIAL DISTRICT
PRINCE WILLIAM COUNTY, VA

THE PURPOSE OF THIS PLAN IS FOR CONSTRUCTION TO REPLACE THE FUEL DISPENSERS, VEEDER ROOT FUEL MANAGEMENT SYSTEM AND UNDERGROUND FUEL TANKS IN KIND LOCATED ON THE WEST SIDE ADJACENT TO THE BUS PARKING AREA, AND THESE PLANS DO NOT INTEND TO ALTER THE SITE DESIGN PREVIOUSLY APPROVED WITH "PRTC MULT-PURPOSE TRANSIT CENTER", BY SPRINGFIELD ENGINEERING ASSOCIATES, INC.

GENERAL

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH PRINCE WILLIAM COUNTY'S STANDARDS AND THE LATEST EDITION OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE STANDARDS.
2. IF THE CONTRACTOR OR OTHERS BECOME AWARE OF ANY DISCREPANCIES, ANY UNANTICIPATED SITE CONDITIONS, ANY REASONS FOR NONCONFORMANCE WITH THE DESIGN DOCUMENTS, OR ANY PROPOSED FIELD REVISIONS - PROMPT WRITTEN NOTICE THEREOF SHALL BE GIVEN TO CHRISTOPHER CONSULTANTS, LTD.
3. THE WATERLINE, ELECTRIC, TELEPHONE, AND CATV UNDERGROUND UTILITIES SHOWN HEREON ARE BASED ON FIELD MARKINGS BY UTILITY PROFESSIONALS, INC. (UPI). THE LIMITS OF THE UNDERGROUND SAND FILTERS (DESIGNATED BY "SF#") AND THE UNDERGROUND STORMWATER MANAGEMENT FACILITY SHOWN HEREON ARE APPROXIMATE AND ARE BASED ON PLANS RETRIEVED FROM PRINCE WILLIAM COUNTY RECORDS AND DESIGN PLANS PREPARED BY IMEG. NO CERTIFICATION HAS BEEN MADE AS TO THE LOCATIONS OF UNDERGROUND UTILITES SUCH AS, BUT NOT LIMITED TO ELECTRIC, GAS, TELEPHONE, CATV, WATER, SANITARY AND STORM SEWERS. THE STORM SEWER LINES REFERENCED TO THIS NOTE ARE APPROXIMATE; PHYSICAL, SUB-SURFACE VERIFICATION WILL BE NECESSARY TO CONFIRM PIPE SIZE AND MATERIAL.
4. THE CONTRACTOR SHALL DIG TEST PITS AS REQUIRED FOLLOWING NOTIFICATION AND MARKING OF ALL EXISTING UTILITIES TO VERIFY THE LOCATION AND DEPTH OF EXISTING UTILITIES. TEST PITS ARE TO BE PERFORMED AT LEAST 30 DAYS PRIOR TO START OF CONSTRUCTION. ANY DISCREPANCIES ARE TO BE REPORTED IMMEDIATELY TO THE OWNER AND IMEG. REDESIGN AND APPROVAL BY REVIEWING AGENCIES SHALL BE OBTAINED, IF REQUIRED.
5. THE CONTRACTOR SHALL CONTACT MISS UTILITY AS REQUIRED BEFORE DIGGING.
6. THE CONTRACTOR 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.
7. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING SITE FEATURES WHICH ARE TO REMAIN. ANY DAMAGE INCURRED DUE TO THE CONTRACTOR'S OR ANY SUBCONTRACTOR'S ACTIONS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
8. ALL UTILITIES, INCLUDING ALL POLES, WHICH ARE TO BE RELOCATED, SHALL BE AT THE CONTRACTOR'S EXPENSE PRIOR TO CONSTRUCTION. CONTRACTOR TO CONTACT APPLICABLE UTILITIES AT LEAST 60 DAYS PRIOR TO NEEDING FACILITY RELOCATED.
9. THE CONTRACTOR IS RESPONSIBLE FOR SECURING ALL REQUIRED PERMITS PRIOR TO CONSTRUCTION.
10. THE CONTRACTOR IS RESPONSIBLE FOR ARRANGING ALL NECESSARY INSPECTIONS.
11. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING A SAFE CONSTRUCTION SITE AND COMPLYING WITH ALL OSHA, STATE AND LOCAL REGULATIONS.
12. IMEG SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION, MEANS, METHODS, TECHNIQUES, OR PROCEDURES UTILIZED BY THE CONTRACTOR, NOR SAFETY OF PUBLIC OR CONTRACTOR'S EMPLOYEES OR THE FAILURE OF THE CONTRACTOR TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND STANDARD CONSTRUCTION PRACTICES.
13. ALL REQUIRED SHOP DRAWINGS ARE TO BE SUBMITTED TO IMEG FOR REVIEW AND APPROVAL 30 DAYS PRIOR TO INSTALLATION AND SHALL BE SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED AND EXPERIENCED IN THE STATE IN WHICH THE PROJECT IS LOCATED.
14. ALL FILL, BASE AND SUBBASE MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% OF THEORETICAL MAXIMUM DENSITY AS DETERMINED BY A.A.S.H.T.O. T-99 METHOD A WITHIN PLUS OR MINUS 2% OF OPTIMUM MOISTURE AS SPECIFIED BY THE GEOTECHNICAL REPORT.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING A SMOOTH TRANSITION TO EXISTING CURB AND SIDEWALKS, IF APPLICABLE TO INSURE POSITIVE DRAINAGE.
16. THE CONTRACTOR MUST ENSURE THAT POSITIVE DRAINAGE OCCURS ON SITE TO PREVENT PONDING OR DRAINAGE PROBLEMS ON ADJACENT PROPERTIES.
17. DURING ROUGH GRADING OF THE SITE, THE CONTRACTOR WILL IMMEDIATELY NOTIFY THE GEOTECHNICAL ENGINEER IF GROUND WATER SEEPAGE/SPRINGS ARE IDENTIFIED.
18. ALL COMMUNICATION BETWEEN CONTRACTOR AND IMEG, SHALL BE THROUGH FORMAL CHANNELS. ANY QUESTIONS OR SUBMITTALS ARE TO BE PRESENTED AS A WRITTEN REQUEST FOR INFORMATION, SHOP DRAWING, OR SUBMITTAL PACKAGE.
19. THE CONTENT OF THESE PLANS IS CONSIDERED PROPRIETARY AND SHALL NOT BE USED OR MODIFIED WITHOUT THE EXPRESS WRITTEN CONSENT OF IMEG.



VICINITY MAP

1000 500 0 1000 2000

GRAPHIC SCALE
1"=1000'

Sheet Number	Sheet Title
C000	COVER SHEET
C200	SITE DETAILS
C201	SITE DETAILS
C202	SITE DETAILS
C203	SITE DETAILS
C300	EXISTING CONDITIONS
C400	PROPOSED CONSTRUCTION
C700	EROSION & SEDIMENT CONTROL PLAN
C701	STAGING AREA PLAN
C800	EXISTING TANK PLANS
C801	EXISTING TANK PLANS

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engineering • surveying • land planning

POTOMAC AND RAPPAHANNOCK TRANSPORTATION
FUEL TANK REPLACEMENT PLAN
14700, 14716, 14720 & 14730 POTOMAC MILLS ROAD & 14775 TELEGRAPH ROAD
NEABSCO MAGISTERIAL DISTRICT, PRINCE WILLIAM COUNTY, VIRGINIA

MARK	DATE	DESCRIPTION

PROJECT No.: 23006915.00
DRAWING No.: 112943
DATE: 11-14-2023
SCALE: AS NOTED
DESIGN: WRS
DRAWN: WRS
CHECKED: TWT

SHEET TITLE:

COVER SHEET

SHEET No.

C000

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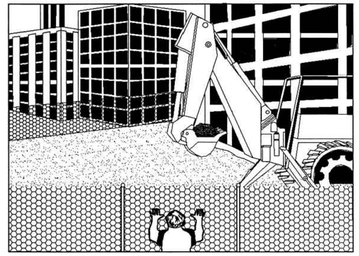
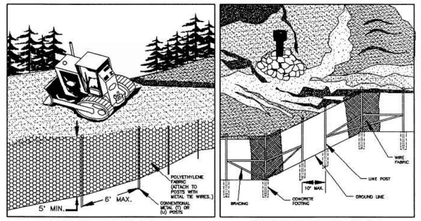
SAFETY FENCE



PERSPECTIVE VIEW



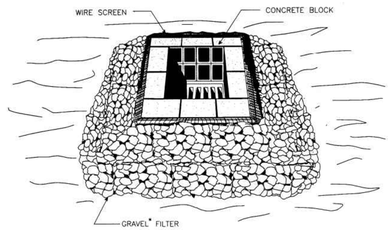
PERSPECTIVE VIEW
PLASTIC FENCE

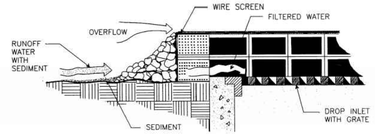
PERSPECTIVE VIEW
METAL FENCE

Source: Adapted from Conwed Plastics and VDOT Road and Bridge Standards

Plate 3.01-1

BLOCK AND GRAVEL DROP INLET SEDIMENT FILTER





SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY FLOWS ARE EXPECTED AND WHERE AN OVERFLOW CAPACITY IS NECESSARY TO PREVENT EXCESSIVE PONDING AROUND THE STRUCTURE.

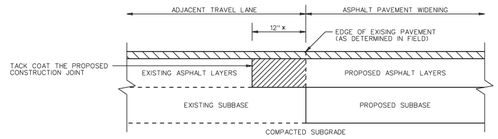
* GRAVEL SHALL BE VDOT #3, #357 OR #5 COARSE AGGREGATE.

Source: Va. DSWC

Plate 3.07-3

2016 ROAD & BRIDGE STANDARDS

WP-2



CONSTRUCTION JOINT DETAIL

REMOVE EXISTING ASPHALT LAYERS TO EXISTING SUBBASE AND REPLACE WITH PROPOSED ASPHALT WIDENING LAYERS

PROPOSED MINIMUM 1½ INCH THICK ASPHALT SURFACE COURSE (SEE NOTE 5)

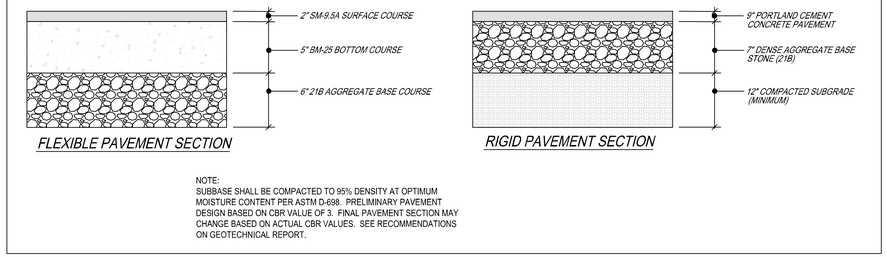
x MINIMUM 12 INCHES, OR GREATER AS NECESSARY TO ABUT THE FULL THICKNESS OF EXISTING ASPHALT LAYERS AS DETERMINED BY CORES (SEE NOTE 3)

NOTES:

1. ASPHALT PAVEMENT WIDENING SHALL HAVE A PAVEMENT DESIGN IN ACCORDANCE WITH CURRENT VDOT PROCEDURES AND BE APPROVED BY THE ENGINEER.
2. THE PAVEMENT DESIGN FOR ASPHALT PAVEMENT WIDENING SHALL MEET OR EXCEED THE DEPTHS AND TYPES OF THE LAYERS OF EXISTING PAVEMENT. SUBSURFACE DRAINAGE OF THE EXISTING AND PROPOSED PAVEMENT SHALL BE ADDRESSED IN THE PAVEMENT DESIGN.
3. A MINIMUM OF THREE CORES SHALL BE TAKEN ALONG THE CENTER OF THE ADJACENT TRAVEL LANE TO DETERMINE THE TYPE AND THICKNESS OF EXISTING PAVEMENT LAYERS. THESE CORES SHALL BE SPACED NO MORE THAN 500 FEET APART.
4. THE ADJACENT TRAVEL LANE SHALL BE MILLED A MINIMUM DEPTH OF 1½ INCHES AND REPLACED WITH AN ASPHALT SURFACE COURSE TO MATCH THE PROPOSED PAVEMENT WIDENING SURFACE COURSE, UNLESS WAIVED BY THE ENGINEER.
5. THE ENGINEER MAY REQUIRE THE MILLING DEPTH OF THE EXISTING PAVEMENT TO BE ADJUSTED TO ACHIEVE AN ACCEPTABLE PAVEMENT CROSS-SLOPE AND EFFECTIVE SURFACE DRAINAGE.
6. EXISTING PAVEMENT MARKINGS AND MARKERS WITHIN THE PROJECT LIMITS SHALL BE RESTORED SUBJECT TO THE APPROVAL OF THE ENGINEER.
7. FINAL TRANSVERSE PAVEMENT TIE-IN SHALL CONFORM TO THE REQUIREMENTS OF SECTION 315 OF THE SPECIFICATIONS EXCEPT THAT ALL JOINTS AT TIE-IN LOCATIONS SHALL BE TESTED USING A 10 FOOT STRAIGHTEDGE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 315 OF THE SPECIFICATIONS.

VDOT ROAD AND BRIDGE STANDARDS		ASPHALT PAVEMENT WIDENING FOR WIDENING SUBJECT TO TRAFFIC VIRGINIA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE
SHEET 1 OF 1	REVISION DATE		315
303.02			

2016 ROAD & BRIDGE STANDARDS

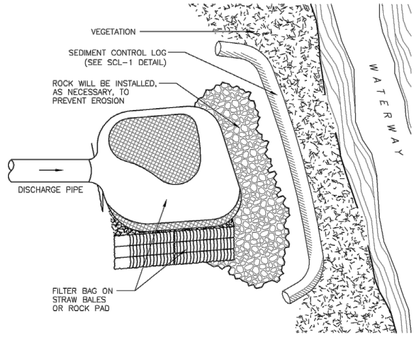


FLEXIBLE PAVEMENT SECTION

RIGID PAVEMENT SECTION

NOTE:
SUBBASE SHALL BE COMPACTED TO 95% DENSITY AT OPTIMUM MOISTURE CONTENT PER ASTM D-698. PRELIMINARY PAVEMENT DESIGN BASED ON CBR VALUE OF 3. FINAL PAVEMENT SECTION MAY CHANGE BASED ON ACTUAL CBR VALUES. SEE RECOMMENDATIONS ON GEOTECHNICAL REPORT.

SM-9 Dewatering Operations (DW)



DW-4. DEWATERING FILTER BAG

DEWATERING INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   -LOCATION OF DEWATERING EQUIPMENT.
   -TYPE OF DEWATERING OPERATION (DW-1 TO DW-4).

2. THE OWNER OR CONTRACTOR SHALL OBTAIN A CONSTRUCTION DISCHARGE (DEWATERING) PERMIT FROM THE STATE PRIOR TO ANY DEWATERING OPERATIONS DISCHARGING FROM THE SITE. ALL DEWATERING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE PERMIT.

3. THE OWNER OR OPERATOR SHALL PROVIDE, OPERATE, AND MAINTAIN DEWATERING SYSTEMS OF SUFFICIENT SIZE AND CAPACITY TO PERMIT EXCAVATION AND SUBSEQUENT CONSTRUCTION IN DRY CONDITIONS AND TO LOWER AND MAINTAIN THE GROUNDWATER LEVEL A MINIMUM OF 2-FEET BELOW THE LOWEST POINT OF EXCAVATION AND CONTINUOUSLY MAINTAIN EXCAVATIONS FREE OF WATER UNTIL BACK-FILLED TO FINAL GRADE.

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CHECKED: TWT

SHEET TITLE:

SITE DETAILS

SHEET No.

C200

NEW WORLD. NEW STANDARD.

ITEM# 23

TLS-450

AUTOMATED COMPLIANCE AND SITE MANAGEMENT

At Veeder-Root, we've delivered over 100,000 times worldwide. With our new TLS-450 Platform, the same promises apply, along with new benefits that will keep your stations ready and help you adapt to changing regulations and business environments.

WELCOME TO THE NEW WORLD

The TLS-450 is the new standard in tank monitoring systems. The TLS-450 offers retail and commercial petroleum site owners automated compliance and site management so they are always inspector-ready, they always know their business status, and they are always in control of their fueling operations.

PROVE COMPLIANCE

Always inspector-ready. Meet all requirements.

- Provides one-touch inspector-ready compliance reporting.
- Automatically stores and organizes compliance data for up to three years.
- Allows access to compliance data via web browser on a PC.

STAY IN COMPLIANCE

Always know your compliance status. Take instant action.

- Provides automatic compliance update status via email.
- Customized alarms and built-in help menu ensure fast appropriate site action.
- Allows easy local or remote upgrades for future compliance requirements.

IMPROVE SITE MANAGEMENT

Always control your inventory. Eliminate service costs.

- Provides inventory and delivery data via email or by a web browser on a PC.
- Custom alarms, remote diagnostics, & easy annual tests avoid unnecessary service calls.

TLS-450 FEATURES

The TLS-450 offers a variety of features for access, control, data storage, and business management. The base TLS-450 Console comes complete with the following communications features:

Total Access

Wherever you are, you can access or monitor your sites via web browser on your PC. Using the TLS-450 Direct Access™ software, you can securely control and modify configurations and diagnostics.

Total Control

Customize multi-level password access, alarms, email notifications, reports, built-in Help and dashboard views to make sure all sites are under control.

Extended Storage

Back up your reports, alarms, compliance, inventory and delivery data for up to three years on a Veeder-Root thumb-drive using the USB connection. The TLS-450 can also back up your setup settings.

SYSTEM CAPABILITIES

- Comprehensive compliance reports
- Up to three years of data history
- Inventory and delivery monitoring and reporting
- Supports up to 32 probes
- Interstitial/sump monitoring capabilities
- Dispenser sump monitoring capability

- Vapor well monitoring capability
- Groundwater monitoring capability
- Audible and visual alarm capabilities
- Customizable alarms
- Email notification and reporting
- Fax notification and reporting
- Continuous Statistical Leak Detection software - 0.2 GPH for both single and manifolded tanks
- 3.0 GPH, 0.1 GPH and 0.2 GPH in tank leak detection
- 3.0 GPH, 0.1 GPH and 0.2 GPH line leak detection capabilities
- Sensor status report
- Sensor status history report
- 7.4" full VGA LCD touch screen
- High resolution, high speed printer
- Universal compartments support universal sensor and probe module, and input output interface module
- Built-in relay for overfill alarm
- Supports multiple languages
- Intuitive and user-friendly interface
- Single touch access to most functions
- Customizable on-board Help
- Custom dashboard
- Remote web access
- TLS-450 Direct Access™ software
- Up to nine communication ports
- Internal auto-dial fax modem communications SiteFax™
- Ethernet communications
- RS-232 data communications
- RS-485 data communications
- USB ports for software upgrade and data back up

VEEDER-ROOT

FUTURE READY PAST PROVEN™

NEW WORLD. NEW STANDARD.

ITEM# 23

TLS-450

RELIABILITY. QUALITY. INNOVATION. SERVICE.

STANDARD MODEL TLS-450 CONSOLE COMES COMPLETE WITH:

- TLS-450 console with 80 column high speed thermal printer and 7.4" full VGA LCD touch screen. Supports up to 64 sensors (up to 32 of one sensor type)
- Total Access USB/ethernet dual interface module and Direct Access software.
- Total Control software
- RS-232 dual interface module
- One built-in relay
- Three-years of data storage

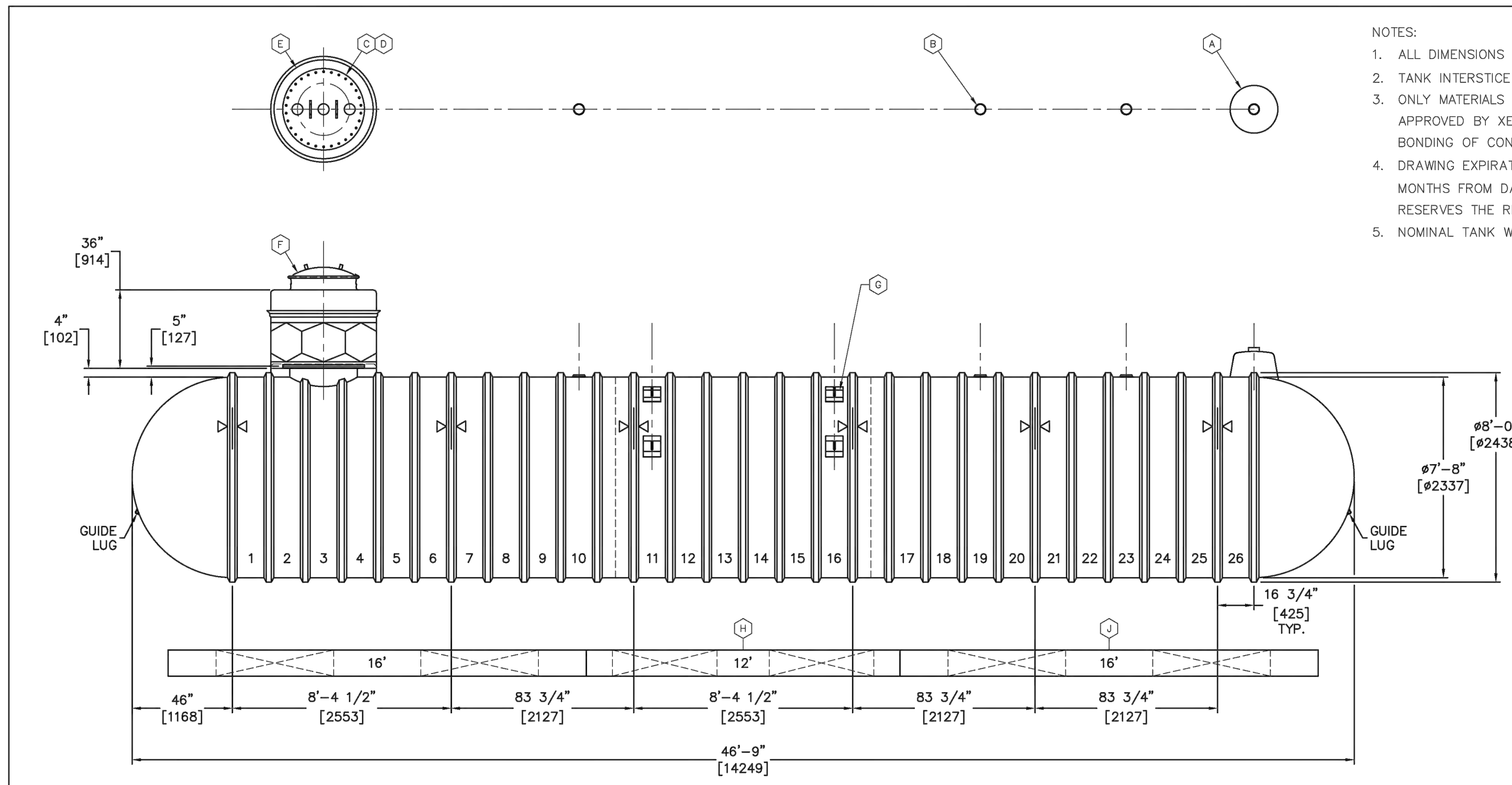
TLS-450 WITH INTERFACE MODULES:

- TLS-450 contains four compartments in which the universal sensor/probe or input/output interface modules can be installed interchangeably. One module per compartment.

DESCRIPTION	FUNCTION
LOW-POWER/HIGH-POWER COMPARTMENTS (limit four modules per console)	
Universal sensor/probe interface module	16 input module supports probes and sensors
Universal input/output interface module	Five dry contact output relays/four low voltage dry contact inputs/five high voltage inputs (<=240Vac). Supports PLLD and Pump Sense as well as standard functions
Built-in relay	Supports tank overfill alarm
COMMUNICATION COMPARTMENT (limit five modules per console)	
SiteFax™ interface module	Allows hookup to most remote facsimile or modem equipment
Ethernet interface module	Provides connectivity to local and wide area networks (LAN/WAN)
USB interface module	Supports Veeder-Root USB thumb drive
USB/ethernet dual interface module	Provides connectivity to local and wide area networks (LAN/WAN)
RS-232 dual interface module	Provides two 9-Pin female D-Connectors for data transmission to P.O.S. terminal or computer
RS-232/RS-485 dual interface module	Provides a 9-Pin female D-Connector and an 8-position RJ45 D-Connector for data transmission to P.O.S. terminal or computer
Single RS-232 interface module	Provides a 9-Pin female D-Connector for data transmission to P.O.S. terminal or computer
SPECIFICATIONS	
Operating temperature range	32°F to 104°F (0°C to 40°C)
Storage temperature range	14°F to 158°F (-10°C to 70°C)

To learn more, contact us at 1-888-561-7942, or visit www.veeder.com to register for product updates.

VEEDER-ROOT
125 Powder Forest Drive, P.O. Box 2003, Simsbury, CT 06070 USA



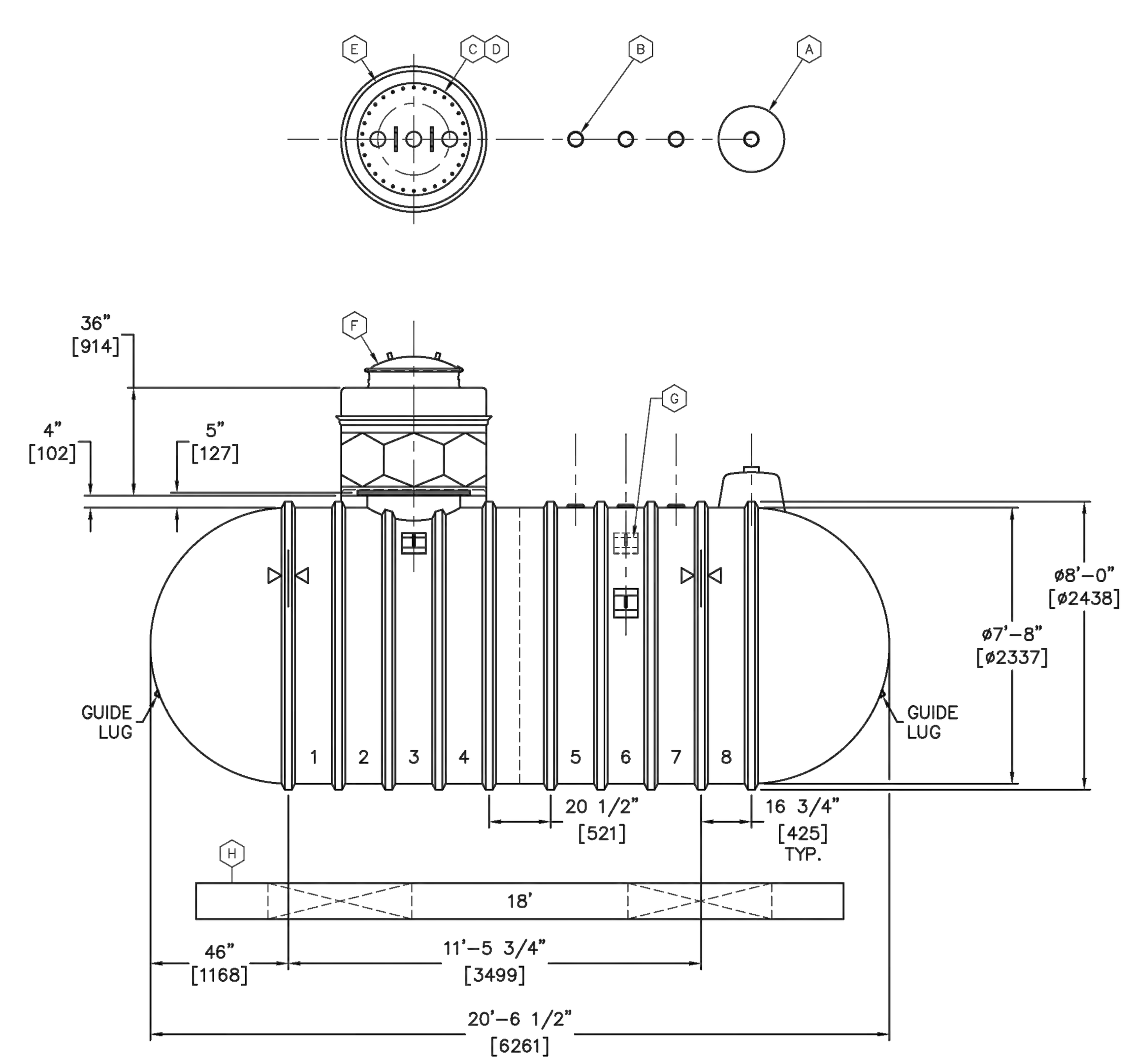
NOTES:

1. ALL DIMENSIONS SHOWN ARE IN FEET/INCHES [mm].
2. TANK INTERSTICE IS FACTORY BRINE FILLED.
3. ONLY MATERIALS THAT HAVE BEEN TESTED AND APPROVED BY XERXES SHOULD BE USED FOR BONDING OF CONTAINMENT SUMP COMPONENTS.
4. DRAWING EXPIRATION: DRAWING VALID FOR SIX (6) MONTHS FROM DATE OF LAST REVISION. XERXES RESERVES THE RIGHT TO REVIEW AND UPDATE.
5. NOMINAL TANK WEIGHT : 11,200 lbs. [5,100 kg.].

ITEM	QTY	DESCRIPTION	PART NO.
A	1	MONITOR RESERVOIR, 18"	C230003
B	3	FITTING, 4" H, 8' (WITH STRIKER PLATE)	C310101
C	1	MANWAY, 30" (WITH STRIKER PLATE)	C210004
D	1	MANWAY COVER, 30", 3–4" H, TYPE C & TWO HANDLES	C330067
E	1	COLLAR, SW, 48"	C220002
F	1	SUMP, SWFS, 48" X 36" w/ 30" WT LL TOP + URETHANE	C710094
G	6	LIFT LUG, ON BENT PLATE, 8" x 10", 8' (17" 17" 34")	C340009
H	2	12' PREFABRICATED CONCRETE DEADMEN KIT	–
J	4	16' PREFABRICATED CONCRETE DEADMEN KIT	–
▷◁	6	HOLD DOWN STRAP LOCATION	–

00	REVISION DESCRIPTION				
DRN –	DATE –	CHK'D –	DATE –	APPR'D –	DATE –

DRN: DD DATE: 11-06-23
CHK'D: PWM DATE: 11-06-23
APPR'D: – DATE: –
TITLE: 8' DIA DW UL CAP. 15,000 GALLONS ADVANCED FUELING SYSTEMS
SALES MANAGER: Rick Whately
DR. SIZE: B DR. NUMBER: XS-005154 REV: 00
SCALE: N.T.S. SHT 1 OF 1
INDUSTRY TYPE: M101 Fuel Markets



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D	1	MANWAY COVER, 30", 3–4" H, TYPE C & TWO HANDLES	C330067
E	1	COLLAR, SW, 48"	C220002
F	1	SUMP, SWFS, 48" X 36" w/ 30" WT LL TOP + URETHANE	C710094
G	3	LIFT LUG, ON BENT PLATE, 8" x 10", 8' (35" 35" 14")	C340009
H	2	18' PREFABRICATED CONCRETE DEADMEN KIT	–
▷◁	2	HOLD DOWN STRAP LOCATION	–

00	REVISION DESCRIPTION				
DRN –	DATE –	CHK'D –	DATE –	APPR'D –	DATE –

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DR. SIZE: B DR. NUMBER: XS-005155 REV: 00
SCALE: N.T.S. SHT 1 OF 1
INDUSTRY TYPE: M101 Fuel Markets

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SHEET TITLE:
SITE DETAILS

SHEET No.
C201

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ITEM# 01

SELECT™ SERIES
ELECTRONIC FLEET FUEL DISPENSERS

Wayne
FUELING SYSTEMS

Wayne Select Series
Electronic Fleet Fuel Dispensers

Advanced technology delivers enhanced fleet fueling efficiency

Getting your fleet on the road quickly is crucial to your bottom line which means fueling should be as hassle-free and fast as possible. The Wayne Select Series electronic fleet fuel dispenser keeps your operation moving at a rapid pace. In a class of its own, this dispenser harnesses leading technology and combines it with durable construction to bring you high speed, dependable fueling capabilities.

Powerfully equipped with cutting-edge electronics, the latest metering technology and field-proven components, the Select Series not only decreases fueling time significantly, it provides reliable functionality and easy management. A wide range of configuration options along with multiple feature choices give you superior flexibility.

High tech, high performance

The Select Series' outstanding performance is backed by exceptional, state-of-the-art technology, incorporating the Wayne iGEM electronics platform, the dispenser promotes smooth operability through features like user operating messages, transaction limit controls, error monitoring, enhanced diagnostics and PC-enabled software uploads and downloads.

Additionally, a handheld remote utilizes infrared technology to allow configuration and diagnostics access without opening the dispenser. And the Select Series features a unique status display that provides at-a-glance information about the dispensers' operating status including satellite-in-use messages for master and satellite configurations. All models include sophisticated electronic calibration for precise, yet simple meter calibration.

Speed, dependability and easy-to-manage performance

- Rugged construction houses the latest technology for fast fueling
- Select family includes three high flow rate series
- Wayne iGEM electronics platform offers smooth operability and simple maintenance

Three Series deliver fast fueling options

Because reducing fueling time increases efficiency and productivity, the Select Series' superior technology supports three different high flow rate series for a swift fueling experience. This means more time on the road for your vehicles. All series include island-oriented (side) or lane-oriented front nozzle configurations so you can match your specific operational requirements.

Select EC Series - The Select Enhanced Capacity Series provides fueling speeds up to 22 GPM*. Six suction pump and six remote dispenser configurations are available. The EC Series utilizes the Wayne intelligent iMeter® proven in demanding retail stations around the globe. The suction models feature powerful one horsepower motors for maximum flow performance with gear-type pumping units for years of rugged reliability. And the remote dispenser models include internal filters to ensure product purity. All models have one-inch discharges with 3/4-inch adapters, allowing them to be easily adapted to either hose size for gasoline or higher flow diesel applications. Maximum flow can be conveniently controlled electronically through the dispenser configuration to meet spit-back and vapor recovery requirements.

Select SHC Series - The Select Super High Capacity Series offers flow rates up to 36 GPM*. It includes two iMeters and two pumps (suction models) connected to a single hose for superior performance. Choose from two suction models and eight different remote dispenser configurations including two satellite models that enable truck saddle tank fueling.

Select UHC Series - The Select Ultra High Capacity Series delivers high capacity fueling. Through a combination of advanced technology and streamlined hydraulics for amazing flow performance, it delivers a flow rate of up to 60 GPM* for master and satellite hoses combined. It is available in 12 remote dispenser configurations including three satellite models for convenient truck saddle tank fueling, and all UHC dispensers are ready for satellite connections. The Select UHC Series is designed to match your specific requirements with unique configuration options such as two hoses on the same side for easy product selection or filling double tanks located on one side of a truck. The UHC Series features a Liquid Controls® meter for high flow throughput. Plus, dual internal 40 GPM filters are placed before the meter on each hose. Fuel is efficiently filtered from one location without sacrificing flow performance before it is dispensed through the master or satellite feeds.

*Flow rates are maximum test rates at discharge. Actual rates will depend upon the installation conditions, dispenser accessories, and for remote dispensers, size of the submersible pump. Flow rates for UHC models are for master and satellite hoses combined.

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Advanced technology and high capacity packaged in a heavy-duty cabinet

- Brings advanced electronics, electronic calibration and diagnostic capability to fleet fueling environments
- High speed fueling capacity supports your business goals by keeping your fleet on the road
- Highly configurable to match your exact requirements

Tailored to your needs

The Select Series electronic fuel dispensers' robust offering of optional features further enhances adaptability and configurability. Select the pulse output interface so you can connect to popular fuel control systems, or choose the hose retractor and mast to keep hoses out of fueling lanes. A factory-installed Healy VAC vapor recovery system helps meet environmental regulations, and you can select a price display for applications where dispenser price computation is necessary. What's more, all models are compatible with multiple fuel types including gasoline, kerosene, diesel and B20 biodiesel.

Strong durability for demanding fleet settings

The Select Series dispensers' powder-coated finish is incredibly durable even under harsh conditions and rugged use. All cabinet panels are galvannealed steel and supports are made of galvanized steel for corrosion resistance. Additionally, heavy gauge side panels and doors stand up to the elements for years.

Investment protection through easy installation and maintenance

Built with easy maintenance in mind, the Select Series dispenser is simple to install and cost-effective to manage. Patented double bump piping on EC and SHC Series models ensures reliable connections while simplifying component replacement during servicing. Hinged doors simplify routine maintenance, and a vertical strainer minimizes spills during cleaning.

- **Island-Oriented:** Nozzle(s) on side of cabinet for use from both lanes.
- **Lane-Oriented:** Nozzle(s) on front bezel for use in lane nozzle faces.
- **Enhanced Capacity:** One iMeter and one pump (suction models) per hose (except Twin I suction hoses share one pump).
- **Super High Capacity (SHC):** Two meters and two pumps (suction models) per hose for superior flow.
- **Ultra High Capacity (UHC):** High flow Liquid Controls meter per hose for maximum flow.
- **Master:** Equipped with satellite connection for use with satellite dispenser. Twin Master has two connections. All UHC models are satellite ready.

Suction Pumps

Type	ENHANCED CAPACITY (EC) (UP TO 22 GPM*)		SUPER HIGH CAPACITY (SHC) (UP TO 36 GPM*)	
	Island-Oriented	Lane-Oriented	Island-Oriented	Lane-Oriented
Single	3/G7201P/2JK/W	3/G7207P/2JK/W	3/G7221P/8JK	3/G7227P/8JKR
Twin I	3/G7202P/2JK	3/G7207P/2JK		
Twin II	3/G7203P/28JK/W	3/G7208P/28JK/W		

Remote Dispensers

Type	ENHANCED CAPACITY (EC) (UP TO 22 GPM*)		SUPER HIGH CAPACITY (SHC) (UP TO 36 GPM*)		ULTRA HIGH CAPACITY (UHC) (UP TO 60 GPM*)	
	Island-Oriented	Lane-Oriented	Island-Oriented	Lane-Oriented	Island-Oriented	Lane-Oriented
Single	3/G7201D/2GJK	3/G7207D/2GJKR	3/G7221D/GJK	3/G7227D/GJKR	3/G7231D/GJK/W3	3/G7237D/GJKR/W3
Twin I	3/G7242D/2GJK	3/G7247D/2GJK		3/G7227D/GJK	3/G7232D/GJK/W3	3/G7237D/GJK/W3
Twin II	3/G7203D/28GJK	3/G7208D/28GJK			3/G7233D/GJK/W3	3/G7238D/GJK/W3
Single Master				3/G7227D/GJK/R		3/G7237D/GJK/R/W3
Twin I Master				3/G7227D/GJK/M		3/G7237D/GJK/M/W3
Twin II Master						3/G7238D/GJK/M/W3
Master/Satellite						3/G7238D/GJK/L/W3
Two-Hose, Single-Sided, Twin I Master						3/G7238D/GJK/R/W3
Two-Hose, Single-Sided, Twin II Master						3/G7240D/GJK/R/W3
Satellites						
Single				3/G7027JK/R		3/G7037JK/R/W3
Twin				3/G7028JK/L		3/G7038JK/L/W3
Two-Hose Single-Sided						3/G7039JK/L/R/W3

3/G7242D/29GHJKU/K

Unleaded: Black Doors
Diesel: Green Doors

Model Number Format: *3 / Base Model / Suffix 1 Options / Suffix 2 Options* (e.g. 3/G7201D/2GJK/H)

The following options are standard: 1" discharge [2 on EC models], internal filter [G] (remote models), AC j-box [J], and hose hanger [K].
Option suffixes are noted in the specifications in [ ], A "/" (e.g. [/H]) indicates a suffix 2 option.

*Note: Specified flow rates are maximum test rates at the discharge. Actual flow rates will depend upon the installation conditions, product dispensed, dispenser accessories, and for remote dispensers, the size of the submersible pump. For Twin I suction and Twin I SHC remote models, the maximum flow rate is for only one hose operating at a time. The maximum flow rate for UHC models is for master and satellite hoses combined.

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Select Series Specifications

Compatibility: For dispensing low viscosity petroleum fuels - diesel; biodiesel blends up to 20%; gasoline, including oxygenated blends; kerosene; AvGas+; and jet fuel^. See E85 option and approvals. Fuel must meet the applicable ASTM standard.
^Note: Confirm with fuel supplier on any fluid path metal restrictions.

LCD Displays: Backlit 1" six-digit volume display and ½" four-character status display per hose. Displays each side of cabinet, except models with lane-oriented nozzle boot only display on corresponding nozzle boot side. Configurable 0-4 digits to right of decimal. Programmable gallons or liters. In event of power loss, display remain visible for approximately 15 minutes.

Totalizers: 7-digit electromechanical non-resettable totalizer per hose (EC twin I is per product). Two electronic 6-digit totalizers per hose - non-resettable and resettable - show on display using infrared remote control.

Fuel Control System Interfaces: Wayne protocol. Optional pulse output.

Meter:
EC & SHC - Reliable, micro-accurate 2-piston positive displacement Wayne iMeter with integral intelligent pulser. Unique, compact design with two meters in one housing. Electronic calibration. (E85 option - positive displacement axial flow meter)

UHC - Liquid Controls® high volume, positive displacement, rotary meter. Wayne optical pulser with quadrature output. Electronic calibration.

Pumping Unit+/-: Positive displacement, self-priming, gear-type pumping unit with integral centrifugal air separator and adjustable bypass valve. Suction strainers at inlet connection.

Motor+/-: 1-HP continuous duty with thermal overload protection. Adjustable V-link belt connects to pump pulley.

Electrical: 120VAC 60Hz. Motors^: 120/240VAC 50/60 Hz.

Inlet Connection:
EC - 1 ½" (3.8 cm) male NPT. (E85 option - 1"/1.2" (3.8cm) female NPT. No riser.)
SHC Remotes: 1 ½" male or 2" (5.1 cm) female NPT.
SHC Suctions: 2" female NPT.
UHC - 2" male NPT.

Internal Filter [G]: Standard on remote dispensers. UHC - dual internal filters per hose with 40 GPM/151 LPM, 30 micron elements (60 GPM/303 LPM total filter capacity per hose). Optional dual internal 100-mesh disposable strainer canisters in place of UHC filter elements. (E85 option - 1-micron ethanol filter)

Discharge:
EC - 1" (2.5 cm) NPT. Includes ¾" (1.9 cm) reducing bushing. SHC - 1" (2.5 cm) NPT. UHC - 1 ¼" (3.2 cm) NPT. Includes 1" (2.5 cm) reducing bushing.

Flow Control Valve:
EC & SHC - Proportional 7/8" (2.2 cm) valve. Standard on remote dispensers, Twin I suction, and SHC suction. Optional on other suction models [delete /W suffix to include valve on suction model].
UHC - Two-stage 1 ¼" (3.8 cm) valve.

Satellite Connection [/M]:
SHC - SHC master models include satellite down-piping and 1 ¼" (3.8 cm) NPT connection.
UHC - All UHC models are satellite-ready. The discharge assembly includes internal port for 1 ½" (3.8 cm) satellite piping connection (piping not included).

Cabinet Finish: Powder-coated metallic silver sides, top, and base. Doors painted blue (optional black, brown, green, red, silver, yellow, white, or stainless steel). Black register face with black-decal with white lettering.

Cabinet Construction: All exterior panels are fabricated from heavy gauge galvannealed steel for superior weather and corrosion resistance. Hinged doors for convenient service access.

Lighted Product ID Panels: Light for displays also illuminates product ID panel. Specify product names with order.

Nozzle Boot: Fits UL interchangeable nozzles and Emco Wheaton 4015 and Husky V short spout balance vapor recovery nozzles. Lift nozzle hook for activation. Hook extension kits+ for OPW 11VF (p/n 892081-001) and Healy 400 (p/n 892080-001) long spout vapor recovery nozzles.

Hose Hanger [K]: Keeps hose off of island when not in use.

Actual Dimensions: 32.25" W x 19.38" D x 63.3" H (81.9 cm W x 49.2 cm D x 160.8 cm H)

Approvals: UL / CSA - includes diesel; biodiesel blends to B5; gasoline including ethanol blends to E10 (to E85 with E85 option - UL only); & kerosene.

U.S. Weights & Measures - includes diesel; biodiesel; gasoline, including ethanol blends to E15 (to E85 with E85 option); kerosene; AvGas; and Jet Fuel.

FCC

Options

Pulse Output Interface [H]: Emulates mechanical dispenser interface for connection to fuel management and tank monitoring systems. Includes two outputs.

Price Displays [1]: Total sale and unit price displays for cardlock applications. Includes satellite-in-use display [l] on master models and solenoid valves on suction models [delete/W].

Preset Keypad [S]: Requires price display option. 12-button preset. Can select money or volume. Displays on total sale or volume display as applicable.

E85 [E/ prefix and X]: EC remote dispensers only. Utilizes special meter, stainless steel, nickel plating, special elastomers, and a special filter for E85 compatibility. UL listed for gasoline blends up to E85 as well as gasoline and diesel. Less inlet riser.

Hose Mast [/J]: Raises hose to ease hose handling and helps keep stored hose out of the fueling lane. Optional hose mast clamp kit+ (p/n 880696-001) for Goodyear® balance vapor recovery hose.

Stainless Steel Panels: Ideal for very corrosive environments. Stainless steel lower cabinet with black galvannealed steel top and stainless [/SS] or painted galvannealed steel doors [/S4], or stainless steel doors only [/SS2].

HealyVac Vapor Recovery: Remote dispensers only. Factory-installed Healy vapor recovery components for ORVR and EVR: applications. Only hose [D3] or two-hose [D4] options. Does not include hanging hardware.

Other Options: Heater for electronics [/L]; internal hose retractor [/H], electromechanical totalizer per hose on EC twin I [/1K], solenoid valves on suction models [delete /W], 880467-001 external filter kit+ , 890467-002 SHC external filter kit+ , filters display graphic, automatic temperature compensation [C], and 240VAC 50/60 Hz operation of register and light [2].

Satellite Specifications

Note: SHC satellites require SHC masters, and UHC satellites require UHC masters.
Cabinet Finish: Metallic silver sides and top with blue doors (optional blacks, brown, green, red, silver, yellow, white, or stainless steel doors).
Cabinet Construction: Heavy gauge galvannealed steel.
Inlet Connection: EC - 1 ½" (3.8 cm) male NPT.
SHC - Remotes: 1 ½" male or 2" (5.1 cm) female NPT. Suctions: 2" female NPT.
UHC - 2" male NPT.
Flow Control Valve:
SHC - (2) proportional 7/8" (2.2 cm) valves per hose.
UHC - (1) two-stage 1 ½" (3.8 cm) valve per hose.
Electrical: 24VDC from master dispenser.
Discharge:
SHC - 1" (2.5 cm) NPT.
UHC - 1 ¼" (3.2 cm) NPT. Includes 1" (2.5 cm) reducing bushing.
Nozzle Boot: See nozzle boot specification in main section.
Hose Hanger [K]: Keeps hose off the island when not in use.
Actual Dimensions: 32.25" W x 19.38" D x 44.75" H (81.9cm W x 49.2cm D x 113.7cm H)
Approvals: UL / CSA - includes diesel; biodiesel blends to B5; gasoline including ethanol blends to E10 (to E85 with E85 option - UL only); & kerosene.
U.S. Weights & Measures - includes diesel; biodiesel; gasoline including ethanol blends to E15 (to E85 with E85 option); kerosene, AvGas; and Jet Fuel, FCC.
Options: Hose mast [/J]. All stainless steel cabinet with stainless [/SS] or painted galvannealed steel doors [/VS1).
^Note: Applies to suction models only. SHC suction models must be run at 240VAC.
+Note: Kits require field assembly.

Master and satellite models allow for the convenient and quick fueling of trucks with saddle tanks

Select SHC Series utilizes two Wayne electronic iMeters manifolded to each hose for superior flow performance

Price display option adds Total Sale and Unit Price displays for cardlock applications

Select UHC Series features high flow Liquid Controls meters, dual internal 40 GPM filters per meter, and a streamlined flow path to provide maximum flow performance and clean fuel.

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IMEG
19 Culpeper St. Suite #2
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POTOMAC AND RAPPAHANNOCK TRANSPORTATION
FUEL TANK REPLACEMENT PLAN
14700, 14716, 14720 & 14730 POTOMAC MILLS ROAD & 14775 TELEGRAPH ROAD
NEABSCO MAGISTERIAL DISTRICT, PRINCE WILLIAM COUNTY, VIRGINIA

MARK	DATE	DESCRIPTION

PROJECT No.: 23006915.00
DRAWING No.: 112943
DATE: 11-14-2023
SCALE: 1" = #
DESIGN: WRS
DRAWN: WRS
CHECKED: TWT

SHEET TITLE:

SITE DETAILS

SHEET No.

C202

XERXES

Diesel Exhaust Fluid (DEF) Tank

Fiberglass tanks lead the way in underground DEF storage

Since DEF can't be exposed to carbon steel, fiberglass is the ideal tank material for DEF storage. Our Truchek® hydrostatic monitoring system provides the added security of continual monitoring and tank-testing capability.

Tank geometry and material create structural strength

- Xerxes DEF tanks are designed and manufactured to provide decades of secure storage.
- Cylindrical tank with dished or domed end caps is designed to withstand the stresses of underground storage.
- Integrally manufactured fiberglass ribs function like I-beams and enhance tank strength.
- Premium resin and glass-fiber reinforcement create a structurally strong tank.

Tanks manufactured for unique requirements of DEF

- Tank and accessory materials are specifically tested for storage of urea DEF (AUS32).
- Manway covers and fittings are stainless steel.
- Underground storage eliminates need for temperature controls.
- No special coatings or linings needed to protect product integrity.

Designed to withstand **H-25/HS-25 axle loads**

Corrosion-resistant inside and out

Greater storage capacity than above ground packaged products

30-year limited warranty

Lightweight tanks for **easy shipping and installation**

Meets **PEI/RP1100 and ISO 22241** requirements

Extensive **third-party testing** for compatibility

Storage temperature range **11-25°C (11-25°C)**

xerxes.com

Diesel Exhaust Fluid (DEF) Tanks

Product and project reliability

- Stringent quality control of manufacturing ensures that every tank is a long-term investment.
- Comprehensive installation training is available.
- 40+ years of composite manufacturing and 225,000+ installed tanks are assurance that we stand behind our products and warranties.

Tanks shipped ready to store DEF

- Tank is factory-cleaned with deionized or distilled water.
- Fittings are sealed to prevent contamination.
- One fitting has pressure-relief valve to prevent pressure buildup.
- Interstice of double-wall tank has vacuum or monitoring fluid.
- Tank and engineered deadmen can generally ship on the same truck flatbed.

Can be manufactured as an ANSI/CAN/UL/ULC 1316:2018-listed tank

While a fuel tank generally can't be converted for future use as a DEF storage tank, a DEF tank can be manufactured for future storage of traditional fuels or new biofuels. When customers order a double-wall ANSI/CAN/UL/ULC 1316:2018 DEF tank, the tank can be used later to store fuel.

Typical DEF tank accessories

- Containment collars, sumps and covers
- Stainless steel fittings
- Stainless steel manway covers
- Truchek® hydrostatic monitoring system
- EPDM (peroxide-cured ethylene propylene diene monomer rubber) gaskets

SINGLE-COMPARTMENT TANKS
SINGLE-WALL & DOUBLE-WALL

NOMINAL DIAMETER	DESIGNED FOR U.S. INSTALLATIONS (GALLONS)	DESIGNED FOR CANADIAN INSTALLATIONS (LITERS)
4'	600 – 2,000	2,500 – 5,000
6'	2,000 – 8,000	10,000 – 25,000
8'	2,000 – 17,000	15,000 – 65,000
10'	7,000 – 40,000	50,000 – 110,000
12'	20,000 – 50,000	–

MULTICOMPARTMENT TANKS
DOUBLE-WALL

NOMINAL DIAMETER	DESIGNED FOR U.S. INSTALLATIONS (GALLONS)	DESIGNED FOR CANADIAN INSTALLATIONS (LITERS)
6'	4,000 – 12,000	15,000 – 25,000
8'	6,000 – 25,000	35,000 – 65,000
10'	12,000 – 40,000	70,000 – 110,000

For over 40 years, Xerxes has designed and manufactured fiberglass underground storage tanks for fuel, water and wastewater. Xerxes' most recent expansion is its HydroChain™ product line. These highly engineered products with site-specific designs provide a complete stormwater management solution. Xerxes is a key brand of Mattr, a global materials technology company serving critical infrastructure markets.

FDEF0923 | fuelsales@mattr.com | **xerxes.com**

XERXES

800 GALLON UNDERGROUND DEF TANK

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19 Culpeper St, Suite #2
Warrenton, VA 20186 P 703.273.6820
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POTOMAC AND RAPPAHANNOCK TRANSPORTATION
FUEL TANK REPLACEMENT PLAN
14700, 14716, 14720 & 14730 POTOMAC MILLS ROAD & 14775 TELEGRAPH ROAD
NEABSCO MAGISTERIAL DISTRICT, PRINCE WILLIAM COUNTY, VIRGINIA

MARK	DATE	DESCRIPTION

PROJECT No.: 23006915.00
DRAWING No.: 112943
DATE: 11-14-2023
SCALE: 1" = #'
DESIGN: WRS
DRAWN: WRS
CHECKED: TWT

SHEET TITLE:

SITE DETAILS

SHEET No.

C203

P:\Projects\23006915.00\112943 - Site Plan\C200 - SITE DETAILS.dwg, 8/23/2024 1:35:00 PM, Richard L. Herrman Jr.,

1. THE PROPERTY SHOWN HEREON, IDENTIFIED ON PRINCE WILLIAM COUNTY, VIRGINIA GEOGRAPHIC INFORMATION SYSTEM AS GPIN 7595-58-7878, IS CURRENTLY ZONED M/T.

2. THE PROPERTY DELINEATED HEREON AS G.P.I.N. 8291-65-7904 WAS ACQUIRED BY THE COUNTY OF PRINCE WILLIAM BY DEED RECORDED IN DEED BOOK 1735, PAGE 1798.
THE PROPERTY DELINEATED HEREON AS G.P.I.N. 8291-64-9383 WAS ACQUIRED BY COUNTY BOARD OF SUPERVISORS OF PRINCE WILLIAM COUNTY, VIRGINIA BY DEED RECORDED IN DEED BOOK 520, PAGE 52.
THE PROPERTY DELINEATED HEREON AS G.P.I.N. 8291-64-9860 WAS ACQUIRED BY THE COUNTY OF PRINCE WILLIAM, VIRGINIA BY DEED RECORDED IN DEED BOOK 347, PAGE 258.
THE PROPERTY DELINEATED HEREON AS G.P.I.N. 8291-74-0443 WAS ACQUIRED BY THE COUNTY OF PRINCE WILLIAM, VIRGINIA BY DEED RECORDED IN DEED BOOK 2363, PAGE 1355.

3. A.) HORIZONTAL ORIENTATION OF THIS SURVEY IS VIRGINIA STATE GRID NORTH,
B.) THE ELEVATIONS SHOWN HEREON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

4. NO TITLE REPORT FURNISHED. ALL UNDERLYING TITLE LINES, EASEMENTS, SERVITUDES AND OTHER MATTERS OF TITLE ARE NOT SHOWN HEREON. THIS DOCUMENT DOES NOT REPRESENT A CURRENT BOUNDARY SURVEY.

5. THE PHYSICAL IMPROVEMENTS AND TOPOGRAPHY SHOWN HEREON ARE BASED UPON A FIELD SURVEY CONDUCTED BY THIS FIRM BETWEEN THE DATES OF DECEMBER 3, 2021 AND APRIL 19, 2022.

6. NO GEOTECHNICAL, SUBSURFACE, FIELD REVIEWS, RESEARCH, AGENCY OR GOVERNMENTAL RECORD REVIEWS, OR OTHER INVESTIGATIONS HAVE BEEN MADE FOR THE PURPOSE OF LOCATING, OR DETERMINING THE EXISTENCE OF HAZARDOUS MATERIALS, OR OTHER ENVIRONMENTAL CONCERNS ON SITE IN THE PERFORMANCE OF IMEG SERVICES FOR THE PROJECT AS SHOWN HEREON.

7. THE WATERLINE, ELECTRIC, GAS, TELEPHONE, AND CATV UNDERGROUND UTILITIES SHOWN HEREON ARE BASED ON FIELD MARKINGS BY UTILITY PROFESSIONALS, INC. (UPI). THE LIMITS OF THE UNDERGROUND SAND FILTERS (DESIGNATED BY "SF#") AND THE UNDERGROUND STORMWATER MANAGEMENT FACILITY SHOWN HEREON ARE APPROXIMATE AND ARE BASED ON PLANS RETRIEVED FROM PRINCE WILLIAM COUNTY RECORDS. NO CERTIFICATION HAS BEEN MADE AS TO THE LOCATIONS OF UNDERGROUND UTILITIES SUCH AS, BUT NOT LIMITED TO ELECTRIC, GAS, TELEPHONE, CATV, WATER, SANITARY AND STORM SEWERS.
THE STORM SEWER LINES REFERENCED TO THIS NOTE ARE APPROXIMATE; PHYSICAL, SUB-SURFACE VERIFICATION WILL BE NECESSARY TO CONFIRM PIPE SIZE AND MATERIAL.

8. DURING THE PROCESS OF OUR PHYSICAL SURVEY NO INDICATIONS OF A CEMETERY WERE FOUND. NO FURTHER INSPECTION OF THIS PROPERTY HAS BEEN MADE FOR POSSIBLE CEMETERIES.

9. THE PROPERTY SHOWN HEREON LIES WITHIN ZONE "X" AREAS DETERMINED TO BE OUTSIDE 500-YEAR FLOODPLAIN, AS DEPICTED ON FLOOD INSURANCE RATE MAP COMMUNITY PANEL NUMBER 51153C0218-D, PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY AND HAVING AN EFFECTIVE DATE OF JANUARY 5, 1995.

10. THIS SURVEY WAS PERFORMED FOR POTOMAC AND RAPPAHANNOCK TRANSPORTATION COMMISSION - 14700 POTOMAC MILLS ROAD WOODBRIDGE, VA 22192.

UPI NOTES

UTILITY MARKING NOTES:

1) THE LOCATION OF UTILITIES LISTED IN THE TABLE BELOW AND SHOWN ON THIS PLAT ARE FROM OBSERVED EVIDENCE OF ABOVE GROUND APPURTENANCES, SURFACE GROUND MARKINGS, AND EXISTING PLANS AND MAPS.
2) BEFORE DIGGING IN THIS AREA, CALL "MISS UTILITY" 1-800-552-7001 FOR FIELD LOCATIONS (REQUEST FOR GROUND MARKINGS) OF UNDERGROUND UTILITY LINES.
3) THIS INVESTIGATION DOES NOT INCLUDE THE USE OF GROUND PENETRATING RADAR OR INTRUSIVE METHODS OF INVESTIGATION SUCH AS TEST PITS OR BORINGS.
4) THIS INVESTIGATION DOES NOT INCLUDE DESIGNATING SPRINKLER OR IRRIGATION SYSTEMS, BURIED TANKS, SEWER SYSTEMS, NON-CONDUCTIVE UTILITIES, OR WELLS.
5) DETECTING AND DESIGNATING UTILITIES THAT ARE BURIED DIRECTLY BELOW OTHER UTILITIES ARE NOT PROVIDED.

UTILITY DESCRIPTION	PLANS	MARKED	LOCATED	NOTES
ELECTRIC				
DOMINION POWER	NO PLANS RECEIVED AT THIS TIME	X	X	MARKED AND LOCATED.
PRIVATE ELECTRIC	NO PLANS RECEIVED AT THIS TIME	X	X	PARTIALLY MARKED AND LOCATED. SEE NOTE #3.
WATER				
PRINCE WILLIAM COUNTY SERVICE AUTHORITY	GIS MAP 11/19/2021	X	X	PARTIALLY MARKED AND LOCATED. SEE NOTE #4.
PRIVATE WATER	NO PLANS RECEIVED AT THIS TIME	X	X	MARKED AND LOCATED.
COMMUNICATION				
VERIZON	NO PLANS RECEIVED AT THIS TIME	X	X	MARKED AND LOCATED.
GAS				
WASHINGTON GAS	NO PLANS RECEIVED AT THIS TIME	X	X	MARKED AND LOCATED.

GENERAL NOTES

1) UTILITY LOCATIONS SHOWN HEREON ARE PER A FIELD SURVEY PERFORMED BY THIS FIRM BETWEEN 11/29/21 AND 12/02/21.
2) BACKGROUND TOPOGRAPHY IS SHOWN PER A SURVEY PREPARED BY CHRISTOPHER CONSULTANTS LTD, RECEIVED BY THIS FIRM ON 01/14/22.
3) ELECTRIC LINES WERE NOT TRACEABLE PAST NOTED LOCATIONS BY UPI USING GEOPHYSICAL METHODS AT THE TIME OF THE FIELD INVESTIGATION. UPI RECOMMENDS PRIOR TO CONSTRUCTION, TEST PITS ARE PERFORMED ON THESE LINES IN THE VICINITY OF THE CONSTRUCTION.
4) WATER LINE WAS NOT TRACEABLE PAST NOTED LOCATION BY UPI USING GEOPHYSICAL METHODS AT THE TIME OF THE FIELD INVESTIGATION. UPI RECOMMENDS PRIOR TO CONSTRUCTION, TEST PITS ARE PERFORMED ON THIS LINE IN THE VICINITY OF THE CONSTRUCTION.

STORM STRUCTURE DATA

- EX. A11 — INV. EL. = 180.32
- EX. 12 — TOP EL. = 191.39; INV IN = (18" RCP) 182.69; INV IN = (15" RCP) 182.49; INV OUT (18" RCP) = 182.39
- EX. A13 — TOP EL. = 195.19; INV OUT (15" RCP) = 183.17
- EX. 13 — TOP EL. = 203.45; INV OUT (15" RCP) = 198.35
- EX. 14 — RIM EL. = 203.37; INV IN (36" RCP) = 193.87; INV OUT (36" RCP) = 193.67; INV OUT (42" CMP) = 193.86
- EX. 15 — TOP EL. = 201.40; INV OUT (18" RCP) = 197.41; INV OUT (PIPE SIZE UNKNOWN) = 197.63
- EX. 16 — TOP EL. = 198.76; INV OUT (PIPE SIZE UNKNOWN) = 192.76; INV OUT (15" CMP) = 192.80
- EX. 17 — RIM EL. = 195.42; INV OUT (18" RCP) = 191.96; INV OUT (18" RCP) = 191.38
- EX. 18 — TOP EL. = 196.48; INV OUT (18" RCP) = 189.31
- EX. 19 — RIM EL. = 197.95; INV IN (18" RCP) = 191.04; INV IN (18" RCP) = 188.85; INV OUT (18" RCP) = 187.64
- ** EX. 20 — RIM EL. = 198.20
- EX. 21 — RIM EL. = 199.88; INV IN (15" CMP) = 188.30; INV IN (18" CMP) = 187.08; INV IN (98" CMP) = 184.38; INV OUT (98" CMP) = 184.23
- EX. 22 — STRUCTURE NOT FOUND
- EX. 23 — RIM EL. = 202.72; INV IN (18" CMP) = 195.50; INV (98" CMP) = 185.22; INV (98" CMP) = 185.22
- EX. 24 — RIM EL. = 200.78; INV IN (15" CMP) = 190.38; INV IN (98" RCP) = 184.78; INV OUT (98" RCP) = 184.68
- EX. 25 — RIM EL. = 199.21; INV (98" CMP) = 184.31; INV (98" CMP) = 184.26; INV (98" CMP) = 184.26
- EX. A — SAND FILTER #6; RIM EL. = 201.40; INV OUT (15" RCP) = 191.59
- EX. B — SAND FILTER #4; RIM EL. = 199.58; INV OUT (8" D.I.P.) = 192.36
- EX. C — SAND FILTER #7; RIM EL. = 199.13; INV OUT (15" RCP) = 188.07
- EX. D — SAND FILTER #8; RIM EL. = 195.80; INV IN (15" RCP) = 190.66; CHAMBER BOTTOM = 185.80
- EX. E — RIM EL. = 195.83; INV OUT (15" RCP) = 186.67
- EX. F — SAND FILTER #5; TOP EL. = 197.38; INV OUT (18" RCP) = 185.34

SANITARY STRUCTURE DATA

- EX. SSMH 1 — RIM EL. = 203.24; INV IN (6" PVC) = 191.14; INV IN (6" PVC) = 191.12; INV OUT (6" PVC) = 191.06
- ** EX. SSMH 2 — RIM EL. = 203.32
- ** EX. SSMH 3 — RIM EL. = 201.86
- EX. SSMH 5 — RIM EL. = 197.23; INV IN (6" PVC) = 193.73; INV IN (6" PVC) = 193.49; INV OUT (6" PVC) = 193.38
- EX. SSMH A — RIM EL. = 204.75; INV IN (6" PVC) = 197.49; INV OUT (6" PVC) = 197.27

** STRUCTURE INACCESSIBLE - FUSED SHUT

LEGEND

Utilities - Storm
- STORM DRAIN INLET

Utilities - Water
- FIRE HYDRANT
- WATER VALVE

Utilities - Electric
- UTILITY POLE
- GUY WIRE
- LIGHT POLE

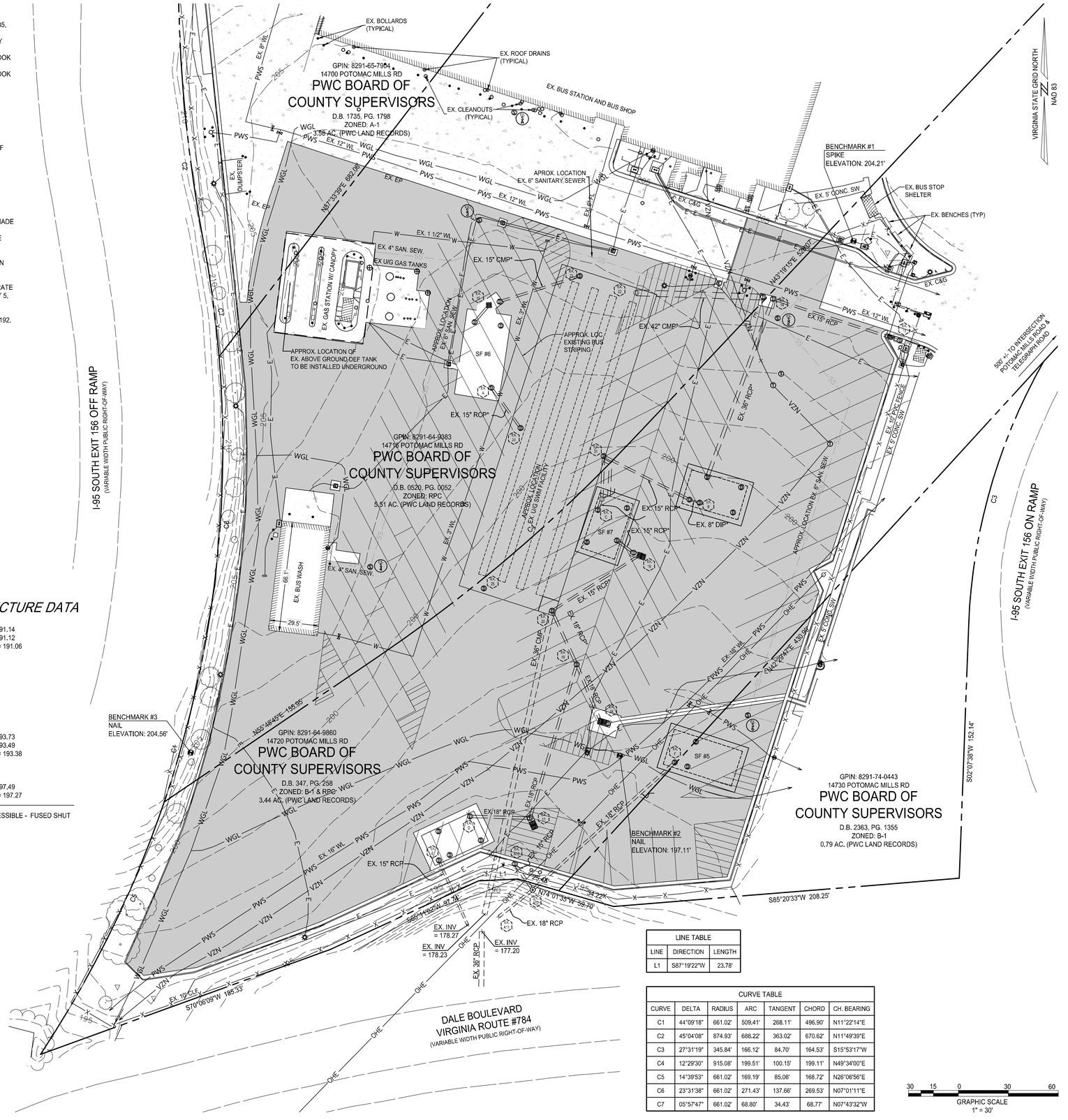
Utilities - Communication
- TELEPHONE PEDESTAL

Misc. Structures
- × 150.0 — SPOT SHOT
- SIGN

Abbreviations
- EX. — EXISTING
- CONC. — CONCRETE
- EP — EDGE OF PAVEMENT
- CLF — CHAIN LINK FENCE
- CL — CENTERLINE
- IPF — IRON PIPE FOUND
- STM. — STORM
- SEW. — SEWER
- ESMT — EASEMENT

Surfaces
- ASPHALT AREA
- GRAVEL AREA
- CONCRETE AREA
- RIP RAP AREA

Linetypes
- INDEX CONTOUR (5')
- INT. CONTOUR (1')
- FENCE
- OVERHEAD UTILITY WIRE
- UNDERGROUND TELEPHONE
- STORM PIPE
- APPROX. LOCATION SAN. SEW.
- DOMINION ELECTRIC MARKING
- PRIVATE ELECTRIC MARKING
- VERIZON COMMUNICATION MARKING
- PRINCE WILLIAM COUNTRY SERVICE AUTHORITY
- PRIVATE WATER MARKING
- WASHINGTON GAS MARKING
- TREE LINE
- PROPERTY LINE
- ADJOINER LINE



LINE TABLE		
LINE	DIRECTION	LENGTH
L1	S87°19'22"W	23.78'

CURVE TABLE					
CURVE	DELTA	RADIUS	ARC	TANGENT	CHORD	CH. BEARING
C1	44°09'18"	661.02'	509.41'	268.11'	496.90'	N11°22'14"E
C2	45°04'08"	874.93'	688.22'	363.02'	670.62'	N11°49'39"E
C3	27°31'19"	345.84'	166.12'	84.70'	164.53'	S15°53'17"W
C4	12°29'30"	915.08'	199.51'	100.15'	199.11'	N49°34'00"E
C5	14°39'53"	661.02'	169.19'	85.06'	168.72'	N26°06'56"E
C6	23°31'38"	661.02'	271.43'	137.66'	269.53'	N07°01'11"E
C7	05°57'47"	661.02'	68.80'	34.43'	68.77'	N07°43'32"W

30 15 0 30 60
GRAPHIC SCALE
1" = 30'

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POTOMAC AND RAPPAHANNOCK TRANSPORTATION
FUEL TANK REPLACEMENT PLAN
14700, 14716, 14720 & 14730 POTOMAC MILLS ROAD & 14775 TELEGRAPH ROAD
NEABSCO MAGISTERIAL DISTRICT, PRINCE WILLIAM COUNTY, VIRGINIA

MARK	DATE	DESCRIPTION

PROJECT No.: 23006915.00
DRAWING No.: 112943
DATE: 11-14-2023
SCALE: 1" = 30'
DESIGN: WRS
DRAWN: WRS
CHECKED: TWT

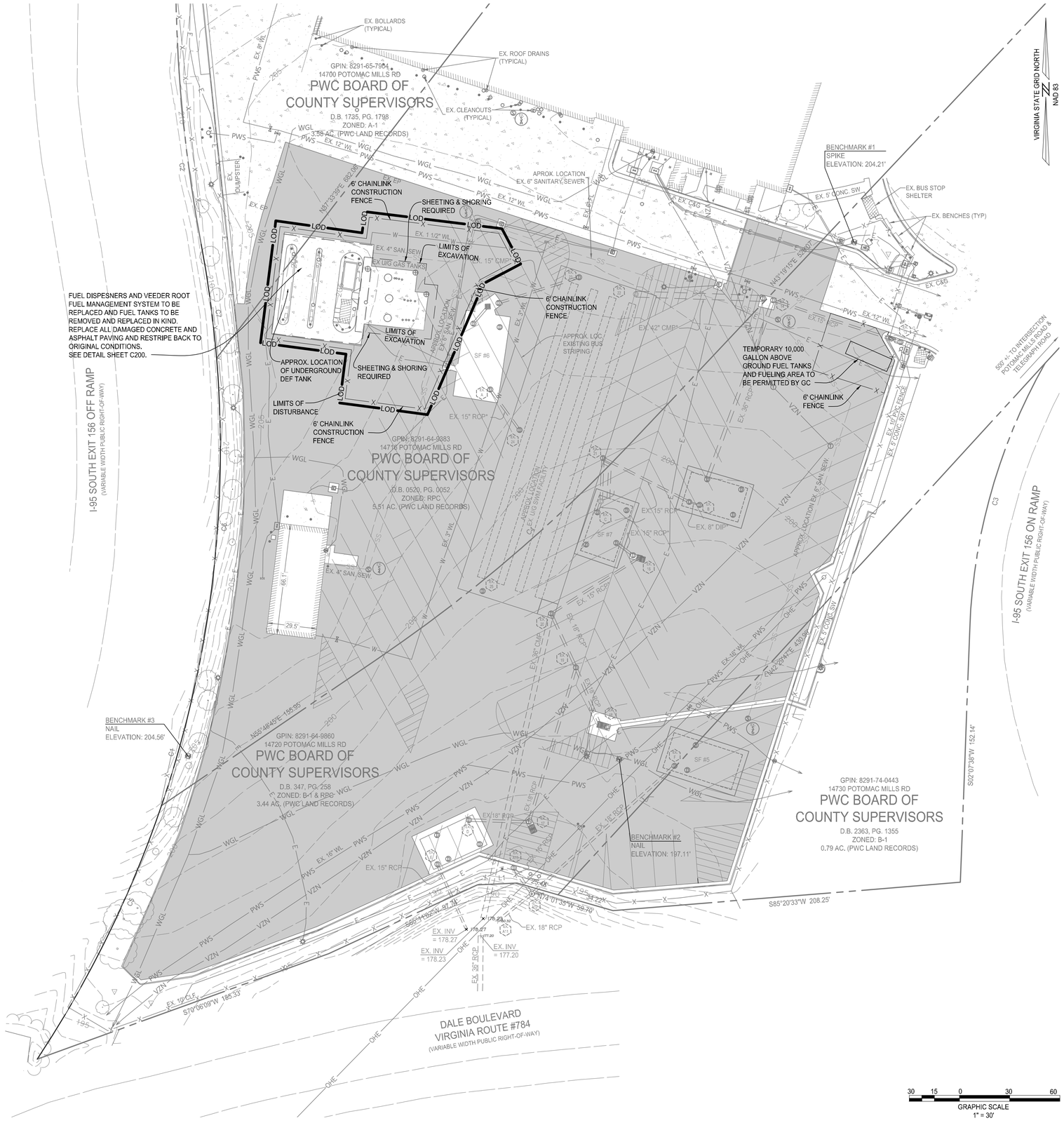
SHEET TITLE:
EXISTING CONDITIONS

SHEET No.
C300

P:\Projects\23006915.00\112943 - Site Plan\C-300 EXISTING CONDITIONS.dwg, 8/23/2024 1:40:54 PM, Richard L. Herrman Jr.

NOTES:

1. TEMPORARY FUEL TANK TO BE OPERATIONAL PRIOR TO START OF CONSTRUCTION.
2. CONTRACTOR TO RESTORE PAVEMENT GRADES BACK TO ORIGINAL CONDITIONS.
3. CONTRACTOR TO RESTORE PAVEMENT STRIPING TO ORIGINAL CONDITIONS.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING CONSTRUCTION ACTIVITIES WITH PRTC STAFF DURING CONSTRUCTION SO AS TO MINIMIZE DISRUPTION OF DAILY ACTIVITIES OUTSIDE OF THE LIMITS OF CONSTRUCTION. THIS SHALL INCLUDE EXPORT AND IMPORT OF EXCAVATION AND FILL, MATERIAL DELIVERIES, ASPHALT PAVING, STRIPING AND ALL OTHER ACTIVITIES ASSOCIATED WITH THE SCOPE OF THIS PROJECT.



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POTOMAC AND RAPPAHANNOCK TRANSPORTATION

FUEL TANK REPLACEMENT PLAN

14700, 14716, 14720 & 14730 POTOMAC MILLS ROAD & 14775 TELEGRAPH ROAD
NEABSCO MAGISTERIAL DISTRICT, PRINCE WILLIAM COUNTY, VIRGINIA

MARK	DATE	DESCRIPTION

PROJECT No.: 23006915.00
DRAWING No.: 112943
DATE: 11-14-2023
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DESIGN: WRS
DRAWN: WRS
CHECKED: TWT

SHEET TITLE:

PROPOSED CONSTRUCTION

SHEET No.

C400

P:\Projects\23006915.00\112943 - Site Plan\C-400 PROPOSED CONSTRUCTION.dwg, 8/23/2024 1:27:23 PM, Richard L. Herman Jr.,

PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF THE REPLACEMENT OF FUEL DISPENSERS, THE VEEDER ROOT FUEL MANAGEMENT SYSTEM AND THE UNDERGROUND FUEL TANKS. A TOTAL OF 0.03 ACRES OF PAVEMENT WILL BE DISTURBED DURING CONSTRUCTION.

ADJACENT PROPERTY

ALL EFFORTS SHOULD BE TAKEN TO DECREASE THE IMPACTS TO ANY ADJACENT WATER COURSES/BODIES DOWNSTREAM OF THE SITE BY ENSURING PROPER MAINTENANCE OF ALL CONTROLS IN THE DRAINAGE SHED.

OFFSITE AREAS

ANY EXCESS MATERIAL TO BE TRANSPORTED TO AN OFFSITE AREA IN PRINCE WILLIAM COUNTY MUST BE TRANSPORTED TO A LEGALLY PERMITTED SITE. AN OFFSITE STAGING AND STOCK PILE AREA LOCATED APPROXIMATELY 480 FEET NORTH OF THE SITE OFF OF TELEGRAPH ROAD WILL BE UTILIZED FOR TRANSPORTING FILL AND MATERIALS AS NEEDED. THE CONTRACTOR IS RESPONSIBLE FOR KEEPING THE ROAD CLEAN AND FREE OF CONSTRUCTION DEBRIS. SEE SHEET C701.

CRITICAL EROSION AREAS

THERE ARE NO CRITICAL EROSION AREAS.

EROSION AND SEDIMENT CONTROL MEASURES

UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (LATEST EDITION).

STRUCTURAL PRACTICES

3.01 SAFETY FENCE - PROVIDE SAFETY FENCE AS SHOWN ON THE PLAN. SAFETY FENCE SHALL BE SIX FOOT (6') HIGH TEMPORARY CHAIN LINK FENCE.

3.07 STORM DRAIN INLET PROTECTION - INLET PROTECTION SHALL BE PROVIDED AT EXISTING INLETS AS SHOWN ON PLANS AND SHALL CONSIST OF CURB INLET PROTECTION WITH A BLOCK AND GRAVEL BARRIER ACROSS THE THROAT OR AN EXCAVATION AND GRAVEL PROTECTION AROUND EXISTING OR PROPOSED YARD INLETS. THE CONTRACTOR SHALL MONITOR STRUCTURAL PROTECTION AND REMOVE DEPOSITED SEDIMENTS WHEN THE CAPACITY OF THE MEASURE HAS BEEN REDUCED BY ONE-HALF. INLET PROTECTION SHALL BE INSTALLED AND MAINTAINED AS OUTLINED IN THE EROSION CONTROL HANDBOOK.

MANAGEMENT STRATEGIES

1. THE JOB SUPERINTENDENT SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.
2. AREAS THAT ARE NOT TO BE DISTURBED WILL BE CLEARLY MARKED BY FLAGS, SIGNS, ETC.
3. LIMITS OF CLEARING AND GRADING ARE TO BE PER THE EROSION AND SEDIMENT CONTROL PLAN.
4. CONSTRUCTION WILL BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE.
5. ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS PERTAINING TO THIS PLAN SHALL BE MET.
6. DURING UTILITY CONSTRUCTION, CONTRACTOR SHALL PLACE ALL SPOILS ON THE UPHILL SIDE OF THE OPEN TRENCHES AND BACKFILL TRENCHES AS SOON AS PRACTICAL SO AS TO MINIMIZE POTENTIAL FOR EROSION OF EXCAVATED MATERIALS.

SEQUENCE OF CONSTRUCTION

PHASE 1

1. DURING THE COURSE OF CONSTRUCTION. MUD AND DEBRIS SHALL BE WASHED FROM ALL CONSTRUCTION VEHICLES AND EQUIPMENT BEFORE LEAVING THE SITE.
2. INSTALL ALL INLET PROTECTION AS SHOWN ON THIS PLAN.
3. CLEAR MINIMAL AMOUNT FOR INSTALLATION OF SAFETY FENCE, AS SHOWN ON THIS PLAN. ADD ADDITIONAL PERIMETER CONTROLS AS NECESSARY ALONG CLEARING LIMITS INCLUDING BUT NOT LIMITED TO SILT FENCE AND SUPER SILT FENCE.

PHASE 2

1. REMOVE AND REPLACE UNDERGROUND FUEL TANKS.
2. PROVIDE TEMPORARY SEEDING AND MULCHING OR OTHER STABILIZATION IF NECESSARY.
3. ALL EROSION AND SEDIMENT CONTROLS ARE TO REMAIN IN PLACE FOR THE DURATION OF THE PROJECT AND ARE TO BE REMOVED ONCE PAVEMENT HAVE BEEN INSTALLED AND THE SITE IS BACK TO ORIGINAL CONDITION.
4. INLET PROTECTION IS TO REMAIN IN PLACE UNTIL AND SITE IS ESTABLISHED. ANY BARE AREAS SHALL BE SEEDED AND MULCHED.

NOTE:
IF PUMPING TRENCH IS NECESSARY, THE RUNOFF SHALL BE PUMPED TO A SEDIMENT BAG SOUTH OF THE CONSTRUCTION AS SHOWN ON THIS PLAN.

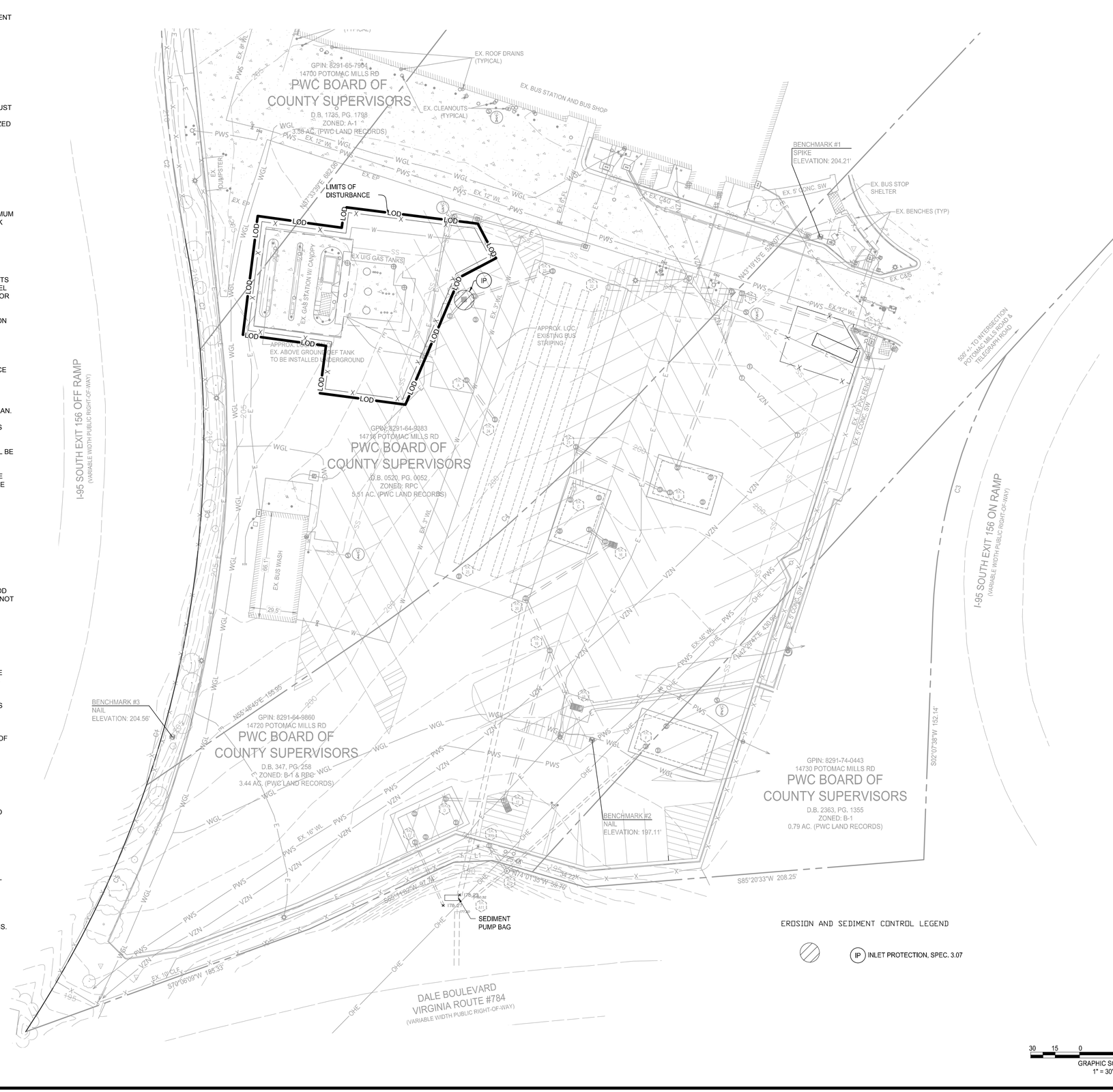
TEMPORARY AND/OR PERMANENT STABILIZATION

NO TEMPORARY OR PERMANENT SEEDING IS ANTICIPATED. HOWEVER IN THE COURSE OF CONSTRUCTION ANY DENUED AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINISH GRADING. SEEDING SHALL BE DONE WITH KENTUCKY 31 TALL FESCUE ACCORDING TO STD.& SPEC. 3.32 PERMANENT SEEDING OF THE HANDBOOK. IN ALL SEEDING OPERATIONS, SEED, FERTILIZER AND LIME WILL BE APPLIED PRIOR TO MULCHING.

IN GENERAL, ALL EROSION AND SEDIMENT CONTROLS WILL BE CHECKED DAILY AND AFTER EACH SIGNIFICANT RAINFALL. THE FOLLOWING ITEMS WILL BE CHECKED IN PARTICULAR:

1. THE SITE SHALL BE CHECKED DETERIORATION OF ANY CONTROLS. SEDIMENT SHALL BE REMOVED AS NEEDED IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.
2. SEEDED AREAS SHALL BE CHECKED REGULARLY TO ENSURE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED AND RE-SEEDED AS NEEDED.
3. ALL MUD AND SILT SHALL BE REMOVED FROM THE EXISTING PUBLIC STREETS ON A DAILY BASIS.

NOTE:
PROVIDE ADEQUATE ACCESS TO BUILDING SITE FOR EMERGENCY RESPONDERS. CONSTRUCTION EQUIPMENT NOT IN USE SHALL REMAIN IN THE STAGING AREA AS SHOWN ON SHEET C701.



EROSION AND SEDIMENT CONTROL LEGEND

IP INLET PROTECTION, SPEC. 3.07

30 15 0 30 60
GRAPHIC SCALE
1" = 30'

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POTOMAC AND RAPPAHANNOCK TRANSPORTATION
FUEL TANK REPLACEMENT PLAN

14700, 14716, 14720 & 14730 POTOMAC MILLS ROAD & 14775 TELEGRAPH ROAD
NEABSCO MAGISTERIAL DISTRICT, PRINCE WILLIAM COUNTY, VIRGINIA

MARK	DATE	DESCRIPTION

PROJECT No.: 23006915.00
DRAWING No.: 112943
DATE: 11-14-2023
SCALE: 1" = 30'
DESIGN: WRS
DRAWN: WRS
CHECKED: TWT

SHEET TITLE:

EROSION & SEDIMENT CONTROL PLAN

SHEET No.
C700

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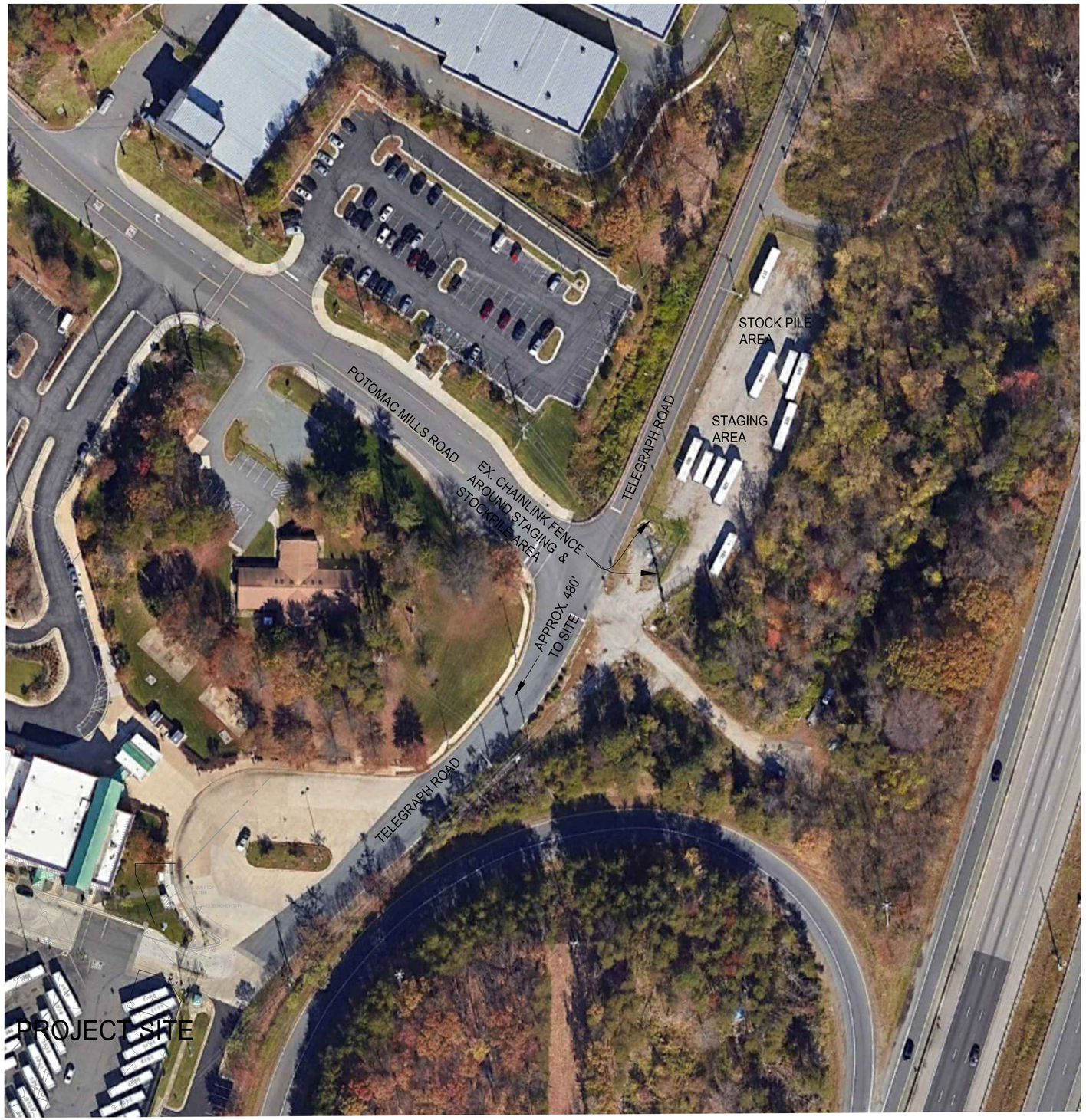

NOTES:
1. ACCESS TO THE THE STAGING AREA.
2. THE CONTRACTOR IS RESPONSIBLE FOR RETURNING THE LOT USED FOR STAGING TO THE ORIGINAL CONDITIONS.

VIRGINIA STATE GRID NORTH
NAD 83

50 25 0 50 100
GRAPHIC SCALE
1" = 50'

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14700, 14716, 14720 & 14730 POTOMAC MILLS ROAD & 14775 TELEGRAPH ROAD
NEABSCO MAGISTERIAL DISTRICT, PRINCE WILLIAM COUNTY, VIRGINIA

MARK	DATE	DESCRIPTION

PROJECT No.: 23006915.00
DRAWING No.: 112943
DATE: 11-14-2023
SCALE: 1" = 50'
DESIGN: WRS
DRAWN: WRS
CHECKED: TWT

SHEET TITLE:

STAGING AREA PLAN

SHEET No.
C701

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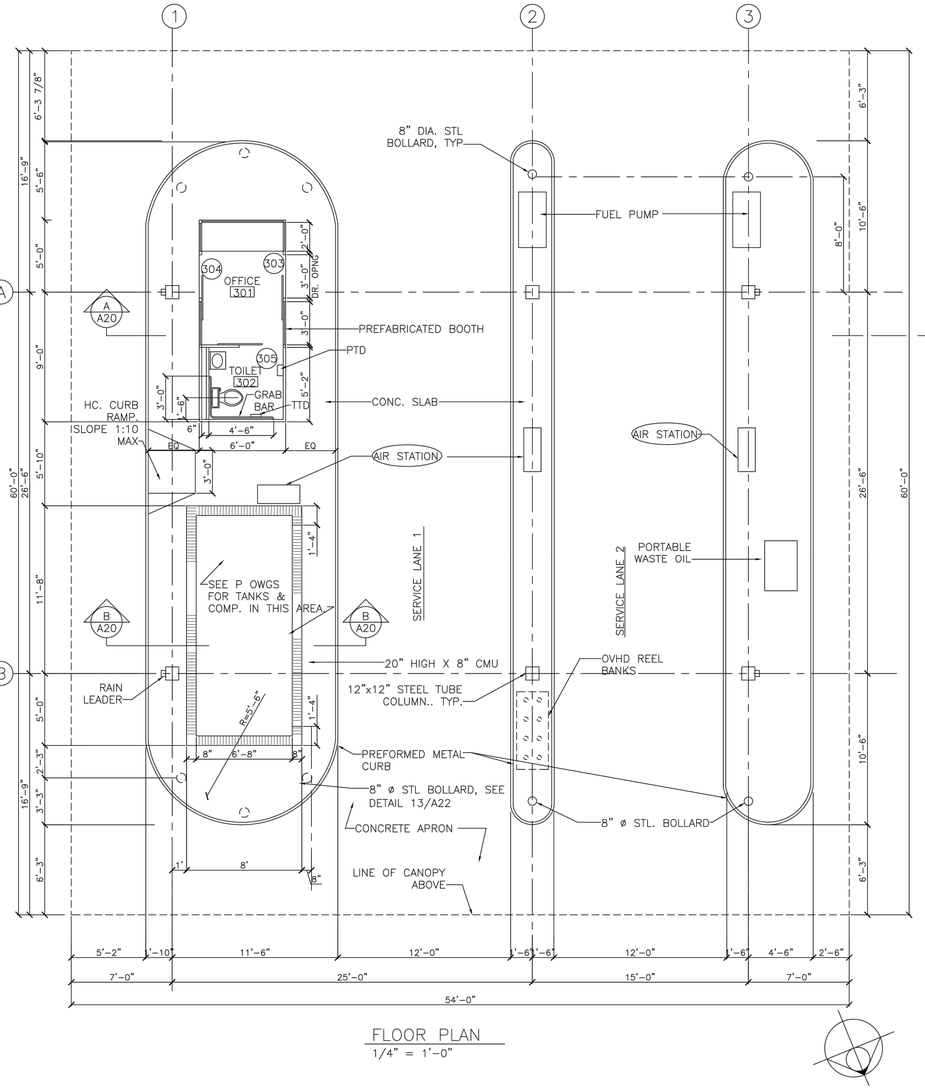
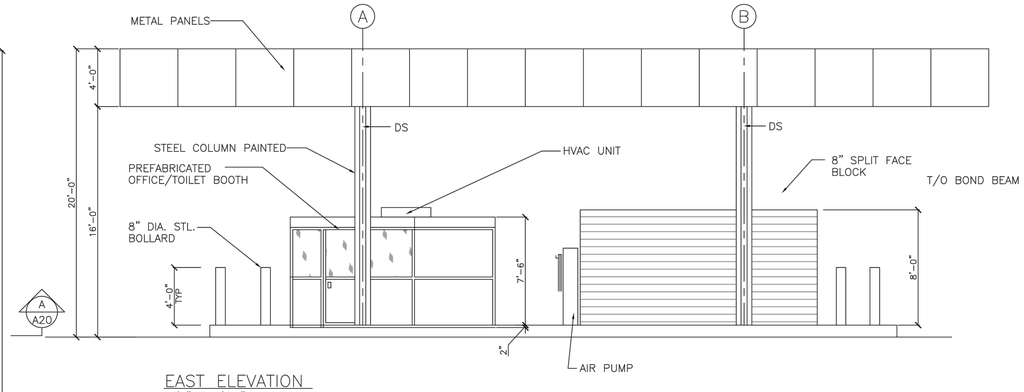
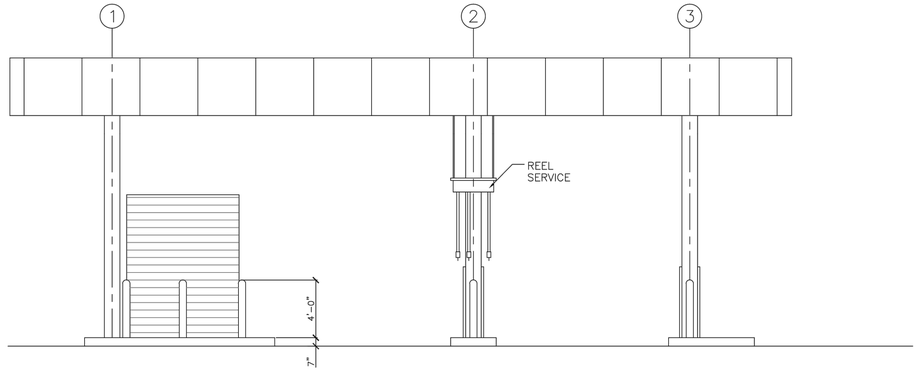


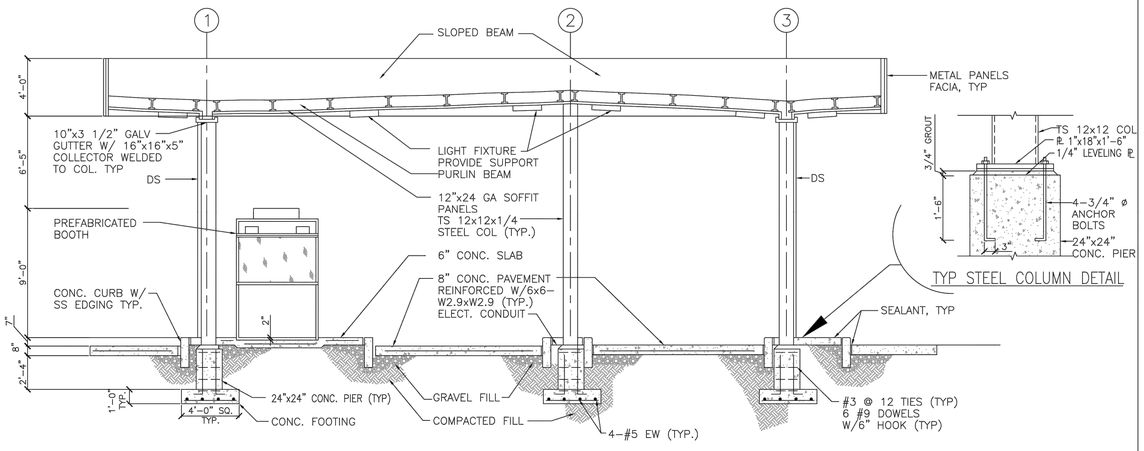
FLOOR PLAN
1/4" = 1'-0"



EAST ELEVATION
1/4" = 1'-0"

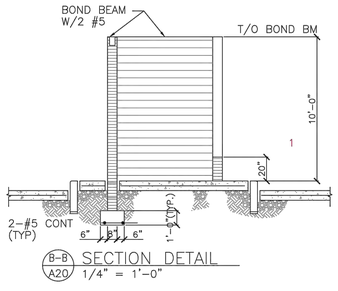


NORTH ELEVATION
1/4" = 1'-0"



A-A / A20 BUILDING SECTION
1/4" = 1'-0"

TYP STEEL COLUMN DETAIL



B-B / A20 SECTION DETAIL
1/4" = 1'-0"

THIS SHEET IS FOR INFORMATIONAL PURPOSES ONLY

Symbol	Description	Initials	Date
1	Revised As-Built	PEO	9/15/06
	See Disclaimer Sheet 1 (Index sheet)		

Gauthier, Alvarado & Associates, Inc.
Architecture Engineering Planning

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PROJECT TITLE

PRTC

POTOMAC AND RAPPAHANNOCK TRANSPORTATION COMMISSION

MULTI-PURPOSE TRANSIT CENTER

POTOMAC AND RAPPAHANNOCK TRANSPORTATION
FUEL TANK REPLACEMENT PLAN
14700, 14716, 14720 & 14730 POTOMAC MILLS ROAD & 14775 TELEGRAPH ROAD
NEABSCO MAGISTERIAL DISTRICT, PRINCE WILLIAM COUNTY, VIRGINIA

TRANSPORTATION CONSULTANTS:
SG Associates, Inc.

SITE ENGINEERS:
Springfield Engineering Corporation, P.C.

PLANNING LANDSCAPE AND SIGNAGE CONSULTANTS:
Coffin & Coffin

REVISIONS

NO.	DATE	DESCRIPTION
	3-11-96	PRINT FOR BID
5	8-20-96	REVISION
	7-20-98	RECORD DWGS

MARK	DATE	DESCRIPTION

DRAWN RR
CHECKED

DRAWING TITLE

ARCHITECTURAL FUEL ISLAND PLANS AND DETAILS

DATE 1-15-96

DRAWING NUMBER

A-24

PROJECT No.: 23006915.00
DRAWING No.: 112943
DATE: 11-14-2023
SCALE: NOT TO SCALE
DESIGN: WRS
DRAWN: WRS
CHECKED: TWT

SHEET TITLE:

EXISTING TANK PLANS

SHEET No.

C800

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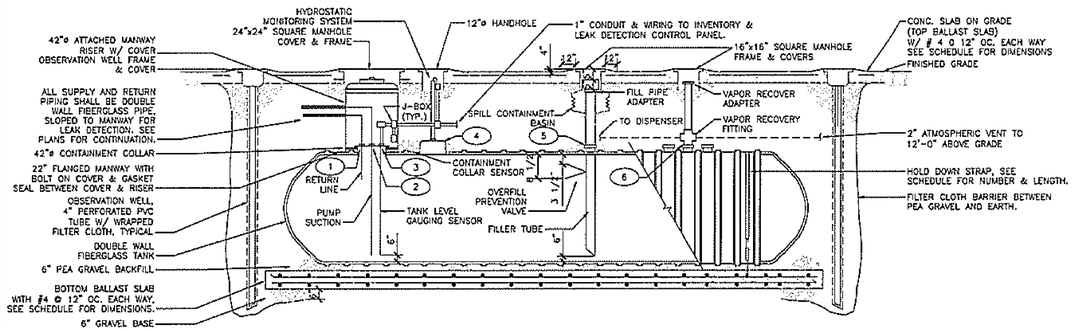


1 / P1 UNDERGROUND STORAGE TANK DETAIL

NOT TO SCALE

FILE NAME, PSD07A

FILE NAME, PH05

FUEL STORAGE TANK SCHEDULE

MARK	CAPACITY	SERVICE	TANK DIMENSIONS		TOP BALLAST SLAB				BOTTOM BALLAST SLAB				CONNECTIONS						STRAPS		REMARKS
			LENGTH	DIAMETER	L	W	D	WT	L	W	D	WT	1	2	3	4	5	6	NO.	LEN.	
UST-1	15,000 GAL	DIESEL	29'6"	10'4"	32'6"	14'4"	6"	32,499	32'6"	24'4"	20"	108,330	– –	SUPPLY 4"	SENSOR 2"	HMS –	FILL 4"	VNT 3"	4	18'	
UST-2	15,000 GAL	DIESEL	29'6"	10'4"	32'6"	14'4"	6"	32,499	32'6"	24'4"	20"	108,330	– –	SUPPLY 4"	SENSOR 2"	HMS –	FILL 4"	VNT 3"	4	18'	
UST-3	6,000 GAL	GASOLINE	19'6"	8'0"	22'6"	11'0"	6"	18,562	22'6"	11'0"	10"	30,937	– –	SUPPLY 4"	SENSOR 2"	HMS –	FILL 4"	VR/VNT 3"	2	14'10"	PROVIDE STAGE I & II VAPOR RECOVERY

HMS = HYDROSTATIC MONITORING SYSTEM
VNT = VENT
VR = VAPOR RECOVERY STAGE I & II –GASOLINE ONLY

BUOYANCY CALCULATIONS

UST-1 DIESEL

FORCE DOWN DUE TO SOIL:
29'6"x10'4"x4'x37.6 # /CF = 45,846 #
FORCE DOWN DUE TO WEIGHT OF TANK: = 3,722 #
FORCE DOWN DUE TO TOP BALLAST SLAB:
32'6"x13'4"x6"x150 # /CF = 32,499 #
FORCE DOWN DUE TO BOTTOM BALLAST SLAB:
32'6"x12'4"x20"x150 # /CF = 108,330 #
FORCE UP DUE TO BUOYANCY:
14,947 GAL'Sx8.32 # /GAL = 124,359 #
TOTALS: 190,397 # 124,359 #

FACTOR OF SAFETY: = 190,397 # (FORCE DOWN) / 124,359 # (BUOYANCY) = 1.53

UST-2 DIESEL

FORCE DOWN DUE TO SOIL:
29'6"x10'4"x4'x37.6 # /CF = 45,846 #
FORCE DOWN DUE TO WEIGHT OF TANK: = 3,722 #
FORCE DOWN DUE TO TOP BALLAST SLAB:
32'6"x13'4"x6"x150 # /CF = 32,499 #
FORCE DOWN DUE TO BOTTOM BALLAST SLAB:
32'6"x13'4"x20"X150 # /CF = 108,330 #
FORCE UP DUE TO BUOYANCY:
14,947 GAL'Sx8.32 # /GAL = 124,359 #
TOTALS: 190,397 # 124,359 #

FACTOR OF SAFETY: = 190,397 # (FORCE DOWN) / 124,359 # (BUOYANCY) = 1.53

UST-3 GASOLINE

FORCE DOWN DUE TO SOIL:
19'6"x8'x4'x37.6 # /CF = 23,462 #
FORCE DOWN DUE TO WEIGHT OF TANK: = 1,600 #
FORCE DOWN DUE TO TOP BALLAST SLAB:
22'6"x11'x6"x150 # /CF = 18,562 #
FORCE DOWN DUE TO BOTTOM BALLAST SLAB:
22'6"x11'x10'x150 # /CF = 30,937 #
FORCE UP DUE TO BUOYANCY:
5,997 GAL'Sx8.32 # /GAL = 49,895 #
TOTALS: 74,561 # 49,895 #

FACTOR OF SAFETY: = 74,561 # (FORCE DOWN) / 49,893 # (BUOYANCY) = 1.49

GENERAL NOTES

1. COORDINATE ALL PIPING WITH ACTUAL EQUIPMENT PURCHASED. LOCATE AND SIZE EQUIPMENT CONCRETE PADS AND CURBS IN ACCORDANCE WITH ACTUAL EQUIPMENT PURCHASED.

2. ALL SERVICES AND EQUIPMENT SHALL BE FULLY COORDINATED WITH ALL TRADES PRIOR TO INSTALLATION.

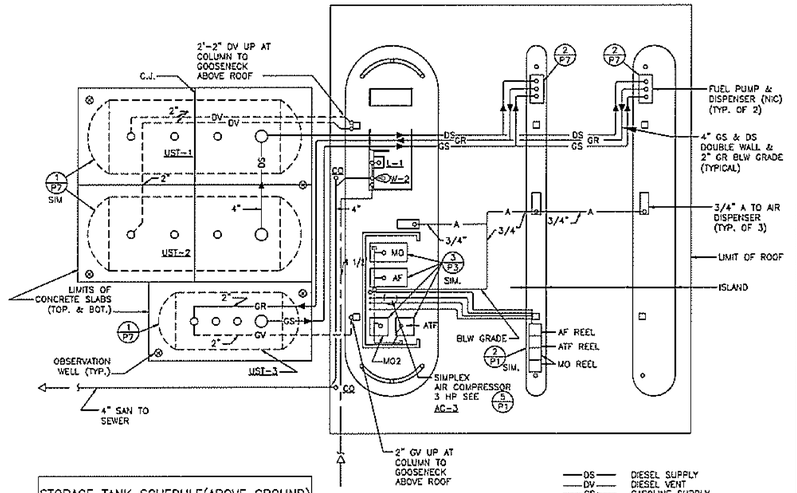
3. ALL VENT PIPING SHALL BE PITCHED TOWARD THE STORAGE TANK FOR DRAINAGE.

4. COORDINATE ALL ELECTRICAL REQUIREMENTS OF EQUIPMENT WITH THE ELECTRICAL CONTRACTOR.

CONCRETE:
- CONCRETE STRENGTHS: 3500 psi
- REINFORCING BARS: ASTM A-615, GRADE 60
- WELDED WIRE FABRIC (WWF): ASTM A-185

ITEM	SIZE
SLAB-ON-GRADE	6x6 – W2. 9xW2. 9

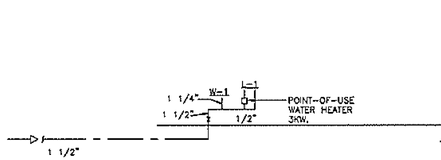
- PROVIDE 2x4 KEYS, UNLESS NOTED OTHERWISE
- PROVIDE #4 @ 12 E.W.E.F. IN SLABS OR WALLS NOT COVERED BY A NOTE OR SECTION.
- CONCRETE PROTECTION FOR REINFORCING:
  FOOTINGS = 3" SLABS = 1-1/2"
- PROVIDE 1/2" CHAMFER ON CONCRETE CORNERS THAT WILL BE EXPOSED TO VIEW.
- CAST IN PLACE CONCRETE WORK SHALL COMPLY WITH ACI 318-89
- USE AIR-ENTRAINING ADMIXTURE IN ALL CONCRETE EXPOSED TO FREEZING AND THAWING.



STORAGE TANK SCHEDULE(ABOVE GROUND)		
DESIG	TYPE	CAPACITY (GALLONS)
MO1	MOTOR OIL	275
MO2	MOTOR OIL	120
AF	ANTI FREEZE	275
ATF	TRANS FLUID	120

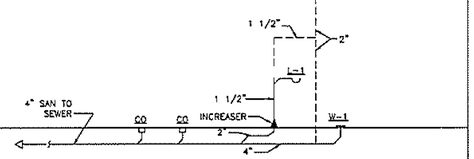
FUEL ISLAND FLOOR PLAN

1/8" = 1'-0"



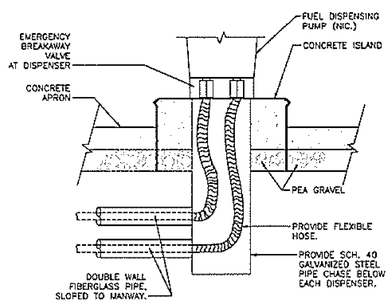
DOMESTIC WATER RISER DIAGRAM

NOT TO SCALE



SANITARY RISER DIAGRAM

NOT TO SCALE



2 / P1 FUEL ISLAND SECTION

3/4" = 1'-0"

THIS SHEET IS FOR INFORMATIONAL PURPOSES ONLY

Gauthier, Alvarado & Associates, Inc.
Architecture Engineering Planning

IMEG
19 Culpeper St. Suite #2
Warrenton, VA 20186 P 703.273.6820
engineering • surveying • land planning

PROJECT TITLE

PRTC

POTOMAC AND RAPPAHANNOCK TRANSPORTATION COMMISSION

MULTI-PURPOSE TRANSIT CENTER

POTOMAC AND RAPPAHANNOCK TRANSPORTATION
FUEL TANK REPLACEMENT PLAN
14700, 14716, 14720 & 14730 POTOMAC MILLS ROAD & 14775 TELEGRAPH ROAD
NEABSCO MAGISTERIAL DISTRICT, PRINCE WILLIAM COUNTY, VIRGINIA

TRANSPORTATION CONSULTANTS:
SG Associates, Inc.

SITE ENGINEERS:
Springfield Engineering Corporation, P.C.

PLANNING LANDSCAPE AND SIGNAGE CONSULTANTS:
Coffin & Coffin

REVISIONS

NO.	DATE	DESCRIPTION
	3-11-96	PRINT FOR BID
	7-20-96	RECORD DWGS

MARK	DATE	DESCRIPTION

DRAWN SAW

CHECKED REH

DRAWING TITLE

PLUMBING FUEL ISLAND PLANS & DETAILS

DATE 1-15-96

DRAWING NUMBER

P-7

PROJECT No.: 23006915.00
DRAWING No.: 112943
DATE: 11-14-2023
SCALE: NOT TO SCALE
DESIGN: WRS
DRAWN: WRS
CHECKED: TWT

SHEET TITLE:

EXISTING TANK PLANS

SHEET No.

C801

ATTACHMENT A-6

Technical Specifications

Section	024113	Selective Site Demolition
	310001	Site Preparation
	310519	Geotextiles and Geogrids
	312000	Earth Moving
	312500	Erosion and Sediment Control
	321216	Asphalt Paving
	321313	Site Concrete
	323000	Site Improvements
	333000	Sewer and Utilities

SECTION 024113 – SELECTIVE SITE DEMOLITION

1.1 GENERAL REQUIREMENTS

1.0 Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, Commonwealth of Virginia/State Board of Health Waterworks Regulations (latest edition) apply to this Section.

1.2 DESCRIPTION

1. This Section includes, but is not limited to, the selective removal and subsequent off-site disposal of the following as indicated on the drawings:

    1. Miscellaneous demolition including concrete, asphalt pavement and underground piping.
    2. Trash removal.

2. Related Work Described Elsewhere

    1. Site Preparation - Section 310001

3. Definitions: The term "Demolition" includes removal of all existing structures and objects within the limits of clearing and grading shown on the plans. All objects shall be removed in their entirety (above and below ground) and removed from the site.

1.3 SUBMITTALS

1. General: Submit the following in accordance with Conditions and Division I Specification Sections.

2. Schedule indicating proposed sequence of operations for selective demolition work to Owner's Representative for review prior to start of work. Include coordination for shutoff, capping, and continuation of utility services as required, together with details for dust and noise control protection. Provide detailed sequence of demolition and removal work to ensure uninterrupted progress of site operations.

1.4 JOB CONDITIONS

1. Condition of Structures: Owner assumes no responsibility for actual condition of items or structures to be demolished.

2. Partial Demolition and Removal: Items indicated to be removed but of salvageable value to Contractor may be removed from structures as work progresses. Transport salvaged items from site as they are removed.

    1. Storage or sale of removed items on site will not be permitted.

3. Protections: Provide temporary barricades and other forms of protection to protect Owner's personnel and general public from injury due to selective demolition work.

4. Damages: Promptly repair damages caused to adjacent facilities by demolition work.

5. Traffic: Conduct selective demolition operations and debris removal to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities.

    1. Do not close, block, or otherwise obstruct streets, walks, or other occupied or used facilities without written permission from authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

6. Flame Cutting: Do not use torches for removal until work area is cleared of flammable materials. Maintain portable fire suppression devices during flame-cutting operations.

7. Utility Services: Maintain existing utilities indicated to remain in service and protect them against damage during demolition operations.

    1. Do not interrupt utilities serving occupied or used facilities, except when authorized in writing by authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to governing authorities.

    2. Maintain fire protection services during selective demolition operations.

8. Environmental Controls: Use water sprinkling, temporary enclosures, and other methods to limit dust and dirt migration. Comply with governing regulations pertaining to environmental protection.

    1. Do not use water when it may create hazardous or objectionable conditions such as ice, flooding, and pollution.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 PREPARATION

1. Locate, identify, stub off, and disconnect utility services that are not indicated to remain.

3.2 DEMOLITION

1. General: Perform selective demolition work in a systematic manner. Use such methods as required to complete work indicated on Drawings in accordance with demolition schedule and governing regulations.

    1. Demolish concrete and masonry in small sections.

    2. Locate demolition equipment throughout structure and promptly remove debris to avoid imposing excessive loads on supporting walls, floors, or framing.

    3. Provide services for effective air and water pollution controls as required by local authorities having jurisdiction.

    4. Demolish and remove completely all foundations walls. Demolish and remove below-grade wood or metal construction. Break up below-grade concrete slabs and remove completely.

    5. Completely fill below-grade areas and voids resulting from demolition work. Provide fill consisting of approved earth, gravel, or sand, free of trash and debris, stones over 6 inches in diameter, roots, or other organic matter.

3.3 DISPOSAL OF DEMOLISHED MATERIALS

1. Remove from site: all debris, rubbish, vehicles, metal and other materials resulting from demolition operations. Transport and legally dispose of off site. If hazardous materials are encountered during demolition operations, contact the Owners Representative at once and cease all operations in that area.

3.4 CLEANUP AND REPAIR

1. General: Upon completion of demolition work, remove tools, equipment, and demolished materials from site.

    1. Repair demolition performed in excess of that required. Return elements of construction and surfaces to remain to condition existing prior to start operations. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.

END OF SECTION 024113

SECTION 310001 - SITE PREPARATION

1.1 GENERAL REQUIREMENTS

1. Drawings and general provisions of Contract, including General and Supplementary Conditions, Division 1 Specifications, and other sections of the Specifications not referenced below shall also apply to the extent required for proper performance of the Work of this section.

2. Work described in this section shall be carried out under the supervision of a certified Responsible Land Disturber (RLD) registered with the Virginia Department of Conservation and Recreation Division of Soil and Water Conservation Urban Programs.

1.2 DESCRIPTION

1. This site was previously developed as a Bus Parking and Maintenance Facility as shown on the contract drawings. The Contractor is responsible for all clearing, demolition, erosion control and stabilization. Work included as part of this contract includes but is not necessarily limited to:

    1. Removal and stockpiling of topsoil.
    2. Removing improvements or obstructions that interfere with new construction.
    3. Removal of all debris generated with this contract.
    4. Any clearing as required for new construction.

2. Other Sections that may apply:

    1. Earth Moving - Section 312000
    2. Erosion and Sediment Control - Section 312500

3. Definitions: The term "Demolition, Clearing and Grubbing" includes removal of all existing objects (except for those designated to remain) down to existing ground level (below grade if required to execute properly the new work), plus such other work as described in this Section.

1.3 JOB CONDITIONS

1. Dust Control

    1. Use necessary means to prevent spread of dust during performance of work.

    2. Moisten surfaces as required to prevent dust from being a nuisance to public, neighbors, and concurrent performance of other work on site.

2. Disposal of Waste

    Remove all brush, stumps, wood and other refuse and accumulated silt and sediment from erosion control devices as needed and dispose of at a legal and permitted facility. No burying of stumps or other debris will be allowed on site. Contractor is responsible to obtain, at his expense, all waste areas, permits, etc., for legal disposal of material.

3. Protection

    1. Protect existing objects designated to remain.
    2. In event of damage, repair or replace at no additional cost to Owner.

2.1 PREPARATION

1. Site Inspection

    1. Prior to start of work, visit site, compare drawings and specifications with any work in place, and be informed of all conditions. Failure to visit site will in no way relieve furnishing of any materials or performing any work that may be required to complete work in accordance with drawings and specifications without additional cost to Owner. Inspect entire site and all objects designated to be removed or preserved. Remove any existing debris from site.

    2. Locate existing active utility lines traversing site and determine requirements for protection.

2. Clarification

    1. Drawings do not purport to show all objects existing on site.

    2. Verify with Architect all objects to be removed or preserved before commencing work.

3. Stake-Out

    1. Contractor shall verify locations of and maintain established benchmarks and horizontal control points on site. This work and other site verifications and layout and stakeout work shall be completed by a Virginia licensed Land Surveyor or Civil Engineer.

    2. The exactness of grades, elevations, existing underground utilities, dimensions, or locations given on any contract drawings issued by the Architect/Engineer is not guaranteed by the Architect/Engineer or the Owner. The Contractor shall satisfy himself as to the accuracy of all grades, elevations, existing underground utilities, dimensions, and locations. The Contractor shall verify at the site all dimensions and elevations on all cases of interconnection of his work with existing or other work. Errors due to the Contractor's failure to verify all such grades, elevations, locations, or dimensions shall be promptly rectified by him without cost to the Owner.

3.1 GRUBBING

1. Grubbing

    1. Prior to stripping topsoil, remove all surface rocks, stumps, roots and other vegetation within limits of construction.

    2. Do not leave any roots in the ground.

3.2 STRIPPING TOPSOIL

1. Strip to whatever depths encountered in such a manner to prevent intermingling with underlying subsoil or other objectionable material. Strip topsoil from all areas, fill areas as well as cut areas. Strip topsoil to its full depth, whether it is 1 inch or 12 inches or more. Strip entire area within the limits of clearing and grading of topsoil and properly stockpile prior to starting mass grading operations or utility work.

2. Remove heavy growths of grass from areas before stripping.

3. Where trees are indicated to be left standing, stop topsoil stripping at drip line of existing trees to prevent damage to main root system.

4. Stockpile topsoil on site where it will not interfere with building construction, utility work and general sitework. Stockpile locations shall be pre-approved by Architect. Use topsoil exclusively for finish grading of grass areas.

5. Construct storage piles to freely drain surface water.

END OF SECTION 310001

SECTION 310519 – GEOTEXTILES AND GEOGRIDS

1.1 GENERAL REQUIREMENTS

1. Drawings and general provisions of Contract, including General and Supplementary Conditions, Division 1 Specifications, and other sections of the Specifications not referenced below shall also apply to the extent required for proper performance of the Work of this section.

1.2 DESCRIPTION

1. Provide woven geotextile material at the contract unit price rate, between subgrade and gravel subbase when and where required by Soils Engineer.

2. Provide biaxial geogrid material at the contract unit price rate, between compacted layers of soil when and where required by Soils Engineer

1.3 SUBMITTALS

1. Furnish the Engineer a mill certificate or affidavit signed by an official of the geotextile and/or geogrid manufacturer attesting that the geotextile/geogrid meets the requirements of this specification.

1.4 QUALITY ASSURANCE

1. Applicable publications: The most recent Publications listed below form a part of this specification to the extent referenced. Publications are referred to in the text by basic designation only.

    1. American Society for Testing and Materials (ASTM) Publications

        1. D751 Coated Fabric, Method of Testing
        2. D4632 Grab Tensile and Elongation of Textile Fabrics
        3. D1777 Measuring Thickness of textile Materials
        4. D1910 Construction Characteristics of Woven Fabrics
        5. D4533 Trapezoidal Tear Strength
        6. D3786 Mullen Burst Test
        7. D3787 Puncture Test
        8. D4751 Apparent Opening Size
        9. D4759 Conformance of Geosynthetics
        10. D6637 Tensile Properties of Geogrids by Single or Multi-Rib Tensile Method
        11. D5818 Evaluate Installation Damage of Geosynthetics
        12. D4355 Deterioration of Geotextiles by Exposure to Light, Moisture and Heat

1.5 DELIVERY, HANDLING, AND STORAGE

1. During all periods of shipment and storage, the geotextile and/or geogrid shall be protected from direct sunlight, ultraviolet rays, temperatures greater than 140 dF, mud, dirt, and debris. Geotextile shall be delivered fully wrapped in an opaque, heavy duty protective covering. Geotextile and geogrid shall be individually identified.

2.1 GENERAL

1. Geotextile and geogrid shall be rot-proof, vermin-proof, and resistant to deterioration due to chemicals or acids that may be found in the plant environment. It shall not be susceptible to puncture or excessive deformation during installation.

2. Geotextile shall be available in rolls of at least 100 feet or more in length and 8 feet in minimum width.

3. Geogrid shall be delivered to the jobsite in roll form and nominally measuring 3.0 meters (9.8 feet) or 4.0 meters (13.1 feet) in width and 50.0 meters (164 feet) in length.

2.2 GEOTEXTILE MATERIAL

1. Geotextile shall consist of polyester, polypropylene, nylon, or other material capable of meeting the requirements of these specifications. It shall be woven design and shall permit flow of water without passage of fine soil particles through it.

2. Weight of the Geotextile shall be min. of (5.0) ounces per square yard.

3. Geotextile thickness shall be in range of 20 to 30 mils.

4. Grab Tensile Strength: Geotextile shall have a grab strength when wet of no less than 200 pounds.

5. Busting Strength: Based on Mullen burst test, shall not be less than 400 psi.

6. Equivalent opening size shall be 30 (Standard U.S. Sieve Size).

7. Trapezoidal Tear: Min. trapezoidal tear strength shall be no less than 75 lbs.

8. Puncture: min. puncture strength shall be no less than 75 lbs.

2.3 GEOGRID MATERIAL

1. Geogrid shall consist of integrally formed biaxial geogrid of polypropylene or other material capable of meeting the requirements of these specifications.

2. Aperture Dimensions shall be nominally 1.0 inch and Minimum Rib Thickness is 0.05 inch

3. Tensile Strength @ 2% Strain is 410 lb/ft and @ 5% Strain is 810 lb/ft. in machine direction

4. Ultimate Tensile Strength is 1,310 lb/ft in machine direction

5. Flexural Stiffness is 750,000 mg-cm.

6. Resistance of Installation Damage is 95% for SC soil, 93 % for SW soil, and 90% for GP soil.

7. Resistance to UV Degradation is 100 %.

2.4 SOURCE QUALITY CONTROL

1. Testing Methods:

    1. Test method ASTM D1910 shall be used to determine geotextile weight per square yard.

    2. Test method ASTM D1777 shall be used to obtain geotextile thickness.

    3. Test method ASTM D4632 shall be used to determine grab tensile strength. Test shall be performed using a constant rate of extension machine on ten samples of saturated geotextile, five each in width and length directions.

4. Test method ASTM D4533 shall be used to determine the trapezoidal tear strength.

5. Mullen burst test, as described in ASTM D3786, shall be used to determine bursting strength.

6. Test method ASTM D3787 shall be used to determine puncture strength.

7. Test method ASTM D4751 shall be used to determine Apparent Opening Size.

8. Test method ASTM D4759 shall be used to determine geogrid dimensions.

9. Test Method ASTM D6637 shall be used to determine geogrid tensile strength and resistance to installation damage.

10. Test Method ASTM D5732 shall be used to determine geogrid flexural stiffness.

11. Test Method ASTM D6355 shall be used to determine resistance to UV degradation.

3.1 INSTALLATION

1. Prior to placing the geotextile or geogrid, the Owner's representative and Geotechnical Engineer will inspect the previously prepared subgrade or other surface with the Contractor to ensure there are no ruts, grooves, or puncturing debris that may damage fabric.

2. At time of installation, geotextiles and geogrids shall be rejected if they have defects, rips, holes, flaws, deterioration, or damage incurred during manufacture, transportation, or storage.

3. After subgrade or other surface has been approved and accepted by Owner's representative and Geotechnical Engineer, geotextile fabric shall be placed and overlapped according to manufacturer's instructions. Geotextiles at overlap shall be either lapped a min. of (2) feet or sewn at joint. If overlapped, fabrics shall be placed so that preceding roll overlaps following roll in direction fill material is being spread.

4. After subgrade or other surface has been approved and accepted by Owner's representative and Geotechnical Engineer, geogrid shall be placed and overlapped according to manufacturer's instructions.

5. Geotextiles shall be laid smooth and free of tension, stress, folds, wrinkles, or creases.

6. Geogrid shall be laid relatively flat and pulled tight. Soil or aggregate shall be placed on top to ensure the tension in the geogrid remains. At no time shall a construction vehicle travel directly on top of a geogrid without soil or aggregate between tires/tracks and geogrid.

7. In those areas where geotextile material is installed, stone ballast (or other ensuring items of work) shall be placed (or implemented) as soon as possible to avoid geotextile deterioration.

8. Subbase aggregate shall be end-dumped on geotextile from edges of geotextile or over previously placed aggregate.

END OF SECTION 310519

SECTION 312000 – EARTH MOVING

1.1 GENERAL REQUIREMENTS

1. Drawings and general provisions of Contract, including General and Supplementary Conditions, Division 1 Specifications, and other sections of the Specifications not referenced below shall also apply to the extent required for proper performance of the Work of this section.

2. Work described in this section shall be carried out under the supervision of a certified Responsible Land Disturber (RLD) registered with the Virginia Department of Conservation and Recreation Division of Soil and Water Conservation Urban Programs.

1.2 DESCRIPTION

1. Scope of Work
   a. **All** excavation work under this contract is **unclassified**, and includes, without being limited to, excavation and removal of **all** soil, shale, rock, fill and all subsurface conditions encountered in the Contract Area to cut elevations. The risk of unanticipated soil conditions is solely the Contractor's and no claim shall be entertained.
   b. The work includes the excavation, filling, backfilling, and grading indicated and necessary for the proper completion of the project. The Contractor shall provide all work and material necessary to grade the site to the finished grades shown on the site plan sheets.
   c. Structures and paved areas are defined, for the purpose of this section, as extending a minimum of ten (10) feet beyond the structures and/or pavement plus one (1) foot wider for each one (1) foot of fill height exceeding ten (10) feet. Sidewalks are considered to be structures which extend 5 feet beyond the edge of the sidewalk. Light Poles are considered to be structures which extend 10 feet beyond the edge of the Light Pole.
   d. The suitability and usability of the on-site soils for fill conditions shall be the Contractor's responsibility. Unsuitable and/or un-useable soils shall be removed from the site by the Contractor or may be disposed of onsite under the direction of the Geotechnical Engineer and Owner.

2. Related Work Described Elsewhere

   1. Site Preparation - Section 310001
   2. Erosion and Sediment Control - Section 312500

1.3 JOB CONDITIONS

1. Existing Conditions

   1. Prior to start of work, visit site, compare drawings and specifications with any work in place, and be informed of all conditions. Failure to visit site will in no way relieve furnishing of any materials or performing any work that may be required to complete work in accordance with drawings and specifications without additional cost to Owner.

   2. Contractors shall assume all risk as to the character of the material to be excavated and as to the presence of water. Earthwork under this contract is **unclassified** to cut elevations.

   3. Existing Utilities: Contractor is responsible for obtaining the best available information on all existing utilities. Should uncharted or incorrectly charted piping or other utilities be encountered during excavation, consult Architect immediately for directions as to procedure. Cooperate with Owner, and utility companies in keeping services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.

2. Protection

1. Protection of Persons and Property: Barricade open excavations and post with warning lights for safety of persons. Operate warning lights during hours from dusk to dawn each day. Protect structures, utilities, sidewalks, pavements, and other facilities immediately adjacent to excavations, from damages caused by settlement, lateral movement, undermining, washout and other hazards.

2. Protect all objects designated to remain.

3. Environmental Conditions

1. Use all means necessary to control dust on and near work if such dust is caused by Contractor's operations during performance of work or if resulting from conditions in which Contractor leaves the site.

2. Thoroughly moisten all surfaces as required to prevent dust being a nuisance to public, neighbors, and concurrent performances of other work on site.

3. Maintain all erosion control devices including construction entrance(s) in accordance with state and county standards.

2.1 BACKFILL AND FILL MATERIALS

1. Suitable structural fill and backfill material for building foundation and slab on grade shall consist of soil which conforms to the Unified Soil Classifications (ASTM D-2487) of SW, SP, SM, SC, ML, CL, GW, GP, GM, GC, and combinations thereof. These materials should possess a Liquid Limit less than 40% and a Plasticity Index less than 15%, and be free of all organic materials, trash, debris, clay lumps, frozen materials or rock fragments greater than 3 inches in size.

2. Suitable structural fill and backfill material for paved areas (roadway, parking lot), curb & gutter, slopes, sidewalk, emergency access road, tennis courts, stormwater management pond shell shall consist of soil which conforms to the Unified Soil Classifications (ASTM D-2487) of SW, SP, SM, SC, ML, CL, GW, GP, GM, GC, and combinations thereof. These materials should possess a Liquid Limit less than 45% and a Plasticity Index less than 20%, and be free of all organic materials, trash, debris, clay lumps, frozen materials or rock fragments greater than 3 inches in size.

3. Unsuitable structural fill and backfill material consist of soil which do not meet all the requirements for suitable structural fill and backfill such as Fat CLAY (CH), Elastic SILT (MH), and rock fragments larger than 3 inches in size, and shall not be used as structural fill under any circumstances. Soils which classify as CH and MH can be used for the stormwater management pond cut-off trench and impervious core.

4. Unstable soils are soils meeting the requirements of Suitable structural fill and backfill that are unstable in their current condition due to excess moisture causing the subgrades to deflect, pump, or rut during proofrolling operations, or are too wet to permit compaction. If allowed to dry by either discing, scarifying, or air drying, these soils will become suitable to be used as structural fill and backfill.

5. Structural fill and backfill requirements shall extend horizontally 10 feet beyond building footprint and 5 feet beyond pavement, sidewalk, and tennis courts, emergency access roads in all directions plus one (1) foot wider for each one (1) feet of fill height exceeding ten (10) feet.

6. Non-structural (unsuitable) fill may be placed in green areas and ballfields only. Rock greater than 3 inches in its greatest dimension but less than 12 inches may be placed; however sufficient fines should be mixed with the rock to prevent open voids between pieces.

7. Topsoil is not to be placed as either structural fill or non-structural fill. It can only be used for re-spread.

3.1 GENERAL

1. Ground Surface Preparation: Remove vegetation, debris, topsoil, unstable soil materials, obstructions, and deleterious materials from ground surface prior to placement of fills. Plow, strip, or break-up surfaces so that fill material will bond with existing surface. When existing ground surface has a density less than that specified under "Compaction" for particular area classification, break up ground surface, pulverize, moisture-condition to optimum moisture content, and compact to required depth and percentage of maximum density.

3.2 EXCAVATION

1. Excavate to grades shown on drawings.

   Rough grading of areas within Project, including cut and fill sections and adjacent transition areas, shall be reasonably smooth, compacted and free from irregular surface changes. Degree of finish shall be that ordinarily obtainable from either blade-grader or motor patrol except as otherwise specified. Provide finished subgrade surface for grassed areas generally shall be not more than 0.2 feet above or below established grade or approved cross section, with due allowance for topsoil.

   Tolerance for areas within 10 feet of building and all paved areas shall not exceed 0.10 feet above or below established subgrade. Finish all ditches, swales and gutters to drain readily. Unless otherwise indicated on drawings, evenly slope subgrade to provide drainage away from building walls in all directions at a grade not less than 1/4 inch per foot. Provide roundings at top and bottom of banks and at other breaks in grade.

   Proofroll constructed cut areas below pavement and structures with a heavily loaded dump truck or a fully loaded pan (minimum axle weight of 10 tons) during earthwork operations to locate all unstable areas. Make at least four systematic passes over each area, first and third passes perpendicular to other two during each proofroll test. Should any unstable or unsatisfactory soils be encountered below pavement or structures, remove unstable material to stabilize earth or to a depth as directed by the Geotechnical Engineer, and fill with satisfactory soils material or VDOT No. 3 or No. 57 stone as directed by Geotechnical Engineer to sub grade elevation. (See Section 3.2, Paragraph 6.) Where removal of unstable materials in cut areas is due to fault or negligence of Contractor in his performance of earthwork and site grading operations, excavate resulting unstable material and replace with compacted satisfactory material as required, at no additional cost to Owner.

2. Excavation consists of removal and disposal of all materials encountered to obtain required subgrade elevations, including earth, and other materials encountered that are not classified as rock, rock excavation or unauthorized excavation.

3. Rock excavation consists of removal and disposal of materials encountered as defined hereafter.

   Typical of materials classified as rock are boulders one (1) cubic yard or more in volume, solid rock, rock in ledges, and rock hard cementitious aggregate deposits that cannot be removed by a Caterpillar 330, 330L backhoe with a rock bucket or verified equivalent in trenches and by a Caterpillar D-9 or verified equivalent bulldozer with a single tooth ripper on trenches and open cuts without the use of explosives or drills. Intermittent drillings performed to increase production and not necessary to permit excavation of material encountered will not be classified as rock excavation. If rock, as herein defined, is encountered within the limits of excavation, the Contract price will be adjusted. When rock is encountered outside of areas indicated in the Contract price, the Contractor shall immediately notify the Architect and shall not proceed further until instructions are given and measurements made for purpose of establishing volume of rock excavation.

   Trench volumes for pipe and footings: for pipe shall be measured and paid according to VDOT detail PB-1 of Road and Bridge Standards. Calculate volumes as follows:

   1. Trench width for pipe shall be pipe outside diameter plus (24") using vertical walls. Trench depth shall be from actual measured vertical elevation of rock encountered to (8") below bottom surface of pipe installed.

2. Trench width for footings shall be actual footing width using vertical walls. Trench depth shall be from actual measured vertical elevation of rock encountered to (12") below bottom of concrete footing.

Existing top elevation of rock shall be measured prior to rock excavation. Contractor shall notify Architect who shall make arrangements for these rock measurements. Owner will pay for all rock measurements outside of areas included in the Contract price.

When rock is encountered in grading, it shall be removed to depths as follows:

1. Under building or paved areas, to 6" under respective subgrade for such areas.

2. Under lawn and planted areas - 12" minimum below subgrade.

4. Unauthorized Excavation: Unauthorized excavation consists of removal of materials beyond indicated subgrade elevations without specific direction of Owner or Architect. Where excess unauthorized excavation takes place beyond indicated lines, or grades, the Contractor shall fill at no extra cost to the Owner to the indicated subgrades as follows:

1. Where footings and foundations occur, use concrete of same proportions as specified for footings and foundations.

2. Where footings and foundations do not occur, use suitable fill to indicated subgrades, as specified herein.

3. Where slabs are to be constructed, use Compacted Suitable Structural Fill or VDOT # 57 stone as specified herein as directed by the Architect.

5. Backfill and compact unauthorized excavations as specified for authorized excavations of same classification, unless otherwise directed by Architect.

6. Removal of Unsuitable/Unstable Undisturbed Original Natural Soil Materials: Excavate unsuitable/unstable soil materials if encountered to additional depth as directed by the Geotechnical Engineer. Any additional required undercut of pavement or building, provided it is not due to fault or neglect of Contractor, will be measured as directed by Architect and paid for by Owner as a change in Work. In cut areas, such additional excavation of original natural soil will be paid for by the Owner for the volume excavated below the required subgrade elevation.

In fill areas, such additional excavation of original natural soil will be paid for by the Owner for volume excavated after the removal of topsoil and before the placement of any fill material.

7. Locate temporary stockpiling of excavation as approved by Architect.

8. Construct storage piles to freely drain surface water.

3.3 DEWATERING

1. Perform earthwork and site grading in a manner to prevent surface water and subsurface or groundwater from flowing into excavations, and to prevent water from flooding project site and surrounding area. Do not allow water to accumulate in excavations. Remove all water from excavations using dewatering methods which will prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to stability of subgrades and foundations. Provide and maintain pumps, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from site. Rectify any damage to property as a result of construction operations by Contractor at Contractor's expense.

2. Should any springs or running water be encountered in excavation, notify Architect. Contractor shall provide

temporary free discharge of water by trenches and drain to an appropriate point of disposal as directed. If permanent provision must be made for disposal of water other than as shown, contract price will be adjusted. Contractor shall provide temporary drainage facilities to minimize flow of water onto adjacent property at no cost to Owner. Water shall be discharged at points in such a manner as to prevent erosion.

3.4 FILL OPERATIONS

1. In the presence of the Geotechnical Engineer or their qualified representative, proofroll all subgrades. Proofrolling shall be performed on all subgrades which will receive fill placement and on all pavement and structure subgrades using a heavily loaded dump truck or similar rubber-tired construction vehicle (minimum axle weight of 10 tons) to locate all unstable areas. Make at least four systemic passes over each area, first and third passes perpendicular to other two during each proofroll test. Any areas that pump, deflect, or rut and continue to do so after several passes of the rubber-tired vehicle shall be undercut to firm soils, and replaced with compacted satisfactory soil material as required.

2. Before placing fill material, remove all debris subject to termite attack, rot, or corrosion, and all other deleterious material from areas to be filled and/or backfilled. Prior to placing fill material, scarify sub-surface of ground to a depth of 6 inches. Moisture content of loosened material shall be such that it will readily bond with the first layer of fill material (See Section 3.1). Remove unstable soil as specified herein before placing fill material. (See Section 3.2 Paragraph 6).

3. All fill materials shall be free from roots, debris, trash, and unsuitable materials.

4. The moisture content of the fill soils should be maintained within 2 percent of the optimum moisture content determined from the Laboratory moisture-density test. This provision shall require the Contractor to dry the soils during periods of wet weather or wet the soils during dry periods.

5. The fill surface must be adequately maintained during construction in order to achieve an acceptable compacted fill. The fill surface shall be sloped to achieve sufficient drainage and to prevent water from ponding on the fill. If precipitation is expected while fill construction is temporarily halted, the surface should be rolled with a smooth steel drummed equipment to improve surface run-off. If the surface soils become excessively wet or frozen, fill operations shall be halted and shall not proceed until conditions are acceptable to the Geotechnical Engineer.

6. Slope fill placement against or adjacent to existing slopes shall be benched into the present soils. This is necessary to provide an adequate interface between newly placed fill and existing soils.

7. Fill under buildings and surfaced areas shall not contain humus. Stones larger than 3 inches maximum dimension shall not be used. Place material in successive horizontal layers in loose depths as specified, for full width of cross section. Deposit fill in layers not more than 8 inches thick for material compacted with heavy compaction equipment, 4" layers for material compacted with walk behind rollers and tampers.

8. Thoroughly compact each layer by rolling or pneumatic tamping. Bring finished subgrade to elevations indicated and slope to drain water away from building walls. Fill to required elevations any areas where settlement occurs.

9. During operation of making fills under and adjacent to building pad, approved self-powered sheeps-foot and steel drum types of rollers shall be in continuous operation. At no time shall any piece of equipment engaged for compaction purposes be used for other than compaction of material and all earth moving operations shall cease for any reason that compaction equipment is stopped or not onsite.

   Prior to beginning of any excavation whatsoever, grading contractor shall have on Site, approved types of rollers which he shall, in presence of Owner's Representative and Geotechnical Engineer, remove any inspection plates necessary to verify presence of fluids or ballasts for weight. These pieces of equipment shall be demonstrated and proven in satisfactory condition prior to making any fills, stripping any topsoil or any grading whatsoever.

10. No backfilling shall be permitted where excavations for bearing under footings has been carried too deep. Fill such excavations with concrete of same class as member it is to support; at no cost to Owner.

11. Before compaction, moisten or aerate each layer to the extent necessary to provide optimum moisture content of soil material. Compact each layer to required percentage of maximum density for each area classification. Do not place suitable structural fill or backfill material on surfaces that are unsuitable, unstable, muddy, frozen, or contain frost or ice.

12. The fill shall be spread evenly by mechanical equipment and by manual means above the approved (compacted) subgrade and shall be thoroughly mixed and spread in lifts as specified. Beginning with the lowest areas, lifts shall be built up in horizontal layers as nearly even as practical to prevent the thickness of lift from exceeding that specified.

13. Each layer shall be free of ruts and shall meet compaction requirements before a succeeding layer is placed.

14. Where fill is to be constructed on an existing slope (25% or greater), the existing slope shall be benched and keyed as directed by the Geotechnical Engineer and in accordance with latest VDOT Road and Bridge Specifications Section 303 - Earthwork.

15. Where topsoil or fill is to be placed on cut slopes, the slope subgrades shall be adequately scarified in a direction perpendicular to the fall line of the slope to allow sufficient bonding of the topsoil or fill and the in-situ soils.

16. No fill materials shall be placed when either the fill material or the previous lift or subgrade on which it is placed is frozen. In the event that any fill which has already been placed, or the subgrade, shall become frozen, it shall be scarified and re-compacted, or removed, to the satisfaction of the Geotechnical Engineer before the next lift is placed. Any soft spots resulting from frost shall be removed and re-compacted with unfrozen fill to the satisfaction of the Geotechnical Engineer or a qualified representative before new material is placed.

17. Before filling operations begin, representative samples of each proposed fill material shall be collected and tested to determine maximum dry density, optimum moisture content, natural moisture content, gradation, and plasticity of soil. These tests are needed for quality control during construction and also to determine if the fill material is acceptable. Use fill in accordance with the test results.

3.5 SOIL DENSITY

1. "Percentage of Maximum Density" Requirements
Unless otherwise indicated on plans, provide not less than following percentages of maximum density of soil materials, compacted at optimum moisture content for each layer of soil material-in-place. Determine density by Standard Proctor Method (ASTM D-698).

2. Compact each layer of structural fill under structures and paved areas and structures by rolling or tamping to 95% of maximum dry density at optimum moisture content, and not less than 95% under lawn and planting areas. Upper (12") of fill beneath grade slabs and pavements shall be compacted to at least 100%. In proposed structural fill areas ten (10) feet or greater in total depth, compact to not less than 98% of maximum dry density. Determine and control degree of compaction in accordance with Standard Proctor Method (ASTM D-698). Accomplish Standard Proctor Method (ASTM D-698) Compaction by use of power rollers, sheepsfoot rollers, machine tampers, or other mechanical equipment approved by Architect. When necessary, soil shall be moistened, or dried to correct moisture content before compaction.

3.6 COMPACTION

1. General

    1. Perform compaction of soil material using compaction equipment for materials to be compacted and work

area locations.

2. Control soil compaction during construction for compliance with percentage of maximum density specified for each area classification.

2. Compaction Equipment

Use self-powered sheepsfoot rollers, self-powered steel drum rollers, tamper rollers and vibrating tampers, capable of obtaining required density throughout entire layer being compacted. (Use of loaded dump trucks, pans, or anything else not specifically designed for compaction is not allowed)

3. Moisture Controls

1. Where subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply required amount of water to surface of subgrade, or layer of soil material, in such a manner as to prevent free water appearing on surface during or subsequent to compaction operation. Acceptable moisture content will be plus or minus 2% from optimum as determined by ASTM D-698.

2. Remove and replace (Unsuitable soil material) or scarify and air dry to extent required (Unstable soil material), any soil material that is too wet to permit compaction to specified percentage of maximum density.

4. Moisture Control Equipment

Provide equipment capable of adding measured amounts of moisture to soil material as determined by moisture-density relation tests. Provide equipment capable of scarifying for air drying soil material to acceptable moisture levels. Provide sufficient quantity of equipment as necessary to maintain the Contractor's Construction Schedule.

3.7 GRADING

1. Uniformly grade all areas within limits of site grading under this section, including adjacent transition areas. Smooth finished surface compact with uniform levels or slopes between such points where elevations are shown, or between such points and existing grades. Fill low areas resulting from removal of unsatisfactory/unsuitable soil materials, obstructions, and other deleterious materials with approved soil material. Shape to line, grade, and cross section as shown on drawings. Final grading shall provide proper drainage away from building pad area. Proof roll areas below pavement and structures. Do not disturb after completion of proof rolling.

3.8 MAINTENANCE

1. Protection of Graded Areas: Protect newly graded areas from traffic and erosion, keep free of trash and debris.

2. Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, reshape, and compact to required density prior to further construction. Use hand tamping for re-compaction over underground utilities.

The contractor shall be responsible for any reconditioning of previously tested or proof rolled areas at no additional cost to the Owner.

3.9 CLEANING AND DISPOSAL

1. Disposal of Waste Materials: Remove all existing and generated trash, debris and waste materials, from Owner's property and legally dispose of it.

3.10 TESTING

1. Owner shall employ a testing laboratory to perform field and lab tests of fill materials and operations. Contractor will be responsible for notifying testing laboratory of progress of work in adequate time to allow scheduling of personnel. Testing will be performed at surface of existing grades or cut areas as well, and this should not be overlooked in notifying laboratory. Testing laboratory will be responsible for verbally informing Contractor of test results immediately upon completion, so unnecessary delay is eliminated and unsatisfactory work is not covered up. Continued progress of Work shall not relieve Contractor of responsibility of complying with specification requirements. Testing laboratory shall notify Contractor, Owner and Architect/Engineer in writing of test results on same day the tests are completed. Contractor shall obtain from the Geotechnical Engineer a written certification that fill and compaction was completed with accepted materials in accordance with specification and ASTM Requirements.

END OF SECTION 312000

SECTION 312500 - EROSION AND SEDIMENT CONTROL

1.1 GENERAL REQUIREMENTS

1. Drawings and general provisions of Contract, including General and Supplementary Conditions, Division 1 Specifications, and other sections of the Specifications not referenced below shall also apply to the extent required for proper performance of the Work of this section.

1.2 DESCRIPTION

1. Work included: Install and maintain all erosion and sediment control devices shown on plans. Maintain installation of sediment trapping devices, silt fences and all other devices required for proper erosion and sediment control. These devices shall be maintained, utilized, altered and removed as necessary for the completion of the project. The contractor shall be responsible for the cleaning of all sediment traps and installing all controls as indicated on the erosion control plans.

2. Related Work Described Elsewhere

    1. Site Preparation - Section 310001
    2. Earth Moving - Section 312000

2.1 MATERIALS

1. Topsoil and general earth excavation for earth berms; stone for silt traps; straw, silt fence, seed and fertilizer for seeding.

3.1 GENERAL REQUIREMENTS

1. The most recent version of the Prince William County Design and Construction Standards Manual and the Virginia Erosion & Sediment Control Handbook (VESCH) shall be followed. Refer to these and plans for Erosion and Sediment Control Specifications.

2. No topsoil shall be spread in areas where site utilities are proposed until all site utilities are in place within that designated area.

3. At completion of grass and lawn areas to finish subgrade elevations, provide temporary seeding to control erosion and sediment.

    Also, in incomplete areas left denuded more than 14 days, provide temporary seeding.

4. Temporary Seeding Schedule

    1. Summer and Fall seeding: use Annual Rye grass at rate of 100 lbs. per acre.

    2. Winter and Spring seeding: use millet at rate of 100 lbs. per acre.

3.2 MAINTENANCE

1. Maintain erosion and sediment control measures in an operative condition throughout entire period of construction contract in accordance with the most recent version of the Virginia Erosion and Sediment Control Handbook (VESCH).

2. Contractor shall be responsible for removing silt to maintain an effective silt collector. Removed silt shall be hauled from the site. Unsightly trash and waste material accumulating shall be removed.

3. Perform work in such a manner as to prevent washing of any soil, silt or debris onto adjacent properties. Contractor shall be held responsible and financially accountable for any damage incurred.

4. Upon establishment of grass on all slopes and other grass areas, collected silt shall be removed and erosion and sediment control measures shall be removed at appropriate time during construction process as determined by County Inspection.

5. Construction entrance with wash rack shall be installed and maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This will require periodic top dressing with additional stone or additional length as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed, or tracked onto offsite areas must be removed immediately. Additional "Construction Entrances" may be required at various locations as the construction progresses. Additional locations shall be as approved by the Architect.

   If conditions on site are such that majority of mud is not removed by vehicles traveling over gravel, then tires of vehicles must be washed before entering a public road. Wash water must be carried away from entrance to a settling area to remove sediment.

END OF SECTION 312500

SECTION 321216 – ASPHALT PAVING

1.1 GENERAL REQUIREMENTS

1. Drawings and general provisions of Contract, including General and Supplementary Conditions, Division 1 Specifications, and other sections of the Specifications not referenced below shall also apply to the extent required for proper performance of the Work of this section.

1.2 WORK INCLUDED

1. Furnish all tools, labor, equipment, and materials and perform all operations required to construct stone base course, asphalt concrete surface, asphalt base course, pavement marking, and curb painting as specified in these specifications and shown on drawings and details.

1.3 SUBMITTALS

1. Submit a certificate that materials meet requirements as given in these specifications, and source of materials. Submit proposed mix design including aggregate gradation, asphalt cement certification for asphalt concrete, and paint.

1.4 REFERENCES

1. All references to VDOT specifications are from Virginia Department of Transportation, Road and Bridge Specifications, most recent version. All references to "Method of Measurement" or "Basis of Payment" do not apply. Specific items in this specification shall control over items in VDOT specifications.

2. American Society for Testing and Materials (ASTM), Latest Editions.

3. Standard Specifications for Transportation Materials and Method of Sampling and Testing, The American Association of State Highway and Transportation Officials (AASHTO).

4. Asphalt Paving Manual (MS-8): Asphalt Institute

1.5 QUALITY ASSURANCE

1. Perform work in accordance with applicable section of VDOT specifications and as indicated by these specifications. Should any conflict arise between these specifications and VDOT specifications, work shall proceed as directed by Architect.

2. Obtain materials from same source throughout project.

1.6 REGULATORY REQUIREMENTS

1. Where work interfaces or ties into adjacent public property, work shall conform to governing codes and regulations.

1.7 TESTING AND INSPECTION

1. Testing and inspection will be performed by Geotechnical Engineer.

2.1 ASPHALT CEMENT

1. Asphalt cement for paving mixtures shall be AC-20 meeting requirements of VDOT Section 210.

2.2 ASPHALT CONCRETE PAVING MIX

1. Asphalt concrete shall be produced in conformance with requirements of Section 211 of VDOT. Temperature of mixture when discharged from plant shall not exceed 325 dF.

2.3 STONE

1. Stone for paving shall meet requirements of VDOT Sections 200-209.

2. No bank run gravel shall be permitted for use on this project.

2.4 PAINT

1. Pavement Marking Paint: In accordance with Federal Specification TT-P-115E, Type 1, yellow or white, as directed by Architect.

2. Paint shall be in sealed containers that plainly show manufacturer's name, batch number, designated name, and date of manufacture.

3. Paint shall be homogeneous, easily stirred to smooth consistency, and shall show no hard settlement or other objectionable characteristics during storage period.

3.1 PAVING EQUIPMENT

1. Provide following equipment for transporting, placing and compacting asphalt concrete mixes:

    1. Enough smooth metal-bedded trucks with covers to ensure orderly and continuous paving operations.

    2. Self-powered pavers capable of producing a surface that will meet requirements of typical cross-section, and smoothness test, and not produce segregation.

    3. Self-propelled rollers capable of compacting mixture to required density, smoothness, and cross-section without leaving roller marks, cracks, or tears in final surface.

2. Maintain all equipment in good repair and operating condition.

3.2 PAINT MARKING EQUIPMENT

1. Provide hand-operated push-type applicator machines of type commonly used for application of paint to pavement surfaces. Applicator machines shall be equipped with necessary paint tanks and spraying nozzles and shall be capable of applying paint uniformly.

2. Provide hand-operated spray guns for use in areas where push-type machines cannot be used.

3. Provide sandblasting equipment as required for cleaning surfaces to be painted.

3.3 PREPARATION FOR PAVING

1. After installation and approval of stone base course, thoroughly clean surface to receive new pavement and apply tack coat in accordance with VDOT Section 310.

2. Paint vertical contact surfaces with tack coat to provide watertight joints. Apply track coat in a manner so as not to stain exposed curb, drains, or other surfaces.

3.4 ASPHALT CONCRETE PAVEMENT

1. Do not place asphalt concrete when air temperature is below 50 dF and falling. Asphalt concrete may be placed when air temperature is 40 dF and rising.

2. Do not place asphalt concrete on surfaces which show evidence of moisture or when weather conditions are unsuitable. Work may continue during sudden rains to utilize materials which are in transit from plant.

3. Asphalt concrete delivered to site at temperatures less than (250) dF will be rejected and disposed of at Contractor's expense.

4. Apply a tack coat to vertical contact surfaces. Apply tack coat in manner that will not stain exposed surfaces.

5. If more than (72) hours elapse or proper bond is not obtained between lifts, apply a tack coat with a pressure distributor at a min. rate of (0.05) gal/square yard.

6. Place asphalt concrete in continuous operation using a self-powered paver. Hand spreading will be permitted only in areas inaccessible to paver.

7. Leveling and wedging base course as required to achieve specified grade and slope to drains. Place asphalt concrete in minimum and maximum lift thicknesses per VDOT standards.

8. Perform engineering elevation survey to establish and maintain grade control at all times during construction.

3.5 COMPACTING AND FINISHING

1. Compact mix with self propelled rollers immediately after placing. Initial breakdown rolling should follow paver as closely as possible. Eliminate previous roller marks during final rolling.

2. Roll longitudinal joints between successive passes of paver first. Roll longitudinal joints with (4" to 6") of roller riding on previously compacted mat.

3. Operate rollers at a speed and in a manner that will not displace mixture. Correct any areas of displacement immediately with rakes and additional hot mix.

4. Rolling pattern is responsibility of Contractor. Final acceptance will be based on thickness, density, and smoothness.

5. Compact areas inaccessible to roller thoroughly with mechanical tamping equipment.

3.6 JOINTS

1. Offset longitudinal joints in successive lifts by a minimum of 6".

2. When transverse joints are required, pavement must be cut off vertically using a bulkhead or by saw cutting.

3. Apply tack coat to vertical contact surface at transverse joints.

3.7 DENSITY, THICKNESS, AND SMOOTHNESS

1. Compact asphalt concrete mixtures to min. of 95 percent of established Marshall laboratory density for day's production. Daily Marshall densities to be supplied by asphalt plant.

2. Compacted thickness tolerance shall be no more than (+1/4") for each course.

3. Acceptance of asphalt surface course will be determined from thickness and density testing by Engineer of in-place mat

during construction.

4. Finished pavement not meeting specified tolerances is subject to rejection of pavement and replacement at Contractor's expense.

3.8 SURFACE PREPARATION FOR PAINT MARKING

1. Allow new concrete curb and asphalt concrete pavement to cure max. time recommended by manufacturer before applying paint.

2. Clean all surfaces to be painted by sweeping, blowing with compressed air, or rinsing with water.

3.9 PAINT APPLICATION

1. Apply paint in strict conformance with manufacturer's printed application instructions.

2. Apply paint pneumatically with approved equipment at rate of coverage sufficient to produce dry film thickness of 1.5 mil.

3. Apply paint only when air and pavement temperatures are above 40 dF and below 95 dF. Maintain paint temperatures within these limits.

4. Mark pavement to provide widths and lengths of parking spaces as shown on drawings. Width of lines shall be (4"). Center lines of marking shall not deviate more than (1") laterally from a straight line at any point.

5. Provide "Visitor and Handicapped Parking" designations on pavement as shown on drawings.

6. Provide play pad marking as shown on plans.

7. Provide guidelines and templates to control paint application. All edges of markings shall be sharply outlined.

8. Use max. drying time requirements of paint manufacturer to prevent pickup, displacement, or discoloration by tires. Discontinue painting operations if there is a deficiency in drying until cause of slow drying is determined and corrected.

9. Place suitable signs and markers along newly painted lines to control traffic and prevent damage to newly painted surfaces.

10. Stain all new concrete curb in no parking areas, as shown on plans or noted with Yellow H&C Concrete Stain Solid Color Water Based or approved equal.

END OF SECTION 321216

SECTION 321313 - SITE CONCRETE

1.1 GENERAL REQUIREMENTS

1. Drawings and general provisions of Contract, including General and Supplementary Conditions, Division 1 Specifications, and other sections of the Specifications not referenced below shall also apply to the extent required for proper performance of the Work of this section.

1.2 DESCRIPTION

1. Work included: Concrete work for exterior site work only including but not limited to curb & gutter, header curb, sidewalks, dumpster pad, cooling tower slab, transformer and emergency generator pads, and any other miscellaneous items.

2. Related work described elsewhere

    1. Earth Moving - Section 312000
    2. Asphalt Paving - Section 321216
    3. Site Improvements - Section 323000

1.3 QUALITY ASSURANCE

1. Qualifications of workmen: for finishing of surfaces, use only personnel with minimum 3-years experience, thoroughly trained and qualified in skills required.

2. The most recent version of VDOT Road and Bridge Specifications shall apply for all materials and workmanship.

3. Shop drawing submittals for all materials specified in this section shall be provided to the Architect in accordance with these specifications.

1.4 SUBMITTALS

A. Product Data: For each type of manufactured material and product indicated.

B. Design Mixes: For each concrete mix. Include alternate mix designs when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.

    1. Indicate amounts of mix water to be withheld for later addition at Project site.

C. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated, based on comprehensive testing of current materials:

D. Material Certificates: Signed by manufacturers certifying that each of the following items complies with requirements:

    1. Cementitious materials and aggregates.
    2. Steel reinforcement and reinforcement accessories.
    3. Admixtures.
    4. Curing materials.
    5. Bonding agents.
    6. Adhesives.
    7. Vapor retarders

8. Epoxy joint filler.
9. Joint-filler strips.
10. Repair materials.

1.5 PROTECTION

1. Protect installed work during and after installation.

2. Repair or replace any work damaged prior to project acceptance.

2.1 MATERIALS

1. Unless noted otherwise, all materials shall conform to following requirements: (ASTM specifications refer to latest revision.)

    1. Cement: Portland Cement, American Society for Testing and Materials, ASTM C-150, Type I or Type II.
        a) Fly Ash: ASTM C 681, Class F.
        b) Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.

    2. Concrete aggregates: Normal-Weight Aggregate: ASTM C 33, uniformly graded, and as follows:
        a) Nominal maximum Aggregate Size: 1 inch.

    3. Mixing water: Potable and complying with ASTM C 94.

    4. Expansion-joint material: 1/2 inch thick asphalt-impregnated premolded fiber conforming to Preformed Expansion Joint Filler for Concrete, ASTM D-1752.

    5. Curing compound: White Liquid Membrane-Forming Compounds for Curing Concrete, ASTM C-309. Curing compound shall be in conformance with VDOT section 220 and shall be of a non peel membrane which can be painted.

    6. Air-entraining admixtures for concrete: General: Admixtures certified by manufacturer to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material and to be compatible with other admixtures and cementitious materials. Do not use admixtures containing calcium chloride. Air-Entraining Admixtures for Concrete, ASTM C-260.

    7. All other materials used in concrete shall conform to current applicable ASTM specifications which include but are not limited to the following:

        Water-Reducing Admixture: ASTM C 494, Type A.

        High-Range, Water-Reducing Admixture: ASTM C 494, Type F.

        Water-Reducing and Accelerating Admixture: ASTM C 494, Type E.

        Water-Reducing and Retarding Admixture: ASTM C 494, Type D.

    8. Unless noted otherwise, all concrete shall have a minimum 28-day compressive strength of 3000 psi. Concrete shall be manufactured and delivered in accordance with Ready Mixed Concrete, ASTM C-94.

3.1 GENERAL

1. Standard Construction details, of the VDOT Road and Bridge Specifications, and Prince William County Design and Construction Standards Manual shall be followed unless specific deviation therefrom is authorized in writing by Architect or is shown on approved plans.

2. Concrete Mixes:

A. Prepare design mixes for each type and strength of concrete determined by either laboratory trial mix or field test data bases, as follows:

1) Proportion normal-weight concrete according to ACI 211.1 and ACI 301.

B. Use a qualified independent testing agency for preparing and reporting proposed mix designs for the laboratory trial mix basis.

C. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:

1) Fly Ash: 25 percent.
2) Ground Granulated Blast-Furnace Slag: 25 percent.

D. Air Content: Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content as follows within a tolerance of plus 1 or minus 1.5 percent, unless otherwise indicated:

1) Air Content: 6 percent for 1-inch-nominal maximum aggregate size.

3.2 PREPARATION

1. Proof roll prepared sub-base to check for unstable areas requiring additional compaction.

2. Do not begin work until any discrepancies have been corrected.

3. Remove loose material from sub-base immediately prior to placing concrete.

3.3 INSTALLATION

1. Forming
   1. Forms shall be of such cross section and strength and so secured as to resist pressure of concrete when placed and impact and vibration of any equipment they support, without springing or settlement. Method of connection between sections shall be such that joints shall not move in any direction. Maximum deviation of top surface shall not exceed 1/8 inch in 10 ft. or inside face not more than 1/4 inch in 10 ft. from a straight line. Use flexible or curved forms of proper radius for curves of 200-ft. radius or less.

   2. Compact and cut subgrade under forms to grade so that form when set will be uniformly supported for its entire length at specified elevation. All forms shall be cleaned and oiled each time they are used.

   3. Check and correct alignment and grade elevations of forms immediately before placing concrete. When any form has been disturbed or any grade has become unstable, form shall be reset and rechecked.

   4. Leave forms in place min. 24 hours after concrete placement.

2. Joints

Provide expansion and construction joints according to the current VDOT Road and Bridge Specifications.

3. Placing and Finishing

1. General

1. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94, and furnish batch ticket information.

2. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

3. Deposit concrete on a moist grade in such manner as to require as little rehandling as possible. Placing shall be continuous between transverse joints without use of intermediate bulkheads. Necessary hand spreading shall be done with shovels, not rakes. Workmen shall not be allowed to walk in freshly mixed concrete with boots or shoes coated with earth or foreign substances.

4. Exposure to the environment may weaken the soils if the excavations remain open for too long a time. Therefore, concrete should be placed the same day that excavations are dug. If bearing soils are softened by surface water intrusion or exposure, softened soils should be removed from excavation bottom immediately prior to placement of concrete.

5. Concrete shall be thoroughly consolidated against and along faces of all forms and along full length and on both sides of all joint assemblies. Vibrators shall not be permitted to come in contact with a joint assembly, grade, or a side form. Vibrator shall never be operated longer than 15 seconds in any one location.

6. Deposit concrete as near to expansion and contraction joints as possible without disturbing them but not dumped onto a joint assembly.

2. Strikeoff, Consolidation, and Finishing

1. Sequence of operations shall be strikeoff and consolidation, floating if necessary, straightedging, and final surface finish. Pavement shall be struck off and consolidated with a mechanical finishing machine, vibrating screed, or by hand-finishing methods.

2. In general, adding water to surface of concrete to assist in finishing operations shall not be permitted.

3. After concrete has been struck off and consolidated, it shall be scraped with a straightedge 10 ft. long equipped with a handle to permit operation from edge of pavement. Remove any excess water and laitance from surface. Correct irregularities by adding or removing concrete. All disturbed places shall be again straightedged.

4. Before final finishing is completed and before concrete has taken its initial set, edges of slab and curb shall be carefully finished with an edger.

5. Use a broom for final finishing. For a broom finish, a stiff bristled broom shall be drawn with adjacent strokes slightly overlapping to produce surface corrugations of uniform appearance.

3. Protection

1. Contractor shall always have available materials to protect surface of plastic concrete against rain.

These materials shall consist of burlap, curing paper, or plastic sheeting. When skipform construction is being used, materials such as wood planks or forms to protect edges of pavement shall also be required.

2. Cure concrete by protecting it against loss of moisture, rapid temperature change, and mechanical injury for at least 3 days after placement with liquid membrane compound. After finishing operations have been completed, entire surface of newly placed concrete shall be covered by curing medium.

3. Before actual placement begins, Contractor shall have at hand equipment needed for adequate curing.

4. Apply membrane method of curing following final finishing operation as each area is finished. Provide complete and uniformed coverage at required rate of 150 sq.ft. per gallon. Keep compound agitated to prevent the pigment from settling.

4. Cold-Weather Protection

1. Except by specific written authorization, concrete work shall cease when descending air temperature in shade and away from artificial heat falls below 40 degrees F. Do not resume work until ascending air temperature in shade and away from artificial heat rises to 35 degrees F.

2. When concrete has been placed in cold weather and temperature may drop below 35 degrees F., provide straw, hay, insulated curing blankets, or other suitable material along line of work. Whenever air temperature may reach freezing point during day or night, spread materials over concrete deep enough to prevent freezing of concrete. Protect concrete from freezing temperatures until it is at least 10 days old. Concrete injured by frost action shall be removed and replaced at Contractor's expense. All concrete shall be protected in cold weather in accordance with ACI 306R.

END OF SECTION 321313

SECTION 323000 – SITE IMPROVEMENTS

1.1 GENERAL REQUIREMENTS

1. Drawings and general provisions of Contract, including General and Supplementary Conditions, Division 1 Specifications, and other sections of the Specifications not referenced below shall also apply to the extent required for proper performance of the Work of this section.

1.2 APPLICABLE REQUIREMENTS

1. The most recent versions of the Prince William County Design and Construction Standards Manual and VDOT Road and Bridge Specifications govern work under this section.

1.3 WORK DESCRIPTION

1. Handicap signage, PWC type HP-1 and van accessible sign
2. Stop Signs.
3. "FIRE LANE" signs
4. Other signs indicated on drawings.

1.4 RELATED WORK DESCRIBED ELSEWHERE

1. Earth Moving - Section 312000
2. Sewer and Utilities - Section 333000
3. Site Concrete - Section 321313
4. Asphalt Paving - Section 321216

2.1 PRODUCTS AND MATERIALS

1. GENERAL: See plans for details of design of each item and for location for installation.
2. SHOP DRAWINGS: Submit shop drawings on items necessary for product approval.
3. All sign materials and installation shall meet the latest Prince William County standards. Yellow H&C Concrete Stain Solid Color Water Based or approved equal shall be used for all fire lane curb markings.

3.1 EXECUTION

1. LOCATION: See site plan for location of miscellaneous items other than the fire lanes. Coordinate with the Prince William County Fire Marshal's Office for the location of fire lane painted curbs and the location of fire lane signs.
2. Install each item according to detail or approved shop drawing.
3. Provide and install painted curbs as directed by the Prince William County Fire Marshall. Provide and install standard "FIRE LANE" signs along painted curb. Install signs with appropriate arrows as directed by the Fire Marshall.

END OF SECTION 323000

SECTION 333000 - SEWER AND UTILITIES

RELATED DOCUMENTS:

Drawings and general provisions of the Contract, including General and Supplemental Conditions and Division-1 Specification sections, apply to work of this section.

1. GENERAL:

A. Standard construction details, specifications, and the construction standards of the most recent versions of the Prince William Water Utility Standards Manual, Prince William County Design and Construction Standards Manual and the Virginia Department of Transportation shall be followed unless specific deviation therefrom is authorized, in writing, by the Architect, or unless specific deviation is shown on approved plans.

B. Construction of sewers and appurtenances shall be in accordance with plans and with specifications contained herein. Good workmanship and standard construction procedures shall be applied.

C. Shop drawing submittals for all materials specified in this section shall be provided to the Architect in accordance with these specifications.

D. Prior to substantial completion, the contractor shall provide utility as-builts drawings certified by a Land Surveyor or Professional Engineer registered in the Commonwealth of Virginia. The as-built drawings shall meet the minimum requirements and shall be approved by Prince William County.

2. TRENCHING, BEDDING AND BACKFILLING:

A. The trench walls above the top of the pipe may be sloped or the trench above the top of the pipe may be widened as necessary for placing sheeting and bracing. It is desirable to keep all trench walls vertical, if possible, and before sloping the walls the Contractor shall obtain the Architects permission to do so. Excavation in ditches and at manholes and similar structures shall be kept free of water at all times until the pipes have been laid, properly jointed and backfilled. No trench shall be opened until adequate pumping equipment is available to dewater the trench, should this be required.

B. Trenches for sewers and drains shall be excavated to the alignment and depths required to allow installation of pipes as shown on the plans. Grade the trench bottoms to provide a smooth, firm, and stable foundation free from rock points throughout the length of the pipe. The elevations shown on the plan are the inside flow line of the pipe, and the trench shall be excavated so as to provide for the pipe and bedding thicknesses below these grades. The lengths shown on the plan are center-to-center of structures.

C. All sanitary sewer pipe shall be bedded in compacted granular material. The granular material shall be a crushed stone which will pass a 3/4" sieve but will be retained on a No. 4 sieve. The granular bedding shall have a minimum thickness of 6 inches under the pipe and extend 1/2D up the pipe barrel at the sides.

D. Reinforced concrete storm sewer pipe shall be bedded in compacted granular material. The granular material shall be a crushed stone which will pass a 3/4" sieve but will be retained in a No. 4 sieve. The granular bedding shall have a minimum thickness of 6" under the pipe and extend 6" up the pipe barrel at the sides.

E. If any excavation is caused by the Contractor's error or wherever the excavation is carried beyond or below the lines and grade shown on the plans - the Contractor shall at his own expense refill all such excavated space with such approved material and in such a manner as may be directed by the Architect in order to insure the stability of various pipe lines or structures. Space excavated without authority shall be refilled with Class "B" (VDOT Specification Section 217) concrete or with crushed stone or other approved material as ordered and as directed at the Contractor's expense.

F. All trenches and excavations shall be properly sheeted and braced, where necessary for the safety of

personnel or the protection of the work, or to maintain the maximum trench widths specified or to prevent the disturbance or settlement of adjacent foundations and structures, or as required by the local authorities. Where necessary, bracing shall be so arranged as not to place any stress on portions of the completed work until the general construction thereof has proceeded far enough to provide ample support. Loss of life; injury to personnel; or damage to new or existing structures, slides, caves or other causes due to failure or lack of sheeting or bracing, or improper bracing, shall be the Contractor's responsibility and shall be repaired at his own expense. No payment will be made for sheeting and bracing.

G. Backfill around and immediately over the pipe with select material free from stones, etc., compact carefully and then balance of the backfill shall be with excavated material approved by the Owners Soils Engineer. Material shall consist of sandy clay, sand and gravel, soft shale or other approved materials and shall be free from frost and large clods of earth or stones larger than two (2) inches in diameter. The backfilling shall be completed in accordance with section 312000. The layers shall be brought up evenly. Any deficiency in the quantity of material for backfilling or for filling depressions caused by settlement shall be supplied and placed by the Contractor. The compaction for the backfilling shall be executed in such a manner that there will be no settlement or depression in the finished grade. Should depressions appear, the area shall again be compacted until there is no further settlement and brought to finished grade.

H. If the excavated material is not suitable to use as "backfill", the Contractor shall provide material from off-site to use as backfill. This material shall be approved by the Owner's Soils Engineer prior to hauling onto site. This substitution shall be accomplished at no additional cost to the Owner.

3. INSTALLATION OF PIPES:

A. The pipe shall be bedded as hereinbefore specified, true to line and grade.

B. All gravity lines shall be laid from the structure with the lowest elevation uphill to the structure with the highest elevation. All pipe sewers shall be laid with bells upgrade. The section of the pipe shall be so laid and fitted together that the completed sewer will have a smooth and uniform invert. The pipe shall be kept thoroughly clean so that jointing materials will adhere. Each pipe shall be inspected for defects before being lowered into the trench. The interior of the pipe shall be clean at the time of laying and shall be kept clean as the work progresses.

C. Jointing: All concrete pipe jointing shall be done in accordance with VDOT standards and specifications.

D. The end of pipes which enter structures shall be neatly cut to fit the inner face of the masonry. After joints have been inspected and approved, pipes shall be back-filled as previously specified. Care shall be used so that pipes are not displaced in elevation or alignment during backfilling.

4. SANITARY SEWER PIPE, ACCESSORIES AND CONSTRUCTION:

A. All sanitary sewer materials, construction and testing shall conform at minimum with the most recent Prince William Water Utility Standards Manual.

5. STORM SEWERS:

A. Storm Drainage Pipe Culverts, Jointing and Accessories: Unless otherwise approved in writing by the Architect, all pipe used on this project shall meet the current and appropriate specifications of the American Society for Testing Materials. The laying length shall not be less than three (3) feet.

B. Concrete Culvert and Storm Drain Pipe: Concrete culvert and storm drain pipe shall conform to ASTM Standard Specification C76, "Reinforced Concrete Culvert, Storm Drain and Sewer Pipe" for Class III or Class IV pipe as shown on the drawings.

Refer to the most recent version of the VDOT Road and Bridge Specifications and Prince William County Design and Construction Standards Manual for pipe material and construction specifications. Culvert pipe classed as "seconds" by the manufacturer or pipe which has been rejected from another project shall not be permitted for use.

All pipe installed shall be of the type and size indicated on the drawings.

C. Jointing: Concrete pipe joints shall meet the current VDOT standards and specifications.

D. Standard Catch Basins and Appurtenances: All storm sewer structures shall be according to the current VDOT construction standards and specifications, except where special designed structures are used and so noted on the plans.

E. PVC Roof Drain Lines: PVC roof drain lines shall be manufactured in accordance with ASTM Designation 3034-77 (SDR 35). Installation of PVC roof drain lines shall be in accordance with ASTM Designation 2321 and manufacturer's recommendation. Pipe stored for more than one (1) year prior to installation shall be covered with an opaque covering to prevent damage by the sun.

F. Testing: Perform testing of completed storm sewer lines in accordance with local authorities having jurisdiction.

G. Manhole Frames and Covers: Manholes shall be complete with frames and covers. The frames and covers shall meet VDOT standard MH-1 with a frame weight of 239 lbs. and a cover weight of 137 lbs. All manhole covers shall be bolt down type.

6. WATER PIPE, ACCESSORIES AND CONSTRUCTION:

A. All water system materials, construction and testing shall conform with the most recent Prince William Water Utility Standards Manual.

7. SAFETY:

A. Except as thereafter provided, the current edition of "Rules and Regulations Governing Construction, Demolition and all Excavation" as adopted by the Safety Codes Commission of the Commonwealth of Virginia, and all provisions therein contained are hereby included as a part of these Specifications. (A manual setting forth these rules and regulations has been issued by the Department of Labor and Industry and may be obtained by writing he office at P.O. Box 1814, Richmond, Virginia 23214.)

B. Proper safety precautions shall be exercised in all phases of work. The Contractor shall require the use of any techniques or devices necessary to protect both workmen and the general public from injury or loss of life. It shall be the responsibility of the project foreman or superintendent to recognize and correct hazardous conditions whether or not he has received previous direction.

C. The current provisions of Article II of the Rules and Regulations Governing Construction, Demolition, and All Excavation as adopted by the Safety Codes Commission, Commonwealth of Virginia shall apply, in their entirety, to all excavation work occurring in conjunction with the use of these specifications. The following supplemental specifications shall also apply to all excavation work.

D. Storage of Excavated Material: Excavated or other material shall not be stored nearer than two (2) feet from the edge of the excavation.

E. Sheeting and Bracing: The sides of an excavation five (5) feet or more in depth shall either be sloped to the angle of repose of the weakest stratum or be supported by sheeting, bracing, cribbing, shoring, or other safe support systems in accordance with such requirements as specified in Article II of the aforementioned Rules and Regulations. In solid rock, hard shale, or other types of stable materials, Contractor shall exercise appropriate safety measures in accordance with the aforementioned Rules and Regulations.

All materials used for sheeting, bracing, shoring or cribbing shall be in good serviceable condition. Timber shall be sound, free from large or loose knots and comparable in strength to straight grained southern yellow pine or similar timber of comparable strength. Where conditions are encountered which require materials of greater strength or dimensions than as specified in Article II, approval of such materials and their use must be received from the Architect.

F. Personal Protection: The provisions of Article VII of the aforementioned Rules and Regulations shall apply to insure the protection of workmen from hazards created by conditions to which workers are exposed. In addition to exercising all practical control to eliminate such hazards, or reduce them to a minimum, the Contractor shall also issue personal protection equipment, such as hard hats, safety goggles, etc., where indicated by working conditions.

G. Explosives: The provisions of the County Fire Code in conjunction with the Rules and Regulations Governing Manufacture, Storage, Handling, Use and Sale of Explosives as adopted by the Safety Code Commission of the Commonwealth of Virginia shall be strictly adhered to on all projects. Violators of any portion of these codes shall be prohibited from performance of further work until compliance with the codes is obtained (Copies of these Rules and Regulations may be obtained from the Department of Labor and Industry, P. O. Box 1814, Richmond, Virginia 23214.

H. Public Protection: The provisions of Article X of the Rules and Regulations Governing Construction, Demolition, and All Excavation shall apply to insure adequate and safe protection to the general public whenever construction work is readily accessible to the public.

END OF SECTION 333000

ATTACHMENT B
PRICING SCHEDULE

IFB #025-001

PRTC FUEL STORAGE TANKS AND FUEL DISPENSERS REPLACEMENT

NAME OF BIDDER OR CONTRACTOR:	**SOLICITATION OR CONTRACT NUMBER:**
Type Contractor Name Here	**025-001**

SCOPE OF WORK

The Contractor shall provide all manpower, materials, tools, supplies, and all equipment incidental to and necessary to perform replacement of the underground fuel tanks in accordance with the contract provisions, specifications, and drawings.

Item No.	Description	Est Qty	Unit	Unit Price	Price
1	Mobilization	1			
2	General conditions	1			
3	Utility protection	1			
4	Erosion & Sediment control	1			
5	Excavation	1			
6	Demolition and Material Haul off and disposal	1			
7	Removal of existing tank system	1			
8	Removal of the fuel dispensers and/or the Veeder Root system	1			
9	Two (2) foot undercut	1			
10	Proposed Fuel Tanks Materials	1			
11	Proposed Fuel Tanks Installation	1			
12	Proposed fuel dispensers and/or the Veeder Root system Materials	1			
13	Proposed fuel dispensers and/or the Veeder Root system Installation	1			
14	Fill material and earthwork	1			
15	Temporary above ground fuel tank and fencing	1			
16	Subbase and concrete	1			
17	Subbase and asphalt	1			
	TOTAL PRICE				

ATTACHMENT C
REFERENCE FORM

Describe previous work experience for at least five (5) engagements that are similar in service type, size, scope, and/or complexity in the past five (5) years. Please make additional copies of this sheet and use one for each reference. Information shall include, but is not limited to, the following:

Client Company's Name _____

Contact Name _____ Telephone Number _____

Fax Number _____

Address _____

_____

Type of business, if not public transportation _____

Detailed scope of services

_____

_____

_____

_____

Beginning and ending dates _____

Contract value $_____

Other information:

_____

_____

_____

_____

_____

ATTACHMENT D
IFB SUBMISSION FORM

IFB Number: **No. 025-001** Bids Due: **October 15, 2024 at 2pm**

Name of IFB: **PRTC Fuel Storage Tanks and Dispensers Replacement**

SECTION I - COMPANY IDENTIFICATION AND OWNERSHIP DISCLOSURE

Company _____ Contact Person _____
Address _____ Title _____
_____ Telephone No. _____
Remittance Address _____ FAX No. _____
_____ Email _____

Indicate Which Apply:
___Corporation ___Partnership ___Sole Proprietorship ___Small Business

___Disadvantaged Business Enterprise (DBE) Certified by: _____

Organized under the laws of the State of _____ Age of Firm:_____ years
Principal place of business at _____

Annual gross Receipts: Indicate by checking X the appropriate block that applies to your firm:

____ Less than $7,500,000 ____ More than $7,500,000

Following are the names and addresses of all persons having an ownership interest of 3% or more in the company: (Attach more sheets if necessary)

_____ _____
_____ _____

SECTION III - CONFLICTS OF INTEREST

This solicitation is subject to the provisions of Va. Code §§ 2.2-3100, *et seq.*, the "State and Local Government Conflicts of Interest Act."

The Offeror **is** [ ] **is not** [ ] aware of any information bearing on the existence of any potential organizational conflict of interest.

ATTACHMENT D (continued)
IFB SUBMISSION FORM

SECTION IIII – COLLUSION

I certify that this offer is made without prior understanding, agreement, or in connection with any corporation, firm, or person submitting an offer for the same services, materials, or equipment, and is in all respects fair and without collusion or fraud. I understand collusive bidding is a violation of the State and Federal law and results in fines, prison sentences, and civil damage awards. I hereby certify that the responses to the above representations, certifications, and other statements are accurate and complete. I agree to abide by all conditions of this Invitation for Bid and certify that I am authorized to sign for the Bidder.

Signature _____ Date _____

Name (Printed) _____ Title _____

BIDDER MUST RETURN THIS COMPLETED FORM WITH BID SUBMISSION

ATTACHMENT E

INSURANCE REQUIRED CHECKLIST

X = Required Coverage, Indicate compliance in blank with Yes/No

COVERAGE REQUIRED					LIMITS (FIGURES DENOTE MINIMUM)	
Yes	No*	Required				
___ ___ ___ ___ ___ ___ ___	___ ___ ___ ___ ___ ___ ___	X X X	1.	Workers' Compensation and Employers' Liability; Admitted in Virginia Employer's Liability All Sates Endorsement USL&H Endorsement Voluntary Compensation	1.	Statutory Limits of the Commonwealth of Virginia: Yes $100,000
___ ___ ___ ___ ___ ___ ___	___ ___ ___ ___ ___ ___ ___	X X X X X	2.	General Liability Products Complete Operations Contractual Liability Personal Injury Independent Contractors XCU Prop. Damage Excl.	2.	$1,000,000 Combined Single Limit Bodily Injury and Property Damage Each Occurrence
___ ___ ___	___ ___ ___	X X	3.	Automobile Liability Owned, Hired & Rented Motor Carrier Act End.	3.	$1,000,000 Combined Single Limit Bodily Injury and Property Damage Each Occurrence
___	___	X	4.	Professional Errors and Omissions	4.	$1,000,000 Per Claim & Aggregate Limit
___	___		5.	Garage Liability	5.	
___	___		6.	Garage keepers' Legal Liability	6.	
___	___		7.	Fire Legal Liability	7.	
___	___		8.	Other Insurance:	8.	
___	___	X	9.	PRTC named as additional insured on General Liability (This coverage is primary to all other coverage's PRTC may possess)	9.	
___	___	X	10.	30-day cancellation notice required	10.	
___	___	X	11.	Best's Guide Rating - A:VI or Better, or Equivalent	11.	
___	___	X	12.	The Certificate must state IFB No. 025-001 and IFB Title	12.	
___	___	X	13.	Environmental Liability Coverage	13.	$1,000,000 Limit
___	___	X	14.	Umbrella Liability	14.	$2,000,000 Limit per Occurrence

ATTACHMENT F
BID BOND FORM

IFB No. 025-001 **Bond No._____**

KNOW ALL MEN BY THESE PRESENTS: That_____ _____, the Contractor ("Principal") whose principal place of business is located at_____and____("Surety") whose address for delivery of 'Notices' is located at_____are held and firmly bound unto the Potomac and Rappahannock Transportation Commission as, the Owner ("Obligee") in the amount of five percent (5%) of the Amount (Total Base Bid inclusive of all Cost Items) Bid by Principal, for the payment whereof, Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for _____.

NOW, THEREFORE, the conditions of this obligation are as follows. This Bid Bond shall guarantee that the Principal will not withdraw his bid during the period of sixty (60) days following the opening of bids unless extended by mutual consent of all parties in accordance with the terms of the Invitation For Bid No. 025-001 ("IFB"); that if his bid is accepted, Principal will enter into a formal contract with the Owner in accordance above mentioned IFB and Bidding Documents; that Principal will submit a properly executed and authorized Standard Performance Bond and Standard Labor and Material Payment Bond on the forms included in the IFB documents; and that in the event of the withdrawal of said bid within said period, or failure to enter into said contract and give said bonds within ten (10) days after Principal has received notice of acceptance of his bid, Principal and Surety shall be jointly and severally liable to the Owner for the difference between the amount specified in said bid and such larger amount for which the Owner may contract with another party to perform the work covered by said bid, up to the amount of the bid guarantee. This amount represents the damage to the Owner of account of the default of the bidder in any particular thereof.

The Surety represents to the Principal and to the Obligee that it is legally authorized to do business in the Commonwealth of Virginia.

Signed and sealed this day of

_____

Contractor / Principal **(SEAL)**

_____ By:_____

Witness Typed Name:_____

Title: _____

_____

Surety **(SEAL)**

By:_____

Attorney-in-Fact

Typed Name: _____

(Attach Power of Attorney)

ATTACHMENT G
SAMPLE CONTRACT
Potomac and Rappahannock Transportation Commission
Services Contract

CONTRACT: **#025-001**

SUBJECT: PRTC Fuel Storage Tanks and Dispensers Replacement

Between:

Potomac and Rappahannock Transportation Commission, aka OMNIRIDE
14700 Potomac Mills Road
Woodbridge, VA 22192

and the Contractor:

_____
_____
_____

This Contract is entered into this ____ day of _____, 2024, by and between the Potomac and Rappahannock Transportation Commission aka OMNIRIDE, or its authorized agents, and the Contractor identified above for supplies and services identified herein, on the following terms and conditions. This Contract is prepared in accordance with the Virginia Public Procurement Act, Va. Code §§ 2.2-4300, *et seq*., which is incorporated herein by reference.

SECTION I

SPECIAL PROVISIONS

I.1 Definitions

"Potomac and Rappahannock Transportation Commission" or "PRTC" shall mean the Potomac and Rappahannock Transportation Commission authorized by the Virginia Public Procurement Act or other law to enter into contracts.

"Contract Administrator" - Matters relating to prices, terms and conditions, period of performance, qualities to be supplied, delivery schedule and financial adjustments shall be handled through the Contractor Administrator. The Contract Administrator for this Contract for PRTC is LaWana Glymph, Contract Specialist.

"Project Manager" (PM) assists in monitoring the work under the contract. The PM is responsible for the day-to-day clarifications and guidance of Contractor's personnel as may be required under the Contract. The PM for this Contract is Vince Walker, Facility Manager.

"Contracting Officer" for this Contract is the PRTC Executive Director Dr. Bob Schneider ("PRTC Executive Director"/"Executive Director").

"Contractor" shall mean:

_____
_____
_____

whose authorized representative is _____, who is responsible for the performance obligation of the Contractor under this Contract.

I.2 Contract Term

The term of this Contract shall be until the successful completion of all work as outlined in the Scope of Work, site plans, drawings and technical specifications. The term of this Contract will begin upon execution of the Contract.

I.3 Incorporation of Documents

The following documents are hereby incorporated by reference into this Contract:

1. PRTC's Solicitation Number IFB No. 025-001, entitled "PRTC Fuel Storage Tanks and Dispensers Replacement," and dated August 27, 2024.
2. Contractor's Bid Response dated, _____.

I.3b Precedence of Terms

In the event of an inconsistency between the above-referenced documents, the inconsistency shall be resolved by the following order of precedence:

a. The Virginia Public Procurement Act, Va. Code §§ 2.2-4300 et seq.

b. PRTC Public Procurement Policy and Procedures Manual

c. This executed Contract #025-001,

d. Invitation for Bids, No. 025-001, entitled "PRTC Fuel Storage Tanks and Dispensers Replacement," and dated August 27, 2024.

e. Contractor's Response dated, _____.

I.4 Provision of Services

The Potomac and Rappahannock Transportation Commission (PRTC) is soliciting bids from a qualified and experienced Contractor to replace the existing underground fuel storage tanks, fuel dispensers, and fuel management system at the fuel island in the Bus Yard located at the PRTC Transit Center, 14700 Potomac Mills Road, Woodbridge, Virginia 22192, as described herein and further outlined in Scope of Work.

I.5 Contract Amount

In return for the services identified above, and subject to the "Non-Appropriation of Funds" clause herein, PRTC certifies that sufficient funds are budgeted and appropriated and shall compensate the Contractor for service at the rates outlined on the pricing schedule attached to this contract.

I.6 Method of Payment

The Contractor shall submit invoices identifying the services performed. The invoice should cite the Purchase Order Number, Contract Number, and date of services.

PRTC will make payment to the Contractor, net 30 days or in accordance with discount terms, if offered, after receipt of an acceptable invoice.

I.7 Time of the Essence and Completion

Time shall be of the essence to this Contract, except where it is specifically provided to the contrary.

I.8 Key Personnel

PRTC Key Personnel:

1. Vince Walke**r**, Project Manager, vwalker@omniride.com, 703-580-6150

The Contractor shall assign to this Contract the following key personnel:

_____

_____

During the period of performance, the Contractor shall make no substitutions of key personnel unless approved in writing by the Contract Administrator.

The Contractor shall provide a detailed explanation of the circumstances necessitating the proposed substitutions, complete resumés for the proposed substitutes, and any additional information requested by the Contract Administrator. Proposed substitutes should have comparable qualifications to those of the persons being replaced. The Contract Administrator will notify the Contractor within 15 calendar days after receipt of all required information of the decision on substitutions. This clause will be modified to reflect any approved changes of key personnel.

I.9 Insurance

The Contractor shall maintain insurance shall otherwise comply with the Insurance Requirements set forth in the following numbered paragraphs, plus the coverages and limits indicated on the "Insurance Checklist."

1. The Contractor shall be responsible for its work and every part thereof, and for all materials, equipment, and property of any and all description used in connection therewith. The Contractor assumes all risks of direct and indirect damage or injury to any person or property wherever located, resulting from any action, omission, commission, or operation under the Contract, or in connection in any way whatsoever with the Contract work.

2. The Contractor shall, during the continuance of all work under the Contract provide and agree to maintain Insurance Requirements as provided on the Insurance Checklist (**Attachment E**) and in Section III.15 of IFB No. 025-001, PRTC Fuel Storage Tanks and Dispensers Replacement.

1.10 Hold Harmless, Indemnify, and Defend PRTC

The Contractor agrees to indemnify, defend at its own expense, and hold harmless PRTC, its officers, agents, employees, and volunteers, from any and all claims for property damage, bodily injuries, and personal injuries, including cost of investigation, all reasonable attorney's fees, and the cost of appeals arising out of any such claims or suits, because of any and all acts or omissions of the Contractor, including its agents, subcontractors, employees and volunteers, in connection with work under this Contract.

SECTION II

GENERAL PROVISIONS

II.1 Assignability of Contract

Neither this Contract, nor any part hereof, may be assigned by the Contractor to any other party without the prior express written permission of PRTC.

II.2 Modifications or Changes to the Contract

All modifications and changes to the Contract shall be in writing.

The PRTC Executive Director shall, without notice to any sureties, have the authority to order changes in this Contract which affect the cost or time of performance. Such changes shall be ordered in writing specifically designated to be a "Change Order." Such orders shall be limited to reasonable changes in the services to be performed or the time of performance; provided that the Contractor shall not be excused from performance under the changed contract by failure to agree to such changes, and it is the express purpose of this provision to permit unilateral changes in the Contract subject to the conditions and limitations herein.

The Contractor need not perform any work described in any change order unless it has received a certification from PRTC that there are funds budgeted and appropriated sufficient to cover the cost of such changes.

The Contractor shall make a demand for payment for completed changed work within 30 days of receipt of a change order, unless such time period is extended in writing, or unless the Executive Director requires submission of a cost proposal prior to the initiation of any changed work or supplies. Later notification shall not bar the honoring of such claim or demand unless PRTC is prejudiced by such delay.

No claim for changes ordered hereunder shall be considered if made after final payment in accordance with the Contract.

II.3 Employment Discrimination

1. During the performance of this Contract, the Contractor agrees as follows:

    a. The Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, sexual orientation, gender identity, national origin, age, disability, status as a service-disabled veteran, or any other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the

Contractor. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment notices setting forth the provision of this nondiscrimination clause.

b. The Contractor, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, will state that such Contractor is an equal opportunity employer.

c. Notices, advertisements, and solicitations placed in accordance with Federal law, rule, or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.

2. The Contractor will include the provisions of the foregoing paragraphs a, b, and c in every subcontract or purchase order over $10,000, so that the provisions will be binding upon each subcontractor or Contractor.

II.4 Drug-free Workplace to be Maintained by Contractor

During the performance of this Contract, the Contractor agrees to (i) provide a drug-free workplace for the Contractor's employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the Contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition; (iii) state in all solicitations or advertisements for employees placed by or on behalf of the Contractor that the Contractor maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses in every subcontract or purchase order over $10,000, so that the provisions will be binding upon each subcontract or Contractor.

For the purposes of this section, "drug-free workplace" means a site for the performance of work done in connection with a specific Contract awarded to a Contractor in accordance with this chapter, the employees of whom are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession, or use of any controlled substance or marijuana during the performance of this Contract.

II.5 Claims/Disputes

Contractual Disputes and Claims: In accordance with Va. Code § 2.2-4363, this provision shall be followed for consideration and handling of all disputes and claims by the Contractor under this Contract. Va. Code § 2.2-4365 is not applicable to this Contract. Under no circumstances is this section an administrative appeals procedure governed by Va. Code § 2.2-4365.

Notice of the intent to submit a claim setting forth the basis for any claim shall be submitted in writing within ten (10) business days after the occurrence or the event giving rise to the claim or within ten (10) business days of discovering the condition giving rise to the claim, whichever is

later. In no event shall any claim arising out of this Contract be filed after submission of the request for Final Payment by the Contractor.

Claims by the Contractor with respect to this Contract shall be submitted in writing in the first instance for consideration by the Contract Administrator. The decision of the Contract Administrator shall be rendered in writing within 30 calendar days from the receipt of the claim from the Contractor. If the Contractor is not satisfied with the decision or resolution of the Contract Administrator, the Contractor may file a formal dispute with regard to the claim with the PRTC Executive Director within 30 calendar days of the decision of the Contract Administrator. The Executive Director shall reduce his/her decision to writing and shall mail or otherwise furnish a copy of its decision to the Contractor within 30 days of the receipt of the claim from the Contractor. The decision of the Executive Director shall be final and binding.

Should any decision-maker designated under this procedure fail to make a decision on a claim within the time period specified, then the claim is deemed to have been denied by the decision-maker. Pending a final determination of a claim, the Contractor shall proceed diligently with the performance of the work under this Contract.

In accordance with the provisions of Va. Code § 2.2-4363, full compliance with the disputes and claim resolution procedure set forth in this Section shall be a precondition of the filing of any lawsuit by the Contractor against the Commission arising out of the Contract.

II.6 Termination for Convenience of the Potomac and Rappahannock Transportation Commission

The parties agree that PRTC may terminate this Contract, or any work or delivery required hereunder, from time to time either in whole or in part, whenever the PRTC Executive Director shall determine that such termination is in the best interests of PRTC.

Termination, in whole or in part, shall be affected by delivery of a Notice of Termination signed by the Executive Director or his designee, mailed or delivered to the Contractor, and specifically setting forth the effective date of termination.

Upon receipt of such Notice, the Contractor shall:

1. cease any further deliveries or work due under this Contract, on the date, and to the extent, which may be specified in the Notice;

2. place no further orders with any subcontractors except as may be necessary to perform that portion of this Contract not subject to the Notice;

3. terminate all subcontracts except those made with respect to Contract performance not subject to the Notice;

4. settle all outstanding liabilities and claims which may arise out of such termination, with the ratification of the Executive Director; and

5. use its best efforts to mitigate any damages which may be sustained by it as a consequence of termination under this clause.

After complying with the foregoing provisions, the Contractor shall submit a termination claim, in no event later than six (6) months after the effective date of its termination, unless an extension is granted by the Executive Director.

PRTC shall pay reasonable costs of termination, including a reasonable amount for profit on supplies or services delivered or completed. In no event shall this amount be greater than the original Contract price, reduced by any payments made prior to Notice of Termination and further reduced by the price of the supplies not delivered, or the services not provided. This Contract shall be amended accordingly, and the Contractor shall be paid the agreed amount.

In the event that the parties cannot agree on the whole amount to be paid to the Contractor by reason of termination under this clause, PRTC shall pay to the Contractor the amounts determined as follows, without duplicating any amounts which may have already been paid under the preceding paragraph of this clause:

1. With respect to all Contract performance prior to the effective date of Notice of Termination, the total of:

    a. cost of work performed or supplies delivered;

    b. the cost of settling and paying any reasonable claims as provided in subparagraph (4) above;

    c. a sum as profit on (a) determined by the Executive Director to be fair and reasonable.

2. The total sum to be paid under (a) above shall not exceed the Contract price, as reduced by the amount of payments otherwise made, and as further reduced by the Contract price of work or supplies not provided. In the event that the Contractor is not satisfied with any payments, which the Executive Director shall determine to be due under this clause, the Contractor may appeal any claim in accordance with the "Claims and Disputes" clause of this Contract.

The Contractor shall include similar provisions in any subcontract and shall specifically include a requirement that subcontractors make all reasonable efforts to mitigate damages which may be suffered. Failure to include such provisions shall bar the Contractor from any recovery from PRTC whatsoever of loss or damage sustained by a subcontractor as a consequence of termination for convenience.

II.7 Termination for Default

Either party may terminate this Contract, without further obligation, for the default of the other party or its agents or employees with respect to any agreement or provision contained herein.

II.8 Examination of Records

The Contractor agrees that PRTC, or any duly authorized representative, shall, until the expiration of three (3) years after final payment hereunder, have access to and the right to examine and copy any directly pertinent books, documents, papers and records of the Contractor involving transactions related to this Contract.

The Contractor further agrees to include in any subcontract for more than $10,000 entered into as a result of this Contract, a provision to the effect that the subcontractor agrees that PRTC or any duly authorized representative shall, until the expiration of three (3) years after final payment under the subcontract, have access to and the right to examine and copy any directly pertinent books, documents, papers and records of such Contractor involved in transactions related to such subcontract, or this Contract. The term "subcontract" as used herein shall exclude subcontracts or purchase orders for public utility services at rates established for uniform applicability to the general public. The period of access provided herein for records, books, documents and papers which may relate to any arbitration, litigation, or the settlement of claims arising out of the performance of this Contract or any subcontract shall continue until any appeals, arbitration, litigation or claims shall have been finally disposed of.

II.9 Termination for Non-Appropriation of Funds

If funds are not appropriated for any succeeding fiscal year subsequent to the one in which this Contract is entered into, for the purposes of this Contract, then PRTC may terminate this Contract upon thirty (30) calendar days prior written notice to the Contractor. Should termination be accomplished in accordance with this Section, PRTC shall be liable only for payments due through the date of termination.

II.10 Payments to Subcontractors

In the event that the Contractor utilizes a subcontractor for any portion of the work under this Contract, the Contractor hereby agrees to:

1. The Contractor shall take one of the two following actions within seven (7) business days after receipt of amounts paid to the Contractor by PRTC for work performed by a subcontractor under the Contract.

    a. Pay a subcontractor for the proportionate share of the total payment received from PRTC attributable to the work performed by that subcontractor under the Contract; or

b. Notify PRTC and any subcontractors, in writing, of its intention to withhold all or a part of the subcontractors payment with the reason for nonpayment.

c. The prime Contractor agrees further to return retainage payments to each subcontractor within seven (7) business days after subcontractor's work is satisfactorily completed. Work is satisfactorily completed when all the tasks called for in the subcontract have been accomplished and documented as required.

2. The Contractor shall be obligated to pay interest to a subcontractor on all monies owed by the Contractor that remain unpaid after seven (7) business days following receipt by the Contractor of payment from PRTC for work performed by a subcontractor under the Contract, except for amounts withheld under subsection 1.b. of this section. The Contractor's obligation to pay an interest charge to a subcontractor pursuant to the provisions of this section may not be construed as an obligation by PRTC. A contract modification may not be made for the purpose of providing reimbursement for any such interest charge. A cost reimbursement claim may not include any amount for reimbursement for such interest charge.

3. Unless otherwise provided under the terms of this Contract, interest shall accrue at the rate of one percent (1%) per month.

4. The Contractor is hereby required to include in each of its subcontracts a provision requiring each subcontractor to otherwise be subject to the same payment and interest requirements set forth in subsection 2 and 3 of this section with respect to each lower-tier subcontractor.

II.11 Ethics in Public Contracting

The Contractor hereby certifies that it has familiarized itself with Article 6 of Title 2.2 of the Virginia Public Procurement Act, Va. Code §§ 2.2-4367 through 2.2-4377, and that all amounts received by it, pursuant to this Procurement, are proper and in accordance therewith.

II.12 Governing Law and Forum

This Contract and any disputes hereunder shall be governed by the Constitution and laws of the Commonwealth of Virginia. Any legal action arising out of or related to this Contract shall be filed in a state court located in Prince William County, Virginia, or the United States District Court for the Eastern District of Virginia, Alexandria Division, to the exclusion of the courts of any other jurisdiction.

II.13 Integration

This Contract shall constitute the whole agreement between the parties. There are no promises, terms, conditions or obligations other than those contained herein, and this Contract shall supersede all previous communications, representations or agreements, written or verbal, between the parties hereto.

II. 14 Force Majeure

If either party to this Contract is rendered unable, wholly or in part, to carry out its obligations under this Contract in a timely manner by reason of some cause beyond the control and without the fault or negligence of the Party that amounts to Force Majeure, such party shall give to the other party prompt written notice within in five (5) business days thereof with reasonably full particulars, and if undisputed, the obligation of the party giving notice to perform its obligations shall be suspended during, but no longer than, the continuance of the Force Majeure, and such party shall act diligently to remove the Force Majeure as soon as practical and to reschedule the work or take such other action as is reasonable necessary to mitigate any delay.

For the purposes of this section, Force Majeure shall mean:

(a) An act of way, whether or not declared, civil war, insurrection, riot, acts of terrorism, or any condition incident to the foregoing.

(b) Acts of the Federal or State government or the entry of a court order, intended to, or having the effect of stopping or delaying the work.

(c) An Act of God which for the purposes of this section shall mean an earthquake, flood, cyclone, or other cataclysmic phenomenon of nature or pandemic beyond the power of the party to foresee or make preparation in defense of. The performance of the work shall not be adjusted for normal inclement weather.

II.15 Immigration and Control Act of 1986

Pursuant to Va. Code § 2.2-43311.1, the Contractor certifies that it does not, and shall not during the performance of the Contract, knowingly employ an unauthorized alien as defined in the federal Immigration Reform and Control Act of 1986.

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POTOMAC AND RAPPAHANNOCK TRANSPORTATION COMMISSION

CONTRACTOR:

_____
Executive Director/ Contracting Officer

_____
Contractor Representative

_____
Date

_____
Title

_____
Date

APPROVED AS TO FORM PRTC/OMNIRIDE ATTORNEY

_____
Attorney's Signature

_____
Date