

SITE DEVELOPMENT PLAN INSPECTION SEQUENCE NOTES

- 1. Contractor shall notify the Carroll County Bureau of Permits and Inspections at 410-386-2674, at least one day prior to beginning any work.
2. Contractor shall obtain a utility permit prior to initiating storm drain construction in Dickenson Road.
3. Site compliance inspections are required at the following stages during construction:
(a) Proposed structures staked out in proper locations as shown on these approved plans.
(b) Proposed foundations installed for all buildings shown on these approved plans.
(c) Sub-grades established for all drives, parking lots, and surrounding grading.
(d) Completion of all drives, parking lots, and surrounding grading.
(e) Completion of all work shown on plans.
It is the Contractor's responsibility to contact the Carroll County Bureau of Permits and Inspections at 410-386-2674 upon completion of each phase of construction.
4. Contractor shall notify Carroll County Bureau of Resource Management, Environmental Inspection Services Division at 410-386-2210 prior to beginning any work. All forest conservation plan devices must be in place prior to any construction.
5. Final landscaping inspection shall be arranged through Bureau of Resource Management, Environmental Inspection Services Division at 410-386-2210 by the contractor/developer or agent. Written approval from the Landscape Review Specialist, Bureau of Resource Management, must be obtained for any deviations from the landscaping or forest conservation plans or modifications in the plant material.
6. The contractor shall not proceed to the next phase of construction until given approval of prior phases.

CONSTRUCTION INSPECTION NOTE

Entrance construction is subject to inspection and approval by the Carroll County Department of Public Works, Construction Inspection Division. Contractor is responsible to notify that office at 410-386-2712 a minimum of three working days prior to beginning work in or along any public road.

The Contractor shall notify the Carroll County Department of Public Works, Construction Inspection Division (410-386-2712) a minimum of three (3) working days before beginning work.

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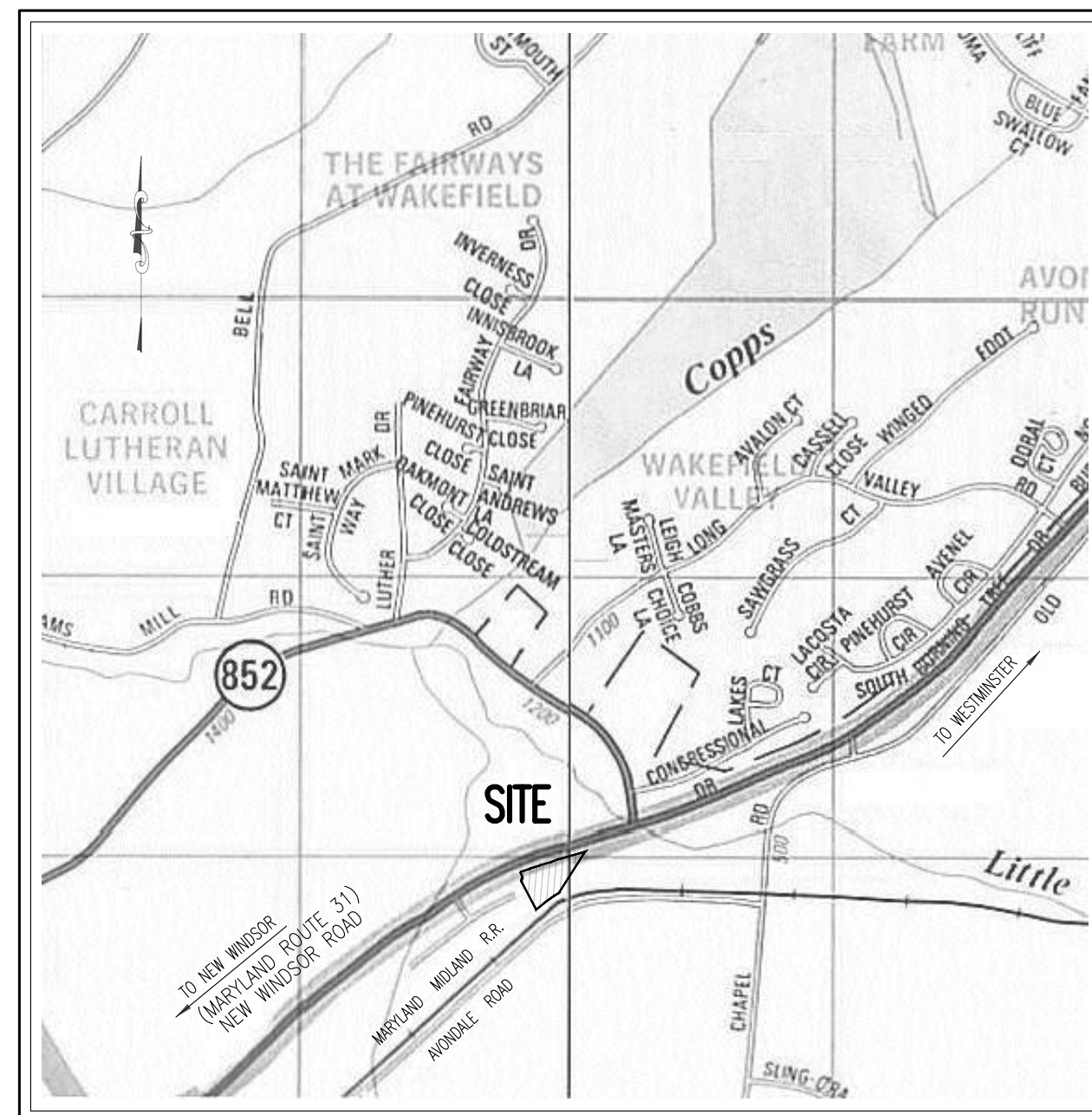
SITE DEVELOPMENT PLAN for GREAT VALLEY PROPANE

EXISTING USE: VACANT PROPOSED USE: 40-SEAT RESTAURANT

adjacent to #1201 New Windsor Road near Westminster, Carroll County, Maryland
7th Election District

NOTE:

The purpose of this site development plan is to construct (2) 30,000 gallon tanks for storage, sales and distribution of liquid propane and a future 40'-0" x 80'-0" building for office space.



VICINITY MAP

Scale 1" = 1/4 MILE

CARROLL COUNTY ADC MAP #18 GRID: K-8

COPYRIGHT ADC THE MAP PEOPLE PERMITTED USE NUMBER 21096444

GENERAL NOTES:

- 1. Current Title References:
Owner: route309, LLC, a Pennsylvania limited liability company
Deed Reference: H.D. Liber 10927, Folio 420
Date: November 2, 2022
Grantor: Development Company of America, LLC, a Maryland limited liability company
Plat: Lot #3 - Plat of Lot 3 and First Amendment Plat of Lot 2, Section 2 of 'Development Company of America Property' Plat Book 31-180 2.4923 acres.
2. Owner: 'route309, LLC'
195 Lancaster Avenue
Malvern, Pennsylvania 19355
Developer: Great Valley Propane
195 Lancaster Avenue
Malvern, Pennsylvania 19355
c/o Bud Haly Phone: (610) 656-2097
3. Tax Map: 45 Block: 15 p/o Parcel: 539 Tax Account No: 07-111932
4. Zoning of Property: I-2 - Heavy Industrial District
Minimum Building Setbacks:
Front Yard = 10 feet Side Yard = 20 feet Rear Yard = 20 feet
Maximum Building Height = 50 feet
5. Total Disturbed Area = 81,060 square feet (1.861 acres +/-)
6. Usage and Building Area:
Proposed Use: Storage, sales and distribution of liquid propane
Proposed Construction: (2) 30,000 gallon tanks for storage, sales and distribution of liquid propane and a future 40'-0" x 80'-0" building for office space and
7. Parking Requirements: 1 parking spaces per 1.5 employees (Industrial Use)
Parking Required = (3 employees) x (1 space / 1.5 employees) = 2 parking spaces
Parking Provided = 6 standard (9'x20') spaces plus 1 A.D.A. accessible space = 7 parking spaces
8. Fire Protection: There is a public fire hydrant located 825 feet southwest of the property at the intersection of Byron Road and New Windsor Road (MD RTE 31).
9. Water: Public - WESTMINSTER DISTRICT - Water Service Category W-5 - Future (7-10yr)
Sewer: Public - WESTMINSTER DISTRICT - Sewer Service Category S-1 - Existing/Final Planning
10. Topography in the project area shown hereon was field run on October 10, 2023 by Leon A. Podolak & Associates, L.L.C. and is based on the Maryland Coordinate System (NAD83).
11. Sign Tabulation: Permitted Sign area is 4 square feet per linear foot of building frontage. Permitted Sign Area = (4 sq ft/ LF) (40 LF) = 160 square feet
12. This site plan shall become null and void eighteen months after the date of written approval by the Carroll County Planning Commission, unless a building permit or zoning certificate has been issued for the project. In the event the building permit or zoning certificate is revoked or is terminated prior to the issuance of a final use-and-occupancy certificate, the site plan becomes void on the date of the revocation or termination. At the written request of the Developer/Owner, the Director may grant an extension.
13. A "Stormwater Management Easement and Maintenance Agreement" is to be granted to the County Commissioners of Carroll County as an easement of access to the County Commissioners or authorized representatives by a deed intended to be recorded simultaneously with the Public Works Agreement.
14. Any changes to this plan will require an Amended Site Development Plan to be approved by the Carroll County Planning and Zoning Commission.

ZONING CASE SUMMARY:

A request for a conditional use for propane storage tank(s), larger than 2,000 gallons on the property was approved by the Carroll County Board of Zoning Appeals on April 28, 2023 in Case# 6445.

- 1. Applicable Provisions of the Carroll County Code of Ordinances: §158.082, §158.040, and §158.157.

ESTIMATED TRIP GENERATION:

The following trip generation data was calculated using trip generation rates, plots and equations presented in the Tenth Edition of the Institute of Transportation Engineers Trip-Generation Manual.

Category: Light Industrial (110)
Independent Variable Used: Acreage of the Property
Area of Lot #3 = 2.4923 acres±

Average Vehicle Trip Ends on a Weekday = 130 trips
Average Weekday Morning Peak Hour of Generator = 22 trips
Average Weekday Evening Peak Hour of Generator = 22 trips

Developer certification and approval section containing signature lines and dates for Bud Haly, Great Valley Propane, and Peter L. Podolak, P.E.

FINAL LANDSCAPE PLAN - OWNER CERTIFICATION FORM
I certify that I have reviewed this Final Landscape Plan; that I have read and understand the regulations presented in the Carroll County Landscape Manual; and I agree to comply with these regulations and all applicable policy, guidelines and ordinances. I agree to certify the implementation of this approved Final Landscape Plan no later than one (1) year from the date of approval of this plan to the Department of Planning, Bureau of Resource Management, Room 209, 225 N. Center Street, Westminster, MD 21157-5194.

Table with 3 columns: Applicant's Signature, Date, and Print name. Includes Bud Haly and Peter L. Podolak, P.E.

This plan has been reviewed for compliance with the Carroll County Department of Public Works Design Manual - Volume 1 Road and Storm Drains. The design Engineer or Engineer of record is solely responsible for the accuracy of all data and modifications for construction.

OWNERS CERTIFICATION
I/We hereby certify that all proposed work shown on these construction drawings(s) has been reviewed by me/us and that I/We fully understand what is necessary to accomplish this work and that the work will be conducted in strict accordance with these plans. I/We also understand that any changes to these plans will require an amended plan to be reviewed and approved by the Carroll County Planning and Zoning Commission before any change in the work is made. Community water and sewerage facilities will be available to all lots offered for sale.

Table with 3 columns: Signed, Date, and Print name. Includes Bud Haly - Great Valley Propane and Peter L. Podolak, P.E.

Dam Breach Statement
The location of the impoundments of do not present undue risks to downstream properties or life and failure of the embankment will not result in loss of life or in damages that exceed the ability of the owner to pay.

Signature of Landscape Architect or Designer: Peter L. Podolak, P.E., Date: 10-23-2023

Signature: Peter L. Podolak, P.E., Date: 10-23-2023, License No: 19561, Expiration Date: 3-3-2024



CONSTRUCTION NOTES

- 1. Construction shall be performed in accordance with latest editions of the following, including all addenda, supplements or updates:
a. Design Manual - Volume One - Roads and Storm Drains, 1994 edition, of the Carroll County Department of Public Works.
b. Design Guide for Flexible Pavement, 2004, of the Carroll County Department of Public Works.
c. Book of Standards, Highway and Incidental Structures of the Maryland Department of Transportation, State Highway Administration.
d. Standard Specifications for Construction and Materials, 2008 edition, of the Maryland Department of Transportation, State Highway Administration.
e. Maryland Manual on Uniform Traffic Control Devices (MdMUTCD) 2009 Edition of the Maryland Department of Transportation, State Highway Administration.
f. Maryland Standards and Specifications for Soil Erosion and Sediment Control, 1994 edition, published jointly by Water Resources Administration, Soil Conservation Service and State Soil Conservation Committee.
g. Carroll County Department of Public Works - Bureau of Utilities - Regulations and Standard Specifications and Design Details for Water and Sewerage Construction in Carroll County, Maryland.
All of the above noted publications are included by reference as part of these construction plans.
2. The Contractor shall notify the Carroll County Department of Public Works, Construction Inspection Division (410-386-2157) a minimum of three (3) working days before beginning work.
3. Contractor shall furnish, place and maintain traffic control measures as shown in these plans and as specified in the MdMUTCD. Contractor shall immediately remove and replace devices which are damaged, do not function properly, or are determined by Construction Inspector to be unsuitable for their purpose. Traffic control devices may be removed only upon approval of Construction Inspector.
4. Locations of existing utilities are shown only as notification to Contractor of the presence of underground utilities. Carroll County and the design engineer do not warrant or guarantee correctness or completeness of information shown. Contractor is responsible for contacting Miss Utility at 1-800-257-7777 three working days prior to beginning any work in the vicinity of existing utilities. Any damage to existing utilities due to Contractor's operation shall be repaired immediately at Contractor's expense.
5. Developer is responsible in all regards for relocation of any existing utilities.
6. In case of discrepancy between scaled and figured dimensions, figured dimensions shall govern.
7. If for any reason proposed facilities cannot be constructed in accordance with approved plans, Contractor must immediately inform Construction Inspector or Construction Inspection Division (410-386-2157) and shall not begin or continue work on those items. If the Department of Public Works determines plan revisions are necessary, no work shall be performed on the item(s) in question until revised plans issued by the design engineer are approved and issued for construction by the Bureau of Development Review.
8. Failure to mention specifically the provision of any item(s), or performance of any work or procedure which would normally be required to complete the project, shall not relieve the Contractor of his responsibility to provide such item(s) or to perform such work or procedure.
9. Construct earth fills for roads, embankments, and structures in accordance with Section 204 EMBANKMENT AND SUBGRADE of the MD SHA Standard Specifications for Construction and Materials. Compact the material that is 1 foot below the top of subgrade to at least 92.0% of maximum dry density using AASHTO T-180 method. Compaction of top one foot of fill shall not be less than 97.0% of maximum dry density using the same method.
10. Developer is responsible for providing soil, base aggregate and hot mix asphalt compaction testing. A certified technician must be onsite at all times during fill operations. Compaction tests must be certified by a Professional Engineer registered in the State of Maryland. Copies of soil compaction test results must be provided to, and approved by, the Construction Inspection Division prior to placement of curbs and/or base aggregate. Copies of base aggregate compaction test results must be provided to, and approved by, the Construction Inspection Division prior to placement of base hot mix asphalt.
11. Inlet grates in sumps shall be constructed level at elevation given in structure schedule. Inlets on grade shall be adjusted so that slope of grate matches finished flow line of curb. Top elevation shall apply to centerline of grate at flow line of curb. Cross slope of the grate shall match the road cross slope.
12. Pipe elevations shown on storm drain profiles are invert elevations unless otherwise noted.
13. Where ditch or waterway stabilization matting of any type is specified, installation shall be in accordance with manufacturer's recommendations. Matting shall be placed on bottom and side slopes to provide either 1.0' stabilized depth, unless otherwise indicated on plans.
14. All existing paving disturbed by utility cuts shall be replaced in accordance with Carroll County Standard Plate 47, Option 1 or Option 3 in the Design Manual, Volume 1 or as noted in the Utility Permit.
15. Once begun, road construction shall be continued until full depth of aggregate base and paving as shown on the typical section are placed, including the finished surface course. Aggregate base course and hot mix asphalt base course shall not remain uncovered for more than five working days.
16. Off-site borrow material to be imported for embankment construction and support of pavement is to meet the minimum subgrade soil specifications in Table 3 of the Design Guide for Flexible Pavements. CBR testing of off-site borrow material shall be performed and the test results submitted to and approved by the Bureau of Development Review prior to delivery of the material. The paving design sections shown on the approved plans shall be reviewed and evaluated using the CBR testing results of the borrow material. Any changes to the pavement design sections based on the CBR test results shall be incorporated through the red-line revision process.
17. The design Equivalent Single Axle Loads (ESAL) and the design CBR value shall be noted on the construction plans.
18. Permanent signage and striping shall be furnished and installed by the Carroll County Bureau of Roads Operations. Contractor shall notify the Bureau of Roads Operations at 410-386-6717 a minimum of three (3) weeks prior to starting work and then again 48 hours prior to completion of work.
19. Construction vehicles, contractor or private, or construction materials or equipment shall not be parked, placed, or stored within any public right-of-way.

BENCHMARK INFORMATION

CARROLL COUNTY SURVEY CONTROL
Datum (NAD 1983)
NOTE: SEE PLAN VIEW ON SHEET 2 FOR BENCHMARK LOCATIONS.
BM1 - MAG NAL
N 688308.842 E 1300882.886 ELEV. 543.75
MAG NAL set flush with the pavement at the location shown on sheet 2.
BM2 - REBAR
N 688465.629 E 1301235.568 ELEV. 538.17
REBAR flush with the existing ground at the location shown on sheet 2.

\*NOTE: ALL COORDINATE VALUES SHOWN ON THESE PLANS ARE BASED ON THE STATE GRID NORTH AS ESTABLISHED BY THE CARROLL COUNTY SURVEY CONTROL NETWORK. SEE ABOVE FOR BENCHMARK INFORMATION. SUBMITTED FOR THIS CONSTRUCTION SITE. COORDINATE VALUES ARE PROVIDED AS A CONVENIENCE TO THE CONTRACTOR FOR STAKEOUT. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF PLAN AND PROFILE DIMENSIONS PRIOR TO FINAL CONSTRUCTION OF EACH ITEM.

OWNER

"route309, LLC"
195 Lancaster Avenue
Malvern, Pennsylvania 19355

DEVELOPER

Great Valley Propane
195 Lancaster Avenue
Malvern, Pennsylvania 19355
c/o Bud Haly Phone: (610) 656-2097

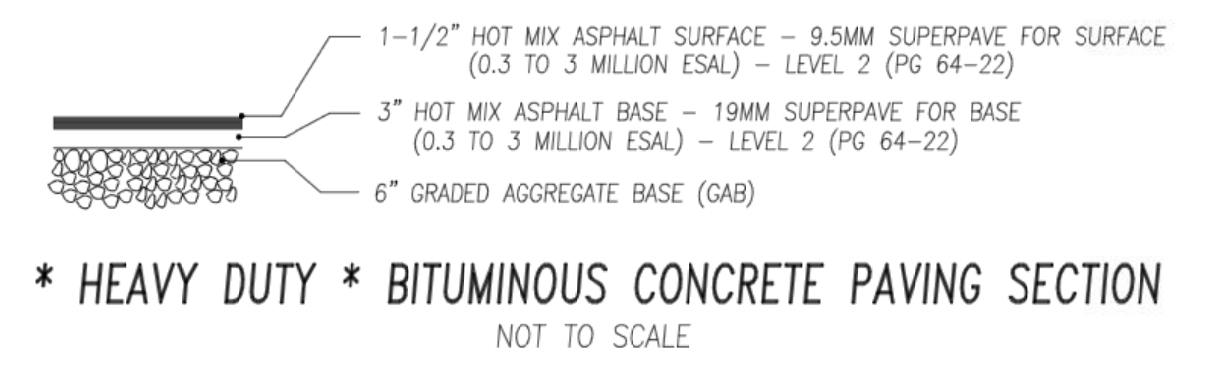
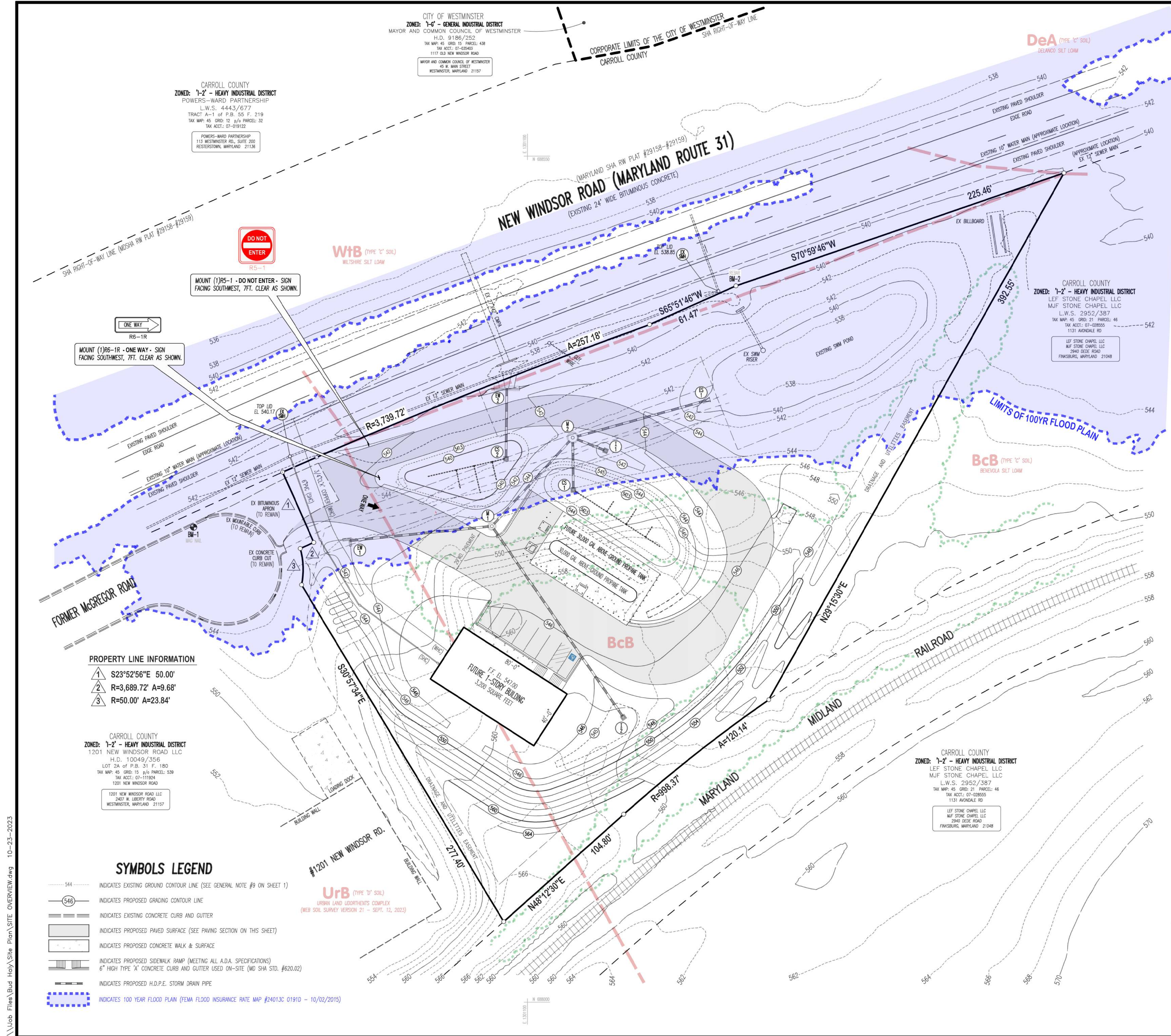
TITLE SHEET



S-23-0015

GREAT VALLEY PROPANE
LOT #3 'DEVELOPMENT COMPANY OF AMERICA' TAX MAP: 45 GRID: 15 p/o PARCEL: 539 TAX ACCT. NO.: 07-111932

Title sheet footer containing sheet number (1 OF 10), surveying and civil engineering seal for Leon A. Podolak and Associates, L.L.C., and revision table.



- REQUIRED SEQUENCE OF CONSTRUCTION:**
- Contact the Carroll County Department of Public Works at (410) 386-2400 at least three working days prior to commencing any work, to schedule a pre-construction meeting and inspections. Contact the Engineer at (410) 876-1226 to arrange for stormwater management inspection. Contact the Geo-Technical Engineer to arrange for compaction inspection and testing of soils. Contact MD SHA District 7 Office at (310) 624-8151 to arrange for inspection of all work in the SHA right-of-way.
  - Upon approval from the Grading Inspector, clear and grub for perimeter sediment control devices and install the Stabilized Construction Entrance, the Earth Dike, and the Super Silt Fence as depicted on the plan and the Sediment Control Plan. Upon approval of the sediment control inspector, clear and grub the remainder of the site.
  - Beginning at ES-1 install the storm drain network from the outfall at ES-1 to the intake Endwall EW-1. At Manholes M-1 and M-2 temporarily plug the holes for other structures at this time by constructing temporary bulkheads. Trench backfill material shall be clean and free of organic material or excessive rock and shall be placed in 8 inch lifts, and compacted to a dry density of 95 percent, as measured by the ASHTO Method T-99. Using the Grading Detail provided in the Inset on Sheet #4, divert clean water runoff from the existing curb cut and from the existing swale on the adjoining lot to Endwall EW-1. Stabilize these graded channels with topsoil and sod in accordance with sodding specifications. Install temporary silt fence as depicted on Sheet #4 and stabilize disturbed areas outside of the silt fence with topsoil seed and mulch.
  - Strip topsoil and stockpile in the location depicted on plan. Stabilize any stockpiled soil in accordance with temporary seeding specifications. Grade site to lines and grades depicted on the plan and remove excess borrow material by hauling it off site. Construct waterway along the southern property lines and stabilize in accordance with plan specifications.
  - Construct Endwall EW-2 and storm drain pipe leading to Control Structure CS-1. Backfill material for the outfall pipe and any fill to create embankments shall conform to Unified Soil Class GC, SD, SM, MH, ML, CH, or CL impervious soils and shall be compacted in 8 inch lifts to a dry density of 95 percent as measured by AASHTO Method T-99. Install Control Structure CS-1 but do not install the underdrain pipe, stone bedding or filter media at this time. Construct a bulkhead for the underdrain pipe and then grade around CS-1, but do not excavate lower than an elevation of 480.00. Install temporary inlet protection per Detail E-9-1, around CS-1, as depicted on the plan.
  - Similarly, install the storm drain piping from Manhole M-2 to Inlet I-1 and to Control Structure CS-2. Backfill material for the outfall pipe from CS-2 and any fill to form embankments shall conform to Unified Soil Class GC, SD, SM, MH, ML, CH, or CL impervious soils and shall be compacted in 8 inch lifts to a dry density of 95 percent as measured by AASHTO Method T-99. Install Control Structure CS-2 but do not install the underdrain pipe, stone bedding or filter media at this time. Construct a bulkhead for the underdrain pipe and then grade around CS-2, but do not excavate lower than an elevation of 481.50. Install temporary inlet protection per Detail E-9-1, as depicted on the plan.
  - Level off the building pad and grade access road, and concrete slab for tanks. The Building itself will be constructed in the future and is designated as Phase 2 Construction. The plan is to provide a building pad for this future construction.
  - Install Concrete Curb and gutter as depicted on the plan. Form and cast the concrete slab for the tanks and install stone pavement base for the access roadways as depicted on the plans.
  - Grade and install the water quality swales, following the details, specification and Required Sequence of Construction for the Water Quality Swale, depicted on this plan. Contact the Engineer for field verification of grades of swales. Upon Engineer's approval, install soil stabilization matting and stabilize swale with topsoil, seed and mulch. Install roof downspouts to 1500 gallon sedimentation tank.
  - Pave parking lot and service road. Fine grade all pervious areas, add topsoil and stabilize in accordance with temporary seeding specifications.
  - Once a healthy 2 inch stand of grass has taken hold over the site, and upon approval of the Engineer, construct the two Micro-Bioretenation facilities, in accordance with the Required Sequence of Construction for these facilities depicted on the plans. Clean out all storm drain inlets and manholes Contact the Engineer for As-Built final inspection and certification of all SWM devices. The Engineer shall then submit "As-Built" drawings to the Carroll County Bureau of SWM for release of bond monies.
  - Upon approval of the Carroll County Sediment Control Inspector, remove all temporary sediment control measures.

CARROLL COUNTY  
ZONED: 1-2 - HEAVY INDUSTRIAL DISTRICT  
POWERS-WARD PARTNERSHIP  
L.W.S. 4443/677  
TRACT A-1 of P.B. 55 F. 219  
TAX MAP 45 GRID 15 PARCEL: 32  
TAX ACCT. 07-019132  
POWERS-WARD PARTNERSHIP  
113 WESTMINSTER RD., SUITE 200  
WESTMINSTER, MARYLAND 21157

CITY OF WESTMINSTER  
ZONED: 1-6 - GENERAL INDUSTRIAL DISTRICT  
MAYOR AND COMMON COUNCIL OF WESTMINSTER  
H.D. 9186/252  
TAX MAP 45 GRID 15 PARCEL: 438  
TAX ACCT. 07-020863  
1117 OLD NEW WINDSOR ROAD  
WESTMINSTER, MARYLAND 21157

DeA (TYPE "C" SOIL)  
DEGRADED SILT LOAM

WtB (TYPE "C" SOIL)  
MULTISHIRE SILT LOAM

CARROLL COUNTY  
ZONED: 1-2 - HEAVY INDUSTRIAL DISTRICT  
LEF STONE CHAPEL LLC  
MUF STONE CHAPEL LLC  
L.W.S. 2952/387  
TAX MAP 45 GRID 21 PARCEL: 46  
TAX ACCT. 07-020864  
1131 AVALONDALE RD  
FINNSBURG, MARYLAND 21048

CARROLL COUNTY  
ZONED: 1-2 - HEAVY INDUSTRIAL DISTRICT  
LEF STONE CHAPEL LLC  
MUF STONE CHAPEL LLC  
L.W.S. 2952/387  
TAX MAP 45 GRID 21 PARCEL: 46  
TAX ACCT. 07-020865  
1131 AVALONDALE RD  
FINNSBURG, MARYLAND 21048

**PROPERTY LINE INFORMATION**

- S23°52'56"E 50.00'
- R=3,689.72' A=9.68'
- R=50.00' A=23.84'

CARROLL COUNTY  
ZONED: 1-2 - HEAVY INDUSTRIAL DISTRICT  
1201 NEW WINDSOR ROAD LLC  
H.D. 10049/356  
LOT 2A of P.B. 31 F. 180  
TAX MAP 45 GRID 15 PARCEL: 539  
TAX ACCT. 07-111924  
1201 NEW WINDSOR ROAD  
WESTMINSTER, MARYLAND 21157

**SYMBOLS LEGEND**

- 544 INDICATES EXISTING GROUND CONTOUR LINE (SEE GENERAL NOTE #9 ON SHEET 1)
- 546 INDICATES PROPOSED GRADING CONTOUR LINE
- INDICATES EXISTING CONCRETE CURB AND GUTTER
- INDICATES PROPOSED PAVED SURFACE (SEE PAVING SECTION ON THIS SHEET)
- INDICATES PROPOSED CONCRETE WALK & SURFACE
- INDICATES PROPOSED SIDEWALK RAMP (MEETING ALL A.D.A. SPECIFICATIONS)
- 6" HIGH TYPE "A" CONCRETE CURB AND GUTTER USED ON-SITE (MD SHA STD. #620.02)
- INDICATES PROPOSED H.D.P.E. STORM DRAIN PIPE
- INDICATES 100 YEAR FLOOD PLAIN (FEMA FLOOD INSURANCE RATE MAP #24013C 0191D - 10/02/2015)

UrB (TYPE "D" SOIL)  
URBAN LAND UPOURTHRETS COMPLEX  
(WEB SOIL SURVEY VERSION 21 - SEPT. 12, 2023)

**SITE OVERVIEW**

GREAT VALLEY PROPANE  
LOT #3 DEVELOPMENT COMPANY OF AMERICA TAX MAP: 45 GRID: 15 p/o PARCEL: 539 TAX ACCT. NO.: 07-111932

**LEON A. PODOLAK and ASSOCIATES, L.L.C.**

SHEET 2 OF 10

DATE: Oct. 23, 2023  
DRAWING NO. AS-23-0015

DATE: Oct. 23, 2023  
DRAWING NO. AS-23-0015

\\Job Files\Bud Holy Site Plan\Site Overview.dwg 10-23-2023

**NEW WINDSOR ROAD (MARYLAND ROUTE 31)**  
(EXISTING 24' WIDE BITUMINOUS CONCRETE)

**SWM ESD M-6 - MICRO-BIORETENTION (CS-1)**  
QUALITATIVE MANAGEMENT FOR 8,884 SQ.FT. OF IMPERVIOUS AREA IS PROVIDED BY MICRO-BIORETENTION.  
TARGET  $P_e = 1.8$  INCHES  $P_e$  PROVIDED = 2.00 INCHES  
ESD VOLUME PROVIDED = 1,454 CU.FT. = 0.0334 AC.-FT.

**SWM ESD M-8 - GRASS SWALE (to INLET I-1)**  
QUALITATIVE MANAGEMENT FOR 7,095 SQ.FT. OF IMPERVIOUS AREA IS PROVIDED BY A GRASS SWALE ( $S_{max}=2.00\%$ ).  
TARGET  $P_e = 1.8$  INCHES  $P_e$  PROVIDED = 0.39 INCHES  
ESD VOLUME PROVIDED = 501 CU.FT. = 0.0115 AC.-FT.  
 $Q_p = 0.25$  CFS  $V_p = 0.37$  FPS  $Q_{10} = 1.71$  CFS  $V_{10} = 2.01$  FPS  
(SEE PROFILE AND SPECIFICATIONS ON SHEET 8)

**SWM ESD M-6 - MICRO-BIORETENTION (CS-2)**  
QUALITATIVE MANAGEMENT FOR 9,334 SQ.FT. OF IMPERVIOUS AREA IS PROVIDED BY MICRO-BIORETENTION.  
TARGET  $P_e = 2.0$  INCHES  $P_e$  PROVIDED = 2.10 INCHES  
ESD VOLUME PROVIDED = 1,565 CU.FT. = 0.0359 AC.-FT.  
(SEE DETAILS AND SPECIFICATIONS ON SHEET 7)

**SWM ESD M-8 - GRASS SWALE (to INLET I-2)**  
QUALITATIVE MANAGEMENT FOR 800 SQ.FT. OF IMPERVIOUS AREA IS PROVIDED BY A GRASS SWALE ( $S_{max}=2.00\%$ ).  
TARGET  $P_e = 1.0$  INCH  $P_e$  PROVIDED = 0.28 INCHES  
ESD VOLUME PROVIDED = 333 CU.FT. = 0.0078 AC.-FT.  
 $Q_p = 0.03$  CFS  $V_p = 0.17$  FPS  $Q_{10} = 1.18$  CFS  $V_{10} = 1.81$  FPS  
(SEE PROFILE AND SPECIFICATIONS ON SHEET 8)

**PROPERTY LINE INFORMATION**  
1  $S23^{\circ}52'56"E$  50.00'  
2  $R=3,689.72'$   $A=9.68'$   
3  $R=50.00'$   $A=23.84'$



**SWM ESD M-8 - GRASS SWALE (to EW-1)**  
QUALITATIVE MANAGEMENT FOR 800 SQ.FT. OF IMPERVIOUS AREA IS PROVIDED BY A GRASS SWALE ( $S_{max}=3.82\%$ ).  
TARGET  $P_e = 1.0$  INCH  $P_e$  PROVIDED = 0.81 INCHES  
ESD VOLUME PROVIDED = 480 CU.FT. = 0.0110 AC.-FT.  
 $Q_p = 0.03$  CFS  $V_p = 0.20$  FPS  $Q_{10} = 1.18$  CFS  $V_{10} = 2.20$  FPS  
(SEE PROFILE AND SPECIFICATIONS ON SHEET 8)

**SYMBOLS LEGEND**

- 544 --- INDICATES EXISTING GROUND CONTOUR LINE (SEE GENERAL NOTE #10 ON SHEET 1)
- 546 --- INDICATES PROPOSED GRADING CONTOUR LINE
- ==== INDICATES EXISTING CONCRETE CURB AND GUTTER
- ==== INDICATES PROPOSED PAVED SURFACE (SEE PAVING SECTION ON SHEET 2)
- ==== INDICATES PROPOSED CONCRETE WALK & SURFACE
- ==== INDICATES PROPOSED SIDEWALK RAMP (MEETING ALL A.D.A. SPECIFICATIONS)
- ==== INDICATES PROPOSED 6" HIGH TYPE "A" CONCRETE CURB AND GUTTER USED ON-SITE (MD SHA STD. #620.02)
- ==== INDICATES PROPOSED H.D.P.E. STORM DRAIN PIPE
- L.O.D. --- INDICATES LIMITS OF DISTURBANCE (81,080 SQ.FT. = 1.861 ACRES±)

**GRADING PLAN**

GREAT VALLEY PROPANE  
LOT #3 'DEVELOPMENT COMPANY OF AMERICA' TAX MAP: 45 GRID: 15 p/o PARCEL: 539 TAX ACCT. NO.: 07-111932

SHEET <b>3</b> OF <b>10</b>	<b>LEON A. PODOLAK and ASSOCIATES, L.L.C.</b>	Date	Revision
		SURVEYING and CIVIL ENGINEERING 147 East Main St. (P.O. Box 266) Westminster, Maryland 21157 (410) 848-2229 - (410) 876-1226  Peter L. Podolak, P.E. Date: Oct. 23, 2023 I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, license no. 19561, expiration date: 3-3-2024.	Date: Oct. 23, 2023

Job Files\Bud Holy Site Plan\SWM DA MAPS and CALCULATIONS.dwg 10-23-2023

**NEW WINDSOR ROAD (MARYLAND ROUTE 31)**  
(EXISTING 24' WIDE BITUMINOUS CONCRETE)

**WtB** (TYPE 'C' SOIL)  
WILTSHIRE SILT LOAM

**DeA** (TYPE 'C' SOIL)  
DELAWARE SILT LOAM

**BcB** (TYPE 'C' SOIL)  
BENEVOLE SILT LOAM

**PROPERTY LINE INFORMATION**  
 1 S23°52'56"E 50.00'  
 2 R=3,689.72' A=9.68'  
 3 R=50.00' A=23.84'

SEE PHASE ONE GRADING AND SEDIMENT CONTROL DETAIL ON SHEET 10.

**SEDIMENT CONTROL PLAN LEGEND**

- 544 --- INDICATES EXISTING GROUND CONTOUR LINE (SEE GENERAL NOTE #9 ON SHEET 1)
- 544 --- INDICATES PROPOSED GRADING CONTOUR LINE
- --- INDICATES EXISTING CONCRETE CURB AND GUTTER
- --- INDICATES PROPOSED PAVED SURFACE (SEE PAVING SECTION ON SHEET 2)
- --- INDICATES PROPOSED CONCRETE WALK & SURFACE
- --- INDICATES PROPOSED SIDEWALK RAMP (MEETING ALL A.D.A. SPECIFICATIONS)
- --- 6" HIGH TYPE 'A' CONCRETE CURB AND GUTTER USED ON-SITE (MD SHA STD. #620.02)
- --- INDICATES PROPOSED H.D.P.E. STORM DRAIN PIPE
- L.O.D. --- INDICATES LIMITS OF DISTURBANCE (81,060 SQ.FT. = 1.861 ACRES±)
- --- INDICATES TEMPORARY STABILIZED CONSTRUCTION ENTRANCE WITH MOUNTABLE BERM. (SEE 2011 MDCS DETAIL ON SHEET 10)
- --- INDICATES TEMPORARY SUPER SILT FENCE (SEE 2011 MDCS DETAIL ON SHEET 10)
- CS-1 --- INDICATES TEMPORARY INLET PROTECTION (SEE 2011 MDCS DETAIL ON SHEET 10) TYPICAL - CS-1, CS-2, I-1 AND I-2
- --- INDICATES TEMPORARY SILT FENCE (SEE 2011 MDCS DETAIL ON SHEET 10)
- A-2 --- INDICATES TEMPORARY EARTH DIKE (SEE 2011 MDCS DETAIL ON SHEET 10)

SEE PHASE ONE GRADING AND SEDIMENT CONTROL DETAIL ON SHEET 10.

**SEDIMENT CONTROL PLAN**



**S-23-0015**

GREAT VALLEY PROPANE  
 LOT #3 'DEVELOPMENT COMPANY OF AMERICA' TAX MAP: 45 GRID: 15 p/o PARCEL: 539 TAX ACCT. NO.: 07-111932

**LEON A. PODOLAK and ASSOCIATES, L.L.C.**

**SURVEYING and CIVIL ENGINEERING**  
 147 East Main St. (P.O. Box 266) Westminster, Maryland 21157  
 (410) 848-2229 - (410) 876-1226

*Leon A. Podolak*  
 Peter L. Podolak, P.E. Date: \_\_\_\_\_  
 I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, license no. 19561, expiration date: 3-3-2024.

Date	Revision
Oct. 23, 2023	
1"=20'	

Scale 1"=20'

**SITE ANALYSIS**

TOTAL AREA OF SITE	2.4923 ACS.±
TOTAL DISTURBED AREA	81,060 SQ.FT.

SHEET  
**4**  
OF  
**10**

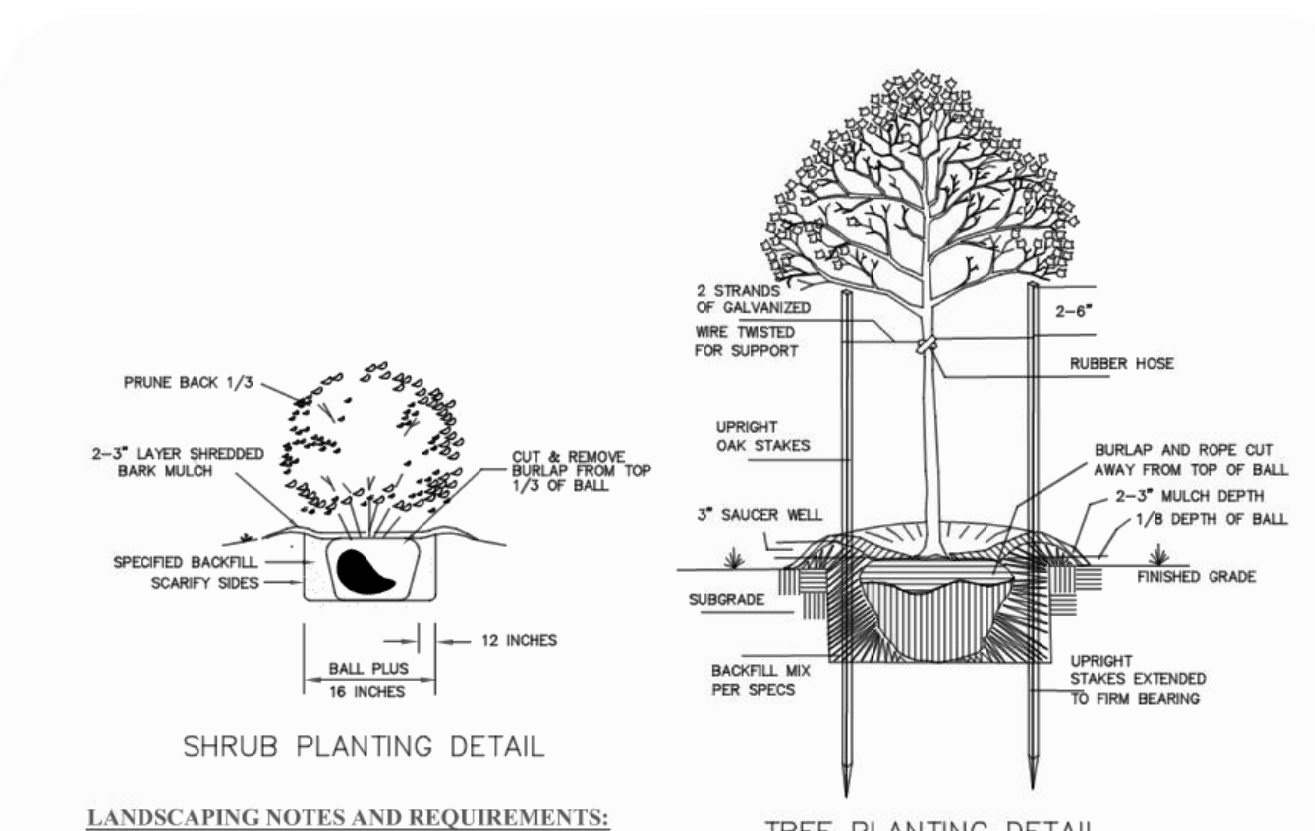
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**PLANTING REQUIREMENTS PER CARROLL COUNTY LANDSCAPE MANUAL:**

Requirement No.	Requirement	Basis	Planting Units Req'd
2.II.B.1.a	Class B Screening of Service Road along MD Rte 31	1 PU/25 LF 567 LF	23 planting units
2.II.B.2.a	Landscape Islands 10% of Parking Lot Areas	3,600 Sq Ft	380 Sq Ft provided 10.5% provided
2.II.B.2.e	1 PU / 12 spaces	7 Spaces	1 planting unit
2.II.E.2	Class A Screening of Tank Storage Area & Service Lane	1 PU/20 LF 250 LF	13 planting units
2.III.A	Class A Screening of dumpster	1 PU/20 LF	2 planting units

**TOTAL PLANTING UNITS REQUIRED = 39 planting units**

Note: Screening on the southeastern and southwestern sides of the Storage Area and Service Lane is not necessary, nor is it provided, because the grading is such that the facility will not be visible to the adjoining property (Lot#2) nor from Avondale Road.



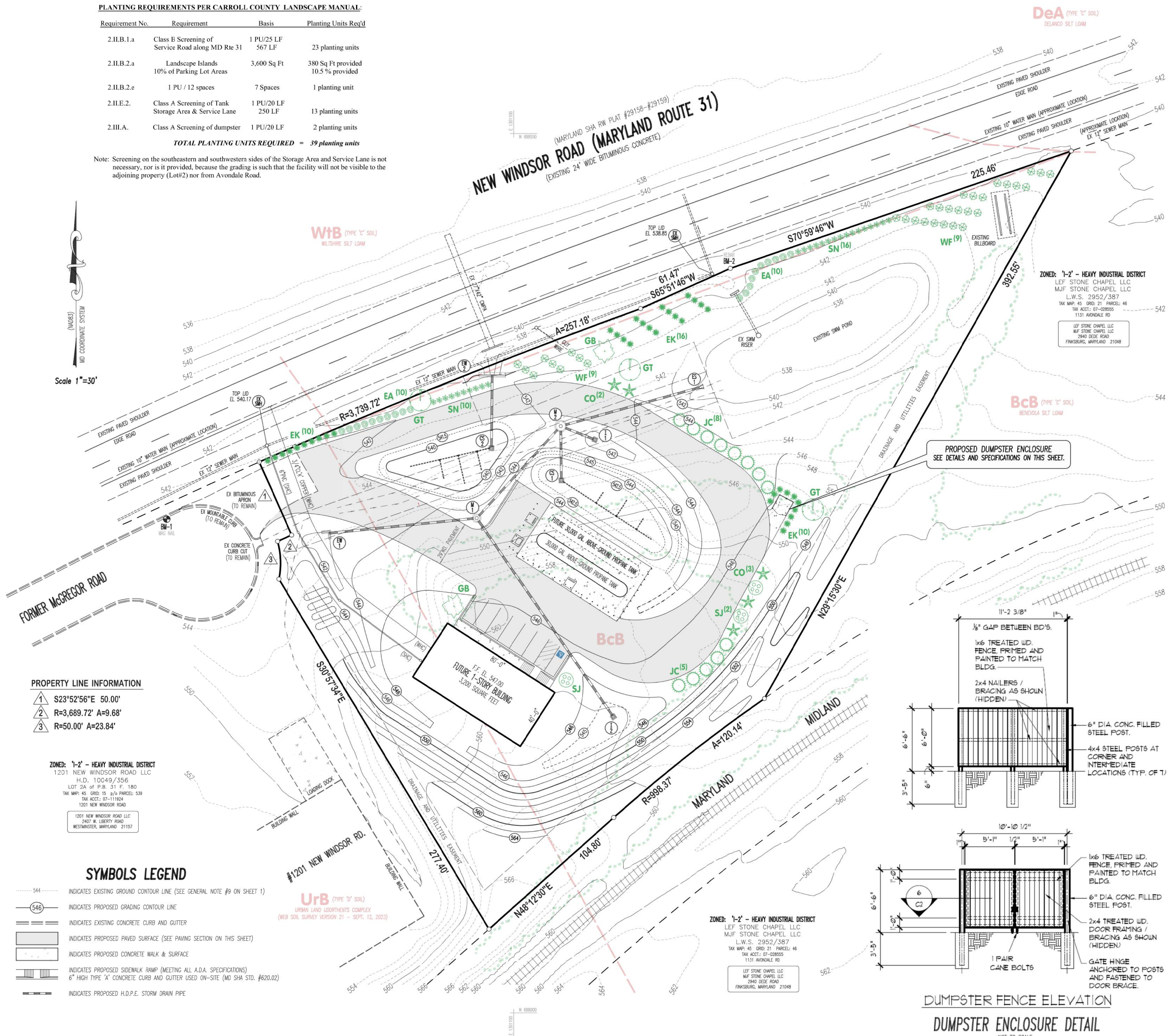
**LANDSCAPING NOTES AND REQUIREMENTS:**

- Installation**
- Standards to conform to the most recent version of the ANSI A300 Standards Part 6 - Transplanting and Landscape Specifications Guidelines of the Landscape Contractors Association, Maryland, District of Columbia and Virginia.
  - Planting on individual lots shall be installed upon final grading inspection. No final grading approval shall be given on the building permit until landscaping is complete.
- Maintenance Responsibility**
- The owner of any property on which landscaping has been installed pursuant to this plan shall maintain the landscaping in good condition in perpetuity. A Landscape Maintenance Agreement shall be required. Failure to replace dead or dying P.U.s or the removal of any installed P.U.s is a violation of Chapter 134 of the Code of Public Local Laws and Ordinances of Carroll County.
- Inspections** - A minimum of 2 inspections will be required. No inspections shall be finalized from November 1st to March 1st. To be considered acceptable, no more than 1/3 of a plant may be dead.
- Initial Inspection. This inspection shall be performed by the County when planting is completed to verify compliance with the approved planting plan.
  - Final Inspection. This inspection shall be performed by the County 12 months after the initial planting.
- LANDSCAPE SPECIFICATIONS**
- All nursery stock shall conform to American Association of Nurserymen, Inc., standards as described in American Standard for Nursery Stock, current ANSI A-300 specifications.
  - All nursery stock shall be planted in accordance with the procedures outlined in the Landscape Guidelines for Maryland, Washington, D.C. and Virginia, latest edition.
  - A minimum of three (3) inches of topsoil on all disturbed areas to be landscaped, seeded or sodded is required.

**LANDSCAPING PLANTING SCHEDULE:**

MAJOR PLANTING UNITS	Caliper	Height	Number	Planting Notes	P.U.
GB Maiden Hair Tree	1-1/2"	---	3	balled and burlaped	3.0
GT Ginkgo Baloba "Autumn Gold"	2"	---	2	balled and burlaped	2.0
GT Gleditsia tricanthos "Shademaster"	---	---	---	---	---
MINOR PLANTING UNITS					
SJ Japanese Snowbell	1"	5'	3	balled and burlaped	1.5
SJ Syringa japonica "Emerald Pagoda"	---	---	---	---	---
CO Golden Hinoki False Cypress	1"	5'	7	plant in mulched beds	3.5
CO Chamaecyparis obtusa "Aurea"	---	---	---	---	---
JC Spartan Juniper	1"	5'	13	balled and burlaped at 10 ft c/c	6.5
JC Juniperus chinensis "Spartan"	---	---	---	---	---
SHRUBS					
WF Wine and Roses Weigela	---	18"	33	plant in mulched beds at 6ft c/c	6.6
WF Weigela florida "Wine & Roses"	---	---	---	---	---
SN Snowmound Spirea	---	18"	26	plant in mulched beds at 4ft c/c	5.2
SN Spiraea nipponicum "Snowmound"	---	---	---	---	---
EA Dwarf Burning Bush	---	18"	20	plant in mulched beds at 5ft c/c	4.0
EA Euonymus alatus "Compactus"	---	---	---	---	---
EK Green Beauty Boxwood	---	18"	36	plant in mulched beds at 5ft c/c	7.2
EK Euonymus kiautschovicus	---	---	---	---	---

**TOTAL PLANTING UNITS PROVIDED = 39.5 PLANTING UNITS**



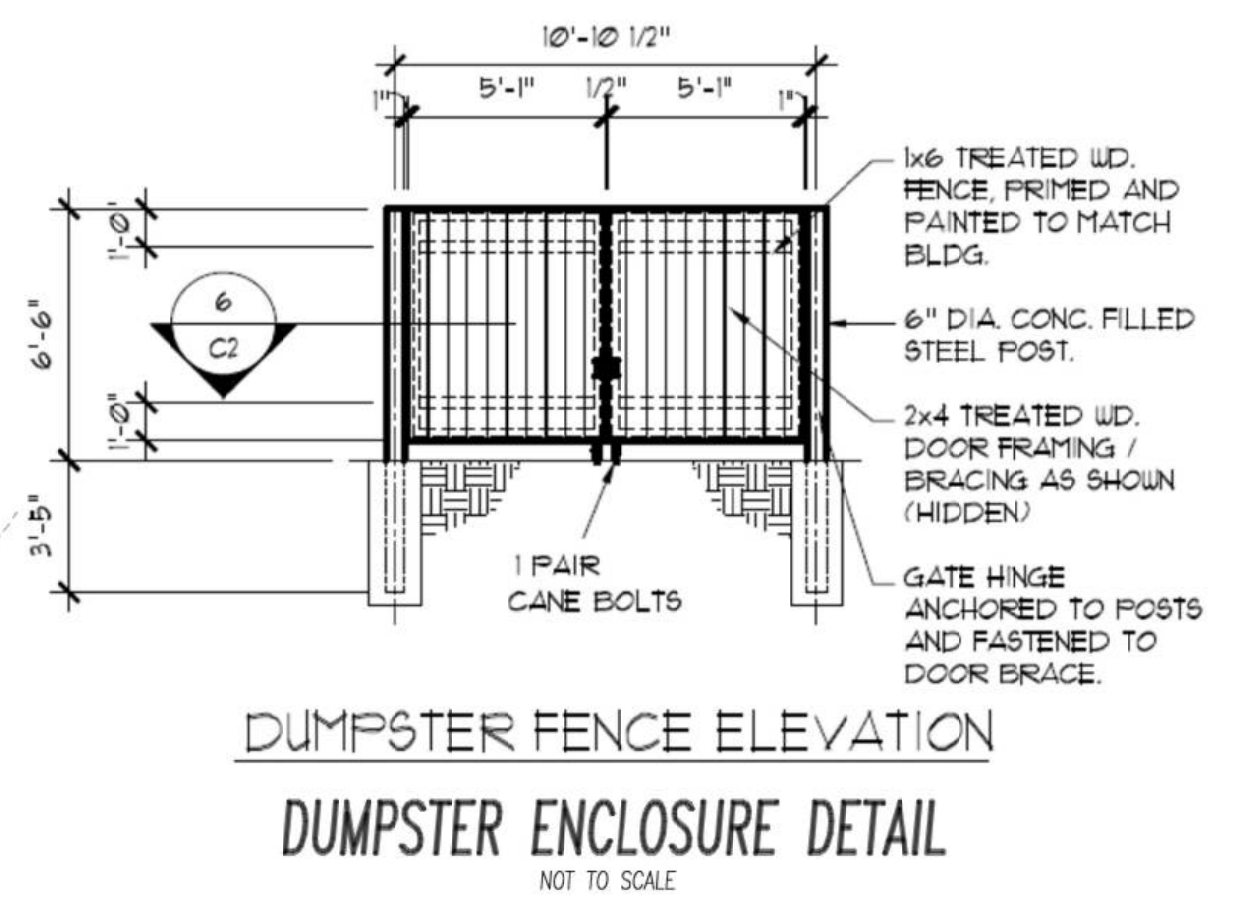
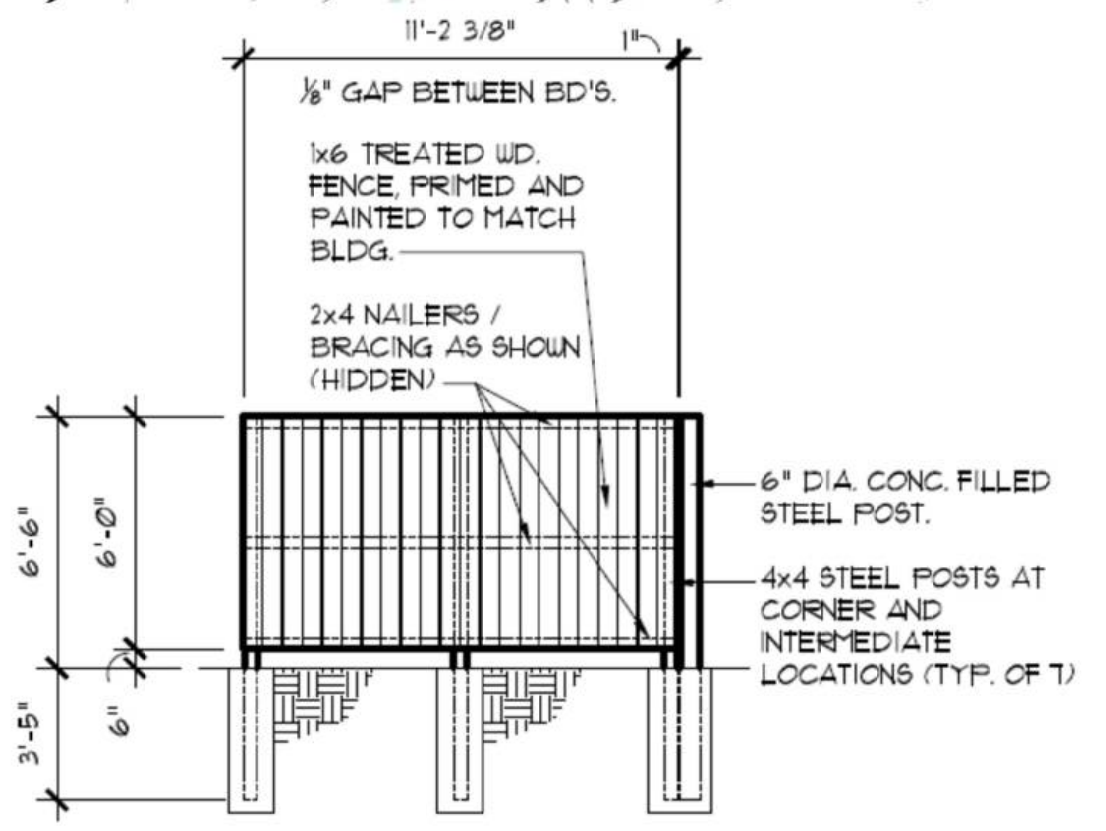
**PROPERTY LINE INFORMATION**

- S23°52'56"E 50.00'
- R=3,689.72' A=9.68'
- R=50.00' A=23.84'

**ZONED: 1-2 - HEAVY INDUSTRIAL DISTRICT**  
 1201 NEW WINDSOR ROAD LLC  
 H.D. 10C49/356  
 LOT 29A of P.B. 31 F. 190  
 TAX MAP: 45 GRID: 15 p/o PARCEL: 539  
 TAX ACCT: 07-111924  
 1201 NEW WINDSOR ROAD

**SYMBOLS LEGEND**

- 544 --- INDICATES EXISTING GROUND CONTOUR LINE (SEE GENERAL NOTE #9 ON SHEET 1)
- 546 INDICATES PROPOSED GRADING CONTOUR LINE
- INDICATES EXISTING CONCRETE CURB AND GUTTER
- INDICATES PROPOSED PAVED SURFACE (SEE PAVING SECTION ON THIS SHEET)
- INDICATES PROPOSED CONCRETE WALK & SURFACE
- INDICATES PROPOSED SIDEWALK RAMP (MEETING ALL A.D.A. SPECIFICATIONS)
- 6" HIGH TYPE 'A' CONCRETE CURB AND GUTTER USED ON-SITE (MD SHA STD. #620.02)
- INDICATES PROPOSED H.D.P.E. STORM DRAIN PIPE



**LANDSCAPE PLAN**

GREAT VALLEY PROPANE  
 LOT #3 DEVELOPMENT COMPANY OF AMERICA  
 TAX MAP: 45 GRID: 15 p/o PARCEL: 539 TAX ACCT. NO.: 07-111932

**LEON A. PODOLAK and ASSOCIATES, L.L.C.**

**SURVEYING and CIVIL ENGINEERING**  
 147 East Main St. (P.O. Box 266) Westminster, Maryland 21157  
 (410) 848-2229 - (410) 876-1226

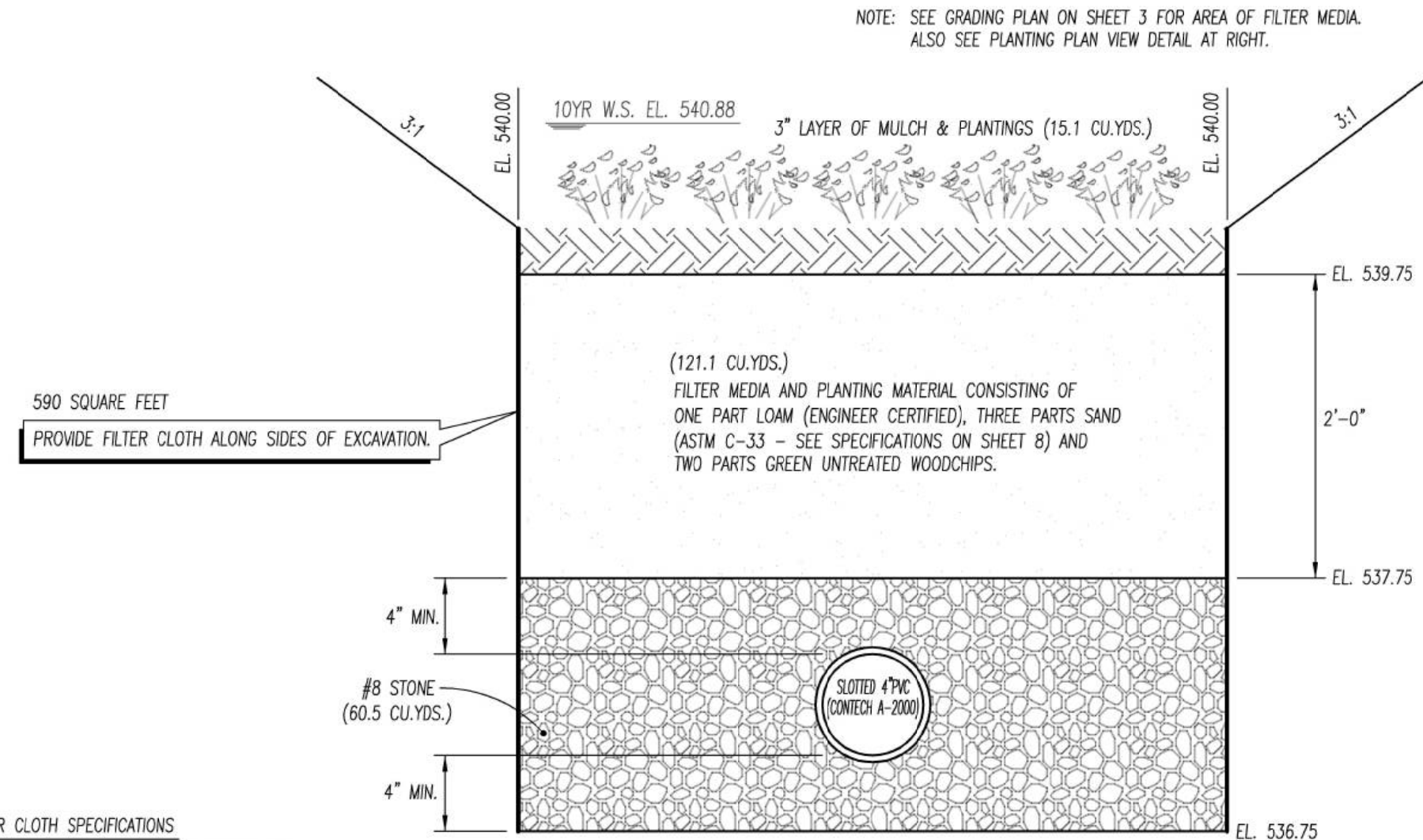
**Peter L. Podolak, P.E.**  
 I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, license no. 19561, expiration date: 3-3-2024.

**STATE OF MARYLAND PROFESSIONAL ENGINEER**

**SHEET 5 OF 10**

Date: Oct. 23, 2023  
 Date: 1"=30'  
 Drawing No.

\\Job Files\Bud Holy Site Plan\Site Overview.dwg 10-23-2023



**MICRO-BIORETENTION DETAILS**  
NOT TO SCALE

SEE MATERIAL SPECIFICATIONS FOR MICRO-BIORETENTION FACILITY ON THIS SHEET.

**REQUIRED SEQUENCE OF CONSTRUCTION FOR MICRO-BIORETENTION FACILITY:**

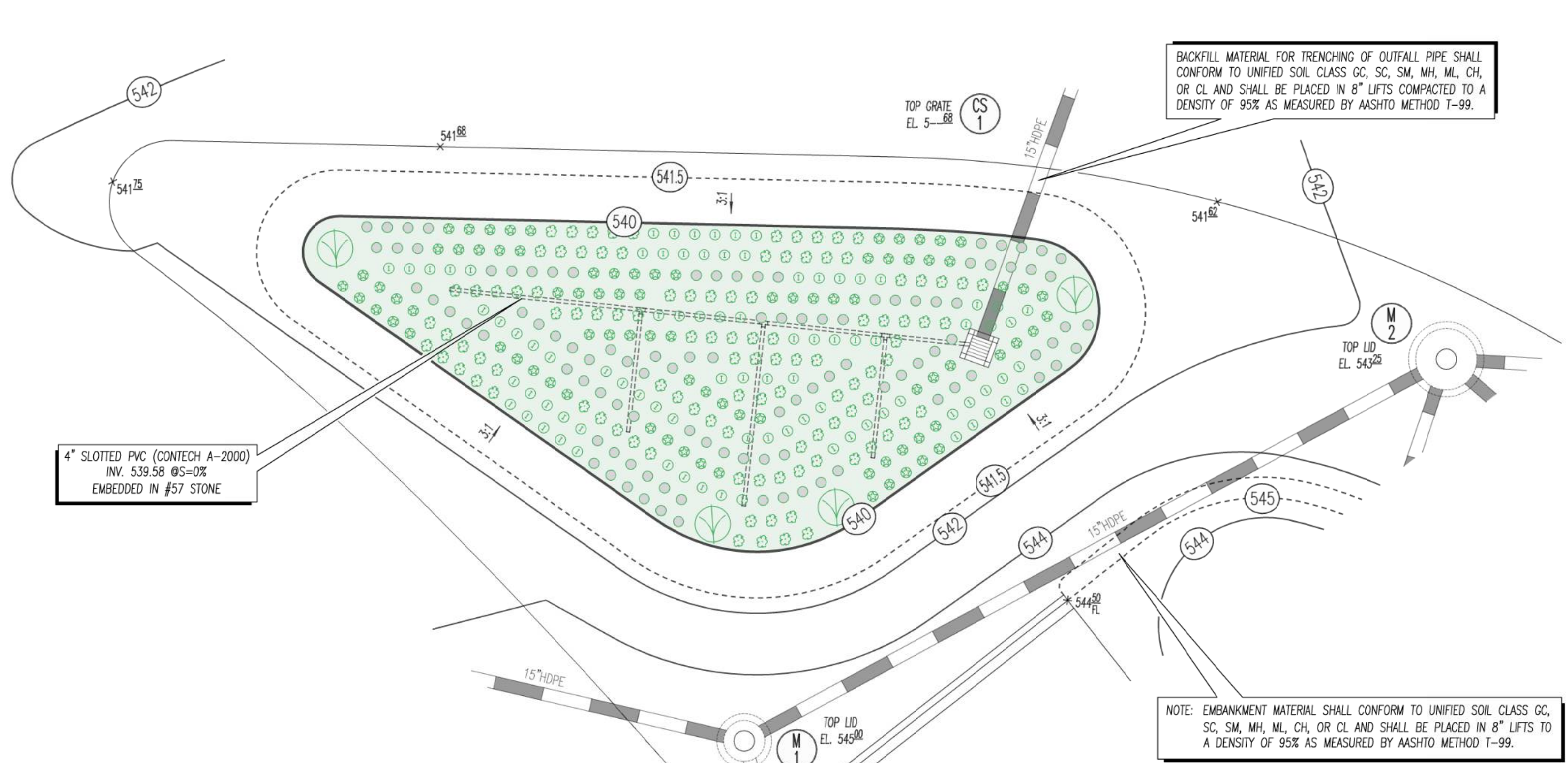
- Contact the office of Leon A. Podolak and Associates, LLC (the engineer) at 410 848-2229 at least 3 working days prior to commencing construction of stormwater management (SWM) facilities, to schedule construction inspection and verification of grades. Be sure drainage area is stabilized, with a healthy 2 inch stand of dense grass, and base coat paving is completed before proceeding with Bio Retention construction.
- Excavation must be conducted in dry conditions with equipment located outside of the practice. Only lightweight, low ground contact equipment should be used within the micro bio-retention area. Excavate to subgrade and scarify bottom. Line sides of excavation with filter cloth. Install precast control structure CS-1 and outfall pipe. All backfill material for trenching of the outfall pipe and/or construction of the embankment shall conform to Unified Soil Class GC, SC, SM, MH, ML, CH or CL and shall be placed in 8 inch lifts compacted to a density of 95 percent as measured by AASHTO Method T-99. Contact the soils engineer to verify material and compaction. Contact Site Engineer (410) 876-1226 to verify grades.
- Install underdrain piping and gravel bedding. Gravel shall be washed, clean and free of fines. Avoid stockpiling stone on site. Install temporary cap on underdrain pipe inside control structure CS-1. Bio-Retention filter media may be mixed on site prior to placement. The filter media consists of one part loam, engineer certified, three parts sand, see sand specifications, and two parts green, untreated wood chips. Soils may not be placed under saturated conditions. Mixed filter media should be placed with a backhoe operating adjacent to the practice and shall be placed in 12 inch maximum lifts. Proper compaction of the media will occur naturally. Spraying or sprinkling water on each lift until saturated may quicken setting times.
- Provide plantings in fall or spring. Spring plantings may require watering.
- Remove all sediment from control structure CS-1 and stabilize any disturbed areas outside of the bio retention areas, in accordance with permanent seeding specifications. Remove the temporary cap on the underdrain pipe inside control structure CS-1. Contact engineer for final inspection. The engineer will submit "As-Built" plans to the Carroll County Bureau of Stormwater Management, for release of bond monies.

**INSPECTION CHART FOR SWM MICRO-BIORETENTION AREAS FOR CS-1**

Note: Contractor should contact the Office of Leon A. Podolak and Associates, L.L.C. at (410) 876-1226, at least 48 hours prior to commencing construction of proposed Storm Water Management Devices.

SWM ESD M-6	STAGE	ENGINEER'S APPROVAL MICRO-BIORETENTION	Initials	Date
1.)	Drainage area must be stabilized with 2 inch stand of dense grass with base coat on paved surfaces			
2.)	Compact top of berm. Berm shall be backfilled with Unified Soil Class GC, SD, SM, MH, ML, CH, or CL impervious soils and compacted in 8 inch lifts to a dry density of 95 percent as measured by AASHTO Method T-99. Soil Engineer approval of material and compaction. Shape basin of Micro Bio-Retention facility & place topsoil on sides.			
3.)	Install riser and outfall piping. Trenching for the outfall pipe shall be backfilled with Unified Soil Class GC, SD, SM, MH, ML, CH, or CL impervious soils and compacted in 8 inch lifts to a dry density of 95 percent as measured by AASHTO Method T-99. Soil Engineer approval of material and compaction.			
4.)	Excavate for filter media and scarify sides and bottom. Line excavation with filter cloth.			
5.)	Install pipe underdrain and #8 stone bedding. Place temporary cap on underdrain at Control Structure CS-2.			
6.)	Mix & Place Filter Media. Allow time for settling & top off as necessary. Install Gabion Baskets. Stabilize side slopes of facility per Permanent Seeding Specs.			
7.)	Plant landscaping units during Spring or Fall. Mulch and remove sediment and debris from Control Structure CS-2. Upon approval of Site Engineer remove temporary underdrain cap.			
8.)	Site Engineer shall submit an "As-Built" SWM Plan to the Carroll County Bureau of SWM.			

SEE SWM MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION FACILITY ON THIS SHEET.



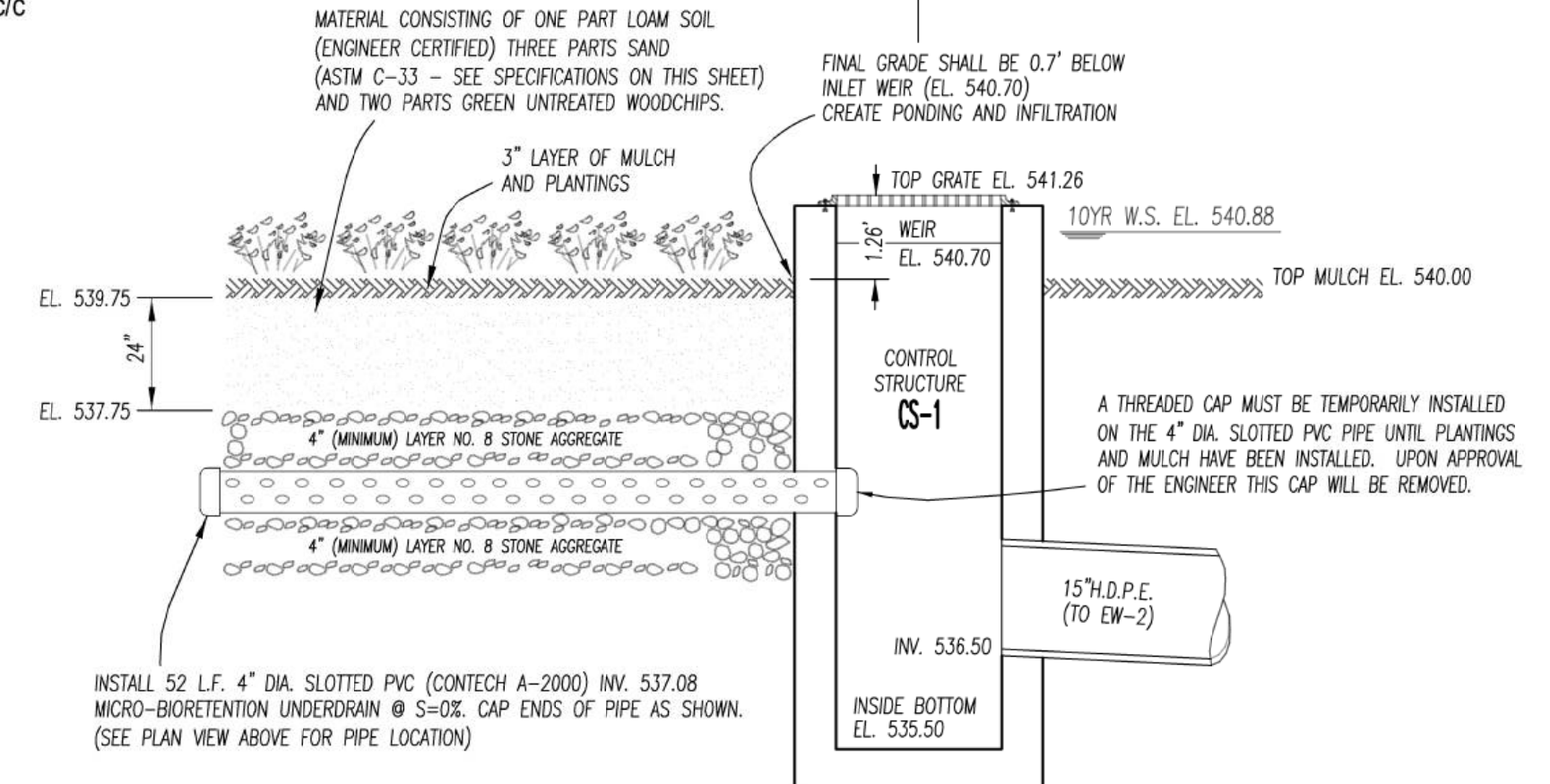
**MICRO-BIORETENTION FACILITY PLANTING SCHEDULE:**

HERBACEOUS SPECIES	Height	Spread	Number	
Switchgrass <i>Panicum virgatum</i>	15"	2'-3'	4	plant in 3" pots - 5'c/c
Blue Flag <i>Iris versicolor</i>	15"	2'-3'	87	plant in 3" pots - 2'c/c
Cardinal Flower <i>Lobelia cardinalis</i>	15"	2'-3'	102	plant in 3" pots - 2'c/c
Joe Pye Weed <i>Eupatorium perpurea</i>	15"	2'-3'	105	plant in 3" pots - 2'c/c
Purple Coneflower <i>Echinacea purpurea</i>	15"	2'-3'	84	plant in 3" pots - 2'c/c

SEE SWM MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION FACILITY ON THIS SHEET.

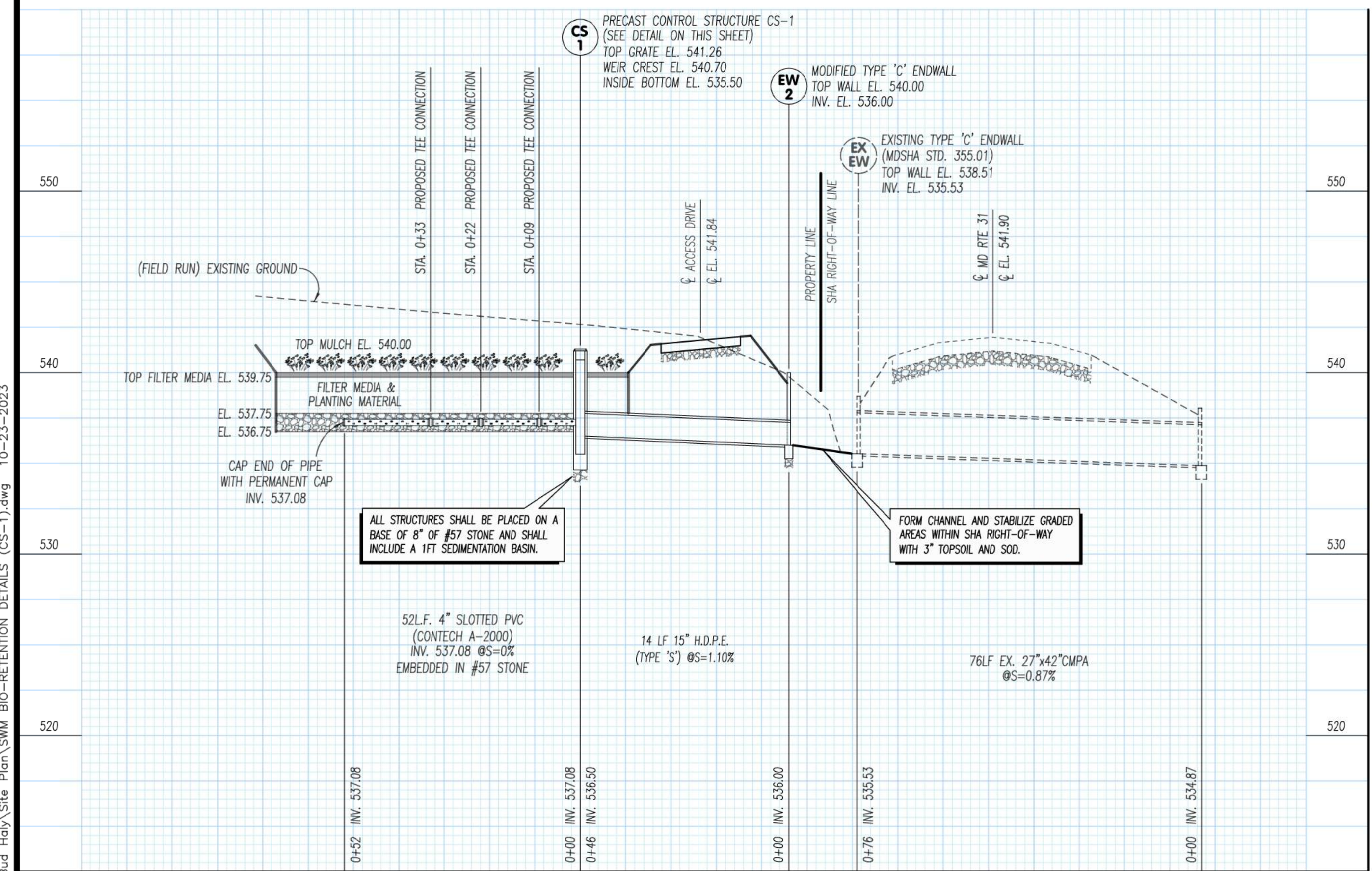
**\* PRIVATE \*  
STORM WATER MANAGEMENT FACILITY MAINTENANCE SCHEDULE**

- The Stormwater Management Facility/Facilities shown on these plans shall be constructed and maintained by the owner(s).
- Owner/his heirs or assigns shall be responsible for continuing maintenance of the facility/facilities, which shall include such items as mowing, cleaning and removing sediment, trees, shrubs and debris. Requirements and schedules for specific types of facilities and practices as listed on the plans are hereby included. The time period for this continuing maintenance shall be on "as-needed" basis but shall not be delayed longer than thirty (30) days.
- Owner, his heirs or assigns shall be responsible for any structural damages or failure which may occur as a result of negligence, accident or misuse. In the event of structural damage, owner shall be responsible to make the necessary repairs as quickly as possible but in any case within thirty (30) days.
- If after notice by the County/Town/City to correct a violation requiring maintenance work, satisfactory corrections are not made by the owner(s) within (30) days the County/Town/City may perform all necessary work to place the facility in proper working condition. The owners of the facility shall be assessed the cost of the work and any penalties. These monies shall be collected from a bond, which the developer is required to post with the County/Town/City to cover such expenses until "completion of the facility". "Completion of the facility" is construed to mean that all contributory drainage areas are paved or supporting a 2" stand of dense grass and that the Carroll County Bureau of Resource Management has inspected construction and a registered professional engineer has certified that the "As-Built" plans meet the plans and specifications for construction. After "completion of the facility" the monies may be collected by placing a lien on the property, or by including the costs and penalties on the property tax bill and collecting them as ordinary taxes by the County/Town/City.
- Owner(s) shall grant right of entry to authorized County/Town/City personnel for purposes of inspection monitoring and/or repair. Site visits for inspection and/or monitoring shall be conducted only during normal County working hours (8:00 a.m. to 5:00 p.m. Monday - Friday).
- This agreement including right-of-entry for inspection/maintenance and repair shall be recorded in the Land Records of the County.



**MICRO-BIORETENTION UNDERDRAIN DETAIL**  
NOT TO SCALE

SEE MATERIAL SPECIFICATIONS FOR MICRO-BIORETENTION FACILITY ON THIS SHEET.



**MICRO-BIORETENTION UNDERDRAIN to CS-1 to EW-2**  
SWM ESD M-6

SCALE: HORIZONTAL: 1"=20'  
VERTICAL: 1"=5'

Material	Specification	Size	Notes
Plantings	See Landscape Plan	N/A	Plantings are site specific and per approved landscape plan
Seed Mix	Filter Bed Mix - Use Wet Meadow Mix per MD Standards and Specifications §707. See Table 3 (1 lb. minimum/micro-bioretentation)	N/A	Used with straw mulch in place of shredded hardwood mulch. Incorporate seed evenly in top 1/2" of filter media
Mulch	Shredded Hardwood	N/A	Aged 6 months, minimum
Straw Mulch	MD Standards and Specifications §707(4)(i), 200 lb. minimum/micro-bioretentation)	N/A	1" Straw mulch over seed bed (facility bottom)
Geotextile	Class "C" - Apparent opening size (ASTM-D-4751), Grab Tensile Strength (ASTM-D-4632), Puncture Resistance (ASTM-D-4833)	N/A	Sides only. Not on bottom unless specified on the plans
Underdrain and Reservoir Gravel	AASHTO M-43 No. 8 Stone	3/4" - 1 1/2"	Stone must be clean and washed
Underdrain and Observation Well Piping	Slotted PVC or Slotted HDPE Type "SSP" Pipes. Solid Scheduled 40 PVC or HDPE Type "SS"	See Plan	Refer to the Carroll County SWM Supplement Pg. 87. All pipes must be double walled (smooth core) and slotted (no circular holes)
Sand	ASTM-C-33 (3 parts to 6 within Filter Media)	0.02" - 0.04"	Sand substitutions such as Diabase and Graystone #10 are not acceptable. No calcium carbonate or dolomitic sand substitutions are acceptable. No "rock-dust" can be used for sand. Manufactured sand from approved sources may be used for filters. Manufactured sand may not be used in dams.
Soil	Engineer approved loam with 20% or less clay (1 part to 6 within Filter Media)	N/A	
Wood Chips	Untreated "Green" (2 parts to 6 within Filter Media)	N/A	Untreated "green" wood chips
Filter/Planting Media	Composed of 3 parts sand, 2 parts wood chips, 1 part soil	N/A	See individual material specifications

**SWM MICRO-BIORETENTION DETAILS and SPECIFICATIONS (CS-1)**

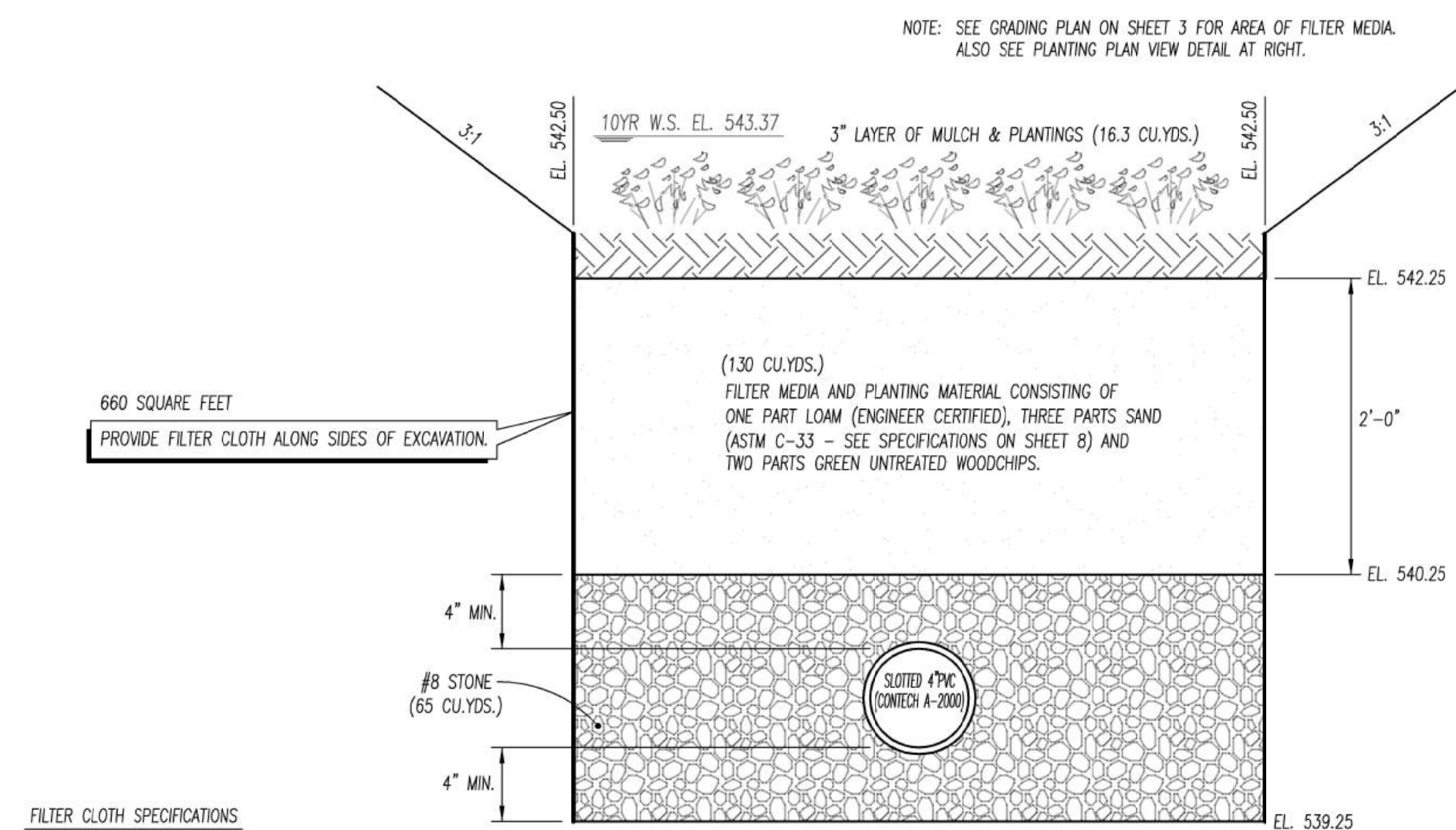
GREAT VALLEY PROPANE  
LOT #3 'DEVELOPMENT COMPANY OF AMERICA' TAX MAP: 45 GRID: 15 p/o PARCEL: 539 TAX ACCT. NO.: 07-111932

**LEON A. PODOLAK AND ASSOCIATES, L.L.C.**

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147 East Main St. (P.O. Box 266) Westminster, Maryland 21157  
(410) 848-2229 - (410) 876-1226

**Peter L. Podolak, P.E.**  
I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, license no. 15661, expiration date: 3-3-2025.

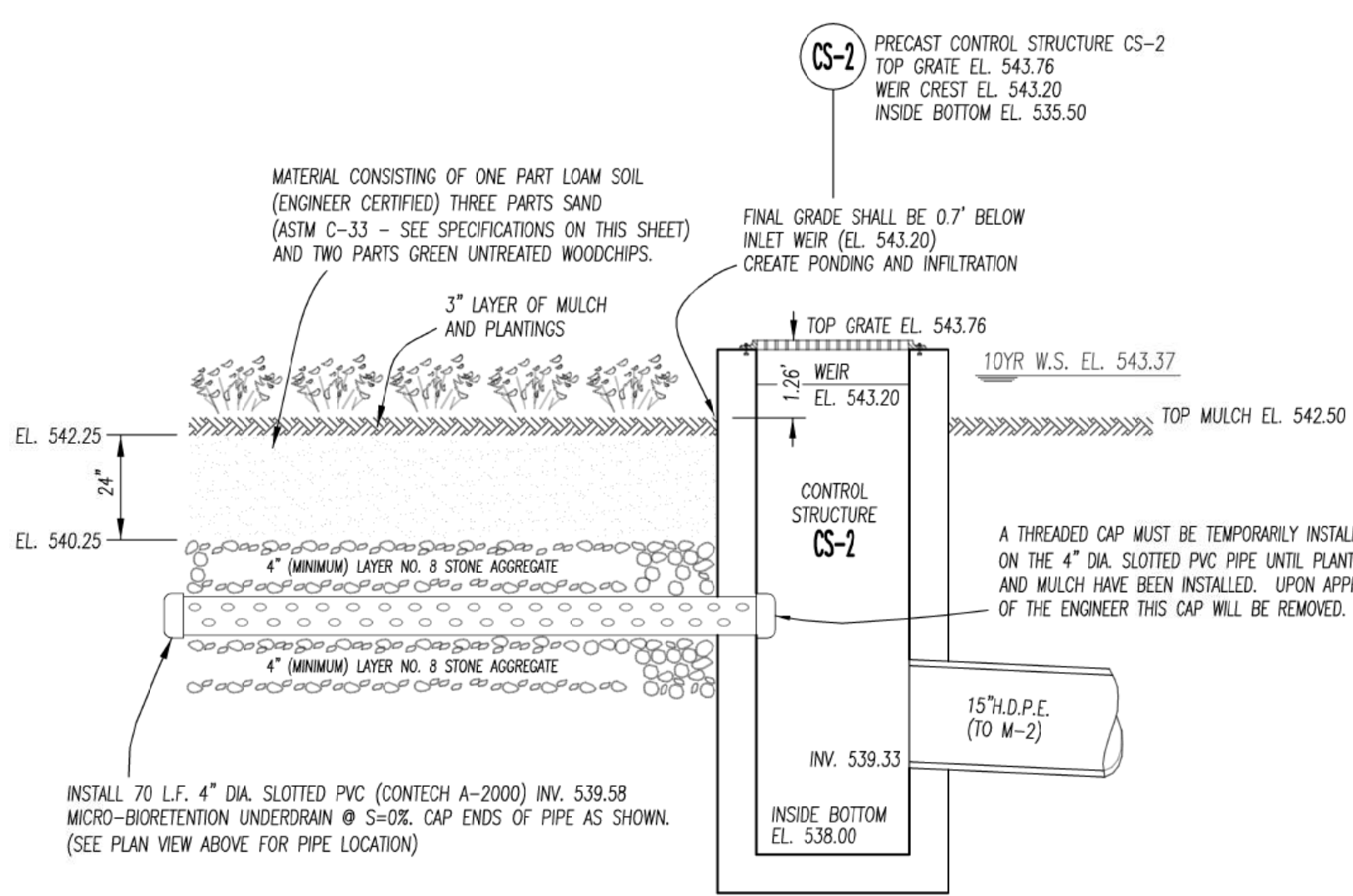
Date: Oct. 23, 2023  
Drawing No. \_\_\_\_\_



**FILTER CLOTH SPECIFICATIONS**  
 FILTER CLOTH SHALL MEET OR EXCEED THE FOLLOWING PHYSICAL PROPERTIES:  
 A. Permeability (ASTM D4918) = 0.1 sec<sup>2</sup> (MIN)  
 B. Opening Size (ASTM D4751-07) = #50 (1.5 mm) (MAX)  
 C. Flowrate (ASTM D4451-05) = 10 gal/min/ft (MIN)  
 D. Mullen Burst (ASTM D3786) = 200 psi (MIN)

**MICRO-BIORETENTION DETAILS**  
 NOT TO SCALE

SEE MATERIAL SPECIFICATIONS FOR MICRO-BIORETENTION FACILITY ON THIS SHEET.



**MICRO-BIORETENTION UNDERDRAIN DETAIL**  
 NOT TO SCALE

SEE MATERIAL SPECIFICATIONS FOR MICRO-BIORETENTION FACILITY ON THIS SHEET.

**REQUIRED SEQUENCE OF CONSTRUCTION FOR MICRO-BIORETENTION FACILITY:**

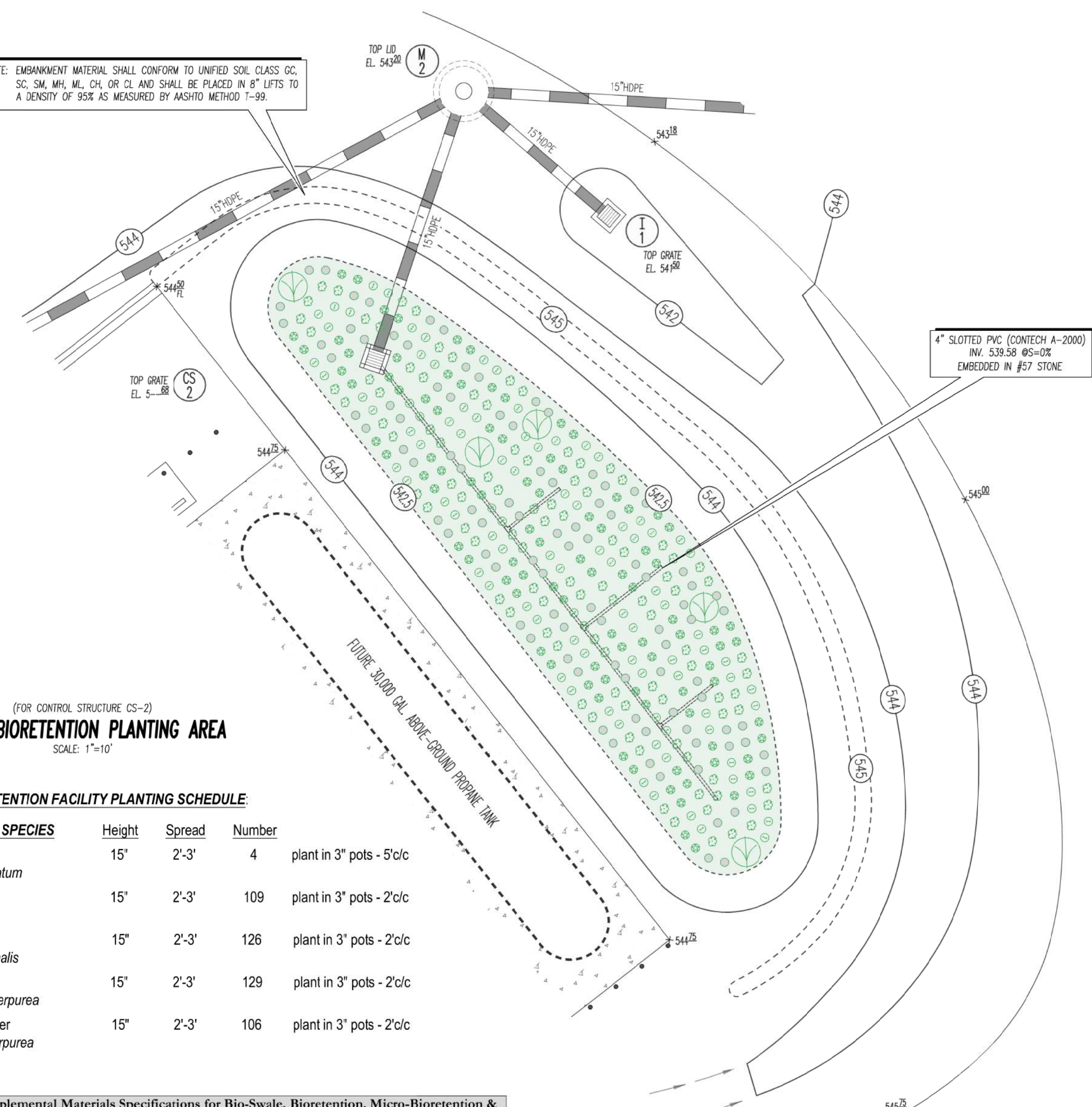
- Contact the office of Leon A. Podolak and Associates, LLC (the engineer) at 410 848-2229 at least 3 working days prior to commencing construction of stormwater management (SWM) facilities, to schedule construction inspection and verification of grades. Be sure drainage area is stabilized, with a healthy 2 inch stand of dense grass, and base coat paving is completed before proceeding with Bio Retention construction.
- Excavation must be conducted in dry conditions with equipment located outside of the practice. Only lightweight, low ground contact equipment should be used within the micro bio-retention area. Excavate to subgrade and scarify bottom. Line sides of excavation with filter cloth. Install precast control structure CS-2 and outfall pipe. All backfill material for trenching of the outfall pipe and/or construction of the embankment shall conform to Unified Soil Class GC, SC, SM, MH, ML, CH or CL and shall be placed in 8 inch lifts compacted to a density of 95 percent as measured by AASHTO Method T-99. Contact the soils engineer to verify material and compaction. Contact Site Engineer (410) 876-1226 to verify grades.
- Install underdrain piping and gravel bedding. Gravel shall be washed, clean and free of fines. Avoid stockpiling stone on site. Install temporary cap on underdrain pipe inside control structure CS-2.
- Bio-Retention filter media may be mixed on site prior to placement. The filter media consists of one part loam, engineer certified, three parts sand, see sand specifications, and two parts green, untreated wood chips. Soils may not be placed under saturated conditions. Mixed filter media should be placed with a backhoe operating adjacent to the practice and shall be placed in 12 inch maximum lifts. Proper compaction of the media will occur naturally. Spraying or sprinkling water on each lift until saturated may quicken setting times.
- Provide plantings in fall or spring. Spring plantings may require watering.
- Remove all sediment from control structure CS-2 and stabilize any disturbed areas outside of the bio retention areas, in accordance with permanent seeding specifications. Remove the temporary cap on the underdrain pipe inside control structure CS-2. Contact engineer for final inspection. The engineer will submit 'As-Built' plans to the Carroll County Bureau of Stormwater Management, for release of bond monies.

**INSPECTION CHART FOR SWM MICRO-BIORETENTION AREAS FOR CS-2**

Note: Contractor should contact the Office of Leon A. Podolak and Associates, L.L.C. at (410) 876-1226, at least 48 hours prior to commencing construction of proposed Storm Water Management Devices.

SWM ESD M-6	STAGE	ENGINEER'S APPROVAL MICRO-BIORETENTION
		Initials Date
1.)	Drainage area must be stabilized with 2 inch stand of dense grass with base coat on paved surfaces	
2.)	Compact top of berm. Berm shall be backfilled with Unified Soil Class GC, SD, SM, MH, ML, CH, or CL impervious soils and compacted in 8 inch lifts to a dry density of 95 percent as measured by AASHTO Method T-99. Soil Engineer approval of material and compaction. Shape basin of Micro Bio-Retention facility & place topsoil on sides.	
3.)	Install riser and outfall piping. Trenching for the outfall pipe shall be backfilled with Unified Soil Class GC, SD, SM, MH, ML, CH, or CL impervious soils and compacted in 8 inch lifts to a dry density of 95 percent as measured by AASHTO Method T-99. Soil Engineer approval of material and compaction.	
4.)	Excavate for filter media and scarify sides and bottom. Line excavation with filter cloth.	
5.)	Install pipe underdrain and #8 stone bedding. Place temporary cap on underdrain at Control Structure CS-2.	
6.)	Mix & Place Filter Media. Allow time for settling & top off as necessary. Install Gabion Baskets. Stabilize side slopes of facility per Permanent Seeding Specs.	
7.)	Plant landscaping units during Spring or Fall. Mulch and remove sediment and debris from Control Structure CS-2. Upon approval of Site Engineer remove temporary underdrain cap.	
8.)	Site Engineer shall submit an 'As-Built' SWM Plan to the Carroll County Bureau of SWM.	

SEE SWM MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION FACILITY ON THIS SHEET.



**MICRO-BIORETENTION PLANTING AREA**  
 SCALE: 1"=10'

**MICRO-BIORETENTION FACILITY PLANTING SCHEDULE**

HERBACEOUS SPECIES	Height	Spread	Number	
Switchgrass <i>Panicum virgatum</i>	15'	2'-3'	4	plant in 3" pots - 5/c
Blue Flag <i>Iris versicolor</i>	15'	2'-3'	109	plant in 3" pots - 2/c
Cardinal Flower <i>Lobelia cardinalis</i>	15'	2'-3'	126	plant in 3" pots - 2/c
Joe Pye Weed <i>Eupatorium perpurea</i>	15'	2'-3'	129	plant in 3" pots - 2/c
Purple Coneflower <i>Echinacea purpurea</i>	15'	2'-3'	106	plant in 3" pots - 2/c

Material	Specification	Size	Notes
Plantings	See Landscape Plan	N/A	Plantings are site specific and per approved landscape plan
Seed Mix	Filter Bed Mix - Use Wet Meadow Mix per MD Standards and Specifications §707. See Table 3 (1 lb. minimum/micro-bioretentation)	N/A	Used with straw mulch in place of shredded hardwood mulch. Incorporate seed evenly in top 1/2" of filter media
Mulch	Shredded Hardwood	N/A	Aged 6 months, minimum
Straw Mulch	MD Standards and Specifications §920.04.01, (200 lb. minimum/micro-bioretentation)	N/A	1" Straw mulch over seed bed (facility bottom)
Geotextile	Class "C" - Apparent opening size (ASTM-D4751), Grab Tensile Strength (ASTM-D4632), Puncture Resistance (ASTM-D-4833)	N/A	Sides only. Not on bottom unless specified on the plans
Underdrain and Reservoir Gravel	AASHTO M-43 No. 8 Stone	3/4" - 1 1/4"	Stone must be clean and washed
Underdrain and Observation Well Piping	Slotted PVC or Slotted HDPE Type "SP" Pipes. Solid: Scheduled 40 PVC or HDPE Type "S"	See Plan	Refer to the Carroll County SWM Supplement Pg. 87. All pipes must be double walled (smooth core) and slotted (no circular holes)
Sand	ASTM-C-33 (3 parts to 6 within Filter Media)	0.02" - 0.04"	Sand substitutions such as Diabase and Graystone #10 are not acceptable. No calcium carbonate or dolomitic sand substitutions are acceptable. No "rock-chest" can be used for sand. Manufactured sand from approved sources may be used for filters. Manufactured sand may not be used in dams.
Soil	Engineer approved loam with 20% or less clay (1 part to 6 within Filter Media)	N/A	
Wood Chips	Untreated "Green" (2 parts to 6 within Filter Media)	N/A	Untreated "green" wood chips
Filter/Planting Media	Comprised of 3 parts sand, 2 parts wood chips, 1 part soil	N/A	See individual material specifications

**SWM MICRO-BIORETENTION DETAILS and SPECIFICATIONS (CS-2)**



**S-23-0015**

GREAT VALLEY PROPANE  
 LOT #3 'DEVELOPMENT COMPANY OF AMERICA' TAX MAP: 45 GRID: 15 p/o PARCEL: 539 TAX ACCT. NO.: 07-111932

**LEON A. PODOLAK and ASSOCIATES, L.L.C.**

**SURVEYING and CIVIL ENGINEERING**  
 147 East Main St. (P.O. Box 266) Westminster, Maryland 21157  
 (410) 848-2229 - (410) 876-1226

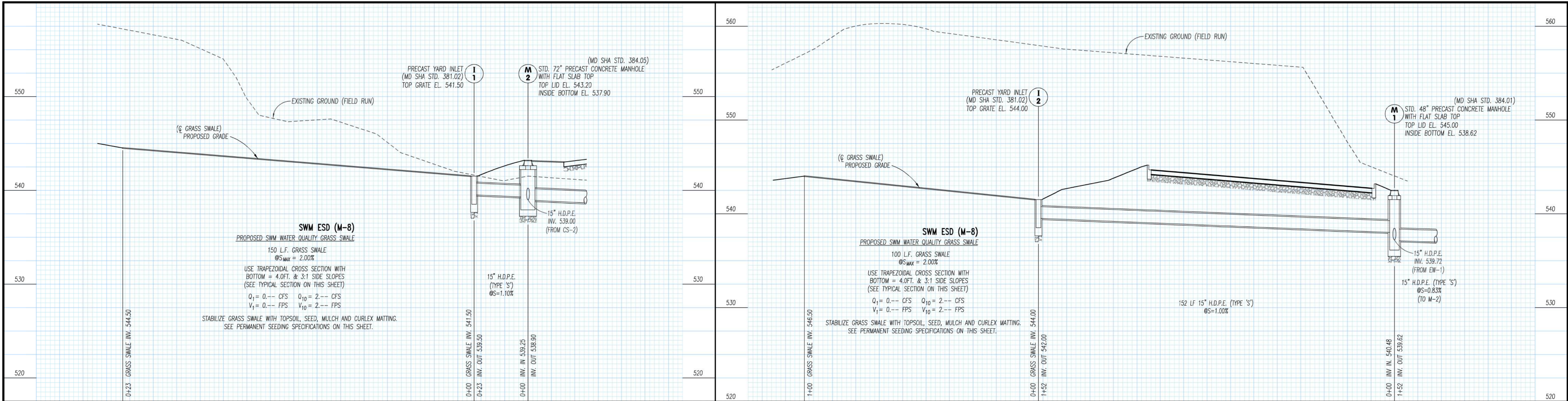
*Leon A. Podolak*  
 Peter L. Podolak, P.E. Date: \_\_\_\_\_  
 I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, license no. 15661, expiration date: 3-3-2024.

Date: Oct. 23, 2023  
 Date: 1"=20'  
 Drawing No. \_\_\_\_\_

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**MICRO-BIORETENTION UNDERDRAIN to CS-2 to M-2**

SWM ESD M-6 SCALE: HORIZONTAL: 1"=20'  
 VERTICAL: 1"=5'



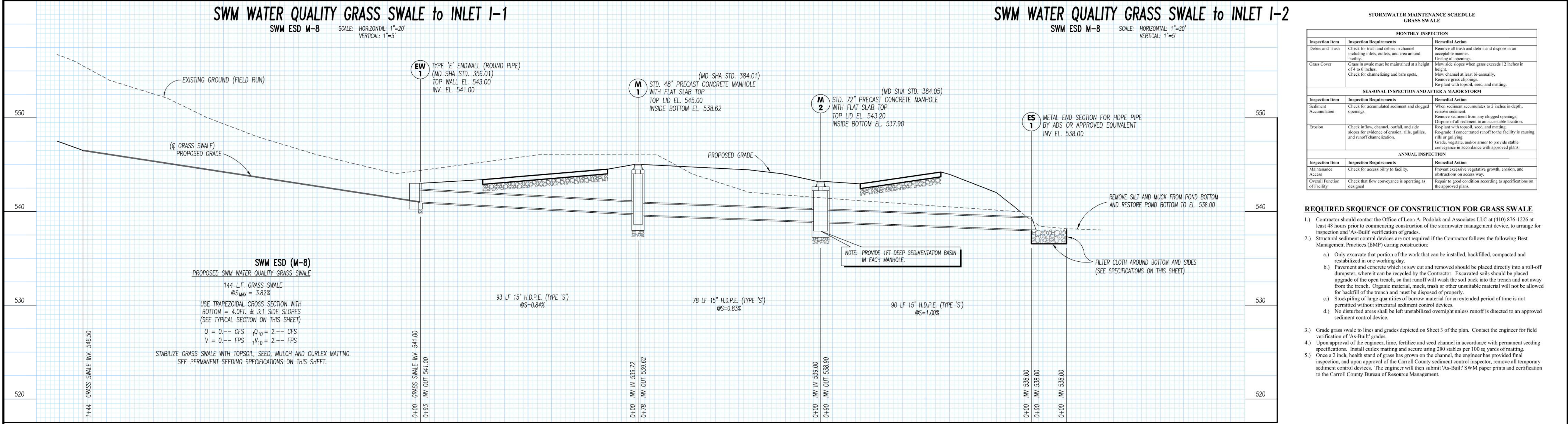
**SWM WATER QUALITY GRASS SWALE to INLET I-1**  
 SWM ESD M-8 SCALE: HORIZONTAL: 1"=20'  
 VERTICAL: 1"=5'

**SWM WATER QUALITY GRASS SWALE to INLET I-2**  
 SWM ESD M-8 SCALE: HORIZONTAL: 1"=20'  
 VERTICAL: 1"=5'

**STORMWATER MAINTENANCE SCHEDULE**  
 GRASS SWALE

MONTHLY INSPECTION		
Inspection Item	Inspection Requirements	Remedial Action
Debris and Trash	Check for trash and debris in channel including inlets, outlets, and area around facility.	Remove all trash and debris and dispose in an acceptable manner. Unplug all openings.
Grass Cover	Grass in swale must be maintained at a height of 4 to 6 inches. Check for channeling and bare spots.	Now side slopes when grass exceeds 12 inches in height. Re-plant grass clippings. Re-plant with topsoil, seed, and mulch.
SEASONAL INSPECTION AND AFTER A MAJOR STORM		
Inspection Item	Inspection Requirements	Remedial Action
Sediment Accumulation	Check for accumulated sediment and clogged openings.	When sediment accumulates to 2 inches in depth, remove sediment. Remove sediment from any clogged openings. Dispose of all sediment in an acceptable location.
Erosion	Check inflow channel, outlet and side slopes for evidence of erosion, rills, gullies, and runoff channelization.	Re-plant with topsoil, seed, and mulch. Re-grade if concentrated runoff to the facility is causing rills or gullies. Grade, vegetate, and/or armor to provide stable conveyance in accordance with approved plans.
ANNUAL INSPECTION		
Inspection Item	Inspection Requirements	Remedial Action
Maintenance Access	Check for accessibility to facility.	Prevent excessive vegetative growth, erosion, and obstructions on access way.
Overall Function of Facility	Check that flow conveyance is operating as designed.	Repair to good condition according to specifications on the approved plans.

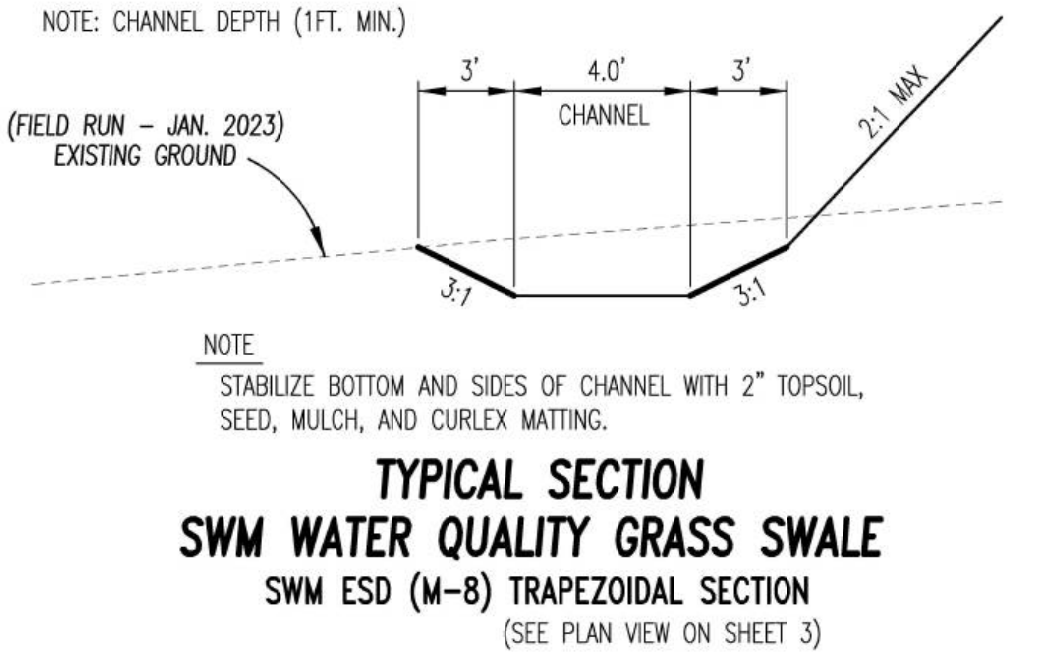
- REQUIRED SEQUENCE OF CONSTRUCTION FOR GRASS SWALE**
- Contractor should contact the Office of Leon A. Podolak and Associates LLC at (410) 876-1226 at least 48 hours prior to commencing construction of the stormwater management device, to arrange for inspection and 'As-Built' verification of grades.
  - Structural sediment control devices are not required if the Contractor follows the following Best Management Practices (BMP) during construction:
    - Only excavate that portion of the work that can be installed, backfilled, compacted and reestablished in one working day.
    - Pavement and concrete which is saw cut and removed should be placed directly into a roll-off dumpster, where it can be recycled by the Contractor. Excavated soils should be placed upgrade of the open trench, so that runoff will wash the soil back into the trench and not away from the trench. Organic material, muck, trash or other unsuitable material will not be allowed for backfill of the trench and must be disposed of properly.
    - Stockpiling of large quantities of borrow material for an extended period of time is not permitted without structural sediment control devices.
    - No disturbed areas shall be left unattended overnight unless runoff is directed to an approved sediment control device.
  - Grade grass swale to lines and grades depicted on Sheet 3 of the plan. Contact the engineer for field verification of 'As-Built' grades.
  - Upon approval of the engineer, lime, fertilizer and seed channel in accordance with permanent seeding specifications. Install curlex matting and secure using 200 staples per 100 sq yds of matting. Once a 2 inch, health stand of grass has grown on the channel, the engineer has provided final inspection, and upon approval of the Carroll County sediment control inspector, remove all temporary sediment control devices. The engineer will then submit 'As-Built' SWM paper prints and certification to the Carroll County Bureau of Resource Management.



**SWM WATER QUALITY GRASS SWALE to ES-2**  
 SWM ESD M-8 SCALE: HORIZONTAL: 1"=20'  
 VERTICAL: 1"=5'

**INSPECTION CHART FOR 'SWM' GRASS SWALE**  
 Note: Contractor should contact the Office of Leon A. Podolak and Associates, L.L.C. at (410) 876-1226, at least 48 hours prior to commencing construction of proposed Storm Water Management Devices.

SWM ESD M-8	STAGE	ENGINEER'S APPROVAL TRAPEZOIDAL SWALE	
		Initials	Date
1.	Grade grass swales to lines and grades depicted on Sheet 3 of the plan. Contact engineer for field verification of 'As-Built' grades and alignment.		
2.	Upon approval of the engineer, add topsoil, lime, fertilizer and seed in accordance with permanent seeding specifications shown hereon.		
3.	Install curlex matting and secure by using 200 staples per 100 sq yds of matting. Seed and mulch.		
4.	Upon establishment of a 2" stand of dense grass and upon approval of the Carroll County Sediment Control Inspector, remove all sediment control devices.		
5.	Engineer to provide final inspection and submit 'As-Built' SWM paper prints and certification to the Carroll County Bureau of Resource Management.		



**SWM GRASS SWALE DETAILS and SPECIFICATIONS**



GREAT VALLEY PROPANE  
 LOT #3 'DEVELOPMENT COMPANY OF AMERICA' TAX MAP: 45 GRID: 15 p/o PARCEL: 539 TAX ACCT. NO.: 07-111932

**LEON A. PODOLAK and ASSOCIATES, L.L.C.**

**SURVEYING and CIVIL ENGINEERING**  
 147 East Main St. (P.O. Box 266) Westminster, Maryland 21157  
 (410) 848-2229 - (410) 876-1226

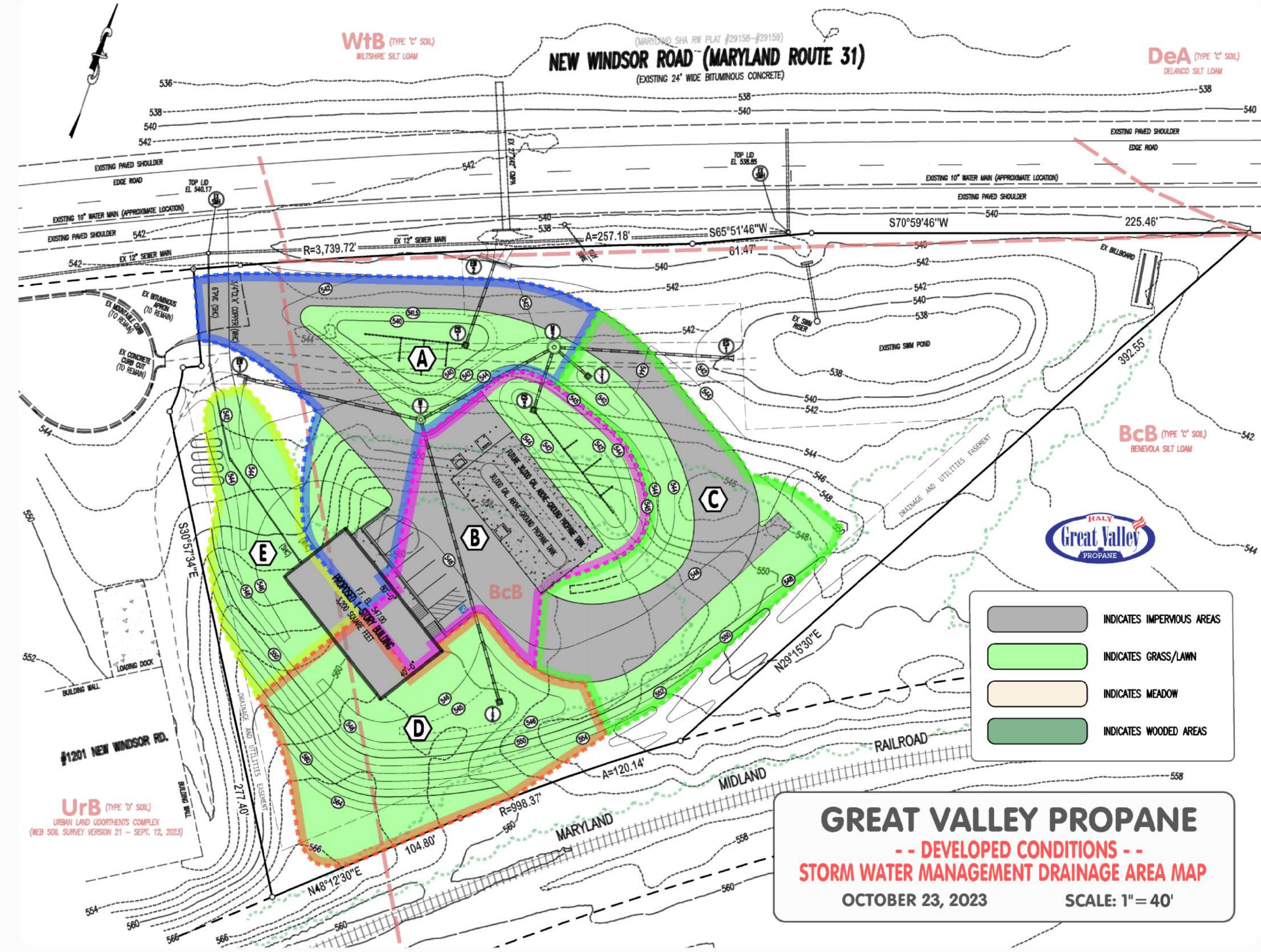
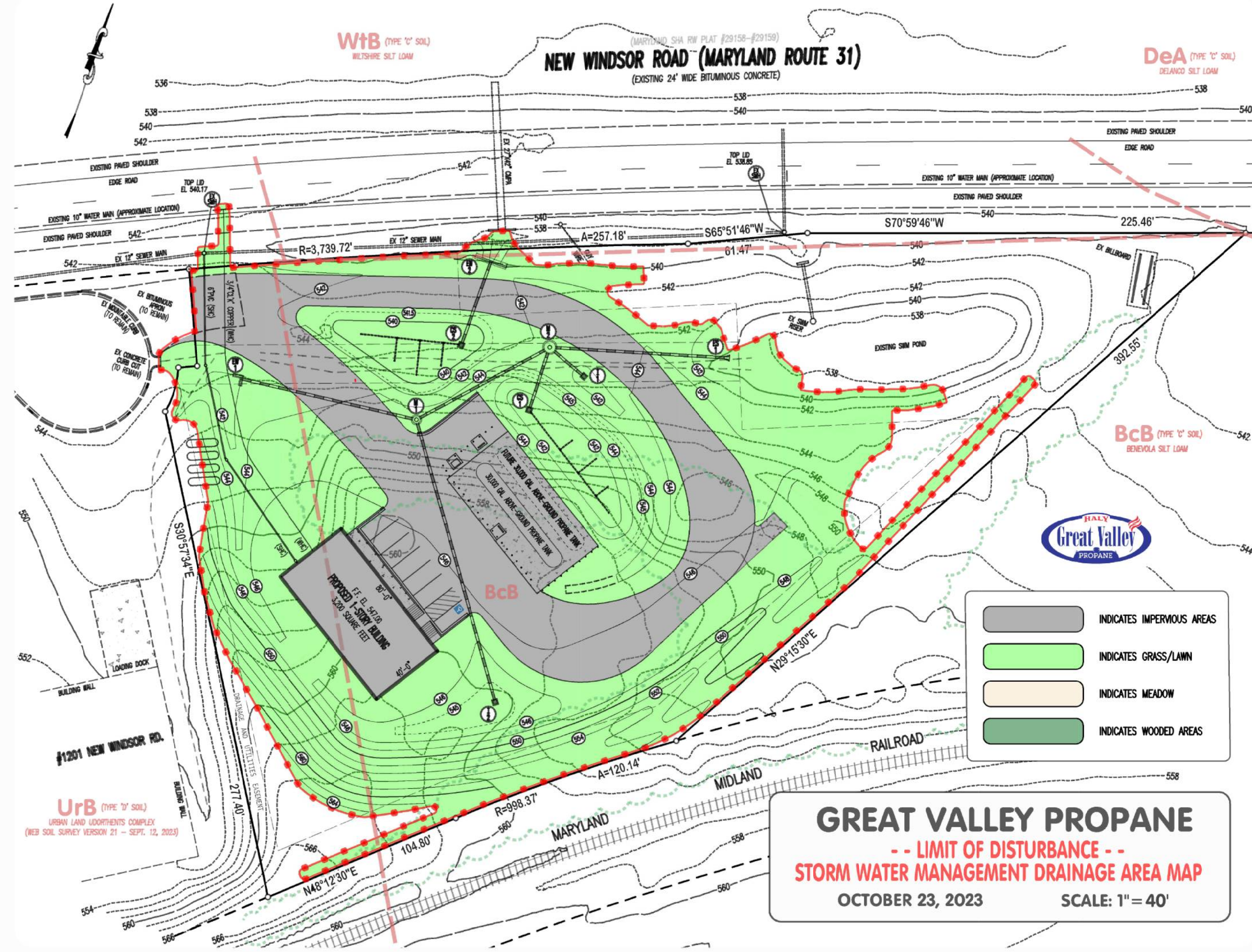
*Leon A. Podolak*  
 Peter L. Podolak, P.E. Date

I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, license no. 15561, expiration date: 3-3-2025.

Date: Oct. 23, 2023  
 Date: 1"=20'  
 Drawing No. \_\_\_\_\_

SHEET  
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**ESD STORM WATER MANAGEMENT REQUIREMENTS for GREAT VALLEY PROPANE (S-23-0015):**

The existing impervious area on the 108,565 square foot or 2.4923 acres site, prior to initiating any development, is 702 square feet (0.02 Acres), which equates to an existing impervious percentage of less than 1 percent. Accordingly, the subject project would not be considered a redevelopment project, per the code. However, this project is unique, insofar that it has a FEMA floodplain on it. The stream associated with this floodplain is located more than 800 feet from the site, however, the floodwaters are due to the proximity of the sump in Maryland Route #31 to the subject property. In short, the theoretical 100 year floodwaters will pond at the box culverts of the stream and back up onto the property before topping the road at its sump. Therefore, this project is exempt from the requirements of managing the 10 year storm event in accordance with Section 151.035(A)(2) of the Carroll County Code of Public Local Laws and Ordinances.

**Great Valley Propane Facility:**  
 Total Disturbed Area associated with this development = 81,060 sq ft = 1.86 Acres  
 Total Impervious Area proposed = 27,178 sq ft = 0.62 Acres  
 Percent Impervious Cover (I) = 33.5 percent

**Water Quality Volume:**  
 $WQv = \frac{[(P)(Rv)(A)]}{12}$  where, P = 1.0 inch in Eastern Zone of Maryland  
 Rv = Volumetric Runoff Coefficient  
 $Rv = (0.05) + (0.009)(I)$   
 I = Percent Impervious Cover = 33.5 %  
 A = Drainage Area in Acres = 1.86 Acres  
 $WQv = \frac{[(1.0 \text{ in.})((0.05) + (0.009)(33.5))](1.86 \text{ acs.})}{12 \text{ in./ft.}} = 0.0545 \text{ Acre-feet}$

**Water Quality Volume = 0.0545 Acre-feet = 2,373 cubic feet**

**Recharge Volume:**  
 $Rev = \frac{[(S)(Rv)(A)]}{12}$  where, S = Soil Specific Recharge Factor  
 S = 0.07 inches for Type D Soils  
 S = 0.13 inches for Type C Soils  
 Area of D Soils = 15,767 sq ft = 0.36 Acs.  
 Area of C Soils = 65,293 sq ft = 1.50 Acs.  
 Composite S =  $\frac{(15,767)(0.07) + (65,293)(0.13)}{81,060} = 0.12$

$Rev = \frac{[(0.12)((0.05) + (0.009)(33.5))](1.86 \text{ acs.})}{12 \text{ in./ft.}} = 0.0065 \text{ Acre-feet}$

**Recharge Volume = 0.0065 Acre-feet = 285 cubic feet**

**ESD Volume Required:**  
 Target Pe = 1.6 inches [Table 5.3 SWM Manual for C soils with 35 percent impervious]  
 $ESD \text{ Volume} = \frac{[(1.6 \text{ in.})((0.05) + (0.009)(33.5))](1.86 \text{ acs.})}{12 \text{ in./ft.}} = 0.0873 \text{ Acre-feet}$

**Required Volume for ESD Practices = 0.0873 Acre-feet = 3,797 cubic feet**

**ESD DATA TABULATION:**

**ESD M-6 Micro Bio-Retention @ CS-1:** This non-structural practice is to be owned and maintained by the developer of the property, their heirs or assigns.

Drainage Area A to Micro Bio-Retention CS-1 = 16,032 sq ft = 0.37 Acres  
 Impervious Surface Treated = 8,884 square feet = 0.20 Acres  
 Wqv Provided = 1,454 cu ft = 0.0334 Acre-feet  
 Rev Provided = 263 cu ft = 0.0060 Acre-feet  
 ESDv Provided = 1,454 cu ft = 0.0334 Acre-feet

**ESD M-6 Micro Bio-Retention @ CS-2:** This non-structural practice is to be owned and maintained by the developer of the property, their heirs or assigns.

Drainage Area B to Micro Bio-Retention CS-2 = 13,234 sq ft = 0.32 Acres  
 Impervious Surface Treated = 9,334 square feet = 0.21 Acres  
 Wqv Provided = 1,565 cu ft = 0.0359 Acre-feet  
 Rev Provided = 284 cu ft = 0.0065 Acre-feet  
 ESDv Provided = 1,565 cu ft = 0.0359 Acre-feet

**ESD M-8 Water Quality Swale to Inlet I-1:** This non-structural, ESD practice is to be owned and maintained by the owner and developer of the property, their heirs or assigns.

Drainage Area C = 15,414 square feet = 0.35 Acres  
 Impervious Surface Treated = 7,095 square feet = 0.16 Acres  
 Wqv Provided = 501 cu ft = 0.0115 Acre-feet  
 Rev Provided = 65 cu ft = 0.0015 Acre-feet  
 ESDv Provided = 501 cu ft = 0.0115 Acre-feet

**ESD M-8 Water Quality Swale to Inlet I-2:** This non-structural, ESD practice is to be owned and maintained by the owner and developer of the property, their heirs or assigns.

Drainage Area D = 14,083 square feet = 0.32 Acres  
 Impervious Surface Treated = 800 square feet = 0.02 Acres  
 Wqv Provided = 333 cu ft = 0.0078 Acre-feet  
 Rev Provided = 37 cu ft = 0.0008 Acre-feet  
 ESDv Provided = 333 cu ft = 0.0078 Acre-feet

**ESD M-8 Water Quality Swale to Endwall EW-1:** This non-structural, ESD practice is to be owned and maintained by the owner and developer of the property, their heirs or assigns.

Drainage Area E = 7,126 square feet = 0.16 Acres  
 Impervious Surface Treated = 800 square feet = 0.02 Acres  
 Wqv Provided = 480 cu ft = 0.0110 Acre-feet  
 Rev Provided = 34 cu ft = 0.0008 Acre-feet  
 ESDv Provided = 480 cu ft = 0.0110 Acre-feet

**Stormwater Management Requirements:**

- Water quality volume required = 2,373 cubic feet = 0.0545 Acre-feet
- Recharge volume (Re) required = 285 cubic feet = 0.0065 Acre-feet
- ESD quantitative volume required = 3,797 cubic feet = 0.0873 Acre-feet

**Stormwater Management Provided:**

- Water quality volume (Wqv) provided = 4,333 cubic feet = 0.0995 Acre-feet
- Recharge volume (Re) provided = 683 cubic feet 0.0157 Acre-feet
- ESD quantitative volume provided = 4,333 cubic feet = 0.0995 Acre-feet

**Watershed Information:**  
 Watershed name: Double Pipe Creek [2140304]  
 Stream classification: [Use IV-P]  
 Discharge point: Little Pipe Creek

# SWM DRAINAGE AREA MAPS and CALCULATIONS

GREAT VALLEY PROPANE  
 LOT #3 'DEVELOPMENT COMPANY OF AMERICA' TAX MAP: 45 GRID: 15 p/o PARCEL: 539 TAX ACCT. NO.: 07-111932

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*Leon A. Podolak*  
 Peter L. Podolak, P.E. Date: \_\_\_\_\_  
 I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, license no. 15861, expiration date: 3-3-2024.

Date: Oct. 23, 2023  
 Date: 1"=30'  
 Drawing No. \_\_\_\_\_

SHEET 9 OF 10

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