

STANDARD RESPONSIBILITY NOTES

- I (We) certify that:
  - All development and construction will be done in accordance with this sediment and erosion control plan, and further, authorize the right of entry for periodic on-site evaluation by the Anne Arundel Soil Conservation District (AASCD) Board of Supervisors or their authorized agents.
  - Any responsible personnel involved in the construction project will have a certificate of attendance from the Maryland Department of the Environment's approved training program for the control of sediment and erosion before beginning the project.

Responsible personnel on site: TBD
- If applicable, the appropriate enclosure will be constructed and maintained on sediment basin(s) included in this plan. Such structure(s) will be in compliance with the Anne Arundel County Code.
- The developer is responsible for the acquisition of all easements, right, and/or rights-of-way that may be required for the sediment and erosion control practices, storm water management practices and the discharge of storm water onto or across adjacent or downstream properties included in the plan.
- For initial soil disturbance or re-disturbance, permanent and/or temporary stabilization per the AASCD Vegetative Establishment shall be completed within three calendar days for the surface of all controls, dikes, swales, ditches, perimeter slopes and all slopes greater than 3 horizontal to 1 vertical (3:1); and seven days for all other disturbed or graded areas on the project site.
- The grading and sediment control approval on this plan extends only to those areas within the limits of disturbance.
- The approval of this plan for sediment and erosion control does not relieve the developer/consultant from complying with Federal, State or County requirements pertaining to environmental issues.
- The developer must request that the sediment and erosion control inspector approve work completed in accordance with the approved erosion and sediment control plan, the grading or building permit, and the ordinance.
- All material shall be taken to a site with an approved sediment and erosion control plan.
- First phase inspection and approval of the sediment and erosion control inspector shall be required upon completion of the installation of erosion and sediment controls prior to proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until the initial approval by the sediment and erosion control inspector is given. Inspection and Permits may also require that an inspection and certification of the installation of sediment control also be performed by a design professional prior to construction commencing.
- Approval from the inspector must be requested on final stabilization of all sites prior to removal of sediment and erosion controls.
- Existing topography must be field verified by responsible personnel to the satisfaction of the sediment control inspector prior to commencing work.

Designed by: Khadija Abdur-Rahman 5/28/2024 | 07:45 PDT  
 Signature of Developer/Owner \_\_\_\_\_ Date \_\_\_\_\_  
 Name (Print): Khadija Abdur-Rahman  
 Title: Engineer Manager  
 Affiliation: Department of Public Works  
 Address: 2662 Riva Road, Annapolis, MD 21402  
 Telephone Number: 410-222-4261  
 Email Address: pwabdu22@aacounty.org

CONSULTANTS CERTIFICATION

The Developer's plan to control silt and erosion is adequate to contain the silt and erosion on the property covered by the plan. I certify that this plan of erosion and sediment control represents a practical and workable plan based on my personal knowledge of this site, and was prepared in accordance with the requirements of the AASCD Plan Submittal Guidelines and the current Maryland Standards and Specifications for Soil Erosion and Sediment Control. I have reviewed this erosion and sediment control plan with the owner/developer.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
 Name (Print): Anthony J. Dietz MD P.E. License Number: 32574  
 Firm Name: Century Engineering, LLC, A Kleinfelder Company  
 Address: 10710 Gilroy Road, Hunt Valley, Maryland 21031

STORMWATER MANAGEMENT RECORD DRAWING CERTIFICATION

THIS CERTIFIES TO THE BEST OF MY PROFESSIONAL BELIEF AND KNOWLEDGE, THE APPROVED S.W.M. SYSTEM(S) AS SHOWN HEREON HAVE BEEN CONSTRUCTED IN SUCH A MANNER THAT WOULD BE CONSISTENT WITH THE APPROVED PLANS. ANY CHANGES/MODIFICATIONS ARE SHOWN IN RED.

PROFESSIONAL'S NAME (PRINTED)	SIGNATURE	LICENSE NUMBER	DATE
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OWNER/PERMITTEE ACKNOWLEDGEMENT

"ALL GRADING, DRAINAGE, STRUCTURES, AND EROSION AND SEDIMENT CONTROL PRACTICES INCLUDING FACILITIES AND VEGETATIVE MEASURES HAVE BEEN COMPLETED IN CONFORMANCE WITH APPROVED PLANS."

OWNER/PERMITTEE'S NAME (PRINTED)	OWNER/PERMITTEE'S SIGNATURE	DATE
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Statement of Accessibility Review

I hereby certify that these plans have been designed in conformance with the 2010 ADA Standards for Accessible Design, County Code, Maryland Accessibility Code and Accessible and Useable Buildings and Facilities-ICC A117.1-2009 standard.

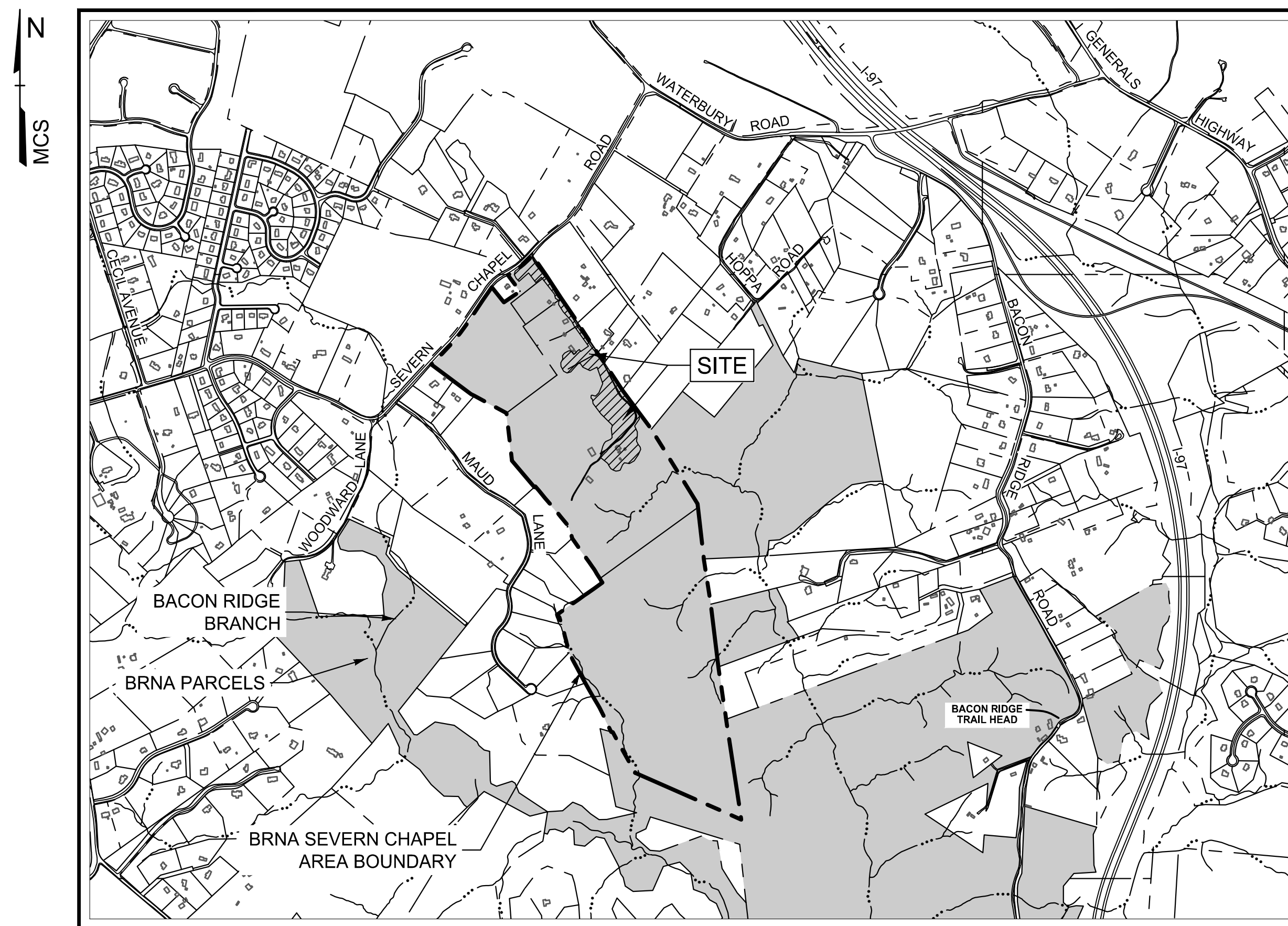
Print Name \_\_\_\_\_  
 Signature \_\_\_\_\_ Date \_\_\_\_\_

ANNE ARUNDEL COUNTY, MARYLAND  
 DEPARTMENT OF PUBLIC WORKS

SEVERN CHAPEL AREA  
 OF THE BACON RIDGE NATURAL AREA

CONSTRUCTION DOCUMENTS 95%

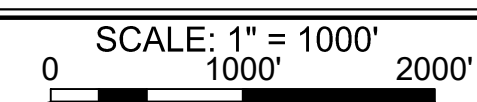
AA CO. PROJECT: P588001



SITE DATA

- OWNER / DEVELOPER: Anne Arundel County  
Dept. of Recreation and Parks  
2662 Riva Road  
Annapolis, MD 21401  
Contact: Bruce Bruchey  
(410) 222-2827
- SITE ADDRESS: 1214 Severn Chapel Road  
Crownsville, Maryland 21032
- # OF EXISTING PARCELS: 6
- NET TRACT AREA: ± 152.06 AC
- PROJECT AREA / LOD: ± 9.90 AC (±431,244 SF)
- PLAT REFERENCE: 226 / 35
- DEED REFERENCE: SEE SHEET 2
- TAX ACCOUNT: SEE SHEET 2
- TAX MAP/ GRID/ PARCEL: 0037 / 0011 / 0086
- CENSUS: 751700
- CONGRESSIONAL DISTRICT: 3
- COUNCIL DISTRICT: 6
- LEGISLATIVE DISTRICT: 33B
- ZONING: RA - Rural Agricultural
- WATER SERVICE AREA: N/A
- SEWER SERVICE AREA: RURAL (N/A)
- FEMA FIRM MAP #: 24003C0145E
- 100 YR FLOODPLAIN: N/A
- TIDAL/NONTIDAL WETLANDS: SEE SHEET 3
- WATERSHED: Bacon Ridge Branch, South River
- THIS SITE IS NOT WITHIN THE CHESAPEAKE BAY CRITICAL AREA.
- THIS SITE IS NOT WITHIN THE BWI AIRPORT ZONE.
- EXISTING USE: Park / Natural Area
- PROPOSED USE: Park / Natural Area
- PARKING SUMMARY  
 EXISTING: TEMPORARY / UNPAVED  
 PROPOSED: 101 STANDARD SPACES  
 15 TRAILER / BUS SPACES  
 5 HANDICAP (ADA) SPACES
- THERE IS (1) HISTORIC SITE WITHIN THE PROJECT LIMIT OF DISTURBANCE, AA-882, "THOMAS CRANDELL FARM." THE REMAINDER OF THE SEVERN CHAPEL AREA TRACT CONTAINS ADDITIONAL RESOURCES. SEE EXISTING CONDITIONS PLAN SHEET NOTES (SHEET 2).
- SEVERN CHAPEL ROAD IS A CLASSIFIED "CATEGORY 1, RURAL" SCENIC AND HISTORIC ROAD.

VICINITY MAP



SITE ANALYSIS

TOTAL SITE AREA	152.0 Acres (6,621,120 sf)
TOTAL DISTURBED AREA	9.9 Acres (431,244 sf)
TOTAL CUT	14,640± CY*
TOTAL FILL	16,400 ±CY*
AREA TO BE ROOFED OR PAVED	3.5 Acres (152,460 sf)
AREA TO BE VEGETATIVELY STABILIZED	6.4 Acres (278,784 sf)

- \* EXCESS MATERIAL WILL BE PLACED ON-SITE.
- \* CONTRACTOR RESPONSIBLE TO VERIFY EARTHWORK QUANTITIES AND SUITABILITY OF SOILS

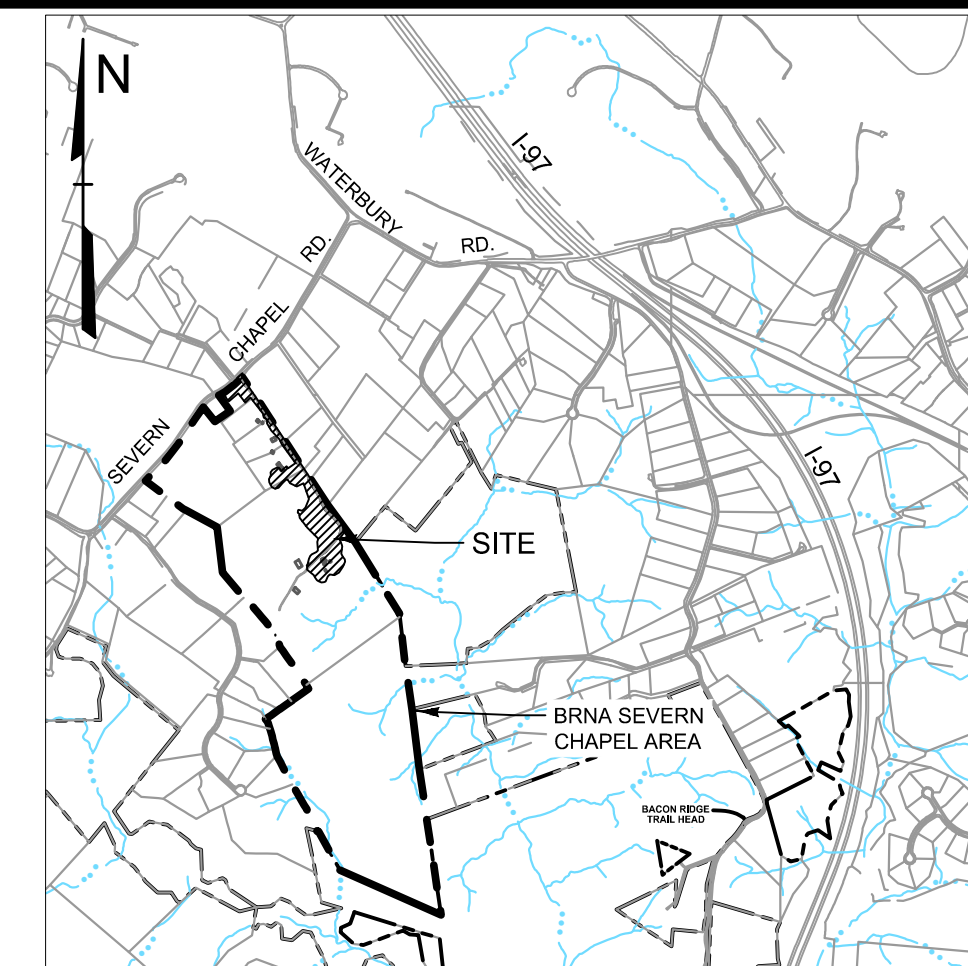
LIMIT OF DISTURBANCE

9.9 ACRES (431,244 SF)

SEQUENCE OF CONSTRUCTION; OUTFALL STATEMENT: SEE SHEET 2

SHEET LIST

- Cover Sheet
- General Notes
- Overall Existing Conditions Plan
- Overall Site Plan
- Demolition Plan
- Demolition Plan
- Site, Grading & Utility Plan
- Site, Grading & Utility Plan
- Site, Grading & Utility Plan
- Site, Grading & Utility Plan
- Road & Parking Layout Plan
- Site Details
- Site Details
- Erosion And Sediment Control Plan-Phase I
- Erosion And Sediment Control Plan-Phase I
- Erosion And Sediment Control Plan-Phase I
- Erosion And Sediment Control DA Map-Phase II
- Erosion And Sediment Control Plan-Phase II
- Erosion And Sediment Control Plan-Phase II
- Erosion And Sediment Control DA Map-Phase II
- Erosion And Sediment Control Plan-Phase II-A
- Erosion And Sediment Control Plan-Phase II-A
- Erosion And Sediment Control Plan-Phase II-A
- Erosion And Sediment Control Notes & Details
- Erosion And Sediment Control Notes & Details
- Erosion And Sediment Control Notes & Specifications
- Soil Boring Logs
- Soil Boring Logs
- Soil Boring Logs
- SWM Existing Conditions DA Map
- SWM Proposed Conditions DA Map
- SWM Proposed Conditions DA Map
- SWM Proposed Conditions DA Map
- SWM Facilities
- SWM Facilities
- Utility Profiles
- SWM Facilities
- Utility Profiles
- SWM Facilities
- SWM Notes & Details
- SWM Notes & Details
- SWM Facility Outfall Profiles
- SWM Planting Plan
- SWM Planting Plan
- SWM Outfall Exhibit
- Utility Profiles
- Water Line Profile
- Utility Details
- Entrance And Sight Line Plan
- Entrance And Sight Line Plan
- Landscape Plan
- Landscape Plan
- Landscape Notes & Details
- Tree Inventory Plan
- Tree Protection Notes & Details
- G000 - Cover Sheet & Sheet Index
- Civil Site Plan
- A000 - Architectural Abbrv., Code Analysis, Legends & Gen. Notes
- A101 - Architectural Floor & Roof Plan
- A201 - Architectural Elevation
- A202 - Architectural Building Sections
- A301 - Architectural Sections
- S001 - Structural General Notes - I
- S002 - Structural General Notes - II
- S101 - Structural Foundation Plan & Details
- M001 - Mechanical & Plumbing Legend & Abbreviations
- M002 - Mechanical & Plumbing General Notes
- M101 - Mechanical & Plumbing Plans
- M301 - Mechanical & Plumbing Sections & Elevations
- M501 - Mechanical & Plumbing Details & Schedules
- E001 - Electrical Notes & Legend
- E101 - Electrical Lighting Plan
- E201 - Electrical Power Plan
- E301 - Electrical Lighting Protection and Grounding Plan
- E501 - Electrical Schedules



VICINITY MAP

SCALE: 1" = 2000'

BENCHMARKS

COORDINATES, BEARINGS AND DISTANCES ARE REFERRED TO THE MARYLAND STATE PLANE COORDINATE SYSTEM (NAD 83/2011) VIA GPS AND TIED TO THE FOLLOWING LEICA SMART NET NGS CORS REFERENCE STATION NETWORK STATIONS:  
 LOYF-0371 N 476639.2591 E 1448171.6640 ELEV. 61.4557  
 MDAN-0368N 53581.9866 E 1371782.9323 ELEV. 225.5004

LEGEND

- Property Line
- Adjacent Lot Line
- Existing Edge of Road
- Stream Centerline
- Existing Building
- Bacon Ridge Natural Area
- Project Site

CALL "MISS UTILITY" AT  
 1-800-257-7777  
 48 Hours Before Start Of Construction

DATA SOURCES:

- TOPOGRAPHY AND PLANIMETRICS SHOWN ARE FROM A FIELD-RUN SURVEY BY CENTURY ENGINEERING, DATED 8-11-2022, 11-14-2023, 2/20/2023, AND SUPPLEMENTED BY ANNE ARUNDEL COUNTY GIS.
- ON-SITE STREAMS AND WETLAND DELINEATION ARE BASED ON A NATURAL RESOURCES SURVEY PERFORMED BY CENTURY ENGINEERING, DATED 1/27/2021.
- FOREST CONSERVATION EASEMENTS SHOWN ARE BASED ON PLAT 11860 - 11861, PLAT BOOK 226, PAGES 34-35.
- FLOODPLAIN DATA IS FROM FEMA NATIONAL FLOOD HAZARD LAYER GIS.
- PROPERTY DATA IS FROM MARYLAND DEPARTMENT OF ASSESSMENTS AND TAXATION REAL PROPERTY DATA.
- MARYLAND COORDINATE SYSTEM (MCS)

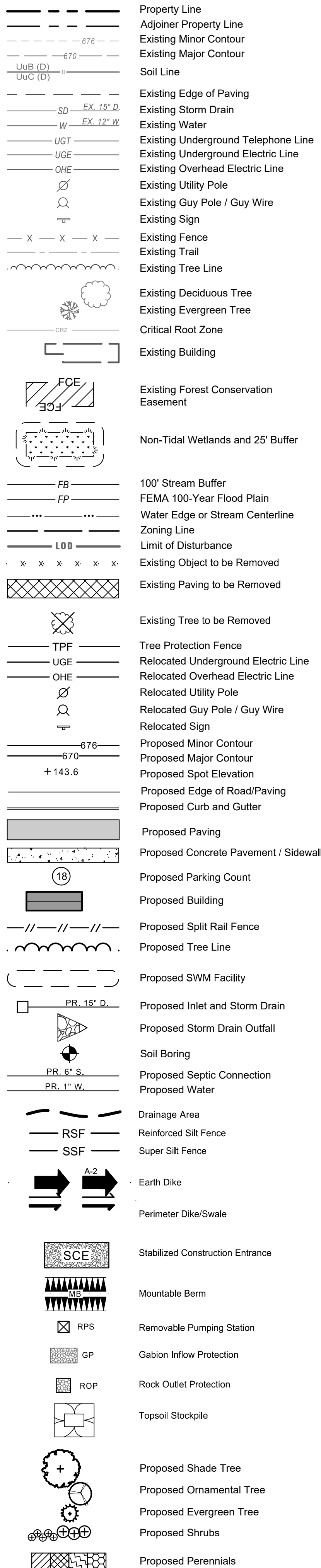
24TMP-026983

<p>Century Engineering A Kleinfelder Company 10710 Gilroy Road, Hunt Valley, MD 21031 Phone: 443.589.2400 www.centuryeng.com</p>		DATE: 6/21/2024 	REVISED DATE BY APPROVED DATE APPROVED DATE APPROVED DATE APPROVED DATE APPROVED DATE	ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS G02020077 CONSTRUCTION DOCUMENTS Cover Sheet Severn Chapel Area of the Bacon Ridge Natural Area 2nd Tax District Anne Arundel Co., MD.
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T:\2023\Facilities\202352371001aBaconRidgeConstructionDrawings\Phase1\CIVIL\CADD\Drawings\B\_Construction Documents\202352371001A\_CDP-011\_Cover\_Sheet.dwg Jun 21, 2024 10:30am kdarley



LEGEND



LEGEND NOTES: 1. ALL ITEMS SHOWN MAY NOT BE PRESENT ON ALL SHEETS. 2. SUPPLEMENTAL SHEET-SPECIFIC LEGENDS WITH ADDITIONAL ITEMS MAY BE PRESENT ON INDIVIDUAL SHEETS.

GENERAL NOTES

- 1. ALL CONSTRUCTION SHALL COMPLY WITH ANNE ARUNDEL COUNTY STANDARDS. ALL CONSTRUCTION WITHIN THE STATE RIGHT OF WAY SHALL COMPLY WITH ALL THE MARYLAND DEPARTMENT OF TRANSPORTATION STANDARDS.
2. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS REQUIRED BY GOVERNMENT AGENCIES PRIOR TO CONSTRUCTION.
3. PROPER CONSTRUCTION PROCEDURES SHALL BE FOLLOWED ON ALL IMPROVEMENTS WITHIN THE PARCELS SO AS TO PREVENT THE SILTING OF ANY WATERCOURSE OR WETLANDS IN ACCORDANCE WITH THE REGULATIONS OF MDE & AASDC GUIDELINES FOR SOIL EROSION AND SEDIMENT POLLUTION CONTROL.

STORM DRAIN GENERAL NOTES

- 1. UNLESS OTHERWISE NOTED, ALL STORM DRAIN CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST ANNE ARUNDEL COUNTY DESIGN MANUAL AND STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
2. EXISTING FEATURES AND UTILITIES SHOWN HAVE BEEN BASED UPON SURVEYS AND OTHER SOURCES BELIEVED TO BE RELIABLE. THE CORRECTNESS OR COMPLETENESS OF THE INFORMATION SHOWN IS NOT GUARANTEED.
3. THE CONTRACTOR SHALL NOTIFY MISS UTILITY AT 1-800-257-7777 A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO CONSTRUCTION.

NOTE:

- 1. ROADS TO BE SWEEPED DAILY
2. STOCKPILES: 15' MAX HEIGHT WITH 2:1 SLOPES

\*NOTE: INSTALL RSF OR SSF PRIOR TO ROUGH GRADING/EXCAVATING SWM FACILITIES MAY BE CLEARED AND EXCAVATED DURING CONSTRUCTION WITH THE INSPECTOR'S APPROVAL. THEY MUST BE PROTECTED WITH RSF IMMEDIATELY UPON GRADING. SWM CANNOT BE COMPLETE (I.E. GRAVEL, STONE, AGGREGATES AND MEDIUM) UNTIL THE UPSTREAM DRAINAGE AREA TO EACH FACILITY IS 95% STABILIZED WITH PERMANENT COVER AND WITH THE INSPECTORS APPROVAL.

SANITARY AND WATER GENERAL NOTES

- 1. UNLESS OTHERWISE NOTED, PIPE ELEVATIONS FOR WATER MAINS REFER TO TOP OF PIPE AND SANITARY SEWER ELEVATIONS REFER TO INVERT. MAINTAIN A MINIMUM OF FOUR (4) FEET OF COVER OVER WATER MAINS UNLESS OTHERWISE NOTED.
2. CONTRACTOR TO VERIFY HORIZONTAL AND VERTICAL LOCATION OF EXISTING MAINS TO WHICH THE PROPOSED CONSTRUCTION CONNECTS. SHOULD LOCATIONS DIFFER FROM PROPOSED PLAN, CONTRACTOR IS TO NOTIFY ENGINEER PRIOR TO COMMENCING CONSTRUCTION.
3. THE CONTRACTOR SHALL NOTIFY ANNE ARUNDEL COUNTY DEPARTMENT OF INSPECTION AND PERMITS AT (410)222-7780 FIVE (5) WORKING DAYS PRIOR TO STARTING WORK SHOWN ON THESE PLANS.

SEQUENCE OF CONSTRUCTION

- 1 DAY 1. Notify the department of inspections and permits (410-222-7780) at least 48 hours before commencing work. Work may not commence until the permittee or the responsible personnel have met on site with the sediment and erosion control inspector to review the approved plans.
PHASE 1
7 DAYS 2. Prior to beginning any construction or demolition on this site, install tree protective fence as shown\*. After tree protective fencing is installed, install construction fence, stabilized construction entrance (sce), and reinforced reinforced silt fence and super silt fence.
1 DAY 3. Once sediment controls and traps have been installed, install dikes and swales which contribute to traps. Control the inspector for approval of sediment control installation prior to starting work.
NOTE: Inspections and permits may require that an inspection and certification of the installation of sediment control also be performed by a design professional prior to construction commencing.
60 DAYS 4. With the sediment control inspector's approval, install sediment trap#1. With 3 day dry weather forecast begin clean water diversions-structures and pipes starting with I-2A, M-2C, M-2B and R-2. If water is present in the existing pond, use removable pumping station mand filter bag. Install M-2A, I-2, M-2 and E-2 with rip-rap outlet protection. Stabilize areas as installation is completed. Stabilize areas in the existing gravel roadway with gravel to allow safe passage. Install inlet protection as inlets are installed (needed in phase 2). Once completed during another 3 day dry weather forecast install I-1A, E-1A with minor grading and rip-rap. Install inlet protection for I-1A. Repair any sediment controls disturbed by the process as storm drain installation proceeds. During a subsequent 3 day dry weather forecasts install sediment traps 1 and 2 with associated earth dike and temporary swale.
PHASE 2
180 DAYS 5. Once clean water diversions are constructed, contact the inspector for approval prior to beginning work.
6. Begin demo work as shown on sheets 5,6 and 7. Store evergreen trees to be relocated. See Landscape plan for re-planting location. Trees may be replanted once clean water diversions are complete. Begin site grading, storm drains (not already constructed as clean water diversions) and utilities. Begin building construction. Install curb and gutter, barrier curb and paving base course. Install inlet protection as inlets are installed.
7. Repair sediment controls at the end of each day as necessary as grading progresses.
8. Stabilize slopes and reposition SSF as construction progresses.
9. Install sub base for road and parking areas.
PHASE 2A
30 DAYS 10. With the sediment control inspectors permission, once all areas are stabilized, remove sediment traps and install additional SSF to complete paving in area of Trap#2.
11. Complete remaining portion of lower parking lot I-8, I-7, M-4 and E-11. Install inlet protection as inlets are installed.
12. Final pave parking lots and driveway.
13. Grade in SWM facilities and install underdrains once all areas draining to facilities are stabilized. Delay placement of stone and filter media until 3 day dry weather is forecast. Install SWM landscaping.
14. Repair SSF as necessary at the end of each working day. Stabilize areas below SWM facilities with sod as noted on SWM plans.
15. Install site landscaping.
16. Once all areas are stabilized and with the permission of the sediment control inspector remove remaining sediment controls.

\*NOTE: ANY DISTURBANCE/DAMAGE TO THE TREE PROTECTION FENCES SHOULD BE REPAIRED IMMEDIATELY

NOTE: TSWM NOT REQUIRED TO TRAPS #1 AND #2 BASED ON DRAINAGE AREAS.

NOTE:

The terms "To Be Removed" and "To Be Relocated", and/or the abbreviation "T.B.R." requires the Project Contractor to remove/relocate said item. "To Be Removed By Others" or "To Be Relocated By Others" indicates said item is to be removed/relocated by an entity other than the Project Contractor.

ADJOINING PROPERTY INFORMATION:

Table with columns: NO., OWNER, ADDRESS, ACCT. #, DEED. Lists adjacent property owners and their details.

(NOTE: PLEASE REFER TO SHEETS 3 and 4 FOR ADJOINING PROPERTY LOCATIONS & INFORMATION).

ARCHEOLOGY NOTE

- 1. ANY ARTIFACTS FOUND DURING CONSTRUCTION SHALL BE TRANSFERRED TO THE ANNE ARUNDEL COUNTY CULTURAL RESOURCES ARCHEOLOGY LAB. CONTACT LAB DIRECTOR JENI BABIARZ (jbabi22@anncounty.org) FOR ARTIFACT TRANSFER AND COPY THE COUNTY ARCHEOLOGICAL SITES PLANNER, ANASTASIA POULOS (pzpou44@anncounty.org) ON ANY CORRESPONDENCE.

DEMOLITION NOTE

- 1. ITEMS TO BE REMOVED DURING DEMOLITION AND NOT REINSTALLED ON THE SITE MAY BE TURNED OVER TO THE COUNTY WESTERN DISTRICT MAINTENANCE SHOP ON SITE (LOT 2A) AS SALVAGE MATERIAL.

BGE ELECTRIC DESIGN NOTE

- 1. ALL PROPOSED ELECTRIC LINES AND STRUCTURES SHOWN ON THE PLANS HEREIN ARE BASED ON THE FINAL DESIGN PLAN BY BGE DESIGN SERVICES.
2. PROPOSED ELECTRIC INFRASTRUCTURE DESIGNED BY BGE IS SHOWN FOR REFERENCE ONLY. THE CONTRACTOR SHALL REFER TO THE APPROVED FINAL DESIGN PLAN BY BGE FOR SPECIFICATIONS AND REQUIREMENTS RELATING TO THE BGE ELECTRIC INFRASTRUCTURE.

OUTFALL STATEMENT

A field investigation was done of the outfalls and the conveyance systems down stream of them on October 31, 2023, by Century Engineering, LLC. The Bacon Ridge site is broken into four major drainage areas, A, A2, B, & C. Area A, drains to a swale running west along Severn Chapel Road. Area A2 drains to a swale running northwest from the middle of the proposed area of work and eventually rejoins with the Severn Chapel Road swale. Area B drains East from the southernmost portion of the proposed area of work. Area C is the southernmost area, and no work is proposed for this area therefore no computations are provided. All the drainage areas eventually combine but this is well outside of the study area, approximately 2 1/4 miles south of the proposed work area. The Point of investigation (POI) was set at where the proposed work areas were ten percent of the whole drainage area to that point. In most cases the proposed work was much less than the ten percent of the drainage area where the site drainage joined another larger stream or flood plain. A photo walking tour was done of the three outfalls the findings of this are described below:

Drainage area 'A' has Micro-bioretenation 1, Submerged Gravel Wetland 1A, and Bioswale 2 as well as culverts bypassing runoff from upstream properties around the Environmental Site Design features draining to it. These facilities outfall to a meadow area which drains to a swale along Severn Chapel Road. This swale drains to an area where a stream, part of Bacon Ridge Branch, crosses Severn Chapel Road. The stream is in a FEMA 100 year flood plain (PANEL 24003C0145E, EFF. DATE 10/16/12). There is no indication of erosion in the field or roadside swale.

Drainage area 'A2' has Submerged Gravel Wetland 1, 2 & 3, and Micro-bioretenation 2,3 & 4 as well as culverts bypassing runoff from upstream properties around the Environmental Site Design features draining to it. These features discharge to an existing meadow area which, in turn, drains to a swale leading to an existing pond. The discharge from the pond drains to a swale which crosses two private driveways eventually combining with the discharge from D.A. A1 near Maud Lane just before reaching the existing flood plain and stream. There is no indication of erosion in the field or swales.

Drainage area 'B' has Micro-bioretenation 5 & 6, and Bioswales 3 & 4 draining to it. These features discharge to an existing meadow area which drains to a swale leading to a stream eventually leading to Bacon Ridge Branch. There is no indication of erosion in the field or swales.

24TMP-026983

Project title block for ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS, G02020077. Includes Century Engineering logo, date 6/21/2024, and various approval signatures and dates.

T:\2023\Facilities\2023523710018baconridge construction drawings phase 1\CIVIL\CADD\Drawings\3. Construction Documents\2023523710018(CD-01a) General Notes.dwg Jun 21 11:20:24 -10:30am ktdarley



**ENVIRONMENTAL SITE DATA**

- GROSS TRACT AREA: ±152.06 AC
- PROJECT AREA: ±9.90 AC / ±431,244 SF
- FLOODPLAIN AREA IN LOD: 0 AC / 0 SF
- WETLAND AREA IN LOD: 0 AC / 0 SF
- WETLAND BUFFER AREA IN LOD: 0 AC / 0 SF
- STREAM BUFFER AREA IN LOD: 0 AC / 0 SF
- EXISTING IMPERVIOUS IN LOD: ±0.47 AC / ±20,602 SF
- THIS SITE IS NOT WITHIN THE CHESAPEAKE BAY CRITICAL AREA.
- THERE ARE NO BOGS WITHIN OR NEAR THE SITE.

**CULTURAL RESOURCES**

- Historic / Archeological Sites within BRNA Severn Chapel Area:  
18AN433 (Chapel of Ease)  
18AN527 (Forney)  
AA-882 (Thomas Crandell Farm)  
AA-896 (Chapel of Ease)
- Historic / Archeological Sites within PROJECT SITE:  
AA0882 (Thomas Crandell Farm)  
AA-2351 (Severn Chapel Road)

**PROPERTY DATA**

- LOT 1: Acct. 90109639 Deed Ref. 33968 / 107  
 LOT 1A: Acct. 90109638 Deed Ref. 33968 / 120  
 LOT 2A: Acct. 90109640 Deed Ref. 9827 / 343  
 LOT 2B: Acct. 90210144 Deed Ref. 33968 / 113  
 LOT 2: Acct. 90109641 Deed Ref. 33968 / 100  
 LOT 2 RESIDUE: Acct. 90109642 Deed Ref. 33968 / 126

LINE	BEARING	DISTANCE (FT)
L1	N 43°11'36" E	236.74
L2	N 34°22'02" E	391.34
L3	S 34°22'02" E	211.25
L4	N 55°40'58" E	201.50
L5	N 34°22'02" W	214.17
L6	N 41°01'47" E	0.96
L7	S 34°40'09" E	1,321.97
L8	S 32°54'33" E	1,637.76
L9	S 07°01'46" E	3,234.00
L10	N 64°38'05" W	1,160.83
L11	N 25°22'23" W	745.80
L12	N 30°52'23" W	201.30
L13	N 29°08'08" W	264.00
L14	N 27°07'22" W	165.00
L15	N 13°52'23" W	231.00
L16	N 17°37'23" W	132.00
L17	N 37°52'23" W	33.00
L18	N 54°19'51" E	549.45
L19	N 32°06'04" W	168.51
L20	N 35°39'44" W	364.37
L21	N 14°59'51" W	115.49
L22	N 38°39'18" W	821.81
L23	N 06°06'06" W	477.08
L24	N 61°07'55" W	400.28
L25	N 52°52'58" W	536.24

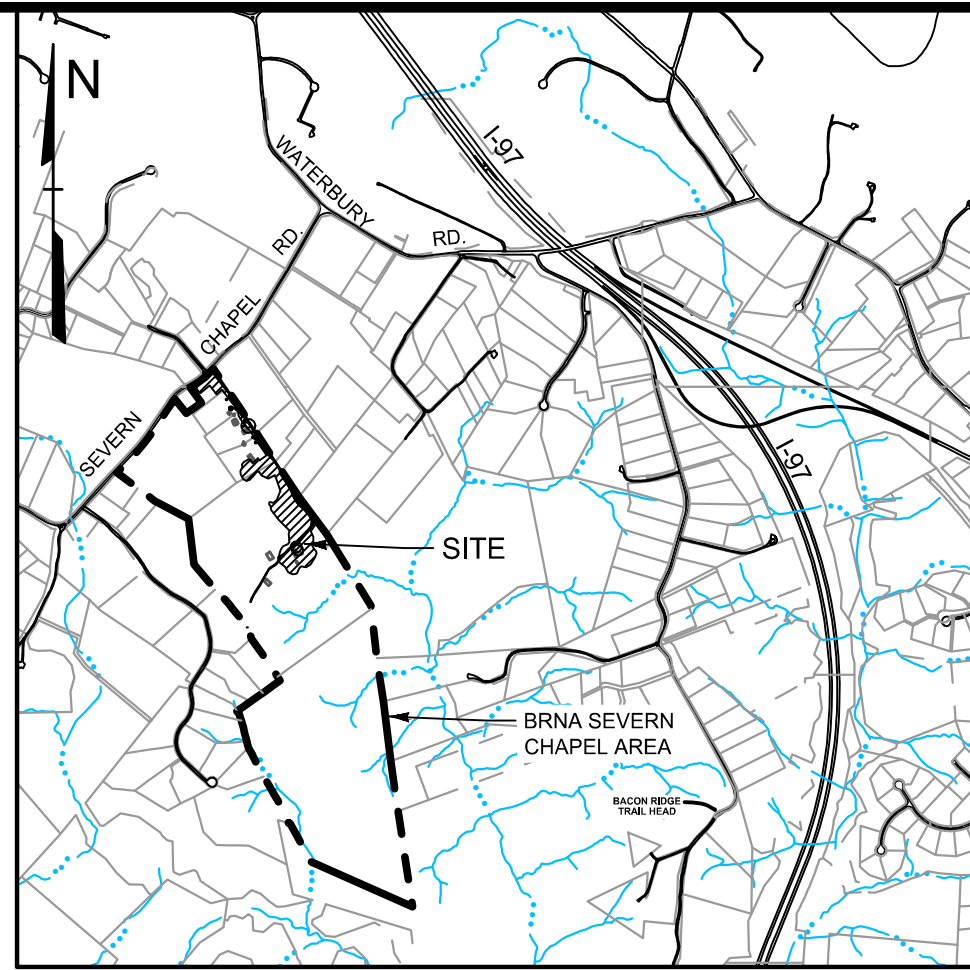
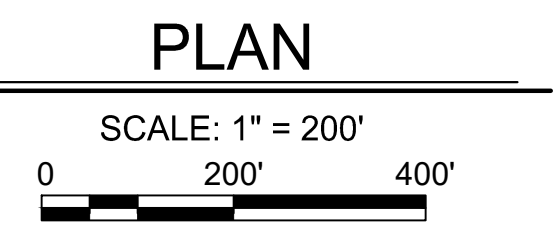
CURVE	DELTA ANGLE	RADIUS	ARC	TAN.	CHORD	CHORD BEARING
C1	08°49'33"	2030.00	312.71	156.66	312.40	N 38°46'49" E
C2	08°14'36"	370.00	53.22	26.66	53.18	N 38°29'21" E
C3	17°26'38"	930.00	283.14	142.67	282.05	N 49°45'06" E

NOTE: LINE AND CURVE DATA IS ADAPTED FROM PLAT 11860-11861 AND MAY NOT MATCH THE GIS PROPERTY BOUNDARY SHOWN HEREON.

KEY	NAME	SLOPE	HYDROLOGIC GROUP	HYDRIC SOIL
AdA	Adelphia-Holmdel complex	0-2%	C	No
AdB	Adelphia-Holmdel complex	2-5%	C	No
AsB	Annapolis fine sandy loam	2-5%	C	No
AsC	Annapolis fine sandy loam	5-10%	C	No
AsE	Annapolis fine sandy loam	15-25%	C	No
AsF	Annapolis fine sandy loam	25-40%	C	No
CoB	Collington-Wist complex	2-5%	B	No
CoC	Collington-Wist complex	5-10%	B	No
CRD	Collington and Annapolis soils	10-15%	B/C	No
CSE	Collington, Wist, and Westphalia soils	15-25%	A/B	No
CSF	Collington, Wist, and Westphalia soils	25-40%	A/B	No
DnB	Donlonton fine sandy loam	2-5%	D	No
FaaA	Fallsington sandy loams	0-2%	C/D	Yes
SaB	Sassafras fine sandy loam	2-5%	B	No
SsA	Shrewsbury loam	0-2%	B/D	Yes
W	Water	-	-	-
WBA	Widewater and Issue soils	0-2%	B/D	Yes



1 NOTE: PLEASE REFER TO SHEET 2 FOR ADJACENT PROPERTY OWNER INFORMATION



VICINITY MAP  
SCALE: 1" = 200'

**LEGEND**

- Property Line
- Adjoiner / Lot Line
- Existing Minor Contour
- Existing Major Contour
- Existing Edge of Road/Paving
- Soil Line
- Existing Building
- Existing Tree Line
- Existing Forest Conservation Easement
- Non-Tidal Wetlands and 25' Buffer
- 100' Stream Buffer
- FEMA 100-Year Flood Plain (PANEL 24003C0145E, EFF. DATE 10/16/12)
- Water Edge or Stream Centerline Zoning Line
- Existing Septic Area
- Limit of Disturbance

Note: Refer to Sheet 2 for additional Legend Notes & Items

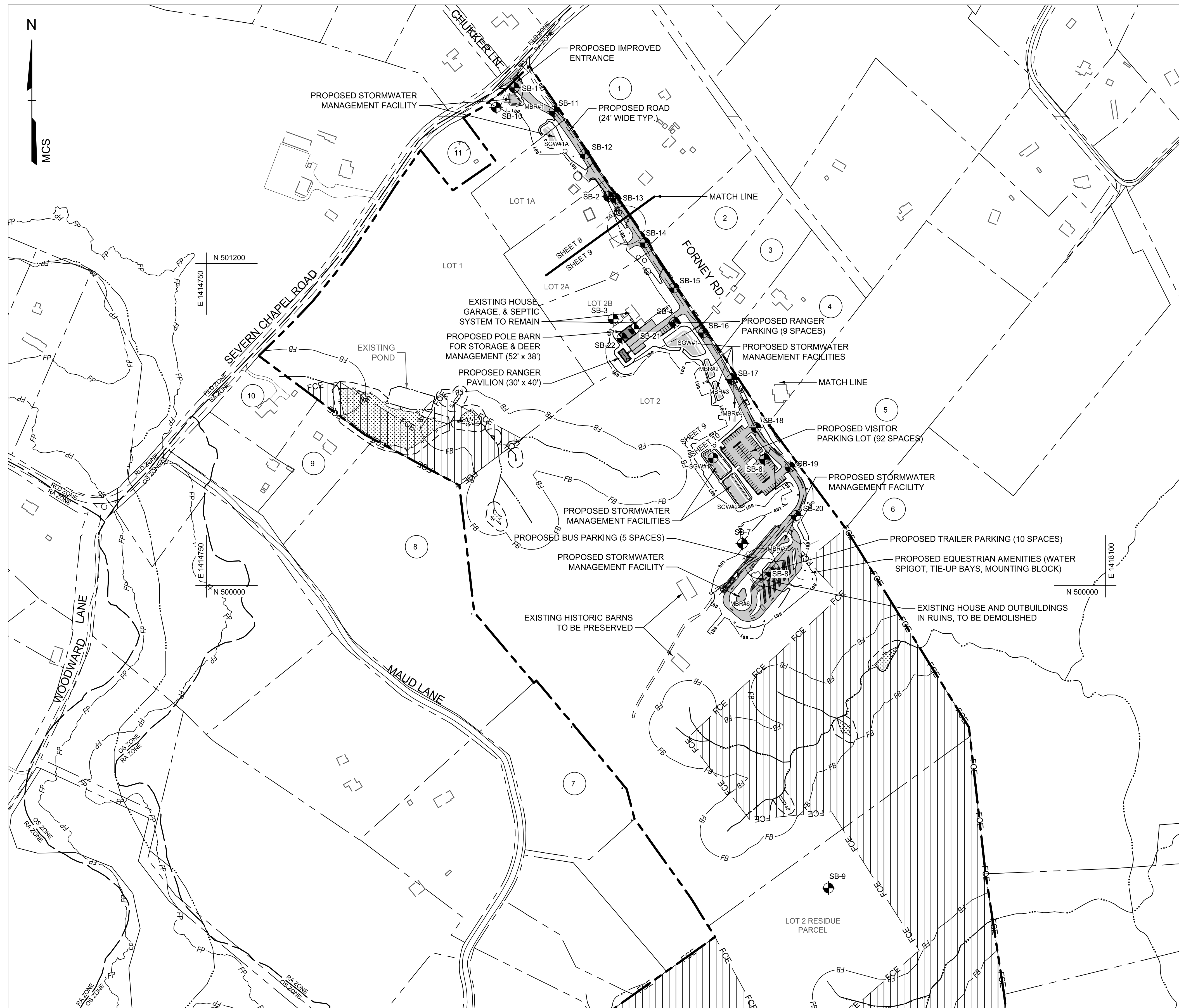
24TMP-026983

 A Kleinfelder Company 10710 Gilroy Road, Hunt Valley, MD 21031 Phone: 443.589.2400 www.centuryeng.com	DATE: 6/21/2024 	ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS		G02020077 CONSTRUCTION DOCUMENTS		
	REVISED DATE BY APPROVED DATE CHIEF ENGINEER APPROVED DATE ASSISTANT CHIEF ENGINEER	APPROVED DATE PROJECT MANAGER APPROVED DATE CHIEF, RIGHT OF WAY	SCALE AS SHOWN DRAWN BY LMV/JRD CHECKED BY MJP/AJD SHEET 3 OF 77 PROJECT NO.: P588001 DATE: 6/7/2024	Overall Existing Conditions Plan Severn Chapel Area of the Bacon Ridge Natural Area 2nd Tax District Anne Arundel Co., MD. Tax Map 37, Grid 11, Parcel 86		

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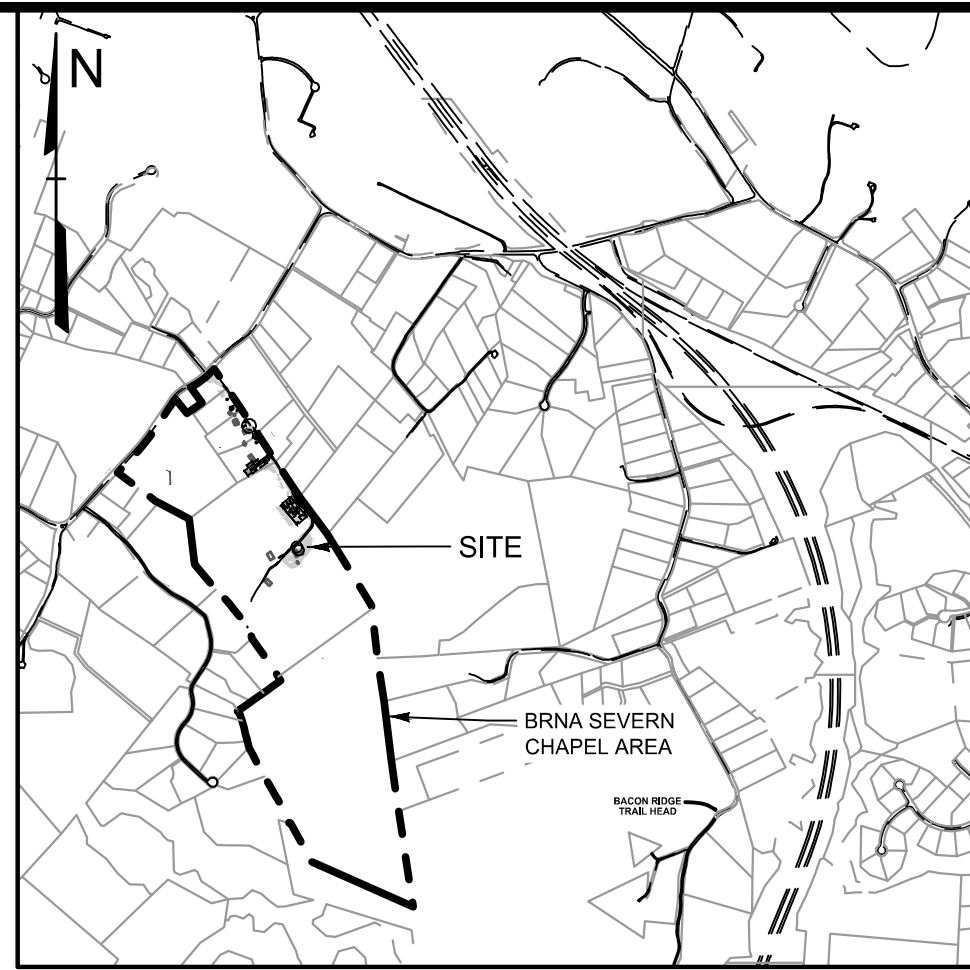
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NOTE: PLEASE REFER TO SHEET 2 FOR ADJACENT PROPERTY OWNER INFORMATION

**PLAN**

SCALE: 1" = 200'



**VICINITY MAP**

SCALE: 1" = 2000'

**LEGEND**

- Property Line
- Adjoiner / Lot Line
- Zoning Line
- Existing Edge of Road/Paving
- Existing Building
- Non-Tidal Wetlands and 25' Buffer
- Water Edge or Stream Centerline
- 100' Stream Buffer
- FEMA 100-Year Flood Plain
- Forest Conservation Easement
- Proposed Paving
- Proposed Building
- Soil Boring
- Limit of Disturbance

Note: Refer to Sheet 2 for additional Legend Notes & Items

24TMP-026983

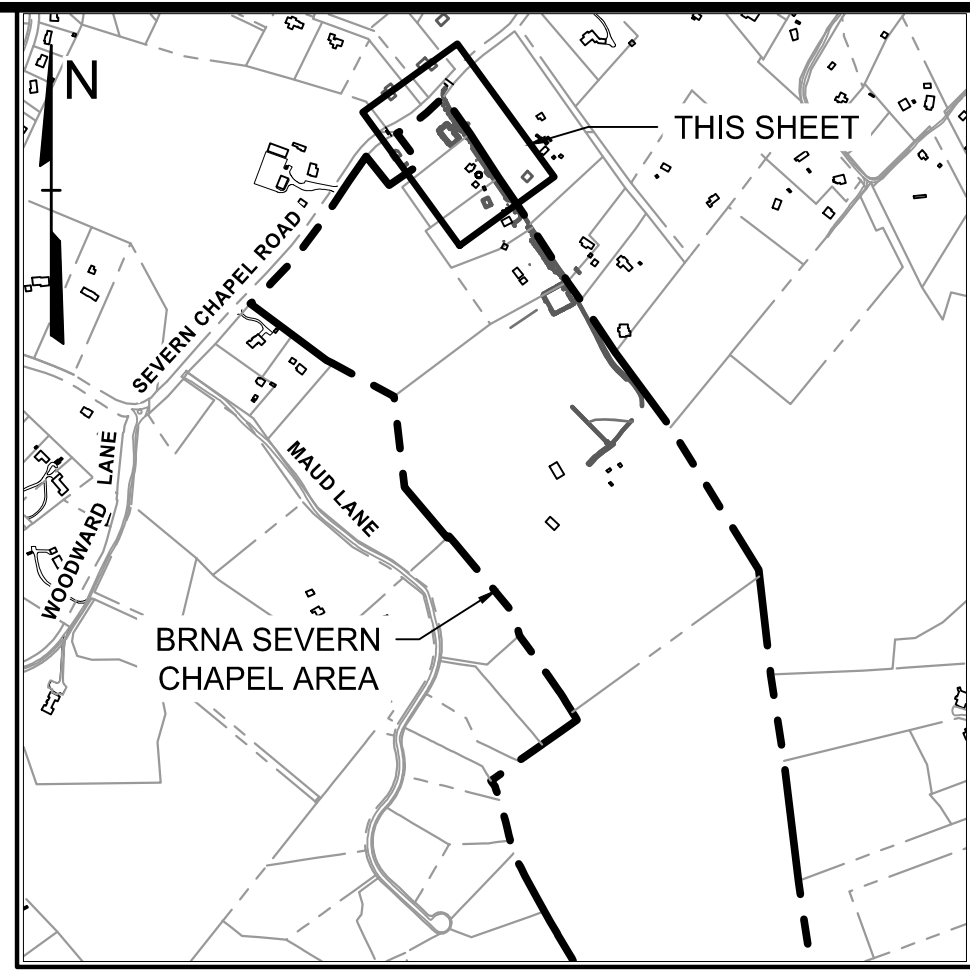
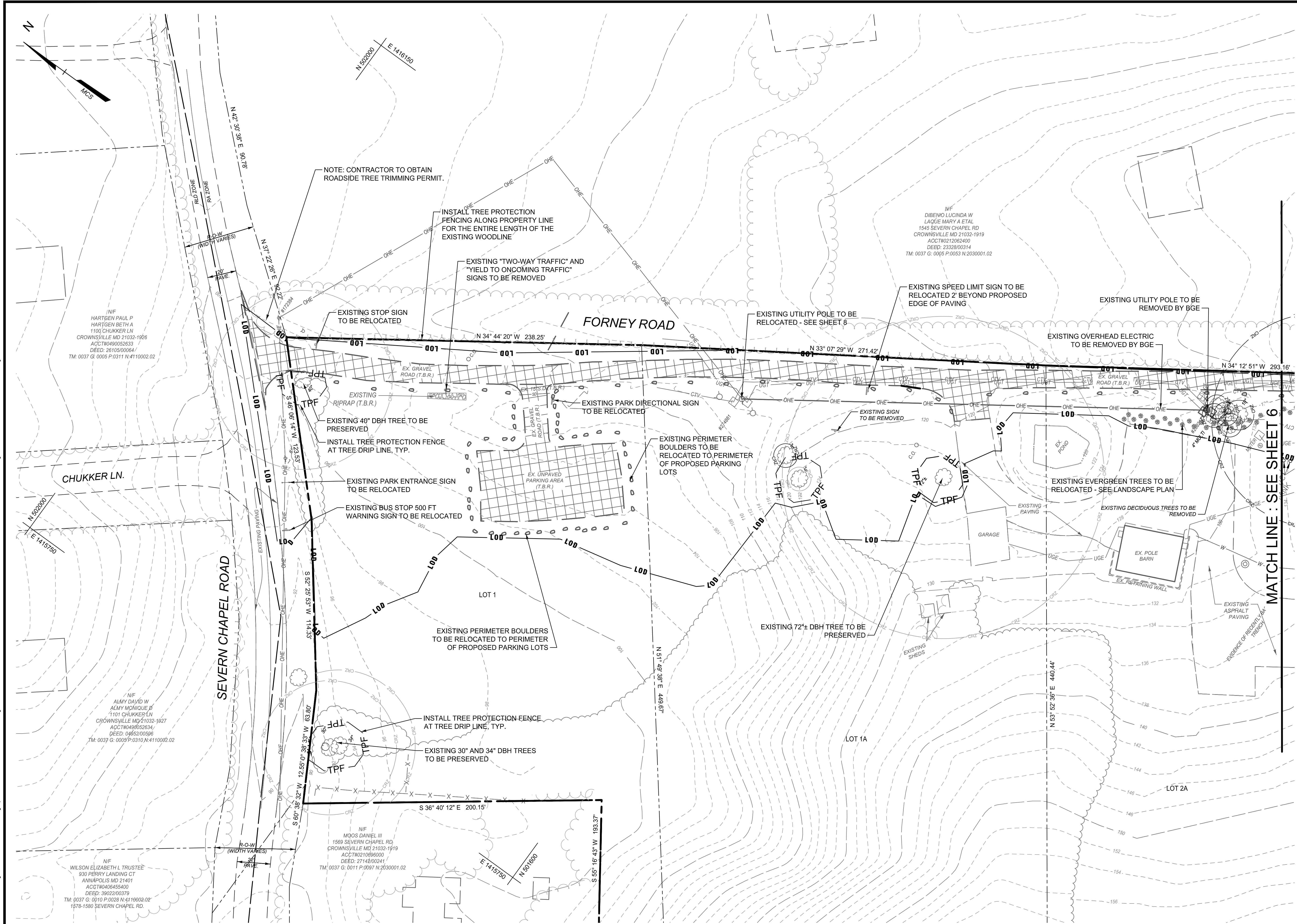
 <b>CENTURY ENGINEERING</b> A Kleinfelder Company 10710 Gilroy Road, Hunt Valley, MD 21031 Phone: 443.589.2400 www.centuryeng.com	DATE: 6/21/2024  LICENSE NO. 32574	ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS		G02020077 CONSTRUCTION DOCUMENTS																														
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>REVISED</th> <th>DATE</th> <th>BY</th> <th>APPROVED</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	REVISED	DATE	BY	APPROVED	DATE						<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>APPROVED</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	APPROVED	DATE			<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>APPROVED</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	APPROVED	DATE			<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>SCALE</th> <th>AS SHOWN</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	SCALE	AS SHOWN			<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">DRAWN BY</th> <th colspan="2">CHECKED BY</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	DRAWN BY		CHECKED BY				
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PROJECT MANAGER: _____ APPROVED: _____ DATE: _____ ASSISTANT CHIEF ENGINEER: _____		PROJECT MANAGER: _____ APPROVED: _____ DATE: _____ CHIEF, RIGHT OF WAY: _____		SHEET 4 OF 77 PROJECT NO.: P588001 DATE: 6/7/2024																														

**Overall Site Plan**  
**Severn Chapel Area**  
 of the Bacon Ridge Natural Area

2nd Tax District Anne Arundel Co., MD. Tax Map 37, Grid 11, Parcel 86



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PLAN KEY

SCALE: 1" = 1000'

LEGEND

- Property Line
- Adjoiner / Lot Line
- Zoning Line
- Existing Minor Contour
- Existing Major Contour
- Existing Edge of Road/Paving
- Existing Water
- Existing Overhead Electric Line
- Existing Utility Pole
- Existing Guy Pole / Guy Wire
- Existing Sign
- Existing Fence
- Existing Natural Surface Trail
- Existing Tree Line
- Existing Deciduous Tree
- Existing Evergreen Tree
- Critical Root Zone
- Existing Building
- Limit of Disturbance
- Existing Impervious Areas to be Removed
- To Be Removed
- Tree Protection Fence
- Existing Tree to be Removed
- Existing Boulders
- Existing Concrete
- Water Edge or Stream Centerline
- Remove Item

Note: Refer to Sheet 2 for additional Legend Notes & Items

PLAN

SCALE: 1" = 30'

24TMP-026983

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DATE: 6/21/2024

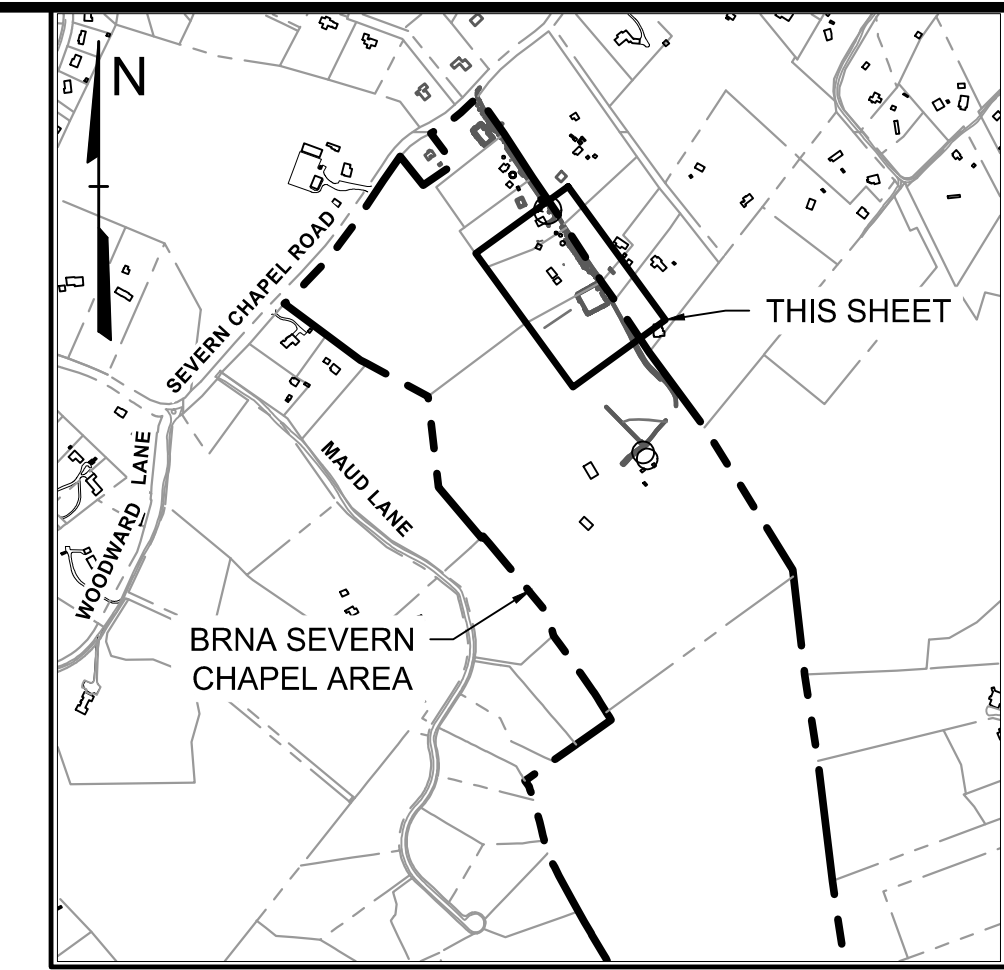
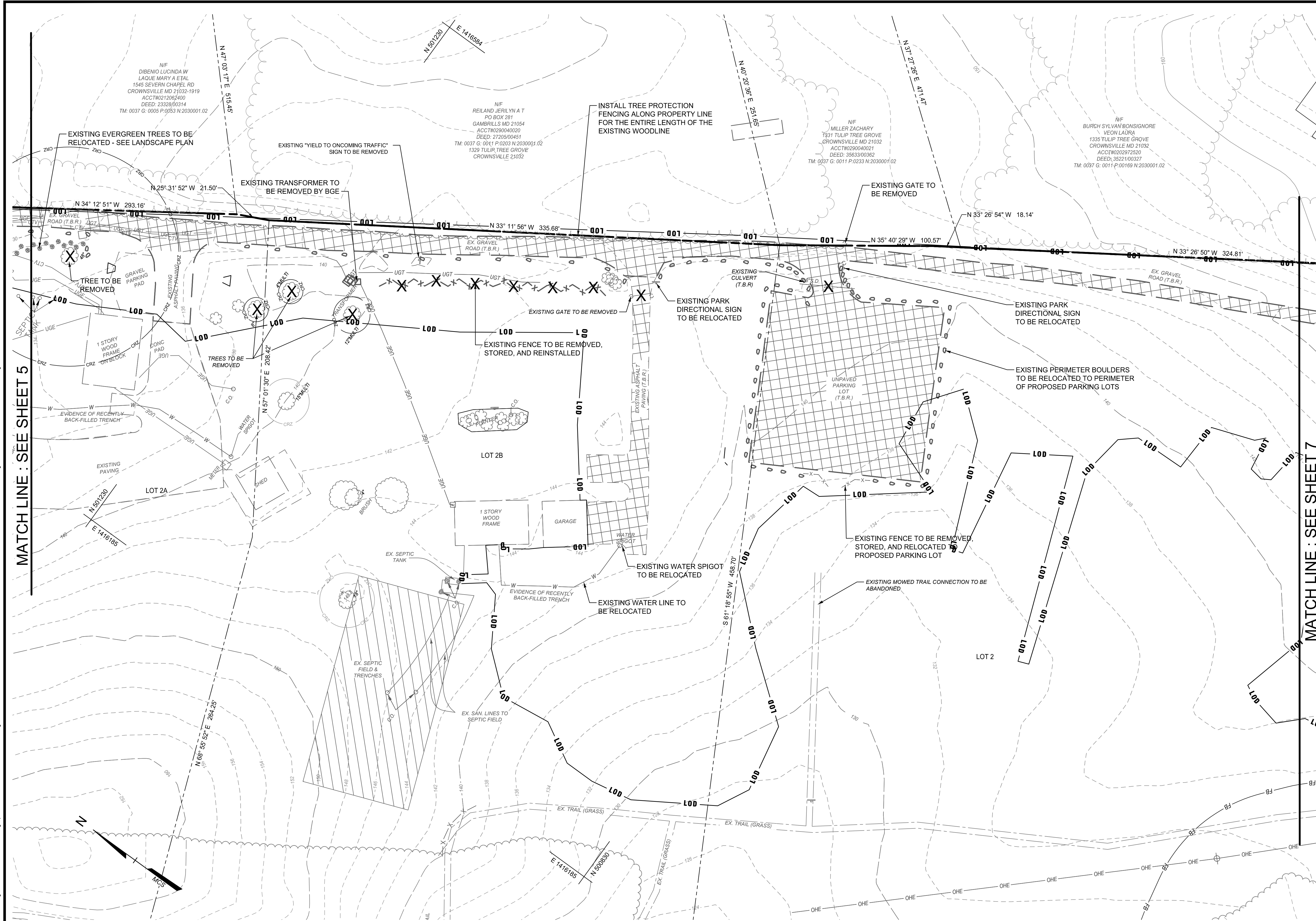
REVISED	DATE	BY	APPROVED	DATE

ANNE ARUNDEL COUNTY  
DEPARTMENT OF PUBLIC WORKS  
G02020077  
CONSTRUCTION DOCUMENTS  
Demolition Plan  
Severn Chapel Area of the Bacon Ridge Natural Area  
2nd Tax District Anne Arundel Co., MD. Tax Map 37, Grid 11, Parcel 86

SCALE	AS SHOWN
DRAWN BY	LMV/VRT
CHECKED BY	MJP/AJD
SHEET	5 OF 77
PROJECT NO.:	P588001
DATE:	6/7/2024



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**LEGEND**

	Property Line
	Adjoiner / Lot Line
	Existing Minor Contour
	Existing Major Contour
	Existing Edge of Road/Paving
	Existing Storm Drain
	Existing Water
	Existing Underground Telephone Line
	Existing Underground Electric Line
	Existing Overhead Electric Line
	Existing Utility Pole
	Existing Guy Pole / Guy Wire
	Existing Sign
	Existing Fence
	Existing Natural Surface Trail
	Existing Tree Line
	Existing Deciduous Tree
	Existing Evergreen Tree
	Critical Root Zone
	Existing Building
	Existing Septic Area
	Limit of Disturbance
	Existing Impervious Areas to be Removed
	To Be Removed
	Existing Tree to be Removed
	Existing Boulders
	Existing Concrete
	Water Edge or Stream Centerline
	Zoning Line
	Remove Item

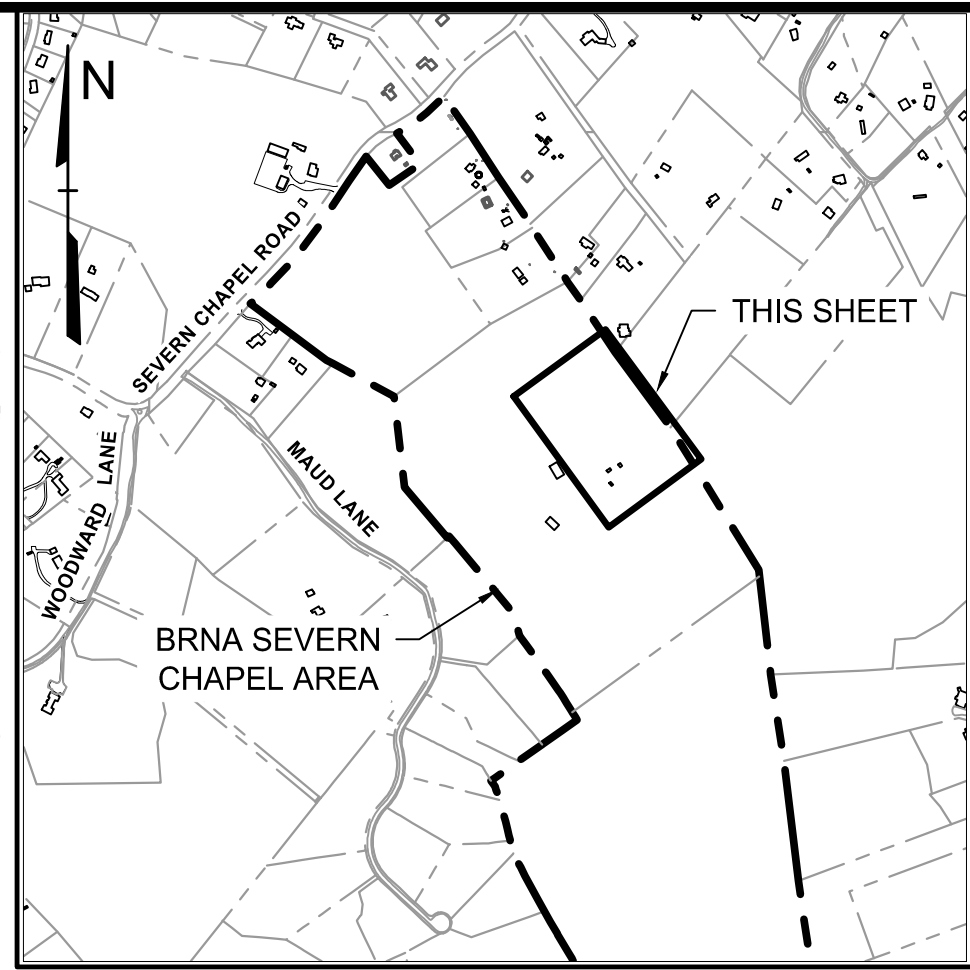
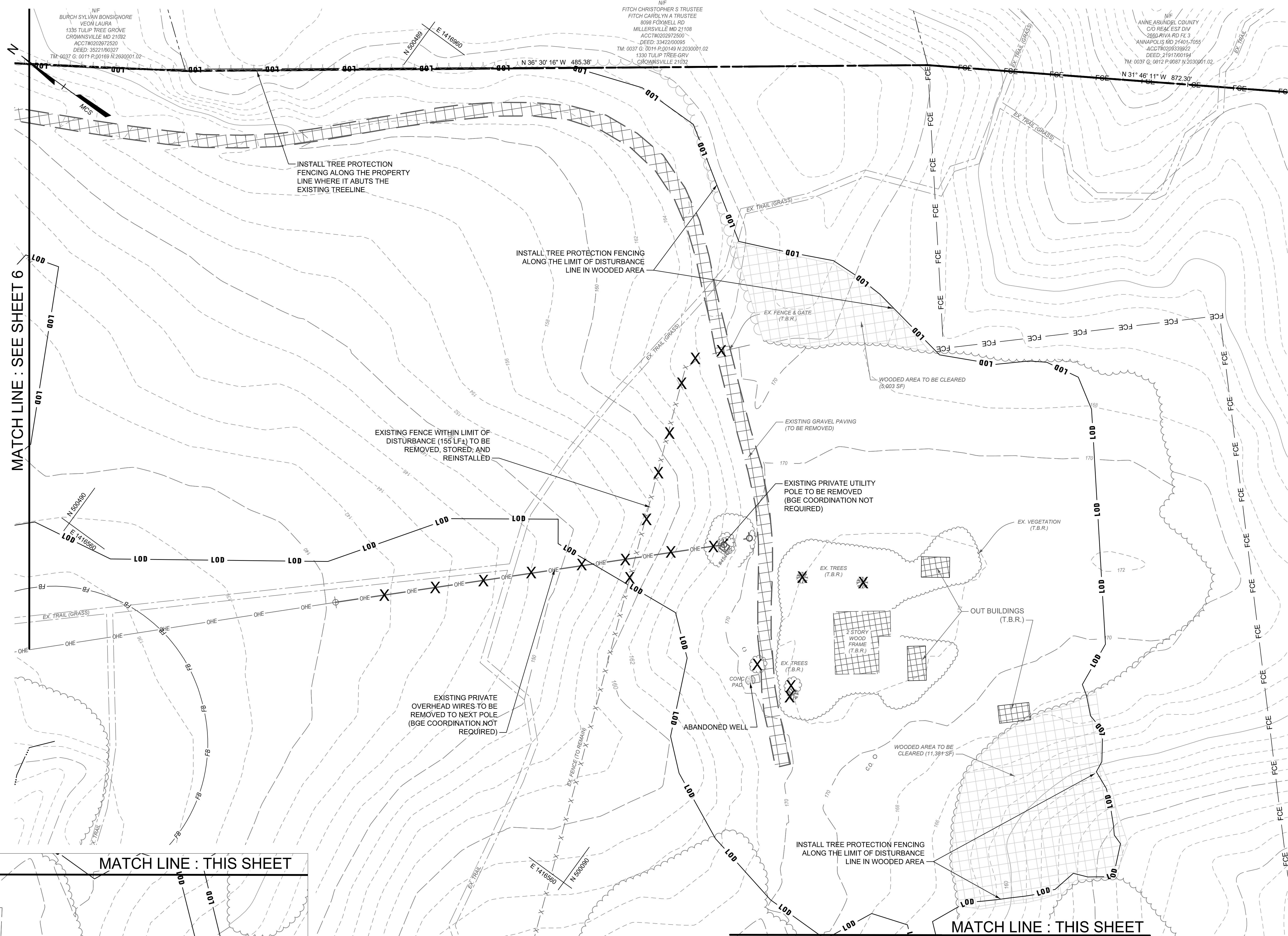
Note: Refer to Sheet 2 for additional Legend Notes & Items

**PLAN**  
SCALE: 1" = 30'

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				REVISIONS: DATE BY APPROVED DATE _____ _____ _____		APPROVED DATE APPROVED DATE _____ _____ _____		SCALE AS SHOWN DRAWN BY LMV/VRT CHECKED BY MJP/AJD SHEET 6 OF 77 PROJECT NO.: P588001 DATE: 6/7/2024	
APPROVED DATE _____ CHIEF ENGINEER APPROVED DATE _____ ASSISTANT CHIEF ENGINEER				PROJECT MANAGER APPROVED DATE _____ CHIEF, RIGHT OF WAY				CONSTRUCTION DOCUMENTS <b>Demolition Plan</b> Severn Chapel Area of the Bacon Ridge Natural Area 2nd Tax District Anne Arundel Co., MD. Tax Map 37, Grid 11, Parcel 86	



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PLAN KEY

SCALE: 1" = 1000'

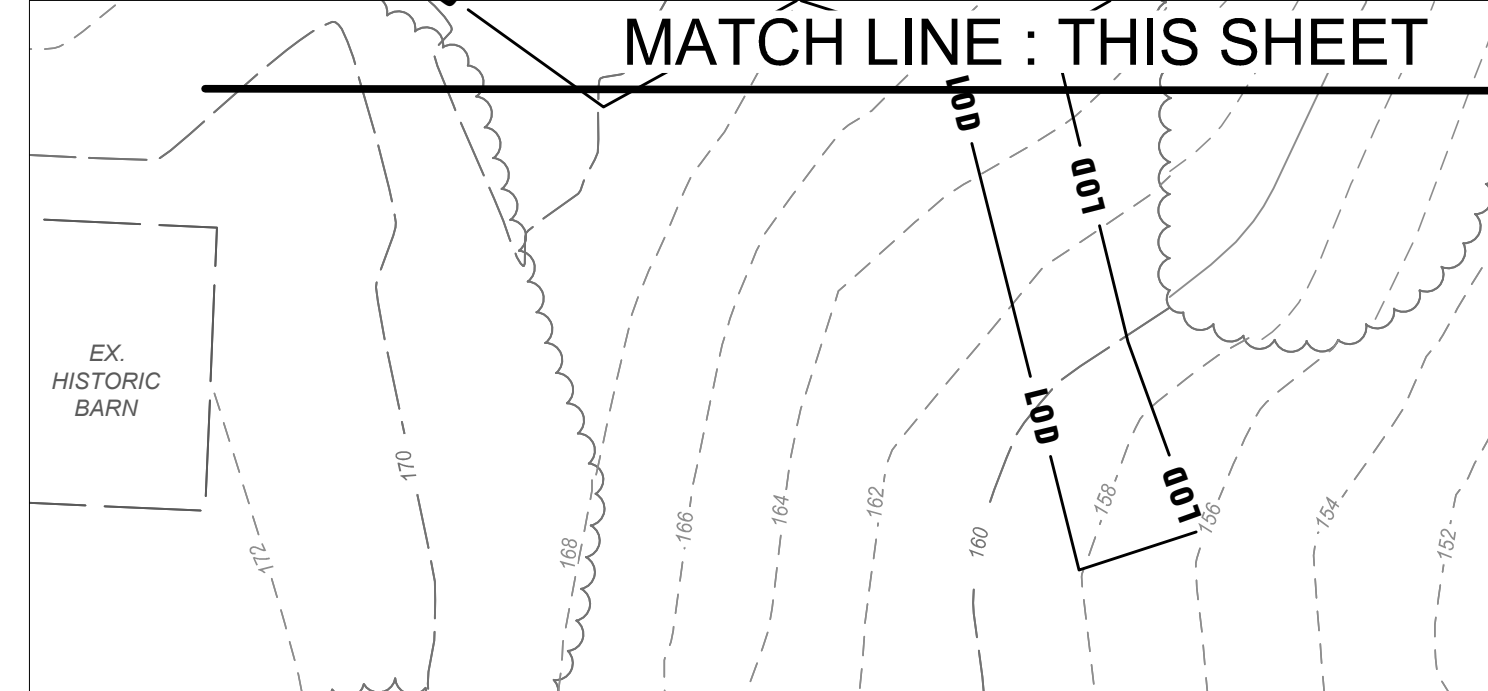
LEGEND

- Property Line
- Adjoiner / Lot Line
- Existing Minor Contour
- Existing Major Contour
- Existing Edge of Road/Paving
- Existing Overhead Electric Line
- Existing Utility Pole
- Existing Guy Pole / Guy Wire
- Existing Sign
- Existing Fence
- Existing Natural Surface Trail
- Existing Tree Line
- Existing Deciduous Tree
- Existing Evergreen Tree
- Existing Building
- Existing Forest Conservation Easement
- 100' Stream Buffer
- Water Edge or Stream Centerline
- Limit of Disturbance
- Existing Impervious Areas to be Removed
- Wooded Areas to be Cleared
- To Be Removed
- Existing Tree to be Removed
- Existing Boulders
- Existing Concrete
- Remove Item

Note: Refer to Sheet 2 for additional Legend Notes & Items

NOTE:  
The terms "To Be Removed" and "To Be Relocated", and/or the abbreviation "T.B.R." requires the Project Contractor to remove/relocate said item. "To Be Removed By Others" or "To Be Relocated By Others" indicates said item is to be removed/relocated by an entity other than the Project Contractor.

24TMP-026983



PLAN  
SCALE: 1" = 30'

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DEPARTMENT OF PUBLIC WORKS

APPROVED	DATE	APPROVED	DATE

SCALE AS SHOWN	CHECKED BY	PROJECT NO.	DATE

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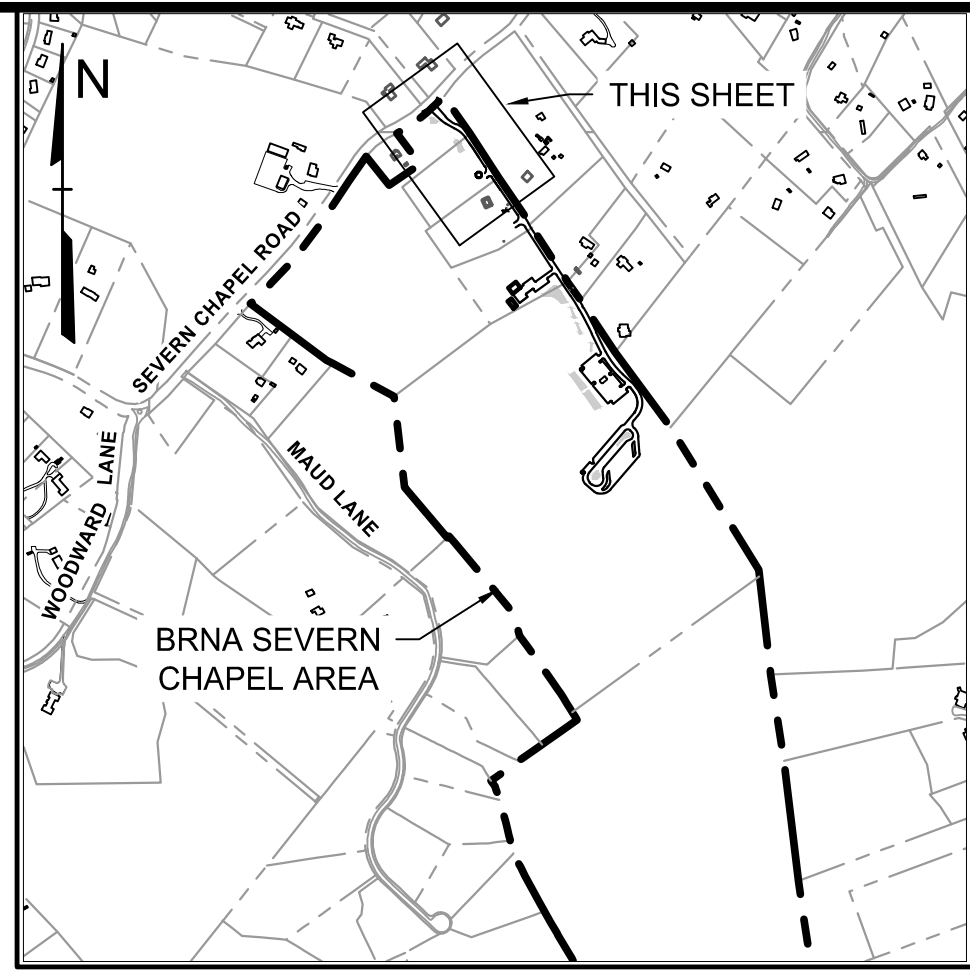
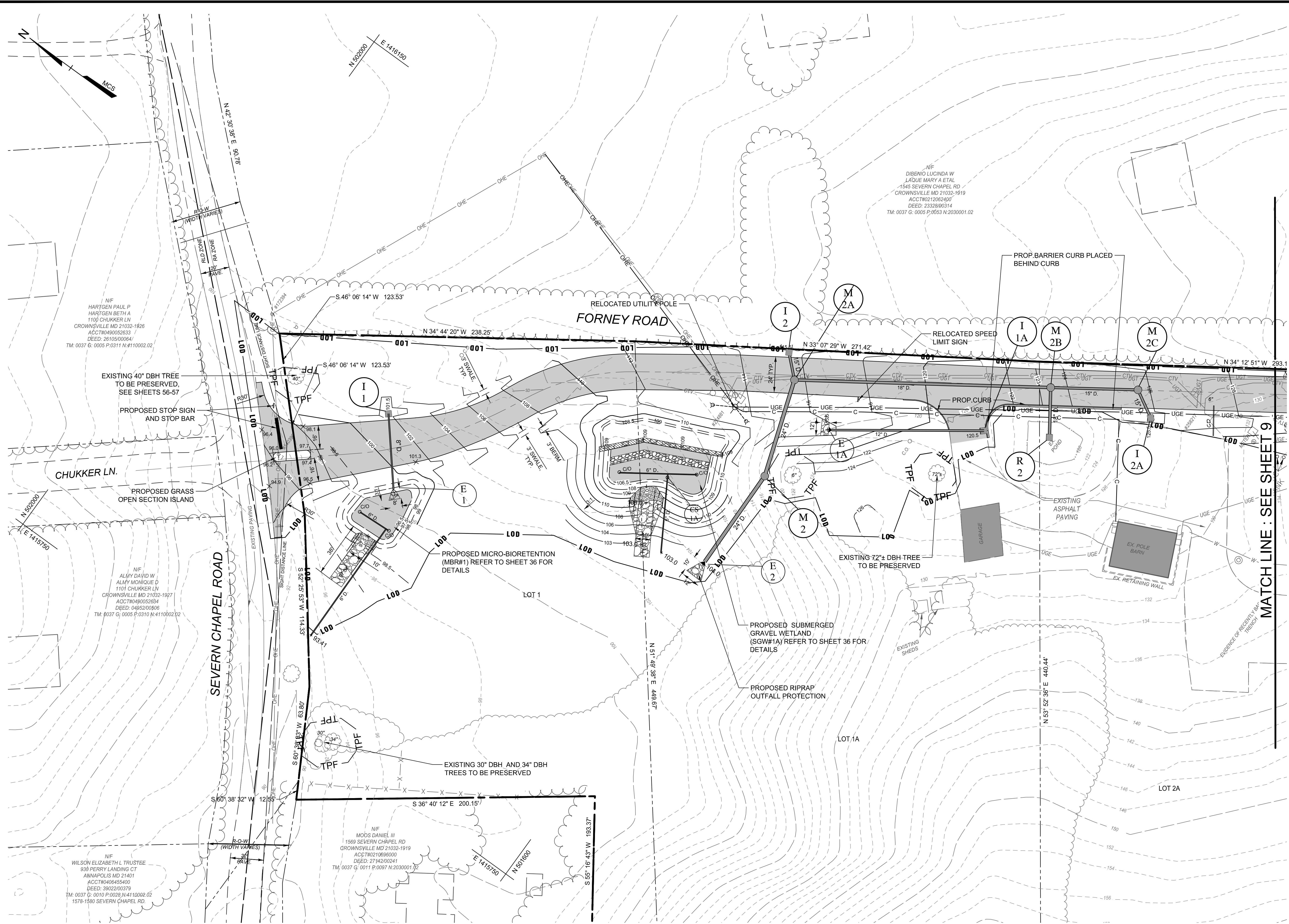
CONSTRUCTION DOCUMENTS  
Demolition Plan

Severn Chapel Area  
of the Bacon Ridge Natural Area

2nd Tax District Anne Arundel Co., MD. Tax Map 37, Grid 11, Parcel 86



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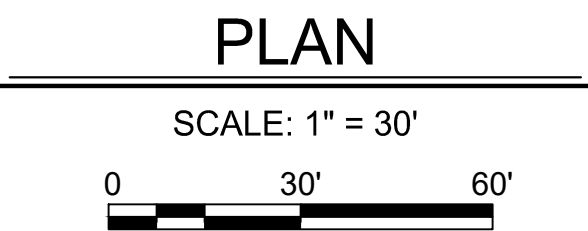


**LEGEND**

	Property Line
	Adjoiner / Lot Line
	Zoning Line
	Existing Minor Contour
	Existing Major Contour
	Existing Edge of Road/Paving
	Existing Storm Drain
	Existing Water
	Existing Overhead Electric Line
	Existing Utility Pole
	Existing Guy Pole / Guy Wire
	Existing Sign
	Existing Fence
	Existing Natural Surface Trail
	Existing Tree Line
	Existing Deciduous Tree
	Existing Evergreen Tree
	Tree Protection Fence
	Existing Building
	Limit of Disturbance
	Proposed Minor Contour
	Proposed Major Contour
	Proposed Spot Elevation
	Proposed Edge of Road/Paving
	Proposed Asphalt Paving
	Proposed Compacted Earth Spillway
	Proposed Inlet and Storm Drain
	Proposed Storm Drain Outfall
	Proposed Timber/Stone Check Dam
	Soil Boring
	Relocated Sign
	Relocated Utility Pole
	Relocated Guy Pole / Guy Wire
	Relocated Overhead Electric Line
	Water Edge or Stream Centerline
	Zoning Line

Note: Refer to Sheet 2 for additional Legend Notes & Items

MATCH LINE : SEE SHEET 9

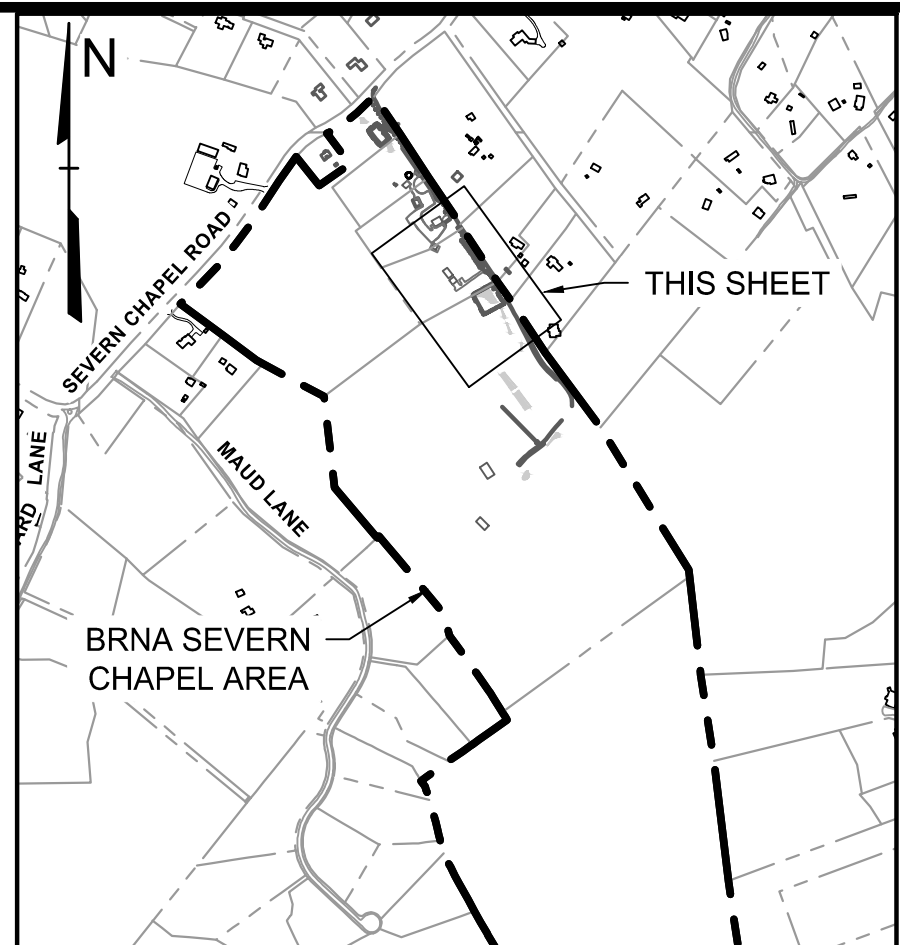
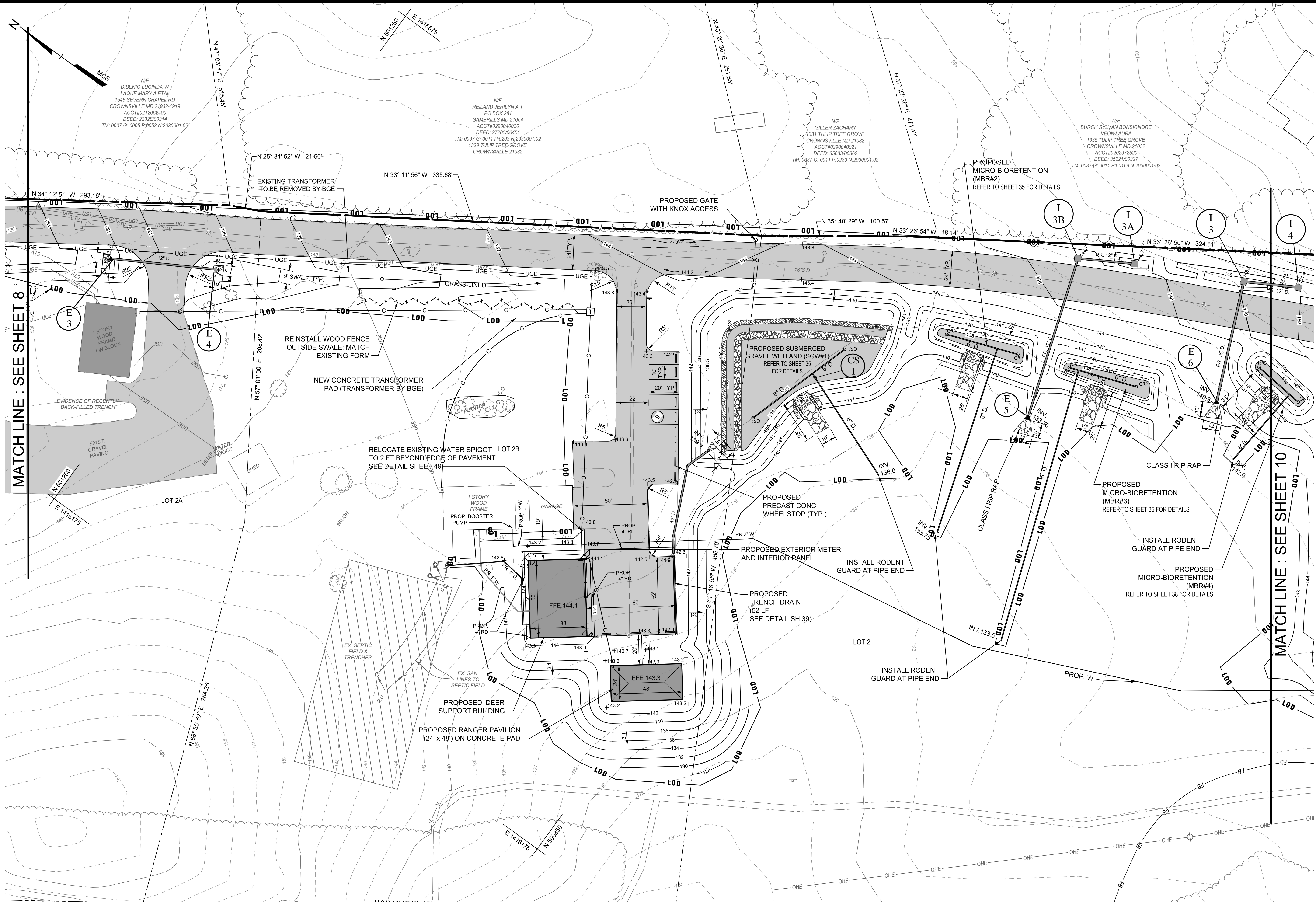


 A Kleinfelder Company 10710 Gilroy Road, Hunt Valley, MD 21031 Phone: 443.589.2400 www.centuryeng.com	DATE: 6/21/2024 LICENSE NO. 32574	<table border="1"> <tr> <th>REVISED</th> <th>DATE</th> <th>BY</th> <th>APPROVED</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	REVISED	DATE	BY	APPROVED	DATE						ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS G02020077 CONSTRUCTION DOCUMENTS													
	REVISED	DATE	BY	APPROVED	DATE																					
<table border="1"> <tr> <td>CHIEF ENGINEER</td> <td>DATE</td> <td>PROJECT MANAGER</td> <td>DATE</td> </tr> <tr> <td>APPROVED</td> <td> </td> <td>APPROVED</td> <td> </td> </tr> <tr> <td>ASSISTANT CHIEF ENGINEER</td> <td> </td> <td>CHIEF, RIGHT OF WAY</td> <td> </td> </tr> </table>	CHIEF ENGINEER	DATE	PROJECT MANAGER	DATE	APPROVED		APPROVED		ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY		<table border="1"> <tr> <td>SCALE AS SHOWN</td> <td>CHECKED BY</td> <td>PROJECT NO.:</td> <td>DATE:</td> </tr> <tr> <td> </td> <td>MJP/AJD</td> <td>P588001</td> <td>6/7/2024</td> </tr> <tr> <td>SHEET 8 OF 77</td> <td> </td> <td> </td> <td> </td> </tr> </table>	SCALE AS SHOWN	CHECKED BY	PROJECT NO.:	DATE:		MJP/AJD	P588001	6/7/2024	SHEET 8 OF 77				Site, Grading & Utility Plan Severn Chapel Area of the Bacon Ridge Natural Area 2nd Tax District Anne Arundel Co., MD.
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APPROVED		APPROVED																								
ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY																								
SCALE AS SHOWN	CHECKED BY	PROJECT NO.:	DATE:																							
	MJP/AJD	P588001	6/7/2024																							
SHEET 8 OF 77																										

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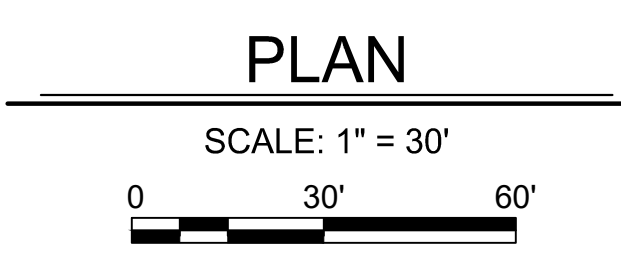
PLAN KEY

SCALE: 1" = 100'

LEGEND

- Property Line
- Adjoiner / Lot Line
- Existing Minor Contour
- Existing Major Contour
- Existing Edge of Road/Paving
- Existing Storm Drain
- Existing Water
- Existing Underground Telephone Line
- Existing Underground Electric Line
- Existing Overhead Electric Line
- Existing Utility Pole
- Existing Guy Pole / Guy Wire
- Existing Sign
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- Existing Tree Line
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- Existing Evergreen Tree
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- Tree Protection Fence
- Existing Septic Area
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- Proposed Asphalt Paving
- Proposed Edge of Road/Paving
- Proposed Curb & Gutter
- Proposed Compacted Earth Spillway
- Proposed Inlet and Storm Drain
- Proposed Storm Drain Outfall
- Proposed Check Dam
- Proposed Water Line
- Proposed Septic Connection
- Soil Boring
- Relocated Sign
- Proposed Precast Conc. Wheelstop
- Proposed Underground Primary Electric
- Proposed Electric Connection/Conduit

Note: Refer to Sheet 2 for additional Legend Notes & Items



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LICENSE NO. 32574

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DATE	BY	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE

ANNE ARUNDEL COUNTY  
DEPARTMENT OF PUBLIC WORKS

G02020077

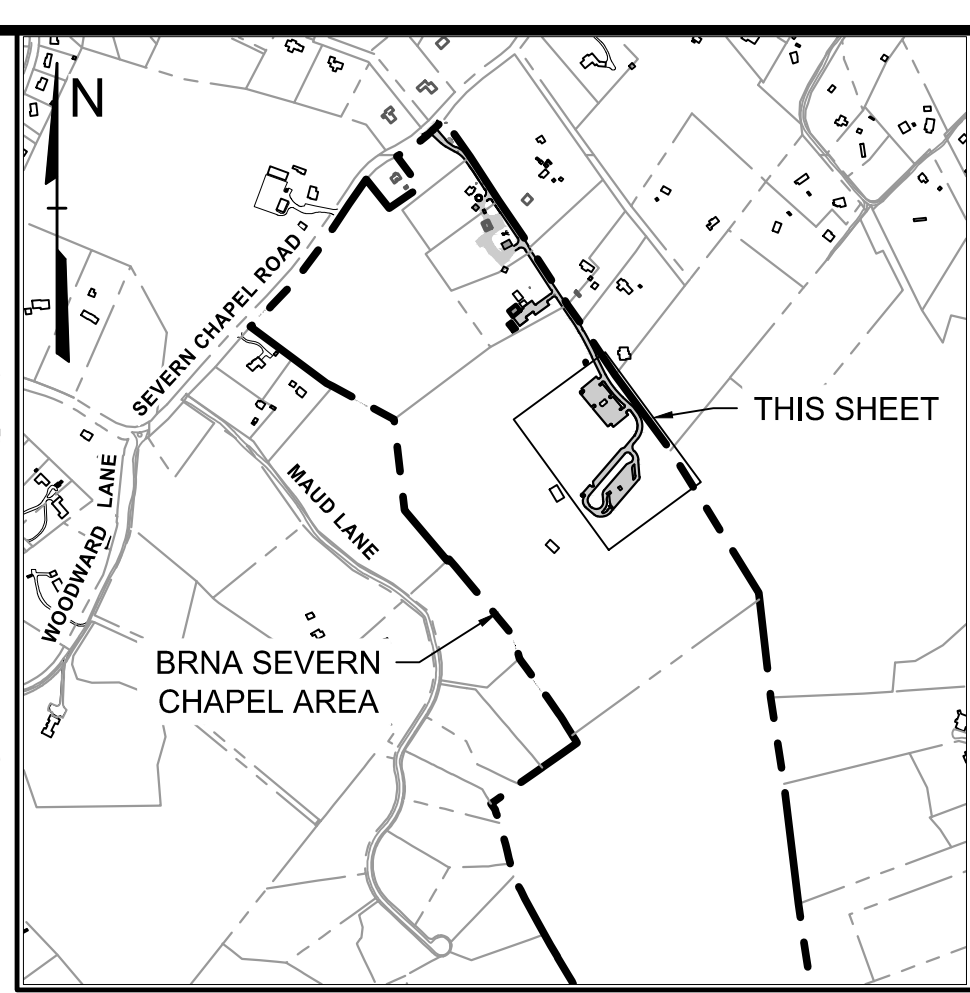
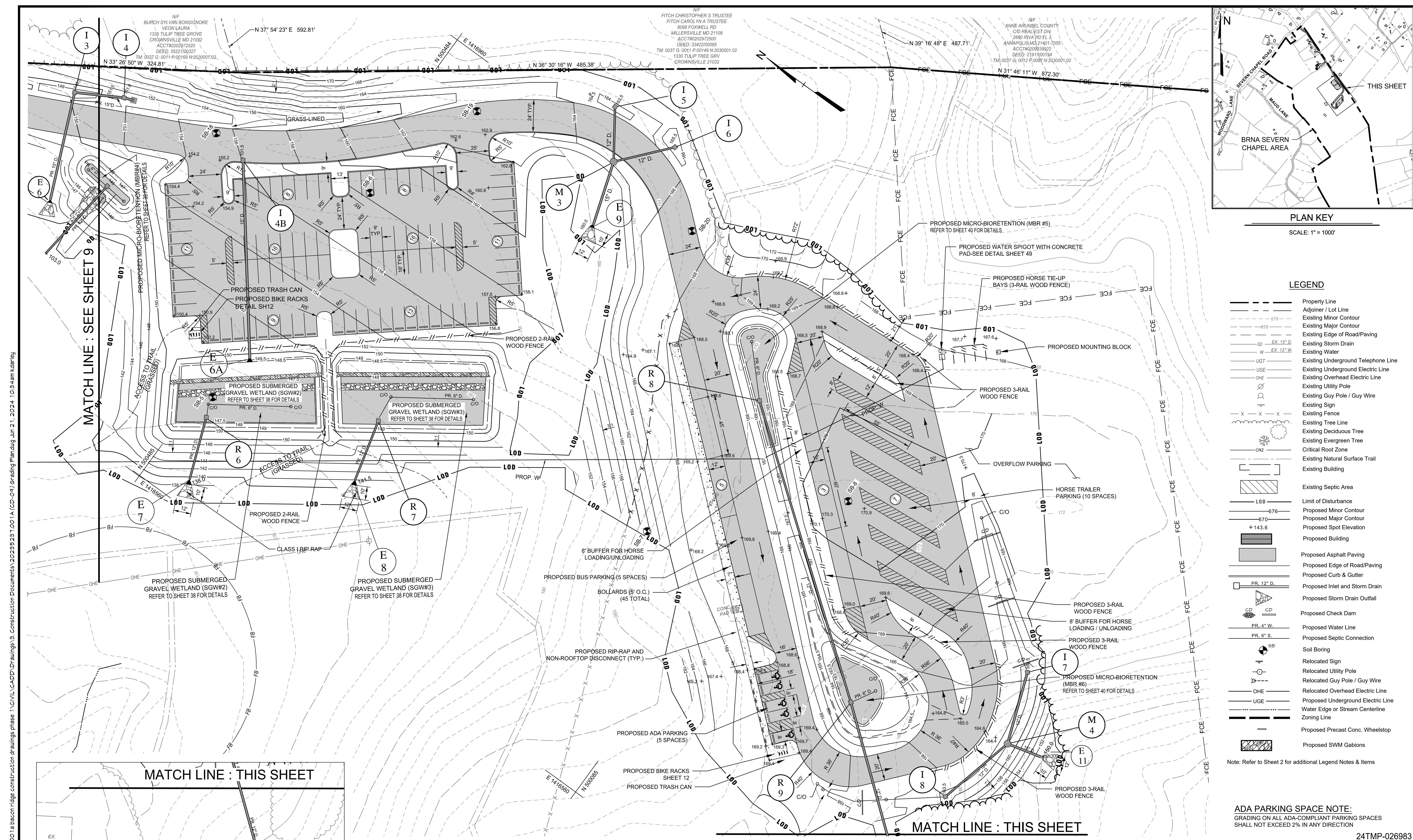
CONSTRUCTION DOCUMENTS

Site, Grading & Utility Plan  
Severn Chapel Area  
of the Bacon Ridge Natural Area

2nd Tax District  
Anne Arundel Co., MD.

24TMP-026983





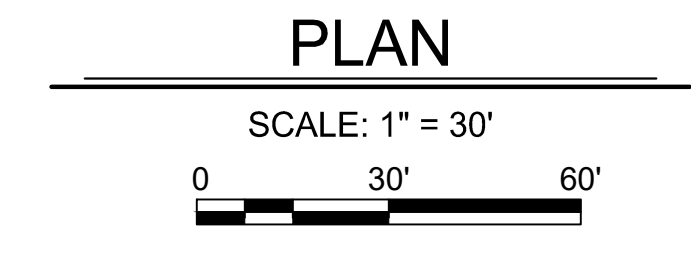
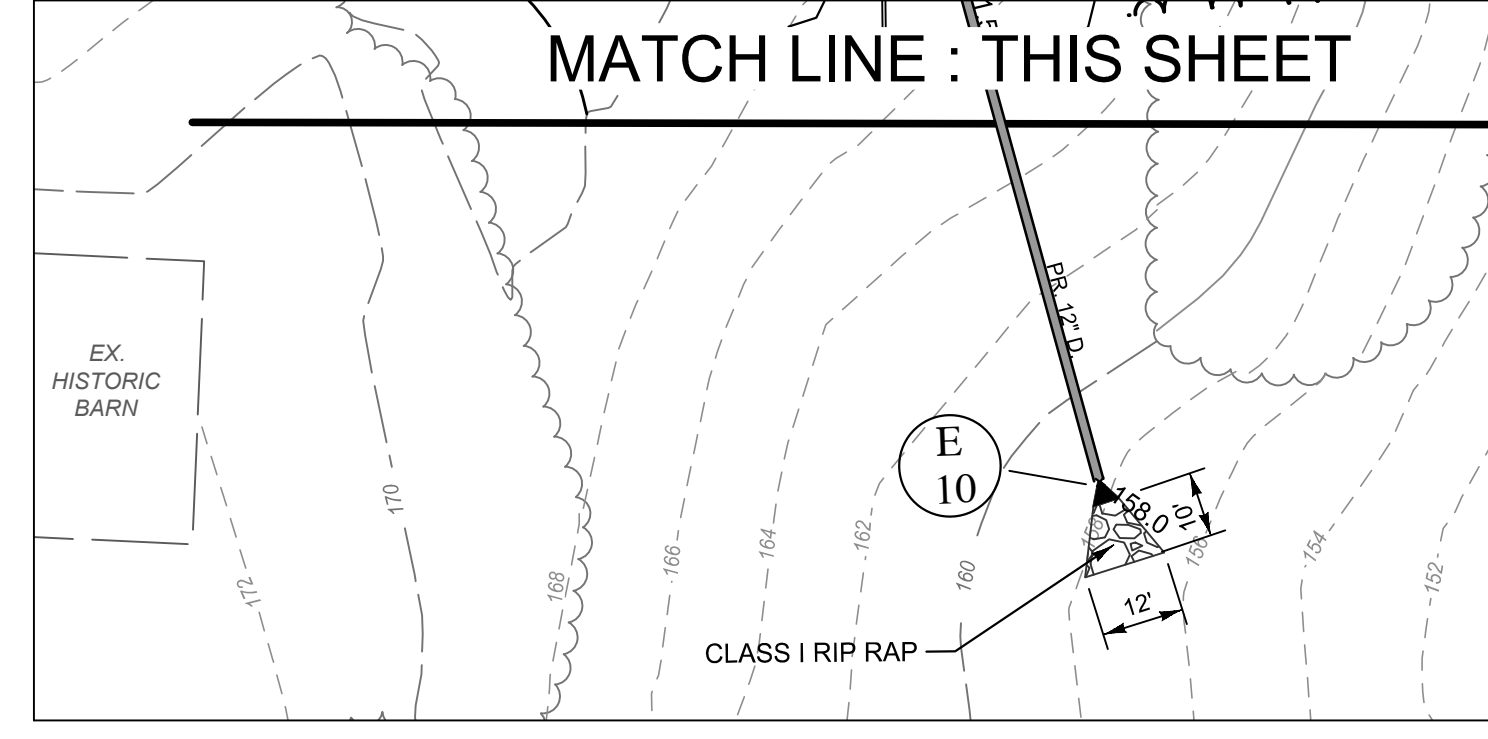
**PLAN KEY**  
SCALE: 1" = 100'

- LEGEND**
- Property Line
  - Adjoiner / Lot Line
  - Existing Minor Contour
  - Existing Major Contour
  - Existing Edge of Road/Paving
  - Existing Storm Drain
  - Existing Water
  - Existing Underground Telephone Line
  - Existing Underground Electric Line
  - Existing Overhead Electric Line
  - Existing Utility Pole
  - Existing Guy Pole / Guy Wire
  - Existing Sign
  - Existing Fence
  - Existing Tree Line
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  - Existing Evergreen Tree
  - Critical Root Zone
  - Existing Natural Surface Trail
  - Existing Building
  - Existing Septic Area
  - Limit of Disturbance
  - Proposed Minor Contour
  - Proposed Major Contour
  - Proposed Spot Elevation
  - Proposed Building
  - Proposed Asphalt Paving
  - Proposed Edge of Road/Paving
  - Proposed Curb & Gutter
  - Proposed Inlet and Storm Drain
  - Proposed Storm Drain Outfall
  - Proposed Check Dam
  - Proposed Water Line
  - Proposed Septic Connection
  - Soil Boring
  - Relocated Sign
  - Relocated Utility Pole
  - Relocated Guy Pole / Guy Wire
  - Relocated Overhead Electric Line
  - Proposed Underground Electric Line
  - Water Edge or Stream Centerline
  - Zoning Line
  - Proposed Precast Conc. Wheelstop
  - Proposed SWM Gabions
- Note: Refer to Sheet 2 for additional Legend Notes & Items

**ADA PARKING SPACE NOTE:**  
GRADING ON ALL ADA-COMPLIANT PARKING SPACES SHALL NOT EXCEED 2% IN ANY DIRECTION

24TMP-026983

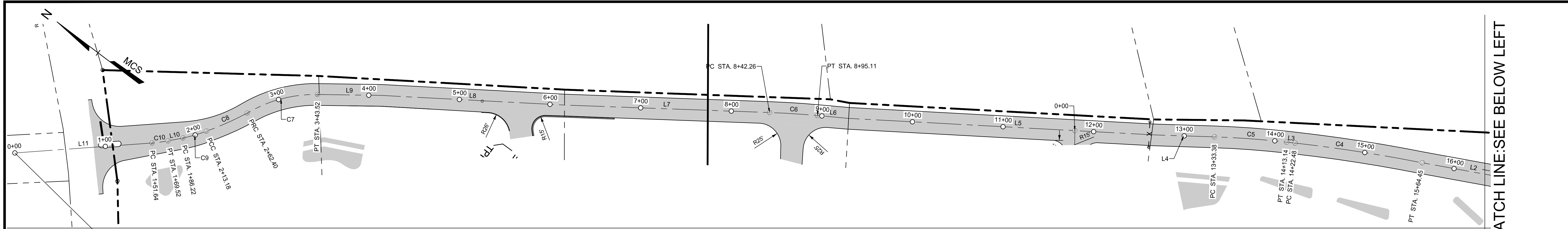
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		DATE: 6/21/2024		ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS		G02020077	
A Kleinfelder Company 10710 Gilroy Road, Hunt Valley, MD 21031 Phone: 443.589.2400 www.centuryeng.com				REVISIONS DATE BY	APPROVED DATE	APPROVED DATE	SCALE AS SHOWN DRAWN BY: LMV/RDT CHECKED BY: MJP/AJD SHEET 10 OF 77 PROJECT NO.: P588001 DATE: 6/7/2024
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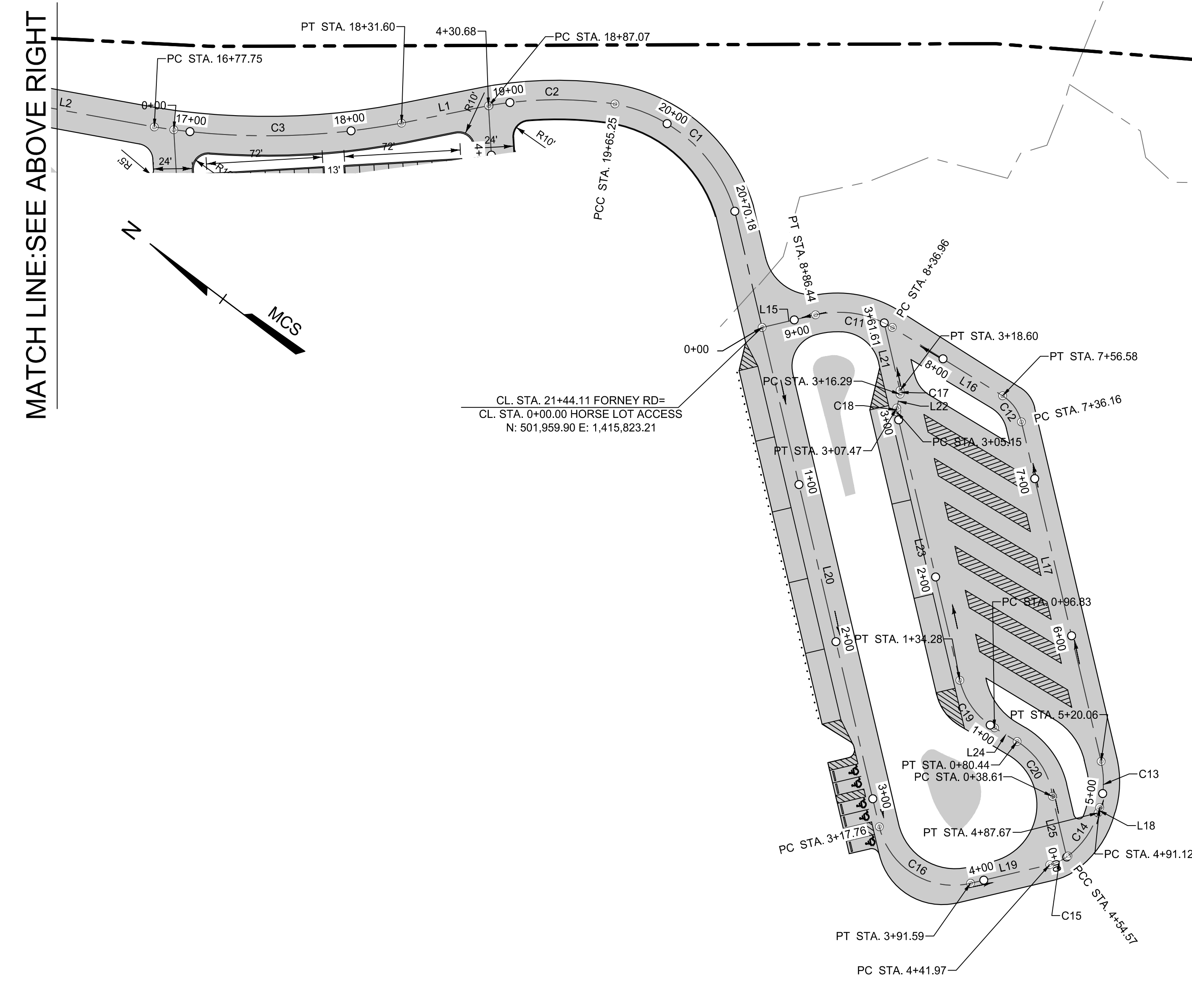
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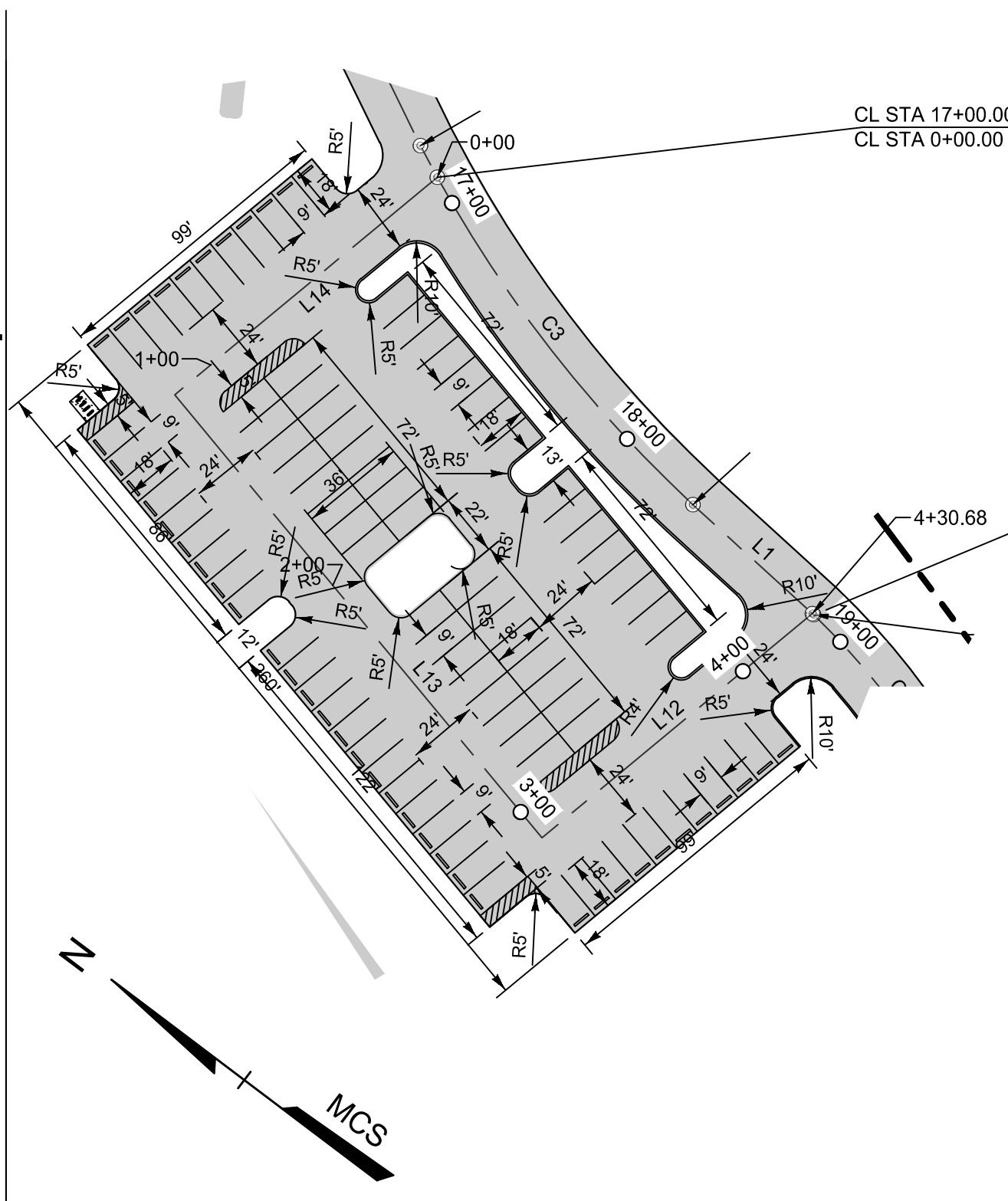
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(LIMIT OF WORK)

CL STA. 11+79 FORNEY RD=  
CL STA. 0+00.00 PARKING AREA #1  
N: 501,032.96  
E: 1,416,534.77



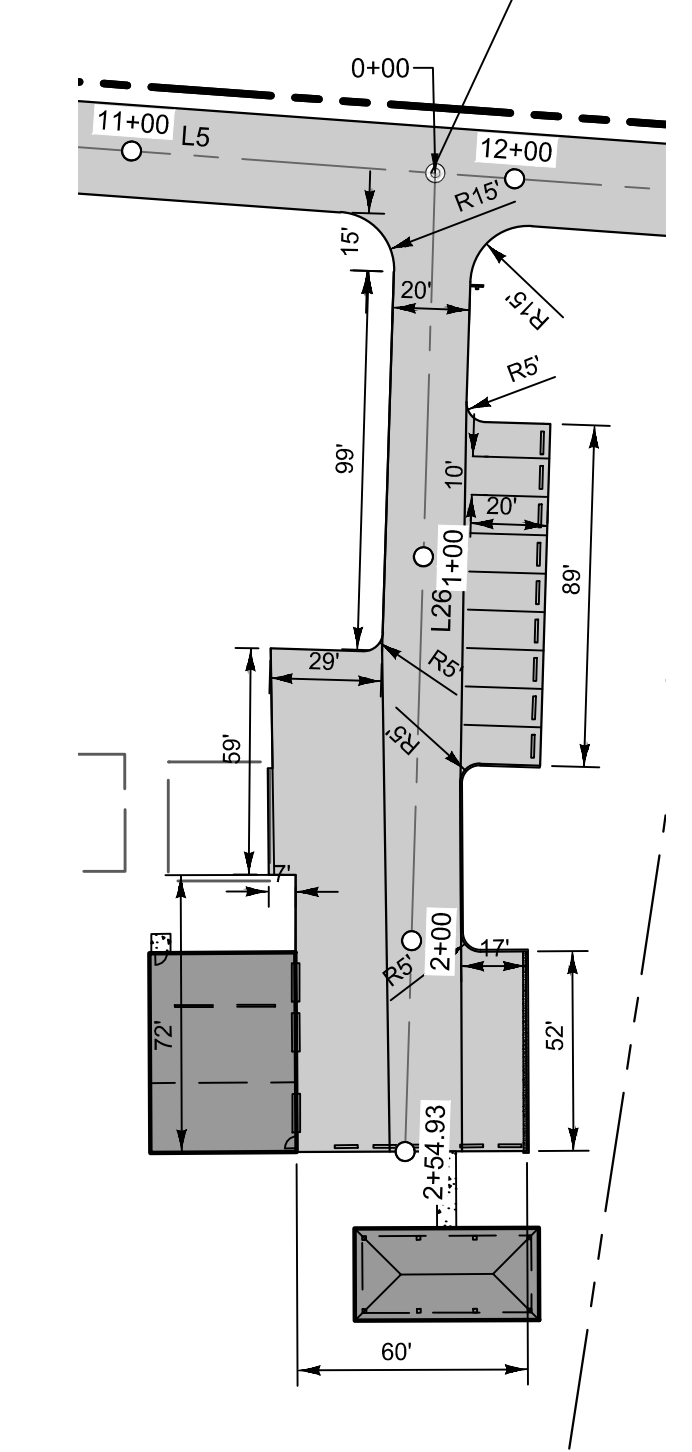
**FORNEY ROAD & HORSE LOT ACCESS  
GEOMETRIC LAYOUT PLAN**

SCALE: 1" = 50'



**PARKING AREA #2 LAYOUT**

SCALE: 1" = 50'



**PARKING AREA #1 LAYOUT**

SCALE: 1" = 50'

FORNEY RD			
Number	Length	Radius	Line/Chord Direction
C1	104.94	95.07	S06°W
C2	78.18	242.21	S37°E
C3	153.85	447.41	S37°E
C4	141.97	1697.36	S27°E
C5	79.76	1008.00	S32°E
C6	52.86	988.00	S33°E
C7	81.11	148.05	S51°E
C8	49.22	341.76	S60°E
C9	26.96	148.00	S53°E
C10	17.88	150.00	S44°E
L1	55.46		S48°E
L2	113.30		S26°E
L3	9.35		S30°E
L4	67.77		S34°E
L5	336.46		S33°E
L6	34.03		S31°E
L7	226.90		S34°E
L8	201.51		S33°E
L9	70.34		S35°E
L10	16.70		S47°E
L11	151.64		S40°E

HORSE LOT ACCESS			
Number	Length	Radius	Line/Chord Direction
C11	49.48	63.00	N27°W
C12	20.42	26.00	N18°E
C13	28.94	55.00	N56°E
C14	33.10	53.00	N89°E
C15	12.60	30.00	S62°E
C16	73.83	47.00	S05°E
L15	34.00		N50°W
L16	80.38		N05°W
L17	216.11		N40°E
L18	3.44		N71°E
L19	50.38		S50°E
L20	317.76		S40°W

HORSE TRAILER AREA CL			
Number	Length	Radius	Line/Chord Direction
C17	2.32	5.00	N54°E
C18	2.32	5.00	N54°E
C19	37.44	47.00	N18°E
C20	41.83	46.00	N21°E
L21	43.01		N40°E
L22	8.82		N67°E
L23	170.87		N40°E
L24	16.39		N05°W
L25	38.61		N40°E

PARKING LOT#1			
Number	Length	Radius	Line/Chord Direction
L26	254.93		S54°W

PARKING LOT#2			
Number	Length	Radius	Line/Chord Direction
L12	119.33		N50°E
L13	195.50		S40°E
L14	115.85		S50°W

24TMP-026983

**CENTURY ENGINEERING**  
A Kleinfelder Company  
10710 Gilroy Road, Hunt Valley, MD 21031  
Phone: 443.589.2400 www.centuryeng.com

DATE: 6/21/2024  
STATE OF MARYLAND  
PROFESSIONAL ENGINEER  
LICENSE NO. 32574

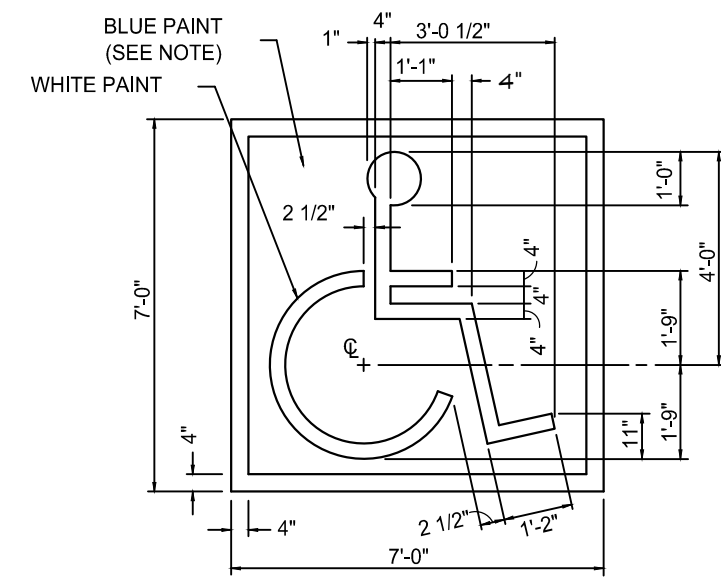
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DATE	BY			
	CHIEF ENGINEER		PROJECT MANAGER	
	APPROVED	DATE	APPROVED	DATE
	ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY	

ANNE ARUNDEL COUNTY  
DEPARTMENT OF PUBLIC WORKS  
SCALE AS SHOWN  
DRAWN BY LMV/RDT  
CHECKED BY MJP/AJD  
SHEET 11 OF 77  
PROJECT NO.: P588001  
DATE: 6/7/2024

G02020077  
CONSTRUCTION DOCUMENTS  
**Road & Parking Layout Plan**  
Severn Chapel Area  
of the Bacon Ridge Natural Area  
2nd Tax District  
Anne Arundel Co., MD. Tax Map 37, Grid 11, Parcel 86



T:\2023\Facilities\2023523100\18baconridge construction drawings phase 1\CIVIL\CADD\Drawings\13\_Construction Documents\2023523100\1A (CD - 10) Site Details.dwg Jun 21, 2024 10:34am kdarby



**PAINTED HANDICAP PARKING SYMBOL DETAIL**  
NOT TO SCALE



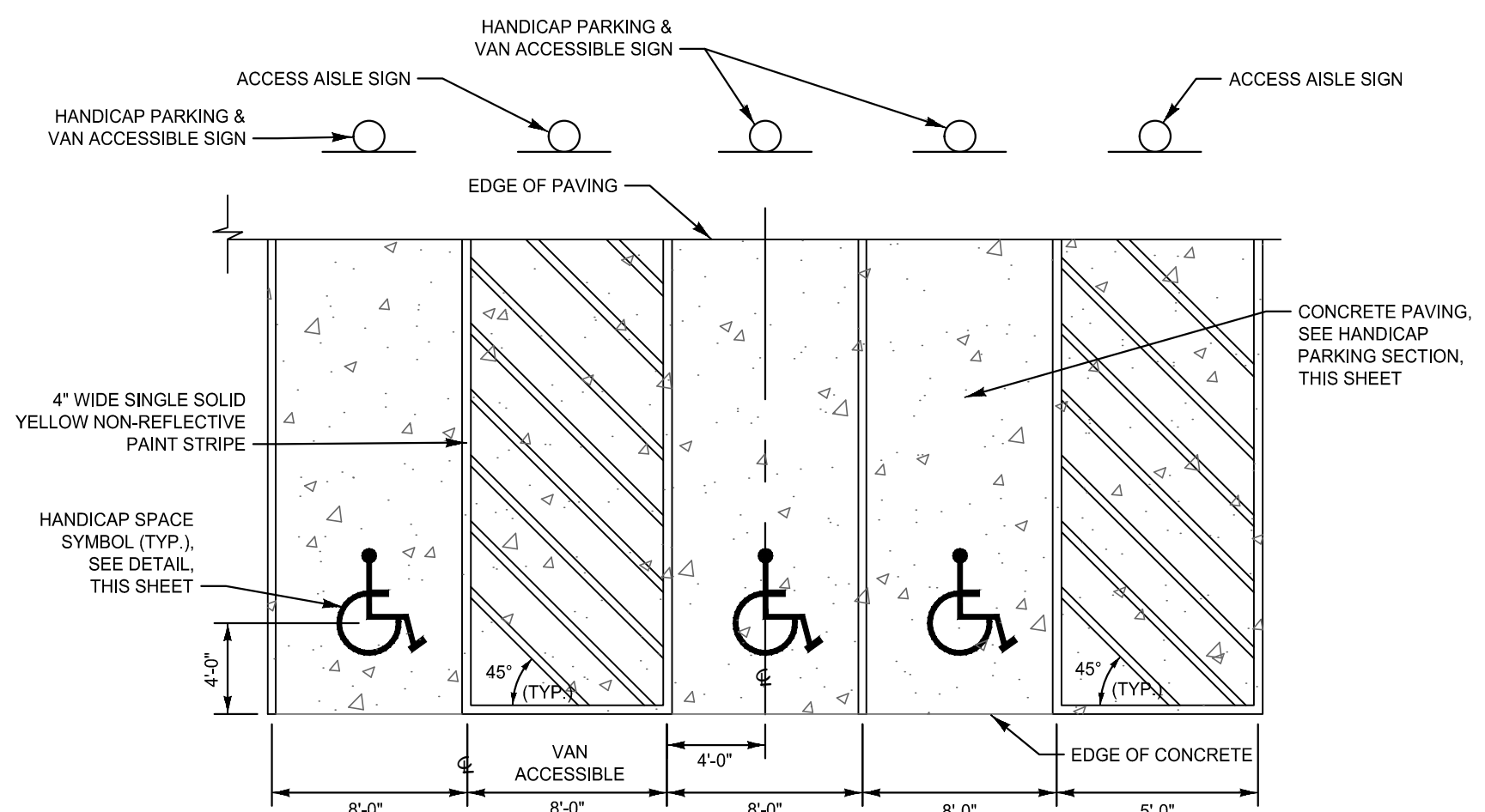
**ACCESS AISLE SIGN DETAIL**  
NOT TO SCALE

SIGN SIZE	DIMENSIONS (INCHES)								
	A	B	C	D	E	F	G	H	J
STANDARD	12	18	3/8	1-3/4	2-1/20	1	2C	1-1/2	6

SIGN SIZE	DIMENSIONS (INCHES)						
	K	L	M	N	P	Q	R
STANDARD	6-1/2	1-5/8	1/8	1/8	3/4	9/64	30*

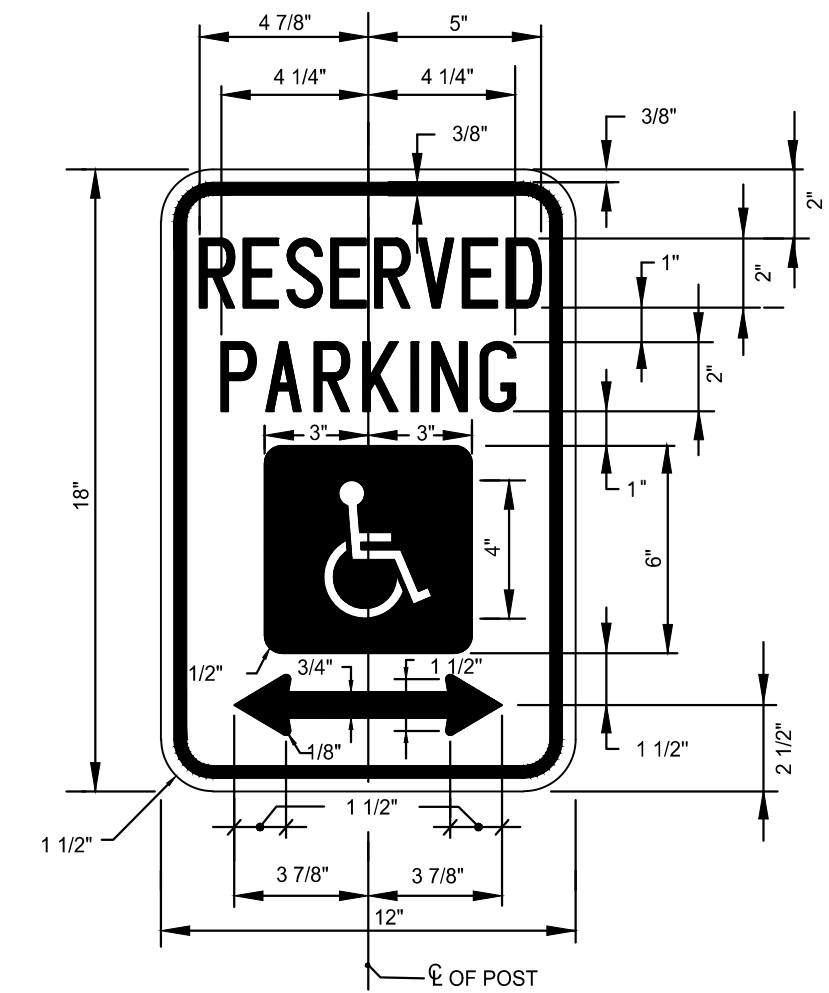
REFERENCES  
MdMUTCD SECTION - 2B.39, 2B.40, 2B.41, 5B.05, 7B.14

COLORS  
LEGEND - RED  
BACKGROUND - WHITE



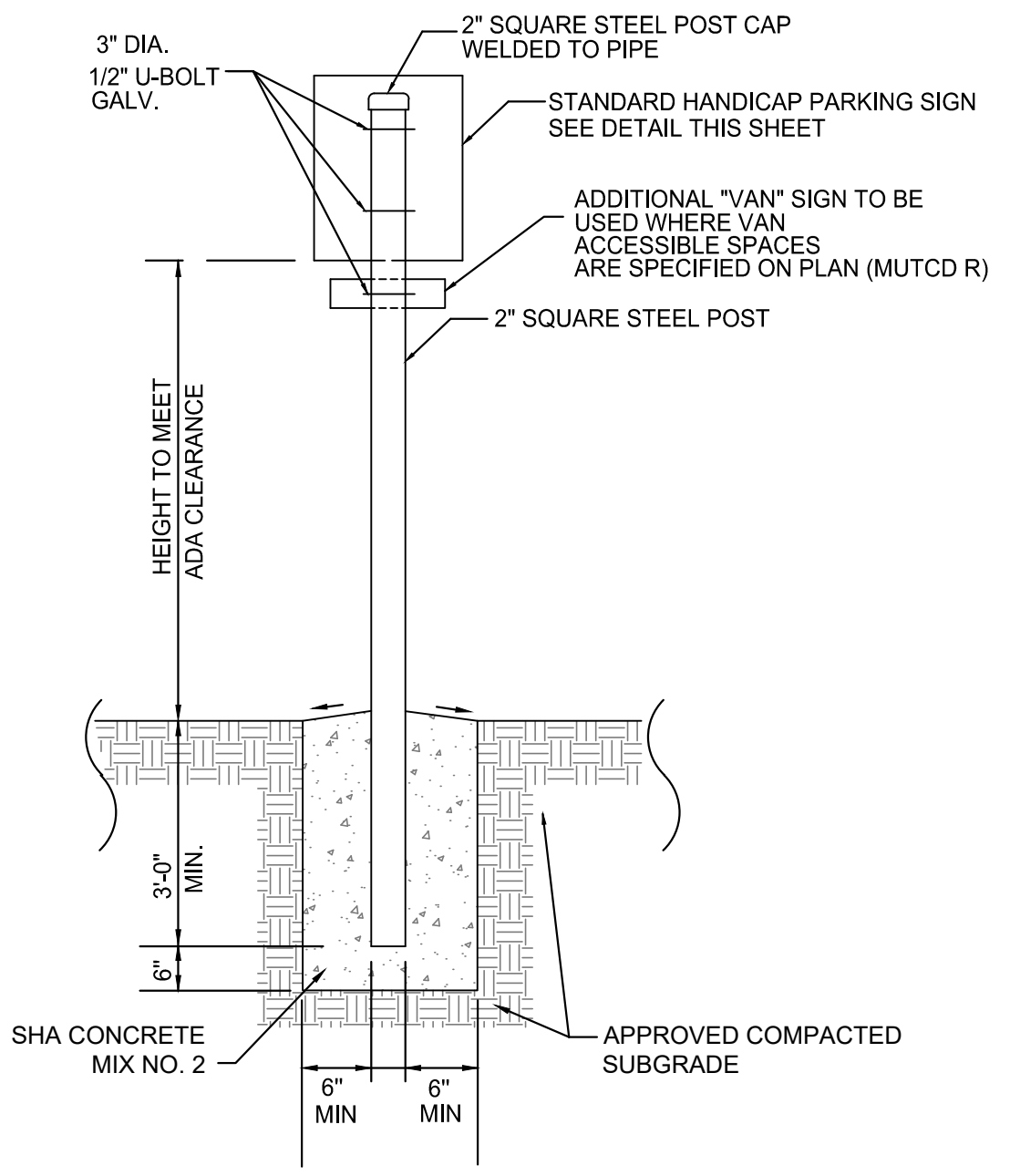
**HANDICAP PARKING STRIPING DETAIL**  
NOT TO SCALE

- STRIPING SHOULD END AT EDGE OF PAVING
- STRIPING MATERIAL AND METHODS OF CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE LATEST MUTCD EDITION STDS. & SPECS.
- INSTALL "VAN ACCESSIBLE" SIGN BELOW HANDICAP SIGN ON POSTS WHERE NOTED ON PLAN.
- YELLOW PAINT MAY BE USED ON CONCRETE OR OTHER SURFACES WHERE WHITE PAINT DOES NOT PROVIDE SUFFICIENT CONTRAST. OWNER'S WRITTEN APPROVAL MUST BE OBTAINED.
- ALL DIMENSION, LAYOUT, BACKGROUND AND COLOR TO CONFORM TO MOST CURRENT ADA GUIDELINES.



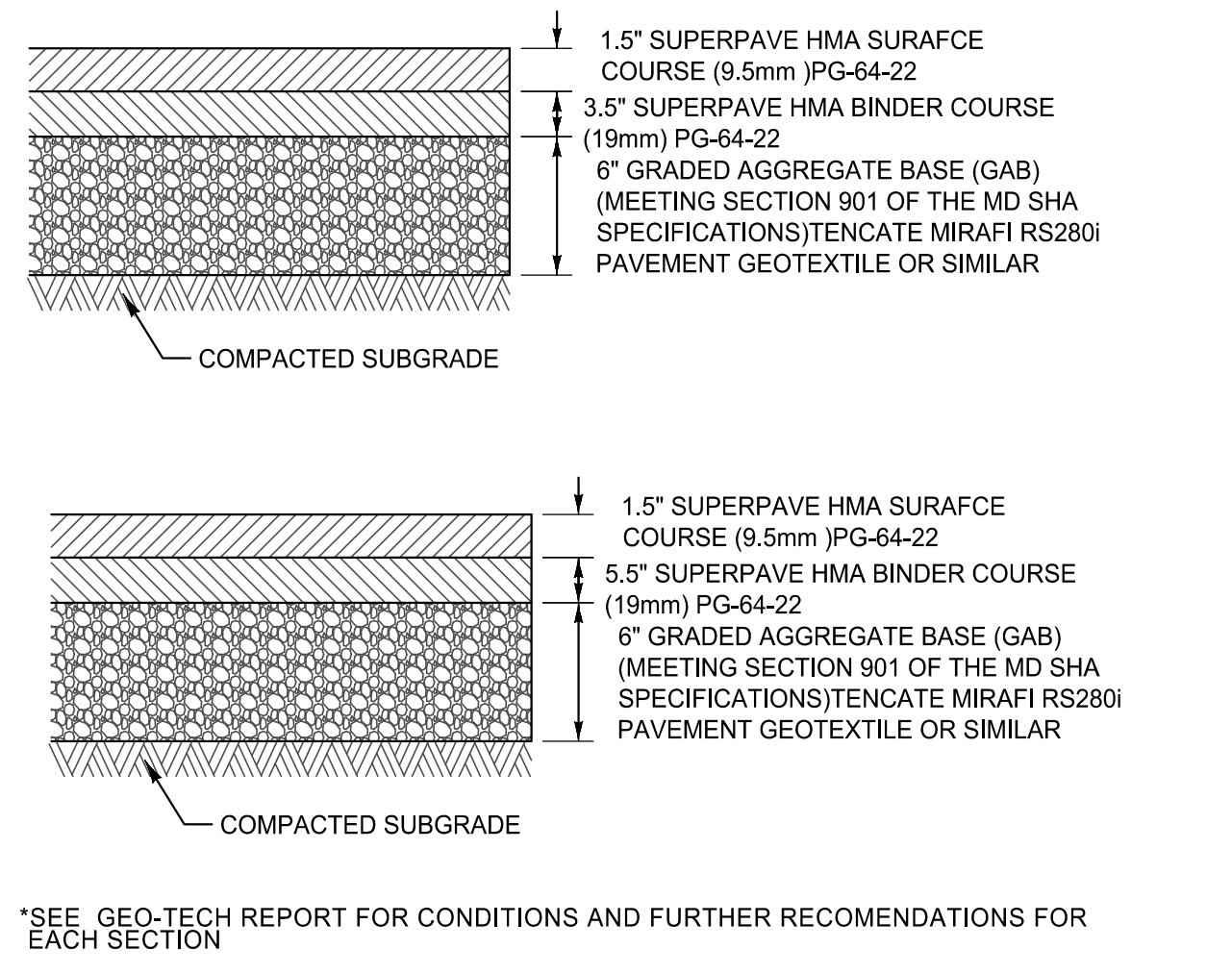
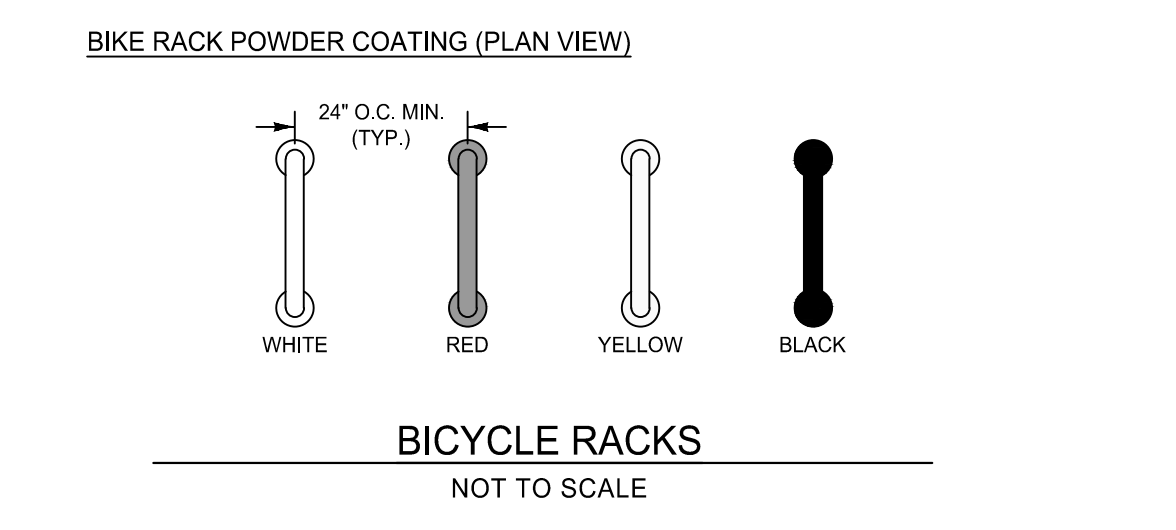
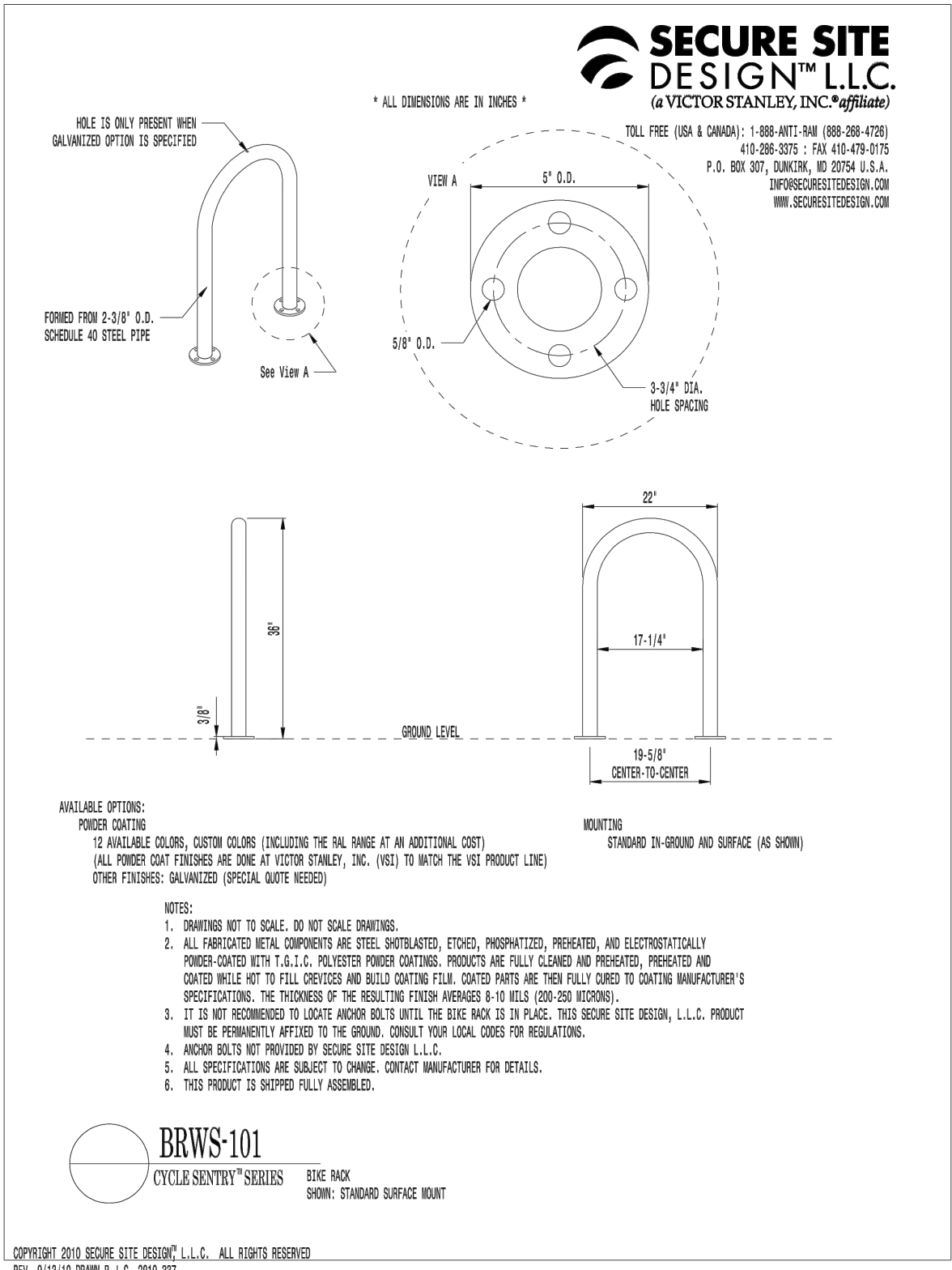
**HANDICAP PARKING SIGN DETAIL**  
NOT TO SCALE

J. SECTION 4.6.4 SIGNAGE. EACH ACCESSIBLE PARKING SPACE SHALL BE IDENTIFIED BY AN APPROVED SIGN WITH THE BOTTOM EDGE AT LEAST 7 FEET ABOVE THE GROUND, UNLESS THE SIGN IS PLACED FLUSH AGAINST A BUILDING, STRUCTURE, OR OTHER LOCATION THAT DOES NOT OBSTRUCT VEHICLE OR PEDESTRIAN TRAFFIC. IN WHICH CASE THE SIGN SHALL BE AT LEAST 6 FEET AND NO MORE THAN 10 FEET ABOVE THE GROUND. SIGNS SHALL BEAR THE INTERNATIONAL SYMBOL OF ACCESS AND THE WORDS "RESERVED PARKING" AND SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS OF THE MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (SEE REGULATION .07 FOR EXPLANATORY MATERIAL). SIGN R7-6  
COLORS  
BACKGROUND - WHITE; LEGEND AND BORDER - GREEN; WHITE SYMBOL ON BLUE BACKGROUND  
NOTE: PROVIDE ADDITIONAL "VAN ACCESSIBLE" SIGNAGE (R7-6A) PER ADA REQUIREMENTS FOR SPACES AS NOTED ON PLAN.  
FOR INFORMATION ON SIGN POST AND MOUNTING REFER TO DETAIL THIS SHEET.

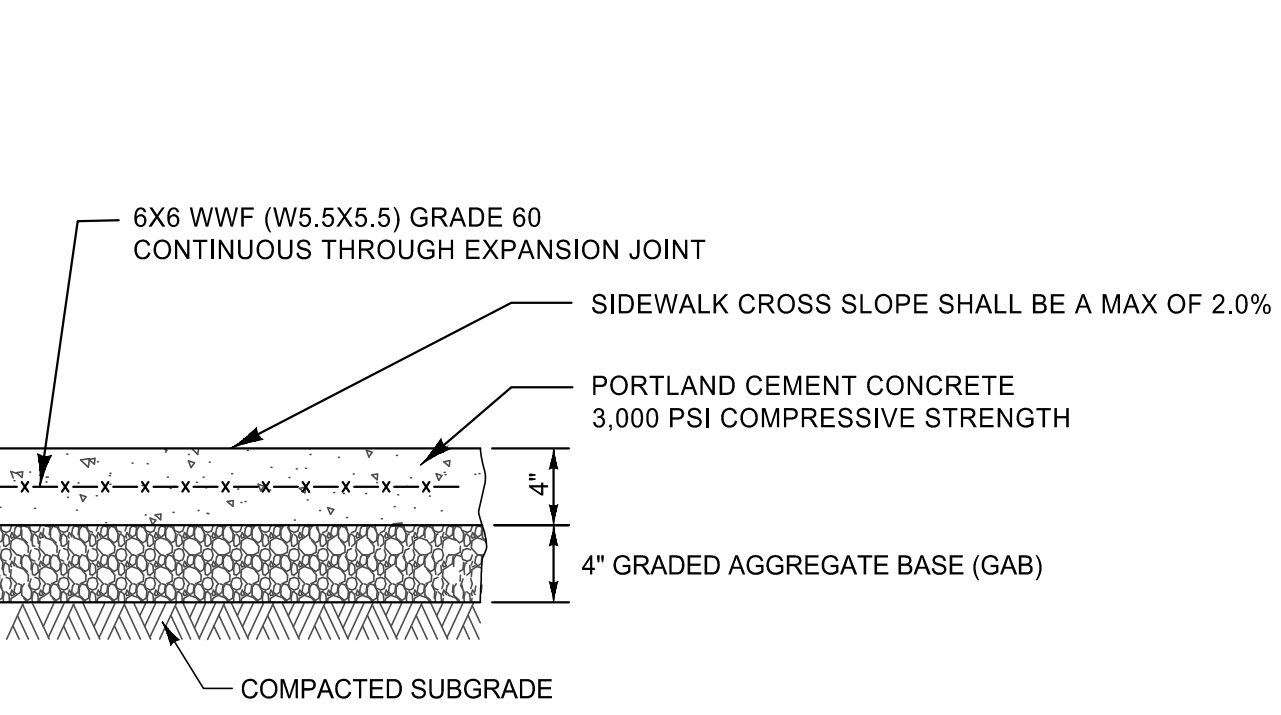


**HANDICAP SIGN MOUNTING DETAIL**  
NOT TO SCALE

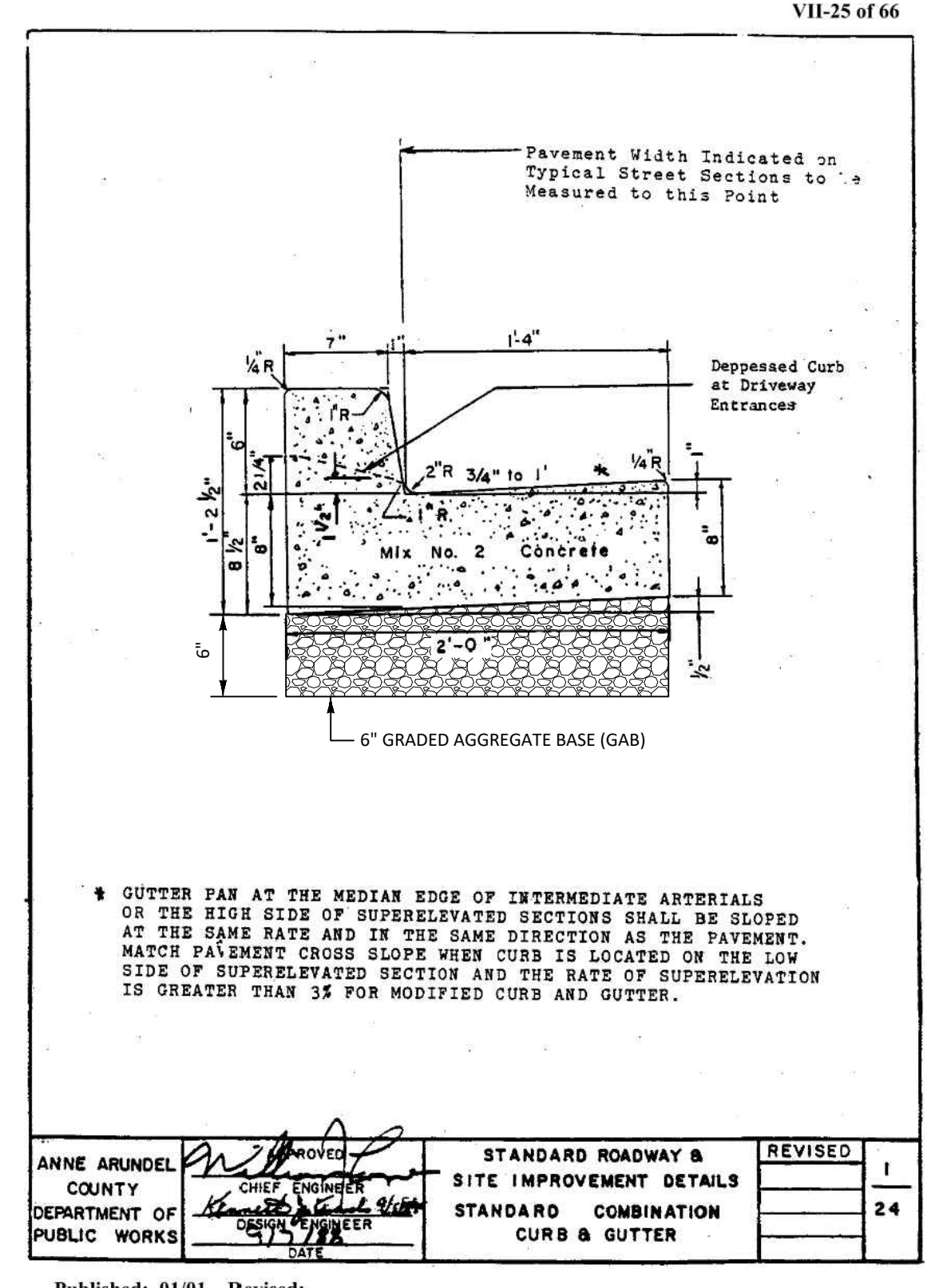
ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE MOST CURRENT ADA REGULATIONS.



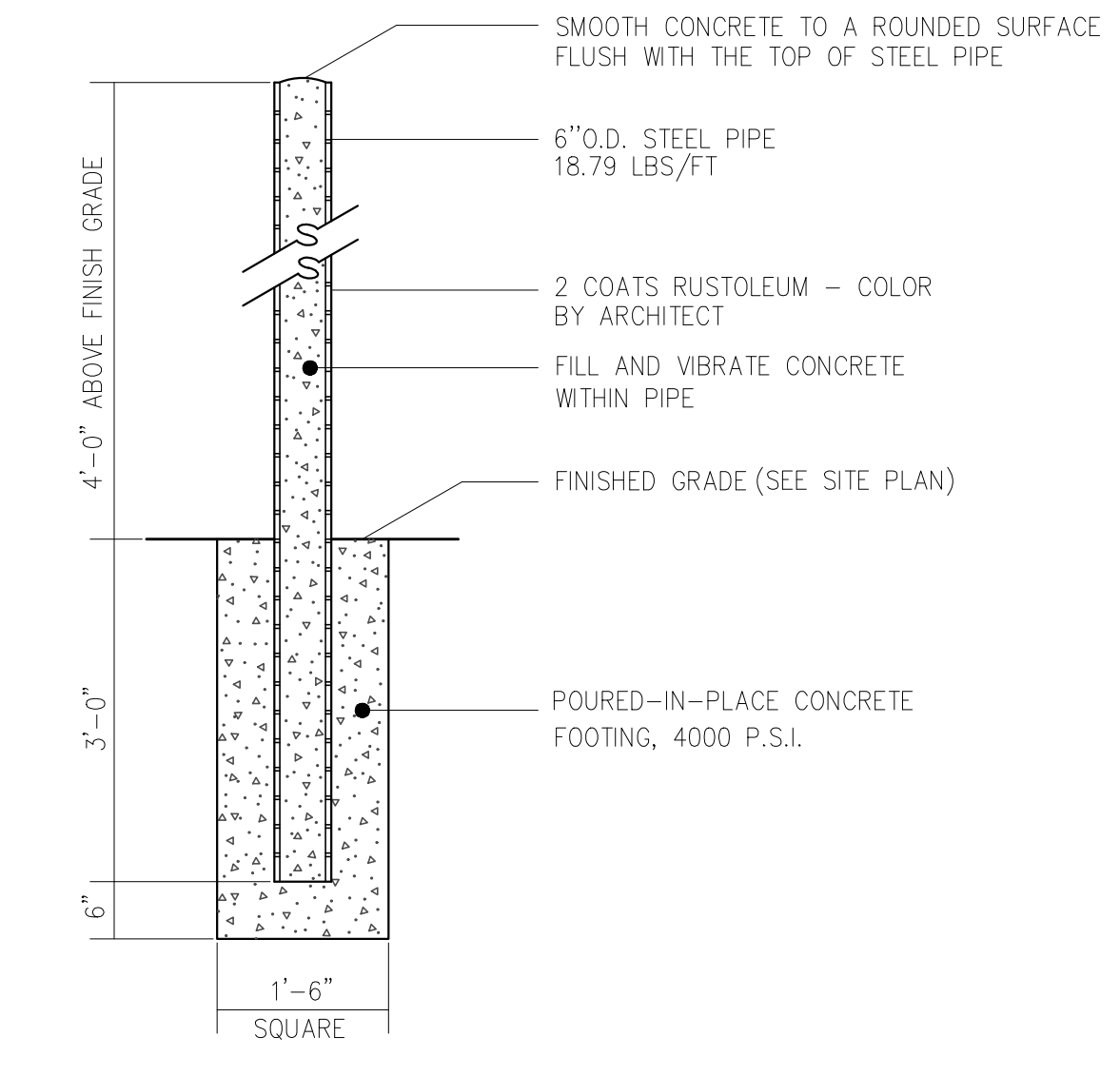
**PAVING SECTION\***  
NOT TO SCALE



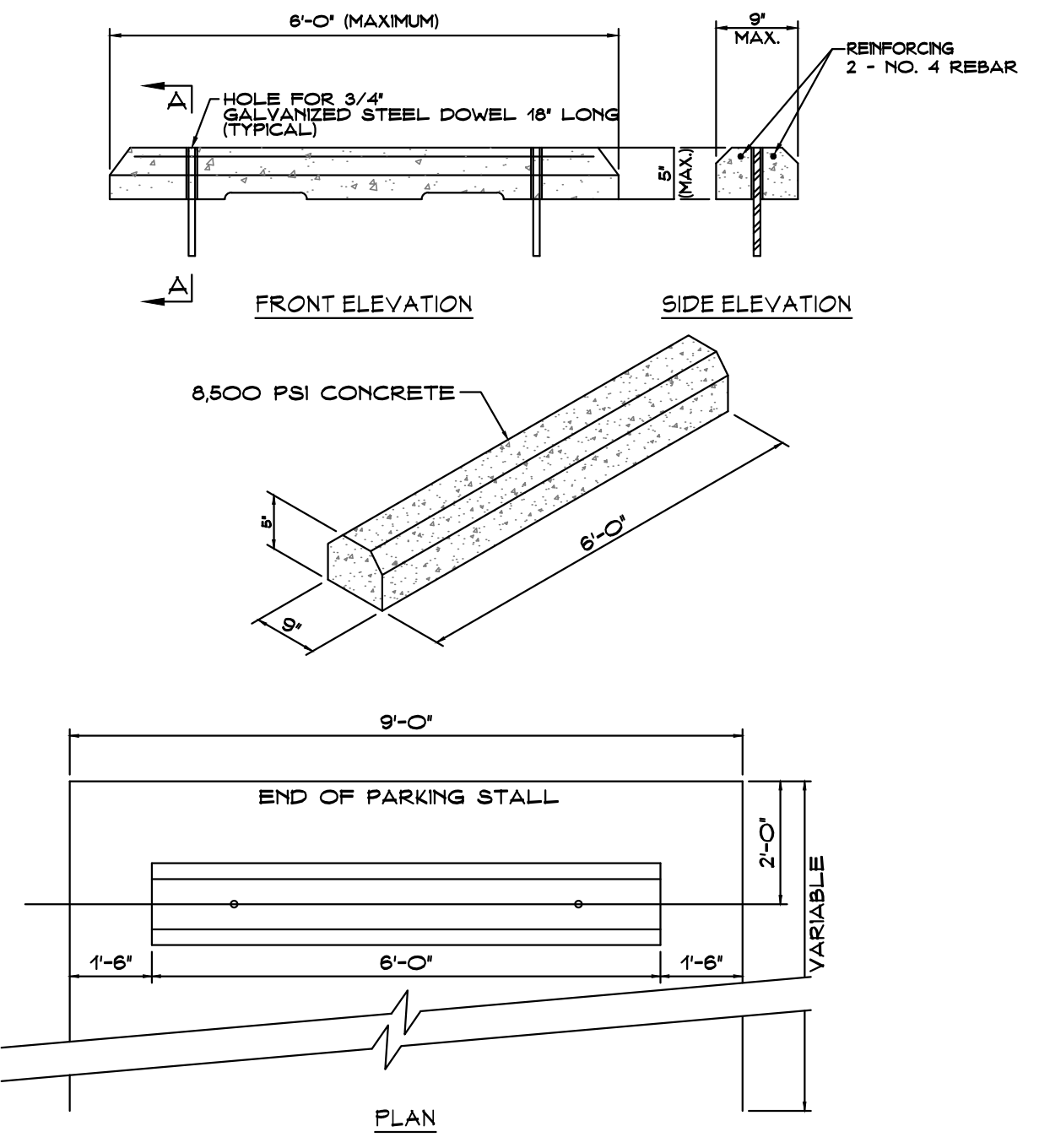
**CONCRETE SIDEWALK AND PAVILLION SLAB SECTION**  
NOT TO SCALE



**BOLLARD DETAIL**  
NOT TO SCALE



**CONCRETE WHEEL STOP DETAIL**  
NOT TO SCALE



**CONCRETE WHEEL STOP DETAIL**  
NOT TO SCALE

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED [Signature] CHIEF ENGINEER	STANDARD ROADWAY & SITE IMPROVEMENT DETAILS STANDARD COMBINATION CURB & GUTTER	REVISED 1 24
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Published: 01/01 Revised:

**CENTURY ENGINEERING**  
A Kleinfelder Company  
10710 Gilroy Road, Hunt Valley, MD 21031  
Phone: 443.589.2400 www.centuryeng.com

DATE: 6/21/2024  
LICENSE NO. 32574  
PROFESSIONAL ENGINEER

REVISED DATE	BY	APPROVED DATE	DATE
		CHIEF ENGINEER	
		APPROVED	
		ASSISTANT CHIEF ENGINEER	

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS  
G02020077  
CONSTRUCTION DOCUMENTS  
Site Details  
Severn Chapel Area of the Bacon Ridge Natural Area  
2nd Tax District Anne Arundel Co., MD. Tax Map 37, Grid 11, Parcel 86

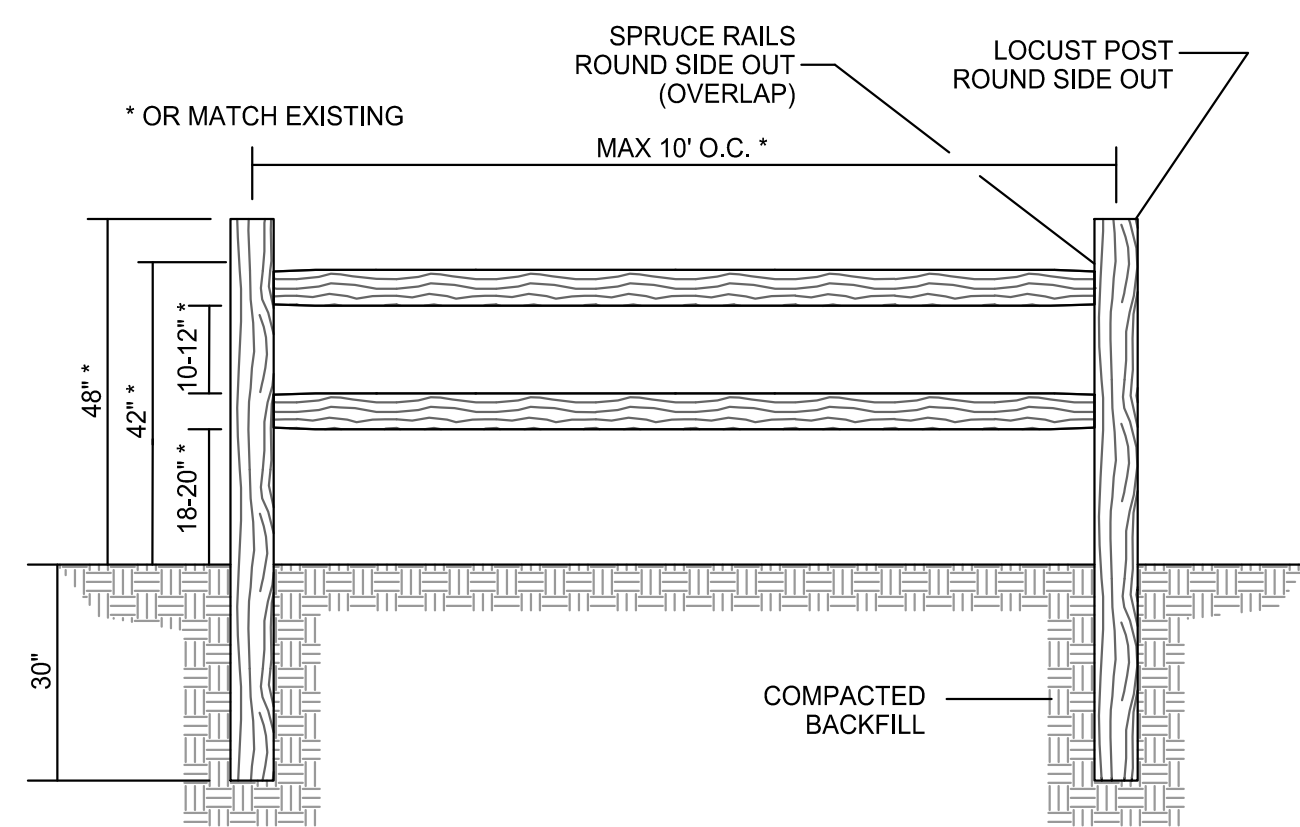
SCALE AS SHOWN	CHECKED BY MJPI/AJD	PROJECT NO.: P588001
DRAWN BY LMV/VRT	SHEET 12 OF 77	DATE: 6/7/2024

24TMP-026983



**NOTES:**

1. FENCE POSTS AND RAILS SHALL BE TREATED IN ACCORDANCE WITH AWPA STANDARD U1 TO THE REQUIREMENT OF USE CATEGORY 4 (UC4A).
2. ALL EXISTING SPLIT RAIL FENCE TO BE REMOVED, STORED, AND REPLACED SHALL MATCH EXISTING SPLIT RAIL FENCE TO REMAIN.
3. CONTRACTOR SHALL REPLACE ANY SPLIT RAIL FENCE DAMAGED BY CONSTRUCTION.

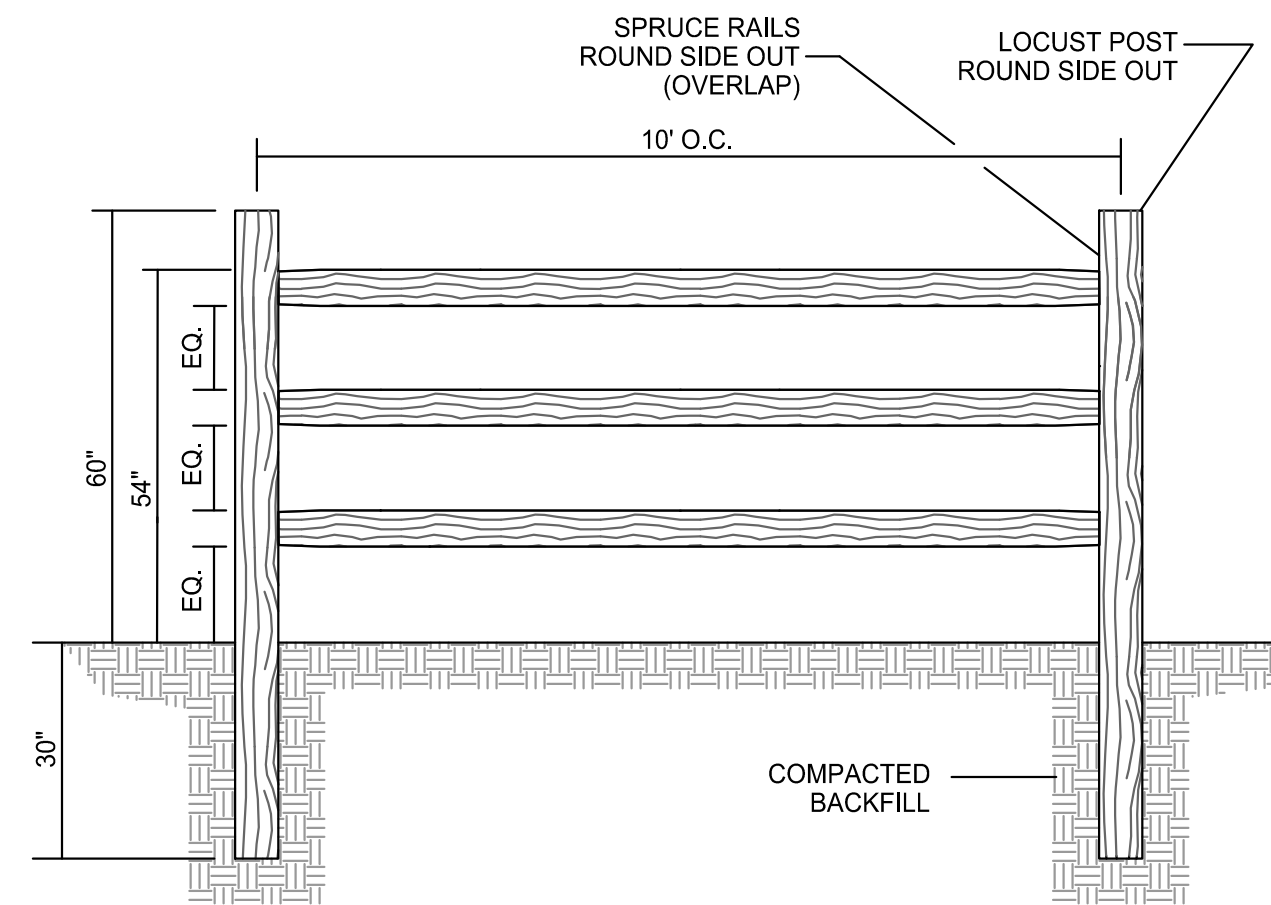


**2-RAIL WOOD FENCE DETAIL**  
NOT TO SCALE



EXISTING 2-RAIL WOOD FENCE

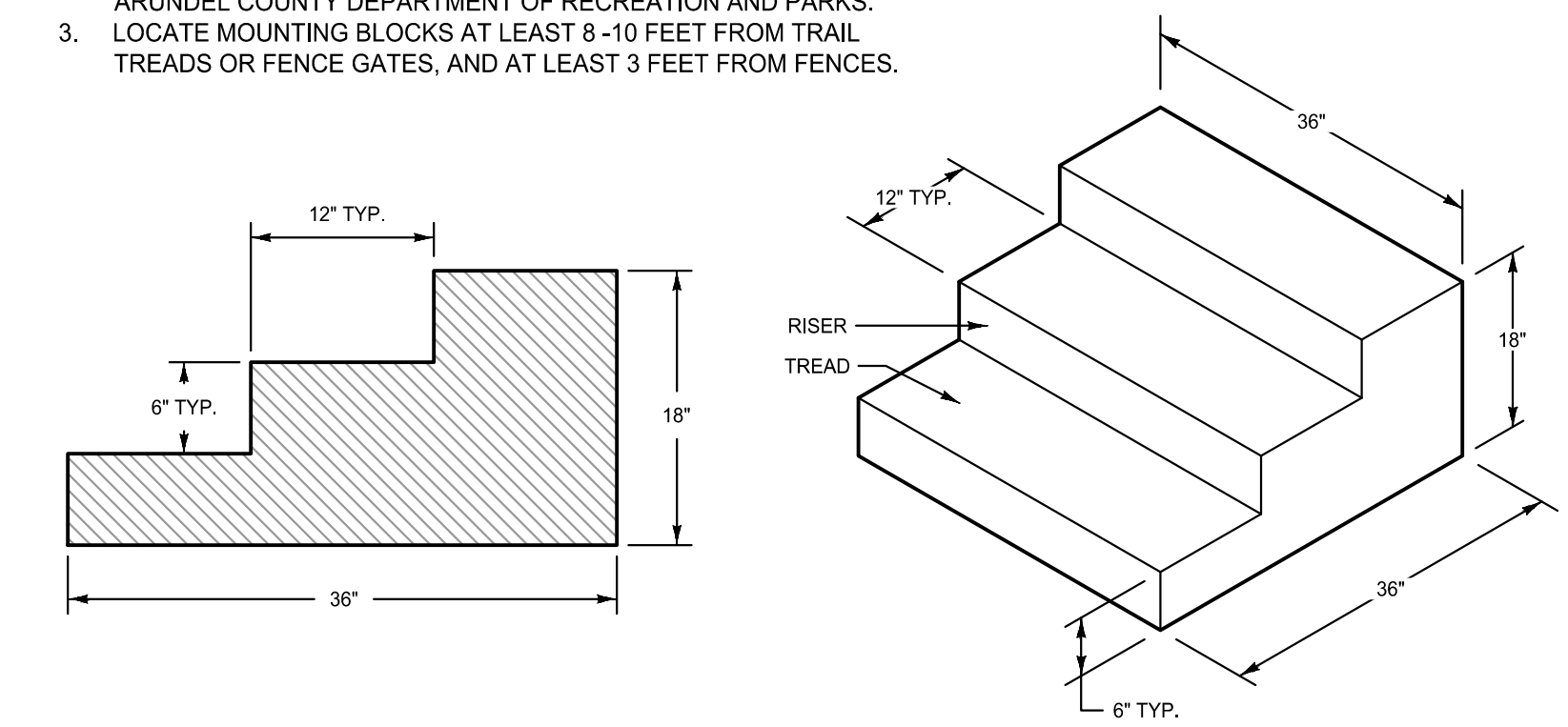
**NOTE:**  
FENCE POSTS AND RAILS SHALL BE TREATED IN ACCORDANCE WITH AWPA STANDARD U1 TO THE REQUIREMENT OF USE CATEGORY 4 (UC4A).



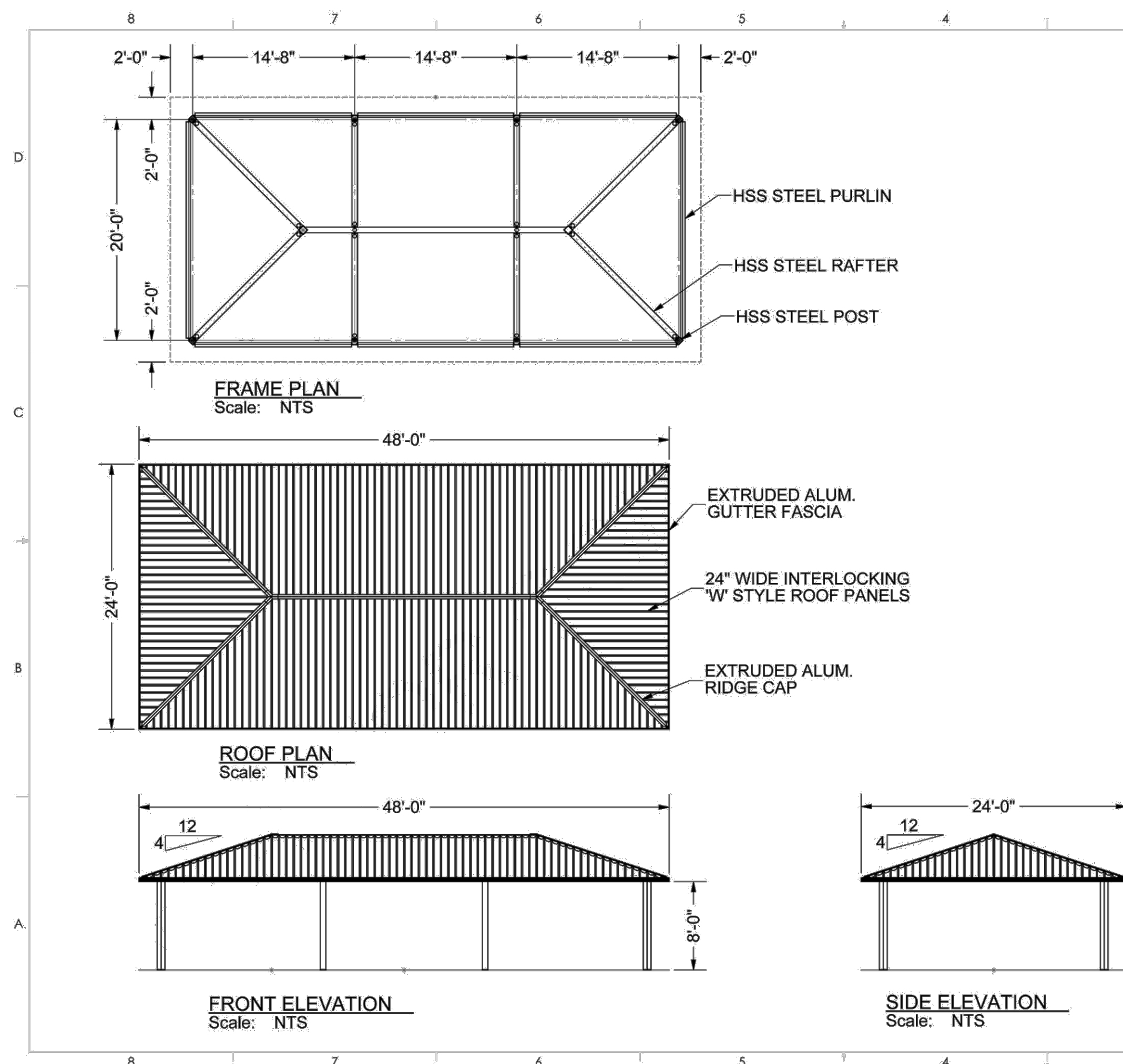
**3-RAIL WOOD FENCE DETAIL**  
NOT TO SCALE

**NOTES:**

1. MOUNTING BLOCK MATERIAL SHALL BE WOOD.
2. PREFABRICATED MOUNTING BLOCKS SHALL BE APPROVED BY ANNE ARUNDEL COUNTY DEPARTMENT OF RECREATION AND PARKS.
3. LOCATE MOUNTING BLOCKS AT LEAST 8-10 FEET FROM TRAIL TREADS OR FENCE GATES, AND AT LEAST 3 FEET FROM FENCES.



**EQUESTRIAN MOUNTING BLOCK DETAIL**  
NOT TO SCALE

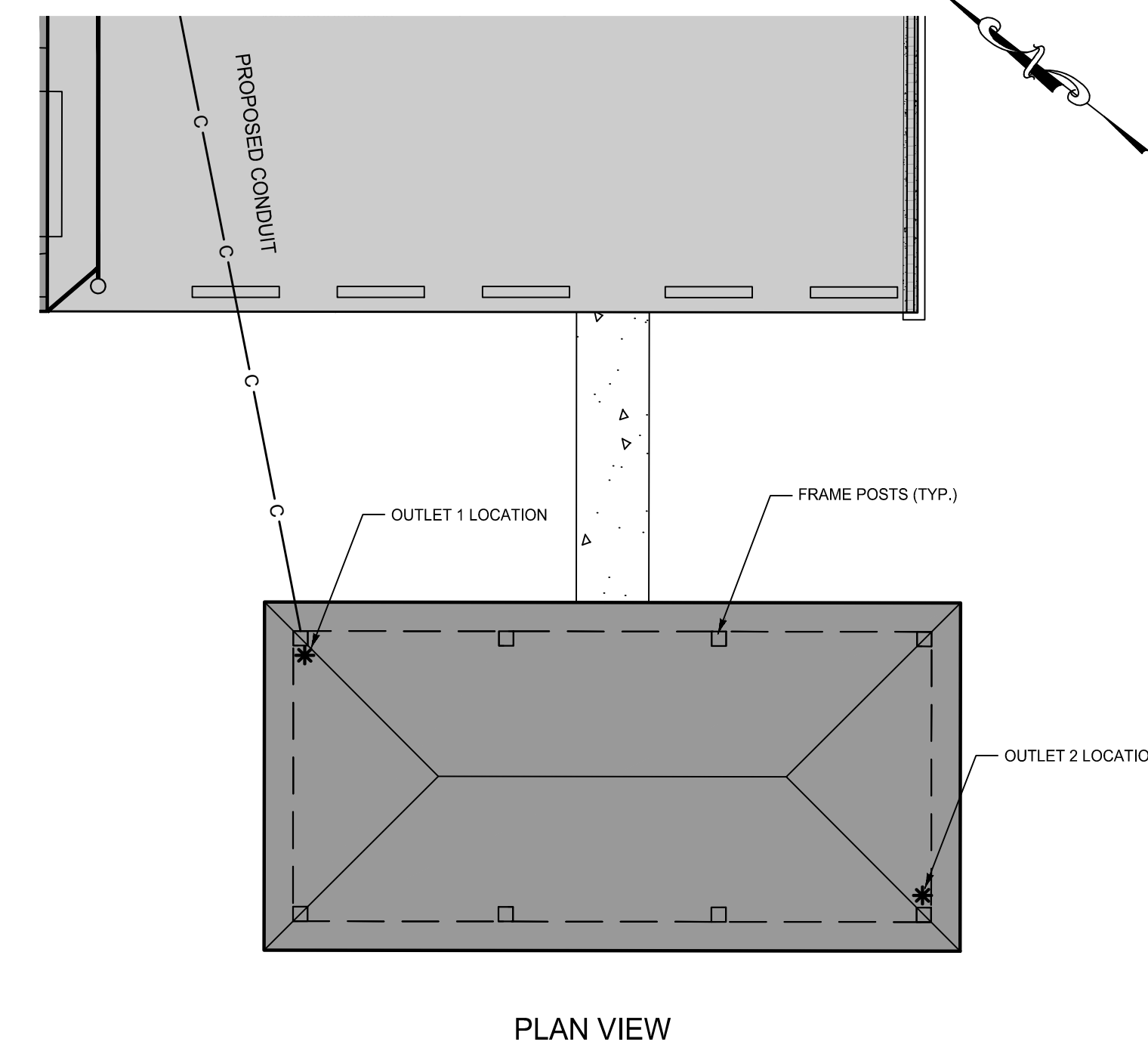


**PAVILION**  
NOT TO SCALE

**GENERAL NOTES**

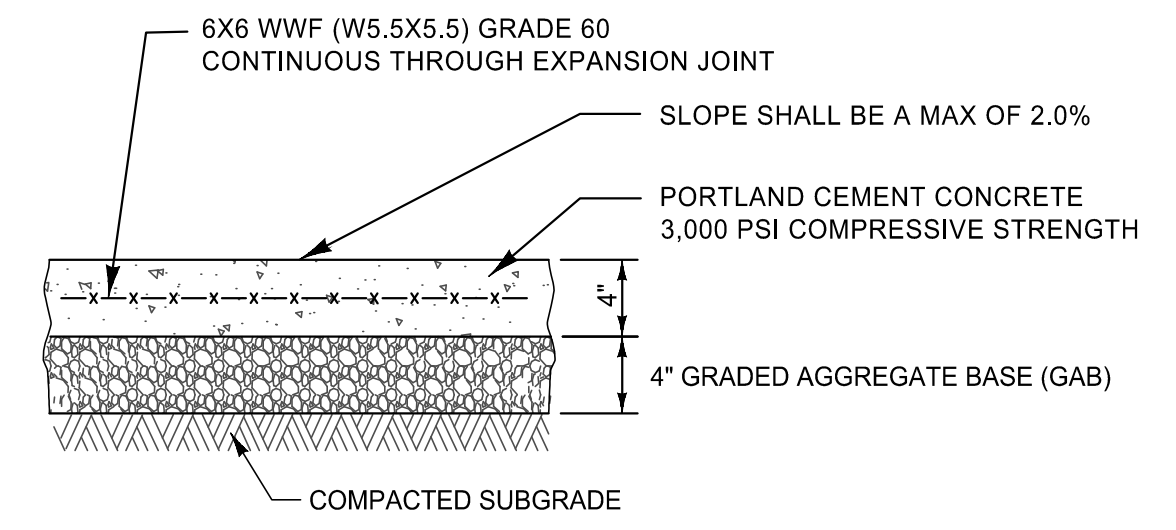
1. SHELTER DESIGN
  - A. THIS SHELTER HAS BEEN DESIGNED AS AN OPEN STRUCTURE. THE ADDITION OF ANY ENCLOSURE SUCH AS WALLS, INSECT MESH, OR SHADE SCREENS SHALL BE PROHIBITED AS INCREASED WIND FORCES MAY RESULT.
  - B. DESIGN SHOWN IS FOR ESTIMATING USE ONLY. NOT INTENDED FOR CONSTRUCTION USE. DESIGN IS SUBJECT TO ENGINEERING REVIEW. ACTUAL DELIVERY MAY VARY.
2. FOUNDATION
  - A. THE FOUNDATION SHALL REST ON SOUND SOIL THAT IS FREE OF ORGANIC AND DELETERIOUS MATERIALS AND CAPABLE OF SUPPORTING 1000 PSF VERTICAL BEARING PRESSURE.
  - B. FOUNDATION DESIGN SHOWN IS A RECOMMENDATION ONLY. OWNER SHALL VERIFY ACTUAL SOIL CONDITIONS AT EACH JOB SITE AND ANY REQUIRED ADJUSTMENTS TO THE FOOTING DESIGN SHALL BE DESIGNED BY OTHERS.
3. CONCRETE
  - A. COMPRESSION STRENGTH OF ALL REINFORCED CONCRETE SHALL NOT BE LESS THAN 2800 PSI AT 28 DAYS.
  - B. REINFORCING BARS SHALL BE DEFORMED BARS CONFORMING TO THE REQUIREMENTS OF MINIMUM ASTM A615 GRADE 40 FOR #4 AND SMALLER BARS AND GRADE 60 FOR BARS LARGER THAN #4.
  - C. MINIMUM CONCRETE CLEAR COVER FOR REINFORCING BARS SHALL BE 3".
4. STRUCTURAL STEEL
  - A. STEEL PLATE SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36.
  - B. HOLLOW STRUCTURAL SECTIONS (HSS) SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500, GRADE B.
  - C. WELDING SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICAN WELDING SOCIETY'S SPECIFICATION FOR THE MATERIAL BEING WELDED.
  - D. WELDING ELECTRODES SHALL BE E70XX.
  - E. STRUCTURAL STEEL COMPONENTS SHALL BE COATED WITH ANTI-GRAFFITI POLYESTER TOIC POWDER COAT FINISH MEETING AAMA 2604-02 SPECIFICATION.
5. ALUMINUM
  - A. EXTRUDED ALUMINUM RIDGE CAP SHALL BE FABRICATED FROM ALUMINUM ALLOY 6105-T5.
  - B. EXTRUDED ALUMINUM GUTTER FASCIA AND FASCIA TRIM SHALL BE FABRICATED FROM ALLOY 6061-T6 OR 6105-T6.
  - C. ALUMINUM COMPONENTS SHALL BE COATED WITH ANTI-GRAFFITI POLYESTER POWDER COAT FINISH MEETING AAMA 2604-02 SPECIFICATION.
6. ROOF DECK
  - A. INTERLOCKING SEAL ALUMINUM ROOF DECK SHALL BE ROLL FORMED FROM ALUMINUM ALLOY 3004-H54.
  - B. ROOF DECK SHALL BE COATED WITH HEAT REFLECTIVE BASF ULTRA-COOL COATING OR APPROVED EQUAL.
7. FASTENERS
  - A. HIGH STRENGTH BOLTS SHALL CONFORM TO ASTM A325 OR A307 (SEE DETAILS).
  - B. SCREWS ATTACHING TO STEEL SHALL BE 12-24 HEX WASHER HEAD #6 POINT SELF DRILLING SCREWS.
  - C. SCREWS ATTACHING TO ALUMINUM SHALL BE 6-18 HEX WASHER HEAD #2 POINT SELF DRILLING SCREWS.
  - D. HIGH STRENGTH BOLTS SHALL BE HOT DIP GALVANIZED. ALL SCREWS SHALL BE STAINLESS STEEL OR COATED WITH ZINC.

AMERICANA BUILDING PRODUCTS			
#2 INDUSTRIAL DRIVE - SALEM, IL 62881			
(888) 442-2828 - www.americana.com			
<b>24'-0" x 48'-0" NAVAJO SHELTER</b>			
SIZE	DATE	DWG NO	REV
B	2/14/2013	NAV24x48	
SCALE: AS NOTED DRAWN: AY SHEET 1 of 1			

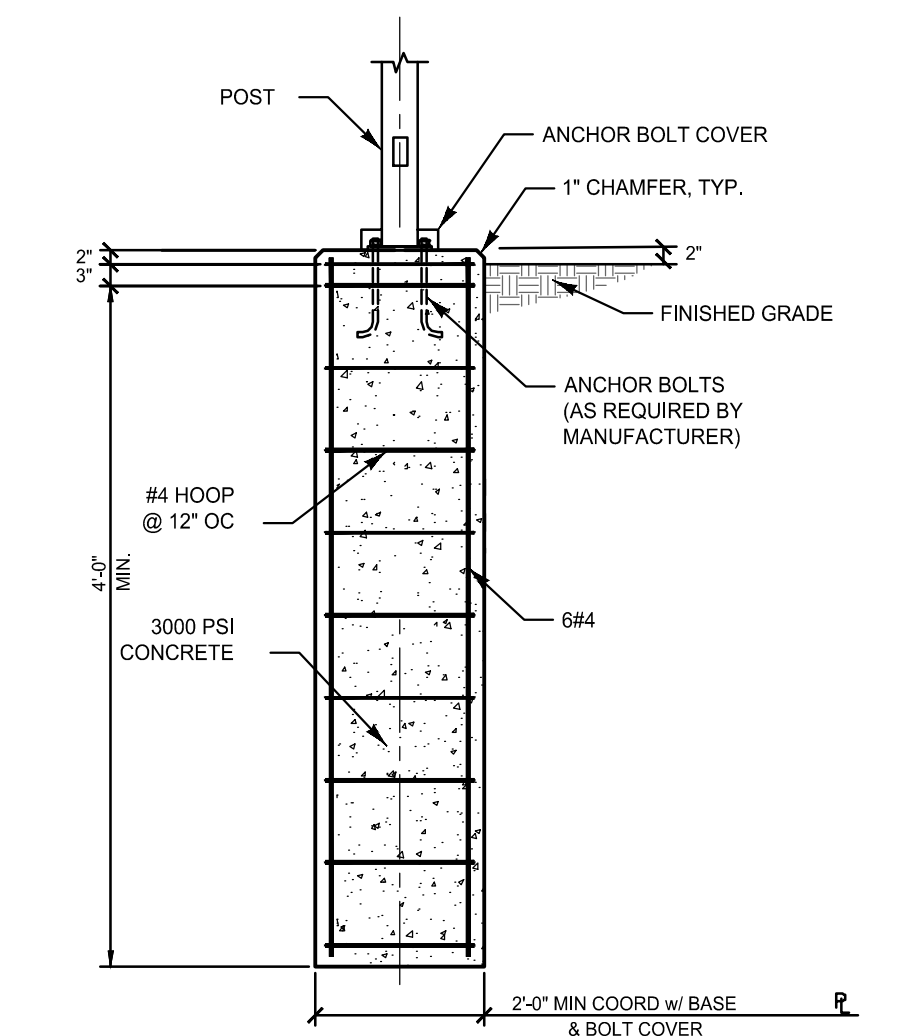


**PAVILION FURNISHING DETAIL**  
NOT TO SCALE

- NOTES:**
1. OUTLETS SHALL BE SECURED TO THE PAVILION FRAME POSTS.
  2. OUTLETS SHALL BE INSTALLED BETWEEN 18" TO 24" ABOVE THE FINISH FLOOR ELEVATION.
  3. OUTLETS SHALL BE GROUND-FAULT CIRCUIT INTERRUPTERS (GFCI) PROTECTED.



**CONCRETE PAVILION SLAB SECTION**  
NOT TO SCALE



**PAVILION POST FOUNDATION DETAIL**  
NOT TO SCALE

- NOTES:**
1. PAVILION SHALL INCLUDE ELECTRIC SERVICE FOR TWO (2) OVERHEAD LIGHTS AND TWO (2) STANDARD OUTLETS.
  2. ROOF COLOR SHALL BE #555 DARK GREEN.
  3. FRAME COLOR SHALL BE #815 ASH GRAY.
  4. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY REQUIRED PERMITS AND SEALED/STAMPED DRAWINGS.

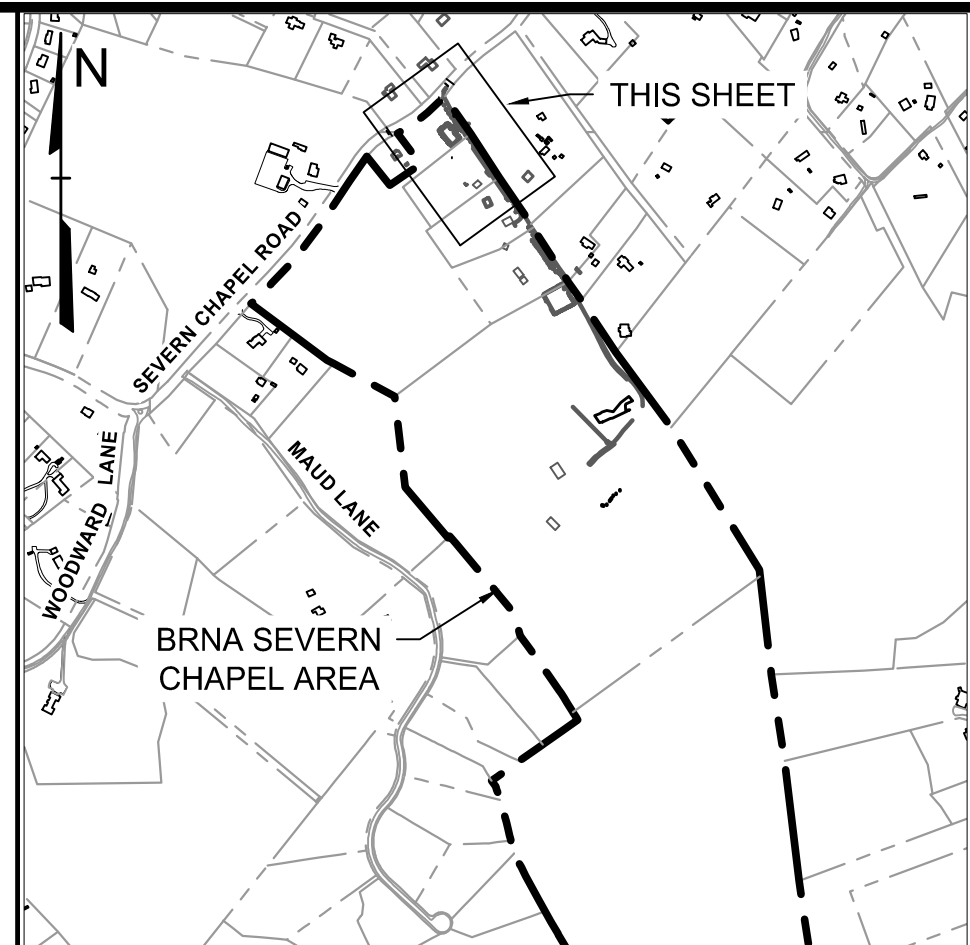
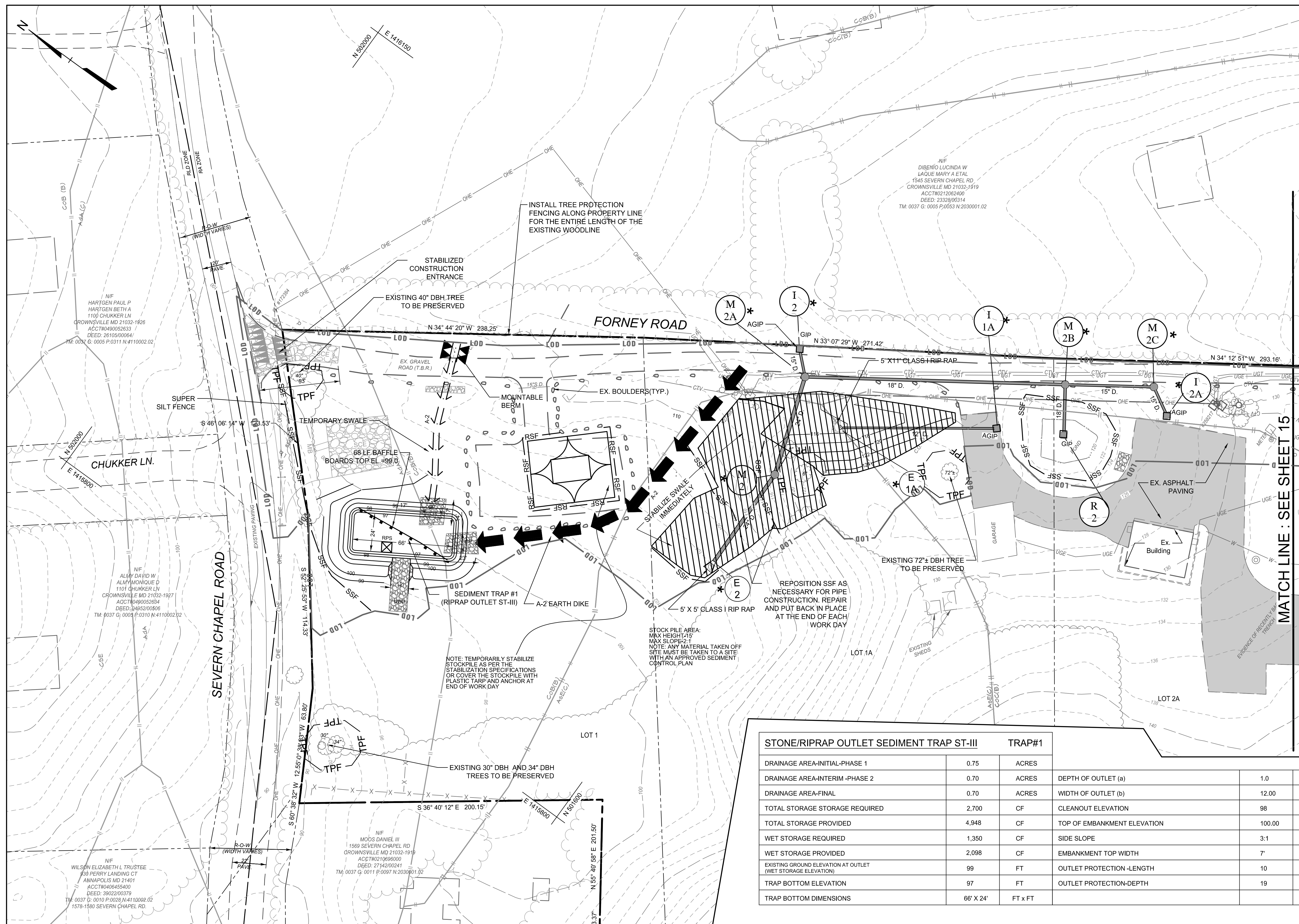
24TMP-026983

<p><b>CENTURY ENGINEERING</b> A Kleinfelder Company 10710 Gilroy Road, Hunt Valley, MD 21031 Phone: 443.589.2400 www.centuryeng.com</p>		DATE: 6/21/2024		ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS		G02020077 CONSTRUCTION DOCUMENTS			
		LICENSE NO. 32574		REVISIONS:		SCALE: AS SHOWN		PROJECT NO.: P588001	
APPROVED:		DATE:		APPROVED:		DATE:		CHECKED BY: MJP/AJD	
CHIEF ENGINEER		DATE:		PROJECT MANAGER		DATE:		SHEET 13 OF 77	
APPROVED:		DATE:		CHIEF, RIGHT OF WAY		DATE: 6/7/2024		2nd Tax District Anne Arundel Co., MD.	
ASSISTANT CHIEF ENGINEER		DATE:		CHIEF, RIGHT OF WAY		DATE: 6/7/2024		Tax Map 37, Grid 11, Parcel 86	

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T:\2023\Facilities\20235237.00\1a\bacon ridge construction drawings phase 1\CIVIL\CADD\Drawings\3. Construction Documents\20235237.00\1A\CD-12\ESC PH.1 Plan.dwg Jun 21, 2024 10:35am Kdarley



**PLAN KEY**

SCALE: 1" = 1000'

**ESC LEGEND**

- ESC Drainage Area
- Reinforced Silt Fence
- Super Silt Fence
- Critical Root Zone
- Tree Protection Fence
- Earth Dike
- Perimeter Dike/Swale
- Stabilized Construction Entrance
- Removable Pumping Station
- Gabion Inflow Protection
- Rock Outlet Protection
- Topsoil Stockpile
- Limit of Disturbance
- Mountable Berm
- Storm Drain & Outfall
- Existing Paving to remain
- Inlet Protection
- Baffle Board
- Areas to be stabilized immediately
- SD STRUCTURES
- CLEAN WATER DIVERSIONS

Note: Refer to Sheet 2 for Sequence of Construction and additional Legend Notes & Items

LOD SHOWN FOR PHASE I AND II  
MAX ESC LIMIT OF DISTURBANCE: 457,380 SF = 10.5 AC.±

STONE/RIPRAP OUTLET SEDIMENT TRAP ST-III		TRAP#1	
DRAINAGE AREA-INITIAL-PHASE 1	0.75	ACRES	
DRAINAGE AREA-INTERIM-PHASE 2	0.70	ACRES	DEPTH OF OUTLET (a)
DRAINAGE AREA-FINAL	0.70	ACRES	WIDTH OF OUTLET (b)
TOTAL STORAGE STORAGE REQUIRED	2,700	CF	CLEANOUT ELEVATION
TOTAL STORAGE PROVIDED	4,948	CF	TOP OF EMBANKMENT ELEVATION
WET STORAGE REQUIRED	1,350	CF	SIDE SLOPE
WET STORAGE PROVIDED	2,098	CF	EMBANKMENT TOP WIDTH
EXISTING GROUND ELEVATION AT OUTLET (WET STORAGE ELEVATION)	99	FT	OUTLET PROTECTION -LENGTH
TRAP BOTTOM ELEVATION	97	FT	OUTLET PROTECTION-DEPTH
TRAP BOTTOM DIMENSIONS	66' X 24'	FT x FT	

**PLAN**

SCALE: 1" = 30'  
0 30' 60'

**CENTURY ENGINEERING**  
A Kleinfelder Company  
10710 Gilroy Road, Hunt Valley, MD 21031  
Phone: 443.589.2400 www.centuryeng.com

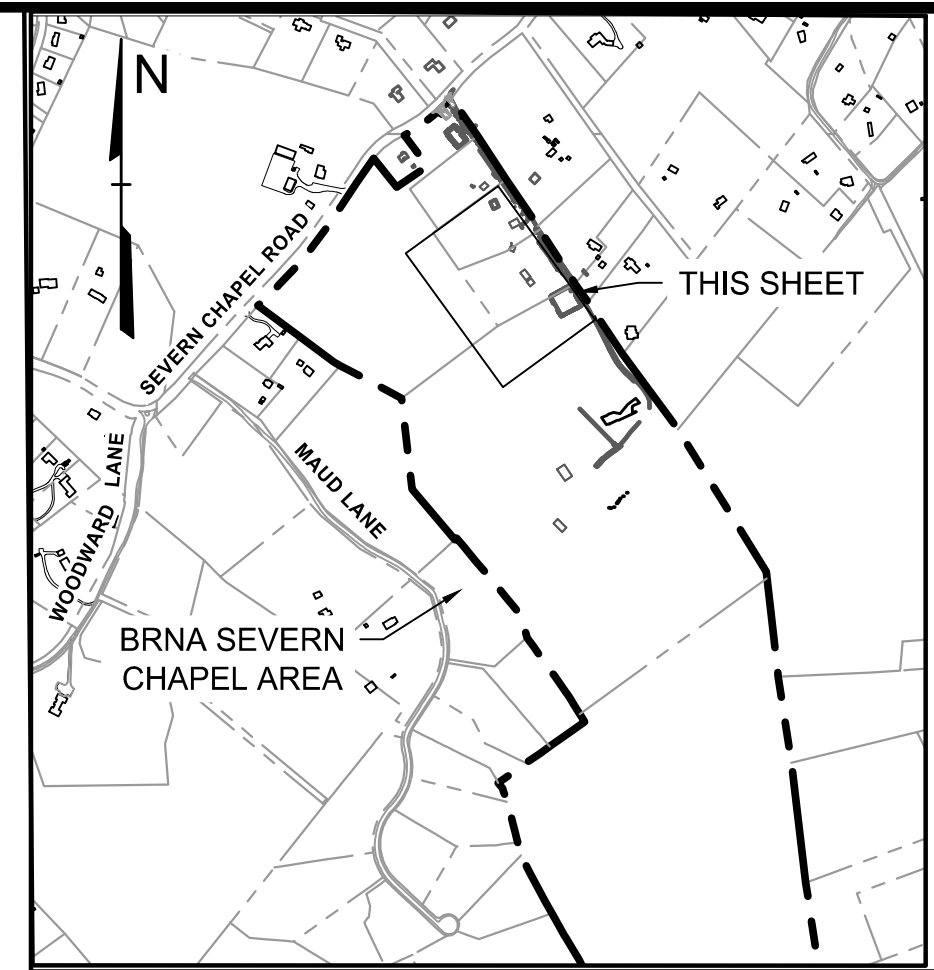
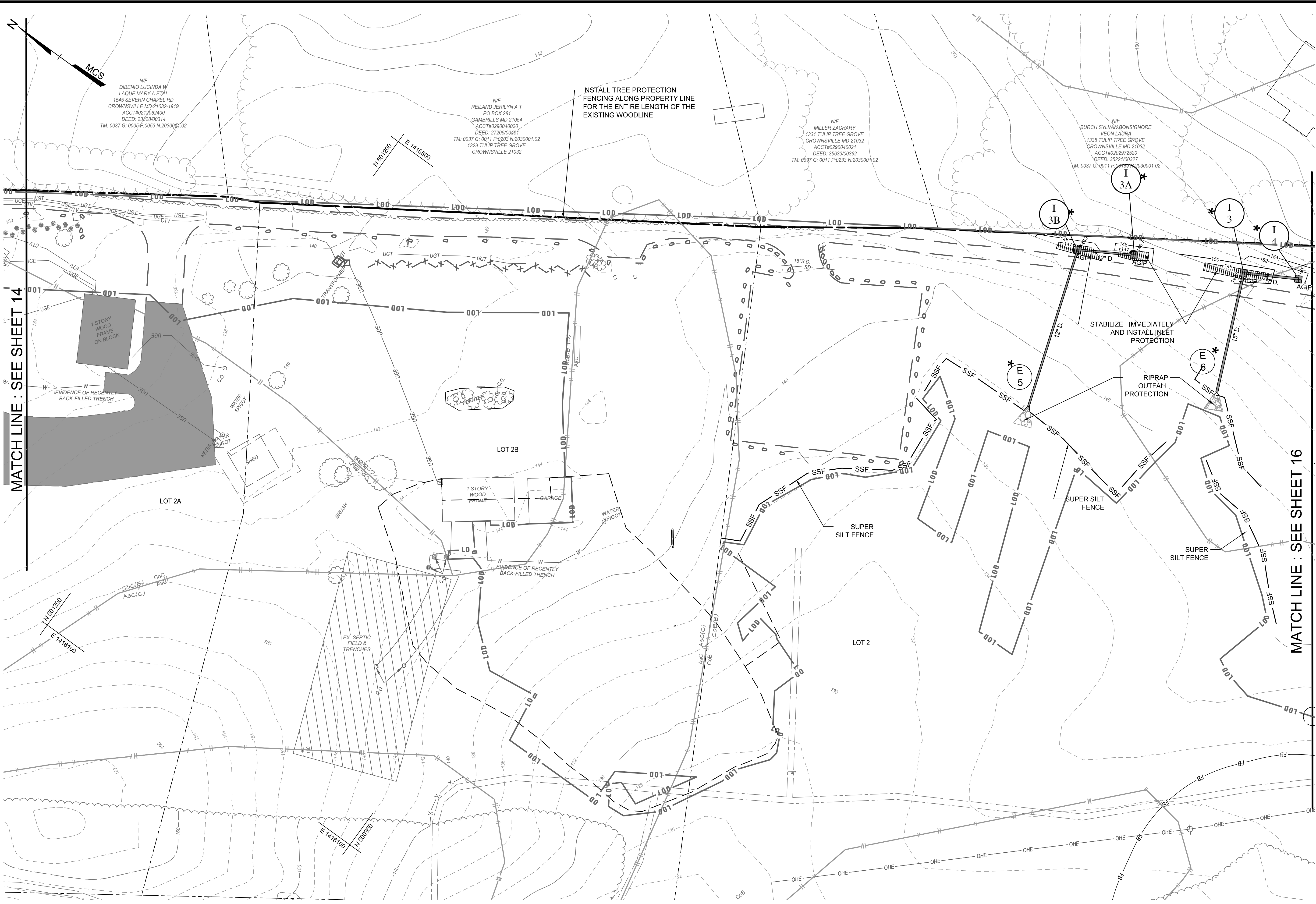
DATE: 6/21/2024

REVISED	DATE	BY	APPROVED	DATE	APPROVED	DATE	SCALE	AS SHOWN
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			APPROVED		APPROVED		CHECKED BY	MJP/AJD
			ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY		SHEET	14 OF 77
							PROJECT NO.:	P588001
							DATE:	6/7/2024

ANNE ARUNDEL COUNTY  
DEPARTMENT OF PUBLIC WORKS  
G02020077  
CONSTRUCTION DOCUMENTS  
Erosion And Sediment Control Plan-Phase I  
**Severn Chapel Area of the Bacon Ridge Natural Area**  
2nd Tax District Anne Arundel Co., MD. Tax Map 37, Grid 11, Parcel 86

24TMP-026983





**PLAN KEY**  
SCALE: 1" = 1000'

- ESC LEGEND**
- ESC Drainage Area
  - Reinforced Silt Fence
  - Super Silt Fence
  - Earth Dike
  - Perimeter Dike/Swale
  - Stabilized Construction Entrance
  - Removable Pumping Station
  - Gabion Inflow Protection
  - Rock Outlet Protection
  - Topsoil Stockpile
  - Limit of Disturbance
  - Mountable Berm
  - Storm Drain & Outfall
  - Existing Paving to remain
  - Inlet Protection
  - Baffle Board
  - Areas to be stabilized immediately
  - SD STRUCTURES
  - CLEAN WATER DIVERSIONS

MATCH LINE : SEE SHEET 14

MATCH LINE : SEE SHEET 16

**PLAN**  
SCALE: 1" = 30'  
0 30' 60'

Note: Refer to Sheet 2 for Sequence of Construction and additional Legend Notes & Items  
 LOD SHOWN FOR PHASE I AND II  
 LIMIT OF DISTURBANCE: 457,850 ft<sup>2</sup>/10.52 ac.±

24TMP-026983

**CENTURY ENGINEERING**  
 A Kleinfelder Company  
 10710 Gilroy Road, Hunt Valley, MD 21031  
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DATE: 6/21/2024

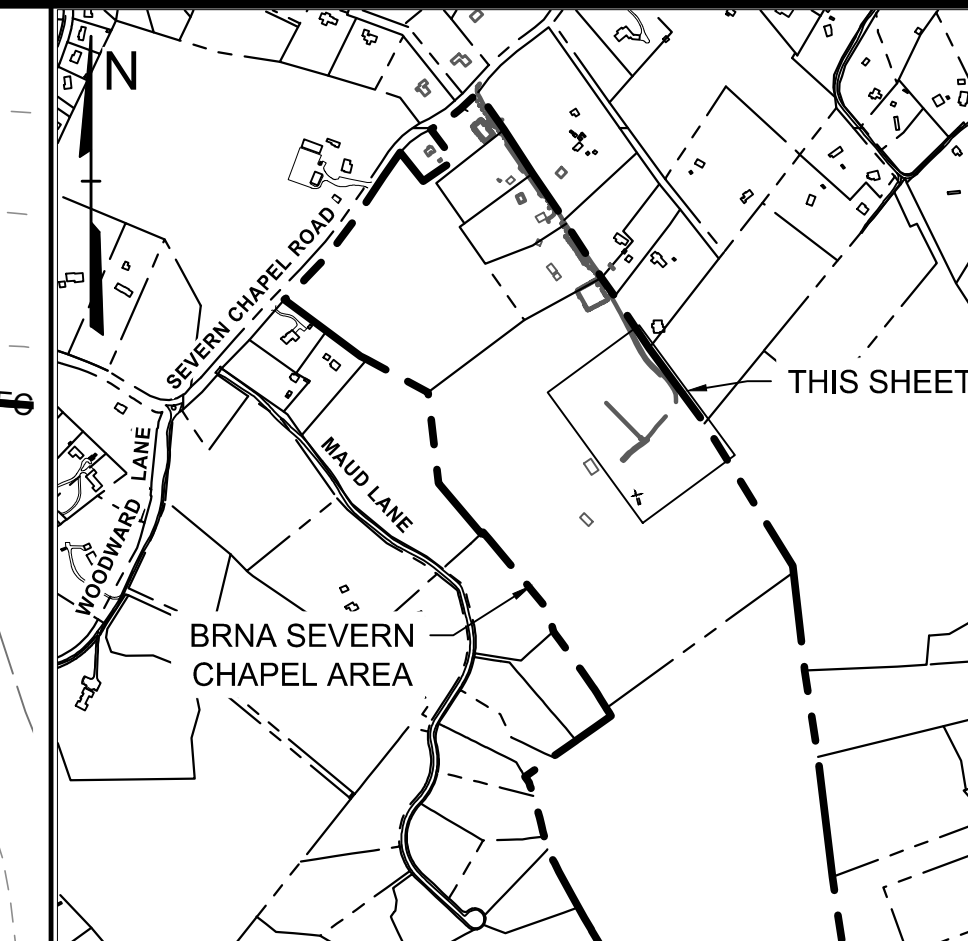
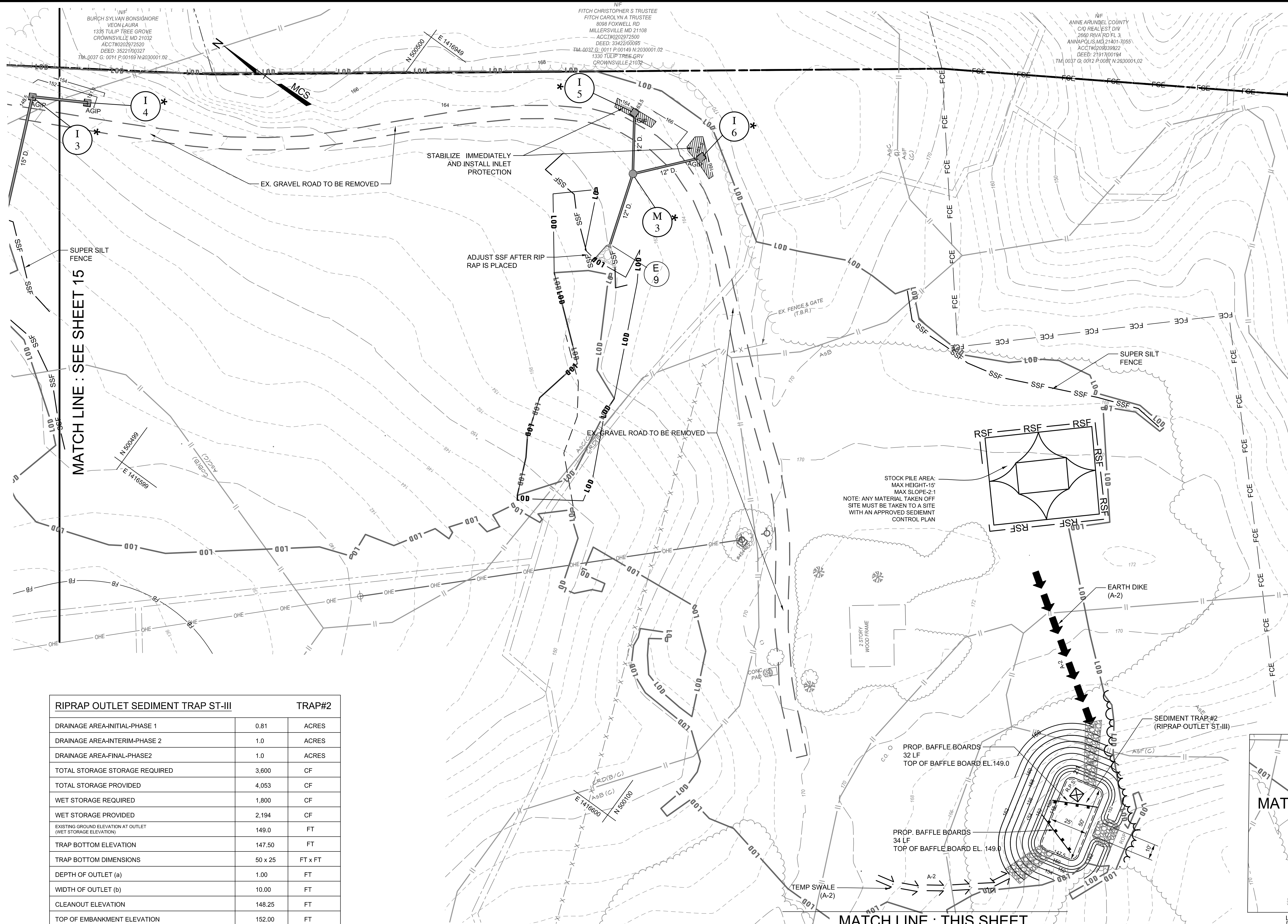
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DATE	BY										
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		APPROVED				APPROVED				CHECKED BY MJP/AJD	
						APPROVED				SHEET 15 OF 77	
		ASSISTANT CHIEF ENGINEER				CHIEF, RIGHT OF WAY				PROJECT NO.: P588001	
										DATE: 6/7/2024	

ANNE ARUNDEL COUNTY  
 DEPARTMENT OF PUBLIC WORKS  
 G02020077  
 CONSTRUCTION DOCUMENTS  
 Erosion And Sediment Control Plan-Phase I  
**Severn Chapel Area**  
 of the Bacon Ridge Natural Area  
 2nd Tax District Anne Arundel Co., MD. Tax Map 37, Grid 11, Parcel 86

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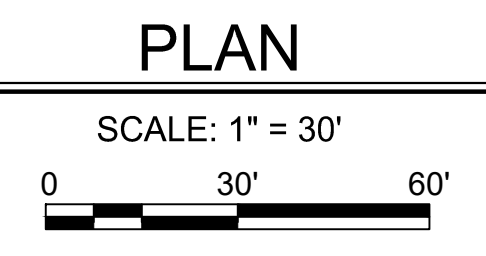
**PLAN KEY**

SCALE: 1" = 1000'

**ESC LEGEND**

- ESC Drainage Area
- Reinforced Silt Fence
- Super Silt Fence
- Earth Dike
- Swale
- Stabilized Construction Entrance
- Removable Pumping Station
- Gabion Inflow Protection
- Rock Outlet Protection
- Topsoil Stockpile
- Limit of Disturbance
- Mountable Berm
- Storm Drain & Outfall
- Existing Paving to remain
- Inlet Protection
- Baffle Board
- Areas to be stabilized immediately
- SD STRUCTURES
- CLEAN WATER DIVERSIONS

RIPRAP OUTLET SEDIMENT TRAP ST-III	TRAP#2	
DRAINAGE AREA-INITIAL-PHASE 1	0.81	ACRES
DRAINAGE AREA-INTERIM-PHASE 2	1.0	ACRES
DRAINAGE AREA-FINAL-PHASE2	1.0	ACRES
TOTAL STORAGE STORAGE REQUIRED	3,600	CF
TOTAL STORAGE PROVIDED	4,053	CF
WET STORAGE REQUIRED	1,800	CF
WET STORAGE PROVIDED	2,194	CF
EXISTING GROUND ELEVATION AT OUTLET (WET STORAGE ELEVATION)	149.0	FT
TRAP BOTTOM ELEVATION	147.50	FT
TRAP BOTTOM DIMENSIONS	50 x 25	FT x FT
DEPTH OF OUTLET (a)	1.00	FT
WIDTH OF OUTLET (b)	10.00	FT
CLEANOUT ELEVATION	148.25	FT
TOP OF EMBANKMENT ELEVATION	152.00	FT
SIDE SLOPE	2:1	H:V RATIO
EMBANKMENT TOP WIDTH	6.00	FT
OUTLET PROTECTION -LENGTH	10	FT
OUTLET PROTECTION-DEPTH	19	IN



MATCH LINE : THIS SHEET

MATCH LINE : THIS SHEET

LOD SHOWN FOR PHASE I AND II  
MAX ESC LIMIT OF DISTURBANCE: 457,380 SF = 10.5 AC.± 24TMP-026983

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DATE: 6/21/2024

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DEPARTMENT OF PUBLIC WORKS

G02020077

CONSTRUCTION DOCUMENTS

Erosion And Sediment Control Plan-Phase I

Severn Chapel Area  
of the Bacon Ridge Natural Area

2nd Tax District  
Anne Arundel Co., MD.

REVISED DATE	BY	APPROVED DATE	APPROVED DATE	SCALE AS SHOWN

CHIEF ENGINEER

APPROVED DATE

ASSISTANT CHIEF ENGINEER

PROJECT MANAGER

APPROVED DATE

CHIEF, RIGHT OF WAY

CHECKED BY MJPI/AJD

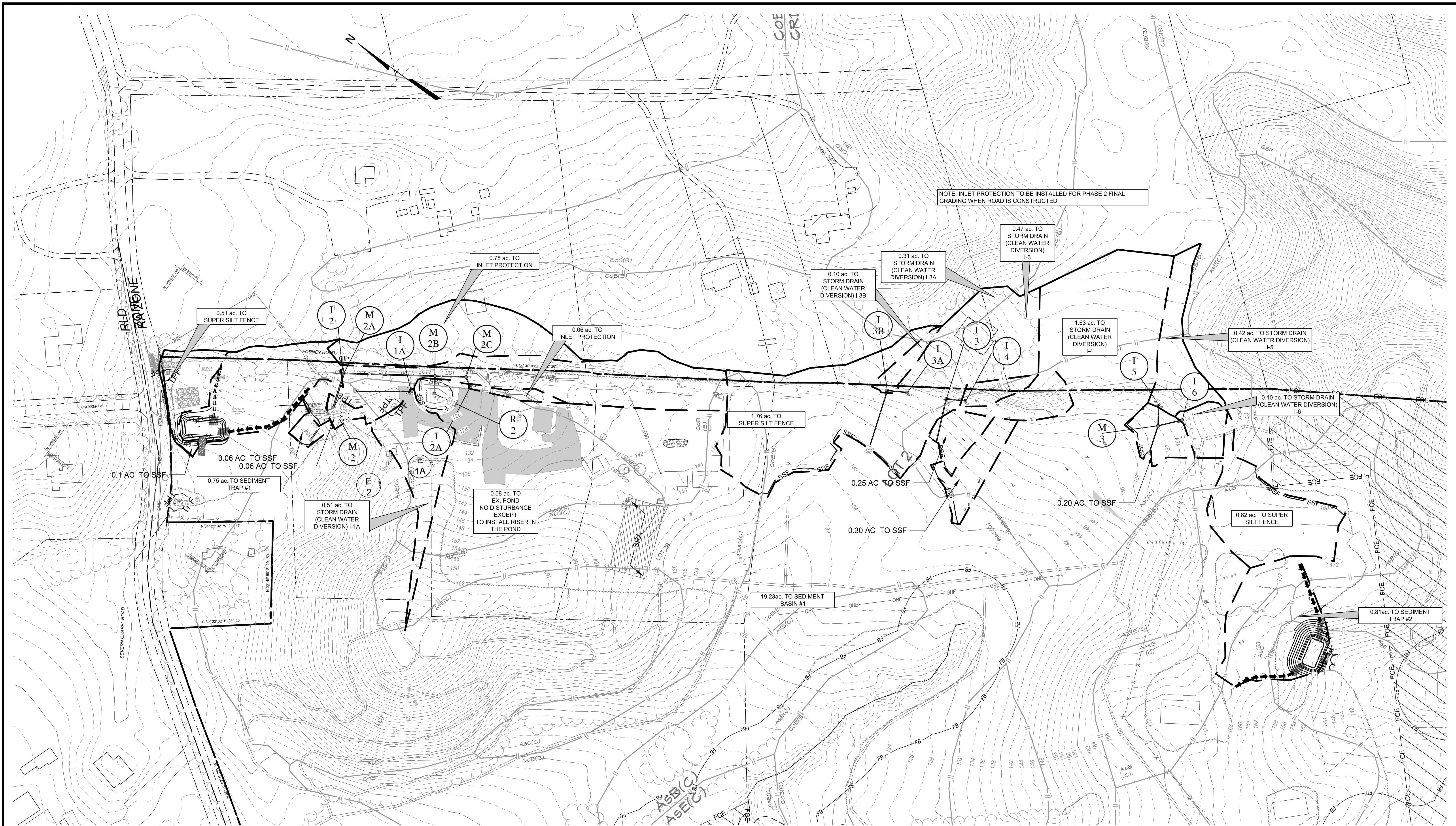
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PROJECT NO.: P588001

DATE: 6/7/2024



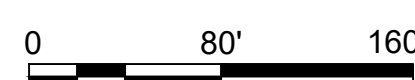
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NOTE: INLET PROTECTION TO BE INSTALLED FOR PHASE 2 FINAL GRADING WHEN ROAD IS CONSTRUCTED

PLAN

SCALE: 1" = 80'

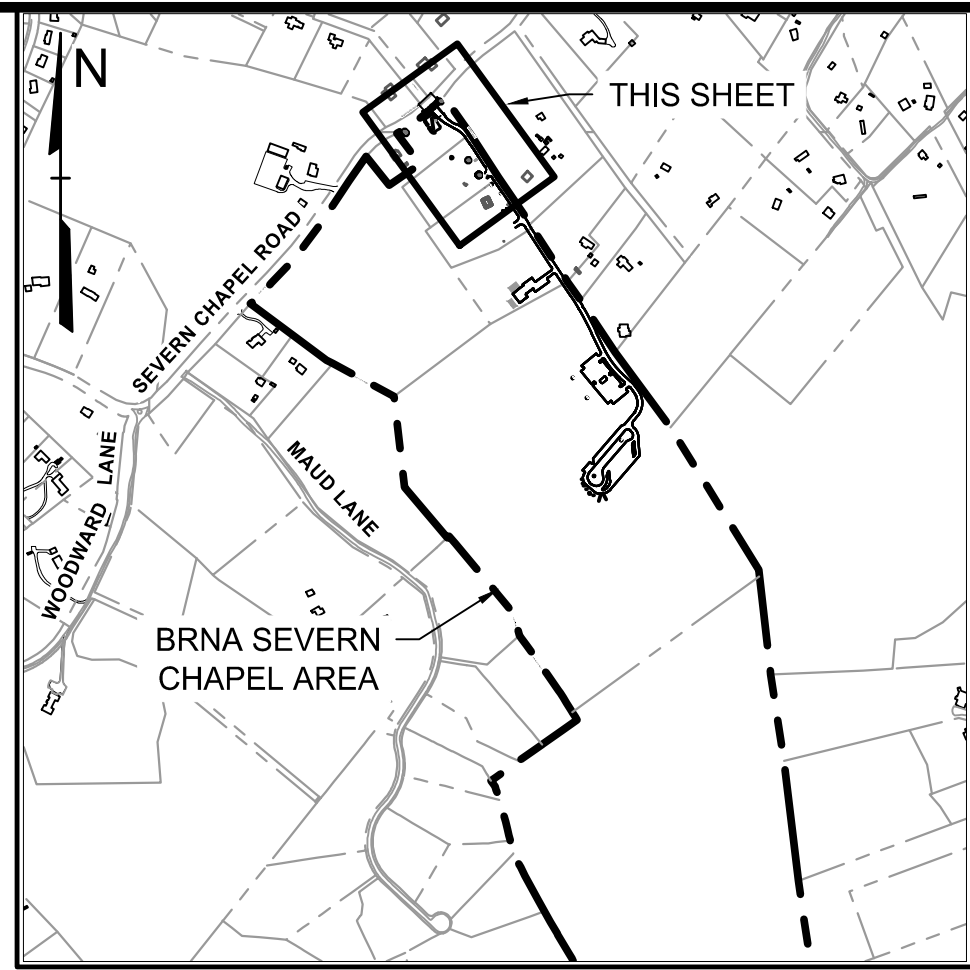
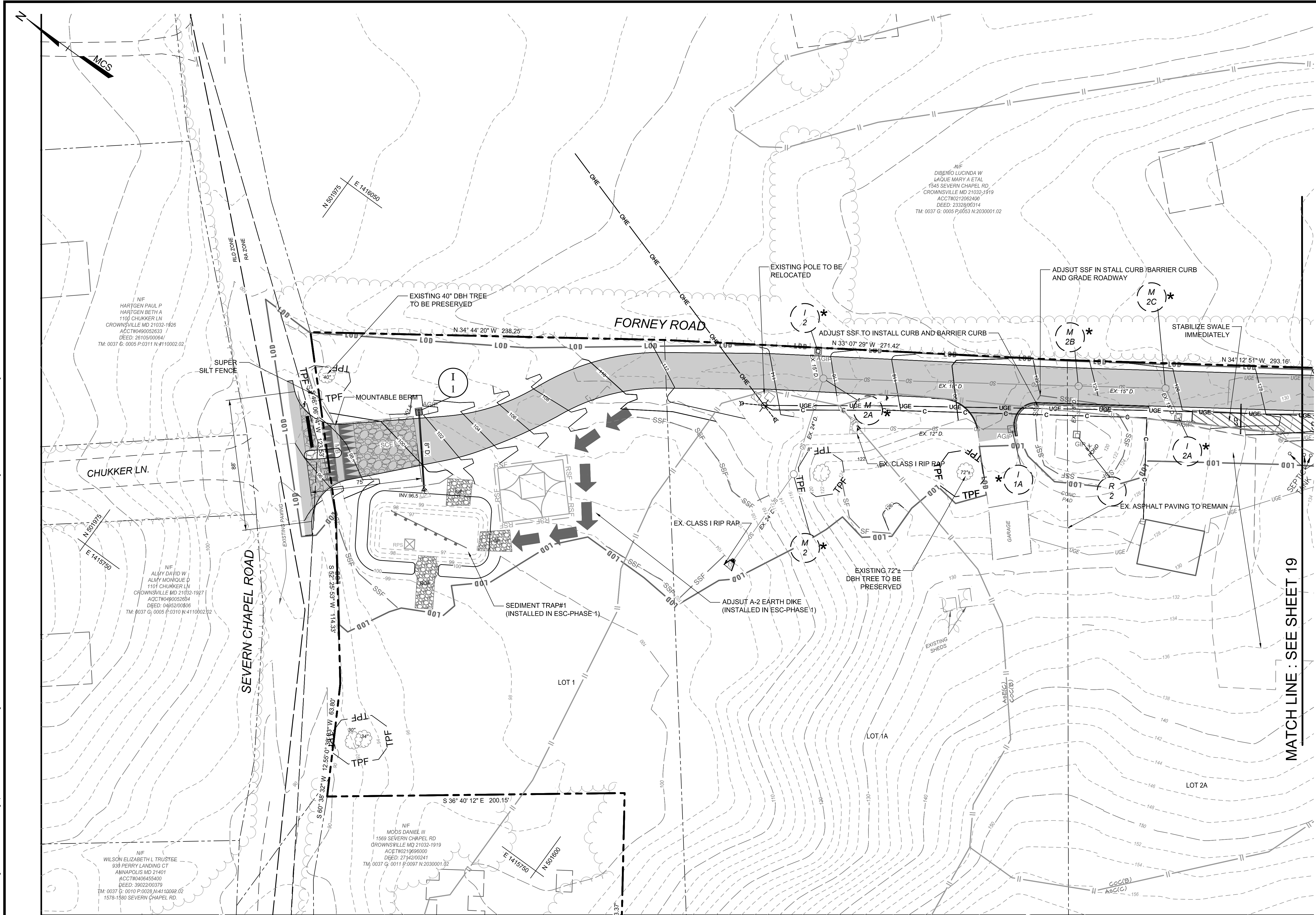


24TMP-026983

<p><b>CENTURY ENGINEERING</b> A Kleinfelder Company 10710 Gilroy Road, Hunt Valley, MD 21031 Phone: 443.589.2400 www.centuryeng.com</p>	<p>DATE: 6/21/2024</p> <p>LICENSE NO. 32574</p>	<table border="1"> <tr> <th>REVISED</th> <th>DATE</th> <th>BY</th> <th>APPROVED</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	REVISED	DATE	BY	APPROVED	DATE						<p>ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS</p> <table border="1"> <tr> <td>APPROVED</td> <td>DATE</td> <td>APPROVED</td> <td>DATE</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	APPROVED	DATE	APPROVED	DATE					<p>G02020077</p> <p>CONSTRUCTION DOCUMENTS</p> <p><b>Erosion And Sediment Control</b> DA Map-Phase I Severn Chapel Area of the Bacon Ridge Natural Area</p> <p>2nd Tax District Anne Arundel Co., MD.</p>																	
	REVISED	DATE	BY	APPROVED	DATE																																		
APPROVED	DATE	APPROVED	DATE																																				
<table border="1"> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>													<table border="1"> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>													<table border="1"> <tr> <td>SCALE AS SHOWN</td> <td> </td> </tr> <tr> <td>DRAWN BY</td> <td>LMV/JRD</td> </tr> <tr> <td>CHECKED BY</td> <td>MJP/AJD</td> </tr> <tr> <td>SHEET</td> <td>17 OF 77</td> </tr> <tr> <td>PROJECT NO.:</td> <td>P588001</td> </tr> <tr> <td>DATE:</td> <td>6/7/2024</td> </tr> </table>	SCALE AS SHOWN		DRAWN BY	LMV/JRD	CHECKED BY	MJP/AJD	SHEET	17 OF 77	PROJECT NO.:	P588001	DATE:	6/7/2024	<p>24TMP-026983</p>
SCALE AS SHOWN																																							
DRAWN BY	LMV/JRD																																						
CHECKED BY	MJP/AJD																																						
SHEET	17 OF 77																																						
PROJECT NO.:	P588001																																						
DATE:	6/7/2024																																						



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**PLAN KEY**

SCALE: 1" = 100'

**ESC LEGEND**

- ESC Drainage Area
- Reinforced Silt Fence
- Super Silt Fence
- Tree Protection Fence
- Earth Dike
- Swale
- Stabilized Construction Entrance
- Removable Pumping Station
- Gabion Inflow Protection
- Rock Outlet Protection
- Topsoil Stockpile
- Limit of Disturbance
- Mountable Berm
- Storm Drain & Outfall
- Existing Paving to remain
- Inlet Protection
- Baffle Board
- Areas to be stabilized immediately
- SD STRUCTURES
- EX.SD STRUCTURES INSTALLED AS CLEAN WATER DIVERSIONS

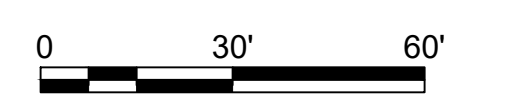
MATCH LINE : SEE SHEET 19

LOD SHOWN FOR PHASE I AND II  
LIMIT OF DISTURBANCE: 457,850 SF/10.52 ac.±

24TMP-026983

**PLAN**

SCALE: 1" = 30'



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DATE	BY								
		CHIEF ENGINEER				PROJECT MANAGER			
		APPROVED				APPROVED			
		ASSISTANT CHIEF ENGINEER				CHIEF, RIGHT OF WAY			

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DEPARTMENT OF PUBLIC WORKS

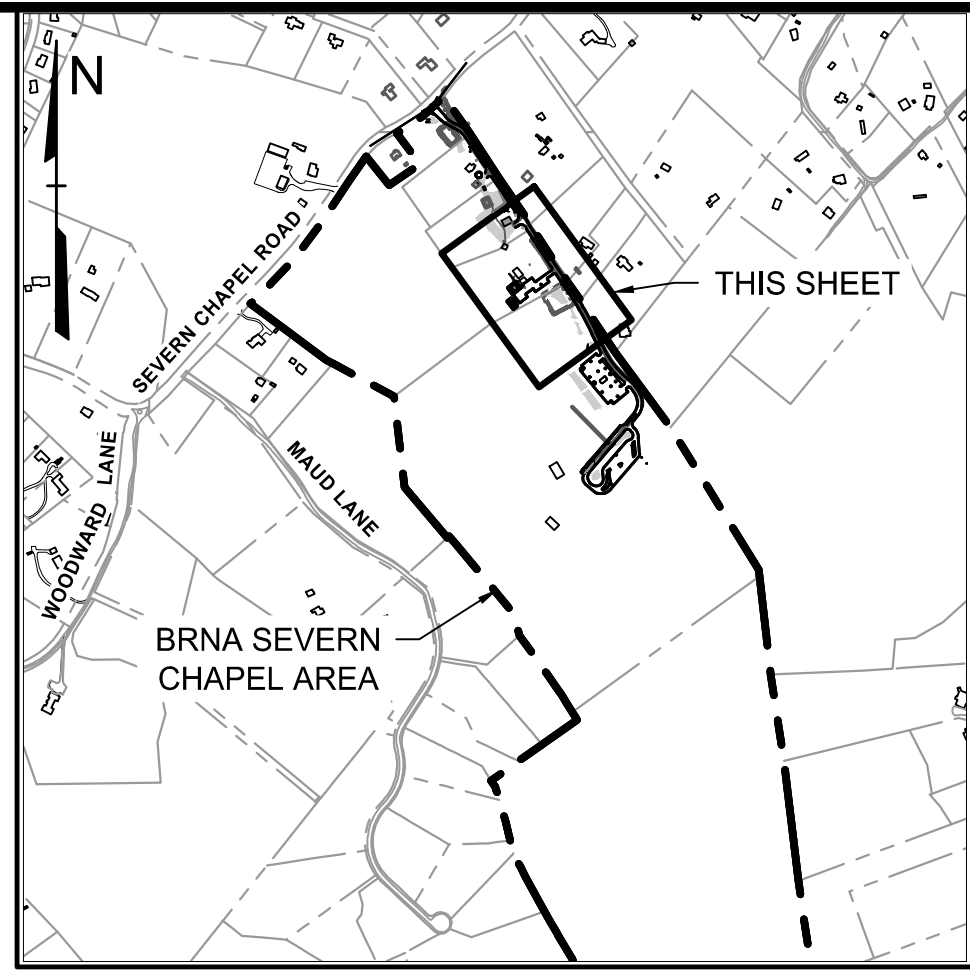
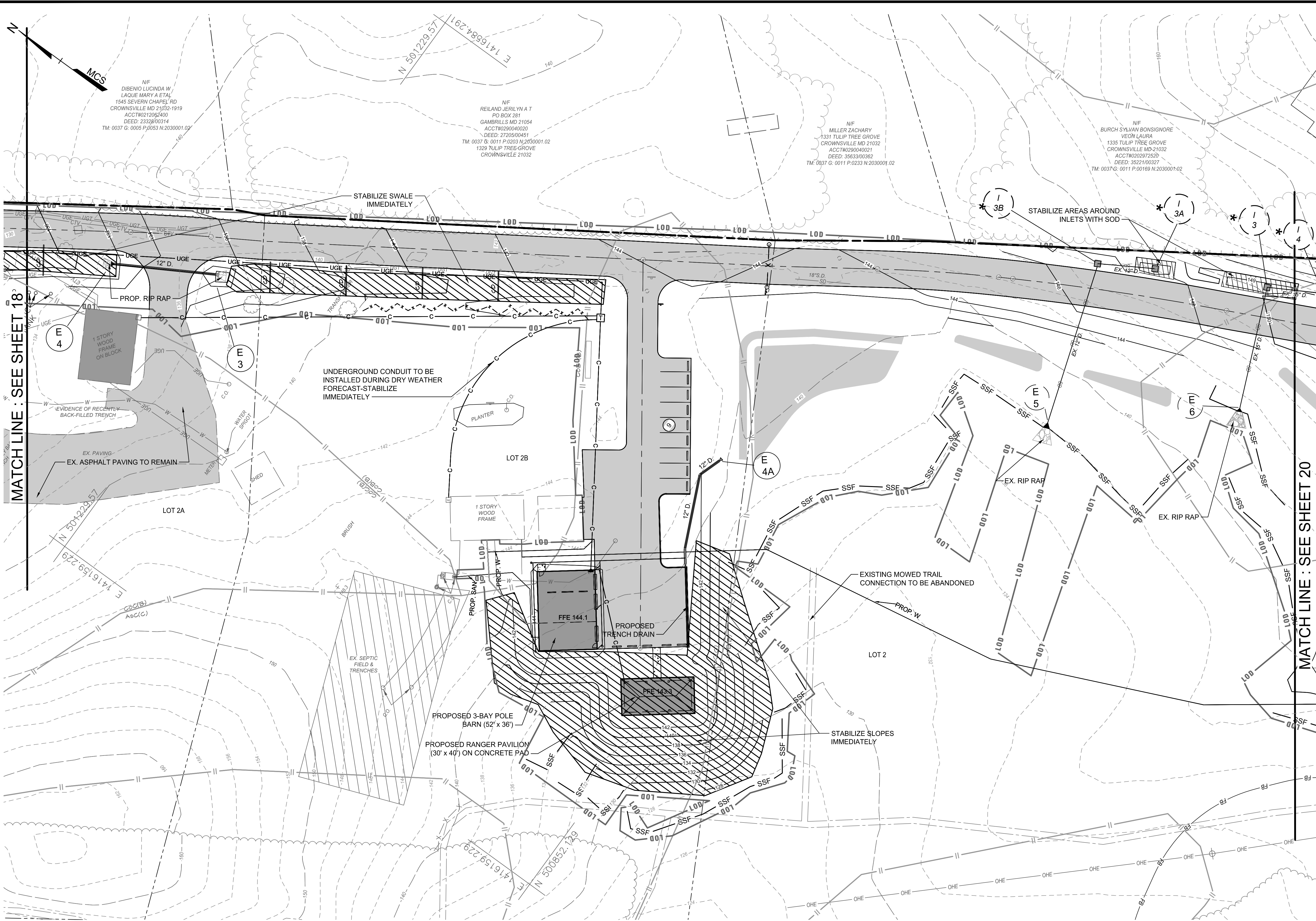
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CONSTRUCTION DOCUMENTS  
Erosion And Sediment Control Plan-Phase II

SCALE AS SHOWN  
DRAWN BY: LMV/RDT  
CHECKED BY: MJP/AJD  
SHEET 18 OF 77  
PROJECT NO.: P588001  
DATE: 6/7/2024

**Severn Chapel Area**  
of the Bacon Ridge Natural Area  
2nd Tax District  
Anne Arundel Co., MD. Tax Map 37, Grid 11, Parcel 86





**PLAN KEY**

SCALE: 1" = 100'

**ESC LEGEND**

- ESC Drainage Area
- Reinforced Silt Fence
- Super Silt Fence
- Earth Dike
- Swale
- Stabilized Construction Entrance
- Removable Pumping Station
- Gabion Inflow Protection
- Rock Outlet Protection
- Topsoil Stockpile
- Limit of Disturbance
- Mountable Berm
- Storm Drain & Outfall
- Existing Paving to remain
- Inlet Protection
- Baffle Board
- Areas to be stabilized immediately
- EX.SD STRUCTURES INSTALLED AS CLEAN WATER DIVERSIONS
- SD STRUCTURES

LOD SHOWN FOR PHASE I AND II  
MAX ESC LIMIT OF DISTURBANCE: 457,380 SF = 10.5 AC.±

MATCH LINE : SEE SHEET 18

MATCH LINE : SEE SHEET 20

**PLAN**

SCALE: 1" = 30'  
0 30' 60'

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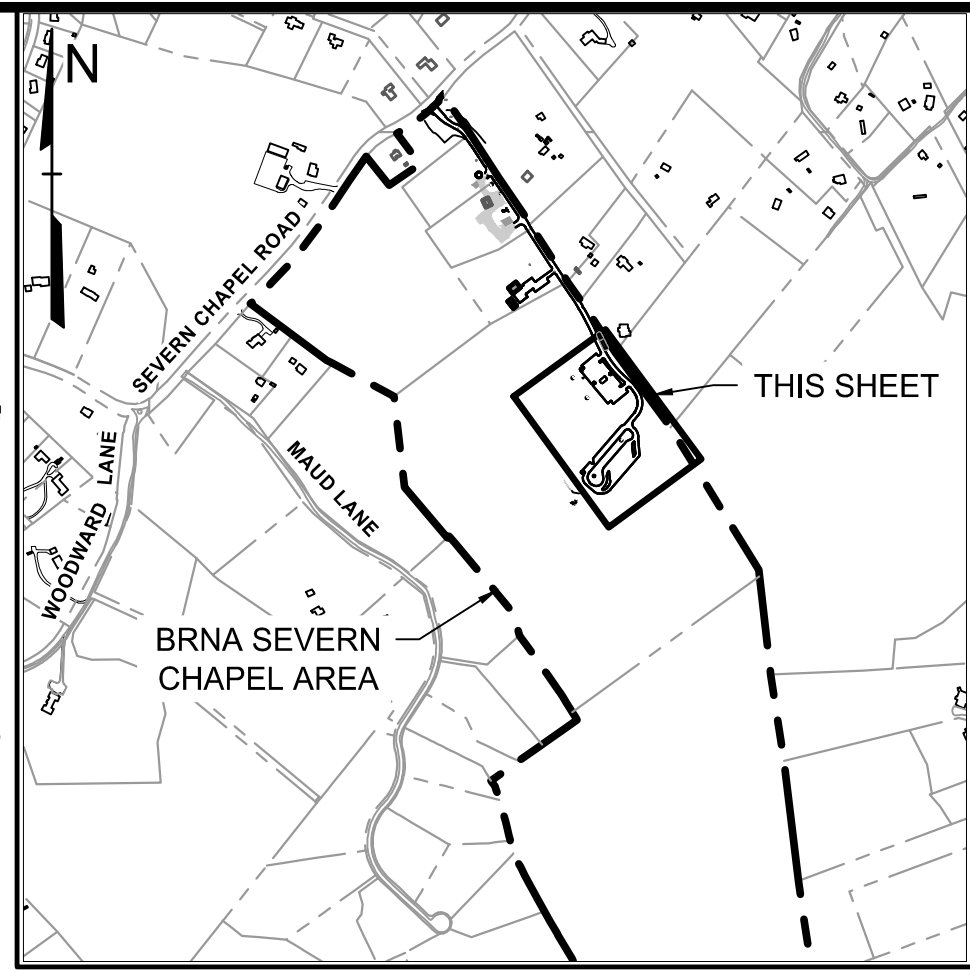
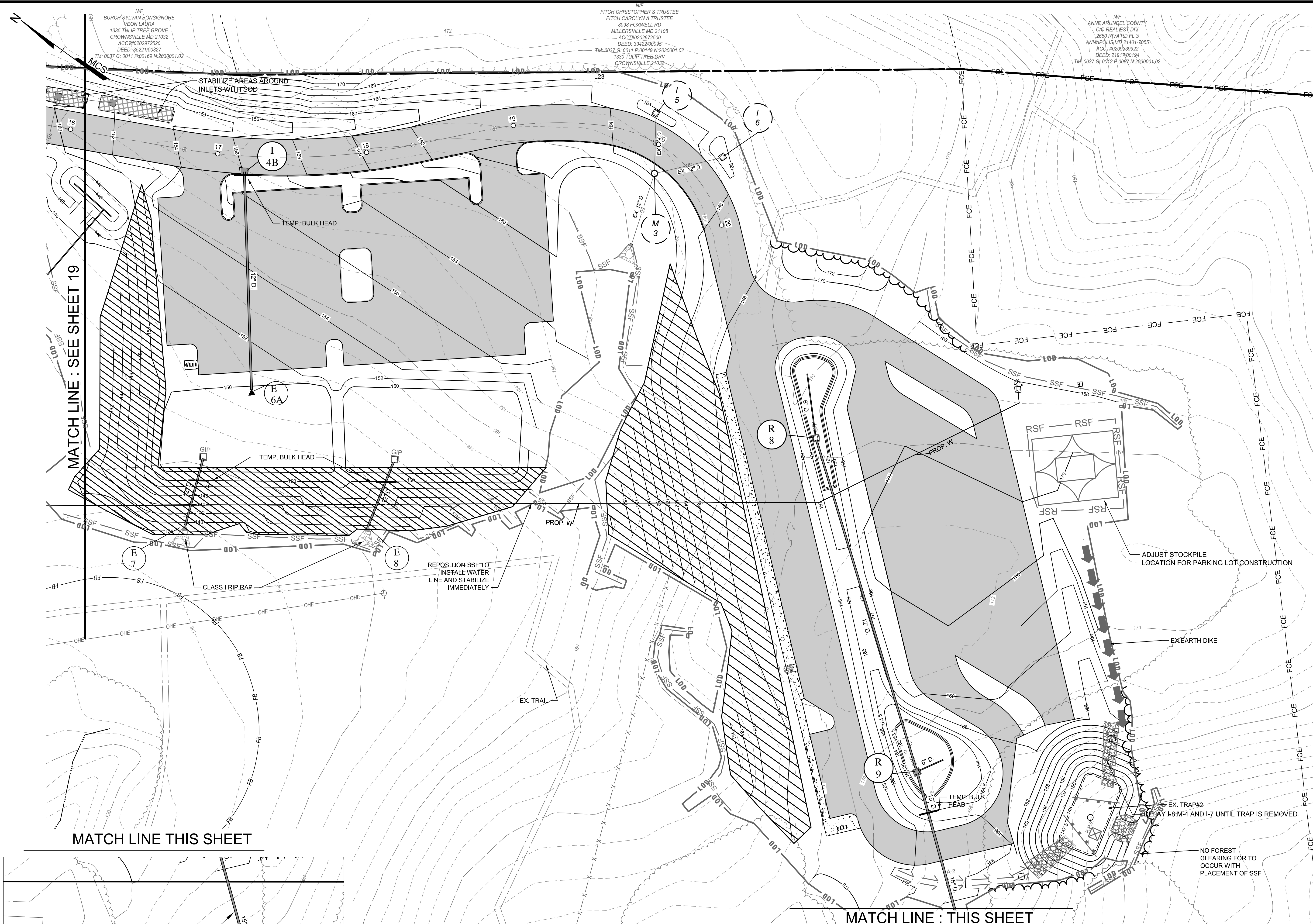
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		ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY		SHEET	19 OF 77
						PROJECT NO.:	P588001
						DATE:	6/7/2024

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G02020077  
CONSTRUCTION DOCUMENTS  
Erosion And Sediment Control Plan-Phase II  
**Severn Chapel Area of the Bacon Ridge Natural Area**  
2nd Tax District Anne Arundel Co., MD. Tax Map 37, Grid 11, Parcel 86

24TMP-026983



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**PLAN KEY**

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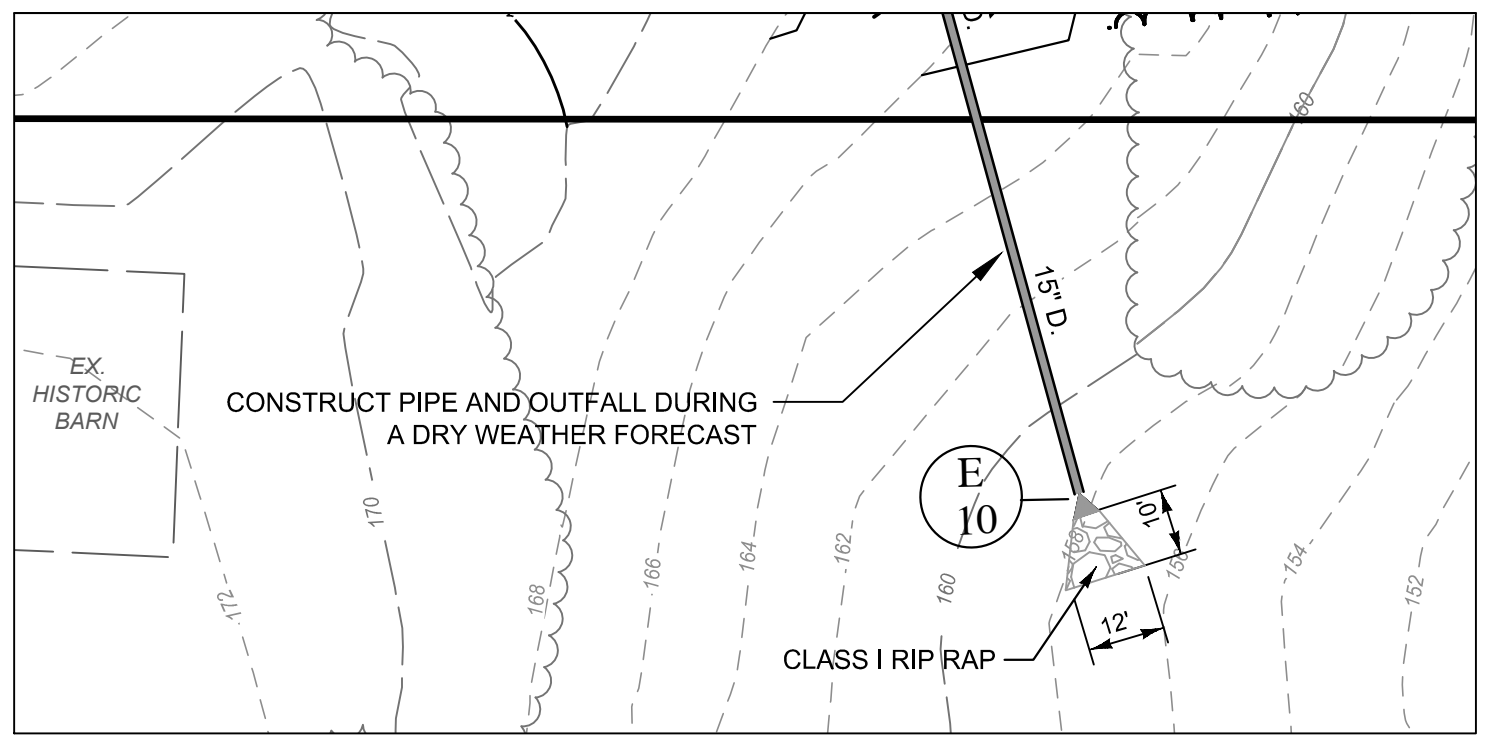
**ESC LEGEND**

- ESC Drainage Area
- Reinforced Silt Fence
- Super Silt Fence
- Earth Dike
- Perimeter Dike/Swale
- Stabilized Construction Entrance
- Removable Pumping Station
- Gabion Inflow Protection
- Rock Outlet Protection
- Topsoil Stockpile
- Limit of Disturbance
- Mountable Berm
- Existing Storm Drains
- Proposed Storm Drains
- Check Dam
- Areas to be stabilized immediately
- SD STRUCTURES
- SD STRUCTURES CLEAN WATER DIVERSIONS

Note: Refer to Sheet 2 for Sequence of Construction and additional Legend Notes & Items

LOD SHOWN FOR PHASE I AND II  
MAX ESC LIMIT OF DISTURBANCE: 457,380 SF = 10.5 AC ±

24TMP-026983



**PLAN**

SCALE: 1" = 30'



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APPROVED	DATE	APPROVED	DATE

SCALE	AS SHOWN
DRAWN BY	LMV/RDT
CHECKED BY	MJP/AJD
SHEET	20 OF 77
PROJECT NO.:	P588001
DATE:	6/7/2024

CONSTRUCTION DOCUMENTS  
Erosion And Sediment Control Plan-Phase II  
**Severn Chapel Area of the Bacon Ridge Natural Area**  
2nd Tax District Anne Arundel Co., MD. Tax Map 37, Grid 11, Parcel 86

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20 OF 77

DATE: 6/7/2024



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- ESC LEGEND**
- ESC Drainage Area
  - Reinforced Silt Fence
  - Super Silt Fence
  - Silt Fence
  - Earth Dike
  - Perimeter Dike/Swale
  - Stabilized Construction Entrance
  - Removable Pumping Station
  - Gabion Inflow Protection
  - Rock Outlet Protection
  - Topsoil Stockpile
  - Limit of Disturbance
  - Mountable Berm
  - Storm Drain & Outfall
  - Existing Paving to remain
  - Inlet Protection
  - Baffle Board
  - Areas to be stabilized immediately
  - SD STRUCTURES
  - CLEAN WATER DIVERSIONS
  - SD STRUCTURES

NOTE: INLET PROTECTION TO BE INSTALLED FOR PHASE 2 FINAL GRADING WHEN ROAD IS CONSTRUCTED

1.2ac. TO SUPER SILT FENCE

0.20 AC TO SSF EACH

1.2ac. TO SUPER SILT FENCE

0.82 ac. TO SUPER SILT FENCE

0.8 ac. TO SUPER SILT FENCE

INSTALL WATER LINE DURING 3 DAY DRY WEATHER FORECAST STABILIZE IMMEDIATELY

0.10 AC TO SSF EACH

0.70 TO SSF

1.00 ac. TO SEDIMENT TRAP #2

1.0 ac. TO SEDIMENT TRAP #1

NOTE: PHASE 2 A FOR INSTALLATION OF SWM FACILITIES AND SMALL SECTION OF PAVING TO OCCUR WHEN ALL AREAS STABILIZED AND WITH PERMISSION OF SEDIMENT CONTROL INSPECTOR.

**PLAN**

SCALE: 1" = 80'

24TMP-026983

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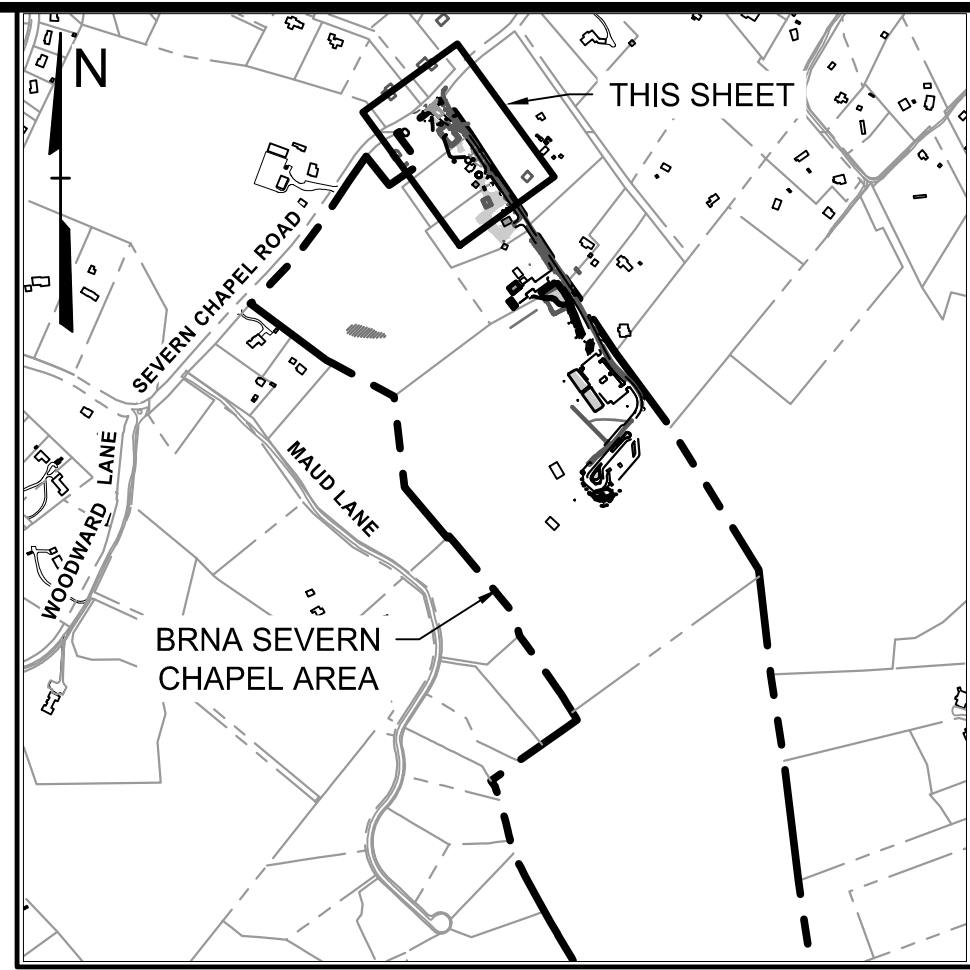
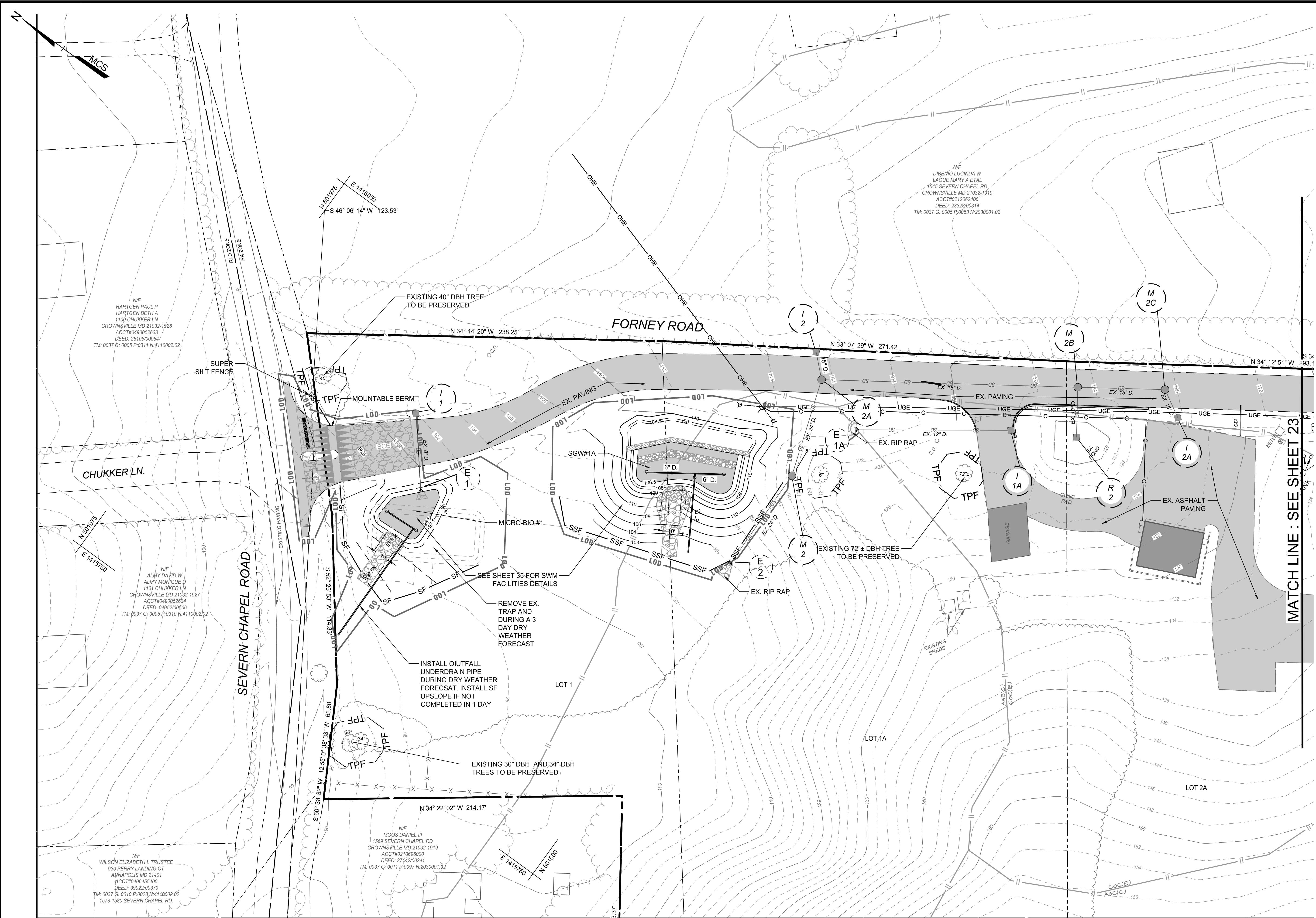
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DATE	BY										
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		APPROVED				APPROVED				CHECKED BY MJP/AJD	
										SHEET 21 OF 77	
		ASSISTANT CHIEF ENGINEER				CHIEF, RIGHT OF WAY				PROJECT NO.: P588001	
										DATE: 6/7/2024	

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 CONSTRUCTION DOCUMENTS  
 Erosion And Sediment Control DA  
 Map-Phase II  
 Severn Chapel Area  
 of the Bacon Ridge Natural Area  
 2nd Tax District Anne Arundel Co., MD. Tax Map 37, Grid 11, Parcel 86



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**PLAN KEY**

SCALE: 1" = 1000'

**ESC LEGEND**

- ESC Drainage Area
- Reinforced Silt Fence
- Super Silt Fence
- Silt Fence
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- Earth Dike
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- Proposed Check Dam

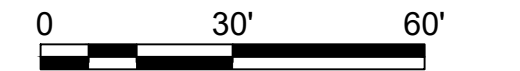
Note: Refer to Sheet 2 for Sequence of Construction and additional Legend Notes & Items

MAX ESC LIMIT OF DISTURBANCE: 457,380 SF = 10.5 AC ±

24TMP-026983

**PLAN**

SCALE: 1" = 30'



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DATE: 6/21/2024

LICENSE NO. 32574

REVISED DATE	BY	APPROVED	DATE	APPROVED	DATE
		CHIEF ENGINEER		PROJECT MANAGER	
		APPROVED	DATE	APPROVED	DATE
		ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY	

ANNE ARUNDEL COUNTY  
DEPARTMENT OF PUBLIC WORKS

G02002077

CONSTRUCTION DOCUMENTS

Erosion And Sediment Control Plan-Phase II-A  
(SWIMESD FACILITY INSTALLATION)

**Severn Chapel Area**  
of the Bacon Ridge Natural Area

2nd Tax District  
Anne Arundel Co., MD.

Tax Map 37, Grid 11, Parcel 86

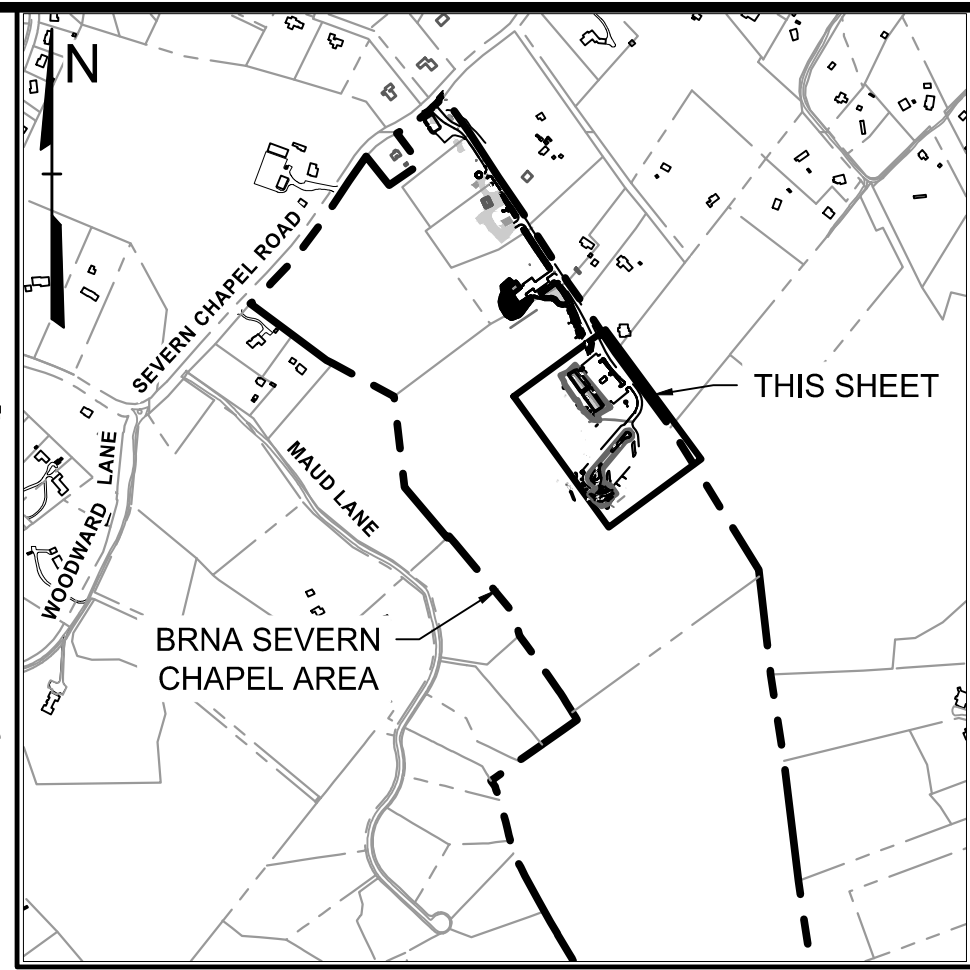
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 CHECKED BY: MJP/AJD  
 SHEET 22 OF 77  
 PROJECT NO.: P588001  
 DATE: 6/7/2024







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**PLAN KEY**

SCALE: 1" = 1000'

**ESC LEGEND**

- ESC Drainage Area
- Reinforced Silt Fence
- Super Silt Fence
- Silt Fence
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- Stabilized Construction Entrance
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- Storm Drain & Outfall
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- AGIP
- Baffle Board
- Areas to be stabilized immediately
- EX. SD STRUCTURES
- PROP. SD STRUCTURES
- Proposed Check Dam

Note: Refer to Sheet 2 for Sequence of Construction and additional Legend Notes & Items

MAX ESC LIMIT OF DISTURBANCE: 457,380 SF = 10.5 AC ±

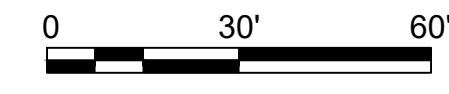
MATCH LINE : SEE SHEET 23

MATCH LINE THIS SHEET

MATCH LINE : THIS SHEET

**PLAN**

SCALE: 1" = 30'



**CENTURY ENGINEERING**  
A Kleinfelder Company  
10710 Gilroy Road, Hunt Valley, MD 21031  
Phone: 443.589.2400 www.centuryeng.com

DATE: 6/21/2024

REVISED	DATE	BY	APPROVED	DATE

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DEPARTMENT OF PUBLIC WORKS

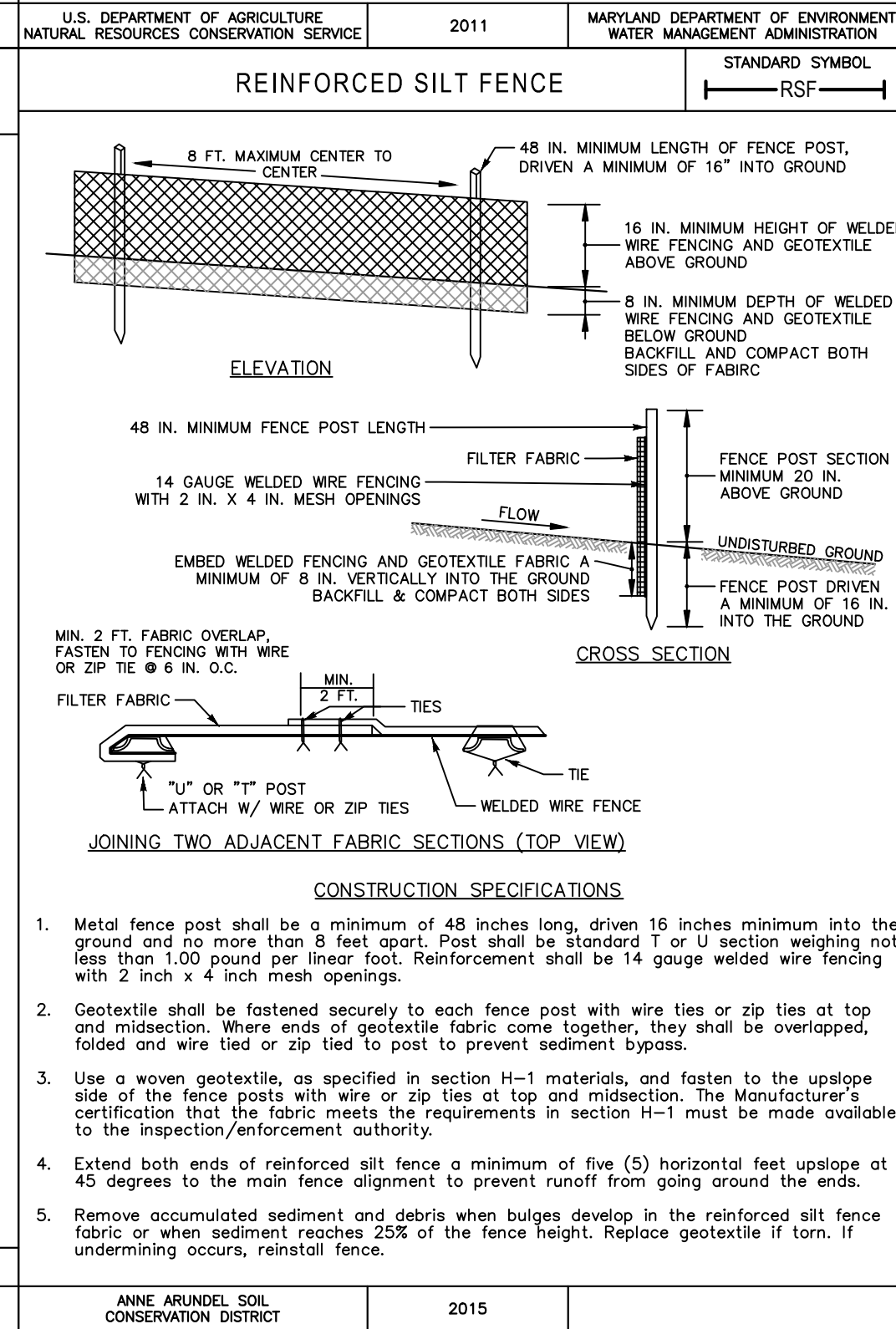
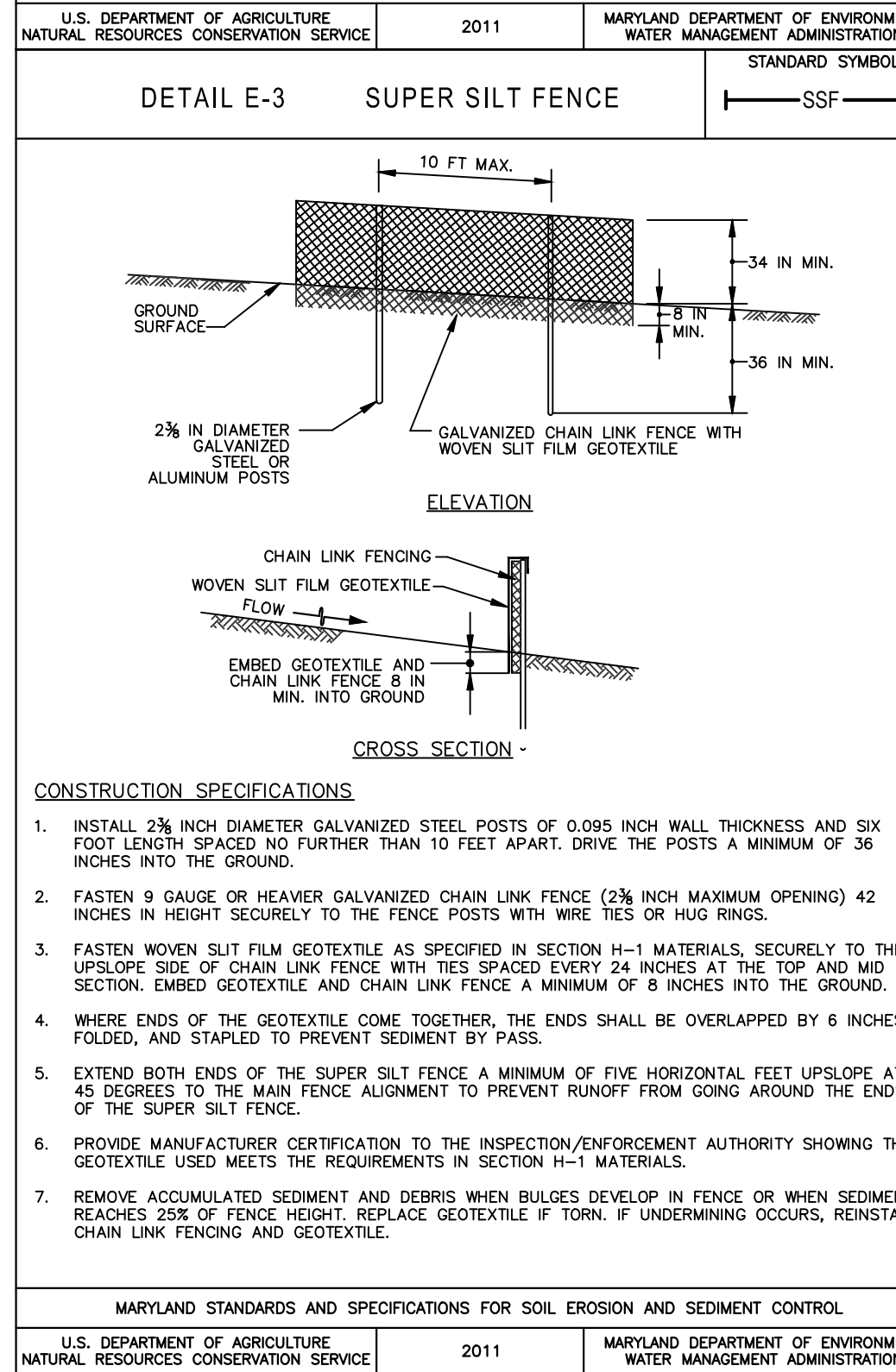
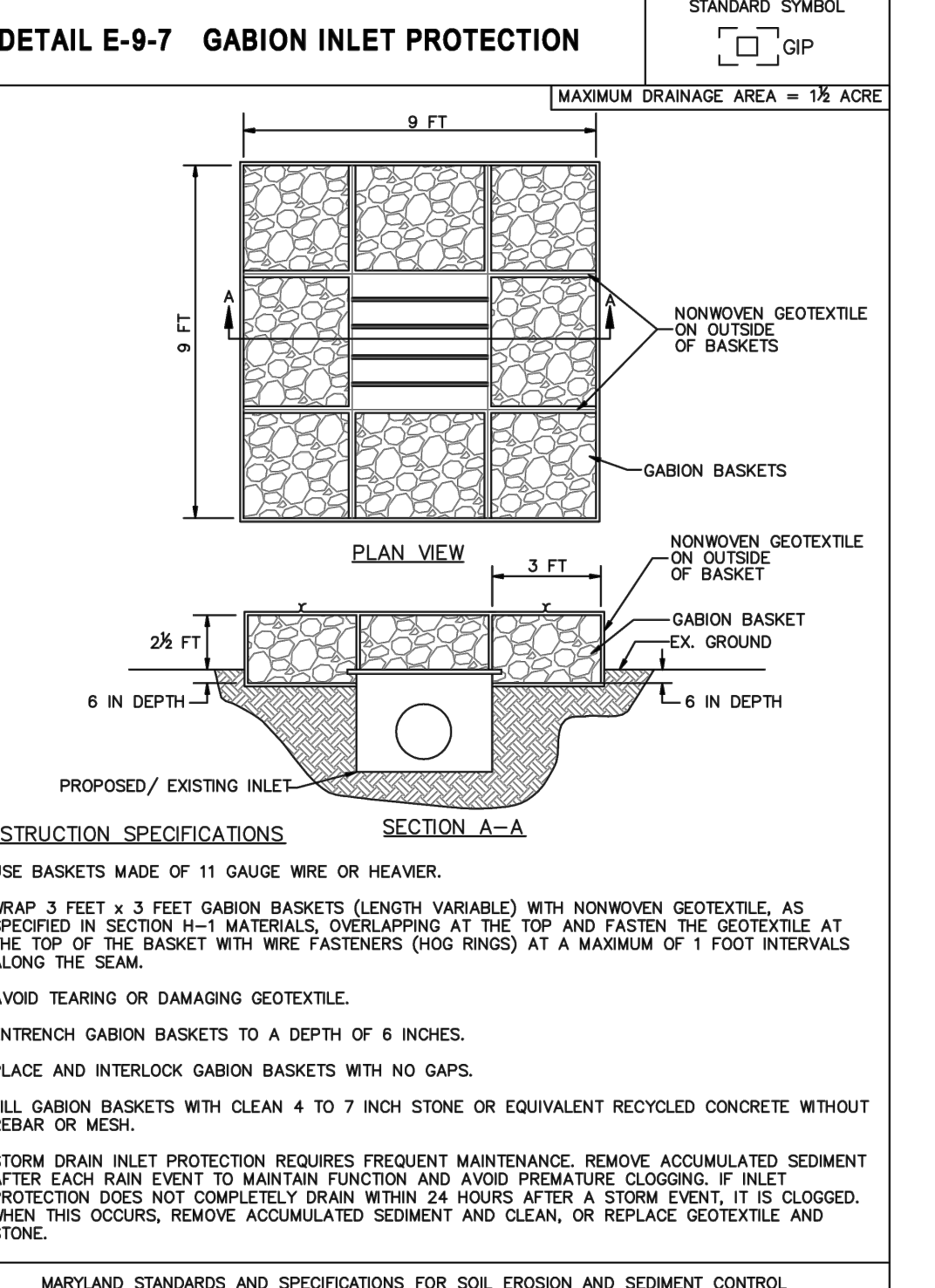
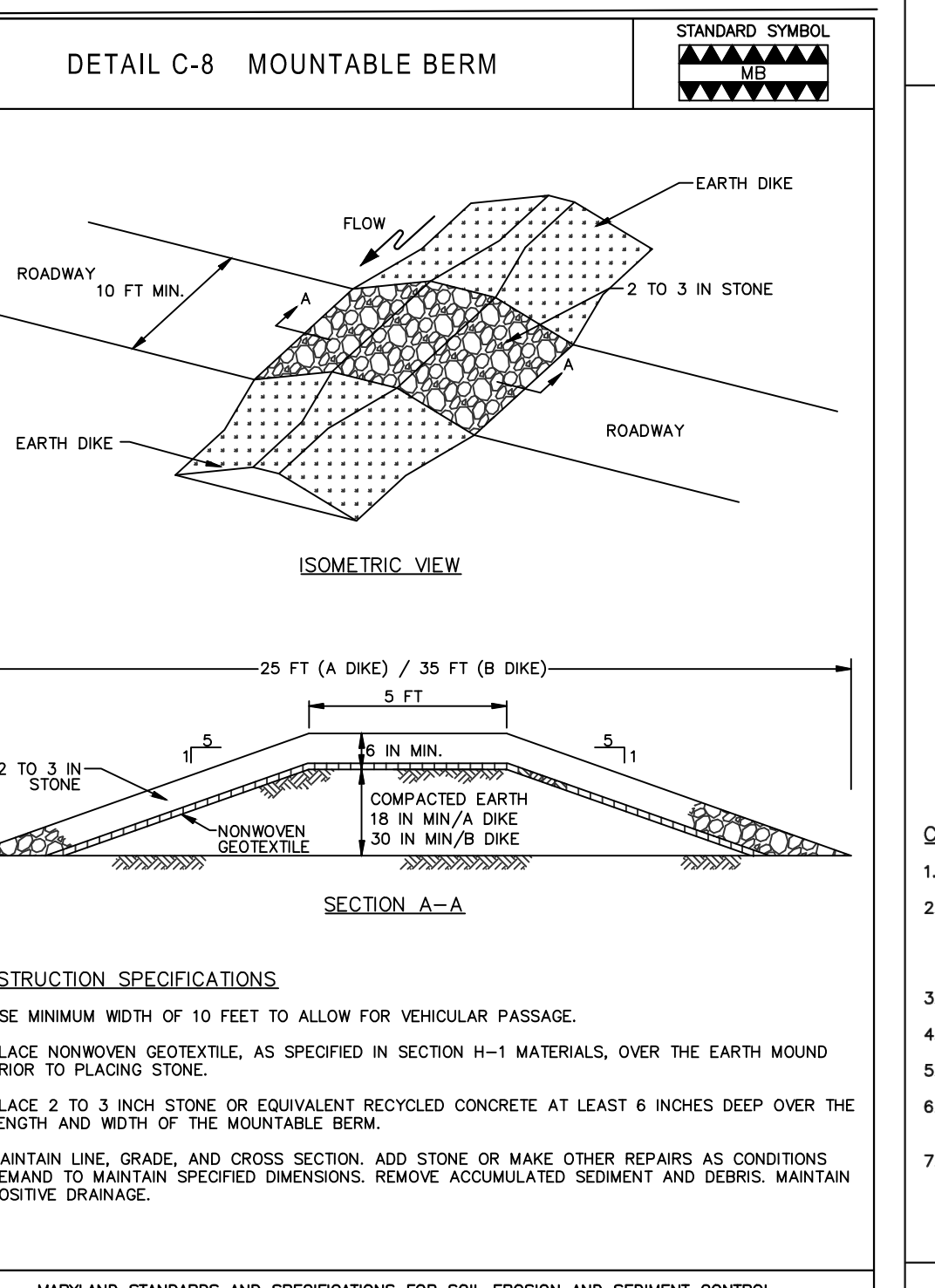
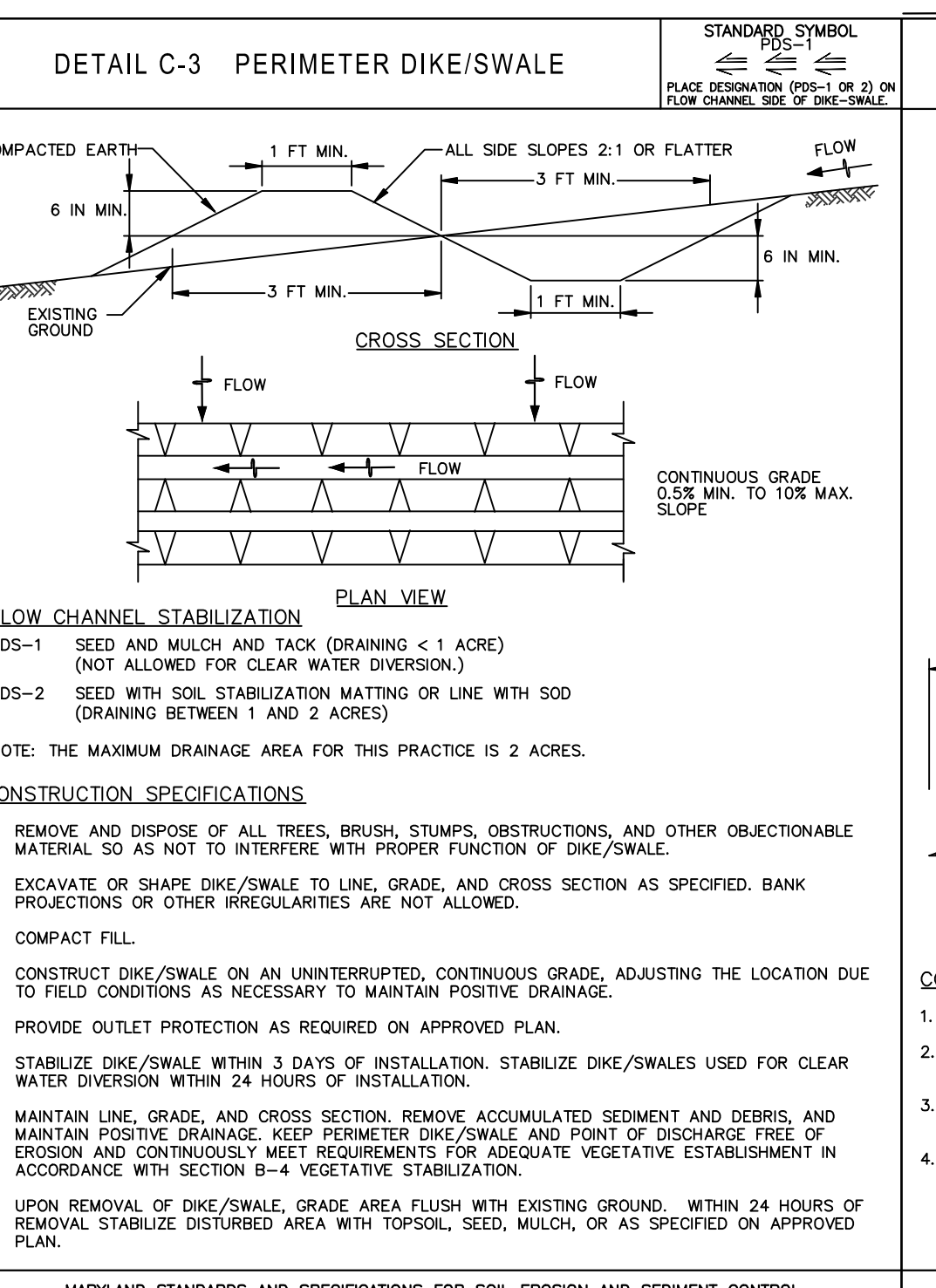
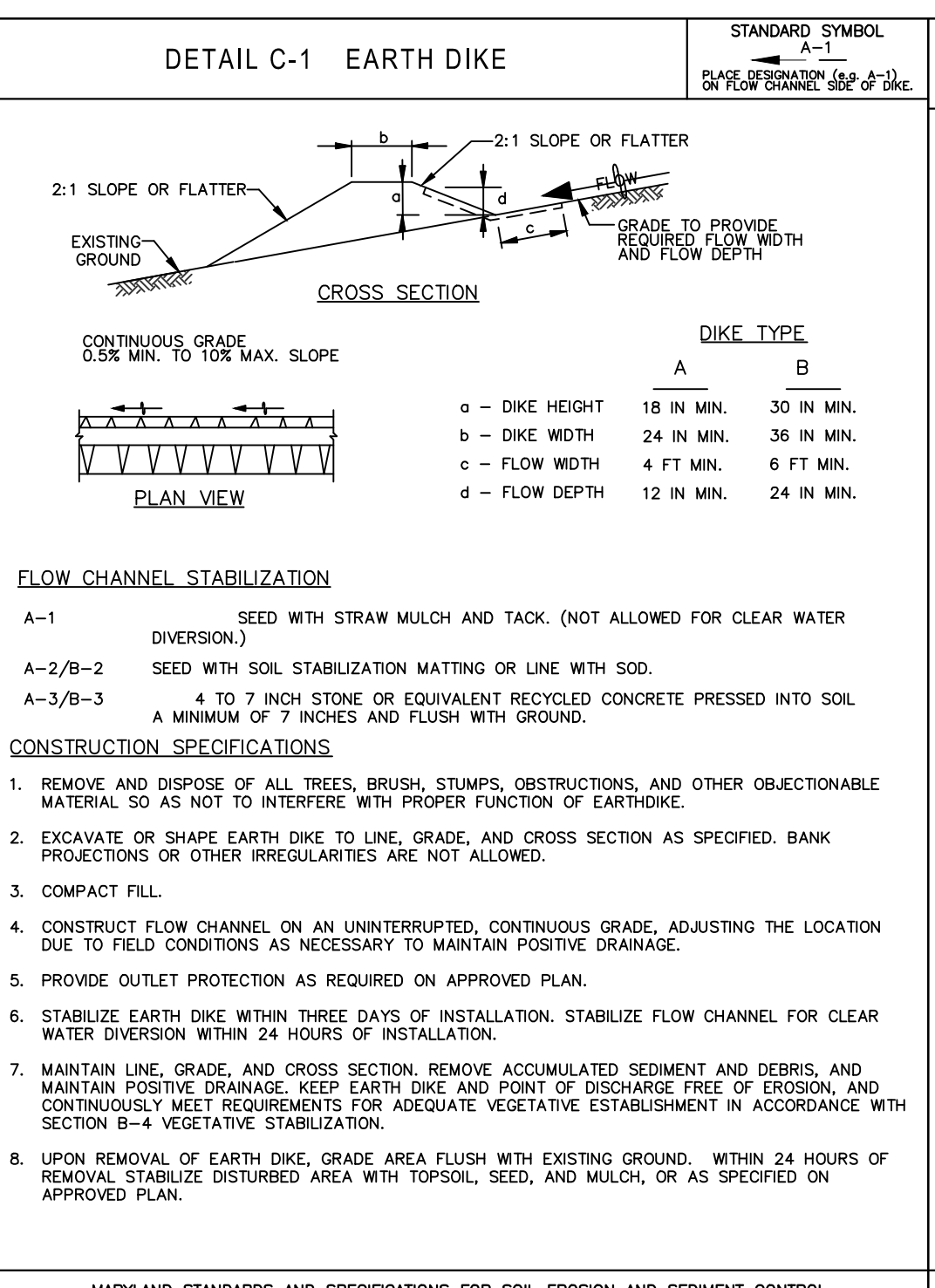
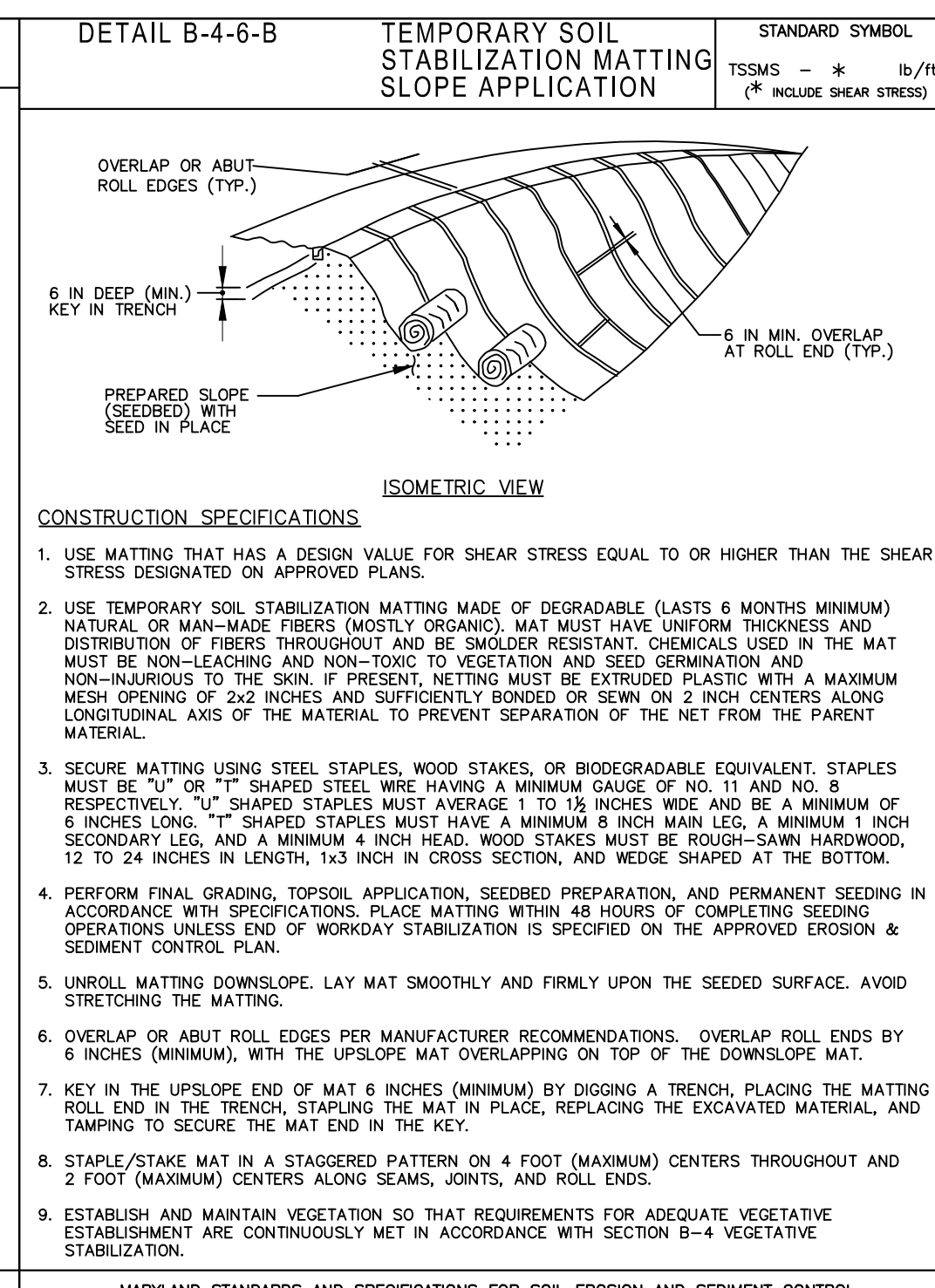
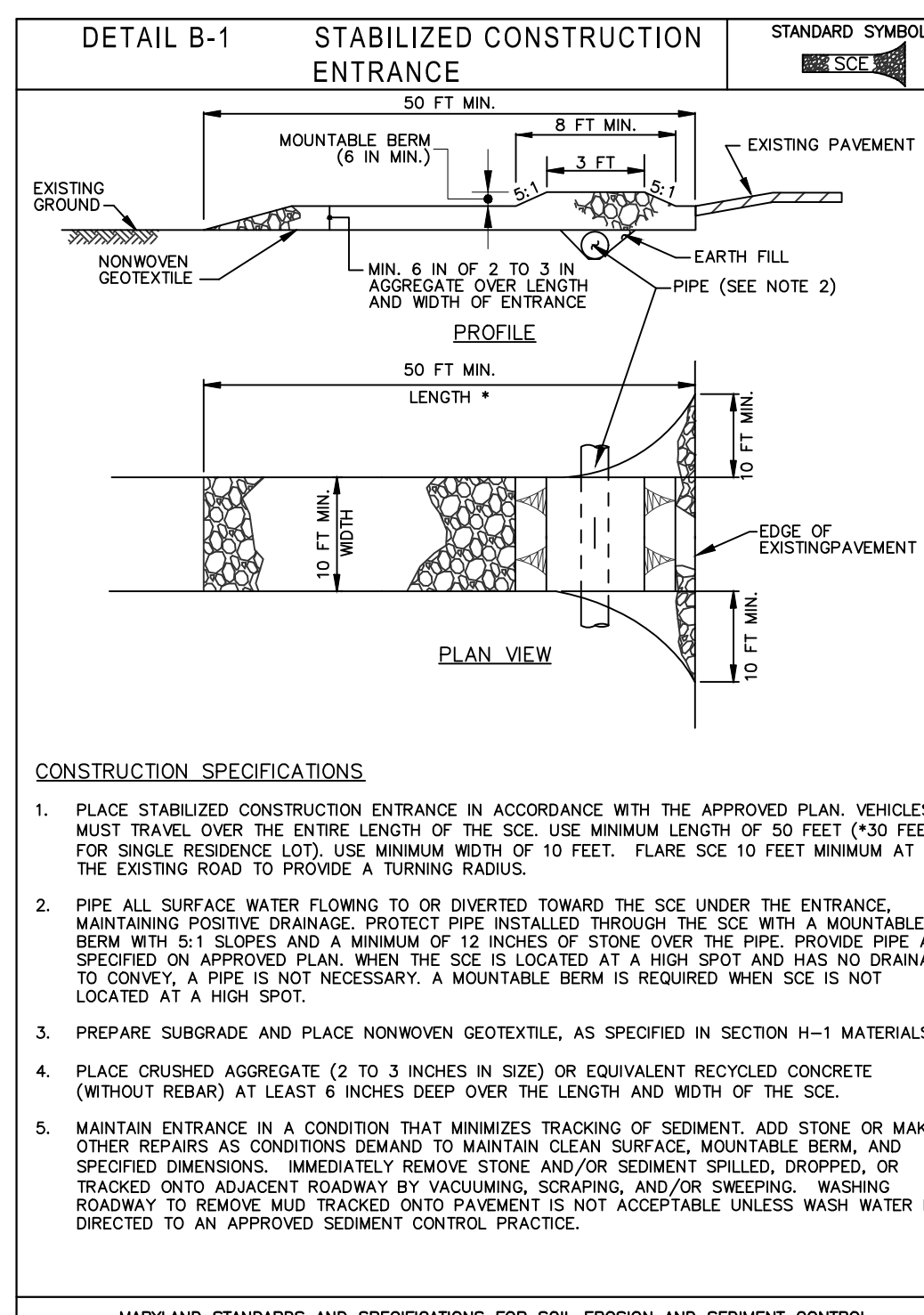
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DRAWN BY: LMV/RDT  
CHECKED BY: MJP/AJD  
SHEET 24 OF 77  
PROJECT NO.: P588001  
DATE: 6/7/2024

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CONSTRUCTION DOCUMENTS  
Erosion And Sediment Control Plan-Phase II-A  
**Severn Chapel Area of the Bacon Ridge Natural Area**  
2nd Tax District Anne Arundel Co., MD. Tax Map 37, Grid 11, Parcel 86

24TMP-026983





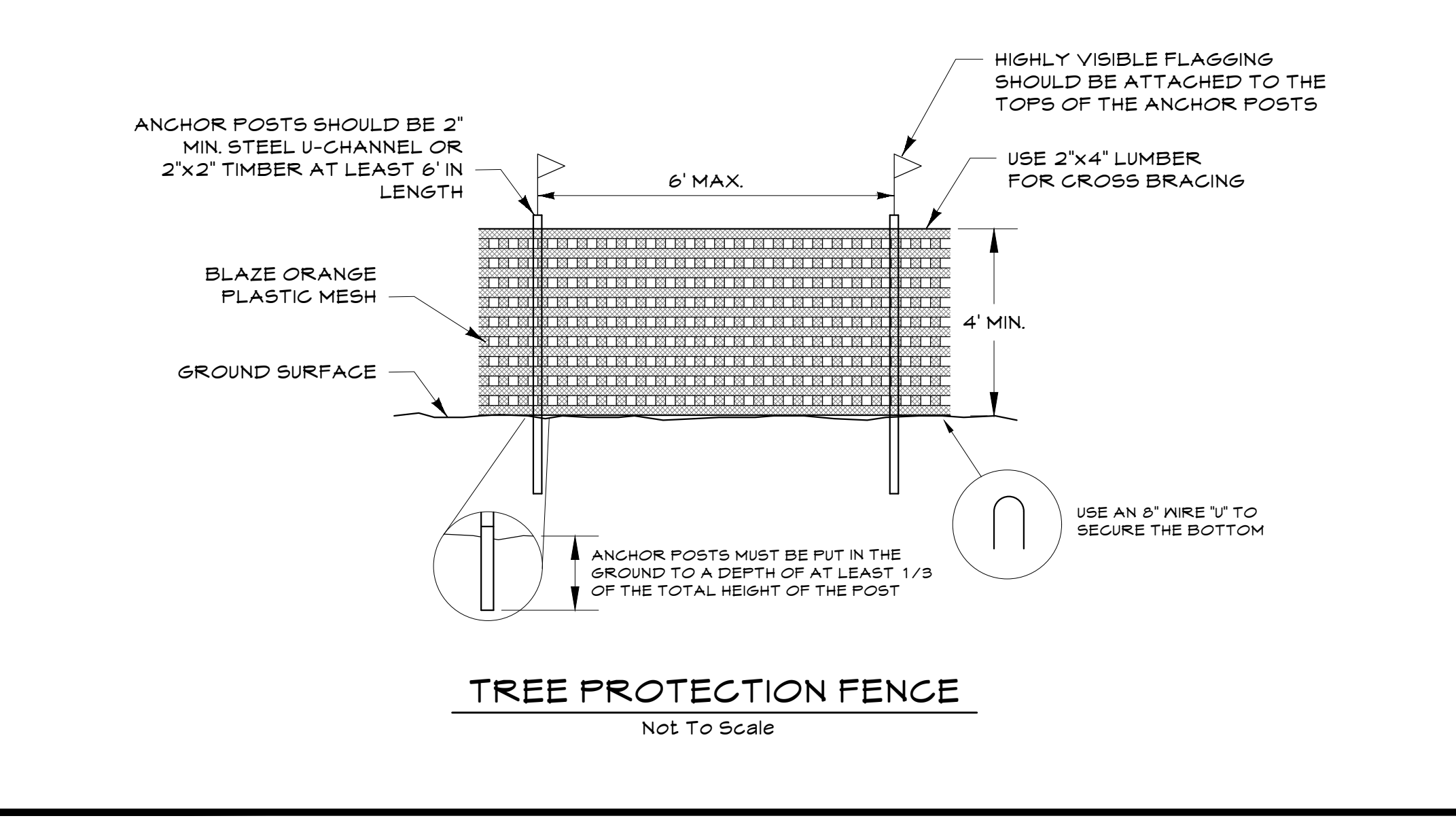
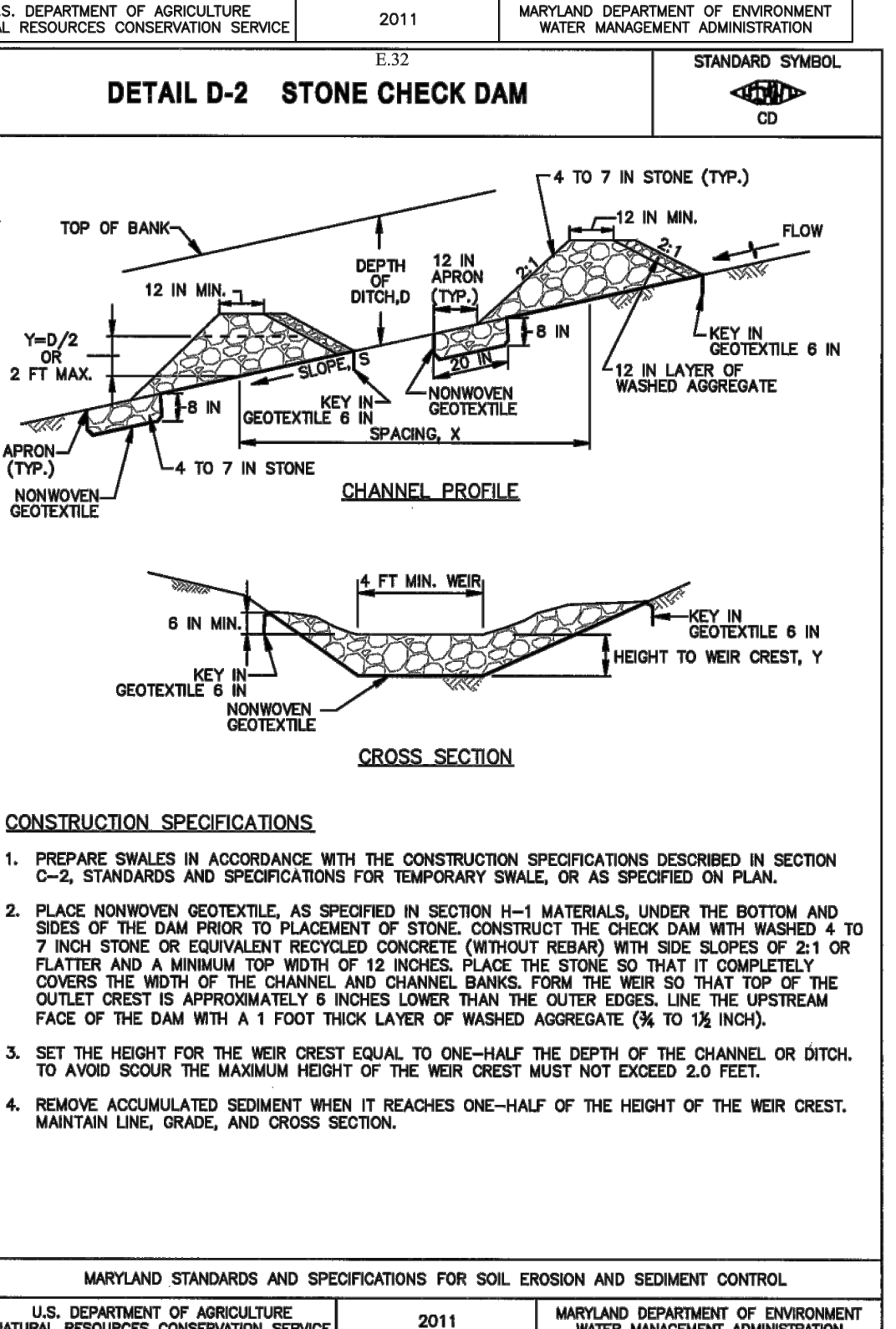
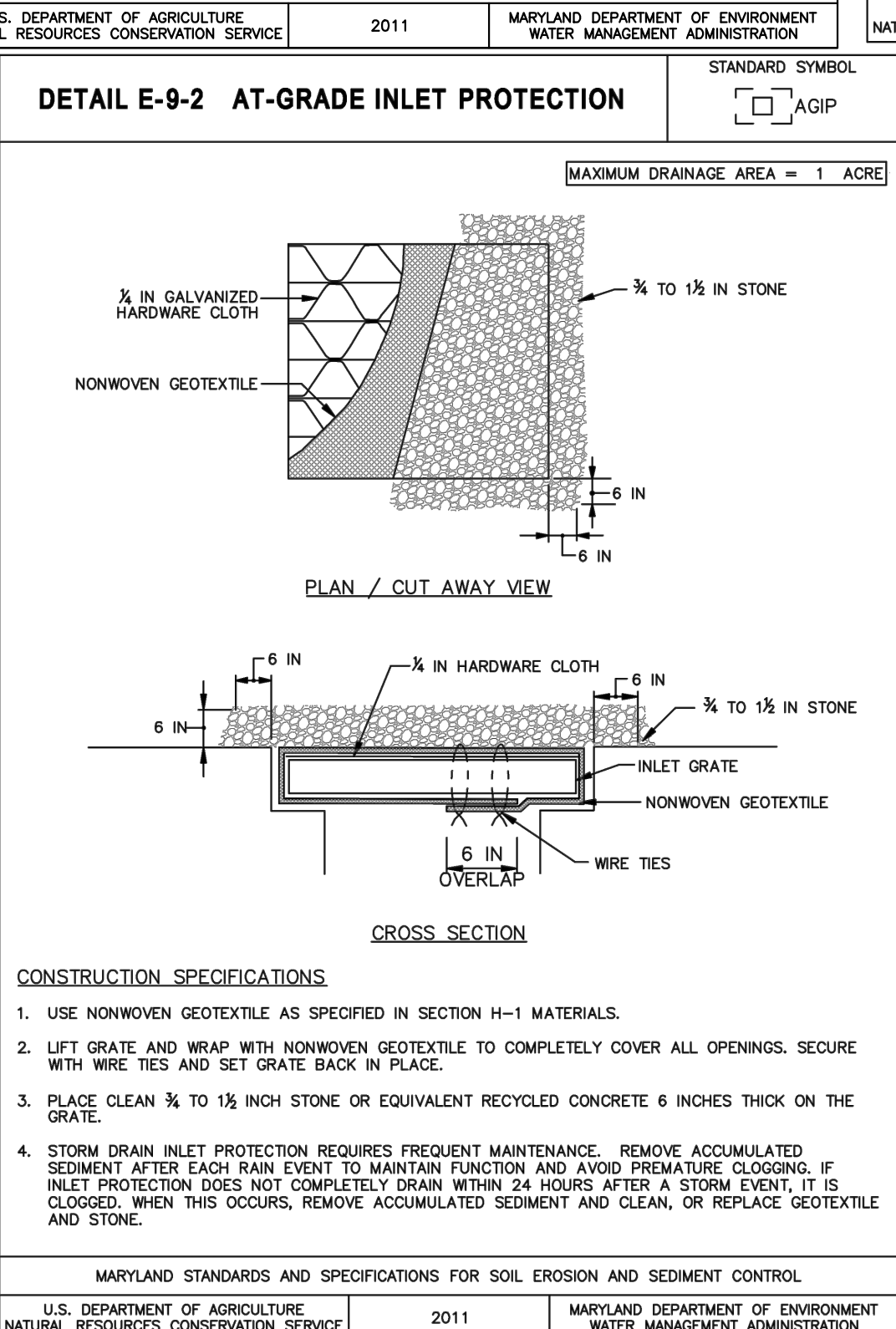
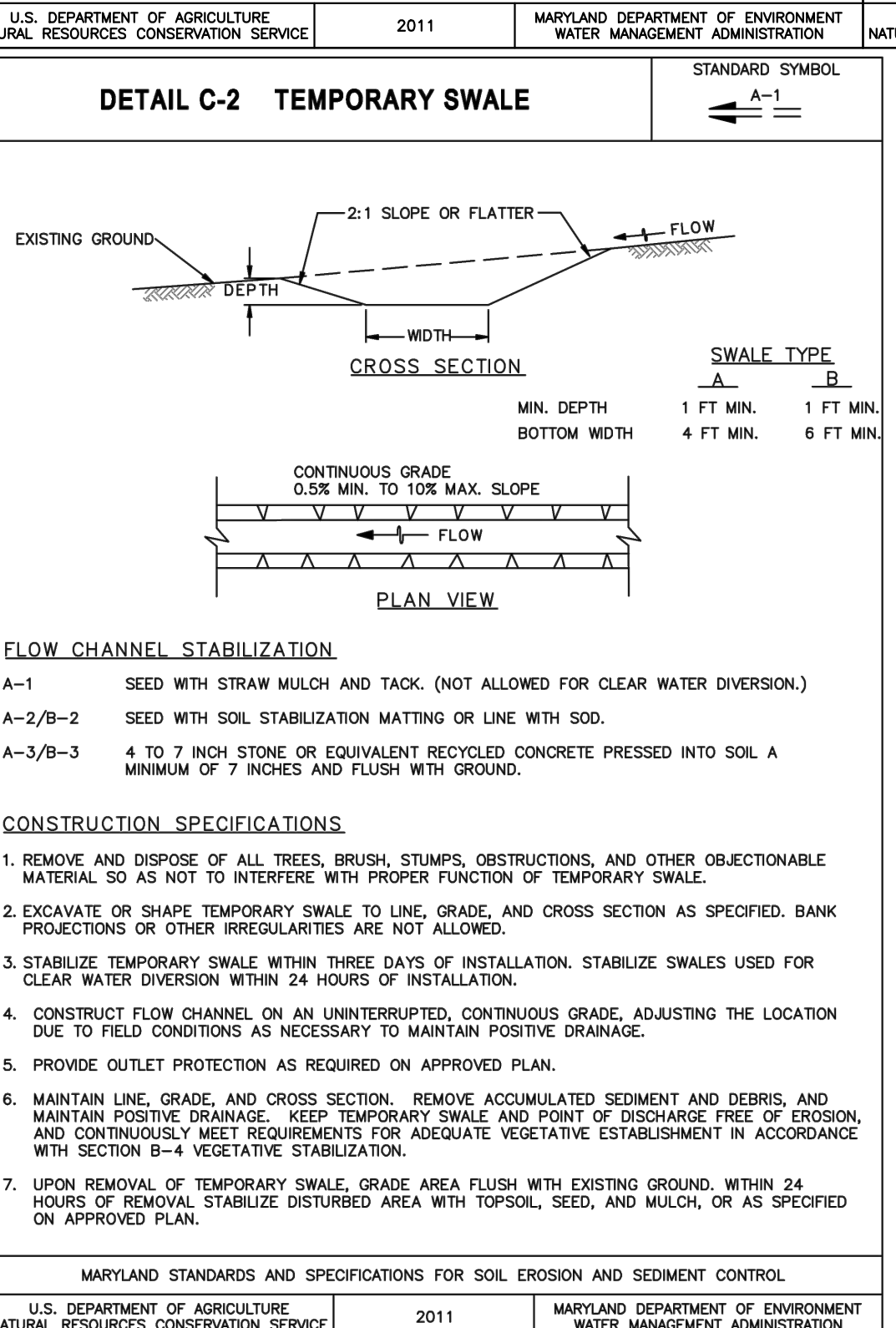
### REINFORCED SILT FENCE

Design Criteria

Reinforced Silt Fence Design Constraints

Average Slope Steepness	Maximum Slope Length	Maximum Silt Fence Length
Flatter than 50:1 (<2%)	300 feet*	Unlimited
50:1 to 10:1 (2-10%)	125 feet	1,000 feet
10:1 to 5:1 (10-20%)	100 feet	750 feet
5:1 (>20%)	40 feet	250 feet

\*Maximum slope length is unlimited on the Hydrologic Soil Group (HSG) "A" soils



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DATE: 6/21/2024

REVISED DATE	BY	APPROVED DATE	DATE

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SCALE	AS SHOWN	CONSTRUCTION DOCUMENTS	
DRAWN BY	LJV/RJD	Erosion And Sediment Control Notes & Details	
CHECKED BY	MJP/AJD	<b>Severn Chapel Area</b>	
SHEET	25 OF 77	of the Bacon Ridge Natural Area	
PROJECT NO.:	P588001	2nd Tax District, Anne Arundel Co., MD.	
DATE:	6/7/2024	Tax Map 37, Grid 11, Parcel 86	

**ANNE ARUNDEL COUNTY**  
DEPARTMENT OF PUBLIC WORKS

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REVISED DATE	BY	APPROVED DATE	DATE

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SCALE	AS SHOWN	CONSTRUCTION DOCUMENTS	
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SHEET	25 OF 77	of the Bacon Ridge Natural Area	
PROJECT NO.:	P588001	2nd Tax District, Anne Arundel Co., MD.	
DATE:	6/7/2024	Tax Map 37, Grid 11, Parcel 86	

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2018 VEGETATIVE ESTABLISHMENT

Following initial soil disturbances or redistribution, permanent or temporary stabilization shall be completed within three calendar days for the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes greater than 3 horizontal to 1 vertical (3:1) and seven days for all other disturbed or graded areas on the project site.

1. Permanent Seeding:

- A. Soil Tests: Lime and fertilizer will be applied per soil tests results for sites greater than 5 acres. Soil tests will be done at completion of initial rough grading or as recommended by the sediment control inspector. Rates and analyses will be provided to the grading inspector as well as the contractor.

Occurrence of acid sulfate soils (grayish black color) will require covering with a minimum of 12 inches of clean soil with 6 inches minimum capping of top soil. No stockpiling of material is allowed. If needed, soil tests should be done before and after a 6-week incubation period to allow oxidation of sulfates.

The minimum soil conditions required for permanent vegetative establishment are:

- a. Soil pH shall be between 6.0 and 7.0.
- b. Soluble salts shall be less than 500 parts per million (ppm).
- c. The soil shall contain less than 40% clay but enough fine grained material (> 30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if lovegrass or sericea lespedeza is to be planted, then a sandy soil (< 30% silt plus clay) would be acceptable.
- d. Soil shall contain 1.5% minimum organic matter by weight.
- e. Soil must contain sufficient pore space to permit adequate root penetration.
- f. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with the Standard and Specification for Soil Preparation, Topsoiling and Soil Amendments from the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control or amendments made as recommended by a certified agronomist.

- B. Seedbed Preparation: Area to be seeded shall be loose and friable to a depth of at least 3-5 inches. The top layer shall be loosened by raking, disking or other acceptable means before seeding occurs. For sites less than 5 acres, apply 100 pounds dolomitic limestone and 21 pounds of 10-10-10 fertilizer per 1,000 square feet. Harrow or disk lime and fertilizer into the soil to a depth of at least 3-5 inches on slopes flatter than 3:1.

- C. Seeding: Apply 5-6 pounds per 1,000 square feet of tall fescue between February 1 and April 30 or between August 15 and October 31. Apply seed uniformly on a moist firm seedbed with a cyclone seeder, cultipacker seeder or hydroseeder (slurry includes seeds and fertilizer, recommended on steep slopes only). Maximum seed depth should be 1/4 inch in clayey soils and 1/2 inch in sandy soils when using other than the hydroseeder method. Irrigate where necessary to support adequate growth until vegetation is firmly established. If other seed mixes are to be used, select from Table B3 and B5 of the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control.

- D. Mulching: Mulch shall be applied to all seeded areas immediately after seeding. During the time periods when seeding is not permitted, mulch shall be applied immediately after grading. Mulch shall be unrotted, unchopped, small grain straw applied at a rate of 2 tons per acre or 90 pounds per 1,000 square feet (2 bales). Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch-anchoring tool is used, apply 2.5 tons per acre. Mulch materials shall be relatively free of all kinds of weeds and shall be completely free of prohibited noxious weeds. Spread mulch uniformly, mechanically or by hand, to a depth of 1-2 inches.

- E. Securing Straw Mulch: Straw mulch shall be secured immediately following mulch application to minimize movement by wind or water. The following methods are permitted:

- i. Use a mulch-anchoring tool which is designed to punch and anchor mulch into the soil surface to a minimum depth of 2 inches. This is the most effective method for securing mulch, however, it is limited to relatively flat areas where equipment can operate safely.
- ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. If mixed with water, use 50 pounds of wood cellulose fiber per 100 gallons of water.
- iii. Liquid binders may be used. Apply at higher rates at the edges where wind catches mulch, such as in valleys and on crests of slopes. The remainder of the area should appear uniform after binder application. Binders listed in the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control or approved equal shall be applied at rates recommended by the manufacturers.
- iv. Lightweight plastic netting may be used to secure mulch. The netting will be stapled to the ground according to manufacturer's recommendations.

2. Temporary Seeding:

- Lime: 100 pounds of dolomitic limestone per 1,000 square feet.
- Fertilizer: 15 pounds of 10-10-10 per 1,000 square feet.
- Seed: Perennial rye - 0.92 pounds per 1,000 square feet (February 1 through April 30 or August 15 through October 31).  
Millet - 0.92 pounds per 1,000 square feet (May 1 through August 15).  
Same as 1 D and E above.

- 3. No fills may be placed on frozen ground. All fill is to be placed in approximately horizontal layers, each layer having a loose thickness of not more than 8 inches. All compaction requirements are in accordance to Anne Arundel County Standard Specifications for Construction as well as the AA County Design Manual and Standard Details. Fills for pond embankments shall be compacted as per MD-378 Construction Specifications. All other fills shall be compacted sufficiently so as to be stable and prevent erosion and slippage.

4. Permanent Sod:

Installation of sod should follow permanent seeding dates. Seedbed preparation for sod shall be as noted in section (B) above. Permanent sod is to be tall fescue, state approved sod; lime and fertilizer per permanent seeding specifications and lightly irrigate soil prior to laying sod. Sod is to be laid on the contour with all ends tightly abutting. Joints are to be staggered between rows. Water and roll or tamp sod to insure positive root contact with the soil. All slopes steeper than 3:1, as shown, are to be permanently sodded or protected with an approved erosion control netting. Additional watering for establishment may be required. Sod is not to be installed on frozen ground. Sod shall not be transplanted when moisture content (dry or wet) and/or extreme temperature may adversely affect its survival. In the absence of adequate rainfall, irrigation should be performed to ensure establishment of sod.

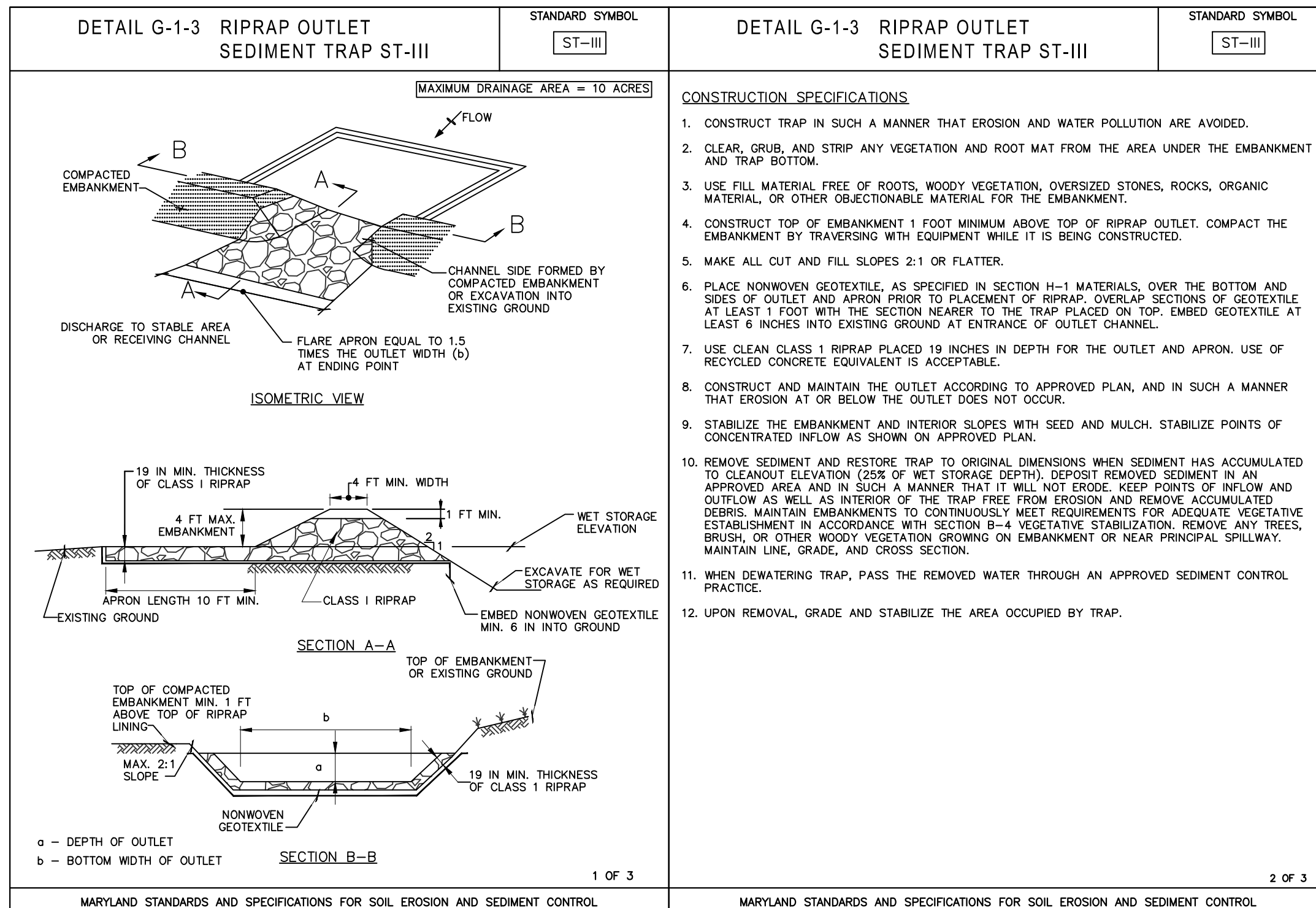
5. Mining Operations:

Sediment control plans for mining operations must include the following seeding dates and mixtures:

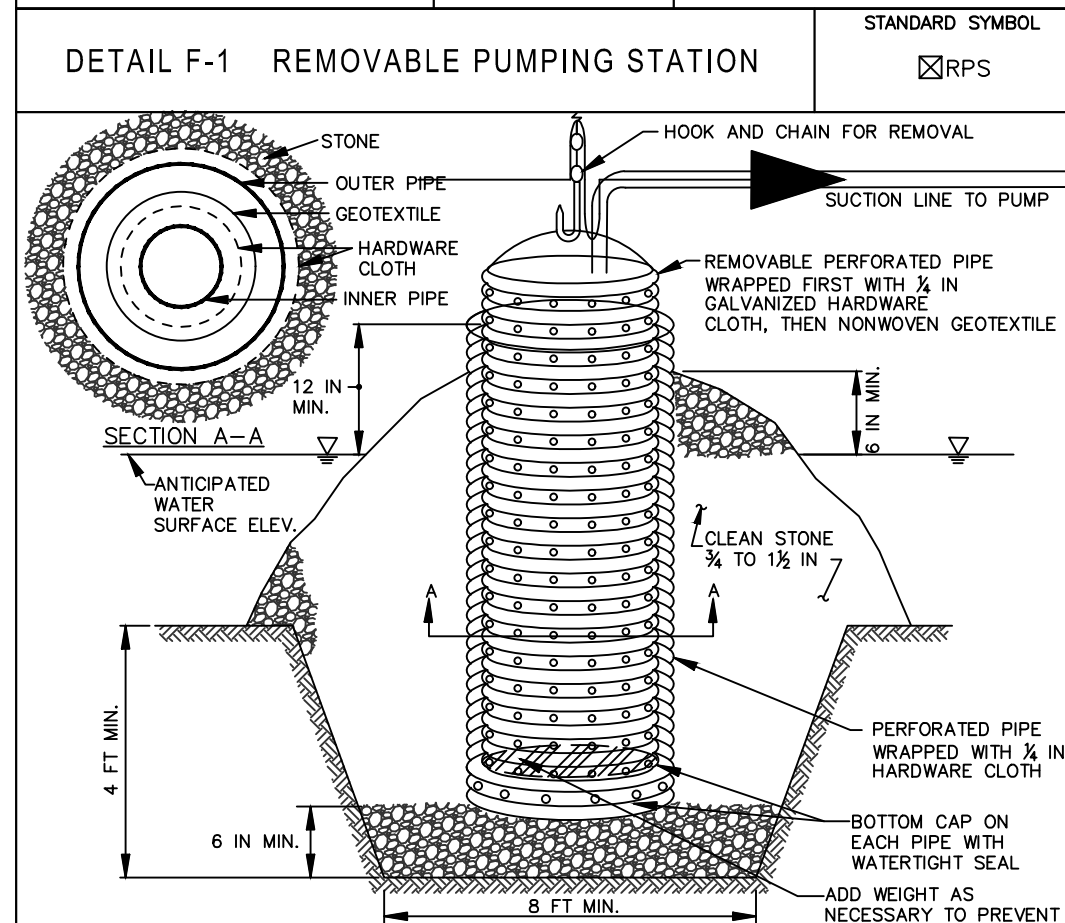
For seeding dates of February 1 through April 30 and August 15 through October 31, use seed mixture of tall fescue at the rate of 2 pounds per 1,000 square feet and sericea lespedeza at the minimum rate of 0.5 pounds per 1,000 square feet.

Topsoil shall be applied as per the Standard and Specifications for Soil Preparation, Topsoiling, and Soil Amendments from the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control.

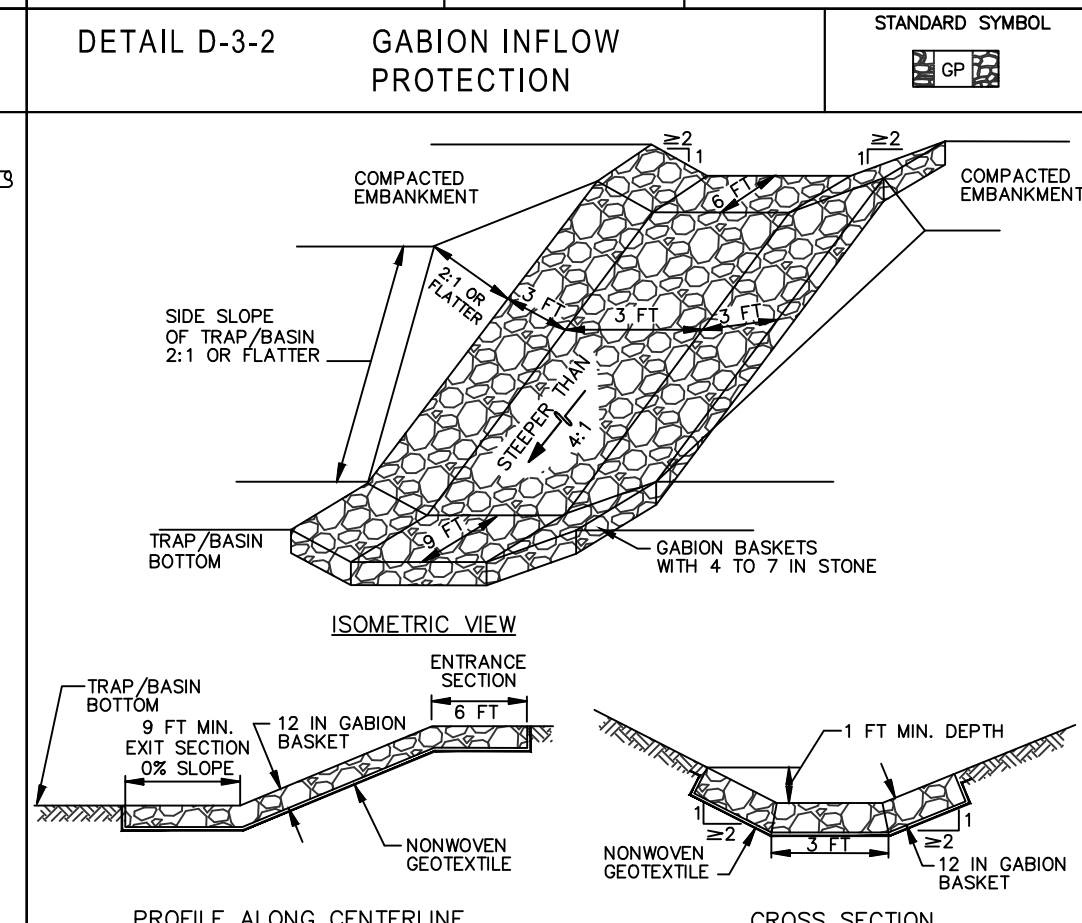
Use of these Vegetative Establishment Specifications does not preclude the permittee or contractor from meeting all of the requirements set forth in the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control.



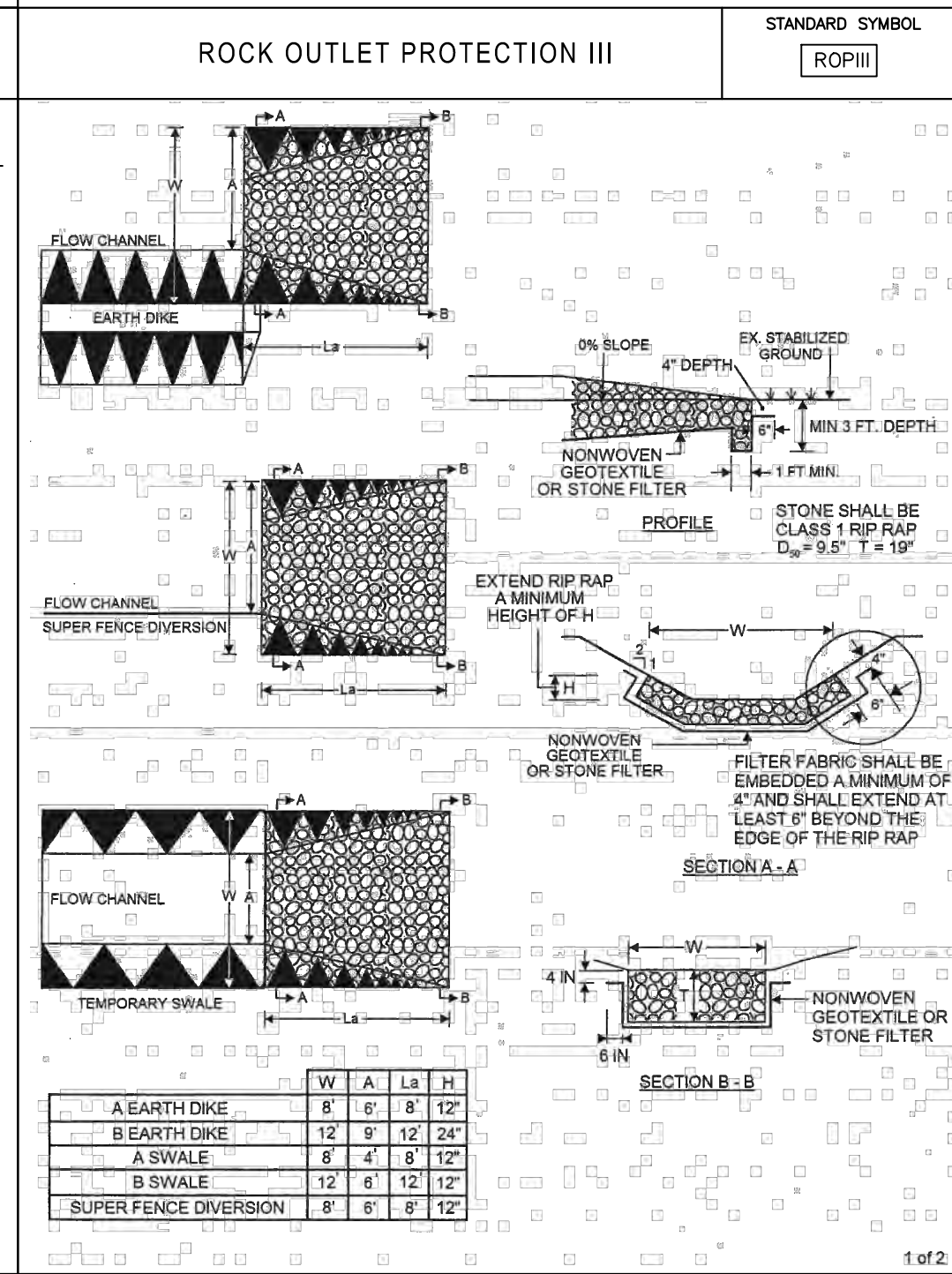
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE. 2011. MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION.



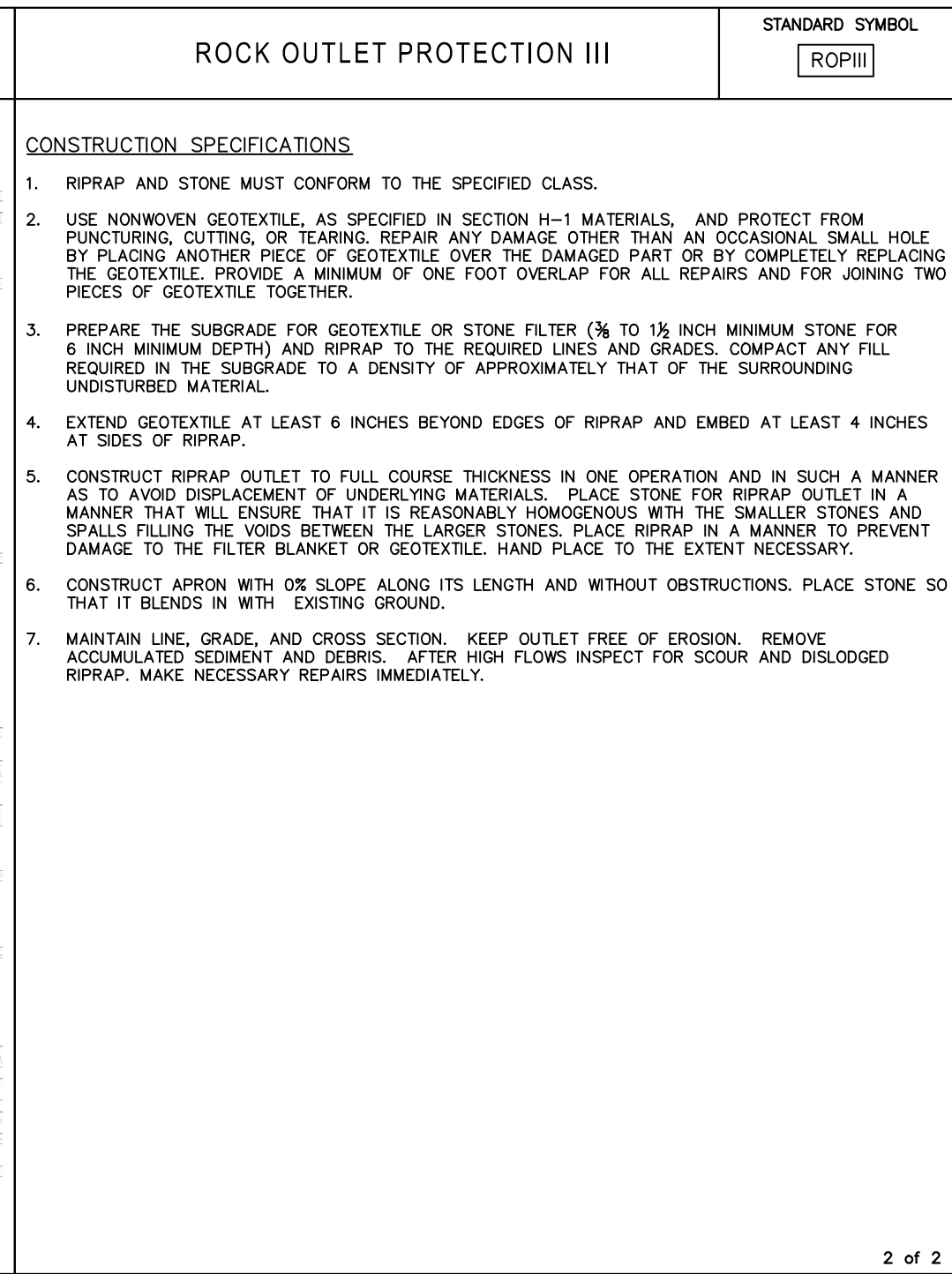
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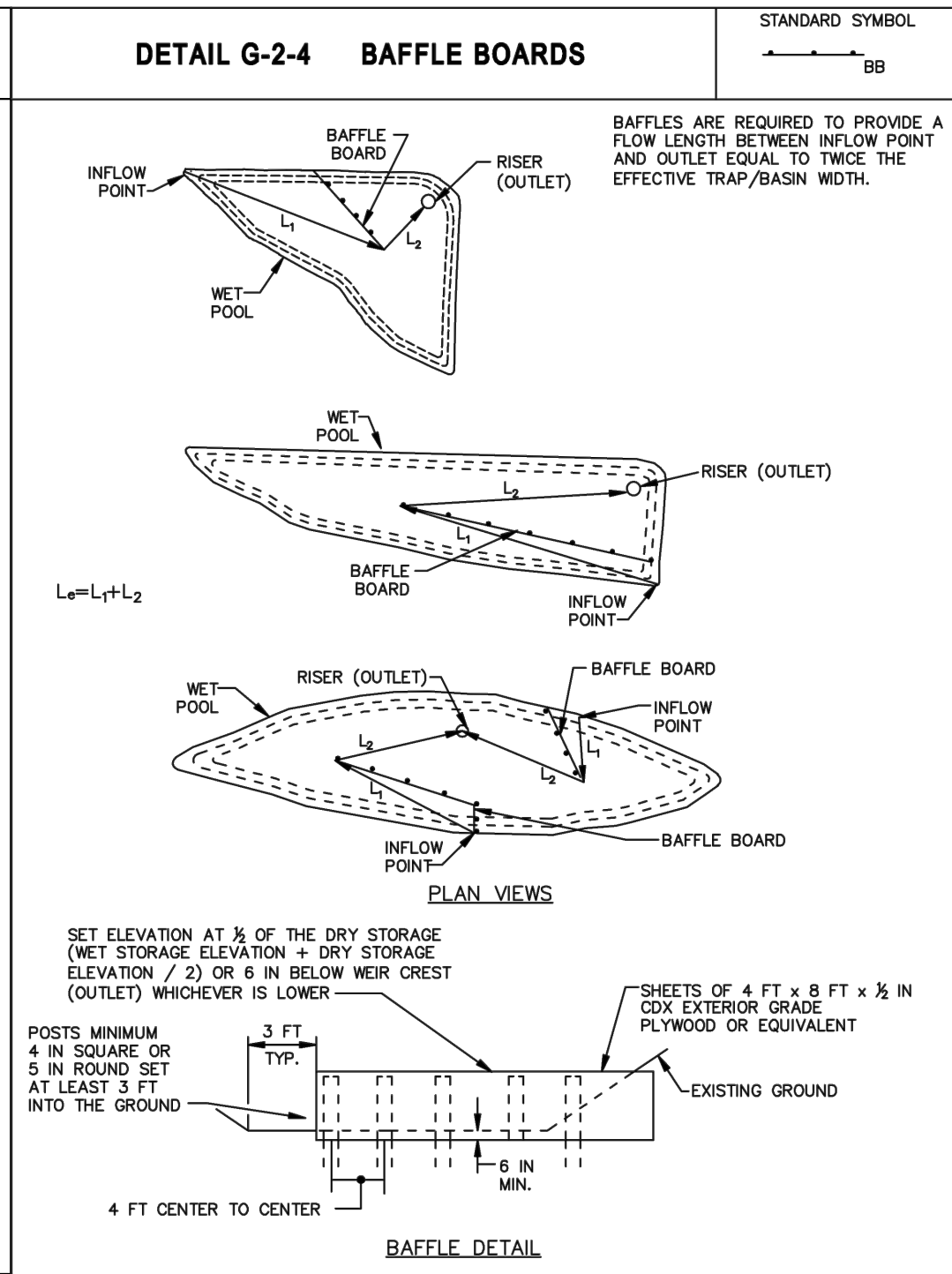
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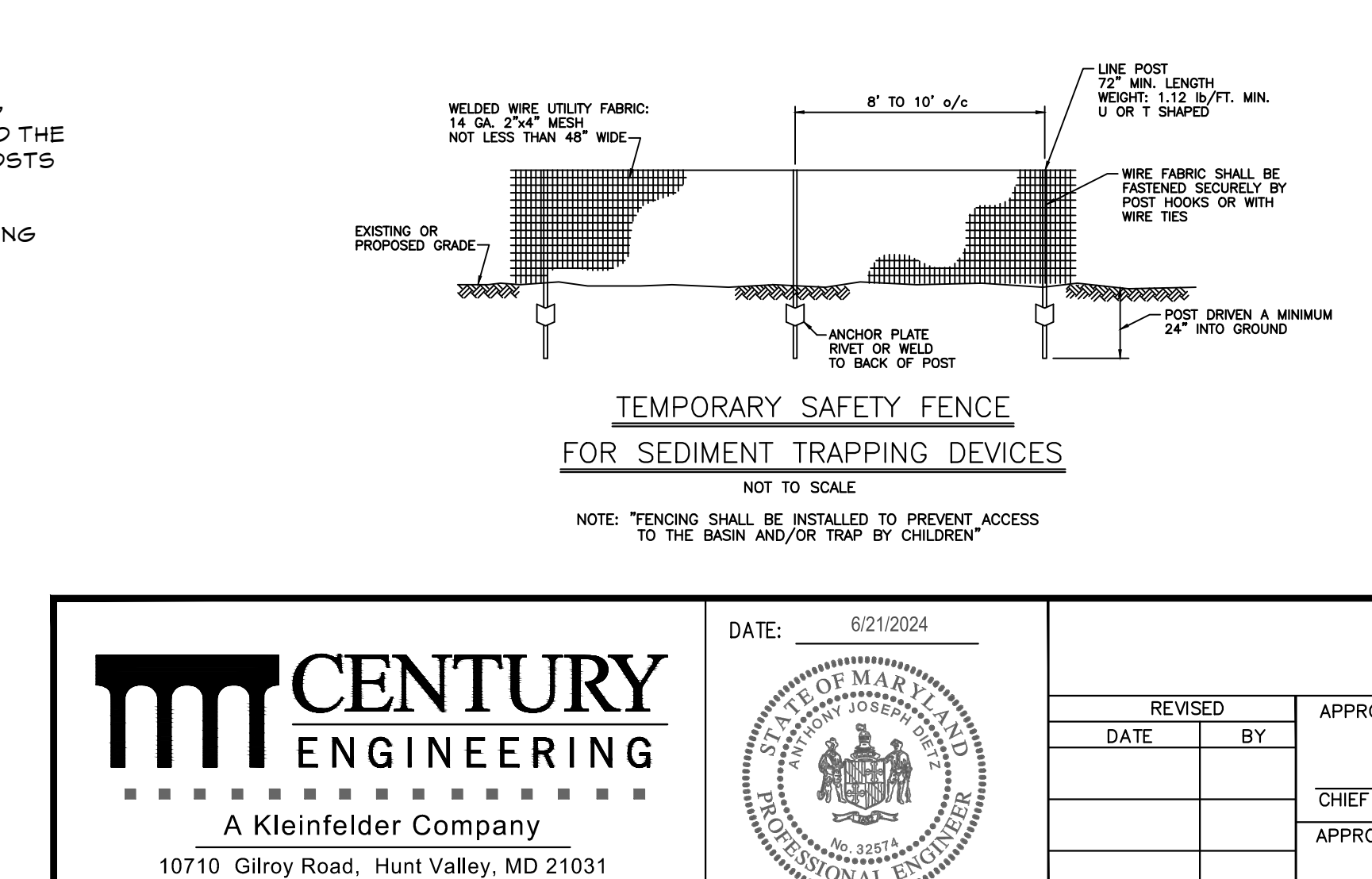
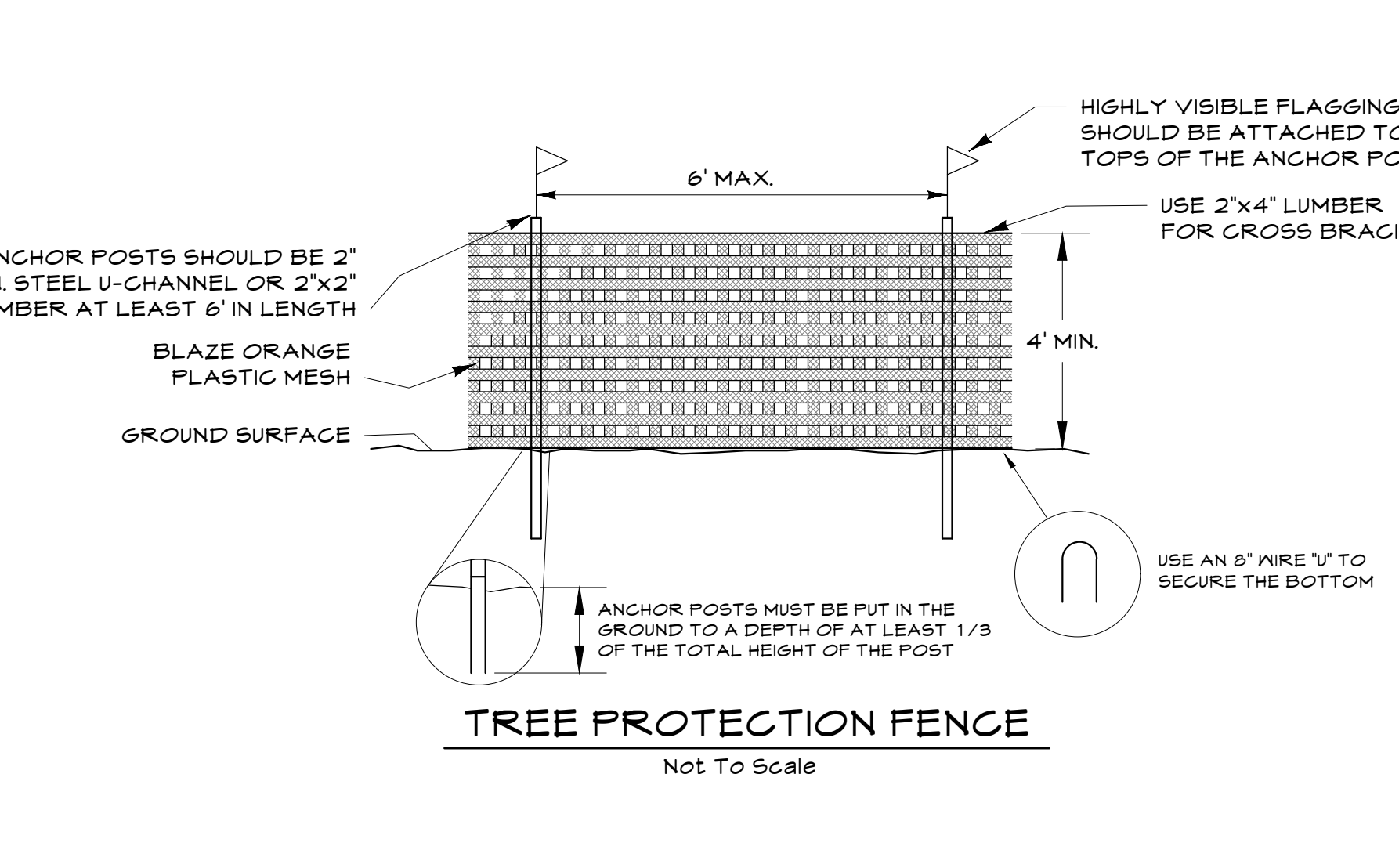
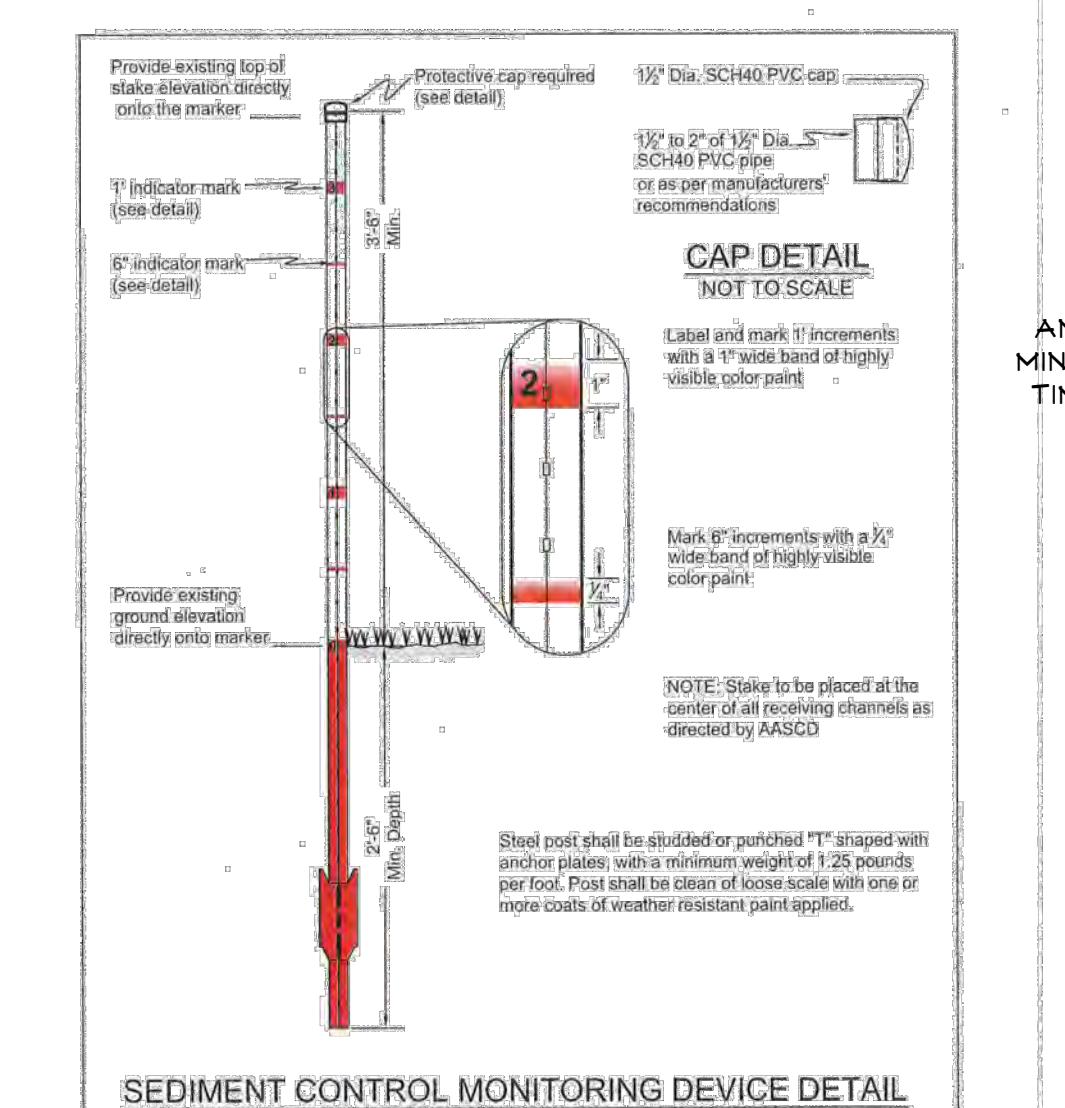
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE. MODIFIED - 2012. MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION.



MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE. MODIFIED - 2012. MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION.



MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE. 2011. MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION.



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APPROVED:	DATE
CHIEF ENGINEER	
APPROVED:	DATE
ASSISTANT CHIEF ENGINEER	

**ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS**  
G02020077  
CONSTRUCTION DOCUMENTS  
Erosion And Sediment Control Notes & Details of the Bacon Ridge Natural Area  
2nd Tax District Anne Arundel Co., MD. Tax Map 37, Grid 11, Parcel 86

24TMP-026983

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B-4 STANDARDS AND SPECIFICATIONS

FOR VEGETATIVE STABILIZATION

DEFINITION Using vegetation as cover to protect exposed soil from erosion.

PURPOSE To promote the establishment of vegetation on exposed soil.

CONDITIONS WHERE PRACTICE APPLIES On all disturbed areas not stabilized by other methods. This specification is divided into sections on incremental stabilization; soil preparation, soil amendments and topsoiling; seeding and mulching; temporary stabilization; and permanent stabilization.

EFFECTS ON WATER QUALITY AND QUANTITY Stabilization practices are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas.

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, percolation, and groundwater recharge. Over time, vegetation will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth.

Vegetation will help reduce the movement of sediment, nutrients, and other chemical carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone.

SEDIMENT CONTROL PRACTICES MUST REMAIN IN PLACE DURING GRADING, SEEDBED PREPARATION, SEEDING, MULCHING, AND VEGETATIVE ESTABLISHMENT.

ADJUCATE VEGETATIVE ESTABLISHMENT Inspect seeded areas for vegetative establishment and make necessary repairs, replacements, and reseedings within the planting season.

- 1. Adequate vegetative stabilization requires 95 percent groundcover.
2. If an area has less than 40 percent groundcover, restabilize following the original recommendations for lime, fertilizer, seedbed preparation, and seeding.
3. If an area has between 40 and 94 percent groundcover, over-seed and fertilizer using half of the rates originally specified.
4. Maintenance fertilizer rates for permanent seeding are shown in Table B.6.

B-4-1 STANDARDS AND SPECIFICATIONS FOR INCREMENTAL STABILIZATION

DEFINITION Establishment of vegetative cover on cut and fill slopes.

PURPOSE To provide timely vegetative cover on cut and fill slopes as work progresses.

CONDITIONS WHERE PRACTICE APPLIES Any cut or fill slope greater than 15 feet in height. This practice also applies to stockpiles.

CRITERIA

- A. Incremental Stabilization - Cut Slopes
1. Excavate and stabilize cut slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all cut slopes as the work progresses.
2. Construction sequence example (Refer to Figure B.1):
a. Construct and stabilize all temporary swales or dikes that will be used to convey runoff around the excavation.
b. Perform Phase 1 excavation, prepare seedbed, and stabilize.
c. Perform Phase 2 excavation, prepare seedbed, and stabilize. Overseed Phase 1 areas as necessary.
d. Perform final phase excavation, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.

NOTE: ONCE EXCAVATION HAS BEGUN, THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.

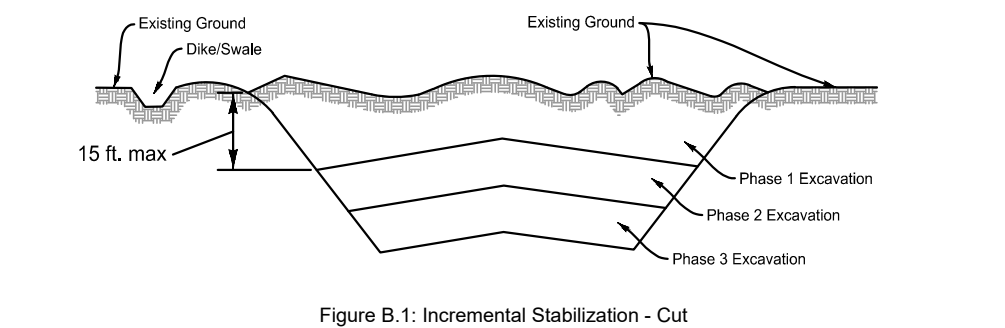


Figure B.1: Incremental Stabilization - Cut

- B. Incremental Stabilization - Fill Slopes
1. Construct and stabilize fill slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all slopes as the work progresses.
2. Stabilize slopes immediately when the vertical height of a lift reaches 15 feet or when the grading operation ceases as prescribed in the plans.
3. At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
4. Construction sequence example (Refer to Figure B.2):
a. Construct and stabilize all temporary swales or dikes that will be used to divert runoff around the fill. Construct silt fence on low side of fill unless other methods shown on the plans address this area.
b. At the end of the day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
c. Place Phase 1 fill, prepare seedbed, and stabilize.
d. Place Phase 2 fill, prepare seedbed, and stabilize.
e. Place final phase fill, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.

NOTE: ONCE THE PLACEMENT OF FILL HAS BEGUN, THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.

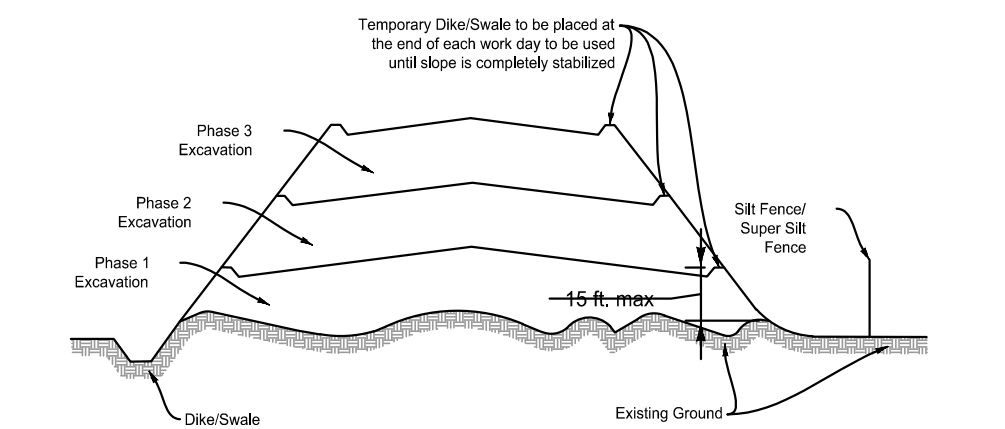


Figure B.2: Incremental Stabilization - Fill

B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

DEFINITION The process of preparing the soils to sustain adequate vegetative stabilization.

PURPOSE To provide a suitable soil medium for vegetative growth.

CONDITIONS WHERE PRACTICE APPLIES Where vegetative stabilization is to be established.

CRITERIA

- A. Soil Preparation
1. Temporary Stabilization
a. Seed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After soil is loosened, it must not be rolled or dragged smooth but left in roughened condition. Slopes 3:1 or flatter areas to be tracked with ridges running parallel to the contour of the slope.
b. Apply fertilizer and lime as prescribed on the plans.
c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
2. Permanent Stabilization
a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
a. Soil pH between 6.0 to 7.0.
b. Soluble salts less than 500 parts per million (ppm).
c. Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if lovegrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
d. Soil contains 1.5 percent minimum organic matter by weight.
e. Soil contains sufficient pore space to permit adequate root penetration.
2.a. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
2.b. Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches.
2.c. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
2.d. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake lower areas to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

- B. Topsoiling
1. Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.
2. Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in representative soil profile section in the Soil Survey published by USDA-NRCS.
3. Topsoiling is limited to areas having 2:1 or flatter slopes where:
3.a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
3.b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant material.
3.c. The original soil to be vegetated contains material toxic to plant growth.
3.d. The soil is so acidic that treatment with limestone is not feasible.
4. Areas having slopes steeper than 2:1 require special consideration and design.
5. Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:
5.a. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1/2 inches in diameter.
5.b. Topsoil must be free of roots of plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.
5.c. Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
6. Topsoil Application
6.a. Erosion and sediment control practices must be maintained when applying topsoil.
6.b. Uniformly distribute topsoil in a 5 to 8 inch layer and tightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.
6.c. Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

- C. Soil Amendments (Fertilizer and Lime Specifications)
1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
2. Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
3. Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve.
4. Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.
5. Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

DEFINITION The application of seed and mulch to establish vegetative cover.

PURPOSE To protect disturbed soils from erosion during and at the end of construction.

CONDITIONS WHERE PRACTICE APPLIES To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

CRITERIA

- A. Seeding
1. Specifications
1.a. All seed must meet the requirement of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.
1.b. Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
1.c. Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 90 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
1.d. Sod and seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.

- 2. Application
2.a. Dry seeding: This includes use of conventional drop or broadcast spreaders
a. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
b. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.
2.b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
a. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/2 inch of soil covering. Seedbed must be firm after planting.
b. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
2.c. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
a. If fertilizer is being applied at the time of seeding, the application rates should be exceed the following: nitrogen, 100 pounds per acre total soluble nitrogen; P2O5 (phosphorus), 200 pounds per acre; K2O (potassium), 200 pounds per acre.
b. Lime: Use only ground agricultural lime (up to 5 tons per acre) and apply with hydroseeding. Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
c. Mix seed and fertilizer on site and seed immediately and without interruption.
d. When hydroseeding, do not incorporate into the soil.

- B. Mulching
1. Mulch Materials (in order of preference)
1.a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonable bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where one species of grass is desired.
1.b. Wood Cellulose Fiber Mulch (WCFFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
a. WCFFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
b. WCFFM, including dye, must contain no germination or growth inhibiting factors.
c. WCFFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogenous slurry. The mulch material must form a blotter-like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
d. WCFFM material must not contain elements or compounds at concentration levels that will by phyto-toxic.
e. WCFFM must conform to the following physical requirements: fiber length of approximately 10 millimeters; diameter approximately 1 millimeter; pH range of 4.0 to 8.5; ash content of 1.6 percent maximum and water holding capacity of 90 percent minimum.
2. Application
2.a. Apply mulch to all seeded areas immediately after seeding.
2.b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.
2.c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 100 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
3. Anchoring
3.a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard:
a. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should follow the contour.
b. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
c. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petrosol, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of eggshell binders is strictly prohibited.
d. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

B STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREAS

DEFINITION A mound or pile of soil protected by appropriately designed erosion and sediment control measures.

PURPOSE To provide a designated location for the temporary storage of soil that controls the potential for erosion, sedimentation, and changes to drainage patterns.

CONDITIONS WHERE PRACTICE APPLIES Stockpile areas are utilized when it is necessary to salvage and store soil for later use.

CRITERIA

- A. The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
B. The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.
C. Runoff from the stockpile area must drain to a suitable sediment control practice.
D. Access to the stockpile area from the upgrade side.
E. Clear water runoff into the stockpile area must be minimized by use of a diversion fence such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner.
F. Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.
G. Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary Stabilization.
H. If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with impermeable sheeting.

The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization. Side slopes must be maintained at no steeper than a 2:1 ratio. The stockpile area must be kept free of erosion. If the vertical height of a stockpile exceeds 20 feet for 2:1 slopes, 30 feet for 3:1 slopes or 40 feet for 4:1 slopes, benching must be provided in accordance with Section B-3 Land Grading.

PERMANENT SEEDING NOTES(B-4-4)

SCOPE: PLANTING SHORT TERM (NO MORE THAN 6 MONTHS) VEGETATION TO TEMPORARILY STABILIZE ANY AREAS WHERE SOIL DISTURBANCE HAS OCCURRED, UNTIL THE AREA CAN BE PERMANENTLY STABILIZED WITH VEGETATIVE OR NON-VEGETATIVE PRACTICES.

STANDARDS: THE FOLLOWING NOTES SHALL CONFORM TO SECTION B-4 OF THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL," PUBLISHED JOINTLY BY THE MARYLAND DEPARTMENT OF ENVIRONMENT - WATER MANAGEMENT ADMINISTRATION, THE NATIONAL RESOURCE CONSERVATION SERVICE AND THE MARYLAND ASSOCIATION OF SOIL CONSERVATION DISTRICTS

THE SEED BED SHALL BE PREPARED BY LOOSENING THE SOIL TO A DEPTH OF 3 TO 5 INCHES AND INCORPORATING THE LIME AND FERTILIZER INTO THIS LOOSENEED LAYER OF SOIL. SEE SECTION B-4-2

FOR TEMPORARY STABILIZATION, FERTILIZER SHALL CONSIST OF A MIXTURE OF 10-20-20 AND BE APPLIED AT A RATE OF 436 LB. PER ACRE (10 LB. PER 1000 SQ. FT.) AND WILL MEET THE REQUIREMENTS IN SECTION B-4-2. LIME SHALL BE APPLIED AT A RATE OF 2 TONS PER ACRE (90 LB. PER 1000 SQ. FT.) AND SHALL MEET THE REQUIREMENTS IN SECTION B-4-2 AND B-4-5

SEED TYPE AND APPLICATION SHALL MEET THE REQUIREMENTS IN SECTION B-4-3 SEED TAGS SHALL BE MADE AVAILABLE TO THE INSPECTOR TO VERIFY THE TYPE AND RATE OF SEED USED. MULCH TYPE AND ITS APPLICATION WILL MEET THE REQUIREMENTS IN SECTION B-4-3 A, B AND C AND WILL BE APPLIED ALONG WITH THE SEED OR IMMEDIATELY AFTER SEEDING

SEEDING MIXTURES SHALL BE SELECTED FROM OR WILL BE EQUAL TO THOSE ON TABLE B.1 (PAGE B.20).

THE SEEDING CHART BELOW WILL NEED TO BE PLACED ON AND FILLED IN ON THE SEDIMENT CONTROL PLAN

TEMPORARY SEEDING SUMMARY table with columns: No., Species, Application Rate (lb/ac), Seeding Dates, Seeding Depths, Fertilizer Rate (10-20-20), Lime Rate.

PERMANENT SEEDING NOTES(B-4-5)

SCOPE: PLANTING PERMANENT, LONG LIVED VEGETATIVE COVER ON GRADED AND/OR CLEARED AREAS AND AREAS THAT HAVE BEEN IN TEMPORARY VEGETATION FOR MORE THAN 6 MONTHS.

STANDARDS: THE FOLLOWING NOTES SHALL CONFORM TO SECTION B-4 OF THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL," PUBLISHED JOINTLY BY THE MARYLAND DEPARTMENT OF ENVIRONMENT - WATER MANAGEMENT ADMINISTRATION, THE NATIONAL RESOURCE CONSERVATION SERVICE AND THE MARYLAND ASSOCIATION OF SOIL CONSERVATION DISTRICTS.

THE SEED BED SHALL BE PREPARED BY LOOSENING THE SOIL TO A DEPTH OF 3 TO 5 INCHES AND INCORPORATING THE LIME AND FERTILIZER INTO THIS LOOSENEED LAYER OF SOIL. SEE SECTION B-4-2

FOR SITES OVER 5 AC, SOIL TESTS WILL BE PERFORMED. SOIL TESTS WILL BE CONDUCTED BY THE UNIVERSITY OF MARYLAND OR A RECOGNIZED COMMERCIAL LABORATORY. MINIMUM SOIL CONDITIONS SHALL MEET THE REQUIREMENTS OF SECTION B-4-2 A-2-A, OTHERWISE SOIL AMENDMENTS OR TOPSOIL WILL NEED TO BE APPLIED. TOPSOILING MAY OCCUR WHEN SOIL CONDITIONS MEET THE MINIMUM REQUIREMENTS AS STATED IN SECTION B-4-2-B. SOIL AMENDMENTS MUST MEET THE REQUIREMENTS AS SET FORTH IN SECTION B-4-2-C AND MUST BE APPLIED AS INDICATED BY THE SOILS TESTS.

FOR SITES OF 5 AC. OR LESS OF DISTURBANCE, THE FOLLOWING FERTILIZER AND LIME RATES SHALL APPLY. FERTILIZER SHALL CONSIST OF A MIXTURE OF 10-20-20 AND BE APPLIED AT THE FOLLOWING RATES: N = 45 LB. PER ACRE (1 LB. PER 1000 SQ. FT.) P205 = 90 LB. PER ACRE (2 LB. PER 1000 SQ. FT.) K2O = 90 LB. PER ACRE (2 LB. PER 1000 SQ. FT.) LIME SHALL BE APPLIED AT A RATE OF 2 TONS PER ACRE (90 LB. PER 1000 SQ.FT.)

SEED TYPE, TURFGRASS OR SOD APPLICATION SHALL MEET THE REQUIREMENTS IN SECTION B-4-5. SEED TAGS SHALL BE MADE AVAILABLE TO THE INSPECTOR TO VERIFY THE TYPE AND APPLICATION RATE OF SEED USED. MULCH TYPE AND ITS APPLICATION WILL MEET THE REQUIREMENTS IN SECTION B-4-3 A, B AND C, AND WILL BE APPLIED ALONG WITH SEED OR IMMEDIATELY AFTER SEEDING

SEEDING MIXTURES SHALL BE SELECTED FROM OR WILL BE EQUAL TO THOSE ON TABLE B-3. THE SEEDING CHART BELOW WILL NEED TO BE PLACED ON AND FILLED IN ON THE SEDIMENT CONTROL PLAN.

Permanent Seeding Summary

Permanent Seeding Summary table with columns: No., Species, Application Rate (lb/ac), Seeding Dates, Seeding Depths, Fertilizer Rate (10-20-20), Lime Rate.

Permanent Seeding Summary table with columns: No., Species, Application Rate (lb/ac), Seeding Dates, Seeding Depths, Fertilizer Rate (10-20-20), Lime Rate.

SEDIMENT AND EROSION CONTROL NOTES

- 1. ALL EROSION/SEDIMENT CONTROL MEASURES SHALL COMPLY WITH THE "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL," BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT, WATER MANAGEMENT ADMINISTRATION IN ASSOCIATION WITH THE NATURAL RESOURCES CONSERVATION SERVICE AND THE MARYLAND ASSOCIATION OF SOIL CONSERVATION DISTRICTS (REFERRED AS THE 2011 STANDARDS AND SPECS).
2. AREAS THAT HAVE BEEN CLEARED AND/OR GRADED, BUT WILL NOT BE CONSTRUCTED ON OR PERMANENTLY VEGETATED FOR MORE THAN 5 DAYS (3 DAYS FOR SEDIMENT CONTROL MEASURES AND FOR STEEP SLOPES) MUST BE STABILIZED WITH MULCH OR TEMPORARY STABILIZATION. ANY AREAS THAT ARE IN TEMPORARY VEGETATION FOR OVER 6 MONTHS WILL NEED TO BE PERMANENTLY VEGETATED.
3. FOR SPECIFICATIONS ON PERMANENT OR TEMPORARY STABILIZATION, SEE B-4-4 AND B-4-5.
4. MULCHING ONLY IS RESTRICTED TO USE ON DISTURBED AREAS AS A TEMPORARY COVER WHERE VEGETATION IS NOT FEASIBLE OR WHERE SEEDING GERMINATION CANNOT BE COMPLETED BECAUSE OF WEATHER CONDITIONS. FOR SPECIFICATIONS SEE B-4-3, A. 1.B
5. FOR SPECIFICATIONS ON THE STABILIZATION OF CUT AND FILL SLOPES STEEPER THAN 3:1 HORIZONTAL TO 1 VERTICAL, SEE INCREMENTAL STABILIZATION B-4-1.
6. THE EXISTING TOPSOIL FROM ON OR OFF SITE THAT IS USED MUST MEET THE MINIMUM SPECIFICATION IN B-4-2
7. THE REQUIRED SEQUENCE OF CONSTRUCTION MUST BE FOLLOWED DURING SITE DEVELOPMENT. ANY CHANGES IN THE SEQUENCE OF CONSTRUCTION MUST BE APPROVED BY THE SOIL CONSERVATION DISTRICT.
8. ANY REVISIONS TO THE SEDIMENT CONTROL PLAN, NOT COVERED UNDER THE LIST OF PLAN MODIFICATIONS THAT CAN BE APPROVED BY THE SEDIMENT CONTROL INSPECTOR, NEED TO BE SUBMITTED TO THE SOIL CONSERVATION DISTRICT FOR APPROVAL.
9. NO PROPOSED SLOPE THAT IS REQUIRED TO BE SEEDED AND/OR MULCHED SHALL BE STEEPER THAN 2:1. SLOPES STEEPER THEN 2:1 SHALL REQUIRE AN ENGINEERED DESIGN FOR STABILIZATION
10. ALL SEDIMENT CONTROL STRUCTURES WILL BE INSPECTED ONCE A WEEK AND AFTER EACH RAINFALL AND WILL BE REPAIRED, AS NEEDED, SO THAT THE STRUCTURE MEETS THE MINIMUM SPECIFICATIONS AS SHOWN IN THE 2011 STANDARDS AND SPECS.
11. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL SEDIMENT AND EROSION CONTROL MEASURES UNTIL THE DISTURBED AREAS ARE PERMANENTLY STABILIZED.
12. THE DISTRICT APPROVAL FOR THIS SEDIMENT CONTROL PLAN IS GOOD FOR 2 YEARS. AT THE END OF 2 YEARS, IF CONSTRUCTION OF THE PLAN HAS NOT STARTED, THE PLAN WILL NEED TO BE RESUBMITTED TO THE SOIL CONSERVATION DISTRICT FOR REVIEW AND RE-APPROVAL. ANY PLANS THAT ARE CURRENTLY UNDER CONSTRUCTION AFTER 2 YEARS MAY BE REQUIRED TO BE RESUBMITTED TO THE SOIL CONSERVATION DISTRICT BY THE SEDIMENT CONTROL INSPECTOR.

SOD NOTES

SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).

- 1. GENERAL SPECIFICATIONS
a. CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.
b. SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 1/4 INCH, PLUS OR MINUS 1/8 INCH. AT THE TIME OF CUTTING, MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.
c. STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.
d. SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
e. SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.
2. SOD INSTALLATION
a. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.
b. LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.
c. WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERED JOINTS. ROLL AND TAMP PEG OR OTHERWISE SECURE THE SOD TO PREVENT SLIPPAGE ON SLOPES. ENSURE SOIL CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.
d. WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT HOURS.
3. SOD MAINTENANCE
a. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.
b. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.
c. DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/2 OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

\\2023\Facilities\2023231700 1 a beacon ridge construction drawings phase 1\CIVIL\CADD Drawings\3. Construction Documents\20235 23 1700 1A (CP-20)IEC Notes Specs-Aug Jun 21, 2024 10:41 am kdarbyf

24TMP-026983

MILLICENTURY ENGINEERING logo and address (10710 Gilroy Road, Hunt Valley, MD 21031). ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS stamp with date 6/21/2024 and various approval signatures/initials.



TEST BORING LOG												BORING SB-1			
<b>M CENTURY ENGINEERING</b>				PROJECT : Bacon Ridge CLIENT : Anne Arundel County CONTRACTOR : DTCI											
GROUNDWATER		DEPTH (ft) OF:		EQUIPMENT		CASING		SAMPLER		CORE		CONTRACT NO.: 00181120.09 SHEET NO.: 1 of 1			
Date	Time	Water	Casing	Hole	Type:	HSA	S					NORTHING : EASTING : ELEVATION : 102 DATE START : 2-14-23 END : 2-14-23 DRILLER : DCTI INSPECTOR : J. Harris			
2/14/23	0 Hr	Dry		3.3	Size I.D.:	4-1/4"	2"								
2/16/23	48 Hr	Dry		3	Hammer Wt.:	140	---								
								Hammer Fall:							
FIELD CLASSIFICATION AND REMARKS															
Depth in Feet	Strata Change	Case BPF (Drill) (min/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/Depth (ft)	FIELD CLASSIFICATION AND REMARKS							
0							101.8	Topsoil							
0.3							0.3	Brown, moist, very loose, Silty f-m SAND (sm)							
1.3							13"								
2.2							13"								
3							14"								
5							97.0								
5.0							5.0								
BLOWS/FT. DENSITY BLOWS/FT. CONSISTENCY SAMPLE IDENTIFICATION SUMMARY															
0-5	Very Loose	0-3	Very Soft	S - Split Spoon	Overburden:										
6-10	Loose	4-5	Soft	T - Thin Wall Tube	Rock:										
11-30	Medium Dense	6-10	Medium Stiff	U - Undisturbed Piston	Samples:										
31-50	Dense	11-15	Stiff	C - Diamond Core											
51+	Very Dense	16-30	Very Stiff	W - Wash Sample											
BORING SB-1															

TEST BORING LOG												BORING SB-2			
<b>M CENTURY ENGINEERING</b>				PROJECT : Bacon Ridge CLIENT : Anne Arundel County CONTRACTOR : DTCI											
GROUNDWATER		DEPTH (ft) OF:		EQUIPMENT		CASING		SAMPLER		CORE		CONTRACT NO.: 00181120.09 SHEET NO.: 1 of 1			
Date	Time	Water	Casing	Hole	Type:	HSA	S					NORTHING : EASTING : ELEVATION : 126 DATE START : 2-14-23 END : 2-14-23 DRILLER : DCTI INSPECTOR : J. Harris			
2/14/23	0 Hr	Dry		2.4	Size I.D.:	4-1/4"	2"								
2/16/23	48 Hr	Dry		2.4	Hammer Wt.:	140	---								
								Hammer Fall:							
FIELD CLASSIFICATION AND REMARKS															
Depth in Feet	Strata Change	Case BPF (Drill) (min/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/Depth (ft)	FIELD CLASSIFICATION AND REMARKS							
0							125.7	Topsoil							
0.3							0.3	Brown, moist, very loose to loose, Silty f-m SAND (sm) with f Gravel							
2.2							12"								
5							18"								
5							121.0								
5.0							5.0								
BLOWS/FT. DENSITY BLOWS/FT. CONSISTENCY SAMPLE IDENTIFICATION SUMMARY															
0-5	Very Loose	0-3	Very Soft	S - Split Spoon	Overburden:										
6-10	Loose	4-5	Soft	T - Thin Wall Tube	Rock:										
11-30	Medium Dense	6-10	Medium Stiff	U - Undisturbed Piston	Samples:										
31-50	Dense	11-15	Stiff	C - Diamond Core											
51+	Very Dense	16-30	Very Stiff	W - Wash Sample											
BORING SB-2															

TEST BORING LOG												BORING SB-3			
<b>M CENTURY ENGINEERING</b>				PROJECT : Bacon Ridge CLIENT : Anne Arundel County CONTRACTOR : DTCI											
GROUNDWATER		DEPTH (ft) OF:		EQUIPMENT		CASING		SAMPLER		CORE		CONTRACT NO.: 00181120.09 SHEET NO.: 1 of 1			
Date	Time	Water	Casing	Hole	Type:	HSA	S					NORTHING : EASTING : ELEVATION : 144 DATE START : 2-14-23 END : 2-14-23 DRILLER : DCTI INSPECTOR : J. Harris			
2/14/23	0 Hr	Dry		3.5	Size I.D.:	4-1/4"	2"								
2/16/23	48 Hr	Dry		3.5	Hammer Wt.:	140	---								
								Hammer Fall:							
FIELD CLASSIFICATION AND REMARKS															
Depth in Feet	Strata Change	Case BPF (Drill) (min/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/Depth (ft)	FIELD CLASSIFICATION AND REMARKS							
0							143.8	Topsoil							
0.2							0.2	Brown, moist, very loose, Silty f-m SAND (sm)							
2.3							14"								
5							18"								
5							139.0								
5.0							5.0								
BLOWS/FT. DENSITY BLOWS/FT. CONSISTENCY SAMPLE IDENTIFICATION SUMMARY															
0-5	Very Loose	0-3	Very Soft	S - Split Spoon	Overburden:										
6-10	Loose	4-5	Soft	T - Thin Wall Tube	Rock:										
11-30	Medium Dense	6-10	Medium Stiff	U - Undisturbed Piston	Samples:										
31-50	Dense	11-15	Stiff	C - Diamond Core											
51+	Very Dense	16-30	Very Stiff	W - Wash Sample											
BORING SB-3															

TEST BORING LOG												BORING SB-4			
<b>M CENTURY ENGINEERING</b>				PROJECT : Bacon Ridge CLIENT : Anne Arundel County CONTRACTOR : DTCI											
GROUNDWATER		DEPTH (ft) OF:		EQUIPMENT		CASING		SAMPLER		CORE		CONTRACT NO.: 00181120.09 SHEET NO.: 1 of 1			
Date	Time	Water	Casing	Hole	Type:	HSA	S					NORTHING : EASTING : ELEVATION : 143 DATE START : 2-14-23 END : 2-14-23 DRILLER : DCTI INSPECTOR : J. Harris			
2/14/23	0 Hr	Dry		4.5	Size I.D.:	4-1/4"	2"								
2/16/23	48 Hr	Dry		3.4	Hammer Wt.:	140	---								
								Hammer Fall:							
FIELD CLASSIFICATION AND REMARKS															
Depth in Feet	Strata Change	Case BPF (Drill) (min/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/Depth (ft)	FIELD CLASSIFICATION AND REMARKS							
0							142.8	Topsoil							
0.3							0.3	Brown, moist, very loose, Silty f-m SAND (sm)							
2.2							13"								
5							12"								
5							138.0								
5.0							5.0								
BLOWS/FT. DENSITY BLOWS/FT. CONSISTENCY SAMPLE IDENTIFICATION SUMMARY															
0-5	Very Loose	0-3	Very Soft	S - Split Spoon	Overburden:										
6-10	Loose	4-5	Soft	T - Thin Wall Tube	Rock:										
11-30	Medium Dense	6-10	Medium Stiff	U - Undisturbed Piston	Samples:										
31-50	Dense	11-15	Stiff	C - Diamond Core											
51+	Very Dense	16-30	Very Stiff	W - Wash Sample											
BORING SB-4															

TEST BORING LOG												BORING SB-5			
<b>M CENTURY ENGINEERING</b>				PROJECT : Bacon Ridge CLIENT : Anne Arundel County CONTRACTOR : DTCI											
GROUNDWATER		DEPTH (ft) OF:		EQUIPMENT		CASING		SAMPLER		CORE		CONTRACT NO.: 00181120.09 SHEET NO.: 1 of 1			
Date	Time	Water	Casing	Hole	Type:	HSA	S					NORTHING : EASTING : ELEVATION : 147 DATE START : 2-14-23 END : 2-14-23 DRILLER : DCTI INSPECTOR : J. Harris			
2/14/23	0 Hr	Dry		7.4	Size I.D.:	4-1/4"	2"								
2/16/23	48 Hr	Dry		7.4	Hammer Wt.:	140	---								
								Hammer Fall:							
FIELD CLASSIFICATION AND REMARKS															
Depth in Feet	Strata Change	Case BPF (Drill) (min/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/Depth (ft)	FIELD CLASSIFICATION AND REMARKS							
0							146.7	Topsoil							
0.3							0.3	Brown, moist, very loose, Clayey f-m SAND (sc), trace Silt							
1.2							145.0								
2							2.0	Brown, moist, very loose, Silty f-m SAND (sm)							
5							142.5								
4.5							4.5	Infiltration test performed at 4 ft below grade							
								Brown to orange, moist, very loose to loose, Poorly-graded f-m SAND with Silt (sp-sm)							
								water on rods at 8 ft							
10							137.0								
10.0							10.0								
BLOWS/FT. DENSITY BLOWS/FT. CONSISTENCY SAMPLE IDENTIFICATION SUMMARY															
0-5	Very Loose	0-3	Very Soft	S - Split Spoon	Overburden:										
6-10	Loose	4-5	Soft	T - Thin Wall Tube	Rock:										
11-30	Medium Dense	6-10	Medium Stiff	U - Undisturbed Piston	Samples:										
31-50	Dense	11-15	Stiff	C - Diamond Core											
51+	Very Dense	16-30	Very Stiff	W - Wash Sample											
BORING SB-5															

TEST BORING LOG												BORING SB-6			
<b>M CENTURY ENGINEERING</b>				PROJECT : Bacon Ridge CLIENT : Anne Arundel County CONTRACTOR : DTCI											
GROUNDWATER		DEPTH (ft) OF:		EQUIPMENT		CASING		SAMPLER		CORE		CONTRACT NO.: 00181120.09 SHEET NO.: 1 of 1			
Date	Time	Water	Casing	Hole	Type:	HSA	S					NORTHING : EASTING : ELEVATION : 157 DATE START : 2-14-23 END : 2-14-23 DRILLER : DCTI INSPECTOR : J. Harris			
2/14/23	0 Hr	Dry		2.9	Size I.D.:	4-1/4"	2"								
2/16/23	48 Hr	Dry		2.7	Hammer Wt.:	140	---								
								Hammer Fall:							
FIELD CLASSIFICATION AND REMARKS															
Depth in Feet	Strata Change	Case BPF (Drill) (min/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/Depth (ft)	FIELD CLASSIFICATION AND REMARKS							
0							156.7	Topsoil							
0.3							0.3	Orange to brown, moist, soft, Clayey SILT (ml), trace f-m Sand							
1.2							155.3								
5							152.0	Brown, moist, medium stiff, f-m Sandy SILT (ml)							
5							5.0								
BLOWS/FT. DENSITY BLOWS/FT. CONSISTENCY SAMPLE IDENTIFICATION SUMMARY															
0-5	Very Loose	0-3	Very Soft	S - Split Spoon	Overburden:										
6-10	Loose	4-5	Soft	T - Thin Wall Tube	Rock:										
11-30	Medium Dense	6-10	Medium Stiff	U - Undisturbed Piston	Samples:										
31-50	Dense	11-15	Stiff	C - Diamond Core											
51+	Very Dense	16-30	Very Stiff	W - Wash Sample											
BORING SB-6															

TEST BORING LOG												BORING SB-7			
<b>M CENTURY ENGINEERING</b>				PROJECT : Bacon Ridge CLIENT : Anne Arundel County CONTRACTOR : DTCI											
GROUNDWATER		DEPTH (ft) OF:		EQUIPMENT		CASING		SAMPLER		CORE		CONTRACT NO.: 00181120.09 SHEET NO.: 1 of 1			
Date	Time	Water	Casing	Hole	Type:	HSA	S					NORTHING : EASTING : ELEVATION : 164 DATE START : 2-14-23 END : 2-14-23 DRILLER : DCTI INSPECTOR : J. Harris			
2/14/23	0 Hr	Dry		7	Size I.D.:	4-1/4"	2"								
2/16/23	48 Hr	Dry		6.7	Hammer Wt.:	140	---								
								Hammer Fall:							
FIELD CLASSIFICATION AND REMARKS															
Depth in Feet	Strata Change	Case BPF (Drill) (min/ft)	Sampler Blows Per 6" (RQD%)	Sample Number	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/Depth (ft)	FIELD CLASSIFICATION AND REMARKS							
0							163.7	Topsoil							
0.3							0.3	Orange to brown, moist, very loose, Silty f-m SAND (sm)							
2.1							16"	Infiltration test performed at 2 ft below grade							
5							17"	less Silt							
5							18"	Water on rods at 6 ft							
10							156.0								
10							154.0	Light brown, moist, very loose, Poorly-graded SAND (sp)							
10.0							10.0								
BLOWS/FT. DENSITY BLOWS/FT. CONSISTENCY SAMPLE IDENTIFICATION SUMMARY															
0-5	Very Loose	0-3	Very Soft	S - Split Spoon	Overburden:										
6-10	Loose	4-5	Soft	T - Thin Wall Tube	Rock:										
11-30	Medium Dense	6-10	Medium Stiff	U - Undisturbed Piston	Samples:										
31-50	Dense	11-15	Stiff	C - Diamond Core											
51+	Very Dense	16-30	Very Stiff	W - Wash Sample											
BORING SB-7															

TEST BORING LOG												BORING SB-8	
<b>M CENTURY ENGINEERING</b>				PROJECT : Bacon Ridge CLIENT : Anne Arundel County CONTRACTOR : DTCI									
GROUNDWATER		DEPTH (ft) OF:		EQUIPMENT		CASING		SAMPLER					



TEST BORING LOG										BORING SB-9			
CENTURY ENGINEERING										PROJECT : Bacon Ridge			
										CLIENT : Anne Arundel County			
										CONTRACTOR : DTCI			
GROUNDWATER DEPTH (ft) OF:										EQUIPMENT CASING SAMPLER CORE		CONTRACT NO. : 00181120.09	
Date	Time	Water	Casing	Hole	Type	HSA	S			SHEET NO. : 1 of 1	NORTHING : 501771		
2/14/23	0 Hr	Dry		2.8	Size I.D.:	4-1/4"	2"			EASTING : 1416771	ELEVATION : 117		
2/16/23	48 Hr	Dry		1.9	Hammer Wt.:	140	---			DATE START : 8-10-23	DATE END : 8-10-23		
					Hammer Fall:	30	---			DRILLER : DTCI	INSPECTOR : J. Harris		
FIELD CLASSIFICATION AND REMARKS													
Depth in Feet	Strata Change (Drill) (min/ft)	Case Blows Per 6" (RGD%)	Sampler Blows Per 6" (RGD%)	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/Depth (ft)	Brown, moist, very soft to stiff, Silty CLAY (cl-m)						
2	1-2	S-1	0.0	1.5	13"								
3	6-8	S-2	2.0	3.5	18"								
4	3-5	S-3	3.5	5.0	16"								
5						162.0							
						5.0							
BLOWS/FT. DENSITY BLOWS/FT. CONSISTENCY SAMPLE IDENTIFICATION SUMMARY													
0-5	Very Loose	0-3	Very Soft	S - Split Spoon	Overburden:								
6-10	Loose	4-5	Soft	T - Thin Wall Tube	Rock:								
11-30	Medium Dense	6-10	Medium Stiff	U - Undisturbed Piston	Samples:								
31-50	Dense	11-15	Stiff	C - Diamond Core									
51+	Very Dense	16-30	Very Stiff	W - Wash Sample									
		31+	Hard	See Remarks			BORING SB-9						

TEST BORING LOG										BORING SB-10			
CENTURY ENGINEERING										PROJECT : Bacon Ridge			
										CLIENT : Anne Arundel County			
										CONTRACTOR : DTCI			
GROUNDWATER DEPTH (ft) OF:										EQUIPMENT CASING SAMPLER CORE		CONTRACT NO. : 00181120.09	
Date	Time	Water	Casing	Hole	Type	HSA	S			SHEET NO. : 1 of 1	NORTHING : 501803		
8/10/23	0 Hr	Dry		3	Size I.D.:	4-1/4"	2"			EASTING : 1415841	ELEVATION : 98		
8/11/23	24 Hr	Dry		2.9	Hammer Wt.:	140	---			DATE START : 8-10-23	DATE END : 8-10-23		
					Hammer Fall:	30	---			DRILLER : DTCI	INSPECTOR : C. Stouten		
FIELD CLASSIFICATION AND REMARKS													
Depth in Feet	Strata Change (Drill) (min/ft)	Case Blows Per 6" (RGD%)	Sampler Blows Per 6" (RGD%)	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/Depth (ft)	Topsoil						
2	1-2	S-1	0.0	2.0	0	97.7							
						0.3							
3	5-4	S-2	2.0	4.0	0								
4	1-2	S-3	4.0	6.0	24"								
5						104.0							
						5.0							
10						88.0							
						10.0							
BLOWS/FT. DENSITY BLOWS/FT. CONSISTENCY SAMPLE IDENTIFICATION SUMMARY													
0-5	Very Loose	0-3	Very Soft	S - Split Spoon	Overburden:								
6-10	Loose	4-5	Soft	T - Thin Wall Tube	Rock:								
11-30	Medium Dense	6-10	Medium Stiff	U - Undisturbed Piston	Samples:								
31-50	Dense	11-15	Stiff	C - Diamond Core									
51+	Very Dense	16-30	Very Stiff	W - Wash Sample									
		31+	Hard	See Remarks			BORING SB-10						

TEST BORING LOG										BORING SB-11			
CENTURY ENGINEERING										PROJECT : Bacon Ridge			
										CLIENT : Anne Arundel County			
										CONTRACTOR : DTCI			
GROUNDWATER DEPTH (ft) OF:										EQUIPMENT CASING SAMPLER CORE		CONTRACT NO. : 00181120.09	
Date	Time	Water	Casing	Hole	Type	HSA	S			SHEET NO. : 1 of 1	NORTHING : 501771		
8/10/23	0 Hr	Dry		1.2	Size I.D.:	4-1/4"	2"			EASTING : 1416036	ELEVATION : 109		
					Hammer Wt.:	140	---			DATE START : 8-10-23	DATE END : 8-10-23		
					Hammer Fall:	30	---			DRILLER : DTCI	INSPECTOR : C. Stouten		
FIELD CLASSIFICATION AND REMARKS													
Depth in Feet	Strata Change (Drill) (min/ft)	Case Blows Per 6" (RGD%)	Sampler Blows Per 6" (RGD%)	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/Depth (ft)	Topsoil						
2	1-1	S-1	0.0	1.5	16"	108.3							
						0.7							
3	2	S-2	2.0	3.5	12"								
4	1-3	S-3	3.5	5.0	18"								
5						104.0							
						5.0							
BLOWS/FT. DENSITY BLOWS/FT. CONSISTENCY SAMPLE IDENTIFICATION SUMMARY													
0-5	Very Loose	0-3	Very Soft	S - Split Spoon	Overburden:								
6-10	Loose	4-5	Soft	T - Thin Wall Tube	Rock:								
11-30	Medium Dense	6-10	Medium Stiff	U - Undisturbed Piston	Samples:								
31-50	Dense	11-15	Stiff	C - Diamond Core									
51+	Very Dense	16-30	Very Stiff	W - Wash Sample									
		31+	Hard	See Remarks			BORING SB-11						

TEST BORING LOG										BORING SB-12			
CENTURY ENGINEERING										PROJECT : Bacon Ridge			
										CLIENT : Anne Arundel County			
										CONTRACTOR : DTCI			
GROUNDWATER DEPTH (ft) OF:										EQUIPMENT CASING SAMPLER CORE		CONTRACT NO. : 00181120.09	
Date	Time	Water	Casing	Hole	Type	HSA	S			SHEET NO. : 1 of 1	NORTHING : 501602		
8/10/23	0 Hr	Dry		1.3	Size I.D.:	4-1/4"	2"			EASTING : 1416152	ELEVATION : 117		
					Hammer Wt.:	140	---			DATE START : 8-10-23	DATE END : 8-10-23		
					Hammer Fall:	30	---			DRILLER : DTCI	INSPECTOR : C. Stouten		
FIELD CLASSIFICATION AND REMARKS													
Depth in Feet	Strata Change (Drill) (min/ft)	Case Blows Per 6" (RGD%)	Sampler Blows Per 6" (RGD%)	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/Depth (ft)	Topsoil						
2	1-1	S-1	0.0	1.5	14"	116.3							
						0.7							
3	1	S-2	2.5	4.0	16"								
4	2	S-3	4.0	5.5	18"								
5						111.5							
						5.3							
BLOWS/FT. DENSITY BLOWS/FT. CONSISTENCY SAMPLE IDENTIFICATION SUMMARY													
0-5	Very Loose	0-3	Very Soft	S - Split Spoon	Overburden:								
6-10	Loose	4-5	Soft	T - Thin Wall Tube	Rock:								
11-30	Medium Dense	6-10	Medium Stiff	U - Undisturbed Piston	Samples:								
31-50	Dense	11-15	Stiff	C - Diamond Core									
51+	Very Dense	16-30	Very Stiff	W - Wash Sample									
		31+	Hard	See Remarks			BORING SB-12						

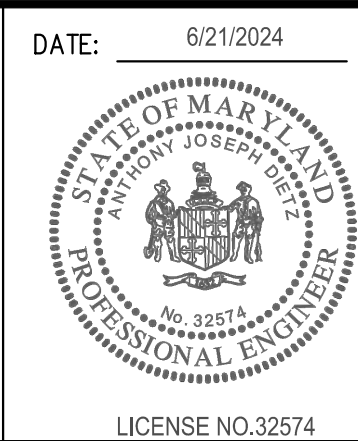
TEST BORING LOG										BORING SB-13			
CENTURY ENGINEERING										PROJECT : Bacon Ridge			
										CLIENT : Anne Arundel County			
										CONTRACTOR : DTCI			
GROUNDWATER DEPTH (ft) OF:										EQUIPMENT CASING SAMPLER CORE		CONTRACT NO. : 00181120.09	
Date	Time	Water	Casing	Hole	Type	HSA	S			SHEET NO. : 1 of 1	NORTHING : 501445		
8/10/23	0 Hr	Dry		1.2	Size I.D.:	4-1/4"	2"			EASTING : 1416271	ELEVATION : 125		
					Hammer Wt.:	140	---			DATE START : 8-10-23	DATE END : 8-10-23		
					Hammer Fall:	30	---			DRILLER : DTCI	INSPECTOR : C. Stouten		
FIELD CLASSIFICATION AND REMARKS													
Depth in Feet	Strata Change (Drill) (min/ft)	Case Blows Per 6" (RGD%)	Sampler Blows Per 6" (RGD%)	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/Depth (ft)	Topsoil						
2	5	S-1	0.0	1.5	10"	124.7							
						0.3							
3	7	S-2	1.5	3.0	13"	124.2							
						0.8							
4	7	S-3	3.0	4.5	14"								
5						120.5							
						4.5							
BLOWS/FT. DENSITY BLOWS/FT. CONSISTENCY SAMPLE IDENTIFICATION SUMMARY													
0-5	Very Loose	0-3	Very Soft	S - Split Spoon	Overburden:								
6-10	Loose	4-5	Soft	T - Thin Wall Tube	Rock:								
11-30	Medium Dense	6-10	Medium Stiff	U - Undisturbed Piston	Samples:								
31-50	Dense	11-15	Stiff	C - Diamond Core									
51+	Very Dense	16-30	Very Stiff	W - Wash Sample									
		31+	Hard	See Remarks			BORING SB-13						

TEST BORING LOG										BORING SB-14			
CENTURY ENGINEERING										PROJECT : Bacon Ridge			
										CLIENT : Anne Arundel County			
										CONTRACTOR : DTCI			
GROUNDWATER DEPTH (ft) OF:										EQUIPMENT CASING SAMPLER CORE		CONTRACT NO. : 00181120.09	
Date	Time	Water	Casing	Hole	Type	HSA	S			SHEET NO. : 1 of 1	NORTHING : 501304		
8/10/23	0 Hr	Dry		1.4	Size I.D.:	4-1/4"	2"			EASTING : 1416365	ELEVATION : 135		
					Hammer Wt.:	140	---			DATE START : 8-10-23	DATE END : 8-10-23		
					Hammer Fall:	30	---			DRILLER : DTCI	INSPECTOR : C. Stouten		
FIELD CLASSIFICATION AND REMARKS													
Depth in Feet	Strata Change (Drill) (min/ft)	Case Blows Per 6" (RGD%)	Sampler Blows Per 6" (RGD%)	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/Depth (ft)	Topsoil						
2	4	S-1	0.0	1.5	10"	134.7							
						0.3							
3	5-6	S-2	2.5	4.0	14"	134.2							
						0.8							
4	3	S-2	2.5	4.0	14"								
5						129.5							
						5.2							
BLOWS/FT. DENSITY BLOWS/FT. CONSISTENCY SAMPLE IDENTIFICATION SUMMARY													
0-5	Very Loose	0-3	Very Soft	S - Split Spoon	Overburden:								
6-10	Loose	4-5	Soft	T - Thin Wall Tube	Rock:								
11-30	Medium Dense	6-10	Medium Stiff	U - Undisturbed Piston	Samples:								
31-50	Dense	11-15	Stiff	C - Diamond Core									
51+	Very Dense	16-30	Very Stiff	W - Wash Sample									
		31+	Hard	See Remarks			BORING SB-14						

TEST BORING LOG										BORING SB-15			
CENTURY ENGINEERING										PROJECT : Bacon Ridge			
										CLIENT : Anne Arundel County			
										CONTRACTOR : DTCI			
GROUNDWATER DEPTH (ft) OF:										EQUIPMENT CASING SAMPLER CORE		CONTRACT NO. : 00181120.09	
Date	Time	Water	Casing	Hole	Type	HSA	S			SHEET NO. : 1 of 1	NORTHING : 501117		
8/10/23	0 Hr	Dry		1.5	Size I.D.:	4-1/4"	2"			EASTING : 1416484	ELEVATION : 142		
					Hammer Wt.:	140	---			DATE START : 8-10-23	DATE END : 8-10-23		
					Hammer Fall:	30	---			DRILLER : DTCI	INSPECTOR : C. Stouten		
FIELD CLASSIFICATION AND REMARKS													
Depth in Feet	Strata Change (Drill) (min/ft)	Case Blows Per 6" (RGD%)	Sampler Blows Per 6" (RGD%)	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/Depth (ft)	Topsoil						
2	8	S-1	0.0	1.5	16"	141.2							
						0.3							
3	2	S-2	1.5	3.0	16"	141.3							
						0.7							
4	4	S-3	3.0	4.5	20"								
5						137.5							
						4.5							
BLOWS/FT. DENSITY BLOWS/FT. CONSISTENCY SAMPLE IDENTIFICATION SUMMARY													
0-5	Very Loose	0-3	Very Soft	S - Split Spoon	Overburden:								
6-10	Loose	4-5	Soft	T - Thin Wall Tube	Rock:								
11-30	Medium Dense	6-10	Medium Stiff	U - Undisturbed Piston	Samples:								
31-50	Dense	11-15	Stiff	C - Diamond Core									
51+	Very Dense	16-30	Very Stiff	W - Wash Sample									
		31+	Hard	See Remarks			BORING SB-15						

TEST BORING LOG										BORING SB-16			
CENTURY ENGINEERING										PROJECT : Bacon Ridge			
										CLIENT : Anne Arundel County			
										CONTRACTOR : DTCI			
GROUNDWATER DEPTH (ft) OF:										EQUIPMENT CASING SAMPLER CORE		CONTRACT NO. : 00181120.09	
Date	Time	Water	Casing	Hole	Type	HSA	S			SHEET NO. : 1 of 1	NORTHING : 500984		
8/10/23	0 Hr	Dry		1.2	Size I.D.:	4-1/4"	2"			EASTING : 1416575	ELEVATION : 144		
					Hammer Wt.:	140	---			DATE START : 8-10-23	DATE END : 8-10-23		
					Hammer Fall:	30	---			DRILLER : DTCI	INSPECTOR : C. Stouten		
FIELD CLASSIFICATION AND REMARKS													
Depth in Feet	Strata Change (Drill) (min/ft)	Case Blows Per 6" (RGD%)	Sampler Blows Per 6" (RGD%)	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/Depth (ft)	Topsoil						
2	3	S-1	0.0	1.5	15"	143.7							
						0.3							
3	6	S-2	1.5	3.0	18"								
4	3	S-3	3.0	4.5	16"								
5						139.5							
						4.5							
BLOWS/FT. DENSITY BLOWS/FT. CONSISTENCY SAMPLE IDENTIFICATION SUMMARY													
0-5	Very Loose	0-3	Very Soft	S - Split Spoon	Overburden:								
6-10	Loose	4-5	Soft	T - Thin Wall Tube	Rock:								
11-30	Medium Dense	6-10	Medium Stiff	U - Undisturbed Piston	Samples:								
31-50	Dense	11-15	Stiff	C - Diamond Core									
51+	Very Dense	16-30	Very Stiff	W - Wash Sample									
		31+	Hard	See Remarks			BORING SB-16						

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DATE: 6/21/2024

REVISED	APPROVED	DATE	APPROVED	DATE	SCALE	AS SHOWN	CONSTRUCTION DOCUMENTS
DATE	BY		DATE		DRAWN BY	LMV/RDT	
	CHEF ENGINEER		PROJECT MANAGER		CHECKED BY	MJP/AJD	
	APPROVED	DATE	APPROVED	DATE	SHEET	29 OF 77	

PROJECT NO.: P588001  
DATE: 6/7/2024  
2nd Tax District  
Anne Arundel Co., MD.

Soil Boring Logs  
Severn Chapel Area  
of the Bacon Ridge Natural Area

24TMP-026983



TEST BORING LOG										BORING SB-17		
GROUNDWATER			DEPTH (ft) OF:			EQUIPMENT		CASING SAMPLER CORE		CONTRACT NO.: 00181120.09		
Date	Time	Water	Casing	Hole	Type:	HSA	S			SHEET NO. : 1 of 1	PROJECT : Bacon Ridge	
8/10/23	0 Hr	Dry		2.3	Size I.D.:	4-1/4"	2"			NORTHING : 500782 <td colspan="2">CLIENT : Anne Arundel County</td>	CLIENT : Anne Arundel County	
					Hammer WL:	140	---			EASTING : 1416704 <td colspan="2">CONTRACTOR : DTCl</td>	CONTRACTOR : DTCl	
					Hammer Fall:	30	---			DATE START : 8-10-23 <td colspan="2"></td>		
										END : 8-10-23 <td colspan="2"></td>		
										DRILLER : DTCl <td colspan="2"></td>		
										INSPECTOR : C. Stouten <td colspan="2"></td>		

FIELD CLASSIFICATION AND REMARKS										
Depth in Feet	Case Blows (min/ft)	Strata Change (ft)	Sampler Blows (per 6" ROD%)	Sample Number	Sample Depth Range (ft)	Sample Recovery (ft)	Elevation/Depth (ft)	FIELD CLASSIFICATION AND REMARKS		
0.0	1.5	0.0	S-1	1	0.0 - 1.5	16"	161.5	Brown, moist, very loose, Silty SAND (sm)		
2.3	4.0	2.3	S-2	1	2.3 - 4.0	17"	161.5	trace organics		
4.0	5.5	4.0	S-3	1	4.0 - 5.5	19"	141.5			

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLE IDENTIFICATION	SUMMARY
0-5	Very Loose	0-3	Very Soft	S - Split Spoon	Overburden:
6-10	Loose	4-5	Soft	T - Thin Wall Tube	Rock:
11-30	Medium Dense	6-10	Medium Stiff	U - Undisturbed Piston	Samples:
31-50	Dense	11-15	Stiff	C - Diamond Core	
51+	Very Dense	16-30	Very Stiff	W - Wash Sample	
		31+	Hard	- See Remarks	BORING SB-17

TEST BORING LOG										BORING SB-18		
GROUNDWATER			DEPTH (ft) OF:			EQUIPMENT		CASING SAMPLER CORE		CONTRACT NO.: 00181120.09		
Date	Time	Water	Casing	Hole	Type:	HSA	S			SHEET NO. : 1 of 1	PROJECT : Bacon Ridge	
8/10/23	0 Hr	Dry		1.4	Size I.D.:	4-1/4"	2"			NORTHING : 500599 <td colspan="2">CLIENT : Anne Arundel County</td>	CLIENT : Anne Arundel County	
					Hammer WL:	140	---			EASTING : 1416799 <td colspan="2">CONTRACTOR : DTCl</td>	CONTRACTOR : DTCl	
					Hammer Fall:	30	---			DATE START : 8-10-23 <td colspan="2"></td>		
										END : 8-10-23 <td colspan="2"></td>		
										DRILLER : DTCl <td colspan="2"></td>		
										INSPECTOR : C. Stouten <td colspan="2"></td>		

FIELD CLASSIFICATION AND REMARKS										
Depth in Feet	Case Blows (min/ft)	Strata Change (ft)	Sampler Blows (per 6" ROD%)	Sample Number	Sample Depth Range (ft)	Sample Recovery (ft)	Elevation/Depth (ft)	FIELD CLASSIFICATION AND REMARKS		
0.0	1.5	0.0	S-1	1	0.0 - 1.5	17"	159.5	Light brown, moist, very loose to loose, Silty SAND (sm)		
1.5	3.0	1.5	S-2	2	1.5 - 3.0	18"	159.5			
3.0	4.5	3.0	S-3	2	3.0 - 4.5	18"	159.5			

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLE IDENTIFICATION	SUMMARY
0-5	Very Loose	0-3	Very Soft	S - Split Spoon	Overburden:
6-10	Loose	4-5	Soft	T - Thin Wall Tube	Rock:
11-30	Medium Dense	6-10	Medium Stiff	U - Undisturbed Piston	Samples:
31-50	Dense	11-15	Stiff	C - Diamond Core	
51+	Very Dense	16-30	Very Stiff	W - Wash Sample	
		31+	Hard	- See Remarks	BORING SB-18

TEST BORING LOG										BORING SB-19		
GROUNDWATER			DEPTH (ft) OF:			EQUIPMENT		CASING SAMPLER CORE		CONTRACT NO.: 00181120.09		
Date	Time	Water	Casing	Hole	Type:	HSA	S			SHEET NO. : 1 of 1	PROJECT : Bacon Ridge	
8/10/23	0 Hr	Dry		1.5	Size I.D.:	4-1/4"	2"			NORTHING : 500432 <td colspan="2">CLIENT : Anne Arundel County</td>	CLIENT : Anne Arundel County	
					Hammer WL:	140	---			EASTING : 1416929 <td colspan="2">CONTRACTOR : DTCl</td>	CONTRACTOR : DTCl	
					Hammer Fall:	30	---			DATE START : 8-10-23 <td colspan="2"></td>		
										END : 8-10-23 <td colspan="2"></td>		
										DRILLER : DTCl <td colspan="2"></td>		
										INSPECTOR : C. Stouten <td colspan="2"></td>		

FIELD CLASSIFICATION AND REMARKS										
Depth in Feet	Case Blows (min/ft)	Strata Change (ft)	Sampler Blows (per 6" ROD%)	Sample Number	Sample Depth Range (ft)	Sample Recovery (ft)	Elevation/Depth (ft)	FIELD CLASSIFICATION AND REMARKS		
0.0	1.5	0.0	S-1	1	0.0 - 1.5	13"	163.3	Topsoil		
1.5	3.0	1.5	S-2	2	1.5 - 3.0	15"	163.3	Sand and Gravel base		
3.0	4.5	3.0	S-3	3	3.0 - 4.5	18"	161.8	Brown, moist, loose, Clayey SAND (sc)		
4.5		4.5		3	4.5 - 5.5	18"	159.5	Brown, moist, loose, Silty SAND (sm)		

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLE IDENTIFICATION	SUMMARY
0-5	Very Loose	0-3	Very Soft	S - Split Spoon	Overburden:
6-10	Loose	4-5	Soft	T - Thin Wall Tube	Rock:
11-30	Medium Dense	6-10	Medium Stiff	U - Undisturbed Piston	Samples:
31-50	Dense	11-15	Stiff	C - Diamond Core	
51+	Very Dense	16-30	Very Stiff	W - Wash Sample	
		31+	Hard	- See Remarks	BORING SB-19

TEST BORING LOG										BORING SB-20		
GROUNDWATER			DEPTH (ft) OF:			EQUIPMENT		CASING SAMPLER CORE		CONTRACT NO.: 00181120.09		
Date	Time	Water	Casing	Hole	Type:	HSA	S			SHEET NO. : 1 of 1	PROJECT : Bacon Ridge	
8/10/23	0 Hr	Dry		1.5	Size I.D.:	4-1/4"	2"			NORTHING : 500251 <td colspan="2">CLIENT : Anne Arundel County</td>	CLIENT : Anne Arundel County	
					Hammer WL:	140	---			EASTING : 1416942 <td colspan="2">CONTRACTOR : DTCl</td>	CONTRACTOR : DTCl	
					Hammer Fall:	30	---			DATE START : 8-10-23 <td colspan="2"></td>		
										END : 8-10-23 <td colspan="2"></td>		
										DRILLER : DTCl <td colspan="2"></td>		
										INSPECTOR : C. Stouten <td colspan="2"></td>		

FIELD CLASSIFICATION AND REMARKS										
Depth in Feet	Case Blows (min/ft)	Strata Change (ft)	Sampler Blows (per 6" ROD%)	Sample Number	Sample Depth Range (ft)	Sample Recovery (ft)	Elevation/Depth (ft)	FIELD CLASSIFICATION AND REMARKS		
0.0	1.5	0.0	S-1	1	0.0 - 1.5	12"	167.8	Topsoil		
1.5	3.0	1.5	S-2	3	1.5 - 3.0	10"	167.8	Sand and Gravel base		
3.0	4.0	3.0	S-3	3	3.0 - 4.0	10"	162.5	Brown, moist, loose, Silty SAND (sm)		
4.0	5.5	4.0	S-3	4	4.0 - 5.5	13"	162.5	trace c Gravel		

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLE IDENTIFICATION	SUMMARY
0-5	Very Loose	0-3	Very Soft	S - Split Spoon	Overburden:
6-10	Loose	4-5	Soft	T - Thin Wall Tube	Rock:
11-30	Medium Dense	6-10	Medium Stiff	U - Undisturbed Piston	Samples:
31-50	Dense	11-15	Stiff	C - Diamond Core	
51+	Very Dense	16-30	Very Stiff	W - Wash Sample	
		31+	Hard	- See Remarks	BORING SB-20

TEST BORING LOG										BORING SB-21		
GROUNDWATER			DEPTH (ft) OF:			EQUIPMENT		CASING SAMPLER CORE		CONTRACT NO.: 00181120.09		
Date	Time	Water	Casing	Hole	Type:	HSA	S			SHEET NO. : 1 of 2	PROJECT : Bacon Ridge	
8/11/23	0 Hr	Dry		9.5	Size I.D.:	4-1/4"	2"			NORTHING : 500946 <td colspan="2">CLIENT : Anne Arundel County</td>	CLIENT : Anne Arundel County	
					Hammer WL:	140	---			EASTING : 1416318 <td colspan="2">CONTRACTOR : DTCl</td>	CONTRACTOR : DTCl	
					Hammer Fall:	30	---			DATE START : 8-11-23 <td colspan="2"></td>		
										END : 8-11-23 <td colspan="2"></td>		
										DRILLER : DTCl <td colspan="2"></td>		
										INSPECTOR : C. Stouten <td colspan="2"></td>		

FIELD CLASSIFICATION AND REMARKS										
Depth in Feet	Case Blows (min/ft)	Strata Change (ft)	Sampler Blows (per 6" ROD%)	Sample Number	Sample Depth Range (ft)	Sample Recovery (ft)	Elevation/Depth (ft)	FIELD CLASSIFICATION AND REMARKS		
0.0	1.5	0.0	S-1	1	0.0 - 1.5	14"	141.4	Topsoil		
1.5	4.0	1.5	S-2	1	1.5 - 4.0	20"	141.4	Brown, moist to wet, very loose to loose, Silty SAND (sm), trace organics		
4.0	6.5	4.0	S-3	2	4.0 - 6.5	17"	141.4			
6.5	9.0	6.5	S-4	1	6.5 - 9.0	18"	141.4	light brown to gray		
9.0	11.5	9.0	S-5	1	9.0 - 11.5	18"	141.4			
11.5	15.0	11.5	S-6	2	11.5 - 15.0	12"	141.4			
15.0	20.0	15.0	S-7	4	15.0 - 20.0	16"	141.4	dark brown		

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLE IDENTIFICATION	SUMMARY
0-5	Very Loose	0-3	Very Soft	S - Split Spoon	Overburden:
6-10	Loose	4-5	Soft	T - Thin Wall Tube	Rock:
11-30	Medium Dense	6-10	Medium Stiff	U - Undisturbed Piston	Samples:
31-50	Dense	11-15	Stiff	C - Diamond Core	
51+	Very Dense	16-30	Very Stiff	W - Wash Sample	
		31+	Hard	- See Remarks	BORING SB-21

TEST BORING LOG										BORING SB-21		
GROUNDWATER			DEPTH (ft) OF:			EQUIPMENT		CASING SAMPLER CORE		CONTRACT NO.: 00181120.09		
Date	Time	Water	Casing	Hole	Type:	HSA	S			SHEET NO. : 2 of 2	PROJECT : Bacon Ridge	
					Size I.D.:	4-1/4"	2"			NORTHING : 500933 <td colspan="2">CLIENT : Anne Arundel County</td>	CLIENT : Anne Arundel County	
					Hammer WL:	140	---			EASTING : 1416294 <td colspan="2">CONTRACTOR : DTCl</td>	CONTRACTOR : DTCl	
					Hammer Fall:	30	---			DATE START : 8-11-23 <td colspan="2"></td>		
										END : 8-11-23 <td colspan="2"></td>		
										DRILLER : DTCl <td colspan="2"></td>		
										INSPECTOR : C. Stouten <td colspan="2"></td>		

FIELD CLASSIFICATION AND REMARKS										
Depth in Feet	Case Blows (min/ft)	Strata Change (ft)	Sampler Blows (per 6" ROD%)	Sample Number	Sample Depth Range (ft)	Sample Recovery (ft)	Elevation/Depth (ft)	FIELD CLASSIFICATION AND REMARKS		
23.5	25.0	23.5	S-8	1	23.5 - 25.0	18"	112.0	dark gray		
28.5	30.0	28.5	S-9	1	28.5 - 30.0	18"	112.0	Groundwater on rods @ 27 ft		

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLE IDENTIFICATION	SUMMARY
0-5	Very Loose	0-3	Very Soft	S - Split Spoon	Overburden:
6-10	Loose	4-5	Soft	T - Thin Wall Tube	Rock:
11-30	Medium Dense	6-10	Medium Stiff	U - Undisturbed Piston	Samples:
31-50	Dense	11-15	Stiff	C - Diamond Core	
51+	Very Dense	16-30	Very Stiff	W - Wash Sample	
		31+	Hard	- See Remarks	BORING SB-21

TEST BORING LOG										BORING SB-22		
GROUNDWATER			DEPTH (ft) OF:			EQUIPMENT		CASING SAMPLER CORE		CONTRACT NO.: 00181120.09		
Date	Time	Water	Casing	Hole	Type:	HSA	S			SHEET NO. : 1 of 2	PROJECT : Bacon Ridge	
8/11/23	0 Hr	Dry		7	Size I.D.:	4-1/4"	2"			NORTHING : 500933 <td colspan="2">CLIENT : Anne Arundel County</td>	CLIENT : Anne Arundel County	
					Hammer WL:	140	---			EASTING : 1416294 <td colspan="2">CONTRACTOR : DTCl</td>	CONTRACTOR : DTCl	
					Hammer Fall:	30	---			DATE START : 8-11-23 <td colspan="2"></td>		
										END : 8-11-23 <td colspan="2"></td>		
										DRILLER : DTCl <td colspan="2"></td>		
										INSPECTOR : C. Stouten <td colspan="2"></td>		

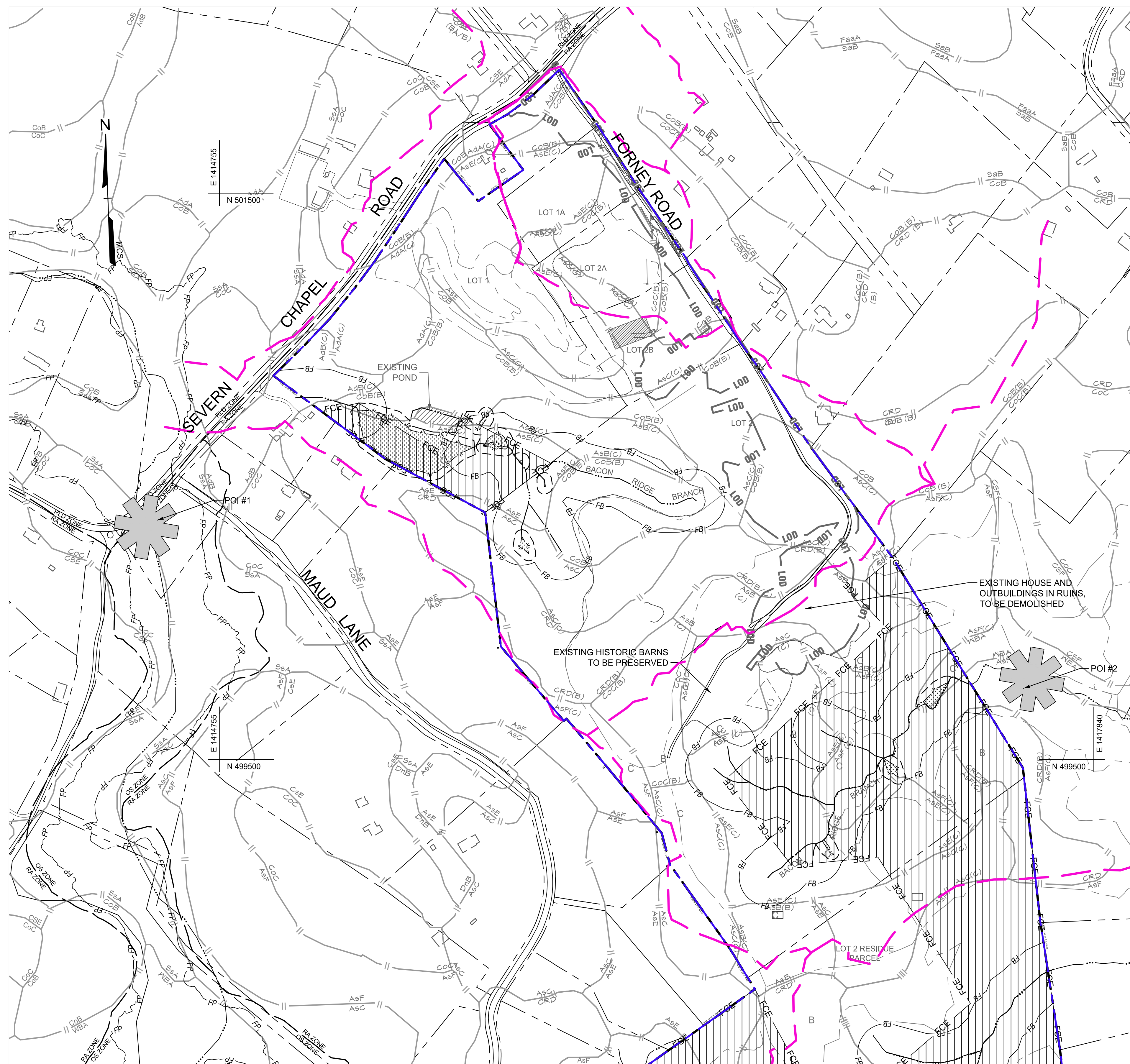
FIELD CLASSIFICATION AND REMARKS										
Depth in Feet	Case Blows (min/ft)	Strata Change (ft)	Sampler Blows (per 6" ROD%)	Sample Number	Sample Depth Range (ft)	Sample Recovery (ft)	Elevation/Depth (ft)	FIELD CLASSIFICATION AND REMARKS		
0.0	1.5	0.0	S-1	1	0.0 - 1.5	15"	139.0	Topsoil		
1.5	4.0	1.5	S-2	1	1.5 - 4.0	18"	139.0	Brown, moist to wet, very loose to medium dense, Silty SAND (sm), trace organics		
4.0	6.5	4.0	S-3	3	4.0 - 6.5	15"	139.0	trace organics		
6.5	9.0	6.5	S-4	2	6.5 - 9.0	15"	139.0			
9.0	11.5	9.0	S-5	1	9.0 - 11.5	6"	139.0			
11.5	15.0	11.5	S-6	4	11.5 - 15.0	18"	139.0	dark gray		
15.0	20.0	15.0	S-7	1	15.0 - 20.0	18"	139.0	Groundwater on rods @ 18 ft		

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLE IDENTIFICATION
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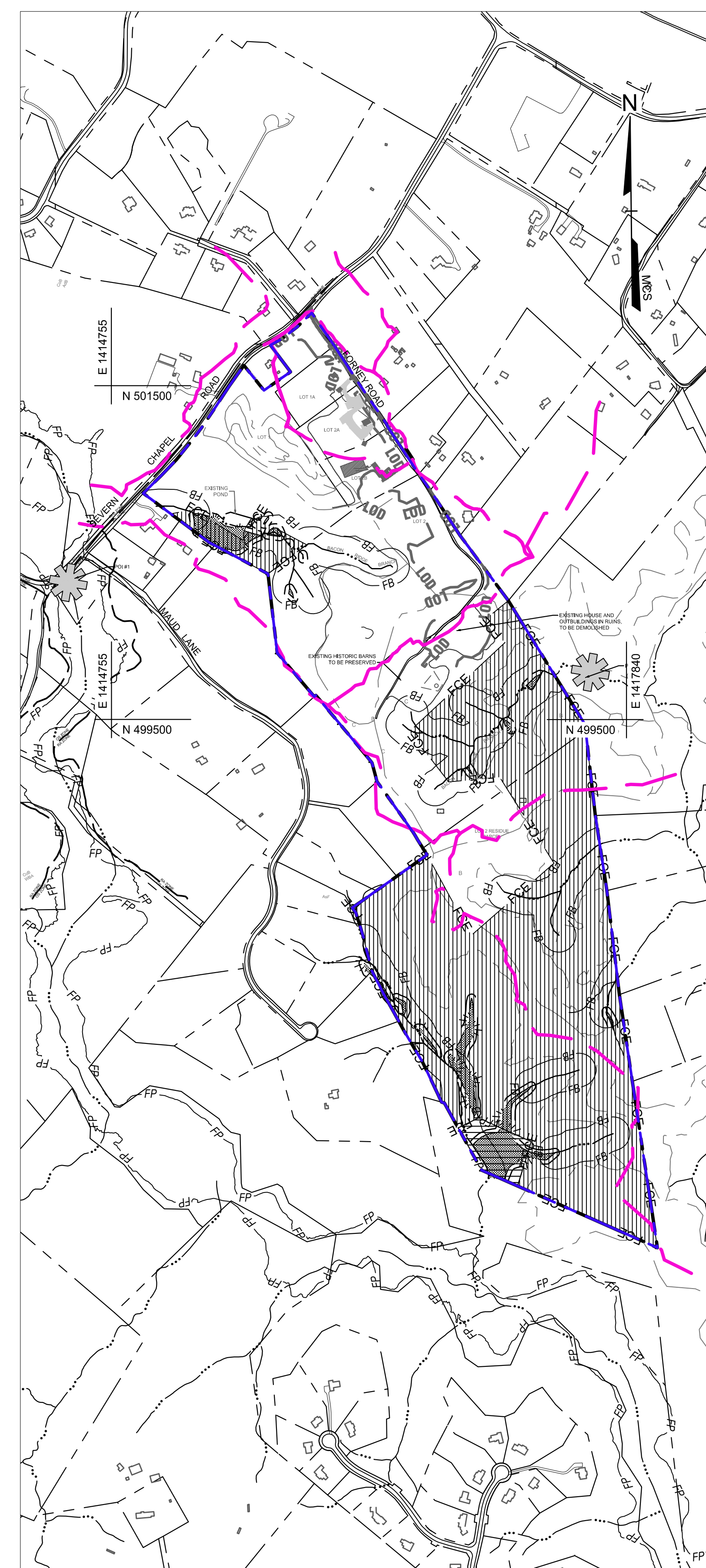


T:\2023\Facilities\20235237.00 1a Bacon Ridge construction drawings phase 1\CIVIL\CADD\Drawings\B\_Construction Documents\20235237.00 1A (CP-24)\SWM\_Existing Conditions DA Map.dwg Jun 21, 2024 10:41 am kdarling



PLAN

SCALE: 1" = 200'



PLAN

SCALE: 1" = 500'

LEGEND

- Property Line
- Adjoiner / Lot Line
- - - - - Existing Minor Contour
- - - - - Existing Major Contour
- - - - - Existing Edge of Road/Paving
- UuB (D) Hydrologic Soil Group
- UuC (D) Soil Line
- SD EX. 18" D Existing Storm Drain
- W EX. 12" W Existing Water
- SAN EX. 8" S Existing Sewer
- G EX. 8" G Existing Gas Line
- E Existing Underground Electric Line
- OHE Existing Overhead Electric Line
- C Existing Conduit Line
- FO Existing Fiber Optic Line
- CTV Existing Cable Line
- T Existing Telephone Line
- X - X - X Existing Chain Link Fence
- - - - - Existing Split Rail Fence
- - - - - Existing Trail
- - - - - Existing Tree Line
- Existing Building
- Non-Tidal Wetlands and 25' Buffer
- FB 100' Stream Buffer
- FP FEMA 100-Year Flood Plain
- Chesapeake Bay Critical Area Limits
- Water Edge or Stream Centerline
- Zoning Line
- Existing Drainage Area Lines
- Existing Forest Conservation Easement
- LOD SWM LOD

24TMP-026983

**CENTURY ENGINEERING**  
 A Kleinfelder Company  
 10710 Gilroy Road, Hunt Valley, MD 21031  
 Phone: 443.589.2400 www.centuryeng.com

DATE: 6/21/2024

LICENSE NO. 32574

REVISED	DATE	BY	APPROVED	DATE

APPROVED	DATE	APPROVED	DATE

ANNE ARUNDEL COUNTY  
 DEPARTMENT OF PUBLIC WORKS

SCALE	AS SHOWN

DRAWN BY	CHECKED BY
KAD	MJP/AJD

SHEET	OF
31	77

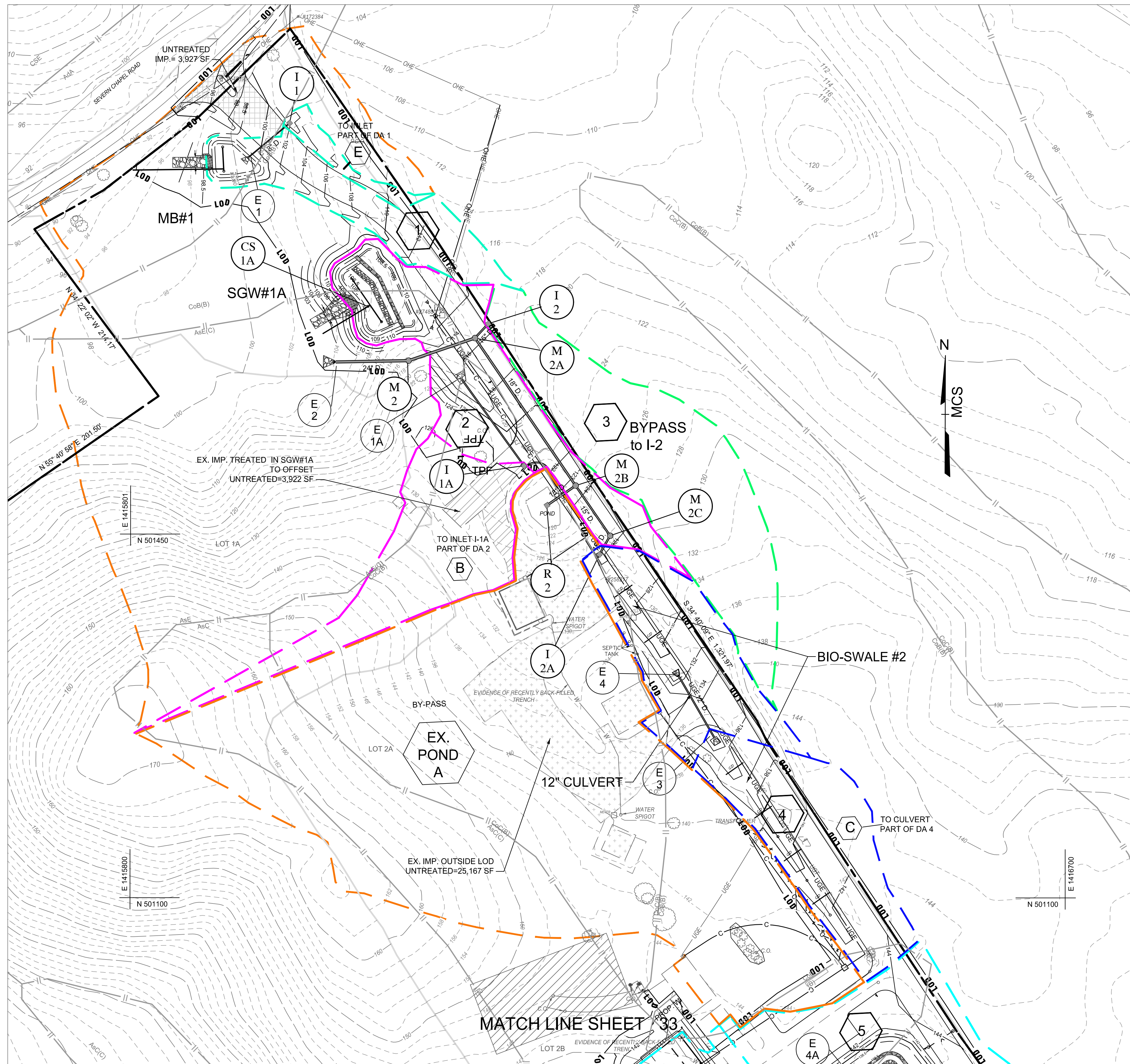
  

PROJECT NO.:	DATE:
P588001	6/7/2024

G02020077  
 CONSTRUCTION DOCUMENTS  
**SWM Existing Conditions DA Map**  
**Severn Chapel Area**  
 of the Bacon Ridge Natural Area  
 2nd Tax District  
 Anne Arundel Co., MD. Tax Map 37, Grid 11, Parcel 86



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**LEGEND**

- Property Line
- Adjoiner / Lot Line
- - - - - Existing Minor Contour
- - - - - Existing Major Contour
- - - - - Existing Edge of Road/Paving
- UuB (D)
- UuC (D)
- Soil Line
- SD - EX. 18" D Existing Storm Drain
- W - EX. 12" W Existing Water
- SAN - EX. 8" S Existing Sewer
- G - EX. 8" G Existing Gas Line
- E Existing Underground Electric Line
- OHE Existing Overhead Electric Line
- C Existing Conduit Line
- FO Existing Fiber Optic Line
- CTV Existing Cable Line
- T Existing Telephone Line
- X - X - X Existing Chain Link Fence
- - - - - Existing Split Rail Fence
- - - - - Existing Trail
- - - - - Existing Tree Line
- - - - - Existing Building
- - - - - Non-Tidal Wetlands and 25' Buffer
- FB 100' Stream Buffer
- FP FEMA 100-Year Flood Plain
- - - - - Chesapeake Bay Critical Area Limits
- - - - - Water Edge or Stream Centerline
- - - - - Drainage Area Line
- 4 Drainage Area

**DRAINAGE AREA MAP**  
SCALE: 1" = 50'

**CENTURY ENGINEERING**  
A Kleinfelder Company  
10710 Gilroy Road, Hunt Valley, MD 21031  
Phone: 443.589.2400 www.centuryeng.com

DATE: 6/21/2024  
  
 LICENSE NO. 32574

REVISED	DATE	BY	APPROVED	DATE

CHIEF ENGINEER	DATE	APPROVED	DATE
ASSISTANT CHIEF ENGINEER	DATE	CHIEF, RIGHT OF WAY	DATE

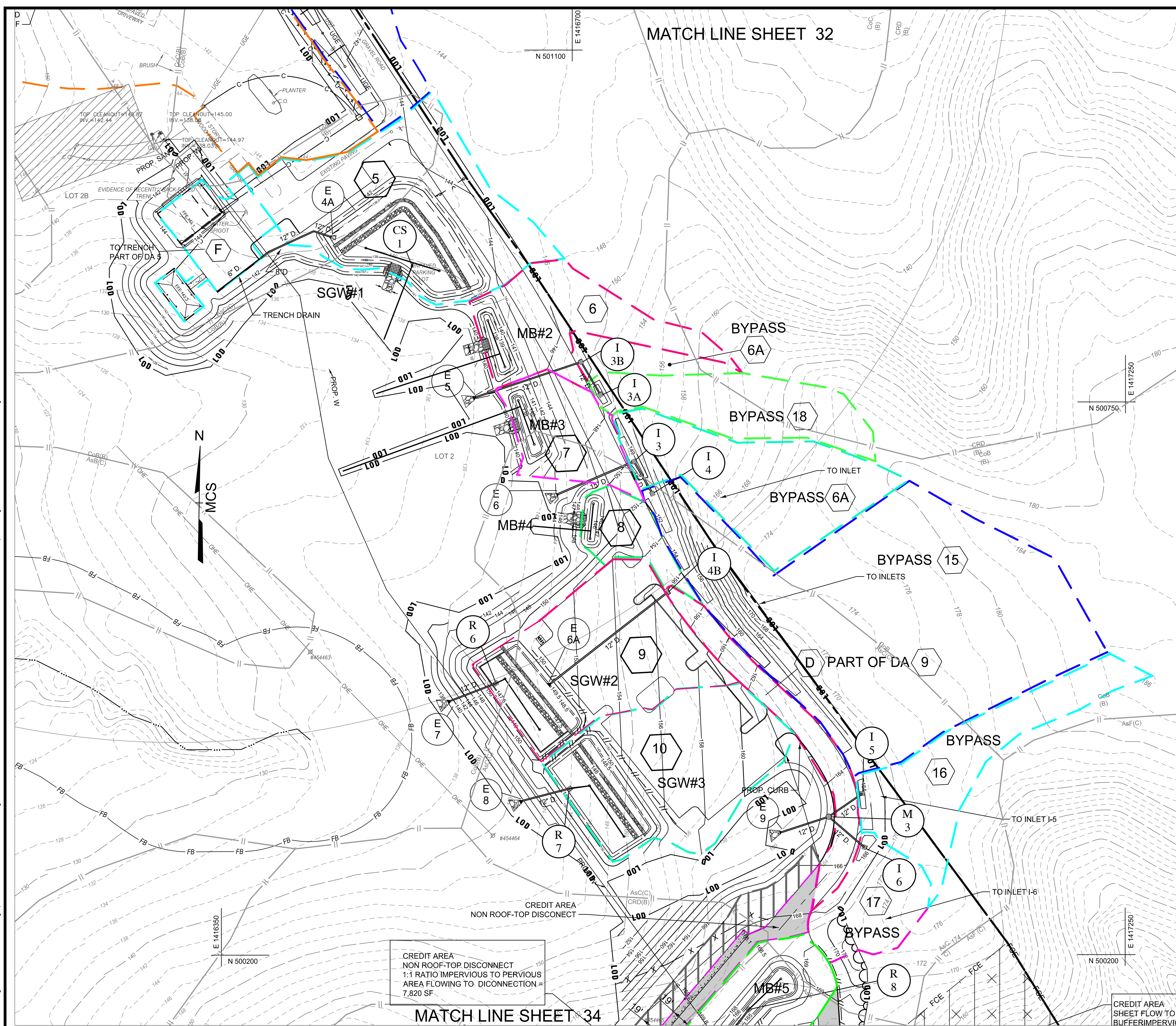
  

SCALE AS SHOWN	DRAWN BY KAD	CHECKED BY MJP/AJD	SHEET 32 OF 77
PROJECT NO.: P588001	DATE: 6/7/2024	PROJECT MANAGER	APPROVED

REFER TO SHEET 2 FOR LEGEND  
 24TMP-026983  
 ANNE ARUNDEL COUNTY  
 DEPARTMENT OF PUBLIC WORKS  
 G02020077  
 CONSTRUCTION DOCUMENTS  
 SWM Proposed Conditions DA Map  
**Severn Chapel Area of the Bacon Ridge Natural Area**  
 2nd Tax District Anne Arundel Co., MD. Tax Map 37, Grid 11, Parcel 86



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**STORM DRAIN DRAINAGE AREAS**

INLET	DA	ACRES	C
I-1	E	0.06	.35
I-2A	4	0.95	.49
R-2	A	3.38	.44
I-2	3	0.80	.35
I-1A	B	0.51	.43
I-4	15 BY-PASS	1.62	.35
I-3	19	0.32	.35
I-5	16	0.42	.35
I-6	17	0.20	.35
I-7	13	0.08	.65
I-8	14	0.38	.65
I-3A	18 BY-PASS	0.32	.35
I-3B	6A BY-PASS	0.10	.35
I-4B	D	0.20	.90
TRENCH	F	0.20	.90

**LEGEND**

- Property Line
- Adjoiner / Lot Line
- Existing Minor Contour
- Existing Major Contour
- Existing Edge of Road/Paving
- Soil Line
- Existing Storm Drain
- Existing Water
- Existing Sewer
- Existing Gas Line
- Existing Underground Electric Line
- Existing Overhead Electric Line
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- Existing Fiber Optic Line
- Existing Cable Line
- Existing Telephone Line
- Existing Chain Link Fence
- Existing Split Rail Fence
- Existing Trail
- Existing Tree Line
- Existing Building
- Non-Tidal Wetlands and 25' Buffer
- 100' Stream Buffer
- FEMA 100-Year Flood Plain
- Chesapeake Bay Critical Area Limits
- Water Edge or Stream Centerline
- Drainage Area Line
- Drainage Area

LOCATION		AREA	ACRES	COEFF.	CA	SUMP	CA	TIME CONC.-MIN.	INTEN.	INTEN.	Q-C.F.S.	PIPE	REMARKS		
From	To	Sub.	Total	"C"	CA	CA	CA	Inlet	Drain	10 Year	15'	Size	Slope	Vel.	Lgth.
I2A	M2B	4	0.95	.49	0.47	0.00		5.0	8.00	7.00	3.76	15"	0.34%	3.1	79'
R-2	M2B	A	3.38	.44	1.49	0.00		10.0	10.0	6.95	6.10	18"	0.97%	5.9	
M2B	M2A	4+A	4.33				1.96	10.0	0.0	6.10	11.96	18"	1.30%	6.8	55'
I2	M2A	3	0.80	.35	0.28	0.00		10.0	10.0	6.95	6.10	15"	0.09%	1.6	19'
M2A	E2	3+A	5.13				2.24	5.0	0.2	5.2	0.00	24"	0.48%	5.0	141'
I1A	E1A	B	0.51	.43	0.22	0.00		5.0	5.0	7.00	1.54	12"	0.19%	2.0	102'
E-3	E-4	C	0.50	.65	0.33	0.00		5.0	5.0	8.00	2.64	12"	0.55%	3.4	68'
I4	I-3	15	1.62	.35	0.57	0.00		10.0	10.0	6.95	2.29	12"	0.41%	2.9	68'
I-3	E6	15+19	1.94	.35	0.11	0.00		5.0	5.0	8.00	7.00	8"	0.29%	2.8	37'
I-5	M-3	16	0.42	.35	0.15	0.00		5.0	5.0	8.00	7.00	12"	0.11%	1.5	41'
I-6	M-3	17	0.20	.35	0.07	0.00		5.0	5.0	8.00	7.00	12"	0.02%	.7	47'
M-3	E-9	17	.62				0.22	5.0	1.1	6.1	0.00	12"	0.18%	1.9	49'
I3A	I3B	18	0.32	.35	0.11	0.00		5.0	5.0	8.00	7.00	8"	0.06%	1.1	107'
I3B	E5	18+6A	0.10	.35	0.04	0.00		5.0	5.0	7.00	2.8	12"	0.08%	1.3	110'
I4B	E6A	D	0.20	.90	0.18	0.00		5.0	5.0	7.00	1.26	12"	0.13%	1.6	148'
I-7	M4	13	0.39	.65	0.25	0.00		5.0	5.0	7.00	1.75	12"	0.24%	2.2	55'
I-8	M4	14	0.11	.65	0.07	0.00		5.0	5.0	7.00	4.0	12"	0.02%	.6	60'
M4	E11	13+14	.50				0.32	5.0	1.6	6.6	0.00	12"	0.36%	2.7	27'
R-8	R-9	11	0.36	.73	0.26	0.00		5.0	5.0	8.00	7.00	12"	0.34%	2.6	234'
R-9	E-10	11+12	.82	.58	0.27	0.00		5.0	5.0	8.00	7.00	12"	0.30%	2.9	159'
I1	E1	E	0.06	.35	0.02	0.00		5.0	5.0	8.00	7.00	8"	0.02%	.5	51'
TRENCH	I-4A	F	0.20	.90	0.12	0.00		5.0	5.0	7.00	3.4	6"	0.02%	4.3	52'

**DRAINAGE AREA MAP**  
SCALE: 1" = 50'

**CENTURY ENGINEERING**  
A Kleinfelder Company  
10710 Gilroy Road, Hunt Valley, MD 21031  
Phone: 443.589.2400 www.centuryeng.com

DATE: 6/21/2024

STATE OF MARYLAND PROFESSIONAL ENGINEER LICENSE NO. 32574

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS

DATE: 6/21/2024

DATE: 6/7/2024

SCALE: AS SHOWN

DRAWN BY: KAD

CHECKED BY: MJP/AJD

SHEET 33 OF 77

PROJECT NO.: P588001

DATE: 6/7/2024

CONSTRUCTION DOCUMENTS

G02020077

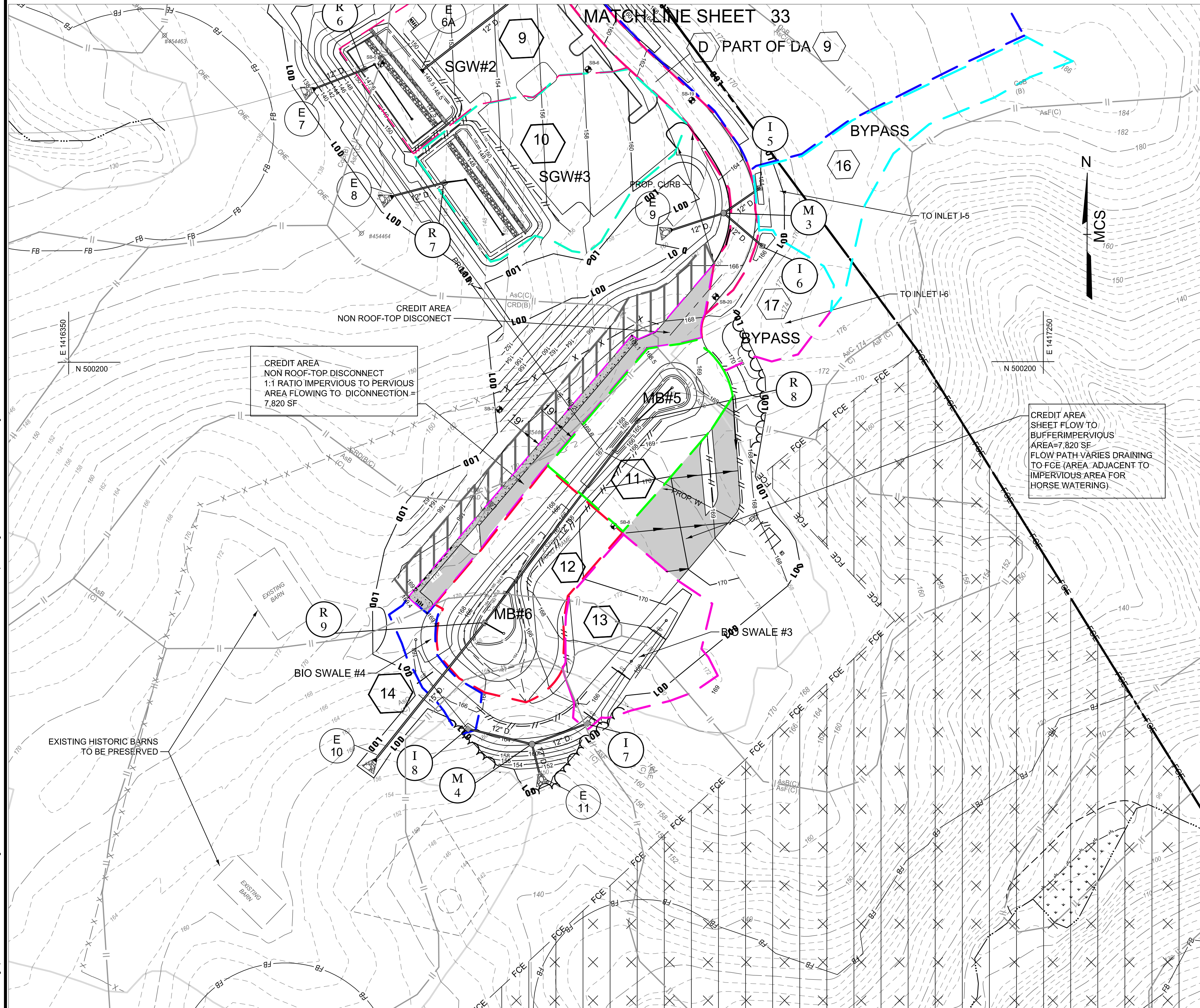
SWM Proposed Conditions DA Map

Severn Chapel Area of the Bacon Ridge Natural Area

2nd Tax District Anne Arundel Co., MD. Tax Map 37, Grid 11, Parcel 86

REFER TO SHEET 2 FOR LEGEND  
24TMP-026983





ESD FACILITY SUMMARY TABLE

DA #	FACILITY TYPE	DA-SF	IMPERVIOUS AREA-SF	REQ.ESD VOLUME-CF	ACTUAL FACILITY VOLUME	ACTUAL 75% TREATED VOLUME*	DESIGN PE	PE TREATED
1	MICRO-BIO #1	16,446	5,246	726	1,136	1,224	1.57	2.65
2	SUBMERGED GRAVEL WETLAND #1A	42,256	10,546	1,354	2,339	3,119	1.40	2.42
4	BIO-SWALE #2	41,328	9,578	1,247	2,360	2,360	1.40	2.65
5	SUBMERGED GRAVEL WETLAND #1	43,128	19,230	2,920	3,783	4,298	1.80	2.33
6	MICRO-BIO #2	15,249	2,842	387	905	733	1.40	2.65
7	MICRO-BIO #3	10,627	2,963	391	931	706	1.47	2.65
8	MICRO-BIO #4	5,674	2,503	380	423	560	1.80	2.65
9	SUBMERGED GRAVEL WETLAND #2	36,117	26,159	4,246	3,982	5,309	2.01	1.89
10	SUBMERGED GRAVEL WETLAND #3	27,441	14,704	2,191	2,452	3,225	1.60	2.01
11	MICRO-BIO #5	16,336	9,790	1,605	1,473	2,072	2.00	2.58
12	MICRO-BIO #6	20,216	7,889	1,217	1,576	1,791	1.80	2.65
13	BIO-SWALE #3	16,960	7,489	1,138	1,676	1,676	1.80	2.65
14	BIO-SWALE #4	4,363	1,657	256	1,090	378	1.80	2.65
		416,737	120,596	18,058	24,126	27,451		

NOTE: THERE IS NO BIO-SWALE#1

\* BASED ON MAX PE=2.65

ESD FACILITY SUMMARY

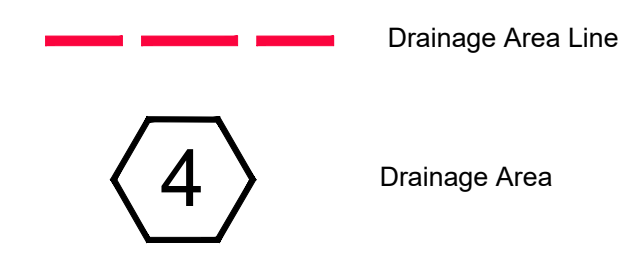
TARGET PE=1.0 BASED ON TOTAL PARK SITE=152.06 AC.  
 PE REQUIRED BASED ON DA AND % IMPERVIOUS TO EACH BMP  
 TOTAL EXISTING IMPERVIOUS AREA=49,830 SF (1.59 ACRES)  
 TOTAL PROPOSED IMPERVIOUS AREA IN SWM LOD=154,638 SF (3.55 ACRES)  
 SWM LOD=9.9 ACRES  
 PROPOSED IMPERVIOUS AREA IN LOD= 129,471 SF (2.97 ACRES)  
 IMPERVIOUS AREA TREATED IN BMP= 120,596 SF (2.77 ACRES)

NON-ROOF TOP DISCONNECT CREDIT  
 IMPERVIOUS AREA= 7,820 SF(0.18 ACRES)  
 PE=1.0  
 SHEET FLOW TO BUFFER CREDIT  
 IMPERVIOUS AREA =7,979 SF (0.18 ACRES)  
 PE=1.0  
 TOTAL IMPERVIOUS AREA TREATED=138,077 SF (3.13 ACRES)  
 IMPERVIOUS AREA UNTREATED IN EX. SWALE= 3,927 SF (0.09 AC.)\*

\* 0.09 ACRES OF EXISTING IMPERVIOUS AREA PREVIOUSLY DRAINING TO EXISTING ON-SITE POND TREATED TO OFFSET THE UNTREATED IMPERVIOUS AT THE ENTRANCE.

DRAINAGE AREA MAP

SCALE: 1" = 50'



REFER TO SHEET 2 FOR LEGEND  
 24TMP-026983

**CENTURY ENGINEERING**  
 A Kleinfelder Company  
 10710 Gilroy Road, Hunt Valley, MD 21031  
 Phone: 443.589.2400 www.centuryeng.com

DATE: 6/21/2024

LICENSE NO. 32574

ANNE ARUNDEL COUNTY  
 DEPARTMENT OF PUBLIC WORKS

REVISED DATE	BY	APPROVED DATE	DATE	APPROVED DATE	DATE

SCALE AS SHOWN  
 DRAWN BY KAD  
 CHECKED BY MJP/AJD  
 SHEET 34 OF 77  
 PROJECT NO.: P588001  
 DATE: 6/7/2024

G02020077  
 CONSTRUCTION DOCUMENTS  
 SWM Proposed Conditions DA Map  
**Severn Chapel Area**  
 of the Bacon Ridge Natural Area  
2nd Tax District Anne Arundel Co., MD. Tax Map 37, Grid 11, Parcel 86

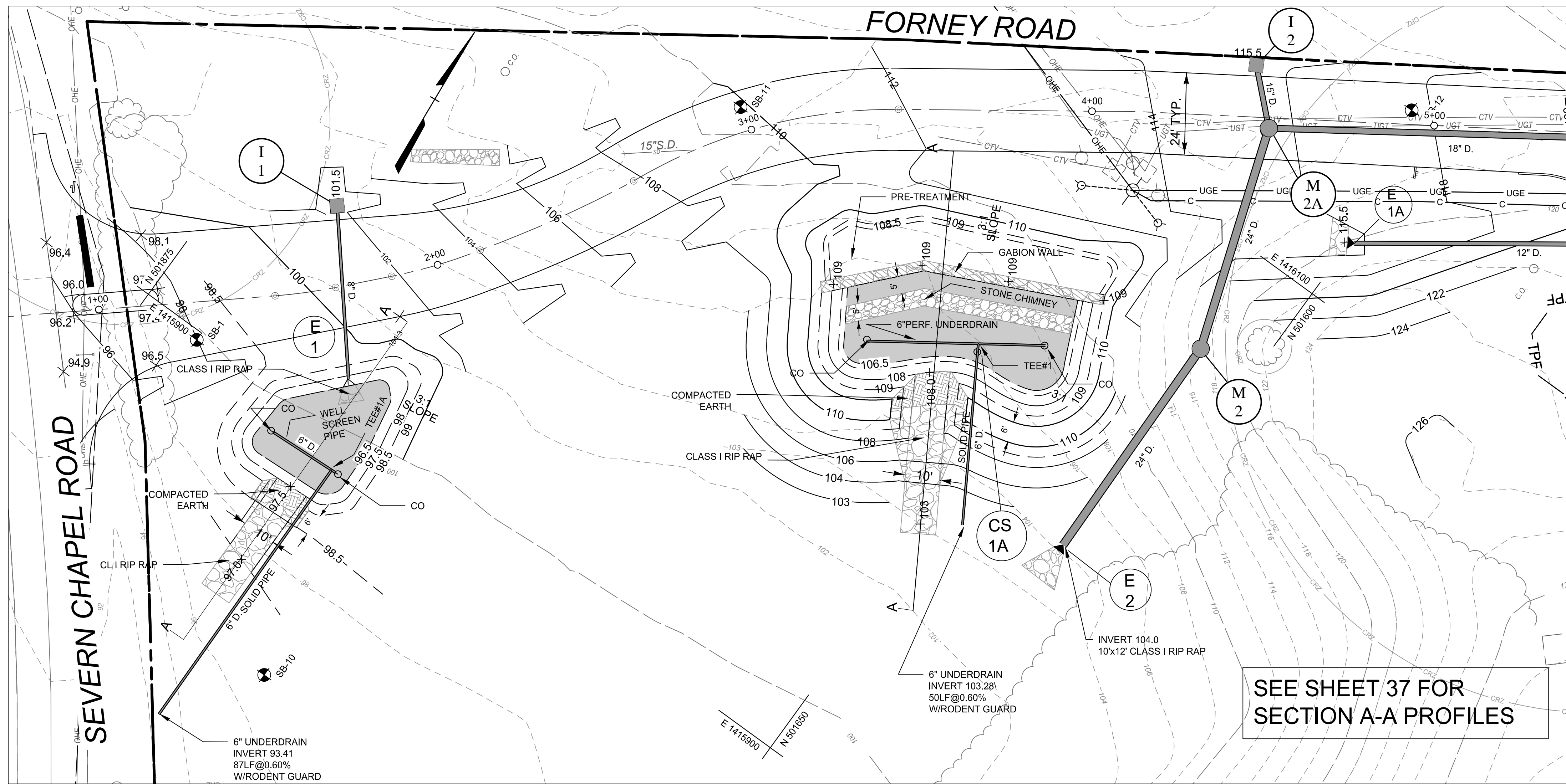
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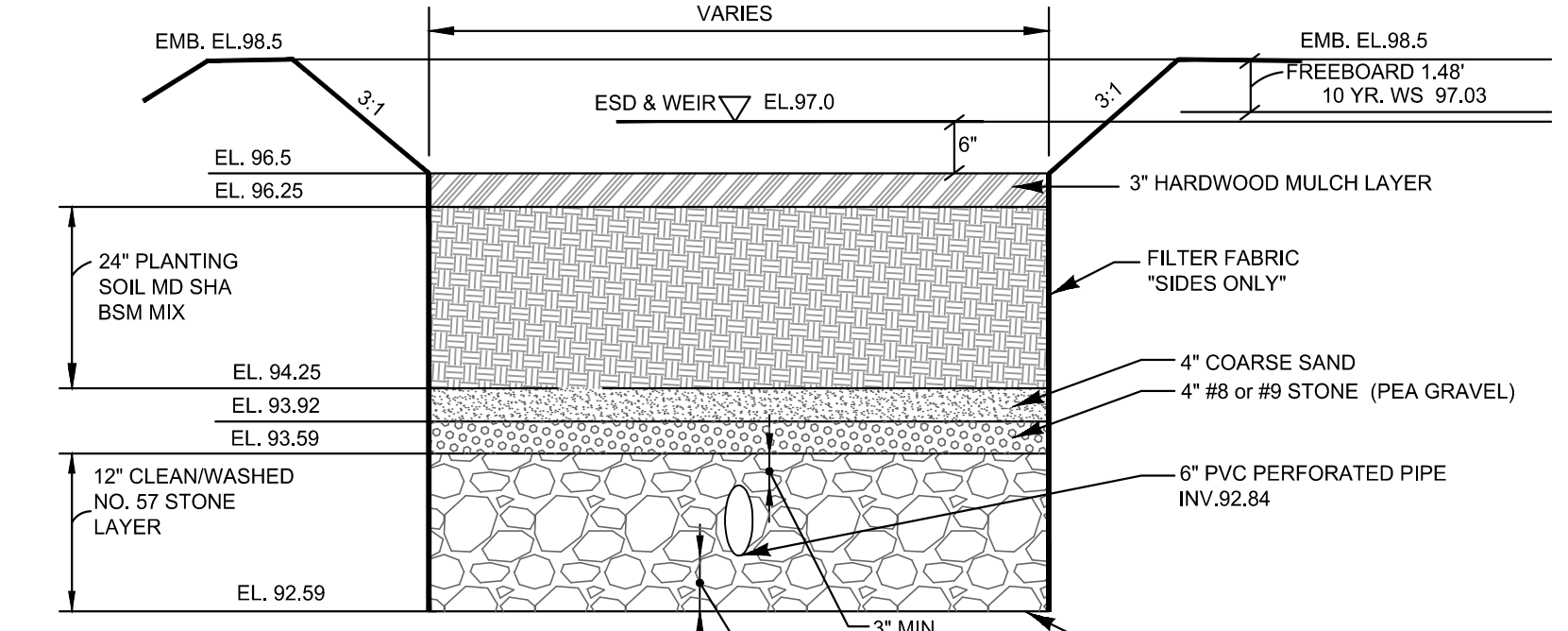
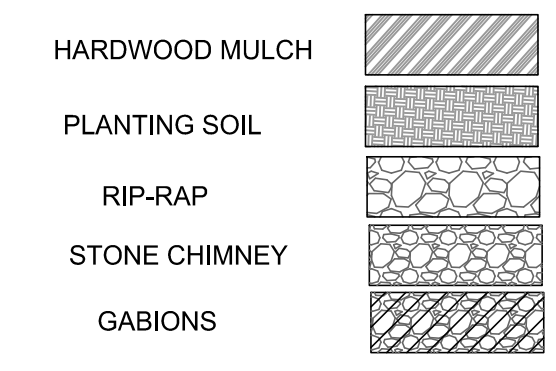




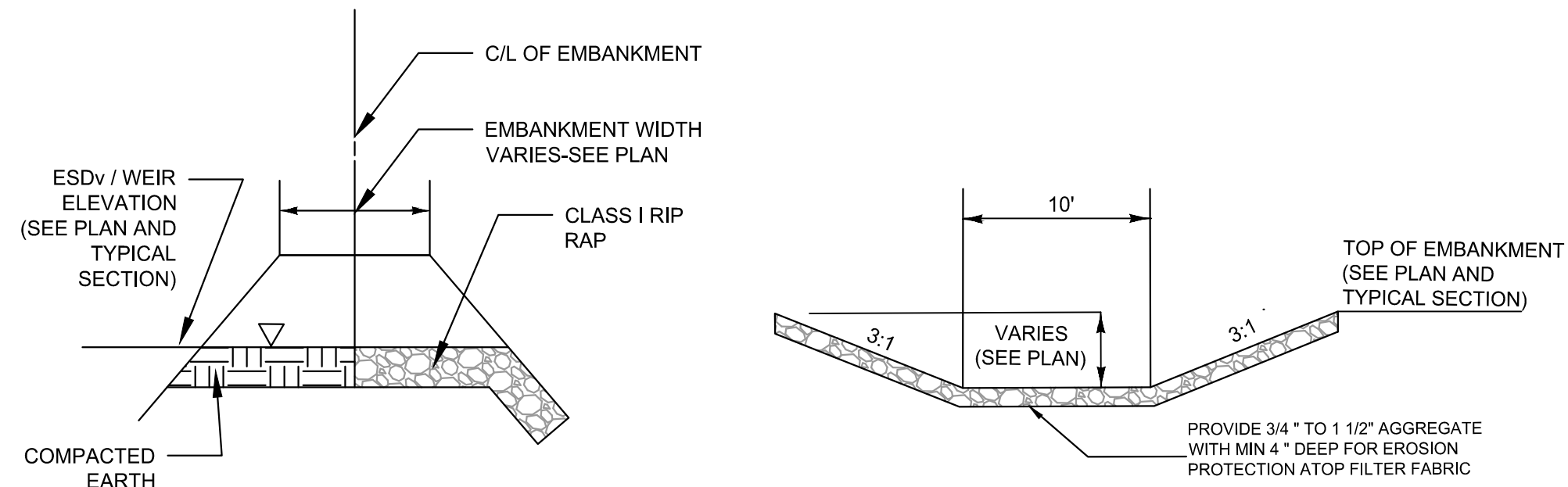
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**ESDv FACILITY LEGEND**



**TYPICAL SECTION  
MICRO BIORETENTION 1**  
NOT TO SCALE

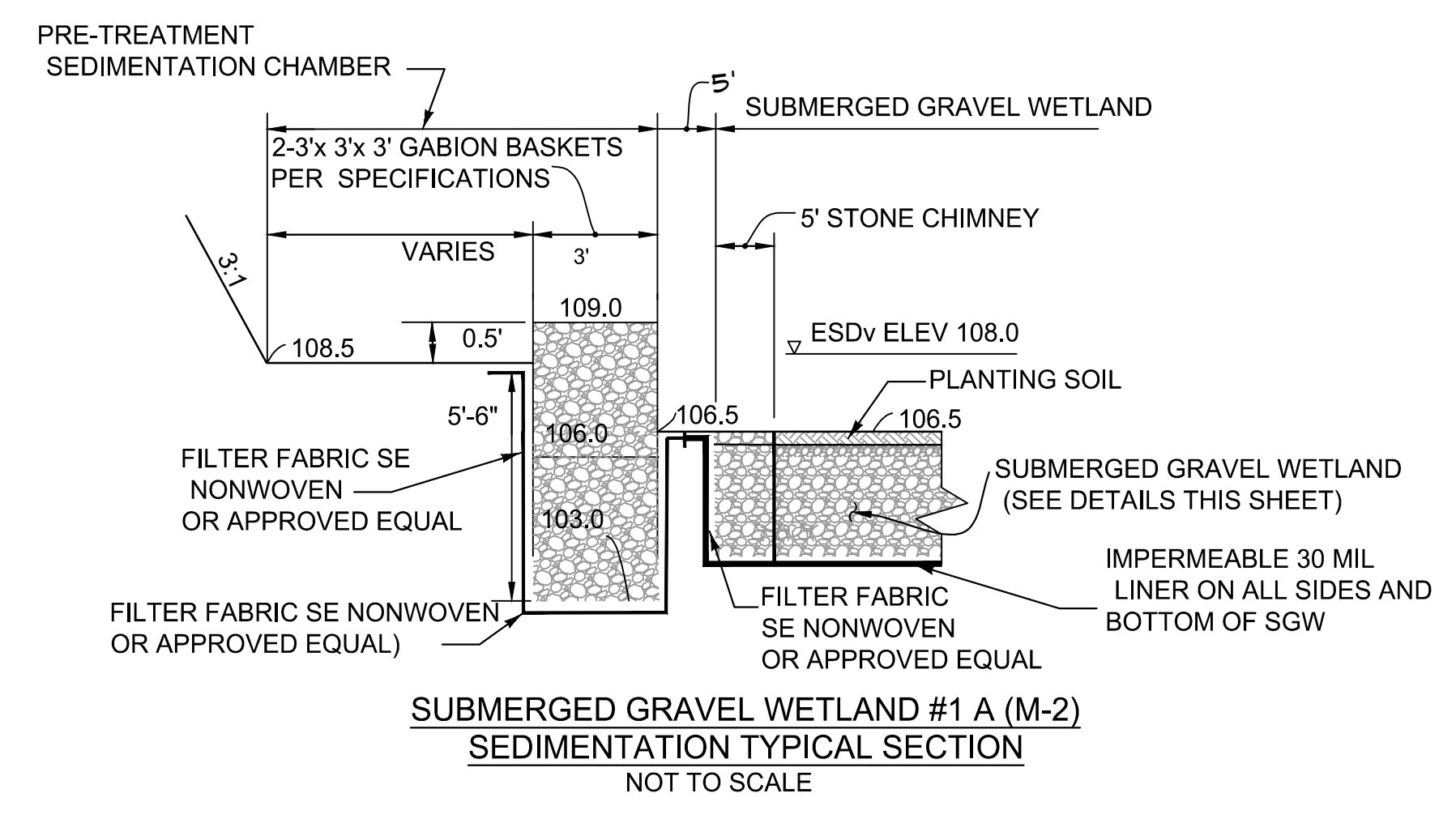


**RIP-RAP OVERFLOW/OUTLET CHANNELS  
TYPICAL DETAIL**  
NOT TO SCALE

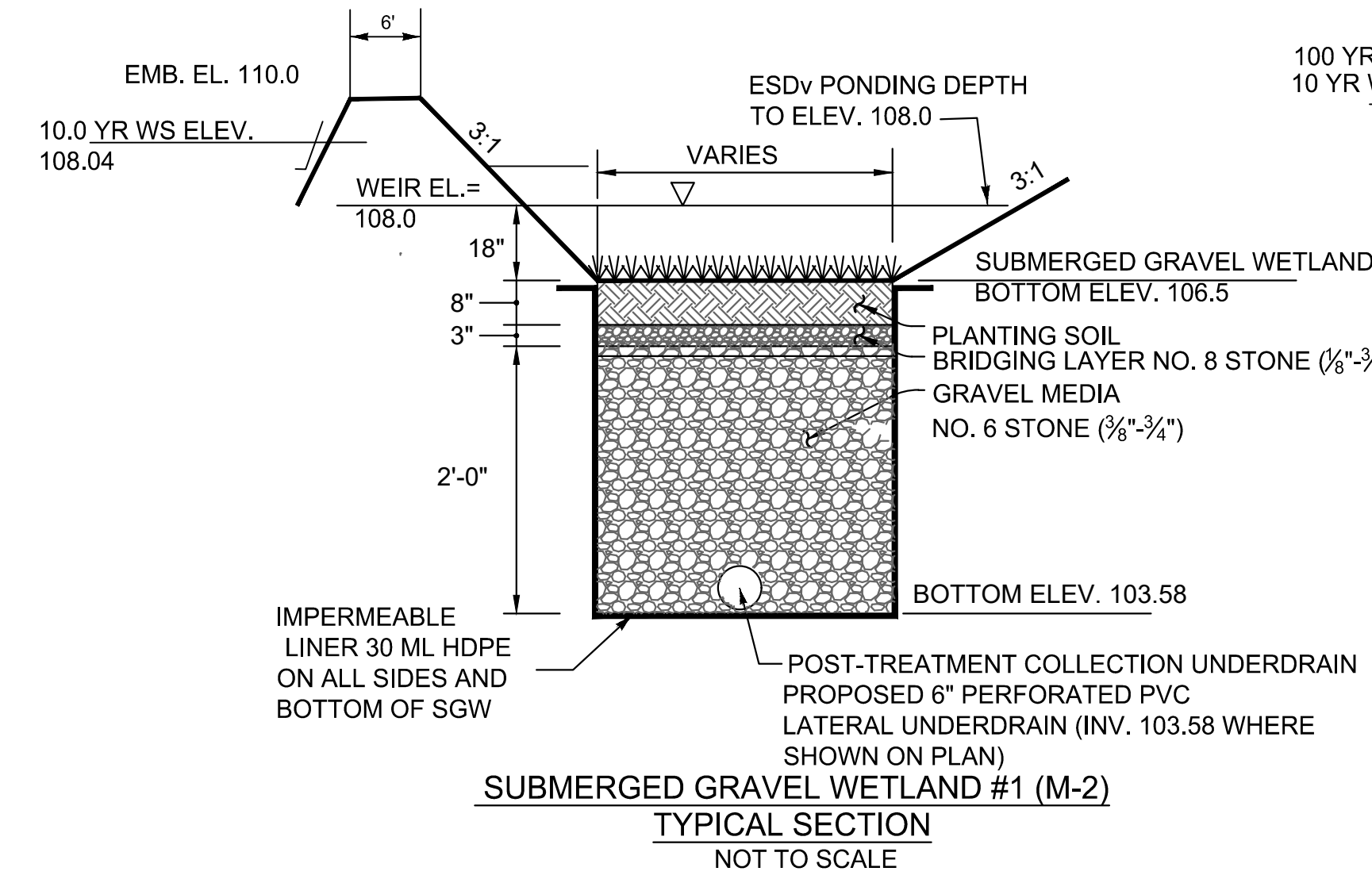
**MICRO-BIORETENTION #1(M-6)**  
SCALE: 1" = 20'  
0 20' 40'

**NOTE: AREAS ADJACENT TO SWM TO BE SODDED**

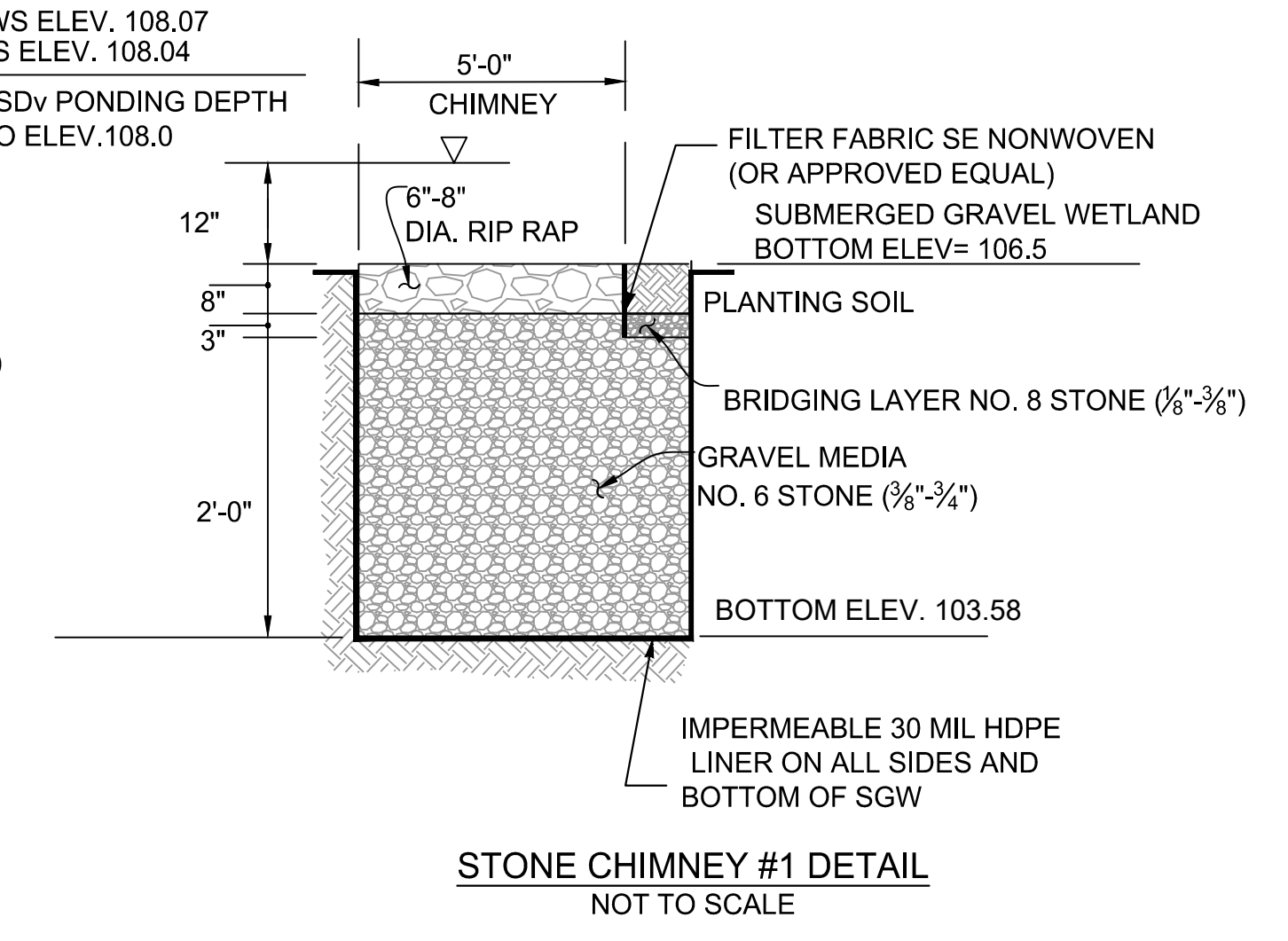
**SUBMERGED GRAVEL WETLAND #1A(M-2)**  
SCALE: 1" = 20'  
0 20' 40'



**SUBMERGED GRAVEL WETLAND #1 A (M-2)  
SEDIMENTATION TYPICAL SECTION**  
NOT TO SCALE



**SUBMERGED GRAVEL WETLAND #1 (M-2)  
TYPICAL SECTION**  
NOT TO SCALE



**STONE CHIMNEY #1 DETAIL**  
NOT TO SCALE

**NOTE: REFER TO SHEET 2 FOR LEGEND**

**CENTURY ENGINEERING**  
A Kleinfelder Company  
10710 Gilroy Road, Hunt Valley, MD 21031  
Phone: 443.589.2400 www.centuryeng.com

DATE: 6/21/2024  
  
LICENSE NO. 32574

REVISED	DATE	BY	APPROVED	DATE

CHIEF ENGINEER  
APPROVED

ASSISTANT CHIEF ENGINEER

ANNE ARUNDEL COUNTY  
DEPARTMENT OF PUBLIC WORKS

APPROVED	DATE	APPROVED	DATE

PROJECT MANAGER  
APPROVED

CHIEF, RIGHT OF WAY

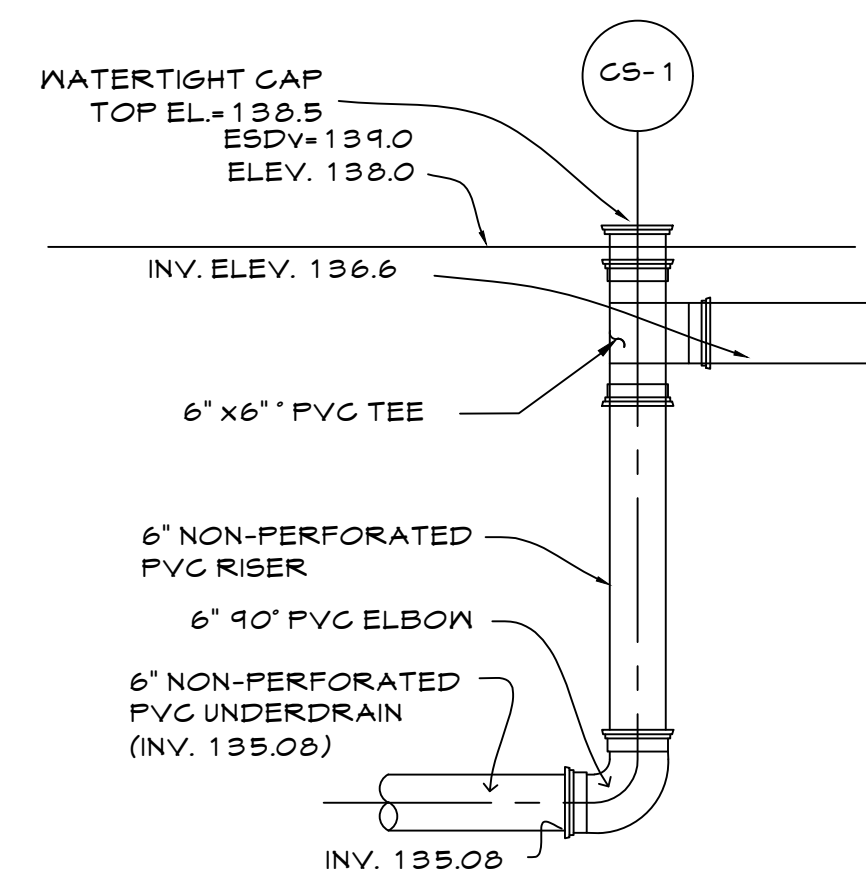
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DRAWN BY	LMV/RDT
CHECKED BY	MJP/AJD
SHEET	36 OF 77
PROJECT NO.:	P588001
DATE:	6/7/2024

CONSTRUCTION DOCUMENTS  
**SWM Facilities**  
Severn Chapel Area of the Bacon Ridge Natural Area  
2nd Tax District Anne Arundel Co., MD. Tax Map 37, Grid 11, Parcel 86

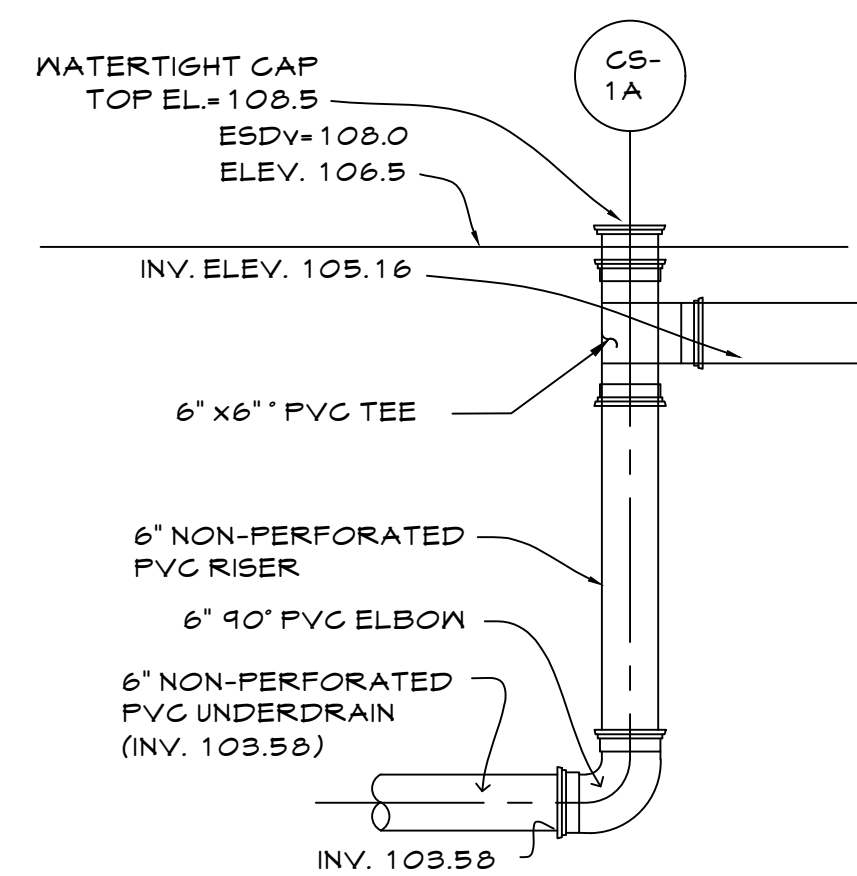
24TMP-026983



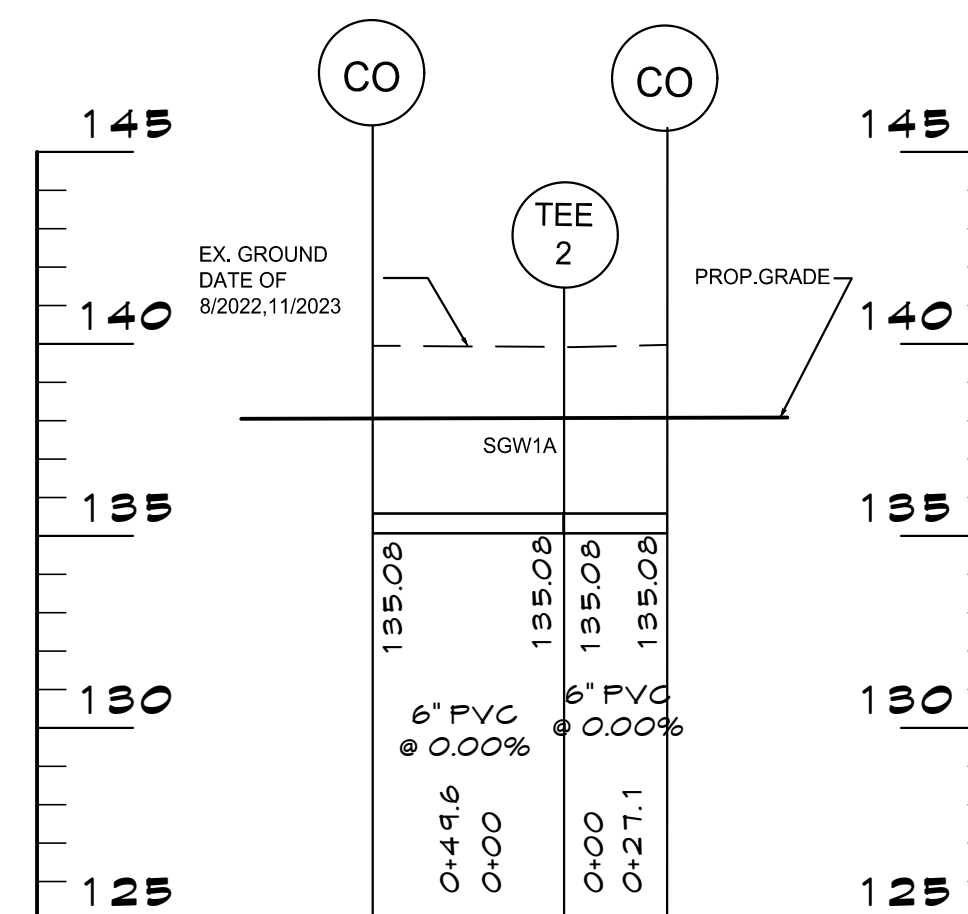
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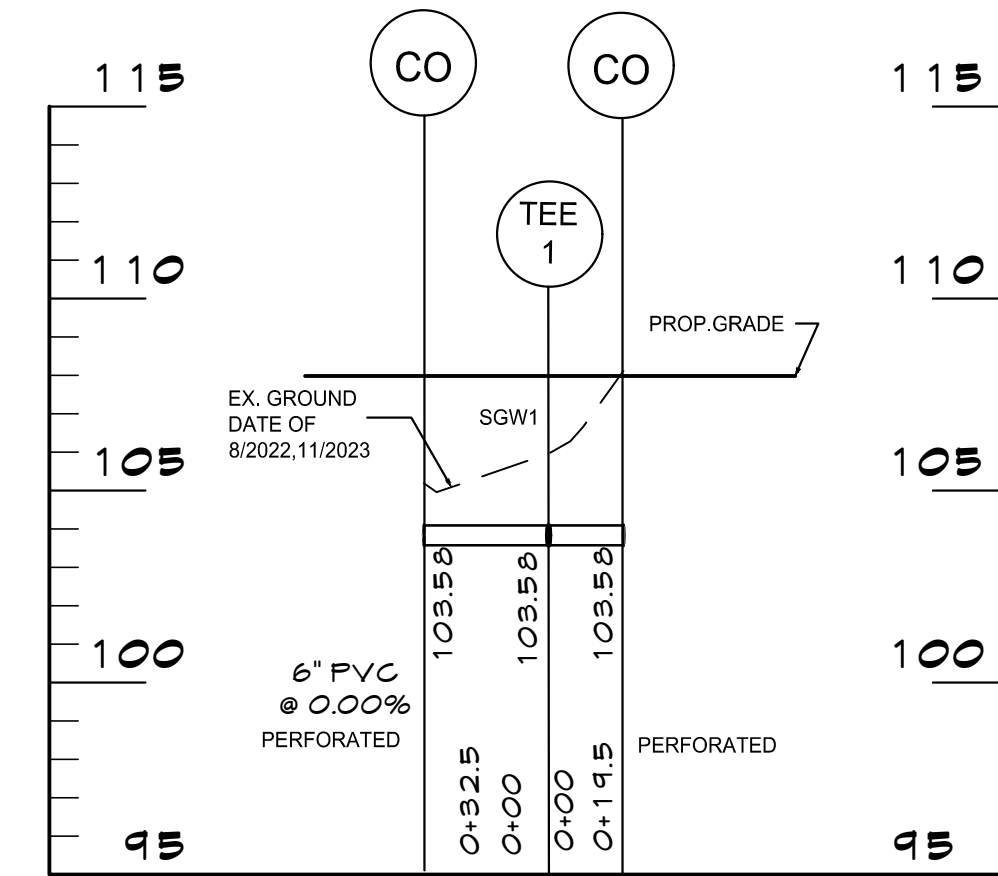
**SGW#1 - PRIMARY OUTLET CONTROL**  
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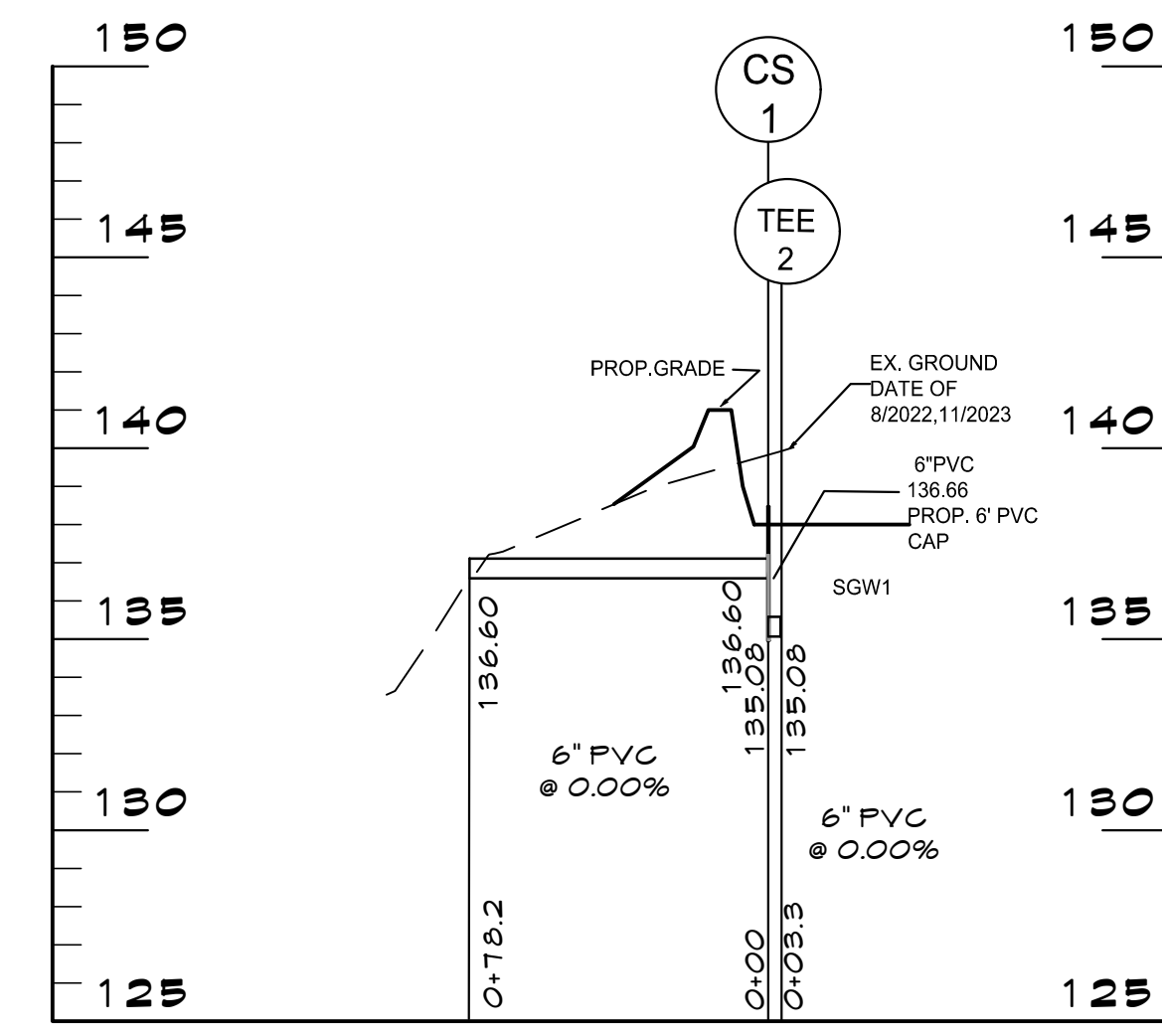
**SGW#1A - PRIMARY OUTLET CONTROL**  
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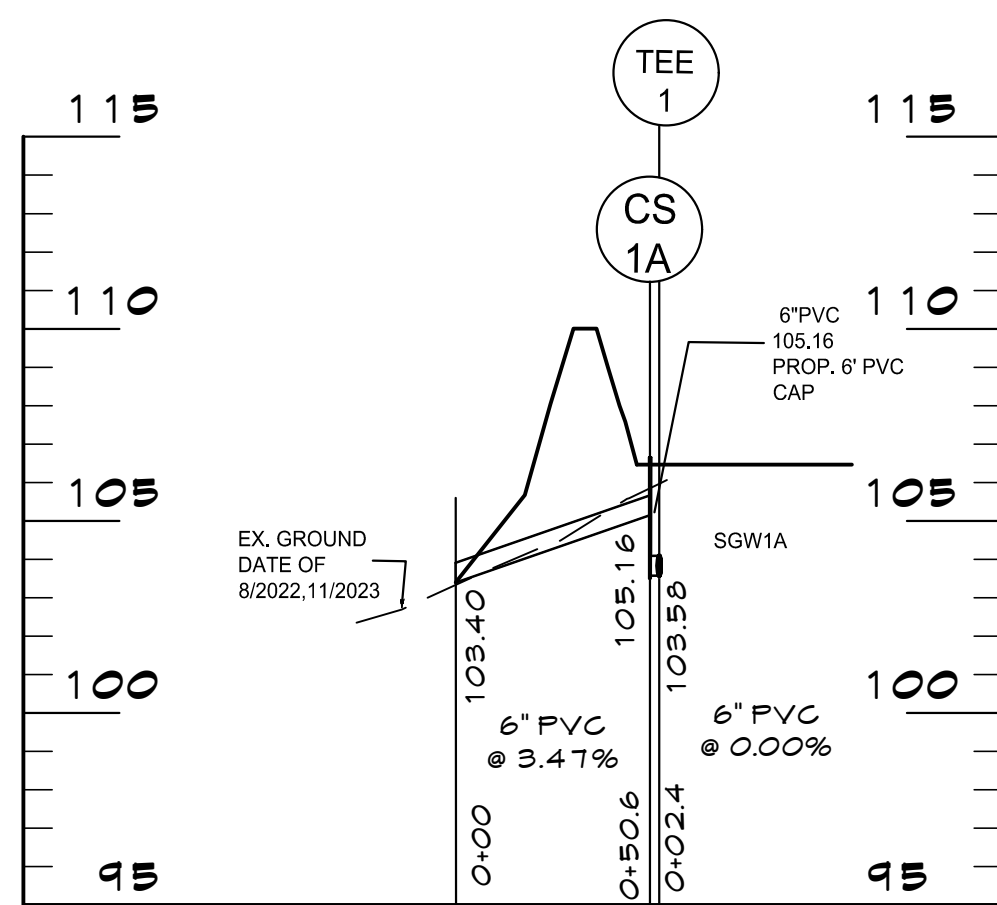
**STORM DRAIN PROFILE**  
SCALE: 1"=50' (HORIZ.)  
1"=5' (VERT.)  
SGW#1



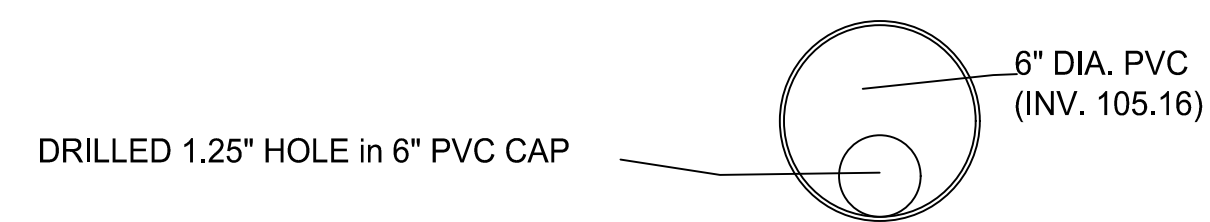
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SGW#1A



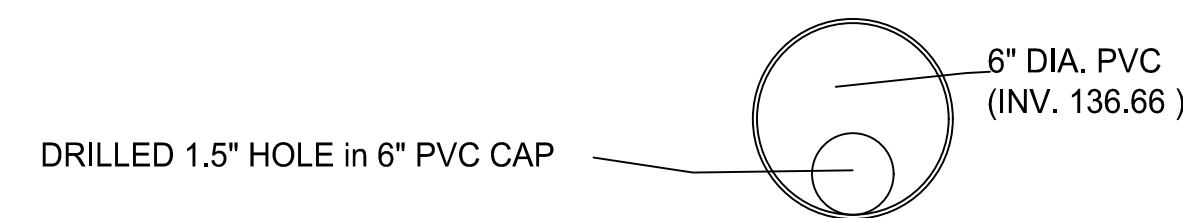
**STORM DRAIN PROFILE**  
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SGW#1



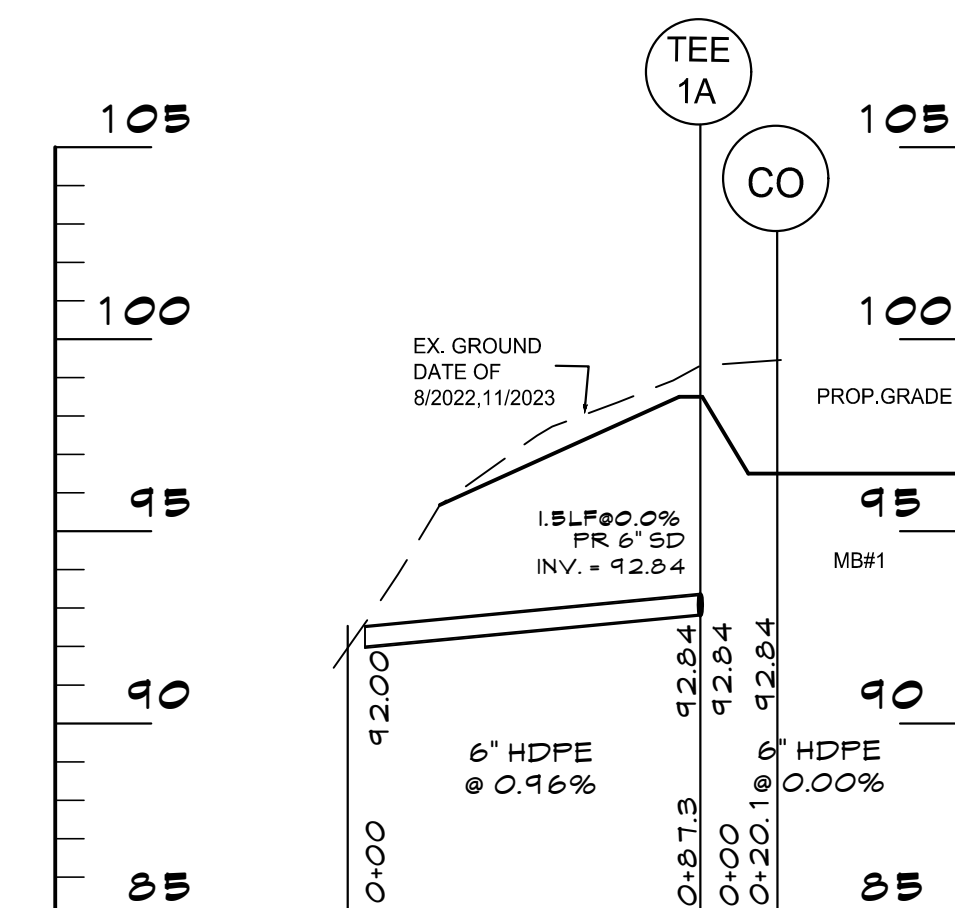
**STORM DRAIN PROFILE**  
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1"=5' (VERT.)  
SGW#1A



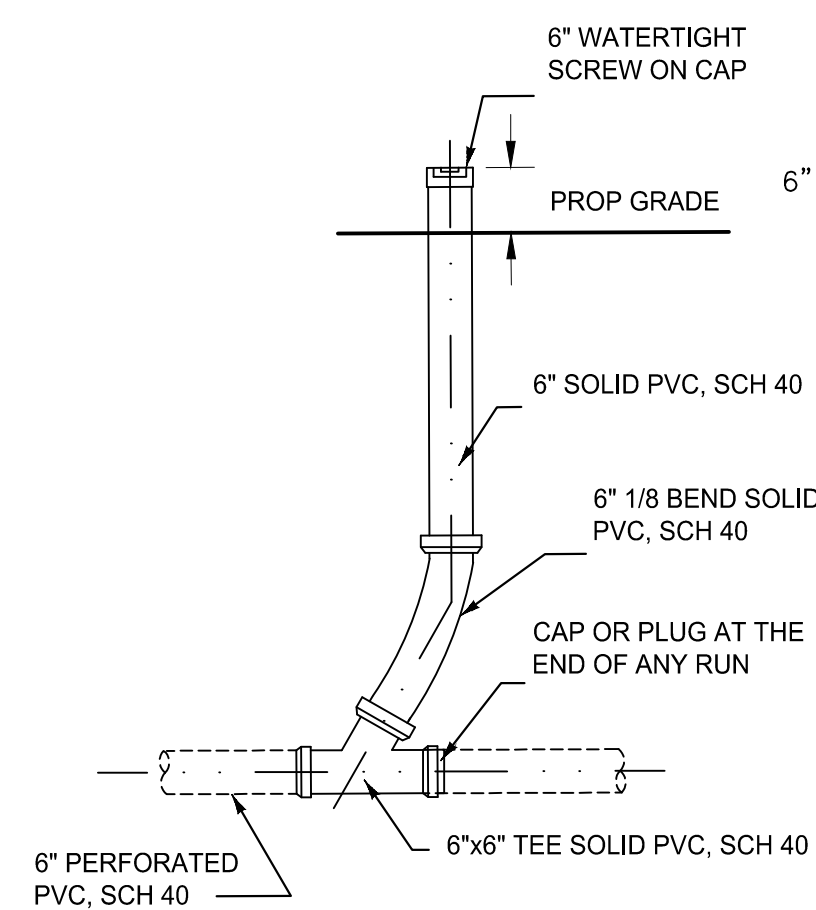
**TYPICAL CAP DETAIL @ CS-1A**  
NOT TO SCALE



**TYPICAL CAP DETAIL @ CS-1**  
NOT TO SCALE



**STORM DRAIN PROFILE**  
SCALE: 1"=50' (HORIZ.)  
1"=5' (VERT.)  
MB#1



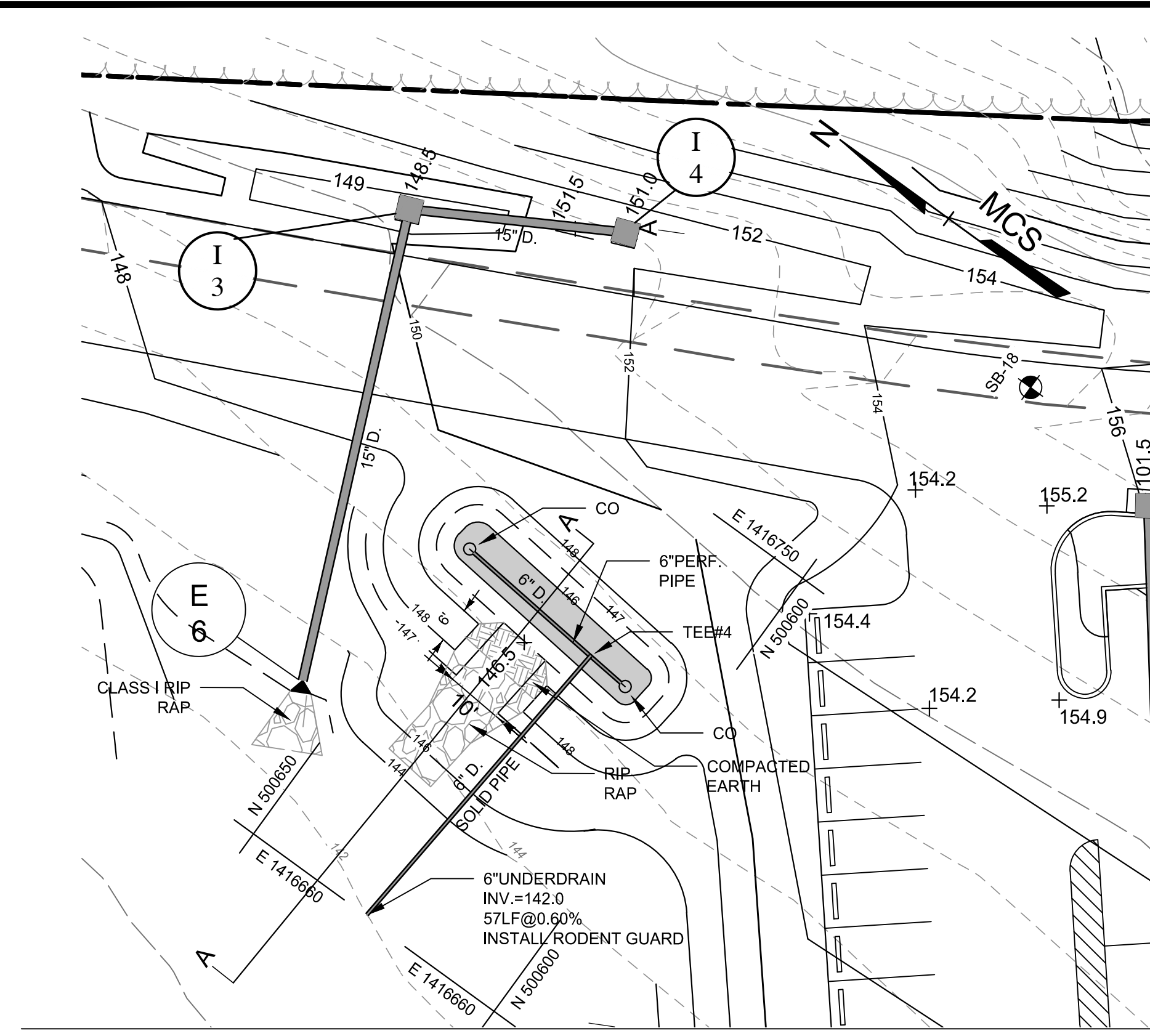
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NOT TO SCALE

24TMP-026983

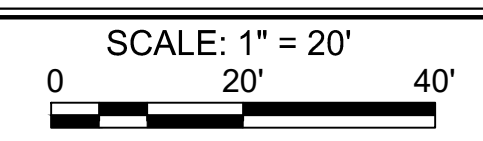
 <b>CENTURY ENGINEERING</b> A Kleinfelder Company 10710 Gilroy Road, Hunt Valley, MD 21031 Phone: 443.589.2400 www.centuryeng.com	DATE: 6/21/2024	ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS		G02020077																																
	 LICENSE NO. 32574	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>REVISED</th> <th>DATE</th> <th>BY</th> <th>APPROVED</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	REVISED	DATE	BY	APPROVED	DATE						<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>APPROVED</th> <th>DATE</th> <th>APPROVED</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	APPROVED	DATE	APPROVED	DATE					<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>SCALE</th> <th>AS SHOWN</th> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <th>DRAWN BY</th> <td>LMV/RDT</td> </tr> <tr> <th>CHECKED BY</th> <td>MJP/AJD</td> </tr> <tr> <th>SHEET</th> <td>37 OF 77</td> </tr> <tr> <th>PROJECT NO.</th> <td>P588001</td> </tr> <tr> <th>DATE</th> <td>6/7/2024</td> </tr> </table>	SCALE	AS SHOWN			DRAWN BY	LMV/RDT	CHECKED BY	MJP/AJD	SHEET	37 OF 77	PROJECT NO.	P588001	DATE	6/7/2024
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CONSTRUCTION DOCUMENTS <b>Utility Profiles</b> Severn Chapel Area of the Bacon Ridge Natural Area <small>2nd Tax District Anne Arundel Co., MD. Tax Map 37, Grid 11, Parcel 86</small>																																				



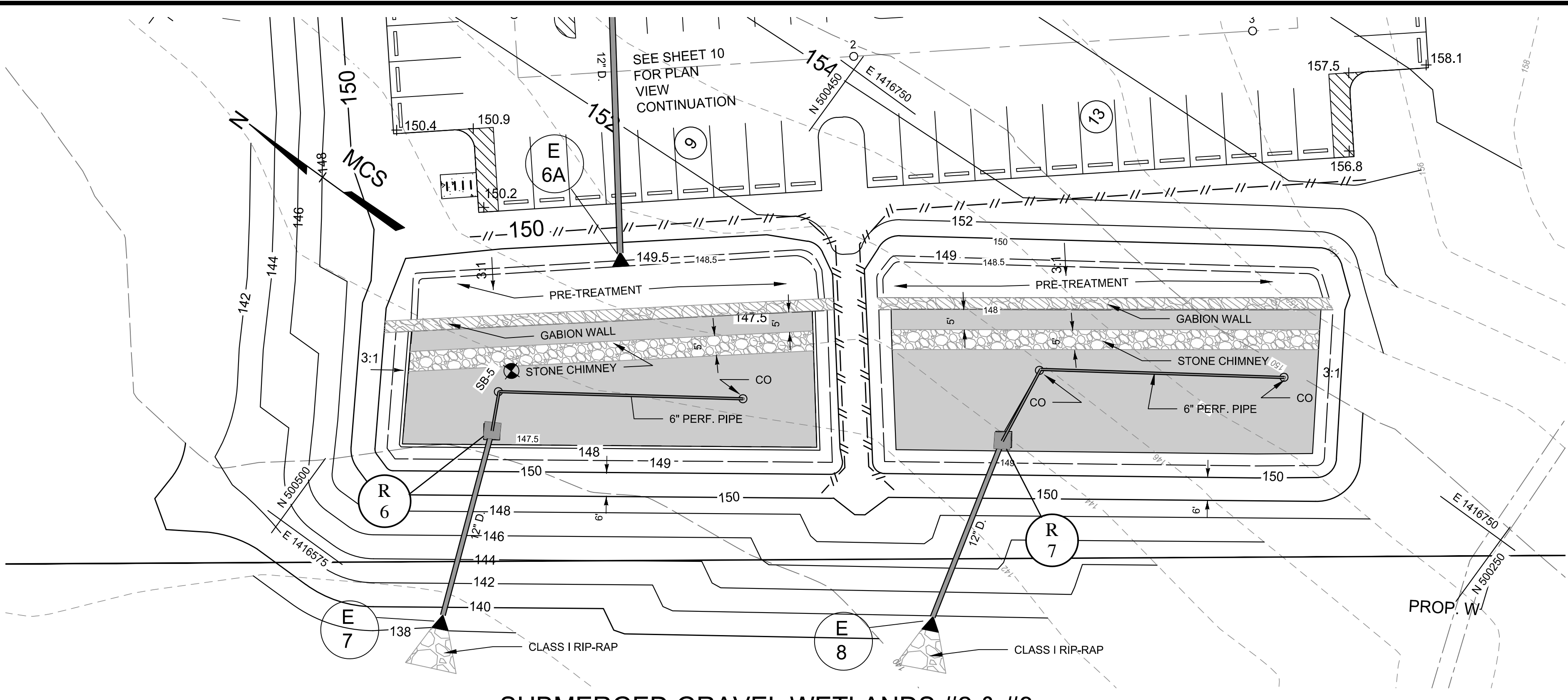
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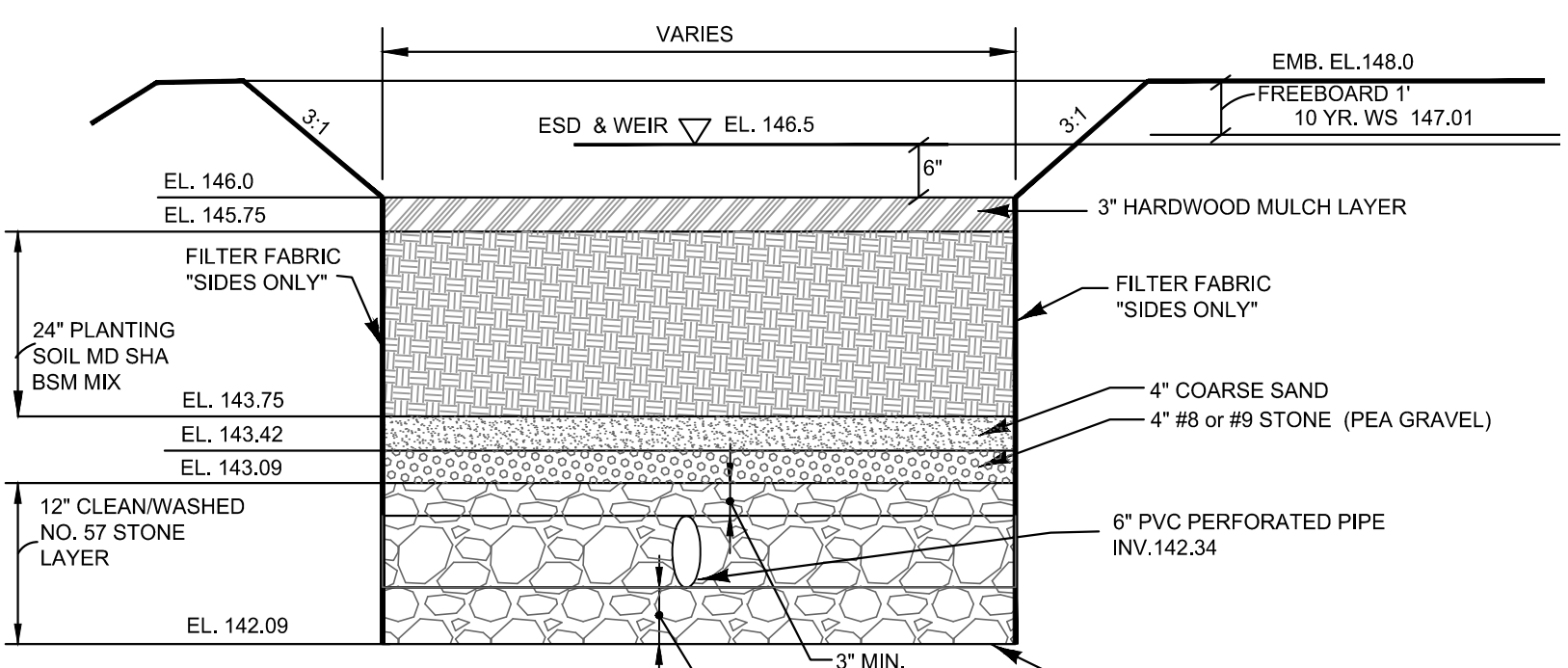
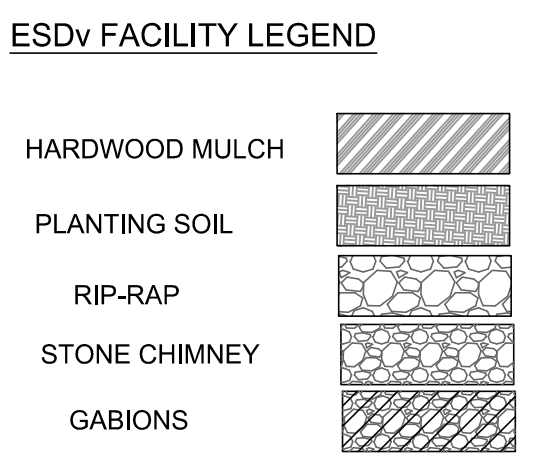
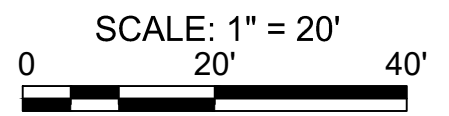
**MICRO-BIORETENTION #4**



**NOTE: AREAS ADJACENT TO SWM TO BE SODDED.**

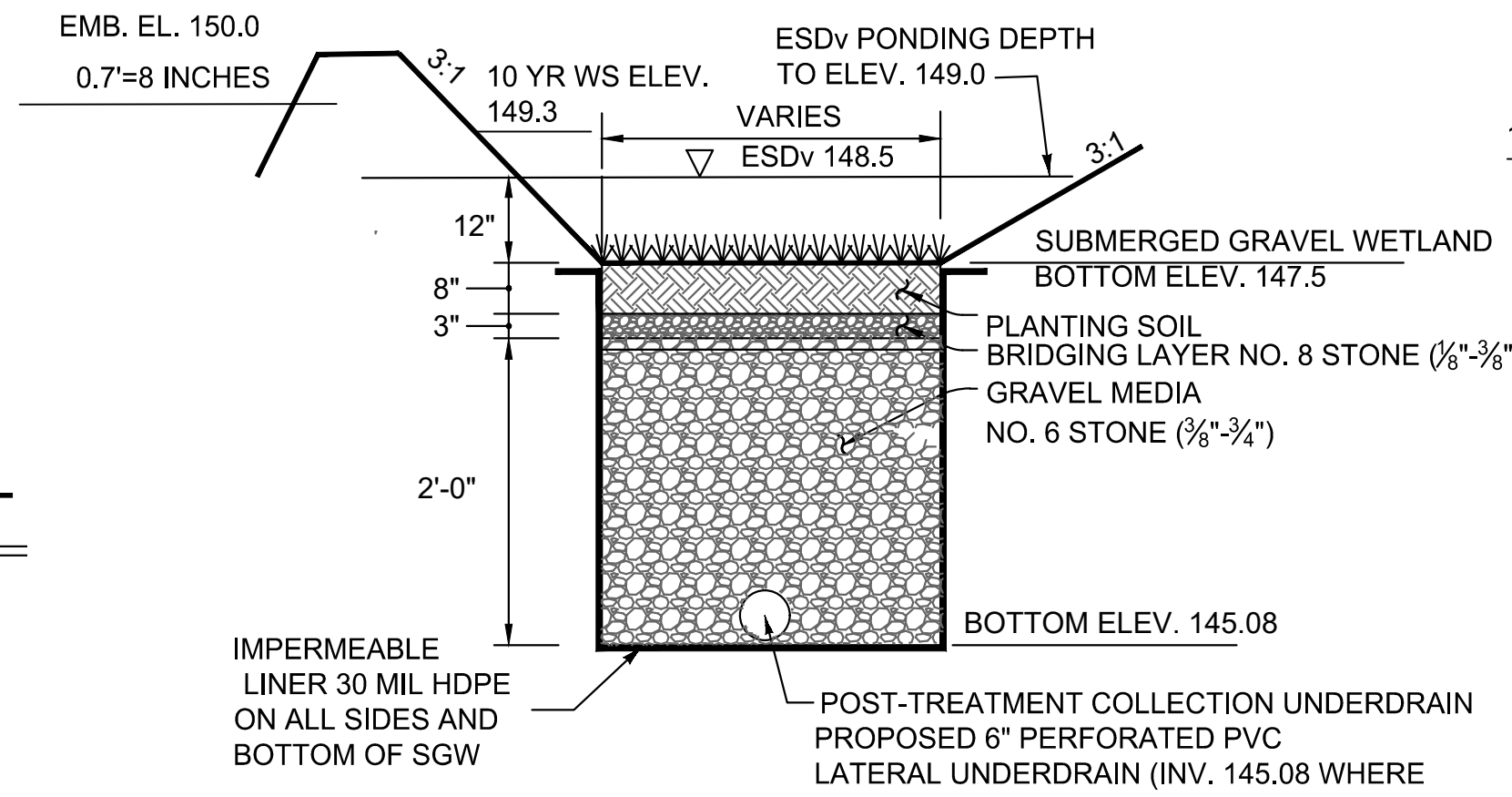


**SUBMERGED GRAVEL WETLANDS #2 & #3**



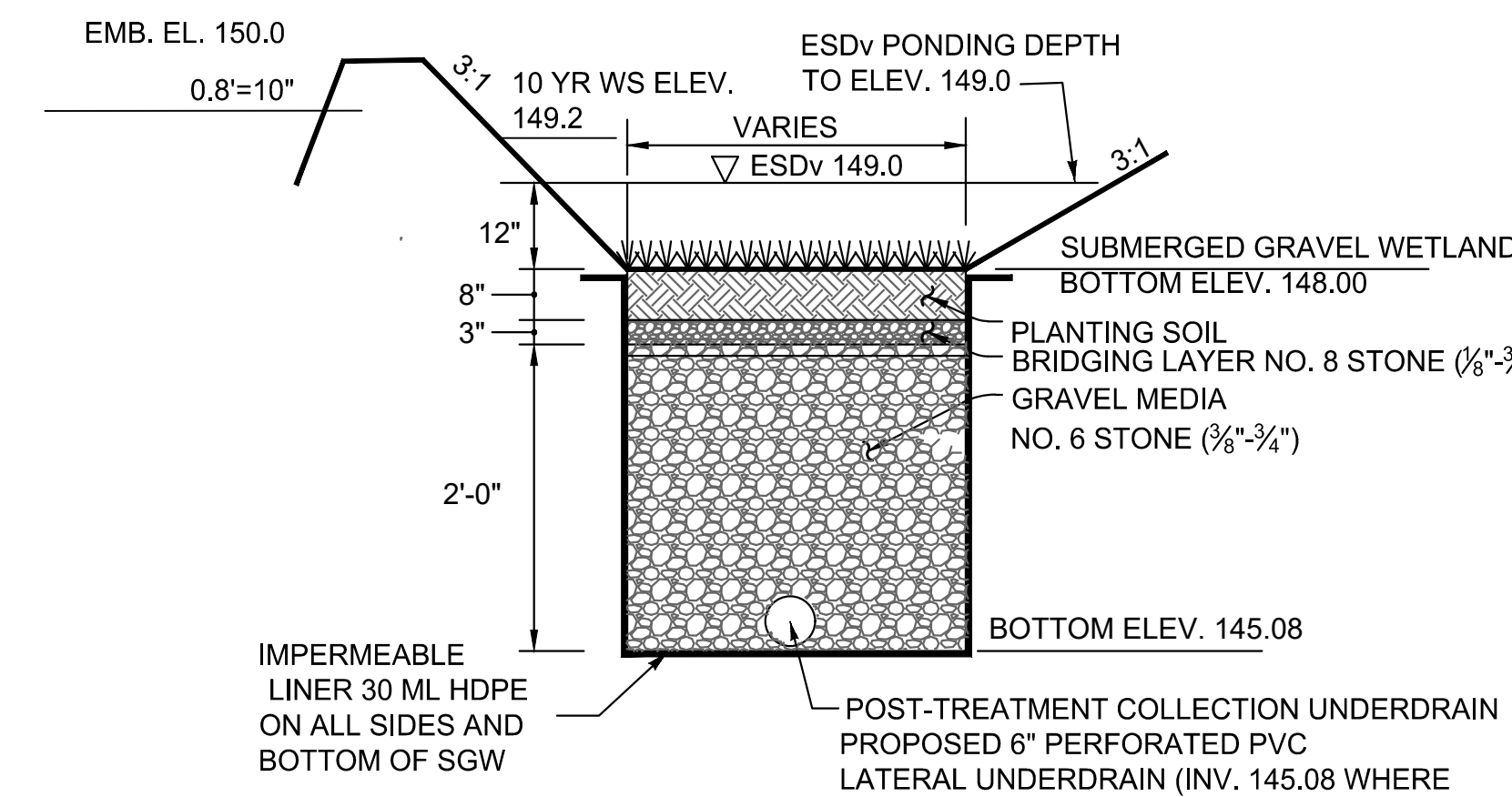
**TYPICAL SECTION MICRO BIORETENTION 4**

NOT TO SCALE



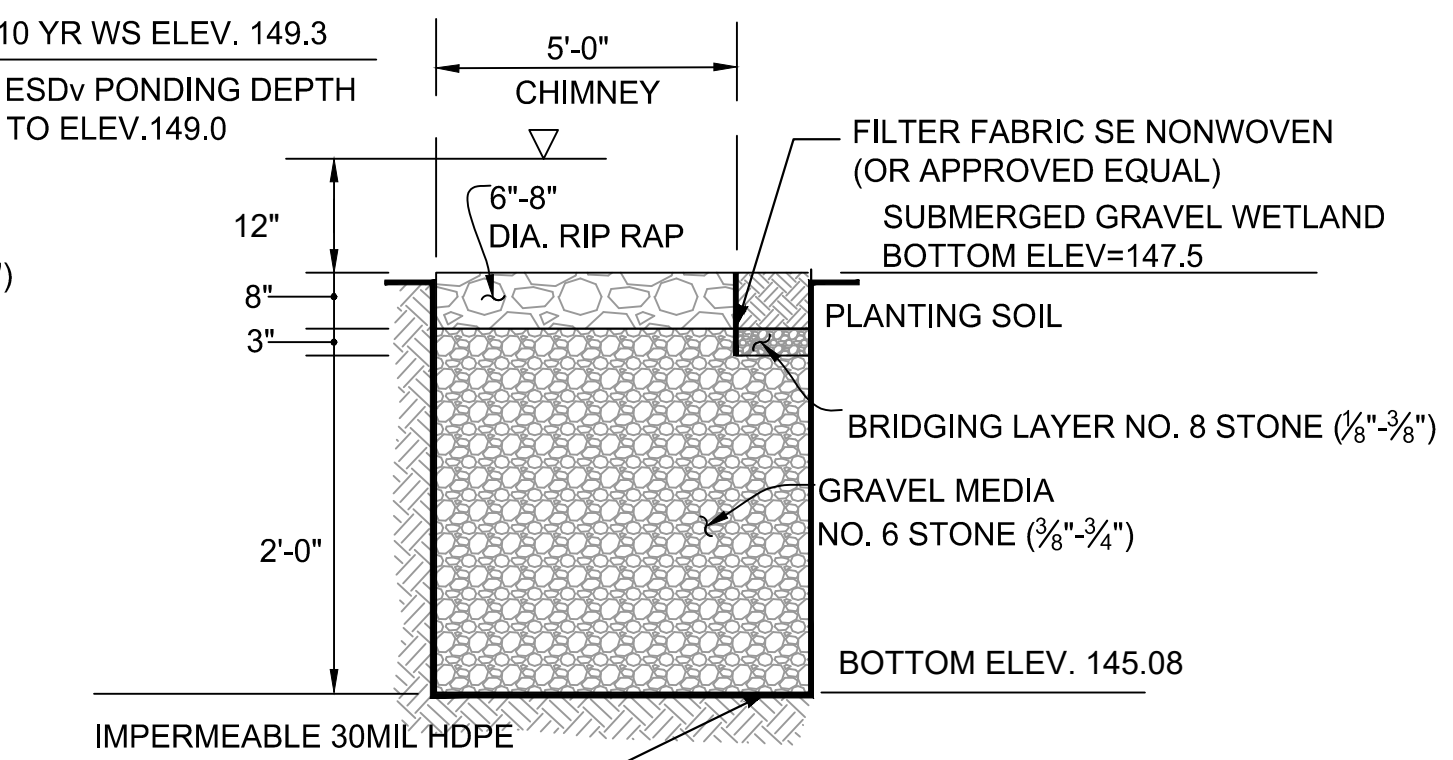
**TYPICAL SECTION SUBMERGED GRAVEL WETLAND#2 (M-2)**

NOT TO SCALE



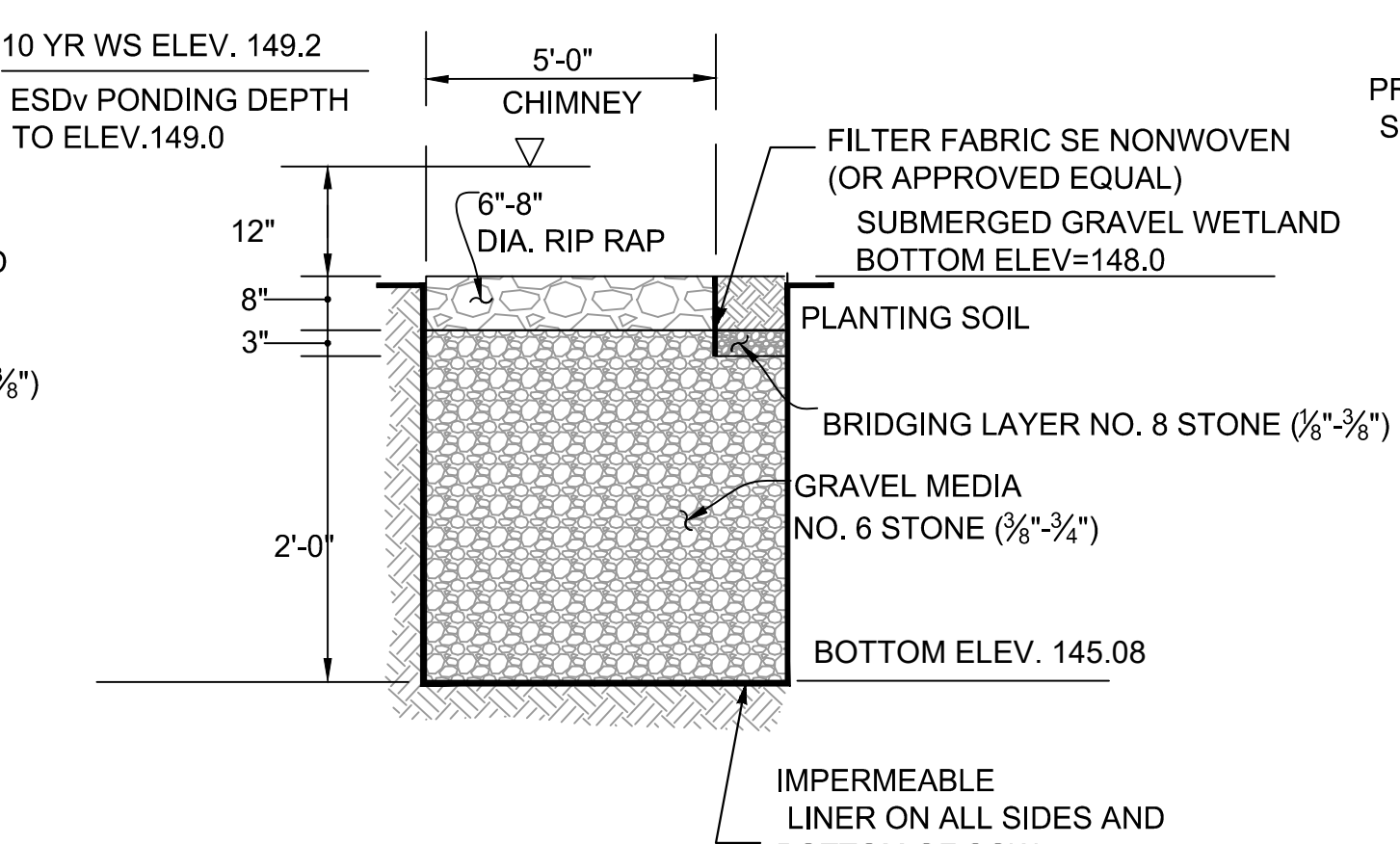
**TYPICAL SECTION SUBMERGED GRAVEL WETLAND#3 (M-2)**

NOT TO SCALE



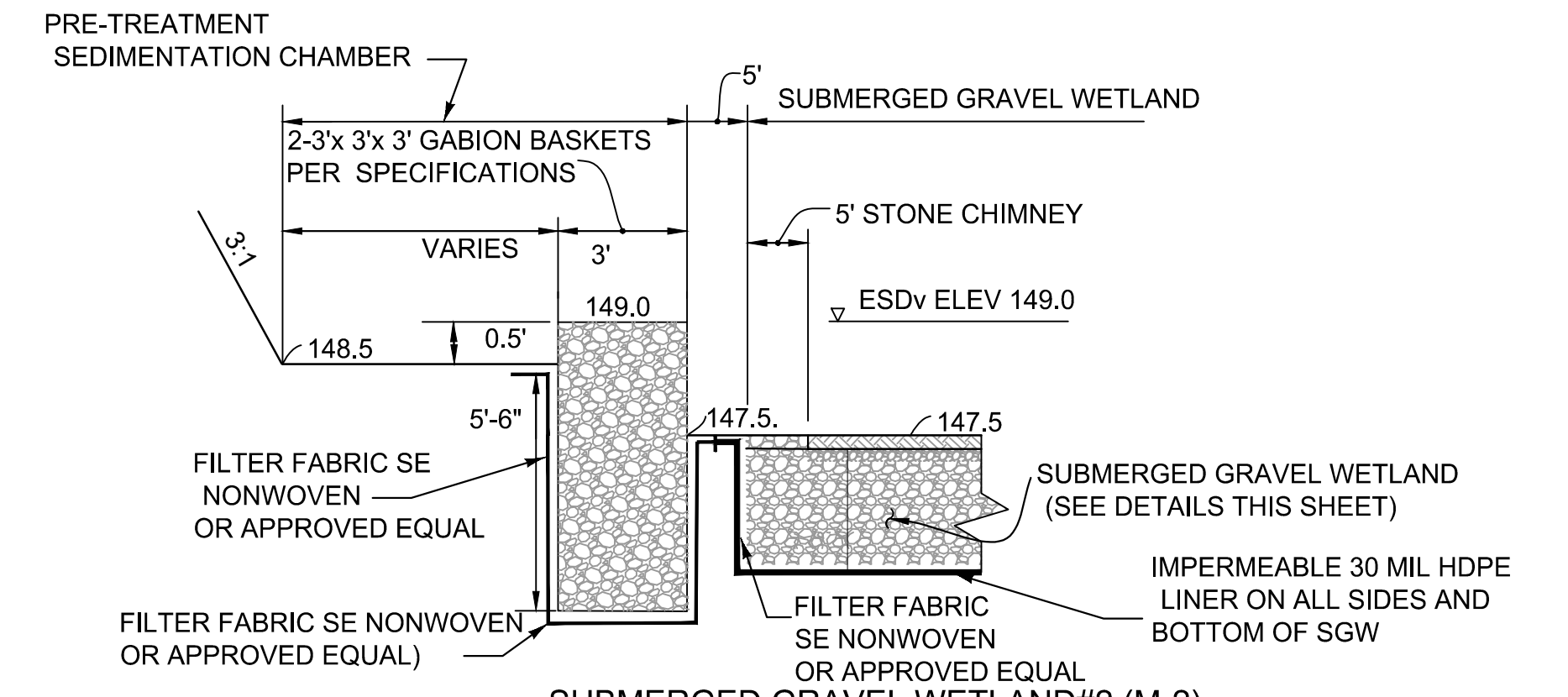
**STONE CHIMNEY DETAIL**

NOT TO SCALE



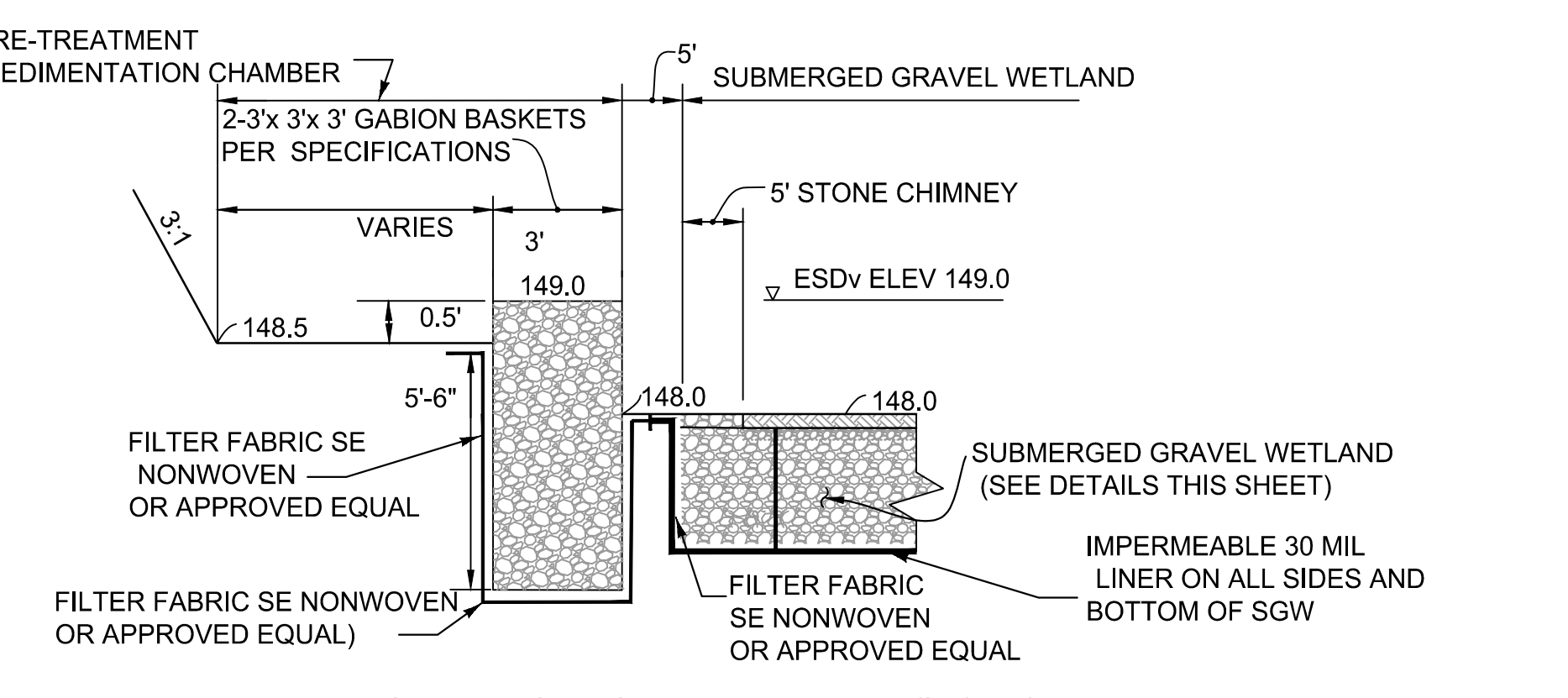
**STONE CHIMNEY DETAIL**

NOT TO SCALE



**SUBMERGED GRAVEL WETLAND#2 (M-2) SEDIMENTATION CHAMBER CROSS SECTION**

NOT TO SCALE



**SUBMERGED GRAVEL WETLAND#3 (M-2) SEDIMENTATION CHAMBER CROSS SECTION**

NOT TO SCALE

24TMP-026983

**CENTURY ENGINEERING**  
A Kleinfelder Company  
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STATE OF MARYLAND PROFESSIONAL ENGINEER LICENSE NO. 32574

REVISED	DATE	BY	APPROVED	DATE

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS

APPROVED	DATE	APPROVED	DATE

SCALE	AS SHOWN

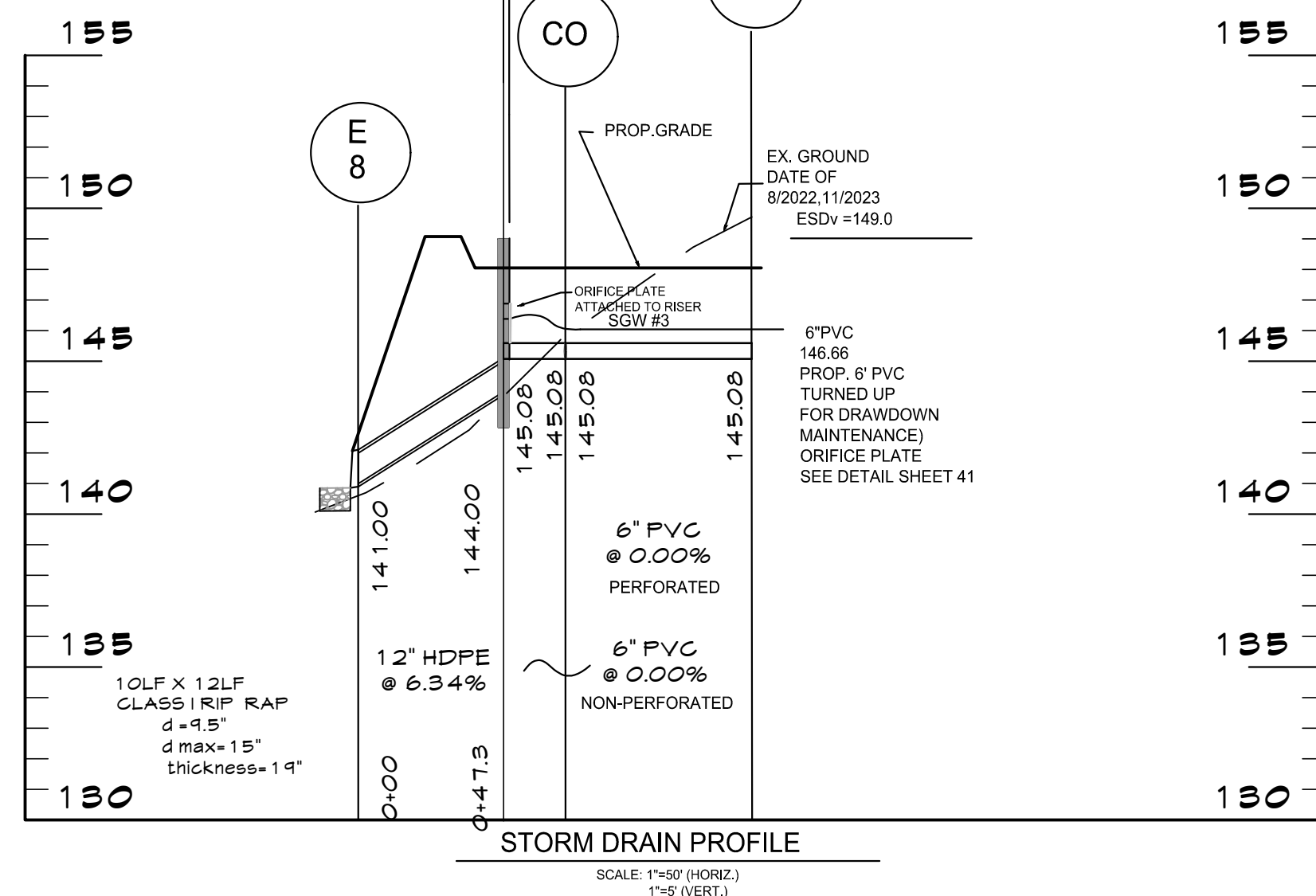
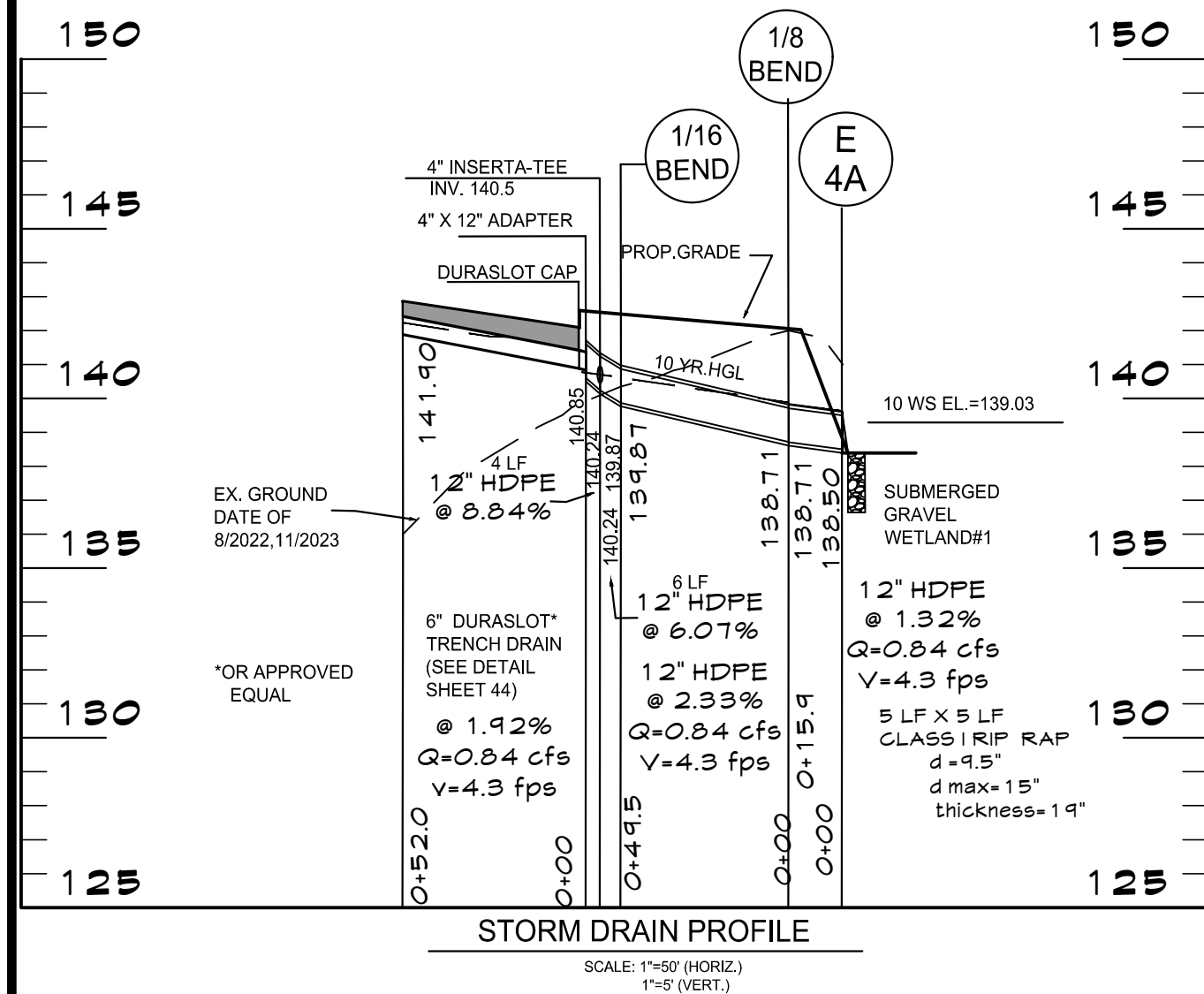
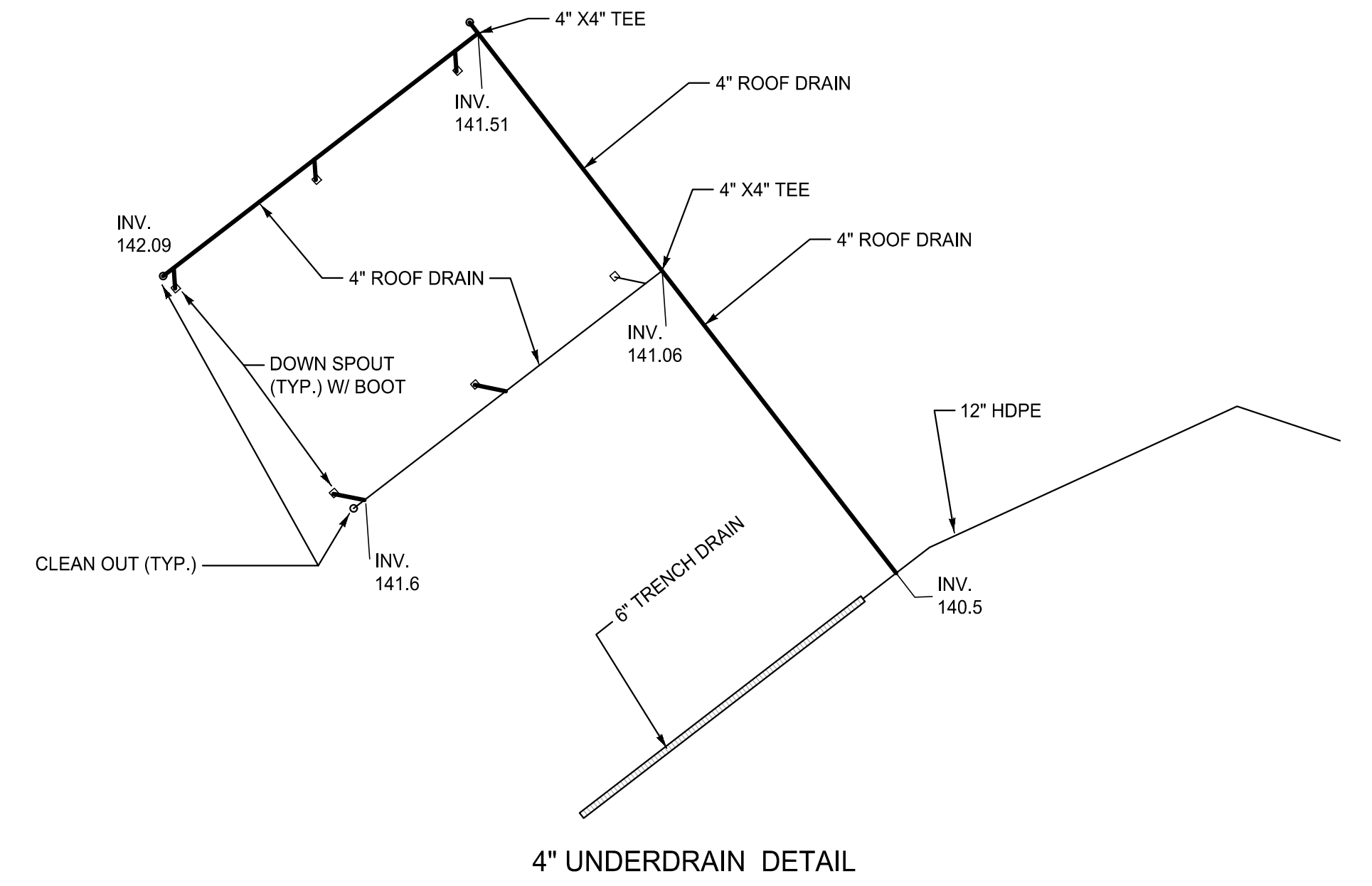
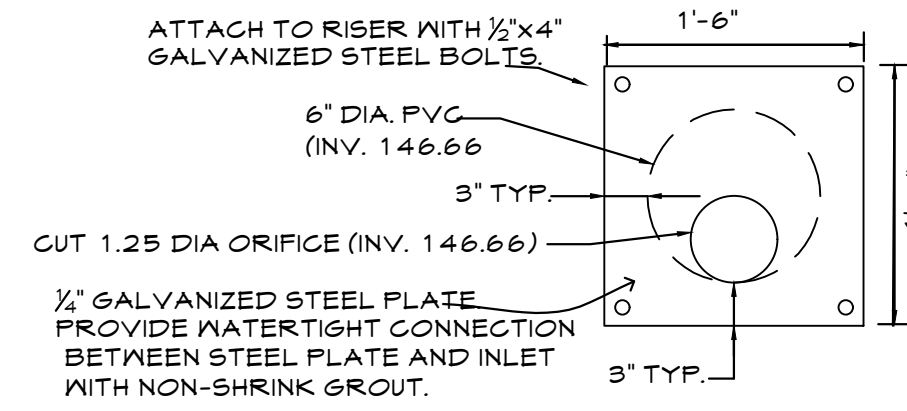
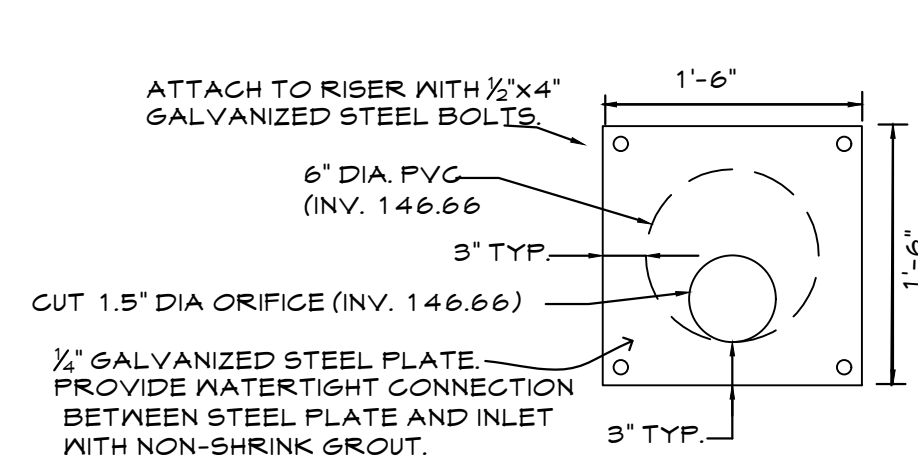
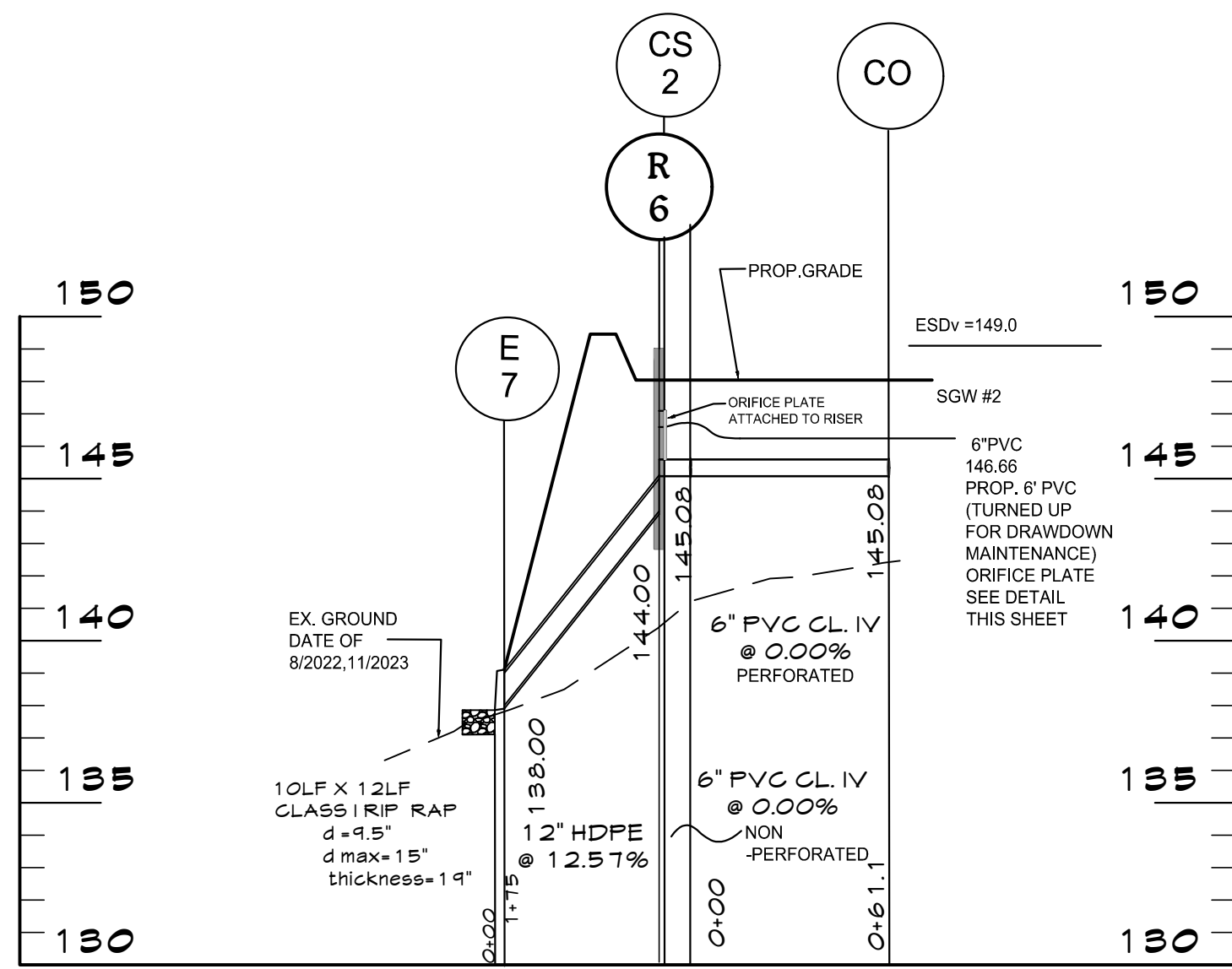
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SHEET 38 OF 77  
PROJECT NO.: P588001  
DATE: 6/7/2024

G02020077

CONSTRUCTION DOCUMENTS  
**SWM Facilities**  
Severn Chapel Area of the Bacon Ridge Natural Area

2nd Tax District Anne Arundel Co., MD. Tax Map 37, Grid 11, Parcel 86

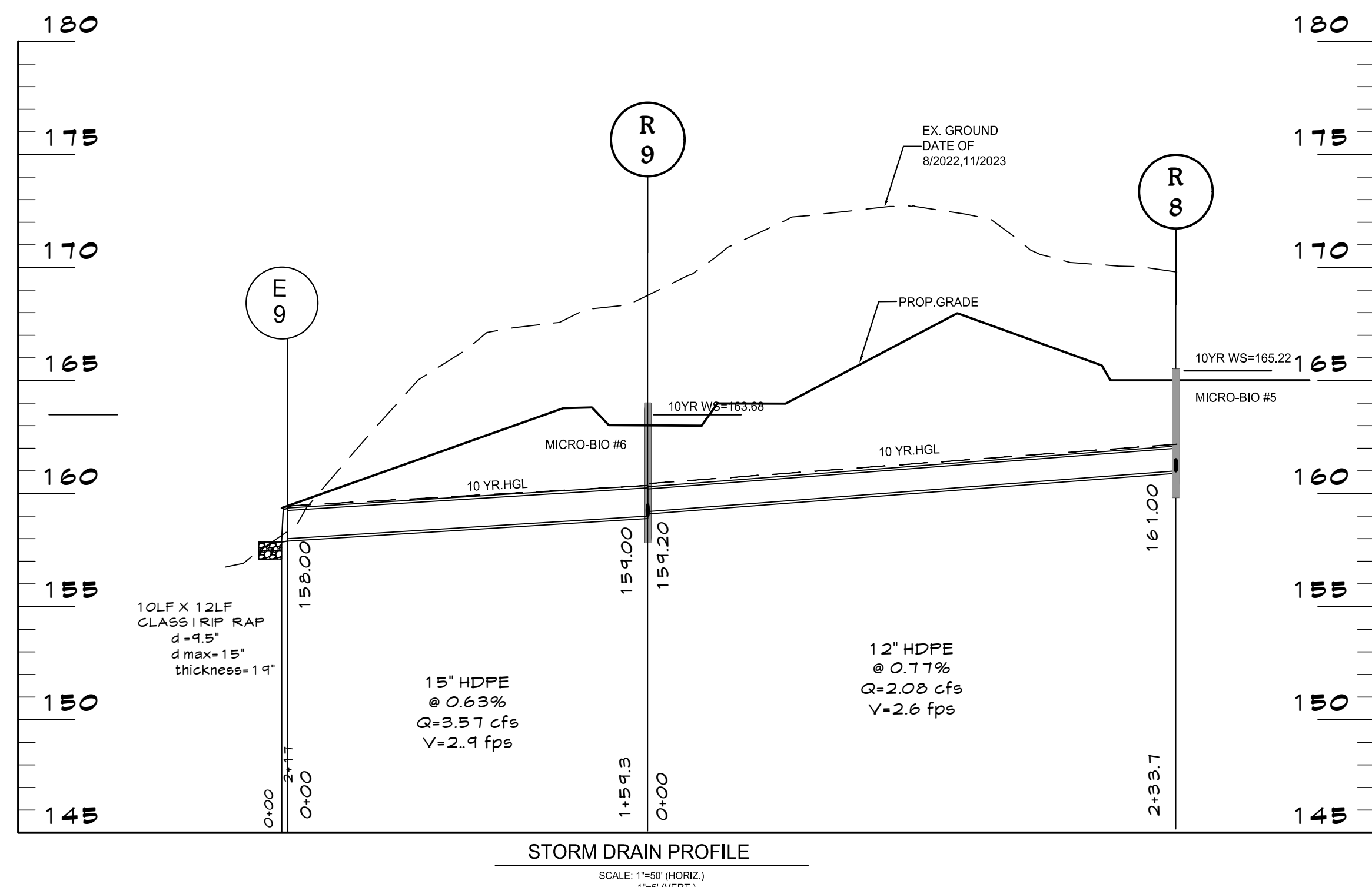




STRUCTURE SCHEDULE					
NO.	NORTHING	EASTING	RIM ELEV.	TYPE	DETAIL
I-3	500690.85	141676.11	148.50	TYPE S INLET	AA CO. STD-40
I-1	501845.30	1415953.56	101.50	TYPE S INLET	AA CO. STD-40
I-1A	501515.80	1416178.92	120.5	TYPE S INLET	AA CO. STD-40
I-2	501652.30	1416144.56	115.50	TYPE S INLET	AA CO. STD-40
I-2A	501430.39	1416251.60	125.50	TYPE S INLET	AA CO. STD-40
I-3A	500756.96	1416727.76	146.70	TYPE S INLET	AA CO. STD-40
I-3B	500789.82	1416708.40	146.70	TYPE S INLET	AA CO. STD-40
I-4	500658.91	1416779.48	151.00	TYPE S INLET	AA CO. STD-40
I-4B	500560.33	1416793.97	156.00	TYPE S INLET	AA CO. STD-40
I-5	500360.51	1416988.35	163.50	TYPE S INLET	AA CO. STD-40
I-6	500306.98	1416990.33	165.50	TYPE S INLET	AA CO. STD-40
I-7	499866.42	1416829.26	162.10	TYPE S INLET	AA CO. STD-40
I-8	499861.35	1416719.00	163.50	TYPE S INLET	AA CO. STD-40
M-2	501616.78	1416067.96	116.96	A-2	AA CO. STD-12
M-2A	501638.54	1416131.80	115.90	A-2	AA CO. STD-12
M-2B	501496.59	1416228.62	123.30	A-2	AA CO. STD-12
M-2C	501448.35	1416261.77	125.80	A-2	AA CO. STD-12
M-3	500337.40	1416954.84	164.10	A-2	AA CO. STD-12
M-4	499847.26	1416777.96	162.00	A-2	AA CO. STD-12
R2	501481.67	1416206.88	122.00	TYPE S INLET	AA CO. STD-40
R6/CS2	500470.16	1416623.80	149.00	TYPE S INLET	AA CO. STD-40
R7/CS1	500365.35	1416696.76	149.00	TYPE S INLET	AA CO. STD-40
R8	500145.65	1416875.19	165.50	TYPE S INLET	AA CO. STD-40
R9	499959.25	1416734.24	163.5	TYPE S INLET	AA CO. STD-40

STRUCTURE SCHEDULE				
NO.	TYPE	DETAIL	NORTHING	EASTING
E-1	8" HDPE END SECTION	SH.42	1415914.48	501813.06
E-1A	12" HDPE END SECTION	SH.42	1416119.21	501598.55
E-2	24" HDPE END SECTION	SH.42	1415998.00	501615.56
E-3	12" HDPE END SECTION	SH.42	1416328.17	501312.94
E-4	12" HDPE END SECTION	SH.42	1416361.97	501254.33
E-5	12" HDPE END SECTION	SH.42	1416604.41	500755.10
E-6	15" HDPE END SECTION	SH.42	1416685.93	500658.64
E-6A	12" HDPE END SECTION	SH.42	1416678.41	500470.45
E-7	12" HDPE END SECTION	SH.42	1416579.22	500452.99
E-8	12" HDPE END SECTION	SH.42	1416651.10	500322.32
E-9	15" HDPE END SECTION	SH.42	1416907.99	500352.99
E-10	12" HDPE END SECTION	SH.42	1416634.59	499834.58
E-11	15" HDPE END SECTION	SH.42	1416784.67	499821.39
CS1	OUTLET STRUCTURE	SH.36	1416540.20	500885.44
CS1A	OUTLET STRUCTURE	SH.36	1416028.91	501668.92

PIPE SCHEDULE	
12" HDPE	1,150 LF
15" HDPE	376 LF
24" HDPE	137 LF
6" PVC	1,046 LF
4" PVC	200 LF



**CENTURY ENGINEERING**  
A Kleinfelder Company  
10710 Gilroy Road, Hunt Valley, MD 21031  
Phone: 443.589.2400 www.centuryeng.com

DATE: 6/21/2024  
LICENSE NO. 32574

REVISED	DATE	BY	APPROVED	DATE

ANNE ARUNDEL COUNTY  
DEPARTMENT OF PUBLIC WORKS

APPROVED	DATE	APPROVED	DATE

SCALE	AS SHOWN

24TMP-026983

G0200077

CONSTRUCTION DOCUMENTS

Utility Profiles

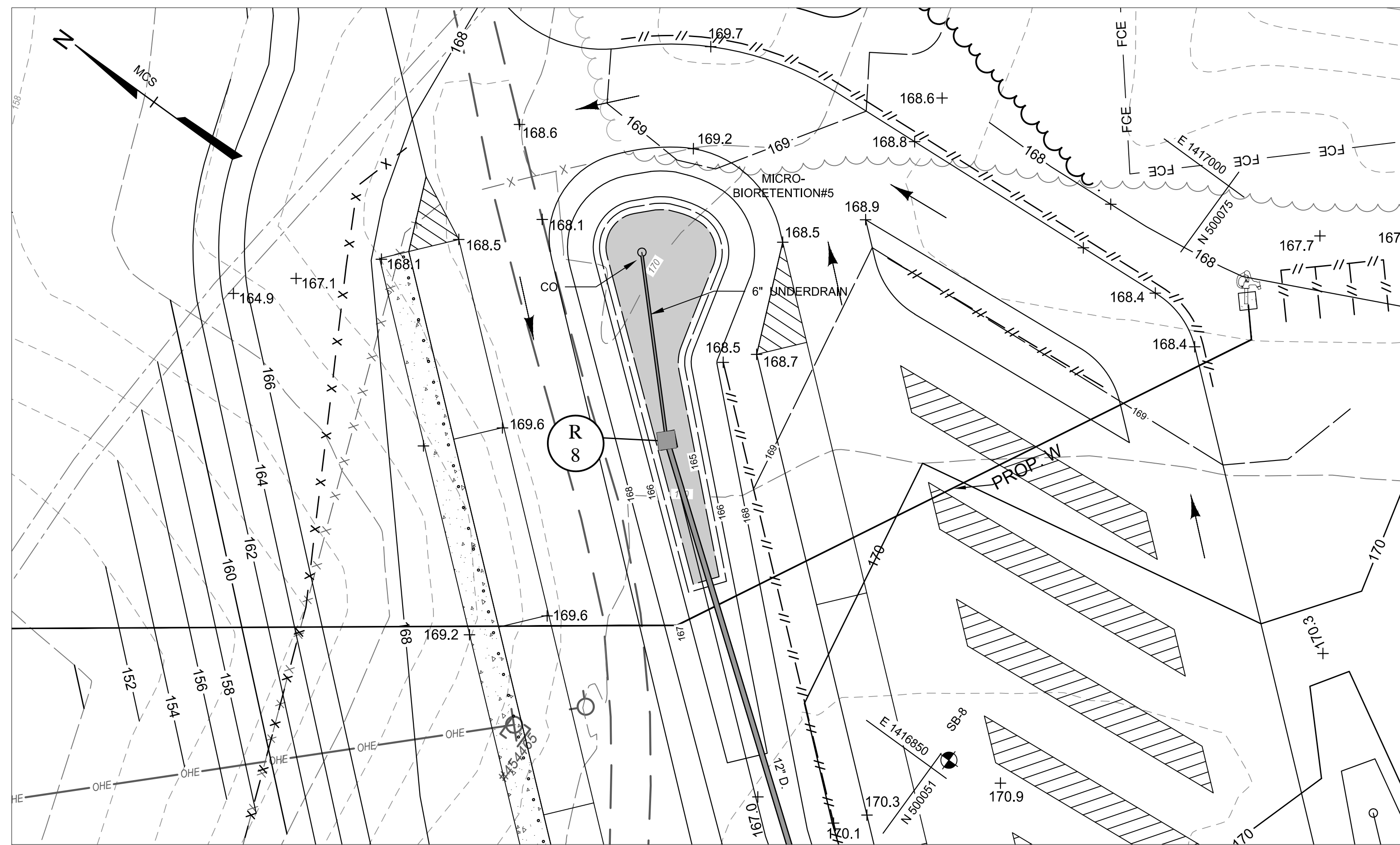
Severn Chapel Area  
of the Bacon Ridge Natural Area

2nd Tax District  
Anne Arundel Co., MD. Tax Map 37, Grid 11, Parcel 86

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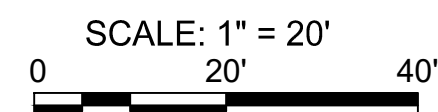


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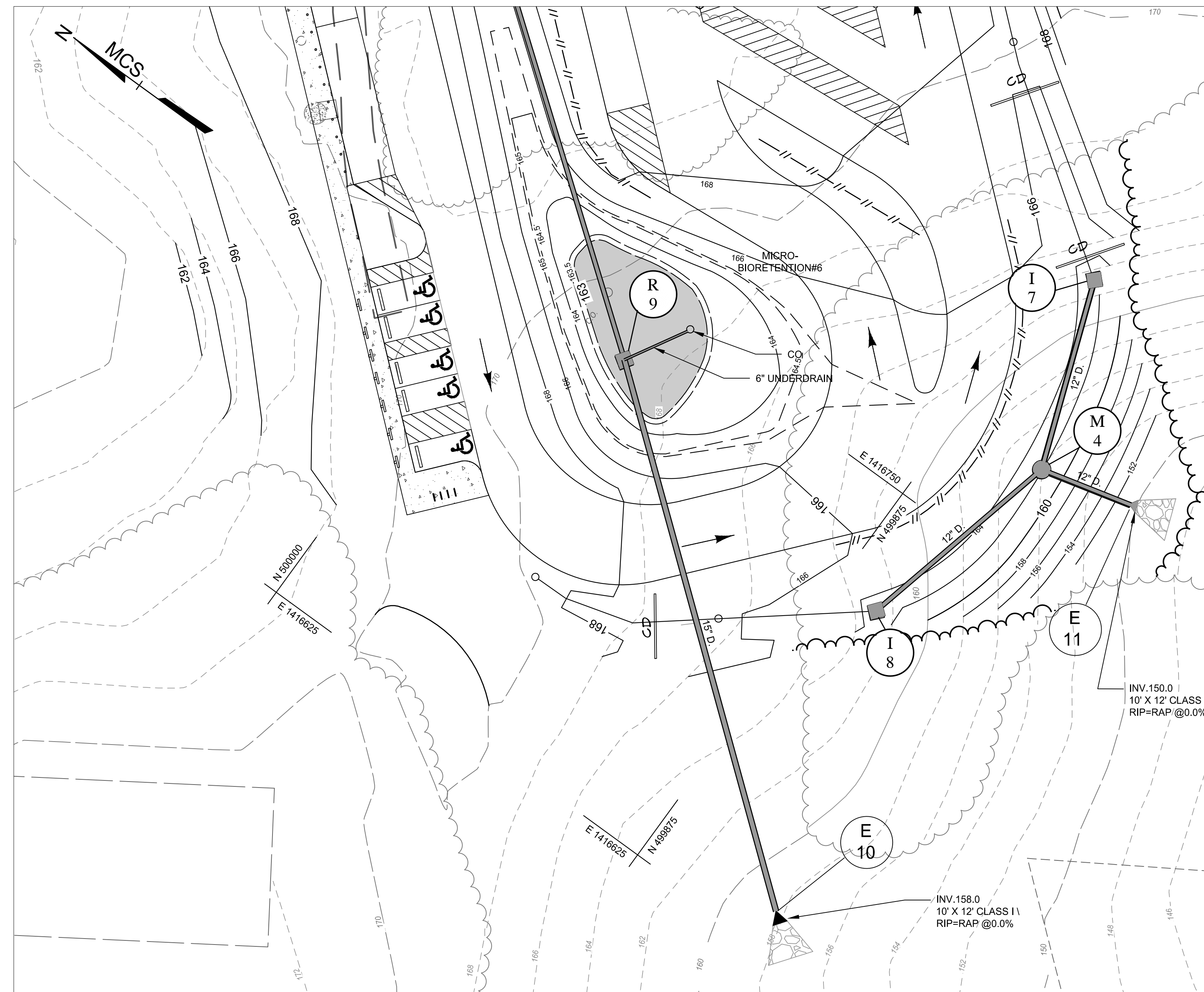
**MICRO-BIORETENTION #5**

**NOTE: AREAS ADJACENT TO SWM TO BE SODDED.**

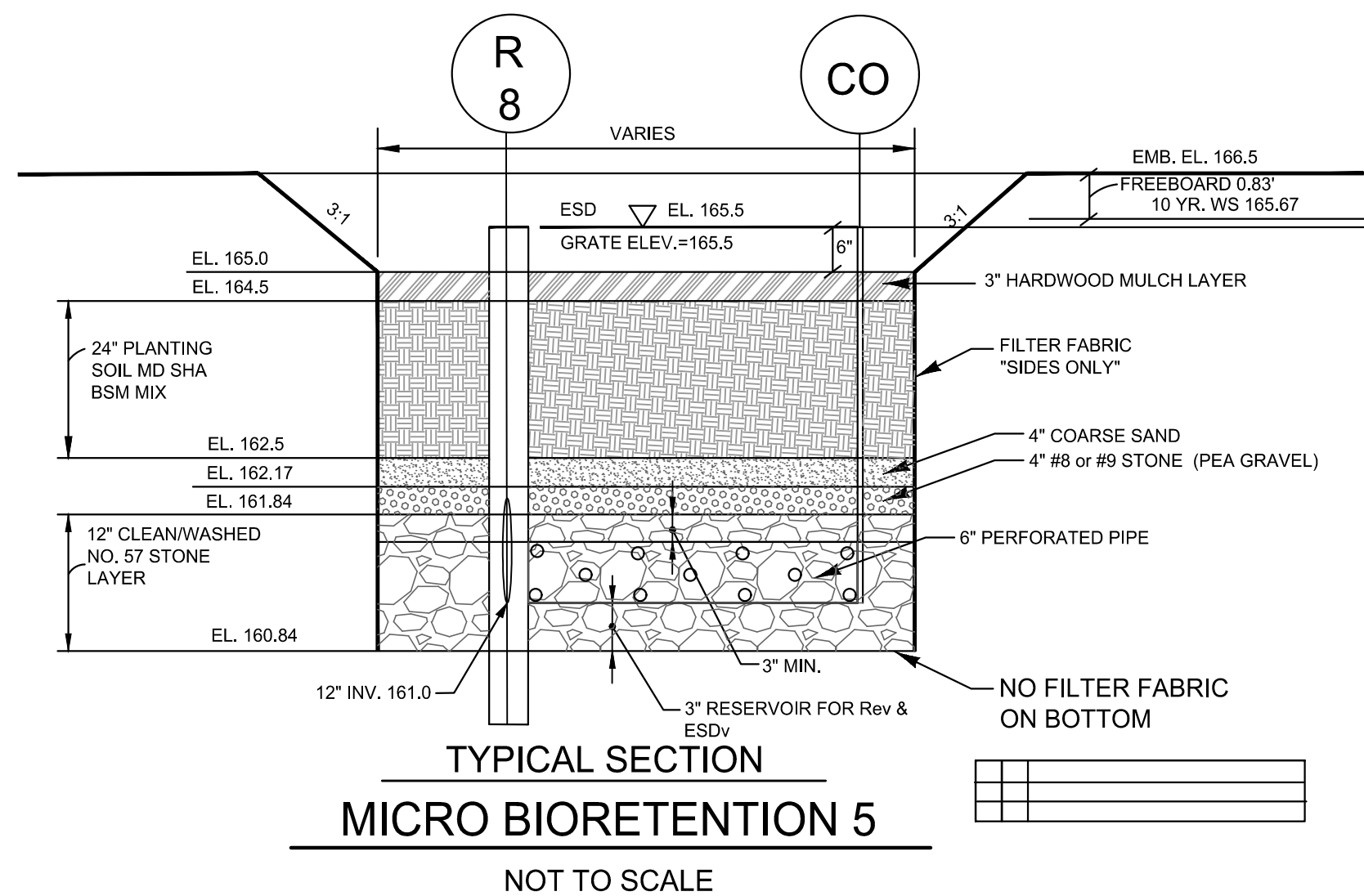
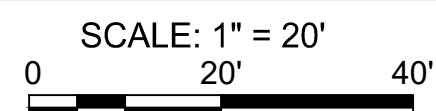


**ESDv FACILITY LEGEND**

- HARDWOOD MULCH
- PLANTING SOIL
- RIP-RAP
- STONE CHIMNEY
- GABIONS

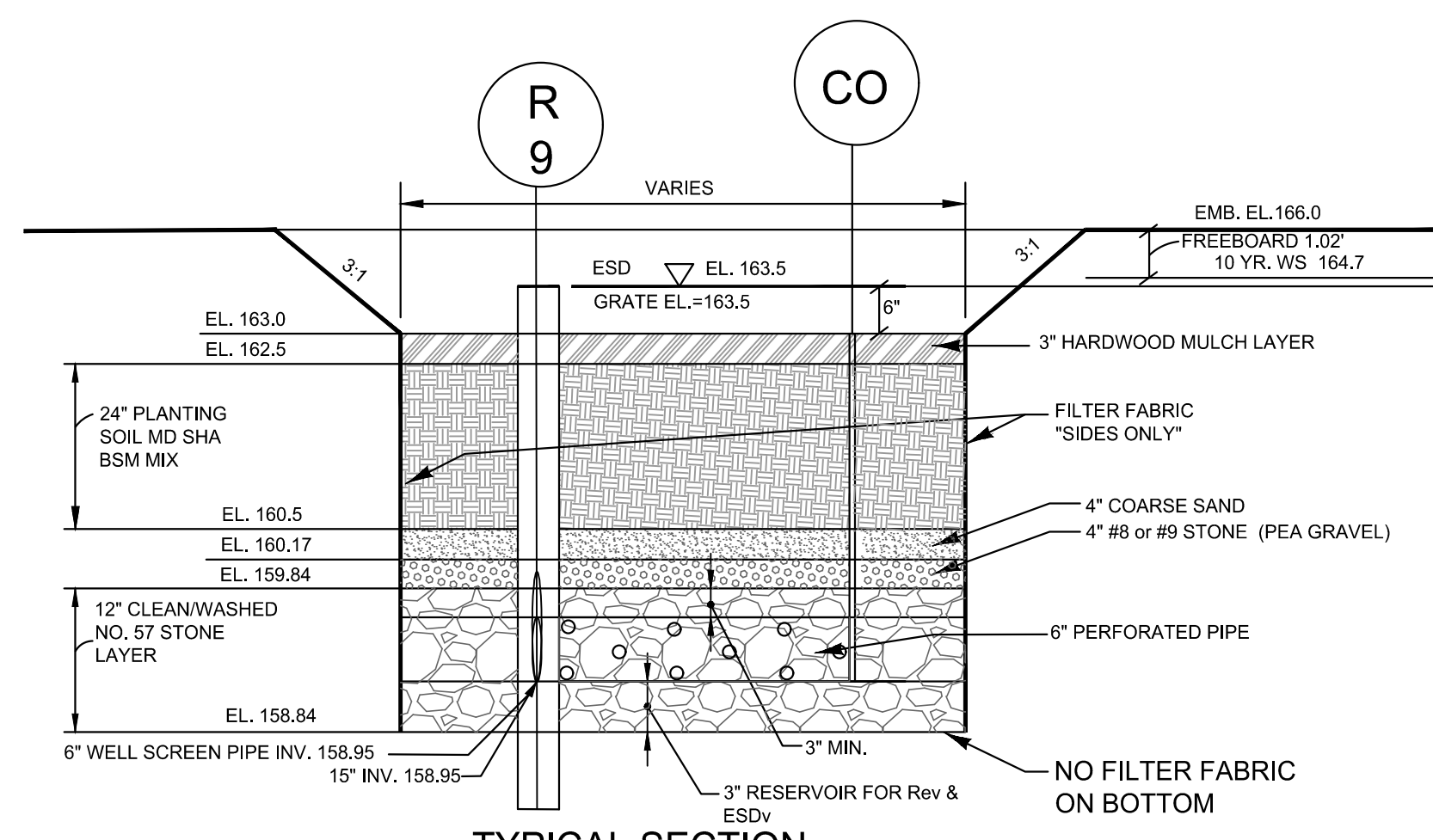


**MICRO-BIORETENTION #6**



**TYPICAL SECTION MICRO BIORETENTION 5**

NOT TO SCALE



**TYPICAL SECTION MICRO BIORETENTION 6**

NOT TO SCALE

24TMP-026983

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DATE: 6/21/2024

REVISED DATE	BY	APPROVED	DATE

ANNE ARUNDEL COUNTY  
 DEPARTMENT OF PUBLIC WORKS

APPROVED	DATE	APPROVED	DATE

SCALE AS SHOWN	CONSTRUCTION DOCUMENTS
DRAWN BY: LMV/JRD	SWM Facilities
CHECKED BY: MJP/AJD	Severn Chapel Area of the Bacon Ridge Natural Area
SHEET 40 OF 77	2nd Tax District Anne Arundel Co., MD.
PROJECT NO.: P588001	Tax Map 37, Grid 11, Parcel 86
DATE: 6/7/2024	



Project Name: Bacon Ridge Park Improvements <b>AS-BUILT DATA FOR MICRO-BIORETENTION</b> * To be completed by the Certifying Engineer			Project Name: Bacon Ridge Park Improvements <b>AS-BUILT DATA FOR SUBMERGED GRAVEL WETLANDS</b> To be completed by the Certifying Engineer			Project Name: Bacon Ridge Park Improvements <b>AS-BUILT DATA FOR MICRO-BIORETENTION</b> * To be completed by the Certifying Engineer			Project Name: Bacon Ridge Park Improvements <b>AS-BUILT DATA FOR MICRO-BIORETENTION</b> * To be completed by the Certifying Engineer		
BMP ID: MB#1			BMP ID: SGW#1A			BMP ID: MB#2			BMP ID: MB#3		
FEATURE	DESIGN	* AS-BUILT	FEATURE	DESIGN	* AS-BUILT	FEATURE	DESIGN	* AS-BUILT	FEATURE	DESIGN	* AS-BUILT
	840 SF		Filter Bed Area	1,761 SF		Filter Bed Area	509 SF		Filter Bed Area	674 SF	
	96.5		Filter Bed Surface Elevation	106.5		Filter Bed Surface Elevation	138.0		Filter Bed Surface Elevation	139.0	
	6" / 93.48		Outlet Pipe (Underdrain) Size/Invert Elevation	6" / 103.58		Outlet Pipe (Underdrain) Size/Invert Elevation	6" / 134.34		Outlet Pipe (Underdrain) Size/Invert Elevation	6" / 134.34	
	24"		Thickness of Stone	24"		Thickness of Filter Media	24"		Thickness of Filter Media	24"	
	Sides Only		Placement of Liner	All Sides		Placement of Geotextile	Sides Only		Placement of Geotextile	Sides Only	
	Per Approved LA Plan			Per Approved LA Plan		Plantings	Per Approved LA Plan		Plantings	Per Approved LA Plan	
	MD SHA BSM MIX		Composition of Gravel Media			Composition of Filter Media	MD SHA BSM MIX		Composition of Filter Media	MD SHA BSM MIX	
	4"		No. 8 Stone	1,837SF		Observation Well with Depth to Filter Bottom Indicated on Cap	4"		Observation Well with Depth to Filter Bottom Indicated on Cap	4"	
	6"		No. 6 Stone	1,837SF		Ponding Depth	18"		Ponding Depth	9"	
	464 CF		Observation Well with Depth to Filter Bottom Indicated on Cap	4"		Ponding Volume	498 CF		Ponding Volume	391CF	
	1,136 CF		Ponding Depth	18"		Total Volume	905 CF		Total Volume	706 CF	
			Ponding Volume	1837 CF							
			Total Volume	2,339 CF							

Date As-Built Accepted by Anne Arundel County: \_\_\_\_\_ Date As-Built Accepted by Anne Arundel County: \_\_\_\_\_ Date As-Built Accepted by Anne Arundel County: \_\_\_\_\_ Date As-Built Accepted by Anne Arundel County: \_\_\_\_\_

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BMP ID: MB#4			BMP ID: MB#5			BMP ID: MB#6		
FEATURE	DESIGN	AS-BUILT	FEATURE	DESIGN	* AS-BUILT	FEATURE	DESIGN	AS-BUILT
Filter Bed Area	298 SF		Filter Bed Area	1,074 SF		Filter Bed Area	1,173 SF	
Filter Bed Surface Elevation	146.0	*	Filter Bed Surface Elevation	165.0		Filter Bed Surface Elevation	163.0	*
Outlet Pipe (Underdrain) Size/Invert Elevation	6" / 142.32		Outlet Pipe (Underdrain) Size/Invert Elevation	12" / 161.0		Outlet Pipe (Underdrain) Size/Invert Elevation	15" / 158.95	
Thickness of Filter Media	24"		Thickness of Filter Media	24"		Thickness of Filter Media	24"	
Placement of Geotextile	Sides Only		Placement of Geotextile	Sides Only		Placement of Geotextile	Sides Only	
Plantings	Per Approved LA Plan		Plantings	Per Approved LA Plan		Plantings	Per Approved LA Plan	
Composition of Filter Media	MD SHA BSM MIX		Composition of Filter Media	MD SHA BSM MIX		Composition of Filter Media	MD SHA BSM MIX	
Observation Well with Depth to Filter Bottom Indicated on Cap	4"		Observation Well with Depth to Filter Bottom Indicated on Cap	4"		Observation Well with Depth to Filter Bottom Indicated on Cap	4"	
Ponding Depth	6"		Ponding Depth	6"		Ponding Depth	6"	
Ponding Volume	185 CF		Ponding Volume	614 CF		Ponding Volume	638 CF	
Total Volume	423 CF		Total Volume	1,473 CF		Total Volume	1,576 CF	

Date As-Built Accepted by Anne Arundel County: \_\_\_\_\_ Date As-Built Accepted by Anne Arundel County: \_\_\_\_\_ Date As-Built Accepted by Anne Arundel County: \_\_\_\_\_

Project Name: Bacon Ridge Park Improvements <b>AS-BUILT DATA FOR SUBMERGED GRAVEL WETLANDS</b> To be completed by the Certifying Engineer			Project Name: Bacon Ridge Park Improvements <b>AS-BUILT DATA FOR SUBMERGED GRAVEL WETLANDS</b> To be completed by the Certifying Engineer			Project Name: Bacon Ridge Park Improvements <b>AS-BUILT DATA FOR SUBMERGED GRAVEL WETLANDS</b> To be completed by the Certifying Engineer		
BMP ID: SGW#1			BMP ID: SGW#2			BMP ID: SGW#3		
FEATURE	DESIGN	* AS-BUILT	FEATURE	DESIGN	* AS-BUILT	FEATURE	DESIGN	* AS-BUILT
Filter Bed Area	5,179 SF		Filter Bed Area	3,179 SF		Filter Bed Area	3,783 SF	
Filter Bed Surface Elevation	138.0		Filter Bed Surface Elevation	147.5		Filter Bed Surface Elevation	148.0	
Outlet Pipe (Underdrain) Size/Invert Elevation	6" / 136.6		Outlet Pipe (Underdrain) Size/Invert Elevation	12" / 144.0		Outlet Pipe (Underdrain) Size/Invert Elevation	12" / 144.0	
Thickness of Stone	24"		Thickness of Stone	24"		Thickness of Stone	24"	
Placement of Liner	All Sides		Placement of Liner	All Sides		Placement of Liner	All Sides	
Plantings	Per Approved LA Plan		Plantings	Per Approved LA Plan		Plantings	Per Approved LA Plan	
Composition of Gravel Media			Composition of Gravel Media			Composition of Gravel Media		
No. 8 Stone	5,179 SF		No. 8 Stone	3,179 SF		No. 8 Stone	3,895 SF	
No. 6 Stone	5,179 SF		No. 6 Stone	3,179 SF		No. 6 Stone	3,895 SF	
Observation Well with Depth to Filter Bottom Indicated on Cap	4"		Observation Well with Depth to Filter Bottom Indicated on Cap	4"		Observation Well with Depth to Filter Bottom Indicated on Cap	4"	
Ponding Depth	12"		Ponding Depth	18"		Ponding Depth	12"	
Ponding Volume	2,648 CF		Ponding Volume	3,451 CF		Ponding Volume	1,957 CF	
Total Volume	3,783 CF		Total Volume	3,982 CF		Total Volume	2,452 CF	

Date As-Built Accepted by Anne Arundel County: \_\_\_\_\_ Date As-Built Accepted by Anne Arundel County: \_\_\_\_\_ Date As-Built Accepted by Anne Arundel County: \_\_\_\_\_

Project Name: Bacon Ridge Park Improvements <b>AS-BUILT DATA FOR SUBMERGED GRAVEL WETLANDS</b> To be completed by the Certifying Engineer			Project Name: Bacon Ridge Park Improvements <b>AS-BUILT DATA FOR SUBMERGED GRAVEL WETLANDS</b> To be completed by the Certifying Engineer			Project Name: Bacon Ridge Park Improvements <b>AS-BUILT DATA FOR SUBMERGED GRAVEL WETLANDS</b> To be completed by the Certifying Engineer		
BMP ID: BIO-SWALE#2			BMP ID: BIO-SWALE#3			BMP ID: BIO-SWALE#4		
FEATURE	DESIGN	AS-BUILT	FEATURE	DESIGN	AS-BUILT	FEATURE	DESIGN	AS-BUILT
Filter Bed Area			Filter Bed Area			Filter Bed Area		
Filter Bed Surface Elevation			Filter Bed Surface Elevation			Filter Bed Surface Elevation		
Outlet Pipe (Underdrain) Size/Invert Elevation	4"		Outlet Pipe (Underdrain) Size/Invert Elevation	4"		Outlet Pipe (Underdrain) Size/Invert Elevation	4"	
Thickness of Filter Media	24"		Thickness of Filter Media	24"		Thickness of Filter Media	24"	
Placement of Geotextile	All Sides		Placement of Geotextile	All Sides		Placement of Geotextile	All Sides	
Plantings	Per Approved LA Plan		Plantings	Per Approved LA Plan		Plantings	Per Approved LA Plan	
Composition of Filter Media	MD SHA BSM MIX		Composition of Filter Media	MD SHA BSM MIX		Composition of Filter Media	MD SHA BSM MIX	
Observation Well with Depth to Filter Bottom Indicated on Cap	4"		Observation Well with Depth to Filter Bottom Indicated on Cap	4"		Observation Well with Depth to Filter Bottom Indicated on Cap	4"	
Ponding Depth	6"		Ponding Depth	6"		Ponding Depth	6"	
Ponding Volume			Ponding Volume			Ponding Volume		
Total Volume			Total Volume			Total Volume		

Date As-Built Accepted by Anne Arundel County: \_\_\_\_\_ Date As-Built Accepted by Anne Arundel County: \_\_\_\_\_ Date As-Built Accepted by Anne Arundel County: \_\_\_\_\_

**STORMWATER MANAGEMENT DATA**

**Project Table for Each Drainage Area**

Permit Number	PS88001
Project Name	Severn Chapel Area/Bacon Ridge
Structure Address	1214 Severn Chapel Road
Structure City	Crownsville
State	Maryland
Structure Zip	21032
Total Drainage Area (Acres)	415,935
RCN - Pre Construction	DA A=73, DA B= 68
RCN - Post Construction	DA A=73, DA B= 68
RCN - Woods	
Total Number of BMPs	13
PE Required (see Note 1)	1.0*
PE Addressed (see Note 2)	2.05*
MD 8-Digit HUC (see Note 4)	2131003
USGS 12-Digit HUC	Blank - County Use

PE required based on total site area 152.00 acres  
PE addressed based on disturbed area 9.9 acres

**For Each Practice in the Drainage Area**

STORM_ID	STRU_NAME	MDE BMP CLASS	MDE BMP TYPE	CONSTRUCTION PURPOSE	ON or OFF SITE	LAND USE	DEVICE DRAINAGE AREA (acres)	IMPERVIOUS AREA DRAINING TO DEVICE (acres)	IMPERVIOUS ACRES RESTORED (See Note 3)	MD NORTH COORD (NAD83 - FT)	MD EAST COORD (NAD83 - FT)	WQ (ac-ft) (See Note 5)	New development (NEW), Redevelopment (REDE), or Restoration (REST)	
													MDP Code	MDP Code
Blank - County Use	MB1	E	MMBR	NEWD	ON	18	0.38	0.12	N/A	N501,811	E1,415,897	1,224		
	SGW1A	E	MSGW	NEWD	ON	18	0.97	0.24	N/A	N501,682	E1,416,040	3,119		
	MB2	E	MMBR	NEWD	ON	18	0.35	0.07	N/A	N500,813	E1,416,620	733		
	MB3	E	MMBR	NEWD	ON	18	0.24	0.07	N/A	N500,806	E1,416,624	706		
	MB4	E	MMBR	NEWD	ON	18	0.13	0.06	N/A	N500,728	E1,416,654	560		
	MB5	E	MMBR	NEWD	ON	18	0.36	0.22	N/A	N499,964	E1,416,745	2,072		
	MB6	E	MMBR	NEWD	ON	18	0.46	0.18	N/A	N500,170	E1,416,905	1,791		
	SGW1	E	MSGW	NEWD	ON	18	0.99	0.44	N/A	N504,100	E1,396,094	4,298		
	SGW2	E	MSGW	NEWD	ON	18	0.83	0.60	N/A	N500,444	E1,416,645	5,309		
	SGW3	E	MSGW	NEWD	ON	18	0.63	0.34	N/A	N500,348	E1,416,715	3,225		
	BIO SWALE 2	E	MSWB	NEWD	ON	18	0.94	0.22	N/A	N501,347	E1,416,306	2,360		
	BIO SWALE 3	E	MSRB	NEWD	ON	18	0.39	0.17	N/A	N499,916	E1,416,663	1,176		
	BIO SWALE 4	E	MSRB	NEWD	ON	18	0.1	0.04	N/A	N499,910	E1,416,676	378		
	NON ROOF TOP DISCONNECT	E	NDRR	NEWD	ON	18	N/A	0.18	N/A	N500,127	E1,416,802	619		
	SHEET FLOW TO BUFFER CREDIT	E	NDRR	NEWD	ON	18	N/A	0.18	N/A	N450,066	E1,416,846	632		


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NOTE: THERE IS NO BIO-SWALE #1



**CENTURY ENGINEERING**  
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10710 Gilroy Road, Hunt Valley, MD 21031  
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DATE: 6/21/2024



LICENSE NO. 32574

**ANNE ARUNDEL COUNTY**  
DEPARTMENT OF PUBLIC WORKS

G02002077

REVISED DATE	BY	APPROVED DATE	APPROVED DATE	SCALE	AS SHOWN
CHIEF ENGINEER		PROJECT MANAGER		CHECKED BY	
APPROVED DATE		APPROVED DATE		MJP/AJD	
ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY		SHEET 41 OF 77	
				PROJECT NO.: P588001	
				DATE: 6/7/2024	

**CONSTRUCTION DOCUMENTS**

**SWM Notes & Details**  
**Severn Chapel Area**  
**of the Bacon Ridge Natural Area**

2nd Tax District  
Anne Arundel Co., MD. Tax Map 37, Grid 11, Parcel 86

24TMP-026983





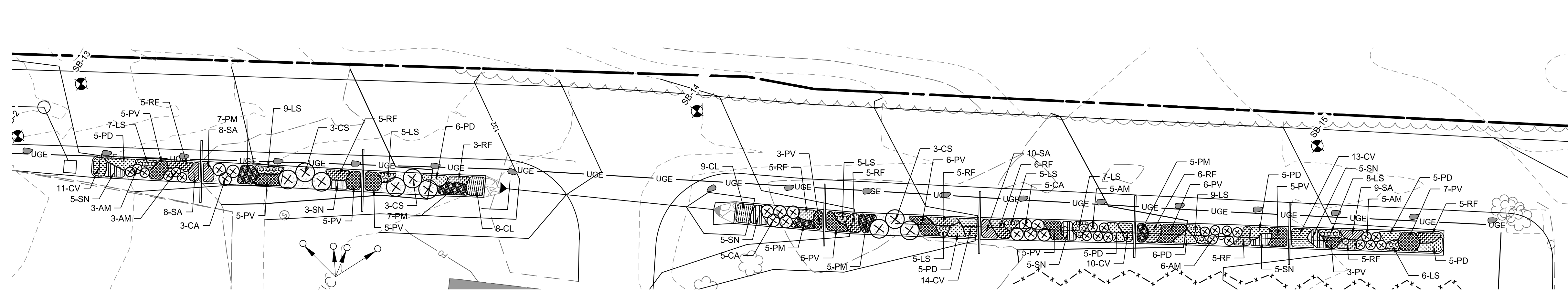










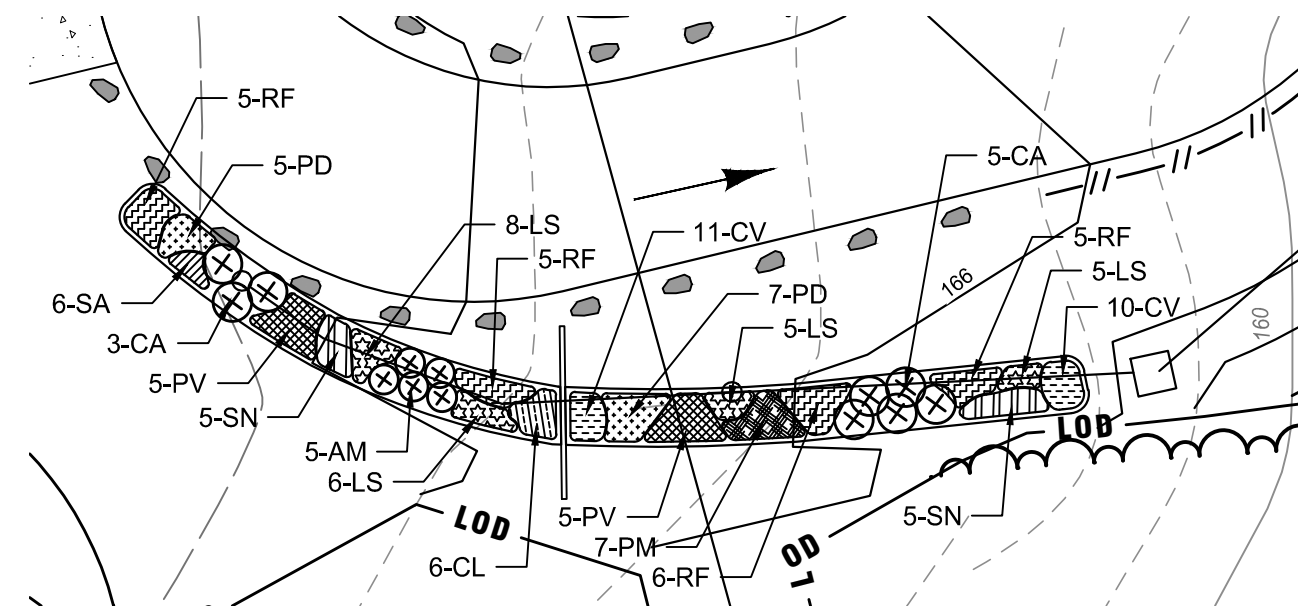


**BIOSWALE #2**

SCALE: 1" = 20'

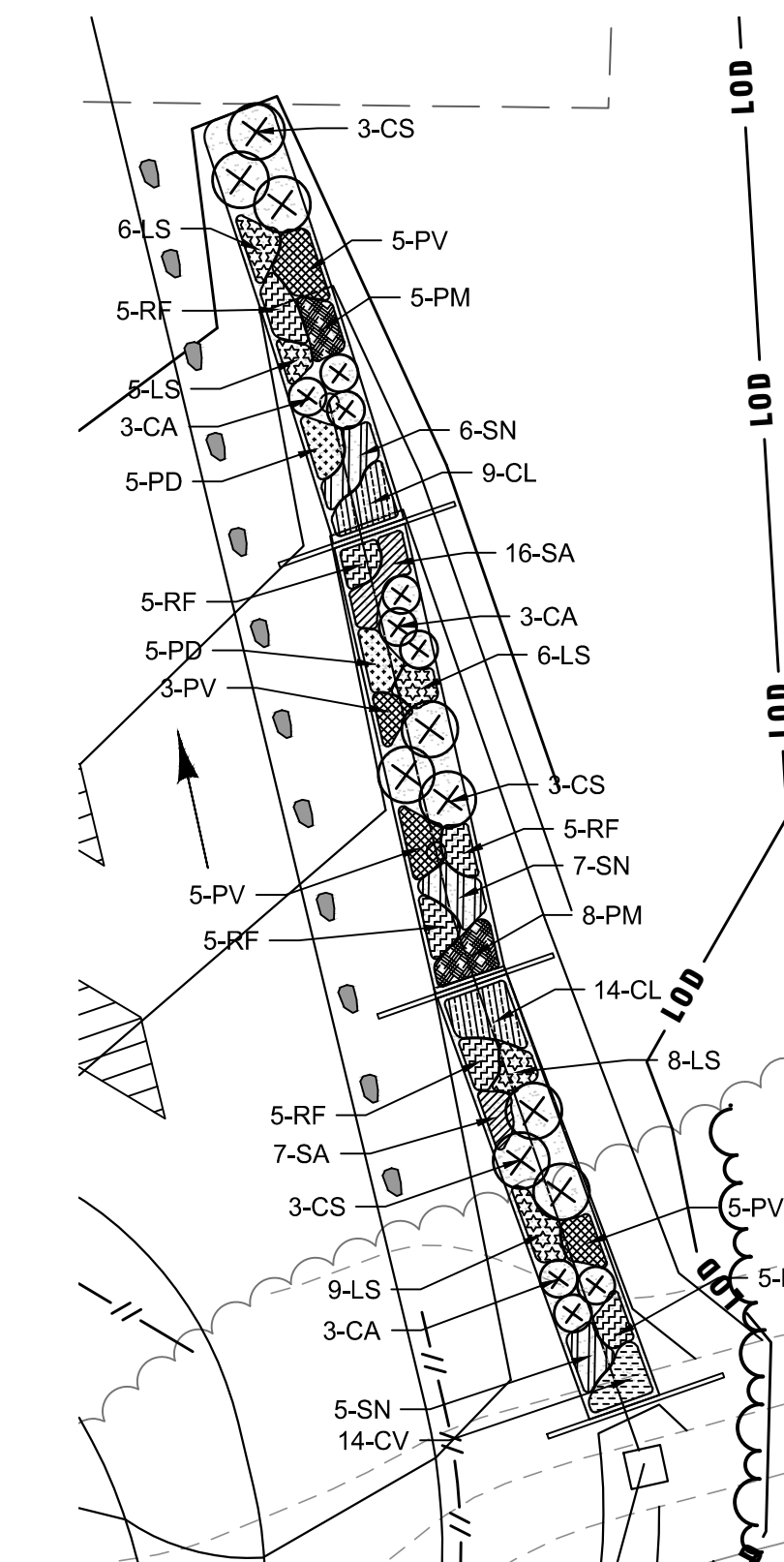
**BIOSWALE PLANT LIST**

KEY	QTY	SCIENTIFIC NAME	COMMON NAME	SIZE	COMMENTS
SHRUBS					
AM	27	<i>Aronia melanocarpa</i>	Black Chokeberry	24" - 36" ht.	Container; Full to Ground
CA	30	<i>Clethra alnifolia</i>	Summersweet Pepperbush	24" - 36" ht.	Container; Full to Ground
CS	18	<i>Cornus sericea</i>	Red Twig Dogwood	24" - 36" ht.	Container; Full to Ground
TOTAL	75				
PERENNIALS, GRASSES, AND GROUNDCOVERS					
CV	81	<i>Carex vulpinoidea</i>	Fox Sedge	9" - 12" ht.	Container; 18" o.c.
CL	46	<i>Chasmanthium latifolium</i>	Northern Sea Oats	12" - 18" ht.	Container; 24" o.c.
LS	124	<i>Liatris spicata</i>	Blazing Star	9" - 12" ht.	Container; 18" o.c.
PV	94	<i>Panicum virgatum</i>	Switch Grass	12" - 18" ht.	Container; 30" o.c.
PD	64	<i>Penstemon digitalis</i>	Foxglove Beardtongue	9" - 12" ht.	Container; 24" o.c.
PM	49	<i>Pycnanthemum muticum</i>	Mountain Mint	9" - 12" ht.	Container; 24" o.c.
RF	106	<i>Rudbeckia fulgida var. sullivantii</i>	Black-Eyed Susan	9" - 12" ht.	Container; 24" o.c.
SA	64	<i>Sisyrinchium angustifolium</i>	Blue-Eyed Grass	9" - 12" ht.	Container; 18" o.c.
SN	56	<i>Symphotrichum novae-angliae</i>	New England Aster	12" - 18" ht.	Container; 30" o.c.
TOTAL	684				



**BIOSWALE #3**

SCALE: 1" = 20'



**BIOSWALE #4**

SCALE: 1" = 20'

**LEGEND**

	Property Line
	Adjoiner Property Line
	Existing Minor Contour
	Existing Major Contour
	Soil Line
	Existing Edge of Paving
	Existing Storm Drain
	Limit of Disturbance
	Proposed Minor Contour
	Proposed Major Contour
	Proposed Spot Elevation
	Proposed Edge of Road/Paving
	Proposed Curb and Gutter
	Proposed Paving
	Proposed Concrete Pavement / Sidewalk
	Proposed Split Rail Fence
	Proposed Inlet and Storm Drain
	Proposed Storm Drain Outfall
	Proposed Shrubs
	Proposed Perennials
	Relocated Boulder

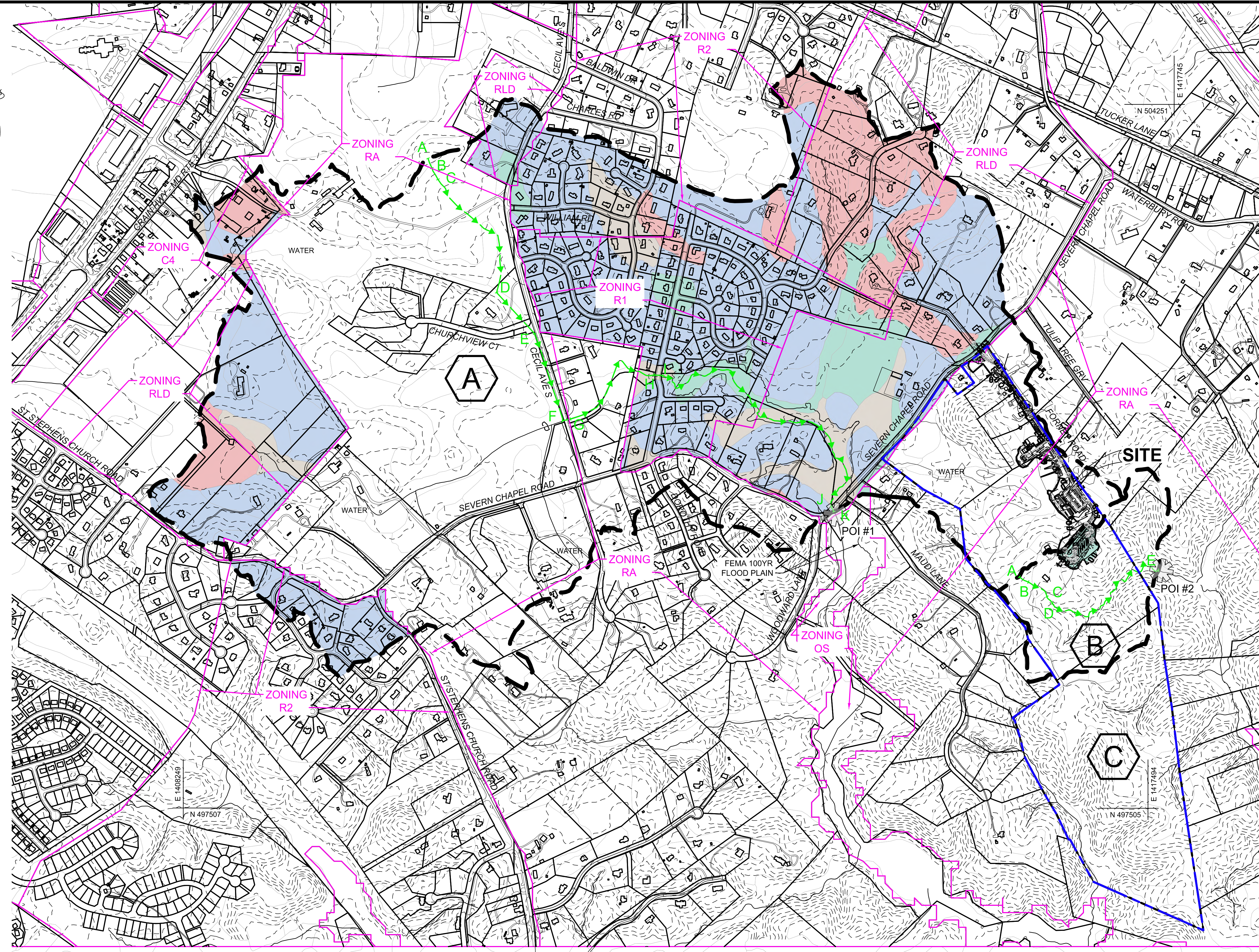
T:\2023\Facilities\202352310018BaconRidgeConstructionDrawings\3.ConstructionDocuments\20235231001A(CD-93)\BMM\LSPlan.dwg Jun 21, 2024 10:46am kdarley

24TMP-026983

 <b>CENTURY ENGINEERING</b> A Kleinfelder Company 10710 Gilroy Road, Hunt Valley, MD 21031 Phone: 443.589.2400 www.centuryeng.com	DATE: 6/21/2024	ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS		G02020077																											
	 LICENSE NO. 10908	<table border="1" style="font-size: 8px;"> <tr> <th>REVISED</th> <th>DATE</th> <th>BY</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	REVISED	DATE	BY				<table border="1" style="font-size: 8px;"> <tr> <th>APPROVED</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> </tr> </table>	APPROVED	DATE			<table border="1" style="font-size: 8px;"> <tr> <th>APPROVED</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> </tr> </table>	APPROVED	DATE			<table border="1" style="font-size: 8px;"> <tr> <td>SCALE AS SHOWN</td> <td>CONSTRUCTION DOCUMENTS</td> </tr> <tr> <td>DRAWN BY LMV/RDT</td> <td><b>SWM Planting Plan</b></td> </tr> <tr> <td>CHECKED BY MJP/AJD</td> <td><b>Severn Chapel Area</b></td> </tr> <tr> <td>SHEET 45 OF 77</td> <td><b>of the Bacon Ridge Natural Area</b></td> </tr> <tr> <td>PROJECT NO.: P588001</td> <td>2nd Tax District Tax Map 37, Grid 11, Parcel 86</td> </tr> <tr> <td>DATE: 6/7/2024</td> <td>Anne Arundel Co., MD.</td> </tr> </table>	SCALE AS SHOWN	CONSTRUCTION DOCUMENTS	DRAWN BY LMV/RDT	<b>SWM Planting Plan</b>	CHECKED BY MJP/AJD	<b>Severn Chapel Area</b>	SHEET 45 OF 77	<b>of the Bacon Ridge Natural Area</b>	PROJECT NO.: P588001	2nd Tax District Tax Map 37, Grid 11, Parcel 86	DATE: 6/7/2024	Anne Arundel Co., MD.
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CHIEF ENGINEER	PROJECT MANAGER																														
APPROVED	APPROVED																														
ASSISTANT CHIEF ENGINEER	CHIEF, RIGHT OF WAY																														



MARYLAND STATE PLANE  
NAD 83/2011 - NAVD 83



**EXISTING D.A.**

RCN = 68	<b>A</b>	A = 726.27Ac.
T <sub>c</sub> = 0.52		A = 1.13480 mi <sup>2</sup>
RCN = 73	<b>B</b>	A = 41.67 Ac.
T <sub>c</sub> = 0.25		A = 0.06511 mi <sup>2</sup>

**PROPOSED D.A.**

RCN = 68	<b>A</b>	A = 725.97Ac.
T <sub>c</sub> = 0.52		A = 1.13432 mi <sup>2</sup>
RCN = 74*	<b>B</b>	A = 41.97 Ac.
T <sub>c</sub> = 0.25		A = 0.06558 mi <sup>2</sup>

	Hydrologic 'A' Soils		Study Point
	Hydrologic 'B' Soils		Existing Drainage Area Divide
	Hydrologic 'C' Soils		Existing TC Path
	Hydrologic 'D' Soils		Zoning Line
			Limit Of Disturbance (LOD)
			Drainage Area ID

**POINT OF INVESTIGATION  
MANAGEMENT DRAINAGE AREA MAP**  
SCALE: 1"=500'  
0 500' 1000'

**CENTURY ENGINEERING**  
A Kleinfelder Company  
10710 Gilroy Road, Hunt Valley, MD 21031  
Phone: 443.589.2400 www.centuryeng.com

DATE: 6/21/2024

REVISED	DATE	BY	APPROVED	DATE

CHIEF ENGINEER	DATE	APPROVED	DATE
ASSISTANT CHIEF ENGINEER	DATE	CHIEF, RIGHT OF WAY	DATE

ANNE ARUNDEL COUNTY  
DEPARTMENT OF PUBLIC WORKS

PROJECT MANAGER	DATE	CHECKED BY	DATE
		MJP/AJD	
PROJECT NO.:	P588001	SHEET	46 OF 77
DATE:	6/7/2024		

24TMP-026983

G02020077

CONSTRUCTION DOCUMENTS

**SWM Outfall Exhibit**

**Severn Chapel Area  
of the Bacon Ridge Natural Area**

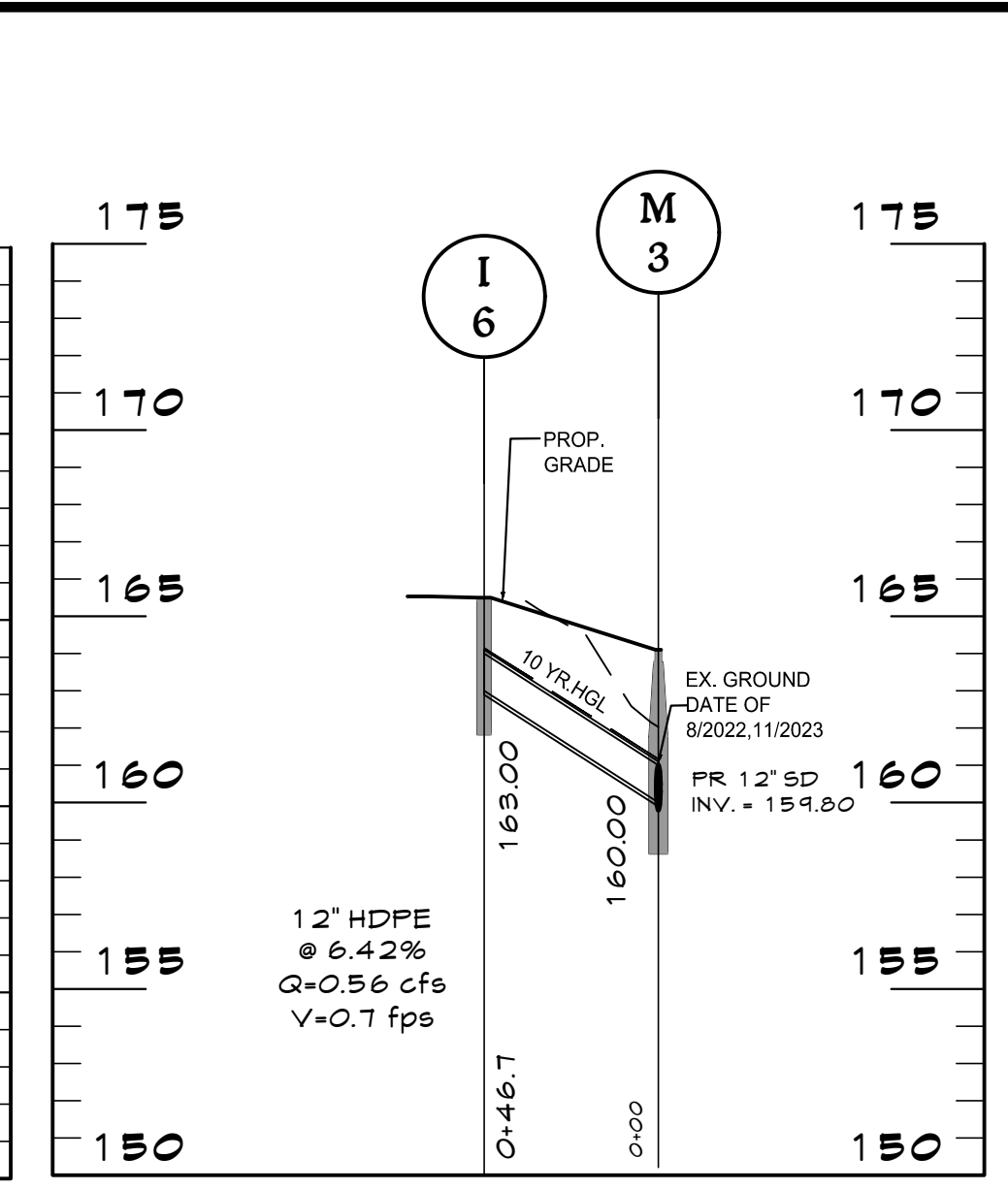
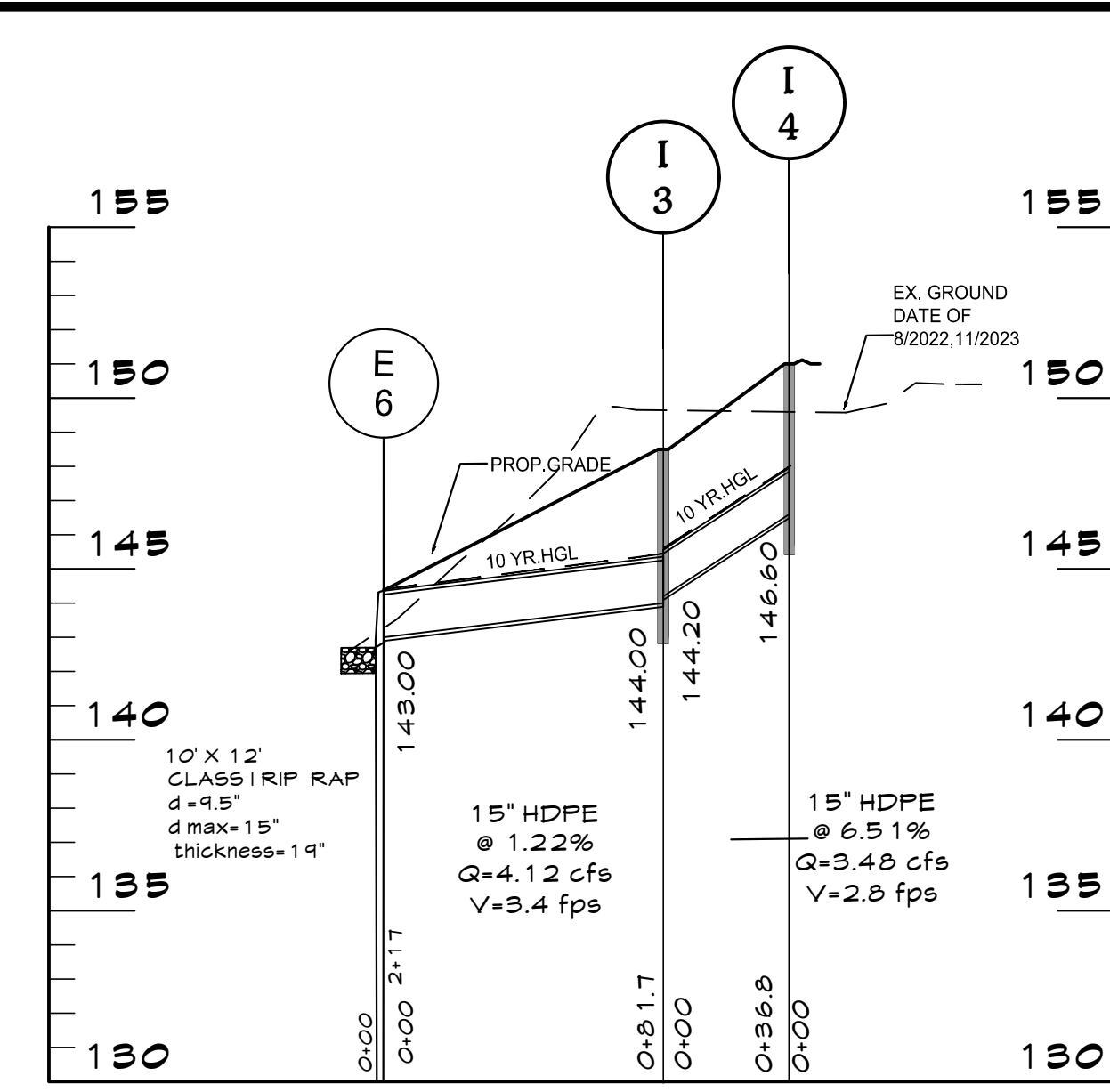
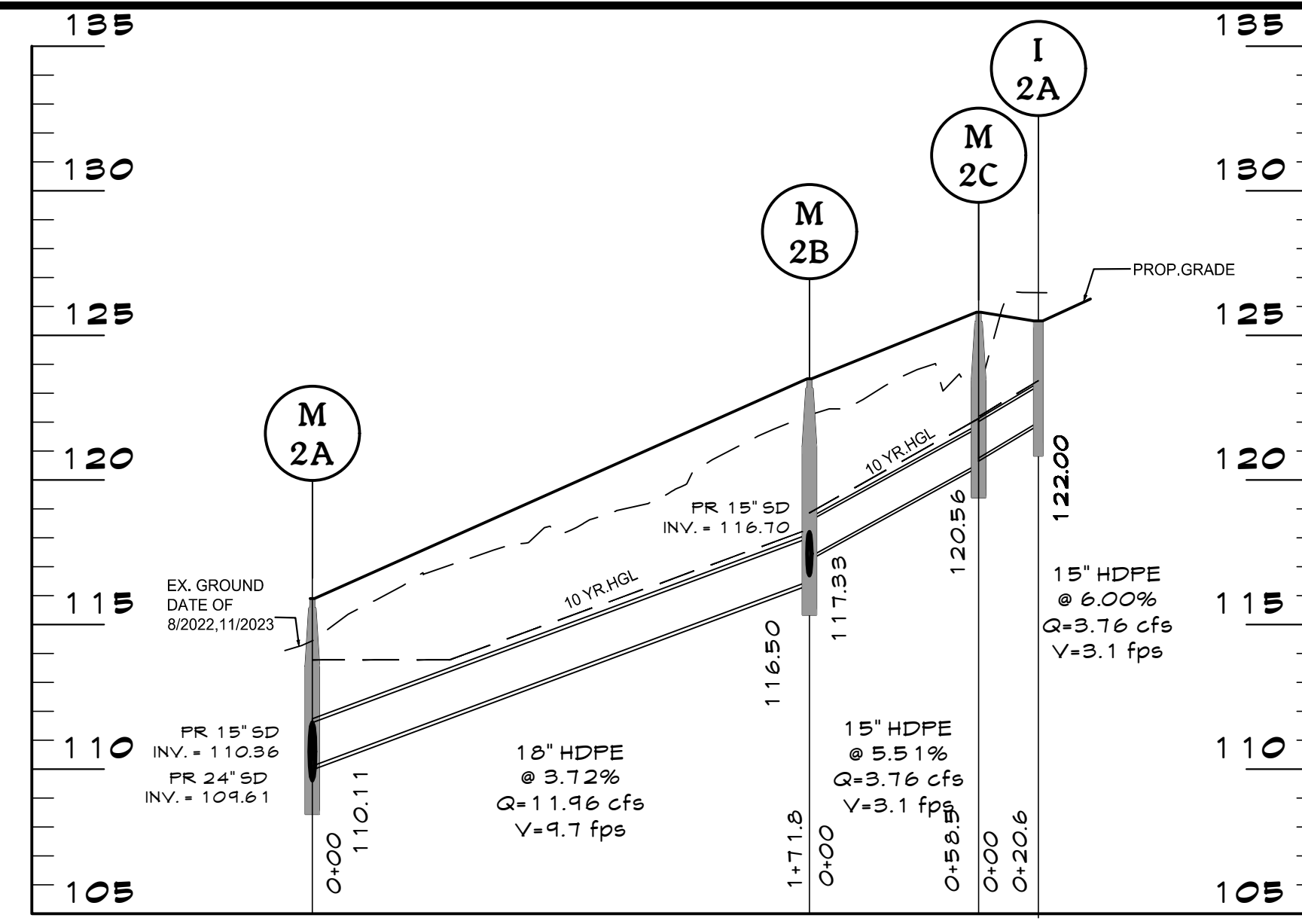
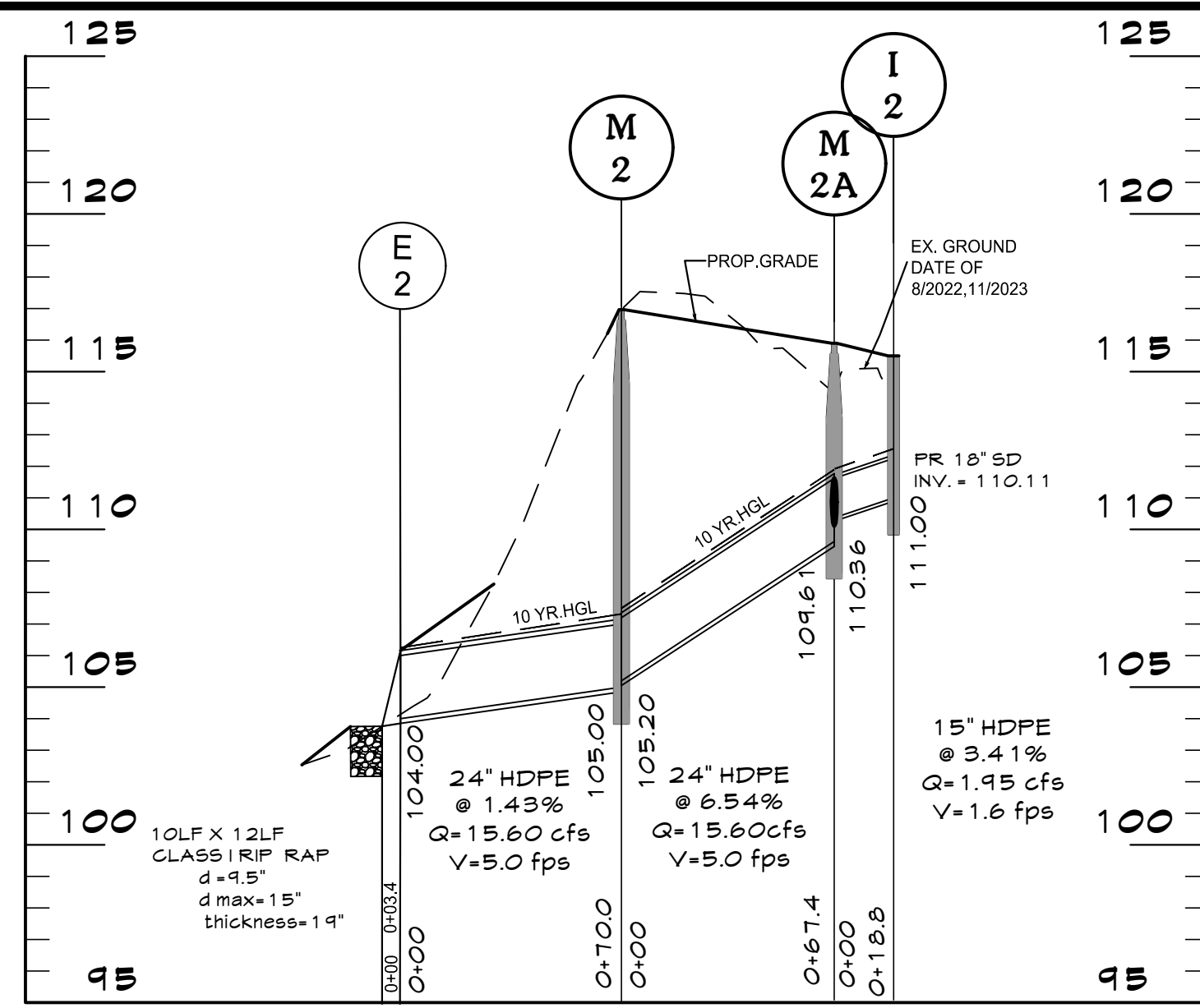
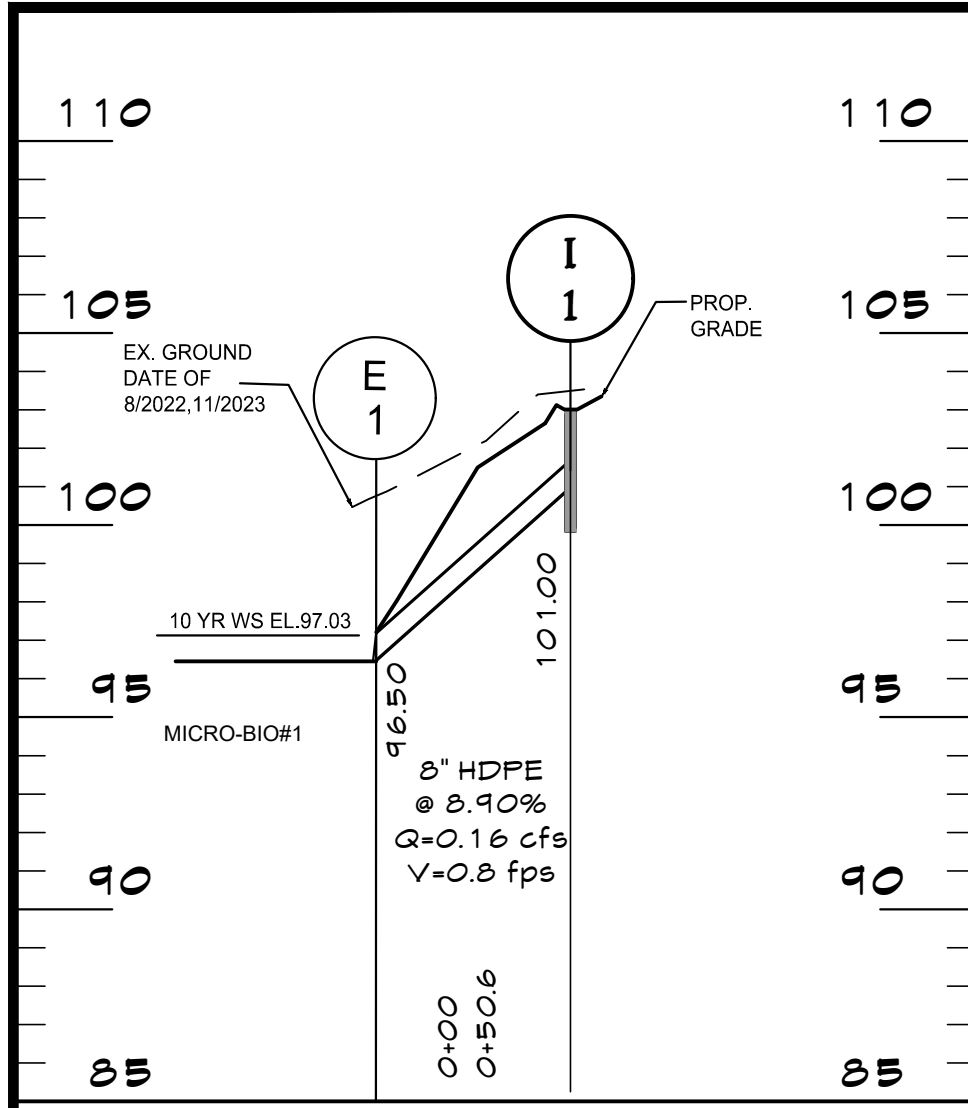
2nd Tax District  
Anne Arundel Co., MD.

Tax Map 37, Grid 11, Parcel 86

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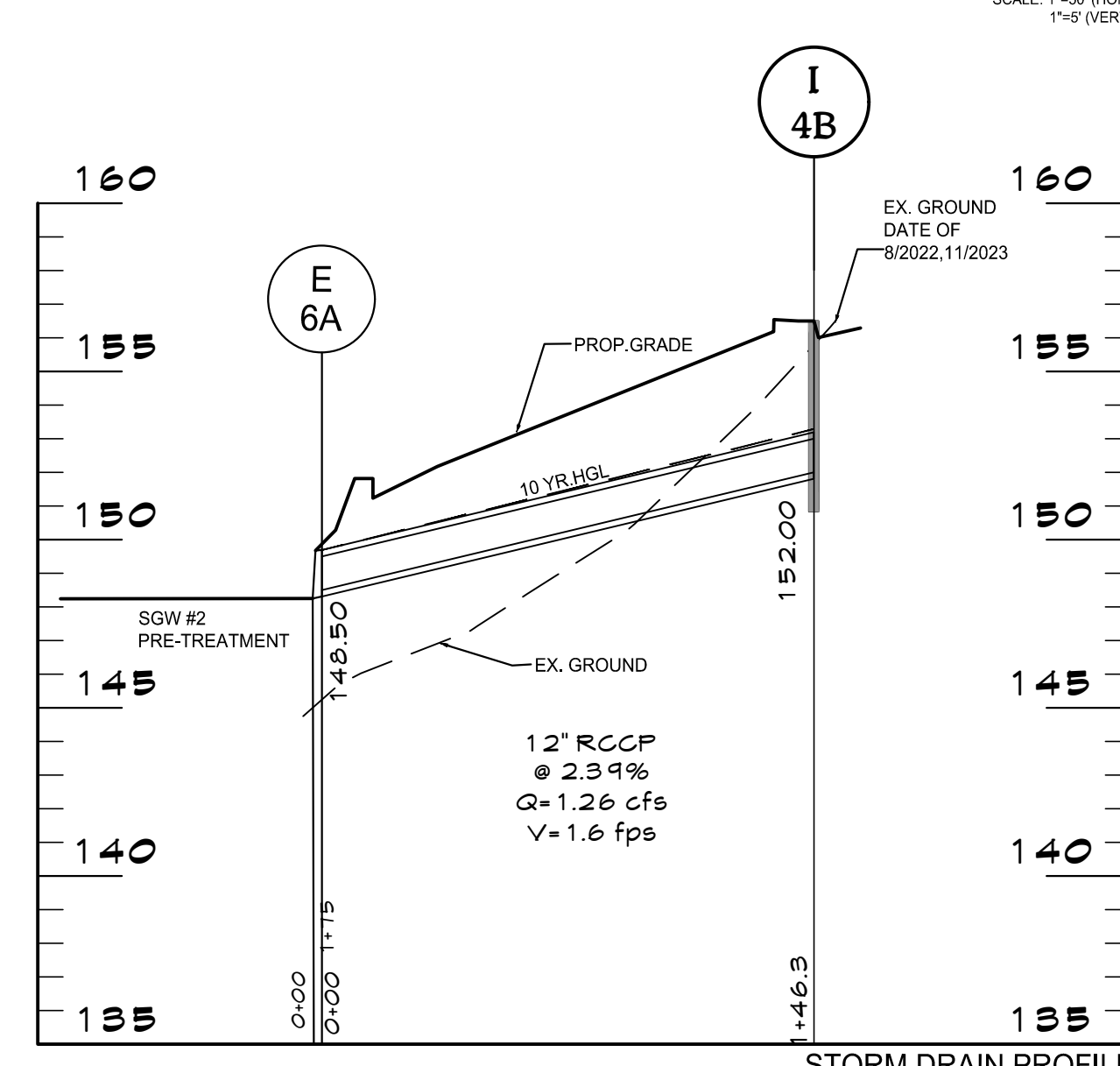
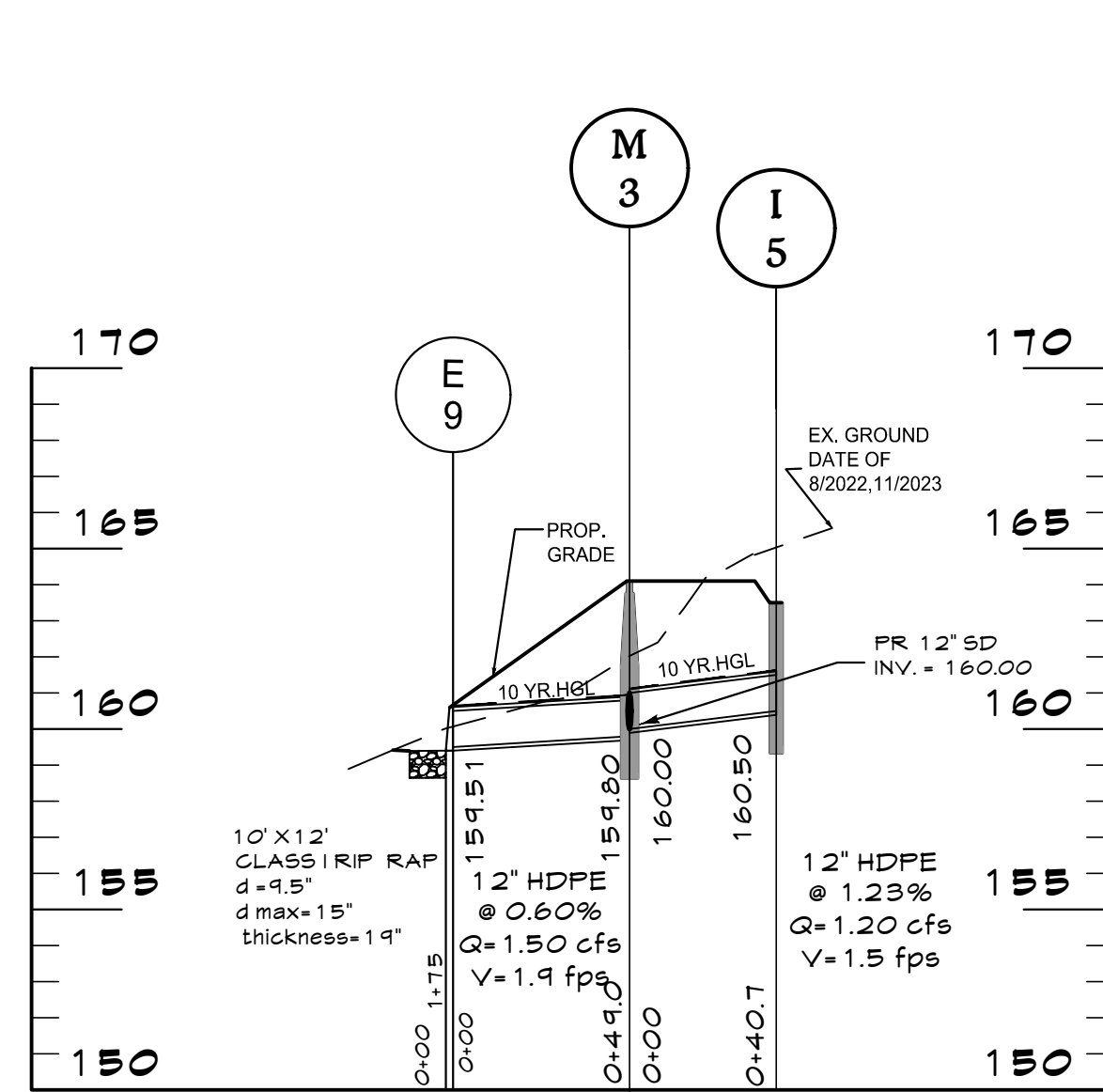
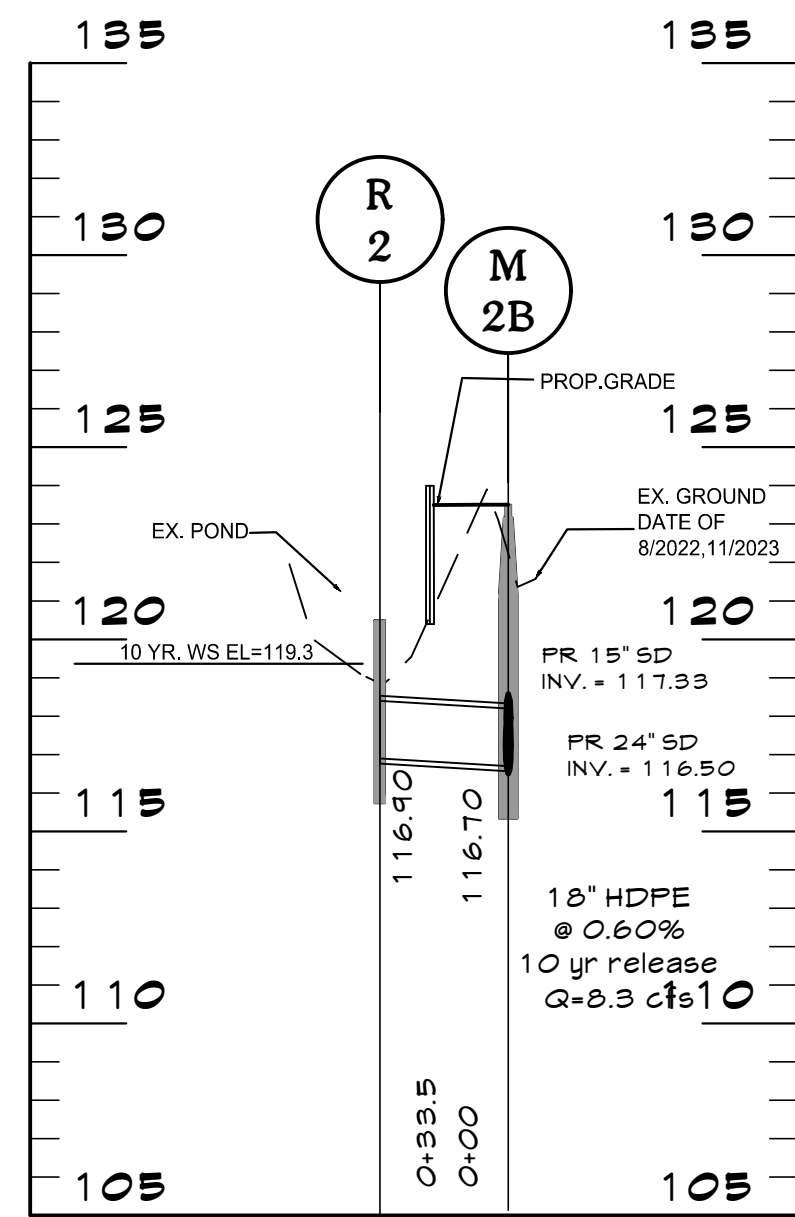


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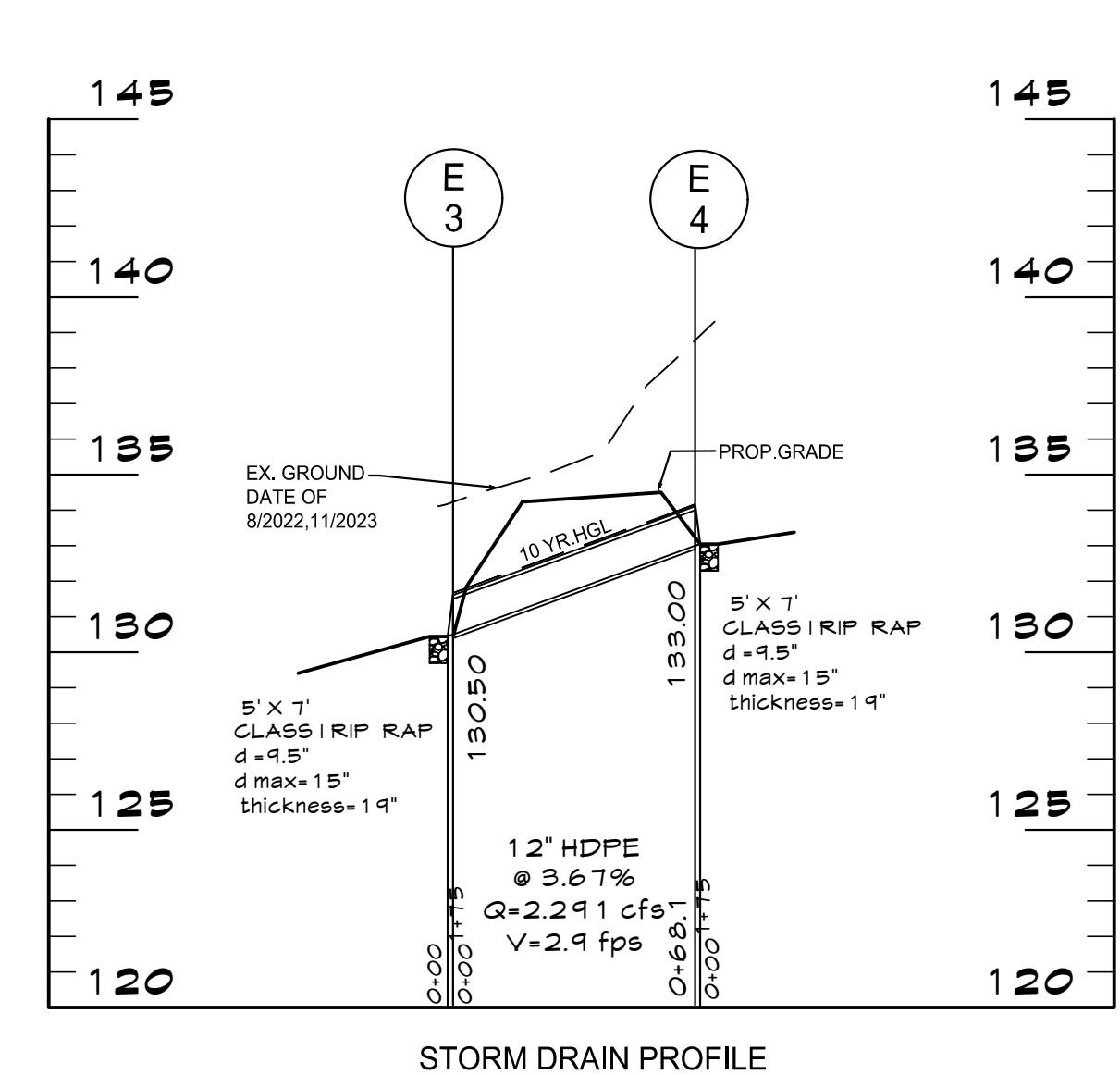
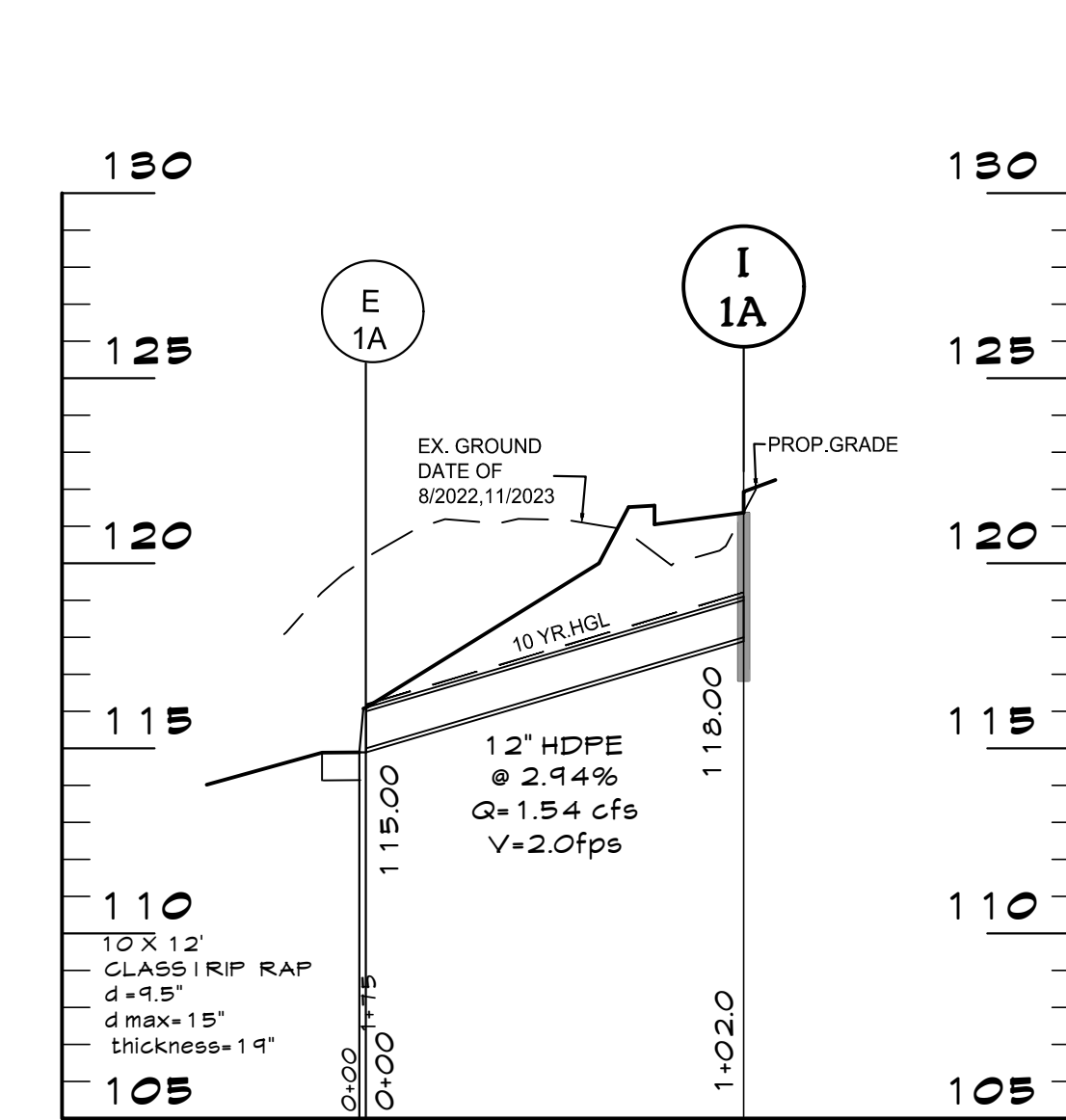
STORM DRAIN PROFILE

SCALE: 1"=50' (HORIZ.)  
1"=5' (VERT.)



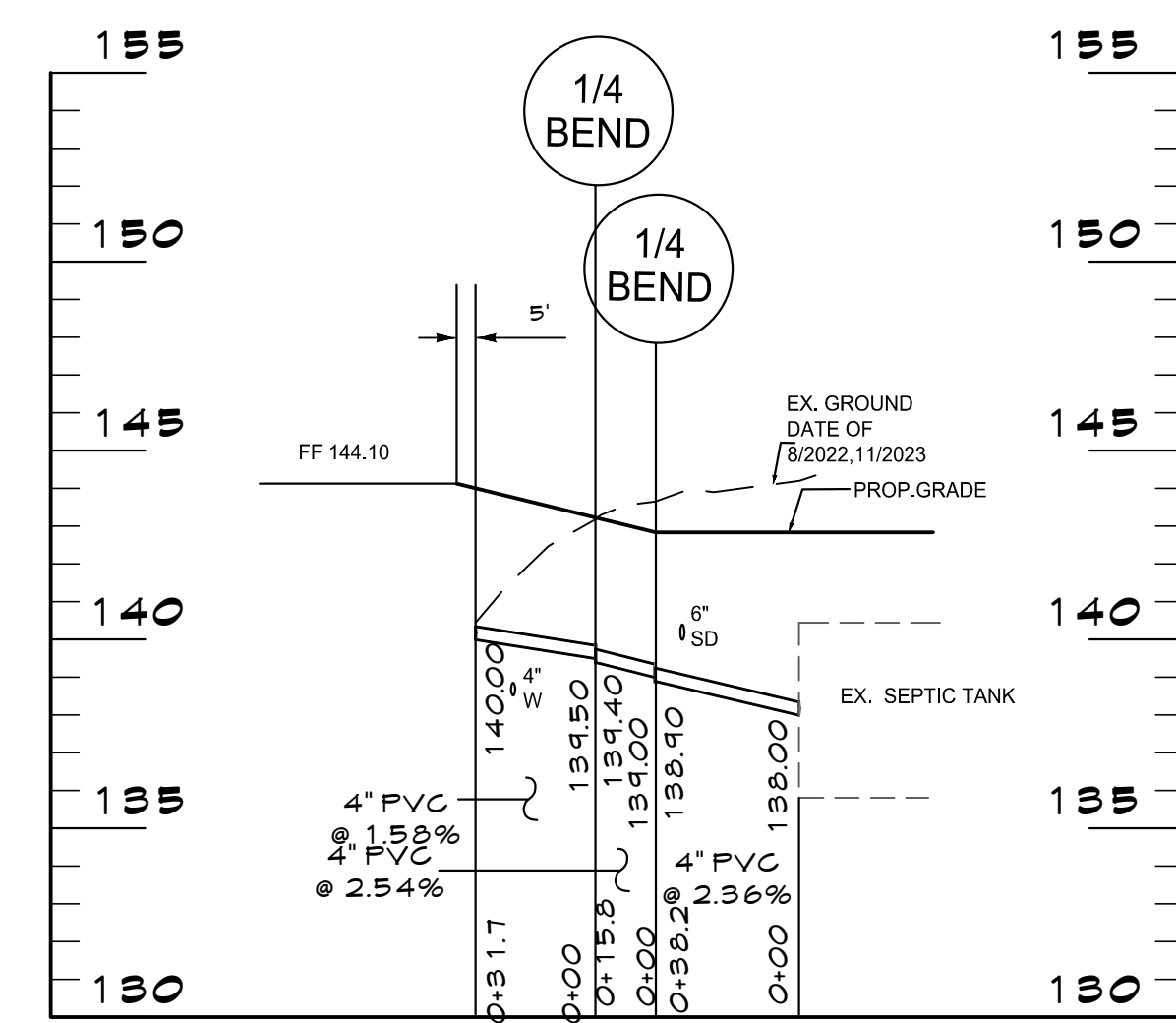
STORM DRAIN PROFILE

SCALE: 1"=50' (HORIZ.)  
1"=5' (VERT.)



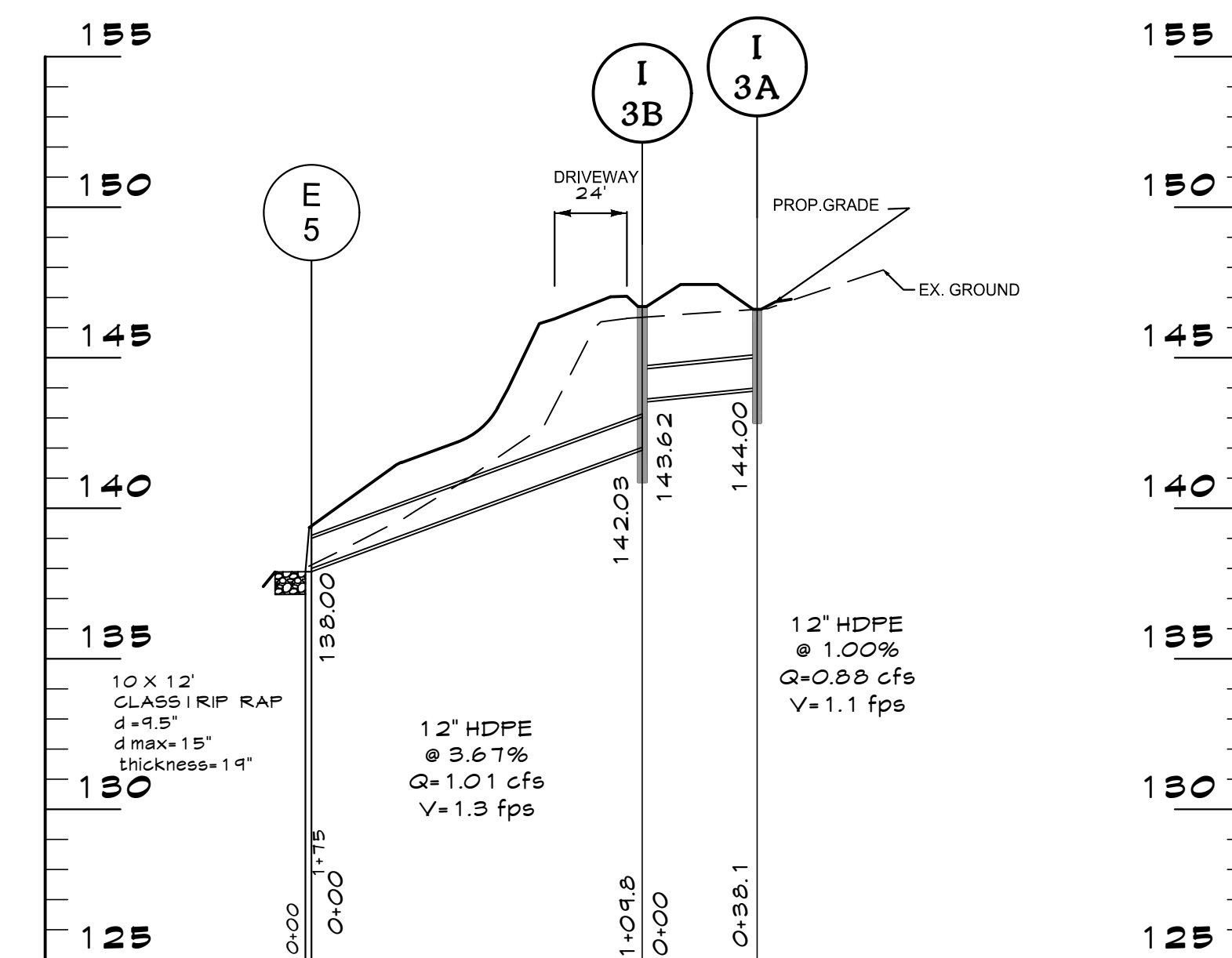
STORM DRAIN PROFILE

SCALE: 1"=50' (HORIZ.)  
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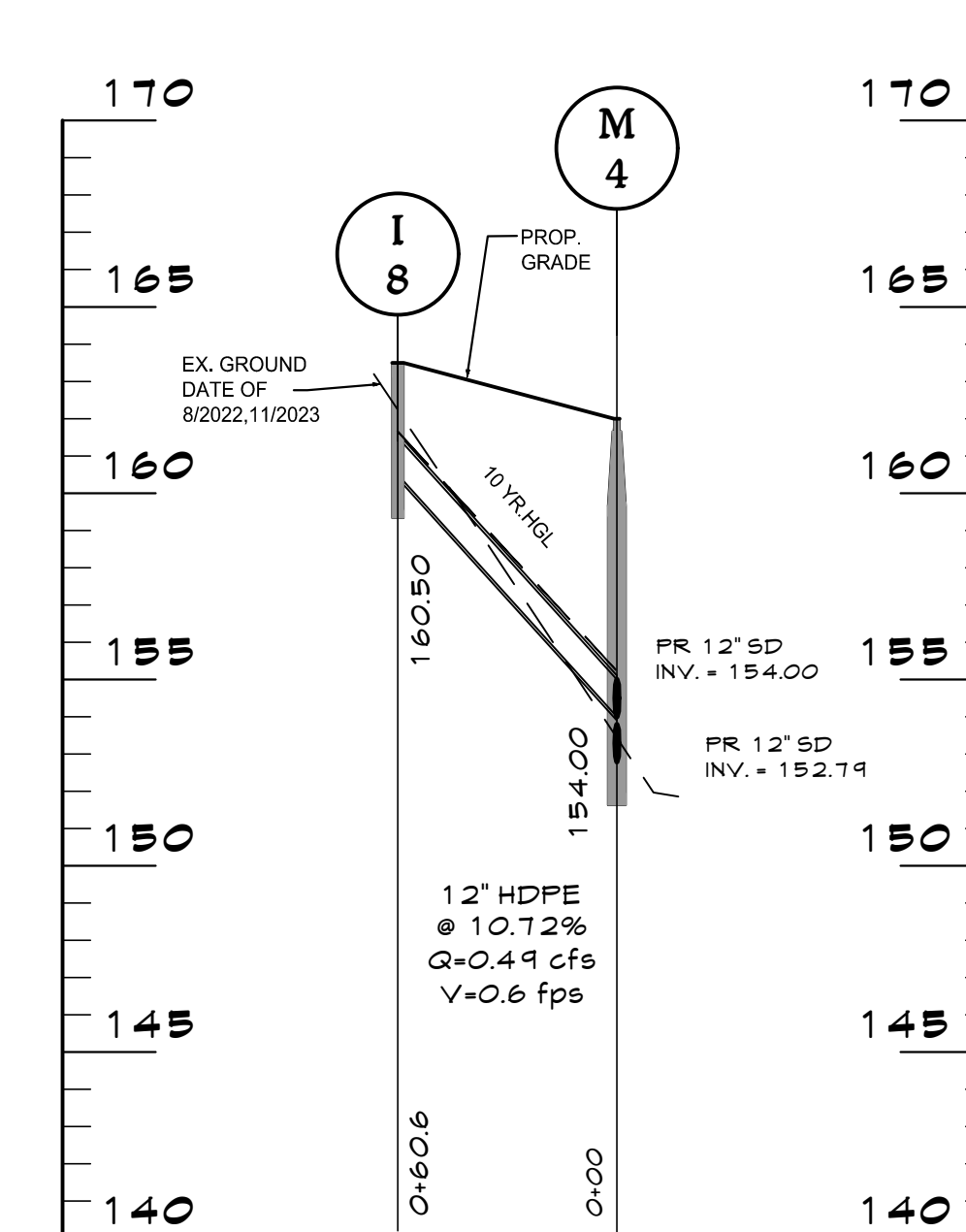
SANITARY PROFILE

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1"=5' (VERT.)



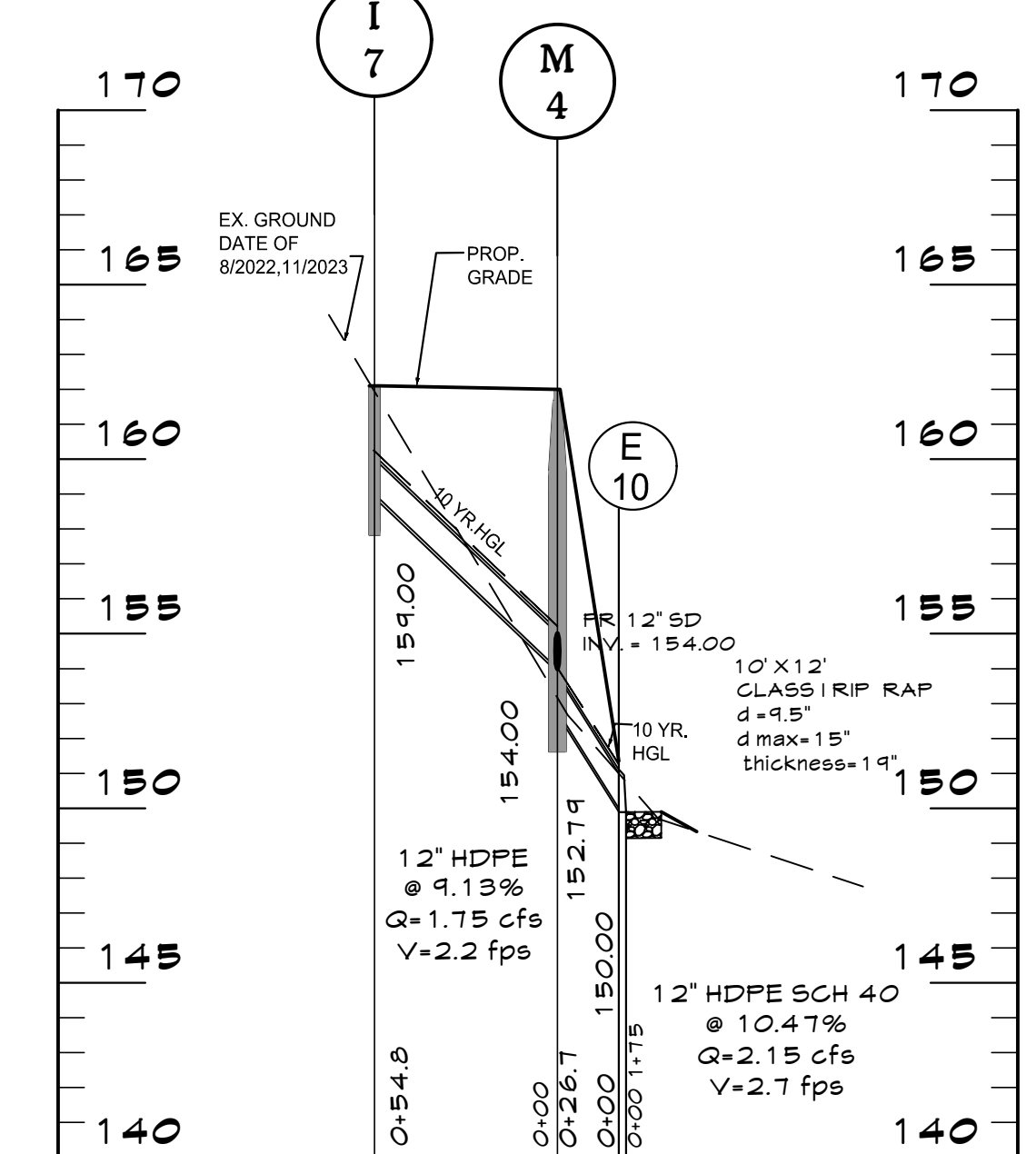
STORM DRAIN PROFILE

SCALE: 1"=50' (HORIZ.)  
1"=5' (VERT.)



STORM DRAIN PROFILE

SCALE: 1"=50' (HORIZ.)  
1"=5' (VERT.)



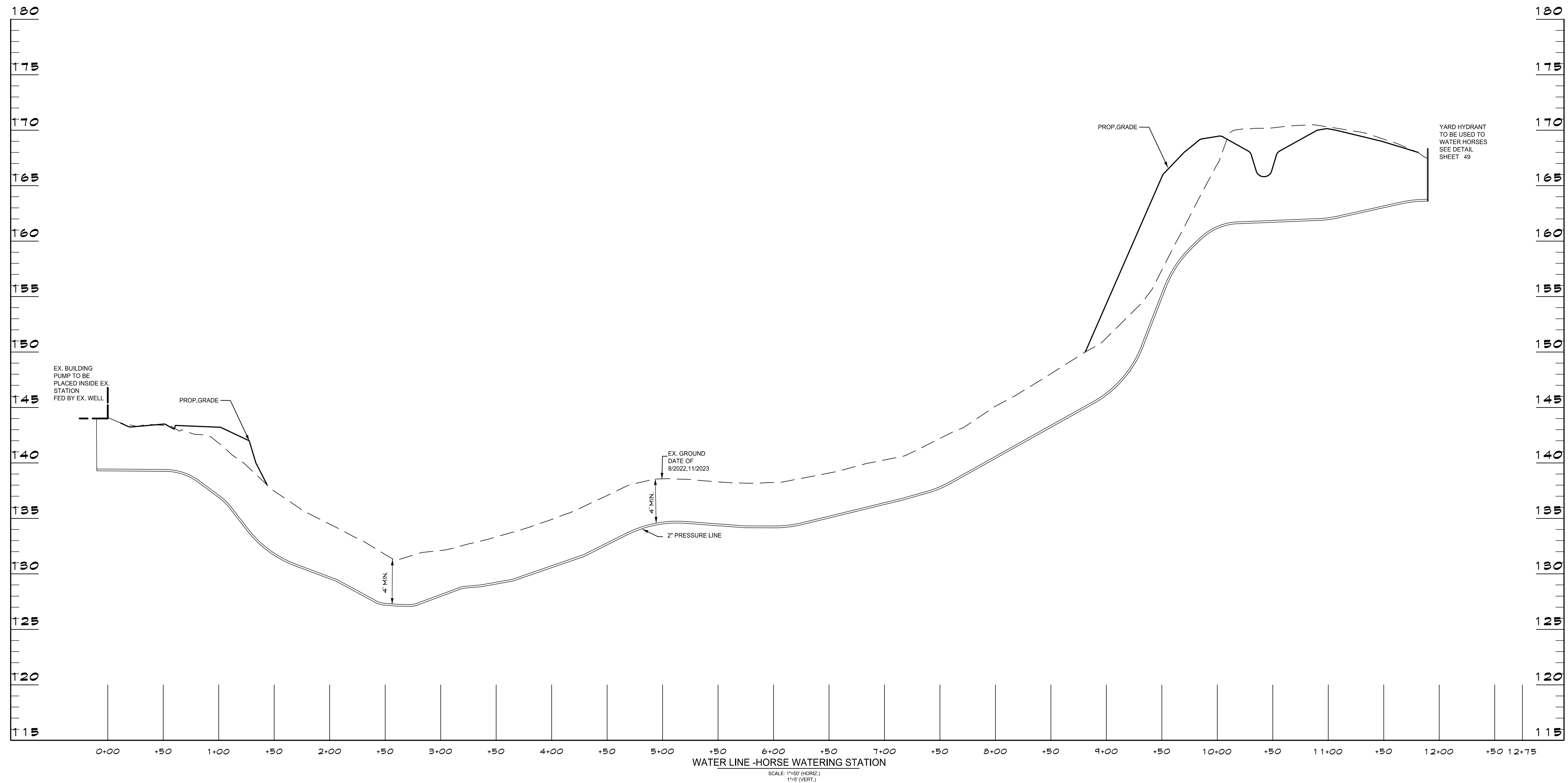
STORM DRAIN PROFILE

SCALE: 1"=50' (HORIZ.)  
1"=5' (VERT.)


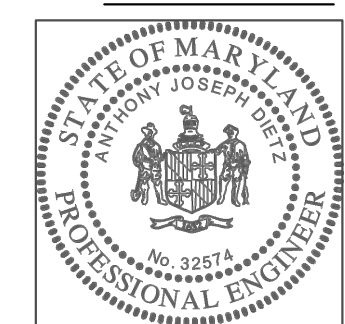
 <b>CENTURY ENGINEERING</b> A Kleinfelder Company 10710 Gilroy Road, Hunt Valley, MD 21031 Phone: 443.589.2400 www.centuryeng.com		DATE: 6/21/2024 		ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS G02020077									
		REVISIONS: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>BY</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>		NO.	DATE	BY	DESCRIPTION					APPROVED: _____ DATE: _____ CHIEF ENGINEER	
NO.	DATE	BY	DESCRIPTION										
APPROVED: _____ DATE: _____ ASSISTANT CHIEF ENGINEER		APPROVED: _____ DATE: _____ CHIEF, RIGHT OF WAY		SCALE AS SHOWN DRAWN BY: LMV/RDT CHECKED BY: MJP/AJD SHEET 47 OF 77 PROJECT NO.: P588001 DATE: 6/7/2024									
CONSTRUCTION DOCUMENTS <b>Utility Profiles</b> Severn Chapel Area of the Bacon Ridge Natural Area				2nd Tax District Anne Arundel Co., MD.									



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24TMP-026983

 <p><b>CENTURY ENGINEERING</b> A Kleinfelder Company 10710 Gilroy Road, Hunt Valley, MD 21031 Phone: 443.589.2400 www.centuryeng.com</p>	<p>DATE: 6/21/2024</p>  <p>LICENSE NO. 32574</p>	<p>ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS</p>		<p>G02020077</p>																																															
	<table border="1"> <thead> <tr> <th>REVISED</th> <th>DATE</th> <th>BY</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	REVISED	DATE	BY													<table border="1"> <thead> <tr> <th>APPROVED</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	APPROVED	DATE									<table border="1"> <thead> <tr> <th>APPROVED</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	APPROVED	DATE									<table border="1"> <thead> <tr> <th>SCALE</th> <th>AS SHOWN</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	SCALE	AS SHOWN									<p>CONSTRUCTION DOCUMENTS</p> <p><b>Water Line Profile</b></p> <p><b>Severn Chapel Area of the Bacon Ridge Natural Area</b></p> <p>2nd Tax District Anne Arundel Co., MD. Tax Map 37, Grid 11, Parcel 86</p>	
	REVISED	DATE	BY																																																
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<p>PROJECT NO.: P588001</p> <p>DATE: 6/7/2024</p>		<p>CHECKED BY: MJPI/AJD</p> <p>SHEET 48 OF 77</p>		<p>DATE: 6/7/2024</p>																																															



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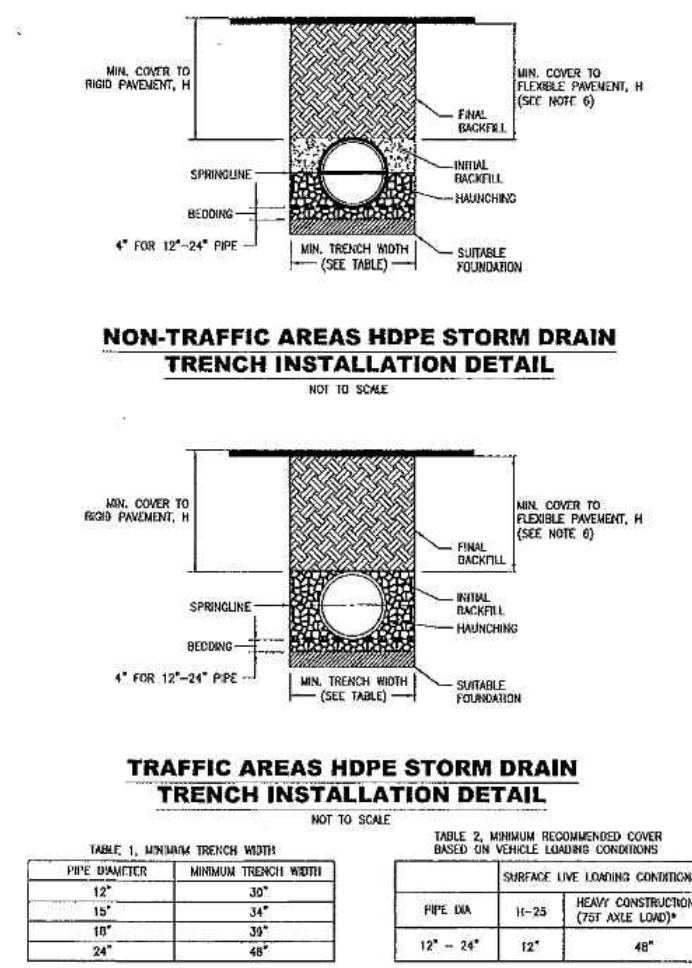


TABLE 1. LAYERS AND THICKNESS

PIPE SIZE	MINIMUM THICKNESS
12"	24"
18"	36"
24"	48"

TABLE 2. MINIMUM RECOMMENDED COVER

PIPE DIA.	11-35	HEAVY CONCRETION
12"	12"	12"
18"	18"	18"
24"	24"	24"

- 1. ALL PIPE SHALL BE INSTALLED IN ACCORDANCE WITH THE TRENCHING AND SHIELDING MANUAL...
- 2. MINIMUM COVER SHALL BE MAINTAINED THROUGHOUT THE ENTIRE LENGTH OF THE TRENCH...
- 3. PROTECTION SHALL BE PROVIDED TO PREVENT DAMAGE TO THE PIPE AND TO THE SURROUNDING SOIL...
- 4. BEDDING SHALL BE MAINTAINED TO THE SPECIFIED GRADE THROUGHOUT THE ENTIRE LENGTH OF THE TRENCH...
- 5. JOINTS SHALL BE MAINTAINED TO THE SPECIFIED GRADE THROUGHOUT THE ENTIRE LENGTH OF THE TRENCH...
- 6. BACKFILL SHALL BE MAINTAINED TO THE SPECIFIED GRADE THROUGHOUT THE ENTIRE LENGTH OF THE TRENCH...

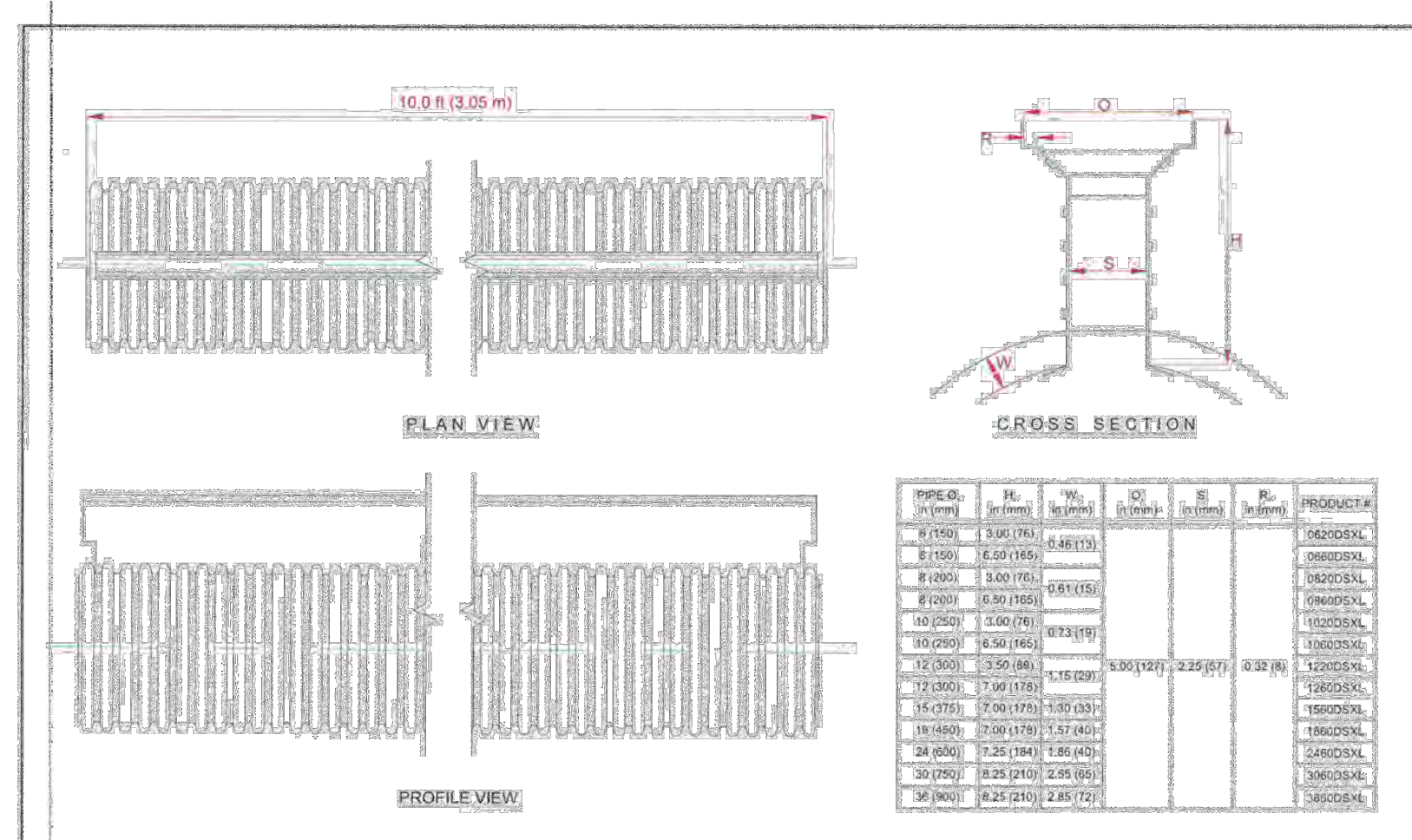


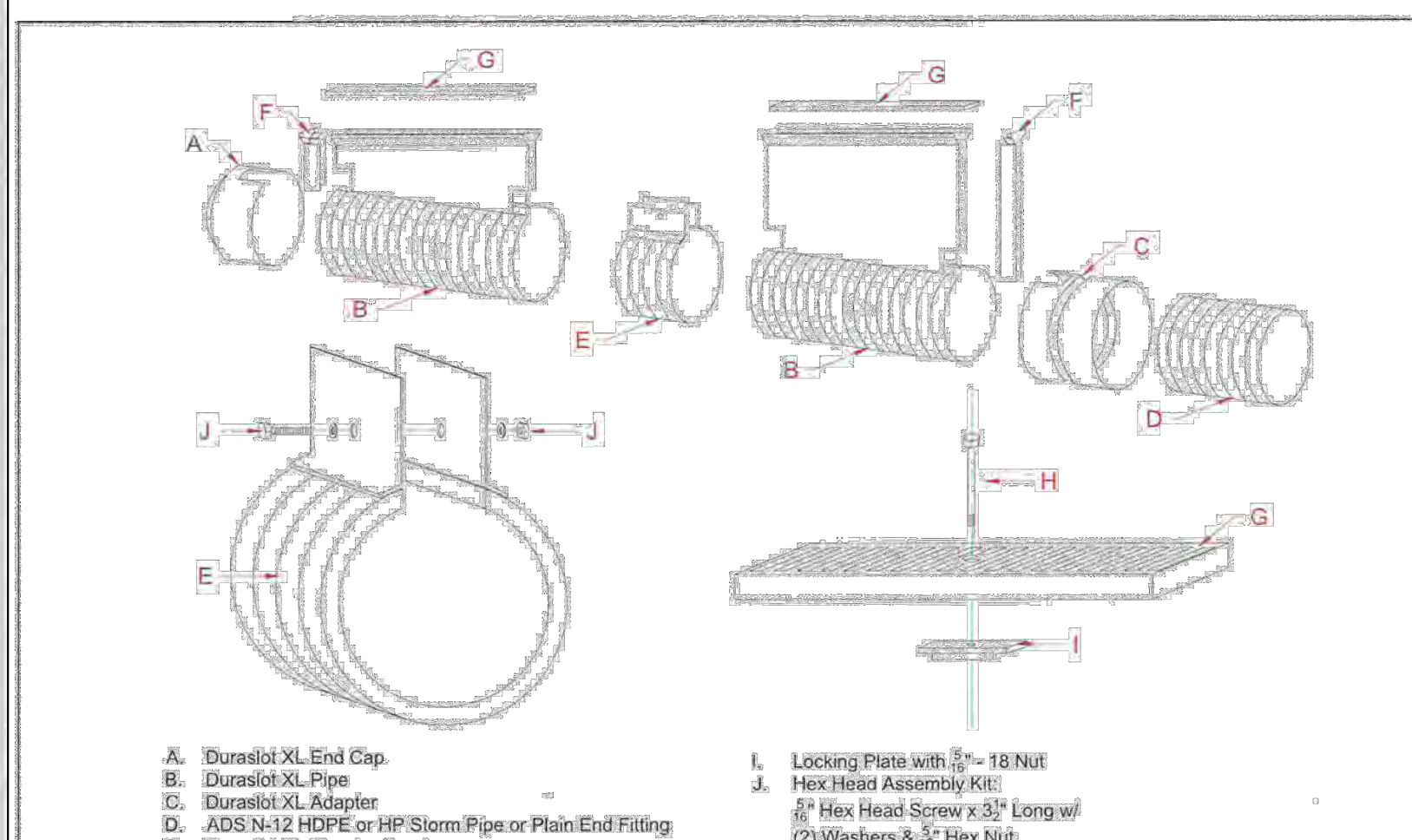
TABLE OF MATERIAL SPECIFICATIONS

ITEM NO.	DESCRIPTION	QTY	UNIT	PRODUCT #
1	Duraslot XL End Cap	2	EA	1000000
2	Duraslot XL Pipe	10	LF	1000000
3	Duraslot XL Adapter	2	EA	1000000
4	ADS N x 12 HOPE or HP Storm Pipe or Plain End Fitting	1	EA	1000000
5	Duraslot XL Coupler Band	2	EA	1000000
6	Duraslot XL Slot Cap	2	EA	1000000
7	5" Wide Grate (Provided by ADS or Other)	1	EA	1000000
8	1/2" - 18 Locking Bolt (Bolt Design Varies by Grate Design)	2	EA	1000000

NOTES: 1. SEE GRATING DETAILS FOR SURFACE TREATMENT OPTIONS

REVISIONS: 1. DATE: 08/29/03 BY: JMD

PROJECT: 18BACONRIDGE CONSTRUCTION PHASE 1



- A. Duraslot XL End Cap
- B. Duraslot XL Pipe
- C. Duraslot XL Adapter
- D. ADS N x 12 HOPE or HP Storm Pipe or Plain End Fitting
- E. Duraslot XL Coupler Band
- F. Duraslot XL Slot Cap
- G. 5" Wide Grate (Provided by ADS or Other)
- H. 1/2" - 18 Locking Bolt (Bolt Design Varies by Grate Design)
- I. Locking Plate with 1/2" - 18 Nut
- J. Hex Head Assembly Kit
- K. Hex Head Screw x 3/8" Long w/ (2) Washers & 1/2" Hex Nut

NOTES: = Slot height may vary per project  
= Each Cap (A) & Adapter (C) comes with an End Plate (F)  
= Coupler Band (E) comes with a Hex Head Assembly Kit (J)

REVISIONS: 1. DATE: 08/29/03 BY: JMD

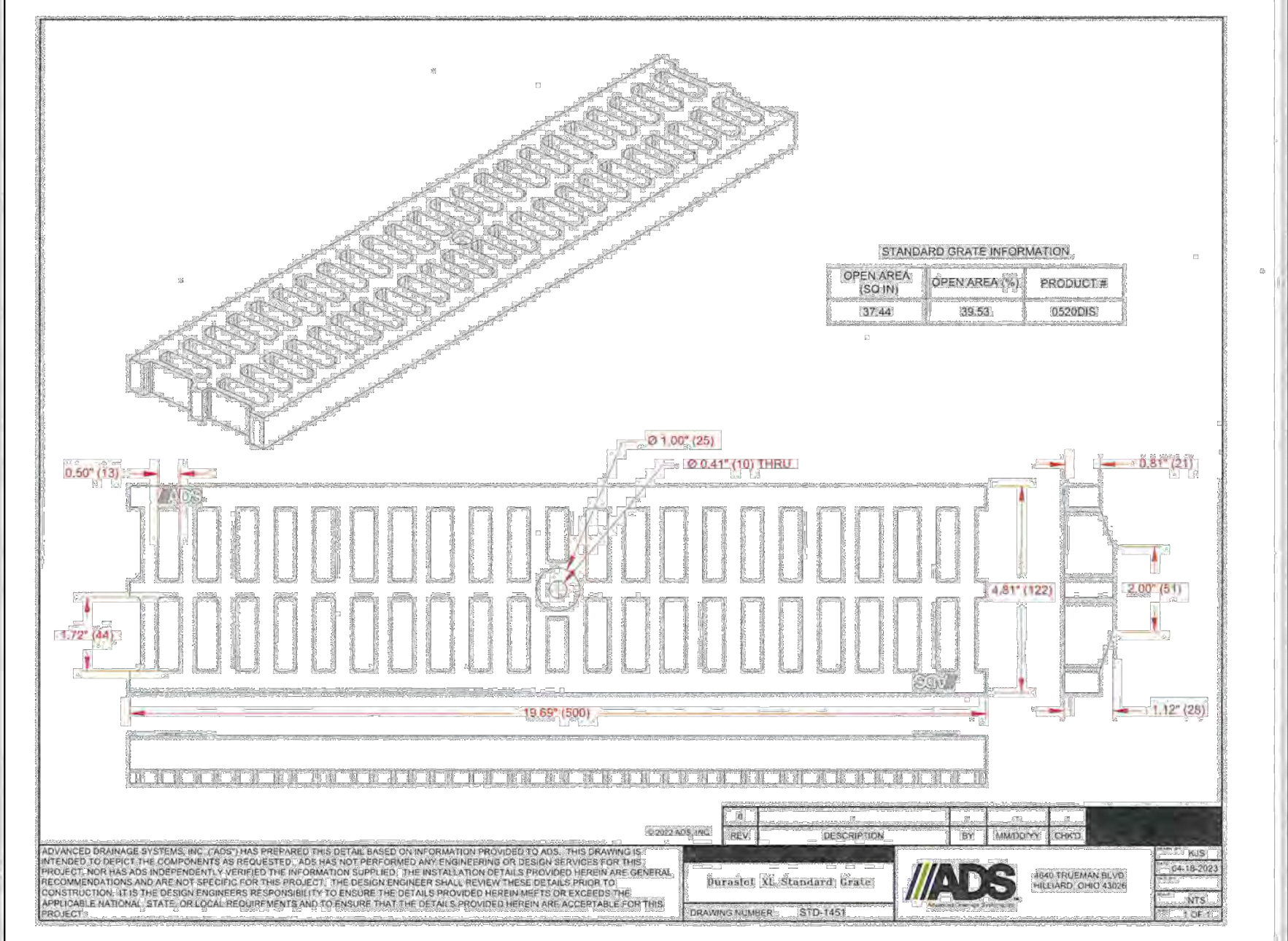
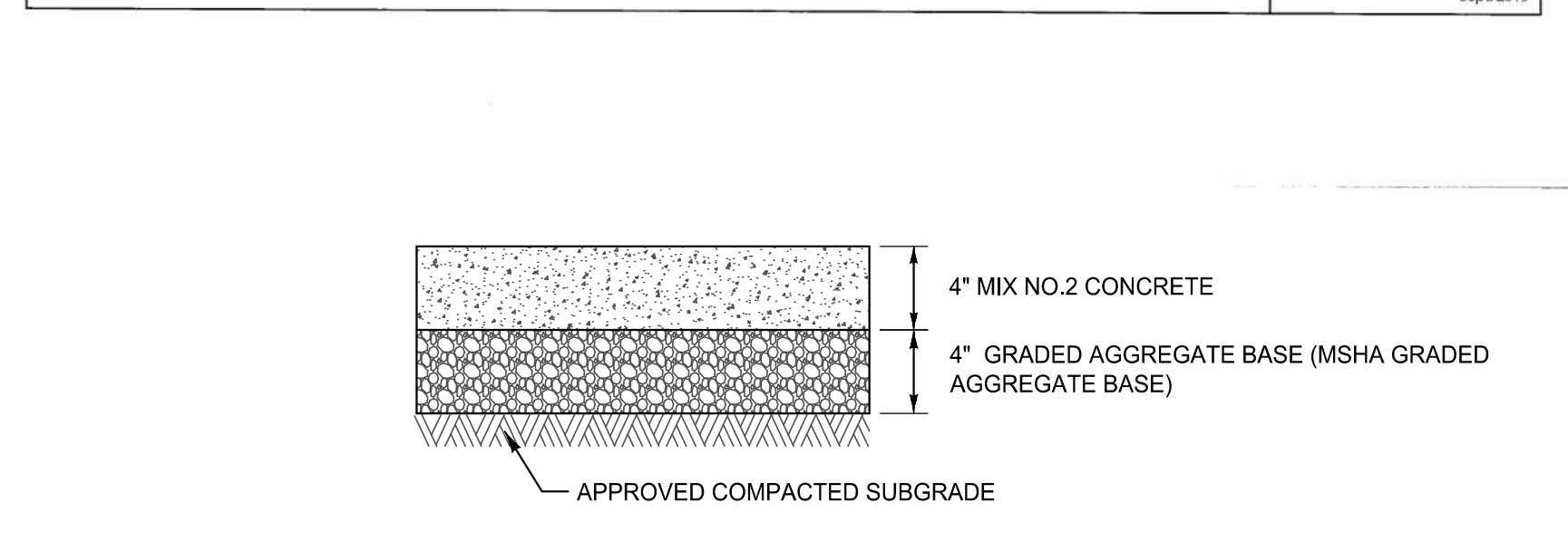
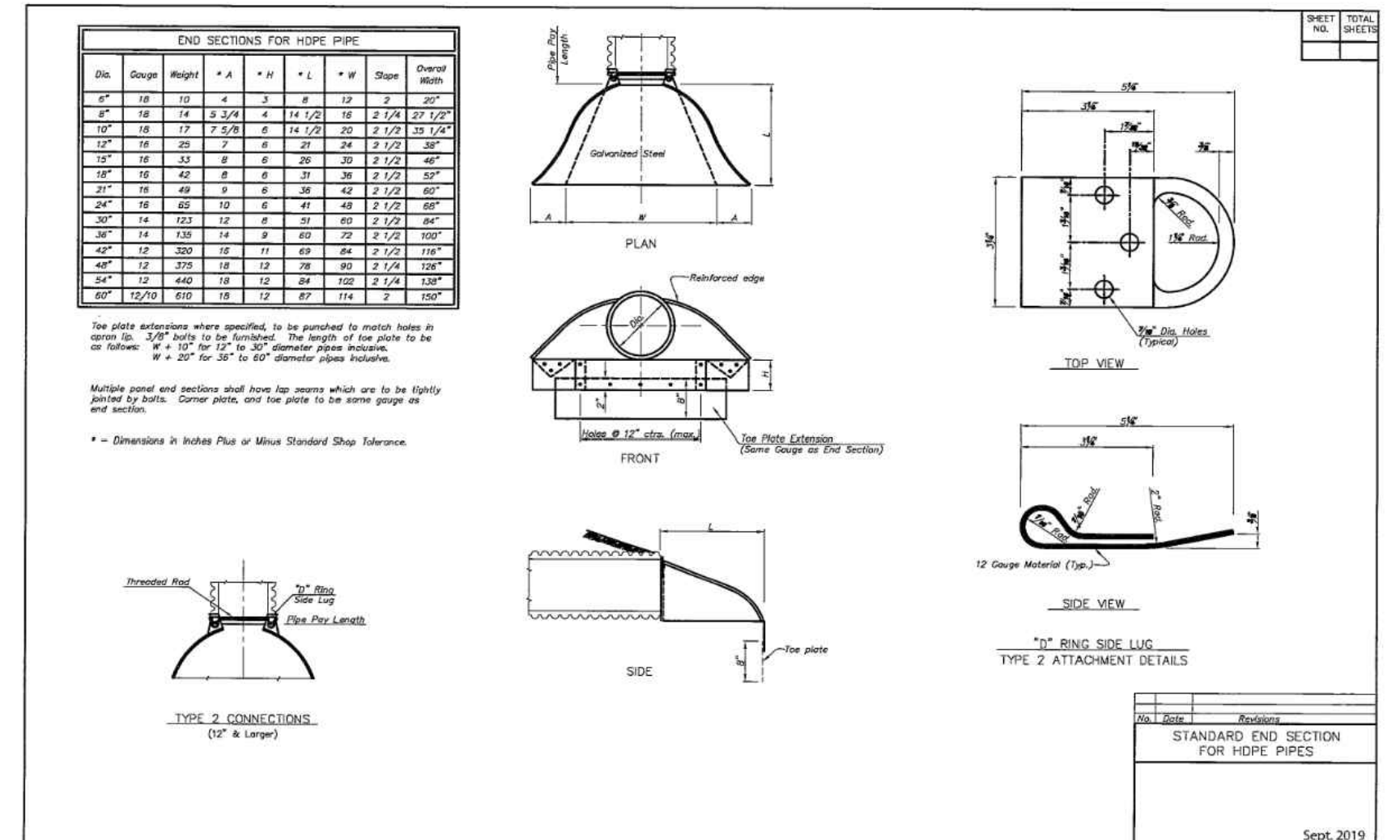


TABLE: TRENCH GRATE INFORMATION

OPEN AREA (%)	OPEN AREA (%)	PRODUCT #
37.44	39.53	022002

ADVANCED DRAINAGE SYSTEMS, INC. HAS PROVIDED THE BEST AVAILABLE INFORMATION FOR THIS PROJECT. THE DRAWINGS ARE NOT TO BE USED FOR ANY OTHER PURPOSES WITHOUT THE WRITTEN PERMISSION OF ADS.



CONCRETE PAD SECTION \*  
NOT TO SCALE  
\*4'X4' PAD FOR HORSE WATERING STATION

### ZURN Z1395 YARD HYDRANT Exposed Head, Non-Freeze

Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice

DEPTH OF BURY: 2 (610) to 8 (2438)

HOSE CONNECTION: 1/2" [19] HOSE CONNECTION

INTERNAL PARTS: 7, 8, 10, 13

Depth of Bury Feet	B+ Dim. Feet	Approx. Wt. Lbs. [kg]
2 (610)	4 1/2 (1372)	15 (7)
3 (914)	5 1/2 (1676)	19 (9)
4 (1219)	6 1/2 (1981)	23 (10)
5 (1524)	7 1/2 (2286)	27 (12)
6 (1829)	8 1/2 (2591)	31 (14)
8 (2438)	10 1/2 (3200)	39 (18)

ENGINEERING SPECIFICATION: ZURN Z1395 Exposed, non-freeze yard hydrant, with Dura-Coated cast iron head and lift handle with lock option. Bronze interior parts and galvanized steel casing with bronze valve housing and 1/2" [13] IP drain port in housing.

Options: -AC Aluminum Casing Guard, -RK Hydrant Parts Repair Kit, -VB 3/4" [19] Adapter Vacuum Breaker\*\*

PARTS LIST: 7 Operating Coupling (1), 8 Packing (1), 10 Operating Rod (1), 13 Plunger (1)

REV. E DATE: 8/29/03 C.N. NO. 91237  
DWG. NO. 58884 PRODUCT NO. Z1395

### DUAL WALL FABRICATED TEES 4" - 30" DIAMETER

PART #	PIPE SIZE	A	B	JOINT
0480AN	4 in (100 mm)	12.8 in (324 mm)	8.2 in (208 mm)	-
0661AN	6 in (150 mm)	16.5 in (419 mm)	8.1 in (207 mm)	-
0822AN	8 in (200 mm)	21.0 in (533 mm)	10.6 in (268 mm)	-
1063AN	10 in (250 mm)	26.9 in (680 mm)	12.8 in (320 mm)	-
1264AN	12 in (300 mm)	30.7 in (780 mm)	15.4 in (390 mm)	-
1284AN85S	12 in (300 mm)	21.1 in (536 mm)	10.6 in (268 mm)	ST
1284AN65S	12 in (300 mm)	21.1 in (536 mm)	10.6 in (268 mm)	WT
1565AN	15 in (375 mm)	38.9 in (987 mm)	19.4 in (494 mm)	-
1565AN85S	15 in (375 mm)	23.3 in (592 mm)	11.7 in (296 mm)	ST
1565AN65S	15 in (375 mm)	23.3 in (592 mm)	11.7 in (296 mm)	WT
1866AN	18 in (450 mm)	42.9 in (1089 mm)	21.4 in (545 mm)	-
1866AN85S	18 in (450 mm)	26.8 in (681 mm)	13.4 in (340 mm)	ST
1866AN65S	18 in (450 mm)	26.8 in (681 mm)	13.4 in (340 mm)	WT
2467AN	24 in (600 mm)	50.4 in (1280 mm)	25.2 in (640 mm)	-
2467AN85S	24 in (600 mm)	37.8 in (960 mm)	18.9 in (480 mm)	ST
2467AN65S	24 in (600 mm)	37.8 in (960 mm)	18.9 in (480 mm)	WT

PLAN END and ST & WT (INCLUDES 3 GASKETS) diagrams.

NOTE: ALL FITTINGS DIMENSIONS ARE FOR REFERENCE ONLY.

DRAWING # 2400  
DESIGNED BY: JMD  
APPROVED BY: JMD  
DATE: 08/29/03

A Kleinfelder Company  
10710 Gilroy Road, Hunt Valley, MD 21031  
Phone: 443.589.2400 www.centuryeng.com

DATE: 6/21/2024

REVISED	DATE	BY	APPROVED	DATE

ANNE ARUNDEL COUNTY  
DEPARTMENT OF PUBLIC WORKS

APPROVED	DATE	SCALE	AS SHOWN

G02002077  
CONSTRUCTION DOCUMENTS  
Utility Details

PROJECT MANAGER	DATE	CHECKED BY	DATE

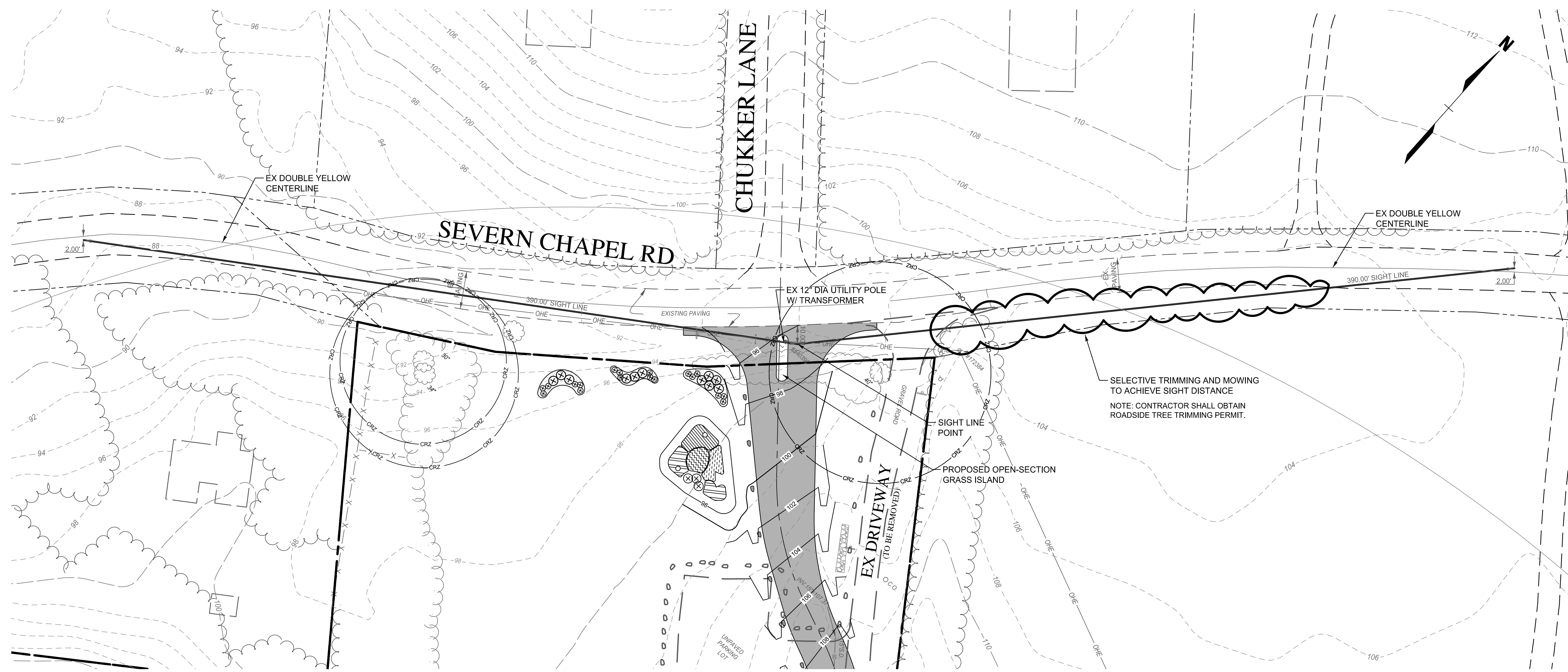
Severn Chapel Area  
of the Bacon Ridge Natural Area

2nd Tax District  
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24TMP-026983



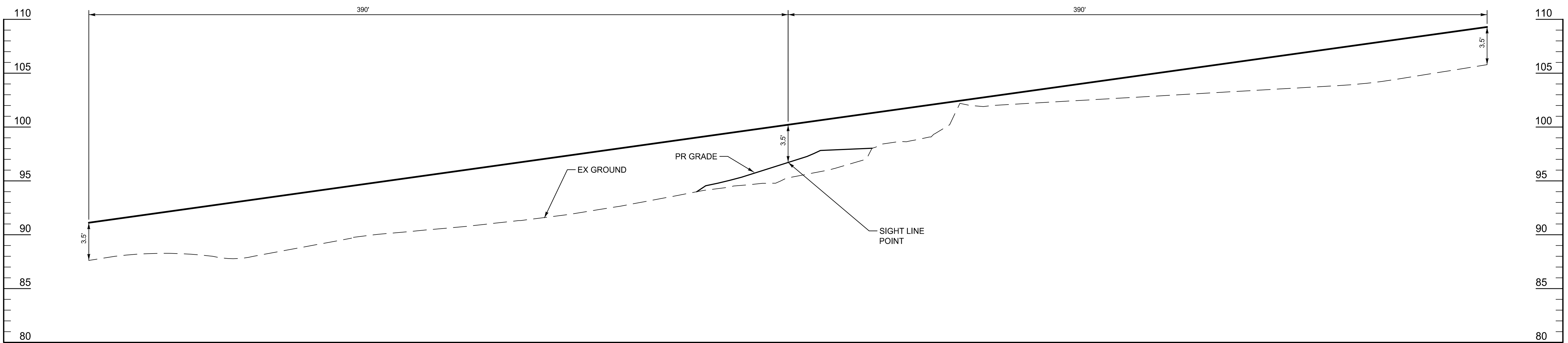
T:\2023\Facilities\2023523710018 Bacon Ridge construction drawings phase 1\CIVIL\CADD Drawings\3. Construction Documents\202352371001A (CD-37) EntrancePlan.dwg Jun 21, 2024 10:47am kdarley



**LEGEND**

- Property Line
- Adjoiner / Lot Line
- - - - - Existing Minor Contour
- - - - - Existing Major Contour
- - - - - Existing Edge of Road/Paving
- || Soil Line
- SD EX 18" D Existing Storm Drain
- W EX 12" W Existing Water
- SAN EX 8" S Existing Sewer
- G EX 8" G Existing Gas Line
- E Existing Underground Electric Line
- OHE Existing Overhead Electric Line
- C Existing Conduit Line
- FO Existing Fiber Optic Line
- CTV Existing Cable Line
- T Existing Telephone Line
- X - X - X Existing Chain Link Fence
- X - X - X Existing Split Rail Fence
- Existing Trail
- Existing Tree Line
- Existing Building
- Non-Tidal Wetlands and 25' Buffer
- FB 100' Stream Buffer
- FP FEMA 100-Year Flood Plain
- - - - - Chesapeake Bay Critical Area Limits
- - - - - Water Edge or Stream Centerline
- Zoning Line

**PLAN**  
SCALE: 1"=30'



**DRIVEWAY ENTRANCE DATA**

POSTED SPEED = 35 mph  
 DESIGN SPEED = 45 mph  
 ROAD CLASSIFICATION = COLLECTOR (SCENIC BYWAY)  
 REQUIRED SIGHT DISTANCE (based on off posted speed):  
 CARS = 390'  
 TRUCKS = 490'  
 PROVIDED SIGHT DISTANCE:  
 LOOKING LEFT = 390'  
 LOOKING RIGHT = 390'

**SIGHT LINE PROFILE**  
SCALE: HORIZ: 1"=30'  
VERT: 1"=5'

**CENTURY ENGINEERING**  
 A Kleinfelder Company  
 10710 Gilroy Road, Hunt Valley, MD 21031  
 Phone: 443.589.2400 www.centuryeng.com

DATE: 6/21/2024  
  
 LICENSE NO. 32574

REVISED		APPROVED		DATE	
DATE	BY				
		CHIEF ENGINEER		PROJECT MANAGER	
		APPROVED		APPROVED	
		ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY	

ANNE ARUNDEL COUNTY  
DEPARTMENT OF PUBLIC WORKS

SCALE AS SHOWN  
 DRAWN BY LMV/RDT  
 CHECKED BY MJP/AJD  
 SHEET 50 OF 77  
 PROJECT NO.: P588001  
 DATE: 6/7/2024

G02020077  
 CONSTRUCTION DOCUMENTS  
**Entrance And Sight Line Plan**  
 (10R Offset)  
**Severn Chapel Area**  
 of the Bacon Ridge Natural Area  
 2nd Tax District  
 Anne Arundel Co., MD. Tax Map 37, Grid 11, Parcel 86

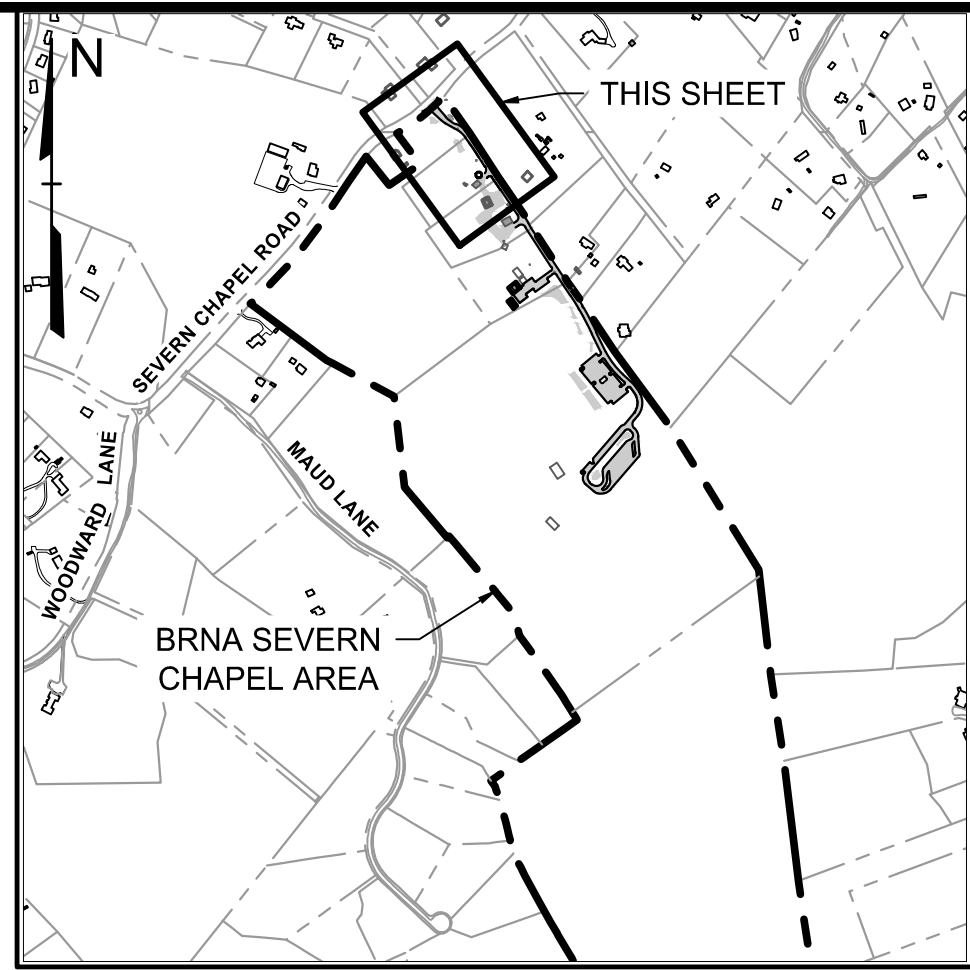
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PLAN KEY

SCALE: 1" = 1000'

LEGEND

- Property Line
- Adjoiner / Lot Line
- Zoning Line
- Existing Minor Contour
- Existing Major Contour
- Existing Edge of Road/Paving
- Existing Storm Drain
- Existing Water
- Existing Overhead Electric Line
- Existing Utility Pole
- Existing Guy Pole / Guy Wire
- Existing Sign
- Existing Fence
- Existing Trail
- Existing Tree Line
- Existing Deciduous Tree
- Existing Evergreen Tree
- Critical Root Zone
- Existing Building
- Limit of Disturbance
- Proposed Edge of Road/Paving
- Proposed Minor Contour
- Proposed Major Contour
- Proposed Paving
- Proposed Inlet and Storm Drain
- Proposed Storm Drain Outfall
- Proposed Check Dam
- Relocated Sign
- Relocated Utility Pole - By BGE
- Relocated Guy Pole / Guy Wire
- Relocated Overhead Electric Line
- Proposed Major Tree
- Proposed Minor Tree
- Proposed Evergreen Tree
- Proposed Shrubs
- Proposed Mulched Bed
- Relocated Boulder

MATCH LINE : SEE SHEET 53

PLAN

SCALE: 1" = 30'

**CENTURY ENGINEERING**  
A Kleinfelder Company  
10710 Gilroy Road, Hunt Valley, MD 21031  
Phone: 443.589.2400 www.centuryeng.com

DATE: 6/21/2024

LICENSE NO. 1008

REVISED DATE	BY	APPROVED	DATE	APPROVED	DATE	SCALE AS SHOWN
		CHIEF ENGINEER		PROJECT MANAGER		DRAWN BY LMV/JRT
		APPROVED		APPROVED		CHECKED BY MJP/AJD
		ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY		SHEET 52 OF 77
						PROJECT NO.: P588001
						DATE: 6/7/2024

ANNE ARUNDEL COUNTY  
DEPARTMENT OF PUBLIC WORKS

24TMP-026983

G02020077

CONSTRUCTION DOCUMENTS

Landscape Plan

Severn Chapel Area  
of the Bacon Ridge Natural Area

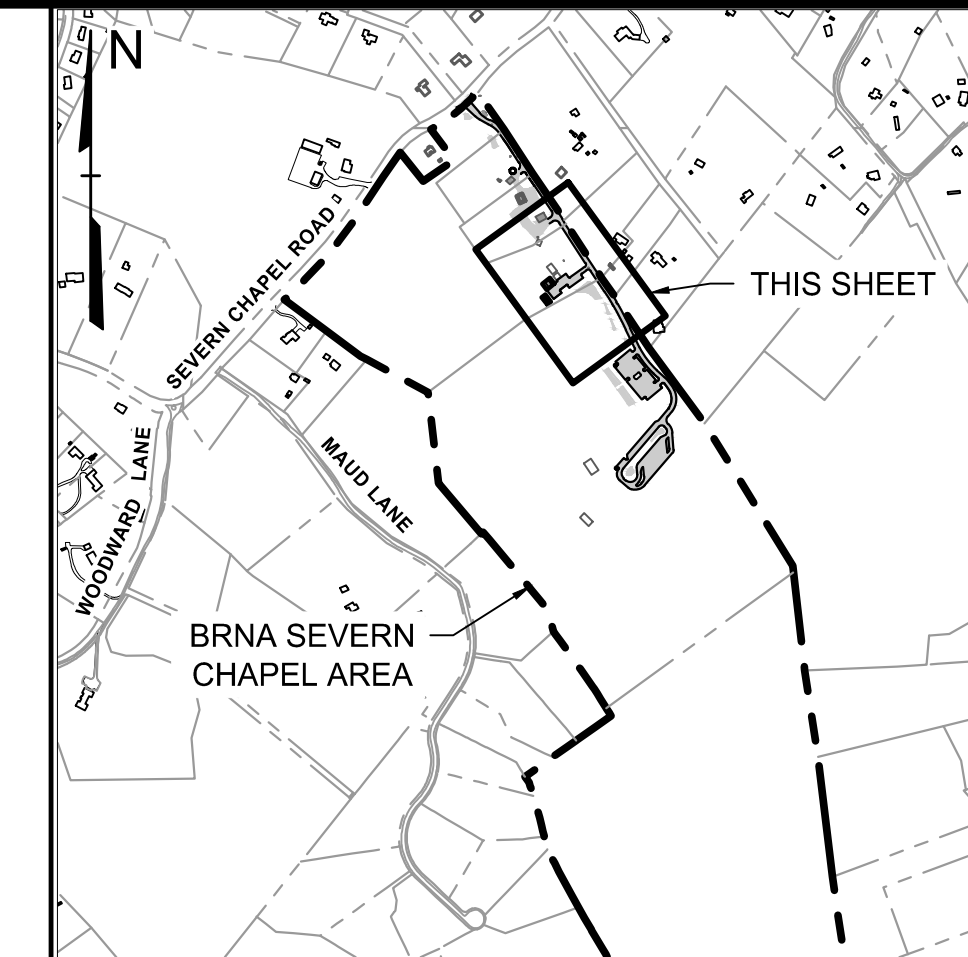
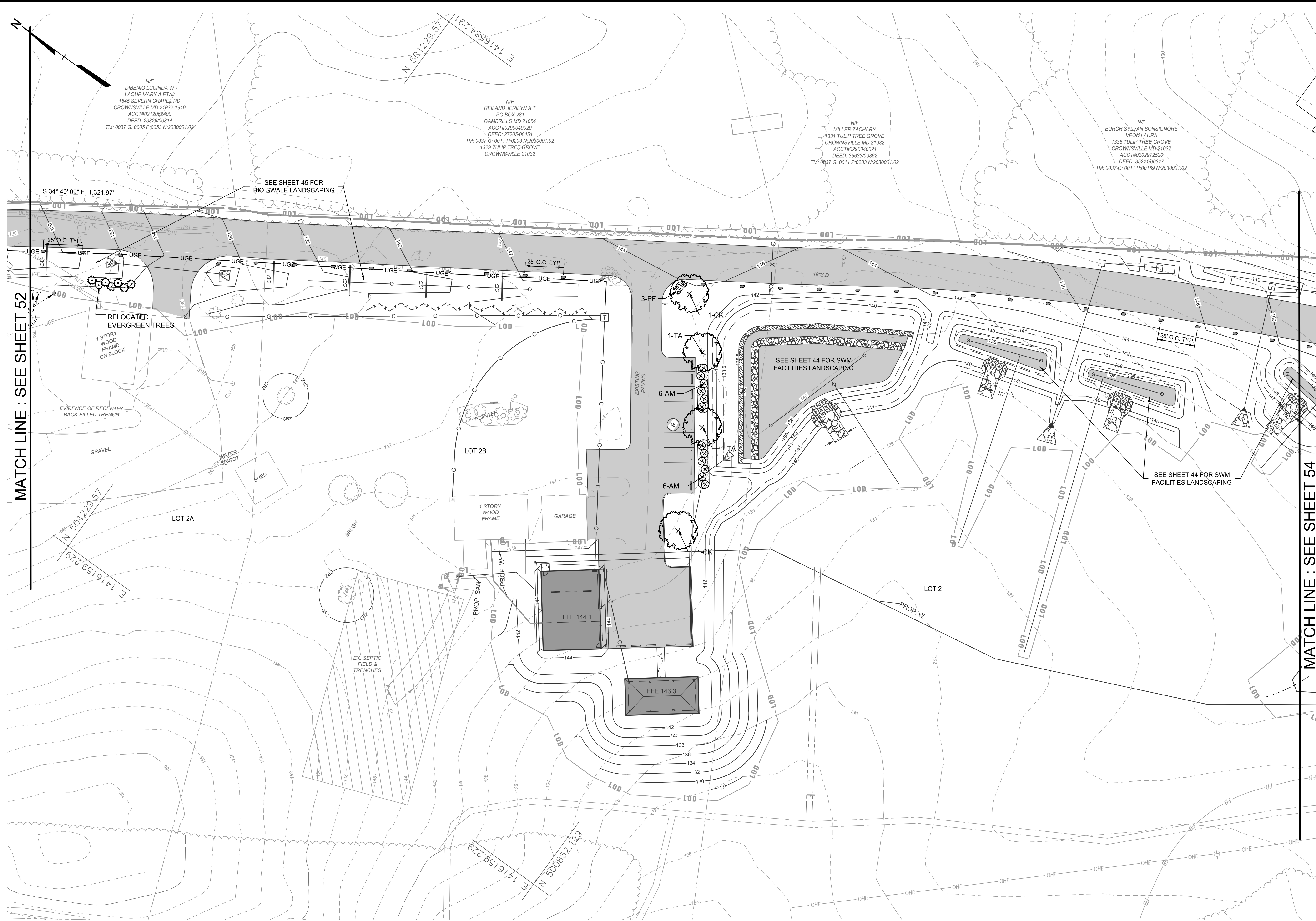
2nd Tax District Anne Arundel Co., MD. Tax Map 37, Grid 11, Parcel 86



T:\2023\Facilities\202352310018 Bacon Ridge construction drawings phase 1\CIVIL\CADD\Drawings\3 Construction Documents\202352310018 (CD-40)\Landscape\Plan\Jun 21, 2024 10:41am.kalarley

MATCH LINE : SEE SHEET 52

MATCH LINE : SEE SHEET 54



PLAN KEY

SCALE: 1" = 100'

LEGEND

- Property Line
- Adjoiner / Lot Line
- Existing Minor Contour
- Existing Major Contour
- Existing Edge of Road/Paving
- Existing Storm Drain
- Existing Water
- Existing Underground Telephone Line
- Existing Underground Electric Line
- Existing Overhead Electric Line
- Existing Utility Pole
- Existing Guy Pole / Guy Wire
- Existing Sign
- Existing Fence
- Existing Tree Line
- Existing Deciduous Tree
- Existing Evergreen Tree
- Critical Root Zone
- Existing Trail
- Existing Building
- Limit of Disturbance
- Proposed Building
- Proposed Edge of Road/Paving
- Proposed Minor Contour
- Proposed Major Contour
- Proposed Spot Elevation
- Proposed Paving
- Proposed Major Tree
- Proposed Minor Tree
- Proposed Evergreen Tree
- Proposed Shrubs
- Proposed Mulched Bed
- Relocated Boulder

PLAN

SCALE: 1" = 30'

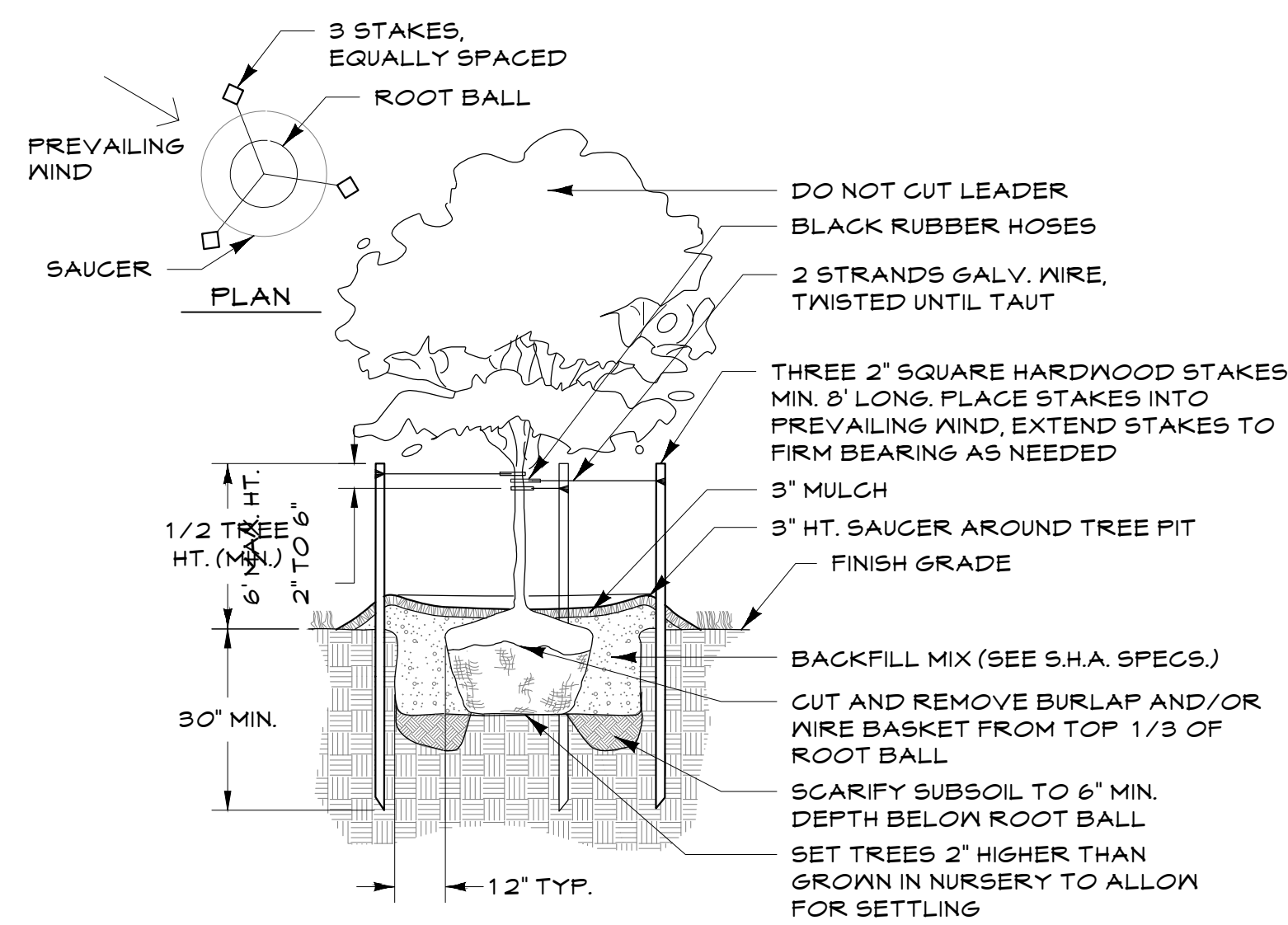
24TMP-026983

<p>A Kleinfelder Company</p> <p>10710 Gilroy Road, Hunt Valley, MD 21031 Phone: 443.589.2400 www.centuryeng.com</p>		DATE: 6/21/2024		ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS		G02020077																															
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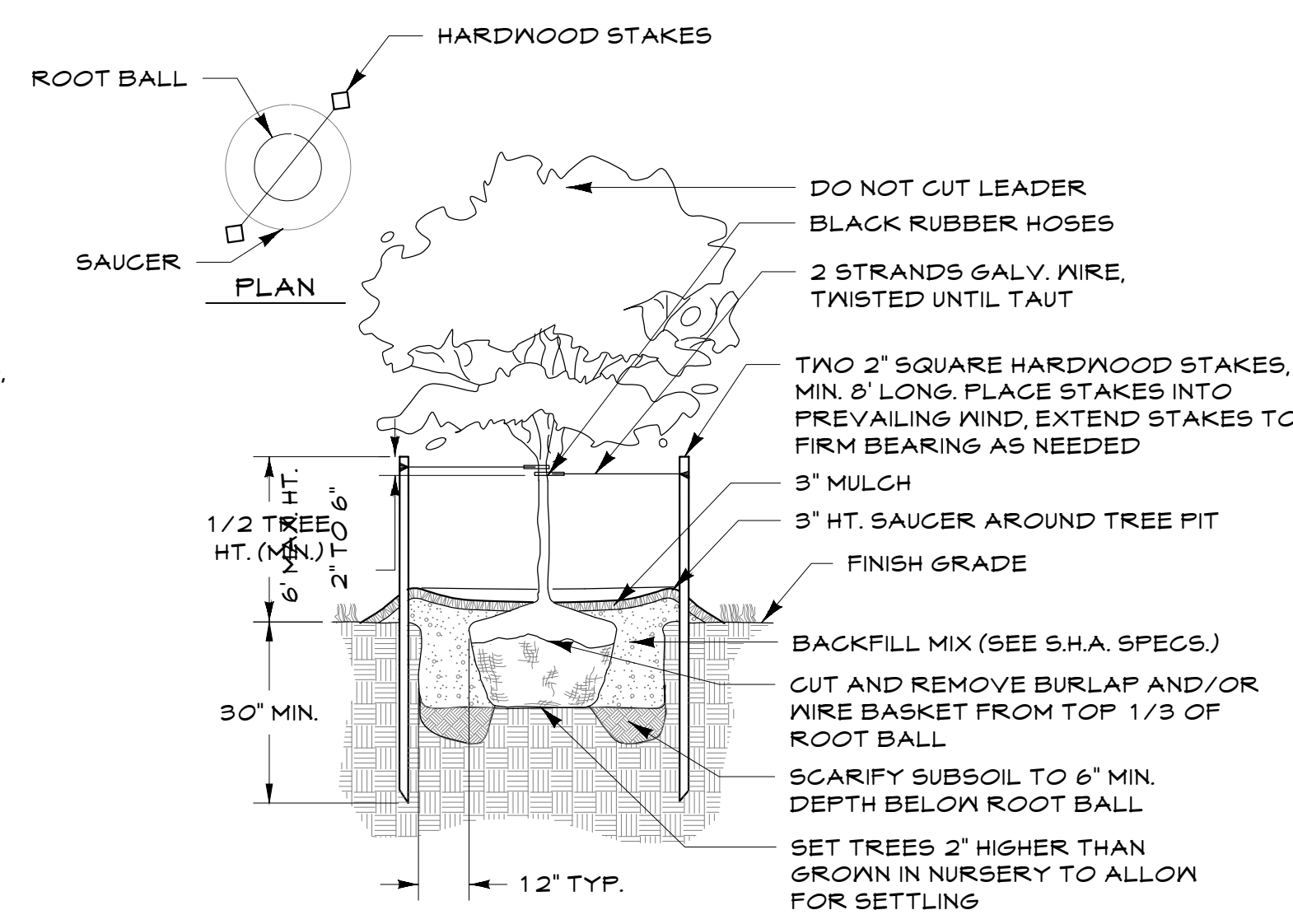




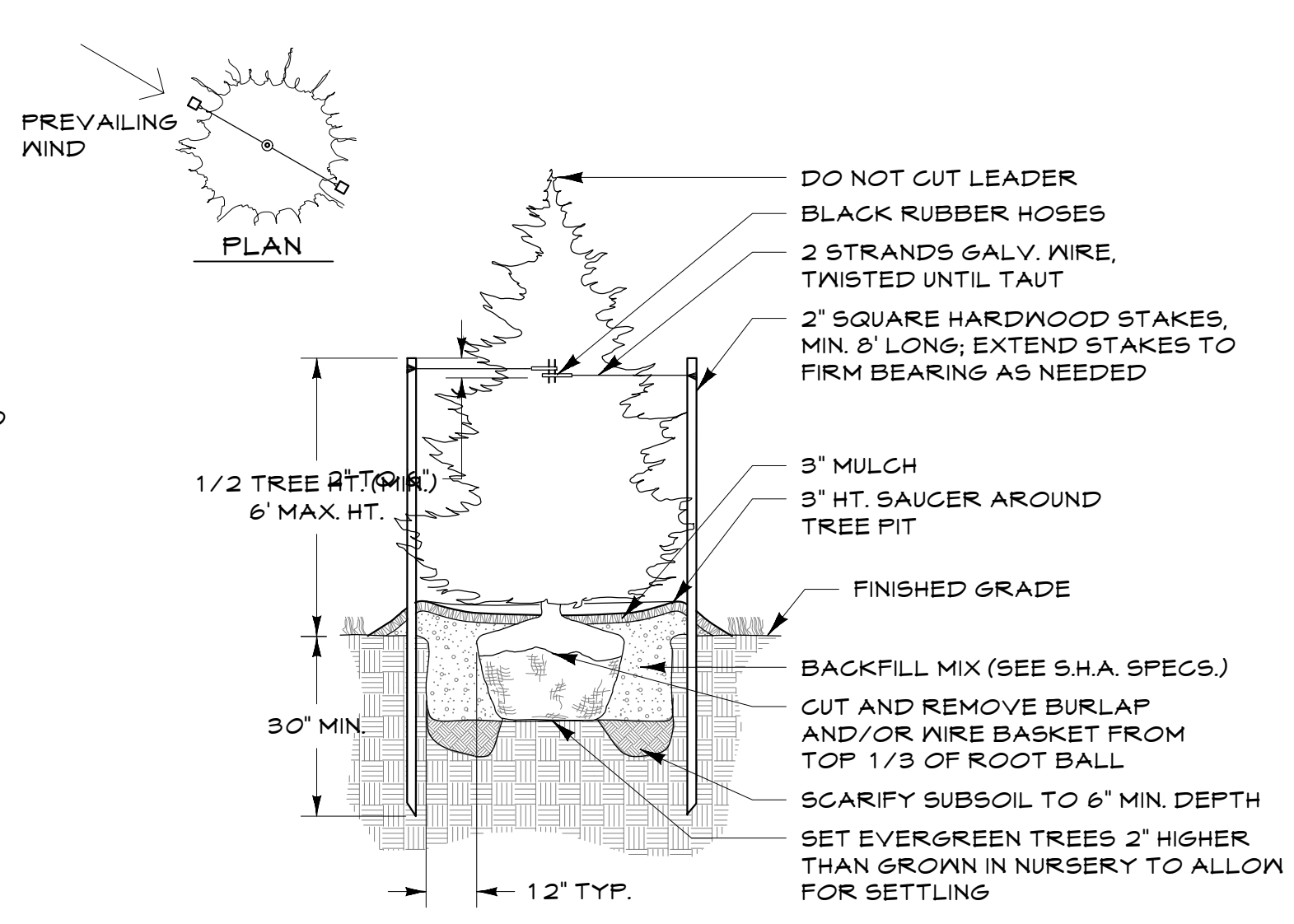




**DECIDUOUS TREE PLANTING**  
NOT TO SCALE



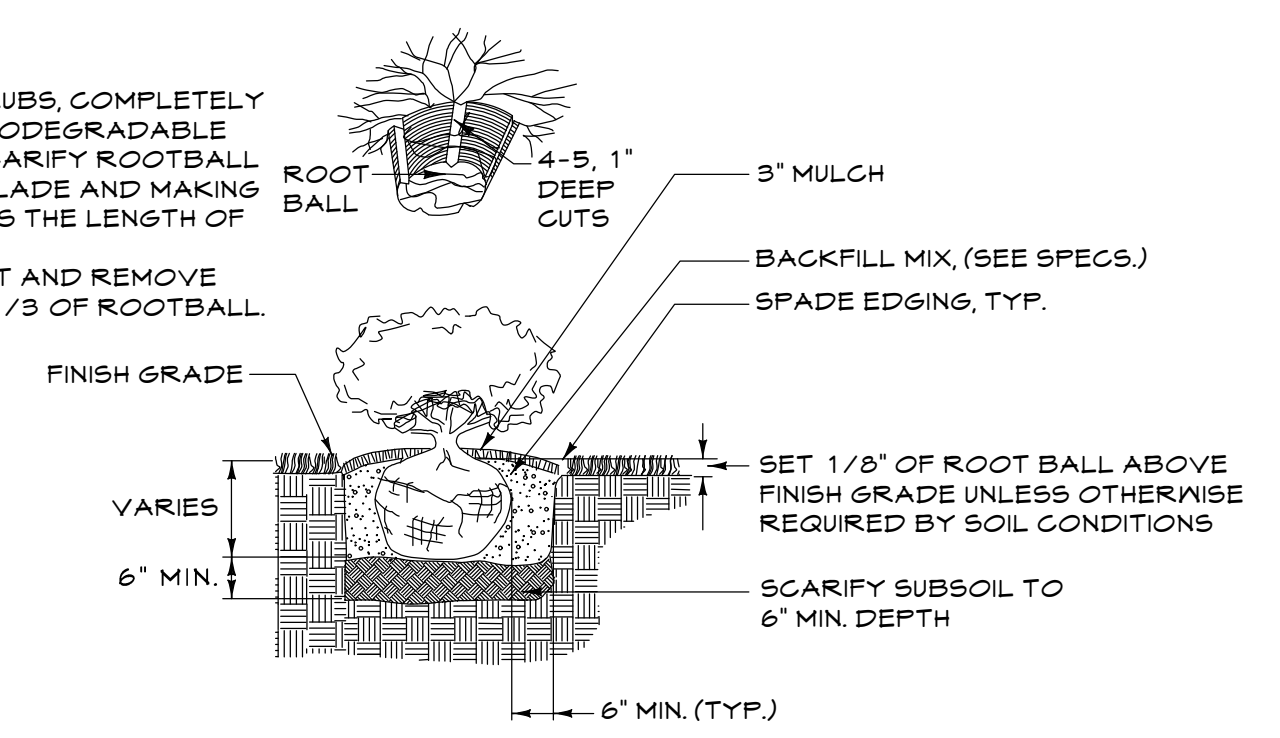
**FLOWERING TREE PLANTING**  
NOT TO SCALE



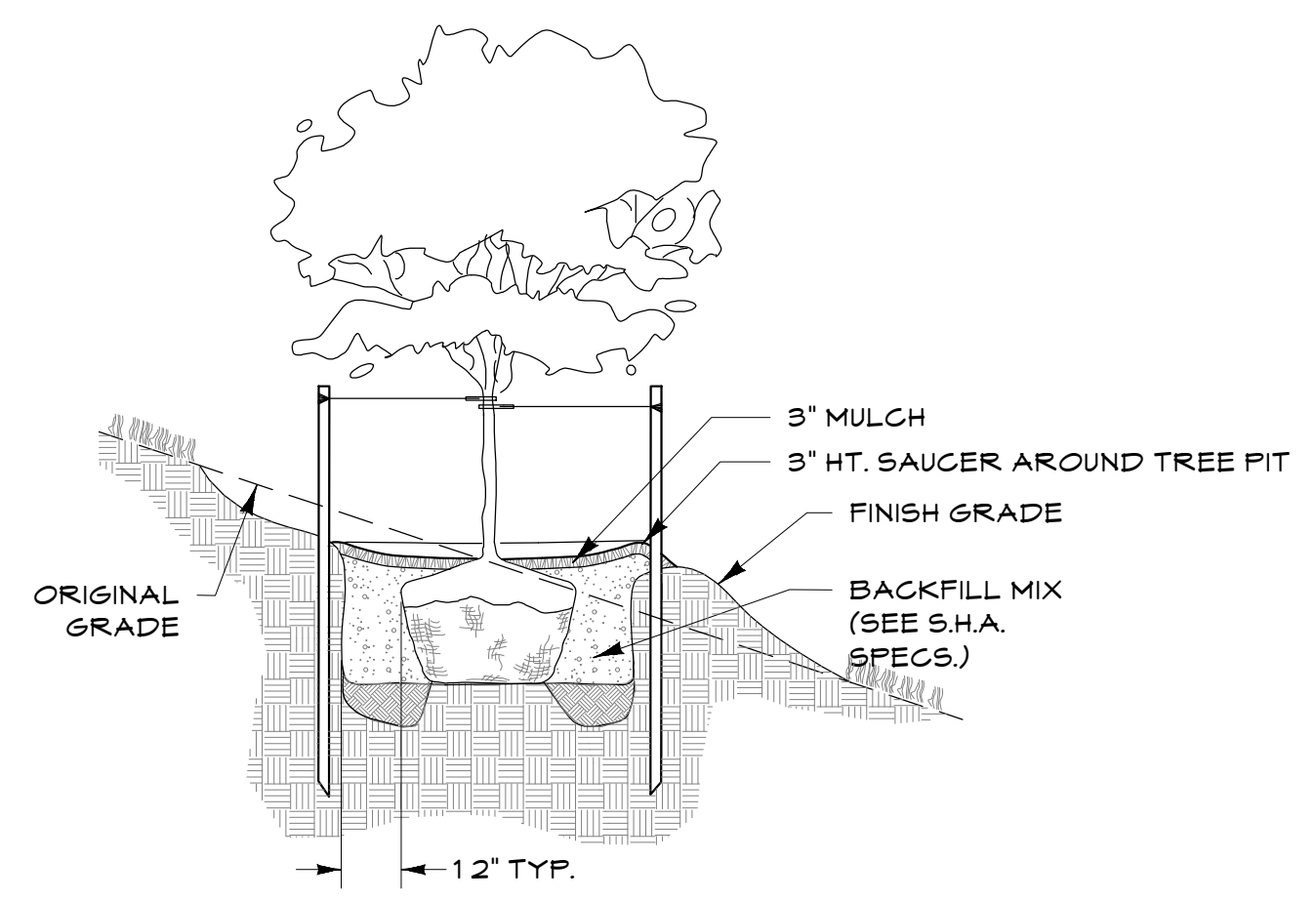
**EVERGREEN TREE PLANTING**  
NOT TO SCALE

**NOTES:**

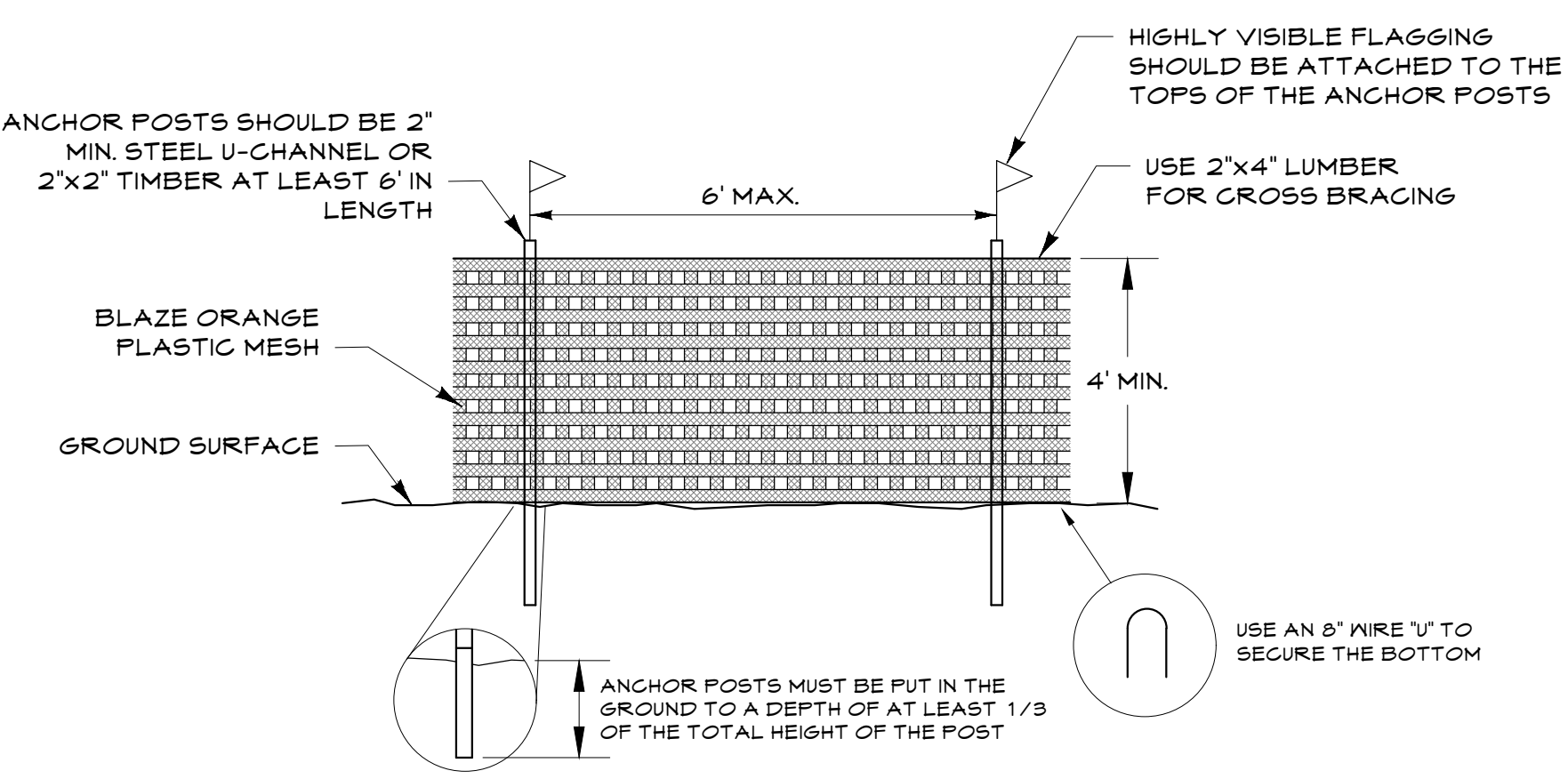
1. FOR CONTAINER SHRUBS, COMPLETELY REMOVE ALL NON-BIODEGRADABLE CONTAINERS AND SCARIFY ROOTBALL BY USING A SHARP BLADE AND MAKING 4 TO 5 ONE INCH CUTS THE LENGTH OF THE ROOTBALL.
2. FOR B&B SHRUBS, CUT AND REMOVE BURLAP FROM TOP 1/3 OF ROOTBALL.



**SHRUB PLANTING**  
Not To Scale



**TREE PLANTING ON SLOPE (TYP.)**  
Not To Scale



**TREE PROTECTION FENCE**  
Not To Scale

**PLANTING NOTES**

1. PLANT MATERIAL SUBSTITUTIONS WILL NOT BE ACCEPTED WITHOUT APPROVAL OF THE LANDSCAPE ARCHITECT.
2. ALL SHRUBS AND GROUND COVER AREAS SHALL BE PLANTED IN CONTINUOUS PREPARED PLANTING BEDS.
3. ALL SHRUB BEDS SHALL BE MULCHED WITH HARDWOOD MULCH AS DETAILED AND SPECIFIED EXCEPT WHERE NOTED ON PLANS.
4. MAINTAIN POSITIVE DRAINAGE OUT OF PLANTING BEDS AT A MINIMUM OF TWO PERCENT SLOPE.
5. PLANT QUANTITIES ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR. IF DISCREPANCIES EXIST BETWEEN QUANTITIES SHOWN ON THE PLAN AND THOSE SHOWN ON THE PLAN LIST, THE QUANTITIES ON THE PLAN SHALL TAKE PRECEDENCE.
6. ALL AREAS WITHIN CONTRACT LIMITS DISTURBED DURING OR PRIOR TO CONSTRUCTION NOT DESIGNATED TO RECEIVE PLANTINGS AND MULCH SHALL BE FINE GRADED AND SEEDED IN ACCORDANCE WITH PLANTING AND CONSTRUCTION.
7. THE CONTRACTOR SHALL NOTIFY MISS UTILITY, (800-257-7777) A MINIMUM OF THREE WORKING DAYS PRIOR TO PLANTING AND CONSTRUCTION.
8. ALL PLANT MATERIAL SHALL BE NURSERY GROWN, LANDSCAPE QUALITY, AND SHALL CONFORM TO AMERICAN STANDARDS FOR NURSERY STOCK (ANSI Z60.1) PUBLISHED BY AMERICAN HORT.
9. ALL PLANTING PROCEDURES SHALL CONFORM TO LANDSCAPE CONTRACTORS ASSOCIATION SPECIFICATION GUIDELINES FOR BALTIMORE/WASHINGTON METROPOLITAN AREA (LATEST EDITION).
10. CONTRACTOR SHALL TEST PIT PRIOR TO PLANT INSTALLATION.

**PLANTING PROVIDED**

SYMBOL	TYPE	QTY
	MAJOR DECIDUOUS TREES	38
	MINOR DECIDUOUS TREES	10
	EVERGREEN TREES	6
	SHRUBS	181

PLANT LIST					
KEY	QTY	SCIENTIFIC NAME	COMMON NAME	SIZE	COMMENTS
MAJOR DECIDUOUS TREES					
CO	5	Carya ovata	Shagbark Hickory	2" - 2 1/2" cal.	B&B
CK	4	Cladrastis kentukea	American Yellowwood	2" - 2 1/2" cal.	B&B
LT	11	Liriodendron tulipifera	Tulip Poplar	2" - 2 1/2" cal.	B&B
NS	11	Nyssa sylvatica	Black Gum	2" - 2 1/2" cal.	B&B
TA	7	Tilia americana	American Linden	2" - 2 1/2" cal.	B&B
TOTAL	38				
MINOR DECIDUOUS TREES					
CC	10	Cercis canadensis	Eastern Redbud	1" - 1 1/2" cal.	B&B
TOTAL	10				
EVERGREEN TREES					
PS	6	Pinus strobus	Eastern White Pine	6' - 8' ht.	B&B; full to ground
TOTAL	6				
SHRUBS					
AM	33	Aronia melanocarpa	Black Chokeberry	18" - 24" ht.	Container
CA	36	Ceanothus americanus	New Jersey Tea	18" - 24" ht.	Container
CR	10	Cornus racemosa	Gray Dogwood	24" - 30" ht.	Container
PF	42	Potentilla fruticosa	Shrubby Cinquefoil	12" - 15" ht.	Container
PO	35	Physocarpus opulifolius	Ninebark	24" - 30" ht.	Container
VD	25	Viburnum dentatum	Arrowwood Viburnum	24" - 30" ht.	Container
TOTAL	181				

**BOULDER RELOCATION NOTES**

1. ALL EXISTING BOULDERS ADJACENT TO EXISTING ROADWAYS AND PARKING AREAS SHALL BE REMOVED AND STORED ON SITE UNTIL RELOCATION.
2. BOULDERS SHALL BE RELOCATED AS SHOWN ON THE LANDSCAPE PLANS.
3. BOULDERS SHALL BE PLACED A MINIMUM OF TWO (2) FEET FROM ANY EDGE OF PAVEMENT.
4. RELOCATED BOULDERS SHALL BE PARTIALLY BURIED TO A DEPTH OF SIX (6) INCHES OR MORE AS NECESSARY TO PREVENT MOVEMENT.

24TMP-026983

**CENTURY ENGINEERING**  
A Kleinfelder Company  
10710 Gilroy Road, Hunt Valley, MD 21031  
Phone: 443.589.2400 www.centuryeng.com

DATE: 6/21/2024

LICENSE NO. 1008

**ANNE ARUNDEL COUNTY**  
DEPARTMENT OF PUBLIC WORKS

G02020077

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		APPROVED DATE		APPROVED DATE		SHEET 55 OF 77
		ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY		PROJECT NO.: P588001
						DATE: 6/7/2024

CONSTRUCTION DOCUMENTS

**Landscape Notes & Details**

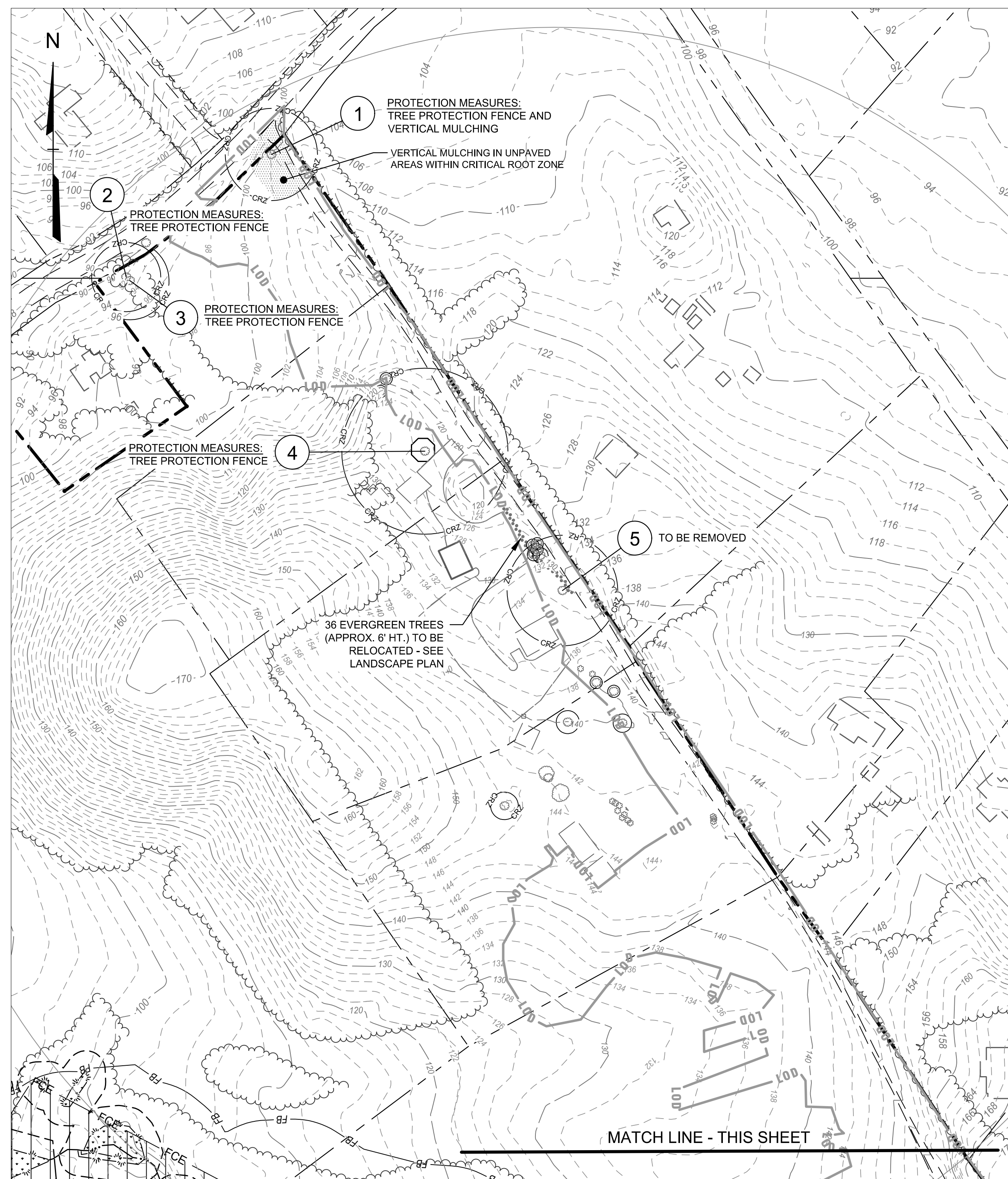
**Severn Chapel Area**  
of the Bacon Ridge Natural Area

2nd Tax District Anne Arundel Co., MD. Tax Map 37, Grid 11, Parcel 86

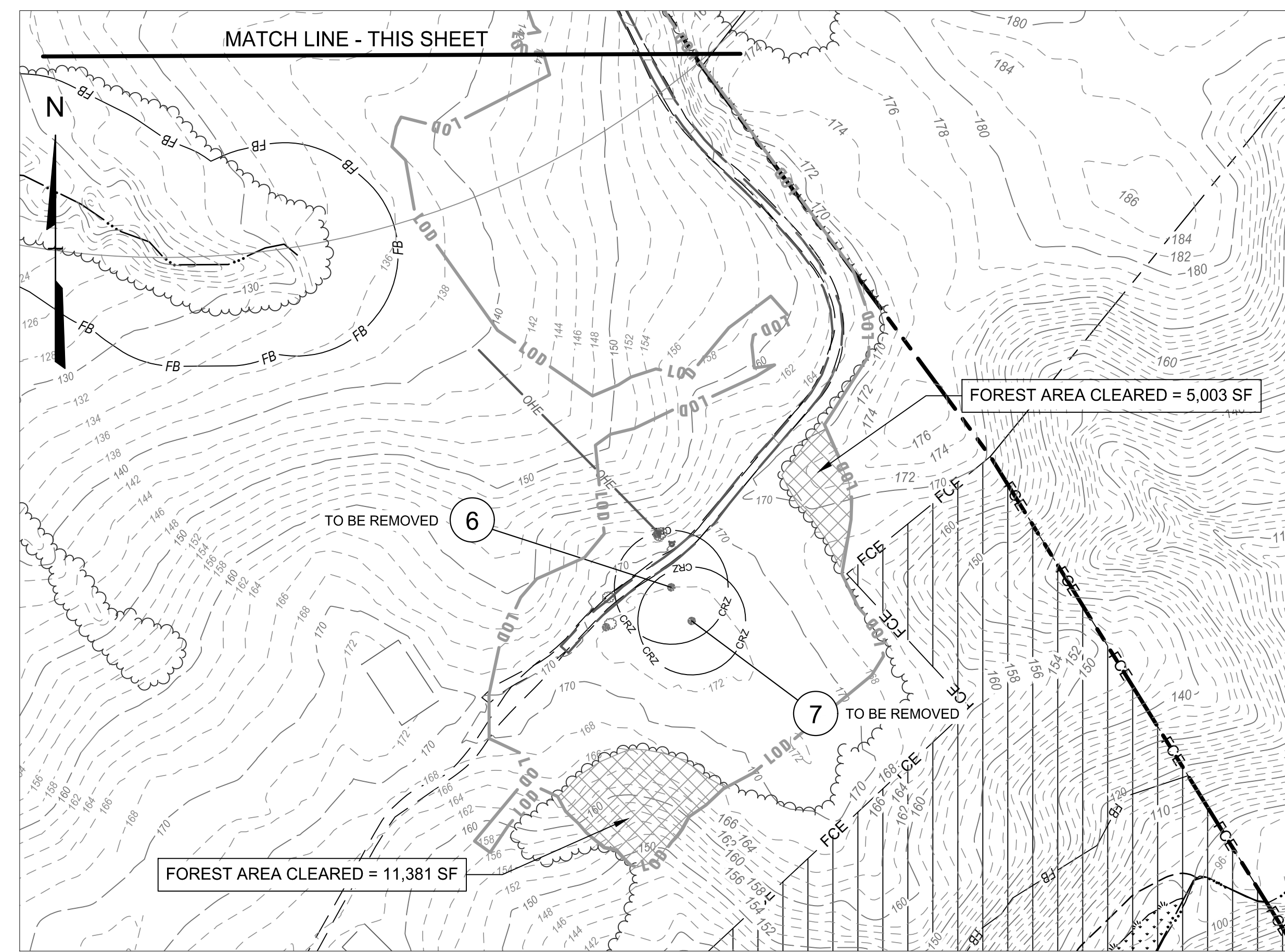
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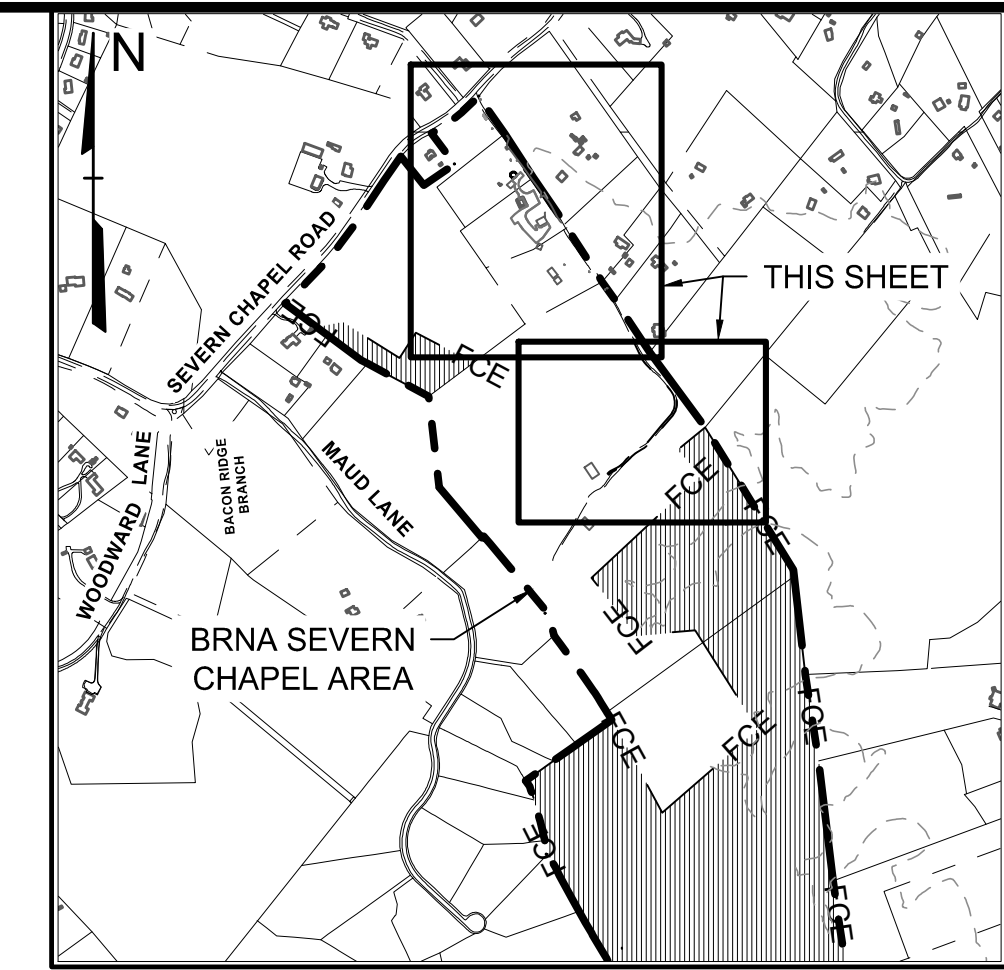
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**PLAN**  
SCALE: 1" = 100'  
0 100' 200'



**PLAN**  
SCALE: 1" = 100'  
0 100' 200'



**PLAN KEY**  
SCALE: 1" = 100'

**LEGEND**

- Property Line
- Adjoiner / Lot Line
- Existing Edge of Road/Paving
- Existing Minor Contour
- Existing Major Contour
- Existing Building
- Non-Tidal Wetlands and 25' Buffer
- Water Edge or Stream Centerline
- 100' Stream Buffer
- FEMA 100-Year Flood Plain
- Forest Conservation Easement
- Existing Tree Line
- Critical Root Zone
- Limit of Disturbance
- Proposed Forest Clearing
- Proposed Vertical Mulching Area

SPECIMEN TREES						
KEY	SPECIES	SIZE (DBH)	CRZ	CONDITION	PROPOSED ACTION	CRZ IMPACT
1	Liriodendron tulipifera	40"	60'	Good	Retained w/ CRZ impacts	20.6%
2	Liriodendron tulipifera	30"	45'	Good	Retained	0.0%
3	Liriodendron tulipifera	34"	51'	Good	Retained	0.0%
4	Acer saccharinum	72"	108'	Fair	Retained w/ CRZ impacts	28.2%
5	Acer saccharinum	48"	72'	Fair	Removed	49.6%
6	Juniperus virginiana	38"	57'	Fair	Removed	100.0%
7	Pinus strobus	36"	54'	Fair	Removed	100.0%

**TOTAL FOREST AREA CLEARED**  
16,384 SF

**EXCEPTION TO §17-6 SUBTITLE 3: FOREST CONSERVATION**

In accordance with § 17-6-301.(b) of the Anne Arundel County Code, the proposed improvements to this site do not result in more than 20,000 square feet of forest clearing. No additional clearing is expected for future site improvements. Therefore, the requirements of Subtitle 3, Forest Conservation, do not apply to this site.

A Declaration of Intent will be filed in accordance with § 17-6-301.(c) prior to approval of the grading permit.

24TMP-026983

<p><b>CENTURY ENGINEERING</b> A Kleinfelder Company 10710 Gilroy Road, Hunt Valley, MD 21031 Phone: 443.589.2400 www.centuryeng.com</p>	<p>DATE: 6/21/2024</p> <p>LICENSE NO. 1008</p>	<p>ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS</p>		<p>G02020077</p>																								
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**MEETING SUMMARY**

**Project:** Bacon Ridge Natural Area – Severn Chapel Area (P588001)  
**Purpose:** Tree Consultation  
**Date:** May 4, 2023 at 2:30 P.M.

The meeting was held on site. Specimen trees and off-site trees potentially impacted by the proposed development were examined. Schematic plan drawings were used to review the proposed development and limits of disturbance. Findings and recommendations by the attending Arborist are listed below. The following individuals were in attendance:

- Bud Reaves – Arborist, Anne Arundel County Department of Inspections and Permits
- Emma Pfefferkorn – Anne Arundel County Department of Public Works
- Michael Pieranunzi – Century Engineering, a Kleinfelder Company
- Lydia Vaccare – Century Engineering, a Kleinfelder Company

**40" DBH Tulip Poplar**

- Located immediately south of the existing park entrance.
- Potential proposed disturbance includes excavation/grading in the outer critical root zone for the proposed entrance road and accompanying runoff conveyance swales, and removal of the existing entrance.
- Findings:** The tree appears to be in good condition. The tree's drip line is relatively narrow. The proposed limits of grading are acceptable. Removal of the existing entrance will likely be beneficial for the tree.
- Recommendations:** Vertical mulching throughout the entire root zone to treat compaction and encourage small root growth.

**72"± DBH Silver Maple (Multi-stem)**

- Located on Lot 1A adjacent to the existing garage and 2-story building.
- Potential proposed disturbance includes excavation/grading in the outer critical root zone for the proposed road and accompanying runoff conveyance swale.
- Findings:** The tree appears to be in fair condition. The proposed limits of grading are acceptable; not likely to impact the tree.
- Recommendations:** N/A

**48" DBH Silver Maple**

- Located on Lot 2A between the existing park road and 1-story building.
- The current design plans propose to remove the tree to accommodate the proposed road and accompanying runoff conveyance swale.
- Findings:** The tree appears to be in fair condition. It is currently impacted by other activity taking place on the lot. Several Giant Arborvitae have been recently planted directly next to the tree.
- Recommendations:** Removal of the tree is acceptable.

**38" DBH Eastern Red Cedar**

- Located on Lot 2 adjacent to the existing 2-story farmhouse.
- The current design plans propose to remove the tree to accommodate the proposed horse trailer and school bus parking area.
- Findings:** The tree appears to be in fair condition. It is currently impacted by vine growth on the trunk and branches.
- Recommendations:** Removal of the tree is acceptable.

**36" DBH Eastern White Pine**

- Located on Lot 2 adjacent to the existing 2-story farmhouse.
- The current design plans propose to remove the tree to accommodate the proposed horse trailer and school bus parking area.
- Findings:** The tree appears to be in fair condition.
- Recommendations:** Removal of the tree is acceptable.

**Off-Site Trees**

- Located along the northeastern property line from Severn Chapel Road and following the entire length of the existing park road/driveway.
- Potential proposed disturbance includes excavation/grading in the root zones for the proposed road.
- Findings:** No specimen trees were visually identified along the existing road. The proposed limits of grading are acceptable.
- Recommendations:** N/A

*Paul Reaves, CF*

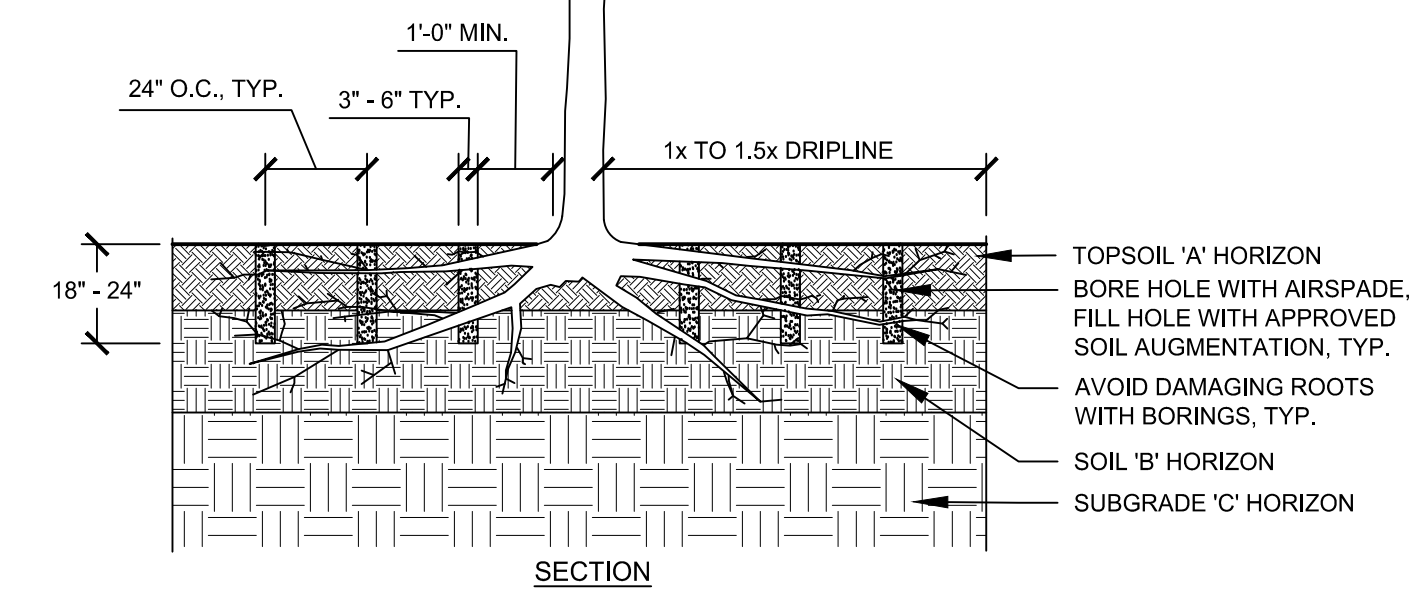
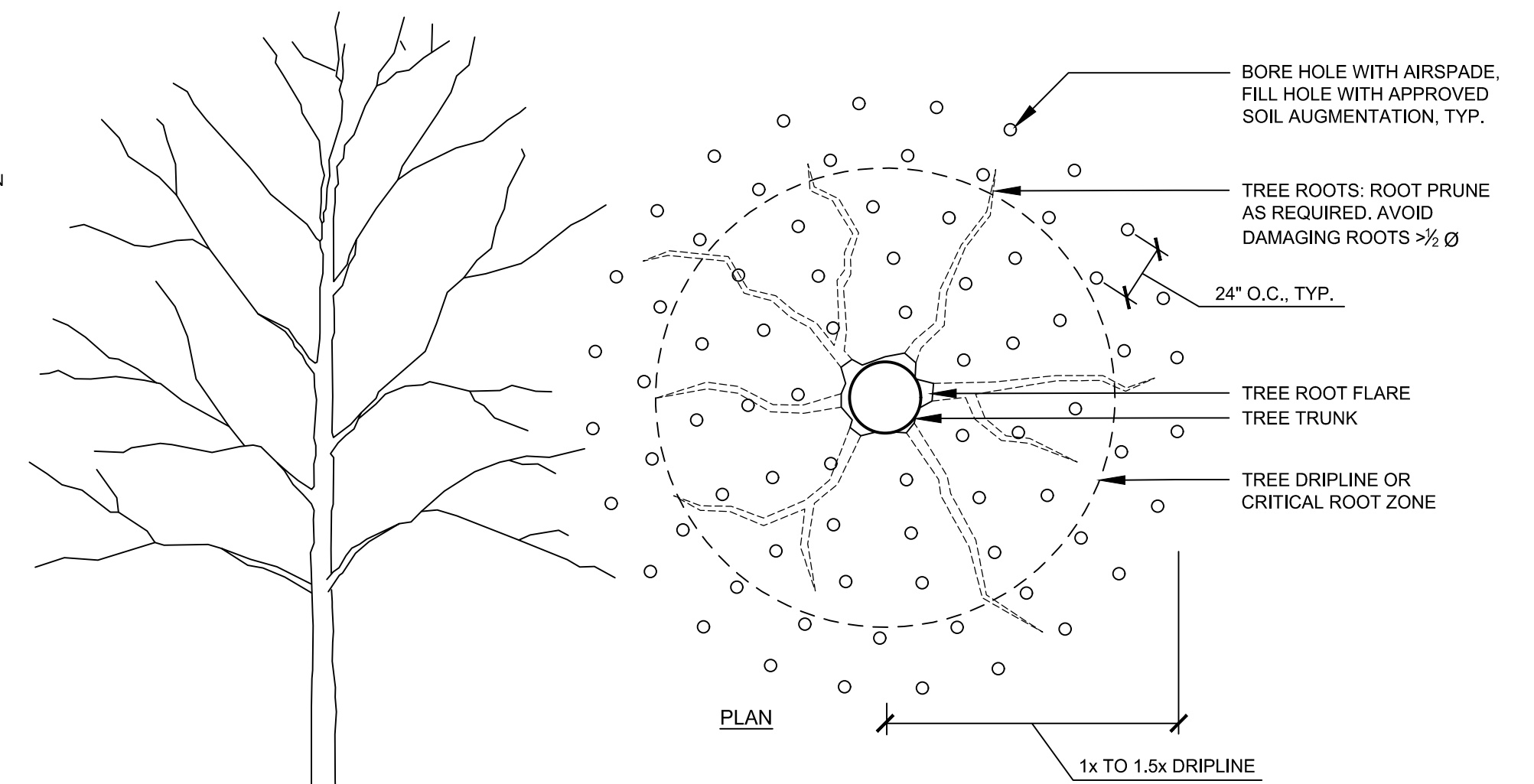
Earl "Bud" Reaves Jr.  
Anne Arundel County Department of Inspections and Permits

May 30, 2023

Date

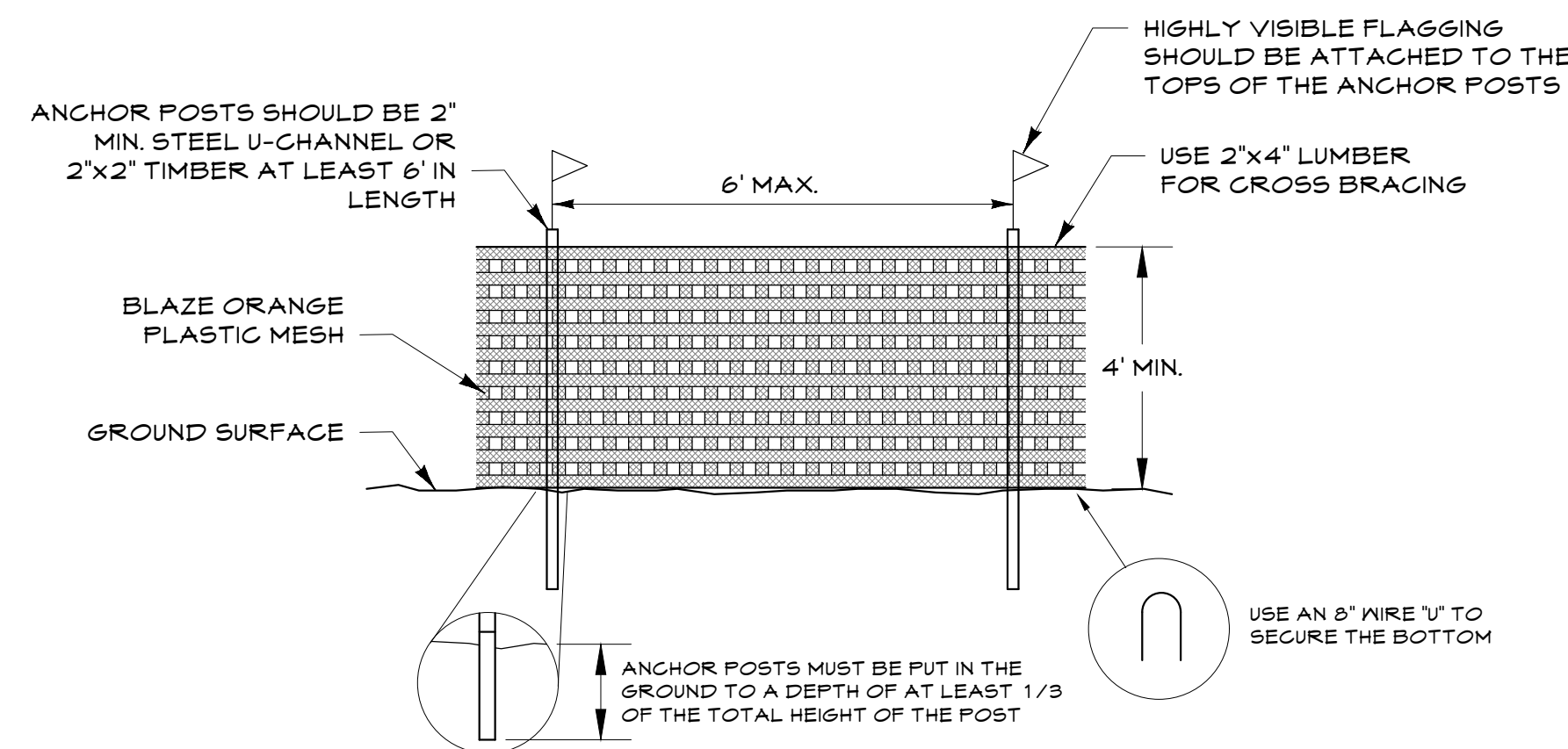
**NOTES:**

- DEPTH AND SPACING OF BORE HOLES TO BE DETERMINED BY LANDSCAPE ARCHITECT AND/OR CERTIFIED ARBORIST BASED ON INITIAL SITE INVESTIGATION. SPECIFIED BORE HOLE DEPTH MAY RANGE FROM 18" TO 36" AND SHOULD BE SPECIFIED BASED ON INDIVIDUAL SITE CONDITIONS AND TREE HEALTHCARE NEEDS.
- USE AIRSPADE TO BARE-ROOT IMPACTED PLANTINGS DURING SOIL AERATION, STOCKPILE, PROTECT, AND WATER PLANTS AS NECESSARY, AND ENSURE PROPER REPLANTING OR REPLACEMENT AT COMPLETION OF WORK.
- ALL WORK TO BE DONE UNDER THE SUPERVISION OF CERTIFIED ARBORIST OR APPROVED CONTRACTOR. ENSURE THAT TREES ARE IN GOOD HEALTH AND NOT EXPERIENCING UNUSUAL STRESS PRIOR TO COMMENCING WORK.
- PROTECT TREE AND TREE ROOTS THROUGHOUT CONSTRUCTION. AIRSPADE OR HAND DIG ONLY WITHIN THE CRITICAL ROOT ZONE. DOCUMENT AND ASSESS ALL DAMAGES TO TREES AT COMMENCEMENT AND THROUGH COMPLETION OF WORK. DAMAGES TO BE COMPENSATED BASED ON PRE-AGREED TERMS.
- ENSURE PROPER SOIL MOISTURE LEVELS THROUGH DURATION OF WORK. SOIL MUST BE NEAR FIELD CAPACITY, BUT NOT SATURATED, AND PASS A FIELD MOISTURE TEST PRIOR TO USE OF AN AIRSPADE. HAND WATER TREES AS NECESSARY BEFORE COMMENCEMENT OF WORK AND WITHIN 24 HOURS OF COMPLETION. COVER BARE ROOTS AND WATER AS NECESSARY DURING WORK.
- ARBORIST TO EVALUATE THE OVERALL HEALTH OF TREES AND TO MAKE A REPORT AND RECOMMENDATIONS FOR ADDITIONAL TREE CARE BEFORE, DURING, AND AFTER THE COMPLETION OF WORK.
- CALL 811 OR CONTACT MISS UTILITY TO LOCATE EXISTING UTILITIES PRIOR TO ANY EXCAVATION. PROTECT EXISTING UTILITIES THROUGHOUT THE CONSTRUCTION PROCESS AND REPAIR ANY DAMAGE TO THESE AT NO COST TO THE OWNER.



**VERTICAL MULCHING WITH AIRSPADE \***

Not To Scale  
\* SEE PLAN SHEET 52 FOR TREE LOCATION



**TREE PROTECTION FENCE**

Not To Scale

<p><b>CENTURY ENGINEERING</b> A Kleinfelder Company 10710 Gilroy Road, Hunt Valley, MD 21031 Phone: 443.589.2400 www.centuryeng.com</p>	<p>DATE: 6/21/2024</p> <p>LICENSE NO. 1008</p>	<p>ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS</p>		<p>G02020077</p>																			
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<table border="1"> <tr> <th>APPROVED</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> </tr> </table>		APPROVED	DATE			<table border="1"> <tr> <th>APPROVED</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> </tr> </table>		APPROVED	DATE			<table border="1"> <tr> <th>PROJECT NO.:</th> <th>DATE:</th> </tr> <tr> <td>P588001</td> <td>6/7/2024</td> </tr> </table>		PROJECT NO.:	DATE:	P588001	6/7/2024						
APPROVED	DATE																						
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P588001	6/7/2024																						
<table border="1"> <tr> <th>ASSISTANT CHIEF ENGINEER</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> </tr> </table>		ASSISTANT CHIEF ENGINEER	DATE			<table border="1"> <tr> <th>CHIEF, RIGHT OF WAY</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> </tr> </table>		CHIEF, RIGHT OF WAY	DATE			<p>SHEET 57 OF 77</p>											
ASSISTANT CHIEF ENGINEER	DATE																						
CHIEF, RIGHT OF WAY	DATE																						

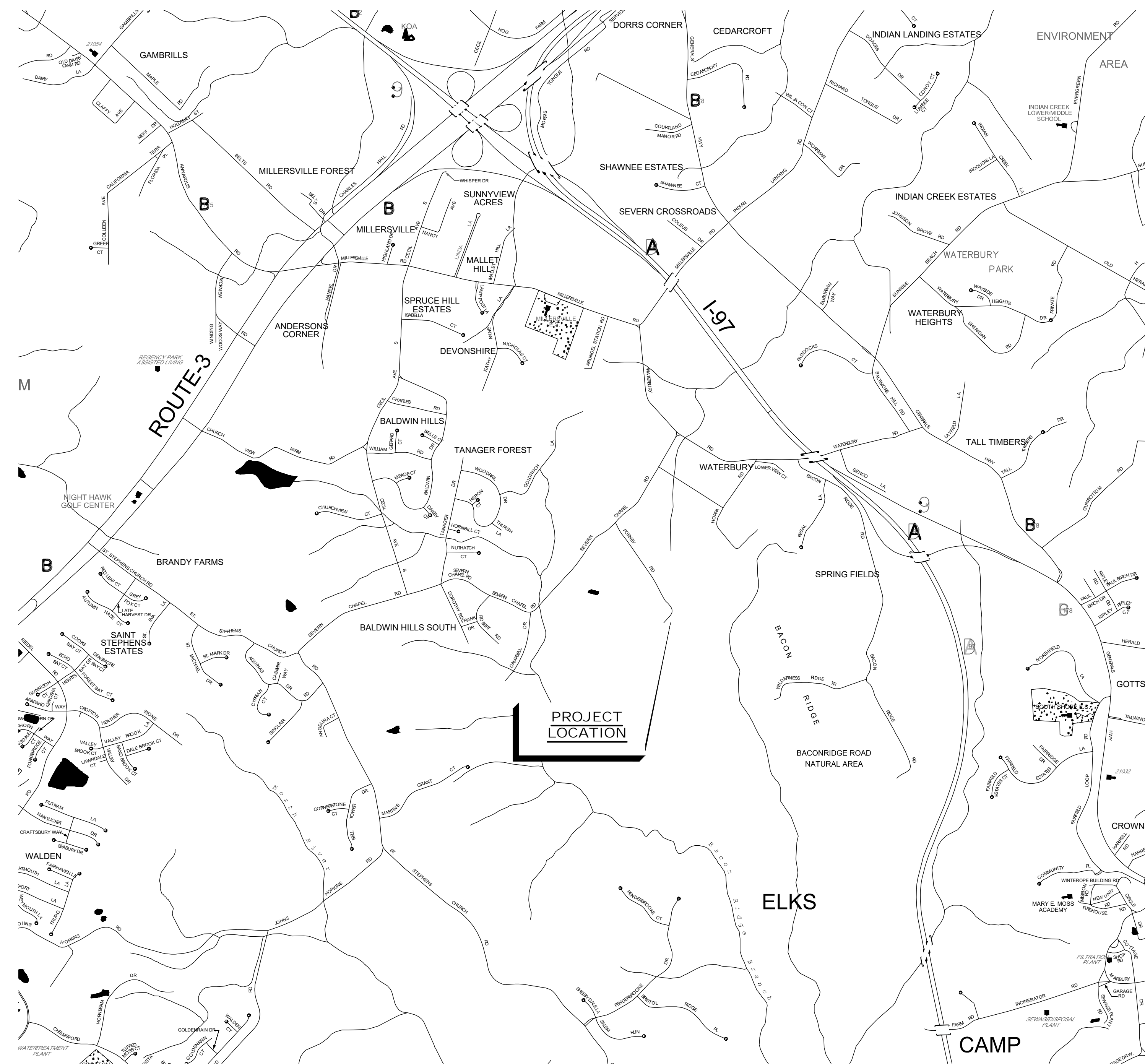


# ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS

## BACON RIDGE/FORNEY NATURAL AREA DEER SUPPORT BUILDING

1555 SEVERN CHAPEL ROAD, CROWNSVILLE, MARYLAND 21032

PROJECT NUMBER: P588000  
 CONTRACT NUMBER: P588001



### SHEET INDEX

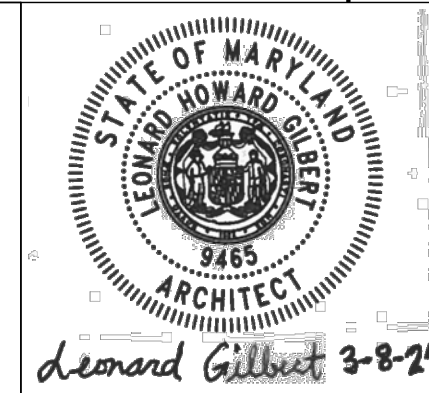
SHEET NO.	GENERAL:	ARCHITECTURAL:	STRUCTURAL:	MECHANICAL/PLUMBING:	ELECTRICAL:
01.	G000				
02.					
03.		A000			
04.		A101			
05.		A201			
06.		A202			
07.		A301			
08.			S001		
09.			S002		
10.			S101		
11.				M001	
12.				M002	
13.				M101	
14.				M301	
15.				M501	
16.					E001
17.					E101
18.					E201
19.					E301
20.					E501

BID DOCUMENTS



AECOM  
 4 NORTH PARK DRIVE  
 SUITE 300  
 HUNT VALLEY, MARYLAND 21030  
 PHONE: 410-785-7220

PROFESSIONAL CERTIFICATION  
 \*I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.  
 LICENSE NUMBER: 9465  
 EXPIRATION DATE: APRIL 4, 2025

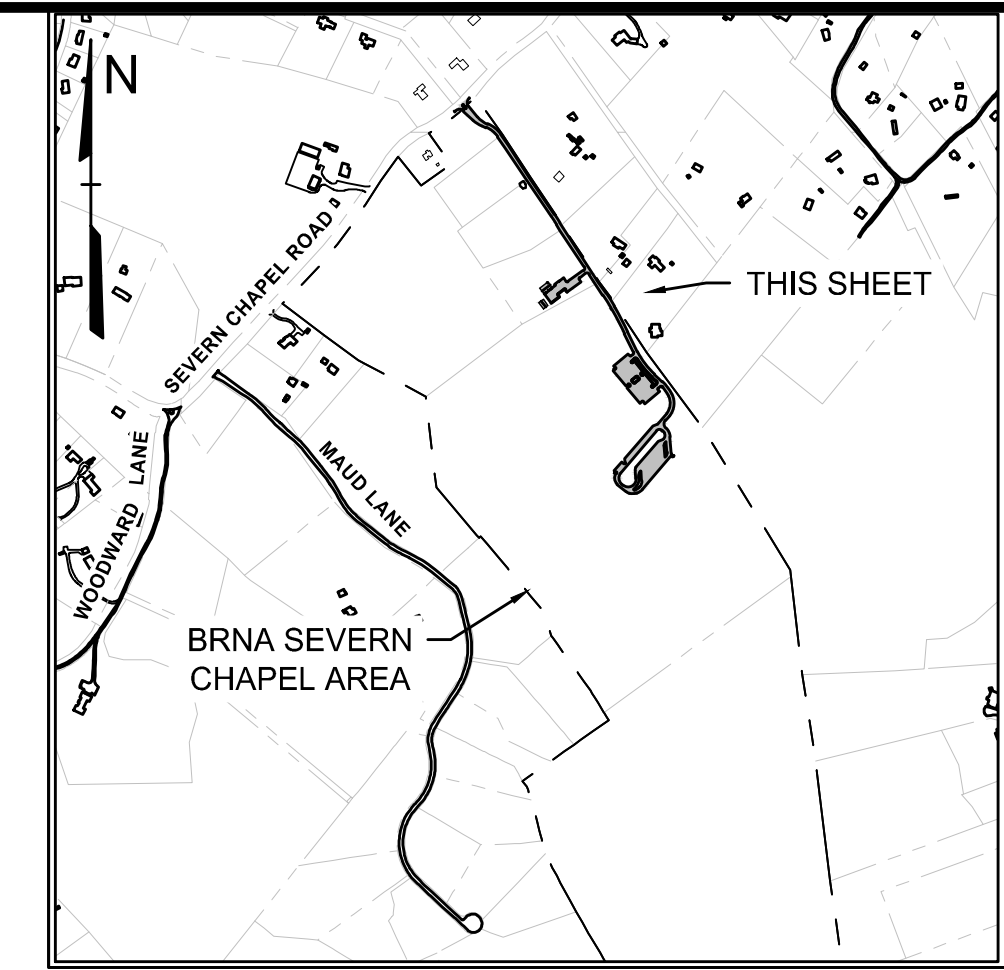
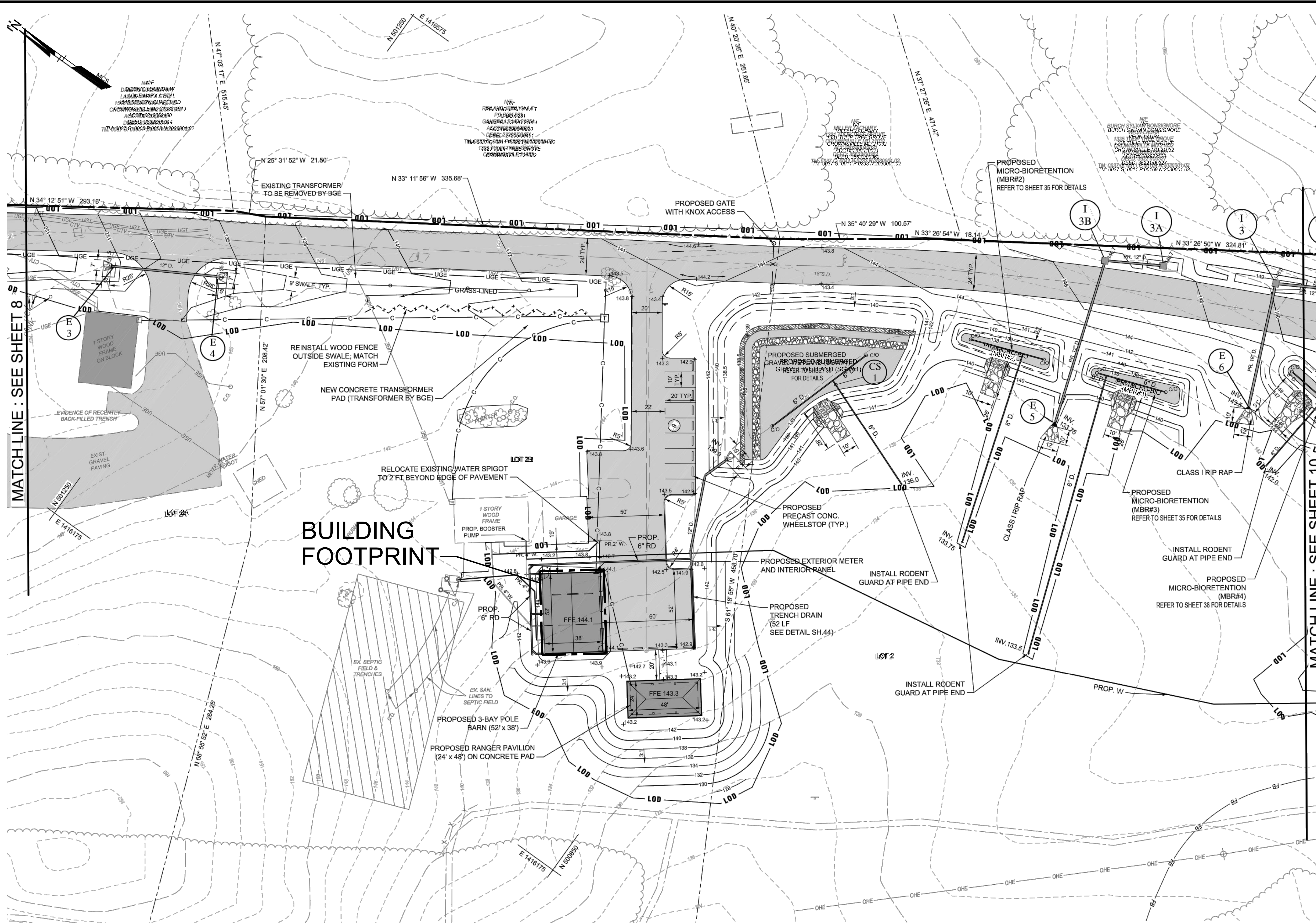


ANNE ARUNDEL COUNTY - DEPARTMENT OF PUBLIC WORKS							
BACON RIDGE/FORNEY NATURAL AREA DEER SUPPORT BUILDING							
REVISED	APPROVED	DATE	APPROVED	DATE	SCALE: AS NOTED	COVER SHEET AND SHEET INDEX	
DATE	BY		DATE		DRAWN BY: LF		
	CHIEF ENGINEER		PROJECT MANAGER		CHECKED BY: LG		
	APPROVED	DATE	APPROVED	DATE	SHEET NO. 58 OF 77		
	ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY		PROJECT NO.		
					CONTRACT NO.		

G000



C:\Users\lroyfourman\AECOM\AA County Bacon Ridge - General\900 CAD\_GIS\2023-08-22 Bacon Ridge Site Plan - Standard\2023527.001A (DD-08) Grading Plan\_PDF Overlay.dwg Jun 20, 2024 8:04am lroyfourman



PLAN KEY

SCALE: 1" = 1000'

LEGEND

- Property Line
- Adjoiner / Lot Line
- Existing Minor Contour
- Existing Major Contour
- Existing Edge of Road/Paving
- Existing Storm Drain
- Existing Water
- Existing Underground Telephone Line
- Existing Underground Electric Line
- Existing Overhead Electric Line
- Existing Utility Pole
- Existing Guy Pole / Guy Wire
- Existing Sign
- Existing Fence
- Existing Tree Line
- Existing Deciduous Tree
- Existing Evergreen Tree
- Critical Root Zone
- Existing Trail
- Existing Building
- Existing Septic Area
- Limit of Disturbance
- Proposed Building
- Proposed Edge of Road/Paving
- Proposed Minor Contour
- Proposed Major Contour
- Proposed Spot Elevation
- Proposed Paving
- Proposed Inlet and Storm Drain
- Proposed Storm Drain Outfall
- Soil Boring

- AECOM:**  
**GENERAL NOTES:**
- REFER TO E001 FOR LEGEND ABBREVIATION AND GENERAL NOTES.
  - REFER TO E201 FOR LOCATION OF PANELBOARD AND METER.
  - COORDINATE PRIMARY, SECONDARY, TRANSFORMER AND METER REQUIREMENTS WITH BGE.

PLAN

SCALE: 1" = 30'

AECOM PROVIDES THIS DRAWING FOR REFERENCE ONLY. WORK BEYOND LIMITS OF BUILDING FOOT PRINT BY OTHERS.

**CENTURY ENGINEERING**  
A Kleinfelder Company  
10710 Gilroy Road, Hunt Valley, MD 21031  
Phone: 443.589.2400 www.centuryeng.com

DATE: \_\_\_\_\_  
LICENSE NO. \_\_\_\_\_

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS				DESIGN DEVELOPMENT	
REVISED	APPROVED	DATE	APPROVED	DATE	SCALE AS SHOWN
DATE	BY		DATE		DRAWN BY LMV/RDT
	CHIEF ENGINEER		PROJECT MANAGER		CHECKED BY MJP
	APPROVED	DATE	APPROVED	DATE	SHEET 59 OF 77
	ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY		PROJECT NO.: P588001
					DATE: 8/21/2023

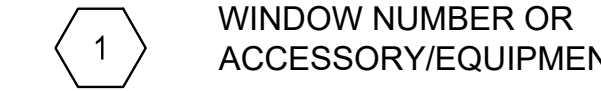
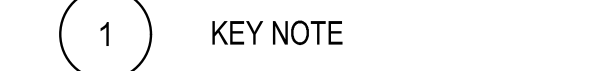
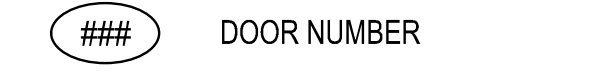
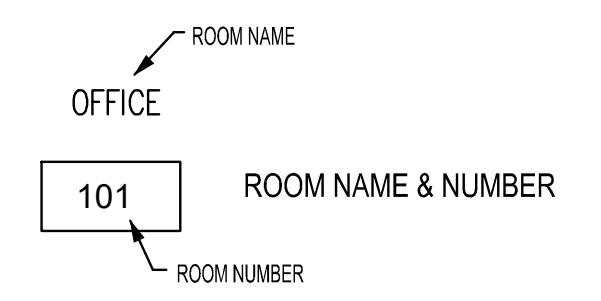
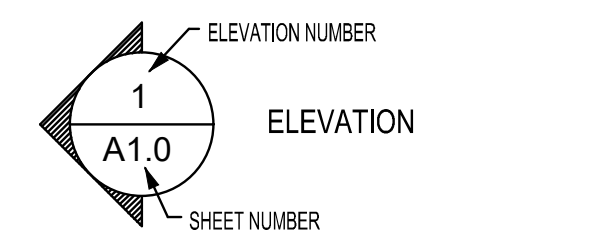
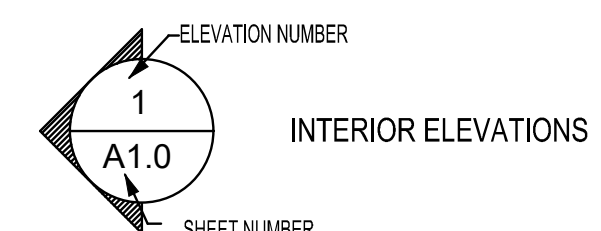
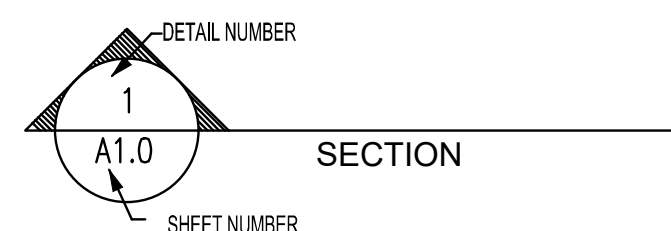
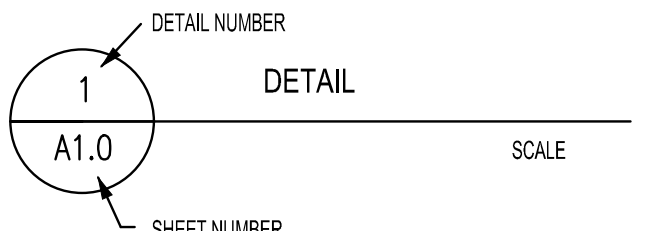
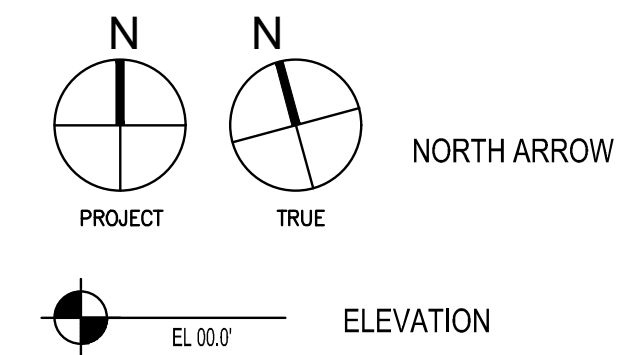
Severn Chapel Area  
of the Bacon Ridge Natural Area  
2nd Tax District  
Anne Arundel Co., MD. Tax Map 37, Grid 11, Parcel 86



# ARCHITECTURAL ABBREVIATIONS

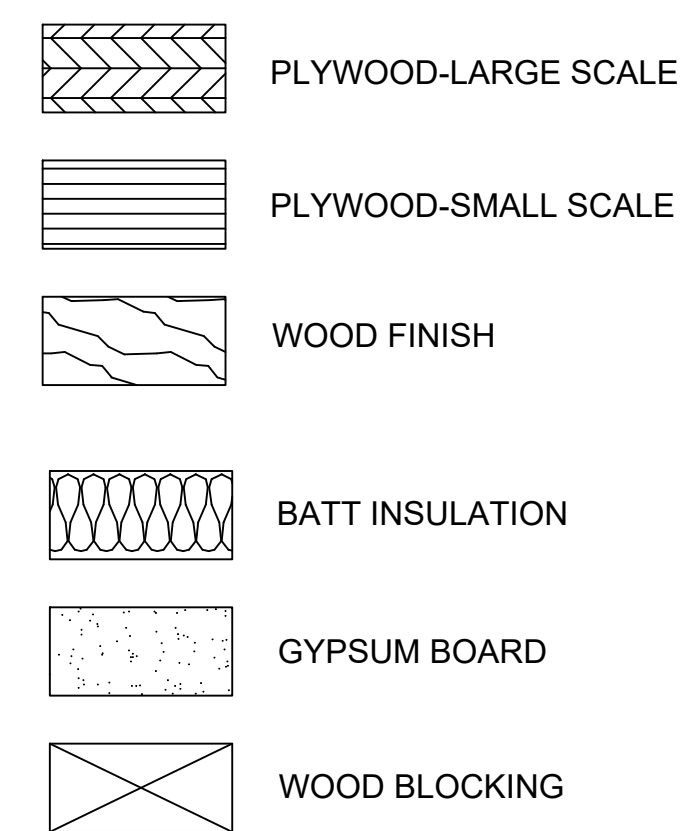
&	AND	F.F.E.	FINISH FLOOR ELEVATION	PR	PAIR
@	AT	F.O.F.	FACE OF FINISH	PT	POINT
A.B.	ANCHOR BOLT	F.O.S.	FACE OF STUD	PTD.	PAINTED
A.D.	ACCESS DOOR	F.O.W.	FACE OF WALL	PWR.	POWER
A.F.F.	ABOVE FINISH FLOOR	F.S.	FIRE SPRINKLER	R.D.	ROOF DRAIN
A.F.G.	ABOVE FINISH GRADE	FIBERGL.	FIBERGLASS	R.F.	RETURN FAN
A.P.	ACCESS PANEL	FIN.	FINISH	R.O.	ROUGH OPENING
A.V.	AIR VENT	FIN. FLR.	FINISH FLOOR	R.P.M.	REVOLUTIONS PER MINUTE
ACOUS.	ACOUSTICAL	FIN. GR.	FINISH GRADE	RAD. (R)	RADIUS
ACT	ACOUSTICAL TILE	FLASH	FLASHING	REC.	RECESS
ADJ.	ADJACENT, ADJUSTABLE	FLR.	FLOOR	RECEPT.	RECEPTION
ALT.	ALTERNATE	FLUOR.	FLUORESCENT	REF.	REFERENCE
ANOD.	ANODIZED	FR.	FRAME	REFRIG.	REFRIGERATOR
APPROX.	APPROXIMATELY	FR.MG.	FRAMING	REINF.	REINFORCING (ED) (ING)
ARCH.	ARCHITECTURE	FT. D.	FOOTING DRAIN	REQ.	REQUIRE (MENTS) (D)
ASSY.	ASSEMBLY	FTG.	FOOTING	RET.	RAFTERS
		FTQ.	FOOTING	RM	ROOM
B.F.G.	BELOW FINISH GRADE	G.B.	GROUND BEAM	S.A.	SUPPLY AIR
B.O.F.	BOTTOM OF FOOTING	GAB	GROUND AGGREGATE BASE	S.C.	SOLID CORE
BD	BOARD	GAL.	GALLON	S.C.W.D.	SOLID CORE WOOD DOOR
BF	BELOW FLOOR	GALV.	GALVANIZED	S.M.	SHEET METAL
BLDG.	BUILDING	GR.	GRADE	S.O.G.	SLAB ON GRADE
BLK (G)	BLOCK (ING)	GRD.	GUARDRAIL	S.O.V.	SHUT-OFF VALVE
BM (S)	BEAM	GRND.	GROUND	S.P.	STATIC PRESSURE
BOT.	BOTTOM	GT.	GRATE	SCHED.	SCHEDULE
		GYP BD, GWB	GYP. BOARD	SHR.	SHOWER
C.C.	CENTER TO CENTER	H.B.	HOSE BIBB	SHT.	SHEET
C.G.	CORNER GUARD	H.C.	HANDICAPPED	SIM.	SIMILAR
C.J.	CONTROL JOINT, CEILING JOIST	H.M.	HOLLOW METAL	SL	SLOPE
		H.P.	HIGH PRESSURE, HORSE POWER	SP.	SPACING
C.S.	CRAWL SPACE	H.V.A.C.	HEATING, VENTILATING AND AIR CONDITIONING	SPEC.	SPECIFICATION
CKT. BRK.	CIRCUIT BREAKER	HDR.	HEADER	SPR.	SPRINKLER
C.M.U.	CONCRETE MASONRY UNIT	HR.	HORIZONTAL	SQ.	SQUARE
		HT.	HEIGHT	SQ. FT., S.F.	SQUARE FEET
C.T.	CERAMIC TILE	I.E.	INVERT ELEVATION	S.S.	STAINLESS STEEL
CAB.	CABINET	INFO.	INFORMATION	STAG.	STAGGERED
C.L.	CENTER LINE	INSUL.	INSULATE (ED) (ING)	STD.	STANDARD
CLG.	CEILING	JST.	JOIST	STL.	STEEL
CLR.	CLEAR	LAB.	LABORATORY	STOR.	STORAGE
COL.	COLUMN	LAM.	LAMINATED	STRUCT.	STRUCTURAL
CONC.	CONCRETE	LBS.	POUNDS	SUSP.	SUSPENDED
CONN.	CONNECTION	L.F.	LINEAR FEET		
CONST.	CONSTRUCTION	LSCP.	LANDSCAPE	T. & B.	TOP AND BOTTOM
CONT.	CONTINUOUS	L.T.	LIGHT	T. & G.	TONGUE AND GROOVE
CONTR.	CONTRACTOR	LTG.	LIGHTING	T.O.D.	TOP OF DECK
CORR.	CORRIDOR	LVR.	LOUVER	T.O.P.	TOP OF PAD, PAVING, PARAPET
CU. FT.	CUBIC FEET	M.B.	MACHINE BOLT	T.O.S.	TOP OF STEEL
		MAS.	MASONRY	T.O.W.	TOP OF WALL, WALK
		MATL.	MATERIAL	T.P.	TOILET PAPER
		MAX.	MAXIMUM	T.S.	TUBE STEEL
DM.	DIMENSION	MECH.	MECHANICAL	TEL.	TELEPHONE
DN.	DOWN	MEP.	MECHANICAL, ELECTRICAL, PLUMBING	TEMP.	TEMPERATURE, TEMPERED
DR.	DOOR	MFR.	MANUFACTURER	TRANS.	TRANSFORMER
DWG.	DRAWING	MIN.	MINIMUM, MINUTE	TYP.	TYPICAL
		MIR.	MIRROR	U	UNION
E.F.	EXHAUST FAN	MISC.	MISCELLANEOUS	U.L.	UNDERSINKS LABORATORY
		MTD.	MOUNTED	U.O.N.	UNLESS OTHERWISE NOTED
E.S.	EACH SIDE	MTG.	MOUNTING	U.S.	UNDER SIDE
		MTL.	METAL	UG	UNDERGROUND
EA	EACH	MTL.	METAL	UTIL.	UTILITY
ELEV.	ELEVATION, ELEVATOR	N.I.C.	NOT IN CONTRACT		
EMER.	EMERGENCY	N.T.S.	NOT TO SCALE	V.I.F.	VERIFY IN FIELD
EQ.	EQUAL	NOM.	NOMINAL	V.T.R.	VENT-THRU ROOF
EQUIP.	EQUIPMENT			VEND.	VENDING
EXH.	EXHAUST	O.C.	ON CENTER	VER.	VERIFY
EXIST'G	EXISTING	O.H.	OVERHEAD, OPPOSITE HAND	VERT.	VERTICAL
EXP. JT.	EXPANSION JOINT	OPNG.	OPENING	VEST.	VESTIBULE
EXT.	EXTERIOR				
E.I.S.	EXTERIOR INSULATION SYSTEM	P.C.	PORTLAND CEMENT	W.C.	WATER CLOSET
		P.L.	PROPERTY LINE	W.R.	WATER RESISTANT
F	FIRE (SERVICE)	P.S.F.	POUNDS PER SQUARE FOOT	W.W.F.	WELDED WIRE FABRIC
F.A.	FIRE ALARM	P.S.I.	POUNDS PER SQUARE INCH	W	WITHOUT
F.D.	FLOOR DRAIN	P.T.	PRESSURE TREATED	WO	WOOD
F.E.C.	FIRE EXTINGUISHER CABINET	P.V.C.	POLYVINYL CHLORIDE	WC/T	WAINSCOTING
		PKG.	PARKING	WD.	WOOD
		PL.	PLATE	WP.	WEATHERPROOF
		PLAS. LAM.	PLASTIC LAMINATE	WRB	WEATHER RESISTIVE BARRIER
		PLBG.	PLUMBING	WT.	WEIGHT
		PLWD.	PLYWOOD	WTR.	WATER
		PNL.	PANEL		

# SYMBOL LEGEND

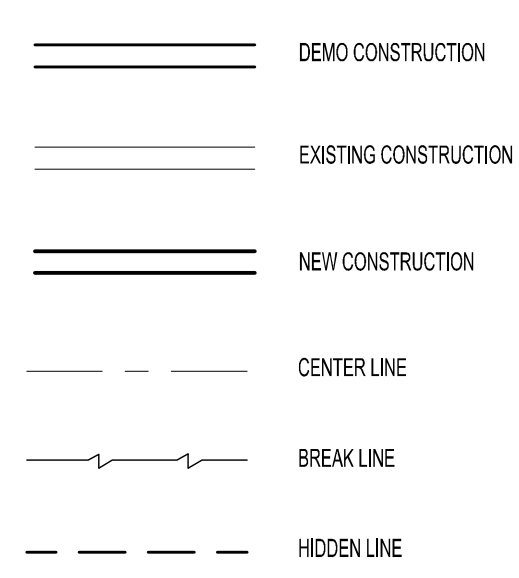


- APPLICABLE BUILDING AND FIRE CODES FOR ANNE ARUNDEL COUNTY**
- BUILDING CODE - INTERNATIONAL BUILDING CODE 2018
  - MECHANICAL - INTERNATIONAL MECHANICAL CODE 2018
  - ELECTRICAL - NATIONAL ELECTRICAL CODE 2017
  - PLUMBING - INTERNATIONAL PLUMBING CODE 2018
  - ACCESSIBILITY - ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES - ICC A117.1-2009
  - FIRE PREVENTION - NFPA 1 2018
  - LIFE SAFETY CODE - NFPA 101 2018
  - AUTOMATIC SPRINKLER SYSTEMS CODE - NFPA 13 2016
  - FIRE ALARM CODE - NFPA 72 NATIONAL FIRE ALARM CODE 2016

# MATERIAL LEGEND



# LINETYPE LEGEND

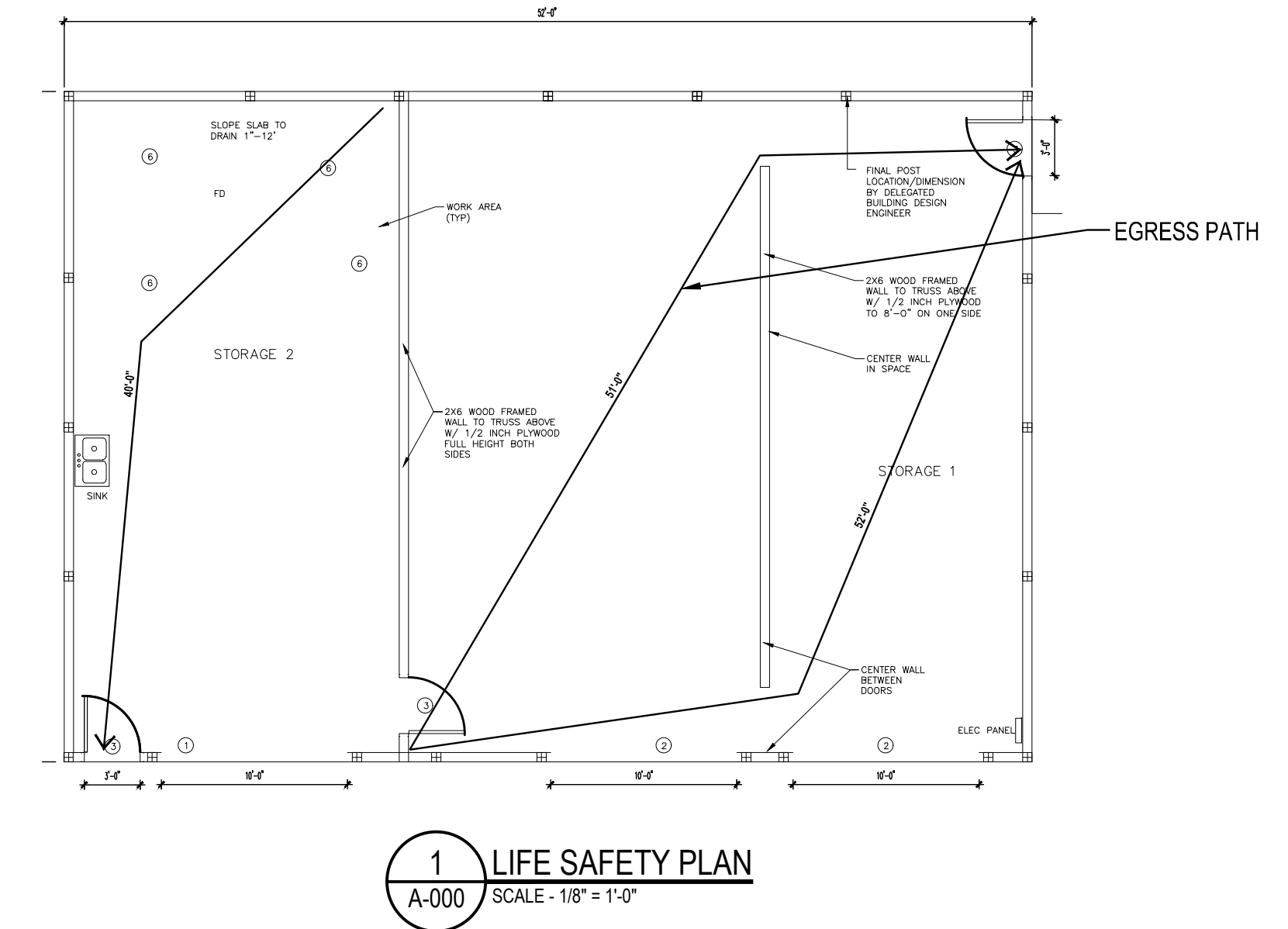


# GENERAL NOTES

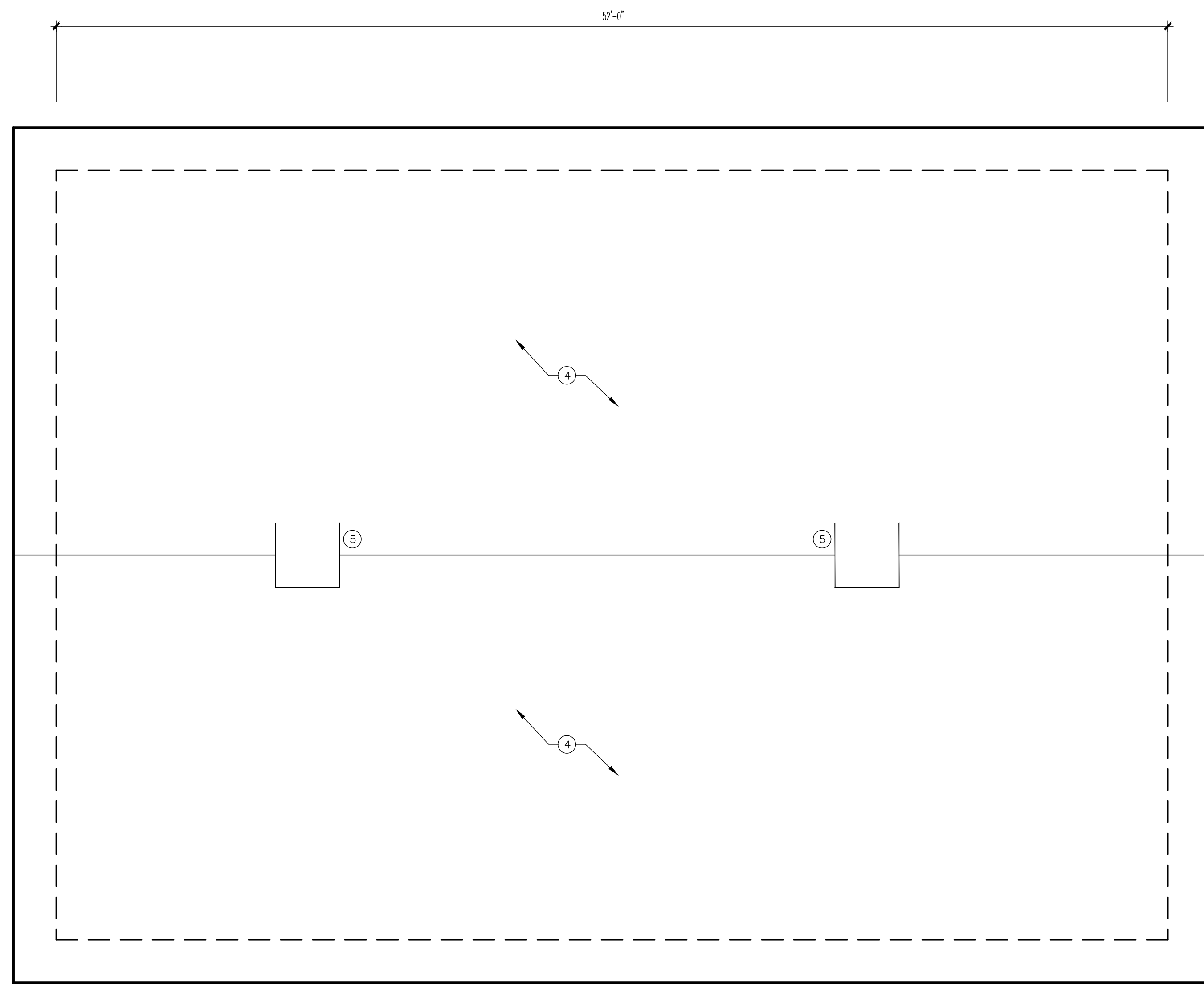
- DO NOT SCALE DRAWINGS. CONTRACTOR SHALL RELY ON WRITTEN DIMENSIONS AS GIVEN. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT FOR CLARIFICATIONS. ALL DIMENSIONS SHALL BE FIELD VERIFIED BY CONTRACTOR AND COORDINATED WITH ALL OF THE WORK OF ALL TRADES.
- DIMENSIONS SHOWN ON FLOOR PLANS, SECTIONS, ELEVATIONS, AND DETAILS ARE TO FINISH FACE OF STUD, MASONRY, OR CONCRETE.
- CONTRACTOR SHALL PROTECT ALL FINISH WORK AND SURFACES FROM DAMAGE DURING THE COURSE OF CONSTRUCTION AND SHALL REPLACE AND/OR REPAIR ALL DAMAGED SURFACES CAUSED BY THE CONTRACTOR OR SUBCONTRACTOR PERSONNEL TO THE SATISFACTION OF THE OWNER AND ARCHITECT/ENGINEER.
- EXISTING CONDITIONS MATERIALS AND/OR DIMENSIONS WHERE SHOWN OR DESCRIBED ARE GENERAL INFORMATION ONLY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS AFFECTING MEANS OF CONSTRUCTION PRIOR TO BEGINNING WORK.
- NOTIFY ANN ARUNDEL PROJECT MANAGER IMMEDIATELY IF ARTIFACTS ARE DISCOVERED DURING CONSTRUCTION FOR ASSESSMENT AND DIRECTION. FOR ANY ARTIFACTS FOUND DURING CONSTRUCTION SHALL BE TRANSFERRED TO THE ANN ARUNDEL COUNTY CULTURAL RESOURCES ARCHEOLOGY LAB DIRECTOR JENN BARIARZ (jzbabi@aaconity.org) FOR ARTIFACT TRANSFER AND COPY THE COUNTY ARCHEOLOGICAL SITES PLANNER, ANASTASIA POULOS (ppoulos@aaconity.org) ON ANY CORRESPONDENCE.

# CODE ANALYSIS/LIFE SAFETY

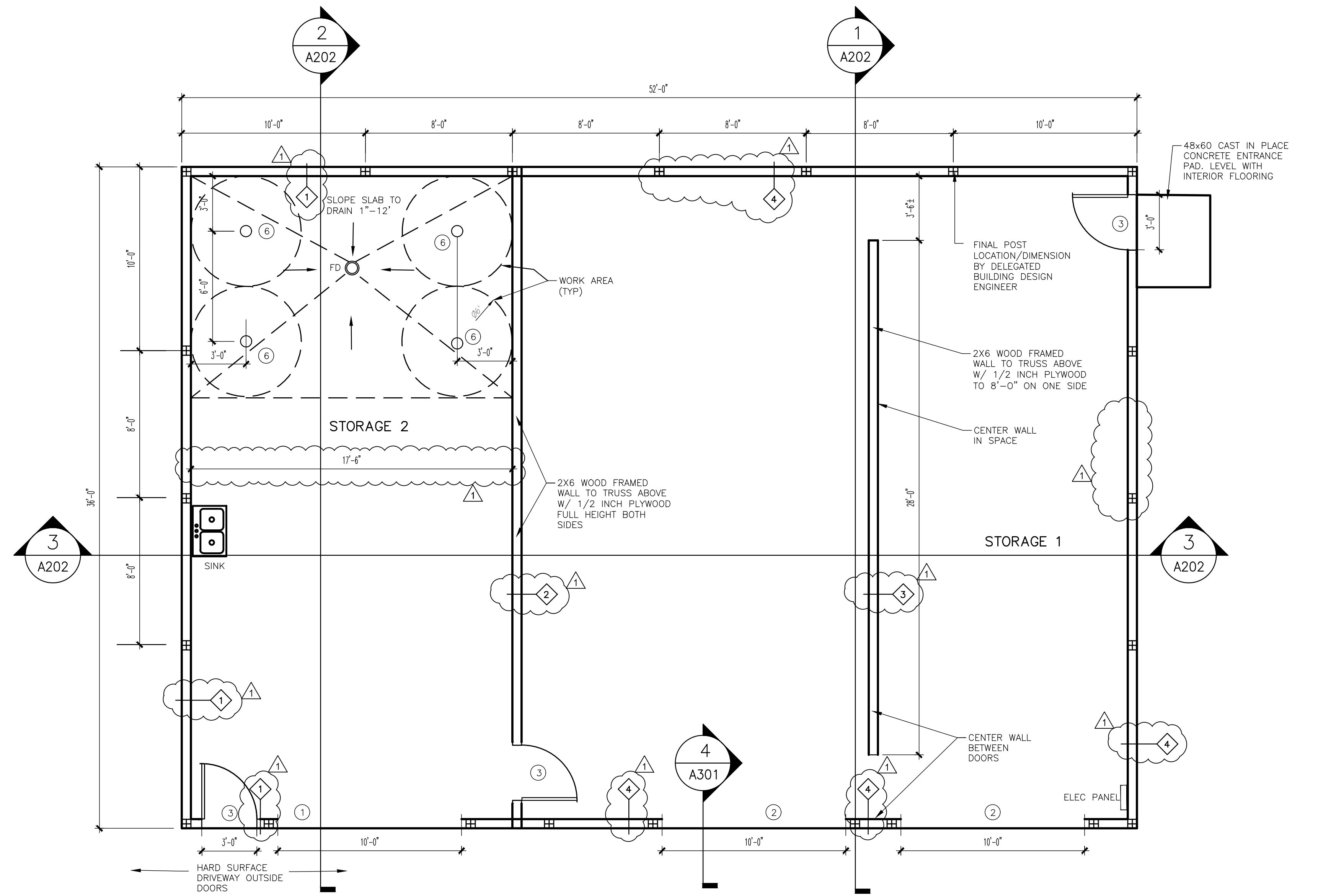
- BUILDING CODE ANALYSIS**
- THE BUILDING IS NORMALLY UNOCCUPIED AND UN-CONDITIONED.
- BUILDING OCCUPANCY:  
IBC - 311.2-USE GROUP S1-STORAGE
  - CONSTRUCTION TYPE:  
  
STORAGE FACILITY  
IBC - 601 - TYPE VB  
FIRE RESISTANCE RATING BY BUILDING ELEMENTS:  
0 HOUR FOR ALL ELEMENTS.  
  
MAX. ALLOWABLE HEIGHT:  
IBC - TABLE 504.3 - 40 FT.  
PROPOSED = 25'-0"
  - OCCUPANT FLOOR AREA PER PERSON  
  
OCCUPANT LOAD:  
S1 STORAGE OCCUPANCY  
GROSS SQ. FEET/500 (FLOOR AREA PER OCCUPANT)  
WAREHOUSE 500 SF/OCCUPANT  
2016/500=5 OCCUPANTS
- FIRE RESISTANCE RATING REQUIREMENTS:  
  
IBC - TABLE 601  
ALL CONSTRUCTION : 0 HOURS  
EXTERIOR BEARING WALLS: TABLE 602  
FIRE SEPARATION DISTANCE > 10 FEET 0 HOURS (GROUP S1)  
  
BUILDING IS NOT SPRINKLERED
  - MEANS OF EGRESS:  
  
MINIMUM NUMBER OF EXITS REQUIRED - IBC 1005.1 : 1 MIN  
MINIMUM DOOR WIDTH REQUIRED: 0.2/PERSON  
13 x 0.2' = 2.6' MIN  
  
NUMBER OF MAN EXITS : 1 PER AREA  
MINIMUM EXIT DOOR CLEAR WIDTH PROPOSED: 36" MIN
  - EXIT ACCESS TRAVEL DISTANCE  
WITHOUT SPRINKLER SYSTEM (OCCUPANCY S1) 200' MAX  
PROPOSED: 52' MAX  
COMMON PATH OF TRAVEL WITHOUT SPRINKLERS 75' MAX







1 ROOF PLAN  
A101 SCALE 1/4 = 1'-0"



2 FIRST FLOOR PLAN  
A101 SCALE 1/4 = 1'-0"

KEY NOTES:

- 1 INSULATED STEEL PANEL GARAGE DOOR (120x108) WITH MOTORIZED LIFT. MOTOR IS TO BE WALL MOUNTED. SIMILAR TO GENIE MODEL 6071HO, DRIVE CONNECTED TO TORSION SPRING.
- 2 UNINSULATED STEEL PANEL GARAGE DOOR (120x108) WITH MOTORIZED LIFT. MOTOR IS TO BE WALL MOUNTED. SIMILAR TO GENIE MODEL 6071HO, DRIVE CONNECTED TO TORSION SPRING.
- 3 36" HOLLOW METAL PANEL DOOR AND FRAME AND HARDWARE. PROVIDE STAINLESS STEEL LEVER LOCKSET AND DEADBOLT, KEYED ALIKE.
- 4 THIRTY YEAR WARRANTY ARCHITECTURAL SHINGLE WITH COLOR TO MATCH EXISTING RANGER STATION.
- 5 36"x36" PREFINISHED FUNCTIONAL CUPOLA. PROVIDE FRAMED OPENING AND INSECT SCREEN.
- 6 ELECTRIC HOIST LIFT MOUNTED TO BOTTOM OF TRUSS: SPORTSMAN SERIES EHOISTUL 440 LBS. WIRED CONTROL WITH 5 FOOT CABLE, 5 AMP, 3/4 HP, 110 VOLT/60 HZ (OR SIMILAR, TO BE SUBMITTED AND APPROVED BY ENGINEER).
- 7 VINYL SIDING IN COLOR TO MATCH RANGER STATION.

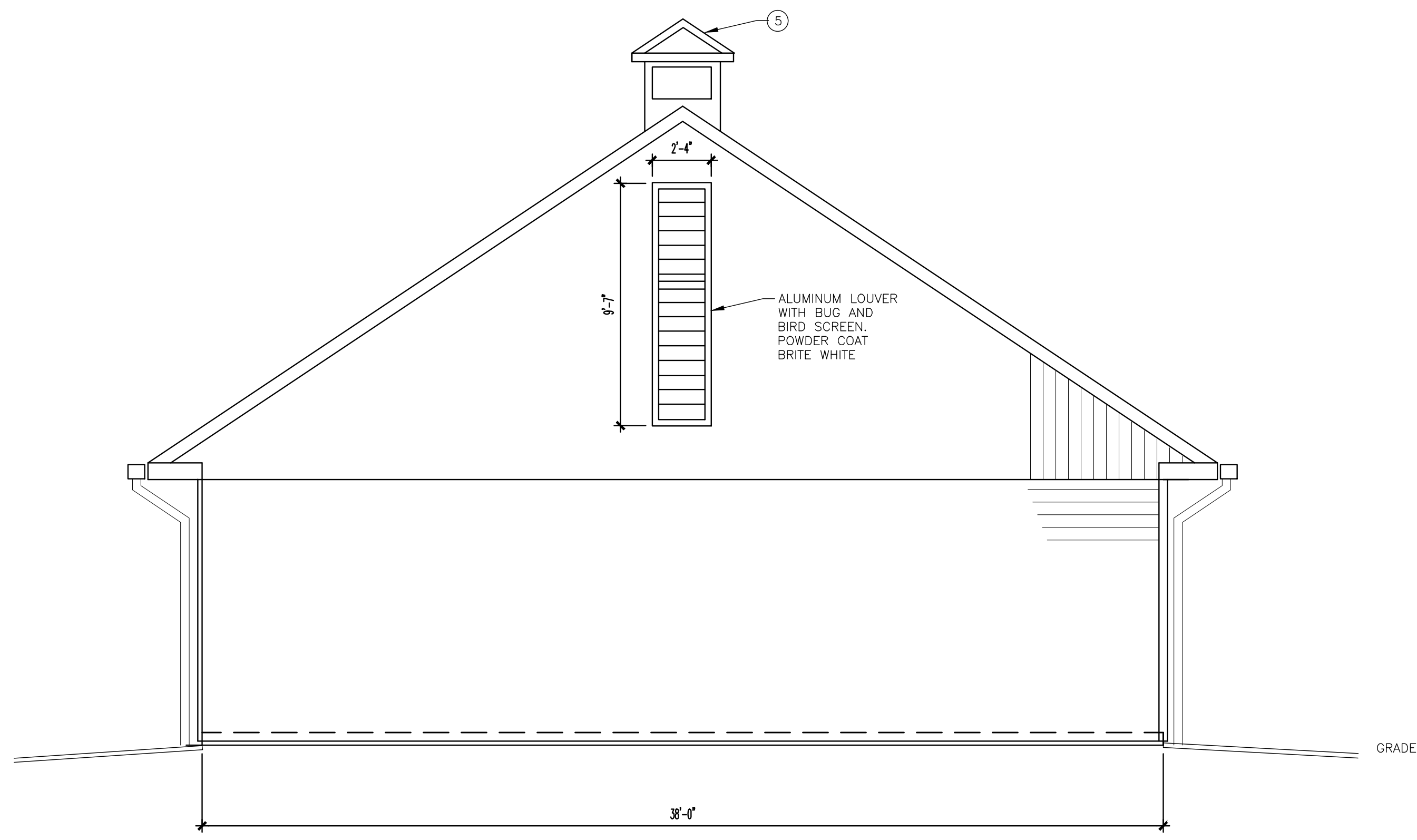
INTERIOR FINISH SCHEDULE

	MATERIALS				REMARKS
	FLOOR	WALLS	CEILING		
STORAGE 1	Sealed Concrete	PAINTED	PAINTED	OPEN FRAMING	
STORAGE 2	●	●	●		SEMI-GLOSS

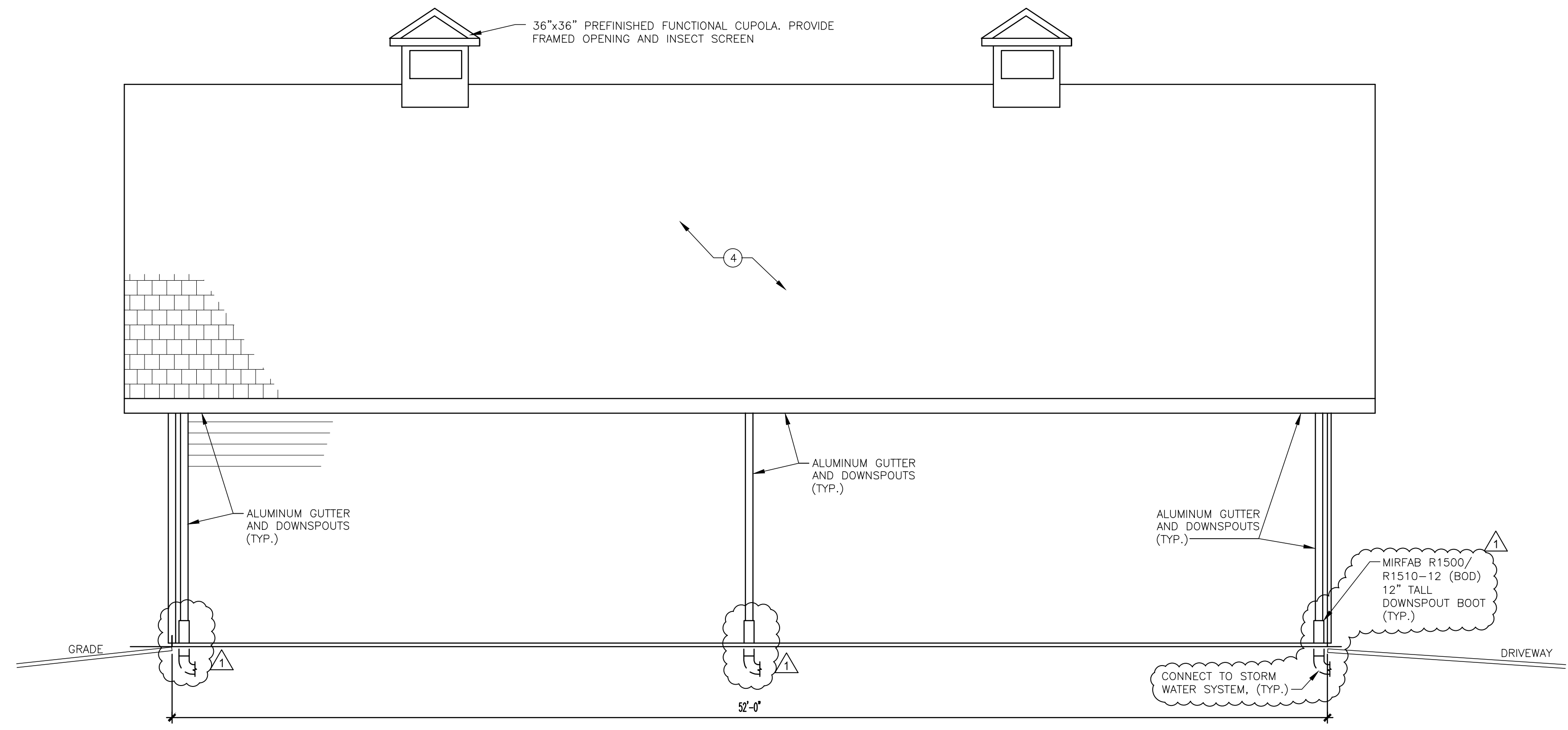
DOOR SCHEDULE

NO.	DOOR SIZE	FRAME										REMARKS			
		HDW.	TYPE	MAT'L	FIN.	LABEL	TYPE	MAT'L	FIN.	head	jamb		sill	LABEL	
D1	10'-0" x 9'-0"	-	-	STL	PTD	-	-	WD	PTD	-	-	-	-	-	INSULATED
D2	10'-0" x 9'-0"	-	-	STL	PTD	-	-	WD	PTD	-	-	-	-	-	
D3	3'-0" x 7'-0"	-	-	6-PANEL	HM	PTD	-	-	HM	PTD	-	-	-	-	INSULATED AT STORAGE 2

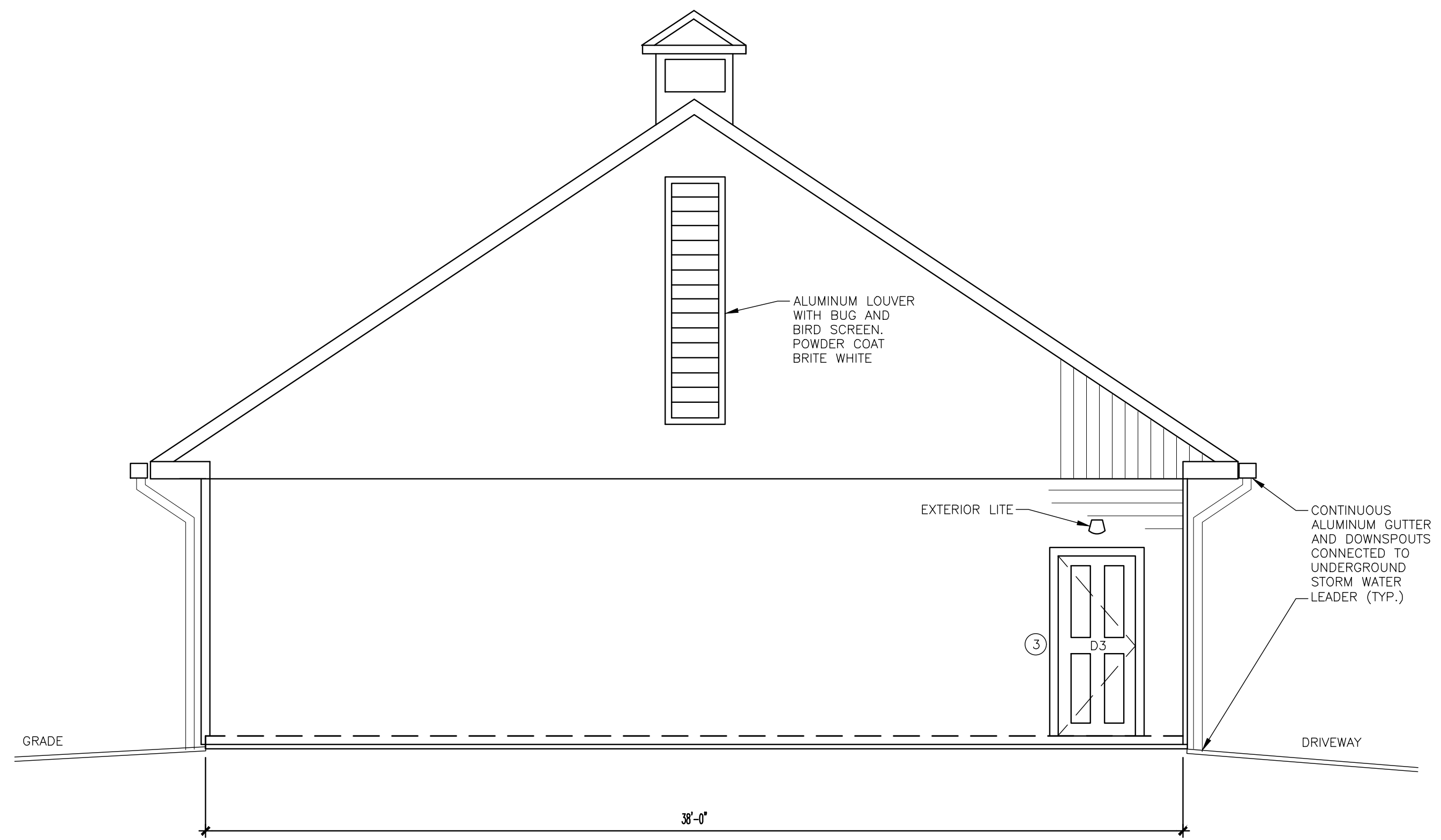




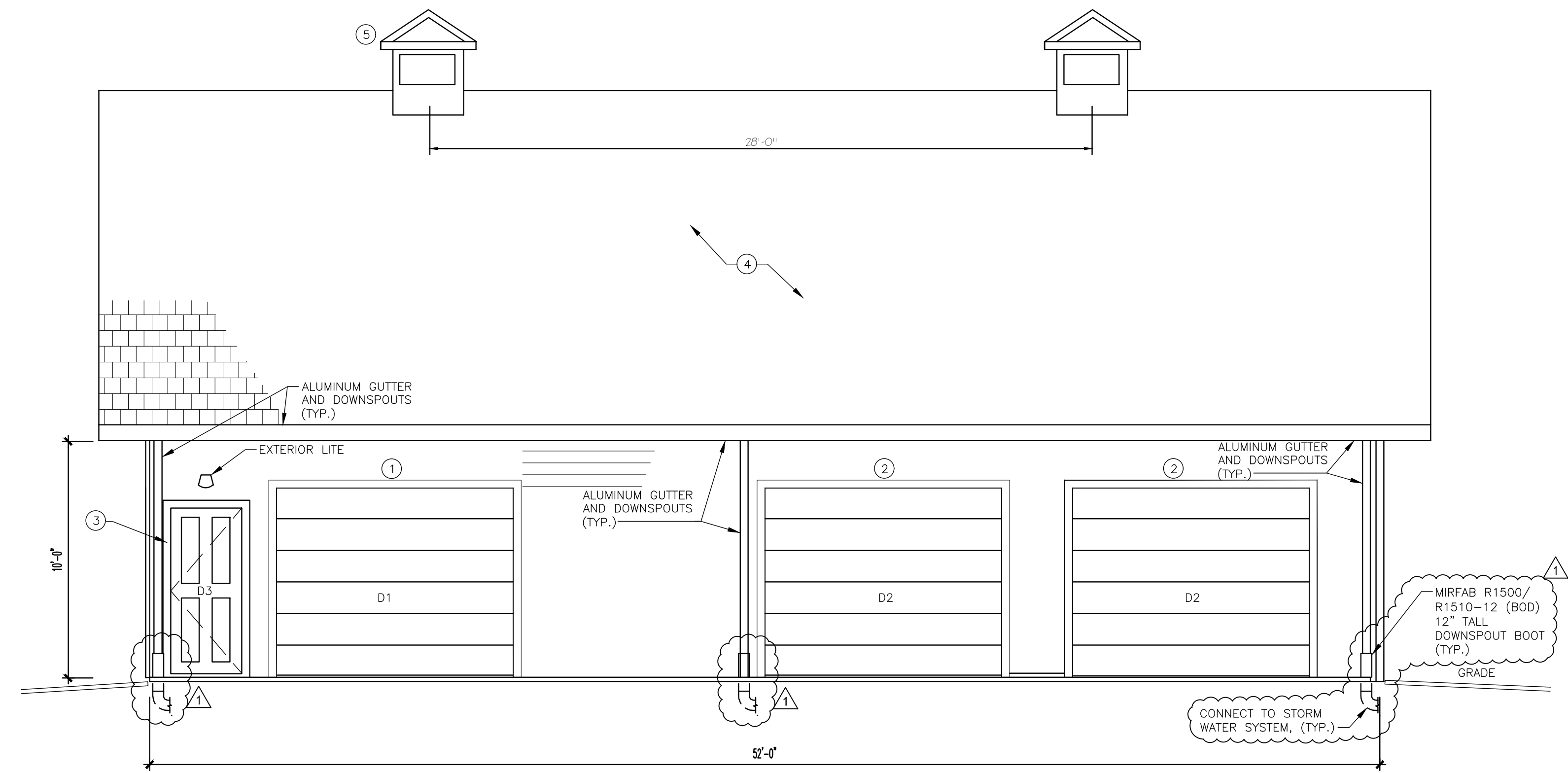
1 SIDE ELEVATION  
A201 SCALE 1/4" = 1'-0"



2 REAR ELEVATION  
A201 SCALE 1/4" = 1'-0"



3 SIDE ELEVATION  
A201 SCALE 1/4" = 1'-0"



4 FRONT ELEVATION  
A201 SCALE 1/4" = 1'-0"

KEY NOTES:

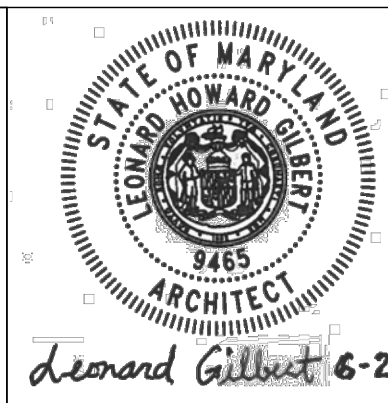
- 1 INSULATED STEEL PANEL GARAGE DOOR (120x108) WITH MOTORIZED LIFT. MOTOR IS TO BE WALL MOUNTED, SIMILAR TO GENIE MODEL 6071HO, DRIVE CONNECTED TO TORSION SPRING.
- 2 UNINSULATED STEEL PANEL GARAGE DOOR (120x108) WITH MOTORIZED LIFT. MOTOR IS TO BE WALL MOUNTED, SIMILAR TO GENIE MODEL 6071HO, DRIVE CONNECTED TO TORSION SPRING.
- 3 36" HOLLOW METAL PANEL DOOR AND FRAME AND HARDWARE. PROVIDE STAINLESS STEEL LEVER LOCKSET AND DEADBOLT, KEYED ALIKE.
- 4 THIRTY YEAR WARRANTY ARCHITECTURAL SHINGLE WITH COLOR TO MATCH EXISTING RANGER STATION.
- 5 36"x36" PREFINISHED VINYL FUNCTIONAL CUPOLA. PROVIDE FRAMED OPENING AND INSECT SCREEN. BASIS OF DESIGN: DERBY CUPOLA AS MANUFACTURED BY WEATHERVANE FACTORY. WEATHERVANE.COM, 1318 MAIN RD, EDDINGTON, ME 04428. (PROVIDE B.O.D. OR APPROVED SUBSTITUTE)
- 6 ELECTRIC HOIST LIFT: SPORTSMAN SERIES EHOISTUL 440 LBS. WIRED CONTROL WITH 5 FOOT CABLE, 5 AMP, 1/2 HP, 110 VOLT/60 HZ (OR SIMILAR, TO BE SUBMITTED AND APPROVED BY ENGINEER).
- 7 VINYL SIDING IN COLOR TO MATCH RANGER STATION.

BID DOCUMENTS



AECOM  
4 NORTH PARK DRIVE  
SUITE 300  
HUNT VALLEY, MARYLAND 21030  
PHONE: 410-785-7220

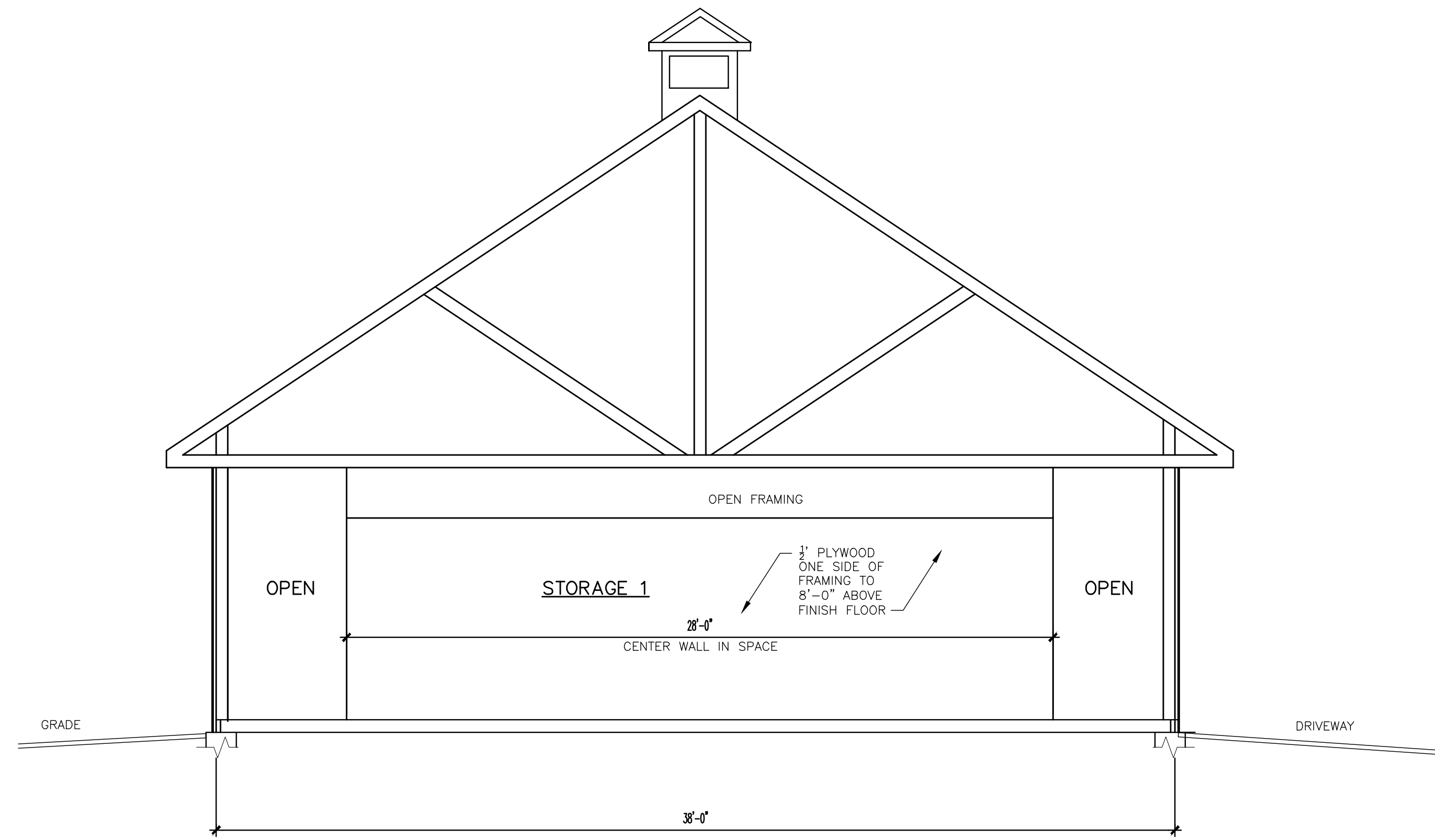
PROFESSIONAL CERTIFICATION  
"I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND."  
LICENSE NUMBER: 9465  
EXPIRATION DATE: APRIL 4, 2025



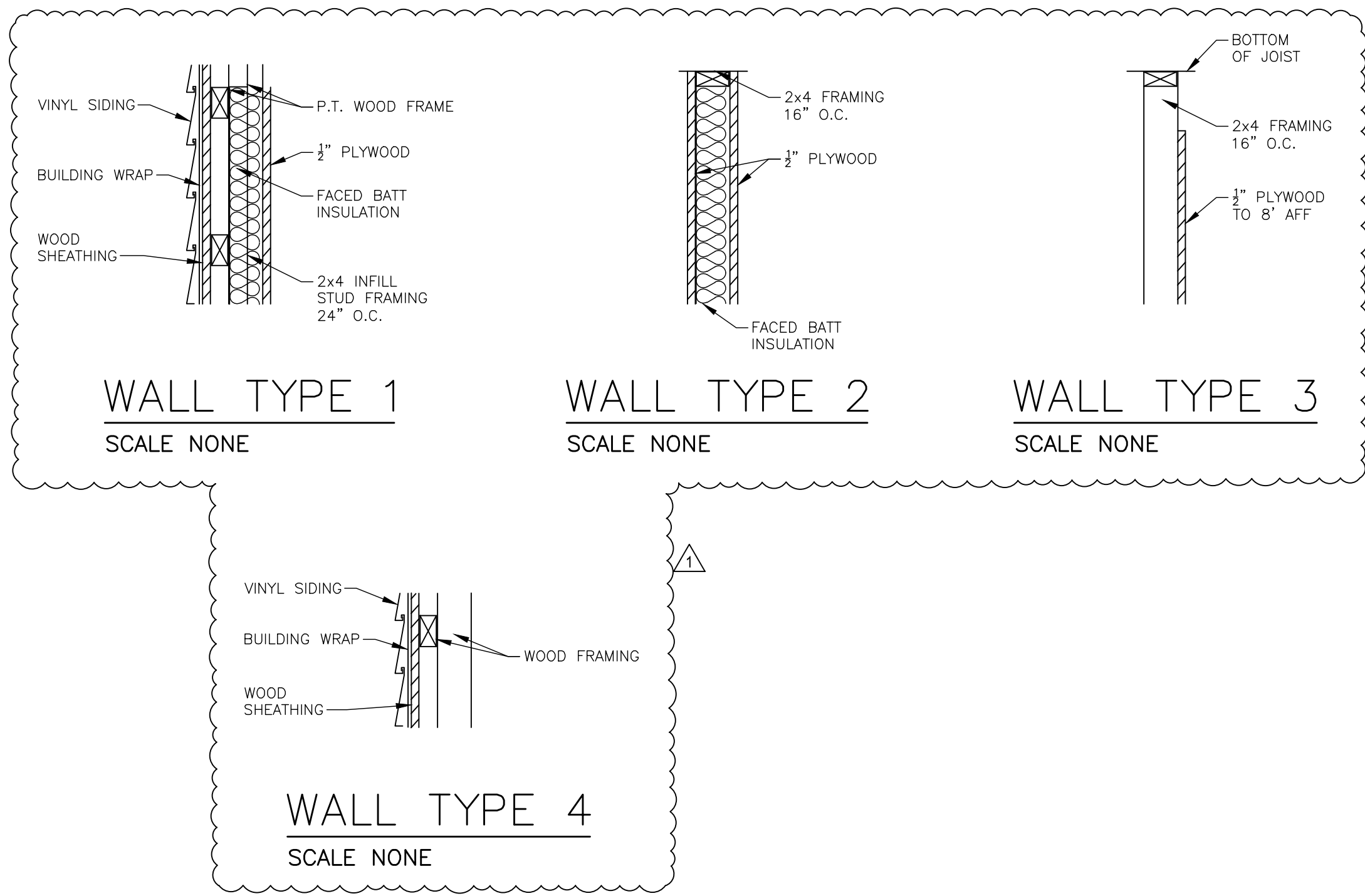
ANNE ARUNDEL COUNTY - DEPARTMENT OF PUBLIC WORKS							
BACON RIDGE/FORNEY NATURAL AREA DEER SUPPORT BUILDING							
REVISED	DATE	BY	APPROVED	DATE	APPROVED	DATE	SCALE: AS NOTED
	6-21-2024	LG	CHIEF ENGINEER		PROJECT MANAGER		DRAWN BY: LG
			APPROVED	DATE	APPROVED	DATE	CHECKED BY: LG
			ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY		SHEET NO. 62 OF 77
							PROJECT NO.
							CONTRACT NO.

ARCHITECTURAL ELEVATION  
**A201**

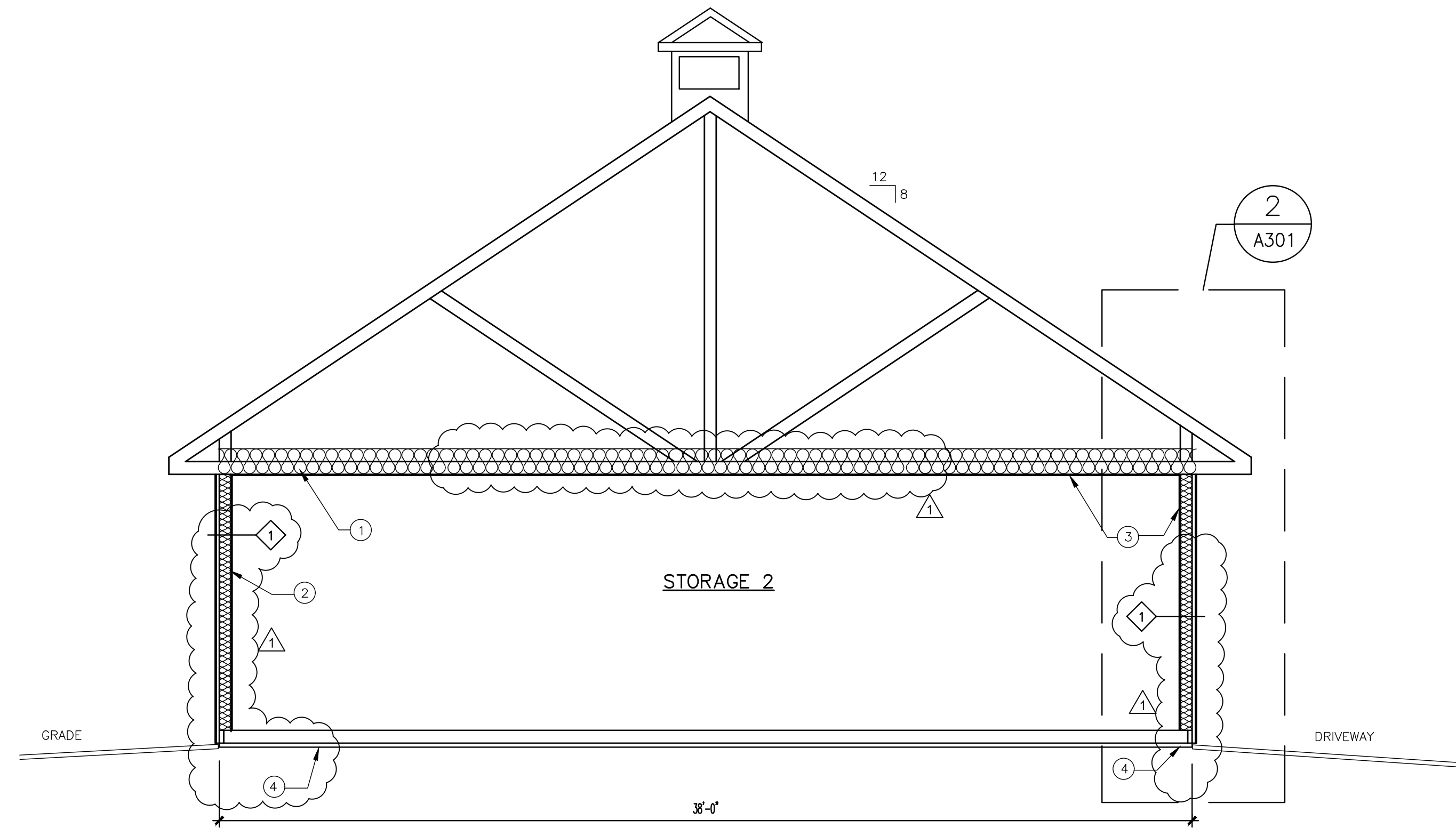




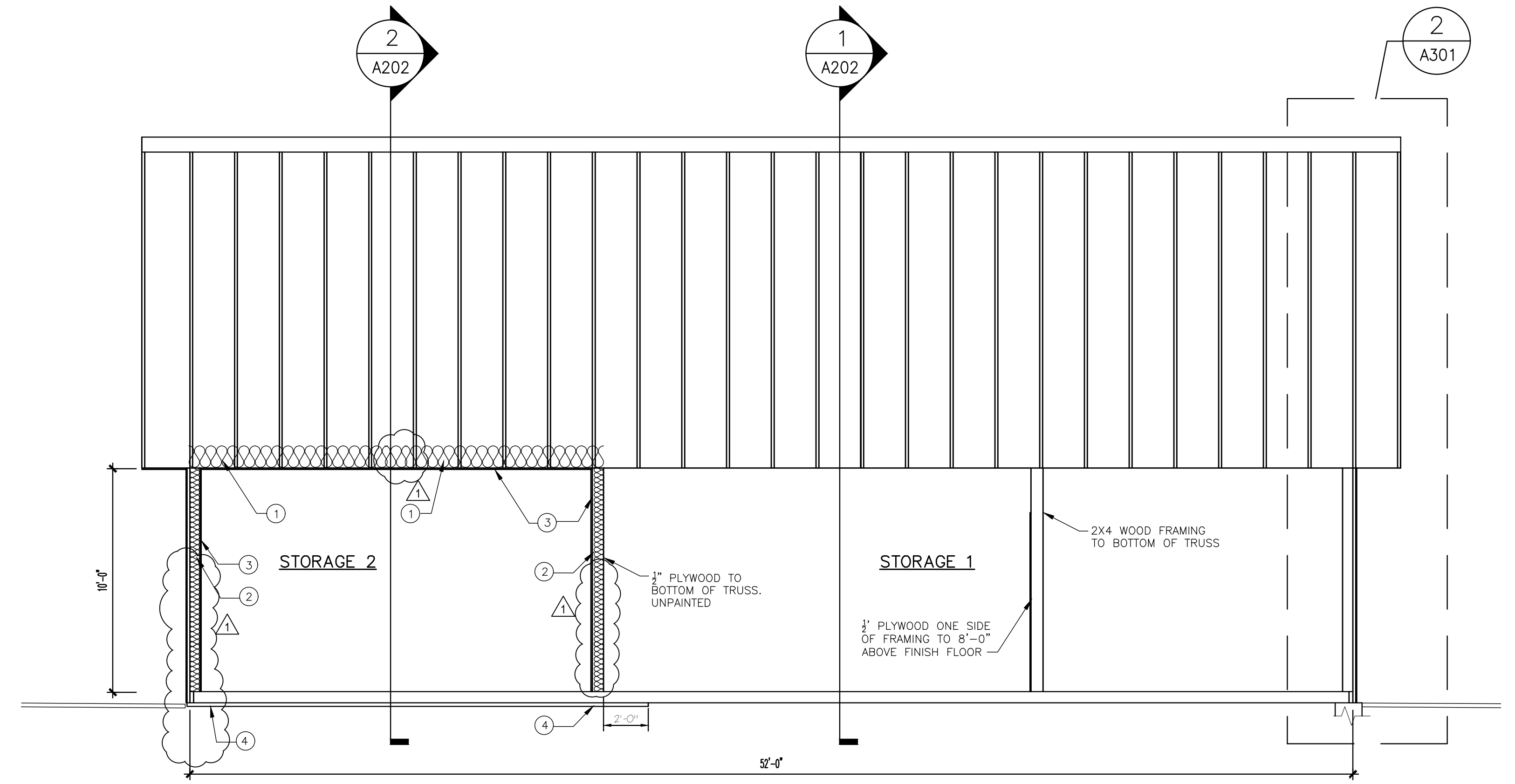
1 BUILDING SECTION  
A202 SCALE 1/4 = 1'-0"



- KEY NOTES:
- INSULATE AREA ABOVE THIS BAY W/ TWO LAYERS OF UN-FACED BATT. LAY SECOND LAYER OVER BOTTOM CHORD OF JOIST PERPENDICULAR TO THE RUN OF JOIST. TOTAL R-VALUE TO BE A MINIMUM TOTAL PERFORMANCE OF R=38)
  - INSULATE WALL OF THIS BAY WITH 6 INCHES OF FACED BATT INSULATION (R=19)
  - 1/2 INCH PLYWOOD, PAINTED WITH PRIMER AND TWO FINISH COATS OF EGGSHELL WHITE PAINT. SEAL JOINT AT WALL TO CEILING AND BETWEEN PANELS WITH ACRYLIC BASED SEALANT.
  - PROVIDE UNDER SLAB AND BELOW GRADE PERIMETER INSULATION AT STORAGE 2. INSTALL 2 INCH THICK RIGID POLYISOCYANURATE INSULATION BOARD.



2 BUILDING SECTION  
A202 SCALE 1/4 = 1'-0"

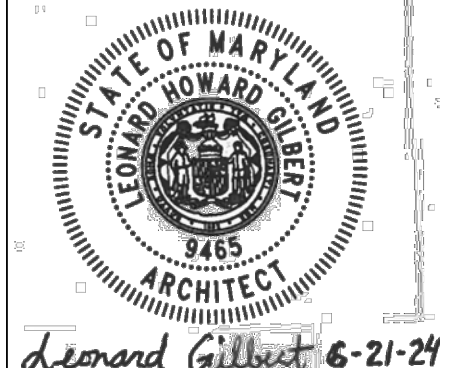


3 BUILDING SECTION  
A202 SCALE 1/4 = 1'-0"



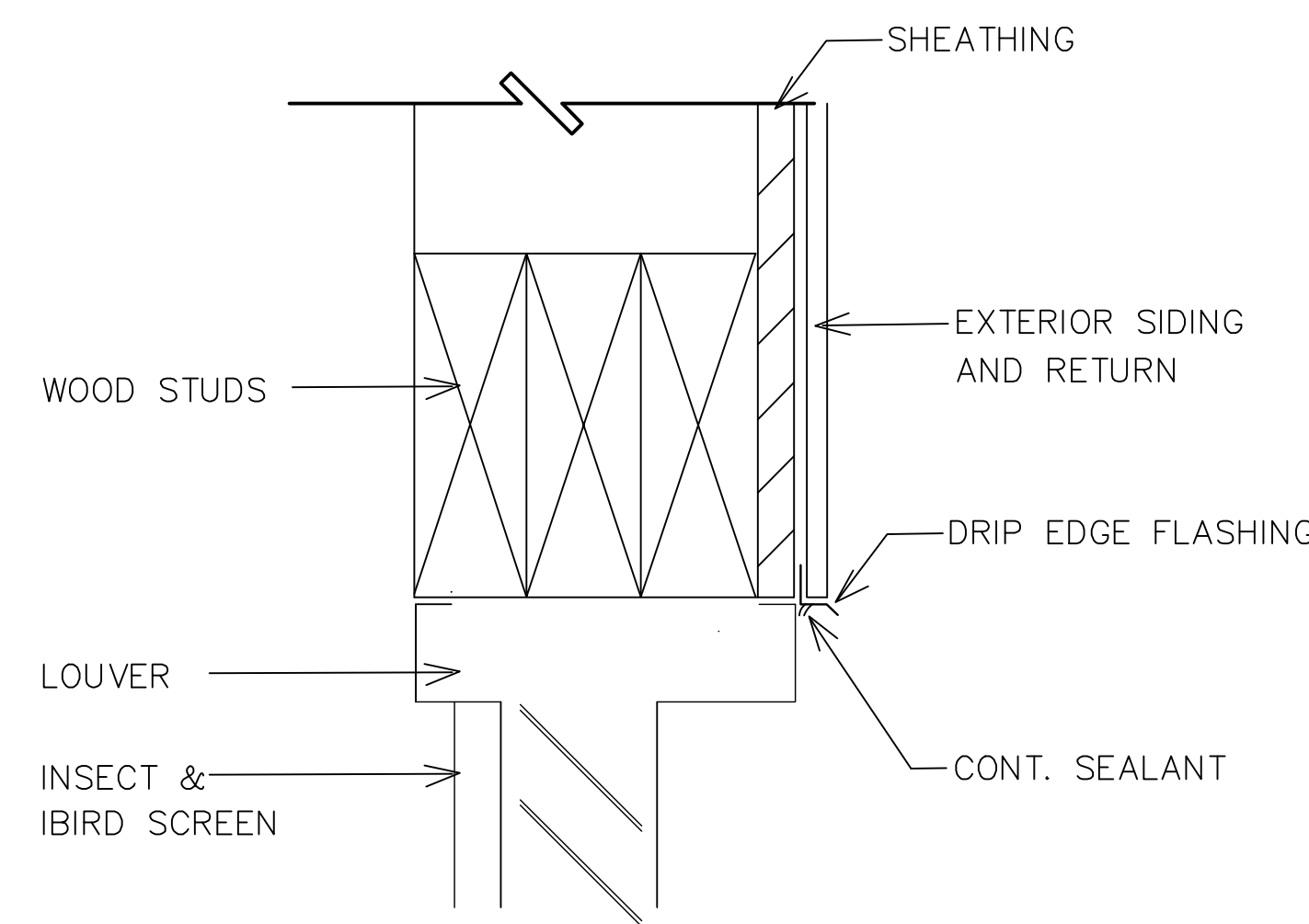
AECOM  
4 NORTH PARK DRIVE  
SUITE 300  
HUNT VALLEY, MARYLAND 21030  
PHONE: 410-785-7220

PROFESSIONAL CERTIFICATION  
I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.  
LICENSE NUMBER: 9465  
EXPIRATION DATE: APRIL 4, 2025

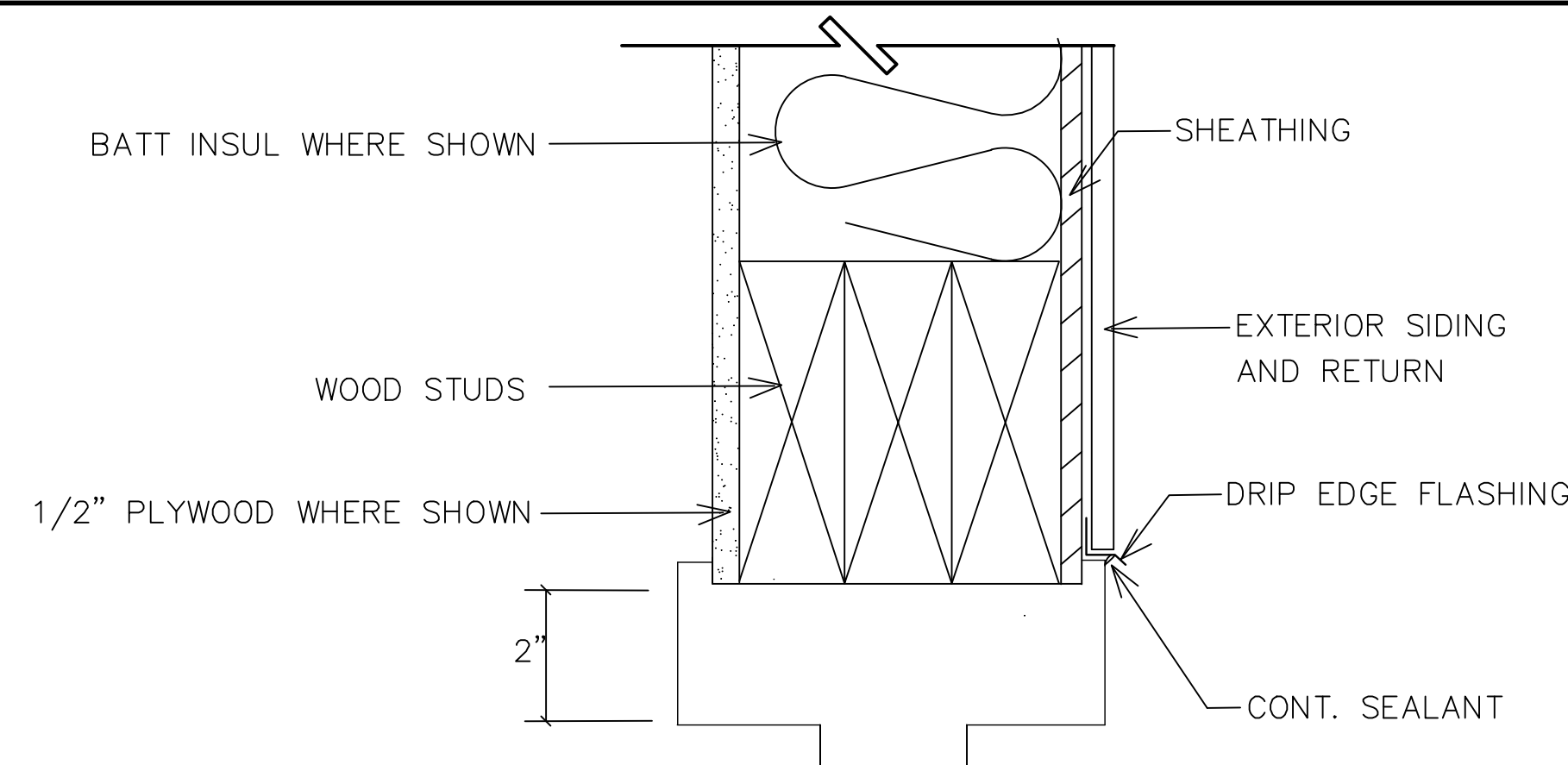


ANNE ARUNDEL COUNTY - DEPARTMENT OF PUBLIC WORKS							
BACON RIDGE/FORNEY NATURAL AREA DEER SUPPORT BUILDING							
REVISED	DATE	BY	APPROVED	DATE	APPROVED	DATE	SCALE: AS NOTED
	6-21-2024	LG	CHIEF ENGINEER		PROJECT MANAGER		ARCHITECTURAL BUILDING SECTIONS
			APPROVED	DATE	APPROVED	DATE	CHECKED BY: LG
			ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY		SHEET NO. 63 OF 77
							PROJECT NO.
							CONTRACT NO.

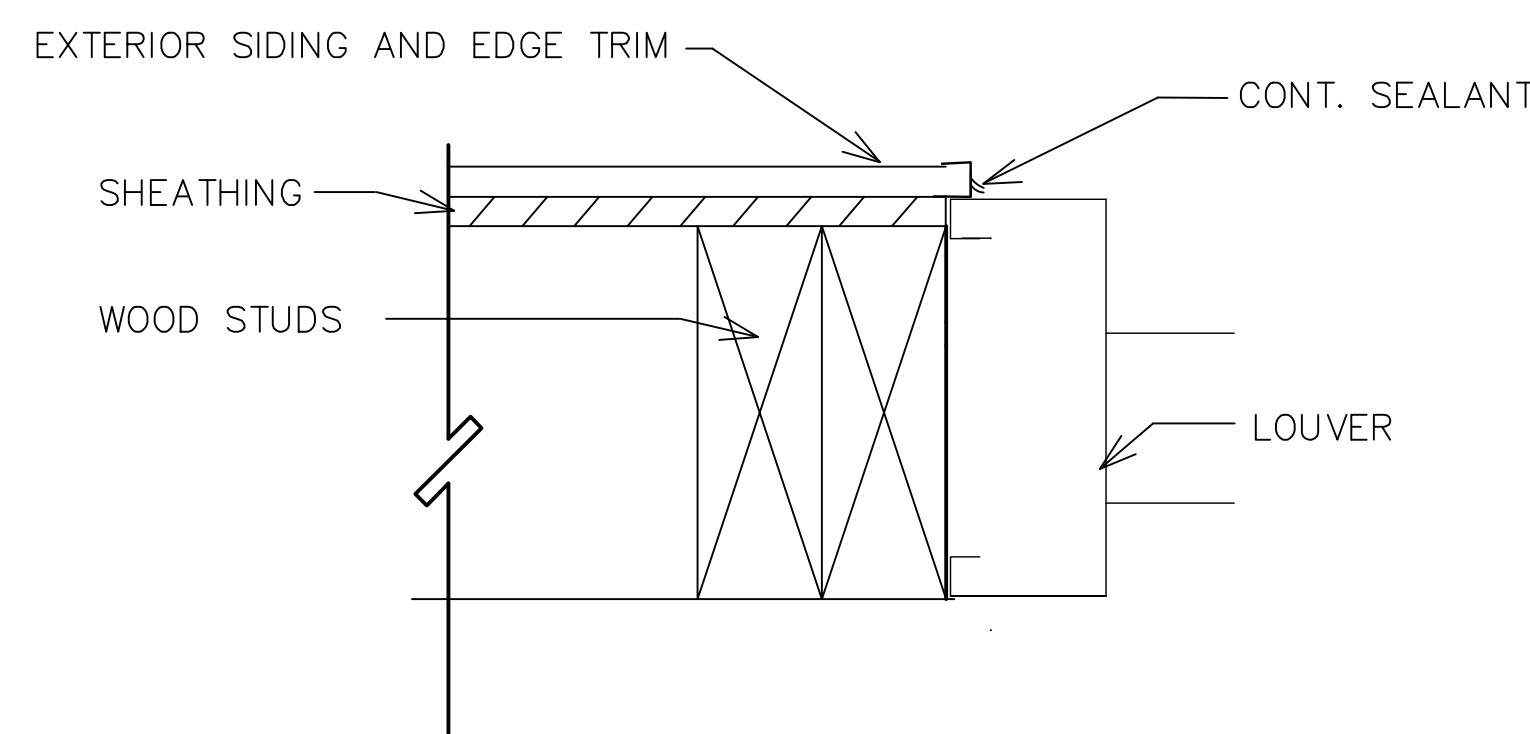




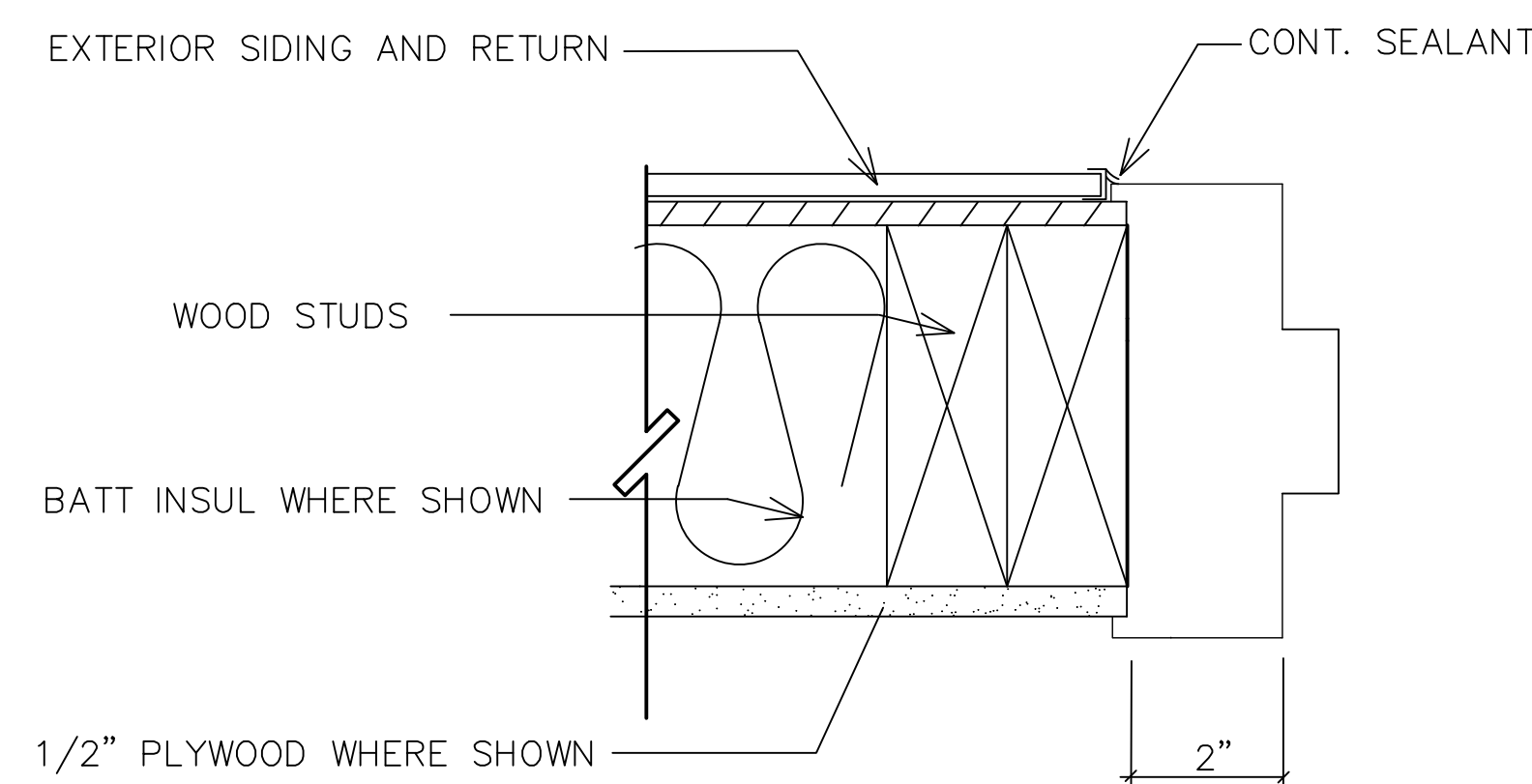
**H** LOUVER HEAD  
SCALE: 3" = 1'-0"



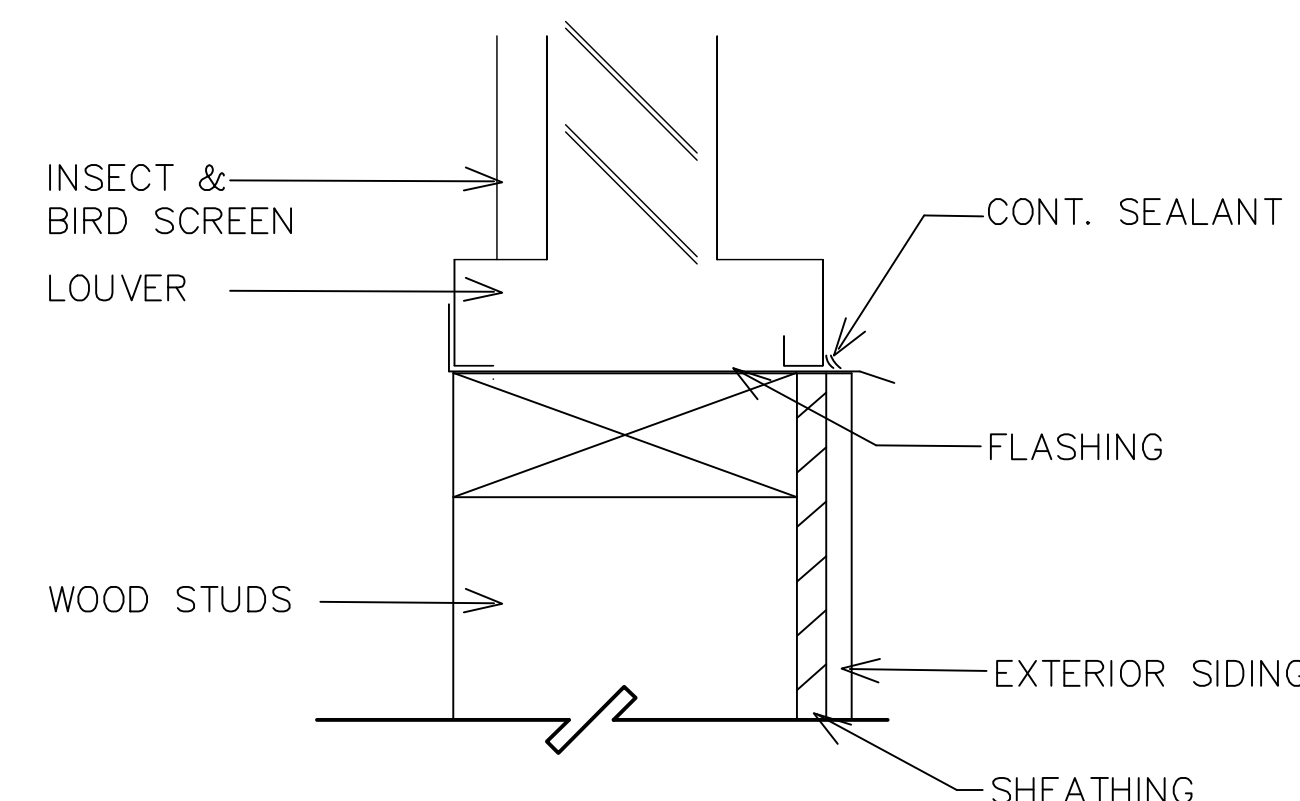
**H** DOOR HEAD (H.M.)  
SCALE: 3" = 1'-0"



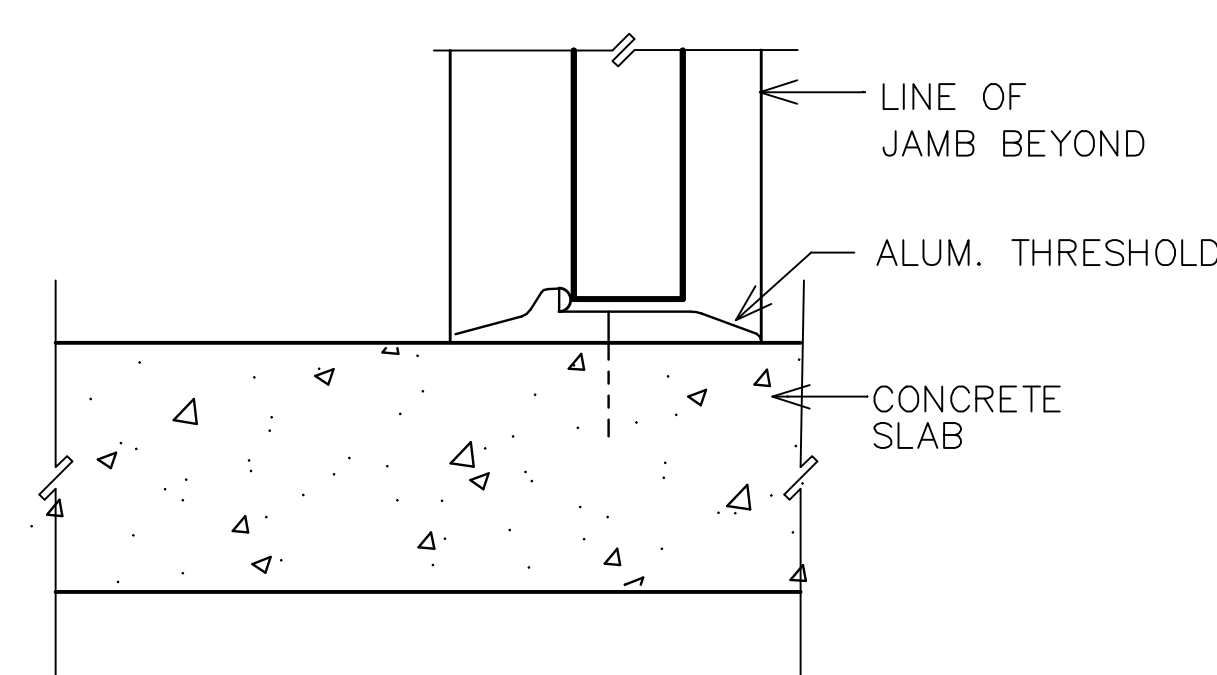
**J** LOUVER JAMB  
SCALE: 3" = 1'-0"



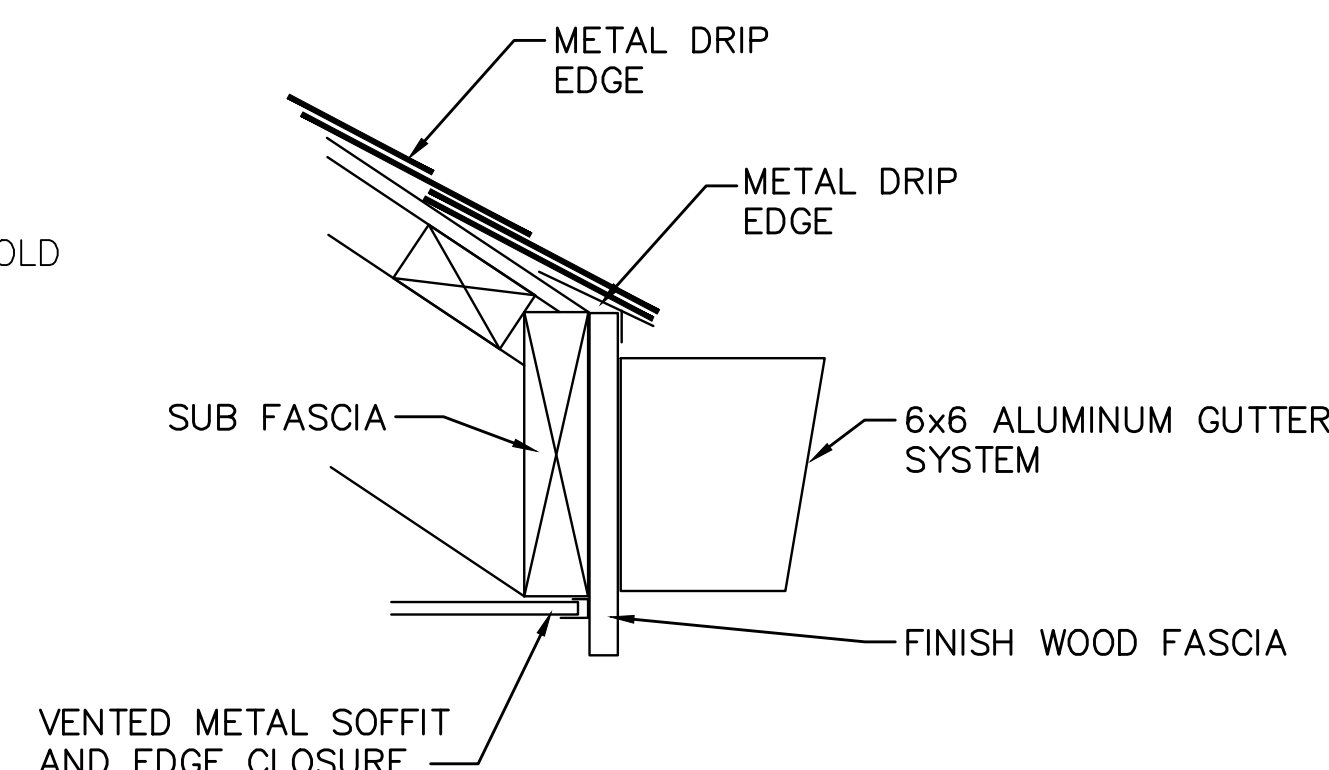
**J** DOOR JAMB (H.M.)  
SCALE: 3" = 1'-0"



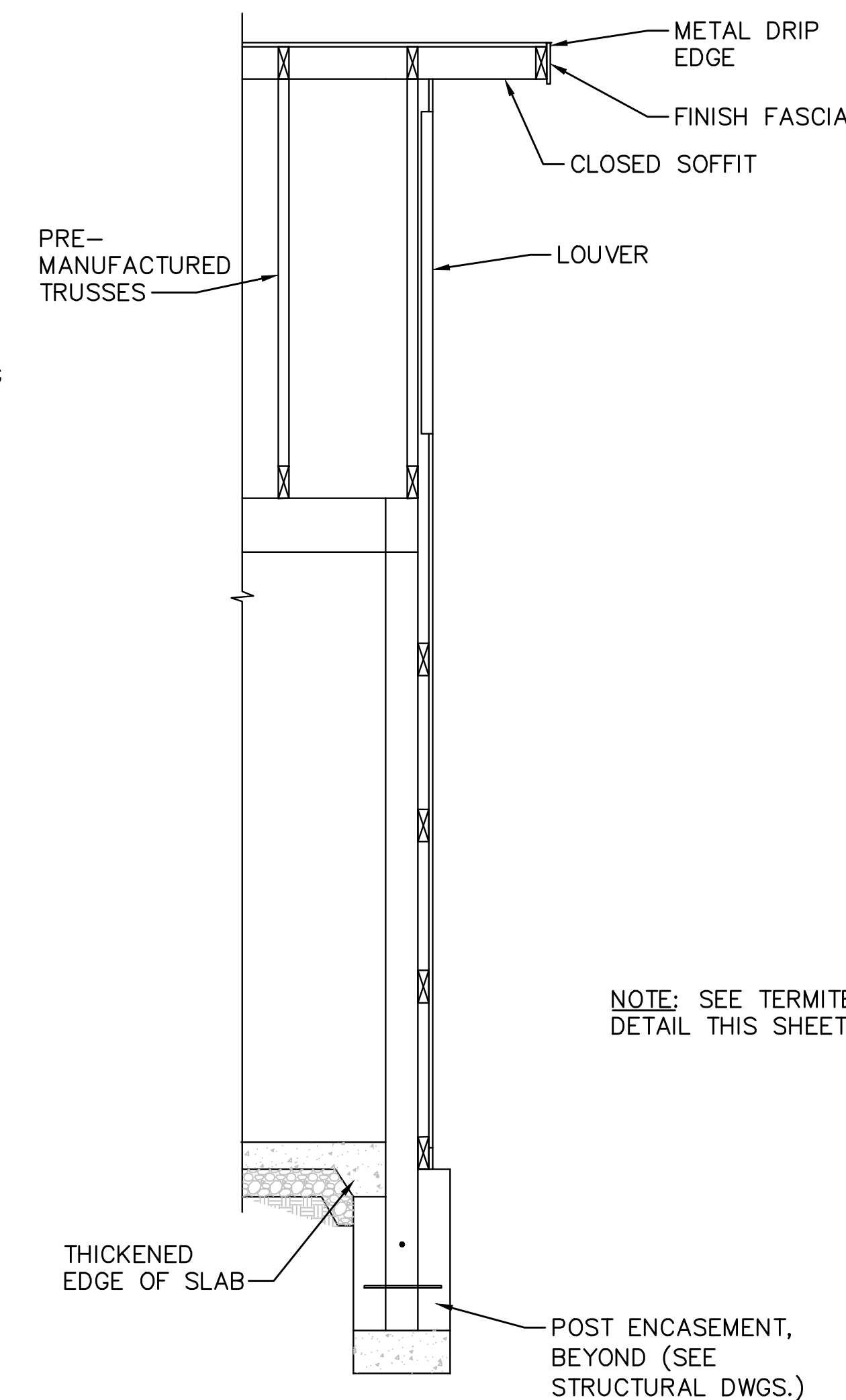
**H** LOUVER SILL  
SCALE: 3" = 1'-0"



**S** DOOR THRESHOLD  
SCALE: 3" = 1'-0"

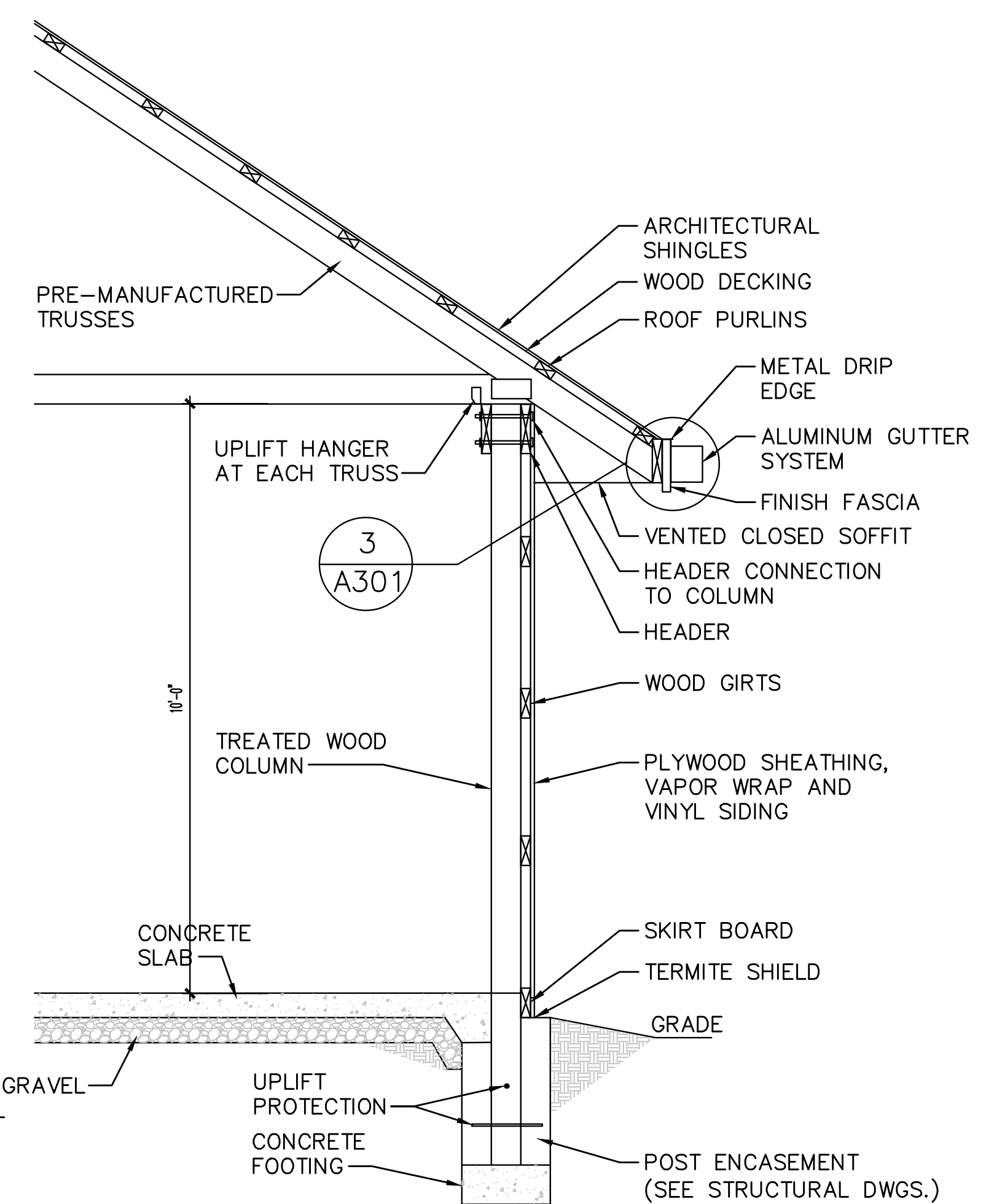


**3** ROOF EDGE DETAIL  
A301 NO SCALE

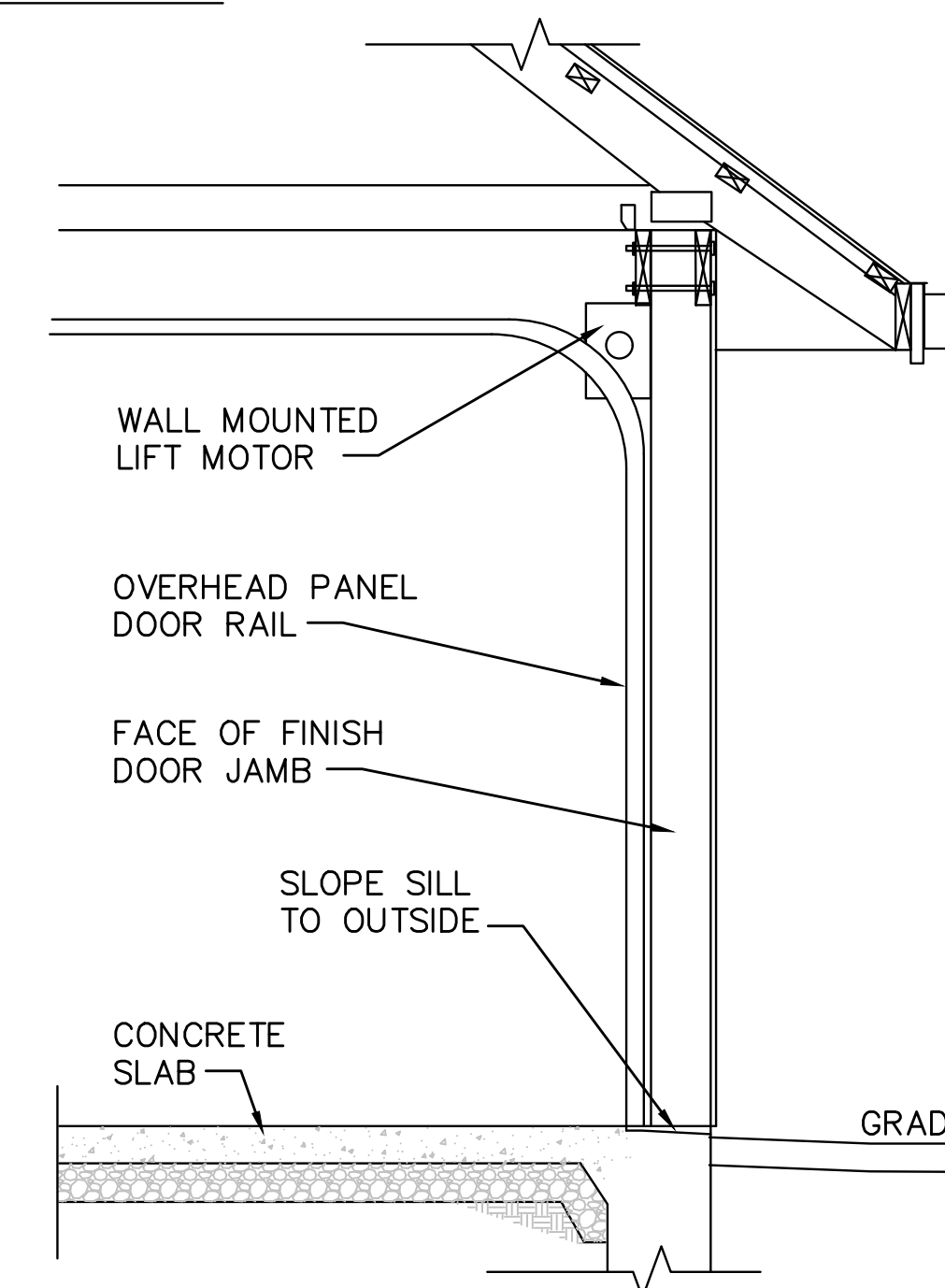


**1** END WALL SECTION  
A301 SCALE 1/2 = 1'-0"

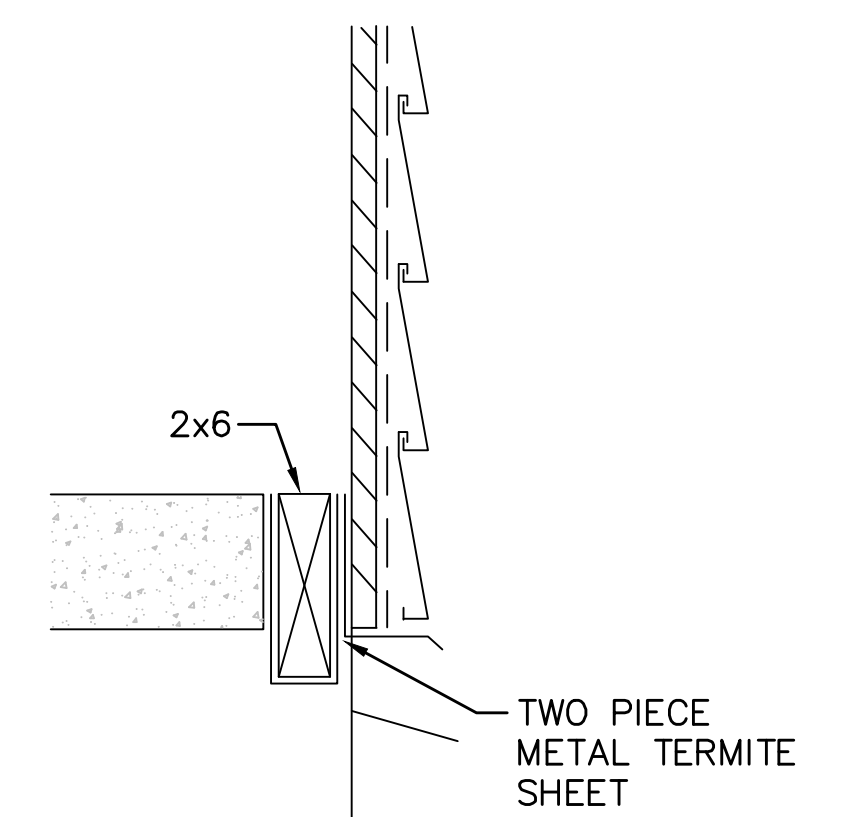
NOTE: SEE TERMITE SHEET  
DETAIL THIS SHEET.



**2** POST AND FRAME WALL SECTION  
A301 SCALE 1/2 = 1'-0"



**4** SECTION AT TYPICAL ROLLUP DOOR  
A301 SCALE 1/2 = 1'-0"



**4** TERMITE SHEET DETAIL  
A301 NO SCALE

ANNE ARUNDEL COUNTY - DEPARTMENT OF PUBLIC WORKS							
BACON RIDGE/FORNEY NATURAL AREA DEER SUPPORT BUILDING							
REVISED	DATE	BY	APPROVED	DATE	APPROVED	DATE	SCALE: AS NOTED
			CHIEF ENGINEER		PROJECT MANAGER		DRAWN BY: LG
			APPROVED	DATE	APPROVED	DATE	CHECKED BY: LG
			ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY		SHEET NO. 64 OF 77
							PROJECT NO.
							CONTRACT NO.



STRUCTURAL GENERAL NOTES

A. CODES

1. INTERNATIONAL BUILDING CODE (IBC), 2018 EDITION
2. ASCE 7-16 MINIMUM

B. DESIGN LOADS (IBC 2018 AND AS FOLLOWS)

1. LIVE LOAD
  - a. FLOOR LIVE LOAD: 250 PSF
  - b. ROOF LIVE LOAD: 30 PSF
2. DEAD LOAD
  - a. STRUCTURAL FRAMING SELF WEIGHT
3. RISK CATEGORY: II
4. SNOW LOADING
  - a. GROUND SNOW LOAD (PG): 25 PSF
  - b. IMPORTANCE FACTOR (I): 1.0
  - c. SNOW DRIFT LOADS AS APPLICABLE: -
5. WIND LOADING
  - a. BASIC WIND SPEED(V): 115 MPH (PER A.A. CO.)
  - b. EXPOSURE CATEGORY: C
  - c. SURFACE ROUGHNESS: C
6. SEISMIC LOADING
  - a. 0.2 SEC SPECTRAL RESPONSE ACCELERATION (SS): 0.131G
  - b. 1.0 SEC SPECTRAL RESPONSE ACCELERATION (S1): 0.042G
  - c. IMPORTANCE FACTOR (I): 1.0
  - d. SITE CLASS: E
  - e. SEISMIC DESIGN CATEGORY: B

C. FOUNDATIONS

1. ALL EXISTING FILL MATERIALS, CONSISTING OF GRAVEL, BRICK FRAGMENTS, CONCRETE CHIPS, WOOD CHIPS, AND DEMOLITION DEBRIS SHALL BE REMOVED IN THE REGIONS OF ALL FOUNDATIONS AND UNDER AREAS OF SLAB-ON-GRADE.
2. THE SLAB-ON-GRADE SHALL REST ON A MINIMUM OF 5 INCHES OF COMPACTED GRANULAR FILL.
3. PROOF ROLL SLAB SUBGRADE UNDER THE DIRECTION OF THE INSPECTION AGENCY. REMOVE ALL UNSUITABLE AREAS AND REPLACE WITH COMPACTED STRUCTURAL FILL MATERIALS. COMPACT FILL PER SPECIFICATIONS.
4. POST-FRAME BUILDING FOUNDATIONS SHALL CONSIST OF EMBEDDED POSTS BEARING ON POST FOOTINGS WITH CONCRETE COLLARS AND COMPACTED WELL GRADED GRANULAR AGGREGATE EMBEDMENT MATERIAL.
5. FOUNDATION DESIGN INCLUDED IN THESE DOCUMENTS IS BASED UPON THE CURRENT BUILDING POST LAYOUT AND IS APPROXIMATE. FINAL FOUNDATION DESIGN SHALL BE COORDINATED WITH THE FINAL POST LAYOUT OF THE BUILDING. FOUNDATIONS SHALL BE PROVIDED BY THE CONTRACTORS DELEGATED DESIGN PROFESSIONAL WHO SHALL BE RESPONSIBLE FOR THE SIZES, DEPTHS AND LOCATIONS OF THE FOUNDATIONS, AS PART OF A COMPLETE DESIGN WITH THE POST-FRAME BUILDING SYSTEM, AND SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MARYLAND.
6. POST FOOTINGS SHALL BEAR ON UNDISTURBED SOIL OR CONTROLLED STRUCTURAL FILL HAVING A MINIMUM SAFE BEARING CAPACITY OF 2.0 KSF. THE TESTING AND INSPECTION AGENCY SHALL VERIFY SOIL BEARING CAPACITY AT EACH FOOTING PRIOR TO INSTALLATION OF FOOTING. NOTIFY DELEGATED DESIGN ENGINEER OF ANY VARIATION FROM ANTICIPATED BEARING CAPACITY FOR APPROPRIATE REDESIGN OR LOWERING OF FOOTING.
7. THE BOTTOMS OF ALL EXTERIOR FOOTINGS SHALL BE 2'-6" MINIMUM BELOW FINISHED GRADE..
8. THE CONTRACTOR SHALL SAFEGUARD AND PROTECT ALL EXCAVATIONS AND ALL EXCAVATIONS SHALL BE KEPT FREE OF WATER.
9. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL, PLUMBING, MECHANICAL, AND ELECTRICAL DRAWINGS FOR ALL LOCATIONS OF TRENCHES, PITS, CONDUITS, ETC. NOT SHOWN ON THE STRUCTURAL DRAWINGS.
10. FOUNDATION DESIGN IS BASED UPON THE "FINAL GEOTECHNICAL INVESTIGATION REPORT" PROVIDED BY CENTURY ENGINEERING, DATED SEPTEMBER 28 2023.

D. FOUNDATION CONCRETE

1. ALL CONCRETE SHALL BE NORMAL WEIGHT CONCRETE HAVING A DESIGN COMPRESSIVE STRENGTH AT 28 DAYS AS FOLLOWS:
  - a. FOOTINGS 4,000 PSI
  - b. SLAB-ON-GRADE 4,500 PSI
2. NO CONCRETE SHALL BE PLACED UNTIL CONCRETE DESIGN MIXES HAVE BEEN SUBMITTED FOR EACH CLASS OF CONCRETE NOTED ABOVE AND HAVE BEEN APPROVED BY THE ENGINEER.
3. REINFORCING STEEL SHALL BE DEFORMED BARS OF INTERMEDIATE GRADE NEW BILLET STEEL CONFORMING TO CURRENT REQUIREMENTS OF ASTM A 615, GRADE.

LAP BARS 40 DIAMETER UNLESS OTHERWISE SHOWN. ALL HOOKS SHALL BE STANDARD HOOKS, UNLESS OTHERWISE NOTED.

4. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 1064.
5. ALL MESH SHALL BE SPLICED SO THAT THE OVERLAP OF THE OUTERMOST CROSS WIRES OF EACH ADJOINING SHEET IS NOT LESS THAN THE SPACING OF THE CROSS WIRES PLUS 2 INCHES, UNLESS NOTED OTHERWISE.
6. FOR ALL SLABS ON GRADE WHERE NOT OTHERWISE SPECIFIED, USE 6 X 6 - WX2.9 X W2.9 W.W.F.
7. MINIMUM STEEL PROTECTION, UNLESS OTHERWISE SHOWN, SHALL BE 1-INCH FOR INTERIOR FACE OF WALLS, 2 INCHES FOR EXTERIOR FACE OF WALLS, 3 INCHES FOR FOOTINGS AND OTHER STRUCTURAL CONCRETE DEPOSITED AGAINST GROUND, 2 INCHES FOR CONCRETE PERMANENTLY EXPOSED TO EARTH OF WEATHER.
8. ALL SLABS-ON-GRADE SHALL HAVE THICKENINGS, DEPRESSIONS, OPENINGS, ETC. AS SHOWN OR AS REQUIRED BY VARIOUS TRADES.
9. REFER TO ARCHITECTURAL DRAWINGS AND/OR SPECIFICATIONS FOR CONCRETE FINISHES.
10. FOR ADDITIONAL CONCRETE WORK NOT SHOWN ON STRUCTURAL DRAWINGS, SEE ARCHITECTURAL DRAWINGS.

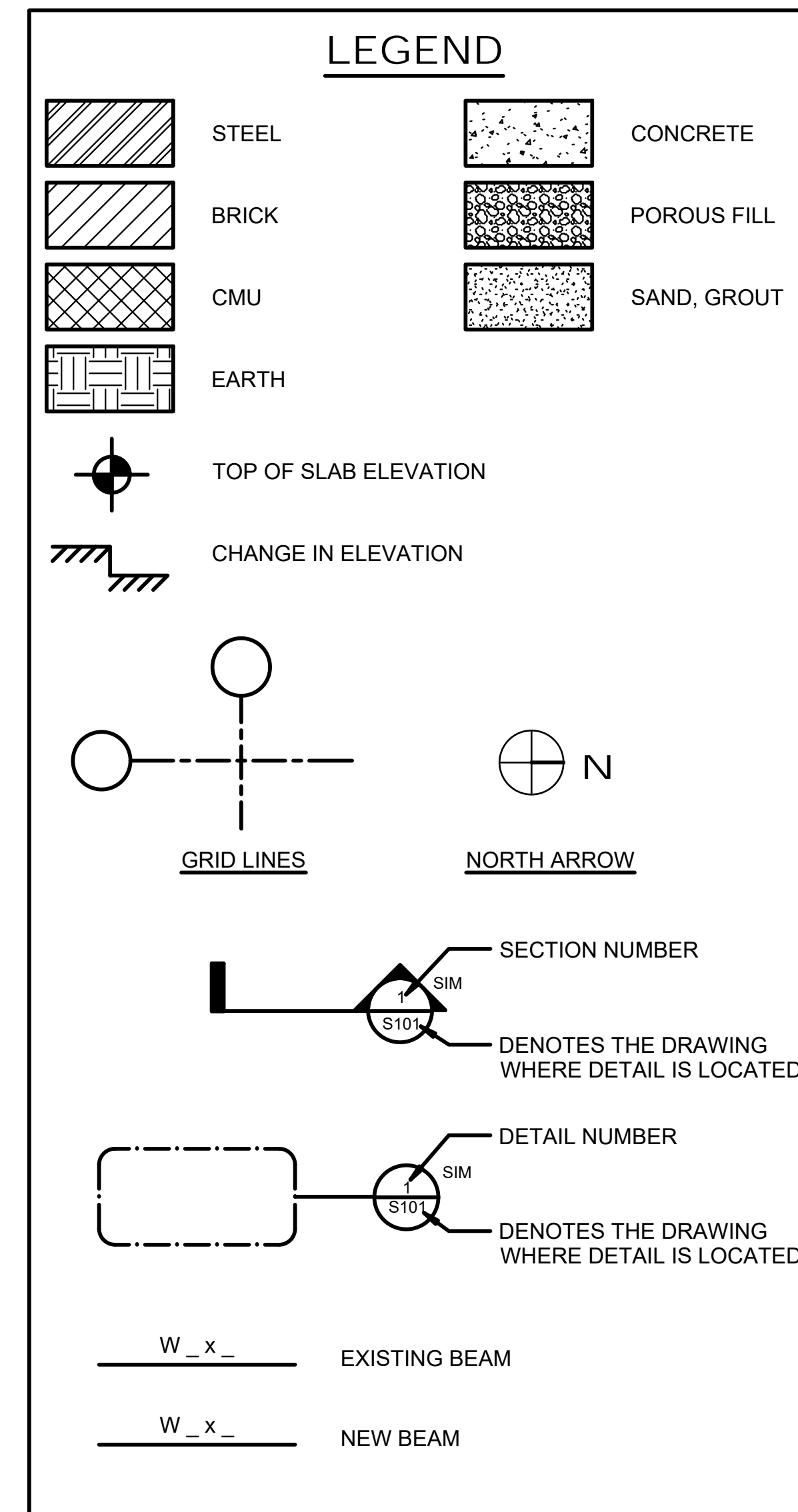
E. POST-FRAME BUILDING SYSTEM

1. TIMBER FRAMING SHALL BE PART OF A PRE-ENGINEERED POST-FRAME BUILDING SYSTEM. COMPLETE WITH STRUCTURAL FRAMING, ROOF TRUSSES, ROOFING, PURLINS, GIRTS, AND ACCESSORY ELEMENTS NORMALLY INCLUDED AS PART OF THE BUILDING ENVELOPE.
  2. STRUCTURAL PERFORMANCE: THE POST-FRAME BUILDING SYSTEMS SHALL WITHSTAND THE EFFECTS OF LOADS INDICATED ON THESE CONTRACT DRAWINGS AND ALL OTHER APPLICABLE LOADS AND LOAD COMBINATIONS WITHIN LIMITS AND UNDER CONDITIONS INDICATED ACCORDING TO PROCEDURES IN THE NON-DIAPHRAGM POST-FRAME BUILDING DESIGN GUIDE (NDPFDG) BY THE NATIONAL FRAME BUILDING ASSOCIATION (NFBA).
  3. PROVIDE SECONDARY AND SUPPLEMENTAL FRAMING AS REQUIRED TO SUPPORT SUSPENDED EQUIPMENT. COORDINATE LOCATIONS, WEIGHTS AND SUPPORT REQUIREMENTS WITH MECHANICAL, ELECTRICAL AND ARCHITECTURAL DRAWINGS AND EQUIPMENT MANUFACTURERS.
- F. MISCELLANEOUS
1. CONTRACTOR SHALL VERIFY CONDITIONS IN THE FIELD AND IMMEDIATELY NOTIFY ENGINEER OF ANY CONDITIONS NOT AS ASSUMED, THE CONTRACTOR SHALL TAKE FIELD MEASUREMENTS AS REQUIRED AND BE RESPONSIBLE FOR SAME.
  2. CONTRACTOR SHALL COORDINATE WITH ALL RELATED TRADES FOR DETAILING, FABRICATION, AND ERECTION PRIOR TO SUBMITTING SHOP DWGS FOR APPROVAL.
  3. ALL STRUCTURAL WORK SHALL BE COORDINATED WITH ARCHITECTURAL, CIVIL, MECHANICAL, ELECTRICAL, PLUMBING, ETC. REQUIREMENTS. DISCREPANCIES AND/OR INTERFERENCES SHALL BE REPORTED TO THE ARCHITECT / ENGINEER OR THE ANNE ARUNDEL COUNTY PROJECT MANAGER IMMEDIATELY.
  4. NO OPENINGS SHALL BE MADE IN ANY STRUCTURAL MEMBER UNLESS SPECIFICALLY SHOWN ON THE POST FRAME BUILDING STRUCTURAL DWGS OR OTHER APPROVAL FROM THE POST-FRAME BUILDING DESIGN ENGINEER.
  5. SUPPORT DETAILS FOR EQUIPMENT, ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING IS BASED UPON AVAILABLE INFORMATION OF MANUFACTURER. CONTRACTOR SHALL COORDINATE REQUIREMENTS OF ACTUAL EQUIPMENT SUPPLIED WITH DETAILS AND SHALL PROVIDE ANY ADDITIONAL FRAMING.
  6. CONSTRUCTION TOLERANCES SPECIFIED OR REFERENCED FOR DIFFERENT MATERIALS AND SYSTEMS SHALL NOT BE CUMULATIVE.

7. REFER TO THE PROJECT MANUAL APPENDIX "D" - DEER SUPPORT BUILDING PROJECT MANUAL FOR DEER SUPPORT BUILDING CONSTRUCTION SPECIFICATIONS.

G. SPECIAL INSPECTIONS

1. SPECIAL INSPECTIONS ARE TO BE PERFORMED BY THE CONSTRUCTION MANAGER/INSPECTOR HIRED BY ANNE ARUNDEL COUNTY.
2. SPECIAL INSPECTOR SHALL PERFORM ALL APPLICABLE "SPECIAL INSPECTIONS" AS DEFINED BY SECTION 1704 OF IBC 2018 AND AS INDICATED ON SHEET S002 FOR CONCRETE AND SOILS.
3. INSPECTIONS AND TESTING REQUIRED FOR THE POST-FRAME BUILDING SYSTEM SHALL BE PROVIDED BY THE CONTRACTOR.



STRUCTURAL ABBREVIATIONS

AB	ANCHOR BOLT	INCL	INCLUDE(ED)(ING)
ABV	ABOVE	INSUL	INSULATION
ACI	AMERICAN CONCRETE INSTITUTE	INT	INTERIOR
ADDN	ADDITION (AL)	JST	JOIST
ADJ	ADJACENT	JT	JOINT
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	K	KIP
AISI	AMERICAN IRON AND STEEL INSTITUTE	KF	KIP FEET
AITC	AMERICAN INSTITUTE OF TIMBER CONSTRUCTION	KLF	KIPS PER LINEAL FOOT
ALT	ALTERNATE	KSF	KIPS PER SQUARE FOOT
ANCH	ANCHOR	KSI	KIPS PER SQUARE INCH
ASD	ALLOWABLE STRESS DESIGN	L	LENGTH
ARCH	ARCHITECTURAL	LB	POUND
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS	LEV	LEVEL
AWG	AMERICAN WELDING SOCIETY	LG	LONG
		LLH	LINEAL
		LLV	LONG LEG VERTICAL
B/	BOTTOM OF	LOC	LOCATION
BAL	BALANCE	LP	LOW POINT
BD	BOARD	LT	LEFT
BF	BOTH FACES		
BHS	BAGGAGE HANDLING SYSTEM	MAS	MASONRY
BIA	BRICK INSTITUTE OF AMERICA	MATL	MATERIAL
BLDG	BUILDING	MAX	MAXIMUM
BM	BEAM	MECH	MECHANICAL
BOT	BOTTOM	MEZZ	MEZZANINE
BRDG	BRIDGING	MFR	MANUFACTURER
BRG	BEARING	MIN	MINIMUM
BRG PL	BEARING PLATE	MISC	MISCELLANEOUS
BSMT	BASEMENT	MK	MARK
BT	BENT	MO	MASONRY OPENING
C/C	CENTER TO CENTER	NCMA	NATIONAL CONCRETE MASONRY ASSOCIATION
CANT	CANTILEVER	NIC	NOT IN CONTRACT
CAP	CAPACITY	NOM	NOMINAL
CIP	CAST IN PLACE	NTS	NOT TO SCALE
CJ	CONTROL JOINT	#	NUMBER
CL	CENTER LINE		
CLR	CLEAR	OC	ON CENTER
CMU	CONCRETE MASONRY UNIT	OD	OUTSIDE DIAMETER
COL	COLUMN	OPNG	OPENING
COMPR	COMPRESSIBLE	OPP	OPPOSITE
CONC	CONCRETE	OSL	OUTSTANDING LEG
CONN	CONNECTION	PBB	PASSENGER BOARDING BRIDGE
CONST	CONSTRUCTION	PCF	POUNDS PER CUBIC FOOT
CONT	CONTINUOUS	PERIM	PERIMETER
COOR	COORDINATE	PL	PLATE
CTR	CENTER	PSF	POUNDS PER SQUARE FOOT
		PSI	POUNDS PER SQUARE INCH
DBL	DOUBLE	QTY	QUANTITY
DEG	DEGREE		
DEPR	DEPRESSION	RAD	RADIUS
DETL	DETAIL	REBAR	REINFORCING BAR
DIA	DIAMETER	RECT	RECTANGULAR
DIM	DIMENSION	REINF	REINFORCE(ING)(ED)(MENT)
DN	DOWN	REQD	REQUIRED
DO	DITTO	REV	REVISION
DWG	DRAWING	RND	ROUND
DWL	DOWEL	RO	ROUGH OPENING
EA	EACH	SCHED	SCHEDULE
ELECT	ELECTRICAL	SECT	SECTION
ELEV	ELEVATION	SHT	SHEET
EOS	EDGE OF SLAB	SIM	SIMILAR
EQ	EQUAL	SOG	SLAB ON GRADE
EW	EACH WAY	SPA	SPACE(S)(ING)
EXIST	EXISTING	SPEC	SPECIFICATION
EXP	EXPOSED	SQ FT	SQUARE FOOT
EXT	EXTERIOR	SQ IN	SQUARE INCH
EXTEN	EXTENSION	SS	STAINLESS STEEL
F/F	FACE TO FACE	STD	STANDARD
FD	FLOOR DRAIN	STIFF	STIFFENER
FDN	FOUNDATION	STIR	STIRRUP
FIN	FINISH	STL	STEEL
FLR	FLOOR	STRUCT	STRUCTURE(AL)
FP	FULL PENETRATION	SUP	SUPPORT
FTG	FOOTING	SYM	SYMMETRICAL
FURN	FURNISH	T&B	TOP AND BOTTOM
FUT	FUTURE	T&G	TONGUE AND GROOVE
GA	GAGE	T/	TOP OF
GALV	GALVANIZE	TEMP	TEMPERATURE
GEN	GENERAL	THK	THICK(NESS)
GR	GRADE	THKD	THICKENED
GTB	GATE TRANSITION BUILDING	TYP	TYPICAL
HDR	HEADER	UNO	UNLESS NOTED OTHERWISE
HGR	HANGER	W/	WITH
HK	HOOK	W/O	WITHOUT
HORIZ	HORIZONTAL	WD	WOOD
HP	HIGH POINT	WPT	WORK POINT
HT	HEIGHT	WWF	WELDED WIRE FABRIC
ID	INSIDE DIAMETER		
IF	INSIDE FACE		
IN	INCH(ES)		

BID DOCUMENTS



AECOM  
4 NORTH PARK DRIVE  
SUITE 300  
HUNT VALLEY, MARYLAND 21030  
PHONE: 410-785-7220

PROFESSIONAL CERTIFICATION  
I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
LICENSE NUMBER: 18998  
EXPIRATION DATE: APRIL 14, 2026



ANNE ARUNDEL COUNTY - DEPARTMENT OF PUBLIC WORKS							
BACON RIDGE/FORNEY NATURAL AREA DEER SUPPORT BUILDING							
REVISED		APPROVED	DATE	APPROVED	DATE	SCALE: AS NOTED	STRUCTURAL GENERAL NOTES - I
DATE	BY					DRAWN BY: CDS	
6/21/24	JLB	CHIEF ENGINEER		PROJECT MANAGER		CHECKED BY: JLB	
		APPROVED	DATE	APPROVED	DATE	SHEET NO. 65 OF 77	
		ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY		PROJECT NO.	
						CONTRACT NO.	

S001



REQUIRED SPECIAL INSPECTOR QUALIFICATIONS AND EXPERIENCE	
INSPECTION CATEGORY	MINIMUM QUALIFICATIONS
REINFORCED CONCRETE	LICENSED PROFESSIONAL ENGINEER, OR CURRENT CERTIFICATION BY ACI, OR CURRENT ICC REINFORCED CONCRETE SPECIAL INSPECTOR CERTIFICATION
SOIL	LICENSED PROFESSIONAL ENGINEER, SPECIALIZING IN GEOTECHNICAL ENGINEERING
OTHER	AS APPROVED BY THE BUILDING OFFICIAL ON CASE-BY-CASE BASIS

- NOTES:
- THE QUALIFICATIONS OF ALL PERSONNEL PERFORMING SPECIAL INSPECTIONS SHALL BE SUBMITTED TO THE BUILDING OFFICIAL, ARCHITECT AND ENGINEER OF RECORD - STRUCTURAL FOR REVIEW.
  - SPECIAL INSPECTION AGENCY SHALL BE ACCREDITED BY THE INTERNATIONAL ACCREDITATION SERVICE (IAS) AND MAINTAIN CURRENT ACCREDITATION STATUS.

REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION (ADAPTION OF 2018 IBC - TABLE 1705.3)				
TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD *a	2018 IBC REFERENCE
1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	-	X	ACI 318: CH. 20, 25.2, 25.3, 26.1-26.6.3	1908.4
2. INSPECT REINFORCING STEEL WELDING IN ACCORDANCE WITH TABLE 1705.2.2, ITEM 2b.	-	NA	AWS D1.4 ACI 318: 26.6.4	-
3. INSPECT ANCHORS CAST IN CONCRETE.	-	X	ACI 318: 17.8.2	-
4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS *b. A. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATION RESIST SUSTAINED TENSION LOADS. B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.A.	X	-	ACI 318: 17.8.2.4	-
	-	X	ACI 318: 17.8.2	-
5. VERIFY USE OF REQUIRED DESIGN MIX.	-	X	ACI 318: Ch. 19, 24.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
6. PRIOR TO CONCRETE PLACEMENT PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	-	ASTM C172 ASTM C31 ACI 318: 26.5, 26.12	1910.10
7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	-	ACI 318: 26.5	1908.6, 1908.7, 1908.8
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	-	X	ACI 318: 26.5.3-26.5.5	1908.9
9. INSPECTION OF PRESTRESSED CONCRETE: A. APPLICATION OF PRESTRESSING FORCES. B. GROUTING OF BONDED PRESTRESSING TENDONS.	NA	-	ACI 318: 26.10	-
	NA	-		
10. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS.	-	NA	ACI 318: 26.9	-
11. VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.	-	NA	ACI 318: 26.11.2	-
12. INSPECT FORMWORK FOR SHAPE, LOCATION DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED, SHORING AND RESHORING.	-	X	ACI 318: 26.11.1.2(b)	-

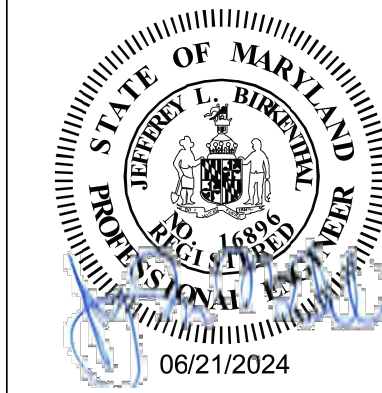
\*a. WHERE APPLICABLE, SEE ALSO 2018 IBC SECTION 1705.12. SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE.  
\*b. SPECIFIC REQUIREMENTS FOR SPECIAL INSPECTION SHALL BE INCLUDED IN THE RESEARCH REPORT FOR THE ANCHOR ISSUED BY AN APPROVED SOURCE IN ACCORDANCE WITH ACI 318: 17.8 OR OTHER QUALIFICATION PROCEDURES. WHERE SPECIFIC REQUIREMENTS ARE NOT PROVIDED, SPECIAL INSPECTION REQUIREMENTS SHALL BE SPECIFIED BY THE REGISTERED DESIGN PROFESSIONAL AND SHALL BE APPROVED BY THE BUILDING OFFICIAL PRIOR TO THE COMMENCEMENT OF WORK.

REQUIRED SPECIAL INSPECTIONS AND TESTS OF SOILS (ADAPTION OF 2018 IBC - TABLE 1705.6)		
TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	-	X
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	-	X
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.	-	X
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	X	-
5. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	-	X

- NOTES:
- "CONTINUOUS SPECIAL INSPECTION" INDICATES SPECIAL INSPECTION BY THE SPECIAL INSPECTOR WHO IS PRESENT WHEN AND WHERE THE WORK TO BE INSPECTED IS BEING PERFORMED.
  - "PERIODIC SPECIAL INSPECTION" INDICATES SPECIAL INSPECTION BY THE SPECIAL INSPECTOR WHO IS INTERMITTENTLY PRESENT WHERE THE WORK TO BE INSPECTED HAS BEEN OR IS BEING PERFORMED.
  - "NA" INDICATES INSPECTIONS THAT ARE NOT APPLICABLE TO THIS PROJECT. NOT ALL INSPECTIONS ARE REQUIRED FOR THIS PROJECT (I.E., PRESTRESSING, SHOTCRETE).

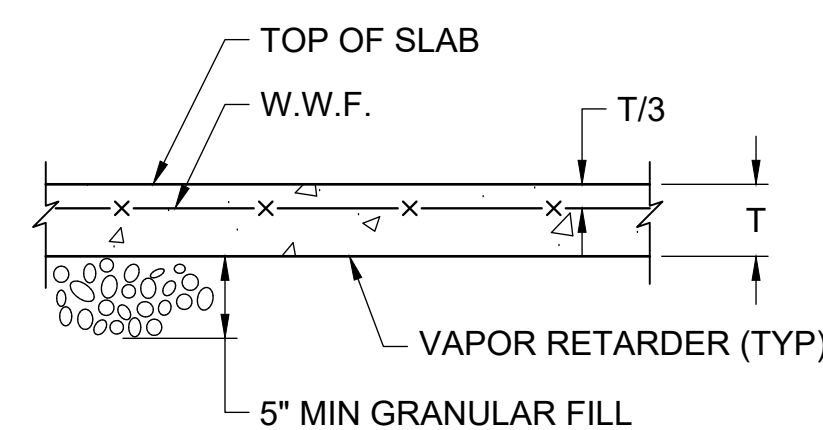
**AECOM**  
 4 NORTH PARK DRIVE  
 SUITE 300  
 HUNT VALLEY, MARYLAND 21030  
 PHONE: 410-785-7220

PROFESSIONAL CERTIFICATION  
 \*I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
 LICENSE NUMBER: 18988  
 EXPIRATION DATE: APRIL 14, 2026

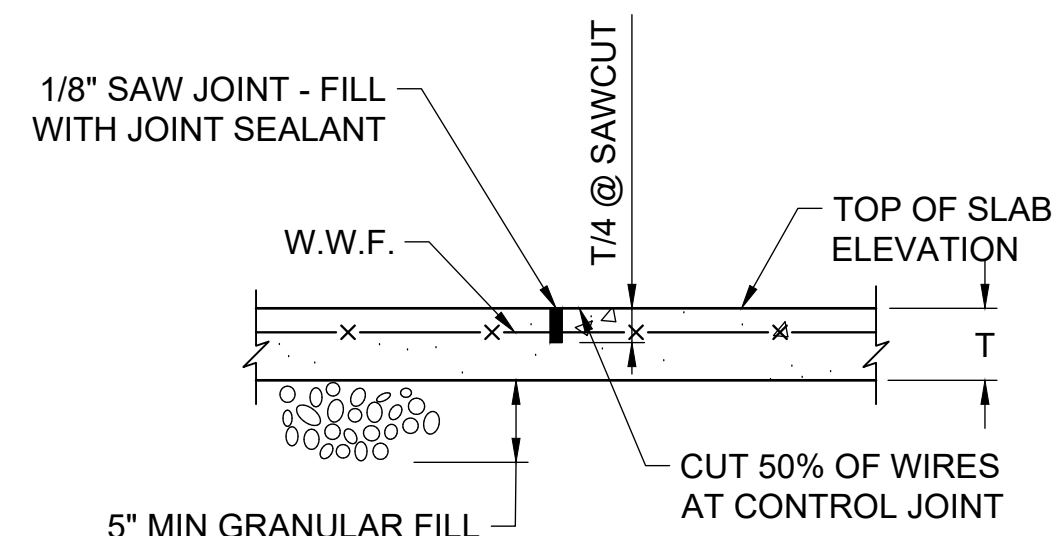


ANNE ARUNDEL COUNTY - DEPARTMENT OF PUBLIC WORKS					
BACON RIDGE/FORNEY NATURAL AREA DEER SUPPORT BUILDING					
REVISED	APPROVED	DATE	APPROVED	DATE	SCALE: AS NOTED
DATE	BY		DATE		DRAWN BY: CDS
6/21/24	JLB				CHECKED BY: JLB
	CHIEF ENGINEER		PROJECT MANAGER		SHEET NO. 66 OF 77
	APPROVED	DATE	APPROVED	DATE	PROJECT NO.
	ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY		CONTRACT NO.





**2** TYPICAL SLAB ON GRADE  
S101 SCALE 3/4 = 1'-0"

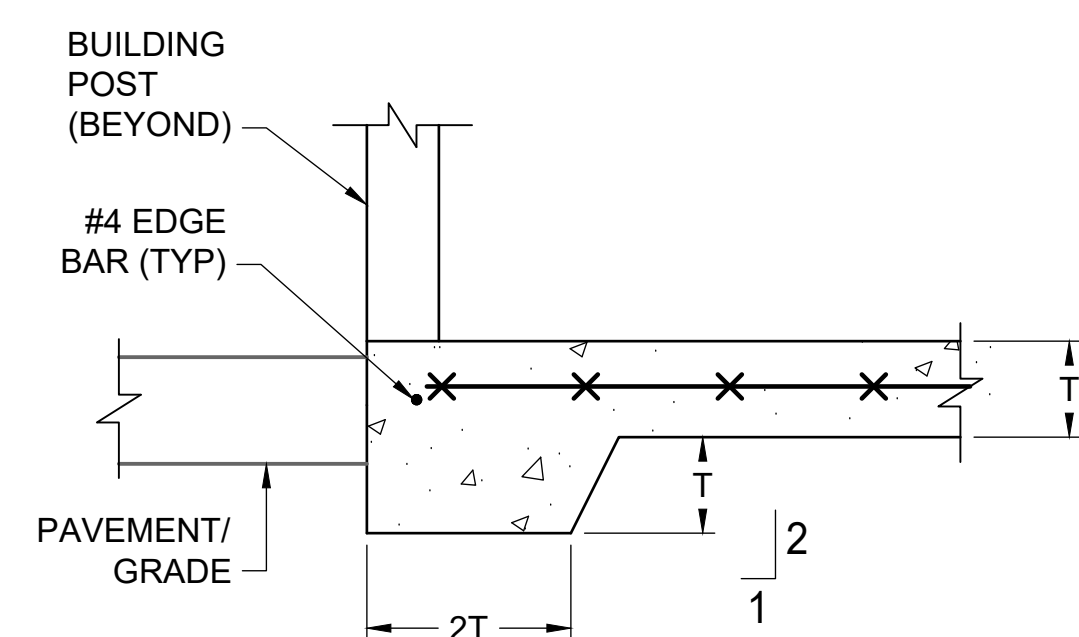


**3** CONTROL JOINT  
S101 SCALE 3/4 = 1'-0"

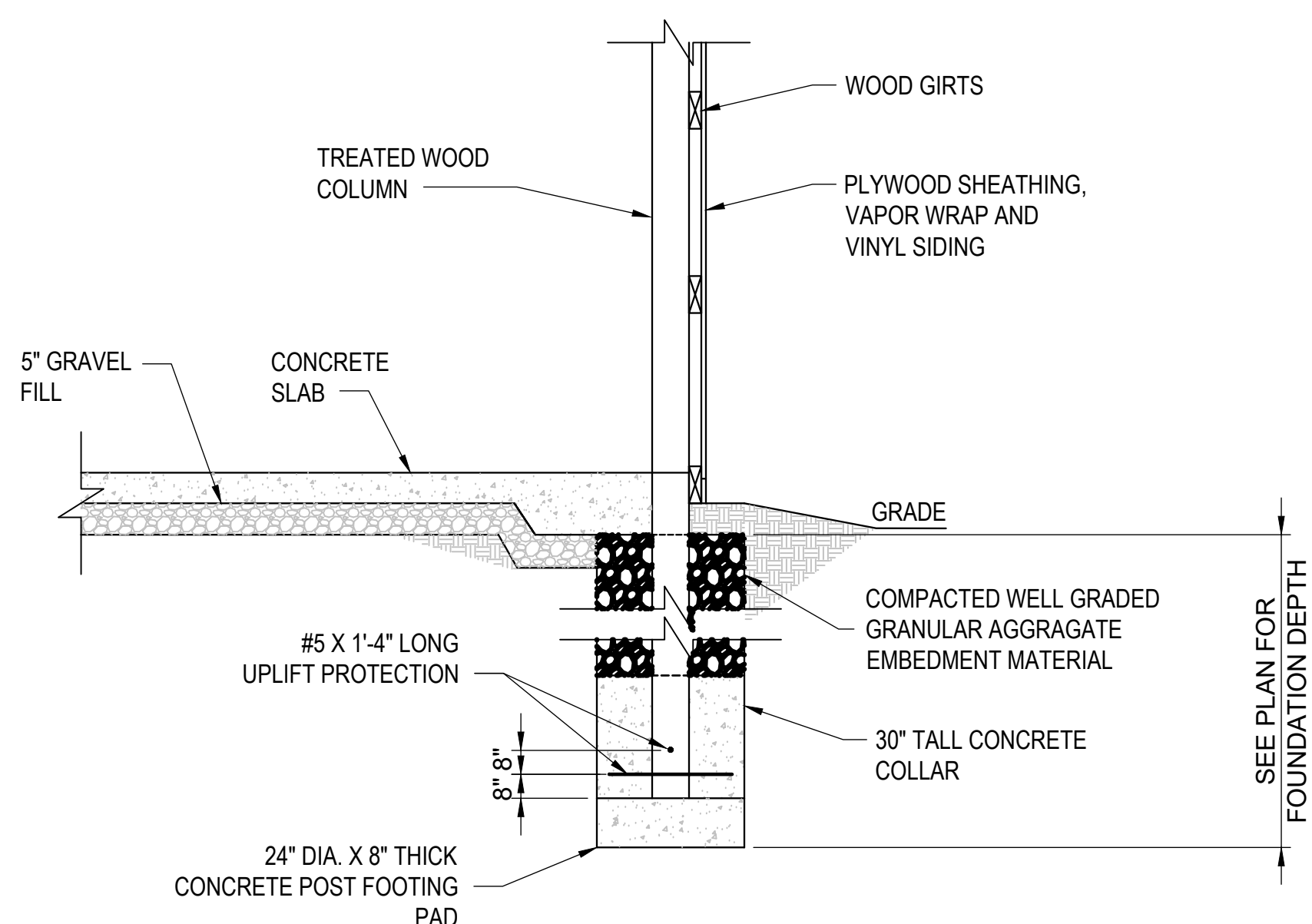
SAWCUT CONTROL JOINT AS SOON AS SURFACE IS FIRM ENOUGH SO THAT IT WILL NOT BE TORN OR DAMAGED BY BLADE

**NOTES:**

- CONTROL JOINT (C.J.) ON PLAN.



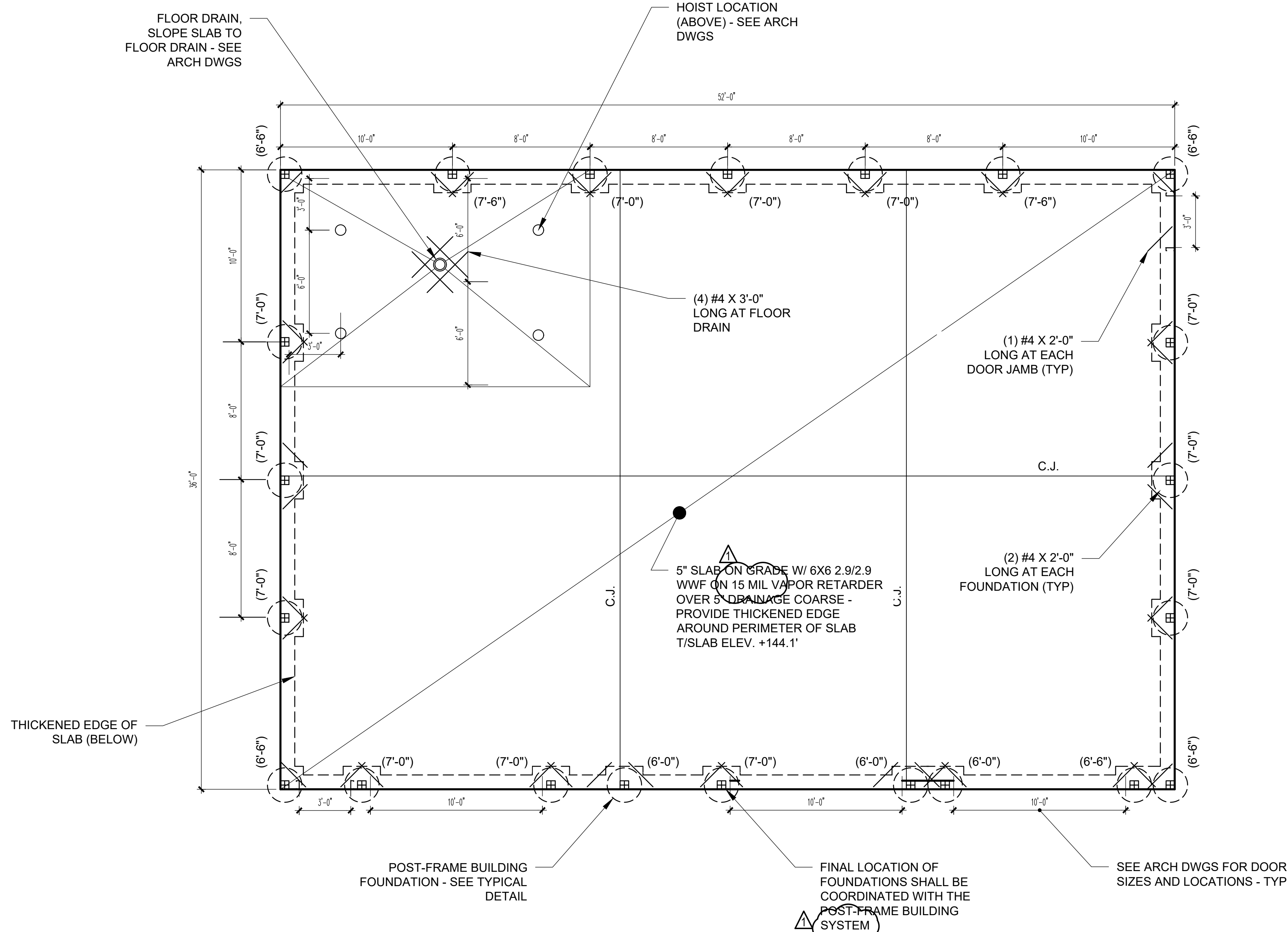
**4** TYPICAL THICKENED EDGE OF SLAB  
S101 SCALE 3/4 = 1'-0"



**6** TYPICAL POST FRAME FOUNDATION  
S101 SCALE 1/2 = 1'-0"

**NOTE:**

1. FOUNDATION SIZES INDICATED ARE APPROXIMATE. FULL FOUNDATION DESIGN SHALL BE PROVIDED BY THE CONTRACTORS DELEGATED DESIGN PROFESSIONAL.



**1** FOUNDATION PLAN  
S101 SCALE 1/4 = 1'-0"

**NOTE:**

- DIMENSIONS NOTED THUS (X'-X") ARE THE DEPTH OF THE POST FRAME FOUNDATIONS. SEE SECTION 5/S101.
- FOUNDATION SIZES AND LOCATIONS INDICATED ARE APPROXIMATE. FULL FOUNDATION DESIGN SHALL BE PROVIDED BY THE CONTRACTORS DELEGATED DESIGN PROFESSIONAL WHO SHALL BE RESPONSIBLE FOR THE SIZES, DEPTH AND LOCATIONS OF THE FOUNDATIONS, AS PART OF A COMPLETE DESIGN WITH THE POST-FRAME BUILDING SYSTEM, INCLUDING CALCULATIONS, AND SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MARYLAND.

BID DOCUMENTS



AECOM  
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SUITE 300  
HUNT VALLEY, MARYLAND 21030  
PHONE: 410-785-7220

PROFESSIONAL CERTIFICATION  
I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
LICENSE NUMBER: 18988  
EXPIRATION DATE: APRIL 14, 2026



ANNE ARUNDEL COUNTY - DEPARTMENT OF PUBLIC WORKS							
BACON RIDGE/FORNEY NATURAL AREA DEER SUPPORT BUILDING							
REVISED	DATE	BY	APPROVED	DATE	APPROVED	DATE	SCALE: AS NOTED
	6/21/24	JLB	CHIEF ENGINEER		PROJECT MANAGER		CHECKED BY: JLB
			APPROVED	DATE	APPROVED	DATE	SHEET NO. 67 OF 77
			ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY		PROJECT NO.
							CONTRACT NO.

S101



NOTE: SOME SYMBOLS AND ABBREVIATIONS MAY NOT APPEAR ON DRAWINGS

**MECHANICAL LEGEND**

SYMBOL	DESCRIPTION
	GATE VALVE
	CHECK VALVE
	GLOBE VALVE
	BALL VALVE
	TWO WAY CONTROL VALVE
	THREE WAY CONTROL VALVE
	BALANCE SHUT OFF VALVE (CIRCUIT SETTER)
	STRAINER
	PRESSURE GAUGE AND COCK
	PIPE UP, PIPE DOWN
	MANUAL AIR VENT
	AUTOMATIC AIR VENT
	THERMOMETER
	TEMPERATURE TRANSMITTER
	PRESSURE TRANSMITTER
	SUPPLY AIR DUCT (UP,DOWN)
	RETURN/EXHAUST AIR DUCT (UP,DOWN)
	RETURN AIR REGISTER (PLAN,ELEV.) (R.A.R.)
	SUPPLY AIR DIFFUSER (PLAN,ELEV.) (S.A.D.)
	EXHAUST GRILLE
	CURRENT TRANSMITTER
	FLEXIBLE CONNECTION

**MECHANICAL LEGEND**

SYMBOL	DESCRIPTION
	FLEXIBLE DUCT
	VOLUME DAMPER (VD)
	FIRE DAMPER
	MOTOR OPERATED DAMPER
	UNIT HEATER
	THERMOSTAT/ TEMPERATURE SENSOR
	SMOKE DETECTOR
	DUCT DETECTOR
	DIFFERENTIAL PRESSURE SWITCH
	PUMP
	DUCT ELBOW TURNING VANES (DOUBLE/ SINGLE LINE)
	DUCT ELBOW TURNING VANES (DOUBLE/ SINGLE LINE)
	BACK DRAFT DAMPER (BBD)
	DUCT OR PIPE TO BE REMOVED
	REMOVE EXISTING TO THIS POINT
	CONNECT TO EXISTING AT THIS POINT
	SPACE TEMPERATURE SENSOR

**PLUMBING LEGEND**

SYMBOL	DESCRIPTION
	FLOW ARROW
	CONNECT TO EXISTING
	END OF DEMOLITION
	PIPE CAPPED
	PIPE DOWN
	PIPE UP
	PIPE TEE DOWN
	PIPE REDUCER
	PIPE UNION
	PIPE GUIDES OR SLEEVES
	PIPE ANCHOR
	FLEXIBLE PIPE CONNECTION
	GENERAL SERVICE VALVE (SEE SPECIFICATION FOR VALVE TYPE PER APPLICATION)
	CHECK VALVE (ARROW INDICATES DIRECTION OF FLOW)
	MANUAL BALANCING VALVE
	AUTOMATIC BALANCING VALVE
	SOLENOID VALVE
	TWO-WAY CONTROL VALVE
	THREE-WAY CONTROL VALVE
	TWO-WAY PRESSURE INDEPENDENT CONTROL AND BALANCE VALVE
	THERMOSTATIC MIXING VALVE
	PRESSURE REDUCING VALVE
	VACUUM BREAKER
	PLUG VALVE
	SUPERVISED VALVE
	TEMPERATURE AND PRESSURE RELIEF VALVE
	DRAIN VALVE WITH THREADED HOSE CONNECTION
	REDUCED PRESSURE BACKFLOW PREVENTER
	PRESSURE GAUGE WITH STOPCOCK
	STRAINER WITH BLOW DOWN VALVE
	AUTOMATIC AIR VENT
	MANUAL AIR VENT
	TEMPERATURE/PRESSURE TEST PLUG (PETE'S PLUG)
	WATER FLOW SWITCH
	PRESSURE SWITCH
	CLEAN OUT
	WALL CLEAN OUT
	FLOOR CLEAN OUT
	GRADE CLEAN OUT

ABBREVIATION	DESCRIPTION
AC	AIR CONDITIONING UNIT
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AMPS	AMPERES
APD	AIR PRESSURE DROP
APPROX	APPROXIMATE
AS	AIR SEPARATOR
AST	ABOVEGROUND STORAGE TANK
B-	BOILER
BAS	BUILDING AUTOMATION SYSTEM
BDD	BACKDRAFT DAMPER
BGE	BALTIMORE GAS & ELECTRIC
BLDG	BUILDING
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BP	BOOSTER PUMP
BT	BUFFER TANK
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT HOUR
CAP	CAPACITY
CC	COOLING COIL
CDP	CONDENSER WATER PUMP
CDR	CONDENSER RETURN
CDS	CONDENSER SUPPLY
CFM	CUBIC FEET PER MINUTE
C	CENTERLINE
CH-	CHILLER
CHWP	CHILLED WATER PUMP
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CONC	CONCRETE
COND	CONDENSATE
CONN	CONNECTION
CU	CONDENSER/CONDENSING UNIT
CUH	CABINET UNIT HEATER
CV	CONTROL VALVE
CW	COLD WATER
DP	DEEP
dB	DECIBEL
DB	DRY BULB
DDC	DIRECT DIGITAL CONTROLS
DIA	DIAMETER
DISCH	DISCHARGE
DN	DOWN
DP	DIFFERENTIAL PRESSURE
DWG	DRAWING
DX	DIRECT EXPANSION
(E)	EXISTING TO REMAIN/EXISTING
EA	EXHAUST AIR EAT ENTERING AIR TEMPERATUR
EDB	ENTERING DRY BULB
EF	EXHAUST FAN
EFF	EFFICIENCY EL ELEVATION ELECT ELECTRICAL
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
EUH	ELECTRIC UNIT HEATER
EWT	ENTERING WATER TEMPERATURE
EXT	EXTERNAL
F	DEGREE FAHRENHEIT
F-	FAN
FCU	FAN COIL UNIT
FD	FLOOR DRAIN
FLA	FULL LOAD AMPS
FT	FEET
FPM	FEET PER MINUTE FEET OF WATER
GA	GAGE
GAL	GALLON
GALV	GALVANIZED
GPM	GALLONS PER MINUTE
H	HIGH
HC	HEATING COIL
HP	HORSE POWER
HR	HEATING WATER RETURN
HS	HEATING WATER SUPPLY
HTG	HEATING
HUH	HYDRONIC UNIT HEATER
HVAC	HEATING VENTILATION AND AIR CONDITIONING
HW	DOMESTIC HOT WATER
HWP	HEATING WATER PIPING
HZ	HERTZ IN INCH
IRH	INFRA-RED UNIT HEATER
KW	KILOWATT

ABBREVIATION	DESCRIPTION
L-	LOUVER
L	LONG
LAT	LEAVING AIR TEMPERATURE
LB	POUND
LD	LINEAR SUPPLY DIFFUSER
LDB	LEAVING DRY BULB
LGT	LENGTH
LWT	LEAVING WATER TEMPERATURE
MA	MIXED AIR
MAX	MAXIMUM
MBH	THOUSAND BTU PER HOUR
MECH	MECHANICAL
MER	MECHANICAL EQUIPMENT ROOM
MIN	MINIMUM MOD MOTOR OPERATED DAMPER
NC	NOISE CRITERIA
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NPT	NATIONAL PIPE THREAD
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAI	OUTSIDE AIR INTAKE
OBD	OPPOSED BLADE DAMPER
OED	OPEN END DUCT
PD	PRESSURE DROP
PH	PHASE
PRESS	PRESSURE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQ INCH GAGE
PVC	POLYVINYL CHLORIDE
(R)	REMOVE RA RETURN AIR
RG	RETURN AIR GRILLE RD RETURN CEILING DIF
REQD	REQUIRED
RF	RETURN FAN
RHC	REHEAT COIL
RL	REFRIGERANT LIQUID
RLA	RUNNING LOAD AMPS
RPM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SUCTION
SA	SUPPLY AIR
SAG	SUPPLY AIR GRILLE
SENS	SENSIBLE
SF	SUPPLY FAN
SG	SUPPLY AIR GRILLE
SP	STATIC PRESSURE
SR	SUPPLY AIR REGISTER
SUCT	SUCTION TEMP TEMPERATURE
TS	TEMPERATURE SENSOR
TSTAT	THERMOSTAT
TU	TERMINAL UNIT
TYP	TYPICAL UH UNIT HEATER
UST	UNDERGROUND STORAGE TANK
V	VOLT
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VEF	VEHICLE EXHAUST FAN
VFD	VARIABLE FREQUENCY DRIVE
VOLTS	VOLTAGE
W	WIDE
WB	WET BULB
WC	WATER COLUMN
WG	WATER GAGE
WMS	WIRE MESH SCREEN
WPD	WATER PRESSURE DROP
XT	EXPANSION TANK

BID DOCUMENTS

**AECOM**  
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 PHONE: 410-785-7220

PROFESSIONAL CERTIFICATION  
 \*I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
 LICENSE NUMBER: 52561  
 EXPIRATION DATE: MAY 31, 2024



ANNE ARUNDEL COUNTY - DEPARTMENT OF PUBLIC WORKS					
BACON RIDGE/FORNEY NATURAL AREA DEER SUPPORT BUILDING					
REVISED	APPROVED	DATE	APPROVED	DATE	SCALE: AS NOTED
DATE	BY		DATE		MECHANICAL AND PLUMBING LEGEND AND ABBREVIATIONS
	CHIEF ENGINEER		PROJECT MANAGER		CHECKED BY: JNG
	APPROVED	DATE	APPROVED	DATE	SHEET NO. 68 OF 77
	ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY		PROJECT NO.
					CONTRACT NO.

M001



**PLUMBING GENERAL NOTES**

1. COORDINATE EXACT REQUIREMENTS AND LOCATION OF WORK WITH THE WORK OF OTHER TRADES PRIOR TO FABRICATION. PROVIDE ADDITIONAL OFF SETS AND SECTIONS OF PIPING AS MAY BE REQUIRED TO MEET THE APPLICABLE JOB CONDITION REQUIREMENTS. VERIFY JOB-SITE ELEVATIONS, DIMENSIONS, AND CONDITIONS, PRIOR TO FABRICATION OR INSTALLATION OF THE WORK. COORDINATE EXACT ROUTING OF PIPING WITH OTHER TRADES SO THAT NO CONFLICTS OCCUR WITH DUCTWORK, PIPING, LIGHTS, STRUCTURE, ETC.
2. ALL FLOOR PENETRATIONS TO BE SEALED WATER TIGHT AND COMPLETELY PACKED WITH SEALANT OR FIRE STOP MATERIAL WHERE APPLICABLE BY TRADE CONTRACTORS.
3. PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE SYSTEMS AS INDICATED ON THE DRAWINGS AND SPECIFICATIONS. INCLUDE ALL NECESSARY AND APPLICABLE APPURTENANCES, WHETHER INDICATED OR NOT.
4. INSTALL ALL WORK TO COMPLY WITH ALL LAWS, REGULATIONS, CODES AND STANDARDS (FEDERAL, STATE, AND LOCAL), AS ADOPTED BY THE AGENCIES HAVING JURISDICTION, INCLUDING REASONABLY ANTICIPATED REVISIONS BASED ON EMERGING TRENDS IN BUILDING REGULATIONS. WHERE ANY OF THESE DIFFER, THE MOST STRINGENT SHALL APPLY.
5. COORDINATE THE LOCATION OF ALL UTILITY CONNECTION POINTS, FLOOR DRAINS AND HUB DRAINS FOR EQUIPMENT WITH OTHER TRADES.
6. PROVIDE A LINE SIZED SHUT-OFF VALVE IN ALL HOT AND COLD WATER BRANCHES SERVING PLUMBING FIXTURES OR EQUIPMENT.
7. ALL INDICATED PIPING PENETRATIONS THRU COUNTERTOPS BY PLUMBING CONTRACTOR. PROVIDE CHROME PLATED ESCUTCHEON.
8. PROVIDE A WATER HAMMER ARRESTOR ON HOT AND COLD WATER LINES AT ENDS OF MAINS, AT ENDS OF BRANCH LINES, AT END OF LINES SERVING GROUPS OF PLUMBING FIXTURES AND FOR ALL QUICK CLOSING VALVES. SIZE AND INSTALL ARRESTORS AS RECOMMENDED BY PDI W11-2011 TO ELIMINATE WATER HAMMER. INSTALL WHERE ACCESSIBLE FOR SERVICE AND PROVIDE ISOLATION VALVE AND ACCESS DOOR IF REQUIRED.
9. THE CONTRACTOR IS RESPONSIBLE FOR FIRESTOPPING AT ALL PLUMBING RELATED PENETRATIONS OF FIRE, SMOKE AND OTHER RATED STRUCTURES, INCLUDING FLOORS, WALLS, PARTITIONS, ETC. REFER TO ARCHITECTURAL DOCUMENTATION FOR LOCATIONS OF ALL RATED STRUCTURES, AND SPECIFIC INFORMATION AND REQUIREMENTS PERTAINING TO SAME.
10. LAYOUT AND INSTALLATION OF PIPING, EQUIPMENT AND APPURTENANCES INDICATED ON PLAN IS SCHEMATIC IN NATURE. EXACT LOCATION, ROUTING AND INSTALLATION TO BE COORDINATED WITH BUILDING STRUCTURES AND ALL OTHER TRADES.
11. UNLESS INDICATED OTHERWISE, ALL FIXTURES AND EQUIPMENT PROVIDED WITH PLUMBING SUPPLY PIPING TO BE FURNISHED WITH APPROVED/LISTED STOPS IN ACCESSIBLE LOCATIONS.
12. UNLESS INDICATED OTHERWISE BY THE ARCHITECTURAL DOCUMENTATION (WHICH SHALL TAKE PRECEDENCE), PLUMBING FIXTURES AND EQUIPMENT MOUNTING HEIGHTS SHALL BE AS INDICATED ON PLUMBING SCHEDULES.
13. PLUMBING PIPING IS NOT PERMITTED TO RUN ABOVE ANY ELECTRICAL SWITCH GEAR, MOTOR CONTROL CENTERS OR PANELS (INCLUDING ACCESS/CLEARANCE SPACE 42" WIDE), UNDER ANY IN FRONT OF THESE ITEMS, AND MIN 30 CIRCUMSTANCES. LOCATION OF NEW ITEMS OF THESE TYPES TO BE DETERMINED AND CONFIRMED FROM INDICATION BY THE PROJECT ELECTRICAL DOCUMENTATION, AND ACTUAL INSTALLATION CONFIRMED WITH THE ELECTRICAL CONTRACTOR PRIOR TO START OF WORK.
14. THE MINIMUM SIZES OF SANITARY, VENT AND WATER BRANCH PIPING TO SINGLE FIXTURES SHALL BE AS SCHEDULED IN THE PLUMBING FIXTURE SCHEDULE.
15. CONTRACTOR TO PROVIDE MISCELLANEOUS STEEL AS REQUIRED TO SUPPORT EQUIPMENT AND ASSOCIATED COMPONENTS SUCH AS CONTROL PANELS, TANKS, VALVES, PIPING, VARIABLE SPEED DRIVES, ETC. MISCELLANEOUS STEEL TO CONSIST OF GALVANIZED STRUT, ANGLE IRON, CHANNELS OR OTHER STANDARD GALVANIZED STEEL ELEMENTS. ALL WELDED CONNECTIONS TO BE GROUND AND COLD GALVANIZED IN THE FIELD.
16. PROVIDE BACKFLOW PREVENTER OR VACUUM BREAKER IN DOMESTIC WATER LINES, WHERE BACKFLOW OR BACK PRESSURE MAY OCCUR, AS REQUIRED BY THE STATE OR LOCAL JURISDICTION. EQUIPMENT SUCH AS STERILIZERS, COFFEE MAKERS, WASHERS/DISINFECTORS, ULTRASONIC CLEANERS, CARBONATED VENDING MACHINES, ICE MAKERS, SHOWER MIXING VALVES WITH HOSES, HOSE BIBBS AND WALL HYDRANTS ARE TO INCLUDE BACKFLOW PREVENTION DEVICES IN THE WATER LINES THAT SERVE THEM.
17. ALL SANITARY VENT LINES ARE TO TAKE OFF FROM SANITARY WASTE BRANCHES AT A MINIMUM OF 45 DEGREE RISE OFF TOP OF PIPE.
18. PROVIDE SHUT-OFF BALL VALVE IN WATER LINES SERVING TRAP PRIMER DISTRIBUTION UNITS, BALANCING VALVES AND WATER HAMMER ARRESTORS.
19. PROVIDE ACCESS PANEL IN WALLS AND DRYWALL CEILINGS TO ACCESS VALVES.

**MECHANICAL GENERAL NOTES**

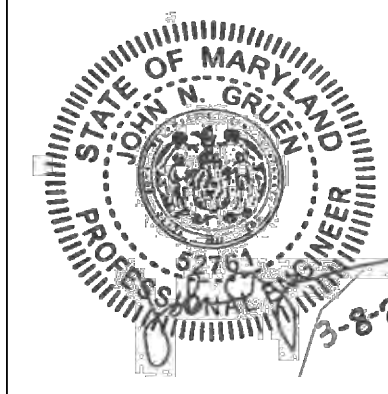
1. COORDINATE LOCATION OF ALL EQUIPMENT, PIPING, DUCTWORK, ETC. WITH THE OTHER BUILDING TRADES. ALL MECHANICAL ITEMS SHALL BE INSTALLED PER LOCAL, STATE, AND FEDERAL CODES, AS WELL AS PER MANUFACTURER'S INSTRUCTIONS. CONTRACTOR SHALL TAKE SPECIAL CARE TO ENSURE ALL CLEARANCES ARE MAINTAINED FOR PROPER ACCESS AND MAINTENANCE OF THE EQUIPMENT.
2. PROVIDE COORDINATION DRAWINGS SHOWING ALL PROPOSED DUCTWORK, PIPING, EQUIPMENT, TERMINAL BOXES, DIFFUSERS, SPRINKLER SYSTEM, ETC. COORDINATED WITH LIGHTS, BUILDING STRUCTURE, CEILING AND OTHER RELATED ELEMENTS.
3. WHERE THE CONTRACTOR SUBMITS EQUIPMENT OTHER THAN THAT SCHEDULED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT ALL ELECTRICAL POWER, PIPING CONNECTIONS, DUCTWORK CONNECTIONS, AND OTHER ASSOCIATED ITEMS ARE COORDINATED. NO ADDITIONAL COSTS WILL BE ALLOWED FOR NECESSARY CHANGES TO FURNISH AND INSTALL THE SUBMITTED EQUIPMENT.
4. PROVIDE ANCHORS AND EXPANSION LOOPS AND/OR DEVICES AS NECESSARY FOR PIPING SYSTEMS SUBJECT TO EXPANSION AND CONTRACTION.
5. PROVIDE VIBRATION ISOLATORS FOR ALL MOVING EQUIPMENT PER MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.
6. UNLESS OTHERWISE NOTED, ALL ISOLATION VALVES SHALL BE THE SAME SIZE AS THE PIPE THEY ARE INSTALLED IN.
7. PROVIDE ISOLATION VALVES AT ALL NEW EQUIPMENT, PLUMBING FIXTURES, AND ON BRANCH PIPES AT CONNECTIONS TO MAINS WHERE BRANCH PIPES SERVE MORE THAN THREE (3) PIECES OF EQUIPMENT OR FIXTURES.
8. ALL EXPOSED STEEL PIPING AND EQUIPMENT SUPPORTS SHALL BE PAINTED IN THE FIELD. PROVIDE MINIMUM TWO COATS OF PRIMER AND TWO COATS OF EPOXY FINISH, WITH COLOR(S) SELECTED BY THE ARCHITECT/ENGINEER.
9. PROVIDE MANUAL AIR VENTS AT ALL HIGH POINTS IN ALL PIPING SYSTEMS. PROVIDE DRAINS AT ALL LOW POINTS IN ALL PIPING SYSTEMS. PROVIDE AUTOMATIC AIR VENTS AT LOCATIONS INDICATED ON THE PLANS.
10. PROVIDE STRAINERS BEFORE ALL CONTROL VALVES AND/OR COILS, PUMPS AND BOILERS.
11. PROVIDE FLEXIBLE PIPE CONNECTIONS AT ALL PUMPS, AIR COMPRESSORS, AND AT OTHER EQUIPMENT THAT MOVES.
12. WHERE EQUIPMENT AND OTHER ITEMS SUCH AS ISOLATION VALVES, DRAIN VALVES, STRAINERS, CONTROL VALVES, FANS, PUMPS, VOLUME DAMPERS, FIRE DAMPERS, SMOKE DAMPERS AND DUCT SMOKE DETECTORS ARE LOCATED ABOVE NON-ACCESSIBLE CEILINGS (SUCH AS PLASTER AND GYPSUM BOARD CEILINGS), PROVIDE ACCESS PANELS FOR MAINTENANCE AS WELL AS REPLACEMENT OF THE ITEMS. COORDINATE LOCATIONS OF THESE ACCESS PANELS WITH THE REFLECTED CEILING COORDINATION SHOP DRAWING PLANS. UNLESS OTHERWISE NOTED, PROVIDE ALUMINUM AND/OR STEEL ACCESS PANELS (FIRE RATED WHEN REQUIRED) IN COLORS APPROVED BY THE ARCHITECT/ENGINEER. UNLESS OTHERWISE NOTED ON THE PLANS, PROVIDE ACCESS PANELS OF THE FOLLOWING SIZES:
  - 12.1. 12 INCHES BY 12 INCHES FOR VALVES 2-INCHES AND SMALLER
  - 12.2. 18 INCHES BY 18 INCHES FOR VALVES 6-INCHES AND SMALLER, MANUAL VOLUME DAMPERS, SMALL CIRCULATING PUMPS, SMALL FANS, SMALL FIRE DAMPERS
  - 12.3. 24 INCHES BY 24 INCHES FOR VALVES 12 INCHES AND SMALLER, VAV BOXES, PUMPS, AND FANS
  - 12.4. 36 INCHES BY 36 INCHES FOR LARGE VALVES, LARGE VAV BOXES, AND LARGER FANS.
13. UNLESS OTHERWISE NOTED, ALL MECHANICAL SYSTEMS SHALL BE TESTED AND BALANCED PER AABC OR NEBB REQUIREMENTS.
14. DISCREPANCIES BETWEEN CONTRACT DOCUMENTS: THE CONTRACTOR AND SUB-CONTRACTORS SHALL REVIEW MECHANICAL DRAWINGS, SPECIFICATIONS AND RELATED CODES PRIOR TO BID OF THE PROJECT. REQUEST FOR CLARIFICATIONS AND INFORMATION SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO BID. AFTER AWARDING THE CONTRACT, DISCREPANCIES WILL BE CLARIFIED BY THE ENGINEER AND THE CONTRACTOR SHALL ACCEPT THE MOST STRINGENT CASE, IF SELECTED BY THE ENGINEER, AT NO ADDITIONAL COST TO THE CLIENT
15. COORDINATION: THE CONTRACTOR AND SUB-CONTRACTORS SHALL REVIEW AND COORDINATE MECHANICAL DOCUMENTS IN DETAIL WITH OTHER TRADES PRIOR TO BID AND SUBMIT REQUEST FOR INFORMATION OR CLARIFICATIONS TO THE ENGINEER. AFTER AWARDING THE CONTRACT, THIS SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAKE ADJUSTMENTS AND MODIFICATIONS TO MECHANICAL SYSTEMS PER ENGINEER DIRECTION AT NO ADDITIONAL COST TO THE CLIENT.
16. ALL WORK ASSOCIATED WITH THE ROOF SHALL BE PER ROOFING MANUFACTURER'S REQUIREMENTS SO AS TO MAINTAIN EXISTING ROOF WARRANTY.

BID DOCUMENTS



AECOM  
4 NORTH PARK DRIVE  
SUITE 300  
HUNT VALLEY, MARYLAND 21030  
PHONE: 410-785-7220

**PROFESSIONAL CERTIFICATION**  
\*I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
LICENSE NUMBER: 52181  
EXPIRATION DATE: MAY 31, 2024



ANNE ARUNDEL COUNTY - DEPARTMENT OF PUBLIC WORKS							
BACON RIDGE/FORNEY NATURAL AREA DEER SUPPORT BUILDING							
REVISED	APPROVED	DATE	APPROVED	DATE	SCALE: AS NOTED	MECHANICAL AND PLUMBING GENERAL NOTES	
DATE	BY				CHECKED BY: JNG		
	CHIEF ENGINEER		PROJECT MANAGER		SHEET NO. 69 OF 77		
	APPROVED	DATE	APPROVED	DATE	PROJECT NO.		
	ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY		CONTRACT NO.		

M002



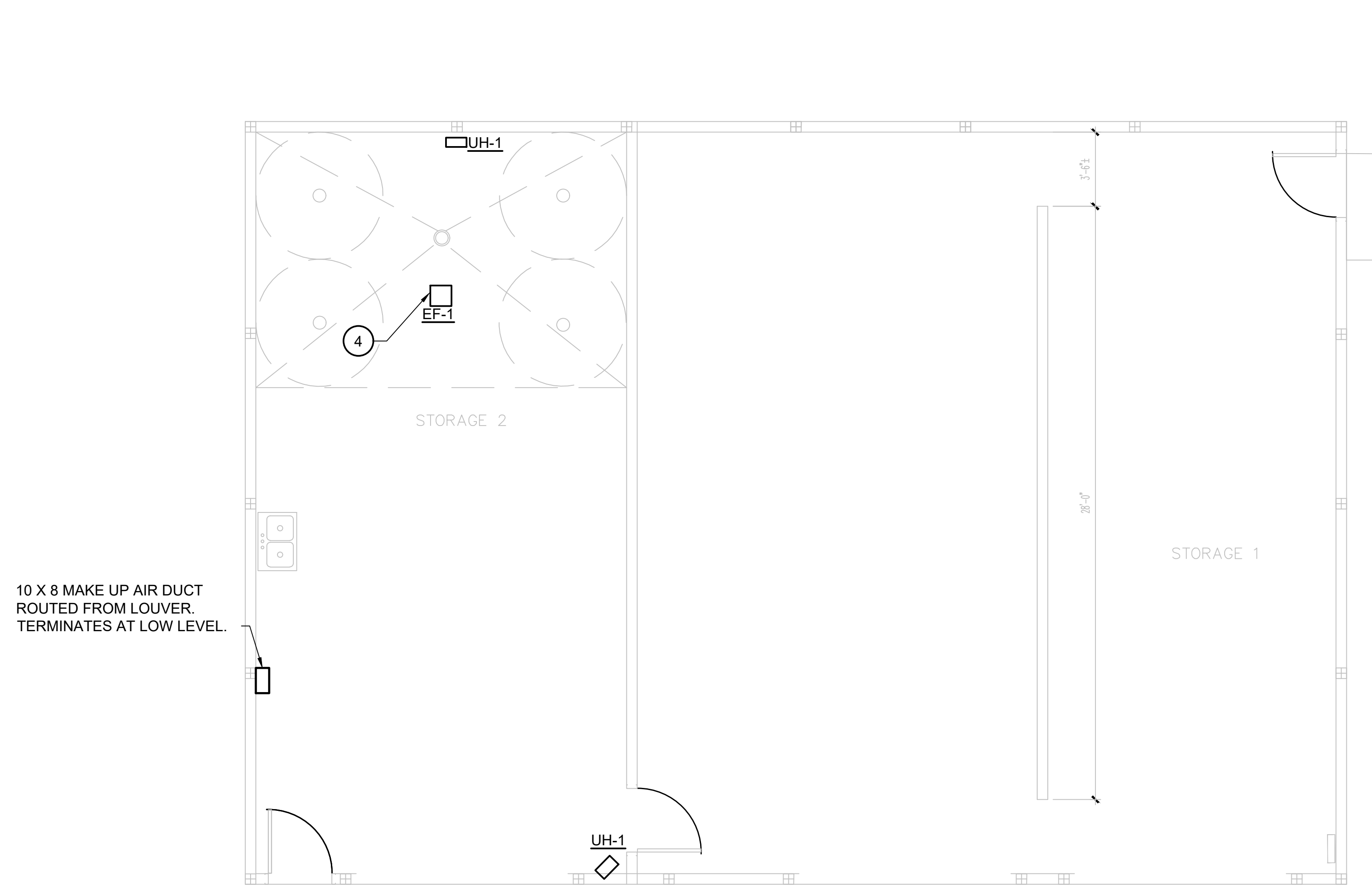
KEY NOTES:

1. 4" SANITARY, INVERT 140.0 @ 5' FROM FACE OF BUILDING. REFER TO CIVIL DRAWINGS FOR CONTINUATION.

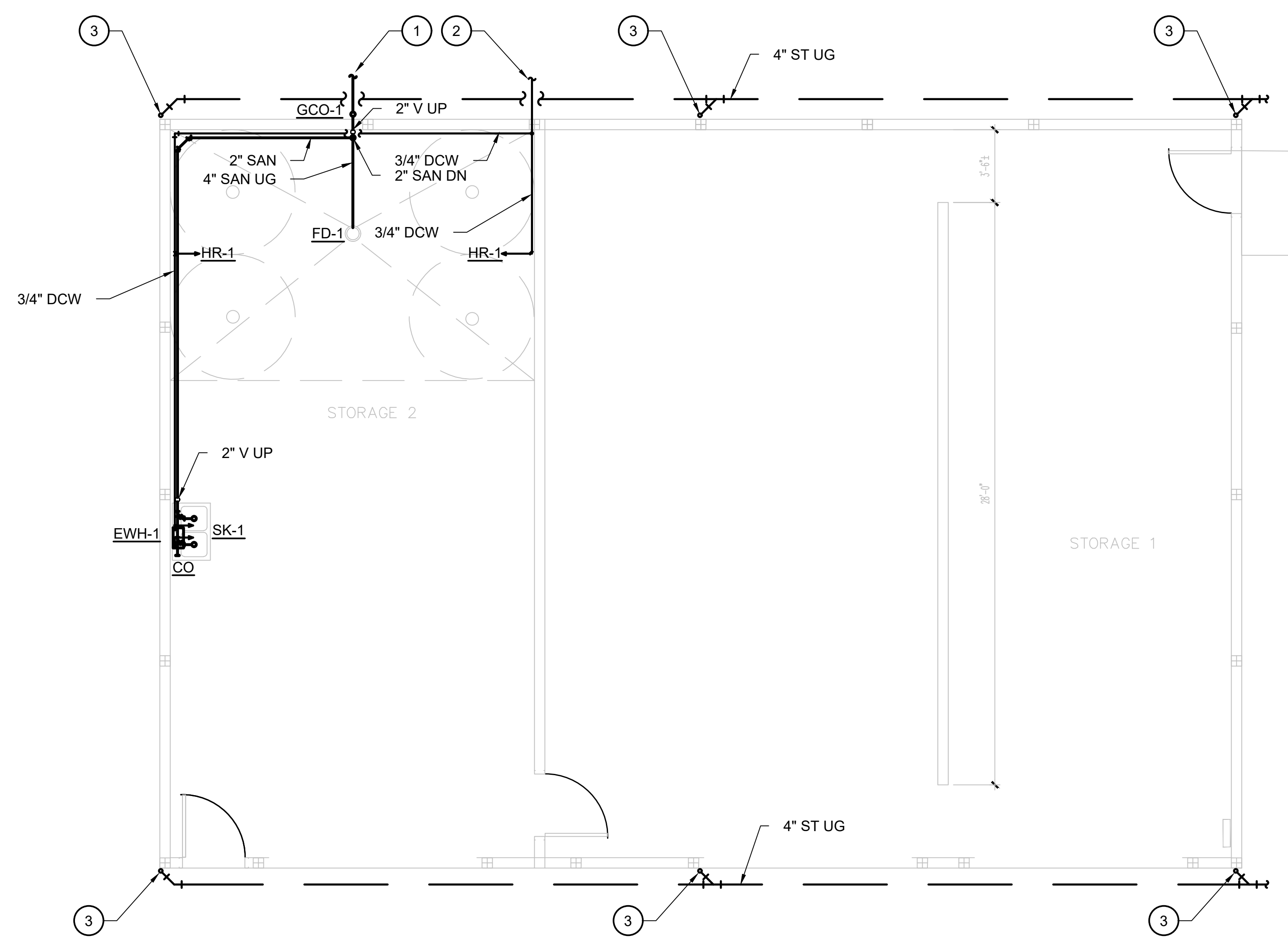
2. INCOMING 1" DOMESTIC COLD WATER. REFER TO CIVIL FOR CONTINUATION AND SHEET M501 FOR CONNECTION DETAILS WITHIN EXISTING RANGER STATION.

3. DOWNSPOUT FROM ROOF, MIN DIMS 2"X2" DROPS FROM GUTTER ABOVE TO BELOW. DOWNSPOUT CONNECTS TO BOOT, COMPLETE WITH CLEANOUT AND CONNECTS TO BELOW GRADE STORM PIPE.

4. CEILING MOUNTED EXHAUST FAN DISCHARGE ROUTE TO CUPULA. REFER TO SHEET M301 FOR DETAILS.



1 DEER SUPPORT BUILDING - MECHANICAL PLAN  
M-101 SCALE: 1/4" = 1'-0"



2 DEER SUPPORT BUILDING - PLUMBING PLAN  
M-101 SCALE: 1/4" = 1'-0"

BID DOCUMENTS



AECOM  
4 NORTH PARK DRIVE  
SUITE 300  
HUNT VALLEY, MARYLAND 21030  
PHONE: 410-785-7220

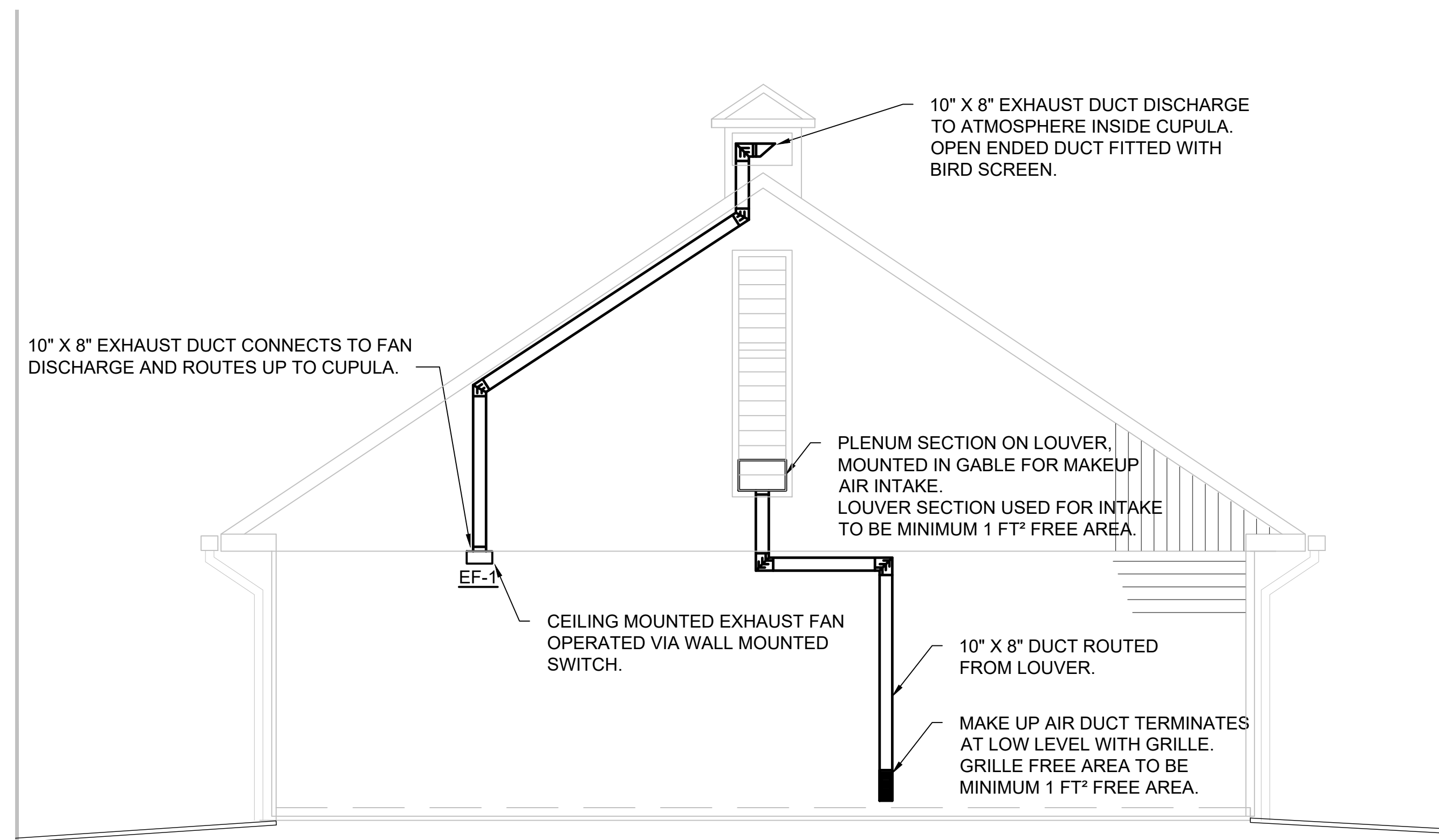
PROFESSIONAL CERTIFICATION  
\*I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
LICENSE NUMBER: 52751  
EXPIRATION DATE: MAY 31, 2024



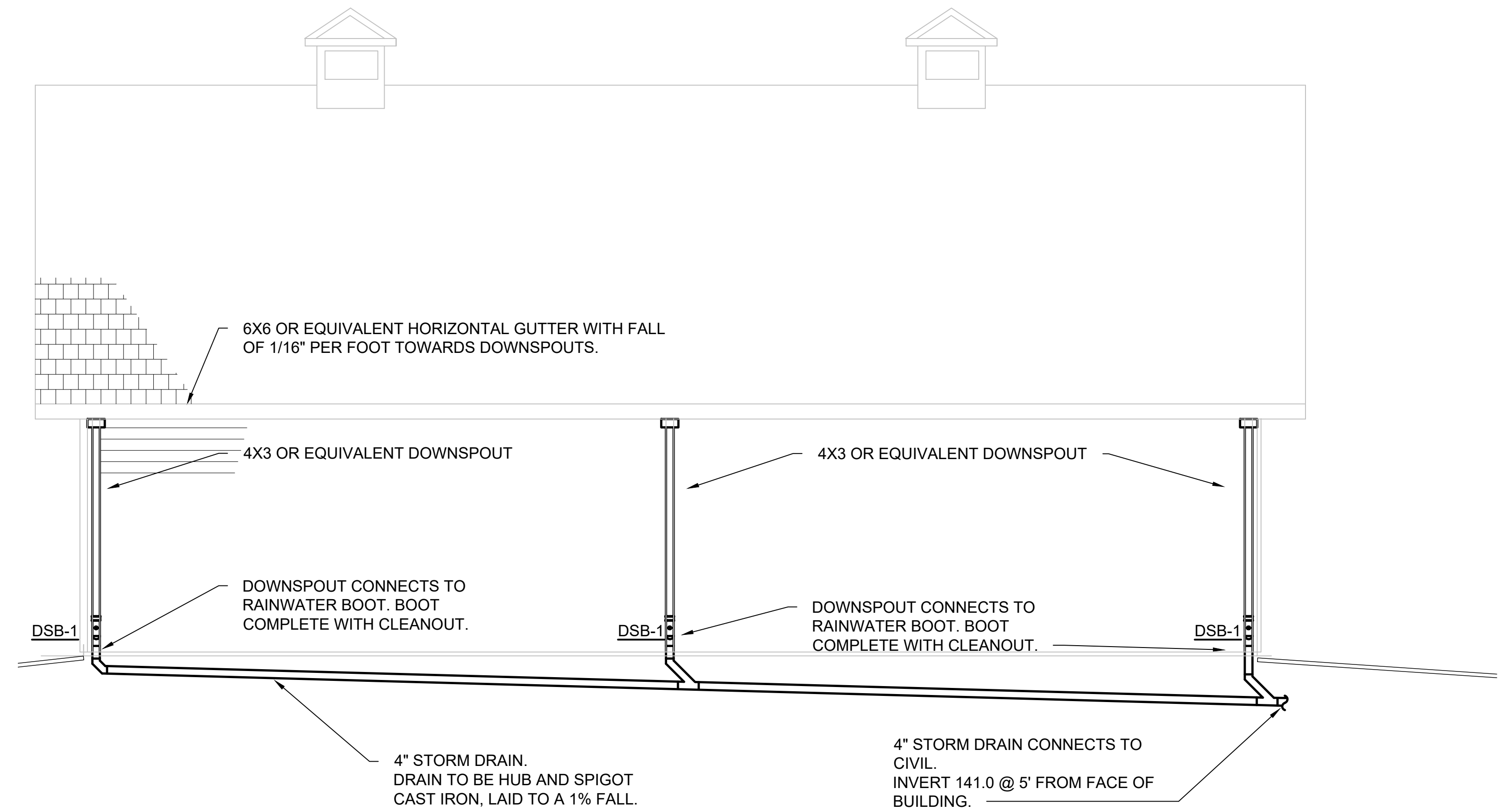
ANNE ARUNDEL COUNTY - DEPARTMENT OF PUBLIC WORKS							
BACON RIDGE/FORNEY NATURAL AREA DEER SUPPORT BUILDING							
REVISED	DATE	BY	APPROVED	DATE	APPROVED	DATE	SCALE: AS NOTED
			CHIEF ENGINEER		PROJECT MANAGER		CHECKED BY: JNG
			APPROVED	DATE	APPROVED	DATE	SHEET NO. 70 OF 77
			ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY		PROJECT NO.
							CONTRACT NO.

M101

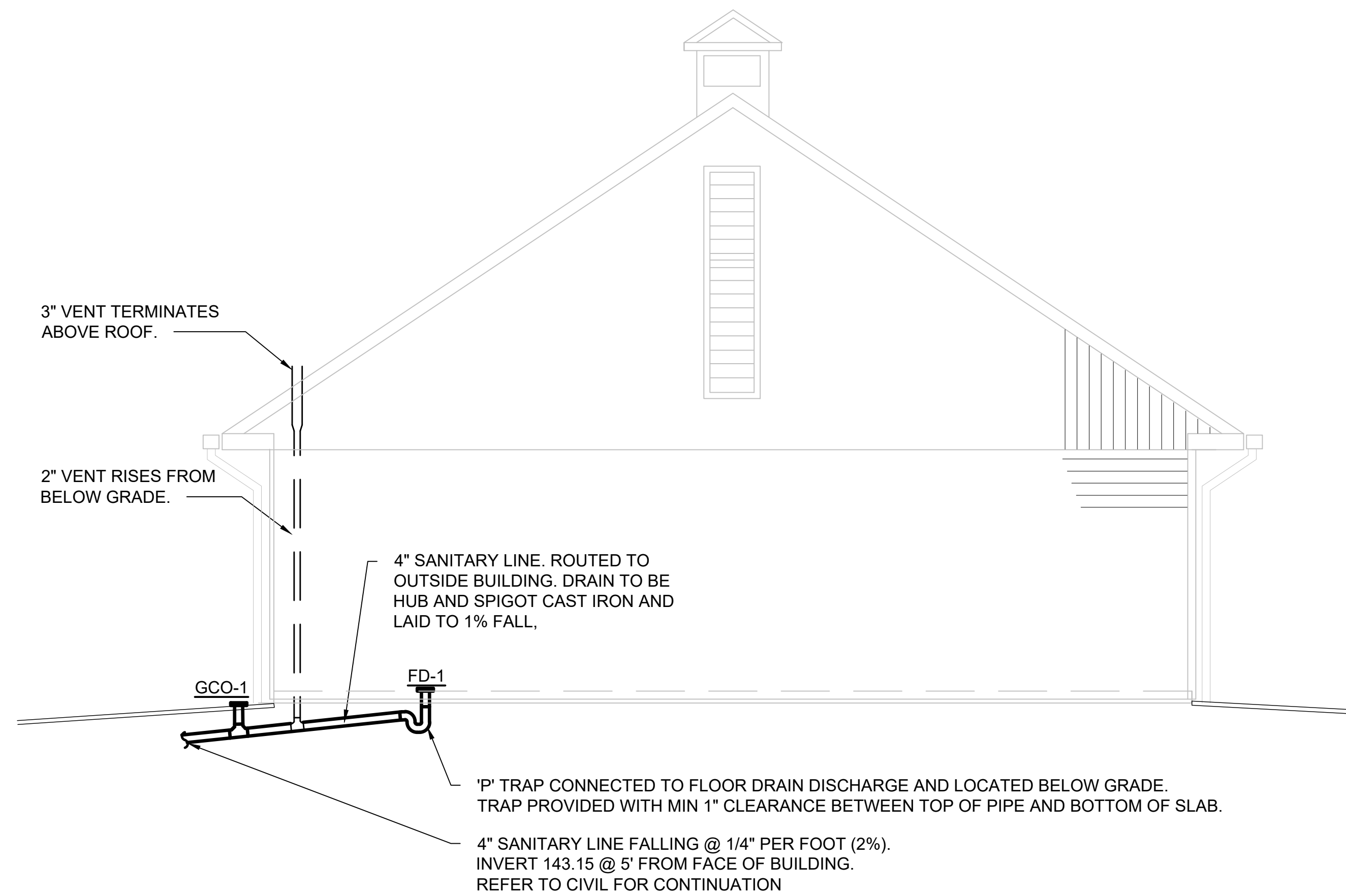




**1 DEER SUPPORT BUILDING - MECHANICAL SECTION**  
M-301 SCALE: 1/4" = 1'-0"



**2 DEER SUPPORT BUILDING - PLUMBING ELEVATIONS**  
M-301 SCALE: 1/4" = 1'-0"



**3 DEER SUPPORT BUILDING - PLUMBING SECTION**  
M-301 SCALE: 1/4" = 1'-0"

BID DOCUMENTS



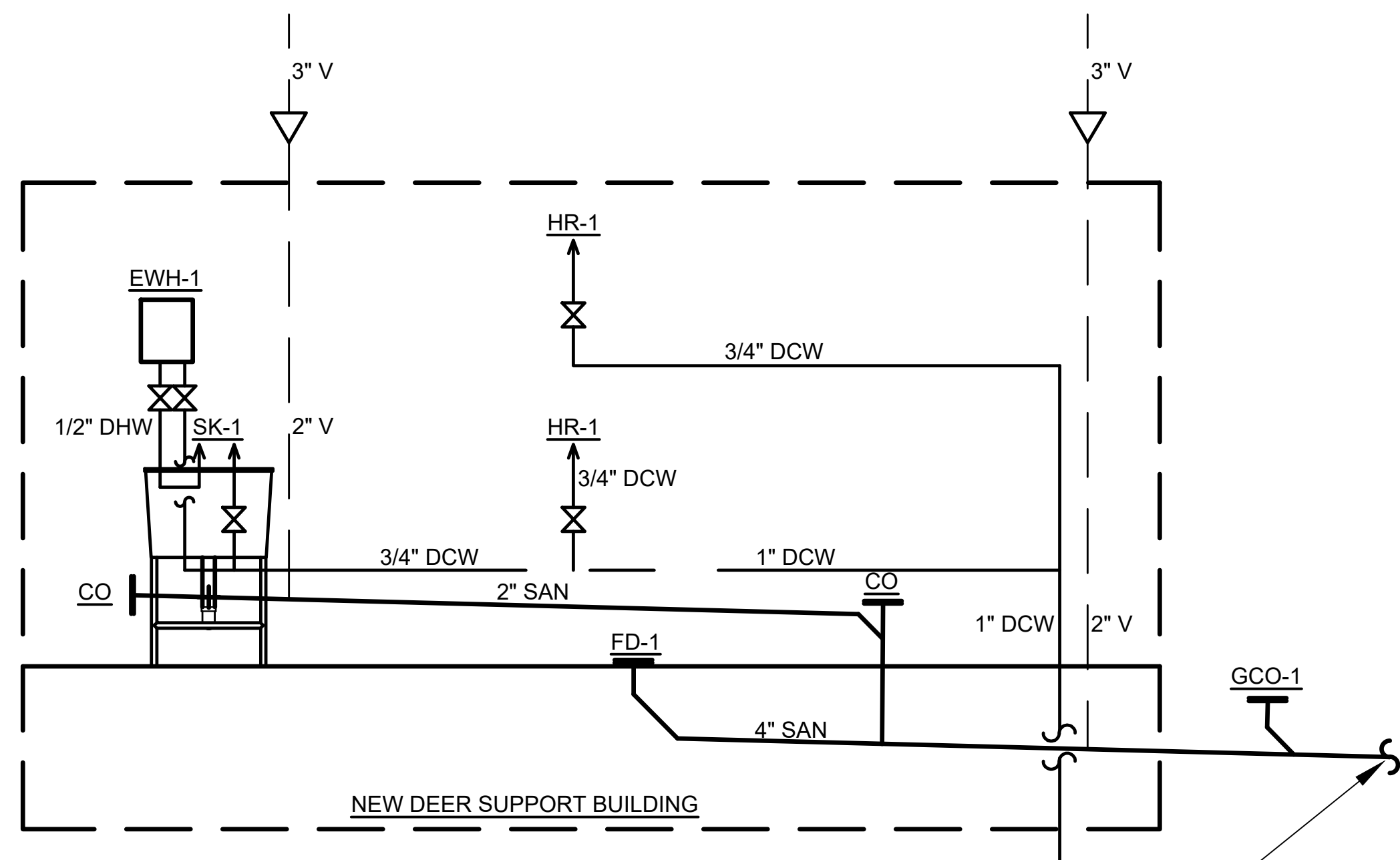
AECOM  
4 NORTH PARK DRIVE  
SUITE 300  
HUNT VALLEY, MARYLAND 21030  
PHONE: 410-785-7220

PROFESSIONAL CERTIFICATION  
\*I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
LICENSE NUMBER: 52781  
EXPIRATION DATE: MAY 31, 2024



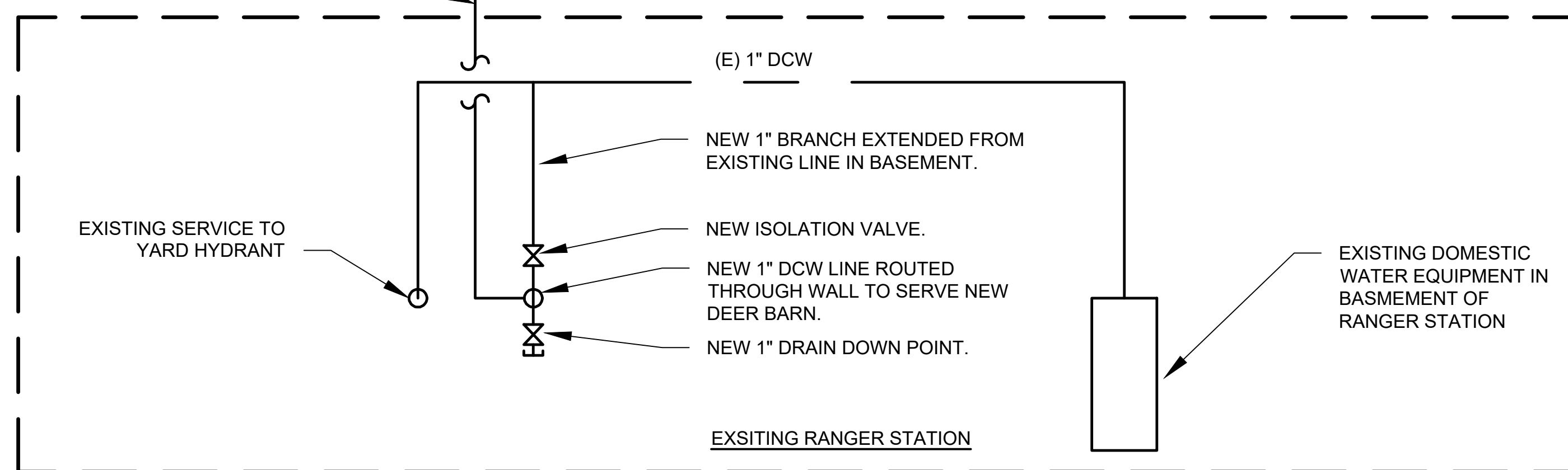
ANNE ARUNDEL COUNTY - DEPARTMENT OF PUBLIC WORKS							
BACON RIDGE/FORNEY NATURAL AREA DEER SUPPORT BUILDING							
REVISED DATE	BY	APPROVED	DATE	APPROVED	DATE	SCALE: AS NOTED	MECHANICAL AND PLUMBING SECTIONS AND ELEVATIONS
		CHIEF ENGINEER		PROJECT MANAGER		CHECKED BY: JNG	
		APPROVED	DATE	APPROVED	DATE	SHEET NO. 71 OF 77	
		ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY		PROJECT NO. CONTRACT NO.	





NEW 1" BRANCH EXTENDED ACROSS SITE FROM RANGER STATION TO DEER SUPPORT HUT. REFER TO CIVIL SITE PLANS FOR FURTHER DETAILS.

SANITARY SEWER CONNECTS TO EXISTING SEPTIC SYSTEM. REFER TO CIVIL SITE DRAWINGS FOR FURTHER INFORMATION.



**SEQUENCE OF OPERATIONS**

THE DEER BARN IS INTENDED TO BE USED INFREQUENTLY AND NORMALLY LEFT IN THE UNOCCUPIED STATE.

UNOCCUPIED STATE:

EWH-1 IN DEER BARN IS TO BE TURNED OFF.  
ISOLATION VALVE IV-1 IS TO BE CLOSED.  
DRAIN VALVE DV-1 IS TO BE OPEN AND ALL WATER FROM SERVICE TO DEER BARN IS TO BE SAFELY DISCHARGED TO DRAIN.  
UNIT HEATERS SHALL BE DE-ENERGIZED VIA WALL SWITCH

OCCUPIED STATE:

WHEN THE DEER BARN IS INTENDED TO BE OCCUPIED, THE FOLLOWING SEQUENCE IS TO BE USED.

DRAIN VALVE DV-1 IS TO BE CLOSED.  
ISOLATION VALVE IV-1 IS TO BE OPENED  
SK-1 FAUCETS ARE TO BE OPENED AND CHECKED FOR FLOW.  
UPON CONFIRMATION OF WATER SERVICE TO THE DEER BARN, EWH-1 CAN BE ENERGIZED.  
UNIT HEATERS SHALL BE ENERGIZED VIA WALL SWITCH, AND SHALL HEAT TO 55 F (ADJ) VIA THERMOSTAT.

UNIT HEATER SCHEDULE										
DESIG.	TYPE	CAPACITY (BTU)	MOUNTING HEIGHT (FT)	ELECTRICAL					BASIS OF DESIGN	NOTES
				V	PH	HZ	A	KW		
UH-1	WALL HUNG, ELECTRIC UNIT HEATER. UNIT EQUIPPED WITH INTEGRAL MOUNTING BRACKET AND ADJUSTABLE LOUVERS TO CONTROL AIR THROW.	8,500	9	240	1	60	10.4	2.5	QMARK MWUH 5004	1,2,3
NOTES:										
1. UNIT TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS AND MINIMUM CLEARANCES.										
2. UNIT TO BE CONTROLLED VIA WALL MOUNTED SWITCH										
3. UPPER TEMPERATURE LIMIT SET TO 55 F (ADJ), CONTROLLED VIA INTEGRAL THERMOSTAT.										

EXHAUST FAN SCHEDULE										
DESIG.	TYPE	AIRFLOW (CFM)	EXTERNAL STATIC PRESSURE (IN W.C)	ELECTRICAL					BASIS OF DESIGN	NOTES
				V	PH	HZ	A	MOTOR (W)		
EF-1	CEILING MOUNTED EXHAUST FAN WITH PERMANENTLY LUBRICATED MOTOR AND BALANCED BLOWER WHEEL. UNIT TO BE GALVANIZED STEEL CONSTRUCTION, WITH 4 POINT MOUNTING CAPABILITY. UNIT TO BE PROVIDED WITH 8" X 8" DUCT CONNECTOR, COMPLETE WITH BACK DRAFT DAMPER.	450	0.375	120	1	60	2.4	155	GREENHECK SP-A510-VG	1,2
NOTES:										
1. UNIT TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.										
2. UNIT TO BE CONTROLLED VIA WALL MOUNTED TWO FUNCTION SWITCH										

ELECTRIC WATER HEATER SCHEDULE											
DESIG.	DESCRIPTION	FLOW RATE (GPM)	TEMP RISE (F)	CONNECTIONS (IN)	ELECTRICAL					BASIS OF DESIGN	NOTES
					V	PH	HZ	A	KW		
EWH-1	POINT OF USE, WALL HUNG, INSTANTANEOUS WATER HEATER. UNIT SHALL HAVE COPPER CLAD IMMERSION HEATING ELEMENT. HEATER SHALL HAVE EXTERNAL DISPLAY AND TEMPERATURE CONTROL.	1	55	2	240	1	60	33	8	EEMAX HA008240	1
NOTES:											
1. UNIT TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.											

PLUMBING FIXTURE SCHEDULE										
DESIG.	DESCRIPTION	MOUNTING HEIGHT (IN)	DCW (IN)	DHW (IN)	SAN (IN)	V (IN)	BASIS OF DESIGN		NOTES	
							MANUFACTURER	MODEL		
SK-1	FREE STANDING, DOUBLE BOWL, 18 GA 300 SERIES STAINLESS STEEL SINK COMPLETE WITH 9" BACKSPLASH, RAISED ROLL EDGE AND ADJUSTABLE FEET. 8" CENTERSET WALL MOUNTED LOW FLOW FAUCET, WITH 4" WRISTBLADE HANDLES, 1/2" INLET CONNECTIONS AND 1.5 GPM FLOW RATE.	36	1/2	1/2	2	1 1/2	ELKAY	SINK: B2C18X21X FAUCET: LK940AT14T4S	1,2	
FD-1	DUCO COATED, HEAVY DUTY, CAST IRON FLOOR DRAIN. 8" ROUND TOP, WITH SLOTTED GRATE AND 4" NO-HUB OUTLET CONNECTION.	GRADE	-	-	4	2	J.R. SMITH	2270 Y	1	
GCO-1	DUCO COATED CAST IRON CLEANOUT, WITH ROUND, HEIGHT ADJUSTABLE SCORATED SECURED CAST IRON 6" DIA COVER. SUITABLE FOR 4" PIPE WITH NO-HUB CONNECTION.	FLOOR	-	-	4	-	J.R. SMITH	4220	1	
HR-1	WALL MOUNTED SPRING RETRACTABLE, ADJUSTABLE HOSE REEL, COMPLETE WITH 25 LONG' 3/4" PVC HOSE.	48	3/4	-	-	-	REELCRAFT	7925 OLP	1	
DSB-1	CAST IRON DOWNSPOUT BOOT COMPLETE WITH CLEANOUT. BOOT 12" TALL AND TRANSITIONS 4X3 ALUMINIUM DOWNPOUT TO 4" CAST IRON BELOW GRADE STORM DRAIN.	GRADE	-	-	-	-	J.R. SMITH	1785-12	1	
NOTES:										
1. UNIT TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS										
2. MOUNTING HEIGHT TO FLOOD RIM LEVEL.										

**1** DEER SUPPORT BUILDING - CONNECTION TO EXISTING WATER SERVICE  
M-501 SCALE: NTS



AECOM  
4 NORTH PARK DRIVE  
SUITE 300  
HUNT VALLEY, MARYLAND 21030  
PHONE: 410-785-7220

PROFESSIONAL CERTIFICATION  
\*I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
LICENSE NUMBER: 03761  
EXPIRATION DATE: MAY 31, 2024



ANNE ARUNDEL COUNTY - DEPARTMENT OF PUBLIC WORKS							
BACON RIDGE/FORNEY NATURAL AREA DEER SUPPORT BUILDING							
REVISED	DATE	BY	APPROVED	DATE	APPROVED	DATE	SCALE: AS NOTED
			CHIEF ENGINEER		PROJECT MANAGER		DRAWN BY: NDG
			APPROVED	DATE	APPROVED	DATE	CHECKED BY: JNG
			ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY		SHEET NO. 72 OF 77
							MECHANICAL AND PLUMBING DETAILS AND SCHEDULES
							<b>M501</b>





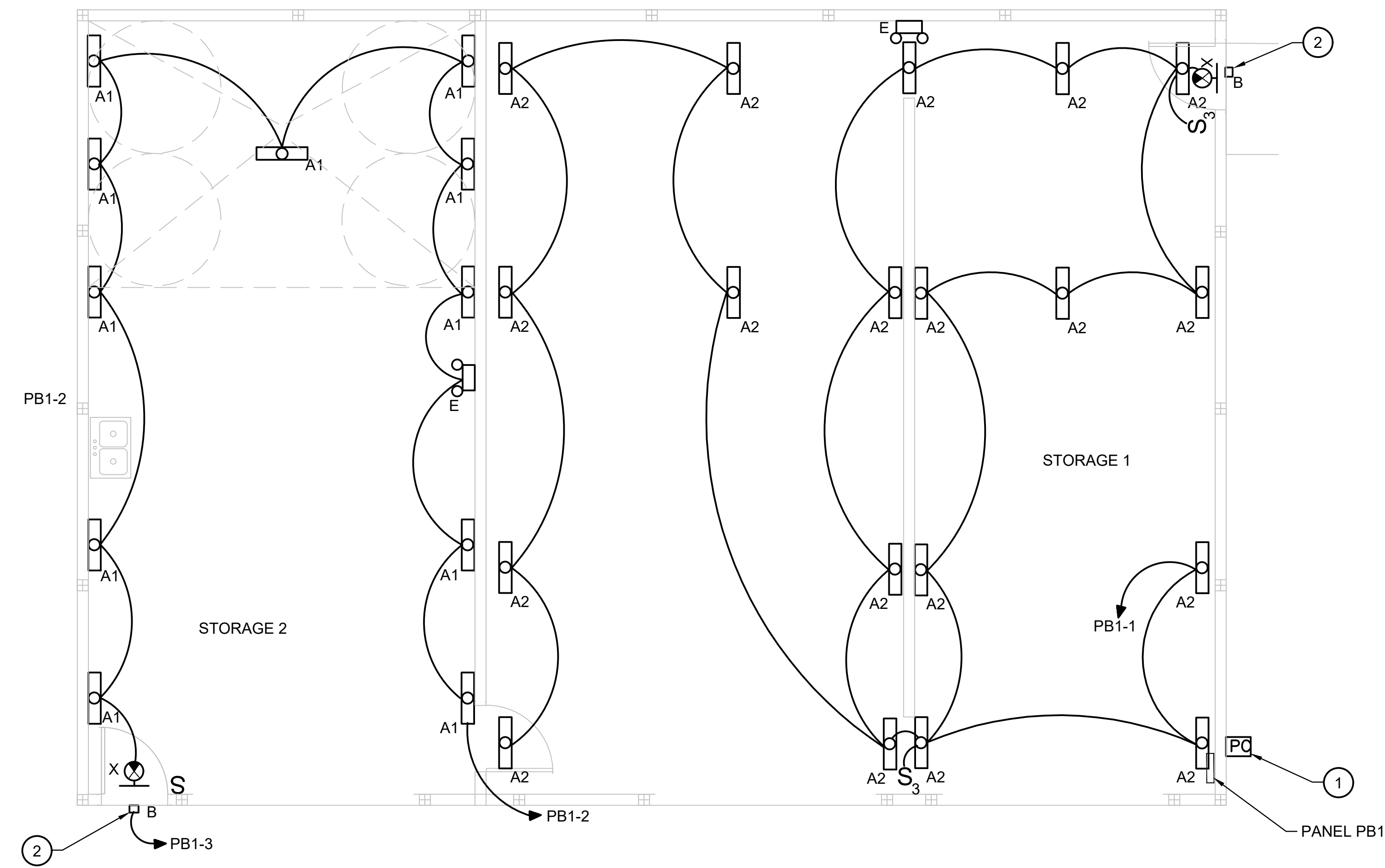


**GENERAL NOTES:**

1. REFER TO E001 FOR LEGEND, ABBREVIATION AND GENERAL NOTES.
2. REFER TO E501 FOR LIGHTING FIXTURE AND PANELBOARD SCHEDULES.
3. CONNECT EXIT AND EMERGENCY LIGHTING TO LINE SIDE OF SWITCH SERVING THAT SPACE.

**DRAWING NOTES:**

- ① PROVIDE PHOTOCELL SWITCH AT THIS LOCATION. CONNECT EXTERIOR LIGHTING VIA PHOTOCELL TO CIRCUIT INDICATED.
- ② EXTERIOR LUMINAIRES CONTROLLED VIA PHOTOCELL. REFER TO DRAWING NOTE 1.



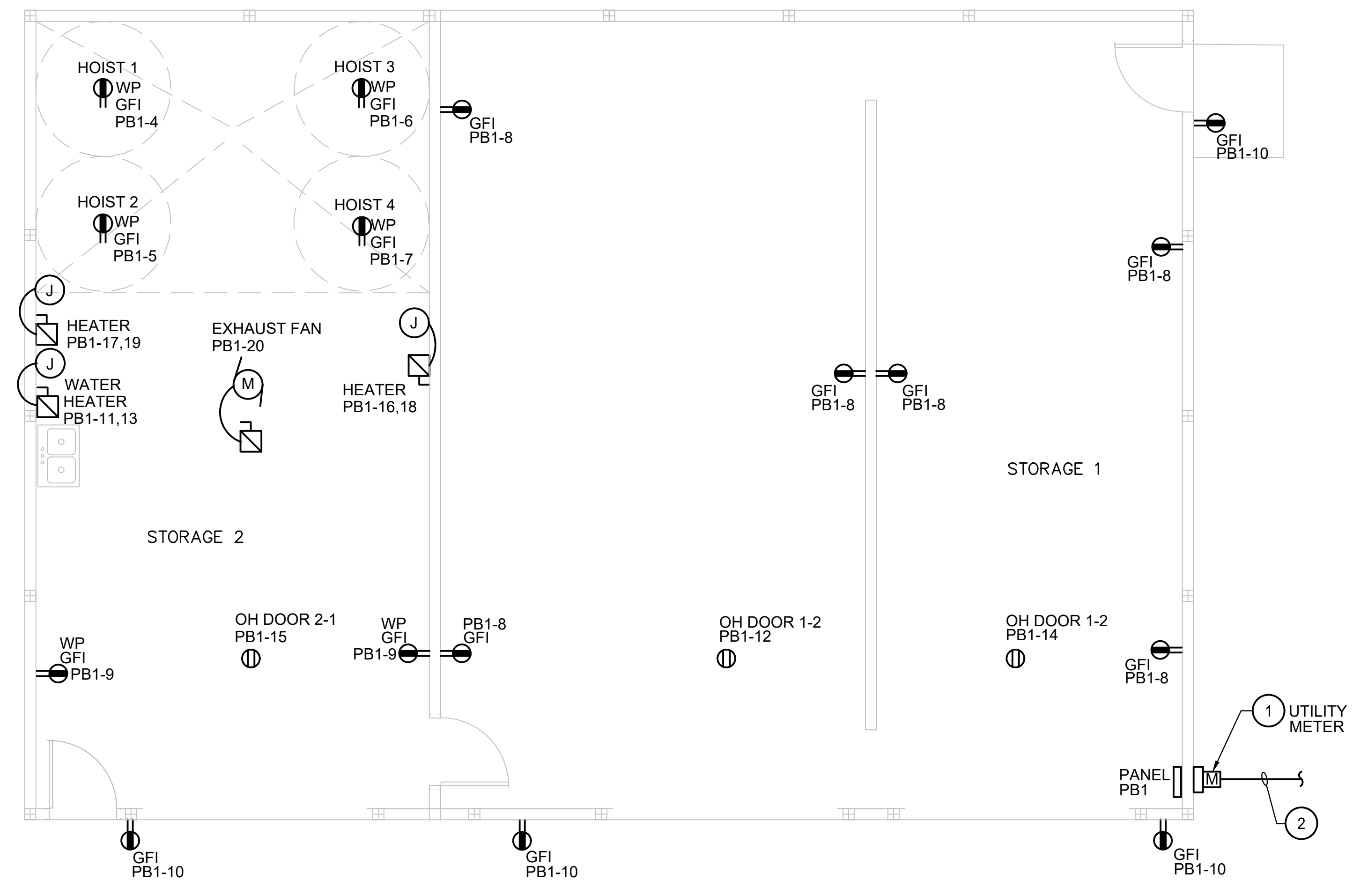
**1 ELECTRICAL LIGHTING PLAN**  
 E-101 SCALE: 1/4"=1'-0"  
 4 2 0 4 8

<p><b>AECOM</b>                  4 NORTH PARK DRIVE                  SUITE 300                  HUNT VALLEY, MARYLAND 21030                  PHONE: 410-785-7220</p>	<p><small>PROFESSIONAL CERTIFICATION</small></p> <p><small>*I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.</small></p> <p><small>LICENSE NUMBER: 38023                  EXPIRATION DATE: DECEMBER 8, 2025</small></p>		ANNE ARUNDEL COUNTY - DEPARTMENT OF PUBLIC WORKS BACON RIDGE/FORNEY NATURAL AREA DEER SUPPORT BUILDING				SCALE: AS NOTED	ELECTRICAL LIGHTING PLAN																							
			<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>REVISED DATE</th> <th>BY</th> <th>APPROVED</th> <th>DATE</th> <th>APPROVED</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	REVISED DATE	BY	APPROVED	DATE	APPROVED	DATE																						
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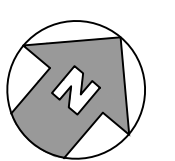


- GENERAL NOTES:**
- REFER TO E001 FOR LEGEND, ABBREVIATION AND GENERAL NOTES.
  - REFER TO E501 FOR LIGHTING FIXTURE AND PANELBOARD SCHEDULES.
  - REFER TO E100 FOR UTILITY PRIMARY, SECONDARY AND TRANSFORMER REQUIREMENTS.
  - MAKE ALL FINAL CONNECTIONS TO MOTORS, HEATERS, AND EQUIPMENT. COORDINATION LOCATION WITH WORK WITH OTHER TRADES.

- DRAWING NOTES:**
- PROVIDE METER SOCKET FOR UTILITY METER. COORDINATE WORK WITH BGE.
  - REFER TO CIVIL DRAWINGS FOR ELECTRICAL SERVICE REQUIREMENTS.

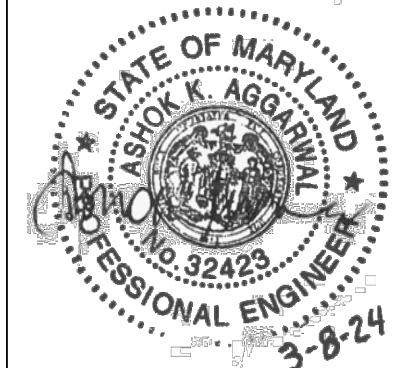


**1 ELECTRICAL POWER PLAN**  
 E-201 SCALE: 1/4"=1'-0"  
 4 2 0 4 8



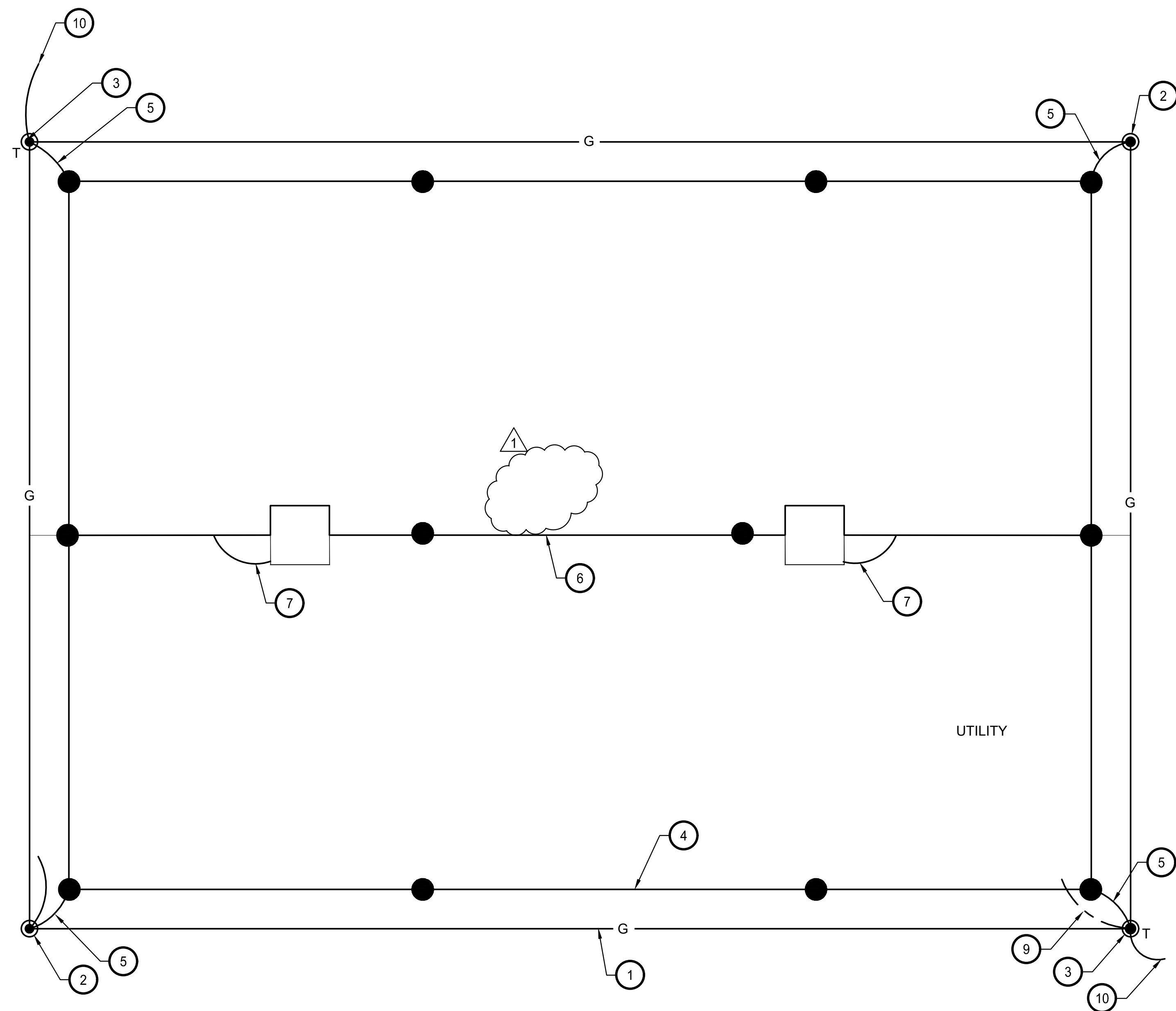
**AECOM**  
 AECOM  
 4 NORTH PARK DRIVE  
 SUITE 300  
 HUNT VALLEY, MARYLAND 21030  
 PHONE: 410-785-7220

**PROFESSIONAL CERTIFICATION**  
 \*I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
 LICENSE NUMBER: 38423  
 EXPIRATION DATE: DECEMBER 8, 2025



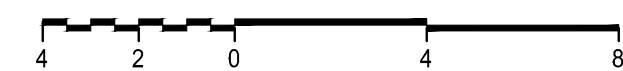
ANNE ARUNDEL COUNTY - DEPARTMENT OF PUBLIC WORKS					
BACON RIDGE/FORNEY NATURAL AREA DEER SUPPORT BUILDING					
REVISED	APPROVED	DATE	APPROVED	DATE	SCALE: AS NOTED
DATE	BY		PROJECT MANAGER		DRAWN BY: TC
	CHIEF ENGINEER				CHECKED BY: AA
	APPROVED	DATE	APPROVED	DATE	SHEET NO. 75 OF 77
	ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY		PROJECT NO.
					CONTRACT NO.





- DRAWING NOTES:**
- ① PROVIDE #3/0 AWG BARE COPPER GROUND CONDUCTOR DIRECT BURIED (TYP.)
  - ② PROVIDE GROUND ROD AT THIS LOCATION (TYP.)
  - ③ PROVIDE GROUND ROD AND TEST PIT AT THIS LOCATION (TYP.)
  - ④ PROVIDE LIGHTNING MAIN CONDUCTORS NEAR EDGE OF ROOF (TYP.)
  - ⑤ PROVIDE LIGHTNING DOWN CONDUCTORS TO GROUNDING ELECTRODE SYSTEM (TYP.)
  - ⑥ BOND TO HIGHER PORTION OF ROOF (TYP.)
  - ⑦ BOND TO METAL ROOF CUPOLA VENT (TYP.)
  - ⑧ BOND TO METAL ENCLOSURE OF EQUIPMENT (TYP.)
  - ⑨ BOND TO PANELBOARD BUS WITH #3/0 AWG.
  - ⑩ BOND TO FENCE AND GATE WHERE WITHIN 10'-0" OF BUILDING (TYP.)

① **ELECTRICAL PROTECTION AND GROUNDING PLAN**  
 E-301 SCALE: 1/4"=1'-0"



AECOM  
 4 NORTH PARK DRIVE  
 SUITE 300  
 HUNT VALLEY, MARYLAND 21030  
 PHONE: 410-785-7220

**PROFESSIONAL CERTIFICATION**  
 \*I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
 LICENSE NUMBER: 3823  
 EXPIRATION DATE: DECEMBER 8, 2025



ANNE ARUNDEL COUNTY - DEPARTMENT OF PUBLIC WORKS				BACON RIDGE/FORNEY NATURAL AREA DEER SUPPORT BUILDING		ELECTRICAL LIGHTNING PROTECTION AND GROUNDING PLAN	
REVISED	DATE	BY	APPROVED	DATE	APPROVED	DATE	SCALE: AS NOTED
	5-15-2024	JVL	CHIEF ENGINEER		PROJECT MANAGER		CHECKED BY: JL
			APPROVED	DATE	APPROVED	DATE	SHEET NO. 76 OF 77
			ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY		CONTRACT NO.



**LIGHTING FIXTURE SCHEDULE (INTERIOR)**

TYPE	SYMBOL	DESCRIPTION	MOUNTING	LUMENS	VOLT	MANUFACTURER AND CAT. NO.
A1		4'-0" LINEAR LED LIGHT WITH ENCLOSED AND GASKETED FIBERGLASS HOUSING AND LENS. PENDANT MOUNTED. WET LOCATION LISTED.	PENDANT 10'-0" AFF	3375	120	LITHONIA FEM-L24-4000LM-LPPCL-WD-120 -GZ10-30K-80CRI, STSL OR EQUAL
A2		4'-0" LINEAR LED LIGHT WITH WEATHER PROOF HOUSING AND LENS. PENDANT MOUNTED. WET LOCATION LISTED.	PENDANT 10'-0" AFF	1802	120	LITHONIA FEM-L24-2000LM-LPPCL-WD-120 -GZ10-30K-80CRI, STSL OR EQUAL
E		TWO-HEAD EMERGENCY LUMINAIRE WITH ADJUSTABLE OPTICS, 7.88"W X 2.75"D X 4.5"H, THERMOPLASTIC HOUSING, 90-MINUTE BATTERY.	SURFACE MOUNTED 7'-6" AFF	150	120	LITHONIA EU2L-M12 OR EQUAL
X		11.75" W X 2" D X 8.25" EMERGENCY EXIT SIGN WITH DIE CAST ALUMINUM HOUSING. 90-MINUTE BATTERY.	SURFACE MOUNTED 7'-6" AFF	N/A	120	LITHONIA LQC-1-R-ELN OR EQUAL

**LIGHTING FIXTURE SCHEDULE (EXTERIOR)**

TYPE	SYMBOL	DESCRIPTION	MOUNTING	LUMENS	VOLT	MANUFACTURER AND CAT. NO.
B		CONE SHAPED, 5" X 6.25" X 4". DIE-CAST ALUMINUM HOUSING. 3000K . DARK SKY COMPLIANT. WET LOCATION LISTED	WALL MOUNTED 8'-0" AFF	143	120	MAXIM MINI 1-86199BK OR EQUAL

**PANELBOARD PB1**

POLES		VOLTAGE		MOUNTING		SURFACE												
SECTION 1 OF 1		BUS 225A		LOCATION		1 PHASE 3 WIRE												
AIC 10,000		MAIN C.B. 225A		PHASE		ENCLOSURE: NEMA 12												
CKT #	BREAKER TRIP POLES	DESCRIPTION	WIRE 3 WIRE (A, B, N, EG)			PHASE KVA			DESCRIPTION	BREAKER POLES	TRIP	CKT #						
			WIRE NO.	GROUND NO.	CON SIZE	A	B	NO.					GROUND NO.	CON SIZE				
1	20A 1	Lighting Storage 1	2	12	1	12	3/4"	0.3		2	12	1	12	3/4"	Lighting Storage 2	1	20A	2
3	20A 1	Exterior Lighting	2	12	1	12	3/4"	0.1	0.7	2	12	1	12	3/4"	Storage 2 Hoist 1	1	20A	4
5	20A 1	Storage 2 Hoist 2	2	12	1	12	3/4"	0.7	0.7	2	12	1	12	3/4"	Storage 2 Hoist 3	1	20A	6
7	20A 1	Storage 2 Hoist 4	2	12	1	12	3/4"	0.7	1.1	2	12	1	12	3/4"	Storage 1 Receptacles	1	20A	8
9	20A 1	Storage 2 Receptacles	2	12	1	12	3/4"	1.1	0.7	2	12	1	12	3/4"	Exterior Receptacles	1	20A	10
11								4.0		2	12	1	12	3/4"	Garage Door 1 Operator Storage 1	1	20A	12
13	50A 2	Water Heater	2	8	2	10	3/4"	4.0		2	12	1	12	3/4"	Garage Door 1 Operator Storage 1	1	20A	14
15	20A 1	Garage Door Storage 2	2	12	1	12	3/4"		0.7	2	12	1	12	3/4"	Heating Unit 2	2	20A	16
17								1.3										18
19	20A 2	Heating Unit 1	2	12	1	12	3/4"	1.3	0.3	2	12	1	12	3/4"	Exhaust Fan			20
21																		22
23																		24
25																		26
27																		28
29																		30
								11.0	10.8									
								TOTAL CONNECTED KVA		21.8	TOTAL AMPS:		90.8					
								TOTAL DEMAND KVA		19.4	TOTAL AMPS:		80.8					

**GENERAL NOTES**

- REFER TO E001 FOR LEGEND, ABBREVIATION AND GENERAL NOTES.
- MOUNTING HEIGHT OF LUMINAIRES ARE INDICATED TO BOTTOM OF LUMINAIRE.

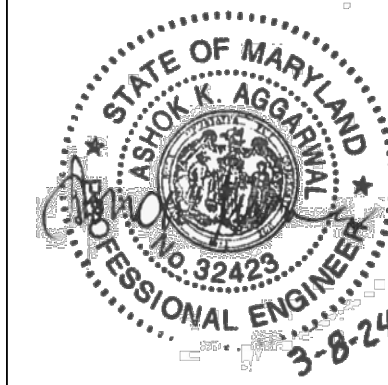
**DRAWING NOTES:**

- AVAILABLE SHORT-CIRCUIT CURRENT: 3,996 AMPERES.



AECOM  
4 NORTH PARK DRIVE  
SUITE 300  
HUNT VALLEY, MARYLAND 21030  
PHONE: 410-785-7220

PROFESSIONAL CERTIFICATION  
\*I CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
LICENSE NUMBER: 38423  
EXPIRATION DATE: DECEMBER 8, 2025



ANNE ARUNDEL COUNTY - DEPARTMENT OF PUBLIC WORKS							
BACON RIDGE/FORNEY NATURAL AREA DEER SUPPORT BUILDING							
REVISED	DATE	BY	APPROVED	DATE	APPROVED	DATE	SCALE: AS NOTED
	5-15-2024	JVL	CHIEF ENGINEER		PROJECT MANAGER		DRAWN BY: TC
			APPROVED	DATE	APPROVED	DATE	CHECKED BY: JL
			ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY		SHEET NO. 77 OF 77
						PROJECT NO.	
						CONTRACT NO.	