STANDARD RESPONSIBILITY NOTES

1. I (We) certify that:

   a. 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.

   b. 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

   c. 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.

2. 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.
3. 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.
4. The grading and sediment control approval on this plan extends only to those areas within the limits of disturbance.
5. 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.
6. 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.
7. All material shall be taken to a site with an approved sediment and erosion control plan.
8. 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.
9. Approval from the inspector must be requested on final stabilization of all sites prior to removal of sediment and erosion controls.
10. Existing topography must be field verified by responsible personnel to the satisfaction of the sediment control inspector prior to commencing work.

Signature of Developer/Owner Date

Name (Print):

Title:

Affiliation:

Address:

Telephone Number:

Email Address:

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): MD P.E. License Number:

Firm Name:

Address:

STORMWATER MANAGEMENT RECORD DRAWING CERTIFICATION

THIS CERTIFIES TO THE BEST OF MY PROFESSIONAL BELIEF AND KNOWLEDGE, THE APPROVED S.W.M. SYSTEM(S) AS SHOWM 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

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

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

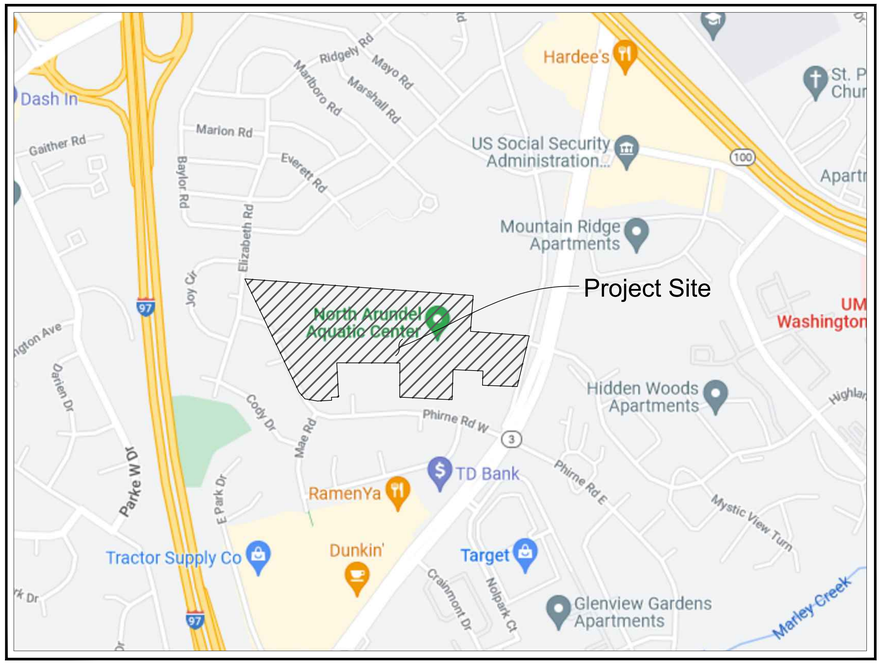
ANNE ARUNDEL COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

NORTH ARUNDEL AQUATIC CENTER

TURF FIELD AND IMPROVEMENTS

PERMIT SET

AA CO. PROJECT: P570004



VICINITY MAP

SCALE: 1" = 500'

SHEET LIST

Sheet Number	Sheet Title
1	Cover Sheet
2	General Notes
3	Overall Existing Conditions Plan
4	Site & Utility Plan
5	Existing Conditions & Demolition Plan
6	Grading Plan
7	Site Details 1
8	Site Details 2
9	Site Details 3
10	Site Details 4
11	Playground Plan
12	Erosion & Sediment Control Plan Phase 1
13	Erosion & Sediment Control Plan Phase 2
14	Erosion & Sediment Control Details
15	Erosion & Sediment Control Notes & Specifications
16	Soil Boring Logs
17	Existing Drainage Area Map
18	Proposed Drainage Area Map
19	ESD Facilities Drainage Area Map
20	ESD Facility 1 - Alternative Surface
21	ESD Facility 2 - Micro-Bioretention
22	ESD Facility 3 - Micro-Bioretention
23	ESD Facility 4 - Micro-Bioretention
24	ESD Facility 5 - Micro-Bioretention
25	ESD Facility 6 - Alternative Surface
26	ESD Facility 7 - Micro-Bioretention
27	ESD Facility 8 - Micro-Bioretention
28	ESD Facility 9 - Micro-Bioretention
29	SWM Notes & Details
30	SWM Planting Plan
31	Utility Profiles
32	Utility Profiles
33	Utility Profiles
34	Landscape Plan
35	Landscape Notes & Details
36	Forest Stand Delineation
37	Forest Conservation Plan
38	Forest Conservation Notes & Details

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 533581.9866 E 1371782.9323 ELEV. 225.5004

SITE DATA

1.	OWNER / DEVELOPER:	Anne Arundel County Dept. of Recreation and Parks 2662 Riva Road Annapolis, MD 21401 Contact: Bruce Bruchey (410) 222-2827
2.	SITE ADDRESS:	7888 Crain Highway Glen Burnie, Maryland 21061
3.	# OF EXISTING PARCELS:	1
4.	NET TRACT AREA:	24.26 AC
5.	PROJECT AREA / LOD:	± 6.64 AC (±289,323 SF)
6.	DEED REFERENCE:	9465/358
7.	TAX ACCOUNT:	90041273
8.	TAX MAP/ GRID/ PARCEL:	0015 / 0011 / 638
9.	ZONING:	OS - Open Space District
10.	WATER SERVICE AREA:	YES
11.	SEWER SERVICE AREA:	YES
12.	FEMA FIRM MAP #:	24003C0044E
13.	100 YR FLOODPLAIN:	N/A
14.	TIDAL/NONTIDAL WETLANDS:	N/A
15.	WATERSHED:	
	6-DIGIT:	021309 PATAPSCO RIVER
	8-DIGIT	02130903 BALTIMORE HARBOR
16.	THIS SITE IS NOT WITHIN THE CHESAPEAKE BAY CRITICAL AREA.	
17.	THIS SITE IS WITHIN THE BWI 4-MILE AIRPORT DISTRICT AND WITHIN THE 65-Ldn BWI AIRPORT NOISE ZONE.	
18.	EXISTING USE:	INDOOR POOL
19.	PROPOSED USE:	INDOOR POOL PLAYGROUND SPORTS FIELDS
20.	PARKING SUMMARY	
	EXISTING:	119 SPACES + 5 HC SPACES
	PROPOSED:	204 SPACES + 11 HC SPACES

SITE ANALYSIS

TOTAL SITE AREA	24.26 Acres (1,056,835 sf)
TOTAL DISTURBED AREA	6.64 Acres(289,323 sf)
TOTAL CUT	14,640± CY*
TOTAL FILL	16,400 ±CY*
AREA TO BE ROOFED OR PAVED	6.33 Acres (275,630 sf)
AREA TO BE VEGETATIVELY STABILIZED	17.93 Acres (781,205 sf)

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

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 11/14/2023, AND SUPPLEMENTED BY ANNE ARUNDEL COUNTY GIS.
- PROPERTY DATA IS FROM MARYLAND DEPARTMENT OF ASSESSMENTS AND TAXATION REAL PROPERTY DATA.
- MARYLAND COORDINATE SYSTEM (MCS)

LIMIT OF DISTURBANCE
6.64 ACRES (289,323 SF)

OUTFALL STATEMENT: SEE SHEET 2
SEQUENCE OF CONSTRUCTION: SEE SHEET 15

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

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE No.: 32603
EXPIRATION DATE: 1-18-2026

STATE OF MARYLAND · MICHAEL JOSEPH PHARO · 32603 · PROFESSIONAL ENGINEER

LICENSE NO.

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

REVISED DATE	BY

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

SCALE AS SHOWN
DRAWN BY LMV/RDT
CHECKED BY MJP
SHEET 1 OF 38
PROJECT NO.: P570004
DATE: 1/23/2025

CONSTRUCTION DOCUMENTS

Cover Sheet

North Arundel Aquatic Center

2nd Tax District Tax Map 15, Grid 11, Parcel 638
Anne Arundel Co., MD.

T:\2018\facilities\18111200\plan aquatic center\CIVIL\CADD\Drawings\3 Construction Documents\18111200194 (GD-01) Cover Sheet.dwg Jan 24, 2025 9:33am dshanahan

LEGEND

EXISTING

- Tract Boundary
- Property Line
- Easement Line
- Minor Contour (-672-)
- Major Contour (-670-)
- Edge of Paving
- Curb and Gutter
- Storm Drain (EX.15" D. SD)
- Water & Fire Hydrant (W)
- Sanitary Sewer (EX. 8" S. S) (EX.12" W.)
- Underground Electric (UGE)
- Overhead Electric (OHE)
- Cable Television (CTV)
- Gas and Valve (G EX.4" GAS (HP) G GV)
- Power/Utility Pole (BGE #542497)
- Street Light
- Utility Pole Guy Wire
- Sign
- Electric Structure
- Fence Line (X X X)
- Building
- Soils Line (GhC / MaD)
- Tree Line
- Deciduous Tree
- Evergreen Tree
- 100-Year Floodplain (FP)
- Natural Surface Trail

DEMOLITION

- Line to be Removed
- Pavement to be Removed
- Tree to be Removed

PROPOSED

- Limit of Disturbance (LOD)
- Minor Contour (672)
- Major Contour (670)
- Spot Elevation (+143.8)
- Easement Line
- Sanitary Sewer (PROP. 8" S.)
- Water and Fire Hydrant (PROP. 8" W.)
- Storm Drain (PROP. 15" D.)
- Curb & Gutter
- Asphalt Paving
- Concrete
- Building
- Chain Link Fence (X X X)
- Wall
- Natural Surface Trail
- Tree Line
- Shade Tree
- Flowering Tree
- Evergreen Tree
- Shrubs
- Perennials
- Pollinator Seed Mix

EROSION & SEDIMENT CONTROL

- Drainage Area
- Silt Fence (SF)
- Super Silt Fence (SSF)
- Super Fence Diversion (SFD)
- Silt Fence on Paving (SFOP)
- Super Silt Fence on Paved Area (SSFOP)
- Same Day Stabilization (SDS)
- Diversion Fence (DF)
- High Visibility Fence (HVF)
- Crossable Swale
- Temporary Swale
- Earth Dike (A-2)
- Perimeter Dike/Swale
- Curb Inlet Protection (CIP)
- At Grade Inlet Protection (AGIP)
- Stone Check Dam (CD)
- Temporary Gabion Outlet Structure (TGOS)
- Mountable Berm
- Stabilized Construction Entrance (SCE)
- Removable Pumping Station (RPS)
- Gabion Inflow Protection (GM)
- Rip Rap Inflow Protection (RRP)
- Rock Outlet Protection (ROP)

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.
2. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS REQUIRED BY GOVERNMENT AGENCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FROM ANNE ARUNDEL COUNTY DEPARTMENTS REQUIRED TO PERFORM THE WORK. THE CONTRACTOR SHALL POST ALL BONDS, PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK.
3. 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. THE CONTRACTOR SHALL VERIFY ALL INFORMATION BEFORE COMMENCING WORK.
4. THE CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL DATUM WITH THE SURVEYOR OF RECORD BEFORE STARTING WORK.
5. CONSTRUCTION SHALL FOLLOW THE SEQUENCE OF CONSTRUCTION ON THE APPROVED EROSION AND SEDIMENT CONTROL DRAWINGS.
6. THE CONTRACTOR SHALL MAINTAIN TRAFFIC AT ALL TIMES, IF APPLICABLE.
7. PROPER CONSTRUCTION PROCEDURES SHALL BE FOLLOWED ON ALL IMPROVEMENTS ON SITE SO AS TO PREVENT THE SILTING OF ANY WATERCOURSE OR WETLANDS IN ACCORDANCE WITH THE REGULATIONS OF MDE & AASCD GUIDELINES FOR SOIL EROSION AND SEDIMENT POLLUTION CONTROL. IN ADDITION, HEREIN, THE CONTRACTOR SHALL STRICTLY ADHERE TO THE "EROSION AND SEDIMENT CONTROL PLAN" CONTAINED. THE CONTRACTOR SHALL BE RESPONSIBLE TO POST ALL BONDS AS REQUIRED BY ANNE ARUNDEL SOIL CONSERVATION DISTRICT WHICH GUARANTEE THE PROPER IMPLEMENTATION OF THE PLAN.
8. THE CONTRACTOR SHALL MAINTAIN, REPAIR, AND/OR REPLACE ANY EXISTING SEDIMENT CONTROL DEVICES ENCOUNTERED AND DISTURBED DURING THE COURSE OF CONSTRUCTION. AT THE END OF EACH DAY, ALL MEASURES AND DEVICES SHALL BE REPAIRED OR REPLACED BEFORE LEAVING THE WORK SITE.
9. ALL FILL MATERIAL UNDER STRUCTURES AND UNDER PAVED AREAS SHALL BE "LOAD BEARING FILL" (COARSE AGGREGATE CRUSHED STONE) AND SHALL BE PLACED IN ACCORDANCE WITH THE REQUIREMENTS OF MD SHA, UNDER THE SUPERVISION OF A QUALIFIED PROFESSIONAL ENGINEER. COMPACTION SHALL BE 95% MIN MODIFIED PROCTOR DENSITY PER ASTM D1557 AT 2 PERCENT OF OPTIMUM MOISTURE CONTENT.
10. ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF REVIEWED AND APPROVED BY THE OWNER, ENGINEER, AND APPROPRIATE REGULATORY AGENCIES PRIOR TO INSTALLATION.
11. THE CONTRACTOR SHALL RESTORE ANY UTILITY STRUCTURE, PIPE, UTILITY, PAVEMENT, CURBS, SIDEWALKS OR LANDSCAPED AREAS DISTURBED DURING CONSTRUCTION TO THEIR ORIGINAL CONDITION OR BETTER.
12. TOPSOIL SHALL BE STRIPPED AND STOCKPILED FOR USE IN FINAL LANDSCAPING.
13. NUMERICALLY WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS.
14. UNLESS OTHERWISE NOTED, DIMENSIONS FROM CURB ARE MEASURED AT FACE OF CURB.
15. REFER TO THE DETAIL SHEETS FOR PAVEMENT, CURBING, AND SIDEWALK INFORMATION.
16. CONTRACTOR SHALL SAWCUT PAVEMENT WHERE UTILITIES ARE TO BE INSTALLED IN PAVEMENT.
17. ALL PIPES SHALL BE LAID ON STRAIGHT ALIGNMENTS AND EVEN GRADES USING A PIPE LASER OR OTHER APPROVED ACCURATE METHOD.
18. THE CONTRACTOR SHALL COMPACT THE PIPE AND SITE BACKFILL IN 8" LIFTS ACCORDING TO THE PIPE BEDDING DETAIL. TRENCH BOTTOM SHALL BE STABLE IN HIGH GROUND WATER AREAS. A PIPE FOUNDATION SHALL BE USED IN AREAS OF ROCK EXCAVATION.
19. CONTRACTOR IS RESPONSIBLE FOR ALL TRENCHING, BACKFILL AND PADS FOR ELECTRIC UTILITIES. THE CONTRACTOR SHALL CONTACT ANNE ARUNDEL COUNTY PUBLIC WORKS REGARDING CONNECTIONS AND CONSTRUCTION.
20. ELECTRIC, TELEPHONE, GAS, CABLE, AND LIGHTING TO BE DESIGNED BY OTHERS. WHERE THOSE FACILITIES ARE SHOWN, THEY ARE FOR COORDINATION PURPOSES ONLY.
21. CONTRACTOR SHALL VERIFY LOCATIONS AND EXISTENCE OF UTILITY SERVICES AND MAINS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT "MISS UTILITY" 1-800-257-7777 AT LEAST FIVE (5) DAYS PRIOR TO CONSTRUCTION. CONTRACTOR TO TEST PIT WHERE NECESSARY TO VERIFY EXISTING UTILITIES.
22. THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT THE FACILITIES OF THE COUNTY AND OTHER UTILITIES DURING CONSTRUCTION. EXCAVATION AND CONSTRUCTION SHALL BE PERFORMED WITH EXTREME CARE TO PREVENT DAMAGE TO FACILITIES.
23. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY SHOULD ANY DISCREPANCY REGARDING THE PROPOSED WORK OR UNFORESEEN CONDITIONS ARISE, PRIOR TO PROCEEDING FURTHER WITH THE AFFECTED WORK.
24. ALL DISTURBANCES INCURRED TO ANY ADJOINING PROPERTY DUE TO CONSTRUCTION OR DEMOLITION SHALL BE RESTORED TO THE PREVIOUS CONDITION OR BETTER, TO THE SATISFACTION OF ANNE ARUNDEL COUNTY AND/OR THE INVOLVED LAND OWNERS.
25. ANY DAMAGE DONE DURING CONSTRUCTION TO PARK FACILITIES TO BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.
26. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY WORK NOT SPECIFICALLY MENTIONED ON THE PLANS WHICH NORMALLY WOULD BE REQUIRED TO COMPLETE THE PROJECT.

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. THE CONTRACTOR SHALL NOTIFY MISS UTILITY AT 1-800-257-7777 A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND INSPECTIONS.
4. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION AND DEPTH OF ALL EXISTING UTILITIES, AS NECESSARY. REPORT ANY DISCREPANCIES FROM THE PLANS TO CENTURY ENGINEERING, LLC. THE CONTRACTOR SHALL VERIFY ALL INVERT ELEVATIONS PRIOR TO INSTALLING ANY PIPE.
5. ALL UTILITIES SHALL BE RETAINED UNLESS LABELED OTHERWISE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS AND WORK REQUIRED TO ADJUST EXISTING AND PROPOSED UTILITIES AND APPURTENANCES TO FINISHED GRADES WITHIN THE LIMITS OF WORK.
7. DAMAGE TO EXISTING CONDITIONS AND UTILITIES SHALL BE REPAIRED TO THE OWNER'S SATISFACTION AT THE EXPENSE OF THE CONTRACTOR.
8. EXISTING UTILITIES WHICH ARE NOT TO BE REMOVED OR ABANDONED SHALL REMAIN OPERATIONAL AT ALL TIMES. APPROPRIATE EXISTING UTILITIES SHALL REMAIN IN SERVICE UNTIL REPLACEMENT/RELOCATED UTILITIES ARE OPERATIONAL, UNLESS OTHERWISE NOTED.
9. THE CONTRACTOR SHALL MAINTAIN 2.0 FEET MINIMUM COVER OVER ALL UTILITIES DURING CONSTRUCTION.

NOTE:

1. ROADS TO BE SWEPT 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. CONTRACTOR SHALL VERIFY ALL INVERTS PRIOR TO INSTALLING ANY PIPE.
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.
4. UNLESS OTHERWISE NOTED, ALL WATER PIPES AND FITTINGS SHALL BE PVC SDR-14, CLASS 200, CONFORMING TO AWWA C900 WITH DIP OUTSIDE DIAMETER. PIPE SHALL BE FURNISHED WITH RUBBER GASKETED JOINTS OF EITHER THE INTEGRAL THICKENED BELL OR TWIN GASKETED COUPLING TYPE. WHERE SO NOTED, DUCTILE IRON PIPE FOR WATER MAINS SHALL BE CLASS 50 CONFORMING TO AWWA C151, WITH TYLON OR MECHANICAL JOINTS. JOINTS ON FITTINGS SHALL BE MECHANICAL JOINTS ONLY. FITTINGS SHALL CONFORM TO AWWA C110. DIP WATER PIPE AND FITTINGS SHALL BE CEMENT-LINED IN ACCORDANCE WITH AWWA C104, DOUBLE THICKNESS. LINING SHALL BE SEALED WITH A BITUMINOUS SEAL COAT. OUTSIDE SURFACE SHALL BE BITUMINOUS COATED.
5. CONCRETE BUTTRESSES ARE TO BE INSTALLED AT ALL BENDS, TEES, AND BLOWOFFS IN ACCORDANCE WITH ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS STANDARD DETAILS.
6. UNLESS OTHERWISE NOTED, ALL SEWER PIPE SHALL BE PVC SDR-35 CONFORMING TO THE REQUIREMENTS OF ASTM SPECIFICATION D-3034, TYPE PSM. PIPE FITTINGS SHALL BE MANUFACTURED WITH INTEGRALLY FORMED BELL AND SPIGOT TYPE JOINTS IN ACCORDANCE WITH ASTM D3212, ELASTOMETRIC GASKETS CONFORMING TO ASTM F477. WHERE SO NOTED, DUCTILE IRON PIPE FOR SEWERS SHALL BE CLASS 50 WITH TYLON OR MECHANICAL JOINTS, OUTSIDE SURFACES SHALL BE BITUMINOUS COATED.
7. ALL MANHOLES ARE TO BE BITUMINOUS COATED. ALL MANHOLES IN NON-PAVED AREAS SHALL HAVE WATERTIGHT COVERS IN ACCORDANCE WITH ANNE ARUNDEL COUNTY STANDARD DETAILS. FRAMES AND COVERS TO BE SET ABOVE GRADE AS NOTED AND PAINTED YELLOW.
8. ALL FIRE HYDRANTS ARE TO BE PAINTED SAFETY YELLOW AND RISER IS TO BE PAINTED GLOSS BLACK.
9. TRENCH BACKFILL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF THE MAXIMUM DRY DENSITY DETERMINED BY AASHTO METHOD T-180, METHOD C.
10. A. PRIOR TO PLACEMENT OF COMPACTED FILL, ANY SOFT OR OTHERWISE UNSUITABLE SOILS ENCOUNTERED AT OR BELOW THE PIPE INVERT SHALL BE UNDERCUT AND REMOVED FROM THE CONSTRUCTION AREA.
    B. ACCEPTABLE COMPACTED FILL SHALL BE PLACED IN SIX (6)-INCH THICK LOOSE LIFTS AND COMPACTED TO AT LEAST 98% OF THE MAXIMUM DRY DENSITY DETERMINED BY AASHTO METHOD T-180. COMPACTION TEST RESULTS CONDUCTED BY AN INDEPENDENT TESTING LAB ARE TO BE SEALED BY A REGISTERED ENGINEER AND SUBMITTED TO THE COUNTY PRIOR TO PIPE INSTALLATION.
    C. THE COMPACTED FILL SHALL BE BENCHED INTO THE EXISTING VIRGIN SLOPES WITH EACH LIFT PLACED TO ALLOW A SMOOTH TRANSITION FROM VIRGIN SOILS TO FILL SOILS.
11. MINIMUM ONE (1)-FOOT VERTICAL CLEARANCES ARE REQUIRED AT ALL UTILITY CROSSINGS.

SEQUENCE OF CONSTRUCTION

SEE SHEET 15, Erosion & Sediment Control Notes & Specifications

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 that the Project Contractor.

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

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE No.: 32603
EXPIRATION DATE: 1-18-2026

DATE:

STATE OF MARYLAND · RICHARD S. MAY · 32603 · PROFESSIONAL ENGINEER

LICENSE NO.

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

REVISED DATE	BY

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

SCALE AS SHOWN
DRAWN BY LMV/RDT
CHECKED BY MJP
SHEET 2 OF 38
PROJECT NO.: P570004
DATE: 1/23/2025

CONSTRUCTION DOCUMENTS

General Notes

North Arundel Aquatic Center

2nd Tax District Anne Arundel Co., MD.
Tax Map 15, Grid 11, Parcel 638

T:\2018\facilities\181120019a.n. aquatic center\CIVIL\CADD\Drawings\3. Construction Documents\181120019A (CD-02) General Notes.dwg Jan 24, 2025 - 11:34am dshanahan

ADJOINING PROPERTY INFORMATION:

NO.	OWNER	ADDRESS	ACCT. #	DEED
1	BOARD OF EDUCATION OF ANNE ARUNDEL COUNTY	2644 RIVA RD, ANNAPOLIS, MD 21401	0400000093211	01495/00297
2	ANNE ARUNDEL COUNTY	205 MD. RT. 3 N MILLERSVILLE, MD 21108	0400000093068	
3	LOWMAN, FLORENCE & LOWMAN, H,M.	7892 CRAIN HWY S GLEN BURNIE, MD 21061	0400003380100	02148/00418
4	KHUMAN, JAGIT	412 UNIVERSITY DR. SEVERN, MD 21144	0400090041274	28942/00108
5	YEO, STEVEN B. & YEO, URSULA M.	373 PHIRNE RD. GLEN BURNIE, MD 21061	0432305968400	03744/00567
6	SIMEONA, TALITHA	375 PHIRNE RD. GLEN BURNIE, MD 21061	0432304116500	37562/00005
7	MOCCHIA, OSCAR & MOCCHIA, MICHELLE A.	377 PHIRNE RD. GLEN BURNIE, MD 21061	0432306500980	32295/00197
8	PARCE, STEPHANIE N. PARCE, CHRISTOPHER R.	379 PHIRNE RD. GLEN BURNIE, MD 21061	0432306559410	30870/00386
9	DEVREIES, EVERETT RODENBURG DEVREIES, ABIGAIL HUFFMAN	381 PHIRNE RD. GLEN BURNIE, MD 21061	0432301272825	26018/00091
10	NAPPIER, JOHN M. NAPPIER, WANDA J.	383 PHIRNE RD. GLEN BURNIE, MD 21061	0432303040765	04186/00865
11	VANMETER, ABRAHAM L.	7910 BUFORD RD, GLEN BURNIE, MD 21061	0400005969027	05296/00181
12	ARNOLD, JOHN W. ARNOLD, MARY S.	395 PHIRNE RD. GLEN BURNIE, MD 21061	0432300010700	01738/00118
13	SIDER, SCOTT W.	397 PHIRNE RD. GLEN BURNIE, MD 21061	0432305352400	18473/00425
14	HAWES, RICHARD W. HAWES, J. M.	399 PHIRNE RD. GLEN BURNIE, MD 21061	0432302424480	01976/00517
15	ESCOBAR, LETY AYALA AYALA-MACHADO, IMMAR	401 PHIRNE RD. GLEN BURNIE, MD 21061	0432306261300	32447/00268
16	RATZBURG, DAVID S. RATZBURG, LORI A.	403 PHIRNE RD. GLEN BURNIE, MD 21061	0432301933400	06257/00287
17	FOSTER, MICHAEL W. FOSTER, APRIL A.	405 PHIRNE RD. GLEN BURNIE, MD 21061	0432306245200	29399/00288
18	RUHL, JEFFREY M. RUHL, LINDA K.	407 PHIRNE RD. GLEN BURNIE, MD 21061	0432306059217	05225/00452
19	MOORE, BENJAMIN J.	409 PHIRNE RD. GLEN BURNIE, MD 21061	0432304440300	07493/00616
20	EID, ELIAS	411 PHIRNE RD. GLEN BURNIE, MD 21061	0432301998700	15095/00236
21	JAMES & ROBERTA REINER FAMILY TRUST	413 PHIRNE RD. GLEN BURNIE, MD 21061	0432304732025	21960/00023
22	EVANS, SCOTT	415 PHIRNE RD. GLEN BURNIE, MD 21061	0432301810107	31004/00470
23	GRAHAM, DONALD H. GRAHAM, DEBORAH M.	417 PHIRNE, RD. GLEN BURNIE, MD 21061	0432304905200	04275/00432
24	ANDRULEWICZ, EDWARD D. ANDRULEWICZ, KUM JA	419 PHIRNE RD. GLEN BURNIE, MD 21061	0432301880600	03230/00240
25	LAWTON, AMANDA L. TALVIK, ERIC S.	523 ELIZABETH RD.	0432301433000	38814/00310

PLAN

SCALE: 1" = 100'

0 100' 200'

VICINITY MAP

SCALE: 1" = 2000'

LEGEND

EXISTING

- Tract Boundary
- Property Line
- Minor Contour (672)
- Major Contour (670)
- Edge of Paving
- Curb and Gutter
- Storm Drain (SD)
- Water & Fire Hydrant (W)
- Sanitary Sewer (S)
- Underground Electric (UGE)
- Overhead Electric (OHE)
- Fence Line (X)
- Building
- Soils Line (GhC / MaD)
- Tree Line
- Steep Slopes (15%-25%)
- Steep Slopes (25%+)

PROPERTY DATA

Acct. 0400090041273 Deed Ref. 09465 / 00358

ENVIRONMENTAL SITE DATA

1. GROSS TRACT AREA: 25.91 AC
2. PROJECT AREA: ± 6.86 AC (±298,925 SF)
3. FLOODPLAIN AREA IN LOD: 0 AC / 0 SF
4. WETLAND AREA IN LOD: 0 AC / 0 SF
5. WETLAND BUFFER AREA IN LOD: 0 AC / 0 SF
6. STREAM BUFFER AREA IN LOD: 0 AC / 0 SF
7. EXISTING IMPERVIOUS IN LOD: ±0.17 AC / ±7,338 SF
8. TOTAL EXISTING IMPERVIOUS: ±2.82 AC / ±122,816 SF
9. THIS SITE IS NOT WITHIN THE CHESAPEAKE BAY CRITICAL AREA.
10. THERE ARE NO BOGS WITHIN OR NEAR THE SITE.

SOIL CHART

KEY	NAME	SLOPE	HYDROLOGIC GROUP	HYDRIC SOIL
PfB	Patapsco-Fort Mott complex	0-5%	A	No
PfC	Patapsco-Fort Mott complex	5-10%	A	No
PgB	Patapsco-Fort Mott-Urban Landcomplex	0-5%	A	No
SME	Sassafras and Croom soils	15-25%	C	No
WdaA	Woodstown Sandy Loam	0-2%	C	No

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10710 Gilroy Road, Hunt Valley, MD 21031
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PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE No.: 32603
EXPIRATION DATE: 1-18-2026

STATE OF MARYLAND — RICHARD STEVEN HAWES II — No. 32603 — PROFESSIONAL ENGINEER

LICENSE NO.

REVISED	
DATE	BY

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

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

SCALE	AS SHOWN
DRAWN BY	LMV/RDT
CHECKED BY	MJP
SHEET	3 OF 38
PROJECT NO.:	P570004
DATE:	1/23/2025

CONSTRUCTION DOCUMENTS

Overall Existing Conditions Plan

North Arundel Aquatic Center

2nd Tax District Anne Arundel Co., MD. Tax Map 15, Grid 11, Parcel 638

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N

MCS

N 536200

E 1414700.0

TREE PROTECTION FENCE - SEE SHEETS 37-38

EX. SPECIMEN TREE TO REMAIN; SEE SHEETS 34-36

EX. SPECIMEN TREE TO BE REMOVED; SEE SHEETS 34-36

EX. SPECIMEN TREE TO REMAIN; SEE SHEETS 36-38

EX. SPECIMEN TREE TO BE REMOVED; SEE SHEETS 34-36

EX. SPECIMEN TREE TO REMAIN; SEE SHEETS 36-38

N/F
BOARD OF EDUCATION OF ANNE ARUNDEL COUNTY
2644 RIVA RD
ANNAPOLIS MD 21401
ACCT#0400000093211
DEED: 01495/00297
TM: 0015 G: 0011 P:0636 N:24000.02
"GLEN BURNIE PARK ELEMENTARY SCHOOL"
500 MARLBORO RD.

EX. TREE TO BE REMOVED

WOODED AREA TO BE CLEARED: ± 1,778 SF

N/F
ANNE ARUNDEL COUNTY
2662 RIVA RD., ANNAPOLIS MD 21401-7305
TM: 0015 G: 0011 P: 0638 N: 24000.02
ACCT. #0400090041273 DEED: 09465/ 00358
7888 S CRAIN HWY GLEN BURNIE 21061-0000
30.8200 AC

EX. "NO TRESPASSING" SIGN TO BE REMOVED

EX. HYDRANT TO BE REMOVED, STORED ON SITE, AND RELOCATED

EX. "FIRE ACCESS ONLY" SIGNS TO BE REMOVED, STORED ON SITE, AND RELOCATED

EX. SHED TO BE REMOVED, STORED ON SITE, AND RELOCATED

EX. CHAIN LINK FENCE AND BOLLARDS TO BE REMOVED

EX. WASTE BINS TO BE REMOVED, STORED ON SITE, AND RELOCATED

REMOVE EX. CONCRETE

REMOVE EX. ASPHALT PAVING

MILL EX. ASPHALT PAVING

REMOVE EX. ASPHALT PAVING

TEMPORARY WASTE BIN STORAGE AREA

EX. TREE TO REMAIN

ASPHALT PAVING TO BE REMOVED FOR PIPE INSTALLATION AND REPLACED

EX. TREE T.B.R.

EX. TREE TO REMAIN

REMOVE EX. ASPHALT PAVING

ASPHALT PAVING TO BE REMOVED FOR PIPE INSTALLATION AND REPLACED

TEMPORARY STORAGE AREA FOR ITEMS NOTED ON THIS SHEET, EXCEPT WASTE BINS; DO NOT STORE ITEMS IN EX. SWALE

EX. TREES TO BE REMOVED

WOODED AREA TO BE CLEARED: ±1,553 SF

WOODED AREA TO BE CLEARED: ± 132,589 SF

EX. "NO TRESPASSING" SIGN TO BE REMOVED

N/F
VANMETER, ABRAHAM L.
7910 BUFORD RD.
GLEN BURNIE, MD 21061
ACCT#0400005969027
DEED: 05296/00181
TM: 0015 G: 0011 P:1047 N:4070002.02

N 535749

E 1414700

N 535750

E 1415400

TREE PROTECTION FENCE - SEE SHEETS 37-38

WOODS

BOULDERS

EXISTING PAVING

1 STORY BRICK

EX. BUILDING

CONC. SIDEWALK

LEGEND

EXISTING

- Tract Boundary
- Property Line
- Minor Contour (672)
- Major Contour (670)
- Edge of Paving
- Curb and Gutter
- Storm Drain (SD)
- Water & Fire Hydrant (W)
- Sanitary Sewer (S)
- Underground Electric (UGE)
- Street Light
- Sign
- Electric Structure
- Fence Line (X X X)
- Building
- Tree Line
- Deciduous Tree
- Evergreen Tree
- Critical Root Zone (CRZ)

DEMOLITION

- Line to be Removed (X X X X X)
- Paving to be Removed
- Paving to be Removed & Replaced
- Mill & Overlay Ex. Paving
- To Be Removed (T.B.R.)
- Tree to be Removed
- Limits of Clearing

PROPOSED

- Limit of Disturbance (Construction) (LOD)
- Limit of Disturbance (Grading) (SWM)
- Tree Protection Fence (TPF)

NOTE: CONSTRUCTION L.O.D. INCLUDES NON-GRADING ITEMS SUCH AS SILT FENCE AND TEMPORARY STOCKPILE AREAS

PLAN

SCALE: 1" = 30'

0 30' 60'

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PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE No.: 32603
EXPIRATION DATE: 1-18-2026

STATE OF MARYLAND · RICHARD SHEARD · 32603 · PROFESSIONAL ENGINEER

LICENSE NO.

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

REVISED	
DATE	BY

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

SCALE AS SHOWN
DRAWN BY LMV/RDT
CHECKED BY MJP
SHEET 4 OF 38
PROJECT NO.: P570004
DATE: 1/23/2025

CONSTRUCTION DOCUMENTS

Existing Conditions & Demolition Plan

North Arundel Aquatic Center

2nd Tax District Anne Arundel Co., MD.
Tax Map 15, Grid 11, Parcel 638

T:\2018\facilities\181120014a n. aquatic center\CIVIL\CADD\Drawings\3 Construction Documents\181120014A (CD-04) Ex Cond & Demo Plan.dwg Jan 24, 2025 8:34am dshanahan

N

N/F
BOARD OF EDUCATION OF ANNE ARUNDEL COUNTY
2644 RIVA RD, ANNAPOLIS MD 21401
ACCT#0400000093211
DEED: 01495/00297
TM: 0015 G: 0011 P:0636 N:24000.02

N 536200
E 1414700

93'-10" | 67' BALL STOPPER NETTING - SEE SHEET 8 | 93'-10"

225'

PROPOSED 14' x 26' STONE PAD - #57 STONE, 6" DEPTH (FOR FIELD SHED BY OTHERS) SEE SHEET 9

PROPOSED DOUBLE GATE; SEE SHEET 8

PROPOSED 4'-WIDE GATE; SEE SHEET 8

PROPOSED FIELD LIGHTS POLE, BY OTHERS (TYP. OF 4)

PROPOSED SYNTHETIC TURF FIELD (81,000 SF) BY ASTROTURF CORPORATION OR APPROVED EQUAL; AND ESD #1 (SEE SHEET 20)

PROPOSED BLEACHER STAND - 54 SEAT CAPACITY; SEE SHEET 8

PROPOSED 4'-WIDE GATE; SEE SHEET 8

PROPOSED FIELD LIGHTS POLE, BY OTHERS (TYP. OF 4)

FIELD STRIPING (TYP.)

PROPOSED 4'-WIDE GATE; SEE SHEET 8

N 535749
E 1414700

93'-10" | 67' BALL STOPPER NETTING - SEE SHEET 8 | 93'-10"

PR. COG OPENING; SEE SHEET 7

PR. PED. CROSSWALK STRIPING

PR. CURB RAMP (TYP.)

PR. CURB OPENING; SEE SHEET 7

ADA PARKING SIGN (TYP.); SEE SHEET 7

ADA PARKING SPACES (TYP.); SEE SHEET 7

CONC. WHEEL STOP (TYP.); SEE SHEET 7

PR. FH

PROPOSED PARKING (61 SPACES)

NOTCHED CURB - SEE SHEET 7

PROPOSED ACCESS ROAD

PROP. 6" W.

PR. STREET LIGHT - MATCH EXISTING SINGLE ARM PARKING LOT LIGHTS (TYP. OF 13)

PR. SWM ESD #4 (SHEET 24)

PROPOSED PLAYGROUND (±5,500 SF); SEE SHEET 11 & ESD #6 (SHEET 26)

PR. SWM ESD #5 (SHEET 25)

PROPOSED FIRE ACCESS LANE

PROPOSED SPEED HUMP; SEE SHEET 8

"RELOCATED "FIRE ACCESS ONLY" SIGN

RELOCATED FIRE HYDRANT

EX. INDOOR POOL

RELOCATED SHED ON #57 STONE; SEE SHEET 9

PROPOSED TRASH ENCLOSURE; SEE SHEET 9

PROPOSED RESTROOM BUILDING (SEE SHEET 10)

PR. BIKE RACKS ON CONC. PAD; SEE SHEET 9

PROPOSED PARKING (82 SPACES)

PR. PED. CROSSWALK STRIPING

PR. CURB RAMP (TYP.)

CONTRACTOR TO VERIFY POWER SOURCE FOR RESTROOM BUILDING AND FIELD/PARKING LIGHTING

1 STORY BRICK

PROPOSED SIDEWALK EXTENSION

PR. SWM ESD #8 (SHEET 26)

PR. SWM ESD #3 (SHEET 23)

PR. SWM ESD #2 (SHEET 22)

PROPOSED CURB & AISLE RE-ALIGNMENT

TEMP. STORAGE AREA

PR. CURB OPENINGS; SEE SHEET 7

PR. SWM ESD #7 (SHEET 27)

PR. CURB OPENING; SEE SHEET 7

PR. SWM ESD #9 (SHEET 21)

EX. PARKING (116 SPACES)

N 535750
E 1415400

N/F
VANMETER, ABRAHAM L.
7910 BUFORD RD.
GLEN BURNIE, MD 21061
ACCT#0400005969027
DEED: 05296/00181
TM: 0015 G: 0011 P:1047 N:4070002.02

PLAN

SCALE: 1" = 30'

0 30' 60'

LEGEND

EXISTING

- Tract Boundary
- Property Line
- Easement Line
- Edge of Paving
- Curb and Gutter
- Storm Drain (SD)
- Water & Fire Hydrant (W)
- Sanitary Sewer (S)
- Underground Electric (UGE)
- Overhead Electric (OHE)
- Cable Television (CTV)
- Gas and Valve (EX. 4" GAS (HP), G, GV)
- Power/Utility Pole (BGE #542497)
- Street Light
- Sign
- Electric Structure
- Fence Line
- Building
- Tree Line
- Deciduous Tree
- Evergreen Tree

PROPOSED

- Limit of Disturbance (Construction) (LOD)
- Limit of Disturbance (Grading) (SWM)
- Sanitary Sewer (PROP. 8" S.)
- Water and Fire Hydrant (PROP. 8" W.)
- Storm Drain (PROP. 15" D.)
- Curb & Gutter
- Asphalt Paving
- Concrete
- Stone
- Building
- Chain Link Fence
- Conduit
- Street Light
- Tree Line

NOTE: CONSTRUCTION L.O.D. INCLUDES NON-GRADING ITEMS SUCH AS SILT FENCE AND TEMPORARY STOCKPILE AREAS

T:\2018\facilities\18112001\ian aquatic center\CIVIL\CADD\Drawings\3. Construction Documents\18112001A (CD-05) Overall Site Plan.dwg Jan 24, 2025 11:34am dshanahan

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PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE No.: 32603
EXPIRATION DATE: 1-18-2026

STATE OF MARYLAND — DAVID RICHARD SHANAHAN — 32603 — PROFESSIONAL ENGINEER

LICENSE NO.

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

REVISED DATE	BY

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

SCALE AS SHOWN
DRAWN BY LMV/RDT
CHECKED BY MJP
SHEET 5 OF 38
PROJECT NO.: P570004
DATE: 1/23/2025

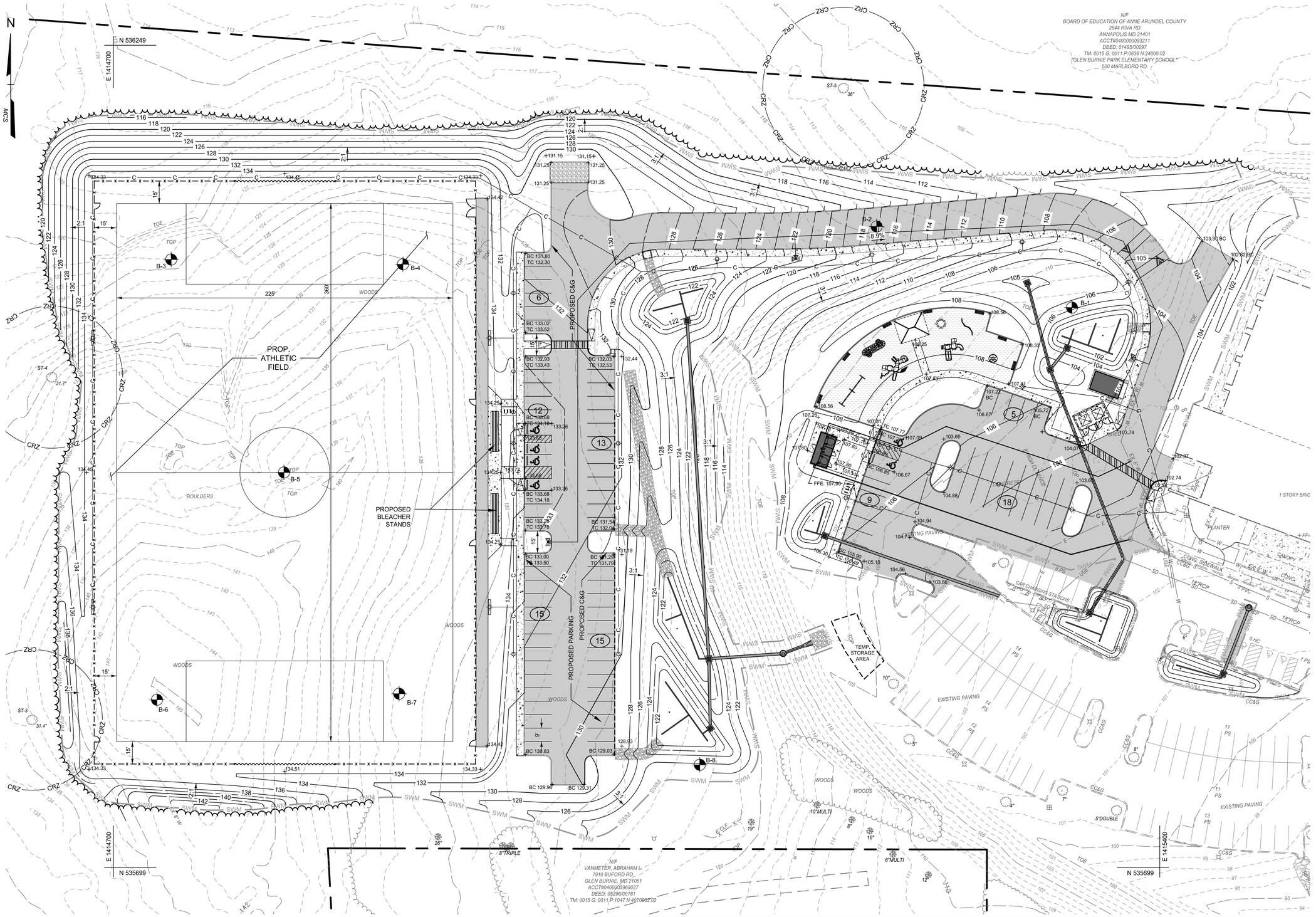
CONSTRUCTION DOCUMENTS

Site & Utility Plan

North Arundel Aquatic Center

2nd Tax District
Anne Arundel Co., MD.

Tax Map 15, Grid 11, Parcel 638



PLAN

SCALE: 1" = 30'

0 30' 60'

LEGEND

EXISTING

- Tract Boundary
- Property Line
- Minor Contour (672)
- Major Contour (670)
- Edge of Paving
- Curb and Gutter
- Storm Drain (SD)
- Water & Fire Hydrant (W)
- Sanitary Sewer (S)
- Underground Electric (UGE)
- Street Light
- Sign
- Electric Structure
- Fence Line (X X X)
- Building
- Tree Line
- Deciduous Tree
- Evergreen Tree
- Critical Root Zone (CRZ)

PROPOSED

- Limit of Disturbance (Grading) (SWM)
- Minor Contour (672)
- Major Contour (670)
- Spot Elevation (+143.8)
- Easement Line
- Sanitary Sewer (PROP. 8" S.)
- Water and Fire Hydrant (PROP. 8" W.)
- Storm Drain (PROP. 15" D.)
- Curb & Gutter
- Asphalt Paving
- Concrete
- Stone
- Building
- Chain Link Fence (X X X)
- Conduit (C C)
- Street/Field Light
- Tree Line

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

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE No.: 1008
EXPIRATION DATE: 5/20/2026

DATE: 1/23/2025

1008
LICENSE NO.

REVISED DATE	BY

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

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

SCALE	AS SHOWN
DRAWN BY	LMV/RDT
CHECKED BY	MJP
SHEET	6 OF 38
PROJECT NO.:	P570004
DATE:	1/23/2025

CONSTRUCTION DOCUMENTS

Grading Plan

North Arundel Aquatic Center

2nd Tax District
Anne Arundel Co., MD.

Tax Map 15, Grid 11, Parcel 638

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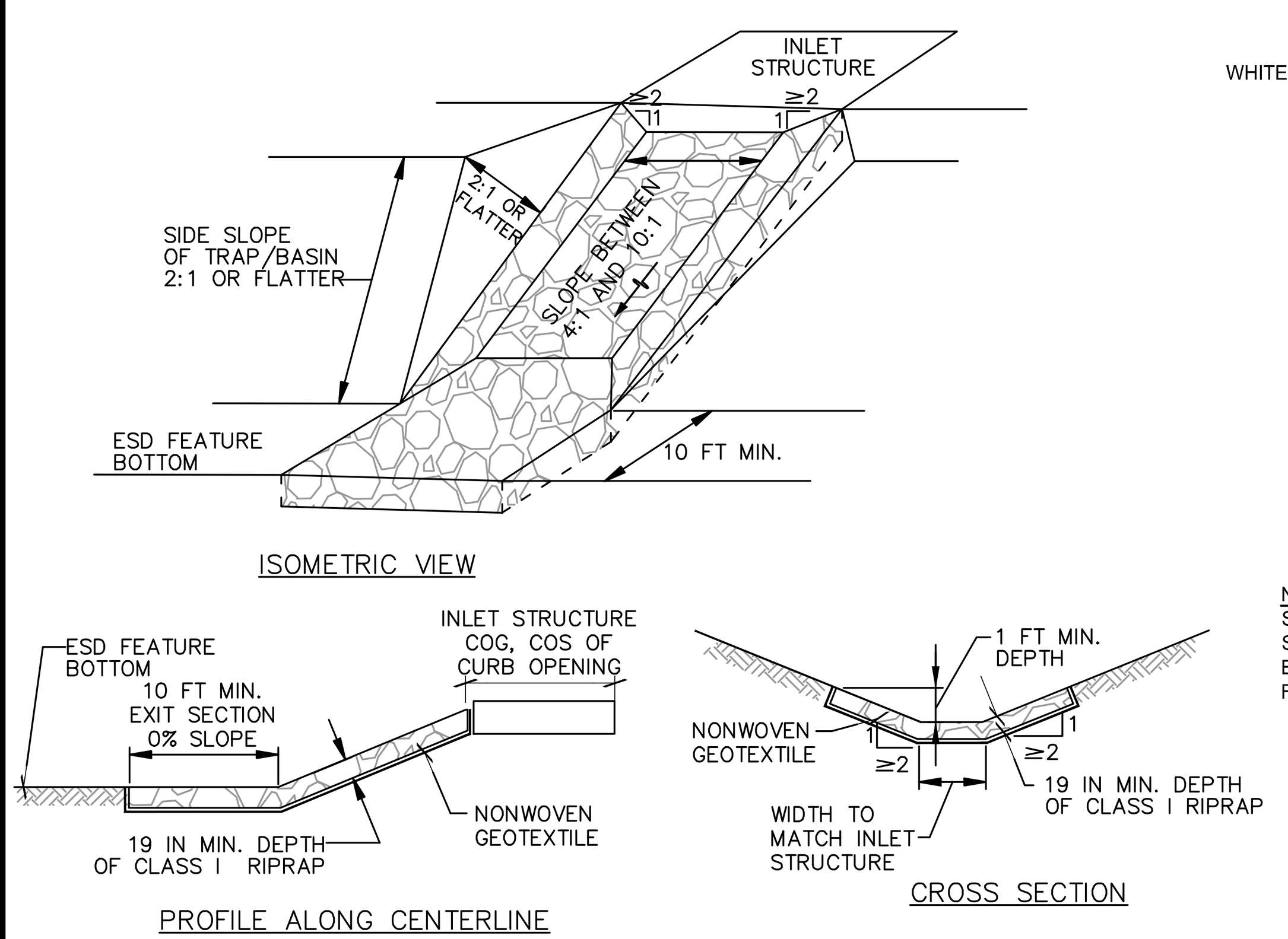
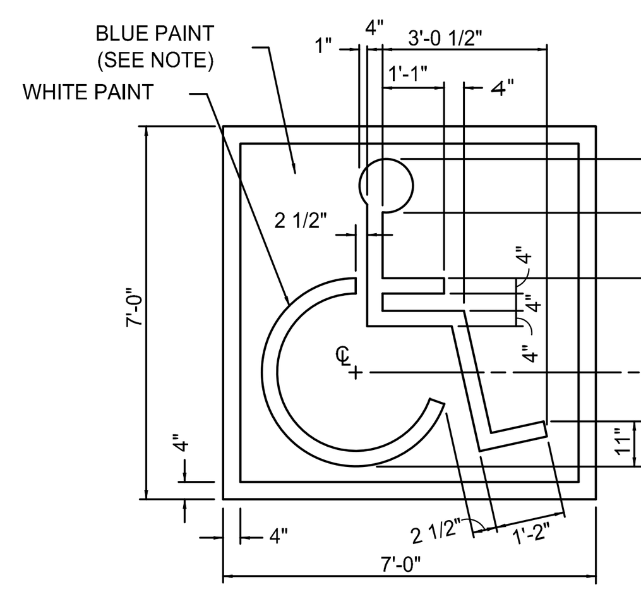


CONSTRUCTION SPECIFICATIONS

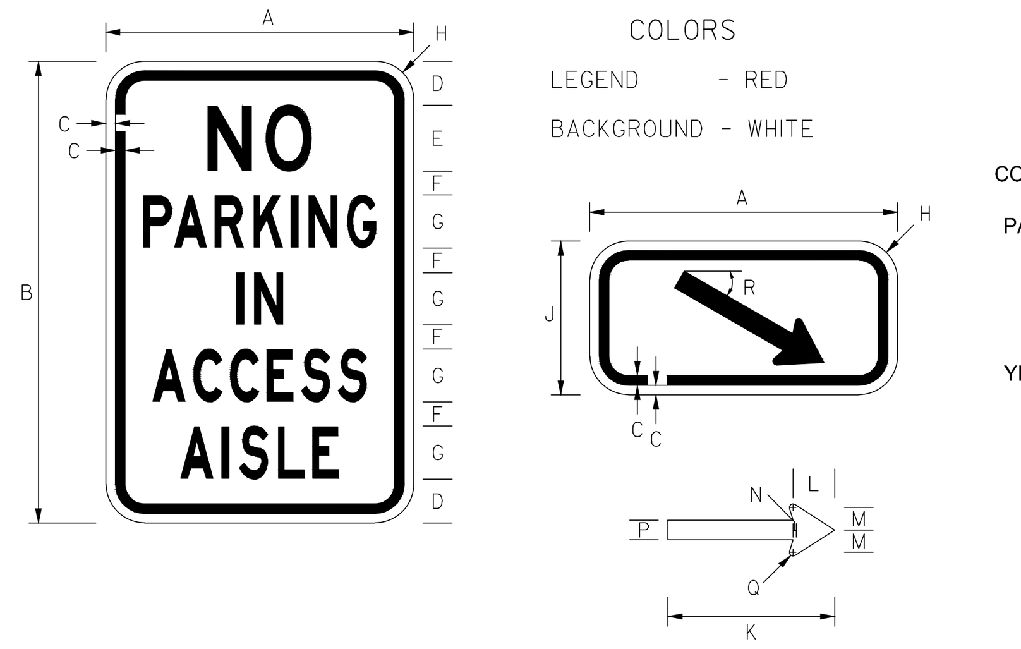
1. PROVIDE NONWOVEN GEOTEXTILE, AS SPECIFIED IN MATERIALS, UNDER THE BOTTOM AND ALONG SIDES OF ALL RIPRAP.
2. CONSTRUCT INFLOW CHANNEL WITH CLASS I RIPRAP LINING TO A MINIMUM DEPTH OF 19 INCHES (2 x D_{50}) AND A 1 FOOT DEEP FLOW CHANNEL. INFLOW RIPRAP PROTECTION CHANNEL MUST HAVE A TRAPEZOIDAL CROSS SECTION WITH 2:1 OR FLATTER SIDE SLOPES.
3. INSTALL EXIT SECTIONS AS SHOWN ON THE PROFILE.
4. BLEND RIPRAP INTO EXISTING GROUND.
5. MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. KEEP POINTS OF INFLOW AND OUTFLOW FREE OF EROSION.

RIPRAP INFLOW PROTECTION
NOT TO SCALE



NOTE:
SYMBOL TO BE CENTERED ON WIDTH OF PARKING STALL. SYMBOL IS REQUIRED TO CONTRAST WITH BACKGROUND WHITE ON BLUE (COLOR NO. 105090 IN FED. STANDARD 5952) DOUBLE COAT (TYP.)

PAINTED HANDICAP PARKING SYMBOL DETAIL
NOT TO SCALE



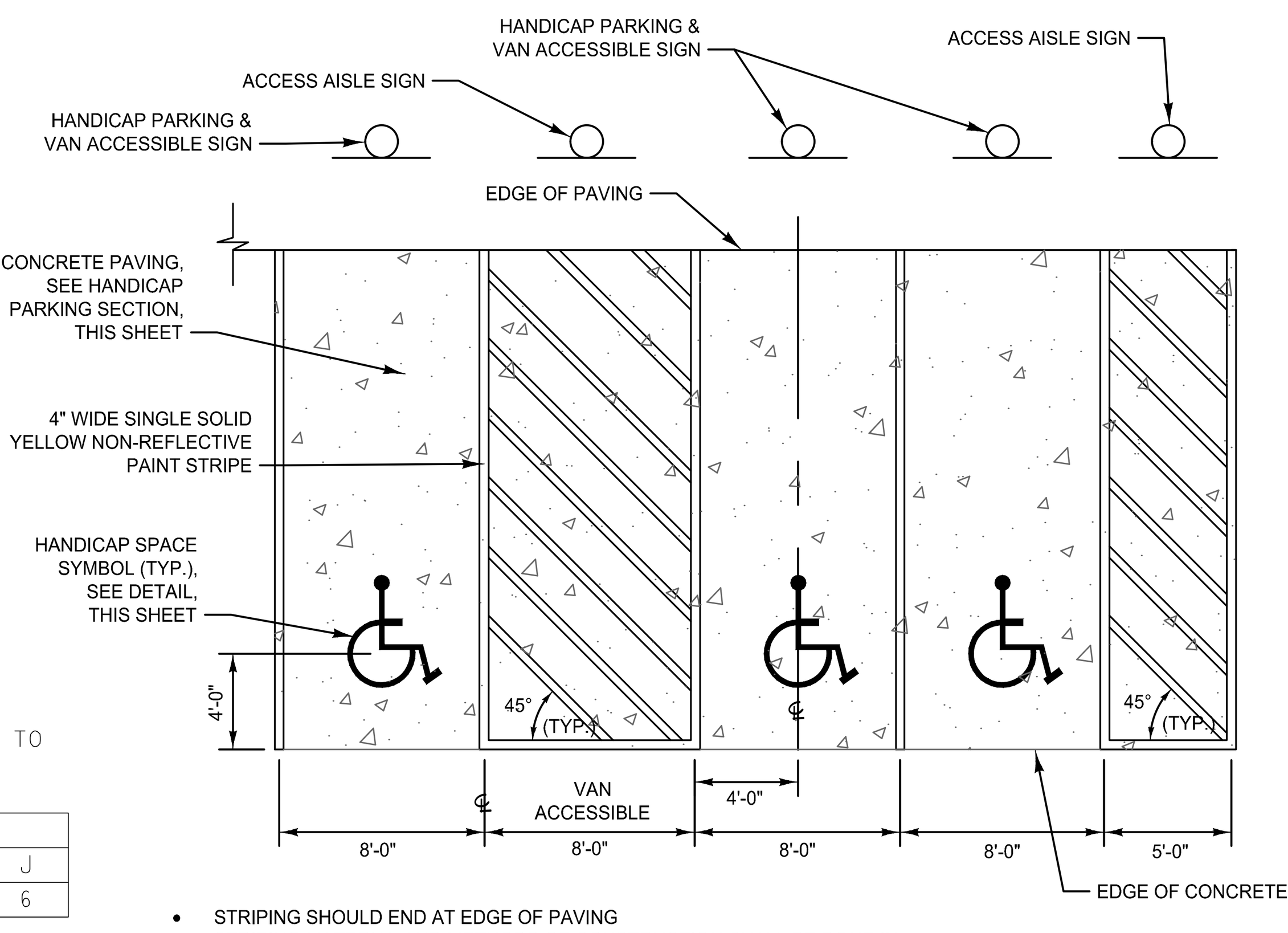
NOTE: ARROW PLATE IS OPTIONAL, MAY BE USED WHEN IT IS NECESSARY TO OFFSET SIGN LOCATION DUE TO ACCESS RAMP.

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	7/8	1/8	3/4	9/64	30°

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

ACCESS AISLE SIGN DETAIL
NOT TO SCALE

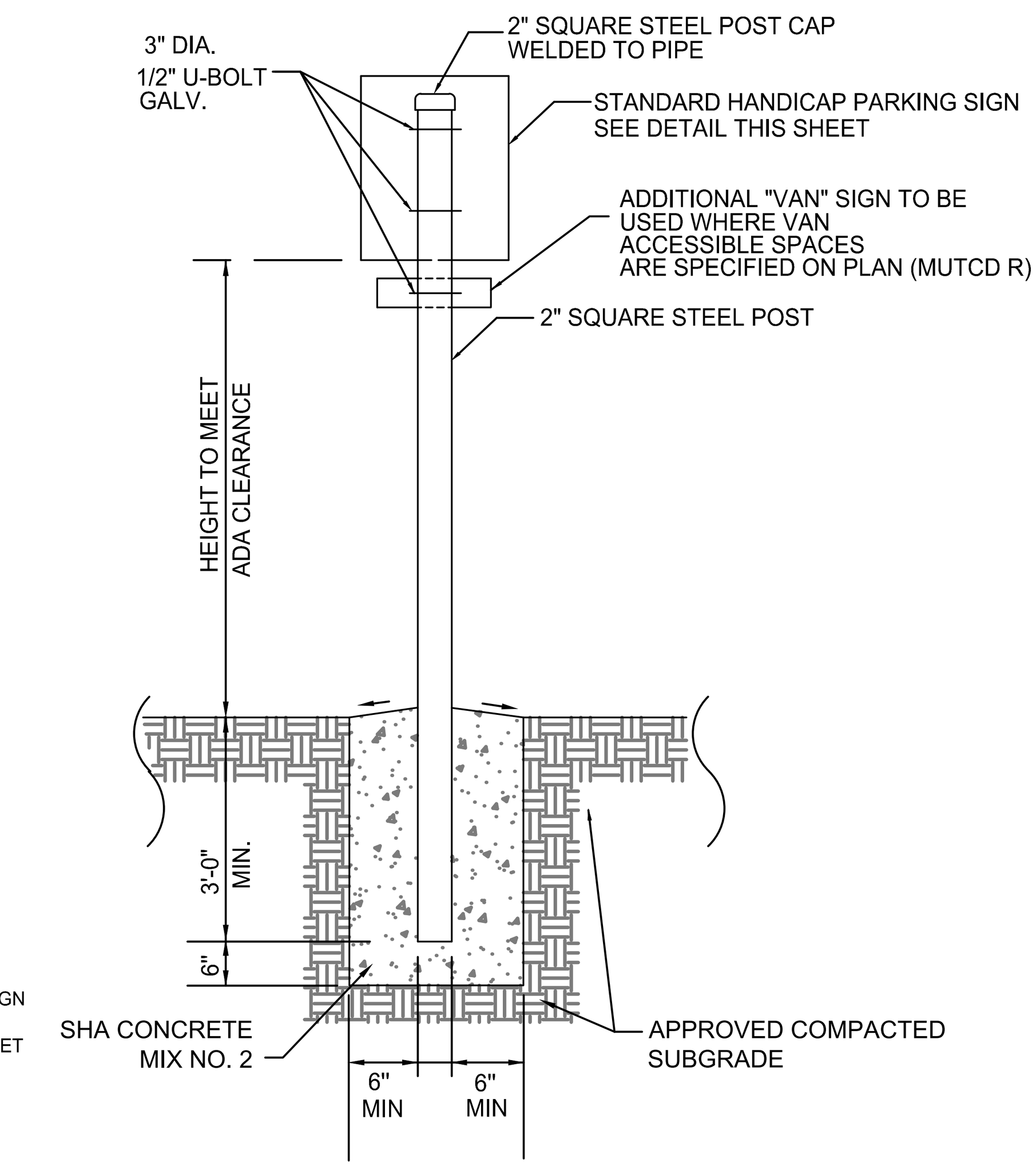


- STRIPING SHOULD END AT EDGE OF PAVING
- STRIPING MATERIAL AND METHODS OF CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE LATEST MUTCD EDITION STDS. & SPECS.
- INSTALL "VAN ACCESSIBLE" SIGN BELOW HANDICAP SIGN ON POSTS WHERE NOTED ON PLAN.
- YELLOW PAINT MAY BE USED ON CONCRETE OR OTHER SURFACES WHERE 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 STRIPING DETAIL
NOT TO SCALE

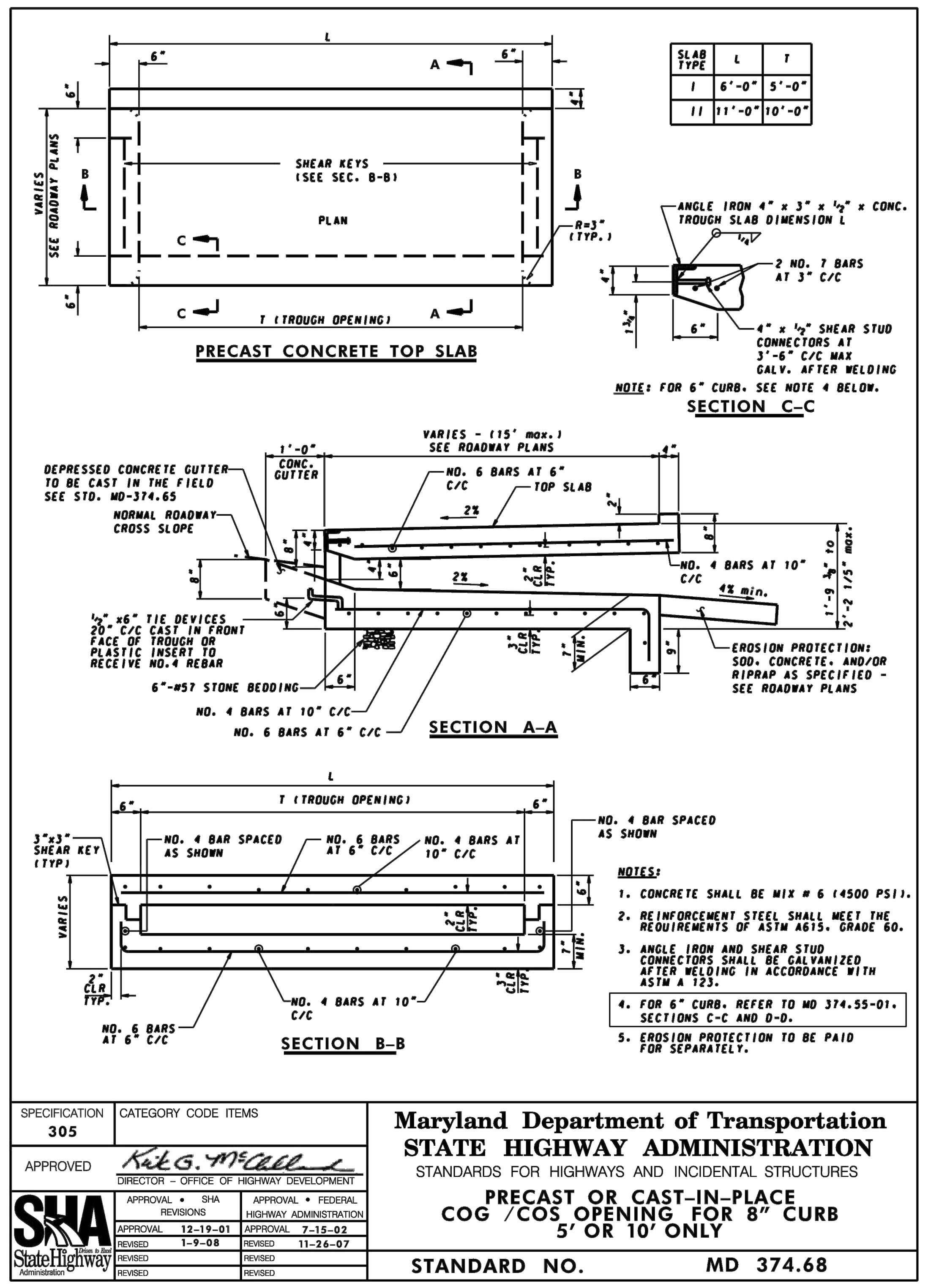
J. SECTION 4.6.4 SIGNAGE. EACH ACCESSIBLE PARKING SPACE SHALL BE IDENTIFIED BY AN APPROVED SIGN WITH THE BOTTOM EDGE AT LEAST 7 FEET ABOVE THE GROUND, UNLESS THE SIGN IS PLACED FLUSH AGAINST A BUILDING, STRUCTURE, OR OTHER LOCATION THAT DOES NOT OBSTRUCT VEHICLE OR PEDESTRIAN TRAFFIC, IN WHICH CASE THE 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 R7-8
COLORS:
BACKGROUND - WHITE; LEGEND AND BORDER-GREEN; WHITE SYMBOL ON BLUE BACKGROUND
NOTE:PROVIDE ADDITIONAL "VAN ACCESSIBLE" SIGNAGE (R7-8A) PER ADA REQUIREMENTS FOR SPACES SPACES AS NOTED ON PLAN.
FOR INFORMATION ON SIGN POST AND MOUNTING REFER TO DETAIL THIS SHEET.

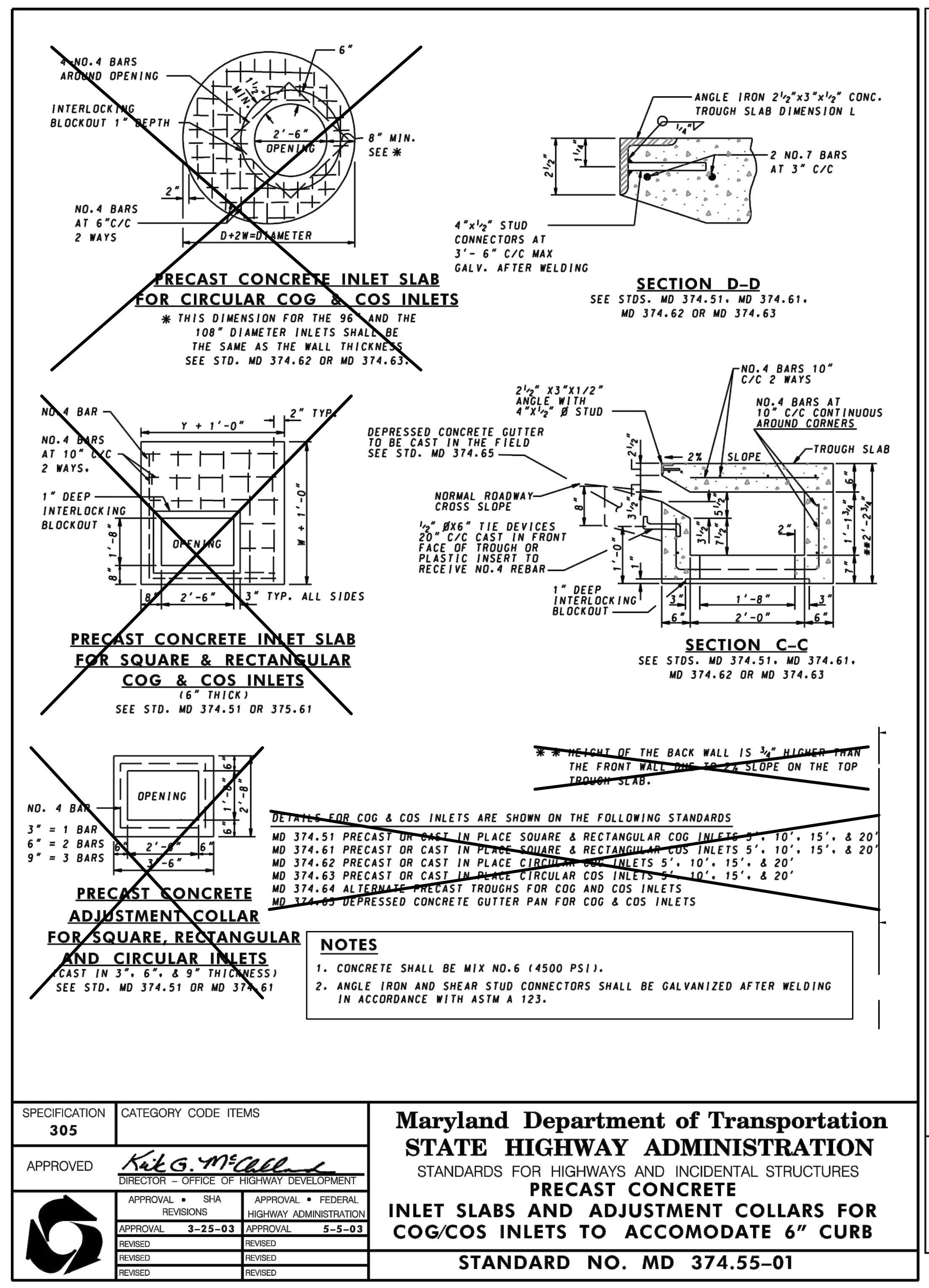
HANDICAP PARKING SIGN DETAIL
NOT TO SCALE

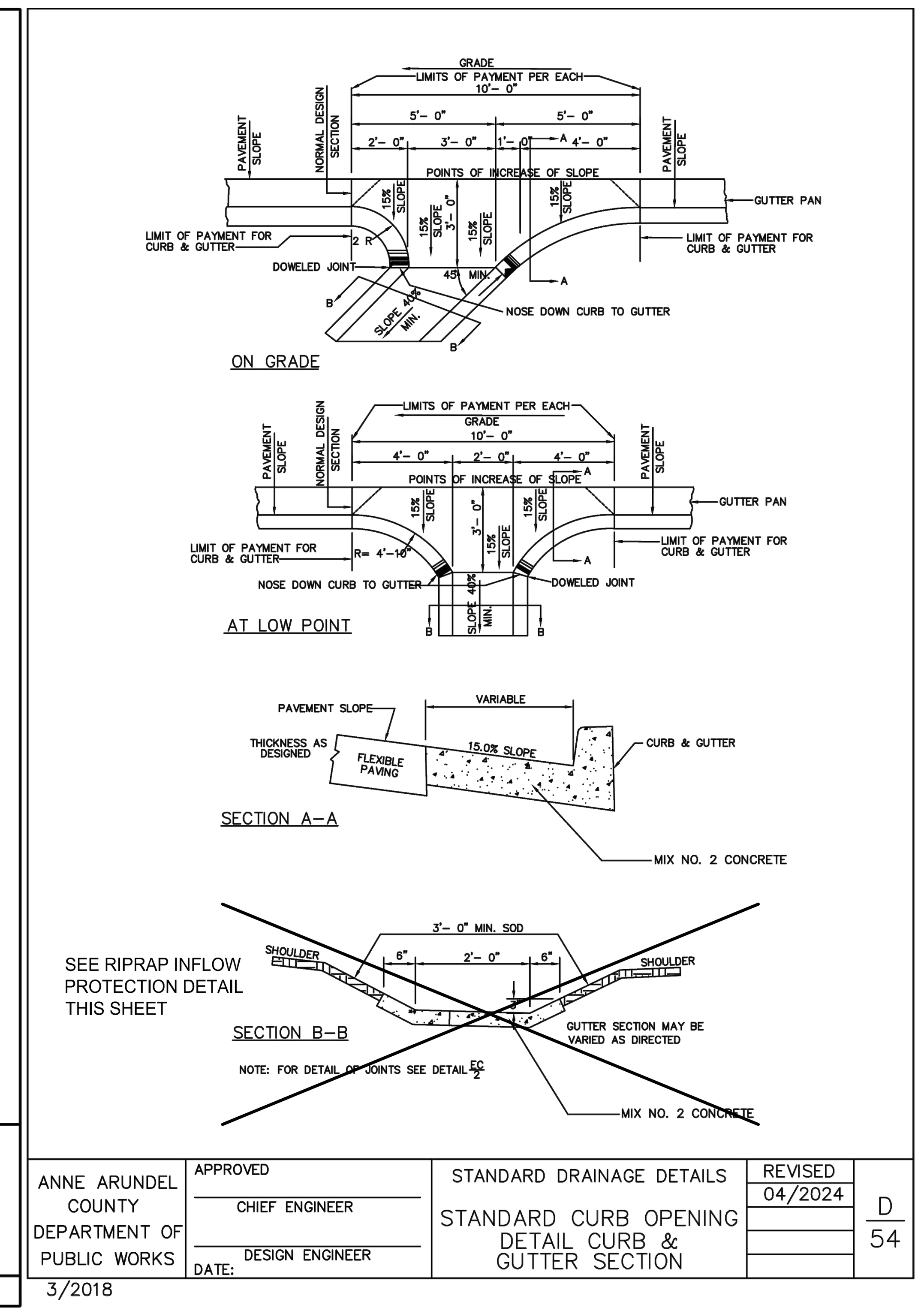


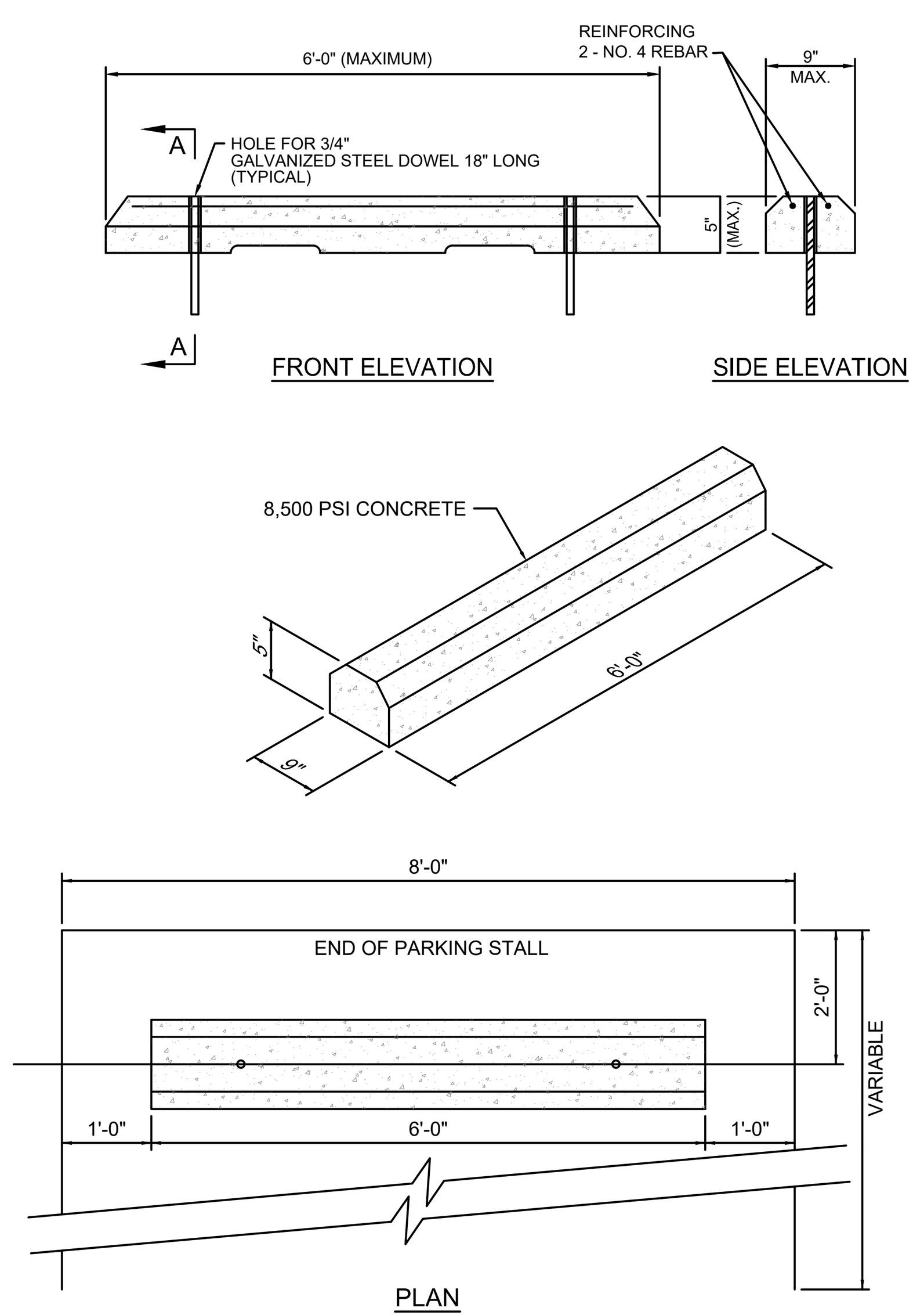
ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE MOST CURRENT ADA REGULATIONS.

HANDICAP SIGN MOUNTING DETAIL
NOT TO SCALE

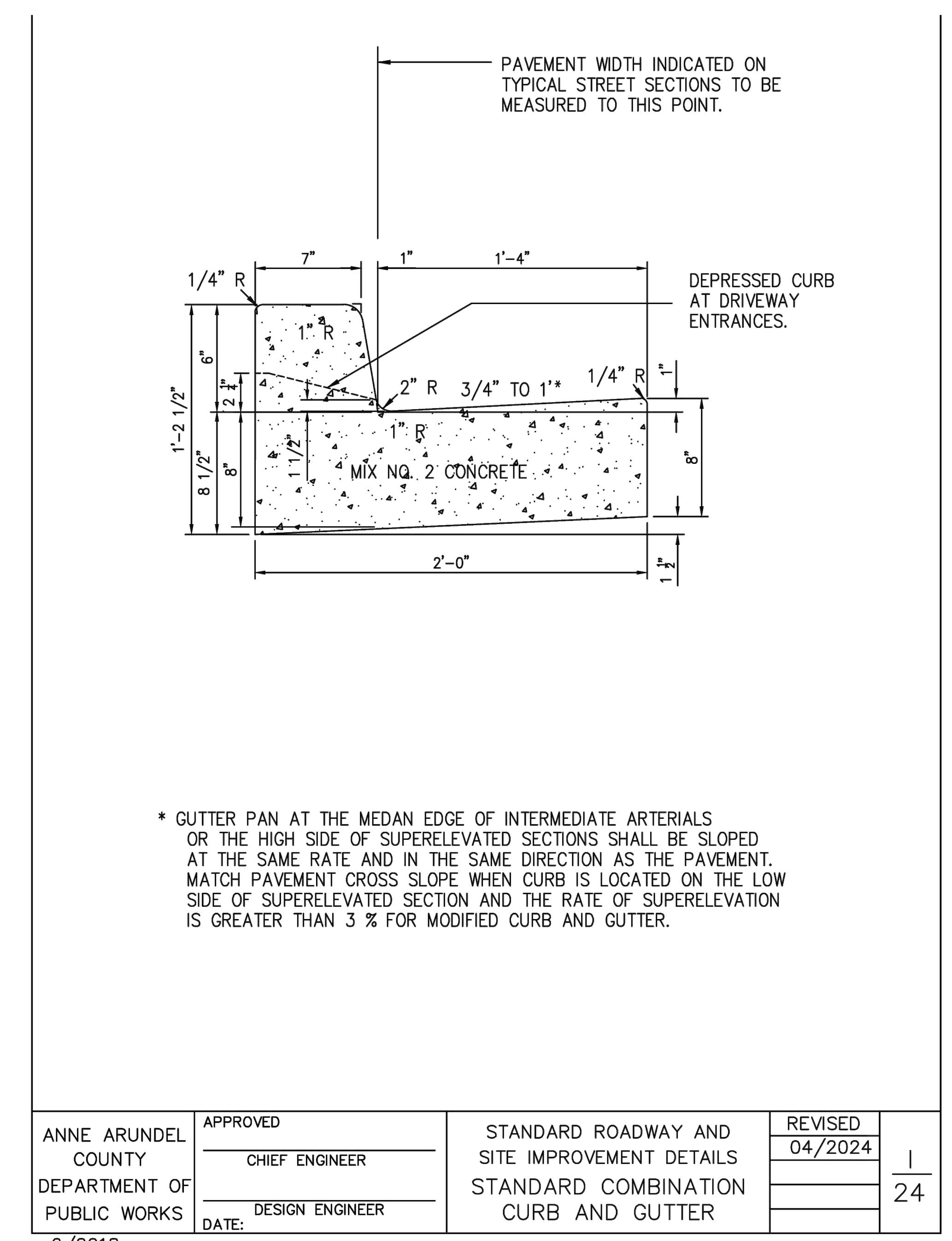


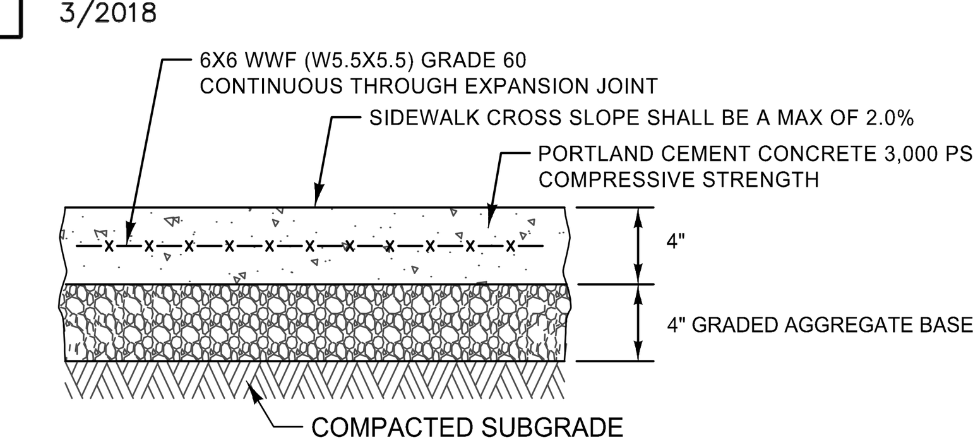




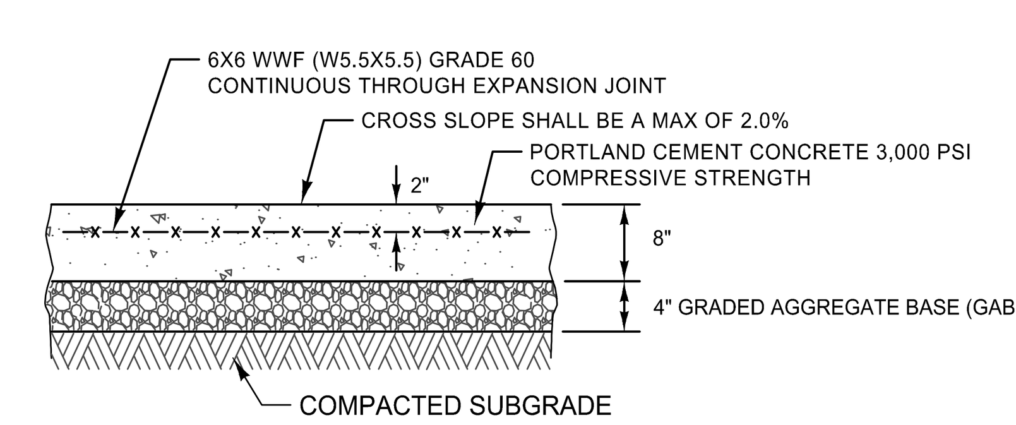


CONCRETE WHEEL STOP DETAIL
NOT TO SCALE

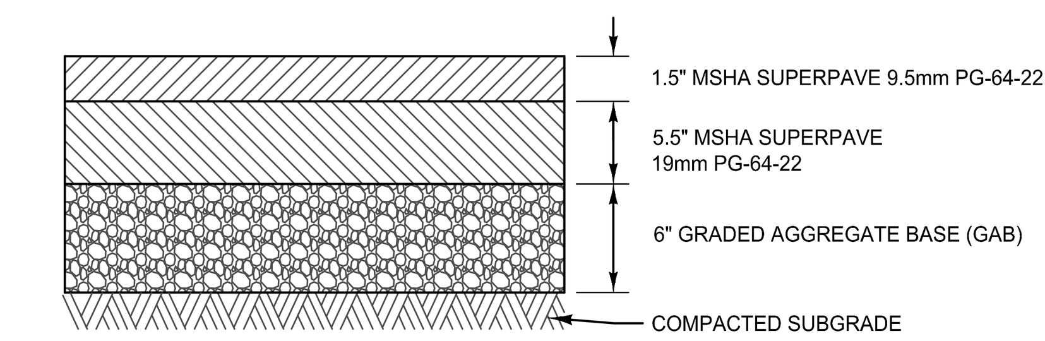




TYPICAL CONCRETE PAVING SECTION FOR SIDEWALKS & CONCRETE PADS
NOT TO SCALE

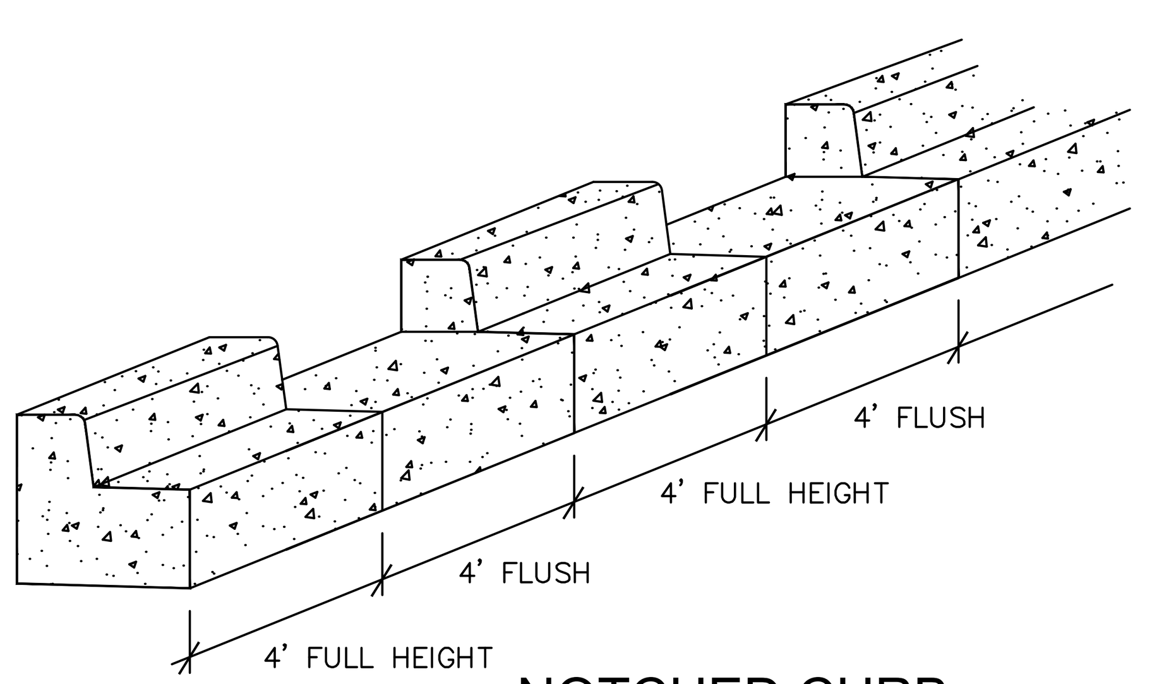


REINFORCED CONCRETE PAVING SECTION FOR TRASH ENCLOSURE PAD
NOT TO SCALE

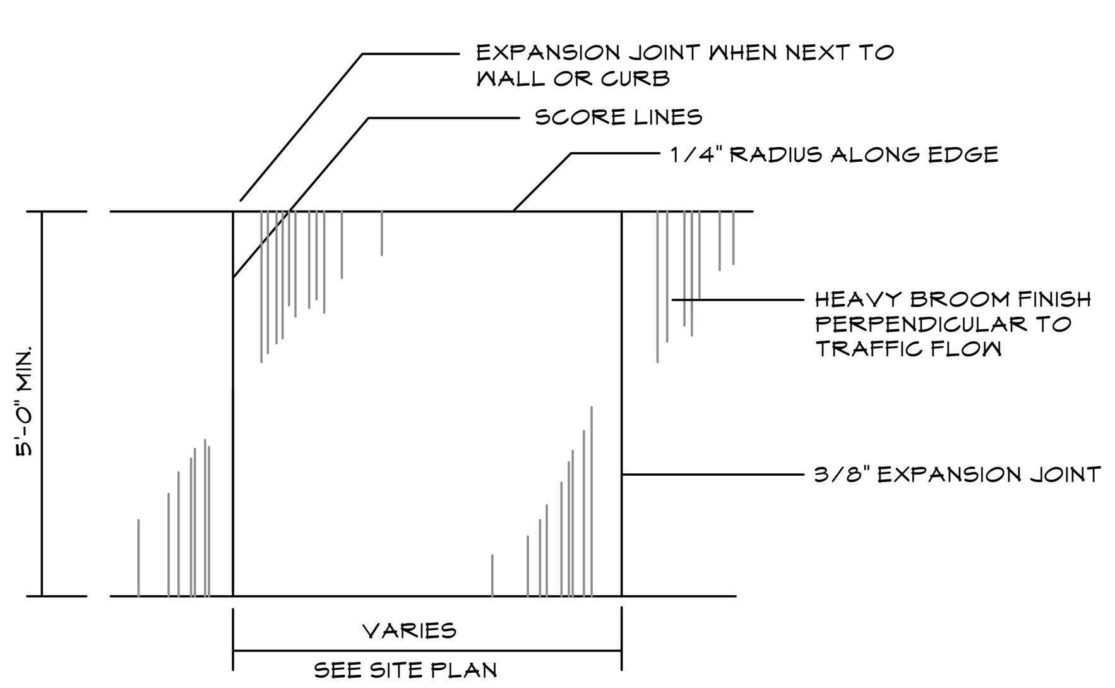


PAVING SECTION*
NOT TO SCALE

* SEE GEOTECHNICAL REPORT FOR ALTERNATE PAVING SECTIONS WITH SUBGRADE IMPROVEMENTS



NOTCHED CURB
NOT TO SCALE

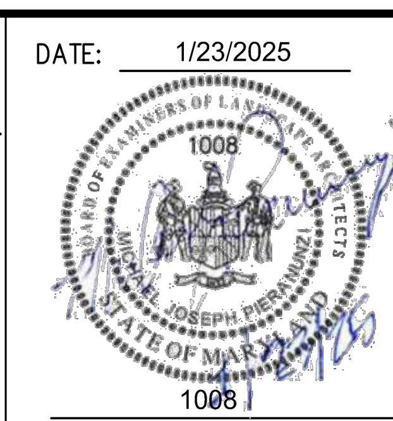


CONCRETE SCORING DETAIL FOR SIDEWALKS
NOT TO SCALE

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

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE No.: 1008
EXPIRATION DATE: 5/20/2026

DATE: 1/23/2025



LICENSE NO.

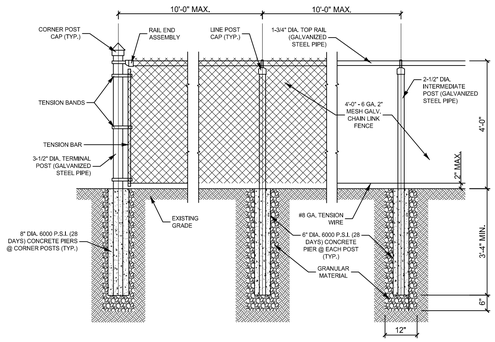
ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

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

SCALE	AS SHOWN
DRAWN BY	LMV/RDT
CHECKED BY	MJP
SHEET	7 OF 38
PROJECT NO.:	P570004
DATE:	1/23/2025

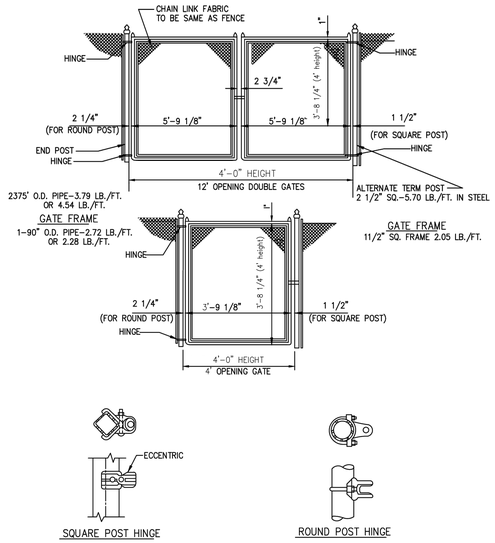
CONSTRUCTION DOCUMENTS
Site Details 1
North Arundel Aquatic Center
2nd Tax District
Anne Arundel Co., MD.
Tax Map 15, Grid 11, Parcel 638

T:\2018\facilities\18112001\4a n aquatic center\CIVIL\CADD\Drawings\3 Construction Documents\18112001\4A (CD-07) Site Details.dwg Jan 24, 2025 1:35am dshanahan



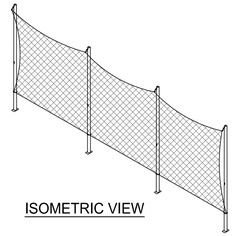
CHAIN LINK FENCE

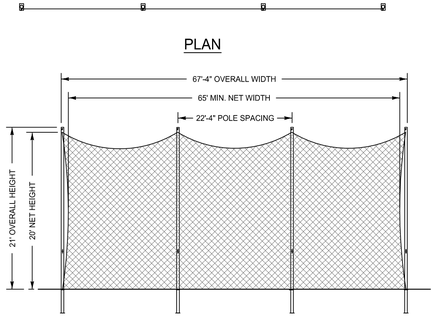
NOT TO SCALE



CHAIN LINK FENCE GATE DETAILS

NOT TO SCALE

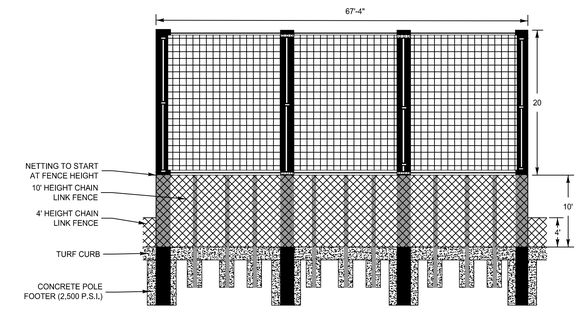




NOTES:
1. ALUMINUM UPRIGHTS WITH HOIST SYSTEM FOR EASY NET HANDLING, ALUMINUM GROUND SLEEVES WITH CAPS, POLYETHYLENE NET AND GROUND PEGS TO HOLD ON GROUND DURING PLAY.

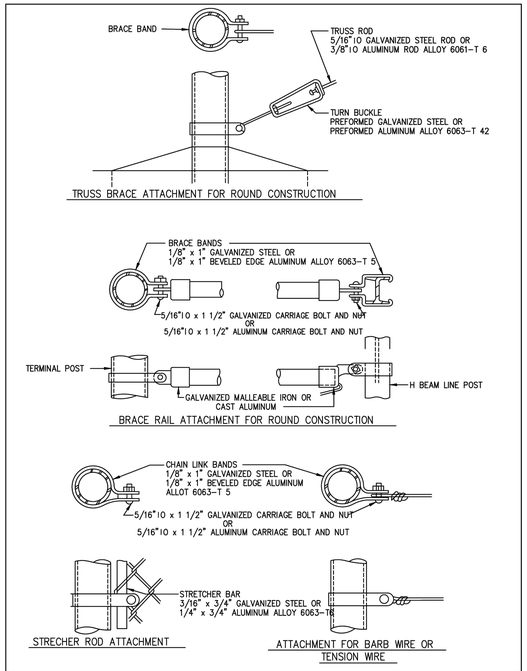
BALL STOPPER NET

NOT TO SCALE



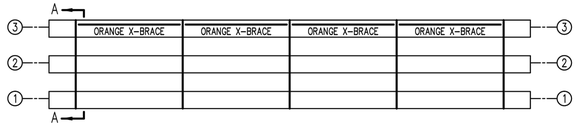
BALL STOPPER NET, CHAIN LINK FENCE, AND TURF CURB DETAIL

NOT TO SCALE



ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED CHIEF ENGINEER DESIGN ENGINEER DATE:	STANDARD ROADWAY AND SITE IMPROVEMENT DETAILS CHAIN LINK FENCE BRACE AND ROD ATTACHMENTS-ROUND SITE IMPROVEMENT DETAILS	REVISED 04/2024	1 30

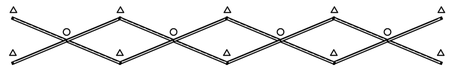
6/2018



SEAT & FRAMING PLAN

1/4" = 1'-0"

54 NET SEATS @ 18" PER SEAT

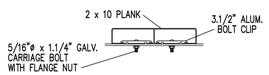


X-BRACE DETAIL

N.T.S.

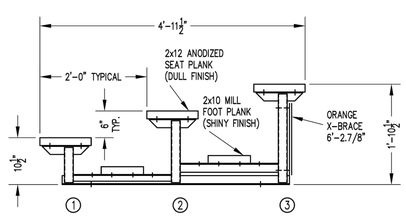
7/16" X 1" GALV. MACH. BOLT

7/16" X 3" GALV. MACH. BOLT



BOLT CLIP DETAIL

1.1/2" = 1'-0"



SECTION AA

3/4" = 1'-0"

BLEACHER DETAILS

NOT TO SCALE

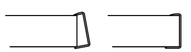


FIG.1 FIG.2

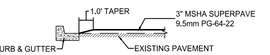
1) LOCATE THE CHANNEL END CAP AS SHOWN IN FIG. 1.
2) TAP END CAP INTO PLACE WITH RUBBER MALLET OR SOFT WOOD. FIG.2
3) DRILL 5/32" HOLES THROUGH THE BOTTOM FLANGE AND THE BOTTOM OUTSIDE PLANK FLANGES OF EACH PLANK. INSTALL 5/32" POP RIVETS.

END CAP DETAIL

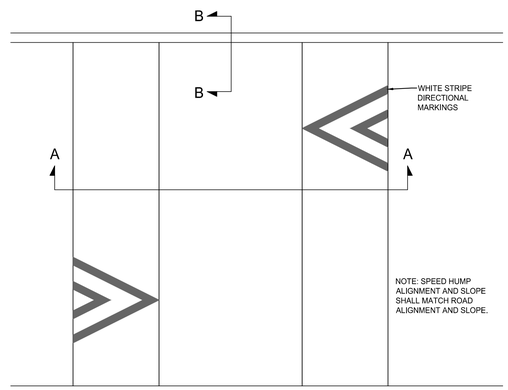
N.T.S.

Outdoor Aluminum P.O. BOX 118 GENEVA, ALABAMA 36340 334-684-2296			
SCALE AS NOTED	REVISIONS	BY	DATE
DATE 02/02/09	UPDATED TO 700 SERIES STANDARDS	GDK	02/13
DRN WAW CKD	ADJUSTED FOR FLANGE NUTS	GDK	5/24
APVD			
TITLE: LTSA 3-27 SEATING/FRAMING PLAN		NO. 864-E1061	

SECTION A-A



SECTION B-B



SPEED HUMP DETAIL

NOT TO SCALE

CENTURY ENGINEERING
A Kleinfelder Company
10710 Gilroy Road, Hunt Valley, MD 21031
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PROFESSIONAL CERTIFICATION

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LICENSE No.: 1008
EXPIRATION DATE: 5/20/2026

DATE: 1/23/2025

1008
LICENSE NO.

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

REVISED DATE	BY

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

SCALE	AS SHOWN
DRAWN BY	LMV/RDT
CHECKED BY	MJP
SHEET	8 OF 38
PROJECT NO.:	P570004
DATE:	1/23/2025

CONSTRUCTION DOCUMENTS

Site Details 2

North Arundel Aquatic Center

2nd Tax District, Anne Arundel Co., MD. Tax Map 15, Grid 11, Parcel 638

T:\2018\facilities\18111200\18a.n. aquatic center\CIVIL\CADD\Drawings\3 Construction Documents\18111200014A (CD-07) Site Details.dwg Jan 24, 2025 - 9:35am dshanahan

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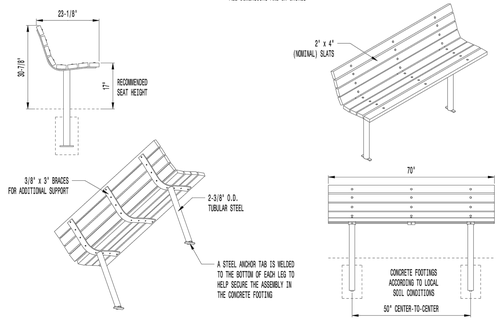
WEB SITE: HTTP://WWW.VICTORSTANLEY.COM

* ALL DIMENSIONS ARE IN INCHES *



AVAILABLE OPTIONS:
POWDER COATING
10 STANDARD COLORS, 2 OPTIONAL METALLIC COLORS,
CUSTOM COLORS (INCLUDING THE RAL RANGE)
SLAT TYPES
1PE 1000 OR 2nd SITE SYSTEM® RECYCLED PLASTIC SLATS
2nd SITE SYSTEM® COLORS: GRAY, MAPLE, CHERRY, AND WALNUT
(6-FOOT LENGTH WITH FULL CENTER LEG)
ARMRESTS (BOLT-ON)
4', 6', & 8' AVAILABLE WITH OPTIONAL ARMREST WITH MATCHING TRIM

LENGTHS
STANDARD 4'
STANDARD 6' (AS SHOWN)
STANDARD 8'
MOUNTING
STANDARD IN-GROUND (AS SHOWN) AND SURFACE
AVAILABLE WITH OPTIONAL GULL-WING AND BACK-TO-BACK
6' LENGTH AVAILABLE WITH WALL BRACKETS

NOTES:
1. DRAWINGS NOT TO SCALE. DO NOT SCALE DRAWINGS.
2. ALL FABRICATED METAL COMPONENTS ARE STEEL SHOTBLASTED, ETCHED, PHOSPHATIZED, PREHEATED, AND ELECTROSTATICALLY POWDER-COATED WITH T.G.I.C. POLYESTER POWDER COATINGS. PRODUCTS ARE FULLY CLEANED AND PREHEATED, PREHEATED AND COATED WHILE HOT TO FILL CREVICES AND BUILD COATING FILM. COATED PARTS ARE THEN FULLY CURED TO COATING MANUFACTURER'S SPECIFICATIONS. THE THICKNESS OF THE RESULTING FINISH AVERAGES 8-10 MILS (200-250 MICRONS).
3. THIS VICTOR STANLEY, INC. PRODUCT MUST BE PERMANENTLY AFFIXED IN THE GROUND. CONSULT YOUR LOCAL CODES FOR REGULATIONS.
4. FOR HIGH SALT ABRASIVE CLIMATES, HOT-DIP GALVANIZING BEFORE POWDER COATING IS AVAILABLE. HOT-DIP GALVANIZING IS PERFORMED FOR VICTOR STANLEY, INC. BY AN EXPERIENCED QUALIFIED FIRM TO WHICH PRODUCTS ARE SHIPPED FOR GALVANIZING. HOT-DIP GALVANIZING INCLUDES AN AGGRESSIVE PRE-TREATMENT AND IMMERSION IN A TANK OF CHARGED LIQUID ZINC AT OR AROUND 860°F (460°C). THE RESULTING SURFACE IS RESISTANT TO RUST BUT HAS SOME UNEVENNESS RESULTING FROM THE BONDING OF THE ZINC TO THE STEEL SURFACE. AS A RESULT, THE POWDER-COATING SURFACE FINISH OVER THAT GALVANIZED SURFACE MAY EXHIBIT BUMPS, UNEVENNESS, AND MAY NOT BE AS SMOOTH AS THE STANDARD FINISH; THIS UNEVEN AND INCONSISTENT FINISH IS NORMAL FOR GALVANIZING. CONTACT MANUFACTURER FOR DETAILS.
5. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE. CONTACT MANUFACTURER FOR DETAILS.
6. THIS PRODUCT IS SHIPPED PARTIALLY UNASSEMBLED.

MODEL 8
HOMESTEAD

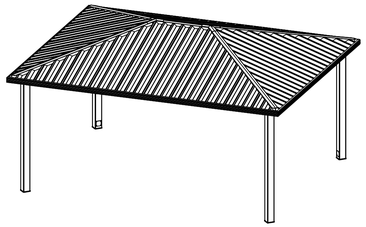
CONTOURED BENCH
SHOWN: STANDARD 8-FOOT LENGTH
STANDARD IN-GROUND MOUNT

REV. 5/2/17 DRAWN V.F.T. 2017-504

PLAYGROUND BENCHES
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, SHEET METAL OR SHADE SCREENS SHALL BE PROHIBITED AS INCREASED WIND FORCES MAY RESULT.
2. FOUNDATION
A. THE FOUNDATION SHALL REST ON SOUND SOIL THAT IS FREE OF ORGANIC AND DELETERIOUS MATERIALS AND CAPABLE OF SUPPORTING 1500 PSF VERTICAL BEARING PRESSURE AND 300 PSF/FT LATERAL BEARING PRESSURE.
B. FOUNDATION DESIGN SHOWN IS BASED ON THE MINIMUM PRESUMPTIVE SOIL STRENGTHS FROM THE SPECIFIED BUILDING CODE. OWNER SHALL VERIFY ACTUAL SOIL CONDITIONS AT EACH JOB SITE AND ANY REQUIRED ADJUSTMENTS TO THE FOUNDATION DESIGN SHALL BE DESIGNED BY OTHERS.
3. CONCRETE
A. COMPRESSION STRENGTH OF ALL REINFORCED CONCRETE SHALL NOT BE LESS THAN 3500 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 COVER FOR REINFORCING BARS SHALL BE 3 UNLESS NOTED OTHERWISE.
D. ANCHOR RODS SHALL BE ASTM F1554 GRADE 36 MINIMUM, GALVANIZED ROD, HEADED OR WITH HEAVY HEX NUT TACKED TO ROD.
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 OF ASTM A500, GRADE B (F_y = 46 KSI).
C. WELDING SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICAN WELDING SOCIETY'S SPECIFICATIONS FOR THE MATERIAL BEING WELDED.
D. WELDING ELECTRODES SHALL BE E70XX.
E. STRUCTURAL STEEL COMPONENTS SHALL BE COATED WITH ANTI-GRAFFITI POLYESTER TGIC POWDER COAT FINISH MEETING AAMA 2604-02 SPECIFICATION.
5. ALUMINUM
A. EXTRUDED ALUMINUM RIDGE CAP SHALL BE FABRICATED FROM ALUMINUM ALLOY 6005-T5 AND SHALL CONFORM TO THE REQUIREMENTS SHOWN ON THE DRAWING.
B. EXTRUDED ALUMINUM GUTTER FASCIA SHALL BE FABRICATED FROM ALUMINUM ALLOY 6005-T6 AND SHALL CONFORM TO THE REQUIREMENTS SHOWN ON THE DRAWING.
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-H34 AND SHALL CONFORM TO THE DECK PROFILE SHOWN ON THE DRAWING.
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 ATTACHED TO STEEL SHALL BE 12-24 HEX WASHER HEAD #5 POINT SELF DRILLING SCREWS WITH BOND SEAL WASHER.
C. SCREWS ATTACHING TO ALUMINUM SHALL BE 8-18 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.
E. ALL BOLTS SHALL BE TIGHTENED TO A SNUG-TIGHT CONDITION AS DEFINED IN THE 2004 RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC) SPECIFICATION FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS.
8. SHOP FABRICATION AND FIELD ASSEMBLY
A. ALL STRUCTURAL STEEL AND ALUMINUM COMPONENTS SHALL BE SHOP FABRICATED SO THAT FIELD ASSEMBLY OF CONNECTIONS CAN BE PERFORMED USING ONLY BOLTING AND SCREW PLACEMENT.
B. ALL SHOP WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS.
C. ALL SHOP WELDS SHALL BE IN STRICT ACCORDANCE WITH THE STRUCTURAL WELDING CODE AWS D1.1 OF THE AMERICAN WELDING SOCIETY SPECIFICATIONS. ALL STRUCTURAL WELDS SHALL BE IN COMPLIANCE WITH THE REQUIREMENTS OF "PRE-QUALIFIED" WELDED JOINTS. ALL WELDING SHALL CONFORM TO AWS A5.18 ; ER70S-6 SERIES E70XX ELECTRODES - LOW HYDROGEN.
D. FIELD WELDING SHALL NOT BE REQUIRED.
9. SPECIAL INSPECTIONS
A. SPECIAL INSPECTIONS, IF ANY REQUIRED BY THE LOCALLY ADOPTED BUILDING CODES, ARE NOT INCLUDED IN THIS WORK AND SHALL BE DONE BY OTHERS.



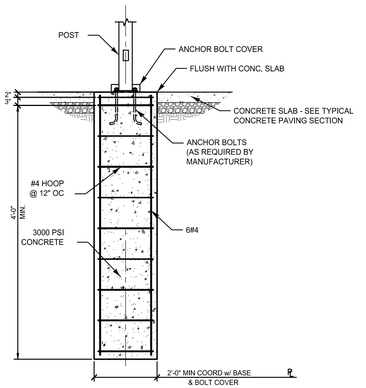
PLAYGROUND SHADE PAVILION
NOT TO SCALE

AMERICANA OUTDOORS
2 INDUSTRIAL DR, SALEM IL 62881
(800)851-0865 - www.americana.com

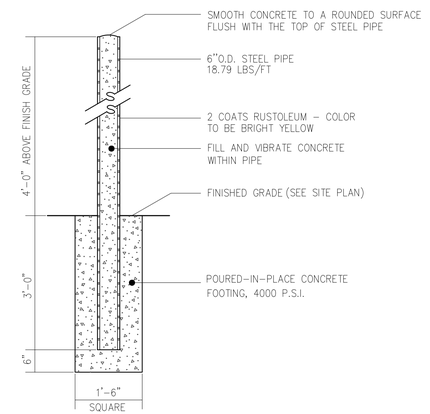
TITLE: 16'x20' NAVAJO SHELTER

SIZE: A | DWG. NO. | REV

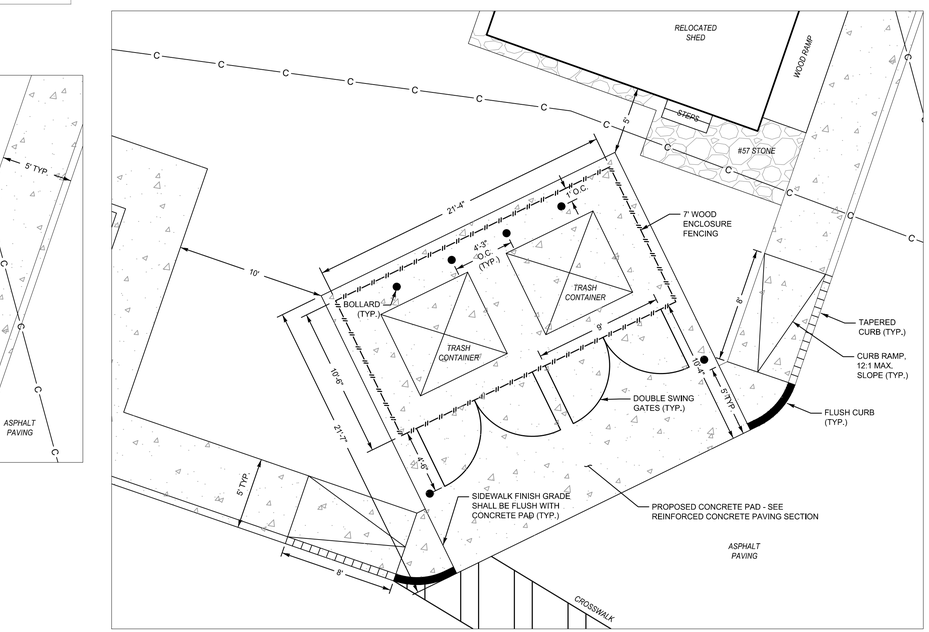
SCALE: 1:1 | WEIGHT: | SHEET 1 OF 1



PAVILION POST FOUNDATION DETAIL - ALL POSTS
NOT TO SCALE



BOLLARD DETAIL
NOT TO SCALE



TRASH ENCLOSURE DETAIL
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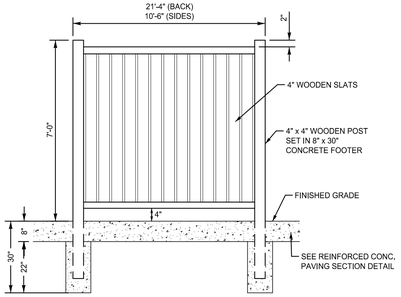

ENCLOSURE FENCING DETAIL
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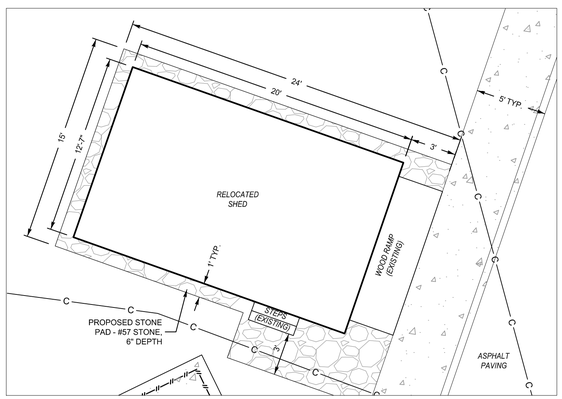
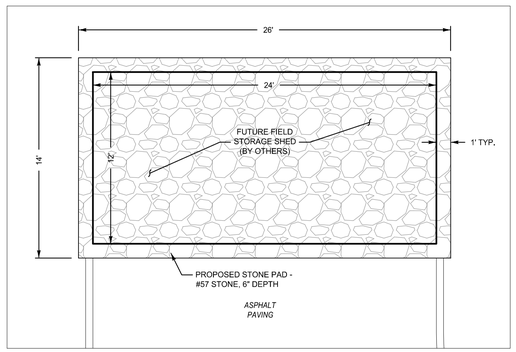


STONE PAD FOR RELOCATED SHED
NOT TO SCALE



STONE PAD FOR FUTURE FIELD STORAGE SHED
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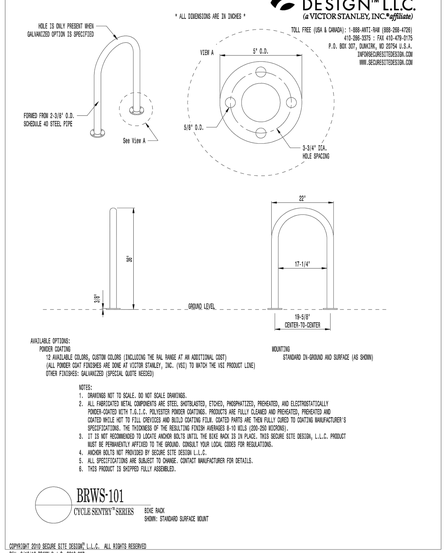
415-286-3370 ; FAX 415-479-2175
P.O. BOX 307, DUNKIRK, MD 20754 U.S.A.
INFO@SECURESITEDESIGN.COM
WWW.SECURESITEDESIGN.COM

* ALL DIMENSIONS ARE IN INCHES *



AVAILABLE OPTIONS:
POWDER COATING
12 AVAILABLE COLORS, CUSTOM COLORS (INCLUDING THE RAL RANGE AT AN ADDITIONAL COST)
(ALL POWDER COAT FINISHES ARE DONE AT VICTOR STANLEY, INC. (VSI) TO MATCH THE VSI PRODUCT LINE)
OTHER FINISHES: GALVANIZED (SPECIAL QUOTE NEEDED)

MOUNTING
STANDARD IN-GROUND AND SURFACE (AS SHOWN)

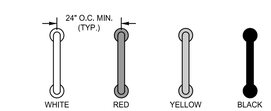
NOTES:
1. DRAWINGS NOT TO SCALE. DO NOT SCALE DRAWINGS.
2. ALL FABRICATED METAL COMPONENTS ARE STEEL SHOTBLASTED, ETCHED, PHOSPHATIZED, PREHEATED, AND ELECTROSTATICALLY POWDER-COATED WITH T.G.I.C. POLYESTER POWDER COATINGS. PRODUCTS ARE FULLY CLEANED AND PREHEATED, PREHEATED AND COATED WHILE HOT TO FILL CREVICES AND BUILD COATING FILM. COATED PARTS ARE THEN FULLY CURED TO COATING MANUFACTURER'S SPECIFICATIONS. THE THICKNESS OF THE RESULTING FINISH AVERAGES 8-10 MILS (200-250 MICRONS).
3. IT IS NOT RECOMMENDED TO LOCATE ANCHOR BOLTS UNTIL THE BIKE RACK IS IN PLACE. THIS SECURE SITE DESIGN, L.L.C. PRODUCT MUST BE PERMANENTLY AFFIXED TO THE GROUND. CONSULT YOUR LOCAL CODES FOR REGULATIONS.
4. ANCHOR BOLTS NOT PROVIDED BY SECURE SITE DESIGN L.L.C.
5. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE. CONTACT MANUFACTURER FOR DETAILS.
6. THIS PRODUCT IS SHIPPED FULLY ASSEMBLED.

BRWS-101
CYCLE SENTRY™ SERIES

EDGE RACK
SHOWN: STANDARD SURFACE MOUNT

REV. 9/18/15 DRAWN R.J.C. 2015-107

BIKE RACK POWDER COATING (PLAN VIEW)



BICYCLE RACKS
NOT TO SCALE

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

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE No.: 1008
EXPIRATION DATE: 5/20/2026

DATE: 1/23/2025

1008
LICENSE NO.

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

REVISED DATE	BY

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

SCALE AS SHOWN
DRAWN BY LMV/RDT
CHECKED BY MJP
SHEET 9 OF 38
PROJECT NO.: P570004
DATE: 1/23/2025

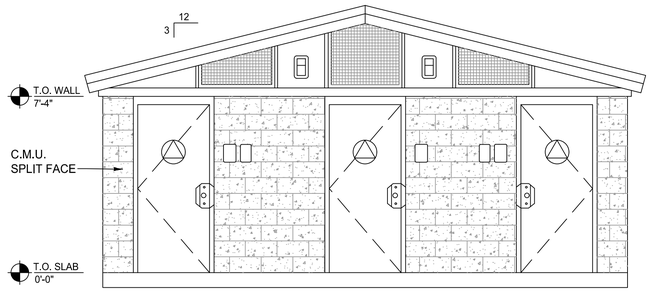
CONSTRUCTION DOCUMENTS

Site Details 3

North Arundel Aquatic Center

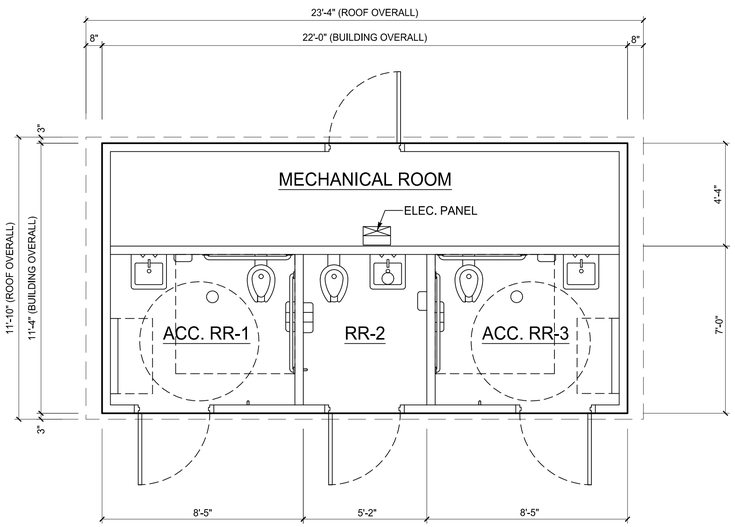
2nd Tax District Tax Map 15, Grid 11, Parcel 638
Anne Arundel Co., MD.

T:\2018\facilities\181120019\gn. aquatic center\CIVIL\CADD\Drawings\3 Construction Documents\181120019A (CD-07) Site Details.dwg Jan 24, 2025 11:55am dehanahan



ELEVATION

SCALE: NOT TO SCALE



FLOOR PLAN

SCALE: NOT TO SCALE

RESTROOM BUILDING
PLAYGROUND SERIES
PS-033
135 USERS / HOUR

ARTIST IMPRESSION: 3D RENDERING ONLY FOR REPRESENTATION. COLORS AND MATERIALS ARE SUBJECT TO CHANGE.

PUBLIC RESTROOM COMPANY
Building Better Places To Go.℠

www.PublicRestroomCompany.com
2587 BUSINESS PARKWAY
MINDEN NEVADA 89423
P: 888-888-2060 F: 888-888-1448

GENERAL NOTES

Plan shown for reference only. Contractor to confirm final restroom building layout and design with Anne Arundel County Department of Recreation & Parks.

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

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EXPIRATION DATE: 5/20/2026

DATE: 1/23/2025

1008 — LICENSE NO.

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

REVISED DATE	BY

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

SCALE AS SHOWN
DRAWN BY LMV/RDT
CHECKED BY MJP
SHEET 10 OF 38
PROJECT NO.: P570004
DATE: 1/23/2025

CONSTRUCTION DOCUMENTS

Site Details 4

North Arundel Aquatic Center

2nd Tax District
Anne Arundel Co., MD.

Tax Map 15, Grid 11, Parcel 638

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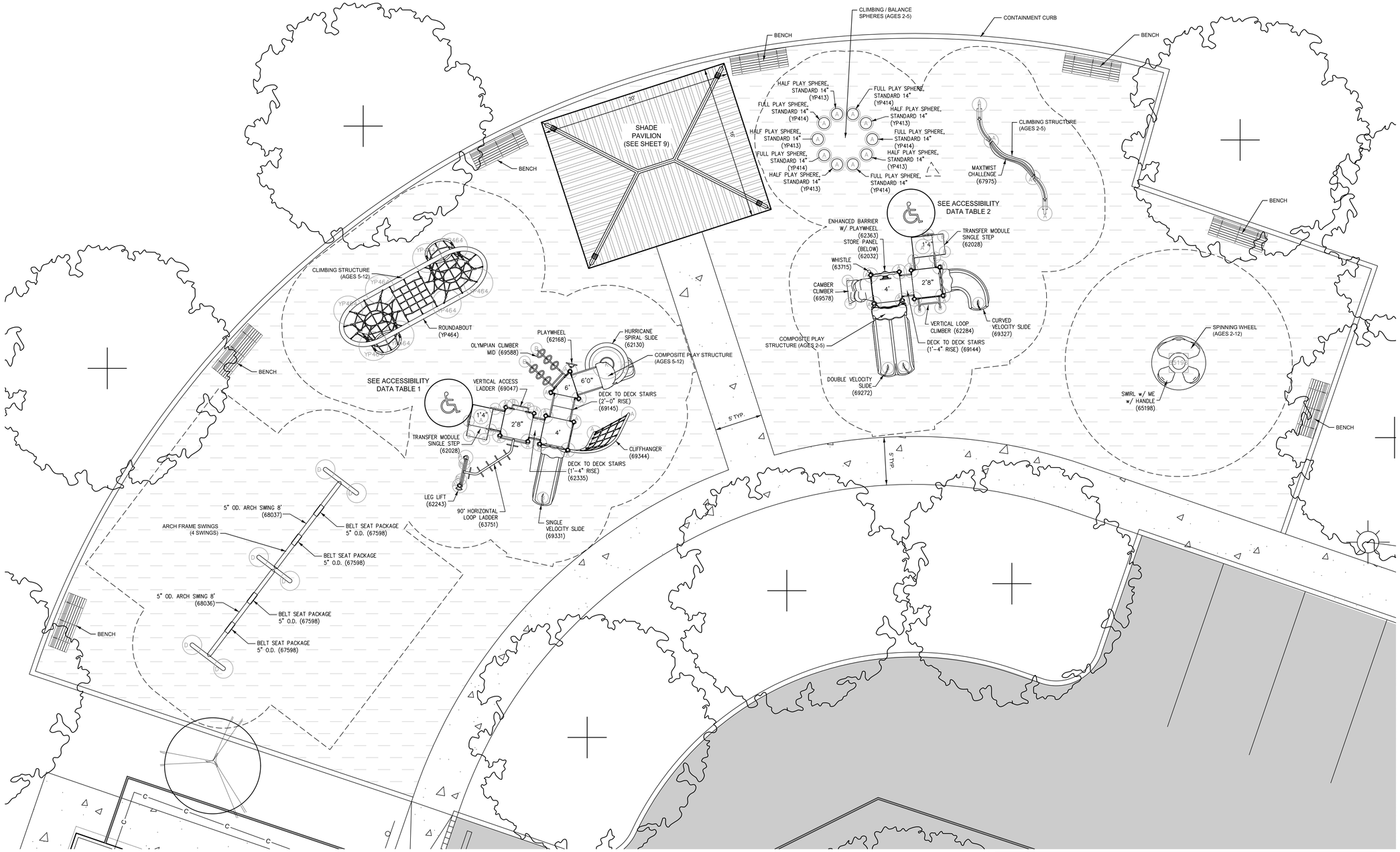

LEGEND

PROPOSED

- Limit of Disturbance — LOD
- Storm Drain — PROP. 15" D.
- Curb & Gutter
- Asphalt Paving
- Playground Surface
- Concrete
- Building
- Play Equipment Fall Zone
- Play Equipment Footing
- Shade Tree — A
- Flowering Tree — A

NOTES

1. See Sheet 9 for pavilion and bench details.
2. Playground equipment not to be scaled from this plan.
3. Equipment footings are shown for reference only. Footing design is preliminary and subject to change.

Manufacturer Notes:

4. Top View drawings and measurements are for overall site and structure appearance purposes. Top view should not be conceived as a construction detail; therefore, all measurements and slope requirements should be field verified prior to construction.
5. Never install play equipment over hard, unresilient surfaces such as asphalt, concrete, or compacted earth. It is the Owner's responsibility to ensure the "minimum area required" contains an appropriate amount of resilient material to cushion accidental falls.

FOOTINGS TABLE			
TYPE	DIAMETER	DEPTH	QTY.
A	1'-6" [45.72cm]		
B	1'-2" [35.56cm]		
C	2'-0" [60.96cm]		
D	2'-0" [60.96cm]		
E	1'-2" [35.56cm]		
F	3'-0" [91.44cm]		
G	4'-0" [121.92cm]		

ACCESSIBILITY DATA TABLE 1

Total Play Components	13			
Elevated Play Components	6			
Elevated Play Components Accessible by Ramp	0	Req.	0	User Capacity
Elevated Components Accessible by Transfer	6	Req.	3	35-45
Accessible Ground Level Components Shown	7	Req.	2	Critical Fall Height
Different Types of Ground Level Components	4	Req.	2	8'-0"

ACCESSIBILITY DATA TABLE 2

Total Play Components	19			
Elevated Play Components	5			
Elevated Play Components Accessible by Ramp	0	Req.	0	User Capacity
Elevated Components Accessible by Transfer	5	Req.	3	45-55
Accessible Ground Level Components Shown	14	Req.	2	Critical Fall Height
Different Types of Ground Level Components	5	Req.	2	4'-0"

PLAN

SCALE: 1"= 5'

0 5' 10'

North Arundel Aquatic Center
7888 Crain Hwy
Glen Burnie, MD 21061

Bliss Products & Services

This play equipment is recommended for children ages: 2-5 and 5-12
Minimum Area Required: Per Site

Scale: 1" = 10'-0"
This drawing can be scaled only when in an 11" x 17" format

Drawn By: J. Swiezichowski
Date: 10/3/2024
Quote Number: 645-171551A

play & park structures
544 Chestnut Street
Chattanooga, TN 37402
800-727-1907 / www.playandpark.com

User Capacity: 75-125
Critical Fall Height: 8'-0"

ISO 9001:2015

DURAGOO POWDER COATINGS

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

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LICENSE No.: 1008
EXPIRATION DATE: 5/20/2026

DATE: 1/23/2025

1008
LICENSE NO.

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

REVISED DATE	BY

APPROVED DATE
CHIEF ENGINEER

APPROVED DATE
PROJECT MANAGER

APPROVED DATE
ASSISTANT CHIEF ENGINEER

APPROVED DATE
CHIEF, RIGHT OF WAY

SCALE AS SHOWN
DRAWN BY LMV/RDT
CHECKED BY MJP
SHEET 11 OF 38
PROJECT NO.: P570004
DATE: 1/23/2025

CONSTRUCTION DOCUMENTS

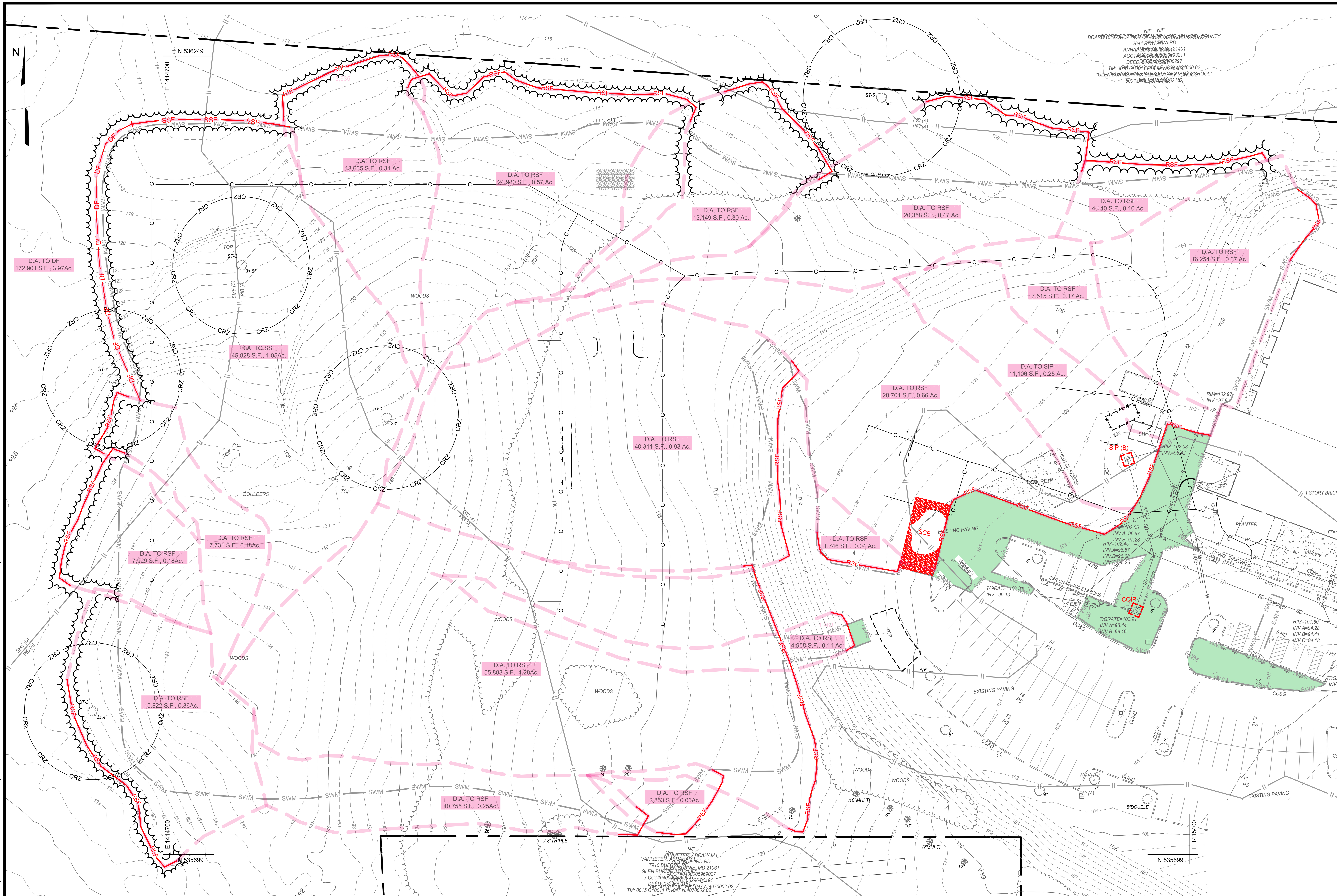
Playground Plan

North Arundel Aquatic Center

2nd Tax District
Anne Arundel Co., MD.

Tax Map 15, Grid 11, Parcel 638

T:\2018\facilities\18112001\plan aquatic center\CIVIL\CADD\Drawings\3 Construction Documents\18112001A (CD-08) Playground Plan 1 Details.dwg Jan 24, 2025 11:55am dshanahan



LEGEND

EXISTING

- Tract Boundary
- Property Line
- Minor Contour
- Major Contour
- Edge of Paving
- Curb and Gutter
- Storm Drain
- Water & Fire Hydrant
- Sanitary Sewer
- Underground Electric
- Street Light
- Sign
- Electric Structure
- Fence Line
- Building
- Tree Line
- Deciduous Tree
- Evergreen Tree
- Critical Root Zone
- Soils Line

EROSION & SEDIMENT CONTROL

- Limit of Disturbance — LOD
- Drainage Area
- Silt Fence — RSF
- Super Silt Fence — SSF
- Diversion Fence — DF
- Standard Inlet Protection — SIP
- At Grade Inlet Protection — COIP
- Stabilized Construction Entrance — SCE
- Area of Same Day Stabilization

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

PLAN

SCALE: 1" = 30'

0 30' 60'

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Phone: 443.589.2400 www.centuryeng.com

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE No.: 32603
EXPIRATION DATE: 1-18-2026

STATE OF MARYLAND DAVID RICHARD SHANAHAN No. 32603 PROFESSIONAL ENGINEER

LICENSE NO.

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

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

SCALE	AS SHOWN
DRAWN BY	LMV/RDT
CHECKED BY	MJP
SHEET	12 OF 38
PROJECT NO.:	P570004
DATE:	1/23/2025

CONSTRUCTION DOCUMENTS

Erosion & Sediment Control Plan
Phase 1

North Arundel Aquatic Center

2nd Tax District
Anne Arundel Co., MD.
Tax Map 15, Grid 11, Parcel 638

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LEGEND

PROPOSED

- Limit of Disturbance — LOD
- Minor Contour — 672
- Major Contour — 670
- Spot Elevation — +143.8
- Easement Line
- Sanitary Sewer — PROP. 8" S.
- Water and Fire Hydrant — PROP. 8" W.
- Storm Drain — PROP. 15" D.
- Curb & Gutter
- Asphalt Paving
- Concrete
- Building
- Chain Link Fence — X — X — X
- Wall
- Street/Field Light
- Tree Line

EROSION & SEDIMENT CONTROL

- Limit of Disturbance — LOD
- Drainage Area
- Silt Fence — RSF
- Super Silt Fence — SSF
- Diversion Fence — DF
- Standard Inlet Protection — SIP
- Stabilized Construction Entrance — SCE
- Area of Same Day Stabilization

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

N

N 536249

E 1414700

N/F
BOARD OF EDUCATION OF ANNE ARUNDEL COUNTY
2644 RIVA RD
ANNAPOLIS MD 21401
ACCTR04000009321 1
DEED: 01495/00297
TM: 0015 G: 0011 P:0636 N:24000.02
"GLEN BURNIE PARK ELEMENTARY SCHOOL"
500 MARLBORO RD.

D.A. TO RSF
13,635 S.F., 0.31 Ac.

D.A. TO RSF
19,026 S.F., 0.44 Ac.

D.A. TO RSF
9,027 S.F., 0.21 Ac.

D.A. TO RSF
10,521 S.F., 0.24 Ac.

D.A. TO RSF
1,080 S.F., 0.02 Ac.

D.A. TO RSF
9,630 S.F., 0.22 Ac.

D.A. TO SSF
5,724 S.F., 0.13 Ac.

DIVERSION FENCE SHALL BE DOUBLE SIDED FOR ITS ENTIRE LENGTH

D.A. TO DF
7,668 S.F., 0.18 Ac.

D.A. TO DF
166,726 S.F., 3.83 Ac.

D.A. TO RSF
8,766 S.F., 0.20 Ac.

D.A. TO RSF
3,168 S.F.,
0.07 Ac.

D.A. TO RSF
7,281 S.F.,
0.17 Ac.

D.A. TO SIP
10,1610 S.F., 0.23 Ac.

D.A. TO SIP
19,620 S.F., 0.45 Ac.

D.A. TO SIP
18,441 S.F., 0.42 Ac.

D.A. TO RSF
9,333 S.F.,
0.21 Ac.

D.A. TO RSF
17,865 S.F., 0.41 Ac.

D.A. TO RSF
2,865 S.F., 0.07 Ac.

D.A. TO RSF
6,453 S.F., 0.15 Ac.

D.A. TO SIP
15,867 S.F., 0.36 Ac.

D.A. TO SIP
19,385 S.F., 0.44 Ac.

D.A. TO SIP
1,755 S.F., 0.04 Ac.

D.A. TO RSF
25,776 S.F., 0.59 Ac.

D.A. TO SIP
5,202 S.F., 0.12 Ac.

D.A. TO RSF
1,629 S.F., 0.04 Ac.

D.A. TO SIP
1,809 S.F., 0.04 Ac.

D.A. TO SIP
1,656 S.F., 0.04 Ac.

BLOCK OPENINGS UNTIL SWM FACILITIES ARE COMPLETE AND STABILIZED

SB-1 B-1
SB-2 B-2
SB-3 B-3
SB-4 B-4
SB-5 B-5
SB-6 B-6
SB-7 B-7
SB-8 B-8

N/F
VANMETER, ABRAHAM L.
7910 BUFORD RD.
GLEN BURNIE, MD 21061
ACCTR04000969027
DEED: 05296/00181
TM: 0015 G:0011 P:1947 N:4070002.02

E 1414700
N 535699
E 1415400
N 535699

PLAN

SCALE: 1" = 30'

0 30' 60'

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

PROFESSIONAL CERTIFICATION

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LICENSE No.: 32603
EXPIRATION DATE: 1-18-2026

STATE OF MARYLAND — JOAN MARIE SHEPPARD — No. 32603 — PROFESSIONAL ENGINEER

LICENSE NO.

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

REVISED DATE	BY

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

SCALE	AS SHOWN
DRAWN BY	LMV/RDT
CHECKED BY	MJP
SHEET	13 OF 38
PROJECT NO.:	P570004
DATE:	1/23/2025

CONSTRUCTION DOCUMENTS

Erosion & Sediment Control Plan
Phase 2

North Arundel Aquatic Center

2nd Tax District
Anne Arundel Co., MD.

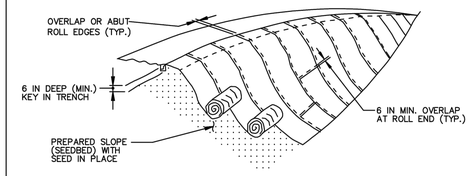
Tax Map 15, Grid 11, Parcel 638

T:\2018\facilities\181120019a n. aquatic center\CIVIL\CADD Drawings\3. Construction Documents\181120019A (CP-12) ESC Plan Ph2.dwg Jan 24, 2025 10:52am dahanahan

DETAIL B-4-6-B TEMPORARY SOIL STABILIZATION MATTING SLOPE APPLICATION

STANDARD SYMBOL

TSSMS – * lb/ft² (* INCLUDE SHEAR STRESS)



ISOMETRIC VIEW

CONSTRUCTION SPECIFICATIONS

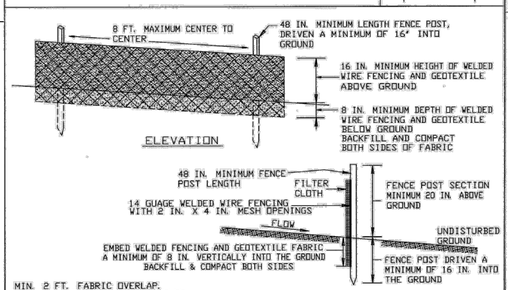
1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION & SEDIMENT CONTROL PLAN.
5. UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
7. KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

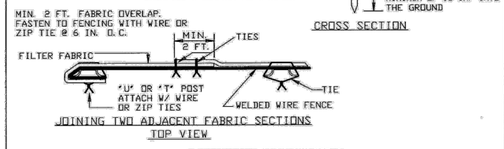
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

REINFORCED SILT FENCE

STANDARD SYMBOL — RSF —





CONSTRUCTION SPECIFICATIONS

1. Metal fence post shall be a minimum of 48 inches long, driven 16 inches minimum into the ground and no more than 8 feet apart. Post shall be standard T or U section weighing not less than 1.00 pound per linear foot. Reinforcement shall be 14 guage welded wire fencing with 2 inch X 4 inch mesh openings.
2. Geotextile shall be fastened securely to each fence post with wire ties or zip ties at top and mid section. Where ends of geotextile fabric come together, they shall be overlapped, folded and wire tied or zip tied to post to prevent sediment bypass.
3. Use a woven geotextile, as specified in section H-1 materials, and fasten to the upslope side of the fence posts with wire or zip ties at top and midsection. The manufacturer's certification that the fabric meets the requirements in section H-1 must be made available to the inspection/enforecment authority.
4. Extend both ends of reinforced silt fence a minimum of Five (5) horizontal feet upslope at 45 degrees to the main fence alignment to prevent runoff from going around the ends.
5. Remove accumulated sediment and debris when bulges develop in the reinforced silt fence fabric or when sediment reaches 25% of the fence height. Replace geotextile if torn. If undermining occurs, reinstall fence.

ANNE ARUNDEL SOIL CONSERVATION DISTRICT	2015	

REINFORCED SILT FENCE

Design Criteria

Reinforced Silt Fence Desisgn 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 Hydrolic Soil Group (HSG) "A" soils

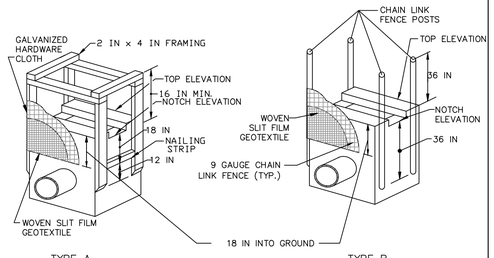
1. The use of Reinforced Silt Fence must conform to the design constraints listed above.
2. The area downgrade of the Reinforced Silt Fence must be undisturbed ground.
3. Reinforced Silt Fence must be placed along the contour.
4. Reinforced Silt Fence should be used with caution in areas where rocky soils may prevent trenching.
5. Extend both ends of reinforced silt fence a minimum of five (5) horizontal feet upslope and 45 degrees to the main fence alignment to prevent runoff from going around the edges

ANNE ARUNDEL SOIL CONSERVATION DISTRICT	2015	

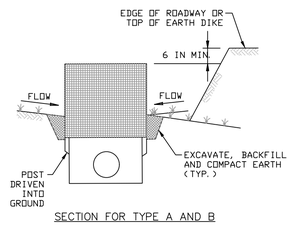
DETAIL E-9-1 STANDARD INLET PROTECTION

STANDARD SYMBOL SIP

TYPE A MAXIMUM DRAINAGE AREA = ¼ ACRE
TYPE B MAXIMUM DRAINAGE AREA = 1 ACRE



ISOMETRIC VIEW



SECTION FOR TYPE A AND B

1 OF 2

CONSTRUCTION SPECIFICATIONS

1. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
2. EXCAVATE COMPLETELY AROUND THE INLET TO A DEPTH OF 18 INCHES BELOW THE NOTCH ELEVATION.
3. FOR TYPE A, USE NOMINAL 2 INCH X 4 INCH CONSTRUCTION GRADE LUMBER POSTS, DRIVEN 1 FOOT INTO THE GROUND AT EACH CORNER OF THE INLET. PLACE NAIL STRIPS BETWEEN THE POSTS ON THE ENDS OF THE INLET. ASSEMBLE THE TOP PORTION OF THE 2X4 FRAME AS SHOWN. STRETCH ½ INCH GALVANIZED HARDWARE CLOTH TIGHTLY AROUND THE FRAME AND FASTEN SECURELY. FASTEN GEOTEXTILE SECURELY TO THE HARDWARE CLOTH WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND HARDWARE CLOTH A MINIMUM OF 18 INCHES BELOW THE WEIR CREST. THE ENDS OF THE GEOTEXTILE MUST MEET AT A POST, BE OVERLAPPED AND FOLDED, THEN FASTENED TO THE POST.

   FOR TYPE B, USE 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND 6 FOOT LENGTH, DRIVEN A MINIMUM OF 36 INCHES BELOW THE WEIR CREST AT EACH CORNER OF THE STRUCTURE. FASTEN 9 GAUGE OR HEAVIER CHAIN LINK FENCE, 42 INCHES IN HEIGHT, SECURELY TO THE FENCE POSTS WITH WIRE TIES. FASTEN GEOTEXTILE SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 18 INCHES BELOW THE WEIR CREST.
4. BACKFILL AROUND THE INLET IN LOOSE 4 INCH LIFTS AND COMPACT UNTIL SOIL IS LEVEL WITH THE NOTCH ELEVATION ON THE ENDS AND TOP ELEVATION ON THE SIDES.
5. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

2 OF 2

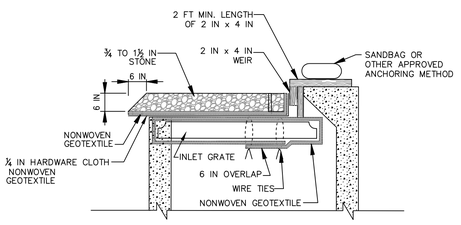
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

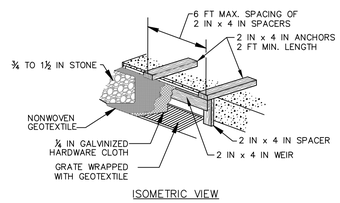
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-9-6 COMBINATION INLET PROTECTION

STANDARD SYMBOL COIP

MAXIMUM DRAINAGE AREA = ¼ ACRE





1 OF 2

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

DETAIL E-9-6 COMBINATION INLET PROTECTION

STANDARD SYMBOL COIP

CONSTRUCTION SPECIFICATIONS

1. USE NOMINAL 2 INCH x 4 INCH LUMBER.
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
3. LIFT GRATE, AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS, THEN SET GRATE BACK IN PLACE.
4. ATTACH A CONTINUOUS PIECE OF ½ INCH GALVANIZED HARDWARE CLOTH WITH A MINIMUM WIDTH OF 30 INCHES AND A MINIMUM LENGTH OF 4 FEET LONGER THAN THE THROAT OPENING, TO THE 2X4 WEIR, EXTENDING 2 FEET BEYOND THROAT ON EACH SIDE.
5. PLACE A CONTINUOUS PIECE OF NONWOVEN GEOTEXTILE THE SAME DIMENSIONS AS THE HARDWARE CLOTH OVER THE HARDWARE CLOTH AND SECURELY ATTACH IT TO THE WEIR.
6. NAIL THE 2X4 WEIR TO THE TOP OF A 9 INCH LONG VERTICAL SPACER TO BE LOCATED BETWEEN THE WEIR AND THE INLET FACE (MAXIMUM 4 FEET APART).
7. PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL TO 2X4 ANCHORS (MINIMUM 2 FOOT LENGTHS OF 2x4 INCH TO THE TOP OF THE WEIR AT SPACER LOCATIONS). EXTEND 2X4 ANCHORS ACROSS THE INLET TOP AND HOLD IN PLACE BY SANDBAGS OR OTHER APPROVED ANCHORING METHOD.
8. INSTALL END SPACERS A MINIMUM OF 1 FOOT BEYOND BOTH ENDS OF THE THROAT OPENING.
9. FORM THE ¼ INCH HARDWARE CLOTH AND THE GEOTEXTILE TO THE CONCRETE GUTTER AND AGAINST THE FACE OF THE CURB ON BOTH SIDES OF THE INLET. PLACE CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE OVER THE HARDWARE CLOTH AND GEOTEXTILE IN SUCH A MANNER TO PREVENT WATER FROM ENTERING THE INLET UNDER OR AROUND THE GEOTEXTILE.
10. AT NON-SUMP LOCATIONS, INSTALL A TEMPORARY SANDBAG OR ASPHALT BERM TO PREVENT INLET BYPASS.
11. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

2 OF 2

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

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

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE No.: 32603
EXPIRATION DATE: 1-18-2026

STATE OF MARYLAND — JOSEPH MICHAEL PHILLIPS — 32603 — PROFESSIONAL ENGINEER

LICENSE NO.

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

REVISED DATE	BY

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

SCALE	AS SHOWN
DRAWN BY	LMV/RDT
CHECKED BY	MJP
SHEET	14 OF 38
PROJECT NO.:	P570004
DATE:	1/23/2025

CONSTRUCTION DOCUMENTS

Erosion & Sediment Control Details

North Arundel Aquatic Center

2nd Tax District Anne Arundel Co., MD.

Tax Map 15, Grid 11, Parcel 638

T:\2018\Facilities\18111200\19a.n.aquatic center\CIVIL\CADD\Drawings\3.Construction Documents\18111200 19A(CD-19) ESC Details.dwg Jan 24, 2025 9:16am dshanahan

AASCD/MAA VEGETATIVE ESTABLISHMENT DETAILS AND SPECIFICATIONS FOR PROJECTS WITHIN 4 MILES OF THE BWI AIRPORT

July 1, 2004

References to ITEM #s noted below are found in Maryland Aviation Administration's manual entitle Specifications for Performing Landscaping Activities for the Maryland Aviation Administration dated May 2001.

SOIL TESTS

1. Following initial soil disturbances or re-disturbance, 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.
2. 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.
3. 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.
   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 to ITEM 901 or amendments made as recommended by a certified agronomist.

SEEDING

ITEM 903 SEEDING

DESCRIPTION

903-1.1 GENERAL. This item provides specifications for seeding of areas as designated on plans or as directed by the MAA Engineer. The species, mixtures, and methods of application provided in this item have been designed to reduce the attractiveness of airport grounds to wildlife. Only MAA-approved species, mixtures, and rates of application provided in this item may be used to establish vegetation. All activities associated with seeding including soil preparation, seed application, fertilization, and maintenance shall also conform to these approved standards.

MATERIALS

903-2.1 SEED. All seed shall comply with the Maryland Seed Law (Agricultural Article of the Annotated Code of Maryland). Only MAA-approved species, mixtures, and rates of application provided in this item may be used to establish vegetation. Seed will be sampled and tested by an inspector from the Turf and Seed Section, Maryland Department of Agriculture (MDA), Annapolis, Maryland. All lawn and turf seed and mixtures shall be free from the following state-listed restricted noxious weeds:

Corn Cockle (Agrostemma githago)	Orchardgrass (Dactylis glomerata)
Bentgrass (Agrostis spp.)*	Tall Fescue (Festuca arundinacea)*
Redtop (Agrostis gigantea)*	Meadow Fescue (Festuca pratensis)*
Wild Onion (Allium canadense)	Velvetgrass (Holcus lanatus)
Wild Garlic (Allium vineale)	Annual Bluegrass (Poa annua)
Bindweed (Calstegia spp.)	Rough Bluegrass (Poa trivialis)*
Dodder (Cuscuta spp.)	Timothy (Phleum pra tense)
Bermuda Grass (Cynodon dactylon)	Johnson Grass (Sorgum halepense)

Restricted noxious-weed seed may not exceed 0.5 percent by weight of any seed mixture. In addition, all seed sold in Maryland shall be free from the following listed prohibited noxious weeds: Balloonvine (Cardiospermum halicacab), Quackgrass (Elytrigia repens), Sicklepod (Senna obtusifolia), Sorghum (Sorghum spp.), Canada thistle (Cirsium arvense), Plumeless thistle (Carduus spp.-includes musk thistle and curled thistle), and Serrated tussock (Nassella trichotoma).

*These species may be included as a labeled component of a mixture when each is present in excess of five percent of the mixture by weight.

903-2.1.1 APPROVED SPECIES. The following table contains species that are approved by MAA for use in seed mixtures. Purity requirements and germination requirements are also provided.

APPROVED PLANT SPECIES MAA SEED MIXTURES	Purity* Not Less than %	Minimum % Germination *	Pure Live Seed Factor
Certified Turf-Type Tall Fescue(Festuca arundinacea)	98	90	1.13
Certified Kentucky Bluegrass (Poa pratensis)	90	80	1.39
Hard Fescue (Festuca longifolia)	98	90	1.13
Chewings Red Fescue (Festuca rubra commutata)	98	90	1.13
Annual Ryegrass (Lolium multiflorum)	95	85	1.24
Perennial Ryegrass (Lolium perenne)	90	80	1.39
Fowl Meadow Grass (Poa palustris)	90	80	1.39
Little Bluestem (Andropogon scoparius)	62	94	1.71

*The percentage weight of pure seed present shall be free of any agriculture seeds, inert matter, and other seeds distinguishable by their appearance.
*The percentage of germination shall be actual sprouts and shall not include hard seeds unless specifically permitted by the MAA Engineer.

903-2.1.2 PURITY. All seed shall be free of all state-designated noxious weeds listed in Paragraph 2.1.1 and conform to MAA specifications. To ensure compliance, MAA requires sampling and testing of seed by the Turf and Seed Section, Maryland Department of Agriculture (MDA). The Contractor shall furnish the MAA Engineer with duplicate signed copies of a statement by the Turf and Seed Section certifying that each lot of seed has been laboratory tested within six months of date of delivery. This statement shall include the following information:

- Name and address of laboratory,
- Date of test,
- Lot number,
- The results of tests as to name, percentages of purity and of germination
- Percentage of weed content for the seed furnished, and
- In the case of a mixture, the proportions of each kind of seed.

Seed shall be furnished in standard containers with the seed name, lot number, net weight, percentages of purity, germination rate and hard seed, and percentage of maximum weed seed content clearly marked. All seed containers shall be tagged with a MDA supervised mix program seed tag.

903-2.1.3 MIXTURES AND APPLICATION RATES. Only seed mixtures and application rates described in this item may be used unless otherwise approved by the MAA Engineer. Seed mixtures shall meet criteria detailed in Paragraph 903-2.1.2. Seed mixtures have been formulated to minimize the attractiveness of areas to wildlife of common landscape scenarios. The appropriate seed mixture for application will be designated based on environmental conditions and may vary from site to site. All planting rates listed are in pounds of Pure Live Seed (PLS) per acre.

Seed mixtures, application scenarios, and rates for permanent cool-season grasses are as follows:

a. Seed Mixture No. 1 - relatively flat areas (grade less than 4:1) subject to normal conditions and regular mowing (Application rate = 234 lbs PLS/acre).
b. Seed Mixture No. 2 - sloped areas (grade greater than 4:1) not subject to regular mowing (Application rate = 115 lbs PLS/acre).
c. Seed Mixture No. 3 - wetlands and their associated buffer zones (Application rate = 131 lbs PLS/acre).

Seed Mixture No. 1: Relatively flat areas regularly mowed and exposed to normal conditions (Application rate = 234 lbs PLS/acre)

Seed	Rate of Application (lbs of PLS/acres)
85% Certified Turf-Type Tall Fescue	192
10% Certified Kentucky Bluegrass	28
5% Perennial Ryegrass	14
Supplemental Seed	
Annual Ryegrass	25

Seed Mixture No. 2: Sloped areas not subject to regular mowing (Application rate = 115 lbs PLS/acre)

Seed	Rate of Application (lbs of PLS/acre)
75% Hard Fescue	85
20% Chewings Fescue	23
5% Kentucky Bluegrass	7
Supplemental Seed	
Redtop	3

Seed Mixture No. 3: Wetland areas and their associated buffer zones (Application rate = 131 lbs PLS/acre)

Seed	Rate of Application (lbs of PLS/acre)
60% Fowl Meadow Grass	83
30% Chewings Fescue	34
10% Perennial Ryegrass	14
Supplemental Seed	
Redtop	3

903-2.1.4 SEEDING SEASONS. Application of seed and seed mixtures shall occur within a specified seeding season unless otherwise approved by the MAA Engineer. No seed or seed mixtures are to be applied on frozen ground or when the temperature is at or below 35 degrees Fahrenheit. Under these conditions, a layer of mulch should be applied in accordance with Item 905, Mulching, to stabilize the site, and permanent seeding should occur in the subsequent seeding season. Seed application may occur during the seeding season dates listed below. Seeding performed after October 20 should be a temporary cover of annual ryegrass and followed by overseeding of the appropriate seed mixture during the spring seeding season.

SEEDING SEASONS	
Permanent Cool-Season Grasses	March 1 to April 20 and August 1 to October 20, inclusive
Temporary Cover of Annual Rye/Redtop	March 1 to April 30 and August 1 to November 30, inclusive
Temporary Cover of Warm-Season Grasses (Little Bluestem only)	May 1 to July 31, inclusive. Rate of application should be 13.6 lbs PLS/acre

Seeding seasons are based on typical years and can be subject to variation, which may be modified by the MAA Engineer based on seasonal trends.

If the time required to complete any of the operations necessary under this item, within the specified planting season or any authorized extensions thereof, extends beyond the Contract period, then such time will be charged against the Contract time, and liquidated damages will be enforced with respect to this portion of work.

903-2.2 LIME. Lime shall consist of ground limestone and contain at least 85% total carbonates. Lime shall be ground to a fineness so that at least 90% will pass through a No. 20 mesh sieve and 50% will pass through a No. 100 mesh sieve. Dolomitic lime or a high magnesium lime shall contain at least 10% magnesium oxide. Lime shall be applied by approved methods detailed in Section 903-3.3 of this item. The rate of application will be based on results of soil tests.

903-2.3 FERTILIZER. Fertilizer shall be standard commercial fertilizer (supplied separately or in mixtures) and meet the requirements of applicable state and federal laws (O-F-241) as well as standards of the Association of Official Agricultural Chemists. Nitrogen- Phosphorus-Potassium (N-P-K) concentrations shall be determined from analysis of soil samples. ***(Approved fertilizer rate: 21 pounds of 10-10-10 per 1,000 square feet.)*** Methods of fertilizer application shall conform to standards described in Section 903-3.3 of this item. Fertilizer shall be furnished in standard containers that are clearly labeled with name, weight, and guaranteed analysis of the contents (percentage of total nitrogen, available phosphoric acid, and water-soluble potash). Mixed fertilizers shall not contain any hydrated lime or cyanamide compounds. Fertilizers failing to meet the specified analysis may be approved by the MAA Engineer, providing sufficient materials are applied to conform with the specified nutrients per unit of measure without additional cost to MAA.

The fertilizers may be supplied in the following forms:

a. A dry, free-flowing fertilizer suitable for application by a common fertilizer spreader;
b. A finely ground fertilizer soluble in water, suitable for application by power sprayers; or
c. A granular or pellet form suitable for application by blower equipment.

The rate of application will be based on results of soil tests performed by the University of Maryland Soil Testing Laboratory. By law, persons applying fertilizer to State-owned land shall follow the recommendations of the University of Maryland as set forth in the "Plant Nutrient Recommendations Based on Soil Tests for Turf Maintenance" and the "Plant Nutrient Recommendations Based on Soil Tests for Sod Production" (see Appendix B). Application of the fertilizer shall be in a manner that is consistent with the recommendations of the University of Maryland Cooperative Extension.

CONSTRUCTION METHODS AND EQUIPMENT

903-3.1 GENERAL. This section provides methods for the application of and includes standards for seedbed preparation, methods of application, and equipment to be used during the process. Lime and fertilizer shall be applied to seeded areas before the seed is spread. The mixture of seed will be determined for sites based on environmental conditions as described in Paragraph 903-2.1.3.

903-3.2 ADVANCE PREPARATION. Areas designated for seeding shall be properly prepared in advance of seed application. The area shall be tilled and graded prior to application of lime and fertilizer, and the surface area shall be cleared of an stones larger than 1 inch in diameter, sticks, stumps, and other debris that might interfere with sowing of seed, growth of grasses, or subsequent maintenance of grass-covered areas. Damage caused by erosion or other forces that occur after the completion of grading shall be repaired prior to the application of fertilizer and lime. The Contractor will repair such damage, which may include filling gullies, smoothing irregularities, and repairing other incidental damage before beginning the application of fertilizer and ground limestone.

If an area to be seeded is sparsely sodded, weedy, barren and unworked, or packed and hard, all grass and weeds shall first be cut or otherwise satisfactorily disposed of, and the soil then scarified or otherwise loosened to a depth not less than 5 inches (125mm). Clods shall be broken and the top 3 inches (75mm) of soil shall be worked into a satisfactory condition by discing or by use of cultipackers, rollers, drags, harrows, or other appropriate means.

An area to be seeded shall be considered a satisfactory seedbed (without requiring additional treatment) if it has recently been thoroughly loosened and worked to a depth of not less than 5 inches; the top 3 inches of soil is loose, friable, and is reasonably free from large clods, rocks, large roots, or other undesirable matter; appropriate amounts of fertilizer and lime have been added; and, if it has been shaped to the required grade immediately prior to seeding. For slope areas steeper than 3:1 (three horizontal to one vertical), the subsoil shall be loose to a depth of 1 inch.

After completion of tilling and grading, lime and fertilizer shall be applied within 48 hours according to the specified rate (Paragraphs 903-2.2 and 2.3) and methods (Paragraphs 903-3.3.1 and 903-3.3.2) approved by MAA. The seeding mixture shall be applied within 48 hours after application of lime and fertilizer. To firm the seeded areas, cultipacking shall occur immediately after seeding.

903-3.3 METHODS OF APPLICATION. Lime, fertilizer, and seed mixes shall be applied by either the dry or wet application methods that have been approved by MAA and are detailed below.

903-3.3.1 DRY APPLICATION METHOD

a. **Liming.** If soil test results indicate that lime is needed, the following procedures will be used: following advance preparation of the seedbed, lime shall be applied prior to the application of any fertilizer or seed and only on seedbeds that have been prepared as described in Paragraph 903-3.2. The lime shall be uniformly spread and worked into the top 2 inches of soil, after which the seedbed shall be properly graded again.
b. **Fertilizing.** Following advance preparations (and liming if necessary), fertilizer shall be spread uniformly at the specified rate to provide no less than the minimum quantity stated in Paragraph 903-2.3.
c. **Seeding.** Seed mixtures shall be sown immediately after fertilization of the seedbed. The fertilizer and seed shall be lightly raked to a depth of 1 inch for newly graded and disturbed areas.
d. **Rolling.** After the seed has been properly covered, the seedbed shall be immediately compacted using a cultipacker or an approved lawnroller.

903-3.3.2 WET APPLICATION METHOD/HYDROSEEDING

a. **General.** The Contractor may elect to apply seed and fertilizer as per Paragraphs c and d of this section in the form of an aqueous mixture by spraying over the previously prepared seedbed using methods and equipment approved by MAA. The rates of application shall be as specified in Paragraphs 903-2.1 through 903-2.3.

b. **Spraying Equipment.** The spraying equipment shall have a container or water tank equipped with a liquid level gauge capable of reading increments of 50 gallons or less over the entire range of the tank capacity. The liquid level gauge shall be mounted so as to be visible to the nozzle operator at all times. The container or tank shall also be equipped with a mechanical power-driven agitator capable of keeping all the solids in the mixture in complete suspension at all times until used.

The spraying equipment shall also include a pressure pump capable of delivering 100 gallons per minute at a pressure of 100 pounds per square inch. The pressure pump assemblage shall be configured to allow the mixture to flow through the tank when not being sprayed from the nozzle. All pump passages and pipelines shall be capable of providing clearance for 5/8-inch solids. The power unit for the pump and agitator shall have controls mounted so as to be accessible to be accessible to the nozzle operator. A pressure gauge shall be connected to and mounted immediately behind the nozzle.

The nozzle pipe shall be mounted on an elevated supporting stand in such a manner that it can be rotated through 360 degrees horizontally and inclined vertically from at least 20 degrees below to at least 60 degrees above the horizontal. There shall be a quick-acting, three-way control valve connecting the recirculating line to the nozzle pipe and mounted so that the nozzle operator can control and regulate the amount of flow of mixture to be supplied so that mixtures may be properly sprayed over a distance varying from 20 feet to 100 feet. One shall be a close-range ribbon nozzle, one a medium-range ribbon nozzle, and one a long-range jet nozzle. For ease of removal and cleaning, all nozzles shall be connected to the nozzle pipe by means of quick-release couplings. In order to reach areas inaccessible to the regular equipment, an extension hose at least 50 feet in length shall be provided to which the nozzles may be connected.

c. **Mixtures.** Lime shall be applied separately in the quantity specified, prior to the fertilizing and seeding operations. Lime should be added to and mixed with water at a concentration not to exceed 220 pounds of lime for every 100 gallons of water. After lime has been applied, the tank should be emptied and rinsed with fresh water. Seed and fertilizer shall be mixed together in the relative proportions specified, but the resulting concentration should not exceed 220 pounds of mixture per 100 gallons of water and should be applied within 30 minutes to prevent fertilizer burn of the seeds.

All water used shall be obtained from fresh water sources and shall be free from injurious chemicals and other toxic substances harmful to plant life. Brackish water shall not be used at any time. The Contractor shall identify all sources of water to the MAA Engineer at least two weeks prior to use. The Engineer may take samples of the water at the source or from the tank at any time and have a laboratory test the samples for chemical and saline content. The Contractor shall not use any water from any source that is disapproved by the Engineer following such tests.

All mixtures shall be constantly agitated from the time they are mixed until they are finally applied to the seedbed. All such mixtures shall be used within 30 minutes from the time they were mixed or they shall be wasted and disposed of at a location acceptable to the Engineer.

d. **Spraying.** Lime shall be sprayed upon previously prepared seedbeds on which the lime, if required, shall have been worked in already. The mixtures shall be applied using a high-pressure spray which shall always be directed upward into the air so that the mixtures will fall to the ground in a uniform spray. Nozzles or sprays shall never be directed toward the ground in such a manner that might produce erosion or runoff. Particular care shall be exercised to ensure that the application is made uniformly, at the prescribed rate, and to guard against misses and overlapped areas. Predetermined quantities of the mixture shall be used in accordance with specifications to cover specified sections of known areas. To check the rate and uniformity of application, the applicator will observe the degree of wetting of the ground or distribute test sheets of paper or pans over the area at intervals and observe the quantity of material deposited thereon.

On surfaces that are to be mulched as indicated by the plans or designated by the MAA Engineer, seed and fertilizer applied by the spray method need not be raked into the soil or rolled. However, on surfaces on which mulch is not to be used, the raking and rolling operations will be required after the soil has dried.

903-3.4 MAINTENANCE OF SEEDED AREAS. The contractor shall protect seeded areas against traffic or other use by warning signs or barricades, as approved by the Engineer.
Surfaces gullied or otherwise damaged following seeding shall be repaired by regrading and reseeding as directed. The Contractor shall mow, water as directed, and otherwise maintain seeded areas in a satisfactory condition until final inspection and acceptance of the work.

When either the dry or wet application method outlined above is used for work performed out of season, the Contractor will be required to establish a good stand of grass of uniform color and density to the satisfaction of the Engineer. If at the time when the contract has been otherwise completed, it is not possible to make an adequate determination of the color, density, and uniformity of such stand of grass, payment for the unaccepted portions of the areas seeded out of season will be withheld until such time as these requirements have been met.

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 applied as per ITEM 905.

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: Per ITEM 903,
Mulch: Mulch shall be applied as per ITEM 905.

FILL

No fills may be placed on frozen ground. All fill to be placed in approximately horizontal layers, each layer having a loose thickness of not more than 8 inches. All fill in roadways and parking areas is to be classified Type 2 as per Anne Arundel County Code - Article 16, Sections 2-307, and compacted to 90% density; compactions to be determined by ASTM D-1557-66T (Modified Proctor). Any fill within the building area is to be compacted to a minimum of 95% density as determined by methods previously mentioned. 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.

SODDING

Installation of sod should follow permanent seeding dates. Seedbed preparation for sod shall be as noted above. 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. Install sod per ITEM 904.

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 red top at the minimum rate of 0.5 pounds per 1,000 square feet.

NOTE: Use of this information does not preclude meeting all of the requirements of the current Maryland Standards and Specifications for Soil Erosion and Sediment Control.

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 silt fence, super silt fence , diversion fence and inlet protection.Clear the minimum area to install sediment controls as shown on Sheet 12.

1 DAY
3. Once sediment controls and traps have been installed. Contact 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.

PHASE 2.

180 DAYS
4. Begin demo work as shown on sheet 3.
5. Begin site grading, as site is brough to grade install storm drains, and utilities. Install Inlet protection as inlets are installed. Begin building construction.

NOTE: Building construction may not proceed past the ground floor until all remaining disturbed areas have been permanently or temporarily stabilized. During building construction beyond the ground floor, all disturbed areas must be stabilized at the end of business day. A certificate must be provided to the inspector verifying the grades and drainage patterns shown on the approved erosion and sediment control plan have been obtained.

7. Repair sediment controls at the end of each day as necessary as grading progresses.
8. Stabiliize slopes as construction progresses.
9. Install sub base for road and parking areas.
10. Install curb and gutter.
11. Install base paving, sidewalks, rip rap and fine grade site.

NOTE: All areas upstream of SWM features shall be stabilized prior ti the installation of the Micro-Bioretention facilities, of the alternative surfaces for the ball field or playground.

12. Once areas upstream of the ballfield and/or playground are stabilized install facilities. Once facilities are installed install silt fence around the perimeter of the area, or sod all disturbed areas uphill of facility.
13. Once areas upstream of the ESD facilities are stabilized and with a 3 day dry weather is forecast. for each facility, install facility. Install SWM landscaping. Once facilities are installed install silt fence around the perimeter of filterbed area, or sod all disturbed areas uphill of facility.
14. Final pave parking lots and driveway.
15. With the sediment control inspectors permission, once all areas draining to facilities are stabilized. Remove Inlet blocking.
16. Install landscaping.
17. Once all areas are stabilized and with the permission of the sediment control inspector remove remaining sediment controls.

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 (REFERENCED 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 SPECIFICATIONS FOR PERFORMING LANDSCAPING ACTIVITIES FOR THE MARYLAND AVIATION ADMINISTRATION DATED MAY 2001.
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 SPECIFICATIONS FOR PERFORMING LANDSCAPING ACTIVITIES FOR THE MARYLAND AVIATION ADMINISTRATION DATED MAY 2001.
5. FOR SPECIFICATIONS ON THE STABILIZATION OF CUT AND FILL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL, SEE SPECIFICATIONS FOR PERFORMING LANDSCAPING ACTIVITIES FOR THE MARYLAND AVIATION ADMINISTRATION DATED MAY 2001.
6. THE EXISTING TOPSOIL FROM ON OR OFF SITE THAT IS USED MUST MEET THE MINIMUM SPECIFICATION IN SPECIFICATIONS FOR PERFORMING LANDSCAPING ACTIVITIES FOR THE MARYLAND AVIATION ADMINISTRATION DATED MAY 2001.
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 A 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 ¾ INCH, PLUS OR MINUS ¼ 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 STAGGERING JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SLIPPAGE ON SLOPES. ENSURE SOLID 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 ⅓ 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.

CENTURY ENGINEERING
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Phone: 443.589.2400 www.centuryeng.com

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE No.: 32603
EXPIRATION DATE: 1-18-2026

STATE OF MARYLAND — DONALD RICHARD STARR — No. 32603 — PROFESSIONAL ENGINEER

LICENSE NO.

REVISED DATE	BY

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

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

SCALE AS SHOWN
DRAWN BY LMV/RDT
CHECKED BY MJP
SHEET 15 OF 38
PROJECT NO.: P570004
DATE: 1/23/2025

CONSTRUCTION DOCUMENTS

Erosion & Sediment Control Notes & Specifications

North Arundel Aquatic Center

2nd Tax District
Anne Arundel Co., MD.

Tax Map 15, Grid 11, Parcel 638

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TEST BORING LOG — BORING B-1

CENTURY ENGINEERING

PROJECT : North Aquatic Center
CLIENT : Anne Arundel County
CONTRACTOR : DTCI

GROUNDWATER		DEPTH (ft) OF:			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Hole	Type:	HSA	S	
3/13/2024	0 Hr	Dry		7.3	Size I.D.:	4-1/4"	1-3/8"	
3/14/2024	24 Hr	Dry		6.8	Hammer Wt.:		140 Lbs.	----
					Hammer Fall:		30 in.	----

CONTRACT NO.: 00181120.019A
SHEET NO. : 1 of 1
NORTHING : 536073.9916
EASTING : 1415341.306
ELEVATION : 107
DATE START : 3-13-24
END : 3-13-24
DRILLER : DTCI
INSPECTOR : J. Harris

Depth in Feet	Strata Change	Case BPF (Drill) (min/ft)	Sampler Blows Per 6" (RQD%)	Sample Number Type	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
			2 3-7 8	S-1	0.0 2.0	16"	106.5 0.5	Topsoil
			6 7-9 10	S-2	2.0 4.0	16"		Tan, moist, loose to dense, Silty f SAND (SM)
			9 6-13 20	S-3	4.0 6.0	16"		
			13 18-18 18	S-4	6.0 8.0	16"	101.0 6.0	Tan, moist, dense to medium dense, Poorly-graded f SAND with Silt (SP-SM)
			3 7-14 13	S-5	8.0 10.0	16"	97.0 10.0	

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY
0-5	Very Loose	0-3	Very Soft
6-10	Loose	4-5	Soft
11-30	Medium Dense	6-10	Medium Stiff
31-50	Dense	11-15	Stiff
51+	Very Dense	16-30	Very Stiff
		31+	Hard

SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; - See Remarks

SUMMARY: Overburden: Rock: Samples:

BORING B-1

May 3, 24

TEST BORING LOG — BORING B-2

CENTURY ENGINEERING

PROJECT : North Aquatic Center
CLIENT : Anne Arundel County
CONTRACTOR : DTCI

GROUNDWATER		DEPTH (ft) OF:			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Hole	Type:	HSA	S	
3/13/2024	0 Hr	Dry		8.6	Size I.D.:	4-1/4"	1-3/8"	
3/14/2024	24 Hr	Dry		7.6	Hammer Wt.:		140 Lbs.	----
					Hammer Fall:		30 in.	----

CONTRACT NO.: 00181120.019A
SHEET NO. : 1 of 1
NORTHING : 536128.2626
EASTING : 1415210.306
ELEVATION : 114
DATE START : 3-13-24
END : 3-13-24
DRILLER : DTCI
INSPECTOR : J. Harris

Depth in Feet	Strata Change	Case BPF (Drill) (min/ft)	Sampler Blows Per 6" (RQD%)	Sample Number Type	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
			2 2-2	S-1	0.0 1.5	16"	113.7 0.3	Topsoil
			2 1-2	S-2	2.5 4.0	16"		Tan to brown, moist, very loose to medium dense, Poorly-graded f SAND (SP)
			2 2-4	S-3	5.0 6.5	16"		
			6 7-8	S-4	7.5 9.0	16"	106.0 8.0	Tan to gray, moist, stiff, f Sandy Lean CLAY (cl)
			6 4-4	S-5	9.0 10.5	16"	103.5 10.5	

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY
0-5	Very Loose	0-3	Very Soft
6-10	Loose	4-5	Soft
11-30	Medium Dense	6-10	Medium Stiff
31-50	Dense	11-15	Stiff
51+	Very Dense	16-30	Very Stiff
		31+	Hard

SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; - See Remarks

SUMMARY: Overburden: Rock: Samples:

BORING B-2

May 3, 24

TEST BORING LOG — BORING B-3

CENTURY ENGINEERING

PROJECT : North Aquatic Center
CLIENT : Anne Arundel County
CONTRACTOR : DTCI

GROUNDWATER		DEPTH (ft) OF:			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Hole	Type:	HSA	S	
3/13/2024	0 Hr	Dry		7.1	Size I.D.:	4-1/4"	1-3/8"	
3/14/2024	24 Hr	Dry		6.5	Hammer Wt.:		140 Lbs.	----
					Hammer Fall:		30 in.	----

CONTRACT NO.: 00181120.019A
SHEET NO. : 1 of 1
NORTHING : 536106.162
EASTING : 1414738.674
ELEVATION : 124
DATE START : 3-13-24
END : 3-13-24
DRILLER : DTCI
INSPECTOR : J. Harris

Depth in Feet	Strata Change	Case BPF (Drill) (min/ft)	Sampler Blows Per 6" (RQD%)	Sample Number Type	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
			2 1-2	S-1	0.0 1.5	16"	123.7 0.3	Topsoil
			1 2-1	S-2	2.5 4.0	16"		Tan, moist, very loose to medium dense, Poorly-graded f SAND (SP)
			3 4-5	S-3	5.0 6.5	16"		
			6 6-9	S-4	7.5 9.0	16"		
			6 6-8	S-5	9.0 10.5	16"	113.5 10.5	orange to tan

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY
0-5	Very Loose	0-3	Very Soft
6-10	Loose	4-5	Soft
11-30	Medium Dense	6-10	Medium Stiff
31-50	Dense	11-15	Stiff
51+	Very Dense	16-30	Very Stiff
		31+	Hard

SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; - See Remarks

SUMMARY: Overburden: Rock: Samples:

BORING B-3

May 3, 24

TEST BORING LOG — BORING B-4

CENTURY ENGINEERING

PROJECT : North Aquatic Center
CLIENT : Anne Arundel County
CONTRACTOR : DTCI

GROUNDWATER		DEPTH (ft) OF:			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Hole	Type:	HSA	S	
3/13/2024	0 Hr	Dry		8	Size I.D.:	4-1/4"	1-3/8"	
3/14/2024	24 Hr	Dry		7.4	Hammer Wt.:		140 Lbs.	----
					Hammer Fall:		30 in.	----

CONTRACT NO.: 00181120.019A
SHEET NO. : 1 of 1
NORTHING : 536102.9384
EASTING : 1414893.748
ELEVATION : 130.2
DATE START : 3-13-24
END : 3-13-24
DRILLER : DTCI
INSPECTOR : J. Harris

Depth in Feet	Strata Change	Case BPF (Drill) (min/ft)	Sampler Blows Per 6" (RQD%)	Sample Number Type	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
			1 1-2	S-1	0.0 1.5	16"	129.8 0.4	Topsoil
			2 2-3	S-2	2.5 4.0	16"		Tan, moist, very loose to loose, Poorly-graded f SAND with Silt (SP-SM)
			3 4-6	S-3	5.0 6.5	16"		
			4 4-6	S-4	7.5 9.0	16"		
			5 4-5	S-5	9.0 10.5	16"	119.7 10.5	

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY
0-5	Very Loose	0-3	Very Soft
6-10	Loose	4-5	Soft
11-30	Medium Dense	6-10	Medium Stiff
31-50	Dense	11-15	Stiff
51+	Very Dense	16-30	Very Stiff
		31+	Hard

SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; - See Remarks

SUMMARY: Overburden: Rock: Samples:

BORING B-4

May 3, 24

TEST BORING LOG — BORING B-5

CENTURY ENGINEERING

PROJECT : North Aquatic Center
CLIENT : Anne Arundel County
CONTRACTOR : DTCI

GROUNDWATER		DEPTH (ft) OF:			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Hole	Type:	HSA	S	
3/13/2024	0 Hr	Dry		7.1	Size I.D.:	4-1/4"	1-3/8"	
3/14/2024	24 Hr	Dry		6.6	Hammer Wt.:		140 Lbs.	----
					Hammer Fall:		30 in.	----

CONTRACT NO.: 00181120.019A
SHEET NO. : 1 of 1
NORTHING : 535963.6949
EASTING : 1414814.15
ELEVATION : 138
DATE START : 3-13-24
END : 3-13-24
DRILLER : DTCI
INSPECTOR : J. Harris

Depth in Feet	Strata Change	Case BPF (Drill) (min/ft)	Sampler Blows Per 6" (RQD%)	Sample Number Type	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
			2 1-2 3	S-1	0.0 2.0	16"		Tan, moist, very loose, Poorly-graded f SAND (sp)
			2 1-3 4	S-2	2.0 4.0	16"	136.0 2.0	Tan, moist, very loose, Clayey f SAND (SC)
			3 3-4 6	S-3	4.0 6.0	16"	134.0 4.0	Orange to gray, moist, medium stiff, Lean CLAY (CL) with f Sand
			4 4-6 4	S-4	6.0 8.0	16"		
			5 5-6 5	S-5	8.0 10.0	16"	130.0 8.0	Tan, moist, medium dense, Poorly-graded f SAND (sp)
							128.0 10.0	

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY
0-5	Very Loose	0-3	Very Soft
6-10	Loose	4-5	Soft
11-30	Medium Dense	6-10	Medium Stiff
31-50	Dense	11-15	Stiff
51+	Very Dense	16-30	Very Stiff
		31+	Hard

SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; - See Remarks

SUMMARY: Overburden: Rock: Samples:

BORING B-5

May 3, 24

TEST BORING LOG — BORING B-6

CENTURY ENGINEERING

PROJECT : North Aquatic Center
CLIENT : Anne Arundel County
CONTRACTOR : DTCI

GROUNDWATER		DEPTH (ft) OF:			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Hole	Type:	HSA	S	
3/14/2024	0 Hr	Dry		9.2	Size I.D.:	4-1/4"	1-3/8"	
3/15/2024	24 Hr	Dry		9	Hammer Wt.:		140 Lbs.	----
					Hammer Fall:		30 in.	----

CONTRACT NO.: 00181120.019A
SHEET NO. : 1 of 1
NORTHING : 535811.6384
EASTING : 1414729.22
ELEVATION : 144.8
DATE START : 3-14-24
END : 3-14-24
DRILLER : DTCI
INSPECTOR : C. Stouten

Depth in Feet	Strata Change	Case BPF (Drill) (min/ft)	Sampler Blows Per 6" (RQD%)	Sample Number Type	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
			2 1-2 1	S-1	0.0 2.0	21"	144.4 0.4	Topsoil
			1 1-2 1	S-2	2.0 4.0	19"		Tan, moist, very loose to loose, Poorly-graded f SAND with Silt (SP-SM)
			0 0-0 1	S-3	4.0 6.0	15"	138.8 6.0	
			1 2-3 4	S-4	6.0 8.0	15"		Light brown, moist, very loose to loose, Poorly-graded f SAND (SP)
			3 5-6 7	S-5	8.0 10.0	22"		
			3 7-7 10	S-6	10.0 12.0	23"		beige, some banding
			10 10-11 12	S-7	12.0 14.0	24"		
			10 12-12 14	S-8	14.0 16.0	22"	128.8 16.0	

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY
0-5	Very Loose	0-3	Very Soft
6-10	Loose	4-5	Soft
11-30	Medium Dense	6-10	Medium Stiff
31-50	Dense	11-15	Stiff
51+	Very Dense	16-30	Very Stiff
		31+	Hard

SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; - See Remarks

SUMMARY: Overburden: Rock: Samples:

BORING B-6

May 3, 24

TEST BORING LOG — BORING B-7

CENTURY ENGINEERING

PROJECT : North Aquatic Center
CLIENT : Anne Arundel County
CONTRACTOR : DTCI

GROUNDWATER		DEPTH (ft) OF:			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Hole	Type:	HSA	S	
3/14/2024	0 Hr	Dry		9.5	Size I.D.:	4-1/4"	1-3/8"	
3/15/2024	24 Hr	Dry		9.5	Hammer Wt.:		140 Lbs.	----
					Hammer Fall:		30 in.	----

CONTRACT NO.: 00181120.019A
SHEET NO. : 1 of 1
NORTHING : 535815.6929
EASTING : 1414891.177
ELEVATION : 131.7
DATE START : 3-14-24
END : 3-14-24
DRILLER : DTCI
INSPECTOR : C. Stouten

Depth in Feet	Strata Change	Case BPF (Drill) (min/ft)	Sampler Blows Per 6" (RQD%)	Sample Number Type	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
			1 0-1 1	S-1	0.0 2.0	14"	131.4 0.3	Topsoil
			1 2-2 3	S-2	2.0 4.0	15"		Brown, moist, very loose, Silty-Clayey f SAND (SC-SM)
			3 3-3 4	S-3	4.0 6.0	24"	126.7 5.0	
			4 5-4 4	S-4	6.0 8.0	24"		Light brown to beige, moist, loose to medium dense, Poorly-graded f SAND with Silt (SP-SM)
			2 2-4 6	S-5	8.0 10.0	18"		
			2 4-6 6	S-6	10.0 12.0	17"		some banding
			6 6-6 6	S-7	12.0 14.0	18'		
			2 3-4 7	S-8	14.0 16.0	18"	115.7 16.0	

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY
0-5	Very Loose	0-3	Very Soft
6-10	Loose	4-5	Soft
11-30	Medium Dense	6-10	Medium Stiff
31-50	Dense	11-15	Stiff
51+	Very Dense	16-30	Very Stiff
		31+	Hard

SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; - See Remarks

SUMMARY: Overburden: Rock: Samples:

BORING B-7

May 3, 24

TEST BORING LOG — BORING B-8

CENTURY ENGINEERING

PROJECT : North Aquatic Center
CLIENT : Anne Arundel County
CONTRACTOR : DTCI

GROUNDWATER		DEPTH (ft) OF:			EQUIPMENT	CASING	SAMPLER	CORE
Date	Time	Water	Casing	Hole	Type:	HSA	S	
3/14/2024	0 Hr	Dry		6.5	Size I.D.:	4-1/4"	1-3/8"	
3/15/2024	24 Hr	Dry		6.5	Hammer Wt.:		140 Lbs.	----
					Hammer Fall:		30 in.	----

CONTRACT NO.: 00181120.019A
SHEET NO. : 1 of 1
NORTHING : 535768.1051
EASTING : 1415092.314
ELEVATION : 124.5
DATE START : 3-14-24
END : 3-14-24
DRILLER : DTCI
INSPECTOR : C. Stouten

Depth in Feet	Strata Change	Case BPF (Drill) (min/ft)	Sampler Blows Per 6" (RQD%)	Sample Number Type	Sample Depth Range (ft)	Sample Recovery (in)	Elevation/ Depth (ft)	FIELD CLASSIFICATION AND REMARKS
			2 3-4 7	S-1	0.0 2.0	18"	124.3 0.3	Topsoil
			7 9-13 13	S-2	2.0 4.0	16"		Beige, moist, loose to dense, Poorly-graded f SAND (SP)
			3 4-13 20	S-3	4.0 6.0	18"		some banding
			14 17-26 38	S-4	6.0 8.0	18"		
			3 10-15 17	S-5	8.0 10.0	15"	114.5 10.0	

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY
0-5	Very Loose	0-3	Very Soft
6-10	Loose	4-5	Soft
11-30	Medium Dense	6-10	Medium Stiff
31-50	Dense	11-15	Stiff
51+	Very Dense	16-30	Very Stiff
		31+	Hard

SAMPLE IDENTIFICATION: S - Split Spoon; T - Thin Wall Tube; U - Undisturbed Piston; C - Diamond Core; W - Wash Sample; - See Remarks

SUMMARY: Overburden: Rock: Samples:

BORING B-8

May 3, 24

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

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE No.: 32603
EXPIRATION DATE: 1-18-2026

STATE OF MARYLAND — GAVIN RICHARD SHEARD — 32603 — PROFESSIONAL ENGINEER

LICENSE NO.

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

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/RDT
CHECKED BY MJP
SHEET 16 OF 38
PROJECT NO.: P570004
DATE: 1/23/2025

CONSTRUCTION DOCUMENTS

Soil Boring Logs

North Arundel Aquatic Center

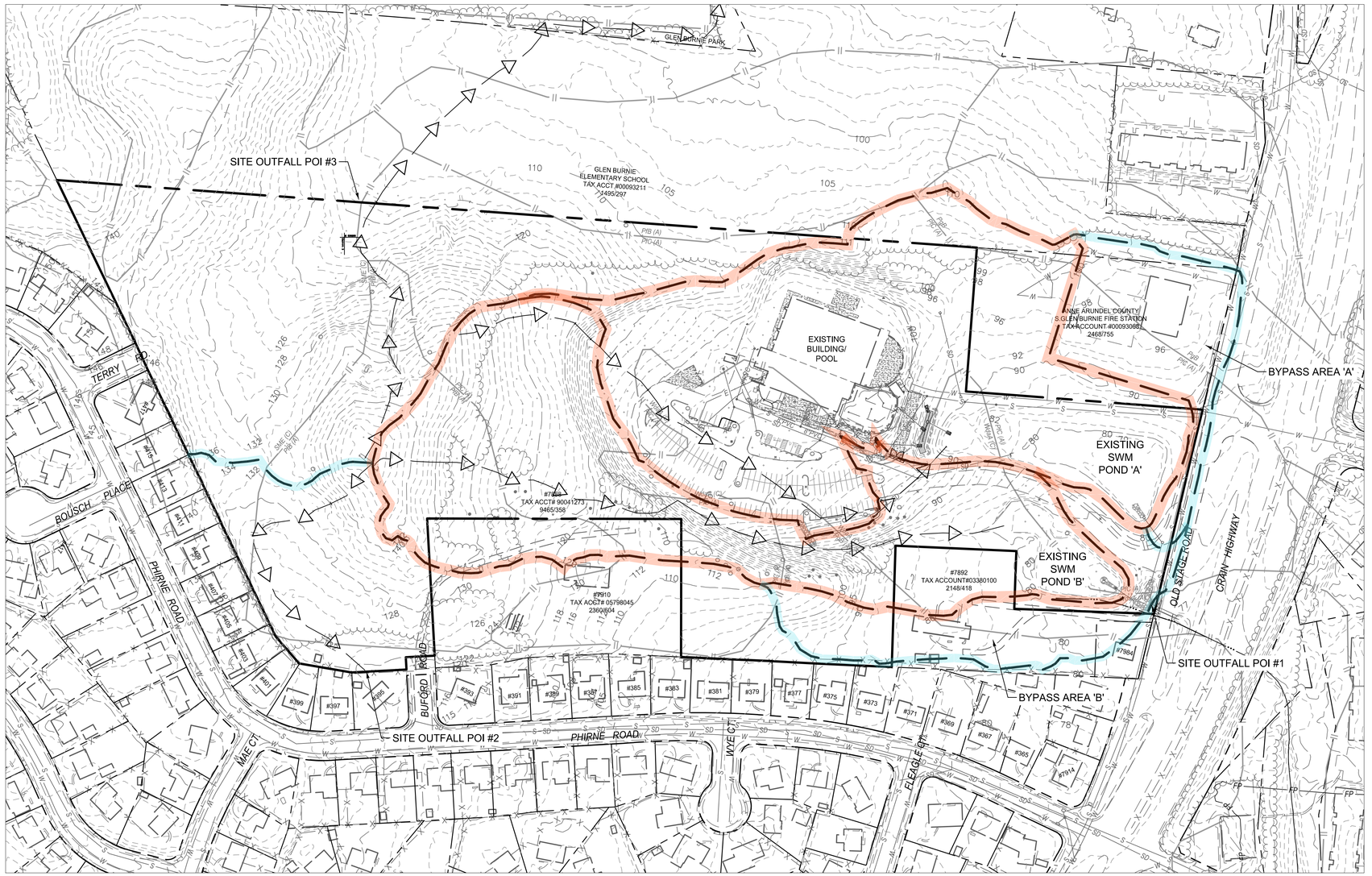
2nd Tax District
Anne Arundel Co., MD.

Tax Map 15, Grid 11, Parcel 638

LEGEND

- Property Line
- Adjoiner / Lot Line
- Zoning Line
- Existing Minor Contour (676)
- Existing Major Contour (670)
- Existing Edge of Road/Paving
- Existing Water (W, EX 12" W)
- Existing Overhead Electric Line (OHE)
- Existing Utility Pole
- Existing Guy Pole / Guy Wire
- Existing Sign
- Existing Fence (X X X)
- Existing Trail
- Existing Tree Line
- Existing Deciduous Tree
- Existing Evergreen Tree
- Existing Building
- Limit of Disturbance (LOD)
- Proposed Major Contour (400)
- Proposed Minor Contour (402)
- Prop. Fire Hydrant
- Prop. Sewer Connection
- Prop. Water Connection
- Storm Drain Inlet
- Storm Drain Outfall
- Prop. Pole
- Telecom. Manhole
- Handicap Parking Spot
- Proposed Structure
- Proposed Curb & Gutter
- Proposed Flush Curb
- Proposed Sidewalk
- Concrete
- 100' Stream and Wetlands Buffer (FB)
- FEMA 100-Year Flood Plain (FP)
- Chesapeake Bay Critical Area Limits
- Water Edge or Stream Centerline
- Zoning Line

1 — ESD DRAINAGE AREAS



EXISTING DRAINAGE AREA MAP

SCALE: 1" = 100'

SITE DATA
SITE AREA (LOD) = 6.64 Ac.
ZONING: RS
EXISTING USE: AQUATIC CENTER
PROPOSED USE: AQUATIC CENTER

Outfall Statement

THE SITE OUTFALL IS AT THE OUTFALL POINT OF THE SITE FROM EXISTING SWM FACILITY SWM-1A VIA STORM DRAIN PIPE TO MARLEY CREEK. THE EXISTING STORMWATER FACILITIES ON-SITE WILL REMAIN UNDISTURBED. SITE OUTFALL DISCHARGES TO THE CREEK LOCATED APPROXIMATELY 200 FT SOUTHEAST OF THE PROPERTY BOUNDARY, AND APPROXIMATELY 800 FT SOUTHEAST OF THE PROJECT SITE AREA. MARLEY CREEK IS CLASSIFIED WITHIN USE CLASS I, CONSIDERED A TIDAL WATERSHED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT AND ULTIMATELY OUTFALLS TO THE PATAPSCO RIVER. PER ANNE ARUNDEL COUNTY MAPPING, MARLEY CREEK IS A PERENNIAL STREAM, REQUIRING A 100 FT BUFFER. ON WERS MAPPING, DATA INDICATES POINTS OF EROSION, HEADCUTS, AND OBSTRUCTIONS ALONG THE STREAM. A FIELD INVESTIGATION WAS PERFORMED ON MAY 11, 2023 AND DETERMINED THAT THE SWM-1A OUTFALL IN STABLE AND IN GOOD CONDITION, WITH LITTLE TO NO SIGNS OF SIGNIFICANT EROSIVE OR SEDIMENTATION ISSUES. THE CULVERT UNDER OLD CRAIN HIGHWAY IS IN GOOD CONDITION.

EXISTING SITE DRAINAGE

LOCATION	D.A. Acres	Tc	CN	Q_{10} (cfs)	NOTES
EXISTING SITE DRAINAGE TO POND A	8.72	0.35	59	11.58	DATA OBTAINED FROM TR-55
EXISTING SITE DRAINAGE TO POND B	7.01	0.41	48	2.80	DATA OBTAINED FROM TR-55
EXISTING DRAINAGE TO POI #1	18.58	0.41	56	16.32	DATA OBTAINED FROM TR-55
EXISTING DRAINAGE TO POI #2	2.92	0.38	37	0.20	DATA OBTAINED FROM TR-55
EXISTING DRAINAGE TO POI #3	7.41	0.50	51	3.80	DATA OBTAINED FROM TR-55

		K	Hydric	HSG	Drainage class
EuD	Evesboro-Galestown-Urban land complex, 5 to 15 percent slopes	0.05	NO	A	Excessively drained
EuE	Evesboro-Galestown-Urban land complex, 15 to 25 percent slopes	0.05	NO	A	Excessively drained
FrA	Fallsington-Urban land complex, 0 to 2 percent slopes	0.2	YES	B/D	Poorly drained
PfB	Patapsco-Fort Mott complex, 0 to 5 percent slopes	0.02	NO	A	Somewhat excessively drained
PfC	Patapsco-Fort Mott complex, 5 to 10 percent slopes	0.02	NO	A	Somewhat excessively drained
PgB	Patapsco-Fort Mott-Urban land complex, 0 to 5 percent slopes	0.02	NO	A	Somewhat excessively drained
PgD	Patapsco-Fort Mott-Urban land complex, 5 to 15 percent slopes	0.02	NO	A	Somewhat excessively drained
SME	Sassafras and Croom soils, 15 to 25 percent slopes	0.15	NO	C	Well drained
SnB	Sassafras-Urban land complex, 0 to 5 percent slopes	0.24	NO	B	Well drained
UoB	Udorthents, loamy, 0 to 5 percent slopes	0.37	NO	C	Well drained
Uz	Urban land		NO	D	
WdaA	Woodstown sandy loam, 0 to 2 percent slopes, Northern Coastal Plain	0.24	NO	C	Moderately well drained
WrB	Woodstown-Urban land complex, 0 to 5 percent slopes	0.28	NO	C	Moderately well drained
ZBA	Zekiah and Issue soils, 0 to 2 percent slopes, frequently flooded	0.32	YES	B/D	Poorly drained

CENTURY ENGINEERING
A Kleinfelder Company
10710 Gilroy Road, Hunt Valley, MD 21031
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PROFESSIONAL CERTIFICATION

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LICENSE No.: 32603
EXPIRATION DATE: 1-18-2026

STATE OF MARYLAND — MICHAEL JOSEPH PHILLIPS — 32603 — PROFESSIONAL ENGINEER
LICENSE NO.

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

REVISED DATE	BY

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

SCALE AS SHOWN
DRAWN BY LMV/RDT
CHECKED BY MJP
SHEET 17 OF 38
PROJECT NO.: P570004
DATE: 1/23/2025

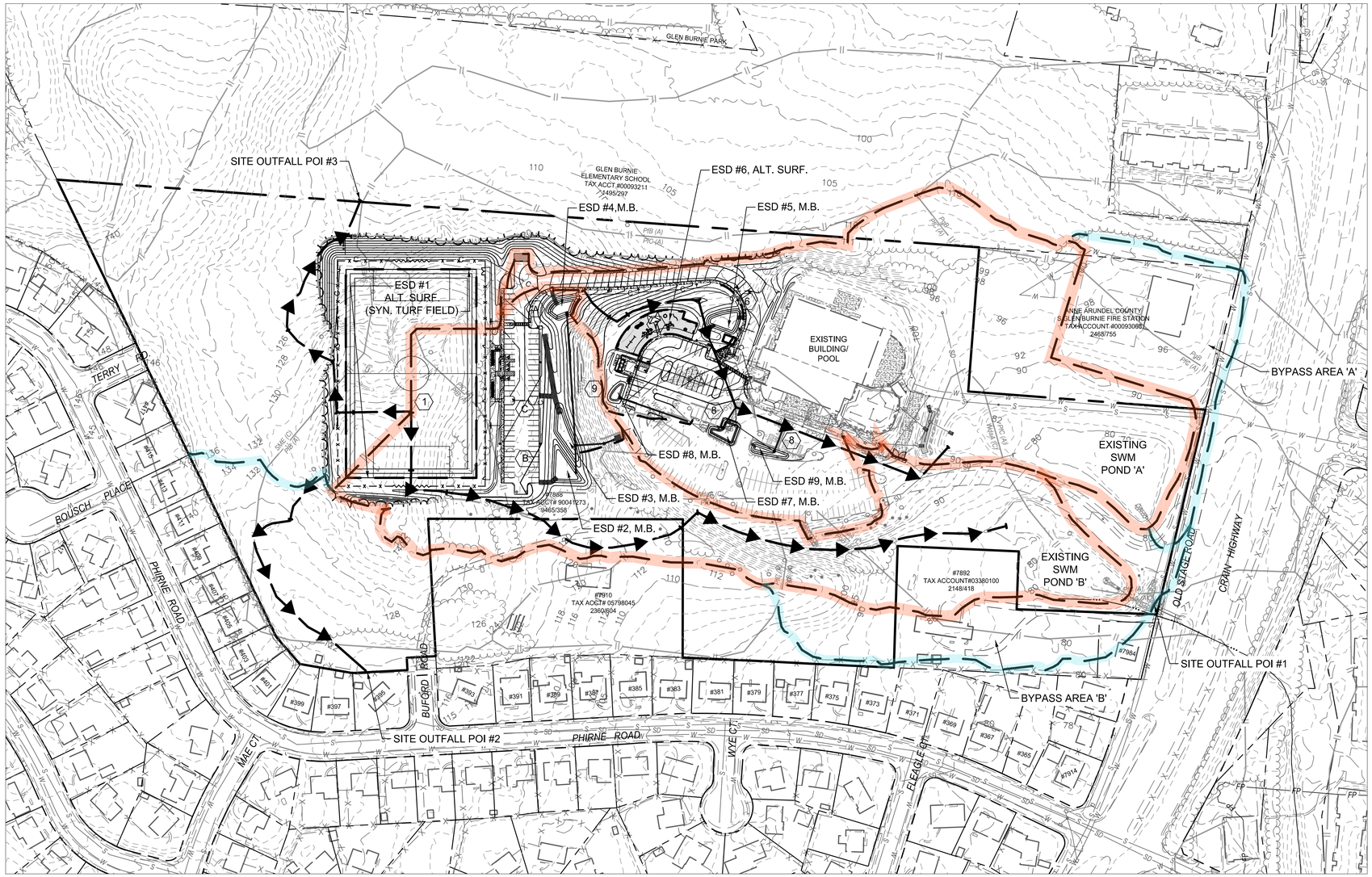
CONSTRUCTION DOCUMENTS
Existing Drainage Area Map
North Arundel Aquatic Center
2nd Tax District Tax Map 15, Grid 11, Parcel 638
Anne Arundel Co., MD.

T:\2018\facilities\18112001918a n aquatic center\CIVIL\CADD\Drawings\3. Construction Documents\18112001918A(CD-1B)SWM EXPA2 Map.dwg Jan 24, 2025 9:36am dshanahan

LEGEND

- Property Line
- Adjoiner / Lot Line
- Zoning Line
- Existing Minor Contour (676)
- Existing Major Contour (670)
- Existing Edge of Road/Paving
- Existing Water (W, EX 12" W)
- Existing Overhead Electric Line (OHE)
- Existing Utility Pole
- Existing Guy Pole / Guy Wire
- Existing Sign
- Existing Fence (X X X)
- Existing Trail
- Existing Tree Line
- Existing Deciduous Tree
- Existing Evergreen Tree
- Existing Building
- Limit of Disturbance (LOD)
- Proposed Major Contour (400)
- Proposed Minor Contour (402)
- Prop. Fire Hydrant
- Prop. Sewer Connection
- Prop. Water Connection
- Storm Drain Inlet
- Storm Drain Outfall
- Prop. Pole
- Telecom. Manhole
- Handicap Parking Spot
- Proposed Structure
- Proposed Curb & Gutter
- Proposed Flush Curb
- Proposed Sidewalk
- Concrete
- 100' Stream and Wetlands Buffer (FB)
- FEMA 100-Year Flood Plain (FP)
- Chesapeake Bay Critical Area Limits
- Water Edge or Stream Centerline
- Zoning Line

(1) ESD DRAINAGE AREAS



SITE DATA
SITE AREA (LOD) = 6.64 Ac.
ZONING: RS
EXISTING USE: AQUATIC CENTER
PROPOSED USE: AQUATIC CENTER

PROPOSED DRAINAGE AREA MAP

SCALE: 1" = 100'

		K	Hydric	HSG	Drainage class
EuD	Evesboro-Galestown-Urban land complex, 5 to 15 percent slopes	0.05	NO	A	Excessively drained
EuE	Evesboro-Galestown-Urban land complex, 15 to 25 percent slopes	0.05	NO	A	Excessively drained
FrA	Fallsington-Urban land complex, 0 to 2 percent slopes	0.2	YES	B/D	Poorly drained
PfB	Patapsco-Fort Mott complex, 0 to 5 percent slopes	0.02	NO	A	Somewhat excessively drained
PfC	Patapsco-Fort Mott complex, 5 to 10 percent slopes	0.02	NO	A	Somewhat excessively drained
PgB	Patapsco-Fort Mott-Urban land complex, 0 to 5 percent slopes	0.02	NO	A	Somewhat excessively drained
PgD	Patapsco-Fort Mott-Urban land complex, 5 to 15 percent slopes	0.02	NO	A	Somewhat excessively drained
SME	Sassafras and Croom soils, 15 to 25 percent slopes	0.15	NO	C	Well drained
SnB	Sassafras-Urban land complex, 0 to 5 percent slopes	0.24	NO	B	Well drained
UoB	Udorthents, loamy, 0 to 5 percent slopes	0.37	NO	C	Well drained
Uz	Urban land		NO	D	
WdaA	Woodstown sandy loam, 0 to 2 percent slopes, Northern Coastal Plain	0.24	NO	C	Moderately well drained
WrB	Woodstown-Urban land complex, 0 to 5 percent slopes	0.28	NO	C	Moderately well drained
ZBA	Zekiah and Issue soils, 0 to 2 percent slopes, frequently flooded	0.32	YES	B/D	Poorly drained

Outfall Statement

THE SITE OUTFALL IS AT THE OUTFALL POINT OF THE SITE FROM EXISTING SWM FACILITY SWM-1A VIA STORM DRAIN PIPE TO MARLEY CREEK. THE EXISTING STORMWATER FACILITIES ON-SITE WILL REMAIN UNDISTURBED. SITE OUTFALL DISCHARGES TO THE CREEK LOCATED APPROXIMATELY 200 FT SOUTHEAST OF THE PROPERTY BOUNDARY, AND APPROXIMATELY 800 FT SOUTHEAST OF THE PROJECT SITE AREA. MARLEY CREEK IS CLASSIFIED WITHIN USE CLASS I, CONSIDERED A TIDAL WATERSHED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT AND ULTIMATELY OUTFALLS TO THE PATAPSCO RIVER. PER ANNE ARUNDEL COUNTY MAPPING, MARLEY CREEK IS A PERENNIAL STREAM, REQUIRING A 100 FT BUFFER. ON WERS MAPPING, DATA INDICATES POINTS OF EROSION, HEADCUTS, AND OBSTRUCTIONS ALONG THE STREAM. A FIELD INVESTIGATION WAS PERFORMED ON MAY 11, 2023 AND DETERMINED THAT THE SWM-1A OUTFALL IN STABLE AND IN GOOD CONDITION, WITH LITTLE TO NO SIGNS OF SIGNIFICANT EROSIVE OR SEDIMENTATION ISSUES. THE CULVERT UNDER OLD CRAIN HIGHWAY IS IN GOOD CONDITION.

PROPOSED SITE DRAINAGE

LOCATION	D.A. Acres	Tc	CN	Q (cfs)	NOTES
PROPOSED SITE DRAINAGE TO POND A	9.15	0.20	62	17.85	DATA OBTAINED FROM TR-55
ADJUSTED PROPOSED SITE DRAINAGE TO POND A	9.15	0.20	59	14.33	ADJUSTED PER AACo SWM PRACTICES AND PROCEEDURES MANUAL CHAPTER 7.2.3.D
PROPOSED SITE DRAINAGE TO POND B	7.01	0.54	53	4.37	DATA OBTAINED FROM TR-55
ADJUSTED PROPOSED SITE DRAINAGE TO POND B	7.01	0.54	46	1.63	ADJUSTED PER AACo SWM PRACTICES AND PROCEEDURES MANUAL CHAPTER 7.2.3.D
PROPOSED DRAINAGE TO POI #1	19.01	0.43	59	22.90	DATA OBTAINED FROM TR-55
ADJUSTED PROPOSED DRAINAGE TO POI #1	19.01	0.43	55	15.44	ADJUSTED PER AACo SWM PRACTICES AND PROCEEDURES MANUAL CHAPTER 7.2.3.D
PROPOSED DRAINAGE TO POI #2	2.79	0.36	37	0.20	DATA OBTAINED FROM TR-55
PROPOSED DRAINAGE TO POI #3	6.88	0.50	62	8.87	DATA OBTAINED FROM TR-55
ADJUSTED PROPOSED DRAINAGE TO POI #3	6.88	0.50	52	3.72	ADJUSTED PER AACo SWM PRACTICES AND PROCEEDURES MANUAL CHAPTER 7.2.3.D

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Phone: 443.589.2400 www.centuryeng.com

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE No.: 32603
EXPIRATION DATE: 1-18-2026

STATE OF MARYLAND · DAVID MICHAEL SPERA · 32603 · PROFESSIONAL ENGINEER

LICENSE NO.

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

REVISED DATE	BY

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

SCALE AS SHOWN
DRAWN BY LMV/RDT
CHECKED BY MJP
SHEET 18 OF 38
PROJECT NO.: P570004
DATE: 1/23/2025

CONSTRUCTION DOCUMENTS

Proposed Drainage Area Map

North Arundel Aquatic Center

2nd Tax District
Anne Arundel Co., MD.

Tax Map 15, Grid 11, Parcel 638

T:\2018\facilities\18112001\9a n aquatic center\CIVIL\CADD\Drawings\3. Construction Documents\18112001 9A (CD-1A) SWM PropDA Map.dwg Jan 24, 2025 9:56am dshanahan

N

SCALE: 1" = 30'

0 30' 60'

ESD FACILITY #4
MICRO-BIORETENTION, M-6
DRAINAGE AREA = 11,617 S.F.
IMP. AREA = 6,316 S.F.

ESD FACILITY #6
ALTERNATIVE SURFACE, A-2
DRAINAGE AREA = 5,661 S.F.
IMP. AREA = 5,661 S.F.

ESD FACILITY #5
MICRO-BIORETENTION, M-6
DRAINAGE AREA = 19,500 S.F.
IMP. AREA = 14,817 S.F.

ESD FACILITY #1
ALTERNATIVE SURFACE, A-2
DRAINAGE AREA = 81,586 S.F.
IMP. AREA = 81,586 S.F.

ESD FACILITY #8
MICRO-BIORETENTION, M-6
DRAINAGE AREA = 5,849 S.F.
IMP. AREA = 904 S.F.

ESD FACILITY #3
MICRO-BIORETENTION, M-6
DRAINAGE AREA = 19,306 S.F.
IMP. AREA = 9,277 S.F.

ESD FACILITY #9
MICRO-BIORETENTION, M-6
DRAINAGE AREA = 5,032 S.F.
IMP. AREA = 3,402 S.F.

ESD FACILITY #7
MICRO-BIORETENTION, M-6
DRAINAGE AREA = 18,728 S.F.
IMP. AREA = 12,786 S.F.

ESD FACILITY #2
MICRO-BIORETENTION, M-6
DRAINAGE AREA = 18,275 S.F.
IMP. AREA = 8,633 S.F.

N/F
BOARD OF EDUCATION OF ANNE ARUNDEL COUNTY
2644 RIVA RD
ANNAPOLIS MD 21401
ACCT#0400000093211
DEED: 01495/00297
TM: 0015 G: 0011 P:0636 N:24000.02
"GLEN BURNIE PARK ELEMENTARY SCHOOL"
500 MARLBORO RD.

N/F
VANMETER, ABRAHAM L.
7910 BUFORD RD.,
GLEN BURNIE, MD 21061
ACCT#0400005969027
DEED: 05296/00181
TM: 0015 G: 0011 P:1047 N:4070662.02

PROP. ATHLETIC FIELD

PROPOSED BENCHES

PROPOSED PARKING

PROPOSED C&G

SB-1 B-1
SB-2 B-2
SB-3 B-3
SB-4 B-4
SB-5 B-5
SB-6 B-6
SB-7 B-7

LEGEND

EXISTING

- Tract Boundary
- Property Line
- Minor Contour (672)
- Major Contour (670)
- Edge of Paving
- Curb and Gutter
- Storm Drain (SD)
- Water & Fire Hydrant (W)
- Sanitary Sewer (S)
- Underground Electric (UGE)
- Street Light
- Sign
- Electric Structure
- Fence Line (X X X)
- Building
- Tree Line
- Deciduous Tree
- Evergreen Tree
- Critical Root Zone (CRZ)

PROPOSED

- Limit of Disturbance (LOD)
- Minor Contour (672)
- Major Contour (670)
- Spot Elevation (+143.8)
- Easement Line
- Sanitary Sewer (PROP. 8" S.)
- Water and Fire Hydrant (PROP. 8" W.)
- Storm Drain (PROP. 15" D.)
- Curb & Gutter
- Asphalt Paving
- Concrete
- Building
- Chain Link Fence (— X — X — X —)
- Wall
- Street/Field Light
- Tree Line
- Drainage Area Line

PLAN

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

PROFESSIONAL CERTIFICATION

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LICENSE No.: 32603
EXPIRATION DATE: 1-18-2026

STATE OF MARYLAND — RICHARD M. SWARTZ — 32603 — PROFESSIONAL ENGINEER — 1-18-2025

LICENSE NO.

REVISED	
DATE	BY

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

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

SCALE AS SHOWN
DRAWN BY LMV/RDT
CHECKED BY MJP
SHEET 19 OF 38
PROJECT NO.: P570004
DATE: 1/23/2025

CONSTRUCTION DOCUMENTS

ESD Facilities Drainage Area Map

North Arundel Aquatic Center

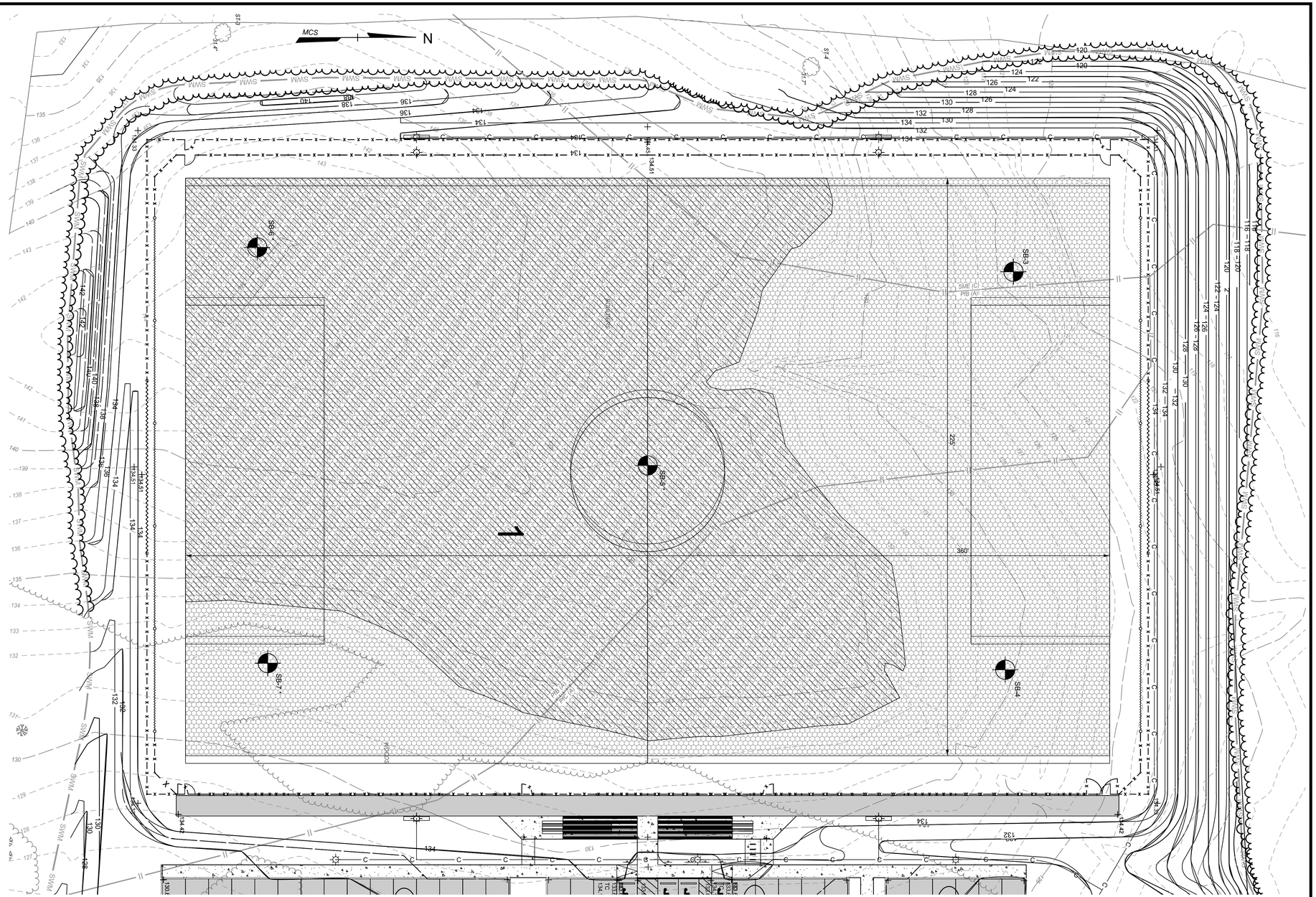
2nd Tax District
Anne Arundel Co., MD.

Tax Map 15, Grid 11, Parcel 638

T:\2018\facilities\181120019a n. aquatic center\CIVIL\CADD\Drawings\3. Construction Documents\181120019A (CD-20) ESD Facilities DA Map.dwg Jan 24, 2025 4:13 pm dshanahan

LEGEND

- Property Line
- Adjoiner / Lot Line
- Zoning Line
- 676 — Existing Minor Contour
- 670 — Existing Major Contour
- Existing Edge of Road/Paving
- W — EX. 12" W — Existing Water
- OHE — 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
- Existing Building
- LOD — Limit of Disturbance
- 400 — Proposed Major Contour
- 402 — Proposed Minor Contour
- Prop. Fire Hydrant
- Prop. Sewer Connection
- Prop. Water Connection
- Storm Drain Inlet
- Storm Drain Outfall
- Prop. Pole
- Telecom. Manhole
- Handicap Parking Spot
- Proposed Structure
- Proposed Curb & Gutter
- Proposed Flush Curb
- Proposed Sidewalk
- Proposed Concrete
- Proposed Asphalt Paving
- Area in cut under field
- Area of synthetic turf field



ESD FACILITY # 1
ALTERNATIVE SURFACE (A-1) PLAN

SCALE: 1"=20'

0 20' 40'

T:\2018\facilities\18112001\4a n. aquatic center\CIVIL\CADD\Drawings\3. Construction Documents\18112001A(CD-20)SWM Facilities Plan.dwg Jan 24, 2025 1:57pm dshanahan

CENTURY ENGINEERING
A Kleinfelder Company
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PROFESSIONAL CERTIFICATION

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LICENSE No.: 32603
EXPIRATION DATE: 1-18-2026

STATE OF MARYLAND — MICHAEL J. PRESSIMONE — 32603 — PROFESSIONAL ENGINEER
LICENSE NO.

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

REVISED DATE	BY

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

SCALE AS SHOWN
DRAWN BY LMV/RDT
CHECKED BY MJP
SHEET 20 OF 38
PROJECT NO.: P570004
DATE: 1/23/2025

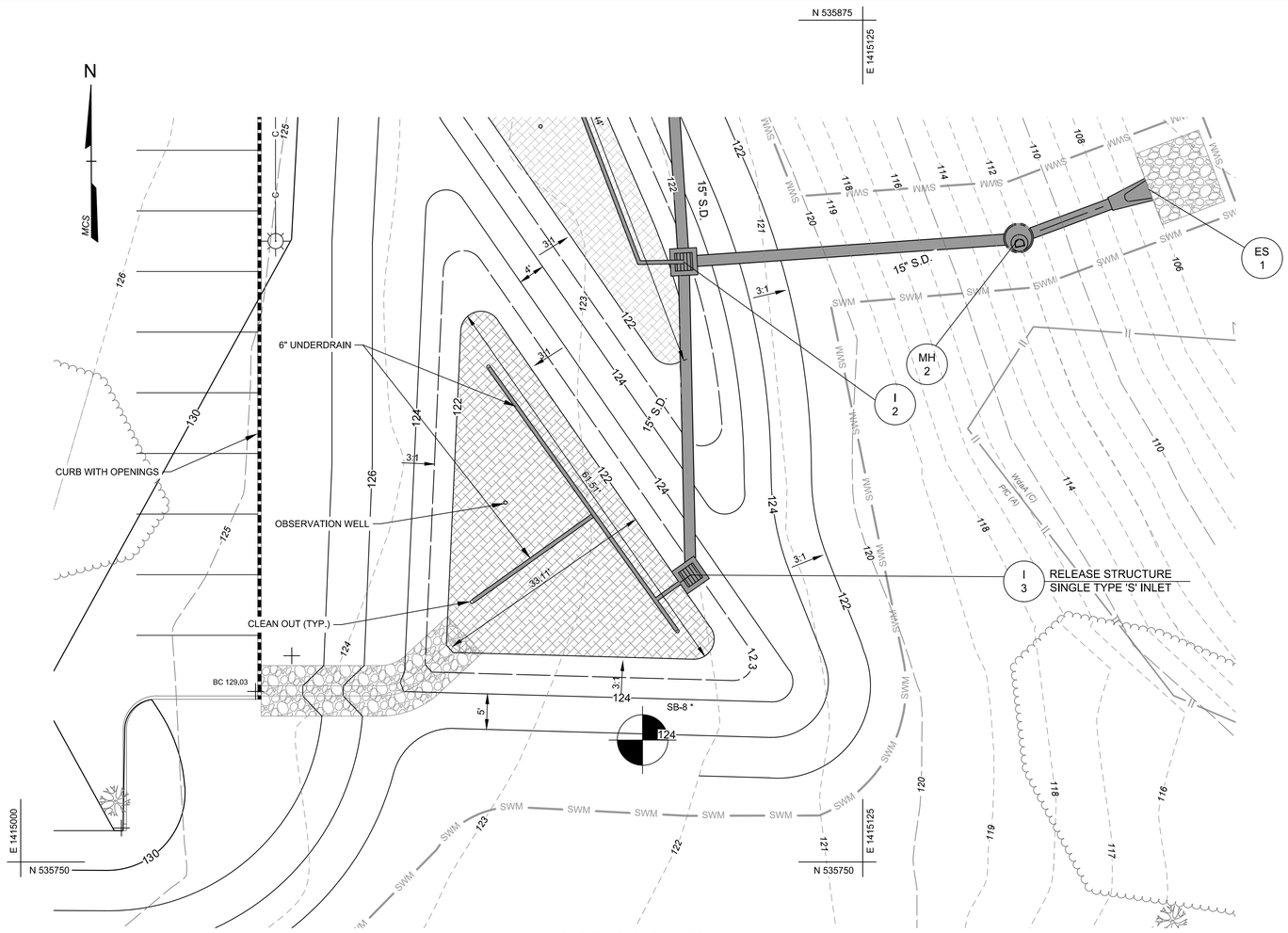
CONSTRUCTION DOCUMENTS

ESD Facility 1 - Alternative Surface

North Arundel Aquatic Center

2nd Tax District
Anne Arundel Co., MD.

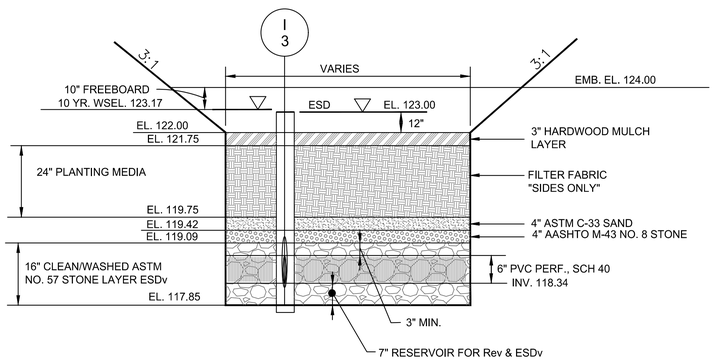
Tax Map 15, Grid 11, Parcel 638



ESD FACILITY #2
MICRO-BIORETENTION (M-6) PLAN

SCALE: 1" = 10'

0 10' 20'



ESD # 2 (MICRO-BIORETENTION) SECTION

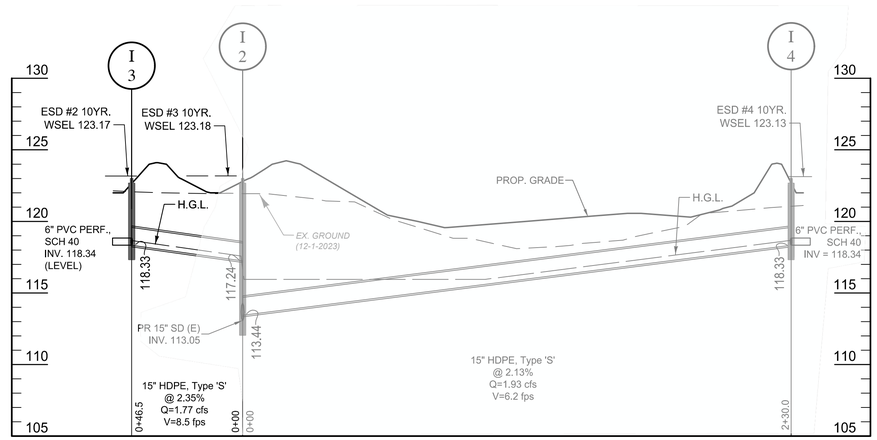
NOT TO SCALE

Project Name: Odenton Park Improvements		
AS-BUILT DATA FOR MICRO-BIORETENTION *To be completed by the Certifying Engineer		
BMP ID: 2		
FEATURE	DESIGN	* AS-BUILT
Filter Bed Area	1183 SF	
Filter Bed Surface Elevation	122.00	
Outlet Pipe (Underdrain) Size/Invert Elevation	6" / 118.64	
Thickness of Filter Media	24"	
Placement of Geotextile	Sides Only	
Plantings	Per Approved LA Plan	
Composition of Filter Media	MD SHA BSM MIX	
Observation Well with Depth to Filter Bottom Indicated on Cap	5' 3"	
Ponding Depth	12"	
Ponding Volume	1,465 CF	
Total Volume	1,937 CF (Treated)	

Date As-Built Accepted by Anne Arundel County:_____

LEGEND

- Property Line
- Adjoiner / Lot Line
- Zoning Line
- 676 Existing Minor Contour
- 670 Existing Major Contour
- Existing Edge of Road/Paving
- W EX. 12" W Existing Water
- OHE Existing Overhead Electric Line
- Existing Utility Pole
- Existing Guy Pole / Guy Wire
- Existing Sign
- X X X Existing Fence
- Existing Trail
- Existing Tree Line
- Existing Deciduous Tree
- Existing Evergreen Tree
- Existing Building
- LOD Limit of Disturbance
- 400 Proposed Major Contour
- 402 Proposed Minor Contour
- Prop. Fire Hydrant
- Prop. Sewer Connection
- Prop. Water Connection
- Storm Drain Inlet
- Storm Drain Outfall
- Prop. Pole
- Telecom. Manhole
- Handicap Parking Spot
- Proposed Structure
- Proposed Curb & Gutter
- Proposed Flush Curb
- Proposed Curb with Openings
- Proposed Sidewalk
- Proposed Concrete
- ESD Planting Media



STORM DRAIN PROFILES

SCALE: 1" = 30' HORIZ.
1" = 5' VERT.

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

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE No.: 32603
EXPIRATION DATE: 1-18-2026

STATE OF MARYLAND — PROFESSIONAL ENGINEER — 32603 — 1-18-2026

LICENSE NO.

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

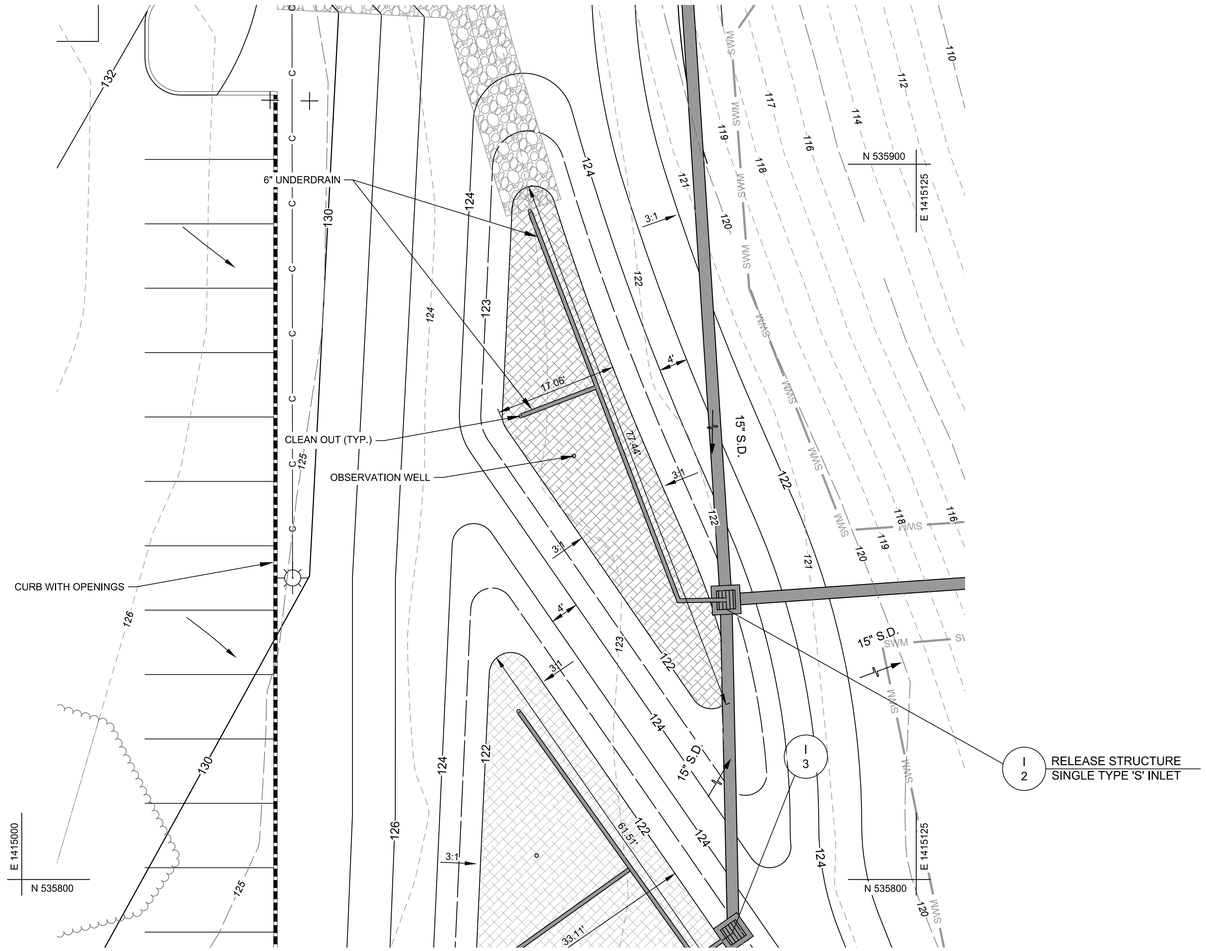
REVISED DATE	BY

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

SCALE AS SHOWN
DRAWN BY LMV/RDT
CHECKED BY MJP
SHEET 21 OF 38
PROJECT NO.: P570004
DATE: 1/23/2025

CONSTRUCTION DOCUMENTS
ESD Facility 2 - Micro-Bioretention
North Arundel Aquatic Center
2nd Tax District Anne Arundel Co., MD.
Tax Map 15, Grid 11, Parcel 638

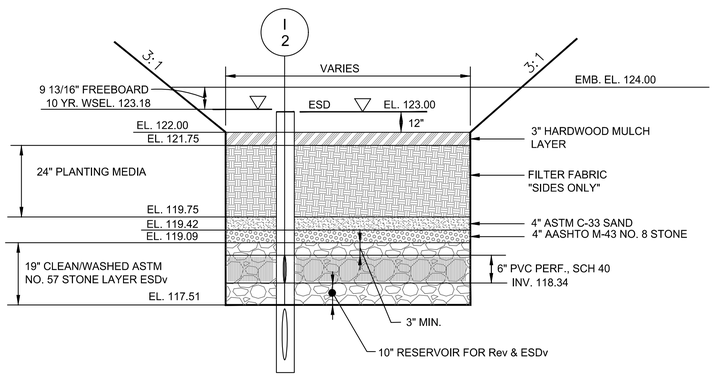
T:\2018\facilities\18112001\9a n aquatic center\CIVIL\CADD\Drawings\3. Construction Documents\18112001 9A (CD-20) SWM Facilities Plan.dwg, Jan 24, 2025 - 1:13 pm, dshanahan



ESD FACILITY # 3
MICRO-BIORETENTION (M-6) PLAN

SCALE: 1" = 10'

0 10' 20'

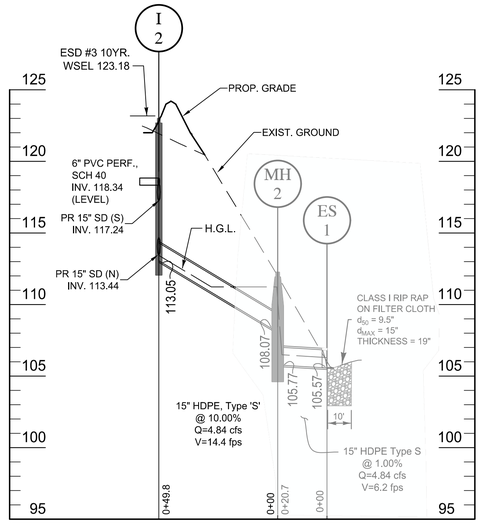


ESD # 3 (MICRO-BIORETENTION) SECTION

NOT TO SCALE

Project Name: Odenton Park Improvements		
AS-BUILT DATA FOR MICRO-BIORETENTION *To be completed by the Certifying Engineer		
BMP ID: 3		
FEATURE	DESIGN	* AS-BUILT
Filter Bed Area	888 SF	
Filter Bed Surface Elevation	122.00	
Outlet Pipe (Underdrain) Size/Invert Elevation	6" / 118.34	
Thickness of Filter Media	24"	
Placement of Geotextile	Sides Only	
Plantings	Per Approved LA Plan	
Composition of Filter Media	MD SHA BSM MIX	
Observation Well with Depth to Filter Bottom Indicated on Cap	5' 6"	
Ponding Depth	12"	
Ponding Volume	1,214 CF	
Total Volume	2,046 CF (Treated)	

Date As-Built Accepted by Anne Arundel County:_____



STORM DRAIN PROFILES

SCALE: 1" = 30' HORIZ.
1" = 5' VERT.

LEGEND

- Property Line
- Adjoiner / Lot Line
- Zoning Line
- Existing Minor Contour (676)
- Existing Major Contour (670)
- Existing Edge of Road/Paving
- Existing Water (W — EX. 12" W)
- Existing Overhead Electric Line (OHE)
- Existing Utility Pole
- Existing Guy Pole / Guy Wire
- Existing Sign
- Existing Fence (X — X — X)
- Existing Trail
- Existing Tree Line
- Existing Deciduous Tree
- Existing Evergreen Tree
- Existing Building
- Limit of Disturbance (LOD)
- Proposed Major Contour (400)
- Proposed Minor Contour (402)
- Prop. Fire Hydrant
- Prop. Sewer Connection
- Prop. Water Connection
- Storm Drain Inlet
- Storm Drain Outfall
- Prop. Pole
- Telecom. Manhole
- Handicap Parking Spot
- Proposed Structure
- Proposed Curb & Gutter
- Proposed Flush Curb
- Proposed Curb with Openings
- Proposed Sidewalk
- Proposed Concrete
- ESD Planting Media

T:\2018\facilities\18111200\14a north aquatic center\CIVIL\CADD\Drawings\3. Construction Documents\18111200 14A (CD-20) SWM Facilities Plan.dwg Jan 24, 2025 11:38am dshanahan

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Phone: 443.589.2400 www.centuryeng.com

PROFESSIONAL CERTIFICATION

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LICENSE No.: 32603
EXPIRATION DATE: 1-18-2026

STATE OF MARYLAND — DAVID MICHAEL SHANAHAN — 32603 — PROFESSIONAL ENGINEER

LICENSE NO.

DATE

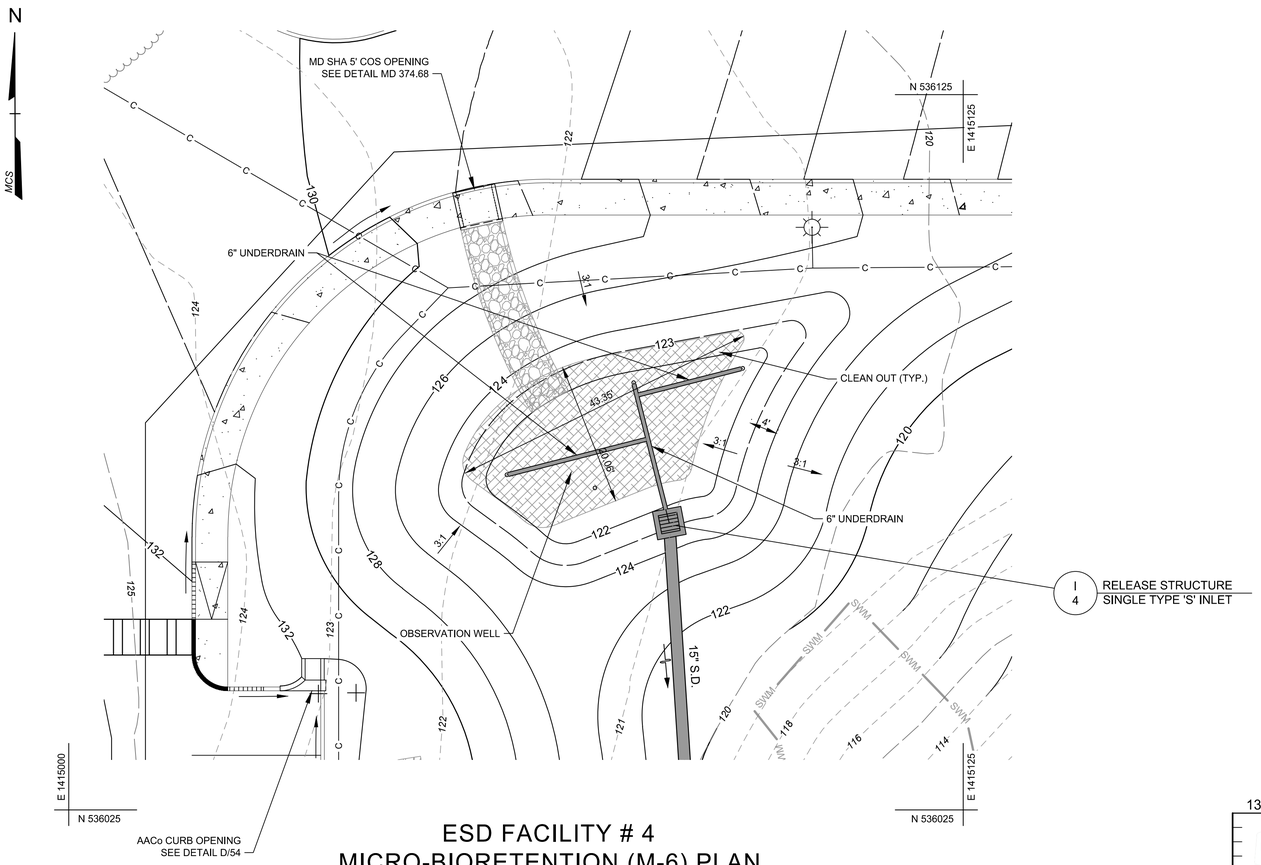
ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

REVISED DATE	BY

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

SCALE AS SHOWN
DRAWN BY LMV/RDT
CHECKED BY MJP
SHEET 22 OF 38
PROJECT NO.: P570004
DATE: 1/23/2025

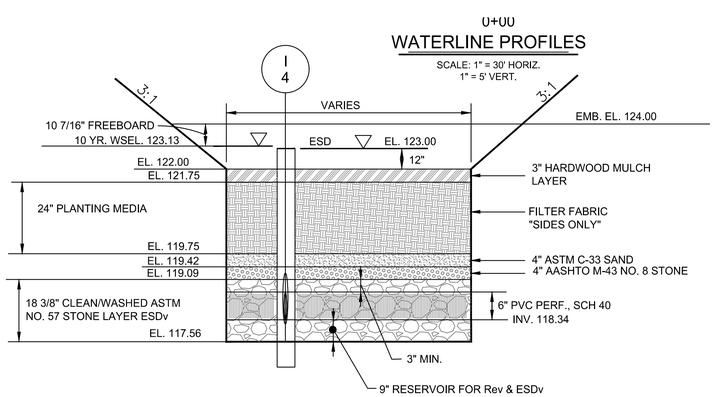
CONSTRUCTION DOCUMENTS
ESD Facility 3 - Micro-Bioretention
North Arundel Aquatic Center
2nd Tax District Tax Map 15, Grid 11, Parcel 638
Anne Arundel Co., MD.



ESD FACILITY # 4
MICRO-BIORETENTION (M-6) PLAN

SCALE: 1" = 10'

0 10' 20'

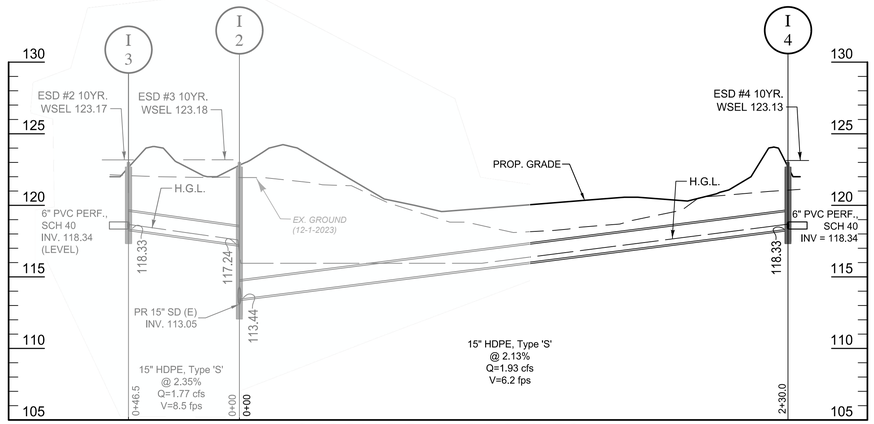


ESD # 4 (MICRO-BIORETENTION) SECTION

NOT TO SCALE

Project Name: Odenton Park Improvements		
AS-BUILT DATA FOR MICRO-BIORETENTION *To be completed by the Certifying Engineer		
BMP ID: 3		
FEATURE	DESIGN	* AS-BUILT
Filter Bed Area	637 SF	
Filter Bed Surface Elevation	122.00	
Outlet Pipe (Underdrain) Size/Invert Elevation	6" / 118.34	
Thickness of Filter Media	24"	
Placement of Geotextile	Sides Only	
Plantings	Per Approved LA Plan	
Composition of Filter Media	MD SHA BSM MIX	
Observation Well with Depth to Filter Bottom Indicated on Cap	5' 6"	
Ponding Depth	12"	
Ponding Volume	815 CF	
Total Volume	1,385 CF (Treated)	

Date As-Built Accepted by Anne Arundel County:_____



STORM DRAIN PROFILES

SCALE: 1" = 30' HORIZ.
1" = 5' VERT.

LEGEND

- Property Line
- Adjoiner / Lot Line
- Zoning Line
- 676 — Existing Minor Contour
- 670 — Existing Major Contour
- Existing Edge of Road/Paving
- W EX. 12" W — Existing Water
- OHE — Existing Overhead Electric Line
- Existing Utility Pole
- Existing Guy Pole / Guy Wire
- Existing Sign
- X X X — Existing Fence
- Existing Trail
- Existing Tree Line
- Existing Deciduous Tree
- Existing Evergreen Tree
- Existing Building
- LOD — Limit of Disturbance
- 400 — Proposed Major Contour
- 402 — Proposed Minor Contour
- Prop. Fire Hydrant
- Prop. Sewer Connection
- Prop. Water Connection
- Storm Drain Inlet
- Storm Drain Outfall
- Prop. Pole
- Telecom. Manhole
- Handicap Parking Spot
- Proposed Structure
- Proposed Curb & Gutter
- Proposed Flush Curb
- Proposed Sidewalk
- Proposed Concrete
- ESD Planting Media

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PROFESSIONAL CERTIFICATION

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LICENSE No.: 32603
EXPIRATION DATE: 1-18-2026

STATE OF MARYLAND — RICHARD J. HARDESTY — 32603 — PROFESSIONAL ENGINEER

LICENSE NO.

REVISED	
DATE	BY

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

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

SCALE	AS SHOWN
DRAWN BY	LMV/RDT
CHECKED BY	MJP
SHEET	23 OF 38
PROJECT NO.:	P570004
DATE:	1/23/2025

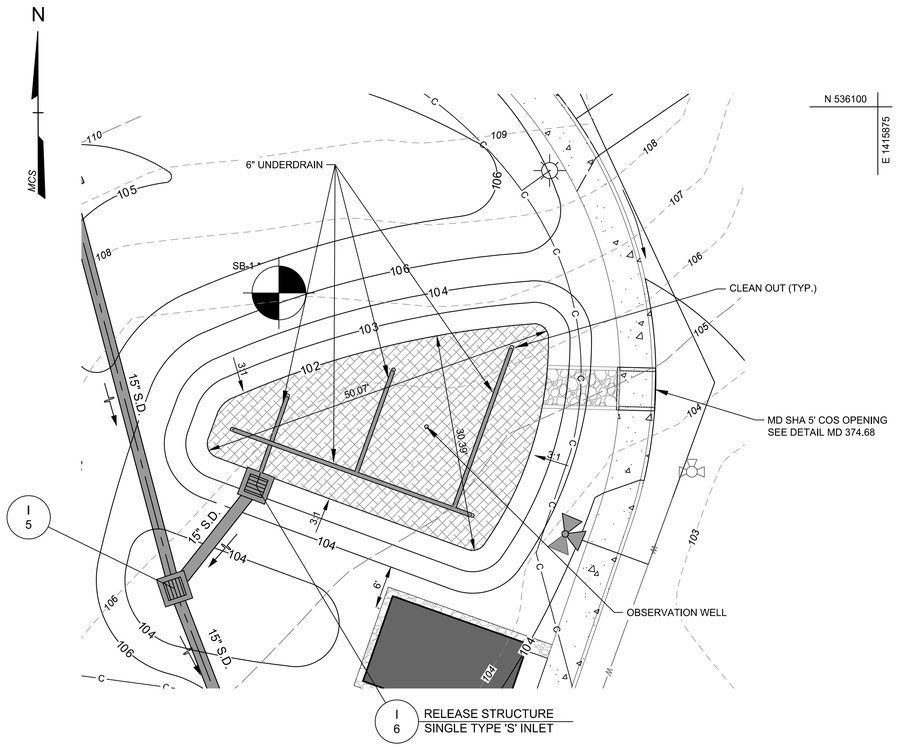
CONSTRUCTION DOCUMENTS

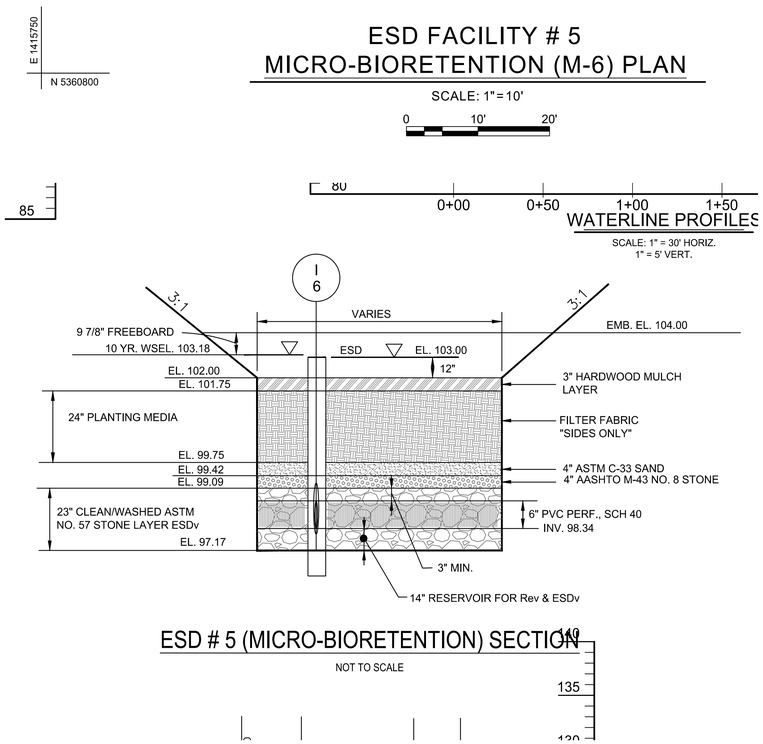
ESD Facility 4 - Micro-Bioretention

North Arundel Aquatic Center

2nd Tax District, Anne Arundel Co., MD. Tax Map 15, Grid 11, Parcel 638

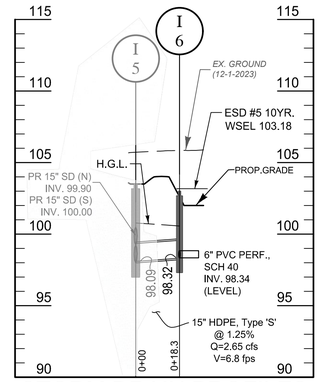
T:\2018\facilities\181120019a n. aquatic center\CIVIL\CADD\Drawings\3. Construction Documents\181120019A (CD-20) SWM Facilities Plan.dwg Jan 24, 2025 1:38 am dshanahan





Project Name: Odenton Park Improvements		
AS-BUILT DATA FOR MICRO-BIORETENTION *To be completed by the Certifying Engineer		
BMP ID: 3		
FEATURE	DESIGN	* AS-BUILT
Filter Bed Area	963 SF	
Filter Bed Surface Elevation	102.00	
Outlet Pipe (Underdrain) Size/Invert Elevation	6" / 98.34	
Thickness of Filter Media	24"	
Placement of Geotextile	Sides Only	
Plantings	Per Approved LA Plan	
Composition of Filter Media	MD SHA BSM MIX	
Observation Well with Depth to Filter Bottom Indicated on Cap	5' 10 3/4"	
Ponding Depth	12"	
Ponding Volume	1,169 CF	
Total Volume	2,329 CF (Treated)	

Date As-Built Accepted by Anne Arundel County:_____



STORM DRAIN PROFILES

SCALE: 1" = 30' HORIZ.
1" = 5' VERT.

LEGEND

- Property Line
- Adjoiner / Lot Line
- Zoning Line
- 676 — Existing Minor Contour
- 670 — Existing Major Contour
- Existing Edge of Road/Paving
- W EX. 12" W — Existing Water
- OHE — Existing Overhead Electric Line
- Existing Utility Pole
- Existing Guy Pole / Guy Wire
- Existing Sign
- X X X — Existing Fence
- Existing Trail
- Existing Tree Line
- Existing Deciduous Tree
- Existing Evergreen Tree
- Existing Building
- LOD — Limit of Disturbance
- 400 — Proposed Major Contour
- 402 — Proposed Minor Contour
- Prop. Fire Hydrant
- Prop. Sewer Connection
- Prop. Water Connection
- Storm Drain Inlet
- Storm Drain Outfall
- Prop. Pole
- Telecom. Manhole
- Handicap Parking Spot
- Proposed Structure
- Proposed Curb & Gutter
- Proposed Flush Curb
- Proposed Sidewalk
- Proposed Concrete
- ESD Planting Media

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LICENSE No.: 32603
EXPIRATION DATE: 1-18-2026

STATE OF MARYLAND — RICHARD S. MAGEE — 32603 — PROFESSIONAL ENGINEER

LICENSE NO.

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

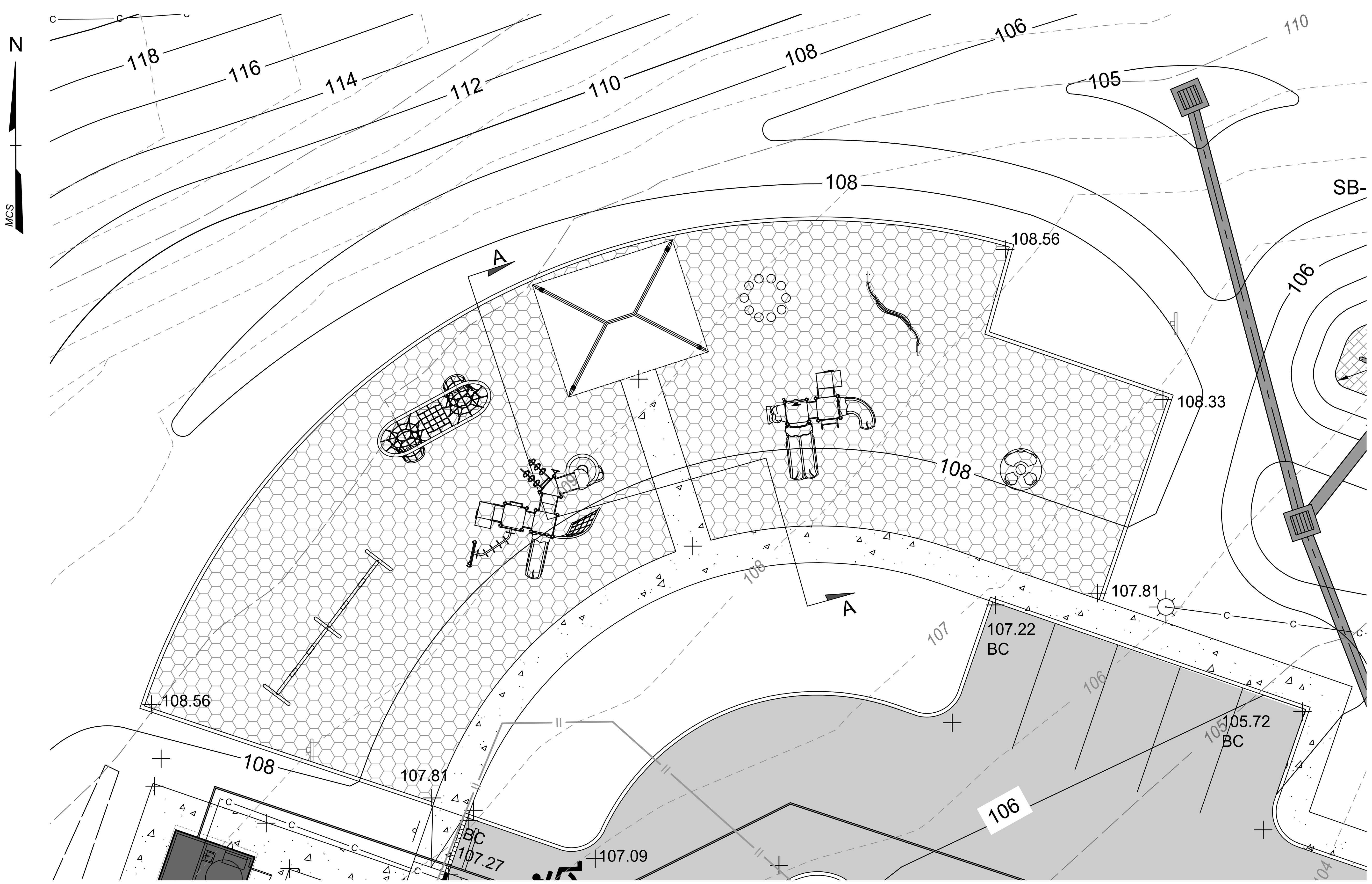
REVISED DATE	BY

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

SCALE AS SHOWN
DRAWN BY LMV/RDT
CHECKED BY MJP
SHEET 24 OF 38
PROJECT NO.: P570004
DATE: 1/23/2025

CONSTRUCTION DOCUMENTS
ESD Facility 5 - Micro-Bioretention
North Arundel Aquatic Center
2nd Tax District Tax Map 15, Grid 11, Parcel 638
Anne Arundel Co., MD.

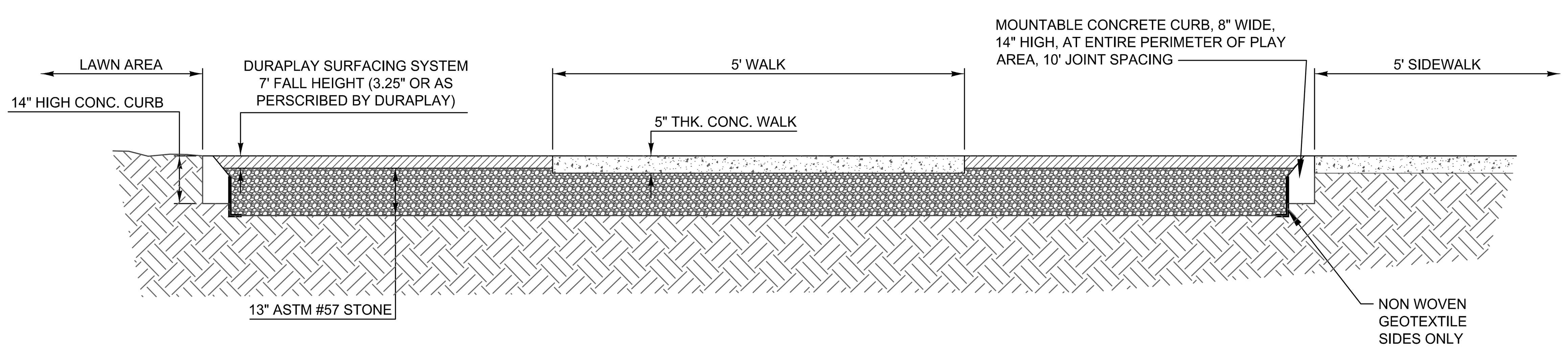
T:\2018\facilities\18112001\9a n. aquatic center\CIVIL\CADD\Drawings\3. Construction Documents\18112001A (CD-20) SWM Facilities Plan.dwg Jan 24, 2025 9:38am dshanahan



ESD FACILITY # 6
ALTERNATIVE SURFACE (A-1) PLAN

SCALE: 1"=10'

0 10' 20'



SECTION A-A
PLAYGROUND SURFACE DETAIL

NOT TO SCALE

LEGEND

- Property Line
- Adjoiner / Lot Line
- Zoning Line
- Existing Minor Contour (676)
- Existing Major Contour (670)
- Existing Edge of Road/Paving
- Existing Water (W, EX. 12" W)
- Existing Overhead Electric Line (OHE)
- Existing Utility Pole
- Existing Guy Pole / Guy Wire
- Existing Sign
- Existing Fence
- Existing Trail
- Existing Tree Line
- Existing Deciduous Tree
- Existing Evergreen Tree
- Existing Building
- Limit of Disturbance (LOD)
- Proposed Major Contour (400)
- Proposed Minor Contour (402)
- Prop. Fire Hydrant
- Prop. Sewer Connection
- Prop. Water Connection
- Storm Drain Inlet
- Storm Drain Outfall
- Prop. Pole
- Telecom. Manhole
- Handicap Parking Spot
- Proposed Structure
- Proposed Curb & Gutter
- Proposed Flush Curb
- Proposed Sidewalk
- Proposed Concrete
- Proposed Asphalt Paving

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PROFESSIONAL CERTIFICATION

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LICENSE No.: 32603
EXPIRATION DATE: 1-18-2026

DATE
LICENSE NO.

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

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

SCALE	AS SHOWN
DRAWN BY	LMV/RDT
CHECKED BY	MJP
SHEET	25 OF 38
PROJECT NO.:	P570004
DATE:	1/23/2025

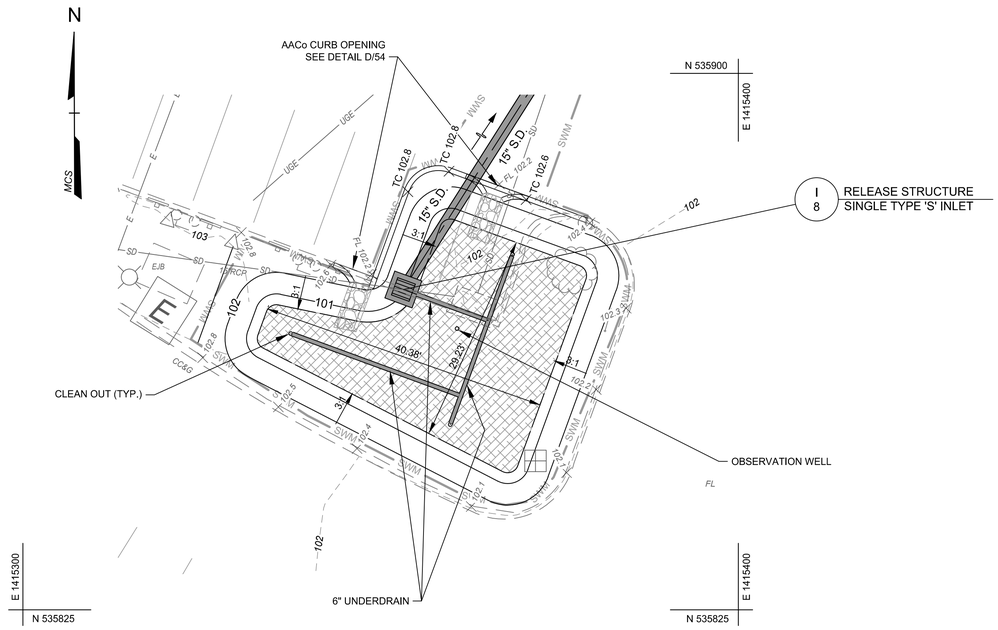
CONSTRUCTION DOCUMENTS

ESD Facility 6 - Alternative Surface

North Arundel Aquatic Center

2nd Tax District
Anne Arundel Co., MD.
Tax Map 15, Grid 11, Parcel 638

T:\2018\facilities\18112001\8 n. aquatic center\CIVIL\CADD\Drawings\3. Construction Documents\18112001A (GD-20) SWM Facilities Plan.dwg Jan 24, 2025 9:38am dshanahan



ESD FACILITY # 7
MICRO-BIORETENTION (M-6) PLAN

SCALE: 1"=10'

0 10' 20'

Project Name: Odenton Park Improvements		
AS-BUILT DATA FOR MICRO-BIORETENTION *To be completed by the Certifying Engineer		
BMP ID: 3		
FEATURE	DESIGN	* AS-BUILT
Filter Bed Area	808 SF	
Filter Bed Surface Elevation	100.50	
Outlet Pipe (Underdrain) Size/Invert Elevation	6" / 96.84	
Thickness of Filter Media	24"	
Placement of Geotextile	Sides Only	
Plantings	Per Approved LA Plan	
Composition of Filter Media	MD SHA BSM MIX	
Observation Well with Depth to Filter Bottom Indicated on Cap	5' 1"	
Ponding Depth	12"	
Ponding Volume	455 CF	
Total Volume	1,253 CF (Treated)	

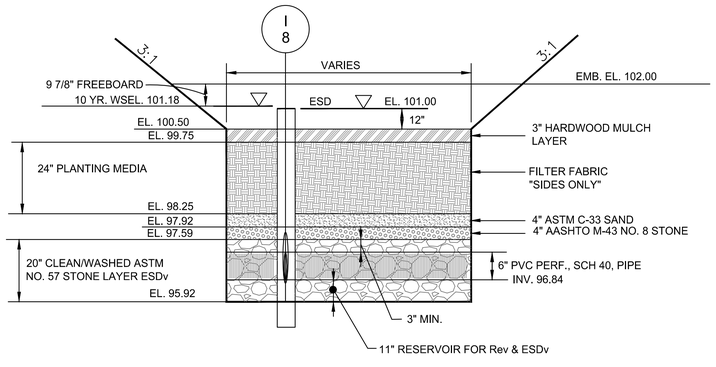
Date As-Built Accepted by Anne Arundel County:_____

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 Trail
- Existing Tree Line
- Existing Deciduous Tree
- Existing Evergreen Tree
- Existing Building
- Limit of Disturbance
- Proposed Major Contour
- Proposed Minor Contour
- Prop. Fire Hydrant
- Prop. Sewer Connection
- Prop. Water Connection
- Storm Drain Inlet
- Storm Drain Outfall
- Prop. Pole
- Telecom. Manhole
- Handicap Parking Spot
- Proposed Structure
- Proposed Curb & Gutter
- Proposed Flush Curb
- Proposed Sidewalk
- Proposed Concrete
- ESD Planting Media

STORM DRAIN PROFILES

SCALE: 1" = 30' HORIZ.
1" = 5' VERT.



ESD # 7 (MICRO-BIORETENTION) SECTION

NOT TO SCALE

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

PROFESSIONAL CERTIFICATION

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LICENSE No.: 32603
EXPIRATION DATE: 1-18-2026

STATE OF MARYLAND · MICHAEL J. PRESSIMONE · 32603 · PROFESSIONAL ENGINEER

LICENSE NO.

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

REVISED DATE	BY

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

SCALE AS SHOWN
DRAWN BY LMV/RDT
CHECKED BY MJP
SHEET 26 OF 38
PROJECT NO.: P570004
DATE: 1/23/2025

CONSTRUCTION DOCUMENTS
ESD Facility 7 - Micro-Bioretention
North Arundel Aquatic Center
2nd Tax District Anne Arundel Co., MD.
Tax Map 15, Grid 11, Parcel 638

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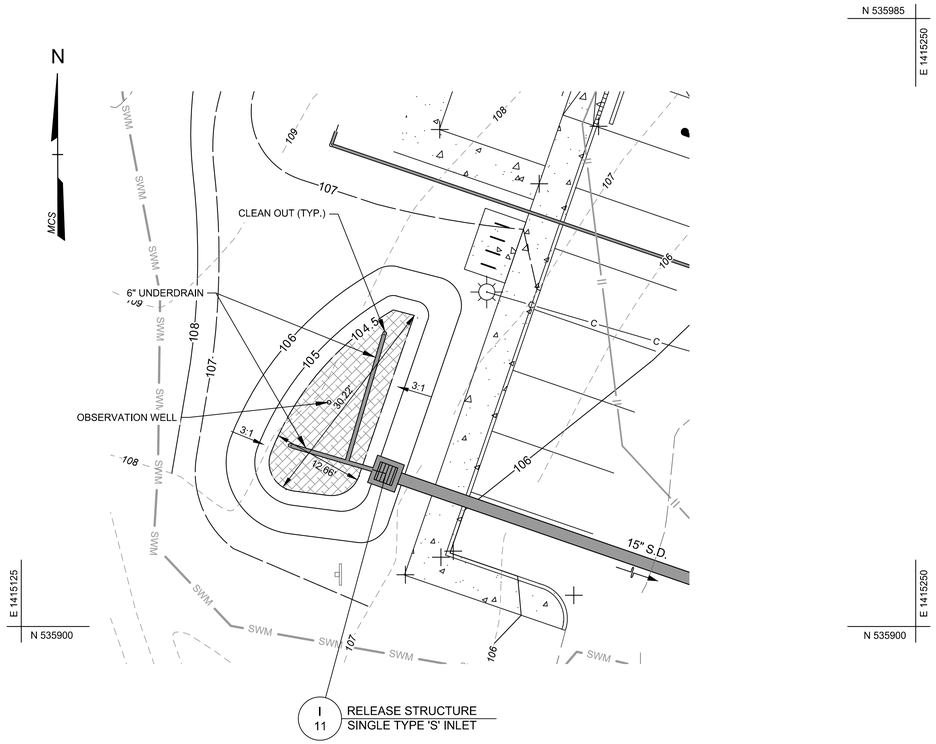


ESD FACILITY # 8
MICRO-BIORETENTION (M-6) PLAN

SCALE: 1" = 10'

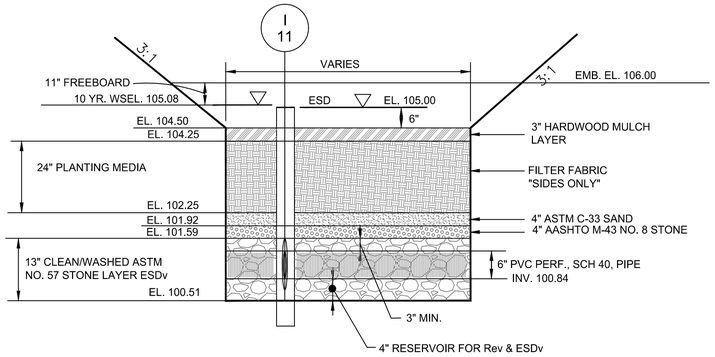
0 10' 20'

Project Name: Odenton Park Improvements		
AS-BUILT DATA FOR MICRO-BIORETENTION *To be completed by the Certifying Engineer		
BMP ID: 3		
FEATURE	DESIGN	* AS-BUILT
Filter Bed Area	271 SF	
Filter Bed Surface Elevation	104.50	
Outlet Pipe (Underdrain) Size/Invert Elevation	6" / 100.84	
Thickness of Filter Media	24"	
Placement of Geotextile	Sides Only	
Plantings	Per Approved LA Plan	
Composition of Filter Media	MD SHA BSM MIX	
Observation Well with Depth to Filter Bottom Indicated on Cap	4' 6"	
Ponding Depth	6"	
Ponding Volume	175 CF	
Total Volume	245 CF (Treated)	

Date As-Built Accepted by Anne Arundel County:_____

LEGEND

- Property Line
- Adjoiner / Lot Line
- Zoning Line
- Existing Minor Contour (676)
- Existing Major Contour (670)
- Existing Edge of Road/Paving
- Existing Water (W — EX. 12" W)
- Existing Overhead Electric Line (OHE)
- Existing Utility Pole
- Existing Guy Pole / Guy Wire
- Existing Sign
- Existing Fence (X — X — X)
- Existing Trail
- Existing Tree Line
- Existing Deciduous Tree
- Existing Evergreen Tree
- Existing Building
- Limit of Disturbance (LOD)
- Proposed Major Contour (400)
- Proposed Minor Contour (402)
- Prop. Fire Hydrant
- Prop. Sewer Connection
- Prop. Water Connection
- Storm Drain Inlet
- Storm Drain Outfall
- Prop. Pole
- Telecom. Manhole
- Handicap Parking Spot
- Proposed Structure
- Proposed Curb & Gutter
- Proposed Flush Curb
- Proposed Sidewalk
- Proposed Concrete
- ESD Planting Media



ESD # 8 (MICRO-BIORETENTION) SECTION

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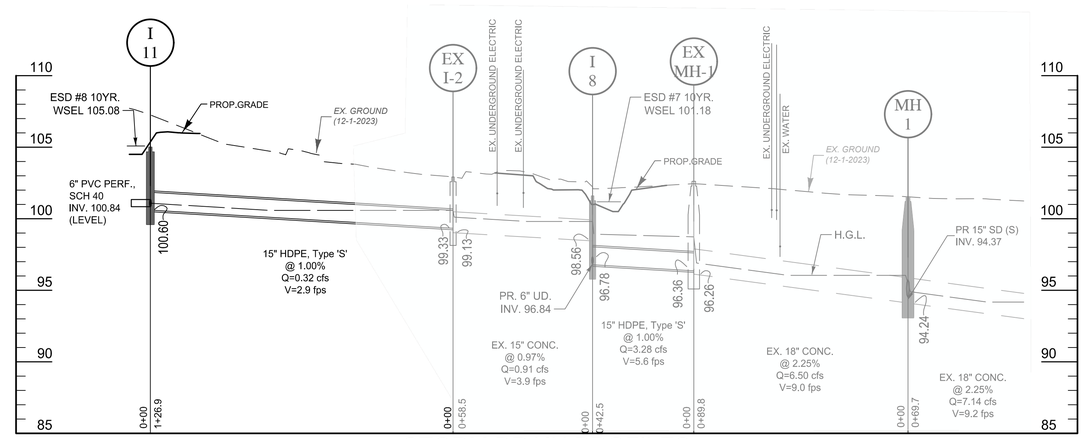

STORM DRAIN PROFILES

SCALE: 1" = 30' HORIZ.
1" = 5' VERT.

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

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE No.: 32603
EXPIRATION DATE: 1-18-2026

STATE OF MARYLAND · RICHARD S. MAGEE · 32603 · PROFESSIONAL ENGINEER

LICENSE NO.

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

REVISED DATE	BY

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

SCALE	AS SHOWN
DRAWN BY	LMV/RDT
CHECKED BY	MJP
SHEET	27 OF 38
PROJECT NO.:	P570004
DATE:	1/23/2025

CONSTRUCTION DOCUMENTS

ESD Facility 8 - Micro-Bioretention

North Arundel Aquatic Center

2nd Tax District
Anne Arundel Co., MD.

Tax Map 15, Grid 11, Parcel 638

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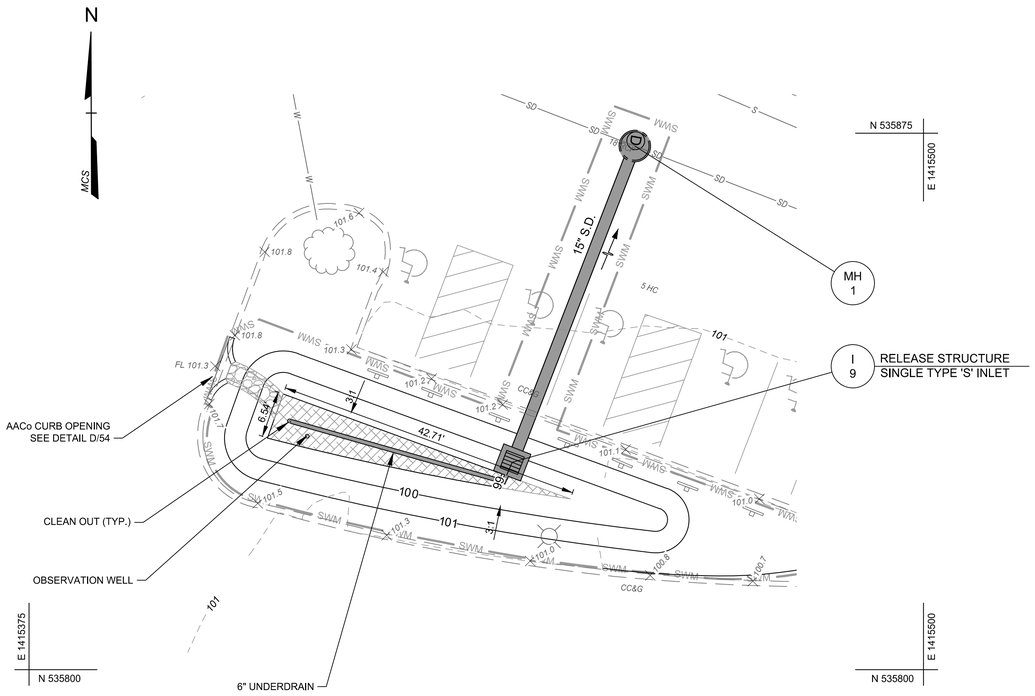


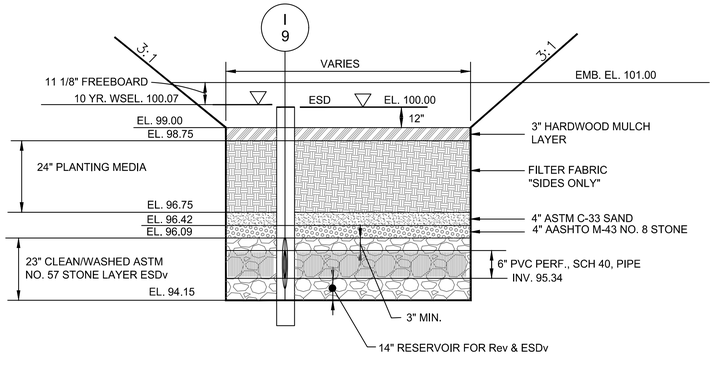
ESD FACILITY # 9
MICRO-BIORETENTION (M-6) PLAN

SCALE: 1"=10'

0 10' 20'

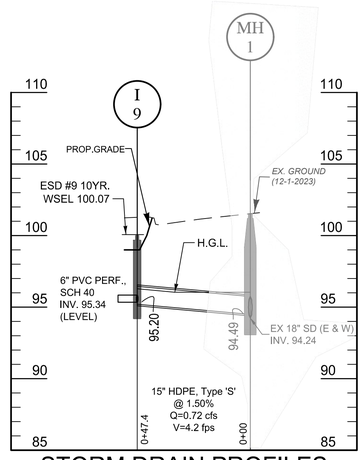
Project Name: Odenton Park Improvements		
AS-BUILT DATA FOR MICRO-BIORETENTION *To be completed by the Certifying Engineer		
BMP ID: 3		
FEATURE	DESIGN	* AS-BUILT
Filter Bed Area	157 SF	
Filter Bed Surface Elevation	99.00	
Outlet Pipe (Underdrain) Size/Invert Elevation	6" / 95.34	
Thickness of Filter Media	24"	
Placement of Geotextile	Sides Only	
Plantings	Per Approved LA Plan	
Composition of Filter Media	MD SHA BSM MIX	
Observation Well with Depth to Filter Bottom Indicated on Cap	5' 10"	
Ponding Depth	12"	
Ponding Volume	333 CF	
Total Volume	570 CF (Treated)	

Date As-Built Accepted by Anne Arundel County:_____



ESD # 9 (MICRO-BIORETENTION) SECTION

NOT TO SCALE



STORM DRAIN PROFILES

SCALE: 1" = 30' HORIZ.
1" = 5' VERT.

LEGEND

- Property Line
- Adjoiner / Lot Line
- Zoning Line
- 676 Existing Minor Contour
- 670 Existing Major Contour
- Existing Edge of Road/Paving
- W EX. 12" W Existing Water
- OHE Existing Overhead Electric Line
- Existing Utility Pole
- Existing Guy Pole / Guy Wire
- Existing Sign
- X X X Existing Fence
- Existing Trail
- Existing Tree Line
- Existing Deciduous Tree
- Existing Evergreen Tree
- Existing Building
- LOD Limit of Disturbance
- 400 Proposed Major Contour
- 402 Proposed Minor Contour
- Prop. Fire Hydrant
- Prop. Sewer Connection
- Prop. Water Connection
- Storm Drain Inlet
- Storm Drain Outfall
- Prop. Pole
- Telecom. Manhole
- Handicap Parking Spot
- Proposed Structure
- Proposed Curb & Gutter
- Proposed Flush Curb
- Proposed Sidewalk
- Proposed Concrete
- ESD Planting Media

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STATE OF MARYLAND · RICHARD STANLEY · 32603 · PROFESSIONAL ENGINEER

LICENSE NO.

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

REVISED DATE	BY

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

SCALE AS SHOWN
DRAWN BY LMV/RDT
CHECKED BY MJP
SHEET 28 OF 38
PROJECT NO.: P570004
DATE: 1/23/2025

CONSTRUCTION DOCUMENTS
ESD Facility 9 - Micro-Bioretention
North Arundel Aquatic Center
2nd Tax District Anne Arundel Co., MD.
Tax Map 15, Grid 11, Parcel 638

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MD SHA BIORETENTION SOIL MIX SPECIFICATION

920.01.05 Bioretention Soil Mix (BSM). A homogeneous mixture composed by loose volume of 5 parts Coarse Sand, 3 parts Base Soil, and 2 parts Fine Bark. BSM shall conform to the following:

(a) Components. Components of BSM shall be sampled, tested and approved before mixing as follows:

(1) Coarse Sand. MSMT 356. Coarse Sand shall be washed silica sand or crushed glass that conforms to ASTM Fine Aggregate C-33. Coarse Sand shall include less than 1% by weight of clay or silt size particles, and less than 5% by weight of any combination of diabase, greystone, calcareous or dolomitic sand.

(2) Base Soil. Base Soil shall be tested and certified by the producer to conform to the following requirements:

COMPOSITION- BASE SOIL					
TEST PROPERTY	TEST METHOD	TEST VALUE AND AMEDMENT			
Prohibited Weeds	---	Free of seed and viable plant parts of species in 920.06.02(a)(b)(c) when inspected.			
Debris	---	No observable content of cement, concrete, asphalt, crushed gravel or construction debris when inspected.			
Grading Analysis	T 87	Sieve Size	Passing by Weight Minimum %		
		2 in.	100		
		No.4	90		
		No. 10	80		
Textural Analysis	T 88	Particle		% Passing by Weight	
		Size	mm	Minimum	Maximum
		Sand	2.0 -0.050	50	85
		Silt	0.050 -0.002	5	45
		Clay	less than 0.002	5	10
Soil pH	D4972	pH of 5.1 to 6.9.			
Organic Matter	T 194	1.0 to 10.0% by weight.			
Soluble Salts	EC1:2 (V:V)	500 ppm (1.25 mmhos/cm) or less.			
Harmful Materials	---	920.01.01(a)			

(3) Fine Bark. Fine Bark shall be the bark of hardwood trees that is milled and screened to a uniform particle size of 2 in. or less. Fine Bark shall be composted and aged for 6 months or longer, and be free from sawdust and foreign materials.

(b) Composition. BSM shall be sampled and tested according to the requirements of MSMT 356 and conform to the following:

COMPOSITION- BIORETENTION SOIL MIX (BSM)					
TEST PROPERTY	TEST METHOD	TEST VALUE AND AMENDMENT			
Weeds	---	Free of seed and viable plant parts of species in 920.06.02(a)(b)(c) when inspected.			
Debris	---	920.01.05(a)(2)			
Textural Analysis	T 88	Particle		% Passing by Weight	
		Size	mm	Minimum	Maximum
		Sand	2.0 -0.050	55	95
		Silt	0.050 -0.002	-	20
		Clay	less than 0.002	1	8
Soil ph	D4972	pH of 5.1 TO 7.1.			
Organic Matter	T 194	Minimum 1.5 % by weight.			
Nutrient Analysis and Soluble Salts	Mehlich-3	Concentration			
		Element	Minimum ppm	Minimum Fi V	Maximum ppm / Maximum Fiv
		Calcium (Ca)	32	25	no limit / no limit
		Magnesium (Mg)	15	25	no limit / no limit
		Phosphorus (P)	18	25	42 / 100
		Potassium (K)	22	25	no limit / no limit
		Sulfur (S04)	25	n/a	no limit / no limit
	EC1:2 (V:V)	Soluble Salts	40	n/a	500 / n/a
Harmful Materials	---	920.01.01 (a).			

(c) Amendment or Failure. BSM that does not conform to composition requirements for pH or nutrient analysis shall be amended as specified by the NMP. BSM that exceeds maximum phosphorus concentration or fails other composition requirements will not be accepted, and shall not be delivered or used as BSM.

(d) Storage. 920.01.02(b). BSM shall be stored in a stockpile that is protected from weather under tarp or shed. DSM stored for 6 months or longer shall be resampled, retested, and reapproved before use.

CONSTRUCTION SPECIFICATIONS FOR MICRO-BIORETENTION FACILITIES

1. MATERIAL SPECIFICATIONS

THE ALLOWABLE MATERIALS TO BE USED IN MICRO-BIORETENTION, LANDSCAPE INFILTRATION AND BIOSWALE AREAS ARE DETAILED IN TABLE B.4.1. (SEE THIS SHEET)

2. FILTER MEDIA OR PLANTING SOIL

SHALL MEET THE MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS 920.01.05 BIORETENTION SOIL MIX (BSM).

3. COMPACTION

IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF MICRO-BIORETENTION, LANDSCAPE INFILTRATION AND BIOSWALE PRACTICES AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE EXCAVATED USING A LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TYPE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.

COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE MICRO-BIORETENTION, LANDSCAPE INFILTRATION AND BIOSWALE FACILITIES BY USING A PRIMARY TILLING OPERATION SUCH AS A CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO REFRACTURE THE SOIL PROFILE THROUGH THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.

WHEN BACKFILLING THE MICRO-BIORETENTION, LANDSCAPE INFILTRATION AND BIOSWALE FACILITIES, PLACE SOIL IN LIFTS OF 12" to 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE MICRO-BIORETENTION, LANDSCAPE INFILTRATION OR BIOSWALE BASINS. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS. GRADE MICRO-BIORETENTION, LANDSCAPE INFILTRATION AND BIOSWALE MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.

4. PLANT MATERIAL

RECOMMENDED PLANT MATERIAL FOR MICRO-BIORETENTION, LANDSCAPE INFILTRATION AND BIOSWALE AREAS CAN BE FOUND ON THE LANDSCAPE PLANS FOUND HEREIN.

5. PLANT INSTALLATION

COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SURROUNDING AREAS TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. FINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE MICRO-BIORETENTION, LANDSCAPE INFILTRATION AND BIOSWALE AREAS DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE.

ROOT STOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO 1/8th OF THE BALL IS ABOVE FINAL GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION.

TREES SHALL BE BRACED USING 2" BY 2" STAKES ONLY AS NECESSARY AND FOR THE FIRST GROWING SEASON ONLY. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL.

GRASSES AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLUGS SHALL BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING SPECIFICATIONS.

THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE MICRO-BIORETENTION, LANDSCAPE INFILTRATION AND BIOSWALE STRUCTURES IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS DEFEATS, OR AT A MINIMUM, IMPEDES THIS GOAL. ONLY ADD FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOTILL UREA FERTILIZER AT A RATE OF 2 POUNDS PER 1000 SQUARE FEET.

6. UNDERDRAINS

UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:

- PIPE - SHOULD BE 4"-6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM F758, TYPE PS 28, OR AASHTO-M-278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED, 4" RIGID PIPE (E.G., PVC OR HDPE).
- PERFORATIONS - IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (NO. 4 OR 4X4) GALVANIZED HARDWARE CLOTH, OR 1/8" x 1" SLOTS AT 6" ON CENTER, 5 SPCED RAIDIALLY AROUND PIPE.
- GRAVEL - THE GRAVEL LAYER (NO. 57 STONE PREFERRED) SHALL BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.
- A RIGID, NON-PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,000 SQUARE FEET) TO PROVIDE A CLEAN-OUT PORT AND MONITOR PERFORMANCE OF THE FILTER.
- A 4" LAYER OF PEA GRAVEL (1/8" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES INTO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".

7. MISCELLANEOUS

THESE PRACTICES MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.

MICRO BIORETENTION MAINTENANCE SCHEDULE

1. FACILITY SHALL BE INSPECTED TWICE A YEAR ANNUALLY AND AFTER EVERY MAJOR STORM EVENT.
2. THE TOP FEW INCHES OF FILTER MEDIA SHOULD BE REMOVED AND REPLACED WHEN WATER PONDS FOR MORE THAN 24 HOURS FOLLOWING ANY STORM EVENT. SILTS AND SEDIMENT SHOULD BE REMOVED FROM THE SURFACE OF THE FILTER BED WHEN ACCUMULATION EXCEEDS ONE INCH.
3. WHERE PRACTICES ARE USED TO TREAT AREAS WITH HIGHER CONCENTRATIONS OF HEAVY METALS (E.G., PARKING LOTS, ROADS), MULCH SHOULD BE REPLACED ANNUALLY. OTHERWISE, THE TOP TWO TO THREE INCHES SHOULD BE REPLACED AS NECESSARY.
4. OCCASIONAL PRUNING AND REPLACEMENT OF DEAD VEGETATION IS NECESSARY. IF SPECIFIC PLANTS ARE NOT SURVIVING, MORE APPROPRIATE SPECIES SHOULD BE USED. WATERING MAY BE REQUIRED DURING PROLONGED DRY PERIODS.
5. A LOGBOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS. THE MAINTENANCE LOGBOOK SHALL BE AVAILABLE TO ANNE ARUNDEL COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA. ONCE THE PERFORMANCE CHARACTERISTICS OF THE SYSTEM HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

Materials Specifications for Alternative Surface - Artificial Turf			
Material	Specification	Size	Notes
Geotextile	Class "C" - Apparent opening size (ASTM-D-4751), Grab Tensile Strength (ASTM-D-4632), Puncture Resistance (ASTM-D-4833)	N/A	Sides only Not Bottom unless specified on the plans
Underdrain and Reservoir Gravel	AASHTO M-43 No. 8 Stone	3/8" - 1/2"	Stone must be cleaned and washed
Sand	ASTM-C-33	0.02" - 0.04"	Sand substitutions such as Diabase and Graystone #10 are not acceptable. No calcium carbonate or dolomitic sand substitutions are acceptable. No "rock-dust" can be used for sand. Manufactured sand may not be used in dams.
Poured in place concrete	MSHA Mix No. 3; f'c = 3500 psi @ 28 days, normal weight, air-entrainrd; reinforced to meet ASTM-61 5-60	N/A	On site testing of poured in place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved State or local standards requires design drawings sealed by a professional and approved by a professional structural engineer licensed in the state of Maryland - design to include meeting ACI Code 350.R/89; vertical loading[H-10 or H-20]; allowable horizontal loading (based on soil pressures); and analysis of potential cracking

ALTERNATIVE SURFACE INSPECTION AND MAINTENANCE PROCEDURES

INSPECTION:

REGULAR INSPECTIONS SHALL BE MADE DURING THE FOLLOWING STAGES OF CONSTRUCTION:

- DURING EXCAVATION TO SUB GRADE.
- DURING PLACEMENT OF THE SUBBASE MATERIAL.
- DURING PLACEMENT OF THE SURFACE MATERIAL.
- UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION.

MAINTENANCE:

- DRAINAGE PIPES, INLETS AND OTHER STRUCTURES WITHIN OR DRAINING TO THE SUBBASE SHOULD BE CLEANED OUT AT REGULAR INTERVALS.
- TRUCKS AND OTHER HEAVY VEHICLES SHOULD BE PREVENTED FROM DRIVING ONTO THE TURF.
- ANY GRASS CLIPPINGS FROM SURROUNDING MOWING PROCEDURES SHOULD BE REMOVED FROM THE TURF AREA.

CONSTRUCTION/PERFORMANCE SPECIFICATIONS FOR ALTERNATIVE SURFACES

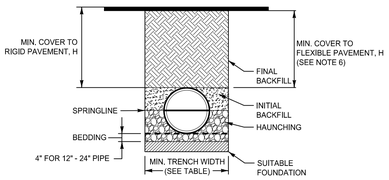
1. THE ARTIFICIAL TURF GRANULAR MATERIAL MUST HAVE AN OPEN PORE SPACE OF AT LEAST 30%.
2. ARTIFICIAL TURF GRANULAR MATERIAL AND STONE BASE SHALL HAVE A HYDRAULIC CONDUCTIVITY OF AT LEAST 2 INCHES PER HOUR.
3. THE ARTIFICIAL TURF SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

Table B.4.1 Materials Specifications for Micro-Bioretention

Material	Specification	Size	Notes
Plantings	See Landscape Plan	n/a	Plantings are site-specific
Planting Soil	MD SHA Bioretention Soil Mix (BSM)	n/a	See specifications this sheet
Organic Content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	Shredded Hardwood		Aged 6 months, minimum; no pine or wood chips
Pea Gravel Diaphragm	Pea gravel: ASTM D-448	No.8 or No.9 (1/8" to 3/8")	
Geotextile		n/a	PE Type I nonwoven
Gravel (underdrains and infiltration berms)	AASHTO M-43	No.57 or No.6 Aggregate (3/8" to 3/4")	
Underdrain pipeing	TMF 758, Type PS 28 or AASHTO M-278	4" or 6" Rigid schedule 40 PVC or SDR35	Slotted or perforated pipe; 3/8" perf @ 6" on center, 4 holes per row; minimum of 3" of gravel around pipes. Perforated pipe shall be wrapped with 1/4-inch galvanized hardware cloth. 1/8"x 1" slots @ 6" on center, 5 spaced radially around pipe.
Poured in place concrete (if required)	MSHA Mix No.3; fc=3500 psi @ 28 days, normal weight air-entrained; reinforcing to meet ASTM-615-60	n/a n/a	on-site testing of poured in place concrete required 28 day strength and slump test; all concrete design (cast-in-place or precast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 350R/89; vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil pressures); and analysis of potential cracking.
Sand	ASSHTO M-6 or ASTM C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone (AASHTO) #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No " rock dust" can be used for sand.

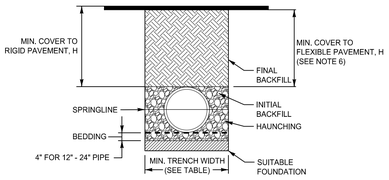
STORMWATER MANAGEMENT GENERAL NOTES

1. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL EFFORTS NECESSARY TO DELIVER A ANNE ARUNDEL COUNTY APPROVED STORMWATER MANAGEMENT SYSTEM WITHIN 60 DAYS OF APPROVAL OF FINAL SITE STABILIZATION.
2. THE GENERAL CONTRACTOR SHALL KEEP ALL AS-BUILT INFORMATION CURRENT ON A RECORD SET OF DRAWINGS AS THE STORMWATER MANAGEMENT SYSTEM IS BEING CONSTRUCTED.
3. THE GENERAL CONTRACTOR SHALL HIRE THE CIVIL ENGINEER OF RECORD TO PRODUCE A SET OF CERTIFIED AS-BUILT DRAWINGS. ONCE PREPARED, THE GENERAL CONTRACTOR SHALL OBTAIN COUNTY APPROVAL OF THE DOCUMENTS.
4. FINAL COUNTY APPROVAL AND CLOSE OUT OF THE GRADING PERMIT IS REQUIRED BEFORE CONTRACT COMPLETION IS ACHIEVED.



NON-TRAFFIC AREAS HDPE STORM DRAIN TRENCH INSTALLATION DETAIL

NOT TO SCALE



TRAFFIC AREAS HDPE STORM DRAIN TRENCH INSTALLATION DETAIL

NOT TO SCALE

TABLE 1, MINIMUM TRENCH WIDTH

PIPE DIAMETER	MINIMUM TRENCH WIDTH
12"	30"
15"	34"
18"	39"
24"	48"

TABLE 2, MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS

	SURFACE LIVE LOADING CONDITIONS	
PIPE DIA.	H-25	HEAVY CONSTRUCTION (75T AXLE LOAD)*
12" - 24"	12"	48"

TABLE 3, MAXIMUM COVER FOR ADS N-12 HDPE PIPE, FT

	CLASS I
PIPE DIA.	COMPACTED TO 95%
12"	26
15"	28
18"	24
24"	21

NOTES

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION, WITH THE EXCEPTION THAT THE INITIAL BACKFILL MAY EXTEND TO THE CROWN OF THE PIPE. BACKFILL TO BE PLACED UNDER THE PIPE HAUNCHES AND PLACED IN 8" LIFTS UNTIL THE CROWN OF PIPE IS REACHED. SOIL CLASSIFICATIONS ARE PER THE LATEST VERSION OF ASTM D2321. CLASS IV MATERIALS (MH, CH) AS DEFINED IN PREVIOUS VERSIONS OF ASTM D2321 ARE NOT APPROPRIATE BACKFILL MATERIALS.
2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN BELOW THE GROUNDWATER ELEVATION OR OTHERWISE REQUIRED.
3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER, AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II, III, OR IV. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. COMPACTION SHALL BE SPECIFIED BY THE ENGINEER IN ACCORDANCE WITH TABLE 3 FOR THE APPLICABLE FILL HEIGHTS LISTED, UNLESS OTHERWISE NOTED BY THE ENGINEER.
5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II, III, OR IV IN THE PIPE ZONE EXTENDING TO THE CROWN OF THE PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION. COMPACTION SHALL BE SPECIFIED BY THE ENGINEER IN ACCORDANCE WITH TABLE 3 FOR THE APPLICABLE HEIGHTS LISTED.
6. MINIMUM COVER: MINIMUM COVER H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE, CONTRACTOR TO USE FLOWABLE FILL AS PORTION OF FINAL BACKFILL IF IT IS REQUIRED TO PREVENT FLOTATION, FOR TRAFFIC APPLICATIONS, CLASS I OR II MATERIAL COMPACTED TO 90% SPD AND CLASS III COMPACTED TO 95% SPD IS REQUIRED. FOR TRAFFIC APPLICATIONS, MINIMUM COVER H IS 12" MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT. CLASS IV MATERIALS MAY NOT BE USED IN TRAFFIC AREAS WHERE COVER IS LESS THAN 72".

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LICENSE No.: 32603
EXPIRATION DATE: 1-18-2026

DATE:

STATE OF MARYLAND — RICHARD SWARTZ — 32603 — PROFESSIONAL ENGINEER

LICENSE NO.

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

REVISED DATE	BY

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

SCALE AS SHOWN
DRAWN BY LMV/RDT
CHECKED BY MJP
SHEET 29 OF 38
PROJECT NO.: P570004
DATE: 1/23/2025

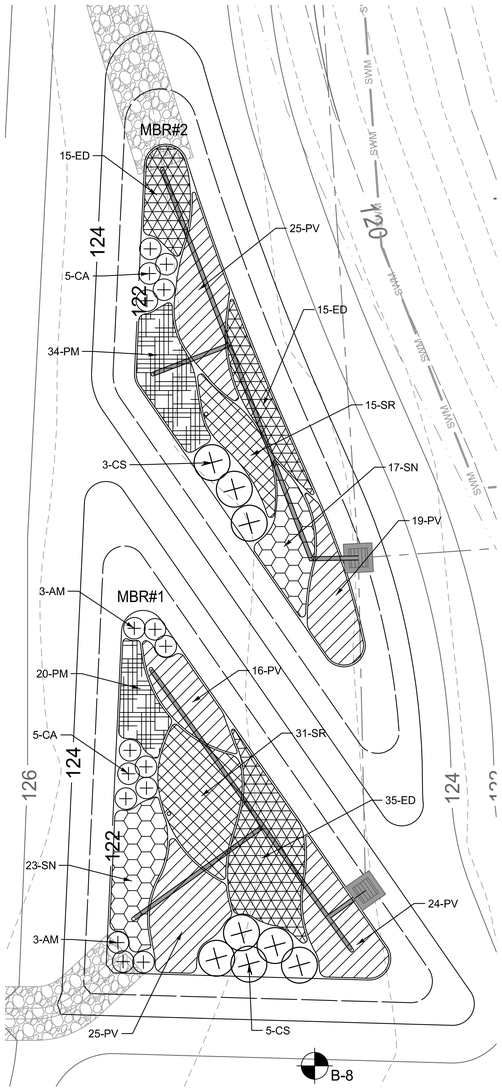
CONSTRUCTION DOCUMENTS

SWM Notes & Details

North Arundel Aquatic Center

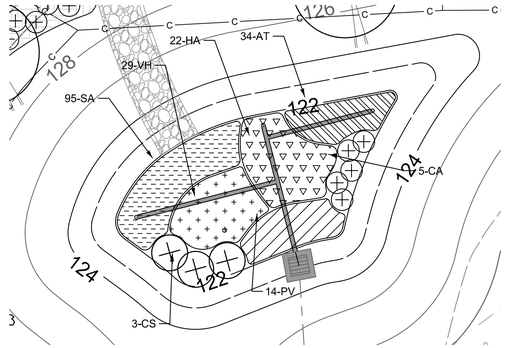
2nd Tax District — Tax Map 15, Grid 11, Parcel 638
Anne Arundel Co., MD.

T:\2018\facilities\18112001 9a n aquatic center\CIVIL\CADD\Drawings\3 Construction Documents\18112001 9A (CD-22) SWM Notes & Details.dwg Jan 24, 2025 9:39am dshanahan



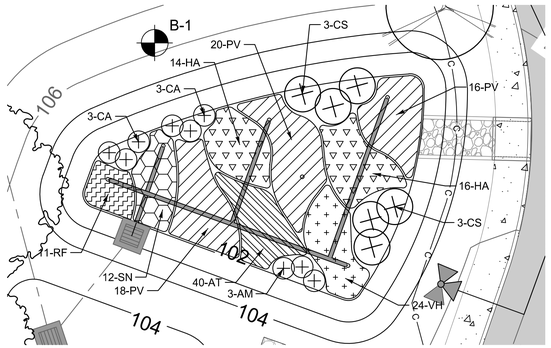
ESD FACILITIES #2 & #3

SCALE: 1" = 10'



ESD FACILITY #4

SCALE: 1" = 10'



ESD FACILITY #5

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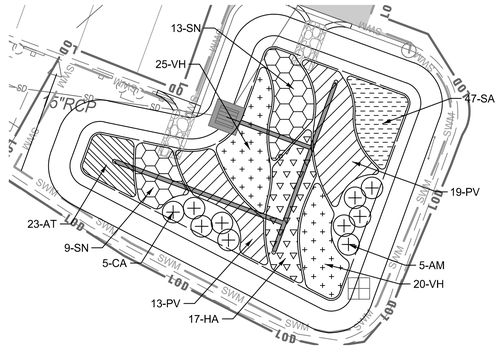
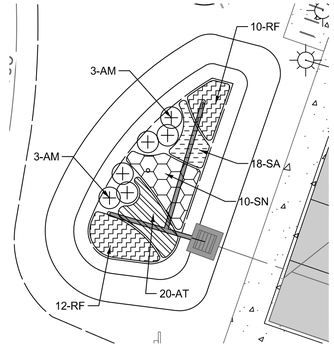


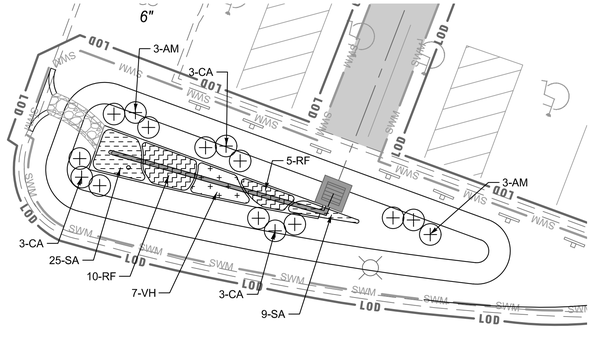
ESD FACILITY #7

SCALE: 1" = 10'



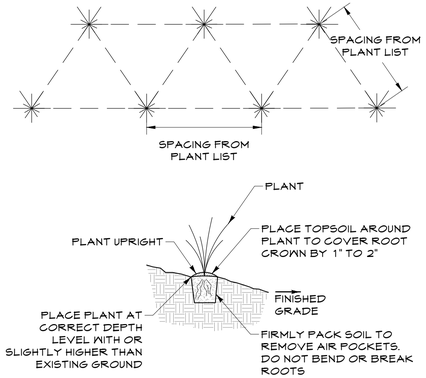
ESD FACILITY #8

SCALE: 1" = 10'



ESD FACILITY #9

SCALE: 1" = 10'



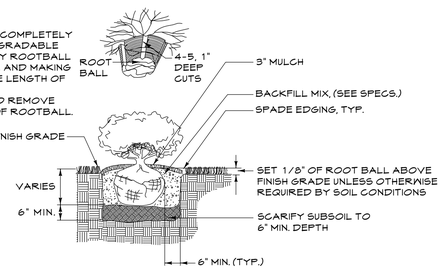
GROUNDCOVER PLANTING

Not To Scale

PLANTING NOTES

1. PLANT MATERIAL SUBSTITUTIONS WILL NOT BE ACCEPTED WITHOUT APPROVAL OF THE LANDSCAPE ARCHITECT.
2. ALL SHRUBS AND GROUNDCOVER 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 PLANT 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.

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

MICRO-BIORETENTION PLANT LIST

KEY	QTY	SCIENTIFIC NAME	COMMON NAME	SIZE	COMMENTS
SHRUBS					
AM	26	Aronia melanocarpa	Black Chokeberry	24" - 36" ht.	Container; Full to Ground
CA	35	Clethra alnifolia	Summersweet Pepperbush	24" - 36" ht.	Container; Full to Ground
CS	17	Cornus sericea	Red Twig Dogwood	24" - 36" ht.	Container; Full to Ground
TOTAL	78				
PERENNIALS, GRASSES, AND GROUNDCOVERS					
AT	117	Asclepias tuberosa	Butterfly Weed	9" - 12" ht.	Container; 18" o.c.
ED	65	Eutrochium dubium	Coastal Joe Pye Weed	12" - 18" ht.	Container; 30" o.c.
HA	69	Helenium autumnale	Common Sneezeweed	12" - 18" ht.	Container; 30" o.c.
PV	209	Panicum virgatum	Switch Grass	12" - 18" ht.	Container; 30" o.c.
PM	54	Pycnanthemum muticum	Mountain Mint	9" - 12" ht.	Container; 24" o.c.
RF	48	Rudbeckia fulgida var. sullivantii	Black-Eyed Susan	9" - 12" ht.	Container; 24" o.c.
SA	194	Sisyrinchium angustifolium	Blue-Eyed Grass	9" - 12" ht.	Container; 18" o.c.
SR	46	Solidago rugosa	Rough Goldenrod	12" - 18" ht.	Container; 30" o.c.
SN	62	Symphyotrichum novae-angliae	New England Aster	12" - 18" ht.	Container; 30" o.c.
VH	105	Verbena hastata	American Blue Vervain	12" - 18" ht.	Container; 24" o.c.
TOTAL	969				

N

0 10' 20'

MCS

LEGEND

EXISTING

- Edge of Paving
- Curb and Gutter
- Storm Drain (EX.15" D. SD)
- Water & Fire Hydrant (W, EX.12" W.)
- Sanitary Sewer (EX. 8" S., S)
- Underground Electric (UGE)
- Street Light
- Sign
- Electric Structure
- Soil Boring (B-1)

PROPOSED

- Limit of Disturbance (LOD)
- Minor Contour (672)
- Major Contour (670)
- Storm Drain (PROP. 15" D.)
- Curb & Gutter
- Asphalt Paving
- Concrete
- Shade Tree
- Flowering Tree
- Evergreen Tree
- Shrubs
- Perennials

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EXPIRATION DATE: 5/20/2026

DATE: 1/23/2025

1008 — LICENSE NO.

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

REVISED DATE	BY

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APPROVED DATE — PROJECT MANAGER
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APPROVED DATE — CHIEF, RIGHT OF WAY

SCALE AS SHOWN
DRAWN BY LMV/RDT
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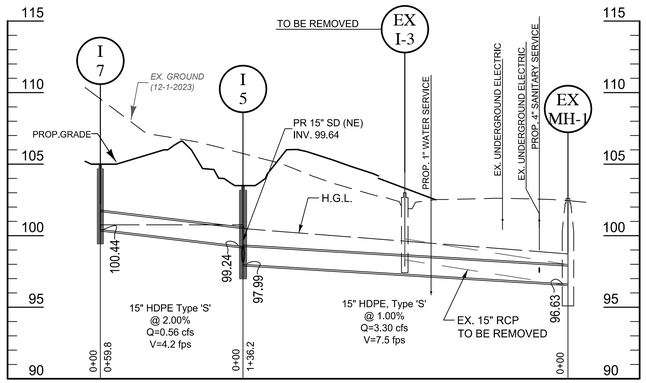
SHEET 30 OF 38
PROJECT NO.: P570004
DATE: 1/23/2025

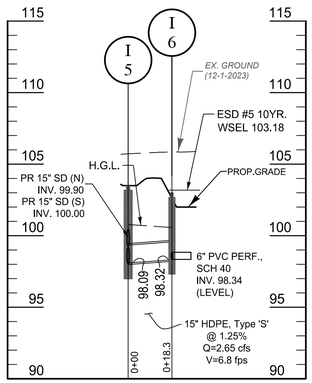
CONSTRUCTION DOCUMENTS
SWM Planting Plan
North Arundel Aquatic Center
2nd Tax District, Anne Arundel Co., MD.
Tax Map 15, Grid 11, Parcel 638

T:\2018\facilities\181120019a.n. aquatic center\CIVIL\CADD\Drawings\3 Construction Documents\181120019A (CD-23) SWM Planting Plan.dwg Jan 24, 2025 9:40am dshanahan



STORM DRAIN PROFILES

SCALE: 1" = 30' HORIZ.
1" = 5' VERT.



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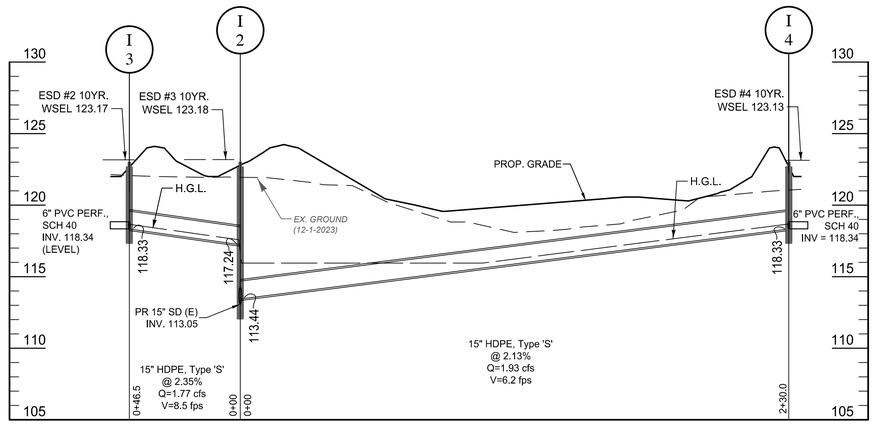

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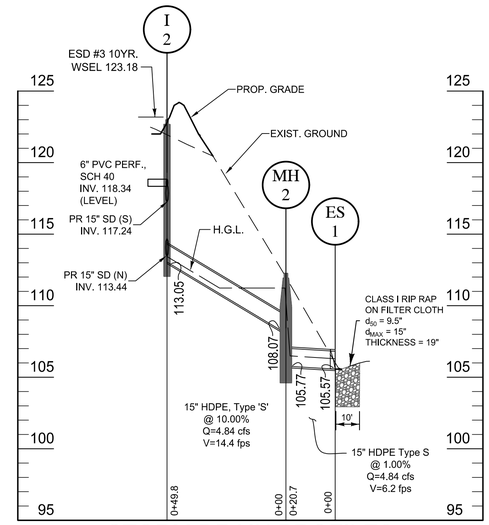

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STORM DRAIN PROFILES

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STORM DRAIN PROFILES

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Pipe Table				
From	To	Size	Length	Slope
MH-1	I-9	15	47.4	1.50%
EX-M1	I-5	15	136.2	1.00%
I-5	I-7	15	59.8	2.00%
I-5	I6	15	18.3	1.25%
I-8	EX-M1	15	42.5	1.00%
MH-2	I-2	15	49.8	10.00%
ES-1	MH-2	15	20.7	1.00%
I-3	I-2	15	46.5	2.35%
I-2	I-4	15	230.0	2.13%
I-11	EX-I2	15	126.9	1.00%

MANHOLE SCHEDULE					
NO.	TYPE	SIZE	INV. OUT	TOP ELEV.	DETAIL
EX-M1	TYPE A-2	48"	96.26	102.61	EXISTING
MH-1	TYPE A-2	48"	94.24	101.53	D-12
MH-2	TYPE A-2	48"	105.77	112.26	D-12

INLET SCHEDULE				
NO.	TYPE	INV. OUT	TOP ELEV.	DETAIL
EX-I2		99.13	102.91	EXISTING
I-2	TYPE S	113.05	123.00	D-40
I-3	TYPE S	118.33	123.00	D-40
I-4	TYPE S	118.33	123.00	D-40
I-5	TYPE S	97.99	103.50	D-40
I-7	TYPE S	100.44	105.00	D-40
I-8	TYPE S	96.78	101.58	D-40
I-9	TYPE S	95.20	100.00	D-40
I-11	TYPE S	100.60	105.00	D-40
I6	TYPE S	98.32	103.00	D-40

NOTE:
1. REMOVE GRATE ADD CONC. SLAB AND MH FRAME.

LOCATION		AREA	ACRES		COEFF.	CA	SUMP CA	Σ CA	TIME CONC. MIN.			INTEN. "I"	INTEN. "I"	Q=C.I.A.	PIPE n = .011						REMARKS
From	To		Sub.	Total	"C"				Inlet	Drain	Total	Adjusted	10 Year	C.F.S.	Size	S(act)	s(Fric)	Partial Flow Vel(7.0 fps min)	Full Flow Vel	Lgth.	
I-4	I-2	A	.44		.54	0.24	0.27		5.00		5.0	8.04	7.05	1.93	15 "	2.13 %	0.06%	7.0	1.6	230 '	20 YR/10 YR
I-3	I-2	B	.42		.53	0.22	0.25		5.00		5.0	8.04	7.05	1.77	15 "	2.35 %	0.05%	7.0	1.4	47 '	20 YR/10 YR
-	I-2	C	.27		.58	0.16	0.18		5.00		5.0	8.04	7.05	1.29	"					'	20 YR/10 YR
I-2	ES-1	A-C		1.13				0.70	5.0	0.5	5.5	.00	6.92	4.84	15 "	10.00 %	0.40%	15.3	3.9	71 '	
						0.00	0.00				0.0	.00	0.00	.00	"					'	
						0.00	0.00				0.0	.00	0.00	.00	"					'	
				.00				0.00	5.5	0.1	5.6	.00	6.89	.00	"					'	
I-7	I-5	D	.36		.20	0.07	0.08		5.00		5.0	8.04	7.05	.56	15 "	1.50 %	0.01%	7.0	.5	60 '	20 YR/10 YR
I-6	I-5	E	.45		.73	0.33	0.38		5.00		5.0	8.04	7.05	2.65	15 "	1.50 %	0.12%	7.0	2.2	18 '	20 YR/10 YR
-	I-5	F	.04		.20	0.01	0.01		5.00		5.0	8.04	7.05	.08	"					'	20 YR/10 YR
I-5	EX-MH-1	D-F		.85				0.47	5.1	0.0	5.1	.00	7.02	3.30	15 "	1.00 %	0.19%	7.0	2.7	136 '	
I-11	EX I-2	H	.13		.31	0.04	0.05		5.00		5.0	8.04	7.05	.32	15 "	1.00 %	0.00%	7.0	.3	127 '	20 YR/10 YR
-	EX I-2	I	.11		.77	0.08	0.00		5.00		5.0	.00	7.05	.56	"					'	
EX I-2	I-8	H&I		.24				0.13	5.0	0.3	5.3	.00	6.97	.91	15 "	0.97 %	0.01%	7.0	.7	59 '	
-	I-8	J	.43		.70	0.30	0.34		5.00		5.0	8.04	7.05	2.41	"					'	20 YR/10 YR
I-8	EX MH-1	H-J		.67				0.47	5.3	0.1	5.4	.00	6.95	3.27	15 "	1.00 %	0.18%	7.0	2.7	43 '	
EX MH-1	MH-1	D-J		1.52				0.94	5.4	0.1	5.5	.00	6.92	6.50	18 "	2.25 %	0.27%	9.5	3.7	90 '	
I-9	MH-1	K	.12		.71	0.09	0.10		5.00		5.0	8.04	7.05	.72	15 "	2.00 %	0.01%	7.0	.6	47 '	20 YR/10 YR
Y-2	EX MH-2	D-K		1.64				1.04	5.5	0.2	5.7	.00	6.87	7.14	18 "	2.25 %	0.33%	9.7	4.0	70 '	

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SCALE AS SHOWN
DRAWN BY LMV/RDT
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SHEET 31 OF 38
PROJECT NO.: P570004
DATE: 1/23/2025

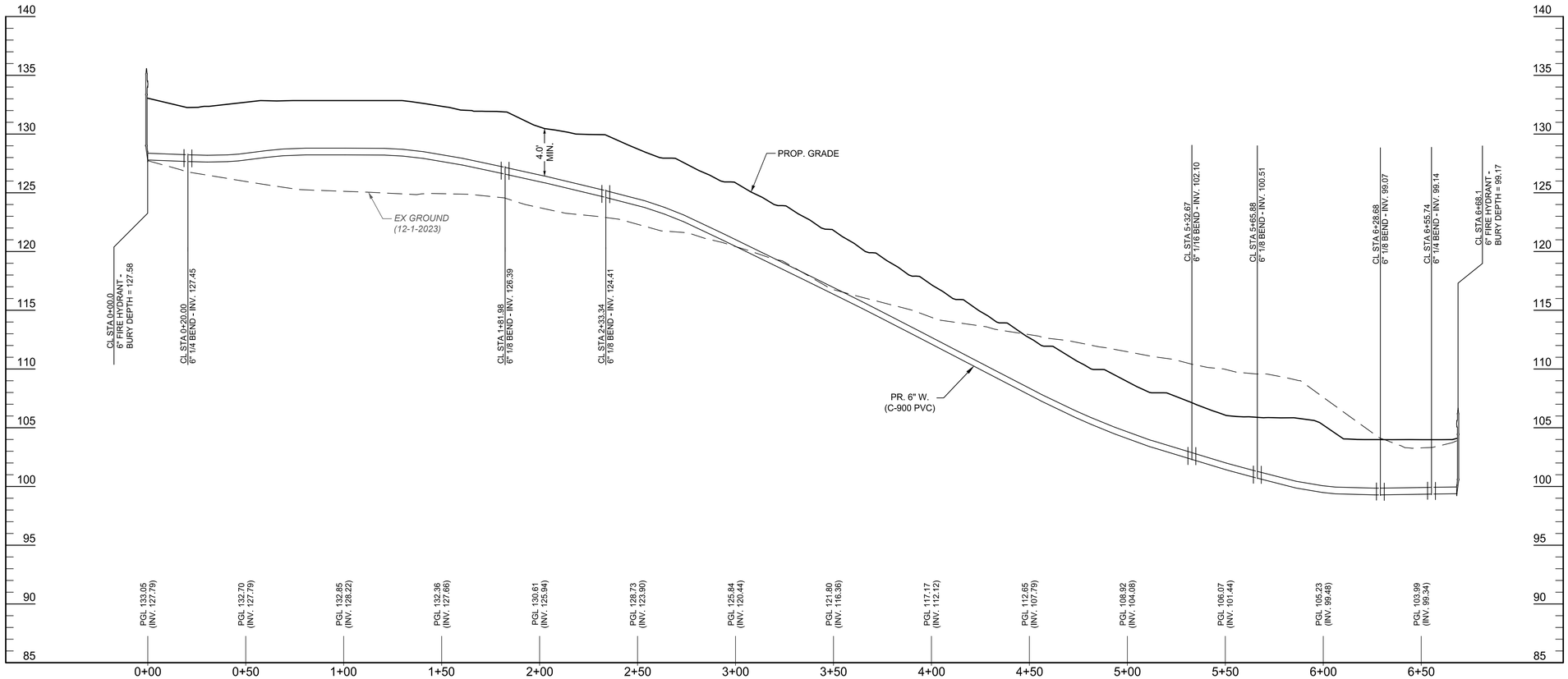
CONSTRUCTION DOCUMENTS

Utility Profiles

North Arundel Aquatic Center

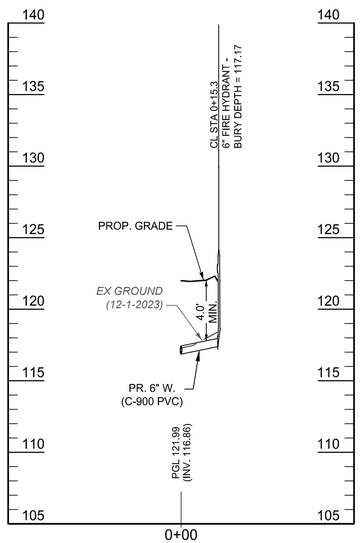
2nd Tax District, Anne Arundel Co., MD. Tax Map 15, Grid 11, Parcel 638

T:\2018\facilities\18112001\dan aquatic center\CIVIL\CADD\Drawings\3. Construction Documents\18112001A (CD-24) Utility Profiles.dwg Jan 24, 2025 9:40am dshanahan



WATERLINE PROFILES

SCALE: 1" = 30' HORIZ.
1" = 5' VERT.



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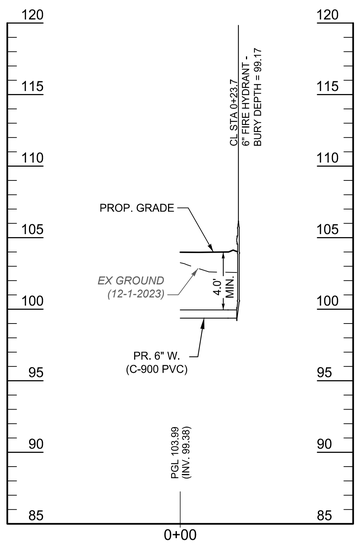

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LICENSE No.: 32603
EXPIRATION DATE: 1-18-2026

STATE OF MARYLAND · RICHARD D. SHEAD · 32603 · PROFESSIONAL ENGINEER

LICENSE NO.

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

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/RDT
CHECKED BY MJP
SHEET 32 OF 38
PROJECT NO.: P570004
DATE: 1/23/2025

CONSTRUCTION DOCUMENTS

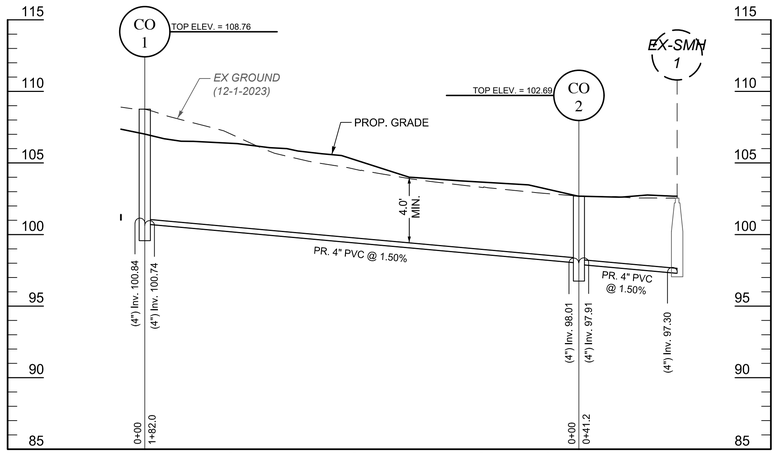
Utility Profiles

North Arundel Aquatic Center

2nd Tax District
Anne Arundel Co., MD.

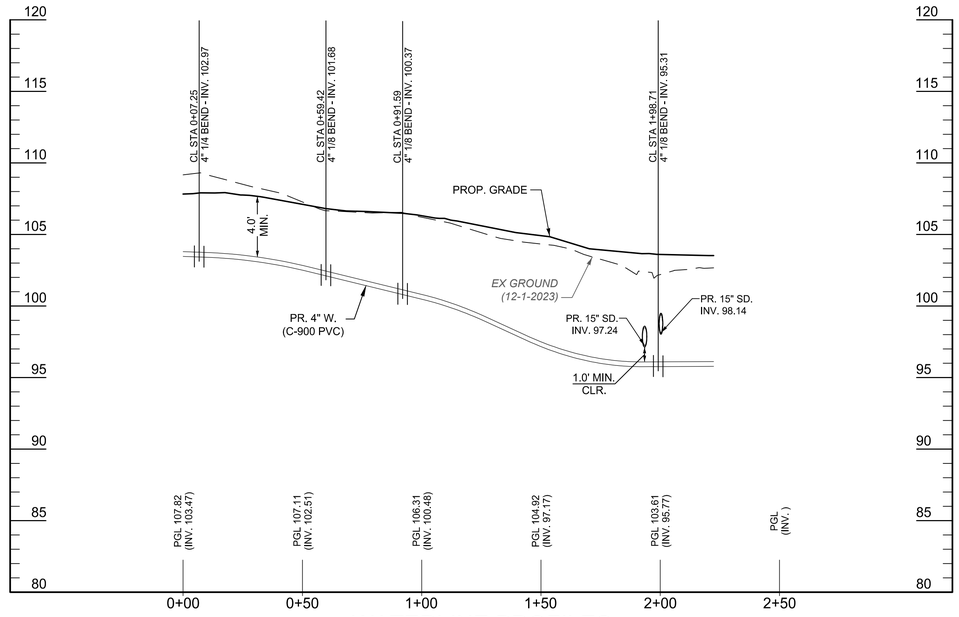
Tax Map 15, Grid 11, Parcel 638

T:\2018\facilities\118112001 8 an. aquatic center\CIVIL\CADD\Drawings\3. construction Documents\118112001 9A (GD-24) Utility Profiles.dwg Jan 24, 2025 1:40pm dshanahan



SANITARY SEWER PROFILES

SCALE: 1" = 30' HORIZ.
1" = 5' VERT.



WATERLINE PROFILES

SCALE: 1" = 30' HORIZ.
1" = 5' VERT.

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CENTURY ENGINEERING
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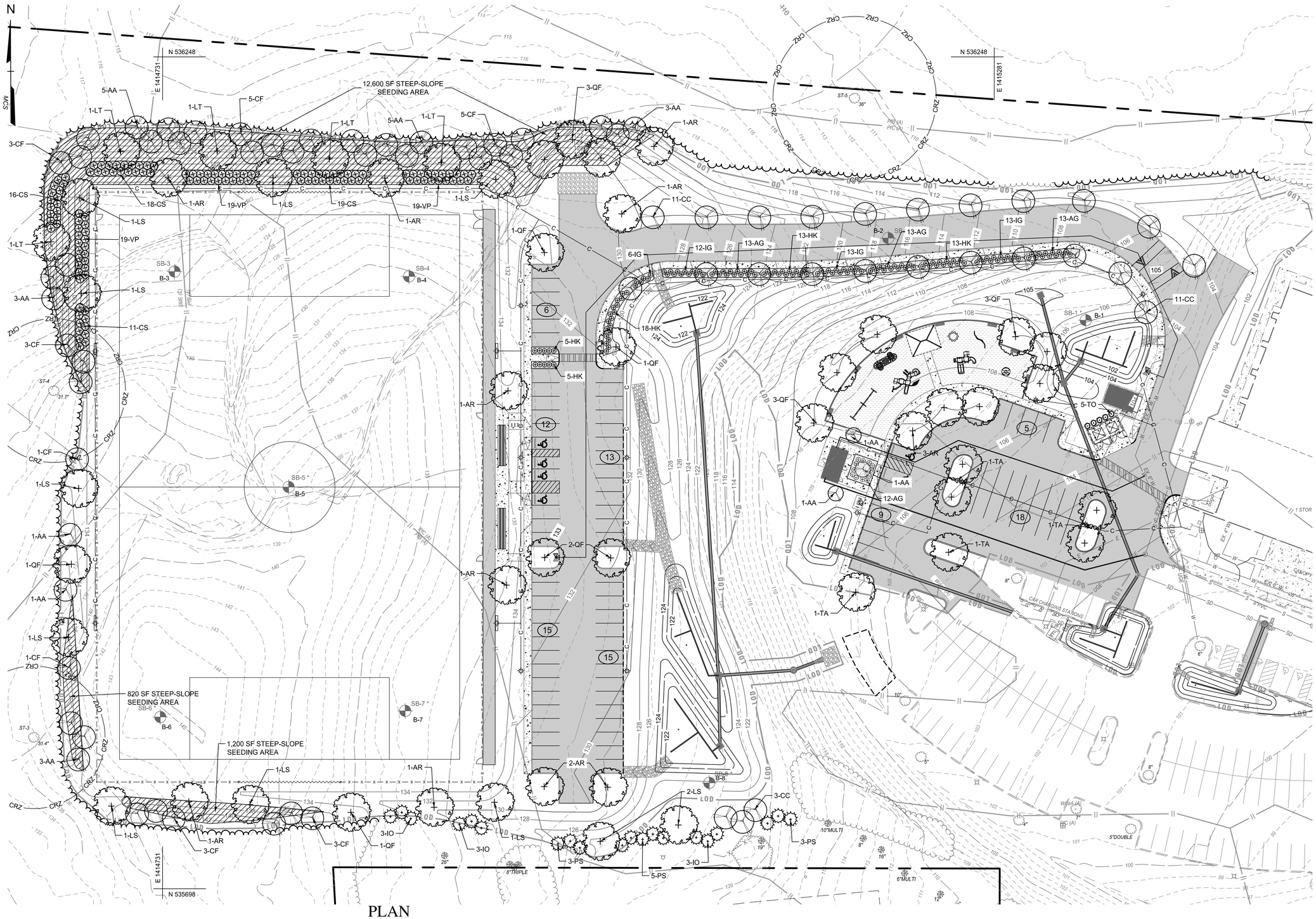
STATE OF MARYLAND · DAVID RICHARD SHANNAHAN · 32603 · PROFESSIONAL ENGINEER

LICENSE NO.

REVISED	
DATE	BY

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE AS SHOWN	CONSTRUCTION DOCUMENTS
CHIEF ENGINEER	PROJECT MANAGER	DRAWN BY LMV/RDT	Utility Profiles
APPROVED DATE	APPROVED DATE	CHECKED BY MJP	North Arundel Aquatic Center
ASSISTANT CHIEF ENGINEER	CHIEF, RIGHT OF WAY	SHEET 33 OF 38	2nd Tax District Anne Arundel Co., MD.
		PROJECT NO.: P570004	Tax Map 15, Grid 11, Parcel 638
		DATE: 1/23/2025	



PLAN

SCALE: 1" = 30'

0 30' 60'

SOIL CHART

KEY	NAME	SLOPE	HYDROLOGIC GROUP	HYDRIC SOIL	K FACTOR (WHOLE SOIL)
PfB	Patapsco-Fort Mott complex	0-5%	A	No	.02
PfC	Patapsco-Fort Mott complex	5-10%	A	No	.02
PgB	Patapsco-Fort Mott-Urban Land complex	0-5%	A	No	.02
SME	Sassafras and Croom soils	15-25%	C	No	.15
WdaA	Woodstown Sandy Loam	0-2%	C	No	.24

LEGEND

EXISTING

- Tract Boundary
- Property Line
- Minor Contour (672-)
- Major Contour (-670-)
- Edge of Paving
- Curb and Gutter
- Storm Drain (SD)
- Water & Fire Hydrant (W)
- Sanitary Sewer (S)
- Underground Electric (UGE)
- Street Light
- Sign
- Electric Structure
- Fence Line (X X X)
- Building
- Tree Line
- Deciduous Tree
- Evergreen Tree
- Critical Root Zone (CRZ)
- Natural Surface Trail

PROPOSED

- Limit of Disturbance (LOD)
- Minor Contour (672)
- Major Contour (670)
- Spot Elevation (+143.8)
- Sanitary Sewer (PROP. 8" S.)
- Water and Fire Hydrant (PROP. 8" W.)
- Storm Drain (PROP. 15" D.)
- Curb & Gutter
- Asphalt Paving
- Concrete
- Building
- Chain Link Fence (X X X)
- Wall
- Natural Surface Trail
- Tree Line
- Shade Tree
- Flowering Tree
- Evergreen Tree
- Shrubs
- Mulch Bed
- Steep Slope Seed Mix

NOTE: FOR STORMWATER MANAGEMENT FACILITY PLANTINGS, SEE SHEET 30.

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LICENSE No.: 1008
EXPIRATION DATE: 5/20/2026

DATE: 1/23/2025

1008
LICENSE NO.

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

REVISED DATE	BY

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

SCALE	AS SHOWN
DRAWN BY	LMV/RDT
CHECKED BY	MJP
SHEET	34 OF 38
PROJECT NO.:	P570004
DATE:	1/23/2025

CONSTRUCTION DOCUMENTS

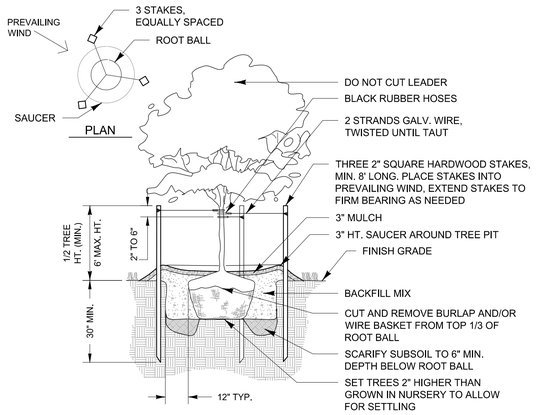
Landscape Plan

North Arundel Aquatic Center

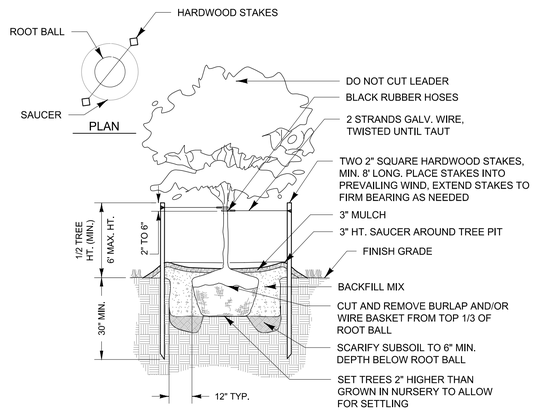
2nd Tax District
Anne Arundel Co., MD.

Tax Map 15, Grid 11, Parcel 638

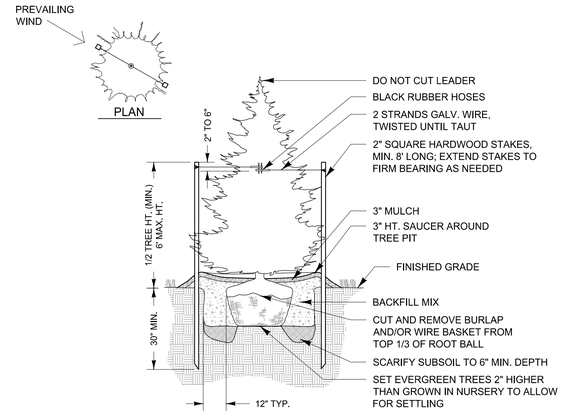
T:\2018\facilities\18112001\4a.n.aquatic center\CIVIL\CADD\Drawings\3. Construction Documents\18112001 9A (CD-25) Landscape Plan.dwg, Jan 24, 2025 4:41am dshanahan



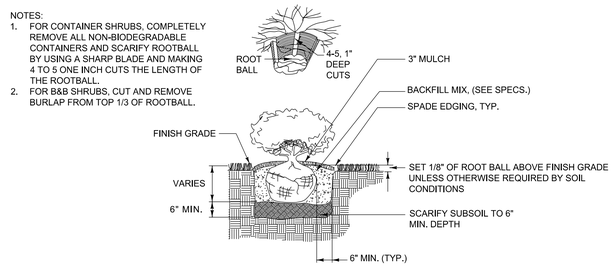
DECIDUOUS TREE PLANTING
NOT TO SCALE



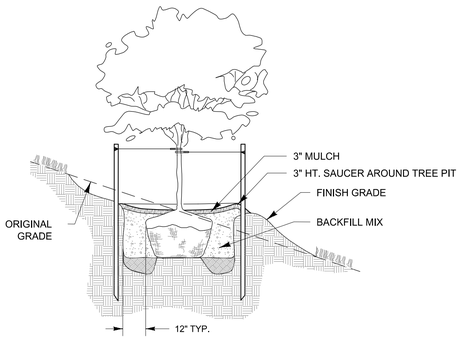
FLOWERING TREE PLANTING
NOT TO SCALE



EVERGREEN TREE PLANTING
NOT TO SCALE



SHRUB PLANTING
Not To Scale



TREE PLANTING ON SLOPE (TYP.)
Not To Scale

PLANT LIST

KEY	QTY	SCIENTIFIC NAME	COMMON NAME	SIZE	COMMENTS
MAJOR DECIDUOUS TREES					
AR	13	Acer rubrum	Red Maple	2" - 2½" cal.	B&B
LS	11	Liquidambar styraciflua	Sweetgum	2" - 2½" cal.	B&B
LT	5	Liriodendron tulipifera	Tulip Poplar	2" - 2½" cal.	B&B
QF	15	Quercus falcata	Southern Red Oak	2" - 2½" cal.	B&B
TA	4	Tilia americana 'Redmond'	Redmond American Linden	2" - 2½" cal.	B&B
TOTAL	48				
MINOR DECIDUOUS TREES					
AA	24	Amelanchier arborea	Downy Serviceberry	1" - 1½" cal.	B&B
CC	25	Cercis canadensis	Eastern Redbud	1" - 1½" cal.	B&B
CF	24	Cornus florida	Flowering Dogwood	1" - 1½" cal.	B&B
TOTAL	73				
EVERGREEN TREES					
IO	9	Ilex opaca	American Holly	6' - 8' ht.	B&B; full to ground
PS	11	Pinus strobus	Eastern White Pine	6' - 8' ht.	B&B; full to ground
TO	15	Thuja occidentalis 'Smaragd'	Emerald Green Arborviatae	6' - 8' ht.	B&B; full to ground
TOTAL	35				
SHRUBS					
AG	51	Abelia x grandiflora 'Rose Creek'	Rose Creek Abelia	18" - 24" ht.	Container
CS	64	Cornus sericea	Redtwig Dogwood	24" - 30" ht.	Container
HK	54	Hypericum kalmianum	Kalm's St. John's Wort	18" - 24" ht.	Container
IG	44	Ilex glabra 'Shamrock'	Shamrock Inkberry	18" - 24" ht.	Container
VD	57	Viburnum prunifolium	Blackhaw Viburnum	24" - 30" ht.	Container
TOTAL	219				

PLANTING NOTES

1. Plant material substitutions will not be accepted without approval of the Landscape Architect.
2. All shrubs and groundcover 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 plant 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 AmericanHort.
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.

STEEP SLOPE SEED MIX NOTES

1. Use Ernst Seeds "Native Steep Slope Mix w/Annual Ryegrass (ERNMX-181)" or approved equal.
2. Alternative seed mixes shall be approved by the project Landscape Architect. Any alternative seed mixes shall contain native meadow species and shall be composed of an appropriate mix of perennial, biennial, and annual species. The seed mix shall be designed for a seeding rate of 40 to 120 seeds per square foot.
3. No insecticides should be used on the site after planting/sowing and at least one year prior to planting/sowing.
4. Begin weed suppression in spring and summer, prior to sowing the seed mix. Large-scale weed suppression methods may include Repeated Shallow Cultivation, Smother Cropping, Soil Inversion, and/or Organic Herbicide Application. Refer to "Organic Site Preparation for Wildflower Establishment" published by Xerces Society.
5. Sow the meadow seed mix in fall or early winter, after the first hard frost, to improve germination in spring. Sowing methods may include Broadcast Seeding and/or Seed Drilling. Hydroseeding is not recommended unless modified to increase the seeding rate, keep seeds and mulch layers separate, and exclude tackifier and nitrogen fertilizer.
6. Sow the seed mix at a rate of $\frac{1}{2}$ to $\frac{1}{3}$ lbs per 1,000 square feet or as directed by the seed mix label.
7. Prior to seeding, remove any debris, such as leaf litter, brush, stumps, or wood chips that might inhibit seed-to-soil contact.
8. Mulch the site with a thin layer of weed-free oat or wheat straw mulch after seeding. Do not use rye straw, leaf mulch, wood chips, sawdust, or wood-based mulches.
9. Use erosion control blankets or matting to stabilize seeded areas on steep slopes. Increase the overall seeding rate in these areas to allow for decreased germination. Ensure the matting is well pinned to reduce shading. Choose a matting that is loosely woven.
10. Native meadow seed typically takes three years to establish. For the first two years after seeding, mow/trim the meadow to a height of 8" when vegetation reaches a height of 12"-18." Do not mow or trim during winter.
11. Once the meadow is established, mow/trim only once per year in late winter/early spring while the plants are still dormant. Continue to mow/trim to a height of 8"-12".

TOTAL STEEP SLOPE AREA TO BE SEEDED: 14,620 SF / 0.34 AC

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APPROVED DATE — CHIEF, RIGHT OF WAY

SCALE AS SHOWN
DRAWN BY LMV/RDT
CHECKED BY MJP
SHEET 35 OF 38
PROJECT NO.: P570004
DATE: 1/23/2025

CONSTRUCTION DOCUMENTS

Landscape Notes & Details

North Arundel Aquatic Center

2nd Tax District
Anne Arundel Co., MD.

Tax Map 15, Grid 11, Parcel 638

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PLAN

SCALE: 1" = 80'

0 80' 160'

VICINITY MAP

SCALE: 1" = 2000'

PROPERTY DATA

1. OWNER / DEVELOPER: Anne Arundel County
   Dept. of Recreation and Parks
   1 Harry S. Truman Parkway
   Annapolis, MD 21401
   Contact: Bruce Bruchey
   (410) 222-2827
2. SITE ADDRESS: 7888 Crain Highway
   Glen Burnie, MD 21061
3. DEED REFERENCE: 9465 / 358
4. TAX ACCOUNT: 90041273
5. TAX MAP/ GRID/ PARCEL: 0015 / 0011 / 638
6. ZONING: OS - Open Space District
7. GROSS TRACT AREA: 25.91 AC

ENVIRONMENTAL SITE DATA

1. PROJECT AREA/LOD: ± 6.86 AC (±298,925 SF)
2. FLOODPLAIN AREA IN LOD: 0 AC / 0 SF
3. WETLAND AREA IN LOD: 0 AC / 0 SF
4. WETLAND BUFFER AREA IN LOD: 0 AC / 0 SF
5. STREAM BUFFER AREA IN LOD: 0 AC / 0 SF
6. EXISTING IMPERVIOUS IN LOD: ±0.17 AC / ±7,338 SF
7. TOTAL EXISTING IMPERVIOUS: ±2.82 AC / ±122,816 SF
8. THIS SITE IS NOT WITHIN THE CHESAPEAKE BAY CRITICAL AREA.
9. THERE ARE NO BOGS WITHIN OR NEAR THE SITE.
10. THERE ARE NO HISTORIC OR ARCHEOLOGICAL SITES ON SITE.
11. FEMA FIRM MAP #: 24003C0044E
12. WATERSHED
    6-DIGIT: 021309 PATAPSCO RIVER
    8-DIGIT 02130903 BALTIMORE HARBOR

SPECIMEN TREES

KEY	SPECIES	SIZE (DBH)	CRZ	CONDITION	ACTION	CRZ IMPACT
ST-1	Quercus falcata	33.0"	49.5'	Fair	Remove	100.0%
ST-2	Quercus falcata	31.5"	47.3'	Poor	Remove	100.0%
ST-3	Quercus falcata	31.4"	47.1'	Fair	Retain	23.5%
ST-4	Quercus falcata	31.7"	47.6'	Fair	Retain	33.0%
ST-5	Quercus falcata	36.0"	54.0'	Fair	Retain	0.2%

SOIL CHART

KEY	NAME	SLOPE	HYDROLOGIC GROUP	HYDRIC SOIL	K FACTOR (WHOLE SOIL)
PfB	Patapsco-Fort Mott complex	0-5%	A	No	.02
PfC	Patapsco-Fort Mott complex	5-10%	A	No	.02
PgB	Patapsco-Fort Mott-Urban Land complex	0-5%	A	No	.02
SME	Sassafras and Croom soils	15-25%	C	No	.15
WdaA	Woodstown Sandy Loam	0-2%	C	No	.24

FOREST STAND DELINEATION NARRATIVE

METHODOLOGY

- During the preliminary analysis of the environmental characteristics, the forest area on site was estimated to be comprised of one contiguous stand. Using the sampling criteria of one plot per 4 acres of forest stand area, three sample plots were placed for the 10-acre stand. The three sample plots satisfied the other two sampling criteria (minimum two plots per stand and three plots for the total forested area of the site). The sample plots were each 0.1 acre in size with a radius of 37 feet.
- The centers of the three sample plots were marked on site with wooden stakes and pink flagging ribbon with the plot number identified. All specimen trees found were marked with pink flagging ribbon identifying the specimen tree number.

FINDINGS

- The total number of tree species found was 16, including canopy and understory species. Dominant species included Shortleaf Pine and Southern Red Oak. Codominant species included Red Maple, Sweetgum, and Blackgum.
- Based on an average of the total number of trees in each sample plot, the number of trees per acre is approximately 263 trees.
- The forest stand contains numerous understory trees, shrubs, and perennials in addition to the overstory trees.
- Five specimen trees were found and marked on site.
- No exotic/invasive species were found during the field walk for the forest stand delineation.

FOREST STAND CONDITIONS

- Specimen trees found were between 31 and 36 inches DBH. Four of the five specimen trees were found in fair condition, while one was found in poor condition.
- The multi-story vegetative structure of the forest stand, and the lack of invasive species, indicates a healthy, maturing forest community.
- There are no streams, stream buffers, wetlands, wetland buffers, or floodplains within the forest stand. There are some areas of steep slopes within the forest stand. Forest retention areas should therefore prioritize the steep slope areas.
- Prior management/use: The forest stand is enclosed by an elementary school property to the north, residential properties to the west, and the site (North Arundel Aquatic Center) to the east. A network of footpaths is present within the 10-acre forest stand, suggesting regular use by site users, neighboring residents, and/or use by the adjacent school or its visitors. This demonstrates that the forest stand is valuable to the community as a place for passive recreation within a natural setting.

FSD WORKSHEETS: SEE SHEET 38

LEGEND

EXISTING

- Tract Boundary
- Property Line
- Minor Contour (672)
- Major Contour (670)
- Edge of Paving
- Curb and Gutter
- Storm Drain (SD)
- Water & Fire Hydrant (W)
- Sanitary Sewer (S)
- Underground Electric (UGE)
- Overhead Electric (OHE)
- Fence Line (X)
- Building
- Soils Line (GhC / MaD)
- Tree Line
- Critical Root Zone (CRZ)
- Sample Plot Center (P1)
- Steep Slopes (15%-25%)
- Steep Slopes (25%+)

DEMOLITION

- Tree to be Removed
- Limits of Clearing

PROPOSED

- Limit of Disturbance (LOD)
- Tree Line

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SCALE AS SHOWN
DRAWN BY LMV/RDT
CHECKED BY MJP
SHEET 36 OF 38
PROJECT NO.: P570004
DATE: 1/23/2025

CONSTRUCTION DOCUMENTS

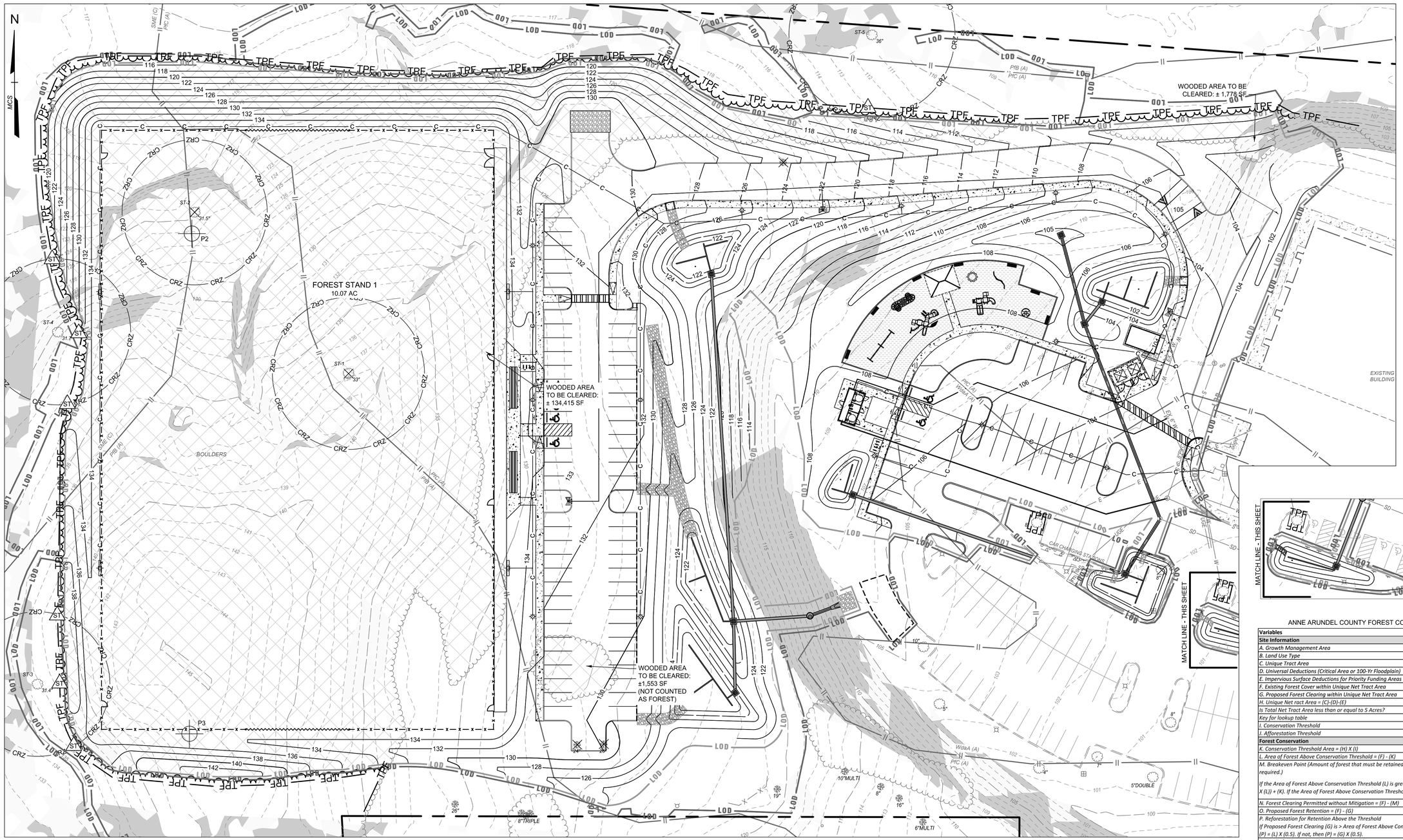
Forest Stand Delineation

North Arundel Aquatic Center

2nd Tax District
Anne Arundel Co., MD.

Tax Map 15, Grid 11, Parcel 638

T:\2018\Facilities\18112001\8 n. aquatic center\CIVIL\CADD\Drawings\3. Construction Documents\18112001A(CD-21).FCP.dwg Jan 24, 2025 9:41 am dshanahan



LEGEND

EXISTING

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- Underground Electric (UGE)
- Overhead Electric (OHE)
- Fence Line (X X X)
- Building
- Soils Line (GhC / MaD)
- Tree Line
- Critical Root Zone (CRZ)
- Sample Plot Center (P1)
- Steep Slopes (15%-25%)
- Steep Slopes (25%+)

DEMOLITION

- Tree to be Removed
- Limits of Clearing

PROPOSED

- Limit of Disturbance (LOD)
- Tree Line
- Tree Protection Fence (TPF)
- Specimen Tree Sign (ST)

SPECIMEN TREES

KEY	SPECIES	SIZE (DBH)	CRZ	CONDITION	ACTION	CRZ IMPACT
ST-1	Quercus falcata	33.0"	49.5'	Fair	Remove	100.0%
ST-2	Quercus falcata	31.5"	47.3'	Poor	Remove	100.0%
ST-3	Quercus falcata	31.4"	47.1'	Fair	Retain	23.5%
ST-4	Quercus falcata	31.7"	47.6'	Fair	Retain	33.0%
ST-5	Quercus falcata	36.0"	54.0'	Fair	Retain	0.2%

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PfB	Patapsco-Fort Mott complex	0-5%	A	No	.02
PfC	Patapsco-Fort Mott complex	5-10%	A	No	.02
PgB	Patapsco-Fort Mott-Urban Land complex	0-5%	A	No	.02
SME	Sassafras and Croom soils	15-25%	C	No	.15
WdaA	Woodstown Sandy Loam	0-2%	C	No	.24

PLAN

SCALE: 1" = 30'

0 30' 60'

TREE PROTECTION NOTES

1. Tree Protection Fence shall be installed along the limit of clearing in existing woods and along the edge of wooded areas to remain.
2. No clearing may take place beyond the Tree Protection Fence.
3. Individual trees to remain within or near the Limit of Disturbance, outside of wooded areas, shall be enclosed by a minimum 10' x 10' perimeter of Tree Protection Fence, where shown on the plan.
4. Tree Protection Fence must be installed prior to clearing and demolition. See Forest Conservation Construction Sequence, sheet 38.

ANNE ARUNDEL COUNTY FOREST CONSERVATION WORKSHEET (IN SQUARE FEET)

Variables	Unique Tract 1
Site Information	
A. Growth Management Area	Priority Funding Area
B. Land Use Type	Institutional
C. Unique Tract Area	1,128,640
D. Universal Deductions (Critical Area or 100-Yr Floodplain)	0
E. Impervious Surface Deductions for Priority Funding Areas	122,816
F. Existing Forest Cover within Unique Net Tract Area	438,798
G. Proposed Forest Clearing within Unique Net Tract Area	136,193
H. Unique Net ract Area = (C)-(D)-(E)	1,005,824
Is Total Net Tract Area less than or equal to 5 Acres?	No
Key for lookup table	Priority Funding AreaInstitutionalNo
I. Conservation Threshold	20%
J. Afforestation Threshold	15%
Forest Conservation	
K. Conservation Threshold Area = (H) X (I)	201,165
L. Area of Forest Above Conservation Threshold = (F) - (K)	237,634
M. Breakeven Point (Amount of forest that must be retained so that no mitigation is required.) *If the Area of Forest Above Conservation Threshold (L) is greater than 0, then M = ((0.3333 X (L)) + (K). If the Area of Forest Above Conservation Threshold is equal to 0, then M = (F).*	280,368
N. Forest Clearing Permitted without Mitigation = (F) - (M)	158,430
O. Proposed Forest Retention = (F) - (G)	302,605
P. Reforestation for Retention Above the Threshold *If Proposed Forest Clearing (G) is > Area of Forest Above Conservation Threshold (L), then (P) = (L) X (0.5). If not, then (P) = (G) X (0.5).*	68,097
Q. Credit for Retention Above the Threshold *If Proposed Forest Clearing (G) is > Area of Forest Above Conservation Threshold (L), then (R) = 0. If not, then (R) = (L) - (G).*	101,441
R. Reforestation for Retention Below the Threshold *If Proposed Forest Clearing (G) < Area of Forest Above Conservation Threshold (L), then (R) = 0. If not, then (R) = ((G) - (L)) X 2*	0
S. Total Reforestation Required = (P) + (R) - (Q)	0
T. Afforestation Threshold Area = (H) X (I)	150,874
U. Total Afforestation Required *If Existing Forest Cover (F) < Afforestation Threshold Area (T), then (U) = (T) - (F). If not, then (U) = 0.*	0
V. Total Mitigation Required By Tract = (S) + (U)	0

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PROFESSIONAL CERTIFICATION

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LICENSE No.: 1008
EXPIRATION DATE: 5/20/2026

DATE: 1/23/2025

1008
LICENSE NO.

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

REVISED DATE	BY

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

SCALE AS SHOWN
DRAWN BY LMV/RDT
CHECKED BY MJP
SHEET 37 OF 38
PROJECT NO.: P570004
DATE: 1/23/2025

CONSTRUCTION DOCUMENTS

Forest Conservation Plan

North Arundel Aquatic Center

2nd Tax District Anne Arundel Co., MD.
Tax Map 15, Grid 11, Parcel 638

T:\2018\facilities\181200019a n. aquatic center\CIVIL\CADD\Drawings\3. Construction Documents\181200019A (CD-21) FCP.dwg Jan 24, 2025 1:41 am dshanahan

Property: North Arundel Aquatic Center — Prepared By: Lydia Vaccare
Stand #: 1 — Plot #: 1 — Plot Size: 1/10 acre — Date: 6/19/2024

Basal Area in sf/acre: Size Class of Trees ≥20' Height within Sample Plot

Tree Species	2-5.9" DBH			6-11.9" DBH			12-19.9" DBH			20-29.9" DBH			≥30" DBH			Total
Crown Position	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	
Sweetgum			3		2											5
Shortleaf Pine							2			1						3
Red Maple			4		3			2								9
Blackgum			6					1								7
Sassafrass			1													1
Tulip Poplar			1													1
Chestnut Oak										1						1
White Oak					1											1
Black Oak										1						1
Southern Red Oak										1						1
Total No. of Trees per Size Class	15			6			5			4			0			30
No. & Size of Standing Dead Trees				1			1									2

List of Common Understory Species 3'-20': Sweetgum, Blackgum, High Bush Blueberry, Flowering Dogwood, Sassafras, American Holly

% of Canopy Closure						
C	N	E	S	W	Total
Y	Y	Y	Y	Y	100%

% Understory Cover 3'-20'

Percent of Invasive Cover per Plot (All Layers): 0

Plot Successional Stage: Mature

List of Herbaceous Species 0'-3': Virginia Creeper, Huckleberry, Pokeweed

% Understory Cover 3'-20'						
C	N	E	S	W	Total
N	Y	Y	Y	Y	80%

% Herbaceous Cover 0'-3'						
C	N	E	S	W	Total
Y	Y	Y	N	Y	80%

Comments

Sheet 1 of 1

Forest Sampling Data Worksheet — C:1

Property: North Arundel Aquatic Center — Prepared By: Lydia Vaccare
Stand #: 1 — Plot #: 2 — Plot Size: 1/10 acre — Date: 6/19/2024

Basal Area in sf/acre: Size Class of Trees ≥20' Height within Sample Plot

Tree Species	2-5.9" DBH			6-11.9" DBH			12-19.9" DBH			20-29.9" DBH			≥30" DBH			Total
Crown Position	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	
Southern Red Oak							1						1			2
Blackgum			7		1	3										11
Red Maple						2										2
Sassafras			1			2										3
Sweetgum			2													2
Shortleaf Pine							2			1						3
																0
																0
																0
Total No. of Trees per Size Class	10			8			3			1			1			23
No. & Size of Standing Dead Trees	5			1												7

List of Common Understory Species 3'-20': Blackgum, Downy Serviceberry, Sassafras, High Bush Blueberry, American Holly, Eastern Redcedar, Devil's Walking Stick

% of Canopy Closure						
C	N	E	S	W	Total
Y	N	N	Y	Y	60%

% Understory Cover 3'-20'

Percent of Invasive Cover per Plot (All Layers): 0

Plot Successional Stage: Mature

List of Herbaceous Species 0'-3': Huckleberry, Blue Ridge Blueberry, Greenbriar, Virginia Creeper, Jumpseed, Carex sp., Rubus sp.

% Understory Cover 3'-20'						
C	N	E	S	W	Total
Y	Y	N	Y	Y	80%

% Herbaceous Cover 0'-3'						
C	N	E	S	W	Total
Y	Y	Y	N	Y	80%

Comments

Sheet 1 of 1

Forest Sampling Data Worksheet — C:1

Property: North Arundel Aquatic Center — Prepared By: Lydia Vaccare
Stand #: 1 — Plot #: 3 — Plot Size: 1/10 acre — Date: 6/19/2024

Basal Area in sf/acre: Size Class of Trees ≥20' Height within Sample Plot

Tree Species	2-5.9" DBH			6-11.9" DBH			12-19.9" DBH			20-29.9" DBH			≥30" DBH			Total
Crown Position	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	Dom	CoD	Other	
Shortleaf Pine							2									2
Black Cherry				1												1
Red Maple			3		5		1	2								11
Sweetgum			3				1			1						5
Tulip Poplar										1						1
Sassafras			2													2
Southern Red Oak							1									1
Pignut Hickory			3													3
																0
																0
Total No. of Trees per Size Class	11			6			7			2			0			26
No. & Size of Standing Dead Trees	3															3

List of Common Understory Species 3'-20': Greenbriar, Highbush Blueberry, Sassafras, American Holly

% of Canopy Closure						
C	N	E	S	W	Total
Y	Y	Y	Y	Y	100%

% Understory Cover 3'-20'

Percent of Invasive Cover per Plot (All Layers): 0

Plot Successional Stage: Mature

List of Herbaceous Species 0'-3': Greenbriar, Virginia Creeper, Huckleberry

% Understory Cover 3'-20'						
C	N	E	S	W	Total
N	Y	N	Y	Y	60%

% Herbaceous Cover 0'-3'						
C	N	E	S	W	Total
Y	N	Y	Y	Y	80%

Comments

Sheet 1 of 1

Forest Sampling Data Worksheet — C:1

Property Name: North Arundel Aquatic Center
Location: 7888 Crain Hwy, Glen Burnie, Anne Arundel County
Prepared By: Lydia Vaccare — Date: 6/19/2024

Stand Variable	Stand # 1 (10.07 acres)	Stand #
1. Dominant species / Codominant species	Shortleaf Pine, Oak sp. Red Maple, Blackgum, Sweetgum	
2. Successional stage	Mature Upland	
3. Basal area in s.f. per acre	206	
4. Size class of dominant species	12" - 19" DBH	
5. Percent of canopy closure	87%	
6. Number of tree species per acre	12	
7. Common understory species per acre	Sassafras Highbush Blueberry American Holly Blackgum	
8. Percent of understory cover 3' to 20' tall	73%	
9. Number of woody plant species 3' to 20' tall	10	
10. Common herbaceous species 0' to 3' tall	Greenbriar Virginia Creeper Huckleberry	
11. Percent of herbaceous & woody plant cover 0' to 3' tall	80%	
12. List of major invasive plant species & percent of cover	N/A - 0%	
13. Number of standing dead trees 6" dbh or greater	13	
14. Comments	Forest is in good general condition with little to no invasive intrusion.	

Sheet 1 of 1

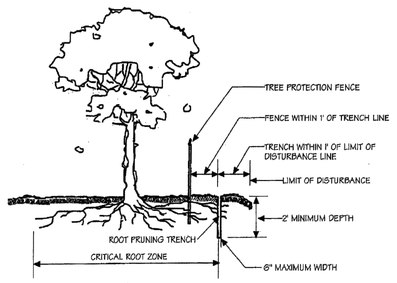
Forest Stand Summary Worksheet — C:2

FOREST PROTECTION NOTES

1. THE FCP SHALL LOCATE AND DESCRIBE ANY PROTECTION MECHANISMS TO BE INSTALLED TO PROTECT RETENTION AREAS DURING AND AFTER CONSTRUCTION. THESE MECHANISMS SHALL BE FIELD LOCATED AND APPROVED BY INSPECTION PRIOR TO THE START OF CONSTRUCTION.
2. ANY CLEARING, GRADING OR CONSTRUCTION WITHIN 50 FEET OF THE RETENTION AREA WILL REQUIRE PROTECTIVE DEVICES, INCLUDING BUT NOT LIMITED TO, FENCING OR ADAPTED SEDIMENT AND EROSION CONTROL DEVICES AND SIGNS AS INDICATED IN THE APPROVED FCP. ALL PROTECTION DEVICES SHALL REMAIN IN PLACE UNTIL CONSTRUCTION COMPLETION, FINAL INSPECTION, AND AN OCCUPANCY PERMIT, UNLESS WAIVED BY THE APPROVING AUTHORITY.
3. THE EDGE OF THE RETENTION AREAS WILL NEED TO BE STAKED BY THE APPLICANT AND APPROVED BY THE AUTHORITY PRIOR TO CLEARING. THIS FIELD EDGE SHOULD BE ADJUSTED ALONG THE CRITICAL ROOT ZONES OF THE TREES IN THE PROPOSED RETENTION AREAS.
4. FIRES PERMITTED WITHIN THE CONSTRUCTION AREA SHALL CONFIRM WITH STATE AND LOCAL REGULATIONS FOR FIRE CONTROL, AND MAY NOT ENTER THE RETENTION AREA OR ITS CANOPY.
5. NO EQUIPMENT, VEHICLES, MACHINERY, DUMPING, STORAGE, OTHER CONSTRUCTION ACTIVITIES, BURIAL, FIRE, OR OTHER DISPOSAL OF CONSTRUCTION MATERIALS SHALL BE LOCATED INSIDE THE FOREST RETENTION AREAS, SUBJECT TO APPROVAL BY THE DEPARTMENT OF NATURAL RESOURCES FOREST SERVICE, OR AMENDED FOREST CONSERVATION PLAN.
6. FOREST RETENTION AND PROTECTIVE DEVICES WILL BE VISIBLE, WELL ANCHORED, APPROVED IN THE FIELD BEFORE CLEARING OR GRADING, OR WHEN CONSTRUCTION COMMENCES AND WILL BE IN PLACE AND MAINTAINED AS NEEDED UNTIL CONSTRUCTION COMPLETION, FINAL INSPECTION, AND AN OCCUPANCY PERMIT IS ISSUED.
7. PROTECTIVE SIGNAGE IS TO REMAIN IN PLACE PERMANENTLY.
8. ATTACHMENT OF SIGNS OR ANY OTHER OBJECTS TO TREES IS PROHIBITED.
9. THIS PLAN IS TO BE USED FOR FOREST CONSERVATION PURPOSES ONLY.

FOREST CONSERVATION CONSTRUCTION SEQUENCE

1. CONTRACTOR IS TO STAKE AND FLAG THE TREE PROTECTION FENCE. FENCE SHALL BE MANUALLY INSTALLED ALONG THE LIMITS, WHERE THE LIMIT IS WITHIN 50 FEET OF THE WETLAND/STREAM BUFFERS. THIS SHALL BE COMPLETED BEFORE THE PRE-CONSTRUCTION MEETING.
2. NO EQUIPMENT, VEHICLES, MACHINERY, DUMPING, STORAGE, OTHER CONSTRUCTION ACTIVITIES, BURIAL, FIRE, OR OTHER DISPOSAL OF CONSTRUCTION MATERIALS SHALL BE LOCATED INSIDE RETENTION AREAS. FOREST RETENTION AND PROTECTIVE DEVICES WILL BE VISIBLE, WELL ANCHORED, & APPROVED IN THE FIELD BEFORE CONSTRUCTION COMMENCES. DEVICES WILL BE IN PLACE AND MAINTAINED AS NEEDED UNTIL CONSTRUCTION COMPLETION. ATTACHMENT OF SIGNS OR ANY OTHER OBJECT TO TREES IS PROHIBITED.
3. NOTIFY ANNE ARUNDEL COUNTY, 48 HOURS IN ADVANCE, FOR THE PRE-CONSTRUCTION MEETING, TO INCLUDE INSPECTION OF LINE AND PROTECTIVE DEVICES LOCATIONS. NOTE: EXISTING PATHWAY TO BE TEMPORARILY CLOSED DUE TO PLANTING.
4. INSTALL ALL SEDIMENT CONTROL DEVICES AND BEGIN CLEARING AND GRADING.
5. PLANT AREAS PER STANDARDS AND SPECIFICATIONS.
6. MONITOR THE CONDITION OF ANY TREES TO BE RETAINED DURING CONSTRUCTION AND MAKE CORRECTIVE MEASURES WHEN APPROPRIATE. DECISIONS ARE TO BE MADE WITH THE APPROVAL OF A CERTIFIED ARBORIST.
7. AFTER CONSTRUCTION IS COMPLETED, REMOVE PROTECTIVE FENCING. INSTALL SIGNS FOR THE MITIGATION AREA AS SHOWN ON SHEETS 44 AND 45.
8. FOLLOWING COMPLETION OF CONSTRUCTION, PRIOR TO USE, A CERTIFIED ARBORIST SHALL INSPECT THE SITE TO ASCERTAIN CONDITION OF TREES IN RETENTION AREAS. IF NECESSARY, IMPLEMENT CORRECTIVE MEASURES FOR STRESS REDUCTION. REPAIR OF RETAINED TREE DAMAGE, AND REMOVAL OF DEAD OR DYING TREES THAT POSE A SAFETY HAZARD.

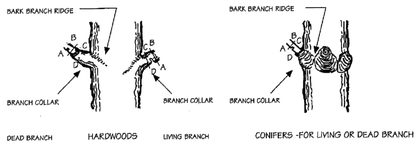


Notes:
1. Retention Areas to be established as part of the forest conservation plan review process.
2. Boundaries of Retention Areas to be staked, flagged and/or fenced prior to trenching.
3. Exact location of trench should be identified.
4. Trench should be immediately backfilled with soil removed or organic soil.
5. Roots should be cleanly cut using vibratory knife or other acceptable equipment.

Source: Adapted from Steve Clark & Associates/ACRT, Inc. and Forest Conservation Manual, 1991

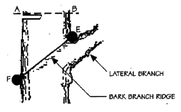
Root Pruning — Figure D-1

Pruning a Branch



Notes:
1. Remove branch weight by undercutting at A and remove limb by cutting through at AB.
2. Remove stub at CD (line between branch bark ridge and outer edge of branch collar).
3. If D is difficult to find on hardwoods, angle of CD to trunk should be the reflective angle of the bark branch ridge to the trunk.
4. Only prune at specified times.
5. Remove no more than 30% of crown at one time.

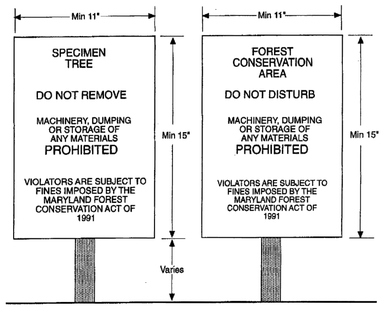
Pruning a Leader to Reduce Size



Notes:
1. Remove top weight by undercutting at A and remove limb by cutting through AB.
2. Remove stub at EF parallel to the bark branch ridge.
3. Only prune at specified times.
4. No more than 30% of crown to be removed at one time.
5. Diameter of lateral branch should be no less than 30% of the diameter of the leader.

Source: Fairfax County, Virginia:Vegetation Preservation & Planting, January 1986

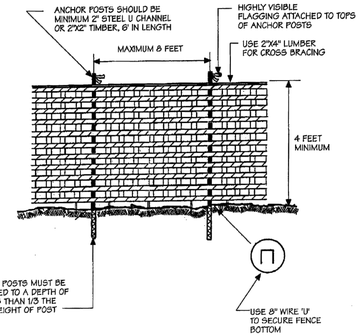
Tree Pruning — Figure D-2



Notes:
1. Bottom of signs to be higher than top of tree protection fence.
2. Signs to be placed approximately 50' feet apart. Conditions on site affecting visibility may warrant placing signs closer or farther apart.
3. Attachment of signs to trees is prohibited.

Source: Adapted from Forest Conservation Manual, 1991

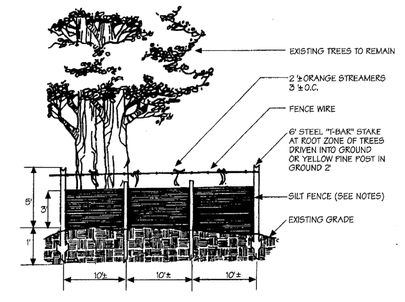
Construction Signs — Figure D-4



Notes:
1. Blaze orange or blue plastic mesh fence for forest protection device, only.
2. Boundaries of Retention Area will be established as part of the forest conservation plan review process.
3. Boundaries of Retention Area should be staked and flagged prior to installing device.
4. Avoid damage to critical root zone. Do not damage or sever large roots when installing posts.
5. Protection signs are required.
6. Device should be maintained throughout construction.

Source: Adapted from Prince George's County, Maryland: Woodland Conservation Manual and Forest Conservation Manual, 1991

Plastic Mesh Tree Protection Fence — Figure D-5



Notes:
1. Silt fence to be heeled into the soil.
2. Wire, snow fence, etc. for tree protection only.
3. Boundaries of Retention Area will be established as part of the forest conservation plan review process.
4. Boundaries of Retention Area should be staked and flagged prior to installing device.
5. Avoid root damage when placing anchor posts.
6. Device should be properly maintained throughout construction.
7. Protection signs are also required.
8. Locate fence outside the Critical Root Zone.

Source: Adapted from Steve Clark & Associates/ACRT, Inc.

Silt Fence and Tree Protection — Figure D:8

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T:\2018\facilities\18112001\aa aquatic center\CIVIL\CADD\Paulings\3. Construction Documents\18112001A (CD-28) FCP Details.dwg Jan 24, 2025 9:41 am dshanahan