

ANNE ARUNDEL COUNTY

DEPARTMENT OF PUBLIC WORKS

TANYARD SPRINGS PARK

PROJECT NO. 587900

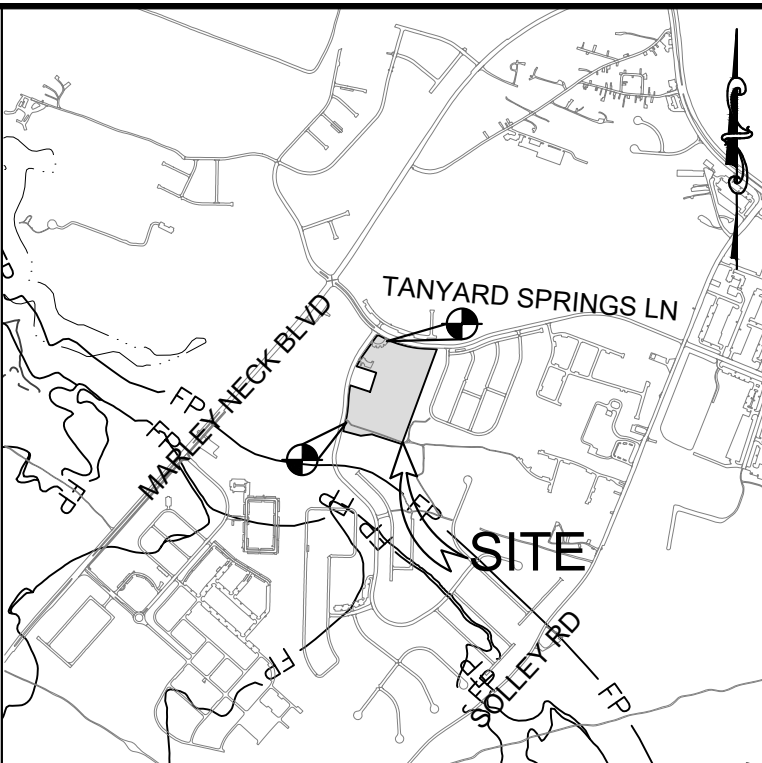
CONSTRUCTION DOCUMENTS - 95%

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BENCHMARKS

BENCHMARK NUMBER: 1
 DESCRIPTION: CORNER OF STORM DRAIN INLET
 ELEVATION: 26.68
 VERTICAL CONTROL: NAVD88
 N 54973.9985
 E 143593.9914

BENCHMARK NUMBER: 2
 DESCRIPTION: CORNER OF STORM DRAIN INLET
 ELEVATION: 26.68
 VERTICAL CONTROL: NAVD88
 N 550422.7784
 E 1436359.7784



VICINITY MAP
SCALE: 1"=2000'

ENGINEER/LANDSCAPE ARCHITECT:

PENNONI ASSOCIATES, INC.
 8890 MCGAW ROAD,
 SUITE 100
 COLUMBIA MD, 21045

PROJECT LOCATION:

7180 HERITAGE CROSSING
 GLEN BURNIE, MD 21060

OWNER/DEVELOPER:

ANNE ARUNDEL COUNTY DEPARTMENT OF RECREATION AND PARKS
 AND ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS
 44 CALVERT STREET
 ANNAPOLIS, MD 21401
 (410) 222-7000

SEQUENCE OF CONSTRUCTION

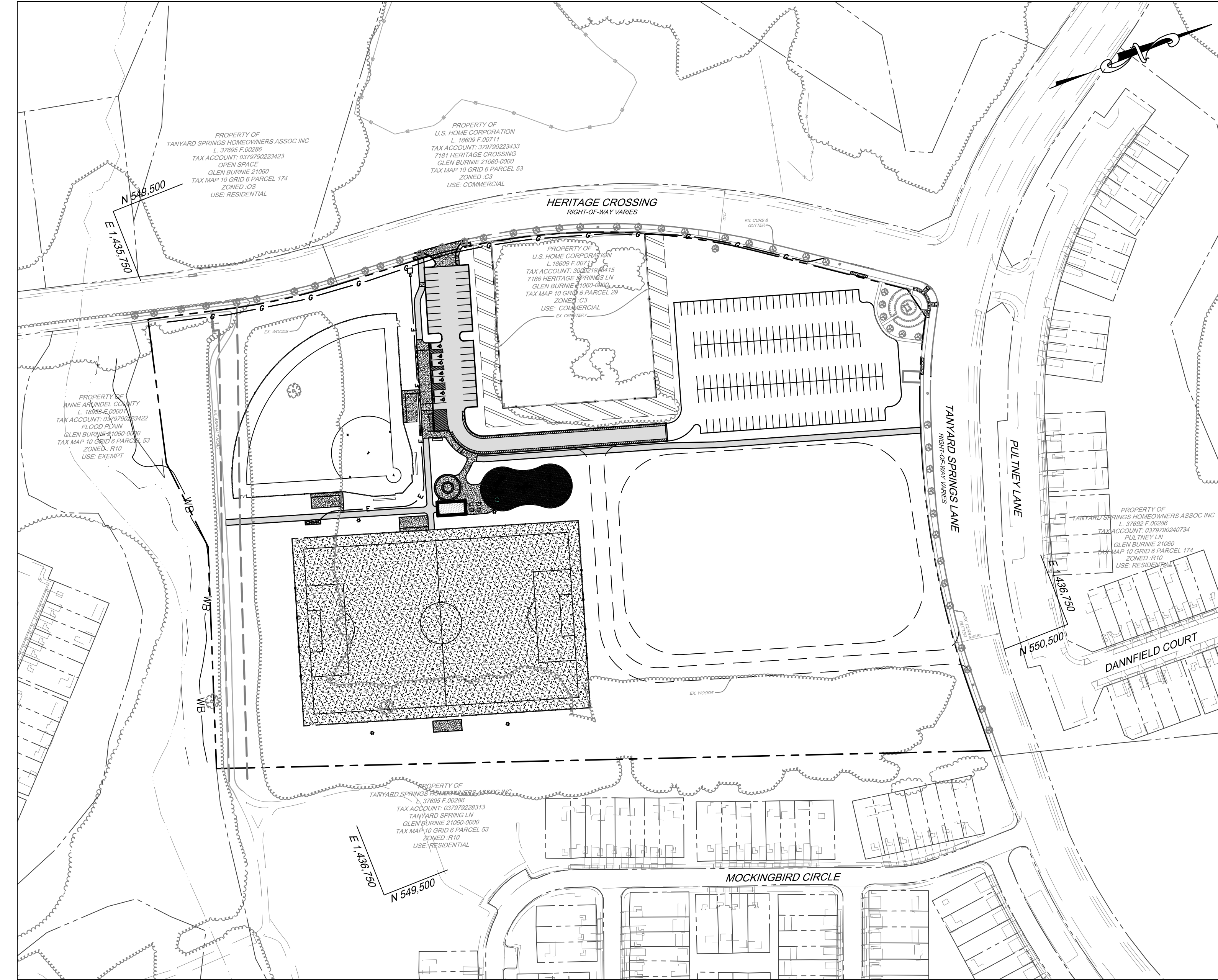
- NOTIFY THE DEPARTMENT OF INSPECTIONS AND PERMITS (410-222-7780) AT LEAST 48 HOURS BEFORE COMMENCING WORK. WORK MAY NOT COMMENCE UNTIL THE PERMITTEE OR THE RESPONSIBLE PERSONNEL HAVE MET ON SITE WITH THE SEDIMENT AND EROSION CONTROL INSPECTOR TO REVIEW THE APPROVED PLANS.
- STAKEOUT LIMITS OF DISTURBANCE OF THE ENTIRE PROJECT. CLEAR AND GRUB FOR THE INSTALLATION OF STABILIZED CONSTRUCTION ENTRANCES, INLET PROTECTION, AND PERIMETER CONTROLS. (1 WEEK)
- INSTALL STABILIZED CONSTRUCTION ENTRANCES, INLET PROTECTION, AND PERIMETER CONTROLS. INSTALL TREE PROTECTION FENCING ALONG AREAS THAT REQUIRE THE PROTECTION OF EXISTING TREES. (1 WEEK)
- CONTACT COUNTY INSPECTOR FOR INITIAL INSPECTION. (1 WEEK)
- UPON APPROVAL OF INSPECTOR, BEGIN DEMOLITION, AND CLEARING. AS INLETS ARE INSTALLED, PROVIDE INLET PROTECTION WHERE CALLED FOR ON THE PLANS. (4 WEEKS)
- BEGIN MASS GRADING. INSTALL STORM DRAIN FROM I-23 TO EX-I-9 FOR CLEAN WATER DIVERSION. INSTALL WATER AND ELECTRIC CONNECTIONS. WATER AND ELECTRIC CONNECTIONS SHALL BE INSTALLED USING SAME DAY STABILIZATION MEASURES. (8 WEEKS)
- WITH THE ESTABLISHMENT OF SUBGRADE, COMPLETE ANY REMAINING STORM DRAIN INSTALLATION AND INSTALL INLET PROTECTION AROUND ALL INLETS. (3 WEEKS)
- BEGIN INSTALLING PAVILION, PLAYGROUND, CONCRETE PADS AND TRAILS. DELAY TRAIL INSTALLATION FOR AREAS WHERE SEDIMENT CONTROLS ARE IN CONFLICT WITH TRAIL UNTIL SITE IS 95% STABILIZED. WHERE TRAILS ARE OUTSIDE OF SEDIMENT CONTROLS, INSTALL TRAIL USING SAME DAY STABILIZATION MEASURES. STABILIZE DISTURBED AREAS WITH SEED AND STRAW, AND INSTALL SOIL STABILIZATION MATTING IN SWALES AND SLOPES. INSTALL CURBING. (4 WEEKS)
- ONCE SITE HAS BEEN PRELIMINARY STABILIZED, COMPLETE FINAL GRADING FOR THE INSTALLATION OF STORMWATER MEASURES AND INSTALL ALL STORMWATER FACILITIES. STORMWATER FACILITIES SHALL NOT BE INSTALLED UNTIL CONTRIBUTING DRAINAGE AREA IS 95% STABILIZED. IF INSPECTOR ALLOWS EARLIER INSTALLATION, PROTECT PERIMETER OF FACILITY WITH RSF, AND COVER WITH FILTER FABRIC UNTIL LANDSCAPING IS INSTALLED. (3 WEEKS)
- INSTALL LANDSCAPING, FENCING, AND GATES. COMPLETE TRAIL INSTALLATION. (4 WEEKS)
- WITH COMPLETION OF WORK AND STABILIZATION OF SITE, CONTACT COUNTY INSPECTOR FOR FINAL INSPECTION. WITH APPROVAL OF INSPECTOR, REMOVE ALL REMAINING SEDIMENT CONTROL DEVICES. (2 WEEKS)
- EVALUATE TREES ALONG THE LOD AND TO PROVIDE REPLACEMENTS FOR ANY TREES NOT RETAINED IN THESE AREAS. (1 WEEK)

DAILY STABILIZATION NOTE

THIS NOTE SHOULD BE USED FOR MINIMAL AREAS WITHIN THE LIMITS OF DISTURBANCE THAT DO NOT DRAIN TO A SEDIMENT CONTROL MEASURE AND/OR WHERE THE INSTALLATION OF CONTROLS IS NOT FEASIBLE. (ROAD WIDENING, SIDEWALK INSTALLATION, ETC.)

CONTRACTOR SHALL ONLY DISTURB THAT AREA WHICH CAN BE COMPLETED AND STABILIZED BY THE END OF EACH WORKING DAY. STABILIZATION SHALL BE AS FOLLOWS:

- FOR AREAS TO BE PAVED, THE APPLICATION OF STONE BASE.
 - FOR AREAS TO BE VEGETATIVELY STABILIZED:
 - PERMANENT SEED AND SOIL STABILIZATION MATTING OR SOD FOR ALL STEEP SLOPES, CHANNELS OR SWALES.
 - PERMANENT SEED AND MULCH FOR ALL OTHER AREAS.
- ANY AREAS WHICH CAN NOT BE STABILIZED BY THE END OF EACH WORKING DAY MUST HAVE SILT FENCE INSTALLED ON THE DOWNSLOPE SIDE.



LOCATION PLAN
SCALE: 1" = 100'

STANDARD RESPONSIBILITY NOTES

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

Khadija Abdur-Rahman
 SIGNATURE OF APPLICANT
 KHADIJA ABDUR-RAHMAN
 NAME
 ENGINEER MANAGER
 TITLE
 ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS
 AFFILIATION
 2662 BYVA ROAD, ANNAPOLIS, MD 21401
 ADDRESS
 410-222-7500
 TELEPHONE NUMBER
 khadija@accourty.org
 EMAIL ADDRESS
 11/27/2023
 DATE

SITE ANALYSIS SUMMARY

TOTAL SITE AREA/LOD: 8.36 AC (364,304 SF)
 VOLUME OF CUT: 6,800 CY
 VOLUME OF FILL: 7,800 CY
 VOLUME OF BORROW MATERIAL: 0 CY
 AREA VEGETATIVELY STABILIZED: 7.24 ACRES (315,374 SF)
 EXISTING IMPERVIOUS AREA: 0.17 ACRES (7,573 SF)
 PROPOSED IMPERVIOUS AREA: 1.12 ACRES (48,930 SF)

VOLUMES ARE FOR PERMITTING ONLY AND ARE NOT TO BE USED FOR BID PURPOSES

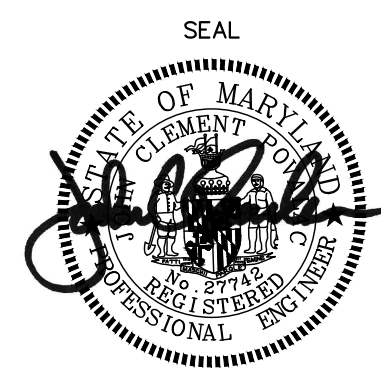
PARKING SUMMARY

THERE ARE 12 PARKING SPACES LOCATED IN THE EXISTING PARKING LOT ON THE SITE. THESE 12 PARKING SPACES ARE PROPOSED TO BE REMOVED. A PAVED PARKING LOT WITH 38 PARKING SPACES IS PROPOSED ALONG WITH A GRASS PARKING LOT WITH APPROXIMATELY 150 PARKING SPACES.

CONSULTANT'S 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."

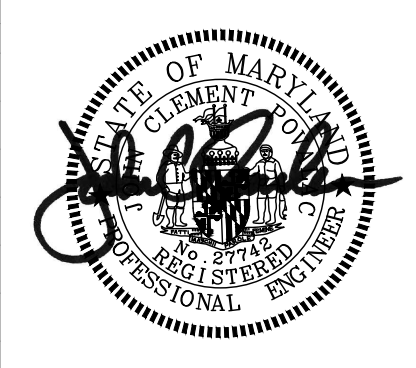
MD P.E. LICENSE # 27742
 NAME JOHN C. POVALAC, PE
 FIRM NAME PENNONI ASSOCIATES INC.
 ADDRESS 8890 MCGAW RD., SUITE 100
 CITY COLUMBIA STATE MD ZIP CODE 21045



EXISTING UTILITIES SHOWN ON THIS PLAN SET WERE DRAWN USING EXISTING RECORD DRAWINGS AND BASE FILES FROM THE UTILITY COMPANIES, FROM VISIBLE MARKINGS AND FEATURES WITHIN THE PROJECT LIMITS, FROM FIELD SURVEYS, AND FROM LIMITED TEST PITS. UTILITIES SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY. THE UTILITY INFORMATION SHOWN MAY BE INNACURATE OR INCOMPLETE. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITIES WITHIN THE PROJECT LIMITS OF WORK TO HIS OWN SATISFACTION PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES, SHALL AVOID IMPACTS TO UTILITIES, AND SHALL MAINTAIN UNINTERRUPTED UTILITY SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IMMEDIATELY AT NO COST TO ANNE ARUNDEL COUNTY IN COORDINATION WITH THE AFFECTED UTILITY COMPANIES.

PROFESSIONAL CERTIFICATION: I, JOHN C. POVALAC, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 27742 EXPIRATION DATE 07/18/2024

#	REVISIONS DESCRIPTION	APPROVED BY	DATE



PENNONI ASSOCIATES INC.
 8890 McGaw Road, Suite 100
 Columbia, MD 21045
 T 410.997.8900 F 410.997.9282

ANNE ARUNDEL COUNTY		DEPARTMENT OF PUBLIC WORKS		NOVEMBER 27, 2023	
APPROVED DATE	APPROVED DATE	SCALE: 1" = 200'	COVER SHEET		
CHIEF ENGINEER	PROJECT MANAGER	DRAWN BY: JSN/CR/SVH	TANYARD SPRINGS PARK CONSTRUCTION DOCUMENTS		
APPROVAL DATE	APPROVED DATE	CHECKED BY: JCP/PJS/JSN	TAX MAP 10 GRID 6 PARCEL 53		
ASSISTANT CHIEF ENGINEER	CHIEF, RIGHT OF WAY SERVICES	SHEET 1 of 36	GLEN BURNIE, MD ZIP CODE 21060 3RD DISTRICT		
		PROJECT #: P587900	ANNE ARUNDEL COUNTY, MD		
		PROPOSAL #: P587901			

GP #G02019941 DWG NO: CD01

DWG NO:

GENERAL NOTES

- FIELD RUN TOPOGRAPHY WAS PERFORMED BY PENNONI DURING MARCH, 2023. TOPOGRAPHIC INFORMATION HAS BEEN SUPPLEMENTED BY ANNE ARUNDEL COUNTY GIS AND UTILITY LOCATING COMPANY INFORMATION.
- THE EXISTENCE OF WETLANDS AND WATERS OF THE U.S. HAS BEEN INVESTIGATED, AND IS SHOWN BASED ON A REPORT PREPARED BY WETLAND STUDIES & SOLUTIONS, INC., DATED MAY 2023.
- THE SPECIMEN TREES SHOWN ON THE PLAN ARE FROM A FOREST STAND DELINEATION PREPARED BY WETLAND STUDIES & SOLUTIONS, INC., DATED MAY 2023.
- UNLESS OTHERWISE INDICATED, THE LOCATION OF ALL UNDERGROUND UTILITIES ARE APPROXIMATE AND ARE BASED ON VISIBLE EVIDENCE, OR GIS RECORDS.
- THE EXISTING UTILITIES AND OBSTRUCTIONS SHOWN ARE FROM THE BEST AVAILABLE RECORDS, AND SHALL BE VERIFIED BY THE CONTRACTOR TO HIS OWN SATISFACTION. NECESSARY PRECAUTIONS SHALL BE TAKEN BY THE CONTRACTOR TO PROTECT EXISTING SERVICE MAINS. ANY DAMAGE TO THEM SHALL BE REPAIRED IMMEDIATELY AT NO ADDITIONAL COST TO ANNE ARUNDEL COUNTY OR TO SHA.
- UTILITY RELOCATION WILL BE PERFORMED BY OTHERS UNLESS NOTED OTHERWISE IN THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF HIS CONSTRUCTION WITH THE CONSTRUCTION OF OTHER CONTRACTORS (INCLUDING BUT NOT LIMITED TO BG&E, VERIZON, AND CABLE TV UTILITY). REFER TO PROJECT MANUAL GENERAL SPECIAL PROVISIONS.
- THE CONTRACTOR SHALL CALL "MISS UTILITY" 1-800-257-7777 A MINIMUM OF 72 HOURS PRIOR TO BEGINNING ANY EXCAVATION.
- IT SHALL BE DISTINCTLY UNDERSTOOD THAT FAILURE TO MENTION SPECIFICALLY ANY WORK WHICH WOULD NATURALLY BE REQUIRED TO COMPLETE THE PROJECT SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO COMPLETE SUCH WORK.
- THE CONTRACTOR SHALL NOTIFY THE ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS (410) 222-4126, AT LEAST FOURTEEN (14) DAYS PRIOR TO BEGINNING CONSTRUCTION.
- GRID COORDINATES ARE BASED ON THE MARYLAND STATE PLANE COORDINATE SYSTEM NAD 83/91. VERTICAL ELEVATIONS ARE BASED UPON NAVD 88.
- THE CONTRACTOR SHALL ADJUST MANHOLES, WATER, METER VALVES, HAND BOXES, AND OTHER APPURTENANCES TO FINAL GRADE. THE COST OF PERFORMING THESE ACTIVITIES SHALL BE INCIDENTAL TO THE CONTRACT PRICE PAID FOR VARIOUS PAVEMENT ITEMS.
- UNLESS OTHERWISE NOTED, PIPE ELEVATIONS REFER TO THE PIPE INVERT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ANY EXISTING LIGHT POLES, TRAFFIC BARRIER, SIGNS, ETC., DAMAGED OR REMOVED BY HIM DURING CONSTRUCTION.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ENGINEER OF ANY DEVIATION TO THIS PLAN PRIOR TO ANY FIELD CHANGES BEING MADE. THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR ANY FIELD CHANGES OR ADJUSTMENTS WITHOUT NOTIFYING THE ENGINEER.
- ALL WORK SHALL COMPLY WITH THE APPLICABLE PROVISIONS OF THE "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" ISSUED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT AND AMENDMENTS BY THE ANNE ARUNDEL SOIL CONSERVATION DISTRICT, CONTAINED HEREIN AND THE 2017 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS ISSUED BY THE MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION.
- THE DESIGN FOR THIS PROJECT INCORPORATES FACILITIES FOR THE HANDICAPPED IN COMPLIANCE WITH STATE AND FEDERAL LEGISLATION.
- WHERE CURB AND GUTTER ENDS ARE EXPOSED, PROVIDE A NOSE DOWN SECTION AT 3:1 SLOPE.
- IN PAVEMENT AND GRAVEL REMOVAL AREAS, THE CONTRACTOR SHALL REMOVE ALL PAVING AND BASE MATERIALS, BACKFILL WITH COMMON BORROW MATERIAL AND 4" OF TOPSOIL, SEED AND MULCH. THE AREA SHALL BE GRADED TO DRAIN.
- MATERIAL REMOVED DURING CONSTRUCTION SHALL BECOME THE CONTRACTOR'S PROPERTY UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIAL PROVISIONS.
- STORM DRAIN AND UTILITY INSTALLATION IN EXISTING PAVEMENT SHALL BE IN ACCORDANCE WITH MD STD. 578.1.
- SUBGRADE DRAINS SHALL BE PLACED WHEN WET SUBGRADE IS ENCOUNTERED AND AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL USE CIRCULAR PIPE UNDERDRAIN OUTLET TO CONNECT ALL EXISTING AND PROPOSED SUBGRADE DRAIN AND PERFORATED CIRCULAR PIPE UNDERDRAIN TO PROPOSED INLETS.
- ALL INVERT ELEVATIONS ARE APPROXIMATE. INVERT ELEVATIONS OF INLETS AND PIPES MAY BE MODIFIED AS DIRECTED BY THE ENGINEER TO MEET CONDITIONS ENCOUNTERED DURING INSTALLATION OF DRAINAGE STRUCTURES. ALL PIPES AND DITCHES SHALL BE CONSTRUCTED ON A UNIFORM GRADE BETWEEN INVERT ELEVATIONS NOTED ON THE PLANS, UNLESS INDICATED OTHERWISE ON THE PLANS OR DETAILS OR AS DIRECTED BY THE ENGINEER. THE LOCATION AND LENGTH OF PIPE SHALL BE VERIFIED BY THE CONTRACTOR BEFORE ORDERING.
- ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION OF ANNE ARUNDEL COUNTY.
- CONTRACTOR MUST HAND DIG NEAR EXISTING UNDERGROUND UTILITIES WITH LESS THAN OR EQUAL TO 3.0 FEET CLEAR DISTANCE.
- PROPOSED FENCING SHALL BE BLACK VINYL COATED CHAIN LINK. FINAL HEIGHT SHALL BE DETERMINED WITH FUTURE PLANS.

SYMBOL LEGEND

PROPERTY LINE AND RIGHT-OF-WAY: - - - - -

EXISTING 2' CONTOUR: -52-

EXISTING 10' CONTOUR: -50-

EXISTING TREE LINE: A-B

EXISTING SOILS: A-B

EXISTING ASPHALT ROADWAY: [Pattern]

EXISTING BUILDINGS: [Rectangles]

EXISTING WATER: W-W-W

EXISTING SEWER: S-S-S

EXISTING OVERHEAD ELECTRIC: OE-OE-OE

EXISTING UNDERGROUND ELECTRIC: UE-UE-UE

EXISTING STORM DRAIN: D-D-D

EXISTING GAS: G-G-G

SPECIMEN TREE AND CRITICAL ROOT ZONE: [Tree Symbol]

100 YEAR FLOODPLAIN STREAM BUFFER: FP, SB

EXISTING WETLANDS: WB

EXISTING WETLAND BUFFER: WB

EXISTING DRAINAGE AREA: [Pattern]

EXISTING 15%-25% SLOPES: [Shaded Box]

EXISTING 25%+ SLOPES: [Shaded Box]

PROPOSED ASPHALT PAVING: [Pattern]

PROPOSED CONCRETE PAVING: [Pattern]

PROPOSED FENCE: [Line with Posts]

PROPOSED STORM DRAIN: [Line with Invert]

PROPOSED MICRO-BIORETENTION FACILITY: [Rectangular Structure]

PROPOSED GRASS SWALE: [Pattern]

PROPOSED 2' CONTOUR: 122

PROPOSED 10' CONTOUR: 120

PROPOSED SPOT ELEVATION: 21 1/2

PROPOSED SHADE TREE: [Tree Symbol]

PROPOSED FLOWERING TREE: [Tree Symbol]

PROPOSED EVERGREEN TREE: [Tree Symbol]

PROPOSED SHRUBS: [Tree Symbol]

PROPOSED TREELINE: [Wavy Line]

PROPOSED GRAVEL PAVING: [Pattern]

PROPOSED REINFORCED SILT FENCE: [Pattern]

PROPOSED SOIL STABILIZATION MATTING: [Pattern]

PROPOSED STANDARD INLET PROTECTION: SIP

PROPOSED CURB INLET PROTECTION: CIP

PROPOSED STABILIZED CONSTRUCTION ENTRANCE: [Structure]

PROPOSED SAME DAY STABILIZATION: [Pattern]

PROPOSED LIMIT OF DISTURBANCE: LOD

PROPOSED TREE PROTECTION DEVICE: TP

PROPOSED WATER LINE: PROPOSED 8" WATER

SOIL BORINGS: [Circle]

PROPOSED EARTH DIKE: [Line with Arrows]

LIST OF ABBREVIATIONS

AATUR - ABANDONED ACCORDING TO UTILITY RECORDS	P.V.C. - POINT OF VERTICAL CURVE (OR POLYVINYL CHLORIDE)
A.D.T. - AVERAGE DAILY TRAFFIC	P.V.I. - POINT OF VERTICAL INTERSECTION
AHD - AHEAD	PVMT - PAVEMENT
BGE - BALTIMORE GAS AND ELECTRIC COMPANY	P.V.T. - POINT OF VERTICAL TANGENCY
BIT. - BITUMINOUS	R - RADIUS
BK. - BACK	R.C.C.P. - REINFORCED CEMENT CONCRETE PIPE
B.M. - BENCH MARK	REF. - REFERENCE
BW - BOTTOM OF WALL	R.S.E. - REVERTIBLE SLOPE EASEMENT
B/L - BASELINE	RT. - RIGHT
C - RATE OF TRANSITION	RTE. - ROUTE
CC - CENTER POINT OF CURVE	R/W - RIGHT OF WAY
CATV - CABLE TELEVISION	SAN. - SANITARY
C&G - CURB AND GUTTER	S.D. - STORM DRAIN
C.I.P. - CAST IN PLACE (OR CURB INLET PROTECTION)	S/E - SUPER ELEVATION
C.I.P. - CORRUGATED METAL PIPE	S.H.A. - STATE HIGHWAY ADMINISTRATION
C.S.P. - CORRUGATED STEEL PIPE	SMH. - SEWER MANHOLE
C.O. - CLEAN OUT	S.S.D. - STOPPING SIGHT DISTANCE
COMB. - COMBINATION	STA. - STATION
COMM. - COMMUNICATION	STD. - STANDARD
CONSTR. - CONSTRUCTION	STRUCT. - STRUCTURE
CORR. - CORRECTION	T - TELEPHONE
DATUR - DEPICTED ACCORDING TO UTILITY RECORDS	TC - TRAFFIC CONTROL
DWG. - DRAWING	T.C.A. - TEMPORARY CONSTRUCTION EASEMENT
Dc - DEGREE OF CURVE	T.C.P. - TRAFFIC CONTROL PLANS
Δ - DELTA (CENTRAL ANGLE), DEGREES	T.H. - TEST HOLE
D.H.V. - DESIGN HOUR VOLUME	TW - TOP OF WALL
D.I. - DROP INLET	TYP. - TYPICAL
DIA. - DIAMETER	U.D. - UNDERDRAIN PIPE
D.S. - DESIGN SPEED	WB - WESTBOUND
E - ELECTRIC	W.M. - WATER METER
EB - EASTBOUND	W.S. - WRAPPED STEEL
EOI - END OF INFORMATION	W.U.S. - WATERS OF THE UNITED STATES
EORI - END OF RECORD INFORMATION	W.V. - WATER VALVE
ERCCP - ELLIPTICAL REINFORCED CEMENT CONCRETE PIPE	V.C. - LENGTH OF VERTICAL CURVE
ES - END STRUCTURE	
EW - ENDWALL OR EACH WAY	
EX, EXIST- EXISTING	
F.O. - FIBER OPTIC	
F.S. - FULL SUPER	
GA. - GAUGE OR GAGE	
G.H.C. - GAS HOUSE CONNECTION	
G.V. - GAS VALVE	
HDWL - HEADWALL	
HERCCP - HORIZONTAL ELLIPTICAL REINFORCED CEMENT CONCRETE PIPE	
H.H. - HANDHOLE	
H.S.A. - HEADLIGHT SIGHT DISTANCE	
H.P. - HIGH POINT	
I - INLET	
INV. - INVERT	
L - LENGTH	
L.P. - LOW POINT (OR LIGHT POLE)	
L.S. - LEVEL SECTION	
LT. - LEFT	
M.B. - MAIL BOX	
MD - MARYLAND	
MDE - MARYLAND DEPARTMENT OF THE ENVIRONMENT	
M.H. - MANHOLE	
N/A - NOT APPLICABLE	
NO. - NUMBER	
N.S. - NORMAL SECTION	
O.C. - ON CENTER	
O/S - OFFSET	
P.C. - POINT OF CURVE	
P/C - POINT OF CROWN	
P.C.C. - POINT OF COMPOUND CURVE OR PORTLAND CEMENT CONCRETE	
P/G.E. - PROFILE GRADE ELEVATION	
P.G.L. - PROFILE GRADE LINE	
P/G.L. - PROFILE GROUND LINE	
P.H. - PUNCH HOLE	
P.I. - POINT OF INTERSECTION	
P.O.C. - POINT ON CURVE	
P.O.T. - POINT ON TANGENT	
P/R - POINT OF ROTATION	
P.R.C. - POINT OF REVERSE CURVATURE	
P.T. - POINT OF TANGENT	

SOILS TABLE

MAP SYMBOL	NAME	STRUCTURAL LIMITATIONS DWELLINGS WITH BASEMENTS	EROSION HAZARD	HYDRIC	SLOPE (%)	SOIL GROUP	K FACTOR
EVC	Evesboro and Galestown soils	Not Limited	Moderate	No	5-10%	A	.05
PeB	Patapsco-Evesboro-Fort Mott complex	Not Limited	Low	No	0-5%	A	.02
RHD	Russett-Christiana-Hambrook complex	Somewhat Limited	Moderate	Yes	10-15%	C	.28
ZBA	Zekiah and Issue soils	Very Limited	Low	Yes	0-2%	B/D	.32

SOURCE: NATURAL RESOURCES CONSERVATION SERVICE WEB SOIL SURVEY.

PROFESSIONAL CERTIFICATION: I, JOHN C. POVALAC, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 27742 EXPIRATION DATE 07/18/2024

#	REVISIONS DESCRIPTION	APPROVED BY	DATE

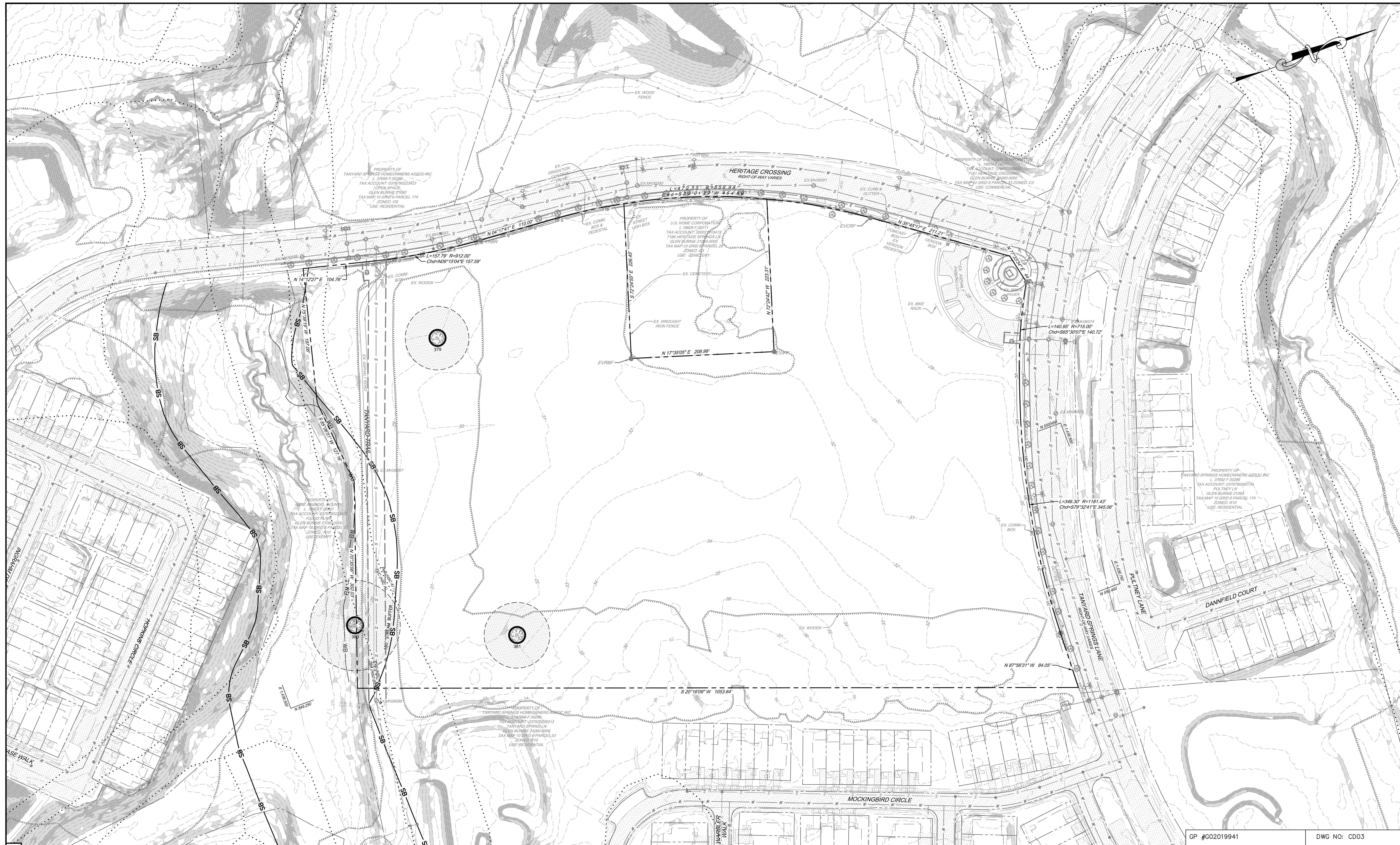
Pennonni
 PENNONI ASSOCIATES INC.
 8890 McGaw Road, Suite 100
 Columbia, MD 21045
 T 410.997.8900 F 410.997.9282

ANNE ARUNDEL COUNTY
 DEPARTMENT OF PUBLIC WORKS
 NOVEMBER 27, 2023

APPROVED	DATE	APPROVED	DATE	SCALE: AS SHOWN
CHIEF ENGINEER		PROJECT MANAGER		DRAWN BY: JSN/CR/SVH
APPROVAL	DATE	APPROVED	DATE	CHECKED BY: JCP/PJS/JSN
ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY SERVICES		SHEET 2 of 36
				PROJECT #: P587900
				PROPOSAL #: P587901

TANYARD SPRINGS PARK CONSTRUCTION DOCUMENTS
 TAX MAP 10 GRID 6 PARCEL 53
 GLEN BURNIE, MD ZIP CODE 21060 3RD DISTRICT
 ANNE ARUNDEL COUNTY, MD

GP #G02019941 DWG NO: CD02

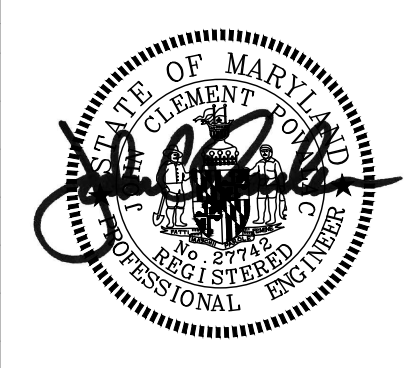


GP #G02019941 DWG NO: CD03

PROFESSIONAL CERTIFICATION: I, JOHN C. POVALAC, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 27742 EXPIRATION DATE 07/18/2024

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS
NOVEMBER 27, 2023

#	REVISIONS DESCRIPTION	APPROVED BY	DATE

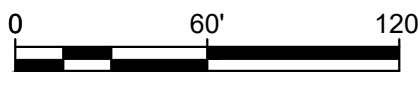


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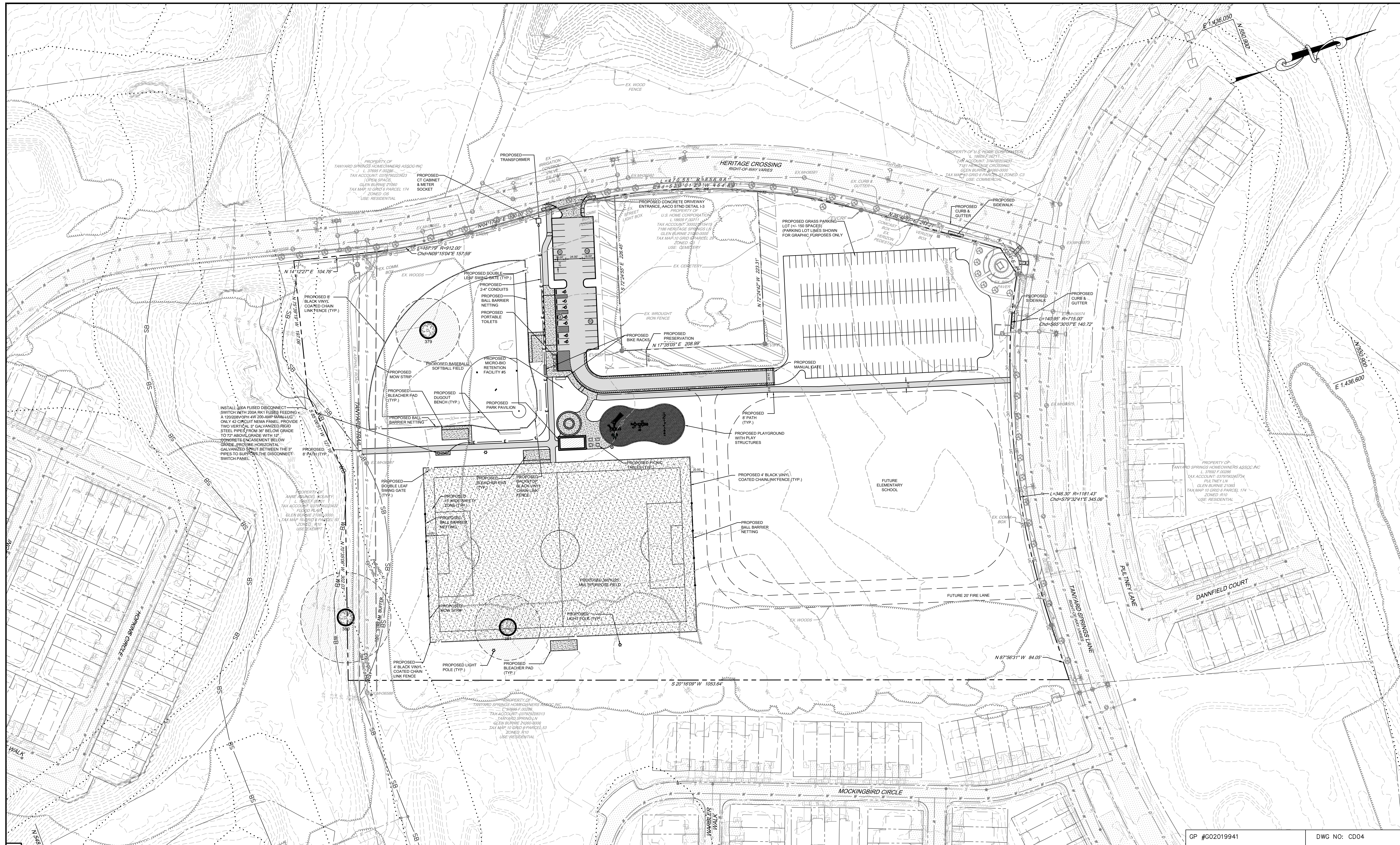
APPROVED	DATE	APPROVED	DATE

SCALE: 1" = 60'
DRAWN BY: JSN/CR/SVH
CHECKED BY: JCP/PJS/JSN
SHEET 3 of 36
PROJECT #: P587900
PROPOSAL #: P587901

OVERALL EXISTING CONDITIONS PLAN
TANYARD SPRINGS PARK
CONSTRUCTION DOCUMENTS
TAX MAP 10 GRID 6 PARCEL 53
GLEN BURNIE, MD ZIP CODE 21060 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD



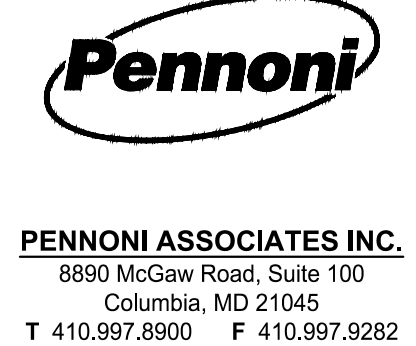
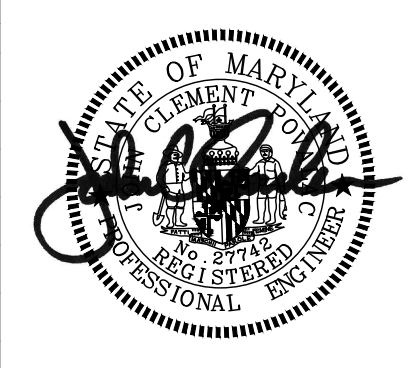
DPW No:



GP #G02019941 DWG NO: CD04

PROFESSIONAL CERTIFICATION: I, JOHN C. POVALAC, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 27742 EXPIRATION DATE 07/18/2024

#	REVISIONS DESCRIPTION	APPROVED BY	DATE



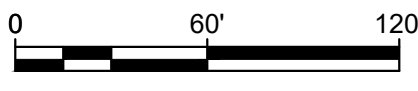
ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

NOVEMBER 27, 2023

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

SCALE: 1" = 60'
DRAWN BY: JSN/CR/SVH
CHECKED BY: JCP/PJS/JSN
SHEET 4 of 36
PROJECT #: P587900
PROPOSAL #: P587901

OVERALL PLAN
TANYARD SPRINGS PARK
CONSTRUCTION DOCUMENTS
TAX MAP 10 GRID 6 PARCEL 53
GLEN BURNIE, MD ZIP CODE 21060 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD



DPW No:

U:\Acad\14\00\VA\CD\22005 - Tanyard Springs Park Dev - P587901\DESIGN_SHEETS\CD-00 PLANS\VA\CD\22005-0004.dwg

SITE DEMOLITION NOTES

1. ALL CONSTRUCTION DEBRIS (THIS INCLUDES RECYCLABLE AND NON-RECYCLABLE) SHALL BE DISPOSED OF IN ACCORDANCE WITH LOCAL JURISDICTION.
2. DISPOSE OF ALL DEBRIS OFF-SITE UNLESS INDICATED TO BE SALVAGED.
3. NO SLAB OR LAND DISTURBANCE IS PERMITTED WITHOUT APPROVAL OF SEDIMENT CONTROL, AS SHOWN ON DRAWINGS.
4. CONTRACTOR SHALL COORDINATE WITH APPROPRIATE UTILITY COMPANY PRIOR TO REMOVAL OR RELOCATION OF ANY EXISTING UTILITIES.
5. EXISTING UTILITY LINES HAVE BEEN SHOWN USING THE BEST AVAILABLE RECORDS OBTAINED FROM UTILITY COMPANIES AND FIELD EVIDENCE. PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL ENGAGE A PRIVATE UTILITY LOCATING COMPANY (AT CONTRACTOR'S EXPENSE) TO ENSURE THAT ALL EXISTING UTILITIES HAVE BEEN MARKED.
6. ONCE DEMOLITION IS COMPLETED, ALL AREAS OF EXPOSED EARTH SHALL BE STABILIZED.
7. FOR ALL UTILITY DEMOLITION, COORDINATE WITH APPLICABLE UTILITY PROVIDER.



DEMOLITION KEY

1	REMOVE EXISTING ASPHALT PAVING AND STONE BASE
2	REMOVE EXISTING CONCRETE
3	REMOVE EXISTING BIKE RACK
4	REMOVE EXISTING STREET TREES AND SPECIMEN TREES
5	RELOCATE COMMUNICATION BOX
6	REMOVE EXISTING CURB

DEMOLITION LEGEND

[Hatched Pattern]	REMOVE EX. ASPHALT PAVING
[Cross-hatched Pattern]	REMOVE EX. CONCRETE SIDEWALK
[Dotted Pattern]	REMOVE EX. BIKE RACK
[Dashed Line]	REMOVE EX. CURB
[Circle with X]	REMOVE EX. TREE

PROPERTY OF
TANYARD SPRINGS HOMEOWNERS ASSOC, INC.
L. 37695 F. 00286
TAX ACCOUNT: 037979228313
TANYARD SPRINGS LN
GLEN BURNIE 21060-0000
TAX MAP 10 GRID 6 PARCEL 53
ZONED: R10
USE: RESIDENTIAL

PROPERTY OF
U.S. HOME CORPORATION
L. 18609 F. 00711
TAX ACCOUNT: 30002915415
7186 HERITAGE SPRINGS LN
GLEN BURNIE 21060-0000
TAX MAP 10 GRID 6 PARCEL 29
ZONED: C3
USE: CEMETERY

PROPERTY OF
ANNE ARUNDEL COUNTY
L. 18653 F. 00011
TAX ACCOUNT: 037979023422
FLOOD PLAIN
GLEN BURNIE 21060-0000
TAX MAP 10 GRID 6 PARCEL 53
ZONED: R10
USE: EXEMPT

PROPERTY OF
ARD SPRINGS HOMEOWNERS ASSOC, INC.
L. 37695 F. 00286
TAX ACCOUNT: 0379790223423
OPEN SPACE
GLEN BURNIE 21060
TAX MAP 10 GRID 6 PARCEL 174
ZONED: OS
USE: RESIDENTIAL

PROPERTY OF
U.S. HOME CORPORATION
L. 18609 F. 00711
TAX ACCOUNT: 30002915415
7186 HERITAGE SPRINGS LN
GLEN BURNIE 21060-0000
TAX MAP 10 GRID 6 PARCEL 29
ZONED: C3
USE: CEMETERY

PROPERTY OF
U.S. HOME CORPORATION
L. 18609 F. 00711
TAX ACCOUNT: 379790223433
7181 HERITAGE CROSSING
GLEN BURNIE 21060-0000
TAX MAP 10 GRID 6 PARCEL 53 ZONED: C3
USE: COMMERCIAL

PROFESSIONAL CERTIFICATION: I, JOHN C. POVALAC, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 27742. EXPIRATION DATE 07/18/2024.

#	REVISIONS DESCRIPTION	APPROVED BY	DATE

Pennoni
PENNONI ASSOCIATES INC.
8890 McGaw Road, Suite 100
Columbia, MD 21045
T 410.997.8900 F 410.997.9282

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS
NOVEMBER 27, 2023

APPROVED: _____ DATE: _____

CHIEF ENGINEER: _____ PROJECT MANAGER: _____

APPROVAL: _____ DATE: _____

ASSISTANT CHIEF ENGINEER: _____ CHIEF, RIGHT OF WAY SERVICES: _____

SCALE: 1" = 40'

DRAWN BY: JSN/CR/SWH
CHECKED BY: JCP/PJS/JSN
SHEET 5 of 36
PROJECT #: P587900
PROPOSAL #: P587901

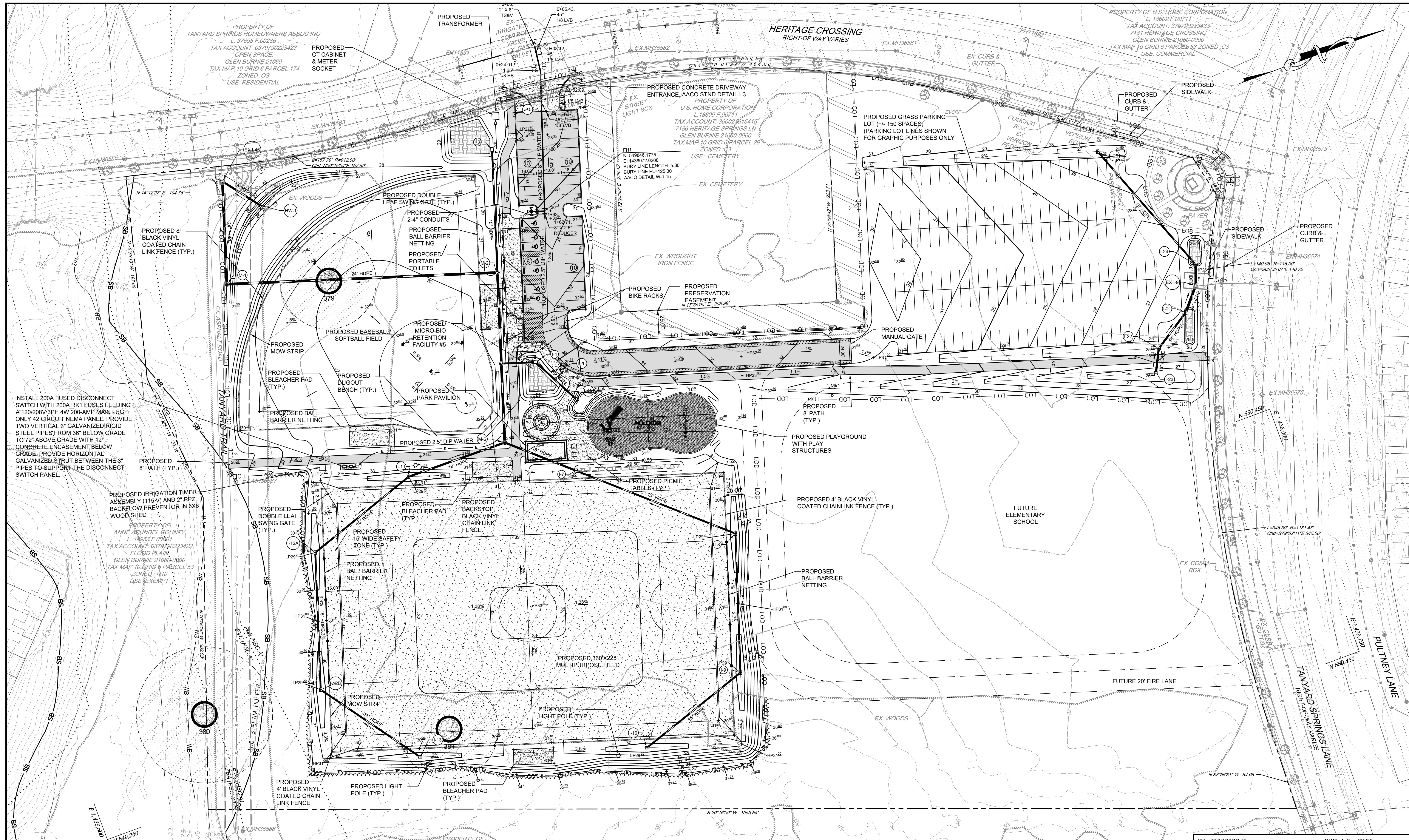
EXISTING CONDITIONS AND DEMOLITION PLAN

**TANYARD SPRINGS PARK
CONSTRUCTION DOCUMENTS**

TAX MAP 10 GRID 6 PARCEL 53
GLEN BURNIE, MD ZIP CODE 21060 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD

GP #G02019941 DWG NO: CD05

DATE PLOT: _____



INSTALL 200A FUSED DISCONNECT SWITCH WITH 200A RK1 FUSES FEEDING A 120/208V-3PH 4W 200-AMP MAIN LUG ONLY 42 CIRCUIT NEMA PANEL PROVIDE TWO VERTICAL 3" GALVANIZED RIGID STEEL PIPES FROM 36" BELOW GRADE TO 72" ABOVE GRADE WITH 12" CONCRETE ENCASUREMENT BELOW GRADE. PROVIDE HORIZONTAL GALVANIZED STRUT BETWEEN THE 3" PIPES TO SUPPORT THE DISCONNECT SWITCH PANEL.

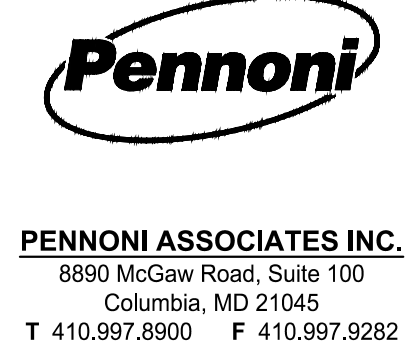
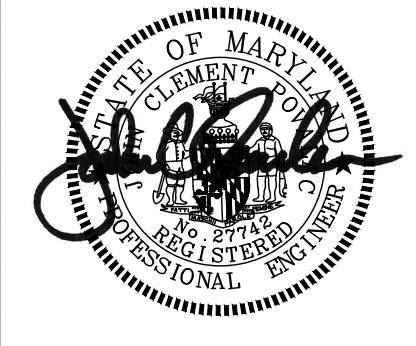
PROPOSED IRRIGATION TIMER ASSEMBLY (115V) AND 2" RPZ BACKFLOW PREVENTOR IN 6X6 WOOD SHED

PROPERTY OF ANNE ARUNDEL COUNTY L: 18953 F: 00011 TAX ACCOUNT: 037970223422 FLOOD PLAIN GLEN BURNIE 21060-0000 TAX MAP 10 GRID 6 PARCEL 53 ZONED: R10 USE: EXEMPT

PROPERTY OF TANYARD SPRINGS HOMEOWNERS ASSOC INC. L: 37695 F: 00286 TAX ACCOUNT: 037979228313 TANYARD SPRING LN GLEN BURNIE 21060-0000 TAX MAP 10 GRID 6 PARCEL 53 ZONED: R10 USE: RESIDENTIAL

PROFESSIONAL CERTIFICATION: I, JOHN C. POVALAC, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 27742 EXPIRATION DATE 07/18/2024

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

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS
NOVEMBER 27, 2023

SCALE: 1" = 40'
DRAWN BY: JSN/CR/SVH
CHECKED BY: JCP/PJS/JSN
SHEET 6 of 36
PROJECT #: P587900
PROPOSAL #: P587901

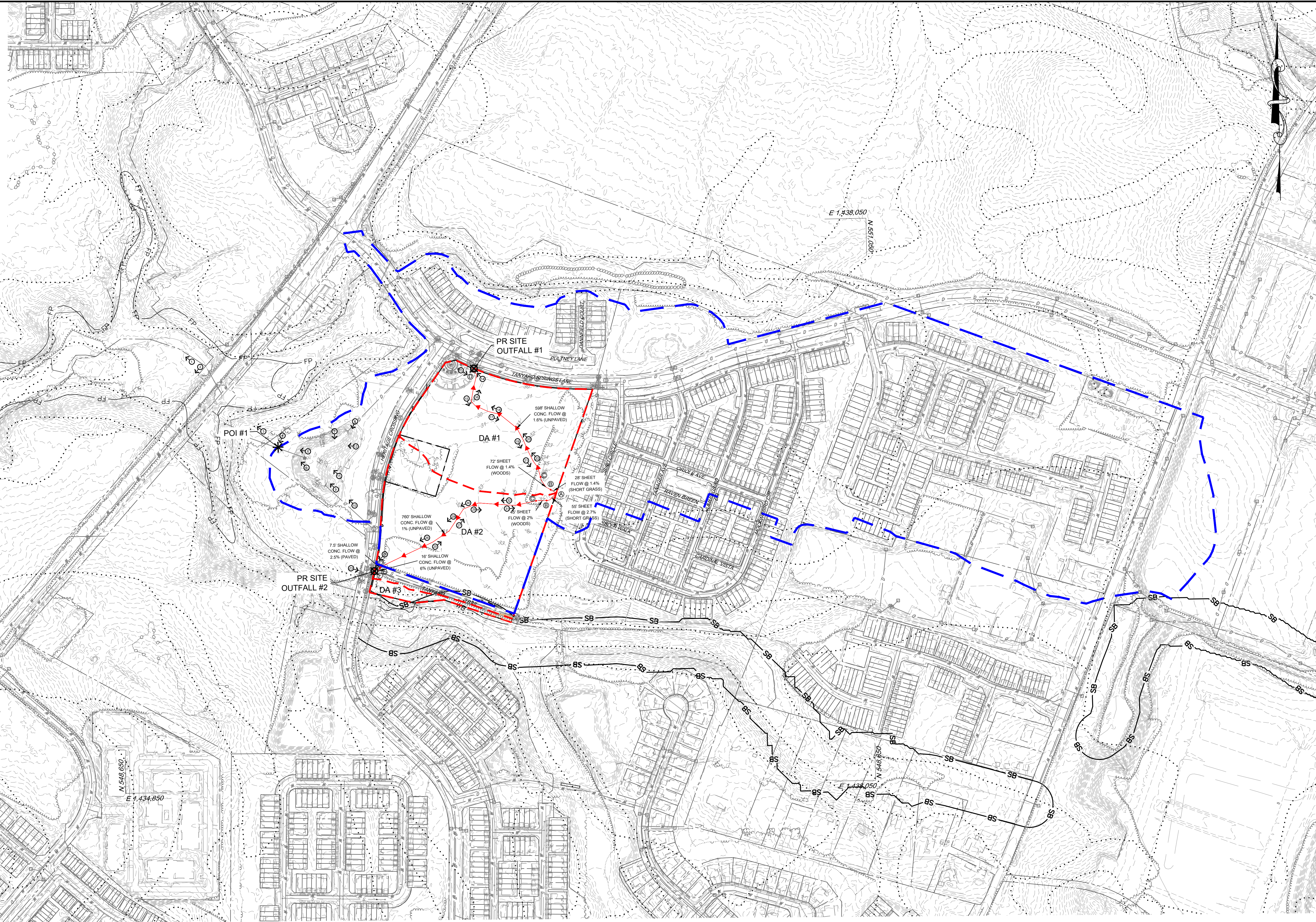
SITE AND GRADING PLAN
TANYARD SPRINGS PARK
CONSTRUCTION DOCUMENTS
TAX MAP 10 GRID 6 PARCEL 53
GLEN BURNIE, MD ZIP CODE 21060 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD



GP #G02019941 DWG NO: CD06

SYMBOL LEGEND

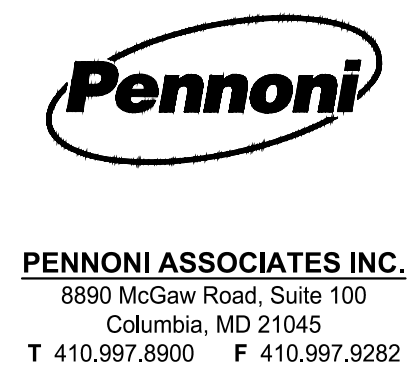
- PROPERTY LINE AND RIGHT-OF-WAY
- EXISTING 2' CONTOUR
- EXISTING 10' CONTOUR
- EXISTING TREE LINE
- EXISTING SOILS
- EXISTING WATER
- EXISTING SEWER
- EXISTING STORM DRAIN
- EXISTING DRAINAGE AREA
- POI DRAINAGE AREA
- TC PATH - ON SITE
- SITE OUTFALL
- POINT OF INVESTIGATION
- PHOTO LABEL



EXISTING SITE DRAINAGE AREA						
	TOTAL AREA	IMPERVIOUS AREA	IMPERVIOUS %	Q ₁₀	RCN	T _c
DA #1	7.28 ACRES (317,117 SQFT)	0.17 ACRES (7,405 SQFT)	2.3%	0.21 CFS	39	0.46 HR
DA #2	8.03 ACRES (349,787 SQFT)	0.12 ACRES (5,227 SQFT)	1.5%	0.12 CFS	37	0.41 HR
DA #3	0.48 ACRES (20,909 SQFT)	0 ACRES (0 SQFT)	0.0%	0 CFS	34	0.30 HR

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#	REVISIONS DESCRIPTION	APPROVED BY	DATE



GP #G02019941 DWG NO: CD07

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

NOVEMBER 27, 2023

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

SCALE: 1" = 200'
 DRAWN BY: JSN/CR/SVH
 CHECKED BY: JCP/PJS/JSN
 SHEET 7 of 36
 PROJECT #: P587900
 PROPOSAL #: P587901

EXISTING DRAINAGE AREA MAP
TANYARD SPRINGS PARK
 CONSTRUCTION DOCUMENTS
 TAX MAP 10 GRID 6 PARCEL 53
 GLEN BURNIE, MD ZIP CODE 21060 3RD DISTRICT
 ANNE ARUNDEL COUNTY, MD

DWG No.:

SYMBOL LEGEND

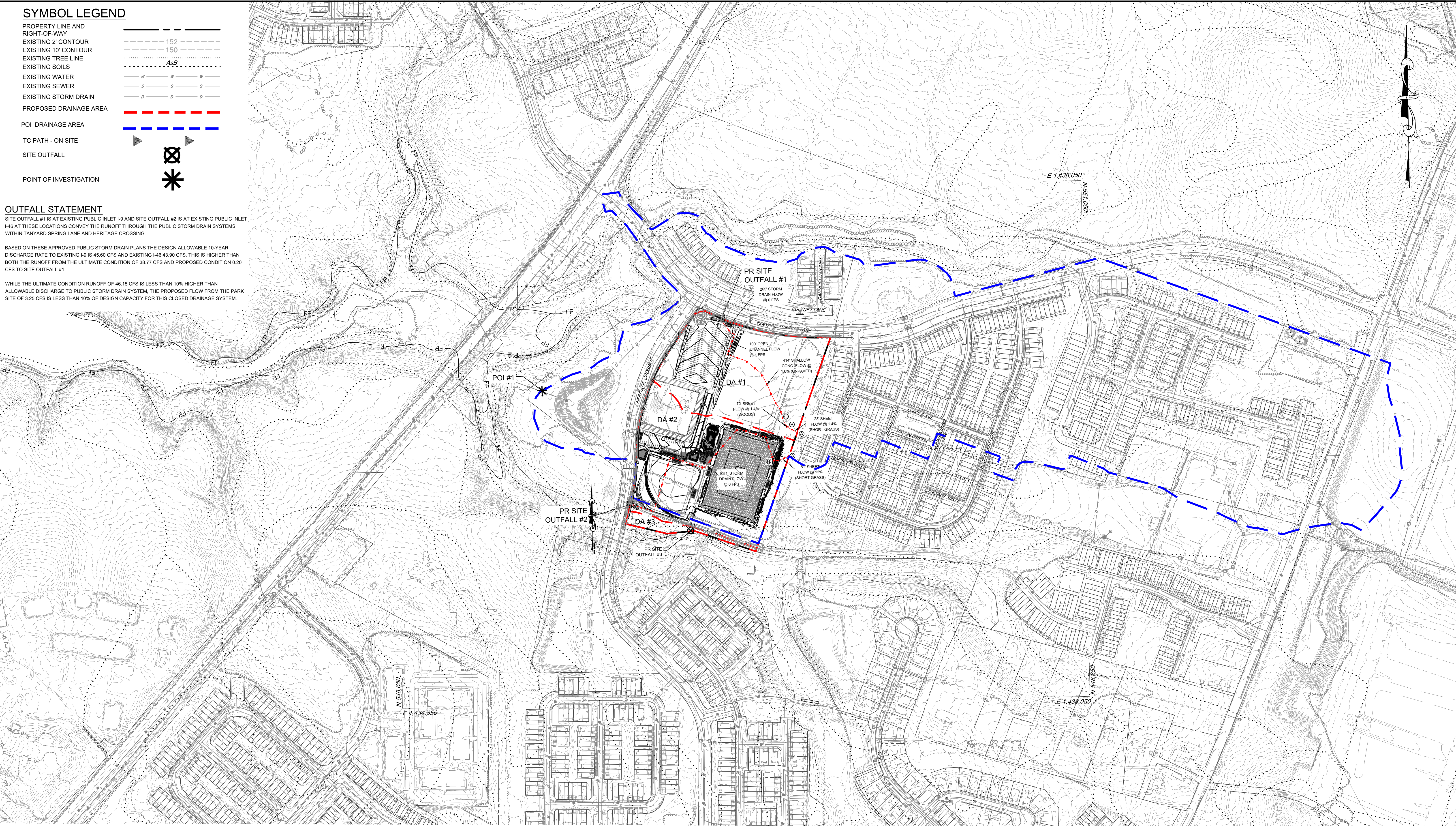
- PROPERTY LINE AND RIGHT-OF-WAY
- EXISTING 2' CONTOUR
- EXISTING 10' CONTOUR
- EXISTING TREE LINE
- EXISTING SOILS
- EXISTING WATER
- EXISTING SEWER
- EXISTING STORM DRAIN
- PROPOSED DRAINAGE AREA
- POI DRAINAGE AREA
- TC PATH - ON SITE
- SITE OUTFALL
- POINT OF INVESTIGATION

OUTFALL STATEMENT

SITE OUTFALL #1 IS AT EXISTING PUBLIC INLET I-9 AND SITE OUTFALL #2 IS AT EXISTING PUBLIC INLET I-46 AT THESE LOCATIONS CONVEY THE RUNOFF THROUGH THE PUBLIC STORM DRAIN SYSTEMS WITHIN TANYARD SPRING LANE AND HERITAGE CROSSING.

BASED ON THESE APPROVED PUBLIC STORM DRAIN PLANS THE DESIGN ALLOWABLE 10-YEAR DISCHARGE RATE TO EXISTING I-9 IS 45.80 CFS AND EXISTING I-46 43.90 CFS. THIS IS HIGHER THAN BOTH THE RUNOFF FROM THE ULTIMATE CONDITION OF 38.77 CFS AND PROPOSED CONDITION 0.20 CFS TO SITE OUTFALL #1.

WHILE THE ULTIMATE CONDITION RUNOFF OF 46.15 CFS IS LESS THAN 10% HIGHER THAN ALLOWABLE DISCHARGE TO PUBLIC STORM DRAIN SYSTEM, THE PROPOSED FLOW FROM THE PARK SITE OF 3.25 CFS IS LESS THAN 10% OF DESIGN CAPACITY FOR THIS CLOSED DRAINAGE SYSTEM.



PROPOSED AND ULTIMATE SITE DRAINAGE AREAS

	TOTAL AREA	IMPERVIOUS AREA	IMPERVIOUS %	Q ₁₀	RCN	T _c	Q _{ULT}	RCN	T _c
DA #1	6.99 ACRES (304,484 SQFT)	0.17 ACRES (7,405 SQFT)	2.4%	0.20 CFS	39	0.46 HR	38.77 CFS	89	0.10 HR
DA #2	8.32 ACRES (362,419 SQFT)	0.99 ACRES (43,124 SQFT)	11.9%	3.25 CFS	45	0.11 HR	46.15 CFS	89	0.10 HR
DA #3	0.48 ACRES (20,909 SQFT)	0 ACRES (0 SQFT)	0.0%	0 CFS	34	0.30 HR	2.66 CFS	89	0.10 HR

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REVISIONS	APPROVED BY	DATE

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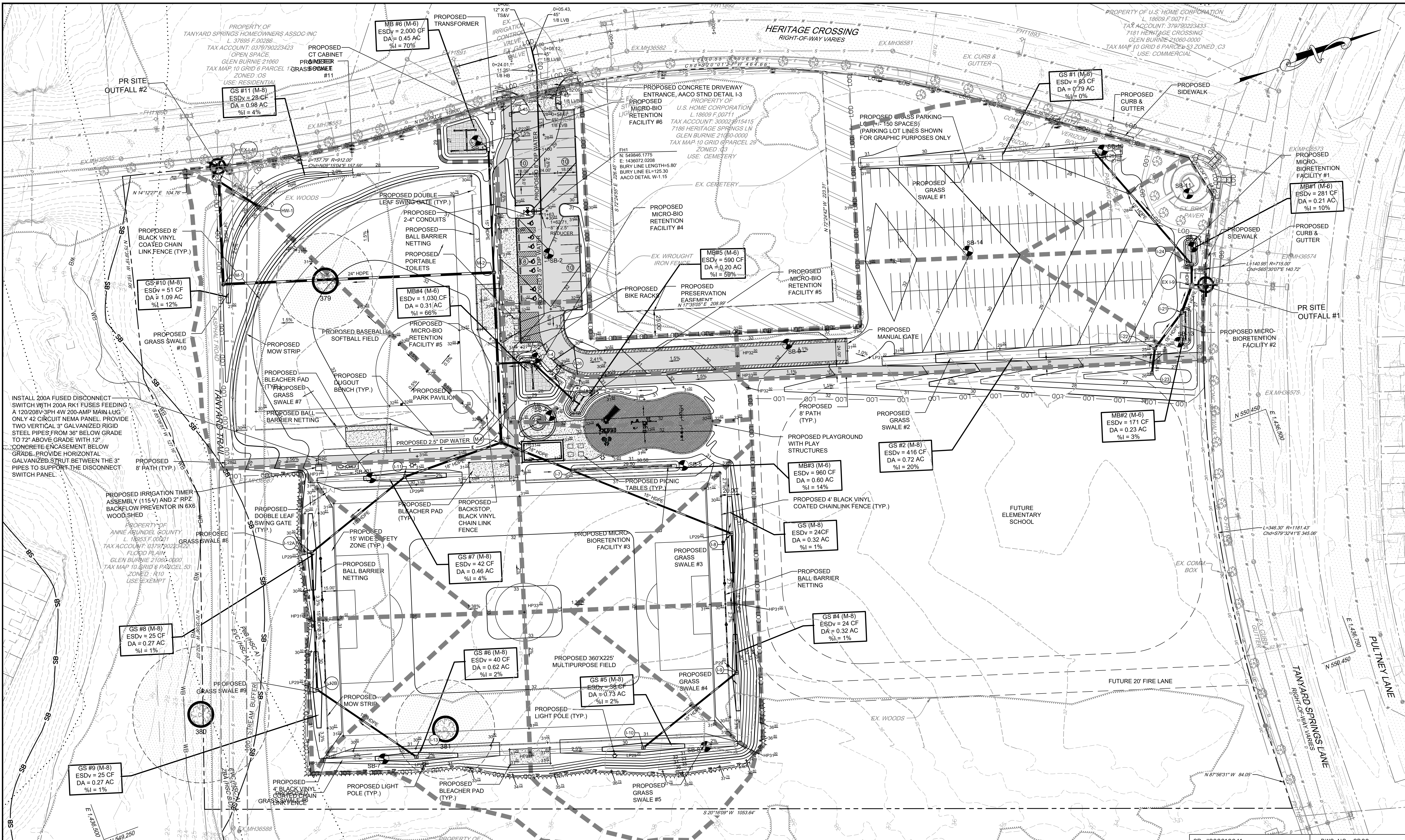
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ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS
NOVEMBER 27, 2023

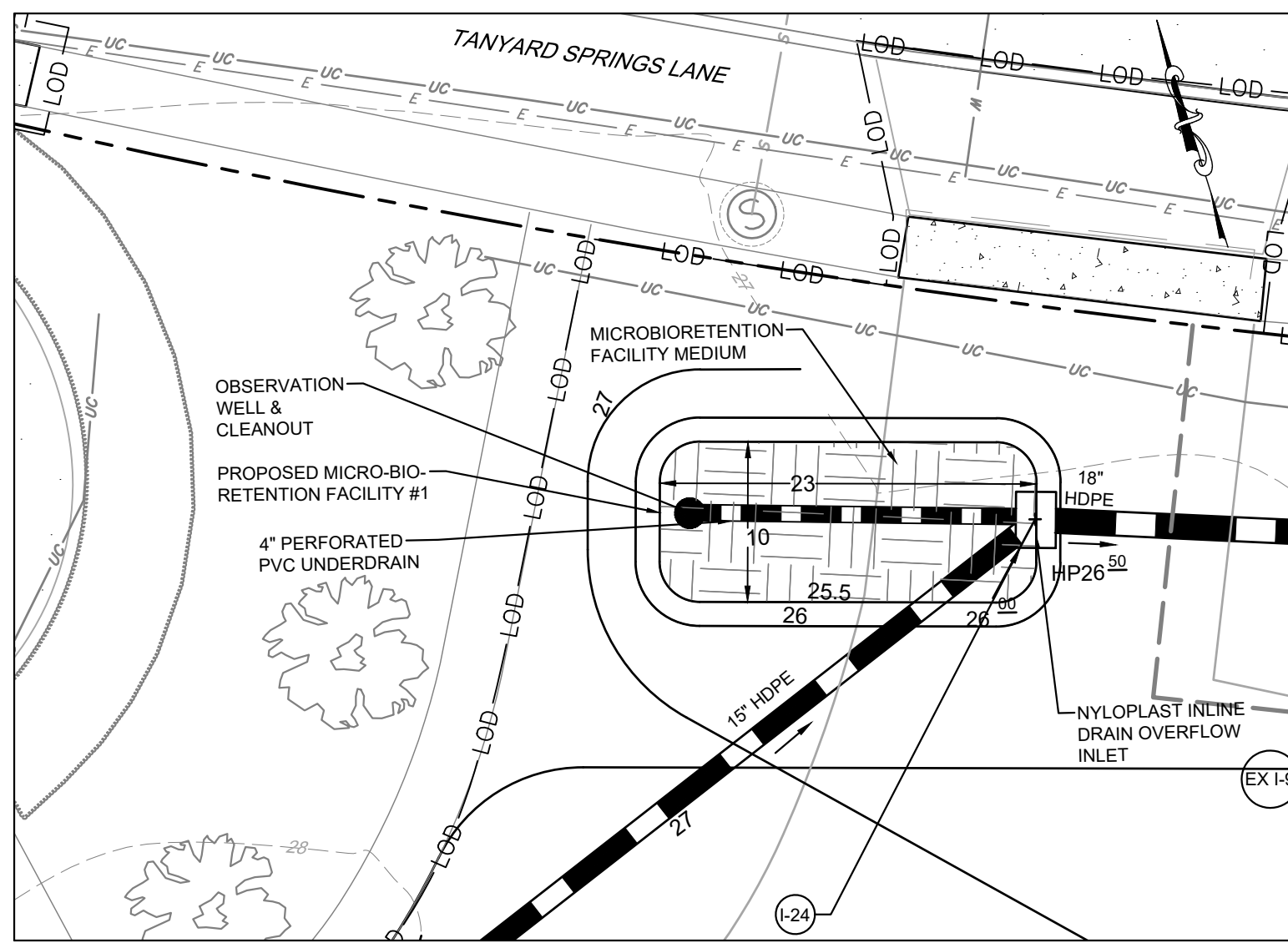
APPROVED _____ DATE _____	APPROVED _____ DATE _____	SCALE: 1" = 200'
CHIEF ENGINEER _____	PROJECT MANAGER _____	DRAWN BY: JSN/CR/SVH
APPROVAL _____ DATE _____	APPROVED _____ DATE _____	CHECKED BY: JCP/PJS/JSN
ASSISTANT CHIEF ENGINEER _____	CHIEF, RIGHT OF WAY SERVICES _____	SHEET 8 of 36
		PROJECT #: P587900
		PROPOSAL #: P587901

TANYARD SPRINGS PARK
CONSTRUCTION DOCUMENTS
TAX MAP 10 GRID 6 PARCEL 53
GLEN BURNIE, MD ZIP CODE 21060 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD

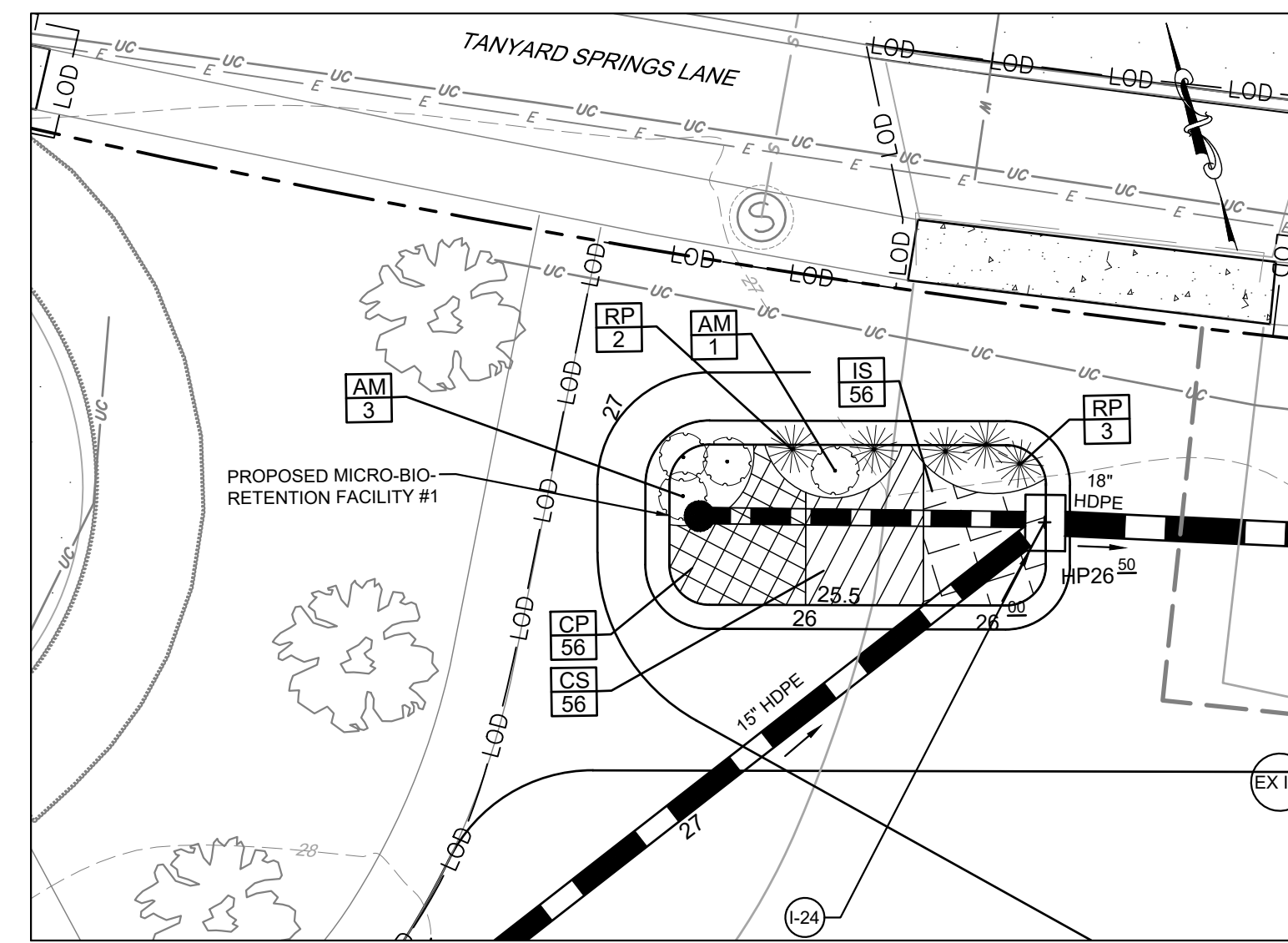
DATE PLOTTED: 11/27/23



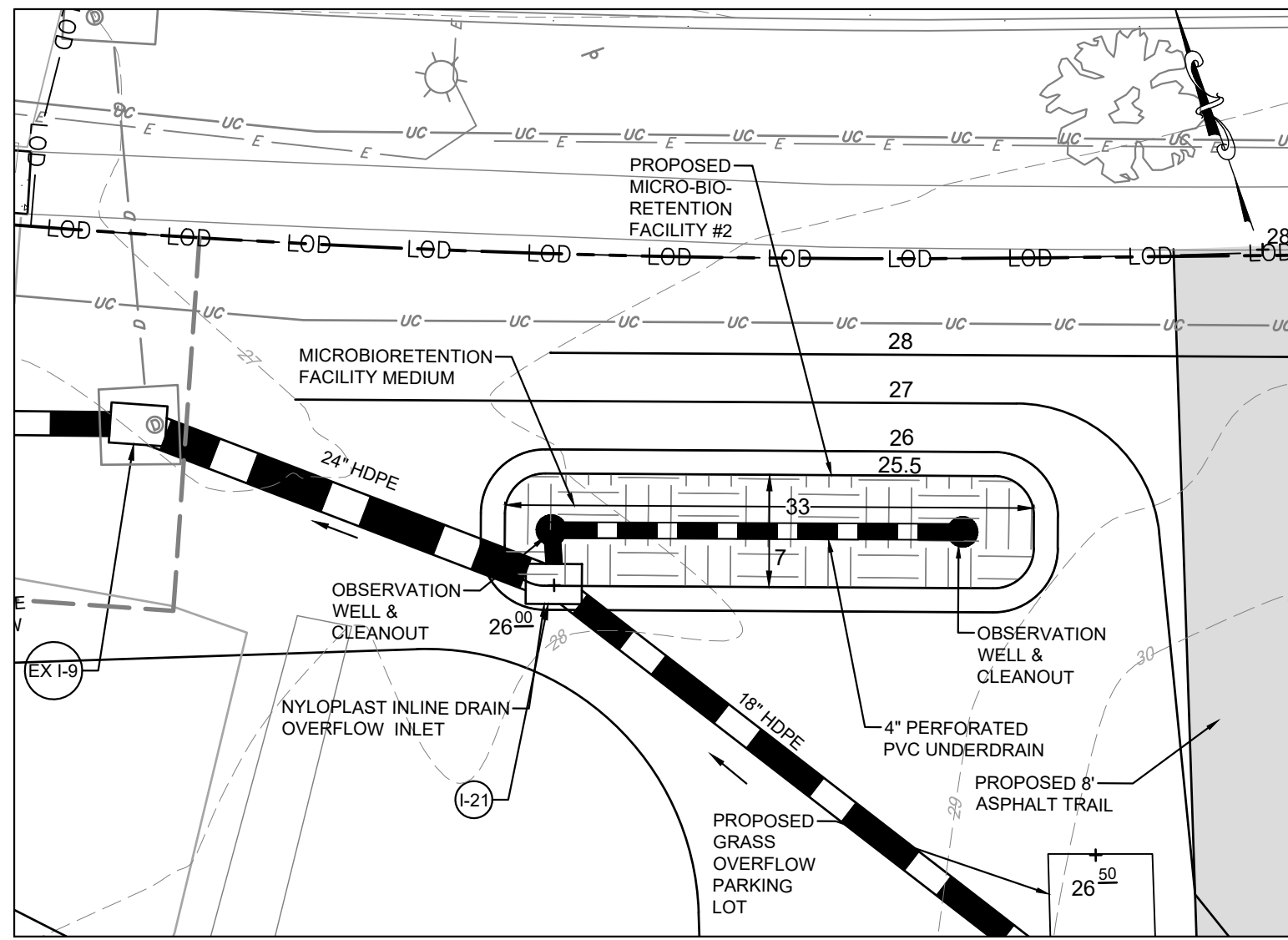
<p>PROFESSIONAL CERTIFICATION: I, JOHN C. POVALAC, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 27742 EXPIRATION DATE 07/18/2024</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>REVISIONS</th> <th>APPROVED BY</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	REVISIONS	APPROVED BY	DATE								<p>PENNONI ASSOCIATES INC. 8890 McGaw Road, Suite 100 Columbia, MD 21045 T 410.997.8900 F 410.997.9282</p>	<p>ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>APPROVED _____</td> <td>DATE _____</td> <td>APPROVED _____</td> <td>DATE _____</td> </tr> <tr> <td>CHIEF ENGINEER</td> <td>PROJECT MANAGER</td> <td>APPROVED _____</td> <td>DATE _____</td> </tr> <tr> <td>APPROVAL _____</td> <td>DATE _____</td> <td>APPROVED _____</td> <td>DATE _____</td> </tr> <tr> <td>ASSISTANT CHIEF ENGINEER</td> <td>CHIEF, RIGHT OF WAY SERVICES</td> <td>APPROVED _____</td> <td>DATE _____</td> </tr> </table>	APPROVED _____	DATE _____	APPROVED _____	DATE _____	CHIEF ENGINEER	PROJECT MANAGER	APPROVED _____	DATE _____	APPROVAL _____	DATE _____	APPROVED _____	DATE _____	ASSISTANT CHIEF ENGINEER	CHIEF, RIGHT OF WAY SERVICES	APPROVED _____	DATE _____
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ASSISTANT CHIEF ENGINEER	CHIEF, RIGHT OF WAY SERVICES	APPROVED _____	DATE _____																									
<p>SCALE: 1" = 40'</p> <p>DRAWN BY: JSN/CR/SVH</p> <p>CHECKED BY: JCP/PJS/JSN</p> <p>SHEET 9 of 36</p> <p>PROJECT #: P587900</p> <p>PROPOSAL #: P587901</p>		<p>NOVEMBER 27, 2023</p> <p>STORMWATER MANAGEMENT PLAN</p> <p>TANYARD SPRINGS PARK CONSTRUCTION DOCUMENTS</p> <p>TAX MAP 10 GRID 6 PARCEL 53 GLEN BURNIE, MD ZIP CODE 21060 3RD DISTRICT ANNE ARUNDEL COUNTY, MD</p>																										



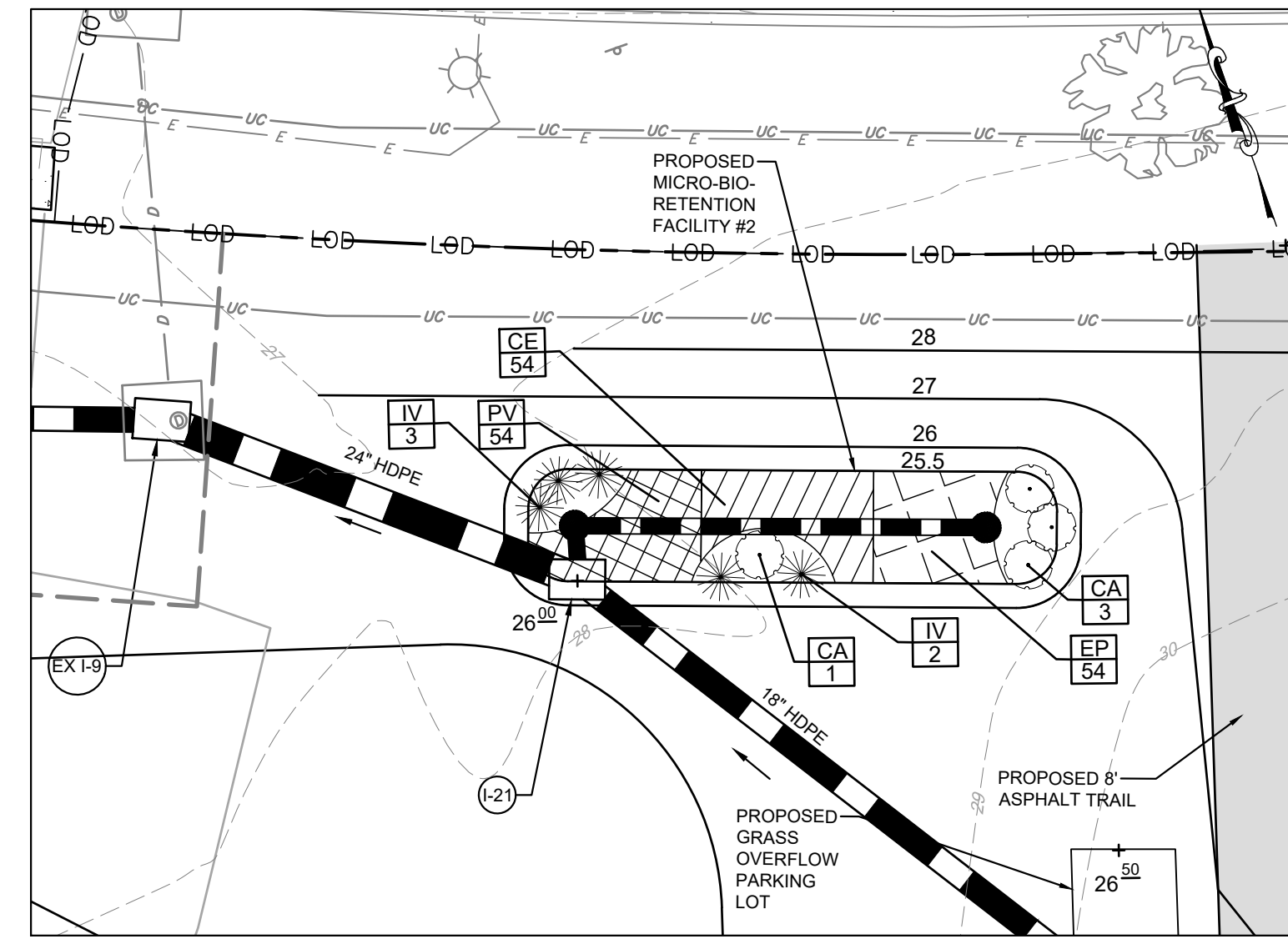
MICROBIORETENTION FACILITY #1 DETAIL PLAN
SCALE: 1"=10'



MICROBIORETENTION FACILITY #1 LANDSCAPE PLAN
SCALE: 1"=10'



MICROBIORETENTION FACILITY #2 DETAIL PLAN
SCALE: 1"=10'

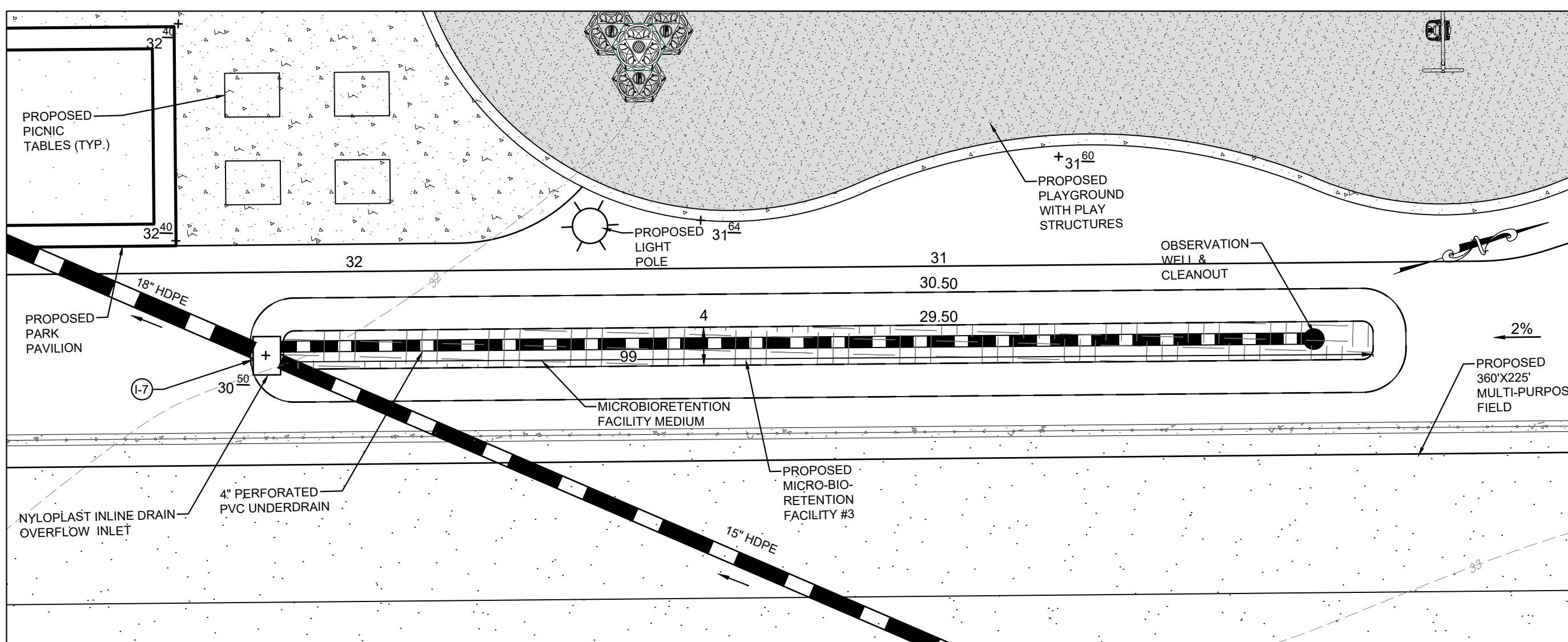


MICROBIORETENTION FACILITY #2 LANDSCAPE PLAN
SCALE: 1"=10'

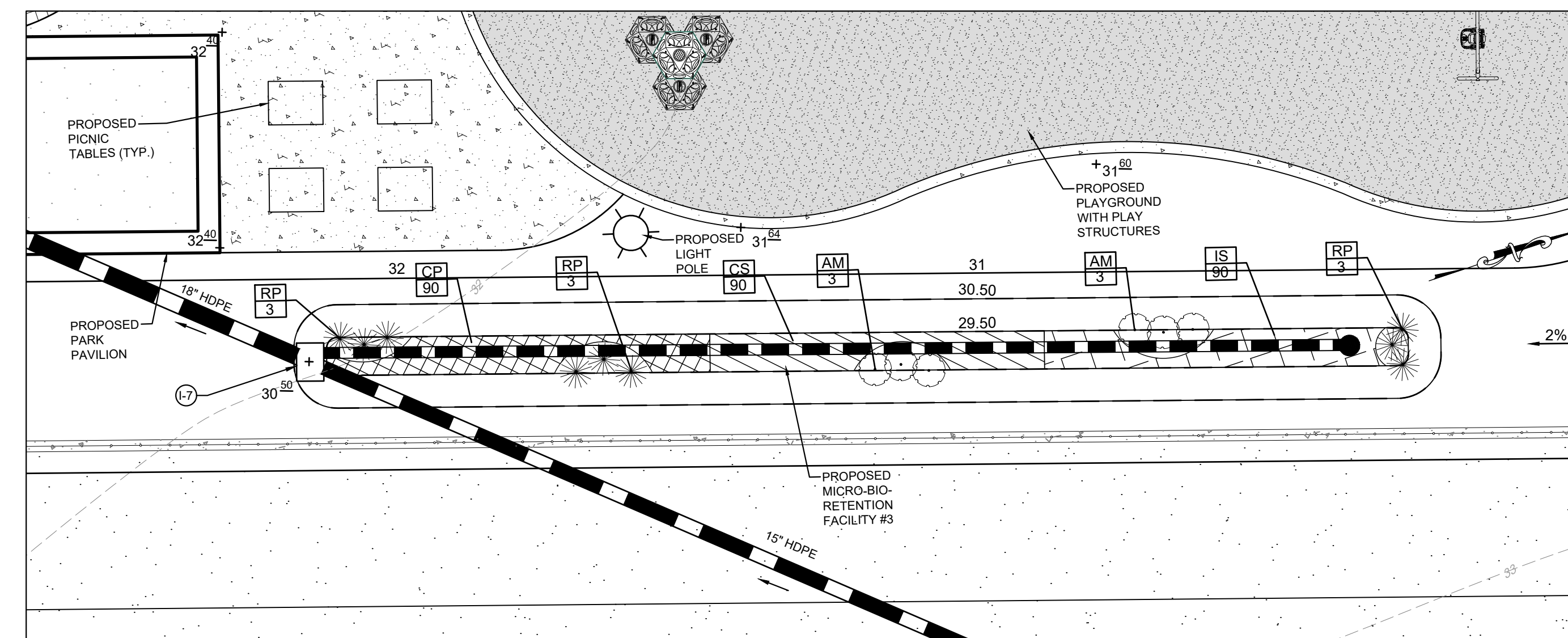
MICROBIORETENTION FACILITY DESIGN DATA						
	#1	#1 AS-BUILT	#2	#2 AS-BUILT	#3	#3 AS-BUILT
ESDv ELEV	26.00		26.00		30.50	
TOP OF MULCH ELEV A	25.50		25.50		29.50	
PLANTING MEDIA BOTTOM ELEV B	23.33		23.33		26.33	
PEA GRAVEL BOTTOM ELEV C	23.00		23.00		26.00	
UNDERDRAIN INVERT ELEV AT CLEANOUT ELEV D	22.42		22.42		25.42	
GRAVEL AND FACILITY BOTTOM ELEV E	22.17		22.17		25.17	
SURFACE AREA AT 'E' (SF)	200		200		300	
OVERFLOW STRUCTURE TOP ELEV	26.00		26.00		30.50	
OUTFLOW PIPE INVERT ELEV AT OVERFLOW STRUCTURE	19.52		19.56		24.52	
ENHANCED FILTER BOTTOM ELEV	--					

MICRO-BIORETENTION #1 PLANT SCHEDULE					
SYMBOL	QTY.	SCIENTIFIC/COMMON NAME	SIZE	ROOT	REMARKS
AM	4	ARONIA MELANOCARPA BLACK CHOKEBERRY	3 GAL.	CONT.	AS SHOWN
RP	5	ROSA PALUSTRIS SWAMP ROSE	3 GAL.	CONT.	AS SHOWN
CP	56	CALTHA PALUSTRIS MARSH MARIGOLD	1 QUART	CONT.	12" ON CENTER
CS	56	CAREX STRICTA TUSSOCK SEDGE	1 QUART	CONT.	12" ON CENTER
IS	56	IRIS VERSICOLOR 'BLUE FLAG' BLUE FLAG IRIS	1 QUART	CONT.	12" ON CENTER

MICRO-BIORETENTION #2 PLANT SCHEDULE					
SYMBOL	QTY.	SCIENTIFIC/COMMON NAME	SIZE	ROOT	REMARKS
IV	5	ILEX VERTICILLATA WINTERBERRY	3 GAL.	CONT.	AS SHOWN
CA	4	CALLICARPA AMERICANA AMERICAN BEAUTYBERRY	3 GAL.	CONT.	AS SHOWN
PV	54	PANICUM VIRGATUM VIRGINIA SWITCHGRASS	1 QUART	CONT.	12" ON CENTER
CE	54	CAREX 'EVERGOLD' EVERGOLD SEDGE	1 QUART	CONT.	12" ON CENTER
EP	54	EUPATORIUM PURPUREUM JOE-PYE WEED	1 QUART	CONT.	12" ON CENTER



MICROBIORETENTION FACILITY #3 DETAIL PLAN
SCALE: 1"=10'



MICROBIORETENTION FACILITY #3 LANDSCAPE PLAN
SCALE: 1"=10'

MICRO-BIORETENTION #3 PLANT SCHEDULE					
SYMBOL	QTY.	SCIENTIFIC/COMMON NAME	SIZE	ROOT	REMARKS
AM	6	ARONIA MELANOCARPA BLACK CHOKEBERRY	3 GAL.	CONT.	AS SHOWN
RP	9	ROSA PALUSTRIS SWAMP ROSE	3 GAL.	CONT.	AS SHOWN
CP	90	CALTHA PALUSTRIS MARSH MARIGOLD	1 QUART	CONT.	12" ON CENTER
CS	90	CAREX STRICTA TUSSOCK SEDGE	1 QUART	CONT.	12" ON CENTER
IS	90	IRIS VERSICOLOR 'BLUE FLAG' BLUE FLAG IRIS	1 QUART	CONT.	12" ON CENTER

NOTE:
SOD TO BE USED AS SAME DAY STABILIZATION AROUND SWM FACILITIES.

PROFESSIONAL CERTIFICATION: I, JOHN C. POVALAC, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 27742 EXPIRATION DATE 07/18/2024

REVISIONS	APPROVED BY	DATE
#		
DESCRIPTION		

Pennoni
PENNONI ASSOCIATES INC.
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ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS
NOVEMBER 27, 2023

APPROVED _____ DATE _____
CHIEF ENGINEER

APPROVED _____ DATE _____
PROJECT MANAGER

APPROVED _____ DATE _____
ASSISTANT CHIEF ENGINEER

CHIEF, RIGHT OF WAY SERVICES

SCALE: 1" = 40'
DRAWN BY: JSN/CR/SVH
CHECKED BY: JCP/PJS/JSN
SHEET 10 of 36
PROJECT #: P587900
PROPOSAL #: P587901

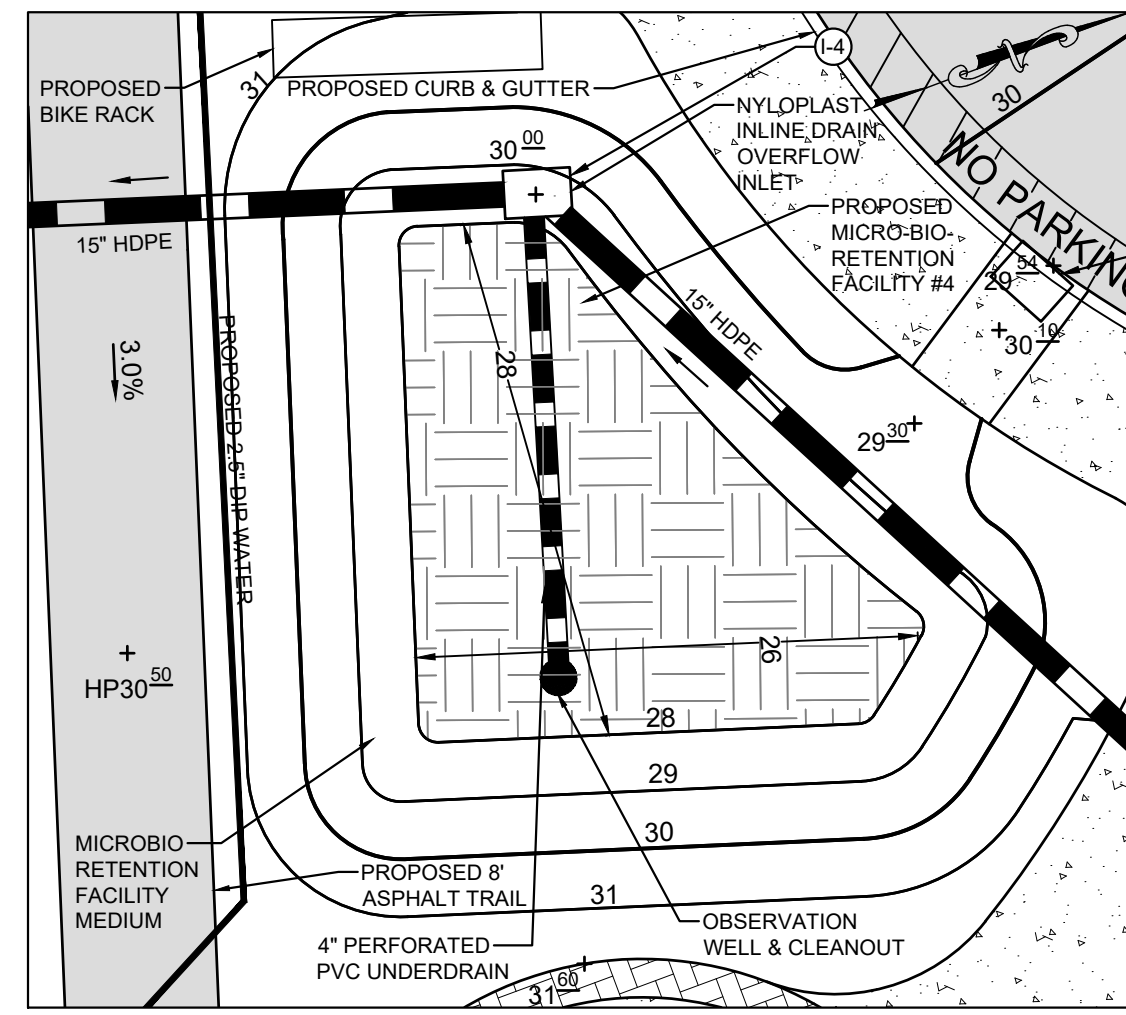
STORMWATER MANAGEMENT DETAILS

TANYARD SPRINGS PARK CONSTRUCTION DOCUMENTS
TAX MAP 10 GRID 6 PARCEL 53
GLEN BURNIE, MD ZIP CODE 21060 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD

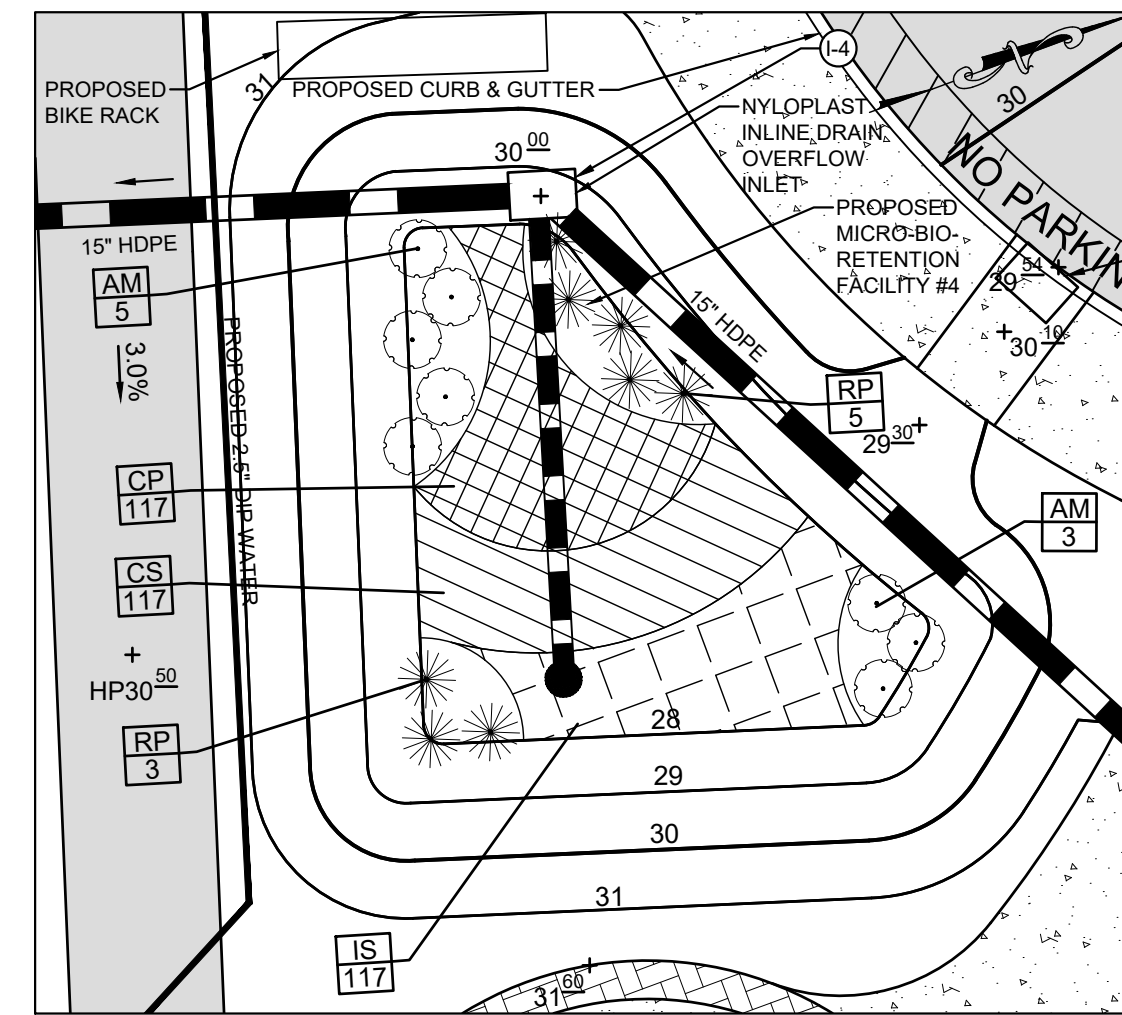
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DPW No:

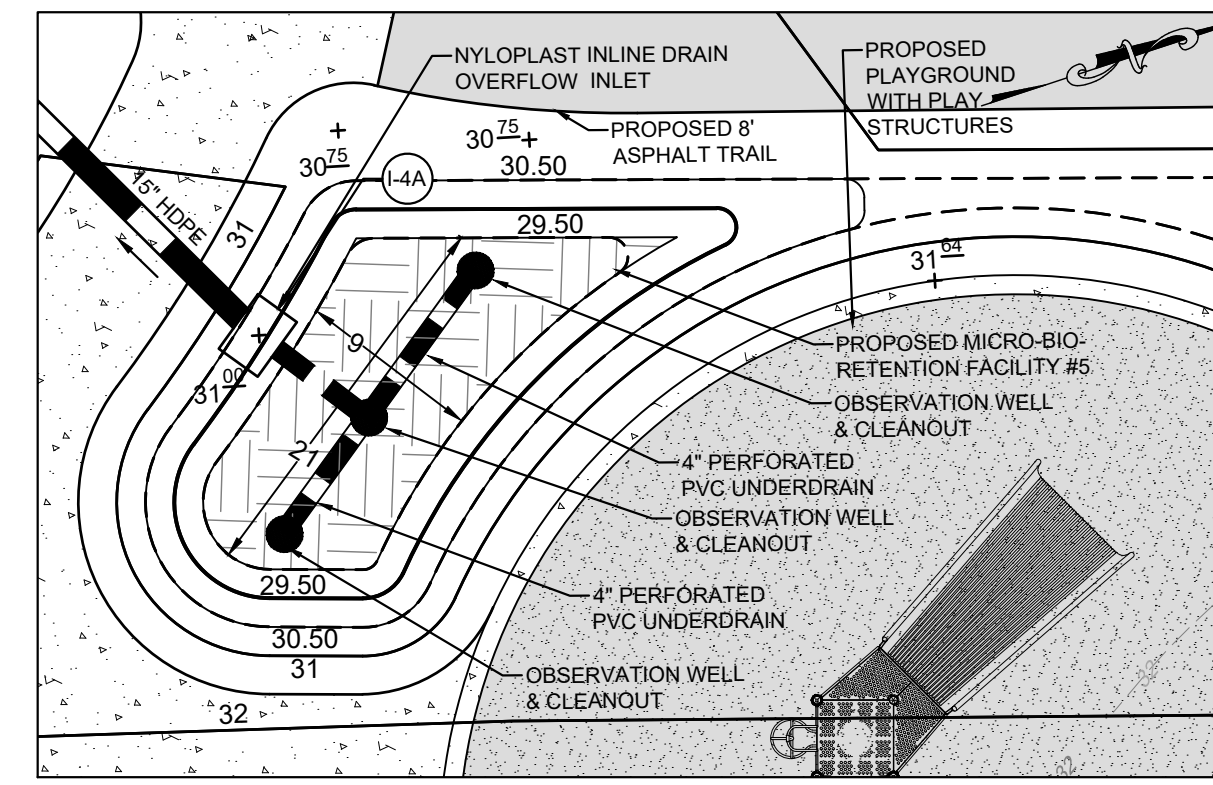
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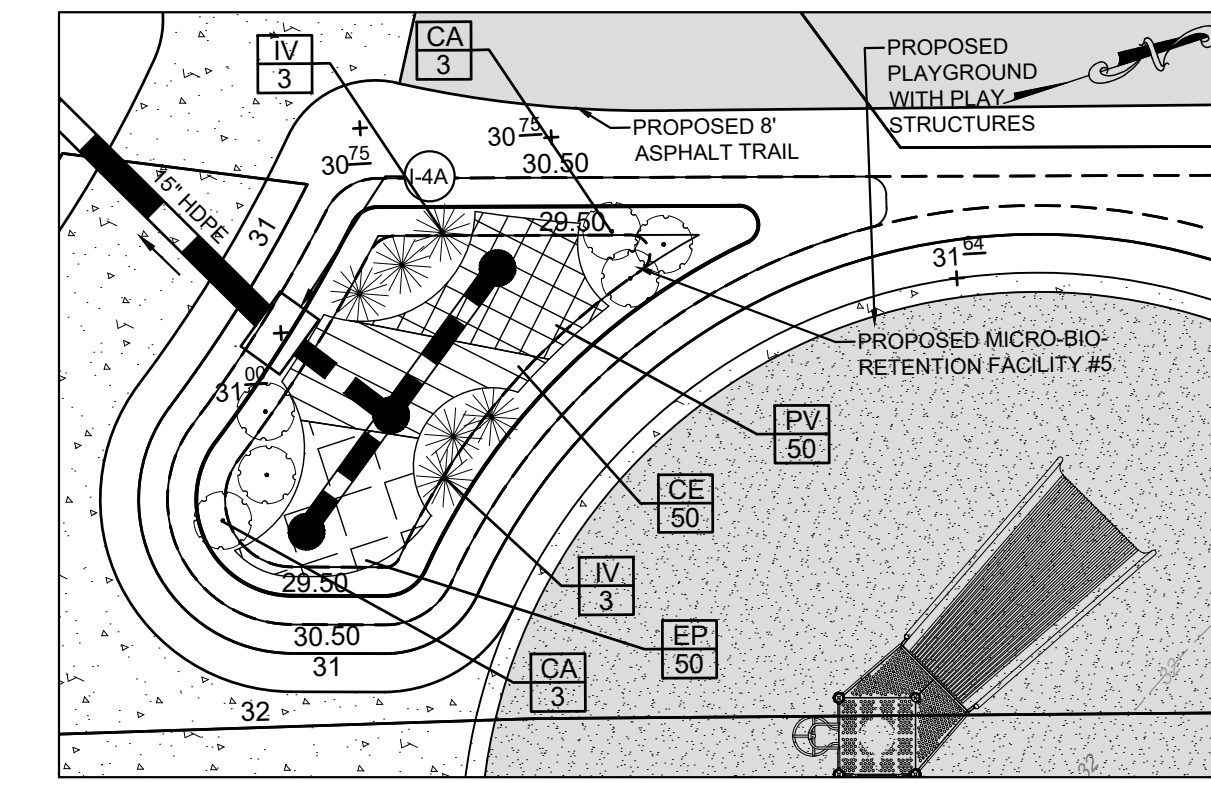
MICROBIORETENTION FACILITY #4 DETAIL PLAN
SCALE: 1"=10'



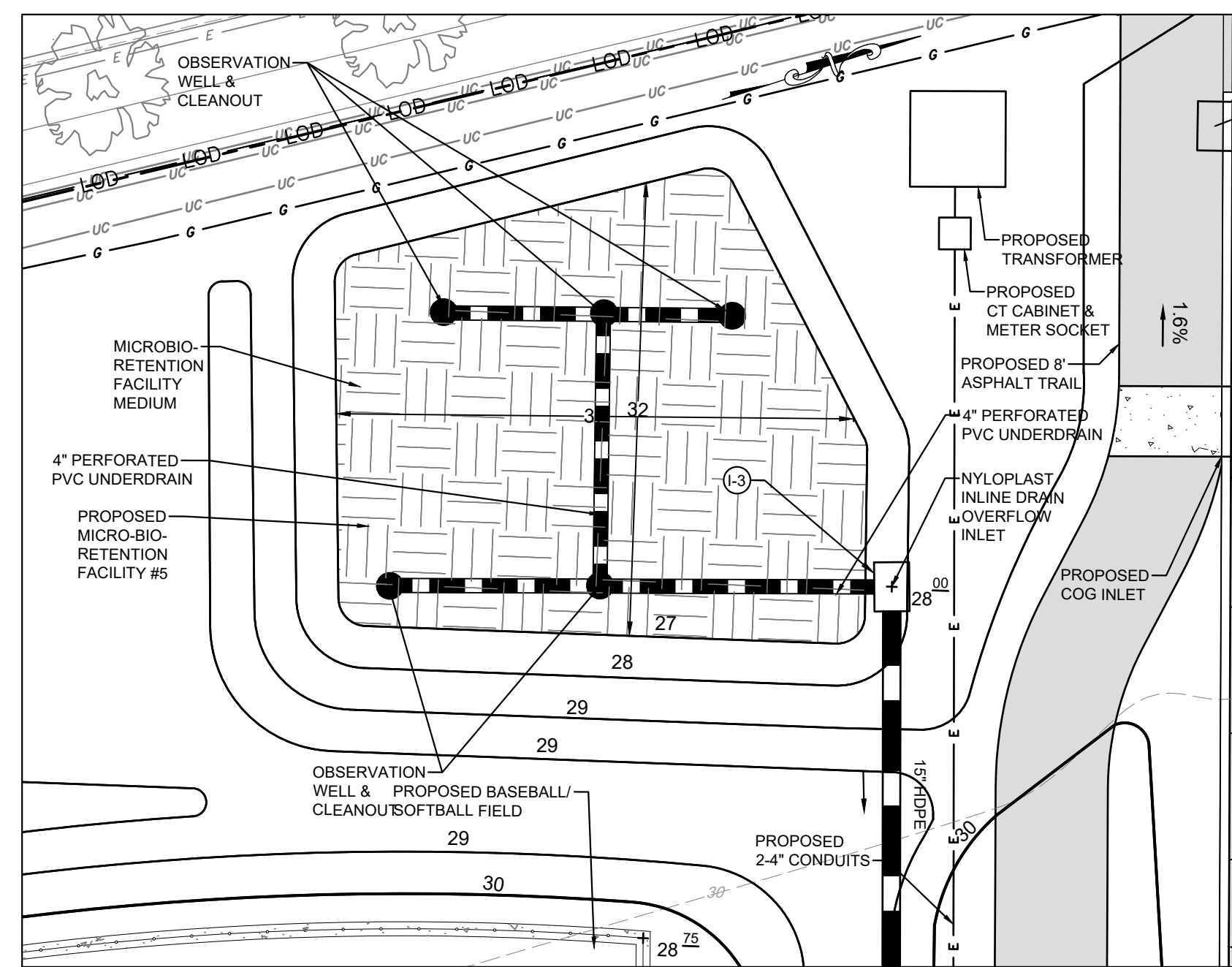
MICROBIORETENTION FACILITY #4 LANDSCAPE PLAN
SCALE: 1"=10'



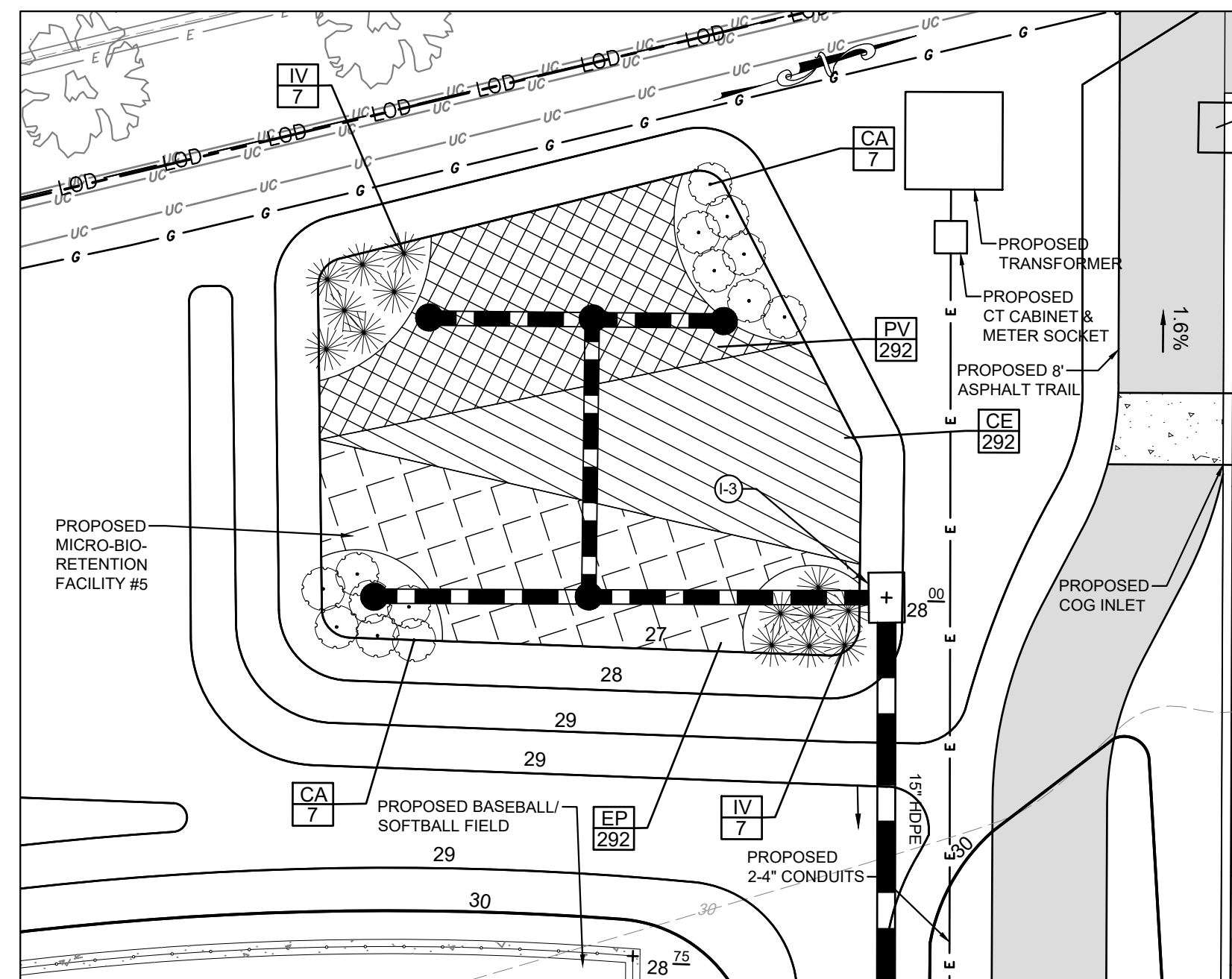
MICROBIORETENTION FACILITY #5 DETAIL PLAN
SCALE: 1"=10'



MICROBIORETENTION FACILITY #5 LANDSCAPE PLAN
SCALE: 1"=10'



MICROBIORETENTION FACILITY #6 DETAIL PLAN
SCALE: 1"=10'



MICROBIORETENTION FACILITY #6 LANDSCAPE PLAN
SCALE: 1"=10'

MICRO-BIORETENTION #4 PLANT SCHEDULE					
SYMBOL	QTY.	SCIENTIFIC/ COMMON NAME	SIZE	ROOT	REMARKS
AM	8	ARONIA MELANOCARPA BLACK CHOKEBERRY	3 GAL.	CONT.	AS SHOWN
RP	8	ROSA PALUSTRIS SWAMP ROSE	3 GAL.	CONT.	AS SHOWN
CP	117	CALTHA PALUSTRIS MARSH MARIGOLD	1 QUART	CONT.	12" ON CENTER
CS	117	CAREX STRICTA TUSSOCK SEDGE	1 QUART	CONT.	12" ON CENTER
IS	117	IRIS VERSICOLOR 'BLUE FLAG' BLUE FLAG IRIS	1 QUART	CONT.	12" ON CENTER

MICRO-BIORETENTION #5 PLANT SCHEDULE					
SYMBOL	QTY.	SCIENTIFIC/ COMMON NAME	SIZE	ROOT	REMARKS
IV	6	ILEX VERTICILLATA WINTERBERRY	3 GAL.	CONT.	AS SHOWN
CA	6	CALLICARPA AMERICANA AMERICAN BEAUTYBERRY	3 GAL.	CONT.	AS SHOWN
PV	50	PANICUM VIRGATUM VIRGINIA SWITCHGRASS	1 QUART	CONT.	12" ON CENTER
CE	50	CAREX EVERGOLD EVERGOLD SEDGE	1 QUART	CONT.	12" ON CENTER
EP	50	EUPATORIUM PURPUREUM JOE-PYE WEED	1 QUART	CONT.	12" ON CENTER

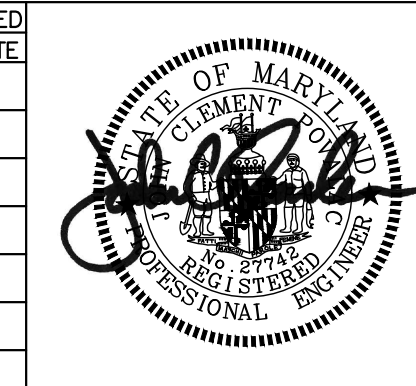
MICRO-BIORETENTION #6 PLANT SCHEDULE					
SYMBOL	QTY.	SCIENTIFIC/ COMMON NAME	SIZE	ROOT	REMARKS
IV	14	ILEX VERTICILLATA WINTERBERRY	3 GAL.	CONT.	AS SHOWN
CA	14	CALLICARPA AMERICANA AMERICAN BEAUTYBERRY	3 GAL.	CONT.	AS SHOWN
PV	292	PANICUM VIRGATUM VIRGINIA SWITCHGRASS	1 QUART	CONT.	12" ON CENTER
CE	292	CAREX EVERGOLD EVERGOLD SEDGE	1 QUART	CONT.	12" ON CENTER
EP	292	EUPATORIUM PURPUREUM JOE-PYE WEED	1 QUART	CONT.	12" ON CENTER

MICROBIORETENTION FACILITY DESIGN DATA						
	#4	#4 AS-BUILT	#5	#5 AS-BUILT	#6	#6 AS-BUILT
ESDV ELEV	29.00		30.50		28.00	
TOP OF MULCH ELEV A	28.00		29.50		27.00	
PLANTING MEDIA BOTTOM ELEV B	24.83		26.33		24.83	
PEA GRAVEL BOTTOM ELEV C	24.50		26.00		24.50	
UNDERDRAIN INVERT ELEV AT CLEANOUT ELEV D	23.92		25.42		23.92	
GRAVEL AND FACILITY BOTTOM ELEV E	23.67		25.17		23.67	
SURFACE AREA AT 'E' (SF)	400		200		1000	
OVERFLOW STRUCTURE TOP ELEV	29.00		30.50		28.00	
UNDERDRAIN INVERT ELEV AT OVERFLOW STRUCTURE	23.94		25.44		23.94	
ENHANCED FILTER BOTTOM ELEV	--					

NOTE:
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#	REVISIONS DESCRIPTION	APPROVED BY	DATE



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ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS
NOVEMBER 27, 2023

APPROVED DATE: _____
CHIEF ENGINEER: _____

APPROVED DATE: _____
PROJECT MANAGER: _____

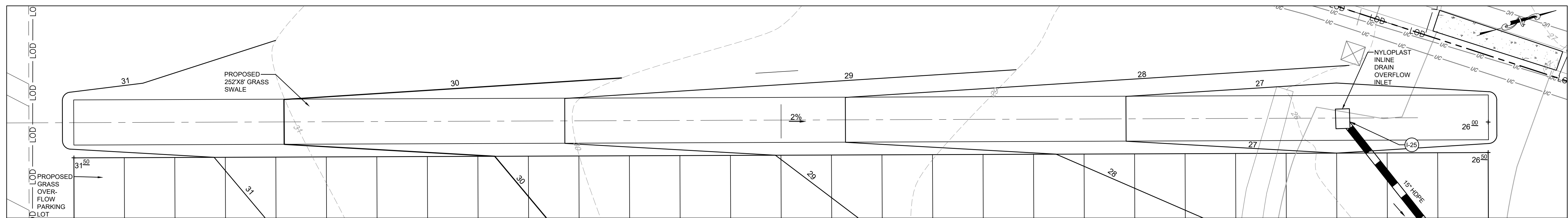
APPROVED DATE: _____
ASSISTANT CHIEF ENGINEER: _____

APPROVED DATE: _____
CHIEF, RIGHT OF WAY SERVICES: _____

SCALE: 1" = 40'
DRAWN BY: JSN/CR/SVH
CHECKED BY: JCP/PJS/JSN
SHEET 11 of 36
PROJECT #: P587900
PROPOSAL #: P587901

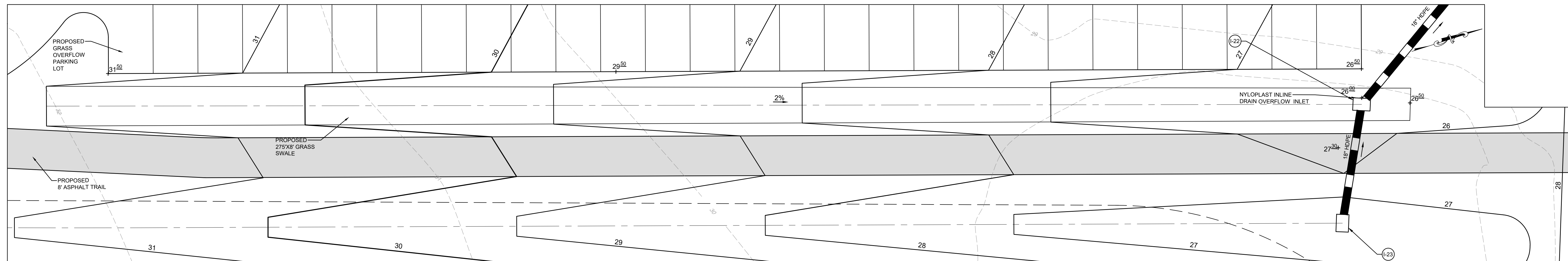
STORMWATER MANAGEMENT DETAILS
TANYARD SPRINGS PARK
CONSTRUCTION DOCUMENTS
TAX MAP 10 GRID 6 PARCEL 53
GLEN BURNIE, MD ZIP CODE 21060 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD

GP #G02019941 DWG NO: CD11



GRASS SWALE #1 DETAIL PLAN

SCALE: 1"=10'



GRASS SWALE #2 DETAIL PLAN

SCALE: 1"=10'

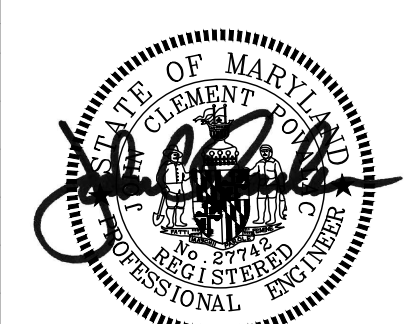
GRASS SWALE FACILITY DESIGN DATA				
	#1	#1 AS-BUILT	#2	#2 AS-BUILT
SWALE ESDv DEPTH	0.33 FT		0.33 FT	
BOTTOM WIDTH	8.00 FT		8.00 FT	
BOTTOM LENGTH	252 FT		275 FT	
BOTTOM SURFACE AREA	2000 SF		2200 SF	
SWALE SLOPE	2.0%		2.0%	
SWALE SIDE SLOPE	3:1		3:1	
STABILIZATION	MATTING AND SEED		MATTING AND SEED	
10 YR FLOW	1.90 CFS		2.40 FPS	
10 YR VELOCITY	0.63 FPS		0.68 FPS	
10 YR DEPTH	0.34 FT		0.39 FT	

NOTE:
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GP #G02019941 DWG NO: CD12

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#	REVISIONS DESCRIPTION	APPROVED BY	DATE



Pennoni

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DEPARTMENT OF PUBLIC WORKS

NOVEMBER 27, 2023

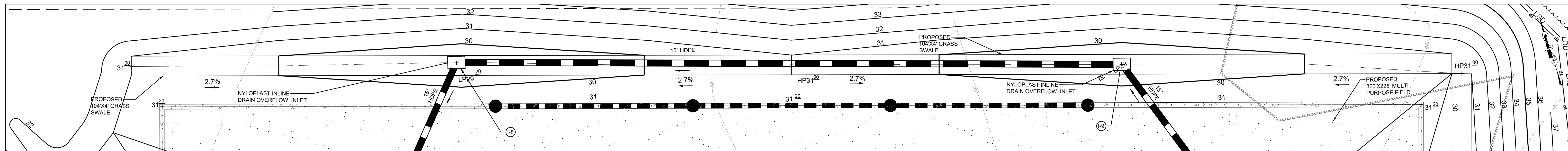
APPROVED _____ DATE _____	APPROVED _____ DATE _____	SCALE: 1" = 40'
CHIEF ENGINEER _____	PROJECT MANAGER _____	DRAWN BY: JSN/CR/SVH
APPROVAL _____ DATE _____	APPROVED _____ DATE _____	CHECKED BY: JCP/PJS/JSN
ASSISTANT CHIEF ENGINEER _____	CHIEF, RIGHT OF WAY SERVICES _____	SHEET <u>12</u> of <u>36</u>
		PROJECT #: P587900
		PROPOSAL #: P587901

STORMWATER MANAGEMENT DETAILS

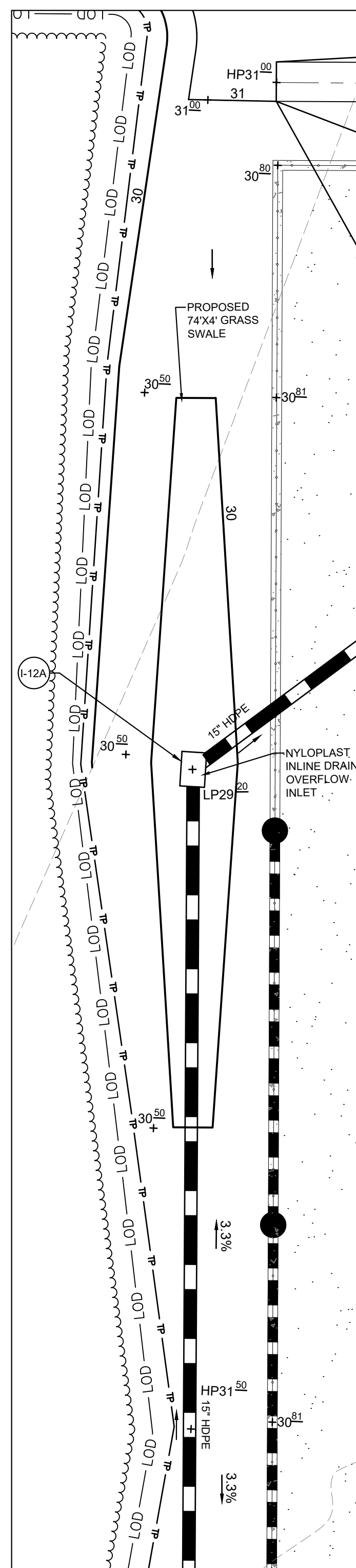
TANYARD SPRINGS PARK CONSTRUCTION DOCUMENTS

TAX MAP 10 GRID 6 PARCEL 53
GLEN BURNIE, MD ZIP CODE 21060 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD

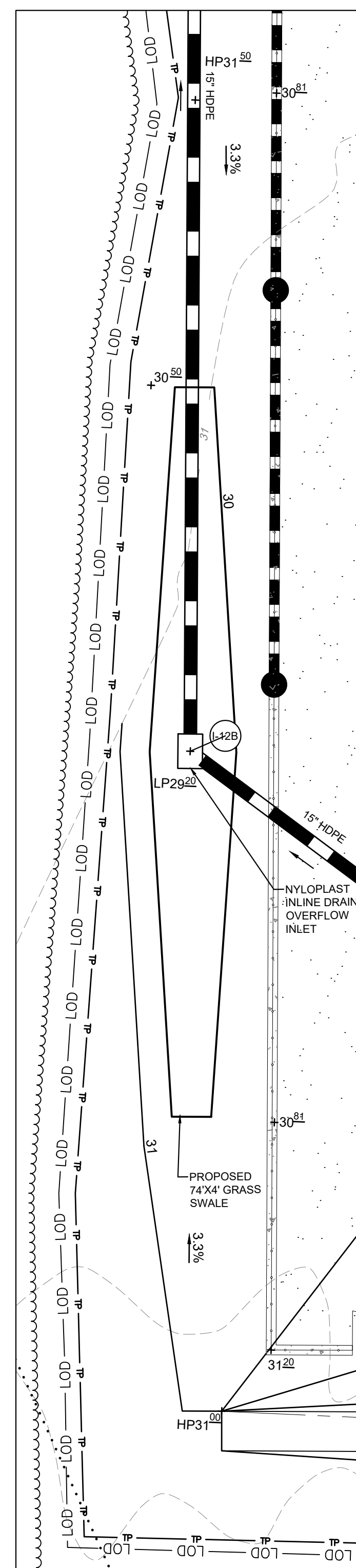
DPPW No:



GRASS SWALE #3&4 DETAIL PLAN
SCALE: 1"=10'



GRASS SWALE #8 DETAIL PLAN
SCALE: 1"=10'



GRASS SWALE #9 DETAIL PLAN
SCALE: 1"=10'

	#3	#3 AS-BUILT	#4	#4 AS-BUILT	#8	#8 AS-BUILT	#9	#9 AS-BUILT
SWALE ESDv DEPTH	0.33 FT		0.33 FT		0.33 FT		0.33 FT	
BOTTOM WIDTH	4.00 FT		4.00 FT		4.00 FT		4.00 FT	
BOTTOM LENGTH	125.0 FT		125 FT		125.0 FT		125 FT	
BOTTOM SURFACE AREA	500 SF		500 SF		500 SF		500 SF	
SWALE SLOPE	2.70%		2.70%		2.70%		2.70%	
SWALE SIDE SLOPE	3:1		3:1		3:1		3:1	
STABILIZATION	MATTING AND SEED		MATTING AND SEED		MATTING AND SEED		MATTING AND SEED	
10 YR FLOW	0.77 CFS		0.77 CFS		0.65 CFS		0.65 CFS	
10 YR VELOCITY	0.60 FPS		0.60 FPS		0.57 FPS		0.57 FPS	
10 YR DEPTH	0.27 FT		0.27 FT		0.57 FT		0.57 FT	

FACILITY TYPE #	DRAINAGE AREA (SF)	IMPERVIOUS AREA (SF)	% IMPERVIOUS AREA	SOIL TYPE	P _e PROVIDED	ESDv PROVIDED (CF)	FILTER SURFACE AREA (SF)	PONDING DEPTH (IN)	MEDIA DEPTH (FT)	MAINT.
MICROBIORETENTION #1 (M-6)	9,115	933	10%	A	2.60	281	200	6"	2	PRIVATE
MICROBIORETENTION #2 (M-6)	10,356	311	3%	A	2.60	170	200	6"	2	PRIVATE
GRASS SWALE #1 (M-8)	34,380	0	0%	A	0.58	83	2,000	4"	N/A	PRIVATE
GRASS SWALE #2 (M-8)	31,482	6,180	20%	A	0.70	416	2,200	4"	N/A	PRIVATE
TOTAL	85,333	7,424	8.7%		1.05	950				

STORMWATER MANAGEMENT DESIGN SUMMARY FOR SITE OUTFALL #1

Stormwater management for this site will utilize Environmental Site Design (ESD) micro-scaled practices and Best Management Practice (BMP) facilities. Micro-Bioretenion #1 and #2, along with Grass Swales #1 and #2 will provide the full ESDv treatment of proposed impervious surfaces.

Site Outfall #1 SWM Site Design Data:

- Site Area / Limit of Disturbance = 85,333 sq.ft. (1.95 ac.)
- Proposed Impervious Area = 7,424 sq.ft. (0.17 ac.)
- Imperviousness Percentage, %i = 8.7%

Site Outfall #1 SWM ESDv Requirements:

- Required ESD Target Rainfall, P_e = 1.0" (%i = 8.7% for Type A Hydrologic Soil Groups)
- Required Total ESDv Treatment = 909 cu.ft. (Treatment By ESD Practices and BMP Facilities)

Site Outfall#1 SWM ESDv Design Provided:

- Provided P_e = 1.05"
- Provided Total ESDv Treatment = 950 cu.ft.

FACILITY TYPE #	DRAINAGE AREA (SF)	IMPERVIOUS AREA (SF)	% IMPERVIOUS AREA	SOIL TYPE	P _e PROVIDED	ESDv PROVIDED (CF)	FILTER SURFACE AREA (SF)	PONDING DEPTH (IN)	MEDIA DEPTH (FT)	MAINT.
MICROBIORETENTION #3 (M-6)	26,444	5,900	14%	A	2.5	960	300	12"	3	PRIVATE
MICROBIORETENTION #4 (M-6)	13,468	8,907	66%	A	1.4	1,030	400	12"	3	PRIVATE
MICROBIORETENTION #5 (M-6)	8,810	5,192	59%	A	1.4	590	200	12"	3	PRIVATE
MICROBIORETENTION #6 (M-6)	19,820	13,820	70%	A	1.8	2,000	1,000	12"	2	PRIVATE
GRASS SWALE #3 (M-8)	14,033	140	1%	A	0.36	24	500	4"	N/A	PRIVATE
GRASS SWALE #4 (M-8)	13,846	138	1%	A	0.36	24	500	4"	N/A	PRIVATE
GRASS SWALE #5 (M-8)	31,862	637	2%	A	0.23	38	720	4"	N/A	PRIVATE
GRASS SWALE #6 (M-8)	26,860	537	2%	A	0.27	40	720	4"	N/A	PRIVATE
GRASS SWALE #7 (M-8)	20,116	891	4%	A	0.28	42	560	4"	N/A	PRIVATE
GRASS SWALE #8 (M-8)	11,860	130	1%	A	0.42	25	500	4"	N/A	PRIVATE
GRASS SWALE #9 (M-8)	11,755	130	1%	A	0.43	25	500	4"	N/A	PRIVATE
GRASS SWALE #10 (M-8)	47,306	5,486	12%	A	0.08	51	400	4"	N/A	PRIVATE
GRASS SWALE #11 (M-8)	42,411	1,591	4%	A	0.09	28	400	4"	N/A	PRIVATE
TOTAL	288,591	43,499	15.0%		1.10	4,878				

STORMWATER MANAGEMENT DESIGN SUMMARY FOR SITE OUTFALL #2

Stormwater management for this site will utilize Environmental Site Design (ESD) micro-scaled practices and Best Management Practice (BMP) facilities. Micro-Bioretenion #3, #4, #5, and #6 along with Grass-Swales #3, #4, #5, #6 and #7 and Sheet Flow To Conservation Areas #1 and #2 will provide the full ESDv treatment of proposed impervious surfaces.

Site Outfall #2 SWM Site Design Data:

- Site Area / Limit of Disturbance = 288,591 sq.ft. (6.62ac.)
- Proposed Impervious Area = 43,499 sq.ft. (0.99 ac.)
- Imperviousness Percentage, %i = 15%

Site Outfall #2 SWM ESDv Requirements:

- Required ESD Target Rainfall, P_e = 1.0" (%i = 14.3% for Type A Hydrologic Soil Groups)
- Required Total ESDv Treatment = 4,435 cu.ft. (Treatment By ESD Practices and BMP Facilities)

Site Outfall #2 SWM ESDv Design Provided:

- Provided P_e = 1.10"
- Provided Total ESDv Treatment = 4,878 cu.ft.

DESIGN NARRATIVE

THIS PROJECT IS A CONSTRUCTION OF 8.75 AC PARK. THIS PARK CONSISTS OF ONE BASEBALL FIELD, ONE MULTIPURPOSE FIELD ENCLOSED BY A CHAIN LINK FENCE ALONG WITH A PLAYGROUND WITH PLAY STRUCTURES AND A PARK PAVILION. ONE ENTRANCE ALONG HERITAGE CROSSING ROAD HAS BEEN PROVIDED. A PAVED PARKING LOT AND A GRASS OVERFLOW LOT HAS ALSO BEEN PROPOSED FOR THE PARK. THE PAVED LOT CONTAINS 38 PARKING SPACES, INCLUDING 7 ACCESSIBLE SPACES. THE OVERFLOW LOT CAN PARK UP TO APPROXIMATELY 150 SPACES. THIS PARK HAS ALSO BEEN PROVIDED WITH AN EIGHT FOOT WIDE PATH THAT CONNECTS ALL THE FIELDS, PLAYGROUND AND PAVILION AS WELL AS TANYARD TRAIL.

STORMWATER MANAGEMENT WILL BE SATISFIED BY PROVIDING SIX (6) MICRO-BIORETENTION FACILITIES, SEVEN (7) GRASS SWALES, AND TWO (2) SHEET FLOW TO CONSERVATION AREAS. THE OFFSITE DRAINAGE FROM THE EASTERN SIDE OF THE PROPERTY WILL BE PICKED UP BY PROPOSED INLETS AND DISCHARGED INTO EXISTING INLETS.

NOTE:

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GP #G02019941 DWG NO: CD13

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REVISIONS	APPROVED
DESCRIPTION	BY DATE

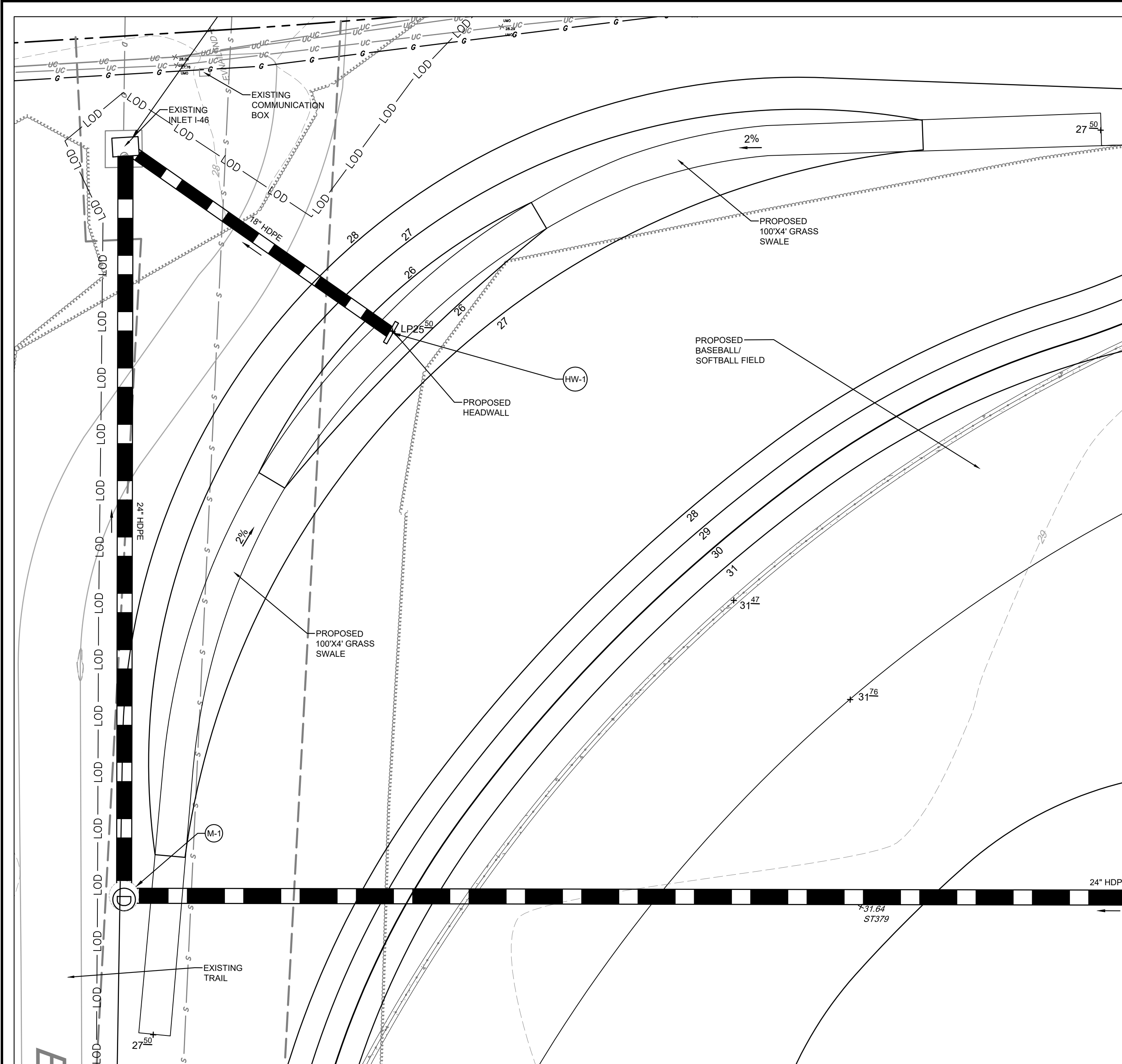
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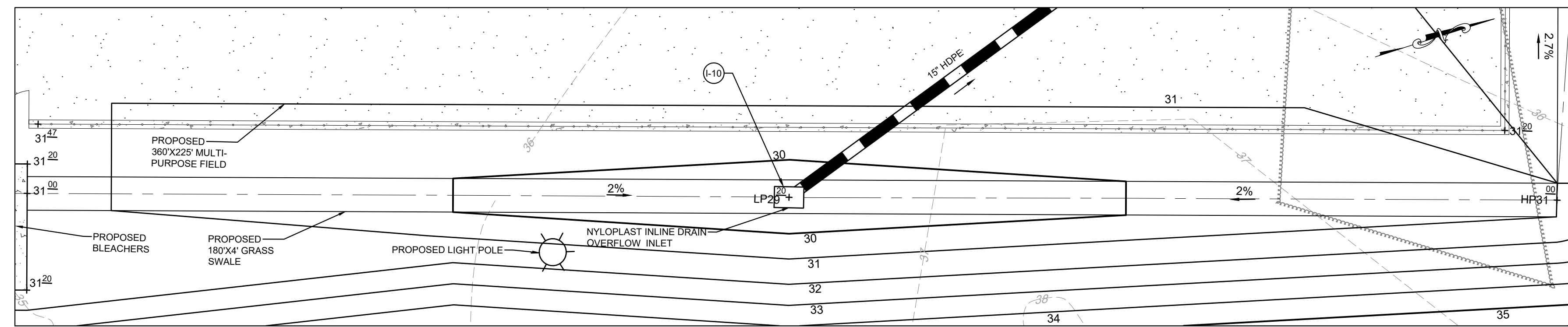
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SCALE: 1" = 40'
DRAWN BY: JSN/CR/SVH
CHECKED BY: JCP/PJS/JSN
SHEET 13 of 36
PROJECT #: P587900
PROPOSAL #: P587901

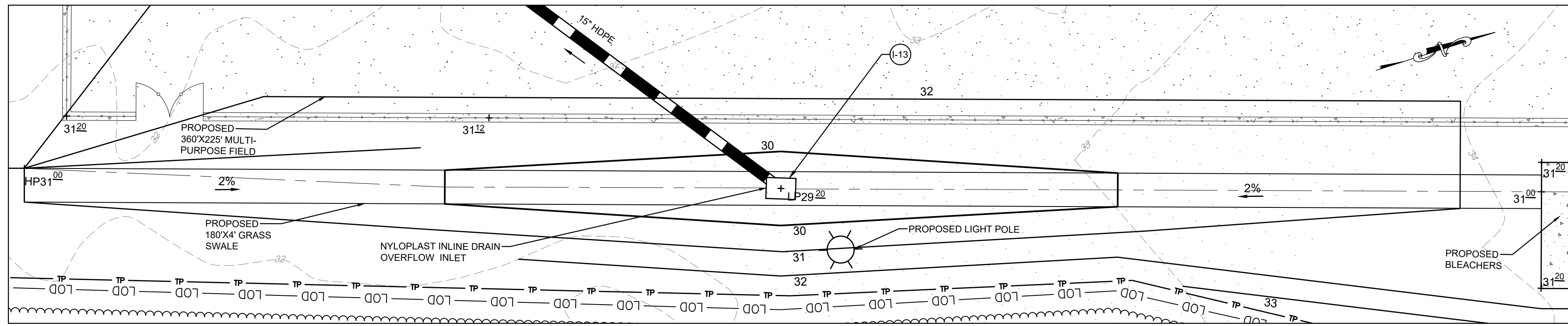
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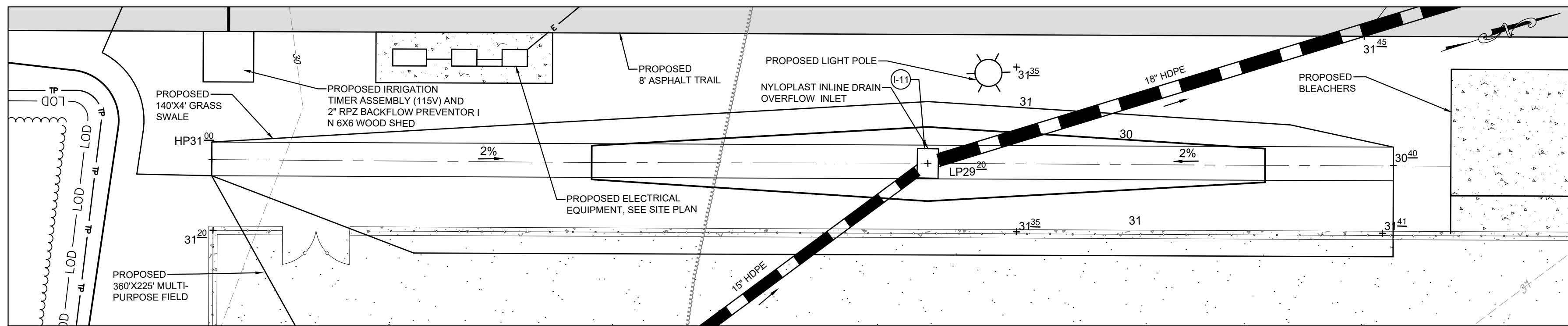
GRASS SWALE #10 & #11 DETAIL PLAN
SCALE: 1"=10'



GRASS SWALE #5 DETAIL PLAN
SCALE: 1"=10'



GRASS SWALE #6 DETAIL PLAN
SCALE: 1"=10'



GRASS SWALE #7 DETAIL PLAN
SCALE: 1"=10'

GRASS SWALE FACILITY DESIGN DATA										
	#5	#5 AS-BUILT	#6	#6 AS-BUILT	#7	#7 AS-BUILT	#10	#10 AS-BUILT	#11	#11 AS-BUILT
SWALE ESDv DEPTH	0.33 FT		0.33 FT		0.33 FT		0.33 FT		0.33 FT	
BOTTOM WIDTH	4.00 FT		4.00 FT		4.00 FT		4.00 FT		4.00 FT	
BOTTOM LENGTH	180.00 FT		180.00 FT		140.00 FT		100.00 FT		100.00 FT	
BOTTOM SURFACE AREA	720.00 FT		720.00 FT		560.00 FT		400.00 FT		400.00 FT	
SWALE SLOPE	2.0%		2.00%		2.00%		2.00%		2.00%	
SWALE SIDE SLOPE	3:1		3:1		3:1		3:1		3:1	
STABILIZATION	MATTING AND SEED		MATTING AND SEED		MATTING AND SEED		MATTING AND SEED		MATTING AND SEED	
10 YR FLOW	1.81 CFS		1.53 CFS		1.20 CFS		3.22 CFS		2.53 CFS	
10 YR VELOCITY	0.71 FPS		0.68 FPS		0.63 FPS		0.85 FPS		0.79 FPS	
10 YR DEPTH	0.47 FT		0.43 FT		0.37 FT		0.25 FT		0.22 FT	

NOTE:
SOD TO BE USED AS SAME DAY STABILIZATION AROUND SWM FACILITIES.

PROFESSIONAL CERTIFICATION: I, JOHN C. POVALAC, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 27742 EXPIRATION DATE 07/18/2024

REVISIONS	APPROVED
#	DESCRIPTION

Pennoni
PENNONI ASSOCIATES INC.
8890 McGaw Road, Suite 100
Columbia, MD 21045
T 410.997.8900 F 410.997.9282

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS
NOVEMBER 27, 2023

APPROVED _____ DATE _____
CHIEF ENGINEER

APPROVED _____ DATE _____
PROJECT MANAGER

APPROVED _____ DATE _____
ASSISTANT CHIEF ENGINEER

APPROVED _____ DATE _____
CHIEF, RIGHT OF WAY SERVICES

SCALE: 1" = 40'
DRAWN BY: JSN/CR/SVH
CHECKED BY: JCP/PJS/JSN
SHEET 14 of 36
PROJECT #: P587900
PROPOSAL #: P587901

STORMWATER MANAGEMENT DETAILS
TANYARD SPRINGS PARK
CONSTRUCTION DOCUMENTS
TAX MAP 10 GRID 6 PARCEL 53
GLEN BURNIE, MD ZIP CODE 21060 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD

GP #G02019941 DWG NO: CD14

DPW No:

MICROBIORETENTION FACILITY AND SPECIFICATIONS

- WHERE REQUIRED, THE UNDERDRAIN PIPE MUST BE 4-INCH DIAMETER SCHEDULE 40 OR STRONGER PERFORATED PVC PIPE AT 0.00% SLOPE. THREE INCHES OF GRAVEL MUST BE PLACED UNDER THE PIPE, WITH A MINIMUM OF 6 INCHES OF GRAVEL OVER THE PIPE. PERFORATIONS MUST BE 3/8 INCH IN DIAMETER AND MUST BE LOCATED 4 INCHES ON CENTER, EVERY 90 DEGREES AROUND THE PIPE. PERFORATED PIPE MUST BEGIN AT LEAST 5FT. INSIDE THE FILTER MEDIA. FILTER FABRIC MUST NOT BE WRAPPED AROUND THE UNDERDRAIN PIPE.
- WHERE REQUIRED FOR UNDERDRAINS, 4" INCH CLEAN-OUTS SHOULD BE USED. CLEANOUTS FOR EACH PIPE SHOULD EXTEND 6 INCHES ABOVE THE TOP OF THE PLANTING MEDIA AND HAVE A REMOVABLE CAP.
- THE GRAVEL LAYER SURROUNDING THE UNDERDRAIN PIPES MUST MEET MSHA SIZE #7 (TABLE 901A), AND MUST PROVIDE A MINIMUM OF 6 INCHES COVER OVER THE PIPE, AND MINIMUM 3 INCHES UNDER THE PIPE. NO GEOTEXTILE OR FILTER FABRIC IS ALLOWED ANYWHERE WITHIN THE FILTER MEDIA (STONE OR SAND).
- A MINIMUM 6-INCH FINE AGGREGATE SAND LAYER SHALL BE PROVIDED BELOW THE SOIL FILTER/PLANTING MEDIA. THE SAND MUST MEET GRADATION REQUIREMENTS FOR WASHED ASTM C33 FINE AGGREGATE CONCRETE SAND. AASHTO M-6 GRADATION IS ALSO ACCEPTABLE. SAND MUST BE SILICA BASED. NO LIMESTONE BASED PRODUCTS MAY BE USED. IF MATERIAL IS WHITE OR GREY IN COLOR, IT IS PROBABLY NOT ACCEPTABLE. SAND MUST BE CLEAN, NATURAL, UNWASHED SAND DEPOSITS MAY NOT BE USED. LIKEWISE, SAND THAT HAS BECOME CONTAMINATED BY IMPROPER STORAGE OR INSTALLATION PRACTICES WILL BE REJECTED. MANUFACTURED SAND OR STONE DUST IS NOT ACCEPTABLE.
- A MINIMUM 4-INCH PEA GRAVEL LAYER SHALL BE PROVIDED BETWEEN THE SAND AND THE STONE.
- THE PLANTING MEDIA MIX SHALL MEET SHA BIORETENTION SOIL MIX STANDARDS. THE SOIL SHALL MEET THE FOLLOWING MINIMUM CRITERIA: A HOMOGENEOUS MIXTURE COMPOSED OF 5 PARTS COARSE SAND, 3 PARTS BASE SOIL, AND 2 PARTS FINE BARK. THE SOIL SHALL BE FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN 2 INCHES. THE PLANTING MATERIAL SHALL BE FLOODED AFTER PLACEMENT. ANY SETTLEMENT THAT OCCURS SHALL BE FILLED BACK TO THE DESIGN ELEVATION.
- THE SURFACE MULCH LAYER WILL CONSIST OF STANDARD FINE SHREDDED AGED HARDWOOD MULCH. THE MULCH SHOULD BE UNIFORMLY TO A DEPTH OF 2 TO 3 INCHES. YEARLY REPLISHING MAY BE NECESSARY. PINE BARK IS NOT ACCEPTABLE.

OPERATION AND MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION (M-6)

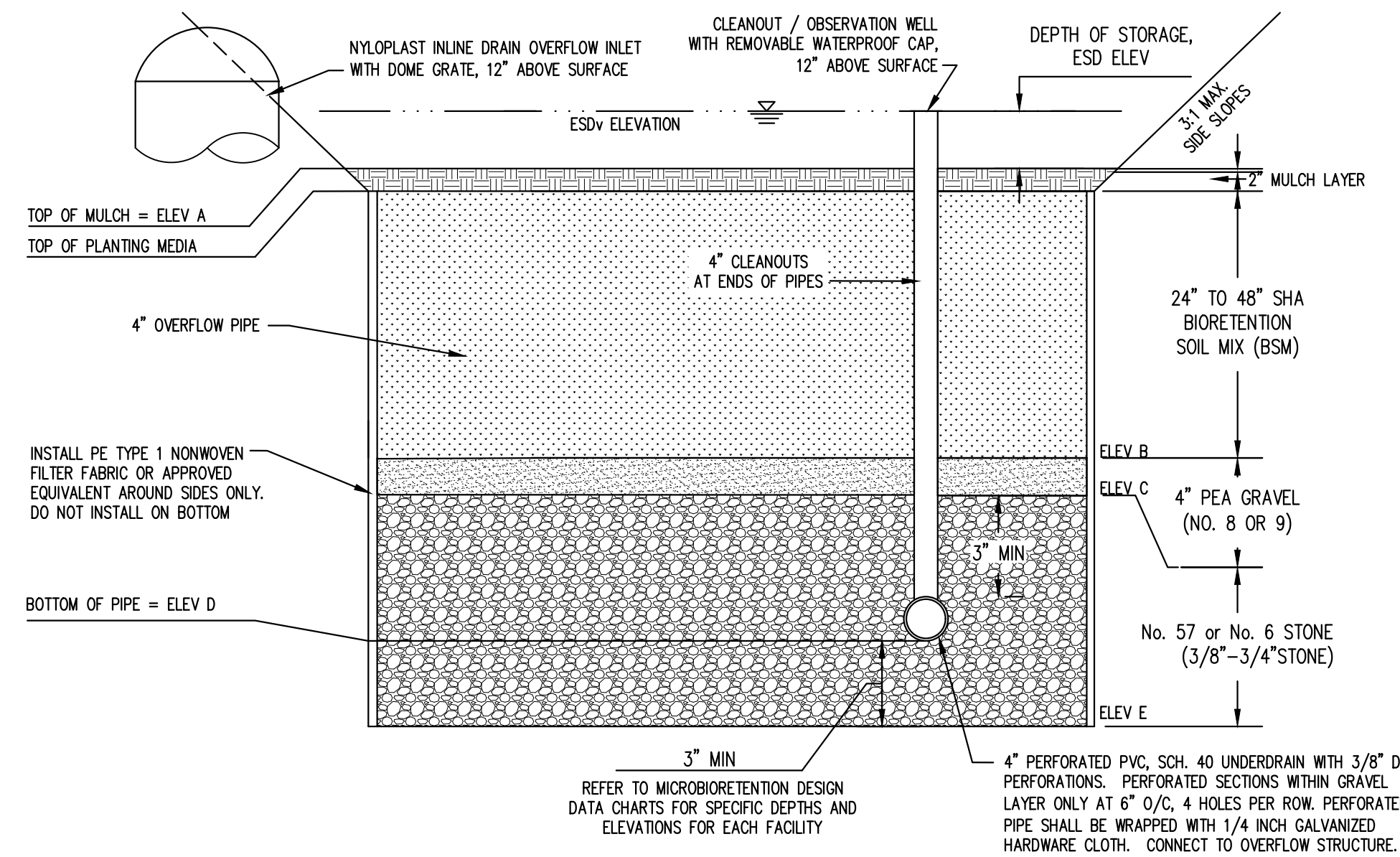
- ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A.4.1 AND 2.
- SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.
- MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
- SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

MICROBIORETENTION FACILITY SEQUENCE OF CONSTRUCTION

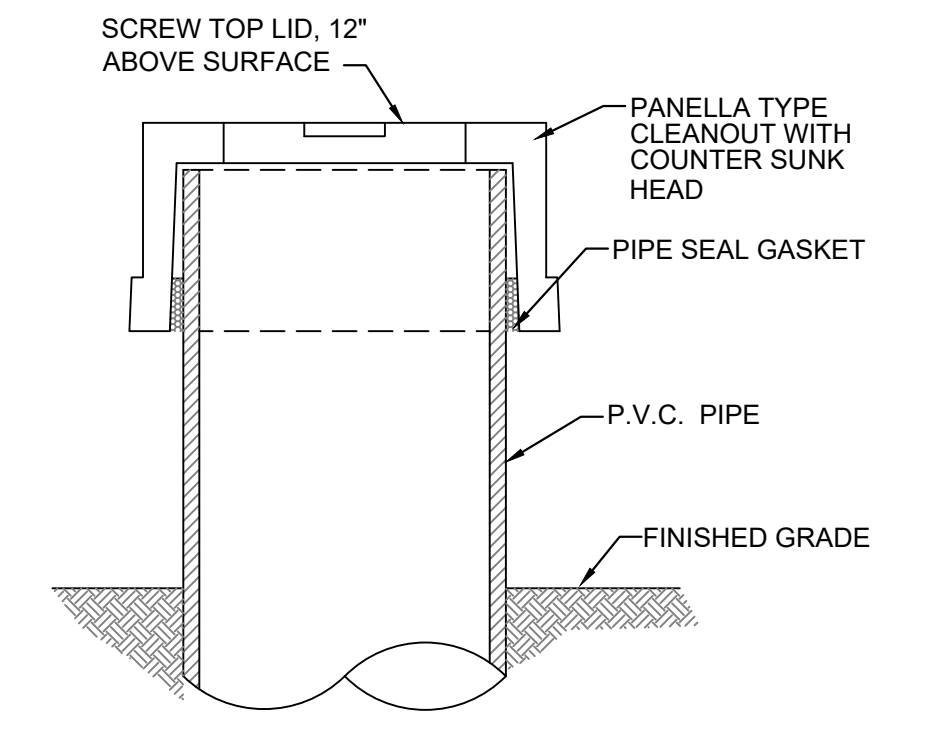
- DO NOT BEGIN MICROBIORETENTION FACILITY INSTALLATION UNTIL SITE UPSTREAM OF THE FACILITY IS STABILIZED AND FINE GRADING HAS BEEN COMPLETED.
- STAKEOUT LIMITS OF THE FACILITY. COORDINATE WITH THE ENGINEER TO VERIFY DIMENSIONS AND ENSURE THAT ENOUGH STAKEOUT INFORMATION IS PROVIDED TO ACCURATELY CONSTRUCT FACILITY. (1 DAY)
- EXCAVATE MICROBIORETENTION FACILITY. CONSTRUCTION SHALL BE PERFORMED WITH LIGHTWEIGHT, WIDE-TRACKED EQUIPMENT TO MINIMIZE DISTURBANCE AND COMPACTION. IT IS RECOMMENDED THAT THE ENGINEER BE CONTACTED TO VERIFY AND SURVEY LIMITS OF EXCAVATION UPON COMPLETION OF EXCAVATION, PRIOR TO PIPE AND UNDERDRAIN CONSTRUCTION AND MATERIAL BACKFILL. EXCAVATED MATERIALS SHALL BE PLACED IN A CONTAINED AREA. (1 DAY)
- PLACE STONE AND UNDERDRAINS. (1 DAY)
- PLACE SAND LAYER IN LIFTS OF THREE INCHES. (0.5 DAY)
- PLACE PLANTING SOIL AND OBSERVATION WELLS. (1 DAY)
- PLACE MULCH. (0.5 DAY)
- INSTALL PLANT MATERIAL. (1 DAY)
- STABILIZE MICROBIORETENTION FACILITY AREA. (0.5 DAY)
- PREPARE AND SUBMIT AS-BUILTS TO COUNTY.

CONSTRUCTION CRITERIA FOR MICRO BIORETENTION (M-6)

- EROSION AND SEDIMENT CONTROL: MICRO BIORETENTION PRACTICES SHOULD NOT BE CONSTRUCTED UNTIL THE CONTRIBUTING DRAINAGE AREA IS STABILIZED. IF THIS IS IMPRACTICAL, RUNOFF FROM DISTURBED AREAS SHALL BE DIVERTED AWAY AND NO SEDIMENT CONTROL PRACTICES SHALL BE USED NEAR THE PROPOSED LOCATION.
- SOIL COMPACTION: EXCAVATION SHOULD BE CONDUCTED IN DRY CONDITIONS WITH EQUIPMENT LOCATED OUTSIDE OF THE PRACTICE TO MINIMIZE BOTTOM AND SIDEWALL COMPACTION. ONLY LIGHTWEIGHT, LOW GROUND-CONTACT EQUIPMENT SHOULD BE USED WITHIN MICRO BIORETENTION PRACTICES AND THE BOTTOM SCARIFIED A MINIMUM OF 6" BEFORE INSTALLING UNDERDRAINS AND FILTERING MEDIA.
- UNDERDRAIN INSTALLATION: GRAVEL FOR THE UNDERDRAIN SYSTEM SHALL BE CLEAN, WASHED, AND FREE OF FINES. UNDERDRAIN PIPES SHOULD BE CHECKED TO ENSURE THAT BOTH THE MATERIAL AND PERFORATIONS MEET SPECIFICATIONS. THE UPSTREAM ENDS OF THE UNDERDRAIN PIPE SHOULD BE CAPPED PRIOR TO INSTALLATION.
- FILTER MEDIA INSTALLATION: MICRO BIORETENTION SOILS MAY BE MIXED ON-SITE BEFORE PLACEMENT. HOWEVER, SOILS SHOULD NOT BE PLACED UNDER SATURATED CONDITIONS. THE FILTER MEDIA SHOULD BE PLACED AND GRADED USING EXCAVATORS OR BACKHOES OPERATING ADJACENT TO THE PRACTICE AND BE PLACED IN HORIZONTAL LAYERS (12 INCHES PER LIFT MAXIMUM). PROPER COMPACTION OF THE MEDIA WILL OCCUR NATURALLY. SPRAYING OR SPRINKLING WATER ON EACH LIFT UNTIL SATURATED MAY QUICKEN SETTLING TIMES.
- LANDSCAPE INSTALLATION: THE OPTIMUM PLANTING TIME IS DURING THE FALL. SPRING PLANTING IS ALSO ACCEPTABLE BUT MAY REQUIRE ADDITIONAL WATERING.



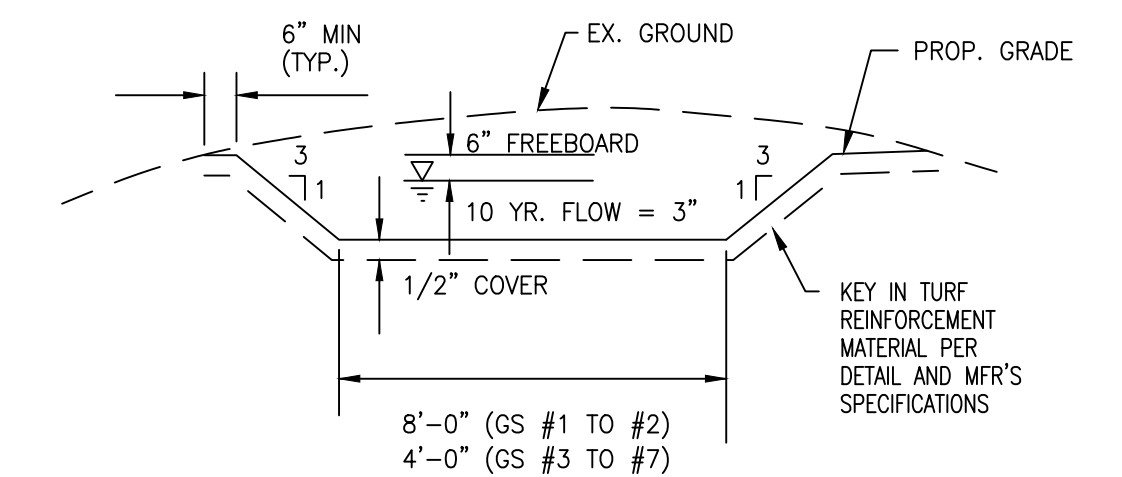
1 MICROBIORETENTION TYPICAL SECTION
15 NOT TO SCALE



NOTES:

- EACH OBSERVATION WELL / CLEANOUT SHALL INCLUDE THE FOLLOWING:
- FOR AN UNDERGROUND FLUSH MOUNTED OBSERVATION WELL / CLEANOUT, PROVIDE A TUBE MADE OF NON-CORROIVE MATERIAL, SCHEDULE 40 OR EQUAL, AT LEAST THREE FEET LONG WITH AN INSIDE DIAMETER OF AT LEAST 4" INCHES.
 - THE TUBE SHALL HAVE A FACTORY ATTACHED CAST IRON OR HIGH IMPACT PLASTIC COLLAR WITH RIBS TO PREVENT ROTATION WHEN REMOVING SCREW TOP LID. THE SCREW TOP LID SHALL BE CAST IRON OR HIGH IMPACT PLASTIC THAT WILL WITHSTAND ULTRA-VIOLET RAYS.
 - ON THE CAP OF THE OBSERVATION WELL MARK THE DEPTH TO THE BOTTOM OF THE SHA BIORETENTION SOIL MIX WITH AN INDELIBLE PEN.

2 CLEAN-OUT / OBSERVATION WELL CAP
15 NOT TO SCALE



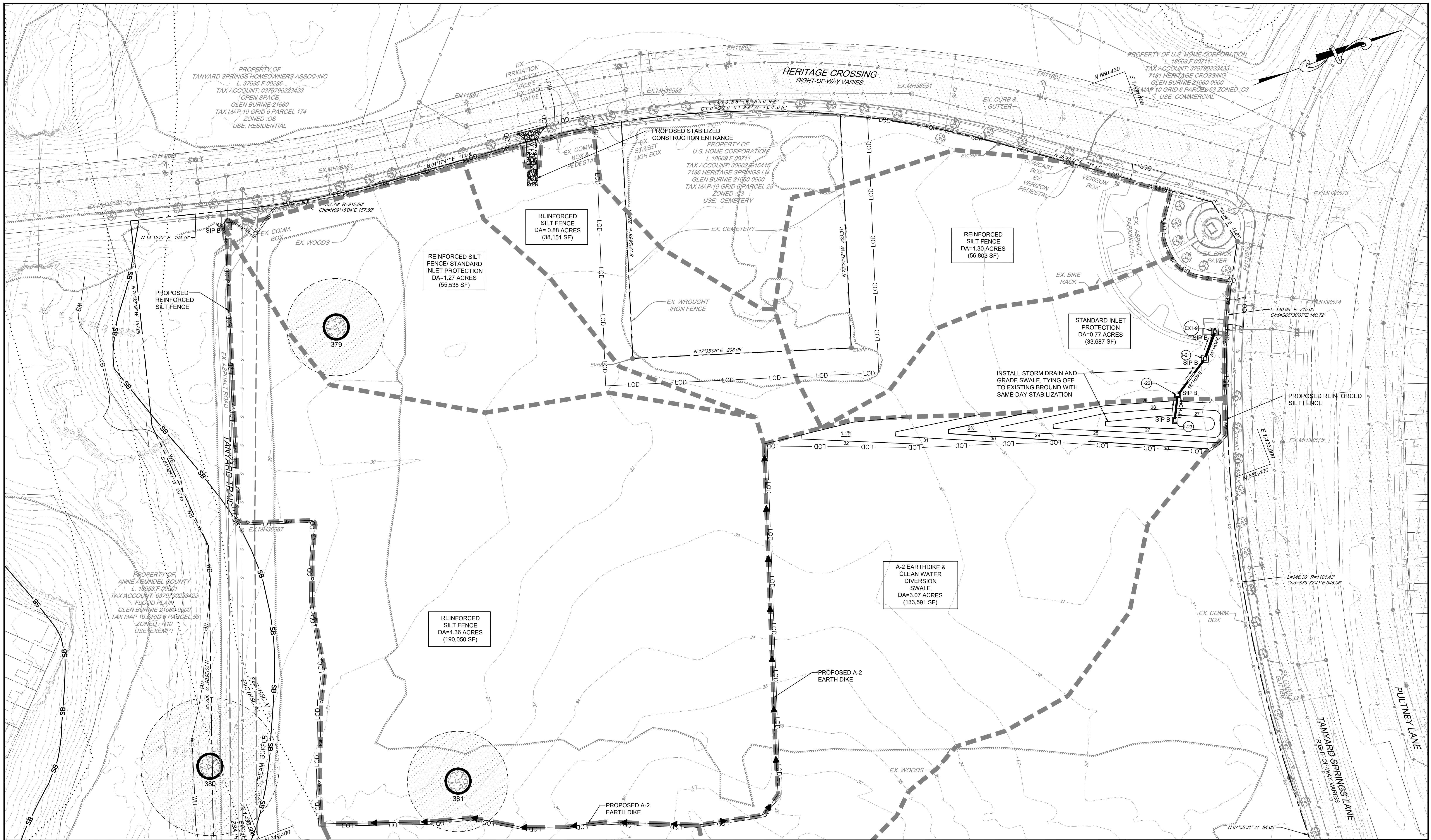
NOTES:

- INSTALL THE MATERIAL PER THE MANUFACTURER'S INSTRUCTIONS INCLUDING SUFACE PREPARATION AND STAPLING. IT IS VERY IMPORTANT THAT THE MATERIAL BE INSTALLED IN GOOD CONTACT WITH THE GROUND WITH NO WRINKLES OR VOID SPACES BELOW THE FABRIC. STAPLES MUST BE PLACED IN A DIAMOND PATTERN APPROXIMATELY 18" APART.
- FILL VOIDS IN THE MATERIAL WITH TOPSOIL BEFORE SODDING OR SEEDING DO NOT PLACE MORE THAN ONE HALF INCH (1/2") OF TOPSOIL OVER THE MATERIAL. THE MATERIAL MUST BE WITHIN THE ROOT ZONE FOR IT TO FUNCTION PROPERLY.
- MATERIAL MUST BE ENKAMAT 7010, ENKAMAT 7020, TENSAR TM-3000, PYRAMAT, OR OTHER MCDPS APPROVED EQUIVALENT. TO BE CONSIDERED AS AN EQUIVALENT, THE MATERIAL MUST BE A SINGLE BONDED TURF REINFORCEMENT MATERIAL.
- TURF REINFORCEMENT IS NOT MEANT TO SERVE AS AN EROSION CONTROL MAT. IF NECESSARY, A BIODEGRADABLE MATERIAL SUCH AS EXVELSIOR MAY BE PLACE OVER THE PREPARED SEED BED TO HOLD THE SEED IN PLACE. THE PURPOSE OF THE TURF REINFORCEMENT MATERIAL IS TO ADD STRENGTH TO THE ROOT SYSTEM AFTER GERMINATION.

3 GRASS SWALE TYPICAL SECTION
15 NOT TO SCALE

DPW No:

PROFESSIONAL CERTIFICATION: I, <u>JOHN C. POVALAC, PE</u> , CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # <u>27742</u> EXPIRATION DATE <u>07/18/2024</u>		ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS NOVEMBER 27, 2023	
REVISIONS # DESCRIPTION APPROVED BY DATE		APPROVED DATE	
PENNONI ASSOCIATES INC. 8890 McGaw Road, Suite 100 Columbia, MD 21045 T 410.997.8900 F 410.997.9282		APPROVAL DATE CHIEF ENGINEER ASSISTANT CHIEF ENGINEER	APPROVED DATE PROJECT MANAGER CHIEF, RIGHT OF WAY SERVICES
		SCALE: 1" = 40'	STORMWATER MANAGEMENT NOTES & DETAILS
		DRAWN BY: JSN/CR/SVH	
		CHECKED BY: JCP/PJS/JSN	
		SHEET 15 of 36	
		PROJECT #: P587900	TANYARD SPRINGS PARK CONSTRUCTION DOCUMENTS TAX MAP 10 GRID 6 PARCEL 53 GLEN BURNIE, MD ZIP CODE 21060 3RD DISTRICT ANNE ARUNDEL COUNTY, MD
		PROPOSAL #: P587901	

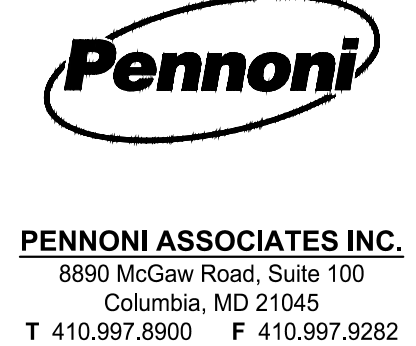
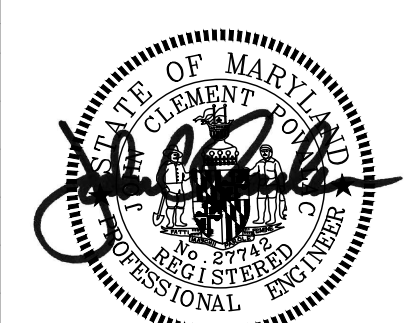


MATCHLINE - SEE SHEET 17

GP #G02019941 DWG NO: CD16

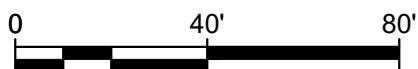
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#	REVISIONS DESCRIPTION	APPROVED BY	DATE



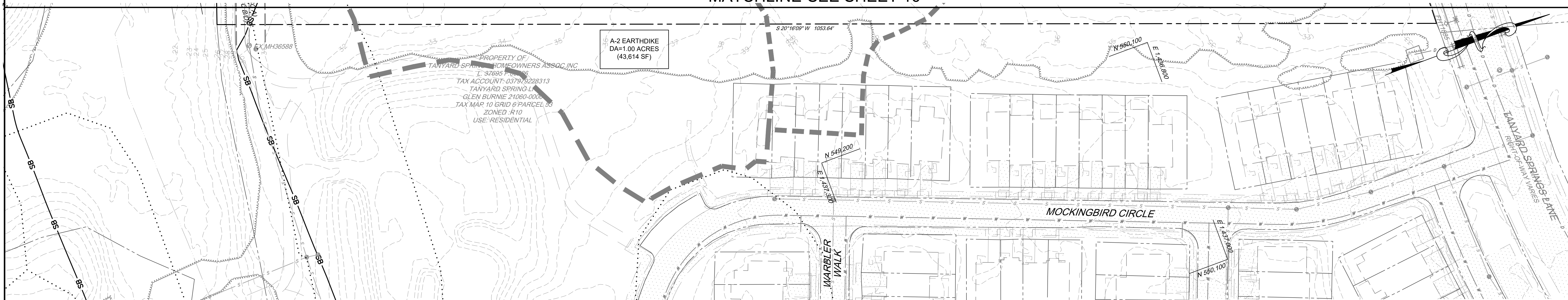
ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS
NOVEMBER 27, 2023

APPROVED _____ DATE _____	APPROVED _____ DATE _____	SCALE: 1" = 40'
CHIEF ENGINEER _____	PROJECT MANAGER _____	DRAWN BY: JSN/CR/SVH
APPROVAL _____ DATE _____	APPROVED _____ DATE _____	CHECKED BY: JCP/PJS/JSN
ASSISTANT CHIEF ENGINEER _____	CHIEF, RIGHT OF WAY SERVICES _____	SHEET 16 of 36
		PROJECT #: P587900
		PROPOSAL #: P587901



PHASE I SEDIMENT CONTROL PLAN
TANYARD SPRINGS PARK
CONSTRUCTION DOCUMENTS
TAX MAP 10 GRID 6 PARCEL 53
GLEN BURNE, MD ZIP CODE 21060 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD

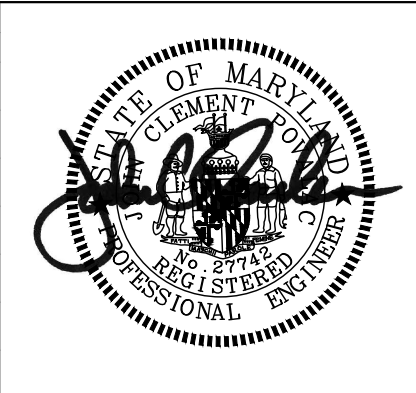
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GP #G02019941 DWG NO: CD17

PROFESSIONAL CERTIFICATION: I, JOHN C. POVALAC, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 22742 EXPIRATION DATE 07/18/2024

#	REVISIONS DESCRIPTION	APPROVED BY	DATE



Pennoni

PENNONI ASSOCIATES INC.
8890 McGaw Road, Suite 100
Columbia, MD 21045
T 410.997.8900 F 410.997.9282

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DEPARTMENT OF PUBLIC WORKS
NOVEMBER 27, 2023

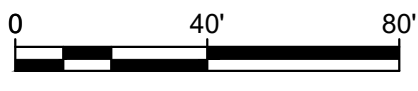
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CHIEF ENGINEER		PROJECT MANAGER	
APPROVAL _____	DATE _____	APPROVED _____	DATE _____
ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY SERVICES	

SCALE: 1" = 40'
DRAWN BY: JSN/CR/SVH
CHECKED BY: JCP/PJS/JSN
SHEET 17 of 36
PROJECT #: P587900
PROPOSAL #: P587901

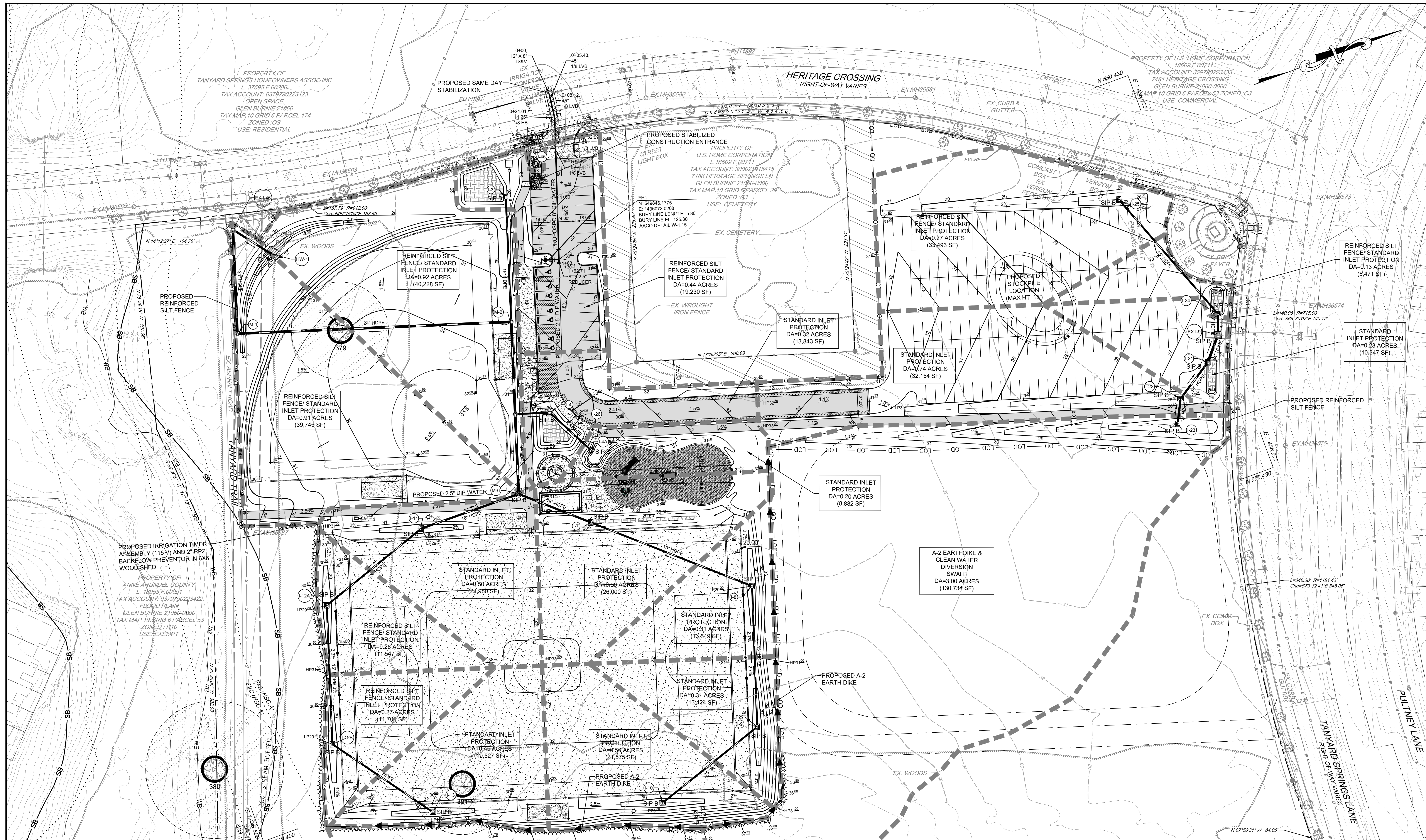
PHASE I SEDIMENT CONTROL PLAN

TANYARD SPRINGS PARK
CONSTRUCTION DOCUMENTS

TAX MAP 10 GRID 6 PARCEL 53
GLEN BURNIE, MD ZIP CODE 21060 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD



DPPW No:



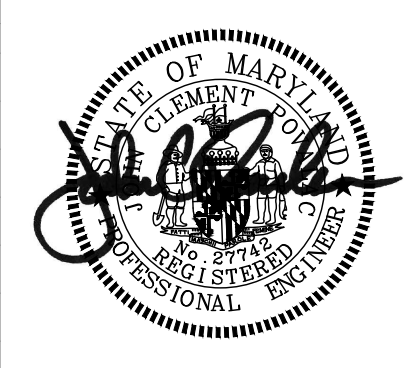
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GP #G02019941 DWG NO: CD18

PROFESSIONAL CERTIFICATION: I, JOHN C. POVALAC, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 27742 EXPIRATION DATE 07/18/2024

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS
NOVEMBER 27, 2023

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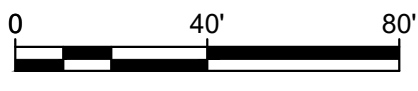
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APPROVED _____ DATE _____
CHIEF ENGINEER
APPROVAL _____ DATE _____
ASSISTANT CHIEF ENGINEER

APPROVED _____ DATE _____
PROJECT MANAGER
APPROVED _____ DATE _____
CHIEF, RIGHT OF WAY SERVICES

SCALE: 1" = 40'
DRAWN BY: JSN/CR/SVH
CHECKED BY: JCP/PJS/JSN
SHEET 18 of 36
PROJECT #: P587900
PROPOSAL #: P587901

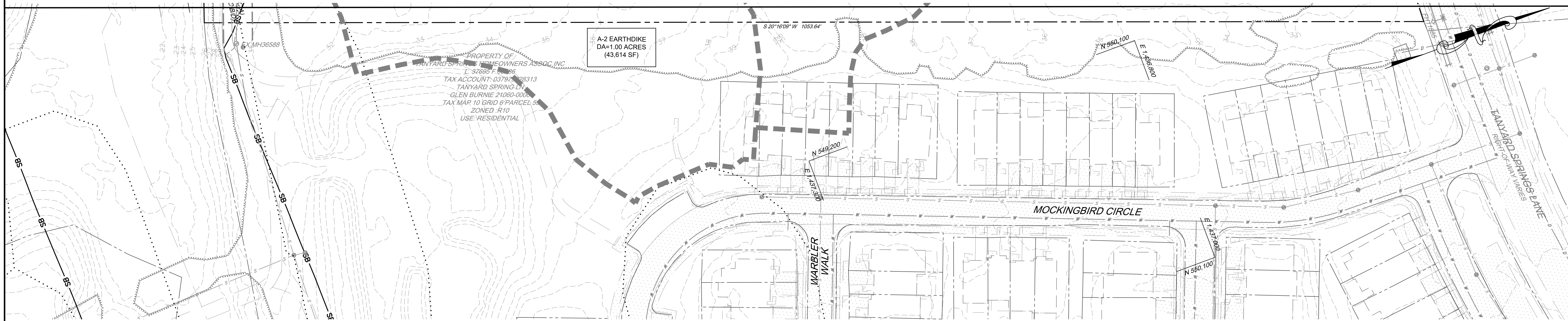
PHASE II SEDIMENT CONTROL PLAN
TANYARD SPRINGS PARK
CONSTRUCTION DOCUMENTS
TAX MAP 10 GRID 6 PARCEL 53
GLEN BURNIE, MD ZIP CODE 21060 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD



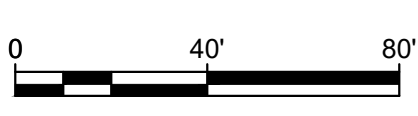
DPW No:

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MATCHLINE-SEE SHEET 18



BPW No:



GP #G02019941 DWG NO: CD19

PROFESSIONAL CERTIFICATION: I, JOHN C. POVALAC, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 27742 EXPIRATION DATE 07/18/2024

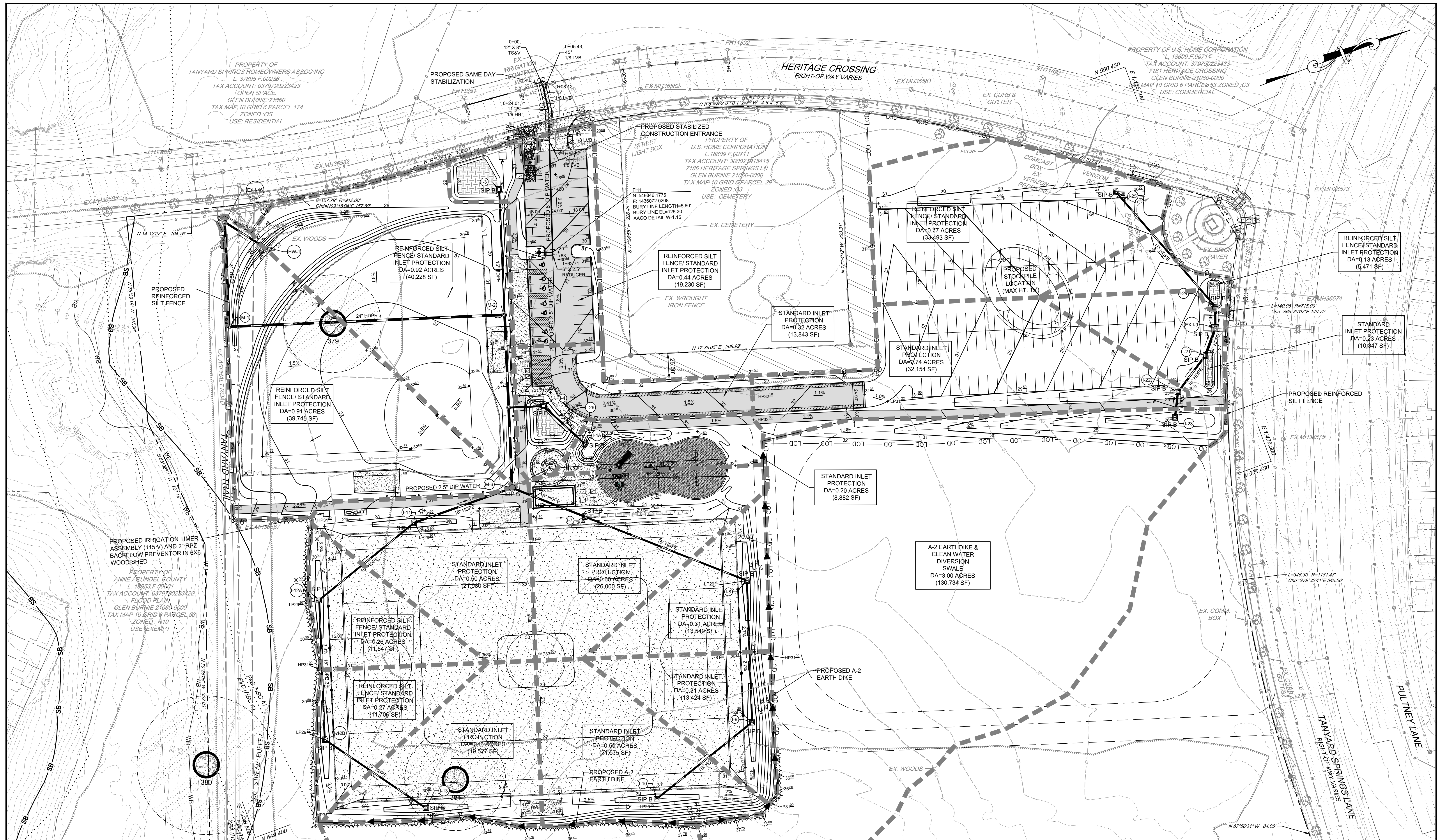
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ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS
 NOVEMBER 27, 2023

APPROVED _____ DATE _____	APPROVED _____ DATE _____	SCALE: 1" = 40'	PHASE II SEDIMENT CONTROL PLAN TANYARD SPRINGS PARK CONSTRUCTION DOCUMENTS TAX MAP 10 GRID 6 PARCEL 53 GLEN BURNIE, MD ZIP CODE 21060 3RD DISTRICT ANNE ARUNDEL COUNTY, MD
CHIEF ENGINEER _____	PROJECT MANAGER _____	DRAWN BY: JSN/CR/SVH	
APPROVAL _____ DATE _____	APPROVED _____ DATE _____	CHECKED BY: JCP/PJS/JSN	
ASSISTANT CHIEF ENGINEER _____	CHIEF, RIGHT OF WAY SERVICES _____	SHEET <u>19</u> of <u>36</u>	
		PROJECT #: P587900	
		PROPOSAL #: P587901	

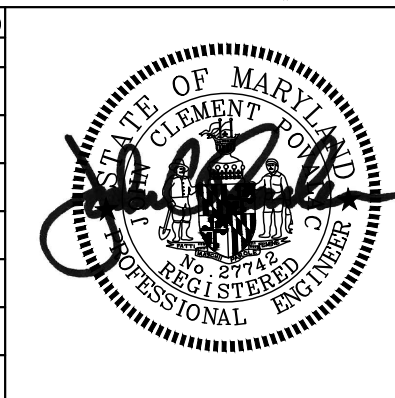


MATCHLINE-SEE SHEET 21

GP #G02019941 DWG NO: CD20

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ANNE ARUNDEL COUNTY

DEPARTMENT OF PUBLIC WORKS

NOVEMBER 27, 2023

APPROVED	DATE
CHIEF ENGINEER	
APPROVAL	DATE
ASSISTANT CHIEF ENGINEER	

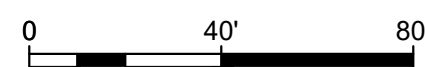
APPROVED	DATE
PROJECT MANAGER	
APPROVED	DATE
CHIEF, RIGHT OF WAY SERVICES	

SCALE: 1" = 40'
DRAWN BY: JSN/CR/SVH
CHECKED BY: JCP/PJS/JSN
SHEET 20 of 36
PROJECT #: P587900
PROPOSAL #: P587901

PHASE III SEDIMENT CONTROL PLAN

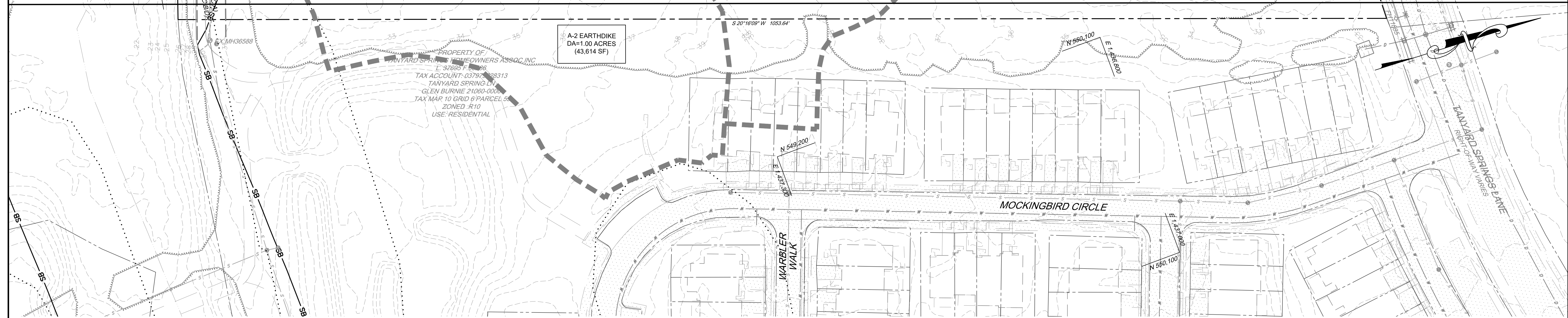
TANYARD SPRINGS PARK
CONSTRUCTION DOCUMENTS

TAX MAP 10 GRID 6 PARCEL 53
GLEN BURNIE, MD ZIP CODE 21060 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD

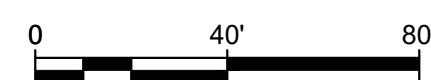


DPW No:

MATCHLINE-SEE SHEET 20



DPW No:



PROFESSIONAL CERTIFICATION: I, JOHN C. POVALAC, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 27742 EXPIRATION DATE 07/18/2024

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GP #G02019941		DWG NO: CD21	
ANNE ARUNDEL COUNTY			
DEPARTMENT OF PUBLIC WORKS			
NOVEMBER 27, 2023			
APPROVED _____	DATE _____	APPROVED _____	DATE _____
CHIEF ENGINEER _____		PROJECT MANAGER _____	
APPROVAL _____	DATE _____	APPROVED _____	DATE _____
ASSISTANT CHIEF ENGINEER _____		CHIEF, RIGHT OF WAY SERVICES _____	
SCALE: 1" = 40'		DRAWN BY: JSN/CR/SVH	
CHECKED BY: JCP/PJS/JSN		SHEET 21 of 36	
PROJECT #: P587900		PROPOSAL #: P587901	
PHASE III SEDIMENT CONTROL PLAN TANYARD SPRINGS PARK CONSTRUCTION DOCUMENTS TAX MAP 10 GRID 6 PARCEL 53 GLEN BURNIE, MD ZIP CODE 21060 3RD DISTRICT ANNE ARUNDEL COUNTY, MD			

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

DEFINITION THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION. PURPOSE TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. CONDITIONS WHERE PRACTICE APPLIES WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED. CRITERIA

A. SOIL PREPARATION

- TEMPORARY STABILIZATION
 - SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSEND, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
 - APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
 - INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

- PERMANENT STABILIZATION
 - A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
 - SOIL PH BETWEEN 6.0 AND 7.0.
 - SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
 - SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
 - SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
 - SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
 - APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
 - GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.
 - APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
 - MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. TOPSOILING

- TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
- TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.
- TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
 - THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
 - THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
 - THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
 - THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
- AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
- TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
 - TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF ONDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2 INCHES IN DIAMETER.
 - TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERBERIS GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
 - TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.

- TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.
- SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)
 - SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
 - FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.
 - LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.
 - LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
 - WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

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

DEFINITION THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER. PURPOSE TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION. CONDITIONS WHERE PRACTICE APPLIES TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING. CRITERIA

A. SEEDING

- SPECIFICATIONS
 - ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.
 - MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.
 - INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.
 - SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.
- APPLICATION
 - DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
 - INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
 - APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDBED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
 - DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
 - CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.
 - APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
 - HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).
 - MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
 - WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

B. MULCHING

- MULCH MATERIALS (IN ORDER OF PREFERENCE)
 - STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLLY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
 - WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
 - WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
 - WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
 - WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
 - WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
 - WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.
- APPLICATION
 - APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
 - WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.
 - WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
- ANCHORING
 - PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:
 - A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR.
 - WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
 - SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TACK II, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.
 - LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

DEFINITION TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS. PURPOSE TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS. CONDITIONS WHERE PRACTICE APPLIES EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED. CRITERIA

1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDNESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.

2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.

3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

TEMPORARY SEEDING SUMMARY

NO.	SPECIES	APPLICATION RATE (lb/100)	SEEDING DATES		SEEDING DEPTHS	FERTILIZER RATE (10-20-20)	LIME RATE
			START DATE	END DATE			
	ANNUAL RYEGRASS	40	MAR 1 TO MAY 15;	AUG 1 TO OCT 15	0.5		
	BARLEY	96	MAR 1 TO MAY 15;	AUG 1 TO OCT 15	1.0	436 lb/ac (10 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)
	OATS	72	MAR 1 TO MAY 15;	AUG 1 TO OCT 15	1.0		
	PEARL MILLET	20	MAY 16 TO JULY 31		0.5		

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

DEFINITION THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION. PURPOSE TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. CONDITIONS WHERE PRACTICE APPLIES WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED. CRITERIA

A. SOIL PREPARATION

- TEMPORARY STABILIZATION
 - SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSEND, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
 - APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
 - INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

- PERMANENT STABILIZATION
 - A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
 - SOIL PH BETWEEN 6.0 AND 7.0.
 - SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
 - SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
 - SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
 - SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
 - APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
 - GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.
 - APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
 - MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. TOPSOILING

- TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
- TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.
- TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
 - THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
 - THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
 - THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
 - THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
- AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
- TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
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C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)

- SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
- FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.
- LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.
- LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
- WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

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

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 - INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.
 - SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.
- APPLICATION
 - DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
 - INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
 - APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDBED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
 - DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
 - CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.
 - APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
 - HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).
 - MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
 - WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

B. MULCHING

- MULCH MATERIALS (IN ORDER OF PREFERENCE)
 - STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLLY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
 - WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
 - WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
 - WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
 - WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
 - WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
 - WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.
- APPLICATION
 - APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
 - WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.
 - WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
- ANCHORING
 - PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:
 - A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR.
 - WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
 - SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TACK II, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.
 - LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

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

DEFINITION THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION. PURPOSE TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. CONDITIONS WHERE PRACTICE APPLIES WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED. CRITERIA

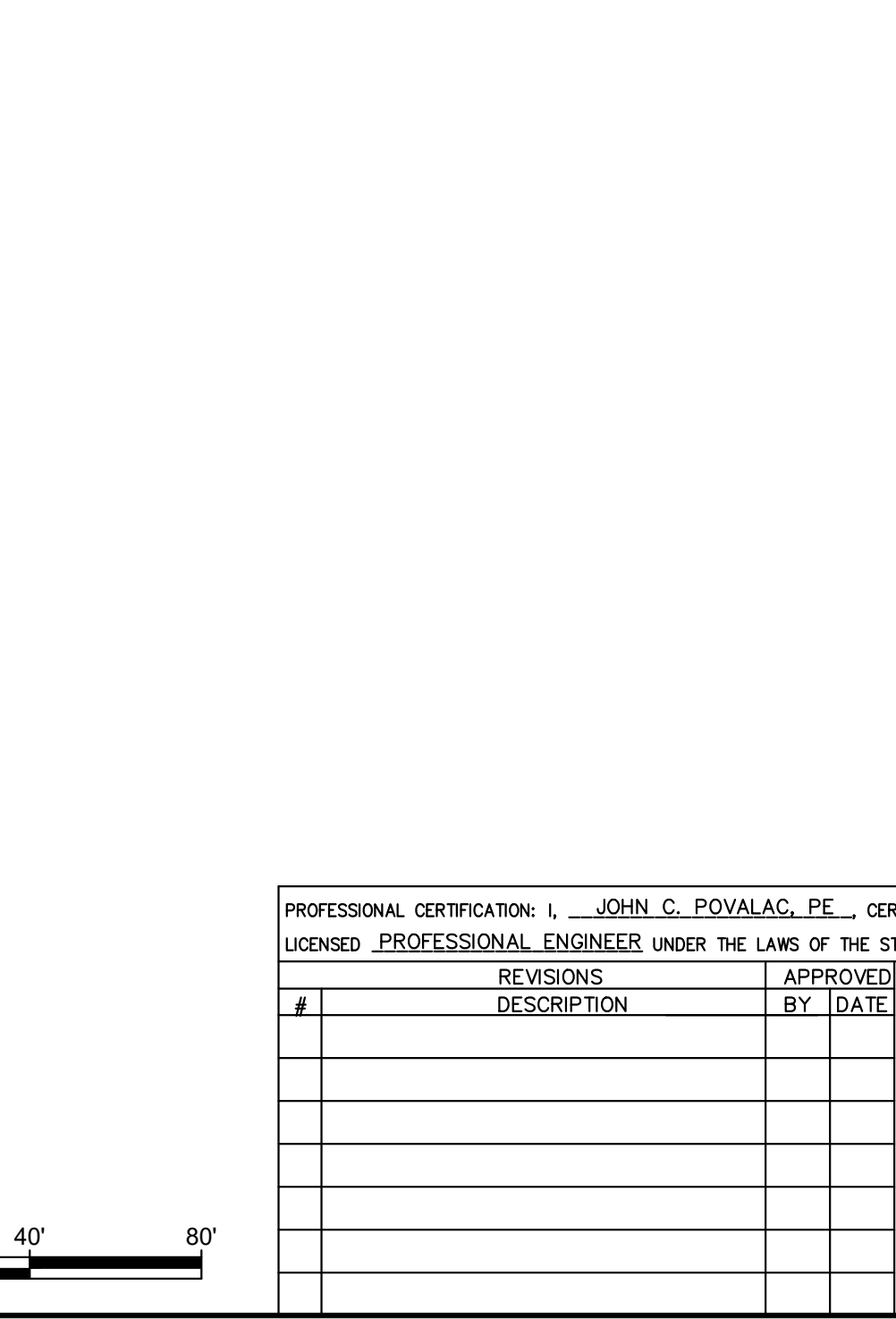
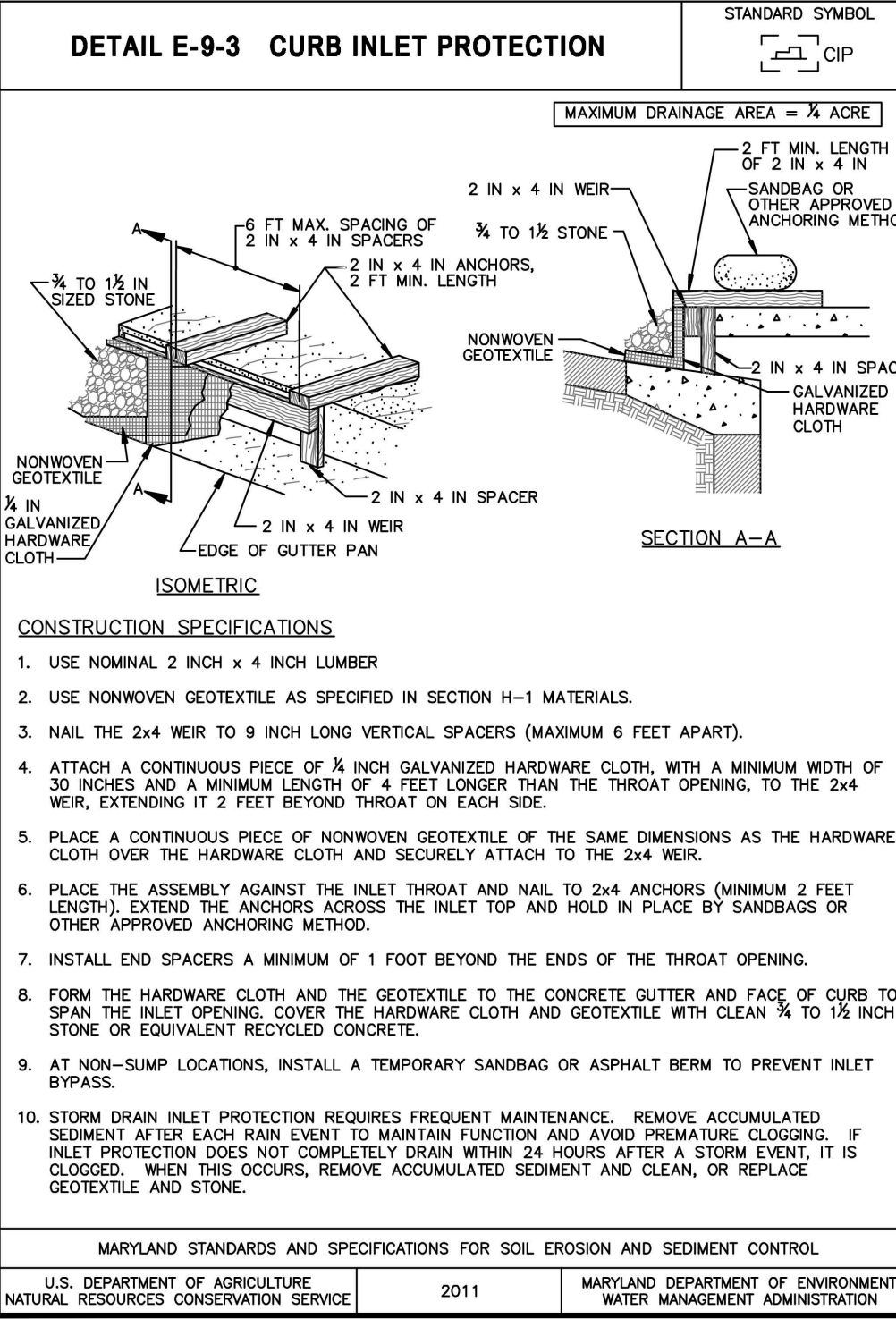
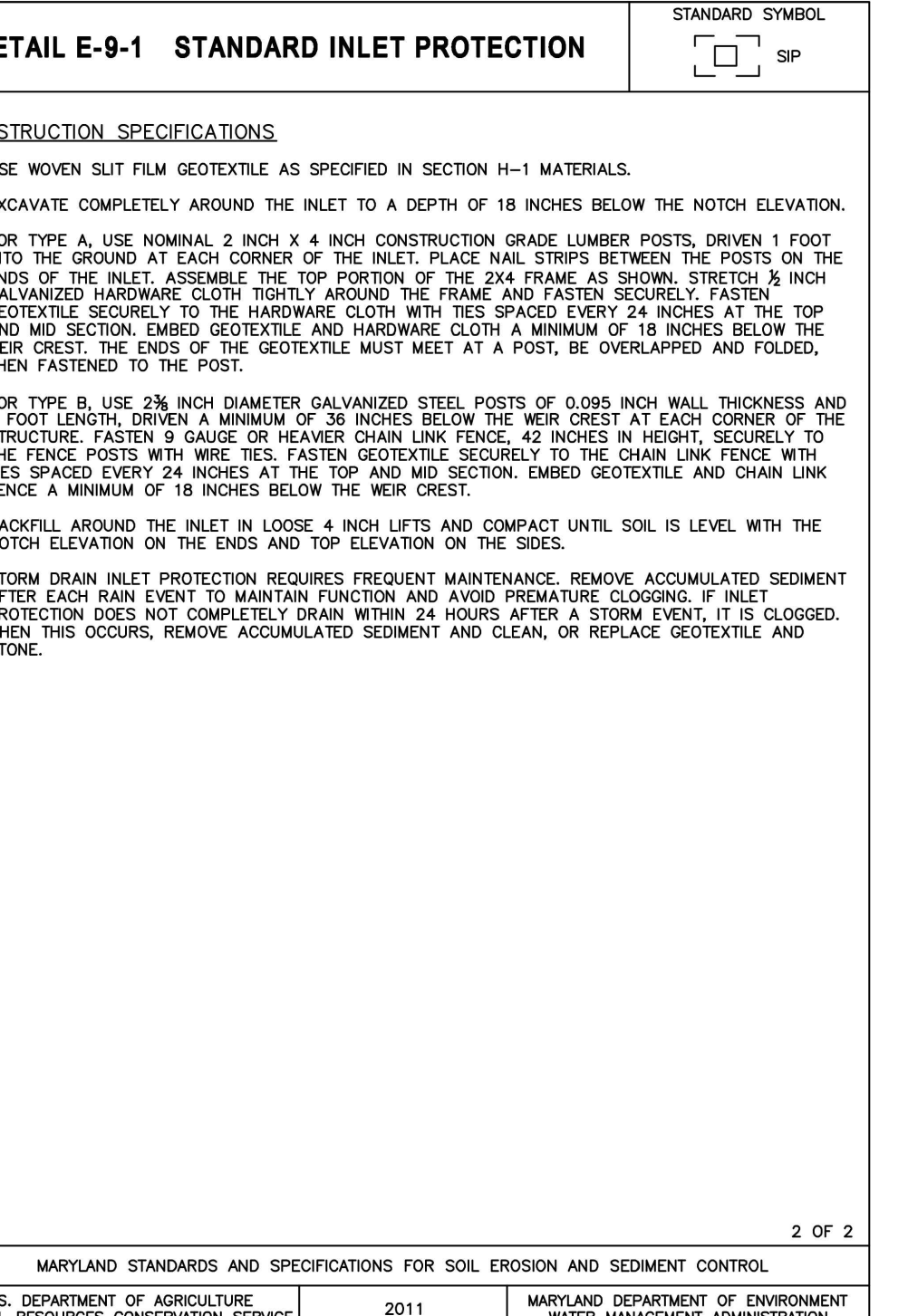
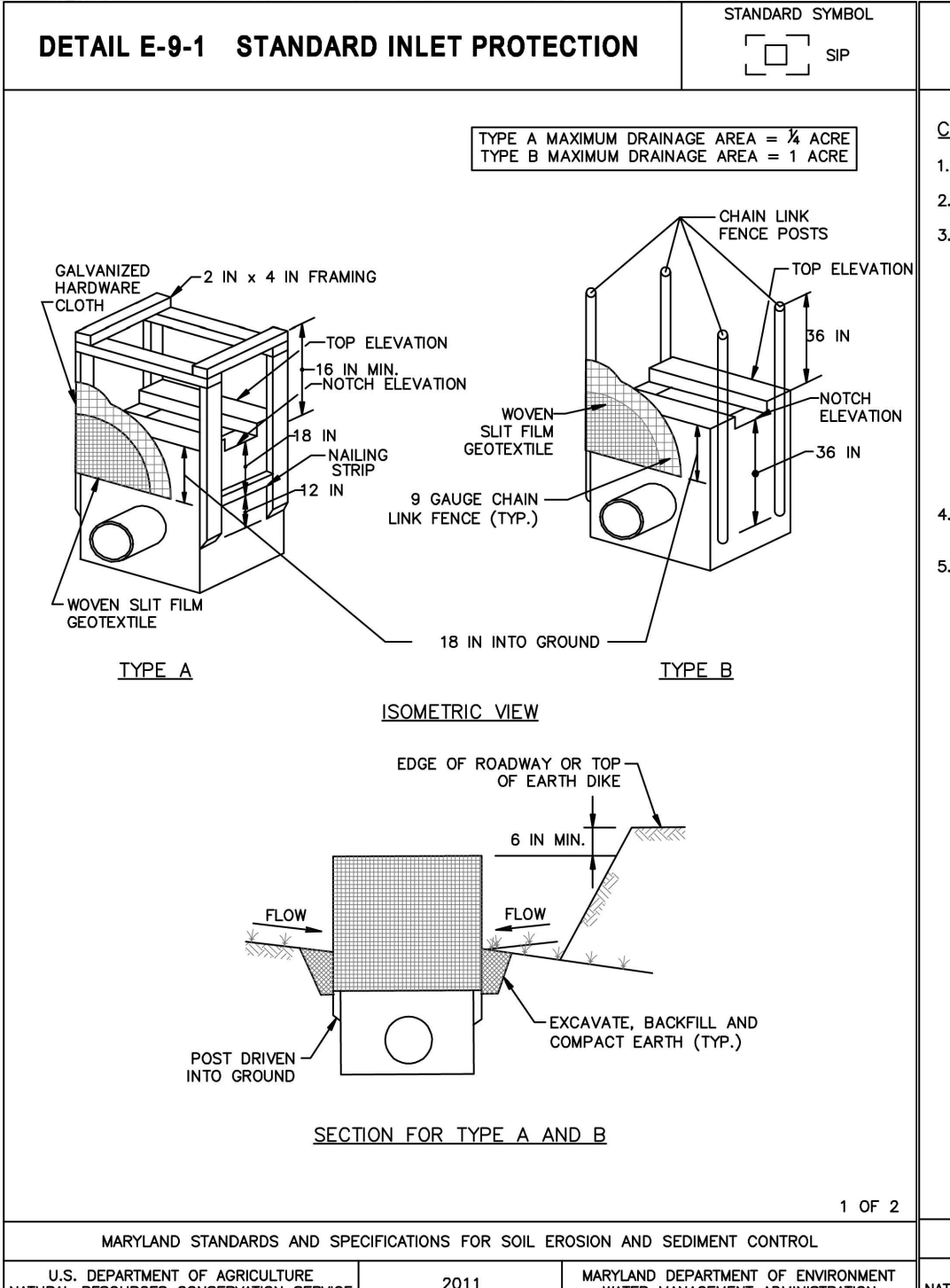
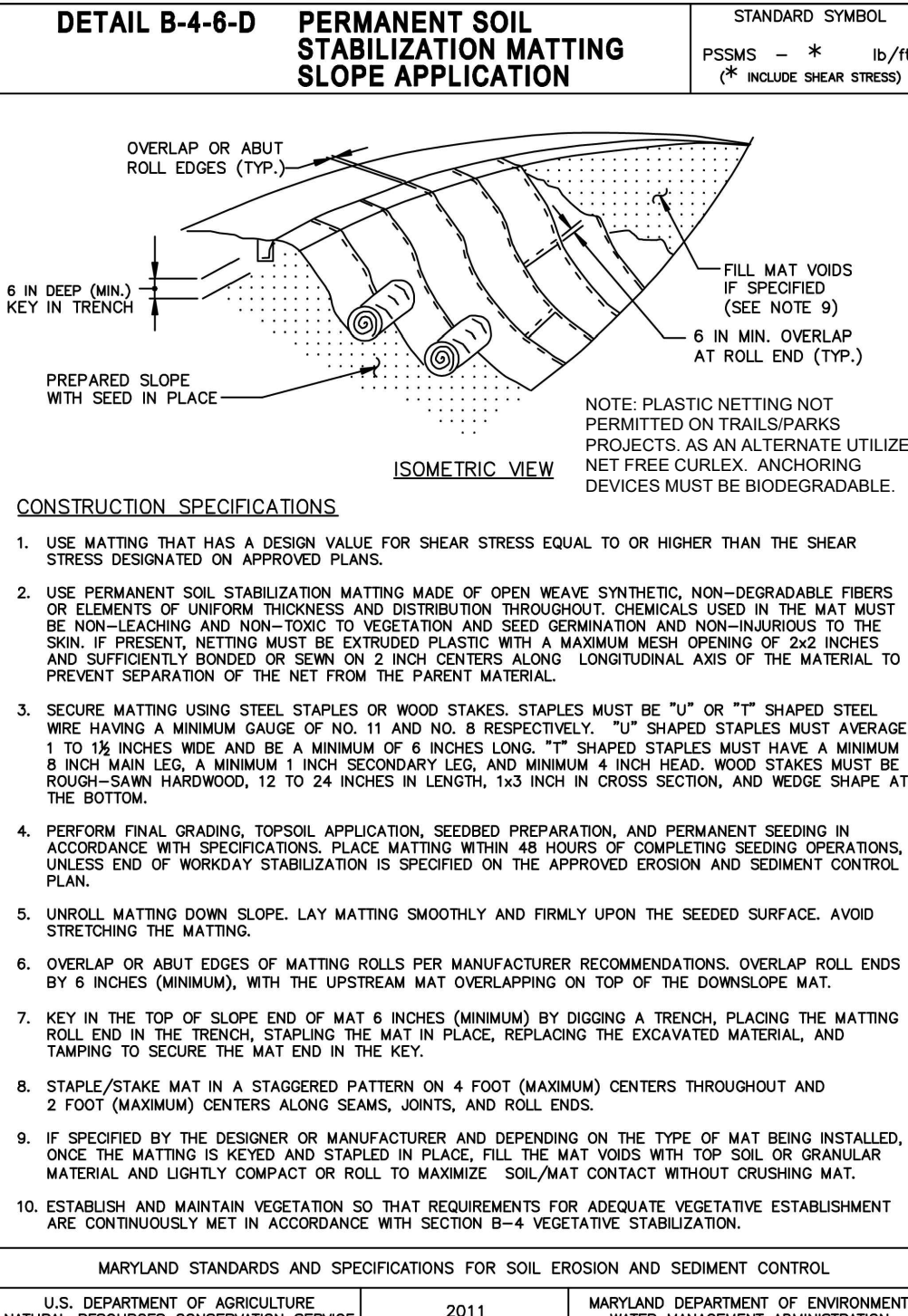
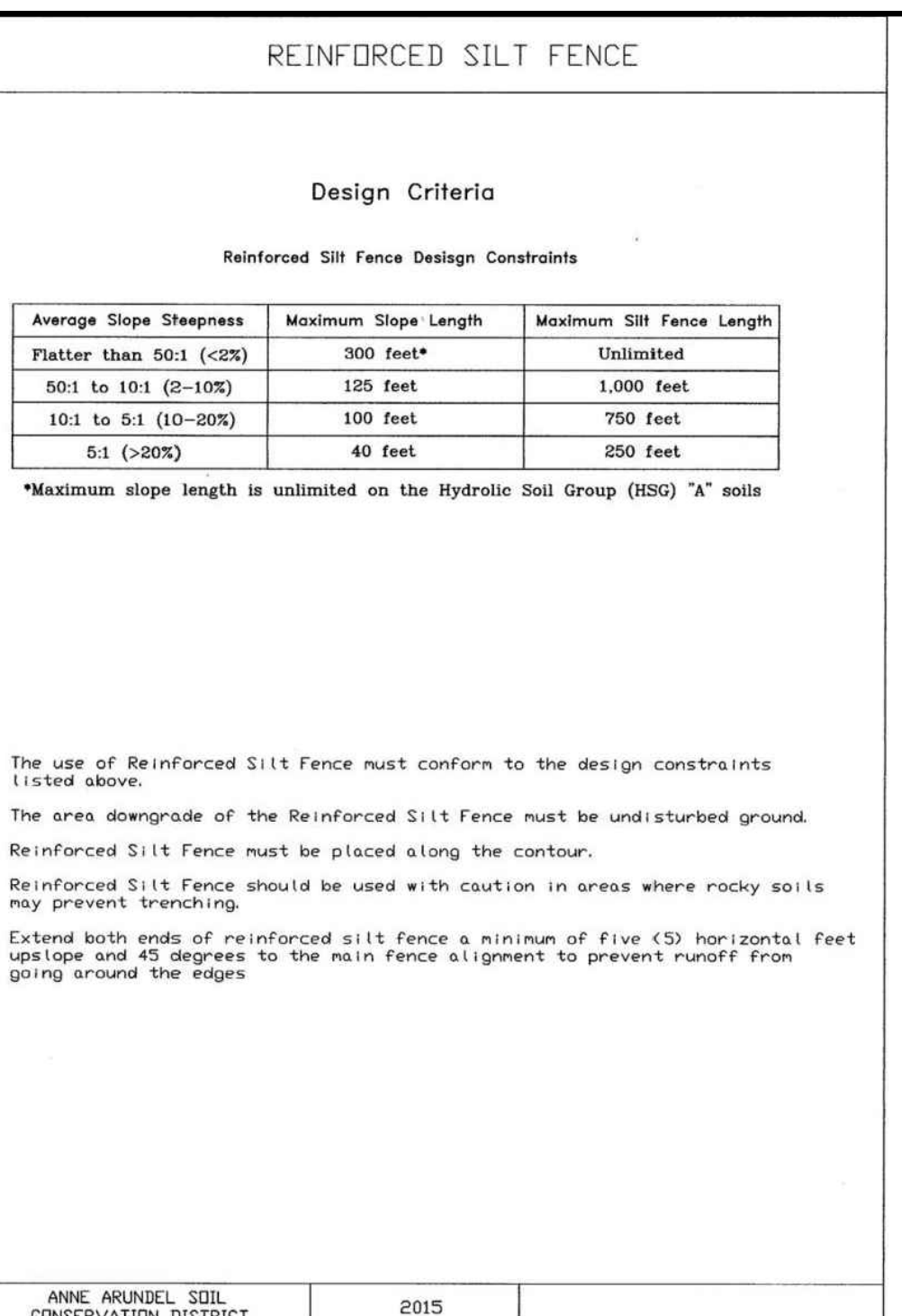
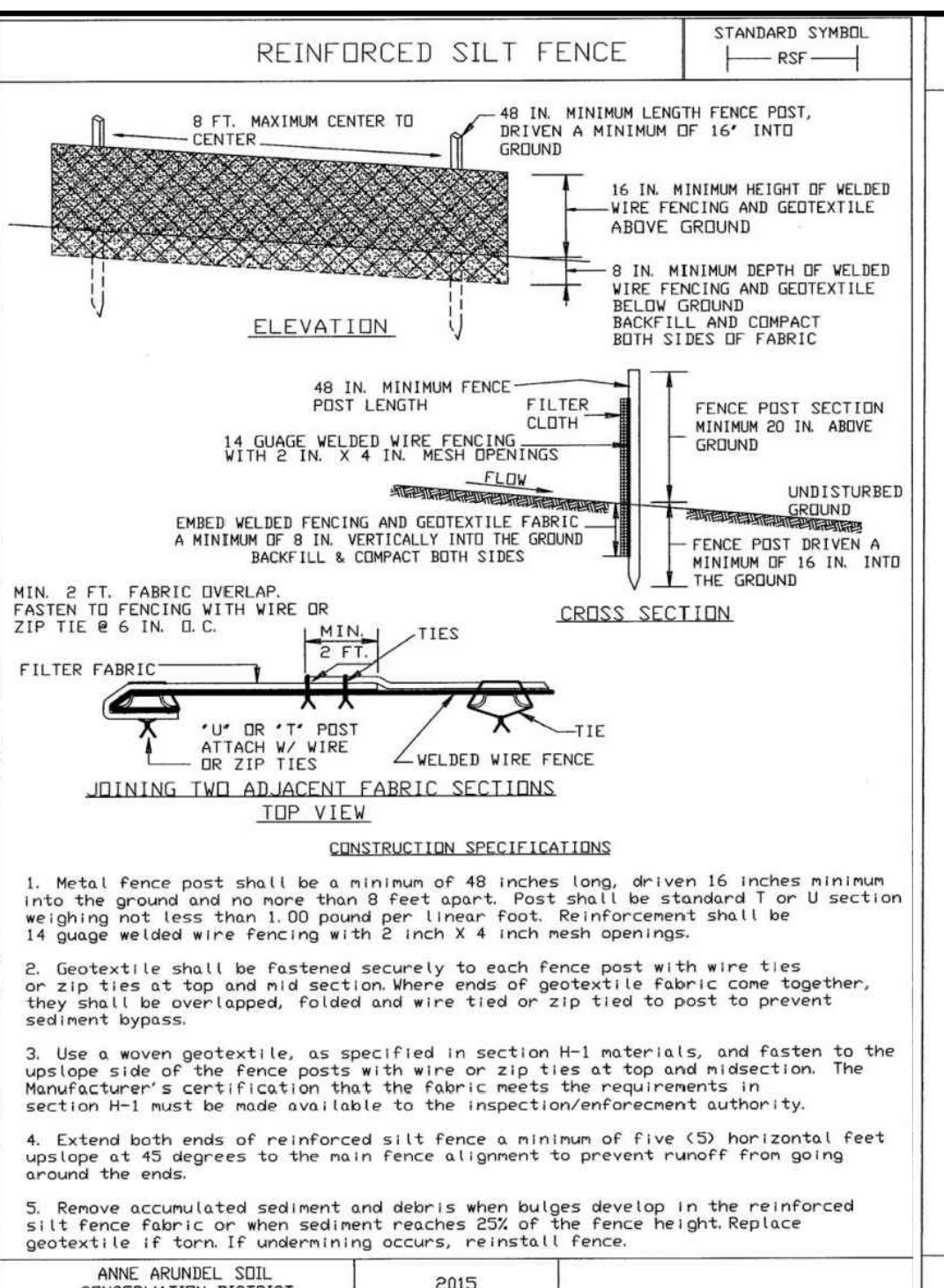
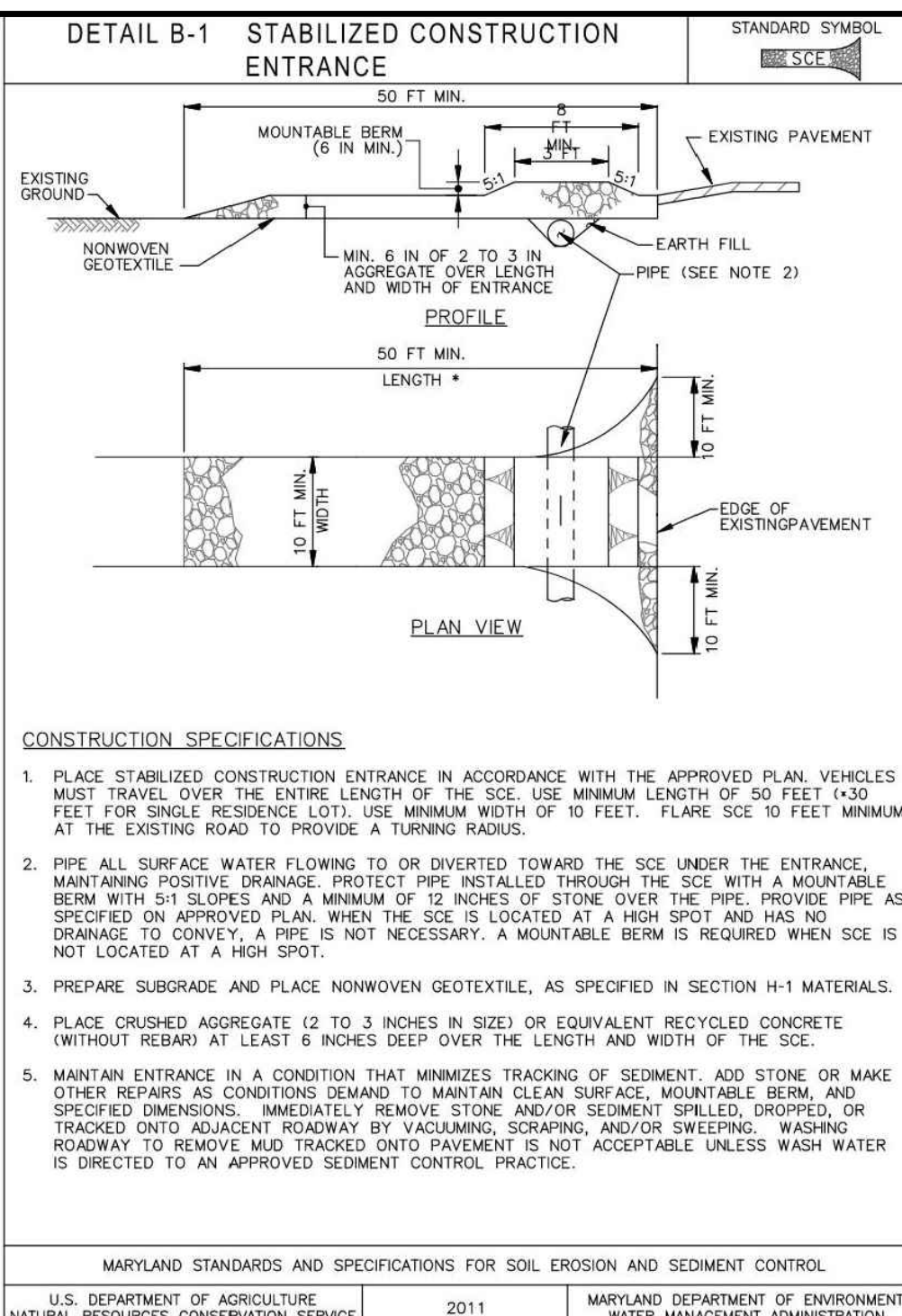
A. SOIL PREPARATION

- TEMPORARY STABILIZATION
 - SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSEND, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
 - APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
 - INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

- PERMANENT STABILIZATION
 - A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
 - SOIL PH BETWEEN 6.0 AND 7.0.
 - SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
 - SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
 - SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
 - SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
 - APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
 - GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.
 - APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
 - MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. TOPSOILING

- TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
- TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.</



2018 VEGETATIVE ESTABLISHMENT

FOLLOWING INITIAL SOIL DISTURBANCES OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN THREE CALENDAR DAYS FOR THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND SEVEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

1. PERMANENT SEEDING:

- SOIL TESTS:** LIME AND FERTILIZER WILL BE APPLIED PER SOIL TESTS RESULTS FOR SITES GREATER THAN 5 ACRES. SOIL TESTS WILL BE DONE AT COMPLETION OF INITIAL ROUGH GRADING OR AS RECOMMENDED BY THE SEDIMENT CONTROL INSPECTOR. RATES AND ANALYSES WILL BE PROVIDED TO THE GRADING INSPECTOR AS WELL AS THE CONTRACTOR.
 - OCCURRENCE OF ACID SULFATE SOILS (GRAYISH-BLACK COLOR) WILL REQUIRE COVERING WITH A MINIMUM OF 12 INCHES OF CLEAN SOIL WITH 6 INCHES MINIMUM CAPPING OF TOP SOIL. NO STOCKPILING OF MATERIAL IS ALLOWED. IF NEEDED, SOIL TESTS SHOULD BE DONE BEFORE AND AFTER A 6-WEEK INCUBATION PERIOD TO ALLOW OXIDATION OF SULFATES.
- THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
- SOIL PH SHALL BE BETWEEN 6.0 AND 7.0.
 - SOLUBLE SALTS SHALL BE LESS THAN 500 PARTS PER MILLION (PPM).
 - THE SOIL SHALL CONTAIN LESS THAN 40% CLAY BUT ENOUGH FINE GRAINED MATERIAL (> 30% SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION IS IF LOVEGRASS OR SERICIA LESPEDEZA IS TO BE PLANTED. THEN A SANDY SOIL (< 30% SILT PLUS CLAY) WOULD BE ACCEPTABLE.
 - SOIL SHALL CONTAIN 1.5% MINIMUM ORGANIC MATTER BY WEIGHT.
 - SOIL MUST CONTAIN SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
 - IF THESE CONDITIONS CANNOT BE MET BY SOILS ON SITE, ADDING TOPSOIL IS REQUIRED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SOIL PREPARATION, TOPSOILING AND SOIL AMENDMENTS FROM THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL OR AMENDMENTS MADE AS RECOMMENDED BY A CERTIFIED AGRONOMIST.
- SEEDBED PREPARATION:** AREA TO BE SEEDBED SHALL BE LOOSE AND FRIABLE TO A DEPTH OF AT LEAST 3-5 INCHES. THE TOP LAYER SHALL BE LOOSENEED BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING OCCURS. FOR SITES LESS THAN 5 ACRES, APPLY 100 POUNDS DOLOMITIC LIMESTONE AND 21 POUNDS OF 10-10-10 FERTILIZER PER 1,000 SQUARE FEET. HARROW OR DISK LIME AND FERTILIZER INTO THE SOIL TO A DEPTH OF AT LEAST 3-5 INCHES ON SLOPES FLATTER THAN 3:1.
 - SEEDING:** APPLY 5-6 POUNDS PER 1,000 SQUARE FEET OF TALL FESCUE BETWEEN FEBRUARY 1 AND APRIL 30 OR BETWEEN AUGUST 15 AND OCTOBER 31. APPLY SEED UNIFORMLY ON A MOIST FIRM SEEDBED WITH A CYCLONE SEEDER, CULTRIPACKER SEEDER OR HYDROSEEDER (SLURRY INCLUDES SEEDS AND FERTILIZER. RECOMMENDED ON STEEP SLOPES ONLY). MAXIMUM SEED DEPTH SHOULD BE 1/4 INCH IN CLAYEY SOILS AND 1/2 INCH IN SANDY SOILS WHEN USING OTHER THAN THE HYDROSEEDER METHOD. IRRIGATE WHERE NECESSARY TO SUPPORT ADEQUATE GROWTH UNTIL VEGETATION IS FIRMLY ESTABLISHED. IF OTHER SEED MIXES ARE TO BE USED, SELECT FROM TABLE B3 AND B5 OF THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
 - 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 UNROTATED, UNCHOPPED, SMALL GRAIN STRAW APPLIED AT A RATE OF 2 TONS PER ACRE OR 90 POUNDS PER 1,000 SQUARE FEET (2 BALES). APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. IF A MULCH-ANCHORING TOOL IS USED, APPLY 2.5 TONS PER ACRE. MULCH MATERIALS SHALL BE RELATIVELY FREE OF ALL KINDS OF WEEDS AND SHALL BE COMPLETELY FREE OF PROHIBITED NOXIOUS WEEDS. SPREAD MULCH UNIFORMLY, MECHANICALLY OR BY HAND, TO A DEPTH OF 1-2 INCHES.
 - SECURING STRAW MULCH:** STRAW MULCH SHALL BE SECURED IMMEDIATELY FOLLOWING MULCH APPLICATION TO MINIMIZE MOVEMENT BY WIND OR WATER. THE FOLLOWING METHODS ARE PERMITTED:
 - USE A MULCH-ANCHORING TOOL WHICH IS DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE TO A MINIMUM DEPTH OF 2 INCHES. THIS IS THE MOST EFFECTIVE METHOD FOR SECURING MULCH. HOWEVER, IT IS LIMITED TO RELATIVELY FLAT AREAS WHERE EQUIPMENT CAN OPERATE SAFELY.
 - WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. IF MIXED WITH WATER, USE 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
 - LIQUID BINDERS MAY BE USED. APPLY AT HIGHER RATES AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF SLOPES. THE REMAINDER OF THE AREA SHOULD APPEAR UNIFORM AFTER BINDER APPLICATION. BINDERS LISTED IN THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL OR APPROVED EQUAL SHALL BE APPLIED AT RATES RECOMMENDED BY THE MANUFACTURERS.
 - LIGHTWEIGHT PLASTIC NETTING MAY BE USED TO SECURE MULCH. THE NETTING WILL BE STAPLED TO THE GROUND ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- TEMPORARY SEEDING:**

LIME: 100 POUNDS OF DOLOMITIC LIMESTONE PER 1,000 SQUARE FEET.

FERTILIZER: 15 POUNDS OF 10-10-10 PER 1,000 SQUARE FEET.

SEED: PERENNIAL RYE - 0.92 POUNDS PER 1,000 SQUARE FEET (FEBRUARY 1 THROUGH APRIL 30 OR AUGUST 15 THROUGH OCTOBER 31).
MILLET - 0.92 POUNDS PER 1,000 SQUARE FEET (MAY 1 THROUGH AUGUST 15).

MULCH: SAME AS 1 D AND E ABOVE.
 - NO FILLS MAY BE PLACED ON FROZEN GROUND. ALL FILLS TO BE PLACED IN APPROXIMATELY HORIZONTAL LAYERS, EACH LAYER HAVING A LOOSE THICKNESS OF NOT MORE THAN 8 INCHES. ALL COMPACTION REQUIREMENTS ARE IN ACCORDANCE TO ANNE ARUNDEL COUNTY STANDARD SPECIFICATIONS FOR CONSTRUCTION AS WELL AS THE AA COUNTY DESIGN MANUAL AND STANDARD DETAILS. FILLS FOR POND EMBANKMENTS SHALL BE COMPACTED AS PER MD-378 CONSTRUCTION SPECIFICATIONS. ALL OTHER FILLS SHALL BE COMPACTED SUFFICIENTLY SO AS TO BE STABLE AND PREVENT EROSION AND SLIPPAGE.
 - PERMANENT SOD:**

INSTALLATION OF SOD SHOULD FOLLOW PERMANENT SEEDING DATES. SEEDBED PREPARATION FOR SOD SHALL BE AS NOTED IN SECTION (B) ABOVE. PERMANENT SOD IS TO BE TALL FESCUE, STATE APPROVED SOD. LIME AND FERTILIZER PER PERMANENT SEEDING SPECIFICATIONS AND LIGHTLY IRRIGATE SOIL PRIOR TO LAYING SOD. SOD IS TO BE LAID ON THE CONTOUR WITH ALL ENDS TIGHTLY ABUTTING. JOINTS ARE TO BE STAGGERED BETWEEN ROWS. WATER AND ROLL OR TAMP SOD TO INSURE POSITIVE ROOT CONTACT WITH THE SOIL. ALL SLOPES STEEPER THAN 3:1. AS SHOWN, ARE TO BE PERMANENTLY SODDED OR PROTECTED WITH AN APPROVED EROSION CONTROL NETTING. ADDITIONAL WATERING FOR ESTABLISHMENT MAY BE REQUIRED. SOD IS NOT TO BE INSTALLED ON FROZEN GROUND. SOD SHALL NOT BE TRANSPLANTED WHEN MOISTURE CONTENT (DRY OR WET) AND/OR EXTREME TEMPERATURE MAY ADVERSELY AFFECT ITS SURVIVAL. IN THE ABSENCE OF ADEQUATE RAINFALL, IRRIGATION SHOULD BE PERFORMED TO ENSURE ESTABLISHMENT OF SOD.
 - 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 SERICIA LESPEDEZA AT THE MINIMUM RATE OF 0.5 POUNDS PER 1,000 SQUARE FEET.
 - TOPSOIL SHALL BE APPLIED AS PER THE STANDARD AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS FROM THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
 - USE OF THESE VEGETATIVE ESTABLISHMENT SPECIFICATIONS DOES NOT PRECLUDE THE PERMITTEE OR CONTRACTOR FROM MEETING ALL OF THE REQUIREMENTS SET FORTH IN THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

GP #G02019941 DWG NO: CD23

PROFESSIONAL CERTIFICATION: I, JOHN C. POVALAC, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 27742, EXPIRATION DATE 07/18/2024

REVISIONS

#	DESCRIPTION	APPROVED BY	DATE

APPROVED DATE

Pennoni

PENNONI ASSOCIATES INC.
8890 McGaw Road, Suite 100
Columbia, MD 21045
T 410.997.8900 F 410.997.9282

ANNE ARUNDEL COUNTY

DEPARTMENT OF PUBLIC WORKS

NOVEMBER 27, 2023

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

SCALE: 1" = 40'

DRAWN BY: JSN/CR/SVH

CHECKED BY: JCP/PJS/JSN

SHEET 23 of 36

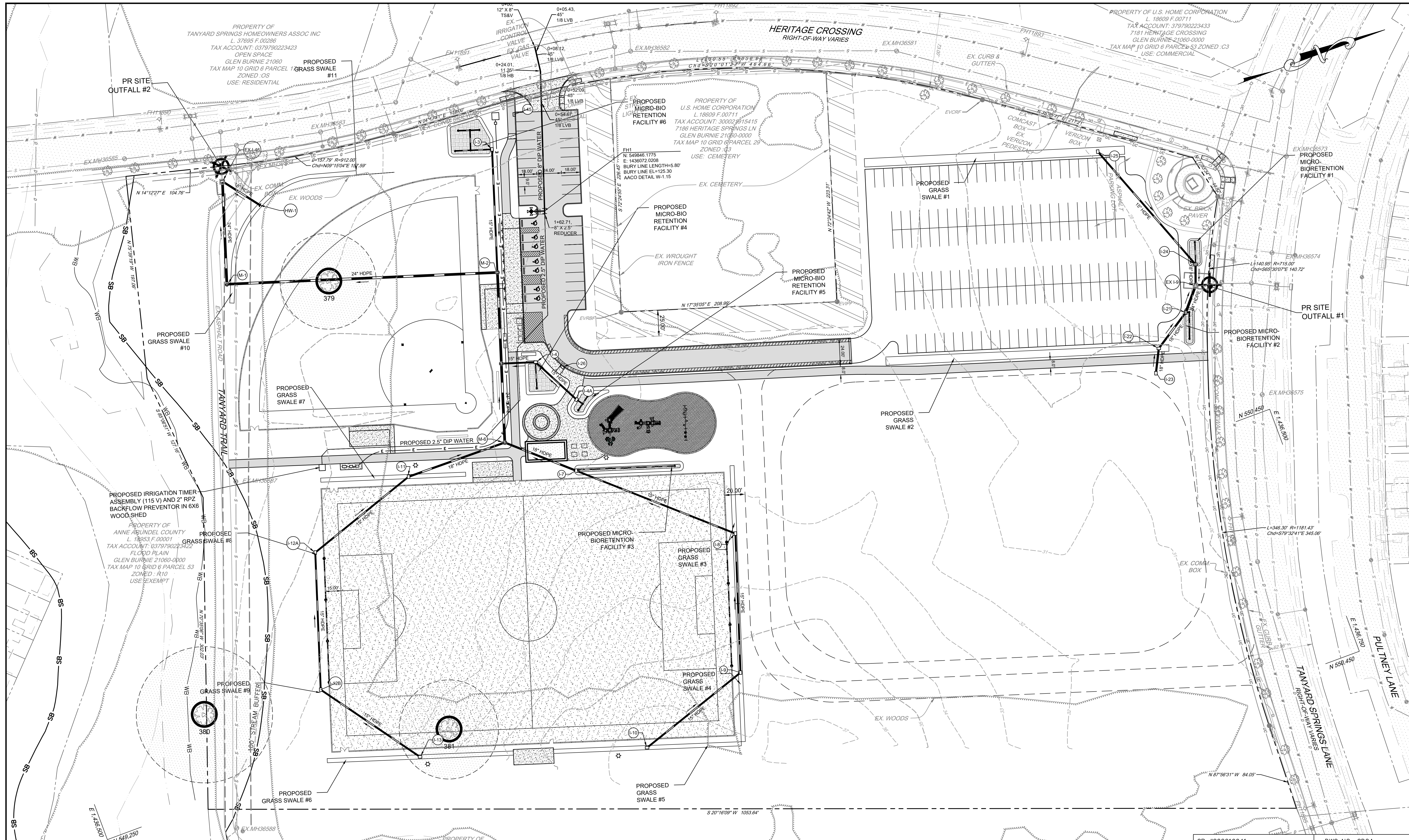
PROJECT #: P587900

PROPOSAL #: P587901

SEDIMENT CONTROL DETAILS

TANYARD SPRINGS PARK
CONSTRUCTION DOCUMENTS

TAX MAP 10 GRID 6 PARCEL 53
GLEN BURNIE, MD ZIP CODE 21060 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD



PROPERTY OF
TANYARD SPRINGS HOMEOWNERS ASSOC INC
L. 37695 F.00286
TAX ACCOUNT: 0379790223423
OPEN SPACE
GLEN BURNIE 21060
TAX MAP 10 GRID 6 PARCEL 1
ZONED .C3
USE: RESIDENTIAL

PROPERTY OF
U.S. HOME CORPORATION
L. 18609 F.00711
TAX ACCOUNT: 379790223433
7181 HERITAGE SPRINGS LN
GLEN BURNIE 21060-0000
TAX MAP 10 GRID 6 PARCEL 29
ZONED .C3
USE: CEMETERY

PROPERTY OF U.S. HOME CORPORATION
L. 18609 F.00711
TAX ACCOUNT: 379790223433
7181 HERITAGE SPRINGS
GLEN BURNIE 21060-0000
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USE: COMMERCIAL

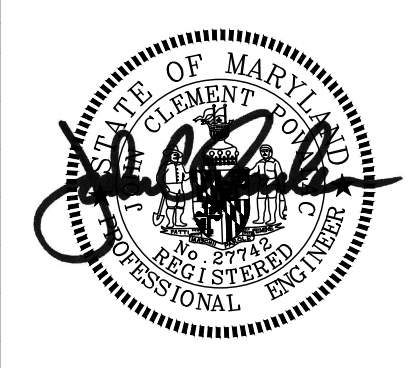
PROPOSED IRRIGATION TIMER
ASSEMBLY (115 V) AND 2" RPZ
BACKFLOW PREVENTOR IN 6X6
WOOD SHED

PROPERTY OF
ANNE ARUNDEL COUNTY
L. 18953 F.00001
TAX ACCOUNT: 0379790223422
FLOOD PLAIN
GLEN BURNIE 21060-0000
TAX MAP 10 GRID 6 PARCEL 53
ZONED .R10
USE: EXEMPT

PROPERTY OF
TANYARD SPRINGS HOMEOWNERS ASSOC INC
L. 37695 F.00286
TAX ACCOUNT: 037979228313
TANYARD SPRING LN
GLEN BURNIE 21060-0000
TAX MAP 10 GRID 6 PARCEL 53
ZONED .R10
USE: RESIDENTIAL

PROFESSIONAL CERTIFICATION: I, JOHN C. POVALAC, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 27742 EXPIRATION DATE 07/18/2024

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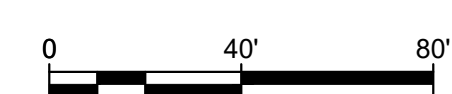
PENNONI ASSOCIATES INC.
8890 McGaw Road, Suite 100
Columbia, MD 21045
T 410.997.8900 F 410.997.9282

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

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

SCALE: 1" = 40'
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CHECKED BY: JCP/PJS/JSN
SHEET 24 of 36
PROJECT #: P587900
PROPOSAL #: P587901

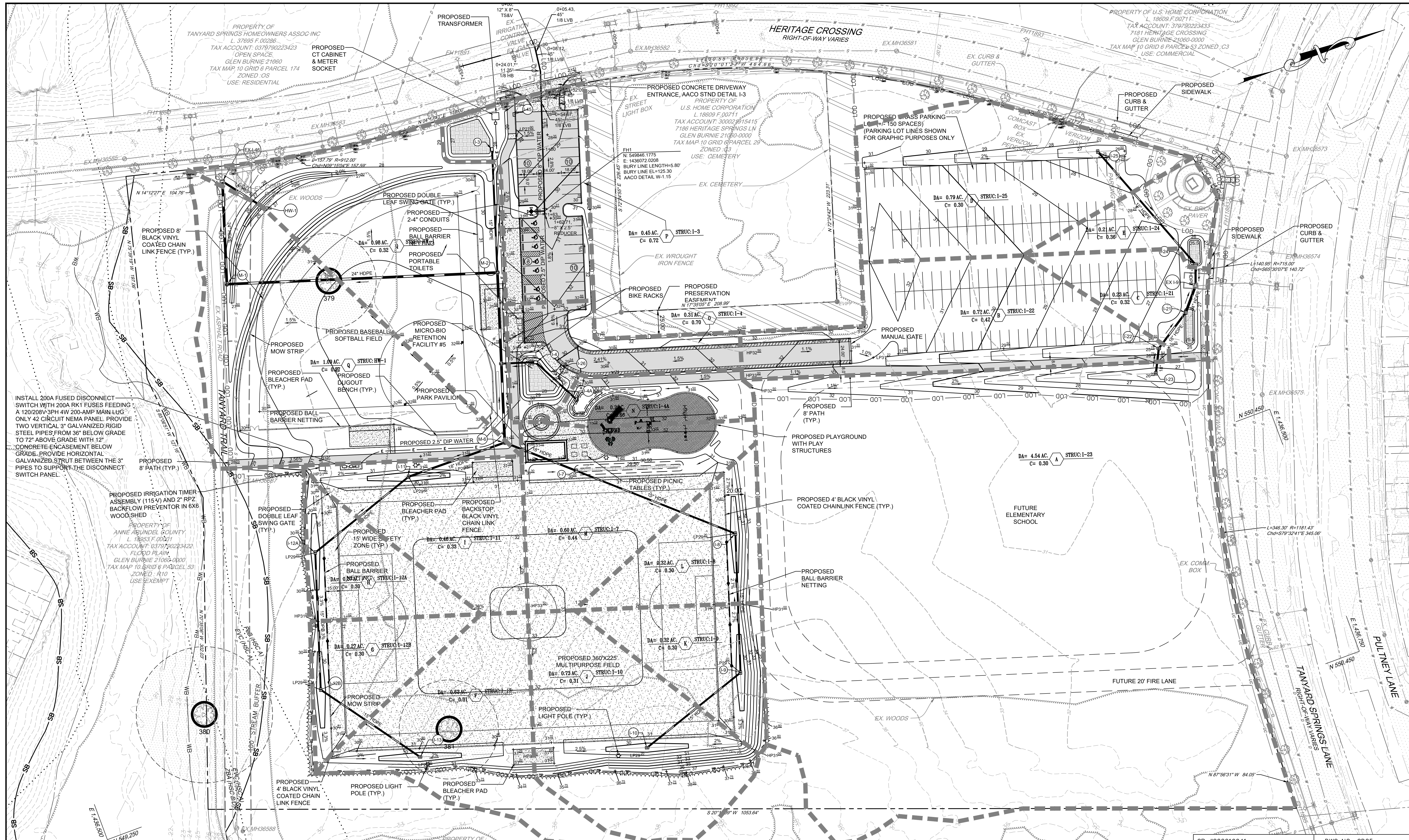
UTILITY PLAN
TANYARD SPRINGS PARK
CONSTRUCTION DOCUMENTS
TAX MAP 10 GRID 6 PARCEL 53
GLEN BURNIE, MD ZIP CODE 21060 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD



GP #G02019941 DWG NO: CD24

NOVEMBER 27, 2023

L:\c\work\1\A\CD\VA\CD\202305 - Tanyard Springs Park Dev - P587901\DESIGN\SHEETS\CD-10 PLANS\VA\CD\22005-0024.dwg



INSTALL 200A FUSED DISCONNECT SWITCH WITH 200A RK1 FUSES FEEDING A 120/208V-3PH 4W 200-AMP MAIN LUG ONLY 42 CIRCUIT NEMA PANEL PROVIDE TWO VERTICAL 3" GALVANIZED RIGID STEEL PIPES FROM 36" BELOW GRADE TO 72" ABOVE GRADE WITH 12" CONCRETE ENCASMENT BELOW GRADE. PROVIDE HORIZONTAL GALVANIZED STRUT BETWEEN THE 3" PIPES TO SUPPORT THE DISCONNECT SWITCH PANEL.

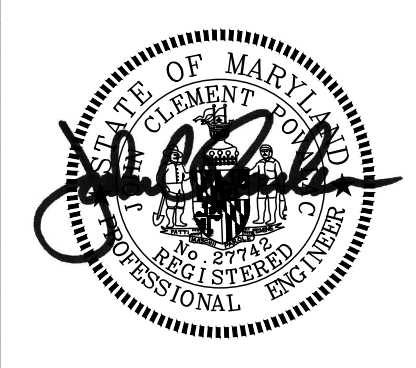
PROPOSED IRRIGATION TIMER ASSEMBLY (115V) AND 2" RPZ BACKFLOW PREVENTOR IN 6X6 WOOD SHED

PROPERTY OF ANNE ARUNDEL COUNTY L 18953 F 00011 TAX ACCOUNT: 037970223422 FLOOD PLAIN GLEN BURNIE 21060-0000 TAX MAP 10 GRID 6 PARCEL 53 ZONED: R10 USE: EXEMPT

PROPERTY OF TANYARD SPRINGS HOMEOWNERS ASSOC INC L 37695 F 00286 TAX ACCOUNT: 037979228313 TANYARD SPRING LN GLEN BURNIE 21060-0000 TAX MAP 10 GRID 6 PARCEL 53 ZONED: R10 USE: RESIDENTIAL

PROFESSIONAL CERTIFICATION: I, JOHN C. POVALAC, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 27742 EXPIRATION DATE 07/18/2024

REVISIONS	APPROVED
DESCRIPTION	BY DATE



Pennoni
 PENNONI ASSOCIATES INC.
 8890 McGaw Road, Suite 100
 Columbia, MD 21045
 T 410.997.8900 F 410.997.9282

ANNE ARUNDEL COUNTY
 DEPARTMENT OF PUBLIC WORKS

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

SCALE: 1" = 40'
 DRAWN BY: JSN/CR/SVH
 CHECKED BY: JCP/PJS/JSN
 SHEET 25 of 36
 PROJECT #: P587900
 PROPOSAL #: P587901

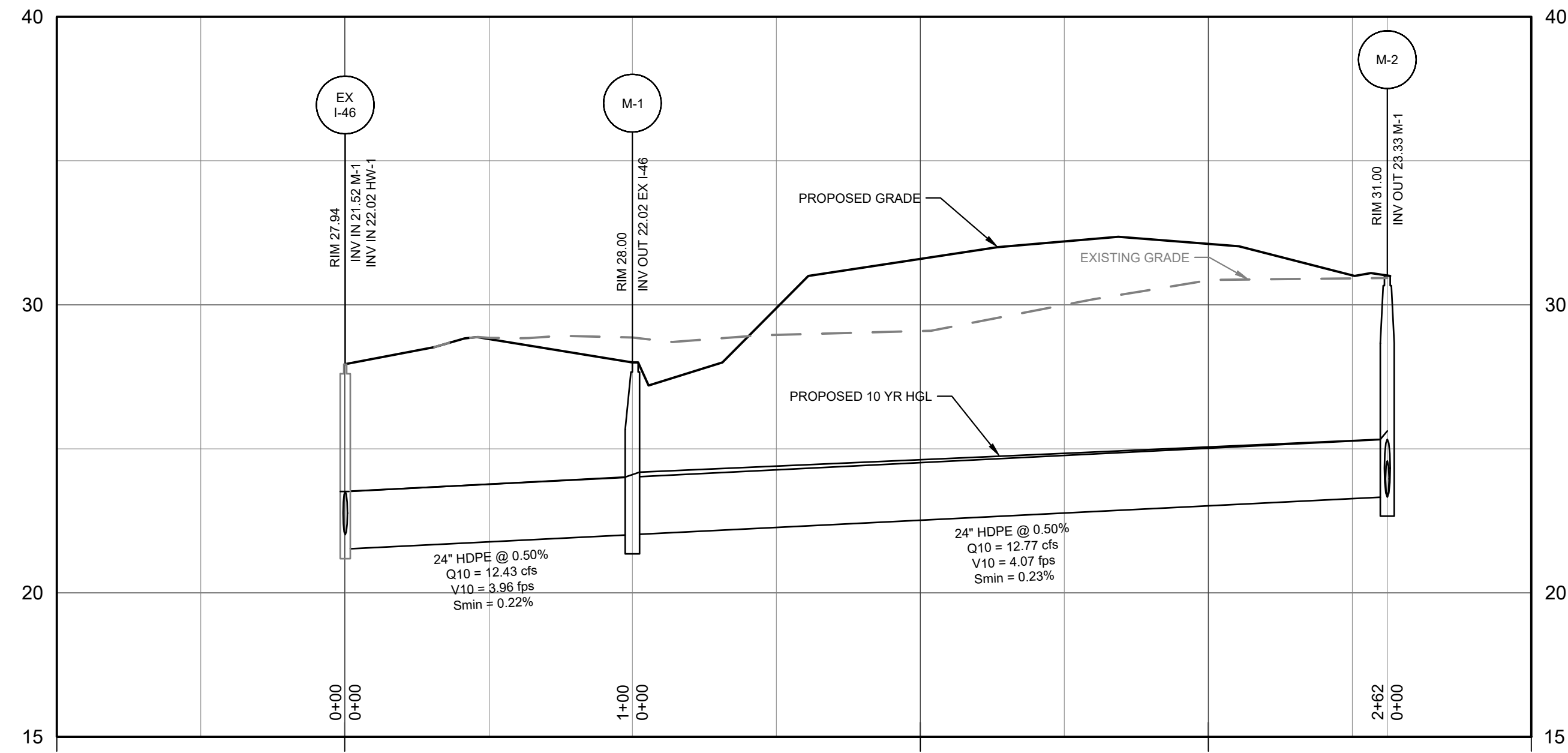
STORM DRAIN DRAINAGE AREA MAP
TANYARD SPRINGS PARK
 CONSTRUCTION DOCUMENTS
 TAX MAP 10 GRID 6 PARCEL 53
 GLEN BURNIE, MD ZIP CODE 21060 3RD DISTRICT
 ANNE ARUNDEL COUNTY, MD

GP #G02019941 DWG NO: CD25

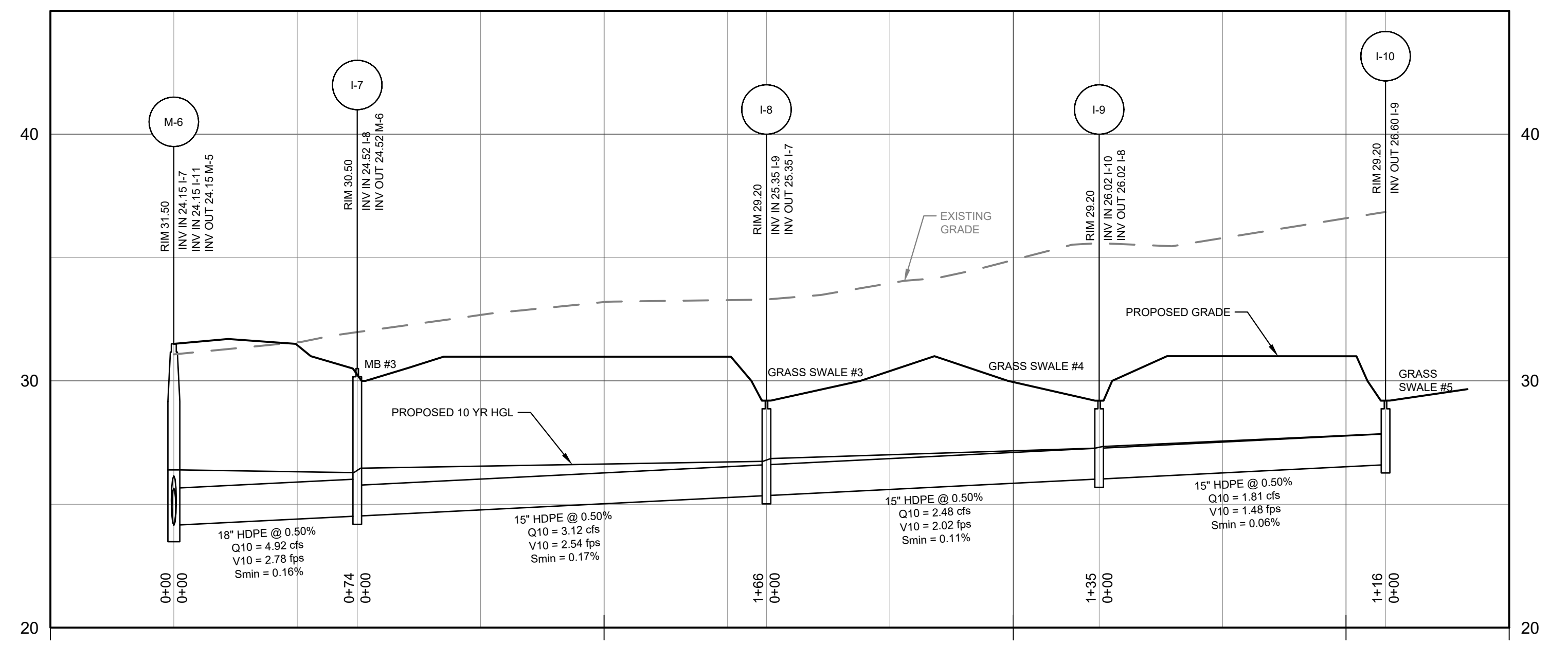


NOVEMBER 27, 2023

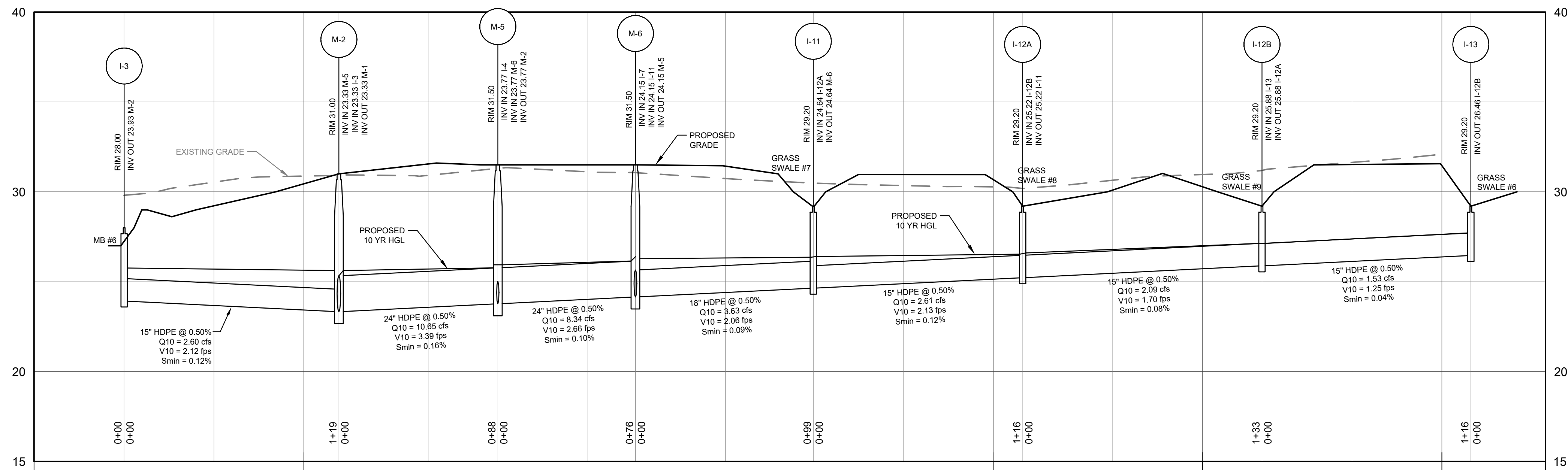
L:\accounts\A\A\CD\202305 - Tanyard Springs Park Dev - P587901\DESIGN_SHEETS\CD-10-PLAN\A\A\CD\202305-0025.dwg



EX I-46 TO M-2
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'



M-6 TO I-10
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

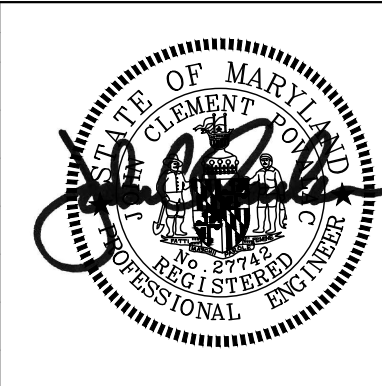


I-2 TO I-12
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

GP #G02019941 DWG NO: CD26

PROFESSIONAL CERTIFICATION: I, JOHN C. POVALAC, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 27742 EXPIRATION DATE 07/18/2024

#	REVISIONS DESCRIPTION	APPROVED BY	DATE



PENNONI ASSOCIATES INC.
8890 McGaw Road, Suite 100
Columbia, MD 21045
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ANNE ARUNDEL COUNTY

DEPARTMENT OF PUBLIC WORKS

NOVEMBER 27, 2023

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

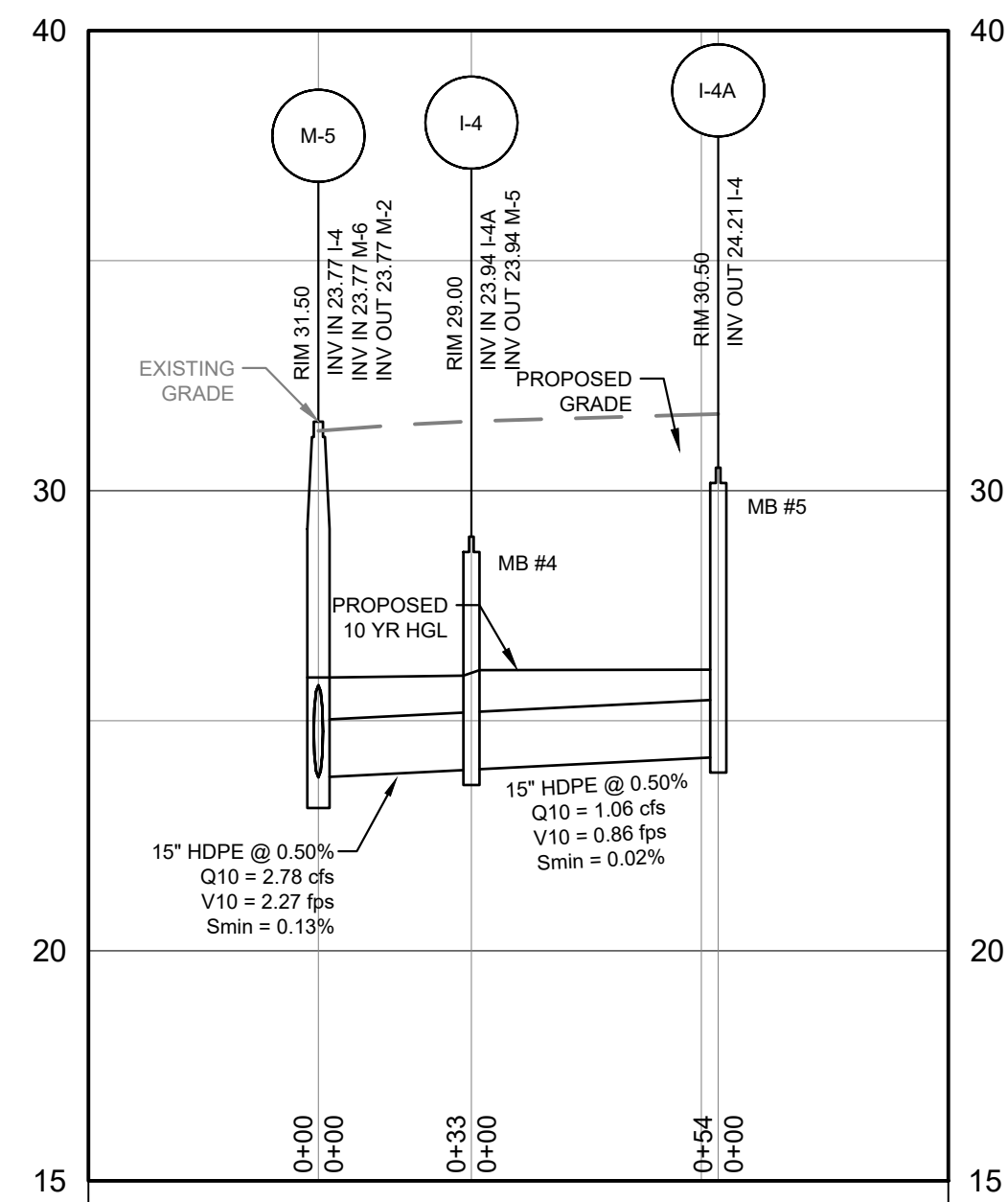
SCALE: 1" = 40'
DRAWN BY: JSN/CR/SVH
CHECKED BY: JCP/PJS/JSN
SHEET 26 of 36
PROJECT #: P587900
PROPOSAL #: P587901

STORM DRAIN PROFILES

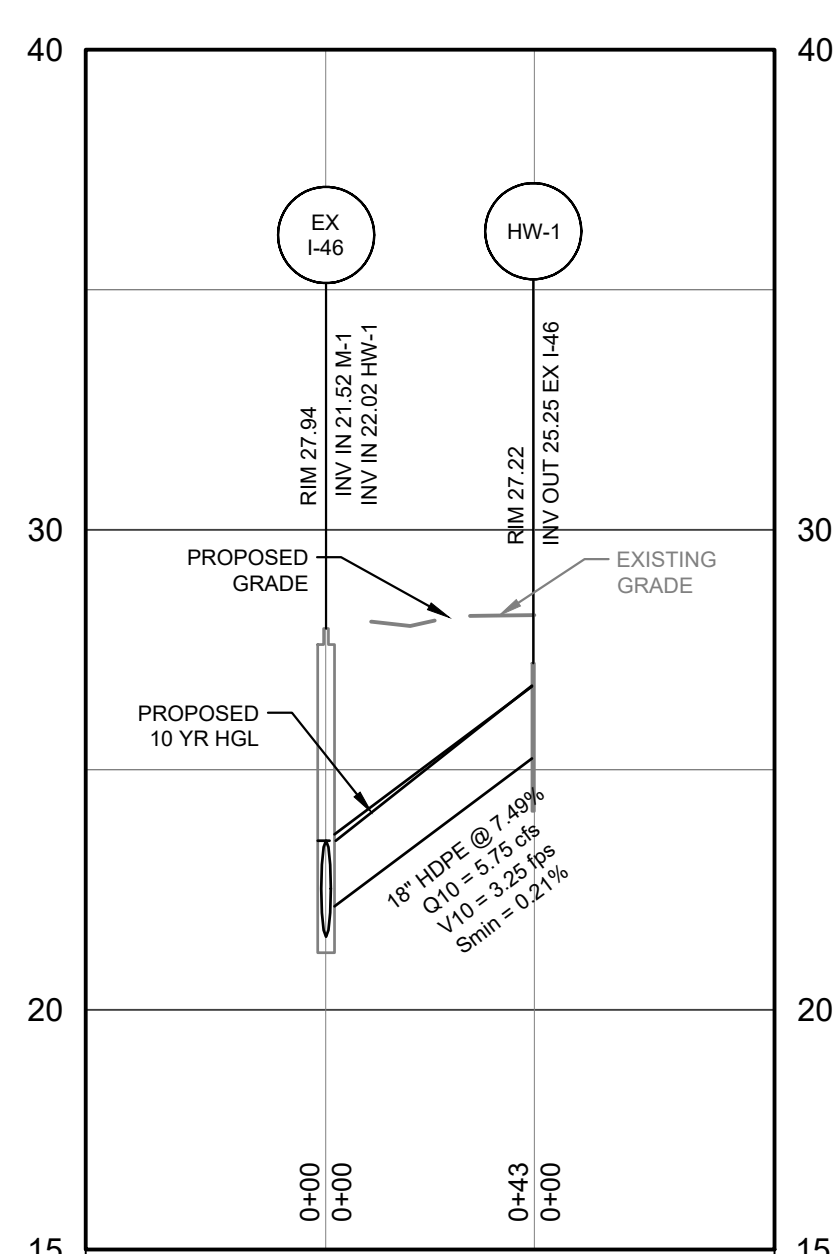
TANYARD SPRINGS PARK
CONSTRUCTION DOCUMENTS

TAX MAP 10 GRID 6 PARCEL 53
GLEN BURNIE, MD ZIP CODE 21060 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD

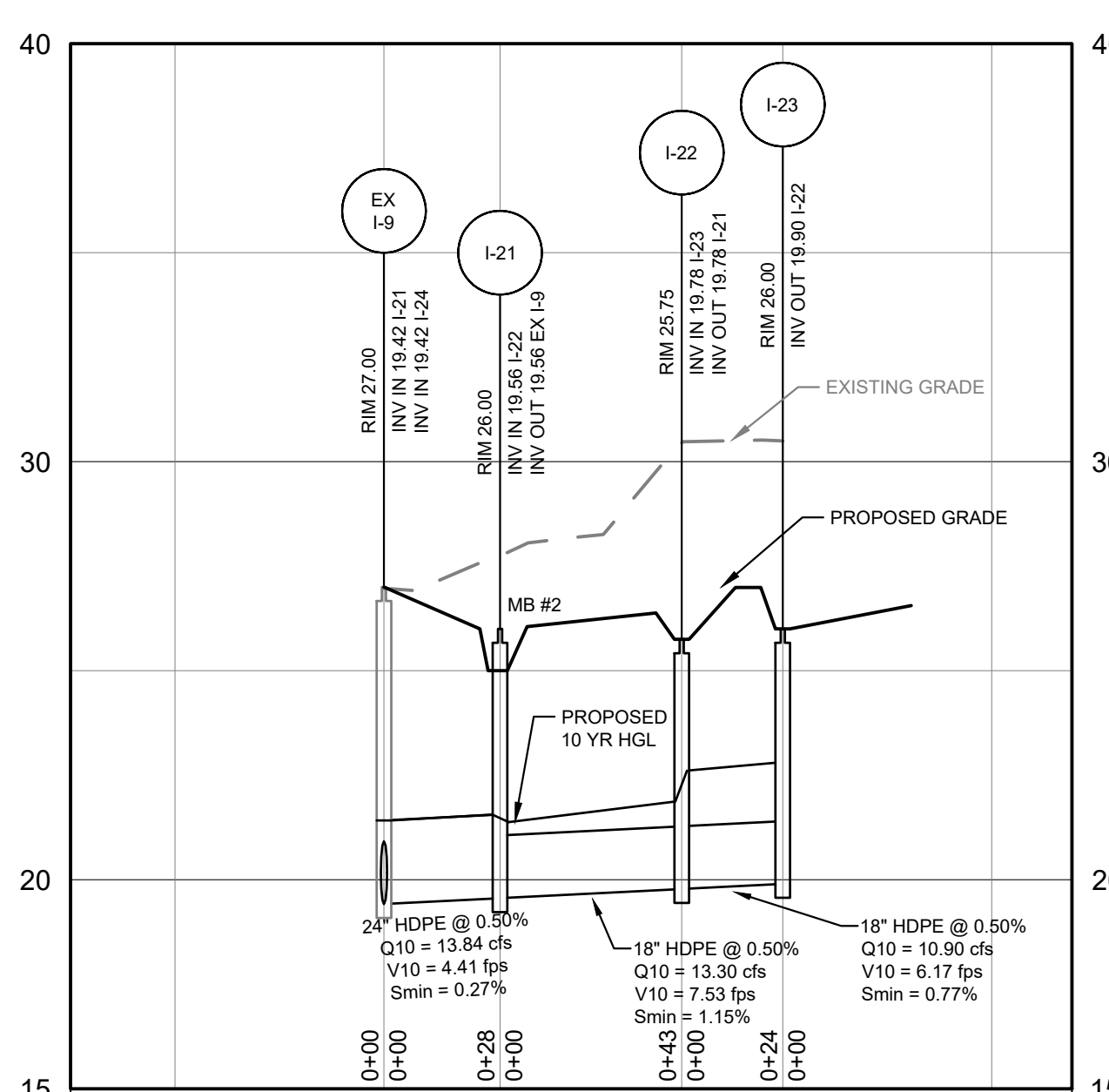
DWG No:



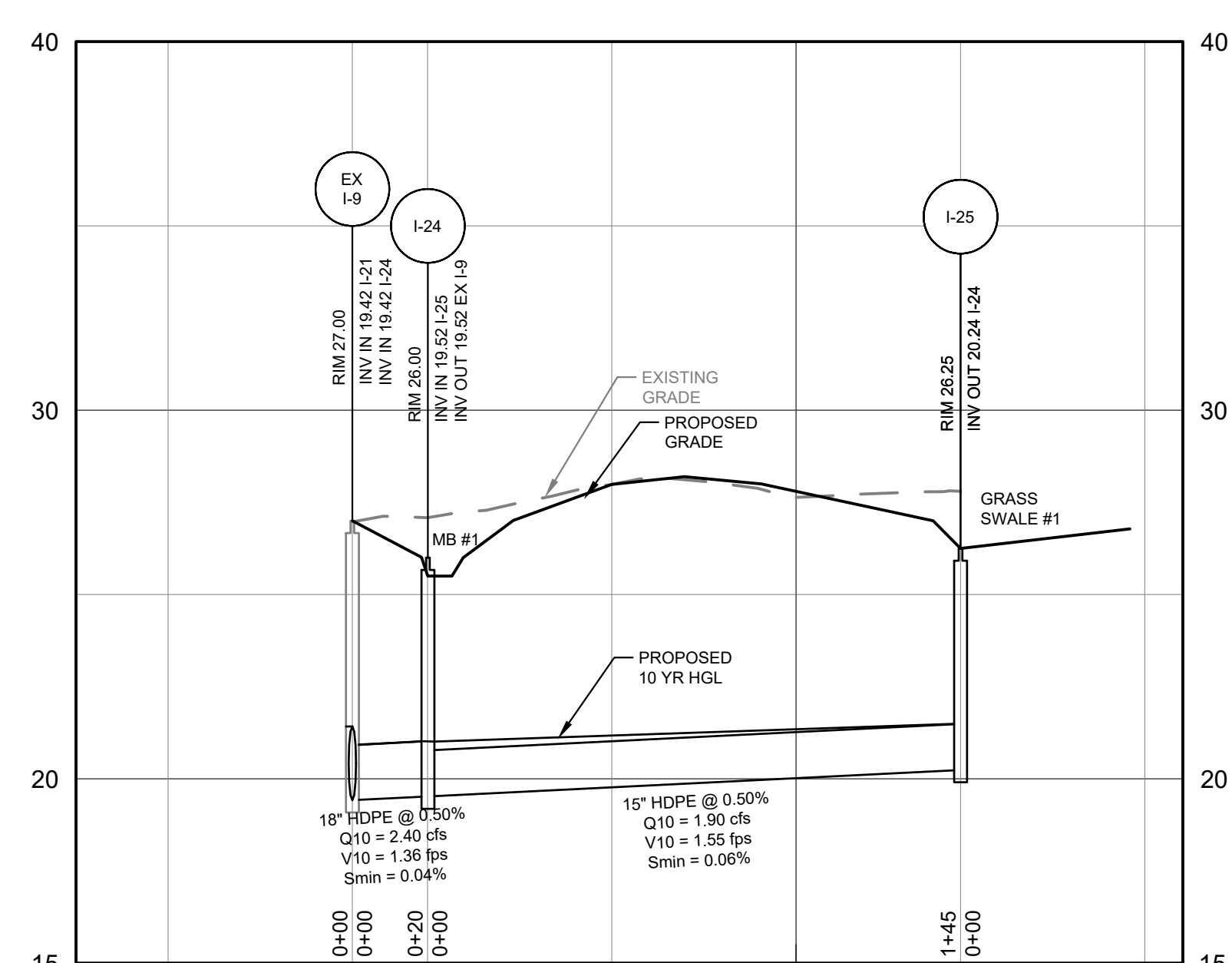
M-5 TO I-4
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'



EX I-46 TO HW-1
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'



EX I-8 TO I-23
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'



EX I-8 TO I-25
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

PROJECT: TANYARD SPRINGS PARK SHEET: 11/8/2023
LOCATION: GLEN BURNIE, MD 21060 PNR
DESIGNED: JS
DEVELOPER: CHECKED: JCP

STORM DRAIN FLOW TABULATION SITE OUTFALL #1

10-Year Pipe Coefficient = 0.011 HDPE
Table with columns: LOCATION FROM, TO, DA NUMBER, AREA, COEF, SUB CA, SUM CA, TIME CONC, INTEN, Q=CIA, SIZE, SLOPE, VEL, LENGTH, TIME, REMARKS.

PROJECT: TANYARD SPRINGS PARK SHEET: 6/6/2023
LOCATION: GLEN BURNIE, MD 21060 PNR
DESIGNED: JS
DEVELOPER: CHECKED: JCP

STORM DRAIN FLOW TABULATION SITE OUTFALL #2

10-Year Pipe Coefficient = 0.011 HDPE
Table with columns: LOCATION FROM, TO, DA NUMBER, AREA, COEF, SUB CA, SUM CA, TIME CONC, INTEN, Q=CIA, SIZE, SLOPE, VEL, LENGTH, TIME, REMARKS.

STORM DRAIN STRUCTURE SCHEDULE

Table with columns: ID, RIM ELEVATION, AS-BUILT, INV IN (FROM), AS-BUILT, INV OUT (TO), AS-BUILT, TYPE, NORTHING, EASTING.

STORM DRAIN PIPE SCHEDULE

Table with columns: USE, TYPE, SIZE, LENGTH.

NOTE: PRIORITY TO ANY UTILITY INSTALLATION OF EXCAVATION, ALL UTILITY CROSSINGS SHALL REQUIRE HAND DUG TEST PIT PROCEDURES TO CONFIRM DEPTH AND LOCATION OF ANY EXISTING UTILITIES ON SITE.

GP #G02019941 DWG NO: CD27

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS

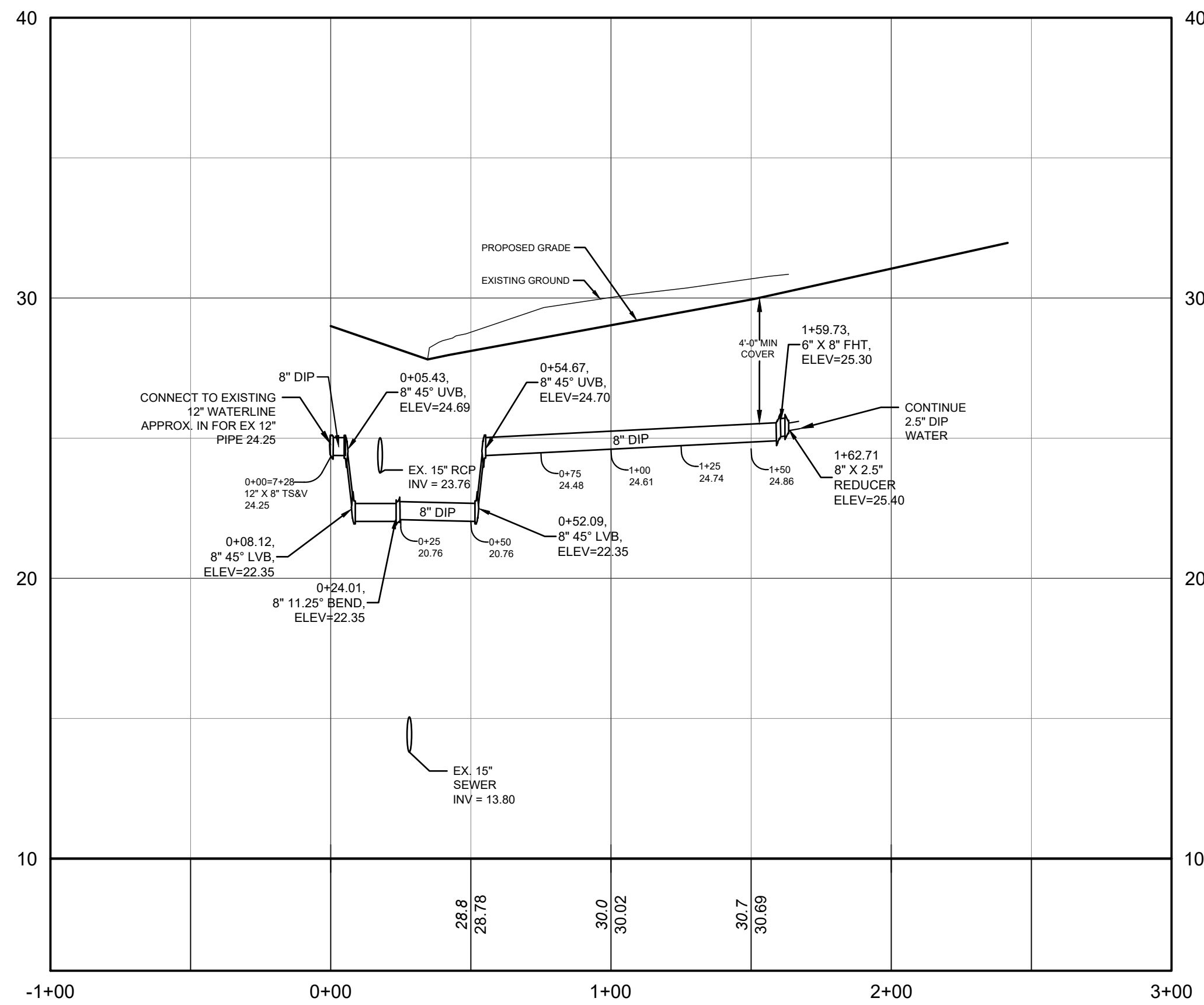
NOVEMBER 27, 2023

PROFESSIONAL CERTIFICATION: I, JOHN C. POVALAC, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 227742 EXPIRATION DATE 07/18/2024

REVISIONS table with columns: #, DESCRIPTION, APPROVED, DATE. Includes Pannoni Associates Inc. logo and address: 8890 McGaw Road, Suite 100, Columbia, MD 21045.

APPROVED DATE table for CHIEF ENGINEER, PROJECT MANAGER, and ASSISTANT CHIEF ENGINEER.

SCALE: 1" = 40', DRAWN BY: JSN/CR/SVH, CHECKED BY: JCP/PJS/JSN, SHEET 27 of 36, PROJECT #: P587900, PROPOSAL #: P587901, TANYARD SPRINGS PARK CONSTRUCTION DOCUMENTS.



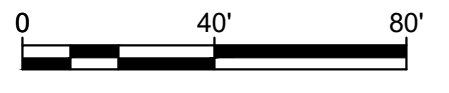
PROPOSED 8" WATERLINE
 HORIZONTAL SCALE: 1" = 40'
 VERTICAL SCALE: 1" = 4'

WATER PIPE SCHEDULE			
USE	TYPE	SIZE	LENGTH
WATER	DIP	8"	163 LF

WATER FITTING SCHEDULE	
ITEM	AMOUNT
12" X 8" TS & V	1
8" 45° LVB	2
8" 11.25° BEND	1
8" 45° UVB	2
8" X 2.5" REDUCER	1
6" X 8" FHT	1

WATER NOTES

1. ALL WATER MAIN SHALL BE INSTALLED IN ACCORDANCE WITH ANNE ARUNDEL COUNTY SPECIFICATIONS AND DETAILS, AND THE CURRENT DPW DESIGN MANUAL.
2. ALL WATER PIPE SHALL BE DIP.

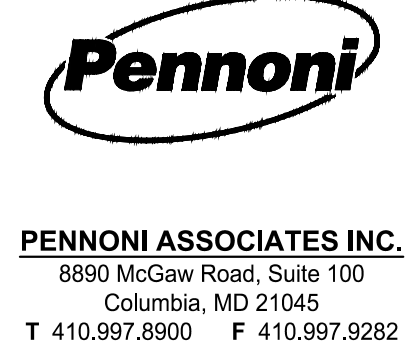


GP #G02019941 DWG NO: CD28

NOTE:
 PRIOR TO ANY UTILITY INSTALLATION, WATER CONSTRUCTION OR EXCAVATION,
 ALL UTILITY CROSSINGS AND STRUCTURE CONNECTIONS SHALL REQUIRE HAND DUG TEST
 PIT PROCEDURES TO CONFIRM DEPTH AND LOCATION OF ANY EXISTING UTILITIES ON SITE.

PROFESSIONAL CERTIFICATION: I, JOHN C. POVALAC, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 27742 EXPIRATION DATE 07/18/2024

REVISIONS	APPROVED BY	DATE
#	DESCRIPTION	



ANNE ARUNDEL COUNTY
 DEPARTMENT OF PUBLIC WORKS

NOVEMBER 27, 2023

APPROVED _____ DATE _____	APPROVED _____ DATE _____	SCALE: 1" = 40'	WATER PROFILE TANYARD SPRINGS PARK CONSTRUCTION DOCUMENTS TAX MAP 10 GRID 6 PARCEL 53 GLEN BURNIE, MD ZIP CODE 21060 3RD DISTRICT ANNE ARUNDEL COUNTY, MD
CHIEF ENGINEER _____	PROJECT MANAGER _____	DRAWN BY: JSN/CR/SVH	
APPROVAL _____ DATE _____	APPROVED _____ DATE _____	CHECKED BY: JCP/PJS/JSN	
ASSISTANT CHIEF ENGINEER _____	CHIEF, RIGHT OF WAY SERVICES _____	SHEET <u>28</u> of <u>36</u>	

PROJECT #: P587900
 PROPOSAL #: P587901

PROPERTY OF
TANYARD SPRINGS HOMEOWNERS ASSOC INC
L. 37695 F.00286
TAX ACCOUNT: 0379790223423
OPEN SPACE
GLEN BURNIE 21060
TAX MAP 10 GRID 6 PARCEL 174
ZONED .C3
USE: RESIDENTIAL

PROPERTY OF U.S. HOME CORPORATION
L. 18609 F.00711
TAX ACCOUNT: 30002915415
7186 HERITAGE SPRINGS LN
GLEN BURNIE 21060-0000
TAX MAP 10 GRID 6 PARCEL 29
ZONED .C3
USE: CEMETERY

PROPERTY OF
U.S. HOME CORPORATION
L. 18609 F.00711
TAX ACCOUNT: 30002915415
7186 HERITAGE SPRINGS LN
GLEN BURNIE 21060-0000
TAX MAP 10 GRID 6 PARCEL 29
ZONED .C3
USE: CEMETERY

PROPERTY OF
ANNE ARUNDEL COUNTY
L. 18953 F.00001
TAX ACCOUNT: 0379790223422
FLOOD PLAIN
GLEN BURNIE 21060-0100
TAX MAP 10 GRID 6 PARCEL 53
ZONED .R10
USE: EXEMPT

PROPERTY OF
TANYARD SPRINGS HOMEOWNERS ASSOC INC
L. 37695 F.00286
TAX ACCOUNT: 037979228313
TANYARD SPRING LN
GLEN BURNIE 21060-0000
TAX MAP 10 GRID 6 PARCEL 53
ZONED .R10
USE: RESIDENTIAL

LANDSCAPE PERIMETER 4
CLASS 'A': 480'
DEDUCTIONS (CREDIT FOR EXISTING TREES, ENTRANCES): 65'

LANDSCAPE PERIMETER 5
CLASS 'A': 658'
DEDUCTIONS (CREDIT FOR EXISTING TREES): 350'

LANDSCAPE PERIMETER 6
CLASS 'A': 410'
DEDUCTIONS: 0'

LANDSCAPE PERIMETER 3
CLASS 'A': 626'
DEDUCTIONS (CREDIT FOR EXISTING TREES): 666'

LANDSCAPE PERIMETER 1
CLASS 'A': 606'
DEDUCTIONS (CREDIT FOR EXISTING TREES, ENTRANCES, FUTURE SCHOOL AREA): 437'

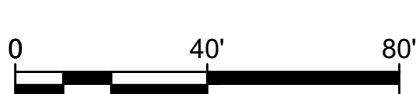
LANDSCAPE PERIMETER 2
CLASS 'A': 1,054'
DEDUCTIONS (CREDIT FOR EXISTING TREES): 1,054'

EXISTING FOREST TO BE CLEARED
1.87 AC
81,593 SF

PROPOSED FOREST RETENTION
AREA A
1.60 AC
69,705 SF

PROPOSED REFORESTATION
AREA B
0.32 AC
13,953 SF SF
(INCLUDES CREDIT FOR CERTAIN LANDSCAPING FROM PERIMETER 4)

NOTE:
THE FOREST CONSERVATION PLANTING IN THE STREAM BUFFER WILL BE INSTALLED USING HAND DIG METHODS OR LIGHT EQUIPMENT. NO OTHER GRADING OR EARTH REMOVAL WILL OCCUR IN THE AREA.



PROFESSIONAL CERTIFICATION: I, JONATHAN S. NORMAN, RLA CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 4114 EXPIRATION DATE 05/09/2025

#	REVISIONS DESCRIPTION	APPROVED BY	DATE



Pennoni
PENNONI ASSOCIATES INC.
8890 McGaw Road, Suite 100
Columbia, MD 21045
T 410.997.8900 F 410.997.9282

APPROVED		DATE	

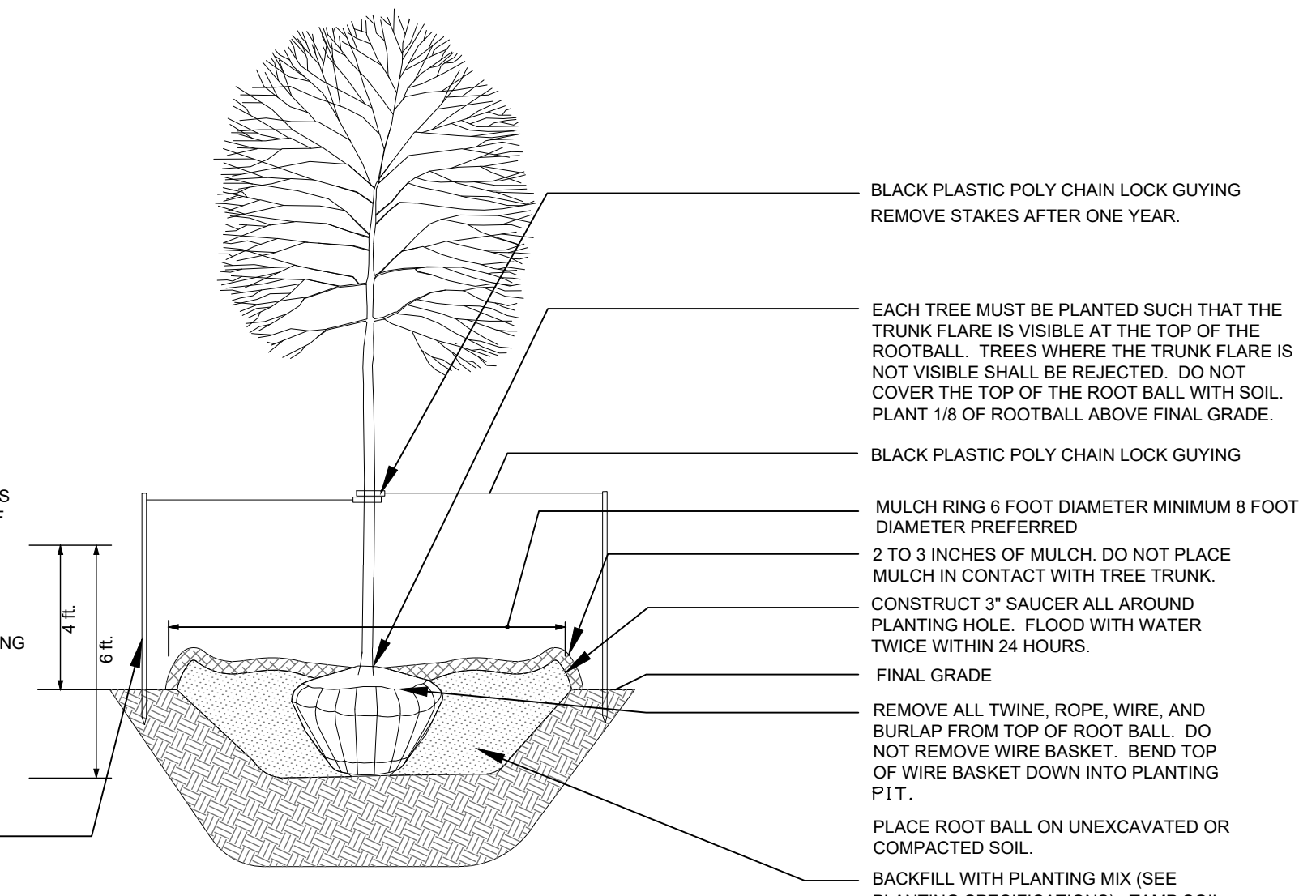
ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS
NOVEMBER 27, 2023
LANDSCAPE AND FOREST CONSERVATION PLAN
TANYARD SPRINGS PARK
CONSTRUCTION DOCUMENTS
TAX MAP 10 GRID 6 PARCEL 53
GLEN BURNIE, MD ZIP CODE 21060 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD

GP #G02019941 DWG NO: CD29

NOTES:

- DO NOT HEAVILY PRUNE THE TREE AT PLANTING. PRUNE ONLY CROSSOVER LIMBS, CO-DOMINANT LEADERS, AND BROKEN OR DEAD BRANCHES. SOME INTERIOR TWIGS AND LATERAL BRANCHES MAY BE PRUNED. HOWEVER, DO NOT REMOVE THE TERMINAL BUDDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.
- STAKE TREES AS SHOWN.
- DIG PLANTING PIT TWICE AS WIDE AS THE DIAMETER OF THE TOP OF THE ROOT BALL WITH A MINIMUM PLANTING PIT DIAMETER OF 5'.
- TIGHTEN GUYS ONLY ENOUGH TO KEEP FROM SLIPPING. ALLOW FOR SOME TRUNK MOVEMENT. GUYS SHALL BE LONG ENOUGH TO ACCOMMODATE 1.5 IN. OF GROWTH AND BUFFER ALL BRANCHES.
- TUCK ANY LOOSE ENDS OF THE GUY SO THAT NO LOOSE ENDS ARE EXPOSED.
- CONTRACTOR TO REMOVE AND GRADE OUT PLANTING SAUCER AT END OF ONE YEAR MAINTENANCE PERIOD. AREA AROUND TREES SHALL BE GRADED SMOOTH TO ELIMINATE MOUNDING. CONTRACTOR TO REMULCH AREA AROUND TREE WHEN GRADING IS COMPLETE.

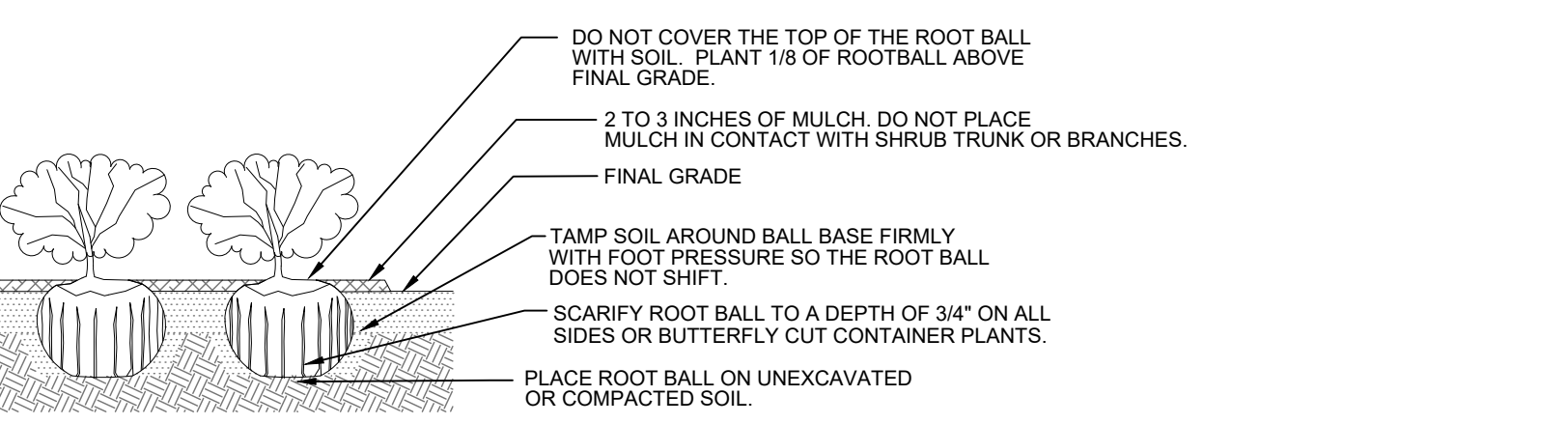
INSTALL TWO STAKES ON OPPOSITE SIDES OF TREE, PARALLEL TO THE DIRECTION OF THE PREVAILING WINTER WINDS, UNLESS OTHERWISE DIRECTED BY LANDSCAPE ARCHITECT. ALL STAKES SHALL BE DRIVEN OUTSIDE THE EDGE OF THE ROOT BALL INTO PREFERABLY UNEXCAVATED SOIL.



1 DECIDUOUS B&B TREE PLANTING DETAIL (TREES 3" CAL. OR SMALLER)
 30 NOT TO SCALE

NOTES:

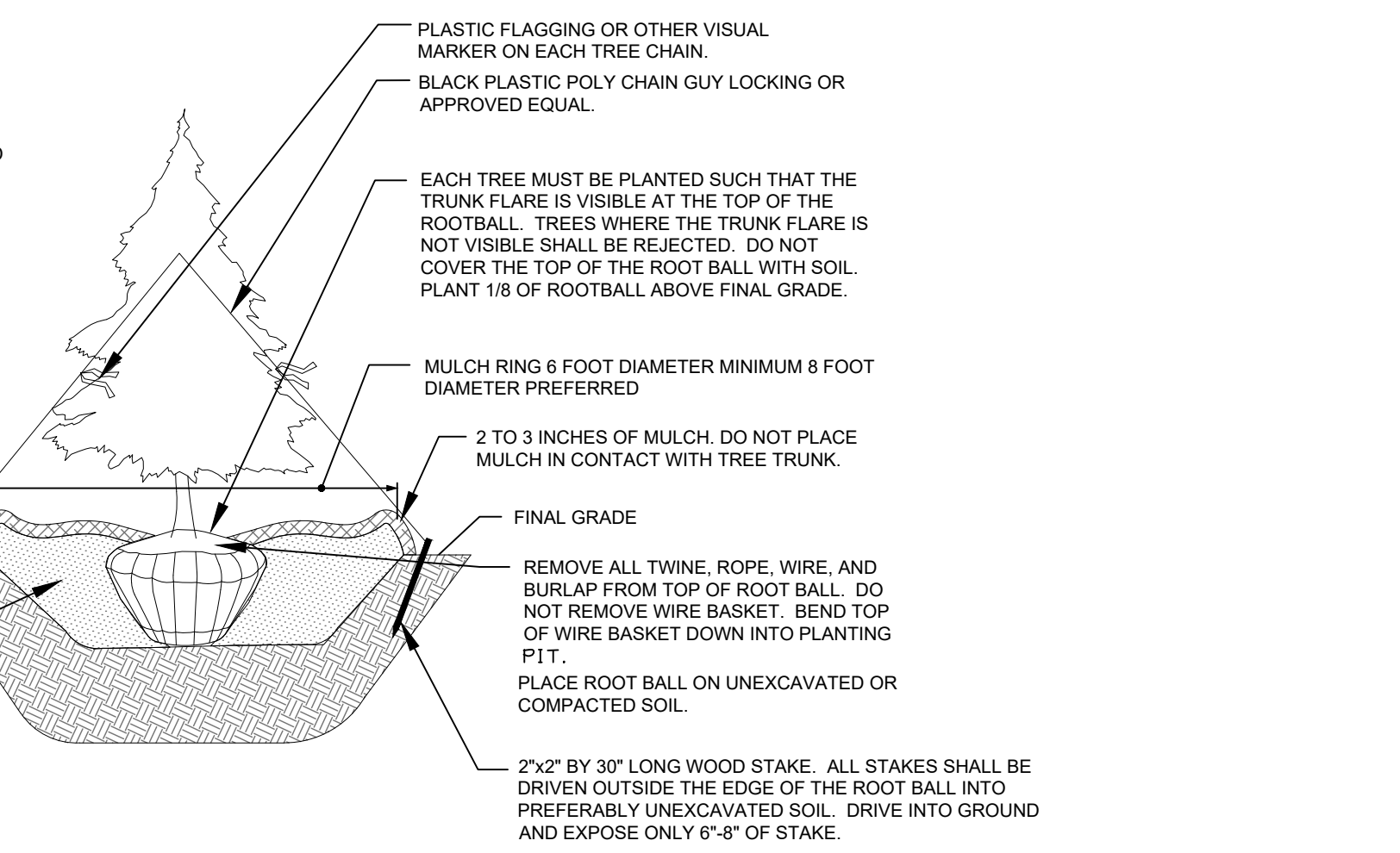
- SEE PLANTING SPECIFICATIONS FOR PREPARATION OF PLANTING BED.
- DO NOT HEAVILY PRUNE THE SHRUB AT PLANTING. PRUNE ONLY BROKEN, DAMAGED, OR DISEASED BRANCHES.
- DIG PLANTING PIT 12" WIDER THAN THE DIAMETER OF THE TOP OF THE ROOT BALL WITH A MINIMUM PLANTING PIT DIAMETER OF 18".
- FOR B&B SHRUBS: REMOVE ALL TWINE, ROPE, AND BURLAP FROM TOP OF ROOT BALL.
- ALL CONTAINERS SHALL BE REMOVED BEFORE INSTALLATION.



2 SHRUB BED PLANTING DETAIL - B&B AND CONTAINER SHRUBS
 30 NOT TO SCALE

NOTES:

- SELECT ONLY NURSERY STOCK WITH A SINGLE LEADER UNLESS OTHERWISE SPECIFIED ON PLAN. PLANTS WITH CO-DOMINANT, MISSING, OR DAMAGED LEADERS SHALL BE REJECTED.
- STAKE TREES AS SHOWN.
- DIG PLANTING PIT TWICE AS WIDE AS THE DIAMETER OF THE TOP OF THE ROOT BALL WITH A MINIMUM PLANTING PIT DIAMETER OF 5'.
- CONTRACTOR TO REMOVE AND GRADE OUT PLANTING SAUCER AT END OF ONE YEAR MAINTENANCE PERIOD. AREA AROUND TREES SHALL BE GRADED SMOOTH TO ELIMINATE MOUNDING. CONTRACTOR TO REMULCH AREA AROUND TREE WHEN GRADING IS COMPLETE.



3 EVERGREEN B&B PLANTING DETAIL
 30 NOT TO SCALE

TABLE 1:
PARKING LOT LANDSCAPE REQUIREMENTS

NO. OF PARKING SPACES	36 SPACES
NO. OF ISLANDS REQUIRED (1/12 SPACES) (36 SP/12 = 3)	3 ISLANDS
NO. OF ISLANDS PROVIDED	5 ISLANDS
AREA OF PARKING LOT (INCLUDING DRIVE AISLES)	13,855 SF±
GREEN AREA FACTOR (10%)	x 0.10
GREEN AREA REQUIRED	1,386 SF±
GREEN AREA PROVIDED	1,472 SF±
NUMBER OF PUS REQUIRED (±1,468 S.F. / 250 S.F.)	6 PU
NUMBER OF TREES PROVIDED	
SHADE TREES	6
MINOR DECIDUOUS TREES	0
EVERGREEN TREES	18
SHRUBS	18
TOTAL NUMBER OF PUS PROVIDED	6 PU

PLANTING UNIT:
 ONE PLANTING UNIT (PU) EQUALS:
 -ONE MAJOR DECIDUOUS SHADE TREE 2-2.5 INCHES IN CALIPER AT INSTALLATION AND 3 SHRUBS OR;
 -TWO MINOR DECIDUOUS TREES 1.5-1.75 INCHES IN CALIPER AT INSTALLATION AND 5 SHRUBS OR;
 -THREE EVERGREEN TREES, 6 FEET IN HEIGHT AT INSTALLATION

TABLE 2:
PERMETER/R.O.W. BUFFER REQUIREMENTS

PERIMETER	1	2	3	4	5	6
TOTAL PERIMETER/R.O.W.	606 LF.±	1,054 LF.±	626 LF.±	480 LF.±	658 LF.±	410 LF.±
DEDUCTIONS (ENTRANCES, CREDIT FOR EXISTING TREES)	437 LF.±	1,054 LF.±	626 LF.±	65 LF.±	350 LF.±	0 LF.±
NET TOTAL	169 LF.±	0 LF.±	0 LF.±	415 LF.±	308 LF.±	410 LF.±
CLASS REQUIRED (A, B, C, D OR E)	A (1 PU/15 LF)	A (1 PU/15 LF)	A (1 PU/15 LF)	A (1 PU/20 LF)	A (1 PU/20 LF)	A (1 PU/20 LF)
NUMBER OF SHADE TREES REQUIRED	12 MAJOR SHADE TREES AND 36 SHRUBS	0 MAJOR SHADE TREES AND 0 SHRUBS	0 MAJOR SHADE TREES AND 0 SHRUBS	21 MAJOR TREES AND 63 SHRUBS	31 MAJOR SHADE TREES AND 93 SHRUBS	21 MAJOR TREES AND 63 SHRUBS
-OR-	24 MINOR DECIDUOUS TREES AND 80 SHRUBS	0 MINOR DECIDUOUS TREES AND 0 SHRUBS	0 MINOR DECIDUOUS TREES AND 0 SHRUBS	42 MINOR DECIDUOUS TREES AND 105 SHRUBS	62 MINOR DECIDUOUS TREES AND 155 SHRUBS	42 MINOR DECIDUOUS TREES AND 105 SHRUBS
-OR-	36 EVERGREEN TREES	0 EVERGREEN TREES	0 EVERGREEN TREES	63 EVERGREEN TREES	93 EVERGREEN TREES	63 EVERGREEN TREES
NUMBER OF EVERGREEN/ORNAMENTAL TREES REQUIRED						
NUMBER OF TREES PROVIDED						
SHADE TREES	6	0	0	14	31	16
FLOWERING TREES	12	0	0	14	0	10
EVERGREEN TREES	0	0	0	0	0	0
SHRUBS	78	0	0	112	93	98
TOTAL NUMBER OF PLANTING UNITS (PU) PROVIDED	12	0	0	21	31	21

PLANT SCHEDULE

SYMBOL	QTY.	SCIENTIFIC/COMMON NAME	SIZE	ROOT	REMARKS
SHADE TREES					
FG	18	FAGUS GRANDIFOLIA AMERICAN BEECH	2" CAL.	B&B	PLANT AS SHOWN
PA	24	PLATANUS X ACERFOLIA 'COLUMBIA' COLUMBIA LONDON PLANE TREE	2.5-3" CAL.	B&B	PLANT AS SHOWN
QR	26	QUERCUS RUBRA NORTHERN RED OAK	2" CAL.	B&B	PLANT AS SHOWN
FLOWERING TREES					
AC	10	AMELANCHIER CANADENSIS CANADIAN SERVICEBERRY	2" CAL.	B&B	PLANT AS SHOWN
CC	11	CERCIS CANADENSIS EASTERN REDBUD	2.5-3" CAL.	B&B	PLANT AS SHOWN
CF	15	CORNUS FLORIDA FLOWERING DOGWOOD	2" CAL.	B&B	PLANT AS SHOWN
SHRUBS					
AA	82	ARONIA ARBUTIFOLIA CHOKECHERRY	24-30"	CONT.	PLANT AS SHOWN
CL	82	CLETHRA ALNIFOLIA SWEET PEPPERBUSH	24-30"	CONT.	PLANT AS SHOWN
CS	80	CORNUS SERICEA 'FLAVIRAMEA' RED TWIG DOGWOOD	24-30"	CONT.	PLANT AS SHOWN
IG	81	ILEX GLABRA INKBERRY HOLLY	24-30"	CONT.	PLANT AS SHOWN
IV**	74	ILEX VERICOLLATA WINTERBERRY HOLLY	24-30"	CONT.	PLANT AS SHOWN

NOTE:
 1. CONTRACTOR TO PLANT 1 MALE WINTERBERRY PER EVERY 6 WINTERBERRIES, AND ENSURE THAT 1 MALE WINTERBERRY IS LOCATED IN EVERY GROUPING OF PLANTINGS.

PROFESSIONAL CERTIFICATION: I, JONATHAN S. NORMAN, RLA CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 4114 EXPIRATION DATE 05/09/2025

#	REVISIONS DESCRIPTION	APPROVED BY	DATE

STATE OF MARYLAND
 JONATHAN S. NORMAN
 No. 4114
 LANDSCAPE ARCHITECT

Pennoni
 PENNONI ASSOCIATES INC.
 8990 McGaw Road, Suite 100
 Columbia, MD 21045
 T 410.997.8900 F 410.997.9282

GP #G02019941 DWG NO: CD30

ANNE ARUNDEL COUNTY
 DEPARTMENT OF PUBLIC WORKS
 NOVEMBER 27, 2023

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

SCALE: 1" = 40'
 DRAWN BY: JSN/CR/SVH
 CHECKED BY: JCP/PJS/JSN
 SHEET 30 of 36
 PROJECT #: P587900
 PROPOSAL #: P587901

LANDSCAPE NOTES AND DETAILS
TANYARD SPRINGS PARK
 CONSTRUCTION DOCUMENTS
 TAX MAP 10 GRID 6 PARCEL 53
 GLEN BURNIE, MD ZIP CODE 21060 3RD DISTRICT
 ANNE ARUNDEL COUNTY, MD

DWG NO:

SPECIMEN TREE TABLE				
KEY	SPECIES	SIZE	CONDITION	REMOVE/REMAIN
379	Southern Red Oak (Quercus falcata)	31"	FAIR	REMOVE
380	Southern Red Oak (Quercus falcata)	44"	POOR	REMAIN
381	Willow Oak (Quercus phellos)	32"	FAIR	REMOVE

SITE AREA TABLE	
	ACRES
TOTAL SITE AREA	14.69
ROAD DEDICATION	0.00
EXISTING FOREST	4.13
LAND WITHIN STREAM BUFFERS	0.44
LAND WITHIN WETLANDS & WETLAND BUFFERS	0.004
LAND WITHIN FLOODPLAIN	0.00
FOREST WITHIN STREAM BUFFERS	0.11
FOREST WITHIN WETLANDS & WETLAND BUFFERS	0.004
FOREST WITHIN FLOODPLAIN	0.00
CRITICAL AREA	0.00
FOREST WITHIN CRITICAL AREA	0.00

OVERALL FOREST MITIGATION TABLE				
MITIGATION	MITIGATION RATIO	REQUIRED (ACRES)	PROVIDED ON-SITE (ACRES)	AMOUNT FOR FEE-IN-LIEU
FOREST CONSERVATION MITIGATION	1:1 ON-SITE	1.6	1.6	0.00
SPECIMEN TREE MITIGATION	1:1 ON-SITE	0.32	0.32	0.00
TOTAL		1.92	1.92	0.00

FOREST CONSERVATION AREAS		
AREA	ACRES	TYPE
A	1.60	RETENTION
B	0.32	AFFORESTATION & *CREDIT FOR CERTAIN LANDSCAPING (SPECIMEN TREE MITIGATION)

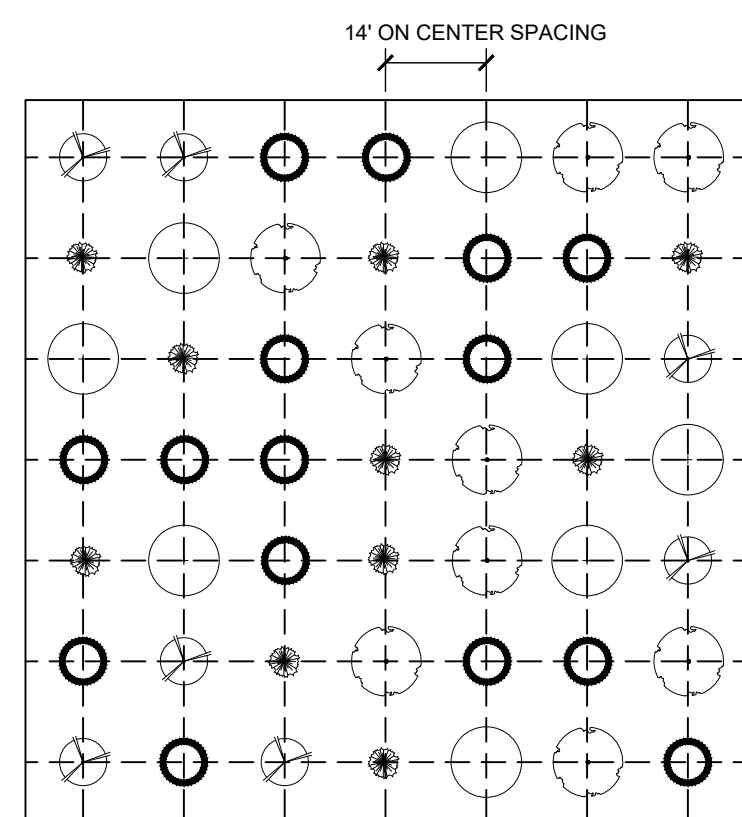
*CREDIT FOR CERTAIN LANDSCAPING (17-6-304(6)) ALONG A PORTION OF PERIMETER 4 HAS BEEN PROVIDED IN THE FORM OF 10 SHADE TREES AND 10 FLOWERING TREES.

REFORESTATION AREA B PLANTING LIST

QUANTITIES	SCIENTIFIC/ COMMON NAME	SIZE	ROOT	REMARKS
4	LIRIODENDRON TULIPIFERA / TULIP POPLAR	2" CAL.	CONTAINER	FULL CROWN 20' ± SPACING SEE RANDOM PLANTING DETAIL
4	QUERCUS PALUSTRIS / PIN OAK			
5	QUERCUS RUBRA / NORTHERN RED OAK			
4	SHAGBARK HICKORY / CARYA OVATA			
4	LIQUIDAMBAR STYRACIFLUA / SWEET GUM			

AFFORESTATION AREAS WILL HAVE TREES PLANTED AT A RATE OF 100 TREES PER ACRE: 9,101 SF/43,560 SF X 100 TREES/ACRE = 21 TREES)

THIS PLANT SCHEDULE EXCLUDES THE CREDIT FOR CERTAIN LANDSCAPING AREA ALONG PERIMETER 4.



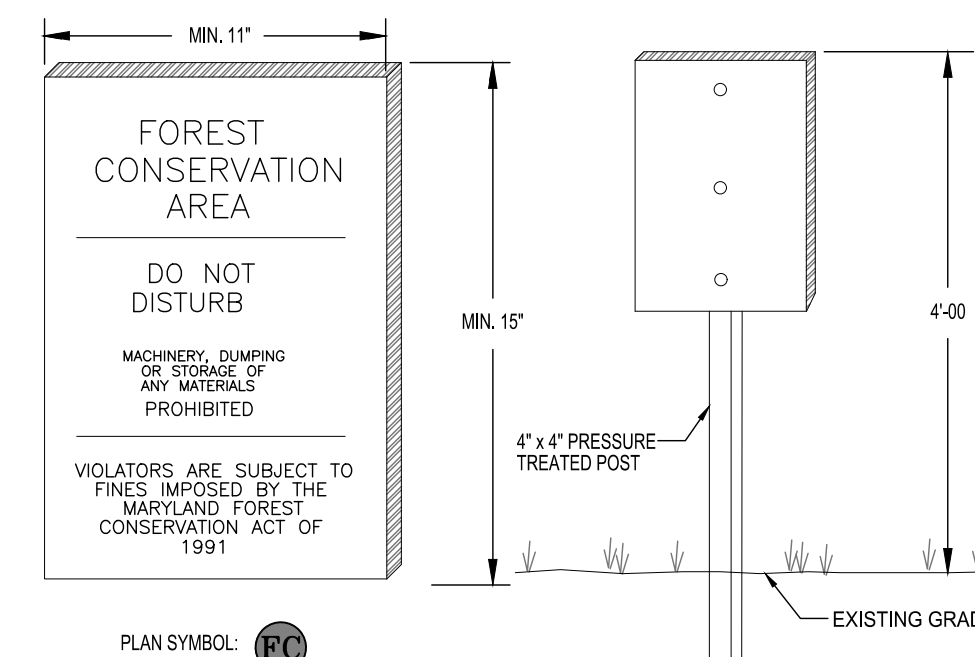
NOTES:

- RANDOMLY LOCATE GROUPS OF PLANT SPECIES, TAKING CARE NOT TO PLANT IN SUCCESSION MORE THAN 4 OF THE SAME SPECIES.
- THIS DETAIL PROVIDES A HYPOTHETICAL, GRAPHIC DEPICTION OF A PROPOSED LAYOUT FOR FIVE DIFFERENT PLANT SPECIES (A-E) AND IS NOT MEANT TO BE FOLLOWED EXACTLY. THE PURPOSE IS TO ACHIEVE THE APPEARANCE OF RANDOM SPACING. SEE PLANT LIST FOR ACTUAL NUMBER OF PLANT SPECIES. SEE PLANT LIST FOR ON-CENTER SPACING REQUIREMENTS.

1 RANDOM PLANTING LAYOUT DETAIL
31 NOT TO SCALE

KEY

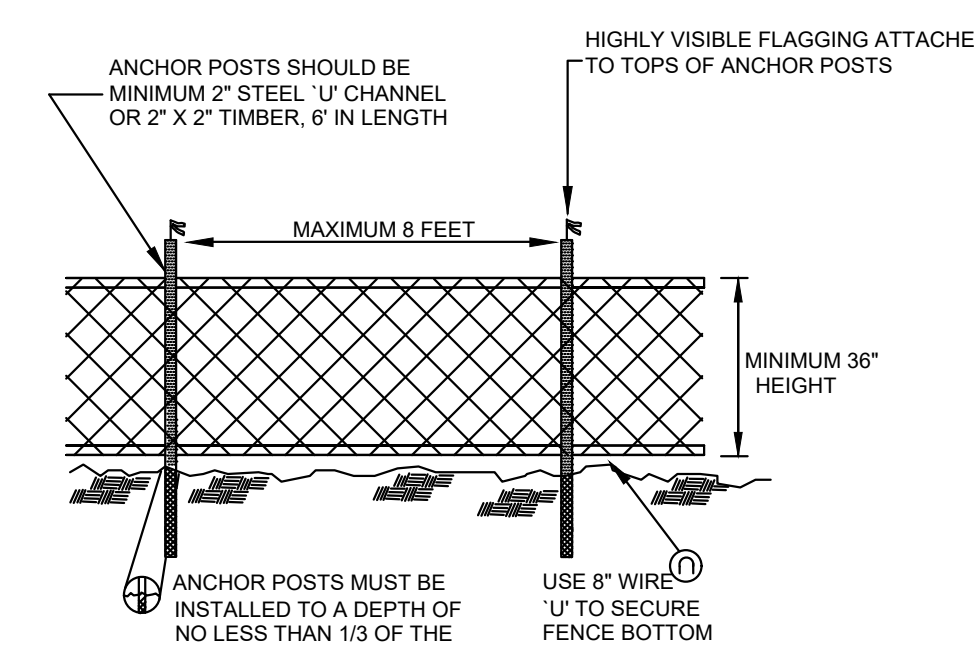
- PLANT SPECIES 'A'
- PLANT SPECIES 'B'
- PLANT SPECIES 'C'
- PLANT SPECIES 'D'
- PLANT SPECIES 'E'



NOTES:

- SIGNAGE SHALL BE LOCATED ON FOREST CONSERVATION / REFORESTATION / AFFORESTATION EASEMENT BORDER.
- PLACE SIGNS AT 50' AT THE OUTER PERIMETER OF THE FOREST CONSERVATION AREAS. SEE PLAN FOR SPACING.

2 FOREST CONSERVATION SIGN DETAIL
31 NOT TO SCALE



NOTES:

- BLAZE ORANGE OR BLUE PLASTIC MESH FENCE FOR FOREST PROTECTION DEVICE, ONLY.
- SUPER SILT FENCE MAY BE SUBSTITUTED FOR TREE PROTECTION FENCING.
- BOUNDARIES OF RETENTION AREA WILL BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS.
- BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
- AVOID DAMAGE TO CRITICAL ROOT ZONE. DO NOT DAMAGE OR SEVER LARGE ROOTS WHEN INSTALLING POSTS.
- PROTECTION SIGNS ARE REQUIRED. SEE SIGN DETAIL.
- FENCING SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

3 TREE PROTECTION FENCING
31 NOT TO SCALE

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	640,037
D. Universal Deductions (Critical Area or 100-Yr Floodplain)	0
E. Impervious Surface Deductions for Priority Funding Areas	53,762
F. Existing Forest Cover within Unique Net Tract Area	179,903
G. Proposed Forest Clearing within Unique Net Tract Area	81,593
H. Unique Net Tract Area = (C)-(D)-(E)	586,275
Is Total Net Tract Area less than or equal to 5 Acres?	No
Key for lookup table	Priority Funding Area Institutional No
I. Conservation Threshold	20%
J. Afforestation Threshold	15%
Forest Conservation	
K. Conservation Threshold Area = (H) X (I)	117,255
L. Area of Forest Above Conservation Threshold = (F) - (K)	62,648
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).	138,136
N. Forest Clearing Permitted without Mitigation = (F) - (M)	41,767
O. Proposed Forest Retention = (F) - (G)	98,310
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).	31,324
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).	0
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	37,890
S. Total Reforestation Required = (P) + (R) - (Q)	69,214
T. Afforestation Threshold Area = (H) X (J)	87,941
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)	69,214

ANNE ARUNDEL COUNTY FOREST CONSERVATION WORKSHEET (IN ACRES)

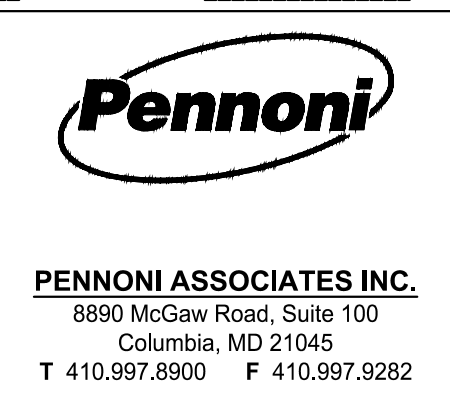
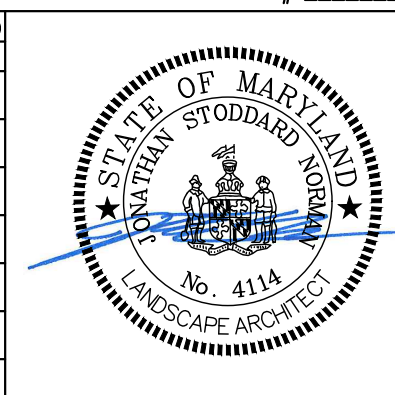
Variables	Unique Tract 1
Site Information	
A. Growth Management Area	Priority Funding Area
B. Land Use Type	Institutional
C. Total Unique Tract Area	14.7
D. Universal Deductions (Critical Area or 100-Yr Floodplain)	0.0
E. Impervious Surface Deductions for Targeted Growth and Priority Funding Areas	1.2
F. Existing Forest Cover within Net Unique Tract Area	4.1
G. Proposed Forest Clearing within Net Unique Tract Area	1.9
H. Net Unique Tract Area = (C)-(D)-(E)	13.5
Is Total Net Tract Area less than or equal to 5 Acres?	No
Key for lookup table	Priority Funding Area Institutional No
I. Conservation Threshold	20%
J. Afforestation Threshold	15%
Forest Conservation	
K. Conservation Threshold Area = (H) X (I)	2.7
L. Area of Forest Above Conservation Threshold = (F) - (K)	1.4
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).	3.2
N. Forest Clearing Permitted without Mitigation = (F) - (M)	1.0
O. Proposed Forest Retention = (F) - (G)	2.3
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).	0.7
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).	0.0
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	0.9
S. Total Reforestation Required = (P) + (R) - (Q)	1.6
T. Afforestation Threshold Area = (H) X (J)	2.0
U. Total Afforestation Required If Existing Forest Cover (F) < Afforestation Threshold Area (T), then (U) = (T) - (F). If not, then (U) = 0.	0.0
V. Total Mitigation Required By Tract = (S) + (U)	1.6

GP #G02019941

DWG NO: CD31

PROFESSIONAL CERTIFICATION: I, JONATHAN S. NORMAN, RLA CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 4114 EXPIRATION DATE 05/09/2025

REVISIONS	APPROVED
#	DESCRIPTION



ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS
NOVEMBER 27, 2023

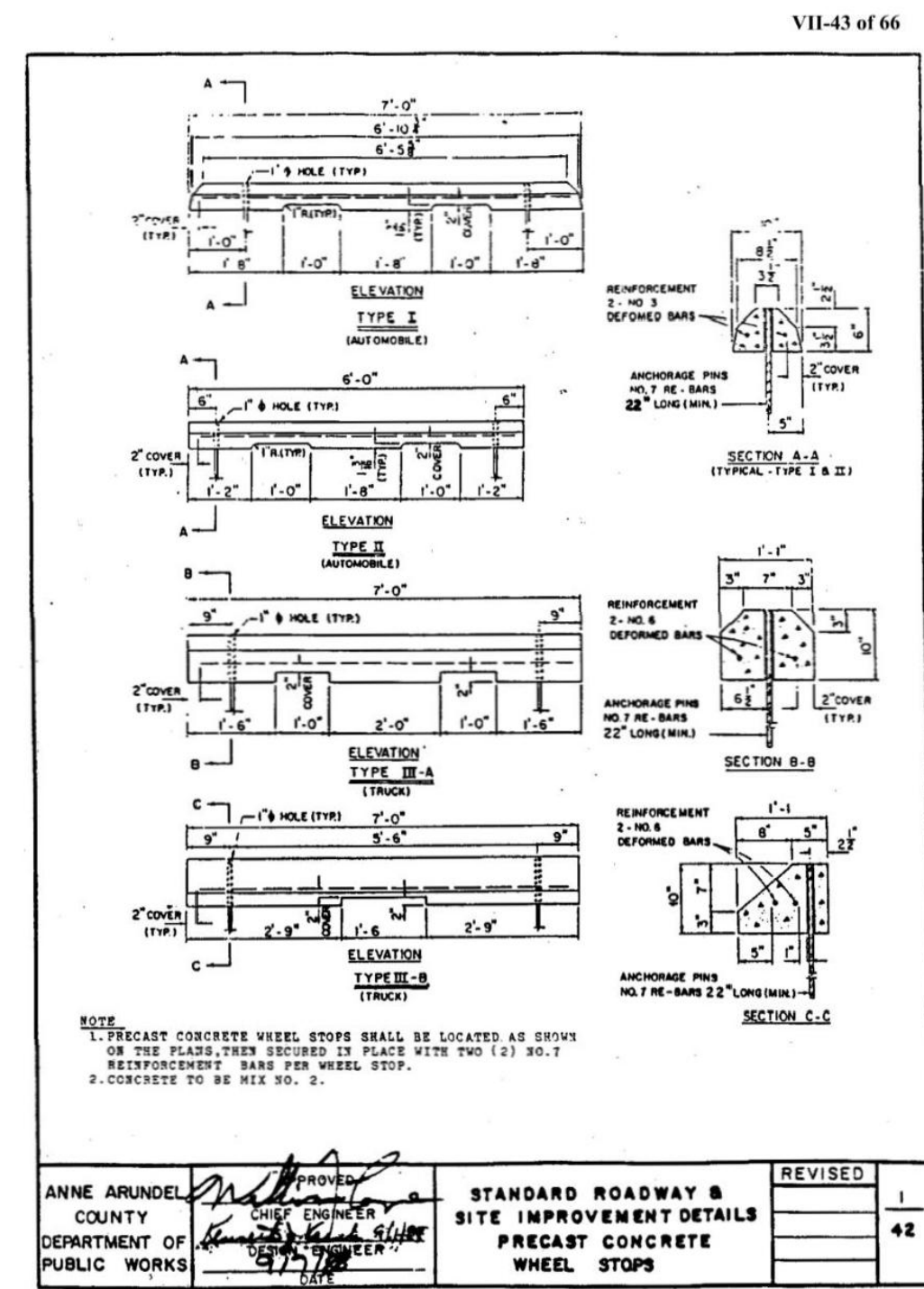
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CHIEF ENGINEER		PROJECT MANAGER	
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ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY SERVICES	

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SHEET 31 of 36
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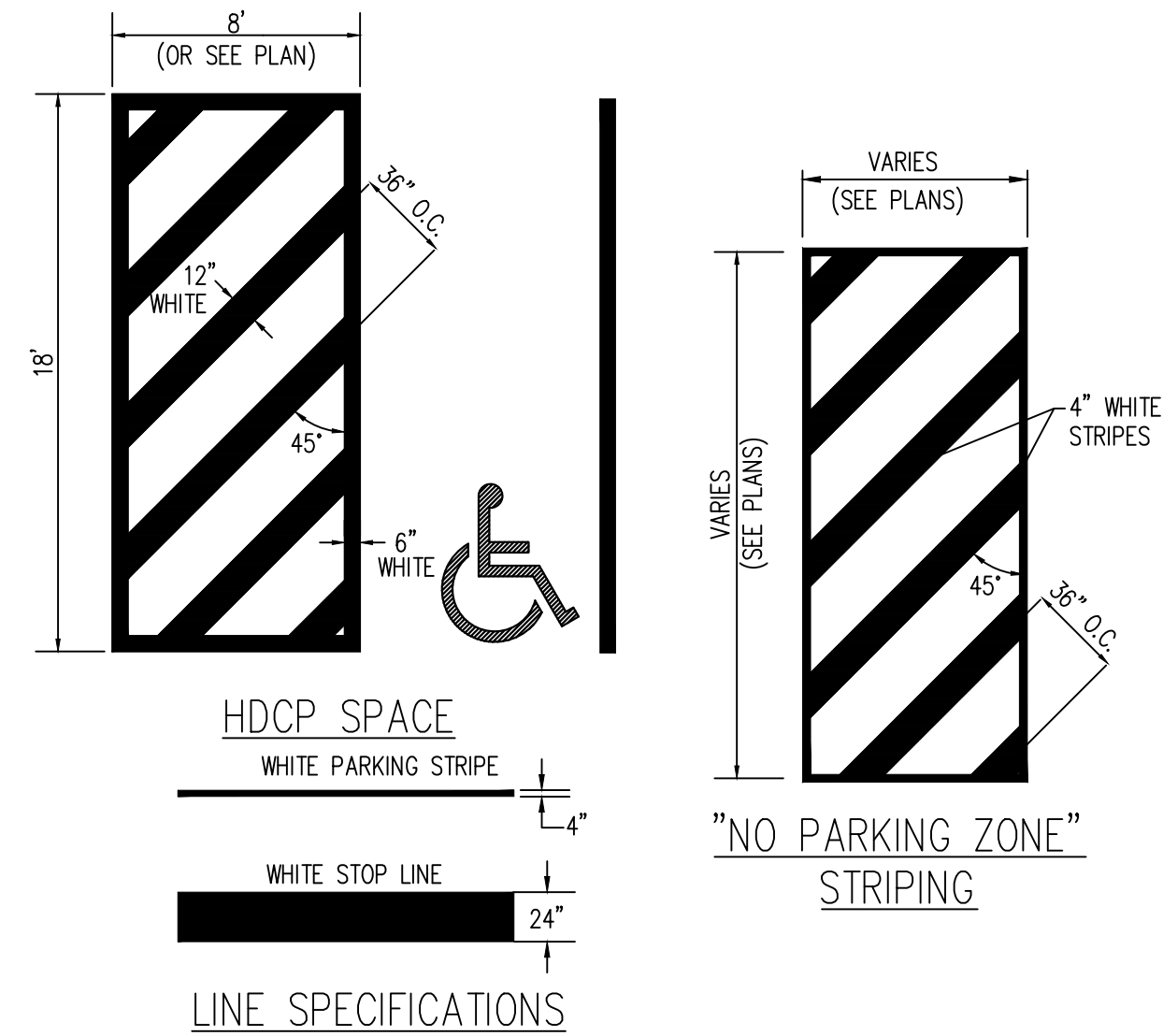
FOREST CONSERVATION NOTES AND DETAILS
TANYARD SPRINGS PARK CONSTRUCTION DOCUMENTS
TAX MAP 10 GRID 6 PARCEL 53
GLEN BURNIE, MD ZIP CODE 21060 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD

NOTE: ALL PLANTINGS SHALL BE INSTALLED AND MULCHED/STABILIZED IN THE SAME WORKING DAY.

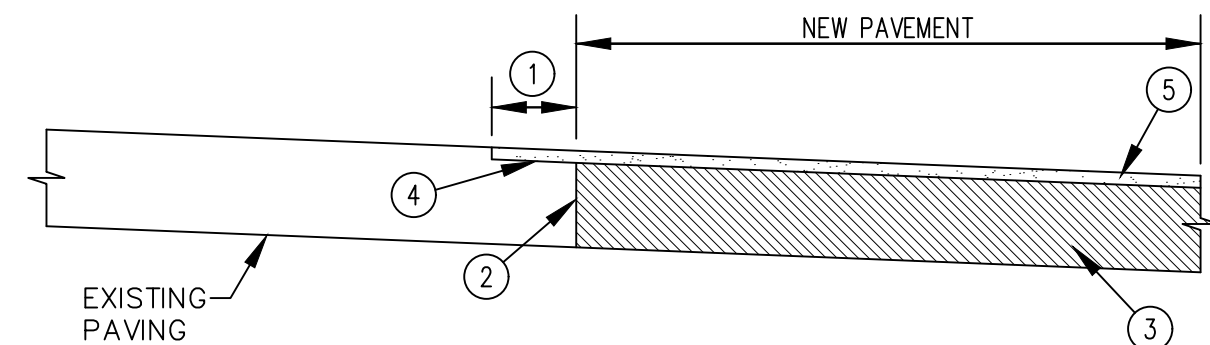
DPW No:



1 CONCRETE WHEELSTOP
32 NOT TO SCALE

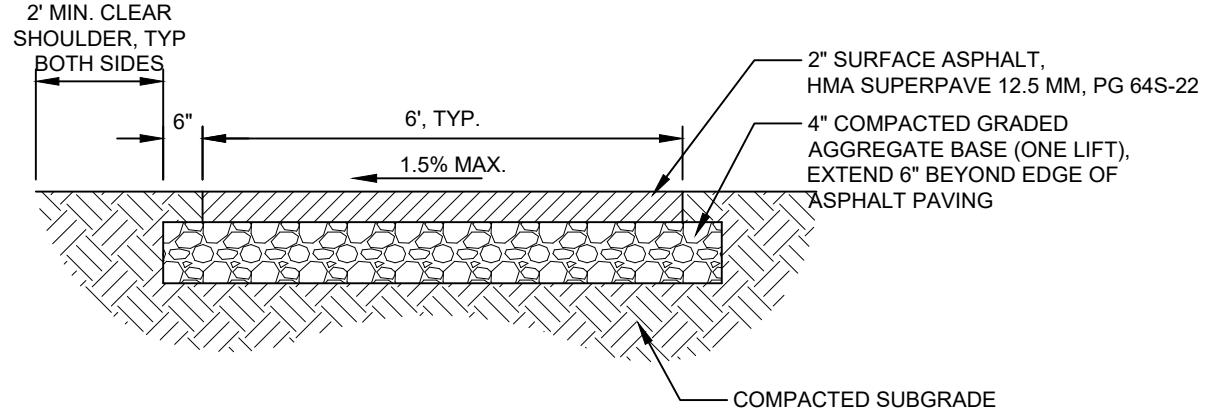


9 STRIPING STANDARDS
32 NOT TO SCALE

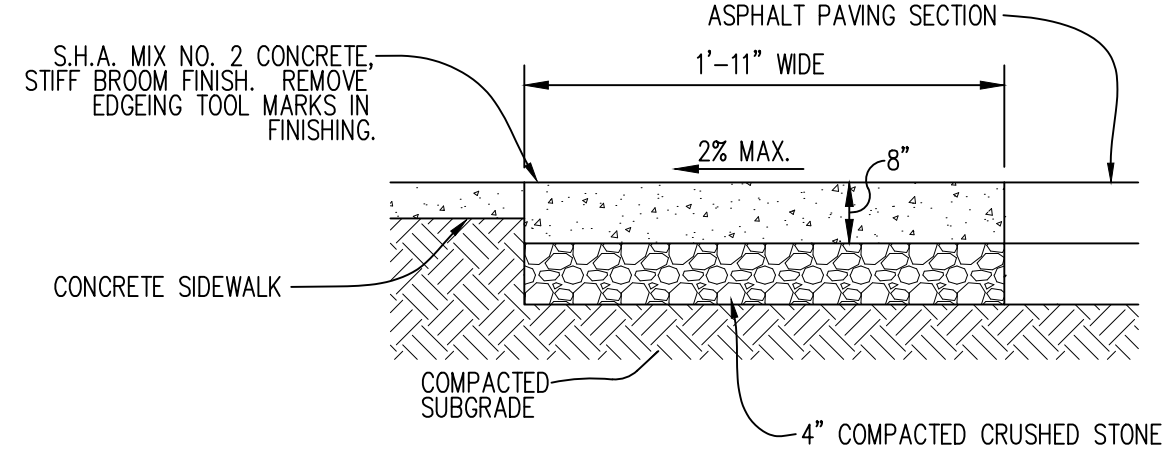


- 1 MILL A 1' WIDE X 1-1/2" DEEP STRIP
 - 2 SAW-CUT THROUGH FULL DEPTH PAVING
 - 3 INSTALL SUB BASE GRAVEL AND BASIC PAVEMENT PER THE TYPICAL PAVEMENT SECTION.
 - 4 INSTALL TACK COAT ON MILLED PAVEMENT SURFACE
 - 5 PROVIDE 1 1/2" TOP SURFACE COARSE (HMA SUPERPAVE 9.5 MM, PG645-22 LEVEL 2)*
- *NOTE: LONGITUDINAL JOINTS FOR THE TOP SURFACE COARSE MUST NOT COINCIDE WITH THE FULL-DEPTH SAW-CUT JOINT

10 PAVEMENT CONNECTION
32 NOT TO SCALE

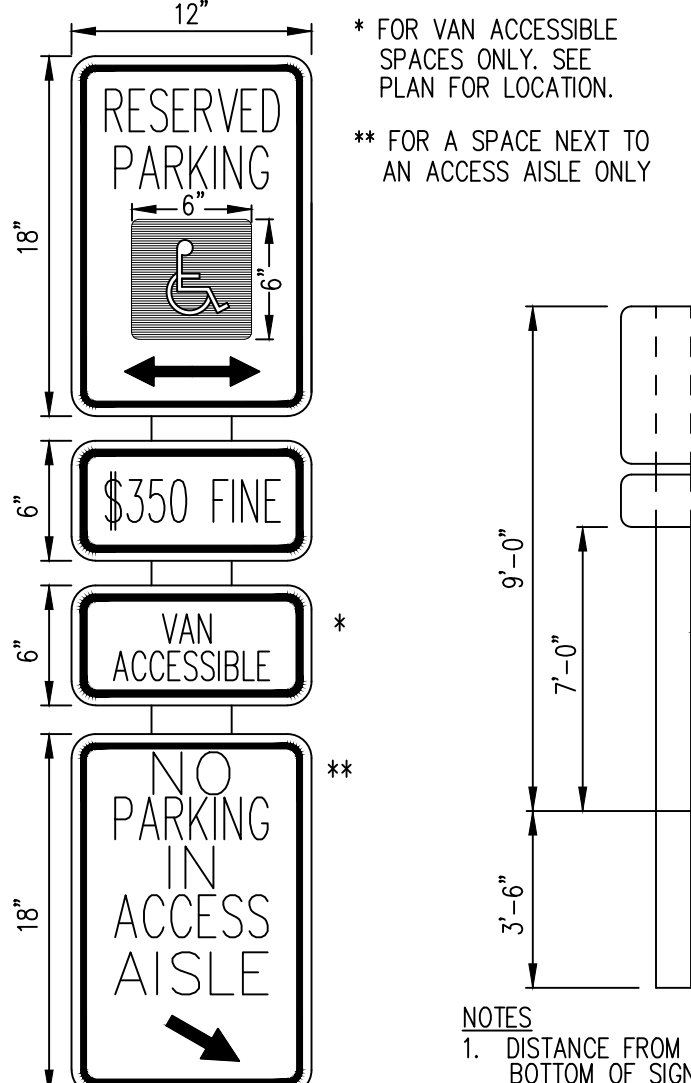


2 ASPHALT TRAIL PAVING SECTION
32 NOT TO SCALE



3 NOSE DOWN CURB
32 NOT TO SCALE

6 FLUSH CURB
32 NOT TO SCALE



7 ACCESSIBLE PARKING SIGN
32 NOT TO SCALE

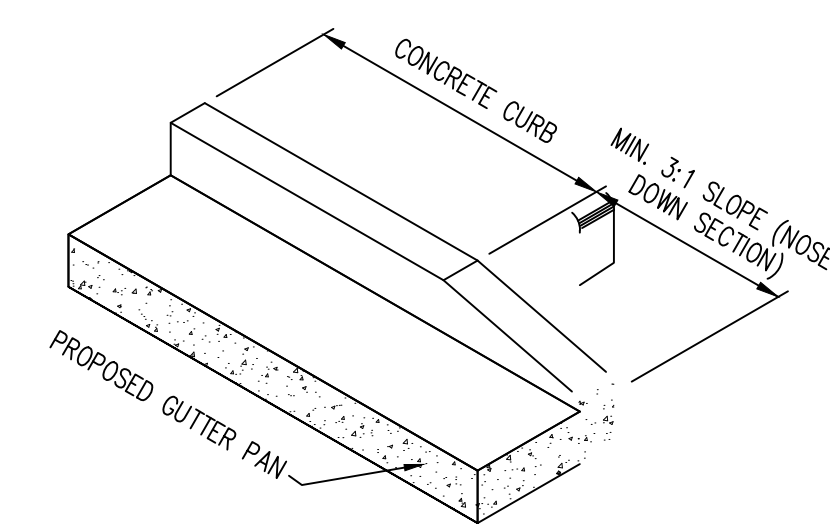
AMERICANA OUTDOORS
Navajo Shelter



- Sizes Available**
- Ordering: Determine size needed and contact us for a price quote.
 - Width: 12ft to 40ft
 - Length: 12ft to 60ft
 - Standard Roof Pitch: 4/12
 - Optional Roof Pitch: 6/12
 - Roof Panel: 24in "W" Aluminum Panel

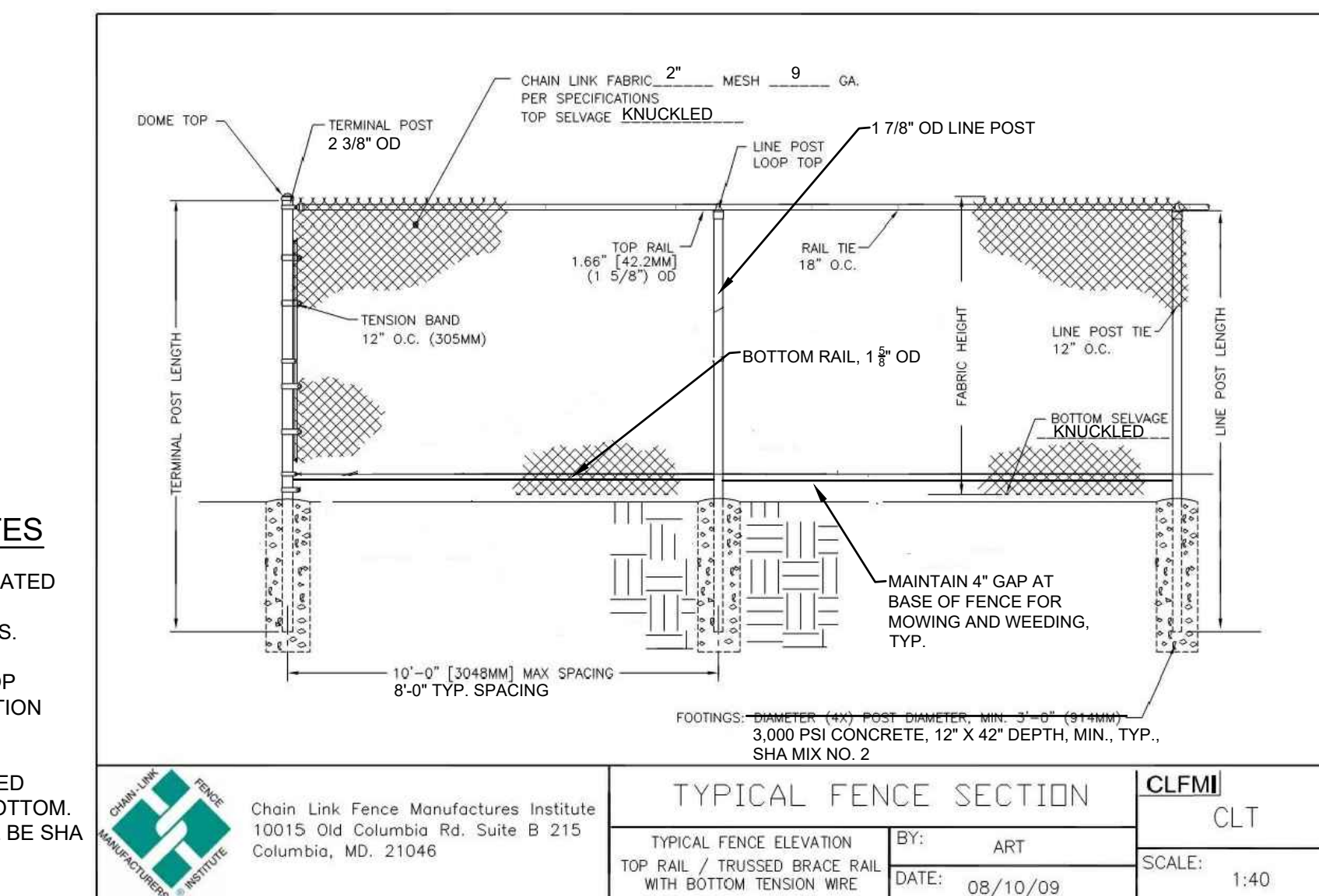
11 PAVILION
32 NOT TO SCALE

- TRAIL SECTION NOTES:**
1. 2' SHOULDERS WITH MAXIMUM SLOPE OF 1:6 SLOPE SHALL BE PROVIDED ON EACH SIDE OF THE TRAIL.
 2. MAXIMUM SLOPE ABOVE OR BELOW THE TRAIL 3:1 (IN SPECIFIC SITUATIONS ALONG THE PROJECT 2:1 SLOPES ARE UTILIZED. THESE HAVE BEEN NOTED ON THE PLAN.
 3. MINIMUM SLOPE AWAY FROM THE TRAIL: 2%
 4. SEE PLAN VIEWS FOR SPECIFIC GRADING ALONG TRAIL.
 5. GROSS SLOPE OF TRAIL SHALL BE 1.5%. SEE PLAN VIEWS FOR DIRECTION OF SLOPE.

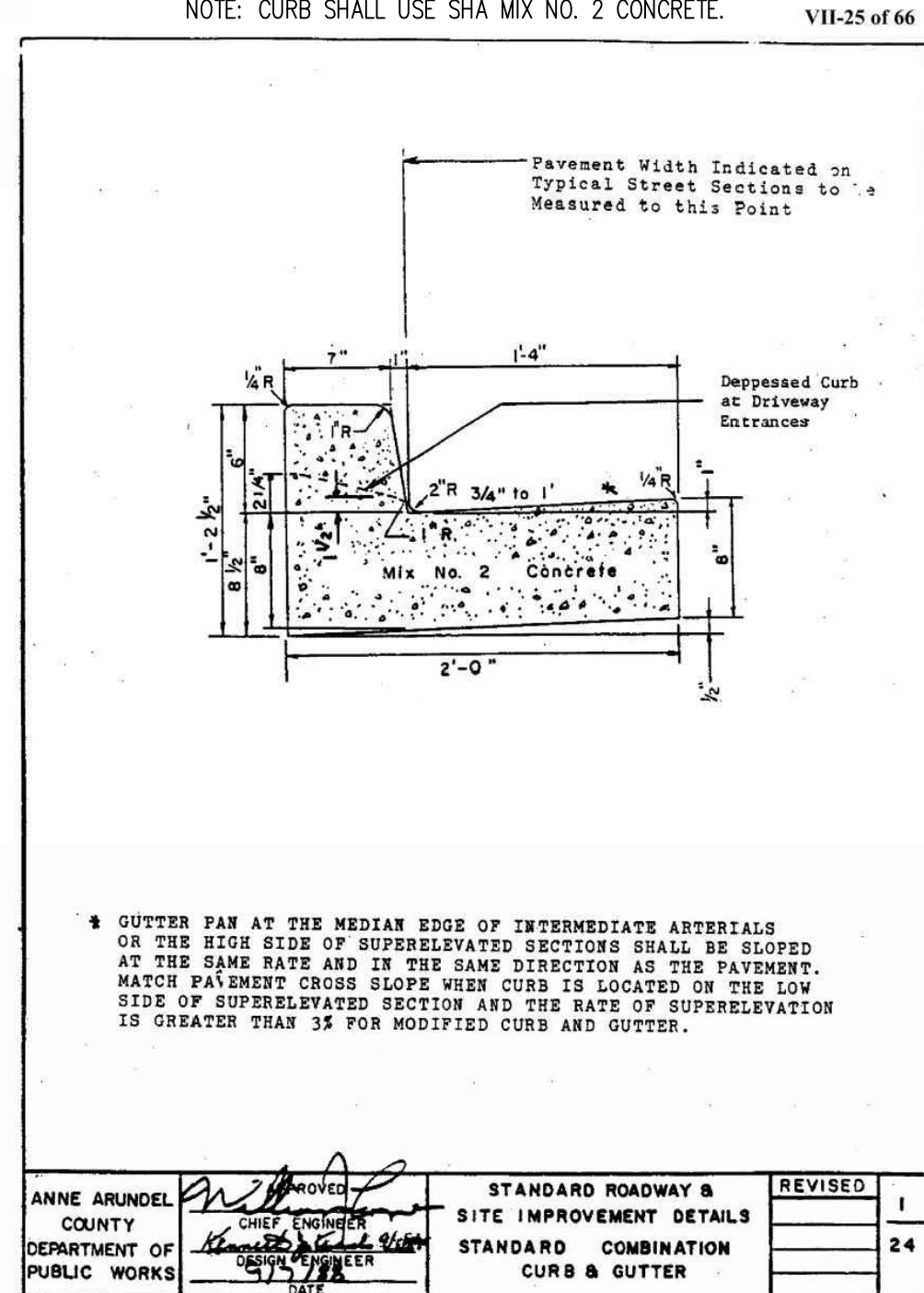


- NOTE:**
1. WHERE THE CURB IS TO BE CONSTRUCTED AS PART OF AN ACCESSIBLE CURB RAMP, THE MARYLAND STATE HIGHWAY ADMINISTRATION STANDARD CURB RAMP DETAILS SHALL GOVERN.
 2. CURB SHALL USE SHA MIX NO. 2 CONCRETE.

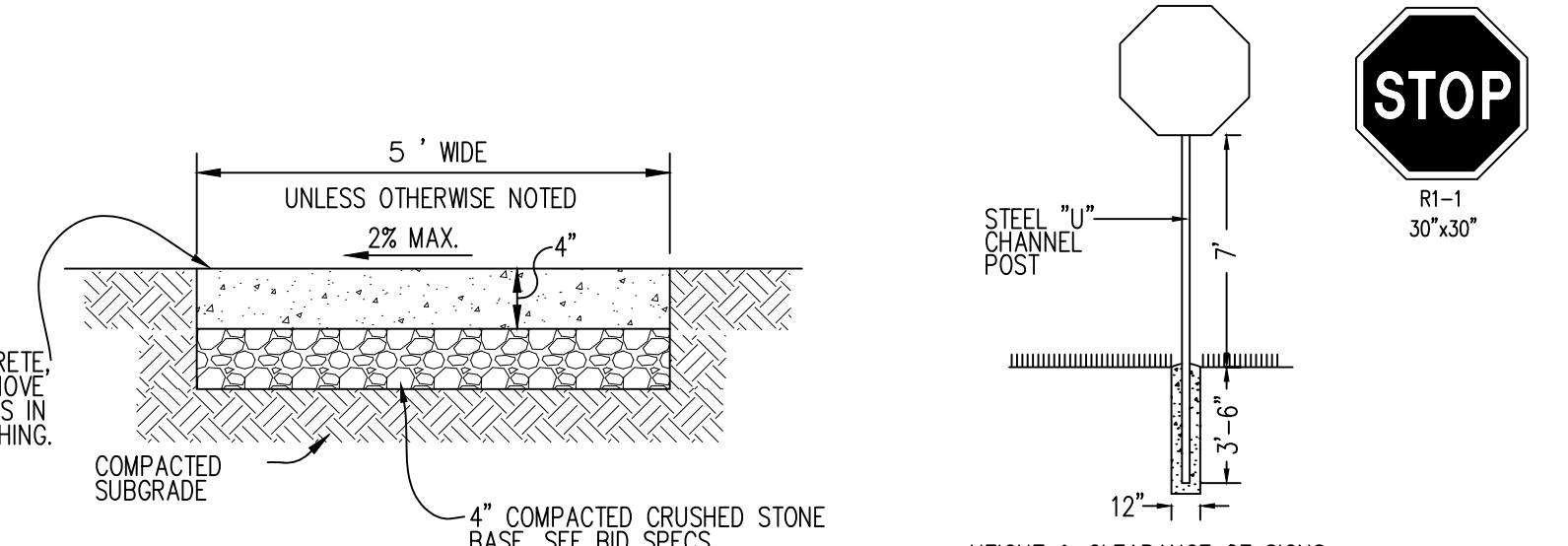
12 STANDARD COMBINATION CURB & GUTTER
32 NOT TO SCALE



8 CHAIN LINK FENCE DETAILS
32 NOT TO SCALE

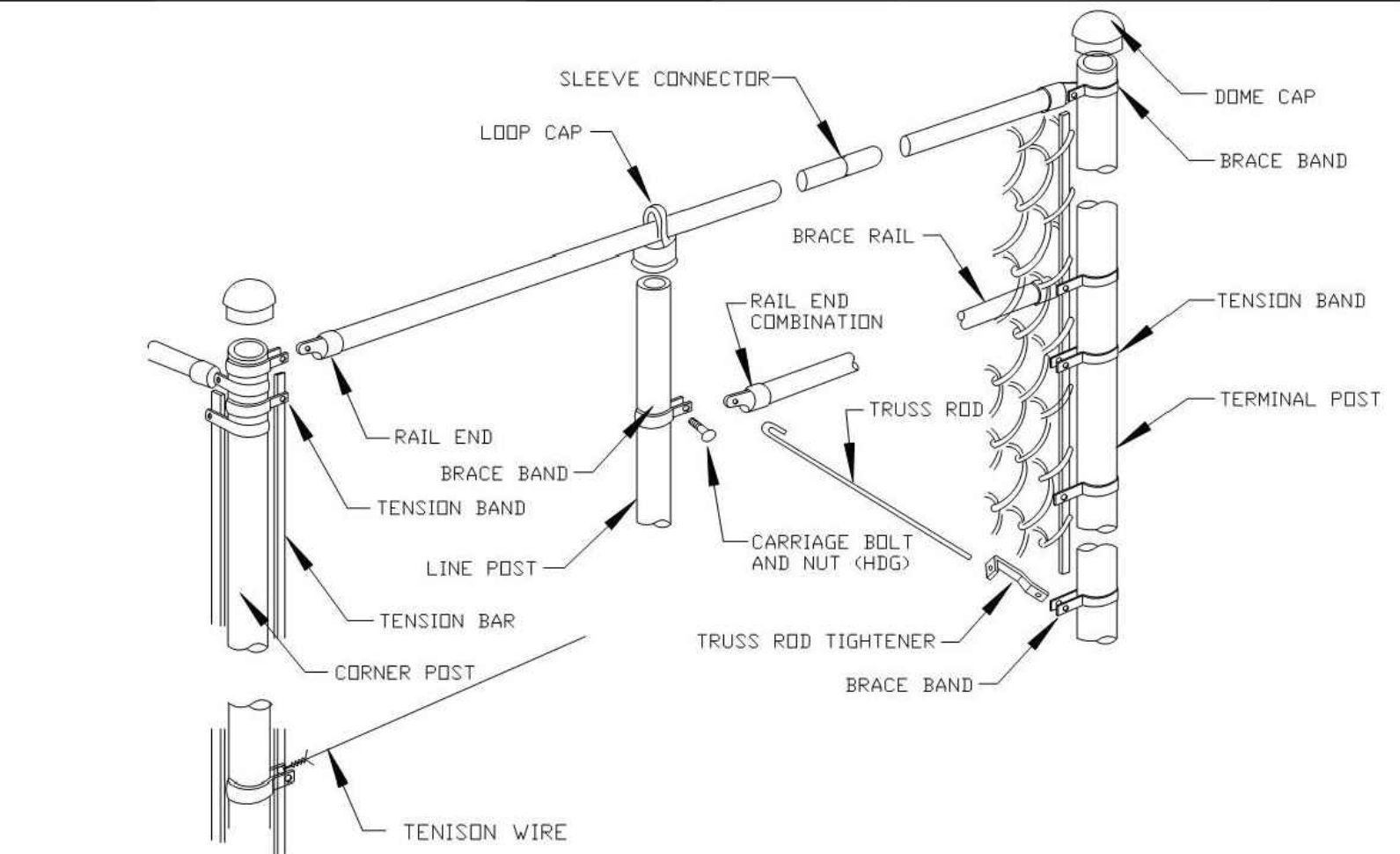


12 STANDARD COMBINATION CURB & GUTTER
32 NOT TO SCALE

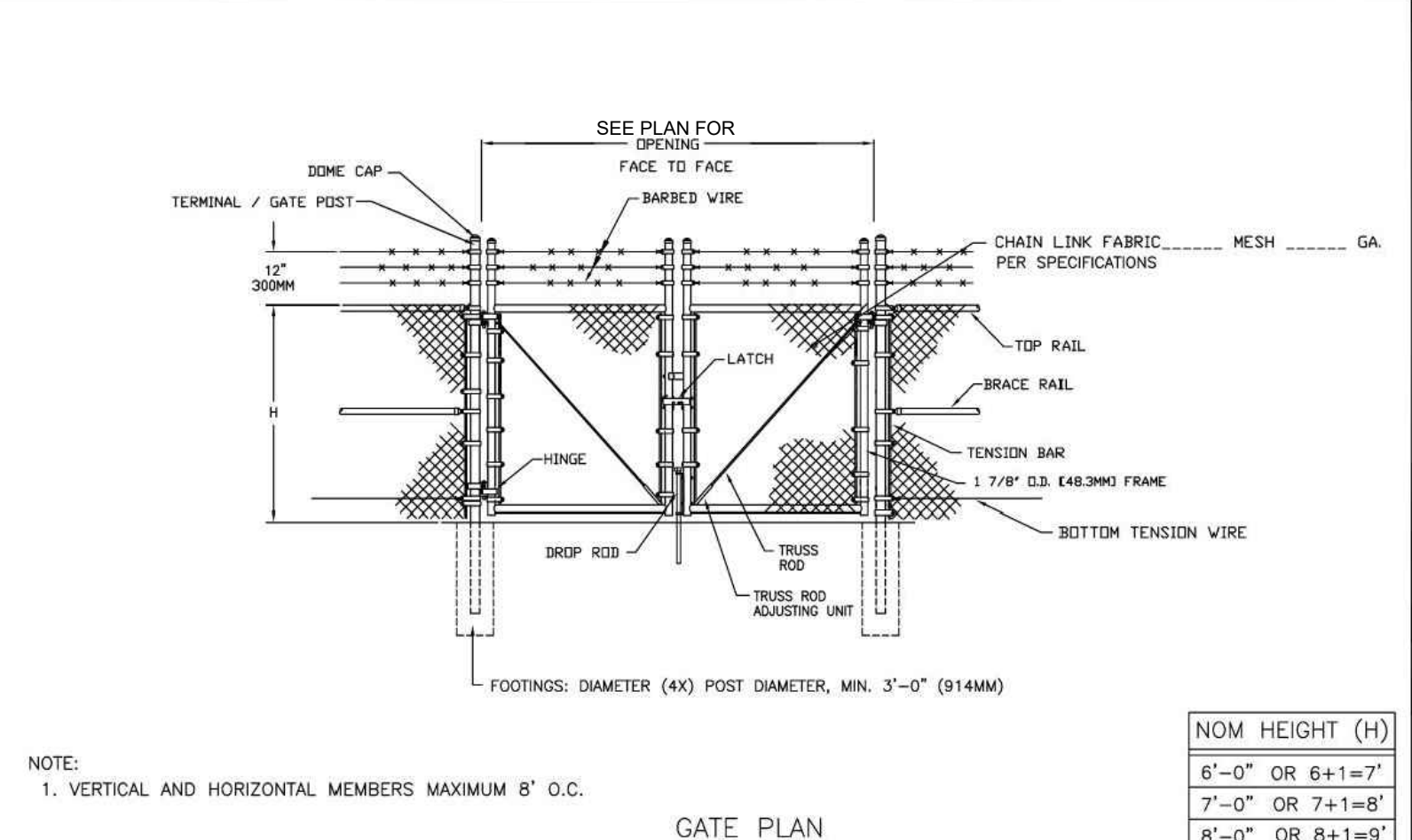


- NOTES:**
1. PROVIDE LATTITUDINAL EXPANSION JOINTS AT 15' O.C. (MAX.)
 2. PROVIDE CONTRACTION (DUMMY) JOINT AT 5' O.C. INTERVALS BETWEEN EXPANSION JOINTS. SIDEWALK TO BE SCRIBED IN 5' MAX SQUARES. CONTRACTOR TO AVOID THE CREATION OF SMALL SCORED AREAS THAT WILL CRACK AND BREAK OFF FROM SIDEWALK.
 3. SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%
 4. CONCRETE SHALL BE 3,000 PSI.

4 CONCRETE SIDEWALK
32 NOT TO SCALE



13 CHAIN LINK FENCE DETAILS
32 NOT TO SCALE



13 CHAIN LINK FENCE DETAILS
32 NOT TO SCALE

PROFESSIONAL CERTIFICATION: I, JOHN C. POVALAC, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 27742 EXPIRATION DATE 07/18/2024

#	REVISIONS DESCRIPTION	APPROVED BY	DATE

Pennoni
PENNONI ASSOCIATES INC.
8890 McGaw Road, Suite 100
Columbia, MD 21045
T 410.997.8900 F 410.997.9282

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS
NOVEMBER 27, 2023

APPROVED DATE: _____
CHIEF ENGINEER: _____

APPROVED DATE: _____
PROJECT MANAGER: _____

APPROVAL DATE: _____
ASSISTANT CHIEF ENGINEER: _____

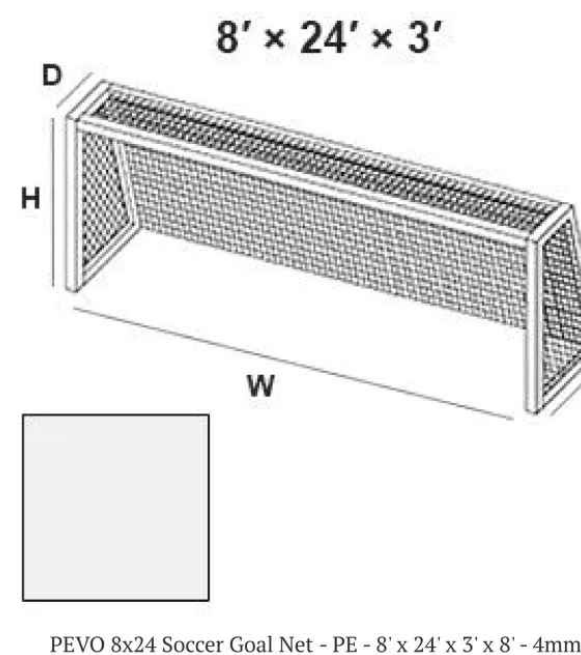
CHIEF, RIGHT OF WAY SERVICES

SCALE: AS SHOWN
DRAWN BY: JSN/CR/SVH
CHECKED BY: JCP/PJS/JSN
SHEET 32 of 36
PROJECT #: P587900
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SITE DETAILS
TANYARD SPRINGS PARK
CONSTRUCTION DOCUMENTS
TAX MAP 10 GRID 6 PARCEL 53
GLEN BURNIE, MD ZIP CODE 21060 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD

GP #G02019941 DWG NO: CD32

PEVO



PEVO 8x24 Soccer Goal Net - PE - 8' x 24' x 3' x 8' - 4mm

This product is **Made in the USA**

The Pevo Park Series Goal features an all aluminum, powder coated white, 3" round upright, crossbar, ground bar, and 1-3/8" round aluminum backstay. The net is attached in the built-in channel using MP Clips. The finished, rounded bottom means this goal can easily be maneuvered around all surfaces without damaging the grass or turf and ensuring safety of the users. The Park Series Goal meets ASTM and NCANFSA standards.

This goal comes in five pieces, two sides, crossbar, ground bar, kit box, and can easily be assembled in 30 minutes.

Features:

- All Aluminum Construction
- Lightweight 3" Round Tubing with Built-in Channel Around the Entire Goal that comes in a Powder Coated White Finish
- High Strength, Durable, Aerospace Grade Aluminum Corner Castings
- Designed and Tested to meet ASTM Standard F2673-08 and NFSA Rules
- 5 Year Limited Warranty

Model: SGM-8x24P

Includes: 8x24 Net, PEVO MP Clips, Ground Anchors

Weight: 187.5 lbs

Height: 8'

Width: 24'

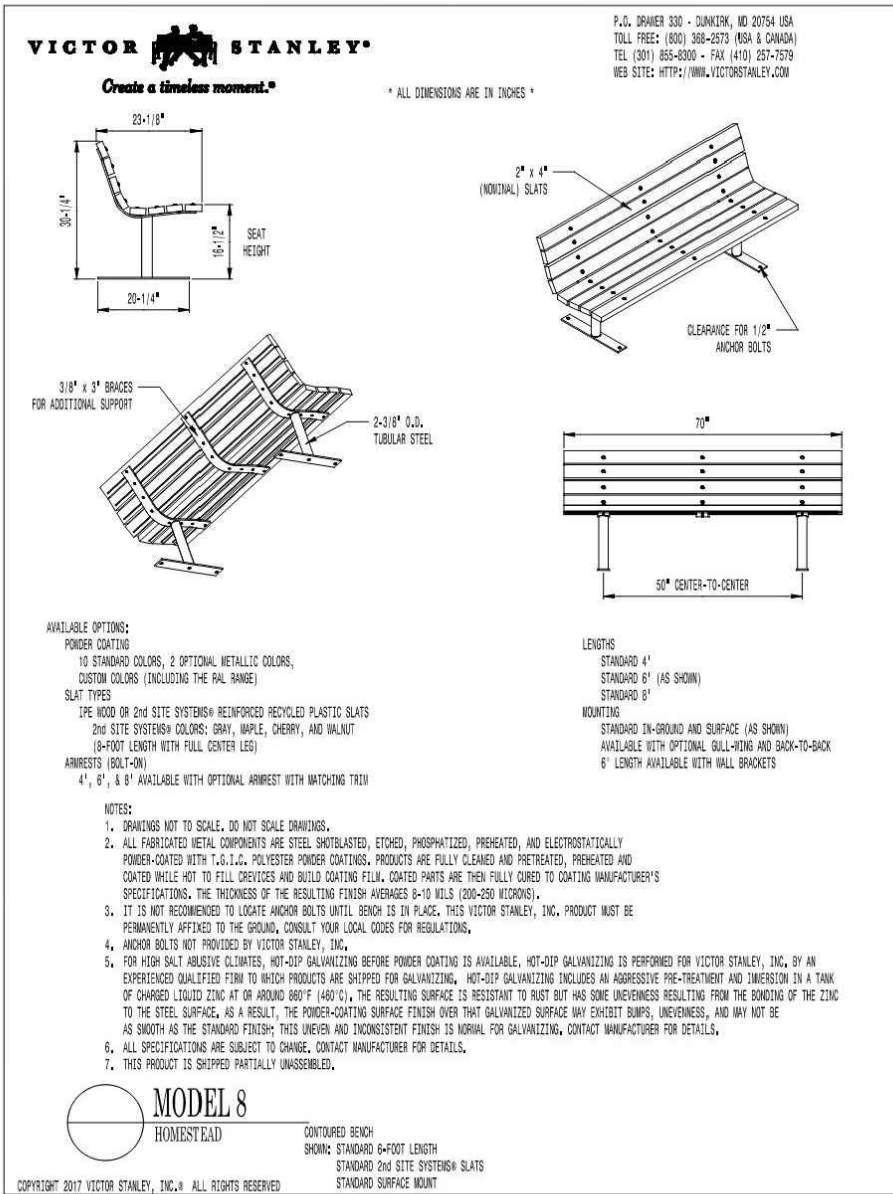
Depth: 3'

Base: 8'

Finish: Powder Coated

NOTES

- SUBMIT SELECTION AND SHOP DRAWING FOR STRUCTURES FOR REVIEW PRIOR TO PROCUREMENT.
- COLORS TO BE SELECTED BY OWNER. PROVIDE SELECTION OPTIONS PRIOR TO PROCUREMENT.



MODEL 8

33 NOT TO SCALE

DETAILS

IMAGES

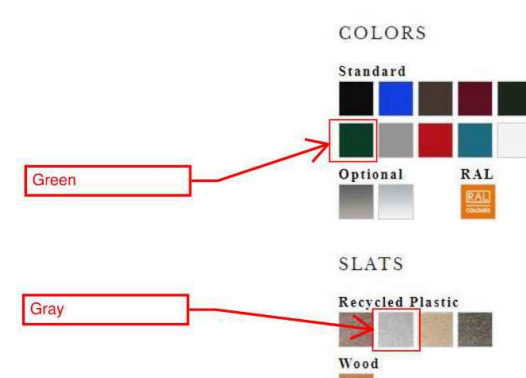
DOCUMENTS

STANDARD

All fabricated metal components except stainless steel are made of mild steel, unless otherwise specified. All steel shall be galvanized to meet or exceed the requirements of the National Steel Industry Association (NSI) standard for galvanized steel.

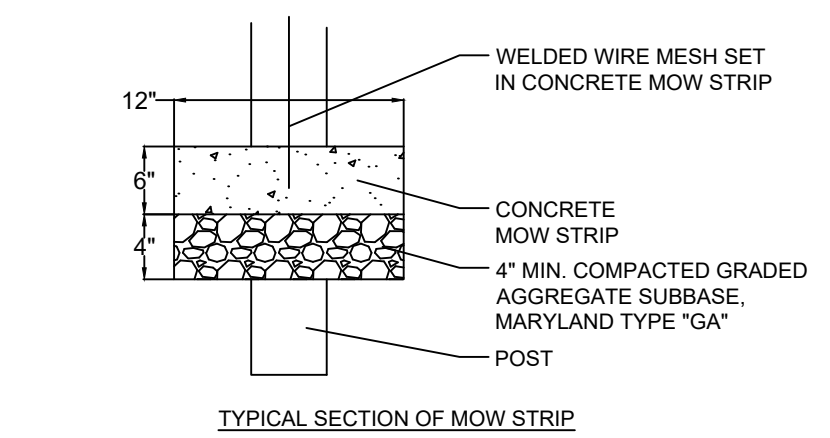
OPTIONS

Wood slat staining: Maple, cherry, walnut or grey. Slat stain systems are available. Recycled slats for 8' x 24' mow strips are available. Slats are available with or without a groove. Slats are available with or without a groove. Slats are available with or without a groove.



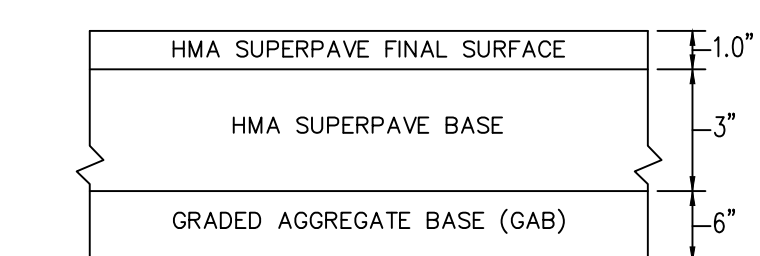
2 BENCH DETAIL

33 NOT TO SCALE



3 CONCRETE MOW STRIP

33 NOT TO SCALE



NOTE: THE PAVING SECTION SHOWN HAS BEEN DESIGNED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT PREPARED BY PENNONI, DATED AUGUST 10, 2023. IT IS RECOMMENDED THAT THE USER CONSULT WITH A LICENSED PROFESSIONAL GEOTECHNICAL ENGINEER FOR A SPECIFIC PAVING DESIGN BASED ON THE APPROPRIATE PARAMETERS DURING CONSTRUCTION AND PRIOR TO INSTALLATION OF THIS PAVING SECTION.

4 LIGHT DUTY PAVING

33 NOT TO SCALE



- NOTES:
- SIGN MATERIAL AND LETTERING SHALL BE ENGINEERING GRADE/REFLECTIVE.
 - GRAPHICS AND BORDER SHALL BE RED ON WHITE BACKGROUND.
 - FONT SHALL BE HIGHWAY-STYLE B OR C AS INDICATED.
 - SIGN SHALL BE INSTALLED 7 FEET ABOVE GRADE.
 - ARROWS ON THE ENDS SHOULD POINT IN ONLY DIRECTION TOWARD THE FIRE LANE. SIGNAGE WITHIN THE FIRE LANE SHOULD SHOW ARROWS POINTING IN BOTH DIRECTIONS.

- LETTER & STRIPING DIMENSIONS:
- ALL STRIPING - MINIMUM 6" THICK LINES
 - OUTER LINE - 3" FROM CURB EDGE OR ROAD EDGE
 - ENDS OF DESIGNATED AREA - CAN BE CURVED/ROUNDED OR BOXED.
 - ANGLED LINES - 6' APART EXCEPT WHERE LETTERED GRAPHICS ARE PLACED.
 - NO PARKING FIRE LANE GRAPHIC - MINIMUM 8" HIGH, 2" CUT OUT, AT 50' INTERVALS
 - NO PARKING FIRE LANE SIGNS - PER STANDARD DETAIL - AT EACH END OF FIRE LANE WITH ADDITIONAL SIGNS AS NEEDED AT 100 FT. SPACING.

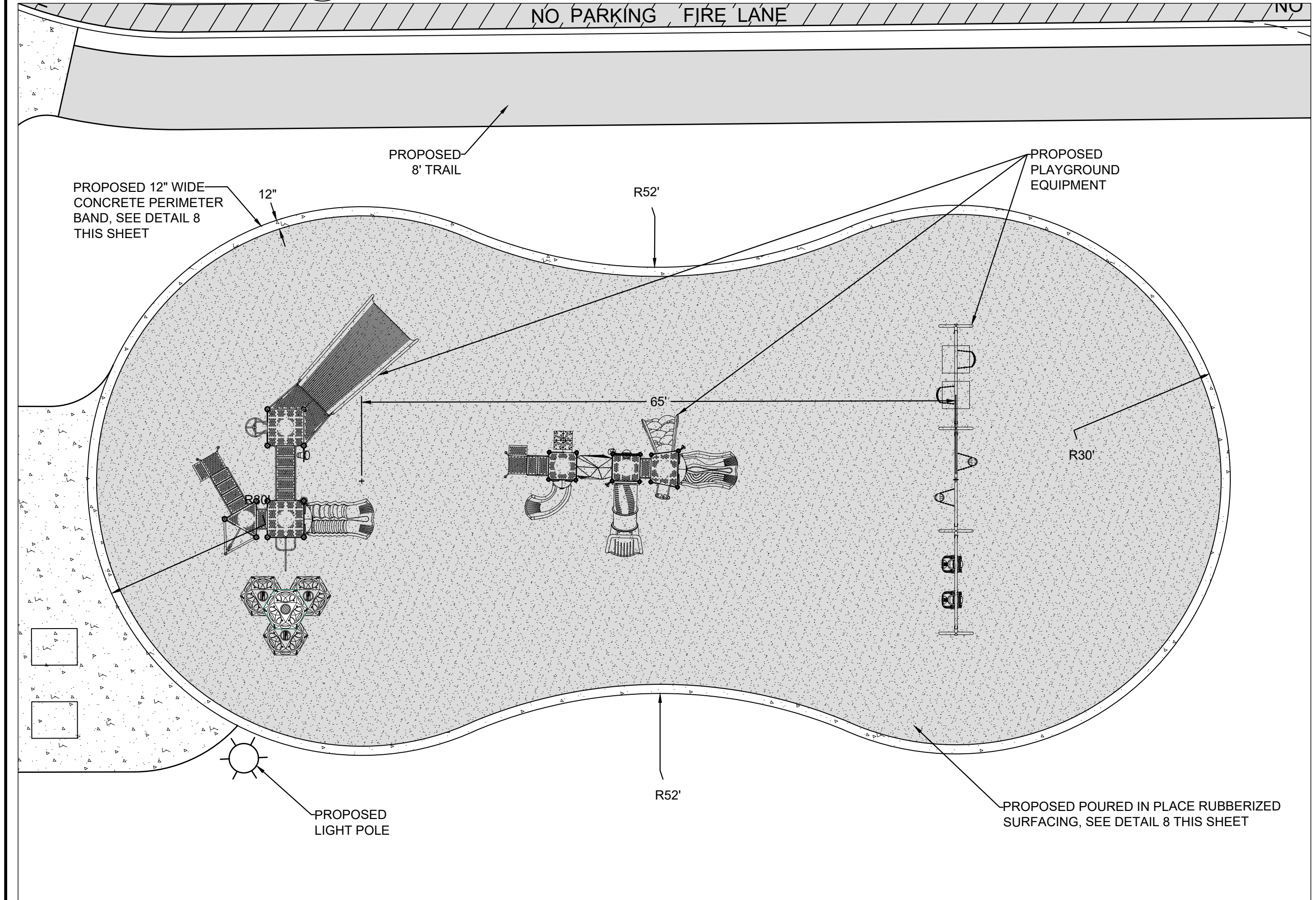


5 FIRE LANE DETAILS

33 NOT TO SCALE

1 SOCCER GOAL

33 NOT TO SCALE



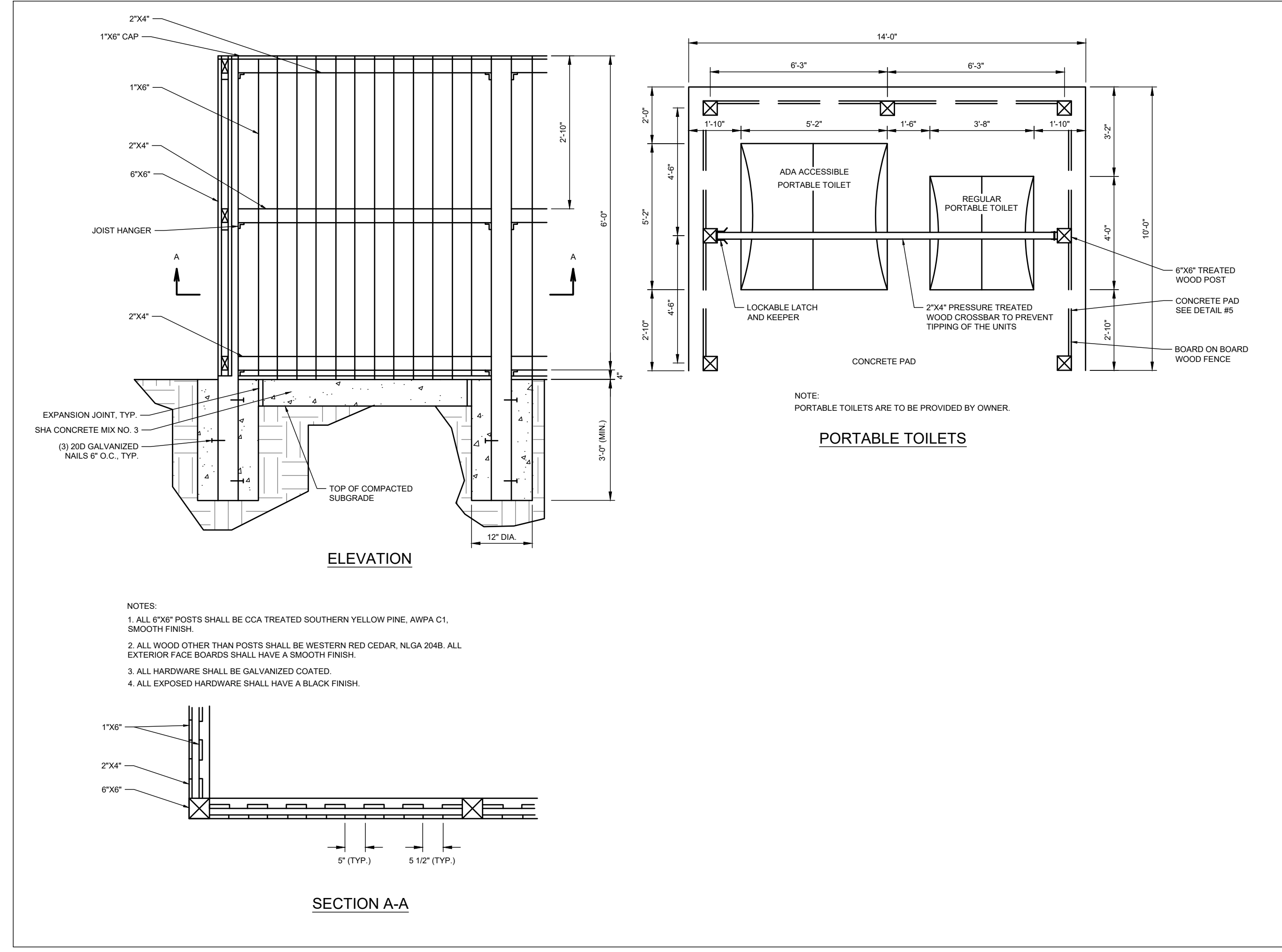
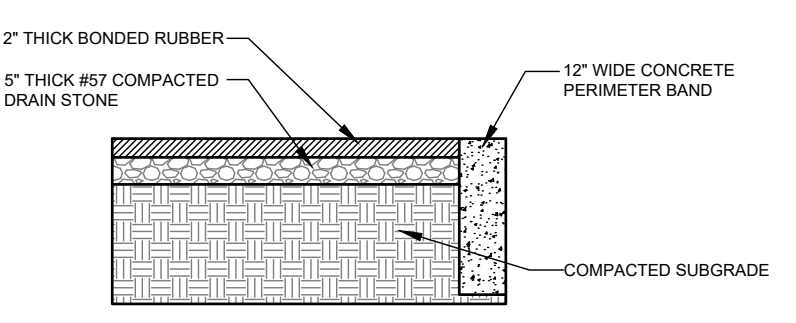
6 PLAYGROUND DETAIL PLAN

33 1"=10'

NAME	ITEM NO.	QUANTITY
PLAYMAKERS MIGHTY MONARCH	500-2301	1
CHALLENGER FORT TWIST	350-1923	1
1 BAY ARCH SWING	500-ARCH	3

8 PLAYGROUND PAVING SECTION

33 NOT TO SCALE



7 PORTABLE TOILET ENCLOSURE

33 NOT TO SCALE

GP #G02019941 DWG NO: CD33

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8890 McGaw Road, Suite 100
Columbia, MD 21045
T 410.997.8900 F 410.997.9282

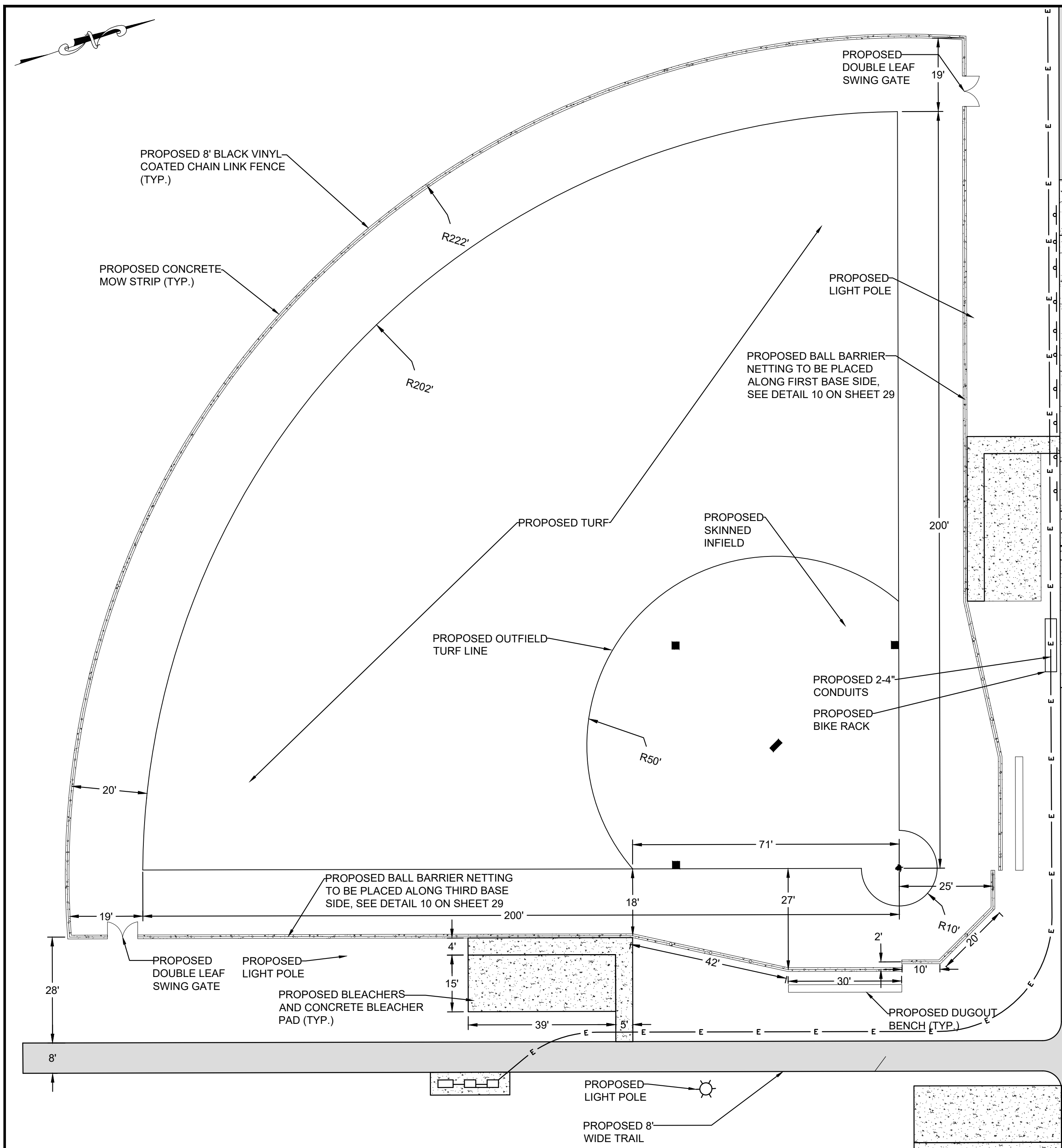
ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS
NOVEMBER 27, 2023

APPROVED	DATE	APPROVED	DATE

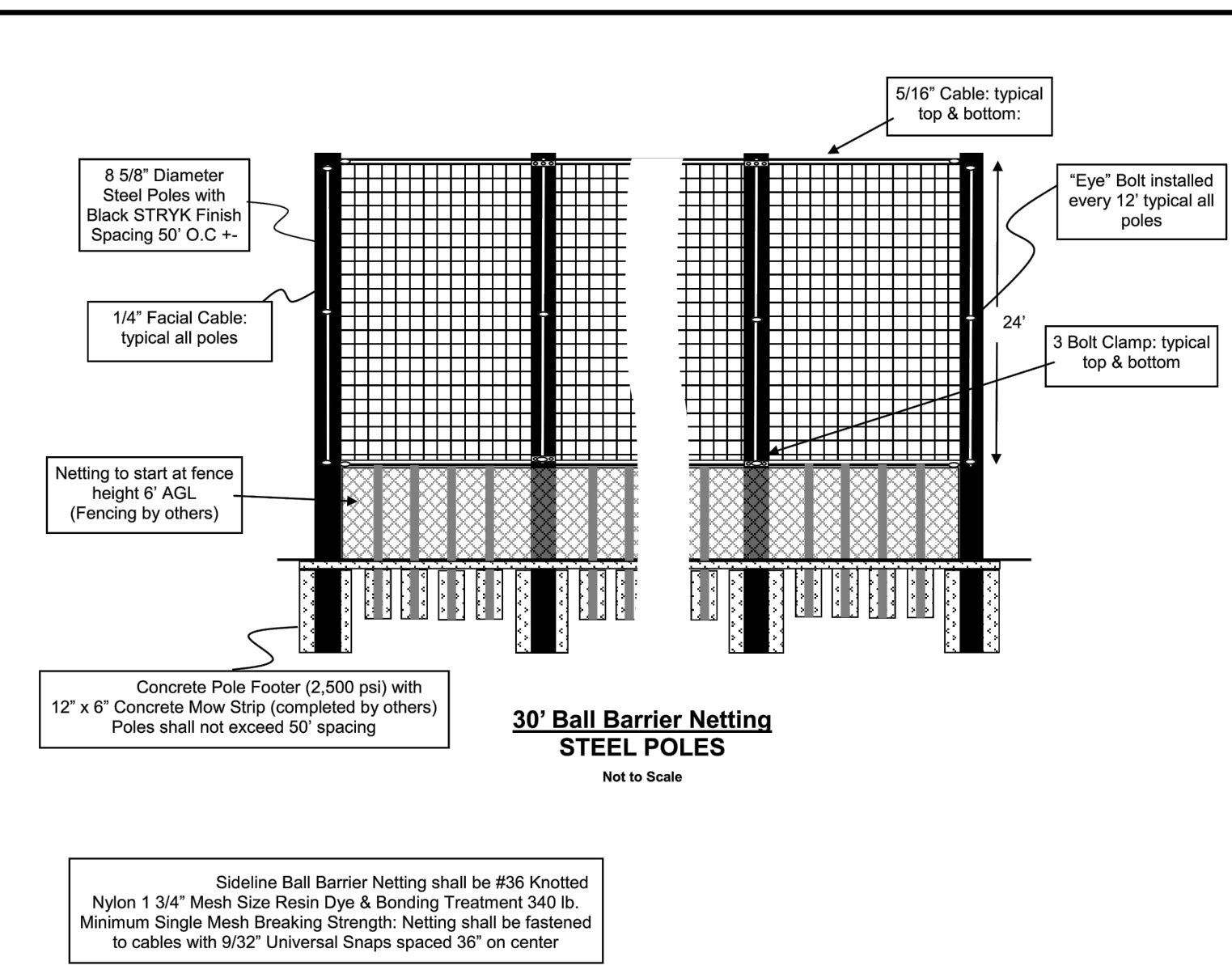
SCALE: AS SHOWN
DRAWN BY: JSN/CR/SVH
CHECKED BY: JCP/PJS/JSN
SHEET 33 of 36
PROJECT #: P587900
PROPOSAL #: P587901

SITE DETAILS
TANYARD SPRINGS PARK
CONSTRUCTION DOCUMENTS
TAX MAP 10 GRID 6 PARCEL 53
GLENN BURNIE, MD ZIP CODE 21060 3RD DISTRICT
ANNE ARUNDEL COUNTY, MD

DWG No:

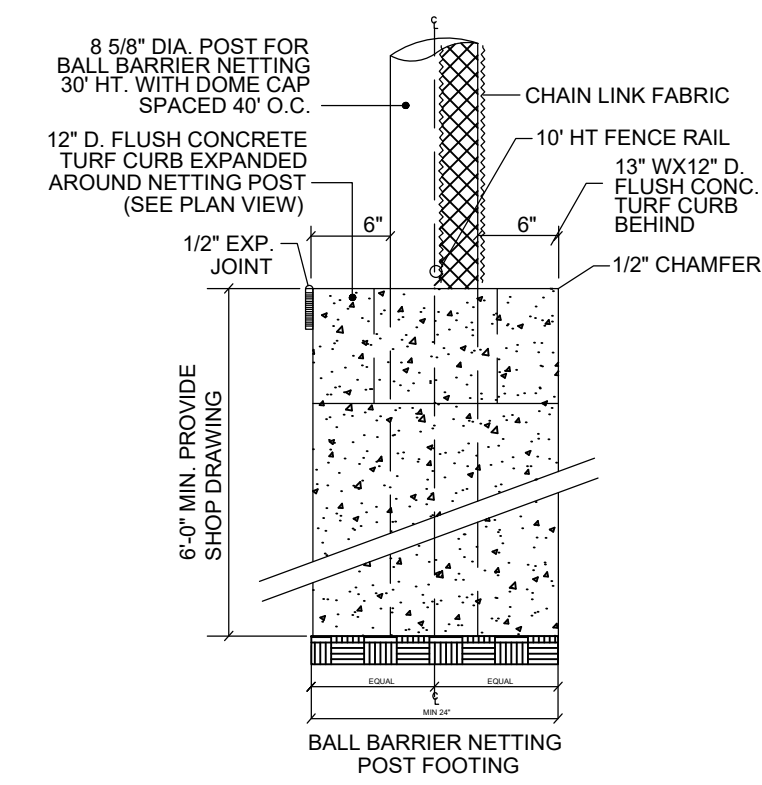


1 BASEBALL/SOFTBALL FIELD DETAIL PLAN
34 SCALE: 1"=20'

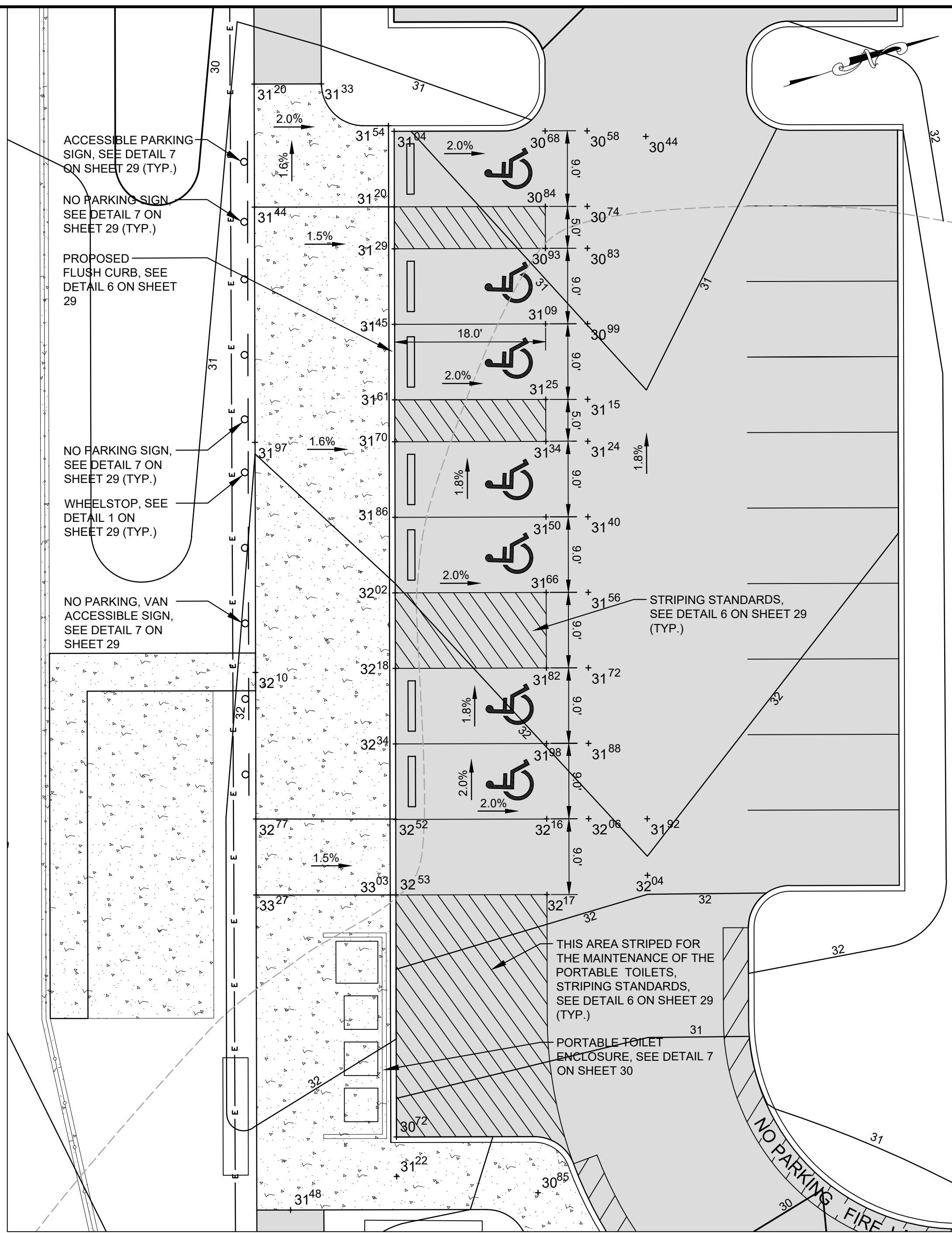


BALL BARRIER NETTING NOTES

- POLES SHALL BE STEEL AND SHALL NOT EXCEED 50' SPACING. GROUND SLEEVES ARE OPTIONAL.
 - CONTRACTOR SHALL PROVIDE A SUBMITTAL FOR NETTING PRIOR TO PROCUREMENT. CONTRACTOR SHALL PROVIDE AN ENGINEERED SHOP DRAWING FOR THE CONCRETE FOOTER. DRAWING SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MARYLAND.
 - NETTING: CUSTOM NETTING SHALL BE HEAVY-DUTY 36 GAUGE, UV-TREATED, TWISTED KNOTTED BLACK NYLON WITH BLACK BOUND ROPE EDGES, 1 3/4" MESH WITH AN AVERAGE 340-POUND SINGLE MESH BREAKING STRENGTH. NETTING TO BE MADE OF 100% DUPONT TYPE 88 HIGH RADE NYLON WEATHER-TREATED FOR OUTDOOR USE. NETTING SHALL BE FASTENED TO CABLES WITH 9/32" UNIVERSAL STRAPS SPACED 36" O.C.
 - INSTALLED HEIGHT ABOVE THE CHAIN LINK FENCE AT 30 FEET AS DETAILED ON THE PLANS.
 - PROVIDE BOUND ROPE EDGES AND GALVANIZED 1/4" STEEL CABLE ALONG TOP EDGE WITH HOG TIES TO CONNECT NET TO CABLE ALONG TOP EDGE AND ALSO TO TOP OF FENCE ALONG BOTTOM EDGE.
 - FOR FURTHER INFORMATION ON THE BALL BARRIER NETTING CONTACT:
 GOLF DESIGN GROUP, INC.
 CONTACT: JACK NIMS
 PHONE: (800)787-9417
 WEBSITE: WWW.GOLFDISIGNGROUP.COM
- CONTRACTOR SHALL PROCURE NETTING SYSTEM FROM GOLF DESIGN GROUP OR APPROVED EQUAL.

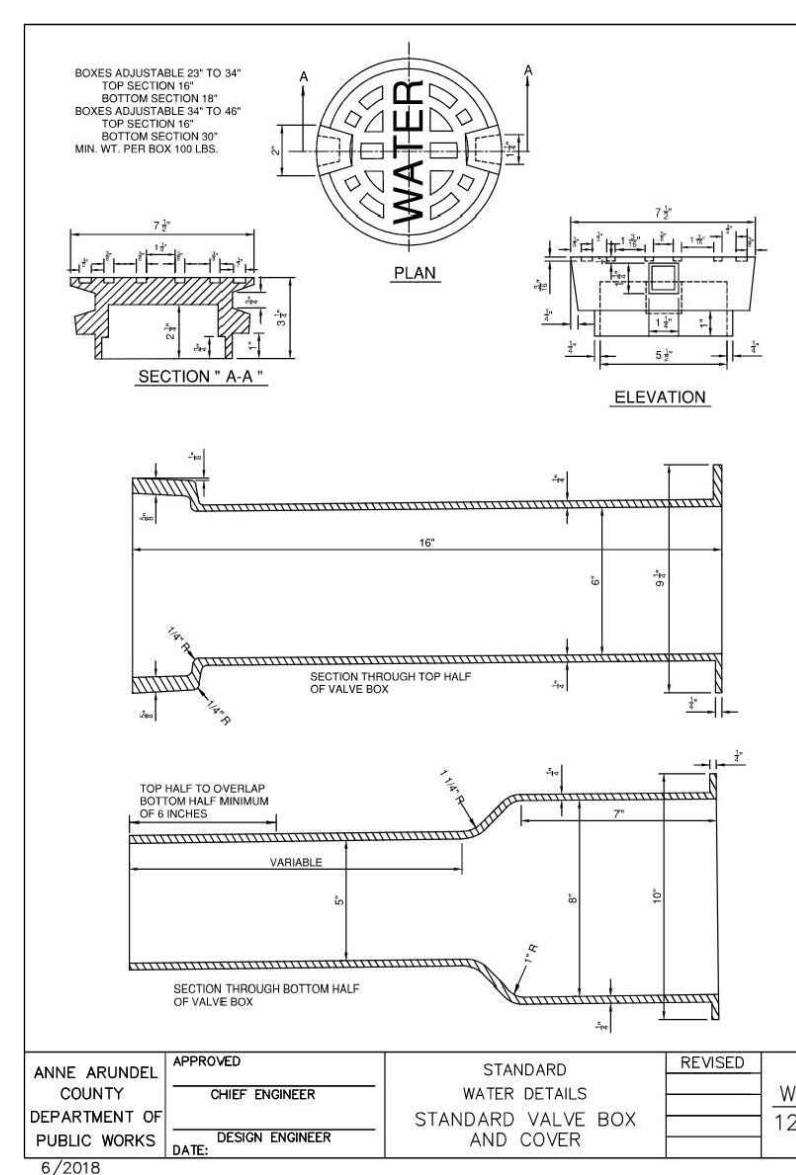


2 BALL BARRIER NETTING
34 SCALE: 1"=20'

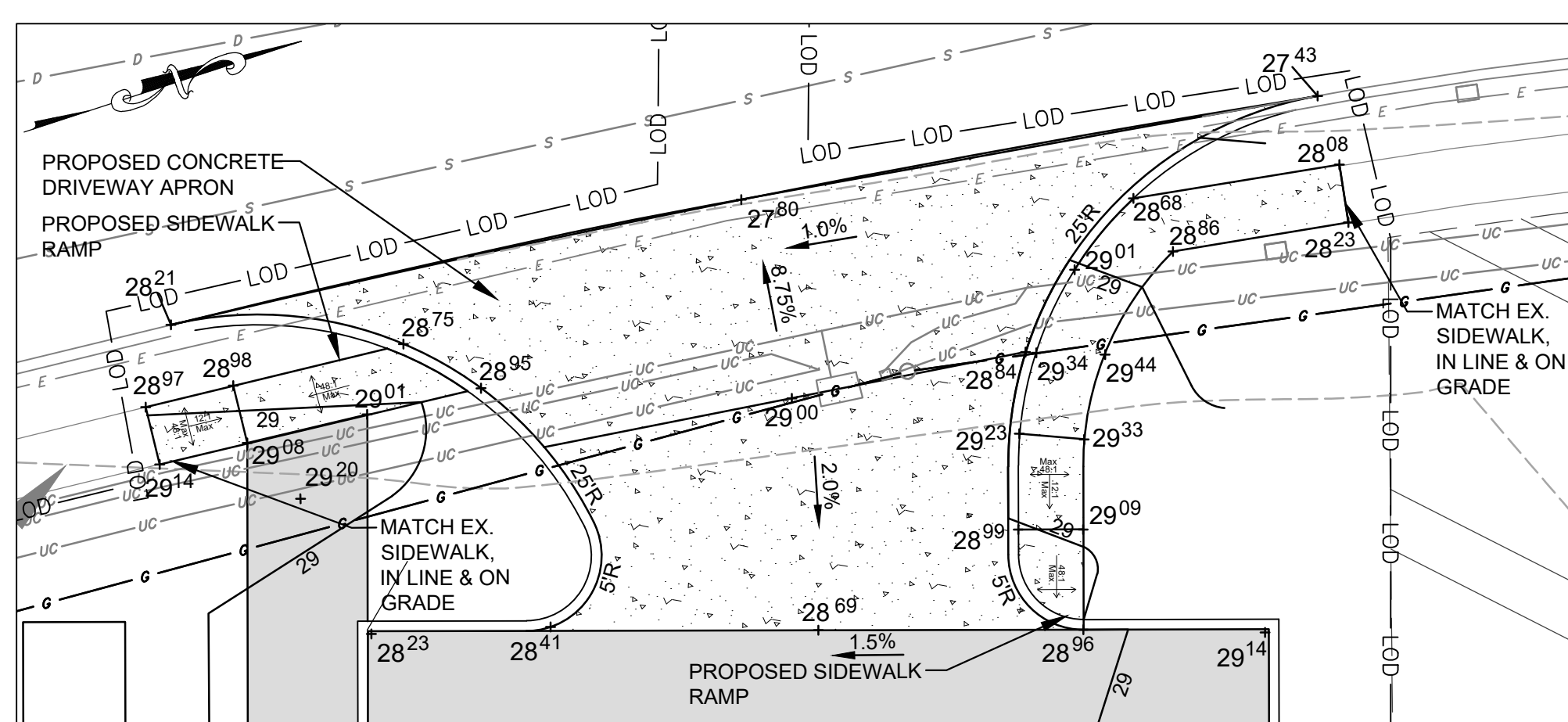
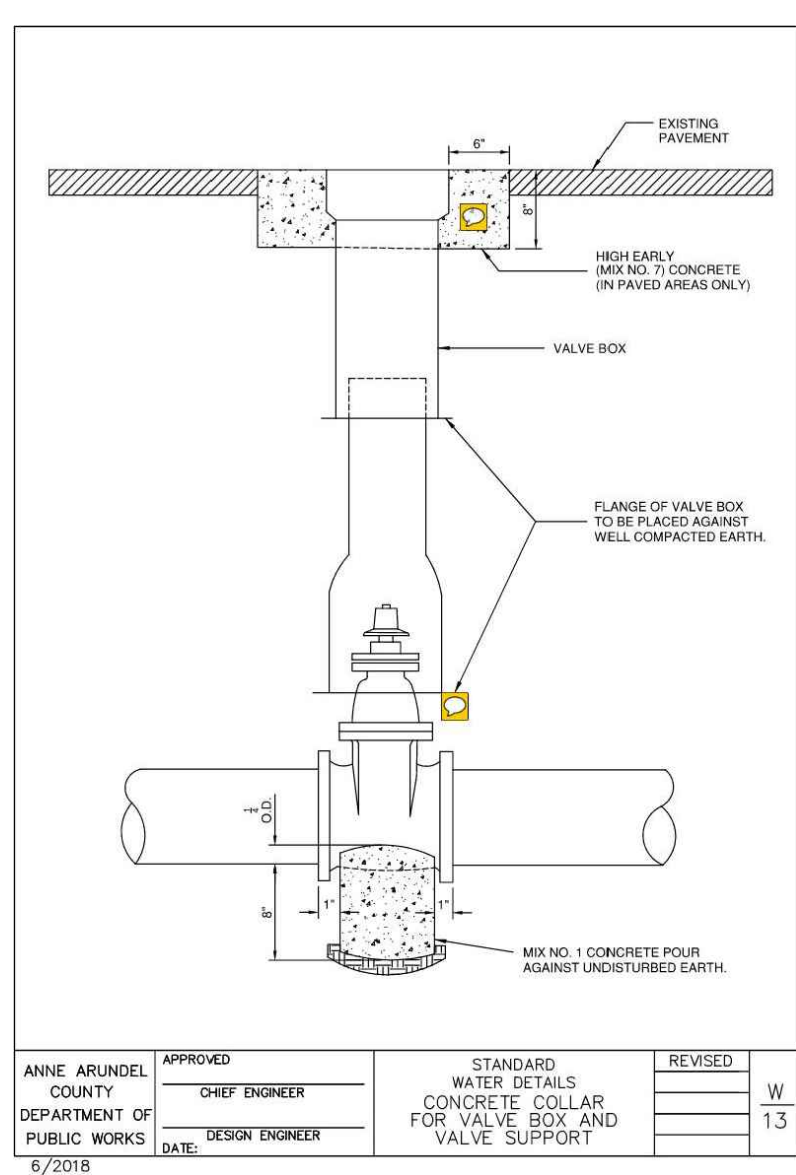


- ACCESSIBILITY NOTES:**
- ACCESSIBLE ROUTE SHALL BE PROVIDED BETWEEN HANDICAPPED PARKING OR PUBLIC RIGHT OF WAYS TO THE MAIN BUILDING ENTRANCE IN ACCORDANCE WITH CURRENT ADA AND LOCAL STANDARDS. ALL HANDICAPPED RAMPS SHALL BE CONSTRUCTED ACCORDING TO CURRENT ADA AND LOCAL STANDARDS, EXCEPT AS SUPERSEDED IN CURRENT ADA AND LOCAL STANDARDS THE FOLLOWING SHALL APPLY:
 A) MAXIMUM SIDEWALK CROSS SLOPES SHALL BE 2%.
 B) A MINIMUM 5' x 5' LANDING AREA WITH A MAXIMUM SLOPE IN ANY DIRECTION OF 2% SHALL BE PROVIDED AT ALL CHANGES IN DIRECTION, TOPS AND BOTTOMS OF RAMPS, AND BUILDING EGRESS POINTS.
 C) ALL HANDICAPPED PARKING SHALL BE SLOPED NO GREATER THAN 2% IN ANY DIRECTION, INCLUDING A 5' WIDE AREA BEHIND THE PARKING SPACES.
 D) AN ACCESS ROUTE FROM THE PARKING SPACE(S) TO THE MAIN BUILDING ENTRANCE SHALL BE PROVIDED. ALL SLOPES ALONG THE DIRECTION OF TRAVEL SHALL NOT EXCEED 1:20 UNLESS THEY FALL UNDER CONDITION B) ABOVE. SLOPES IN EXCESS OF 1:20 EXCEPT FOR CURB RAMPS, REQUIRE A HANDRAIL MEETING AREA REQUIREMENTS.

3 ACCESSIBLE PARKING SPACES
34 SCALE: 1"=10'



4 STANDARD FIRE HYDRANT DETAIL
34 NOT TO SCALE



5 SIDEWALK RAMPS AT DRIVEWAY APRON
34 SCALE: 1"=10'

PROFESSIONAL CERTIFICATION: I, JOHN C. POVALAC, PE, CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE # 27742 EXPIRATION DATE 07/18/2024

#	REVISIONS DESCRIPTION	APPROVED BY	DATE

Pennoni
 PENNONI ASSOCIATES INC.
 8890 McGaw Road, Suite 100
 Columbia, MD 21045
 T 410.997.8900 F 410.997.9282

GP #G02019941 DWG NO: CD34

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