

# SOUTH BRANCH PARK

## HOWARD COUNTY, MARYLAND

### SITE DEVELOPMENT PLAN SDP-18-053

TAX MAP 04 PARCEL 54  
 350 WEST FRIENDSHIP DRIVE  
 SYKESVILLE, MARYLAND 21784

#### GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY SPECIFICATIONS AND DETAILS FOR CONSTRUCTION PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- THE SUBJECT PROPERTY IS ZONED B-1 AND RC-DEO PER THE COMPREHENSIVE ZONING REGULATIONS APPROVED OCTOBER 4, 2013.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING OR NEW STRUCTURES SHALL BE PERMITTED WITHIN WETLANDS, STREAMS, WETLAND OR STREAM BUFFERS, 100-YEAR FLOODPLAIN, OR FOREST CONSERVATION EASEMENTS UNLESS APPROVED BY THE DEPARTMENT OF PLANNING AND ZONING. SECTION 16.115(C)(2), THAT ALL PROPOSED PAVEMENT AND IMPROVEMENTS ARE PERVIOUS. THERE IS NO GRADING OR DISTURBANCE BEYOND THE LOD AND THE PROPOSED LOD IS THE MINIMUM AREA NECESSARY TO COMPLETE THE PROJECT.
- NO LANDSCAPE SURETY IS REQUIRED FOR CAPITAL PROJECTS.
- THE FOREST CONSERVATION OBLIGATION FOR THIS PLAN WILL BE MET BY PROVIDING OFFSITE FOREST BANKING. THE TOTAL AFFORESTATION REQUIREMENT OF 17,424 SQUARE FEET (0.40 ACRES) WILL BE PROVIDED AT THE PRESERVE AT CLARKSVILLE FOREST MITIGATION, FILE F-06-072. THIS IS A COUNTY OWNED MITIGATION BANK TRACKED BY DLD AND RECREATION AND PARKS NATURAL RESOURCE PROGRAM.
- WATER IS PRESENTLY NOT AVAILABLE ON THIS SITE.
- SEWER IS NOT AVAILABLE ON THIS SITE. NO PERMANENT BATHROOMS OR SINKS WILL BE OPERATING ON THIS SITE. PORTABLE BATHROOM FACILITIES WILL BE USED DURING REGULAR OPERATING HOURS AND DURING SPECIAL EVENTS.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UP ON THE MARYLAND STATE PLANE COORDINATE SYSTEM: HORIZONTAL NAD'83/91 VERTICAL NAVD'88.  
 HOWARD COUNTY MONUMENTS USED FOR THIS PROJECT:  
 04EA: N 618100.797, E 1322116.80; ELEV. 434.98  
 04EB: N 617148.383, E 1321447.346; ELEV. 390.636
- THE 100-YEAR FLOODPLAIN STUDY FOR THIS PROJECT WAS PREPARED BY FEMA FLOODPLAIN (5/6/13) FOR HOWARD COUNTY.
- AN APFO TRAFFIC STUDY FOR THIS PROJECT WAS NOT WARRANTED DUE TO THE LOW NUMBER OF DAILY TRIPS GENERATED BY THE NEW PARK FACILITIES.
- TOPOGRAPHICAL FIELD SURVEYS OF THE SITE WERE PERFORMED BY HOWARD COUNTY IN OCTOBER 2013. ADDITIONAL UTILITY INFORMATION WAS PROVIDED BY HOWARD COUNTY RECORDS AND MAY NOT REFLECT CURRENT CONDITIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY CURRENT TOPOGRAPHIC AND UTILITY INFORMATION.
- APPROXIMATE LOCATION AND INVERTS OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN AN UNINTERRUPTED SERVICE. THE CONTRACTOR IS ULTIMATELY RESPONSIBLE FOR THE EXACT HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES BY TEST PIT OR OTHER MEANS OF INVESTIGATION APPROVED BY THE OWNER WELL IN ADVANCE OF CONSTRUCTION. ANY DAMAGE BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- ALL TRASH AND REFUSE WILL BE RESPONSIBILITY OF THE DEPARTMENT OF RECREATION AND PARKS, AND WILL BE REMOVED FROM THE PARK ON A WEEKLY BASIS. DURING CONSTRUCTION, ALL TRASH AND REFUSE WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- ENVIRONMENTAL SITE DESIGN (ESD) IS INCORPORATED INTO THE PROJECT DEVELOPMENT AT THE MAXIMUM EXTENT POSSIBLE. ESD FACILITIES INCLUDE MICRO-BIOTENTIONS AND A RAIN GARDEN. HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS WILL BE RESPONSIBLE FOR MAINTENANCE OF ALL STORMWATER MANAGEMENT FACILITIES. ECP-14-068 WAS APPROVED ON APRIL 2, 2014.
- AN ALTERNATIVE COMPLIANCE APPLICATION WP-14-101 WAS APPROVED 3/18/2014 AND WP-16-005 WAS APPROVED 8/3/15. SEE SHEET C0.02 FOR AN EXPLANATION OF SECTIONS AND CONDITIONS OF APPROVAL.
- THERE ARE NO WETLANDS OR THEIR BUFFERS LOCATED WITHIN THE LIMIT OF DISTURBANCE FOR THIS PROJECT. A CONFIRMATION LETTER BY A DNR QUALIFIED PROFESSIONAL (TIMOTHY HESS) DATED 2/26/2014 CERTIFYING THAT THERE ARE NO WETLANDS LOCATED WITHIN THE LIMITS OF DISTURBANCE WAS PROVIDED WITH SUBMISSION OF THE SDP.
- THE EXISTING PAVILION, PLAY GROUND AND SKATE PARK WAS BUILT UNDER PRIOR CONTRACTS, BUT STORMWATER MANAGEMENT WAS DEFERRED UNDER WP-14-101 AND WP-16-005. THE STORMWATER MANAGEMENT FOR THESE FACILITIES WILL BE PROVIDED UNDER THIS CONTRACT. SEE GENERAL NOTES 18 AND 19 FOR CONDITIONS OF THESE APPROVALS.
- ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) -3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
- THIS SITE IS ON THE HISTORIC SITES INVENTORY AS HQ#751: HOWARD COTTON FACTORY. RECORDS DATE BACK TO 1789 WHEN MR. WHIPS ADVERTISED THE SALE OF A GRIST MILL. THE SITE CURRENTLY HAS 3 HISTORIC BUILDINGS THAT WILL REMAIN: THE SYKES HOUSE, THE BRICK WAREHOUSE AND THE FRAME SCALE HOUSE
- NO FOREST CONSERVATION SURETY IS REQUIRED FOR THIS PROJECT.

#### BENCHMARK DATA

04EA: N 618100.811, E 1322116.795, ELEV. 435.016  
 04EB: N 617148.385, E 1321447.341, ELEV. 390.701  
 04EM2: N 617574.00, E 1321269.37, ELEV. 365.216  
 \*NORTHING & EASTING APPROXIMATE

#### SITE ANALYSIS DATA CHART

LOCATION: TAX MAP 4, GRID 15, PARCEL 54  
 DEED REFERENCE: L. 03483 F. 00621  
 ELECTION DISTRICT: 5th  
 EXISTING ZONING: B-1, RC-DEO  
 TOTAL PROPERTY AREA: 7.37 ACRES  
 AREA OF FLOODPLAIN: 6.04 ACRES  
 AREA OF STEEP SLOPES: 0.46 ACRES  
 AREA OF PLAN SUBMISSION: 1.88 ACRES  
 LIMIT OF DISTURBED AREA: 1.88 ACRES  
 PROPOSED IMPERVIOUS COVER: 1.37 ACRES\*  
 AREA OF FOREST: 3.94 ACRES  
 AREA OF OPEN SPACE: 2.06 ACRES

PROPOSED USES: SKATE PARK, PAVILION, PARKING LOT AND ASSOCIATED PATHWAYS, PLAYGROUND.

FLOOR SPACE: 0 SF

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PARKING REQUIREMENTS FOR THIS SITE WERE DETERMINED BY A LICENSED TRAFFIC ENGINEER. THE VARIOUS USES ON THIS SITE DID NOT LEAD THEMSELVES DIRECTLY TO THE HOWARD COUNTY PARKING REGULATIONS. A PARKING ASSESSMENT LETTER WAS SUBMITTED TO HOWARD COUNTY DED ON OCTOBER 2018. (SEE CHART BELOW)

APPLICABLE DPZ FILE NUMBERS: ECP-14-068, WP-14-101, SDP-75-094 AND WP-16-005

\*NOTE: NUMBER CALCULATED CONSIDERING ALL ALTERNATIVE SURFACES ARE IMPERVIOUS

#### PARKING REQUIREMENTS

Land Use Description	Size (SF)	Acres	ITE LUC	ITE Parking Generation Rate	Howard County Zoning Regulators Parking Requirements*
Daily Uses					
Skateboard Park	10,500	0.24	435	16 / acre = 4 spaces	-
Pavilion	1,072	0.02	435	16 / acre = < 1 space	-
Playground	3,120	0.07	435	16 / acre = 1 space	-
Other Park Space	106,114	2.44	435	16 / acre = 39 spaces	-
Proposed Uses - Daily	120,806	2.77		9.5 / acre = 44 spaces	-
Spaces Provided					
53 Standard Spaces + 3 HC Spaces = 56 Spaces Total					
ITE LUC - INSTITUTE OF TRANSPORTATION ENGINEERS (ITE) PARKING GENERATION MANUAL (4th EDITION)					

#### LIST OF DRAWINGS

- CIVIL**
- C0.1 COVER SHEET
  - C0.2 ABBREVIATIONS, NOTES, AND LEGEND
  - C1.0 EXISTING CONDITIONS/DEMOLITION PLAN
  - C1.1 SITE GEOMETRY/UTILITY PLAN
  - C1.2 GRADING/STORMWATER MANAGEMENT PLAN
  - C1.3 EROSION AND SEDIMENT CONTROL PLAN
  - C1.31 EROSION AND SEDIMENT CONTROL DRAINAGE AREA PLAN
  - C2.1 STORM DRAIN PROFILES
  - C2.2 STORM DRAIN PROFILES
  - C3.1 ENLARGED GRADING/SWM PLANS
  - C4.1 SITE DETAILS
  - C4.2 SITE DETAILS
  - C4.21 SITE DETAILS
  - C4.3 STORMWATER MANAGEMENT NOTES AND DETAILS
  - C4.4 STORMWATER MANAGEMENT NOTES AND DETAILS
  - C5.1 EROSION AND SEDIMENT CONTROL NOTES
  - C5.2 EROSION AND SEDIMENT CONTROL DETAILS
  - C7.1 STORM DRAIN DRAINAGE AREA MAP
  - C7.2 PROPOSED ESD DRAINAGE AREA MAP
- LANDSCAPE**
- L1.1 LANDSCAPE PLAN
  - L3.1 LANDSCAPE NOTES AND DETAILS
  - L3.2 LANDSCAPE NOTES AND DETAILS
- FOREST CONSERVATION**
- F1.1 FOREST CONSERVATION PLAN
  - F1.2 FOREST CONSERVATION PLAN

#### CAPITAL PROJECT NUMBER

N3967

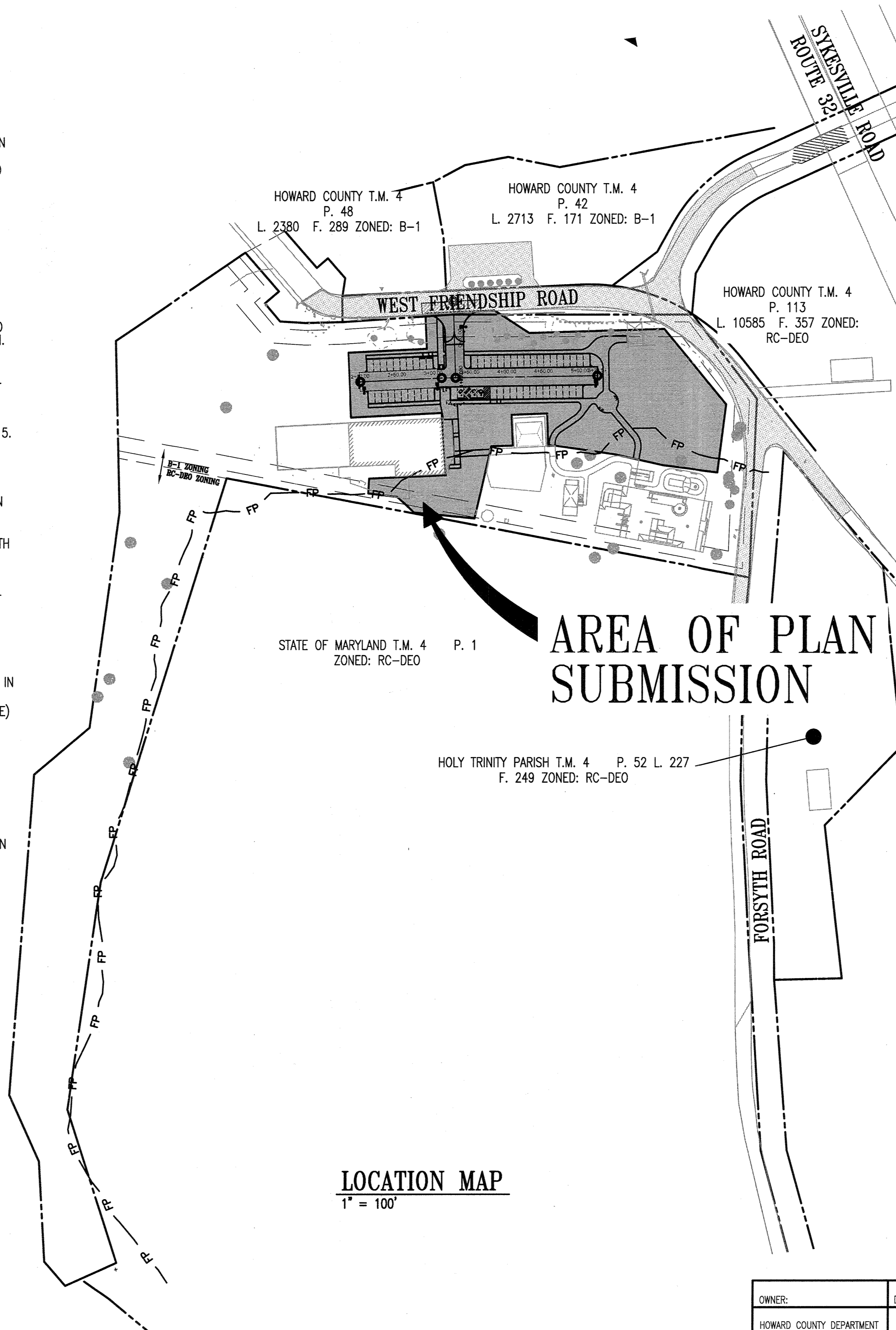
#### ADDRESS CHART

PARCEL #	STREET ADDRESS
54	PHASE 3: 350 WEST FRIENDSHIP DRIVE SYKESVILLE, MARYLAND 21784

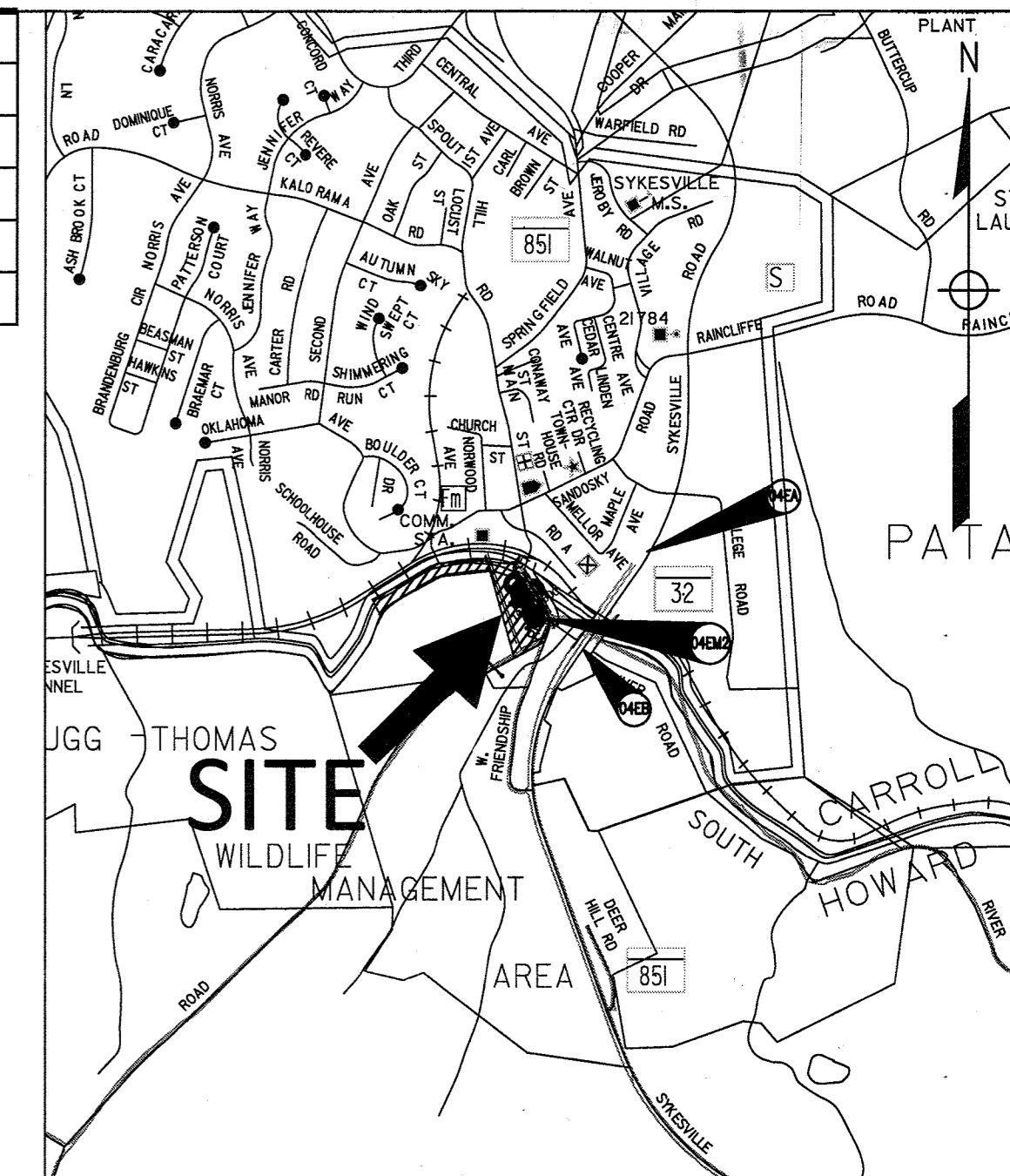
OWNER:	DEVELOPER:	PERMIT INFORMATION CHART				
HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS 7120 OAKLAND MILLS ROAD COLUMBIA, MD 21046 ATTN: MR. RAUL DELERME VOICE 410-313-4689 FAX 410-313-4646	HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS 9250 BENDY ROAD COLUMBIA, MD 21045 ATTN: MR. MARK KOVACH VOICE 410-313-6153 FAX 410-313-6144	WATER CODE: N/A	SEWER CODE: N/A	BUILDING N/A	STREET ADDRESS 350 WEST FRIENDSHIP RD	
PROJECT NAME: SOUTH BRANCH PARK - PHASE 3		SECTION/AREA N/A	PARCEL 54			
L/F 03483/00621	GRID #15	ZONING B-1 RC-DEO	TAX MAP BLOCK 4	ELEC. DIST. 3rd	CENSUS TRACT 603003	

#### LOCATION MAP

1" = 100'



AREA OF PLAN SUBMISSION



COPYRIGHT ADC THE MAP PEOPLE  
 PERMIT USE NUMBER 21002215  
 HOWARD COUNTY MAP BOOK  
 PAGE 11 GRID A-2

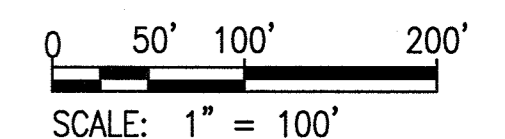
#### VICINITY MAP

1" = 1400'



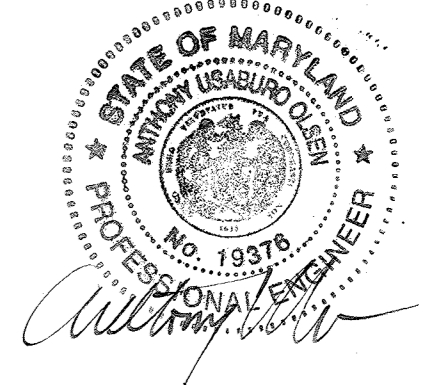
Whitman, Reardon & Associates, LLP  
 801 South Carolina Street, Baltimore, Maryland 21231

#### GRAPHIC SCALES



SCALE: 1" = 100'

#### SIGNATURE



PROFESSIONAL CERTIFICATION  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376  
 EXPIRATION DATE: 08/22/2018

#### SOUTH BRANCH PARK - PHASE 3

#### COVER SHEET

Drawing No.

C0.1

Scale: AS SHOWN

Date: OCTOBER 2018 Sheet 1 of 24

Des: JTD Drawn: JTD Check: AUO

#### APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division  
 Chief, Division of Land Development  
 Director

DATE: 11-29-18  
 DATE: 12-7-18  
 DATE: 12-10-18

HEALTH DEPARTMENT: NOT APPROVED FOR PRIVATE WATER OR PRIVATE SEWER AT THIS TIME.

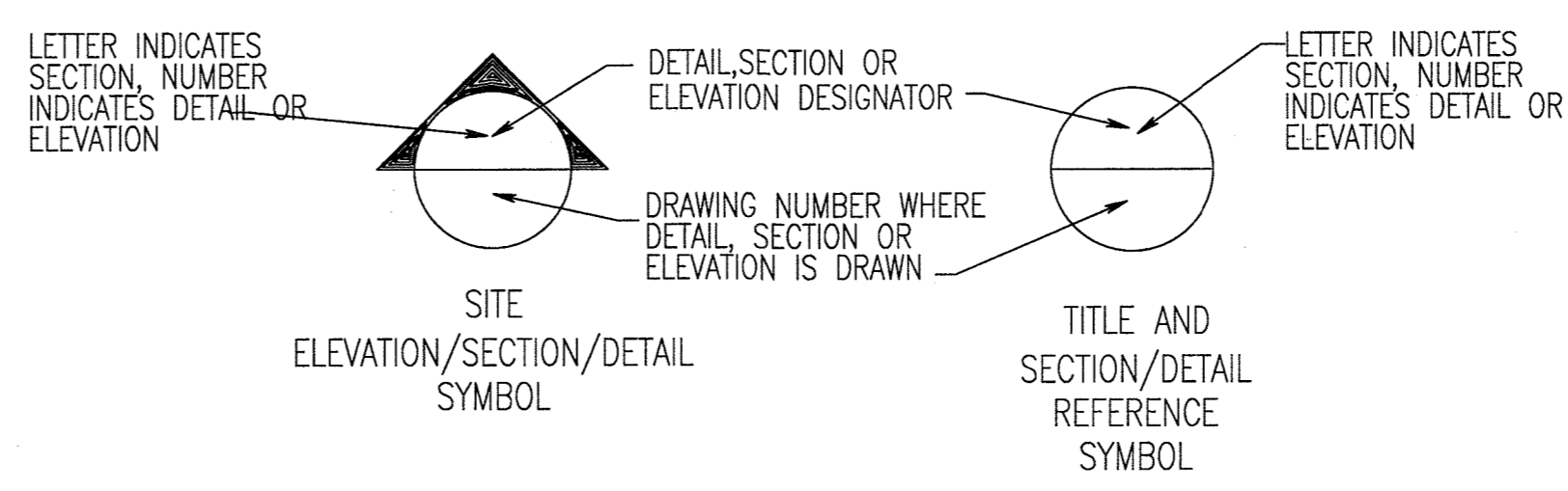
HEALTH OFFICER  
 DATE

**ALTERNATIVE COMPLIANCE APPLICATION INFORMATION**

1. ALTERNATIVE COMPLIANCE APPLICATION WP-14-101 WAS APPROVED 3/18/2014 FOR RELIEF TO SECTION 16.155(a)(1)(i) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, WHICH STATES THAT A SITE DEVELOPMENT PLAN IS REQUIRED FOR EXPANDED NONRESIDENTIAL DEVELOPMENT, INCLUDING PUBLIC FACILITIES, SECTION 16.115(c) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, WHICH STATES THAT NO CLEARING, EXCAVATING, FILLING, ALTERING DRAINAGE, OR IMPERVIOUS PAVING MAY OCCUR ON LAND LOCATED IN A FLOODPLAIN, SECTION 16.1202(a) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, WHICH STATES THAT A FOREST CONSERVATION PLAN IS REQUIRED FOR DEVELOPMENT PLANS, AND SECTION 16.124(a)(2)(i) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, WHICH STATES THAT LANDSCAPING SHALL BE PROVIDED IN ACCORDANCE WITH THE COUNTY CODE. CONDITIONS OF APPROVAL ARE AS FOLLOWS:
  - 1.1 APPROVAL IS FOR THE CONSTRUCTION OF THE PLAYGROUND AND ASSOCIATED WALL, PAVILION PARKING STALLS, NO ADDITIONAL STRUCTURES OR USES, OR ENLARGEMENT TO THE PROPOSED LIMIT OF DISTURBANCE IS PERMITTED UNDER THIS REQUEST.
  - 1.2 THE PROPOSED STRUCTURES AND USES SHALL COMPLY WITH THE MINIMUM BULK REQUIREMENTS INCLUDING THE/ BUILDING SETBACKS AND HEIGHT REQUIREMENTS FOR THE B-1 ZONING DISTRICT IN ACCORDANCE WITH SECTION 118.0 OF THE HOWARD COUNTY ZONING REGULATIONS.
  - 1.3 COMPLIANCE WITH ALL APPLICABLE COUNTY AND STATE REGULATIONS AND OBTAIN ALL NECESSARY PERMITS / FROM THE DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS AND THE MARYLAND DEPARTMENT OF THE ENVIRONMENT PRIOR TO INITIATING DEVELOPMENT ON-SITE.
  - 1.4 APPROVAL OF SECTION 16.1202(a) IS ONLY TO ALLOW TEMPORARY DEFERRAL TO THE FOREST CONSERVATION PLAN OBLIGATION AND REQUIREMENT UNTIL THE SITE DEVELOPMENT PLAN FOR THE OVERALL PARK IS SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING. IF THE OVERALL DEVELOPMENT OF THE PARK CEASES FOR ANY REASON OR IS NOT COMPLETED IN A TIMELY MANNER, THE PETITIONER WILL BE REQUIRED TO ADDRESS THE FOREST CONSERVATION OBLIGATION REQUIREMENT FOR THE LIMIT OF DISTURBANCE AS INDICATED ON THE PLAN EXHIBIT IN ACCORDANCE WITH THE COUNTY CODE AND FOREST CONSERVATION MANUAL.
  - 1.5 APPROVAL OF SECTION 16.124(a)(2)(i) IS ONLY TO ALLOW TEMPORARY DEFERRAL TO THE LANDSCAPING -V REQUIREMENT UNTIL THE SITE DEVELOPMENT PLAN FOR THE OVERALL PARK IS SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING. IF THE OVERALL DEVELOPMENT OF THE PARK CEASES FOR ANY REASON OR IS NOT COMPLETED IN A TIMELY MANNER, THE PETITIONER WILL BE REQUIRED TO PROVIDE PRESERVED LANDSCAPING FOR THE DEVELOPMENT IN ACCORDANCE WITH THE COUNTY CODE AND LANDSCAPE MANUAL.
  - 1.6 APPROVAL OF SECTION 16.115(c) PERTAINS ONLY TO THE LIMIT OF DISTURBANCE AS SHOWN ON THE PLAN EXHIBIT FOR THE CONSTRUCTION OF THE PAVILION SHELTER, PAVED PATHWAY AND PAVED HANDICAP STALLS. ANY FURTHER DISTURBANCES TO THE FLOODPLAIN WILL REQUIRE ADDITIONAL APPROVAL BY THE DEPARTMENT OF PLANNING AND ZONING.
  - 1.7 IN ACCORDANCE WITH THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE REQUIRED WETLANDS, STREAMS OR THEIR ASSOCIATED BUFFERS, AND 100-YEAR FLOODPLAIN, EXCEPT AS PERMITTED BY THIS ALTERNATIVE COMPLIANCE APPLICATION. ALSO, NO REMOVAL OF STATE CHAMPION TREES, TREES 75% OF THE DIAMETER OF A STATE CHAMPION TREE, TREES 30" IN DIAMETER OR LARGER OR OTHER SPECIMEN TREES IS PERMITTED.
  - 1.8 IN COMPLIANCE WITH THE HEALTH DEPARTMENT'S COMMENTS DATED MARCH 18, 2014, NO RESTROOM FACILITIES OR ONSITE PLUMBING MAY BE CONSTRUCTED OR REPAIRED ANYWHERE ON THE PROPERTY AS PART OF THIS PHASE OF THE PROJECT. NO FUTURE PHASES MAY BE DEVELOPED WITHOUT HEALTH DEPARTMENT APPROVAL. THE PROPERTY IS CURRENTLY NOT APPROVED TO UTILIZE ANY ONSITE WATER OR GENERATE ANY ONSITE WASTEWATER.
2. AN ALTERNATIVE COMPLIANCE APPLICATION WP-16-005 WAS APPROVED 8/3/15 FOR RELIEF OF SECTION 16.155(a)(1)(i), 16.1202(a) AND 16.124(a)(2)(i). SECTION 16.155(a)(1)(i) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, WHICH STATES THAT A SITE DEVELOPMENT PLAN IS REQUIRED FOR EXPANDED NONRESIDENTIAL DEVELOPMENT, INCLUDING PUBLIC FACILITIES, SECTION 16.1202(a) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, WHICH STATES THAT A FOREST CONSERVATION PLAN IS REQUIRED FOR DEVELOPMENT PLANS AND SECTION 16.124(a)(2)(i) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, WHICH STATES THAT LANDSCAPING SHALL BE PROVIDED IN ACCORDANCE WITH THE COUNTY CODE. THE CONDITIONS OF THE APPROVAL ARE AS FOLLOWS:
  - 2.1 APPROVAL IS FOR THE CONSTRUCTION OF THE SKATEPARK AND ASSOCIATED BENCHES AND ACCESSIBLE WALKWAY. NO ADDITIONAL STRUCTURES OR USES, OR ENLARGEMENT TO THE PROPOSED LIMIT OF DISTURBANCE IS PERMITTED UNDER THIS REQUEST.
  - 2.2 THE PROPOSED STRUCTURES AND USES SHALL COMPLY WITH THE MINIMUM BULK REQUIREMENT INCLUDING SETBACKS AND HEIGHT REQUIREMENTS FOR THE B-1 ZONING DISTRICT IN ACCORDANCE WITH SECTION 118.0 OF THE HOWARD COUNTY ZONING REGULATIONS.
  - 2.3 COMPLIANCE WITH ALL APPLICABLE COUNTY AND STATE REGULATIONS AND OBTAINING ALL NECESSARY PERMITS FROM THE DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS
  - 2.4 APPROVAL TO SECTION 16.1202(a) IS ONLY TO ALLOW TEMPORARY DEFERRAL TO THE FOREST CONSERVATION PLAN OBLIGATION UNTIL THE SITE DEVELOPMENT PLAN FOR THE OVERALL PARK IS SUBMITTED TO THE DEPARTMENT OF PLANNING & ZONING. IF THE OVERALL DEVELOPMENT OF THE PARK CEASES FOR ANY REASON OR IS NOT COMPLETED IN A TIMELY MANNER, THE PETITIONER WILL BE REQUIRED TO ADDRESS THE FOREST CONSERVATION REQUIREMENT FOR THE LIMIT OF DISTURBANCE AS INDICATED ON THE PLAN EXHIBIT IN ACCORDANCE WITH THE COUNTY CODE AND FOREST CONSERVATION MANUAL FOR PHASE 1 (PLAYGROUND) AND PHASE 2 (SKATE PARK).
  - 2.5 APPROVAL TO SECTION 16.124(a)(2)(i) IS ONLY TO ALLOW TEMPORARY DEFERRAL TO THE LANDSCAPING REQUIREMENT UNTIL THE SITE DEVELOPMENT PLAN FOR THE OVERALL PARK IS SUBMITTED TO THE DEPARTMENT OF PLANNING & ZONING. IF THE OVERALL DEVELOPMENT OF THE PARK CEASES FOR ANY REASON OR IS NOT COMPLETED IN A TIMELY MANNER, THE PETITIONER WILL BE REQUIRED TO PROVIDE LANDSCAPING FOR THE DEVELOPMENT AS INDICATED ON THE PLAN EXHIBIT IN ACCORDANCE WITH THE COUNTY CODE AND LANDSCAPE MANUAL FOR PHASES 1 AND 2.
  - 2.6 IN ACCORDANCE WITH THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE WETLANDS, STREAMS OR THEIR ASSOCIATED BUFFERS AND 100-YEAR FLOODPLAIN. NO REMOVAL OF SLATE CHAMPION TREES, TREES 75% OF THE DIAMETER OF A STATE CHAMPION TREE, TREES 30" OR LARGER IN DIAMETER OR OTHER SPECIMEN TREES IS PERMITTED.
  - 2.7 COMPLIANCE WITH THE HEALTH DEPARTMENT COMMENTS DATED JULY 24, 2015 NO RESTROOM FACILITIES OR ONSITE PLUMBING MAY BE CONSTRUCTED OR REPAIRED ANYWHERE ON THE PROPERTY AS PART OF THIS PHASE OF THE PROJECT. NO FUTURE PHASES MAY BE DEVELOPED WITHOUT HEALTH DEPARTMENT APPROVAL. THE PROPERTY IS CURRENTLY NOT APPROVED TO UTILIZE ANY ONSITE WATER OR GENERATE MY ONSITE WASTEWATER.
  - 2.8 COMPLIANCE WITH THE DEVELOPMENT ENGINEERING DIVISION COMMENTS DATED JULY 20, 2015. APPROVAL OF THIS ALTERNATIVE COMPLIANCE REQUEST IS SUBJECT TO A SKETCH AND COMPUTATIONS BEING PROVIDED WITH THE PHASE 2 BUILDING PERMIT AND PHASE 2 STORMWATER MANAGEMENT SHOWN ON THE FUTURE SITE DEVELOPMENT PLAN.
  - 2.9 IT APPEARS THAT THE EXISTING CONCRETE SLAB AND SKATEPARK DOES NOT COMPLY WITH THE 30' STRUCTURE AND USE SETBACK FROM A RESIDENTIAL ZONING DISTRICT PER SECTION 118.0.0.2.B. OF THE HOWARD COUNTY ZONING REGULATIONS. NO EXPANSION OF THE SKATEPARK USE IS PERMITTED ALONG THE WESTERN PROPERTY BOUNDARY ADJACENT TO THE HUGH THOMAS WILDLIFE MANAGEMENT AREA (ZONED RC-DEO) BEYOND THE EXISTING NON CONFORMING CONCRETE SLAB.
  - 2.10 PER THE FOREST STAND DELINEATION SUBMITTED UNDER ECP-14-068, SEVERAL SPECIMEN TREES EXIST IN THE VICINITY OF THE PROPOSED WALKWAY EXTENSION AND SKATEPARK EXPANSION (BOWL FEATURE). ALL EFFORTS MUST BE MADE TO PROTECT THE SPECIMEN TREES DURING CONSTRUCTION ACTIVITIES. TREE PROTECTION MEASURES SHALL BE UTILIZED INCLUDING PROTECTIVE FENCING, ROOT PRUNING, ETC. AS NECESSARY. NO SPECIMEN TREES ARE PERMITTED TO BE REMOVED.

**LEGEND**

EXISTING	PROPOSED	DESCRIPTION
		CONTOUR
		SPOT ELEVATION
		STORM DRAIN
		CONCRETE CURB AND GUTTER
		FLUSH CURB
		FENCE
		BUILDING
		CONCRETE
		ASPHALT PAVEMENT
		PERVIOUS PAVEMENT
		STORM DRAIN INLET
		STORM DRAIN MANHOLE
		UTILITY POLE
		OVERHEAD UTILITY LINES
		SITE LIGHTING
		TREE
		WOODS LINE
		RIPRAP
		15-24.9% SLOPES
		>25% SLOPES
		SOIL DIVIDE
		STREAM
		75' STREAM BUFFER
		FLY MONUMENT
		GPS MONUMENT
		SURVEY TRAVERSE MONUMENT
		100-YEAR FLOODPLAIN
		LIMIT OF DISTURBANCE
		PROPERTY LINE
		SETBACK
		BORING LOCATION
		STOCKPILE AREA



APPROVED: DEPARTMENT OF PLANNING AND ZONING	
	11.29.18
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
	12-7-18
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
	12-10-18
DIRECTOR	DATE

REVISIONS	

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS  
7120 OAKLAND MILLS ROAD  
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS  
9250 BENDIX ROAD  
ELLCOTT CITY, MD 21043



PROPERTY

TAX MAP 4, GRID 15, PARCEL 54

ZONING: B-1 & RC-DEO

ELECTION DISTRICT 3rd

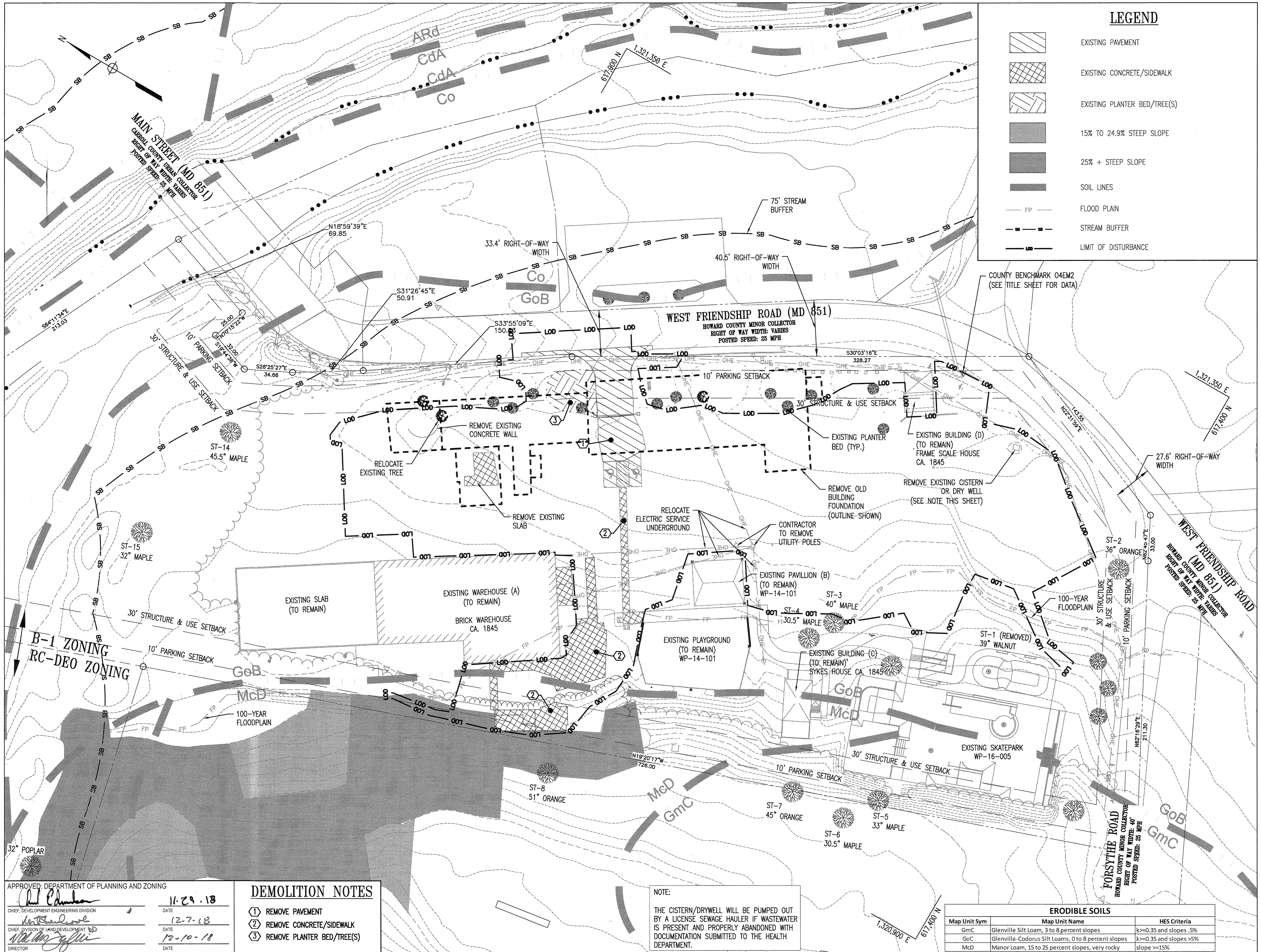
GRAPHIC SCALES

SIGNATURE

PROFESSIONAL CERTIFICATION  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 19378  
EXPIRATION DATE: 09/22/2019

SOUTH BRANCH PARK  
PHASE 3

ABBREVIATIONS, NOTES, AND LEGEND		
Drawing No.		
<b>C0.2</b>		
Scale: AS SHOWN		
Date: OCTOBER 2018	Sheet 2 of 24	
Des: JTD	Drawn: JTD	Check: AUO



**LEGEND**

- EXISTING PAVEMENT
- EXISTING CONCRETE/SIDEWALK
- EXISTING PLANTER BED/TREE(S)
- 15% TO 24.9% STEEP SLOPE
- 25% + STEEP SLOPE
- SOIL LINES
- FLOOD PLAIN
- STREAM BUFFER
- LIMIT OF DISTURBANCE

COUNTY BENCHMARK 04EM2  
(SEE TITLE SHEET FOR DATA)

REVISIONS	

HOWARD COUNTY  
DEPARTMENT OF RECREATION AND PARKS  
7120 OAKLAND MILLS ROAD  
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS  
9250 BENDIX ROAD  
ELLCOTT CITY, MD 21043

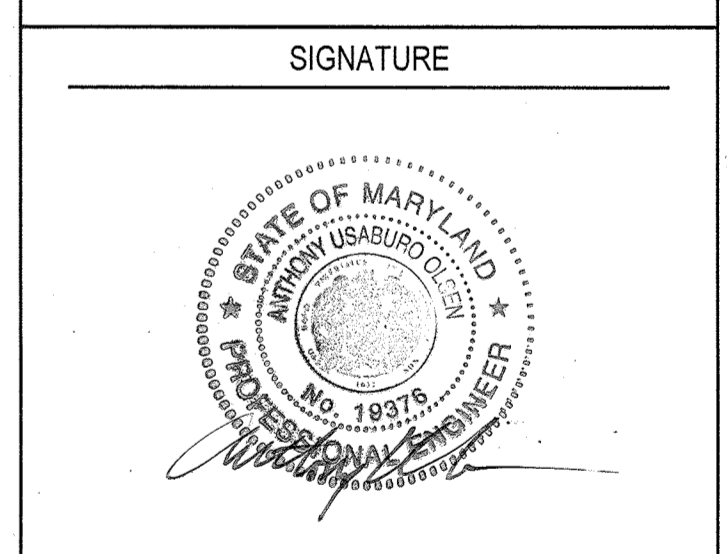
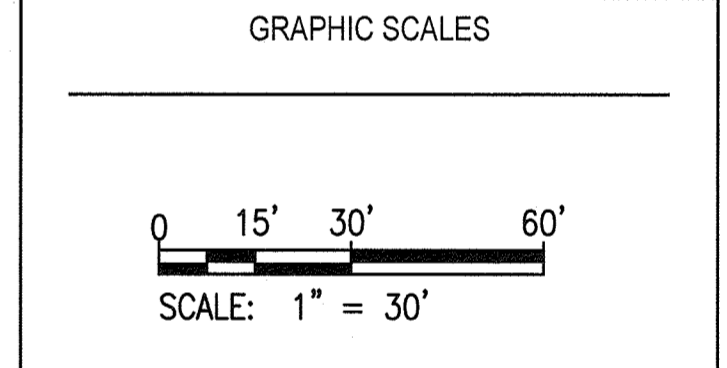


PROPERTY

TAX MAP 4, GRID 15, PARCEL 54

ZONING: B-1 & RC-DEO

ELECTION DISTRICT 3rd



PROFESSIONAL CERTIFICATION:  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19375.  
EXPIRATION DATE: 09/22/2019

**SOUTH BRANCH PARK PHASE 3**

EXISTING CONDITIONS/  
DEMOLITION PLAN

Drawing No.  
**C1.0**

Scale: 1"=30'

Date: OCTOBER 2018 Sheet 3 of 24

Des: JTD Drawn: JTD Check: AUC

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*[Signature]*  
CHIEF DEVELOPMENT ENGINEERING DIVISION

*[Signature]*  
CHIEF DIVISION OF LAND DEVELOPMENT

*[Signature]*  
DIRECTOR

DATE: 11-29-18

DATE: 12-7-18

DATE: 12-10-18

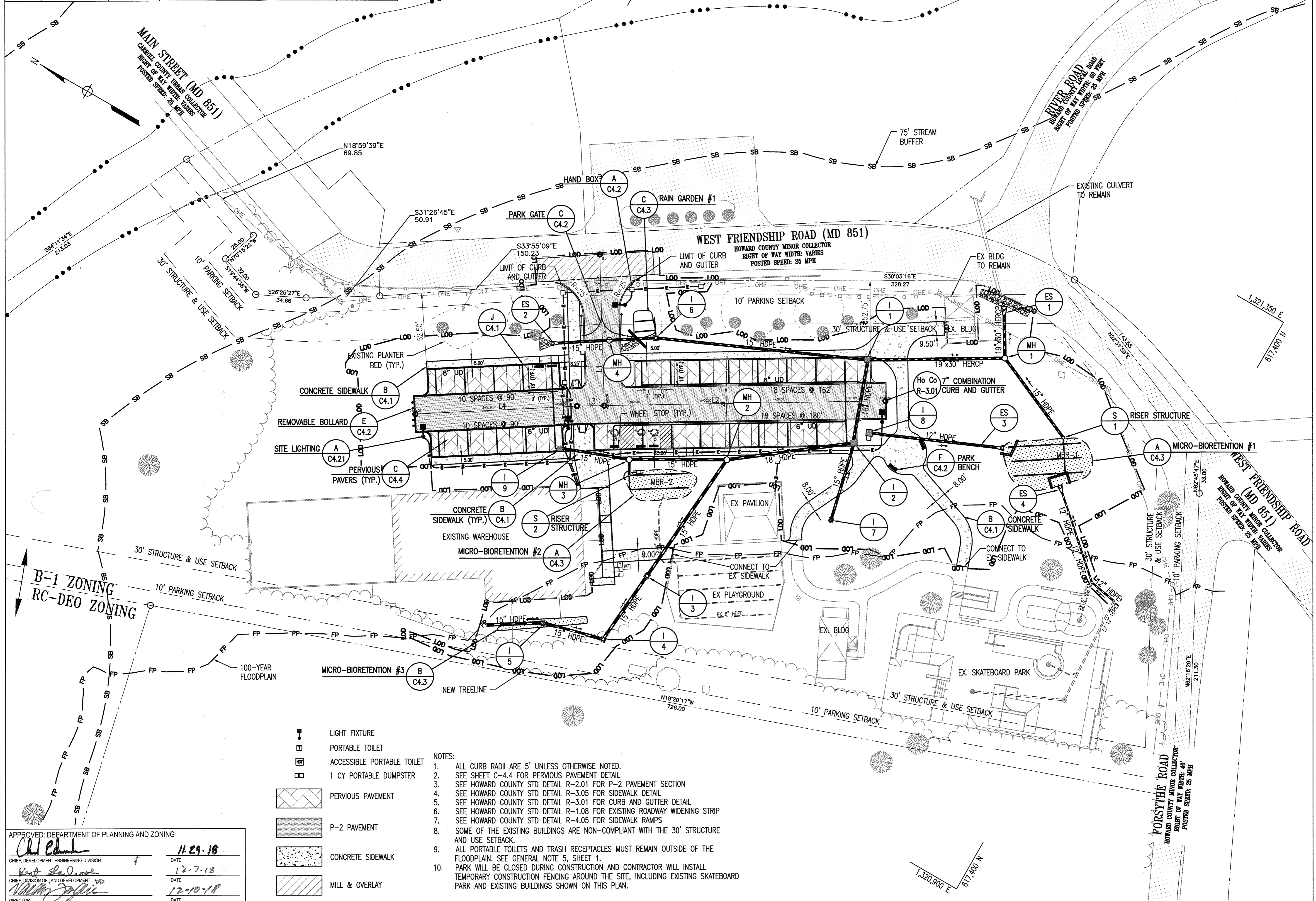
- DEMOLITION NOTES**
- ① REMOVE PAVEMENT
  - ② REMOVE CONCRETE/SIDEWALK
  - ③ REMOVE PLANTER BED/TREE(S)

NOTE:

THE CISTERN/DRYWELL WILL BE PUMPED OUT BY A LICENSED SEWAGE HAULER IF WASTEWATER IS PRESENT AND PROPERLY ABANDONED WITH DOCUMENTATION SUBMITTED TO THE HEALTH DEPARTMENT.

Map Unit Sym	Map Unit Name	HES Criteria
GmC	Glenville Silt Loam, 3 to 8 percent slopes	k>=0.35 and slopes >5%
GoC	Glenville-Codorus Silt Loams, 0 to 8 percent slopes	k>=0.35 and slopes >5%
McD	Manor Loam, 15 to 25 percent slopes, very rocky	slope >=15%

BASELINE INFORMATION TABLE						
LINE	BEARING	DISTANCE	START COORD		END COORD	
			N	E	N	E
L1	S 58 17' 16" W	104.03	617830.917	1321155.241	617776.233	1321066.742
L2	S 30 53' 35" E	193.54	617776.233	1321066.742	617610.149	1321166.114
L3	S 30 53' 35" E	18.84	617776.233	1321066.742	617792.402	1321057.067
L4	S 32 44' 30" E	111.15	617792.402	1321057.067	617885.894	1320996.951



- LIGHT FIXTURE
- PORTABLE TOILET
- ACCESSIBLE PORTABLE TOILET
- 1 CY PORTABLE DUMPSTER
- PERVIOUS PAVEMENT
- P-2 PAVEMENT
- CONCRETE SIDEWALK
- MILL & OVERLAY

- NOTES:
- ALL CURB RADII ARE 5' UNLESS OTHERWISE NOTED.
  - SEE SHEET C-4.4 FOR PERVIOUS PAVEMENT DETAIL.
  - SEE HOWARD COUNTY STD DETAIL R-2.01 FOR P-2 PAVEMENT SECTION.
  - SEE HOWARD COUNTY STD DETAIL R-3.05 FOR SIDEWALK DETAIL.
  - SEE HOWARD COUNTY STD DETAIL R-3.01 FOR CURB AND GUTTER DETAIL.
  - SEE HOWARD COUNTY STD DETAIL R-1.08 FOR EXISTING ROADWAY WIDENING STRIP.
  - SEE HOWARD COUNTY STD DETAIL R-4.05 FOR SIDEWALK RAMPS.
  - SOME OF THE EXISTING BUILDINGS ARE NON-COMPLIANT WITH THE 30' STRUCTURE AND USE SETBACK.
  - ALL PORTABLE TOILETS AND TRASH RECEPTACLES MUST REMAIN OUTSIDE OF THE FLOODPLAIN. SEE GENERAL NOTE 5, SHEET 1.
  - PARK WILL BE CLOSED DURING CONSTRUCTION AND CONTRACTOR WILL INSTALL TEMPORARY CONSTRUCTION FENCING AROUND THE SITE, INCLUDING EXISTING SKATEBOARD PARK AND EXISTING BUILDINGS SHOWN ON THIS PLAN.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Chad Edmond* 11.29.18  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Kurt S. DeLoach* 12-7-18  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Walter J. Jolly* 12-10-18  
 DIRECTOR DATE

REVISIONS	

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS  
 9250 BENDIX ROAD  
 ELLICOTT CITY, MD 21043

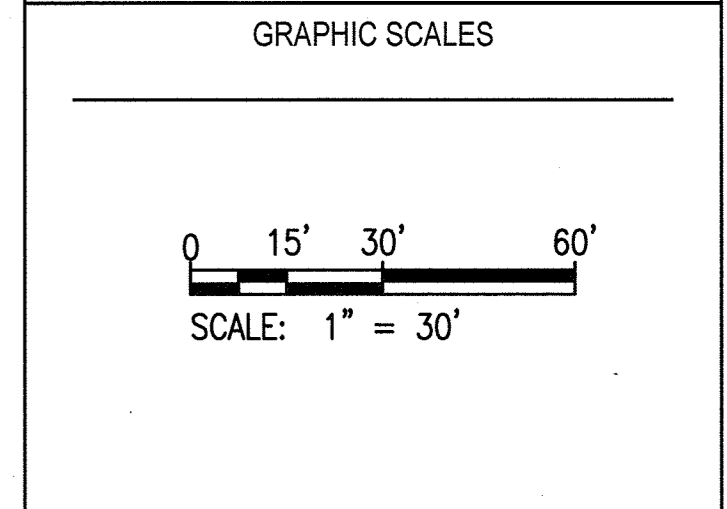


PROPERTY

TAX MAP 4, GRID 15, PARCEL 54

ZONING: B-1 & RC-DEO

ELECTION DISTRICT 3rd



SIGNATURE

PROFESSIONAL CERTIFICATION:  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 16378. EXPIRATION DATE: 09/22/2019.

SOUTH BRANCH PARK  
 PHASE 3

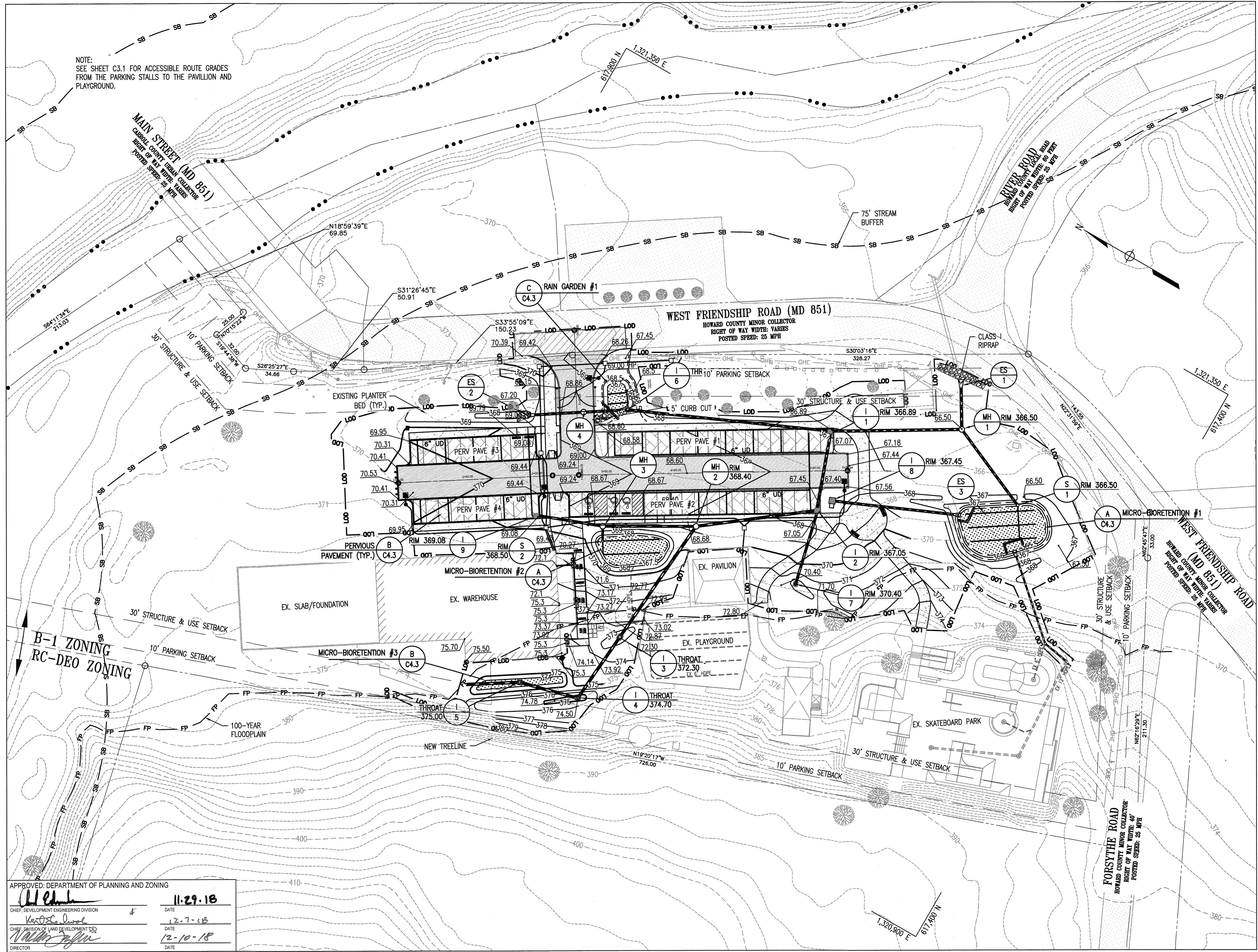
SITE GEOMETRY/UTILITY PLAN

Drawing No.  
**C1.1**

Scale: 1"=30'

Date: OCTOBER 2018 Sheet 4 of 24

Des: JTD Drawn: JTD Check: AUO



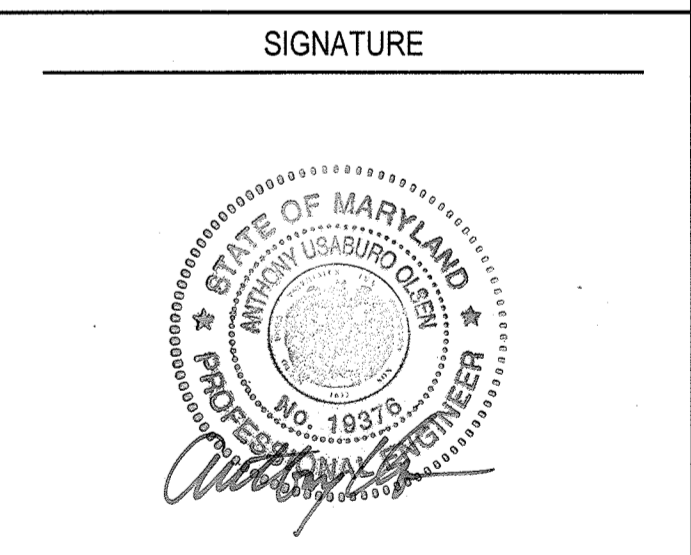
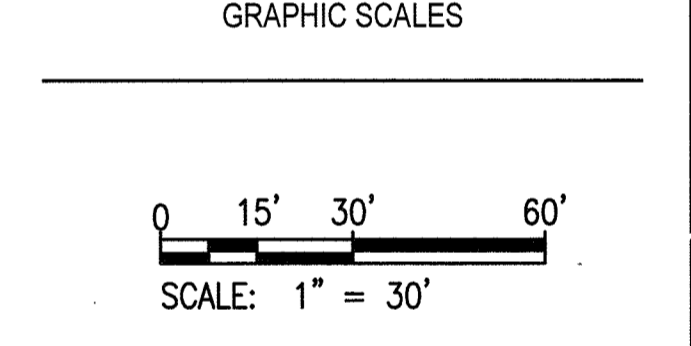
NOTE:  
SEE SHEET C3.1 FOR ACCESSIBLE ROUTE GRADES  
FROM THE PARKING STALLS TO THE PAVILION AND  
PLAYGROUND.

REVISIONS	

HOWARD COUNTY  
DEPARTMENT OF RECREATION AND PARKS  
7120 OAKLAND MILLS ROAD  
COLUMBIA, MD 21046  
DEPARTMENT OF PUBLIC WORKS  
9250 BENDIX ROAD  
ELLCOTT CITY, MD 21043



PROPERTY  
TAX MAP 4, GRID 15, PARCEL 54  
ZONING: B-1 & RC-DEO  
ELECTION DISTRICT 3rd



PROFESSIONAL CERTIFICATION  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE  
PREPARED OR APPROVED BY ME, AND THAT I AM A DULY  
LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF  
THE STATE OF MARYLAND, LICENSE NO. 19376  
EXPIRATION DATE: 09/22/2019

SOUTH BRANCH PARK  
PHASE 3

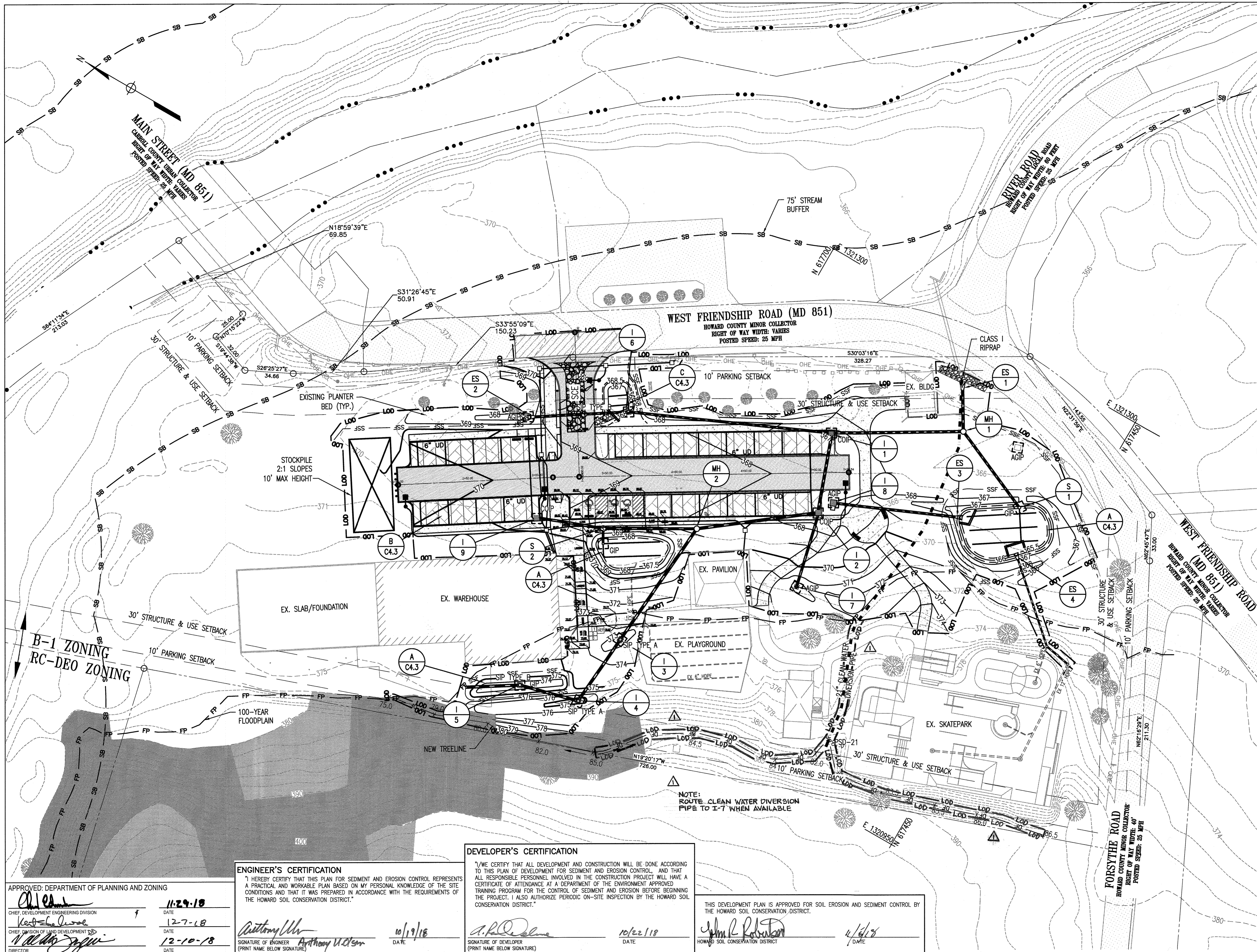
GRADING/STORMWATER  
MANAGEMENT PLAN  
Drawing No.  
**C1.2**  
Scale: 1"=30'  
Date: OCTOBER 2018 Sheet 5 of 24  
Des: JTD Drawn: JTD Check: AUO

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 11.29.18  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE: 12-7-18

*[Signature]* 12-10-18  
CHIEF, DIVISION OF LAND DEVELOPMENT  
DATE: 12-10-18

*[Signature]*  
DIRECTOR



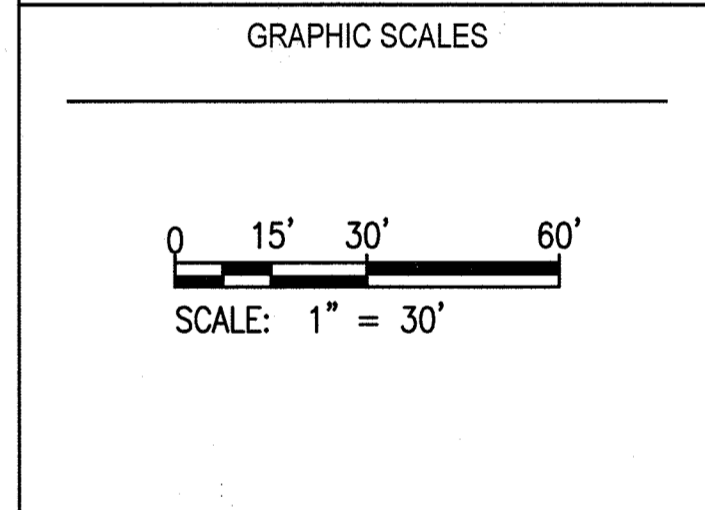
REVISIONS	
△ REVISE LOD	3/16/20

HOWARD COUNTY  
 DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS  
 9250 BENDIX ROAD  
 ELLICOTT CITY, MD 21043



PROPERTY  
 TAX MAP 4, GRID 15, PARCEL 54  
 ZONING: B-1 & RC-DEO  
 ELECTION DISTRICT 3rd



SIGNATURE

PROFESSIONAL CERTIFICATION  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 19378. EXPIRATION DATE: 09/22/2019.

**SOUTH BRANCH PARK  
 PHASE 3**

EROSION AND SEDIMENT CONTROL PLAN

Drawing No.  
**C1.3**

Scale: 1"=30'  
 Date: OCTOBER 2018 Sheet 6 of 24  
 Des: JTD Drawn: JTD Check: AUO

**ENGINEER'S CERTIFICATION**  
 I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Signature: *Anthony U. Olson* DATE: 10/19/18  
 Signature: *Anthony U. Olson* DATE: 12-10-18

**DEVELOPER'S CERTIFICATION**  
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

Signature: *A. Paladino* DATE: 10/22/18  
 Signature: *John P. Robertson* DATE: 11/6/18

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Signature: *Chad...* DATE: 11-29-18  
 Signature: *...* DATE: 12-7-18  
 Signature: *...* DATE: 12-10-18



**INLET PROTECTION DA INFO**

INLET PROT	AREA SF	AREA AC
EX INLET	7339	0.17
I- 1	6386	0.15
I- 2	12169	0.28
I- 3	2519	0.06
I- 4	3201	0.07
I- 5	5149	0.12
I- 6	3740	0.09
I- 7	11782	0.27
I- 8	8015	0.18
I- 9	9945	0.23
ES- 2	13936	0.32
S- 1	21510	0.49
S- 2	11377	0.26

**E&S FENCE DA INFO**

FENCE REF	AREA SF	AREA AC
SSF- 1	13610	0.31
SSF- 2	1565	0.04
SSF- 3	68429	1.57
SSF- 4	18943	0.43
DF-1/PSD-21	77969	1.79
DF-2	27663	0.64

REVISIONS

NO.	DATE	DESCRIPTION

HOWARD COUNTY  
 DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS  
 9250 BENDIX ROAD  
 ELLICOTT CITY, MD 21043

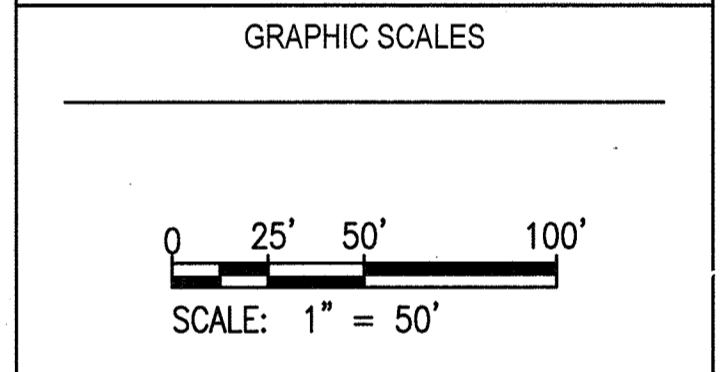


PROPERTY

TAX MAP 4, GRID 15, PARCEL 54

ZONING: B-1 & RC-DEO

ELECTION DISTRICT 3rd



SIGNATURE

PROFESSIONAL CERTIFICATION  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376, EXPIRATION DATE: 09/22/2019.

SOUTH BRANCH PARK  
 PHASE 3

EROSION AND SEDIMENT CONTROL DA MAP

Drawing No.  
**C1.31**

Scale: 1"=50'

Date: OCTOBER 2018 Sheet 7 of 24

Des: JTD Drawn: JTD Check: AUO

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Anthony U. Olson* 11-29-18  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Keith S. ...* 12-7-18  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*William J. ...* 12-10-18  
 DIRECTOR DATE

**ENGINEER'S CERTIFICATION**  
 "I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

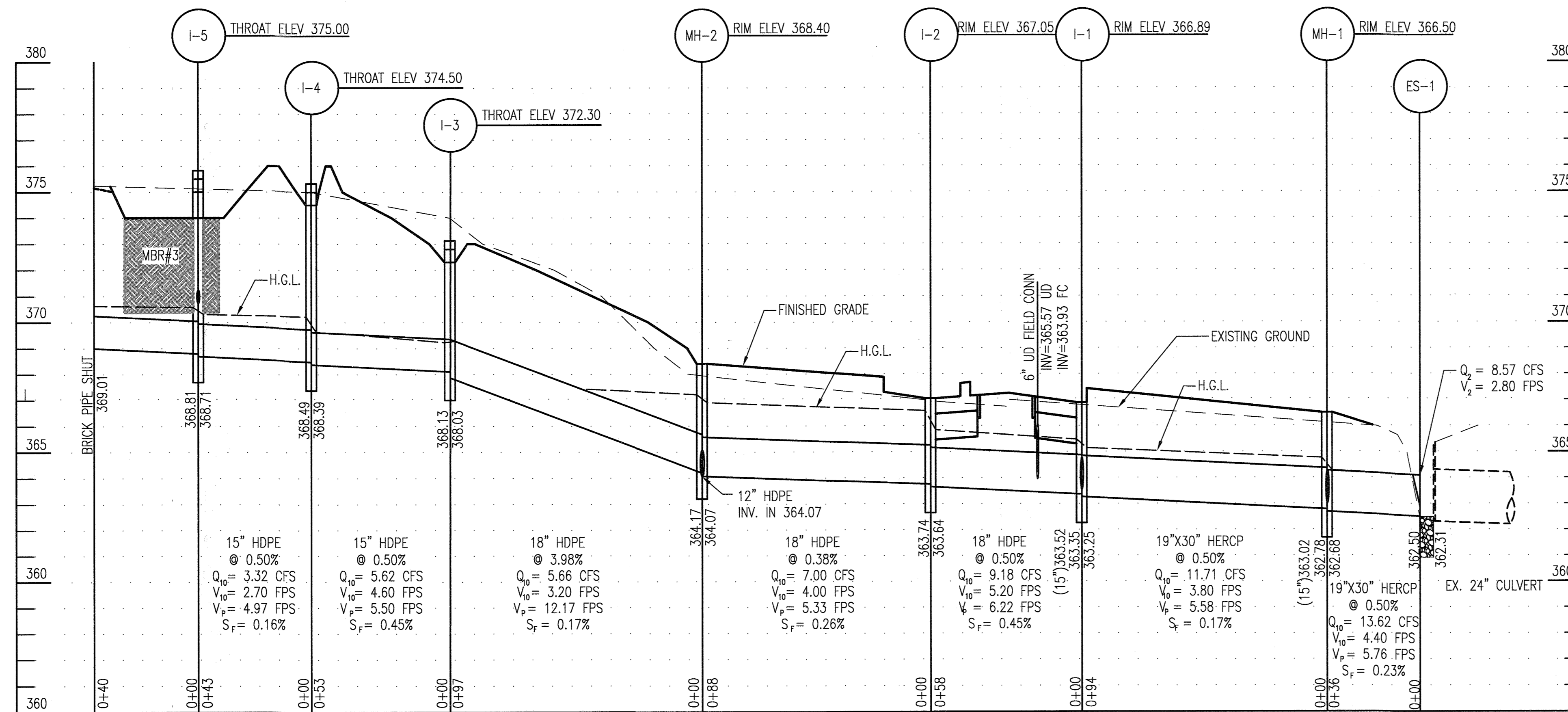
*Anthony U. Olson* 10/19/18  
 SIGNATURE OF ENGINEER DATE  
 (PRINT NAME BELOW SIGNATURE)

**DEVELOPER'S CERTIFICATION**  
 "I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

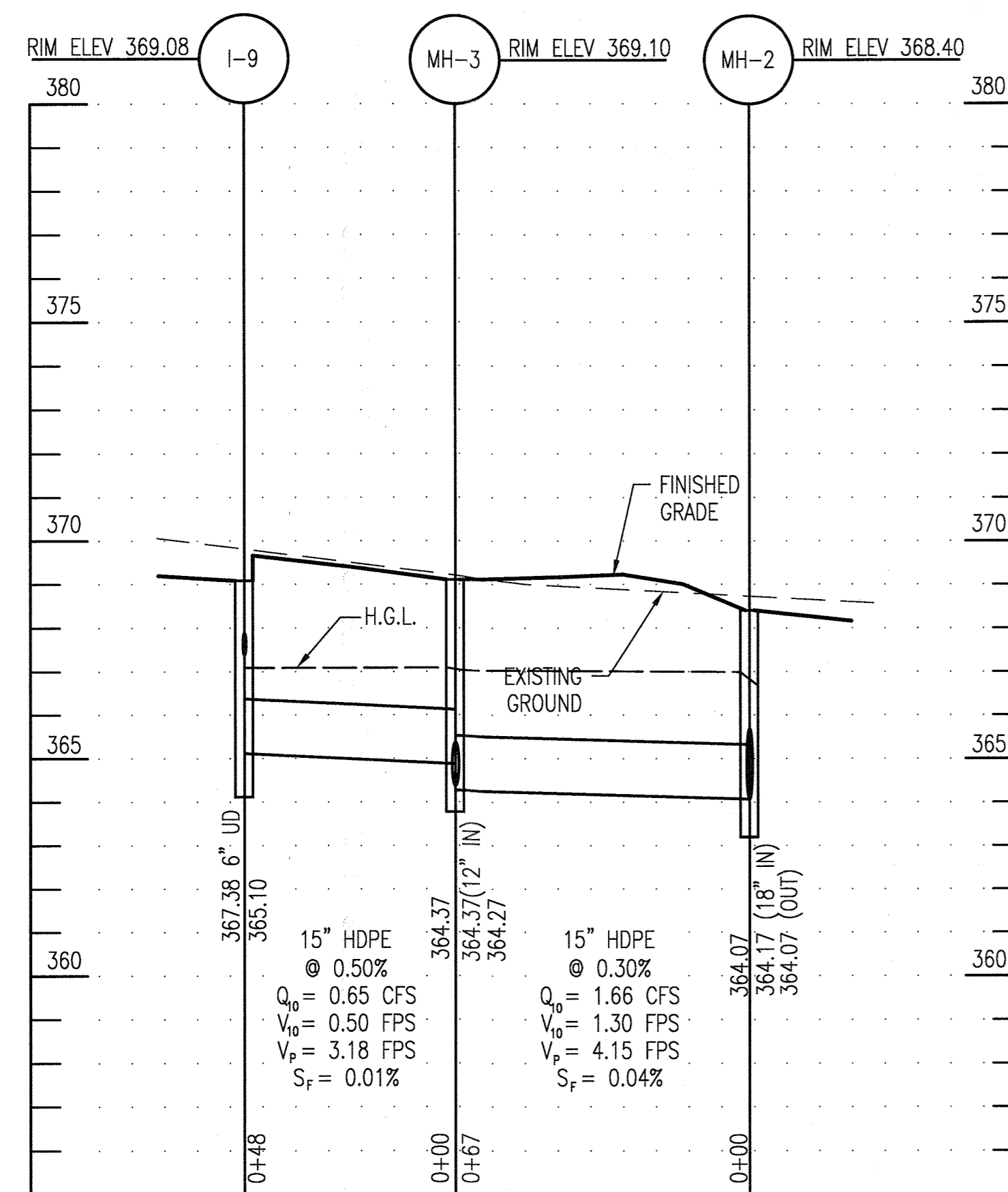
*Anthony U. Olson* 10/22/18  
 SIGNATURE OF DEVELOPER DATE  
 (PRINT NAME BELOW SIGNATURE)

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

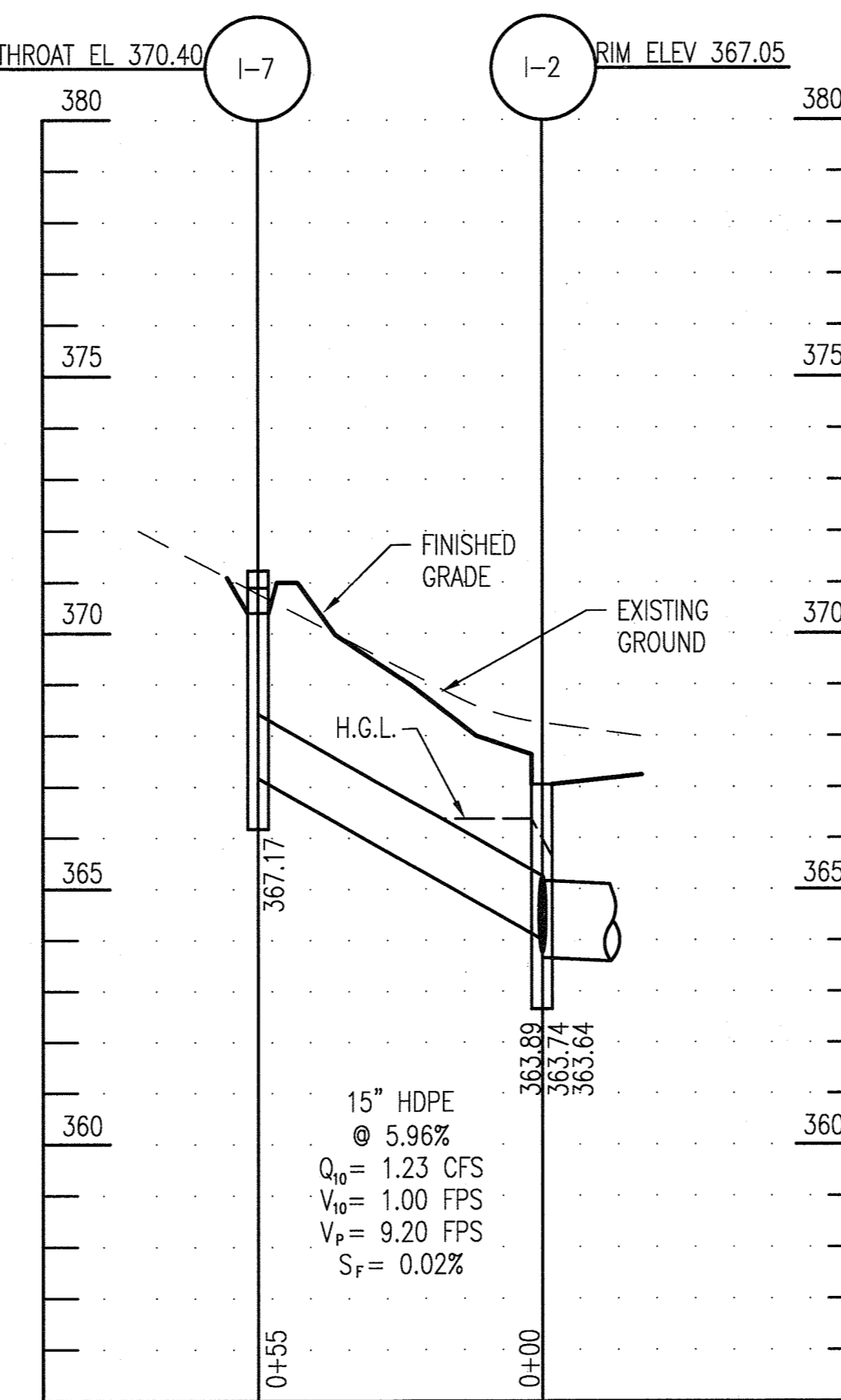
*John P. ...* 11/5/18  
 SIGNATURE OF DISTRICT ENGINEER DATE  
 HOWARD SOIL CONSERVATION DISTRICT



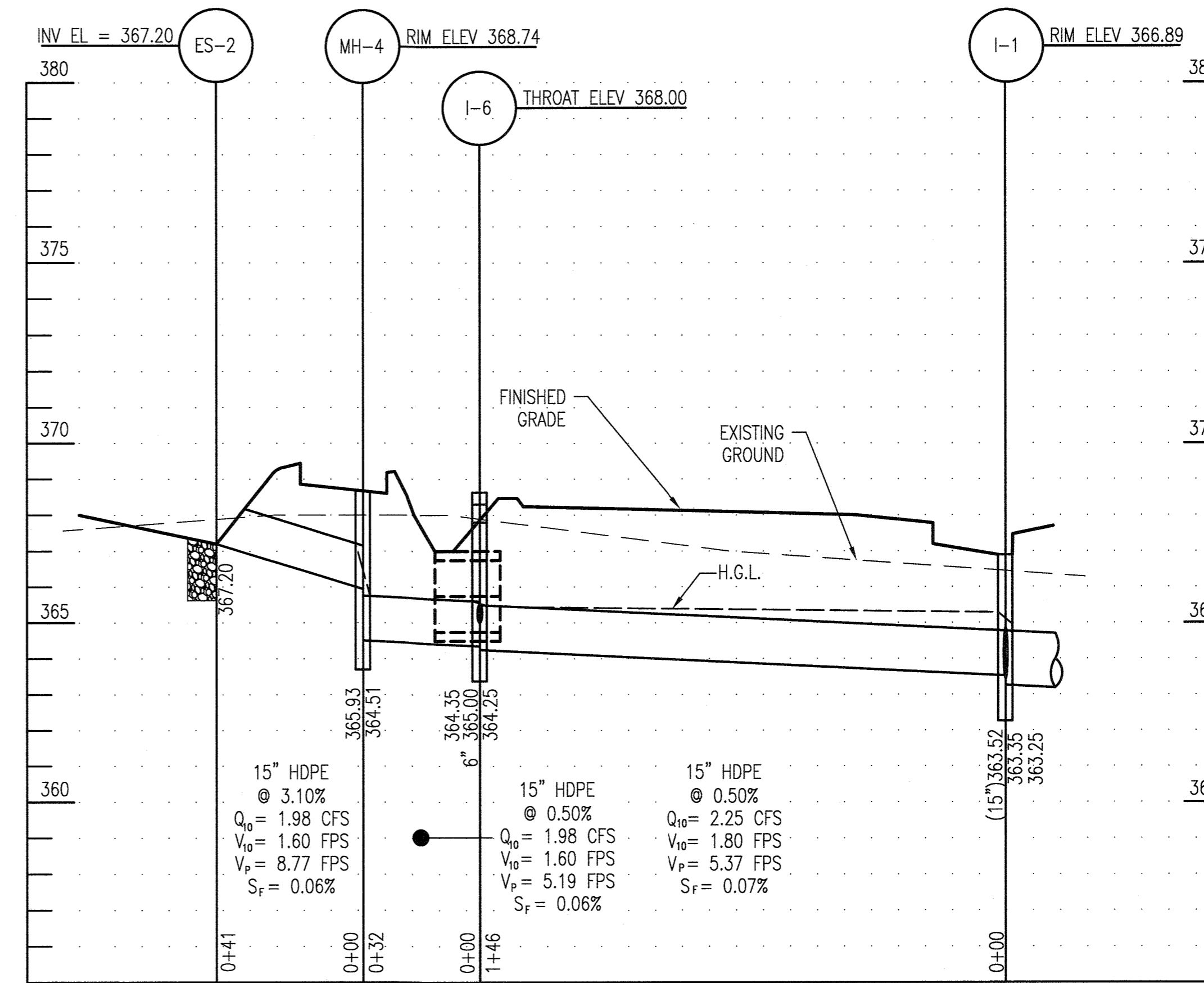
**STORMDRAIN PROFILE: I-5 TO ES-1**  
 SCALE: 1" = 30' HORIZ.  
 1" = 3' VERT.



**STORMDRAIN PROFILE: I-9 TO MH-2**  
 SCALE: 1" = 30' HORIZ.  
 1" = 3' VERT.



**STORMDRAIN PROFILE: I-7 TO I-2**  
 SCALE: 1" = 30' HORIZ.  
 1" = 3' VERT.



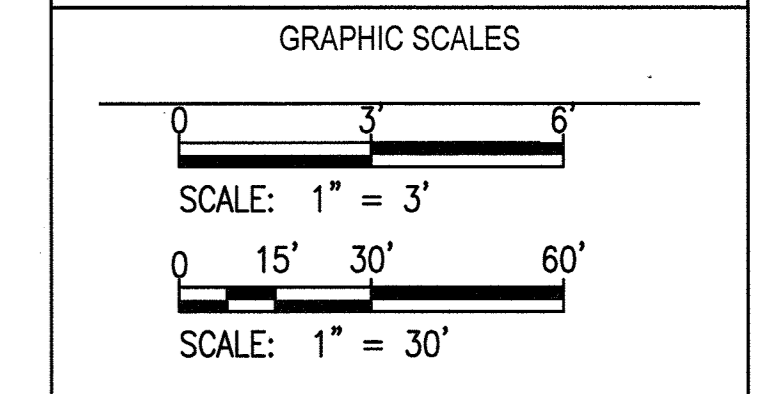
**STORMDRAIN PROFILE: ES-2 TO I-1**  
 SCALE: 1" = 30' HORIZ.  
 1" = 3' VERT.

REVISIONS	

HOWARD COUNTY  
 DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MD 21046  
 DEPARTMENT OF PUBLIC WORKS  
 9250 BENDIX ROAD  
 ELLICOTT CITY, MD 21043



PROPERTY  
 TAX MAP 4, GRID 15, PARCEL 54  
 ZONING: B-1 & RC-DEO  
 ELECTION DISTRICT 3rd



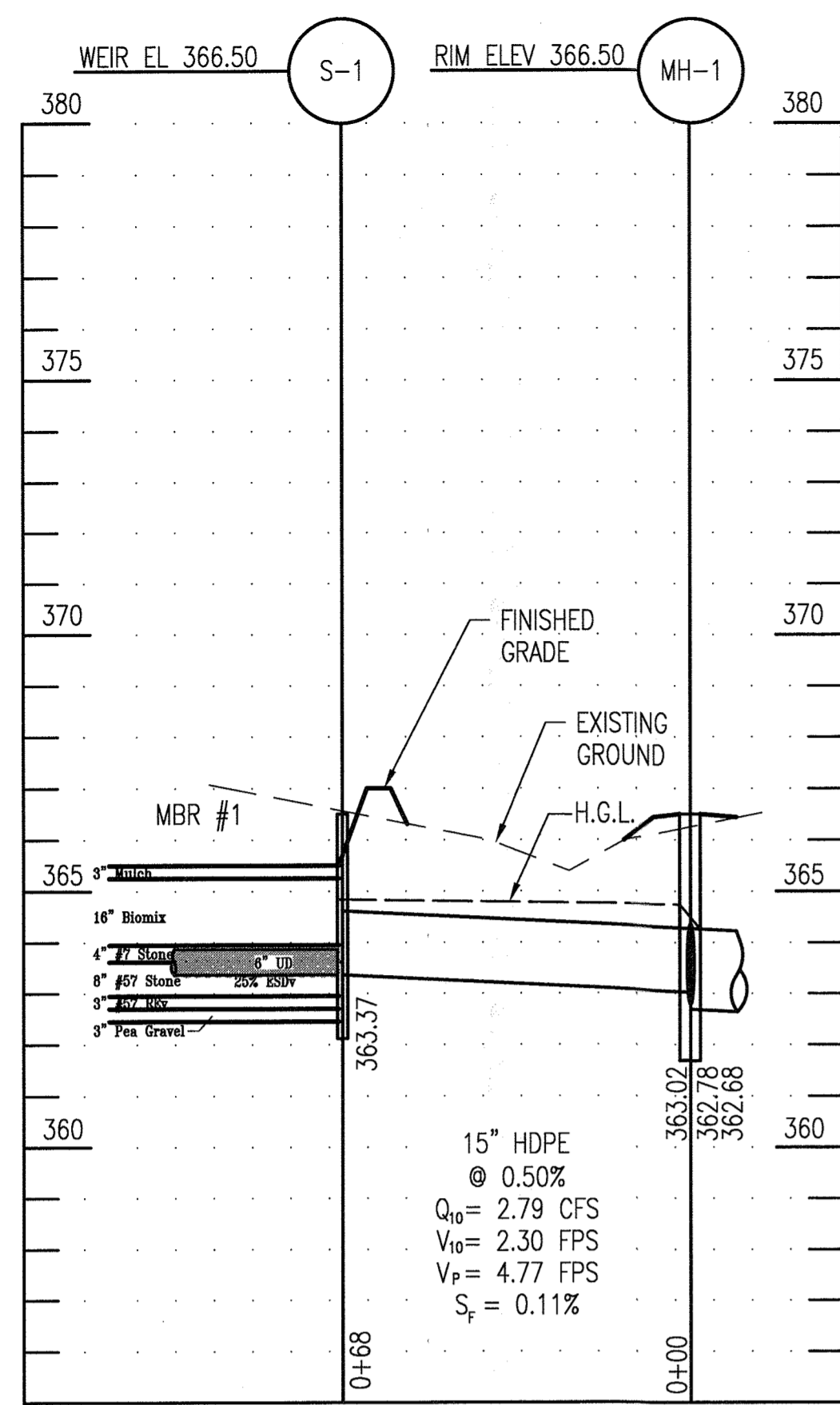
SIGNATURE  
  
 PROFESSIONAL CERTIFICATION  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 19378. EXPIRATION DATE: 10/22/2019.

**SOUTH BRANCH PARK  
 PHASE 3**

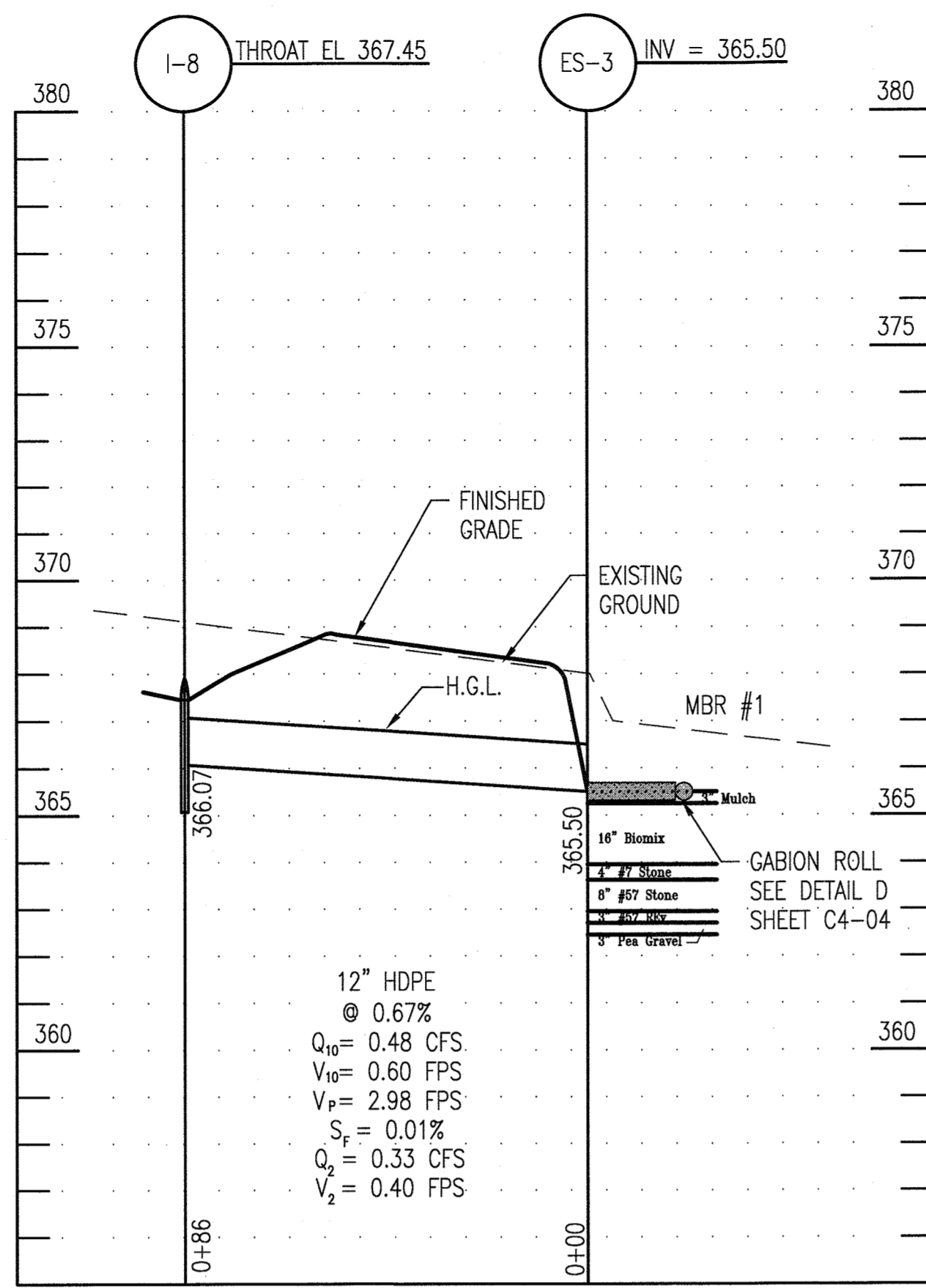
STORM DRAIN PROFILES  
 Drawing No.  
**C2.1**  
 Scale: AS SHOWN  
 Date: OCTOBER 2018 Sheet 8 of 24  
 Des: JTD Drawn: JTD Check: AUO

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
  
 DATE: 11-29-18  
 DATE: 12-7-18  
 DATE: 12-10-18

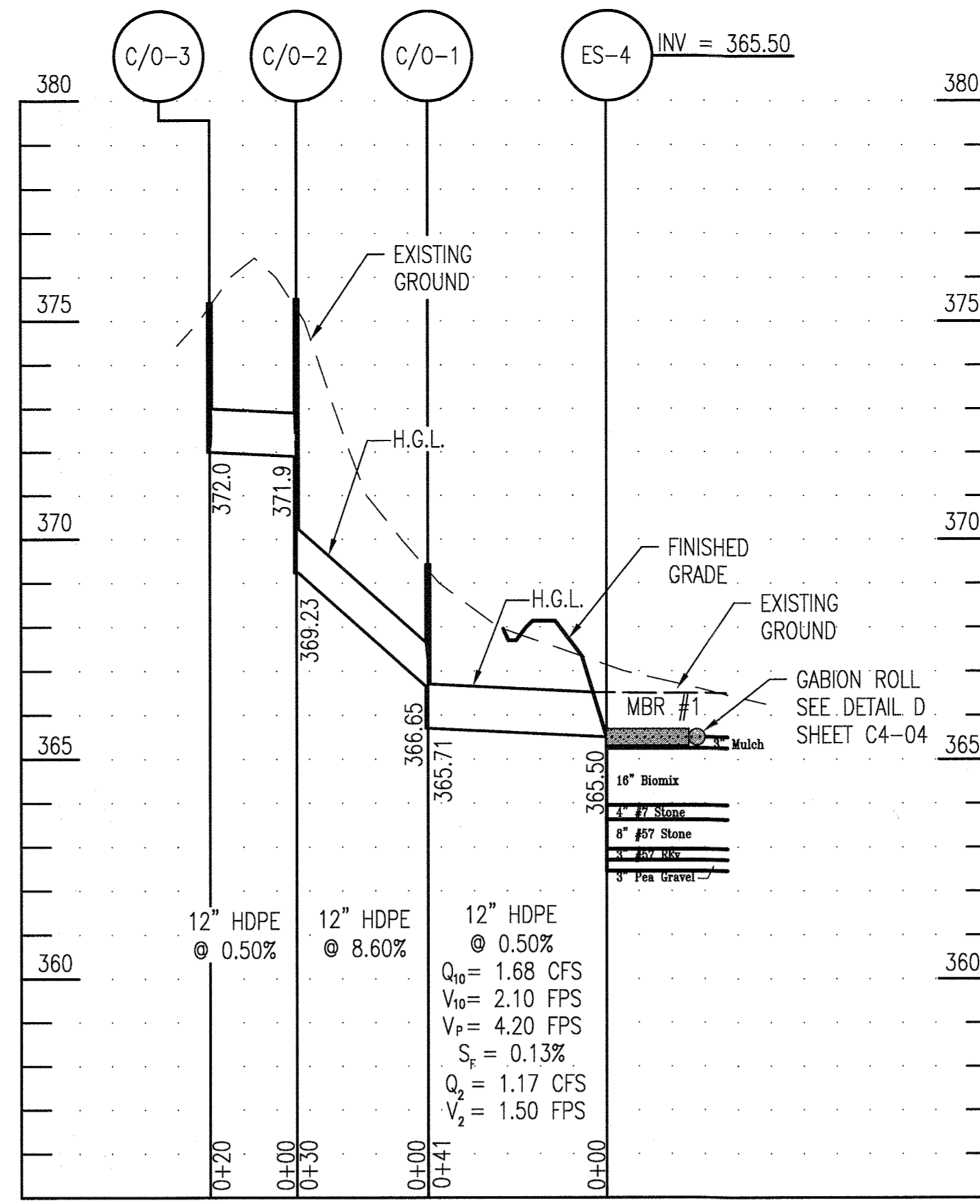




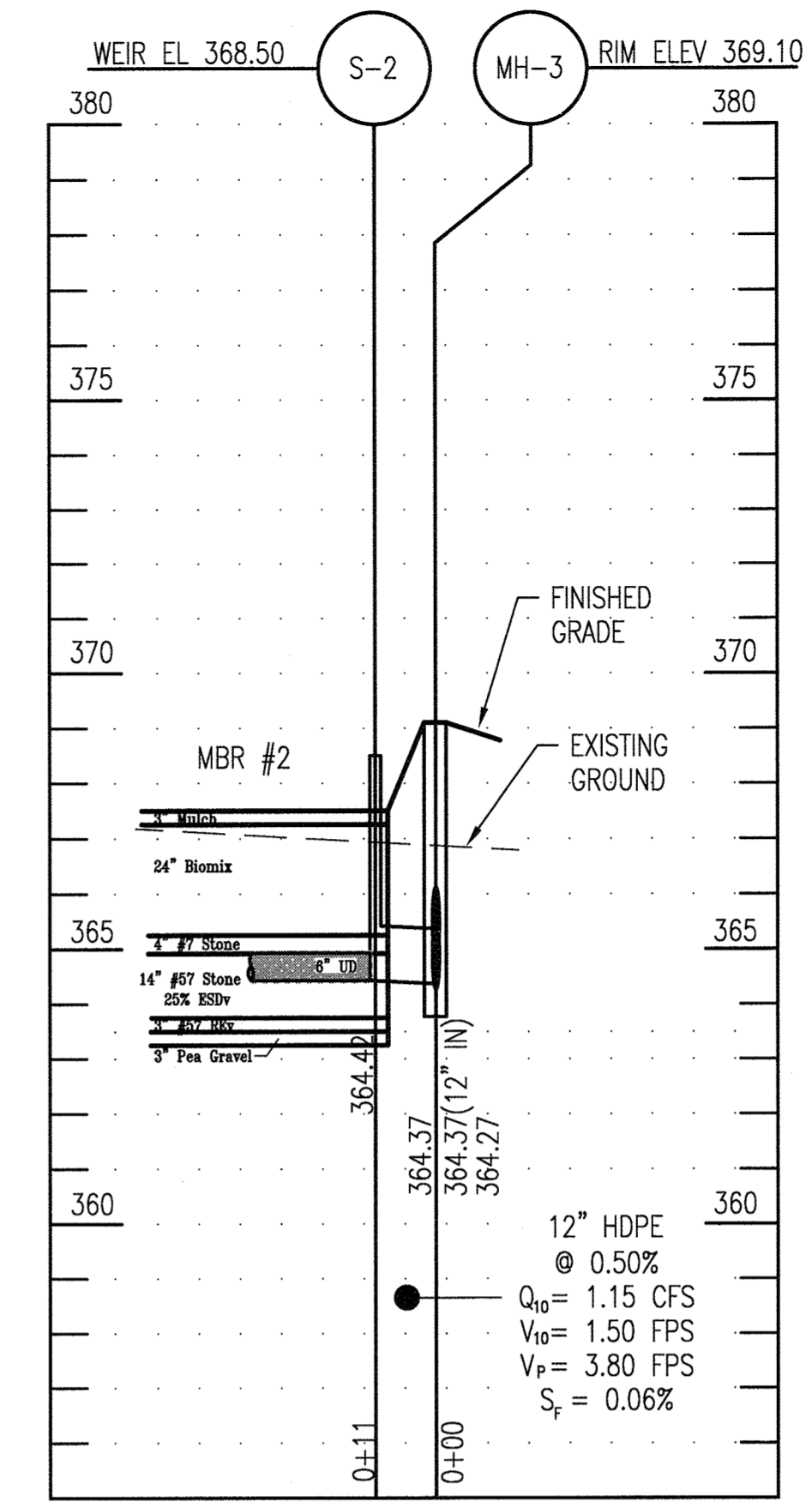
**STORMDRAIN PROFILE: S-1 TO MH-1**  
 SCALE: 1" = 30' HORIZ.  
 1" = 3' VERT.



**STORMDRAIN PROFILE: I-8 TO ES-3**  
 SCALE: 1" = 30' HORIZ.  
 1" = 3' VERT.



**STORMDRAIN PROFILE: C/O-3 TO ES-4**  
 SCALE: 1" = 30' HORIZ.  
 1" = 3' VERT.



**STORMDRAIN PROFILE: S-2 TO MH-3**  
 SCALE: 1" = 30' HORIZ.  
 1" = 3' VERT.

PIPE SCHEDULE	
PIPE SIZE	TOTAL LENGTH (FT)
12" HDPE	138
15" HDPE	593
18" HDPE	243
19"X30" HERCP	130

STR #	TOP EL	INV in #1	INV in #2	INVout	STRUCTURE TYPE	STRUCTURE DETAIL REFERENCE
I- 1	366.89	363.35	363.52	363.25	HO CO SINGLE WR INLET	HOWARD COUNTY STANDARD DETAIL D-4.37
I- 2	367.05	363.74		363.64	HO CO SINGLE WR INLET	HOWARD COUNTY STANDARD DETAIL D-4.37
I- 3	352.30	368.13		368.03	HO CO PRECAST TYPE D INLET	HOWARD COUNTY STANDARD DETAIL D-4.10
I- 4	374.50	368.49		368.39	HO CO PRECAST TYPE D INLET	HOWARD COUNTY STANDARD DETAIL D-4.10
I- 5	375.00	368.81		368.71	HO CO PRECAST TYPE D INLET	HOWARD COUNTY STANDARD DETAIL D-4.10
I- 6	367.80	364.35	365.00	364.25	HO CO PRECAST TYPE D INLET	HOWARD COUNTY STANDARD DETAIL D-4.10
I- 7	370.40			367.17	HO CO YARD INLET	HOWARD COUNTY STANDARD DETAIL D-4.14
I- 8	367.45			366.07	HO CO TYPE K INLET	HOWARD COUNTY STANDARD DETAIL D-4.12 (MOD)
I- 9	369.08	367.38		365.10	HO CO SINGLE WR INLET	HOWARD COUNTY STANDARD DETAIL D-4.37
MH- 1	366.50	362.78	363.02	362.68	48" PRECAST MANHOLE	HOWARD COUNTY STANDARD DETAIL G-5.12
MH- 2	368.40	364.17	364.07	364.07	48" PRECAST MANHOLE	HOWARD COUNTY STANDARD DETAIL G-5.12
MH- 3	369.10	364.37	364.27	364.27	48" PRECAST MANHOLE	HOWARD COUNTY STANDARD DETAIL G-5.12
MH- 4	368.74	365.93		364.51	48" PRECAST MANHOLE	HOWARD COUNTY STANDARD DETAIL G-5.12
ES- 1	364.00			362.50	18" PRECAST END SECTION	HOWARD COUNTY STANDARD DETAIL D-5.51
ES- 2	368.45			367.20	15" PRECAST END SECTION	HOWARD COUNTY STANDARD DETAIL D-5.51
ES- 3	366.50			365.50	12" HDPE END SECTION	12" ADS HDPE END SECTION (OR APPROVED EQUIV)
S- 1	366.50			363.37	24" NYLOPLAST DRAIN BASIN	DETAIL B, SHEET C4.2
S- 2	368.50			364.41	24" NYLOPLAST DRAIN BASIN	DETAIL B, SHEET C4.2

TOP ELEVATION FOR WR INLETS IS TOP OF GRATE  
 TOP ELEVATION FOR TYPE D INLETS IS THE THROAT ELEVATION  
 I-8 WILL BE A TYPE K INLET WITH THE CONCRETE FLUME ON ONE SIDE ONLY (INSTEAD OF BOTH)

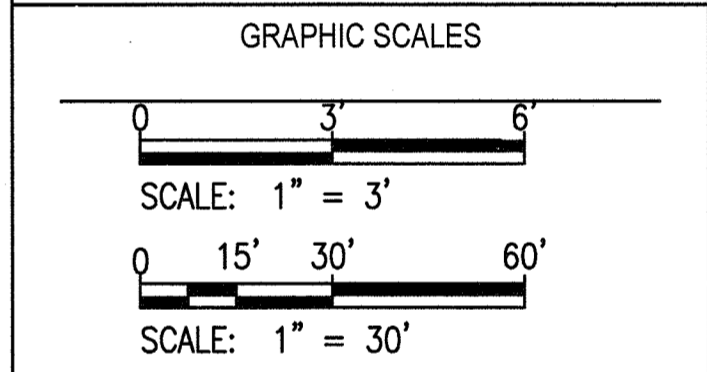
APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 [Signature] 11-29-18  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 [Signature] 12-7-18  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 [Signature] 12-10-18  
 DIRECTOR

REVISIONS	

HOWARD COUNTY  
 DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MD 21046  
 DEPARTMENT OF PUBLIC WORKS  
 9250 BENDIX ROAD  
 ELLICOTT CITY, MD 21043



PROPERTY  
 TAX MAP 4, GRID 15, PARCEL 54  
 ZONING: B-1 & RC-DEO  
 ELECTION DISTRICT 3rd

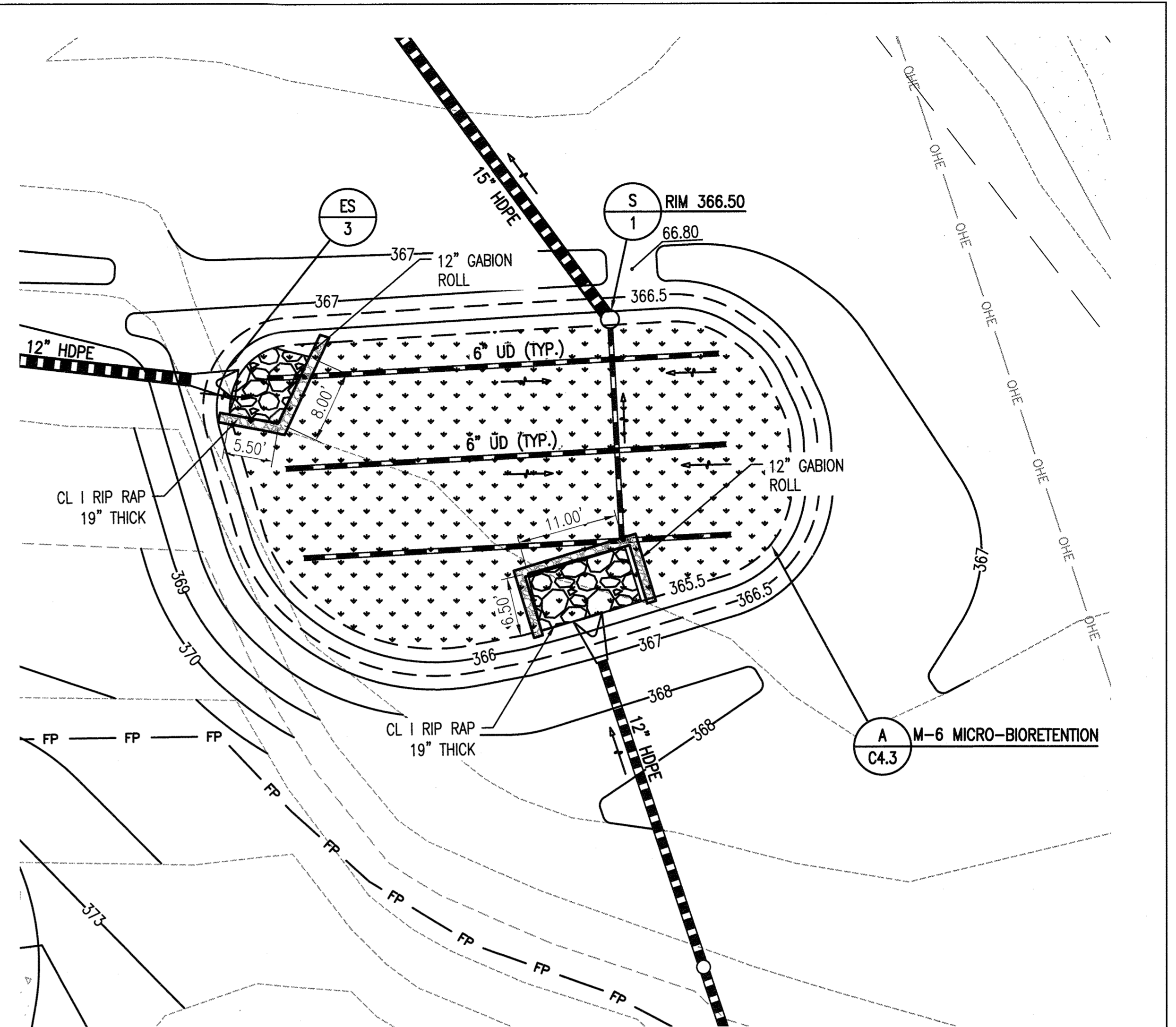
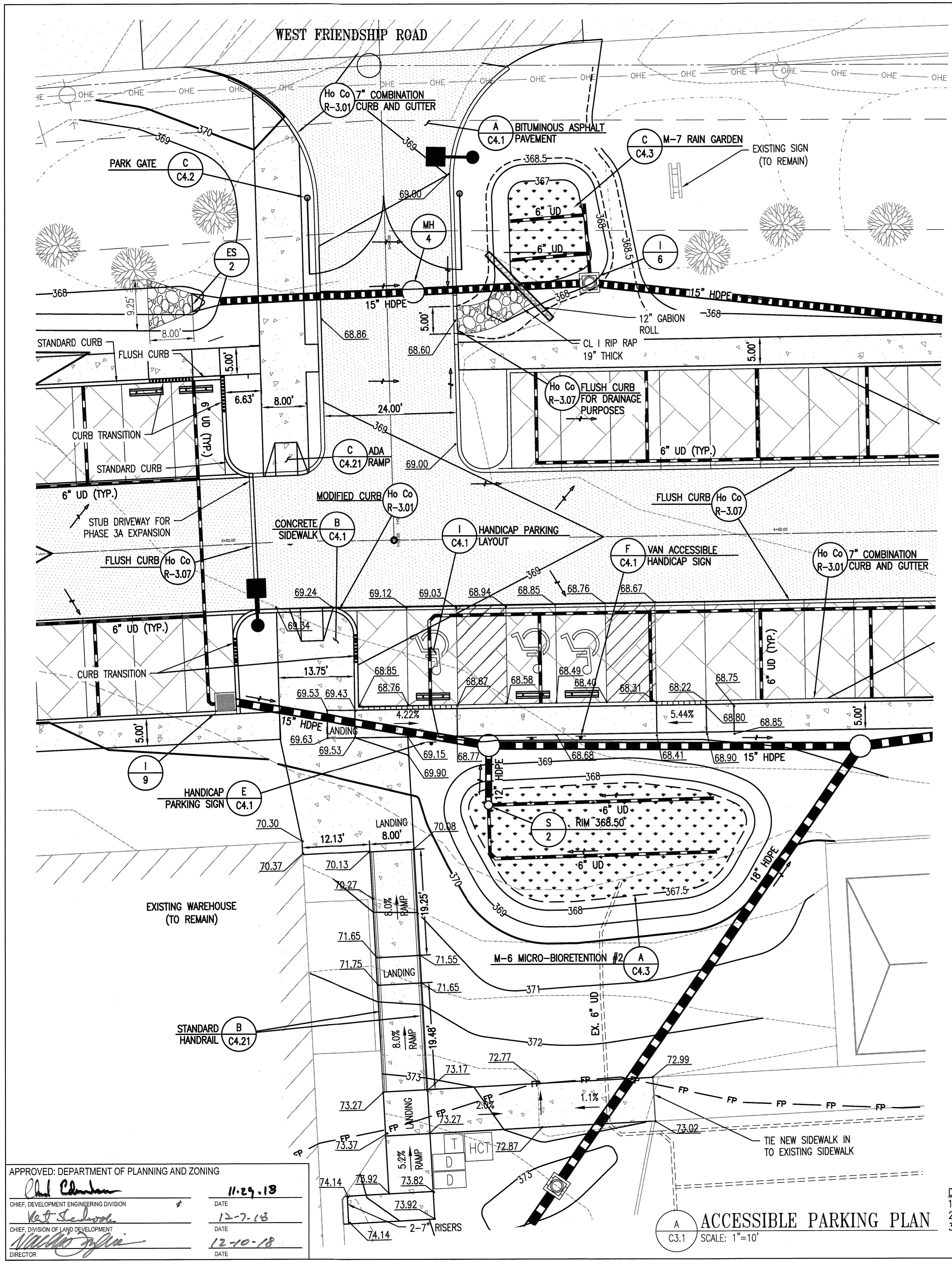


SIGNATURE  
 [Professional Engineer Seal and Signature]

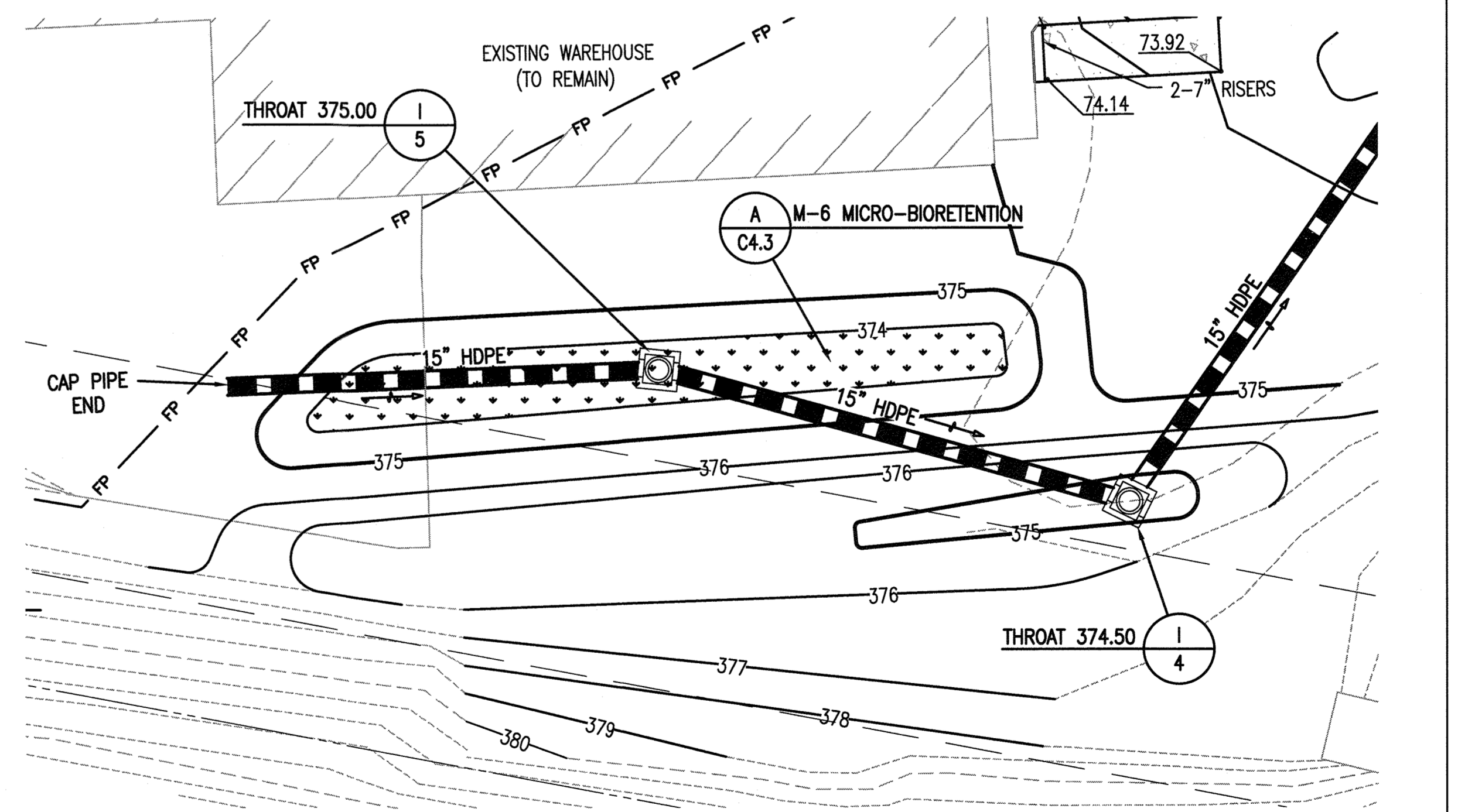
PROFESSIONAL CERTIFICATION  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19379  
 EXPIRATION DATE: 09/22/2019

SOUTH BRANCH PARK  
 PHASE 3

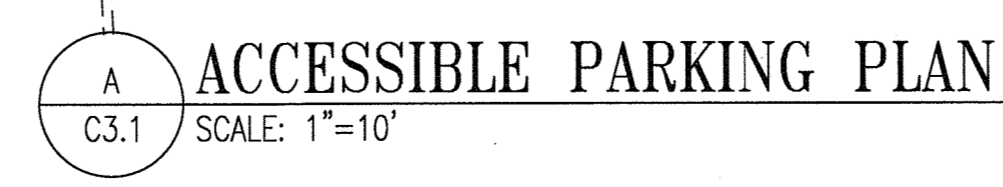
STORM DRAIN PROFILES  
 Drawing No. C2.2  
 Scale: VARIES  
 Date: OCTOBER 2018 Sheet 9 of 24  
 Des: JTD Drawn: JTD Check: AUO



**B M-6 MICRO-BIORETENTION #1 ENLARGED PLAN**  
C3.1 SCALE: 1"=10'



**C M-6 MICRO-BIORETENTION #3 ENLARGED PLAN**  
C3.1 SCALE: 1"=10'



**A ACCESSIBLE PARKING PLAN**  
C3.1 SCALE: 1"=10'

- DRAWING NOTES:**
1. ALL SPOT SHOT ELEVATIONS ARE ALONG THE FLOWLINE OF THE CURB UNLESS OTHERWISE NOTED.
  2. THE MAXIMUM LONGITUDINAL SLOPE FOR ALL PATHWAYS IS 5.0% AND MAXIMUM CROSS SLOPE IS 2.0%.
  3. THE MAXIMUM ALLOWABLE SLOPE FOR ALL ADA ACCESSIBLE PARKING SPACES AND ACCESS AISLES IS 2.0% IN ALL DIRECTIONS.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Chad Anderson* 11-29-18  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Neil Schaefer* 12-7-18  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Walter J. J. [Signature]* 12-10-18  
DIRECTOR DATE

REVISIONS	

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS  
7120 OAKLAND MILLS ROAD  
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS  
9250 BENDIX ROAD  
ELLCOTT CITY, MD 21043

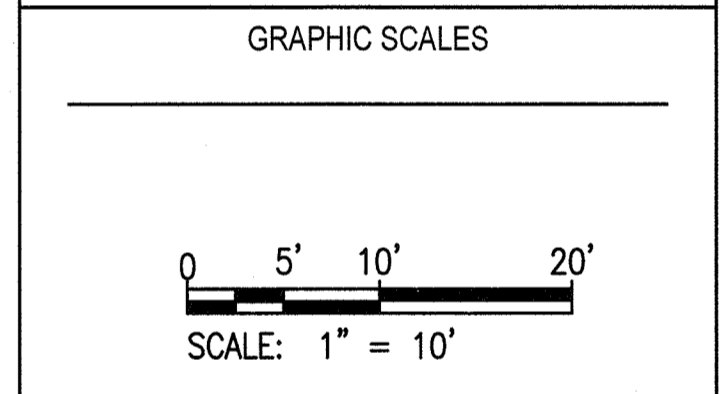


PROPERTY

TAX MAP 4, GRID 15, PARCEL 54

ZONING: B-1 & RC-DEO

ELECTION DISTRICT 3rd



SIGNATURE

PROFESSIONAL CERTIFICATION  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376, EXPIRATION DATE 08/22/2019.

**SOUTH BRANCH PARK  
PHASE 3**

ENLARGED GRADING/SWM PLANS

Drawing No.  
**C3.1**

Scale: 1"=10'

Date: OCTOBER 2018 Sheet 10 of 24

Des: JTD Drawn: JTD Check: AUO

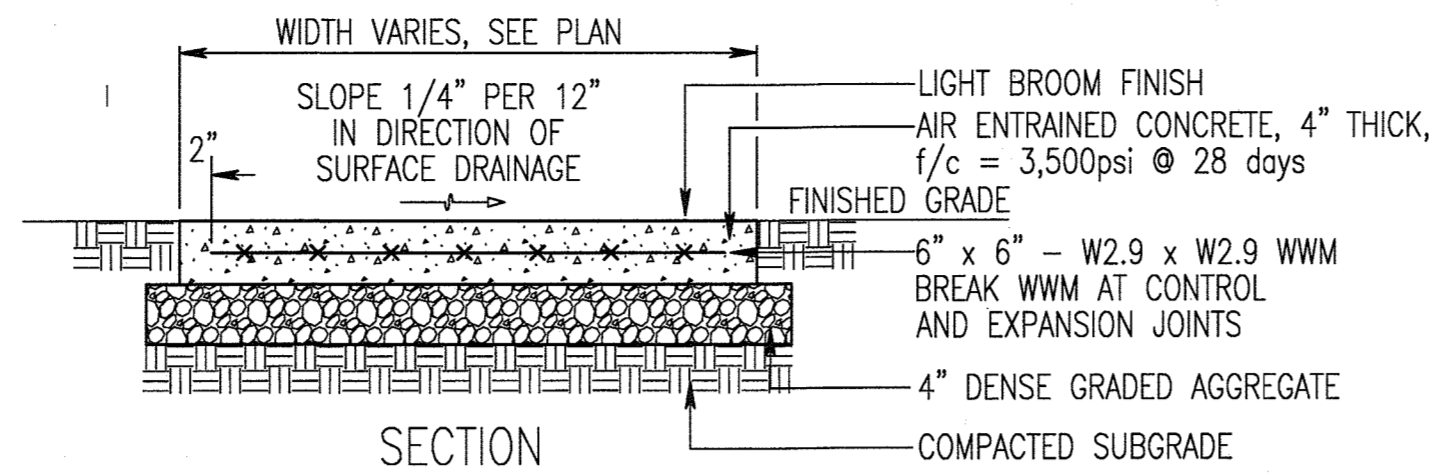
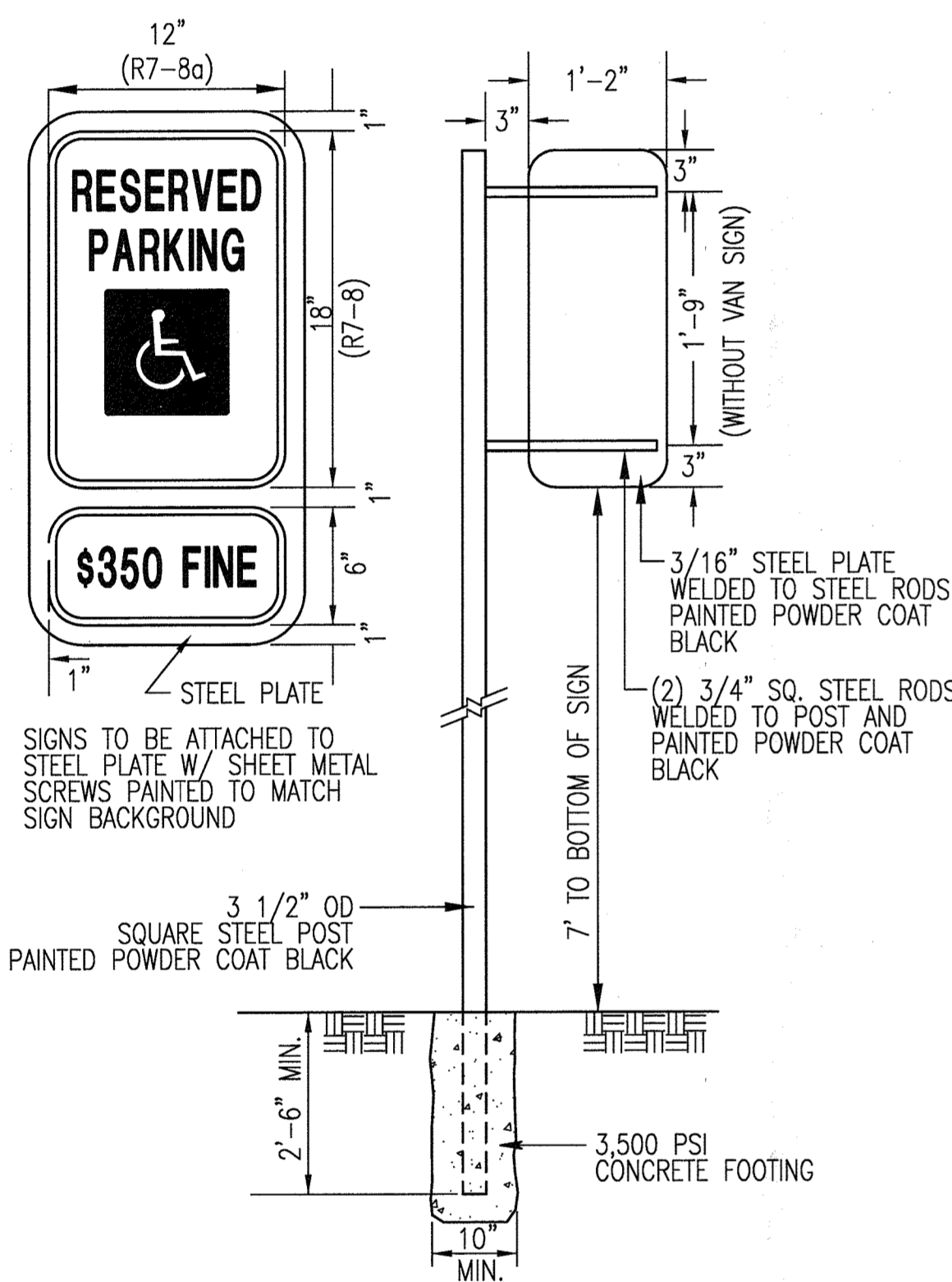
SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)						
		3 TO <4	5 TO <7	2, 7	3 TO <4	5 TO <7	2, 7	
P-1	PARKING DRIVE: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 2 HEAVY TRUCKS PER DAY	HMA SUPERPAVE FINAL SURFACE (2.5 MIN. PD 84-22, LEVEL 1, ESAL)	1.5	1.5	1.5	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE (2.0)	NA	NA	NA	NA	NA	NA
		HMA SUPERPAVE BASE (15.0 MIN. PD 84-22, LEVEL 1, ESAL)	2.0	2.0	2.0	2.5	3.0	2.5
		GRADED AGGREGATE BASE (GAB)	8.0	7.0	5.0	4.0	4.0	4.0
P-2	PARKING DRIVE: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY	HMA SUPERPAVE FINAL SURFACE (2.5 MIN. PD 84-22, LEVEL 1, ESAL)	1.5	1.5	1.5	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE (2.0)	NA	NA	NA	NA	NA	NA
		HMA SUPERPAVE BASE (15.0 MIN. PD 84-22, LEVEL 1, ESAL)	2.0	2.0	2.0	2.5	3.0	2.5
		GRADED AGGREGATE BASE (GAB)	8.0	4.0	3.0	4.0	4.0	4.0
P-3	PARKING DRIVE: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY	HMA SUPERPAVE FINAL SURFACE (2.5 MIN. PD 84-22, LEVEL 1, ESAL)	1.5	1.5	1.5	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE (2.0)	NA	NA	NA	NA	NA	NA
		HMA SUPERPAVE BASE (15.0 MIN. PD 84-22, LEVEL 1, ESAL)	2.0	2.0	2.0	2.5	3.0	2.5
		GRADED AGGREGATE BASE (GAB)	10.0	8.0	3.0	8.0	8.0	8.0
P-4	MINOR COLLECTORS: NON-RESIDENTIAL MAJOR COLLECTORS	HMA SUPERPAVE FINAL SURFACE (2.5 MIN. PD 84-22, LEVEL 1, ESAL)	1.5	1.5	1.5	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE (2.0)	NA	NA	NA	NA	NA	NA
		HMA SUPERPAVE BASE (15.0 MIN. PD 84-22, LEVEL 1, ESAL)	4.0	4.0	3.0	8.0	8.0	3.0
		GRADED AGGREGATE BASE (GAB)	13.0	7.0	4.0	8.0	8.0	8.0

Notes:  
 1) HEAVY TRUCKS ARE DEFINED AS THOSE WITH SIX (6) WHEELS OR MORE INCLUDING GARAGE TRUCKS.  
 2) HMA SUPERPAVE LAYERS SHALL BE PLACED IN APPROPRIATE COMPACTED LIFT THICKNESS: 150 MM BASE (2.0" MIN TO 4.0" MAX), 2.5 HMA SURFACE (1.5" MIN TO 3.0" MAX) AND 2.5 HMA SURFACE (1.5" MIN TO 2.0" MAX).  
 3) GRADED AGGREGATE BASE (GAB) TO BE PLACED AND COMPACTED IN 4" MAX COMPACTED THICKNESS LAYERS.  
 4) THE INTERMEDIATE SURFACE COURSE LAYERS MUST BE PLACED WITHIN 2 WEEDS OF PLACEMENT OF BASE COURSE, AND IS REQUIRED FROM ITS SUPERPAVE COMPLETION INSPECTION AND ROAD PRODUCTION.  
 5) MINOR COLLECTORS SHALL BE PLACED WITHIN 2 WEEDS OF PLACEMENT OF BASE COURSE, AND IS REQUIRED FROM ITS SUPERPAVE COMPLETION INSPECTION AND ROAD PRODUCTION.  
 6) THE THICKNESS OF THE INTERMEDIATE SURFACE COURSE LAYERS CAN BE ADJUSTED TO THE REQUIRED THICKNESS LAYERS.  
 7) THE THICKNESS OF THE INTERMEDIATE SURFACE COURSE LAYERS CAN BE ADJUSTED TO THE REQUIRED THICKNESS LAYERS.  
 8) THE CONSTRUCTION DRAWINGS SHALL SHOW THE PAVING SECTION, ROAD CLASSIFICATION AND CBR VALUE FOR EACH ROADWAY.

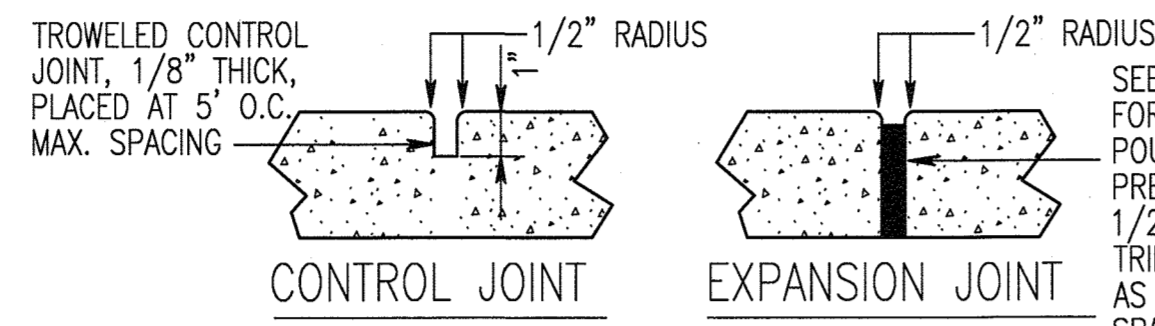
Howard County, Maryland Department of Public Works	Detail P-1 to P-4 R-2.01
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**BITUMINOUS ASPHALT PAVEMENT**

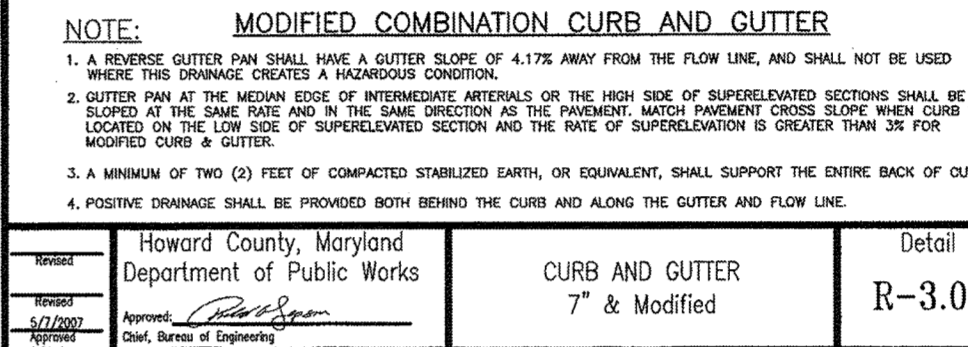
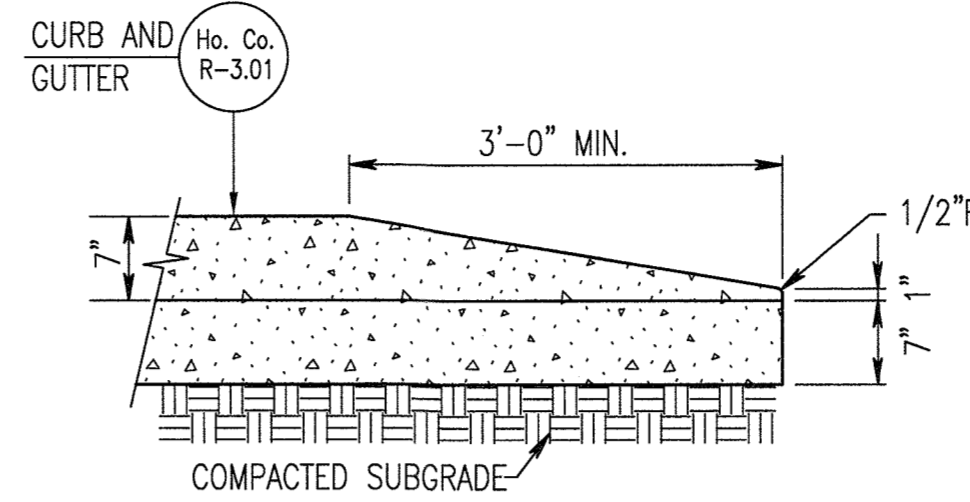
**A** C4.1 NOT TO SCALE



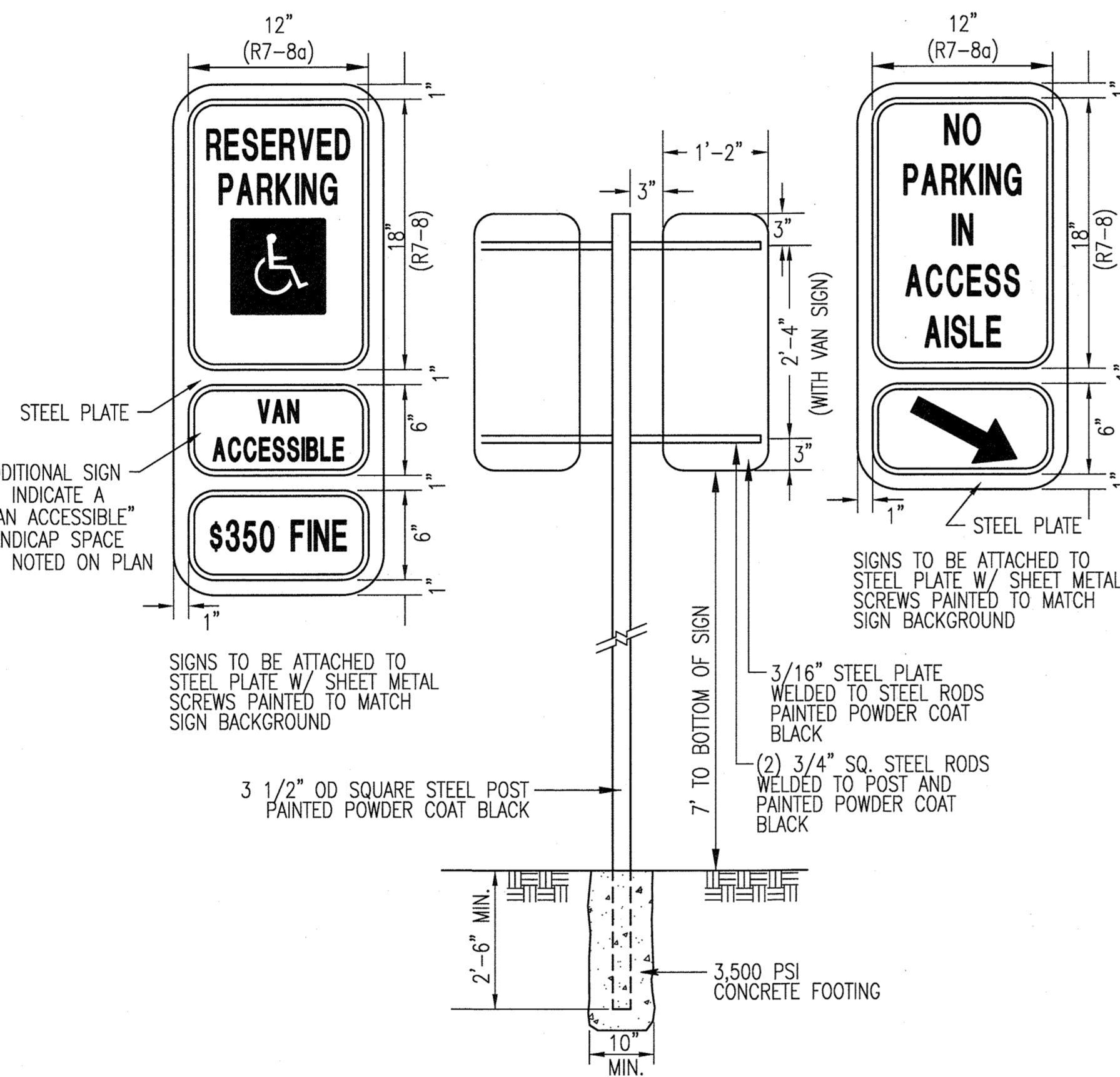
**B** C4.1 NOT TO SCALE



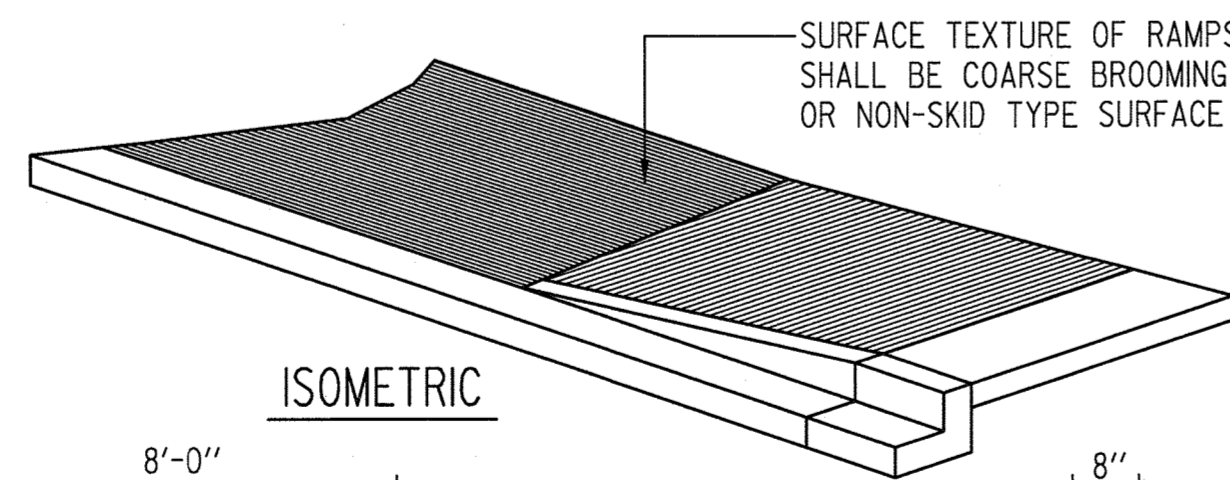
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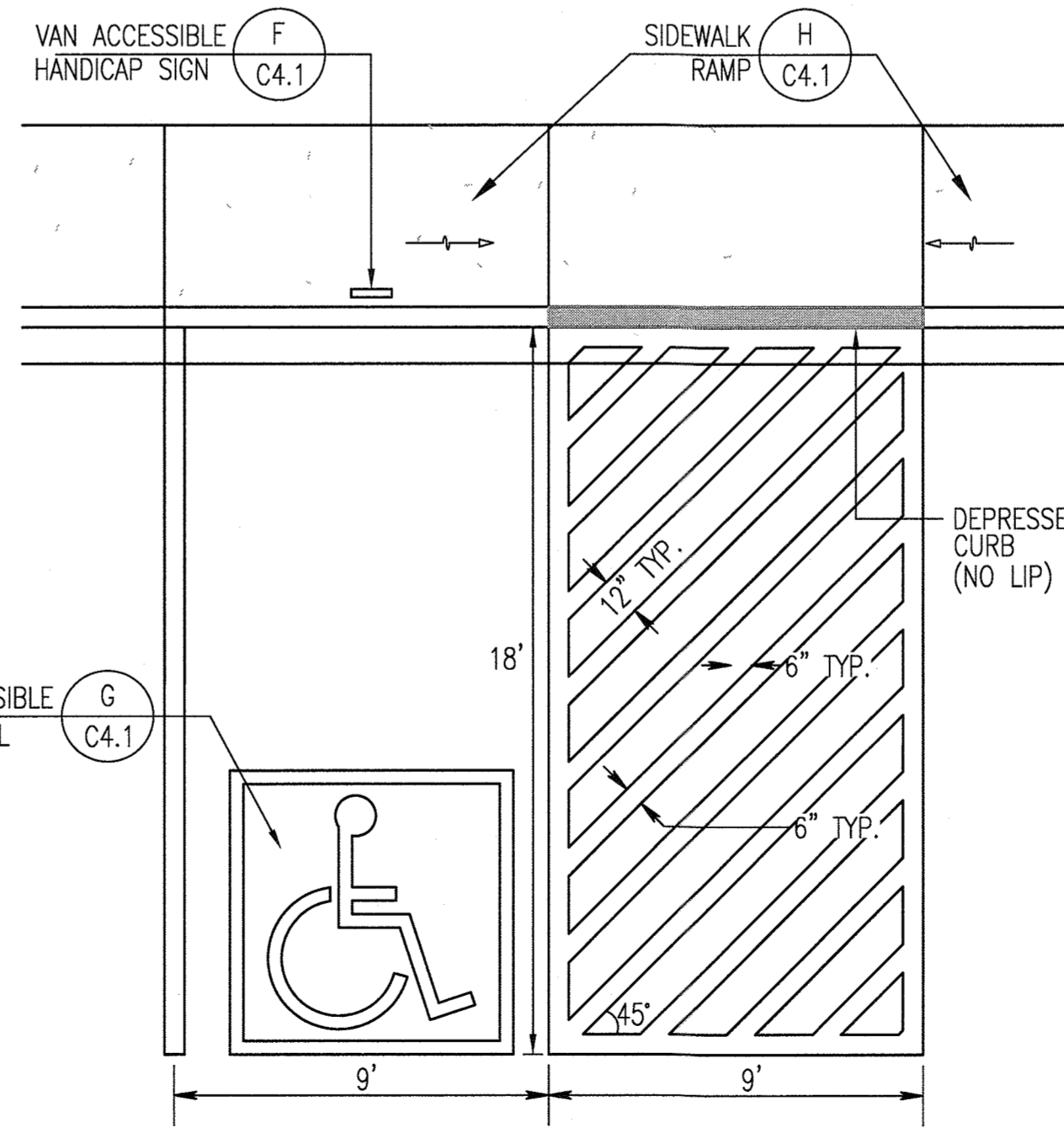
**E** C4.1 NOT TO SCALE



**F** C4.1 NOT TO SCALE



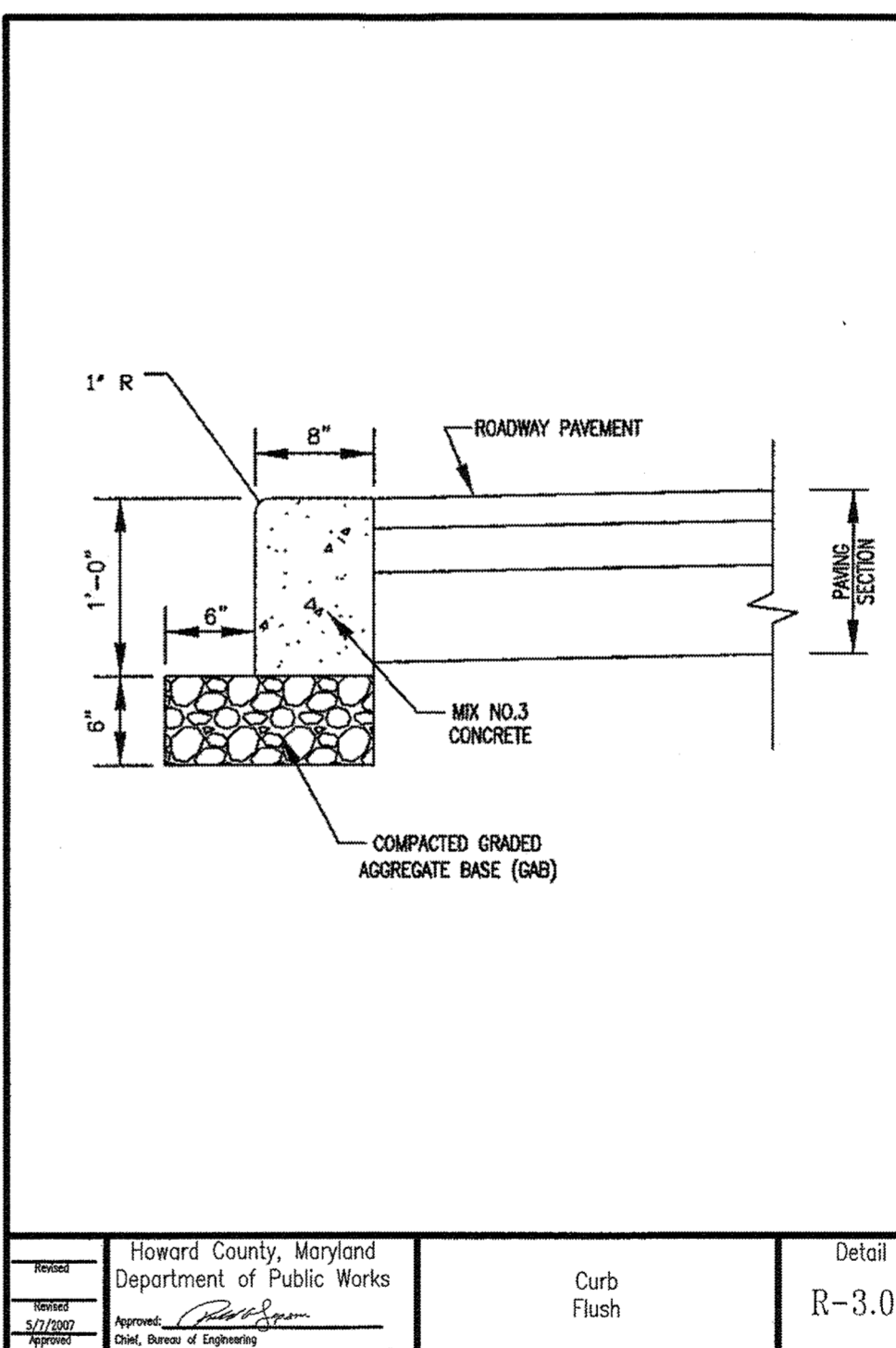
**G** C4.1 NOT TO SCALE



**H** C4.1 NOT TO SCALE

**I** C4.1 NOT TO SCALE

**D** C4.1 NOT TO SCALE



**J** C4.1 NOT TO SCALE

REVISIONS


HOWARD COUNTY  
DEPARTMENT OF RECREATION AND PARKS  
7120 OAKLAND MILLS ROAD  
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS  
9250 BENDIX ROAD  
ELLCOTT CITY, MD 21043

**WRA**  
Whitman, Requardt & Associates, LLP  
801 South Caroline Street, Baltimore, Maryland 21231  
Phone: 410-235-3450 Fax: 410-243-8716

PROPERTY  
TAX MAP 4, GRID 15, PARCEL 54  
ZONING: B-1 & RC-DEO  
ELECTION DISTRICT 3rd

GRAPHIC SCALES

SIGNATURE

PROFESSIONAL CERTIFICATION  
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SOUTH BRANCH PARK PHASE 3

SITE DETAILS

Drawing No. **C4.1**

Scale: AS SHOWN  
Date: OCTOBER 2018 Sheet 11 of 24  
Des: JTD Drawn: JTD Check: AUO

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DATE: 11-29-18  
DATE: 12-7-18  
DATE: 12-10-18



Submitted by: Chesapeake Lighting  
 Job Name: SOUTH BRANCH PARK  
 Catalog Number: ICM-400-MP-480-4S-GM-FF-HS/  
 VA1012-GM  
 Type: J2  
 Date: 11/29/18

**DESCRIPTION**  
 ICM-400-MP-480-4S-GM-FF-HS/VA1012-GM is a heavy-duty, die-cast aluminum luminaire designed for use in parking lots and other outdoor applications. The luminaire is designed to provide uniform, glare-free illumination and is suitable for use in a variety of environments.

**INSTALLATION**  
 The luminaire is designed to be installed on a standard 4x4 steel post. The mounting hardware is included in the package. The luminaire should be installed in a location that provides uniform illumination and is protected from damage.

**ICM ICON SITE MEDIUM**  
 The luminaire is designed to be used in a variety of applications, including parking lots, walkways, and other outdoor areas. It is suitable for use in a variety of environments, including wet and dry conditions.

**STRUCTURAL MOUNT**  
 The luminaire is designed to be mounted on a standard 4x4 steel post. The mounting hardware is included in the package. The luminaire should be installed in a location that provides uniform illumination and is protected from damage.

**FINISHES**  
 The luminaire is available in a variety of finishes, including black, white, and bronze. The finish is durable and resistant to weathering.

**WARRANTY**  
 The luminaire is covered by a 5-year warranty. The warranty covers the luminaire and its components, excluding the mounting hardware.

Submitted by: Chesapeake Lighting  
 Job Name: SOUTH BRANCH PARK  
 Catalog Number: ICM-400-MP-480-4S-GM-FF-HS/  
 VA1012-GM  
 Type: J2  
 Date: 11/29/18

**DESCRIPTION**  
 ICM-400-MP-480-4S-GM-FF-HS/VA1012-GM is a heavy-duty, die-cast aluminum luminaire designed for use in parking lots and other outdoor applications. The luminaire is designed to provide uniform, glare-free illumination and is suitable for use in a variety of environments.

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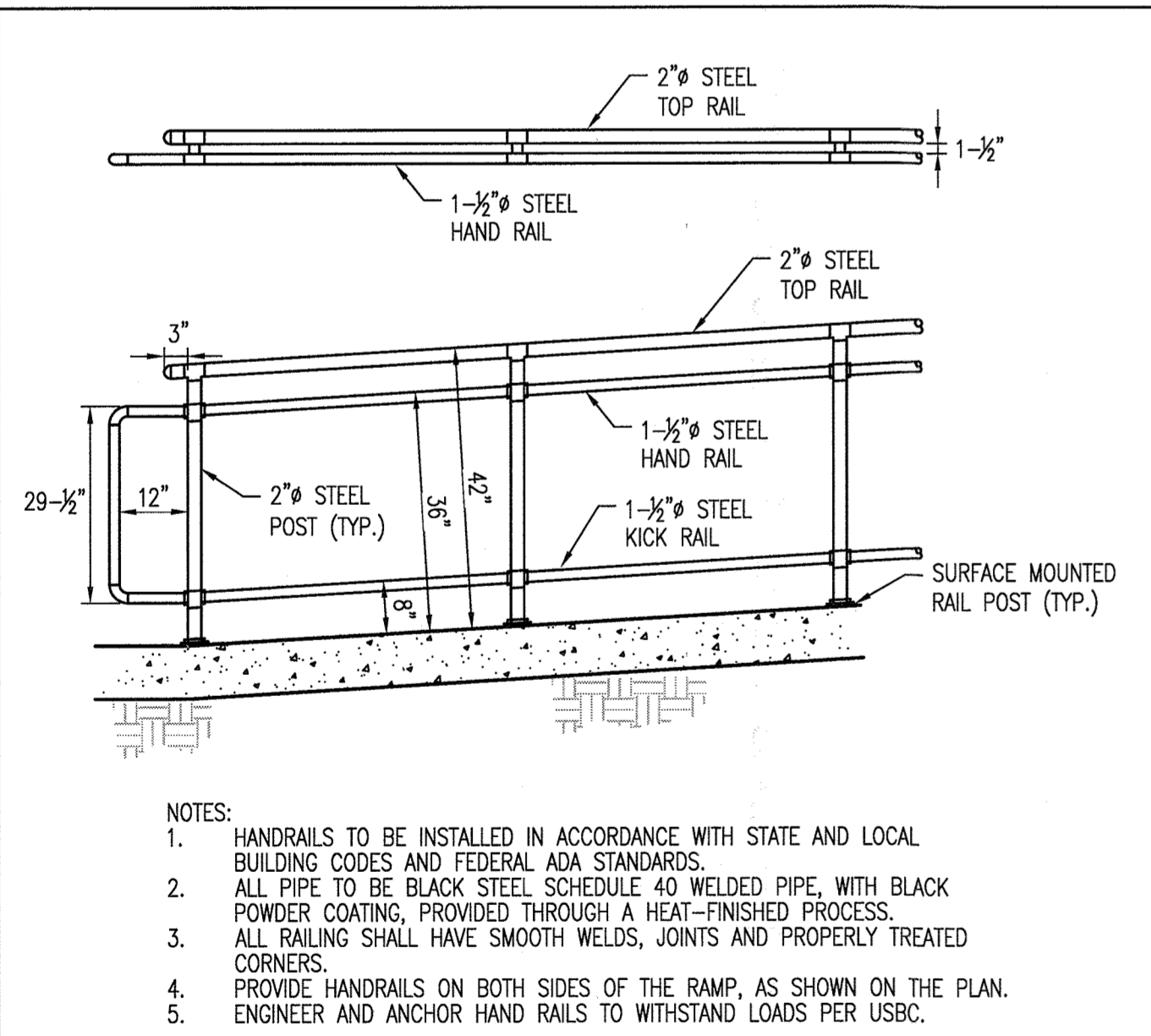
**STRUCTURAL MOUNT**  
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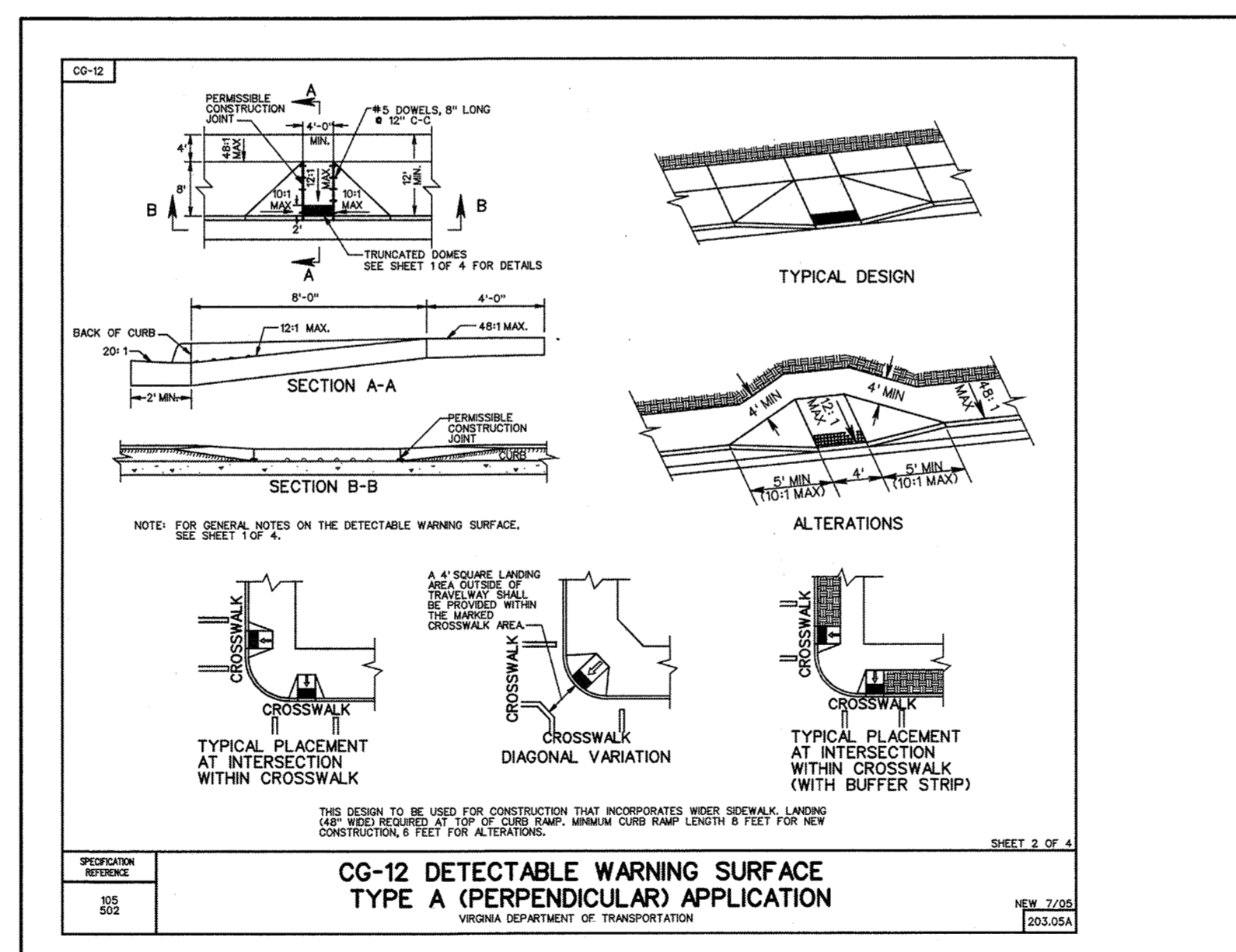
**WARRANTY**  
 The luminaire is covered by a 5-year warranty. The warranty covers the luminaire and its components, excluding the mounting hardware.

**SITE LIGHTING NOTES:**  
 GENERAL INFORMATION: AREA LUMINAIRE, DIE CAST ALUMINUM HOUSING AND POLE, GRAPHITE METALLIC COLOR, FUSE, TYPE IV FULL CUTOFF SEGMENTED OPTICS, HOUSE SIDE SHIELD, IMPACT RESISTANT GLASS LENS, VIBRATION DAMPER.  
 POLE HEIGHT: 30'-0"  
 LED 146 WATTS  
 INVUE FIXTURE: ICM-B06-LED-E1-T4-GM-VA1012-GM (OR APPROVED EQUIVALENT)  
 INVUE POLE: ARTL30AGMC1DGV (OR APPROVED EQUIVALENT)  
 PER SECTION 134.0.C.1 OF THE ZONING CODE, ALL LIGHT FIXTURES USED TO ILLUMINATE OFF-STREET PARKING SHALL BE FULLY OR PARTIALLY SHIELDED.

**A SITE LIGHTING SPECIFICATIONS**  
 C4.21 NOT TO SCALE



**B STANDARD HANDRAIL DETAILS**  
 C4.21 NOT TO SCALE



**C ADA CURB RAMP**  
 C4.21 NOT TO SCALE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Chief, Development Engineering Division  
 Chief, Division of Land Development  
 Director

11-29-18  
 12-7-18  
 12-10-18

REVISIONS	

HOWARD COUNTY  
 DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS  
 9250 BENDIX ROAD  
 ELLICOTT CITY, MD 21043

**WRA**  
 Whitman, Requardt & Associates, LLP  
 801 South Caroline Street, Baltimore, Maryland 21231  
 Phone: 410-235-3450 Fax: 410-243-6716

PROPERTY  
 TAX MAP 4, GRID 15, PARCEL 54  
 ZONING: B-1 & RC-DEO  
 ELECTION DISTRICT 3rd

GRAPHIC SCALES

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 EXPIRATION DATE: 09/22/2019

SOUTH BRANCH PARK  
 PHASE 3

SITE DETAILS  
 Drawing No.  
**C4.21**  
 Scale: AS SHOWN  
 Date: OCTOBER 2018 Sheet 13 of 24  
 Des: JTD Drawn: JTD Check: AUO

**B.4.C SPECIFICATIONS FOR M-6 MICRO-BIORETENTION AND M-7 RAIN GARDEN**

**1. MATERIAL SPECIFICATIONS**

THE ALLOWABLE MATERIALS TO BE USED IN THESE PRACTICES ARE DETAILED IN TABLE B.4.1.

**2. FILTERING MEDIA OR PLANTING SOIL**

THE SOIL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE MICRO-BIORETENTION PRACTICE THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.08.01.05.

THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:

- SOIL COMPONENT - LOAMY SAND OR SANDY LOAM (USDA SOIL TEXTURAL CLASSIFICATION)
- ORGANIC CONTENT - MINIMUM 10% BY DRY WEIGHT (ASTM D 2974). IN GENERAL, THIS CAN BE MET WITH A MIXTURE OF LOAMY SAND (60%-65%) AND COMPOST (35% TO 40%) OR SANDY LOAM (30%), COARSE SAND (30%), AND COMPOST (40%).
- CLAY CONTENT - MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 5%.
- PH RANGE - SHOULD BE BETWEEN 5.5 - 7.0. AMENDMENTS (E.G., LIME, IRON SULFATE PLUS SULFUR) MAY BE MIXED INTO THE SOIL TO INCREASE OR DECREASE PH.

THERE SHALL BE AT LEAST ONE SOIL TEST PER PROJECT. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH, AND ADDITIONAL TESTS OF ORGANIC MATTER, AND SOLUBLE SALTS. A TEXTURAL ANALYSIS IS REQUIRED FROM THE SITE STOCKPILED TOPSOIL. IF TOPSOIL IS IMPORTED, THEN A TEXTURE ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOPSOIL WAS EXCAVATED.

**3. COMPACTION**

IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE

EXCAVATED USING A LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TYPE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH-PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.

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

ROTOTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENTION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PUMP ANY PONDED WATER BEFORE PREPARING (ROTOTILLING) BASE.

WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE.

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

**4. PLANT MATERIAL**

SEE LANDSCAPING PLANS.

**5. PLANT INSTALLATION**

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

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

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

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

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

**6. UNDERDRAINS**

UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:

-PIPE- SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM F 758, TYPE PS 28, OR AASHTO-M-278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED, 4" RIGID PIPE (E.G., PVC OR HDPE).

-PERFORATIONS - IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (NO. 4 OR 4X4) GALVANIZED HARDWARE CLOTH.

-GRAVEL - THE GRAVEL LAYER (NO. 57 STONE PREFERRED) SHALL BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.

-THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE.

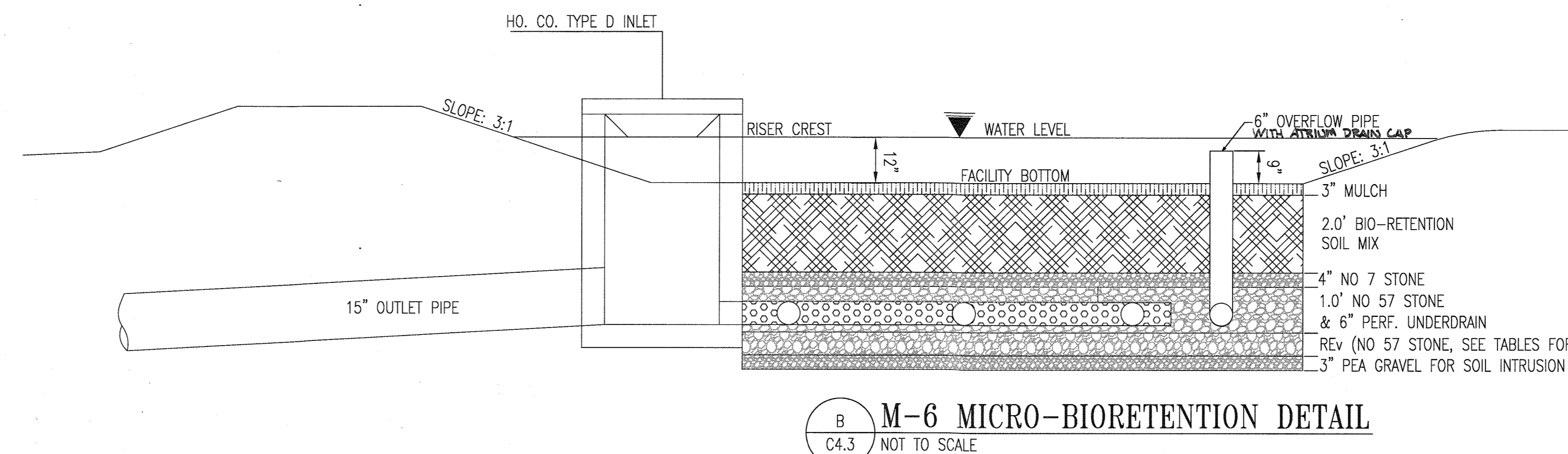
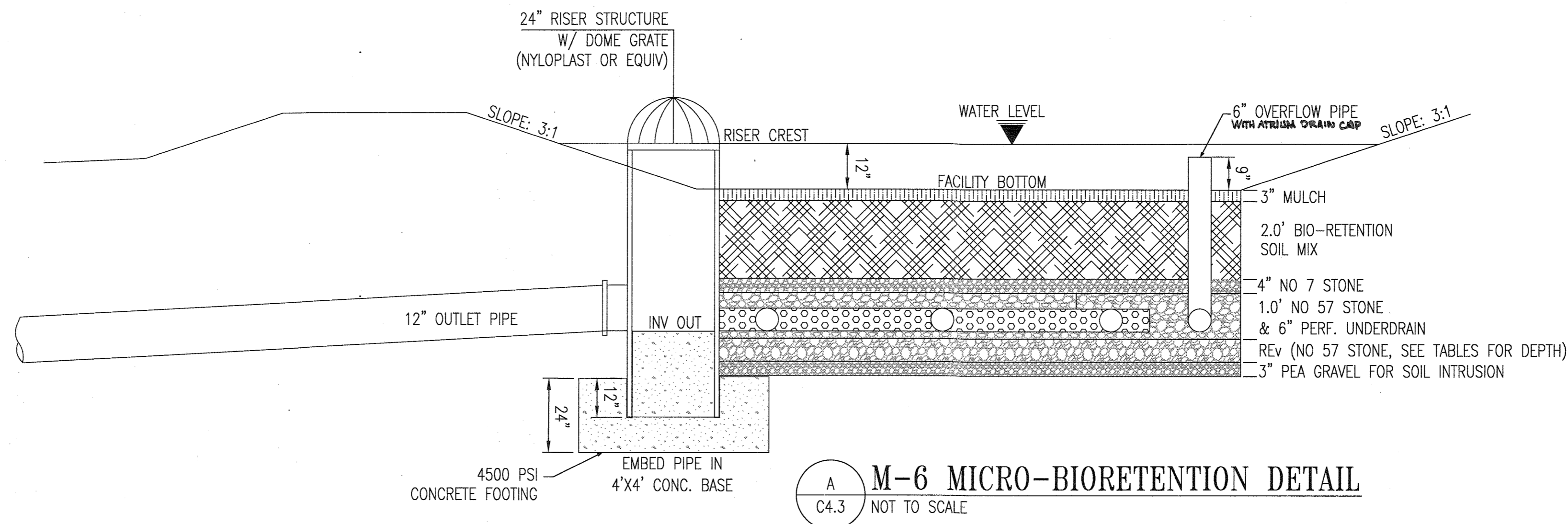
-A RIGID, NON-PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,000 SQUARE FEET) TO PROVIDE A CLEAN-OUT PORT AND MONITOR PERFORMANCE OF THE FILTER.

-A 4" LAYER OF #7 STONE (1/8" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES INTO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".

THE MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%. OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (ONE MINIMUM PER EVERY 1000 SQUARE FEET OF SURFACE AREA).

**7. MISCELLANEOUS**

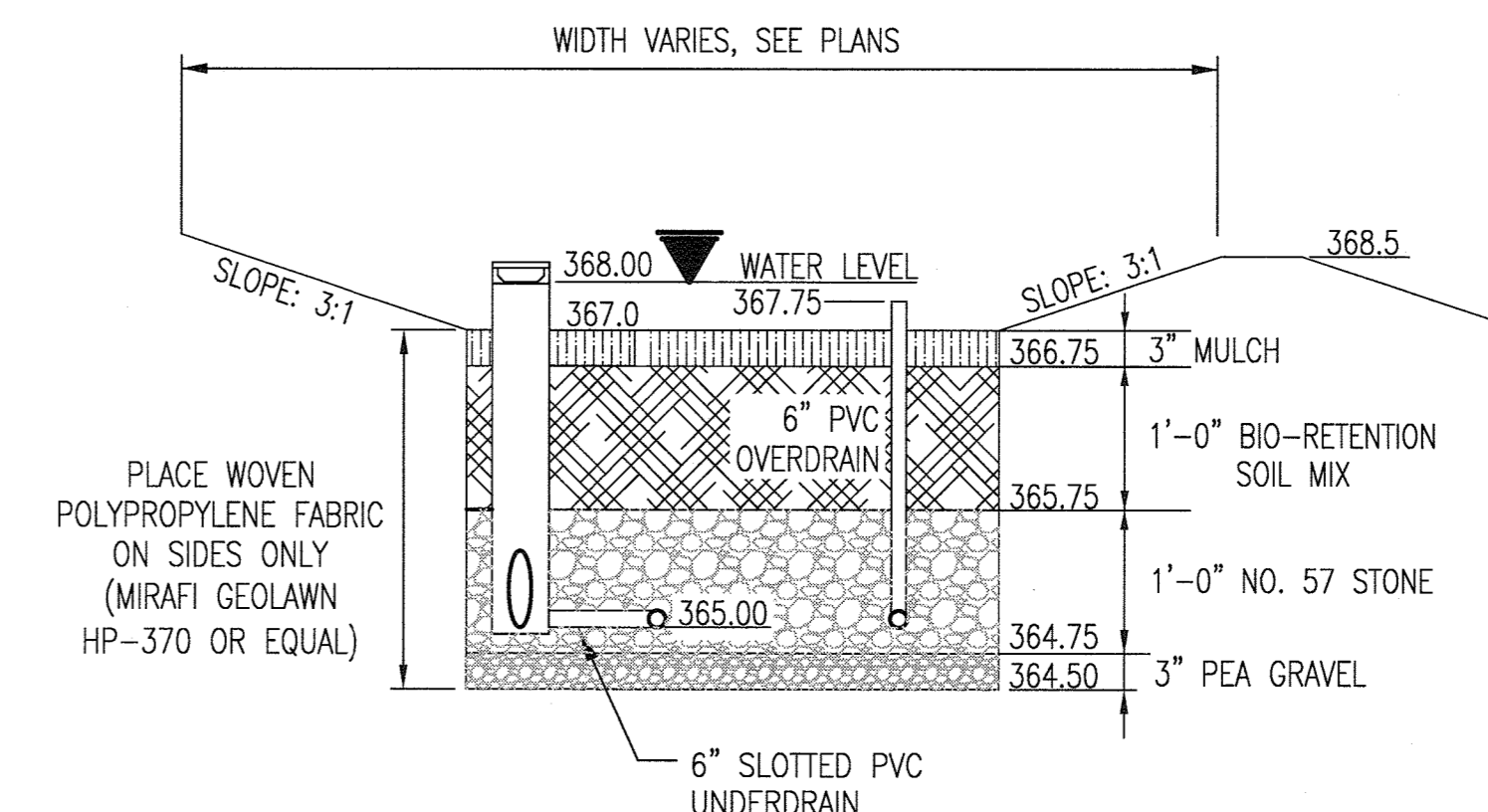
THESE PRACTICES MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.



PROJECT NAME: SOUTH BRANCH PARK PHASE 1 AS-BUILT DATA FOR M-6 MICRO-BIORETENTION 1 (MBR #1) TO BE COMPLETED BY THE CERTIFYING ENGINEER			PROJECT NAME: SOUTH BRANCH PARK PHASE 1 AS-BUILT DATA FOR M-6 MICRO-BIORETENTION 2 (MBR #2) TO BE COMPLETED BY THE CERTIFYING ENGINEER			PROJECT NAME: SOUTH BRANCH PARK PHASE 1 AS-BUILT DATA FOR M-6 MICRO-BIORETENTION 3 (MBR #3) TO BE COMPLETED BY THE CERTIFYING ENGINEER			PROJECT NAME: SOUTH BRANCH PARK PHASE 1 AS-BUILT DATA FOR M-7 RAIN GARDEN 1 (RG #1) TO BE COMPLETED BY THE CERTIFYING ENGINEER		
FEATURE	DESIGN	AS-BUILT	FEATURE	DESIGN	AS-BUILT	FEATURE	DESIGN	AS-BUILT	FEATURE	DESIGN	AS-BUILT
FILTER BED AREA	1778 SF		FILTER BED AREA	875 SF		FILTER BED AREA	336 SF		FILTER BED AREA	240 SF	
FILTER BED SURFACE ELEVATION	365.50		FILTER BED SURFACE ELEVATION	367.50		FILTER BED SURFACE ELEVATION	374.00		FILTER BED SURFACE ELEVATION	367.00	
MULCH ELEVATION (DEPTH)	365.25 (0.25')		MULCH ELEVATION (DEPTH)	367.25 (0.25')		MULCH ELEVATION (DEPTH)	373.75 (0.25')		MULCH ELEVATION (DEPTH)	366.75 (0.25')	
BSM ELEVATION (DEPTH)	363.95 (1.30')		BSM ELEVATION (DEPTH)	365.25 (2.00')		BSM ELEVATION (DEPTH)	371.75 (2.00')		BSM ELEVATION (DEPTH)	365.75 (1.00')	
NO. 7 STONE ELEV. (DEPTH)	363.62 (0.33')		NO. 7 STONE ELEV. (DEPTH)	364.92 (0.33')		NO. 7 STONE ELEV. (DEPTH)	371.42 (0.33')		NO. 7 STONE ELEV. (DEPTH)	364.75 (1.00')	
NO. 57 STONE ELEV. (DEPTH)	362.95 (0.67')		NO. 57 STONE ELEV. (DEPTH)	363.92 (1.00')		NO. 57 STONE ELEV. (DEPTH)	370.42 (1.00')		REV BOTTOM ELEV. (DEPTH)	364.50 (0.33')	
REV BOTTOM ELEV. (DEPTH)	362.70 (0.25')		REV BOTTOM ELEV. (DEPTH)	363.50 (0.42')		REV BOTTOM ELEV. (DEPTH)	370.09 (0.33')		PEA GRAVEL ELEV. (DEPTH)	364.75 (0.25')	
PEA GRAVEL ELEV. (DEPTH)	362.45 (0.25')		PEA GRAVEL ELEV. (DEPTH)	363.25 (0.25')		PEA GRAVEL ELEV. (DEPTH)	369.84 (0.25')		UNDERDRAIN SIZE	6"	
UNDERDRAIN SIZE	6"		UNDERDRAIN SIZE	6"		UNDERDRAIN SIZE	6"		UNDERDRAIN ELEV. (DEPTH)	365.00'	
UNDERDRAIN ELEV. (DEPTH)	363.37'		UNDERDRAIN ELEV. (DEPTH)	363.92'		UNDERDRAIN ELEV. (DEPTH)	370.42'				

**Table B.4.1 Materials Specifications for M-6 Micro-Bioretenment and M-7 Rain Gardens**

Material	Specification	Size	Notes
Planting soil [2' to 4' deep]	loamy sand (60 - 65%) & compost (35 - 40%) or sandy loam (30%), coarse sand (30%) & compost (40%) Min. 10% by dry weight (ASTM D 2974)	n/a	SPECIFICATION 920.01.05 (SEE NOTES THIS SHEET)
Organic content	shredded hardwood		aged 6 months, minimum; no pine or wood chips
Pea Gravel	ASTM-D-448	No. 8 or No. 9 (1/8" or 3/8")	
Geotextile		n/a	PF Type 1 nonwoven
Gravel (underdrains)	AASHTO M-43	No. 57 OR NO. 6 AGGREGATE	
Underdrain piping	F 758, Type PS 28 or AASHTO M-278	6" rigid schedule 40 PVC or as shown on plan	Slotted pipe; 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes. Perforated pipe shall be wrapped with 1/4-inch galvanized hardware cloth



NOTE: NO GEOFABRIC IS TO BE PLACED HORIZONTALLY

**M-7 RAIN GARDEN DETAIL (C)**  
C4.3 NOT TO SCALE

REVISIONS	

HOWARD COUNTY  
DEPARTMENT OF RECREATION AND PARKS  
7120 OAKLAND MILLS ROAD  
COLUMBIA, MD 21046  
DEPARTMENT OF PUBLIC WORKS  
9250 BENDIX ROAD  
ELLICOTT CITY, MD 21043



PROPERTY  
TAX MAP 4, GRID 15, PARCEL 54  
ZONING: B-1 & RC-DEO  
ELECTION DISTRICT 3rd

GRAPHIC SCALES

SIGNATURE

PROFESSIONAL CERTIFICATION  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18376  
EXPIRATION DATE: 09/22/2019

**SOUTH BRANCH PARK PHASE 3**

STORMWATER MANAGEMENT NOTES AND DETAILS

Drawing No. **C4.3**  
Scale: AS SHOWN  
Date: OCTOBER 2018 | Sheet 14 of 24  
Des: JTD | Drawn: JTD | Check: AUO

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
[Signature] 12-9-18  
[Signature] 12-7-18  
[Signature] 12-10-18

**SHA BIO-RETENTION SOIL MIX SPECIFICATION**

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

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

- Coarse Sand.** MSMT 356. Coarse Sand shall be washed silica sand or crushed glass that conforms to ASTM Fine Aggregate C-33. Coarse Sand shall include less than 1% by weight of clay or silt size particles, and less than 5% by weight of any combination of diabase, greystone, calcareous or dolomitic sand.
- Base Soil.** Base Soil shall be tested and certified by the producer to conform to the following requirements:

COMPOSITION - BASE SOIL				
TEST PROPERTY	TEST METHOD	TEST VALUE AND AMENDMENT		
Prohibited Weeds	—	Free of seed and viable plant parts of species in 920.06.02(a)(b)(c) when inspected.		
Debris	—	No observable content of cement, concrete, asphalt, crushed gravel or construction debris when inspected.		
Grading Analysis	T 87	<b>Sieve Size</b>	<b>Passing by Weight Minimum %</b>	
		2 in.	100	
		No. 4	90	
		No. 10	80	
Textural Analysis	T 88	<b>Particle Size</b>	<b>% Passing by Weight</b>	
		mm	Minimum	Maximum
		2.0 - 0.050	50	85
		0.050 - 0.002	5	45
Clay	less than 0.002	5	10	
Soil pH	D 4972	pH of 5.7 to 6.9.		
Organic Matter	T 194	1.0 to 10.0 % by weight.		
Soluble Salts	EC1:2 (V:V)	500 ppm (1.25 mmhos/cm) or less.		
Harmful Materials	—	920.01.01(a)		

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

A 1 to 2 lb sample of Fine Bark shall be submitted to the Landscape Operations Division for examination.

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

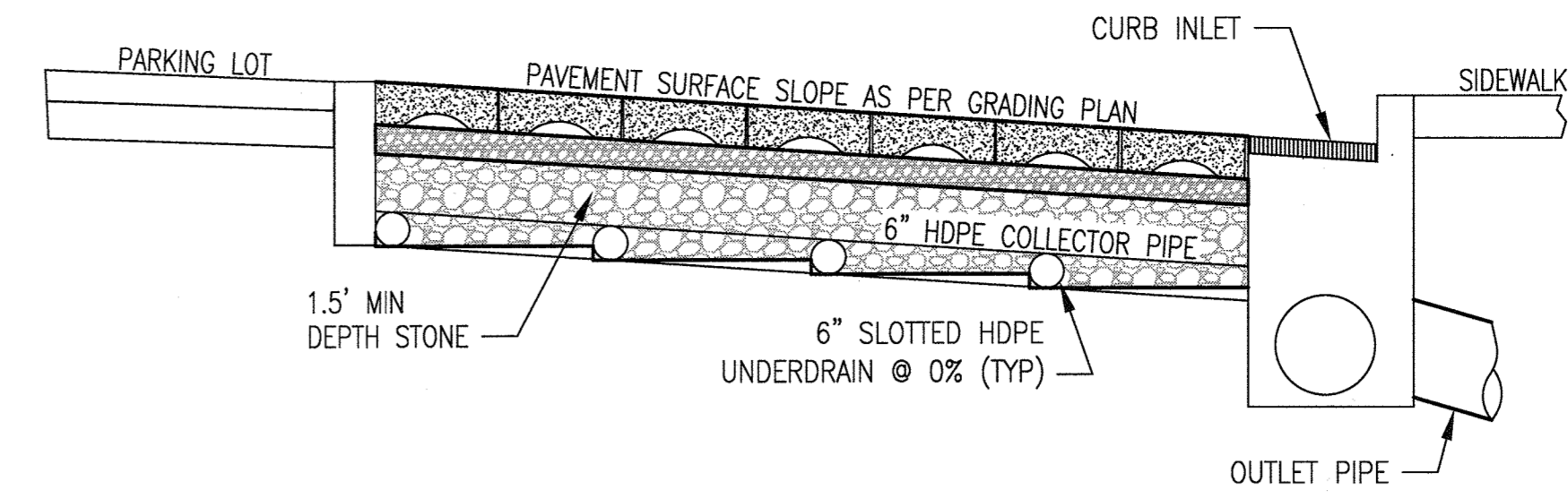
COMPOSITION - BIORETENTION SOIL MIX (BSM)						
TEST PROPERTY	TEST METHOD	TEST VALUE AND AMENDMENT				
Weeds	—	Free of seed and viable plant parts of species in 920.06.02(a)(b)(c) when inspected.				
Debris	—	920.01.05(a)(2)				
Textural Analysis	T 88	<b>Particle Size</b>	<b>% Passing by Weight</b>			
		mm	Minimum	Maximum		
		2.0 - 0.050	55	85		
		0.050 - 0.002	—	20		
Clay	less than 0.002	1	8			
Soil pH	D 4972	pH of 5.7 to 7.1.				
Organic Matter	T 194	Minimum 1.5 % by weight.				
Nutrient Analysis and Soluble Salts	Mehlich-3	<b>Concentration</b>		<b>Maximum</b>		
		<b>Element</b>	<b>Minimum</b>	<b>FIV</b>	<b>ppm</b>	<b>FIV</b>
		Calcium (Ca)	32	25	no limit	no limit
		Magnesium (Mg)	15	25	no limit	no limit
		Phosphorus (P)	18	25	92	100
		Potassium (K)	22	25	no limit	no limit
		Sulfur (SO <sub>4</sub> )	25	n/a	no limit	no limit
EC1:2 (V:V)	Soluble Salts	40	n/a	500	n/a	
Harmful Materials	—	920.01.01(a)				

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

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

**M-6 MICRO-BIORETENTION TABLE**

MBR #	SURFACE AREA	VOL REQ'D	VOL PROV	BOTTOM EL	WEIR EL	U.D. EL	TYPE OF STRUCTURE	Rev DEPTH	METHOD
1	1778 SF	2245 CF	2709 CF	365.50	366.50	361.92'	NYLOPLAST 24" RISER (or approved equivalent)	3"	M-6
2	875 SF	1063 CF	1418 CF	367.50	368.50	363.92'	NYLOPLAST 24" RISER (or approved equivalent)	5"	M-6
3	336 SF	363 CF	662 CF	374.00	375.00	360.42'	TYPE D INLET	4"	M-6

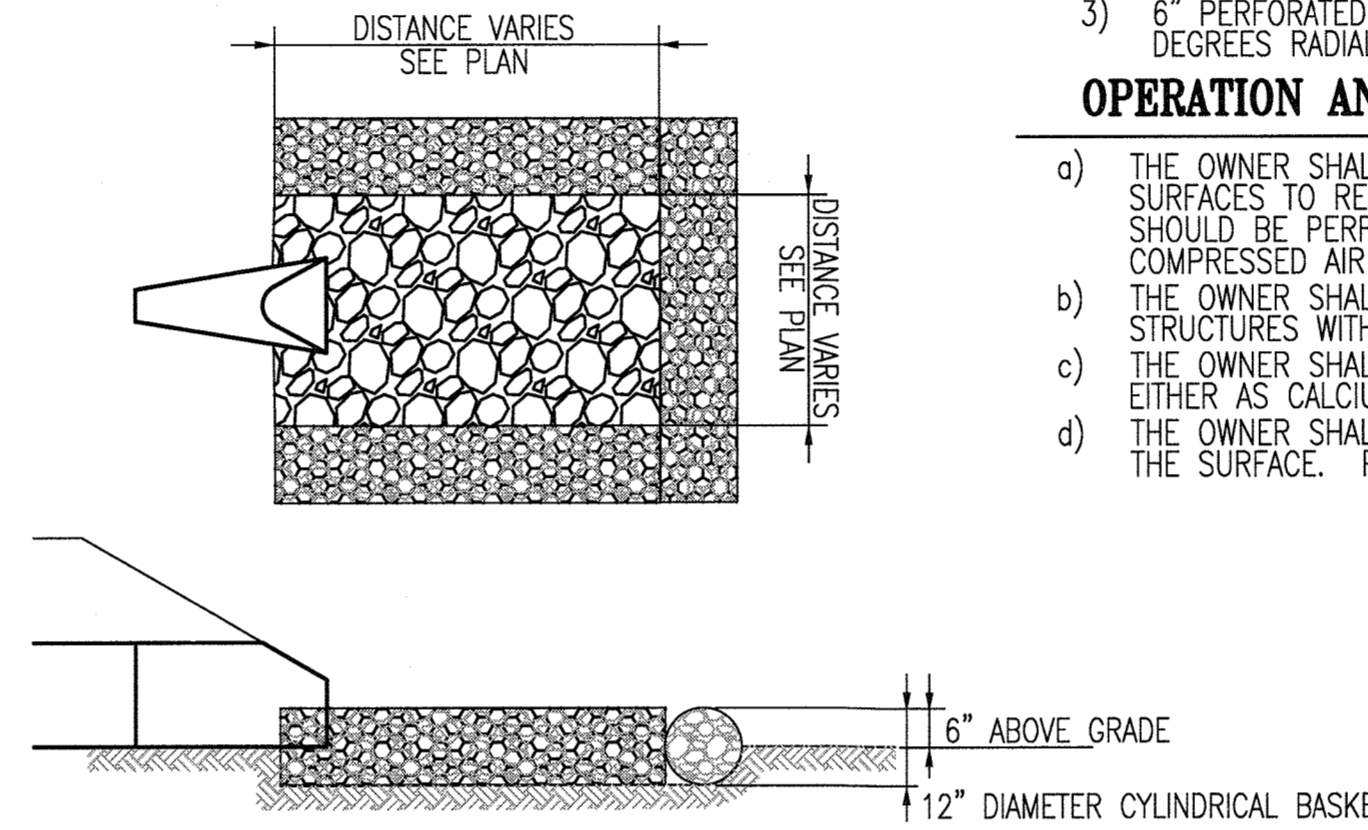


**C PERVIOUS CONCRETE PAVERS TYPICAL SECTION**  
C4.4 NOT TO SCALE

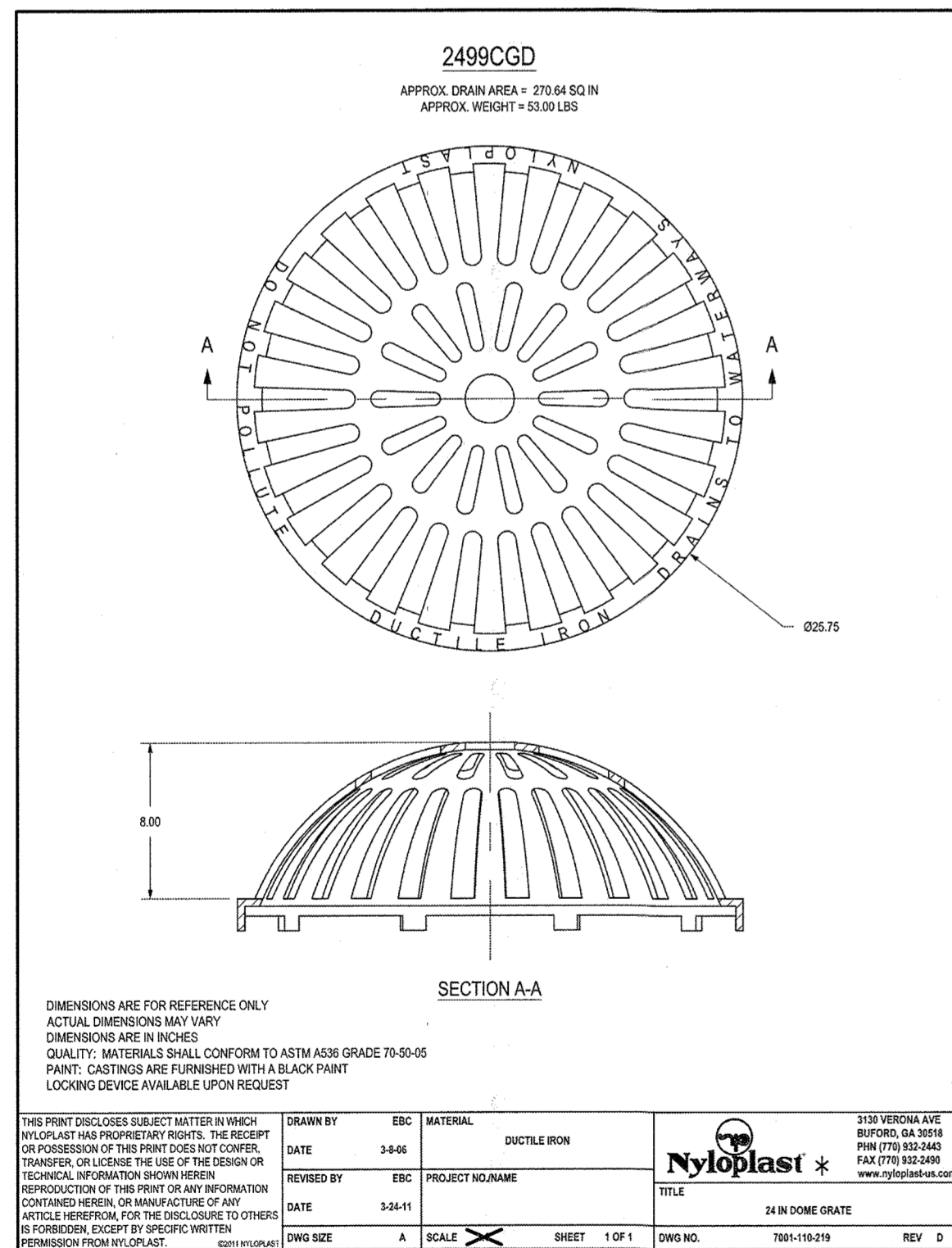
- CONTRACTOR SHALL PROVIDE EVIDENCE OF EMPLOYMENT OF ONE (1) NRMCA CERTIFIED PERVIOUS CONCRETE CRAFTSMAN WHO MUST BE ON-SITE, OVERSEEING EACH PLACEMENT CREW, DURING ALL PERVIOUS CONCRETE PLACEMENT, OR WITH THE APPROVAL OF ARCHITECT/ENGINEER, CONTRACTOR MAY PROVIDE WRITTEN EVIDENCE OF PROJECT EXPERIENCE AND PROFICIENCY IN SUCCESSFULLY COMPLETING PERVIOUS CONCRETE PAVEMENT CONSTRUCTION, AND SUBMIT EVIDENCE OF COMPLETION OF A PERVIOUS CONCRETE CRAFTSMAN CERTIFICATION PROGRAM.
- PERVIOUS CONCRETE MUST BE COVERED WITH PLASTIC FOR A MINIMUM OF 7 DAYS IMMEDIATELY AFTER PLACEMENT.
- 6" PERFORATED PLUG SCHEDULE 40 3/8" DIAMETER PERFORATIONS AT 4" O.C. LENGTH WIDE AND 90 DEGREES RADIALLY AROUND. INSTALL END CAP ON OPEN END.

**OPERATION AND MAINTENANCE SCHEDULE FOR A-2 PERVIOUS CONCRETE**

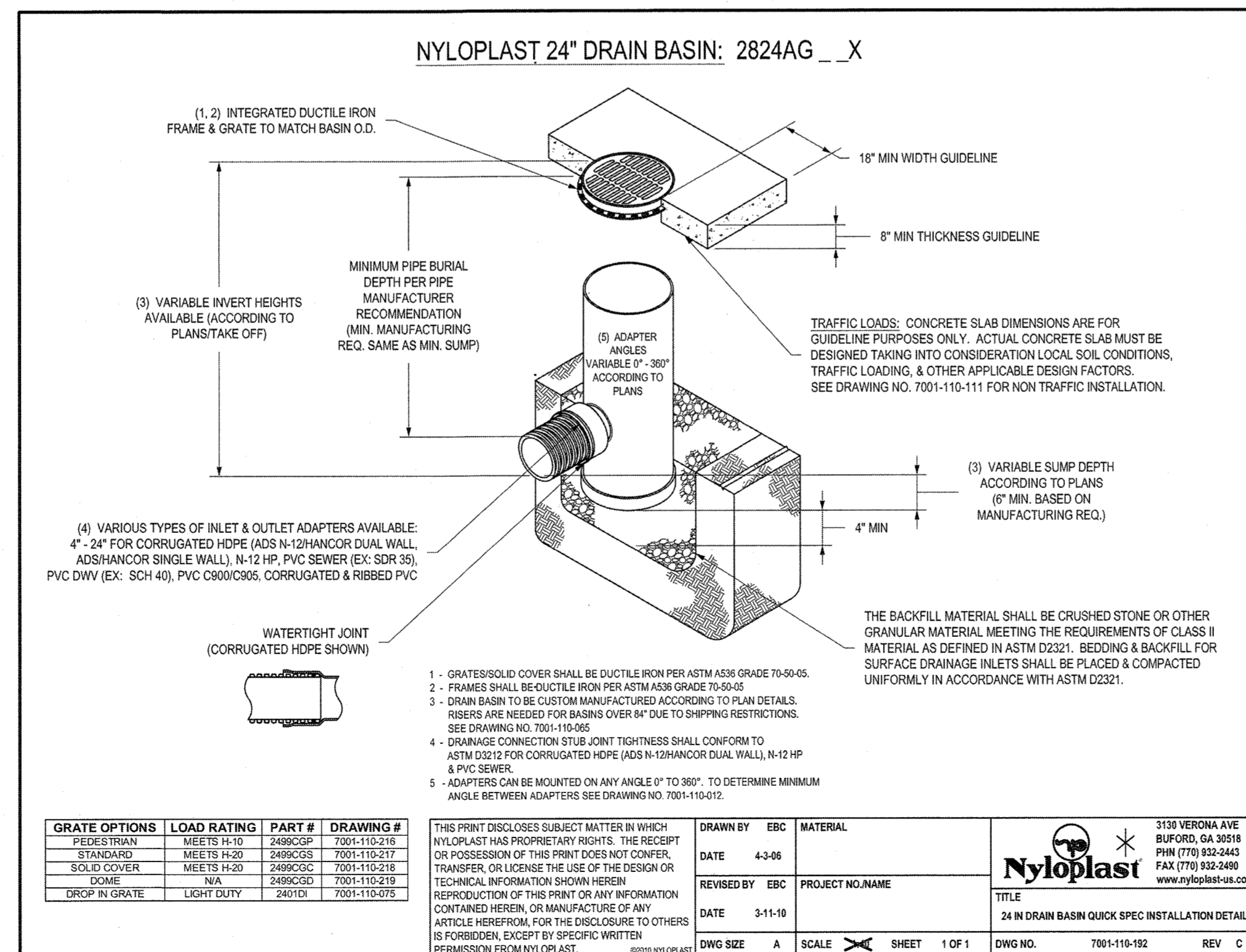
- THE OWNER SHALL PERIODICALLY SWEEP (OR VACUUM PERVIOUS CONCRETE PAVEMENT) THE PAVEMENT SURFACES TO REDUCE SEDIMENT ACCUMULATION AND ENSURE CONTINUED SURFACE POROSITY. SWEEPING SHOULD BE PERFORMED AT LEAST TWICE ANNUALLY WITH A COMMERCIAL CLEANING UNIT. WASHING OR COMPRESSED AIR UNITS SHOULD NOT BE USED TO PERFORM SURFACE CLEANING.
- THE OWNER SHALL PERIODICALLY CLEAN DRAINAGE PIPES, INLETS, STONE EDGE DRAINS AND OTHER STRUCTURES WITHIN OR DRAINING TO THE SUBBASE.
- THE OWNER SHALL USE DEICERS IN MODERATION. DEICERS SHOULD BE NON-TOXIC AND BE APPLIED EITHER AS CALCIUM MAGNESIUM ACETATE OR AS PRETREATED SALT.
- THE OWNER SHALL ENSURE SNOW PLOWING IS PERFORMED CAREFULLY WITH BLADES SET ONE-INCH ABOVE THE SURFACE. PLOWED SNOW PILES AND SNOWMELT SHOULD NOT BE DIRECTED TO PERVIOUS CONCRETE.



**D GABION ROLL DETAIL**  
C4.4 NOT TO SCALE

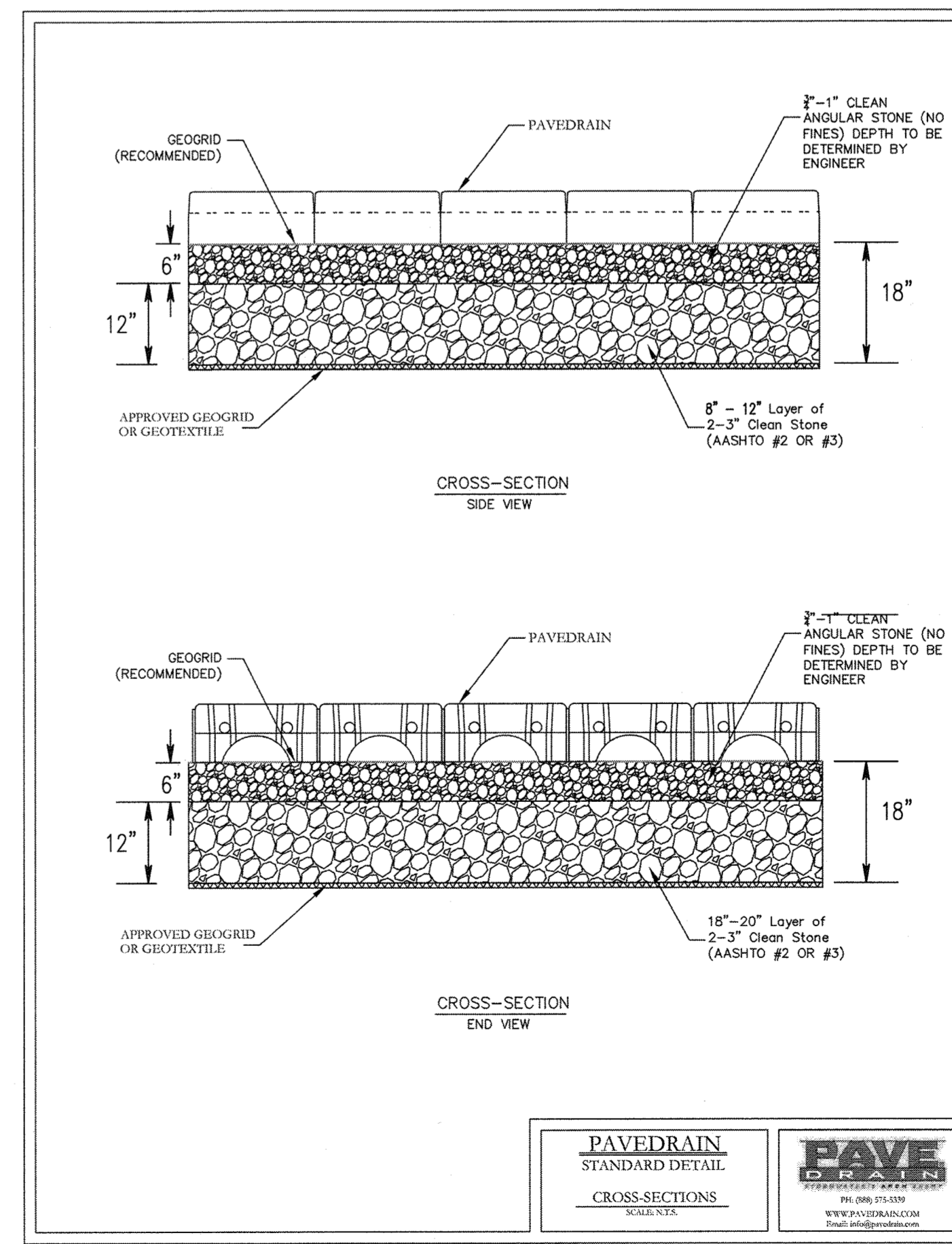


**A 24" NYLOPLAST DOME GRATE**  
C4.4 NOT TO SCALE  
\*NOTE: OR APPROVED EQUAL



GRATE OPTIONS	LOAD RATING	PART #	DRAWING #
PEDESTRIAN	MEETS ILL-10	2499CGP	7001-110-218
STANDARD	MEETS ILL-10	2499CGD	7001-110-217
SOLID COVER	MEETS ILL-20	2499CGC	7001-110-216
DOME	MEETS ILL-10	2499CGE	7001-110-219
DROP IN GRATE	LIGHT DUTY	2499D	7001-110-205

**B 24" NYLOPLAST DRAIN BASIN**  
C4.4 NOT TO SCALE  
\*NOTE: OR APPROVED EQUAL



**C PERVIOUS PAVER DETAIL**  
C4.4 NOT TO SCALE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 [Signature] 11-24-18  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 [Signature] 7-7-18  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 [Signature] 12-10-18  
 DIRECTOR

REVISIONS	

HOWARD COUNTY  
 DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MD 21046  
 DEPARTMENT OF PUBLIC WORKS  
 9250 BENDIX ROAD  
 ELLICOTT CITY, MD 21043

**WRA**  
 Whitman, Reardon & Associates, LLP  
 801 South Caroline Street, Baltimore, Maryland 21231  
 Phone: 410-335-3450 Fax: 410-245-5710

PROPERTY  
 TAX MAP 4, GRID 15, PARCEL 54  
 ZONING: B-1 & RC-DEO  
 ELECTION DISTRICT 3rd

GRAPHIC SCALES  
 SIGNATURE  
 PROFESSIONAL CERTIFICATION  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19378  
 EXPIRATION DATE: 09/22/2019

**SOUTH BRANCH PARK PHASE 3**

STORMWATER MANAGEMENT NOTES AND DETAILS  
 Drawing No. **C4.4**  
 Scale: AS SHOWN  
 Date: OCTOBER 2018 Sheet 15 of 24  
 Des: JTD Drawn: JTD Check: AUO

**HOWARD SOIL CONSERVATION DISTRICT  
STANDARD SEDIMENT CONTROL NOTES**

- A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES:
  - PRIOR TO THE START OF EARTH DISTURBANCE,
  - UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING,
  - PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT,
  - PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.

OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE AND FEDERAL PERMITS SHALL BE REFERENCED, TO ENSURE COORDINATION AND TO AVOID CONFLICTS WITH THIS PLAN.

- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO.

- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT FOR THOSE AREAS UNDER ACTIVE GRADING.

- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR TOPSOIL (SEC. B-4-2), PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES IF THE GROUND IS FROZEN. INCREMENTAL STABILIZATION (SEC. B-4-1) SPECIFICATIONS SHALL BE ENFORCED IN AREAS WITH >15% OF CUT AND/OR FILL. STOCKPILES (SEC. B-4-6) IN EXCESS OF 20 FT. MUST BE BENCHED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPE, AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MATING (SEC. B-4-4).

- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE, AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE CID.

- SITE ANALYSIS:
  - TOTAL AREA OF SITE: 7.37 ACRES
  - AREA DISTURBED: 1.80 ACRES
  - AREA TO BE ROOFED OR PAVED ACRES: 0.87 ACRES
  - AREA TO BE VEGETATIVELY STABILIZED ACRES: 0.87 ACRES
  - TOTAL CUT : 2734 CU. YDS.
  - TOTAL FILL : 310 CU. YDS.
  - ALL SPOILS MUST BE DISPOSED OF OFFSITE.
  - OFFSITE WASTE AREA LOCATION: TO BE DETERMINED BY CONTRACTOR

- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

- ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE CID. THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY; AND THE NEXT DAY AFTER EACH RAIN EVENT. A WRITTEN REPORT BY THE CONTRACTOR, MADE AVAILABLE UPON REQUEST, IS PART OF EVERY INSPECTION AND SHOULD INCLUDE:
  - INSPECTION DATE
  - INSPECTION TYPE (ROUTINE, PRE-STORM EVENT, DURING RAIN EVENT)
  - NAME AND TITLE OF INSPECTOR
  - WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT OF LAST RECORDED PRECIPITATION)
  - BRIEF DESCRIPTION OF PROJECT'S STATUS (E.G., PERCENT COMPLETE) AND/OR CURRENT ACTIVITIES
  - EVIDENCE OF SEDIMENT DISCHARGES
  - IDENTIFICATION OF PLAN DEFICIENCIES
  - IDENTIFICATION OF SEDIMENT CONTROLS THAT REQUIRE MAINTENANCE
  - IDENTIFICATION OF MISSING OR IMPROPERLY INSTALLED SEDIMENT CONTROLS
  - COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND STABILIZATION REQUIREMENTS
  - PHOTOGRAPHS
  - MONITORING/SAMPLING
  - MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED
  - OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES (NPD65, MDE)

- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.
- ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION. MINOR REVISIONS MAY ALLOWED BY THE CID PER THE LIST OF HSCD-APPROVED FIELD CHANGES.

- DISTURBANCE SHALL NOT OCCUR OUTSIDE THE L.O.D. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE CID. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE HSCD, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.
- WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE.
- TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO FINAL GRADE.
- ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON-THE-CONTOUR, AND BE IMBRICATED AT 25 MINUTE INTERVALS, WITH LOWER ENDS CURLED UPHILL BY 2 IN ELEVATION.
- STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUDES):
  - USE I AND IP MARCH 1 - JUNE 15
  - USE III AND IIP OCTOBER 1 - APRIL 30
  - USE IV MARCH 1 - MAY 31
- A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND ASSOCIATED PERMITS SHALL BE ON-SITE AND AVAILABLE WHEN THE SITE IS ACTIVE.

**HOWARD SOIL CONSERVATION DISTRICT  
TEMPORARY SEEDING NOTES**

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE RE-DISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: --- LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: --- APPLY 600 LBS/ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ. FT.).

SEEDING: --- FOR PERIODS MARCH 1 --- APRIL 30, AND AUGUST 15 --- OCTOBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ. FT.). FOR THE PERIOD MAY 1 --- AUGUST 14, SEED WITH 3 LBS/ACRE OF WEEPING LOVEGRASS (0.7 LBS/1000 SQ. FT.). FO- THE PERIOD NOVEMBER 16 --- FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS/ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOO.

MULCHING: --- APPLY 1-1/2 TO 2 TONS/ACRE (70 TO 90 LBS/1000 SQ. FT.) OF UNROTTED WEED-FREE, SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL. PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPE 8 FT. OR HIGHER, USE 348 GAL. PER ACRE (8 GAL/1000 SQ. FT.) FOR ANCHORING.

REFER TO THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR ADDITIONAL RATES AND METHODS NOT COVERED.

**HOWARD SOIL CONSERVATION DISTRICT  
PERMANENT SEEDING NOTES**

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:

- PREFERRED --- APPLY 2 TONS/ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ. FT.) AND 600 LBS/ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS/ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS/1000 SQ. FT.)
- ACCEPTABLE --- APPLY 2 TONS/ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ. FT.) AND 1000 LBS/ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL.

SEEDING --- FOR THE PERIODS MARCH 1 --- APRIL 30, AND AUGUST 1 --- OCTOBER 15, SEED WITH 60 LBS/ACRE (1.4 LBS/1000 SQ. FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 --- JULY 31, SEED WITH 60 LBS KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS/ACRE (0.5 LBS/1000 SQ. FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 --- FEBRUARY 28, PROTECT SITE BY:
 

- OPTION 1 --- TWO TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING.
- OPTION 2 --- USE SOO.
- OPTION 3 --- SEER: WITH 60 LBS/ACRE KENTUCKY 30 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

MULCHING --- APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ. FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPE 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ. FT.) FOR ANCHORING.

MAINTENANCE --- INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

**B-4 STANDARDS AND SPECIFICATIONS  
FOR  
VEGETATIVE STABILIZATION**

**Definition**  
Using vegetation as cover to protect exposed soil from erosion.

**Purpose**  
To promote the establishment of vegetation on exposed soil.

**Conditions Where Practice Applies**  
On all disturbed areas not stabilized by other methods. This specification is divided into sections on incremental stabilization; soil preparation, soil amendments and topsoiling; seeding and mulching; temporary stabilization; and permanent stabilization.

**Effects on Water Quality and Quantity**  
Stabilization practices are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas.

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

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

Sediment control practices must remain in place during grading, seedbed preparation, seeding, mulching, and vegetative establishment.

**Adequate Vegetative Establishment**  
Inspect seeded areas for vegetative establishment and make necessary repairs, replacements, and reseeds within the planting season.

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

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

*John P. Roberts* 11/5/18  
HOWARD SOIL CONSERVATION DISTRICT DATE

**B-4-1 STANDARDS AND SPECIFICATIONS  
FOR  
INCREMENTAL STABILIZATION**

**Definition**  
Establishment of vegetative cover on cut and fill slopes.

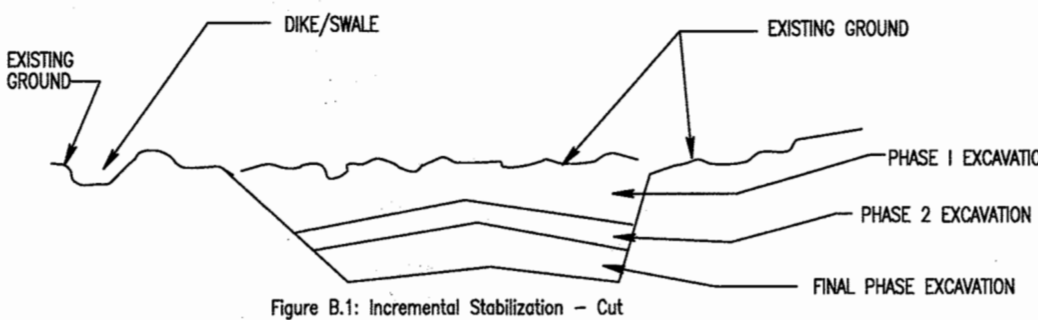
**Purpose**  
To provide timely vegetative cover on cut and fill slopes as work progresses.

**Conditions Where Practice Applies**  
Any cut or fill slope greater than 15 feet in height. This practice also applies to stockpiles.

**Criteria**

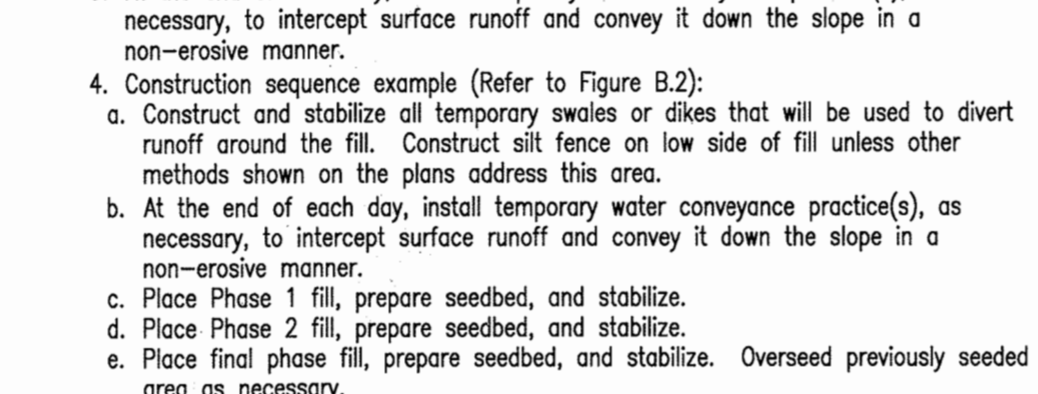
- Incremental Stabilization - Cut Slopes
  - Excavate and stabilize cut slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all cut slopes as the work progresses.
  - Construction sequence example (Refer to Figure B.1)
    - Construct and stabilize cut slopes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

Note: Once excavation has begun, the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.



- Incremental Stabilization - Fill Slopes
  - Construct and stabilize fill slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all slopes as the work progresses.
  - Stabilize slopes immediately when the vertical height of a lift reaches 15 feet, or when the grading operation ceases as prescribed in the plans.
  - At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
  - Place Phase 1 fill, prepare seedbed, and stabilize.
  - Place Phase 2 fill, prepare seedbed, and stabilize.
  - Place final phase fill, prepare seedbed, and stabilize. Overseed previously seeded area as necessary.

Note: Once the placement of fill has begun, the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.



**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.

- 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 loosened, 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. Take 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.

- 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 cinders, 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 Bermuda grass, quack grass, Johnson grass, pigweed, ragweed, yellow top, 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 Application
  - Erosion and sediment control practices must be maintained when applying topsoil.
  - Uniformly distribute topsoil to a depth of 2 to 3 inches and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.
  - 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 analysis.
  - 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 when using hydroseders) which contains at least 90 percent total acidity (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.

- Seeding
  - Specifications
    - All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to pre-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 hydrosedding. 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 (3 days min.) to permit dissipation of phytotoxic materials.
  - Application
    - Seeding: This includes use of conventional drag 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 seeded 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.
      - Hydrosedding: Apply seed uniformly with hydroseder (slurry includes seed and fertilizer).
      - If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P205 (phosphorus), 200 pounds per acre; K20 (potassium), 200 pounds per acre.
      - Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydrosedding). Normally, not more than 2 tons are applied by hydrosedding at any one time. Do not use burnt or hydrated lime when hydrosedding.
      - Mix seed and fertilizer on site and seed immediately and without interruption.
      - When hydrosedding do not incorporate seed into the soil.

**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.

- 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, the Table B.1 plus fertilizer and lime rates must be put on the plan.
- For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding.
- When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3A.1.b and maintain until the next seeding season.

**B-4-5 STANDARDS AND SPECIFICATIONS  
FOR  
PERMANENT STABILIZATION**

**Definition**  
To stabilize disturbed soils with permanent vegetation.

**Purpose**  
To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.

**Conditions Where Practice Applies**  
Exposed soils where ground cover is needed for 6 months or more.

- Seed Mixtures
  - General Use
    - Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.
    - Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.
    - For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency.
  - For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 1/2 pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.
- Turfgrass Mixtures
  - Areas where turfgrass may be desired include lawns, parks, playground, and commercial sites which will receive a medium to high level of maintenance.
  - Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
    - Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
    - Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
    - Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes: Certified Tall Fescue Cultivars 85 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.
    - Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Certified Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes: Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1 1/2 to 3 pounds per 1000 square feet. Note: Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland".

Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line.

- Ideal Times of Seeding for Turf Grass Mixtures
  - Western MD: March 15 to June 1, August 1 to October 1 (Hardness Zones: 5b, 6a)
  - Central MD: March 1 to May 15, August 15 to October 15 (Hardness Zone: 6b)
  - Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardness Zones: 7a, 7b)
- Turf areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1 1/2 inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose no difficulty.
- If soil moisture is deficient, supply new seedings with adequate water for plant growth (1/2 to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

**Permanent Seeding Summary**

Hardness Zone (from Figure B.3): 6b	Seed Mixture (from Table B.1): 11	Fertilizer Rate (10-20-20)	Lime Rate
Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths
Creeping Red Fescue	30	3/1-10/15	1/2"-3/4"
Chewings Fescue	30	3/1-10/15	1/2"-3/4"
Kentucky Bluegrass	15	3/1-10/15	1/2"-3/4"

45 90 90 2  
lb/ac lb/ac lb/ac tons/ac  
(1000sf) (2000sf) (2000sf) (90 lb/1000sf)

- 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 tiller 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 (Ago-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of 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.

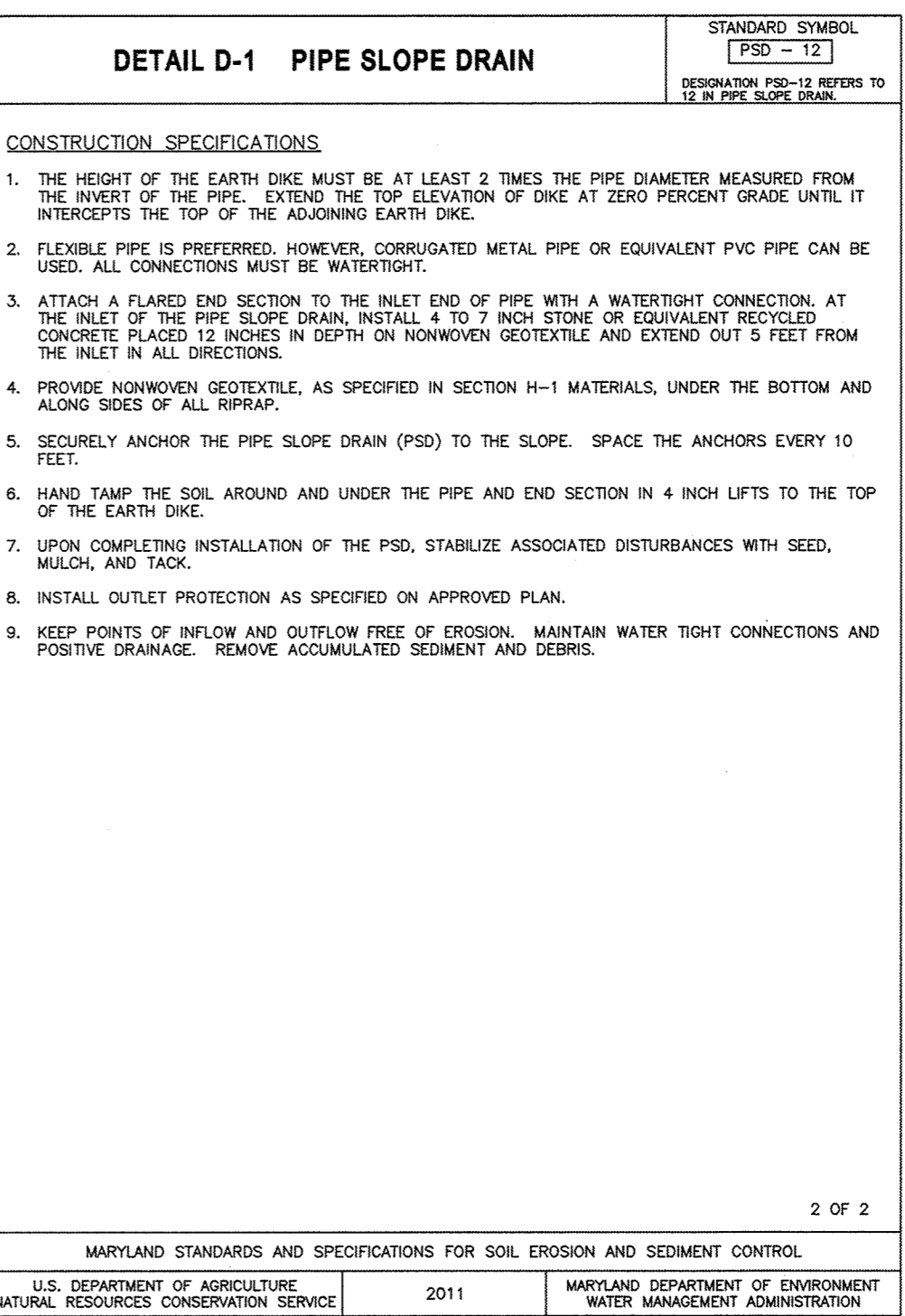
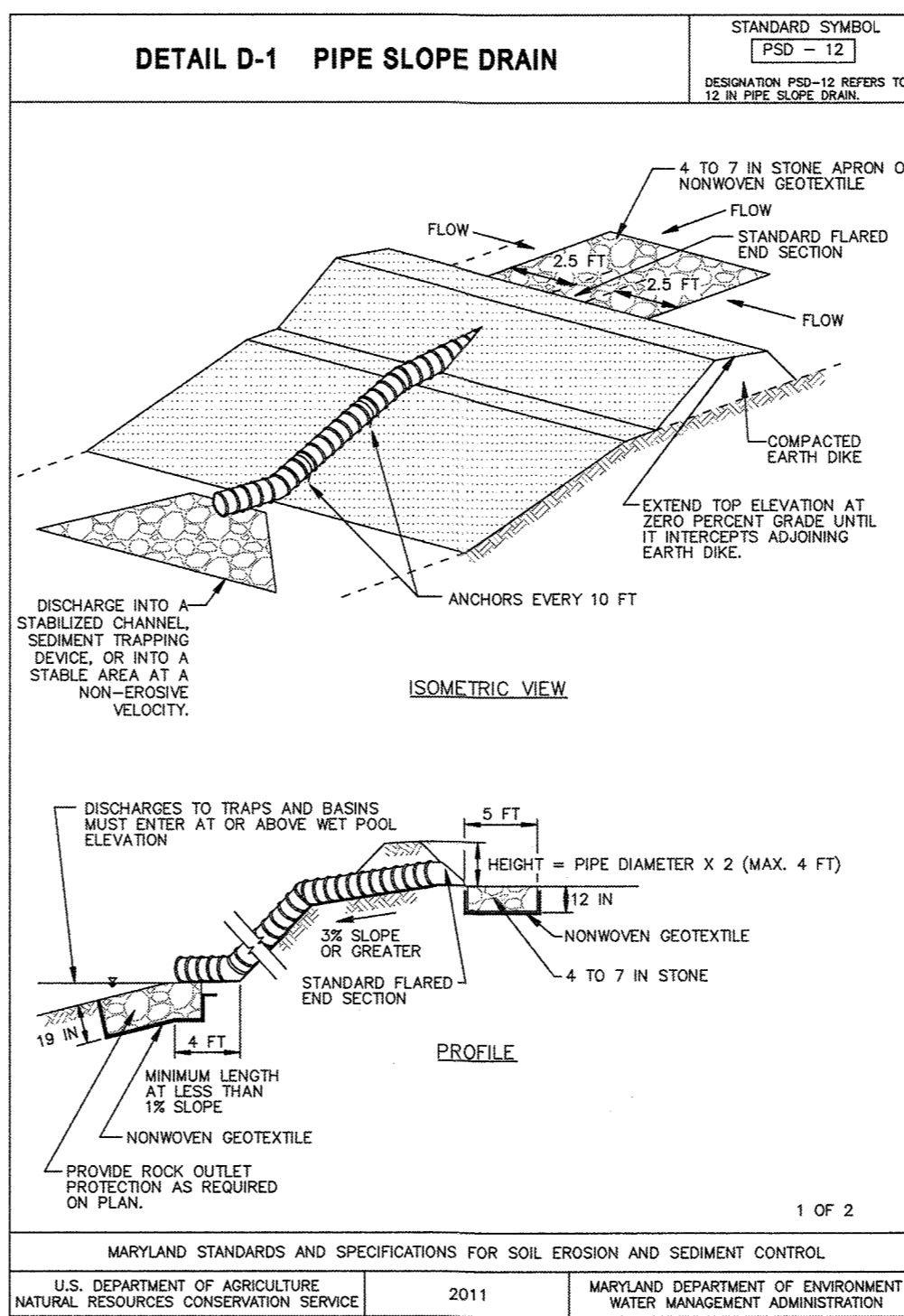
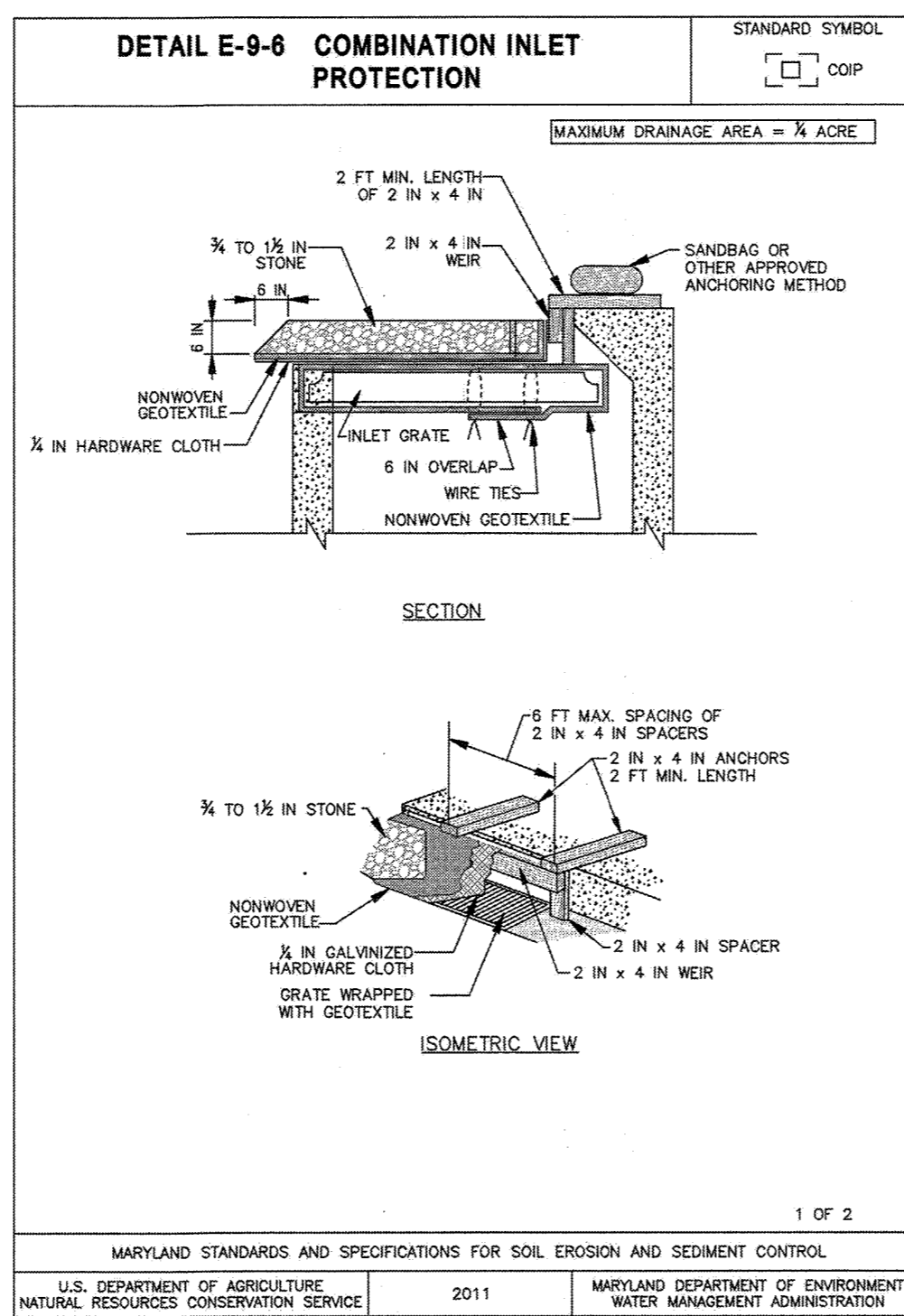
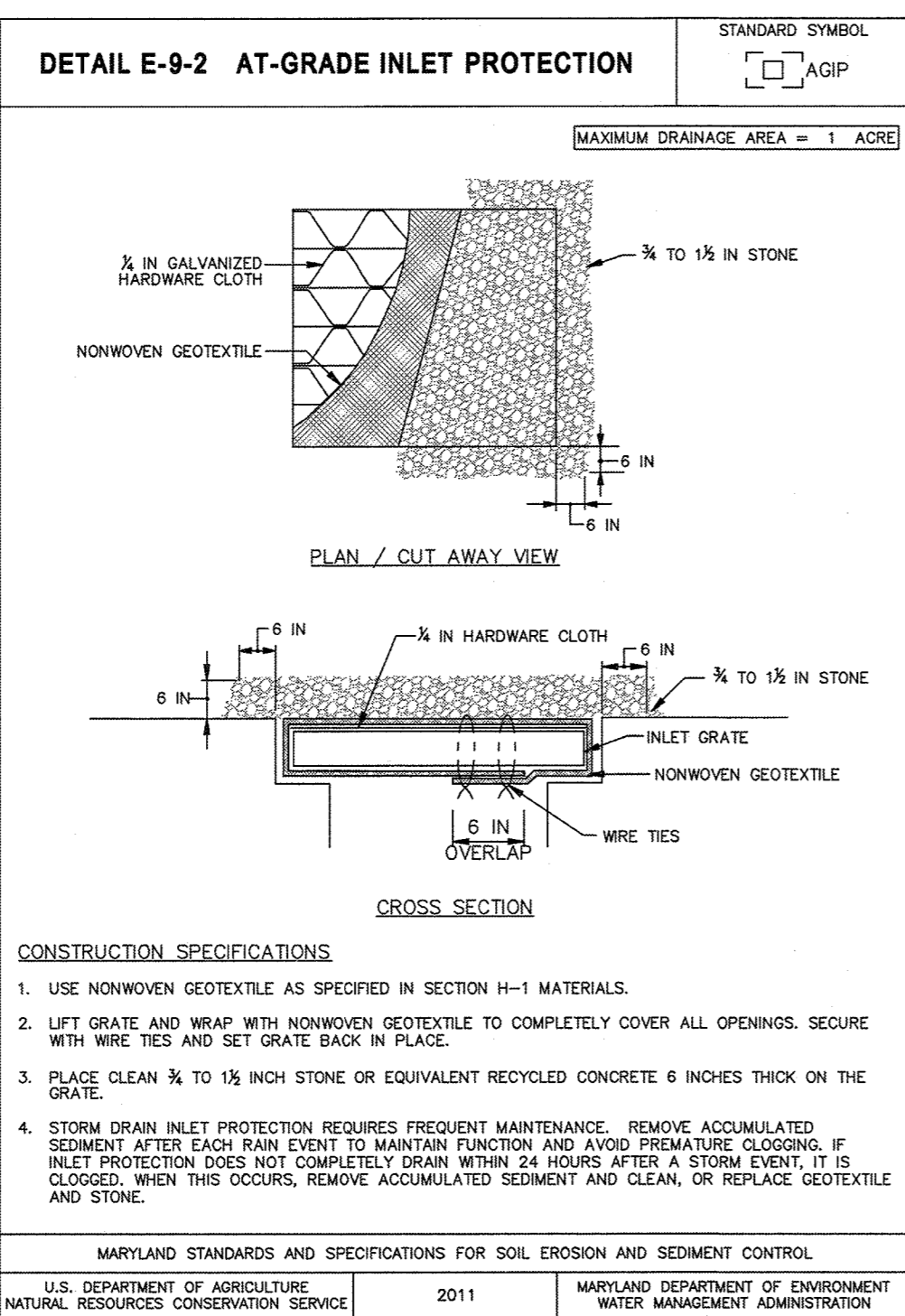
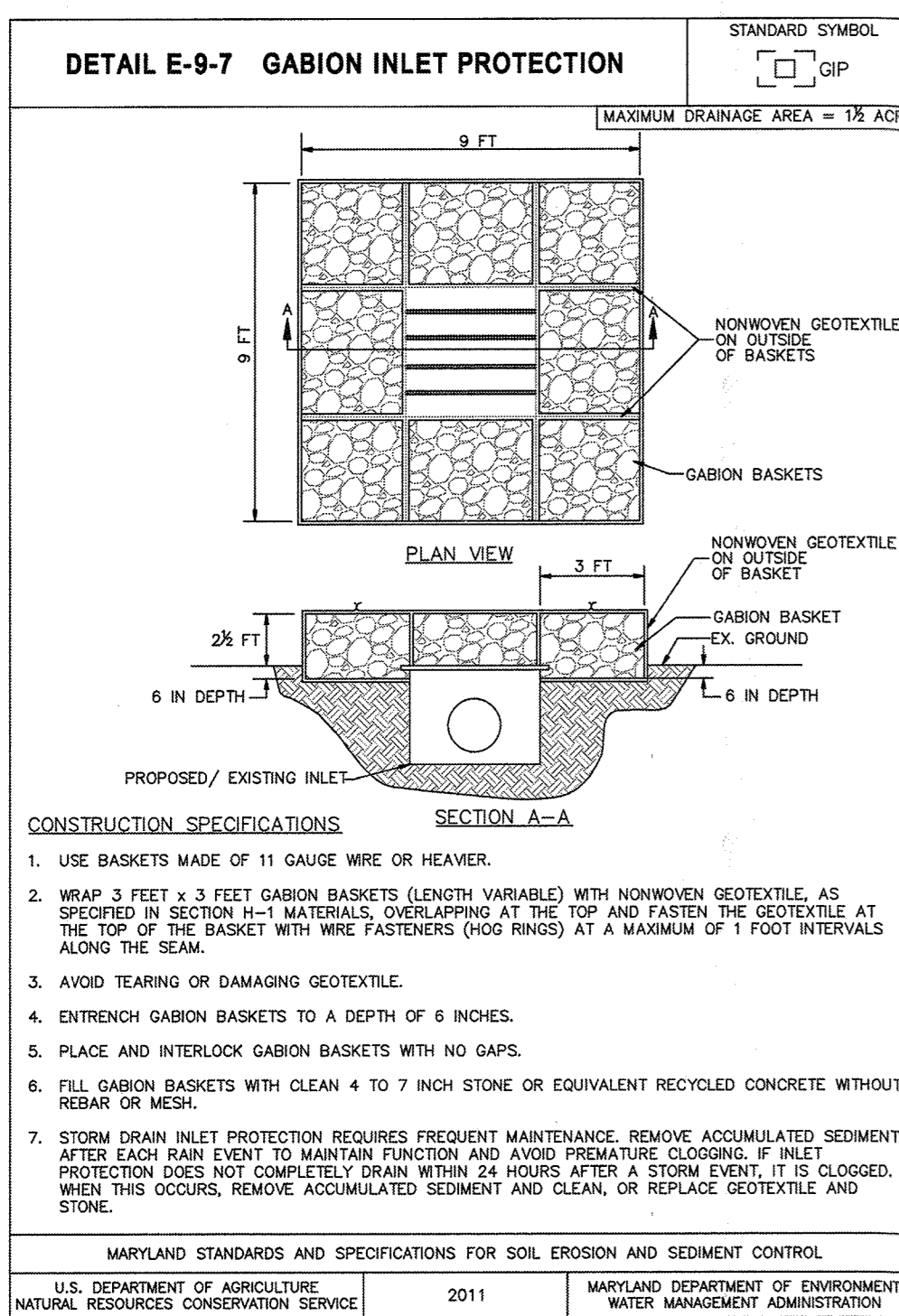
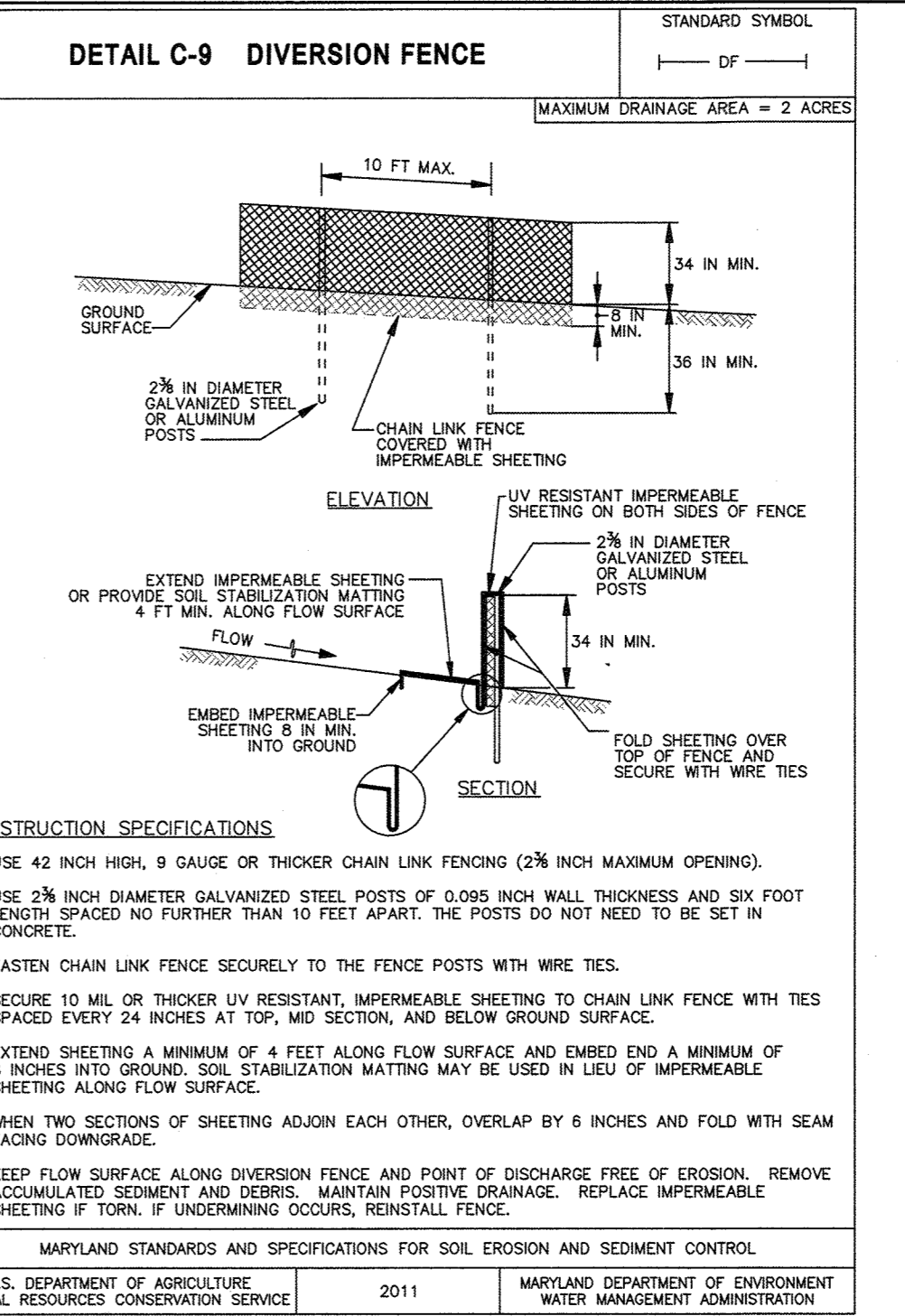
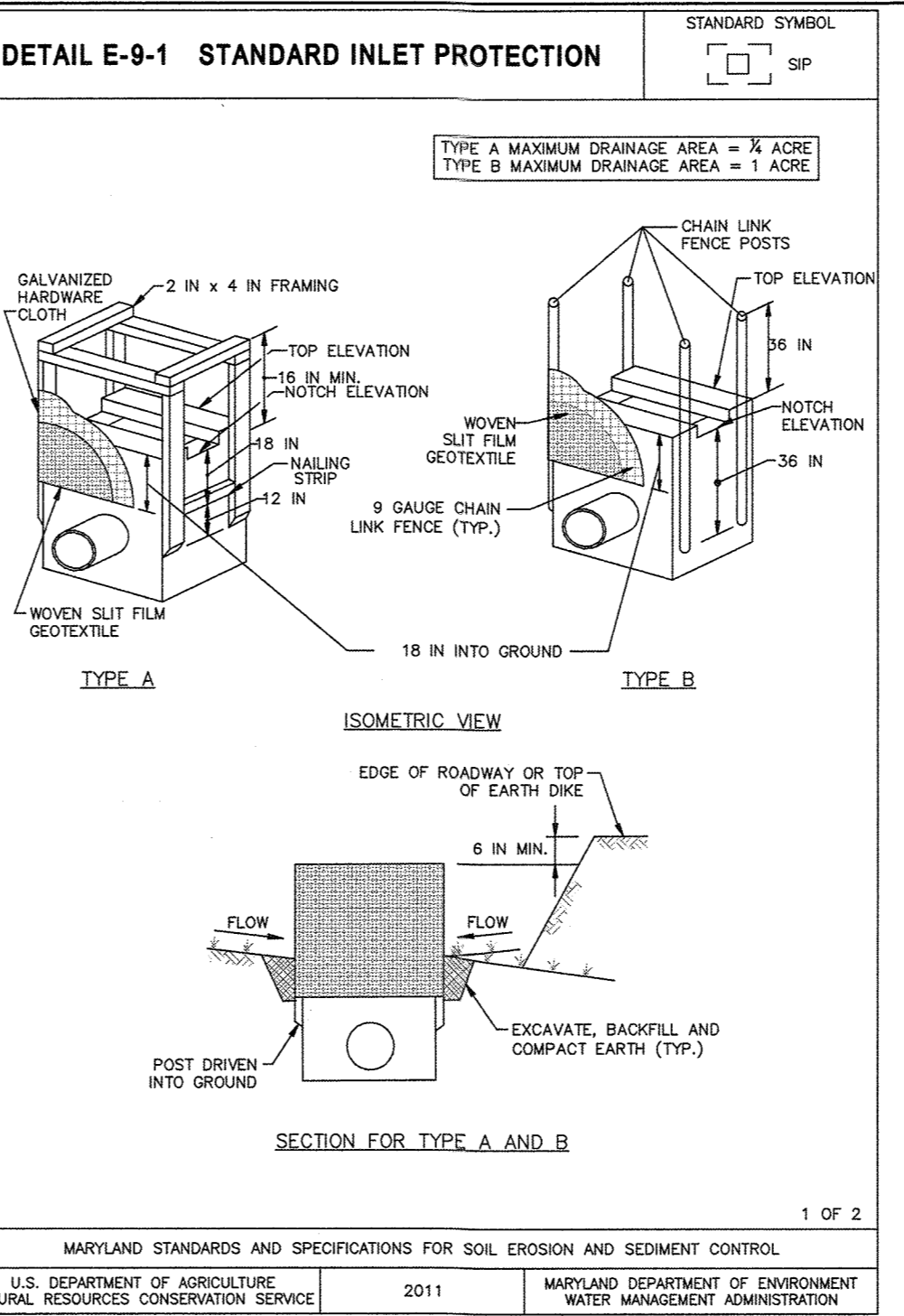
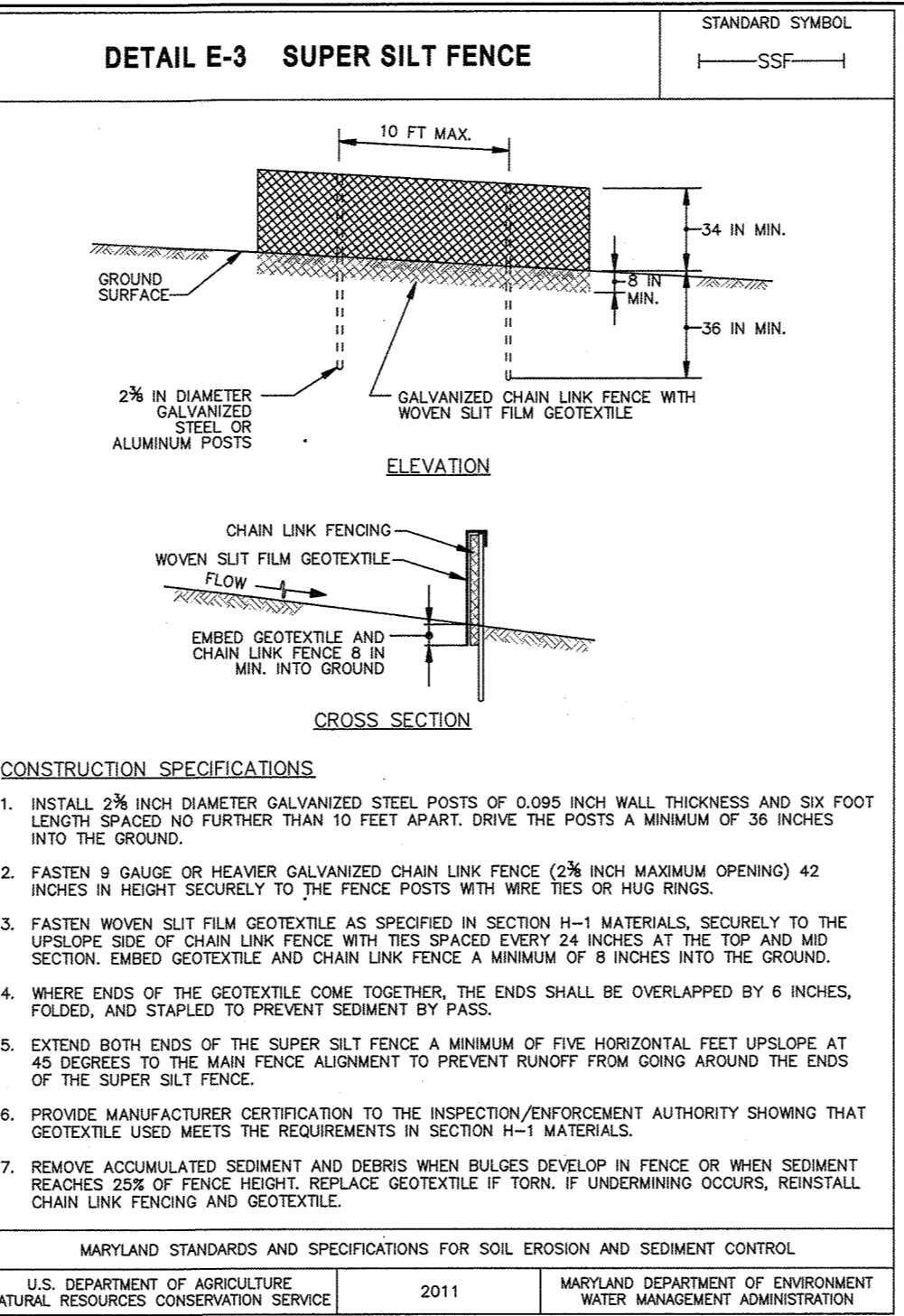
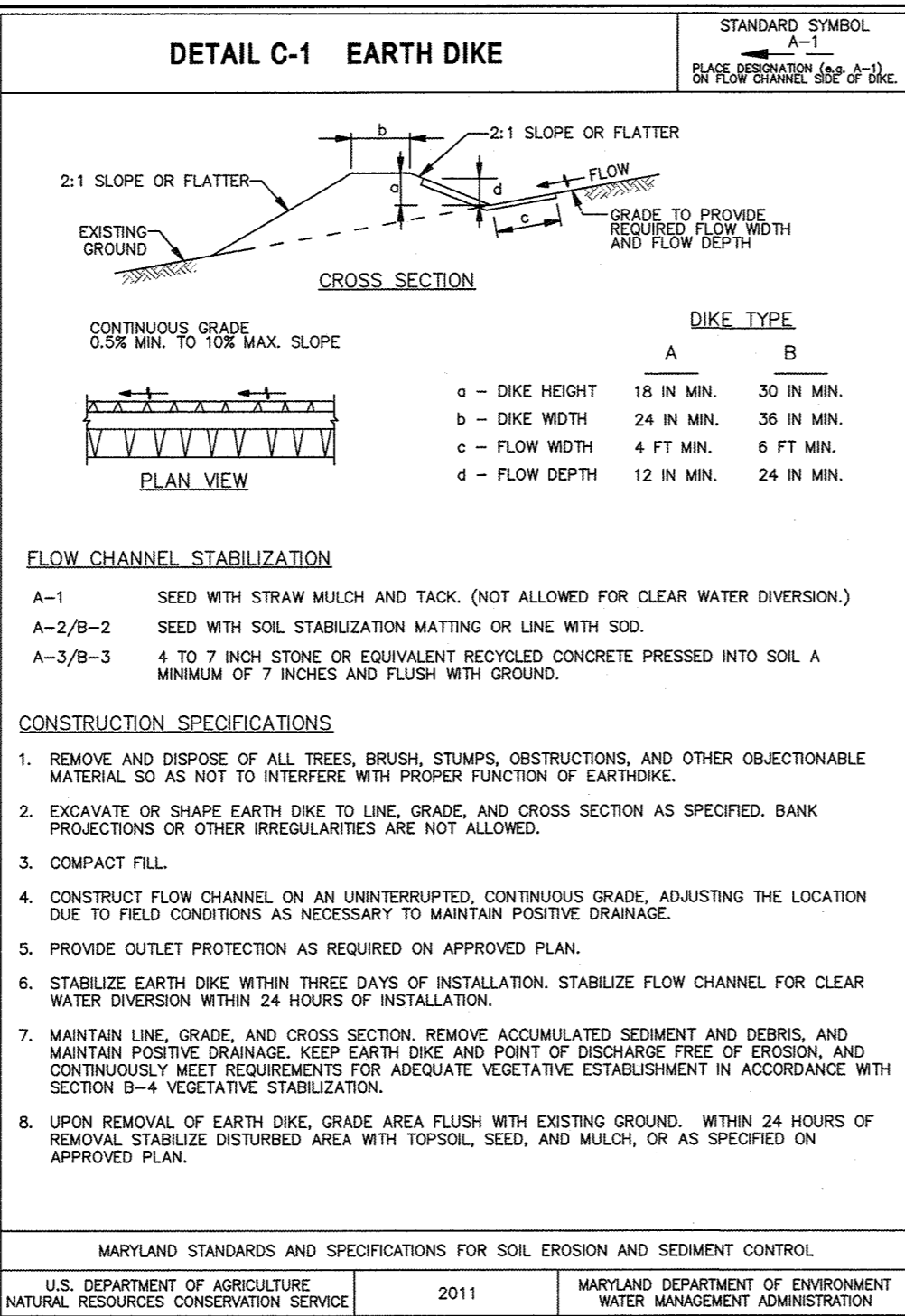
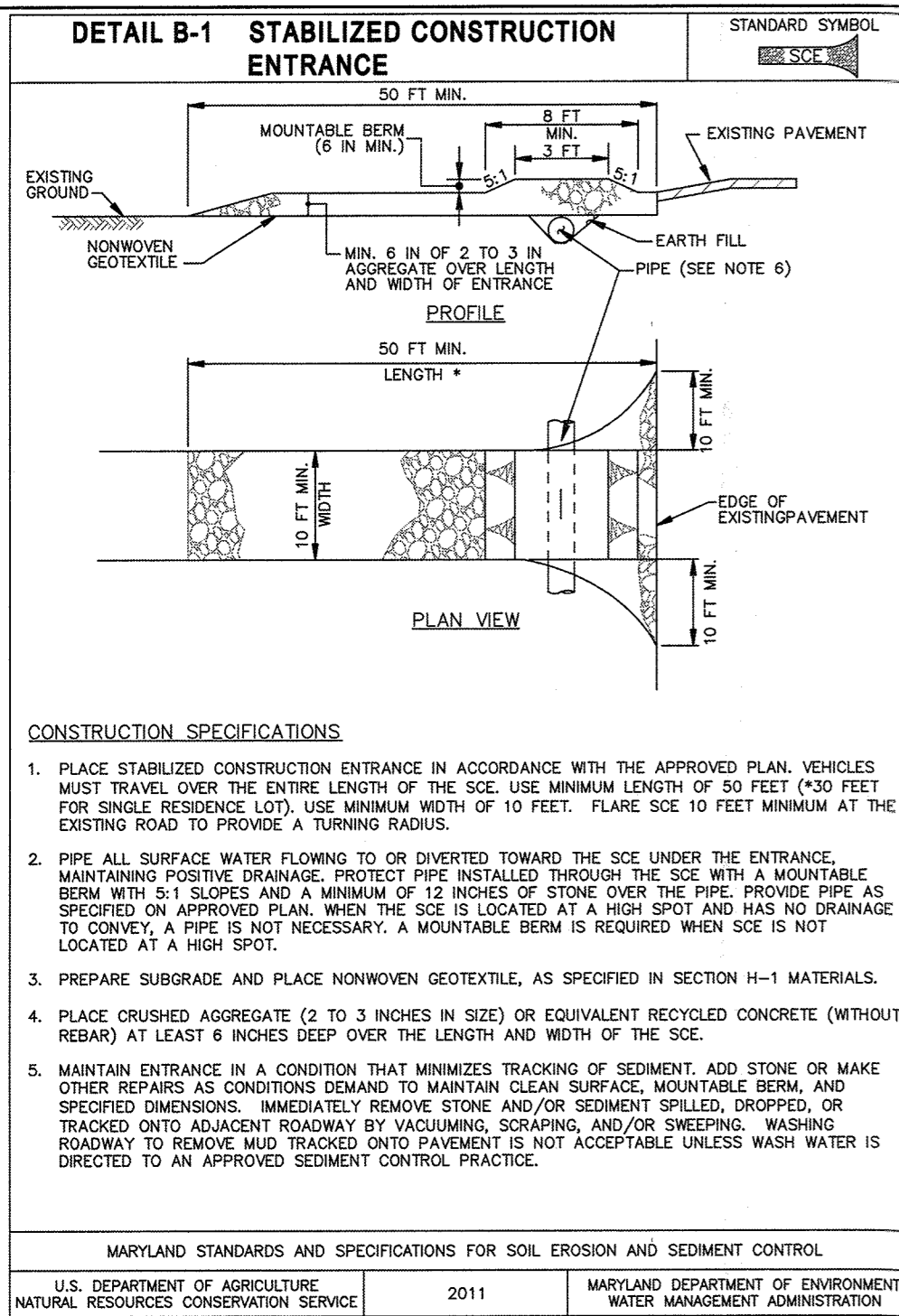
**B-4-4 STANDARDS AND SPECIFICATIONS  
FOR  
TEMPORARY STABILIZATION**

**Definition**  
To stabilize disturbed soils with vegetation for up to 6 months.

**Purpose**  
To use fast growing vegetation that provides cover on disturbed soils.

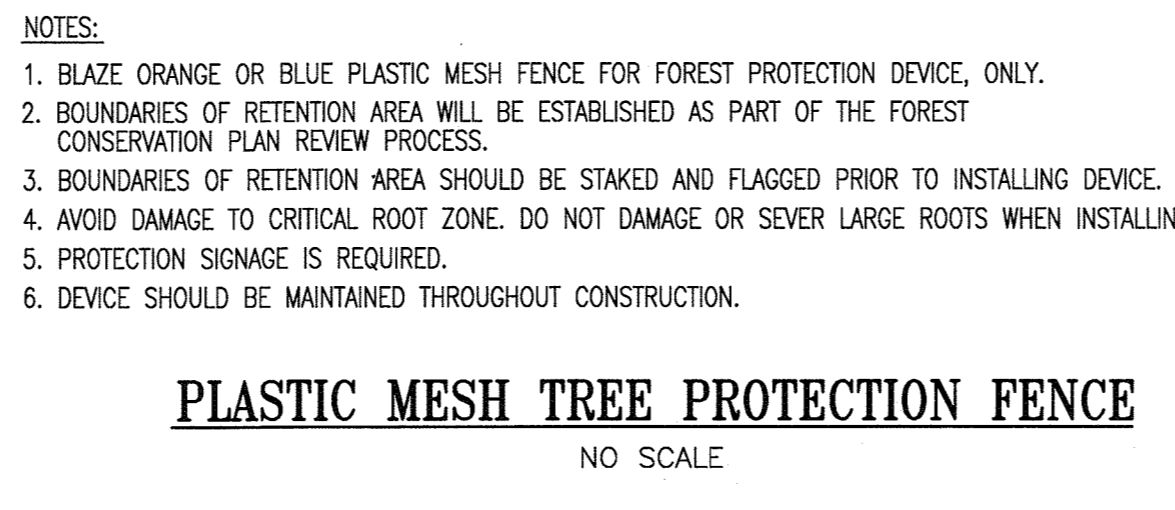
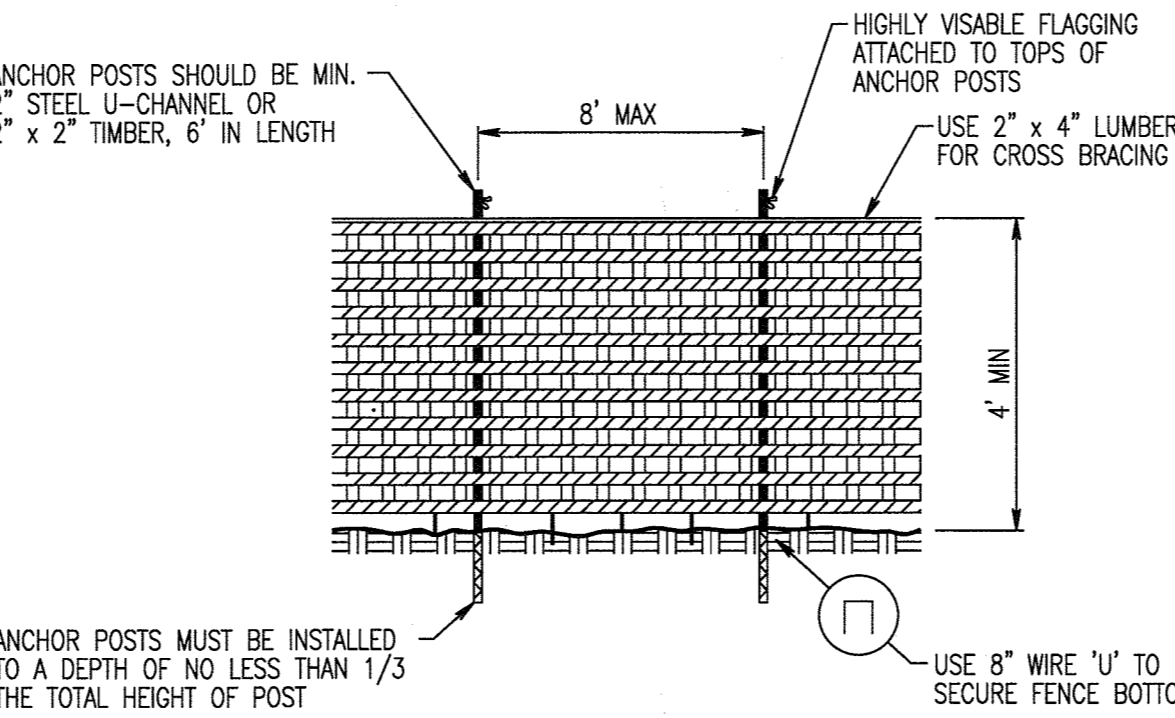
**Conditions Where Practice Applies**<





### SEQUENCE OF CONSTRUCTION

- OBTAIN A GRADING PERMIT AND ARRANGE FOR AN ON-SITE PRE-CONSTRUCTION MEETING WITH A HOWARD COUNTY SCD INSPECTOR (410-313-1880). (1 DAY)
- NOTIFY THE SEDIMENT CONTROL INSPECTION OFFICE 24 HOURS PRIOR TO CONSTRUCTION. (1 DAY)
- INSTALL THE STABILIZED CONSTRUCTION ENTRANCE. PERMANENTLY (OR TEMPORARILY) STABILIZE ALL AREAS AT THE END OF EACH DAY. SEE STANDARD STABILIZATION AND EROSION AND EROSION AND SEDIMENT CONTROL NOTES THIS SHEET. (1 WEEK)
- INSTALL PERIMETER CONTROLS INCLUDING SUPER SILT FENCE AND DIVERSION FENCE. (1 WEEK)
- PERFORM ROUGH GRADING. (2 WEEKS)
- INSTALL STORM DRAIN SYSTEM STARTING AT ES-1 AND WORKING UPSTREAM. INSTALL INLET PROTECTION AS CONSTRUCTION PROGRESSES. INSTALL ES-3 TO I-8 AND BLOCK INLET I-8 UNTIL MBR-1 IS FULLY STABILIZED. DO NOT INSTALL E-4 TO THE SKATEBOARD PARK UNTIL MBR-1 IS FULLY STABILIZED. (2 WEEKS)
- INSTALL PARKING LOT. (3 WEEKS)
- INSTALL ALL SIDEWALKS. (1 WEEKS)
- INSTALL STORMWATER MANAGEMENT FACILITIES. INSTALL SSF AROUND EACH FACILITY UNTIL THE AREAS DRAINING TO THEM ARE STABILIZED. ONCE THE CONTRIBUTING AREAS ARE STABILIZED COMPLETE THE FACILITIES. (3 WEEKS)
- STABILIZE ALL OTHER AREAS WITH PERMANENT SEEDING AND MULCHING. (1 WEEK)
- REMOVE STABILIZED CONSTRUCTION ENTRANCE AND FINISH PARKING STALLS. (1 WEEK)
- STABILIZE REMAINING AREA WITH PERMANENT SEEDING AND MULCHING. (1 DAY)
- UPON PERMANENT STABILIZATION OF ALL DISTURBED AREAS AND WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR, REMOVE ANY REMAINING SEDIMENT CONTROL DEVICES AND ALL NON-NATURAL ITEMS FROM FORESTS AND FLOODPLAIN.



REVISIONS

HOWARD COUNTY  
DEPARTMENT OF RECREATION AND PARKS  
7120 OAKLAND MILLS ROAD  
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS  
9250 BENDIX ROAD  
ELLCOTT CITY, MD 21043



PROPERTY

TAX MAP 4, GRID 15, PARCEL 54

ZONING: B-1 & RC-DEO

ELECTION DISTRICT 3rd

GRAPHIC SCALES

SIGNATURE

PROFESSIONAL CERTIFICATION  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 19378  
EXPIRATION DATE: 09/22/2019

SOUTH BRANCH PARK  
PHASE 3

EROSION AND SEDIMENT CONTROL DETAILS

Drawing No. C5.2

Scale: NOT TO SCALE

Date: OCTOBER 2018 Sheet 17 of 24

Des: JTD Drawn: JTD Check: AUO

**ENGINEER'S CERTIFICATION**

I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*Anthony H. Olson* 10/19/18  
SIGNATURE OF ENGINEER DATE  
(PRINT NAME BELOW SIGNATURE)

**DEVELOPER'S CERTIFICATION**

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

*John R. Blunt* 10/22/18  
SIGNATURE OF DEVELOPER DATE  
(PRINT NAME BELOW SIGNATURE)

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*John R. Blunt* 11-29-18  
DATE

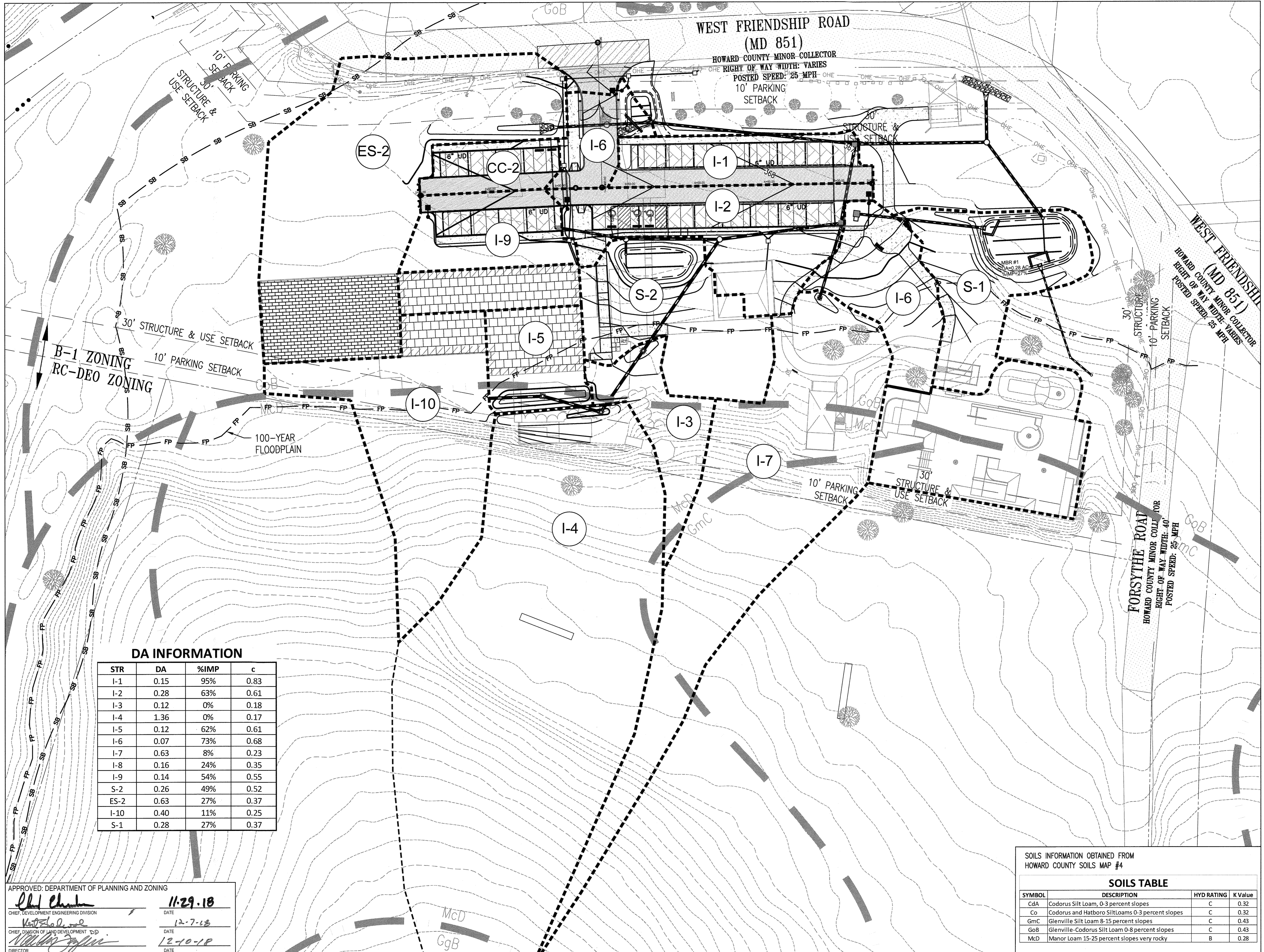
*John R. Blunt* 12-7-18  
DATE

*John R. Blunt* 12-10-18  
DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

*John R. Blunt* 11/5/18  
DATE

FILED: 10/19/18 10:52 AM OFFICE OF THE REGISTERED PROFESSIONAL ENGINEER, STATE OF MARYLAND, 100 N. EIGHTH STREET, BALTIMORE, MD 21202



**DA INFORMATION**

STR	DA	%IMP	c
I-1	0.15	95%	0.83
I-2	0.28	63%	0.61
I-3	0.12	0%	0.18
I-4	1.36	0%	0.17
I-5	0.12	62%	0.61
I-6	0.07	73%	0.68
I-7	0.63	8%	0.23
I-8	0.16	24%	0.35
I-9	0.14	54%	0.55
S-2	0.26	49%	0.52
ES-2	0.63	27%	0.37
I-10	0.40	11%	0.25
S-1	0.28	27%	0.37

SOILS INFORMATION OBTAINED FROM HOWARD COUNTY SOILS MAP #4

SYMBOL	DESCRIPTION	HYD RATING	K Value
CdA	Codorus Silt Loam, 0-3 percent slopes	C	0.32
Co	Codorus and Hatboro SiltLoams 0-3 percent slopes	C	0.32
GmC	Glenville Silt Loam 8-15 percent slopes	C	0.43
GoB	Glenville-Codorus Silt Loam 0-8 percent slopes	C	0.43
McD	Manor Loam 15-25 percent slopes very rocky	B	0.28

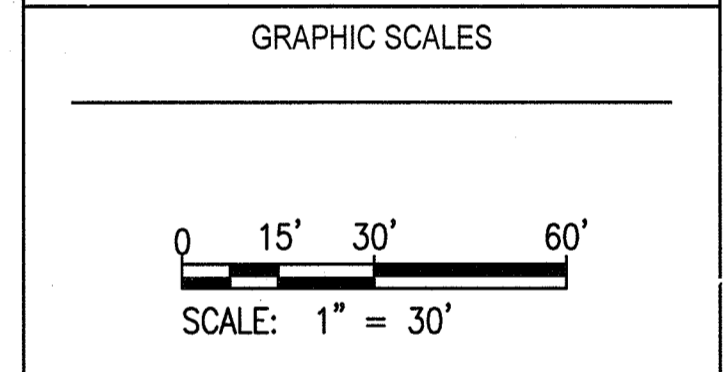
APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 [Signature] 11-29-18  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 [Signature] 12-7-18  
 CHIEF DIVISION OF LAND DEVELOPMENT  
 [Signature] 12-10-18  
 DIRECTOR

REVISIONS	

HOWARD COUNTY  
 DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MD 21046  
 DEPARTMENT OF PUBLIC WORKS  
 9250 BENDIX ROAD  
 ELLICOTT CITY, MD 21043



PROPERTY  
 TAX MAP 4, GRID 15, PARCEL 54  
 ZONING: B-1 & RC-DEO  
 ELECTION DISTRICT 3rd

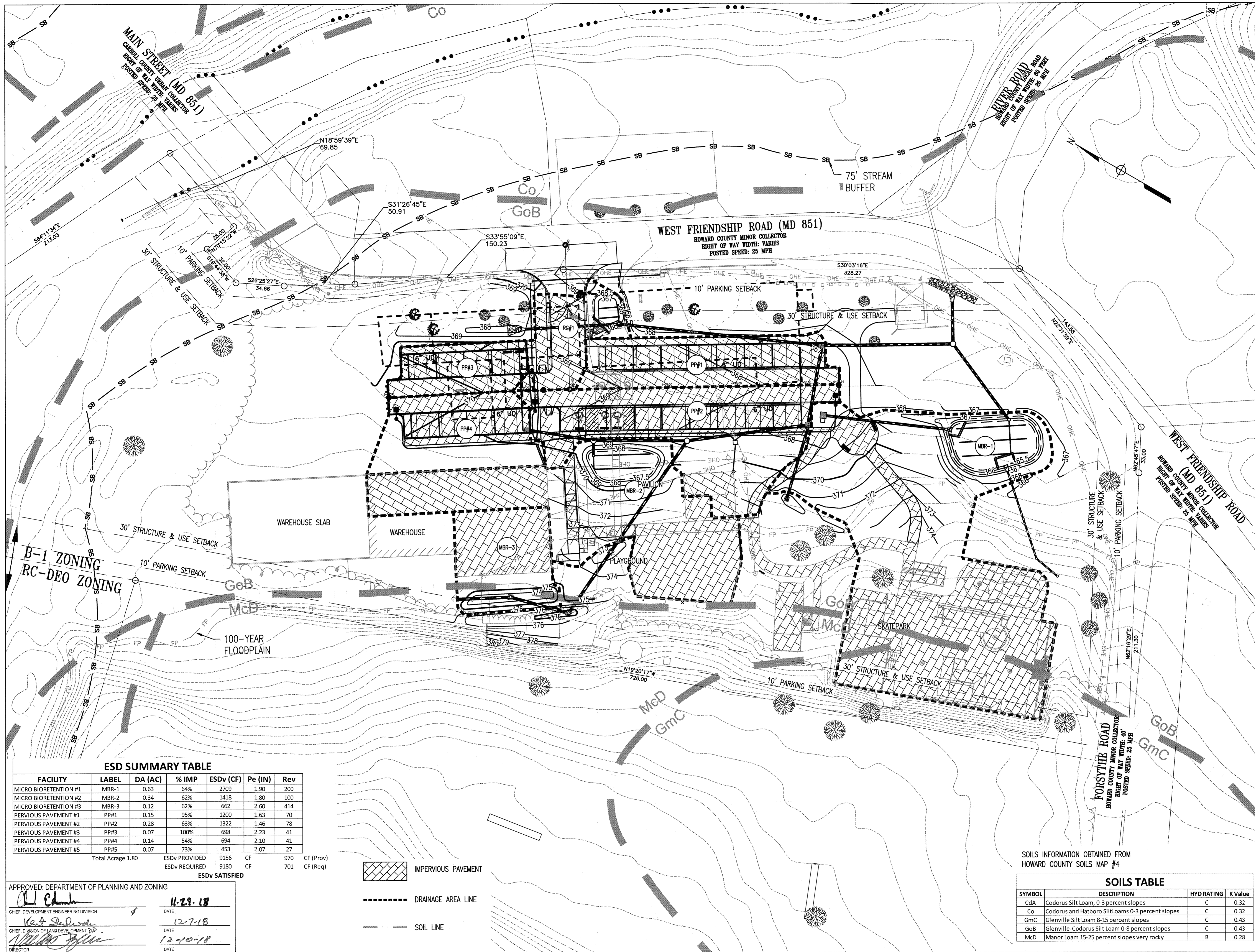


SIGNATURE

PROFESSIONAL CERTIFICATION:  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 18378. EXPIRATION DATE: 09/22/2019.

**SOUTH BRANCH PARK PHASE 3**

STORM DRAIN DRAINAGE AREA MAP  
 Drawing No. **C7.1**  
 Scale: 1"=30'  
 Date: OCTOBER 2018 Sheet 18 of 24  
 Des: JTD Drawn: JTD Check: AUO



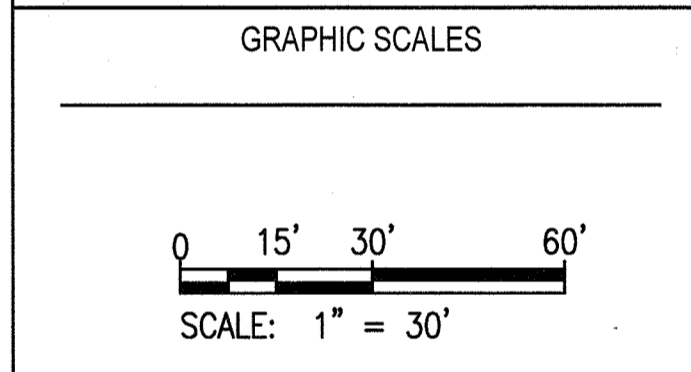
REVISIONS	

HOWARD COUNTY  
 DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS  
 9250 BENDIX ROAD  
 ELLICOTT CITY, MD 21043



PROPERTY  
 TAX MAP 4, GRID 15, PARCEL 54  
 ZONING: B-1 & RC-DEO  
 ELECTION DISTRICT 3rd



SIGNATURE

PROFESSIONAL CERTIFICATION  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 19376  
 EXPIRATION DATE: 08/22/2019

SOUTH BRANCH PARK  
 PHASE 3

PROPOSED/ESD DRAINAGE AREA MAP  
 Drawing No.  
**C7.2**  
 Scale: 1"=30'  
 Date: OCTOBER 2018 Sheet 19 of 24  
 Des: JTD Drawn: JTD Check: AUO

ESD SUMMARY TABLE

FACILITY	LABEL	DA (AC)	% IMP	ESDv (CF)	Pe (IN)	Rev
MICRO BIORETENTION #1	MBR-1	0.63	64%	2709	1.90	200
MICRO BIORETENTION #2	MBR-2	0.34	62%	1418	1.80	100
MICRO BIORETENTION #3	MBR-3	0.12	62%	662	2.60	414
PERVIOUS PAVEMENT #1	PP#1	0.15	95%	1200	1.63	70
PERVIOUS PAVEMENT #2	PP#2	0.28	63%	1322	1.46	78
PERVIOUS PAVEMENT #3	PP#3	0.07	100%	698	2.23	41
PERVIOUS PAVEMENT #4	PP#4	0.14	54%	694	2.10	41
PERVIOUS PAVEMENT #5	PP#5	0.07	73%	453	2.07	27
Total Acreage 1.80		ESDv PROVIDED 9156	CF 970	CF (Prov) 970	CF (Req) 701	CF (Req) 701
		ESDv REQUIRED 9180	CF 970	CF (Prov) 970	CF (Req) 701	CF (Req) 701

ESDv SATISFIED

- IMPERVIOUS PAVEMENT
- DRAINAGE AREA LINE
- SOIL LINE

SOILS INFORMATION OBTAINED FROM HOWARD COUNTY SOILS MAP #4

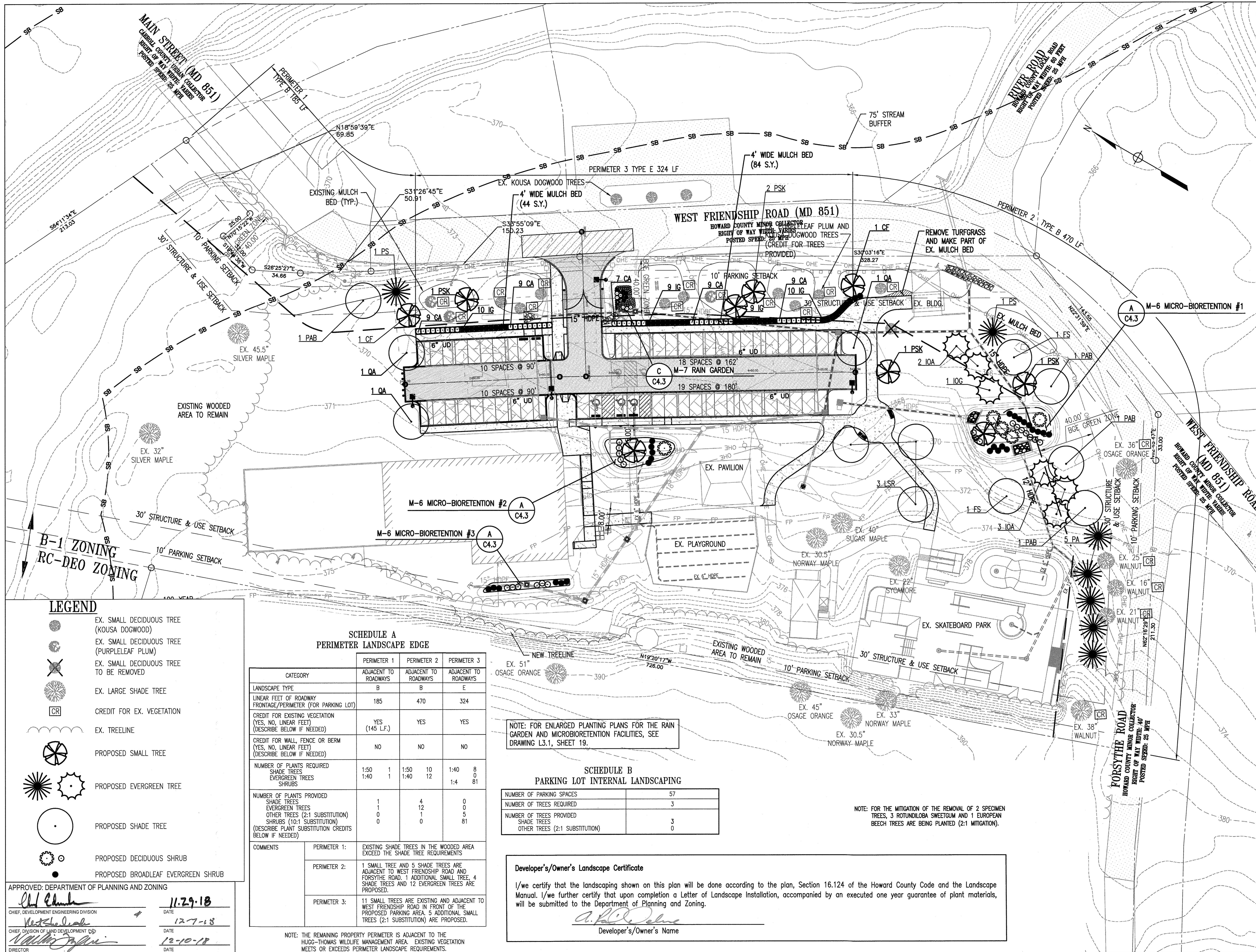
SYMBOL	DESCRIPTION	HYD RATING	K Value
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McD	Manor Loam 15-25 percent slopes very rocky	B	0.28

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 11-29-18  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 12-7-18  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*[Signature]* 12-10-18  
 DIRECTOR DATE



REVISIONS	

HOWARD COUNTY  
 DEPARTMENT OF RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS  
 9250 BENDIX ROAD  
 ELLICOTT CITY, MD 21043

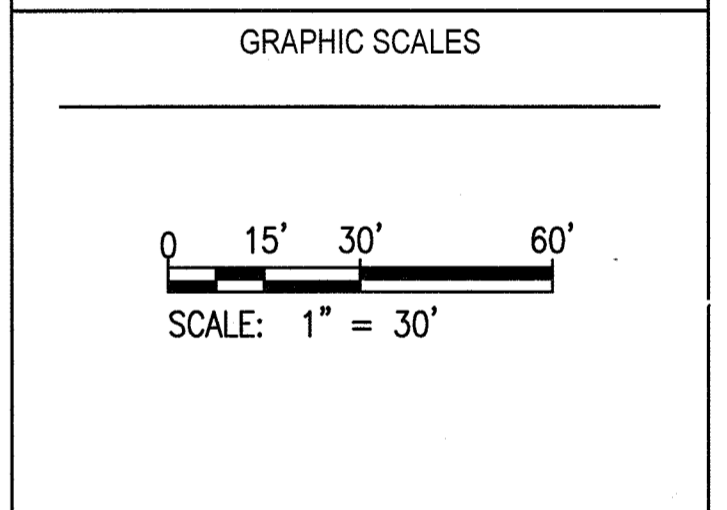


PROPERTY

TAX MAP 4, GRID 15, PARCEL 54

ZONING: B-1 & RC-DEO

ELECTION DISTRICT 3rd



SIGNATURE

**SOUTH BRANCH PARK  
 PHASE 3**

LANDSCAPE PLAN

Drawing No.  
**L1.1**

Scale: 1"=30'

Date: OCTOBER 2018 Sheet 20 of 24

Des: JTD Drawn: JTD Check: AUO

- LEGEND**
- EX. SMALL DECIDUOUS TREE (KOUSA DOGWOOD)
  - EX. SMALL DECIDUOUS TREE (PURPLELEAF PLUM)
  - EX. SMALL DECIDUOUS TREE TO BE REMOVED
  - EX. LARGE SHADE TREE
  - CREDIT FOR EX. VEGETATION
  - EX. TREELINE
  - PROPOSED SMALL TREE
  - PROPOSED EVERGREEN TREE
  - PROPOSED SHADE TREE
  - PROPOSED DECIDUOUS SHRUB
  - PROPOSED BROADLEAF EVERGREEN SHRUB

**SCHEDULE A  
 PERIMETER LANDSCAPE EDGE**

CATEGORY	PERIMETER 1 ADJACENT TO ROADWAYS	PERIMETER 2 ADJACENT TO ROADWAYS	PERIMETER 3 ADJACENT TO ROADWAYS
LANDSCAPE TYPE	B	B	E
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER (FOR PARKING LOT)	185	470	324
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	YES (145 L.F.)	YES	YES
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO
NUMBER OF PLANTS REQUIRED			
SHADE TREES	1:50 1	1:50 10	1:40 8
EVERGREEN TREES	1:40 1	1:40 12	0 0
SHRUBS			1:4 81
NUMBER OF PLANTS PROVIDED			
SHADE TREES	1	4	0
EVERGREEN TREES	1	12	0
OTHER TREES (2:1 SUBSTITUTION)	0	1	5
SHRUBS (10:1 SUBSTITUTION)	0	0	81
(DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)			
COMMENTS	PERIMETER 1: EXISTING SHADE TREES IN THE WOODED AREA EXCEED THE SHADE TREE REQUIREMENTS		
	PERIMETER 2: 1 SMALL TREE AND 5 SHADE TREES ARE ADJACENT TO WEST FRIENDSHIP ROAD AND FORSYTHE ROAD. 1 ADDITIONAL SMALL TREE, 4 SHADE TREES AND 12 EVERGREEN TREES ARE PROPOSED.		
	PERIMETER 3: 11 SMALL TREES ARE EXISTING AND ADJACENT TO WEST FRIENDSHIP ROAD IN FRONT OF THE PROPOSED PARKING AREA. 5 ADDITIONAL SMALL TREES (2:1 SUBSTITUTION) ARE PROPOSED.		

NOTE: FOR ENLARGED PLANTING PLANS FOR THE RAIN GARDEN AND MICROBIORETENTION FACILITIES, SEE DRAWING L3.1, SHEET 19.

**SCHEDULE B  
 PARKING LOT INTERNAL LANDSCAPING**

NUMBER OF PARKING SPACES	57
NUMBER OF TREES REQUIRED	3
NUMBER OF TREES PROVIDED	3
SHADE TREES	0
OTHER TREES (2:1 SUBSTITUTION)	0

NOTE: FOR THE MITIGATION OF THE REMOVAL OF 2 SPECIMEN TREES, 3 ROTUNDILOBA SWEETGUM AND 1 EUROPEAN BEECH TREES ARE BEING PLANTED (2:1 MITIGATION).

**Developer's/Owner's Landscape Certificate**

I/we certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County Code and the Landscape Manual. I/we further certify that upon completion a Letter of Landscape Installation, accompanied by an executed one year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.

*A. P. DeLuca*  
 Developer's/Owner's Name

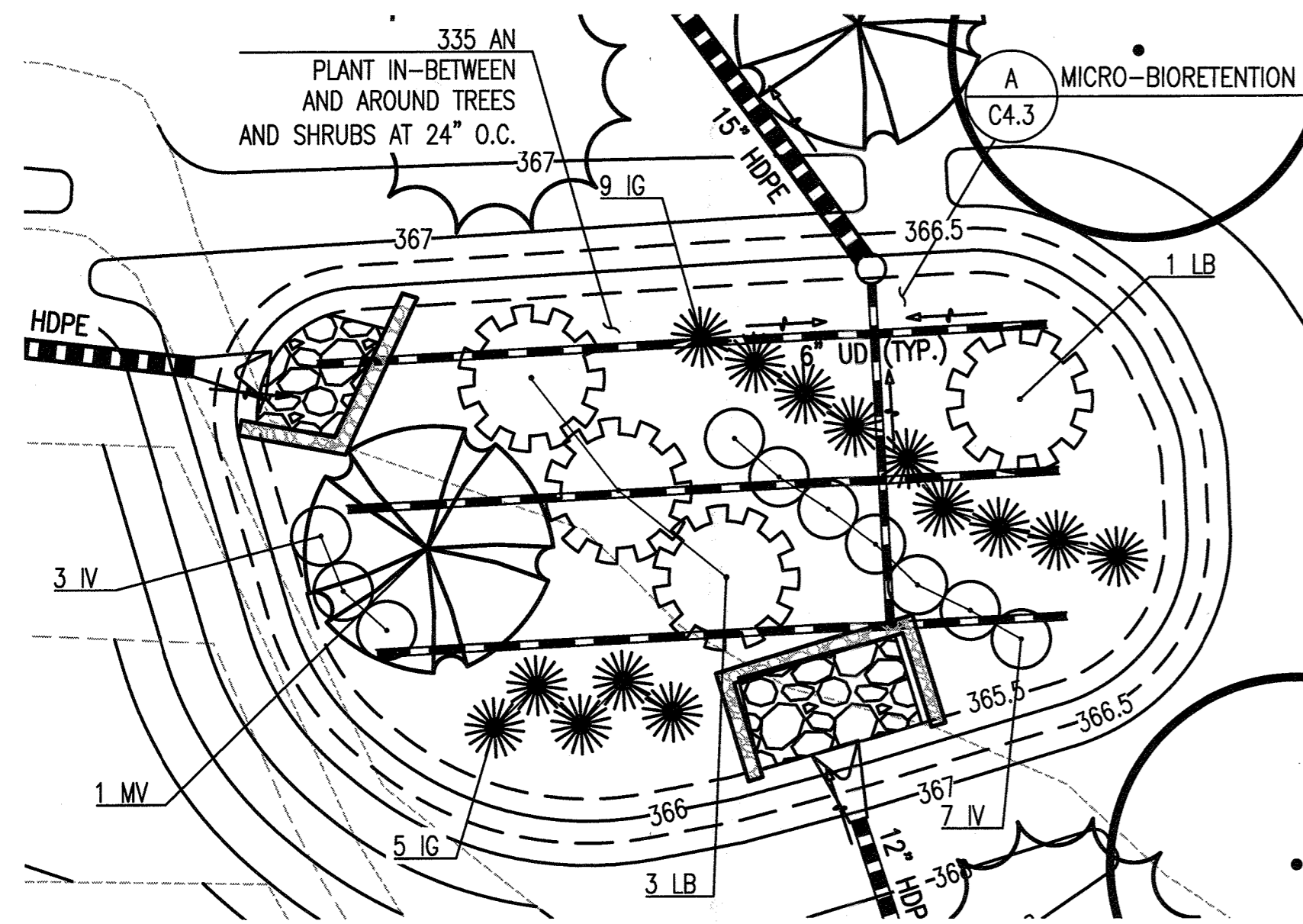
APPROVED: DEPARTMENT OF PLANNING AND ZONING

*John E. ...* 11-29-18  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

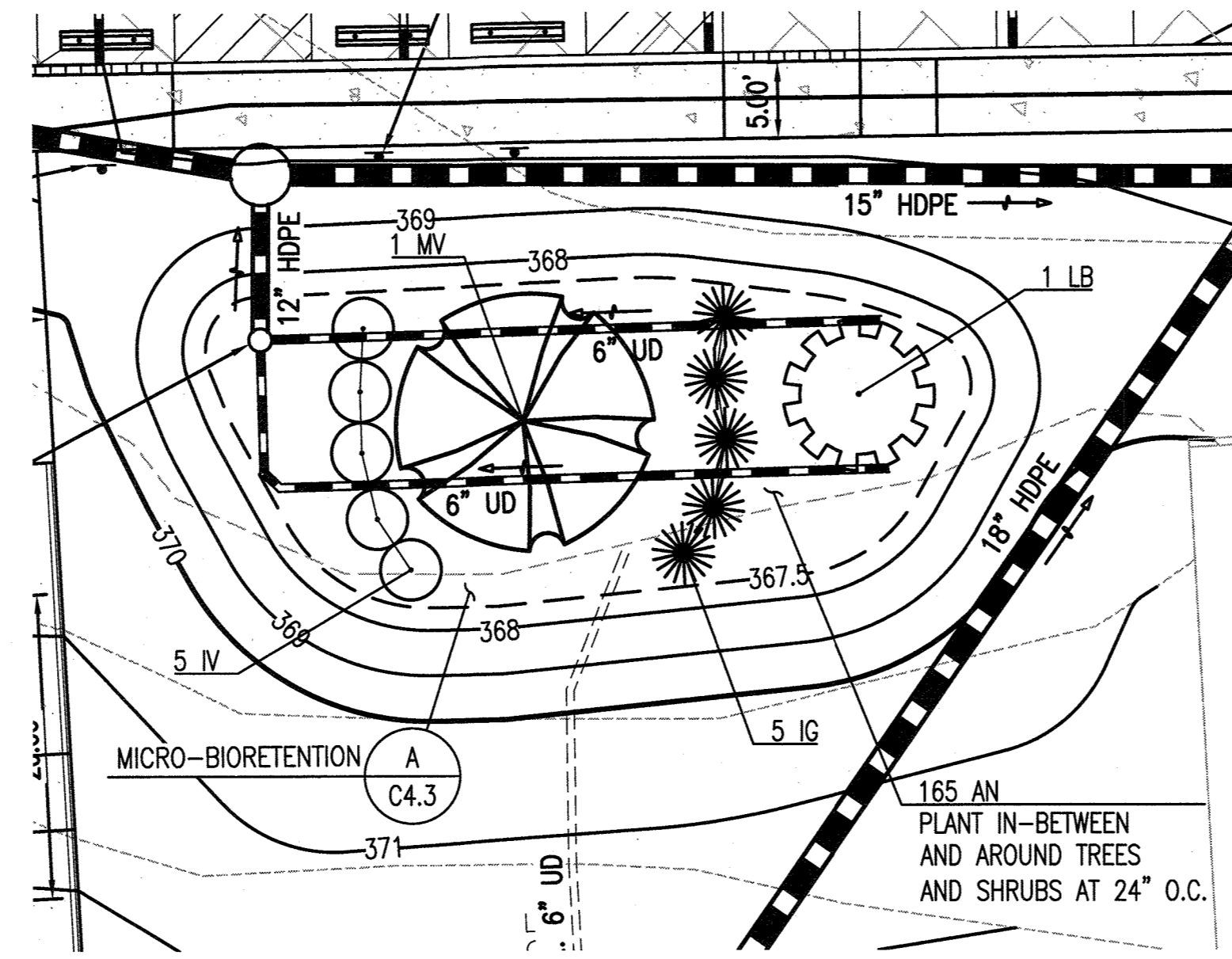
*Walter ...* 12-7-18  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Walter ...* 12-10-18  
 DIRECTOR DATE

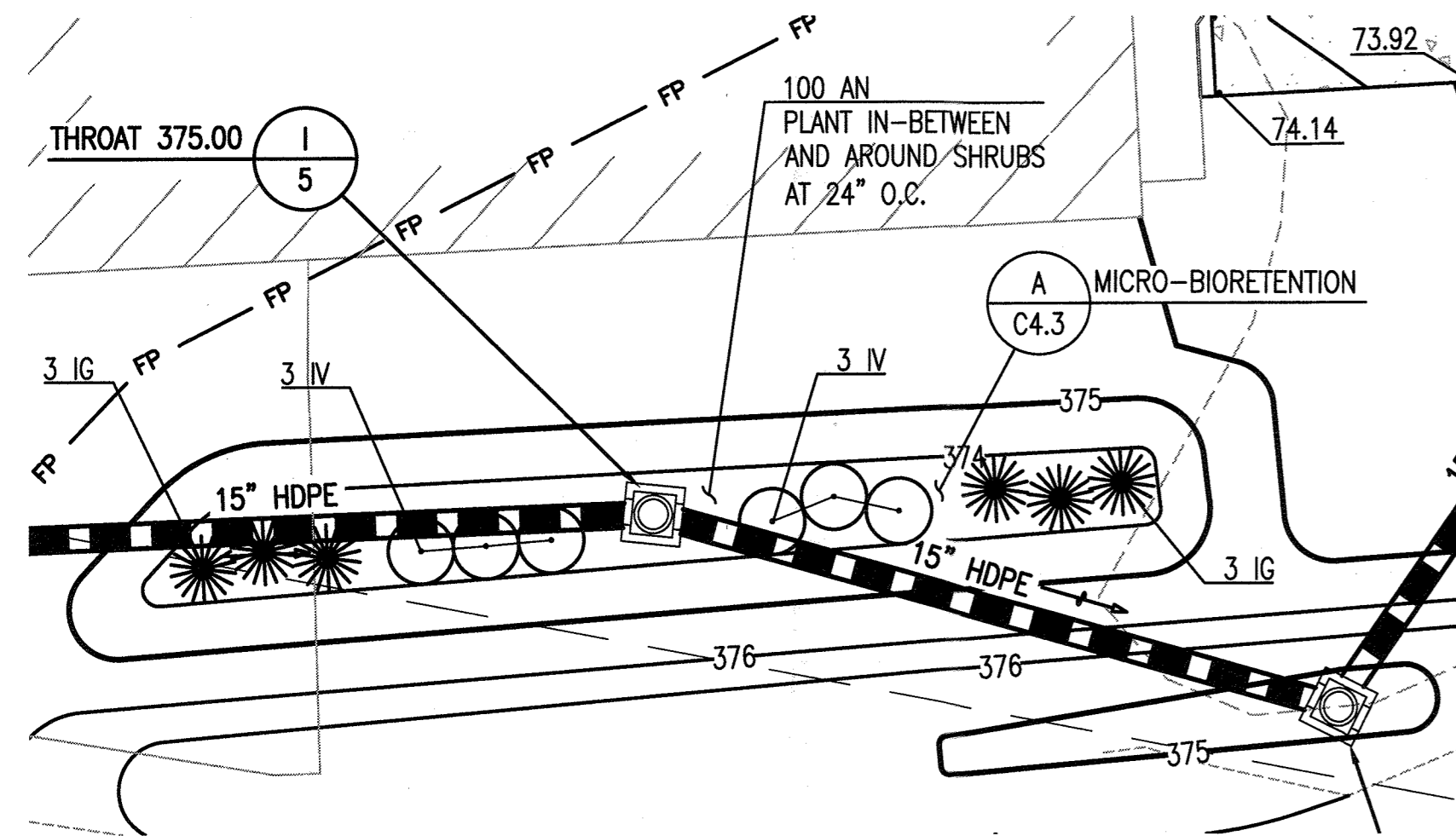
NOTE: THE REMAINING PROPERTY PERIMETER IS ADJACENT TO THE HUGG-THOMAS WILDLIFE MANAGEMENT AREA. EXISTING VEGETATION MEETS OR EXCEEDS PERIMETER LANDSCAPE REQUIREMENTS.



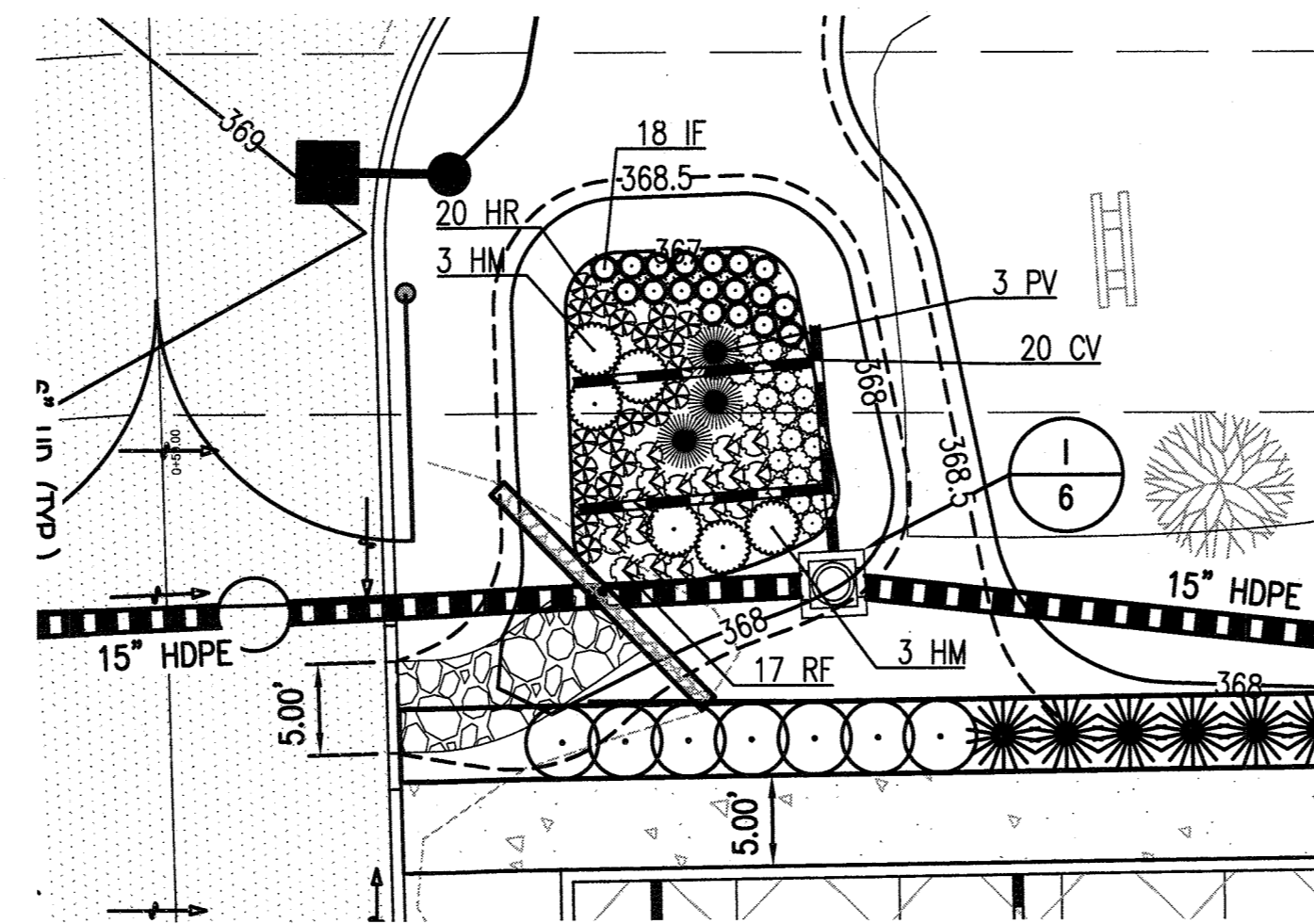
**M-6 MICRO-BIORETENTION #1**  
SCALE: 1" = 10'



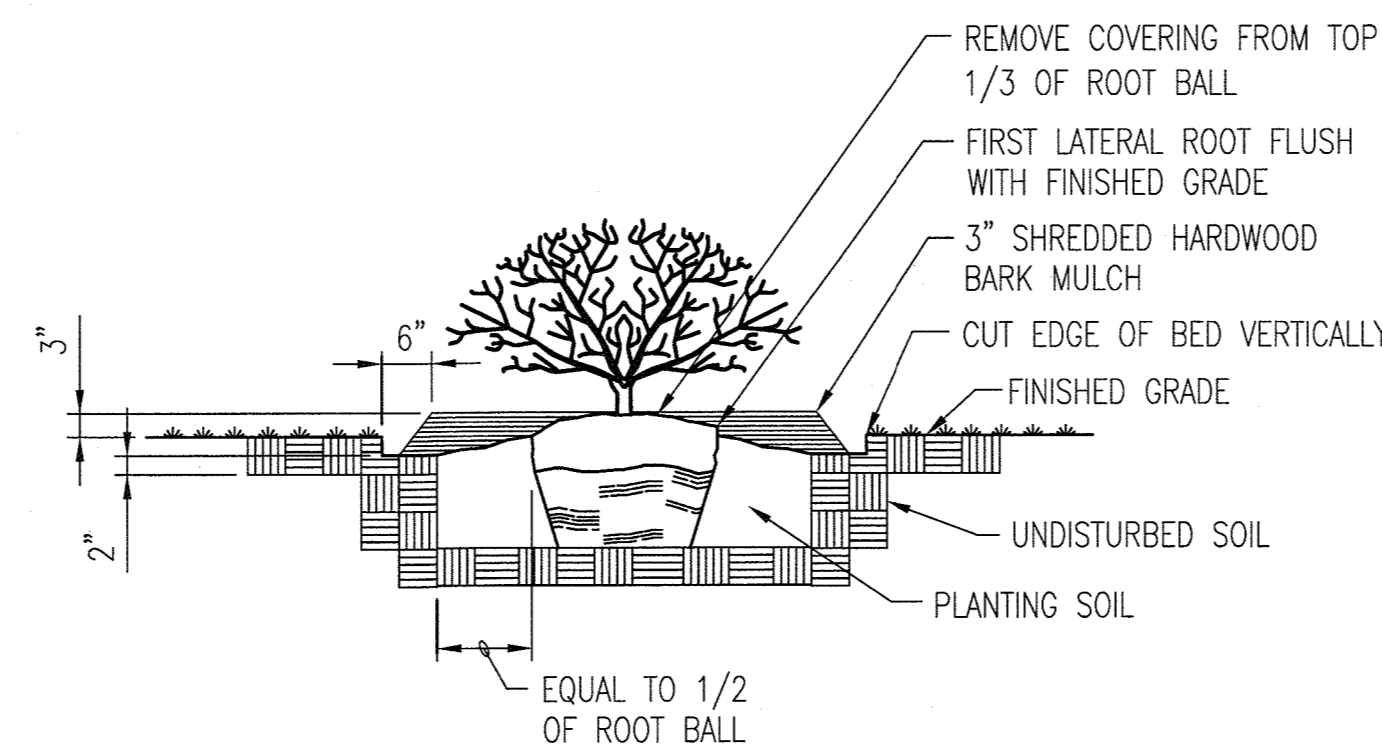
**M-6 MICRO-BIORETENTION #2**  
SCALE: 1" = 10'



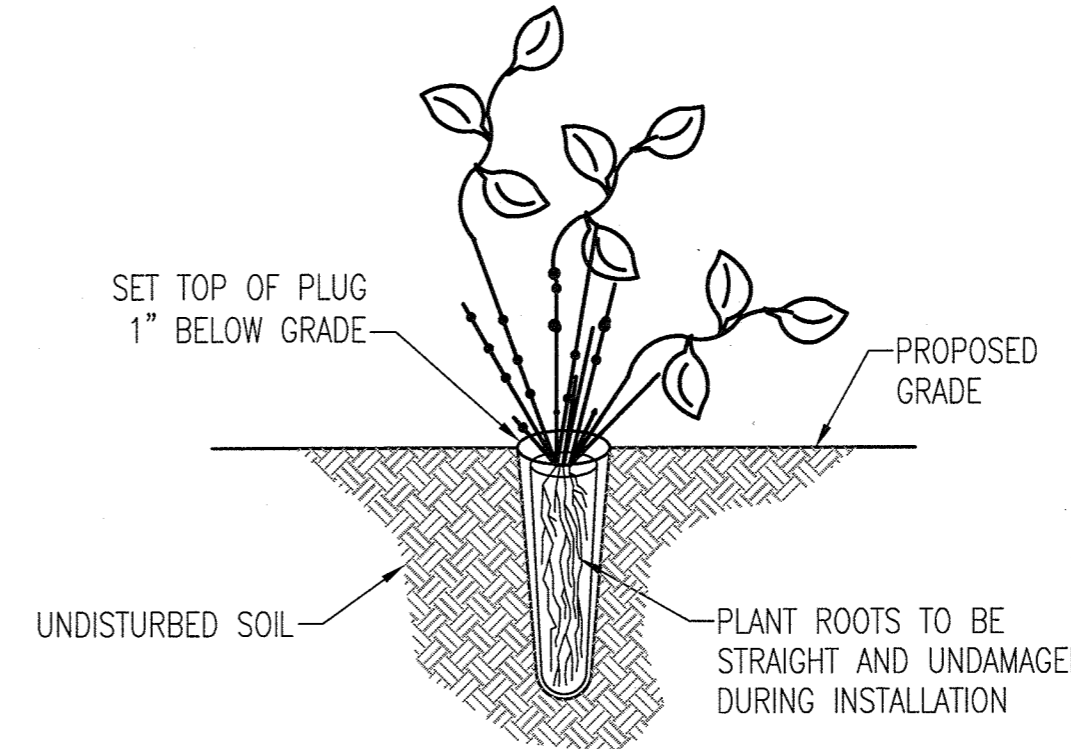
**M-6 MICRO-BIORETENTION #3**  
SCALE: 1" = 10'



**M-7 RAIN GARDEN #1**  
SCALE: 1" = 10'

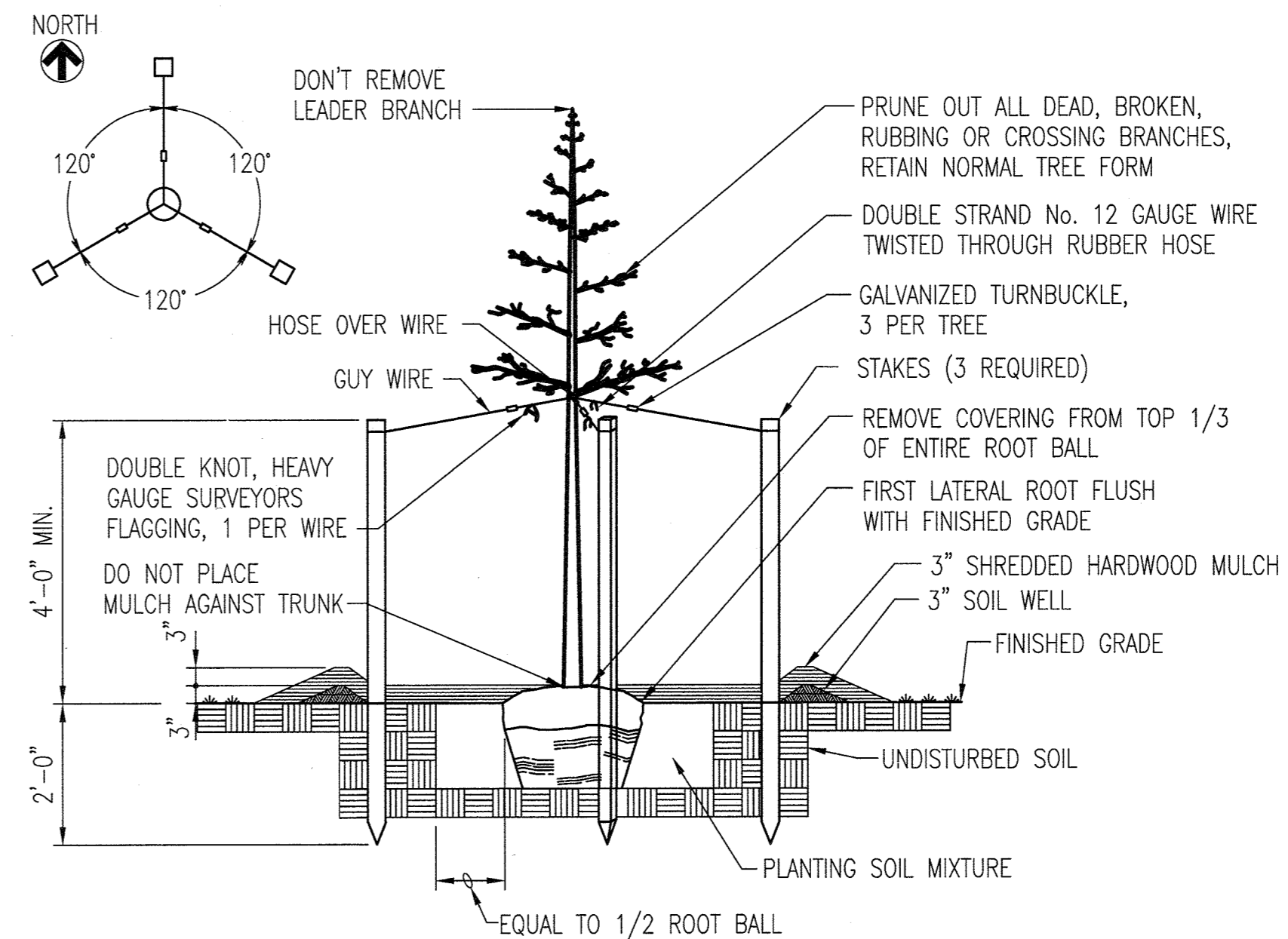


**D PLANTING DETAIL - SHRUB**  
L3.1 NOT TO SCALE

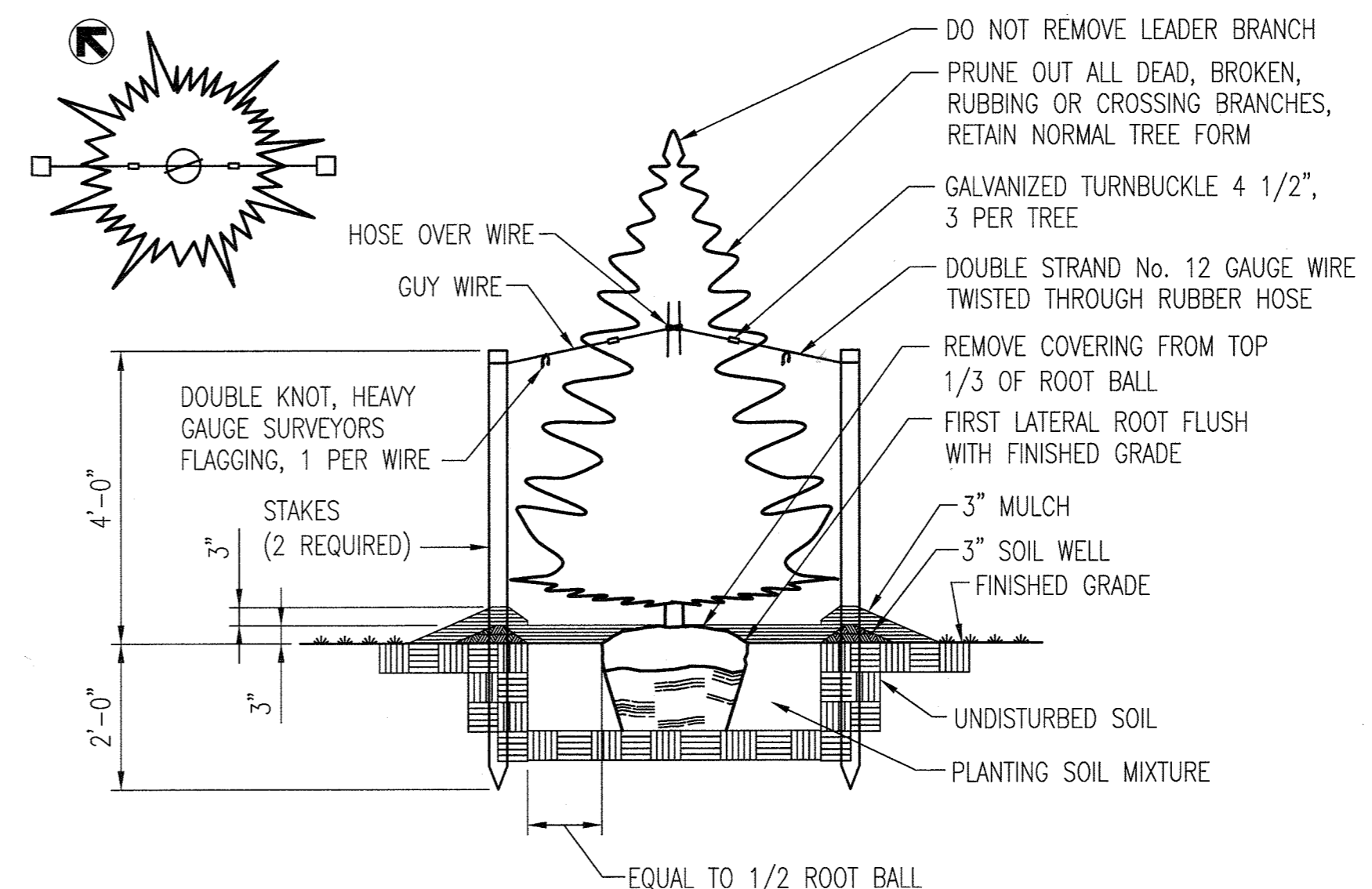


- NOTES:**
1. PLANT USING A DIBBLE BAR, STEEL STAKE OR SIMILAR APPROVED PLANTING DEVICE.
  2. PLANTING PIT SHALL BE SLIGHTLY LARGER THAN THE PLANT ROOTMASS.
  3. DO NOT DAMAGE LEAVES, ROOTS OR STAKES DURING CONSTRUCTION.
  4. PLANT AQUATIC PLUGS IN GROUPS OF 50 PLANTS PER SPECIES.

**A AQUATIC PLANTING DETAIL - 2" PLUG**  
L3.1 NOT TO SCALE



**B PLANTING DETAIL - DECIDUOUS TREE**  
L3.1 NOT TO SCALE



**C PLANTING DETAIL - EVERGREEN TREE**  
L3.1 NOT TO SCALE

**Developer's/Owner's Landscape Certificate**

I/we certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County Code and the Landscape Manual. I/we further certify that upon completion a Letter of Landscape Installation, accompanied by an executed one year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.

*[Signature]*  
Developer's/Owner's Name

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 11-29-18  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 12-7-18  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*[Signature]* 12-10-18  
DIRECTOR DATE

REVISIONS	

HOWARD COUNTY  
DEPARTMENT OF RECREATION AND PARKS  
7120 OAKLAND MILLS ROAD  
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS  
9250 BENDIX ROAD  
ELLCOTT CITY, MD 21043

**WRA**  
Whitman, Reardon & Associates, LLP  
801 South Caroline Street, Baltimore, Maryland 21231  
Phone: 410-235-3450 Fax: 410-243-9716

PROPERTY

TAX MAP 4, GRID 15, PARCEL 54

ZONING: B-1 & RC-DEO

ELECTION DISTRICT 3rd

GRAPHIC SCALES

0 10' 20' 40'  
SCALE: 1" = 10'

SIGNATURE

*[Signature]*

SOUTH BRANCH PARK  
PHASE 3

LANDSCAPE NOTES AND DETAILS

Drawing No.  
**L3.1**

Scale: N/A  
Date: OCTOBER 2018 Sheet 21 of 24  
Des: JTD Drawn: JTD Check: AUO

LANDSCAPE PLANT SCHEDULE							
QUANTITY	KEY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	MATURE SIZE	MIN. SPACING
TREES							
2	CF	CORNUS FLORIDA	NATIVE DOGWOOD	8'-10' HT.	B&B	HEIGHT: 20'-25' SPREAD: 20'-25'	AS SHOWN
2	FS	FAGUS SYLVATICA	EUROPEAN BEECH	2.5"-3" CAL.	B&B	HEIGHT: 50'-60' SPREAD: 35'-45'	AS SHOWN
3	LSR	LIQUIDAMBAR STYRACIFLUA 'ROTUNDILOBA'	ROTUNDILOBA SWEETGUM	2.5"-3" CAL.	B&B	HEIGHT: 60'-75' SPREAD: 40'	AS SHOWN
2	MV	MAGNOLIA VIRGINIANA	SWEETBAY MAGNOLIA	8'-10' HT.	B&B	HEIGHT: 10'-20' SPREAD: 10'-20'	AS SHOWN
4	PAB	PLATANUS X ACERIFOLIA 'BLOODGOOD'	BLOODGOOD LONDON PLANETREE	2.5"-3" CAL.	B&B	HEIGHT: 70'-100' SPREAD: 60'-70'	AS SHOWN
5	PSK	PRUNUS SERRULATA 'KWANZAN'	KWANZAN CHERRY	2.5"-3" CAL.	B&B	HEIGHT: 25'-35' SPREAD: 15'-20'	AS SHOWN
3	QA	QUERCUS COCCINEA	SCARLET OAK	2.5"-3" CAL.	B&B	HEIGHT: <del>50'-60'</del> SPREAD: <del>40'-50'</del>	AS SHOWN
EVERGREEN TREES							
5	IOA	ILEX OPACA 'ANGELICA'	ANGELICA AMERICAN HOLLY	7'-8' HT.	B&B	HEIGHT: 40'-50' SPREAD: 18'-40'	20'
1	IOG	ILEX OPACA 'GABLE'	GABLE AMERICAN HOLLY	7'-8' HT.	B&B	HEIGHT: 40'-50' SPREAD: 20'-40'	20'
5	PA	PICEA ABIES	NORWAY SPRUCE	7'-8' HT.	B&B	HEIGHT: 80'-100' SPREAD: 30'-50'	20'
2	PS	PINUS STROBUS	EASTERN WHITE PINE	7'-8' HT.	B&B	HEIGHT: 50'-80' SPREAD: 20'-40'	20'
SHRUBS							
43	CA	CLETHRA ALNIFOLIA 'SIXTEEN CANDLES'	SIXTEEN CANDLES SUMMERSWEET	30"-36" HT.	B&B	HEIGHT: 3'-4' SPREAD: 3'-4'	3.5' O.C.
63	IG	ILEX GLABRA 'SHAMROCK'	SHAMROCK INKBERRY	30"-36" HT.	B&B	HEIGHT: 3'-4' SPREAD: 3'-4'	3.5' O.C.
21	IV	ITEA VIRGINICA 'LITTLE HENRY'	LITTLE HENRY VIRGINIA SWEETSPIRE	30"-36" HT.	B&B	HEIGHT: 2'-3' SPREAD: 3'-4'	3.5' O.C.
5	LB	LINDERA BENZOIN	SPICEBUSH	30"-36" HT.	B&B	HEIGHT: 6'-12' SPREAD: 6'-12'	AS SHOWN
ORNAMENTAL GRASS							
3	PV	PANICUM VIRGATUM 'PRAIRIE SKY'	BLUE SWITCHGRASS	#2	CONT.	HEIGHT: 3'-4'	3' O.C.
PERENNIALS							
600	AN	ASTER NOVAE- ANGLIAE 'PURPLE DOME'	NEW ENGLAND ASTER	2" PLUG	8-LP50 FLATS	HEIGHT: 18"	24" O.C.
20	CV	COREOPSIS VERTICILLATA	WHORLED COREOPSIS	#1	CONT.	HEIGHT: 18"	18" O.C.
20	HR	HEMEROCALLIS 'HAPPY RETURNS'	HAPPY RETURNS DAYLILY	#1	CONT.	HEIGHT: 18"	18" O.C.
6	HM	HIBISCUS MOCHEUTOS 'LUNA RED'	ROSE MALLOW	#1	CONT.	HEIGHT: 2'-3'	3' O.C.
18	IF	IRIS FULVA	COPPER IRIS	#1	CONT.	HEIGHT: 2'-3'	18" O.C.
17	RF	RUDBECKIA FULGIDA 'GOLDSTURM'	BLACK EYED SUSAN	#1	CONT.	HEIGHT: 2'	18" O.C.

**LANDSCAPE NOTES:**

1. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR CONTACTING MISS UTILITY PRIOR TO BEGINNING CONSTRUCTION FOR LOCATION OF ALL UTILITY LINES. THE LANDSCAPE CONTRACTOR SHALL BE COGNIZANT OF PROPOSED UTILITY LOCATIONS AS SHOWN ON THE PLANS.
2. ALL PLANTS SHALL BE EQUAL TO OR BETTER THAN THE REQUIREMENTS OF THE "AMERICAN STANDARD FOR NURSERY STOCK," LATEST EDITION, AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN. ALL PLANTS SHALL BE TYPICAL OF THEIR SPECIES AND VARIETY, AND SHALL BE FIRST QUALITY, SOUND, VIGOROUS, WELL BRANCHED, AND WITH HEALTHY, WELL-FURNISHED ROOT SYSTEMS. THEY SHALL BE FREE OF DISEASE, INSECTS, PESTS AND MECHANICAL INJURIES.
3. ALL PLANTS SHALL HAVE BEEN NURSERY GROWN AND SHALL HAVE BEEN GROWN UNDER THE SAME CLIMATIC CONDITIONS AS THE LOCATION OF THIS PROJECT FOR AT LEAST TWO YEARS BEFORE PLANTING. NEITHER HEELED IN PLANTS NOR PLANTS FROM COLD STORAGE WILL BE ACCEPTED.
4. LANDSCAPE MAINTENANCE OBLIGATIONS SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS MANUAL AND THE HOWARD COUNTY LANDSCAPE MANUAL, ADOPTED JANUARY 4, 1993 AMENDED MARCH 2, 1998.
5. THE LANDSCAPE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL WATERING DURING CONSTRUCTION AND DURING THE ONE YEAR MAINTENANCE PERIOD.
6. FOR SEEDING REQUIREMENTS, SEE THE EROSION AND SEDIMENT CONTROL DETAIL SHEET.
7. ALL PLANT MATERIALS, TOPSOIL, MULCH, FERTILIZERS, SOIL AMENITIES, PLANTING SUPPLIES AND METHODS SHALL BE SUBJECT TO THE ENGINEER'S APPROVAL. REJECTED MATERIAL SHALL BE REMOVED FROM THE SITE WITHOUT DELAY.
8. ALL PLANT MATERIALS SHALL BE GUARANTEED FOR ONE FULL YEAR TO BE IN A HEALTHY GROWING CONDITION. PLANT MATERIALS WHICH DO NOT FULFILL THIS GUARANTEE SHALL BE REPLACED AT NO COST TO THE OWNER. REPLACEMENT SHALL BE GUARANTEED THROUGHOUT THE ORIGINAL GUARANTEE PERIOD. PLANTS THAT DIE WITHIN 30-60 DAYS SHALL BE REPLACED IMMEDIATELY.
9. THE ONE YEAR GUARANTEE PERIOD SHALL BEGIN UPON THE OWNER'S APPROVAL OF THE PLANTING INSTALLATION. THE LANDSCAPE CONTRACTOR SHALL ALSO PROVIDE LANDSCAPE MAINTENANCE DURING THIS PERIOD.
10. ALL SUBSTITUTIONS OF PLANT MATERIAL SHALL BE REQUESTED IN WRITING TO THE LANDSCAPE ARCHITECT AND APPROVED IN WRITING BY THE OWNER. FAILURE TO OBTAIN SUBSTITUTIONS IN WRITING MAY RESULT IN LIABILITY TO THE CONTRACTOR.
11. DO NOT PLANT ANY TREES, SHRUBS OR PERENNIALS WITHIN 3' OF A CLEANOUT OR OBSERVATION WELL IN THE MICRO-BIORETENTION FACILITIES.
12. ALL TREES OVER 6' IN HEIGHT MUST BE STAKED.
13. AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPING PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL.
14. THE OWNER, TENANT AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS.
15. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL BY PROVIDING 11 SHADE TREES, 8 SMALL DECIDUOUS TREES AND 132 SHRUBS. FINANCIAL SURETY IS NOT REQUIRED FOR THIS PROJECT BECAUSE IT IS A COUNTY CAPITAL PROJECT.
16. IF THERE IS A DISCREPANCY BETWEEN THE QUANTITY OF PLANTS ON THE LANDSCAPE PLAN AND THE QUANTITY OF PLANTS IN THE LANDSCAPE PLANT SCHEDULE, THE GREATER NUMBER SHALL APPLY.

REVISIONS	

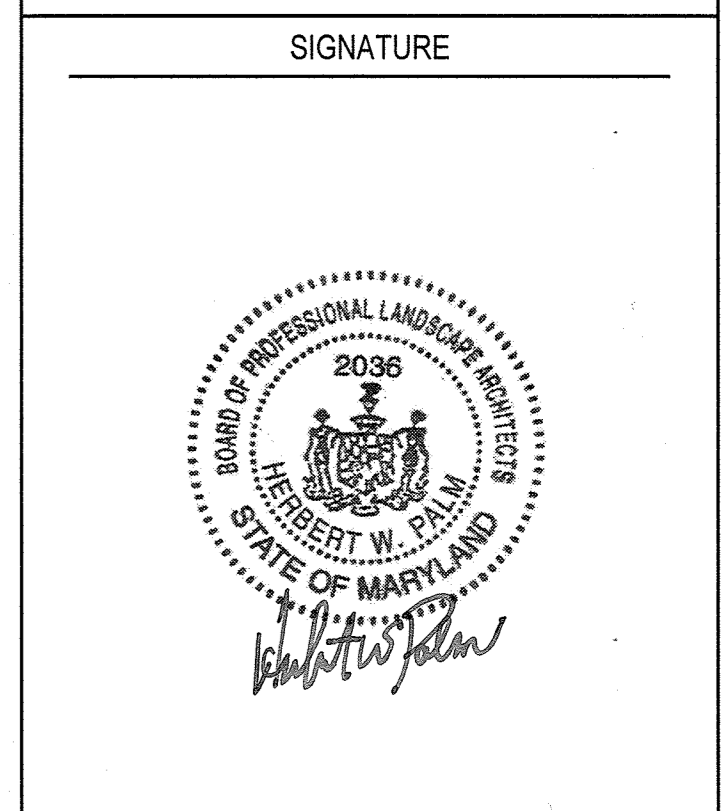
HOWARD COUNTY  
DEPARTMENT OF RECREATION AND PARKS  
7120 OAKLAND MILLS ROAD  
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DEPARTMENT OF PUBLIC WORKS  
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ELLCOTT CITY, MD 21043



PROPERTY  
TAX MAP 4, GRID 15, PARCEL 54  
ZONING: B-1 & RC-DEO  
ELECTION DISTRICT 3rd

GRAPHIC SCALES

SIGNATURE



SOUTH BRANCH PARK  
PHASE 3

LANDSCAPE NOTES AND DETAILS  
Drawing No.  
**L3.2**  
Scale: 1"=30'  
Date: OCTOBER 2018 Sheet 22 of 24  
Des: JTD Drawn: JTD Check: AUO

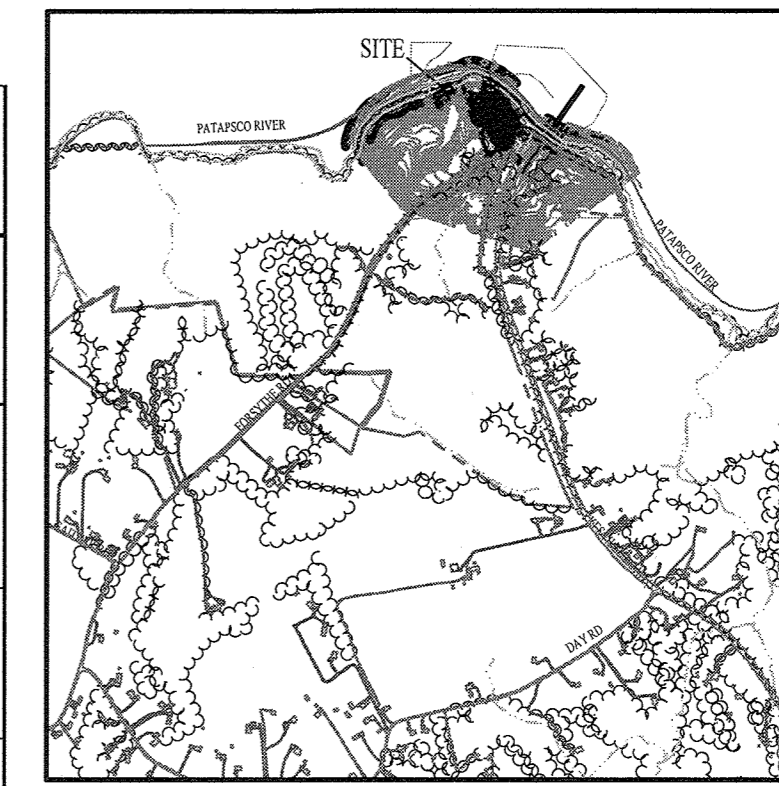
APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*[Signature]* 11-29-18  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
*[Signature]* 12-7-18  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
*[Signature]* 12-10-18  
DIRECTOR DATE

Developer's/Owner's Landscape Certificate  
I/we certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County Code and the Landscape Manual. I/we further certify that upon completion a Letter of Landscape Installation, accompanied by an executed one year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.  
*[Signature]*  
Developer's/Owner's Name

- A SITE VISIT WAS PERFORMED BY WHITMAN, REQUARDT AND ASSOCIATES, LLP ENVIRONMENTAL STAFF ON FEBRUARY 7, 2014 TO PERFORM A LIMITED WETLAND DELINEATION INVESTIGATION AND FOREST STAND DELINEATION. THE STUDY AREA INCLUDED ALL OF PARCEL 54 UNDER MAP 4, GRID 22 (SDAT ACCOUNT NUMBER - 293882).
- TOPOGRAPHIC INFORMATION PROVIDED ON THIS PLAN IS A PRODUCT OF HOWARD COUNTY SURVEY DEPARTMENT (OCT. 2013).
- DURING CONSTRUCTION OF THE SITE ONLY A SMALL PORTION OF THE ALREADY DEVELOPED PARCEL IS EXPECTED TO BE DISTURBED. HOWARD COUNTY PARKS AND RECREATION REQUEST THAT THIS AREA BE DELINEATED FOR WETLANDS. THERE ARE NO WETLANDS IN THIS AREA.
- THE FLOODPLAIN SHOWN ON THIS PLAN IS FROM FROM A FEMA FLOODPLAIN STUDY PERFORMED BY HOWARD COUNTY GOVERNMENT BASED ON A COMBINATION OF GIS DATA AND FIELD RUN TOPOGRAPHIC SURVEY.
- THE PROPERTY BOUNDARIES WERE PROVIDED BY HOWARD COUNTY SURVEY DEPARTMENT.
- ACCORDING TO MERLIN ONLINE MAPPING SERVICE THERE ARE NO STATE OR FEDERAL RECORDS FOR RARE, THREATENED OR ENDANGERED SPECIES WITHIN THE BOUNDARIES OF THE PROJECT SITE AS DELINEATED. HOWEVER, THE US FISH AND WILDLIFE DOES DESIGNATE A MAJORITY OF HOWARD COUNTY AS POTENTIAL INDIAN BAT HABITAT.
- THERE ARE 15 SPECIMEN TREES LOCATED IN OR NEAR THE STUDY AREA. ALL TREES WERE FIELD SURVEYED.
- ONCE APPROVED, THIS FSD IS VALID FOR 5 YEARS FROM THE DATE OF SIGNATURE BY STAFF, OR UNTIL INFORMATION USED TO PREPARE THE FSD CHANGES. THIS FSD PLAN WILL BE REQUIRED TO BE REVISED IF THE BASE INFORMATION CHANGES SIGNIFICANTLY.
- THIS SITE DOES LIE WITHIN A COUNTY GREEN INFRASTRUCTURE EVALUATION AREA.
- THE OWNER OF THE PROJECT IS HOWARD COUNTY DEPARTMENT OF PARKS AND RECREATION 7120 OAKLAND MILLS ROAD, COLUMBIA MD 21046.
- THE NET TRACT AREA IS CONSIDERED BUSINESS LOCAL AND ZONED B-1. THE AREAS SURROUNDING THE PROJECT AREA ARE PRIMARILY ZONED RR-DEO (RURAL RESIDENTIAL) AND RC-DEO (RURAL CONSERVATION).
- THIS PARCEL IS ADJACENT TO THE SOUTHERN BRANCH OF THE PATAPSCO RIVER (HUC CODE - 02060003160, WATERSHED MD - 021309081022). THE PATAPSCO RIVER IS SUBJECT TO A 100 FOOT BUFFER DUE TO THE CLASS IV USE DESIGNATION.
- ACCORDING TO MERLIN ONLINE MAPPING THERE ARE SEVERAL HISTORIC PROPERTIES (NATIONAL REGISTER OF HISTORIC PLACES & MD INVENTORY OF HISTORIC PLACES) ON AND AROUND THE PROJECT SITE. ACCORDING TO MERLIN THE FOLLOWING ARE WITHIN APPROXIMATELY 500 FT. OF THE SITE:

- MD INVENTORY OF HISTORIC PROPERTIES/HISTORICAL TRUST EASEMENTS:
- HO-751 - SOUTH BRANCH RECREATION AREA SURVEY
  - HO-790 - HUGG-THOMAS WILDLIFE MANAGEMENT AREA
  - HO-124 - ST. BARNABAS EPISCOPAL CHURCH
  - HO-755 - SYKESVILLE CREAMERY
  - HO-756 - ST. LUKE'S CHURCH
  - HO-759 - PATAPSCO STATE PARK
  - HO-673 - BRIDGE - SHA 13046
  - CARR-265 - SYKESVILLE TRAIN DEPOT
  - CARR-1024 - SYKESVILLE HISTORIC DISTRICT
  - CARR-266 - MCDONALD AND COMPANY STORE
  - CARR-287 - ST. JOSEPH'S CATHOLIC CHURCH
  - CARR-1649 - ZIMMERMAN WAREHOUSE
  - NATIONAL REGISTER OF HISTORIC PLACES - SYKESVILLE HISTORIC DISTRICT

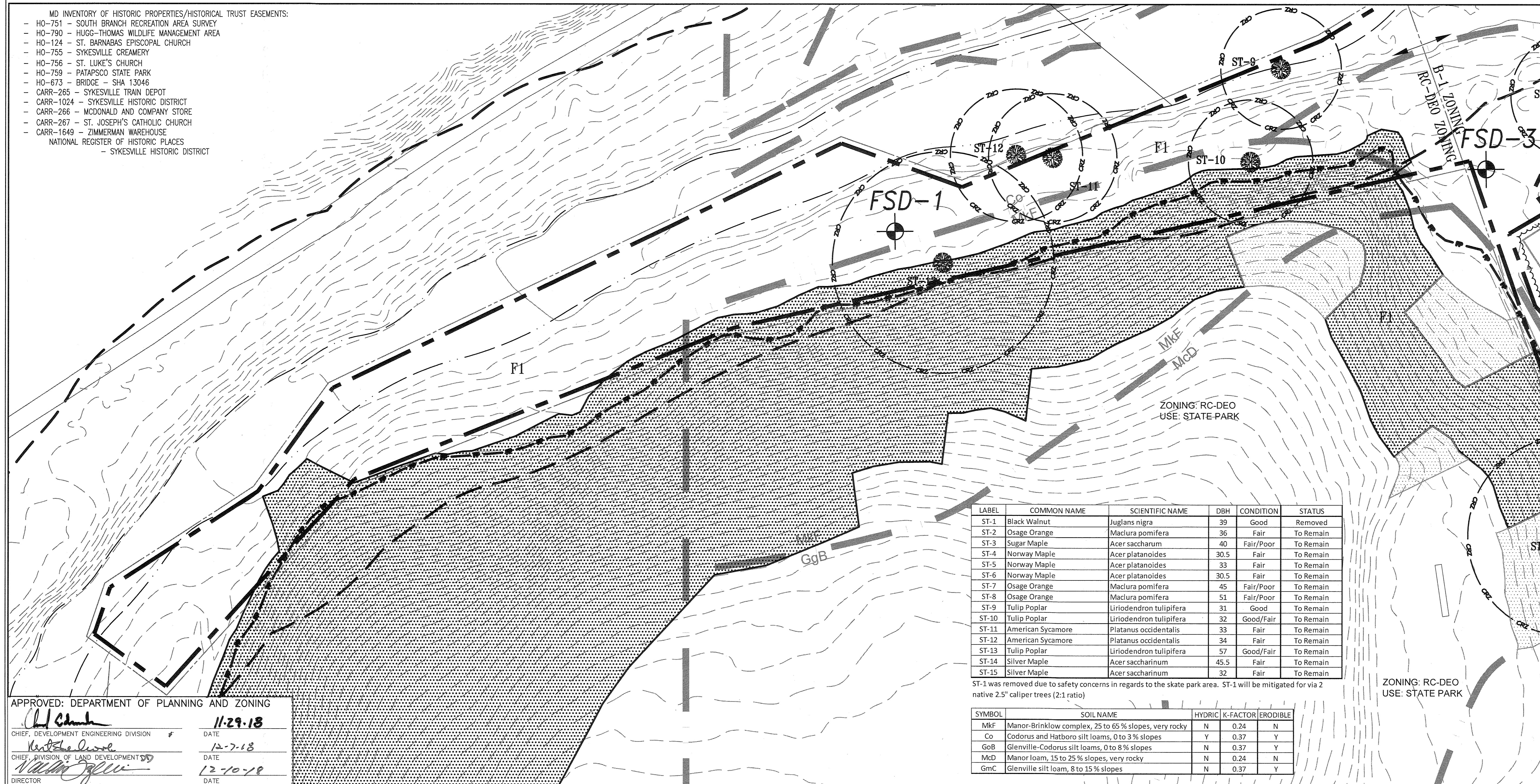
KEY	A. TYPE OF COMMUNITY	B. AREA* (within parcel)	C. SOIL INFORMATION**				D. EXISTING VEGETATION (Dominant Species and Approx. %)	E. STAND CHARACTERISTICS			F. FOREST AREA SENSITIVE ENVIRONMENTS WITHIN PARCEL
			1. Soil Types	2. Typical Forest Cover for Soil Type	3. Woodland Suitability Index	4. Habitat Value for Soil Type		1. Avg. Size (Diameter)	2. Approx. Age	3. General	
F1	Forest	3.84 AC	Co: Codorus and Harboro silt loams, 0 to 3% slopes MkF: Manor-Brinklow complex, 25 to 65% slopes, very rocky GgB:	Hardwood & Coniferous	Group 4 & 45	Good	American Sycamore: 20% of overstory Silver/Red Maple: 30% of overstory Tulip Poplar: 20% of overstory Spicebush: 10% of understory Maple: 20% of tree	12-19.9" DBH	up to 100 yrs	early-mid successional fairly healthy several specimen trees 10-15% invasives	Approximately 3.64 Acres (95%)
TR1	Tree Row	0.27 AC	McD: Manor loam, 15 to 25% slopes, very rocky GmC: Glenville silt loam, 8 to 15% slopes	Hardwood & Coniferous	Group 45 & 16	Good	Osage Orange: 50% of overstory Norway Pine: 50% of overstory Multiflora Rose: 10% of understory	20-29.9" DBH	up to 100 yrs	mid successional fairly healthy several specimen trees 10-15% invasives	Approximately 0.24 Acres (6%)
H1	Hedge Row	0.12 AC	McD: Manor loam, 15 to 25% slopes, very rocky GmC: Glenville-Codorus silt loams, 0 to 8% slopes	Hardwood & Coniferous	Group 45 & 16	Good	Black Walnut: 20% of overstory Norway Maple: 20% of overstory Tulip Poplar: 20% of overstory Black Cherry: 10% of understory Silver Maple: 15% of understory	6-11.9" DBH	up to 50 yrs	early successional fairly healthy no specimen trees 15-20% invasives	Approximately 0.10 Acres (8%)
MF1	Maintained Field with scattered trees	3.82 AC	GmC: Glenville-Codorus silt loams, 0 to 8% slopes	Hardwood & Coniferous	Group 16	Good	Scattered trees include: Norway Maple, Silver Maple, Osage Orange, & Black Walnut	20-29.9" DBH	up to 100 yrs	fairly healthy several specimen trees 5% invasives	Approximately 3.05 Acres (80%)



VICINITY MAP  
SCALE 1" = 200'

**LEGEND**

- Treeline
- Individual Trees/Shrubs
- Gravel Path/Driveway
- GgB Soil Boundary
- GgC Soil Boundary
- Existing Structure
- FSD-13 Forest Stand Data Point
- 15% < Slopes < 25%
- Slopes > 25% (None On-site)
- F6 Stand Label
- Specimen Tree
- Stream
- Stream Buffer
- Property Line
- FP 100-yr Floodplain
- Forest Stand Boundary



APPROVED: DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 11-29-18  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 12-7-18  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

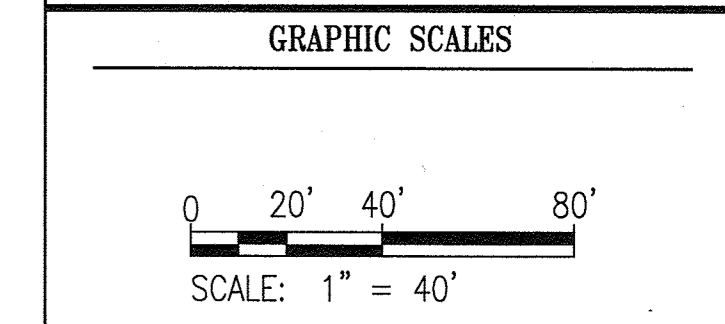
*[Signature]* 12-10-18  
DIRECTOR DATE

REVISIONS


HOWARD COUNTY  
DEPARTMENT OF  
PARKS AND RECREATION  
7120 OAKLAND MILLS ROAD  
COLUMBIA, MD 21046

SOUTH BRANCH PARK

KEY PLAN



SIGNATURE

*[Signature]* DATE

TIMOTHY HESS  
MDNR QUALIFIED PROFESSIONAL

**WRA**  
Whitman, Requardt & Associates, LLP  
801 South Caroline Street, Baltimore, Maryland 21231  
Phone: 410-235-3450 Fax: 410-243-5716

FOREST  
CONSERVATION PLAN

Drawing No.  
F1.1

Scale: 1" = 40'

Date: OCT 2018 Sheet 23 of 24

Des: JD Drawn: TRH Check: MM



**Site Description**

A field visit was conducted by Whitman, Reardon, & Associates, LLP on February 7, 2014. Howard County Park and Recreation Department is currently exploring design options for improvements to the South Branch Park Site located along West Friendship Road in Sykesville, Maryland. The site is a previously developed park consisting of several deteriorating structures, several concrete pads, a skate park, and a parking area.

**Forest Stand Delineation Methodology**

First, the entire site was traversed by foot to obtain a better understanding of the current environmental conditions and vegetative communities present onsite. Field observations from the initial site walks were used to map out preliminary vegetative community boundaries. A full forest stand delineation was conducted to refine the preliminary community boundaries, to conduct vegetative sampling, and to map the locations of all vegetative communities present.

**Sample Plot Data Collection**

Using the sample plot method as defined in the *State Forest Conservation Manual, 3rd Edition* (MDNR, 1997), a minimum 67% confidence level was maintained by using randomly located 1/10th acre sample plots. One sample plot was completed for every 4 acres of forest stand area, with a minimum of two sample plots for each forest stand. Each sample plot was located using a Trimble GPS unit, marked with orange flagging and labeled.

For each plot, data was recorded using the "Forest Sampling Data Worksheet" from the *State Forest Conservation Manual*. Basal area was calculated using a 10-factor wedge prism. Forest stand summary information was recorded on the "Forest Stand Summary Worksheet" from the *State Forest Conservation Manual* and all vegetative community summaries, including forest stand information was recorded on the "Forest Stand Analysis Table" from the *Howard County Forest Conservation Manual* (HC-DPZ, 1998).

**Specimen Tree Data Collection**

Specimen trees measuring at least 30" in diameter at breast height (dbh) were identified, as well as any tree having a dbh measuring at least 70% of the Maryland State Champion of that species. Each specimen tree was located using a Trimble GPS unit and/or survey team. The Specimen Tree Table located on this sheet lists all specimen trees identified within the study limits.

**Results**

The vegetative communities identified onsite include one forest stand, one tree group area, one maintained field, and one hedgerow. These vegetative communities are described in detail below.

**Forest Stand 1 (F1)**

Stand F1 is located along the northern portion of the parcel, adjacent to the Patapsco River. F1 is a mid to early successional area, primarily dominated by American Sycamore (*Platanus occidentalis*), red maple (*Acer rubrum*), silver maple (*Acer saccharinum*), and tulip poplar (*Liriodendron tulipifera*) in the canopy layer. Per the stand data sampling plots the average canopy closure is approximately 67%, with an average of 4 different species per plot. The dominant understorey species consist of American Sycamore (*Platanus occidentalis*), red maple (*Acer rubrum*), boxelder (*Acer negundo*), and northern spicebush (*Lindera benzoin*). The average understorey per plot was estimated to be approximately 60%, with an average of 4.33 species per plot. The fairly sparse herbaceous layer, averaging only 30% coverage per plot, was primarily dominated by Christmas fern (*Polystichum acrostichoides*), Japanese honeysuckle (*Lonicera japonica*), lady fern (*Athyrium filix-femina*), poison ivy (*Toxicodendron radicans*), and multiflora rose (*Rosa multiflora*). The stand averages about 10-15% invasive species the most common of those being multiflora rose and Japanese honeysuckle. The average size of the dominant tree is in the 12-19.9" dbh range. Overall the stand appears to be in good health. Stand F1 extends off the project parcel towards the west. F1 has a high retention priority due to the location of the stand within the 100-yr floodplain and the presence of several specimen trees.

**Tree Row 1 (TR1)**

Tree Row 1 is located along the south western portion of the property. TR1 appears to be an old abandoned driveway or access road that was originally lined with Norway pines (*Pinus resinosa*) and osage-orange (*Maclura pomifera*) trees. The average size of the dominant tree is in the 20-29.9" dbh range. This area appears to be in good health and due to the presence of several specimen trees should be given a high priority for retention rating. TR1 extends off the property to the west.

**Hedgerow 1 (H1)**

Hedgerow 1 is centrally located along the western side of the parcel, adjacent to the Patapsco River. H1 is an early successional area, primarily dominated by Norway maple (*Acer platanoides*), black walnut (*Juglans nigra*) and tulip poplar (*Liriodendron tulipifera*) in the canopy layer. The dominant understorey species consist of black cherry (*Prunus serotina*) and silver maple (*Acer saccharinum*). The herbaceous layer was primarily dominated by wineberry (*Rubus phoenicolasius*), ground ivy (*Glechoma hederacea*), speedwell (*Veronica persica*), Japanese honeysuckle (*Lonicera japonica*) and multiflora rose (*Rosa multiflora*). The stand averages about 15-20% invasive species the most common of those being Norway maple and Japanese honeysuckle. The average size of the dominant tree is in the 6-11.9" dbh range. While there are a number of invasive species within H1 the area appears to be healthy. While there are no specimen trees or areas of 100-yr floodplain with in H1 there are steep slopes associated with this area, therefore this area is still considered to have a moderate retention value.

**Maintained Field 1 (MF1)**

Maintained Field 1 is located adjacent to West Friendship Road and extends across most of the southern portion of the parcel. While a majority of this area is mowed grass there are scattered silver maple (*Acer saccharinum*), black walnut (*Juglans nigra*), osage orange (*Maclura pomifera*), and Norway maple (*Acer platanoides*) trees scattered through out the field. The average size of the dominant tree is in the 20-29.9" dbh range. The scattered trees in this area are in good health and should be retained if at all possible.

**Forest Mitigation Obligation**

The disturbance of the site will require 0.20 acres of mitigation. Due to no available onsite or offsite reforestation planting areas, Howard County has elected to fulfill the reforestation obligation for this project via using a forest mitigation bank. The bank is listed as F-06-072 - The Preserve at Clarksville. This is a County owned mitigation bank tracked by DLD and Recreation and Parks Natural Resource Program. Offsite reforestation is required at 2:1 this bank will require a subtraction of 0.40 acres (17,424 sq. ft.).

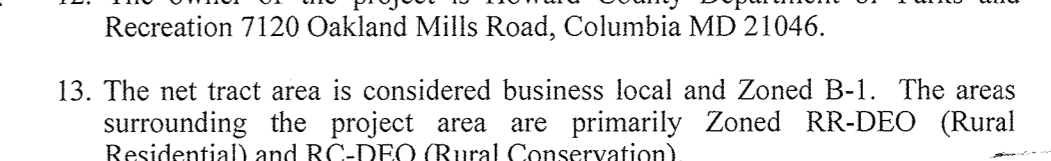
**Surety**

No surety deposit is not required for a Capital Project.

1. A site visit was performed by Whitman, Reardon and Associates, LLP Environmental Staff on February 7, 2014 to perform a limited Wetland Delineation investigation and Forest Stand Delineation. The study area included all of parcel 54 under map 4, grid 22 (SDAT account number - 293882).
2. Topographic information provided on this plan is a product of Howard County Survey Department (Oct. 2013).
3. During construction of the site only a small portion of the already developed parcel is expected to be disturbed. Howard County Parks and Recreation request that this area be delineated for wetlands. There are no wetlands in this area.
4. The floodplain shown on this plan is from from a FEMA Floodplain Study performed by Howard County government based on a combination of GIS data and field run topographic survey.
5. The property boundaries were provided by Howard County Survey Department.
6. According to Merlin Online Mapping service there are no state or federal records for rare, threatened or endangered species within the boundaries of the project site as delineated. However, the US Fish and Wildlife does designate a majority of Howard County as potential Indian bat habitat.
7. Due to no available onsite or offsite reforestation areas, Howard County has elected to fulfill the reforestation obligation for this project via an off-site bank. Offsite reforestation will require 2:1 mitigation (0.40 acres, 17,424 sq. ft.).
8. There are 15 specimen trees located in or near the study area, two of which have since been removed and will require 2:1 mitigation planting. All trees were field surveyed.
9. Once approved, this FSD is valid for 5 years from the date of signature by staff, or until information used to prepare the FSD changes. This FSD plan will be required to be revised if the base information changes significantly.
10. This site does lie within a county green infrastructure evaluation area.
11. According to Merlin Online Mapping there are several historic properties (National Register of Historic Places & MD Inventory of Historic Places) on and around the project site. according to Merlin the following are within approximately 500 ft. of the site:
  - MD Inventory of Historic Properties/Historical Trust Easements:
    - HO-751 - South Branch Recreation Area Survey
    - HO-790 - Hugg-Thomas Wildlife Management Area
    - HO-124 - St. Barnabas Episcopal Church
    - HO-755 - Sykesville Creamery
    - HO-756 - St. Luke's Church
    - HO-759 - Patapsco State Park
    - HO-673 - Bridge - SHA 13046
    - CARR-265 - Sykesville Train Depot
    - CARR-1024 - Sykesville Historic District
    - CARR-266 - McDonald and Company Store
    - CARR-267 - St. Joseph's Catholic Church
    - CARR-1649 - Zimmerman Warehouse
  - National Register of Historic Places
    - Sykesville Historic District

**KEY PLAN**

12. The owner of the project is Howard County Department of Parks and Recreation 7120 Oakland Mills Road, Columbia MD 21046.
13. The net tract area is considered business local and Zoned B-1. The areas surrounding the project area are primarily Zoned RR-DEO (Rural Residential) and RC-DEO (Rural Conservation).
14. This parcel is adjacent to the southern branch of the Patapsco River (HUC Code - 02060003160, Watershed MD - 021309081022). The Patapsco River is subject to a 100 foot buffer due to the Class IV Use Designation.



**NET TRACT AREA:**

A. Total tract area.....	7.37
B. Floodplain Area deductions.....	5.82
C. Existing impervious.....	0.28
D. Net tract area.....	1.27

**LAND USE CATEGORY:** (from table 3.2.1, page 40, Manual)

Input the number "1" under the appropriate land use zoning, and limit to only one entry.

ARA	MDR	IDA	HDR	MPD	CIA
0	0	1	0	0	0

E. Afforestation Threshold.....	15% x D =	0.20
F. Conservation Threshold.....	20% x D =	0.30

**EXISTING FOREST COVER:**

G. Existing forest cover (excluding Critical Area).....	0.00
H. Area of forest above afforestation threshold.....	0.00
I. Area of forest above conservation threshold.....	0.00

**BREAK EVEN POINT:**

J. Forest retention above threshold with no mitigation.....	0.00
K. Clearing permitted without mitigation.....	0.00

**PROPOSED FOREST CLEARING:**

L. Total area of forest to be cleared.....	0.00
M. Total area of forest to be retained.....	0.00

**PLANTING REQUIREMENTS:**

N. Reforestation for clearing above conservation threshold.....	0.00
P. Reforestation for clearing below conservation threshold.....	0.00
Q. Credit for retention above conservation threshold.....	0.00
R. Total reforestation required.....	0.00
S. Total afforestation required.....	0.20
T. Total reforestation and afforestation required.....	0.20

**REVISIONS**


**HOWARD COUNTY**  
 DEPARTMENT OF  
 PARKS AND RECREATION  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MD 21046

**SOUTH BRANCH PARK**

**KEY PLAN**

**GRAPHIC SCALES**

**SIGNATURE**

TIMOTHY HESS  
 MDNR QUALIFIED PROFESSIONAL



**FOREST CONSERVATION PLAN**  
 Drawing No.  
**F1.2**  
 Scale: 1" = 40'  
 Date: OCT 2018 Sheet 24 of 24  
 Des: JD Drawn: TRH Check: MM

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Chief, Development Engineering Division  
 Chief, Division of Land Development  
 Director

11.29.18  
 12.7.18  
 12.10.18